

Table of Contents

2nd Sheets Using Office 2010 and MicroStation V8i	3
General Information	3
Set up Office 2010	4
Word:	4
Word Template Files	12
Excel:	13
Saving Documents with Macros	18
Enabling macros that are not in a trusted location	19
Excel Template Files	20
C:\Users\Public\Office Standards\Survey	20
C:\Users\Public\Office Standards\TDOT 2nd Sheets	20
C:\Users\Public\Office Standards\TDOT Tab Quantities	20
Estimated Roadway Quantities Excel File	21
Create The TDOT Estimated Roadway Quantities	22
Estimated Roadway Quantities Macros	27
Project Column Format	27
Select Item Numbers From List	29
Placing Select Item Numbers & Descriptions In The Roadway Quantity Block	32
Fill In Description and Unit	34
Import CSV File for Items	35
Sort Item Numbers	37
Format Item Numbers	39
Import CSV	40
Auto-Build Tabulated Quantity Block Macro Access	41
Alternate Pay Items	41
Additional Estimated Roadway Quantities Worksheets	42
Add Tabulated Quantity Blocks In The Estimate File	43
Removing Tabulated Quantity Blocks In The Estimate File	45
Standard Tabulated Quantity Template Formatting	47
Auto-Build Tabulated Quantity Blocks	48
Guardrail Tab Builder	48
Storm Drainage Pipe Tab Builder	50
Storm Drainage Structures Tab Builder	51
Link Tabulated Quantity Blocks to Estimated Roadway Quantities Worksheet	52

MicroStation 2d Files for Word and Excel	54
Creating a New Second Sheet.....	54
Excel Linking to a MicroStation File.....	58
Linking The Estimated Roadway Quantities Block	58
Linking The Foot Noes.....	60
Linking The Tabulated Quantities Blocks.....	62
Linking Multiple Blocks To One Sheet.....	64
Excel Text Size in a MicroStation File	65
Open & Update the Excel OLE Attachment	66
Relinking	66
Word Embedded in MicroStation.....	67
Word Documents Embedded in MicroStation DGN Seed Files	67
Creating a Second Sheet from a Seed File in MicroStation.....	67
Seed file Editing Notes:	68
Special Info in the Word Header & Text Body	69
More than one Sheet Needed.....	69
Embedding Word Documents in Existing MicroStation DGN Sheet Files	71
A Full Sheet of Notes	71
Text Size for a Full Sheet of Text.....	73
Placing a Word File on a Layout Sheet	74
Open & Update the Word OLE Attachment	76
Formatting Word Documents.....	78
Show/Hide Formatting	79
Text Styles in Word	80
Indents, Hanging Indents, Line Spacing, Tabs, etc.	82
Numbering & Bullets.....	83
Page Setup.....	84
Columns	85
Breaks.....	86
Current Office \ MicroStation Issues	87
Error Message “Word cannot start the converter mswrd632.wpc”	87
Word Document Text Not Visible In MicroStation	88

2nd Sheets Using Office 2010 and MicroStation V8i

General Information

Instructions in this document are for development of 2nd sheets using Office 2010 and MicroStation V8i.

The process of attaching Office files in MicroStation is called '**OLE** linking', which stands for **Object Link and Embed**. 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 separately 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.

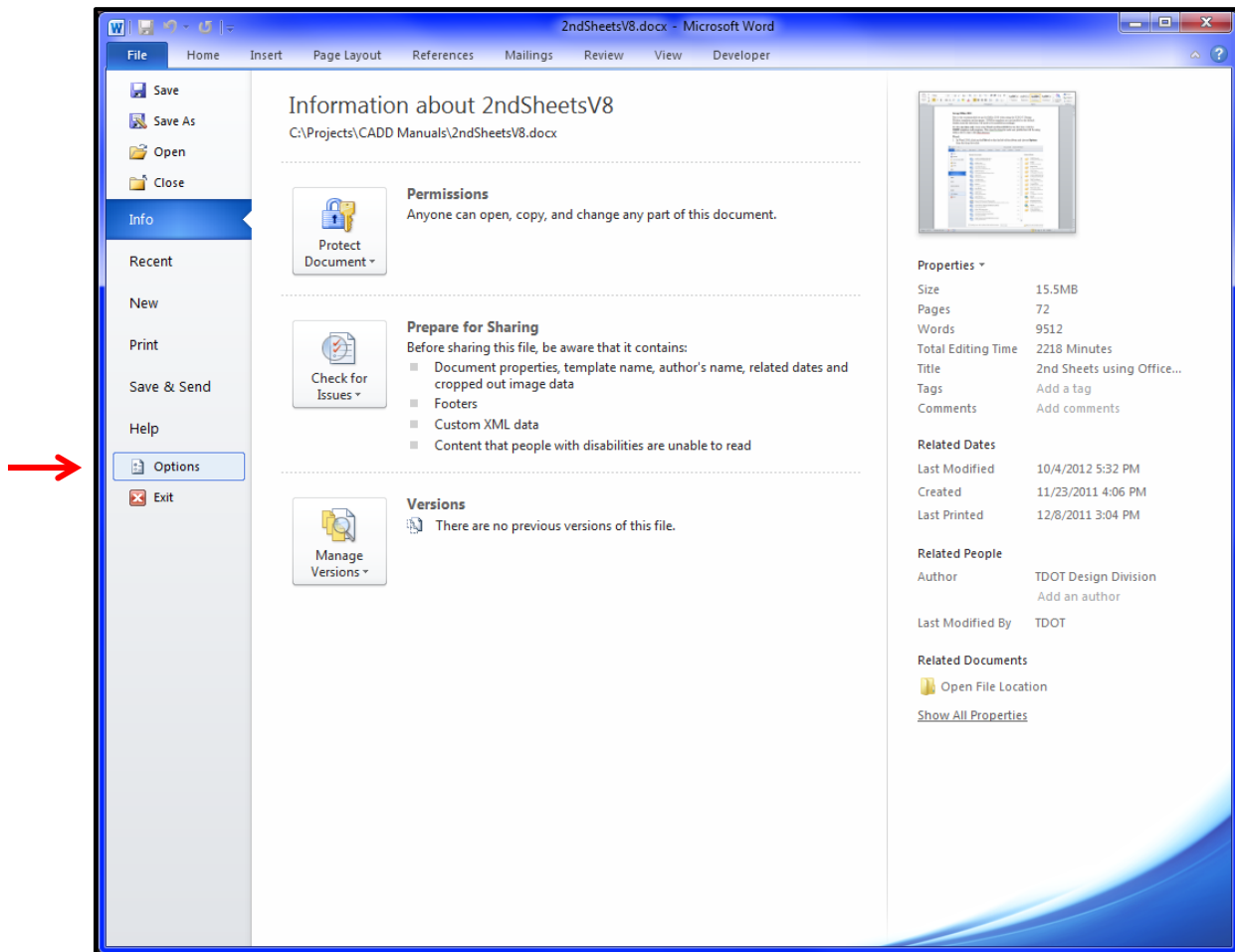
Set up Office 2010

This is the recommended set up for Office 2010 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 2010** 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 2010 to link with MicroStation.

Word:

1. In Word 2010, click on the **File** tab at the far left of the ribbon and choose **Options** from the drop down list.

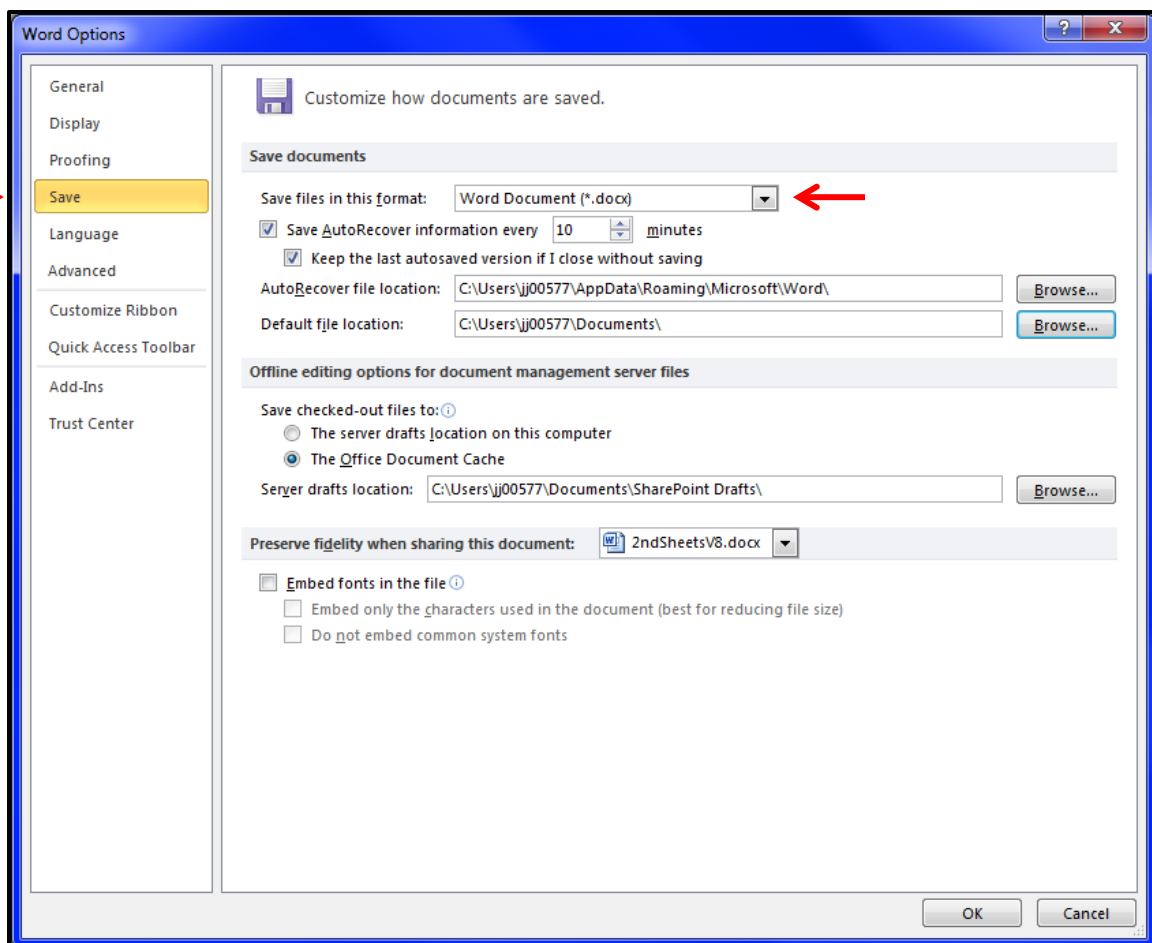


2. In the Word Options dialog click on **Save** in the options on the left.

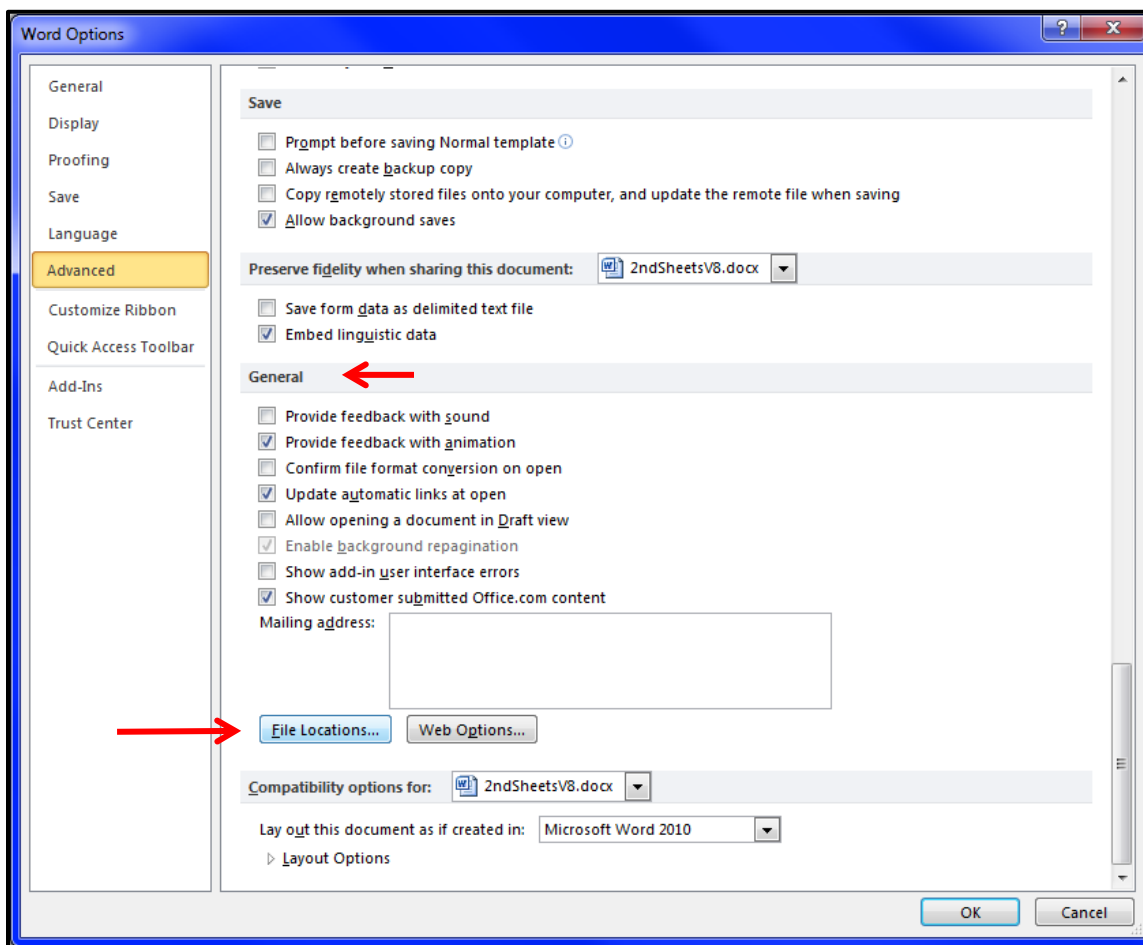
Set the **Save Files in this format:** option to "**Word Document (*.docx)**".

Set the **Default file location:** Use the Browse button to the right of "**Default File Location:**"

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.

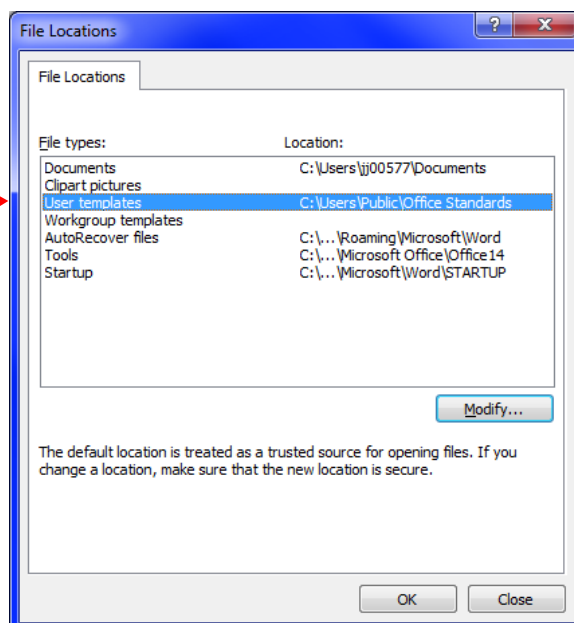


Click on **User Templates** and then click on the **Modify** button.

Navigate to and set the folder to:

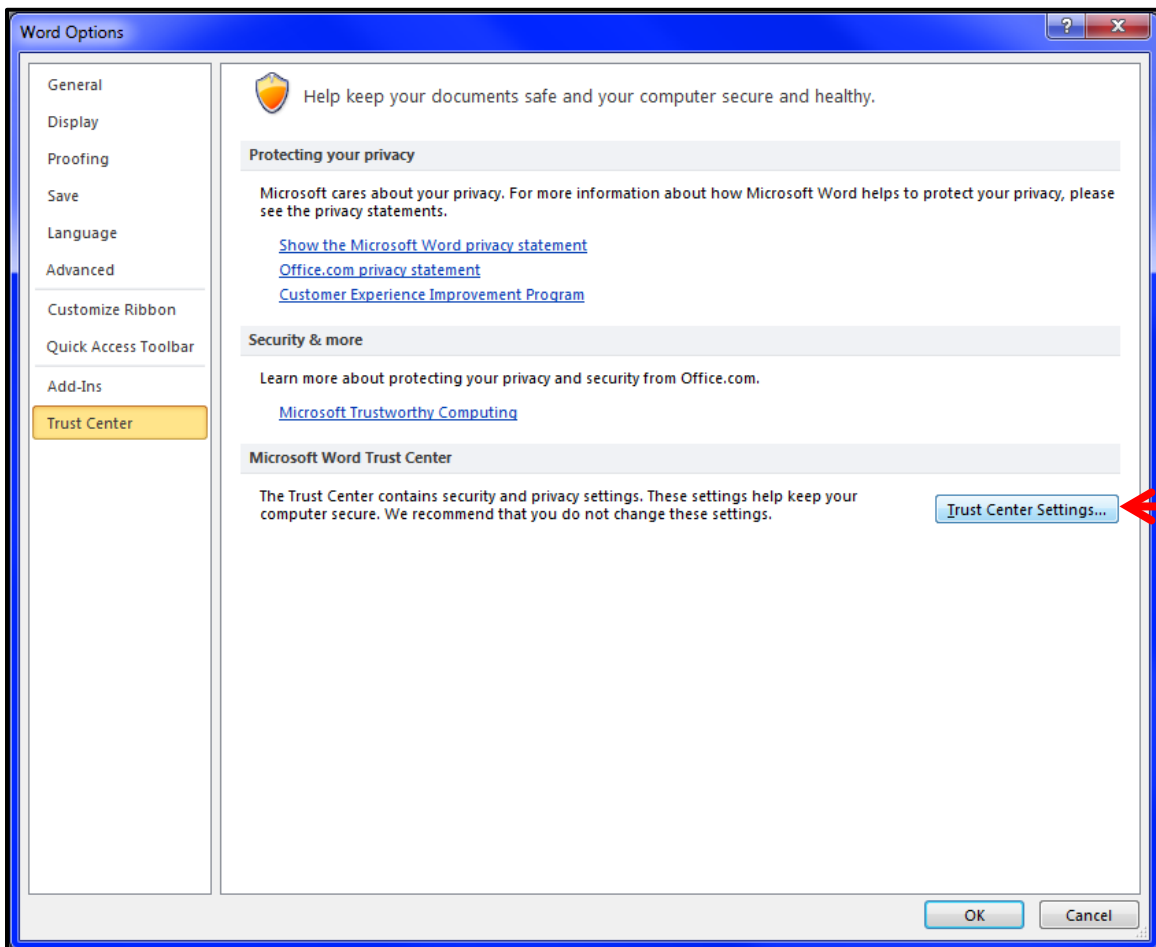
"C:\Users\Public\Office Standards".

Click **OK** to save the setting.



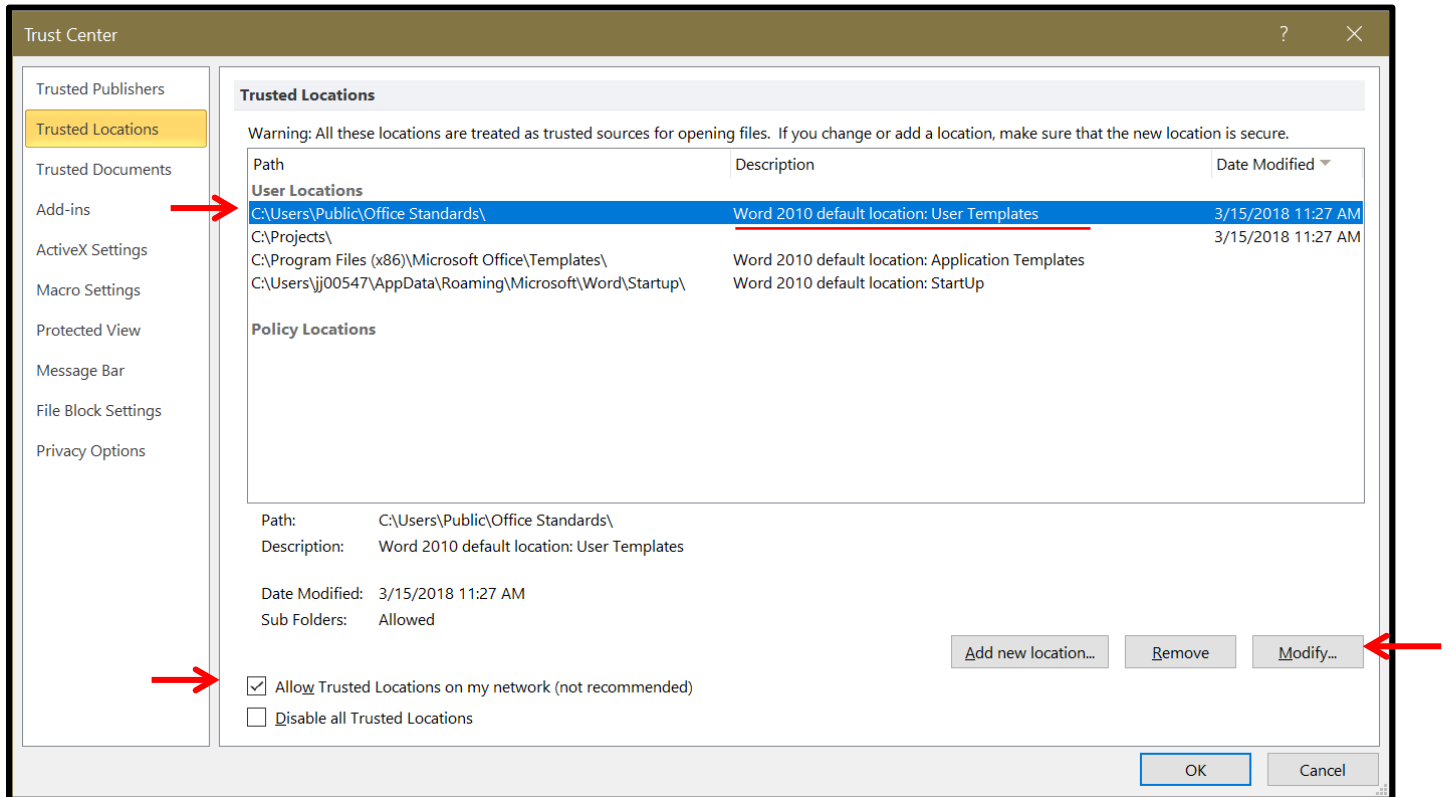
This will set the default template location for both **Word** and **Excel** so that the TDOT template folders will be available.

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 2010 default location: User Templates**". Click the **Modify** button.

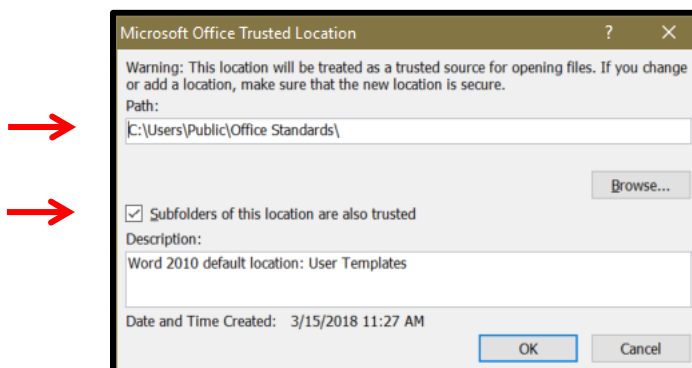
All files stored under Trusted Locations will automatically load macros without any action from the user.



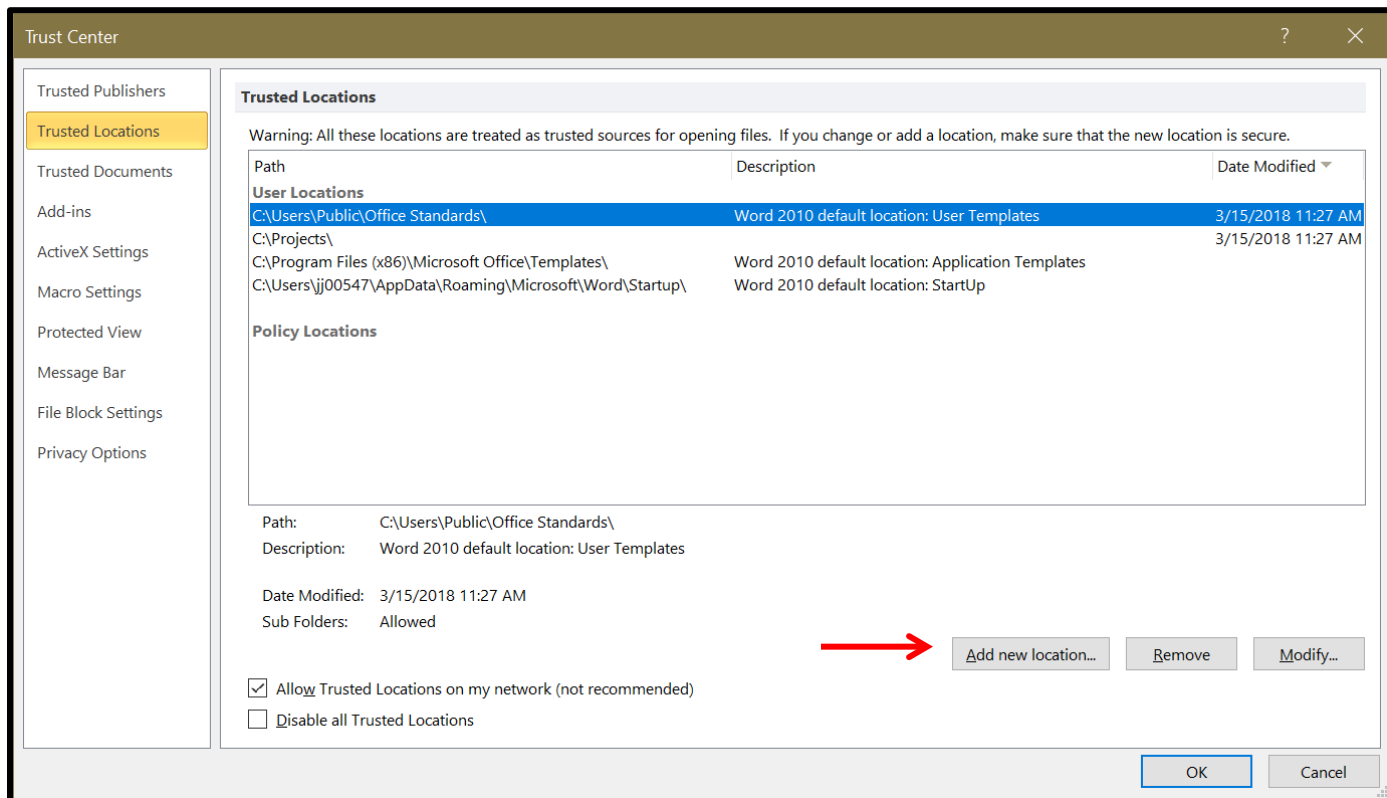
- c. In the dialog box, which opens for the **User Templates**, set the **Path** by Clicking on the **Browse** button.

Select the **Path "C:\Users\Public\Office Standards"**.

Select on the box for "**Subfolders of this location are also trusted**" and click **OK**.



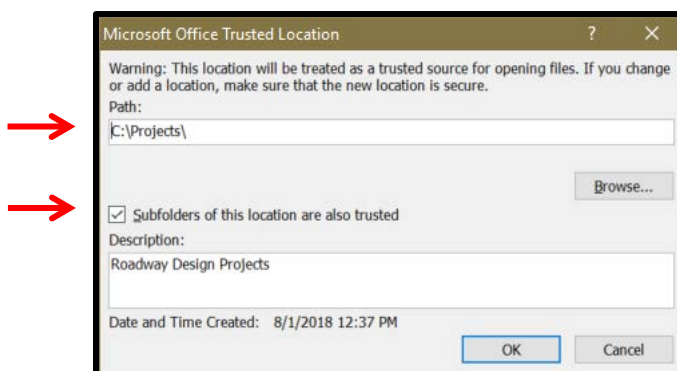
6. In the Trust Center dialog, click the **Add new location** button.



