

SECTION 01 32 16
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, bar chart type.

1.2 RELATED SECTIONS

- A. Section 01 10 00 - Summary: Work sequence.

1.3 SUBMITTALS

- A. Within 10 days after date established in Notice to Proceed, submit preliminary schedule .
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Submit updated schedule with each Application for Payment.
- D. Submit under transmittal letter form specified in Section 01 30 00 - Administrative Requirements.

1.4 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- B. Scale and Spacing: To allow for notations and revisions.

PART 2 SCHEDULE

2.1 GENERAL

- A. A milestone/ phasing construction schedule including start and completion dates and layout in zones with key dates, has been prepared. The milestone schedule has been included as part of the bidding documents within this section.
- B. All Work will be conducted in a number of continuous phases to provide the least possible interference to the activities of the Owner's personnel and to permit the facilities to be partially utilized during implementation of the work.
 - 1. The Contractor is expressly forewarned that impacts to the construction schedule during any phase or portion of the project will not be permitted.
 - 2. Award: December 2022
 - 3. Preconstruction/Submittals: December 2022 - January 2023
 - 4. POOL PHASE
 - a. Mobilize: January 2023
 - b. Construction: January 2023 to March 2023
 - c. Substantial: March 31, 2023
 - 5. BUILDING PHASE
 - a. Mobilize: April/May 2023

- b. Construction: April/May - August 2023
- c. Substantial Completion: August 18, 2023
- C. Schedule of Completion: All work of this project shall be substantially completed by the date indicated on the milestone/ phasing schedule, unless noted otherwise.
- D. All schedules and calendars shall be used as tools in developing the project schedule.
- E. Upon Notice to Proceed the overall Project CPM Schedule will be prepared by the **General Trades Contractor** as outlined in this section.
- F. Start and end dates must be met.

PART 3 EXECUTION

3.1 GENERAL

- A. The CPM Schedule network plan including any appropriate milestone dates and the computer produced reports shall be part of the Owner/Contractor agreement as stipulated herein.
- B. All Prime Contractors shall provide all information required by the Construction Manager to the General Contractor for development of a network plan and schedule for this in accordance with the requirements of this section of the General Requirements.
- C. The purpose of the plan and schedule will be to assure adequate planning, coordination and execution of the work of the various Prime Contractors, and to assist the Construction Manager in monitoring the progress of the work and evaluating proposed changes to the contract and schedule.
- D. The project management tool commonly called the Critical Path Method (CPM) will be employed for the planning, scheduling and report of all work to be performed under the contract. The precedence diagramming method shall be utilized in preparing the CPM Schedule network diagrams.
- E. There are other contracts and work which will run concurrently with this Contract, and may run subsequently to the work of this Contract. The project network diagram and schedule will reflect the major interfaces between the work of this Contract and the concurrent and succeeding work of the other contracts.
- F. The Construction Manager may modify the network diagram to provide interface points for other contracts for this Project.
- G. Activity time delays shall not automatically mean that an extension of the Contract Completion Date is warranted or due the Contractor. A Contract Modification or delay may not affect existing critical activities or cause noncritical activities to become critical. A Contract Modification or delay may result in only absorbing part of the available total float that may exist within an activity chain on the Network, thereby not causing any effect of any interim milestone date or the Contract Completion Date.
- H. Total float is defined as the amount of time between the early start date and late start date, or the early finish date and the late finish date, for each and every activity in the schedule. Float is for the exclusive use or benefit of the Owner. Extensions of time to milestone dates for the Contract Completion Date under the Contract will be granted only to the extent that is equitable time adjustments to the activity or activities affected by the Contract Modification or delay exceeds the total float of the affected or subsequent paths and extends any interim milestone date or the Contract Completion Date.

