

SECTION 01 32 00.1

CONSTRUCTION SCHEDULES (COMPUTERIZED CPM FORMAT)
[LUMP SUM CONTRACTS]

Note: This section is intended to include general procedural requirements for the preparation, submittal and updating of Construction Progress Schedules for Lump Sum Contracts.

Text relies on the General Conditions and Sections 01 33 00 and 01 32 00. Use text of this Section 01 32 00.1 unless the use of Section 01 32 00.2 is approved by the Owner. DO NOT USE BOTH.

PART 1 GENERAL

1.01 REQUIREMENT INCLUDED

- A. Procedures for preparation and submittal of construction progress schedules and periodic updating.

1.02 RELATED REQUIREMENT

- A. Section 01 11 00 Summary of Work.
- B. Section 01 29 76 Applications for Payment
- C. Section 01 33 00 Submittals.
- D. Section 01 32 00 Construction Schedules.
- E. Section 01 32 00.4 Construction Scheduling Management System
- F. Section 01 33 23 Shop Drawings
- G. Section 01 29 73 Schedule of Values
- H. Section 23 05 93 Testing, Adjusting, and Balancing

1.03 GENERAL

- A. The Builder's and/or Subcontractor's timely execution or performance of all construction related activities shall be in strict compliance with the approved Overall Project Schedule. Means and methods of construction in accordance with the Contract Documents shall remain the sole responsibility of the Builder.
- B. The construction of the project will be planned and recorded utilizing Primavera Project Planner computer software (Version 5.0 or greater). It shall be used for coordination, monitoring, and payment of all work under the Contract including all activities of the Builder, subcontractors, vendors, and suppliers.

1.04 OVERALL PROJECT SCHEDULE

The overall project schedule shall be in the form of a time scaled precedence diagram and associated computer analysis and shall consist of detailed activities and their restraining relationships as required to complete the project from Notice To Proceed through completion of the Work and shall indicate the following:

- A. Beginning and end date duration in work days for each activity. (Activities in occupied areas and activities requiring premium time labor rates shall be differentiated from each other and from the balance of project activities).
- B. Beginning and end date and total duration in work days for each Area or portion thereof.
- C. Significant milestones, including, but not limited to those indicated in Section 01 11 00 "Summary of Work".
- D. Identity of each trade, contractor, and subcontractor for each work activity.
- E. Specific location of each work activity per the Professional's phasing drawings or alternative location drawings approved by the Owner.
- F. Total monetary value, including overhead and profit for each activity.
- G. Monetary value for permanent materials for each activity.
- H. Site Labor man-hours by trade for each Subcontractor and the Builder for each activity.
- I. Total Site Labor dollars and all Site Labor rates for each trade used in each activity.
- J. Equipment or Machinery to be used to perform the activity. Data required includes type of equipment, hours required and hourly rate for each piece of equipment and dollar value per piece of equipment for each activity.
- K. Specific phase of the work (as defined by the Professional)(if applicable) using activity codes approved by the Owner.
- L. Detailed schedule of all "utility shut-downs" which would impact on the University, and other building operations or functions including, but not limited to: power, telephone communication systems, air conditioning systems, fire sprinklers, alarm systems, domestic water systems, and sanitary sewer systems.
- M. Sequence and interdependence of all activities required for complete performance of all items of work under this contract.
- N. All network restraints (restraining ties between activities which restrict the start or finish of another activity). The use of negative lags in the restrictions between activities of the Overall Project Schedule is expressly forbidden
- O. Shop drawing submittals by the Builder, reviews by the Professional.
- P. Fabrication and delivery activities for all equipment, including that furnished by the Owner, and materials to be installed during the project.
- Q. Dates for ordering long lead items (materials, equipment, or specialty shop fabricated work).
- R. Detailed schedule for all Commissioning activities as specified in Contract Specifications
- S. Detailed schedule for all Testing Adjusting and Balancing activities as specified in Contract Specifications

The Builder shall also provide the following information: work days per week, holidays, number of shifts per day, number of hours per shift, number of prime time work hours, proposed schedule of "utility shut-downs", Special Equipment or Machinery to be used, and list of work activities which must be performed during restricted or special working hours.

