

# **2nd Sheet Documentation For Microsoft Office and MicroStation V8i (Select Series 2)**



**Roadway Design Division**

Website <https://www.tn.gov/content/tn/tdot/roadway-design/design-standards/design-cadd-files.html>

Email [TDOT.CADDSupport@tn.gov](mailto:TDOT.CADDSupport@tn.gov)

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## 2nd Sheets Using Office 365 and MicroStation V8i

### General Information

Instructions in this document are for development of 2<sup>nd</sup> sheets using Office 365 and MicroStation V8i.

The process of attaching Office files in MicroStation is called 'OLE linking', which stands for **O**bject **L**ink and **E**MBED. It works best to **Link Excel** files and to **Embed Word** files when users are attaching Office files to MicroStation. CADD Support has embedded several Word documents in MicroStation DGN seed files including General Notes and Index sheets in order to streamline their production.

'**Embedded**' Word documents are available **only** from inside the MicroStation file.

'**Linked**' Excel files are external to MicroStation and can be opened & edited from either inside MicroStation or outside of MicroStation directly in Excel. If the Office file is edited separate from MicroStation, the link in MicroStation must be updated after the MicroStation file is opened in order to reflect the current information.

The Office OLE attachment is a picture of the Office file. The boundary of the picture is defined by a MicroStation shape element. The OLE attachment can be modified by graphics commands such as move, copy and scale.

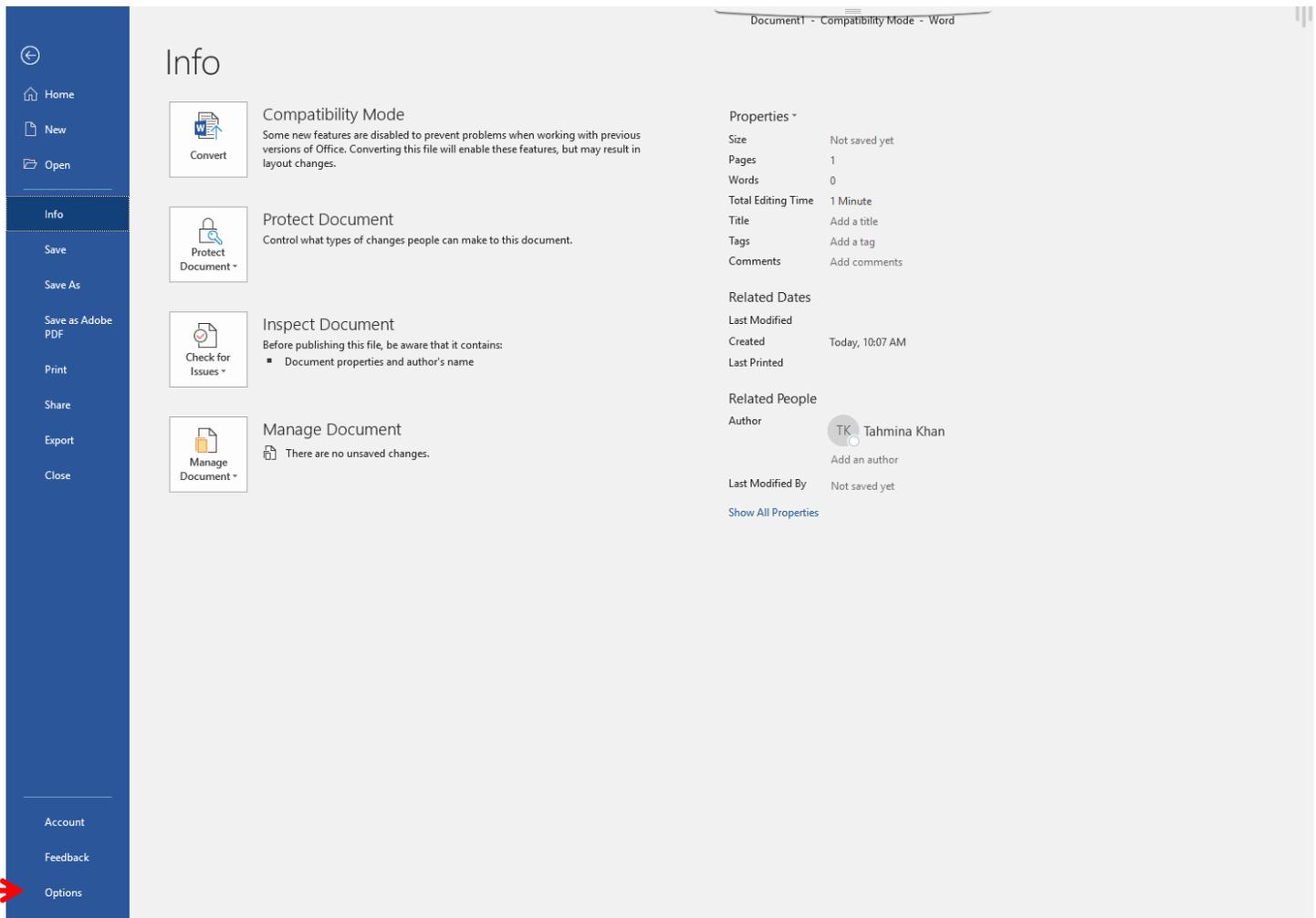
## Set up Office 365

This is the recommended set up for Office 365 when using the T.D.O.T. Roadway Design Division templates and programs. If Office templates are not installed to the default folders, then the directions will need to be modified accordingly.

Do this **one time only** when using **Word** and **Excel Office 365** for the first time with the **TDOT** templates and programs. This must be done for each user profile in the computer that will be using Office 365 to link with MicroStation.

### Word:

1. In Word Office 365, click on the **File** tab at the far left of the ribbon and choose **Options** from the drop down list.

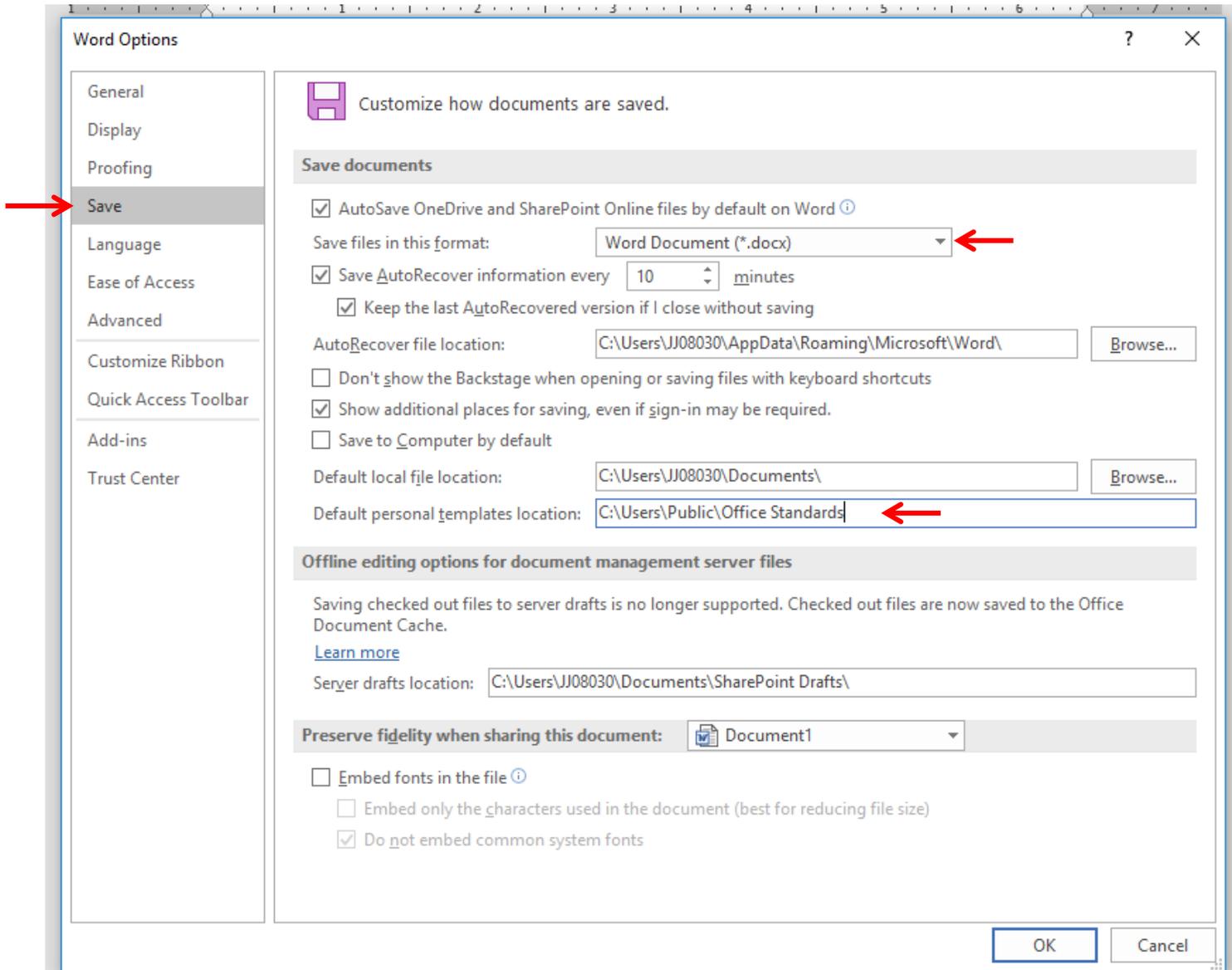


2. In the Word Options dialog click on **Save** in the options on the left.

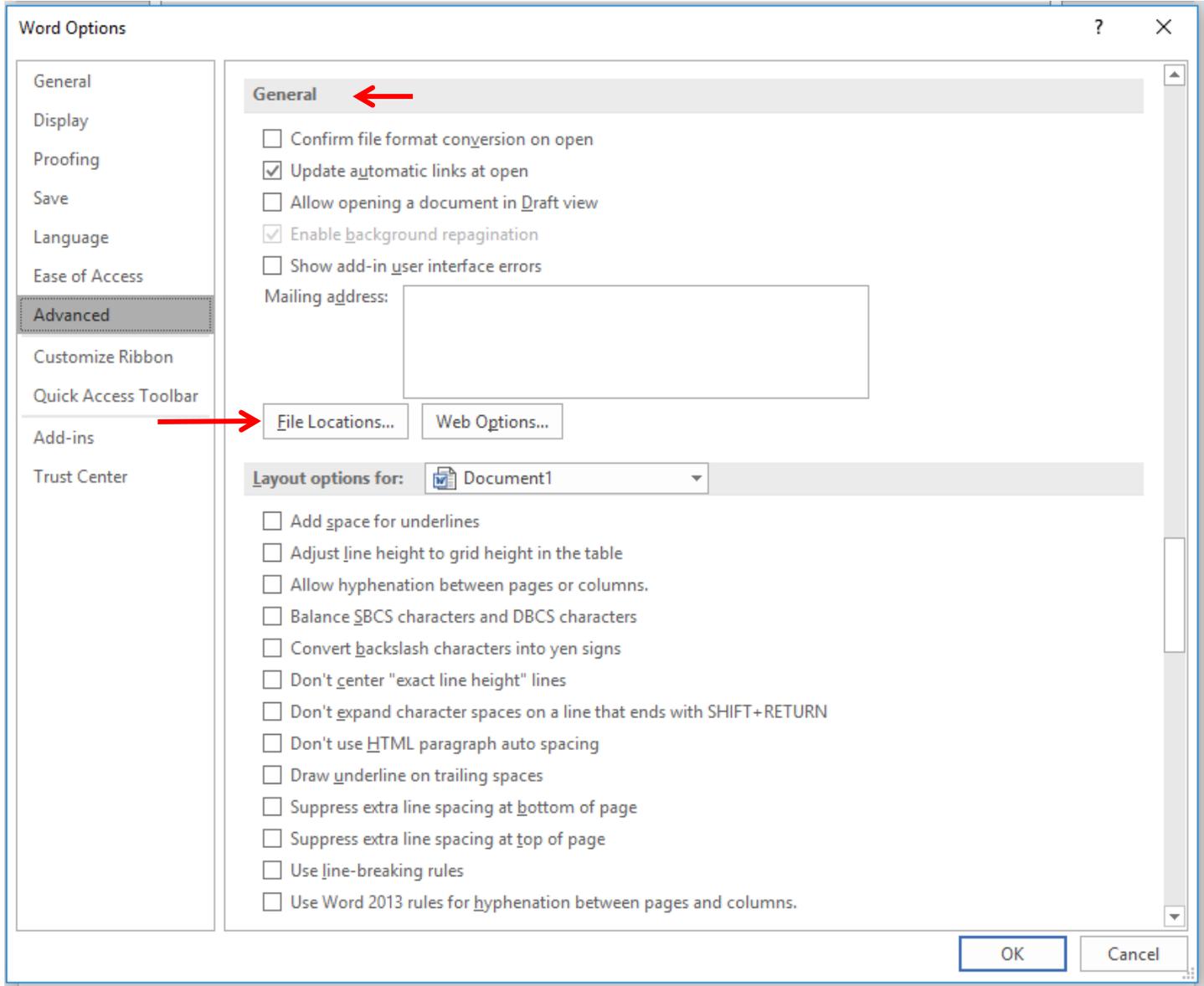
Set the **Save Files in this format:** option to "**Word Document (\*.docx)**".

Set the **Default personal templates location:** "C:\Users\Public\Office Standards"

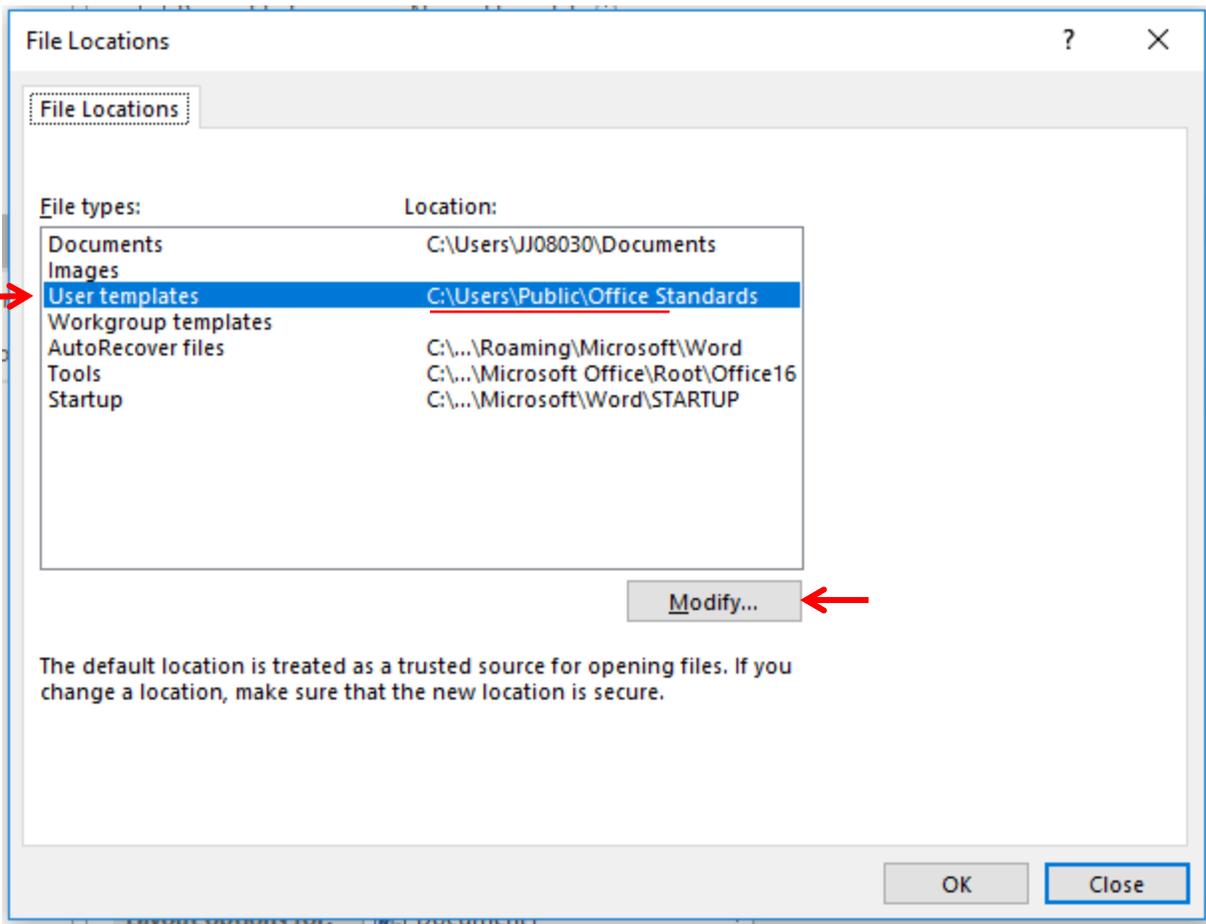
Set the folder where you wish all Word documents to be saved by default.



3. In the Word Options dialog, click on **Advanced** in the options on the left. Scroll down to the **General** section and click the **File Locations** button.



Click on **User Templates** and then click on the **Modify** button.

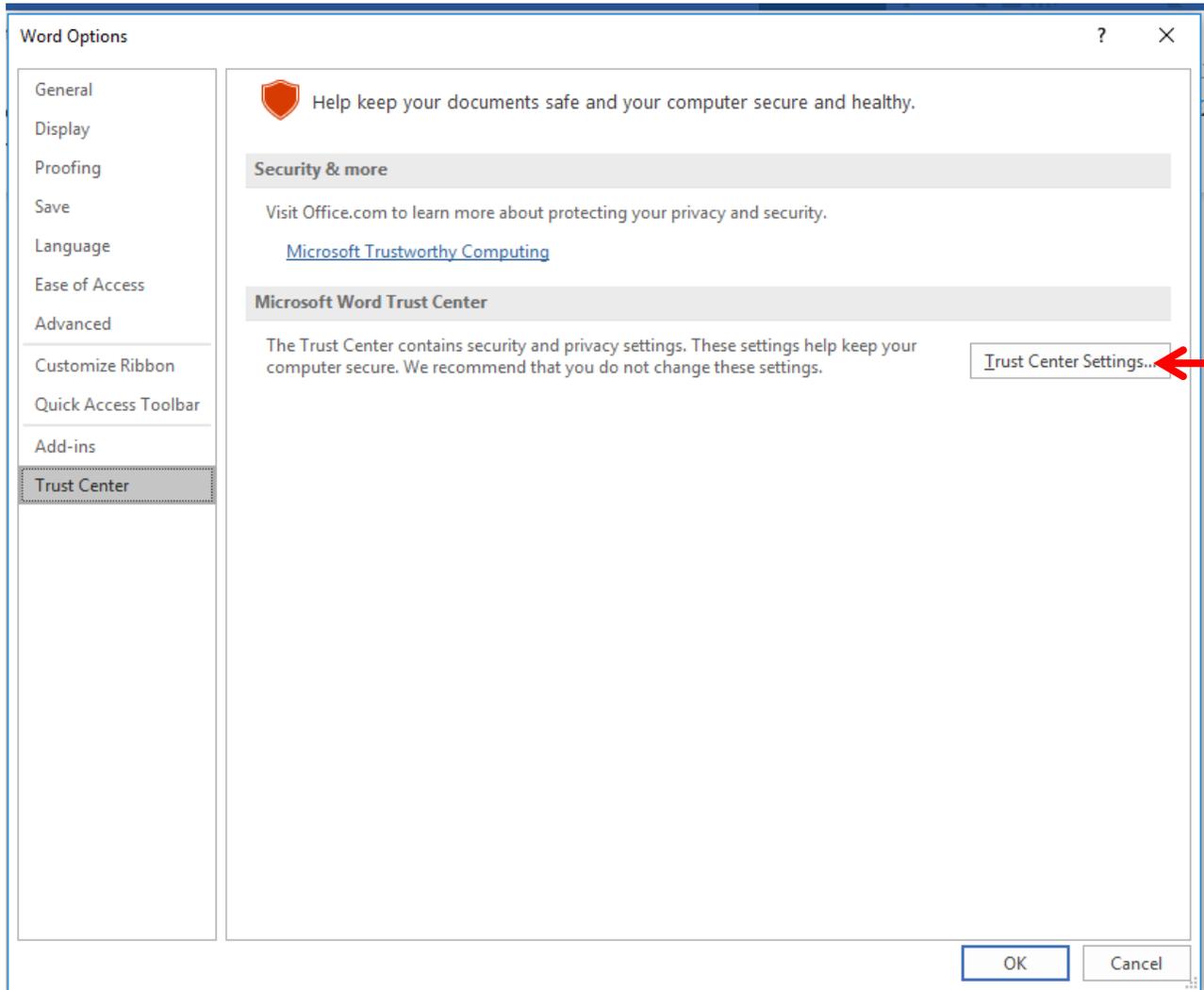


Navigate to and set the folder to: "**C:\Users\Public\Office Standards**".

Click **OK** to save the setting.

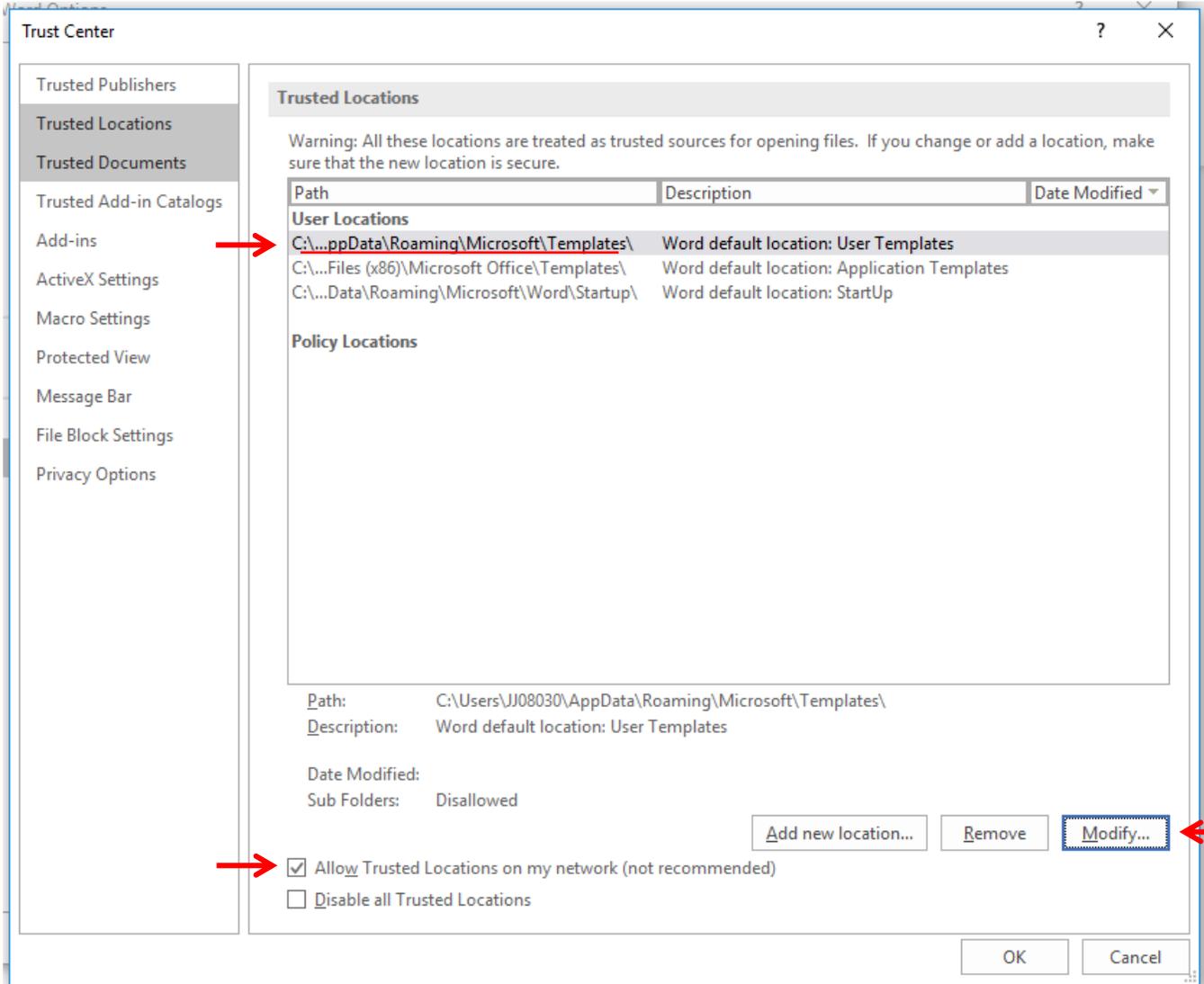
This will set the default template location for both **Word** and **Excel** so that the TDOT template folders will be available.

4. In the Word Options dialog, click on **Trust Center** in the options on the left.  
Click on the **Trust Center Settings** button.

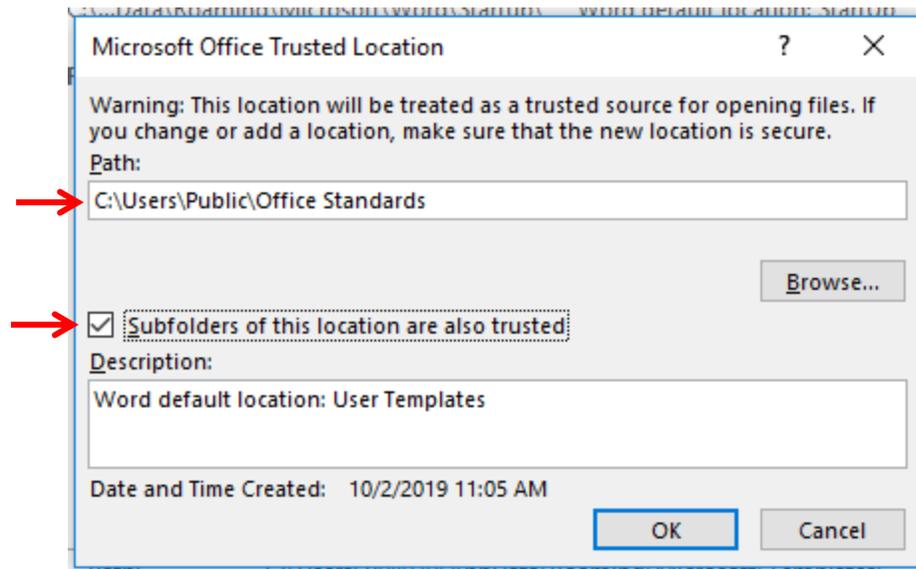


5. In the Trust Center dialog, click on **Trusted Locations** in the options on the left. Then modify as listed:
  - a. If you will be using Office documents on a network drive, check the box at the bottom for Allow Trusted Locations on my network.
  - b. Select the trusted location for "**Word default location: User Templates**".  
Click the **Modify** button.

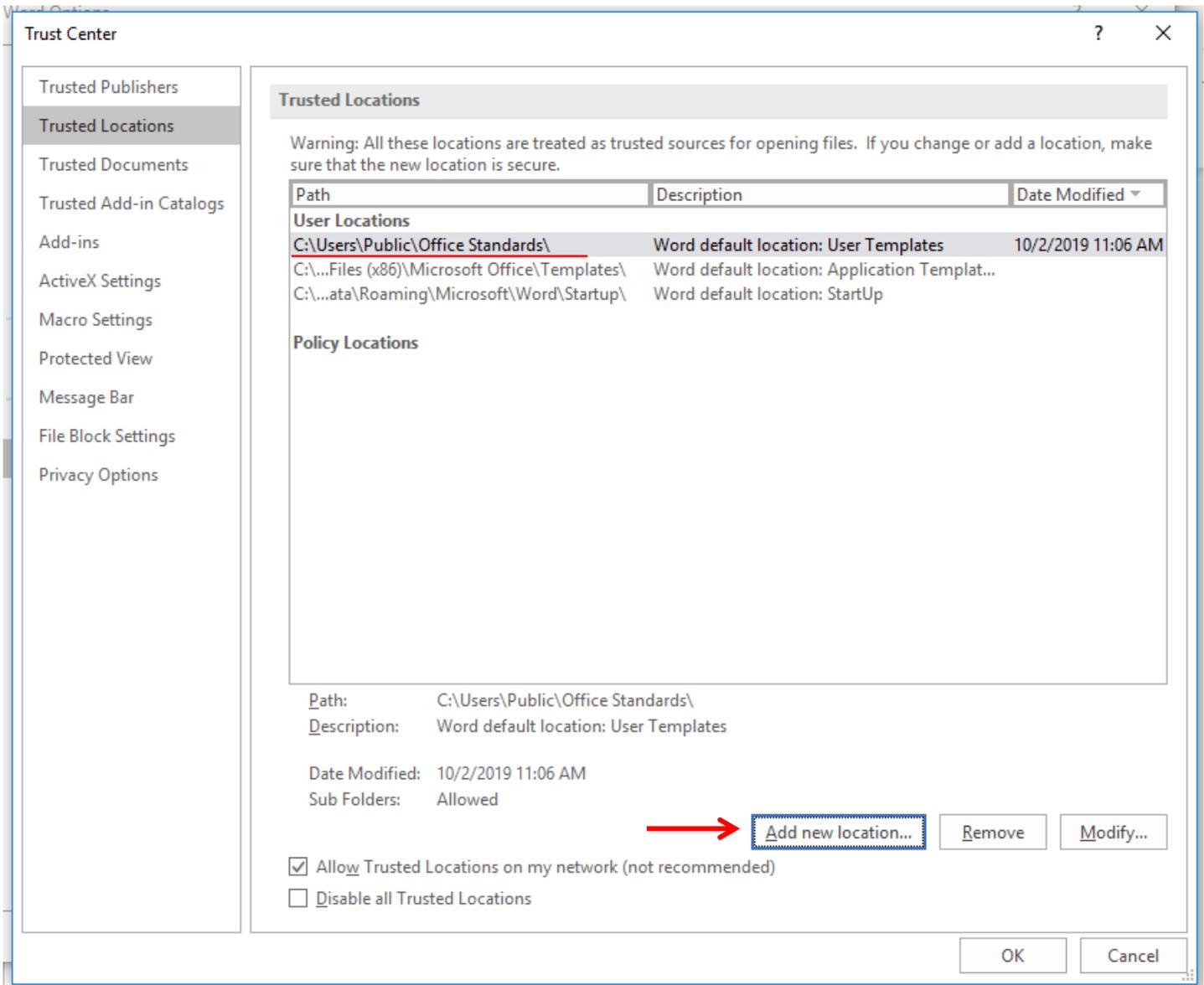
All files stored under Trusted Locations will automatically load macros without any action from the user.



- c. In the dialog box, which opens for the **User Templates**, set the **Path** by Clicking on the **Browse** button.  
Select the **Path "C:\Users\Public\Office Standards"**.  
Select on the box for "**Subfolders of this location are also trusted**" and click **OK**.



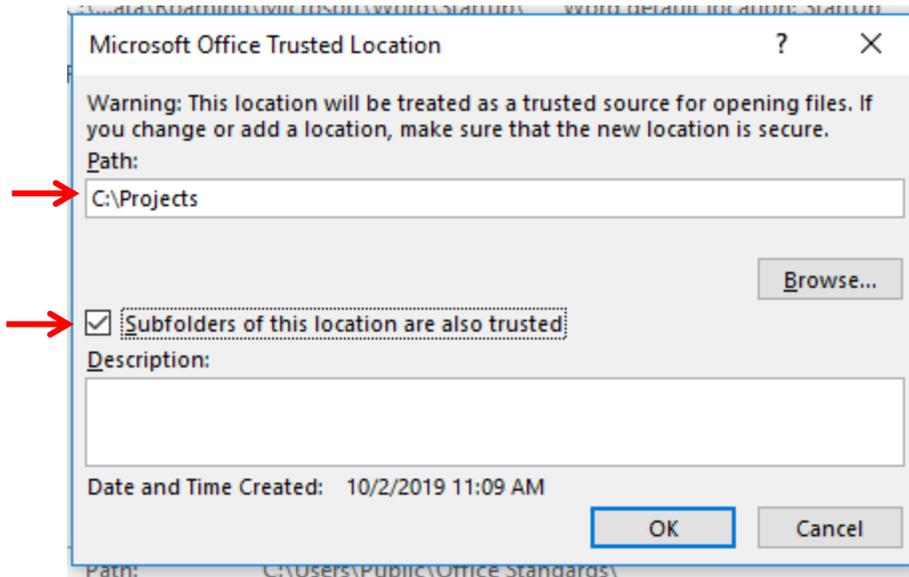
6. In the Trust Center dialog, click the **Add new location** button.



Click the **Browse** button and navigate to the location where your project files are stored.

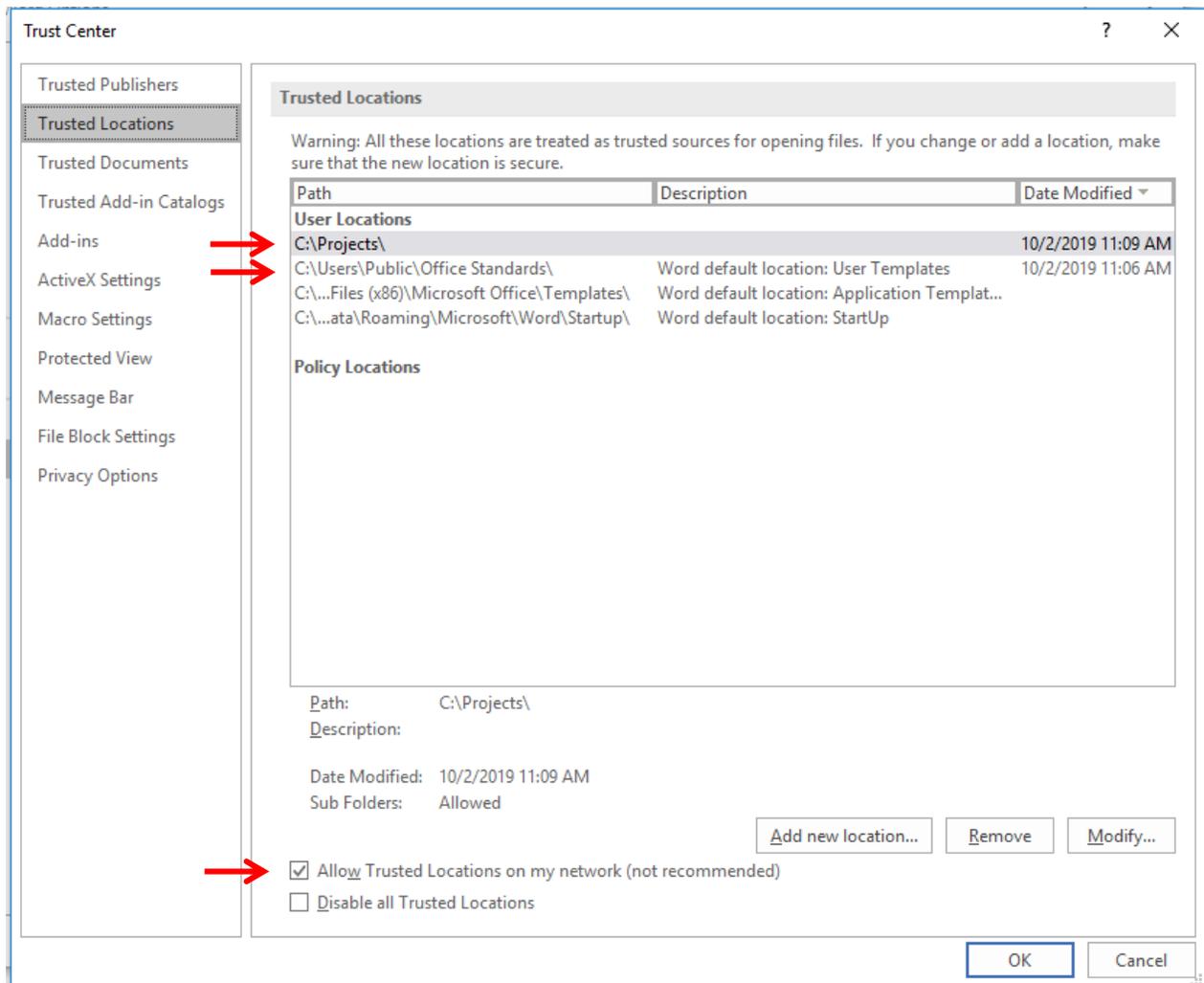
It is recommended for TDOT personnel that all Roadway Design Projects be stored on your c: drive in a folder named Projects and individual projects in subfolders.

Click on the "**Subfolders of this location are also trusted**" option, key in a description if desired and click **OK**.



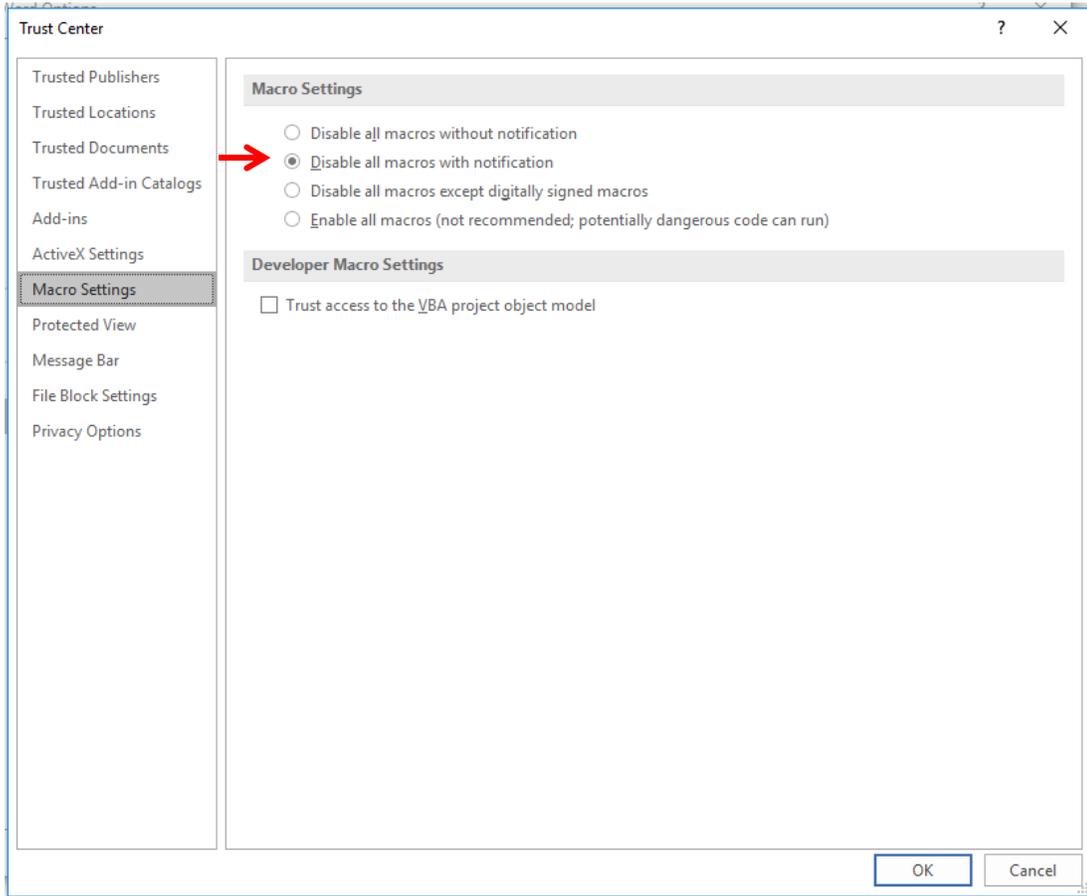
With your project folders defined as trusted locations, all macros will automatically be enabled.

