SECTION 01 32 16.00 20

SMALL PROJECT CONSTRUCTION PROGRESS SCHEDULES

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Baseline Construction Schedule; G

Baseline Design Schedule; G

SD-07 Certificates

Monthly Updates

3-Week Look Ahead Schedule

1.2 PRE-CONSTRUCTION SCHEDULE REQUIREMENT

Within 10 calendar days of issuance of Notice to Proceed, prepare and submit to the Contracting Officer a Baseline Design Schedule and Baseline Construction Schedule in the form of a Network Analysis Schedule (NAS) or a Bar Chart Schedule (as directed by the Contracting Officer) in accordance with the terms in Contract Clause FAR 52.236-15 Schedules for Construction Contracts, except as modified in this contract. The approval of a Baseline Construction Schedule is a condition precedent to:

a. The Contractor starting demolition work or construction stage(s) of the contract.

b. Processing Contractor's invoice(s) for construction activities/items of work.

c. Review of any schedule updates.

Submittal of the Baseline Design and Construction Schedule, and subsequent schedule updates, is understood to be the Contractor's certification that the submitted schedule meets the requirements of the Contract Documents, represents the Contractor's plan on how the work will be accomplished, and accurately reflects the work that has been accomplished and how it was sequenced (as-built logic).

1.3 SCHEDULE FORMAT

1.3.1 Network Analysis Schedule (NAS)

Use the critical path method (CPM) to schedule and control project activities. Prepare and maintain project schedules using Microsoft Project. The scheduling software that will be utilized by the Government on this

project is Microsoft Project by Microsoft, Inc. Notwithstanding any other provision in the contract, schedules submitted for this project must be prepared using Microsoft Project. Submission of data from another software system where data conversion techniques or software is used to import into Microsoft Projects scheduling software is not acceptable and will be cause for rejection of the submitted schedule.

1.3.1.1 Activity Requirements

a. At a minimum, identify the following in the schedule:

(1) Design and Construction time for major systems and components

(2) Each activity assigned with its appropriate Responsibility Code

(3) Each activity assigned with its appropriate Phase and Area Codes

(4) Major submittals and submittal processing time

(5) Major equipment lead time

b. Build the Schedule as follows:

(1) Show design periods, submittals, Government review periods, material/equipment delivery, utility outages, on-site construction, inspection, testing, and closeout activities. Government and Contractor on-site work activities must be driven by calendars that reflect Saturdays, Sundays and all Federal Holidays as non-work days for 5-day work week calendars.

(2) With the exception of the Contract Award and End Contract milestone activities, use of open-ended activities is not allowed; each activity must have predecessor and successor ties. No activity must have open start or open finish (dangling) logic. Minimize redundant logic ties. Once an activity exists on the schedule it must not be deleted or renamed to change the scope of the activity and must not be removed from the schedule logic without approval from the Contracting Officer. While an activity cannot be deleted, where said activity is no longer applicable to the schedule but must remain within the logic stream for historical record, it can be changed to a milestone. Document any such change in the milestone's "Notebook," including a date and explanation for the change. The ID number for a deleted activity must not be re-used for another activity.

(3) Assign each activity its appropriate Responsibility Code and Area Code, indicating location and responsibility to accomplish the work indicated by the activity, Phase Code, and Work Location Code. Include anticipated tasks to be assigned Government responsibility.

(4) Date/time constraints or lags, other than those required by the contract, are not allowed unless approved by the Contracting Officer. Include as the last activity in the contract schedule, a milestone activity named "Contract Completion Date".

(5) Include the following Contract Milestones:

(a) Include as the first activity on the schedule a start milestone titled "Contract Award", which must have a Mandatory Start constraint equal to the Contract Award Date;

(b) Include Interim or Phased Completion Milestones required by the Contract or as approved by the Contracting Officer;

(c) Include Facility Turnover Planning Meeting Milestones;

(d) Include an unconstrained finish milestone on the schedule titled "Substantial Completion". Substantial Completion is defined as the point in time the Government would consider the project ready for beneficial occupancy wherein by mutual agreement of the Government and Contractor. Government use of the facility is allowed while construction access continues in order to complete remaining items (e.g. punch list and other close out submittals).

