

SAMPLE SCHEDULE REVIEW COMMENTS



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Sample Schedule Review Comments

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Sample Schedule Review Comments

Technical Issues:

Work Restriction Comments:

- The holiday work restrictions have not been assigned consistently within the calendar. Some of the restricted holiday periods have not been assigned as non-workdays. Review the calendars and designate the restricted holiday periods as non-workdays.
- Holiday Work Restrictions: The holiday work restrictions have not been assigned consistently across all calendars. Some of the restricted holiday periods have not been assigned as non-work days. Review the calendars and designate the restricted holiday periods as non-work days. These holiday restrictions do not need to be assigned to the seven day week calendar provided the calendar is used for non-work items such as concrete curing.

Adverse Weather Comments:

- The Contractor should revise the current four adverse weather days for the month of April to five as per the project Standard Specification.

Calendar Comments:

- Calendars: There are two different calendars assigned to the schedule activities. The start and end of the workday differs between these two calendars. Review the workday defined in these calendars and adjust so the workday begins and ends at the same time. Note in the narrative if the workdays defined in these calendars are accurate and will not be adjusted.

Only one activity is assigned to the project default calendar. This is unusual and may indicate that an incorrect calendar has been assigned as the project default. Review the project default calendar and activity calendar assignments and adjust as needed.

Both calendars appear to contain five workdays each week; however, the application of weather and holiday restrictions is not consistent. Also, one calendar contains six non-workdays (weather) during the month of October. This is inconsistent with the standard specifications and what is stated in the narrative. These calendars must be adjusted or the differences between the calendars must be described in the written narrative.

Predecessor Comments:

- Activities without Predecessors: The project start milestone in a CPM schedule can be the only activity without a logical predecessor. All other activities must be assigned an appropriate predecessor relationship. The activities listed below must be assigned a proper predecessor relationship in this schedule.

Successor Comments:

- Activities without Successors: The project completion milestone in a CPM schedule can be the only activity without a logical successor. All other activities must be assigned an appropriate successor relationship. The activities listed below must be assigned a proper successor relationship in this schedule.



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Non-overlapping Lag Comments:

- **Non-Overlapping Lags:** The lag assigned to start-to-start, or finish-to-finish relationships must be short enough to allow the activities to overlap. Review the relationships listed below and shorten the lag so that the activities overlap, or the relationship must be changed to finish-to-start. A new activity can be inserted if the non-overlapping period represents a task or other reason this time is required prior to the start of the successor activity.
- The non-overlapping lag noted in the technical issues section of this report is pushing the Stage 3 interim milestone date out an extra day. This relationship must be corrected, or an activity must be added to note why the extra time is needed.

Finish-to-Start Lag Comments:

- **Finish-to-Start Lags:** The table below displays the finish-to-start relationships that have a lag assigned. This type of relationship with a lag creates a period in the schedule where no work is occurring for some unknown reason. Also, these lags do not show up on reports. These relationships must be adjusted to finish-to-start with no lag. If the lag period represents a necessary task, a new activity should be created that represents the reason the lag period is needed.

Negative Lag Comments:

- **Negative Lags:** Negative lags may not be used in CPM schedules. Review the successor relationships to the activities listed below to remove the negative lags. Use start-to-start and finish-to-finish relationships if the intent is to overlap the activities.
- **Negative Lags:** Negative lag relationships are not allowed to exist in a schedule. If an overlapping relationship exists between the predecessor and successor activities, an appropriate start-to-start and/or finish-to-finish relationship(s) needs to be used. A listing of the negative lag relationships that must be eliminated is listed below.

Start-to-Finish Relationship Comments:

- **Start-to-Finish Relationship:** The use of start-to-finish relationships is not very common in CPM schedules. The relationship below should be reviewed for accuracy. Change the relationship to a more traditional type as needed or provide an explanation on the reason this unusual relationship is being used.

Start Relationship Comments:

- **Activities Without a Start Relationship:** Each activity must have a finish-to-start and/or a start-to-start predecessor. Without such a start relationship, the activity could logically start at the beginning of the project. Review the predecessor relationships for these activities and assign an appropriate finish-to-start or start-to-start relationship.



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Finish Relationship Comments:

- Activities Without a Finish Relationship: Each activity must have a finish-to-start and/or finish-to-finish successor. Without such a finish relationship, the activity could logically be delayed until the end of the project without impacting any other activity or project completion. Review the successor relationships for these activities and assign an appropriate successor relationship.

