

SECTION 01310

PROJECT MANAGEMENT AND COORDINATION

PART I: GENERAL

1.1 GENERAL REQUIREMENTS

- A. Administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination Drawings.
 - 2. Administrative procedures.
 - 3. Administrative and supervisory personnel.
 - 4. Project meetings.
 - 5. Requests for Information (RFIs).
- B. Each contractor shall participate in coordination requirements.

1.2 DEFINITIONS

- A. RFI: Request For Information (RFI). A request from the Contractor seeking information from the Contract Documents.
- B. RFC: Request For Clarification (RFC). A request from the Contractor seeking clarification of the Contract Documents.
- C. Construction Manager – the Contractor's Project Manager or person responsible for overseeing all aspects of the Work.
- D. Superintendent – the Contractor's on site representative that shall coordinate all the daily activities of the Work.
- E. Project Manager – the City's Project Manager and representative for the City.

1.3 COORDINATION

- A. 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 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 (1) part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.
4. Priority of Construction Space:
 - a. Coordinate installation of different components to ensure performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
 - b. Following is the Order of Priority of construction space:
 - 1) First: Ductwork.
 - 2) Second: Fire protection piping.
 - 3) Third: Other piping.
 - 4) Fourth: Conduit.

B. Condition of the Contract Drawings for Mechanical and Electrical Work:

1. The Drawings contain diagrammatic layouts and indicate general arrangement of systems, piping conduit, etc.
2. Prior to installation of material and equipment, review and coordinate Work with Engineering, Architectural and Structural Drawings for exact space conditions; where not readily discernable request information from the Project Manager before proceeding.
3. Check Drawings of all other trades to verify extent of material

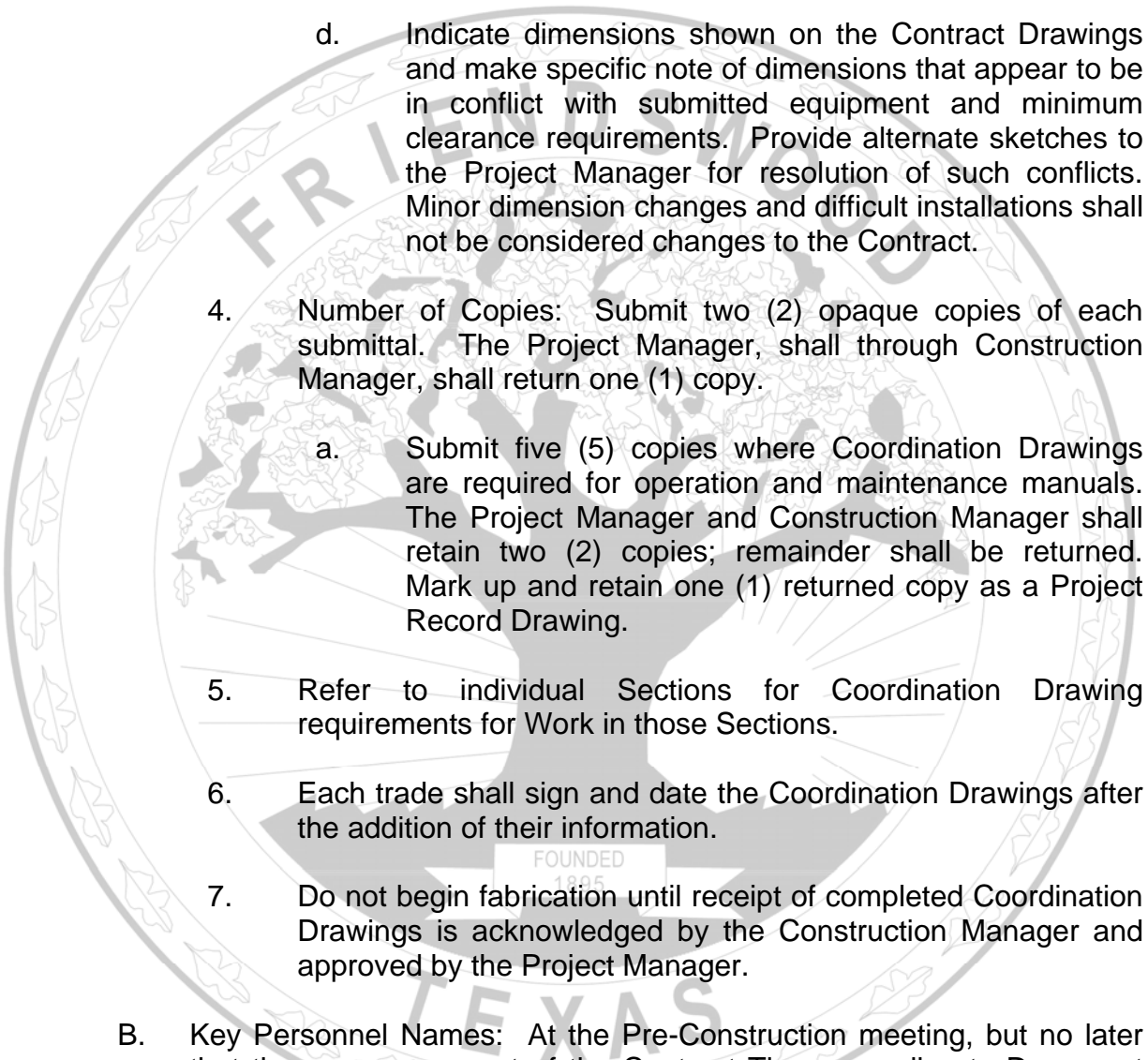
and equipment to be installed in spaces available and consider layout alternatives so that all requirements can be accommodated.

4. Maintain maximum headroom at all locations without finished ceilings.
 5. Maintain finished ceiling heights as indicated.
 6. Coordinate installations with other trades to prevent conflict with the Work of other trades and cooperate in making reasonable modifications in layout as needed.
 7. Where conflicts occur with placement of mechanical and electrical materials as they relate to placement of other building materials, the Construction Manager shall be consulted for assistance in coordination of the available space to accommodate all trades.
- 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 the City 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 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 the Contractor's Construction Schedule.
 2. Preparation of the Schedule of Values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Pre-installation conferences.
 7. Project closeout activities.

8. Startup and adjustment of systems.
- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as City's property.

1.4 SUBMITTALS

- A. Coordination Drawings: Areas of the Work requiring Coordination Drawings include (but not limited to) mechanical rooms, electrical rooms, equipment rooms, corridors, horizontal exits from duct shafts, cross-overs and any other areas where congestion of the Work occurs. Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
 1. Content: Project-specific information, drawn accurately to scale.
 2. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. The Construction Documents in their original, copies or electronic file form are the Architect's or Engineer's instrument of service and are protected under copyright laws.
 - a. {INSERT MEP FIRM NAME}, and its consultants, shall provide electronic files for Contractor's, Subcontractor's or Vendor's use in the preparation of coordination drawings related to the Project, subject to the terms and conditions delineated in Division 1 Section "Summary of Work" and paragraph entitled "Transfer of Electronic Files."
 3. Include the following information, as applicable:
 - a. Follow routing shown on the Contract Drawings for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance and for repairs.

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- b. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - c. Indicate required installation sequences.
 - d. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to the Project Manager for resolution of such conflicts. Minor dimension changes and difficult installations shall not be considered changes to the Contract.
4. Number of Copies: Submit two (2) opaque copies of each submittal. The Project Manager, shall through Construction Manager, shall return one (1) copy.
 - a. Submit five (5) copies where Coordination Drawings are required for operation and maintenance manuals. The Project Manager and Construction Manager shall retain two (2) copies; remainder shall be returned. Mark up and retain one (1) returned copy as a Project Record Drawing.
 5. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.
 6. Each trade shall sign and date the Coordination Drawings after the addition of their information.
 7. Do not begin fabrication until receipt of completed Coordination Drawings is acknowledged by the Construction Manager and approved by the Project Manager.
- B. Key Personnel Names: At the Pre-Construction meeting, but no later than the commencement of the Contract Time according to Document 00725 – Notice To Proceed, submit a list of key personnel assignments, including the Project Superintendent and other personnel in attendance at the Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to the Project.

