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**If any of the SECTIONS (i.e. 1.02, 1.03, etc.) below are not required for the project do NOT delete the Section, but rather change the title of the Section to “NOT USED” (i.e. 1.02 NOT USED) so that numbering of specification references is preserved, and delete the specification language in this Section below the title.**

## **PART 1 GENERAL**

### **1.01 SECTION INCLUDES**

- A. Summary.
- B. Definitions.
- C. Preparation.
- D. Schedule submission requirements.
- E. Preliminary schedule.
- F. Baseline schedule.
- G. Summary schedule.
- H. Cash flow report.
- I. Progress schedules.
- J. Start-up and commissioning schedule.
- K. Narrative report.
- L. Three-week look report
- M. Revisions to schedule.
- N. Final schedule submittal.
- O. Review and acceptance of schedules and reports.
- P. Delays.
- Q. Remediation Plan.
- R. Early Completion.
- S. Incentives.

T. Submittals.

1.02 SUMMARY

- A. This Section consists of definitions, preparation, submittals and reports, review and acceptance, remedial measures and recovery schedule, adjustment of contract times, and performance-based schedule incentives for the following:
1. Preliminary Schedule
  2. Baseline Schedule
  3. Summary Schedule
  4. Cash Flow Schedule/Report
  5. Progress Schedule
  6. Start Up & Commissioning Schedule
  7. Schedule Narrative Report
  8. Three-Week Look Ahead Schedule
  9. Revisions to Schedule
  10. Time Impact Analysis
  11. Final Schedule
- B. Subcontractors and Suppliers:
1. It is the CONTRACTOR's responsibility for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any portion of CONTRACTOR's Work.
- C. Related sections: The following Specification Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the CONTRACTOR to see that the completed Work complies accurately with the Contract Documents.
1. Section 01 29 72 - Applications for Payment
  2. Section 01 29 73 - Schedule of Values
  3. Section 01 30 00 - Administration Requirements
  4. Section 01 91 13 - General Commissioning Requirements
- D. Responsible Person:
1. CONTRACTOR shall designate, in writing and within <5> days after issuance of a Notice to Proceed, a person responsible for preparation, maintenance, updating, and revision of all schedules.
  2. Qualifications of responsible person:
    - a. Authority to act on behalf of CONTRACTOR.
    - b. 5 years verifiable experience in preparation of complex construction schedules for projects of similar value, size, and complexity.
    - c. Knowledge of critical path method (CPM) scheduling utilizing <Primavera Project Management software (Primavera P6)> or <Microsoft Project>.
  3. This person, along with the CONTRACTOR's management team is expected to work closely with UTILITIES to deliver acceptable schedules as outlined in this section and comply with the reporting requirements of this section.
  4. UTILITIES reserves the right to disapprove the responsible person identified by CONTRACTOR under this Section if not qualified.
- E. Scheduling Format and Software:
1. Schedule format: Utilize Precedence Diagramming Method (PDM) format with Critical Path Method (CPM).

. If using MS Project then analysis will not be performed by SPP Controls and will need to be performed by PM. Prepare computerized schedule utilizing <Primavera Project Management Software (Primavera P6)> <or Microsoft Project>.

- F. The CONTRACTOR shall not be entitled to any damages by reason of the failure of the UTILITIES to give timely acceptance or comments on any schedule hereunder.

### 1.03 DEFINITIONS

- A. Baseline Schedule: The approved cost loaded baseline schedule for the contract, demonstrating the planned activities, activity costs, and activity durations as the Project was bid.
- B. Cash Flow Report: For construction costs, the Cash Flow Report reflects scheduled expenditures based on activity cost loading. This is the report for anticipated CONTRACTOR billings before the withholding of retention as estimated by the CONTRACTOR.
- C. Narrative Report: A detailed written report of all changes to the previous schedule submittal.
- D. Progress Schedule: This schedule is an accurate depiction of events that have occurred on the project as well as a projection of the remaining activities, costs, and durations required for construction.
- E. Preliminary Schedule: Covers construction related activities from issuance of the Notice to Proceed through <60> days after issuance of the Notice to Proceed.
- F. Remediation Plan: A schedule depicting the plan for recovery of significant time lost on the project. This separate CPM schedule submission shall provide the proposed resolution and include appropriate changes in network logic, calendar adjustments, working hours per shift, or craft/resource allocation.
- G. Cost Loaded: Defined by the Project as a P6 labor type resource (no P6 expense cost loading allowed) of the Contracting vendor with a unit price of \$1.00/unit. Quantity of units applied to all cost loaded activities should sum to the Schedule of Values/Bid Form.
- H. Summary Schedule: A consolidates groups of activities associated with Major Items of Work shown on Baseline and Progress Schedules. The Summary Schedule is intended to give an overall indication of the project schedule without a large amount of detail.
- I. Three-Week Look Ahead Report: A report documenting the previous weeks activities and the next three week's activities.
- J. Final Schedule: The final schedule shall reflect the exact manner in which the project was constructed by reflecting actual start and completion dates for all activities accomplished on the project.

