# 1803 PROJECT SCHEDULES

## 1803.1 BAR CHART

### A General Requirements

#### A.1 General

When the Department specifies the Work under this Contract must be scheduled using the Bar Chart method, the Work must be planned, accomplished, and reported using a Bar Chart Schedule for the Contractor's Project Schedule accompanied by a written Narrative Report. It is the Contractor's responsibility to develop a Project Schedule that provides for orderly, timely, and efficient completion of the Project and includes enough detail to allow both the Contractor and the Engineer to jointly evaluate progress and confirm contractual requirements are being met.

The Project Schedule must be the Contractor's primary tool to communicate and report their planned delivery strategy to complete the Work. The Contractor must use the Project Schedule to plan, coordinate, and control the progress of construction, including Work performed by subcontractors, suppliers and vendors. The Contractor must provide copies of the Project Schedule to subcontractors, suppliers, vendors and utility companies affected by the Work as needed.

The Project Schedule must be used by the Contractor and the Engineer for the following purposes:

(1) To identify controlling work scopes;
(2) To document actual performance and progress of Work;
(3) To evaluate the effect of changes and delays to the Work;
(4) To evaluate the best course of action for recovering schedule delays;
(5) To evaluate resource requirements of the Contractor and the Department; and
(6) To coordinate the Work of the Department, other contractors, and third parties (e.g., government agencies and authorities, permitting authorities) into the sequencing of the Contractor's Work where necessary.

#### A.2 Notice

The Contractor must give the Engineer at least 72 hours advance notice before beginning any construction and at least 24 hours advance notice before beginning each major construction operation. The Contractor must inform the Engineer of the number of hours the Contractor intends to be working each day and provide 24 hours advance notice of any changes to work day hours, equipment, forces, or sequence of operations. Submission of the Project Schedule does not meet these notice requirements. The Contractor is required to provide notice separate from the Project Schedule submission.

#### A.3 Acceptance

The Engineer will accept or reject a schedule submission based on whether the schedule submission meets the requirements of 1803.1, "Project Schedules, Bar Chart" and any other contractual requirements. The Engineer's acceptance of a schedule submission:

(1) Does not modify the Contract;
(2) Does not attest to the validity of the Contractor's Activity sequencing, Activity durations, or assumptions in creating the schedule;
(3) Does not guarantee that the Project can be performed or completed as depicted in the schedule; and
(4) Does not transfer any of the Contractor's responsibilities to the Department. The Contractor alone remains responsible for the accuracy of the schedule and for managing forces, equipment, and work schedules to ensure completion of the Work within the time(s) specified in the Contract.

The Engineer will return the schedule submission to the Contractor as "Accepted – No Exceptions Taken", "Accepted – As Noted", or "Rejected – As Noted." Review by the Engineer of a portion of a schedule or an incomplete schedule submission will not indicate acceptance of the entire schedule. If the Contractor or Engineer discovers an error after the Engineer has accepted a schedule, the Contractor must correct the error in the next required schedule submission.

### A.4 Request for Early Completion Date

If the Contractor wants to have a contractual completion date changed to an earlier date, the Contractor must notify the Engineer of the new desired date in a written letter. The requested early completion date must be achievable as of the last accepted Bar Chart Schedule, or the Contractor must revise the Bar Chart Schedule to show completion of all Work by the requested early completion date and explicitly identify the schedule as a submission requesting an early completion date. If the Contractor's request for an early completion date is accepted, the Engineer will initiate a Change Order amending the contractual completion date to the early completion date requested and as validated by the accepted Bar Chart Schedule submission. The amended completion date will be effective upon execution of that Change Order, and all Contract provisions concerning the completion date, such as incentives, disincentives, excusable delays, compensable delays, and liquidated damages, will be measured against the amended completion date.

The Contractor is allowed to submit a schedule showing completion of all Work before the contractual completion date without requesting an early completion date. If this occurs, the time between the early project completion shown in the schedule and the contractual completion date will be considered Project Float and the contractual completion date will not be amended.

### A.5 Non-Compliance

It is the Contractor's responsibility to ensure that each schedule submission meets the requirements of 1803.1, "Project Schedules, Bar Chart" and accurately reflects the Work performed in the field. The Department may withhold up to the full amount of each monthly progress estimate for failure to submit an acceptable schedule on time and in the manner required. Payment withheld for violation of the schedule requirements will be included in the next progress estimate following the Contractor's submission of an acceptable schedule. The Engineer may suspend Work under 1803.3, "Temporary Suspensions" if the schedule does not meet the requirements of 1803.1, "Project Schedules, Bar Chart" or if the schedule does not accurately reflect the progress of the Work in the field; the suspension may continue until an acceptable schedule is submitted.

## B Technical Requirements

### B.1 Weather Contingency

The Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-specific Weather Contingency requirements.

### B.2 Actual Weather Day Reporting

The Contractor must document and obtain agreement with the Engineer for each weather day experienced at the time of each occurrence. The Contractor must include a list of the specific claimed actual weather days experienced and a brief description of the work affected on each weather day in the accompanying Narrative Report applicable to the period in which weather was experienced.

## C Required Schedules

### C.1 Bar Chart Schedule

The purpose of the Bar Chart Schedule is to communicate the Contractor's plan to complete the contracted Work in a simplified graphical format. The Bar Chart Schedule must include the entire scope of Work and accurately reflect the Activity sequencing, dates and durations as described in the Contractor's accompanying Narrative Report. The Bar Chart Schedule may be prepared by hand or using a computer.

The Contractor and Engineer must meet at least monthly to assess progress in the field compared to the Bar Chart Schedule. Before meeting with the Engineer, the Contractor must update the Bar Chart Schedule to report actual start and actual finish dates for completed Work.

The Contractor must minimize the number of changes to the Bar Chart Schedule. If the project experiences an impact or the Engineer requests the Bar Chart Schedule to be revised, the Contractor must modify planned Activity sequencing, dates and durations as needed to accurately reflect the planned Work as known in the field. Changes made to the Bar Chart Schedule must be closely coordinated with the Engineer and are subject to the Engineer's review and acceptance.

### C.2 Look-Ahead Schedule

The purpose of the Look-Ahead Schedule is to communicate, in a high level of detail, the Contractor's recent Work progress in the field and planned Work Activities for the upcoming 14 calendar days on a rolling basis. The Contractor must submit a detailed Look-Ahead Schedule to the Engineer each week until all Work is completed. The Contractor must prepare the schedule in Bar Chart format by hand or by using a computer. The Look-Ahead Schedule must include actual dates for Work performed since the last Look-Ahead Schedule submission and planned dates for Work to be performed in the upcoming 14 calendar days at a minimum. The Work activities included in the Look-Ahead Schedule must specifically reference the applicable Activity IDs in the Bar Chart Schedule.

## D Submission Requirements

### D.1 File Naming Convention

The Contractor must include the State Project Number, submission date, and revision number, if applicable, in the file name for all Bar Chart schedule printouts and accompanying Narrative Reports. The Contractor must ensure the file naming convention remains consistent throughout the duration of the Project.

