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 <u>**O**</u>bject <u>**L**</u>ink and <u>**E**</u>mbed.

It works best to **Link Exce**l 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.

Bonne examples of 2 Bheets ereated using word and h		
ROADWAY INDEX AND STANDARD DRAWINGS INDEX	1A	Embedded Word
PROJECT COMMITMENTS	1B	Linked Excel
ESTIMATED BRIDGE QUANTITIES AND BRIDGE INDEX	2 Linked Ex	cel & Embedded Word
ESTIMATED ROADWAY QUANTITIES	2A	Linked Excel
ESTIMATED UTILITIES QUANTITIES	2B	Linked Excel
GENERAL NOTES AND SPECIAL NOTES	2G	Embedded Word
TABULATED QUANTITIES	2H - 2J	Linked Excel
PROPERTY MAPS AND RIGHT-OF-WAY ACQUISITION TABLES	3, 3A - 3B	Linked Excel
PHASING NOTES	36, 36A	Embedded Word
UTILITIES INDEX, UTILITY OWNERS, AND UTILITY SHEETS	U1-1	Embedded Word

Some examples of 2nd Sheets created using Word and Excel:

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

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

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

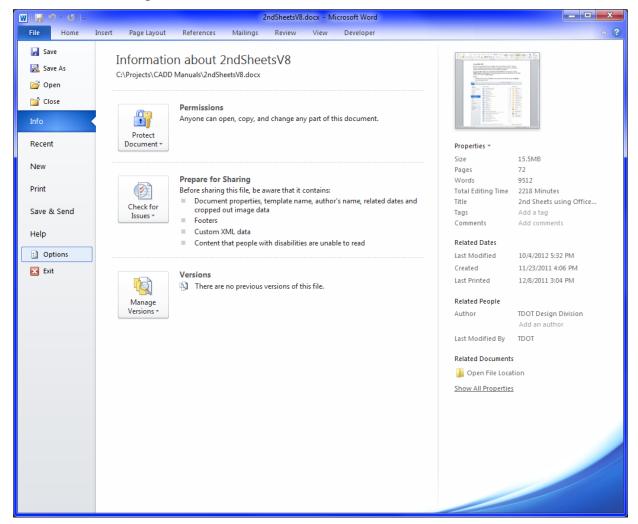
Set up Office 2010

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 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).

Use the Browse button to the right of **Default File Location:** to set the folder where you wish all Word documents to be saved by default.

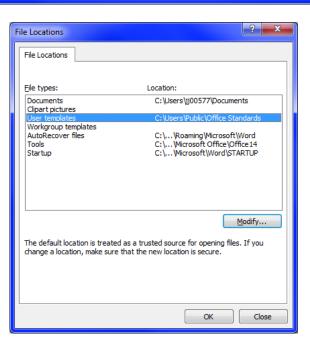
Word Options		? ×
General Display Proofing	Customize how documents are saved.	
Save Language Advanced Customize Ribbon Quick Access Toolbar Add-Ins Trust Center	Save files in this format: Word Document (*.docx) Save AutoRecover information every 10 minutes Keep the last autosaved version if I close without saving AutoRecover file location: C:\Users\ij00577\AppData\Roaming\Microsoft\Word\ Default file location: C:\Users\ij00577\Documents\ Offline editing options for document management server files Save checked-out files to: The server drafts location on this computer	Browse Browse
	Server drafts location: C:\Users\jj00577\Documents\SharePoint Drafts\ Preserve fidelity when sharing this document: 2ndSheetsV8.docx Embed fonts in the file ① Embed only the characters used in the document (best for reducing file size) Do not embed common system fonts	<u>B</u> rowse
	ОК	Cancel

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 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.

Word Options		x
General Display	Help keep your documents safe and your computer secure and healthy.	
Proofing	Protecting your privacy	
Save	Microsoft cares about your privacy. For more information about how Microsoft Word helps to protect your privacy, please see the privacy statements.	
Language	Show the Microsoft Word privacy statement	
Advanced	Office.com privacy statement	
Customize Ribbon	Customer Experience Improvement Program	
Quick Access Toolbar	Security & more	
Add-Ins	Learn more about protecting your privacy and security from Office.com.	
Trust Center	Microsoft Trustworthy Computing	
	Microsoft Word Trust Center	
	The Trust Center contains security and privacy settings. These settings help keep your computer secure. We recommend that you do not change these settings.]
	OK Cancel	

5. In the Trust Center dialog, click on **Trusted Locations** in the options on the left. Select the trusted location for **Application Templates**.

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

Trusted Publishers	Trusted Locations
Trusted Locations	Warning: All these locations are treated as trusted sources for opening files. If you change or add a location, make sure that the new location is secure.
Trusted Documents Add-ins ActiveX Settings Macro Settings Protected View Message Bar File Block Settings Privacy Options	Path Description Date Modified ▼ User Locations C:\Program Files (x86)\Microsoft Office\Templates\ Word 2010 default location: Application Templa 10/4/2012 4:24 PM C:\577\AppData\Roaming\Microsoft\Templates\ Word 2010 default location: User Templates C:\ppData\Roaming\Microsoft\Word\Startup\ Word 2010 default location: StartUp Policy Locations Policy Locations
	Path: C:\Program Files (x86)\Microsoft Office\Templates\ Description: Word 2010 default location: Application Templates Date Modified: 10/4/2012 4:24 PM Sub Folders: Allowed Allow Trusted Locations on my network (not recommended) <u>Modify</u> OK Cancel

The settings for Application Templates are at the bottom. The **Path** should be set to **C:\Users\Public\Office Standards** and **Sub Folders** should be set to **Allowed**.

Click on the **Modify** button. In the dialog which opens, click on the **Browse** button and set the path. Then click on the **Subfolders of this location are also trusted** option and click **OK**.

Microsoft Office Trusted Location		
Warning: This location will be treated as a trusted source for opening files. If you change or add a location, make sure that the new location is secure. Path:		
C:\Users\Public\Office Standards\		
<u>₿</u> rowse <u>₿</u> rowse <u>∎</u> rowse		
Word 2010 default location: Application Templates		
Date and Time Created: 10/1/2012 10:31 AM OK Cancel		

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

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

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

Microsoft Office Trusted Location	? x	
Warning: This location will be treated as a trusted source for opening files. If you change or add a location, make sure that the new location is secure. Path:		
C:\Projects		
Subfolders of this location are also trusted Description:	Browse	
Roadway Project Folders		
Date and Time Created: 10/4/2012 4:32 PM	Cancel	

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

Trust Center			? ×
Trusted Publishers	Trusted Locations		
Trusted Locations		sources for opening files. If you change or add a loc	ation, make sure
Trusted Documents	that the new location is secure. Path	Description	Date Modified 🔻
Add-ins	User Locations	•	
ActiveX Settings	C:\Users\Public\Office Standards\ C:\Projects\	Word 2010 default location: Application Templa Roadway Project Folders	10/4/2012 4:33 PM 10/4/2012 4:33 PM
Macro Settings	C:\577\AppData\Roaming\Microsoft\Templates\ C:\ppData\Roaming\Microsoft\Word\Startup\	Word 2010 default location: User Templates Word 2010 default location: StartUp	
Protected View		there are actual totation, startop	
Message Bar	Policy Locations		
File Block Settings			
Privacy Options			
	Path: C:\Projects\ Description: Roadway Project Folders		
	Date Modified: 10/4/2012 4:33 PM		
	Sub Folders: Allowed		
	Allow Trusted Locations on my network (not red	Add new location <u>R</u> emove	<u>M</u> odify
	Allow Irusted Locations on my network (not red Disable all Trusted Locations	commendea)	
		0	K Cancel

If you open a Word 2010 file with macros that is not in a trusted location, the following two settings 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.

Trust Center		? 🔀
Trusted Publishers Trusted Locations Trusted Documents Add-ins ActiveX Settings	Macro Settings O Disable all macros without notification O Disable all macros with notification O Disable all macros except digitally signed macros Enable all macros (not recommended; potentially dangerous code can run) Developer Macro Settings	
Macro Settings Protected View Message Bar File Block Settings Privacy Options	☐ Trust access to the <u>¥</u> BA project object model	
		OK Cancel

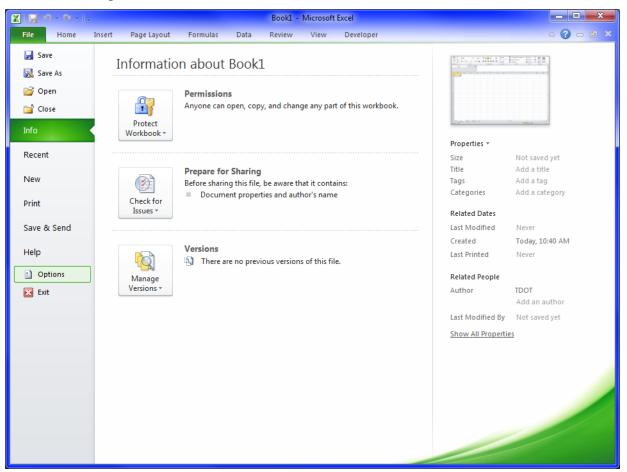
8. In the Trust Center dialog, click on **Message Bar** in the options on the left. The option **Show the Message Bar in all applications when active content, such as ActiveX controls or macros, has been blocked** should be set.

Trust Center		? 🗙
Trusted Publishers Trusted Publishers Trusted Locations Trusted Documents Add-ins ActiveX Settings Macro Settings Protected View Message Bar	Message Bar Settings for all Office Applications Showing the Message Bar Show the Message Bar in all applications when active content, such as ActiveX controls and macros, has been blocked Never show information about blocked content 	?×
File Block Settings Privacy Options	Enable Trust Center logging	ancel
	ок с	ancel

- 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.

Excel:

1. In Excel 2010, click on 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 on **Save** in the options on the left.

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

Change the path given for **Default File Location:** to set the folder where you wish all Excel documents to be saved by default.

Excel Options		? ×
General Formulas Proofing	Customize how workbooks are saved. Save workbooks	
Save Language Advanced Customize Ribbon Quick Access Toolbar Add-Ins Trust Center	Save files in this format: Excel Workbook (*.xlsx) Save <u>A</u> utoRecover information every <u>10</u> <u>minutes</u> Keep the last autosaved version if I close without saving AutoRecover file location: C:\Users\ij00577\AppData\Roaming\Microsoft\Excel\ Default file location: C:\Users\ij00577\Documents AutoRecover exceptions for: Book1 Disable AutoRecover for this workbook only Offline editing options for document management server files Save checked-out files to: The server drafts location on this computer The Qffice Document Cache Seryer drafts location: C:\Users\ij00577\Documents\SharePoint Drafts\ Preserve visual appearance of the workbook Choose what colors will be seen in previous versions of Excel: Colors	Browse
	ОК	Cancel

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

Click on the **Trust Center Settings** button.