### 1.04 PREPARATION

- A. Preparation and submittal of all schedules shall represent the CONTRACTOR's intention to execute the Work within specified time and constraints.
- B. CONTRACTOR shall produce a clear, legible, and accurate calendar based, time scaled, and graphical network diagram for all schedules. CONTRACTOR shall group activities related to the same physical areas of the Work and produce the network diagram based upon the early start of all activities. The CONTRACTOR shall be responsible for providing all information concerning the sequencing, logic, interdependencies and duration of all activities as well as providing the initial critical path method (CPM) logic network diagram for the Work in PDF form.
  - 1. Imposed dates, hidden logic prohibited: CONTRACTOR shall not use CONTRACTOR imposed dates or hidden logic in preparation of schedule.
  - 2. Schedule logic: The proposed schedule shall be assembled to show the order in which CONTRACTOR proposes to carry out the Work, indicate restrictions of access, availability of Work areas, and availability and use of manpower, materials, and equipment in order to meet all Contract Milestones. The Contractor shall base its schedule logic on the following criteria:

- a. Which activities must be completed before subsequent activities can be started.
  - b. Which activities can be performed concurrently.
  - c. Which activities must be started immediately following completed activities.
  - d. What major facility, equipment or manpower restrictions are required for sequencing these activities.
- C. CONTRACTOR shall prepare all schedules utilizing activity durations in terms of working days. CONTRACTOR shall not exceed 15 working day duration on activities except concrete curing, submittal review, equipment fabrication and deliveries, and activities approved by Utilities. Where duration of continuous work exceeds 15 working days, subdivide activities by location, stationing, or other sub-element of the Work. Incorporate holidays identified in Section 01 14 00 - Work Restrictions article 1.04B into the schedule as non-working days.
- D. The Work activities comprising included in each schedule shall be of sufficient detail to assure adequate planning and execution of the Work such that, in the judgment of UTILITIES, it provides an appropriate basis for forecasting, monitoring, evaluation and analysis of the progress of the Work. Work activities shall conform to the following requirements:
1. Include for each activity, the description, activity number, estimated duration in working days, total float, and all activity relationship lines.
  2. Describe Work activities using consistent terminology such that the Work is readily identifiable for assessment of completion. The schedule shall indicate the sequence and interdependency of Work activities.
  3. The construction time as determined by the schedule from early start to late finish for any sub-phase, phase or the entire project shall not exceed the Contract times. One day shall be the smallest time unit shown unless otherwise directed by UTILITIES.
  4. Activities labeled "start," "continue," or "completion" will not be allowed, only Milestones are allowed to contain such labels. Lead and lag time activities will be acceptable only if the description accurately identifies such a restraint and that are realistic with respect to the scheduling and sequencing of the Work and overall control schedule of the project.
  5. The CONTRACTOR shall be able to show, at a minimum, the following information for each Work activity:
    - a. A Work Breakdown Structure (WBS) number consistent with the template provided by UTILITIES at a later date.
    - b. Duration in working days (and number of shifts per calendar day as appropriate) as designated in Section 01 14 00 – Work Restrictions.
    - c. Work location code, descriptive of the physical station and by facility name, as required.
    - d. Cost data as described herein.
    - e. Activity codes, WBS codes and/or other codes and values used for organization of cost data and schedule data information needed for analysis and that comply with the reporting requirements listed herewith, subject to acceptance by UTILITIES.
    - f. Resource assignments, as applicable, to activities containing costs in relation to the Section 01 29 73 - Schedule of Values.
    - g. Cost account structure and assignment of cost accounts to the schedule activities that align with the Section 01 29 73 - Schedule of Values.
- E. The Baseline, Progress and Summary Schedules shall contain, at a minimum, the following milestones:
1. Notice to Proceed.
  2. Construction Start.
  3. CONTRACTOR's Substantial Completion.
  4. Contractual Substantial Completion.
  5. Specific milestones for coordination efforts.
  6. Interim milestone dates, operational constraints: In event there are interim milestone dates and/or operational constraints set forth in Contract, show them on schedule. Do not use Zero Total Float constraint or Mandatory Finish Date on such Contract requirements.
  7. System shutdown and outage dates, system tie-in dates, and Contract completion dates.
  8. Specific milestones requiring completion prior to start of next phase of work.

