

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.3 CHANGES IN THE WORK

- A. Owner will issue supplemental instructions and/or bulletins authorizing changes in the Work.

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Construction Manager; CM will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by **Construction Manager** are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 14 calendar days, when not otherwise specified, after receipt of Proposal Request, submit an itemized quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to the Owner.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements regarding Substitution Procedures in the Solicitation if the proposed change requires substitution of one product or system for product or system specified.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Change Proposal Request, a Change Order will be issued for signatures of Owner and Contractor on **form provided by Owner**.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive (CCD): Construction Change Directive instructs Contractor to provide pricing associated with a change in the Work, for subsequent inclusion in a Change Order.
1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
 2. Construction Change Directive may include a Notice to Proceed with the Work.
- B. Documentation: If requested or required, maintain detailed records on a time and material basis of work required by the Work Change Directive.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 2. Section 013216 "Construction Project Schedule" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.
 - 3. Section 01 3300 "Submittal Procedures" for administrative requirements governing the preparation and submittal of the submittal schedule.

1.3 DEFINITIONS

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

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
 - a. Application for Payment forms
 - b. Submittal schedule
 - c. Items required to be indicated as separate activities in Contractor's construction schedule
 - 2. Submit the schedule of values to Owner, and Owner's Project Manager at earliest possible date, but no later than 14 calendar days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments; provide subschedules showing values coordinated with each phase of payment.

4. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work; provide subschedules showing values coordinated with each element.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one-line item for each Specification Section.
1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Arrange schedule of values consistent with format of **form provided by Owner**
 3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.
 - 1) Labor.
 - 2) Materials.
 - 3) Equipment.
 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of **five** percent of the Contract Sum.
 5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site.
 6. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
 7. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate Owner payments or deposits, if any, and balance to be paid by Contractor.

8. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling **two** percent of the Contract Sum and subcontract amount. Assign costs for testing and commissioning activities, operation and maintenance manuals, punch list activities, Project record documents, and demonstration and training (if applicable), in the amount of two (2) percent of the Contract Sum.
9. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive, on the G703 form.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Times: Submit Application for Payment to Construction Manager by the fifth day of the month. The period covered by each Application for Payment is one month, ending on the **last day of the month**.
 1. Submit draft copy of Application for Payment 14 days prior to due date for review by Owner and **Construction Manager**.
- D. Application for Payment Forms: Use form Applications for Payment provided by Owner.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Owner will return incomplete applications without action.
 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
 1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.

2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- G. Transmittal: Submit and one **hard copy**, signed and notarized original copies of each Application for Payment to Owner by a method ensuring receipt **within 24 hours**. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from **entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment** to include **subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application**.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
 5. Schedule of unit prices.
 6. Submittal schedule (preliminary if not final).
 7. List of Contractor's staff assignments.
 8. List of Contractor's principal consultants.
 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 10. Initial progress report.
 11. Certificates of insurance and insurance policies.

12. Performance and payment bonds.
 13. Data needed to acquire Owner's insurance.
- J. Application for Payment at Substantial Completion: After **Construction Manager** issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- K. Final Payment Application: Within 30 days after completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. Completed District of Columbia Affidavit of Release if Liens.
 5. Evidence that claims have been settled.
 6. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. RFIs.
 - 4. Digital project management procedures.
 - 5. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
 - 1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.

1.3 DEFINITIONS

- A. BIM: Building Information Modeling.
- B. RFI: Request for Information. Request from Owner, Construction Manager, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.
- C. Request for Information definition: Request for information from Prime Contractor seeking information or interpretation of the Contract Documents during construction.
 - 1. Requests for information directly from Subcontractors will not be answered. RFI's will be returned without response for reasons including but not limited to: requests for substitutions, money, time, forgiveness, direction, and means and methods.

1.4 INFORMATIONAL SUBMITTALS

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

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
 2. Number and title of related Specification Section(s) covered by subcontract.
 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within **15** days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
1. Post copies of list in project meeting room, on web-based Project software directory, and in prominent location in each built facility. Keep list current at all times.
- C. A detailed 2-week look-ahead schedule shall be submitted once a week by the close of business on the last day of the previous week's work. The schedule shall include the following:
1. Specific location of work for each trade.
 2. Description of work for each trade.
 3. Number of persons who will be on site for each location and trade.
 4. Specific impacts required, such as equipment or utility shutdowns.
 5. Hours of operation.

1.5 COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its own operations with operations included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.

- C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and scheduled activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of the schedule of values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.
- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.6 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 - 1. All RFI's are to be uploaded to the Owner's project management website, by the contractor. Review and comment shall follow the project defined communication structure, as defined in other sections of the specifications.
 - 2. Construction Manager and/or Architect will return without response those RFIs submitted by other entities controlled by Contractor.
 - 3. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
 - 4. Do not issue RFI as request for substitution. CM will return such RFI with notification to submit proper "Request for Substitution".
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 - 1. Project name.
 - 2. Project number.
 - 3. Date.

4. Name of Contractor.
 5. Name of Architect and Construction Manager.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to the Owner and Construction Manager.
1. Attachments shall be electronic files in PDF format, for approval by Owner.
- D. **Construction Manager (CM) and Architect's Action:** Construction Manager and/or Architect will review each RFI, determine action required, and respond. Allow 10 working days for response for each RFI. RFIs received by Architect and Construction Manager after 1:00 p.m. will be considered as received the following working day.
1. If, in the opinion of the Architect, the RFI is too complicated, and will require coordination with other components, and it will take more than 10 working days to properly respond to, the Architect will notify the Contractor through the Construction Manager of the required time within 7 working days
 2. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 3. CM's action may include a request for additional information, in which case CM and Architect's time for response will date from time of receipt by Architect of additional information.
 4. CM's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

- a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify CM in writing within **10** working days of receipt of the RFI response.
 - b. On receipt of CM or Architect's action, update the RFI log and immediately distribute the RFI response to affected parties.
- E. Contractor Review response and notify Construction Manager within five (5) working days if Contractor disagrees with response.

1.7 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. Architect's Data Files Not Available: Architect will not provide Architect's **BIM model** digital data files for Contractor's use during construction.
- B. Use of Architect's Digital Data Files: Digital data files of Architect's **CAD drawings** will be provided by Architect for Contractor's use during construction.
1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
 2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
 3. Digital Drawing Software Program: Contract Drawings are available in AutoCAD (DWG) version 2016.
 4. Contractor shall execute a data licensing agreement in the form.
 - a. Subcontractors, and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form provided by owner.
 5. The following digital data files will be furnished for each appropriate discipline:
 - a. Floor plans.
 - b. Reflected ceiling plans.
- C. Web-Based Project Software: Use Owner's web-based Project software site for purposes of hosting and managing Project communication and documentation until Final Completion.
1. Provide four hours of software training for the Project Web site users.
 2. Contractor, subcontractors, and other parties granted access to the Project Web site shall execute the data licensing agreement implemented on the website.
- D. PDF Document Preparation: Where PDFs are required to be submitted to Owner, Construction Manager, or Architect, prepare as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.8 PROJECT MEETINGS

- A. General: Construction Manager will schedule and conduct meetings and conferences at Project site unless otherwise indicated. Coordinate all meetings with the Construction Manager.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner, Construction Manager, and Architect of scheduled meeting dates and times a minimum of 10 working days prior to meeting.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, Construction Manager, and Architect, within two days of the meeting.
 4. Meeting participants will have three days to provide revisions back to the entity responsible and the meeting minutes shall be redistributed to the team.
 5. There shall be no private meetings without appropriate attendees, and meeting minutes shall be distributed to all parties, to document the outcome of those meetings.
- B. Preconstruction Conference: Construction Manager will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than **15** calendar days after execution of the Agreement.
1. Attendees: Authorized representatives of Owner, **Owner's Commissioning Authority, Construction Manager**, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Responsibilities and personnel assignments.
 - b. Tentative construction schedule.
 - c. Phasing.
 - d. Critical work sequencing and long lead items.
 - e. Designation of key personnel and their duties.
 - f. Lines of communications.
 - g. Use of web-based Project software.
 - h. Procedures for processing field decisions and Change Orders.
 - i. Procedures for RFIs.
 - j. Procedures for testing and inspecting.
 - 1) Schedule for all testing and inspections shall be part of the schedule process, per section 013200 "Construction Progress Documents."
 - k. Commissioning procedures.
 - l. Procedures for processing Applications for Payment.
 - m. Distribution of the Contract Documents.
 - n. Submittal procedures.
 - o. Sustainable design requirements.
 - p. Preparation of Record Documents.
 - q. Use of the premises **and existing building**.
 - r. Work restrictions.
 - s. Working hours.
 - t. Owner's occupancy requirements.