Bogus Relationship Comments:

- Bogus Relationships: The relationships listed below should be reviewed for appropriate logic ties. In most cases, the lag value is blank in a bogus relationship. The blank lag value in the relationship needs to be replaced by an appropriate numerical value.

Future Actual Date Comments:

- Future Actual Dates: The activities listed below have been assigned actual start or actual finish dates that are on or after the data date. All actual start and finish dates entered into the update must be prior to the data date.
- The future actual dates noted in the technical section of this report would alter the interim completion dates if these dates were accurate. In addition, the calculation of successor start and finish dates will be inaccurate when a predecessor has a future actual date. These future actual dates must be reviewed and revised as necessary to ensure the schedule accurately reflects the status of the project.

Must Finish by Constraint Comments:

- Must Finish by Constraint: A must finish by constraint (and time) of 23Dec16 (12:00 a.m.) has been assigned to the overall project. This type of constraint applies to all activities within a schedule and does not provide for closeout work to occur after substantial completion. The must finish by constraints should be removed. The constraint referred to here can be found on the Dates tab of the Projects page (see image below).

Expected Finish Constraint Comments:

- Past Expected Finish Constraint: The table below includes activities that have been assigned an expected finish constraint that is in the past. These activities have not be updated with an actual finish date or a revised remaining duration. As a result of this, the remaining duration of these activities has been reduced to zero days. These activities need to be reviewed and updated to accurately reflect the time anticipated until completion.

Constraints and Time of Day Comments:

- Time of Day: The time of day associated with the project must finish by constraint noted above is at the beginning of the day rather than the end of the day. This is the reason the first baseline submittal schedule showed negative float even though it was scheduled to be complete by the contract completion date. The time of day associated with a date constraint must be considered when using date constraints.



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Must Finish by Constraint Comments:

- **Must Finish by Constraint and Time of Day:** The date constraint assigned to the project Must Finish By constraint includes a time of day that is at the beginning of the day (12:00 a.m.) The time of day assigned to this constraint reduces the number of workdays available to the project by one day. The constraint dates and time needs to be modified to be at the end of the day.
- **Must Finish by Constraint:** A project Must Finish By constraint of 25Nov19 has been assigned to this schedule. This date is earlier than the contract completion date and is causing the negative float in the schedule. Delete the project Must Finish By constraint and assign a Finish On or After constraint to a project completion milestone.

Mandatory Constraint Comments:

- **Mandatory Finish Constraints:** The use of mandatory finish constraints is not allowed because they do not allow the activity to which it is assigned to move as the schedule is progressed. This type of constraint is assigned to both the interim and finish completion milestones (A1000 and A1010). The constraint type needs to be changed to a finish on or before constraint.

Start On / Finish On Constraint Comments:

- **Start On / Finish On Constraints:** The use of start on or finish on constraints is not allowed because they do not allow the activity to which it is assigned to move as the schedule is progressed. These types of constraints are assigned to the activities in the table below. The finish on constraint needs to be changed to a finish on or before constraint. The start on constraints should be removed to allow the activities to be scheduled on the logical dates.
- **Start On Constraints:** The use of start on constraints is not allowed to be used in lieu of appropriate predecessor relationships. This type of constraint is assigned to the activity in the table below. This activity needs to be assigned a predecessor relationship to the activity or activities that must be completed prior this activity starting.

Consider utilizing the winter shutdown activities to link the end of work in the fall to the beginning of work the following spring. Change the activity type assigned to the winter shutdown to task activities. Assign an expected finish constraint to the winter shutdown on the date prior to spring startup. Linking the fall completion with the spring startup using the winter shutdown activities will also help establish the critical path from the start of the project to the end. Furthermore, this will eliminate the need for start on constraints being assigned to activities in the beginning of each construction season.

- **Winter Shutdown:** Consider assigning an expected finish constraint to the winter shutdown on the date prior to spring startup. Linking the fall completion with the spring startup using the winter shutdown activities will also help establish the critical path from the start of the project to the end. Furthermore, this will eliminate the need to adjust the duration of winter shutdown in each update. The duration will automatically be adjusted based on the scheduled start date and the expected finish date. Note that expected finish constraints on winter shutdown activities is the only exception to the limits on excessive use of constraints. Expected finish constraints should not be used on any other activities.



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As Late As Possible Constraint Comments:

- As Late As Possible Constraints: A total of 155 activities have been assigned an as late as possible constraint. Use of this type of constraint on construction task activities can create a risk to successor activities if the work is not completed as scheduled. Any justification for use of this type of constraint on construction task activities must be provided in the schedule narrative. Provide details on the reasons why these constraints are being utilized on the activities to which they are assigned.