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

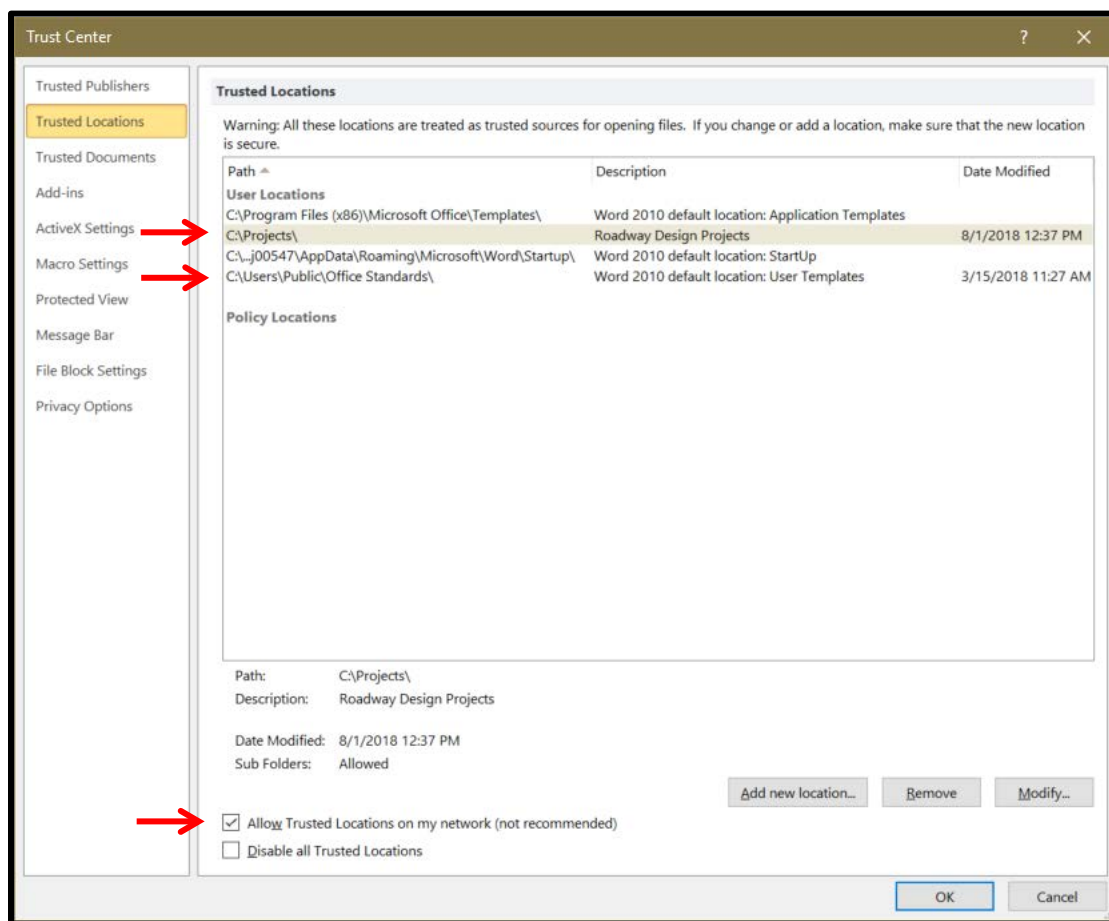
It is recommended for TDOT personnel that all Roadway Design Projects be stored on your c: drive in a folder named Projects and individual projects in subfolders.

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.

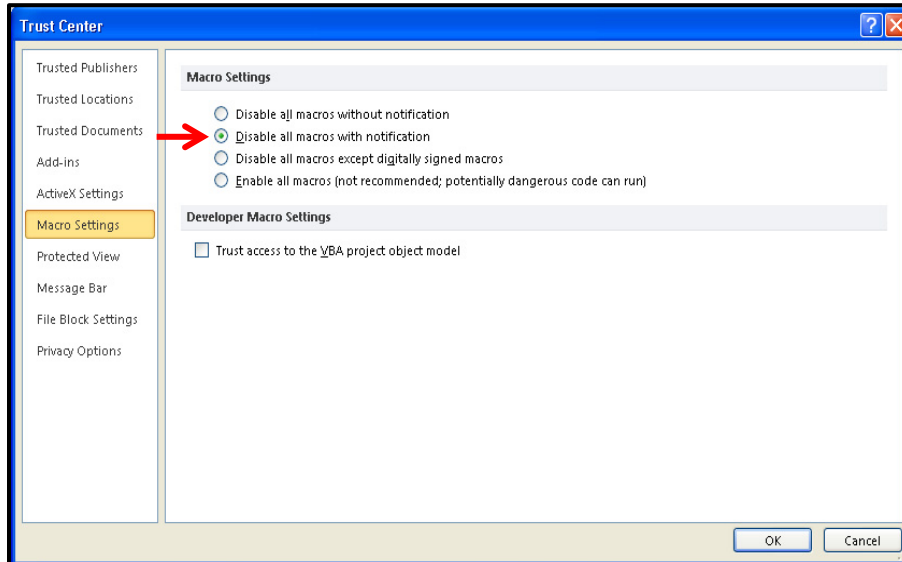
Your Trusted Locations should look like this.



If you open a Word 2010 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.

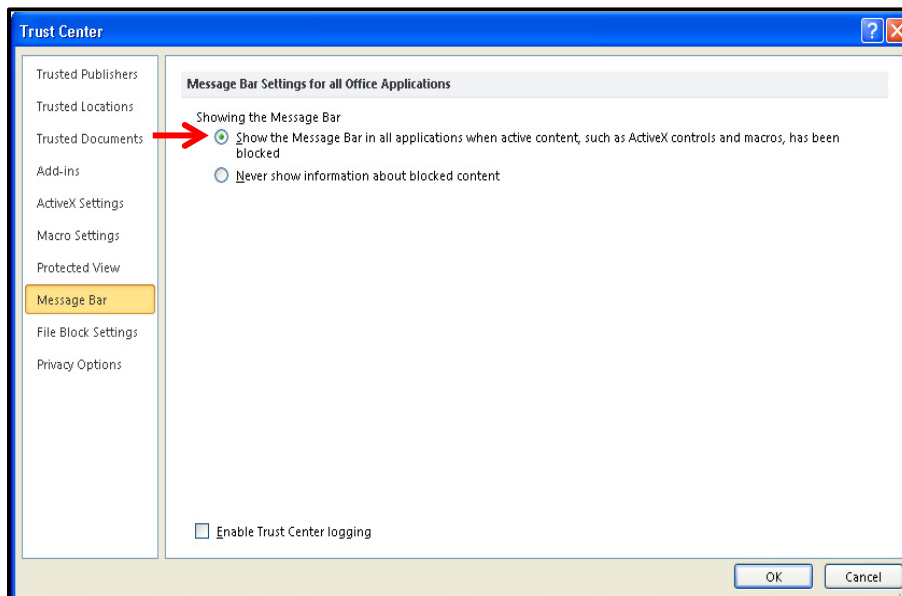
7. In the Trust Center dialog, click on **Macro Settings** in the options on the left.

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 2010 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 3 Survey and Roadway Design Letterhead.dotx
- Sheet 3 ROW Notes Utility Notes Utility Owners XXXXXX.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

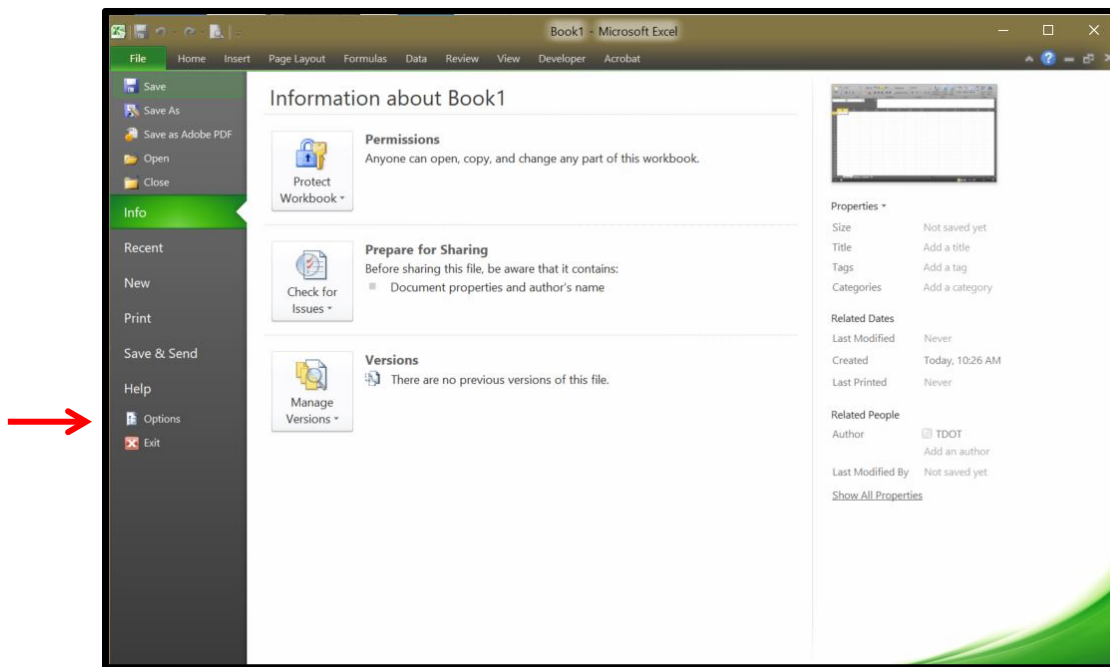
- Bridge Index.dotx
- CONSTRUCTION INDEX XXXXXX.dotx
- Drop Off Notes Traffic Control XXXXXX.dotx
- EPSC Notes XXXXXX.dotx
- General Notes XXXXXX.dotx
- Index and Standard Drawings XXXXXX.dotx
- PRELIMINARY INDEX TITLE SHEET XXXXXX.dotx
- RIGHT OF WAY INDEX TITLE SHEET XXXXXX.dotx
- Sheet 3 ROW Notes Utility Notes Utility Owners XXXXXX.dotx
- SHEET FORMAT FOR 2ND SHEET NOTES XXXXXX.dotx
- Special Notes XXXXXX.dotx
- Standard Roadway Drawings XXXXXX.dotx
- Standard Structure Drawings XXXXXX.dotx
- Standard Traffic Operations and Structure Drawings XXXXXX.dotx
- Standard Traffic Operations Drawings XXXXXX.dotx

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

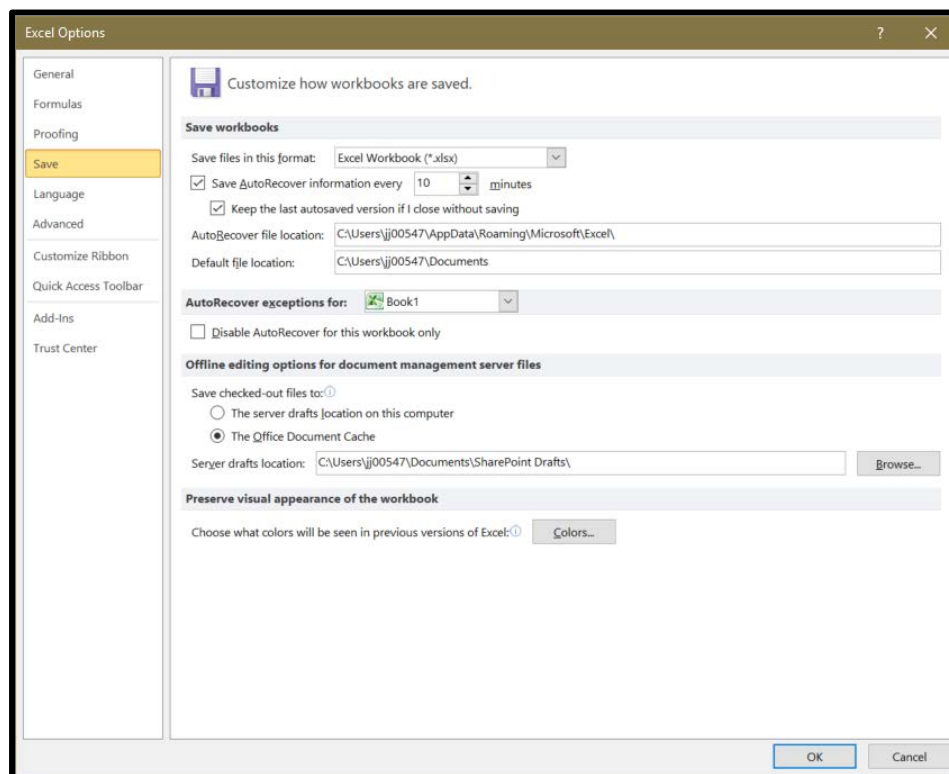
-NONE-

Excel:

1. In Excel 2010, click the **File** tab at the far left of the ribbon and choose **Options** from the drop down list.

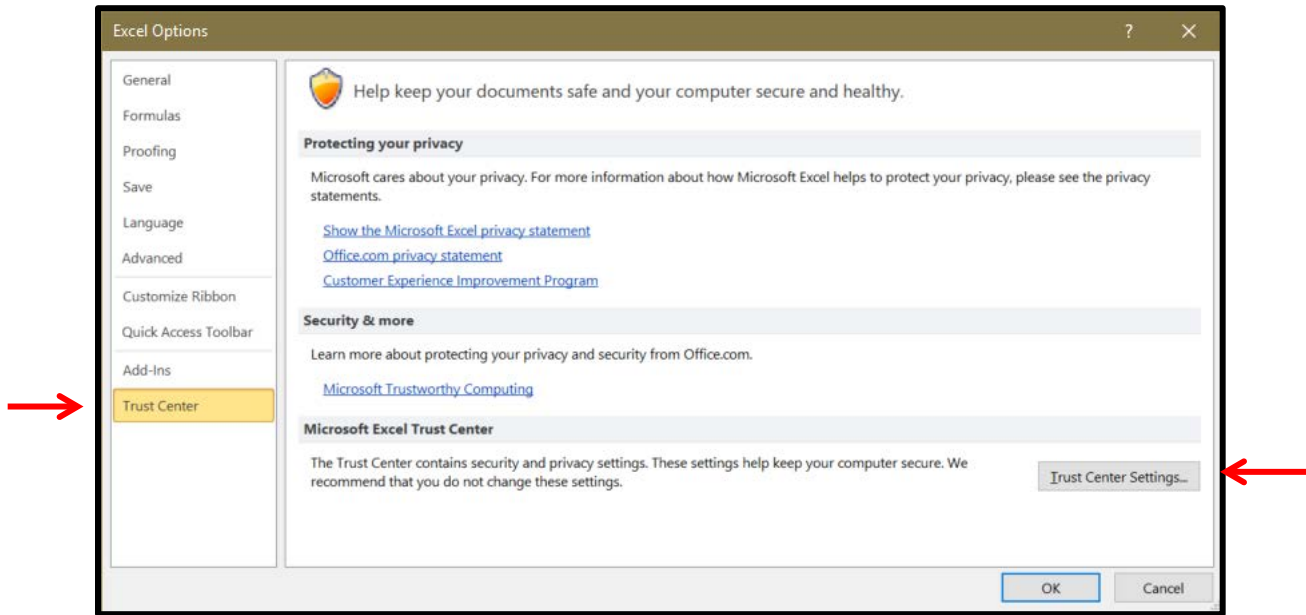


2. In the **Excel Options** dialog, click **Save** in the options on the left.
Set the option for **Save Files in this format: "Excel Workbook (*.xlsx)"**.
Change the path given for **Default File Location**:
Set the folder where all Excel documents should be saved by default.



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

Click the **Trust Center Settings** button.

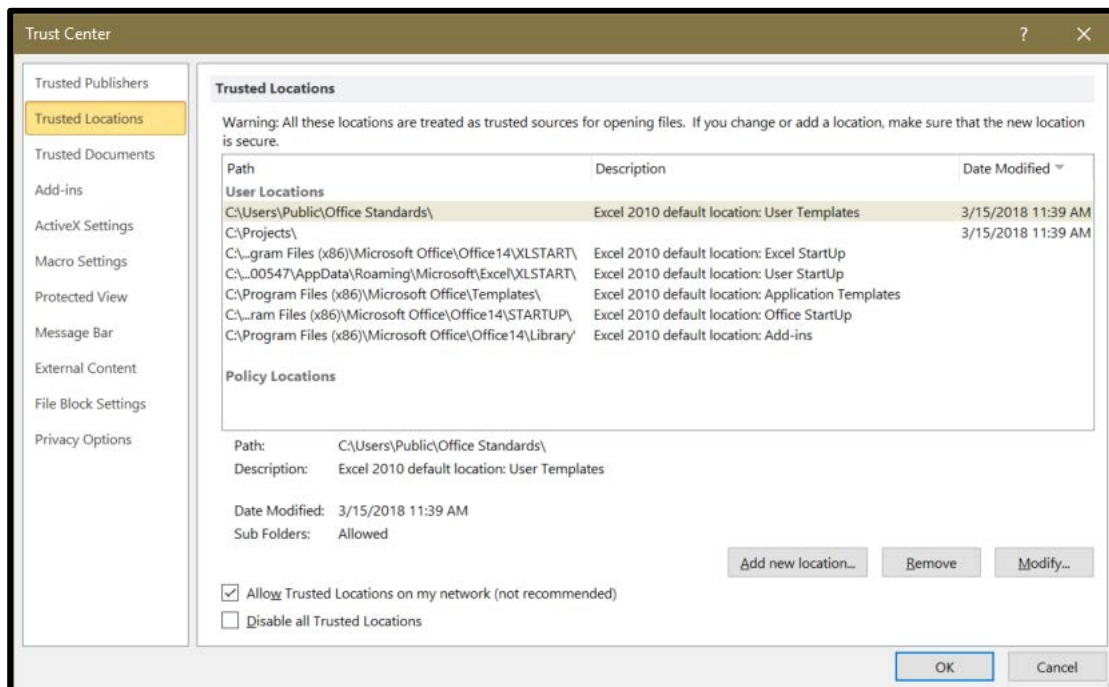


4. In the Trust Center dialog, click **Trusted Locations** in the options on the left.

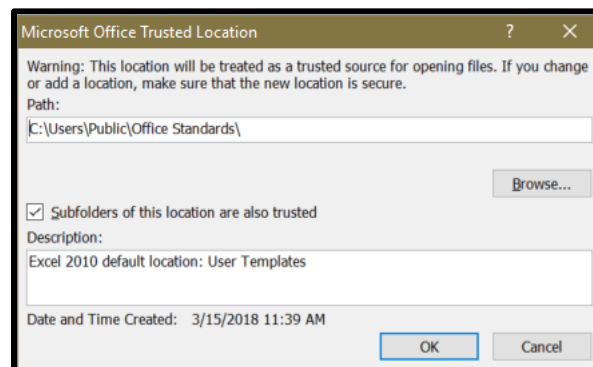
Select the trusted location for **Excel 2010 default locations: User Templates**.

Click the **Modify** button.

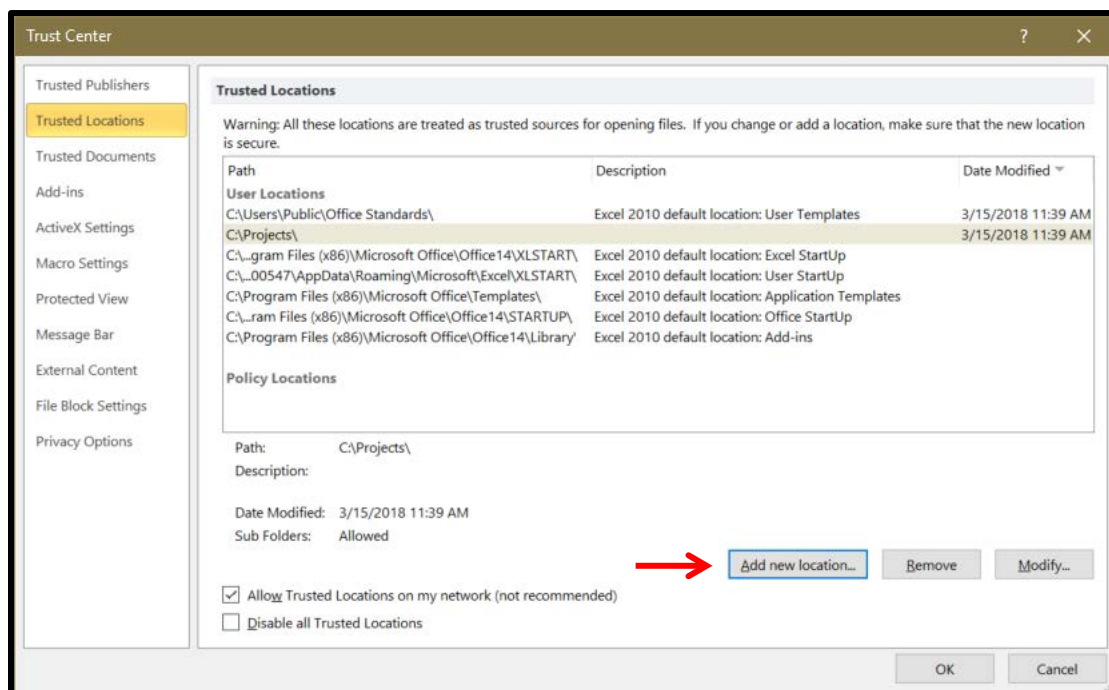
All files stored under Trusted Locations will automatically load macros without any action from the user.



5. 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**.

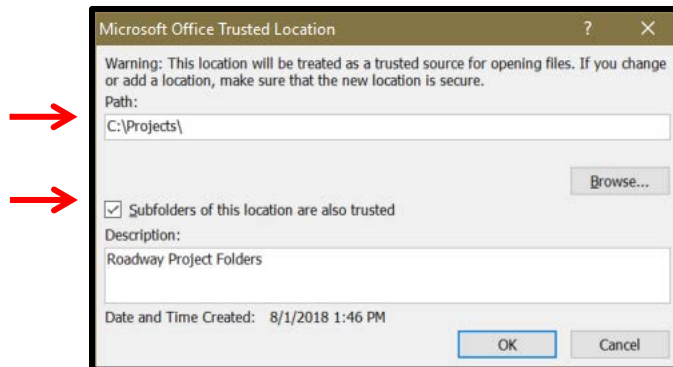


6. In the Trust Center dialog box, click on the **Add new location** button.



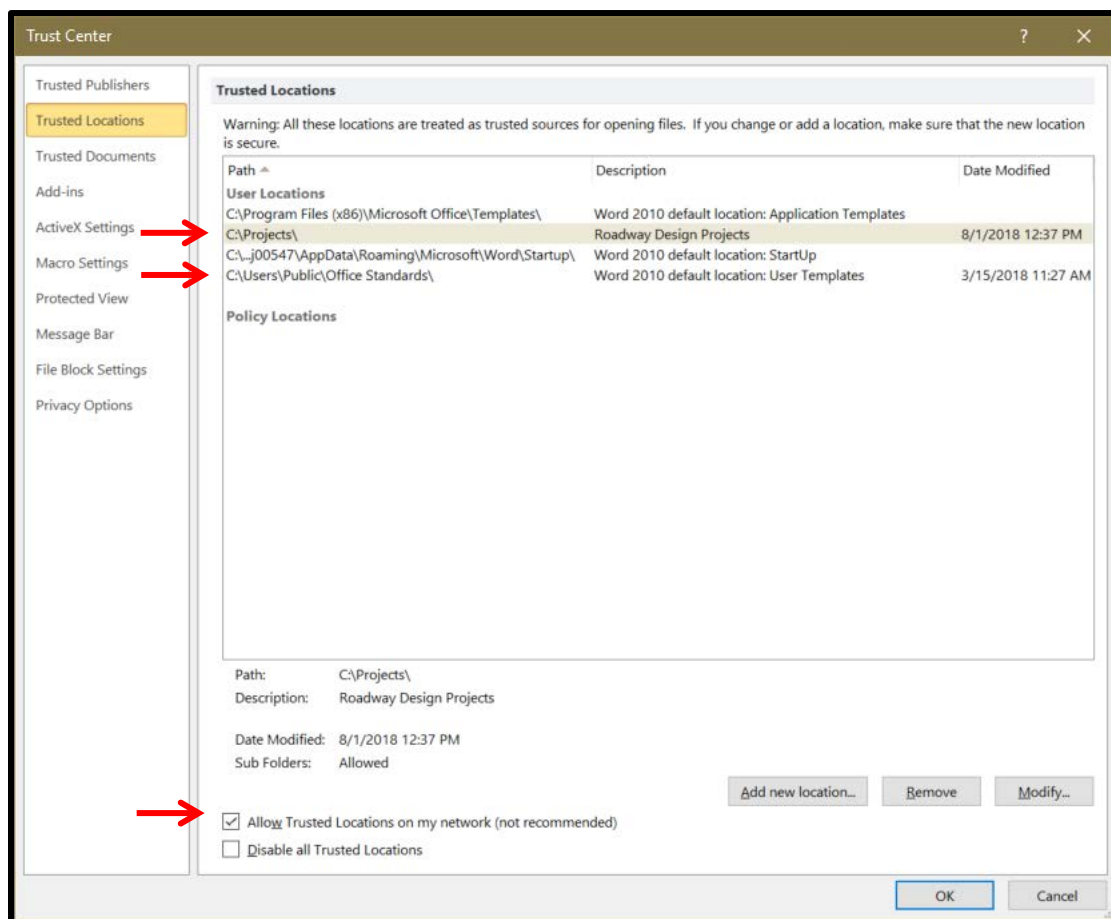
Click on the **Browse** button and navigate to the location where your project files are stored. It is recommended for TDOT personal that all Roadway Design Projects be stored on your c: drive in a folder named Projects and individual projects in subfolders.

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



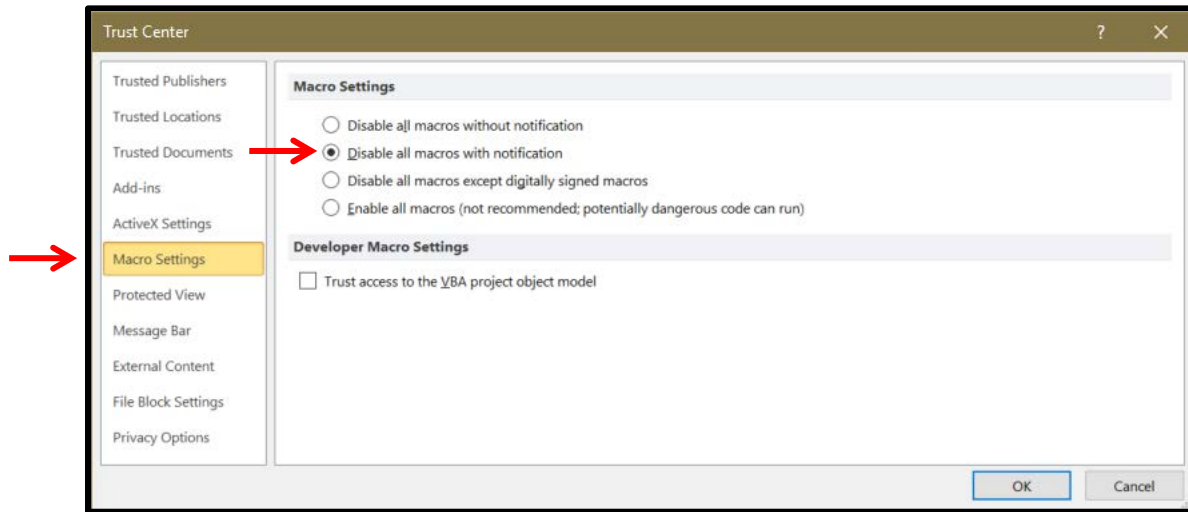
With your project folders defined as trusted locations, all macros will automatically be enabled.

Your Trusted Locations should look like this.