1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

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

1. Include special personnel required for coordination of operations with other contractors.

1.6 PROJECT MEETINGS

A. General: The Construction Manager shall schedule meetings and conferences. The Project Manger shall conduct all meetings and conferences.

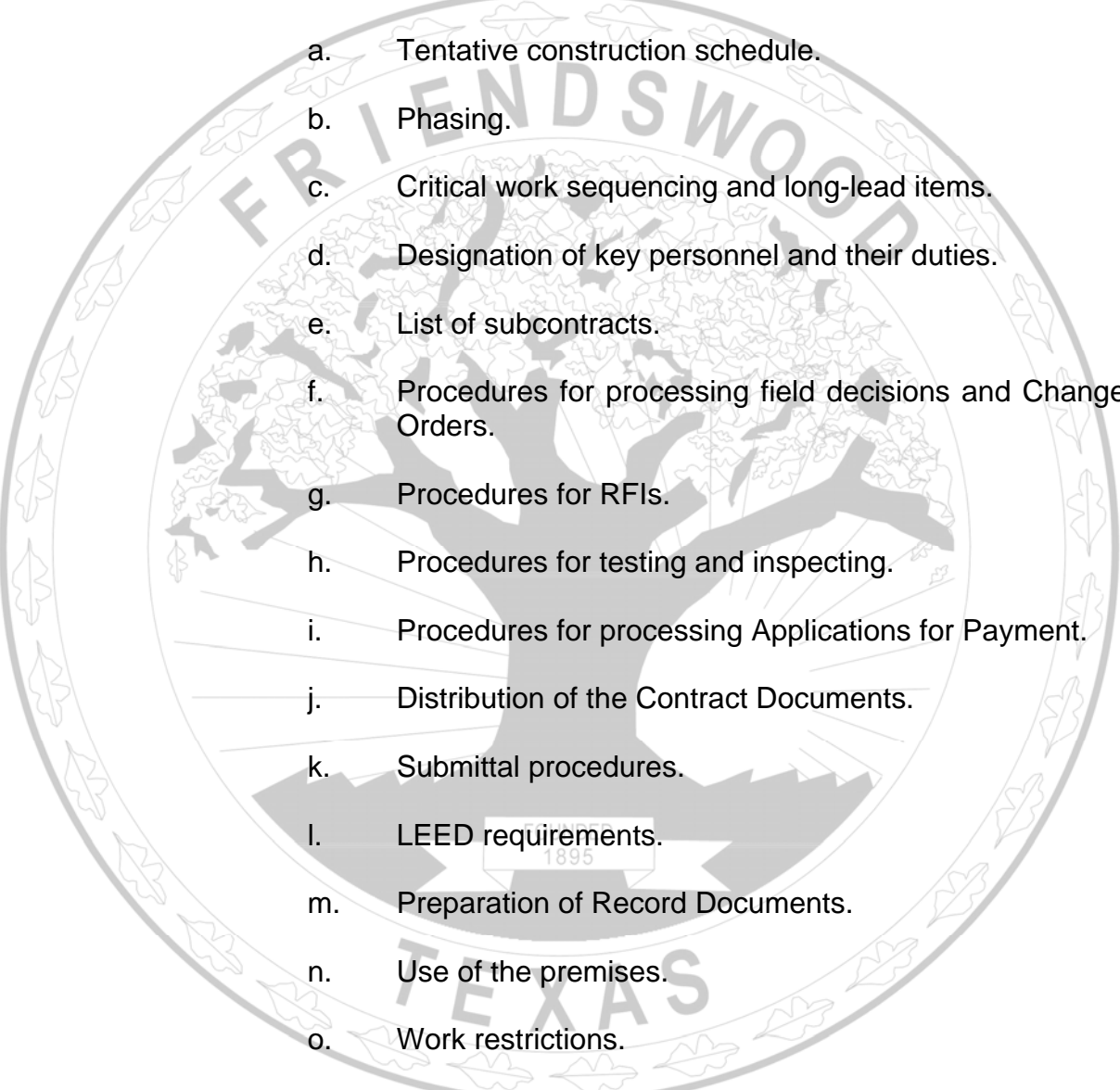
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
2. The Construction Manager shall prepare the meeting agenda and distribute the agenda to all invited attendees.
3. The Construction Manager shall record significant discussions and agreements achieved and distribute the meeting minutes to everyone concerned, including the City and the Architect and/or the Engineer, within three days (3 D) of the meeting.
4. Decisions and interpretations given by the Project Manager at Project meetings shall be on behalf of the City and shall be conclusive on each Contractor affected.

B. Preconstruction Conference: The Project Manager shall schedule a preconstruction conference before starting construction, at a time convenient to the City, the Construction Manager and the Architect and/or the Engineer, but no later than ten working days (10 wD) after execution of the Agreement. The meeting intent is to review responsibilities and personnel assignments.

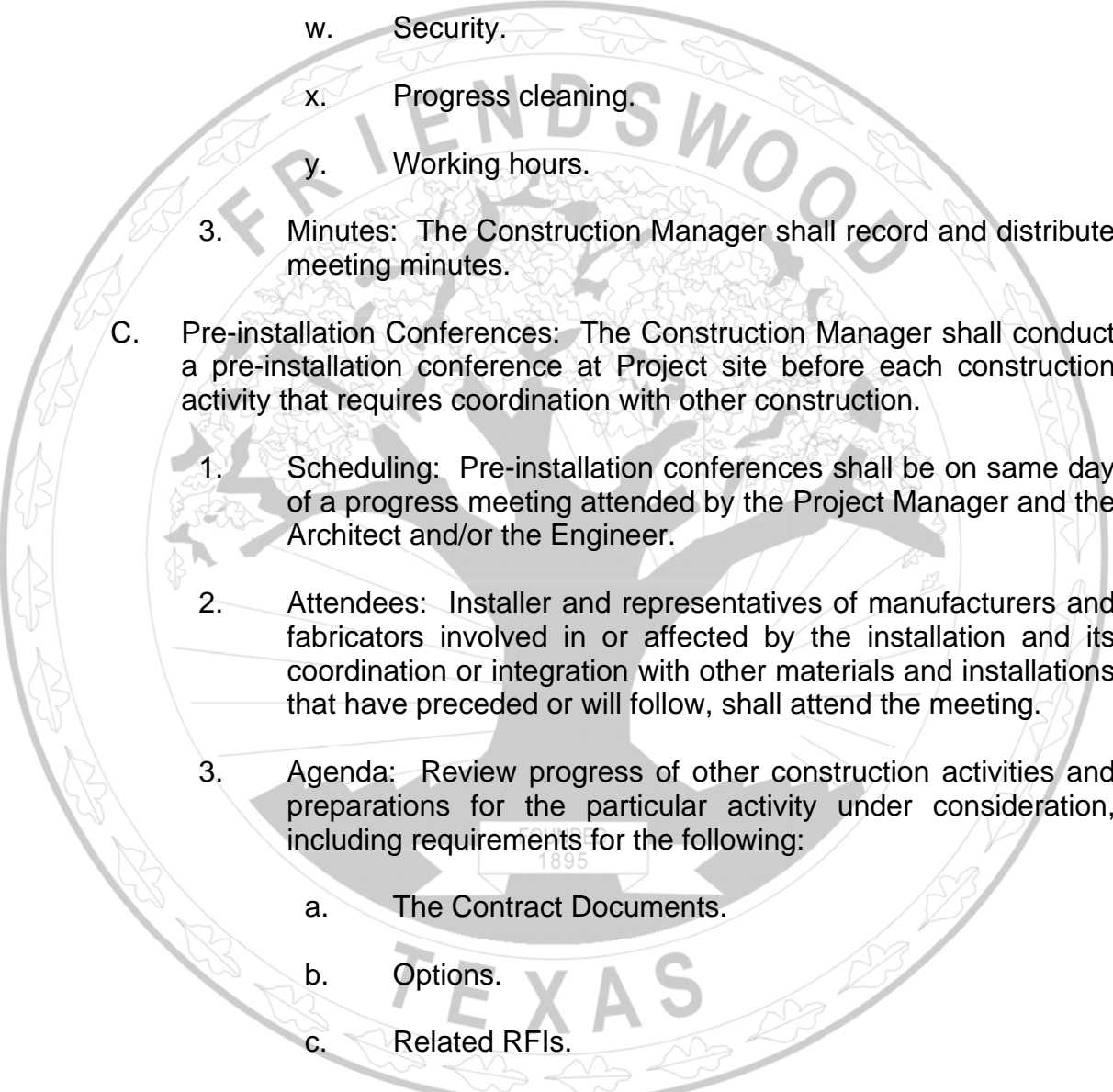
1. Attendees: Authorized representatives of the City, the Project Manager, the Construction Manager, the Architect and/or the Engineer, and their consultants and other concerned parties as deemed necessary by the Project Manager shall attend the


conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect progress as specified in Document 00690 – Pre-Construction Meeting Outline and including the following:

