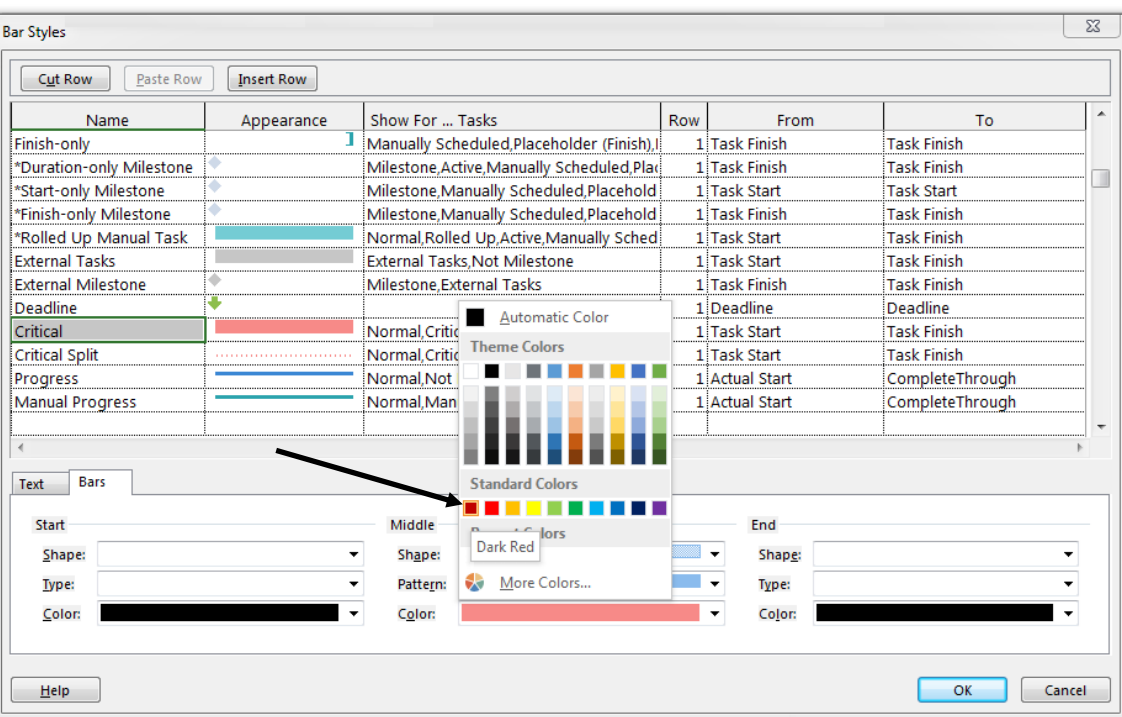
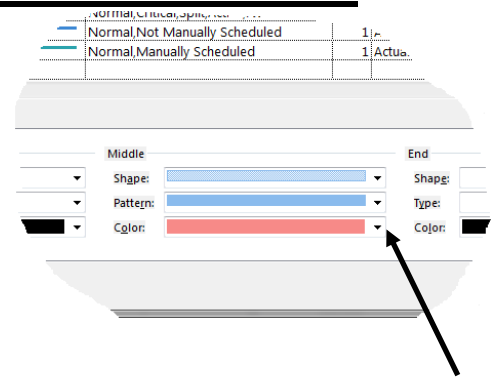
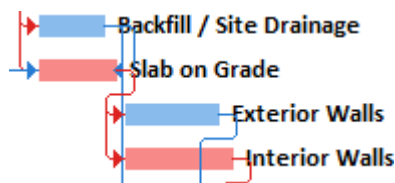


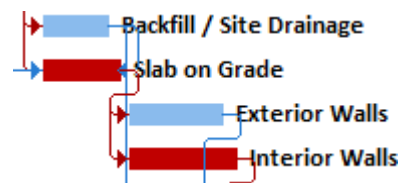
1. Next, re-open the Bar Styles window and scroll back down to select the **Critical** bar, then select the **Bars** tab in the bottom of the window. Go to the **Middle** section, and from there down to the **Color:** field as shown to the right.
2. Use the pull-down in the **Color:** field and select the color **Dark Red** as shown below. Then, click



