

**SECTION 01 32 17**  
**NETWORK ANALYSIS SCHEDULES**

**PART 1 GENERAL**

1.1 SECTION INCLUDES:

- A. References
- B. Quality Assurance
- C. Format
- D. Schedules
- E. Submittals
- F. Review and evaluation
- G. Updating schedules
- H. Distribution

1.2 REFERENCES

- A. The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry, Washington, D.C., The Associated General Contractors of America (AGC), Latest edition.

1.3 QUALITY ASSURANCE

- A. Scheduler:
  - 1. Contractor's personnel specializing in CPM scheduling with minimum of 5-years of experience in scheduling construction work of a complexity comparable to this Project.
  - 2. Having use of computer facilities the capability of delivering a detailed graphic printout within 48-hours of request.
- B. Contractor Administrative Personnel: 5-years minimum experience in using and monitoring CPM schedules on comparable projects.

1.4 FORMAT

- A. Listings, reading from left to right, in ascending order for each activity.
  - 1. Identify each activity with the applicable specification section number.
- B. Diagram Sheet Size: 24" high x width required.
- C. Scale and Spacing, allowing for notations and revisions

1.5 SCHEDULES

- A. Prepare network analysis diagrams and supporting mathematical analyses using the Critical Path Method, under concepts and methods outlined in AGC's "The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry".
- B. Illustrate order and interdependence of activities and sequence of work.
  - 1. How the start of a given activity depends upon completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.
- C. Illustrate complete sequence of construction by activity, identifying work of separate stages.
  - 1. Provide dates for delivery and return of submittals including those for Owner furnished items.
  - 2. Provide dates for procurement and delivery of critical products; and dates for installation and provision for testing.
  - 3. Provide allowances for review, correction and re-review by architect, engineer, Commissioning Authority and Building Department as applicable.
  - 4. Provide legend for symbols and abbreviations used.
  - 5. Provide for delivery of a separate report reflecting only shop drawing/product submittals. Include with each analysis submittal.
- D. Mathematical Analysis: Tabulate each activity of detailed network diagrams, using calendar dates, and identifying for each activity:

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Project Name:

SDPBC Project No.:

1. Preceding and following event numbers
  2. Activity description
  3. Estimated duration of activity, in maximum 15-day intervals
  4. Earliest start date
  5. Earliest finish date
  6. Actual start date
  7. Actual finish date
  8. Latest start date
  9. Latest finish date
  10. Total and free float; float time shall accrue to the contractor and to the contractor's benefit.
  11. Monetary value of activity, keyed to Schedule of Values.
  12. Percentage of activity completed.
  13. Responsibility
- E. Analysis Program: Capable of compiling monetary value of completed and partially completed activities, of accepting revised completion dates, and recompilation of all dates and floats.
- F. Required Sorts: List activities in sorts or groups:
1. By preceding work item or event number from lowest to highest
  2. By amount of float, then in order of early start
  3. By responsibility in order of earliest possible start date
  4. In order of latest allowable start dates
  5. In order of latest allowable finish dates
  6. Contractor's periodic payment request sorted by Schedule of Values listings.
  7. Listing of basic input data that generates the report
  8. Listing of activities on the critical path
  9. Provide sub schedules for each state of Work identified in Section 01 11 00.
  10. Coordinate contents with Schedule of Values in Section 01 33 00.
- G. Commissioning activities: The schedule shall include required Commissioning activities and shall include the following specific issues.
1. Submission of Training Plans
  2. Schedule Equipment and System Training and Demonstration scheduled prior to Functional Performance Testing.
  3. Submission of Equipment and System Operations and Maintenance documents
  4. Required Equipment and System Contractor Startup shall be complete prior to submission of Commissioning System Readiness Checklists.
  5. Submission of Commissioning System Readiness Checklists
  6. Energy Management and Control System shall be complete prior to Functional Performance Testing.
  7. Testing, Adjusting and Balancing shall be complete prior to Functional Performance Testing.
- 1.6 SUBMITTALS FOR REVIEW
- A. Within 10 days after date in Notice to Proceed, submit proposed preliminary network diagram defining planned operations for the first 60 days of work, with a general outline for remainder of work.
- B. Participate in review of preliminary and complete network diagrams jointly with Architect.
- C. Within 20 days after joint review of proposed preliminary network diagram, submit draft of proposed complete network diagram for review.
1. Include written certification that major Subcontractors have reviewed and accepted proposed schedule.

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Project Name:

SDPBC Project No.:

- D. Within 10 days after joint review, submit complete network analysis consisting of network diagrams and mathematical analysis.
- E. Submit updated network schedules with each Application for Payment.
- F. Submit under transmittal in form of a letter as specified in Section 01 33 00.

**1.7 REVIEW AND EVALUATION**

- A. Participate in joint review and evaluation of network diagrams and analysis with Architect at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

**1.8 UPDATING SCHEDULES**

- 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.
  - 1. Update diagrams graphically depicting the status of work.
- C. Identify activities modified since previous submittal, major changes in work, and other identifiable changes.
- D. Indicate changes required to maintain Date of Substantial Completion.
- E. Submit sorts required to support recommended changes.
- F. Provide narrative report to define problem areas, anticipated delays, and affect the schedule. Report corrective action taken or proposed and its effect

**1.9 DISTRIBUTION**

- A. Following joint review, distribute copies of updated schedules to Contractor's project site file, to Subcontractors, Suppliers, Architect, Owner, Commissioning Authority, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

**PART 2 PRODUCTS**

2.1 Not used.

**PART 3 EXECUTION**

3.1 Not used.

END OF SECTION