(e) Include an unconstrained finish milestone on the schedule titled "Projected Completion". Projected Completion is defined as the point in time the Government would consider the project complete. This milestone must have the Contract Completion Date (CCD) milestone as its only successor.

(f) Include as the last activity on the schedule a finish milestone titled "Contract Completion (CCD)" with constraint type "Must Finish No Later Than". Calculation of schedule updates must be such that if the finish of the "Projected Completion" milestone falls after the contract completion date, then negative float will be calculated on the longest path and if the finish of the "Projected Completion" milestone falls before the contract completion date, the float calculation must reflect positive float on the longest path. This milestone must be set to 5:00 pm.

(6) Provide lead time for major equipment.

1.3.1.2 Anticipated Weather Lost Work Days

Use the National Oceanic and Atmospheric Administration's (NOAA) Summary of Monthly Normals report to obtain the historical average number of days each month with precipitation, using a nominal 30-year, greater than 0.10 inch precipitation amount parameter, as indicated on the Station Report for the NOAA location closest to the project site as the basis for establishing a "Weather Calendar" showing the number of anticipated non-workdays for each month due to adverse weather, in addition to Saturdays, Sundays and all Federal Holidays as non-work days.

MONTHLY ANTICIPATED ADVERSE WEATHER DAYS (Based on NOAA Summary Monthly Normals for Oklahoma City)											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
3	3	5	5	6	6	4	5	5	5	4	3

Assign the Weather Calendar to any activity that could be impacted by adverse weather. The Contracting Officer will issue a modification in accordance with the contract clauses, giving the Contractor a time extension for the difference of days between the anticipated and actual

adverse weather delay if the number of actual adverse weather delay days exceeds the number of days anticipated for the month in which the delay occurs and the adverse weather delayed activities are critical to contract completion. A lost workday due to weather conditions is defined as a day in which the Contractor cannot work at least 50 percent of the day on the impacted activity.

1.3.1.3 Activity Identification

a. Identify Government, Construction Quality Management (CQM), Construction activities planned for the project and other activities that could impact project completion if delayed.

b. Identify administrative type activity/milestones including pre-construction submittal and permit requirements prior to demolition or construction stage.

c. Create separate activities for each Phase, Area, Floor Level, and Location the activity is occurring.

d. Do not use construction category activity to represent non-work type reference (Such as, Serial Letter or Request for Information) in NAS.

e. Place non-work reference within P6 activity details notebook. Activity categories included in the schedule are specified below.

1.3.1.4 Responsibility Code

Assign each activity its appropriate Responsibility Code indicating responsibility to accomplish the work indicated by the activity, Phase Code and Work Location Code.

1.3.1.5 Microsoft Project Settings and Parameters

Use the following MS Project settings and parameters in preparing the Baseline Schedule:

a. The Network must have a minimum of 30 construction activities.

b. No on-site construction activity may have durations in excess of 20 working days.

c. Critical is defined as having zero days of Total Slack. Within the Baseline Schedule no more than 20 percent of the activities shall be critical.

d. Logic: include the following setting: File, Options, Schedule tab - Split in-progress tasks - must be selected.

e. Status Date gridline is displayed in the Gantt Chart view.

f. Task Type is set to Fixed Work for "boots-on-the-ground" construction activities.

g. Task Type is set to Fixed Duration for design activities, submittals, Government reviews, procurement, material/equipment delivery, and utility outages.

h. "Effort Driven" is turned ON for Fixed Duration tasks.

i. Time Periods established for the project are set to 8 Hrs/Day, 40 Hrs/Week and 20 days/month.

j. Week starts on Monday must be selected.

k. Default start time is set to 7am (0700).

l. Default end time is set to 4pm (1600).

