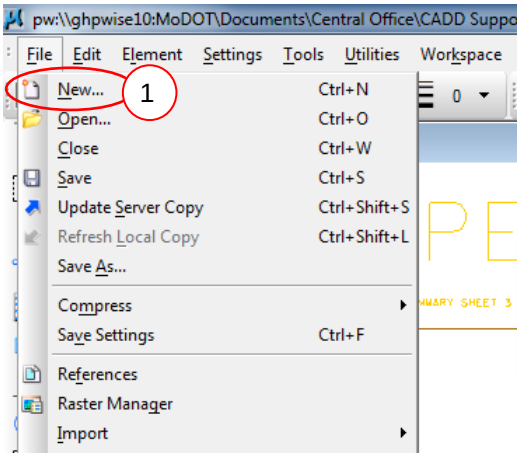
QuanTab (Quantity Table Generator)

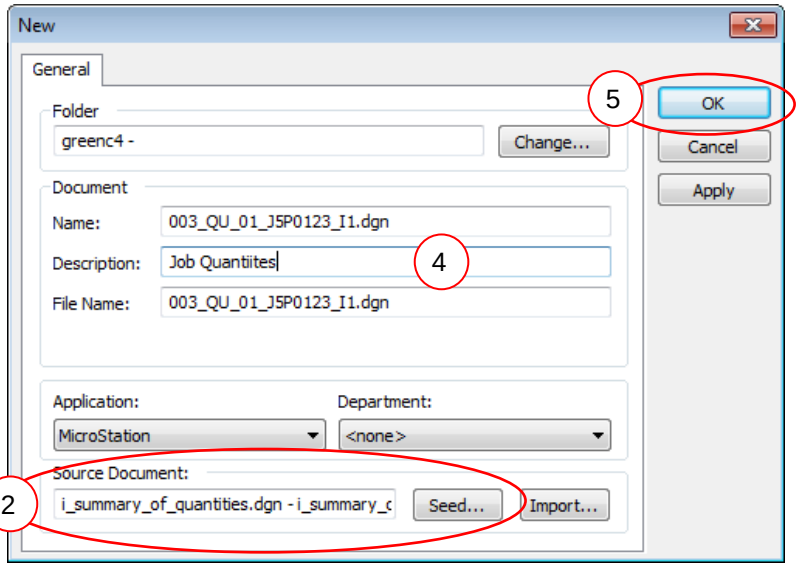
This is a program that translates an Excel spreadsheet into a MicroStation Design File. QuanTab does not have a linking capability. Delete and replace.

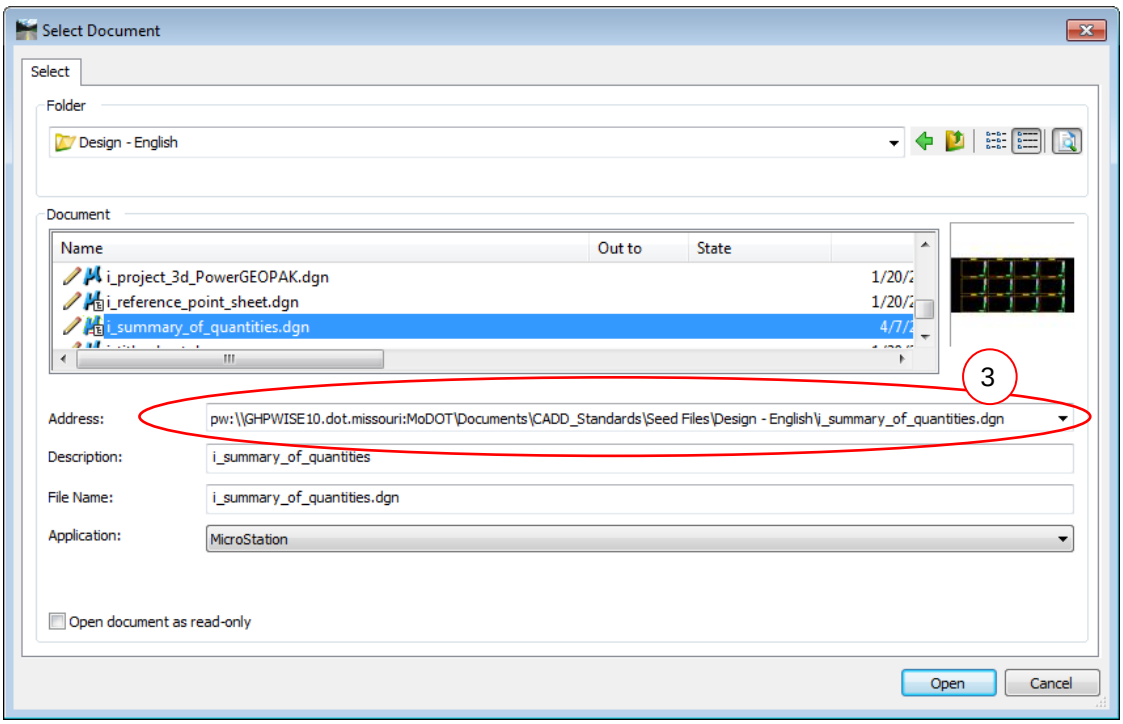
Creating a MoDOT MicroStation summary sheet to receive Excel data.

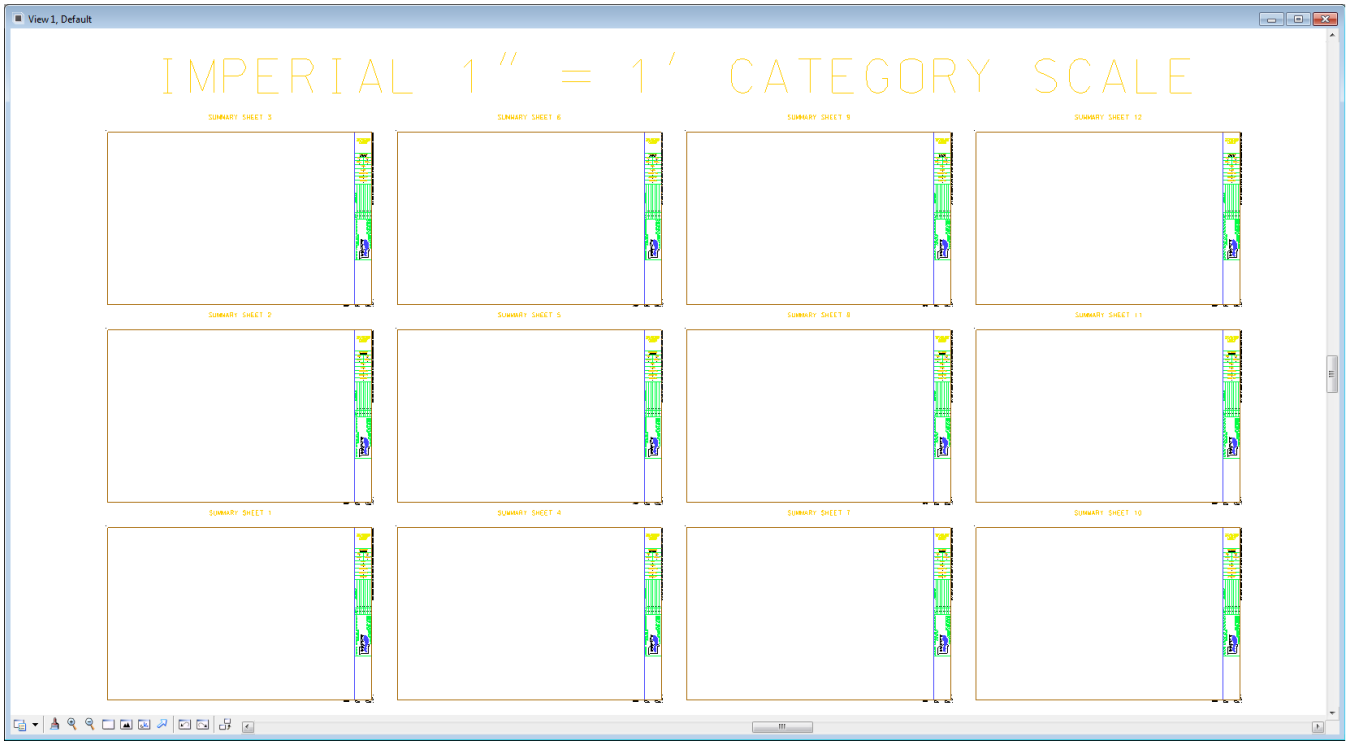
In MicroStation under the ***File*** pull-down, select ***New*** (1) to create a new file using the ***i_summary_of_quantities.dgn*** seed file. (2) The seed file is located under this location in ProjectWise: Documents/CADD_Standards/Seed Files/Design – English. (3)

Give the file a name and file name in the input areas (remember to use letters, numbers, or underscores only) (4) and then click the ***OK*** button (5) when the file has been named.





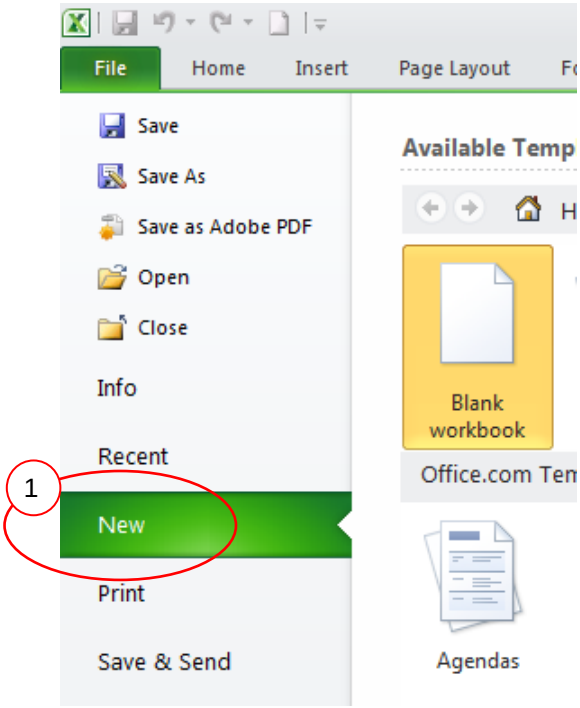




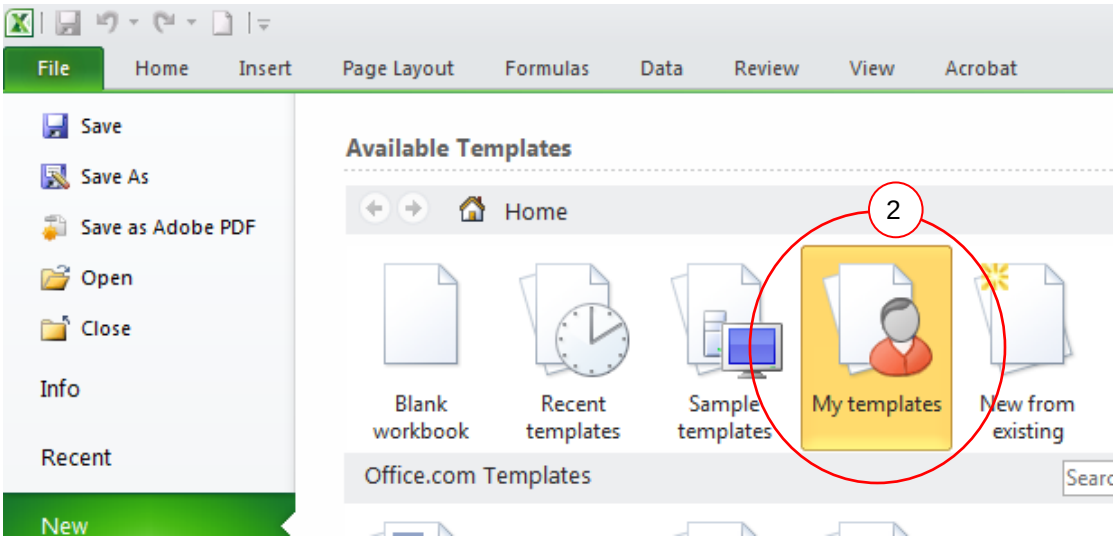
The new file will contain 12 border files and look like the window above.
Now that we have a MicroStation design file created we will move on to the creation of an Excel spreadsheet.

Creating an Excel spreadsheet to be used in MicroStation.

Open any excel file first. Then choose the ***File*** pulldown and select ***New***.

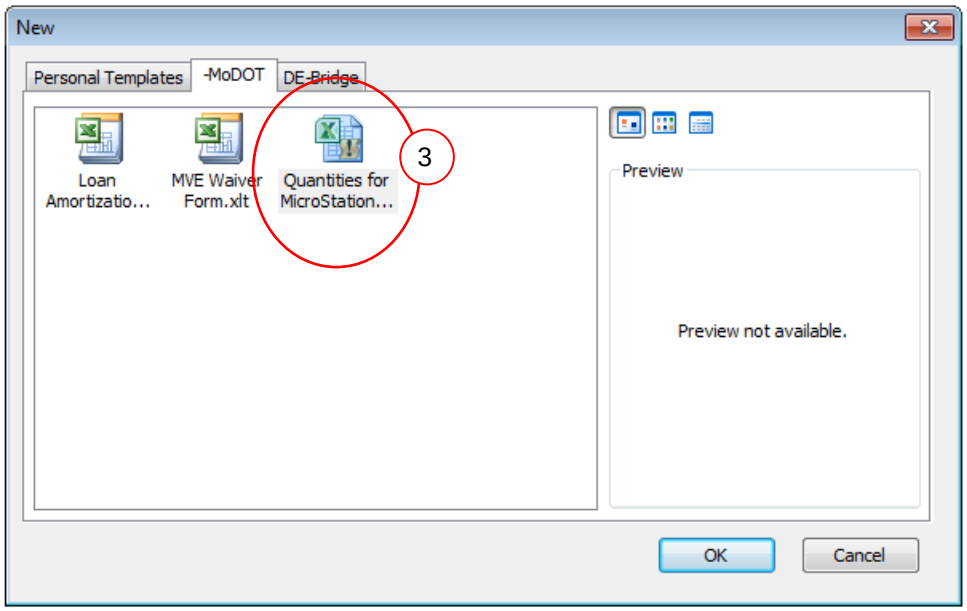


Select the ***My Templates*** (2) icon.

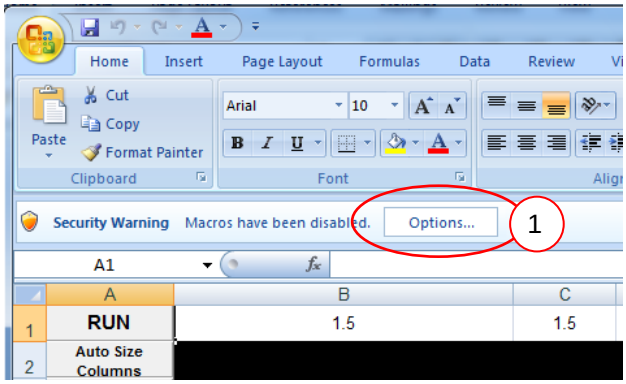


Then select the ***Quantities For MicroStation.xlsm*** (3) excel sheet. Finally, next click the ***OK*** button.

This sheet contains macros that will create 2 text files that will be used in conjunction with the MicroStation macro.
*** This program (QuanTab) will not work without enabling this macro. ***

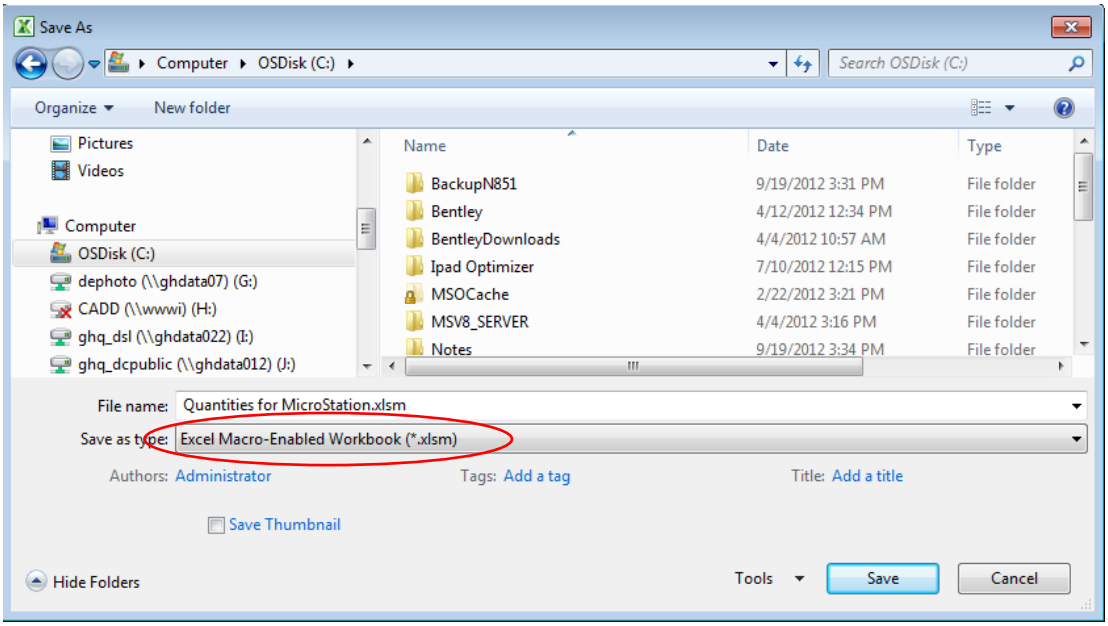


Now once the Quantities for MicroStation sheet is open, you will need to change the Macro security settings to be able to use the sheet properly. To do this, simply click on the ***Options*** button. (1) In the Microsoft Office Security Options dialog box, click on the ***Enable this content*** option (2) so the macros inside the excel sheet can run and finally select the ***OK*** button. (3)



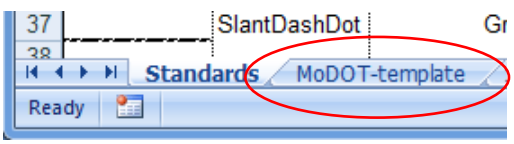
Once you have macro security setting set, you will want to save this file to the same folder that the MicroStation design file was saved at. This will allow for the sheet to travel with the job for future editing. The sheet needs to be saved as an Excel Macro-Enabled Workbook file (.xlsm).

Note - If you are using ProjectWise and the file needs to saved with the job, simply save the file on the network somewhere and then drag the excel file to the proper job folder inside ProjectWise.



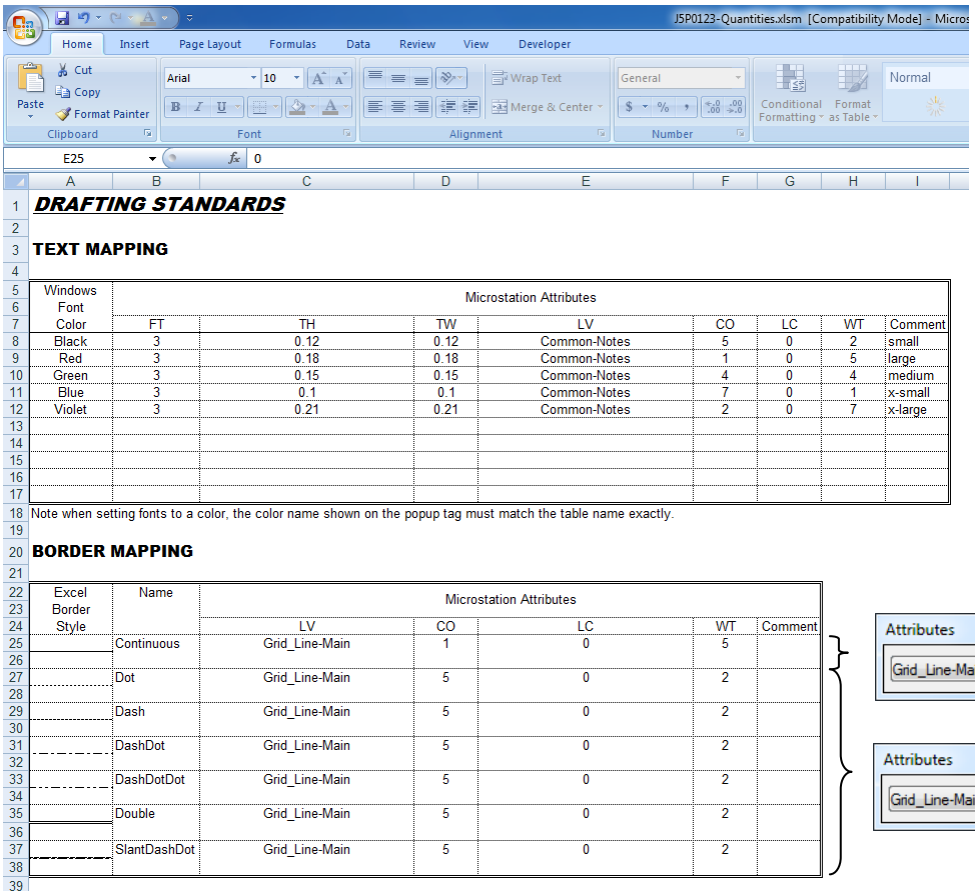
The Excel "Quantities for MicroStation" File

When you open the newly created file, there are two default tabs at the bottom of the screen. The first tab is labeled ***Standards*** and is password-protected to keep MoDOT's quantity sheets standardized. The second tab is labeled ***MoDOT-template*** and is to be copied and used as a template worksheet.



The Standards Tab *** this sheet has been protected to ensure the integrity of the standards***

This sheet has MoDOT's standard text and border mapping preset according to the MoDOT standard Summary Sheet Settings Manager. Therefore, if a user was to place text using the corresponding color to text height and width, they will translate over to the MicroStation design file with the correct standard attributes.



DRAFTING STANDARDS

TEXT MAPPING

Windows Font Color	Microstation Attributes							
	FT	TH	TW	LV	CO	LC	WT	Comment
Black	3	0.12	0.12	Common-Notes	5	0	2	small
Red	3	0.18	0.18	Common-Notes	1	0	5	large
Green	3	0.15	0.15	Common-Notes	4	0	4	medium
Blue	3	0.1	0.1	Common-Notes	7	0	1	x-small
Violet	3	0.21	0.21	Common-Notes	2	0	7	x-large

Note when setting fonts to a color, the color name shown on the popup tag must match the table name exactly.

BORDER MAPPING

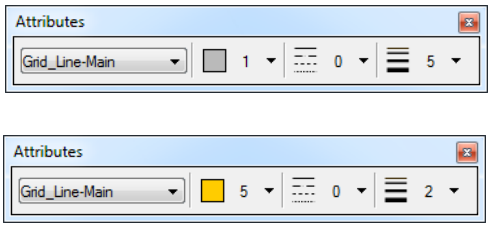
Excel Border Style	Name	Microstation Attributes				
		LV	CO	LC	WT	Comment
	Continuous	Grid_Line-Main	1	0	5	
	Dot	Grid_Line-Main	5	0	2	
	Dash	Grid_Line-Main	5	0	2	
	DashDot	Grid_Line-Main	5	0	2	
	DashDotDot	Grid_Line-Main	5	0	2	
	Double	Grid_Line-Main	5	0	2	
	SlantDashDot	Grid_Line-Main	5	0	2	

FT = Font
TH = Text Height
TW = Text Width

LV = Level
CO = Color
LC = Line Style
WT = Weight

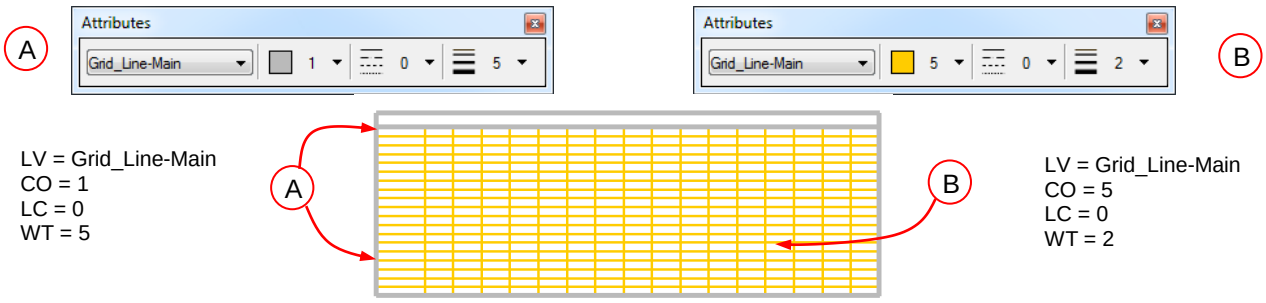
Excel Text = MoDOT Text

Blue text = .10 x-small text
Black text = .12 small text
Green text = .15 medium text
Red text = .18 large text
Violet text = .21 x-large text

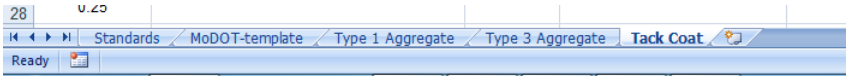


The Border Mapping has numerous line styles but there are only 2 different styles of grid lines used at MoDOT. You can see by using the continuous line style in the Excel sheet it will produce the correct attributes for the box border.

Using any other line style in the Excel sheet will produce the grid line attributes.

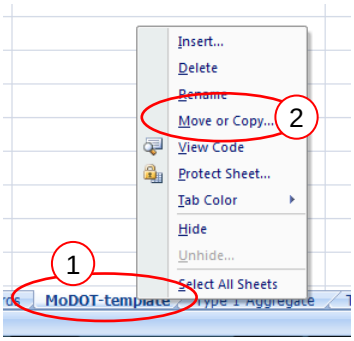


Excel Sheet Tabs

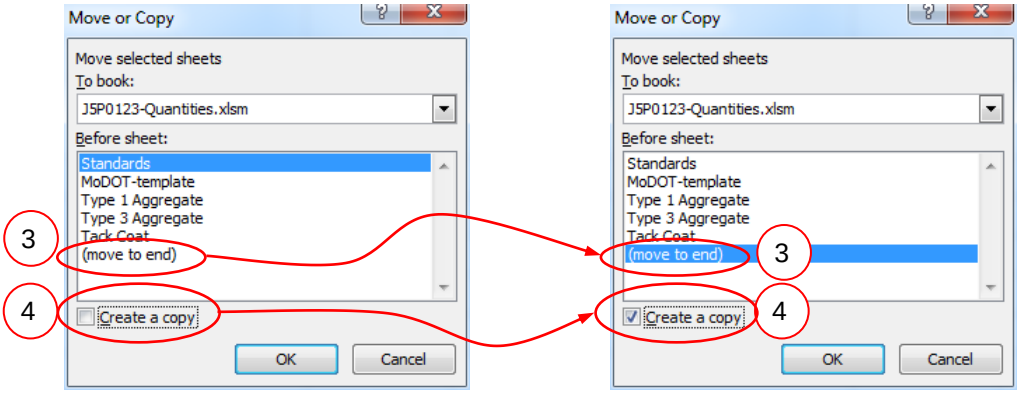


Creating tabs (new sheets) for each quantity box is a great way to organize your spreadsheet. You can and should create a sheet with a tab for each quantity box.

This is done by right clicking over the ***MoDOT-template*** tab (1) and selecting the ***Move or Copy*** option (2).

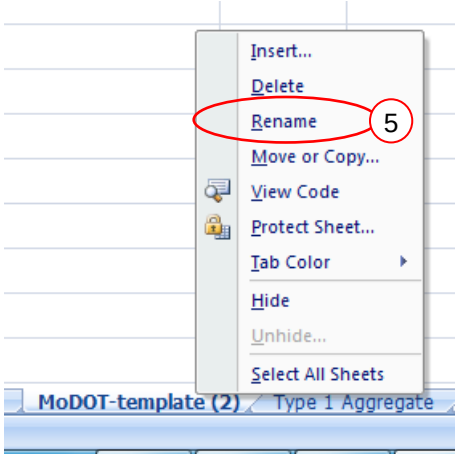


You will get the ***Move or Copy*** dialog. It is in here you will need to make a couple of changes.

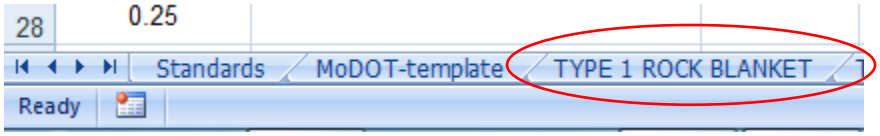


Select the ***(move to end)*** option (3) and check the ***Create a copy*** option (4).

The next step is to give the sheet a name. Right click over the MoDOT (2) tab and select “Rename” (5).



This example uses “TYPE I ROCK BLANKET” for the description of the quantity box.

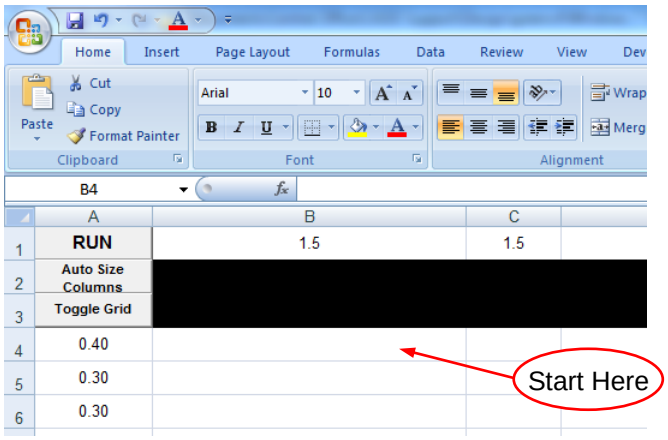


Entering the Quantity Information in Excel

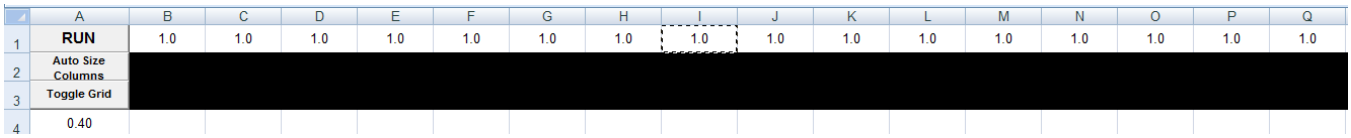
Once the MicroStation design file and the Excel spreadsheet are created you are ready to input the data into the Excel sheet.

There are a few rules that will need to be followed in order for these sheets to transfer into MicroStation.

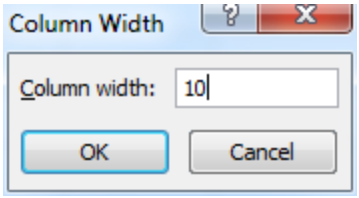
Rows 1, 2, and 3 are not to be used for data input for the quantity box.
Start entering the data with row 4, column B.



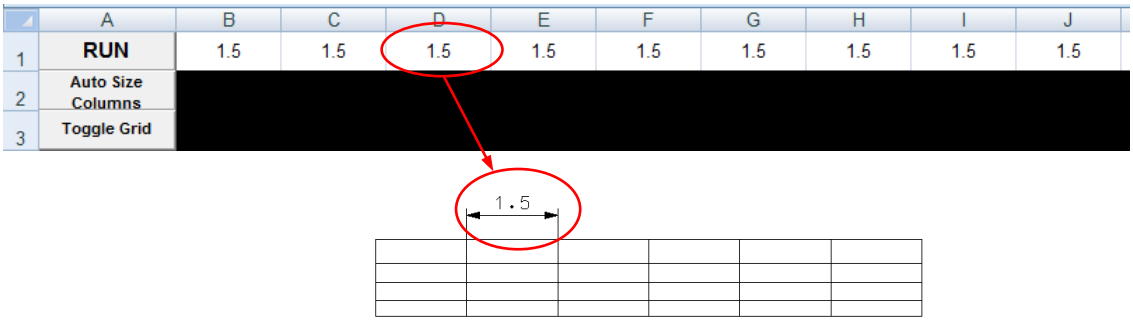
Columns B through Z are setup with a 1.0 default value width. This value controls the width of the columns in MicroStation.



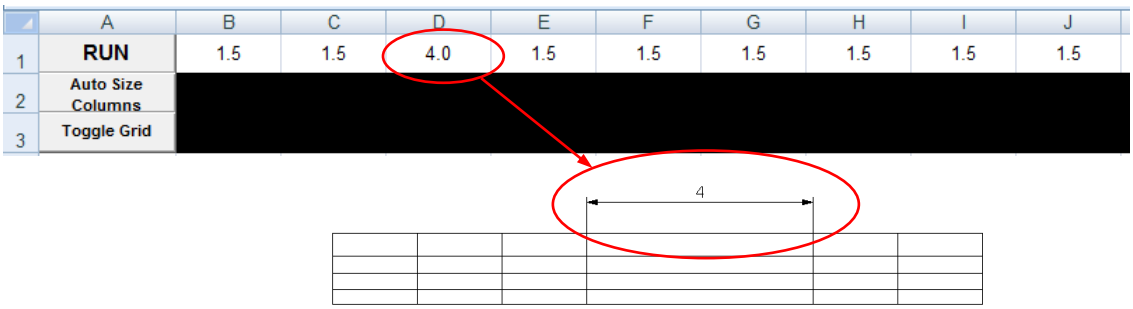
The actual physical column width in Excel means absolutely nothing to the entered value at the top of the columns when transferred to MicroStation.



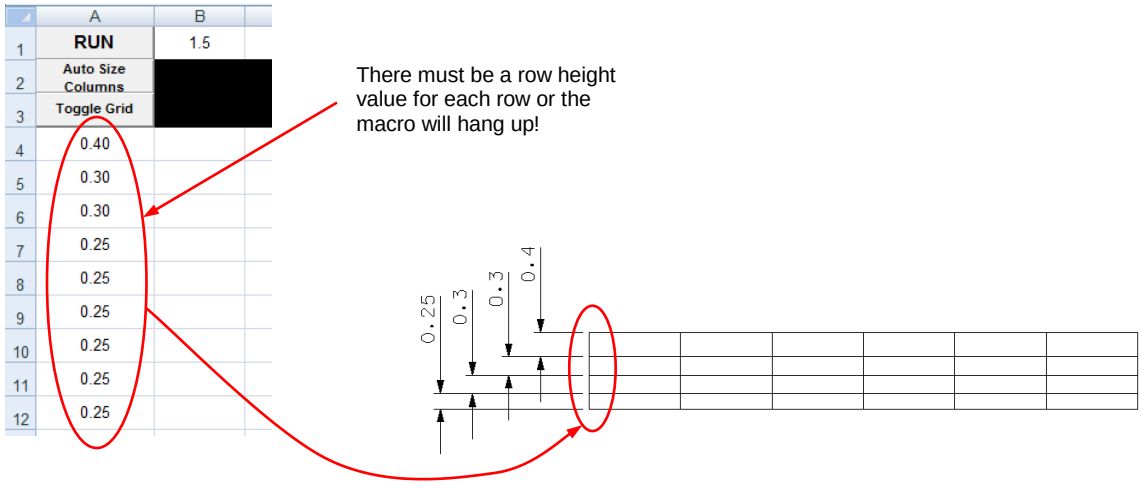
A value of 1.5 in Excel = 1.5’ in MicroStation.



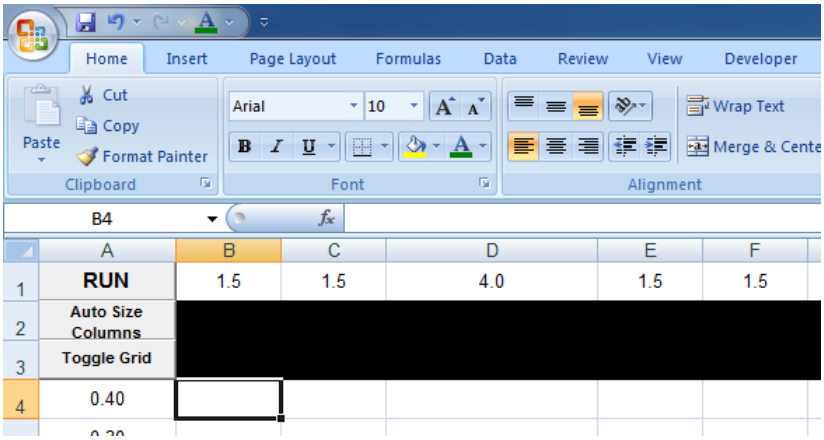
The default values are suggestive values, which could and should be changed to meet the needs of the size of the text string that is placed in the cell (block).



Column A is for adjusting the Row heights. Row heights are defaulted to 0.4 for the box title, 0.3 for the box sub titles, and 0.25 for the grid lines. This can be adjusted to fit your quantity boxes needs. Keep in mind that 0.4 in Excel = 0.4’ in MicroStation.

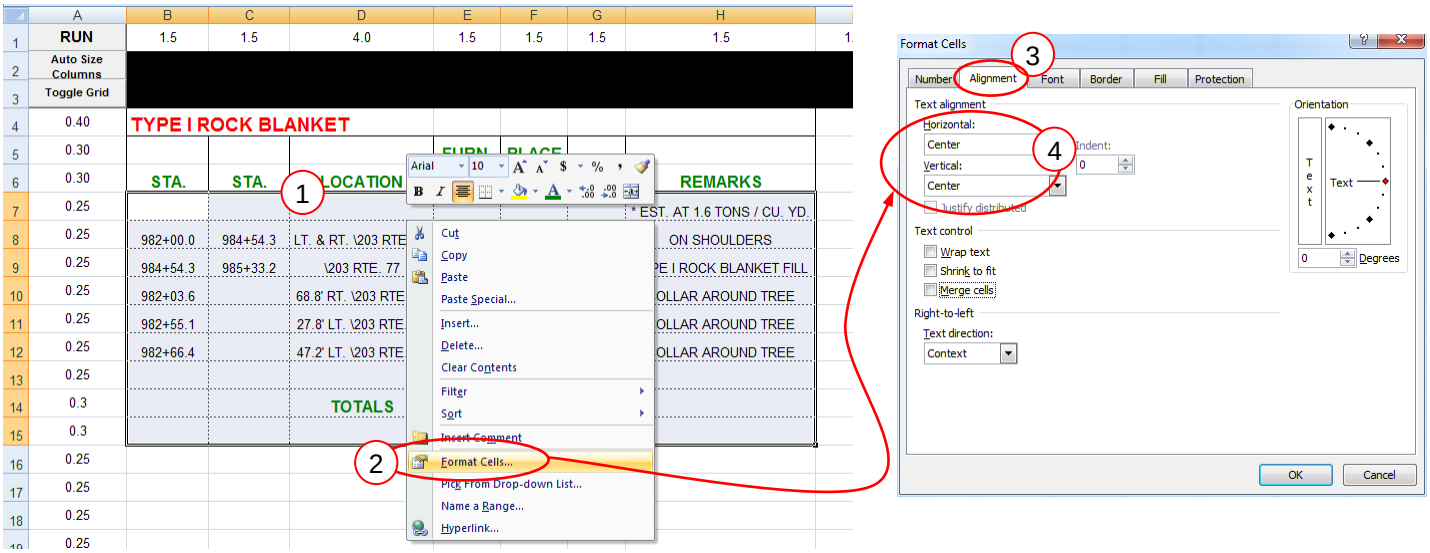


To enter data in the Excel sheets click in the desired cell and key-in the values as needed for the quantity box.
*** Remember to start the box with cell (block) B-4. ****



Once the quantity block has been created, you may need to do some formatting of some cells so everything will come over into the MicroStation file looking correct.

Create a “range” (highlight) of cells, (1) then right click over the “range” of cells and choose the ***Format Cells*** option. (2) This can be done at any point, either before or after the text has been placed, as you want.

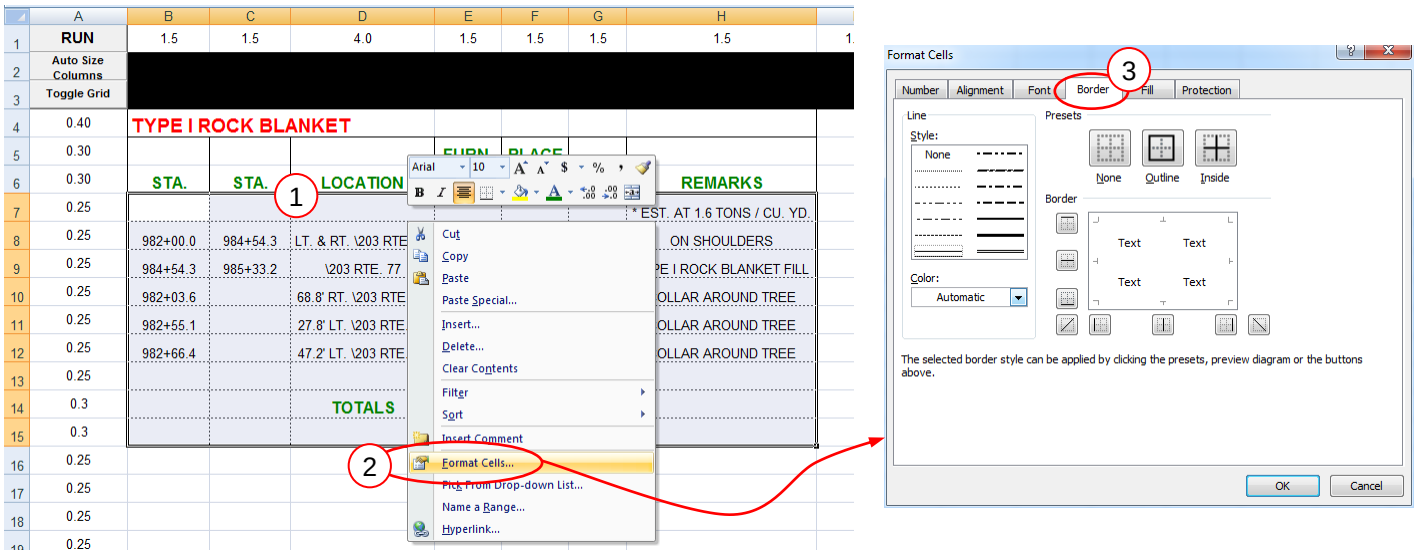


Click the ***Alignment*** tab (3) to change the Text alignment to center horizontally and vertically (4) , which makes for perfect aligned text in the cells quantity box.

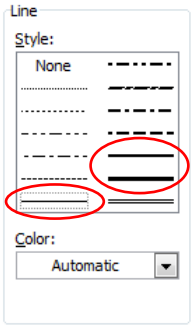
*** To set the text up to the correct standards as far as text heights and widths, make sure you use the proper colored text in Excel that is set up to correspond with the MoDOT text standards. ****

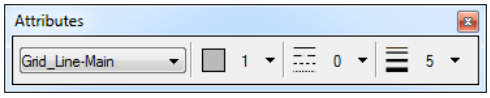
Creating the grid lines after the text has been placed.

Keep the line styles in mind, and how they will translate from Excel to MicroStation (See page 5).
Create a “range” (highlight) of cells (1), then right click over the “range” (2) and choose the ***Format Cells*** option.
Select the ***Border*** tab to show the line style options . (3)

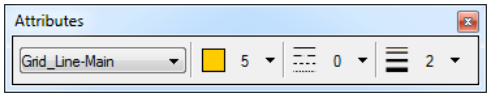


The Border tab opens up the abilities to change line styles and the placement of the border.

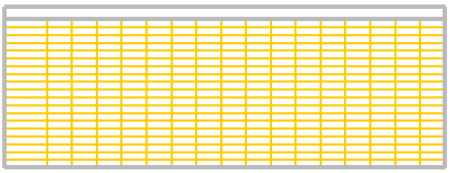




The Continuous line styles (circled to the left) will produce the grey colored, line weight of 5 border lines when transferred to MicroStation.



All other line styles will produce the gold colored, line weight of 2 grid lines when transferred to MicroStation.



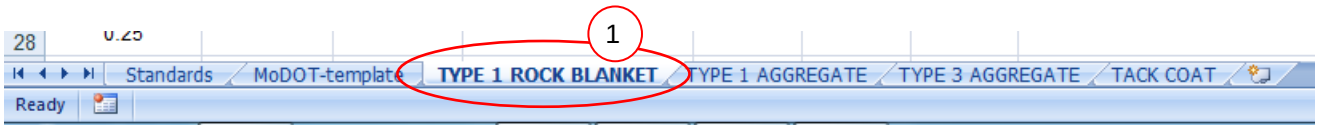
Make the necessary changes to the border and grid lines of your quantity box.

Importing an Excel spreadsheet into MicroStation.

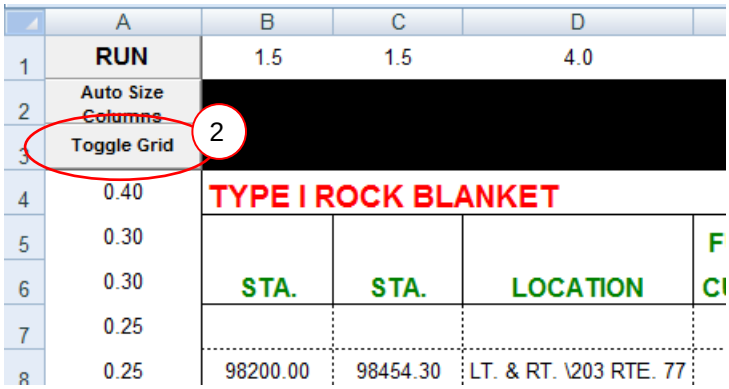
Now that you have the data created in the Excel spreadsheet, you are ready to import the data along with the border and grid work into MicroStation.

Importing the border and grid work:

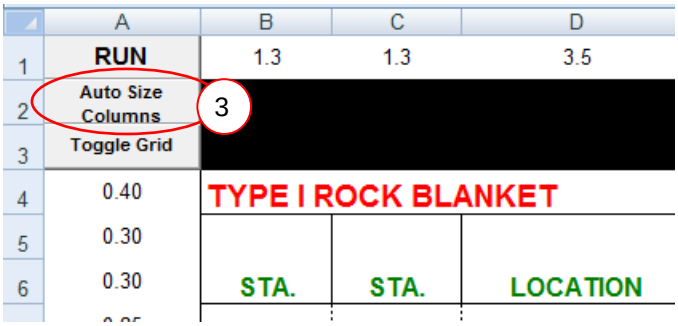
Click on the sheet tab of the quantity box that is to be placed. (1)



Optional: We have for your viewing pleasure, there is a ***Toggle Grid*** button. This will allow you to turn the Excel grid lines on/off with a click of the button. (2)

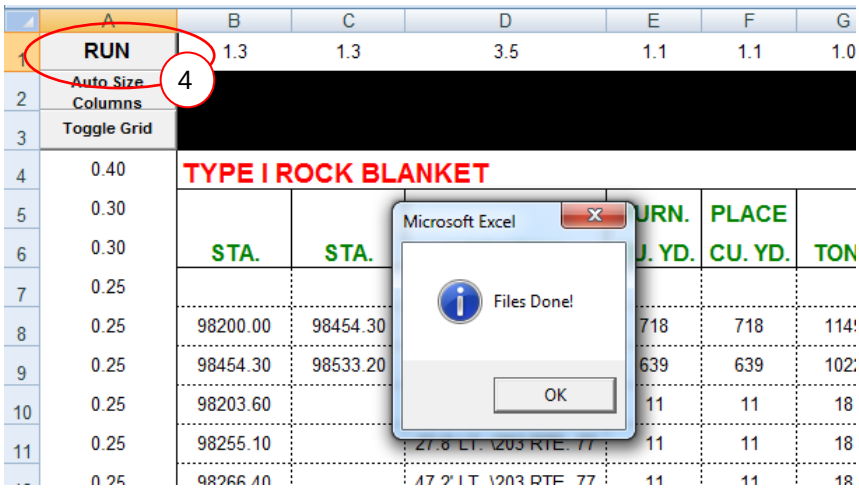


Now the columns need to be resized for the import process into MicroStation. Click the ***Auto Size Columns*** button, which causes the macro to run from column A to Z and place the appropriate size in row 1. (3)

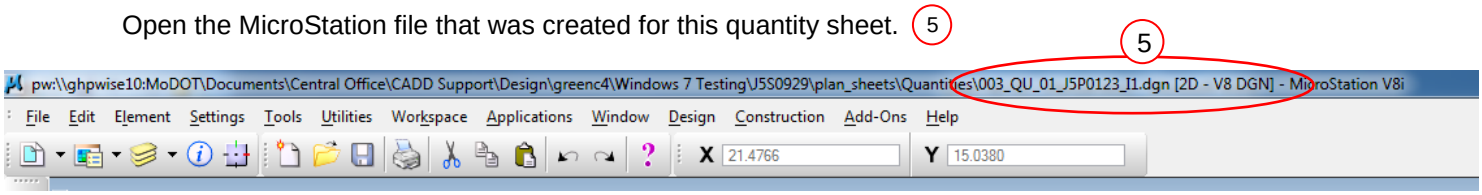


After the columns have been resized to the “suggested value”, you may **overwrite** the column by changing the value to your desired value.

Click the **RUN** button when you have completely finished the quantity box and want to bring it into MicroStation. This will start the macro that creates two text files, one text file contains the border (or gridline) information and the other text file contains the actual text information. You will also get a ***File Done*** dialog box after you click the Run button. (4)



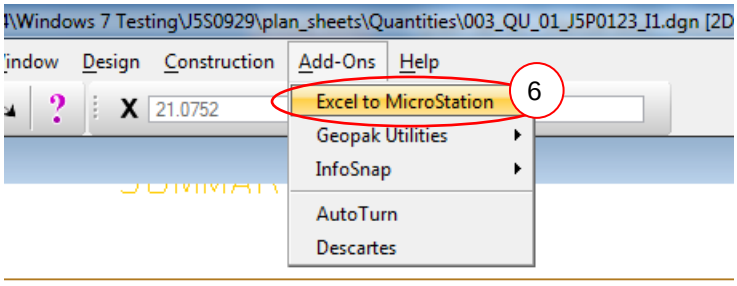
Open the MicroStation file that was created for this quantity sheet. (5)



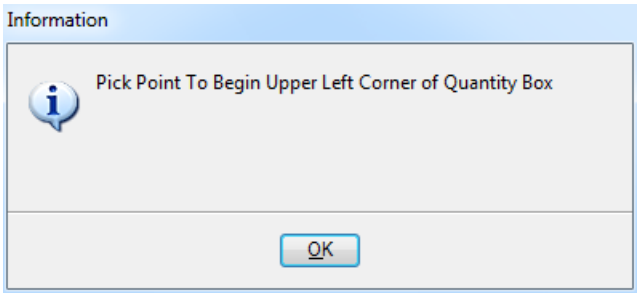
Click on the Excel to MicroStation icon located on the Text tool bar, (6)

Or

Click on the Excel to MicroStation option under the Add-On pull-down. (6)

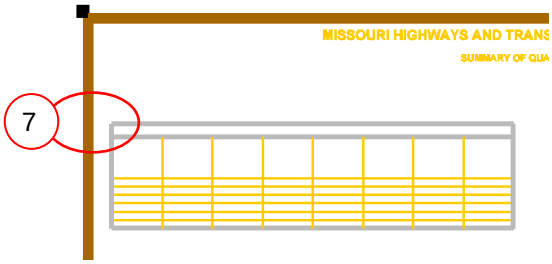


You will get an Information dialog box stating to “Pick Point to Begin Upper Left Corner of Quantity Box”. Click the ***OK*** button.



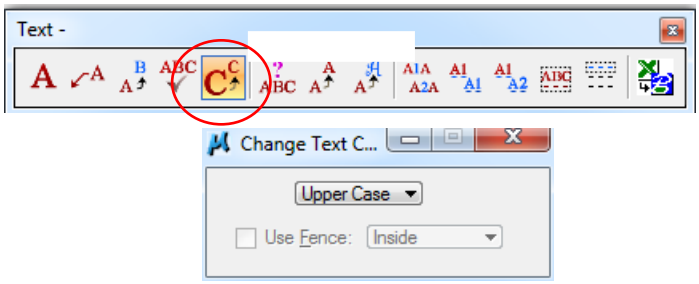
Then data point (left click) in a blank area on the screen to place the border of the Excel quantity sheet. (7)

The upper left corner of the quantity box is the “Origin Point” when you data point to place the box.



*** QuanTab does not have a linking capability with MicroStation. If there are changes to be made after placing the quantity box, you need to **delete** the quantity box and replace it with an updated quantity box. **DO NOT EDIT THE QUANTITIES IN MICROSTATION****

TIP If lowercase text was used in the Excel sheet, use the ***Change Case*** tool located in the Text toolbox to change the text to uppercase.

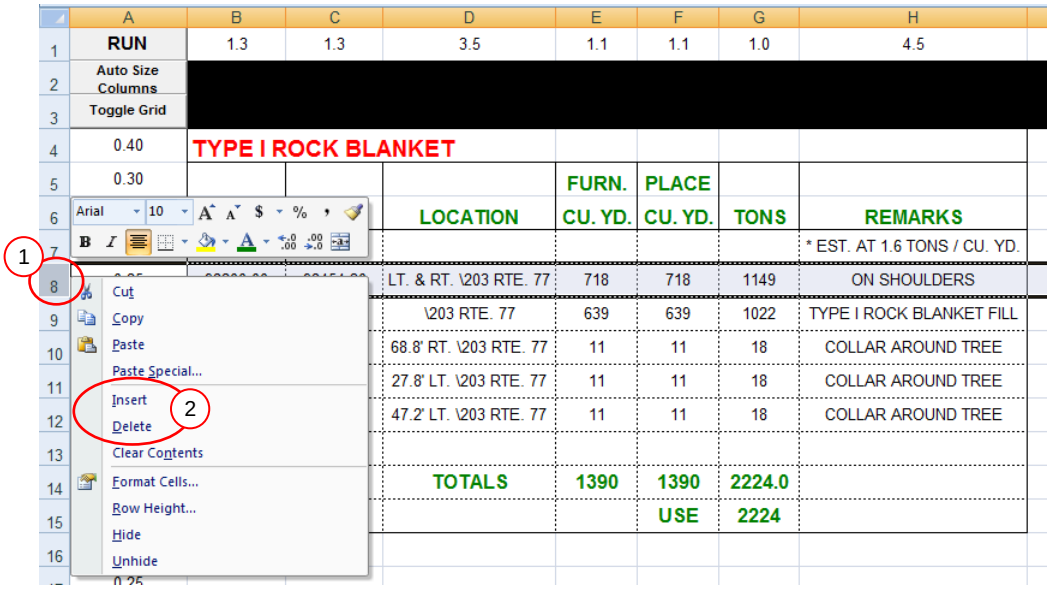


Inserting or Deleting Rows & Columns

There may be a time when your quantity box needs to be updated. Add a row/column, subtract a row/column whatever the case may be, you will need to delete the quantity box in MicroStation and replace it with an updated Excel quantity box.

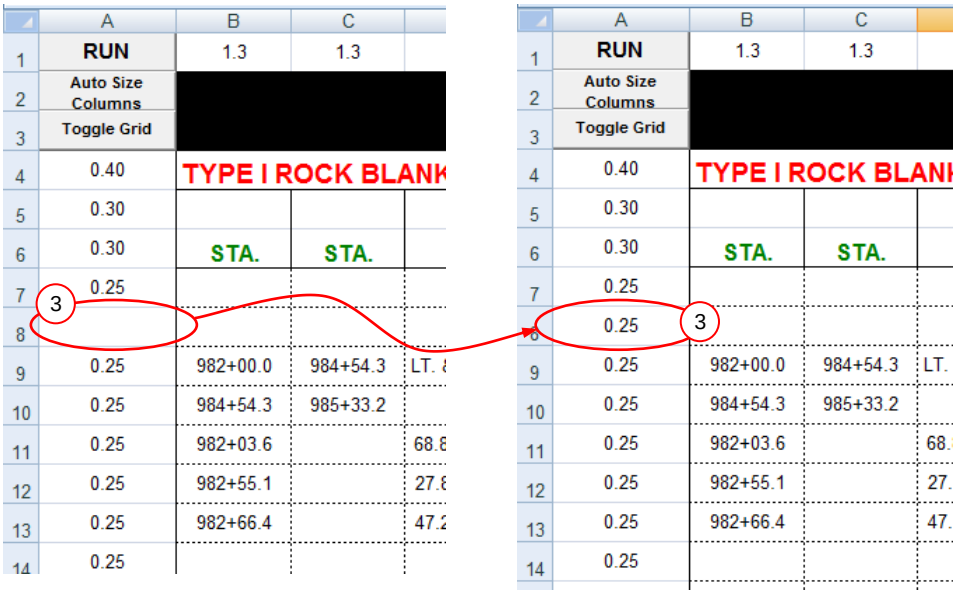
TYPE I ROCK BLANKET						
STA.	STA.	LOCATION	FURN. C.Y.	PLACE C.Y.	TONS	REMARKS
						*EST. AT 1.6 TONS/CU. YD
982+00	984+54.3	LT. & RT. C/L RTE. 77	718	718	1148.8	ON SHOULDERS
984+54.3	985+33.2	C/L RTE.77	639	639	1022.4	TYPE I ROCK BLANKET FILL
982+03.6		68.8' RT. C/L RTE. 77	11	11	17.6	COLLAR AROUND TREE
982+55.1		27.8' LT. C/L RTE. 77	11	11	17.6	COLLAR AROUND TREE
982+66.4		47.2' LT. C/L RTE. 77	11	11	17.6	COLLAR AROUND TREE
		TOTALS	1390	1390	2224.0	
				USE	2224	

To add a row/column, simply right click over the number/letter below (1) or to the right of where you need to insert and click the insert or delete option depending on your choice of operation. (2)



After adding a row (as in this example) you need to make sure that a row height is placed in column A at the appropriate row. (3)

The macro will stop at this point if there is not a value entered for a row height.



	A	B	C	D	E	F	G	H
1	RUN	1.3	1.3	3.5	1.1	1.1	1.0	4.5
2	Auto Size Columns							
3	Toggle Grid							
4	0.40	TYPE I ROCK BLANKET						
5	0.30				FURN.	PLACE		
6	0.30	STA.	STA.	LOCATION	CU. YD.	CU. YD.	TONS	REMARKS
7	0.25							* EST. AT 1.6 TONS / CU. YD.
8	0.25	980+00.0	982+00.0	LT. & RT. \203 RTE. 77	627	627	982.6	TYPE I ROCK BLANKET FILL
9	0.25	982+00.0	984+54.3	LT. & RT. \203 RTE. 77	718	718	1149	ON SHOULDERS
10	0.25	984+54.3	985+33.2	\203 RTE. 77	639	639	1022	TYPE I ROCK BLANKET FILL
11	0.25	982+03.6		68.8' RT. \203 RTE. 77	11	11	18	COLLAR AROUND TREE
12	0.25	982+55.1		27.8' LT. \203 RTE. 77	11	11	18	COLLAR AROUND TREE
13	0.25	982+66.4		47.2' LT. \203 RTE. 77	11	11	18	COLLAR AROUND TREE
14	0.25							
15	0.3			TOTALS	2017	2017	3206.6	
16	0.3					USE	3207	

Notice row 8 has been updated with the added data in the Excel sheet.

After the updated quantity box has been completed and you are ready to bring the data into MicroStation, make sure that you delete the old version in MicroStation.

TYPE I ROCK BLANKET

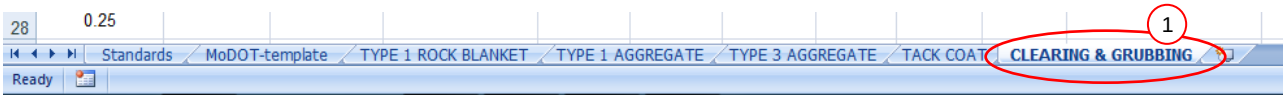
STA.	STA.	LOCATION	FURN. C.Y.	PLACE C.Y.	TONS	REMARKS
						*EST. AT 1.6 TONS/CU. YD
980+00	982+00	LT. & RT. C/L RTE. 77	627	627	982.6	TYPE I ROCK BLANKET FILL
982+00	984+54.3	LT. & RT. C/L RTE. 77	718	718	1148.8	ON SHOULDERS
984+54.3	985+33.2	C/L RTE.77	639	639	1022.4	TYPE I ROCK BLANKET FILL
982+03.6		68.8' RT. C/L RTE. 77	11	11	17.6	COLLAR AROUND TREE
982+55.1		27.8' LT. C/L RTE. 77	11	11	17.6	COLLAR AROUND TREE
982+66.4		47.2' LT. C/L RTE. 77	11	11	17.6	COLLAR AROUND TREE
		TOTALS	2017	2017	3206.6	
				USE	3207	

Copying Existing Excel Sheets Into the MoDOT Template File

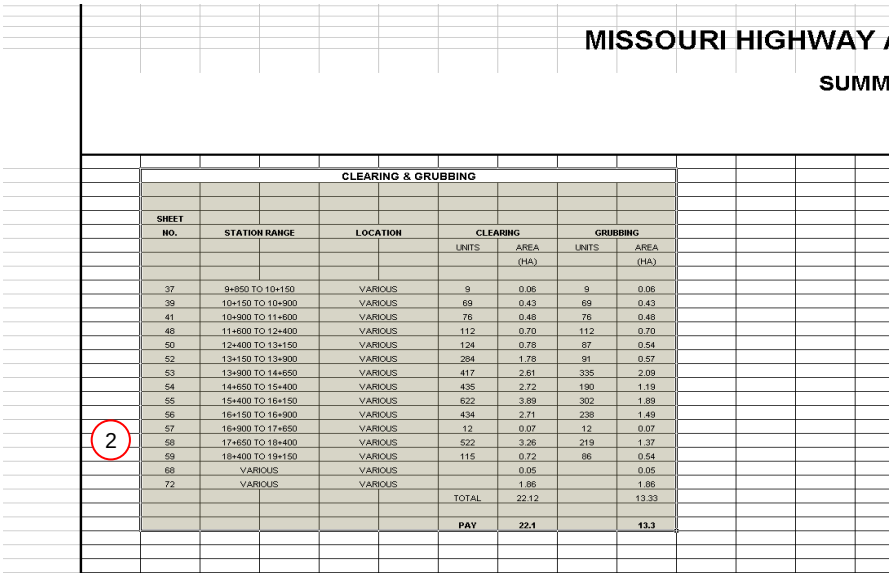
When opening more than one Excel file with macros remember NOT to “enable macros” in more than one file.

