
USACE / NAVFAC / AFCEC / NASA UFGS-01 32 16.00 20 (February 2015)
Change 1 - 05/15

Preparing Activity: NAVFAC Superseding
UFGS-01 32 16.00 20 (November 2009)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

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UNIFIED FACILITIES GUIDE SPECIFICATIONS

SECTION 01 32 16.00 20

SMALL PROJECT CONSTRUCTION PROGRESS SCHEDULES
02/15

NOTE: This guide specification applies to Design-Bid-Build projects and covers the requirements for the preparation and use of construction schedules for small projects. The small projects covered by this specification may be simple or complex, but would not benefit from the use of a cost-loaded NAS as required by Section 01 32 17.00 20 COST LOADED NETWORK ANALYSIS SCHEDULES (NAS). This specification includes two schedule options to choose from based on the complexity of the project. Edit this specification by choosing the desired scheduling option described below.

Confirm with the Administering FEAD/ROICC that the project schedule should be prepared under the requirements of this section. Further, this section should be reviewed and approved by the Administering FEAD/ROICC prior to completion of the Invitation For Bids (IFB).

Option 1: "Non-Cost Loaded Network Analysis Schedule (NAS)" - This is the NAVFAC preferred schedule for use on most small projects and requires either Primavera P6 or Microsoft Project 2010 scheduling software to be used. Option is provided for cost-loading Microsoft Project 2010 schedules at NAVFAC OCONUS locations where Primavera P6 support is not currently available.

Option 2: "Bar Chart Schedule" - In lieu of Option 1 for non-complex projects or projects with minimal disciplines, a simple bar chart (Non-NAS) may be specified. Project examples include: paving, painting, roof replacement, and lighting.

Coordination is required with Section 01 20 00.00 20 PRICE AND PAYMENT PROCEDURES, with selection of "Schedule of Prices" for bar charts and non-cost-loaded NAS, or "Earned Value Report" for cost-loaded Microsoft Project 2010 schedules.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable items(s) or insert appropriate information.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

PART 1 GENERAL

1.1 SUBMITTALS

NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project.

The Guide Specification technical editors have designated those items that require Government approval, due to their complexity or criticality, with a "G". Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item, if the submittal is sufficiently important or complex in context of the project.

An "S" following a submittal item indicates that the submittal is required for the Sustainability Notebook to fulfill federally mandated sustainable requirements in accordance with Section 01 33 29 SUSTAINABILITY REPORTING.

Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy projects.

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

Construction Schedule; G[, [_____]]

SD-07 Certificates

Monthly Updates

1.2 ACCEPTANCE

NOTE: Retain the applicable option in the paragraph below and edit Article "SCHEDULE FORMAT" accordingly.

Prior to the start of work, prepare and submit to the Contracting Officer for acceptance a construction schedule in the form of a [Network Analysis Schedule (NAS)] [Bar Chart Schedule] in accordance with the terms in Contract Clause "FAR 52.236-15, Schedules for Construction Contracts," except as modified in this contract.

The acceptance of a Baseline Construction Schedule is a condition precedent to:

- a. The Contractor starting work on the demolition 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 Schedule, and subsequent schedule updates, is understood to be the Contractor's certification that the submitted schedule meets all of 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)]

NOTE: Retain this paragraph and associated subparagraphs if Option 1 (described in the Initial Editing Notes) is applicable and a NAS is required for the project.

Use the critical path method (CPM) to schedule and control project activities. Prepare and maintain project schedules using [Primavera P6][or][Microsoft Project 2010]. Importing data into the scheduling program using data conversion techniques or third party software is cause for rejection of the submitted schedule. Build the schedule as follows:

- a. The Project Schedule must show submittals, Government review periods, material/equipment delivery, utility outages, all 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.
- b. With the exception of the Contract Award and End Contract milestone activities, no activities shall be open-ended; 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.

- c. Each activity must be assigned its appropriate Responsibility Code indicating responsibility to accomplish the work indicated by the activity, Phase Code and Work Location Code.
- d. Date/time constraint(s) and/or lags, other than those required by the contract, are not allowed unless accepted by the Contracting Officer. Include as the last activity in the contract schedule, a milestone activity named "Contract Completion Date".

[1.3.1.1 Primavera P6 Settings and Parameters

**NOTE: Retain this Paragraph for NAS schedules using
Primavera P6. Delete for NAS schedules using
Microsoft Project 2010.**

Use the following Primavera P6 settings and parameters in preparing the Baseline Schedule. Deviation from these settings and parameters, without prior consent of the Contracting Officer, is cause for rejection of schedule submission.