9. CONTRACTOR's Final Completion.
  10. Contractual Final Completion.
- F. The Baseline and Progress Schedules shall contain, at a minimum, activities designed in the approved Schedule of Value (SOV) and, 01 11 00 Summary of Work, and as requested by UTILITIES. The following: should be included in the baseline schedule as applicable:
1. <Mobilization.>
  2. <All required submittals and submittal review times showing 30 calendar day duration for such activities.>
  3. <Equipment and materials procurement/fabrication/delivery, including items that take longer than <8 weeks>.>
  4. <Approvals and/or permits required.>
  5. <Excavation.>
  6. <Deep dynamic compaction.>
  7. <Shoring design and submission of detailed shoring submittals. Identify submission as a milestone.>
  8. <Shoring review, shoring materials procurement, shoring installation, and shoring removal.>
  9. <Piles.>
  10. <Backfill and compaction.>
  11. <Dewatering.>
  12. <Grading, subbase, base, paving, and curb and gutters.>
  13. <Fencing and landscaping.>
  14. <Concrete, including installation of forms and reinforcement, placement of concrete, curing, stripping, finishing, and patching.>
  15. <Tests for leakage of concrete structures intended to hold water.>
  16. <Masonry.>
  17. <Metal fastenings, framing, structures, and fabrications.>
  18. <Wood structures, finish carpentry, architectural woodwork, and plastic fabrications.>
  19. <Waterproofing and damp proofing, insulation, roofing and flashing, and sealants.>
  20. <Doors and windows, including hardware and glazing.>
  21. <Finishes including coating and painting, flooring, ceiling, and wall covering.>
  22. <Building specialties including furnishings, laboratory equipment, and toilet and bath accessories.>
  23. <Process equipment, including identification of ordering lead-time, factory testing, and installation.>
  24. <Pumps and drives, including identification of ordering lead time, factory testing, and installation.>
  25. <Conveying equipment including hoists and cranes, conveyor systems, and materials handling equipment, including identification of ordering lead-time and installation.>
  26. <Other mechanical equipment including fans and heating, ventilating, and air conditioning equipment.>
  27. <Trenching, pipe laying, and trench backfill and compaction.>
  28. <Piping, fittings and appurtenances, including identification of ordering and fabrication lead time, layout, installation and testing.>
  29. <Valves, gates, and operators, including identification of order lead-time, installation, and testing.>
  30. <Plumbing specialties.>
  31. <Electric transmission, service, and distribution equipment, including identification of ordering lead-time, and factory testing.>
  32. <Other electrical work including lighting, heating and cooling, and special systems, including identification of ordering lead-time.>
  33. <Instrumentation and controls, including identification of ordering lead-time.>
  34. <Preliminary testing of equipment, instrumentation, and controls.>
  35. <Functional testing.>
  36. <Final testing, including preparation time.>
  37. <Operational test.>
  38. <Start-up and Commissioning, pursuant to the Start-up and Commissioning Plan Section 01 91 13 – General Commissioning Requirements.>

39. <Substantial completion.>
40. <Punch list work.>
41. <As-builts.>
42. <Record Documents.>
43. <Operation and maintenance training.>
44. <Demobilization.>
45. < .>

- G. Schedule windows for UTILITIES-furnished, CONTRACTOR-installed equipment or materials. Obtain from UTILITIES anticipated delivery dates of UTILITIES-furnished equipment or materials. Show these dates on all schedules in same manner indicated by UTILITIES.
- H. The CONTRACTOR shall collect data and information from Subcontractors, Suppliers, and equipment manufacturers for incorporation into the construction schedule.
- I. Failure to include an activity required for execution of the Work does not excuse CONTRACTOR from completing the Work and portions thereof within specified times and at price specified in Contract. Contract requirements are not waived by failure of CONTRACTOR to include required schedule constraints, sequences, or milestones in schedules. Contract requirements are not waived by UTILITIES' acceptance of a schedule. In the event of a conflict between an accepted schedule and Contract requirements, the terms of the Contract, and all attachments thereto, govern at all times, unless requirements are waived in writing by UTILITIES.
- J. All costs associated with the execution of the Work shall be included in the Baseline Schedule.
- K. Cost loading: The activities contained within the schedules will be cost loaded, by resource (no P6 expenses will be allowed), to equal the Contract Price.
1. Only on-site construction activities should be cost loaded.
  2. The sum total of all cost loaded activities must equal the current value of the Contract.
  3. Overhead and profit shall be prorated on level of effort activities for the entire project duration.
  4. Payment for mobilization or payment for materials or equipment delivered to the site, not yet incorporated into the Work shall be reflected in the cost loaded Baseline Schedule.
  5. The CONTRACTOR shall not unbalance the activity cost loading.
- L. Each schedule delineates the specified contract duration and identify the planned completion of the Work as a milestone. The difference in time between the project's scheduled early completion date, as submitted, and the required contract completion date shall be considered as float. Show this time period between the planned and Contract completion dates, if any, as an activity identified as "Project Float" unless a Change Order is issued to officially change the Contract completion date.
- M. Non-sequestering of float: UTILITIES may reject schedule submittals for use of float suppression techniques to consume available float such as preferential sequencing or logic, special lead or lag logic restraints, extended activity duration estimates, extensive crew/resource sequencing, imposed dates, etc.
- N. Reference schedule to working days with beginning of Contract Time as Day "1."

#### 1.05 SCHEDULE SUBMISSION REQUIREMENTS

- A. The Preliminary Schedule, Baseline Schedule, Monthly Progress Schedules, and any updates and reports shall be submitted to UTILITIES' via PM SaaS, as specified in Section 01 13 12 - PM SaaS as follows:
1. One (1) electronic copy (.xer or .mpp file) and one (1) PDF copy of the detailed schedule and Summary Schedule.
  2. One (1) PDF copy of the cost and narrative report.
  3. One (1) PDF copy of the 3-Week Look Ahead Schedule.
  4. One (1) electronic (.xlsx file) and one (1) PDF copy of the cash flow projections by month

5. One (1) electronic (.xlsx file) and one (1) PDF copy of the manpower projections by month.
6. One (1) electronic copy (.xer or .mpp file) and one (1) PDF copy of the Start Up & Commissioning Schedule.
7. One (1) electronic copy (.xer or .mpp file) and one (1) PDF copy of the Final Schedule.

B. Naming convention: Name schedule files with the year, month, and day of the data date, revision identifier, and a description of the schedule.

