

READ THIS FIRST

This Project Spec Document may need additional modifications to suit your project. It is recommended that you proofread each section, paying attention to any “Notes” boxes such as this one--you should remove these “Notes” sections as you go. Also, do a search for all bracket characters “ [] “ as they are used to show you areas containing options or project specific details (you can use Microsoft Word’s Find feature {Ctrl-F} to jump to an open bracket “ [“ character quickly). Again, these bracket characters should be removed.

It is important that every paragraph be numbered to allow for easy referencing. If you use the document’s built in styles and formatting your outline should be fine (turn on the formatting toolbar by going to View > Toolbars > Formatting). Most paragraphs will use the style “Numbered Material” and can be promoted (Tab) or demoted (Shift-Tab).

You should not have to manually enter extra spaces, carriage returns or outline characters such as A, B, C, or 1.01, 1.02; the formatting will do this for you. The entire document is 11 pt. Arial. If you paste items in, you may need to reapply the “Numbered Material” format.

PART 1 GENERAL

1.01 DESCRIPTION

- A. The Work under this Contract shall be planned, scheduled, executed and reported using a bar chart schedule. The bar chart Schedules described here serve as a communication tool between the Port and the Contractor, and the Contractor and its subcontractors. The Contractor shall use the schedules to establish a joint understanding of the assumptions regarding the work, and the various constraints and opportunities that are possible within the plan. As the work progresses the project team is expected to use these schedules to assess impacts and to formulate the best methods to complete the work on, or ahead of, the contractual completion dates. Specifically, the purpose is as follows:
 - 1. To assure adequate planning, scheduling and reporting during execution of the Contract.
 - 2. To assure coordination of the work by and between the Contractor and the various subcontractors and suppliers.
 - 3. To assist the Contractor and Engineer in monitoring the progress of the work and to contemporaneously evaluate proposed changes to the Contract and the project schedule.
 - 4. To assist the Contractor and Engineer in the preparation and evaluation of the Contractor's monthly progress payment.
- B. Schedules shall be in a bar chart format with a logical association of predecessor or successor ties between the activities. The Schedules shall be produced using Primavera or Microsoft Project (the most current version). The Contractor may request to use different software as a substitution, in accordance with Division 1, Section 01 25 00 - Substitutions. If the alternate software is accepted, the Contractor will be required to supply the Engineer with an authorized copy of the software with all user support manuals.
- C. If the Contractor should desire or intend to complete the Work earlier than any required Critical or Completion date, the Port will not be liable to the Contractor for any costs or other damages should the Contractor be unable to complete the Work

according to this earlier date. The duties and obligations of the Port to the Contractor shall be consistent with and applicable only to the completion of the Work on the Milestone and Completion dates specified in the Contract, unless the Port and the Contractor otherwise agree and a Change Order is issued.

- D. At anytime throughout the course of the work, the Engineer reserves the right to require additional activities to be added to the Schedule to further define the contractor's plan and intentions regarding the execution of the Work. In each instance, such activities or changes shall be made by the Contractor at no cost or delay to the Port.

1.02 BASELINE SCHEDULE - BAR CHART

- A. The Baseline Schedule is a detailed schedule of the Contractor's approach to completing the Work. It represents the Contractor's plan for the Work from the date of Execution of the Contract to Contract Completion. The first Progress Schedule is an update of the accepted Baseline Schedule. Work under this Section shall consist of furnishing a Schedule showing in detail how the Contractor plans to execute and coordinate the Work. The Contractor shall use the Critical Path Method (CPM) and precedence Diagram Method (PDM) to generate the Schedule. The Schedule shall be based on, and incorporate the Contract Milestone and Completion Dates included in the Contract, and shall show the order in which the Contractor shall perform the Work, projected dates for the start and completion of separable portions of the Work, and other information concerning Contractor's scheduling as Port may request.
- B. The Schedule shall be in the form of a bar chart and shall consist of horizontal lines, or bars, plotted along a time scale. The horizontal bar(s) shall indicate the start and finish dates as well as the total time period of performance for each activity. The Contractor shall arrange the chart so as to show the activities which are necessary to fulfill each and every Milestone and Completion Date requirement. The schedule shall be sorted by phase, area and early start date.
- C. The Contractor's Schedule shall include, but not be limited to:
1. Critical procurement activities including mobilization, shop drawings and other submittals, Engineer review of submittals, fabrication, and delivery of key and long-lead equipment and materials;
 2. Contract Execution, Preconstruction Submittals, Notice To Proceed, Construction/erection activities, Pre Final Inspection, Final Inspection, Substantial Completion, and Physical Completion.
 3. Offsite activities including interfaces with the work of outside contractors, e.g. utilities, power, or any separate contractor.
 4. Port activities including delivery of materials and equipment, programming, abatement, and services provided.
 5. Testing activities; Hold and witness points in construction; Commissioning, and Training.
 6. Phased Completion, Milestones and associated Substantial Completion Dates if specified.
 7. Activities for project Contract activities and requirements which include, but are not limited to, O&M manuals and record documents.