Excel Options	? ***
General Formulas	Help keep your documents safe and your computer secure and healthy.
Proofing	Protecting your privacy
Save Language Advanced	Microsoft cares about your privacy. For more information about how Microsoft Excel helps to protect your privacy, please see the privacy statements. <u>Show the Microsoft Excel privacy statement</u> Office.com privacy statement
Customize Ribbon	Customer Experience Improvement Program
Quick Access Toolbar	Security & more
Add-Ins Trust Center	Learn more about protecting your privacy and security from Office.com. <u>Microsoft Trustworthy Computing</u>
	Microsoft Excel Trust Center
	The Trust Center contains security and privacy settings. These settings help keep your computer secure. We recommend that you do not change these settings.
	OK Cancel

4. In the Trust Center dialog, click on **Trusted Locations** in the options on the left. Select the trusted location for **Application Templates**.

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

Trusted Publishers Trusted Locations Trusted Locations Trusted Documents Add-ins Add-ins ActiveX Settings C:Files (x86)/Microsoft Office/Vemplates). Protected View Message Bar External Content File Block Settings Privacy Options Privacy Options Path: C:\Porgram Files (x86)/Microsoft Office/Vemplates). Excel 2010 default location: Ser Templates Excel 2010 default location: User Templates C:\L	Trust Center			? 🔀
Trusted Documents Add-ins Description Date Modified * Add-ins Add-ins Description Date Modified * ActiveX Settings C:w.orgam Files (86)/Microsoft Office\Templates) Excel 2010 default location: Adplication Templa 3/18/2013 12:56 PM C:w.orgam Files (86)/Microsoft Office\Templates) Excel 2010 default location: Add-ins C:w.orgam Files (86)/Microsoft Office\Templates) Excel 2010 default location: User Templates C:w.orgam Files (86)/Microsoft Office\Templates) Excel 2010 default location: User Templates C:w.orgam Files (86)/Microsoft Office\Templates) Excel 2010 default location: User Templates C:w.orgam Files (86)/Microsoft Office\Templates) Excel 2010 default location: User Templates C:w.orgam Files (86)/Microsoft Office\Templates) Excel 2010 default location: User Templates C:w.orgam Files (86)/Microsoft Office\Templates) Excel 2010 default location: Excel StartUp C:w.ise (86)/Microsoft Office\Templates) Excel 2010 default location: Excel StartUp Policy Locations Policy Locations Privacy Options Path: C:\Program Files (86)/Microsoft Office\Templates\ Description: Path: C:\Program Files (86)/Microsoft Office\Templates\ Description: Excel 2010 default location: Templates	Trusted Publishers	Trusted Locations		
Induced Documents Add-ins Add-ins ActiveX Settings Chungtam Files (x65)Microsoft Office)Templates/ Excel 2010 default location: Application Templatures/ Excel 2010 default location: User Templates Chungtate (x66)Microsoft Office)Office14\USETART Excel 2010 default location: User Templates Excel 2010 default location: User StartUp Protected View Chungtate (x66)Microsoft Office)Office14\USETART Excel 2010 default location: User StartUp Chungtate (x66)Microsoft Office)Office14\USETART Excel 2010 default location: Excel StartUp Chungtate (x66)Microsoft Office)Office14\USETART Excel 2010 default location: Excel StartUp Chungtate (x66)Microsoft Office)Office14\USETART Excel 2010 default location: Excel StartUp Policy Locations Policy Locations Privacy Options Policy Locations Path: C\Urprogram Files (x66)Microsoft Office\USETART) Description: Excel 2010 default location: Application Templates	Trusted Locations		sources for opening files. If you change or add a	a location, make sure
Add-ins User Locations ActiveX Settings C:\Files (x86)/Microsoft Office\Templates\ Excel 2010 default location: Application Templa	Trusted Documents		Description	Data Madified -
Active: Settings C\ Files (x86)\Microsoft Office\Office14\Library\. Excel 2010 default location: User Templates Macro Settings C\577\AppData\Roaming\Microsoft\Cremplates\. Excel 2010 default location: User Templates Protected View C\577\AppData\Roaming\Microsoft\Cremplates\. Excel 2010 default location: User Templates Message Bar C\iles (x86)\Microsoft Office\Office14\STARTUP\. Excel 2010 default location: User Templates File Block Settings Policy Locations Excel 2010 default location: User StartUp Privacy Options Policy Locations Excel 2010 default location: User StartUp Path: C\start C\start Path: C\start C\start Path: C\start C\start Path: C\start Excel 2010 default location: Lesc IstartUp Path: C\start Excel 2010 default location: Excel StartUp Path: C\.Program Files (x86)\Microsoft Office\Templates\. Description: Excel 2010 default location: Add-ins	Add-ins		Description	Date Modified *
Macro Settings C\577\AppData\Roaming\Microsoft\ExcelXUSTARN Excel 2010 default location: User Templates Protected View C\iles (x86)\Microsoft\Office\Office14\START\DP) Excel 2010 default location: User StartUp Message Bar C\iles (x86)\Microsoft\Office\Office14\START\DP) Excel 2010 default location: Excel StartUp Policy Locations Policy Locations Excel 2010 default location: Excel StartUp Privacy Options Policy Locations Policy Locations Path: C\.Program Files (x86)\Microsoft Office\Templates\Description: Excel 2010 default location Templates	ActiveX Settings			3/18/2013 12:56 PM
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Message Bar Policy Locations External Content Policy Locations File Block Settings Privacy Options Privacy Options Privacy Options Path: C:\Program Files (x86)\Microsoft Office\Templates\ Description: Excert 2010 default location: Application Templates	Protected View	C:\iles (x86)\Microsoft Office\Office14\STARTUP\	Excel 2010 default location: Office StartUp	
External Content File Block Settings Privacy Options Privacy Options Path: C:\Program Files (x86)\Microsoft Office\Templates\ Description: Excel 2010 default location: Application Templates	Message Bar	C:\iles (x86)\Microsoft Office\Office14\XLSTART\	Excel 2010 default location: Excel StartUp	
Privacy Options Privacy Options Path: C:\Program Files (x86)\Microsoft Office\Templates\ Description: Excel 2010 default location: Application Templates	External Content	Policy Locations		
Path: C:\Program Files (x86)\Microsoft Office\Templates\ Description: Excel 2010 default location: Application Templates	File Block Settings			
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Description: Excel 2010 default location: Application Templates				
Description: Excel 2010 default location: Application Templates				
Description: Excel 2010 default location: Application Templates				
Description: Excel 2010 default location: Application Templates				
Description: Excel 2010 default location: Application Templates				
Date Modified: 3/18/2013 12:56 PM			•	
		Date Modified: 3/18/2013 12:56 PM		
Sub Folders: Disallowed				
Add new location Remove Modify				nove <u>M</u> odify
 Allow Trusted Locations on my network (not recommended) Disable all Trusted Locations 			commenaea)	
OK Cancel				OK Cancel

The settings for Application Templates are at the bottom. The **Path** should be set to **C:\Users\Public\Office Standards** and **Sub Folders** should be set to **Allowed**.

If sub folders are Disallowed, click on the **Modify** button. In the dialog which opens, click on the **Browse** button and set the path. Then click on the **Subfolders of this location are also trusted** option and click **OK**.

Microsoft Office Trusted Location	? ×
Warning: This location will be treated as a trusted source for opening file change or add a location, make sure that the new location is secure. Path:	s. If you
C:\Users\Public\Office Standards	
 Subfolders of this location are also trusted Description: 	Browse
Excel 2010 default location: Application Templates	
Date and Time Created: 10/4/2012 5:22 PM	Cancel

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

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

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

Microsoft Office Trusted Location	? x
Warning: This location will be treated as a trusted source for opening file change or add a location, make sure that the new location is secure. Path:	es. If you
C:\Projects	
 Subfolders of this location are also trusted Description: 	Browse
Roadway Project Folders	
Date and Time Created: 10/4/2012 5:23 PM	Cancel

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

Trust Center			? ×
Trusted Publishers	Trusted Locations		
Trusted Locations		sources for opening files. If you change or add a loo	ation, make sure
Trusted Documents	that the new location is secure.	Description	Date Modified 🔻
Add-ins	User Locations	Description	Date Modified *
ActiveX Settings	C:\Projects\ C:\Users\Public\Office Standards\	Roadway Project Folders Excel 2010 default location: Application Templat	10/4/2012 5:23 PM 10/4/2012 5:23 PM
Macro Settings	C:\ Files (x86)\Microsoft Office\Office14\Library\	Excel 2010 default location: Add-ins	10/4/2012 5.25 PM
Protected View	C:\iles (x86)\Microsoft Office\Office14\STARTUP\ C:\\AppData\Roaming\Microsoft\Excel\XLSTART\	Excel 2010 default location: Office StartUp Excel 2010 default location: User StartUp	
Message Bar	C:\577\AppData\Roaming\Microsoft\Templates\ C:\iles (x86)\Microsoft Office\Office14\XLSTART\	Excel 2010 default location: User Templates Excel 2010 default location: Excel StartUp	
External Content	Policy Locations		
File Block Settings			
Privacy Options			
	Path: C:\Projects\		
	Description: Roadway Project Folders		
	Date Modified: 10/4/2012 5:23 PM		
	Sub Folders: Allowed	Add new location Demon	
	Allow Trusted Locations on my network (not rec	Add new location <u>R</u> emove	e <u>M</u> odify
	Disable all Trusted Locations		
		0	K Cancel

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

6. 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.

Trust Center		? 🗙
Trusted Publishers	Macro Settings	
Trusted Locations Trusted Documents	 Disable all macros without notification Disable all macros with notification 	
Add-ins	O Disable all macros except digitally signed macros	
ActiveX Settings	<u>Enable all macros (not recommended; potentially dangerous code can run)</u> Developer Macro Settings	
Macro Settings Protected View	Trust access to the <u>V</u> BA project object model	
Message Bar		
External Content		
File Block Settings		
Privacy Options		
	ОК	Cancel

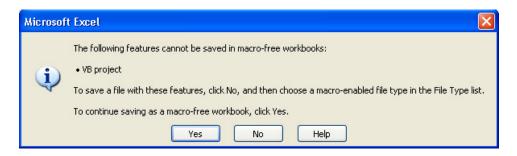
7. In the Trust Center dialog, click on **Message Bar** in the options on the left. The option **Show the Message Bar in all applications when active content, such as ActiveX controls or macros, has been blocked** should be set.