Your Trusted Locations should look like this.

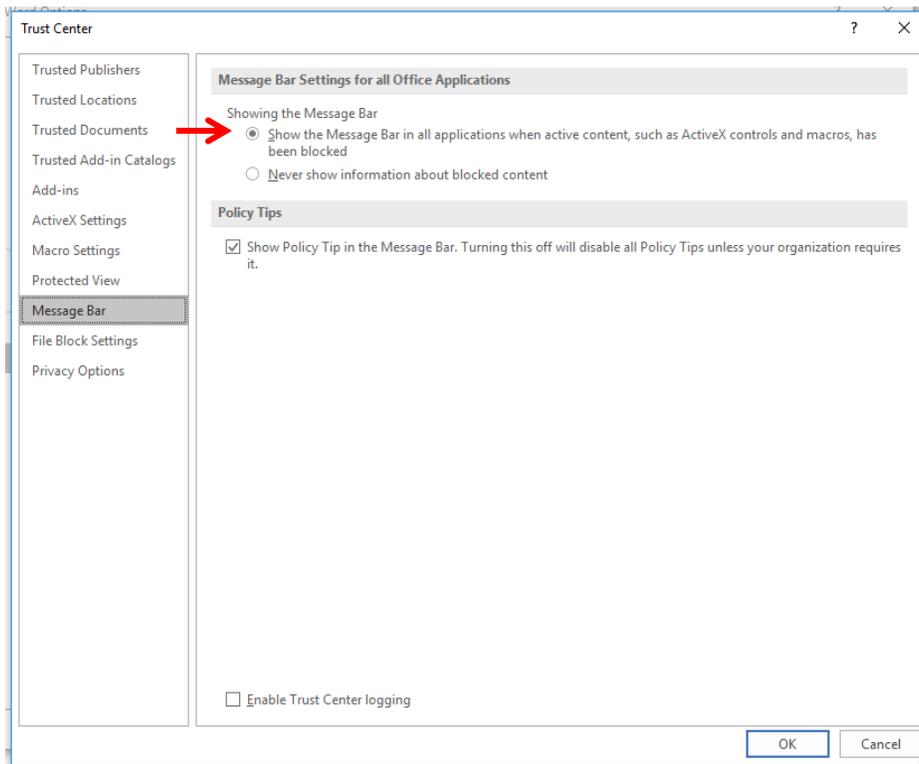


If you open a Word Office 365 file with macros that is not in a trusted location, the following two settings, numbers 7 and 8 will provide you the opportunity to enable the macros as needed.

7. In the Trust Center dialog, click on **Macro Settings** in the options on the left.  
The option "**Disable all macros with notification**" should be set.



8. In the Trust Center dialog, click on Message Bar in the options on the left.  
The option "**Show the Message Bar in all applications when active content, such as ActiveX controls and macros, has been blocked**" should be set.



9. Click **OK** at the bottom of the Trust Center dialog to save the Trust Center settings just made.

10. This completes the settings under Word Options, so click the **OK** button at the bottom of that dialog to complete the Word Office 365 set up.

## **Word Template Files**

T.D.O.T. Roadway Design Division Word templates used with MicroStation, are part of the Standard Design and Survey CADD Files and Documents, Office downloads from the TDOT CADD web page. The templates listed below should be in their default folder locations as shown.

### **C:\Users\Public\Office Standards\Survey**

- Property Owner Contact Letter - Aerial Flagging.dotm
- Property Owner Contact Letter - Geotechnical Staking.dotm
- Property Owner Contact Letter - ROW Staking.dotm
- Property Owner Contact Letter - Survey.dotm
- Region 1 Survey Letterhead.dotx
- Region 2 Survey Letterhead.dotx
- Region 3 Survey Letterhead.dotx

- Region 4 Survey Letterhead.dotx
- Survey Check List\_Field.dotx
- Survey Check List\_Office.dotx
- SURVEY\_SUBMITTAL\_CHECK\_LIST.dotx
- SuveyContact\_Avery5160\_Labels.docx
- SuveyContact\_Envelopes.docx

**C:\Users\Public\Office Standards\TDOT 2nd Sheets**

- Blank Sheet for 2<sup>nd</sup> Sheet Notes.dotx
- Bridge Index.dotx
- CONSTRUCTION INDEX OF SHEETS.dotx
- Convert Word To V8.dotm
- Drop Off Notes Traffic Control .dotx
- EPSC Notes .dotx
- General Notes .dotx
- Index and Standard Drawings .dotx
- Pavement Edge Drop-Off Traffic Control Notes.dotx
- PRELIMINARY INDEX TITLE SHEET .dotx
- RIGHT OF WAY INDEX TITLE SHEET .dotx
- ROW Notes Utility Notes Utility Owners .dotx
- SHEET FORMAT FOR 2ND SHEET NOTES .dotx
- SPECIAL NOTES .dotx
- Standard Roadway Drawings .dotx
- Standard Structure Drawings .dotx
- Standard Traffic Operations and Structure Drawings .dotx
- Standard Traffic Operations Drawings .dotx

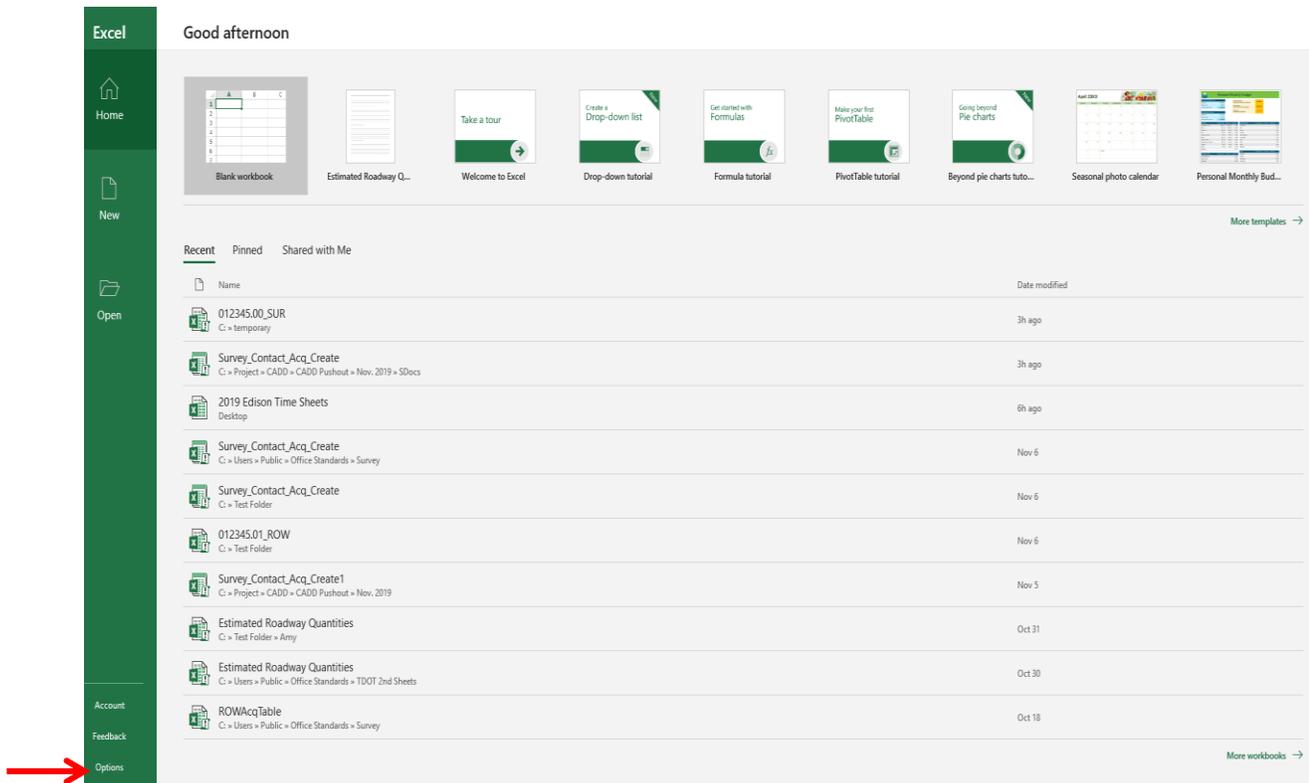
**C:\Users\Public\Office Standards\TDOT English Tab Quantities**

-NONE-



# Excel:

1. In Excel Office 365 welcome screen, choose **Options** from the bottom left corner of screen.

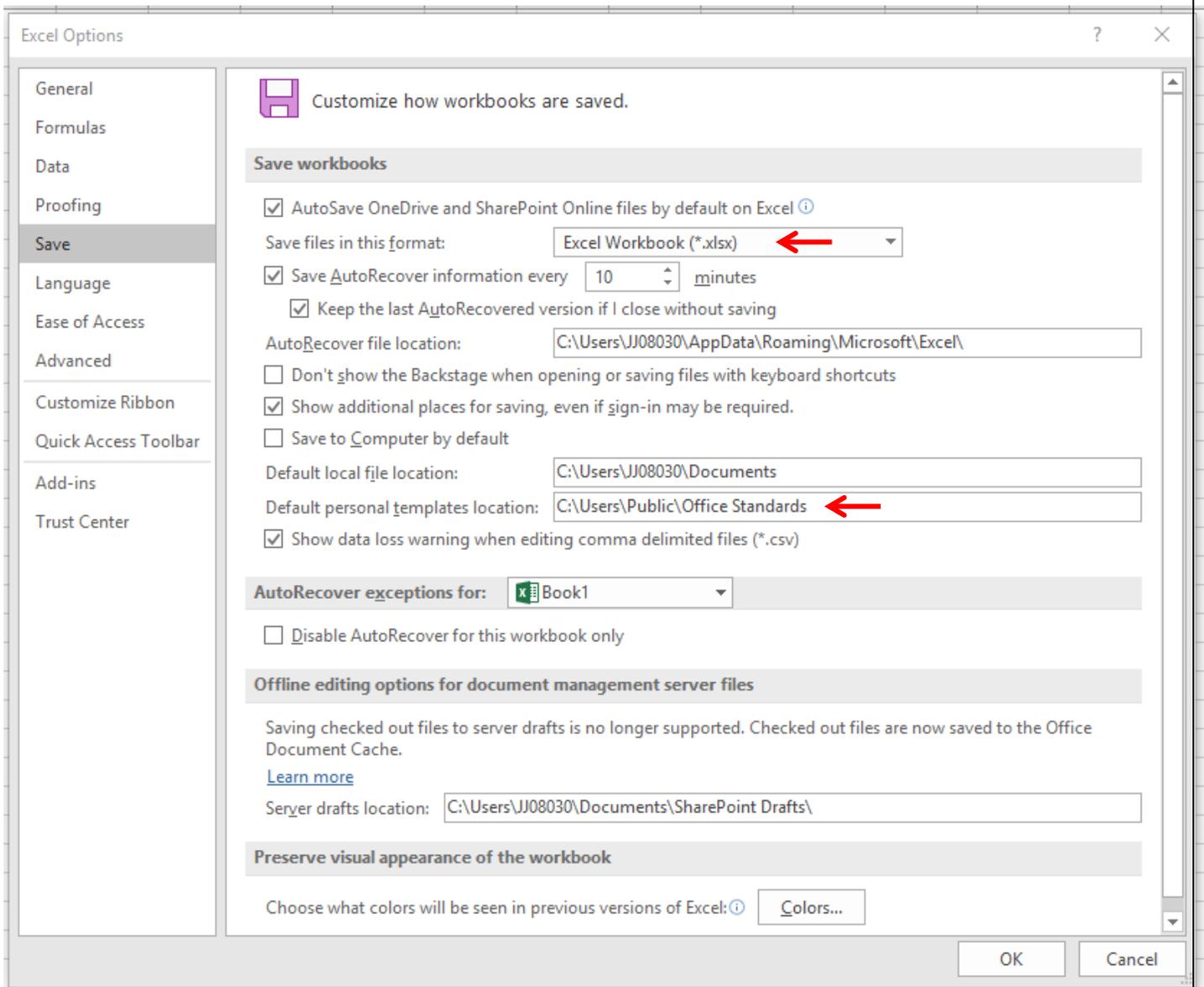


2. In the **Excel Options** dialog, click **Save** in the options on the left.

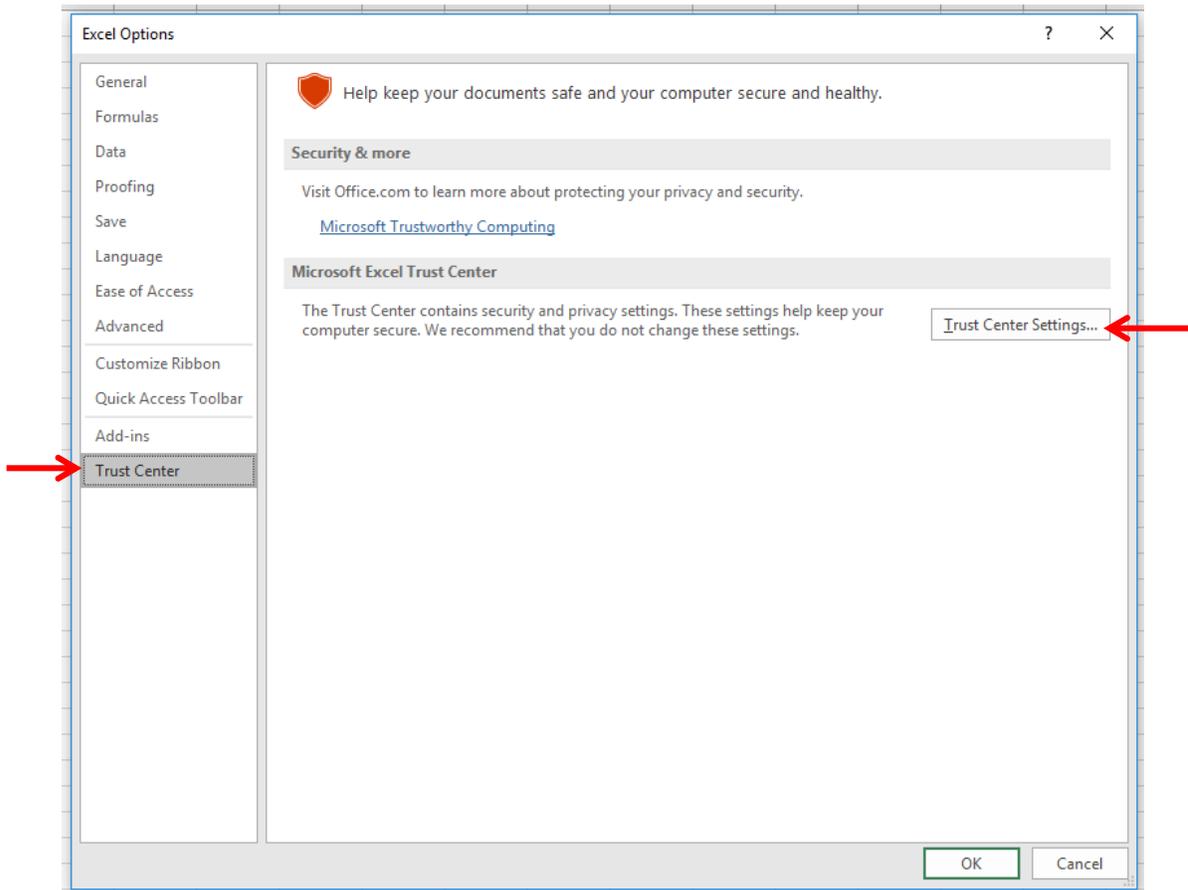
Set the option for **Save Files in this format: "Excel Workbook (\*.xlsx)"**.

Change the path given for **Default personal templates location: "C:\Users\Public\Office Standards"**

Set the folder where all Excel documents should be saved by default.

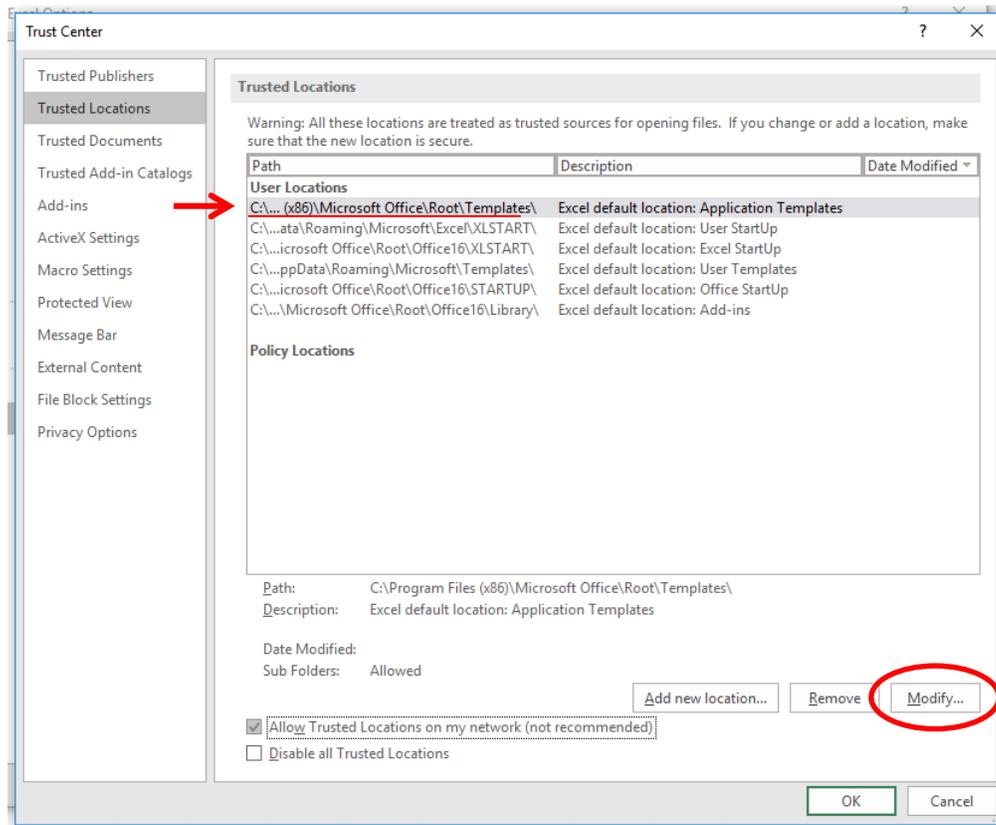


3. In the Excel Options dialog, click **Trust Center** in the options on the left. Click the **Trust Center Settings** button.

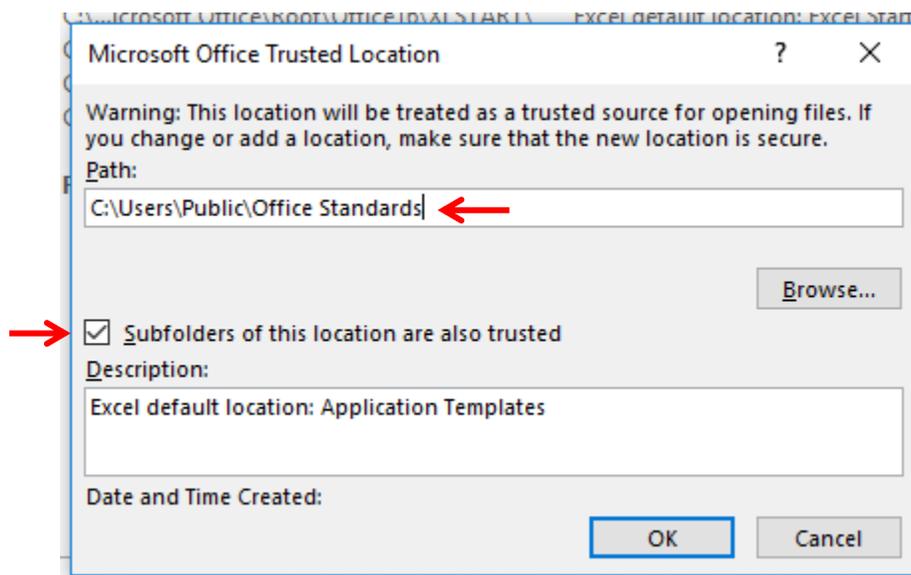


4. In the Trust Center dialog, click **Trusted Locations** in the options on the left. Select the trusted location for **Excel Office 365 default locations: Application Templates**. Click the **Modify** button.

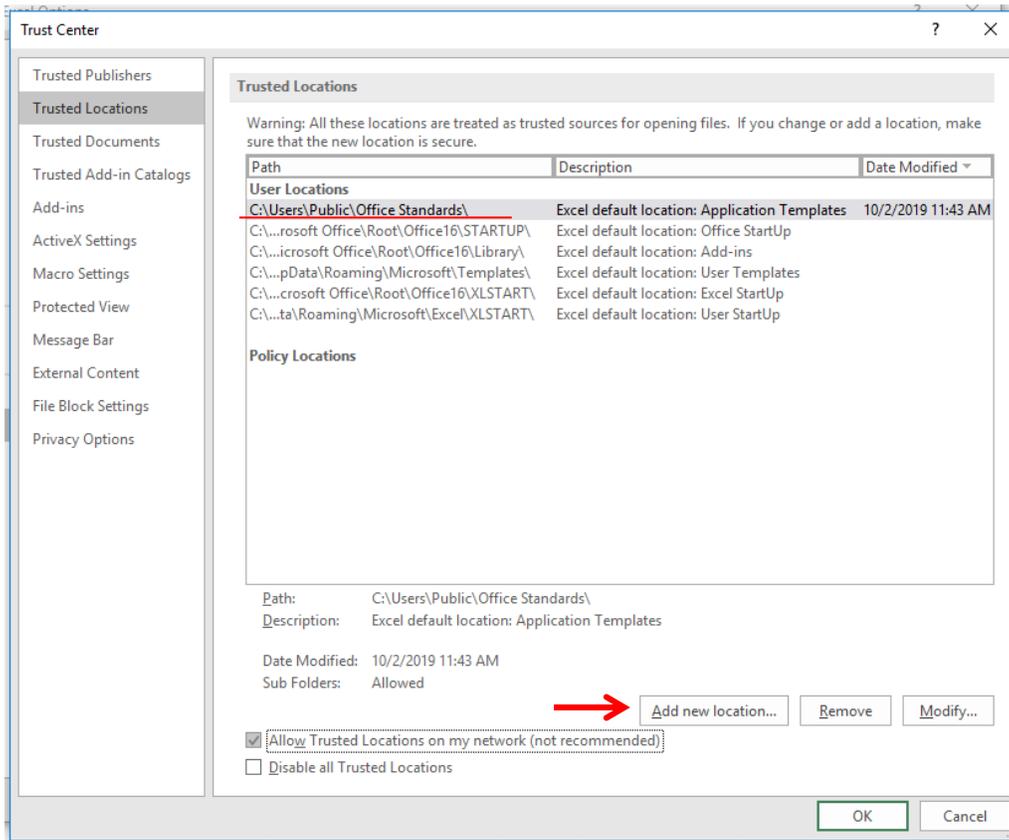
All files stored under Trusted Locations will automatically load macros without any action from the user.



- In the dialog box, which opens for the **User Templates**, set the Path by clicking the **Browse** button. Select the Path "**C:\Users\Public\Office Standards**". Select the box for "**Subfolders of this location are also trusted**" and click **OK**.

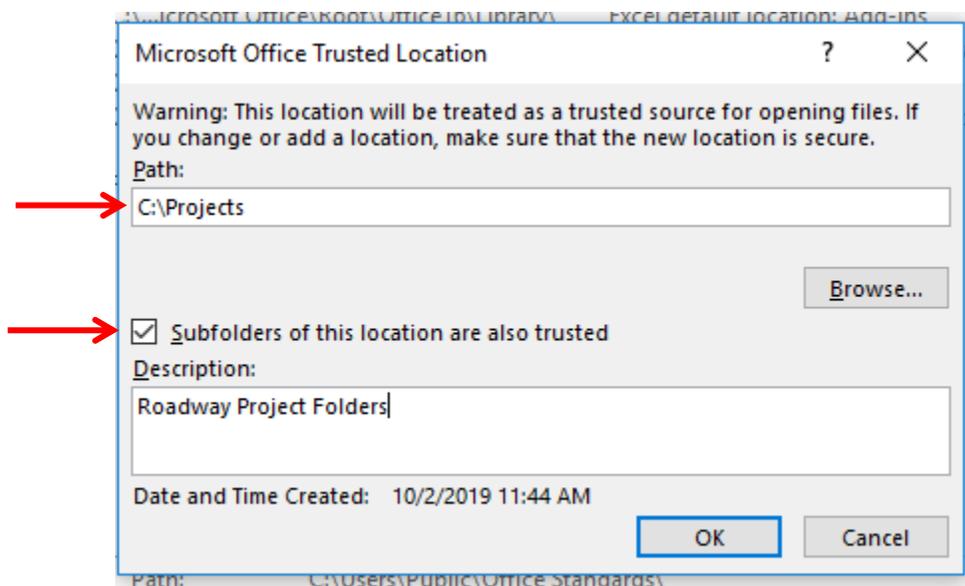


- In the Trust Center dialog, click on the **Add new location** button.



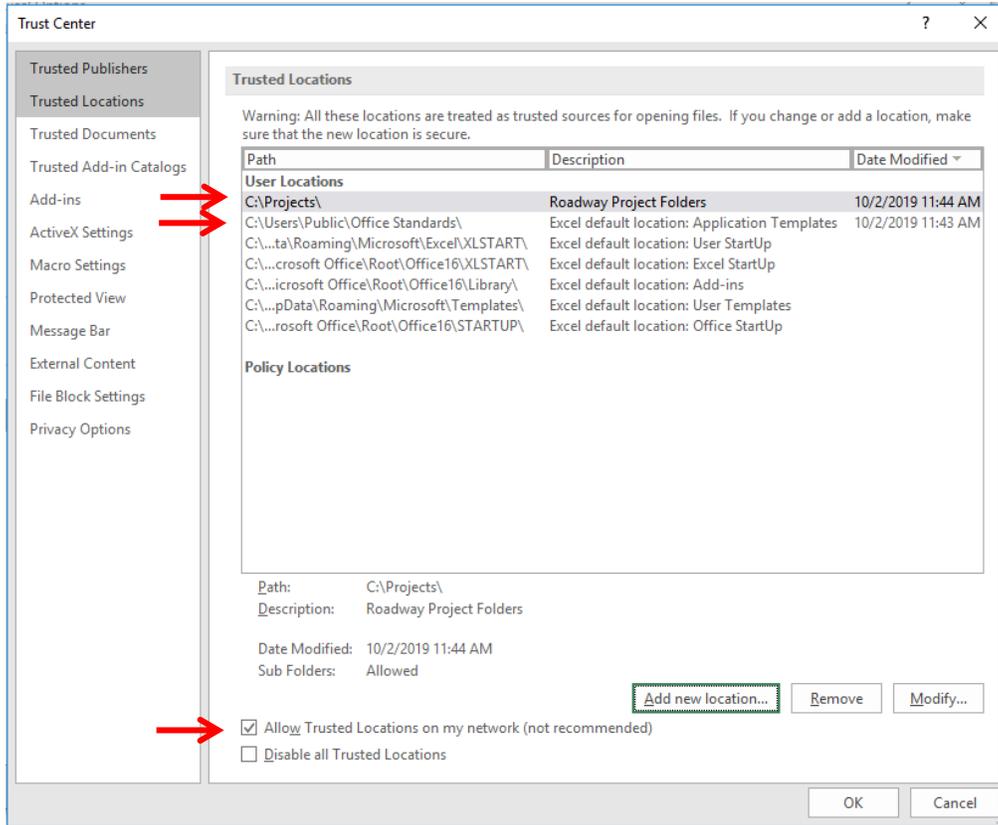
Click on the **Browse** button and navigate to the location where your project files are stored. It is recommended for TDOT personnel that all Roadway Design Projects be stored on your c: drive in a folder named Projects and individual projects in subfolders.

Click on the "**Subfolders of this location are also trusted**" option, key in a description if desired and click **OK**.



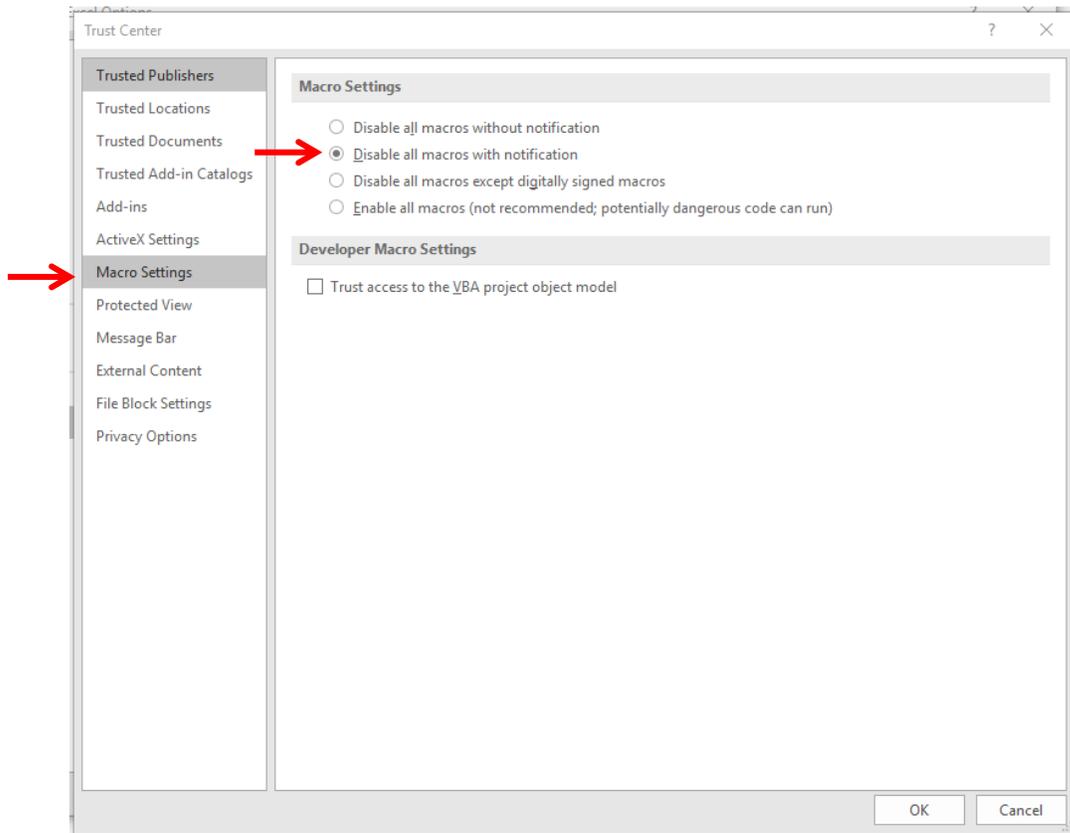
With your project folders defined as trusted locations, all macros will automatically be enabled.

Your Trusted Locations should look like this.

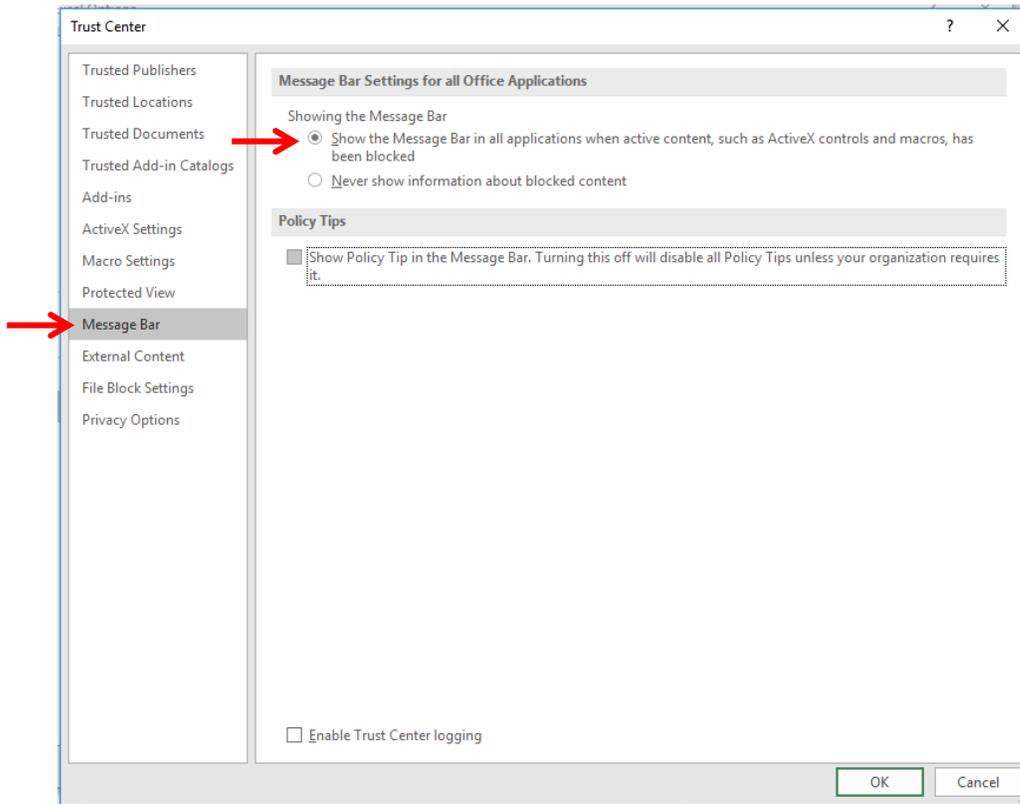


Note: If you open an Excel Office 365 file with macros that is not in a trusted location, the following two settings, numbers 7 and 8 will provide you the opportunity to enable the macros as needed.

7. In the Trust Center dialog, click on **Macro Settings** in the options on the left. The option "**Disable all macros with notification**" should be set.



8. In the Trust Center dialog, click on **Message Bar** in the options on the left. The option "**Show the Message Bar in all applications when active content, such as ActiveX controls or macros, has been blocked**" should be set.

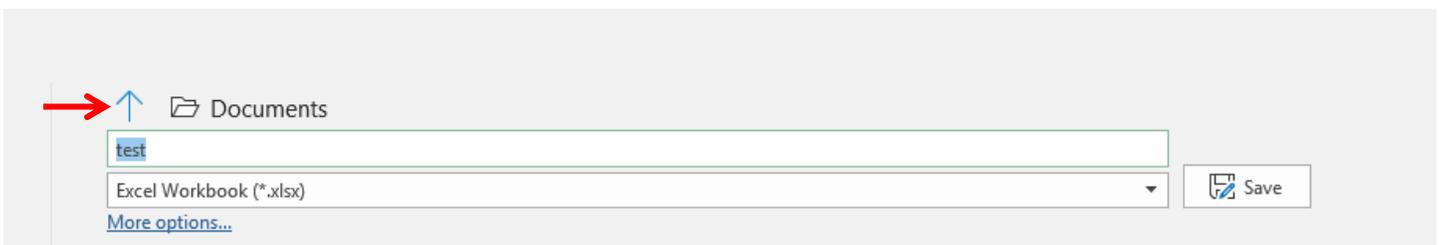


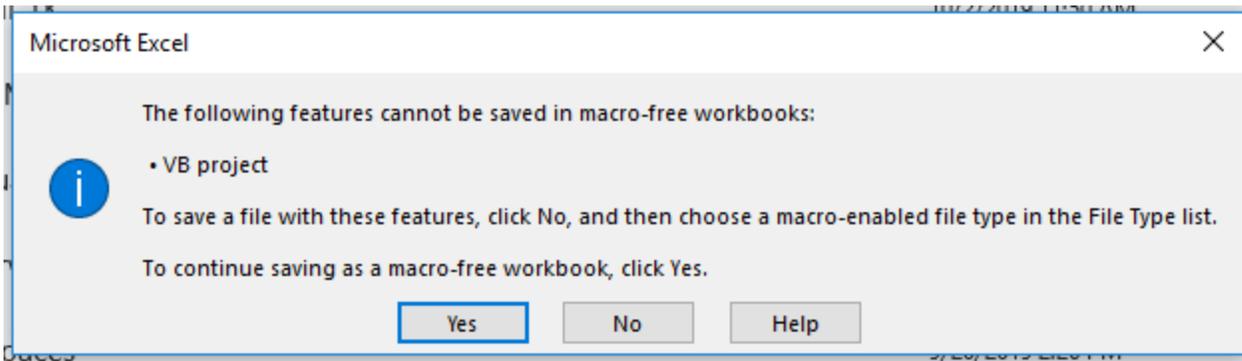
9. Click **OK** at the bottom of the Trust Center dialog to save the Trust Center settings just made.

10. This completes the settings under Excel Options, so click the **OK** button at the bottom of that dialog to complete the Excel Office 365 set up.

