SECTION 013100 - PROJECT MANAGEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes provisions for coordinating construction operations and reporting progress on the Project including the following:

1. Coordination drawings.
2. Requests for Information (RFIs).
3. Project Web site.
4. Project Meetings.
5. Project Reports
6. Project Schedules

1.2 DEFINITIONS

A. RFI: Request from Owner, Architect, or Contractor seeking information from each other.

B. 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.

2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

C. CPM: Critical Path Method

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Float: The number of days between the early start and late start dates of an activity. 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.

1.3 SUBMITTALS

A. RFI Log

B. Start-up CPM Network Diagram: For all CMAR projects, or upon request of SRP PM, submit network diagram of size required to display entire network for entire construction period. Show logic ties for activities. Submit in PDF format.

C. Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period. Submit in PDF format.
D. CPM Reports: For all CMAR projects, or upon request of SRP PM, concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
3. Total Float Report: List of all activities sorted in ascending order of total float.

E. Three Week Look-Ahead Schedule: Every week provide a 3-week schedule showing activities and subcontractors on a weekly basis at the OAC meeting. Include the last week’s actual activities as well. Submit paper copies in Excel or easily understood format.

F. Daily Construction Reports: Submit at weekly intervals (only when requested by the SRP PM.)

G. Coordination Drawings: Submit if required to integrate different components.

H. Schedule of Values

1.4 COORDINATION

A. Coordination: Coordinate construction operations across all Sections of the Specifications. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to ensure orderly progress of the Work. Such administrative activities include:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Pre-installation conferences.
7. Startup and adjustment of systems to include Commissioning.
8. Project closeout activities.

1.5 COORDINATION DRAWINGS

A. Coordination Drawings: Prepare coordination drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.

b. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations are not changes to the Contract.

2. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility.

1.6 REQUESTS FOR INFORMATION (RFIs)

A. General: On discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI. Promptly submit RFIs to avoid delays in Contractor's work or work of subcontractors.

B. Content: Include a detailed description of item needing information or interpretation and the following:

1. Project name.
2. Date.
3. Name of Contractor.
5. RFI number, numbered sequentially.
6. RFI subject.
7. Specification Section numbers, titles, and related paragraphs.
8. Drawing numbers and details.
9. Field dimensions and conditions, as appropriate.
10. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
11. Contractor's signature.
12. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to describe items needing interpretation.

C. RFI Forms: The following are acceptable forms:

1. AIA Document G716
2. Contractor generated form with substantially the same content as indicated above.

D. Transmitting: Send the RFI and all attachments electronically to the Architect with a copy to the SRP PM. If the attachments cannot be sent electronically, send the RFI electronically and then deliver the attachments as soon as possible to both parties. For tracking purposes, the RFI will not be considered as delivered until all attachments are delivered.

E. Architect's Action: Architect will review each RFI and respond. Allow [5] five working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:

   a. Requests for approval of submittals or substitutions.
   b. Requests for information already indicated in the Contract Documents.
   c. Requests for adjustments in the Contract Time or the Contract Sum.
d. Requests for interpretation of Architect's actions on submittals.
e. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.

3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Request according to Specification Section 012600 "Contract Modification Procedures."

   a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and SRP in writing within [5] five working days of receipt of the RFI response.


G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:

   1. Project Name.
   2. Contractor Name.
   3. Architect Name.
   4. RFI number (include RFIs that were dropped).
   5. Description of RFI.
   6. Date the RFI submitted.
   7. Date Architect's response received.
   8. RFI status (including final action by A/E)
   9. Notes as appropriate.

1.7 PROJECT WEB SITE

A. At no cost to SRP, the GC or CMAR may use a Project Web site to manage project communication and documentation until Final Completion. Project Web site may include some of the following functions:

   1. Project directory.
   2. Project correspondence.
   3. Meeting minutes.
   5. RFI forms and logs.
   6. Task and issue management.
   7. Photo documentation.
   8. Schedule and calendar management.
   10. Payment application forms.
   11. Drawing and specification document hosting, viewing, and updating.
   13. Reminder and tracking functions.

C. Upon completion of Project, provide [one] 1 complete archive copy of Project Web site files to Owner and to Architect in a digital storage format acceptable to the Architect.