1.3.1.6 Cost Loading Microsoft Project Schedules

Assign material, labor and equipment costs to their respective Construction Activities. Evenly disperse overhead and profit to each activity over the duration of the project. Cost loading must total to 100 percent of the value of the contract.

1.3.1.6.1 Software Settings

a. Resource Sheet

(1) Resource Name: Enter each code and resource for the project
(2) Type: Set to "Material"
(3) Material Label: Enter units of measurement for each resource
(4) Std. Rate: Enter unit cost for each resource
(5) Accrue at: Set to "Prorated"

b. Assigning Resources to Each Activity

(1) Select each activity in Gantt Chart
(2) Assign resources, Resource Tab
(3) Select each resource and enter the quantity of the units; then, assign the resource(s) to the activity

c. Baseline for Earned Value Calculation, File Tab, Options, Advanced, Default task Earned Value method: Set to "Physical % Complete" or as directed by the Contracting Officer

1.3.1.6.2 Tabular Reports

1.3.1.6.2.1 Tracking Gantt Schedule with Cost Table

Submit a Tracking Gantt Schedule with each schedule update showing activity baseline cost, cost percent complete, and Budgeted Cost of Work Performed (BCWP), as directed by the Contracting Officer.

1.3.1.6.2.2 Earned Value Over Time Report

a. With each schedule submission, submit Earned Value Over Time Report S-Curves indicating Planned Value to the contract completion date based on projected early and late activity finish dates and Earned Value.

b. Revise Earned Value Over Time Report S-Curves when the contract is modified, or as directed by the Contracting Officer.

1.3.2 Bar Chart Schedule

The Bar Chart must, as a minimum, show work activities, submittals,

Government review periods, material/equipment delivery, utility outages, on-site construction, inspection, testing, and closeout activities. The Bar Chart must be time scaled and generated using an electronic spreadsheet program.

1.3.3 Schedule Submittals and Procedures

Submit Schedules and updates in PDF format on electronic media that is acceptable to the Contracting Officer. Submit an electronic back-up of the project schedule in an import format compatible with the Government's scheduling program.

1.4 SCHEDULE MONTHLY UPDATES

Update the Design and Construction Schedule at monthly intervals or when the schedule has been revised. Keep the updated schedule current, reflecting actual activity progress and plan for completing the remaining work.

a. Narrative Report: Identify and justify the following:

(1) Progress made in each area of the project;

(2) Longest Path: Include PDF copy on 11 by 17 inch paper, landscape setting;

(3) Date/time constraint(s), other than those required by the contract;

(4) Listing of changes made between the previous schedule and current updated schedule including: added or removed activities, original and remaining durations for activities that have not started, logic (sequence, constraint, lag/lead), milestones, planned sequence of operations, longest path, calendars or calendar assignments, and cost loading.

(5) Any decrease in previously reported activity Earned Amount;

(6) Pending items and status thereof, including permits, changes orders, and time extensions;

(7) Status of Contract Completion Date and interim milestones;

(8) Current and anticipated delays (describe cause of delay and corrective actions(s) and mitigation measures to minimize);

(9) Description of current and future schedule problem areas.

For each entry in the narrative report, cite the respective Activity ID and Activity Name, the date and reason for the change, and description of the change.

1.5 CONTRACT MODIFICATION

Submit a Time Impact Analysis (TIA) with each cost and time proposal for a proposed change. TIA must illustrate the influence of each change or delay on the Contract Completion Date or milestones. No time extensions will be granted nor delay damages paid unless a delay occurs which consumes all available Project Float, and extends the Projected Finish beyond the Contract Completion Date.

a. Each TIA must be in both narrative and schedule form. The narrative must define the scope and conditions of the change; provide start and finish dates of impact, successor and predecessor activity to impact period, responsible party, describe how it originated, and how it impacts the schedule. The schedule submission must consist of three native files:

(1) Fragnet used to define the scope of the changed condition

(2) Most recent accepted schedule update as of the time of the proposal or claim submission that has been updated to show all activity progress as of the time of the impact start date.