## **Saving Documents with Macros**

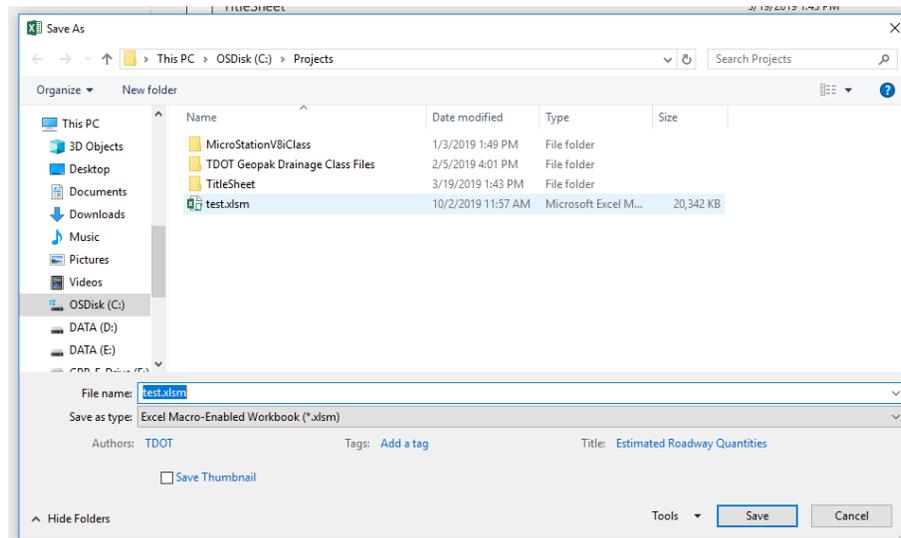
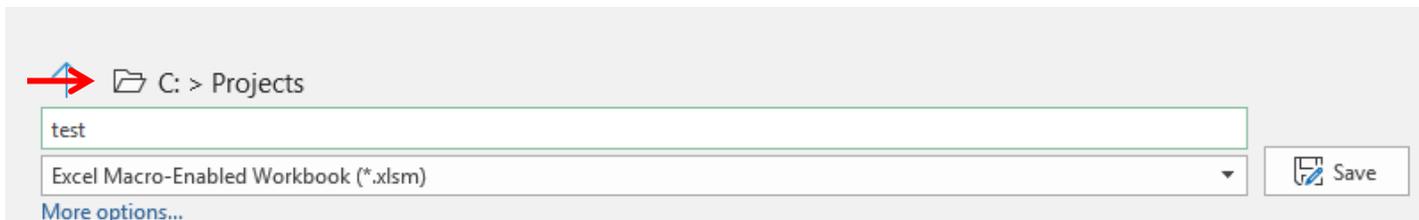
If you try to save a new document that has macros with the default file formats, .docx or .xlsx, then you will be warned that all macros will be thrown out since those file types are specifically macro free.





If you no longer need the macros, simply click **Yes** to save the file in the macro free format. Otherwise, click **No** to stop at this point.

To keep macros for later use, go to **File > Save As** and under **Save As Type** choose the macro-enabled one. Also change the folder location where you need to save it.



Previously saved documents automatically save in their current format.

### **Enabling macros that are not in a trusted location**

If you open a file with macros that is not in a trusted location, a **Security Warning** message bar will appear.

Copy of Estimated Roadway Quantities (2).xlsx - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Acrobat

Clipboard Font Alignment Number Styles Cells Editing

Security Warning Some active content has been disabled. Click for more details. **Enable Content**

	A	B	C	D	E	F
1		Project No. 1 Data	Project No. 2 Data	Project No. 3 Data	Project No. 4 Data	Project No. 5 Data
2	State Construction Project Number					
3	Federal Project Number					
4	Non-Participating	<input type="checkbox"/>				
5	Project Description					
6	PIN					
7	Letting Date					
9	Project Type					
10	Units	English 2000				
12	County					
13	Route					
14	Road Name					
17	Project Length					
18	Beginning Station					
19	Ending Station					
20	Beginning Log Mile					
21	Ending Log Mile					
22	North Coordinate					
23	East Coordinate					
24	Longitude					
25	Latitude					
27	Roadway Designer					
28	Roadway CE Manager 2					
29	Date Turned In					
31	Bridge Required					
32	Retaining Wall Required?					
33	Signals Required?					
34	Is Chapter 86?					
35	Bridge Designer					
36	Bridge CE Manager					
38	Estimate Type					
39	Quantities Calculation Date					
40	Quantities Updated Date					

**ROWS WITH RED DESCRIPTORS IN THE FIRST COLUMN ARE REQUIRED.**

**BUTTONS:**

Press "CONTINUE" once you have filled in the Project Data sheet and wish to see the tab blocks. A set of basic tabs will become visible, as well as the "Add Sheet" page from which the designer can add additional tab blocks as necessary. Blank worksheets may also be added.

Press "FILE DIET" to create a smaller-sized version of the file, which will include only the tab blocks chosen by the designer. This smaller file should be easier to email, but will not include the "Add Sheets" page, and can not be used for further development. Use this button to create files for submission for estimates, etc, but continue to work from your original file. The "File Diet" file will be named according to the PIN and estimate type, and saved in the same folder as the original.

Press "SUBMIT" to email the file created by the "FILE DIET" button to the appropriate addresses, based on the estimate type.

The "ADMIN" button contains tools used by the estimating offices. Designers should not need to press this button. However, if you are unsure if you are using the latest version, press the "ADMIN" button and look for the version information in the header of the resulting menu.

Project Data

If you need to use the macros, click the **Enable Content** button in the message bar. The Security Warning message bar goes away, and macros are ready for use. Once a document has been trusted, Office 365 remembers the name so that it will not be necessary to Enable Content again later.

## **Excel Template Files**

T.D.O.T. Roadway Design Division Excel templates used with MicroStation, are part of the Standard Design and Survey CADD Files and Documents, Office downloads from the TDOT CADD web page. The templates listed below should be in their default folder locations as shown.

### **C:\Users\Public\Office Standards\Survey**

- ROWAcqTable.xltn
- Survey\_Contact\_Acq\_Create.xltn
- Survey Weekly Progress Report.xltx
- Utility Owners.xltx

### **C:\Users\Public\Office Standards\TDOT 2nd Sheets**

- Bridge Quantities.xltn
- Convert Excel to V8.xltn
- Maintenance Quantities.xltn
- Project Commitments.xltx
- Estimated Roadway Quantities .xltn

### **C:\Users\Public\Office Standards\TDOT English Tab Quantities**

- Box Culvert or BR XS Drainage Data.xltx
- Box Slab.xltx
- Concrete Median Barrier.xltx
- Drainage Data for Drainage Map.xltx
- Enhanced Silt Fence Check Design Dimensions.xltx
- Guardrail Tab Builder.xltn
- Pipe Culvert Profile Data No Quantity.xltx
- Pipe Culvert Profile Data Quantity.xltx
- Pipe Culvert XS Drainage Data.xltx
- Storm Drainage Pipe Tab Builder.xltn
- Storm Drainage Structure Tab Builder.xltn

## **Estimated Roadway Quantities Excel File**

The Estimated Roadway Quantities Excel file is required on all jobs per the [T.D.O.T. Roadway Design Division Roadway Design Guidelines](#). A preliminary construction quantity estimate Excel file shall be submitted to the Estimating and Bid Analysis Office when the Right-of-Way plans are turned in per **Section 3-400.15**. A complete construction quantity estimate Excel file shall be turned in to the Estimating and Bid Analysis Office

when the plans are turned in for construction, **Section 4-140.06**. See **Section 4-140.05** for details on the Estimated Roadway Quantities Excel file.

This Excel quantities file is used as an input file for a T.D.O.T. computer database program. The worksheets names, column and row locations and heading information should not be changed or the database program will not input the data correctly.

The Estimated Roadway Quantity Excel file will contain all worksheets that are needed for a design project. The following worksheets are required but not limited to the following: **Project Data, Rdwy Quantity Block 1, Rdwy Quantity Block 2 (if needed, etc), Foot Notes, Box Bridge Quantities Block, and all Tabulated Quantity Blocks**. There may be many worksheets for a large job.

The Estimated Roadway Quantity file has all of the approved Tabulated Quantity Blocks embedded in it for TDOT Roadway Projects.

Structures, Maintenance and the Right-Of-Way Utilities Office also have estimated quantities Excel files that they submit to the Estimating and Bid Analysis Office. The templates for these are included in the **TDOT 2nd Sheets** download.

The Utility Office provides their estimated quantities Excel worksheet to their users. The Utility Office will send a copy of the utility Excel worksheet to the Roadway Design Division so the “Estimated Utilities Quantities” Sheet 2A3 for the plans can be produced, as per **Section 4-137.00** in the T.D.O.T. Roadway Design Division, Roadway Design Guidelines.

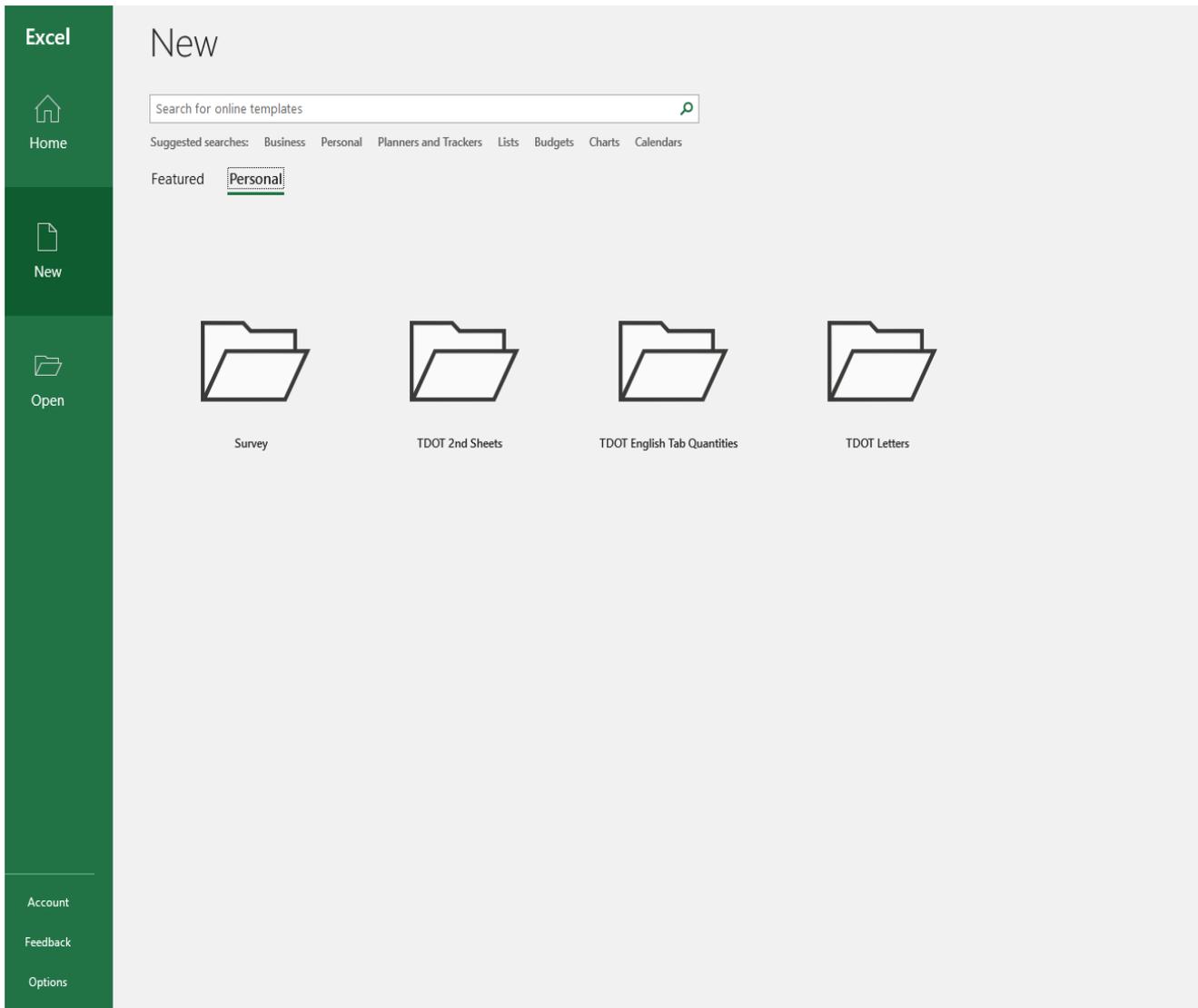
Save the Excel file to your project folder. Any links attached will not be correct if the Excel file is not saved onto your computer or computer network where your files are stored before attaching them to a MicroStation file.

## Create the TDOT Estimated Roadway Quantities

It is required that the user have all of the tabulated quantity blocks in the same file with the estimated roadway quantities. By putting all of the worksheets together in the same Excel file, the quantities on the different tab block sheet quantities should be linked to the estimated quantities sheet. These same tab blocks and quantity blocks will be linked to the MicroStation design files. By setting up the Excel estimate file in this way, each quantity can be entered and updated in one location only and will then be updated in each of the locations where the value appears.

These directions will first demonstrate creating the Estimated Roadway Quantities file and later describe adding other tabulated blocks.

1. In Excel, click on the far left of the Excel ribbon and choose **New**
2. Under New, choose **Personal**.



3. Go to the TDOT 2<sup>nd</sup> Sheets tab and select the **Estimated Roadway Quantities.xltn** template

Excel

Home

New

Open

Account

Feedback

Options

# New

Search for online templates

Suggested searches: Business Personal Planners and Trackers Lists Budgets Charts Calendars

Featured Personal

Survey

TDOT 2nd Sheets

TDOT English Tab Quantities

TDOT Letters

Choose the file with the latest revision date.

Estimated Roadway Quantities1 - Excel

File Home Insert Page Layout Formulas Data Review View Help ACROBAT Tell me what you want to do

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Workbook Views Show Zoom Window Macros

143

	A	B	C	D	E	F	G	H	I	J	K
1		Project No. 1 Data	Project No. 2 Data	Project No. 3 Data	Project No. 4 Data	Project No. 5 Data					
2	State Construction Project Number										
3	Federal Project Number										
4	Non-Participating										
5	Project Description										
6	PIN										
7	Letting Date										
9	Project Type										
10	Units	English 2000									
11	County										
12	Route										
13	Road Name										
14	Road Name										
17	Project Length										
18	Beginning Station										
19	Ending Station										
20	Beginning Log Mile										
21	Ending Log Mile										
22	North Coordinate										
23	East Coordinate										
24	Longitude										
25	Latitude										
27	Roadway Designer										
28	Roadway CE Manager 2										
29	Date Turned In										
31	Bridge Required										
32	Retaining Wall Required?										
33	Signals Required?										
34	Is Chapter 86?										
35	Bridge Designer										
36	Bridge CE Manager										
38	Estimate Type										
39	Quantities Calculation Date										
40	Quantities Updated Date										
41											
42											
43											
44											
45											
46											
47											
48											

**ROWS WITH RED DESCRIPTORS IN THE FIRST COLUMN ARE REQUIRED.**

**BUTTONS:**

Press "CONTINUE" once you have filled in the Project Data sheet and wish to see the tab blocks. A set of basic tabs will become visible, as well as the "Add Sheet" page from which the designer can add additional tab blocks as necessary. Blank worksheets may also be added.

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Project Data

4. Fill in the **Project Data** sheet. Instruction notes are available on the worksheet. Hold the mouse pointer over the small red triangles for directions. NOTE the rows with RED text (2, 3, 5, 6, 9, 11, 13, 27, 28 and 31) in column "A" are required be filed in before you can proceed! The example below shows what must be filled in to proceed

Estimated Roadway Quantities1 - Excel

File Home Insert Page Layout Formulas Data Review View Help ACROBAT Tell me what you want to do

Normal Page Break Preview Page Layout Custom Views Ruler Formula Bar Gridlines Headings Zoom 100% Zoom to Selection New Window Arrange All Freeze Panes Unhide View Side by Side Synchronous Scrolling Reset Window Position Switch Windows Macros

B40

	A	B	C	D	E	F	G	H	I	J
7	Letting Date	February 9, 2018	February 9, 2018							
9	Project Type	New Bridge	Safety							
10	Units	English 2000	English 2000	English 2000	English 2000	English 2000				
12	County	Van Buren	Van Buren							
13	Route	SR 30	SR 30							
14	Road Name									
17	Project Length	5.58 Miles	5.58 Miles							
18	Beginning Station									
19	Ending Station									
20	Beginning Log Mile	0.00	0.00							
21	Ending Log Mile	5.58	5.58							
22	North Coordinate									
23	East Coordinate									
24	Longitude	-85.253436	-85.263436							
25	Latitude	35.675467	35.675467							
27	Roadway Designer	Diane E Witt								
28	Roadway CE Manager 2	Robert Rodgers								
29	Date Turned In	11-11-17								
31	Bridge Required	No								
32	Retaining Wall Required?	No								
33	Signals Required?	No								
34	Is Chapter 86?	No								
35	Bridge Designer									
36	Bridge CE Manager									
38	Estimate Type	Preliminary Estimate								
39	Quantities Calculation Date									
40	Quantities Updated Date									

Continue File Diet Submit Admin

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Project Data

Estimated Roadway Quantities1 - Excel

File Home Insert Page Layout Formulas Data Review View Help ACROBAT Tell me what you want to do

Normal Page Break Preview Page Layout Custom Views Ruler Formula Bar Gridlines Headings Zoom 100% Zoom to Selection New Window Arrange All Freeze Panes Split Hide View Side by Side Synchronous Scrolling Switch Windows Macros

	A	B	C	D	E	F
1		Project No. 1 Data	Project No. 2 Data	Project No. 3 Data	Project No. 4 Data	Project No. 5 Data
2	State Construction Project Number	04002-8218-14	04003-3218-94			
3	Federal Project Number	STPIHSIP-30(73)	STPIHSIP-30(73)			
4	Non-Participating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Project Description	From Vanburen Co. Line to East of Bob Sapp Rd.	From Vanburen Co. Line to East of Bob Sapp Rd.			
6	PIN	000000.00	000000.00			
7	Letting Date	February 9, 2018	February 9, 2018			
9	Project Type	New Bridge	Safety			
10	Units	English 2000	English 2000	English 2000	English 2000	English 2000
12	County	Van Buren	Van Buren			
13	Route	SR 30	SR 30			
14	Road Name					
17	Project Length	5.58 Miles	5.58 Miles			
18	Beginning Station					
19	Ending Station					
20	Beginning Log Mile	0.00	0.00			
21	Ending Log Mile	5.58	5.58			
22	North Coordinate					
23	East Coordinate					
24	Longitude	-85.253436	-85.263436			
25	Latitude	35.675467	35.675467			
27	Roadway Designer	Diane Evitt				
28	Roadway CE Manager 2	Robert Rodgers				
29	Date Turned In	11-11-17				
31	Bridge Required	No				
32	Retaining Wall Required?	No				
33	Signals Required?	No				
34	Is Chapter 86?	No				
35	Bridge Designer					
36	Bridge CE Manager					
38	Estimate Type	Preliminary Estimate				
39	Quantities Calculation Date					
40	Quantities Updated Date					

**ROWS WITH RED DESCRIPTORS IN THE FIRST COLUMN ARE REQUIRED.**

**BUTTONS:**

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Continue File Diet Submit Admin

Project Data Rdw. Quantity Block 1 Rdw. Quantity Block 2 Footnotes Box Bridge Quantities Block Add Sheets

5. When you have filled in all the data for the Project Data sheet click on the Continue Button. You will notice the sheet tabs will appear at the bottom of the sheet.

6. Before you can fill in the Estimated Roadway Quantity Block(s) you must have quantities and they must be tabulated. All tabulated blocks are in this one file. To open a tabulated block sheet, click on the tab at the bottom named **Add Sheets**.

Estimated Roadway Quantities1 - Excel

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Normal Page Break Preview Page Layout Custom Views Ruler Formula Bar Gridlines Headings Zoom 100% Zoom to Selection New Window Arrange All Freeze Panes Hide Unhide View Side by Side Synchronous Scrolling Switch Windows Macros

	A	B	C	D	E	F
1		<b>Project No. 1 Data</b>	<b>Project No. 2 Data</b>	<b>Project No. 3 Data</b>	<b>Project No. 4 Data</b>	<b>Project No. 5 Data</b>
2	State Construction Project Number	04002-8218-14	04003-3218-94			
3	Federal Project Number	STPIHSIP-30(73)	STPIHSIP-30(73)			
4	Non-Participating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Project Description	From Vanburen Co. Line to East of Bob Sapp Rd.	From Vanburen Co. Line to East of Bob Sapp Rd.			
6	PIN	000000.00	000000.00			
7	Letting Date	February 9, 2018	February 9, 2018			
9	Project Type	New Bridge	Safety			
10	Units	English 2000	English 2000	English 2000	English 2000	English 2000
12	County	Van Buren	Van Buren			
13	Route	SR 30	SR 30			
14	Road Name					
17	Project Length	5.58 Miles	5.58 Miles			
18	Beginning Station					
19	Ending Station					
20	Beginning Log Mile	0.00	0.00			
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24	Longitude	-85.253436	-85.263436			
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27	Roadway Designer	Diane Evitt				
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29	Date Turned In	11-11-17				
31	Bridge Required	No				
32	Retaining Wall Required?	No				
33	Signals Required?	No				
34	Is Chapter 86?	No				
35	Bridge Designer					
36	Bridge CE Manager					
38	Estimate Type	Preliminary Estimate				
39	Quantities Calculation Date					
40	Quantities Updated Date					

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Continue File Diet Submit Admin

Project Data Rdwy. Quantity Block 1 Rdwy. Quantity Block 2 Footnotes Box Bridge Quantities Block Add Sheets

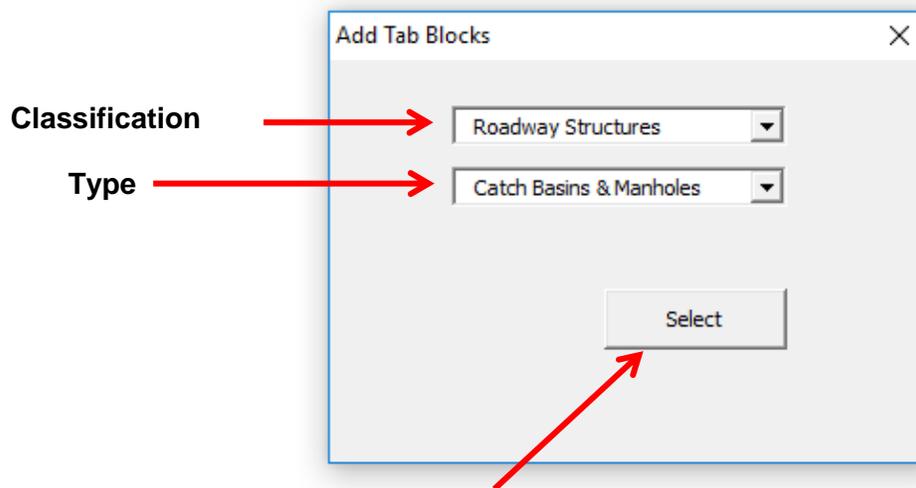
7. This will bring up a dialog box so the user can choose the **Classification** and **Type** of Tab Block need.  
NOTE: All approved Tabulation Blocks are in this file and are hidden. This will unhide them for you.  
For this example, we will open Catch Basins & Manholes Tabulation Block.

### Add Sheets

The "Add Tab Blocks" window should open automatically. If it does not, or if you close it and need to re-open it, use this button.

Each time you choose a tab block and press "select" a copy of the tab block is created. A blank worksheet has been added as the last option.

Please note: all Tab Blocks are to be placed at a scale of 18.



Make your selection and **Click** Select.

8. This will open a sheet for the chosen Tab Block as shown below.

**CATCH BASINS AND MANHOLES**

SHEET NO.	LOCATION	STATION	OFF SET (FT.)	DRAINAGE CODE	GRATE/ TOP ELEV.	INVERT ELEV.	DEPTH (FT.)	INSIDE DIM.	STANDARD DRAWING NO.	PAY ITEMS								
										TYPE 3 611-01.03 8'-12"	TYPE 12 611-12.01 0'-4"	TYPE 12 611-12.02 4'-8"	TYPE 12 611-12.03 8'-12"	TYPE 14 611-14.01 0'-4"	TYPE 14 611-14.02 4'-8"	TYPE 38 611-38.01 0'-4"	TYPE 38 611-38.02 4'-8"	TYPE 38 611-38.03 8'-12"
<b>TOTALS</b>																		

PLACED BY SCALE: 18.00

If more than one table of CATCH BASINS AND MANHOLES is needed, then make a copy of this table and edit the headers on row 2 as follows:  
[CATCH BASINS AND MANHOLES \(TABLE NO. 1\)](#)  
[CATCH BASINS AND MANHOLES \(TABLE NO. 2\) etc.](#)

Then the user can fill in the data that is needed and repeat step no. 7 as many times need to open the Tab Blocks that are required for project.

**NOTE:** If you need to remove a Tab Block, repeat step no. 7 and choose the same Tab Block again, and click on **Select**, and it will be hidden again.

- In all Tabulated Blocks, the Headers are locked and cannot be edited.
- Individual cells for things like item numbers and type can be edited, as required.
- The Tab Blocks are setup for a full sheet of data when placed in a MicroStation file.
- You may delete Rows as needed to adjust the size (length) of the block.
- Be careful not to delete the **TOTALS** Row so the sheet will tabulate your quantities.

9. The worksheets named: **Rdwy. Quantity Block 1**, **Rdwy. Quantity Block 2** and **Box Bridge Quantities Block**, contain several macros that are available to help fill out the estimated quantities block. On these worksheets, buttons are provided to access the macros with descriptions to the right as shown.





But it will not remove any information you will need to do manually.  
**Do not hide unrequired data! This will cause problems for other users.**

## Macro:

### Select Item Numbers From List

**Note:** There are two macros to place item numbers in the work sheets:

The first is the macro "Select Item Numbers From List" and it uses the **Items.dat** file.

The file **Items.dat** must be in the folder **C:\Users\Public\Office Standards\TDOT 2nd Sheets**.

The second is the macro "Import CSV File for Items."

These macros are used to fill in item numbers, descriptions and units.

They will direct the user to the website to download the **items.dat** file

if the file is not on the computer in the correct location or

if it is more than 30 days old.

1. Uses the **Items.dat** file located at **C:\Users\Public\Office Standards\TDOT 2nd Sheets** to find items, list them in an **Item Select** window and write the items selected to the worksheet.

The screenshot shows a Microsoft Excel window titled "Estimated Roadway Quantities.xlsm". The worksheet has a table with the following structure:

ESTIMATED ROADWAY QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
			04002-8218-14

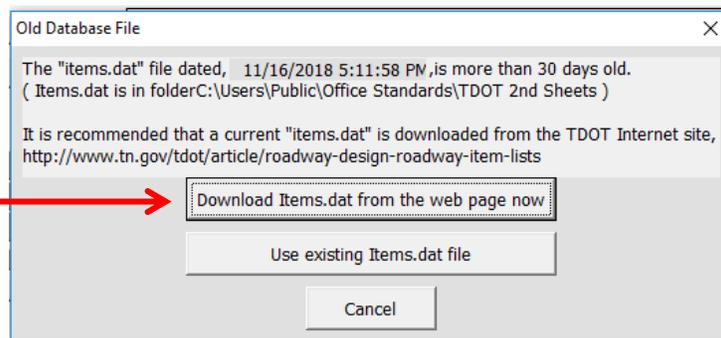
Below the table is a macro interface with three buttons: "Select Items Numbers From List", "Fill In Description and Unit", and "Download Items.dat from Web Page". A red arrow points to the "Select Items Numbers From List" button. To the right of the buttons are several text boxes providing instructions and warnings:

- "These programs can also be accessed under View > Macros on the ribbon in Office 2007"
- "For more detailed information on use of the Item Programs, see 2nd SheetsV8.pdf at [http](#)"
- "DO NOT CHANGE ANY COLUMN WIDTH OR ROW HEIGHT AND TEXT SIZE !!!"
- "For this program to run, the file A word (no asterisks) can be e"
- "The file 'Items.dat' must be in This program will fill in or upda"
- "The item numbers list can be v"

If the **items.dat** file is not on the computer in the correct location or if it is more than 30 days old you will see the following block and you will need to download the **items.dat** file. It is recommended to always update this file due to item numbers and descriptions changing so often due to standard drawings being revised.

2. Click on "Select Item Numbers From List"

This will open a dialog box named: "Old Database File" as shown.



3. Click on **"Download Items.dat from the web page now."**
4. The following web page will open. In the web page named; **"Roadway Item List"** scroll down the blue underlined text **"[Download Search Item lists](#)"** and **click** on it.

Roadway Design Division

Design Standards

Design CADD Files

Design Guidelines

Roadway Item Lists

Instructional Bulletins

Drainage Manual

Standard Drawings Library

Survey Standards

Pavement Design

Quality Assurance/Quality Control

Training

Value Engineering

Plan Sales

Staff

Additional Resources

Consultant Information

Related Divisions

Traffic Operations Division Resources

# Roadway Item Lists

Revised: December 4, 2017

To SEARCH the Item Lists online, click the link below.

[Search Item Lists](#)

To DOWNLOAD the Item Lists, follow the instructions below.

1. Click on file name you wish to download.
2. (A) For **Internet Explorer**:  
In the File Download window ...
  - Click "Save";
  - The file will save to your "Download" folder
    - C:\Users\jij###\Downloads(B) For **Mozilla Firefox**:  
In the dialog window ...
  - Select "Save File"...
  - The file will save to your "Download" folder
    - C:\Users\jij###\Downloads(C) For **Google Chrome**:  
The file automatically downloads to your download folder
  - C:\Users\jij###\Downloads
3. The PowerArchiver Self-Extractor window will appear.  
The PowerArchiver Self-Extractor window will be set to the default download location. If needed, click the "..." button to browse and reset.  
Click "Start".

Click on link below

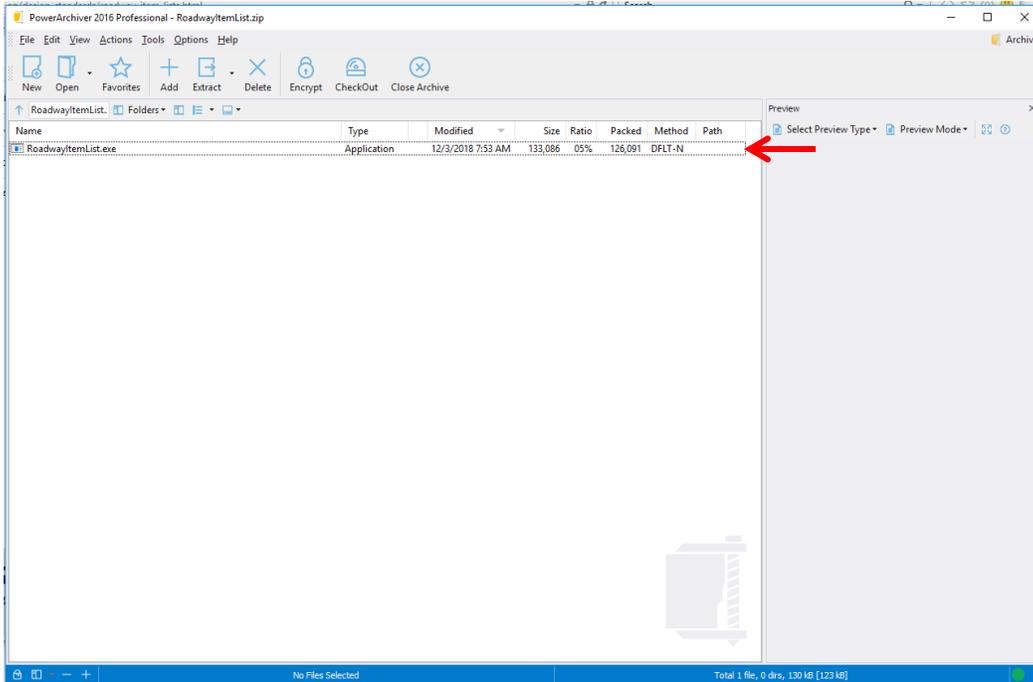
[Download Search Item Lists](#)

(Last update 12/04/2017 @ 11:42 AM)

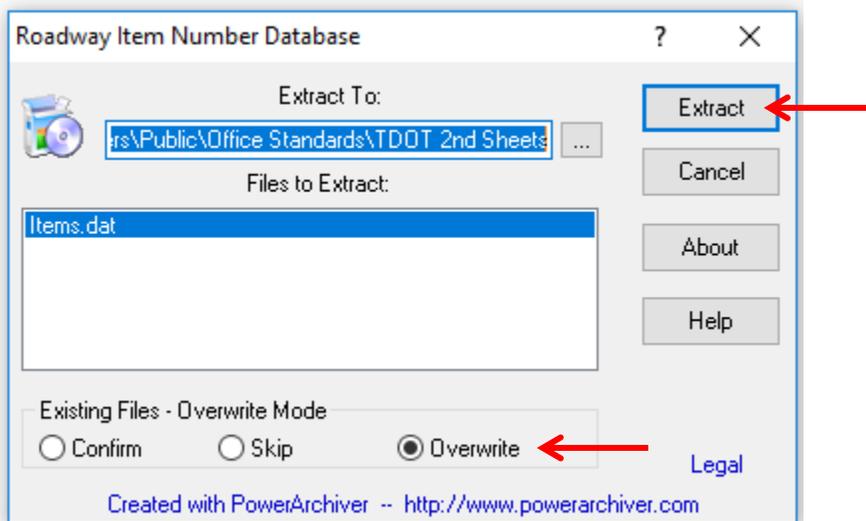
This Page Last Updated: December 11, 2017 at 12:58 PM



5. This will open Windows Explore to **RUN** an EXE file named "**RoadwayItemList.exe**", **Double Click** on it.



6. This will open a dialog box named: "**Roadway Item Number Database**" as shown.

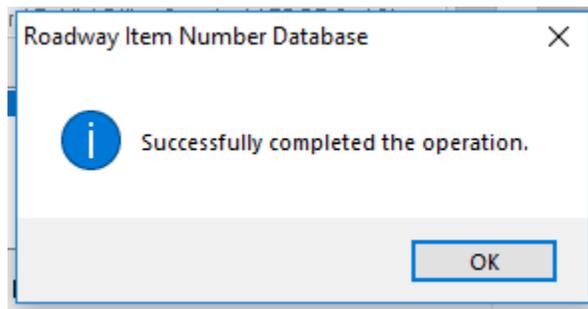


**Check** Overwrite files without prompting and then **Click** Extract

This will place the Items.dat file in the right place and overwrite the old file. You can X out of this box.

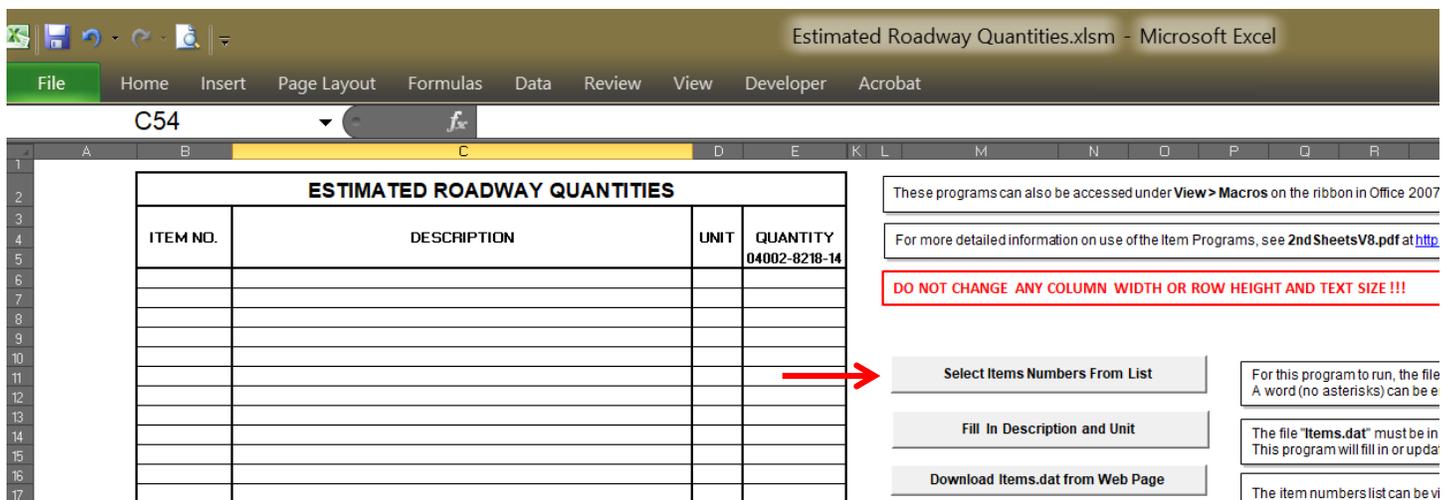
You should see the following dialog box if the macro works correctly.

Click OK

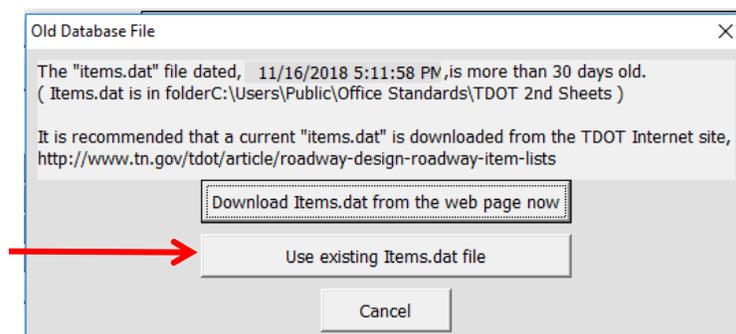


Now you are ready to search and import item numbers in the Estimated Roadway Quantities Block.

7. You will need to **Click** on **"Select Item Numbers From List"** Again to be able to select item numbers.



8. You will see the following Dialog box again but now **Click** on **"Use existing Items.dat file."**



This will bring up the Item Select Dialog Box.

These are the associated buttons:

**Search** – If the **Search for Items** field is left blank, the search button will open all of the items. Put in one or more numbers or letters to pull up all items containing those characters. Do **not** use any wild card characters. Use the **Shift** or **Ctrl** key to select or unselect multiple items.

