

SPECIFICATIONS - DETAILED PROVISIONS
Section 01310.1 - Project Control Schedule - Small Project

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SECTION 01310
PROJECT CONTROL SCHEDULE

PART 1 – GENERAL SCHEDULE REQUIREMENTS

The work specified in this section includes planning, scheduling and reporting required by the CONTRACTOR. It is expressly understood and agreed that the time of beginning, the rate of progress, and the time of completion of the work are essential elements of this CONTRACT.

- A. The Project Control Schedule (PCS) shall be prepared and maintained by the CONTRACTOR as described in this section.
- B. The PCS shall be the CONTRACTOR'S working schedule and will be used by the CONTRACTOR to plan, organize, and execute the work, record and report actual performance and physical progress, and to show how the CONTRACTOR plans to complete all remaining work as of the beginning of each progress report period (data date).
- C. In addition, the PCS shall provide the DISTRICT with a tool to monitor and follow the progress of all phases of the work. The PCS shall comply with the various limits imposed by the scope of the work, contractually specified milestones and completion dates included in the contract.
- D. The PCS must be a Critical Path Method (CPM) schedule, utilizing the Precedence Diagramming Method.
- E. The PCS must clearly show the sequence and interdependence of activities required for complete performance of the work, beginning with the Contract Start Date (CSD) and concluding with the Contract Completion Date (CCD). The maximum duration of any physical work activity shall not exceed twenty (20) working days unless approved by the DISTRICT.
- F. All dates must conform to the dates and milestones stipulated throughout the contract including the Bid Invite Notice and Special Conditions sections.
- G. The CONTRACTOR shall use a scheduling system capable of handling, processing, printing and plotting data to satisfy all requirements of this section. The scheduling system must be capable of producing project reports and other digital (electronic) data that can be directly read and interpreted by the DISTRICT'S scheduling system, without conversion by the DISTRICT, and without error. The DISTRICT uses the latest version of the Primavera Project Planner software. No other scheduling software files will be acceptable unless permitted by the District on a case by case basis, regardless of project size/scope.

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- H. The PCS settings shall calculate the schedule using the Retained Logic scheduling option.
- I. Include a total of eighteen (18) Working Days per year for adverse weather. For projects less than 365 calendar days in duration, use the following as a guideline:
 - January: (3) Working Days
 - February: (3) Working Days
 - March: (3) Working Days
 - April: (3) Working Days
 - October: (2) Working Days
 - November: (2) Working Days
 - December: (2) Working Days
- J. Include District observed holidays as “non-workdays” in the schedule. District observes the following days: New Year’s Day, Martin Luther King Day, President’s Day, Memorial Day, Independence Day, Labor Day, Veteran’s Day, Thanksgiving Days (Thursday and Friday), and Christmas Day.
- K. Include as a separate identifiable activity on the critical path, an activity labeled “Adverse Weather Days Allowance.” Insert this activity at the end of the schedule.
 - a. The Contractor must provide a written notice to the District within three (3) work days following the end of the weather event delay for District review.
 - b. Reduce duration of the Adverse Weather Day Allowance activity during the updating process by a duration equal to the number of approved weather days during the reporting period. Remaining weather days in Inclement Weather Day Allowance at completion of project is considered project float.
- L. An Early Completion schedule is one which anticipates completion of the work ahead of the corresponding Contract Time. Since Total Float is measured to the Contract Completion Date (CCD), and belongs to the Project, the CONTRACTOR shall not be entitled to any extension in Contract Time, or recovery for any delay incurred because of extensions in an early completion date, until all total float is used or consumed and performance or completion of the WORK extends beyond the corresponding Contract Time.
- M. Contract float is for the mutual benefit of both DISTRICT and CONTRACTOR. Changes to the project that can be accomplished within this available period of float may be made by DISTRICT without extending the contract time, by utilizing float. Time extensions will not be granted nor delay damages owed until work extends beyond currently accepted contract completion date. Likewise, CONTRACTOR may utilize float to offset delay. Mutual use of float can continue until all available float shown by schedule has been utilized by either Owner or Contractor, or both.

