

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

SPECIAL PROVISION

Section 108.03—Prosecution and Progress

Delete Subsection 108.03 and substitute the following:

A. General Requirements

The Contractor shall provide a project schedule using the critical path method (CPM). This project schedule, including baseline, revision and all updates, shall be referred to as the Schedule of Record.

The schedule shall show the various activities of work in sufficient detail to demonstrate a reasonable and workable plan to complete the work in the specified contract time.

The Contractor shall be responsible for ensuring that all work sequences are logical and that the schedule indicates a coordinated plan. The schedule shall indicate the order and interdependence of activities and the sequence for accomplishing the work.

The schedule shall include sufficient detail to allow the Engineer to readily identify the work and evaluate the progress of each activity. The schedule shall include activities for all work to be performed by the Contractor, subcontractors and suppliers. The schedule shall also include activities specific to the project to be performed by the Department, other governmental bodies, regulatory agencies, utilities and any others necessary to complete the work. The schedule shall reflect the scope of work, design, construction phasing, maintenance of traffic requirements, environmental requirements, utility and railroad coordination, coordination with other contractors, intermediate completion dates, the contract completion date, and any other work or milestones established in the contract. The schedule shall include activities for working and shop drawing preparation, Contractor submittals, submittal review time by the Department, material procurement and fabrication, and the delivery of materials, plant, and equipment and other similar activities. All field work activities (besides any activities representing general conditions) should be deliverable-based and defined in a manner such that start and end dates can be determined through field observation/ inspection.

Failure by the Contractor to include any element of work or to accurately reflect the relationships among the work activities required for performance of the Contract does not excuse the Contractor from completing all work within the specified time at no additional time or cost to the Department, notwithstanding the acceptance of the schedule by the Department.

The Contractor shall be responsible for implementing and executing the work specified in the contract in conformance with the Schedule of Record. The Schedule of Record shall be the Contractor's work plan for completing the entire Contract as specified in the Contract Documents. Failure of the Contractor to adhere to the Schedule of Record will be cause for the Engineer to deny all requests for additional compensation or extensions in the Contract duration and may result in the Engineer withholding pay estimates.

The existence of a Schedule of Record including any required update(s), as stated in 108.03.D is a condition precedent to the Contractor having any right to the granting of an extension of contract time or any monetary compensation arising out of any delay. Contractor's failure to have a Schedule of Record, including any required update(s) , for the period of potential impact, or in the event the Schedule of Record and applicable updates do not reflect the actual status of the project or fail to accurately show the true critical or non-critical activities for the period of potential impact, will result in any entitlement determination as to time and/or money for such period of potential impact being limited solely to the Department's analysis and identification of the actual critical and non-critical activities.

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Float and Scheduled Completion

Total float belongs to the project and shall be a shared commodity between the Contractor and the Department. Float is not for the exclusive use or benefit of either party. Either party has full use of float until it is depleted.

Float generated during the course of the project due to the efficiencies of either party shall be considered to be part of total float.

Negative float generated during the course of the project will not be a basis for requesting time extensions. A schedule may indicate a scheduled completion date in advance of the contract completion date. However, the Department shall not be liable in any way for the Contractor's failure to complete the project prior to the contract completion date. Any costs incurred by the Contractor as a result of such a failure shall be the responsibility of the Contractor. The Contractor will not be entitled to claim or recover any such cost from the Department.

An accepted schedule that indicates a scheduled completion date in advance of the contract completion date will be considered to have total float equal to the time between the scheduled completion date and the contract completion date.

B. Definitions

The following definitions shall be applied to the terms used in this specification and shall not be taken to modify in any way the definitions in 101.01 through 101.82.

Activity – A discrete, identifiable task or operation that takes time, has a definable start and stop date, furthers the work's progress, and can be used to plan, schedule, and monitor a project.

Activity Calendar – A set of days assigned to a specific activity on which work for the activity may be scheduled.

Activity Calendar Day – A day on which work is scheduled to be performed on a specific activity.

Activity Identification (ID) Number – A unique, alphanumeric, identification code assigned to a specific activity.

Activity Network Diagram – A graphic representation of a CPM schedule, including a timescale, which shows the relationships among activities.

As-built Schedule - The last monthly update schedule depicting the actual start and finish dates for all activities.

Bar Chart – A graphic representation of a schedule without relationship lines displayed. A timescale appears along the horizontal axis.

Baseline Schedule – The baseline schedule is the accepted (by owner & contractor) schedule showing the original plan to complete the entire project.