1. Example 1: DD\_2019\_07\_01 rev 0 Baseline Schedule.xer(.mpp).
2. Example 2: DD\_2019\_09\_01 rev 0 Progress Update.xer(.mpp).

#### 1.06 PRELIMINARY SCHEDULE

- A. No more than <10> calendar days after Limited Notice to Proceed or Notice to Proceed (whichever occurs sooner), submit the Preliminary Schedule containing the following:
1. The Project's critical path at a summary level.
  2. Preliminary cash flow report for the total project.
  3. All procurement activities.
  4. Scheduled activities for the period of Limited Notice to Proceed or Notice to Proceed (whichever occurs sooner) up to <60> days thereafter.

#### 1.07 BASELINE SCHEDULE

- A. No more than <30> calendar days after Limited Notice to Proceed or Notice to Proceed (whichever occurs sooner), submit the Baseline Schedule for all Work of the project. Demonstrate the final level of detail for each activity and show sequence and interdependence of all activities required for complete performance of all Work, beginning with the date of Limited Notice to Proceed or Notice to Proceed (whichever occurs sooner) and concluding with date of Final Completion of the Work. <For Design Build, EPC projects, and other iterative project delivery approaches, the baseline is to be updated at intervals as defined in the contract documents.>
- B. The Baseline Schedule shall be composed of the following:
1. A complete logic and duration schedule at the final level of detail for each activity, containing the required relationships completely identified and the durations of each activity correctly depicted.
  2. The Baseline Schedule shall contain no Change Orders, Amendments or delays which may have been incurred during the interim schedule development period. These changes will be entered at the first progress update after the Baseline Schedule has been accepted.
  3. The CONTRACTOR shall not constrain the schedule with artificial logic ties, constrained dates or any other scheduling techniques that may distort activity or total float associated with the critical path activities.
  4. The Baseline Schedule will contain all cost information assigned to each of the specific activities at the final level of detail. Each activity shall be cost loaded (by resource and not expenses), over time, and assigned the appropriate cost account that aligns with the Schedule of Values/Bid Form to permit initial and monthly generation of a Cash Flow Reports and to assess the progress of the Work.
  5. Weather Day Allowance: CONTRACTOR shall account for weather-days in the body of the project schedule.  
The CONTRACTOR is to propose an anticipated days lost to adverse weather for each month and additional days should not be included in activity calendars and/or activity durations. The CONTRACTOR and UTILITIES are to agree upon the proposed weather day allowance with the baseline schedule in addition to an agreed upon weather station. If the agreed upon weather station is on site, upon mobilization, precipitation shall be measured by a calibrated rain gauge, mounted plumb at the Site office, with no obstructions interfering with rain collection

Only the number of days lost due to abnormal weather as requested by the CONTRACTOR and approved by UTILITIES that exceeds the above-anticipated number of adverse days lost for the month, shall be considered for granting a Contract time extension. Weather day

allowance usage shall be documented with the Weather Delay Form attached to this document and logged by the CONTRACTOR. The contractor assumes the following weather days for the project:

The anticipated number of days lost is listed as follows:

January – 7 days  
February – 4 days  
March – 4 days  
April – 4 days  
May – 6 days  
June – 3 days  
July – 4 days  
August – 2 days  
September – 3 days  
October – 3 days  
November – 4 days  
December – 5 days

6. If the Baseline Schedule is not accepted, the CONTRACTOR shall revise the schedule in accordance with UTILITIES comments and resubmit within <7> calendar days.
7. Once the Baseline Schedule is accepted it becomes the schedule of record and the basis for future schedule updates.
8. After the acceptance of the Baseline Schedule, no changes shall be made therein without acceptance by UTILITIES and as defined herein.
9. As Change Order or Amendments are approved by UTILITIES the CONTRACTOR will update and re-submit the Baseline Schedule to reflect the effect of the change. Change Order or Amendments will be shown as additional Fragnets and not changes to the original activities.

- C. Acceptance of the Baseline Schedule by UTILITIES is a condition precedent to making payments as specified in Section 01 29 72 - Application for Payment after the first <60> calendar days after Notice to Proceed. The Baseline Schedule will be reviewed by UTILITIES, revised by CONTRACTOR accordingly, and accepted by UTILITIES within <30> calendar days of submittal.

#### 1.08 SUMMARY SCHEDULE

- A. CONTRACTOR shall update and submit monthly and after each schedule update or revision the Summary Schedule.
- B. CONTRACTOR shall submit the summary electronically to UTILITIES via PM SaaS, as specified in Section 01 13 12 - PM SaaS.

#### 1.09 CASH FLOW REPORT

- A. In conjunction with submitting the above schedules, CONTRACTOR shall prepare and submit a cash flow report, by the Schedule of Values driven cost account, consistent with the payment amounts requested via the Pay Application. The cost information shall be updated by activity and summarized for each month. The sum of all costs shall be equal to the Contract Price plus approved Change Order or Amendments.
  1. To create and update the Cash Flow reports, the CONTRACTOR shall:
    - a. Create monthly financial periods starting on first day of the month through the last day of the month.
    - b. Create a cost account structure that aligns with the Contract Schedule of Values and assign cost accounts to the schedule activities.
    - c. Enter actual costs for each cost loaded activity that has been started, is in progress, and/or was completed during the reporting period.
    - d. Store the period of performance per monthly update consistent with the payment amounts requested via the pay application for cost reconciliation and verification.