Trust Center	? 🛛
Trusted Publishers	Message Bar Settings for all Office Applications
Trusted Locations	Showing the Message Bar
Trusted Documents	Show the Message Bar in all applications when active content, such as ActiveX controls and macros, has been blocked
Add-ins	Never show information about blocked content
ActiveX Settings	
Macro Settings	
Protected View	
Message Bar	
External Content	
File Block Settings	
Privacy Options	
	Enable Trust Center logging
	OK Cancel

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

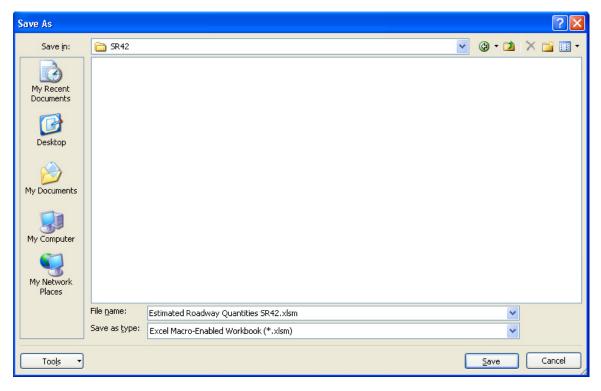
Saving Documents with Macros

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.

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File	Home	Insert Page Lay	out Formulas	Data	Review	view	Deve	loper	Add-Ins	Acrobat
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3 4 5 6 7 8 9 0	201-01 202-04.01 203-01 203-06 204-07	CLEARING AND GR REMOVAL OF STR ROAD & DRAINAGI WATER BEDDING MATERIA	DESCRIPTION UBBING UCTURES (STEEL I-E E EXCAVATION (UN L (PIPE) CLASS B	BEAM BRIDGE)		LS LS C.Y. M.G. C.Y.	QUANTIT	r¥	parenthe "Tab" na For more <u>http://www</u>	esis. NOTE me of the F detailed in witdot.state
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If you need to use the macros, click on 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. If you wish to clear the trusted document list or to disable this functionality, go to **File > Options > Trust Center > Trust Center Settings**. Choose the **Trusted Documents** option on the left and reset as desired.

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Excel Template Files

T.D.O.T. Roadway Design Division Excel templates used with MicroStation are part of the standard Office file downloads from the TDOT CADD web page. The templates are listed below with their default folder locations.

C:\Users\Public\Office Standards\Survey

ROWAcqTable.xltm Utility Owners.xltx ROWAcqMetric.xltx

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

Bridge Quantities.xltm	Maintenance Quantities.xltm
Estimated Roadway Quantities.xltm	Project Commitments.xltx

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

Box Bridge.xltx Box Culvert.xltx Bridge Drains.xltx Catch Basins and Manholes.xltx Catch Basins.xltx Concrete Median Barrier.xltx Cross Drain Arterials.xltx Cross Drain Collectors.xltx Cross Drain Endwalls.xltx Cross Drain Freeways.xltx Cross Drain Local Roads.xltx Drop Inlets.xltx Enhanced Silt Fence Check Design Dimensions.xltx Erosion Prevention and Sediment Control.xltx Grading Quantities Composition Known.xltx Grading Quantities Composition Unknown.xltx Guardrail Tab Builder.xltm Guardrail.xltx Manholes.xltx Median Drain Endwalls.xltx Median Drains.xltx Pavement.xltx

Removal Of Buildings & Obstructions.xltx Removal Of Structures.xltx Rip Rap Basins.xltx Rip Rap Ditches.xltx Roadway Approaches.xltx ROW Markers.xltx Sediment Control Structure Dimensions.xltx Sediment Control Structure Quantities.xltx Side Drain Endwalls.xltx Side Drain.xltx Slab Bridge.xltx Slab Culvert.xltx Slope Rehabilitation.xltx Special Ditches.xltx Spring Drains.xltx Storm Drainage Endwalls.xltx Storm Drainage Pipe Tab Builder.xltm Storm Drainage Pipes.xltx Storm Drainage Structure Tab Builder.xltm Traffic Control.xltx Trees.xltx

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Estimated Roadway Quantities Excel File

The Estimated Roadway Quantities Excel file is required on all jobs per the <u>T.D.O.T.</u> <u>Roadway Design Division Roadway Design Guidelines</u>. A preliminary construction quantity estimate Excel file is to 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 some heading information should not be changed or the database program will not input the data correctly.

There are at least two worksheets required for the Estimated Roadway Quantity Excel file, **Project Data** and **Col #1-Est. Rdwy. Quantities.** There may be more worksheets for a large job or a job with box bridge quantities.

The Structures and Maintenance division also have estimated quantities Excel files they submit to the Estimating and Bid Analysis Office. The templates for these are included in the **TDOT 2nd Sheets** download.

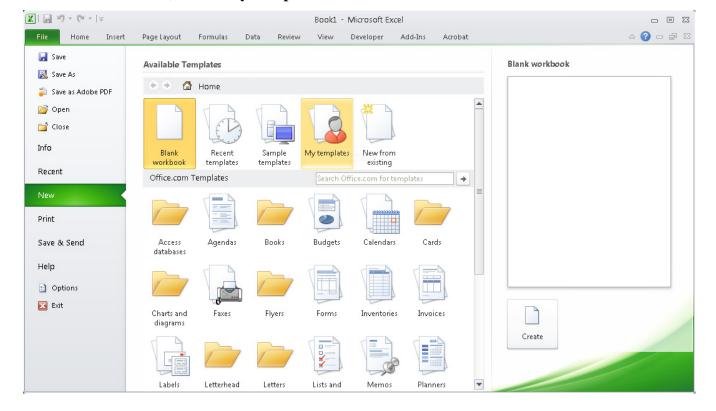
The Utilities Office of the Right-of-Way Division also has an estimated quantities worksheet they submit to the Estimating and Bid Analysis Office. The Utility Office provides their estimated quantities Excel worksheet to their users. The Utility Office will send a copy of the utility Excel worksheet to the Roadway Design Division so the "Estimated Utilities Quantities" Sheet 2B for the plans can be produced as per **Section 4-137.00** in the T.D.O.T. Roadway Design Division Roadway Design Guidelines.

Create TDOT Estimated Roadway Quantities in Excel

It is recommended 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 can be linked to the estimated quantities sheet. These same tab blocks and quantity blocks will be <u>linked</u> 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

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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.

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5. Go to **Col #1-Est. Rdwy. Quantities** worksheet. Several macros are available to help fill out the estimated quantities block. On this worksheet, buttons are provided to access the macros with descriptions to the right.

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Note:

The file **Items.dat** must be in the folder **C:\Users\Public\Office Standards\TDOT 2nd Sheets** for the 'Select Item Numbers...', 'Fill in Description...' and 'Import CSV File for Items' macros to work. The macros 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.

Estimated Roadway Quantities Macros

Select Item Numbers From List

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

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

Import – Will prompt for the Excel cell to start placing the selected item numbers.

Reset – Clears the Items Found list box.

Close – Closes the Item Select dialog box.

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		EARTH PAD FOR GUARD RAIL END TRI
	05-04.25EACH	GUARDRAIL & BARRIER DELINEATOR REMOVE AND REPLACE BARRIER DELI

Import ...

DESCRIPTION			
	UNIT	QUANTIT	
UARDRAIL AT BRIDGE ENDS	L.F.		
INGLE GUARDRAIL (TYPE 2)	L.F.		
UARDRAIL TERMINAL (TYPE 12)	EACH		
UARDRAIL TERMINAL (TYPE 13)	EACH		
UARDRAIL TERMINAL (TYPE-IN-LINE)	EACH		
AN ENERGY ABSORBING TERM (NCHRP 350, TL3)	EACH		
	INGLE GUARDRAIL (TYPE 2) UARDRAIL TERMINAL (TYPE 12) UARDRAIL TERMINAL (TYPE 13) UARDRAIL TERMINAL (TYPE-IN-LINE)	INGLE GUARDRAIL (TYPE 2) L.F. UARDRAIL TERMINAL (TYPE 12) EACH UARDRAIL TERMINAL (TYPE 13) EACH UARDRAIL TERMINAL (TYPE-IN-LINE) EACH	

Fill In Description and Unit

Uses the **Items.dat** file located at **C:\Users\Public\Office Standards\TDOT 2nd Sheets** to fill in the current description and units for the item numbers selected. If the description and unit are left blank, then the item number is not in the **items.dat** file. Check for the item number on the web since it is updated daily and save a fresh copy of **items.dat** as needed to include new item numbers. If the item number should be valid but is not found, contact the TDOT manager for the project.

Select item numbers for fill in ...

	STIMATED ROADWAY QUANTITIES	
ITEM NO.	DESCRIPTION	
607-05.30		
607-39.02		
607-39.03		
611-07.01		- 3
611-07.02		-
611-07.03		
	Item Number Selector	2 🛛
	Select Item Numbers to Fill In	
e e e e e e e e e e e e e e e e e e e	\$B\$7:\$B\$12	
	OK Cancel	
0		
E.		

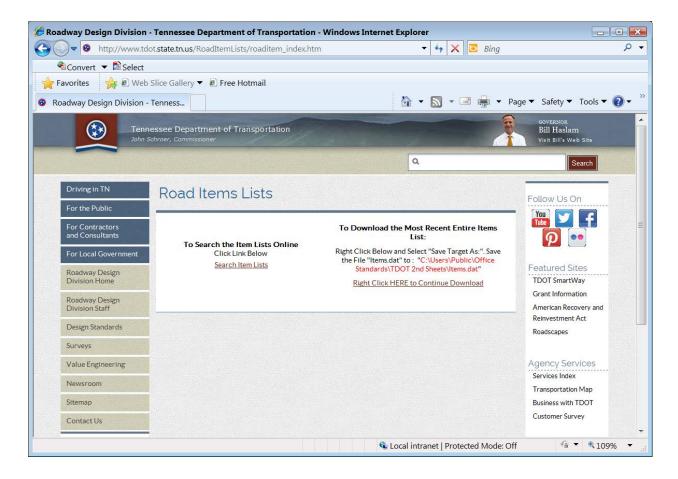
After fill in ...