### D.2 Timeline

The Contractor must submit a Bar Chart Schedule and accompanying Narrative Report for the Engineer's review and acceptance at least 7 calendar days before the preconstruction meeting. The Engineer will either accept or reject the schedule submission within 7 calendar days of receipt. If the Engineer rejects a schedule submission, the Contractor must review and respond to all of the Engineer's questions and concerns, adjust the schedule if needed, and resubmit to the Engineer within 7 calendar days.

The Contractor must submit an updated Bar Chart Schedule within 7 calendar days of each monthly progress meeting with the Engineer.

If the project experiences an impact or the Engineer requests the Bar Chart Schedule to be revised, the Contractor must submit the revised Bar Chart Schedule for the Engineer's review and acceptance within 7 calendar days.

### D.3 Narrative Report

The Contractor must include a detailed Narrative Report with each Bar Chart Schedule submission.

Each Narrative Report must include and discuss at a minimum:

(1) Explanation of the overall plan to complete the Project, including how the Work and crews will flow through the Project;
(2) Description of the status of scheduled Milestone dates, including specifically any differences from the last accepted Bar Chart Schedule;
(3) The quantity and estimated production rates for controlling Work scopes;
(4) The work days per week, number of shifts per day, and number of hours per shift;
(5) Explanation of all nonwork days, including observed Holidays;
(6) Actual weather day reporting as required by 1803.1.B.2, "Actual Weather Day Reporting";
(7) Description of the expected performance of each required permit that has reasonable potential to negatively affect the Work if delayed;
(8) Identification of all Activities requiring coordination with the Department or third parties (e.g., utilities) and a description of the expected performance needed to avoid impacts to the Work;
(9) Description of the reasons for any changes to the schedule, including but not limited to:
    (a) Added or deleted Activities,
    (b) Changes to planned Activity dates,
    (c) Changes to work and nonwork days, including observed Holidays, and
    (d) Changes to previously recorded actual dates;
(10) Description of any unusual labor, shift, equipment or material conditions or restrictions encountered or anticipated since the previous schedule submission; and
(11) Any other Project concerns that are currently affecting or anticipated to affect the schedule.

#### D.4 Schedule Printouts

The Contractor must provide a printout of the Bar Chart Schedule in .pdf format, hard copy or both as requested by the Engineer. The Bar Chart Schedule printout must include the status date (i.e., the date through which progress is being reported), an Activity information table and time-scaled Bar Chart. The Activity information table must include the following information at a minimum:

(1) Activity ID,
(2) Activity Name,
(3) Original Duration,
(4) Remaining Duration,
(5) Percent complete,
(6) Planned start date,
(7) Planned finish date,
(8) Actual start date, and
(9) Actual finish date.

### 1803.2 CRITICAL PATH METHOD (CPM)

#### A General Requirements

#### A.1 General

When the Department specifies the Work under this Contract must be scheduled using the Critical Path Method (CPM), the Work must be planned, accomplished, and reported using CPM scheduling for the Contractor's Project Schedule. The basic concept of CPM network scheduling must be followed, which shows how each given Activity is dependent on preceding Activities and affects following Activities. It is the Contractor's responsibility to develop a Project Schedule that provides for orderly, timely, and efficient completion of the Project and includes enough detail to allow both the Contractor and the Engineer to jointly evaluate progress and confirm contractual requirements are being met.

The Project Schedule must be the Contractor's primary tool to communicate and report their planned delivery strategy to complete the Work. The Contractor must use the Project Schedule to plan, coordinate, and control the progress of construction, including Work performed by subcontractors, suppliers and vendors. The Contractor must provide copies of the Project Schedule to subcontractors, suppliers, vendors and utility companies affected by the Work as needed.

The Project Schedule must be used by the Contractor and the Engineer for the following purposes:

(1) To identify Activities on the Longest Path to project completion;
(2) To identify Activities on the Critical Path(s) to interim Contract Milestone(s);
(3) To document actual performance and progress of Work;
(4) To evaluate the effect of changes and delays to the Work;
(5) To evaluate the best course of action for recovering schedule delays;
(6) To evaluate resource requirements of the Contractor and the Department; and
(7) To coordinate the Work of the Department, other contractors, and third parties (e.g., government agencies and authorities, permitting authorities) into the sequencing of the Contractor's Work where necessary.

#### A.2 Notice

The Contractor must give the Engineer at least 72 hours advance notice before beginning any construction and at least 24 hours advance notice before beginning each major construction operation. The Contractor must inform the Engineer of the number of hours the Contractor intends to be working each day and provide 24 hours advance notice of any changes to work day hours, equipment, forces, or sequence of operations. Submission of the Project Schedule does not meet these notice requirements. The Contractor is required to provide notice separate from the Project Schedule submission.

### A.3 Schedule-Related Roles

The Contractor's Project Manager and Project Scheduler must meet the requirements pertaining to the Project Schedule as specified in 1803.2.A.3.a, "Project Manager" and 1803.2.A.3.b, "Project Scheduler" respectively.

The Contractor's Project Manager and Project Scheduler roles may be performed by the same person. If the Contractor chooses to have one person perform both roles, that person must meet the requirements of both 1803.2.A.3.a, "Project Manager" and 1803.2.A.3.b, "Project Scheduler".

#### A.3.a Project Manager

(1) The Project Manager must have extensive knowledge about the development and status of the Project Schedule. The Project Manager must understand and be able to explain changes made to the Project Schedule, even if the changes were made in the electronic schedule file by the Project Scheduler.
(2) The Project Manager must attend all schedule-related meetings. Any absence from a schedule-related meeting must be approved in advance by the Engineer.

#### A.3.b Project Scheduler

(1) The Contractor must designate an individual, entitled the Project Scheduler, who will develop and maintain the Project Schedule.
(2) The Project Scheduler is recommended to have at least one (1) year of CPM scheduling experience using Primavera P6 scheduling software.
(3) The Project Scheduler may be a full or part time position or may be filled by a consultant.
(4) The Contractor may fill the Project Scheduler position using a person employed by the Contractor who is not on the Project, except for meetings and other times when the Project Manager deems it necessary to have the Project Scheduler at the Project site.
(5) The Contractor must provide an explanation of the Project Scheduler's availability to work on the Project Schedule and experience with CPM scheduling at the preconstruction meeting or before the first Preliminary Schedule submission, whichever occurs first. If the Engineer determines the Project Scheduler does not have sufficient skill or experience in CPM scheduling as a result of Project Schedule submissions being substantially deficient or repeatedly not submitted within the required Contract timeframes, the Engineer may require that the person be removed from the Project in accordance with 1802, "Qualification of Workers" and replaced with a more qualified scheduler.