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- a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. List of subcontracts.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for RFIs.
 - h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. LEED requirements.
 - m. Preparation of Record Documents.
 - n. Use of the premises.
 - o. Work restrictions.
 - p. City's occupancy requirements.
 - q. Responsibility for temporary facilities and controls.
 - r. Construction waste management and recycling.
 - s. Parking availability.

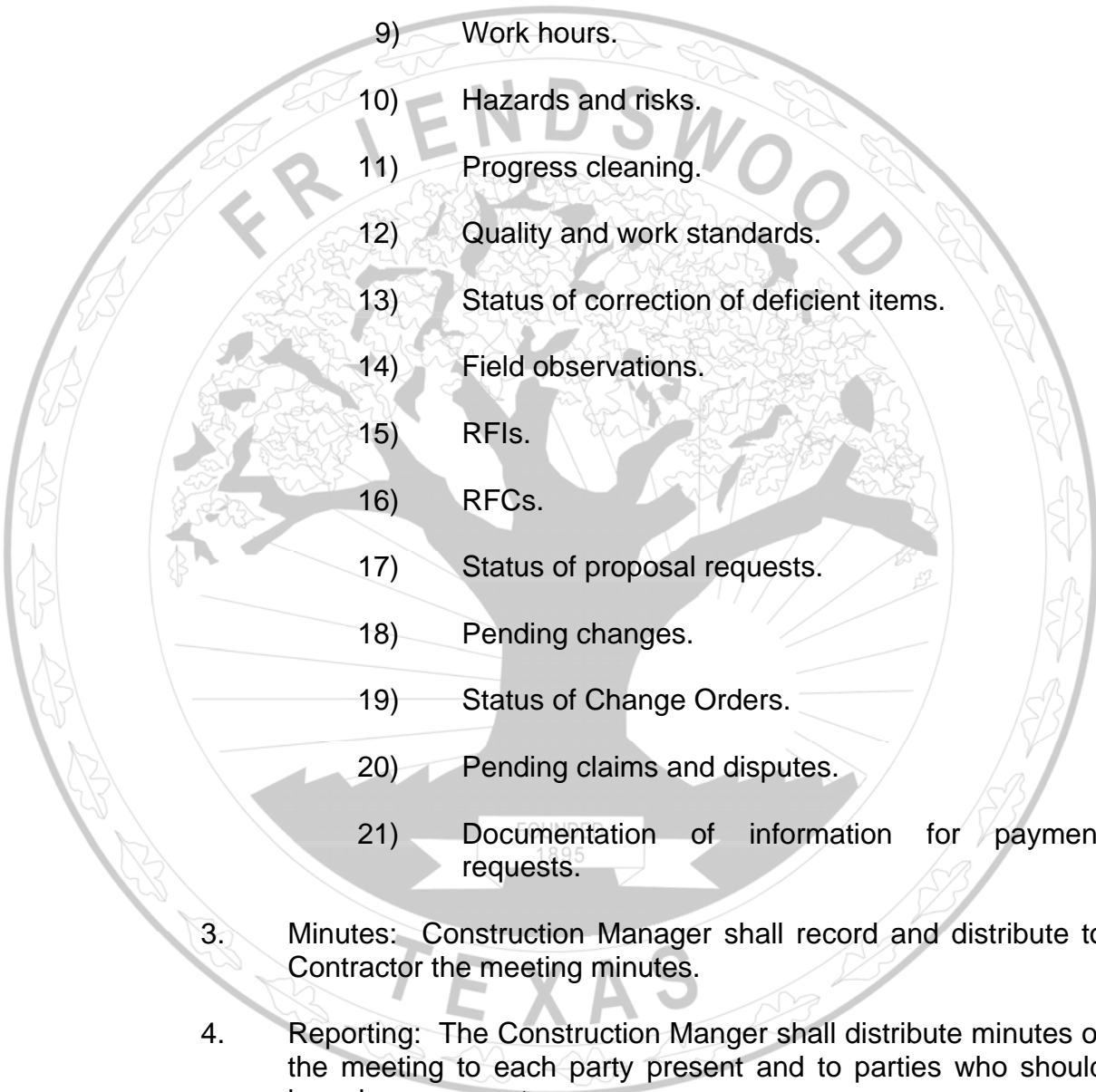
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- t. Office, work, and storage areas.
 - u. Equipment deliveries and priorities.
 - v. First aid.
 - w. Security.
 - x. Progress cleaning.
 - y. Working hours.
3. Minutes: The Construction Manager shall record and distribute meeting minutes.
- C. Pre-installation Conferences: The Construction Manager shall conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Scheduling: Pre-installation conferences shall be on same day of a progress meeting attended by the Project Manager and the Architect and/or the Engineer.
 - 2. 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.
 - 3. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. The Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related RFCs.
 - e. Related Change Orders.
 - f. Purchases.
 - g. Deliveries.

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- h. Submittals.
 - i. Review of mockups.
 - j. Possible conflicts.
 - k. Compatibility problems.
 - l. Time schedules.
 - m. Weather limitations.
 - n. Manufacturer's written recommendations.
 - 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.
4. The Construction Manager shall record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 5. The Construction Manager shall distribute minutes of the meeting to each party present and to parties who should have been present.

6. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: The Project Manager shall conduct progress meetings at either biweekly or monthly intervals.
1. Attendees: In addition to representatives of the City, the Project Manager, the Construction Manager, the Architect and/or the Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
 2. Agenda: The Project Manager shall review and correct or approve minutes of previous progress meeting as well as other items of significance that could affect progress.
 - a. Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to the 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) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.

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- 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) RFIs.
 - 16) RFCs.
 - 17) Status of proposal requests.
 - 18) Pending changes.
 - 19) Status of Change Orders.
 - 20) Pending claims and disputes.
 - 21) Documentation of information for payment requests.
3. Minutes: Construction Manager shall record and distribute to Contractor the meeting minutes.
 4. Reporting: The Construction Manger shall distribute minutes of the meeting to each party present and to parties who should have been present.
 - a. Schedule Updating: Revise the Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

- E. Coordination Meetings: The Construction Manager shall conduct the Project coordination meetings at appropriate intervals. The Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.
1. Attendees: In addition to representatives of the City, the Project Manager, the Construction Manager, the Architect and/or the Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
 2. Agenda: The Construction Manager shall review and correct or approve minutes of the previous coordination meeting as well as review other items of significance that could affect progress.
 - a. The Combined Contractor's Construction Schedule: The Construction Manager shall: review progress since the last coordination meeting; determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to the Combined Contractor's Construction Schedule; determine how construction behind schedule shall 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: The Construction Manager shall revise the 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. The Construction Manager shall review present and future needs of each contractor present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.