ESTIMATED ROADWAY QUANTITIES											
ITEM NO.	DESCRIPTION	UNIT	QUANTITY								
607-05.30	24" PIPE CULVERT	L.F.									
607-39.02	18" PIPE CULVERT (SIDE DRAIN)	L.F.	1								
607-39.03	24" PIPE CULVERT (SIDE DRAIN)	L.F.									
611-07.01	CLASS A CONCRETE (PIPE ENDWALLS)	C.Y.	E.								
611-07.02	STEEL BAR REINFORCEMENT (PIPE ENDWALLS)	LB.									
611-07.03	STRUCTURAL STEEL (PIPE ENDWALLS)	LB.]								
		-	1								
		8	2								
			-								
			Ĩ.								
			1								

Download Items.dat from Web Page

This is a direct link to the item numbers web page. Follow the directions shown on the right of the web page to save the **items.dat** file to the folder location

C:\Users\Public\Office Standards\TDOT 2nd Sheets for use with the other macros.



The item number information can be reviewed, cut from the web page and pasted into the Excel estimate file using the **Search Item Lists** option on the left side of the web page. A direct Paste or Paste Special as HTML will paste the text into separate cells on the Excel estimated items worksheet but formatting will be lost. It will be necessary to run the **Format Item Numbers** macro and perhaps the Format **Notes Area** macro to replace the borders and text formatting.

Import CSV File for Items

Geopak produces quantity calculation files in CSV (comma separated values) format that can be input 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.

You are first prompted for the CSV file to import.

CSV Files to Im	iport						? 🔀
Look in:	🛅 2ndSheet	etD	cDat	~	¢	- 刘	X 📸 🖬 •
My Recent Documents Desktop My Documents My Computer My Network Places	역) DrainageLi 영) Drainagen (위) trees.csv 역) EndwallTat 영) MEDIANEA 역) ROWMARK	nod abul AR1	s.csv ation.csv HEEMS.CSV				
	File <u>n</u> ame:					*	
	Files of type:	C	5V Files (*.csv)			*	
Tools 🔹				C	Op	ien	Cancel

Then you are prompted for the starting location in the estimated roadway quantities block to start placing data.

Item Number	Selector	? 🗙
Select the Cell to	o Place the Imported	Item Numbers
\$B\$7		
	ОК	Cancel

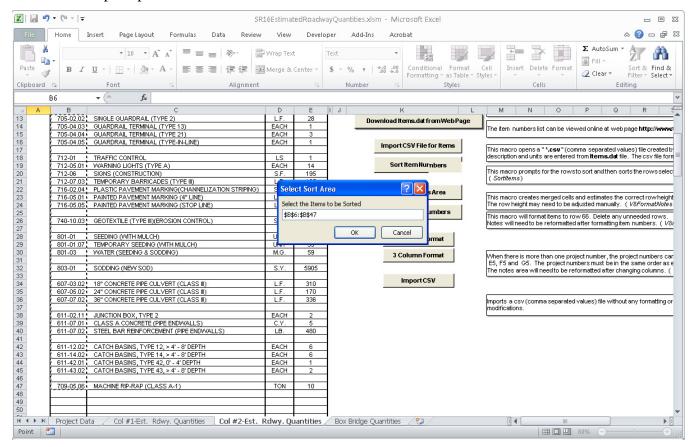
Data is then added in Excel.

ESTIMATED ROADWAY QUANTITIES											
ITEM NO.	DESCRIPTION	UNIT	QUANTITY								
802-01.01	TREES (QUERCUS PALUSTRIS) (1.5 - 2" CAL. B&B)	EACH	2								
802-01.02	TREES (LIRIODENDRON TULIPI) (1.5 - 2" CAL. B&B)	EACH	2								
802-01.03	TREES (CERCIS CARADERSIS) (1.5 - 2" CAL. B&B)	EACH	3								
802-01.04	TREES (ACER RUBRUM) (1.5 - 2" CAL. B&B)	EACH	4								
802-01.05	TREES (BETULA NEGRA) (1.5" - 2" CAL. B&B)	EACH	5								
802-01.06	TREES (ACER SACCHARUM) (1.5 - 2" CAL. B&B)	EACH	6								
802-01.07	TREES(LIQUIDAMBER STYRACIFLUA) (1.5 - 2" CAL. B&B)	EACH	7								
802-01.08	TREES(PLATANUS OCCIDENTALIS) (1.5 - 2"CAL. B&B)	EACH	8								
802-01.09	TREES (QUERCUS PHELLOS) (1.5 - 2" CAL. B&B)	EACH	9								

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

Sort Item Numbers

The item numbers need to 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.



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.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
607-03.02	18" CONCRETE PIPE CULVERT (CLASS III)	L.F.	310
607-05.02	24" CONCRETE PIPE CULVERT (CLASS III)	L.F.	170
607-07.02	36" CONCRETE PIPE CULVERT (CLASS III)	L.F.	336
611-02.11	JUNCTION BOX, TYPE 2	EACH	2
611-07.01	CLASS A CONCRETE (PIPE ENDWALLS)	C.Y.	5
611-07.02	STEEL BAR REINFORCEMENT (PIPE ENDWALLS)	LB.	480
611-12.02	CATCH BASINS, TYPE 12, > 4' - 8' DEPTH	EACH	6
611-14.02	CATCH BASINS, TYPE 14, > 4' - 8' DEPTH	EACH	6
611-42.01	CATCH BASINS, TYPE 42, 0' - 4' DEPTH	EACH	1
611-43.02	CATCH BASINS, TYPE 43, > 4' - 8' DEPTH	EACH	2
701-02	CONCRETE DRIVEWAYS	S.Y.	67
702-03	CONCRETE COMBINED CURB AND GUTTER	C.Y.	71
705-01.01	GUARDRAIL AT BRIDGE ENDS	L.F.	108
705-02.02	SINGLE GUARDRAIL (TYPE 2)	L.F.	28
705-04.03	GUARDRAIL TERMINAL (TYPE 13)	EACH	1
705-04.04	GUARDRAIL TERMINAL (TYPE 21)	EACH	3
705-04.05	GUARDRAIL TERMINAL (TYPE-IN-LINE)	EACH	1
709-05.06	MACHINE RIP-RAP (CLASS A-1)	TON	10
712-01	TRAFFIC CONTROL	LS	1
712-05.01	WARNING LIGHTS (TYPE A)	EACH	14
712-06	SIGNS (CONSTRUCTION)	S.F.	195
712-07.03	TEMPORARY BARRICADES (TYPE III)	L.F.	195
716-02.04	PLASTIC PAVEMENT MARKING(CHANNELIZATION STRIPING)	S.Y.	33
716-05.01	PAINTED PAVEMENT MARKING (4" LINE)	L.M.	1.2
716-05.05	PAINTED PAVEMENT MARKING (STOP LINE)	L.F.	67
717-01	MOBILIZATION	LS	1
740-10.03	GEOTEXTILE (TYPE III)(EROSION CONTROL)	S.Y.	64
801-01	SEEDING (WITH MULCH)	UNIT	9
801-01.07	TEMPORARY SEEDING (WITH MULCH)	UNIT	53
801-03	WATER (SEEDING & SODDING)	M.G.	59
803-01	SODDING (NEW SOD)	S.Y.	5905

Format Notes Area

Notes can be added after the item numbers but the notes area needs to be formatted differently from the item numbers. All of the text for each note should be placed into one cell. The macro prompts the user to select the last line of the item numbers area. The borders are removed from the notes area, the notes cells are merged and the row height is adjusted for multiline notes.

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(2)	209-08.02	TEMPORARY SILT FENCE (VITH BACKING)	L.F.	389					This macro creates merged cells and estimates the					
(2)(3)	209-08.04	TEMPORARY ENHANCED SILT FENCE	L.F.	126		Format Note	s Area		The row height	may need to be ac	djusted m <i>a</i>	anually. (l	/8Formati	
(2)(3)	209-09.01	SANDBAGS	BAG	1000					This macro will form at items to row 66. Delete any unnee				neededro	
(2) (2)(3)	209-09.04 209-10.01	SEDIMENT FILTER BAG(15' X 10') TEMPORARY DEVATERING STRUCTURE	EACH C.Y.	2 72		Format Item N	lumbers		Notes will need	to be reformatted	after form	atting item	numbers	
(2)(3)	203-10.01	POLYETHYLENE SHEETING (6 MIL. MINIMUM)	S.Y.	67	2									
(2)(3)	200-20.00	T GETETTTEERE GILEETING (GTME. MIRANOM)	0.1.											
(-)(-)	303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	4025		1 Column F	ormat							
(4)	303-01.01	GRANULAR BACKFILL (ROADWAY)	TON	1349		- Toolamitte	ormat			nore than one proj i. The project nurr				
	303-10.01	MINERAL AGGREGATE (SIZE 57)	TON	16		2 Column F	ormat			will need to be ref				
(3)				2										
	307-01.01	ASPHALT CONCRETE MIX (PG64-22) (BPMB-HM) GRADING A	TON	1070		3 Column F	ormat							
	307-01.08	M2	TON	775					Importe a cov (o	ommaseparated	values) fil	o with out a	ny form a	
	402-01	BITUMINOUS MATERIAL FOR PRIME COAT (PC)	TON	12					modifications.					
	402-01	AGGREGATE FOR COVER MATERIAL (PC)	TON	48		Import C	sv		Can be used to	build tabulated qu	uantities bl	ockonoth	erworksh	
	403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	1										
			0		6									
(5)	411-01.01	ASPHALT CEMENT (PG64-22) (ACS) GRADING D	TON	35	Last Item	Row			? 🗙					
(6)	411-01.02	AGGREGATE (ACS) GRADING D	TON	546						1				
					Select Th	ne Last Row of th	e Item Number	rs						
		FOOTNOTES:			The rows fo	llowing the item r	umbers will be	formal	tted for notes.					
	(1)	TABULA6TED QUANTITIES SHEET NO. 2XX FOR REMOVAL OF			\$B\$44	lothing the iteriti								
	(2)	SPECIFICATIONS FOR MAINTENANCE REPLACEMENT"			20244									
	(3)	STD. DVG. EC-STR-2.		0			ОК		Cancel					
	(4)	TOTAL INCLUDES 194 TONS FOR DRIVEWAYS.							Cancel					
	(5)	TOTAL INCLUDES 4 TONS FOR DRIVEWAYS. TOTAL INCLUDES 58 TONS FOR DRIVEWAYS.												
	(7)	TOTAL INCLUDES 58 TONS FOR DRIVEWAYS. BE OBLITERATED OR SCARIFIED.		0										
	0	DE ODER EN ATED UN JUANIFIED.												
(F H	Col #1-	Est. Rdwy. Quantities Col #2-Est. Rdwy. Quar	tities	Col #3-F	st. Rdwy. OL	iantitities	Box Bridge C	Duantit	ties 🛙 🖣	1111			Þ	

After re-formatting ...