### A.4 Acceptance

The Engineer will accept or reject a schedule submission based on whether the schedule submission meets the requirements of 1803.2, "Project Schedules, Critical Path Method (CPM)" and any other contractual requirements. The Engineer's acceptance of a schedule submission:

(1) Does not modify the Contract;
(2) Does not attest to the validity of the Contractor's Activity sequencing, Activity Logic, Activity durations, or assumptions in creating the schedule;
(3) Does not guarantee that the Project can be performed or completed as depicted in the schedule; and
(4) Does not transfer any of the Contractor's responsibilities to the Department. The Contractor alone is responsible for the accuracy of the schedule and for managing forces, equipment, and work schedules to ensure completion of the Work within the time(s) specified in the Contract.

The Engineer will return the schedule submission to the Contractor as "Accepted – No Exceptions Taken", "Accepted – As Noted", or "Rejected – As Noted." Review by the Engineer of a portion of a schedule or an incomplete schedule submission will not indicate acceptance of the entire schedule. If the Contractor or Engineer discovers an error after the Engineer has accepted a schedule, the Contractor must correct the error in the next required schedule submission.

### A.5 Float Suppression / Sequestered Float

The Contractor must not suppress or sequester Float. Examples of prohibited Float suppression or sequestration include, but are not limited to:

(1) Logic Relationships that provide no tangible or sequential value between unrelated Activities;
(2) Logic Relationships that demand completion of an Activity that could otherwise continue beyond a Successor's start or finish dates; and
(3) Excessively long and unreasonable Activity durations.

The Contractor is not entitled to compensation or a time extension for delays that could have been avoided by revising Logic or Activity durations used to sequester Float.

### A.6 Use of Float

The Contractor acknowledges that all Float (Total Float and Free Float) is a shared commodity available to the Project and is not for the exclusive benefit of any party. Float is an expiring resource available to accommodate changes in the Work, however originated, or to mitigate the effect of events that may delay performance or completion of all or part of the Work. Float can be used by any party as long as there is no adverse effect to the other party. If the Engineer uses Float, the Contractor must notify the Engineer if the use of that Float will have an impact to the Contract in accordance with 1402, "Contract Revisions".

Weather Contingency, as described in 1803.2.C.10, "Weather Contingency", is not considered Float. For each update period, the Engineer may reserve time gained, or time that should have been gained, on Critical Path Work due to better than anticipated weather as a credit for unused Weather Contingency. The Engineer may apply credits for unused Weather Contingency toward delays to Critical Path Work caused by future weather events or other impacts not caused by the Contractor. Weather Contingency, both planned and acknowledged as a credit, is reserved for the exclusive benefit of the Department.

### A.7 Request for Early Completion Date

If the Contractor wants to have a contractual completion date changed to an earlier date, the Contractor must notify the Engineer of the new desired date in a written letter. The requested early completion date must be achievable as of the last accepted Project Schedule, or the Contractor must submit a Rebaseline Schedule which is explicitly identified as a submission requesting an early completion date and shows completion of all Work by the requested early completion date. If the Contractor's request for an early completion date is accepted, the Engineer will initiate a Change Order amending the contractual completion date to the early completion date requested and as validated by the last accepted Project Schedule or the accepted Rebaseline Schedule submission. The amended completion date will be effective upon execution of that Change Order, and all Contract provisions concerning the completion date, such as incentives, disincentives, excusable delays, compensable delays, and liquidated damages, will be measured against the amended completion date.

The Contractor is allowed to submit a schedule showing completion of all Work before the contractual completion date without requesting an early completion date. If this occurs, the time between the early Project completion shown in the schedule and the contractual completion date will be considered Project Float and the contractual completion date will not be amended.

### A.8 Non-Compliance

It is the Contractor's responsibility to ensure that each schedule submission meets the requirements of 1803.2, "Project Schedules, Critical Path Method (CPM)" and accurately reflects the Work performed in the field. The Department may withhold up to the full amount of each monthly progress estimate for failure to submit an acceptable schedule on time and in the manner required. Payment withheld for violation of the schedule requirements will be included in the next progress estimate following the Contractor's submission of an acceptable schedule. The Engineer may suspend Work under 1803.3, "Temporary Suspensions" if the schedule does not meet the requirements of 1803.2, "Project Schedules, Critical Path Method (CPM)" or if the schedule does not accurately reflect the progress of the Work in the field; the suspension may continue until an acceptable schedule is submitted.

## B Software Requirements

### B.1 Required Software

The Contractor must use Oracle's Primavera P6 (P6). The Contractor must use a version of P6 that is compatible with the Department's current version of P6. The Contractor is responsible for any conversion discrepancies if using a version of P6 that is different than the Department's current version of P6.

### B.2 Calculation Settings

The Contractor must schedule (i.e., F9 in P6) the Project Schedule to ensure all changes have been incorporated before submission to the Engineer. The Contractor must use the following settings in the P6 'Schedule Options' window:

(1) Uncheck 'Use Expected Finish Dates'; expected finish dates are not allowed.
(2) Select 'Retained Logic' for scheduling progressed Activities.
(3) Select 'Longest Path' to define Critical Activities.
(4) Select 'Finish Float = Late Finish – Early Finish' to compute Total Float.

### B.3 Project-Level Settings

The Contractor must use project-level calendars, not global or resources calendars. The Contractor must use project-level codes, not global- or EPS-level codes.

### B.4 Duration Format Settings

The Department considers Activity durations (e.g., Original Duration, Remaining Duration) in whole days. In the 'Time Units' tab of the P6 'User Preferences" window, the Contractor must use the following settings for the 'Duration Format':

(1) 'Day' for the 'Unit of Time', and
(2) '0' for the number of 'Decimals'.

### B.5 Date Format Settings

The Contractor must use the DD-MMM-YY (e.g., 01-Jan-19) format to display dates in schedule printouts. This date format is typically the default P6 setting.

## C Technical Requirements

### C.1 Work Breakdown Structure

The Contractor must use the following Work Breakdown Structure levels and nodes at a minimum.

**Table 1803-1**
**Work Breakdown Structure**

- Level 1: Project Description
  - Level 2: Milestones
  - Level 2: Submittals
    - Level 3: Shop Drawings
    - Level 3: Procurement/Fabrication
  - Level 2: Construction
    - Level 3: Phase TBD
      - Level 4: Stage TBD
        - Level 5: Detail to be defined by Contractor
        - Level 5: Detail to be defined by Contractor
      - Level 4: Stage TBD
        - Level 5: Detail to be defined by the Contractor
        - Level 5: Detail to be defined by the Contractor
    - Level 3: Phase TBD

| Table 1803-1<br>Work Breakdown Structure |
|---|
| Level 4: Stage TBD |
| Level 5: Detail to be defined by Contractor |
| Level 5: Detail to be defined by Contractor |
| Level 4: Stage TBD |
| Level 5: Detail to be defined by the Contractor |
| Level 5: Detail to be defined by the Contractor |
| Level 2: Post Construction |

The Contractor must refine and expand on the specified Work Breakdown Structure provided, but the specified levels and nodes must still be included and maintained in the arrangement specified. The Contractor is responsible for determining an appropriate level of detail and descriptions for the Work Breakdown Structure. The Contractor must obtain acceptance from the Engineer for any deviations from the specified Work Breakdown Structure. The Contractor must ensure each Activity is assigned to the appropriate Work Breakdown Structure node.