- e. Cash Flow reports shall be produced from Primavera P6 <MS Project> and grouped by the cost account structure, at a minimum. The exact report format will be provided to CONTRACTOR by UTILITIES prior to CONTRACTOR's first Application for Payment.
- f. Add approved Change Orders or Amendments to the cost account structure and assign to the correlating schedule activities.

#### 1.10 PROGRESS SCHEDULE

##### A. Monthly Schedule Updates:

1. After the initial Baseline Schedule is accepted by UTILITIES, the CONTRACTOR shall be responsible for preparing and submitting a monthly Progress Schedule updating information on logic, physical percent complete, actual start and finish dates, duration changes, and related reports, diagrams and schedules.
2. The Progress Schedule shall be updated at a minimum of every two-weeks.
3. All monthly Progress Schedule updates shall be compared to the Baseline Schedule. In addition, each monthly Progress Schedule shall be compared to the last month's Progress Schedule. Each monthly Progress Schedule shall be labeled by period with data date and report date.
4. To update the Progress Schedule, the CONTRACTOR shall:
  - a. Obtain from each Subcontractor the necessary information to update the schedule to reflect progress to date and to update the schedule for the balance of the project.
  - b. Enter actual start and completion dates for those activities/milestones started and/or completed during the reporting period.
  - c. For activities in progress, indicate the remaining duration correlating to an accurate forecasted completion date and physical percentage complete to date. Review and revise as necessary the network logic for the remaining duration of the Work from the update to the estimated completion date.
  - d. For activities not yet started, review and revise as required the necessary logic for the durations and the estimated start and completion dates.
  - e. <Enter for each applicable activity, actual installed quantities information and corresponding cost information.>
  - f. Identify overall progress of each Major Item of Work in the Summary Schedule.
  - g. Use Retained Logic along with the necessary logic updates to maintain accuracy in preparing Progress Schedule updates. Progress Override may be accepted upon approval from Project Team.
  - h. Add identified Contract modification activities, if approved by UTILITIES.
  - i. Annotate updated status information on the Schedule in a manner that graphically depicts the current status of the Work.
5. CONTRACTOR shall provide Progress Schedule updates monthly with the Application for Payment. Updates to the Progress Schedule shall begin immediately following acceptance of the Baseline Schedule.
6. Default progress data provided from the scheduling system shall not be allowed. Actual start and finish dates shall not be automatically updated by default mechanisms that may be included in scheduling software systems. Actual start and finish dates on the schedule shall match those dates provided from the CONTRACTOR Daily Reports. Failure of the CONTRACTOR to document the actual start and finish dates shall result in UTILITIES not accepting the CONTRACTOR's schedule and may reject Applications for Payment as allowed in Section 01 30 00 – Application for Payment.
7. Activities that have reported progress without predecessor activities being completed (Out-of-Sequence Progress) will not be allowed except on a case-by-case basis with the acceptance from UTILITIES. A written explanation of each activity shall be included in the monthly narrative report submittal. UTILITIES may direct that changes in schedule logic be made to correct any or all out-of-sequence Work.
8. Should monthly Progress Schedule updates show project completion earlier than the current Contract completion date, CONTRACTOR shall show the time period between the early completion and Contract completion date as a schedule activity identified as "Project Float".

9. Should monthly Progress Schedule updates show project completion later than current Contract completion date, CONTRACTOR shall prepare and submit a schedule revision in accordance with the section below.

#### 1.11 START-UP AND COMMISSIONING SCHEDULE

- A. CONTRACTOR shall develop a start-up and commissioning schedule that demonstrates the final level of detail for each activity and show the sequence and interdependence of all activities required for complete performance of all start-up and commissioning-related Work. This start-up and commissioning schedule shall include the following:
  1. Definitions and the sequence of all installation and functional testing required for each device, component, and piece of equipment included in each subsystem or system.
  2. A detailed sub-network of start-up and commissioning activities, durations, and sequencing requirements with the following activities identified:
    - a) <Manufacturer's services.>
    - b) <Certificates of Proper Installation.>
    - c) <Operator training.>
    - d) <Submission of Operation and Maintenance Manual.>
    - e) <Installation testing.>
    - f) <Functional testing.>
    - g) <Pre-Start-Up activities.>
    - h) <Start-Up testing.>
    - i) <Performance testing.>
    - j) <.....>
  3. Shutdown requirements for existing systems which are necessary to complete start-up of new equipment and systems.
- B. CONTRACTOR shall revise and update the start-up and commissioning schedule based upon review comments, actual progress, or to accommodate changes in the sequence of activities as detailed in the Start-up and Commissioning Plan identified in Section 01 91 13 – General Commissioning Requirements. The start-up and commissioning schedule shall align with the Start-up and Commissioning Plan.

