
**WASTEWATER PROGRAM
MASTER SCHEDULING SPECIFICATIONS**

CONTRACTORS CONSTRUCTION SCHEDULE AND REPORTS

(SHORT FORM)

For use on small, non-complex projects in the range of \$500,000 to \$3 million, requiring few interfaces and minimal coordination with other projects.

21. **CONTRACTOR'S CONSTRUCTION SCHEDULE AND REPORTS (03/11/93)**

[SHORT FORM]

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NTS: This short form is for use on small noncomplex projects with estimated project costs of \$500,000 to \$3 million dollars, requiring few interfaces and minimal coordination with other projects.

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- A. It is expressly understood and agreed that the time of beginning, the rate of progress, and the time of completion of the work are of the essence of this Contract. The work shall be executed with such progress as required to prevent any delay to other contractors working on other contracts at the site, the Contract milestones, and the general completion of the Contract.
- B. The CONTRACTOR shall employ or retain the services of a Construction Scheduler who shall have verifiable experience as the person primarily responsible for preparing and maintaining detailed project schedules on projects of the same or similar size and nature as this project. The person in charge of scheduling is required to attend all meetings pertaining to scheduling and progress of the work.
- C. Within seven (7) days after Notice of Award, the ENGINEER will schedule and conduct a Preconstruction Scheduling Conference to commence development of the required project schedule. At this meeting, the requirements of this Article, 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 plus cost and manpower loading methodology.
- D. The CONTRACTOR shall prepare and submit to the ENGINEER the CONTRACTOR'S Construction Schedule within seven (7) calendar days after issuance of the Notice to Proceed. The CONTRACTOR'S Construction Schedule shall be comprised of a detailed Network Diagram as described in Paragraph J. The CONTRACTOR'S Construction Schedule shall show the dates on which each part or division of the work is expected to be started and completed, and shall show all submittals which constrain any work activity, allowing a minimum of thirty (30) calendar days for the ENGINEER'S review of each submittal unless a longer period of time is specified elsewhere in these Contract Documents. The CONTRACTOR shall also submit a separate listing of all submittals required under the Contract showing when each submittal will be submitted. The work activities making up the schedule shall be of sufficient detail to assure that adequate planning has been done for proper execution of the work and such that, in the sole judgement of the ENGINEER, it provides an appropriate basis for monitoring and evaluating the progress of the work. All on site construction activities shall be cost loaded. The cost value of all on site construction activities shall equal the Contract value. Submittal and approval of the CONTRACTOR'S Construction Schedule in accordance with the requirements of this Article is a condition precedent to the receipt of any payments from the CITY under this Contract.
- E. The CONTRACTOR'S Construction Schedule shall show the sequence, duration, and interdependence of activities required for the complete performance of all work. The CONTRACTOR'S Construction Schedule shall begin with the date of issuance of the Notice to Proceed and conclude with the date of Final Completion shown in the Contract.

- F. Float, slack time, or contingency within the schedule (i.e., the difference in time between the project's early completion date and the required Contract Completion date), and total float within the overall schedule, is not for the exclusive use of either the CITY or the CONTRACTOR, but is jointly owned by both and is an expiring resource available to and shared by both parties as needed to meet Contract milestones and the Contract Completion Date. Pursuant to the float sharing requirement of the Contract, use of float suppression techniques such as preferential sequencing, special lead/lag logic restraints, extended activity times or imposed dates shall be cause for rejection of the Project Schedule and any revisions or updates. The use of float time disclosed or implied by the use of alternative float suppression techniques shall be shared as directed by the ENGINEER.
- G. Time extensions shall not be granted nor delay damages paid until a delay occurs which is beyond the control and without the fault or negligence of the CONTRACTOR and its SUBCONTRACTORS or SUPPLIERS, at any tier and which extends actual performance of the work beyond the current Contract Completion Date. If the delay occurs along a path which the current approved Construction Schedule update projects late completion prior to addition of any CITY caused delay, then the time extension allowed will be only for the additional delay demonstrated by the approved Time Impact Analysis. Time extensions shall be granted only if they are clearly demonstrated by the CONTRACTOR through the submittal of a Time Impact Analysis which demonstrates the estimated impact on the end date of the work; is based upon the updated Construction Schedule current as of the month the delay occurred; and demonstrates that the delay cannot be mitigated, offset, or eliminated through such actions as revising the intended sequence of work or other means. Since float time within the Construction Schedule is jointly owned, it is acknowledged that CITY caused delays on the project may be offset by CITY caused time savings (critical path submittals returned in less time than allowed by the Contract, approval of substitution requests which result in a savings of time to the CONTRACTOR). In such an event, the CONTRACTOR shall not be entitled to receive a time extension or delay damages until all CITY caused time savings are exceeded and the Contract completion date is also exceeded.
- H. If the CONTRACTOR submits a Construction Schedule showing completion of the work more than thirty (30) calendar days in advance of the Contract completion date, the CONTRACTOR agrees that the ENGINEER may, at no cost to the CITY, decrease the Contract duration by issuance of a change order which will change the appropriate Milestone Date(s) and the Contract completion date to the completion date reflected on the Project Schedule. Any approved schedule, revision, or update having an early completion date shall show the time between the early completion date and the current Contract completion date as "project float".
- I. Comments made by the ENGINEER on the CONTRACTOR'S Construction Schedule during review will not relieve the CONTRACTOR from compliance with the requirements of the Contract Documents. The review is only for general conformance with the scheduling requirements of Contract Documents. Upon the ENGINEER'S request, the CONTRACTOR and all major SUBCONTRACTORS (defined herein as being any SUBCONTRACTOR, SUB-SUBCONTRACTOR, or SUPPLIER with five (5) percent or more of the value of the Contract) shall participate in the review of the CONTRACTOR'S Construction Schedule submissions (including the original material, all update submittals, and any resubmittals). All revisions shall be submitted within fifteen (15) calendar days after the ENGINEER'S review.

- J. The Detailed Network Diagram shall provide a workable plan for performing the work, establish and clearly display the critical elements of the work, forecast completion of the construction, and match the Contract duration in time. Exclusive of those activities for submittal review and material fabrication and delivery, activity durations shall not be less than one (1) nor more than thirty (30) calendar days, unless otherwise approved by the ENGINEER. In addition to the detailed network diagram, the CONTRACTOR shall submit the following reports with the original submittal:
- (1) Predecessor/Successor Report or a list showing the predecessor activities and successor activities for each activity in the schedule sorted by Early Start.
 - (2) Activity Report sorted by activity number or a list showing each activity in the schedule.
- K. An updated Construction Schedule shall be submitted to the ENGINEER with the submittal of the CONTRACTOR'S monthly payment request. For those activities started but not yet completed at the time of submittal, the updated schedule shall reflect the percentage complete, as agreed between the CONTRACTOR and the INSPECTOR, and an estimate of the remaining duration. The monthly update of the construction schedule shall include a copy of the following:
- (1) A bar chart diagram showing target versus actual dates for each activity remaining to be completed.
 - (2) The Predecessor/Successor Report sorted by Early Start.
 - (3) The Activity Report sorted by activity number.
 - (4) The updated network diagram or the data necessary to produce such an diagram on computer diskette(s), as agreed with the ENGINEER.
- L. The submittal of the updated Construction Schedule which satisfies the requirements of this Article, accurately reflects the status of the work, and incorporates all changes into the schedule, shall be a condition precedent to the processing of the monthly payment application. Updated schedules shall also be submitted at such other times as the ENGINEER may direct. Upon approval of a change order or issuance of a notice to proceed with a change, the approved change shall be reflected in the next schedule update submittal by the CONTRACTOR. The CONTRACTOR will be compensated for the cost of including Change Orders in the Project Schedule, if such changes are required or requested by the ENGINEER. All such inclusions shall be incorporated into the schedule at a fixed rate of \$200 per Change Order.
- M. If completion of any part of the work, the delivery of equipment or materials, or submittal of CONTRACTOR submittals is behind the updated Construction Schedule, which will impact the end date of the work past the contract completion date, the CONTRACTOR shall submit in writing, a recovery plan acceptable to the ENGINEER for completing the work by the current Contract completion date, if requested by the ENGINEER.
- N. Failure of the CONTRACTOR to submit the Baseline Project Schedule or any required resubmittals, schedule revisions, or schedule updates, in a timely, accurate manner and in accordance with the requirements of this Article, will result in costs to the CITY which are difficult if not impossible to determine. Therefore, the CONTRACTOR shall pay the

CITY liquidated damages in the amount of \$500 per work day, for every day the schedule submittal, revision, resubmittal, or update is late. This amount shall be subtracted from any monies due and shall be forfeited by the CONTRACTOR.

- O. As a condition precedent to the release of any retained funds, the CONTRACTOR shall, after substantial completion of the work has been achieved, submit a final CONTRACTOR'S Construction Schedule which accurately reflects the manner in which the project was constructed and includes actual start and completion dates for all work activities on the Construction Schedule.

WASTEWATER PROGRAM
MASTER SCHEDULING SPECIFICATIONS

CONTRACTORS CONSTRUCTION SCHEDULE AND REPORTS

("TEENY WEENY" FORM)

For use on small, non-complex projects with estimated project costs less than \$500,000 requiring few interfaces and minimal coordination with other projects.

21. **CONTRACTOR'S CONSTRUCTION SCHEDULE AND REPORTS (06/10/93)**

["TEENY WEENY" FORM]

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NTS: This "teeny weeny" form is for use on small noncomplex projects with estimated project costs of less than \$500,000 requiring few interfaces and minimal coordination with other projects.

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- A. It is expressly understood and agreed that the time of beginning, the rate of progress, and the time of completion of the work are of the essence of this Contract.
- B. Within seven (7) days after Notice of Award, the ENGINEER will conduct a Preconstruction Scheduling Conference. The CONTRACTOR shall present the proposed schedule methodology and sequence of operations plus the cost loading methodology. The person in charge of scheduling is required to attend all meetings pertaining to scheduling and progress of the work.
- C. The CONTRACTOR shall submit to the ENGINEER the CONTRACTOR'S Construction Schedule (the schedule) within seven (7) calendar days after issuance of the Notice to Proceed. The schedule shall be either a CPM Network or a detailed Bar Chart. The schedule shall show the date each activity is expected to start and complete, and shall show all submittals, allowing a minimum of thirty (30) calendar days for review of each. Schedule activities shall be of sufficient detail to assure adequate planning has been done for proper execution of the work and such that, in the sole judgement of the ENGINEER, it provides an appropriate basis for monitoring progress. The schedule shall show the sequence, duration, and interdependence of activities required for the complete performance of all work. The schedule shall begin with the date of issuance of the Notice to Proceed and conclude with the date of Final Completion shown in the Contract. Exclusive of those activities for submittal review and material fabrication and delivery, activity durations shall not exceed thirty (30) calendar days. All on site construction activities shall be cost loaded. The cost value of all on site construction activities shall equal the Contract value. Submittal and approval of the schedule in accordance with the requirements of this Article is a condition precedent to the issuance of any payments under this Contract.
- D. Float, slack time, or contingency within the schedule (i.e., the difference in time between the project's early completion date and the required Contract Completion date), and total float within the schedule, is not for the exclusive use of either the CITY or the CONTRACTOR, but is a jointly owned expiring resource available to and shared by both parties. Pursuant to this float sharing requirement, use of float suppression techniques shall be cause for rejection of the schedule and any revisions or updates.
- E. Time extensions shall not be granted nor delay damages paid until a delay occurs which is beyond the control and without the fault or negligence of the CONTRACTOR and its SUBCONTRACTORS or SUPPLIERS, at any tier, and which extends actual work performance beyond the current Contract Completion Date. Time extensions shall be granted only if documented by the CONTRACTOR's submittal of a Time Impact Analysis which demonstrates impact on the end date of the work; based upon an approved schedule update current as of the month the delay occurred; demonstrating that the delay cannot be mitigated or offset through such actions as resequencing work. If a delay occurs to an activity which the current approved schedule update projects late completion, the time extension allowed shall be only for the additional delay demonstrated by an approved Time Impact Analysis. Since float time is jointly owned, it is acknowledged that CITY caused delays may be offset by CITY caused time savings