### C.2 Activity IDs

Each Activity must possess a unique Activity ID which remains constant throughout the Project. If an Activity is deleted in a subsequent schedule submission, the corresponding Activity ID must not be used for any other Activity. The Contractor must limit the complexity of Activity IDs such that Activity IDs are easy to speak and write.

If using 'smart' Activity IDs, the Contractor must develop a coding system and corresponding key to explain the meaning of the Activity IDs. The Contractor must apply the coding system consistently and accurately to all Activity IDs and provide the coding system key to the Engineer for review and acceptance.

### C.3 Activity Names

Each Activity must possess a unique Activity Name. Activity Names must include a Verb, Object and Location (VOL) where practical. In addition, the Activity Name for each 'Level of Effort' Activity must start with "(LOE)". The Contractor must obtain the Engineer's acceptance for any Activity Name that does not include a Verb, Object and Location (VOL). The Contractor must use consistent language, including abbreviations and punctuation, among Activity Names with a similar scope of Work, location, or both.

### C.4 Activity Durations

Activity durations must be expressed in work days. Activity durations must be limited to not more than 20 work days, unless otherwise accepted by the Engineer.

### C.5 Activity Count

The Contractor is responsible for determining an appropriate level of detail to include in the Project Schedule. The number of Activities included in the Project Schedule should reflect the nature, size and complexity of the Project. The Contractor must include enough Activities to assure adequate planning of the Project, to allow for accurate monitoring and evaluation of progress, and to ensure all contractual date requirements are identifiable and being met, including any contractual time-related Work restrictions.

### C.6 Logic

The Activity Relationships included in the Project Schedule must accurately represent how Predecessor and Successor Activities are dependent upon each other.

#### C.6.a Relationship Types

Activity Relationship types must be limited to finish-to-start (FS), start-to-start (SS), and finish-to-finish (FF). The Contractor must obtain acceptance from the Engineer before using any start-to-finish (SF) relationships.

(1) Each Activity, except for the first Activity in the schedule, must have at least one of the following Predecessor Relationships:
   (a) Finish-to-start, or
   (b) Start-to-start.

(2) Each Activity, except for the last Activity in the schedule, must have at least one of the following Successor Relationships:
   (a) Finish-to-start, or
   (b) Finish-to-finish.

#### C.6.b Missing Logic

Each Activity must have at least one Predecessor Relationship except for the first Activity in the schedule and at least one Successor Relationship except for the last Activity in the schedule.

#### C.6.c Open-Ended Activities

Open-Ended Activities occur when an Activity's start or finish is not logically tied to another Activity in the schedule. Open-ended Activities are prohibited.

#### C.6.d Redundant Logic

The Contractor must avoid using excessive Redundant Logic when possible. The Contractor must provide an explanation of the reason for Redundant Logic upon the request of the Engineer.

#### C.6.e Lag

The Contractor must obtain the Engineer's acceptance before using Lags. The Contractor must remove any Lag and replace with an Activity identifying the Lag upon the request of the Engineer, regardless of whether the Engineer allowed the Lag in a previous Project Schedule.

#### C.6.f Out-Of-Sequence Work

Out-Of-Sequence Work occurs when a logical Relationship between Activities is invalidated by actual progress (i.e., when a Successor Activity actually starts or actually finishes earlier than its Predecessor Relationship type indicates it should be able to start or finish). Out-Of-Sequence Work indicates that actual Work progress is being performed differently than was planned in the schedule.

The Department considers the degree of Out-Of-Sequence Work as major, minor or historical, as defined below. A list of major and minor Out-Of-Sequence Work can be found in the P6 'Schedule Log' after scheduling (i.e., F9 in P6) the schedule. Before making any change to the schedule, the Contractor must review each instance of Out-Of-Sequence Work reported on the P6 'Schedule Log' to determine if a corrective action is appropriate. When possible, the Contractor must minimize the number of changes to the Project Schedule resulting from any Out-Of-Sequence Work correction. If the Contractor determines a change is needed due to Out-Of-Sequence Work, a detailed explanation must be provided in the accompanying Narrative Report for each instance of Out-Of-Sequence Work and the corrective action taken. If the Contractor believes Out-Of-Sequence Work indicates a significant change in planned Work sequencing, the Contractor must notify the Engineer before making changes in the schedule. Significant numbers of Out-Of-Sequence Work instances, including major Out-Of-Sequence Work, may indicate a Rebaseline Schedule or Impact Schedule is needed. The Contractor should discuss any concerns with Out-Of-Sequence Work and the potential need for a Rebaseline Schedule or Impact Schedule with the Engineer before taking action.

(1) Major Out-Of-Sequence Work: Each instance of Out-Of-Sequence Work may be considered major when either of the following parameters occur:
   (a) The Predecessor is critical, and the Successor is 100% complete, or
   (b) The Out-Of-Sequence Work is not expected to be resolved during the next update period.

(2) Minor Out-Of-Sequence Work: Each instance of Out-Of-Sequence Work may be considered minor when the Out-Of-Sequence Work is expected to be resolved during the next update period and either of the following parameters occur:
    (a) The Predecessor is not critical, and the Successor is 100% complete, or
    (b) The Successor is in-progress.
(3) Historical Out-Of-Sequence Work: Historical Out-Of-Sequence Work will not be reported on the P6 'Schedule Log'.

Major Out-Of-Sequence Work is prohibited. The Contractor must modify each instance of major Out-Of-Sequence Work to accurately reflect Activity Relationships and the planned Work sequence as known in the field.

Minor Out-Of-Sequence Work is allowed. The Contractor must not modify minor Out-Of-Sequence Work, unless requested by the Engineer or the Contractor determines that modifications are needed to reflect a change in the planned Work sequence as known in the field.

Historic Out-Of-Sequence Work is allowed. The Contractor must not modify historical Out-Of-Sequence Work, unless requested by the Engineer.

### C.7 Constraints

#### C.7.a Constraint Date Requirements

The Contractor must reference the 1806, "Determination and Extension of Contract Time," Special Provisions for Project-specific Constraint date requirements. The Contractor's use of Constraint dates other than those specified in the Special Provisions is subject to the Engineer's review and acceptance.

#### C.7.b Constraint Types

Constraint types must be limited to the following types, unless otherwise approved by the Engineer:

(1) Start on or before, and
(2) Finish on or before.

### C.8 Calendars

Each Activity must be assigned an appropriate calendar in P6. The Project Schedule must use the following calendars at a minimum, unless otherwise approved by the Engineer:

(1) Calendar to indicate calendar days (i.e., 7 days per week with no Holidays);
(2) Calendar(s) for Work unaffected by weather;
(3) Calendar(s) for Work affected by weather; the Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-specific Weather Contingency requirements; and
(4) Calendar(s) for any Work subject to significant Work restriction periods as detailed in the 1806, "Determination and Extension of Contract Time," Special Provisions (e.g., closure periods, Work in water restrictions).

