
SECTION 01 32 00
CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements of each Prime Contractor for documenting the progress of construction during performance of the Work, including the following:
1. Startup construction schedule.
 2. Contractor's construction schedule.
 3. Daily construction reports.
 4. Construction schedule updating reports.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.
1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 2. Predecessor Activity: An activity that precedes another activity in the network.
 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.
1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

1.3 SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
1. Working electronic copy of schedule file, where indicated.
 2. PDF electronic file.
 3. Refer to Section 01 30 00, Administrative Requirements.
- B. Startup construction schedule. Approval of cost loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

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- D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 - E. CPM Reports: 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 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 each activity, sorted in ascending order by activity number and then by early start date, or actual start date if known.
 - 3. Total Float Report: List of activities sorted in ascending order of total float.
 - F. Construction Schedule Updating Reports: Submit with Applications for Payment.
 - G. Daily Construction Reports: Submit at monthly intervals.
 - H. Site Condition Reports: Submit at time of discovery of differing conditions.

1.4 COORDINATION

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

1.5 CPM SCHEDULE

- A. The Contractor shall submit a CPM Construction Schedule incorporating the work of all trades. An acceptable CPM Schedule is considered to be a schedule which incorporates the level of detailed information described herein, includes the activities scheduled in a logical sequence with reasonable and realistic completion dates, including numeric and graphic indication of the schedule's critical path, and whose overall completion date agrees with the specified Contract times including interim milestones. An acceptable CPM Schedule is a condition precedent to the approval of progress payments. Sequestering of float and/or multiple critical paths is not acceptable.
- B. The overall schedule shall indicate the sequence of work, and the time of starting and completion of each part. It shall include but not be limited to the following items:
 - 1. Shop drawing receipt from manufacturer, submittal to the Architect, review, and return to Contractor
 - 2. Material and equipment order, manufacture, delivery, installation, and check-out
 - 3. Performance tests and supervisory service activities
 - 4. Mobilization
 - 5. Temporary Construction
 - 6. Dewatering
 - 7. Interim Milestones or Phases
 - 8. Piping, ductwork, and wiring installation
 - 9. Demolition work
 - 10. Construction of various facilities