#### 1.12 NARRATIVE REPORT

- A. A Narrative Report shall be submitted in conjunction with all schedule submittals and consist of a detailed written report of all changes to the previous schedule submittal contained in the schedule update. The Narrative Report shall include the following:
  1. Schedule report indicating each activity on the Critical Path that it has been:
    1. Completed during this reporting period.
    2. In progress this reporting period.
    3. Scheduled next reporting period.
  2. Analysis of critical path describing:
    1. The nature of the critical path.
    2. Impact on other activities, milestones and completion dates.
    3. Recommendations for recovery of the delays.
  3. Current and anticipated delays and/or early completions.
    1. Cause of the delay and/or early completion.
    2. Corrective action and schedule adjustments to correct the delay.
    3. Impact of the delay and/or early completion on other activities, milestones and completion dates (e.g., number of days behind or ahead of schedule)
  4. Change in activity descriptions, activity IDs, construction sequence, logic changes, relationship changes and/or duration changes and the rationale associated with each change that required the change to be made.
  5. Pending issues and status of other items:
    1. Permits.
    2. Contract modifications.

3. Time extension requests.
4. Long lead procurement items.
5. Added/deleted activities.
6. Other project or scheduling concerns.

#### 1.13 THREE-WEEK LOOK AHEAD REPORT

- A. CONTRACTOR shall submit to UTILITIES, in conjunction with the weekly progress meeting, a report showing the activities completed during the previous week and the schedule of activities for the following 3 weeks.
- B. CONTRACTOR shall use the logic and conform to the status of the current progress schedule when producing the Three-Week Look Ahead Report in CPM or bar chart format. In the event the report no longer conforms to the current schedule, CONTRACTOR may be required to revise the Progress Schedule or Three-Week Look Ahead Report.
- C. The activity designations used in the Three-Week Look Ahead Report must be consistent with those used in the Baseline and Progress Schedules.

#### 1.14 REVISIONS TO SCHEDULE

- A. CONTRACTOR shall submit a revised Progress Schedule and Narrative Report within <5> working days:
  1. When delay in completion of any activity or group of activities indicates an overrun of the Contract Times or Milestone dates by <15> working days or <5> percent of the remaining duration, whichever is less. A remediation plan will be required if critical path is delayed greater than <15> working days.
  2. When delays in submittals, deliveries, or work stoppages are encountered making necessary the re-planning or rescheduling of activities.
  3. When the schedule does not represent the actual progress of activities.
  4. When any change to the sequence of activities, the completion date for major portions of the work, or when changes occur which affect the critical path.
  5. When Contract modification necessitates schedule revision.
- B. Make revisions on most recently accepted version of the Progress schedule.
- C. Schedule revisions will not be reflected as accepted in the schedule until after the revision is accepted by UTILITIES. This includes revision submitted for the purpose of mitigating a CONTRACTOR-caused project delay, as specified in Section 1.18. UTILITIES shall have no obligation to accept a revised schedule submitted by CONTRACTOR.

#### 1.15 FINAL SCHEDULE SUBMITTAL

- A. The final Progress Schedule shall be used as the final schedule and submitted in the Record Drawings defined in Section 01 78 00 – Closeout Submittals
  1. The final schedule shall reflect the exact manner in which the project was constructed by reflecting actual start and completion dates for all activities accomplished on the project.
  2. CONTRACTOR's Project Manager and scheduler shall sign and certify the final schedule as being an accurate record of the way the project was actually constructed.

#### 1.16 REVIEW AND ACCEPTANCE OF SCHEDULES AND REPORTS

- A. UTILITIES will review Baseline Schedule, Progress Schedule, Narrative Report, Time Impact Analyses and Final Schedule to ascertain compliance with specified project constraints, compliance with Milestone dates, reasonableness of durations and sequence, accurate inter-relationships, and completeness.

- B. UTILITIES will issue written comments following completion of review Baseline Schedule, Progress Schedule, Narrative Report, Time Impact Analyses and Final Schedule within <30> calendar days after receipt by UTILITIES via PM SaaS, as specified in Section 01 13 12 - PM SaaS.
- C. CONTRACTOR shall revise and resubmit schedules and reports in accordance with UTILITIES's comments to accommodate a <30> calendar days.
- D. When a schedule reflects UTILITIES' and CONTRACTOR's agreement as to the project approach and sequence, the schedule will be accepted by UTILITIES. CONTRACTOR shall use accepted schedule for planning, organizing, and directing the work and for reporting progress.