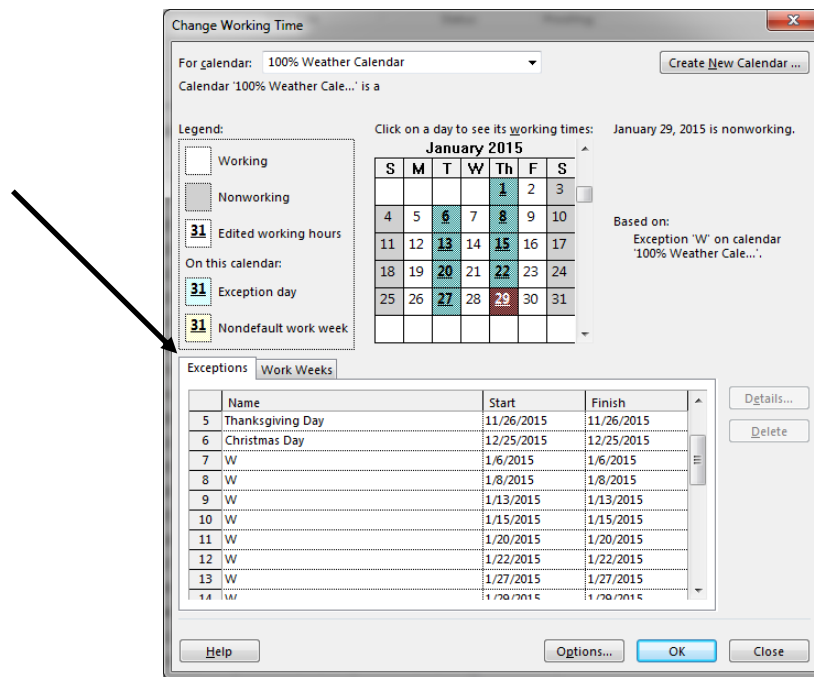
Notice in the example below, how the darkened red color of the critical bars on the right would make it easier to distinguish between critical and non-critical tasks on a black and white printout.

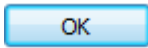


Default Colors



Darkened Red



1. Scroll to **February 2015**. Continue placing the weather days for the remainder of the months for the year 2015 using the *exact dates* shown below. *Carefully double-check to ensure accuracy*, then click .

January 2015

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February 2015

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2015

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2015

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2015

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

June 2015

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

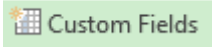
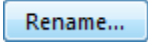
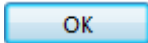
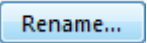
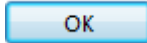
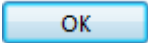
1. A partial view of the schedule to the left shows the **Contractor | Responsibility** custom task group. Notice that the label of each group has either **Text1:** or **Text2:** in the description. These serve no purpose, look bad, and are easily removed.

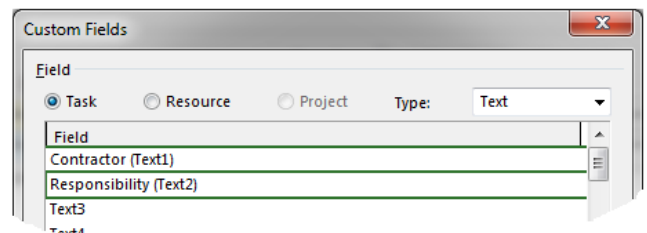
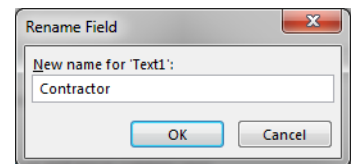
We will now remove these labels from the task group headings.