Baseline Constraint Comments:

- Baseline Constraints: Activity constraints should be limited to contract-imposed dates. The excessive use of date constraints overrides the logic of the schedule and will not allow activities to move as the schedule is updated. Review the date constraints listed below and replace the constraint with appropriate predecessor and successor relationships.
- Baseline Constraints: Activity constraints should be limited to contract-imposed completion dates. The excessive use of date constraints overrides the logic of the schedule and will not allow activities to move as the schedule is updated. Review the date constraints listed below and replace the constraint with appropriate predecessor and successor relationships. Create activities which consume the time up to the constraint date and designate the instream disturbance work restriction as nonworking days within a calendar.

Baseline Activity Progress Comments:

- Activity Progress: The use of actual dates representing progress should not be entered into the baseline schedule prior to department acceptance. The actual dates need to be removed and the data date should be moved to the start of the schedule start milestone in the baseline submittal.

Milestone Comments:

- Milestones Coded as Activities: The task activities listed below have been assigned an original duration equal to zero days. Task activities should be assigned durations of one or more days. Review the activities below and change the durations to the value assigned in the baseline or another appropriate value.
- Milestones Coded as Activities: The milestone activities listed below have been are setup as task activities and assigned an original duration equal to zero days. The activity type field for these activities should be changed to start or finish milestones. Review the activities below and change the activity type to the appropriate value.
- Original Durations Equal to Zero: The task activities listed below have been assigned an original duration equal to zero days. Task activities should be assigned durations equal to one or more days. Review the activities below and change the durations to the value assigned in the baseline or another appropriate value.
- Task Activities with Zero Duration: The activities listed in the table below are task activities that have been assigned an original duration of zero days. Review these activities and adjust the original duration to match the planned duration of this scope of work.



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Interim Completion Date Comments:

- **Intermediate Completion Date:** The Special Provisions intermediate completion date includes a time when liquidated damages will begin. Damages will begin at 12:01 a.m. on the date associated with that milestone. As a result, the scope of work represented by the milestone must be complete the day before the liquidated damages begin.

The interim completion milestone for the completion of Capitol Drive (MIL-1880) is currently scheduled to be complete at 5:00 p.m. on the date specified in the Special Provisions. As noted above, the intermediate completion date should be the day before liquidated damages begin. In this case, this scope of work should be completed on or before 30Aug17.

- The finish on or before constraint assigned to the interim completion milestone (PDL.1007) for the completion of southbound IH 41/USH 45 over North Avenue to open North Ave to two lanes is later than the date specified in the Special Provisions. In this case, the work should be completed on or before 02Sep21. The constraint date assigned to this activity needs to be adjusted accordingly.
- The finish on or before constraint assigned to the interim completion milestone (PDL.1009) to open Meinecke Avenue, 112th Street, 113th Street, B879, R573/576, and N82/83/84/86 is assigned a time of day (05:00 p.m.) that is later than specified in the Special Provisions. In this case, the work should be completed on or before 05:00 a.m. on 08Nov21. The constraint date and time of day assigned to this activity needs to be adjusted accordingly.
- **Interim Completion Milestone Constraints and Time of Day:** The date constraints assigned to the interim completion milestone finish on or before constraints includes a time of day that is at the beginning of the day (08:00 a.m.) The time of day assigned to this constraint reduces the number of workdays available to the project by one day and is another reason this schedule has negative float. Revise the time of day on these finish on or before constraints to be at the end of the day.
- **Intermediate Completion Milestones:** The schedule lacks intermediate completion milestones for the IH 41 SB Ramp & Hampton Ave. signals and the Bluemound Rd & 84th St. pedestrian sidewalk completion dates. These intermediate milestones need to be added to the schedule with appropriate Finish On or Before constraint dates.
- **Project Completion Date:** The Special Provisions states that all work must be complete by 12:00 a.m. on September 13, 2019. As a result, the scope of work represented by the milestone must be complete on or before September 12, 2019.

The project completion milestone (A1030) is currently scheduled to be complete at 2:00 p.m. on September 13, 2019. As noted above, the intermediate completion date should be the day before liquidated damages begin. In this case, this scope of work should be completed on or before September 12, 2019.



Sample Schedule Review Comments

- Closures and Limited Durations: Closures and limited durations have not been included in the schedule. Add activities showing the planned start and finish dates for the various closures, lane restrictions, and limited durations. Recommend utilizing level-of-effort activities to highlight the duration period of these scopes of work.