#### 1.17 DELAYS

- A. CONTRACTOR shall comply with the following items prior to submitting a Potential Contract Change for delays:
  - 1. CONTRACTOR shall clearly indicate that all project float available for the work involved in the request, including any float that may exist between the CONTRACTOR's planned completion date and the Contract completion date. CONTRACTOR shall utilize the most recently accepted version of the Baseline and Progress schedule at the time of the alleged delay, and all other relevant information, to determine any adjustment of the Contract Times as indicated in Section 1.21.
  - 2. Adjustment of the Contract Times will be granted only when the Contract Float has been fully utilized and only when the revised date of completion of the Work has been pushed beyond the Final Completion date. Any adjustment of the Contract Times will be made only for the number of days that the planned completion of the work has been extended.
  - 3. Actual delays in activities which do not affect the critical path work, or which do not move the CONTRACTOR's planned completion date beyond the Contract completion date will not be the basis for an adjustment to the Contract Times.
  - 4. If completion of the project occurs within the specified Contract Times or for delays which are all or partially within the control of CONTRACTOR, the CONTRACTOR is not entitled to job-site or home office overhead beyond the CONTRACTOR's originally planned occupancy of the site.
  - 5. CONTRACTOR shall notify UTILITIES of a request for an adjustment to the Contract Times. CONTRACTOR shall submit a request for an adjustment to the Contract Times as specified within the Contract Documents.
- B. Within Contractor's Control: When delays occur within the CONTRACTOR's control as defined in the Contract General Conditions, the CONTRACTOR shall take some or all of the following actions at no additional cost and with no time extensions granted by UTILITIES:
  - a. Increase resources in such quantities and crafts as will substantially eliminate the backlog of Work.
  - b. Increase working hours per shift, shifts per day, or working days per week, the amount of construction equipment, or any combination of the foregoing to substantially eliminate the backlog of Work.
  - c. Submit a revised Progress Schedule as indicated in Section 1.15 to achieve maximum practical concurrence of accomplishment of activities and comply with the revised schedule.
  - d. The CONTRACTOR shall submit to UTILITIES for review a Remediation Plan in addition to a written statement of the intended steps to remove or arrest the delay to the schedule. The CONTRACTOR shall promptly provide such level of effort to bring the Work back on schedule. Should schedule delays persist, the CONTRACTOR's surety may be asked to attend schedule update meetings.
  - e. Under no circumstances will the addition of equipment, construction forces, increasing the working hours, any other method, manner, or procedure to return to the CPM Schedule be considered justification for Contract modification or extra Work.
  - f. Failure of the CONTRACTOR to recover the Schedule time frames as set forth in this Contract may be considered cause for termination as defined in the General Conditions.

g. UTILITIES may require the CONTRACTOR, at any time during the project, to develop a more detailed schedule/fragnet than depicted in the detailed schedule, to provide a clearer understanding of the effort needed to complete a specific area or task.

C. Other Delays

a. Excusable delay: An excusable delay is the result of events which are unforeseeable, outside the control of, and without the fault or negligence of either UTILITIES or the CONTRACTOR (or any party for whom either is responsible), which would independently delay the completion of the Work beyond the Final Completion date. For excusable delay, CONTRACTOR is entitled to an extension of the Contract Times only. No other damages will be approved.

b. Compensable delay: A compensable delay is the result of actions or inactions of UTILITIES, or events for which UTILITIES has assumed contractual responsibility, which would independently delay the completion of the Work beyond the Final Completion date. The CONTRACTOR is entitled to an adjustment of the Contract Times and Contract Price.

c. Concurrent delay: Concurrent delay is any combination of Non-excusable, Excusable, and Compensable delays occurring on the same calendar date.

d. Weather delay:

- 1) When a weather-day occurs during the project CONTRACTOR shall promptly notify UTILITIES verbally and in writing as required by the Contract Documents with the Weather Delay Form attached to this specification section.
- 2) Only the number of days lost due to abnormal weather as requested by the CONTRACTOR and approved by the UTILITIES that exceeds the anticipated number of adverse days lost for the month as indicated in Section 1.07, A.5 shall be considered for granting an adjustment to the Contract Times.
- 3) The CONTRACTOR's request for a time extension due to abnormal weather delays shall clearly demonstrate the following:
  - a) The weather conditions at the site are "abnormal" and would not have been reasonably anticipated given the normal prevalent weather conditions as described in section 1.07 and below.
  - b) The weather conditions actually prevented or disrupted CONTRACTOR from safely performing the activities in the location planned.
  - c) The impacted activities were planned in the Project Schedule or daily plan to occur on the day of the event.
  - d) The impacted activities are on the critical path to the timely completion of the project.
  - e) CONTRACTOR has provided both prompt verbal notice at the time of the decision to suspend the activity, as well as written notice to UTILITIES of the occurrence within twenty-four (24) hours.
  - f) The date, time, crew and shift(s) which were delayed because of a Weather Delay.
  - g) A written statement from the Contractor and/or the Subcontractor describing conditions and explain in reasonable detail how the weather conditions resulted in unsafe work conditions for the performance of the scheduled activity.
  - h) Reasonable, verifiable documentation of precipitation information.
  - i) For the avoidance of doubt, a Weather Delay shall be deemed not to have occurred if the activity is scheduled to occur and the CONTRACTOR;
    - 1 has not performed Work necessary to permit the activity to occur;
    - 2 has not provided the full shift(s) necessary to perform the activity;
    - 3 equipment is not in good working condition
    - 4 equipment is otherwise considered unsafe to operate for reasons other than those constituting a Weather Delay;
    - 5 or a combination of (a), (b), or (c) above have occurred.
- 4) The Weather Delay Form shall be completed by the CONTRACTOR'S Project Manager, Superintendent, or Site Representative and attached to a Potential Contract Change.
- 5) Weather delay applicable events may include:
  - a) Rainfall at the job site greater than 0.5 inches per hour.
  - b) Snowfall at the job site greater than 8 inches in a single occurrence.
  - c) Sustained winds for 2 hours or longer at the job site of greater than 35 miles per hour.