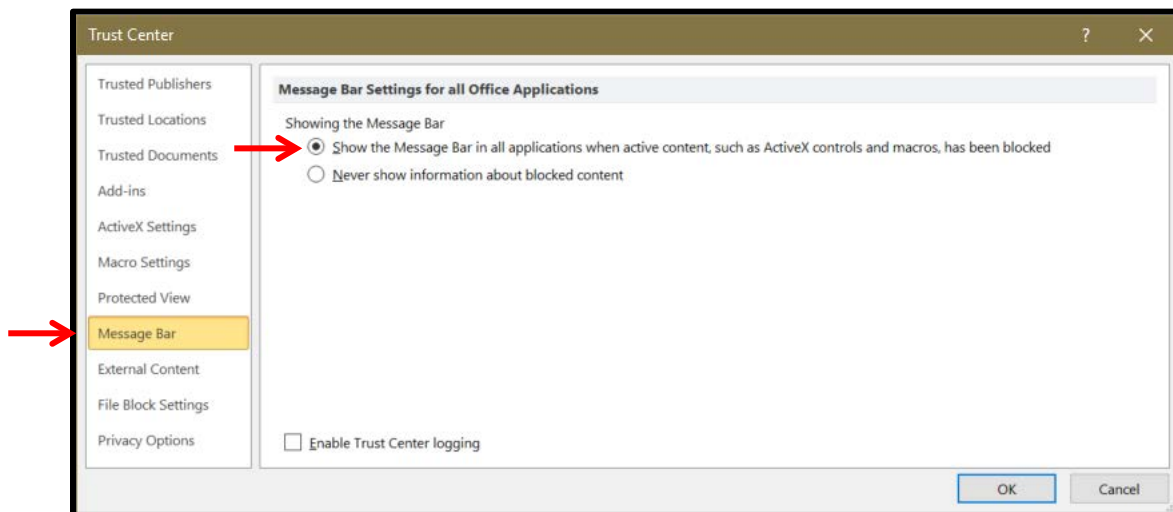


Note: If you open an Excel 2010 file with macros that is not in a trusted location, the following two settings, numbers 7 and 8 will provide you the opportunity to enable the macros as needed.

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



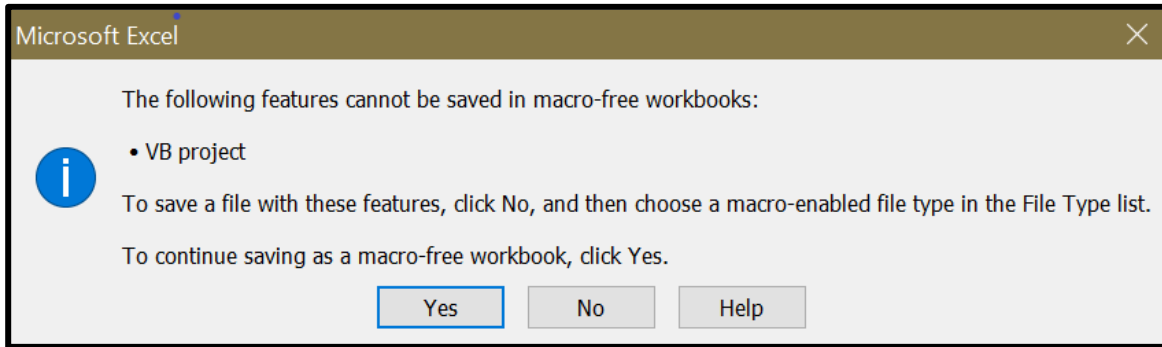
8. In the Trust Center dialog box, click on **Message Bar** in the options on the left. The option "**Show the Message Bar in all applications when active content, such as ActiveX controls or macros, has been blocked**" should be set.



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 2010 set up.

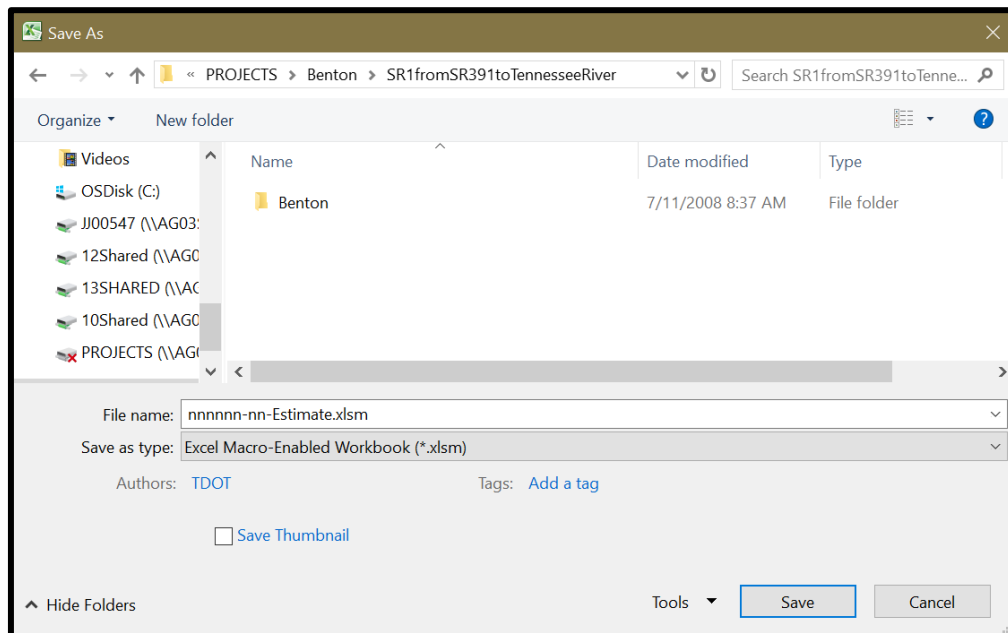
Saving Documents with Macros

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.



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.

Estimated Roadway Quantities.xlsm - Microsoft Excel

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

	A	B	C	D	E	F
		Project No. 1 Data	Project No. 2 Data	Project No. 3 Data	Project No. 4 Data	Project No. 5 Data
1	State Project Number					
2	Federal Project Number					
3	Non-Participating					
4	Project Description					
5	PIN					
6	Letting Date					
7	Project Type					
8	Units	English 2000	English 2000	English 2000	English 2000	English 2000
9	Country					
10	Route					
11	Road Name					
12	Project Length					
13	Beginning Station					
14	Ending Station					
15	Beginning Log Mile					
16	Ending Log Mile					
17	North Coordinate					
18	East Coordinate					
19	Longitude					
20	Latitude					
21	Roadway Designer					
22	Roadway CE Manager 2					
23	Date Turned In					
24	Bridge Required					
25	Bridge Designer					
26	Bridge CE Manager					
27	Estimate Type					
28	Quantities Calculation Date					
29	Quantities Updated Date					

DO NOT CHANGE OR DELETE ANY COLUMN WIDTH OR ROW HEIGHT AND TEXT SIZE !!!
IF YOU CHANGE ANY OF THESE IT WILL CAUSE PROBLEMS FOR OTHER PEOPLE USING THIS FILE.

ROWS WITH RED DESCRIPTORS IN COLUMN A ARE REQUIRED.

Continue Submit Admin

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 2010 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
- Maintenance Quantities.xltn
- Project Commitments.xltx
- Estimated Roadway Quantities XXXXXX.xltn

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

- Builder Guardrail Tab.xltn
- Builder Storm Drainage Pipe Tab.xltn
- Builder Storm Drainage Structure Tab.xltn
- OutFalls.xltx

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.

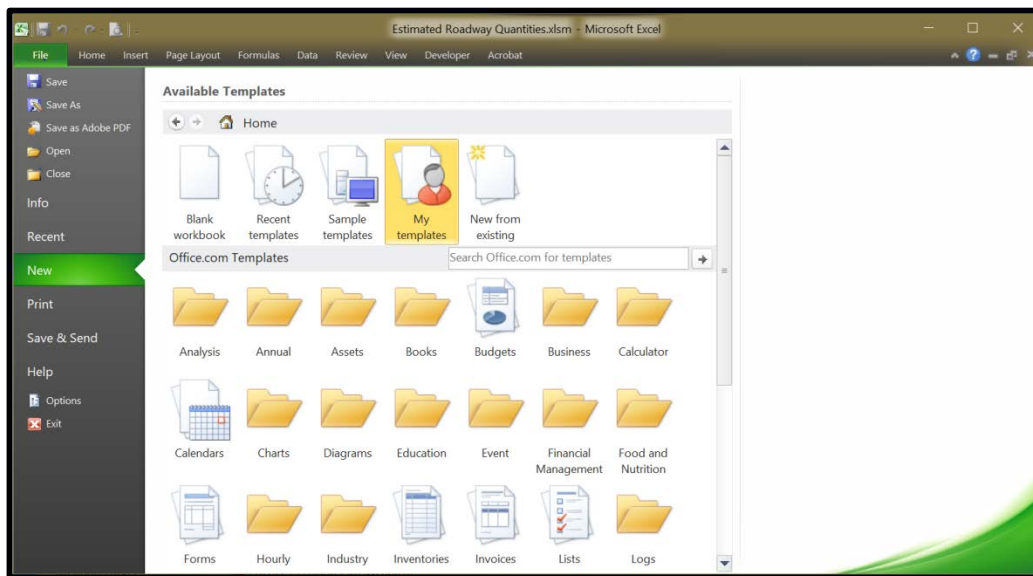
Save the Excel file to your project folder. Any links attached will not be correct if the Excel file is not saved onto your computer or computer network where your files are stored before attaching them to a MicroStation file.

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.

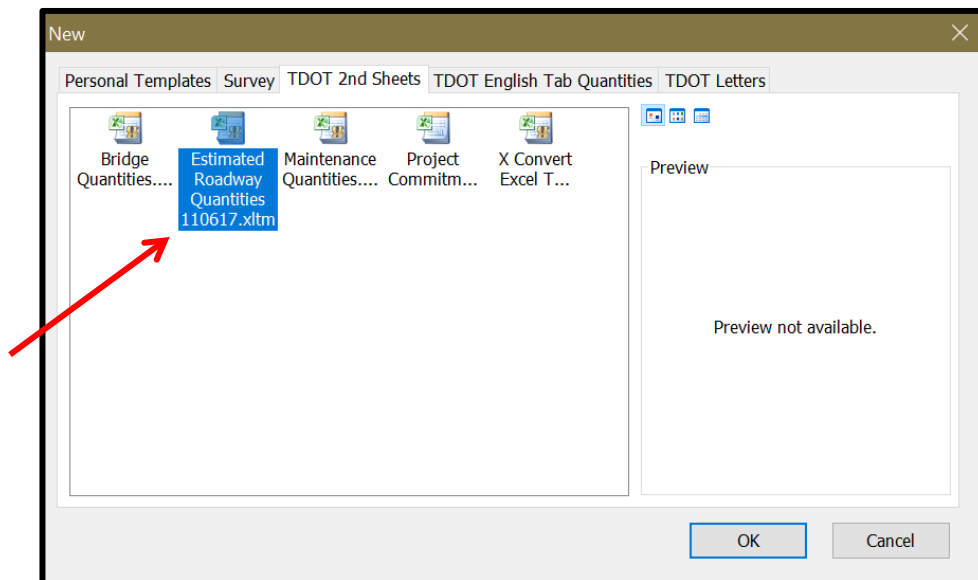
These directions will first demonstrate creating the Estimated Roadway Quantities file and later describe adding other tabulated blocks.

1. In Excel, click on the **File** tab on the far left of the Excel ribbon and choose **New**
2. Under New, choose **My Templates**.



3. Go to the TDOT 2nd Sheets tab and select the **Estimated Roadway Quantities.xltm** template

Choose the file with the latest revision date.



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 filled in before you can proceed! The example below shows what must be filled in to proceed

	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 Project Number	04002-8218-14	04003-3218-94			
3	Federal Project Number	STPHSIP-30(79)	STPHSIP-30(79)			
4	Non-Participating					
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	-85.253436			
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	Bridge Designer					
33	Bridge CE Manager					
35	Estimate Type	Preliminary				
36	Quantities Calculation Date					
37	Quantities Updated Date					

DO NOT CHANGE OR DELETE ANY COLUMN WIDTH OR ROW HEIGHT AND TEXT SIZE !!!
IF YOU CHANGE ANY OF THESE IT WILL CAUSE PROBLEMS FOR OTHER PEOPLE USING THIS FILE.

ROWS WITH RED DESCRIPTORS IN COLUMN A ARE REQUIRED.

Continue Submit Admin

Project Data Rdwy. Quantity Block 1 Rdwy. Quantity Block 2 Foot Notes Box

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 Quantities.xlsm - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Developer Acrobat

Clipboard Font Alignment Number Styles Cells Editing

Project No. 1 Data Project No. 2 Data Project No. 3 Data Project No. 4 Data Project No. 5 Data

State Project Number 04002-0278-14 04003-0278-94

Federal Project Number STPH-SP-30179 STPH-SP-30179

Non-Participating

Project Description From Vanburen Co. Line To East of Bob Sapp Rd. From Vanburen Co. Line To East of Bob Sapp Rd.

PIN 000000.00 000000.00

Letting Date February 9, 2018 February 9, 2018

Project Type New Bridge Safety

Units English-2000 English-2000 English-2000 English-2000 English-2000

County Van Buren Van Buren

Route SR 30 SR 30

Road Name

Project Length 5.58 Miles 5.58 Miles

Beginning Station

Ending Station

Beginning Log Mile 0.00 0.00

Ending Log Mile 5.58 5.58

North Coordinate

East Coordinate

Longitude -85.253436 -85.253436

Latitude 35.675467 35.675467

Roadway Designer Diane F. Witt

Roadway CE Manager 2 Robert Rodgers

Date Turned In 11-11-17

Bridge Required No

Bridge Designer

Bridge CE Manager

Estimate Type Preliminary

Quantities Calculation Date

Quantities Updated Date

continue Submit Admin

Project Data Rdwy. Quantity Block 1 Rdwy. Quantity Block 2 Foot Notes Box Bridge Quantities Block **Add Sheets**

Ready

DO NOT CHANGE OR DELETE ANY COLUMN WIDTH OR ROW HEIGHT AND TEXT SIZE !!!
IF YOU CHANGE ANY OF THESE IT WILL CAUSE PROBLEMS FOR OTHER PEOPLE USING THIS FILE.

ROWS WITH RED DESCRIPTORS IN COLUMN A ARE REQUIRED.

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

Classification Roadway Structures

Type Catch Basins & Manholes

Select

Make your selection and Click Select.

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

[illegible]

Then the user can fill in the data that is need 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.

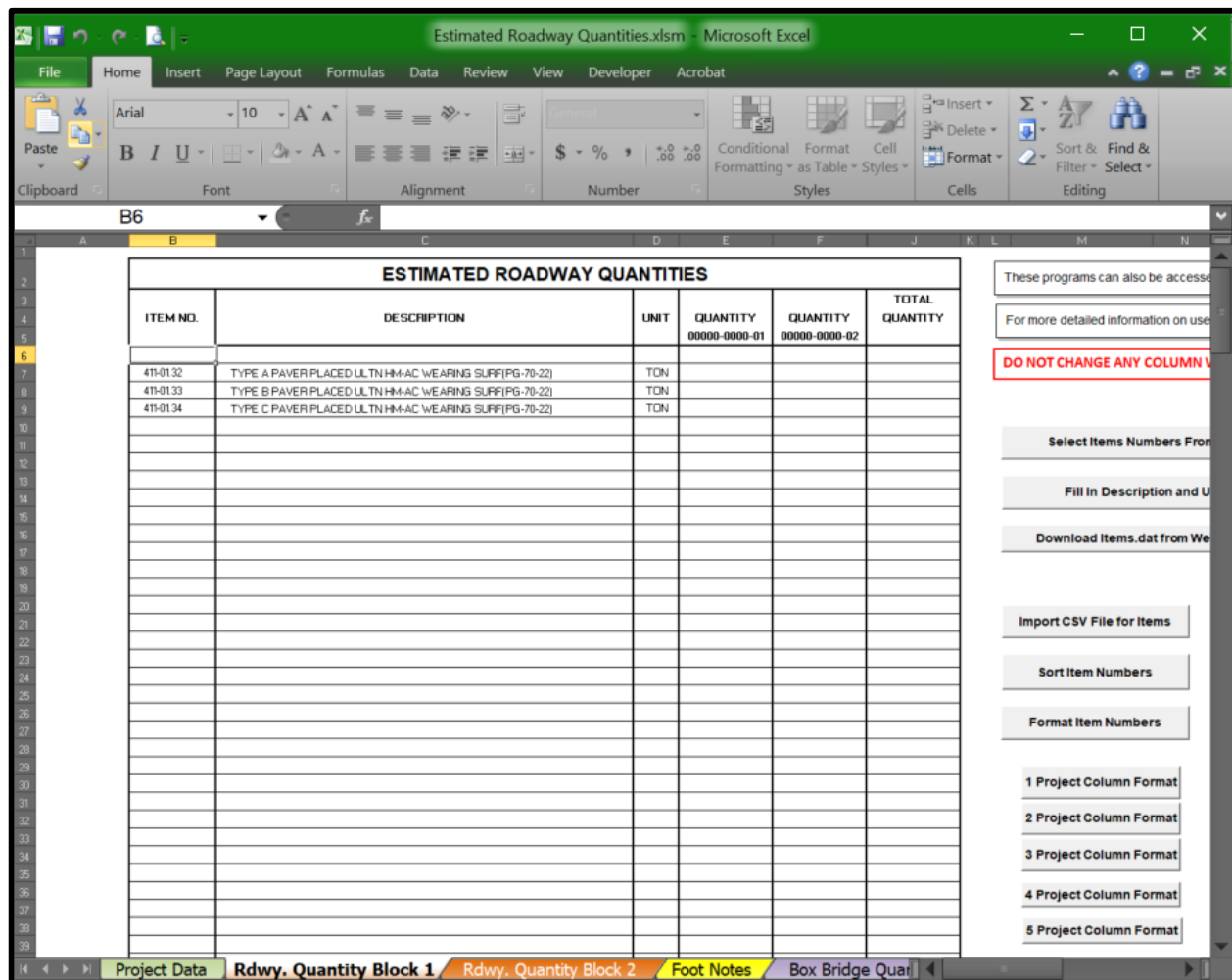
- In all Tabulated Blocks, the Headers are locked and cannot be edited.
- Individual cells for things like item numbers and type can be edited, as required.
- The Tab Blocks are setup for a full sheet of data when placed in a MicroStation file.
- You may delete Rows as needed to adjust the size (length)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

[illegible]

Two Project Column Format

For projects that go across two counties or for another reason have two project numbers with a total quantities column, there is the two column format. **Click** on the **"2 Project Column Format"** button and the Macro will reformat the sheet.



Project Column Formatting for 3 thru 5 Column Format

For projects that go across three counties or for another reason have three project numbers with a total quantities column, there is the three-column format thru five-column format. **Click** on the **"3 Project Column Format"** button thru **"3 Project Column Format"** button and the Macro will reformat the sheet.

Note: You can **Click** on the Project Column Format Buttons at any time to Hide or Unhide the columns as needed. But it will not remove any information you will need to do the 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."

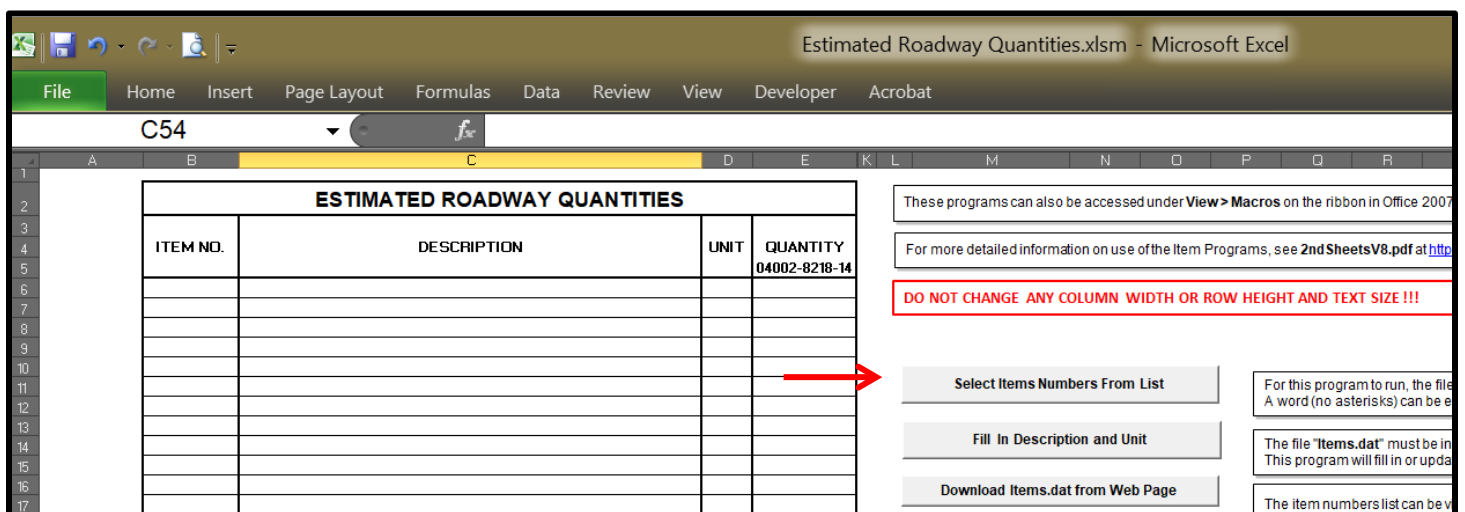
These macros are used to fill in item numbers, descriptions and units.

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.

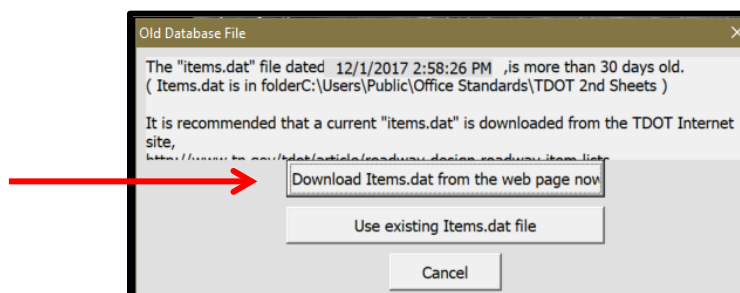
1. Uses the **Items.dat** file located at **C:\Users\Public\Office Standards\TDOT 2nd Sheets** to find items, list them in an **Item Select** window and write the items selected to the worksheet.



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.

TN TDOT
Department of Transportation

Go to TN.gov

Search TDOT

Driver how do I... Business how do I... Government how do I... Find Local Information Find IMPROVE Act Projects Sitemap Index of Services

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".

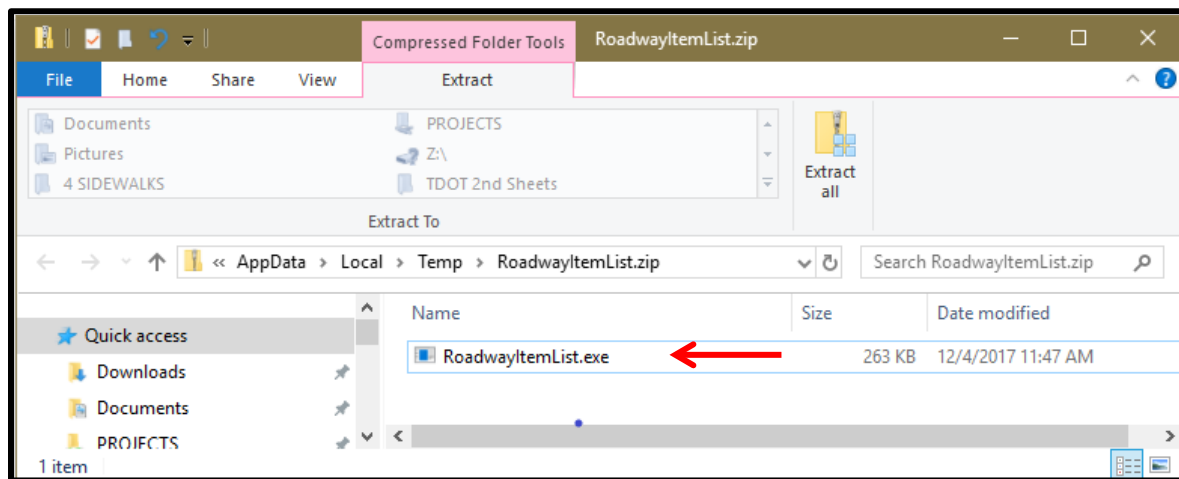
Click on link below

[Download Search Item Lists](#)

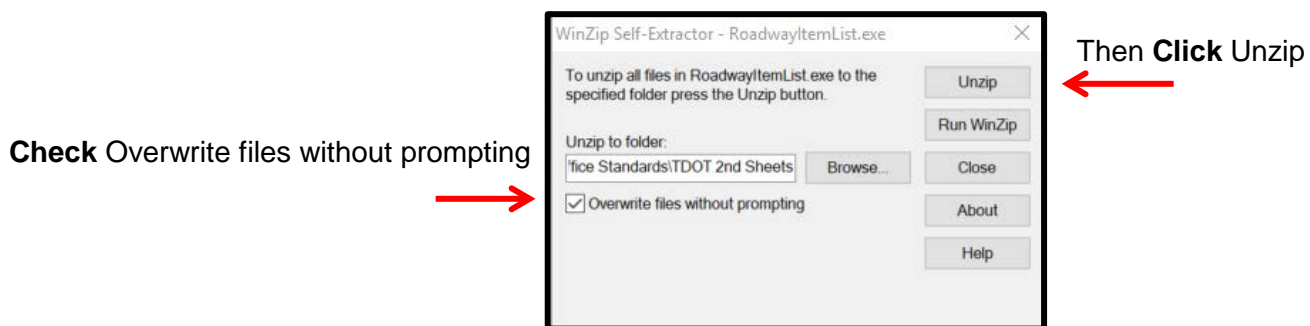
(Last update 12/04/2017 @ 11:42 AM)

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.

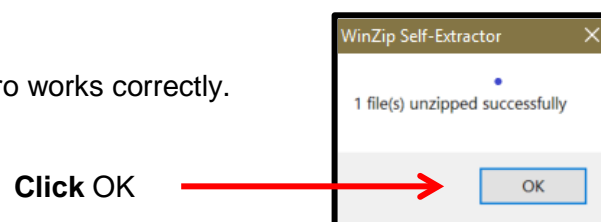


6. This will open a dialog box named: "**WinZip Self-Extractor – RoadwayItemList.exe**" as shown.



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

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



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

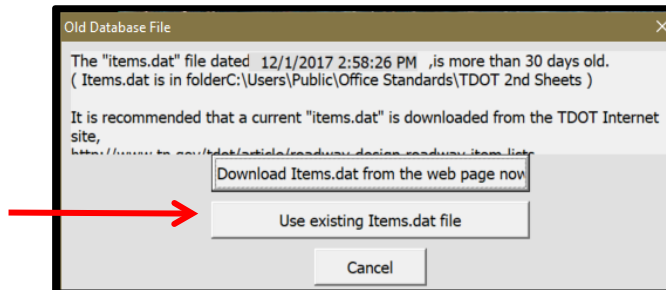
Macro:

Placing Select Item Numbers & Descriptions In The Roadway Quantity Block

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

The screenshot shows the Microsoft Excel interface with the file 'Estimated Roadway Quantities.xlsm'. The 'Formulas' tab is active, and the formula bar shows 'C54'. The table 'ESTIMATED ROADWAY QUANTITIES' is visible, with columns: ITEM NO., DESCRIPTION, UNIT, and QUANTITY. The QUANTITY column has the value '04002-8218-14'. To the right of the table, there are three buttons: 'Select Items Numbers From List', 'Fill In Description and Unit', and 'Download Items.dat from Web Page'. A red arrow points from the 'Select Items Numbers From List' button to the table. To the right of these buttons, there are three text boxes: '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 Sheets V8.pdf at [http://](#)', and 'DO NOT CHANGE ANY COLUMN WIDTH OR ROW HEIGHT AND TEXT SIZE !!!'. Below these buttons, there are three more text boxes: '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', and 'The item numbers list can be vi'.

2. 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 – Prompts for the Excel cell to start placing the selected item numbers, descriptions and units.