The Contractor must ensure the number of calendars created and used in the Project Schedule is manageable. The Contractor must provide an explanation of each calendar in the accompanying Narrative Report. Once the Baseline Schedule is accepted, the Contractor must not make changes to calendars unless the changes are clearly identified and explained in the accompanying Narrative Report.

#### C.8.a Work Days Per Week

The name of each calendar in P6 must include the number of planned work days per week (e.g., 5 days, 6 days). The planned number of work days per week shown in the calendars must be consistent with the number of work days listed in the accompanying Narrative Report and the number of days worked in the field. Once the Baseline Schedule is accepted, the Contractor must not make changes to the planned work days per week in the calendars unless the changes are clearly identified and explained in the accompanying Narrative Report.

#### C.8.b Work Hours Per Day

The Department considers Activity durations in work days and not work hours. It is not recommended for the Contractor to adjust the calendars in P6 to reflect the specific planned work hours per day because adjusting work hours in calendars can add significant complexity in schedule management and result in unintentional changes to Activity durations. If the Contractor chooses to modify the work hours per day in a

calendar after the Baseline Schedule is accepted, the changes must be clearly identified and explained in the accompanying Narrative Report.

#### C.8.c Nonwork Days

The calendars in P6 must indicate all days that the Contractor does not plan to work as nonwork days. Each calendar must contain nonwork days (e.g., weekends, closure periods, Holidays, Weather Contingency) as appropriate, with the exception of the calendar used to indicate calendar days.

The nonwork days shown in the calendars must be consistent with the nonwork days described in the accompanying Narrative Report. Once the Baseline Schedule is accepted, the Contractor must not make changes to the planned nonwork days in the calendars unless the changes are clearly identified and explained in the accompanying Narrative Report.

### C.9 Holidays

The calendars in P6, with the exception of the calendar used to indicate calendar days, must accurately show each planned observed Holiday as a nonwork day. The Holidays shown in the calendars must be consistent with the Holidays listed in the accompanying Narrative Report. Once the Baseline Schedule is accepted, the Contractor must not make changes to the Holidays in the calendars unless the changes are clearly identified and explained in the accompanying Narrative Report. Unless otherwise noted, Holidays must be as established in MS 645.44.

### C.10 Weather Contingency

#### C.10.a Project-Specific Weather Contingency

The Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-Specific Weather Contingency requirements.

#### C.10.b Weather Contingency Reporting

For each update period, the Contractor must provide an assessment of the planned Weather Contingency compared to actual weather experienced on Critical Path Work, in addition to the requirements of 1803.2.C.11, "Actual Weather Day Reporting", in the accompanying Narrative Report for the Engineer's review.

(1) The Contractor must clearly state the number of days that any contractual requirement was delayed due to weather when the Contractor believes actual weather experienced on Critical Path Work is more than the planned Weather Contingency in an update period.
(2) The Contractor must clearly state that no contractual requirement(s) was delayed due to weather when the Contractor believes the actual weather experienced on Critical Path Work is less than or equal to the planned Weather Contingency in the update period.

For each update period, the Engineer may reserve a credit for unused Weather Contingency (i.e., the difference between the planned Weather Contingency and actual weather days experienced) when the actual weather experienced on Critical Path Work is less than the planned Weather Contingency. The Engineer will consider any credits for unused Weather Contingency as cumulative until the completion of the Project or until the Engineer determines that a time extension due to weather is necessary. The Engineer will not pursue an early completion of the Project as a result of any credits for unused Weather Contingency unless an early completion date is requested by the Contractor in accordance with 1803.2.A.7, "Request for Early Completion Date."

The Engineer will provide details regarding determination of any credits for unused Weather Contingency for the Contractor's review. If the Contractor disagrees with the Engineer's determination, the Contractor must provide a written explanation and supporting documentation (e.g., daily reports, contemporaneous correspondence, Project photos) for the Engineer's review.

### C.11 Actual Weather Day Reporting

The Contractor must document and obtain agreement with the Engineer for each weather day experienced at the time of each occurrence. The Contractor must include a list of the specific claimed actual weather days experienced and a brief description of the Work affected on each weather day in the accompanying Narrative Report applicable to the period in which weather was experienced.

### C.12 Actual Dates

The Contractor must report actual start and actual finish dates for Work performed before the Project Schedule Data Date. Actual dates must accurately reflect when the Work was performed in the field. The Contractor must provide an explanation in the accompanying Narrative Report for any change to a previously reported actual date.

### C.13 Schedule Criticality

The Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-specific schedule criticality requirements.

### C.14 Activity Codes

The Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-specific Activity Code requirements.

### C.15 User Defined Fields

The Contractor must reference the 1803, "Project Schedules" Special Provisions for Project-specific User Defined Field requirements.

## D Required Schedules

### D.1 Preliminary Schedule

Acceptance of the First Preliminary Schedule is a condition of Notice to Proceed 1 (NTP1). The Contractor must reference Table 1803-2 for Preliminary Schedule file naming convention requirements and Table 1803-3 for Preliminary Schedule submission timeline requirements. A delay in submitting the Preliminary Schedule is a non-excusable delay under 1806.2.C, "Non-Excusable Delays," and the Contractor is not entitled to an extension of the Contract Time.

The purpose of the Preliminary Schedule is to show that the Contractor understands the contractual Milestones and plans to complete the Project within the contractually required interim and completion dates. The Preliminary Schedule may be submitted in either Bar Chart or CPM format. The Preliminary Schedule is not required to meet all requirements in 1803.2.B, "Software Requirements" and 1803.2.C, "Technical Requirements". At a minimum, the Contractor must include the following level of detail in the Preliminary Schedules:

(1) First Preliminary Schedule: Show all Milestone dates are understood and provide a detailed schedule for the next 30 calendar day look-ahead period from the submission date.
(2) Subsequent Preliminary Schedules: Show all Milestone dates are understood and provide a detailed schedule for the next 45 calendar day look-ahead period from the submission date.

Changes made between Preliminary Schedule submissions must be closely coordinated with the Engineer and are subject to the Engineer's review and acceptance. The Contractor must show the status of Work completed by reporting actual start and finish dates and by reasonably estimating the Remaining Duration for each in-progress Activity.

### D.2 Baseline Schedule

Baseline Schedule acceptance is a condition of Notice to Proceed 2 (NTP2). The Contractor must reference Table 1803-2 for Baseline Schedule file naming convention requirements and Table 1803-3 for Baseline Schedule submission timeline requirements. It is the responsibility of the Contractor to ensure schedule submissions intended for Baseline Schedule review and acceptance meet all requirements included in 1803.2, "Project Schedules, Critical Path Method (CPM)". Any delay to acceptance of the Baseline Schedule and NTP2 not caused by the Department (e.g., Contractor late submissions, incomplete submissions, and repeat resubmissions due to failure to properly address comments by the Engineer) will be considered a non-excusable delay in accordance with 1806.2.C, "Non-Excusable Delays".

The purpose of the Baseline Schedule is to establish how the Contractor plans to complete all Work contracted. The Baseline Schedule must include the entire scope of Work in detail. The Contractor must notify the Engineer when a schedule is being submitted for baseline review and acceptance as opposed to a Preliminary Schedule submission.

