

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. General Requirements
- B. Progress Schedule -Bar Chart
- C. Coordination
- D. Updates and Progress Payments
- E. Float Time
- F. Recovery Schedule

1.02 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. The General Conditions of the Contract and Supplemental General Conditions
- B. Make particular reference to the following Division One sections:
 - 1. Section 01040 -Project Coordination
 - 2. Section 01630 -Product Substitutions

1.03 GENERAL REQUIREMENTS

- A. The Work under this Contract will be planned, scheduled, executed and reported using a bar chart, pursuant to the provisions of Article 3 of the General Conditions and the Supplementary General Conditions.
- B. The primary objectives of the Progress Schedule are to ensure the adequate planning and execution of the construction activities so they may be prosecuted in an orderly and expeditious manner, within the Contract Time and specific dates stipulated by the Contract, to provide optimum coordination between Contractors, to establish the basis for measuring and monitoring individual Contractor progress and overall project progress, to detect problems for the purpose of taking corrective action to maintain the scheduled program and to provide a mechanism, or tool for determining and monitoring such corrective actions.
- C. The Progress Schedule shall be in a bar chart format with a logical association of predecessor and/or successor ties between the activities. Activities shall be overlapped with start-to-start and/or finish-to-finish relationships to evaluate how the Work is to be accomplished. The Progress Schedule shall be produced using either SureTrack version 1.5 or Microsoft Project version 4.0 (or the most current versions). The Contractor may request to use different software as a substitution, in accordance with Division One Section 01640. If the alternate software is accepted, the Contractor will be required to supply the Owner's Representative with an authorized copy of the software with all user support manuals.
- D. If the Contractor plans or intends to complete the Work earlier than any required Completion Date, the Owners, and Owner's Representative shall not be liable to the Contractor for any costs or other damages if the Contractor does not complete the Work before this earlier date for any reason. The duties, obligations and warranties of the Owner to the Contractor shall be consistent with and applicable only to the completion of the Work on the Completion Dates required in the Owner-Contractor Agreement, unless Owner and the Contractor otherwise agree in writing.

1.04 PROGRESS SCHEDULE -BAR CHART

- A. Pursuant to the General Conditions of this Contract, the following additional scheduling requirements are a part of this Contract.
- B. Work under this Section shall consist of furnishing a Progress Schedule showing in detail how the Contractor plans to execute and coordinate the Work. The Progress Schedule shall be based on and incorporate the Contract Completion dates specified in the Owner-Contractor Agreement and shall show the order in which Contractor shall perform the Work, projected dates for the start and completion of separable portions of the Work, and other information concerning Contractor's Work scheduling as Owner may request.
- C. Schedule Requirements
 1. Schedule Requirements The Progress Schedule shall be in the form of a bar chart and shall consist of horizontal lines, or bars, plotted along a daily time scale. The horizontal bar(s) shall indicate the start and finish dates as well as the total time period of performance for each activity. The Contractor shall arrange the chart so as to show the activities that are necessary to fulfill each and every Milestone and Specific Completion Date requirement.
 2. The Schedule Content:
 - a. The Contractor's Progress Schedule shall include, but not be limited to:
 1. Procurement activities including mobilization, shop drawings and sample submittals, Owner/Architect review of submittals, fabrication, and delivery of all key and long-lead equipment and materials;
 2. Construction/erection activities;
 3. Testing activities;
 4. Any offsite activities including interfaces with the work of outside contractors, e.g. utilities, power, or any separate contractor.
 5. Activities for project closeout including punch list, as-built drawings, Substantial Completion, and Final Completion.
 - b. The identity and logic of activities comprising the Schedule shall meet the following criteria:
 1. The description of work by activity. Activity descriptions and coding shall contain the area of the work as well as the specific type of work.
 2. Activity boundaries shall be easily measurable and descriptions shall be clear and concise. Do not preface activity descriptions with "Begin" or "Complete." The beginning and end of each activity shall be readily verifiable, and progress shall be quantifiable.
 3. Responsibility for each activity shall be identified with a single performing organization.
 4. Activity duration's over fourteen (14) working days shall not be used except for non- construction activities such as shop drawing and sample submittals, fabrication and delivery of materials and equipment, concrete curing, and General Conditions activities, or as approved in writing by the Construction Manager.
 5. Activity durations shall be in workdays.
 6. The costs for the project shall be broken down according to a Schedule of Values that corresponds to the work schedule activities. The Schedule of values shall include costs for each of the activities identified under paragraph 1.04.C.2.a above of this Section.

7. Potential problems or constraints related to the implementation of the construction plan shall be identified in writing.
8. Foreseeable delays to activities such as normal seasonal weather shall be considered and included in the planning and scheduling of all work.
9. In assigning logical ties between activities, maximize Start- To- Start and Finish- To- Finish activity relationships. Overlapping activities minimizes out-of-sequence problems that arise when most relationships are Finish- To-Start with zero lead or lag.
10. Imposed completion dates for events other than the Substantial Completion Date are not permitted. Artificial Constraints are also not permitted.

D. Submittals

1. The submittal of the schedule documents shall include:
 - a. A computer-generated graphic time-scaled bar chart showing activity descriptions, durations and relationships between activities. The critical path should be easily identifiable.
 - b. A narrative that explains the basis for the Contractor's schedule of construction and any constraints.
 - c. A 3 1/2" computer diskette containing the schedule data files.

E. Approval Process

1. The Contractor shall perform the following immediately after receipt of the Notice to Proceed:
 - a. Prepare a detailed Progress Schedule that represents the Contractor's best judgment on how it shall prosecute and complete the Work in compliance with the Contract Substantial and Final Completion dates stipulated in the Contract Documents.
2. Within 5 calendar days following Notice to Proceed, submit to the Owners Representative a draft of the Progress Schedule for review and comment. Before the first Application for Payment, the Contractor shall submit to the Owners Representative a Schedule of Values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Owners Representative may require. This schedule, unless objected to by the Owners Representative, shall be used as a basis for reviewing the Contractor's Applications for Payment. The Schedule of Values shall correspond to the Work segments/activities identified in the Progress Schedule.
3. The Progress Schedule shall indicate Completion Dates for the project that are not later than the project's required Completion Dates. All activity durations shall be given in Work days.
4. It is to be expressly understood and agreed by the Contractor that the Progress Schedule is an estimate to be revised from time to time as progress proceeds, and that the Owner does not guarantee that Contractor can start work activities on the start dates or complete work activities on the finish date shown in the schedule, or as same may be updated or revised; nor does the Owner guarantee that Contractor can proceed at all times in the sequence established by said schedule.
5. The Owner's Representative and Architect will review the Contractor's Schedule. If required, a meeting will be held between the Owner's Representative and Architect and the Contractor to resolve any conflicts between the Contractor's schedule and the overall Project Construction. The Contractor shall revise his

schedule as required by the Construction Manager and Architect to support the Project Construction and shall submit its revised schedule to the Owner's Representative within five (5) days for final review and acceptance.

6. Acceptance by the Architect and Owner's Representative of the Contractor's Progress Schedule is advisory only and shall not release the Contractor of the responsibility for accomplishing the Work within each and every Contract-required Completion Date. Omissions and errors in the Progress Schedule shall not excuse performance that is not in compliance with the Contract. Acceptance by the Owner, Construction Manager or Architect in no way makes the Owner, Owner's Representative or the Architect an insurer or guarantor of the Progress Schedule's success or liable for time or cost overruns flowing from its shortcomings. The Owner hereby disclaims any obligation or liability by reason of Owner's Representative or Architect acceptance of the Construction Schedule.

1.05 COORDINATION

- A. The Contractor shall coordinate the work with that of the other contractors and shall cooperate fully with the Owners Representative in maintaining orderly progress toward completion of the Work as scheduled.
- B. The Contractor shall inform the Subcontractors of progress while the Work is underway regarding delivery status of Owner-furnished equipment and material and of the progress of construction work being performed under separate contracts.
- C. The Contractor shall involve all applicable Subcontractors in the schedule development, updating and revisions.