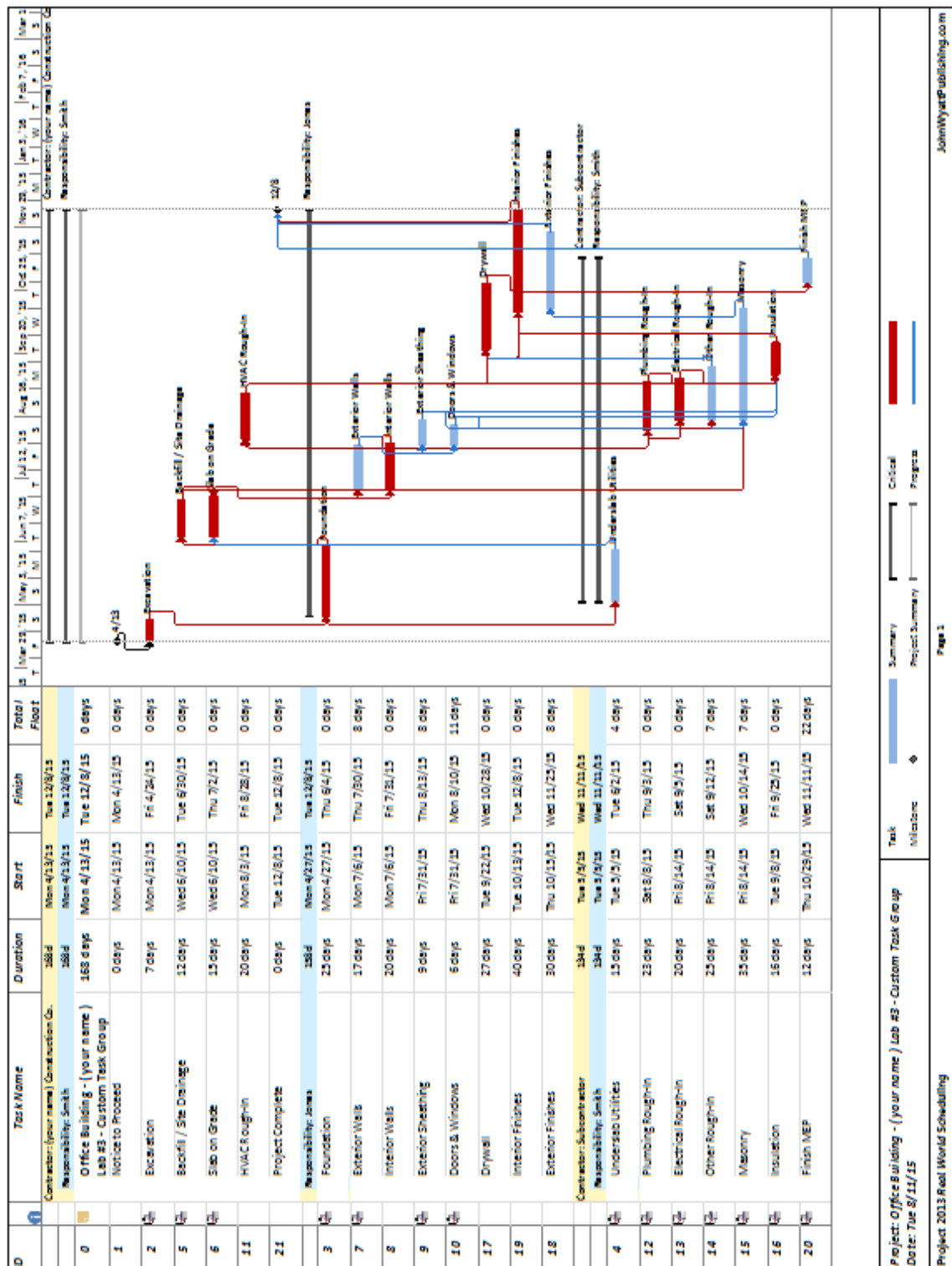
Working with Custom Fields

Follow the directions below to learn how to work with Custom Fields and to remove the **Text1:** or **Text2:** labels from the task group headings.