- u. Responsibility for temporary facilities and controls.
 - v. Procedures for moisture and mold control.
 - w. Procedures for disruptions and shutdowns.
 - x. Construction waste management and recycling.
 - y. Parking availability.
 - z. Office, work, and storage areas.
 - aa. Equipment deliveries and priorities.
 - bb. First aid.
 - cc. Security.
 - dd. Progress cleaning.
3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Sustainable Design Requirements Coordination Conference: Construction Manager will schedule and conduct a sustainable design coordination conference before starting construction, at a time convenient to Owner, Construction Manager, Architect, and Contractor.
- 1. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Construction Manager, Architect, and their consultants; Contractor and its superintendent and sustainable design coordinator; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Discuss items of significance that could affect meeting sustainable design requirements, including the following:
 - a. Sustainable design Project checklist.
 - b. General requirements for sustainable design-related procurement and documentation.
 - c. Project closeout requirements and sustainable design certification procedures.
 - d. Role of sustainable design coordinator.
 - e. Construction waste management.
 - f. Construction operations and sustainable design requirements and restrictions.
 - 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- D. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Construction Manager, and Owner's Commissioning Authority of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.

- c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Sustainable design requirements.
 - i. Review of mockups.
 - j. Possible conflicts.
 - k. Compatibility requirements.
 - l. Time schedules.
 - m. Weather limitations.
 - n. Manufacturer's written instructions.
 - o. Warranty requirements.
 - p. Compatibility of materials.
 - q. Acceptability of substrates.
 - r. Temporary facilities and controls.
 - s. Space and access limitations.
 - t. Regulations of authorities having jurisdiction.
 - u. Testing and inspecting requirements.
 - v. Installation procedures.
 - w. Coordination with other work.
 - x. Required performance results.
 - y. Protection of adjacent work.
 - z. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- E. Project Closeout Conference: Construction Manager will schedule and conduct a project closeout conference, at a time convenient to Owner, but no later than **90** days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of Record Documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.

- c. Procedures for completing and archiving web-based Project software site data files.
 - d. Submittal of written warranties.
 - e. Requirements for completing sustainable design documentation.
 - f. Requirements for preparing operations and maintenance data.
 - g. Requirements for delivery of material samples, attic stock, and spare parts.
 - h. Requirements for demonstration and training.
 - i. Preparation of Contractor's punch list.
 - j. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - k. Submittal procedures.
 - l. Coordination of separate contracts.
 - m. Owner's partial occupancy requirements.
 - n. Installation of Owner's furniture, fixtures, and equipment.
 - o. Responsibility for removing temporary facilities and controls.
4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- F. Progress Meetings: Construction Manager shall conduct progress meetings at biweekly or at agreed to intervals.
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner, Owner's Commissioning Authority Construction Manager and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Resolution of BIM component conflicts.
 - 4) Status of submittals.
 - 5) Status of sustainable design documentation.
 - 6) Deliveries.
 - 7) Off-site fabrication.
 - 8) Access.

- 9) Site use.
 - 10) Temporary facilities and controls.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) Status of RFIs.
 - 16) Status of Proposal Requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information. Minutes to be distributed within **48** hours of the meeting.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- G. Coordination Meetings: **Conduct** Project coordination meetings at **weekly** intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner, Owner's Commissioning Authority, Construction Manager and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
 - c. Review present and future needs of each contractor present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Resolution of BIM component conflicts.

- 4) Status of submittals.
 - 5) Deliveries.
 - 6) Off-site fabrication.
 - 7) Access.
 - 8) Site use.
 - 9) Temporary facilities and controls.
 - 10) Work hours.
 - 11) Hazards and risks.
 - 12) Progress cleaning.
 - 13) Quality and work standards.
 - 14) Status of RFIs.
 - 15) Proposal Requests.
 - 16) Change Orders.
 - 17) Pending changes.
3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013216 – CONSTRUCTION PROJECT SCHEDULE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. The Contractor shall use a Critical Path Method ("CPM") Project Schedule to plan, coordinate, and perform the Work. The Project Schedule shall be produced using widely used, commercially available computer software that is capable of generating and monitoring a CPM schedule and is capable of exporting readable output in PDF format. Develop a detailed Network Plan demonstrating complete fulfillment of all Work shown in the contract documents. Regularly update the Network Plan in accordance with the requirements of this Section, and use it in planning, coordinating, and performing all the Work under this contract. Schedule activities shall accurately depict the contractor's means and methods to complete the entire scope of work including, but not limited to, activities of subcontractors, consultants, equipment vendors and suppliers, the Owner, and others, as required. The contractor is required to follow the Network Plan in the execution of the work.
 - 1. Startup construction schedule.
 - 2. Contractor's Construction Schedule (CPM).
 - 3. Construction schedule updating reports.
- B. Related Requirements:
 - 1. Section 013300 "Submittal Procedures" for submitting schedules and reports.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources. Each activity shall be limited to one trade unless the Owner specifically approves otherwise on an exception basis.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. Baseline Schedule: The original work plan approved by the Owner as the Project Schedule depicting the contractor's plan to prosecute the work.

- C. Constraint: A scheduling restriction imposed on the start date, finish date or float of an activity. No constraints will be allowed.
- D. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum.
- E. CPM: A scheduling technique using activities, durations, and interrelationships/dependencies (logic), such that all activities are interrelated with logic ties from the beginning of the project to the completion of the project. There shall be no open-ended relationships in the schedule. All activities shall have at least one successor with a finish relationship (“finish to start” or “finish to finish” except the last activity in the network.
- F. Critical Path: The Project critical path is defined as the longest, continuous path of interrelated activities depicting project work from notice of award (or NTP) to project completion. All reports and graphics indicating the Critical Path shall depict the longest path of interrelated activities. Unless otherwise approved by the Owner, the Baseline Schedule Critical Path shall use all allotted Contract time. The contractor has the right to develop a schedule that forecasts an early finish. However, all time between the forecasted early finish of substantial completion and the contractual substantial completion date shall be shown as float.
- G. Current Schedule of Record: The current accepted construction schedule, recently updated or revised to reflect the actual progression of the work.
- H. Data Date: The date to which progress is updated. In most scheduling software, the data date represents the next day of work and all progress is updated through the day prior to the data date.
- I. Float: The amount of time an activity can be delayed in a project network without causing delay to subsequent activities (free float) or the project completion date (total float).
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project Substantial Completion date.
- J. Float Suppression: The masking of available float through the use of constraints, unreasonable logical relationships or unreasonable durations. Float suppression techniques are not be allowed.
- K. Fragnet: A subset group of interrelated activities representing only a portion of the CPM schedule.
- L. Resource Loading: The allocation of manpower and equipment necessary for completing an activity as scheduled.
- M. Network Plan: The Network Plan is the entire database of activities, logic, durations, and all items relating to any activity input into the scheduling software and is the complete representation of the Project Schedule prepared using the Critical Path Method and graphically shown in a time-scaled form. The network shows the sequence and interdependence of the

activities, and planned and actual progress by activity, required for complete performance of the Work.

- N. Project Schedule: The Project Schedule includes the Preliminary Schedule (submitted at bid or as determined by the CO), the approved Baseline Schedule (developed based on the Preliminary Schedule), and all subsequent Schedule Updates, Schedule Revisions, Recovery Schedules, and As-Built Schedule.
- O. Recovery Schedule: A schedule depicting the Contractor's plan for recovery of time lost on the project.
- P. Retained Logic: When you choose Retained Logic, the remaining duration of a progressed activity is not scheduled until the logical relationships of all predecessors are satisfied. When you choose Progress Override, network logic is ignored, and the activity can progress without delay
- Q. Schedule Revision: A schedule in which the plan for the work is revised. A Schedule Revision is required when the current schedule no longer represents the actual or planned prosecution of the Work.
- R. Schedule Update: A schedule in which only actual start dates, actual finish dates and duration percent completes are updated from the prior data date to the current data date. No Revisions will be permitted in a Schedule Update. (i.e. added activities, deleted activities, logical relationships, etc.) unless the Owner specifically approves otherwise on an exception basis.
- S. Time Impact Analysis: A technique to demonstrate a revision or proposed revision against the current approved Project Schedule.
- T. Working Day: A Working Day is a calendar day scheduled for active prosecution of the work.