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

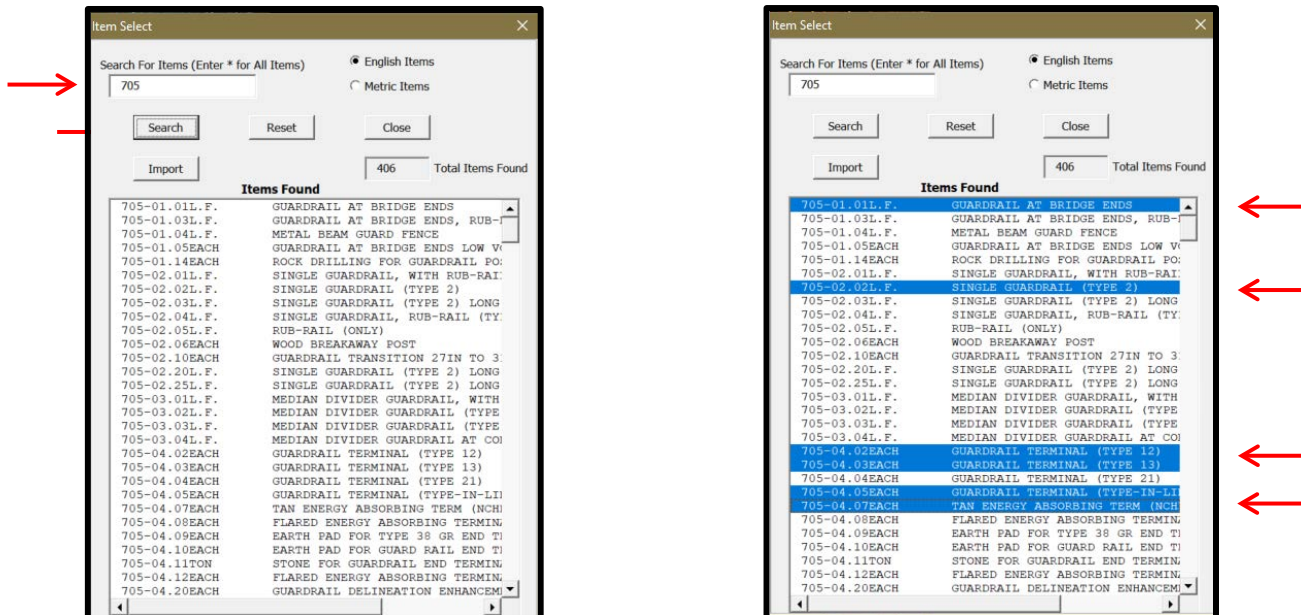
Close – Closes the **Item Select** dialog box.

3. The Item Select Dialog Box

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

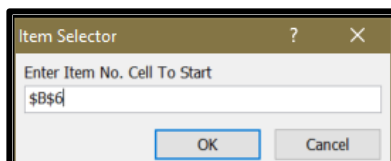
This will bring all items numbers that starts with 705.

Then we select the desired items.

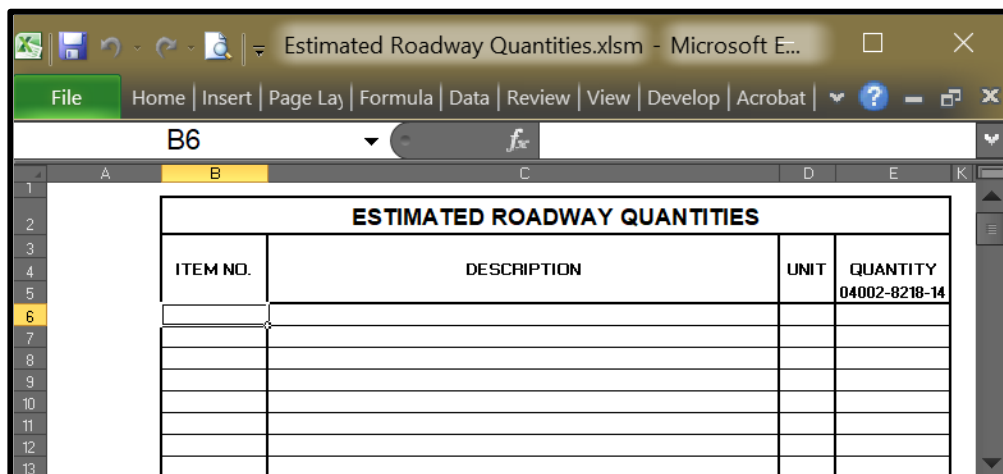


4. Click **Import**.

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



5. **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.



The imported Item data

[illegible]

Macro:

Fill In Description and Unit

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 macro **"Fill In Description and Unit"** functions like the macro **"Select Item Numbers From List"** But only imports one item number at a time and you must know the complete item number.

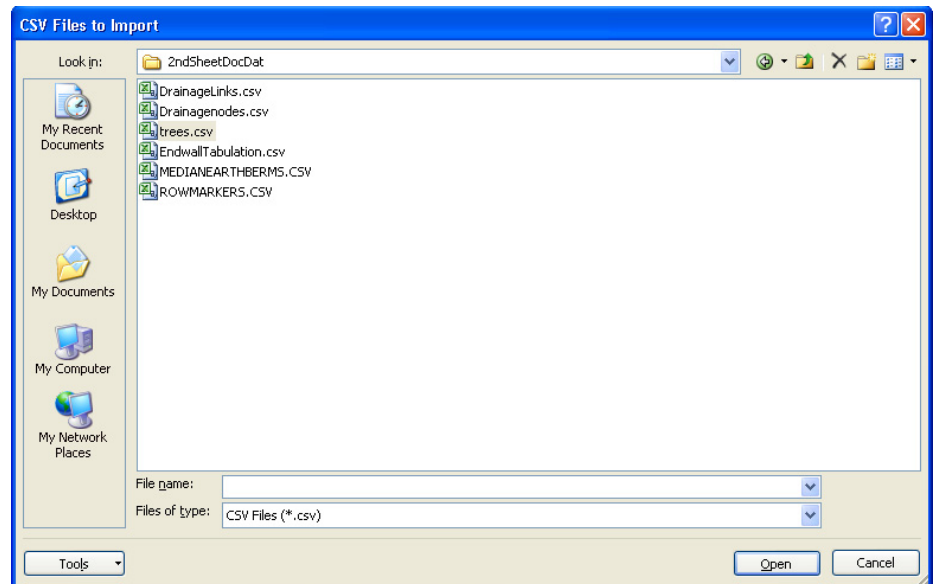
Macro:

Import CSV File for Items

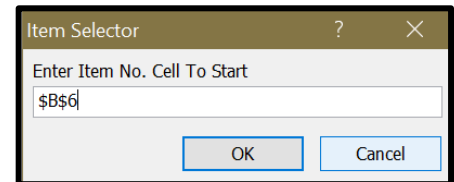
GEOPAK produces quantity calculation files in CSV (comma-separated values) format that can be inputted directly into the Excel estimated roadway quantities file. The default CSV file format from GEOPAK is item number, GEOPAK description, units and quantity. This macro imports only the item number and the quantity and then uses the **Fill In Description ...** macro to enter the description and unit. The GEOPAK descriptions do not always match the official item descriptions, which must be used.

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

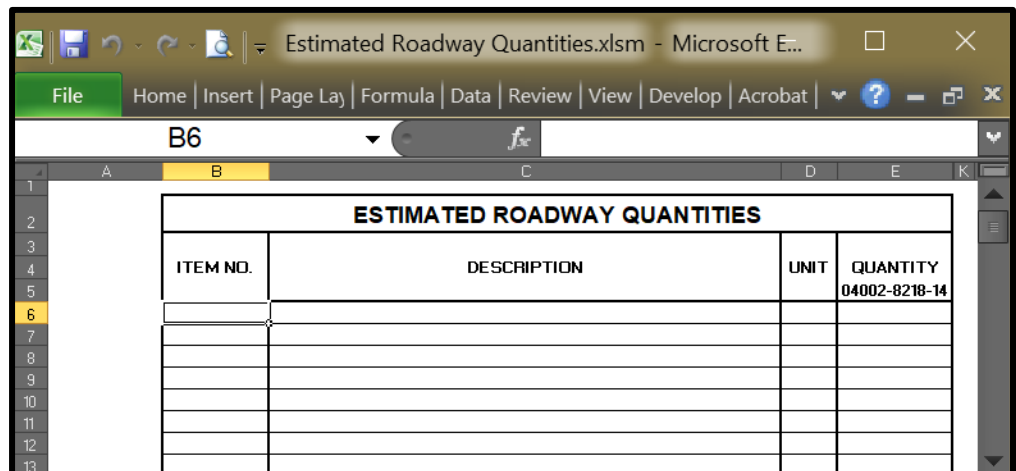
Find your file to import, click on it then click on open.



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

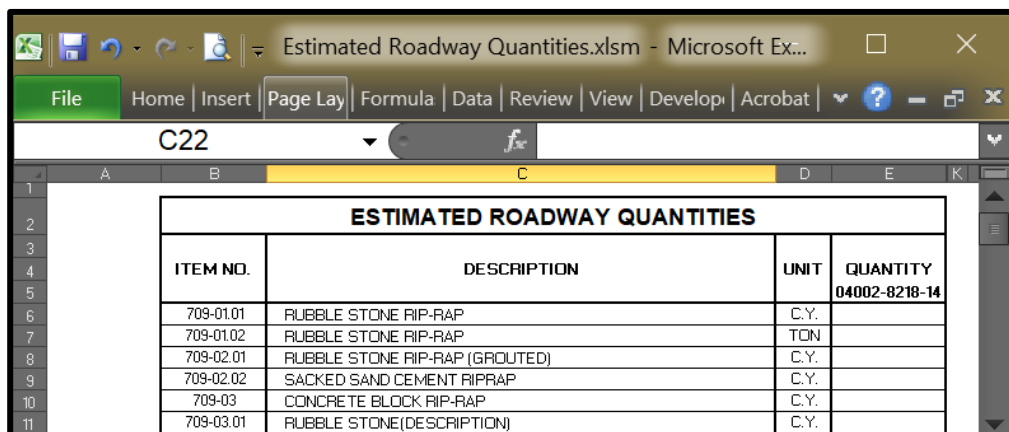


2. Then **Click** in the Estimated Roadway Quantities block cell where we want to start placing the item data we choose. Then **Click OK**. In the example we selcted B6.



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

The imported Item data



ESTIMATED ROADWAY QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
709-01.01	RUBBLE STONE RIP-RAP	C.Y.	04002-8218-14
709-01.02	RUBBLE STONE RIP-RAP	TON	
709-02.01	RUBBLE STONE RIP-RAP (GROUTED)	C.Y.	
709-02.02	SACKED SAND CEMENT RIPRAP	C.Y.	
709-03	CONCRETE BLOCK RIP-RAP	C.Y.	
709-03.01	RUBBLE STONE(DESCRIPTION)	C.Y.	

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 the Microsoft Excel interface with the file 'Estimated Roadway Quantities.xlsm'. The active sheet is 'Rdwy. Quantity Block 1'. The table 'ESTIMATED ROADWAY QUANTITIES' is displayed with columns: ITEM NO., DESCRIPTION, UNIT, and QUANTITY. The data is as follows:

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
716-01.14	RAISED PAVEMENT MARKER REMOVAL	EACH	45
716-01.21	Snwplwble Pvmnt Mrkrs (Bi-Dir)(1 Color)	EACH	
716-01.22	Snwplwble Pvmnt Mrkrs (Mono-Dir)(1 Color)	EACH	43
716-01.23	Snwplwble Pvmnt Mrkrs (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
716-02.13	PLASTIC PAVEMENT MARKING (CROSSWALK)	S.F.	
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.	

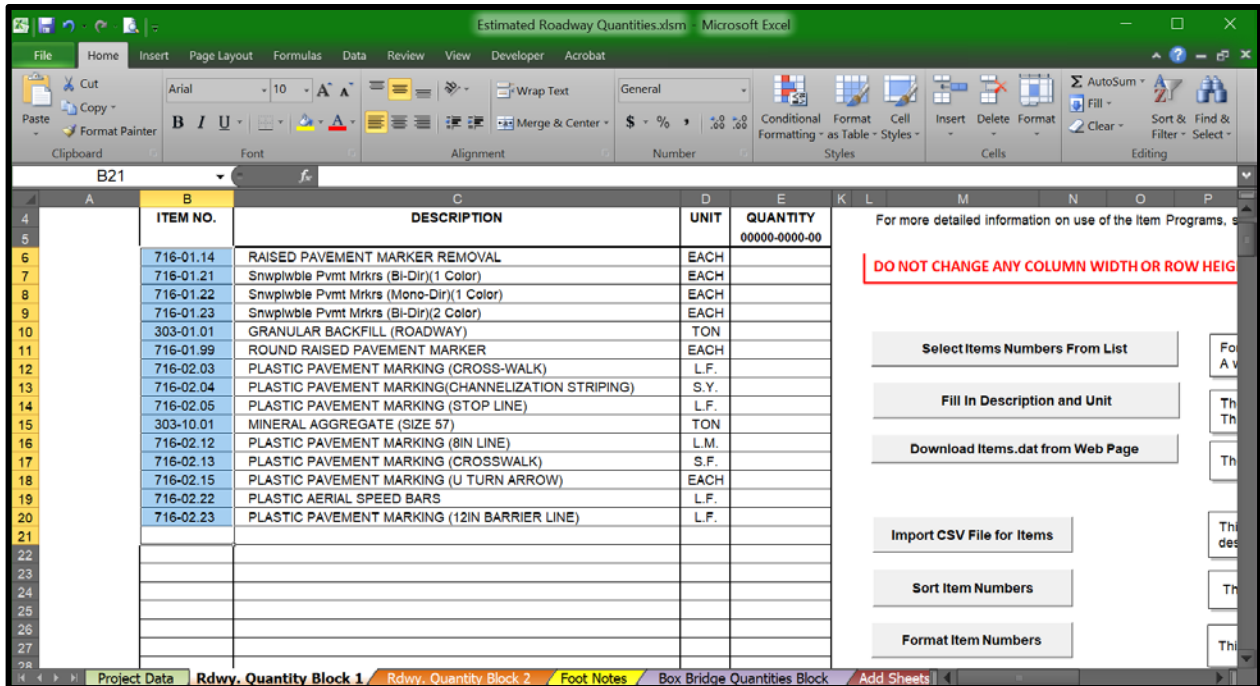
On the right side of the table, there is a sidebar with the following text and buttons:

- These programs can also be accessed under **View > M**
- For more detailed information on use of the Item Program
- DO NOT CHANGE ANY COLUMN WIDTH OR ROW H**
- Select Items Numbers From List
- Fill In Description and Unit
- Download Items.dat from Web Page
- Import CSV File for Items
- Sort Item Numbers
- Format Item Numbers

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

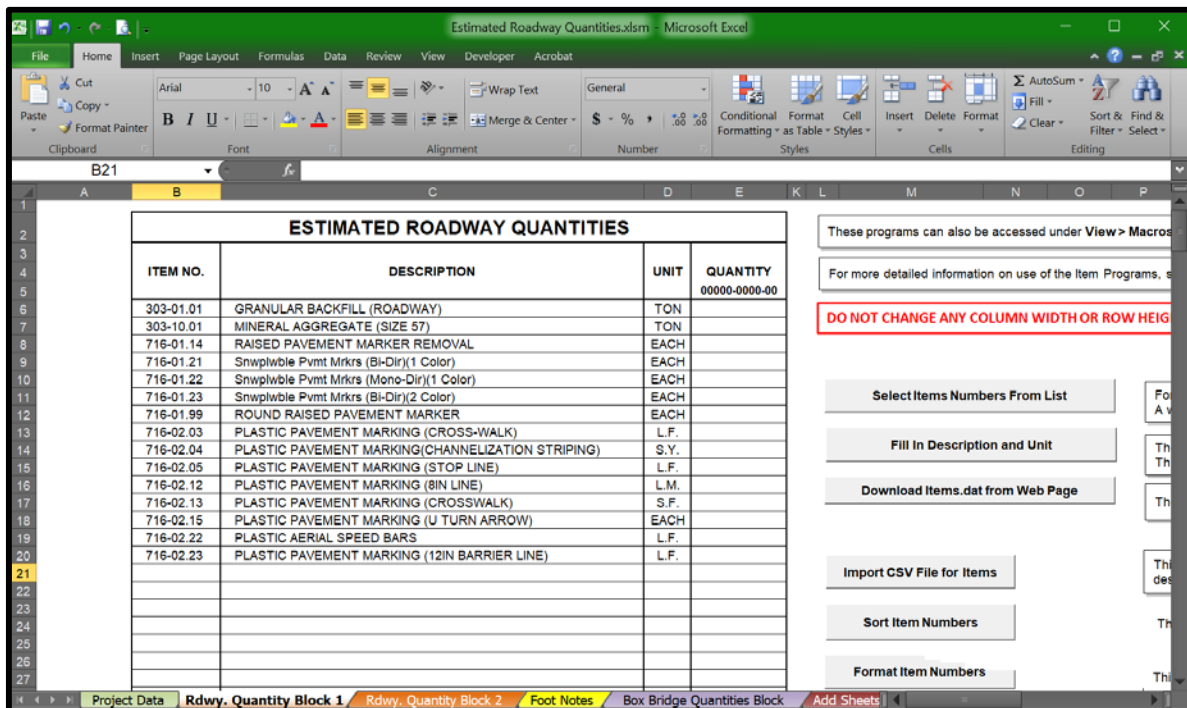
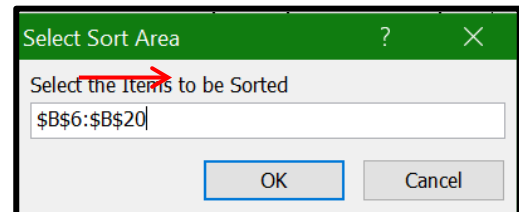
The dialog box is titled 'Select Sort Area' and contains the text 'Select the Items to be Sorted'. Below the text is a text input field. At the bottom of the dialog box are two buttons: 'OK' and 'Cancel'.

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.



3. **Click OK**

Notice the item numbers are now sorted.



After sorting, the blank lines at the bottom can be deleted and blank lines between groups can be inserted as desired. Select the row by the row number, and right click for row **Delete** and **Insert** tools.

Macro:

Format Item Numbers

The borders, text sizes, text justification, fonts, etc. may be changed as the estimate table is being filled in as shown. This macro reformats the estimated quantities block to the original size and proper format.

The screenshot shows the Microsoft Excel interface with the 'Estimated Roadway Quantities.xlsm' file open. The 'Home' tab is selected in the ribbon. The table 'ESTIMATED ROADWAY QUANTITIES' is visible, with columns for ITEM NO., DESCRIPTION, UNIT, and QUANTITY. The QUANTITY column has a data validation rule set to '00000-0000-00'. To the right of the table, there is a sidebar with several macros and buttons:

- These programs can also be accessed u...
- For more detailed information on use of...
- DO NOT CHANGE ANY COLUMN WID...**
- Select Items Numbers From L...
- Fill In Description and Unit...
- Download Items.dat from Web P...
- Import CSV File for Items
- Sort Item Numbers
- Format Item Numbers**

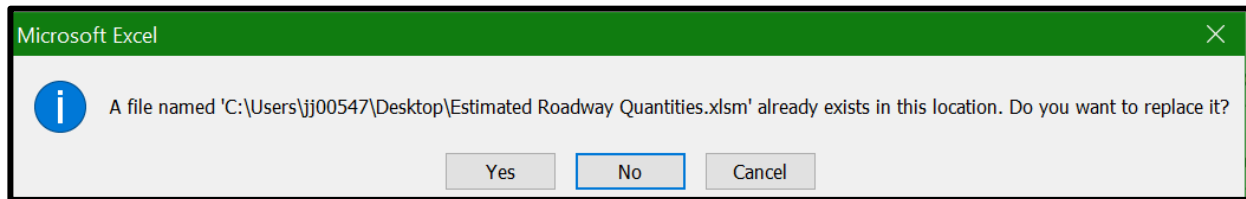
1. Click on "Format Item Numbers". Notice the table is now formatted correctly.

The screenshot shows the same Excel interface as before, but the 'ESTIMATED ROADWAY QUANTITIES' table is now formatted correctly. The table has a clear border, and the text is properly aligned. The sidebar macros are still visible, but the 'Format Item Numbers' button is no longer highlighted.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
			00000-0000-00
411-01.32	TYPE A PAVER PLACED ULTN HM-AC WEARING SURF(PG-70-22)	TON	
411-01.33	TYPE B PAVER PLACED ULTN HM-AC WEARING SURF(PG-70-22)	TON	
411-01.34	TYPE C PAVER PLACED ULTN HM-AC WEARING SURF(PG-70-22)	TON	
411-01.35	TYPE A PAVER PLACED ULTN HM-AC WEARING SURF(PG-76-22)	TON	
411-01.36	TYPE B PAVER PLACED ULTN HM-AC WEARING SURF(PG-76-22)	TON	
411-01.03	ASPHALT CEMENT (PG64-22) FOR SUPERPAVE 1/2" (ACS)	TON	
411-01.04	AGGREGATE FOR SUPERPAVE 1/2" (ACS)	TON	
411-01.07	ACS MIX (PG64-22) GRADING E SHOULDER	TON	
411-01.10	ACS MIX(PG64-22) GRADING D	TON	

- Once the table is reformatted, it brings up the dialog box to save the changes.

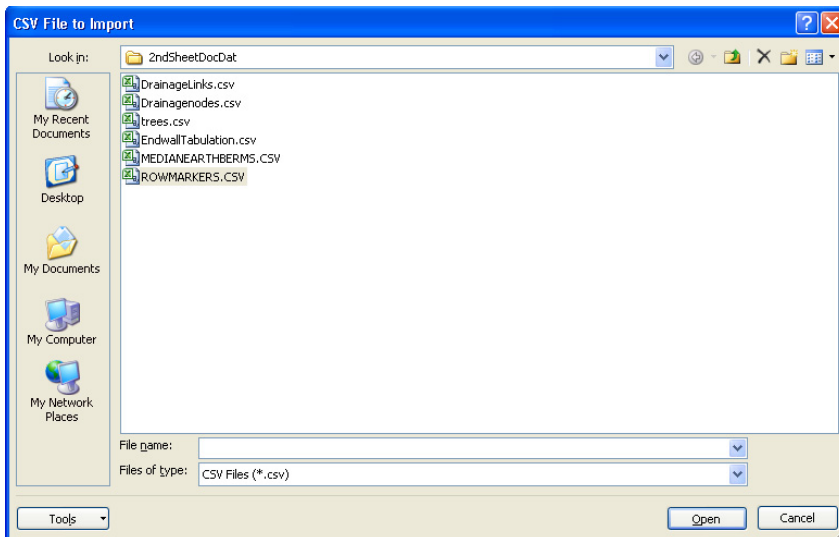
If the table looks ok, **Click Yes** to save the Excel file.



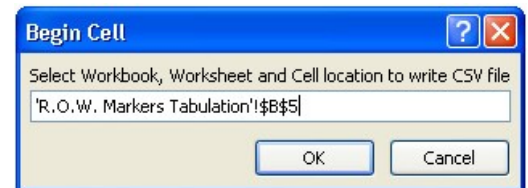
Macro:

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			
	"A"	"B"	"C"	TOTALS
TOTALS				

After Import

RIGHT OF WAY MARKERS				
SHEET NO.	QUANTITIES			
	"A"	"B"	"C"	TOTALS
3	2	3	1	6
4	1	1	3	5
5	2	2	1	5
TOTALS	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.

SR105EstimatedRoadwayQuantities.xlsm - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Developer Add-Ins Acrobat

Clipboard Font Alignment Number Styles Cells Editing

C40

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
713-15	REMOVAL OF SIGNS, POSTS AND FOOTINGS	LS	1
713-16.03	CHANGEABLE MESSAGE SIGN	EACH	1
713-17.02	INSTALL AUXILIARY SUPPORT FOR EXIT NUMBER PANEL	EACH	5
716-01.10	SNOWPLOWABLE REFLECTIVE MARKER	EACH	266
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
716-02.10	PLASTIC PAVEMENT MARKING (6" LINE)	L.M.	12
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
716-10.15	PREFORMED PLASTIC PAVEMENT MARKING (6" LINE)	L.M.	3
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

These programs can also be accessed under **View > Macros** on the ribbon end of the notes below in parenthesis. NOTE: This estimated roadway read correctly, do not change "Tab" name of the **Project Data** worksheet

For more detailed information on use of the Item Programs, see **2ndSheet** http://www.tdot.state.tx.us/Chief_Engineer/assistant_engineer_design/06/

Select Items Numbers From List

Fill In Description and Unit

Download Items.dat from Web Page

Import CSV File for Items

Sort Item Numbers

Format Notes Area

Format Item Numbers

1 Column Format

2 Column Format

3 Column Format

Import CSV

For this program to run, (A word (no asterisks) ca

The file "Items.dat" mus

This program will fill in o

The item numbers list ca

This macro opens a ".c

description and units are

This macro prompts for t

(SortItems)

This macro creates merc

The row height may need

This macro will format t

Notes will need to be ref

When there is more than

E5, F5 and G5. The pr

The notes area will need

Imports a csv (comma se

modifications.

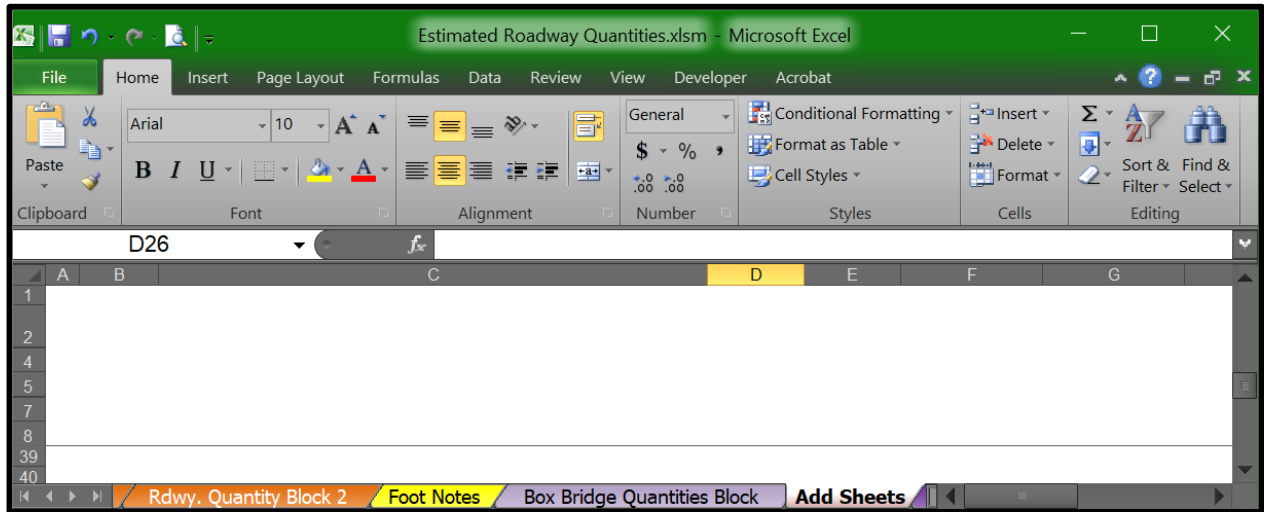
Col #1-Est. Rdwy. Quantities Col #2-Est. Rdwy. Quantities Box Bridge Quantities Guardrail

Ready

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**.

Classification →
Type →

2. Make your selection and **Click Select.** →

Your New Worksheet

ESTIMATED ROADWAY QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
			00000-0000-01

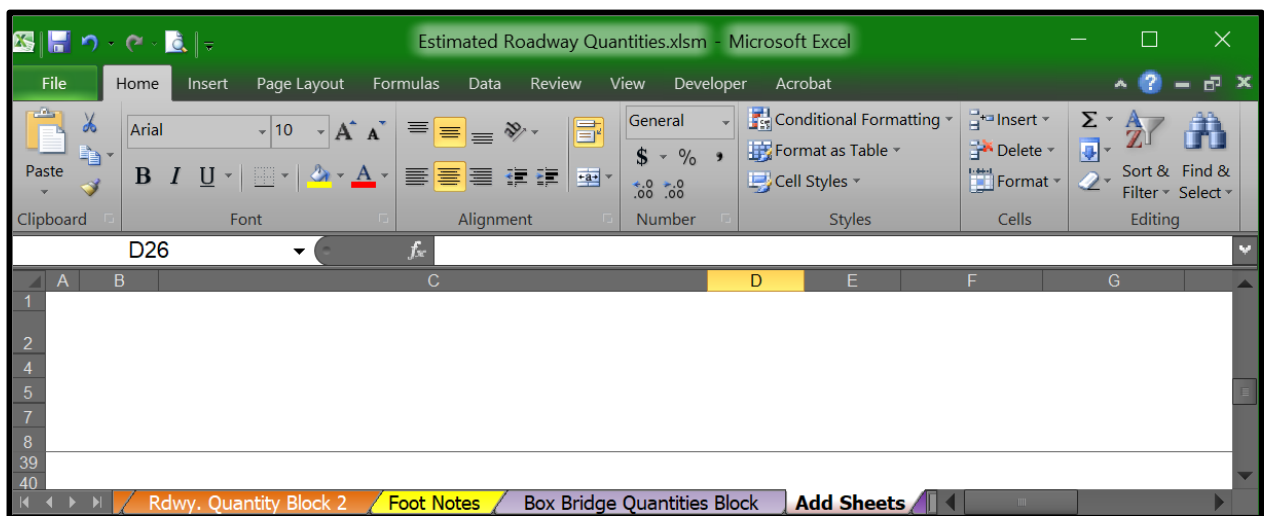
Note:

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: On 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.

