

Insights into Construction Scheduling

Calendars as they apply to Construction Projects

Calendars are a critical component of any Construction Schedule. Carefully crafted Calendars will not only assist in the creation of a properly modeled plan, but also be helpful in its maintenance during the life of the project.

Calendar Creation

Global Calendars should be created at the enterprise level to cover a variety of work schedules common to the Program. Projects should then extract copies of the Global Calendars from the database and create specific Project Calendars for use in your specific project. This process eliminates having to heavily modify project calendars once they are created while allowing project specific adjustments to be made. Avoid assigning Global Calendars to your projects. Enterprise level access to Global Calendars creates a security risk in that other users can access those calendars and modify them without your knowledge. If project A decides to take the month of December off this year, and you are sharing the same Global calendar, you will also end up taking that month off the next time you schedule your project. Nobody needs those kinds of surprises.

If you project schedules in days, consider using 8 hour days with **working hours** from 8 am to 5 pm with 1 hour for lunch for all your calendars. These are not meant to be actual **working hours**, only a standard to build common calendars and avoid interface problems with activities with different calendars. We have all seen schedules where the hours of the day are mismatched between calendars. When you view the “hours” in the data columns you have a wide variety of starting and finishing times. This leads to partial day values for remaining duration and total float. All this can be avoided by synchronizing the working hours of your days in your calendars. If you must have different hours per day, say a 10 hour day, consider making the ending hour of the shifts in each calendar match. This should allow for a uniform turnover between activities.

Calendar IDs

It is important to keep the length of the Calendar ID as short as possible. **This will help in keeping the column width at a minimum for any reports or layouts that include calendars.** The calendar names and parameters should be listed in the narrative accompanying the project baseline. This seems like such a small issue, but it will allow you a great deal of flexibility in using a column for calendars in your Gantt Charts and Reports.

Calendar ID	Calendar Name
5D	5 day calendar with holidays
5W	5 day calendar with holidays and Weather days
5P	5 day calendar with holidays and a Paving window
6D	6 day calendar with holidays

Insights into Construction Scheduling

Calendars as they apply to Construction Projects

7D	7 day calendar
----	----------------

Table 1 – Calendar IDs that are column friendly

Number of Calendars

Use common sense when deciding of the number of calendars necessary to properly model your project. The use of too many calendars can have adverse effects on the apparent Activity Float value. A good example is a curing calendar based on 7 days a week. Consider a logic string of Activity A on a 5 day calendar and Activity B on a 7 day calendar. If this string of activities has one week of float, then Activity A would show 5 days of float while the Activity B would show 7 days of float. It is a little confusing at best. This is also a good argument for defining critical activity by Longest Path. As the number of calendars used increases, the more potential for variation in Total Float values for activities in the same Float Path.

Consideration of weather days

In rainy or cold climates, calendars can be created to more accurately reflect the number of days each month that may be unworkable for certain activities due to weather. Modifications can either be made to the standard work week, or days can be manually set as non-work days depending on personal preferences. These “weather” calendars are then applied only to the activities that are sensitive to the weather recognized in the Calendar. In northern climates it is common to have a Rain Calendar for dirt work and a Paving Calendar for paving operations controlled by temperate. In creating a Rain Calendar, care must be taken to capture both the rain event days and the rain recovery days. Often one day of rain will result in one or more recovery days depending to the type of work and the soils involved in the activity. Take care to explain the source of your weather information and the methodology of incorporating them into your calendars when you are preparing your Baseline Narrative. This allows stakeholders a chance to review and comment on your methods and may help avoid any future confusion should those methods come under review later in the project.

Placing all the anticipated weather days in a “bucket” activity at the end of the project is highly discouraged as it distorts the start dates of the activities affected by the weather.

It is also beneficial to actualize rain days in your periodic schedule updates. By doing this you will eliminate any inaccuracies in actual durations caused by work stoppages in excess of your planned weather days. Your intent to use this methodology should be stated in your Baseline narrative to avoid any confusion.

Consideration of Contract Specifications

When creating Project Calendars, special attention should be paid to the Contract Specifications for Calendar related restrictions. In addition to weather days, some contracts have specific timeframes when they want to restrict activity because of special events or previously scheduled conflicting activities. Some contracts even preclude the use of weather days in the calendar. Adjustments should be made in the

Insights into Construction Scheduling
Calendars as they apply to Construction Projects

calendars to accurately reflect those non-work periods. Do not use constraints to move activities out of restricted timeframes instead of calendars as the activity may shift at a future date and the constraint may no longer be valid.