(1) The Baseline Schedule must indicate:

(a) Actual dates of Work performed if the Contractor chooses to perform any Work before the Baseline Schedule being accepted.
(b) All contractual date requirements and Milestones, including any time-related Work restrictions, are being met and scheduled to complete within the Contract Time.

(2) The Baseline Schedule must include the following level of detail at a minimum and when applicable:
(a) Mobilization;
(b) Work to be performed by the Contractor, subcontractors and suppliers;
(c) Work to be performed by the Department, other contractors, and third parties which directly affects the Contractor's Work (e.g., government agencies and authorities, permitting authorities);
(d) Project Milestones, phases, stages, traffic switches and availability dates specified in the Contract
(e) Submittal, review and acceptance Activities;
(f) Fabrication, delivery, installation, testing and similar Activities for materials, plants and equipment;
(g) Installation, erection, removal and similar Activities related to temporary systems or structures (e.g. temporary electrical system, shoring);
(h) Settlement or surcharge periods;
(i) Utility notification and relocation, including concurrent utility moves and planned suspension periods to allow for utility relocation;
(j) Receipt of permits;
(k) Substantial Completion; and
(l) Final Completion.

### D.3 Update Schedule

The Contractor must submit an Update Schedule on a monthly basis, at a minimum, after the Baseline Schedule is accepted. The Contractor must reference Table 1803-2 for Update Schedule file naming convention requirements and Table 1803-3 for Update Schedule submission timeline requirements.

The purpose of the Update Schedule is to document progress and communicate the current status of the Project. The Contractor must update the last accepted Project Schedule to create each Update Schedule. Each Update Schedule must meet all requirements included in 1803.2, "Project Schedules, Critical Path Method (CPM)." The Contractor must update the last accepted Project Schedule by reporting actual start and actual finish dates for Work completed during the update period and by reasonably estimating the Remaining Duration for each in-progress Activity. The Contractor must minimize the number of changes to the Project Schedule. The Contractor must describe in detail the reason for any changes to the schedule in the accompanying Narrative Report submitted with each Update Schedule.

The inclusion of significant changes in a standard Update Schedule requires a detailed review by the Engineer and may affect acceptance of the Update Schedule and corresponding progress payment. Should significant changes be required during the standard update process, the Contractor must determine whether a Rebaseline Schedule or Impact Schedule is needed instead of including the changes in the Update Schedule. The Contractor must coordinate closely with the Engineer if an Update Schedule is due and a Rebaseline Schedule or Impact Schedule has been submitted and is in the review process. The Engineer will determine if the Contractor must update progress for the Update Schedule that is due using the last accepted Project Schedule or the last submitted Rebaseline Schedule or Impact Schedule.

### D.4 Look-Ahead Schedule

The Contractor must submit a detailed Look-Ahead Schedule to the Engineer each week until all Work is completed. The Contractor must reference Table 1803-3 for Look-Ahead Schedule submission timeline requirements.

The purpose of the Look-Ahead Schedule is to communicate, in a high level of detail, the Contractor's recent Work progress in the field and planned Work Activities for the upcoming 14 calendar days on a rolling basis. The Contractor must prepare the schedule in Bar Chart format by hand or by using a computer. The Look-Ahead Schedule must include actual dates for Work performed since the last Look-Ahead Schedule submission

and planned dates for Work to be performed in the upcoming 14 calendar days at a minimum. The Look-Ahead Schedule is not required to meet all requirements in 1803.2.B, "Software Requirements" and 1803.2.C, "Technical Requirements". However, the Work Activities included in the Look-Ahead Schedule must specifically reference the applicable Activity IDs in the Project Schedule. The Look-Ahead Schedule may be prepared by Contractor personnel other than the designated Project Scheduler (e.g., Superintendent, Field Supervisor, Project Manager).

#### D.5 Rebaseline Schedule

The Contractor must not perform Work substantially different than depicted on the last accepted Project Schedule. If work is to be performed substantially different than depicted on the last accepted Project Schedule, the Contractor must seek an accepted Rebaseline Schedule.

The Contractor must submit a Rebaseline Schedule upon one of the following:

(1) At the Engineer's Request.
   (a) Where the Engineer has accepted an Impact Schedule and approves the Contractor to incorporate the impacts and corresponding resolution (e.g., modified completion date, re-sequenced Work, mitigation efforts) into the last accepted Project Schedule.
   (b) Where the Engineer requires the Contractor to demonstrate a proposed recovery plan to any Milestone date significantly exceeding the contractual requirements in the last accepted Project Schedule.
   (c) The Engineer concludes that there is a substantial difference between the sequence or duration of the Work as known in the field and the Work as depicted in the last accepted Project Schedule.
(2) The issuance of a Contract Revision document that changes the planned sequence of Work or the method and manner of its performance.
(3) The Contractor requests an early completion date.
(4) The Contractor plans to substantially deviate from the last accepted Project Schedule, including significant changes to sequence or durations of remaining Work.

The Contractor must reference Table 1803-2 for Rebaseline Schedule file naming convention requirements and Table 1803-3 for Rebaseline Schedule submission timeline requirements.

The purpose of the Rebaseline Schedule is to establish the Contractor's revised plan to complete all Work when significant changes to the last accepted Project Schedule are required. The Rebaseline Schedule must meet all requirements included in 1803.2, "Project Schedules, Critical Path Method (CPM)." The Contractor must describe in detail the reasons for all proposed schedule changes in the accompanying Narrative Report.

Any requirement to prepare a Rebaseline Schedule is not a directive by the Engineer to accelerate the Work but rather a directive for the Contractor to seek the Engineer's acceptance of a proposal to revise the last accepted Project Schedule, which may or may not include acceleration. Acceptance of a Rebaseline Schedule does not approve acceleration costs without detailed support from the Contractor explaining such acceleration costs.

#### D.6 Impact Schedule

The Contractor must submit an Impact Schedule to model and evaluate impacts to the Project Schedule upon one of the following:

(1) At the Engineer's request. An example of a reason for an Engineer-requested Impact Schedule may be the negotiation of a potential Contract Revision document that changes that planned sequence of Work or the method and manner of its performance.
(2) When the Contractor believes that an Impact Schedule is necessary and obtains agreement with the Engineer.

Depending on the complexity of the proposed schedule changes required to evaluate the impact experienced, an Impact Schedule may or may not be needed. However, the Engineer still reserves the right to require the Contractor to submit an Impact Schedule regardless of complexity. The Contractor must reference Table 1803-2 for Impact Schedule file naming convention requirements and Table 1803-3 for Impact Schedule submission timeline requirements.

The purpose of the Impact Schedule is to quantify the effects of any past, current or future impacts to the Project Schedule and to establish the potential need for a time extension to a Project Milestone. When creating an Impact Schedule, the Contractor must follow the standard for preparation of an Impact Schedule as specified in 1806, "Determination and Extension of Contract Time." The Contractor must describe in detail the reasons for all proposed schedule changes in the accompanying Narrative Report.