- N. Failure to include an activity or milestone required for execution of the work or fulfillment of a milestone does not excuse CONTRACTOR from completing the work and portions thereof within specified times, milestones and at the price specified in the contract. Contract requirements are not waived by failure of CONTRACTOR to include required schedule constraints, sequences, or milestones in schedule. Contract requirements are not waived by the DISTRICT's acceptance of the schedule.

In event of conflict between accepted schedule and Contract requirements, terms of Contract shall govern, unless requirements of the contract are waived in writing by the DISTRICT.

PART 2 – DEFINITIONS

The principles and definitions of the terms used herein shall be as set forth in the Associated General Contractors of America (AGC) publication "The Use of CPM in Construction," copyright 1976.

Additional definitions are set forth as follows:

- A. Baseline Schedule – shall be defined as the CONTRACTOR's CPM Schedule representing all activities and work sequence required to complete the entire scope of work in the contract at the time of providing a bid for construction. The Baseline Schedule shall have a data date equal to the first day of the contract duration.
- B. Progress Update Schedule – shall be defined as the CONTRACTOR's CPM Schedule updated with actual start & finish dates through the end of a reporting period (Month). The data date of the Progress Update Schedule shall be the first day of the month following the update period. The Progress Update Schedule shall provide a forward-looking sequence of activities required to be completed between the data date and the Contract Completion Date (CCD).
- C. Data Date - (DD) - The date used as the starting point for schedule calculations. For Baselines, the DD is the first day of the project, the CSD date. For subsequent schedule updates, the DD is the first workday of the remainder of the schedule, normally the first calendar day after the schedule close-out date (usually month end).
- D. Critical Path(s) - shall be defined as the longest continuous path of activities from the Contract Start Date (CSD) to the Contract Completion Date (CCD).
- E. Near Critical Paths - shall be defined as those paths of activities having a total float value equal to the total float value of the defined critical path (longest path) plus ten (10) working days.

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- F. Activity Codes - are values assigned to schedule activities to organize the Schedule Activities into manageable groups for updating, analyzing, reporting, plotting, and summarizing.
- G. WBS (Work Breakdown Structure) - is a definition of project related activity codes, to be used by the CONTRACTOR to organize the CONTRACTOR'S Project Control Schedule in a manner that facilitates the DISTRICT'S use of the PCS information.
- H. Constraint - is a restriction imposed on the start, finish or duration of an activity.
- I. Total Float - is the amount of time that the start or finish of an activity can be delayed without impacting the Contract Completion Date. Total float is a CALCULATED value.
- J. Free Float - is the amount of time that the start or finish of an activity can be delayed without impacting the early start or finish of a successor activity. Free float is a CALCULATED value.
- K. Lag - is an offset or delay from an activity to its successor, or from its predecessor. Lag is physically defined by the scheduler. Lag is NOT CALCULATED.
- L. Open End - is an activity that has either no predecessor or no successor relationships.
- M. Out of Sequence Progress - means that all or a portion of an activity has been completed before the predecessors to the activity are complete.
- N. Percent Complete - the portion of an activity that is complete based on physical measurement of the scope of work included in the activity that has been completed by the CONTRACTOR and accepted by the DISTRICT.
- O. Adverse Weather – severe weather that causes unsafe conditions that affects the project's critical path.

PART 3 – SCHEDULE SUBMITTAL PROCEDURES

The DISTRICT will schedule and conduct a Preconstruction Conference within fifteen (15) calendar days after the issuance of the Notice of Acceptance of Proposal. At this meeting, the requirements of this section, as they apply to the contract, will be reviewed with the CONTRACTOR. The CONTRACTOR shall be prepared to review and discuss methodology for the schedule and sequence of operations and labor, equipment and material constraints.

- A. **BASELINE SCHEDULE** - within thirty (30) calendar days of the CSD, the CONTRACTOR shall have a DISTRICT approved Baseline Schedule. The Baseline Schedule shall represent the CONTRACTOR'S complete plan for the execution of the CONTRACT in accordance with the BID and CONTRACT documents.

The Baseline Schedule shall utilize the DISTRICT'S WORK BREAKDOWN STRUCTURE (WBS) Example Format (Attachment A), showing in detail:

- A. Notice of Acceptance of Proposal.
- B. Pre-Construction Conference.
- C. Contract start date.
- D. Mobilization.
- E. Submission and approval of key submittals.
- F. Procurement of key materials and equipment.
- G. Milestones and other contractual dates.
- H. Contract completion date.

Failure to have a completed and approved Baseline Schedule within the referenced timeframe may result in partial payment amounts withheld by the DISTRICT.

- B. **MONTHLY SCHEDULE UPDATES** – By the 1st of every month, or more often if deemed necessary by the DISTRICT, the CONTRACTOR shall review and update the PCS to incorporate all current information, including progress, approved adjustments of time and logic, and proposed changes in sequence and logic.

Failure to have a completed and approved Monthly Schedule Updates within the referenced timeframe may result in partial payment amounts withheld by the DISTRICT.

- C. **LOOKAHEAD SCHEDULE** - Submit to DISTRICT, at every progress meeting, a 4-Week Schedule showing the activities completed during the previous week and the Contractor's schedule of activities for following 3 weeks.
- a. Use the logic and conform to the status of the current progress schedule when producing a Weekly Schedule in CPM schedule or a bar chart format:
 - b. If determined that the Lookahead Schedule no longer conforms to the current contract schedule, CONTRACTOR may be required to revise the monthly update schedule as specified in this Section.
 - c. The activity ID's and descriptions used in the Weekly Schedule must be consistent with those used in the Baseline Schedule and the monthly Schedule Updates.
 - d. CONTRACTOR and DISTRICT must agree on the format of the Lookahead Schedule.
- D. **AS-BUILT SCHEDULE** - The last PCS update submitted shall be identified as the "As-Built Schedule" and is a condition precedent to issuance of Final Acceptance of the CONTRACT by the DISTRICT.

PART 4 – BASELINE SCHEDULE

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The CONTRACTOR shall be responsible for assuring that all work sequences are logical, and the network shows a coordinated plan for the complete performance of the CONTRACT.

In the event the CONTRACTOR fails to define any element of the work in the network, when the omission or error is discovered by either the CONTRACTOR or DISTRICT, it shall be corrected by the CONTRACTOR at the next scheduled update or submittal.

- A. The Baseline Schedule shall be organized to clearly define separate groups of activities detailing:
- a. Key submittals
 - b. Procurement of major materials and equipment
 - c. Delivery of DISTRICT furnished materials and equipment,
 - d. Approvals required by regulatory agencies or other third parties,
 - e. Plans for all major subcontract work,
 - f. Access to and availability of all work areas
 - g. Identification of interfaces and dependencies with preceding, concurrent, and follow-on contractors
 - h. Tests and inspections
 - i. Identification of any manpower, material or equipment restrictions.
 - j. Inclement weather days

The CONTRACTOR's work breakdown structure (WBS) must be submitted and found acceptable by the DISTRICT prior to submittal.