1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
 - 1. Working electronic copy of schedule file, where indicated.
 - 2. PDF file.
 - 3. One paper copy, of sufficient size to display entire period or schedule, as required.
- B. Baseline Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 - 1. Submit a working digital copy of schedule, using software indicated, and labeled to comply with requirements for submittals.
- C. Schedule Updates: Submit with Applications for Payment no later than the 10th of the following month

1.5 QUALITY ASSURANCE

- A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting.

1.6 COORDINATION

- A. Coordinate Contractor's Construction Schedule with the schedule of values, **list of subcontracts**, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from entities involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.7 PROJECT SCHEDULE, GENERAL

- A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.
 - 1. Use **Microsoft Project** or **Primavera P6, version 8.2**
- B. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.
 - 1. In-House Option: Owner may waive requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
- C. Time Frame: Extend Project Schedule from date established for **the Notice to Proceed** to date of **Final Completion**.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early or late completion date, unless specifically authorized by Change Order.
- D. Activities: Comply with the following:
 - 1. Procurement Activities: Include procurement process activities for the long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 - 2. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Project Schedule with submittal schedule.
 - 3. Testing Time: Include no fewer than **15** work days for testing.
 - 4. Punch List and Final Completion: Include not more than **30** days for completion of punch list items and Final Completion.

- E. Work Restrictions: Include work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.
1. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use-of-premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.
 2. Work Phase: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Submittals.
 - b. Fabrication.
 - c. Deliveries.
 - d. Installation.
 - e. Tests and inspections.
- F. Schedule Composition
1. Open Ended Logic
 - a. Only 2 open ended activities are allowed: the first activity "NTP" shall have no predecessor logic, and the last activity "Final Completion" shall have no successor logic.
 2. Leads, Lags, and Start to Finish Relationships
 - a. Lags shall be reasonable as determined by the Owner and not used in place of realistic original durations, shall not be in place to artificially absorb float, or to replace proper schedule logic.
 - b. Leads (negative lags) and Start to Finish (SF) relationships are prohibited.
 - c. Lag relationships shall not exceed 10% of total relationships
- G. Recovery Schedule: When periodic update indicates the Work is **30** or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

1.8 BASELINE SCHEDULE

- A. Within two weeks after Notice to Proceed, Contractor shall submit a Baseline Schedule detailing the entire scope of the contract. Only the scope, durations and logical relationships will be included in the Baseline Schedule. (No cost loading or resource loading shall be included in the Baseline Schedule.)
- B. Within two weeks of receipt by the Owner of the Baseline Schedule, the Contractor and Owner shall meet to discuss the results of the Owner's schedule review. To the extent that revisions are required, the Contractor shall resubmit the Baseline Schedule to the Owner for approval within seven (7) calendar days of receipt of the Owner's comments.

1. Activities, for major submittals and long lead items including activities representing: (1) Submittals, (2) Review & Approvals, (3) Fabrication, and (4) Deliveries, design, construction, inspections, close-out, start-up, testing and turnover, and work by separate contractors.
2. The Baseline Schedule shall indicate intended submittal dates and depict the review period as defined in the Contract for Owner review. Procurement/submittal activities shall be assigned codes that will allow these activities to be sorted and printed separately from the construction/close-out/commissioning work activities.
3. The Preliminary Schedule shall have a Data Date no later than NTP, and no activities shall be progressed later than the data date
4. Activity descriptions of the work shall include area designators sufficient to identify where the Work will occur. The work related to each Activity shall be limited to one work trade and one area. All activity descriptions shall be unique. No two activities can have the same description.
5. Establish a schedule calendar(s) as it relates to durations for activities (proposed number of working days per week, holidays to be observed, planned number of shifts per day, weather affected activities such as roofing or landscaping that normally cannot occur in the winter/fall months).
6. The following days are recognized as legal holidays and shall be indicated as non-working days on all construction calendars.
 - a. New Year's Day
 - b. Martin Luther King, Jr. Birthday
 - c. Inauguration Day (when applicable)
 - d. President's Birthday
 - e. DC Emancipation Day
 - f. Memorial Day
 - g. Independence Day
 - h. Labor Day
 - i. Columbus Day
 - j. Veterans Day
 - k. Thanksgiving Day
 - l. Christmas Day
7. Interrelationships (logic) and sequencing for ALL activities. Each activity shall have at least one successor (except for the last activity) relationship to form a logically connected Network Plan from NTP to the Contract Completion Date. For each activity, at least one successor must be a finish relationship (finish to start or finish to finish).
8. The contractor shall provide (screen shots of) the schedule software settings used under each tab of User Preferences, Admin Preferences, and Schedule Options with the baseline schedule and each subsequent schedule submittal.
9. Activity durations shall be in units of whole work days and scope of work shall be limited to one trade each. Except submittal and procurement activities, durations shall not exceed 20 working days unless approved by the Owner. Durations for Owner submittal reviews shall meet the requirements set forth in the Contract Documents.
10. Contractual milestone events as defined in the Contract Documents including, but not limited to, phased work, work restrictions/access/shift work, and work being performed by separate contractors. The Contractor is prohibited from assigning milestones that are NOT consistent with key dates shown by Owner in the Contract Documents without specific Owner approval.

1.9 BASELINE SCHEDULE

- A. Upon approval of the Preliminary Schedule (scope and logic), the contractor shall cost load and resource load the schedule and submit it as the proposed Baseline Schedule.
- B. The Baseline Project Schedule shall be submitted within seven (7) calendar days of the approval of the Preliminary Schedule.
- C. Except for certain procurement activities (not including fabrication or delivery), each Activity representing a portion of the work shall be cost and manpower loaded, unless otherwise approved by the Owner.
 - 1. All activities shown in the Project Schedule shall be cost-loaded. The assigned dollar value (cost-loading) shall cumulatively equal the total Contract price. Mobilization costs, bond and insurance costs, general requirements, overhead and profit, etc., shall be individual activities. Activity costs shall be stated in at least the same level of detail as and shall correlate to the total contract price. To the extent that the Contractor anticipates requesting payments for stored materials, delivery activities shall be cost-loaded to reflect the cost of materials (excluding labor for installation) and shown separate from the related fabrication activity. Payment for stored materials is at the sole discretion of the Owner.
 - 2. All field installation activities shown in the Project Schedule shall be resource loaded to depict the Contractor's planned use of labor.

1.10 SCHEDULE UPDATES

- A. The Project Schedule shall be updated on a monthly basis throughout the entire Project performance period until Project completion is achieved. Submit schedule updates with Applications for Payment no later than the 10th of the month following the update period.
- B. The monthly Progress reports shall be submitted in the format described herein shall include, at a minimum:
 - 1. For activities started and/or completed during the previous period: actual start and actual completion dates, number of work days;
 - 2. For activities begun but not yet completed: the actual start date, physical percentage complete to date, the remaining duration of the work, and the estimated completion date;
 - 3. For activities not yet started: estimated start dates, revised duration, and estimated completion dates, as necessary; if estimated start dates for activities vary from current schedule, explain variance and effects;
 - 4. For authorized Contract changes: revised activities, and durations where required;
 - 5. The monthly submittal to the Owner shall be include the Contractor's Schedule Narrative Report in detail, and shall follow the outline below:
 - a. Contractor's transmittal letter
 - b. Description of problem areas
 - c. Current and anticipated Contractor caused delays
 - 1) Cause of delay
 - 2) Corrective action and schedule adjustments to correct the delay so as to maintain affected original milestone completion dates;
 - 3) Impact of the delay on other activities, on milestones, and on completion dates;
 - d. Current and anticipated non-Contractor caused delays:

- 1) Cause of delay
 - 2) Proposed plan of corrective action and schedule adjustments necessary to correct the delay and maintain affected milestone completion dates, to include anticipated costs and time for which the Contractor considers the Owner liable;
- e. Longest Path
 - 1) Discussion of the longest path in the previous schedule at the beginning of the period;
 - 2) Discussion of progress achieved on the longest path;
 - 3) General description of the work on the forecasted longest path for the remainder of the project.
 - 4) Discussion of changes to the longest path since the prior month's approved schedule.
- f. Logic, lag, duration or constraint changes
 - 1) Changes to relationship logic, lags, durations or constraints are not allowed unless specifically approved on a case-by-case basis by Owner. Proposed changes must be listed in tabular format with justifications.
 - 2) Added or deleted activities.
 - 3) Added or deleted activities are not allowed unless specifically approved on a case-by-case basis by Owner. Proposed changes must be listed in tabular format with justifications.
- g. Approved changes in construction sequence;
- h. Pending items and status thereof:
 - 1) Permits;
 - 2) Potential Revisions;
 - 3) Change Orders;
 - 4) Time extensions;
 - 5) Other
- i. Contract completion date(s) status:
 - 1) Ahead of schedule, and number of calendar days;
 - 2) Behind schedule, and number of working days;
 - 3) Revised Reports;
 - 4) Revised cost loading and cash flow information
6. No revisions or additions to the monthly Schedule Updates shall be made other than those reflecting the Owner's prior written approval (i.e., change orders, potential revisions, stop work orders, etc.);
7. The Contractor agrees that, whenever it becomes apparent from the monthly schedule update that any Contract completion date will not be met, at No Fault of the Owner, the Contractor will take any or all of the following actions with prior approval of the Owner and at no additional cost to the Owner:
 - a. Re-sequencing construction activities
 - b. Providing additional labor
 - c. Working additional shifts or otherwise accelerating the work to maintain the Contract stipulated completion dates
8. Whenever it becomes apparent from the current monthly schedule update that any milestone date(s) and/or contract completion dates will not be met due to the Contractor's slow progress on critical activities, items a, b and c above shall be incorporated in the Project Schedule all in accordance with section titled "Recovery Schedule". The revised schedule shall be submitted to the Owner for review and acceptance.

9. A schedule, which has not been accepted in accordance with all requirements set forth in the Contract, may not be used by the Contractor as a basis for requesting equitable adjustments or partial progress payments.

1.11 DELAYS AND TIME EXTENSIONS

- A. The Owner is not bound by any Project Schedule until approved in writing by the Owner. In the event the Contractor proceeds with a schedule that is not approved by the Owner, and in the event of a delay claim, the Contractor shall have the burden of proving that the schedule used is reasonable, and based on its actions, throughout the project, the schedule would have been met.
- B. Whenever delays are experienced, the Contractor shall submit a written Time Impact Analysis to the Owner, illustrating the influence of each delay on the current Project Schedule completion date. Submit a time impact analysis for approval by the Owner based on industry standard AACE 52R-06. Utilize a copy of the last approved schedule prior to the first day of the impact or delay for the time impact analysis. If the Owner determines the time frame between the last approved schedule and the first day of impact is too great, prepare an interim updated schedule to perform the time impact analysis.
- C. Each Time Impact Analysis shall include a fragment network analysis (fragnet), demonstrating how the Contractor proposes to incorporate the delay into the Project Schedule. Additionally, the analysis shall demonstrate the time impact based on the date that the delay began, the status of construction at that point in time, and the event time computation of all affected activities. The event items used in the analysis shall be those included in the latest updated copy of the detailed progress schedule or as adjusted by mutual agreement. Contract time extensions will be granted only to the extent that time adjustments for the activity or activities affected exceed the total or remaining float along the path of activities.
- D. Each Time Impact Analysis shall be submitted within 30 calendar days after a delay occurs or is recognized. In cases in which the Contractor does not submit a Time Impact Analysis for delay within the specified period of time, then it is mutually agreed that that particular delay has no time impact on the Contract completion date and the Project's longest path and no time extension will be granted. Approval or rejection of each Time Impact Analysis by the Owner shall be made within 14 calendar days after receipt of each Time Impact Analysis, unless subsequent meetings and negotiations are necessary. Upon mutual agreement by both parties, fragnets illustrating the influence of Change Order and delays will be incorporated into the Project Schedule during the first update after agreement is reached.
- E. Adjustments to Contract Time for Concurrent Delay:
 1. The Contractor may make a claim for an extension of the Contract Time, subject to the following:
 - a. If an Excusable Delay and Compensable Delay occur concurrently, the maximum extension of the Contract Time shall be the number of days from the commencement of the first delay to the cessation of the delay which ends last.
 - b. If an Inexcusable Delay occurs concurrently with either an Excusable Delay and/or a Compensable Delay, the extension of the Contract Time shall be the number of days, if any, for which the Excusable Delay or the Compensable Delay was concurrent with the Inexcusable Delay.
- F. Delays due to Severe Weather

1. Definitions:
 - a. "Adverse weather" - atmospheric conditions at a definite time and place that are unfavorable to construction activities.
 - b. "Unusually severe weather" - weather that is more severe than the adverse weather anticipated for the season or location involved.
2. This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the contract. In order for the Owner to award a time extension for unusually severe weather, the following conditions must be satisfied:
 - a. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location as defined by NOAA historical data five-year averages.
 - b. The unusually severe weather must cause a delay to the completion of the project. Project delay shall be demonstrated by a Time Impact Analysis.
 - c. The delay must be beyond the control and without the fault or negligence of the contractor.

1.12 SCHEDULE SOFTWARE SETTINGS AND RESTRICTIONS

- A. Activity Constraints: Date/time constraint(s), other than those required by the contract, are not allowed unless accepted by the Owner
- B. Default Progress Data Disallowed: Actual Start and Actual Finish dates on the CPM schedule must match the dates on the Contractor Daily Reports.
- C. Software Settings: Handle schedule calculations and Out-of-Sequence progress (if applicable) through Retained Logic, not Progress Override. Show all activity durations and float values in days. Show activity progress using Remaining Duration. Set default activity type to "Task Dependent".
- D. At a minimum, include the following settings and parameters in Baseline Schedule preparation:
 1. General: Define or establish Calendars and Activity Codes at the "Project" level, not the "Global" level.
 2. Project Level, Dates Tab: Set "Must Finish By" date to "Contract Completion Date".
 3. Project Level, Defaults Tab:
 - a. Duration Type: Set to "Fixed Duration & Units".
 - b. Percent Complete Type: Set to "Physical".
 - c. Activity Type: Set to "Task Dependent".
 4. Project Level, Calculations Tab: Reset Remaining Duration and Units to Original: Must be Checked.
 5. Project Level, Settings Tab: Define Critical Activities: Check Longest Path.
 6. Activity Duration Types must be set to "Fixed Duration & Units".
 7. Percent Complete Types must be set to "Physical".
 8. Set Schedule Option for defining progressed activities to "Retained Logic."
 9. Activity Names must have the most defining and detailed description within the first 30 characters. All Activity Names must be unique.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013200

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

- B. Related Requirements:

1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each **photograph and video recording**. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within three days of taking photographs.
 - 1. Submit photos **on CD-ROM, thumb-drive or as directed by Owner**. Include copy of key plan indicating each photograph's location and direction.
 - 2. Identification: Provide the following information with each image description in file metadata tag and in web-based project software site:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Contractor.
 - d. Date photograph was taken.
 - e. Description of location, vantage point, direction and elevation of construction.
 - f. Unique sequential identifier keyed to accompanying key plan.

1.4 QUALITY ASSURANCE

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

1.5 FORMATS AND MEDIA

- A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels, and with vibration-reduction technology. Use flash in low light levels or backlit conditions.
- B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
- C. Metadata: Record accurate date and time and GPS location data from camera.
- D. File Names: Name media files with date Project area and sequential numbering suffix.