	Task Name	Duration
	Text1: (your name) Construction Co.	16
	Text2: Smith	16
	Office Building - (your name) Lab #3 - Custom Task Group	168 d
0	Notice to Proceed	0 days
1	Excavation	7 days
2	Backfill / Site Drainage	12 days
5	Slab on Grade	15 days
6	HVAC Rough-In	20 days
11	Project Complete	0 days
21	Text2: Jones	158d
3	Foundation	25 days
7	Exterior Walls	17 days
8	Interior Walls	20 days
9	Exterior Sheathing	9 days
10	Doors & Windows	6 days
17	Drywall	27 day
19	Interior Finishes	40 day
18	Exterior Finishes	30 da
	Text1: Subcontractor	134
	Text2: Smith	13
4	Underslab Utilities	15
12	Plumbing Rough-In	2
13	Electrical Rough-In	2
14	Other Rough-In	2
	Masonry	
	Insulation	

2. Go to **Format**, then to the **Columns** area and select the  **Custom Fields** button to open the Custom Fields window.
3. If it is not already highlighted, select **Text1**. Click the  **Rename...** button to open the **Rename Field** window. Type in **Contractor** into the **New name for 'Text1':** field as shown to the right. Then click  **OK**.
4. Next, select **Text2** and  **Rename...** it to **Responsibility** and click  **OK**.
5. Verify that the Custom Fields window looks like the partial window shown to the right, then click  **OK** to see the results.






Office Building Schedule – Contractor | Responsibility Custom Task Group

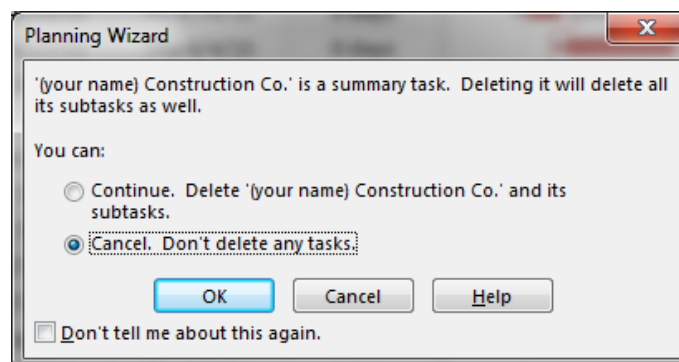
	Task Name	Duration	Start	Finish	Total
	Office Building - (your name) Lab #3 - Summary Tasks	168 days	Mon 4/13/15	Tue 12/8/15	0 d
1	(your name) Construction Co.	38 days	Mon 4/13/15	Thu 6/4/15	0 d
2	Notice to Proceed	0 days	Mon 4/13/15	Mon 4/13/15	0 d
3	Excavation	7 days	Mon 4/13/15	Fri 4/24/15	0 d
4	Foundation	25 days	Mon 4/27/15	Thu 6/4/15	
5	Underslab Utilities	15 days	Tue 5/5/15	Tue 6/2/15	
	Backfill / Site Drainage	12 days	Wed 6/10/15		

(FYI) “Outdenting” a Subtask


If you want to remove a subtask from a summary task, you can “*outdent*” it. You do this by selecting the task or tasks that you want to remove as subtasks, then click the **Outdent Task** button  which is located in the **Schedule** section of the **Task** ribbon. Those tasks will then outdent one outline level to the left.

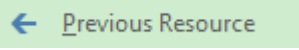
(FYI) Deleting a Summary Task (Be Careful)