- 3) Status of submittals.
- 4) Deliveries.
- 5) Off-site fabrication.
- 6) Access.
- 7) Site utilization.
- 8) Temporary facilities and controls.
- 9) Work hours.
- 10) Hazards and risks.
- 11) Progress cleaning.
- 12) Quality and work standards.
- 13) Change Orders.

d. Cutting and Patching: The Construction Manager shall review scheduled cutting and patching proposals for areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3. Reporting: The Construction Manager shall record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.7 REQUESTS FOR INFORMATION (RFIs)

A. Procedure: Immediately on discovery of the need for information based on the Contract Documents, and if not possible to request information at the Project meeting, prepare and submit a Document 00735 – Contractor Request For Information (RFI).

1. All RFIs shall be submitted to the Project Manager for action.
2. RFIs shall originate with the Contractor. RFIs submitted by entities other than the Contractor shall be returned with no response.

3. Coordinate and submit RFIs in a prompt manner so as to avoid delays in the Contractor's work or work of the subcontractors.
 4. Frivolous RFIs: The Contractor shall compensate the City for the Architect's and/or the Engineer's time and expenses to process RFIs resulting from the Contractor's lack of studying and comparing the Contract Documents, coordinating their own Work, or repeating previous RFIs.
- B. Content of the RFI: Include a detailed, legible description of item needing clarification and the following:
1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of the Architect and/or the Engineer.
 5. Name of the Construction Manager.
 6. RFI number, numbered sequentially.
 7. Technical Specification Section number and title and related paragraphs, as appropriate.
 8. The Drawing number and detail references, as appropriate.
 9. Field dimensions and conditions, as appropriate.
 10. The Contractor's suggested solution(s). If the Contractor's solution(s) impact the Contract Time or the Contract Sum, the Contractor shall state impact in the RFI.
 11. Contractor's signature.
 12. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing information.
 - a. Supplementary drawings prepared by the Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.

- C. Software-Generated RFIs: Software-generated form to be provided by the Contractor using format given on CD at Pre-Construction Meeting with substantially the same content as indicated above.
1. Photographs shall be electronic files in JPG format.
 2. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. The Architect's and/or the Engineer's and the Construction Manager's Action: The Architect and/or the Engineer and the Construction Manager shall review each RFI, determine action required, and return it. Allow seven working days (7 wD) for the Project Managers response for each RFI. RFIs received after 1:00 p.m. shall be considered as received the following working day.
1. The following RFIs shall be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for information of the Project Manager's actions on submittals.
 - f. Incomplete RFIs or RFIs with numerous errors.
 2. The Project Manager's action may include a request for additional information, in which case the Project Manager's time for response shall start again.
 3. If the Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, submit Change Order Request within ten working days (10 wD) of receipt of the RFI response as provided by General Conditions of the Contract.
- E. On receipt of the Project Manager's and the Construction Manager's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify the Project Manager and the Construction Manager within five working days (5 wD) if the

Contractor disagrees with response.

1.8 REQUESTS FOR CLARIFICATION (RFCs)

A. Procedure: Immediately on discovery of the need for clarification based on the Contract Documents, and if not possible to request clarification at the Project meeting, prepare and submit a Document 00735 – Request For Clarification.

1. All RFCs shall be submitted to the Project Manager for action.
2. RFCs shall originate with the Contractor. RFCs submitted by entities other than the Contractor shall be returned with no response.
3. Coordinate and submit RFCs in a prompt manner so as to avoid delays in the Contractor's work or work of the subcontractors.
4. Frivolous RFCs: The Contractor shall compensate the City for the Architect's and/or the Engineer's time and expenses to process RFCs resulting from the Contractor's lack of studying and comparing the Contract Documents, coordinating their own Work, or repeating previous RFCs.

B. Content of the RFC: Include a detailed, legible description of item needing clarification and the following:

1. Project name.
2. Date.
3. Name of Contractor.
4. Name of the Architect and/or the Engineer.
5. Name of the Construction Manager.
6. RFC number, numbered sequentially.
7. Technical Specification Section number and title and related paragraphs, as appropriate.
8. The Drawing number and detail references, as appropriate.
9. Field dimensions and conditions, as appropriate.

10. The Contractor's suggested solution(s). If the Contractor's solution(s) impact the Contract Time or the Contract Sum, the Contractor shall state impact in the RFC.
11. Contractor's signature.
12. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing clarification.
 - a. Supplementary drawings prepared by the Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Software-Generated RFCs: Software-generated form to be provided by the Contractor using format given on CD at Pre-Construction Meeting with substantially the same content as indicated above.
 1. Photographs shall be electronic files in JPG format.
 2. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. The Architect's and/or the Engineer's and the Construction Manager's Action: The Architect and/or the Engineer and the Construction Manager shall review each RFC, determine action required, and return it. Allow seven working days (7 wD) for the Project Managers response for each RFC. RFCs received after 1:00 p.m. shall be considered as received the following working day.
 1. The following RFCs shall be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination clarification already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for clarification of the Project Manager's actions on submittals.

- f. Incomplete RFCs or RFCs with numerous errors.
 2. The Project Manager's action may include a request for additional clarification, in which case the Project Manager's time for response shall start again.
 3. If the Contractor believes the RFC response warrants change in the Contract Time or the Contract Sum, submit Change Order Request within ten working days (10 wD) of receipt of the RFC response as provided by General Conditions of the Contract.
- E. On receipt of the Project Manager's and the Construction Manager's action, update the RFC log and immediately distribute the RFC response to affected parties. Review response and notify the Project Manager and the Construction Manager within five working days (5 wD) if the Contractor disagrees with response.

PART II: PRODUCTS – NOT USED.

PART III: EXECUTION – NOT USED.

END OF SECTION

SECTION 01315

COORDINATION AND MEETINGS

PART I: GENERAL

1.1 GENERAL REQUIREMENTS

- A. General coordination including pre-construction meeting, site mobilization conference, and progress meetings.

1.2 COORDINATION OF DOCUMENTS

- A. Coordination is required throughout documents. Refer to the Contract Documents and coordinate as necessary.

1.3 CONTRACTOR COORDINATION

- A. Coordinate scheduling, submittals, and work of various Technical Specification Sections to assure efficient and orderly sequence of Installation of interdependent construction elements.
- B. Coordinate completion and clean up of the Work prior to the Date of Substantial Completion and for portions of the Work designated for the City's partial occupancy.
- C. Coordinate access to the site for correction of nonconforming work to minimize disruption of the City's activities where the City is in partial occupancy.

1.4 PRE-CONSTRUCTION MEETING

- A. The Project Manager shall schedule a pre-construction meeting.
- B. Attendance Required: City representatives, Design Consultant, special consultants as required by the Project Manager, the Contractor, and major Subcontractors and Suppliers.
- C. The Agenda shall be as specified in Section 00690 – Preconstruction Meeting Outline and shall include, but is not limited to, the following:
 - 1. Distribution of the Executed Contract Documents.
 - 2. Designation of personnel representing the Parties and the Design Consultant.

3. Review of insurance.
4. Discussion of formats for the Schedule of Values and the Construction Schedule.
5. Procedures and processing of Shop Drawings, substitutions, pay estimates or Applications for Payment, Requests for Information, Requests for Proposal, Modifications, and the Contract closeout and other submittals.
6. Scheduling of the Work and coordination with other contractors.
7. Review of Subcontractors and Suppliers.
8. Appropriate agenda items listed for the site mobilization conference, Paragraph 1.5.C, when pre-construction meeting and site mobilization conference are combined.
9. Procedures for testing.
10. Procedures for maintaining Record Documents.

1.5 SITE MOBILIZATION CONFERENCE

- A. When required by the Contract Documents, the Project Manager shall schedule a conference at the Project site prior to the Contractor mobilization.
- B. Attendance Required: City representatives, Design Consultant, special consultants, Superintendent, and major Subcontractors.
- C. Agenda:
 1. Use of premises by the City and the Contractor.
 2. Safety and first aid procedures.
 3. Construction controls provided by the City.
 4. Temporary utilities.
 5. Survey and layout.
 6. Security and housekeeping procedures.
 7. Field office requirements.