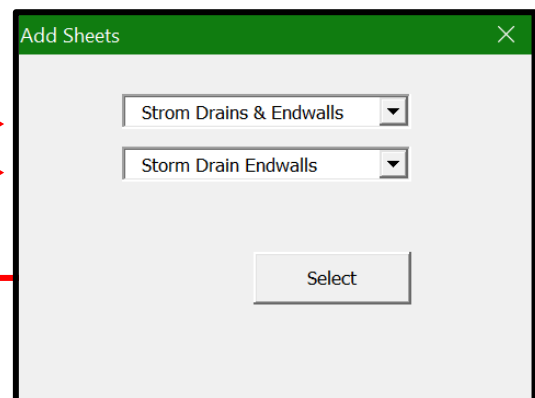
NOTE: All approved Tabulation Blocks are in this file and are hidden. This will unhide them for you.

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

Classification

Type

2. Make your selection and **Click** Select.



Your New Worksheet

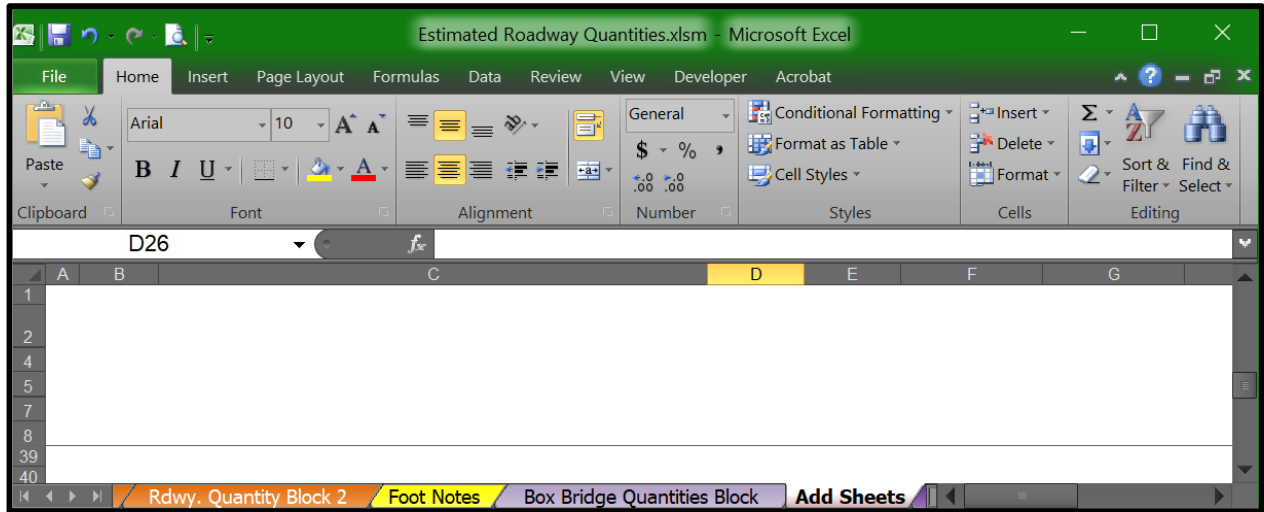
[illegible]

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.

Removing Tabulated Quantity Blocks In The Estimate File

Note: To remove a tabulated quantity sheet that you have opened just repeat the process for opening the sheet. This process will hide the worksheet but will not remove any data you have entered into it. Do NOT submit an Estimated File with hidden data it will not work properly for the Estimate and Construction Offices. They will send your file back to you to fix.

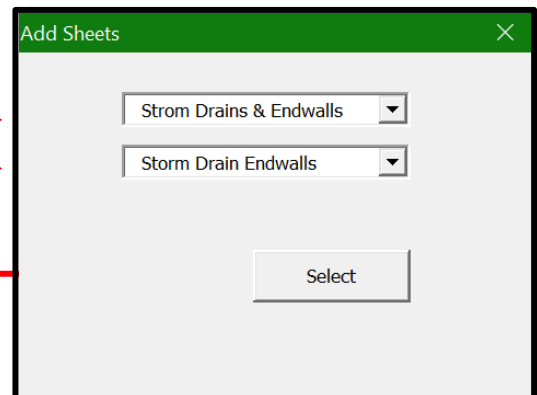
1. Select the worksheet tab named "Add Sheets."



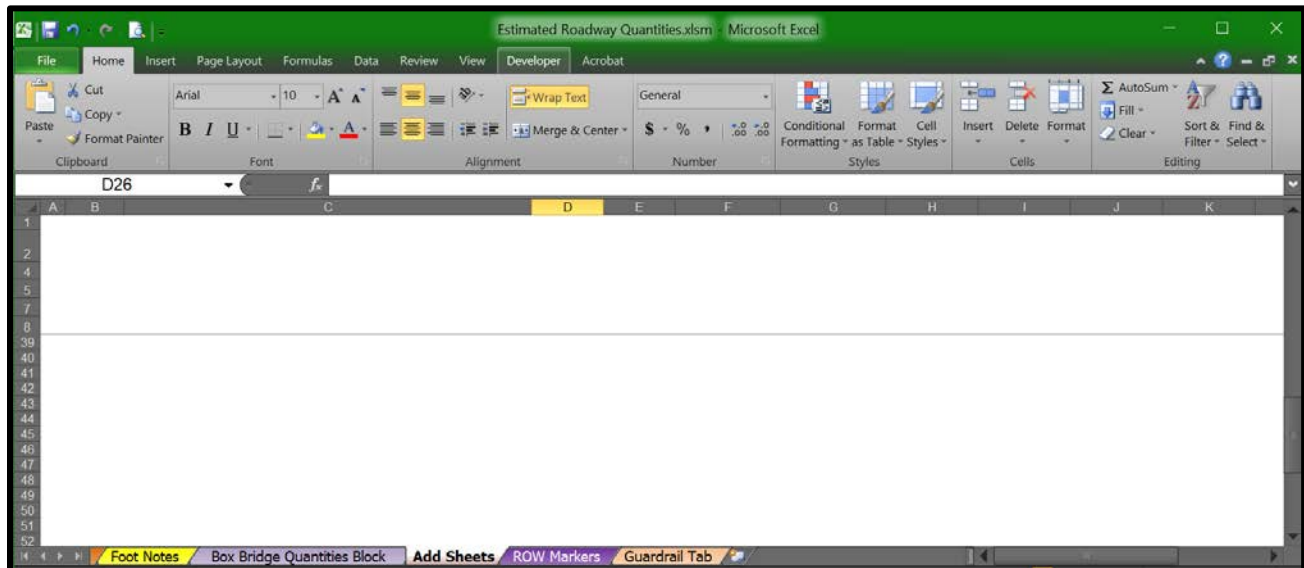
This will bring up a dialog box so the user can choose the **Classification** and **Type** of Tab Block that need to be hidden \ removed. You must choose the exact name of the Tabulation Block for this to work. If you have renamed a tab for a Tabulation Block, it will not work.

Classification →
Type →

2. Make your selection and **Click Select.** →



Your Worksheet Is Now Hidden



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** 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

File Edit Format View Help

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					

Date: 4/24/2008 9:25:49 AM

Page No. 2

Pay Item No. 705-04.03
Unit:EA File Name: D:\Projects\GUARDRAIL\sr95.txt

Pay Item Name: Proposed Type 13 terminal

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					

Date: 4/24/2008 9:25:49 AM

Page No. 3

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.				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.			
	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							

PROPOSED GUARDRAIL										
SHEET NO.	LOCATION	SIDE		STATION		BRIDGE END GUARDRAIL 705-01.01 (L.F.)	SINGLE TYPE 2 GUARDRAIL 705-02.02 (L.F.)	TYPE 13 TERMINAL 705-04.03 (EACH)	TYPE 38 TERMINAL 705-04.07 (EACH)	REMARKS
		LT	RT	FROM	TO					
	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	
TOTALS						26.90	3714.15	2	5	

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.xltn** 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.

Build Storm Drainage Pipe Block	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.
Check Item Numbers	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		GRADE	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	419.49	CB-26	419.29	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		
TOTALS						982	425	1033	390

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.

Build Catch Basins and

Check Item Numbers

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.

Use this program only if a new 'Items.dat' file was downloaded after running the 'Build Catch Basins and Manholes Block' program. This program checks to see if the storm drainage structure 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 Sheet' for use in estimated quantities tabulation.

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.

CATCH BASINS AND MANHOLES

SHEET NO.	LOCATION	STATION	OFFSET (FT.)	DRAINAGE CODE	GRATE/TOE ELEV.	STRUCTURE TYPE	INSIDE DIMENSIO	DEPTH (FT.)	TANDARD DRAWING	TYPE 3 M.H. 611-01.04 12' - 16'	TYPE 3 M.H. 611-01.05 16' - 20'	TYPE 12 C.B. 611-12.01 0' - 4'	TYPE 12 C.B. 611-12.02 4' - 8'	TYPE 12 C.B. 611-12.03 8' - 12'	TYPE 14 C.B. 611-14.04 12' - 16'	TYPE 42 C.B. 611-42.01 0' - 4'	TYPE 42 C.B. 611-42.02 4' - 8'	REMARKS
	CPDRW9	0+56.13	-11.5	CB-24	428.13	#14	8X8	6.42										
	CPDRW9	0+60.37	11.5	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										
	MAINLINE	16+45.00	-34	CB-2	454.85	#12	TX7	21.65								1		
	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	TX7	20.71										
	MAINLINE	17+86.12	-64.34	CB-5	449.43	#42	4X4	3.67										1
	MAINLINE	20+34.72	-34	CB-6	445.5	#12	TX7	19.19										
	MAINLINE	24+03.03	-34	CB-8	423.09	#12	4X4	9.48						1				
	MAINLINE	24+03.03	-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+03.75	-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
TOTALS										1	1	1	0	4	1	4	2	

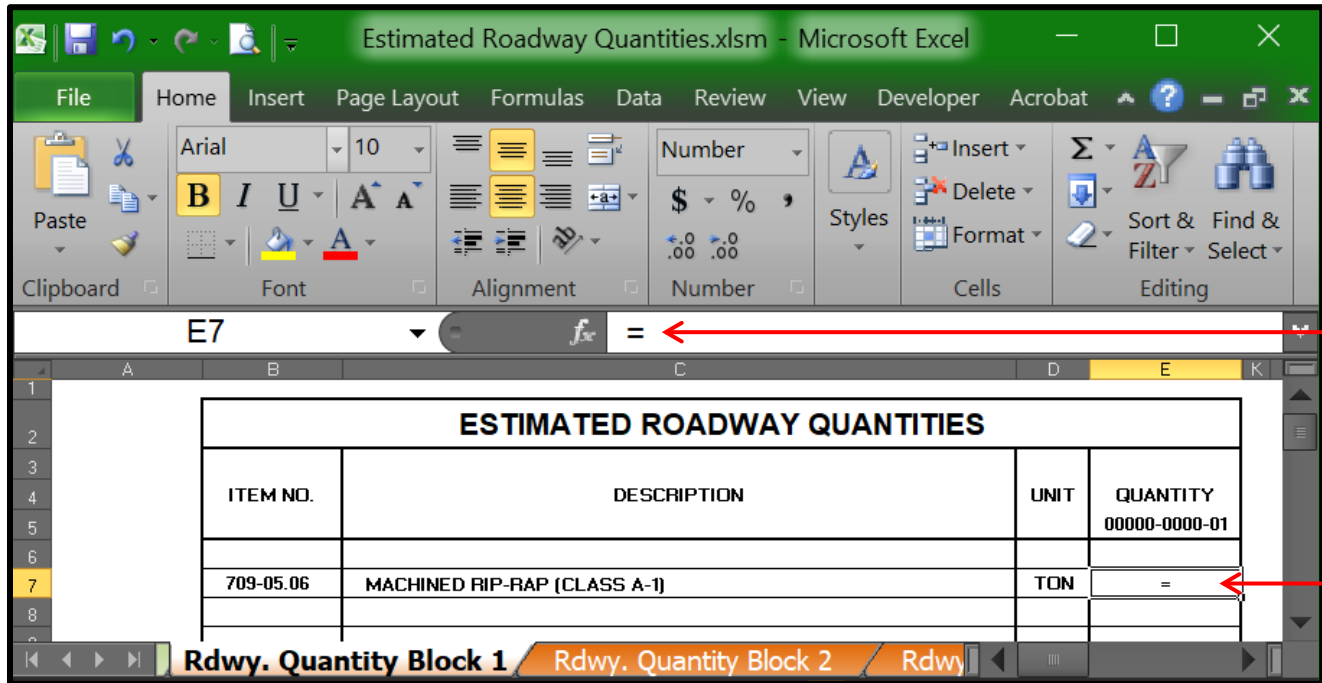
If **Insert** is used to add this file as a worksheet in the Estimated Roadway Quantities file then it will be necessary to re-assign the macros for the buttons. Select a location away from the macro button, right click over the button and choose the **Assign Macro** option. From the macro list, pick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

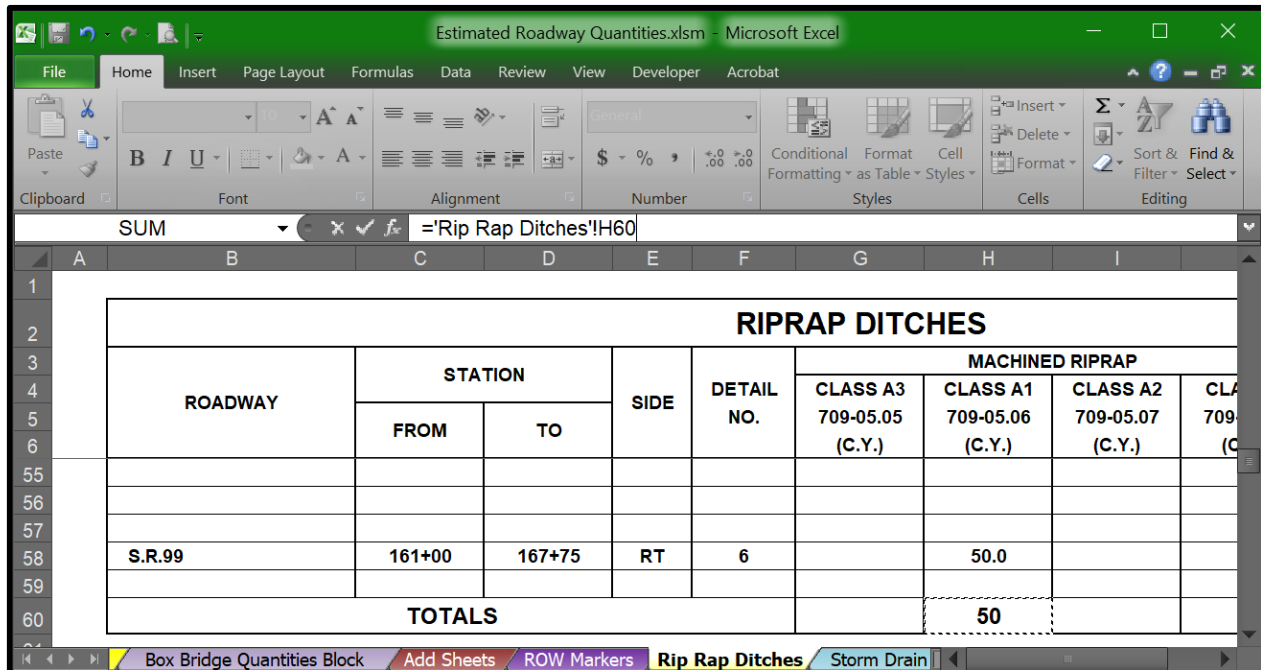
To link cells from tabulated quantity block worksheets to the estimated roadway quantities worksheet:

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.

The screenshot shows the Microsoft Excel interface with the 'Estimated Roadway Quantities.xlsm' file open. The Formula Bar at the top displays the formula `=Rip Rap Ditches!I60+'Storm Drain Endwalls!I60'`. Below the Formula Bar, a table titled 'STORM DRAIN ENDWALLS' is visible. The table has columns for LOCATION, SHEET NO., STATION, OFFSET (FT.), SKEW, CODE, TYPE, DRAWING NO., RIP-RAP CLASS, PROTECTED ENDWALLS CLASS "A" CONCRETE, STEEL BAR REINFORCING, and three columns for 18 IN. quantities. The table contains data for a project with a station of 101+00 and a total quantity of 23.0. Red arrows point to the Formula Bar and the table.

LOCATION	SHEET NO.	STATION	OFFSET (FT.)	SKEW	CODE	TYPE	DRAWING NO.	RIP-RAP CLASS	PROTECTED ENDWALLS CLASS "A" CONCRETE	STEEL BAR REINFORCING	18 IN. 3:1	18 IN. 4:1	18 IN. 6:1
								709-05.06 (TON)	611-07.01 (C.Y.)	611-07.02 (LB.)	07.54	07.55	07.56
6		101+00	50	90°	26EW	SATETY		23.0					
TOTALS								23.0					

- 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.

The screenshot shows the Microsoft Excel interface with the 'Estimated Roadway Quantities.xlsm' file open. The Formula Bar at the top displays the formula `709-05.06`. Below the Formula Bar, a table titled 'ESTIMATED ROADWAY QUANTITIES' is visible. The table has columns for ITEM NO., DESCRIPTION, UNIT, and QUANTITY. The table contains data for a project with a station of 709-05.06 and a total quantity of 73. Red arrows point to the Formula Bar and the table.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
709-05.06	MACHINED RIP-RAP (CLASS A-1)	TON	73

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.

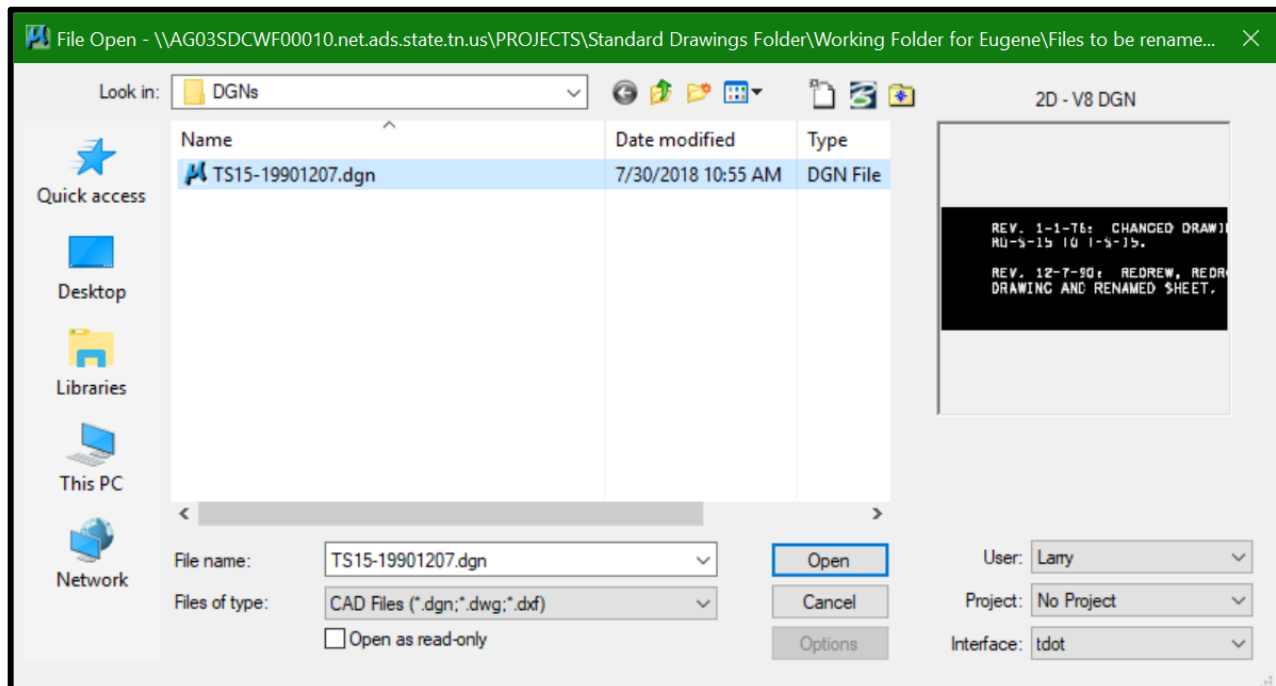
Name the MicroStation DGN sheet file according to [CADDV8.pdf](#) , Section **Roadway Design DGN Project Filenames; Standard Sheet File Types:** for all sheet files **Use .SHT** extension. For example, use the name **002A.sht** for the first **ESTIMATED ROADWAY QUANTITIES** MicroStation sheet file and 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.

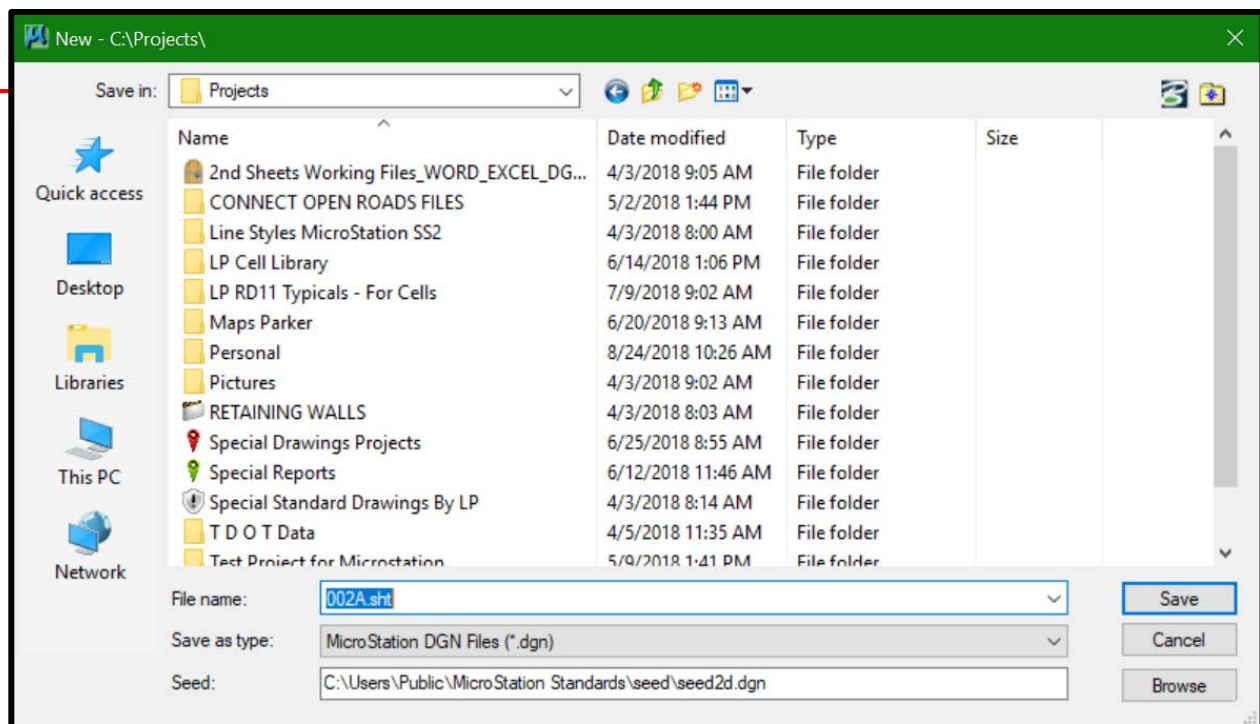
All Second Sheet files must be on a **1:1 scale!** The **Traffic Control and EPSC Tabulation Blocks** shall also be placed on a **1:1 scale**. The **Right-Of-Way Acquisition Table** should be on a 1:1 scale if it is on a sheet by itself or if it is with a Property Map it should be placed at the scale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

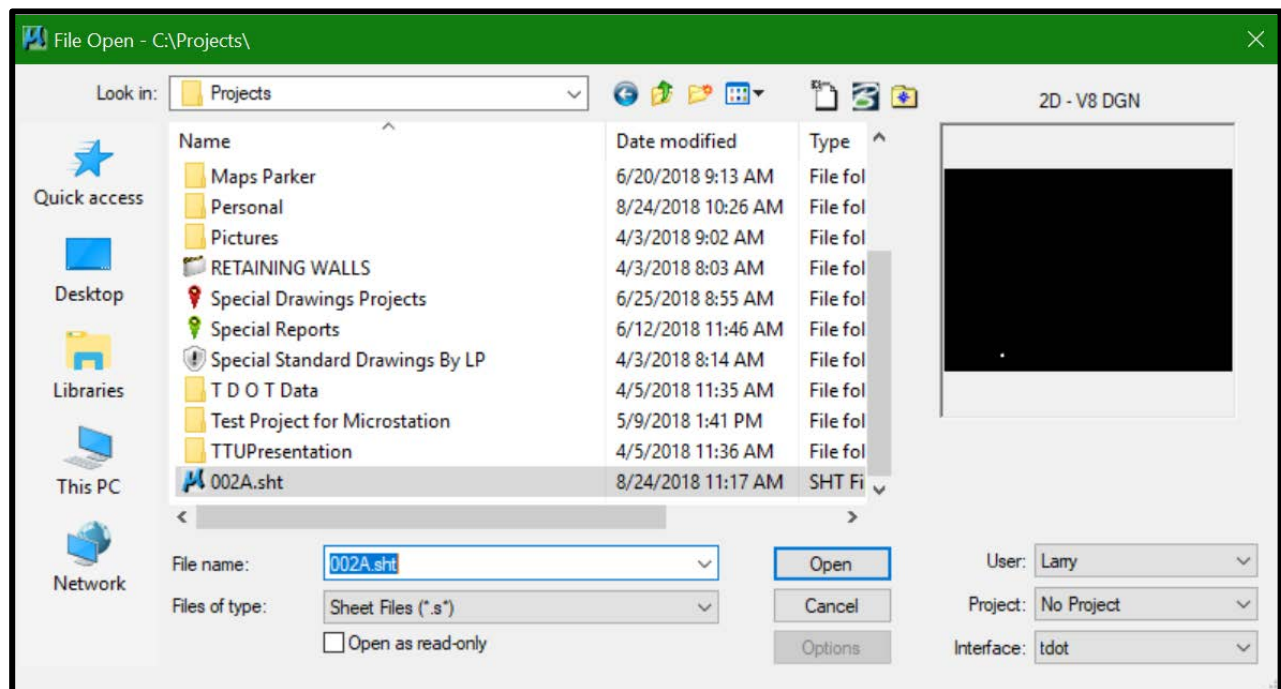
1. Open MicroStation SS2 and **click** on the New File Icon.