1.6 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. Usage Rights: Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.
- C. General: Take photographs with maximum depth of field and in focus.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- D. Preconstruction Photographs: Before commencement of excavation, commencement of demolition, or starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Construction Manager.
 - 1. Flag **excavation areas** and **construction limits** before taking construction photographs.
 - 2. Take **20** photographs to show existing conditions adjacent to property before starting the Work.
 - 3. Take **20** photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
 - 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- E. Periodic Construction Photographs: Take **20** to **50** photographs, depending on project requirements, **weekly coinciding with the cutoff date associated with each Application for Payment**. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Final Completion Construction Photographs: Take **50** photographs, depending on project size and requirements, after date of Substantial Completion for submission as Project Record Documents. Owner will inform photographer of desired vantage points.

- G. Additional Photographs: Owner may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum **or in the allowance for construction photographs.**
1. Three days' notice will be given, where feasible.
 2. In emergency situations, take additional photographs within 24 hours of request.
 3. Circumstances that could require additional photographs include, but are not limited to, the following:
 - a. Special events planned at Project site.
 - b. Immediate follow-up when on-site events result in construction damage or losses.
 - c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
 - d. Substantial Completion of a major phase or component of the Work.
 - e. Extra record photographs at time of final acceptance.
 - f. Owner's request for special publicity photographs.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 013100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
3. Section 013216 "Construction Project Schedule" for submitting schedules and reports, including Contractor's construction schedule.
4. Section 013233 "Photographic Documentation" for submitting preconstruction photographs, periodic construction photographs, and final completion construction photographs.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's and Construction Manager's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's and Construction Manager's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. No action or comment indicated on any submittal shall constitute a change or authorization, in any way, a change the contract sum or contract time.
- D. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

- E. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format. PDF files must be in a format that is searchable and editable.

1.4 CONTRACTOR'S REPRESENTATION AND ACKNOWLEDGEMENT

- A. By submitting shop drawings, product data, samples and similar materials, Contractor represents and affirms that Contractor has reviewed each item submitted and the contents of each submittal and determined and verified their conformance to the requirements of the contract documents and the Work and confirms that each is coordinated with field construction criteria and dimensions.
- B. The Contractor acknowledges that review of submitted items by the Construction Manager and/or the Architect shall not relieve the Contractor of responsibility for deviations from requirements of the contract documents unless the Contractor has specifically notified the Construction Manager and Architect, in writing, at the time of submittal, of each deviation from the contract document requirements and has received written approval from the Construction Manager and Architect for each deviation.
- C. The Contractor acknowledges that the Contractor shall not be relieved of responsibility for error or omission in shop drawings, product data, samples or other submittals by the Construction Manager's and/or Architect's review action.

1.5 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Within 10 working days after notice to proceed, submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by **Architect and Construction Manager** and additional time for handling and reviewing submittals required by those corrections.
 - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 - 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 calendar days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
 - 4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal Category: Action; informational.

- d. Name of subcontractor.
- e. Description of the Work covered.
- f. Scheduled date for **Architect's and Construction Manager's** final release or approval.
- g. Scheduled dates for purchasing.
- h. Scheduled date of fabrication.
- i. Scheduled dates for installation.
- j. Activity or event number.

1.6 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Construction Manager.
5. Name of Contractor.
6. Name of firm or entity that prepared submittal.
7. Names of subcontractor, manufacturer, and supplier.
8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
9. Category and type of submittal.
10. Submittal purpose and description.
11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
12. Drawing number and detail references, as appropriate.
13. Indication of full or partial submittal. Partial submittals will not be reviewed.
14. Location(s) where product is to be installed, as appropriate.
15. Other necessary identification.
16. Remarks.
17. Signature of transmitter.

B. Options: Identify options requiring selection by Construction Manager.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect and Construction Manager on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

E. Submittals for Web-Based Project Software: Prepare submittals as PDF files, or other format indicated by Project software website.

1.7 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Web-Based Project Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Submit all submittal items required for each Specification Section concurrently. No partial submittals for portions of the Work shall be reviewed or approved.
 - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 - 4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect and Construction Manager reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - b. Architect and Construction Manager will not review partial submittals.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 - 1. Initial Review: Allow **10** working days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect or Construction Manager will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 3. Resubmittal Review: Allow **10** working days for review of each resubmittal.
- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Architect's and Construction Manager's action stamp.
 - 4. Resubmittal number should be the original submittal number, with a revision number.

- E. Use for Construction: Use only final action submittals that are marked with approval notation from Architect's and Construction Manager's action stamp.

1.8 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams that show factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - e. Mock-ups
 - f. Equipment engineering requirements for connection to building systems.
 - g. Installation guidelines and details.
 - h. Where required site-specific installation drawings.
 - 5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.

- C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 3. Web-Based Project Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
 4. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
 5. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 6. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit **one** full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 7. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit **two** sets of Samples. Architect and Construction Manager will retain **two** Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.

- 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least **three** sets of paired units that show approximate limits of variations.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- G. Certificates:
1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
 2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
 3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
 5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
 6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- H. Test and Research Reports:
1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests

- performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
 3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
 4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
 5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
 6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation organization.
 - b. Date of evaluation.
 - c. Time period when report is in effect.
 - d. Product and manufacturers' names.
 - e. Description of product.
 - f. Test procedures and results.
 - g. Limitations of use.

1.9 DELEGATED-DESIGN SERVICES

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

3. See other sections of the Construction Documents for additional requirements for “Delegated-Design Services.”

1.10 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect and Construction Manager.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 1. Architect and Construction Manager will not review submittals received from Contractor that do not have Contractor's review and approval.

1.11 ARCHITECT'S AND CONSTRUCTION MANAGER'S REVIEW

- A. Action Submittals: Architect and Construction Manager will review each properly formatted submittal, indicate corrections or revisions required, and return it.
 1. PDF Submittals: Architect and Construction Manager will indicate, via markup on each submittal, the appropriate action.
- B. Informational Submittals: Architect and Construction Manager will review each submittal and will not return it or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will only be reviewed when use of partial submittals has received prior approval from Architect and Construction Manager.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Architect and Construction Manager will return without review submittals received from sources other than Contractor.
- F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 018113.13 - SUSTAINABLE DESIGN REQUIREMENTS- LEED FOR NEW CONSTRUCTION
AND MAJOR RENOVATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. The DC Courts requires the Contractor to implement practices and procedures to meet the environmental performance goals for the project, which include achieving LEED "Platinum" Certification. Specific project goals that may impact this area of work include: use of materials with recycled content, use of locally-manufactured materials, use of low-emitting materials, construction waste recycling, and the implementation of a construction indoor air quality management plan. The Contractor shall ensure that the requirements related to these goals, as defined in the various sections of these Specifications, are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or his subcontractors, will not be permitted if, in the sole opinion of the Architect, such changes may compromise the ability to achieve the stated LEED Performance Criteria.
- B. Section includes general requirements and procedures for compliance with certain USGBC LEED prerequisites and credits needed for Project to obtain LEED Platinum certification based on USGBC's "LEED 2009 for New Construction & Major Renovations."
 - 1. Other LEED prerequisites and credits needed to obtain LEED certification depend on product selections and may not be specifically identified as LEED requirements. Compliance with requirements needed to obtain LEED prerequisites and credits may be used as one criterion to evaluate substitution requests and comparable product requests.
 - 2. Additional LEED prerequisites and credits needed to obtain the indicated LEED certification depend on Architect's design and other aspects of Project that may not be part of the Work of the Contract.
 - 3. A copy of the LEED Project checklist is attached at the end of this Section for information only.
 - 4. Specific requirements for LEED are included in greater detail in other Sections.

1.3 DEFINITIONS

- A. Regional Materials: Materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles (800 km) of Project site. If only a fraction of a product or

material is extracted/harvested/recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value.