1.6 PROGRESS MEETINGS

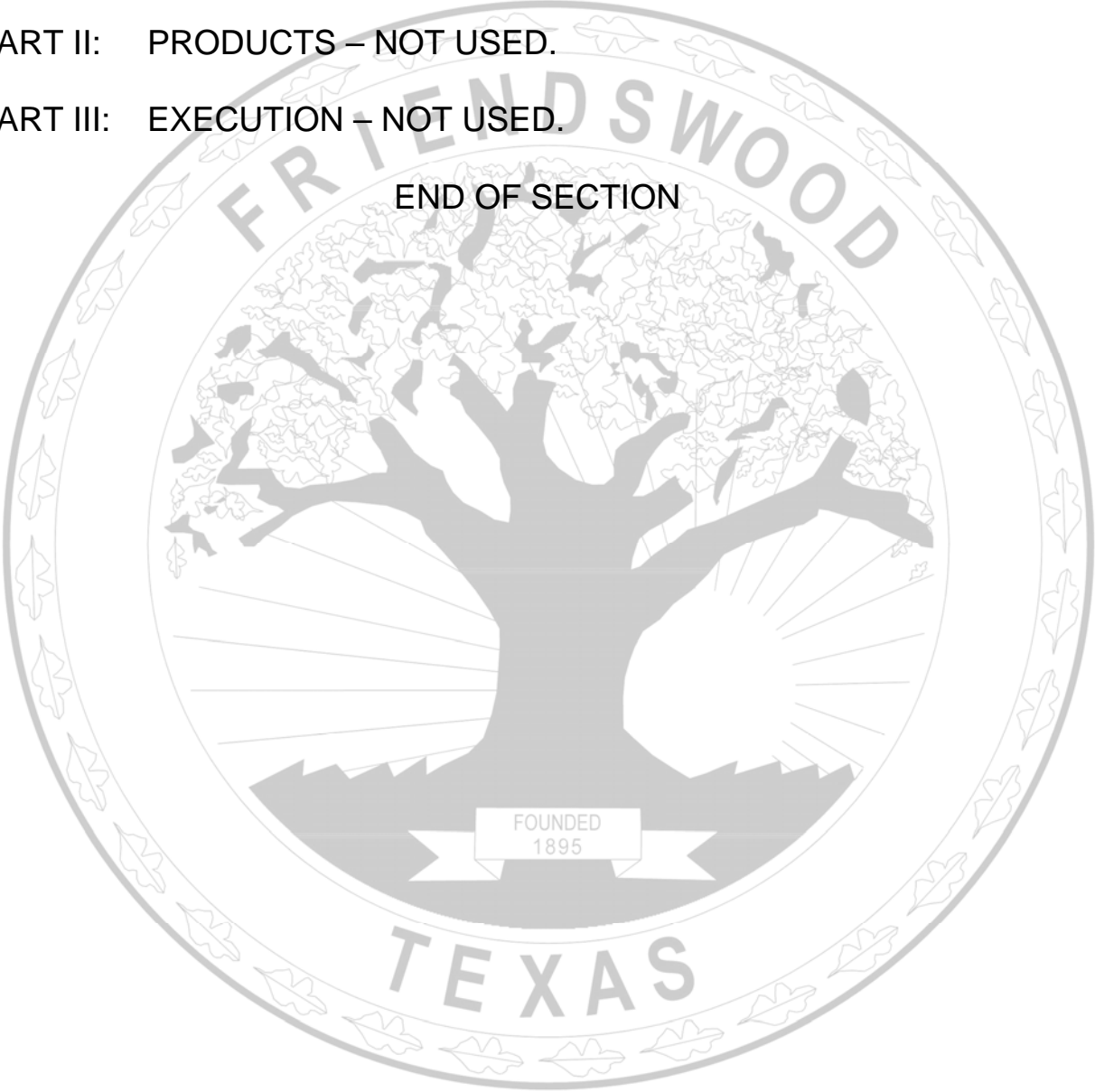
- A. Hold meetings at the Project field office or other location designated by the Project Manager. Hold meetings at monthly intervals, or more frequently when directed by the Project Manager.
- B. Attendance Required: Superintendent, major Subcontractors and Suppliers, City representatives. Design Consultant and its sub-consultants as appropriate for agenda topics for each meeting.
- C. The Project Manager shall make arrangements for meetings, and for recording minutes.
- D. The Project Manager shall prepare the agenda and preside at meetings.
- E. Provide required information and be prepared to discuss each agenda item.
- F. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of the construction schedule, pay estimates, cash flow curve, payroll and compliance submittals.
 - 3. Field observations, problems, and necessary decisions.
 - 4. Identification of problems that impede planned progress.
 - 5. Review of submittal schedule and status of submittals.
 - 6. Review of RFI and RFP status.
 - 7. Modification status.
 - 8. Review of off-site fabrication and delivery schedules.
 - 9. Maintenance of the Construction Schedule.
 - 10. Corrective measures to regain the Construction Schedule.
 - 11. Planned progress during the succeeding work period.
 - 12. Coordination of projected progress.
 - 13. Maintenance of quality and work standards.

- 14. Effect of proposed Modifications on the Construction Schedule and coordination.
- 15. Review the Project Record Contract Drawings.
- 16. Other item relating to the Work.

PART II: PRODUCTS – NOT USED.

PART III: EXECUTION – NOT USED.

END OF SECTION



SECTION 01320

CONSTRUCTION PHOTOGRAPHS

PART I: GENERAL

1.1 GENERAL REQUIREMENTS

- A. Photographic and video requirements for construction photographs and submittals.

1.2 DEFINITIONS

- A. **Pre-construction Photographs:** Photographs taken, in sufficient numbers and detail, prior to Date of Commencement of the Work, to show original construction site conditions.
- B. **Progress Photographs:** Photographs, taken throughout the duration of construction at regular intervals and from fixed vantage points, pre-approved by the City, that document progress of the Work.
- C. **Finished Photographs:** Photographs, taken by a professional photographer near Date of Substantial Completion and before the City Council's acceptance of the Work, that are suitable for framing and for use in brochures or on the Internet.

1.3 SUBMITTALS

- A. Refer to Section 01330 – Submittal Procedures, for submittal requirements.
- B. **Format and Media:** Film or digital photography may be used. Submit color photographs, unless otherwise specified.
 - 1. **Prints:** Submit each Progress or Pre-construction Photograph print in a three (3) hole plastic pocket or sleeve, bound in a three (3) ring notebook. Produce prints on photographic-quality paper approved by the Project Manager. Minimum size for Pre-construction Photograph prints shall be three inches by five inches (3 In x 5 In). Progress Photograph prints shall be eight inches by ten inches (8 In x 10 In).
 - 2. **Film:** Use thirty-five millimeter (35 mm) or larger color film. Submit negatives used to make submitted photographs, in three (3) hole, eight and one-half inch by eleven inch (8-1/2 In x 11 In) plastic sheets with sleeves for negatives.

3. Digital Photography: Use 2.1 megapixel density or greater for photographs. Scanned photographs must equal or exceed four hundred dots per inch (400 dpi) when scanned from eight inch by ten inch (8 In x 10 In) prints.
 4. Submit digital photographic files on computer disks. Format disks for MS-DOS (Microsoft Disk Operating System) filing system and in JPEG (Joint Photographic Experts Group) format.
- C. Submittal Quantities and Frequencies.
1. Pre-construction Photographs:
 - a. For Total Stipulated Price Contracts, submit one (1) set of Pre-construction Photographs, if required, prior to first (1st) Application for Payment.
 - b. For Unit Price Contracts, submit one (1) set of Pre-construction Photographs prior to start of construction operations.
 2. Progress Photographs:
 - a. For Total Stipulated Price Contracts, submit one (1) set of Progress Photographs with each Application for Payment at the times established for submittal of Applications for Payment. Monthly Applications for Payment shall be deemed incomplete if not accompanied by the required Progress Photographs. The Contractor's failure or election to not submit a monthly Application for Payment shall not affect the requirement for monthly Progress Photographs.
 - b. Unless otherwise specified, Progress Photographs are not required for Unit Price.
 3. Finished Photographs:
 - a. For Stipulated Price Contracts submit one (1) set of Finished Photographs, if required, after Date of Substantial Completion and prior to final payment. Each set shall contain one (1) – eleven inch by fourteen inch (11 In x 14 In) matte finish color photographic print from each of the two (2) vantage points pre-approved by the City. Vantage points for

Finished Photographs will be approved separately from vantage points approved for Progress Photographs.