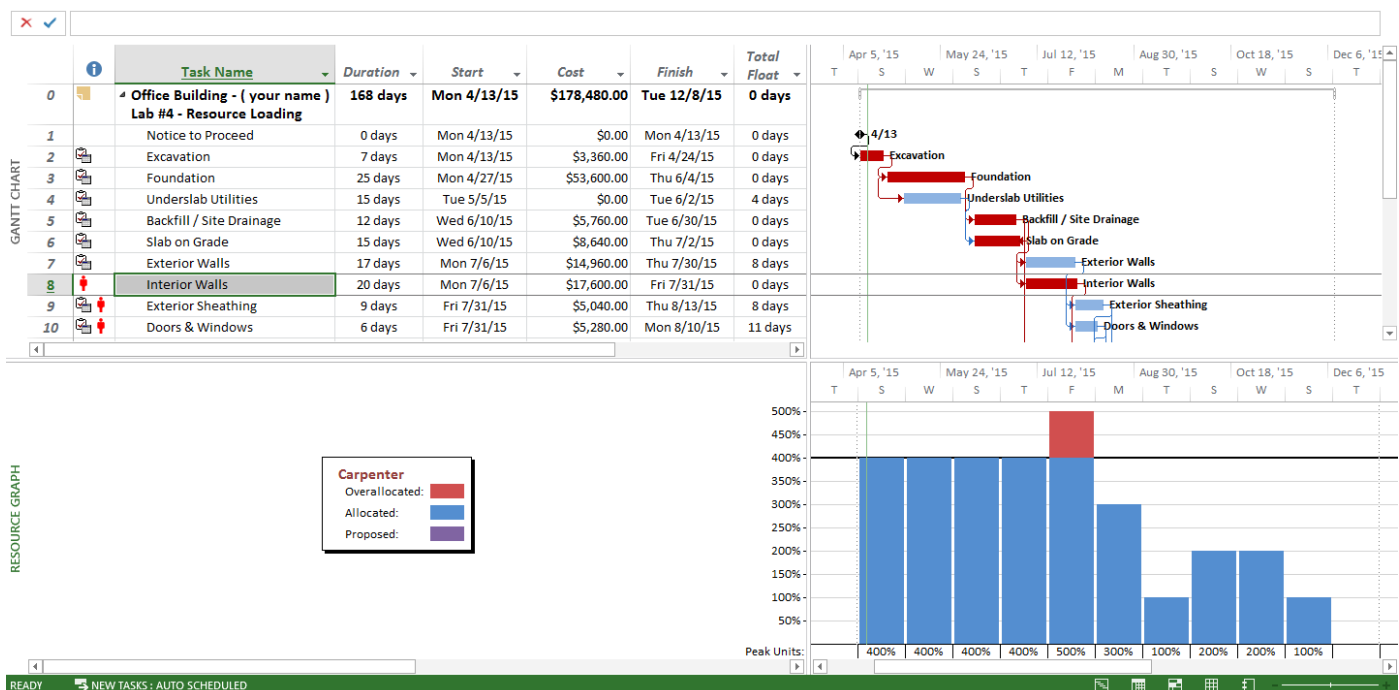
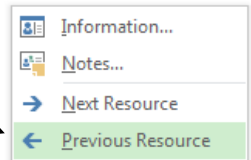
Deleting a summary task can be very dangerous – particularly if you do not want to delete any of the subtasks beneath it. You must be careful. Because, when you delete a summary task, every subtask beneath it gets deleted as well. The following warning comes up. If you did not want to delete it all the tasks, you would click ☒ **Cancel. Don't delete any tasks.** and then click **OK** as shown below.



1. To change the resource in the Resource Graph, **right-click** somewhere near

the resource legend  in the bottom-left pane of the screen.

2. Select the  as seen to the right to view the Carpenter resource graph as shown below.



3. Analyze the carpenter resource graph. We now know that the most carpenters we will need for the entire project is **5**, based on the **500%** histogram indicator (tallest vertical bar on the graph). We also know that we will only need this many carpenters sometime in the month of **July**. Based on the resource legend, we know that the red section of the histogram bar indicates an **over-allocation** of carpenters.

Since we have an over-allocation of a resource, your company will definitely want to know what day, or what days that occurs. So the next step is to zoom the schedule in far enough to see the histogram on a daily level.

Microsoft Project 2013: Real World Scheduling

Schedule Analysis – Lab #4

Name _____

After completing Lab #4, answer the following questions from Resource Loading, Cost Resources, and Accelerated schedules in the software and from the printouts for this lab and turn the Schedule Analysis – Lab #4 in to your instructor stapled on top of the printouts.