1.06 UPDATES AND PROGRESS PAYMENTS

- A. Update Procedures
 1. The Contractor understands and agrees that its schedule is intended to accurately reflect at all times the status of the Project construction and projected activities. The Contractor also understands and agrees that updating the schedule is a key component of this requirement and will make every reasonable effort to provide current information.
 2. The bar chart schedule graphic format of the update shall include a dual line entry for each activity; the top bar graph shall indicate planned start/finish requirements with the bottom bar graph indicating actual start and finish of the activity. For activities in progress, the forecasted completion shall indicate the earliest the activity can be completed based upon current project status. Activity and project float time shall also be shown with dashed lines.
 3. The Contractor understands and agrees that updating the schedule is independent from updating the cost for progress payment purposes.
 4. The Contractor shall submit the proposed updated schedule information and a hand written copy of the previous pay application with the new payment percentages. The Contractor and Owner's Representative and Architect shall meet to go over the Update and approve the Pay Application percentages. Then Contractor shall submit a diskette with the approved updated schedule and the pay application along with a written narrative describing the overall progress of the Work and discussing possible problems, the status of major changes and any changes in sequence.

5. The Architect and the Owner's Representative will not be obligated to review or to process any Application for Progress Payment until the Contractor has submitted all update information.
6. Throughout the progress of the Work, the Contractor shall prepare and maintain a two week look ahead bar chart field schedule reflecting the schedule of work activities accomplished for the previous week and the work scheduled for the forthcoming two weeks.
7. The initial updating shall take place within fourteen (14) calendar days after the approval of the Contractor's schedule. Dates for subsequent updates shall be established by the Owner's Representative.
8. One initial Application for Payment for expenditures not directly related to Work accomplished at the project will be allowed before the acceptance of the Contractor's schedule. This payment will be limited to such items as Permits, Bonds, Mobilization, and Insurance. A second payment or requests for payment for work items not included above will not be allowed without an approved schedule.

1.07 FLOAT TIME

- A. Float time is the amount of time between the earliest start date and the latest start date, or between the earliest finish date and the latest finish date of a chain of activities on the Progress Schedule. Float time is not for the exclusive use or benefit of either the Contractor or the Owner.
- B. Extensions of time will be granted only to the extent that the activity or activities affected exceed the total float or slack along the path of activities affected at the time of Notice to Proceed of a Change Order or the commencement of any delay or condition for which an adjustment is warranted under the Contract Documents. The Contractor shall submit documentation supporting its request for a time extension in a form acceptable to the Owner's Representative and consistent with the requirements of the General Conditions.

1.08 RECOVERY SCHEDULE

- A. Should any conditions exist, for which the Contractor is responsible, such that certain activities shown on the Contractor's Progress Schedule fall behind schedule to the extent that any of the contracted Completion Dates are in jeopardy, the Contractor shall be required to, at no cost to the Owner, prepare and submit to the Owner's Representative a supplementary Recovery Schedule, in a form and detail appropriate to the need, to explain and display how it intends to reschedule those activities to regain compliance with the Baseline Progress Schedule during the immediate subsequent pay period.
- B. The Contractor and Construction Manager shall do the following after determination of the requirement for a Recovery Schedule:
 1. Within five (5) calendar days, the Contractor shall present to Owner's Representative the Recovery Schedule. The Recovery Schedule shall represent the Contractor's best judgment as to how he shall reorganize his work so that he may return to the approved Construction Schedule within the immediate subsequent pay period. The Recovery Schedule shall be prepared to a similar level of detail as the Progress Schedule.
- C. Five (5) calendar days prior to the expiration of the Recovery Schedule, Owner's Representative and the Contractor will meet at the job site to determine whether the

Contractor has regained compliance with the Construction Schedule. At the direction of the Owner's Representative, one of the following will happen:

1. If, in the opinion of the Owner's Representative, the Contractor is still behind schedule, the Contractor will prepare another Recovery Schedule, at the Contractor's expense, to take effect during the immediate subsequent pay period.
2. If, in the opinion of the Owner's Representative, the Contractor has sufficiently regained compliance with the Progress Schedule, the use of the Progress Schedule will be resumed.

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