The precedence diagram shall show the sequence and interdependence of all activities required for complete performance of all items of work under this contract, including shop drawing submittals and approvals and fabrication and delivery activities.

Long-term construction activities shall be broken down into recognizable smaller activities so that no activity will be longer than 15 workdays.

The Owner reserves the right to selectively limit the number of activities in the schedule.

The schedule shall be sufficiently detailed to track the progress of each activity and the project, as a whole, on a daily basis. The activities shall be clearly described so that the work is readily identifiable. The progress of each activity is to be reasonable and based on the amount of labor, materials, and equipment involved. When added together, the dollar value of all activities shall equal the Contract amount less the Allowance Account(s).

The overall project schedule shall be prepared and submitted to the Field Representative within forty-five (45) calendar days from the effective date of the Notice to Proceed.

The precedence diagram submitted by the Builder shall be drawn in the format approved by the Owner and shall be accompanied by a computer generated and plotted schedule utilizing Primavera Project Planner scheduling software. The Builder shall exercise sufficient care to produce clear, legible, and accurate diagrams. The Builder shall group activities related to specific physical areas on the diagram for ease of understanding and simplification.

The Owner will review the overall project schedule for compliance with the Contract requirements as to staging, phasing, and the time of completion. Such review and acceptance of these schedules does not imply either the Professional, the Field Representative's or the Owner's endorsement and/or responsibility of each and every activity duration or sequence of activities.

The overall project schedule shall be updated monthly. This monthly update shall generate a report that will indicate the remaining duration along with schedule and resources percent complete for each activity. This report together with the monthly sorts will act as the basis for the Builder's requests for partial payment and shall be submitted with it.

The duration of the overall project schedule shall be in agreement with the duration of the Contract as stipulated in the Bid Form, or as modified by the Contract provisions described in these Contract Documents.

1.05 NEAR TERM SCHEDULE

The near term project schedule shall delineate, in the same detail as required for the overall project schedule, the work anticipated for the first ninety (90) calendar days after Notice to Proceed (NTP), with the balance of project duration, including all milestones, shown in summary form. The near term project schedule shall be prepared and submitted to the Field Representative prior to the Notice to Proceed.

1.06 CONSTRUCTION PROGRESS REPORT

As part of the monthly updating process, the Builder shall prepare a construction progress report describing the physical progress during the report period, plans for the forthcoming report period, actions to correct any negative float predictions, and potential delays and problems and their estimated impact on performance and the overall project completion date.

- A. Clearly describe all approved revisions to the accepted overall project schedule for that period.
- B. Report actual progress by updating the mathematical analysis for the accepted overall project schedule.
- C. Show tasks/activities, or portions of activities completed during the reporting period, and their actual value.
- D. State the percentage of work actually completed as of the report date, and the progress along the critical path in terms of days ahead of or days behind the allowable dates.
- E. Report progress along other paths with negative float, if the work is behind schedule.
- F. Include a narrative report that shows, but is not necessarily limited to:
 - a. Description of the problem areas, current and anticipated;
 - b. List of delaying factors and their impact;
 - c. Explanation of corrective actions taken or proposed.
- G. Describe plans/actions for the next report period.

1.07 SCHEDULE REVISIONS

The overall project schedule may be revised from time to time as conditions may require, and as approved by the Owner provided, however, that nothing in this Article shall be construed to authorize or approve any extension of time or increase in Contract price, it being expressly understood and agreed that time extensions or increase in contract price, if any, may only be granted in accordance with the applicable requirements of the Contract Documents. Any further revisions to the overall project schedule durations, restrictions, lags or any other logic or cost related components of the schedule must be accepted, in writing, by the Owner.