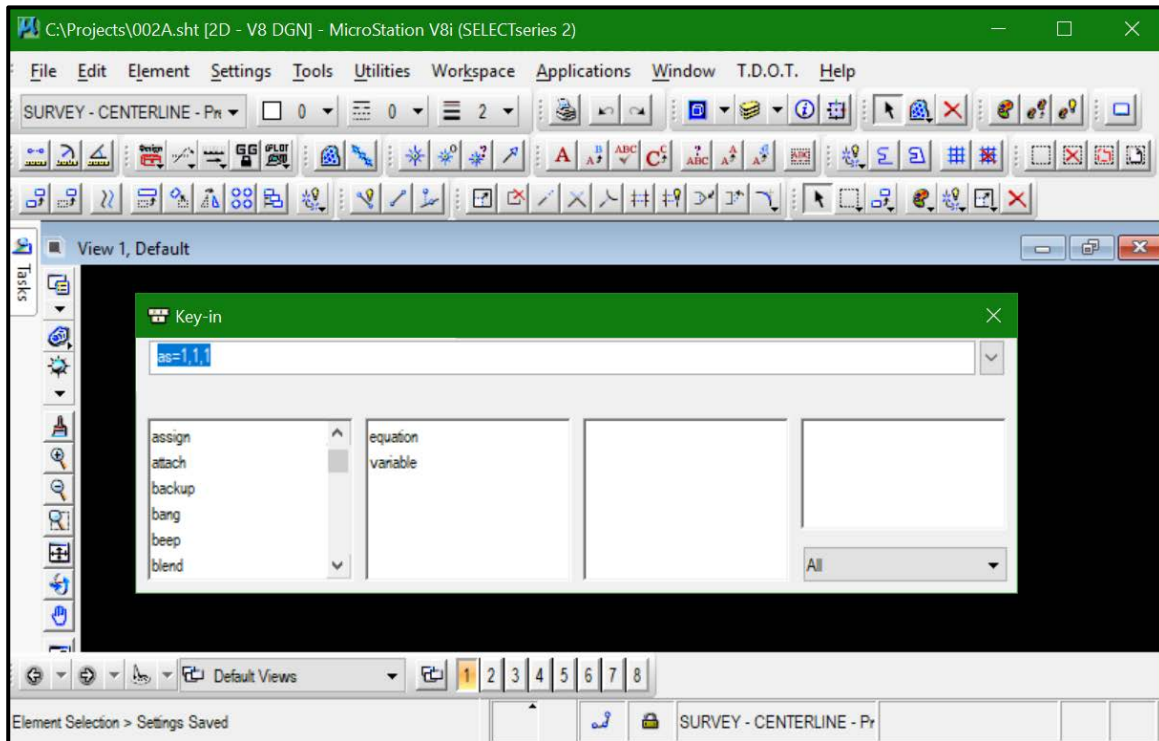
2. In the window that opens to create a new 2nd sheet you need to set the seed type to seed2d.dgn. If it is not set, click Browse and select it. Next, set the location where the file will be created. Select your project Folder where the file is to be placed. It should be placed with the rest of the project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



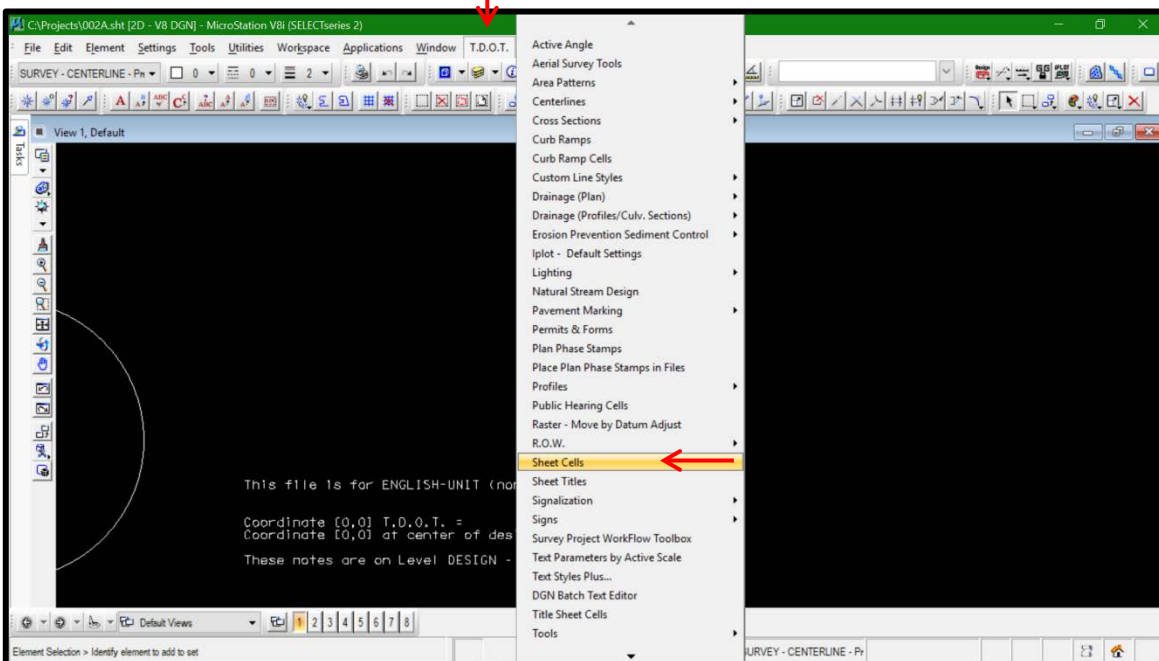
3. In the window that opens select the file and click **OPEN**.



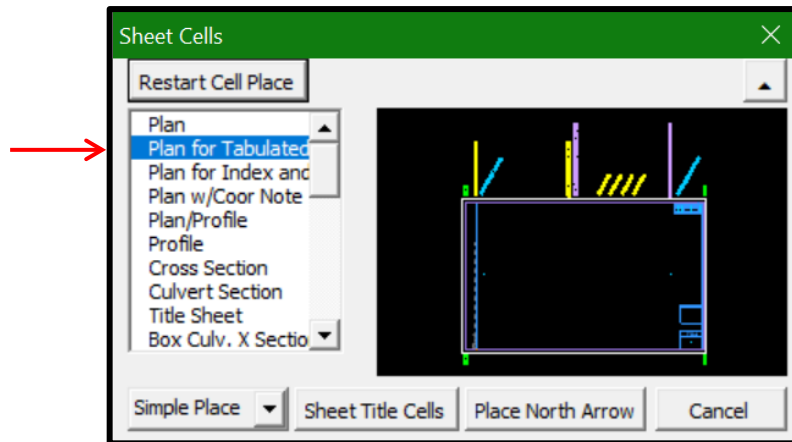
4. When the MicroStation file opens, the first thing the user needs to do is set the active scale to 1:1 for second sheets. In the Menu Ribbon at the top of MicroStation select Utilities and dropdown to **Key-in** and click on it to open it. Key in **as=1,1,1** in Key-in window and hit **Enter**. The 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.



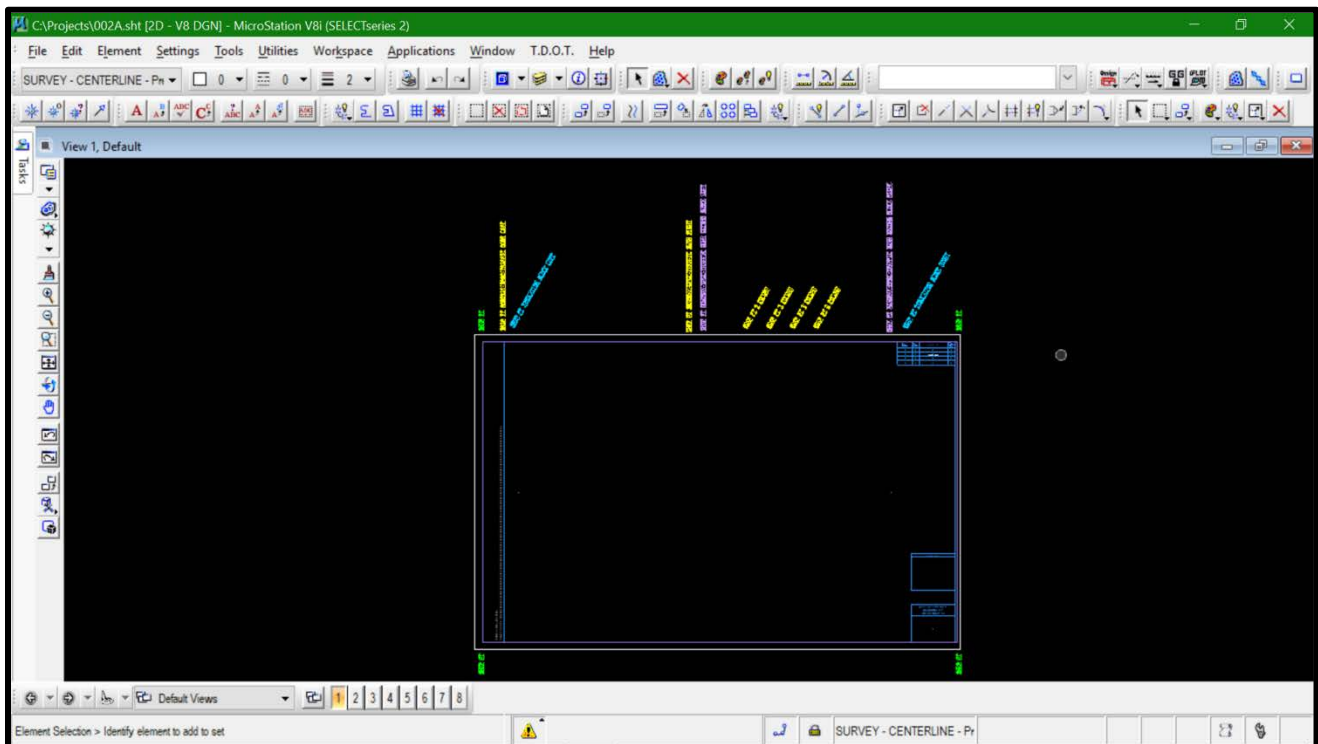
5. Now we place a sheet cell. In the Menu Ribbon at the top of MicroStation, select T.D.O.T., and pull down to Sheet Cells and **click** on it.



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.



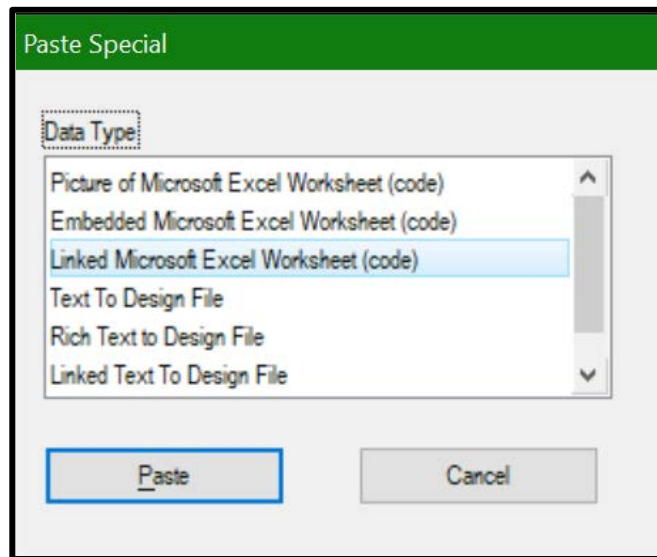
The sheet cell has snap points for placing the **Estimated Roadway Quantity blocks by corners**. The **Yellow** snap points are for placing the quantity block on the left side of the sheet. The first snap point is for placing the beginning corner point of the block and the second is ending corner point. 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.

Linking The Estimated Roadway Quantities Block

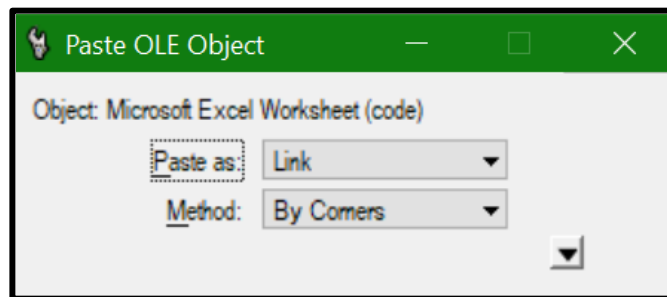
-
- Estimated Roadway Quantities.xlsm - Microsoft Excel
- File Home Insert Page Layout Formulas Data Review View Developer Acrobat
- Paste Font Alignment Number Styles Cells Editing
- Clipboard Font Alignment Number Styles Cells Editing
- A1
- ESTIMATED ROADWAY QUANTITIES
- | ITEM NO. | DESCRIPTION | UNIT | QUANTITY |
|-----------|------------------------------|------|----------|
| 709-05.06 | MACHINED RIP-RAP (CLASS A-1) | TON | 73 |
- These programs can also be accessed under View > Macros on the ribbon in Office 2007 or Office 2010.
- For more detailed information on use of the Item Programs, see 2ndsheetv8.pdf at <https://www.cdot.state.tx.us>
- DO NOT CHANGE ANY COLUMN WIDTH OR ROW HEIGHT AND TEXT SIZE !!! IF YOU CHA
- Select Items Numbers From List
- Fill in Description and Unit
- Download Items.dat from Web Page
- Import CSV File for Items
- Sort Item Numbers
- Format Item Numbers
- 1 Project Column Format
- 2 Project Column Format
- 3 Project Column Format
- 4 Project Column Format
- 5 Project Column Format
- Import CSV
- When there is more than one project
The project numbers must be in the 1st column
If other wording is needed other than project numbers
The text must fit in the cells without wrapping
- Rdwy. Quantity Block 1 Rdwy. Quantity Block 2 Rdwy. Quantity Block 3

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,

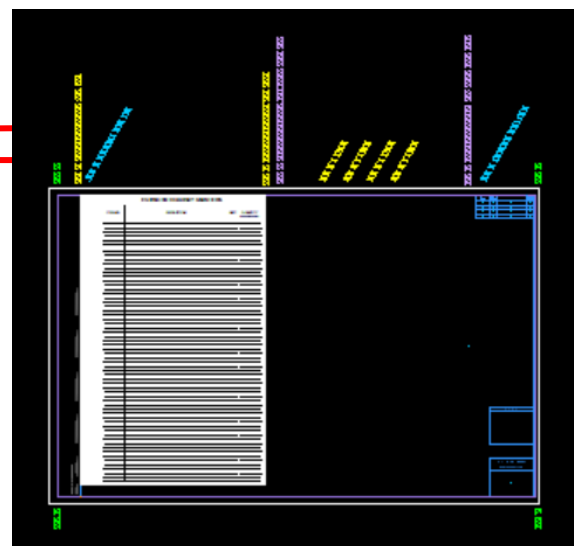


4. Select the Method: By Corners.



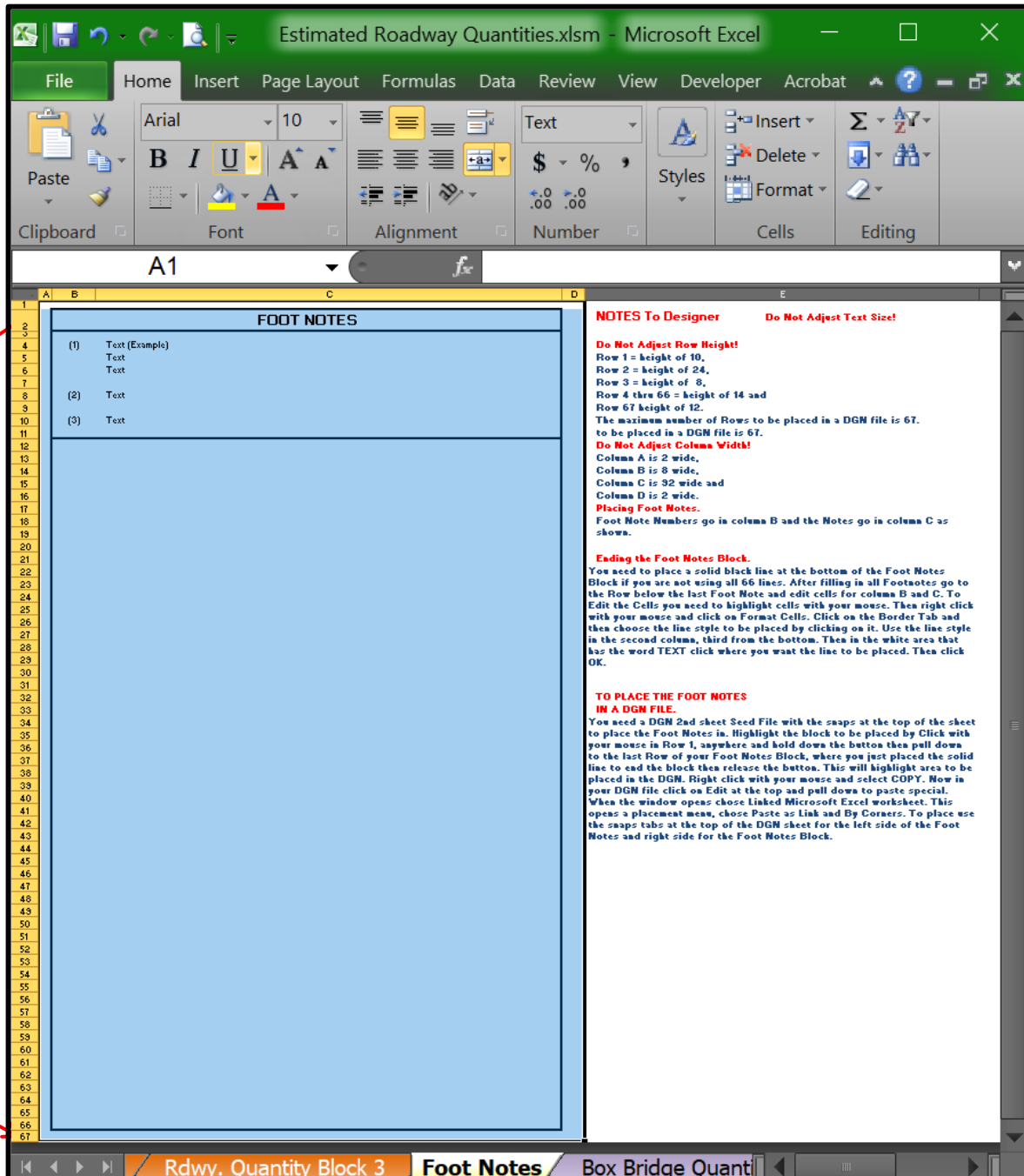
5. Snap to the left Yellow snap point then second Yellow Snap point and the **Rdwy. Quantity Block 1** is placed on the sheet in your DGN file.

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.



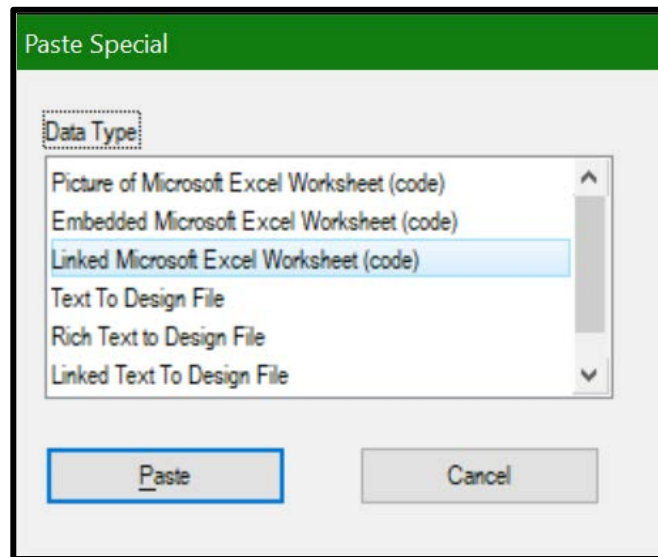
Linking The Foot Noes

- 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.

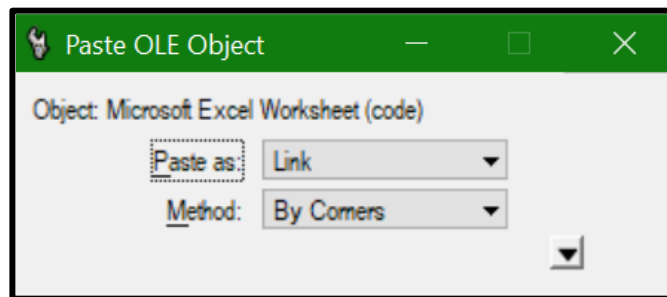


8. In your MicroStation file on the menu bar, go to **Edit > Paste Special...**
(The Excel link will be placed on the active level in MicroStation)

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

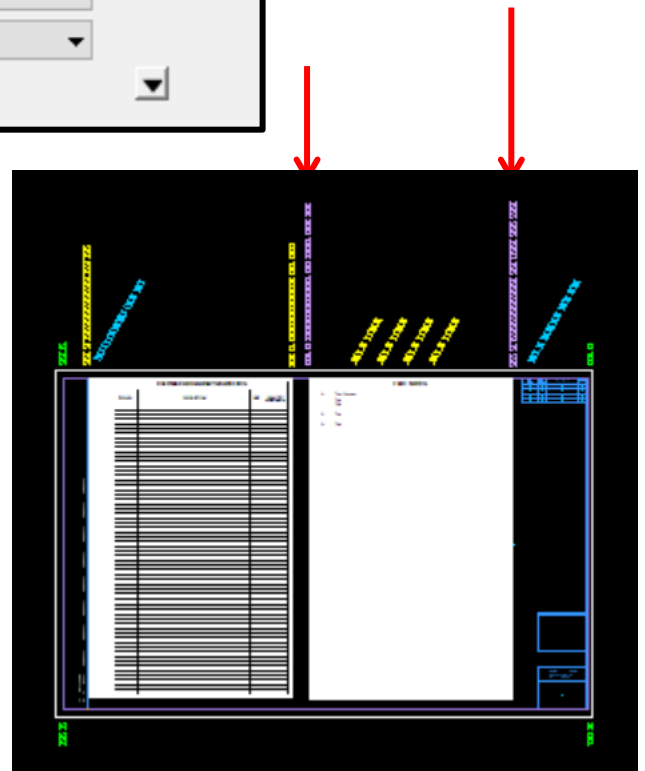


9. Select the Method: By Corners.



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.



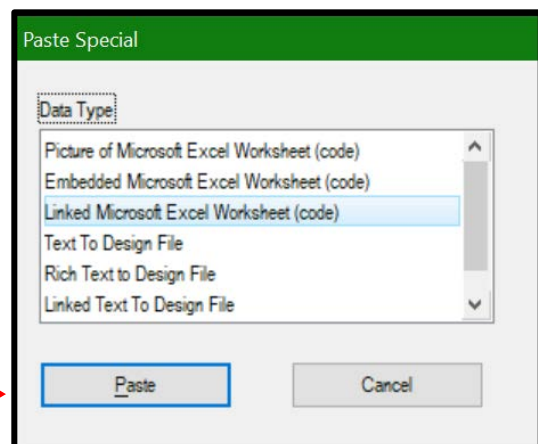
Linking The Tabulated Quantities Blocks

11. 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.
12. Right **click** on your mouse and pick Copy from the choices given. This puts the selected information into the Windows Clipboard.

[illegible]

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

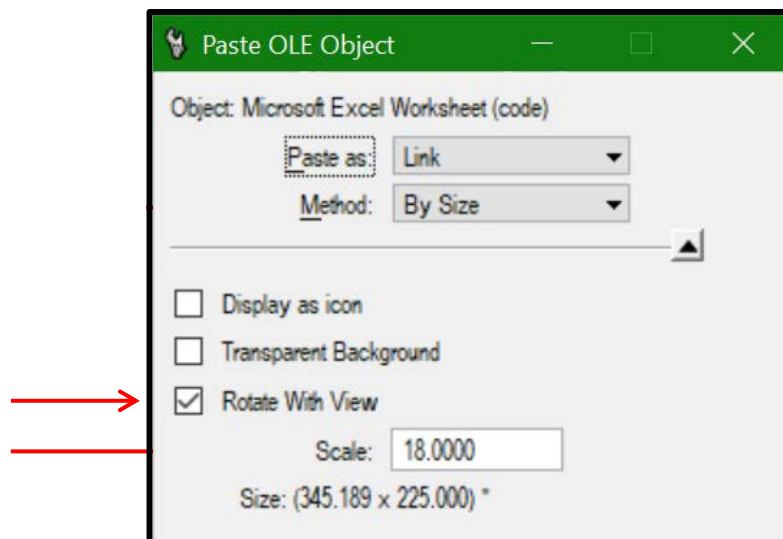
Select the **Linked Microsoft Excel Worksheet** Option and click the **Paste** button,



14. Select the Method: By Size.

Click on Rotate With View.

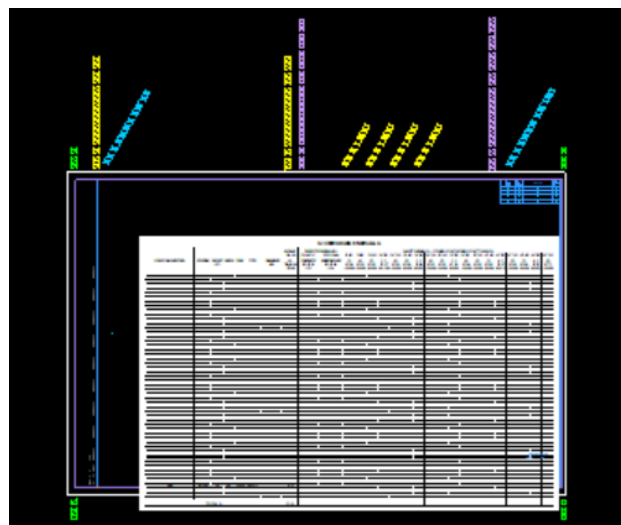
Set the Scale to: **18**.



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

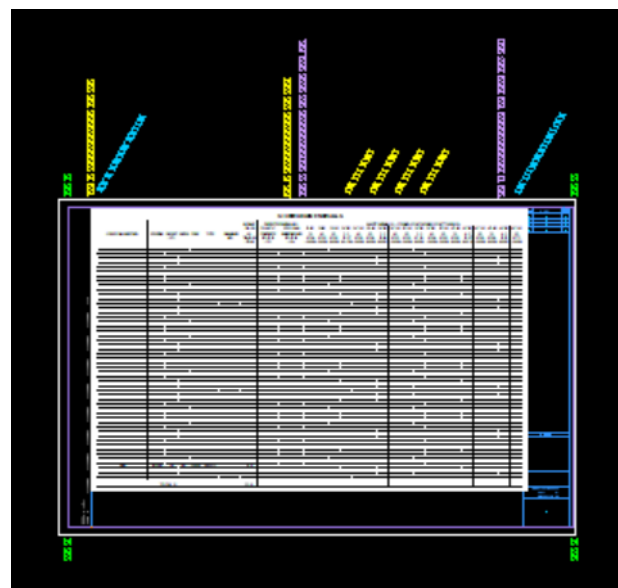
The Active Scale and the Sheet file in the DGN file must be on a 1 to 1 scale.