D. Contractor, subcontractors, and other parties granted access by the Contractor to Project Web site shall execute a data licensing agreement in the form of an Agreement acceptable to the Owner and Architect.

1.8 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform required participants of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
2. Agenda: Prepare and distribute the meeting agenda
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned within [three] 3 days of the meeting.

B. Preconstruction Conference: SRP will schedule and conduct a preconstruction conference before starting construction no later than [15] fifteen days after execution of the Agreement.

1. Attendees: Authorized representatives of SRP, Commissioning Authority, Architect (optional); Contractor (PM and Superintendent), the Working Forman from each major subcontractor; suppliers (optional); 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:
   a. Introductions
   b. Meeting Purpose: Review expectations, allow GC & subs to ask questions.
   c. Project Background – why is this project important to SRP? Is it mission critical?
   d. What defines a successful project at SRP?
   e. Procurement: Their role in the entire project
   f. PO status? Change Requests and Change Orders procedures.
   g. Money disputes go through Procurement
   h. Applications for Payment & Retention
   i. Safety: SRP Philosophy, GC standards, PPE protocol per GC, Asbestos, Hot Work
   j. Project Reporting structure: Information flow, RFI, Submittal, Pay App flow
   k. Testing, Inspections: requirements exceed the code
   l. How does the GC manage quality? GC expectations of subcontractors
   m. SRP Inspections are not the contractor’s QC program
   n. Commissioning: Manufacturer’s installation and startup checklists, Functional Performance Tests
   o. Work hours, Restrictions, Site access and badging for personnel
   p. O&M Manuals.
   q. As-built drawings.
   r. Warranty.
   s. Lien Waivers and Final Pay App.
   t. Formal evaluation of GC and Subs = Business Review.
   u. Business Review is sent to GC’s Business Development Mgr.

C. Pre-installation Meeting: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise SRP PM and the SRP Construction Inspector of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
   b. Related Submittals and RFIs.
   c. Purchases.
   d. Deliveries.
   e. Review of mockups.
   f. Possible conflicts.
   g. Compatibility problems.
   h. Time schedules.
   i. Weather limitations.
   j. Manufacturer's written recommendations.
   k. Compatibility of materials.
   l. Acceptability of substrates.
   m. Temporary facilities and controls.
   n. Space and access limitations.
   o. Testing and inspecting requirements.
   p. Installation procedures.
   q. Coordination with other work.
   r. Required performance results.
   s. Commissioning (if applicable)
   t. Safety to include protection of adjacent work.

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.

D. Weekly Progress Meetings: Conduct Owner/Architect/Contractor (OAC) meetings (biweekly interval for smaller jobs as required by the RFP or the SRP PM).

1. Attendees: SRP representatives, Commissioning Authority, Architect, the Contractor, and every Subcontractor or supplier concerned with current progress or involved in planning future activities shall be present at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
   a. Contractor's Project Schedule: Review this at every meeting. Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule.
   b. Superintendent's Three Week Look Ahead Schedule: Review last week's accomplished activities versus what was scheduled. Present the activities scheduled for the next three weeks and discuss support needed and pre-requisite work needed.
c. RFI Log
d. Submittal Log
e. Change Requests
f. Deficiency Log & quality concerns
g. Review present and future needs of each entity present, including the following:
   1) Interface requirements (with other work or subcontractors).
   2) Sequence of operations.
   3) Deliveries.
   4) Off-site fabrication.
   5) Access.
   6) Site utilization.
   7) Temporary facilities and controls.
   8) Progress cleaning.
   9) Quality and work standards.
   10) Status of correction of deficient items.
   11) Field observations.
h. Round Table – each attendee may bring up any other item.

3. Minutes: Contractor will record and distribute the meeting minutes to each party present and to parties requiring information.
   a. Schedule Updating: Revise Contractor’s construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

E. Executive Meeting: In the event of actual or expected extraordinary conditions on the project, SRP may call for an Executive Meeting.
   1. Purpose: To provide for a problem solving environment above the level of the project team.
   2. Attendees: Management (not the project team members) from the Contractor, Architect, and SRP
   3. Agenda: SRP shall distribute an agenda prior to the meeting.
   4. Minutes: SRP shall publish minutes.

F. Business Review: After the project is complete and final payment transmitted, the SRP Buyer shall schedule a meeting to provide the Contractor with a written performance evaluation.