(critical path submittals returned in less time than allowed by the Contract, approval of substitution requests which result in a savings of time to the CONTRACTOR). In such event, the CONTRACTOR shall not be entitled to a time extension or delay damages until all CITY caused time savings are exceeded and the Contract completion date also exceeded.

- F. If the initial schedule submitted shows completion of work more than thirty (30) calendar days in advance of the Contract completion date, the ENGINEER may, at no cost to the CITY, decrease the Contract duration by issuance of a change order which changes appropriate Milestone Date(s) and the Contract completion date to the completion date reflected on the schedule. Any approved schedule, revision, or update having an early completion date shall show the time between the early completion date and the current Contract completion date as "project float".
- G. Comments made by the ENGINEER on the schedule during review will not relieve the CONTRACTOR from compliance with all requirements of the Contract. The ENGINEER may request that the CONTRACTOR and all major SUBCONTRACTORS (defined herein as being any SUBCONTRACTOR, SUB-SUBCONTRACTOR, or SUPPLIER with five (5) percent or more of the value of the Contract) participate in review of any schedule submission. All revisions shall be submitted within fifteen (15) calendar days after the ENGINEER'S review.
- H. An updated schedule shall be submitted to the ENGINEER with the submittal of each CONTRACTOR'S monthly payment request. For those activities started but not yet completed at the time of submittal, the updated schedule shall reflect the percentage complete, as agreed between the CONTRACTOR and the INSPECTOR, and an estimate of the remaining duration. The monthly update of the schedule shall include a diagram showing target versus actual dates for each activity and an updated bar chart or network diagram or the data necessary to produce such diagram on computer diskette(s), as agreed with the ENGINEER.
- I. The submittal of an updated schedule which meets the requirements of this Article, accurately reflects the status of the work, and incorporates all changes into the schedule, shall be a condition precedent to the processing of the monthly payment application. Updated schedules shall also be submitted at such other times as the ENGINEER may direct. Upon approval of a change order or issuance of a notice to proceed with a change, the approved change shall be reflected in the next schedule update. The CONTRACTOR will be compensated for the cost of including Change Orders in the schedule at a fixed rate of \$200 per Change Order.
- J. If completion of any part of the work, delivery of equipment or materials, or submittal of CONTRACTOR submittals is behind schedule and will impact the end date of the work, the CONTRACTOR shall submit a written recovery plan acceptable to the ENGINEER for completing the work by the current Contract completion date, if requested by the ENGINEER.
- K. Failure of the CONTRACTOR to submit the baseline schedule or any required resubmittals, revisions or updates, in a timely, accurate manner and in accordance with the requirements of this Article, will result in costs to the CITY which are difficult if not impossible to determine. Therefore, the CONTRACTOR shall pay the CITY liquidated damages in the amount of \$500 per work day, for every day the schedule submittal, revision, resubmittal, or update is late. This amount shall be subtracted from any monies due and shall be forfeited by the CONTRACTOR.
- L. As a condition precedent to the release of any retained funds, the CONTRACTOR shall, after substantial completion of the work has been achieved, submit a certified, final schedule which accurately reflects the manner in which the project was constructed and includes actual start and completion dates for all activities on the schedule.