

SECTION 01320  
CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Contractor's Construction Schedule.
  - 2. Submittals Schedule.
  - 3. Construction photographs.
- B. Related Sections include the following:
  - 1. Section 01290 - "Payment Procedures," for submitting the Schedule of Values.
  - 2. Section 01310 - "Project Management and Coordination," for submitting and distributing meeting and conference minutes.

1.02 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 activities are activities on the critical path. They must start and finish on the planned early start and finish times.
  - 2. Predecessor activity is an activity that must be completed before a given activity can be started.
- B. Event: The starting or ending point of an activity.
- C. 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 following activity.
  - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- D. Major Area: A story of construction, a separate building, or a similar significant construction element.

- E. Milestone: A key or critical point in time for reference or measurement.

### 1.03 SUBMITTALS

- A. Submittals Schedule: Submit three copies of schedule.
- B. Contractor's Construction Schedule: Submit two printed copies of initial schedule, one a reproducible print and one a blue- or black-line print, large enough to show entire schedule for entire construction period.
- C. Monthly Reports: Submit a written narrative reporting on the progress of the Work, a Look-Ahead Gantt Chart and a Look-Back Gantt Chart. Submit 3 copies of current monthly report with each monthly Application for Payment.
- D. Construction Photographs: Submit two prints of each photographic view within seven days of taking photographs. At the time of Substantial Completion, submit the negatives.

### 1.04 QUALITY ASSURANCE

- A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 01310, "Project Management and Coordination." Review methods and procedures related to the Preliminary Construction Schedule and Contractor's Construction Schedule, including, but not limited to, the following:
  1. Review software limitations and content and format for reports.
  2. Verify availability of qualified personnel needed to develop and update schedule.
  3. Discuss constraints, including and area separations.
  4. Review delivery dates for Owner-furnished products.
  5. Review time required for review of submittals and resubmittals.
  6. Review requirements for tests and inspections by independent testing and inspecting agencies.
  7. Review time required for completion and startup procedures.
  8. Review and finalize list of construction activities to be included in schedule.
  9. Review submittal requirements and procedures.
  10. Review procedures for updating schedule.

### 1.05 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities.

- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
  - 1. Secure time commitments for performing critical elements of the Work from parties involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.
- C. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities including temporary lighting.

#### 1.06 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
  - 1. Format: Arrange the following information in a tabular format:
    - a. Scheduled date for first submittal.
    - b. Specification Section number and title.
    - c. Submittal category (action or informational).
    - d. Name of subcontractor.
    - e. Description of the Work covered.
    - f. Scheduled date for Architect's final release or approval.
  - 2. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
  - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

#### 1.07 CONTRACTOR'S CONSTRUCTION SCHEDULE, CPM

- A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling." Schedule shall be in the Critical Path Method (CPM) format.
- B. Time Frame: Extend schedule from date established for commencement of the Work to date of Final Completion.
  - 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. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.

2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
  4. Startup and Testing Time: Include not less than 3 days for startup and testing.
  5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of 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. 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.
    - f. Provisions for future construction.
    - g. Seasonal variations.
    - h. Environmental control.
  2. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
    - a. Subcontract awards.
    - b. Submittals.
    - c. Purchases.
    - d. Fabrication.
    - e. Sample testing.
    - f. Deliveries.
    - g. Installation.
    - h. Tests and inspections.
    - i. Adjusting.
    - j. Startup and placement into final use and operation.
  3. Area Separations: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
    - a. Structural completion.
    - b. Permanent space enclosure.
    - c. Completion of mechanical installation.
    - d. Completion of electrical installation.
    - e. Substantial Completion.

- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
- F. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.
  - 1. Refer to Section 01290, "Payment Procedures," for cost reporting and payment procedures.
- G. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis to demonstrate the effect of the proposed change on the overall project schedule.
- H. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
  - 1. Revise schedule immediately before each monthly Progress Meeting. After the meeting, make changes agreed to at the meeting, and issue updated schedule concurrently with the report of each such meeting.
  - 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  - 3. As the Work progresses, indicate Actual Completion percentage for each activity.
- I. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
  - 1. Post copies in Project meeting rooms and temporary field offices.
  - 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

#### 1.08 MONTHLY REPORTS; LOOK AHEAD AND LOOK BACK SCHEDULES

- A. Monthly Report: Evaluate the status of the work as of the 25th of each month to show actual progress and to identify problem areas. Update the construction schedule if required, and print a schedule summary in Gantt Chart format. Include Change Orders and Construction Change Directives within the updated schedule.
  - 1. Prepare and submit a written narrative reporting on the progress of the Work.
  - 2. Gantt Charts: Attach Look-Back and Look-Ahead schedules for the previous and the coming months in the form of Gantt Charts.
    - a. Prepare Gantt Charts on paper no larger than 11" x 17" so they can be copied in a conventional copier.
    - b. Print in red activities which are on the critical path.

3. Attach a written statement of the actual quantity of resources and number of personnel that were employed per day for the period covered by the Look-Back chart.
  4. Attach a description of the resources/personnel intended to be utilized during the period covered by the Look-Ahead chart, and the percentage completion and total dollar value of each activity to be completed within the time period displayed on the Look-Ahead Chart.
- B. Look-Ahead Gantt Chart: Show activities extracted from the current CPM Construction Schedule. Display all of the activities to be performed during the coming month, with one line for each activity and one column for each calendar day.
1. Provide two bars for each activity. Use the top bar to show the duration and Early Start/Late Start dates as shown in the current CPM schedule. Leave the bottom bar blank, to be marked up during the course of the month to show actual work completed.
- C. Look Back Gantt Chart: Show activities extracted from the current approved CPM construction schedule. Display only the activities performed during the previous month with one line for each activity and one column for each calendar day.
1. Provide 2 bars for each activity. Use the top bar to show the duration and Early Start/Late Start dates as shown in the current approved CPM schedule. Mark up the bottom bar to show actual achievement for each activity; indicate the percentage completed at the end of the period covered by the chart.

PART 2 - PRODUCTS                      – Not Used.

### PART 3 - EXECUTION

#### 3.01 CONSTRUCTION PHOTOGRAPHS

- A. Record progress of the work in conventional archival-quality photographs as specified in this Article. Take photographs before construction begins, and thereafter at monthly intervals until the Work is complete.
1. Photographic Film: 35 mm or medium-format, 2-1/4 by 2-3/4 inches (60 by 70 mm), as indicated.
  2. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.
  3. Preconstruction Photographs:
    - a. To establish base-line overview of existing conditions, take six medium-format, color photographs of Project area from different vantage points outside the building, as directed by Architect.
    - b. In addition, take 35 mm photographs, four rolls of 24 exposures each, to fully document existing conditions inside the building existing exterior details in close-up, as directed by the Architect.

4. Periodic Construction Photographs: Take six color photographs each month. Select vantage points to best show status of construction and progress since last photographs were taken.
    - a. Submit prints of these monthly photographs with each Application for Payment
    - b. Field Office Prints: Retain one set of prints of periodic photographs in field office at Project site, available at all times for reference. Identify photographs the same as for those submitted to Architect.
  5. Final Completion Construction Photographs: Take six color photographs after date of Substantial Completion for submission as Project Record Documents. Architect will direct photographer for desired vantage points.
- B. Print Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight commercial-grade stock, enclosed back to back in clear plastic sleeves that are punched for standard 3-ring binder.
1. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
    - a. Name of Project.
    - b. Name and address of photographer.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Date photograph was taken.
    - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
- C. Negatives: Require photographer to keep the photographic negatives for at least two years from Substantial Completion, to protect them from damage, and to furnish prints to Architect and Owner at normal commercial rates upon request during that period.
- D. Digital Photographs: In addition to the archival photographs, take photographs in digital format on an informal basis at times appropriate to the progress of the work and submit them in electronic format to the Architect and Owner as requested. Maintain an electronic log of the digital photographs, recording file name, date photograph was taken, with brief description of subject or vantage point. These photographs will be posted on the Owner's and Architect's intranet, for viewing by home office staff.

END OF SECTION 01320