The requirement to prepare an Impact Schedule is not a directive by the Engineer to accelerate the Work but rather a directive for the Contractor to demonstrate the effects of impacts to the accepted Project Schedule.

### D.7 As-Built Schedule

At the conclusion of work, the Contractor must submit a final Project Schedule with actual start and actual finish dates for each Activity. This schedule will serve as the As-Built Project Schedule. The Department will not grant final Contract acceptance as specified in 1516.4, "Final Contract Acceptance" until the Engineer receives and accepts the Final As-Built Project Schedule.

## E Submission Requirements

### E.1 File Naming Convention

The Contractor must include the file naming convention as shown in Table 1803-2 for all files included in the schedule submission (i.e., Narrative Report, schedule printouts, and P6 native .xer file). The Contractor may include additional wording after the specified file naming convention to identify the schedule submission type (e.g., Narrative Report, All Activities Printout, Longest Path Printout, Near-Critical Activities Printout). The Contractor must ensure any additional wording added to the file naming convention remains consistent throughout the duration of the Project. If the schedule in not accepted, the Contractor must resubmit under the file name as modeled for resubmission. The ####-### indicates a placeholder for the State Project Number.

The purpose of the file naming convention is to avoid confusion regarding the schedule submission type and version between the Contractor, the Engineer, and any other party receiving the Contractor's schedule submission.

**Table 1803-2**
**Project Schedule File Naming Convention**

| Schedules | Original Submission | 1st Resubmission | 2nd Resubmission |
|---|---|---|---|
| First Preliminary Schedule | ####-###-PR00-Rev0 | ####-###-PR00-Rev1 | ####-###-PR00-Rev2 |
| 1st Subsequent Preliminary Schedule edulSchedule | ####-###-PR01-Rev0 | ####-###-PR01-Rev1 | ####-###-PR01-Rev2 |
| 2nd Subsequent Preliminary Schedule, etc. edulSchedule | ####-###-PR02-Rev0 | ####-###-PR02-Rev1 | ####-###-PR02-Rev2 |
| Baseline Schedule | ####-###-BSLN-Rev0 | ####-###-BSLN-Rev1 | ####-###-BSLN-Rev2 |
| 1st Update Schedule | ####-###-UP01-Rev0 | ####-###-UP01-Rev1 | ####-###-UP01-Rev2 |
| 2nd Update Schedule, etc. | ####-###-UP02-Rev0 | ####-###-UP02-Rev1 | ####-###-UP02-Rev2 |
| 1st Rebaseline Schedule | ####-###-RB01-Rev0 | ####-###-RB01-Rev1 | ####-###-RB01-Rev2 |
| 2nd Rebaseline Schedule, etc. | ####-###-RB02-Rev0 | ####-###-RB02-Rev1 | ####-###-RB02-Rev2 |
| 1st Impact Schedule | ####-###-IS01-Rev0 | ####-###-IS01-Rev1 | ####-###-IS01-Rev2 |
| 2nd Impact Schedule, etc. | ####-###-IS02-Rev0 | ####-###-IS02-Rev1 | ####-###-IS02-Rev2 |

### E.2 Timeline

It is the Contractor's responsibility to meet with the Engineer as often as necessary to satisfy the timelines stated in Table 1803-3. If the Engineer does not accept a schedule submission, the Contractor must review and respond to all of the Engineer's questions and concerns, adjust the schedule if needed, and resubmit to the Engineer within the timelines indicated in Table 1803-3.

**Table 1803-3**
**Schedule Submission Timelines**

| Schedule Type | Section | Data Date | Submission Due Date | Engineer Review Length | Resubmission Due Date |
|---|---|---|---|---|---|
| First Preliminary | 1803.2.D.1 | Letting Date, or as agreed to by the Engineer | Condition of NTP1 | 7 Calendar Days after submitted | 7 Calendar Days |
| Subsequent Preliminary | 1803.2.D.1 | One month after the Data Date of the last accepted Preliminary Schedule, or as agreed to by the Engineer | 4 Business Days after Data Date | 7 Calendar Days after submitted | 7 Calendar Days |
| Baseline | 1803.2.D.2 | No earlier than the Data Date of the last accepted Preliminary Schedule, or as agreed to by the Engineer | Condition of NTP2 | 7 Calendar Days after submitted | 7 Calendar Days |
| Update | 1803.2.D.3 | 15th of every month, or as agreed to by the Engineer | 4 Business Days after Data Date | 7 Business Days after submitted | 3 Business Days |
| Look-Ahead | 1803.2.D.4 | N/A | Weekly | N/A | N/A |
| Rebaseline | 1803.2.D.5 | No earlier than the Data Date of the last accepted Project Schedule, or as agreed to by the Engineer | 7 Business Days after the need for a Rebaseline Schedule is identified | 7 Business Days after submitted | 7 Calendar Days |
| Impact | 1803.2.D.6 | No earlier than the Data Date of the last accepted Project Schedule, or as agreed to by the Engineer | 7 Business Days after the need for an Impact Schedule is identified | 7 Business Days after submitted | As directed by the Engineer |

### E.3 Narrative Report

The Contractor must include a detailed Narrative Report with each schedule submission, including schedule resubmissions. For schedule resubmissions, the Contractor must update the Narrative Report to include comments regarding the nature of the resubmission and any changes made since the previous schedule submission.

#### E.3.a Baseline Schedule Narrative Report

Each Baseline Schedule Narrative Report must include and discuss at a minimum:

(1) Explanation of the overall plan to complete the Project, including where the Work will begin and how the Work and crews will flow through the Project;
(2) The quantity and estimated production rates for Critical Activities;
(3) The work days per week, number of shifts per day, and number of hours per shift;
(4) Identification of calendars used in P6 and an explanation of all non work days, including observed Holidays and Weather Contingency;
(5) Description of the expected performance of each required permit that has reasonable potential to negatively affect the Work if delayed;

(6) Identification of all Activities requiring coordination with the Department or third parties (e.g., utilities) and a description of the expected performance needed to avoid impacts to the Work;
(7) Identification of all Constraints and an explanation of the reason for each Constraint;
(8) Identification of all Relationships with Lag and an explanation of the reason for each Lag;
(9) Schedule criticality calculations, if required by the 1803, "Project Schedules" Special Provisions; and
(10) Any other Project concerns that are currently affecting or anticipated to affect the schedule.