Resource Loading:

1. What is the crew cost, not including additional costs, of the Exterior Walls crew ?

Cost per day _____

Cost per hour _____

2. What is the average cost per hour, **per crew member** of the Foundation task crew ? _____

3. There is an over-allocation of 1 carpenter for 1 day on Friday, July 31st, between the Interior Walls, Exterior Sheathing, and Doors & Windows tasks. How would you recommend solving this shortage of 1 carpenter ? _____

4. There is an over-allocation of resources with the Interior and Exterior Finishes tasks. Describe what resource or resources are over-allocated, list how many of each additional resource(s) are needed, and list when are they needed (from when to when) ? _____

5. How would you recommend solving the over-allocation of the Interior and Exterior Finishes tasks? _____

Cost Resources:

6. What is the cost per day rate of the Insulation subcontractor ? _____

7. The Foundation task's total cost is \$131,600. Factoring in duration, crew mix, cost rates, and other additional costs, write the calculation that equals \$131,600 ? _____

Schedule Analysis – Lab #4 (con'td)

8. You are thinking about having your drywall crew work (7) days per week from the Drywall start date on Tuesday, September 22nd, through their completion, at a cost that is 50% above their standard rate for the weekend days during this period. Based on the crew cost per day (**not** including additional costs for materials, etc...), what would be the total additional cost incurred for working weekends ? \$ _____
9. In the question above, how many weekend days would have been worked ? _____

Accelerated Schedule (compared to the non-accelerated Cost Resource schedule):

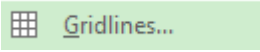
Inserting the Weather Calendars into the project schedule caused the project end date to slip from 11/25/15 to 12/8/15. Your company is trying to avoid paying a liquidated damage penalty clause to the owner of \$100 **per weekday** delay for this slippage. For that reason the schedule was accelerated to remove the slippage. Answer the questions below about this acceleration.

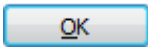
10. Did the schedule acceleration change the critical path ? **Yes No**
11. Based on the overtime rates, what is the **additional** cost **per day** to work on Saturdays for each of these tasks ? Interior Finishes \$ _____ Drywall \$ _____
12. How many Saturdays did Interior Finishes work on the Six Day Workweek ? _____
13. Calculate the additional cost for the Interior Finishes task to work on the Six Day Workweek schedule \$ _____ and calculate resulting potential savings in the penalty clause liquidated damages if they avoid the slippage \$ _____
14. Considering everything, do you think your company should accelerate the project ?


Turning On the Status Date Line

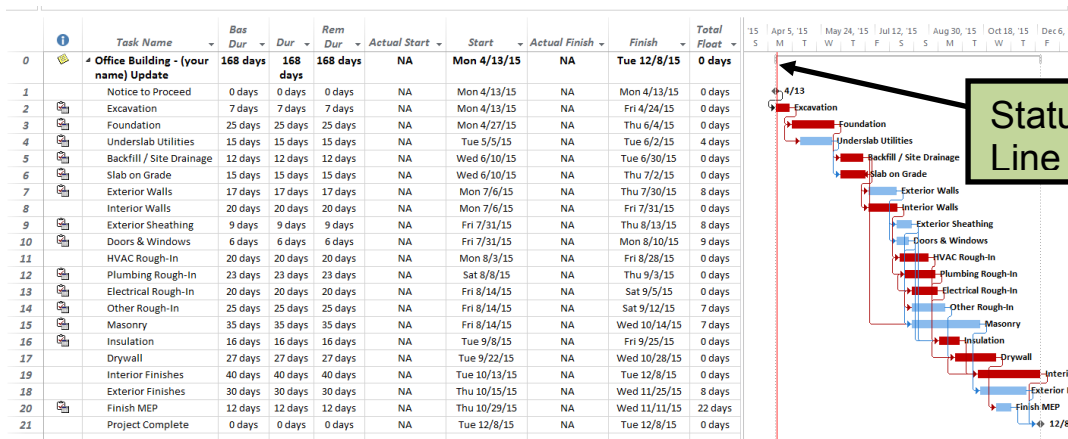
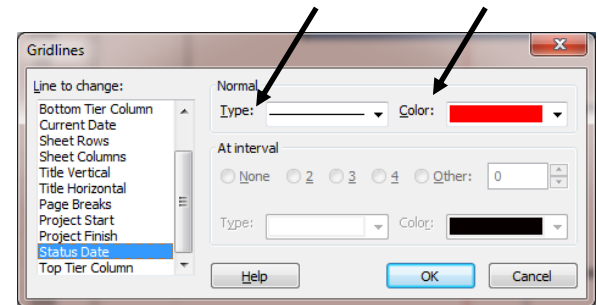
The Status Date Line is the thin red vertical line that moves across the timescale to mark the status date of the project. Follow the instructions below to turn it on.