Calendar Day – As defined in 101.

Calendar ID – An alphanumeric identification code assigned to an activity calendar.

Constraint – A restriction imposed on the start or finish dates of an activity that modifies or overrides the activity's logic relationships.

Contract Completion Date – The original date or revised date specified in the contract for completion of the project.

Schedule of Record – A baseline, monthly update, or a revised CPM schedule accepted by the Department

Critical Activity – Any activity on the critical path.

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Critical Path – The longest path of activities which determines the scheduled completion date of the project.

Critical Path Method (CPM) – A mathematical calculation that determines the earliest completion of the project in accordance with the terms and conditions of the Contract and that includes a graphic representation of the sequence of activities showing the interrelationships and interdependencies of the elements composing a project.

Data Date – The data date is the date through which the project status is updated. Dates prior to the data date are actual and have already occurred and dates after the data date are projected and planned to occur.

Free Float – The amount of time (in work days) an activity can be delayed and not delay a successor.

Initial Schedule – A schedule showing the original plan for the first 60 calendar days of work.

Intermediate Completion Date – A date specified in the contract for completion of an interim milestone, phase or other portion of the project.

Milestone – An activity with no duration that is typically used to represent a single event. Includes, but is not limited to, intermediate completion dates and the contract completion date.

Monthly Update Schedule – A schedule produced by incorporating the project's actual progress into the baseline schedule or a revised schedule.

Open End – The condition that exists when an activity has either no predecessor or no successor, or when an activity's only predecessor relationship is a finish-to-finish or only successor relationship is a start-to start.

Original Duration – The estimated time, expressed in activity work days, required to perform an activity.

Predecessor – An activity that is defined by schedule logic to precede another activity. A predecessor may control the start or finish date of its successor.

Relationship – The interdependence among activities. Relationships link an activity to predecessors and successors.

Remaining Duration – The estimated time, expressed in activity work days, required to complete an activity.

Revised Schedule – A revised schedule that includes a significant modification to the schedule's logic or activity durations.

Schedule – A Critical Path Method (CPM) schedule showing activities organized by relationships to depict the plan for execution of a project.

Scheduled Completion Date – The completion date forecast by the CPM schedule. The schedule may also forecast intermediate completion dates for milestones, phases, or other portions of the project.

Successor – An activity that is defined by schedule logic to succeed another activity. The start or finish date of a successor may be controlled by its predecessor.

Total Float – The amount of time an activity can be delayed and not delay the contract completion date.

Work Breakdown Structure (WBS) – A hierarchical, deliverable-based breakdown of the total scope of work to be carried out for the project.

C. Submissions

The Engineer will provide written notice within 14 calendar days of receipt of a baseline, monthly update, revised or as-built schedule that the schedule is either accepted or rejected or that additional information is requested. The Engineer's written notice will identify the reasons for rejection or what additional information is requested.

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Within 14 calendar days of the Engineer's written notice, the Contractor shall submit a corrected baseline, monthly update, revised or as-built schedule that addresses the reasons for rejection and provides any additional information requested. If the Engineer does not respond in writing to the submittal of a schedule within the allotted time, the schedule shall be considered to be accepted.

The Engineer's review of a submitted schedule will be for compliance with the specifications. Acceptance by the Engineer does not relieve the Contractor of responsibility for the accuracy or feasibility of the schedule. Acceptance of a schedule does not constitute a modification of the contract or endorsement or validation of the Contractor's logic, activity durations, or assumptions in creating the schedule. Acceptance of a schedule does not guarantee that the project can be performed or completed as scheduled. Omissions and errors in a schedule shall be corrected by submittal of a revised schedule and will not entitle the Contractor to additional compensation or contract time.

1. Baseline Schedules

The Contractor shall submit a baseline schedule in accordance with 108.03.D no later than 45 calendar days after Notice to Proceed.

If a baseline schedule is not submitted within the allotted time, the Engineer may withhold all Contract payments until a baseline schedule is submitted. When the Engineer notifies the Contractor that the baseline schedule has been accepted, it will become the baseline Schedule of Record.

2. Monthly Update Schedules

The Contractor shall submit a monthly update to the baseline schedule in accordance with 108.03.D no later than 7 calendar days after the end of each month during the contract beginning with the month after approval of the baseline schedule. The monthly update shall be submitted with the Contractor's monthly pay application, and the schedule shall reflect the status through the final day of the submitted invoice period. The update schedule shall reflect a new data date, work performed up to, but not including the new data date, and the plan for completing the remaining work. If a monthly update schedule submittal is more than 30 days past due, the Engineer may withhold payment until monthly update schedule submittals are current. When the Engineer notifies the Contractor that the update to the baseline schedule has been accepted, it will become the Schedule of Record for the period between its data date and the data date of the next accepted update or revision.

