

CRITICAL PATH METHOD (CPM) SCHEDULE

****From Jamaica ER STP 013-2(12)**

- xx. DESCRIPTION. This work shall consist of preparing, submitting, and modifying Critical Path Method (CPM) construction schedule(s) for the Contract work as specified herein and as directed by the Engineer.

The Contractor is advised that its schedule and narrative, as specified herein, will be used by the Engineer to monitor project progress, plan the level-of-effort by its own work forces and consultants, and as a critical decision making tool. Accordingly, the Contractor shall ensure that it complies fully with the requirements specified herein and that its schedule(s) are both timely and accurate throughout the life of the project.

- xx. SUBMITTALS.

- (a) Within ten (10) working days after the award of the Contract, the Contractor shall submit to the Engineer sufficient information that the CPM software it proposes to use on the Contract is fully capable of producing the specified schedules required by the Contract. The software used must be MS Project or be compatible with MS Project.

The Engineer shall notify the Contractor in writing, within seven (7) working days after the receipt of the Contractor's notification on the software, if there are any objections to the CPM software selected.

- (b) No more than thirty (30) days after the award of the Contract, and no less than ten (10) calendar days prior to the start of work, the Contractor shall submit to the Engineer for acceptance a baseline construction schedule and narrative meeting the following requirements:

(1) Baseline Schedule Requirements.

- a. Define a complete and logical plan that can realistically be accomplished for executing the work defined in the Contract.
- b. Include sufficient activities for adequate project planning for subcontractor, third party, vendor, and supplier activities. These activities shall include Working Drawing submissions as well as provide for adequate review times.
- c. Clearly show the critical path using the longest path definition and other critical elements of work.
- d. Include a unique identification number for each schedule activity.

Clearly and uniquely define each activity description. Do not use descriptions referring to a percent complete of a multi-element task.

- e. Define the duration of each activity.
 - 1. Limit the maximum duration of any activity to fifteen (15) days unless otherwise accepted by the Engineer.
 - 2. When the project contains a road closure period, the work within the closure period shall be broken down by hours instead of days. The maximum duration of each activity within the closure period shall be limited to twelve (12) hours.
- f. Clearly identify the relationships tying activities together.
- g. Do not have open-ended activities except for one start and one finish activity.
- h. Do not have any constrained activities unless the Engineer accepts such constraints.
- i. Include milestones to define significant contractual events such as Notice to Proceed, Interim Completion(s), road closures, road openings, Substantial Completion(s), and/or others as necessary.

(2) Baseline Narrative Requirements.

- a. The construction philosophy supporting the approach to the work outlined in the baseline schedule. Address the reasons for the sequencing of work and describe any limited resources, potential conflicts, and/or other items that may affect the schedule and how they may be resolved.
 - b. Provide information on assumed resources, crew sizes, working hours, equipment, etc.
 - c. The justification for activities with durations exceeding fourteen (14) working days or exceeding twelve (12) hours for those activities falling within a road closure period.
 - d. The justification for constraints used.
 - e. The approach used to apply relationships between activities.
 - f. The project critical path and challenges that may arise associated with the critical path.
- (c) The Contractor shall submit one hard copy and one electronic copy of an updated construction schedule each month during the life of the Contract up to Substantial Completion.

(1) Schedule Updates. Schedule updates shall include the following:

- a. Actual start and finish dates for completed activities.
- b. Actual start dates, percent complete, and remaining duration for activities in progress.
- c. Projected sequences of activities for future work.
- d. Revised relationships and durations for unfinished activities, if warranted.
- e. A well defined critical path.
- f. A narrative describing the following:
 1. Work performed during the previous monthly period.
 2. Problems or delays that have been experienced to date, the party responsible for the problems or delays, and the Contractor's plan to resolve the problems or bring the delayed activities back on schedule.
 3. Differences between the work performed and the work planned for the period, including explanations for the deviations.
 4. The current critical path of the project, explaining any changes since the last update and the impacts of these changes.
 5. Potential problems that may be encountered during the next monthly period. Identify all potential problems the Agency may be party to and explain what action the Agency needs to take and the date by which time the action needs to be taken to avoid the problem.

(d) The Contractor shall participate in progress meetings at the request of the Engineer to review and discuss updated schedule information including any activity delay, remedies, coordination requirements, change orders, potential delays, and other relevant issues.

Projects with short duration road closures of fourteen (14) calendar days or less are of particular importance as the project float will be limited. The Contractor shall promptly inform the Engineer of any schedule delays or changes that occur during one of these periods.

When the Engineer requests a meeting the Contractor shall:

- (1) Make available the project manager, scheduler, and appropriate field personnel.
- (2) Make and record an action item list that describes who is responsible for resolving existing or pending issues and the date by which the issue needs to be resolved to avoid Contract delays.
- (3) Submit a revised schedule update if necessary.

The Engineer will review the Contractor's schedule submittals and provide comments and disposition, either accepting the schedule or requiring revision and resubmittal of the schedule. The Engineer's comments may address work that has been omitted, unacceptable durations for items of work, or Contract violations. The planning, execution of the work, and the accuracy of their representation in the Contract Progress Schedule shall remain the sole responsibility of the Contractor.

The Contractor shall not be relieved of its responsibility for satisfactorily completing the work within the Contract time due to its failure to submit an acceptable project schedule. Additionally, the Contractor shall not withhold monthly or requested schedule submissions in the event that the Engineer does not provide formal review comments. The Contractor is to provide monthly updates regardless of any outstanding issues.

Failure to provide schedule updates as required under this Specification will result in a written notification from the Engineer. Upon receipt of this notification the Contractor has two (2) weeks to provide an updated schedule as required. Failure to provide an updated schedule will result in withholding of full Contract quantity payments until an updated schedule is received.

- xx. PROJECT FLOAT. Float belongs to the project and is a shared commodity between the Agency and the Contractor, and is not for the exclusive use or benefit of either party. The float may be claimed by whichever party first demonstrates a need for it.
- xx. METHOD OF MEASUREMENT. The quantity of Special Provision (CPM Schedule) to be measured for payment will be on a lump sum basis for providing project schedules and narratives in the complete and accepted work.
- xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (CPM Schedule) will be paid for at the Contract lump sum price. Payment will be full compensation for initial preparation, submittals, modifications, resubmittals, and all incidentals necessary to complete the work. Subsequent modifications to the CPM Schedule during construction will be considered incidental to Special Provision (CPM Schedule).

Partial payments will be made as follows:

- (a) The first 25% of the Contract lump sum price will be paid upon the approval of the baseline schedule and narrative.

(b) The remaining 75% of the Contract lump sum price will be pro-rated in equal amounts on a monthly basis. The time used for pro-rating will be equal to the number of months from approval of the baseline schedule to the anticipated Contract Completion Date.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (CPM Schedule)	Lump Sum