- B. Recycled Content: The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.
 - 1. "Post-consumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.
 - 2. "Pre-consumer" material is defined as material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Respond to questions and requests from Architect and the USGBC regarding LEED credits that are the responsibility of the Contractor, that depend on product selection or product qualities, or that depend on Contractor's procedures until the USGBC has made its determination on the project's LEED certification application. Document responses as informational submittals.
- B. The Contractor and his subcontractors shall submit the LEED Certification items listed in the SUBMITTALS section of each Specification. LEED Submittals shall include the following, as applicable:
 - 1. For all installed products and materials, complete the ENVIRONMENTAL MATERIALS REPORTING FORM and the VOC REPORTING FORM (blank copies follow this Section), including the following, as applicable:
 - a. Cost breakdowns for the materials included in the Contractor or subcontractor's work. Cost breakdowns shall include total installed cost and material-only cost. For wood products include total cost for all wood products and itemized costs for all FSC-certified wood products.
 - b. The percentages (by weight) of post-consumer and/or post-industrial recycled content in the supplied product(s).
 - c. Indication of whether the raw materials have been extracted, harvested or recovered, as well as the final product has been manufactured (location of final assembly), within 500 miles of the project site.
 - d. For all field-applied interior adhesives, sealants, and paints relating to work of this Section, provide the Volatile Organic Compound (VOC) content in grams/liter or lbs./gallon.
 - 2. Provide back-up documentation to validate all information provided on the above Forms, except Cost data. For each material listed on the Forms, provide documentation to certify each of the material attributes, as applicable:
 - a. Recycled Content: Published product literature or letter of certification on the manufacturer's letterhead certifying the amounts of post-consumer and/or post-industrial content.
 - b. Regional Materials (within 500 miles):

- 1) Published product literature or letter of certification on the manufacturer's letterhead indicating the city and state from which each of the raw materials in the product were extracted, harvested or recovered, and the distance in miles from the project site.
 - 2) The percentage (by weight) of raw materials in the assembly which originate from within 500 miles of the project site, if any.
 - 3) Published product literature or letter of certification on the manufacturer's letterhead indicating the city and state where the manufacturing plant is located and the distance in miles from the project site.
- c. VOC Content: Material Safety Data Sheets (MSDS) certifying the Volatile Organic Compound (VOC) content of the adhesive, sealant, paint, or coating product. If the MSDS does not show the VOC content of the product, this information must be provided through other published product literature from the manufacturer, or stated in a letter of certification from the product manufacturer on the manufacturer's letterhead. (Required blank copy VOC Reporting Form following this Section).
3. Product cut sheets with the Contractor's or subcontractor's stamp, confirming that the submitted products are the products installed in the Project.
- C. The LEED Submittal information outlined above shall be assembled into one (1) package per LEED credit, to be submitted at the end of the project. LEED Submittal Information shall be available for review on a monthly basis. Incomplete or inaccurate LEED Submittals may result in the rejection of the submitted products or assemblies.
1. The General Contractor shall submit summary reports for construction waste management, recycled content, local materials, FSC-certified wood, low emitting products (adhesives, sealants, paints, coatings, carpets, and composite wood), and construction IAQ. The summary reports shall include calculations, listings of products and their emissions, construction waste and IA plans, and back-up documentation as appropriate for each credit.

1.5 ACTION SUBMITTALS

- A. General: Submit additional LEED submittals required by other Specification Sections.
- B. LEED submittals are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, submit duplicate copies as a separate submittal to verify compliance with indicated LEED requirements.
- C. LEED Submittal information shall be assembled into one (1) package per each LEED credit, to be submitted at the end of the project. LEED Submittal Information shall be available for review on a monthly basis. Incomplete or inaccurate LEED Submittals may result in the rejection of the submitted products or assemblies.
 1. The General Contractor shall submit summary reports for construction waste management, recycled content, local materials, FSC-certified wood, low emitting products (adhesives, sealants, paints, coatings, carpets, and composite wood), and construction IAQ. The summary reports shall include calculations, listings of

products and their emissions, construction waste and IAQ plans, and back-up documentation as may be appropriate for each credit.

D. LEED Documentation Submittals:

1. Credit EA 5: Product data and wiring diagrams for sensors and data collection system used to provide continuous metering of building energy-consumption performance over a period of time of not less than one year of postconstruction occupancy.
2. Credit MR 2: Comply with Section 017419 "Construction Waste Management and Disposal."
3. Credit MR 4: Product data and certification letter from product manufacturers indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating material cost for each product having recycled content.
4. Credit MR 5: Product data for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.
5. Credit EQ 4.1: Product data for adhesives and sealants used inside the weatherproofing system indicating VOC content of each product used.

1.6 INFORMATIONAL SUBMITTALS

- A. Project Materials Cost Data: Provide statement indicating total cost for materials used for Project. Costs exclude labor, overhead, and profit. Include breakout of costs for the following categories of items:
1. Electrical.
 2. Specialty items such as elevators and equipment.
- B. LEED Action Plans: Provide preliminary submittals within 30 days of date established for the Notice of Award indicating how the following requirements will be met:
1. Credit MR 2: Waste management plan complying with Section 017419 "Construction Waste Management and Disposal."
 2. Credit MR 4: List of proposed materials with recycled content. Indicate cost, post-consumer recycled content, and pre-consumer recycled content for each product having recycled content.
 3. Credit MR 5: List of proposed regional materials. Identify each regional material, including its source, cost, and the fraction by weight that is considered regional.
- C. LEED Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with LEED action plans for the following:
1. Credit MR 2: Waste reduction progress reports complying with Section 017419 "Construction Waste Management and Disposal."
 2. Credit MR 4: Recycled content.
 3. Credit MR 5: Regional materials.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Provide products and procedures necessary to obtain LEED credits required in this Section. Although other Sections may specify some requirements that contribute to LEED credits, the Contractor shall determine additional materials and procedures necessary to obtain LEED credits indicated.

2.2 RECYCLED CONTENT OF MATERIALS

- A. Credit MR 4: Building materials shall have recycled content such that post-consumer recycled content plus one-half of pre-consumer recycled content for Project constitutes a minimum of 20 percent of cost of materials used for Project.
 - 1. Cost of post-consumer recycled content plus one-half of pre-consumer recycled content of an item shall be determined by dividing weight of post-consumer recycled content plus one-half of pre-consumer recycled content in the item by total weight of the item and multiplying by cost of the item.
 - 2. Do not include plumbing, mechanical and electrical components, and specialty items such as elevators and equipment in the calculation.

2.3 REGIONAL MATERIALS

- A. Credit MR 5: Not less than 20 percent of building materials (by cost) shall be regional materials.

2.4 LOW-EMITTING MATERIALS

- A. Credit EQ 4.1: For field applications that are inside the weatherproofing system, adhesives and sealants shall comply with the following VOC content limits when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Wood Glues: 30 g/L.
 - 2. Metal-to-Metal Adhesives: 30 g/L.
 - 3. Adhesives for Porous Materials (Except Wood): 50 g/L.
 - 4. Subfloor Adhesives: 50 g/L.
 - 5. Plastic Foam Adhesives: 50 g/L.
 - 6. Carpet Adhesives: 50 g/L.
 - 7. Carpet Pad Adhesives: 50 g/L.
 - 8. VCT and Asphalt Tile Adhesives: 50 g/L.
 - 9. Cove Base Adhesives: 50 g/L.
 - 10. Gypsum Board and Panel Adhesives: 50 g/L.
 - 11. Rubber Floor Adhesives: 60 g/L.
 - 12. Ceramic Tile Adhesives: 65 g/L.
 - 13. Multipurpose Construction Adhesives: 70 g/L.

14. Fiberglass Adhesives: 80 g/L.
15. Contact Adhesive: 80 g/L.
16. Structural Glazing Adhesives: 100 g/L.
17. Wood Flooring Adhesive: 100 g/L.
18. Structural Wood Member Adhesive: 140 g/L.
19. Single-Ply Roof Membrane Adhesive: 250 g/L.
20. Special-Purpose Contact Adhesive (contact adhesive that is used to bond melamine-covered board, metal, unsupported vinyl, rubber, or wood veneer 1/16 inch or less in thickness to any surface): 250 g/L.
21. Top and Trim Adhesive: 250 g/L.
22. Plastic Cement Welding Compounds: 250 g/L.
23. ABS Welding Compounds: 325 g/L.
24. CPVC Welding Compounds: 490 g/L.
25. PVC Welding Compounds: 510 g/L.
26. Adhesive Primer for Plastic: 550 g/L.
27. Sheet-Applied Rubber Lining Adhesive: 850 g/L.
28. Aerosol Adhesive, General-Purpose Mist Spray: 65 percent by weight.
29. Aerosol Adhesive, General-Purpose Web Spray: 55 percent by weight.
30. Special-Purpose Aerosol Adhesive (All Types): 70 percent by weight.
31. Other Adhesives: 250 g/L.
32. Architectural Sealants: 250 g/L.
33. Nonmembrane Roof Sealants: 300 g/L.
34. Single-Ply Roof Membrane Sealants: 450 g/L.
35. Other Sealants: 420 g/L.
36. Sealant Primers for Nonporous Substrates: 250 g/L.
37. Sealant Primers for Porous Substrates: 775 g/L.
38. Modified Bituminous Sealant Primers: 500 g/L.
39. Other Sealant Primers: 750 g/L.