8. Activities that are impacted by Change Order or Event.
- D. The identity, and logic of activities comprising the Schedule shall meet the following criteria:
1. The description of work by activity. Activity descriptions and coding shall contain the area of the work as well as the specific type of work.
 2. Activity boundaries shall be easily measurable and descriptions shall be clear and concise. The beginning and end of each activity shall be readily verifiable, and progress shall be quantifiable.
 3. Responsibility for each activity shall be identified with a single performing organization.
 4. Activity duration shall be in work days. Unless agreed otherwise with the Engineer, activity durations over fifteen (15) working days shall be kept to a minimum and be used only for non-construction activities, such as shop drawing and sample submittals, fabrication and delivery of materials and equipment, concrete curing, and General Conditions activities.
 5. The Baseline Schedule must indicate which activities are to be performed on day shift versus night shift, and which activities will be performed utilizing two work shifts, or weekend work. The contractor is fully responsible for planning and performing the work in order to meet all of the required project delivery dates, including additional second or third shift work.
 6. An explanation of the basis of the construction schedule as well as potential problems or constraints related to the implementation of the construction plan shall be identified in writing in a narrative accompanying the Baseline Schedule.
 7. Foreseeable delays to activities such as normal seasonal weather shall be considered and included in the planning and scheduling of all work.
 8. Imposed completion dates for events other than the Completion Dates are not permitted. Artificial Constraints are also not permitted.
 9. The format for the Schedule shall include an activity information table shown on the left side of the page and a bar graph on the right side of the page. The columns in the activity information table on the left side of the page shall include, but are not limited to; Activity ID, Activity Description, Calendar ID, Original Duration, Remaining Duration, Early Start, Early Finish, Total Float, and Predecessors. The bar chart format shall include the Start Date to the left of the bar and the Activity Description to the right of the bar. The logic ties shall be visible on the bar chart. Critical Activities bars shall be identified by a different color than the non-critical activities.
- E. Submittals
1. The submittal of the schedule documents shall include:
 - a. The Baseline Schedule shall be submitted prior to issuance of NTP, per Section 01 32 19 - Preconstruction Submittals.

- (1) The Baseline Schedule shall include a narrative that explains the basis for the Contractor's schedule of construction and any constraints.
 - (2) All requested comments on the Baseline Schedule shall be incorporated, resubmitted and accepted prior to [NTP] [the second Progress Payment].
 - b. The monthly Progress Schedule and narrative shall be submitted as part of the monthly application for payment per Section 01 20 00 – Measurement and Payment Procedures Three-week "Look Ahead" schedule: Contractor shall provide to the Engineer one electronic copy (PDF format) for the project meetings, 24-hours before the scheduled meeting.
 - c. As-Built project schedule acceptance is required prior to Physical Completion.
 2. All schedules and schedule documents shall be electronic, submitted to the Engineer via CMS Submittal workflow. Submit one (1) color pdf of each schedule report, (except the Look-ahead schedules) together with an electronic data file of the CPM schedule. The bar chart schedules shall be sized for 11" X 17" printouts.
- F. Acceptance Process
1. The Engineer will review the Contractor's Schedule. If required, a meeting will be held between the Engineer and the Contractor to resolve any conflicts between the Contractor's schedule and the overall Project Construction. The Contractor shall revise the schedule as required by the Engineer to support the Project Construction and shall submit its revised schedule to the Engineer within five (5) days for review and acceptance.
 2. Acceptance by the Engineer of the Contractor's Schedule is advisory only and shall not release the Contractor of the responsibility for accomplishing the Work within each and every Contract-required Milestone and Completion Date. Omissions and errors in the Schedule shall not excuse performance that is not in compliance with the Contract. Acceptance by the Engineer in no way makes the Port an insurer of the Schedule's success or liable for time or cost overruns from its shortcomings. The Port disclaims any obligation or liability by reason of its acceptance of the Schedule.