**Import** – Will prompt for the Excel cell to start placing the selected item numbers, descriptions and units.

**Reset** – Clears the **Items Found** list box.

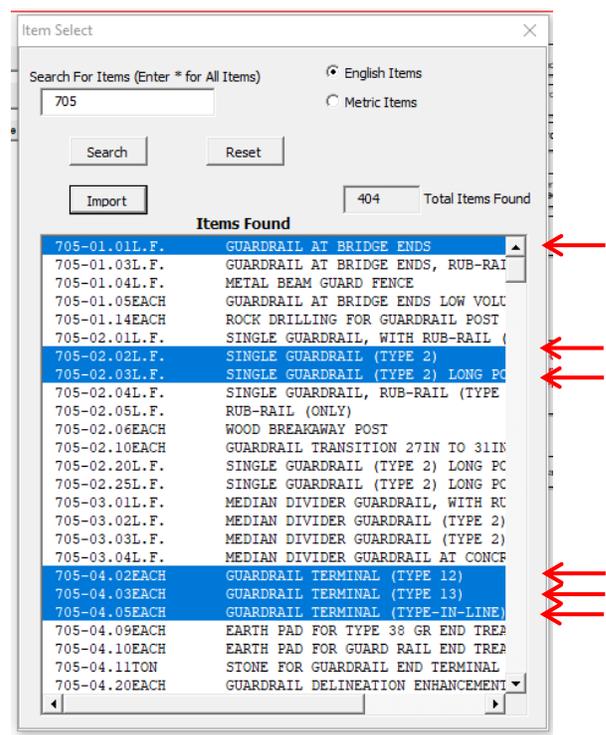
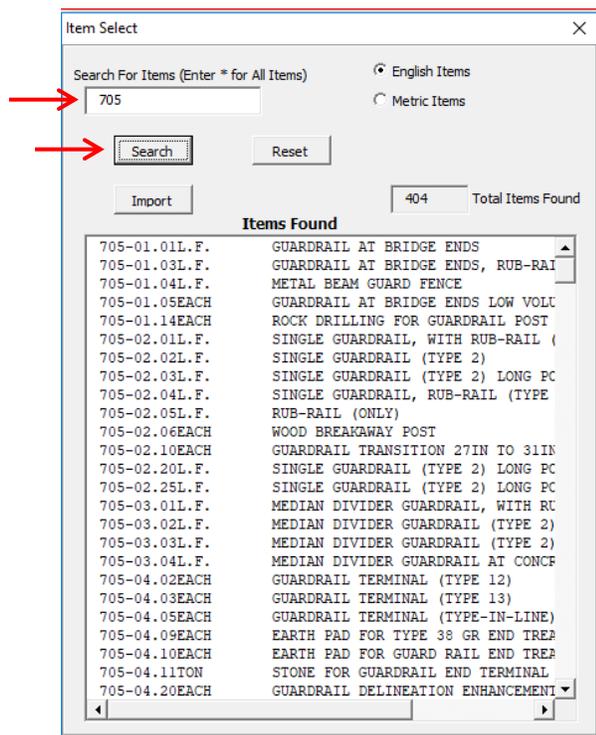
**Close** – Closes the **Item Select** dialog box.

## 9. The Item Select Dialog Box

For this example, we typed 705 in the "**Search For Items**" window and clicked on **Search**.

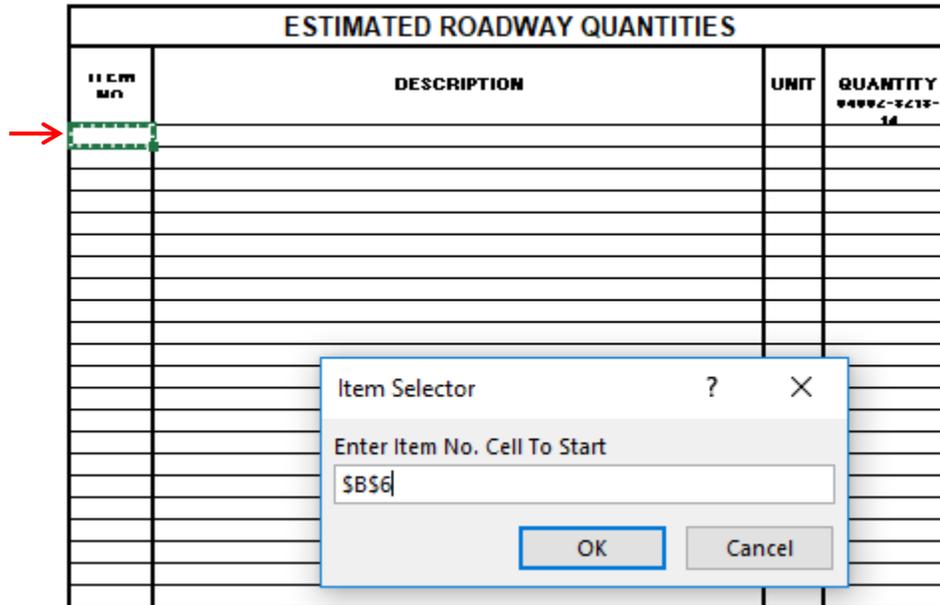
This will bring all items numbers that starts with 705.

Then we select the desired items.

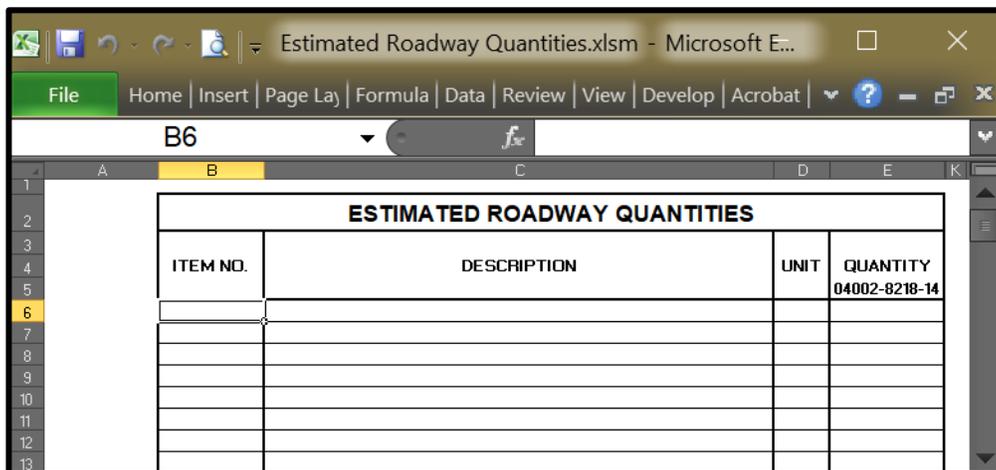


10. Click **Import**.

This will bring up a dialog box that will ask you for a starting location of the cells to placing the item data.



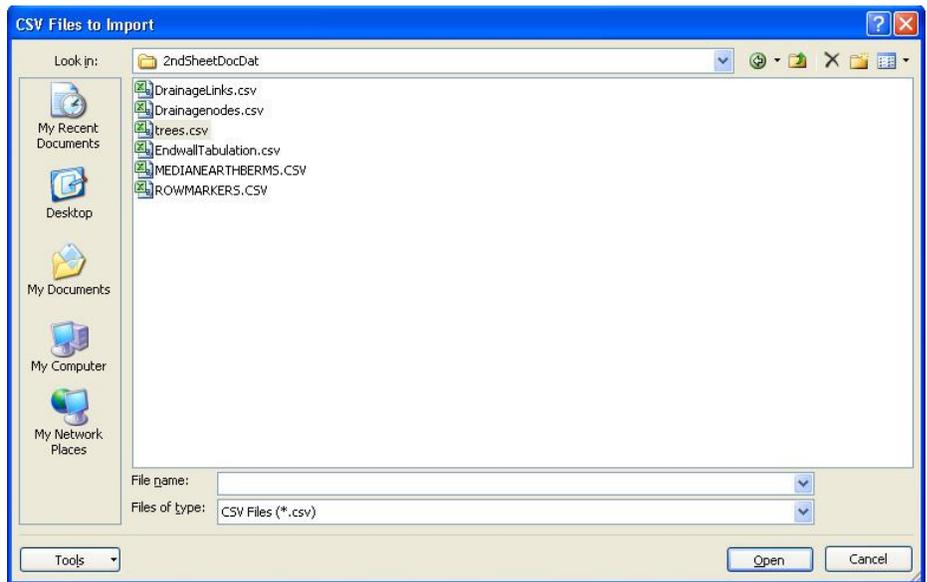
11. **Click** in the Estimated Roadway Quantities block cell where we want to start placing the item numbers we choose. In the example we selected B6.



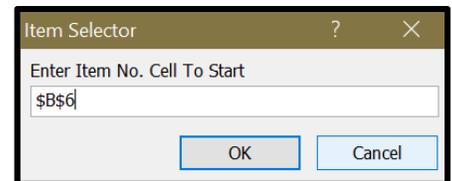


1. You are prompted for the location of CSV file to import.

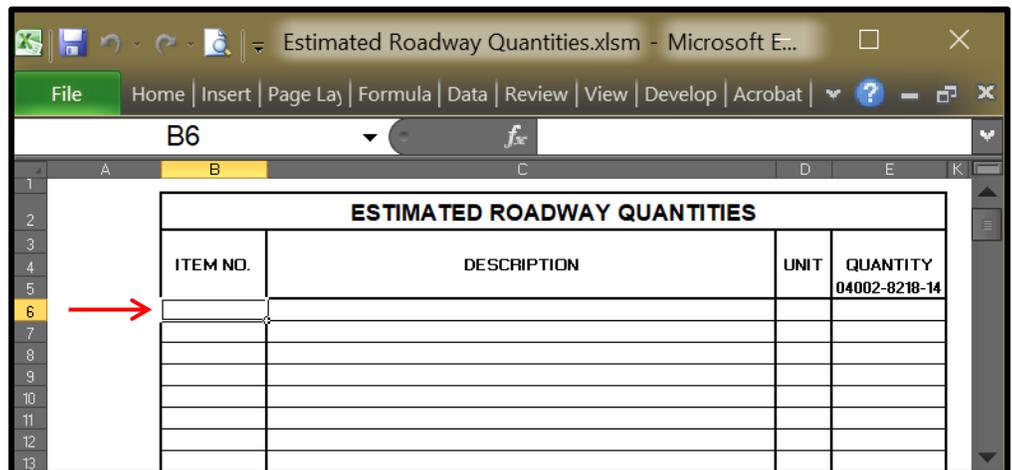
Find your file to import, click on it then click on open.



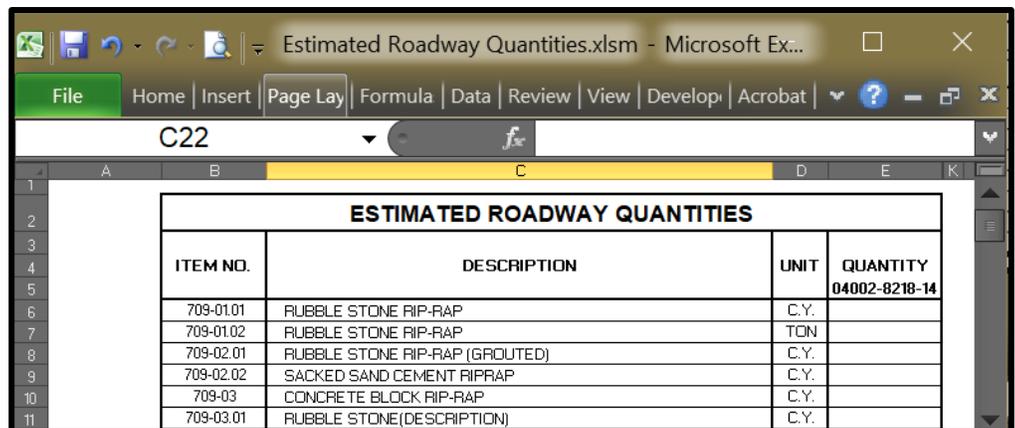
This will bring up a dialog box that will ask you for a starting location of the cells to place the item data.



2. Then **Click** in the Estimated Roadway Quantities block cell where we want to start placing the item data we choose. Then **Click OK**. In the example we selcted B6.



**The imported Item data**



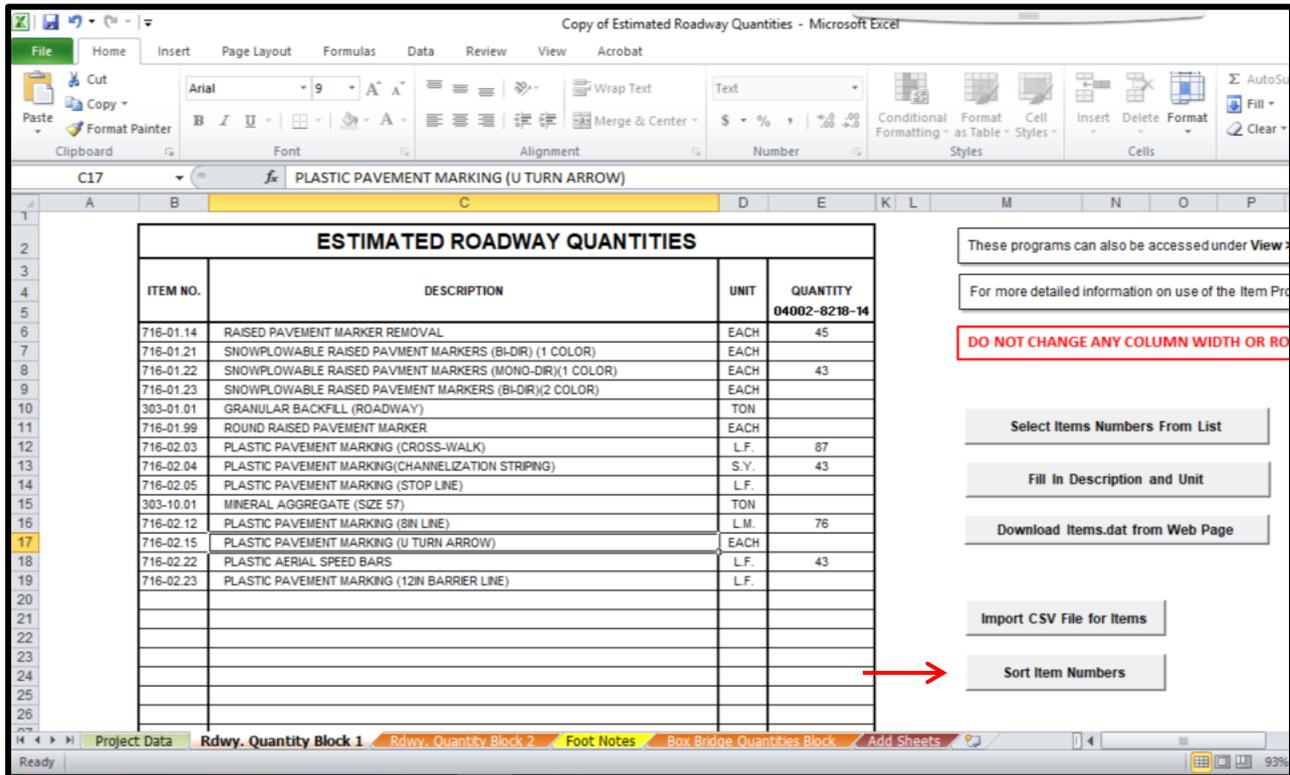
To import a CSV file **as written** for other tabulated quantity worksheets, see macro **Import CSV**.

**Macro:**

## Sort Item Numbers

The item numbers must be sorted in numerical order by the item number. This macro sorts the item numbers selected by the user and maintains the correct formatting. The macro prompts the user to select the items to be sorted by the cell range in **column B**. Notice in the figure below; the item numbers are out of order.

### 1. Click on "Sort Item Numbers."

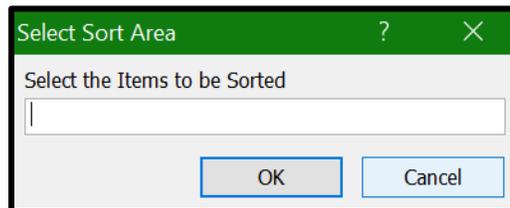


The screenshot shows a Microsoft Excel spreadsheet titled "Copy of Estimated Roadway Quantities". The spreadsheet contains a table with the following data:

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
716-01.14	RAISED PAVEMENT MARKER REMOVAL	EACH	45
716-01.21	SNOWPLOWABLE RAISED PAVMENT MARKERS (BI-DIR) (1 COLOR)	EACH	
716-01.22	SNOWPLOWABLE RAISED PAVMENT MARKERS (MONO-DIR)(1 COLOR)	EACH	43
716-01.23	SNOWPLOWABLE RAISED PAVEMENT MARKERS (BI-DIR)(2 COLOR)	EACH	
303-01.01	GRANULAR BACKFILL (ROADWAY)	TON	
716-01.99	ROUND RAISED PAVEMENT MARKER	EACH	
716-02.03	PLASTIC PAVEMENT MARKING (CROSS-WALK)	L.F.	87
716-02.04	PLASTIC PAVEMENT MARKING(CHANNELIZATION STRIPING)	S.Y.	43
716-02.05	PLASTIC PAVEMENT MARKING (STOP LINE)	L.F.	
303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	
716-02.12	PLASTIC PAVEMENT MARKING (8IN LINE)	L.M.	76
716-02.15	PLASTIC PAVEMENT MARKING (U TURN ARROW)	EACH	
716-02.22	PLASTIC AERIAL SPEED BARS	L.F.	43
716-02.23	PLASTIC PAVEMENT MARKING (12IN BARRIER LINE)	L.F.	

On the right side of the spreadsheet, there is a sidebar with several buttons and text boxes. A red arrow points to the "Sort Item Numbers" button. The sidebar also contains a red box with the text "DO NOT CHANGE ANY COLUMN WIDTH OR ROW HEIGHT".

This Brings up the dialog box to select the range for sorting.



The dialog box is titled "Select Sort Area" and has a question mark icon and a close button (X). It contains a text box with the prompt "Select the Items to be Sorted" and a text input field. At the bottom, there are "OK" and "Cancel" buttons.

2. **Select** the range to be sorted by highlighting the Estimated Roadway Quantities Block in **column B**. For this example we highlighted B6 thru B20 and it fills in the **Select Sort Area** dialog box.

The screenshot shows the Microsoft Excel interface with the 'Estimated Roadway Quantities.xlsx' file open. The spreadsheet displays a table with the following data:

	A	B	C	D	E	K	L	M	N	O	P
4		ITEM NO.	DESCRIPTION	UNIT	QUANTITY	For more detailed information on use of the Item Programs, s					
5					00000-0000-00	<b>DO NOT CHANGE ANY COLUMN WIDTH OR ROW HEIG</b>					
6		716-01.14	RAISED PAVEMENT MARKER REMOVAL	EACH		Select Items Numbers From List					
7		716-01.21	Snwplwble Pvmt Mirks (Bi-Dir)(1 Color)	EACH		Fill In Description and Unit					
8		716-01.22	Snwplwble Pvmt Mirks (Mono-Dir)(1 Color)	EACH		Download Items.dat from Web Page					
9		716-01.23	Snwplwble Pvmt Mirks (Bi-Dir)(2 Color)	EACH		Import CSV File for Items					
10		303-01.01	GRANULAR BACKFILL (ROADWAY)	TON		Sort Item Numbers					
11		716-01.99	ROUND RAISED PAVEMENT MARKER	EACH							
12		716-02.03	PLASTIC PAVEMENT MARKING (CROSS-WALK)	L.F.							
13		716-02.04	PLASTIC PAVEMENT MARKING (CHANNELIZATION STRIPING)	S.Y.							
14		716-02.05	PLASTIC PAVEMENT MARKING (STOP LINE)	L.F.							
15		303-10.01	MINERAL AGGREGATE (SIZE 57)	TON							
16		716-02.12	PLASTIC PAVEMENT MARKING (8IN LINE)	L.M.							
17		716-02.13	PLASTIC PAVEMENT MARKING (CROSSWALK)	S.F.							
18		716-02.15	PLASTIC PAVEMENT MARKING (U TURN ARROW)	EACH							
19		716-02.22	PLASTIC AERIAL SPEED BARS	L.F.							
20		716-02.23	PLASTIC PAVEMENT MARKING (12IN BARRIER LINE)	L.F.							
21											
22											
23											
24											
25											
26											
27											
28											

The 'Select Sort Area' dialog box is open, showing the selected range '\$B\$6:\$B\$20' in the text field. A red arrow points to the 'OK' button.

3. **Click OK**

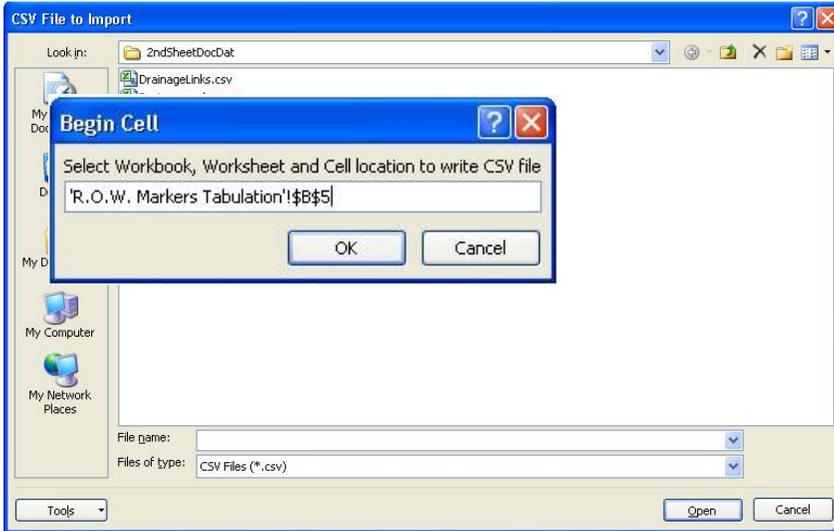
Notice the item numbers are now sorted.



**Macro:**

**Import CSV**

This macro brings in a CSV (comma separated values) file to the worksheet selected, starting at the cell selected. This is intended as a way to build tabulation blocks on other worksheets, but can be used to bring the CSV file in without having any processing done on the information to the Estimated Roadway Quantities Block. You are **First** prompted for the CSV file to import. For this example we did ROW Markers.



**Select** the worksheet & cell location.

Before Import

RIGHT OF WAY MARKERS				
SHEET NO.	QUANTITIES			TOTALS
	"A"	"B"	"C"	
<b>TOTALS</b>				

After Import

RIGHT OF WAY MARKERS				
SHEET NO.	QUANTITIES			TOTALS
	"A"	"B"	"C"	
3	2	3	1	6
4	1	1	3	5
5	2	2	1	5
<b>TOTALS</b>	5	6	5	16

## Auto-Build Tabulated Quantity Block Macro Access

These macros are provided as a way to access the macros in the Excel auto-build tabulated quantity block templates. When those templates are inserted as worksheet templates, their macros are not brought in. The macro buttons can be re-assigned to these macros to access the programs from the original template files.

BuildCatchBasinsBlock                      runcheckitemsCB

BuildGRBlock                                    runcheckitemsGR

BuildStormDrainagePipes                    runcheckitemsSS

See the section **Auto-Build Tabulated Quantity Blocks** for full descriptions of these macros.

## Alternate Pay Items

All alternate items **must** be placed after all of the other roadway items.

In **Column C** (the description column) on the line preceding the alternate items, enter the designation for the alternate as **ALTERNATE AA1, ALTERNATE AA2, ALTERNATE AA3**, etc.

AA1 will alternate with AA2 and AA3.

If there were another set of items to be alternated, they would be labeled **ALTERNATE AB1, ALTERNATE AB2, ALTERNATE AB3**, etc.

AB1 will alternate with AB2 and AB3.

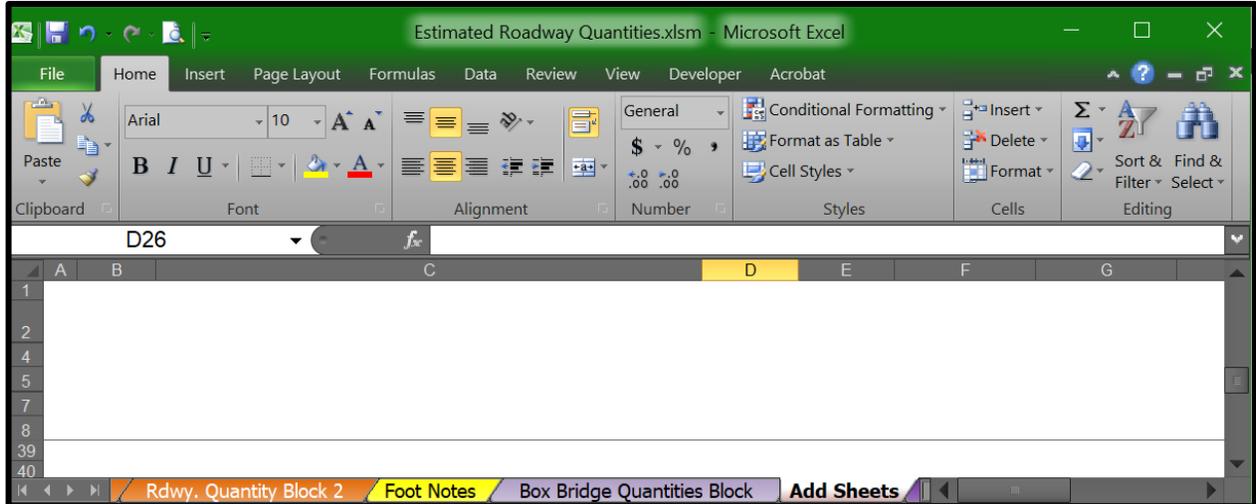
A third set of alternates would be **AC1, AC2, AC3**, etc.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
713-15	REMOVAL OF SIGNS, POSTS AND FOOTINGS	LS	1
713-17.02	INSTALL AUXILIARY SUPPORT FOR EXIT NUMBER PANEL	EACH	5
716-01.30	REMOVAL OF SNOWPLOWABLE REFLECTIVE MARKER	EACH	30
716-02.04	PLASTIC PAVEMENT MARKING(CHANNELIZATION STRIPING)	S.Y.	151
716-02.05	PLASTIC PAVEMENT MARKING (STOP LINE)	L.F.	10
716-02.06	PLASTIC PAVEMENT MARKING (TURN LANE ARROW)	EACH	2
716-02.11	PLASTIC PAVEMENT MARKING (6" DOTTED LINE)	L.F.	147
716-04.07	PLASTIC PAVEMENT MARKING (EXIT ONLY ARROW)	EACH	2
716-05.20	PAINTED PAVEMENT MARKING (6" LINE)	L.M.	0.56
716-08.01	REMOVAL OF PAVEMENT MARKING (LINE)	L.F.	30
716-08.06	REMOVAL OF PAVEMENT MARKING (TURN LANE ARROW)	EACH	2
717-01	MOBILIZATION	LS	1
Alternate AA1			
203-06	WATER	M.G.	1953
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	62742
307-02.01	ASPHALT CONCRETE MIX (PG70-22) (BPMB-HM) GRADING A	TON	9083
402-01	BITUMINOUS MATERIAL FOR PRIME COAT (PC)	TON	116
402-02	AGGREGATE FOR COVER MATERIAL (PC)	TON	461
Alternate AA2			
203-06	WATER	M.G.	1589
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	43906

## Additional Estimated Roadway Quantities Worksheets

To add an additional "Rdwy. Quantity Block #" Worksheet:

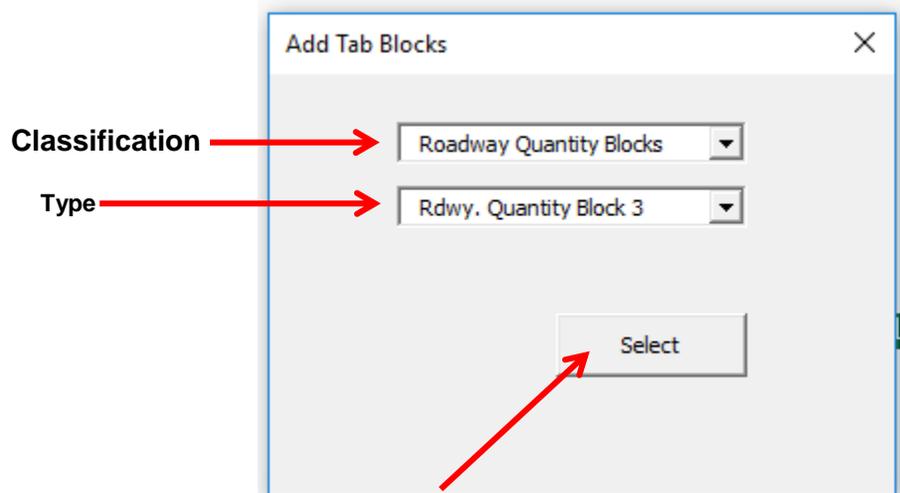
1. **Select** the worksheet tab named "Add Sheets."



This will bring up a dialog box so the user can choose the **Classification** and **Type** of Tab Block need.

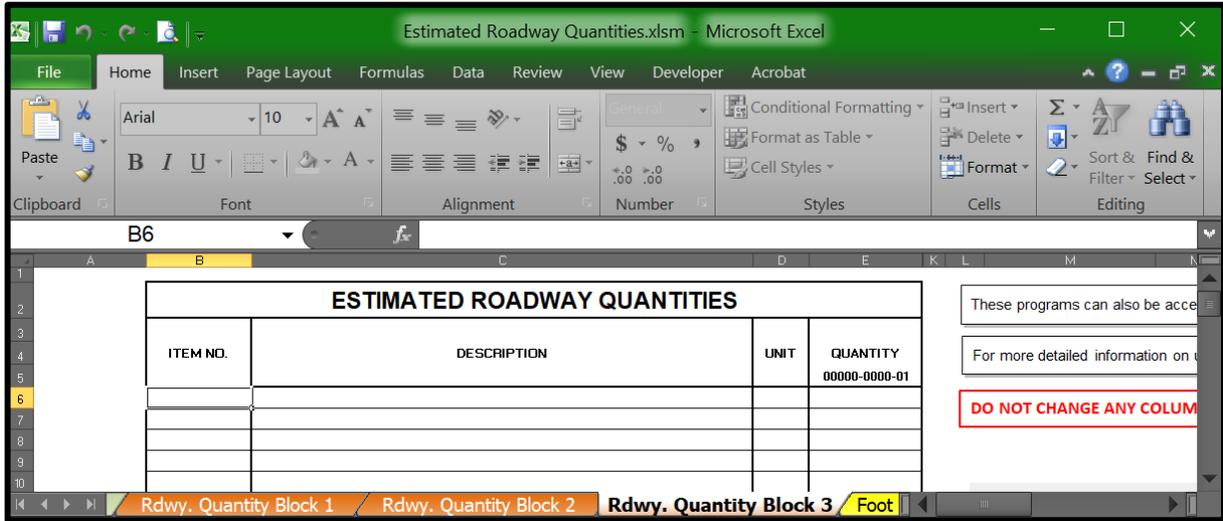
NOTE: All approved Tabulation Blocks are in this file and are hidden. This will unhide them for you.

For this example, we opened **Roadway Quantities Blocks & Rdwy. Quantity Block 3**.



Make your selection and **Click** Select

## Your New Worksheet



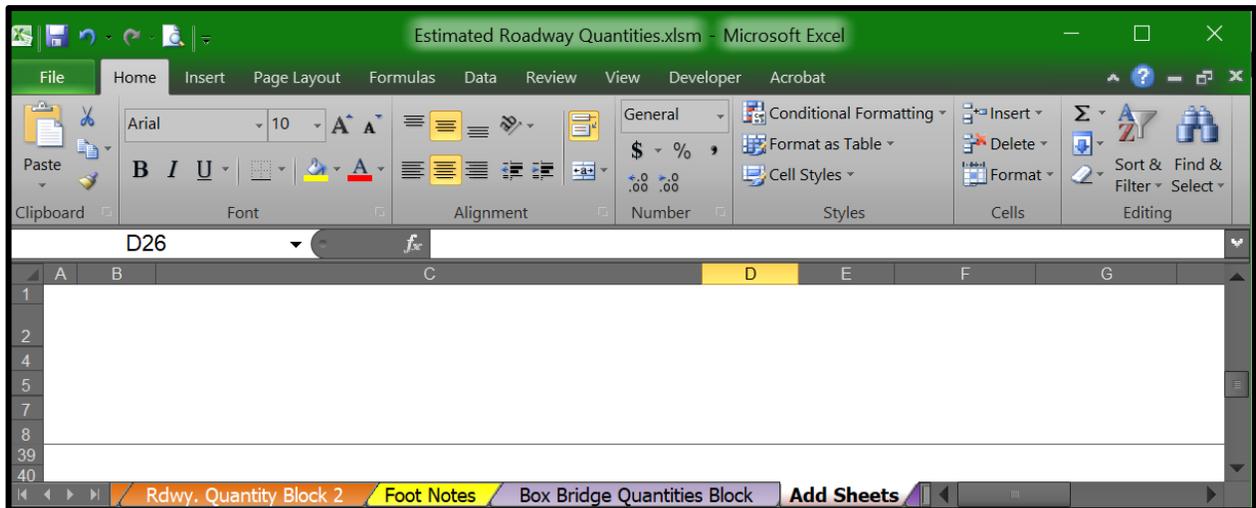
Note:

The **Project Data** worksheet **must** be the first worksheet in the file, the second set of worksheets are the **Estimated Roadway Quantities** worksheets with the name **Rdwy. Quantity Block #** (numbered 1 thru 6 if needed), the third set is the **Foot Notes** worksheet and the fourth set is the **Box Bridge Quantities** worksheet and the next set is all other tabulated worksheets need for the roadway project.

## Add Tabulated Quantity Blocks In The Estimate File

**Note:** All tabulated quantity sheets the TOTALS row of cells contain formulas to sum the contents of the columns or rows.

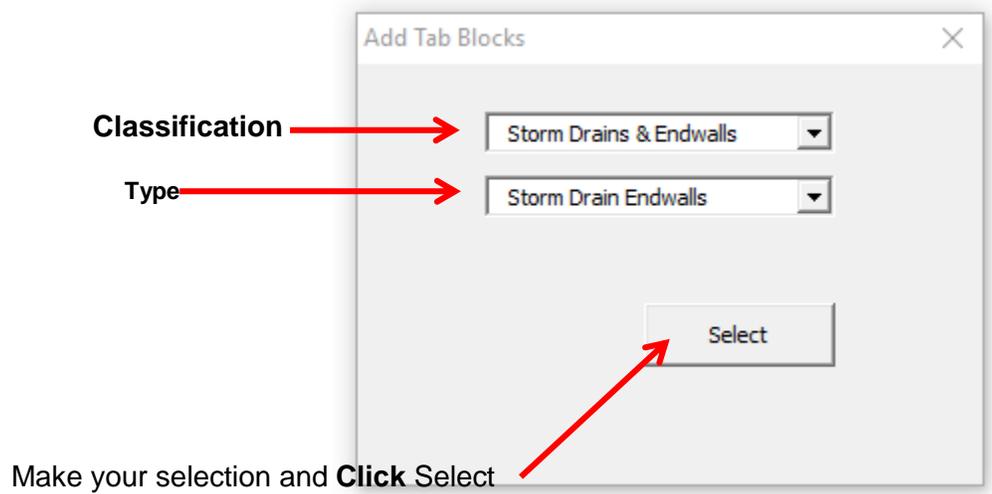
1. **Select** the worksheet tab named **"Add Sheets."**



This will bring up a dialog box so the user can choose the **Classification** and **Type** of Tab Block need.

NOTE: All approved Tabulation Blocks are in this file and are hidden. This will unhide them for you.

For this example, we opened **Storm Drains & Endwalls** & **Storm Drain Endwalls**.



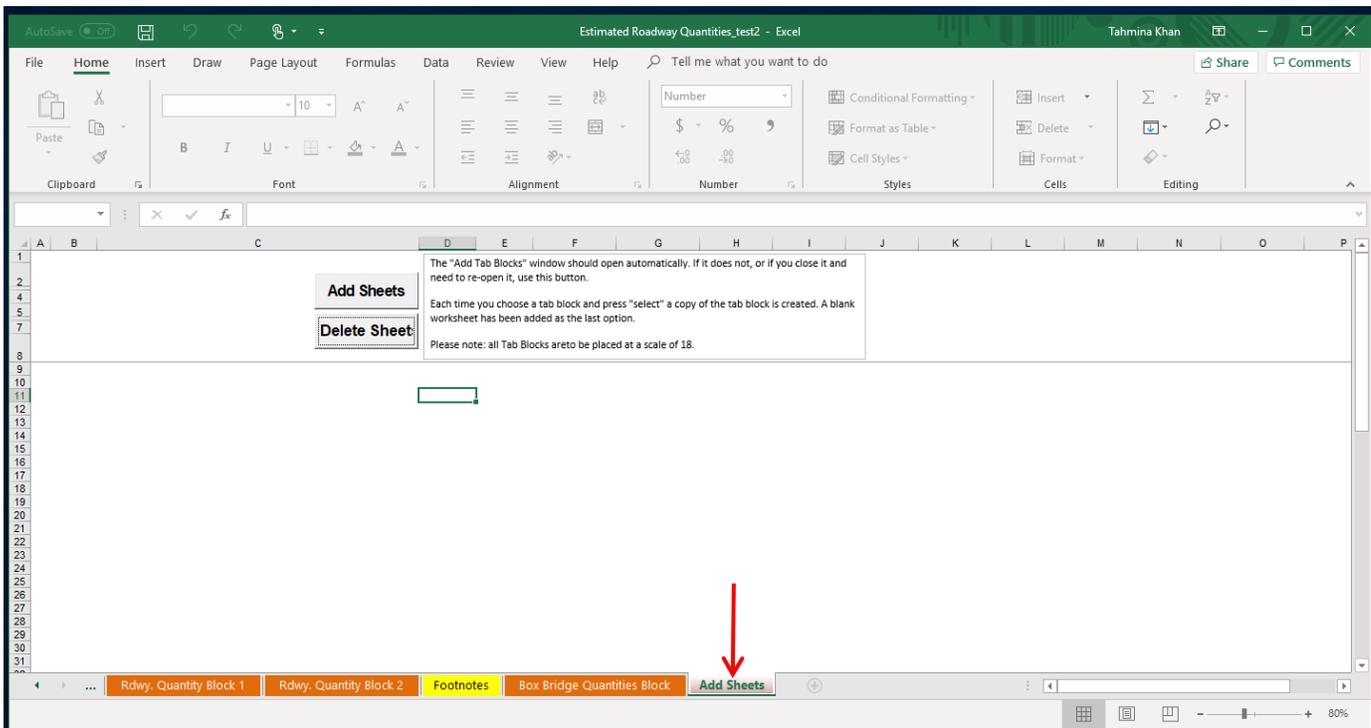


Note: The new worksheet selected may not be in the proper order. To change the order of the worksheets, select the worksheet tab, hold the left mouse button down and then drag and drop to the location wanted.

## Deleting Tabulated Quantity Blocks in The Estimate File

**Note:** To remove/delete a tabulated quantity sheets that you have opened just repeat the process for opening the sheet. That means add sheets first following the previous steps that are shown in the figures below.

### 1. Select the worksheet tab named "Add Sheets."



### 2. Click "Add Sheets" Tab. We opened Storm Drains & Endwalls & Storm Drain Endwalls.



The "Add Tab Blocks" window should open automatically. If it does not, or if you close it and need to re-open it, use this button.

Each time you choose a tab block and press "select" a copy of the tab block is created. A blank worksheet has been added as the last option.

Please note: all Tab Blocks are to be placed at a scale of 18.

**Classification Type**

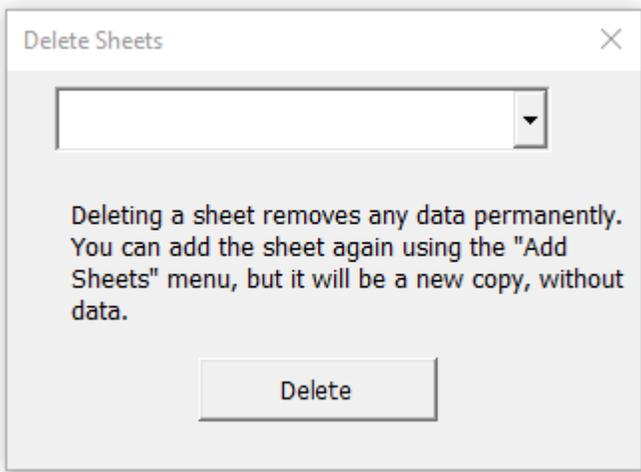
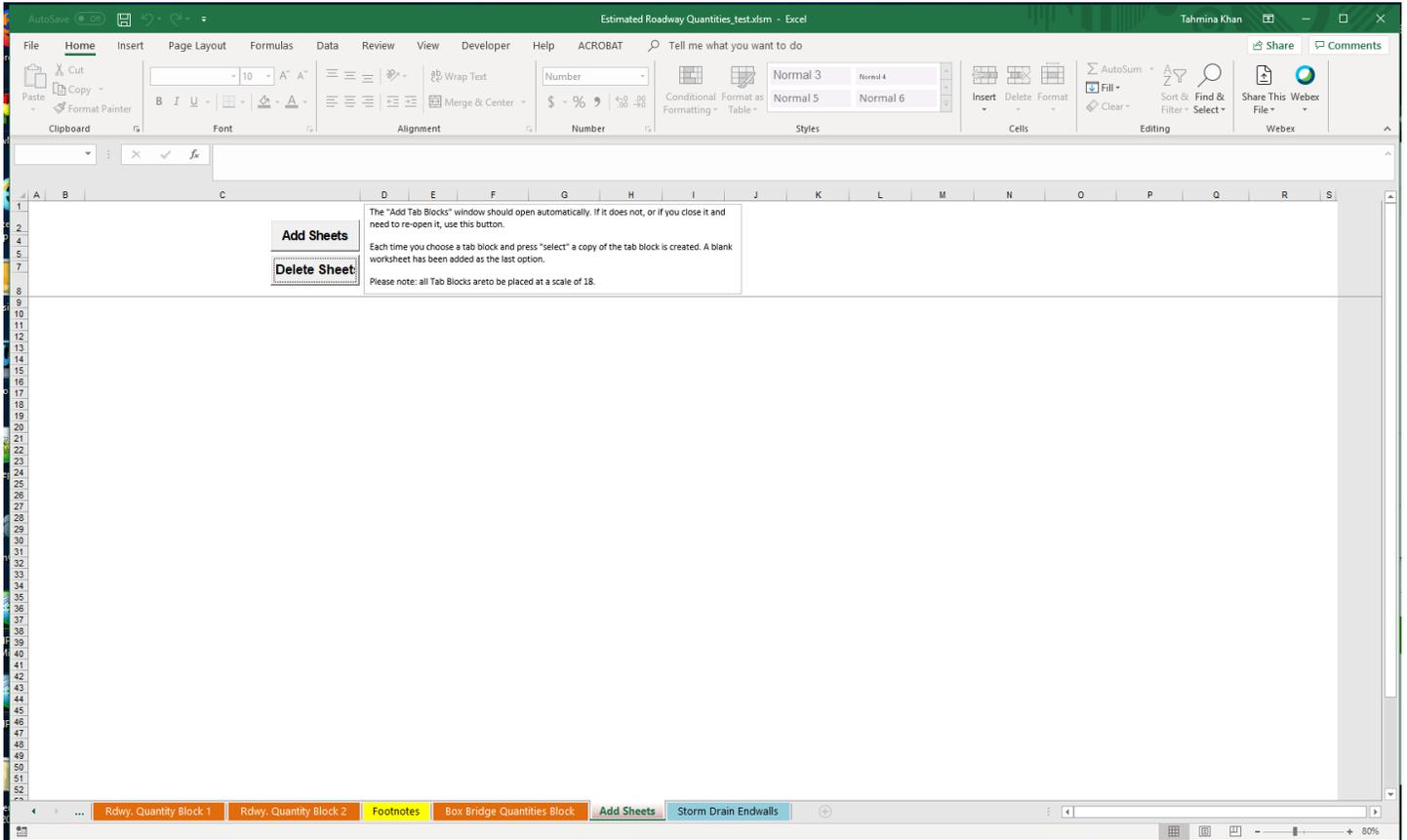
**Make your selection and Click Select**

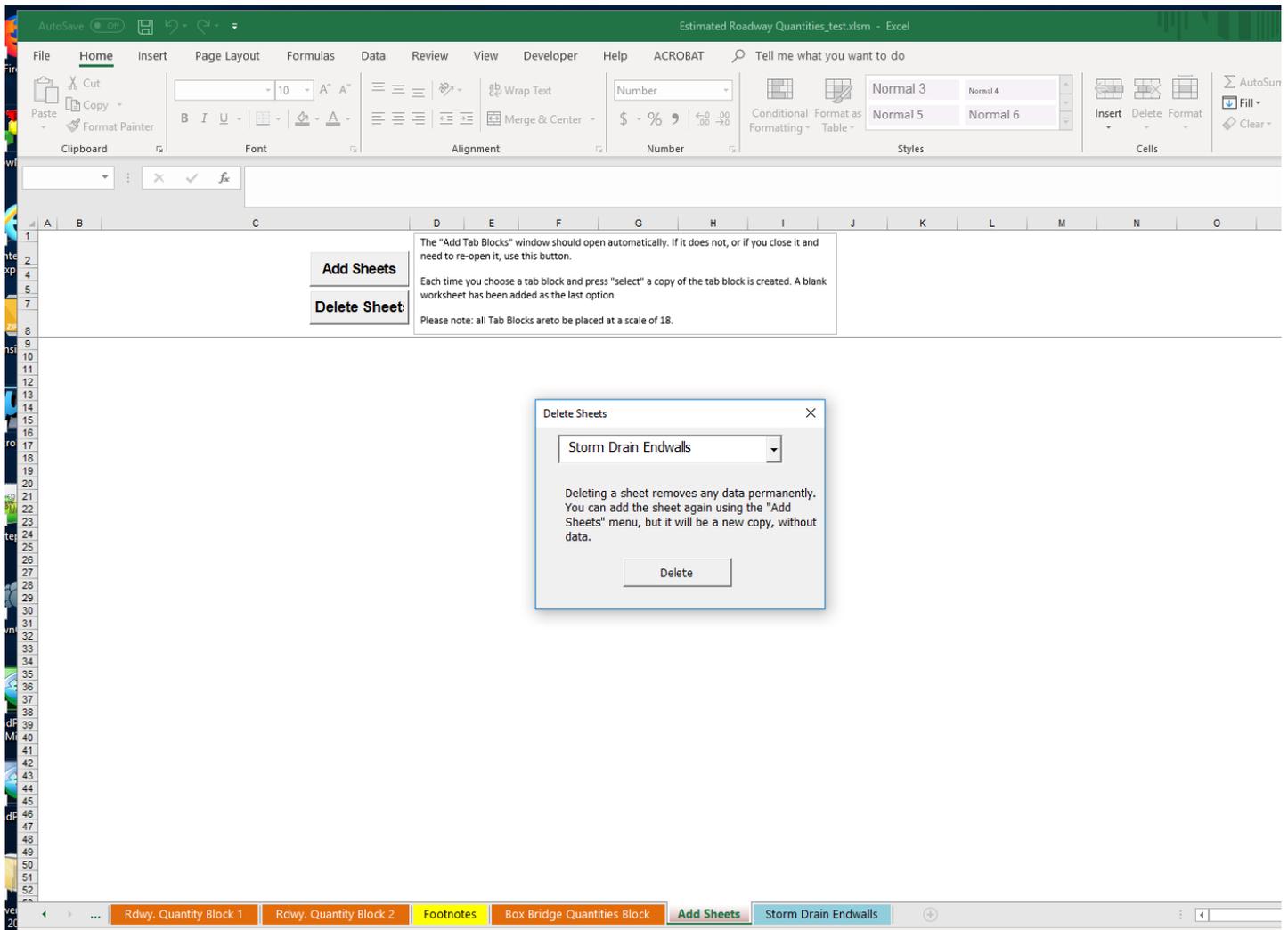
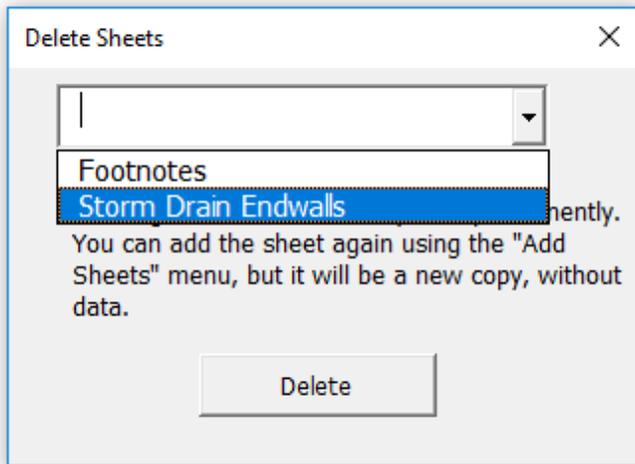
Worksheet tabs at the bottom: Rdwy. Quantity Block 1, Rdwy. Quantity Block 2, Footnotes, Box Bridge Quantities Block, Add Sheets

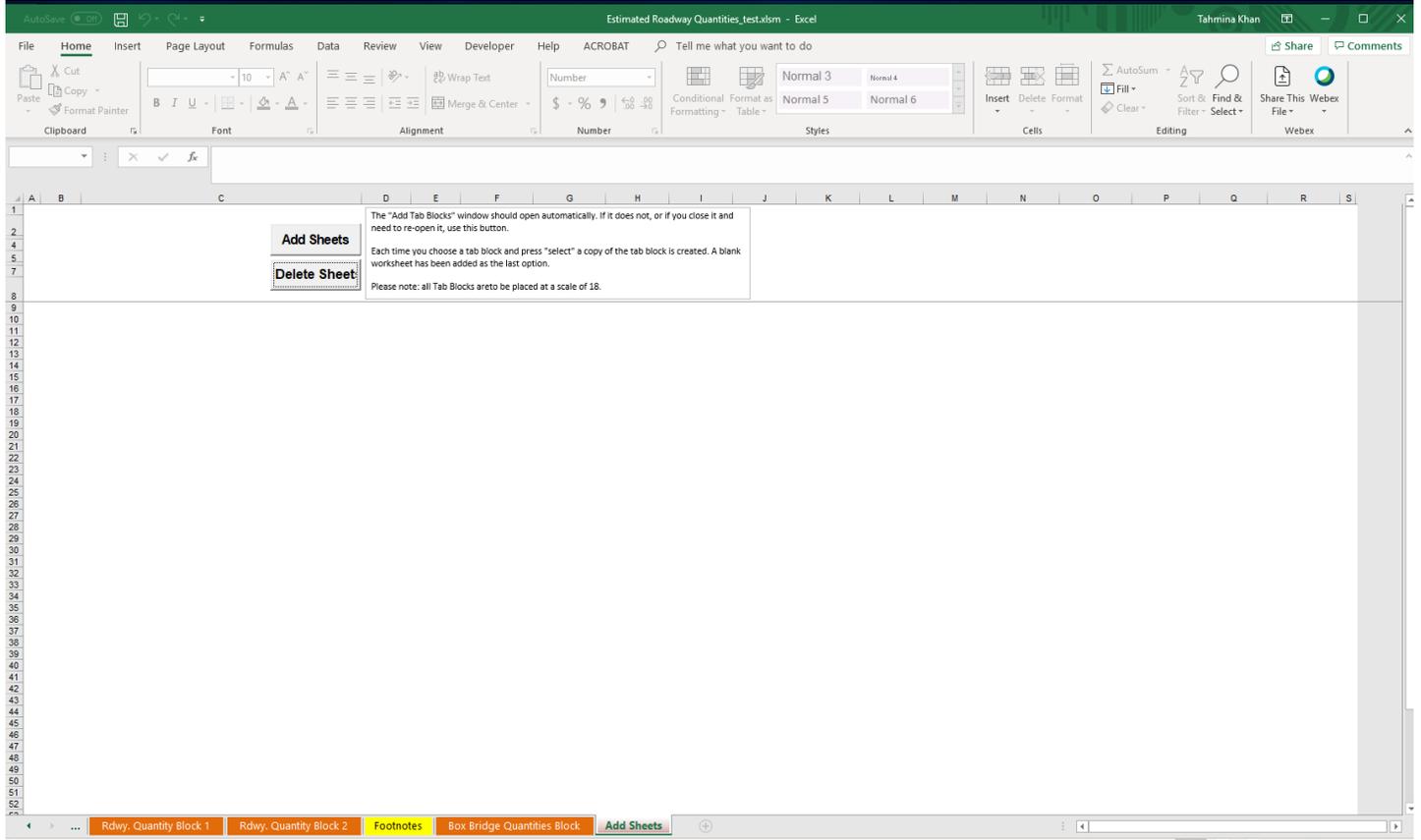
3. Your New Worksheet will be generated



Now to delete worksheet "Storm Drain Endwalls", we select "Delete Sheets" which will show a message to remind that it removes any data permanently. We choose the desired worksheet from drop down menu and click "Delete" (shown in following figures







## Standard Tabulated Quantity Template Formatting

1. All fonts are **Arial**.
2. Body text is size **9 or 10**, not bold.
3. The main heading text is size **16, bold**.
4. The sub heading text is size **9 or 10, bold**.
5. The **TOTALS** text is size **12, bold**.
6. The body horizontal lines are light weight.
7. The heading borders and vertical lines are medium weight.
8. All justification for cells is preset.

## Auto-Build Tabulated Quantity Blocks

The following Excel templates include macros that automatically build the tabulation blocks using data files generated by GEOPAK.

Guardrail Tab Builder.xltn

Storm Drainage Pipe Tab Builder.xltn

Storm Drainage Structure Tab Builder.xltn

### Guardrail Tab Builder

The macro in template **Guardrail Tab Builder.xltn** (can be found at C: > Users > Public > Office Standards > TDOT English Tab Quantities) builds the guardrail block from a guardrail output file created with GEOPAK's Design & Computation Manager Pay Items. The macro also runs the **Check Items Numbers** program to verify all item numbers that are used. See the **GEOPAK Road Course Guide, D&C Manager – Additional Functions, Section 20c. Quantities** for directions to create the guardrail output file using the **Comp Book** format. An example is shown below.

GR.txt - Notepad  
Date: 4/24/2008 9:25:49 AM  
Page No. 1

Pay Item No. 705-02.02  
Unit:LF File Name: D:\Projects\GUARDRAIL\sr95.txt  
Pay Item Name: Proposed single guardrail line type 2

Baseline	[B E G I N]		[E N D]		[O R I G I N A L]			[F I N A L]			Over/ Under Run	Remarks
	Station	Offset	Station	Offset	Gross Length	Deduct	Net Length	Gross Length	Deduct	Net Length		
SR95	289+00.57	-53.73	292+13.07	-53.73	312.50	0.00	312.50					
SR95	329+89.70	91.59	340+04.41	92.93	973.10	0.00	973.10					
SR95	299+85.43	42.97	321+05.25	38.02	2140.20	0.00	2140.20					
Totals		Unit:LF			3425.80	0.00	3425.80					
Baseline	[B E G I N]		[E N D]		[O R I G I N A L]			[F I N A L]			Over/ Under Run	Remarks
	Station	Offset	Station	Offset	Gross Length	Deduct	Net Length	Gross Length	Deduct	Net Length		
SR95	289+00.57	-53.73	289+00.57	-53.73	1.00	0.00	1.00					
SR95	299+85.43	42.97	299+85.43	42.97	1.00	0.00	1.00					
Page Totals		Unit:EA			2.00	0.00	2.00					
Totals		Unit:EA			2.00	0.00	2.00					

**Do not use the Append function** in GEOPAK to add guardrail quantities from multiple roadways together in the same file. Instead, generate each roadway guardrail tabulation in separate files and then combine using any text editor. **The Append function uses line feeds that are not recognized by Excel and will cause this program to fail.**

In Excel, click the **Build Guardrail Block** button and the user is given a file open dialog to **Select GEOPAK Guardrail Pay Items Output File**. Once the file is identified, the macro reads the data and builds the block.

Build  
Guardrail  
Block

This program builds the guardrail block from a guardrail output file created with Geopak D&C Manager Pay Items. See Geopak the GEOPAK Road Course Guide, D&C Manager - Additional Functions - Section 20c. Quantities for directions to create the guardrail output file. This program also runs the Check Items Numbers program to verify all item numbers which are used.

**WARNING:**

Do not use the Append function in Geopak to add guardrail quantities from multiple roadways together in the same file. Instead, generate each roadway guardrail tabulation in separate files and then combine using any text editor. The Append function uses line feeds that are not

Check  
Item  
Numbers

Use this program only if a new items.dat file was downloaded after running the 'Build Guardrail Block' program. This program checks to see if the guardrail pay items listed in the guardrail block are in the current item numbers file, items.dat. This items.dat file is downloaded from the internet to C:\Program Files\Microsoft Office\Templates\dot 2nd Sheets for use in

If Insert is used to add this file as a worksheet in the Estimated Roadway Quantities file then it will be necessary to re-assign the macros for the buttons. Select a location away from the button, right click over the button and choose the Assign Macro option. From the macro list, pick BuildGRBlock for the top button & click OK to finish. Assign runcheckitemsGR to the bottom button.

PROPOSED GUARDRAIL										
SHEET NO.	LOCATION	SIDE		STATION		BRIDGE END GUARDRAIL	SINGLE TYPE 2 GUARDRAIL	TYPE 13 TERMINAL	TYPE 38 TERMINAL	REMARKS
		LT	RT	FROM	TO	705-01.01 (L.F.)	705-02.02 (L.F.)	705-04.03 (EACH)	705-04.07 (EACH)	
	SR95	53.73		289+00.57	292+13.07		312.50			
	SR95	53.73		289+00.57	289+00.57			1		
	SR95	53.73		292+13.07	292+63.07				1	
	SR95		42.97	299+85.43	321+05.25		2140.20			
	SR95		42.97	299+85.43	299+85.43			1		
	SR95		92.59	329+39.70	329+89.70				1	
	SR95	94.29		329+58.90	330+08.90				1	
	SR95		91.59	329+89.70	340+04.41		973.10			
	WESTOVER		20.00	25+86.99	28+75.34		288.35			
	WESTOVER	20.00		28+73.35	29+00.24	26.90				
	WESTOVER		20.00	28+75.34	29+25.34				1	
	WESTOVER	20.00		29+00.24	29+50.24				1	
<b>TOTALS</b>						<b>26.90</b>	<b>3714.15</b>	<b>2</b>	<b>5</b>	

Different roadways are sorted alphabetically based on the roadway chain name from the output file.

If **Insert** is used to add this file as a worksheet in the Estimated Roadway Quantities file then it will be necessary to re-assign the macros for the buttons. Select a location away from the macro button, right click over the button and choose the **Assign Macro** option. From the macro list, pick **BuildGRBlock** for the top button & click **OK** to finish. Assign **runcheckitemsGR** to the bottom button. If you do not see these macros listed in your estimated roadway quantities file, then you will have to either set it up in a file by itself or update your estimated roadway quantities Excel file to the latest version of that file which includes these macros.

## Storm Drainage Pipe Tab Builder

The macro in template **Storm Drainage Pipe Tab Builder.xltm** builds the storm drainage pipe tabulation block from the drainage report file created with **GEOPAK Drainage** using the drainage report format file **TDOTlinksFULL.drf**. The macro also runs the **Check Items Numbers** program to verify all item numbers which are used.

In Excel, click the **Build Storm Drainage Pipe Block** button to activate the file open dialog to **Select Storm Drainage Link Report File**. Once the file is identified, the macro reads the data and builds the block.

<b>Build Storm Drainage Pipe Block</b>	This program builds the storm drainage pipe block from a drainage report file created with Geopak Drainage using the drainage report format file TDOTlinksFULL.drf. This program also runs the Check Items Numbers program to verify all item numbers which are used.	If Insert is used to add this file as a worksheet in the Estimated Roadway Quantities file then it will be necessary to re-assign the macros for the buttons. Select a location away from the button, right click over the button and choose the Assign Macro option. From the macro list, pick BuildStormDrainagePipes for the top button & click OK to finish. Assign runcheckitemsSS to the bottom button.
<b>Check Item Numbers</b>	Use this program only if a new 'Items.dat' file was downloaded after running the 'Build Storm Drainage Pipe Block' program. This program checks to see if the storm drainage pipe pay items listed are in the current item numbers file. The 'Items.dat' file is downloaded from the internet to 'C:\Program Files\Microsoft Office\Templates\TDOT 2nd Sheets' for use in estimated quantities tabulation.	

STORM DRAINAGE PIPES									
SHEET NO.	FROM		TO		%	RCP CLASS III			
	CODE	OUTLET ELEV.	CODE	INLET ELEV.		607-03.02	607-05.02	607-07.02	607-08.02
						18" (L.F.)	24" (L.F.)	36" (L.F.)	42" (L.F.)
	CB-1	442.23	CB-2	441.54	0.50			139	
	CB-3	442.89	CB-2	442.71	0.50	37			
	CB-16	444.88	CB-15	444.59	0.50	58			
	CB-15	444.42	MH-1	444.03	0.50	79			
	CB-17	440.98	MH-1	438.51	4.00	62			
	MH-1	438.30	CB-2	434.99	5.00	66			
	CB-2	433.20	CB-4	432.56	0.50			128	
	CB-5	445.82	CB-4	445.23	2.37	25			
	CB-4	432.27	CB-6	431.12	0.50			230	
	CB-6	426.31	CB-7	424.04	1.00			228	
	CB-7	421.54	CB-8	420.21	1.00			133	
	CB-9	424.63	CB-8	421.71	6.00	49			
	CB-8	419.60	CB-11	418.09	1.00			152	
	CB-11	417.31	CB-10	416.83	2.00			24	
	CB-10	416.33	CB-13	416.21	0.50				24
	CB-12	421.60	CB-13	419.00	11.00	24			
	CB-13	416.00	MH-3	415.48	0.50				103
	CB-14	418.46	MH-3	418.18	0.50	56			
	MH-3	415.27	EW-1	413.96	0.50				264
	CB-18	439.08	MH-2	438.06	5.05	20			
	MH-2	437.94	CB-19	427.91	7.62	132			
	CB-20	429.65	CB-19	427.91	5.00	35			
	CB-19	427.74	CB-21	424.03	1.76	211			
	CB-21	423.86	CB-22	420.67	6.06	53			
	CB-24	421.71	CB-23	421.38	2.00	17			
	CB-23	421.05	CB-22	420.67	2.42	16			
	CB-22	420.34	CB-25	419.99	0.77	45			
	CB-25	419.43	CB-26	419.23	0.50		39		
	CB-26	418.96	MH-4	417.97	0.50		198		
	MH-4	417.76	EW-2	416.82	0.50		188		
<b>TOTALS</b>						<b>982</b>	<b>425</b>	<b>1033</b>	<b>390</b>

If **Insert** is used to add this file as a worksheet in the Estimated Roadway Quantities file, then it will be necessary to re-assign the macros for the buttons. Select a location away from the macro button, right click over the button and choose the **Assign Macro** option. From the macro list, pick **BuildStormDrainagePipes** for the top button & click **OK** to finish. Assign **runcheckitemsSS** to the bottom button. If you do not see these macros listed in your estimated roadway quantities file, then you will have to either set it up in a file by itself or update your estimated roadway quantities Excel file to the latest version of that file which includes these macros.

## Storm Drainage Structures Tab Builder

The macro in template **Storm Drainage Structure Tab Builder.xltm** builds the storm drainage catch basins, junction boxes and manholes tabulation block from the drainage report file created with **GEOPAK Drainage** using the drainage report format file **TDOTnodesFULL.drf**. The macro also runs the **Check Items Numbers** program to verify all item numbers that are used.

In Excel, click the **Build Catch Basins and Manholes Block** button and the user is given a file open dialog to **Select Storm Drainage Node Report File**. Once the file is identified, the macro reads the data and builds the block.

<b>Build Catch Basins and</b>	This program builds the catch basins, junction boxes and manholes block from the drainage report file created with Geopak Drainage using the drainage report format file TDOTnodesFULL.drf. This program also runs the Check Item Numbers program to verify all item numbers which are used.	If Insert is used to add this file as a worksheet in the Estimated Roadway Quantities file then it will be necessary to re-assign the macros for the buttons. Select a location away from the button, right click over the button and choose the Assign Macro option. From the macro list, pick BuildCatchBasinsBlock for the top button & click OK to finish. Assign runcheckitemsCB to the bottom button.
<b>Check Item Numbers</b>	Use this program only if a new Items.drf file was downloaded after running the 'Build Catch Basins and Manholes Block' program. This program checks to see if the storm drainage structure.ply items listed are in the current item numbers file. The 'Items.drf' file is downloaded from the Internet to 'C:\Program Files\Microsoft Office\Templates\TDOT' and Sheets for use in estimated quantities tabulation.	

CATCH BASINS AND MANHOLES															REMARKS		
SHEET NO.	LOCATION	STATION	OFFSET (FT.)	DRAINAGE CODE	GRADE TO ELEV.	STRUCTURE TYPE	INSIDE DIMENSIO	DEPTH (FT.)	STANDARD DRAWING	TYPE 3	TYPE 3	TYPE 12	TYPE 12	TYPE 14	TYPE 42	REMARKS	
										M.H. 611-01.04	M.H. 611-01.05	C.B. 611-12.01	C.B. 611-12.02	C.B. 611-12.03	C.B. 611-14.04		C.B. 611-42.01
	CPDRW9	0+56.13	-115	CB-24	428.13	#14	8X8	6.42									
	CPDRW9	0+60.37	115	CB-23	428.24	#14	8X8	7.19									
	MAINLINE	15+05.10	-81.1	CB-1	457.55	#14	8X8	15.32						1			
	MAINLINE	15+68.36	34	CB-15	456.17	#12	4X3	11.75				1					
	MAINLINE	15+68.36	36.74	CB-16	448.55	#42	4X4	3.67							1		
	MAINLINE	16+45.00	-34	CB-2	454.85	#12	7X7	21.65									
	MAINLINE	16+45.00	-76.75	CB-3	446.56	#42	4X4	3.67							1		
	MAINLINE	16+50.00	37.5	MH-1	456.86	MH	5X5	18.55		1							
	MAINLINE	16+50.00	87.02	CB-17	444.65	#42	4X4	3.67							1		
	MAINLINE	17+86.12	-34	CB-4	452.38	#12	7X7	20.71									
	MAINLINE	17+86.12	-84.34	CB-5	449.49	#42	4X4	3.67							1		
	MAINLINE	20+34.72	-34	CB-6	445.5	#12	7X7	19.19									
	MAINLINE	24+09.03	-34	CB-8	429.09	#12	4X4	9.48			1						
	MAINLINE	24+09.03	-87.36	CB-3	438.52	#42	4X4	13.88									
	MAINLINE	24+82.58	34	CB-21	427.7	#12	4X3	3.84			1						
	MAINLINE	25+41.30	34	CB-22	427.09	#14	8X8	6.75									
	MAINLINE	25+64.65	-34	CB-11	426.37	#12	4X4	3.66				1					
	MAINLINE	25+94.65	-34	CB-10	426.31	#14	8X8	10.58									
	MAINLINE	25+94.65	34	CB-25	426.31	#14	8X8	7.42									
	MAINLINE	26+09.75	-58.08	CB-12	427.84	#42	4X4	6.24								1	
	MAINLINE	26+24.65	-34	CB-13	426.36	#12	5X5	10.36					1				
	MAINLINE	26+41.65	34	CB-26	427.05	#14	8X8	8.03									
	MAINLINE	27+32.81	-34	MH-3	428.78	MH	5X5	13.5		1							
	MAINLINE	28+46.23	34	MH-4	429.43	MH	5X5	11.67									
	STOBEND	10+34.36	28.47	CB-14	425.84	#42	4X4	7.38								1	
<b>TOTALS</b>										<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>4</b>	<b>2</b>

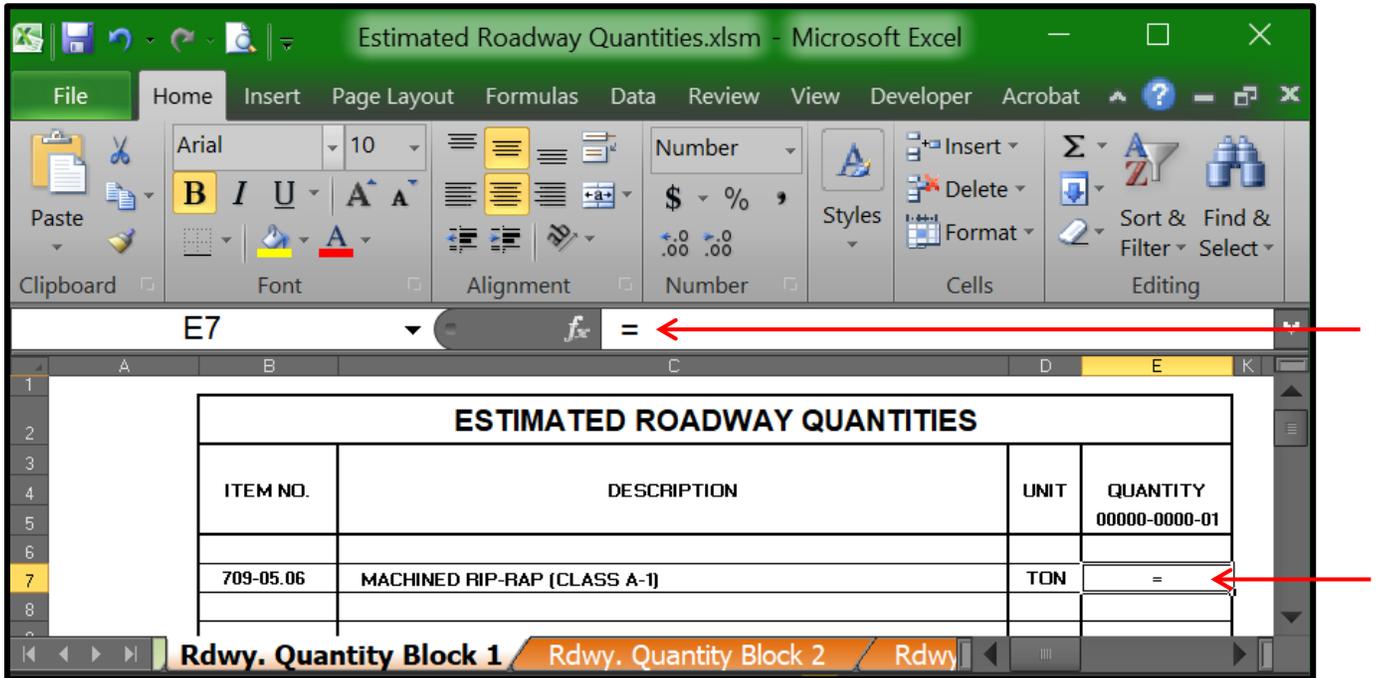
If **Insert** is used to add this file as a worksheet in the Estimated Roadway Quantities file then it will be necessary to re-assign the macros for the buttons. Select a location away from the button, right click over the button and choose the **Assign Macro** option. From the macro list, pick **BuildCatchBasinsBlock** for the top button & click **OK** to finish. Assign **runcheckitemsCB** to the bottom button. If you do not see these macros listed in your estimated roadway quantities file, then you will have to either set it up in a file by itself or update your estimated roadway quantities Excel file to the latest version of that file which includes these macros.

# Link Tabulated Quantity Blocks to Estimated Roadway Quantities Worksheet

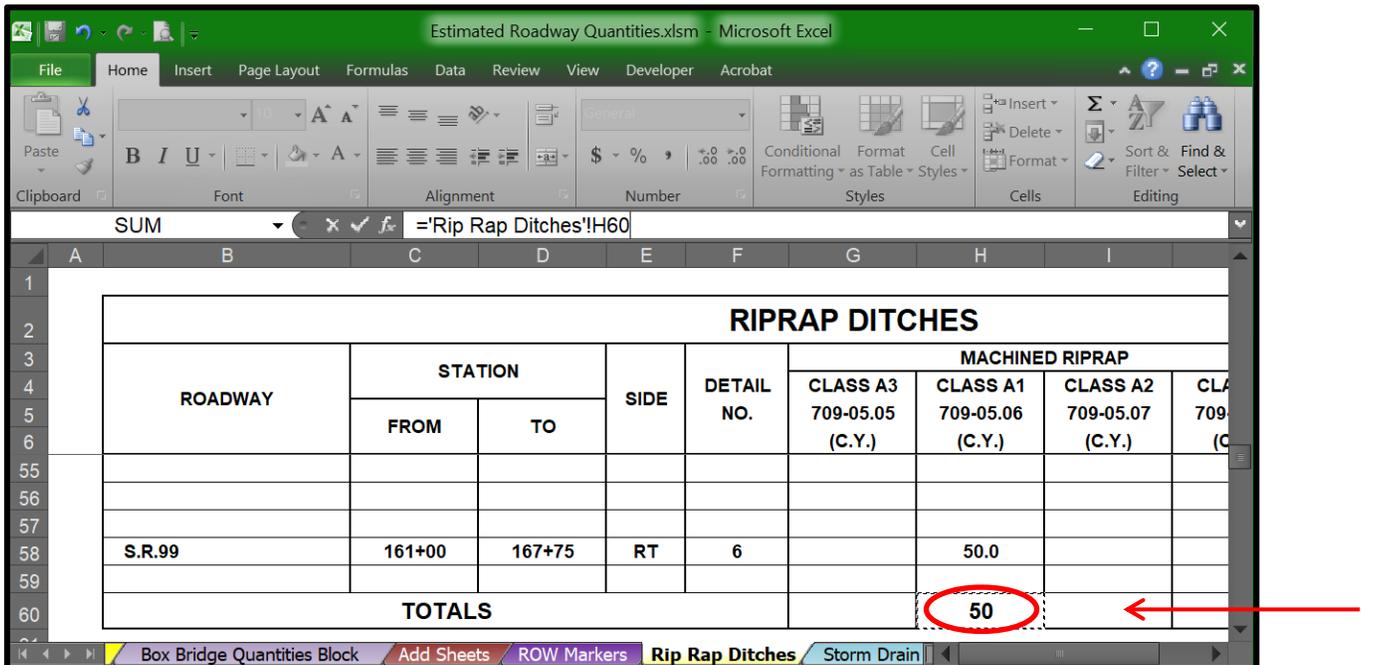
To link cells from tabulated quantity block worksheets to the estimated roadway quantities worksheet:

1. Select the cell where the linked value **will be displayed**. Enter the equal sign, =

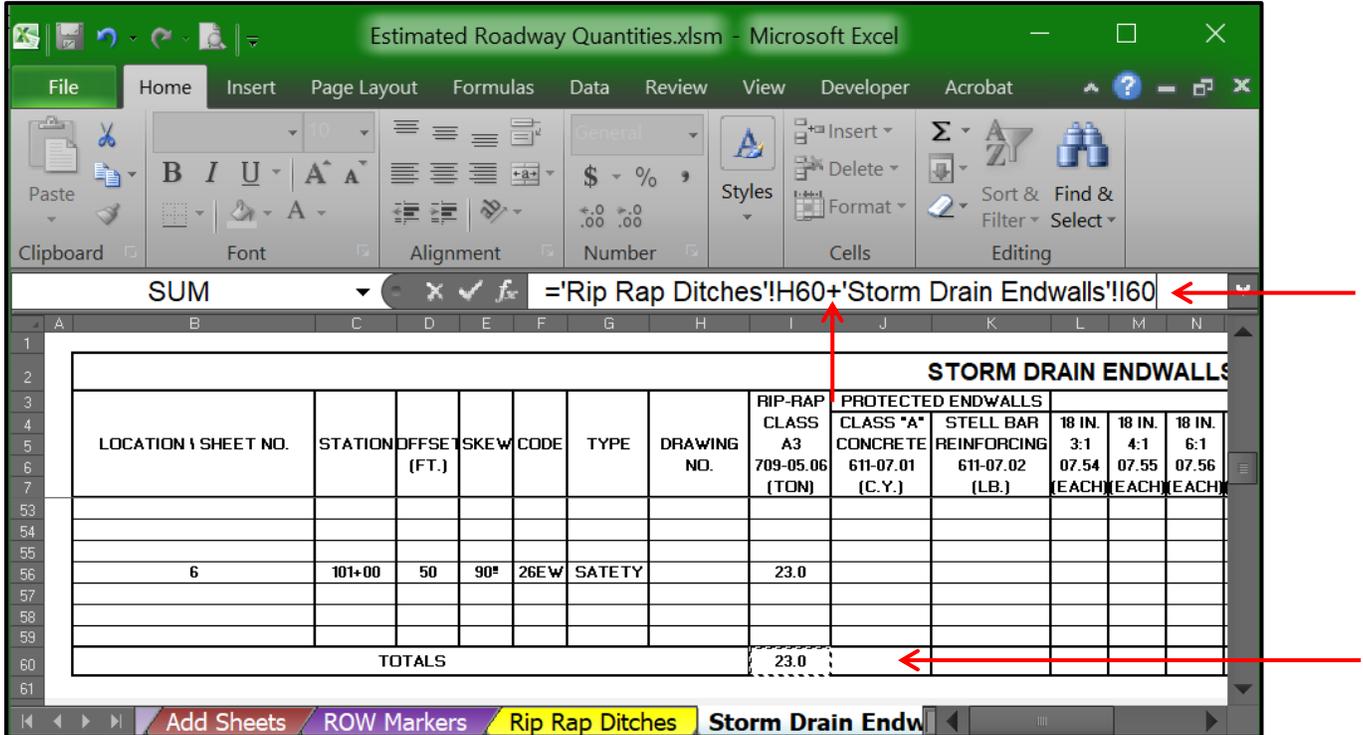
For this example, we will link item no. 709-05.06, MACHINED RIP-RAP (CLASS A-1).



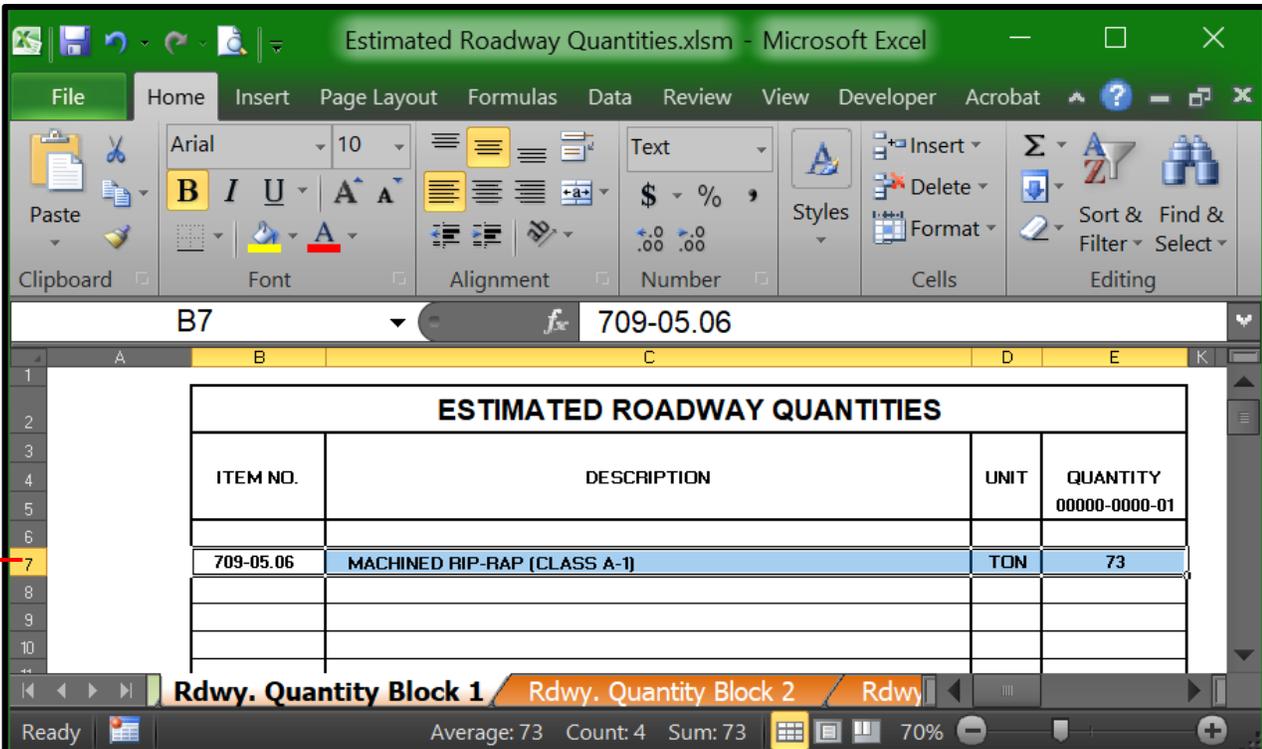
2. Click to the worksheet and cell to be linked.



- Then add an **+** in the **Formula Bar** (if you are going to link another tabulation block) and **click** on the second worksheet and cell to be linked.



- When the correct worksheet name and cell address are entered into the **Formula Bar** entry window, **click** on the check mark, **✓** on the **Formula Bar** and the total quantity will be linked as shown.



**Note: Do not** have quantities linked to values in separate workbooks.

The Estimating and Bid Analysis Office will not accept files with links to separate Excel files.

## MicroStation 2D Files for Word and Excel

Have a 2d design file ready with a sheet border placed in it or open the plans sheet MicroStation DGN file. As with most design files for T.D.O.T. projects, the design file should be created from the T.D.O.T. Roadway Design Division **Seed2d.dgn** seed file, which is part of the T.D.O.T. Roadway Design Division standard CADD files downloads.

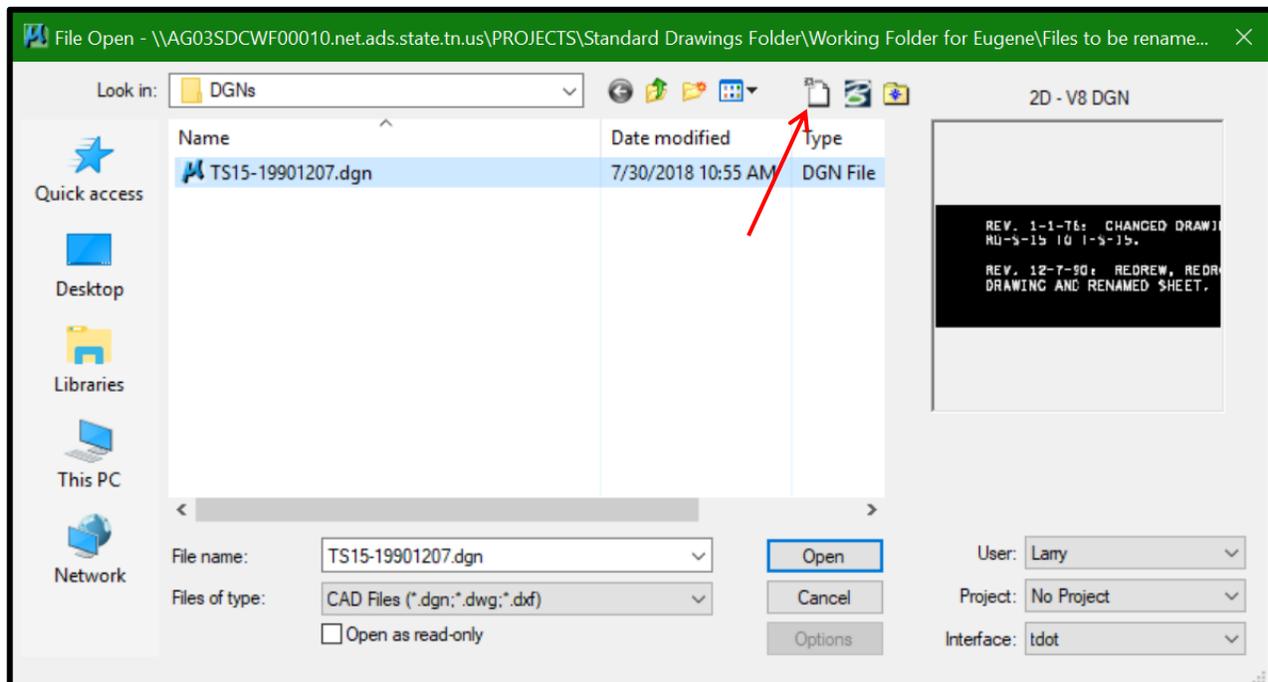
Name the MicroStation DGN sheet file according to [CADDV8.pdf](#), Section **Roadway Design DGN Project Filenames; Standard Sheet File Types**: for all sheet files **Use .SHT** extension. For example, use the name **002A.sht** for the first **ESTIMATED ROADWAY QUANTITIES** MicroStation sheet file and the second **002A1.sht** etc. **Tabulated Block** sheets use the name **002B.sht, 002B1.sht, 002B2.sht**, etc. For the complete INDEX of all sheets see the [Roadway Design Guidelines](#).

There are several reasons why the MicroStation DGN sheet files need to be named according to the **Standard Sheet File** naming requirements. One, the project will be very easy to plot using InterPlot Organizer where the sheets will automatically be in order. Two, the names of the sheet files must be the same as the sheet number so that when the sheet is published on FileNet, other divisions, such as Right-of-Way and Construction, can easily find and use the files produced by the Design Division.

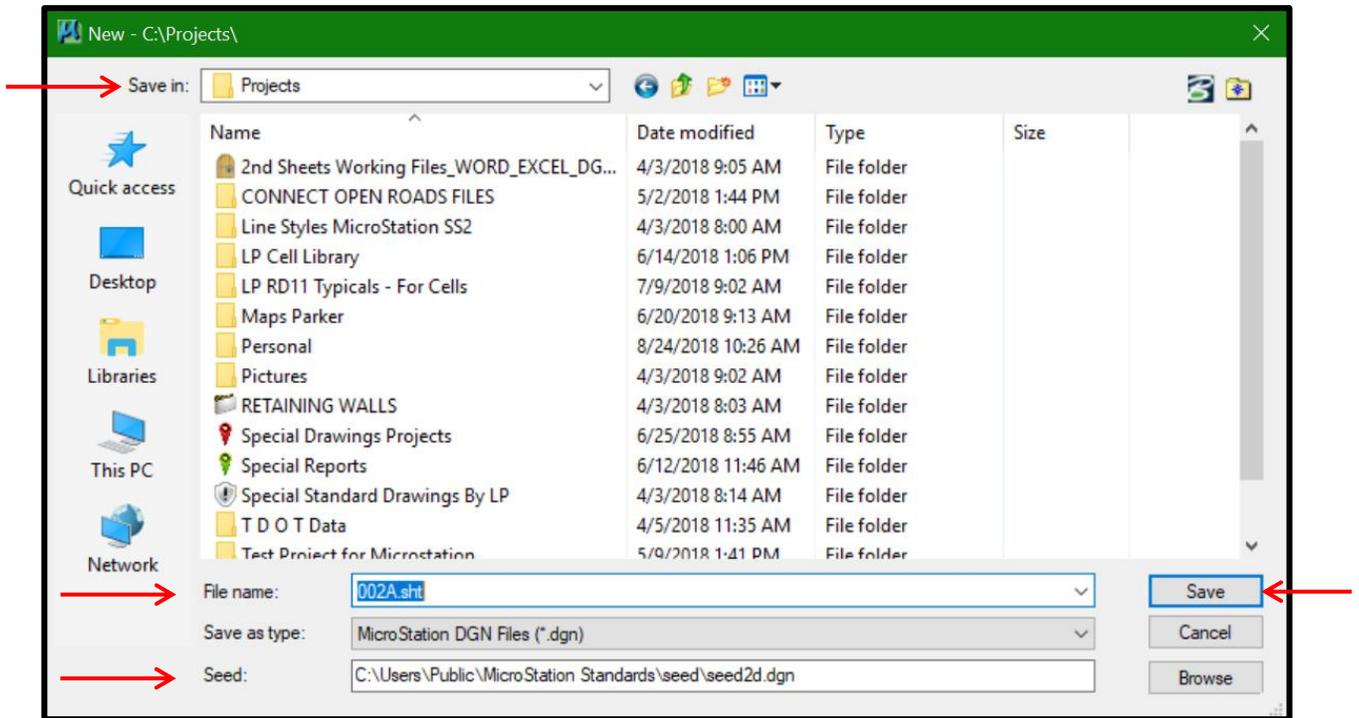
**All Second Sheet** files must be on a **1:1 scale!** The **Traffic Control and EPSC Tabulation Blocks** shall also be placed on a **1:1 scale**. The **Right-Of-Way Acquisition Table** should be on a 1:1 scale if it is on a sheet by itself or if it is with a Property Map it should be placed at the scale of the property Map. Other links can be placed on a plan sheet at the scale of the sheet or at the scale listed in the tabulated block.

### Creating a New Second Sheet

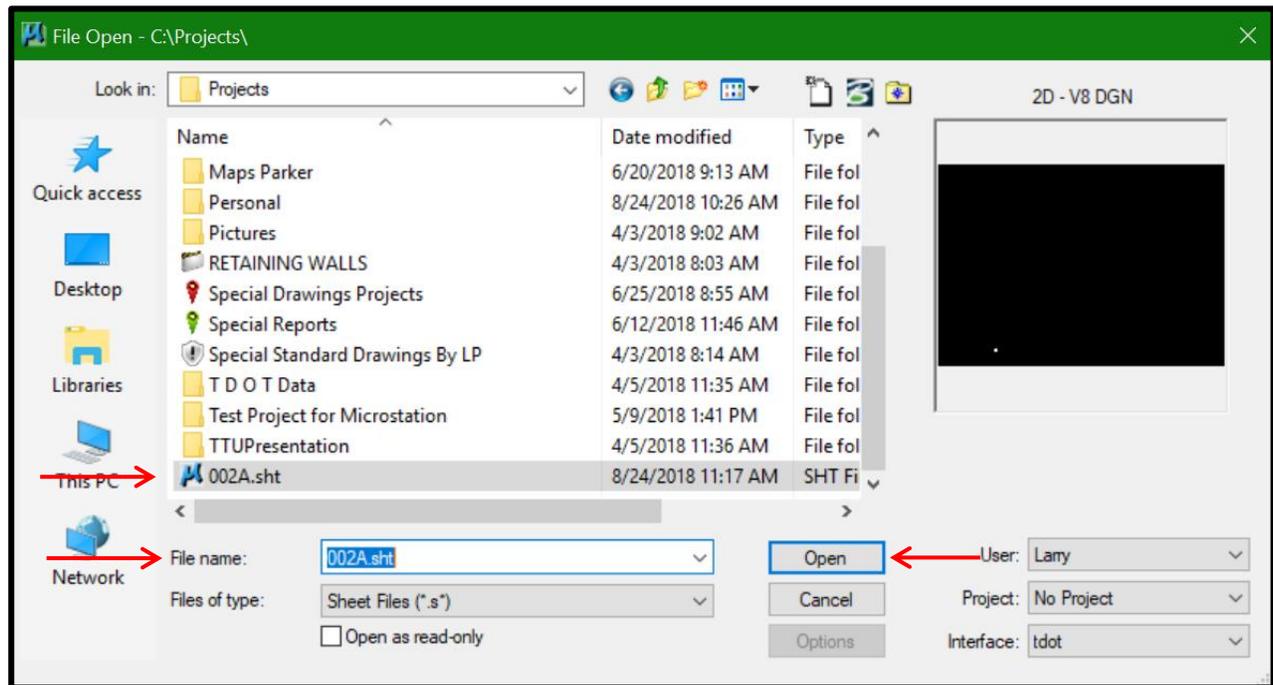
1. Open MicroStation SS2 and **click** on the New File Icon.



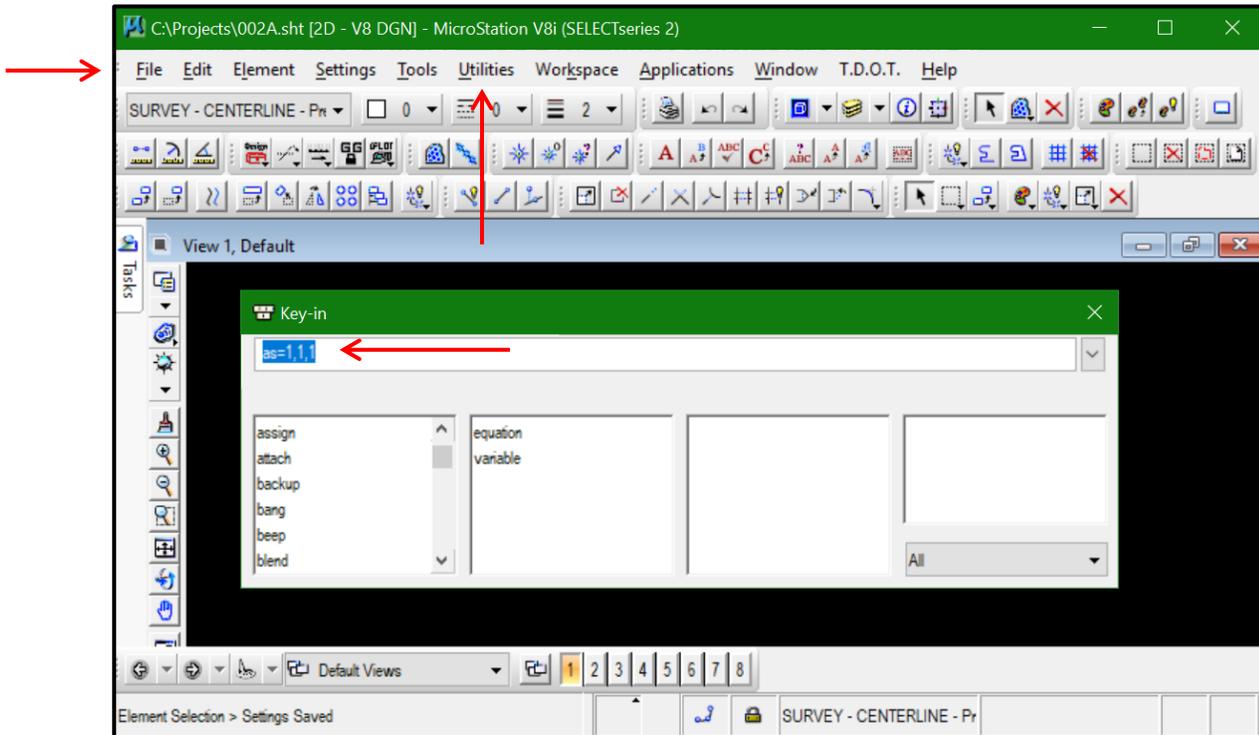
2. In the window that opens to create a new 2nd sheet you need to set the seed type to seed2d.dgn. If it is not set, click Browse and select it. Next, set the location where the file will be created. Select your project Folder where the file is to be placed. It should be placed with the rest of the project files. The last thing you need to set is the name of the file. Then click **Save**.



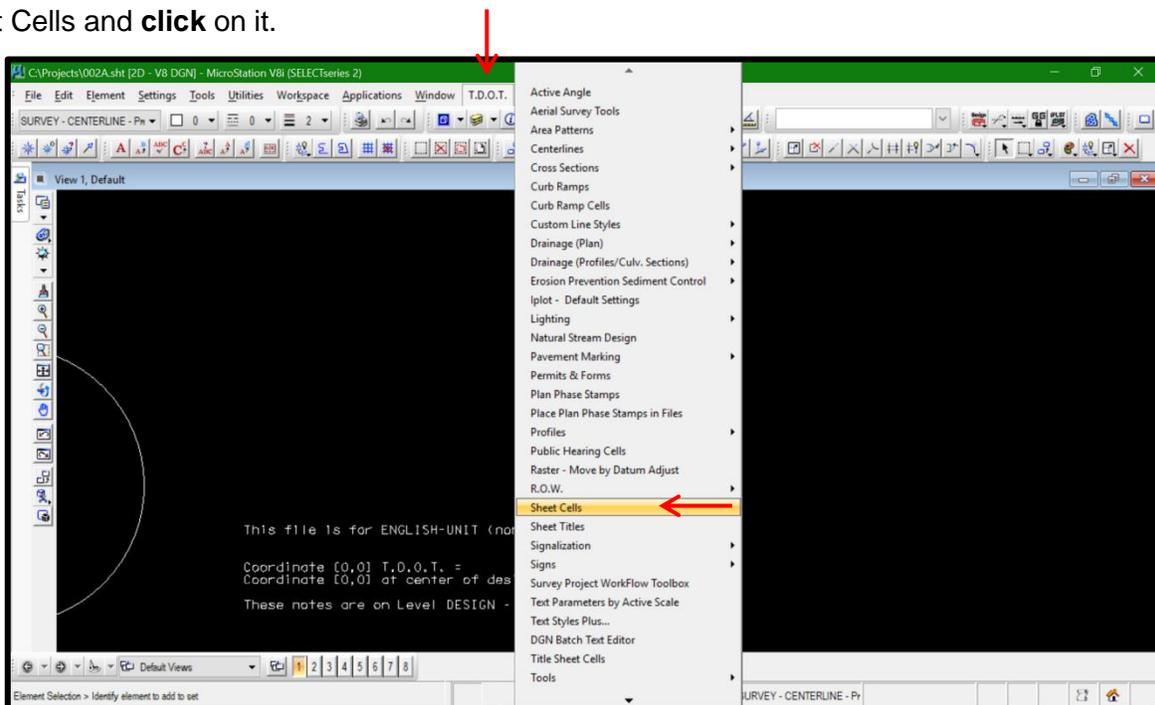
3. In the window that opens select the file and click **OPEN**.



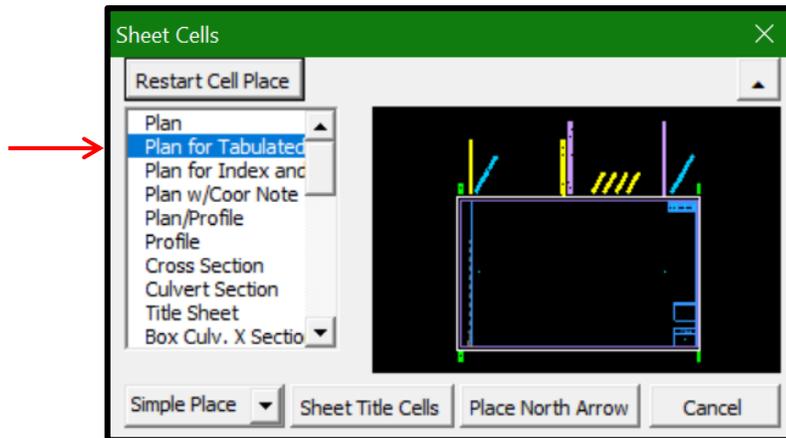
4. When the MicroStation file opens the first thing user needs to do is set the active scale to 1:1 for second sheets. In the Menu Ribbon at the top of MicroStation select Utilities and dropdown to **Key-in** and click on it to open. Key in **as=1,1** in Key-in window and hit **Enter**. The file will be set to a 1:1 scale if it is a 2D or 3D file. Then in the Menu Ribbon at the top of MicroStation select **File** and dropdown to **Save Settings** and **click** on it. This will save the active scale so you will not need to do it again for this file.



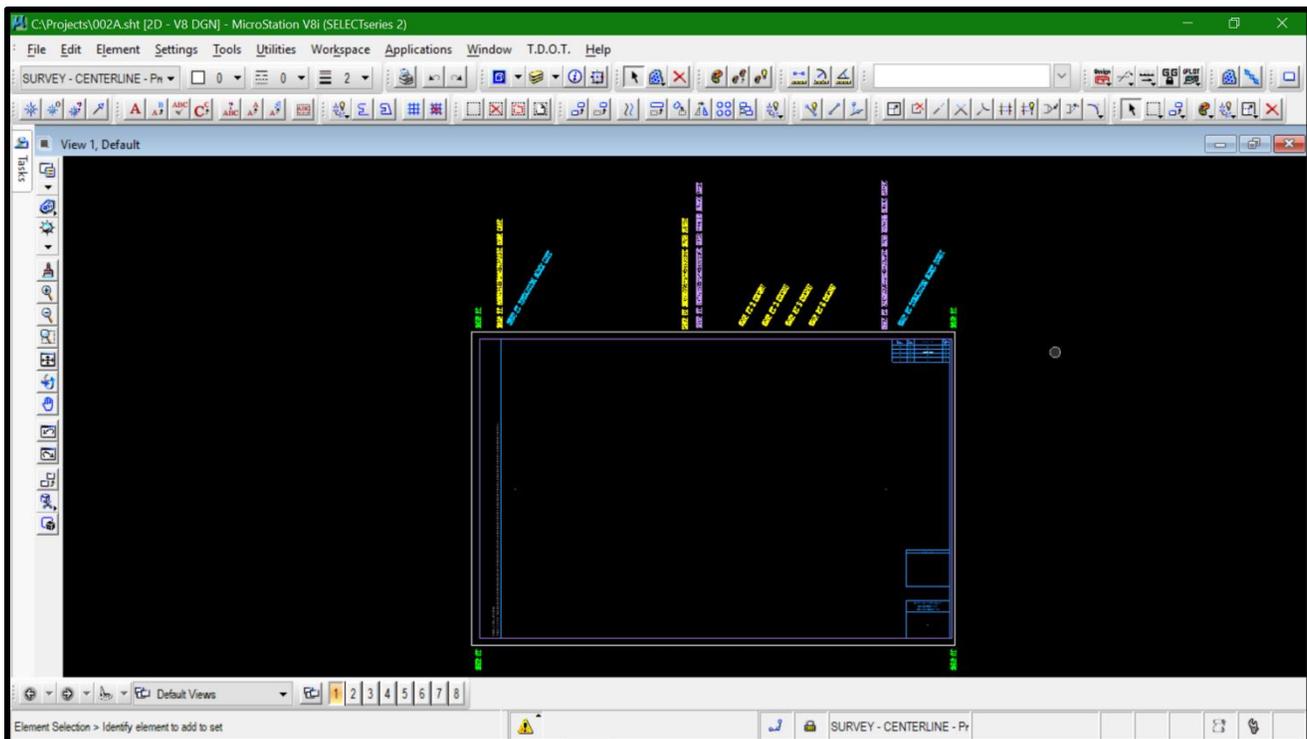
5. Now we place a sheet cell. In the Menu Ribbon at the top of MicroStation select T.D.O.T and pull down to Sheet Cells and **click** on it.



6. This will bring up a dialog box to select your sheet border. Click on **Plan for Tabulated Quantities**.



7. This will activate the sheet cell the user needs to place the cell in the MicroStation file by clicking in the MicroStation view window where they want to place the cell. The sheet cell should look like this.

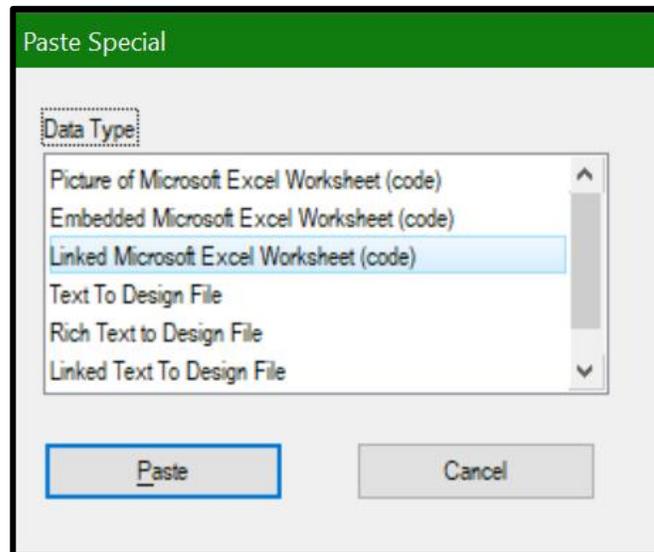


The sheet cell has snap points for placing the **Estimated Roadway Quantity blocks by corners**. The **Yellow** snap points are for placing the quantity block on the left side of the sheet. The first snap point is for placing the beginning corner point of the block and the second is ending corner point. The third, fourth, fifth and sixth snap points are provided if the quantity file has more than one column for quantities. The **Purple** snap points can be used for a second Estimated Roadway Quantity block with one column of quantities or for placing the **Foot Notes by corners**. The **Blue** snap points are the maximum limits for any Excel or Word file being attached by corners.

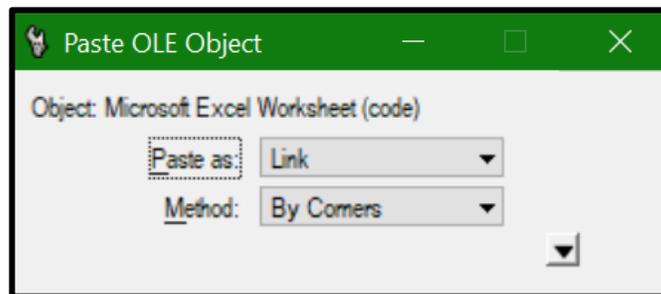


3. In your MicroStation file on the menu bar, go to **Edit > Paste Special...**  
(The Excel link will be placed on the active level in MicroStation)

Select the **Linked Microsoft Excel Worksheet** option and click the **Paste** button,

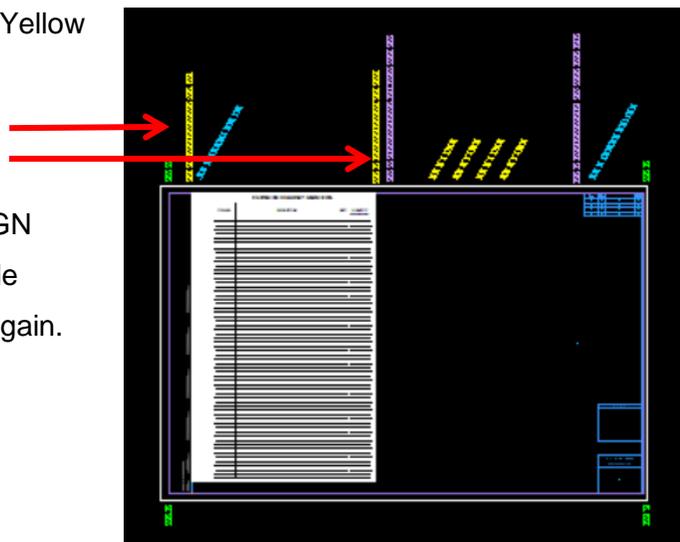


4. Select the Method: By Corners.



5. Snap to the left Yellow snap point then second Yellow Snap point and the **Rdwy. Quantity Block 1** is placed on the sheet in your DGN file.

You now have a live Excel file linked to your DGN file so when you make changes in your Excel file they can be updated without attaching the file again.



## Linking The Foot Noes

- Open your Estimated Roadway Quantity file. For this example, we will use the **Foot Notes**. All tab blocks have been setup so the top row and the row just below the table is one cell each, to make it easy for selecting. Select the information in Excel needed for linking to the MicroStation file. **Click** on the row above the block and hold down the **Shift key** then **click** on the row just below the table (in this example it is row 1 and 67). This will select an extra row and column on each side of the block to provide a border on each table. The selected area should now be highlighted.
- Right **click** on your mouse and pick Copy from the choices given. This puts the selected information into the Windows Clipboard.

The screenshot shows the Microsoft Excel interface with the file 'Estimated Roadway Quantities.xlsm'. The spreadsheet has columns A, B, C, D, and E, and rows 1 through 67. A blue-shaded table titled 'FOOT NOTES' is located in columns B and C, spanning rows 2 to 66. The table contains three rows of text: (1) Text (Example), (2) Text, and (3) Text. To the right of the table, in column E, there is a text block titled 'NOTES TO Designer' with instructions on how to place and format the footnotes. The text block includes instructions on row heights, column widths, and how to link the footnotes to the DGN file. The status bar at the bottom shows the current sheet is 'Foot Notes'.

	A	B	C	D	E
1					
2			FOOT NOTES		
3		(1)	Text (Example)		
4			Text		
5			Text		
6					
7		(2)	Text		
8					
9					
10		(3)	Text		
11					
12					
13					
14					
15					
16					
17					
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19					
20					
21					
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66					
67					

**NOTES TO Designer** **Do Not Adjust Text Size!**

**Do Not Adjust Row Height!**  
Row 1 = height of 10,  
Row 2 = height of 24,  
Row 3 = height of 8,  
Row 4 thru 66 = height of 14 and  
Row 67 height of 12.  
The maximum number of Rows to be placed in a DGN file is 67.  
to be placed in a DGN file is 67.

**Do Not Adjust Column Width!**  
Column A is 2 wide,  
Column B is 8 wide,  
Column C is 32 wide and  
Column D is 2 wide.

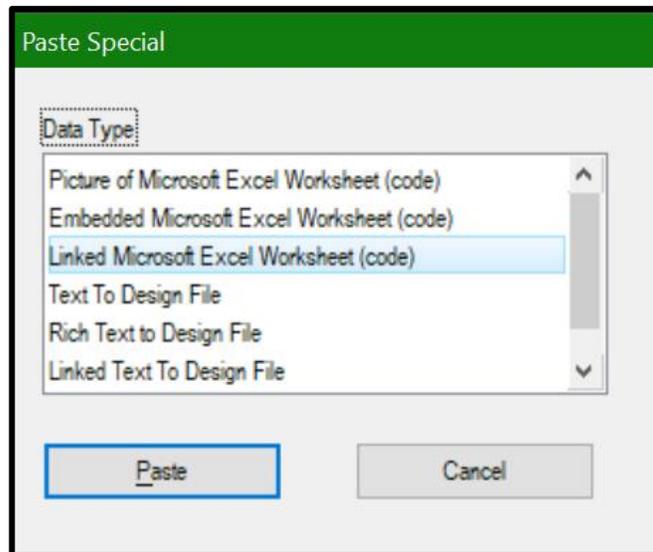
**Placing Foot Notes.**  
Foot Note Numbers go in column B and the Notes go in column C as shows.

**Ending the Foot Notes Block.**  
You need to place a solid black line at the bottom of the Foot Notes Block if you are not using all 66 lines. After filling in all Footnotes go to the Row below the last Foot Note and edit cells for column B and C. To Edit the Cells you need to highlight cells with your mouse. Then right click with your mouse and click on Format Cells. Click on the Border Tab and then choose the line style to be placed by clicking on it. Use the line style in the second column, third from the bottom. Then in the white area that has the word TEXT click where you want the line to be placed. Then click OK.

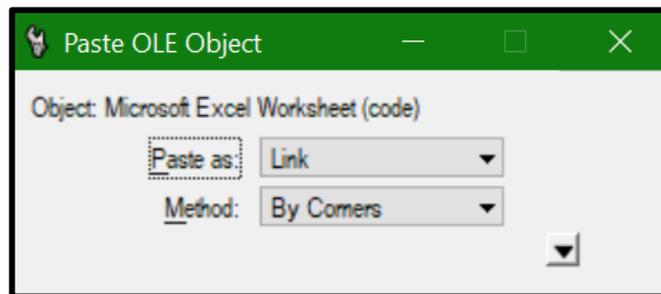
**TO PLACE THE FOOT NOTES IN A DGN FILE.**  
You need a DGN 2nd sheet Seed File with the snaps at the top of the sheet to place the Foot Notes in. Highlight the block to be placed by Click with your mouse in Row 1, anywhere and hold down the button then pull down to the last Row of your Foot Notes Block, where you just placed the solid line to end the block then release the button. This will highlight area to be placed in the DGN. Right click with your mouse and select COPY. Now in your DGN file click on Edit at the top and pull down to paste special. When the window opens chose Linked Microsoft Excel worksheet. This opens a placement menu, chose Paste as Link and By Corners. To place use the snaps tabs at the top of the DGN sheet for the left side of the Foot Notes and right side for the Foot Notes Block.

8. In your MicroStation file on the menu bar, go to **Edit > Paste Special...**  
(The Excel link will be placed on the active level in MicroStation)

Select the **Linked Microsoft Excel Worksheet** option and click the **Paste** button,

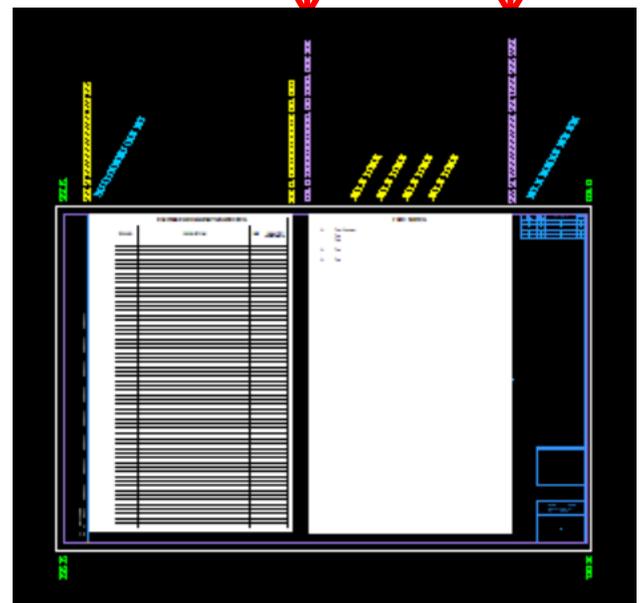


9. Select the Method: By Corners.



10. Snap to the left Purple snap point then second Purple Snap point and the **Foot Notes** are placed on the sheet.

Again, you have a live Excel file linked to your DGN file so when you make changes in your Excel file they can be updated without attaching the file again.



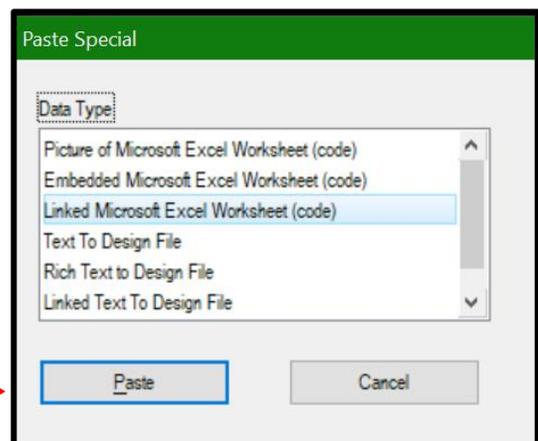
## Linking The Tabulated Quantities Blocks

- Open your Estimated Roadway Quantity file. For this example, we will use the **STORM DRAIN ENDWALLS** Tabulation Block. All tab blocks have been setup so the top row and the row just below the table is one cell each, to make it easy for selecting. Select the information in Excel needed for linking to the MicroStation file. **Click** on the row above the block and hold down the **Shift key** then **click** on the row just below the table (in this example it is row 1 and 61). This will select an extra row and column on each side of the block to provide a border on each table. The selected area should now be highlighted.
- Right **click** on your mouse and pick Copy from the choices given. This puts the selected information into the Windows Clipboard.

STORM DRAIN ENDWALLS																															
PROTECTED ENDWALLS					SAFETY ENDWALLS ( ITEM NO. 611-07.54 THRU 611-07.71 SERIES )																										
LOCATION \ SHEET NO.	STATION	OFFSET	SKEV	CODE	TYPE	DRAWING NO.	CLASS	CONCRETE	REINFORCING	STELL BAR	10 IN.	10 IN.	10 IN.	24" IN.	24" IN.	24" IN.	30" IN.	30" IN.	30" IN.	36" IN.	42" IN.	42" IN.	42" IN.	48" IN.	48" IN.	48" IN.					
							A3	705-05.06	611-07.01	611-07.02	07.54	07.55	07.56	07.57	07.58	07.59	07.60	07.61	07.62	07.63	07.64	07.65	07.66	07.67	07.68	07.69	07.70	07.71	07.72	07.73	07.74
								(TON)	(C.Y.)	(LB.)	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
SHEET							101-00	50	90*	26EV	SAFETY		23.0																		
TOTALS											23.0																				

- In your MicroStation file on the menu bar, go to **Edit > Paste Special...**

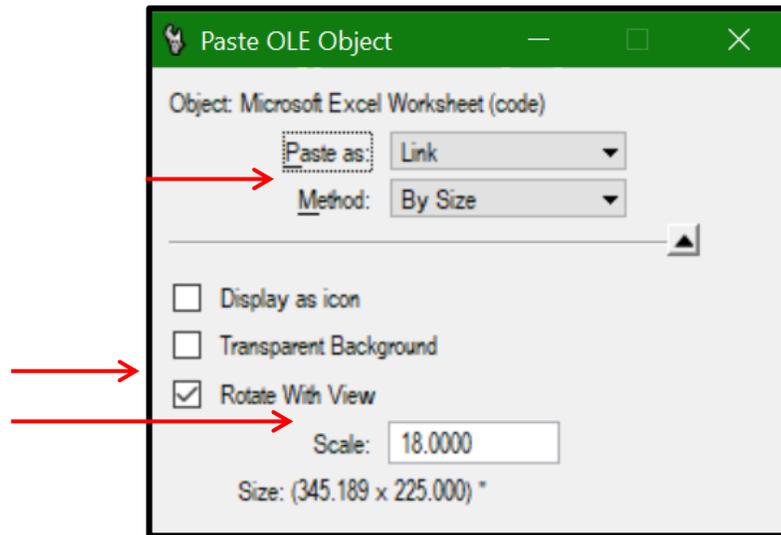
Select the **Linked Microsoft Excel Worksheet** Option and click the **Paste** button,



14. Select the Method: By Size.

**Click** on Rotate With View.

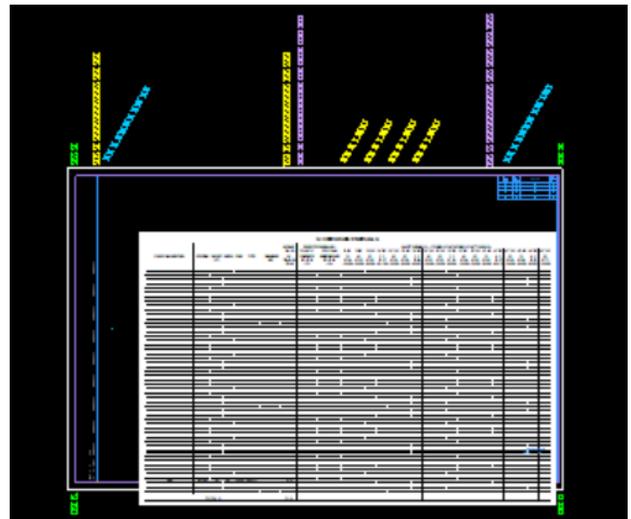
**Set** the Scale to: **18**.