- B. The following relationship types will not be accepted:
- a. Negative Lags
 - b. Lags in excess of 7 working days
 - c. Lags with Finish to Start relationships
 - d. Start to Finish relationships
 - e. Open ends – only the first activity will have no predecessor and only the last activity shall have no successor in the network
 - f. Constraints – any use of constraints beyond bookending the overall start and finish dates and any intermediate milestones as defined in the Project Specifications must be approved by DISTRICT. The CONTRACTOR will only utilize 'Start On or After' and 'Finish On or Before' constraint types.
- C. The CONTRACTOR shall not utilize float suppression techniques or artificial constraints, lags or durations to lessen or control the amount of total or free float contained in the network.
- D. Project Schedule Reports shall be submitted to the DISTRICT as follows:

- a. 11" x 17" Time Scaled Logic Diagram based on early dates, organized by Work Breakdown Structure (WBS) or Activity Codes with the longest (critical) path indicated in red. Include, at a minimum, the following:
 - i. Activity ID and Description
 - ii. WBS or Activity Codes assigned
 - iii. Original Duration
 - iv. Remaining Duration
 - v. Forecasted/Actual Start & Finish Dates
 - vi. Total Float
- b. 11" x 17" Time Scaled Logic Diagram capturing the Longest Path
- c. The CONTRACTOR shall submit a narrative for the Baseline Schedules which includes the following information:
 - i. Transmittal Letter
 - ii. Explanation of the overall plan to complete the project, including where work will begin and how the work and labor crews will flow through the project.
 - iii. Use and application of workdays per week, number of shifts per day, number of hours per shift, and holidays observed.
 - iv. If applicable, a statement explaining why the schedule completion date is forecasted to occur before or after the Contract Completion Date (CCD).
 - v. If applicable, a statement explaining why any of the contract milestone dates are forecasted to occur late.
 - vi. If applicable, a description of anticipated challenges to schedule performance.
 - vii. A description of the Longest Path and any anticipated challenges to it.
 - viii. A statement identifying any constraints used beyond those mentioned above and the justification for doing so.
 - ix. A statement identifying and providing justification for the use of any lags.

E. Acceptance

- a. The DISTRICT may accept the PCS-Baseline submittal and subsequent updates as having been submitted in accordance with the Contract Specifications. The DISTRICT will review and make comments on the PCS. Meetings may be held between the DISTRICT and the CONTRACTOR, and all SUBCONTRACTORS and SUPPLIERS whom the CONTRACTOR may desire to invite or whom the DISTRICT may request be present.
- b. The PCS submittal must meet in all respects the time and order of work requirements of the contract. The work shall be executed in the sequence indicated in the accepted baseline and subsequent accepted updates and revisions. If the CONTRACTOR changes the sequence of work, a baseline revision submittal will be required in accordance with Section 4.10.

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- c. Comments made by the DISTRICT on the PCS or any subsequent updates and revisions, will not relieve the CONTRACTOR from compliance with requirements of the Contract Documents.
- d. If requested by the DISTRICT at any time during the project, the CONTRACTOR shall provide detailed, short term schedules for specific items of the work.

Failure to provide a Narrative will result in the rejection of the Baseline Schedule submittal.

F. Baseline Schedule Revisions

- a. See section 3 A-B for compliance requirements.
- b. No change shall be made to the accepted Baseline Schedule without the prior written authorization of the DISTRICT.
- c. If the CONTRACTOR desires, or the DISTRICT requests that the PCS Baseline be revised to reflect specific issues of the current project plan, the CONTRACTOR shall prepare a detailed analysis of the time related impacts of the specific issue, demonstrating how the CONTRACTOR proposes to incorporate the issue into the Baseline Schedule.
- d. Each time impact analysis shall be submitted prior to approval of any change in the contract to facilitate the incorporation of the impact in the next schedule submittal by the CONTRACTOR.
- e. Time extensions will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the remaining total float along the path of activities impacted by the ISSUE.
- f. When an authorized revision is made to the PCS Baseline, the revised baseline shall be identified by a Revision Number, giving the revised Baseline Schedule an identification number distinct from all previous or subsequent Baseline Revisions.

PART 5 – MONTHLY SCHEDULE UPDATES

- A. The CONTRACTOR shall submit the Schedule Update to the DISTRICT on the 1st of each month. The Update submittal shall include all information available through the last day of the update period unless another Data Date has been established by the DISTRICT.
- B. The CONTRACTOR shall submit a Monthly Schedule Update Narrative which includes the following information:
 - a. Transmittal Letter
 - b. Explanation of schedule progress this period and the plan to complete the work in the upcoming period.
 - c. A statement explaining why the schedule completion date is forecasted to occur before or after the Contract Completion date (if applicable).