**E.3.b Update Schedule Narrative Report**

Each Update Schedule Narrative Report must include and discuss at a minimum:

(1) Description of the reasons for any changes to the schedule, including but not limited to:
    (a) Added or deleted Activities;
    (b) Added or deleted Logic;
    (c) Changes to Original Duration;
    (d) Increases in Remaining Duration (NOTE: decreases in Remaining Duration for Work progressed during the update period are not considered changes);
    (e) Added, deleted, or changed Constraints;
    (f) Added, deleted, or changed Lag;
    (g) Changes to work and nonwork days in calendars in P6, including observed Holidays and Weather Contingency;
    (h) Changes to calendar assignments in P6; and
    (i) Changes to previously recorded actual dates (NOTE: new actual start and actual finish dates for Work progressed during the update period are not considered changes);
(2) Description of the status of scheduled Milestone dates, including specifically any differences from the last accepted Project Schedule;
(3) Actual weather day reporting as required by 1803.2.C.11, "Actual Weather Day Reporting";
(4) Weather Contingency reporting as required by 1803.2.C.10.b, "Weather Contingency Reporting";
(5) Description of any unusual labor, shift, equipment or material conditions or restrictions encountered or anticipated since the previous schedule submission;
(6) Description of the expected performance of each required permit that has reasonable potential to negatively affect the Work if delayed;
(7) Description of the status of any Activities requiring coordination with the Department or third parties (e.g., utilities) planned to occur during the next update period and expected performance needed to avoid impacts to the Work;
(8) Schedule criticality calculations, if required by the 1803, "Project Schedules" Special Provisions; and
(9) Any other Project concerns that are currently affecting or anticipated to affect the schedule.

**E.3.c Rebaseline Schedule Narrative Report**

Each Rebaseline Schedule Narrative Report must include and discuss at a minimum:

(1) Explanation of the overall plan to complete the Project, including how the Work and crews will flow through the Project and specifically how this differs from the last accepted Project Schedule;
(2) Description of the reasons for any changes to the schedule as listed in 1803.2.E.3.b(1);
(3) Description of the status of scheduled Milestone dates, including specifically any differences from the last accepted Project Schedule;
(4) The quantity and estimated production rates for Critical Activities;
(5) Description of any changes to the work days per week, number of shifts per day, and number of hours per shift;
(6) Description of any unusual labor, shift, equipment or material conditions or restrictions encountered or anticipated;

(7) Description of the expected performance of each required permit that has reasonable potential to negatively affect the Work if delayed;
(8) Identification of all Activities requiring coordination with the Department or third parties (e.g., utilities) and a description of expected performance needed to avoid impacts to the Work;
(9) Schedule criticality calculations, if required by the 1803, "Project Schedules" Special Provisions; and
(10) Any other Project concerns that are currently affecting or anticipated to affect the schedule.

#### E.3.d Impact Schedule Narrative Report

Each Impact Schedule Narrative Report must include and discuss at a minimum:

(1) Detailed explanation of the impact being experienced and its effect on the overall plan to complete the Project, including how the impact may affect how crews will flow through the Project;
(2) Detailed description of all changes to the schedule, as listed in 1803.2.E.3.b(1), and the reason for each change; changes must be limited to those involving the impact only;
(3) Description of the status of scheduled Milestone dates, including specifically any differences from the last accepted Project Schedule;
(4) Description of the expected performance of each required permit related to the impact that has reasonable potential to negatively affect the Work if delayed, if related to the impact;
(5) Identification of all Activities related to the impact requiring coordination with the Department or third parties (e.g., utilities) and a description of expected performance needed to avoid impacts to the Work;
(6) Schedule criticality calculations, if required by the 1803, "Project Schedules" Special Provisions; and
(7) Any other Project concerns that are currently affecting or anticipated to affect the schedule.

### E.4 Schedule Printouts

#### E.4.a Required Schedule Printouts

The Contractor must include the following schedule printouts in .pdf format with each schedule submission:

(1) "All Activities". All Activities grouped by WBS and sorted by start date with the Longest Path indicated in red.
(2) "Longest Path". Critical Path Activities, which are typically displayed using the P6 'Longest Path' filter, sorted by start date. This printout may be grouped by WBS at the Contractor's discretion.
(3) "Near-Critical Activities". All Near-Critical Activities sorted first by Total Float and then by start date. This printout must not be grouped by WBS.
(4) Any additional schedule printout as requested by the Engineer.

Each schedule printout must include a title block displaying the Data Date, run date, Activity bar legend, schedule printout name, and filter(s) applied. Each schedule printout must be formatted to fit the Activity table and Gantt chart to one page wide in landscape orientation on an 11x17 page size. The Engineer may require the Contractor to submit a hard copy of each schedule printout in addition to the required .pdf.

#### E.4.b Activity Table Information

The Activity table must contain the following information at a minimum:

(1) Activity ID,
(2) Activity Name,
(3) Original Duration,
(4) Remaining Duration,
(5) Start,
(6) Finish,
(7) Late Start,
(8) Late Finish, and

(9) Total Float.

#### E.4.c Gantt Chart Information

The Gantt chart must typically be formatted as follows:

(1) The timescale must be adjusted to appropriately show the Activities included in the printout.
(2) Show the Data Date as a solid blue line, when applicable.
(3) Show Logic lines, when applicable.
(4) Do not include summary bars, percent complete bars, or baseline bars.

### E.5 P6 Native File

The Contractor must submit the P6 native .xer schedule file with each schedule submission. The Contractor must reference Table 1803-2 for file naming convention requirements.

## 1803.3 TEMPORARY SUSPENSIONS

### A Suspension of Work Ordered by the Engineer

The Engineer will issue all suspension-of-work orders in writing specifying the effective start date and end date of the suspension, the operations to be suspended, and the reasons for the suspension. The Contractor may not resume work until so authorized in writing by the Engineer and must resume work within a reasonable time upon the Engineer's direction. The Engineer will order the resumption of Work upon determining that the conditions that caused the suspension no longer exist.

If the Engineer issues a temporary suspension-of-work order because of any action or inaction by the Department, or because of incomplete Work under other contracts, and if the Contractor has not been advised in the Contract that such a suspension may be necessary, the Contractor must refer to 1402.4, "Suspensions of Work Ordered by the Engineer," regarding compensation and extension of Contract Time.

If the Engineer issues a temporary suspension-of-work order due to the Contractor's fault or negligence, such suspension is a non-excusable delay as specified in 1806.2.C, "Non-Excusable Delays," and is non-compensable.

### B Suspension of Work Requested by the Contractor

The Contractor must send a written request for a temporary suspension of work to the Engineer. The Contractor's request must include the proposed effective start and end dates, the operations to be suspended, and the reasons for requesting the suspension. The Contractor must not suspend all or any part of the Work without the Engineer's written authorization. Suspension of the Work for any cause whatsoever does not relieve the Contractor of the responsibility for maintenance of traffic, except as otherwise provided in 1404, "Maintenance of Traffic," or by written agreement between the Contractor and the Department.

The Engineer will not authorize the Contractor to temporarily suspend operations until the following conditions are met:

(1) The roads that are being used by traffic and any temporary approaches or crossings and intersections with trails, roads, streets, businesses, parking lots, residences, garages, and farms are in such condition that only routine maintenance will be required to adequately accommodate through and local traffic during the anticipated period of suspension.
(2) The Contractor has performed such work as is necessary to protect all completed or partially completed work during the anticipated suspension period.
(3) The Contractor has placed all traffic control devices as specified in 1710, "Traffic Control Devices."

Should the Contractor fail to perform any of this Work before suspension, the Department reserves the right to have the Work performed by others and to deduct the associated costs from any moneys due or becoming due the Contractor.