- a. General: Define or establish Calendars and Activity Codes at the "Project" level, not the "Global" level.
- b. Admin Drop-Down Menu, Admin Preferences, Time Periods Tab:
 - (1) Set time periods for P6 to 8.0 Hours/Day, 40.0 Hours/Week, 172.0 Hours/Month and 2000.0 Hours/Year.
 - (2) Use assigned calendar to specify the number of work hours for each time period: Must be checked.
- c. Project Level, Dates Tab:
 - (1) Set "Must Finish By" date to "Contract Completion Date".
- d. Project Level, Defaults Tab:
 - (1) Duration Type: Set to "Fixed Duration & Units".
 - (2) Percent Complete Type: Set to "Physical".
 - (3) Activity Type: Set to "Task Dependent".
 - (4) Calendar: Set to "Standard 5 Day Workweek". Calendar must reflect Saturday, Sunday and all Federal holidays as non-work days. Alternative calendars may be used with Contracting Officer approval.

e. Project Level, Calculations Tab:

- (1) Activity percent complete based on activity steps: Must be Checked.
- (2) Reset Remaining Duration and Units to Original: Must be Checked.
- (3) Subtract Actual from At Completion: Must be Checked.
- (4) Recalculate Actual units and Cost when duration percent(%) complete changes: Must be Checked.
- (5) Link Actual to Date and Actual This Period Units and Cost: Must be Checked.

f. Project Level, Settings Tab:

- (1) Define Critical Activities: Check "Total Float is less than or equal to" and add "0d".

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

][1.3.1.2 Microsoft Project 2010 Settings and Parameters

NOTE: Retain this Paragraph for NAS schedules using Microsoft Project 2010. Delete for NAS schedules using Primavera P6.

This paragraph is expected to be expanded as additional settings requirements are established for Microsoft Project 2010 applications.

The Network must have a minimum of 30 construction activities. No on-site construction activity may have durations in excess of 20 working days.

][1.3.1.3 Cost Loading Microsoft Project 2010 Schedules

NOTE: Retain this Paragraph only when cost loading a Microsoft Project 2010 schedule.

Assign material, labor and equipment costs to their respective Construction Activities. Material and equipment costs for which payment will be requested in advance of installation must be assigned to their respective procurement activity (i.e. the material/equipment on-site activity). 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.

- a. Submit an Earned Value Report with each schedule update showing activity budget, cost percent complete, earned amount and cost to complete as directed by the Contracting Officer.
- b. With each schedule submission, provide a Schedule Variance control (SVC) diagram showing:

- (1) Cash Flow S-Curves indicating planned project cost based on projected early and late activity finish dates.
- (2) Earned Value to-date. Revise Cash Flow S-Curves when the contract is modified, or as directed by the Contracting Officer.

]]1.3.2 Bar Chart Schedule

NOTE: Retain this paragraph if Option 2 (described in the Initial Editing Notes) is applicable and a Bar Chart is required for the project.

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 [Network Analysis Schedules (NAS)][Bar Chart Schedules] and updates in hard copy and 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 Construction Schedule at monthly intervals or when the schedule has been revised. The updated schedule must be kept current, reflecting actual activity progress and plan for completing the remaining work. Submit copies of purchase orders and confirmation of delivery dates as directed by the Contracting Officer.

- a. Narrative Report: Provide with schedule updates. Identify and justify;
 - (1) Progress made in each area of the project
 - (2) Critical Path
 - (3) Date/time constraint(s), other than those required by the contract
 - (4) Changes in the following; added or deleted activities, original and remaining durations for activities that have not started, logic, milestones, planned sequence of operations, and critical path
 - (5) Status of Contract Completion Date and interim milestones;
 - (6) Current and anticipated delays (describe cause of delay and corrective actions(s) and mitigation measures to minimize);
 - (7) Description of current and future schedule problem areas.

Each entry in the narrative report must cite the respective Activity ID and Activity Description, the date and reason for the change, and description of the change.

[1.5 CONTRACT MODIFICATION

**NOTE: Retain this Article for projects with NAS
schedules.**

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. All TIAs must include any mitigation, and must determine the apportionment of the overall delay assignable to each individual delay. The associated narrative must clearly describe the findings in a chronological listing beginning with the earliest delay event.
 - (1) Identify types of delays as follows:
 - (a) Excusable Delay: Force-Majeure (e.g. weather) - Contractor may receive time extension, but time will not be compensable.
 - (b) Inexcusable Delay: Contractor Responsibility - Contractor will not receive time extension.
 - (c) Compensable Delay: Government Responsibility - Contractor may receive compensable time extension.
 - (2) If a combination of delay types occurs, it is considered Concurrent Delay, which is defined in the following combinations:
 - (a) Excusable Delay and Compensable Delay results in Excusable Delay
 - (b) Excusable Delay and Inexcusable Delay results in Inexcusable Delay

(c) Compensable Delay and Inexcusable Delay results in Excusable Delay

- d. Submit Data disks containing the narrative and native schedule files.
- e. Unless the Contracting Officer requests otherwise, only add conformed contract modifications into the Project NAS.

]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. The detail work plans are to be bar chart type schedules, maintained separately from the Construction Schedule on an electronic spreadsheet program and printed on 216 by 279 mm 8-1/2 by 11 inch sheets as directed by the Contracting Officer. Activities must not exceed 5 working days in duration and have sufficient level of detail to assign crews, tools and equipment required to complete the work. Deliver three hard copies and one electronic file of the 3-Week Look Ahead Schedule to the Contracting Officer no later than 8 a.m. each Monday, and review during the weekly CQC Coordination or Production Meeting.

1.7 CORRESPONDENCE AND TEST REPORTS:

All 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. All 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 --