1. Click the  button and click the  button in the Format area of this tab.



2. Select  to open the Gridlines window. Scroll down to the bottom to select **Status Date** and format the **Type:** and **Color:** fields as

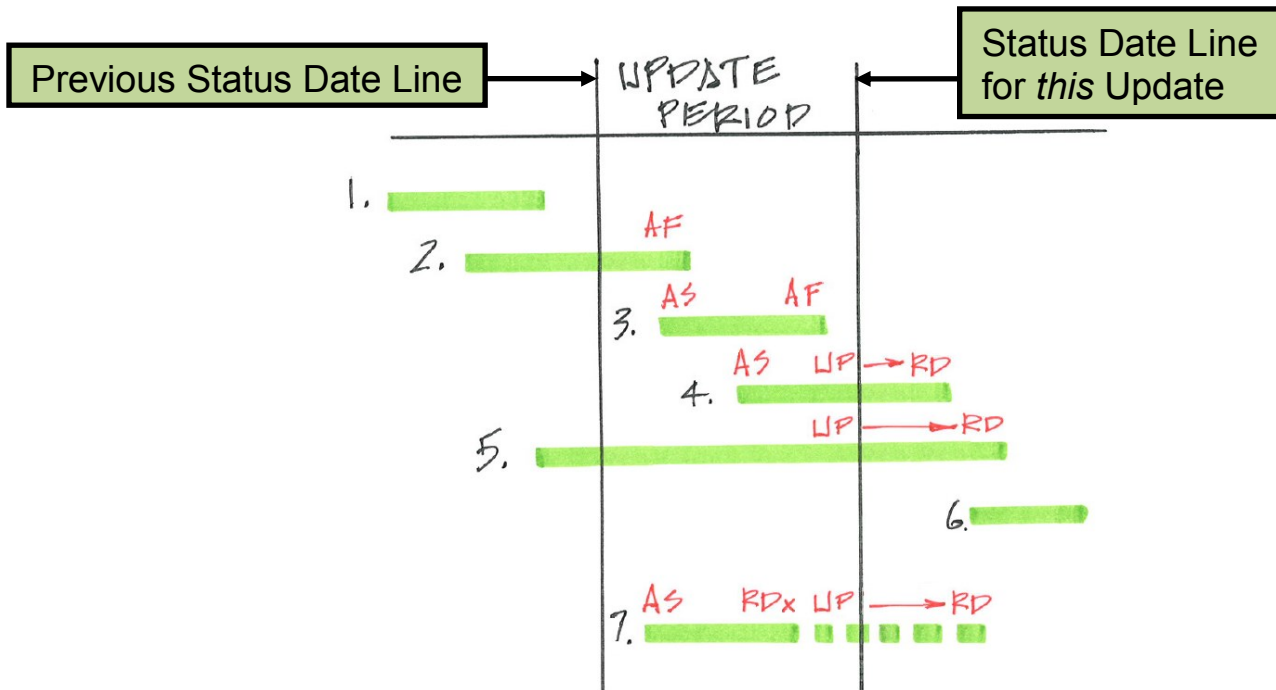
shown by the arrows directly below, then click . Notice the status date line shown on schedule on the top of the next page.