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11. Concrete placement sequence
 12. Backfilling, grading, seeding, paving, etc.
 13. Electrical activities
 14. Heating, Ventilating, and Air Conditioning activities
 15. Plumbing activities
 16. Subcontractors' items of work
 17. Equipment/Systems Start-up and Initial Operation
 18. Final cleaning and demobilization
 19. Allowance for inclement weather and holidays
- C. The CPM Schedule for the first 90 days shall be submitted within 10 days from Notice to Proceed, and the complete CPM Schedule shall be submitted within 30 days from Notice to Proceed. The Architect and Owner will review each of these CPM schedule submissions within 14 calendar days after receipt from the Contractor. The CPM Schedule shall be updated monthly thereafter.
- D. Submit CPM schedule updates with each Application for Payment, if requested by Owner or Architect.
- E. The initial 90 calendar day CPM submittal, the complete CPM Schedule, and each monthly update are conditions precedent to the monthly Application for Payment processing. Failure to submit an initial CPM Schedule, a complete CPM Schedule or an updated CPM Schedule, acceptable to the Owner and Architect, before or with each Application for Payment will result in the Architect not reviewing nor approving the monthly application for payment until an acceptable version of the CPM Schedule is submitted.
- F. Each CPM submittal (Initial and Updates) shall include the following:
1. Narrative Report
 2. Bar Chart (Color)
 3. Network Diagram (All activities)
 4. Disk
 5. Tabular Reports
- G. Submit, with initial 90 day schedule submittal, name of organization performing the analysis. Submit the organization's qualifications for performing the CPM analysis. Include listing of at least four projects, with a value at least equal to 50 percent of Contract Price for this Project, for which the proposed scheduling organization has performed CPM analysis. Contractor may perform the analysis if qualified. Proposed CPM scheduling organization will require approval by Architect as a prerequisite for approval of the initial 90 day CPM schedule. Representative from the CPM scheduling organization shall examine the site in person prior to completing the initial 90 day schedule and at least once every two (2) months thereafter to verify the progress of the work.
- H. Show the following items for each activity on each CPM submittal:
1. Activity number
 2. Activity description
 3. Responsible party
 4. Original duration
 5. Remaining duration
 6. Early and late start dates
 7. Early and late finish dates
 8. Total float
 9. Percent complete
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- I. Sufficient care shall be exercised to produce a legible and accurate graphics (Bar charts and Network Diagrams). Activities related to a specific physical area of the project shall be grouped on the diagram for ease of understanding and simplification.
 - J. Exclusive of those for submittal to the Architect for approval and material fabrication/delivery, activity durations of more than 20 working days shall be kept to a minimum. No activity duration shall be less than one working day. The "critical path" of activities shall be indicated on the Network Diagrams by a heavy or colored line and as a colored line on Bar Charts.
 - K. The Narrative Report shall include a description of the amount of progress during the last month in terms of completed activities in the plan currently in effect, a description of problem areas, current and anticipated delay factors and their estimated impact on performance of other activities and completion dates, and an explanation of corrective action taken or proposed.
 - L. The Tabular Reports should include the following sorts:
 1. Activity Number
 2. Early Start/Total Float by Area
 3. Predecessor and Successor by Activity Number
 4. Total Float
 5. Up to two (2) additional sorts as requested by the Architect.
 - M. Once each month, on a date scheduled by the Architect, a job site meeting will be held; at which time, the schedule will be reviewed. This activity may occur at a regularly scheduled Progress Meeting. The Contractor shall update the overall schedule to reflect progress to date. The updated schedule shall be available at the meeting for review.
 - N. All Change Orders will be incorporated into the CPM Schedule in a manner which is consistent with the original logic of the CPM Schedule. Requested time extensions indicated on the schedule by those individual changes shall be approvable only if they impact directly on the critical sequence of the schedule. All Contract Change Orders are subject to terms and conditions of the General Conditions. Float shall be deemed to belong to the Project, and not to either the Contractor or the Owner.
 - O. The substantial and final completion times for construction shall be as specified in the Contract Documents. The CPM Schedule may indicate a substantial completion time prior to that time specified in the Contract Documents. Any change in the Contract times which extends a Contractor's projected substantial completion time, but does not exceed beyond the Contract substantial completion time, shall not be considered justification for additional time or monetary compensation claims by the Contractor.
 - P. If, in the opinion of the Architect, Contractor that is not prosecuting the work with such diligence as will ensure completion within the time specified, the Architect will require the Contractor to submit a supplemental CPM Schedule. The cost associated with the submission of supplemental schedules will be paid by the Contractor. The supplemental schedule shall detail the specific operational changes to be instituted to ensure the project will be completed within the time specified. If an acceptable supplemental schedule is not received within 15 days of the date of the request, the Architect will not review and approve the monthly application for payment.
 - Q. When the Project is determined to be Substantially Complete, the Contractor shall submit a final record CPM Schedule incorporating the actual dates for all activities. This submittal shall be a condition precedent to requesting and receiving Final Payment.
 - R. The Contractor shall provide four (4) copies to the Architect of all CPM Schedule submissions described previously.
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1.6 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 7. Testing and inspection.
 8. Accidents.
 9. Meetings and significant decisions.
 10. Stoppages, delays, shortages, and losses.
 11. Meter readings and similar recordings.
 12. Emergency procedures.
 13. Orders and requests of authorities having jurisdiction.
 14. Change Orders received and implemented.
 15. Construction Change Directives received and implemented.
 16. Services connected and disconnected.
 17. Equipment or system tests and startups.
 18. Partial completions and occupancies.
 19. Substantial Completions authorized.
- B. Site Condition Reports: Immediately on discovery of a difference between site 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 (NOT USED)**PART 3 EXECUTION (NOT USED)**

END OF SECTION 01 32 00