All Tabulation Blocks are set up to be placed on a scale of **18**.

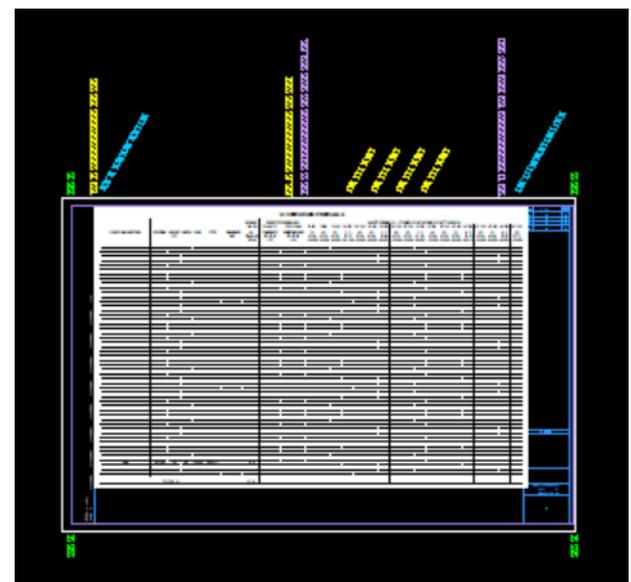
The Active Scale and the Sheet file in the DGN file must be on a 1 to 1 scale.

15. Place the Tabulated Block anywhere inside the sheet border in the DGN file by **clicking** with your mouse that now has the Tab Block attached to it.



16. You will need to move the Tab Block you just attached to the top left corner of the sheet. You must save and close your Excel file to be able to move the attach file in MicroStation. **Snap** to the top left corner of the attached tab block to pick it up and **Snap** on the **Blue Snap Point** in the top left corner of she sheet file as shown to have the block in the right location of the sheet.

Again you have a live Excel file linked to your DGN file so when you make changes in your Excel file they can be updated without attaching the file again.



## Linking Multiple Blocks To One Sheet

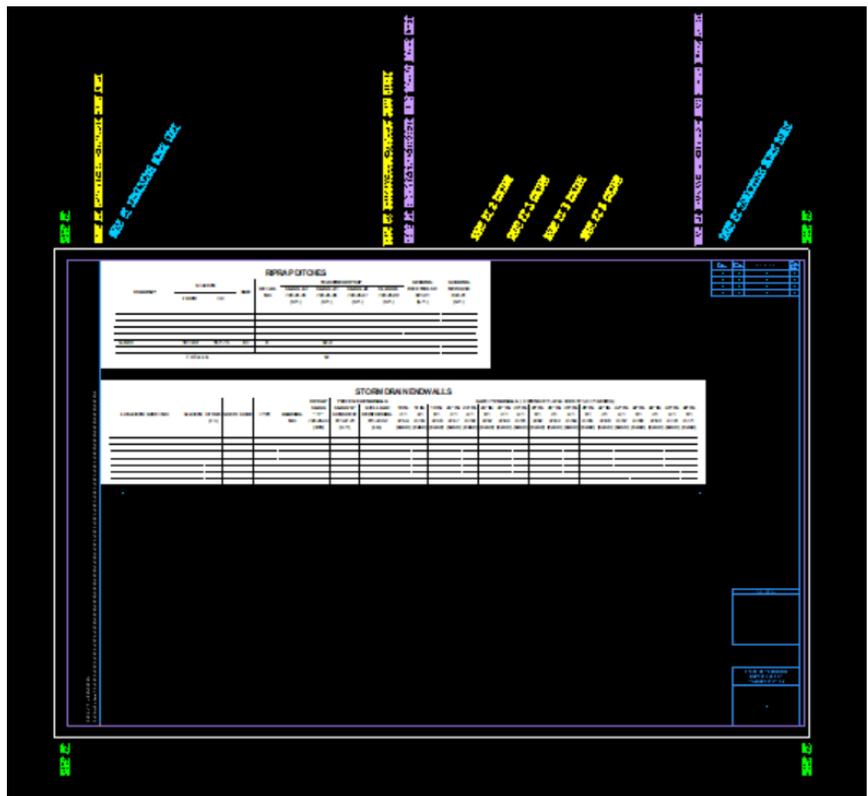
All Tabulated Quantity Blocks are set up for a full sheet of each block. In most small jobs, you will not need a full sheet of most tables. All Tabulated Block have been set up so the user can delete the rows needed to be removed to make the table the size it needs to be. The Rows for the Headers are locked so they cannot be deleted, but the Row for the TOTALS is not locked, so do not delete this Row or the table will not tabulate your quantities.

Note: It is ok to have one Tabulated Block per sheet in the design project, but if there is a need to place multiple blocks on one sheet then **repeat** steps **11 thru 16** to have the blocks placed in upper left corner at the Blue Snap Point.

17. In this example we have attached two blocks to the **Blue Snap Point** in the upper left corner of the sheet. The two blocks have been edited by removing the rows we do not need (rows 9 thru 54) in our blocks. The user will need to move the blocks off the top of each other. In MicroStation activate **AccuDraw**, **click** on **Move** element, then snap to the left top corner of one of the blocks and move down in the sheet. It is recommended to keep one half inch between blocks. Your sheet should look something like this example.

If your Tabulation Block extends into the area under the 4 inches under the Project ID Block in the upper right corner than something did not attach correctly.

It is recommended that each time a Tabulation Block is attached in a MicroStation file that the user compress design, save settings, exit completely out of MicroStation and reopen it before attaching another Excel or Word file.



## Excel Text Size in a MicroStation File

All text in the Estimated Roadway Quantity file that has the Tabulated Quantity Blocks is based on the Arial font and the blocks are set to be placed at a **Scale 18**. This should produce a text size values for .14 for the rows in the middle of all tab blocks that are to be filled in. This is the recommended text size for the best legibility in the plans.

The Arial font, text size 9 in Excel Tab Block when placed at a scale **18** will measure in the DGN file a height of .14 feet.

**1-scale** size sheet, set the scale to **18** for placement:

**Main Body** text size **9** in Excel will measure **0.14 feet** in MicroStation

**Table Name** text size **16** in Excel will measure **0.24 feet** in MicroStation

**Total Row** text size **12** in Excel will measure **0.18 feet** in MicroStation

**50-scale** size sheet, set the scale to **900** for placement:

**Main Body** text size **9** in Excel will measure **7 feet** in MicroStation

**Table Name** text size **16** in Excel will measure **12 feet** in MicroStation

**Total Row** text size **12** in Excel will measure **9 feet** in MicroStation

Because the Excel file link is attached as a picture, the text cannot be measured directly. Zoom in and use the measure tool to see if the body (not the headings) text is approximately the correct size.

ESTIMATED ROADWAY	
ITEM NO.	DESCRIPTION
105-01	CONSTRUCTION STAKES, LINES AND GRA...
201-01	CLEARING AND GRUBBING
202-01	REMOVAL OF STRUCTURES AND OBSTRU...
(1) 202-06.01	REMOVAL OF BUILDINGS (TRACT NO.10)

## Open & Update the Excel OLE Attachment

The changes made to the Excel files outside of MicroStation will not be changed in MicroStation until the Excel links have been opened & updated.

Use one of the following methods:

1. In MicroStation, start the **Element Selection** tool and double click on the link to be revised. The Excel file is opened. Make any changes that may be needed and save the file. The link is updated in MicroStation.
2. In MicroStation, go to **Edit > Links...** In the Links dialog, select the link to be revised and click **Open Source**. The Excel file is opened. Make any changes that may be needed and save the file. The link is updated in MicroStation.

You should not use the Update Now option in the Links dialog without opening the document first. The link may be updated but errors are generated, and you may corrupt your MicroStation file.

3. In MicroStation, select the link to be revised and the **Worksheet Object** tools are enabled. Go to **Edit > Macro-Enabled Worksheet Object > Edit**. The Excel file is opened Make any changes that may be needed and save the file. The link is updated in MicroStation.
4. Open all linked files in Excel. In MicroStation, go to **Edit > Update Links**.

This function should update all the links in the file without opening the links. When used with Office 365, errors are generated, and nothing may be updated.

## Relinking

When the sizes of the rows are changed, the area linked will still be displayed in MicroStation but will be warped or truncated. It will need to be relinked to correct the display in graphics.

To relink an Excel file:

1. Move the existing link graphics away from the sheet border.
2. Open the Excel file.
3. Follow the directions for a new link. See section **Excel Linking to MicroStation**.
4. After the new link has been established and is correct, the link graphics from the old link can be deleted.

## Word Embedded in MicroStation

### Word Documents Embedded in MicroStation DGN Seed Files

There are MicroStation design seed files set up for the 2<sup>nd</sup> sheets with the T.D.O.T. Word documents embedded. These seed files have sheet borders set up at a one-scale.

MicroStation seed files with embedded Word documents:

- Blank Sheet for 2<sup>nd</sup> Sheet Notes.dgn
- Drop Off Notes Traffic Control.dgn
- EPSC Notes.dgn
- EPSC Notes Local Program Projects Only
- General Notes.dgn
- General Notes Local Program Projects Only
- Index and Standard Drawings.dgn
- ROW Notes Utility Notes Utility Owners.dgn
- ROW Notes Utility Notes Utility Owners Local Program Projects Only.dgn
- Sheet 3 ROW Notes Utility Notes Utility Owners Local Program Projects Only.dgn
- Signature Sheet.dgn
- Special Notes.dgn
- Special Notes Local Program Projects Only.dgn
- Standard Roadway Drawings.dgn
- Standard Structure Drawings.dgn
- Standard Traffic Operations and Structure Drawings.dgn
- Standard Traffic Operations Drawings.dgn

### Creating a Second Sheet from a Seed File in MicroStation

1. From MicroStation or MicroStation manager,

Go to **File > New** in MicroStation or click the **New File** icon in MicroStation Manager ..., and in the project folder, **Browse** to select the seed file needed for the sheet, assign the name according to the sheet name directions and assign a \*.sht extension. See [CADDV8.pdf](#), Section **Standard Filenames**, part **Standard Sheet File Types: (Use .SHT extension)**. For example, use the name **001A.sht** for the seed file named **Index and Standard Drawings.dgn**. Be sure to look for the latest date at the end of the file name for each seed file used.

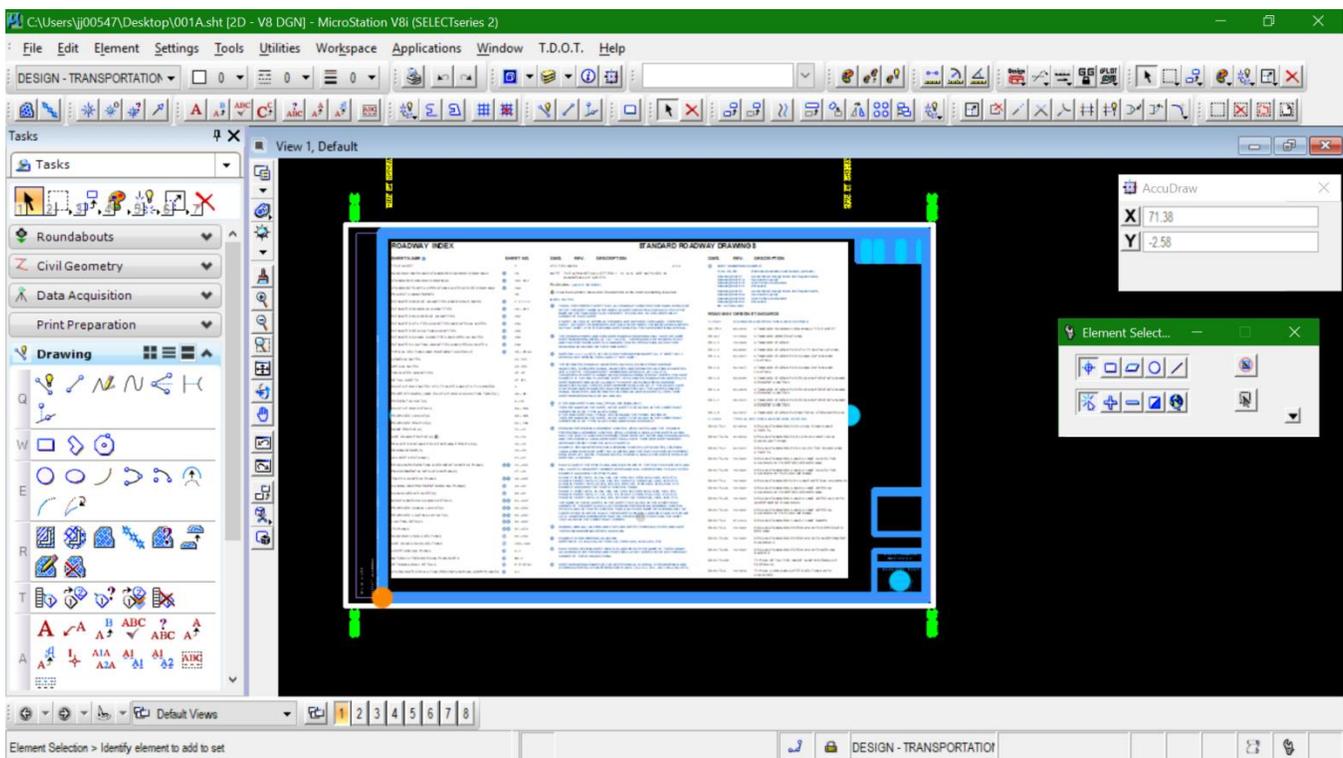
There are several reasons why the MicroStation DGN sheet files need to be named according to the **Standard Sheet File** naming recommendations. One, the project will be very easy to plot using InterPlot Organizer where the sheets will automatically be in order. Two, the names of the sheet files

must be the same as the sheet number so that when the sheet is published on FileNet, other divisions, such as Right-of-Way and Construction, can easily find and use the files produced by the Design Division.

The OLE link is displayed as a 'picture' of the Word document. It has a shape around the edge. The OLE link can be copied, moved or scaled using the graphics commands.

### Seed file Editing Notes:

1. In MicroStation, use the **Element Selection** tool and double click on the embedded Word document. The embedded document will open in Word.



2. Note that the Word document header says **Document in DesignFileName.sht**. Make edits as needed.
3. Occasionally information previously deleted needs to be added back into the Word document. This can be accomplished by cutting and pasting from other open Word documents. To open a temporary General Notes or Index and Standard Drawings file in Word, go to the **File** tab at the far left of the ribbon and choose **New > My Templates >TDOT 2nd Sheets > General Notes.dotx** or **Index and Standard Drawings.dotx** (The file you need info from). Cut from the temporary document and paste to the document in the sheet file. Close the temporary document without saving them.  
In General Notes documents, each section is numbered starting at 1 (one). If the 1<sup>st</sup> note in a section is deleted, the remaining notes will pick up the numbering sequence from the previous section. To correct this, highlight the first note in the section, right click and choose the option **Restart at 1**.
4. After making the edits wanted, go to the File tab at the upper left and choose **Save** or click on the **Save** icon at the upper left. Changes made in the Word document will not be shown in MicroStation until the Word document is closed.
5. The only access to an embedded document is from the graphics in the MicroStation design file. If the graphic display of the embedded Word document is deleted, the Word document will be deleted. If MicroStation has not been closed and the file has not been compressed, then the graphics and the Word document can be recovered through the **Undo** command.

For this reason, it is recommended that a copy of the Word file information be made after significant edits have been done.

This can be done several ways. In the Word document, go to the File tab at the upper left and select Save As to make a copy to the project folder. In MicroStation, the OLE link graphics can be copied to the side creating separate OLE link of the edits at that moment which creates an additional separate embedded Word document. Of course, a backup copy of the entire MicroStation DGN file can be made.

### **Special Info in the Word Header & Text Body**

#### **The Header:**

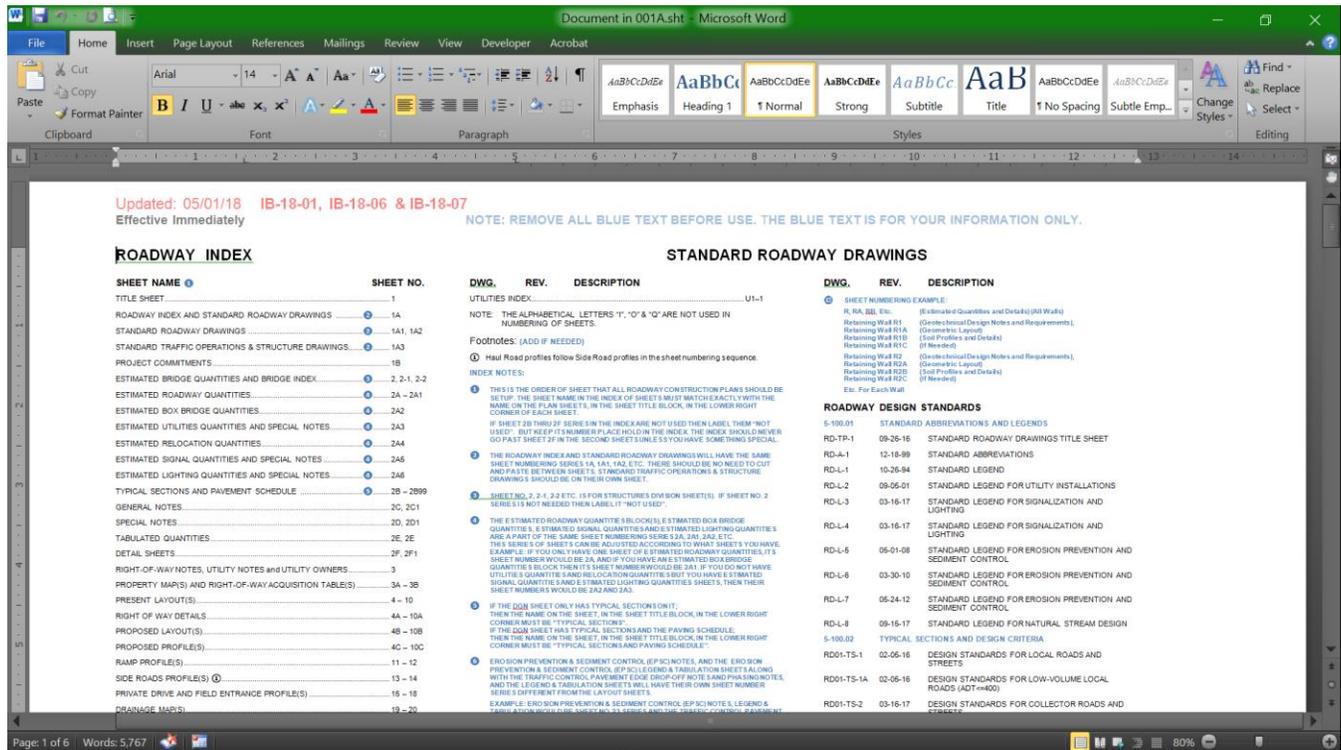
There is special text in **RED**, which is the Updated Date that this file was updated and the Instructional Bulletin(s) that the file was updated to their requirements.

There is special text in **Black**, which list the Effective Date for the data in the word file.

There is special text in **Blue**, which is special instruction of the user.

### The Body of Text:

There is special text in **Blue**, which is special instruction of the user.



## More than one Sheet Needed

If more than one plan sheet will be needed for General Notes or Index sheets:

1. Make edits as needed to the Word document embedded in the first sheet and close the Word document.  
Since the text is not easily moved from one MicroStation design file to another, it is recommended that **all** of the edits be made to the first MicroStation General Notes or Index design file before creating the additional sheets.
2. Repeat step 1 under section **Creating a Second Sheet from a Seed File in MicroStation** as listed below.  
From MicroStation or MicroStation manager,  
Go to **File > New** in MicroStation or click the **New File** icon in MicroStation Manager ..., and in the project folder, **Browse** to select the seed file needed for the sheet, assign the name according to the sheet name directions and assign a \*.sht extension. See [CADDV8.pdf](#), Section **Standard Filenames**, part **Standard Sheet File Types: (Use .SHT extension)**. For example, use the name **001A1.sht** for the second sheet of the seed file named **Index and Standard Drawings.dgn**. Be sure to look for the latest date at the end of the file name for each seed file used.
3. In the new MicroStation sheet file, edit the Word document. Highlight all of the text (except the heading if needed) on the first page in the Word document and delete it. Save & close the Word document to see the changes in the MicroStation file.
4. Repeat as needed for additional sheets.

## Embedding Word Documents in Existing MicroStation DGN Sheet Files

Sometimes you need to add small groups of notes to existing plan sheets in MicroStation.

This section describes the process of embedding the Word documents in MicroStation.

The TDOT Word documents embedded in the MicroStation seed files are also available as Word templates.

These can be used to add notes or standard drawings back into full sheets as needed.

T.D.O.T. Roadway Design Division Word templates used with MicroStation at

C:\Users\Public\Office Standards\TDOT 2nd Sheets:

- Blank Sheet for 2<sup>nd</sup> Sheet Notes.dotx
- Drop Off Notes Traffic Control.dotx
- EPSC Notes.dotx
- EPSC Notes Local Program Projects Only.dotx
- General Notes.dotx
- General Notes Local Program Projects Only.dotx
- Index and Standard Drawings.dotx
- ROW Notes Utility Notes Utility Owners.dotx
- ROW Notes Utility Notes Utility Owners Local Program Projects Only.dotx
- Sheet 3 ROW Notes Utility Notes Utility Owners Local Program Projects Only.dotx
- Signature Sheet.dotx
- Special Notes.dotx
- Special Notes Local Program Projects Only.dotx
- Standard Roadway Drawings.dotx
- Standard Structure Drawings.dotx
- Standard Traffic Operations and Structure Drawings.dotx

## A Full Sheet of Notes

1. In Word, go to the File tab at the upper left, choose **New > My Templates > TDOT 2nd Sheets**, and select the type note file needed. (Or use your own note files)

(Note if you use a non TDOT 2nd Sheet template the following scales for the sheets will not be correct. )

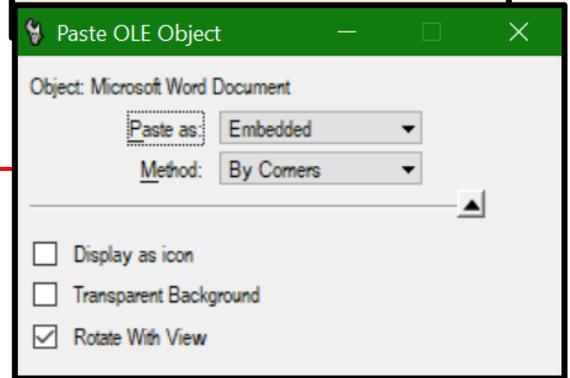
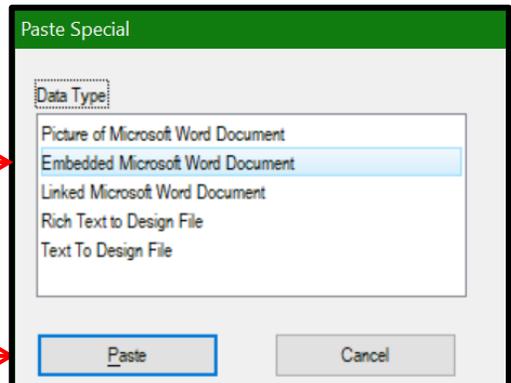
2. Edit the notes as needed. **Select and copy** to put the text into the Windows Clipboard.

3. In your MicroStation file on the menu bar, go to **Edit > Paste Special...**

Select the **Embedded Microsoft Word Document** Option and click the **Paste** button,

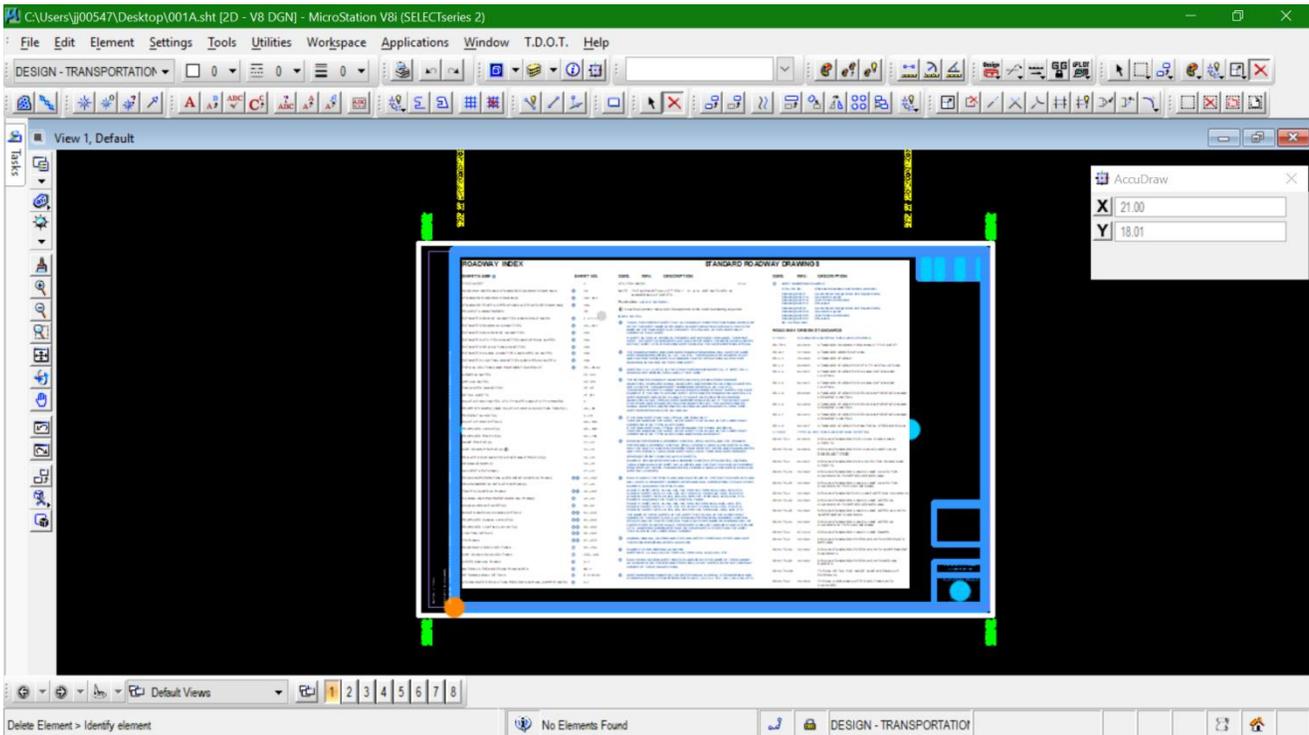
4. If you are placing a **Full Sheet of Notes** in a **Second Sheet** that is 1:1 scale, then you should use a **Sheet Border** that has the **Snap Points** at the top of the sheet.

Select the Method: By Corners.  
Click on Rotate With View.



5. Place the Word Note File by **clicking** with your mouse on the **Snap Points** at the top of the Sheet File

6.



### Text Size for a Full Sheet of Text

Arial font is the standard Font, text size 8 for normal text in Word (font and size in TDOT templates):

**1-scale** size sheet:

**Text Size 13** for **.14** text size - this will measure **0.14 feet** in MicroStation  
and will measure **0.14 inch** on the printed sheet

**Text Size 11** for **.12** text size

**Text Size 9** for **.10** text size

**50-scale** size sheet, multiply the dimension above by **50**:

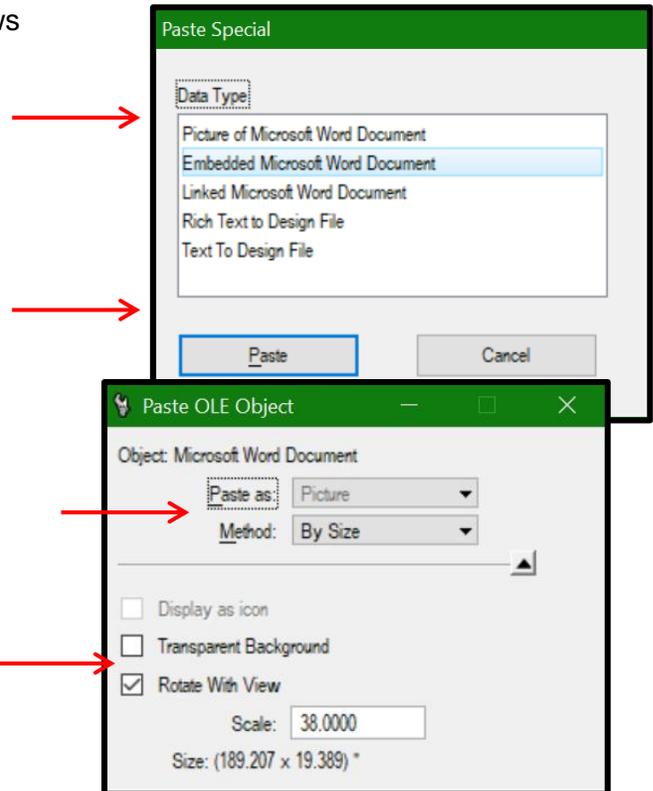
**Text Size 650** for **.14** text size

**Text Size 550** for **.12** text size

**Text Size 450** for **.10** text size

### Placing a Word File on a Layout Sheet

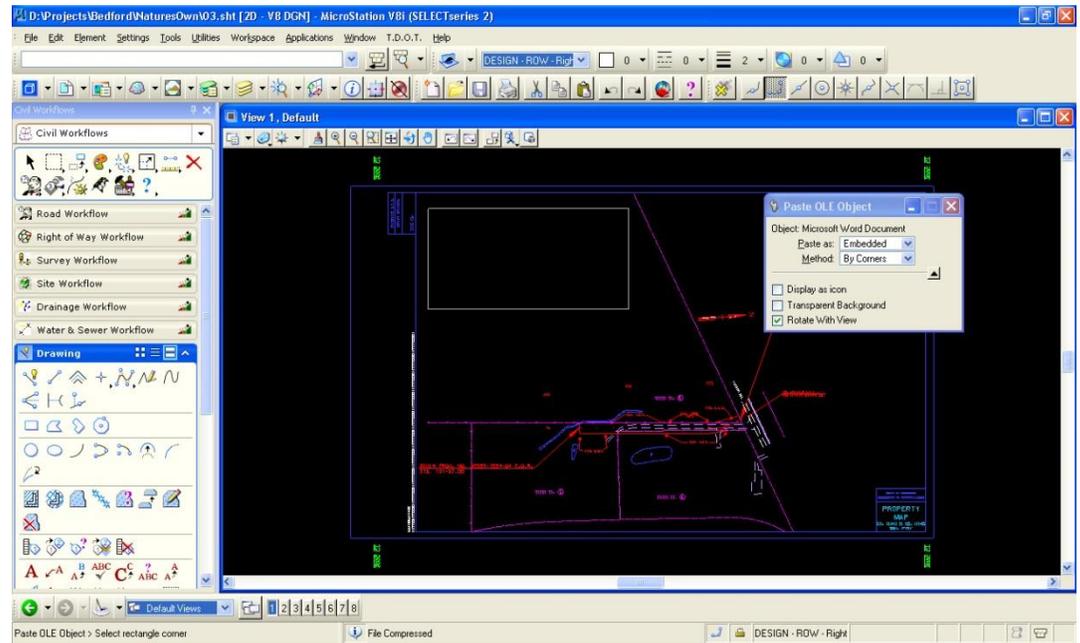
1. In Word, **Select and copy** your Text into the Windows Clipboard that you want to place in the DGN file.
2. In your MicroStation file on the menu bar, go to **Edit > Paste Special...**  
Select the **Embedded Microsoft Word Document** Option and click the **Paste** button,
3. Select Paste as: Embedded and Method: By Size.  
Under the extra options, click on Rotate With View.



4. Set the Scale Size. The following only works if the text is Arial and 7-point size in the Word document.  
This is what the TDOT Standard Note size is based on.  
If the DGN sheet scale is 1:1 than set the scale to 38.

If the DGN sheet scale is 50:1 than set the scale to 1900.

5. Data point at the location on the DGN file where the Word file is to be placed.



6. Use MicroStation's **Move Element** command to position the link as needed. The temporary Word document used to copy the notes from can be closed without saving since the document is now embedded in the MicroStation DGN file.

Additional Notes concerning this method of Embedding

The By Corners method is used for Word documents to ensure that the text comes in at the correct size. The By Scale method does not yield consistent results when used with Word attachments. That method is used with Excel attachments.

Because the embedded Word file is attached as a picture, the text cannot be measured directly. Zoom in and use the measure tool to see if the body (not the headings) text is approximately the correct size.

## Open & Update the Word OLE Attachment

### ***Embedded Word Documents***

In MicroStation, start the **Element Selection** tool and double click on the document to be revised. The Word file is opened. Make any changes that may be needed and save the file. The document is updated in MicroStation.

### ***Linked Word Documents***

Linking Word Office 365 documents instead of embedding them **is not** recommended due to several compatibility issues between Word Office 365 and older versions of MicroStation. Any made with Office 365

will have to consider the following if it is necessary to open & update them in MicroStation versions prior to MicroStation V8i including MicroStation V8 2004.

Word Office 365 documents linked to MicroStation cannot be opened from inside MicroStation and they cannot be updated until they are open in Word.

In order to update these after being linked, you must first open the document through Word Office 365. After making any needed edits, save the file and then with it open in Word, use one of the following methods to update what appears in MicroStation.

1. In MicroStation, go to **E**dit > **L**inks... In the Links dialog, select the link to be updated and click **Update Now**.
2. In MicroStation, go to **E**dit > **U**ppdate **L**inks.

To use this method, it will be necessary to open all linked files first.

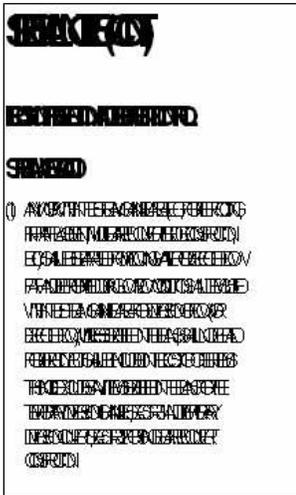
It should update all of the links in the file without opening the links but when used with Office 365 without the files open, errors are generated, and nothing is updated.

## Correcting Overlapping Text from Embedded Word Documents

With previous versions of Office and MicroStation when the height of the text area in the embedded Word document was reduced from what it was when originally set up then the text became warped causing text characters to overlap. This could occur when more than one plan sheet is needed, and the last sheet does not have full text columns or perhaps in a case where you have less than one full sheet and the columns are adjusted to be the same height. It could also happen if after you have added a small set of notes, one or two are removed. This problem appears to be corrected with Office 365 and MicroStation V8i. If you are using MicroStation V8 2004 then you may still run into it.

Take the following steps to re-embed the document and correct this problem:

1. After edits are done to the embedded Word document, the text becomes warped and overlaps in MicroStation.



2. Open the document and in Word go to the Office button at the upper left and select **Save Copy As...** to save the document outside the MicroStation DGN file to your project folder.
3. Open the Word document from your project folder, select and copy to put the text into the Windows Clipboard.
4. In MicroStation, delete the original embedded document or move it to the side off the sheet.
5. The OLE attachment will be placed on the active level, reset as desired.
6. In MicroStation, go to Edit > Paste Special..., select the Embedded Microsoft Office Word Document option and click the Paste button.
7. Select Paste as: Embedded and Method: By Corners. Under the extra options, click on Rotate With View.
8. Data point at the location where the upper left corner of the data needs to start on the sheet. This sets the first corner and you are prompted to **Select Rectangle Corner**.
9. In the MicroStation keyin field enter the required **dx=** keyin to set the corner across from the first point.

The dimension used in this keyin is determined by the scale of the plan sheet as well as the width dimension of the document inside of Word. General Notes and Index sheets are set up as full sheets in Word at 11" X 17" and in MicroStation at a scale of 1 so you should use dx=26 for them. Refer to the table of values in the previous section for use when embedding Word documents in MicroStation.

After re-embedding ...