- d. A statement explaining why any of the contract milestone dates are forecasted to occur late (if applicable).
 - e. A description of the Longest Path and any anticipated challenges to it.
 - f. A description of any current or anticipated delays including:
 - g. Identification of delayed activity(s)
 - h. Type and cause of delay
 - i. Effect of delay on downstream activities
 - j. Identification of the actions needed to mitigate or avoid the delay
 - k. Explanation of any schedule changes, including changes to the logic sequence, activity durations, added or deleted activities, or activity descriptions and the impacts to the overall project.
- C. The Monthly Update Schedule submittal shall be reviewed jointly (if necessary) with the DISTRICT for the purpose of verifying update information. The DISTRICT may request key SUBCONTRACTORS or SUPPLIERS to participate in the review with the CONTRACTOR. Information to verify includes but is not limited to:
- a. Actual start / finish dates for activities started or finished in the current period.
 - b. Activity Percent Complete for activities that are currently in progress.
 - c. Remaining durations or expected finish dates for activities that are currently in progress.
 - d. Revised logic (as-built and projected) and changes in activity durations.
 - e. Impacts of Issues identified by the CONTRACTOR or DISTRICT.
 - f. Incorporation of DISTRICT approved time extensions.
- D. The CONTRACTOR may not make changes to any actual events previously entered in prior updates without written concurrence by the DISTRICT.
- E. Failure to provide a Narrative will result in the rejection of the Monthly Schedule Update submittal.
- F. Monthly Update submittals shall be prepared as follows:
- 11" x 17" Time Scaled Logic Diagram based on early dates, organized by Work Breakdown Structure (WBS) or Activity Codes with the longest (critical) path indicated in red. Include, at a minimum, the following:
- a. Activity ID and Description
 - b. WBS or Activity Codes assigned
 - c. Original Duration
 - d. Remaining Duration
 - e. Forecasted/Actual Start & Finish Dates
 - f. Total Float
 - g. 11" x 17" Time Scaled Logic Diagram capturing the Longest Path

PART 6 – ADJUSTMENT OF CONTRACT TIMES

Contract Time will be adjusted only for causes specified in Contract Documents. No adjustments of time will be provided without an approved Time Impact Analysis. See General conditions for additional information regarding delays, claims, etc.

- A. Non-Excusable Delay: Non-excusable delays include actions or inactions of the Contractor, or events for which the Contractor has assumed contractual responsibility (including actions or inactions of subcontractors, suppliers, or material manufacturers at any tier) that would independently delay the completion of the Work beyond the current Contract completion date). No time extensions will be granted for non-excusable delays.
- B. Excusable Delay: Events which are unforeseeable, outside the control of, and without the fault or negligence of either the Owner or the Contractor (or any party for whom either is responsible), which would independently delay the completion of the Work beyond the current Contract completion date. The Contractor is entitled to a time extension only. No other damages will be approved.
- C. Excusable, Non-Compensable Delay: An Excusable Delay (See Part 7, B) that may be eligible for an extension of CONTRACT time but not additional monetary delay damages.
- D. Compensable Delay: Actions or inactions of the Owner, or events for which the Owner has assumed contractual responsibility, which would independently delay the completion of the Work beyond the current Contract completion date. The CONTRACTOR is entitled to a time extension and potential monetary delay damages.
- E. Concurrent Delay: Concurrent delay is any combination of the above 4 types of delay occurring during the same time period.

In a concurrent delay situation where one cause of delay is DISTRICT-caused or caused by an event which is beyond the control and without the fault or negligence the CONTRACTOR and the other delay during the same time period is CONTRACTOR-caused, the CONTRACTOR is entitled only to a time extension and no delay damages.