1.03 COORDINATION

- A. The Contractor shall coordinate the Work with that of other contractors working on or near the project site and shall cooperate fully with the Engineer in maintaining orderly progress toward completion of the Work as scheduled.
- B. The Contractor shall involve all applicable subcontractors in the schedule development, updating and revisions.
- C. The Contractor shall keep subcontractors informed of the Work underway by utilizing all project schedules.
- D. The Contractor shall coordinate all Work activities with Port departments providing services and support to the project.

1.04 SCHEDULE UPDATES

A. Monthly Progress Schedule

1. The Contractor understands and agrees that its Schedule is intended to accurately reflect at all times the status of the Project Construction and projected activities. The Contractor also understands and agrees that updating is a key requirement to accomplish this intent and shall comply with the requirement to update.
2. The graphic format of the Schedule shall include actual start and actual finish dates for activities that have started or finished. For activities in progress, activity progress shall be shown on the activity bar and the forecasted completion shall indicate the earliest the activity can be completed based upon current project status.
3. The Contractor understands and agrees that updating the Schedule is independent from updating the cost for progress payment purposes.
4. The first Progress Schedule is the initial monthly progress update of the Baseline Schedule. Subsequent Progress Schedules shall be submitted on a monthly basis to update the previously issued Progress Schedule. With each Progress Schedule, the Contractor shall include a written narrative describing the overall progress of the Work. The narrative shall include the following key aspects:
 - a. Progress in the last period
 - b. Critical Path progress and schedule concerns
 - c. Changes to schedule logic or sequencing of the Work Including the addition and deletion of activities
 - d. Changes in Milestone dates
 - e. Potential Delays and Time Impact Analyses
 - f. Submittal Status (focus on critical submittals and concerns)
 - g. Equipment and Material Delivery Status
5. The Engineer will not be obligated to review or to process any Application for Progress Payment until the Progress Schedule and narrative for the corresponding period of time have been accepted.

B. Weekly Look Ahead Schedule

1. Throughout the progress of the Work, the Contractor shall prepare and maintain a three-week Look-ahead bar chart field schedule reflecting the schedule of work activities accomplished for the previous week and the work scheduled for the forthcoming two weeks. Utility shutdowns, activities impacting operations, and coordination meetings shall also be included. This schedule shall be presented at each weekly project meeting. Activities on the three-week Look-ahead schedules shall be readily identifiable with activities on the most current schedule. Submit a pdf of the three-week look-ahead to the Engineer, 24 hours prior to the Project Meeting.

C. As-Built Schedule

1. For the As-Built Record Documents, provide an As-Built Schedule, in the same format as the Progress Schedule, showing actual start and finish dates for all activities prior to request for Final Payment. This is the final schedule update for the project.

1.05 FLOAT

- A. Schedule float is not for the exclusive use or benefit of either the Contractor or the Port. Neither the Port nor the Contractor “owns” the float. The project or Work “owns” the float. Liability for delay to Contract or milestone dates rests with the party whose action (or inaction) caused the delay beyond the float that was available at the time of the delaying action (or inaction).
- B. Extensions of time will be granted only to the extent that the activity or activities affected exceed the total float or slack along the critical path of activities affected at the time of Notice to Proceed of a Change Order or the commencement of any delay or condition for which an adjustment is warranted under the Contract Documents. The Contractor shall submit documentation supporting its request for a time extension in a form acceptable to the Engineer and consistent with the requirements of the General Conditions.