3. Save the project by going to **File**, then **Save**, or simply click the  button.



Adding the Milestone Name to the Milestone Diamond

You may have noticed that all the task names are on the schedule bars except the milestone names. Rather than their names, they currently show the milestone end date as shown here  **4/13** and  **12/8**. Replace these with the milestone names.



1. **Task is already complete** ↔ Nothing should be entered for the task.
2. **Task had already started before the update period and finished during the update period** ↔ Enter the **Actual Finish** date of the task.
3. **Task started and finished during the update period** ↔ Enter the **Actual Start** and **Actual Finish** date of the task, *unless it is a milestone task* (see instructions on page 100 for updating milestone tasks – **never** enter an actual finish for milestone task).
4. **Task started during the update period – the bar extends beyond the status line – and the task is still in progress** ↔ Enter in this exact order, the **Actual Start** date of the task, click **Update Project** for the Selected tasks, then enter your estimate of the task's **Remaining Duration**.
5. **Task had already started before the update period – the bar extends beyond the status line – and the task is still in progress** ↔ Click **Update Project** for Selected tasks, then enter your estimate of the task's **Remaining Duration**.
6. **Task has not started yet** ↔ Nothing should be entered for the task yet.
7. The **“special case”** occurs when the **task bar does not extend beyond the status date line** – and the task is still in progress ↔ Enter in this exact order, the **Actual Start** date of the task, then **Increase Remaining Duration** by (x) amount until the task bar passes the status date line, click **Update Project** for the Selected tasks, then enter your estimate of the task's **real Remaining Duration**.

Microsoft Project 2013: Real World Scheduling

Schedule Analysis – Lab #5

Name _____

After completing Lab #5, answer the following questions from Baseline Schedule, the First Update, and the Accelerated schedules in the software and from the printouts for this lab and turn the Schedule Analysis – Lab #5 in to your instructor stapled on top of the printouts.

Baseline Schedule:

1. Once you start the update, which set(s) of dates can potentially move ? (circle all that apply)

All Baseline Dates **All Start/Finish Dates** **Only Start Dates** **Only Finish Dates**

2. Prior to the first update, could Baseline and Baseline 1 be different ? **Yes** or **No**

3. Which schedule stays “locked in” forever ? **Baseline** or **Baseline 1** (circle one)

First Update Schedule:

4. The Foundation task started on time on 4/27/15 and was supposed to take 25 workdays to complete and end on June 4th. However, it ended on June 15th. Explain why it ended (11) calendar days later, but only took (6) extra workdays to complete ? _____

5. The plumber completed the Underground Utilities task how many workdays late ? _____
What or whom is mostly to blame ? _____

Who should pay for the majority of this delay ? (circle one) **Owner** **Gen. Contractor**

Plumber **Other** – and – what approximate fraction of the delay ? _____

6. The Masonry task follows without lag the Exterior Sheathing task which is supposed to end on 9/4/15. Why doesn't Masonry start the very next day on 9/5/15, rather than 9/8/15 which is now its scheduled start date ? _____

Schedule Analysis – Lab #5 (con'td)

7. Considering the calendar that the Plumbing Rough-In task is assigned to, verify and explain that the remaining duration of 11 days which was calculated by the software, is accurate ?

8. Why is the Project Summary Task showing a decimal duration; that is, a duration that is not to the whole day ?

Accelerated First Update Schedule:

9. After the acceleration, what prior non-critical tasks became critical ? (*list by task IDs*)

10. After the acceleration, what prior critical tasks became non-critical ? (*list by task IDs*)

11. Why do some of the tasks now have negative total float ?

12. Did the end date of any **negative float** task change due to the acceleration ? **Yes** **No**

If yes, list which task(s) by ID and their new end date(s) ?

13. Which task now has the greatest total float ? (*list by task name*)

How many days is this task's total float ?

14. What do the three icons in the Indicator Column represent ?