If you have a file open with the macros enabled and then open another with macros, simply click the disable option. Or this can cause conflict errors, become a nuisance, and possibly kick you out of Excel.

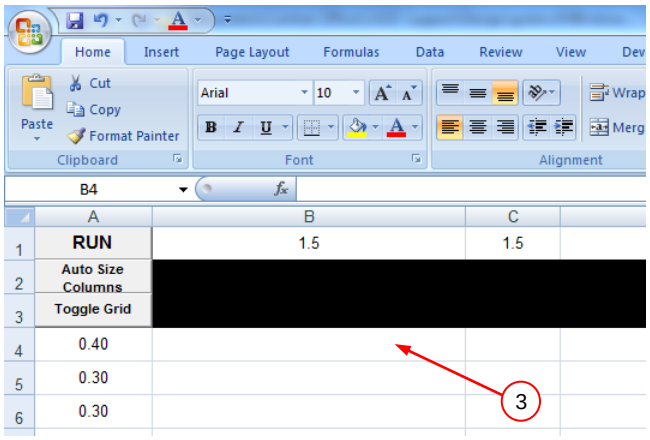
First, you will need to create a worksheet using the MoDOT-template (as shown in the “Excel Sheet Tabs” section of this manual on pages 4 & 5). Enter the name of the quantity box you will be copying on the tab. (1)



Now enter the existing Excel sheet and create a range over the data to be copied. You can either choose the copy option from the **Edit** pull down menu or right click over the range and select the **Copy** option. (2)



Open the destination file and left click in the B-4 cell. (3)

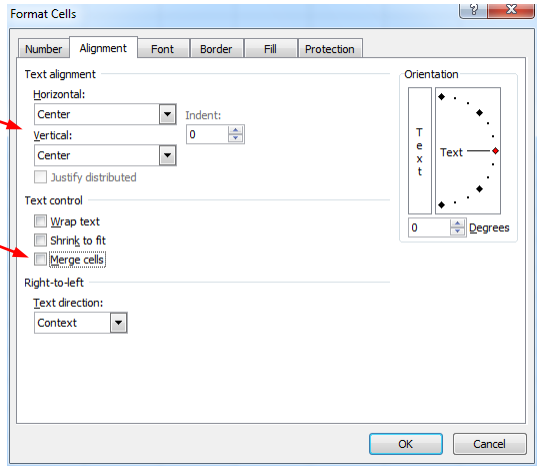


Now you can either choose the **Paste** option from the **Edit** pull down menu or right click over the cell and select the **Paste** option.

While the range is still highlighted you should do some “cleanup”. Right click over the range and choose the **Format Cells** option. This is a good place to align your text, select the **Alignment** tab and check the horizontal & vertical alignment. Also, you can uncheck the **Merge cells** option. Remember that QuanTab doesn’t work well with merged cells.

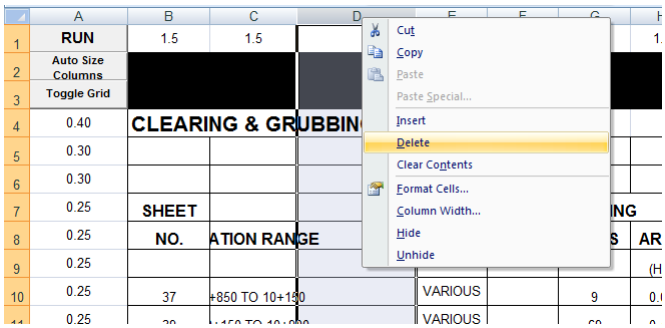
Horizontal & Vertical text alignment can be set here.

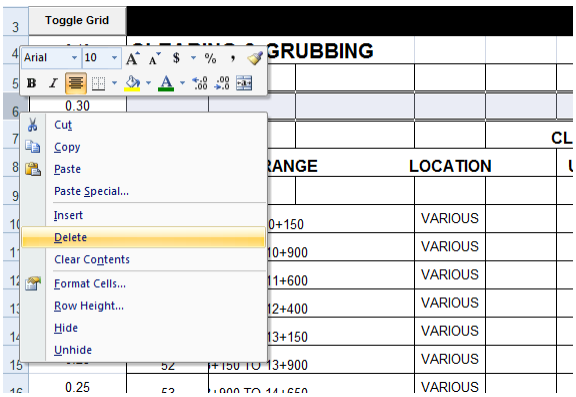
Uncheck any merged cells when copying them in from existing sheets.



Right click over a range of cells and choose the Format Cells option to see this dialog box.

After you have center justified the text and unmerged any merged cells you can delete any unused rows or columns.





Now you can change the color of the text, and line styles so that it will map to the proper standards. (See page 5 on which colors & line styles to use)

	A	B	C	D	E	F	G	H
1	RUN	1.0	2.6	1.3	1.3	1.0	1.3	1.0
2	Auto Size Columns							
3	Toggle Grid							
4	0.40	CLEARING & GRUBBING						
5	0.30							
6	0.25	SHEET			CLEARING		GRUBBING	
7	0.25	NO.	STATION RANGE	LOCATION	UNITS	AREA	UNITS	AREA
8	0.25					(HA)		(HA)
9	0.25	37	9+850 TO 10+150	VARIOUS	9	0.06	9	0.06
10	0.25	39	10+150 TO 10+900	VARIOUS	69	0.48	69	0.48
11	0.25	41	10+900 TO 11+600	VARIOUS	76	0.53	76	0.53
12	0.25	48	11+600 TO 12+400	VARIOUS	112	0.78	112	0.78
13	0.25	50	12+400 TO 13+150	VARIOUS	124	0.87	87	0.61
14	0.25	52	13+150 TO 13+900	VARIOUS	284	1.99	91	0.64
15	0.25	53	13+900 TO 14+650	VARIOUS	417	2.92	335	2.35
16	0.25	54	14+650 TO 15+400	VARIOUS	435	3.05	190	1.33
17	0.25	55	15+400 TO 16+150	VARIOUS	622	4.35	302	2.11
18	0.25	56	16+150 TO 16+900	VARIOUS	434	3.04	238	1.67
19	0.25	57	16+900 TO 17+650	VARIOUS	12	0.08	12	0.08
20	0.25	58	17+650 TO 18+400	VARIOUS	522	3.65	219	1.53
21	0.25	59	18+400 TO 19+150	VARIOUS	115	0.81	86	0.60
22	0.25	68	VARIOUS	VARIOUS		0.05		0.05
23	0.25	72	VARIOUS	VARIOUS		1.86		1.86
24	0.3				TOTAL	24.53		14.69
25	0.3							
26	0.3				PAY	24.5		14.7

Click the **Auto Size Columns** button. This gives the recommended column width. Remember that you can resize the columns manually.

	A	B	C	D	E	F	G	H
1	RUN	1.0	2.6	1.3	1.3	1.0	1.3	1.0
2	Auto Size Columns							
3	Toggle Grid							
4	0.40	CLEARING & GRUBBING						
5	0.30							
6	0.25	SHEET			CLEARING		GRUBBING	
7	0.25	NO.	STATION RANGE	LOCATION	UNITS	AREA	UNITS	AREA
8	0.25					(HA)		(HA)
9	0.25	37	9+850 TO 10+150	VARIOUS	9	0.06	9	0.06
10	0.25	39	10+150 TO 10+900	VARIOUS	69	0.48	69	0.48

	A	B	C	D	E	F	G	H
1	RUN	1.0	2.6	1.3	1.0	1.0	1.0	1.0
2	Auto Size Columns							
3	Toggle Grid							
4	0.40	CLEARING & GRUBBING						
5	0.30							
6	0.25	SHEET			CLEARING		GRUBBING	
7	0.25	NO.	STATION RANGE	LOCATION	UNITS	AREA	UNITS	AREA
8	0.25					(HA)		(HA)
9	0.25	37	9+850 TO 10+150	VARIOUS	9	0.06	9	0.06
10	0.25	39	10+150 TO 10+900	VARIOUS	69	0.48	69	0.48

The screenshot on the left shows the column values after running the Auto Size Column macro, whereas the screenshot on the right shows the values as manually input.

Now all you will need to do is bring the data into MicroStation.