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 the 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

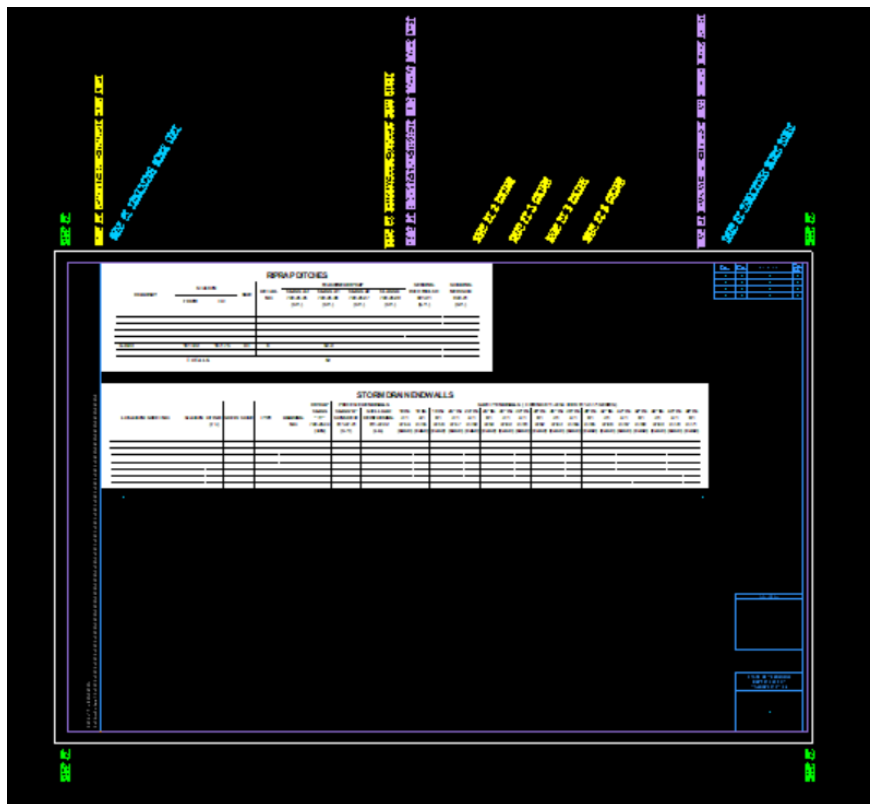
All Tabulated Quantity Blocks are set up for a full sheet for each block. In most small jobs, you will not need a full sheet of most tables. All Tabulated Block have been set up so the user can delete the rows needed to be removed to make the table the size it needs to be. The Rows for the Headers are 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 an 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

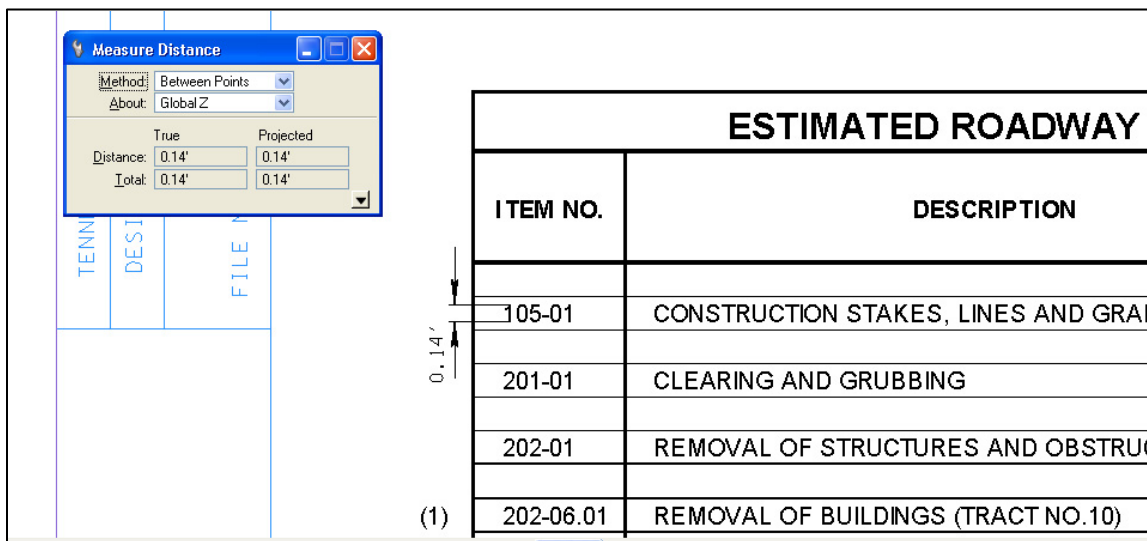
50-scale size sheet, set the scale to **900** for placement:

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 of the links in the file without opening the links. When used with Office 2010, 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 linked 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 2nd 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 2ND SHEET NOTES XXXXXX.dgn
- Drop Off Notes Traffic Control XXXXXX.dgn
- EPSC Notes XXXXXX.dgn
- General Notes XXXXXX.dgn
- Index and Standard Drawings XXXXXX.dgn
- Sheet 3 ROW Notes Utility Notes Utility Owners XXXXXX.dgn
- Special Notes XXXXXX.dgn
- Standard Roadway Drawings XXXXXX.dgn
- Standard Structure Drawings XXXXXX.dgn
- Standard Traffic Operations and Structure Drawings XXXXXX.dgn
- Standard Traffic Operations Drawings XXXXXX.dgn

Creating a Second Sheet from a Seed File in MicroStation

1. From MicroStation or MicroStation manager,

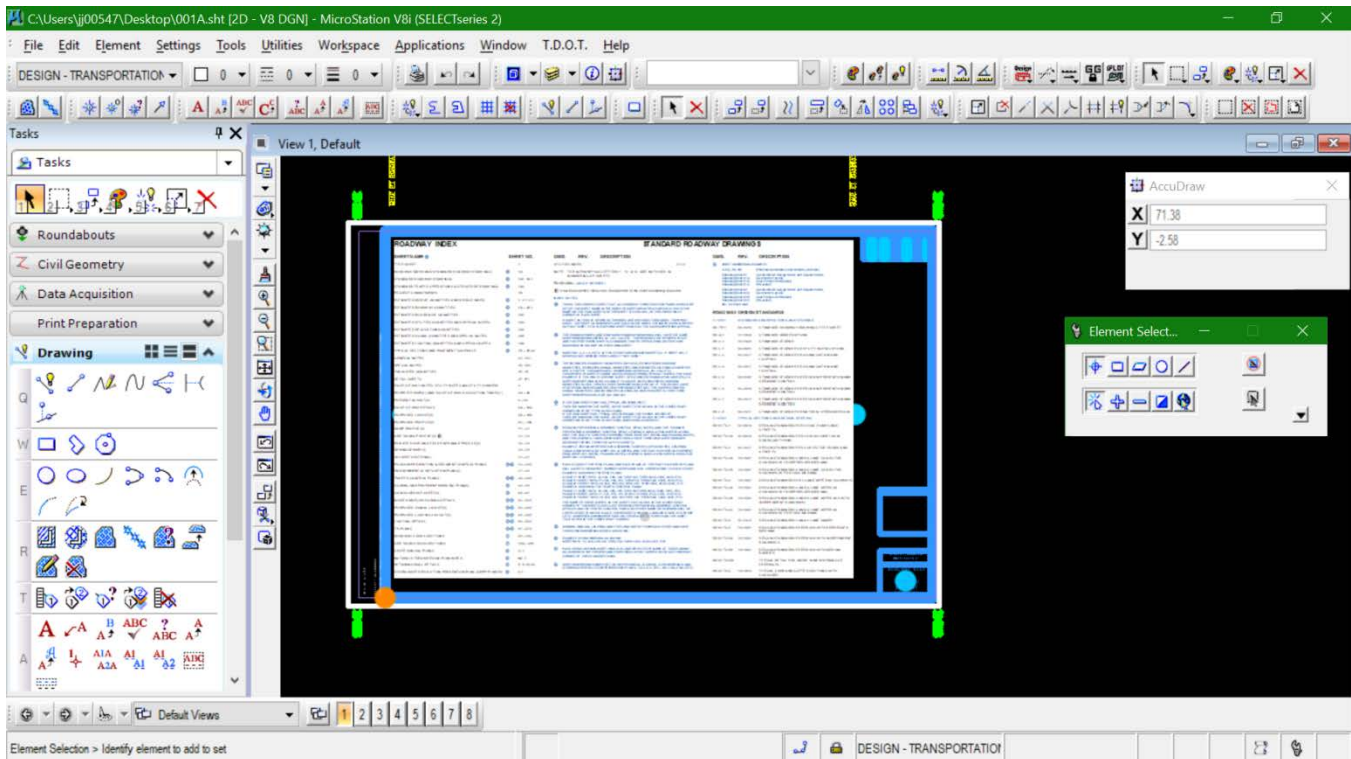
Go to **File > New** in MicroStation or click the **New File** icon in MicroStation Manager ..., and in the project folder, **Browse** to select the seed file needed for the sheet, assign the name according to TDOT CADD's sheet naming conventions and assign a *.sht extension. See [CADDV8.pdf](#), Section **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 xxxxxx.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_xxxxxx.dotx** or **Index and Standard Drawings xxxxxx.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 1st 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:

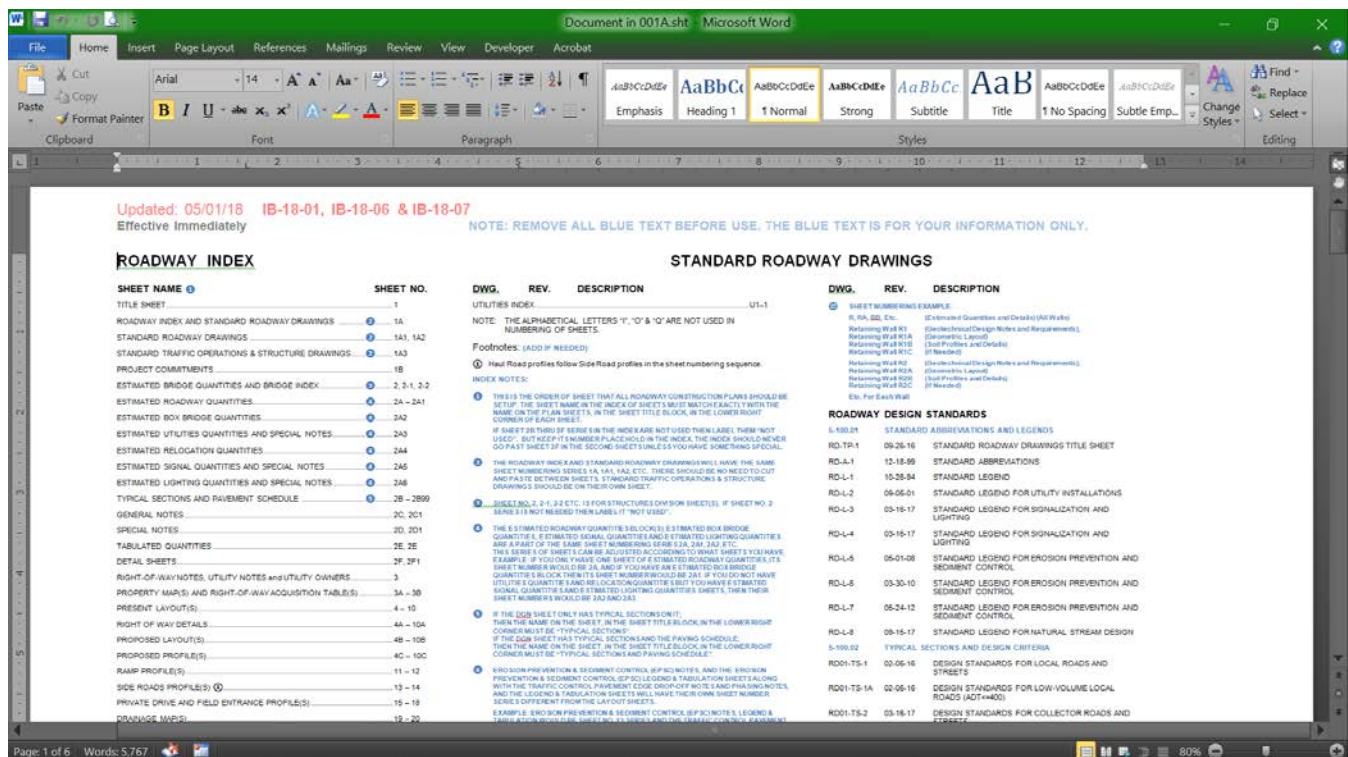
There is special text in **RED**, which is the latest Updated Date for this file and the Instructional Bulletin(s) that the file was updated to their requirements.

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.



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 xxxxxx.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:

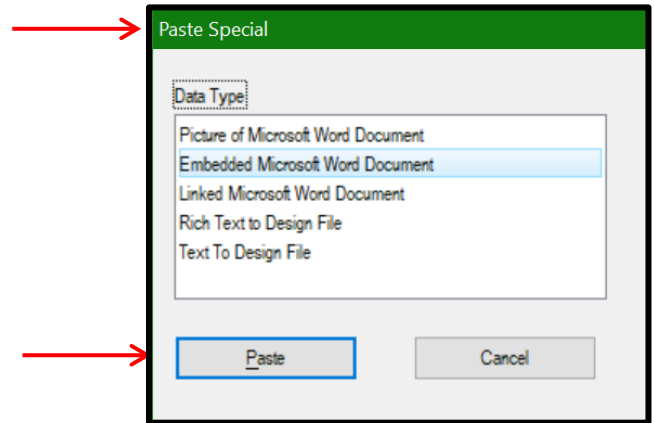
- BLANK SHEET FOR 2ND SHEET NOTES XXXXXX.dotx
- Drop Off Notes Traffic Control XXXXXX. dotx
- EPSC Notes XXXXXX. dotx
- General Notes XXXXXX. dotx
- Index and Standard Drawings XXXXXX. dotx
- Sheet 3 ROW Notes Utility Notes Utility Owners XXXXXX. dotx
- Special Notes XXXXXX. dotx
- Standard Roadway Drawings XXXXXX. dotx
- Standard Structure Drawings XXXXXX. dotx
- Standard Traffic Operations and Structure Drawings XXXXXX. dotx
- Standard Traffic Operations Drawings XXXXXX. 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.

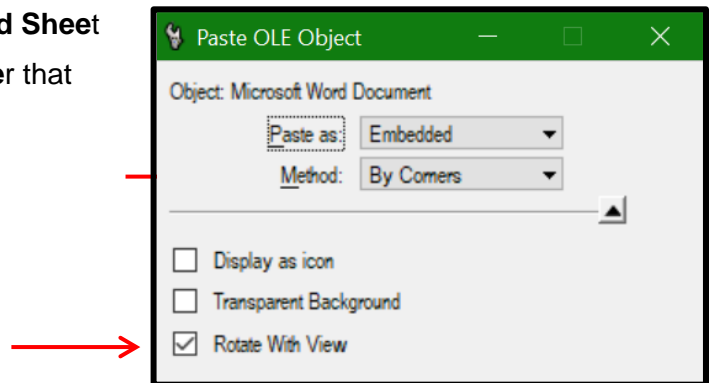
3. In your MicroStation file on the menu bar, go to **Edit > Paste Special...**

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

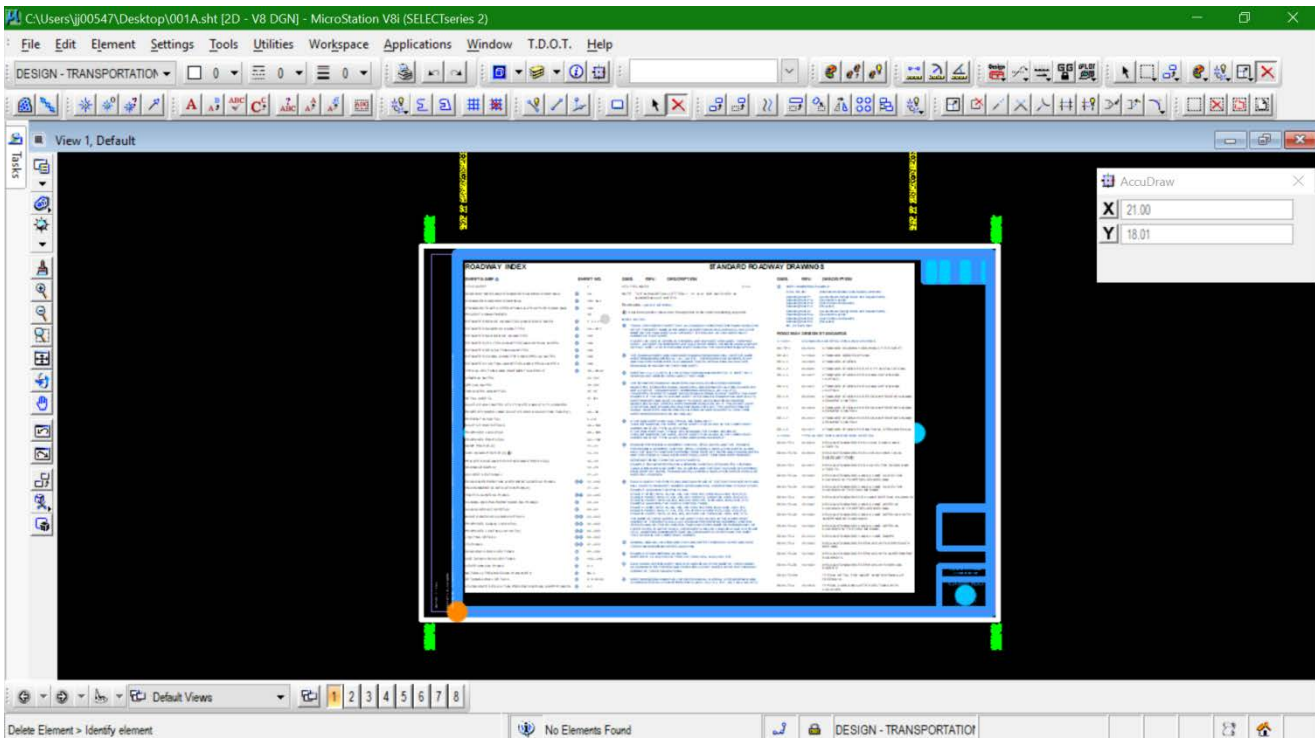


4. If you are placing a **Full Sheet** of **Notes** in a **Second Sheet** that is 1:1 scale then you should use a **Sheet Border** that has the **Snaps Points** at the top of the sheet.

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.



Text Size for a Full Sheet of Text

Arial font is the standard Font, text size 7 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

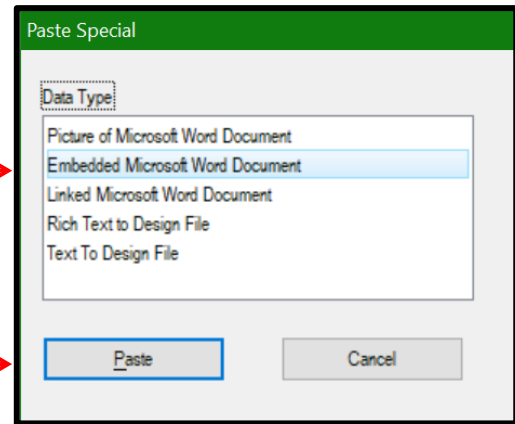
Text Size 550 for **.12** text size

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

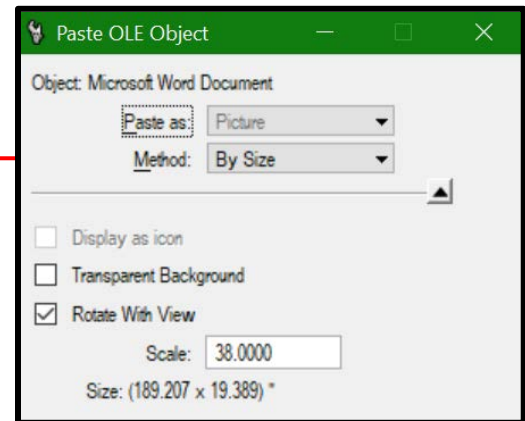
Placing a Word File on a Layout Sheet

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.

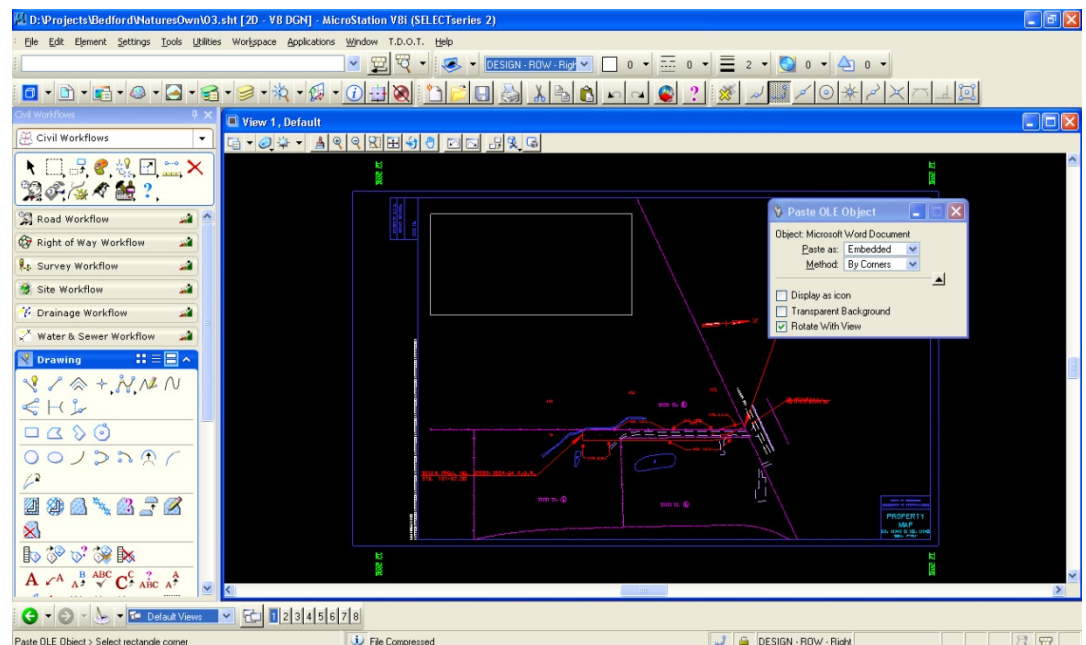


4. Set the Scale Size. The following only works if the text is Arial and 7 point size in the Word document.
This is what the TDOT Standard Note size is based on.

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 2010 documents instead of embedding them **is not** recommended due to several compatibility issues between Word 2010 and older versions of MicroStation. Any made with Office 2010 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 2010 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 2010. 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 **Edit > Links...** In the Links dialog, select the link to be updated and click **Update Now**.
2. In MicroStation, go to **Edit > Uppdate Links**.

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 2010 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 2010 and MicroStation V8i. If you are using MicroStation V8 2004 then you may still run into it.

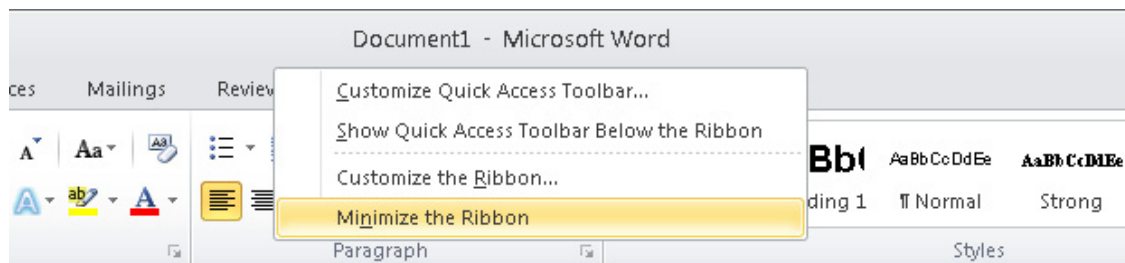
Take the following steps to re-embed the document and correct this problem:

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 scale of the plan sheet as the width dimension of the document inside of Word determine the dimension used in this keyin. 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.

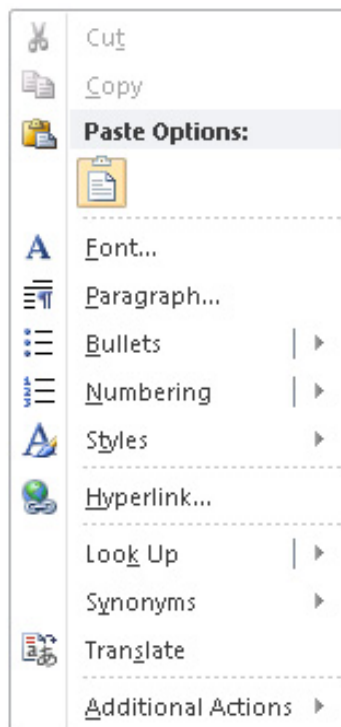
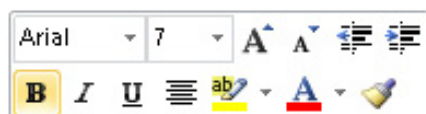
After re-embedding ...

Formatting Word Documents

The Office 2010 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.

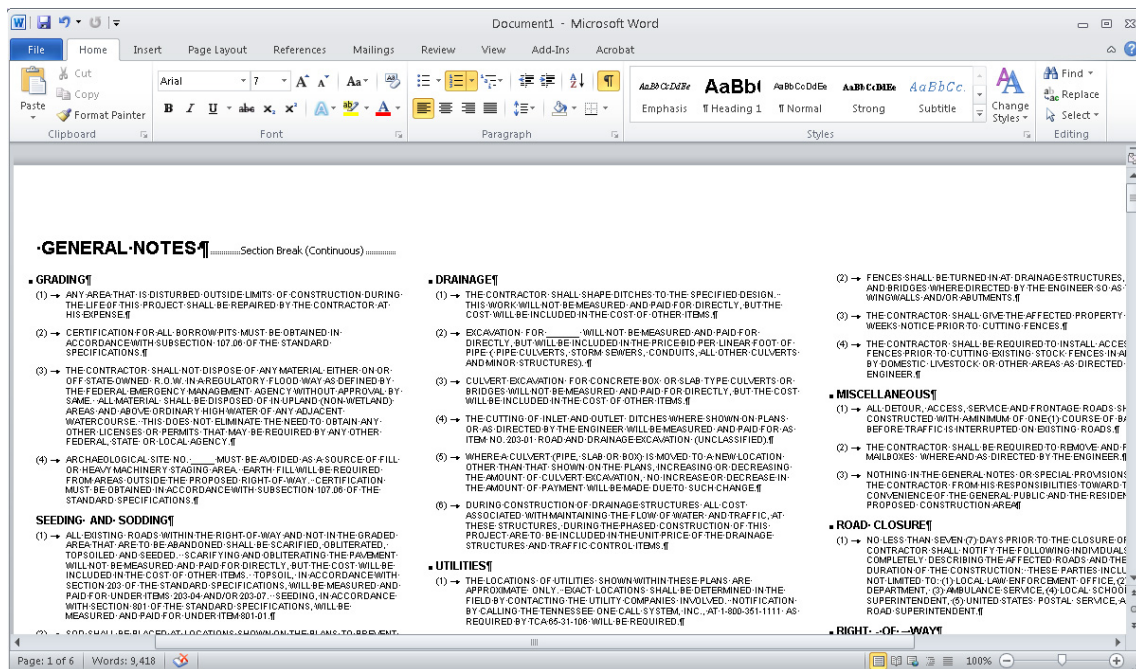


Show/Hide Formatting

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 2010 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.



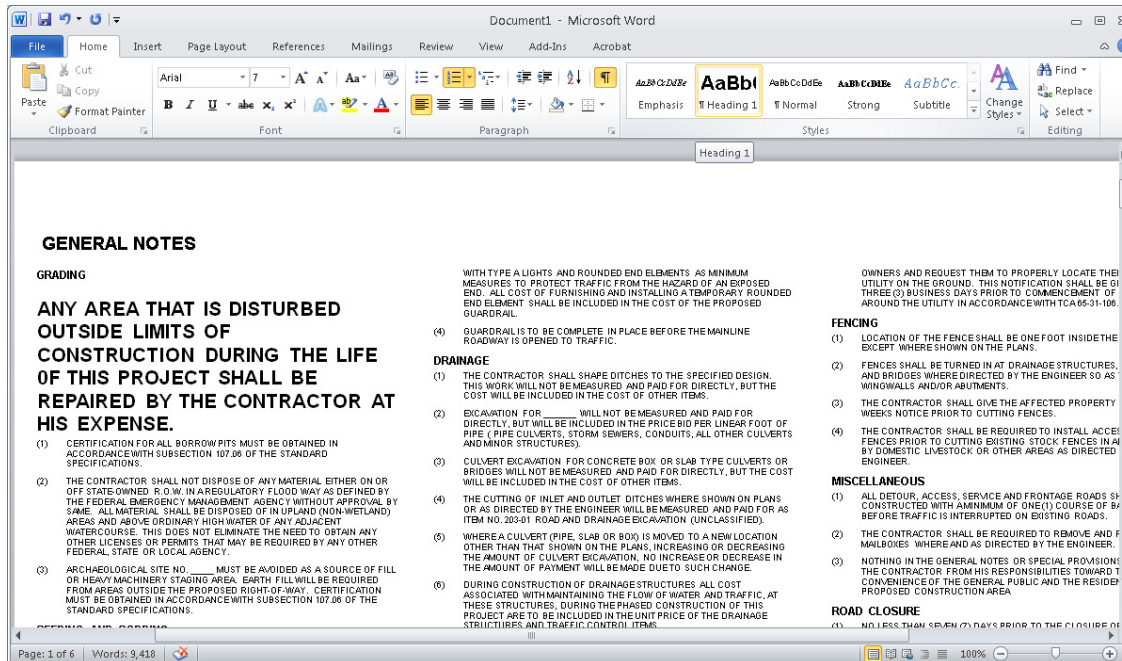
Clicking the paragraph mark will toggle off and on the display of the formatting characters. When it is toggled on, we can see section breaks, paragraph marks, tabs, etc.