- b. Unless otherwise specified, Finished Photographs are not required for Unit Price.
- D. Labeling: Place a label on the back of each photographic print, applied so as to not show through on the front. Labels shall contain the following information:
1. Name of Project, address of Project and Project Number.
 2. Name and address of the Contractor.
 3. Date the photograph was taken.
 4. Location photo was taken from and short description of photo subject.
 5. Name and address of professional photographer who took the photograph, if applicable.
- E. Hand-deliver or transmit prints in standard photographic mailers marked "Photographs -Do Not Bend".
- F. Photographic prints, negatives, photographic files and disks become the property of the City. Do not publish photographs without written consent by the City.

1.4 QUALITY ASSURANCE

- A. The Contractor shall be responsible for the quality of and timely execution and submittal of photographs.
- B. For Finished Photographs, the Contractor shall use a professional photographer, with five years (5 Yrs) minimum professional experience. The Contractor shall submit name, address and credentials of professional photographer for the Project Manager's review and approval.

PART II: PRODUCTS – NOT USED.

PART III: EXECUTION

3.1 PRE-CONSTRUCTION PHOTOGRAPHS

A. Prior to commencement of construction operations, photograph the site to include initial construction corridor, detour routes, and staging or storage areas.

1. For Total Stipulated Price Contracts, unless specified as a requirement in other Sections, these photographs are optional for the Contractor, but are highly recommended for areas bounded by other property owners.

2. Pre-construction photographs are required for Unit Price Contracts. For line projects with scheduled construction segments, take Pre-construction Photographs prior to commencement of work on each segment.

B. Prepare Pre-construction Photographs as follows:

1. Show the following information on a non-reflective chalkboard placed within the picture frame:

a. Project Name.

b. Project Number.

c. Date and time photographs were taken (Automatic date/time in negative is acceptable).

d. Baseline station, direction of view (i.e. N, S, NW, etc.) and house number or street address and street name.

2. Pre-construction Photographs shall indicate condition of the following:

a. Esplanades and boulevards.

b. Yards (near side and far side of street).

c. House walks and sidewalks.

d. Curbs.

e. Areas between walks and curbs.

f. Particular features (e.g. yard lights, shrubs, fences,

trees).

3. Show date photographs were taken on negatives.
- C. Show the location of vantage points and direction of shots on a key plan of the site.

3.2 PROGRESS PHOTOGRAPHS

- A. Progress Photographs document monthly advancement of the Work. Select vantage points for each shot so as to best show status of construction and progress since last photograph submittal. Select camera stations that will require little or no movement or adjustment over the duration of construction.
- B. Take monthly Progress Photographs at regular intervals to coincide with cutoff dates associated with each Application for Payment.

3.3 FINISHED PHOTOGRAPHS

- A. Finished Photographs shall be "staged" and taken by a professional photographer to depict the most flattering images of a finished facility. Two (2) vantage points, from which Finished Photographs will be taken, shall be agreed to in advance by the City. Photographer shall consider lighting, time of day, height of eye, landscaping and placement of vehicles, people and other props in each picture. Filters and post-photography processing may be utilized to achieve a finished product acceptable to the City.

3.4 LOCATION

- A. Vantage points, times and conditions for camera stations and photography for Progress and Finished Photographs shall be mutually agreed upon by the City, the Contractor and the Photographer. Progress Photograph vantage points may be changed by mutual agreement as the Work progresses, at no additional cost to the City.

END OF SECTION

SECTION 01325

CONSTRUCTION SCHEDULE

PART I: GENERAL

1.1 GENERAL REQUIREMENTS

- A. Provide Construction Schedules for the Work included in this Contract in accordance with requirements in this Section. Create Construction Schedule using Critical Path Method (CPM) computer software capable of mathematical analysis of Precedence Diagramming Method (PDM) plan. Provide printed activity listings and bar charts in formats described in this Section.
- B. Combine activity listings and bar charts with narrative report to form the Construction Schedule submittal for the Project Manager.

1.2 SCHEDULING STAFF

- A. Employ or retain services of individual experienced in CPM scheduling for duration of the Contract. Individual shall cooperate with the Project Manager and update the schedule monthly as required to indicate current status of the work.

1.3 REFERENCES

- A. CFTS – City of Friendswood Technical Specifications.
 - 1. Section 00500 – General Conditions.
 - 2. Section 01315 – Coordination and Meetings.
 - 3. Section 01330 – Submittal Procedures.

1.4 SUBMITTALS

- A. Conform to requirements of Section 01330 – Submittal Procedures.
- B. During preconstruction meeting, as described in Section 01315 – Coordination and Meetings, provide sample bar charts and activity listings produced from scheduling software proposed. Scheduling software is subject to review by the Project Manager and shall meet requirements provided in this Section. The Project Manager shall provide review of samples within seven days (7 D) of submittal.

- C. Within twenty-one days (21 D) of receipt of approval of the Contractor's format, or thirty days (30 D) of the Notice to Proceed, whichever is later, submit proposed Construction Schedule for review. Base the Construction Schedule submittal on the following:
1. Level of detail and number of activities required in schedule are dependent on project type.
 - a. For projects with multiple types of tasks within scope, indicate types of work separately within schedule.
 - b. For projects with work at different physical locations or service areas, or different facilities within a site, indicate each location or facility separately within schedule.
 - c. For projects with multiple crafts or significant Subcontractor components, indicate elements separately within schedule. Unless permitted by the Project Manager, tasks shall consist of work covered by only one (1) division of Project Manual.
 - 1) Unless permitted by the Project Manager, each scheduled task shall be same as Schedule of Values line item, and vice versa.
 - 2) For projects with Major Unit Price Work, indicate Shop Drawing submittal and review, purchase, delivery, and Installation dates on the Project schedule. Include activities for testing, adjustment, and delivering O&M manuals.
 - 3) No task except the acquisition of Major Unit Price Work shall represent more than one percent (1%) of the Original Contract Price for facility projects and three percent (3%) of the Original Contract Price for other projects. Duration of tasks may not exceed forty working days (40 wD).
 - 4) For projects where operating facilities are involved, identify each period of work that will impact any process or operation in the schedule and that must be agreed to by the Project Manager and facility operator prior to starting work in the area.

- D. Construction Schedule submittals shall include:
1. Printed bar charts that meet criteria outlined in this Section and are produced by the Contractor's approved scheduling software;
 2. Activity listings that meet criteria outlined in this Section and are produced by the Contractor's approved scheduling software; and
 3. A predecessor/successor listing sorted by Activity ID that meets criteria outlined in this Section and is produced by the Contractor's scheduling software.
 4. A logic network diagram shall be required with the first (1st) Construction Schedule submittal for facilities projects.
 5. Prepare and submit graphic or tabular display of estimated monthly billings (i.e. a cash flow curve for the Work) with the first (1st) schedule submittal. This information is not required in monthly updates, unless significant changes in work require re-submittal of schedule for review. Display shall allocate units indicated in the bid schedule or the Schedule of Values to the Construction Schedule activities. Weighted allocations are acceptable, where appropriate. Dollar value associated with each allocated unit shall be spread across the duration of that activity on a monthly basis. Total for each month and cumulative total shall be indicated. These monthly forecasts are only for the Construction Manager's planning purposes. Monthly payments for actual work completed shall be made in accordance with Section 00500 – General Conditions.
 6. Narrative Report that provides the information outlined in this Section.
- E. No payment shall be made until the Project Manager approves the Construction Schedule and billing forecast.
- F. If Contractor desires to make changes in its method of operating and scheduling, after the Project Manager has reviewed original schedule, notify the Project Manager in writing, stating reasons for changes. When the Project Manager considers these changes to be significant, the Contractor may be required to revise and resubmit for review all or affected portion of the Contractor's Construction Schedule to show effect on the Work.