411-01.01	ASPHALT CEMENT (PG64-22) (ACS) GRADING D	TON	35
411-01.02	AGGREGATE (ACS) GRADING D	TON	546

FOOTNOTES:

- (1) BID PRICE INCLUDES ALL SALVAGE VALUE OF MATERIAL. SEE TABULATED QUANTITIES SHEET NO. 2XX FOR REMOVAL OF BUILDINGS AND OBSTRUCTIONS DESCRIPTION BLOCK.
- (2) "SEE SUBSECTION 209.07 OF THE STANDARD SPECIFICATIONS FOR MAINTENANCE REPLACEMENT"
- (3) FOR USE WITH TEMPORARY SEDIMENT FILTER BAGS. SEE STD. DWG. EC-STR-2.
- (4) TOTAL INCLUDES 194 TONS FOR DRIVEWAYS.
- (5) TOTAL INCLUDES 4 TONS FOR DRIVEWAYS.
- (6) TOTAL INCLUDES 58 TONS FOR DRIVEWAYS.
- (7) INCLUDES BUT NOT LIMITED TO AREAS OF EXISTING ROAD TO BE OBLITERATED OR SCARIFIED.

Format Item Numbers

The borders, text sizes, fonts, etc. may be changed as the estimate table is being filled in. This macro reformats the estimated quantities block to the original size. If there are notes, use the **Format Notes Area** macro to reset that area as needed.

The **Column format** macros listed below will **Hide** and **Unhide** the extra quantity columns. The macros **should always be used** so that the macro buttons and description text will be moved with the columns.

1 Column format

For most projects, where there is only one project number, the one column format is used.

2 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.

3 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.

X	9	• (°" -	Ŧ				Estimated	d Roadwa	ay Quantiti	es.xltm1 -	Microsoft	Excel					_ 0	23
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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 ...

CSV File to Imp	port																										[?	×
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OK Cancel

After import ...

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6	10	0	1	11									
7	12	1	2	15									
8	18	2	0	20									
9	8	0	2	10									
TOTALS	68	5	7	80									

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.

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716-0		PLASTIC PAVEMENT MARKING (STOP LINE)	L.F.	10		Thin in Description and			
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Additional Estimated Roadway Quantities Worksheets Needed

To add an additional Col #*-Est. Rdwy. Quantities worksheet

1. Select the worksheet tab, right click and select Move or Copy...

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	607-07.02	36" CONCRETE PIPE CL	ILVERT (CLASS)	II)		L.F.	336	-			A word (no asterisk
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	611-12.02	CATCH BASINS, TYPE	12, > 4' - 8' DEPT	H		EACH	6	1	Download Items.dat from	WebPage	
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	611-42.01	CATCH BASINS, TYPE				EACH	1				This macro opens a
	611-43.02	CATCH BASINS, TYPE	43, > 4' - 8' DEPT	Н		EACH	2	T .	Import CSV File for	Items	description and units
			-			Insert					This macro prompts
	701-02	CONCRETE DRIVEWAY	5		-	Deleta			Sort Item Numbe	are	(Sortitems)
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	712-06	SIGNS (CONSTRUCTIO	ND			C . L	II Sheets		2 C-lung F-		

2. Identify the workbook and worksheet that should come after the new worksheet. Select the **Create a copy** option and click **OK**.

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36 716-02.04 PLASTIC PAVEMENT MARKING(CHANNELIZ	ATION STRIPING)	S.Y.	33]			Imports a csv (comma separated values) file wit
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3. Select the new worksheet's tab, right click and select **Rename**. You **must** keep the first three letters as **Col** so the database program will read the worksheet as estimated items. Change the column number and the remaining portion of the name as desired.

31						E5, F5 and G5. The project numbers must be i
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34	712-06	SIGNS (CONSTRUCTION)	S.F.	195	3 Column Format	
35	712-07.03	TEMPORARY BARRICADES (TYPE III)	L.F.	195	5 Coldmin Office	
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40	717-01	MOBILIZATION	LS	1		
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42	740-10.03	GEOTEXTILE (TYPE III)(EROSION CONTROL)	S.Y.	64		
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Ready 📍						

Note:

The **Project Data** worksheet **must** be the first worksheet in the file, the estimated roadway quantities worksheets (the worksheet names that start with **Col**) need to be next and then the **Box Bridge Quantities** worksheet (if there is a box culvert or bridge on the project). Any unused worksheets can be deleted.

Add other Tabulated Quantities Blocks

Note: Cells with a red border on tabulated quantity sheets indicate that the cell contains a formula to sum the contents of the column or row.

To add other tabulated quantities blocks:

- 1. Highlight a worksheet tab, right click the mouse and select Insert.
- 2. Select the template group wanted, for example TDOT English Tab Quantities.



3. Select the template wanted and click **OK**. The template is used to create the new worksheet.

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The template will come in ahead of the worksheet selected. 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; or select the worksheet tab of the worksheet to be moved, right click and go to **Move or Copy...**

The **Project Data** worksheet **must** be the first worksheet in the file, the estimated roadway quantities worksheets (the worksheet names that start with **Col**) need to be next and then the **Box Bridge Quantities** worksheet (if there is a box culvert or bridge on the project) before the tabulated quantities worksheets.

Standard Tabulated Quantity Template Formatting

- 1. All fonts are Arial.
- 2. Body text is size **10**, not bold.
- 3. The main heading text is size **15**, **bold**.
- 4. The sub heading text is size **10**, **bold**.
- 5. The body horizontal lines are light weight.
- 6. The heading borders and vertical lines are medium weight.
- 7. Select body cells and set justification as wanted.
- 8. Use **Center Across Selection** under Format Cells > Alignment > Horizontal to center heading text across multiple columns.
- 9. Cells for non-quantity data, footnote numbers or footnotes should be formatted as **Text** under Format Cells > Number.
- 10. Cells for quantity data should be formatted as either **General** if no control of decimals is needed or as **Number** to control the number of decimal places under Format Cells > Number.

11. Multi-line footnote formatting: Entire note should go in column C cell Select all cells from column C to end of tabulation block Under Format Cells > Alignment Set justification to Horizontal: Left & Vertical: Top Turn on Wrap Text & Merge Cells Adjust row height so that all lines of footnote are visible Set Vertical justification to Top for footnote number cell in column B

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.xltm Storm Drainage Pipe Tab Builder.xltm Storm Drainage Structure Tab Builder.xltm

Guardrail Tab Builder

The macro in template **Guardrail Tab Builder.xltm** 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 which 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.

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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.

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

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

Storm Drainage Pipe Tab Builder

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

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

	FR	alnage Pip e in the curr	T CODE CB-2 CB-2 CB-2 CB-15 MH-1 MH-1 CB-2	TO TO STO TO INLET ELEY. 441.54 442.71 444.59 444.03 438.51	This program The "litems DOT 2nd Sh	n checks to see if i s.daf file is downio RAINAGE P 607-03.02 18" (L.F.) 37	ed after running ti the storm drainag aded from the inter- imated quantities to IPES RCP CI 607-05.02 24- (L.F.)	e pipe pay Items II net to "C1Progran abulation.	
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	CB-1 CB-3 CB-16 CB-15 CB-17 MH-1 CB-2 CB-5	DUTLE1 ELEV. 442.23 442.89 444.88 444.88 444.42 440.98 438.30 433.20	CODE CB-2 CB-2 CB-15 MH-1 MH-1 CB-2	INLET ELEV. 441.54 442.71 444.59 444.03 438.51	GRADE 0.50 0.50 0.50	18" (L.F.) 37	607-05.02 24 -	607-07.02 36" (L.F.)	42-
	CB-1 CB-3 CB-16 CB-15 CB-17 MH-1 CB-2 CB-5	DUTLE1 ELEV. 442.23 442.89 444.88 444.88 444.42 440.98 438.30 433.20	CODE CB-2 CB-2 CB-15 MH-1 MH-1 CB-2	INLET ELEV. 441.54 442.71 444.59 444.03 438.51	GRADE 0.50 0.50 0.50	18" (L.F.) 37	607-05.02 24 -	607-07.02 36" (L.F.)	42-
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	CB-3 CB-16 CB-15 CB-17 MH-1 CB-2 CB-5	442.89 444.88 444.42 440.98 438.30 433.20	CB-2 CB-15 MH-1 MH-1 CB-2	442.71 444.59 444.03 438.51	0.50 0.50			139	
	CB-16 CB-15 CB-17 MH-1 CB-2 CB-5	444.88 444.42 440.98 438.30 433.20	CB-15 MH-1 MH-1 CB-2	444.59 444.03 438.51	0.50				
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	CB-8	419.60	CB-0	418.09	1.00	70		152	
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	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			
0	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			
1.000	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		
51 (47	CB-26	418.96	MH-4	417.97	0.50		198		
9	MH-4	417.76	EW-2	416.82	0.50		188		
TOTAL		6	8——			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 which 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 Satch Sasins Sand	file created also runs th	with Geopak Dra e Check Item No	inage using umbers prog	the drainage gram to verify i	and manholes b report format file all item numbers	TDOTnodesFUL which are used.	L drf. This pro	gram wo Qu re-t Sei rigi	nsert is used to rksheet in the E antities file then assign the macr lect a location a ht click over the	stimated Road It will be nec- os for the butb way from the I button and ch	way essary to ons. button, oose the							
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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 Block 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, =
- 2. Click to the worksheet and cell to be linked.
- 3. When the correct worksheet name and cell address are entered into the formula bar entry window, click on the check mark, \checkmark on the formula bar.

Note: The cell must be formatted as "number" or "general" or the link will display as text.

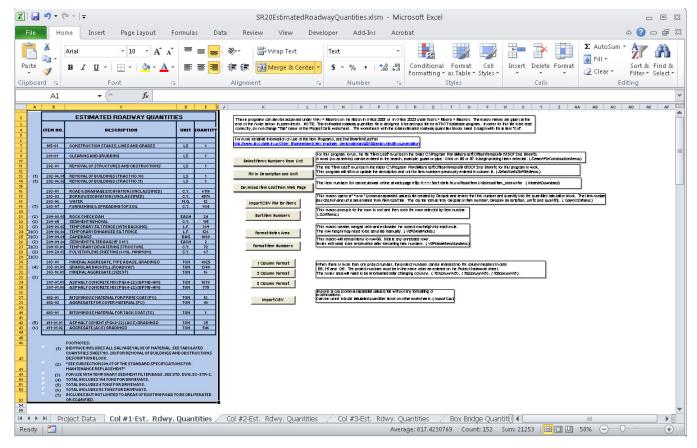
Do not have quantities linked to values in separate workbooks. The Estimating and Bid Analysis Office will not accept files with links to separate Excel files. A **Copy** and **Paste Special> Values** to the same location will replace the link with the current value.

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9	(2)	202-03.02	REMOVAL OF RIGID PAVEMENT	C.Y.	2193				For this pro	
10	(4)	203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	248		Select Items Numbers From Li	ist	A word (no	asterisks
11	(3)	203-03	BORROW EXCAVATION (UNCLASSIFIED)	C.Y.	500				The file "Ite	ems.dat" r
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20		411-01.07	ACS MIX (PG64-22) GRADING E SHOULDER	TON	2597	1		-	This macro	prompts
21					2001		Sort Item Numbers		(Sortitema	s)
22		501-01.02	PORTLAND CEMENT CONCRETE PAVEMENT (PLAIN) 9"	S.Y.	9065					
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27		705-01.01	GUARDRAIL AT BRIDGE ENDS	L.F.	279	4	Format Item Numbers			
28		705-02.02	SINGLE GUARDRAIL (TYPE 2)	L.F.	3686	8				
29		705-04.03	GUARDRAIL TERMINAL (TYPE 13)	EACH						
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Excel Linking to MicroStation

In Excel

- 1. Prepare the Excel file as needed. Save the Excel file to your project folder. The link will not be correct if the Excel file is not saved onto your computer or computer network before attaching to MicroStation.
- 2. Select the information in Excel wanted for linking to MicroStation. Select an extra row and column on each side of the block so that the width of the border lines on the edges of the tabulated block are not cut in half.
- 3. Go to the ribbon menu at **Home > Clipboard** and choose **Copy** or right click on your mouse and pick Copy from the choices given. This puts the selected information into the Windows Clipboard.



In MicroStation

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 <u>CADDV8.pdf</u>, Section **Standard Filenames**, part **Standard Sheet File Types:** (Use .SHT extension). For example, use the name **002A.sht** for the first **ESTIMATED ROADWAY QUANTITIES** MicroStation sheet file.

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.

It works best to use a one-scale sheet border for the 2^{nd} sheet files. Other links can be placed on a plans sheet at the scale of the sheet, such as an erosion control quantities block or a right-of-way acquisition table.

The Excel link will be placed on the active level in MicroStation.

1. On the MicroStation menu bar, go to Edit > Paste Special...

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

Paste Special
Data Type
Picture of Microsoft Excel Worksheet (cor
Embedded Microsoft Excel Worksheet (co Linked Microsoft Excel Worksheet (code)
Text To Design File Rich Text to Design File
Linked Text To Design File
Paste Cancel

2. In the Tool Settings dialog, Set <u>P</u>aste as: Link and <u>M</u>ethod: By Size. Under the extra options, click on Rotate With View.

Object: Microsoft Excel Worksheet (code
Paste as: Picture 💽 💌
Method By Size 💌
■ Display as icon Transparent Background Rotate With View Scale: 17.0000 Size: (120.774 x 187.355) ''

3. Set the **Scale** as needed from the table below. The scale values for .14 text size are recommended for the best legibility in the plans.

English:

For Arial font, text size 10 in Excel (font and size in TDOT templates):
1-scale size sheet, set the scale to:
17 for .14 text size - this will measure 0.14 feet in MicroStation and will measure 0.14 inch on the printed sheet
15 for .12 text size

13 for **.12** text size **13** for **.10** text size

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

850 for .14 text size 750 for .12 text size 650 for .10 text size

For sheets at other scales, multiply the 1-scale above by the scale of the sheet:

17 x Scale for .14 text size

- 15 x Scale for .12 text size
- 13 x Scale for .10 text size

Metric:

For Arial font, text size 10 in Excel (font and size in TDOT templates):

1-scale size sheet, set the scale to:

1.4 for **.14** text size - this will measure **0.0035** <u>meters</u> in MicroStation and will measure **0.14** <u>inch</u> on the printed sheet

- **1.2** for **.12** text size (**0.0030**)
- **1.0** for **.10** text size (**0.0025**)

For sheets at other scales, multiply the 1-scale above by the scale of the sheet:

- 1.4 x Scale for .14 text size
- 1.2 x Scale for .12 text size
- 1.0 x Scale for .10 text size

4. You are prompted to **Select Object Position**. Data point to place the link.

💯 D:ゆrojects\2ndSheetDocDat\002A.sht [2D - V& DGN] - MicroStation V&i (SELECTseries 2)	
: Eile Edit Element Settings Tools Utilities Workspace Applications Window T.D.O.T. Help	
	• = 2 • 🚱 0 • 🛆 0 •
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🕅 Road Workflow	Object: Microsoft Excel Worksheet (code
😥 Right of Way Workflow	Paste as: Link
👫 Survey Workflow	Method: By Size
🛞 Site Workflow 🎿	Display as icon
7 Drainage Workflow 🎿	☐ Transparent Background ▼ Rotate With View
😴 Water & Sewer Workflow 🔎	Scale: 17.0000
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Paste DLE Object > Select Object position	🧈 🖴 SURVEY - CENTERLIN

After placement, the OLE attachment can be manipulated as a graphic element. It can be moved, copied and scaled as needed.

If the Office document is open at the time you are looking at the link in MicroStation, it will appear shaded.

	ESTIMATED ROADWAY QUANTITI	ES	
ITEM NO.	DESCRIPTION	UNIT	QUANT
105-01	CONSTRUCTION STAKES LINES AND GRADES	LS	1
201-01	CLEARING AND GRUBBING	LS	1
282-81	REMOVAL OF STRUCTURES AND DEISTRUCTIONS	1.5	t in the second se

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.

Measure Distance Method: Between Points About: Global Z True Projected			ESTIMATED ROADWAY
Distance: 0.14' 0.14' Iotal: 0.14' 0.14'		I TEM NO.	DESCRIPTION
	₹ 17,	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.
- In MicroStation, go to <u>Edit > Links...</u> 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.

- 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 <u>Edit > Update Links</u>.

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

To relink an Excel file:

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

Word Embedded in MicroStation

Word Documents Embedded in MicroStation DGN Seed Files

There are MicroStation design file 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:

EnglishDropOffNotes.dgn EnglishEPSCSpecialNotes.dgn EnglishGeneralNotes.dgn Ind&StdDwgsEng.dgn Ind&StdDwgsMet.dgn MetricDropoffNotes.dgn MetricEPSCSpecialNotes.dgn MetricGeneralNotes.dgn

In MicroStation

1. From MicroStation or MicroStation manager,

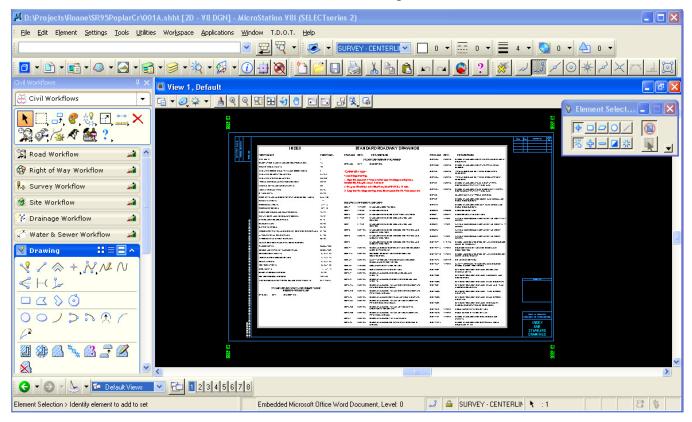
Go to File > New in MicroStation or click the New File icon in MicroStation Manager ..., and in the project folder, Browse to select the seed file needed for the sheet, assign the name according to the sheet name directions and assign a *.sht extension. See <u>CADDV8.pdf</u>, Section Standard Filenames, part Standard Sheet File Types: (Use .SHT extension). For example, use the name 001A.sht for the ROADWAY INDEX AND STANDARD DRAWINGS INDEX MicroStation sheet file.

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.

File Open - D: V	Projects\Roane\SF	R95PoplarCr\					? 🗙		
Look in:	🚞 SR95PoplarCr		 G 	🌶 📂 🖽	"L 🗟 🗈				
My Recent Documents Desktop My Documents My Computer	Name Provides Provide	Save in: My Recent Documents Desktop My Documents Signification	Size Ty cts Roane (SR95) SR95PoplarC F995vsullazator main main gapc.log gapc.log 001.sht 002c.sht	PoplarCr\ r	であった。 たちのであった。 たちのであった。 たちののためのであった。 をついた。 たちのであった。 たちののでであった。 たちののでのであった。 たちののでのであった。 たちののでのであった。 たちののでのでのでのでのでのでのでのでのでのでのでのでのでのでのでのでのでのでの	03test.dgn 03-test.sht 04.sht 04.sht 05.sht 05.sht 06.sht 06.sht 06.sht 07.sht 07.sht 08.sht 07.sht 08.sht NESI601ACQTABLE_bak.xls onvertExcelToV8-rev1_bak.xls 11.xls	ıı ı ı ı ı ı ı ı ı ı ı ı ı ı ı ı ı ı ı	StimatedRoadwayQuant StimatedRoadwayQuant	ities1_V8.xls ities1_V8_bak.
		My Computer	File name: Save as type: Seed:	001A.shht All Files (*.*) C:\Documents a	and Settings\All U:	sers\MicroStation Standards\se	eed\Ind&StdDwgs	♥ (▼ (Eng.dgn	Save Cancel Browse

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.

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



3. Note that the Word document header says **Document in** *DesignFileName*.sht. Make edits as needed

Editing Notes:

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 > English General Notes.dotx** or **English Index & Std Dwgs.dotx.** Cut from the temporary document and paste to the document in the sheet file. Close the temporary document without saving.

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**.

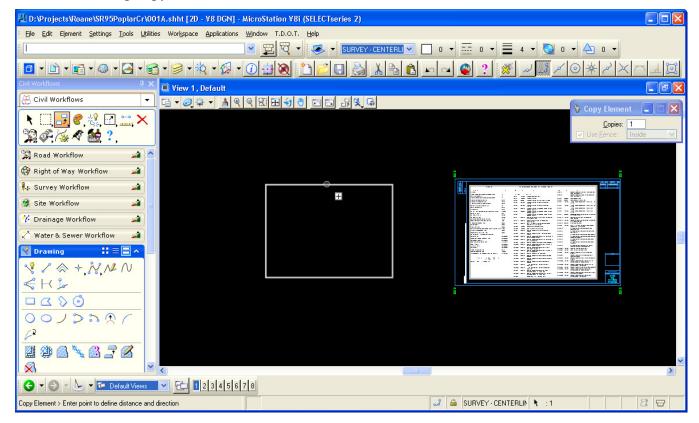
<mark>,</mark> リ ′ ೮ -		Docu	ment in OO	1A.shht - Microsoft Word			- 0
e Home Insert Page Layout Referer	nces Mailings	Review Vi	ew De	veloper Add-Ins Acrobat			۵
Arial ✓ 14 ✓ A Copy te Format Painter B	Ă Aa - ♣ ▲ - ♣ - ▲ -	;= - ;= - *; ■ = = =	:	E 2↓ ¶ Aa280 C2248e AaBbC(Aa86Codde	• AaBbCcDiEe Strong	AaBbo Subtiti	- Cac Replace
Clipboard 🕞 Font	Gi Gi	Pa	ragraph	ra Styl	es		G Editing
INDEX			STANI	DARD ROADWAY DRAWINGS			
SHEET NAME	SHEET NO.	DWG, NO	REV.	DESCRIPTION	DWG. NO	REV.	DESCRIPTION
TITLE SHEET	1		ST	ANDARD BRIDGE DRAWINGS	RD-TS-5A	03-31-03	DESIGN STANDARDS FREEWAYSW
ROADWAY INDEX AND STANDARD DRAWINGS INDEX PROJECT COMMITMENTS	1A 1B	<u>DWG.</u> NO.	REV.	DESCRIPTION	RD-TS-5B	03-31-03	ROADWAYS DESIGN STANDARDS FREEWAYSV BARRIER
ESTIMATED BRIDGE QUANTITIES AND BRIDGE INDEX	2	- Delete t	his note .		RD-TS-6	03-31-03	TYPICAL CURB AND GUTTER SECT
ESTIMATED ROADWAY QUANTITIES ESTIMATED UTILITIES QUANTITIES	2A - 2A1 2B - 2B1	To add Brid	ge Drawing:	s: in Word and then open the bridge drawing index	RD-TS-6A	03-31-03	SHOULDER TYPICAL CURB AND GUTTER SECTI SHOULDER
TYPICAL SECTIONS AND PAMING SCHEDULE	2C - 2F			in word and then open the bridge drawing index	RD-TS-7	03-31-03	DESIGN STANDARDS 2-LANE HIGH
GENERAL NOTES AND SPECIAL NOTES TABULATED QUANTITIES	2G 2H - 2J	-		osoft Office\Templates\TDOT 2nd <u>Sheets.</u> drawings index file and paste into this Word document.	RD-TS-7A	03-31-03	CONTINUOUS 2-WAY LEFT-TURN L DESIGN STANDARDS 2-LANE CURE CONTINUOUS 2-WAY LEFT-TURN L
DETAIL SHEETS	2K - 2L				RD-TS-8		SHARED USE PATH TYPICAL SECTI
PROPERTY MAPS AND RIGHT-OF-WAY ACQUISITION TABLES PRESENT LAYOUTS	3, 3A - 3B 4 - 14				RD-TS-9		DESIGN STANDARDS FOR SINGLE RURAL ROUNDABOUTS
PROPOSED LAYOUTS	4A - 14A			STANDARDS	RD-TS-10		DESIGN STANDARDS FOR MULTI-L
PROPOSED PROFILES	4B - 14B	RD-A1	12-18-99	STANDARD ABBREVIATIONS			RURAL ROUNDABOUTS
PUBLIC SIDE ROADS AND RAMP PROFILES	15 - 17	RD-L-1	10-26-94	STANDARD LEGEND	RD-UD-3	09-05-96	UNDERDRAIN DETAILS
PRIVATE DRIVE AND FIELD RAMP PROFILES	18 - 21	RD-L-2	09-05-01	STANDARD LEGEND FOR UTILITY INSTALLATIONS	RD-UD-4	05-27-01	UNDERDRAIN LATERAL DETAILS
	22 - 24	RD-L-3	04-15-04	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING	RD-UD-6	12-18-94	LATERAL UNDERDRAIN ENDWALL SLOPES
INTERCHANGE GRADING PLANS	22 - 24						
INTERCHANGE GRADING PLANS DRAINAGEMAPS	25 - 27	RD-L-4	04-15-04	STANDARD LEGEND FOR SIGNALIZATION AND	RD-UD-7	12-18-94	
		RD-L-4 RD-L-5	04-15-04 05-01-08	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING STANDARD LEGEND FOR EROSION PREVENTION AND	RD-UD-7 RD-UD-8	12-18-94	LATERAL UNDERDRAIN ENDWALL SLOPES LATERAL UNDERDRAIN ENDWALL

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 <u>separate</u> embedded Word document. Of course, a backup copy of the entire MicroStation DGN file can be made as well.



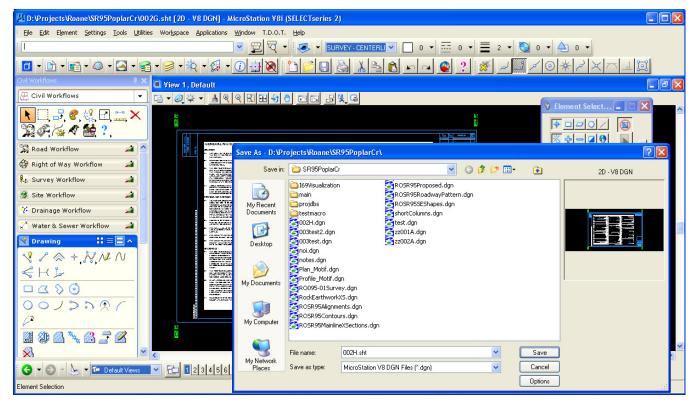
More than one Sheet Needed

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

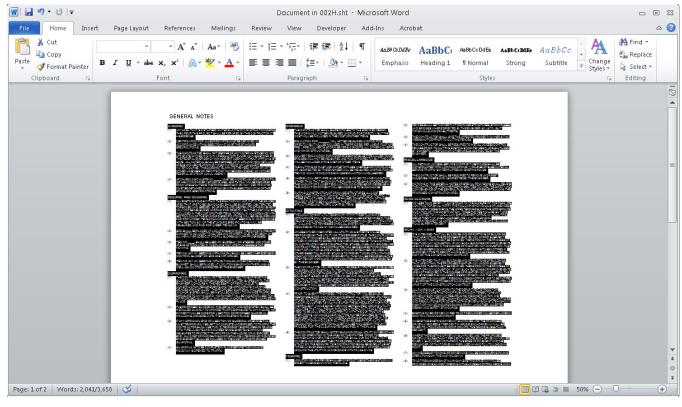
1. Make edits as needed to the Word document embedded in the first sheet and close the Word document.

Since the text is not easily moved from one MicroStation design file to another, it is recommended that **all** of the edits be made to the first MicroStation General Notes or Index design file before creating the additional sheets.

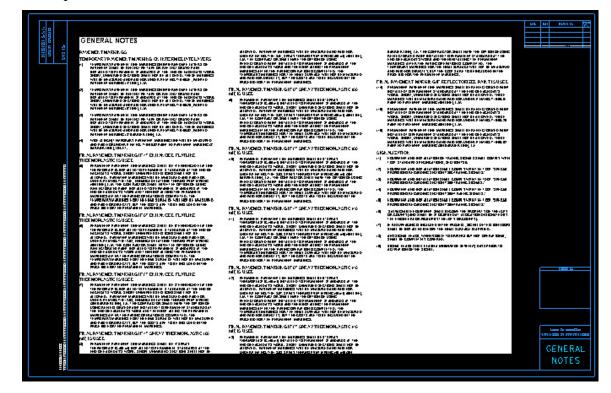
 In MicroStation, go to File> Save As and save as the next sheet needed. There should be a separate design file for each sheet in the set of plans except for cross-section sheet files. For example, do a 'Save As' on the General Notes design file 002G.sht to 002H.sht.



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. A good example of this is ROW notes.

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:

Bridge Index.dotx	Metric Drop Off Notes.dotx
English Drop Off Notes.dotx	Metric EPSC Special Notes.dotx
English EPSC Special Notes.dotx	Metric General Notes.dotx
English General Notes.dotx	Metric Index & Std Dwgs.dotx
English Index & Std Dwgs.dotx	ROW Notes.dotx

- 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 notes.)
- 2. Edit the notes as needed. Select and copy to put the text into the Windows Clipboard.
- 3. In MicroStation, go to Edit > Paste Special..., select the Embedded Microsoft Office Word Document option and click the Paste button.

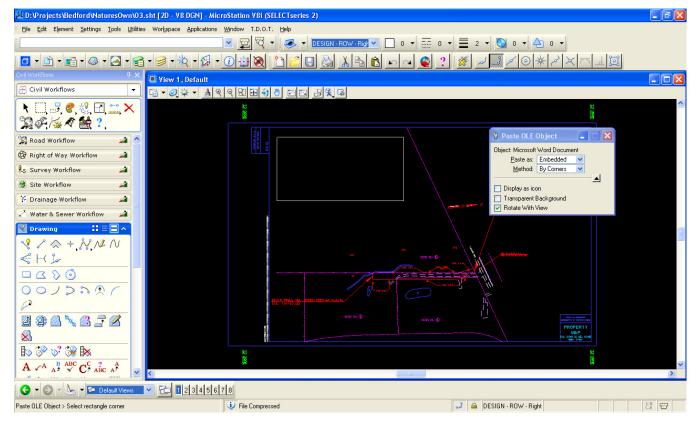
Paste Special
Data Type Linked Microsoft Word Document Picture of Microsoft Word Document Embedded Microsoft Word Document Rich Text to Design File Text To Design File
Paste Cancel

The OLE attachment will be placed on the active level, reset as desired before embedding.