3.2 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a horizontal bar chart.
- B. To the extent necessary for the General Trades Contractor to reflect in a computerized CPM Schedule network diagram each Prime Contractor's proposed plan for completion of their work, all Prime Contractors shall be prepared to meet with and assist the Other Contractors, and furnish information subsequent to award of the contract.
- C. Within (3) calendar days following the Contract Issuance, the Construction Manager will meet with the Prime Contractors and conduct a review of the Prebid Milestone/phasing to assure their understanding of said project schedule requirements and contractual milestone dates.
- D. Within four (4) calendar days after the meeting to review the Milestone/Phasing Schedule, all Prime Contractors will provide their proposed plans of operation to the General Contractor. The Contractor's plan of operations shall consist of, but not limited to, the following:
 1. List of proposed Construction Activities.
 2. List of proposed Durations of Construction Activities (in workdays).
 3. List of Dependency Relationships of Construction Activities.
 4. List of proposed Durations for major procurement items (in workdays).
 5. Proposed Sequencing of Construction Activities.
- E. The Construction Manager, and each Prime Contractor will meet and jointly review the CPM project schedule, based on the proposed plan and sequences of operation. Any areas of such plans which, in the opinion of the Construction Manager, will conflict with timely completion of the project will be subject to revision by the General Contractor unless adequate justification for these plans, durations and logic (as determined by Construction Manager) is provided by the Prime Contractor within (10) calendar days of the Construction Manager's notice to the Prime Contractor of the Construction Manager's intent to revise the schedule. At these meetings, the Prime Contractors, with the aid of the Construction Manager, will manually construct a precedence diagram describing the activities to be accomplished, their dependency relationships and their durations. The Contractor will then, using the manual precedence diagram, prepare a computer produced schedule showing starting and completion dates for each activity.
- F. In preparing the manual precedence diagram, each Prime Contractor will be responsible for assuring that any/all subcontractor work, as well as their own work, is included and that the diagram shows a coordinated plan of work.
- G. The manually prepared precedence diagram, when fully developed, will show the sequence and interdependence of activities required for complete performance of all the work under all of the Prime Contracts. In developing the precedence diagram, the work will be divided into activities with a maximum duration of twenty (20) working days each, unless otherwise directed by the Construction Manager, except for non-construction activities such as procurement of materials, delivery of equipment, and concrete curing.
- H. Proposed durations assigned to each activity shall reflect each Prime Contractor's best estimate of time required to complete activity considering the scope and resources planned for activity.
- I. Failure by the Prime Contractors or Construction Manager to include the element of work required for performance of the contract shall not excuse the Prime Contractors from completing all their work within the Contract Completion Date. If the Construction Manager questions any of the Prime Contractor's proposed durations, the Prime Contractor shall within ten (10) calendar days provide estimates of their labor and intended crew and/or equipment sizes required for the activity which support the proposed duration to the satisfaction of the Construction Manager.

- J. Seasonal weather conditions will be considered in the planning and scheduling of all work influenced by high or low ambient temperatures to insure the completion of all contract work within the allotted contract time milestone completion dates.

3.3 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Identify work of separate stages and other logically grouped activities.
- D. Provide sub-schedules for each stage of Work identified in Section 01 10 00 - Summary.
- E. Provide sub-schedules to define critical portions of the entire schedule.
- F. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- G. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, products identified under Allowances, and dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes.
- H. Provide legend for symbols and abbreviations used.

3.4 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

3.5 REVIEW AND EVALUATION OF SCHEDULE

- A. Within seven (7) calendar days after receipt of the computer produced CPM Schedule and reports provided by the Contractor, each Prime Contractor shall meet with the Construction Manager, if required, for joint review, correction, or adjustment of the proposed plan and schedule; After these joint meetings, the computer produced CPM Schedule and report will be revised in accordance with agreements reached during the joint reviews. Final review and acceptance by the Owner will take place after all Prime Contractors have approved the revised CPM Schedule.
- B. Upon establishment of an agreed upon schedule, each Prime Contractor will sign the CPM Schedule network drawings and computer produced reports, which will then indicate the acceptance and approval of the project schedule, sequence of activities and times for completion. Acceptance of the approved project schedule by all Prime Contractors and the Construction Manager will be a condition precedent to the making of any partial payments under the Contract.
- C. Participate in joint review and evaluation of schedule with Architect at each submittal.
- D. Evaluate project status to determine work behind schedule and work ahead of schedule.
- E. After review, revise as necessary as result of review, and resubmit within 10 days.