- G. Upon written request from the Project Manager, revise and submit for review all or any part of the Construction Schedule submittal to reflect changed conditions in the Work or deviations made from the original schedule.
- H. Updated Construction Schedule with actual start and actual finish dates, percent complete, and remaining duration of each activity shall be submitted monthly. Date used in updating the monthly Construction Schedule shall be the same date as used in the monthly Payment Application. Monthly update of the Construction Schedule is required for the monthly Payment Application to be processed for payment.

1.5 SCHEDULING COMPUTER SOFTWARE REQUIREMENTS

- A. The Contractor's scheduling software shall be capable of creating bar charts and activity listings, which can be sorted by various fields (i.e. Activity ID, Early Start, Total Float, Area Code, Specification Section number, and Subcontractor). Use software capable of producing logic network diagram.
- B. Use scheduling software capable of producing activity listings and bar charts with the following information for each activity in the schedule:
 - 1. Activity ID.
 - 2. Activity Description.
 - 3. Estimated (Original) Duration.
 - 4. Remaining Duration.
 - 5. Actual Duration.
 - 6. Early Start Date.
 - 7. Late Start Date.
 - 8. Early Finish Date.
 - 9. Late Finish Date.
 - 10. Free Float.
 - 11. Total Float.
 - 12. Activity Codes (such as Area Code, Work Type, Specification Section, Subcontractor).

- C. Use scheduling software capable of printing calendars using mathematical analysis of schedule, indicating standard workdays of week and scheduled holidays.
- D. Use scheduling software capable of printing activity listing that indicates predecessors and successors, lag factors and lag relationships used in creating logic of the schedule.
- E. Use scheduling software to provide monthly time in Bar Chart format and scale with twelve month (12 Mo) scale not to exceed one (1) page width. Bar charts may be printed or plotted on eight and one-half inch by eleven inch (8-1/2 In x 11 In), eight and one-half inch by fourteen inch (8-1/2 In x 14 In) or eleven inch by seventeen inch (11 In x 17 In) sheet sizes. Over-size plots are not acceptable.

1.6 NARRATIVE SCHEDULE REPORT

- A. Narrative schedule report shall list activities started this month, activities completed this month, activities continued this month, activities scheduled to start or complete next month, problems encountered this month, and actions taken to solve these problems.
- B. Narrative schedule report shall describe changes made to the Construction Schedule logic (i.e. changes in predecessors and lags), activities added to schedule, activities deleted from schedule, any other changes made to the schedule other than addition of actual start dates and actual finish dates and changes of data date and remaining durations for re-calculation of mathematical analysis.

PART II: PRODUCTS – NOT USED.

PART III: EXECUTION – NOT USED.

END OF SECTION

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SECTION 01330

SUBMITTAL PROCEDURES

PART I: GENERAL

1.1 GENERAL REQUIREMENTS

A. Submittal procedures for:

1. Schedule of Values.
2. Construction Schedules and Cash Flow Curve (billing forecast).
3. Shop Drawings, Product Data and Samples.
4. Operations and Maintenance (O&M) Data.
5. Manufacturer's Certificates.
6. Construction Photographs.
7. Project Record Documents and monthly certification.
8. Video Media.
9. Design Mixes.

1.2 SUBMITTAL PROCEDURES

A. Scheduling and Handling:

1. Submit Shop Drawings, Product Data and Samples for related components as required by the Technical Specifications and the Project Manager.
2. Schedule submittals well in advance of need for construction Products. Allow time for delivery of Products after submittal approval.
3. Develop submittal schedule that allows sufficient time for initial review, correction, resubmission and final review of all submittals. Allow a minimum of thirty days (30 D) for initial review. The Project Manager will review and return submittals

to the Contractor as expeditiously as possible but time required for review will vary depending on complexity and quantity of data submitted.

4. The Project Manager's review of submittals covers only general conformance to the Drawings, the Technical Specifications and dimensions that affect layout. The Contractor is responsible for quantity determination. No quantities will be verified by the Project Manager. The Contractor is responsible for errors, omissions or deviations from Contract Document requirements; review of submittals does not relieve the Contractor from the obligation to furnish required items in accordance with the Drawings and the Technical Specifications.
5. Submit three (3) copies of documents unless otherwise specified.
6. Revise and resubmit submittals as required. Identify all changes made since previous submittal.
7. Assume risk for fabricated Products delivered prior to approval. Do not incorporate Products into the Work, or include payment for Products in periodic progress payments, until approved by the Project Manager.

B. Transmittal Form and Numbering:

1. Transmit each submittal to the Project Manager with Transmittal letter which includes:
 - a. Date and submittal number.
 - b. Project title and number.
 - c. Names of the Contractor, the Subcontractor, the Supplier and the Manufacturer.
 - d. Identification of Product being supplied.
 - e. Location of where Product is to be installed.
 - f. Applicable Technical Specification section number.

2. Identify deviations from Contract Documents clouding submittal drawings. Itemize and detail on separate eight and one-half inch by eleven inch (8-1/2 In x 11 In) sheets entitled

01330-2

"DEVIATIONS FOR _____." When no deviations exist, submit a sheet stating no deviations exist.

3. Have design deviations signed and sealed by an appropriate Professional Engineer licensed by the State of Texas.
4. Sequentially number transmittal letters beginning with number one (1). Use original number for re-submittals with an alphabetic suffix [i.e., 2A for the first (1st) re-submittal of submittal 2, or 15C for third (3rd) re-submittal of submittal 15, etc.]. Show only one (1) type of work or Product on each submittal. Mixed submittals will not be accepted.

C. The Contractor's Stamp:

1. Apply the Contractor's Stamp certifying that the items have been reviewed in detail by the Contractor and that they comply with Contract Document requirements, except as noted by requested variances.
2. As a minimum, the Contractor's Stamp shall include:
 - a. The Contractor's name.
 - b. Job number.
 - c. Submittal number.
 - d. Certification statement the Contractor has reviewed submittal and it is in compliance with the Contract Documents and the Technical Specifications.
 - e. Signature line for the Contractor.

D. Submittals will be returned with one (1) of the following Responses:

1. "ACKNOWLEDGE RECEIPT" when no response and re-submittal is required.
2. "NO EXCEPTION" when sufficient information has supplied to determine that item described is accepted and that no re-submittal is required.
3. "EXCEPTIONS AS NOTED" when sufficient information has been supplied to determine that item will be acceptable subject to changes, or exceptions, which will be clearly stated. When

exceptions require additional changes, the changes must be submitted for approval. Re-submittal is not required when exceptions require no further changes.

4. "REJECTED-RESUBMIT" when submittal does not contain sufficient information, or when information provided does not meet Contract Document requirements and the Technical Specifications. Additional data or details requested by the Project Manager must be submitted to obtain approval.

1.3 MANUFACTURER'S CERTIFICATES

- A. When required by the Technical Specification sections, submit manufacturers' certificate of compliance for review by the Project Manager.
- B. Place the Contractor's Stamp on front of certification.
- C. Submit supporting reference data, affidavits, and certifications as appropriate.
- D. Product certificates may be recent or from previous test results, but must be acceptable to the Project Manager.

1.4 DESIGN MIXES

- A. When required by the Technical Specification sections, submit design mixes for review.
- B. Place the Contractor's Stamp, as specified in this section, on the front of each design mix.
- C. Mark each mix to identify proportions, gradations, and additives for each class and type of mix submitted. Include applicable test results from samples for each mix. Perform tests and certifications within twelve months (12 Mo) of the date of the submittal.
- D. Maintain copies of approved mixes at mixing plant.

1.5 CHANGES TO THE CONTRACT

- A. Changes to the Contract may be initiated by completing a Request for Information form. The Project Manager will provide a response to the Contractor by completing the form and returning it to the Contractor.

1. If the Contractor agrees that the response will result in no

01330-4

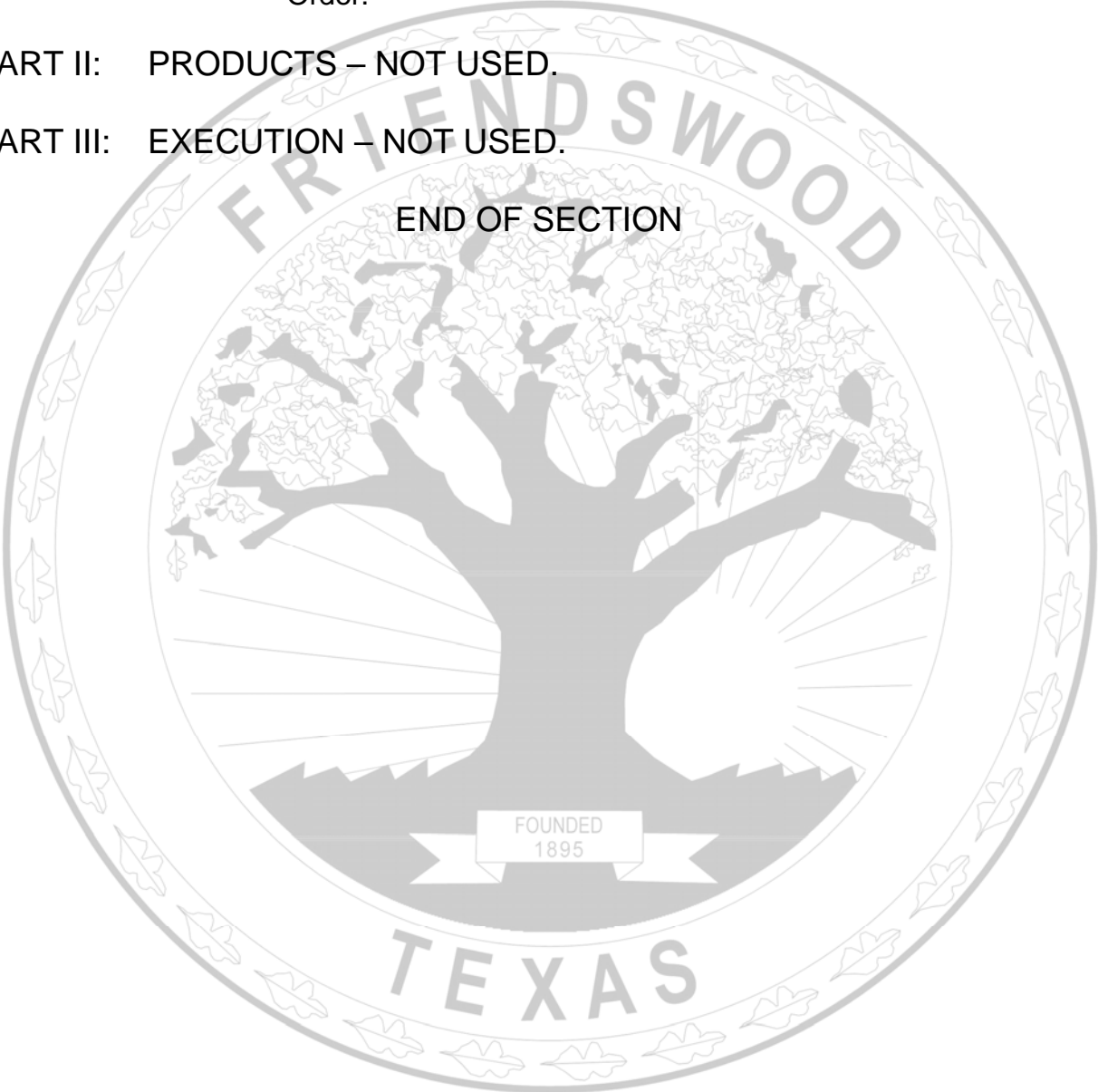
increase in cost or time, a Minor Change in the Work will be issued by the Project Manager.

- 2. If the Contractor and the Project Manager agree that an increase in time or cost is warranted, the Project Manager will forward the Request for Proposal for negotiation of a Change Order.

PART II: PRODUCTS – NOT USED.

PART III: EXECUTION – NOT USED.

END OF SECTION



SECTION 01340

SHOP DRAWINGS

PART I: GENERAL

1.1 GENERAL REQUIREMENTS

- A. Methods, schedules and processes to be followed for Shop Drawings, Product Data and Sample submittals.

1.2 REQUIREMENT

- A. Submit Shop Drawings, Product Data and Samples as required by Section 00500 – General Conditions and Technical Specifications using Section 01330 – Submittal Procedures and the requirements of this Section.
- B. Shop Drawings, Product Data and Samples are not considered Contract Documents.
- C. Request clarification from the Project manager before proceeding should specified reference standards conflict with the Contract Documents.

1.3 SHOP DRAWINGS/SUBMITTAL SCHEDULE

- A. Submit a separate Shop Drawing submittal schedule at the same time the Construction Schedule is submitted. List Products for which Shop Drawings and other submittals are required in the order they appear in the Technical Specifications. Include Product Data and Sample submittals in the schedule. Payment Applications shall not be processed until the Project Manager has approved the Shop Drawing submittal schedule.

1.4 SHOP DRAWINGS

- A. Submit a minimum of three (3) sets of Shop Drawings and Product Data. Review and sign Shop Drawings indicating compliance with the Contract Documents and Technical Specifications.
- B. Place the Contractor's Stamp on each drawing as described in Section 01330 – Submittal Procedures.
- C. Show the following accurately and distinctly:

1. Field and erection dimensions;
 2. Arrangement and section views;
 3. Relation to adjacent materials or structures, including complete information for making connections between the Work and work under other contracts;
 4. Types of Products and finishes;
 5. Parts lists and descriptions;
 6. Assembly drawings of equipment components and accessories showing respective positions and relationships to the complete equipment package;
 7. Identify details by referencing drawing sheet and detail numbers, schedule or room numbers as shown on the Drawings, where necessary for clarity.
- D. Scale drawings to provide a true representation of the specific equipment or item Furnished.
- E. Coordinate and submit components necessary, for the Project Manager to adequately review submittal, as a complete package. Reproduction of the Drawings for use in Shop Drawings shall not be allowed.
- F. For major changes to the original documents, submit Computer-Aided Design (CAD) drawings on a media acceptable to the Project Manager.

1.5 PRODUCT DATA

- A. Submit Product Data for review as required by the Technical Specifications.
- B. Place the Contractor's Stamp on each drawing as described in Section 01330 – Submittal Procedures.
- C. Mark each copy to identify applicable Products, Models and Options to be used in the Work. Where required by the Technical Specifications, supplement the manufacturers' standard data to provide information unique to the Work.
- D. Give manufacturers, trade name, model or catalog designation and applicable reference standard for Products specified only by reference standards.

E. Pre-approved and Pre-qualified Products.

1. For “pre-approved”, “pre-qualified” and “approved” Products named in Section 01610 – Approved Products List, provide an appropriate list designation, as described in Section 01630 – Product Substitution, within thirty days (30 D) after the date on the Notice To Proceed.
2. For Products proposed as alternates to “approved” products, provide information required to demonstrate that the proposed Products meet the level of quality and performance criteria of the “approved” product.

1.6 SAMPLES

- A. Submit Samples for review as required by the Technical Specifications. Have Samples reviewed and signed by a Professional Registered by the State of Texas.
- B. Place the Contractor’s Stamp on each drawing as described in Section 01330 – Submittal Procedures.
- C. Submit the number of Samples specified in the Technical Specifications; the Project Manager shall retain one (1) sample.
- D. Reviewed Samples that may be used in the Work are identified in the Technical Specifications.

PART II: PRODUCTS – NOT USED.

PART III: EXECUTION – NOT USED.

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1985
END OF SECTION