4. Select **Paste as: Embedded** and **Method: By Corners**. Under the extra options, click on **Rotate With View**.



5. Data point at the location where the upper left corner of the notes need to start. This sets the first corner and you are prompted to **Select Rectangle Corner**.



In the MicroStation keyin field we now need to enter a dx= precision keyin to set the corner across from our first point. The dimension used in this keyin is determined by the scale of the plan sheet as well as the width dimension of the document inside of Word. Full sheets in Word are set up as 11" X 17" but small groups of notes are 8 ¹/₂" X 11". All dimensions listed below are for 8 ¹/₂" X 11" documents; for 11" X 17" documents attached in this manner take the dimension values and multiply by 2

English:

For Arial font, text size 7 in Word (font and size in TDOT templates):
1-scale size sheet, use dimension keyin:
dx=13 for .14 text size - this will measure 0.14 feet in MicroStation and will measure 0.14 inch on the printed sheet
dx=11 for .12 text size
dx=9 for .10 text size

100-scale size sheet, multiply the dimension above by 100:dx=1300 for .14 text sizedx=1100 for .12 text sizedx=900 for .10 text size

For other scales, multiply the 1-scale dimension above by the scale of the sheet: 13 x Scale for .14 text size 11 x Scale for .12 text size 9 x Scale for .10 text size

Metric:

For Arial font, text size 7 in Word (font and size in TDOT templates):

1-scale size sheet, set the dimension keyin to:

dx=0.33 for .14 text size - this will measure 0.0035 <u>meters</u> in MicroStation and will measure 0.14 <u>inch</u> on the printed sheet

dx=0.28 for .12 text size (0.0030) dx=0.23 for .10 text size (0.0025)

For other scales, multiply the 1-scale dimension above by the scale of the sheet: **0.33 x Scale** for **.14** text size

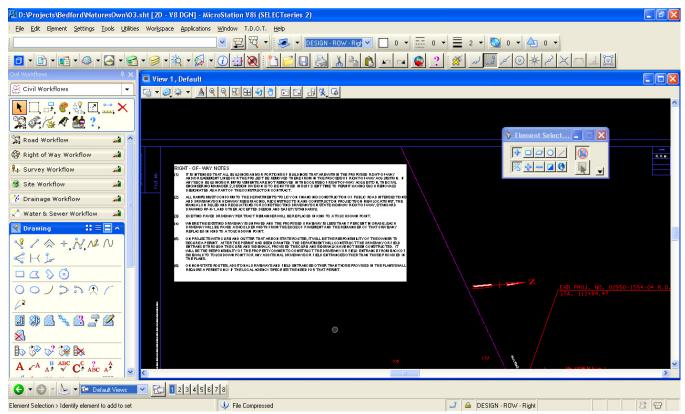
0.28 x Scale for .12 text size

0.23 x Scale for .10 text size

0.23 x Scale for .10 text size

6. To determine the required dimension, take the dimension used for a 1 scale sheet and multiply it by the scale of the plan sheet. In our example, we are adding some ROW notes to a 100 scale property map sheet (13 X 100 = 1300).

Enter dx=1300. The document now appears on the sheet. The dx=1300 keyin yields 0.14 tall body text when plotted at a scale of 100.



7. 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.

The dimension keyin given only specifies the dimension across the sheet. Depending on the contents of the Word document the height will vary while the width remains constant based on the width of the document in Word.

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 <u>Edit > Links...</u> In the Links dialog, select the link to be updated and click Update Now.
- 2. In MicroStation, go to <u>Edit > Update Links</u>.

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.

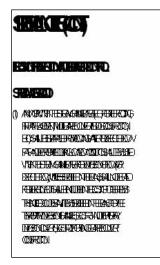
Correcting Overlapping Text from Embedded Word Documents

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.

- 8. Select **Paste as: Embedded** and **Method: By Corners**. Under the extra options, click on **Rotate With View**.
- 7. 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**.
- 8. In the MicroStation keyin field enter the required **dx**= keyin to set the corner across from the first point.

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

After re-embedding ...

SPECIAL NOTES (CONT.)

EROSION PREVENTION AND SEDIMENT CONTROL

STREAM/WETLAND

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

Formatting Word Documents

The Office 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.

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

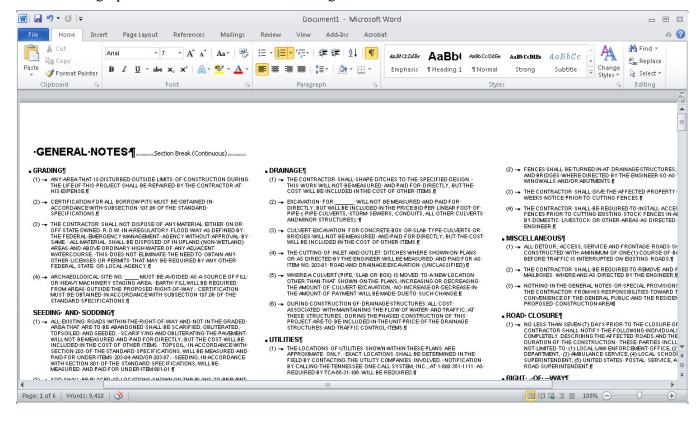
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Show/Hide Formatting

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.



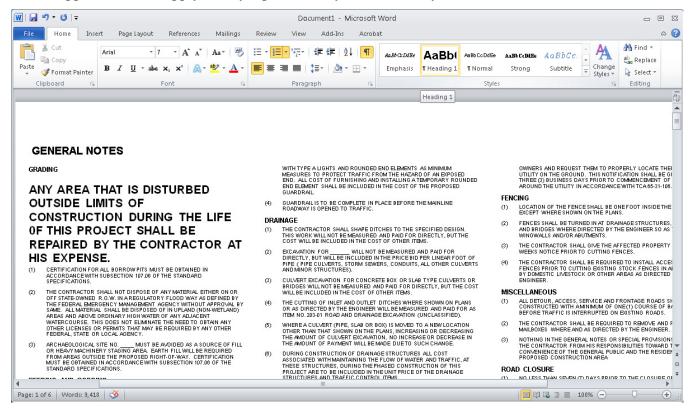
Clicking the paragraph mark will toggle off and on the display of the formatting characters. When it is toggled on, we can see section breaks, paragraph marks, tabs, etc.

Text Styles in Word

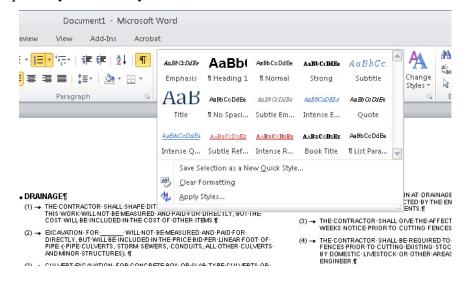
A text style will set all of the characteristics for the specified text. This includes font, font size, tabs, indents, color, heading, bullets and numbering, etc. There are text styles for each type of text used in the TDOT 2^{nd} sheet Office templates. These text styles all start with **V8**.

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 2 ways to access the standard TDOT 2^{nd} 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.

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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.

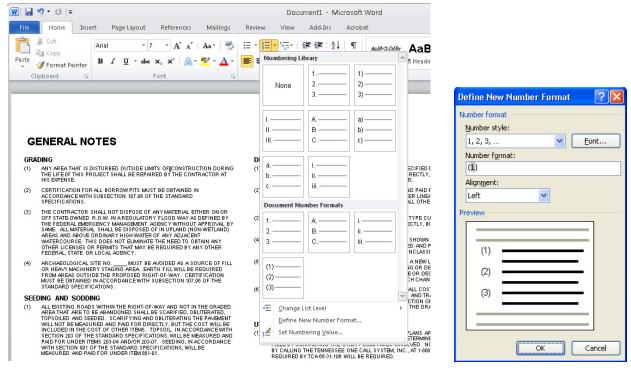
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Indent & Spacing controls can also be found on the Office 2010 ribbon under the **Page Layout** tab in its **Paragraph** section.

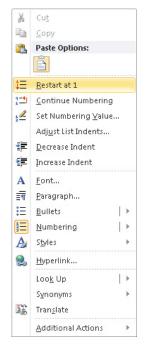
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Numbering & Bullets

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.

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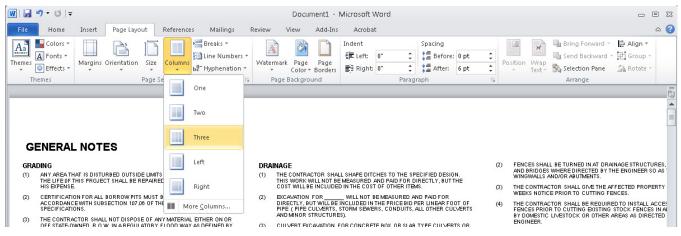
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Columns

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.



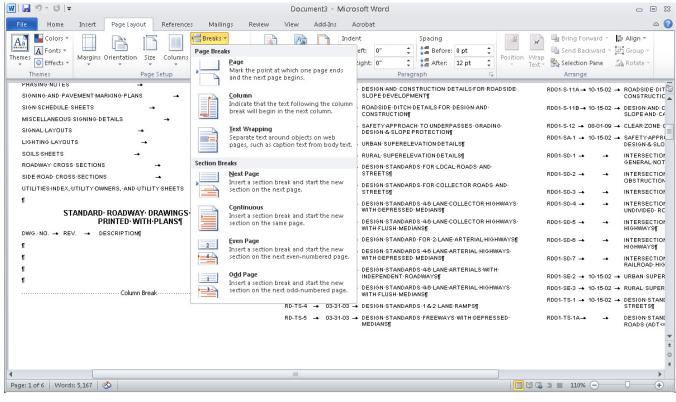
To set widths and other column settings, select the **More Columns** option from the drop down menu to open the **Columns** dialog.

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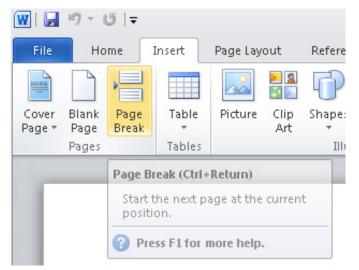
Breaks

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.

"Word cannot start the converter mswrd632.wpc" Error Message

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

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

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

Microsof	t Office Word	
1	Word cannot start the converter mswrd632.wpc.	
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Note:

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

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

Word Document Text Not Visible In MicroStation

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

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

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

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

or ...

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