3. Revised Schedules

The Contractor shall submit a revised schedule when any of the following occur:

- a) There is an actual delay in any critical activity of 7 calendar days or more in the Schedule of Record.
- b) There is a significant difference in the Schedule of Record, as determined by the Engineer, between the scheduled and actual work sequence.

The Engineer will notify the Contractor in writing when a revised schedule is required due to any of the reasons listed above.

The Engineer may request a revised schedule due to changes in the work. The Engineer will notify the Contractor in writing when a revised schedule is requested. Changes that may initiate a request for a revised schedule include, but are not limited to:

- a) An increase or decrease in the amount of work due to extra work or force account work.
- b) An approved increase or decrease in contract time.
- c) A Department requested change in the phasing or contract time of the project.

When a revised schedule is requested by the Engineer, the Contractor shall submit a revised schedule in accordance with 108.03.D no later than 14 calendar days after notification by the Engineer. The revised schedule shall depict the status of the project on the date of the Engineer's request for a revised schedule. The schedule shall reflect a new data date, work performed up to, but not including the new data date, and the plan for completing the remaining work.

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If a revised schedule is not submitted within 30 days of written notification, the Engineer may withhold all Contract payments until the revised schedule is submitted.

The Contractor may request to submit a revised schedule to reflect changes in the plan to perform the work. When a revised schedule is proposed by the Contractor, the Contractor shall provide the Engineer with a written notice 7 calendar days prior to submitting the revised schedule. The notice shall include a description of the changes to be made and the reason for the changes. The revised schedule shall be submitted in accordance with 108.03.D and shall depict the status of the project on the date of the Contractor's written notice to the Engineer. The schedule shall reflect a new data date, work performed up to, but not including the new data date, and the plan for completing the remaining work.

A revised schedule submitted at the request of the Contractor will not be considered to be the Schedule of Record until accepted by the Engineer.

4. As-Built Schedule

The Contractor shall submit an as-built schedule in accordance with 108.03.D no later than 30 calendar days after completion of contract work. The as-built schedule shall depict the actual start and finish dates for each activity.

The as-built schedule shall contain a written certificate signed by the Contractor's project manager stating "To my knowledge, the enclosed as-built schedule reflects the actual start and finish dates of the actual activities for the project contained herein."

D. Schedule Technical Requirements

The schedule shall be generated using CPM capable software fully compatible with Primavera P6 version 15.2 or later.

Utilize a Work Breakdown Structure (WBS) to plan and organize all work activities in the Project Schedule. Ensure activities are mapped to , organized by, and rolled-up to a deliverable-based, hierarchical WBS. The WBS should reflect the overall approach to the planning, scheduling, and execution of the work in the organization and breakdown of the WBS.

Ensure each activity is uniquely named and consists of a verb, noun, and location in the activity description (aka activity name) and is consistent with the WBS and activity code assignments.

The schedule shall at a minimum include activity codes for project phase, location of work and responsibility shall be assigned for each activity. Additional coding fields may be used if approved by the Engineer. Use only project-level activity codes. Include the PI number in the activity code description if more than one project is associated with the Work.

Each schedule submittal shall include the following:

- 1) A letter of transmittal identifying the schedule submission.
- 2) A narrative report in accordance with 108.03.E
- 3) An electronic submittal containing an electronic file of the schedule in a format that is fully compatible with and may be directly imported into Primavera P6 version 15.2 or later without any loss or modification of data or need for any conversion or other software. Any electronic schedule file submitted by the Contractor that is not fully compatible with the Department's software will be rejected.
- 4) A full schedule plot and a critical path only schedule plot.
 - a. Each page of the schedule plot shall at a minimum include a column for each of the following:
 - i. Activity ID
 - ii. Activity description
 - iii. Original duration
 - iv. Remaining duration

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- v. Early start
 - vi. Early finish
 - vii. Late start
 - viii. Late finish
 - ix. Actual start
 - x. Actual finish
 - xi. Total Float
 - xii. Percent Complete
- b. Each page of the schedule plot shall include a legend with the following information:
- i. Contract number
 - ii. District
 - iii. Name of the Contractor
 - iv. Project location
 - v. Notice to Proceed date
 - vi. Original contract completion date
 - vii. Revised contract completion date (as applicable)
 - viii. Data date
- 5) A letter (not applicable for a baseline schedule submittal) stating the dates which the Contractor could not work on activities identified on the critical path due to inclement weather. If there were no inclement weather delays experienced that month the letter should state so.