## **SPECIAL NOTES (CONT.)**

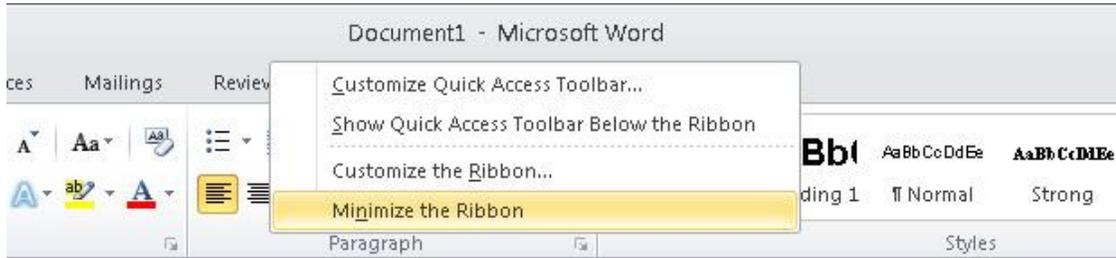
### **EROSION PREVENTION AND SEDIMENT CONTROL**

#### **STREAM/WETLAND**

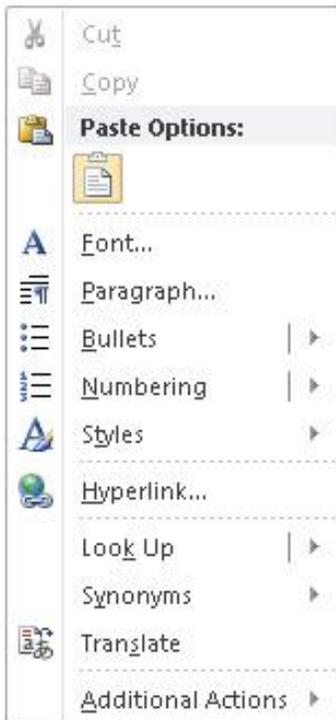
- (1) ANY WORK WITHIN THE STREAM CHANNEL AREA (E.G., FOR PIER FOOTING, RIP-RAP PLACEMENT, MULTI-BARREL CULVERT/BRIDGE CONSTRUCTION, ETC.) SHALL BE SEPARATED FROM FLOWING WATER OR EXPECTED FLOW PATH AND PERFORMED DURING LOW FLOW CONDITIONS. ALL ITEMS USED WITHIN THE STREAM CHANNEL AREA FOR DIVERSION OF FLOW (OR EXPECTED FLOW), UNLESS SPECIFIED IN THE PLANS, SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE COST OF OTHER ITEMS. THIS NOTE EXCLUDES ANY ITEMS SPECIFIED IN THE PLANS FOR THE TEMPORARY DIVERSION CHANNELS, EC-STR-31 AND TEMPORARY DIVERSION CULVERTS, EC-STR-32 FOR SINGLE BARREL CULVERT CONSTRUCTION.

## Formatting Word Documents

The Office 365 interface includes a series of tab options across the top, each of which displays a “ribbon” of command options. As you expand or shrink the width of the Office window, these commands are adjusted to show less or more. You can right click over the top of the ribbon to minimize it when not in use if desired.



When you right click from text in your document, some quick formatting tools are shown above the regular right click option list.

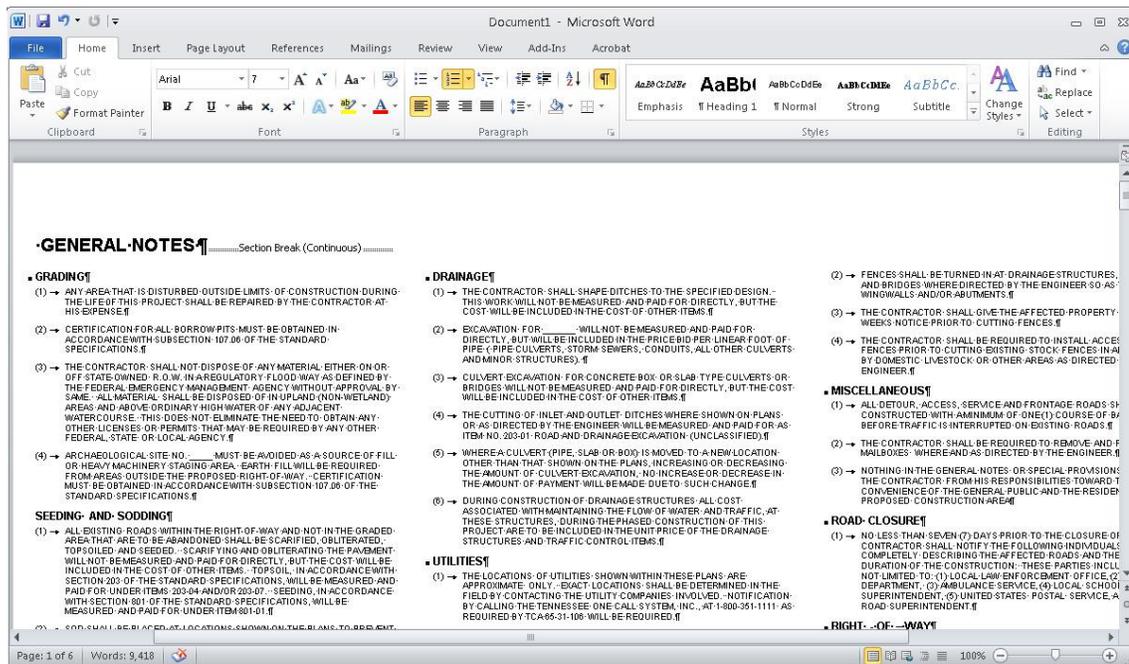


## Show/Hide Formatting

The Word documents created for TDOT plans production contain special formatting so they will appear correctly on the plan sheets. Text styles, tabs, bullets and numbering, paragraph indents, hanging indents, columns, column breaks, page breaks and more are used. These are non-printing characters and do not show in the normal view in Word. In order to edit the Word documents successfully, it is often helpful to see these formatting characters.

To display the formatting characters, use the **Show/Hide** display command. It is located on the Office 365 ribbon under the **Home** tab in the **Paragraph** section. It appears as a paragraph mark.

Click on the **Home** tab. Look at the **Paragraph** section of the ribbon and click on the Paragraph mark to **Show/Hide** formatting characters.



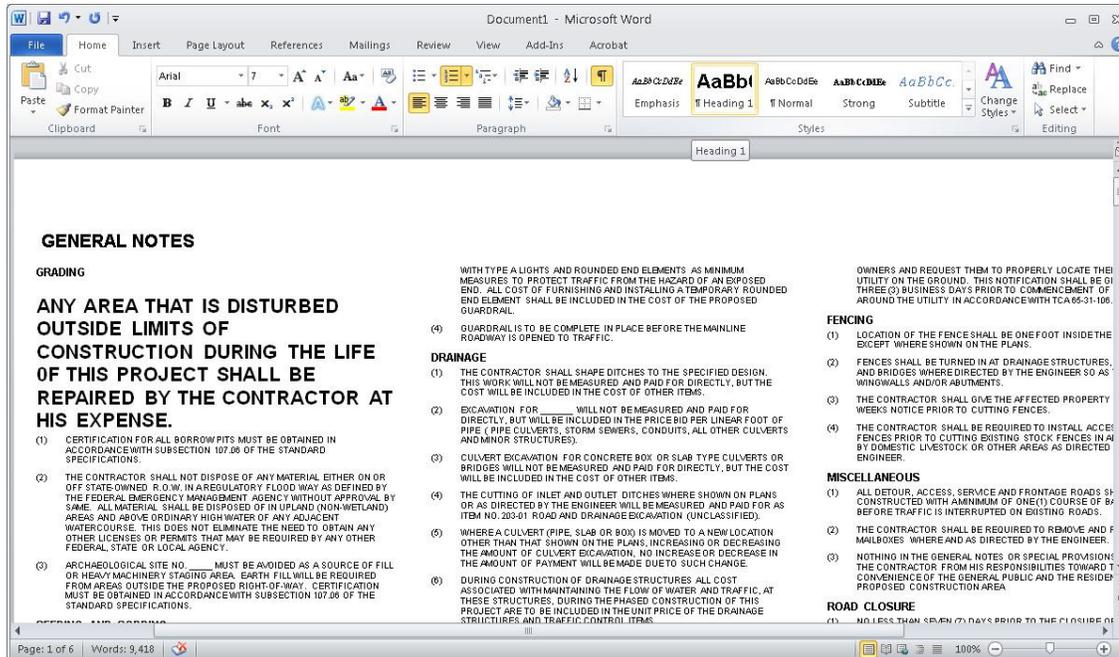
Clicking the paragraph mark will toggle off and on the display of the formatting characters. When it is toggled on, we can see section breaks, paragraph marks, tabs, etc.

## Text Styles in Word

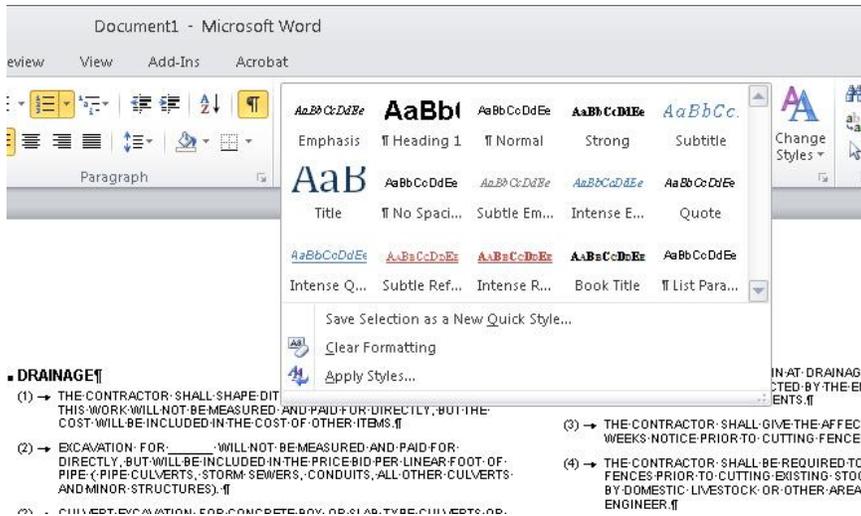
A text style will set all the characteristics for the specified text. This includes font, font size, tabs, indents, color, heading, bullets and numbering, etc. There are text styles for each type of text used in the TDOT 2<sup>nd</sup> sheet Office templates. These text styles all start with **V8**.

Text style controls can be found on the Word Office 365 ribbon under the **Home** tab in the **Styles** section.

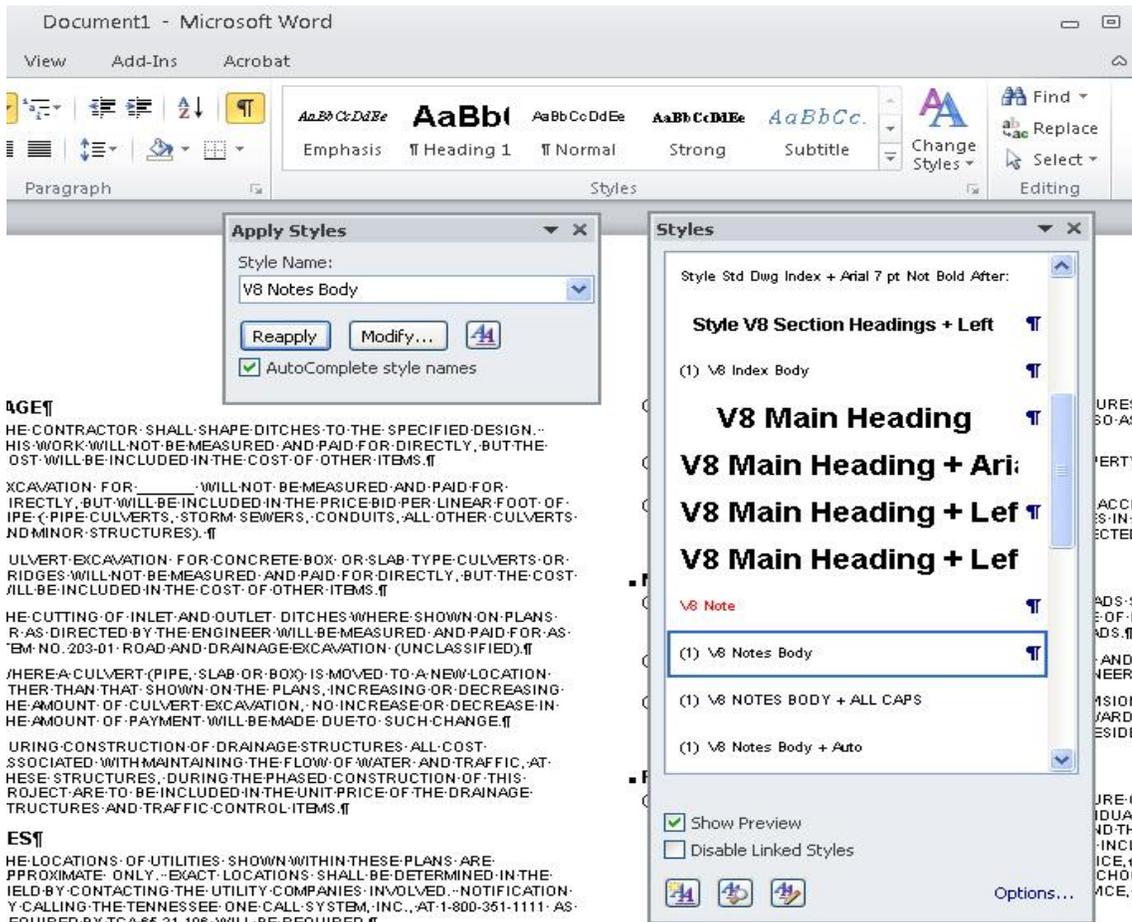
Word Office 365 includes a type of style control called **Quick Styles**. When you move your cursor mark over the quick style it temporarily applies that style to the entire paragraph where your typing insertion point is currently located. In the example below, I was in the first note and it dynamically shows what it would look like with the style Heading 1 applied to it. To apply the style permanently, left click on your mouse.



Click the arrow with the line above it at the bottom of the Quick Styles scroll bar to see all the quick styles currently available.



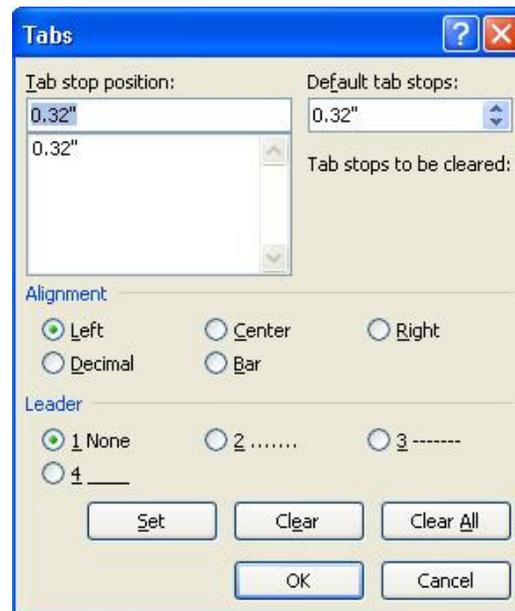
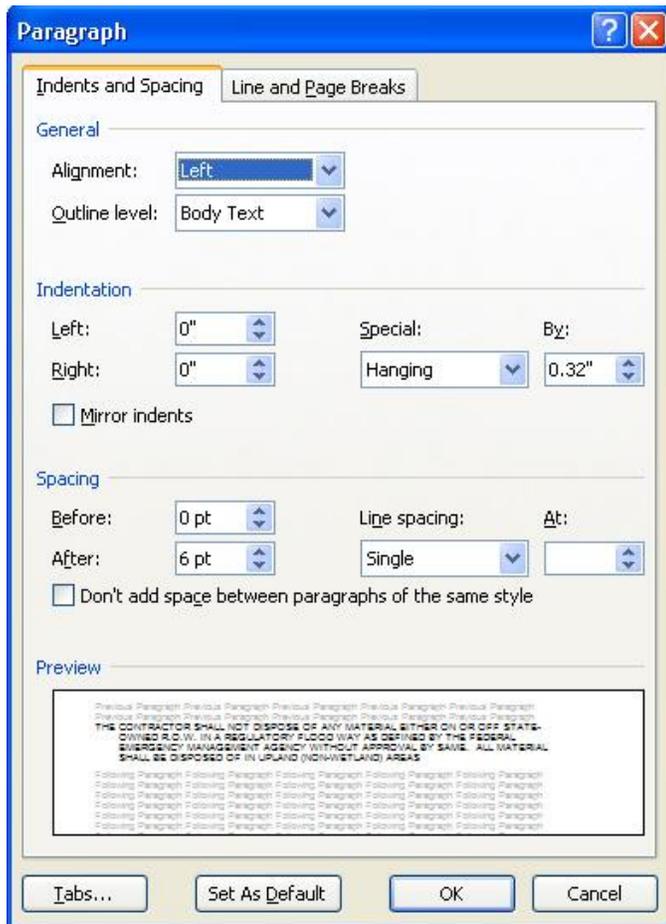
There are 2 ways to access the standard TDOT 2<sup>nd</sup> sheet text styles. You can click on the **Apply Styles** option which appears at the bottom of the Quick Styles drop down menu shown above. This opens the Apply Styles dialog. You could also click the small square with the arrow in it at the lower right of the Styles section title bar. This opens the **Styles** list.



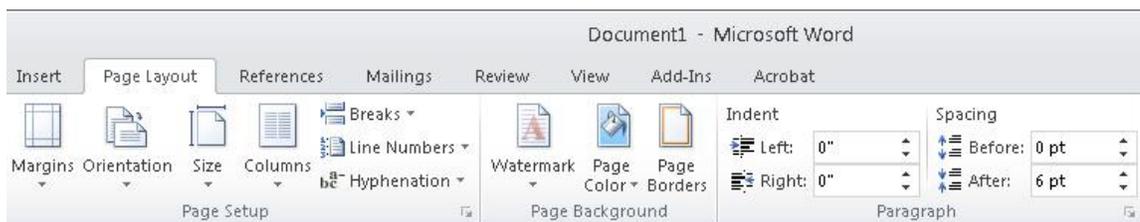
## Indents, Hanging Indents, Line Spacing, Tabs, etc.

To see the indents, hanging indents, tabs, etc. put the cursor at the text/paragraph in question, right click and select **Paragraph**. Note that the **Tabs** can be accessed at the lower left of the dialog. To change any of these settings, select the text to be changed, go to the **Paragraph** dialog and make the changes as needed.

You can also access the Paragraph dialog on the Office 365 ribbon under the **Home** tab in the **Paragraph** section. Click the small square with the arrow in it at the lower right of the Paragraph section title bar.

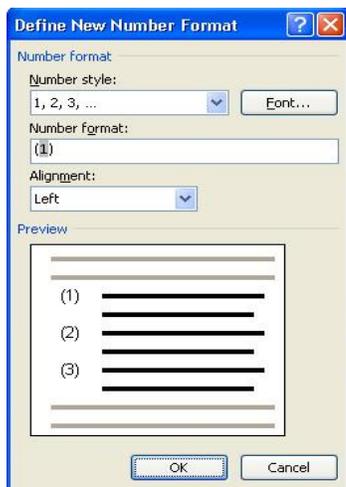
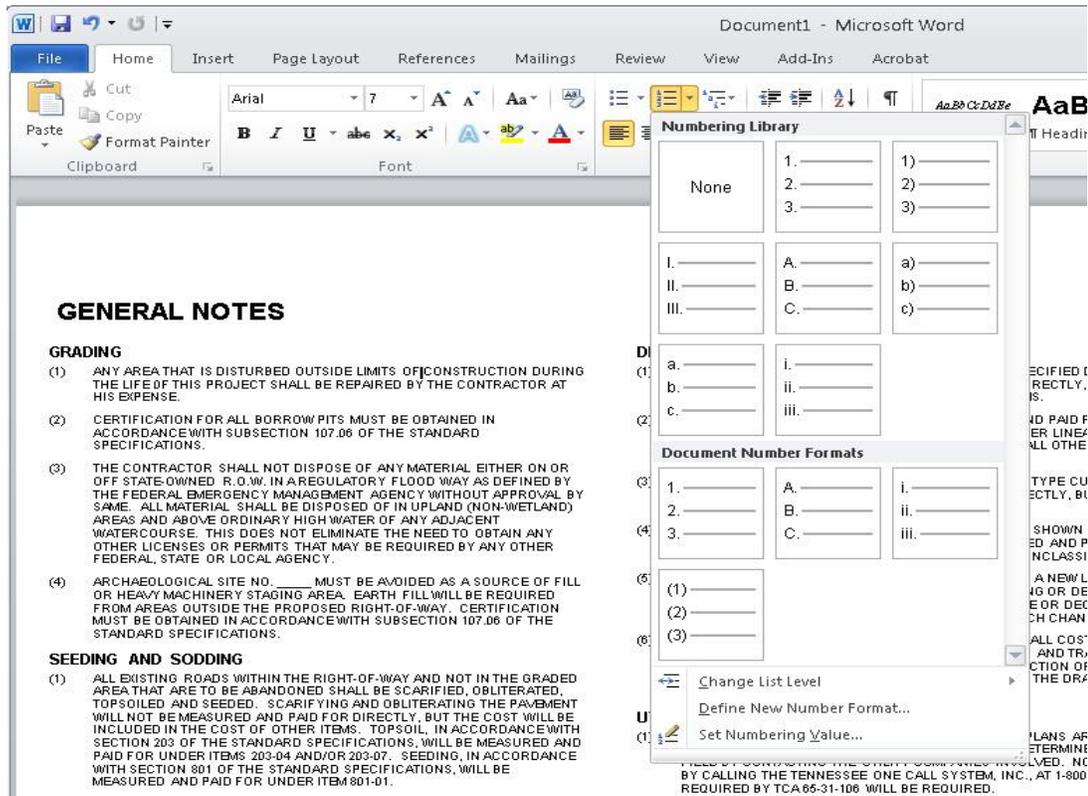


**Indent & Spacing** controls can also be found on the Office 365 ribbon under the **Page Layout** tab in its **Paragraph** section.

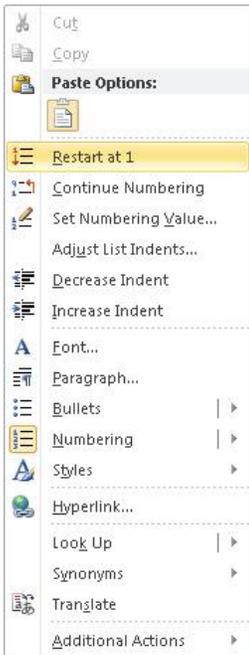


## Numbering & Bullets

You can access **Numbering** and **Bullets** on the Office 365 ribbon under the **Home** tab in the **Paragraph** section. Click either of these to use the current active format or click the arrow next to them to pull out the drop down menu for them. From the drop down menus choose **Define New Number Format** or **Define New Bullet** to set up a new format.

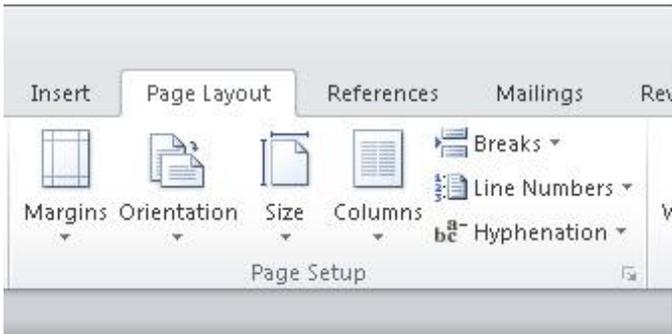


Position yourself in a given numbered paragraph and right click for various numbering controls.



## Page Setup

You can access **Page Setup** on the Office 365 ribbon under the **Page Layout** tab. The **Page Setup** section includes controls for the margins, orientation, size and columns of the page.



The TDOT General Notes and Index & Standard Drawings templates have a paper size of 11” x 17” and use a landscape orientation

Updated: 11/06/2017 IB-17-09, 12, 13 & 14  
Effective For March 23rd, 2018 Letting NOTE: REMOVE ALL BLUE TEXT BEFORE USE. THE BLUE TEXT IS FOR YOUR INFORMATION ONLY.

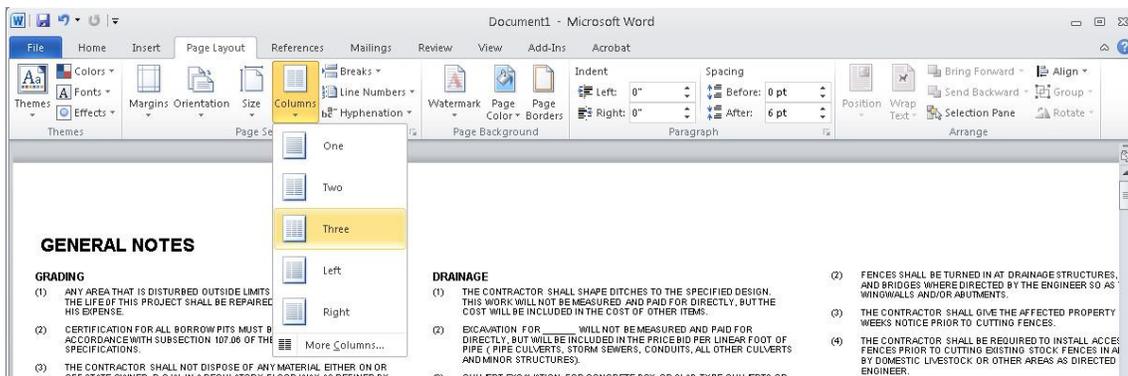
**STANDARD ROADWAY DRAWINGS**

DWG. NO.	REV.	DESCRIPTION	DWG. NO.	REV.	DESCRIPTION	DWG. NO.	REV.	DESCRIPTION
<b>ROADWAY DESIGN STANDARDS</b>								
S-1001 STANDARD ABBREVIATIONS AND LEGENDS								
RD-TR-1	05-25-16	STANDARD ROADWAY DRAWINGS TITLE SHEET	RD01-TS-9	06-15-12	DESIGN STANDARDS FOR SINGLE LANE URBAN AND RURAL ROUNDABOUTS	D-PS-1	03-15-76	STANDARD OVAL & FLAT BASE CONCRETE CULVERT PIPE
RD-A-1	12-18-99	STANDARD ABBREVIATIONS	RD01-TS-10	06-15-12	DESIGN STANDARDS FOR MULTI-LANE URBAN AND RURAL ROUNDABOUTS	S-110.02		STRUTTING DETAILS FOR CORR METAL & STRUCTURAL PLATE ROUND PIPE
RD-L-1	10-28-94	STANDARD LEGEND	RD01-SB-2	10-15-02	URBAN SUPERELEVATION DETAILS	D-PE-16A	06-14-13	SAFETY CROSS DRAIN ENDWALLS
RD-L-2	08-06-01	STANDARD LEGEND FOR UTILITY INSTALLATIONS	RD01-SB-3	10-15-02	RURAL SUPERELEVATION DETAILS	D-PE-16B		18" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 8:1 SLOPES)
RD-L-3	03-16-17	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING	S-100.03		SLOPE DEVELOPMENT	D-PE-16C		15" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 8:1 SLOPES)
RD-L-4	03-16-17	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING	RD01-S-11	04-04-03	DESIGN AND CONSTRUCTION DETAILS FOR ROADSIDE SLOPE DEVELOPMENT	D-PE-16A	01-06-15	18" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 8:1 SLOPES)
RD-L-6	06-01-08	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL	RD01-S-11A	10-15-02	ROADSIDE DITCH DETAILS FOR DESIGN AND CONSTRUCTION	D-PE-16B		15" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 8:1 SLOPES)
RD-L-6	03-30-10	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL	RD01-S-11B	10-15-02	DESIGN AND CONSTRUCTION DETAILS FOR ROCK CUT SLOPE AND CATCHMENT	D-PE-24A	07-06-17	24" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 8:1 SLOPES)
RD-L-7	06-24-12	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL	RD01-SA-1	10-15-02	SAFETY APPROACH TO UNDERPASSES GRADING DESIGN AND SLOPE PROTECTION	D-PE-24B		24" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 8:1 SLOPES)
RD-L-8	08-15-17	STANDARD LEGEND FOR NATURAL STREAM DESIGN	S-100.04		INTERSECTION SIGHT DISTANCE	D-PE-30A	10-10-16	30" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 8:1 SLOPES)
S-100.02		TYPICAL SECTIONS AND DESIGN CRITERIA	RD01-SD-1		INTERSECTION SIGHT DISTANCE DESIGN AND GENERAL NOTES	D-PE-30B		30" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 8:1 SLOPES)
RD01-TS-1	02-05-16	DESIGN STANDARDS FOR LOCAL ROADS AND STREETS	RD01-SD-2		INTERSECTION SIGHT DISTANCE LANDSCAPE AND OBSTRUCTION	D-PE-30A	06-14-13	30" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 8:1 SLOPES)
RD01-TS-1A	02-05-16	DESIGN STANDARDS FOR LOW-VOLUME LOCAL ROADS (ADP=400)	RD01-SD-3		INTERSECTION SIGHT DISTANCE 3-LANE ROADWAYS	D-PE-36B		36" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 8:1 SLOPES)
RD01-TS-2	03-16-17	DESIGN STANDARDS FOR COLLECTOR ROADS AND STREETS	RD01-SD-4		INTERSECTION SIGHT DISTANCE 4-LANE AND 4-LANE UNDIVIDED ROADWAYS	D-PE-42A	06-14-13	42" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 8:1 SLOPES)
RD01-TS-2A	10-15-02	DESIGN STANDARDS 4 AND 6 LANE COLLECTOR HIGHWAYS WITH DEPRESSED MEDIANS	RD01-SD-5		INTERSECTION SIGHT DISTANCE 4-LANE DIVIDED HIGHWAYS	D-PE-42B		42" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 8:1 SLOPES)
RD01-TS-2B	10-15-02	DESIGN STANDARDS 4 AND 6 LANE COLLECTOR HIGHWAYS WITH FLUSH MEDIANS	RD01-SD-6		INTERSECTION SIGHT DISTANCE 6-LANE DIVIDED HIGHWAYS	D-PE-46A	06-14-13	46" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 8:1 SLOPES)
RD01-TS-3	10-15-02	DESIGN STANDARD FOR 2-LANE ARTERIAL HIGHWAYS	RD01-SD-7		INTERSECTION SIGHT DISTANCE FOR PASSIVE RAILROAD HIGHWAY GRADE CROSSINGS	D-PE-48B		48" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 8:1 SLOPES)
RD01-TS-3A	10-15-02	DESIGN STANDARDS 4 AND 6 LANE ARTERIAL HIGHWAYS WITH DEPRESSED MEDIANS	S-100.05		UNDERDRAIN	D-PE-99	11-01-13	PIPE GRATE & SKIVED CONNECTION DETAILS FOR 12" ENDWALLS (FOR 3:1, 4:1 & 8:1 SLOPES)
RD01-TS-3B	10-15-02	DESIGN STANDARDS 4 AND 6 LANE ARTERIALS WITH INDEPENDENT ROADWAYS	RD-UD-3	08-05-96	UNDERDRAIN DETAILS	S-110.03		SAFETY SIDE DRAIN ENDWALLS
RD01-TS-3C	10-15-02	DESIGN STANDARDS 4 AND 6 LANE ARTERIAL HIGHWAYS WITH FLUSH MEDIANS	RD-UD-4	01-25-16	UNDERDRAIN LATERAL DETAILS	D-PS-1A	08-04-17	PIPE GRATE CONNECTION DETAILS FOR UNPLEATED PIPE
			RD-UD-6	12-18-94	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 1:1 & 2:1 SLOPES			

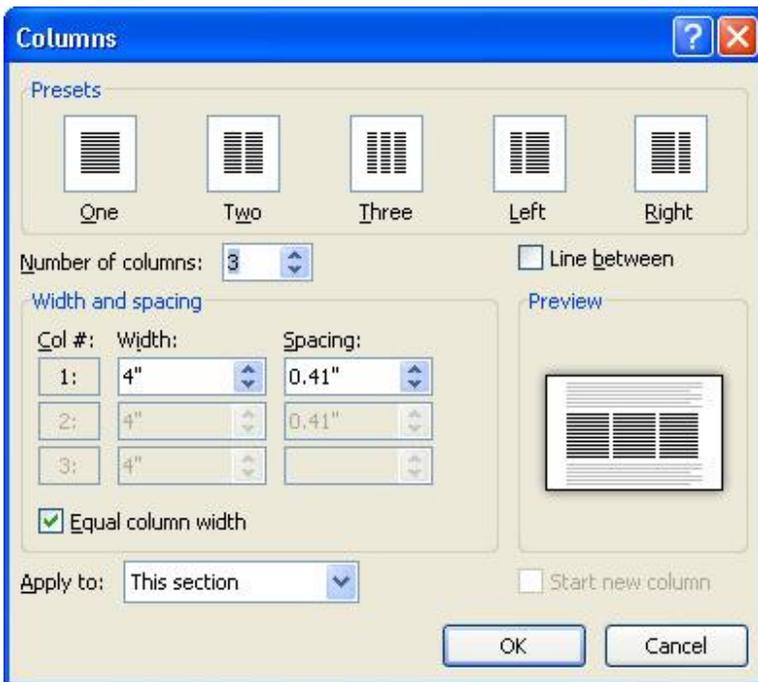
## Columns

You can also access **Column** formatting controls in the **Page Setup** section on the Office 365 ribbon under the **Page Layout** tab.

The TDOT General Notes and Index & Standard Drawings templates are set up into three columns. The number of columns and justification can be set from the Column drop down menu.



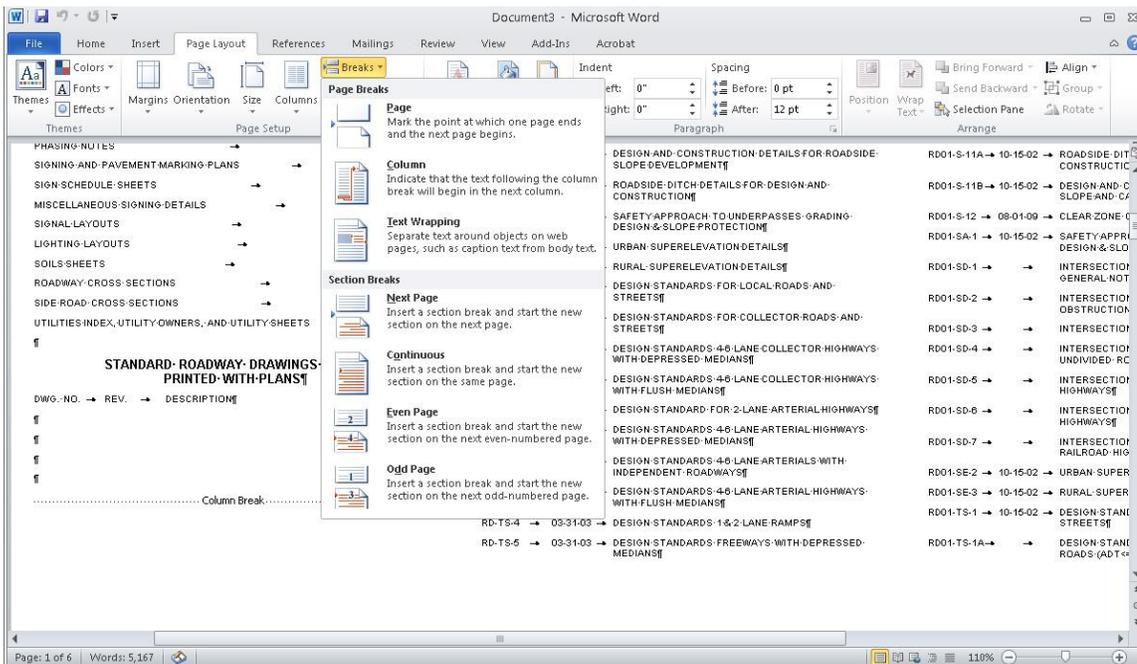
To set widths and other column settings, select the **More Columns** option from the drop down menu to open the **Columns** dialog.



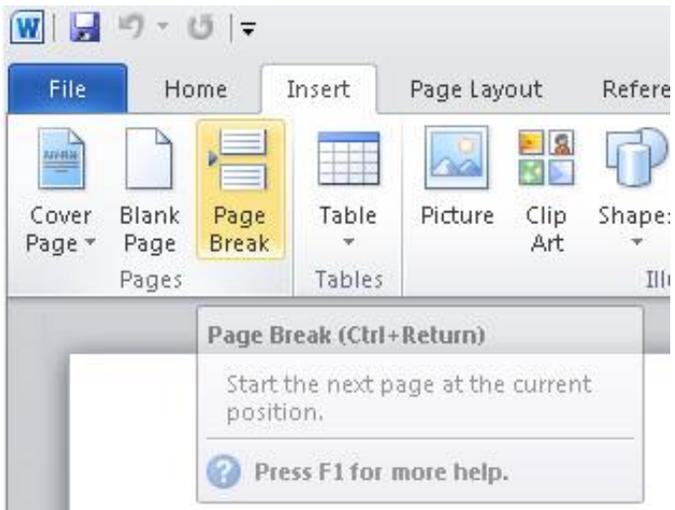
## Breaks

You can also access the **Break** controls in the **Page Setup** section on the Office 365 ribbon under the **Page Layout** tab.

Turn the **Show / Hide** formatting display on to see page, column and section breaks. Use the Delete key to remove a break. Use the drop down menu from **Breaks** in the Page Setup section to insert a page, column or section break as needed.



You can also insert a **Page Break** from the **Pages** section on the Office 365 ribbon under the **Insert** tab.



## Current Office\MicroStation Issues

This section describes current known issues with Office documents that are linked or embedded in MicroStation.

### “Word cannot start the converter mswrd632.wpc” Error Message

This error is caused because of an operating system security update for Windows first published on December 8, 2009.

Microsoft Office uses its own text converters to open Word attachments to MicroStation so this does not truly present a problem. The error message appears anytime you either open a Word document embedded in MicroStation or when you are embedding a Word document in MicroStation.

When the error message is encountered, simply click the OK button or the red X in the upper right corner. The message will pop up 1 or 2 times more, continue to click until it stops. When the message stops displaying you may need to click on the MicroStation title bar to make it active once more. At that point your document will open in Word or if attaching to MicroStation, the Paste OLE option settings come up so you can complete the attachment.



#### **Note:**

This issue can be resolved through unregistering the mswrd632 converter by editing the operating system registry. The change will effectively unregister the converter and disable it for third-party applications and for Microsoft Office.

Consultants who wish to apply this solution should go to Microsoft online for the appropriate steps to take for their systems. As of May 2010, there are no current plans to try to apply the fix on Roadway Design Division computers due to the time it would take and since it does not present a serious issue.

## Word Document Text Not Visible In MicroStation

After editing a Word document embedded in MicroStation and closing the document, the text no longer appears in MicroStation; instead, the attachment appears completely white.

Although this has only been encountered a few times, it does warrant mention. The cause of this problem is not currently known but it can be easily fixed.

Open the document in Word; it should appear normally in there. Then use one of the following methods to rebuild the attachment...

Select all of the text and copy it to the clipboard. In MicroStation, create a new DGN file from the standard seed file for those sheets. Open its embedded Word document, select all text and paste from the clipboard and save.

or ...

Use Save As and save the Word document outside of MicroStation. Create a blank MicroStation DGN file and using regular embedding methods described previously in this document, embed the saved Word document in MicroStation.