(3) The impacted schedule that has the fragnet inserted in the updated schedule and the schedule "run" so that the new completion date is determined.

b. For claimed as-built project delay, the inserted fragnet TIA method must be modified to account for as-built events known to occur after the data date of schedule update used.

c. TIAs must include any mitigation, and must determine the apportionment of the overall delay assignable to each individual delay. Apportionment must provide identification of delay type and classification of delay by compensable and non-compensable events. The associated narrative must clearly describe analysis methodology used, and the findings in a chronological listing beginning with the earliest delay event.

(1) Identify and classify types of delays as follows:

(a) Force majeure delay (e.g. weather delay): Any delay event caused by something or someone other than the Government (including its agents) or the Contractor, or the risk of which has not been assigned solely to the Government or the Contractor. If the force majeure delay is on the critical path, in absence of other types of concurrent delays, the Contractor is granted an extension of contract time, classified as a non-compensable event.

(b) A Contractor-delay: Any delay event caused by the Contractor, or the risk of which has been assigned solely to the Contractor. If the contractor-delay is on the critical path, in absence of other types of concurrent delays, Contractor is not granted extension of contract time, and classified as a non-compensable event. Where absent other types of delays, and having impact to project completion, provide a Corrective Action Plan, identifying plan to mitigate delay, to the Contracting Officer.

(c) A Government-delay: Any delay event caused by the Government, or the risk of which has been assigned solely to the Government. If the Government-delay is on the longest path, in absence of other types of concurrent delays, the Contractor is granted an extension of contract time, and classified as a compensable event.

(2) Use functional theory to analyze concurrent delays, where: Separate delay issues delay project completion, do not necessarily occur at same time, rather occur within same monthly schedule update period at minimum, or within same as-built period under

review. If a combination of functionally concurrent delay types occurs, it is considered Concurrent Delay, which is defined in the following combinations:

(a) Government-delay concurrent with Contractor-delay: Excusable time extension, classified non-compensable event.

(b) Government-delay concurrent with force majeure delay: Excusable time extension, classified non-compensable event.

(c) Contractor-delay concurrent with force majeure delay: Excusable time extension, classified non-compensable event.

(3) A pacing delay, reacting to another delay (parent delay) equally or more critical than paced activity, must be identified prior to pacing. Contracting Officer will notify Contractor prior to pacing. Contractor must notify Contracting Officer prior to pacing. Notification must include identification of parent delay issue, estimated parent delay time period, paced activity(s) identity, and pacing reason(s). Pacing Concurrency is defined as follows:

(a) Government-delay concurrent with Contractor-pacing: Excusable time extension, classified compensable event.

(b) Contractor-delay concurrent with Government-pacing: Inexcusable time extension, classified non-compensable event.

1.6 3-WEEK LOOK AHEAD SCHEDULE

Prepare and issue a 3-Week Look Ahead schedule to provide a more detailed day-to-day plan of upcoming work identified on the Construction Schedule. Key the work plans to activity numbers when a NAS is required and update each week to show the planned work for the current and following two-week period. Additionally, include upcoming outages, closures, preparatory meetings, and initial meetings. Identify critical path activities on the Three-Week Look Ahead Schedule. Deliver electronic version of the 3-Week Look Ahead Schedule to the Contracting Officer each Monday, and review during the weekly Production Meeting.

1.7 CORRESPONDENCE AND TEST REPORTS:

Correspondence (e.g., letters, Requests for Information (RFIs), e-mails, meeting minute items, Production and QC Daily Reports, material delivery tickets, photographs) must reference Schedule Activities that are being addressed. Test reports (e.g., concrete, soil compaction, weld, pressure) must reference Schedule Activities that are being addressed.

1.8 ADDITIONAL SCHEDULING REQUIREMENTS

Any references to additional scheduling requirements, including systems to be inspected, tested and commissioned, that are located throughout the remainder of the Contract Documents, are subject to all requirements of this section.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

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