3.6 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.

- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.
- G. The Approved Project Schedule will be updated by the Prime Contractors and reviewed by the Construction Manager on a monthly basis for the purpose of recording and monitoring the progress of work. The Prime Contractors shall meet with the Construction Manager each month to review actual progress made to date, dates of activities started and completed, and the percentage of work completed to date on each activity started but not completed.
- H. Upon completion of the joint reviews, the Contractors will revise the network to reflect progress to date plus any approved revisions to the network, and carry out a computer calculation to determine status which will be provided to each Prime Contractor.
- I. Based on the result of the monthly progress update, when the schedule no longer represents the actual prosecution and progress of the work, a revision to the schedule logic sequence and the precedence diagram may be required by the Construction Manager or requested by the Prime Contractors.
- J. A Prime Contractor may also request revisions to the logic sequence and precedence diagram in the event their planning for the project is revised. If a Prime Contractor desires to make changes in the Approved Project Schedule to reflect revisions in their method of operating and scheduling, they shall notify the Construction Manager in writing stating the reasons for the proposed revision.
- K. If a revision to the schedule logic sequence is contemplated, a Prime Contractor or the Construction Manager shall so advise the other in writing at least two (2) weeks prior to the next Schedule Update meeting, describing the revision and setting forth the reasons therefore.
- L. All reasonable requests by the Prime Contractors for revisions will be implemented by the Construction Manager if not reasonably objected to by any of the other Prime Contractors.
- M. Construction Manager directed revisions to the schedule will not be implemented without written notice to the Prime Contractors, who shall respond within ten (10) days, either agreeing with the Construction Manager's proposed revision or setting forth justification why it should not be accomplished. If the Prime Contractor's justification for not accomplishing the change is reasonable, such change will not be implemented.
- N. Updating the schedule to reflect actual progress made up to the date of an update shall not be considered revisions to logic sequence and schedule; in case of disagreements concerning actual progress to date, the Construction Manager's determination shall govern.
- O. If a Prime Contractor does not record any exceptions to the published Project Schedule update within ten (10) calendar days of its receipt, they will be deemed to have accepted and approved it.

3.7 RESPONSIBILITY FOR COMPLETION

- A. Each Prime Contractor shall furnish sufficient forces, plant and equipment, and shall work such hours including night shift and overtime operations, as necessary to ensure the prosecution of the work in accordance with the current monthly update of the Project Schedule. If, in the opinion of the Construction Manager, a Prime Contractor falls behind in meeting the schedule as presented in the current monthly update, the Contractor shall take such steps as may be necessary to improve their progress, and the Construction Manager may require them to increase the hours of work, the number of shifts, overtime operations and/or the amount of

construction plant and equipment without additional cost to the Owner or Construction Manager. All additional expenses incurred by the Owner, Construction Manager and Architect/Engineer due to such work will be deducted from the amount due the Prime Contractor. The provisions of this section shall not be construed as prohibiting work on Saturdays, Sundays and holidays if the Prime Contractor so elects and if approved by the Construction Manager.

- B. Failure of a Prime Contractor to comply with the requirements of this subsection shall be a basis for determination by the Owner that the Prime Contractor is not prosecuting the work with such diligence as will ensure completion within the time stipulated. Upon such determination, the Owner may terminate the Prime Contractor's right to proceed with the work or any separable part thereof, in accordance with the provisions of the General Conditions, or may take such other actions as may be deemed appropriate.
- C. It shall be the responsibility of all Prime Contractors to maintain their progress so as not to delay the progress of the project or the progress of other Prime Contractors. If a Prime Contractor delays the progress of the project or the progress of other Prime Contractors, it shall be the responsibility of Prime Contractor causing the delay to increase the number of shifts, days of work, and/or to the extent permitted by law, to institute or increase overtime operations all without additional cost to the Owner to regain the time lost and to maintain the over schedule. Each Prime Contractor is required by virtue of this Contract to cooperate in every way possible with all other Prime Contractors in order to maintain the scheduled completion date. No additional compensation will be considered for such cooperation.

3.8 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Architect, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION