

# *Scheduling Seminar*

*for the*



Prepared and Presented By

**URS**

# *Introduction*

- CPM Scheduling and Terminology
- Scheduling Calculations
- Calculation Exercises
- Scheduling Programs and Overviews

# *CPM Scheduling and Terminology*

- Predecessor
- Successor
- Float
- Free Float
- Total Float
- Sequestered Float
- Critical Activity
- Critical Path
- Longest Path
- Relationships
- Lag
- Constraint
- Calendar
- Hammock Activity
- Milestone
- Out-of-Sequence
- Progress Override
- Retained Logic
- Target Schedule
- Concurrent Delay

# CPM Scheduling and Terminology

- Predecessor is an activity that occurs before another activity and is logically tied to its successor (relationship). A predecessor activity controls the start or finish date of its successor(s).
- Successor is an activity that occurs after another activity and is logically tied to its predecessor (relationship).

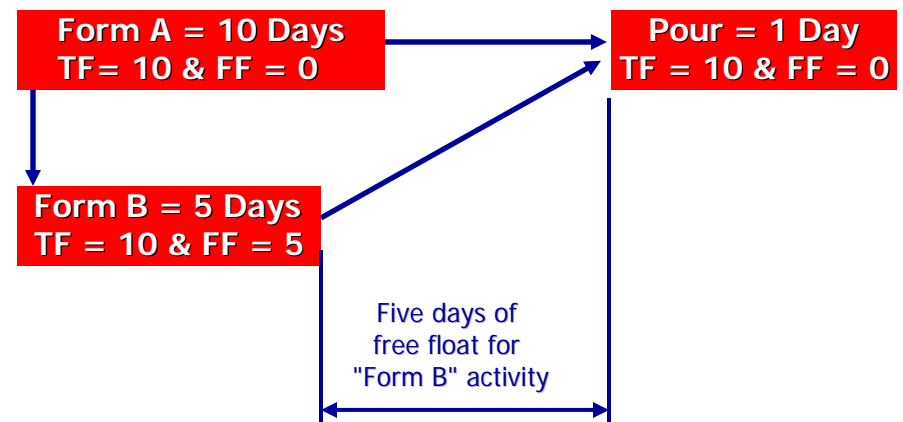
Activity "B" is a predecessor to activity "D" which is a predecessor to activity "G"



Activity "G" is a successor of activity "D" which is a successor of activity "B"

# CPM Scheduling and Terminology

- Float is the amount of time the start or finish of an activity can be delayed without affecting the project finish date, also known as slack.
- Free Float is the amount of extra time available to an activity when all activities start as early as possible without delaying the early start of a successor activity, thus not impacting the successor's total float. Free Float is uniquely available to an activity.



# CPM Scheduling and Terminology

- Total Float is the total number of work periods the start or finish of an activity can be delayed without affecting the project finish date.
- Sequestered Float makes the reflected value of float smaller causing it to withdraw into seclusion and screening from view its true value.
- Critical Activity is an activity with zero or negative float.
- Critical Path is one or more continuous chains of zero or negative float activities running from the start event to the finish event in the schedule.
- Longest Path is the chain of continuous activities that requires the greatest amount of time to accomplish and often referred to as the critical path. However, the longest path is the longest path regardless of float.

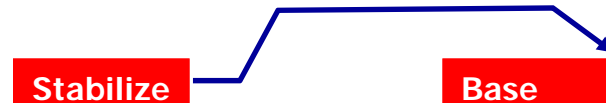
# CPM Scheduling and Terminology

- Relationships: A Relationship is a logical tie between two or more activities. There are four types:

- Finish-To-Start (FS)



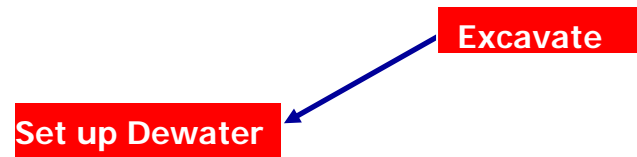
- Finish-To-Finish (FF)



- Start-To-Start (SS)

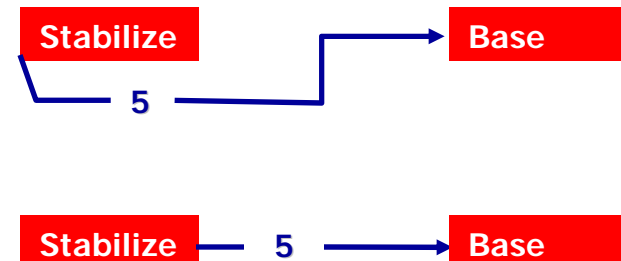


- Start-To-Finish (SF)



# CPM Scheduling and Terminology

- Lag is an offset or delay from an activity to its successor. A lag can be positive or negative. An excessive or unexplainable lag is a typical means of sequestering float. A review of all lags should be a standard used when reviewing a schedule.



- Constraint is a restriction imposed on the start or finish of an activity or an activity's float. Constraints are used to reflect real project requirements and/or restrictions such as contract imposed starts, finishes or interim milestones. Constraints can be imposed on the early starts and finishes, the late starts and finishes, mandatory starts and finishes, expected finish and total and free floats. Constraints are a typical means of sequestering float.

# *CPM Scheduling and Terminology*

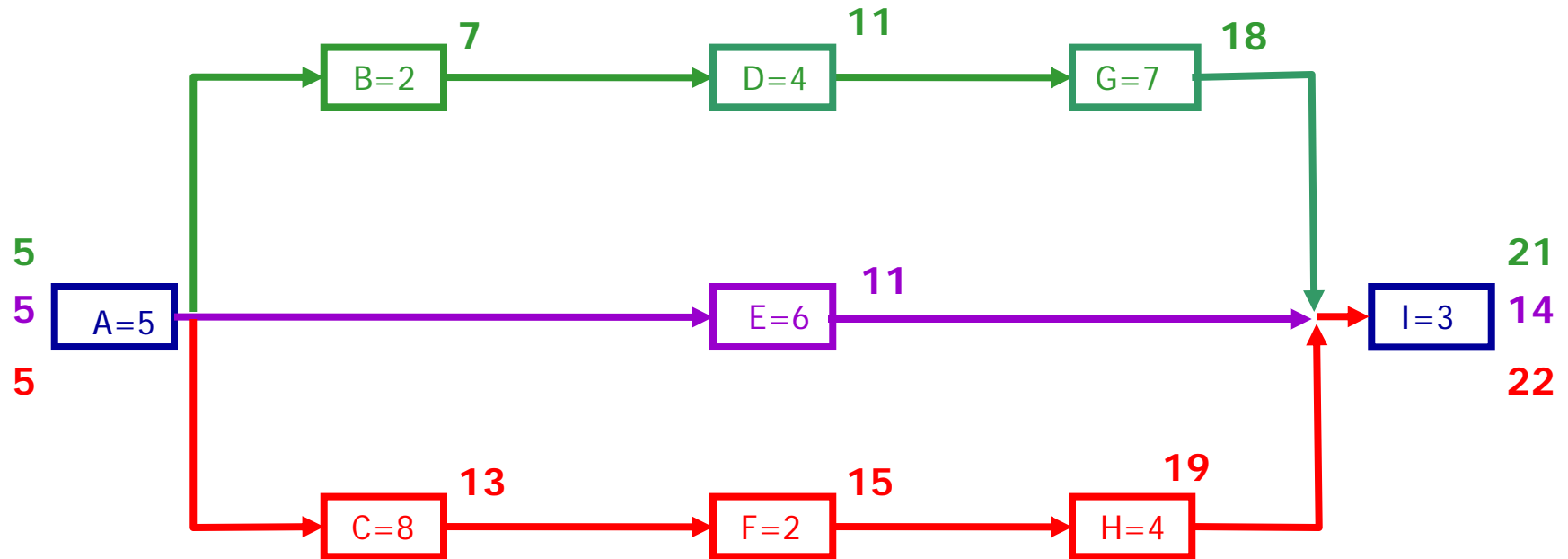
- Calendar: Multiple calendars such as 5, 6 and 7 day workweeks can be applied to account for varying schedule requirements. You can create specific calendars and identify holidays or any other restricted day as non-workdays.
- Hammock Activity: An activity in P3 that spans a group of activities for summarizing purposes and possesses no influence on the network. P6 calls this a Level of Effort activity.
- Milestone: An activity that represents a significant point in time, or accomplishment, but has no duration.
- Out-Of-Sequence: Work completed for an activity before or after it is scheduled to occur.

# CPM Scheduling and Terminology

- Progress Override is one of two types of logic used to calculate a schedule and affects the schedule only if out-of-sequence progress occurs, and ignores network logic. Depending on the quality of the network logic this feature can present illogical situations, such as installing the deck before the beams.
- Retained Logic is one of two types of logic used to calculate a schedule. This feature retains the network logic when out-of-sequence work occurs.
- Target Schedule: A project plan that can be compared to the current schedule to measure progress. A target typically is the accepted baseline or latest accepted update. P6 refers to a target as a baseline.
- Concurrent Delay exists when both parties have impacted the completion date, or interim milestone, during the same time period.

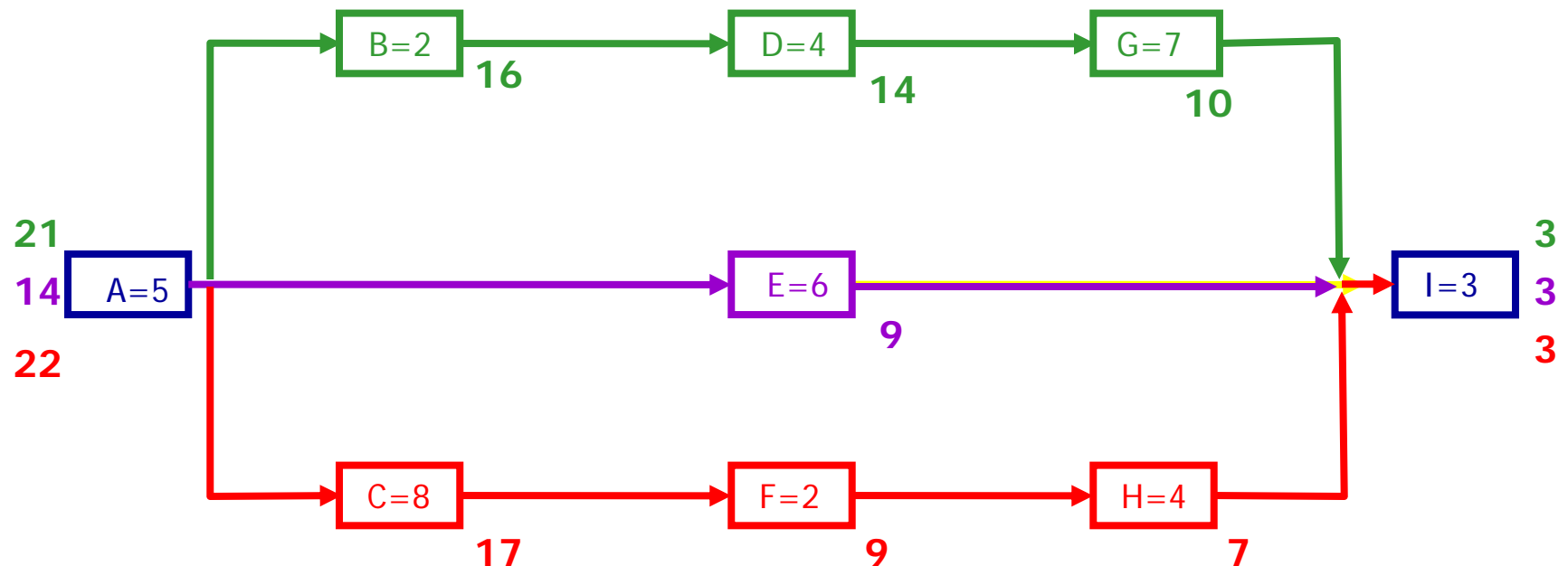
# Scheduling Calculations

- Forward Pass is the calculation of early dates of all network activities. The calculation starts at the beginning of the network (schedule) and continues to the end based on durations, constraints and relationships to calculate the early dates for each activity.



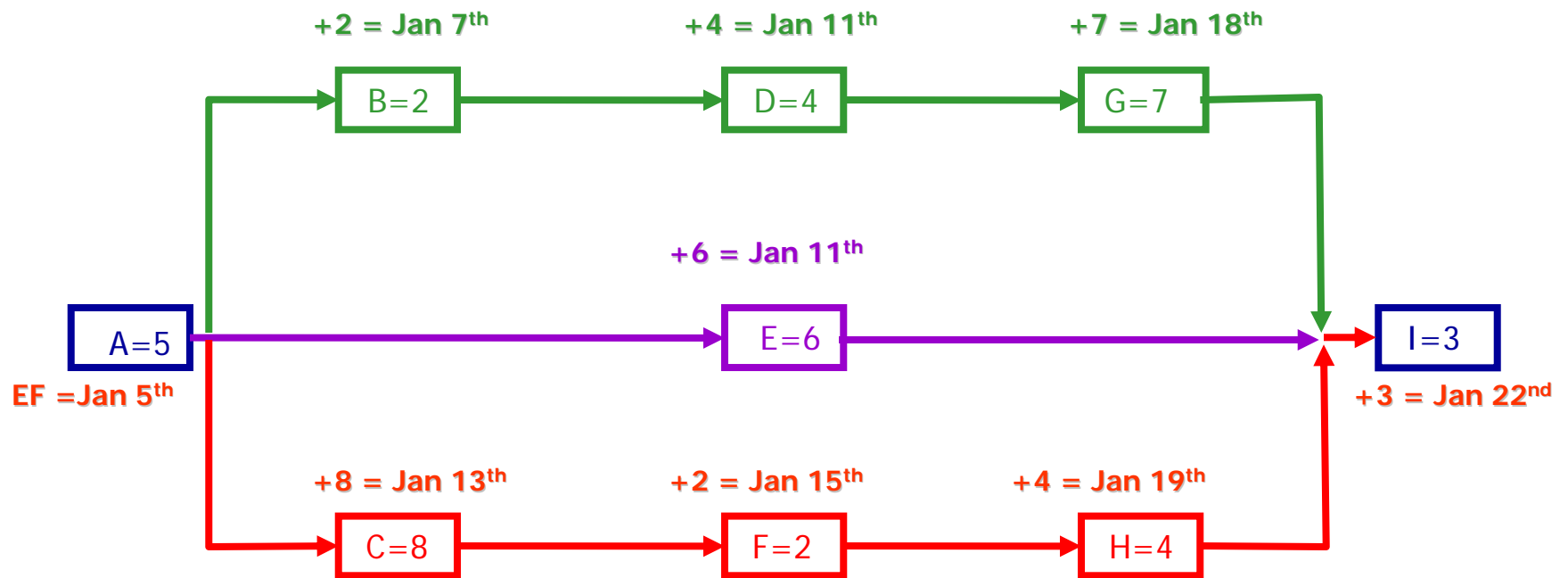
# Scheduling Calculations

- Backward Pass is the calculation of late dates of all network activities. The calculation starts from the end of the network (schedule) to the beginning based on durations, constraints and relationships. The backwards pass also serves to confirm the forward pass. The number at the end of each path should be the same, but at opposite ends.



# Scheduling Calculations

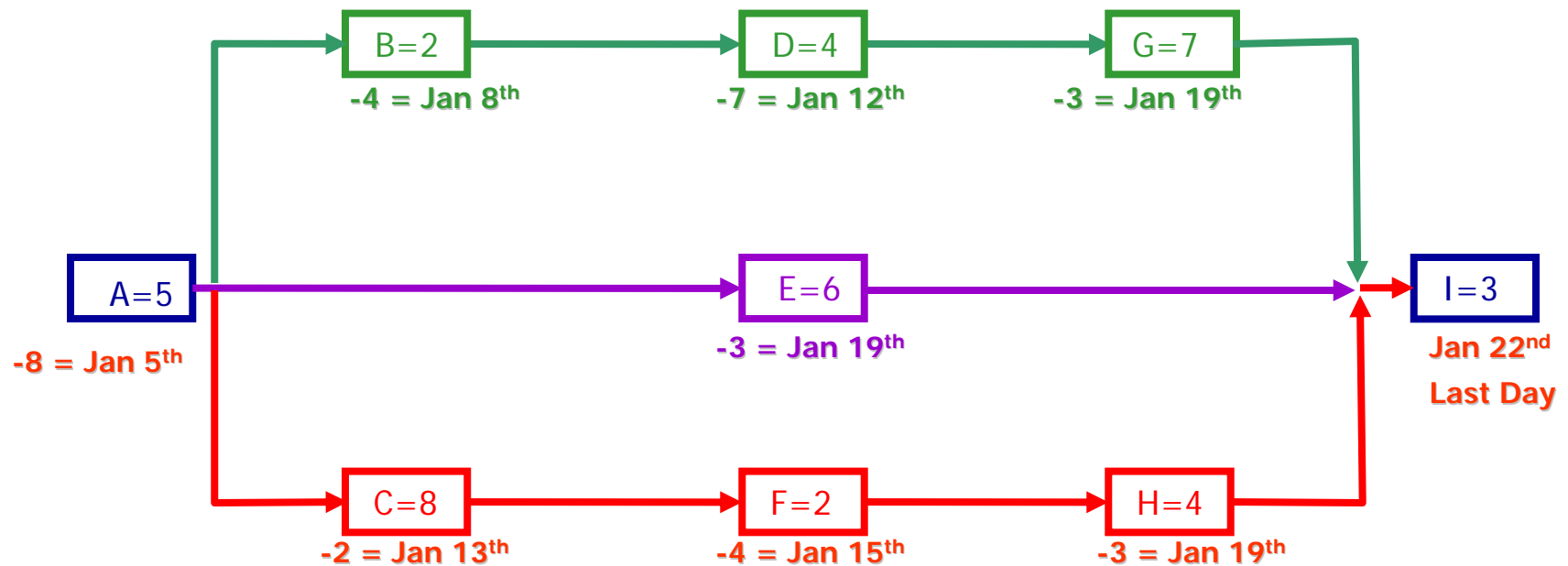
- Early Dates are calculated in the Forward Pass. Each duration is added to its predecessor's duration. Below is a 7-day workweek that reflects early finish dates. If your schedule is a 5-day workweek then you must include the non-workdays into the calculation, including holidays.



First Day = Jan 1<sup>st</sup>

# Scheduling Calculations

- Late dates are calculated in the backward pass. The duration of the last activity is subtracted from the schedule's finish date established in the forward pass. This establishes the last activity's predecessor's late finish date. The cycle continues to the first activity in the schedule. The dates reflected below are late finish dates.



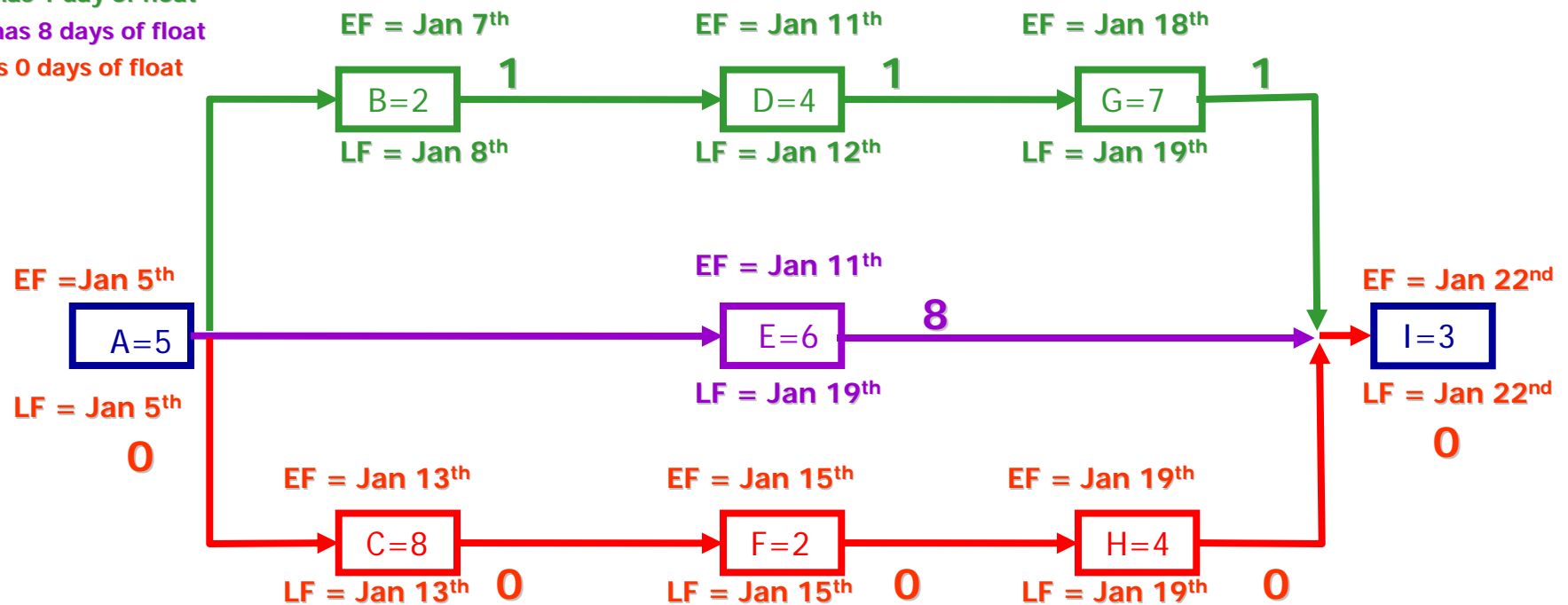
# Scheduling Calculations

- Float is calculated by subtracting the early start from the late start OR by subtracting the early finish from the late finish. This example is based on finish dates of a 7 day calendar. Do not include non-workdays in the calculation if the calendar is less than 7 days. **DO NOT MIX START AND FINISH DATES.**

Green has 1 day of float

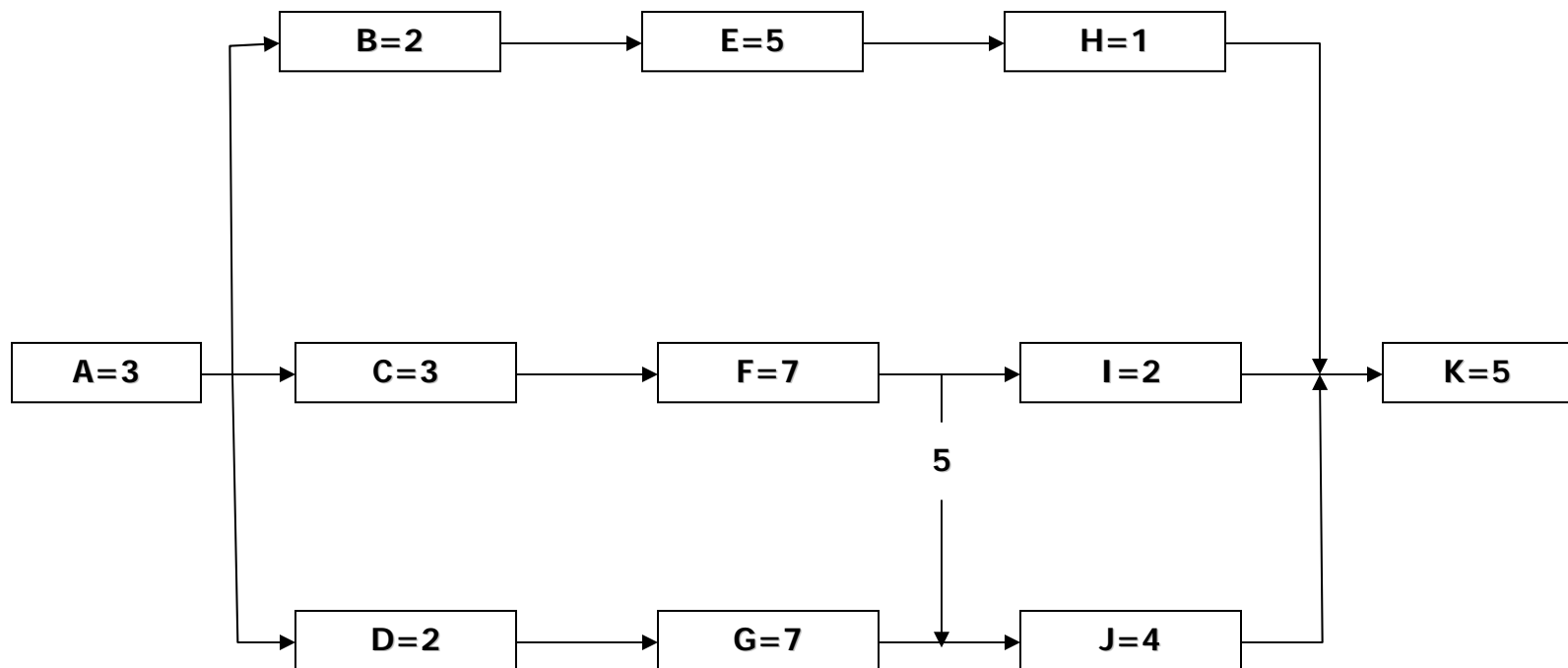
Violet has 8 days of float

Red has 0 days of float



# Calculation Exercise

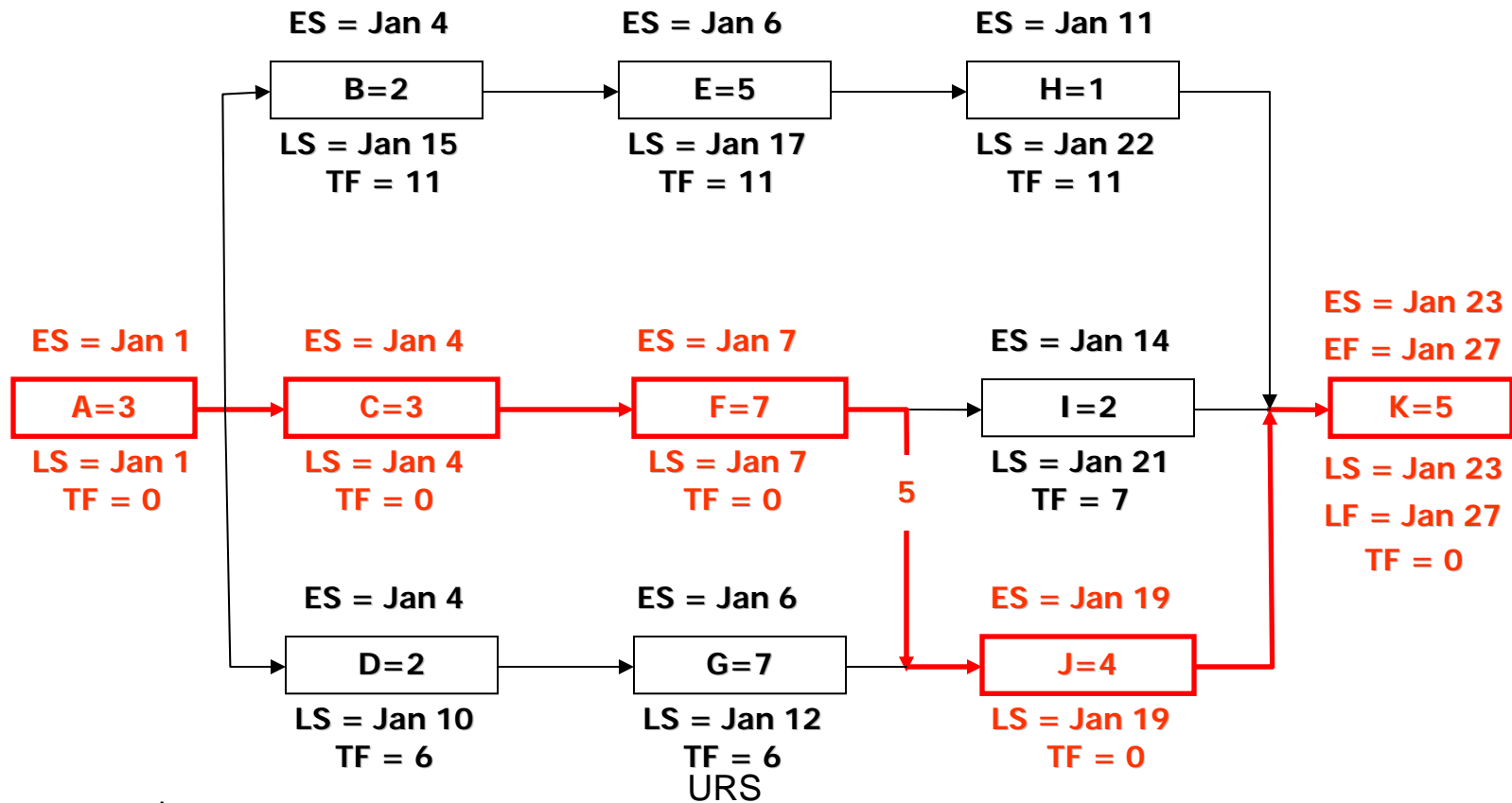
What is the longest path, early and late start dates and float?



First Day is Jan 1<sup>st</sup>

# Calculation Exercise

Longest path = A, C, F, J and K.



First Day is Jan 1<sup>st</sup>

# *Scheduling Programs*

The most common scheduling software in use today consist of four different programs:

- Primavera Project Planner (P3) (replaced by P6)
- Primavera P6
- Primavera SureTrak (being replaced by Primavera Contractor)
- Microsoft Office Project (MS Project)

The most common programs the heavy civil industry uses is SureTrak and P3. However, P6 has replaced P3 and P3 is no longer listed as a product on Oracle/Primavera's web site. P3 support is to be phased out in 2010. Many Contractors have made the move to P6.

It is not uncommon for smaller contractors, and subcontractors, to use MS Project on smaller projects.

# *Primavera P6 Overview*

- EPS - Enterprise Project Structure.
  - Where you can find your projects.
  - Can create your own matrix (District, Engineer, SP No., etc)
  - Can customize to show pertinent info you want to see.
- WBS - Work Breakdown Structure.
  - Organizes the schedule, typically by physical elements of a project (Stage, Location, Work Type, Subs, etc)
- OBS – Organizational Breakdown Structure.
  - Assigns responsibility per your definition.
  - Can assign certain users.
- P6 to P3
  - A contractor who has P6 without having P3 or SureTrak will not be able to convert their P6 file to a P3 file.
  - Calendars in P6 in excess of eight hours per day will transition a duration from say a 12 hour day in P6 to two days in P3.
  - Activity ID greater than ten characters will be truncated in P3.

# Primavera P6 Overview

Lets take a look at P6



## Using Folders

- Files will be .xer. Keep these files in folders as you would with any other document. This is like the .prx file.
  - It can be e-mailed (unlike the .prx).
  - You will import this .xer file into P6.
  - The .xer file is your back up file. It will remain in the folder even after you import it into P6.

## Setting up an EPS

- Enterprise ⇒ Enterprise Project Structure ⇒ Add.
  - Enter an EPS ID and Name – a standard structure should be made within MnDOT.
  - You can create multiple tiers.
  - You can move/position each tier with triangles, up, down, left or right.
  - The EPS can be updated at any time for new projects.

## Import Files into P6

- File ⇒ Import (If there is another file with the same name within the EPS then the imported file will be hyphenated with a dashed numerical value of one, i.e., BL00 will be BL00-1)
  - Select the type of file to import, then click “Next”.
  - The succeeding steps will depend on the format chosen.
    - ◆ For a (XER) format:
      - Choose Primavera PM / MM - (XER), and then click “Next”.
      - Select “Project”, then click “Next”.
      - Navigate to the folder containing the .xer file, and then click “Next”.
      - Click the “Import To” window and double click the EPS location you want the file to be in, and then click “Next”.
      - Click the “Modify” button, then the following:
        - (If resource Loaded) Under Data Type: Activity – double click “Update Existing” for Activity Resource Assignments and change it to “insert new”.
        - Under Data Type: Project – double click “Keep Existing” for Calendars and change it to “Insert New” (Try to have all contractors use the “Project” versus “Global” calendars).
      - Currency Type should default to Dollars, check, and then click “Next”.
      - Click “Finish”.
    - ◆ For a (P3) Format:
      - Choose Primavera Project Planner – (P3), and then click “Next”.
      - Select the folder containing the P3 file, and then select the Project by clicking the box next to the name, and then click “Next” (The P3 file must be in a “restored” state for it to be seen. It cannot be a .prx. If it is a .prx and you don’t have P3 to restore it then just double click the .prx and extract it to the folder, and then continue).
      - If there are subprojects you will need to decide to combine all as one or create all as separate P6 files. After you have decided click “Next”.
      - Select the import type and where you want to import to by clicking on each window, and then click “Next”.
      - Select the parent resource. Leave blank if not resource loaded. Then click “Next”.
      - Select your notebook topic. A P3 log will be converted to a note in the P6 notebook. Should default to create new. Then click “Next”.
      - Click the “Modify” button, then the following:
        - (If resource Loaded) Under Data Type: Activity – double click “Update Existing” for Activity Resource Assignments and change it to “insert new”.

- Under Data Type: Project – double click “Keep Existing” for Calendars and change it to “Insert New” (Try to have all contractors use the “Project” versus “Global” calendars).
- Then click “Finish”.

### **Export P6 Files**

- Open the Project you want to export.
  - From the EPS click on the Project you want to export.
  - With your mouse pointer on the selected Project right click and then click “Open Project”. The Project should open.
- Then click File ⇒ Export (the export window should open).
  - Select the export format you want to export, and then click “Next”.
  - The succeeding steps will depend on the format chosen.
    - ◆ For a (XER) format:
      - Choose Primavera PM / MM - (XER). Know which version you want to export to and choose in the drop-down window, and then click “Next”.
      - Should default to “Project”, check and then click “Next”.
      - Select the file by clicking the box under “Export”, and then click “Next”.
      - Navigate to the folder you want to export to, and then click “Finish” (May take a minute or so).
    - ◆ For a (P3) format:
      - Choose Primavera Project Planner – (P3), and then click “Next”.
      - Select the file by clicking the box under “Export”, and then click “Next”.
      - Enter a Project name, such as BL00. (Cannot be any more than four characters).
      - Select “Days” for both choices, and then click “Next”. (If the schedule being exported has a calendar with more than eight hours per day then chose “hours”. This will make the P3 file durations based on hours versus days and you won’t have the conversion loss/gain in days, i.e., 12 hours = 2 days).
      - Next screen should default to the upper check box, check, make your choice, and then click “Next”.
      - Next screen default should choose all three choices, check, make your choice(s), and then click “Finish”.

### **Copy Projects within P6**

- Make sure all Projects are closed.
- Enterprise ⇒ Projects.
  - From the EPS click on the Project you wish to copy.
  - With your mouse pointer on the selected Project right click and then click “Copy”.
  - Then place your mouse pointer in the EPS section you want the file to be placed.
  - Then right click and click “Paste” (The pasting will create a copy of the file and the new file will use the same name but with a dashed numeric extension. You will be able to edit the Project Name and Project ID by double clicking on either).
  - Choose the options in the popped up window or leave as default, then click OK. Do so for each popped-up option window, four total.

### **Tool Bars**

- View ⇒ Tool Bars.
  - Will let you chose the tool bar(s) you want to see.
  - Can show just the icon or the icon w/name.
  - Can lead to shortcuts to items listed below (Some are listed below some are not).

## User Preferences

- [Edit](#) ⇒ [User Preferences](#).
  - Time Units – This is where you can choose units to be displayed as hour, day, week, month or year. Also lets you decide if you want whole number or decimals.
  - Dates – This is where you can decide on how you wish to see the dates displayed, i.e., M/D/Y, D/M/Y or Y/M/D. Will also let you show time next to the date in 12 hour or 24 hour format.
  - Currency – Chose denomination. **(Always select two decimals because if you chose a whole dollar any update of the schedule coming in with decimals will round up or down and throw off the cost loading).**
  - Other Preferences are: E-mail, Assistance, Application, Password, Resource Analysis, Calculations (resources and staffing) and Start-Up Filter.

## Calendars

- [Enterprise](#) ⇒ [Calendars](#).
  - You will see three choices at the top of the calendar window, Global, Resource and Project.
  - Most contractors have been using the Global. Try to get them to use the Project Calendar option **(Using Global Calendars is dangerous for the contractor because if used for multiple projects and a change to the calendar for Project A will change it for all projects that use the same global calendar. It is also dangerous for MnDOT because a global calendar used by more than one contractor could affect all schedules of all contractors that use the same global calendar. The cure for this is to make sure when you import your projects you select the “Insert New” choice described in the import function above. But this will create a massive amount of global calendars in short time.)**
  - To access the Project Calendars you must have that Project open.
  - This is where you can verify weather contingency.
    - ◆ [Enterprise](#) ⇒ [Calendars](#) ⇒ [Modify](#). The modify window will display the shaded days (Blue by Default) that are non-workdays. A white shade is a typical non-workday; say Sunday, but given exception on a certain Sunday to permit work.
    - ◆ The modify window will display hours per day.
    - ◆ Use the left / right arrows to move from month to month.
    - ◆ The buttons on the right side of the modify window enables you to choose work or non-work.
    - ◆ The Workweek button will reflect which days of the week are work and the hours per day.
  - How to know which Calendars are being used.
    - ◆ Under any view put your mouse pointer on the column header line, and then right click.
    - ◆ Select [Columns...](#) ⇒ [General](#) (General can be found on the left section of the window).
    - ◆ Look for “[Calendars](#)” and select. Then in the middle of the popped-up window click the right triangle, then click “OK”. The calendars for each activity should now appear on your screen in the column section.
    - ◆ [View](#) ⇒ [Group and Sort...](#) In the mid section of the window go to Group By and click on the first left most cell.
    - ◆ Scroll to find “calendar” and select.
    - ◆ [View](#) ⇒ [Collapse To](#). Choose the lowest “Calendar Level #” (greater the number lower the level). You now can see all the different calendars being used for all the activities. This will enable you to know which calendars you need to review in the Enterprise ⇒ Calendars sector of P6 to review weather contingency. **(Be cautious – there could always be a mix of global and project calendars within any schedule due to the default setting in P6. So if you see Project Calendars being used in the Project Calendar window under Enterprise ⇒ Calendars do not assume only those calendars are being used. If the default setting is set to a global calendar then when activities were added to the schedule they may very well been assigned to the default global calendar during the schedule’s creation.)**
  - How to restore your previous view before the step above.

- ◆ **View ⇒ Layout ⇒ Open.** A window will pop-up asking if you want to save the current view – SELECT NO. (If you select yes you will override the previous view prior to your review and sorting of calendars and it will be forever gone until you manually restore it).
- ◆ After selecting NO open any view, and then.....
- ◆ **View ⇒ Layout ⇒ Open.** Select the view you were in prior to reviewing and sorting by calendars. Your previous review should reappear.

### **Customizing your View of Columns**

- **View ⇒ Columns.** (Shortcut - place your mouse pointer on the header row and right click, or look for icon)
  - How to select items what you want to see in your view:
    - ◆ The popped-up columns window has two sections; Available Options and Selected Options.
    - ◆ Click on any Available Option Section.
    - ◆ Click on the item you wish to see in your view, and then click the right triangle in the middle of the window to move it to the Selected Options. Do this for all the items you wish to see.
    - ◆ Then click on any one of the Selected Options and move it up or down by using the triangles to the right.
    - ◆ Click the “Edit Column...” button on the right side of the window and you can customize the column title, width and alignment. You can also do these things from the column header row from within the view itself without accessing the pop-up window.
    - ◆ You can also copy an existing view and modify it as described above.
      - Click the “Copy From...” button on the right side of the window. A new window will pop-up for you to select the view you wish to copy.
      - Select the view to copy, and then click OK.
      - You can also Import and Export views from other Projects from this “Copy From...” function by clicking the Import or Export buttons on the right of the window. This will lead you to select the Project to Import or Copy from the folder that the desired Project is located.
    - ◆ You can move, rearrange, the order of the columns by drag and drop method.
  - How to remove items you don’t want to see in your view:
    - ◆ Click on the item you wish not to see, and then click the left triangle in the middle of the screen. This will return the item to the Available Options section of the window. Do this for each item you wish to not have on the screen.

### **Customizing your View of Bars**

- **View ⇒ Bars.** (Shortcut - place your mouse pointer in the bar area and right click, or look for icon).
  - In order to see bars and milestones the “Display” check box needs to be selected for each one you desire to see (Can be found to the left in the Bars popped-up window).
  - There are a multitude of Bars to choose from so don’t think by choosing one it will show each stage of a bar’s life, it won’t. Actual Work is separate choice from Remaining Work and Critical is a separate choice from non-critical. Baselines are also a separate choice; there are three to choose. (There is a default setting that shows the standard selection of bars but if you don’t see something you think you should then check under this window to see if it is selected).
  - The bottom portion of the Bar window is where you can customize the bar style, bare setting and bar labels. Otherwise the default setting will dictate.
  - The “Options” button located in the Bar window is where you can customize the format (Sight Lines, Progress Line, Data Date, etc...) of the bar area on the screen.

## Time Scale

- **View ⇒ Timescale.** (Shortcut - place your mouse pointer on the bar area and right click, or look for icon).
  - This is where you can select/adjust the displayed start period for the Project, which is within the “Timescale Format” portion of the “Timescale” pop-up window.
  - This is where you can adjust the timescale interval to be shown on the screen. The “Timescale” pop-up window’s Date Format section has a cell to choose the date interval. (The P3 “slide Bar” no longer exist).

## Viewing Data

- **View ⇒ Show on Top.** (Shortcut – look for the icon on the tool bar)
  - You can horizontally split you screen to reflect a multitude of data including:
    - ◆ Activity Table
    - ◆ Activity Usage Spreadsheet
    - ◆ Gantt Chart
    - ◆ Activity Network
- **View ⇒ Show on Bottom.** (Shortcut – look for the icon on the tool bar)
  - You can horizontally split you screen to reflect a multitude of data including:
    - ◆ No Bottom Layout
    - ◆ Activity Details
    - ◆ Activity Table
    - ◆ Gantt Chart
    - ◆ Resource Usage Spreadsheet
    - ◆ Resource Usage Profile
    - ◆ Trace Logic
    - ◆ Activity Usage Spreadsheet

## Activity Details

- This data offers the most at a glance on an individual activity basis.
  - **View ⇒ Show on Bottom ⇒ Activity Details** (Shortcut – look for the icon on the tool bar)
  - Click on an activity in the Activity Table above the Activity Details.
  - This window has 11 tabs of data for the selected activity including, but not limited to, General, Status, Resource and Relationships.
    - ◆ General Tab - Pertinent information; type of activity and calendar
    - ◆ Status Tab - Pertinent information; original duration, remaining duration, float, dates, constraint(s), percent complete and cost.
    - ◆ Resources - Pertinent information, your choice. Customize the data you want to see.
      - Place your mouse on the header row of the Activity Detail window and right click.
      - Customize window pops up, click on it.
      - Resource Assignment Columns window pops up. You can choose what you want to see and the order you want to see it in (follow instructions from Customize your Columns section earlier herein).
    - ◆ Relationships - Pertinent information, your choice. Customize the data you want to see.
      - Place your mouse on the header row of the predecessor or successor window and right click.
      - Customize predecessor or successor column...window pops up, click on it.
      - Predecessor or successor column window pops up. You can choose what you want to see and the order you want to see it in (follow instructions from Customize your Columns section earlier herein).
      - You can move, rearrange, the order of detail within the predecessor or successor windows by drag a drop.
      - Go To – There is a “Go To” button in the bottom of the predecessor and successor section of the Activity Details window. From within the predecessor or successor window click on the preceding or succeeding activity you wish to go to, and then click the “Go To” button. It will take you to that activity. You could call it a form of trace logic.
      - You can also assign predecessors or successors. From within the predecessor or successor window click on the assign button and a window will pop up reflecting all activities to choose. (Be careful because any assignment or removal you make

alters the schedule you are reviewing. This feature should only be used if you are creating a schedule or performing a “What-if” scenario from a copied file).

### **Baselines (Targets)**

- Import the previous version of the schedule you want to compare into the EPS.
- Make sure the Project you wish to assign a Baseline to is opened (You can take a previous version of the schedule and compare it to the current by assigning a baseline).
- **Project ⇒ Maintain Baselines.**
  - Under the Maintain Baseline window click “Add”.
  - Under the Add New Baseline window click “Convert another project to a new baseline of the current project”, and then click “OK”.
  - From within the Select Project window find the project you wish to convert to a baseline and double click, and then click the “Close” button.
- **Project ⇒ Assign Baseline.**
  - Within the Assign Baseline window click on the draw-down arrow of the Project Baseline and select the file that you wish to be your baseline (chances are there will only be one file), and then.....
  - Within the Assign Baseline window click on the draw-down arrow of the User Baseline and select the file that you wish to be your baseline (chances are there will only be one file).

(Caution, whenever you convert a file from the EPS to a baseline the converted file will disappear from the EPS. This is why I suggest you import the previous version even if the previous version is already within the EPS. This way you will have your baseline and still be able to access the previous version as a separate file.)

### **Calculations**

- There are two basic ways to calculate the schedule.
- **Tools ⇒ Schedule. (F9 Shortcut or look for the icon on the tool bar)**
  - From within the popped-up Schedule window select the current data date by clicking on the box within the cell titled Current Data Date.
  - When you click the box a calendar will pop up. Double click on the day to be the data date. If a different month is needed from the one that popped up then click the left or right arrow at the top of the calendar to determine which month you need.
  - If you wish to log a report of the scheduled information, such as out-of-sequence activities, then check off the check box titled Log to File and direct where the file is to be stored via the cell below the check box.
  - Report logs can be viewed by clicking the “View Log” button on the right side of the popped-up Schedule window.
- **Schedule Options:**
  - **Tools ⇒ Schedule. (F9 Shortcut or look for icon on the tool bar)**
  - **Options** – Is where you can find all scheduling options:
    - ◆ Define schedule mode; Retained Logic, Progress Override and Actual Dates.
    - ◆ Define critical; Total Float Less Than or Longest Path.
    - ◆ Lag calculation.
    - ◆ Float calculation; Each Project or Open Projects (chances are you will use Each Project).
    - ◆ General Rules and Advanced Rules.

## **Filters**

- **View** ⇒ **Filters** (Shortcut look for the filter icon on the tool bar)
  - Filters provide the means to extract specific data to assist in reviews.
  - There are predefined filters for almost any filter you need but you can also create your own or modify an existing one. From the Filters pop-up window you can:
    - ◆ To select all activities click the All Activities check box in the upper left hand corner (Using this filter will deselect all other filter selections).
    - ◆ Or to select certain criteria click the check box next to a filter name of any one of the individual filters by clicking the check box next to the filter name.
    - ◆ You can select multiple filters at the same time to deliver a greater range of desired data; however this can complicate your filtering.
      - This step may require you to choose “All Selected Filters” or “Any Selected Filter”. If one returns no activities selected then change your choice to the other. The “All Selected Filters” choice is more demanding than the other; it is an all or nothing scenario.
    - ◆ Click on any filter choice other than All and the “Modify” button to the right will be activated. This will allow you to be more specific in your filter criteria. From within the “Filter” window in the blank space:
      - Click Add to create a modification if no other exists but chances are pre-defined criteria is already listed. In this case you can modify to your needs.
      - Click a spot under the Parameter column and search for your choice, i.e., Actual Start, and then click your choice.
      - Do the same for each column (not all columns will need, or let, you make an entry / choice. It all depends on the criteria being set by you).

## **Grouping and Sorting**

- **View** ⇒ **Group and Sort** (Shortcut look for the Group and Sort icon on the tool bar).
  - Under the Group and Sort window click on the first cell in the Group By section. You will find a multitude of choices by scrolling down.
    - ◆ The WBS (Work Breakdown Structure) is the most commonly used and is typically crafted by the contractor. Just select WBS in the top cell of the Group By section and the rest will fall into place.
    - ◆ You can adjust the format of the WBS, or any other selection, in the Group By section under Font and Color.
    - ◆ For sorting you will need to click the Sort button on the right side of the Group and Sort Window.
      - From within the Sort window click the cell under Field Name to make your selection by then scrolling down.
      - From within the Sort window click the cell under Sort Order to determine your desired order; ascending or descending.

## **Reports**

- **Tools** ⇒ **Reports** ⇒ **Reports** (Shortcut look for the Reports icon on the tool bar).
  - A multitude of predefined report choices will appear and are typically ready to execute. Click on any report and then right click. This will give you choices such as run, modify, import or export.
- **Tools** ⇒ **Reports** ⇒ **Report Wizard**
  - The Wizard will walk you through different options.

### **Claim Digger**

- Claim Digger is a tool within P6 that will assist you in determining all changes made between two schedules.
- [Tools](#) ⇒ [Claim Digger](#).
  - If the current Project is opened:
    - ◆ From within the Claim Digger window you should see a Project already listed in the Select Revised Project section.
    - ◆ To select the previous, or schedule you wish to compare against, click on the first Select Original Project or Baseline cell.
    - ◆ Select Projects or Baselines from within the Select Project/Baseline window.
    - ◆ Your EPS list will appear within the Select Project/Baseline window. Navigate to the desire file, highlight it and click “OK”.
    - ◆ Click on the “Advanced” button. This will give you the selection of what you want to see and don’t want to see (**If you select all items chances are you will get a very large report which will be more than you might need, so give it a run and be selective on additional runs**).
    - ◆ After you made your selections click “OK”.
    - ◆ At the bottom of the Claim Digger window you will see a section titled Output File. Select where you want you output file to be sent. You can then access this report at any time.
    - ◆ Click Compare (**May take a little time to run**).
  - If no Project is opened then do the same as the second step above but under the Select Revised Project.