Each activity shown on the Schedule of Record shall meet the following requirements:

- 1) Each activity shall have a unique activity identification number which shall not be modified or re-assigned to different work activities once assigned to an activity in the network logic diagram.
- 2) Each activity shall have a unique description specifying the work type and location.
- 3) Each activity description shall describe work associated with only one operation.
- 4) All non-procurement activities shall have an original duration not to exceed 20 calendar days unless approved by the Engineer. Durations shall be in whole day increments.
- 5) Activities for submittal reviews by the Department shall be 30 calendar days unless stated otherwise in the contract.
- 6) Each activity, except the first activity, shall have at least one predecessor.
- 7) Each activity, except the last activity, shall have at least one successor.
- 8) Activity relationships shall be finish-to-start (FS) with no leads or lags wherever possible. Finish-to-finish (FF) and start-to-start (SS) should generally be avoided. Do not use start-to-finish (SF) relationships.
- 9) The use of lags with a negative value shall not be allowed on any activity relationship type.
- 10) All activities shall have their start and finish tied to the logic of the schedule.
- 11) Activities shall not have constraints unless approved by the Engineer, with the exception of, when used for "Project Start", and "Project Completion".

The Schedule of Record shall only be calculated using retained logic. Use of the Progress Override option is not acceptable. Schedule duration shall be contiguous. Total float shall be calculated based on finish dates.

E. Narrative Reports

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The Contractor shall submit a narrative report with each schedule submission pertaining to the work identified in the schedule. For the initial and baseline schedule submittals, the narrative report shall include the following:

- 1) An explanation of the overall plan to complete the project, including where the work will begin and how the work and crews will progress through the project.
- 2) An explanation of the use and application of the workdays per week, number of shifts per day, number of hours per shift, holidays observed and how the schedule accommodates adverse weather days for each month.
- 3) Description of the work to be completed each season for multi-year projects.
- 4) A description of any problems or issues.
- 5) A description of any delays, including identification of any delayed activities, the type of delay, the cause of the delay, the effect of the delay on other activities and project milestones and identification of actions required to mitigate the delay.
- 6) A description of the critical path.
- 7) An explanation of the use of any allowed constraints, including the reason and purpose for each constraint.
- 8) A statement describing the status of any required permits.
- 9) A statement describing the reason for the use of each lag.

For each monthly update and revised schedule submittal, the narrative report shall include the following:

- 1) A description of the status of the scheduled completion date, focusing on any changes since the previous submission. A detailed explanation of any variances should be provided.
- 2) An explanation if any contract milestone dates are projected to occur after the dates set out in the contract.
- 3) A description of the work performed since the last schedule update.
- 4) A detailed explanation for any out of sequence work that occurred; major changes to crew or resource staffing; major changes in material or equipment availability. Additionally, any known or anticipated changes to the sequence, crew or resource staffing, or material or equipment availability should be included.
- 5) A description of any problems encountered or anticipated since the last schedule update. A discussion of delays in the narrative report does not constitute notice in accordance with 105.13.B.9. The statement should include identification of the delayed activity, the type of delay, the cause of the delay, the effect of the delay on other activities and project milestones and identification of actions required to mitigate the delay.
- 6) Documentation of any weather-related delays, including the date, length of delay, weather conditions causing the delay, and all information identified in item # 5 above.
- 7) A description of changes in the critical path from the last schedule update.
- 8) A description that identifies the changes made between the previous schedule update and the current proposed schedule including, but not limited to: added/deleted activities, added/deleted relationships, modified relationship lags, modified original durations, and modified constraint dates. The description should provide justification and reasoning for the change.
- 9) A statement providing status of pending items, including, but not limited to:
 - a. Permits
 - b. Change orders
 - c. Time extension requests

F. Extension of Contract Time

If the Contractor believes work on the contract has been delayed for reasons beyond its control, a written request for extension of contract time may be submitted in accordance with 108.07.E.

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The Contractor's request for extension of time shall include its own analysis, using a method approved by the Engineer, of the delay using the Schedule of Record at the time of delay and as-built information of work actually performed.

G. Measurement and Payment

There will be no separate measurement or payment for fulfilling the requirement described herein, and all costs, direct or indirect, of complying with the Special Provision shall be included in the price for other items.