EXPECTED IMPLEMENTATION JANUARY 2010

DRAFT

**SUBMISSION OF WORKING SCHEDULE-SCHEDULE SUBMISSION.**
**(REV 6-3-09) (FA 6-10-09) (1-10)**

SUBARTICLE 8-3.2.2 (of the Special Provision) is deleted and the following substituted:

**8-3.2.2 Schedule Submissions:** Develop the schedule in Precedence Diagram Method (PDM) format. All schedule submittals, shall have a copy of the schedule files on a Windows compatible CD or DVD attached. The files shall be in a Primavera format. Make sure to use "Back up" menu selection and ensure that the option "Remove access list during backup" is checked.

Each schedule submission and monthly update shall include a minimum of 4 items:

1) a Critical Path Method (CPM) Network Diagram in time-scale logic diagram, by week starting on Monday, grouped (banded) by phase and sorted by early start days. Prominently identify the critical path activities, defined as the longest continuous path of work activities. Submit the Network Diagram, printed in color on D size, 22 by 34 inch or E size, 34 by 44 inch paper. The network diagram shall contain, as a minimum, the following information for each schedule activity: identification, activity description, total duration, remaining duration, early start date, late finish date, and total float.

2) a report with the following schedule activity information for each construction activity: identification, description, original duration, remaining duration, early start, early finish, total float, percent complete, and budgeted cost. The bar chart diagram shall not be included in this report. It will be submitted on 8.5 by 11 inch paper.

3) a schedule narrative report describing current project schedule status and identifying potential delays. This report will include a description of the progress made since the previous schedule submission and objectives for the upcoming 30 calendar days. It will be submitted on 8.5 by 11 inch paper. This report shall at a minimum include the following information:

a) This report shall indicate if the project is on schedule, ahead of schedule or behind schedule. If the project is ahead of schedule or behind schedule, the report shall include the specific number of calendar days. If the project is behind schedule, the report shall include a detailed recovery plan that will put the project back on schedule or include a properly supported request for Time Extension.

b) The report will describe the current critical path of the project and indicate if this has changed in the last 30 calendar days. Discuss current successes or problems that have affected either the critical path's length or have caused a shift in the critical path within the last 30 calendar days. Identify specific activities, progress, or events that may reasonably be anticipated to impact the critical path within the next 30 calendar days, either to affect its length or to shift it to an alternate path.

c) List all schedule logic or duration changes that have been made to the schedule since the previous submission. For each change, describe the basis for the change and specifically identify the affected activities by identification number.

d) Identify any and all activities, either in progress or scheduled to occur within the following 30 days that require Department participation, review, approval, etc.

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4) a copy of the schedule files on a Windows compatible CD or DVD formatted in the latest Primavera product.

The Engineer will have 30 days to accept the contract schedule or to schedule a meeting with the Contractor to resolve any problems that prevent acceptance of the schedule. Attend the meeting scheduled by the Engineer, and submit a corrected schedule to the Engineer within seven days after the meeting. The process will be continued until a contract schedule is accepted by the Engineer.

**8-3.2.3 Schedule Content:** All schedule submissions shall comply with the following content guidelines as appropriate to the specific submission:

Outline Schedule Diagrams and Data shall show the sequence, order, and interdependence of major construction milestones and activities. Include ordering and procurement of major materials and equipment, long-lead time items, and key milestones identified by the Contract. Identify planned work schedule(s) and include all non-workdays. Provide a description of each major construction activity or key milestone.

Detailed Schedule Diagrams shall include activity number, description, early dates, float, and all relationships ( i.e. logic ties ), resources and costs. Show the sequence, order, and interdependence of activities in which the work is to be accomplished. Include allowance for Department oversight, acceptance and return of submittals, samples and shop drawings where Department acceptance is specifically required (in accordance with 5-1.4.6 of the standard specifications). In addition to construction activities, detailed network activities shall include the submittals, procurement, and Department or Utility activities impacting progress:

a. Submittal activities shall include oversight and acceptance of submittals. If the Department's action on any submittal is “Not Accepted” or “Revise and Resubmit”, a new series of submittal preparation activities shall be inserted into the schedule. Predecessor for the new submittal preparation activity will be the original acceptance activity and the successor of the new acceptance activity will be the fabrication/delivery activity for the equipment or material.

b. Procurement activities shall include all materials and equipment, receipt of materials with estimated procurement costs of major items for which payment of stockpiled materials will be requested in advance of installation, fabrication of special material and equipment, and their installation and testing.

c. Show activities of the Department or Utilities that affect progress and contract-required dates for completion of all or parts of the work.