1.06 TIME IMPACT ANALYSIS FOR CHANGED CONDITIONS

- A. If the Contractor experiences activity delays that the Contractor believes are caused by the Port, and the Contractor seeks to obtain a Contract time extension, the Contractor shall submit a formal written Time Impact Analysis (TIA). The TIA shall define the impact of each change or delay to the current accepted Schedule. The TIA shall include a written narrative of the impact of such delays, and a schedule that depicts how the changed or delayed work affects other activities in the current accepted Schedule.
- B. The Contractor shall continue to track, update and submit monthly Progress Schedules during the development review and response period for the TIA. The Engineer may withhold monthly payment if the Contractor fails to maintain and submit Progress Schedules.
- C. In addition to the Contractor’s presentation of the impact in the TIA, the Contractor shall include in the TIA a mitigation plan that reduces or eliminates the claimed delay. The mitigation plan shall include specific Port and Contractor actions as well as the cost to the Contractor to proceed with the mitigation.
- D. In the event the Contractor requests a Contract time extension, the time impacts to critical path activities in the current accepted Schedule shall be clearly shown. Extensions of time will be granted only to the extent that such changes or delays cause the time for the changed activity and related activities to exceed the total float along the affected path of activities at the time of the Port directive to proceed with the change or the actual commencement of the delay included in the TIA.
- E. Each formal TIA shall be submitted in accordance with the General Conditions
- F. A copy of the Port accepted TIA will be incorporated in the change order signed by the Contractor and the Port for such change. Any changes to the Schedule shall be incorporated into the next update of the Schedule following the Port’s acceptance of the TIA.

- G. The Contractor shall be responsible for all costs associated with the preparation of the TIA and the incorporation of accepted TIAs, or portion of TIAs, in the Schedule.
- H. If agreement is not reached on a TIA, or a portion of a TIA, the Schedule, including any time extensions, shall be revised only to the extent accepted by the Port. For any TIA, or portion of a TIA, that is not accepted by the Port, the Contractor may submit a claim in accordance with the Conditions of the Contract.

1.07 RECOVERY SCHEDULE

- A. Should any conditions exist, such that certain activities shown on the Contractor's Schedule fall behind schedule to the extent that any of the mandatory Critical dates or Completion dates are in jeopardy, the Contractor shall, at no cost to the Port, prepare and submit to the Engineer a supplementary Recovery Schedule, in a form and detail appropriate to the need, to explain and display how it intends to reschedule those activities to regain compliance with the Schedule.
- B. After determination of the requirement for a Recovery Schedule, the Contractor shall, within five (5) work days, present to Engineer the Recovery Schedule. The Recovery Schedule shall represent the Contractor's best judgment as to how work should be reorganized for return to the accepted Schedule. The Recovery Schedule shall be prepared to a similar level of detail as the Schedule.
 - 1. Recovery Schedule: The Recovery Schedule shall represent the Contractor's best judgment as to how the Contractor's work shall be reorganized such that the work may return to the accepted Schedule within a maximum one-month period. The Recovery Schedule shall be prepared at a similar level of detail as the Schedule and shall be based on the accepted Schedule. The following requirements apply to Recovery Schedules:
 - a. Conditions Requiring a Recovery Schedule: Should any conditions exist, such that certain activities shown on the Schedule fall behind schedule to the extent that any of the mandatory critical dates or milestone completion dates are at risk of being delayed, the Contractor shall, at no cost to the Port, submit to the Engineer a Recovery Schedule.
 - b. Allow five (5) work days for review by the Engineer. Any revisions that result from the Engineer's review shall be resubmitted within three (3) work days by the Contractor for acceptance by the Engineer.
 - c. Narrative: Provide narrative describing the recovery schedule logic.
 - d. Schedule:
 - (1) Complete Schedule organized by Major Area, sorted by sub area and early start date. Provide in bar chart format.
 - (2) Critical Path Schedule: This schedule shall show only the critical path. Provide in bar chart format.
 - e. Manpower Loading and Progress Curve updated to reflect the Recovery Schedule.

- f. The accepted Recovery Schedule shall then be the Schedule that the Contractor shall use in planning, organizing, directing, coordinating, performing and executing the Work (including all activities of subcontractors, equipment vendors and suppliers) that is included on the Recovery Schedule. All other Work shall proceed per the accepted Schedule.
- g. No later than five (5) calendar days prior to the expiration of the Recovery Schedule, the Engineer and Contractor will meet to determine whether the Contractor has regained compliance with the accepted Schedule. At the direction of the Engineer, one of the following will occur:
 - (1) If, in the opinion of the Engineer, the Contractor is still behind schedule, the Contractor shall prepare another Recovery Schedule, at no cost to the Port, to take effect for a maximum of one additional month from the start of the new Recovery Schedule.
 - (2) If, in the opinion of the Engineer, the Contractor has sufficiently regained compliance with the Schedule, the use of the Schedule shall be resumed.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

PART 4 MEASUREMENT AND PAYMENT

4.01 GENERAL

- A. No separate measurement or payment will be made for the work required by this section. The cost for this portion of the Work will be considered incidental to, and included in the payments made for the applicable bid items in the [Schedule of Unit Prices] [Lump Sum price] bid for the Project.

End of Section