Text Styles in Word

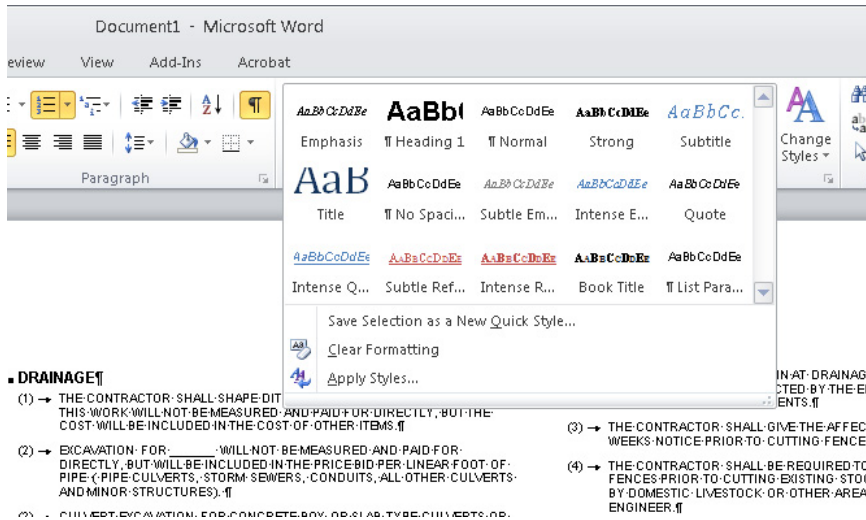
A text style will set all of the characteristics for the specified text. This includes font, font size, tabs, indents, color, heading, bullets and numbering, etc. There are text styles for each type of text used in the TDOT 2nd sheet Office templates. These text styles all start with **V8**.

Text style controls can be found on the Word 2010 ribbon under the **Home** tab in the **Styles** section.

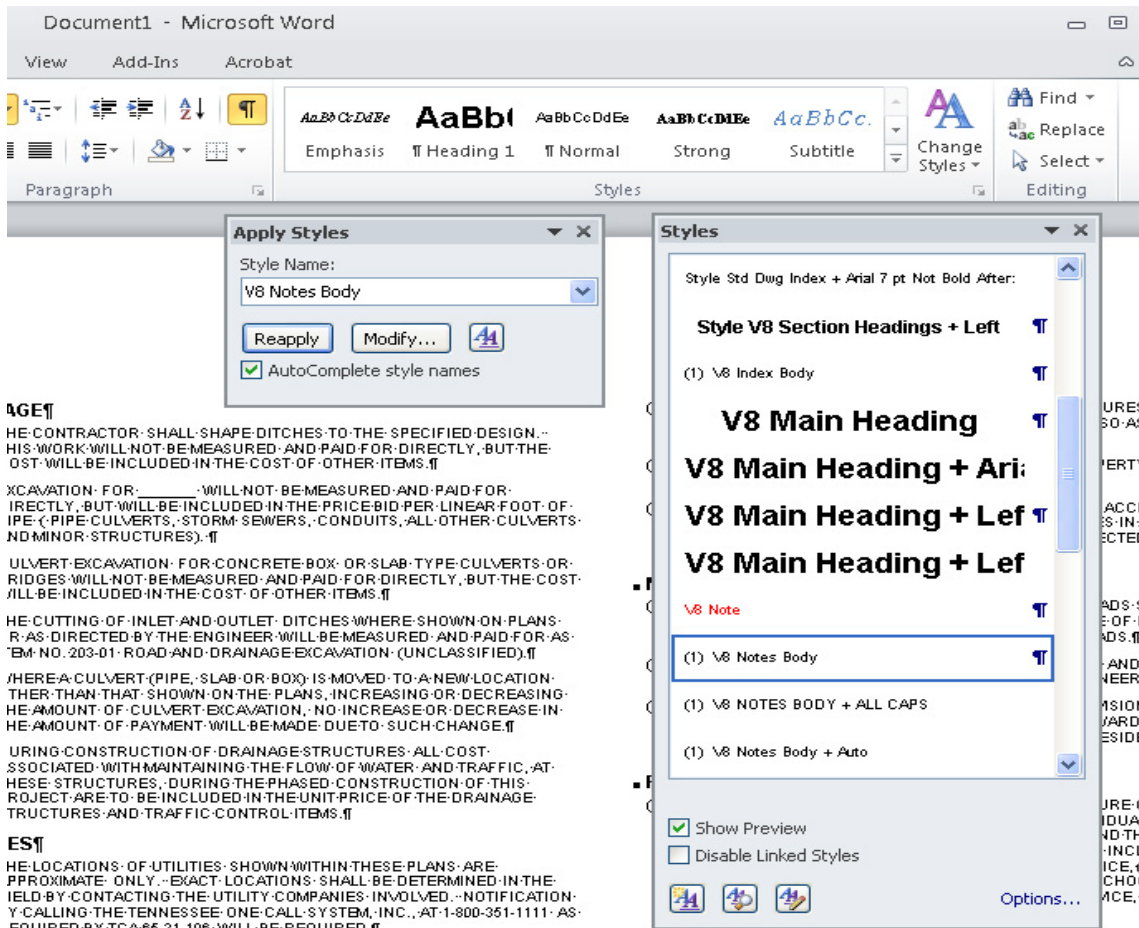
Word 2010 includes a type of style control called **Quick Styles**. When you move your cursor mark over the quick style it temporarily applies that style to the entire paragraph where your typing insertion point is currently located. In the example below, I was in the first note and it dynamically shows 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 of the quick styles currently available.



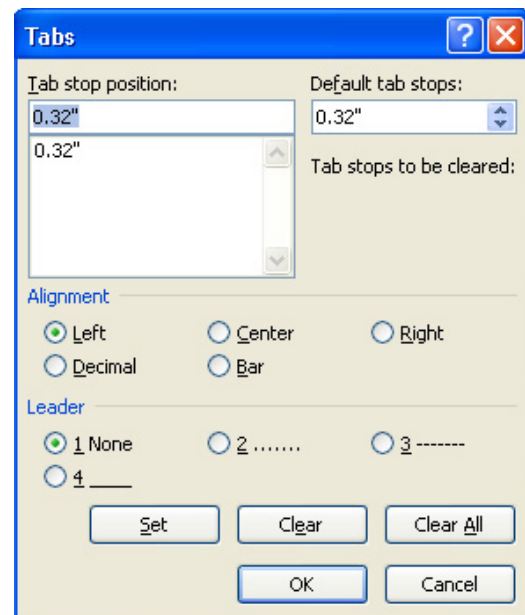
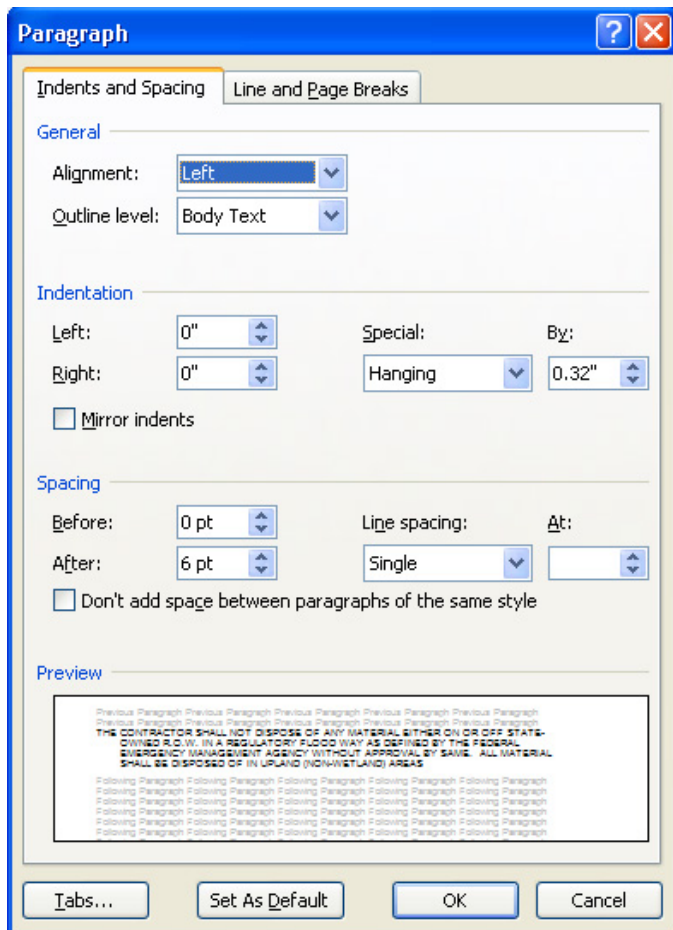
There are two ways to access the standard TDOT 2nd sheet text styles. You can click on the **Apply Styles** option, which appears at the bottom of the Quick Styles drop down menu shown above. This opens up the Apply Styles dialog. You could also click the small square with the arrow in it at the lower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



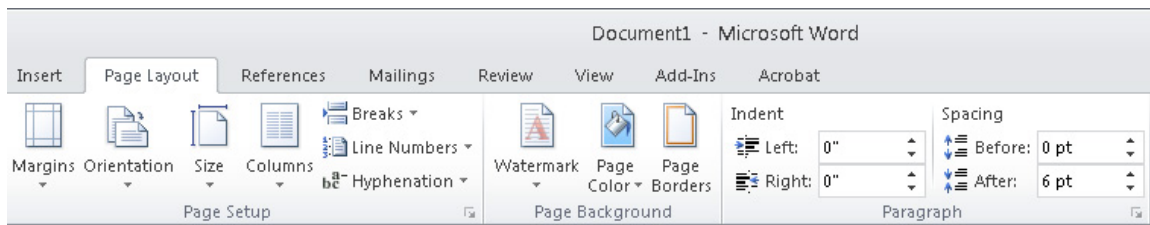
Indents, Hanging Indents, Line Spacing, Tabs, etc.

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 2010 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.

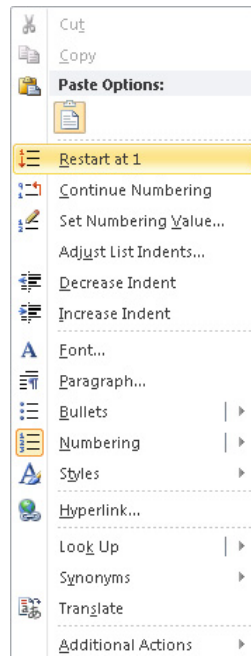
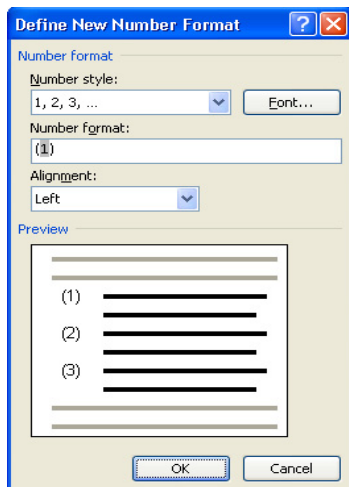
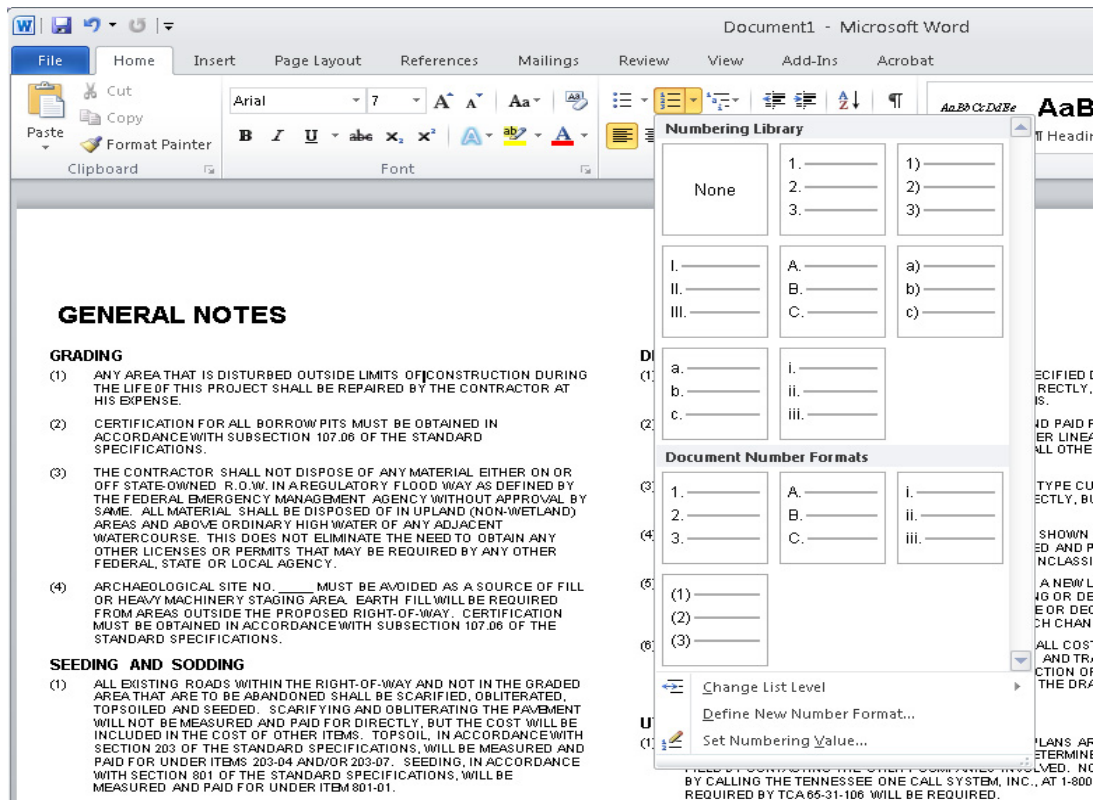


Indent & Spacing controls can also be found on the Office 2010 ribbon under the **Page Layout** tab in its **Paragraph** section.



Numbering & Bullets

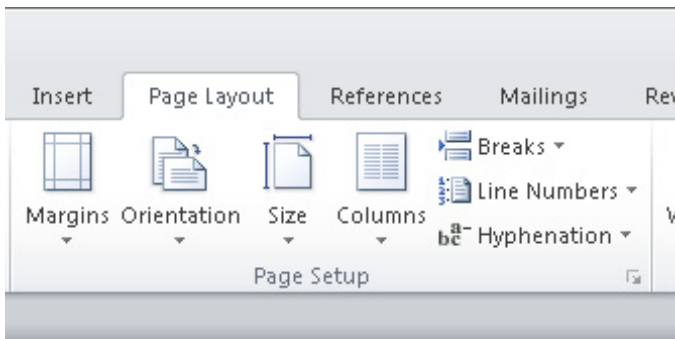
You can access **Numbering** and **Bullets** on the Office 2010 ribbon under the **Home** tab in the **Paragraph** section. Click either of these to use the current active format or click the arrow next to them to pull out the drop down menu for them. From the drop down menus choose **Define New Number 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 2010 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

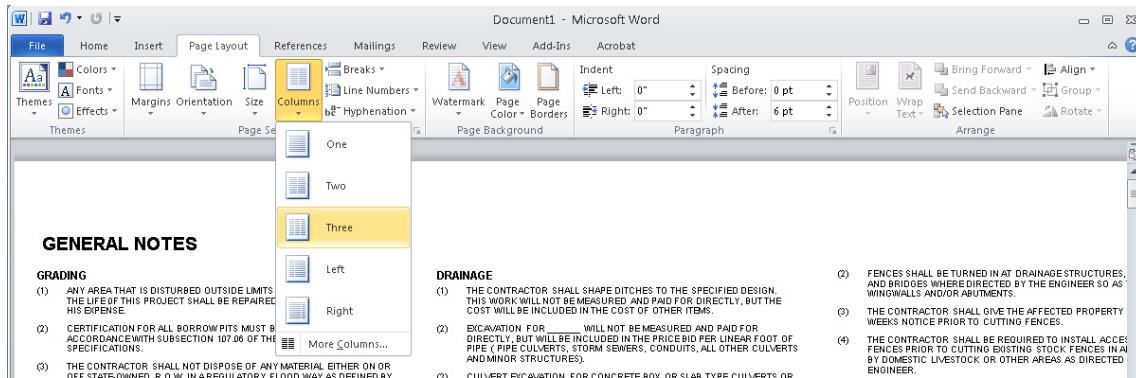
NOTE: REMOVE ALL BLUE TEXT BEFORE USE. THE BLUE TEXT IS FOR YOUR INFORMATION ONLY.

DWG. NO.	REV.	DESCRIPTION	DWG. NO.	REV.	DESCRIPTION	DWG. NO.	REV.	DESCRIPTION
STANDARD ROADWAY DRAWINGS								
ROADWAY DESIGN STANDARDS								
S-100-01		STANDARD ABBREVIATIONS AND LEGENDS	R001-TS-8	03-16-17	SHARED USE PATH TYPICAL SECTIONS	D-PO-1	06-27-01	STANDARD CIVIL & FLAT BASE CONCRETE CULVERT PIPE
R0-TR-1	09-26-18	STANDARD ROADWAY DRAWINGS TITLE SHEET	R001-TS-9	08-16-12	PERISH STANDARDS FOR SINGLE LANE URBAN AND RURAL ROUNDABOUTS	D-PS-1	03-16-16	SPRUITTING DETAILS FOR CORR. METAL & STRUCTURAL PLATE ROUND PIPE
R0-A-1	12-18-99	STANDARD ABBREVIATIONS	R001-TS-10	08-16-12	DESIGN STANDARDS FOR MULTI-LANE URBAN AND RURAL ROUNDABOUTS	S-110-02		SAFETY CROSS DRAIN ENDWALLS
R0-L-1	10-25-94	STANDARD LEGEND	R001-SS-2	10-16-02	URBAN SUPERELEVATION DETAILS	D-PE-15A	06-14-13	12" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 6:1 SLOPES)
R0-L-2	09-05-01	STANDARD LEGEND FOR UTILITY INSTALLATIONS	R001-SS-3	10-16-02	RURAL SUPERELEVATION DETAILS	D-PE-15B		15" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 6:1 SLOPES)
R0-L-3	05-16-17	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING	S-100-05		SLOPE DEVELOPMENT	D-PE-15A	01-06-15	15" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 6:1 SLOPES)
R0-L-4	03-18-17	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING	R001-S-11	04-04-03	DESIGN AND CONSTRUCTION DETAILS FOR ROADSIDE SLOPE DEVELOPMENT	D-PE-15B		15" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 6:1 SLOPES)
R0-L-6	08-01-08	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL	R001-S-11A	10-15-02	ROADSIDE DITCH DETAILS FOR DESIGN AND CONSTRUCTION	D-PE-24A	07-06-17	24" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 6:1 SLOPES)
R0-L-8	03-30-10	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL	R001-S-11B	10-15-02	DESIGN AND CONSTRUCTION DETAILS FOR ROCK OUT SLOPE AND LANDSCAPE	D-PE-24B		24" CONCRETE ENDWALL CROSS DRAIN (FOR 3:1, 4:1 & 6:1 SLOPES)
R0-L-7	06-24-12	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL	R001-SA-1	10-15-02	SAFETY APPROACH TO UNDERPASSES GRADING DESIGN AND SLOPE PROTECTION	D-PE-30A	10-10-16	30" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE FOR 3:1, 4:1 & 6:1 SLOPES
R0-L-8	08-15-17	STANDARD LEGEND FOR NATURAL STREAM DESIGN	S-100-04		INTERSECTION SIGHT DISTANCE DESIGN AND GENERAL NOTES	D-PE-30B		30" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE FOR 3:1, 4:1 & 6:1 SLOPES
S-100-02		TYPICAL SECTIONS AND DESIGN CRITERIA	R001-SO-1		INTERSECTION SIGHT DISTANCE LANDSCAPE AND CONSTRUCTION	D-PE-30A	06-14-13	30" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE FOR 3:1, 4:1 & 6:1 SLOPES
R001-TS-1	02-06-18	DESIGN STANDARDS FOR LOCAL ROADS AND STREETS	R001-SO-2		INTERSECTION SIGHT DISTANCE 2-LANE ROADWAYS	D-PE-30B		30" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE FOR 3:1, 4:1 & 6:1 SLOPES
R001-TS-1A	02-06-18	DESIGN STANDARDS FOR LOW-VOLUME LOCAL ROADS WITH FLOODS	R001-SO-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 & 6:1 SLOPES
R001-TS-2	03-16-17	DESIGN STANDARDS FOR COLLECTOR ROADS AND STREETS	R001-SO-6		INTERSECTION SIGHT DISTANCE 4-LANE DIVIDED HIGHWAYS	D-PE-42B		42" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE FOR 3:1, 4:1 & 6:1 SLOPES
R001-TS-2A	10-15-02	DESIGN STANDARDS 4 AND 6 LANE COLLECTOR HIGHWAYS WITH DEPRESSIONED MEDIANS	R001-SO-8		INTERSECTION SIGHT DISTANCE 8-LANE DIVIDED HIGHWAYS	D-PE-48A	06-14-13	48" CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE FOR 3:1, 4:1 & 6:1 SLOPES
R001-TS-2B	10-15-02	DESIGN STANDARDS 4 AND 6 LANE COLLECTOR HIGHWAYS WITH DEPRESSIONED MEDIANS	R001-SO-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 & 6:1 SLOPES
R001-TS-3	10-15-02	DESIGN STANDARDS FOR 4-LANE ARTERIAL HIGHWAYS	S-100-06		UNDERDRAINS	D-PE-99	11-01-13	PIPE GRATE & SLOPED CONNECTION DETAILS FOR 12" ENDWALLS (FOR 3:1, 4:1 & 6:1 SLOPES)
R001-TS-3A	10-15-02	DESIGN STANDARDS 4 AND 6 LANE ARTERIAL HIGHWAYS WITH DEPRESSIONED MEDIANS	R0-UD-3	08-06-96	UNDERDRAIN DETAILS	S-110-03		SAFETY BOX CULVERT ENDWALLS
R001-TS-3B	10-15-02	DESIGN STANDARDS 4 AND 6 LANE ARTERIALS WITH INDEPENDENT ROADWAYS	R0-UD-4	01-25-18	UNDERDRAIN LATERAL DETAILS			
R001-TS-3C	10-15-02	DESIGN STANDARDS 4 AND 6 LANE ARTERIAL HIGHWAYS WITH INDEPENDENT ROADWAYS	R0-UD-6	12-15-94	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 1:1 & 2:1 SLOPES			

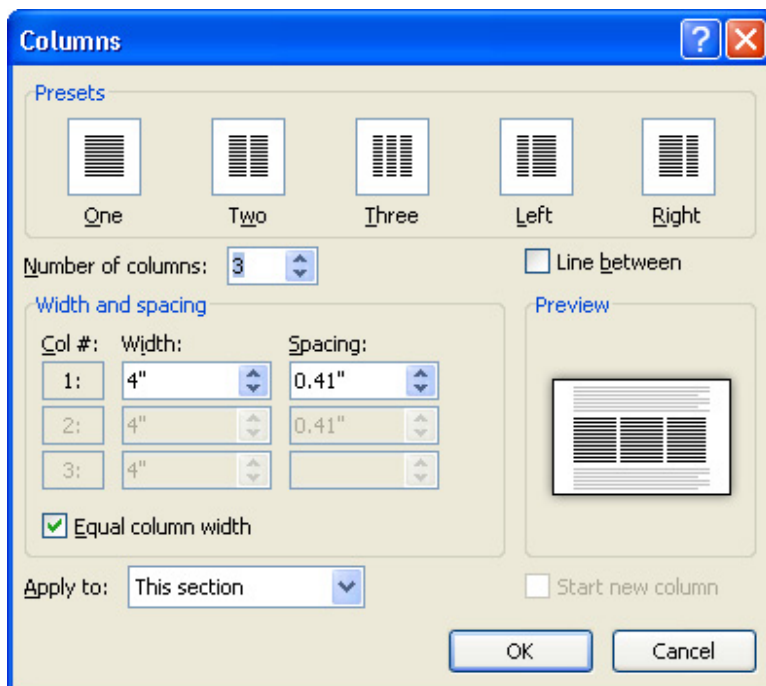
Columns

You can also access **Column** formatting controls in the **Page Setup** section on the Office 2010 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.



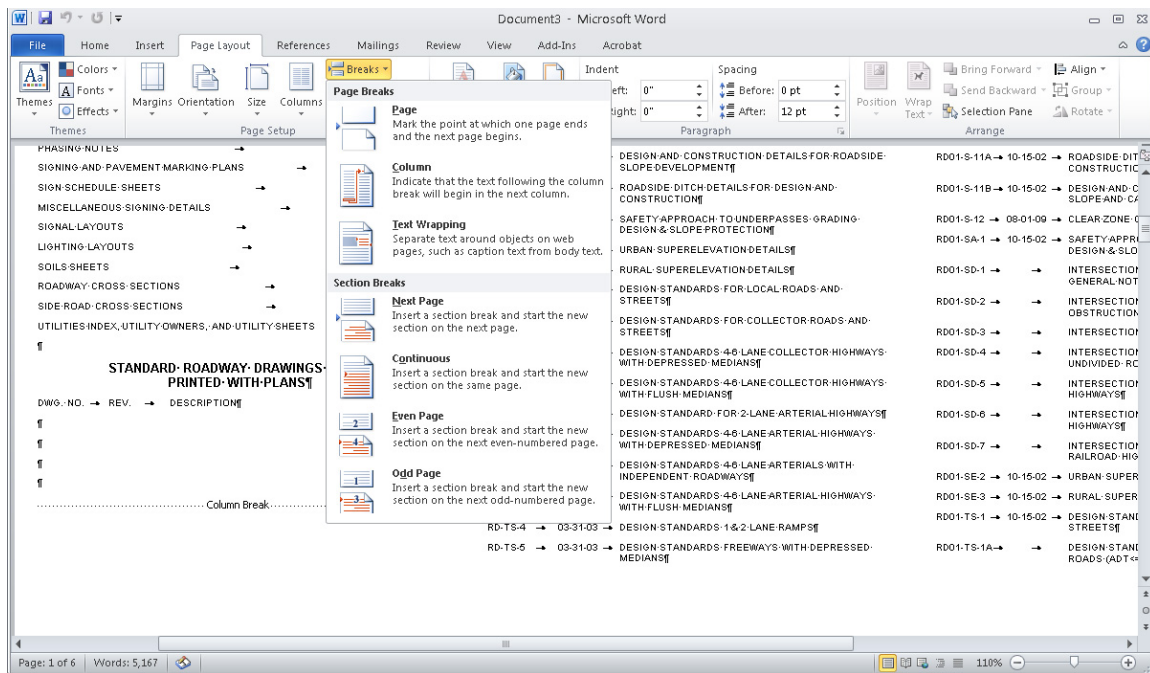
To set widths and other column settings, select the **More Columns** option from the drop down menu to open the **Columns** dialog.



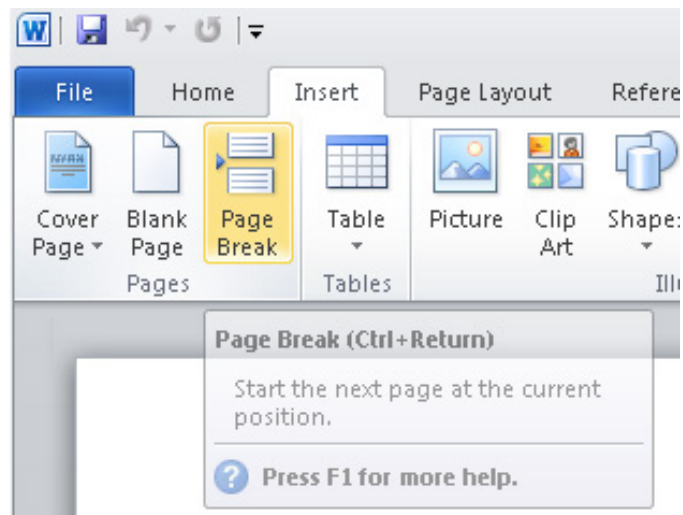
Breaks

You can also access the **Break** controls in the **Page Setup** section on the Office 2010 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 2010 ribbon under the **Insert** tab.



Current Office \ MicroStation Issues

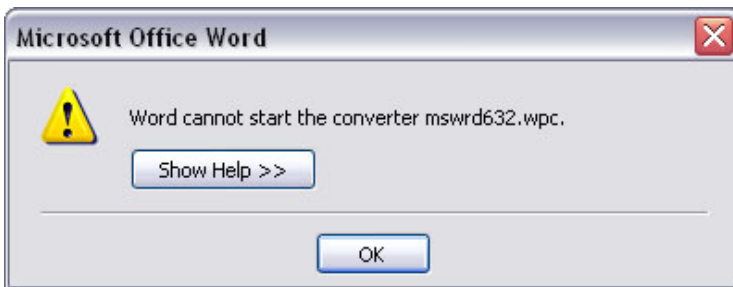
This section describes current known issues with Office documents that are linked or embedded in MicroStation.

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

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 mentioning. 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.