Sample Schedule Review Comments

Team Comments:

General Comments:

- Any construction items not accounted for are considered incidental to the tasks provided for in the baseline and shall not be added later.
- All technical issues noted in Section 3 of this review must be addressed in the next submittal.
- The Contractor should provide the quantity and estimated daily production rates for controlling items of work per 108.4.2.1 item #3.

Narrative Comments:

- Provide an anticipated cash-flow curve for the project, based on the baseline CPM.
- Per SPV article 3, the contract time for completion is based on an expedited work schedule and may require extraordinary forces and equipment.
- Narrative provided with the schedule update needs to include more details on the changes made to the schedule. These additional details included, but are not limited to, the items listed below:
 - Brief description of monthly progress, change to the critical path, sources of delay, potential problems, work planned for the next month, and changes to the CPM schedule
 - Describe in detail changes to the schedule logic including addition and deletion of activities and changes to activity descriptions, original durations, relationships, constraints, calendars, or previously recorded actual dates.
 - Justify changes to the CPM schedule in the narrative by describing associated changes in the planned methods or manner of performing the work or changes in the work itself.
- The narrative states numerous delays have and continue to occur due to utility relocations, WisDOT procurement/material deliveries and temporary power service requests.
 - Provide a complete list of all utility, WisDOT procurement and temporary power service delays that are claimed to be an impact to the critical path.
- In accordance with Special Provisions article 131. Monthly CPM Progress Schedule Updates paragraph 108.4.4.3 3 the narrative provided with the schedule update needs to include more details on the changes made to the schedule. These additional details included, but are not limited to, the items listed below:
 - Brief description of monthly progress, change to the critical path, sources of delay, potential problems, work planned for the next month, and changes to the CPM schedule
 - Describe changes to the schedule logic including addition and deletion of activities and changes to activity descriptions, original durations, relationships, constraints, calendars, or previously recorded actual dates.
 - Justify changes to the CPM schedule in the narrative by describing associated changes in the planned methods or manner of performing the work or changes in the work itself.
 - Provide detailed information on adverse weather days during the update period and any critical path activities that may have been affected by adverse weather.



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- In accordance with Standard Specifications 108.4.4.3 Initial CPM Progress Schedule paragraph (1) 5. a narrative must be provided with the initial schedule. This narrative needs to include details on the work days per week, department-specified holidays, number of shifts per day, and number of hours per shift. Also provide the estimated number of adverse weather days for each month consistent with the monthly-anticipated adverse weather.

Delay / Schedule Impact Comments:

- Utility delays were shown on 3-week schedule during June 28th progress meeting. If applicable, please show these on the CPM.

Calendar Comments:

- Calendar 5D W&H is listed for all activities except for B-40-893 form deck, cure items, and submittal/procurement items. Per SPV article 3, the contract time for completion is based on an expedited work schedule and may require extraordinary forces and equipment.
- The Contractor should incorporate work hours as discussed during preconstruction: 6:30 a.m. to 5:00 p.m. utilizing 2 to 3 crews. Saturday work is not anticipated though will be performed if required to meet contractual dates.

Adverse Weather Comments:

- Update the adverse weather statement to discuss the month referenced in the update.
- The narrative provides a list of adverse/severe weather days but does not state how many days are claimed as delays to the critical path.
 - Provide a claimed number of adverse weather delays.
 - The adverse weather clause in the Special Provisions notes that the CPM schedule must show that the controlling item of work was delayed. The department will continue to monitor and evaluate any impacts due to adverse weather.
 - Please include a column in the Adverse/Severe Weather Days table for the activity IDs of activities claimed to be affected by adverse weather in future submittals. This will help clarify specifically which activities may have been impacted by adverse weather.
- The adverse weather clause in the Special Provisions notes that the CPM schedule must show that the controlling item of work was delayed. Most of the work items noted in the narrative as being impacted by adverse weather have positive total float values. No activities in this schedule update have negative total float. Although adverse weather during the update period may have exceeded the anticipated number of adverse weather days, this CPM update does not show any work being negatively affected by the adverse weather. The department will continue to monitor and evaluate any impacts due to adverse weather.

Please include a column for the activity IDs of activities claimed to be affected by adverse weather in future submittals. This will help clarify specifically which activities may have been impacted by adverse weather.



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- The adverse weather clause in the Special Provisions notes that the CPM schedule must show that the controlling item of work was delayed. Several of the work items noted in the narrative as being impacted by adverse weather have positive total float values. The number of adverse weather days that impacted critical activities during the update period exceeded the anticipated number of adverse weather days by one day which would be applied to the November 8, 2021 interim date. The Set Span 1 Girders on Meinecke activity (1B.BS1135) has zero days of float in this update; therefore, the adverse weather on August 24th did not adversely affect the interim or final completion dates. The department will continue to monitor and evaluate any impacts due to adverse weather.