B. Credit EQ 4.2: For field applications that are inside the weatherproofing system, paints and coatings shall comply with the following VOC content limits when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Flat Paints and Coatings: VOC 0 (zero) g/L.
2. Nonflat Paints and Coatings: VOC not more than 50 g/L.
3. Dry-Fog Coatings: VOC not more than 400 g/L.
4. Primers, Sealers, and Undercoaters: VOC not more than 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
6. Zinc-Rich Industrial Maintenance Primers: VOC not more than 340 g/L.
7. Pretreatment Wash Primers: VOC not more than 420 g/L.
8. Clear Wood Finishes, Varnishes: VOC not more than 275 g/L.
9. Clear Wood Finishes, Lacquers: VOC not more than 275 g/L.
10. Floor Coatings: VOC not more than 50 g/L.
11. Shellacs, Clear: VOC not more than 730 g/L.
12. Shellacs, Pigmented: VOC not more than 550 g/L.
13. Stains: VOC not more than 250 g/L.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT

- A. Credit MR 2: Comply with Section 017419 "Construction Waste Management and Disposal."

END OF SECTION 018113.13



LEED 2009 for New Construction and Major Renovations

Project Checklist

Project Name: H. Carl Moultrie I Courthouse - C Street Addition

Date: 06/28/2019

23 3 Sustainable Sites Possible Points: 26

Y	?	N			
Y			Prereq 1	Construction Activity Pollution Prevention	
1			Credit 1	Site Selection	1
5			Credit 2	Development Density and Community Connectivity	5
1			Credit 3	Brownfield Redevelopment	1
6			Credit 4.1	Alternative Transportation—Public Transportation Access	6
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
		3	Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
2			Credit 4.4	Alternative Transportation—Parking Capacity	2
1			Credit 5.1	Site Development—Protect or Restore Habitat	1
1			Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
1			Credit 6.2	Stormwater Design—Quality Control	1
1			Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
1			Credit 8	Light Pollution Reduction	1

10 Water Efficiency Possible Points: 10

Y	?	N			
Y			Prereq 1	Water Use Reduction—20% Reduction	
4			Credit 1	Water Efficient Landscaping	2 to 4
2			Credit 2	Innovative Wastewater Technologies	2
4			Credit 3	Water Use Reduction	2 to 4

23 12 Energy and Atmosphere Possible Points: 35

Y	?	N			
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
12		7	Credit 1	Optimize Energy Performance	1 to 19
2		5	Credit 2	On-Site Renewable Energy	1 to 7
2			Credit 3	Enhanced Commissioning	2
2			Credit 4	Enhanced Refrigerant Management	2
3			Credit 5	Measurement and Verification	3
2			Credit 6	Green Power	2

6 1 7 Materials and Resources Possible Points: 14

Y	?	N			
Y			Prereq 1	Storage and Collection of Recyclables	
		3	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
		1	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2
		2	Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	?	N			
2			Credit 4	Recycled Content	1 to 2
1	1		Credit 5	Regional Materials	1 to 2
		1	Credit 6	Rapidly Renewable Materials	1
1			Credit 7	Certified Wood	1

11 1 3 Indoor Environmental Quality Possible Points: 15

Y	?	N			
Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
1			Credit 1	Outdoor Air Delivery Monitoring	1
	1		Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
		1	Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			Credit 7.1	Thermal Comfort—Design	1
1			Credit 7.2	Thermal Comfort—Verification	1
		1	Credit 8.1	Daylight and Views—Daylight	1
		1	Credit 8.2	Daylight and Views—Views	1

5 1 Innovation and Design Process Possible Points: 6

Y	?	N			
1			Credit 1.1	Innovation in Design: Exemplary Performance Water Use Reduction	1
1			Credit 1.2	Innovation in Design: Exemplary Performance SSc4.1 Transport	1
	1		Credit 1.3	Innovation in Design:	1
1			Credit 1.4	Innovation in Design: Exemplary Performance EAc2 On site Energy	1
1			Credit 1.5	Innovation in Design: Low Mercury Lamps	1
1			Credit 2	LEED Accredited Professional	1

4 Regional Priority Credits Possible Points: 4

Y	?	N			
1			Credit 1.1	Regional Priority: SSc5.1 (Restore & Protect Habitat)	1
1			Credit 1.2	Regional Priority: SSc6.1 (Stormwater - Quantity)	1
1			Credit 1.3	Regional Priority: WEc2 (Innovative Waste Water Tech)	1
1			Credit 1.4	Regional Priority: EAc1.4 (On-site Renewable Energy)	1

82 3 25 Total Possible Points: 110

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

ENVIRONMENTAL MATERIALS REPORTING FORM

PROJECT NAME: DC Courts Moultrie C St. Expansion

CONTRACTOR: _____

SPEC SECTION: _____

CONTACT NAME: _____ TEL. NO: _____

SUBMITTAL NO: _____

Product	Vendor or Manufacturer	REQUIRED for ALL products identified in Specs (except MEP)		Is the product salvaged, refurbished or reused? ¹ (Y/N)	If contains Recycled Content		Extrac- ted w/n 500 miles (list miles)	Manu- facture d w/n 500 miles ⁴ (list miles)	Contains rapidly renew- able material? ⁵ (Y/N)	For wood products		
		Total Installed COST	Material COST (excl. labor & equipment)		% post con- sumer ²	% pre con- sumer ³				% New wood ⁶	% Certi- fied wood	% FSC Track- ing #
1.												
2.												
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												

1. *Salvaged:* Material or product which has been recovered from existing buildings or construction sites and reused in other buildings (e.g., structural beams, doors, brick).
2. *Post-Consumer Recycled Content:* Portion of material or product which derives from discarded consumer waste that has been recovered for use as a raw material (e.g., plastic bottles, newspaper)
3. *Pre-Consumer Recycled Content:* Portion of material or product which derives from recovered industrial and mfg. materials that are diverted from municipal solid waste for use in a *different* mfg. process, prior to use by a consumer (e.g., fly-ash in concrete or synthetic gypsum board, both of which are by-products of coal-burning power plants). Note that spills and scraps from the original mfg. process that are combined with other constituents after a minimal amount of reprocessing for use in further production of the same product do not qualify.
4. *Manufactured:* Final assembly of components into the building product that is furnished and installed by trades (e.g., if the hardware comes from Dallas, TX, the lumber from Keene, NH, and the joist is assembled in Kent, WA; then the location of final assembly is Kent, WA).
5. *Rapidly Renewable:* Materials and products made from raw materials that are harvested within a 10-year cycle (e.g., bamboo, cork, linoleum, fast-growing poplar, wheatboard, wool carpet)
6. *FSC Certified:* Wood-based products which are certified by the Forest Stewardship Council and carry a Chain-of-Custody certificate number from the vendor or mfr.

CONTRACTOR CERTIFICATION:

I, _____ a duly authorized representative of _____ hereby certify that the material information contained herein is an accurate representation of the material qualifications to be provided by us, as components of the final building construction. Furthermore, I understand that any change in such qualifications during the purchasing period will require

H Carl Moultrie I Courthouse
C Street Addition - Phase 2B - Technology Systems

Environmental Materials Reporting Form

prior written approval from the Construction Manager and Owner.