- d) Hail at the jobsite greater than dime size
- e) Ice accumulation at the job site greater than 0.5 inches
- f) Lightning at the job site abiding to the procedures documented in the Site Specific Safety Plan
- g) Additional weather events abiding to the procedures documented in the Site Specific Safety Plan

D. Time Impact Analysis

1. If the CONTRACTOR believes that UTILITIES has impacted its work, such that the project completion date will be delayed, the CONTRACTOR must submit a Potential Contract Change and proof demonstrating the delay to the critical path. This proof, in the form of a Time Impact Analysis, may entitle the CONTRACTOR to an adjustment of Contract Time. Use the most recently accepted Baseline and Progress Schedule update that is current relative to the time frame of the delay event (Work Change Directive, a delay caused by a third party other than a Subcontractor or Supplier of CONTRACTOR, or other UTILITIES-caused delay). Represent the delay event in the schedule by:
  - a. Inserting new activities associated with the delay event into the schedule.
  - b. Revising activity logic.
  - c. Revising activity durations.
  - d. If the project schedule's critical path and completion date are impacted as a result of adding this delay event to the schedule, a time extension equal to the magnitude of the impact may be warranted.
  - e. The Time Impact Analysis submittal must include the following information:
    - f. The fragment of the portion of the schedule affected by the delay event.
    - g. A narrative explanation of the delay issue and how it impacted the schedule.
    - h. The schedule file used to perform the Time Impact Analysis shall be submitted via PM SaaS, as specified in Section 01 13 12 - PM SaaS.

E. Review and Acceptance

1. UTILITIES will, within <30> calendar days after receipt of a Potential Contract Change requesting an adjustment to the Contract Times, request any missing supporting evidence, review the facts, and advise the CONTRACTOR in writing via PM SaaS, as specified in Section 01 13 12 - PM SaaS.
1. When UTILITIES has not yet made a final determination as to Potential Contract Change requesting an adjustment of the Contract Times, and the parties are unable to agree as to the amount of the adjustment to be reflected in the Progress Schedule, reflect that amount of time adjustment in the Progress Schedule as UTILITIES may accept as appropriate for such interim purpose until such time as the Potential Contract Change is fully resolved.
2. Upon final determination as to any Potential Contract Change seeking an adjustment of the Contract Times, provide an update to the most recently accepted Baseline Schedule and all future monthly Progress Schedule updates to reflect the agreed to Contract Times adjustment and represent the activities and logic stemming from the delaying event(s) as accepted by UTILITIES.
3. Where UTILITIES rejects a Potential Contract Change requesting an adjustment to the Contract Times as a result of an alleged delay beyond the CONTRACTOR's control and CONTRACTOR has exhausted its remedies related to such Potential Contract Change, CONTRACTOR's updates to the Baseline Schedule and monthly Progress Schedule shall reflect that delays in the performance of the Work associated with such Potential Contract Change are not the basis for an adjustment to the Contract Times or Contract Price.

1.18 REMEDIATION PLANS

- A. A Remediation Plan shall be developed if the contractor or subcontractor falls behind the agreed upon and approved project baseline schedule critical path by <10> working days, <10> working days behind the late/start/late finish "S" Curve, or performs the work in such a manner the logic or schedule analysis no longer indicates reasonable completion of contractor's milestones as determined by the

contract. Within 72 hours' notice, a Remediation Plan inclusive of a recovery schedule and supplemental narrative shall be provided to UTILITIES. The recovery schedule as part of the Remediation Plan will supplement but not replace the approved project baseline schedule as the official contract schedule. The Remediation Plan provides a method to return to the approved project baseline schedule milestone completion dates.

- B. The Remediation Plan may accomplish recovery of schedule via reducing remaining durations, revising logic, or adjusting resource on site as approved by UTILITIES. The schedule accompanying the remediation plan shall be resourced loaded with productivity rates provided, and indicate overtime, weekend work, and shift work needed to regain the time indicated in the approved project schedule. Development of the remediation plan or plans will be accomplished by the contractor or subcontractor at no cost to UTILITIES.

#### 1.19 EARLY COMPLETION

- A. Early completion schedules may be accepted by UTILITIES as a convenience to the CONTRACTOR under the following conditions.
  - 1. The CONTRACTOR must submit a written request outlining the specific reasons for using the early completion schedule and submit a revised Progress Schedule as indicated in Section 1.15.
  - 2. Early completion schedule shall not be based on expedited approvals, inspection, or the relaxing of construction constraints by UTILITIES <or Engineer>.
  - 3. Early completion schedules must meet all other Contract requirements.
  - 4. Early completion schedule updates which contain activities behind schedule shall be revised when requested by UTILITIES.
- B. UTILITIES shall have no obligation to accept an early completion schedule that contemplates early delivery of any UTILITIES-furnished materials, early completion of any UTILITIES-performed activities, or modification of any previously agreed to outage dates.

#### 1.20 INCENTIVES

- A. The Contract may provide for incentive or bonus fees for early and/or on-time completion of certain Milestones or planned baseline target dates. Detailed terms and qualifications for obtaining these incentives are specified in the Contract Documents.

### PART 2 PRODUCTS

NOT USED

### PART 3 EXECUTION

#### 3.01 SUBMITTALS

- A. Submittals to be provided by the CONTRACTOR shall include but are not limited to the following:
  - 1. Preliminary Schedule.
  - 2. Baseline Schedule.
  - 3. Summary Schedule.
  - 4. Cash Flow Report.
  - 5. Progress Schedules.
  - 6. Start Up & Commissioning Schedule.
  - 7. Narrative Report.
  - 8. Three-Week Look Ahead Report.
  - 9. Revisions to schedules
  - 10. Time Impact Analysis
  - 11. Remediation Plan

END OF SECTION