1.9 PROJECT REPORTS

A. Daily Construction Reports: Only when requested by the SRP PM or in the RFP, prepare a daily construction report recording the following information concerning events at Project site:
   1. List of subcontractors at Project site.
   2. Approximate count of personnel at Project site.
   3. Equipment at Project site.
   5. High and low temperatures and general weather conditions.
   6. Accidents or Emergency procedures.
   7. Meetings and significant decisions.
   8. Unusual events.
   9. Stoppages, delays, shortages, and losses.
   10. Orders and requests of authorities having jurisdiction.
11. Change Orders received and implemented.
12. Owner Construction Change Directives received and implemented.
13. Services connected and disconnected.
15. Partial completions and occupancies.

B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 2 - PRODUCTS

2.1 CONTRACTOR’S CONSTRUCTION SCHEDULE (< $250,000 CONTRACT VALUE)

A. General: Provide a project schedule based upon Critical Path Method.

B. Time Frame: Schedule shall extend from receipt of Purchase Order to Final Completion or as directed in writing by the SRP PM.
   1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
   1. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule.
   2. Activity Duration: Activities may not exceed [10] ten workdays, unless specifically allowed by SRP.
   3. Procurement Activities: Include separate procurement process activities for long lead items and major items, requiring a cycle of more than 30 days. Procurement cycle activities include submittals, approvals, purchasing, fabrication, and delivery.
   4. Submittal Review Time: Include review and re-submittal times indicated in Section 013300 "Submittal Procedures".
   5. Include activity for submittal of O&M Manuals; set logic so that this activity is a prerequisite for Substantial Completion milestone.
   6. Work by SRP: Include a separate activity for each portion of Work performed by SRP.
   7. Substantial Completion: Indicate anticipated date of substantial completion as a milestone, not a constraint.
   8. Startup and Commissioning: Coordinate with SRP PM to include time for these activities after Substantial Completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
   1. Phasing: Arrange list of activities on schedule by phase.
   2. Work 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.

E. Milestones: Include all milestones indicated in the Contract Documents in schedule, including Substantial Completion, and Final Completion.

F. Recovery Schedule: When periodic update indicates the Work is 10 ten or more workdays behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule.

G. Critical Path Schedule: For projects with duration greater than 60 days, provide a single critical path schedule showing the scheduled progression of the job. Do not show work breakdown structure or any other grouping that interferes with the ability to see the critical path as it progresses through the end of the project.

H. Computer Scheduling Software: Prepare project schedules using recent version of a program developed specifically to manage construction schedules. Excel is only acceptable for 3-week look ahead schedules.

I. Schedule Updating: Concurrent with making revisions to schedule, to make SRP’s review easier, prepare spreadsheet or report showing the following:

1. Identification of activities that have changed.
2. Changes in activity durations in workdays.
3. Changes in the critical path.
4. Changes in total float or slack time.

2.2 CONTRACTOR’S CONSTRUCTION SCHEDULE (> $250,000 CONTRACT VALUE)

A. General: In addition to the requirements in Paragraph 2.1, provide the following.

B. CPM Schedule: Prepare Contractor’s construction schedule using a time-scaled CPM network analysis diagram for the Work. Cost loading of schedule is at Contractor’s option.

1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 20 twenty workdays after receipt of Purchase Order. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing the work within applicable completion dates.

C. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment (FRAGNET) to demonstrate the effect of the proposed change on the overall project schedule.

D. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight “early start-total float.” Identify critical activities. If requested, prepare tabulated report showing the following:

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

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Required Schedule Updates: At monthly intervals, update schedule to reflect actual construction progress and activities. As required by Section 012900 Payment Procedures, update the schedule one week before the pay application is due. Present and discuss this monthly update at the next regularly scheduled progress (OAC) meeting.

1. Revise schedule immediately after OAC meeting where revisions have been recognized or made. Issue the revised schedule concurrently with the report of each such meeting.
2. As the Work progresses, indicate final completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect, SRP, separate contractors, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. When revisions are made, distribute updated schedules to the same parties, and post in the same locations.

C. Display: Post copy of most current project schedule and 3-week look ahead schedule in Contractor's field office.

END OF SECTION 013100