SIGNATURE OF AUTHORIZED REPRESENTATIVE: _____ DATE: _____

p. ____ of ____

VOC REPORTING FORM

PROJECT NAME: DC Courts Moultrie C St. Expansion

CONTRACTOR: _____

SPEC SECTION: _____

CONTACT NAME: _____ TEL. NO: _____

SUBMITTAL NO: _____

Product type or application	Product name	Vendor or Manufacturer	REQUIRED for ALL field-applied adhesives, sealants, paints & coatings identified in Specs (including those related to MEP work)	
			VOC limit ¹ (grams per liter)	VOC content (grams per liter) ²
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

1. VOC: Volatile organic compound which vaporizes into a gas at normal room temperatures and is emitted during the use, application, curing, or drying of an adhesive, sealant, paint, or coating product (excludes methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and other exempt compounds).
2. Submit backup documentation from manufacturer indicating VOC content of the product, defined in either grams per liter, or lbs. per gallon (e.g., MSDS sheet, Product Data Sheet)
3. Refer to Spec. Section 018114 for applicable VOC limits and chemical component limitations for adhesives, sealants, paints and architectural coatings.

CONTRACTOR CERTIFICATION:

I, _____ a duly authorized representative of _____ hereby certify that the material information contained herein is an accurate representation of the material qualifications to be provided by us, as components of the final building construction. Furthermore, I understand that any change in

H Carl Moultrie I Courthouse Voc Limits & Chemical Component Limitations for Adhesives, Sealants, Paints & Architectural Coatings.
C Street Addition - Phase 2B - Technology Systems

such qualifications during the purchasing period will require prior written approval from the Construction Manager and Owner.

SIGNATURE OF AUTHORIZED REPRESENTATIVE: _____ DATE: _____

p. ____ of ____

SECTION 018114 - VOC LIMITS FOR ADHESIVES, SEALANTS AND ARCHITECTURAL COATINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for volatile organic compound (VOC) content in adhesives, sealants, and architectural coatings used for the project

1.2 GENERAL REQUIREMENTS

- A. General Requirements: The District of Columbia Courts requires the Contractor to implement practices and procedures to meet the project's environmental performance goals, which include achieving LEED "Platinum" Certification. The Contractor shall ensure that the requirements related to these goals, as defined in the sections below, are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, shall not be allowed if such changes compromise the stated LEED BUILDING PERFORMANCE CRITERIA of this Section.

1.3 REFERENCES

- A. Rule 1168 - "Adhesive and Sealant Applications", amended 7 January 2005: South Coast Air Quality Management District (SCAQMD), State of California, www.aqmd.gov
- B. Rule 1113 - "Architectural Coatings", amended June 03, 2011: South Coast Air Quality Management District (SCAQMD), State of California, www.aqmd.gov.
- C. Green Seal Standard GS-11- "Paints and Coatings", Third Edition, January 01, 2010, of Green Seal, Inc., Washington, DC, www.greenseal.org.
- D. Aerosol Adhesives: Green Seal Standard for Commercial Adhesives GS-36 requirements in effect on September 01, 2011.

1.4 VOC REQUIREMENTS FOR INTERIOR ADHESIVES

- A. The volatile organic compound (VOC) content of adhesives, adhesive bonding primers, or adhesive primers used in this project shall not exceed the limits defined in Rule 1168 -

“Adhesive and Sealant Applications” of the South Coast Air Quality Management District (SCAQMD), of the State of California. VOC limits correspond to an effective date of July 1, 2005 and rule amendment date of January 7, 2005.

- B. The volatile organic compound (VOC) content of Aerosol Adhesives used in this project shall not exceed the limits defined in Green Seal Standard for Commercial Adhesives GS-36 requirements in effect on September 01, 2011.
1. The allowable VOC weight in grams/liter minus water are as follows:
- a. General purpose mist spray 65% VOCs by weight
 - b. General purpose web spray 55% VOCs by weight
 - c. Special purpose aerosol adhesives (all types) 70% VOCs by weight
- C. The VOC limits defined by SCAQMD are as follows. All VOC limits are defined in grams per liter, less water and less exempt compounds.
- D. Unless otherwise specified below, the VOC content of all adhesives, adhesive bonding primers, or adhesive primers shall not be in excess of 250 grams per liter.
- E. For specified building construction related applications, the allowable VOC content is as follows:
1. Architectural Applications:
- | | |
|---------------------------------------|-----|
| a. Indoor carpet adhesive | 50 |
| b. Carpet pad adhesive | 50 |
| c. Wood flooring adhesive | 100 |
| d. Rubber floor adhesive | 60 |
| e. Subfloor adhesive | 50 |
| f. Ceramic tile adhesive | 65 |
| g. VCT and asphalt tile adhesive | 50 |
| h. Drywall and panel adhesive | 50 |
| i. Cove base adhesive | 50 |
| j. Multipurpose construction adhesive | 70 |
| k. Structural glazing adhesive | 100 |
2. Specialty Applications:
- | | |
|-----------------|-----|
| a. PVC welding | 510 |
| b. CPVC welding | 490 |

c.	ABS welding	325
d.	Plastic cement welding	250
e.	Adhesive primer for plastic	550
f.	Contact Adhesive	80
g.	Special Purpose Contact Adhesive	250
h.	Structural Wood Member Adhesive	140
i.	Sheet Applied Rubber Lining Operations	850
j.	Top & Trim Adhesives	250

3. Substrate Specific Applications:

a.	Metal to metal	30
b.	Plastic foams	50
c.	Porous material (except wood)	50
d.	Wood	30
e.	Fiberglass	80

1.5 VOC requirements for interior sealants

- A. The volatile organic compound (VOC) content of sealants, or sealant primers used in this project shall not exceed the limits defined in Rule 1168 – “Adhesive and Sealant Applications” of the South Coast Air Quality Management District (SCAQMD), of the State of California. VOC limits correspond to an effective date of July 1, 2005 and rule amendment date of January 7, 2005.
- B. The VOC limits defined by SCAQMD are as follows. All VOC limits are defined in grams per liter, less water and less exempt compounds.

1. Sealants:

a.	Architectural	250
b.	Nonmembrane Roof	300
c.	Roadway	250
d.	Single-ply roof membrane	450
e.	Other (including duct)	420

2. Sealant Primer:

a.	Architectural – Nonporous	250
b.	Architectural – Porous	775
c.	Other	750

1.6 VOC REQUIREMENTS FOR INTERIOR PAINTS

A. Paints and Primers: Paints and primers used in non-specialized interior applications (i.e., for wallboard, plaster, wood, metal doors and frames, etc.) shall meet the VOC limitations of the Green Seal Paint Standard GS-11, of Green Seal, Inc., Washington, DC. Product-specific environmental requirements are as follows:

1. The VOC concentrations (in grams per liter) of the product shall not exceed those listed below as determined by U. S. Environmental Protection Agency (EPA) Reference Test Method 24.

a. Interior Paints and Primers:

- | | |
|--------------------|--------------|
| 1) Non-flat: | 50 g/l |
| 2) Flat & Primers: | 0 (zero) g/l |

2. The calculation of VOC shall exclude water and tinting color added at the point of sale.

B. Anti-Corrosive and Anti-Rust Paints: Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates shall meet the VOC limitations of the Green Seal Paint Standard GS-11, of Green Seal, Inc., Washington, DC. Product-specific environmental requirements are as follows:

1. The VOC concentrations (in grams per liter) of the product shall not exceed those listed below as determined by U. S. Environmental Protection Agency (EPA) Reference Test Method 24.

a. Anti-Corrosive and Anti-Rust Paints:

- | | |
|----------------|---------|
| 1) Gloss: | 250 g/l |
| 2) Semi-gloss: | 250 g/l |
| 3) Flat: | 250 g/l |

2. The calculation of VOC shall exclude water and tinting color added at the point of sale.

1.7 VOC REQUIREMENTS FOR INTERIOR COATINGS

A. Clear wood finishes, floor coatings, stains, sealers, and shellacs applied to the interior shall meet the VOC limitations defined in Rule 1113, "Architectural Coatings" of SCAQMD, of the State of California. The VOC limits defined by SCAQMD, based on 06/03/11

amendments, are as follows. VOC limits are defined in grams per liter, less water and less exempt compounds.

1.	Clear Wood Finishes	
	a. Varnish	275
	b. Sanding Sealers	275
	c. Lacquer	275
2.	Shellac	
	a. Clear	730
	b. Pigmented	550
3.	Stains	250
4.	Floor Coatings	50
5.	Waterproofing Sealers	100
6.	Sanding Sealers	275
7.	Other Sealers	100

B. The calculation of VOC shall exclude water and tinting color added at the point of sale.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION 018114