The Builder may make only those revisions to the construction schedule as are accepted in advance by the Owner. In the event of a revision, the Builder shall make certain that not more than one activity shall have the same activity identification number. The activity numbers of deleted activities shall not be used again.

Changes to the Contract by Work Order or Change Order are to be included in the overall project schedule. The new activities and logic are to be reviewed and accepted by the Owner prior to being incorporated into the accepted overall project schedule.

Once the changes are accepted, the Builder's schedule revisions shall be incorporated into the previously accepted overall project schedule with the same force as the original schedule. It is understood that should the Builder fall behind in the schedule and not be entitled to any time extension other than the extension already reflected, the Builder shall submit his plan for bringing his work back up to schedule and shall implement the plan. If other measures are not sufficient to make up the lag, the Builder's plan and implementation thereof shall include increasing the number of workers, shifts, days of work, and/or instituting or increasing overtime, all at no additional cost to the Owner.

Failure or refusal by the Builder to submit a plan or implement the approved plan for bringing the work back into conformity with the accepted schedule may result in withholding payment to the Builder or termination of this Contract by the Owner.

1.08 DUTIES

The Field Representative or the Owner's scheduling representative will perform those duties assigned by the Owner. They will be available to offer suggestions in regard to the interrelation of project activities, and schedule content and format, help identify predecessor activities which relate to other construction projects and other FIU, building, and inter-project activities.

The Builder shall perform those respective duties set forth in this Provision and Section 01 32 00.3 "Construction Scheduling Management System". The Builder shall make decisions with regard to the interrelation of project activities, and schedule content and format, and shall identify predecessor activities that relate to each activity.

1.09 SCHEDULE SUBMITTALS

To facilitate and enhance the use of Builder provided scheduling and cost related information required by the Contract Documents, the Builder shall utilize Primavera Project Planner Software and provide the following:

- A. Initial Baseline Schedule Submittals. The near term schedule submittal (activities for first 90 days) shall be submitted prior to the NTP. The overall project schedule submittal (all activities required for the entire contract) shall be submitted within 45 calendar days after NTP. Submit a hard copy of the near term and overall project schedules with detailed predecessor and successor analysis, and cost and resource tabular reports.
- B. Monthly Update Submittals. Builder may use the near term schedule to fulfill the scheduling requirements of the Contract for the initial monthly update. Starting at the second monthly update and continuing for the remainder of the Project, the Builder shall use the overall project schedule to fulfill the scheduling requirements of the Contract.
- C. Submit digital media files with each of the above submittals, containing the files used to generate the above reports, the near term schedule and the current overall project schedule. Builder shall conform to the standard schedule, cost and resource report formats supplied by the Owner.

1.10 REPORTS, SORTS AND COMPUTER DISKETTES

Unless indicated otherwise, all reports and computer sorts shall depict all activities and their durations required to complete the entire project.

Each budget report shall be accompanied by a separate detailed cost report, which shall break down each activity into total material and labor costs. Labor costs for each activity shall be further broken down into total regular time and total premium time amounts.

The initial, and monthly schedules, reports, and sorts shall be consistent with the accepted overall project schedule.

Each request for payment must be accompanied by the updated report of both time and costs, together with all required sorts and computer diskette copies, based on the monthly update of the approved Overall Project Schedule. Requests for payment will not be processed unless properly submitted as specified.

All costs and time associated with the preparation and distribution of schedules, reports, sorts, and other supportive information required by this Article for the entire Project shall be deemed incidental to and included in the Contract Bid Price Item(s).

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

PART 4 FORMS

Copies of the time impact analysis form to be filed by the Builder in submitting a claim involving a request for time extension follow in Section 01 32 00.1-01 as:

APPENDICES

Section 01 32 00.1-01-1, Time Impact Analysis Summary Sheet

Section 01 32 00.1-01-2, Time Impact Detail Sheet

END OF SECTION