Activity Duration Comments:

- Construction activities are limited to 21 Calendar days (or 15 business days). A suggestion would be breaking them up by limits and/or by adding different sequences of work involved. Consider breaking these activities by floor or other area of the structure.
- Stage 2 Activity A1830 Concrete Walk is inclusive of curb & gutter, surface drains, median curb, noses, and walks. The Contractor should confirm the current 3-day duration is appropriate for this quantity of work.

Staging Comments:

- Do not proceed with combining or resequencing any future staging, in any monthly CPM update until receiving prior authorization from the Department.
- A1165 Winter Shutdown 2023 & A1205 Winter Shutdown 2024 – In accordance with the special provisions, winter shutdown goes until March 11, 2024, and March 3, 2025, respectively unless approved by the engineer.

Activity Sequence Comments:

- Stage 3 currently reflects a 22-day gap between the start of milling and the start of paving. In accordance with Article 3, Prosecution and Progress, Restrictions: place HMA pavement on milled surfaces within two weeks of the milling operation.
- Per the special provisions any milled surface shall be paved one layer of asphalt within 96 hours of completion of the milling operations. The current schedule reflects milling June 5 to June 12, and HMA pavement June 16 to June 23. This does not follow the 96-hour rule.
- Membrane and waterproofing cannot be complete until the deck plate is complete, adjust activities as necessary.

Work Restrictions:

- There are currently several culvert work activities occurring within the noted Special Provisions work restriction window. In accordance with the Project Special Provision, Culvert Work Restrictions: when performing work in any culverts with standing or floating water, it cannot occur from March 1 to June 15 without WisDOT and WDNR approval.



Sample Schedule Review Comments

Missing Scopes of Work Comments:

- Roadway/ All WBS groups – Add Pipe Underdrain activity in the baseline CPM.
- Marsh Excavation work is not shown on the CPM for STH 83 & CTH O reconstruction area and is critical to completing the HMA Pavement (A1630) work in this section which is shown to begin on July 21st. Consider adding an activity for the marsh excavation scope of work.
- If the contractor intends to construct the temporary bridge over Indian Creek along I43 NB, include activities for the temporary bridge (water diversion, installation, removal, etc.)
- Consider adding activities for WE-Electric Service requests for temp & permanent power for both signals and lighting.

Bridge Comments:

- Bridge Structures Overlay: Consistent overnight temperatures in May for faster cure time for TPO overlays (2 layers) will be a challenge to get work done in the timeframes needed.
- Polymer Overlay activity is scheduled for May 16 to May 21:
 - Polymer overlays must be completed during overnight lane closures
 - Polymer overlays require the ambient and concrete surface temperature a minimum of 50 degrees.
- Will multiple drill rigs and secant shaft crews be on site to meet the proposed schedule? A logical crew relationship should be added to the schedule if only one crew is available to perform this scope of work.

Retaining Wall Comments:

- The anchor slab/coping/parapet must be complete prior to C&G and HMA pavement activities. Adjust retaining wall or roadway construction activities to coordinate with each other.

Noise Wall Comments:

Earthwork Comments:

- Time between landscaping and finishing topsoil does not meet specifications.

Roadwork Comments:

- The anchor slab/coping/parapet must be complete prior to C&G and HMA pavement activities. Adjust retaining wall or roadway construction activities to coordinate with each other.

Electrical / FTMS Comments:

- Is wire being pulled immediately after conduit is in place at each location or later? When are underground inspections (WisDOT electric) being performed?
- No explicit timeframe allowed for all required electrical inspections.



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- Consider adding activities for WE-Electric Service requests for temp & permanent power for both signals and lighting.

Storm Sewer Comments:

Submittal / Procurement Comments:

Traffic Control Comments:

Railroad Comments:

- Membrane and waterproofing cannot be complete until the deck plate is complete, adjust activities as necessary.



Sample Schedule Review Comments

Conclusion and Recommendation:

Schedule Recovery Comments:

- The contractor's forecasted milestone dates exceed the contract specified dates. Contractor shall consider adjusting work calendars, activity durations, work crews, resources, or other schedule parameters to recover time. The CPM schedule should illustrate the planned efforts being put forth and the effect of those efforts in recovering time. Include comments in the narrative explaining the contractor's plan to recover time for the milestone dates.
- The schedule review does not change the terms and conditions of the contract documents. Contract intermediate and final milestone completion dates remain unchanged.