PART 7 – TIME IMPACT ANALYSIS

- A. Use a copy of the last accepted schedule update (TIA schedule) prior to the time frame of the delay event (change order, third party delay, or other Owner-caused delay). Represent the delay event in the TIA schedule by:
 - a. Inserting new activities associated with the delay event into the TIA schedule.

- b. Revising activity logic.
 - c. Revising activity durations.
- B. If the project schedule's critical path and completion date are impacted as a result of adding this delay event to the schedule, a time extension equal to the magnitude of the impact may be warranted.
- C. The Time Impact Analysis submittal must include the following information, or it will be rejected without review:
 - a. A fragment of the portion of the schedule affected by the delay event.
 - b. A narrative explanation of the delay issue and how it impacted the schedule.
 - c. The schedule file (XER) used to perform the Time Impact Analysis.
- D. As previously stated, time extensions will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total or remaining float along the critical path at the time of the actual delay.
- E. When a Request for Deviation, Change Order or delay is encountered by the CONTRACTOR and a time extension is contemplated, the CONTRACTOR, shall submit notice to the DISTRICT in accordance with the General Conditions of the CONTRACT. Once the delay has been fully realized or can be reasonable forecasted, a TIA shall be submitted within 3 working days illustrating the delay event(s) impact on the schedule.
- F. The TIA shall be prepared in the form of a Fragnet with logic ties and shall be based on the actual dates the impacted work was completed or delayed. The CONTRACTOR shall use only as-built activity data.
- G. When a delay to the project as a whole can be avoided by revising preferential sequencing or logic, and the Contractor chooses not to implement the revisions, the CONTRACTOR will be entitled to a time extension and no compensation for extended overhead.
- H. Indicate clearly that the Contractor has used, in full, all project float available for the work involved in the request, including any float that may exist between the Contractor's planned completion date and the Contract completion date. Utilize the latest version of the Schedule Update accepted at the time of the alleged delay, and all other relevant information, to determine the adjustment of the Contract Time.
- I. Adjustment of the Contract Times will be granted only when the Contract Float has been fully utilized and only when the revised date of completion of the Work has been pushed beyond the Contract completion date. Adjustment of the Contract Times will be made only for the number of days that the planned completion of the work has been extended.

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- J. Actual delays in activities which do not affect the critical path, or which do not move the Contractor's planned completion date beyond the CONTRACT completion date will not be the basis for an adjustment to the Contract Time.
- K. If completion of the project occurs within the specified Contract Time, the CONTRACTOR is not entitled to jobsite or home office overhead beyond the Contractor's originally planned occupancy of the site.
- L. The DISTRICT will, within 30 calendar days after receipt of a Contract Time adjustment, request any supporting evidence, review the facts, and advise the Contractor in writing:
 - a. Include the new Progress Schedule data, if accepted by the Owner, in the next monthly Schedule Update.
 - b. When the Owner has not yet made a final determination as to the adjustment of the Contract Time, and the parties are unable to agree as to the amount of the adjustment to be reflected in the Progress Schedule, reflect that amount of time adjustment in the Progress Schedule as the Construction Administrator may accept as appropriate for such interim purpose.

It is understood and agreed that any such interim acceptance by the Construction Administrator shall not be binding and shall be made only for the purpose of continuing to schedule the Work, until such time as a final determination as to any adjustment of the Contract Time acceptable to the Construction Administrator has been made. Revise the Progress Schedule prepared thereafter in accordance with the final decision.
- M. Upon mutual agreement of the DISTRICT and CONTRACTOR, the approved Fragnet will be incorporated into the Project Control Schedule during the first update after written approval by the DISTRICT is received.
- N. NOTE – the DISTRICT will not review or consider any request(s) for compensable or non-compensable time extension due to unforeseen delays until all outstanding schedule review comments have been addressed by the CONTRACTOR, and written acknowledgement and approval of such has been provided by the DISTRICT.

END OF SECTION 01310.1