Detailed Schedule Data: shall conform to the following:

a. All activities shall be assigned to a specific calendar within the software. Specific calendars will be defined within the software to include planned work days . These calendars will include both Contractor and Contract defined holidays and suspension days as non-workdays.

b. Each schedule activity shall be cost loaded. Activity cost loading shall be consistent with the bid breakdown. The sum total of the activity cost loading shall be equal to the current contract value, and should not include bid items.

c. At a minimum, each schedule activity shall contain codes by:

1. Responsibility: including, but not be limited to, Department, Utility, Contractor/Subcontractor, Supplier/Vendor, Consultant, etc.

2. Phasing: identify the appropriate Maintenance of Traffic phase or subphase.

d. Key milestones as identified by contract. At a minimum, the start and finish of each Maintenance of Traffic phase or subphase shall be represented by a milestone activity.

e. All non-procurement activities must be less than or equal to 20 workdays unless approved by the Engineer to be greater by the Engineer.

f. Detailed description of each activity. In each activity, give quantity and unit of measure so that the amount of work the activity involves is clearly communicated.

g. Only two (2) open-ended activities (the first and the last) are allowed.

h. Constraints shall only be used for “Project Start,” and “Project Completion.” Constraints cannot override logic. The use of any other imposed constraints is not allowed without specific approval by the Engineer. Any other desired constraints must be submitted to the Engineer with the rationale for the use of each desired additional constraint. If allowed by the Engineer, the rationale should be recorded in the activity's log field. Mandatory constraints (start and finish) violate network logic and shall not be used.

i. Out of sequence progress, if applicable, shall be handled through Retained Logic. Use of the Progress Override option is not appropriate for this project and will not be allowed.

j. Progress shall be calculated based on percent complete.

k. All changes to activities shall be recorded with a note in the activity log field. The log shall include, as a minimum, the date and reason for the change, as well as reference to a document wherein the Engineer acknowledges and accepts the change.

l. The use of resource leveling, either manual or automatic, is prohibited.

**8-3.2.4 Weekly Meetings:** Attend weekly meetings scheduled by the Engineer to discuss Contract progress, near term scheduled activities, including utility relocations, problems and their proposed solutions. Submit a Two-Week “Look Ahead” Planning Schedule at each weekly meeting, showing the items of work planned for the next two weeks. Develop the schedule in Bar Chart format, identifying current and planned activities and related Contract Schedule work activities, including subcontractor work. Designate all activities that are controlling work items as determined by the currently accepted Contract Schedule. A report shall be submitted at each weekly meeting identifying schedule activity progress including actual start or finish dates achieved for any activities.

**8-3.2.5 Float:** Is also known as slack time or slide time; it is defined as the amount of time the finish of an activity can be delayed. Two kinds of float are possible: Total float is how much an activity can be delayed without affecting the finish date of the project or an intermediate deadline (constraint); it is the difference between the late finish date and the early finish date. Free float is how much an activity can be delayed without affecting its earliest successor.

Float is not for the exclusive use or benefit of either the Department or the Contractor.

Use of float suppression techniques, such as preferential sequencing (arranging critical path through activities more susceptible to Department caused delay), special

lead/lag logic restraints, zero total or free float constraints, extended activity times, or imposing constraint dates other than as required by the contract, shall be cause for rejection of the project schedule or its updates. The use of Resource Leveling (or similar software features) used for the purpose of artificially adjusting activity durations to consume float and influence the critical path is expressly prohibited.

Negative float shall not be a basis for requesting time extensions. Any extension of time shall be addressed in accordance with 8-3.2.6 Time Extensions. Scheduled completion date(s) that extend beyond the contract completion date (evidenced by negative float) may be used in computations for assessment of payment withholdings. The use of this computation is not to be construed as a means of acceleration.

**8-3.2.6 Time Extensions:** The Contractor is responsible for submitting a request for Contract Time extension in accordance with 8-7.3.2 of the standard specifications. An extension of time for performance shall be considered only to the extent that a delay to an activity or activities exceeds the total float along the project critical paths within the current approved schedule.

As a minimum, time extension requests shall contain:

a. A descriptive summary of the changes
b. An analysis of project impact
c. A fragnet that shows the impacted activities before the change
d. A fragnet that shows the impacted activities after the change

Time extensions shall not be considered for proposals that do not include full documentation for the schedule change. Once a change has been approved by the Engineer, the specific activities and the overall schedule must be updated.

**8-3.2.7 Performance of Work:** By submitting a schedule the Contractor is making a positive assertion that the project will be constructed in the order indicated on the schedule. Prosecute the work in accordance with the latest accepted Working Schedule. Any costs associated with meeting milestones and completing the project within the authorized Contract Time will be borne solely by the Contractor.

**8-3.2.8 As-Built Schedule:** As a condition for Final Acceptance of the project, submittal of an as-built schedule which describes the actual order and start and stop times for all activities by the Contractor is required.