# Workflow OP 1 - Linking Word Documents to MicroStation

This document guides you through the creation of CDOT Notes sheets. This includes general notes for each of the specialty groups, SWMP notes for Landscape and Environmental, as well as any other sheets with notes. The Design general notes will be illustrated in this workflow, but the process is the same for each type of notes sheet.

### **Workflow Outline**

**Updating Links to the Word Doc** - The existing link in the notes file points to the seed Word document. This needs to be changed to point to the Word document in the project folder.

 Commands Used: Edit > Links > Change Source - Used to change the directory path to the linked Word document.

**Editing the Notes** - How the notes are edited will depend on the extent of the editing. If the edits do not change the line count of the document, the current link can be edited. If the edits will change the line count then the notes should be opened through Word and edited. After editing, the existing links in MicroStation must be deleted and re-created.

• Commands Used: **Double Click on Link** - Used to open Word from MicroStation so that the existing link can be edited.

Setting Up a Word Document for Linking - If you are building a notes file from scratch, the page layout must be set up.

- Commands Used: Word > Page Layout Used set up the page formatting.
  - Margins Used to set the margins.
  - **Size** Used to define the paper size.
  - **Columns** Used to format to two columns.
  - **Indents** Used to set the indents.

**Creating a New Link** - If a new notes file was created or if extensive edits were done on an existing file, a new link will need to be made.

- Commands Used: MicroStation > Delete Used to remove the old link.
- Word > Copy Used to identify the text to be linked.
- MicroStation > Paste Special Used to create the new link in MicroStation.

# Updating Links to the Word Doc

The JPC#DES\_GenlNote##.dgn is created in ...\Design\Drawings project folder when the Create Project Utility is run. This file is linked to a Word document that contains generic notes. The links are pointing to the JPC#DES\_GenNote.doc that resides in the Project Template and must be redirected to the file in the specific folder.

#### Note:

• A Word 2007 document has a maximum viewable width of 13" when linked to MicroStation.

- A Word 2010 document has a maximum viewable width equal to the paper size when linked to MicroStation.
- When changing the source of a linked Word document in MicroStation, the viewable area of the document will match the version of Word installed on the computer.
  - If a link containing a Word 2010 document has the source changed on a computer with Word 2007 installed, the reduction of the viewable area will result in approximately 3" of data on the right side of the document being hidden. It may also affect fonts used in the Word document.
  - If a link containing a Word 2007 document has the source changed on a computer with Word 2010 installed, the image of the document is reduced in size to fit the entire paper area into the area of the existing link. It may also affect fonts used in the Word document.
- 1. Open the JPC#DES\_GenlNote##.dgn located in ProjectWise or, for locally stored projects, C:\Projects\JPC#\Design\Drawings directory.
- 2. Select Edit > Links from the MicroStation Main Menu.



3. In the Links dialog box, highlight one of the documents shown, then <D> Change Source.

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Links:	S GenNote.doc/OLE LINK S_GenNote.doc/OLE_LINK2		Update Unavail Manual	Cancel Update Now Open Source Change Source
Г Source: Туре: Update:	C:\\Drawings\Tabs\XXXX Microsoft Word Document C Automatic (	∝DES_GenNo • Manual	te.doc!OLE_LINK1	Break Link

4. In the **Change Source** dialog box, use the drop-down list next to the **Look In** field to select the desired directory.

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My Network Places	File name: Files of type: LE_LINK1	XXXXDES_GenNote.doc	<b>v</b>	Open Cancel

5. Highlight the JPC#DES\_GenNote.doc file and <D> Open.

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Look in:	Tabs		•	💠 🗈 💣 🗉	∃-
My Recent Documents Desktop My Documents My Computer	■ 12345DE5_Ge ■ 12345DE5_SV ■ 12345DE5_Ta ■ 12345DE5_Ta ■ 12345DE5_Ta ■ 12345DE5_Tit	/MP.doc bEarthwork.xls bMisc.xls			
My Network Places	File name: Files of type:	12345DES_GenNote.doc All Files (*.*)		•	Open Cancel
Item Name: 0	LE_LINK1				

- 6. Repeat this process for the other link.
- 7. <D> Cancel to dismiss the *Change Source* dialog box.

*Note:* both links use the same JPC#DES\_GenNote.doc.

### **Editing the Notes**

1. The General Note text document is located in the project directory under:

*C:\Projects\JPC#\Design\Drawings\Tabs\JPC#DES\_GenNote.doc* 

- 2. This file is then linked twice to the JPC#DES\_GenINote##.dgn sheet files, once for each sheet border in the file. These links act independently of each other, however. Adding or deleting text from one link will not scroll text to the other link.
- 3. Editing that will not change the number of lines in the Word document can be done through the existing link in the JPC#DES\_GenINote##.dgn file. For editing that will change the line count, open the JPC#DES\_GenNote.doc and make the desired changes. After changes are made, delete the existing links in the JPC#DES\_GenINote##.dgn file and create new ones from the edited Word document.

### **Editing an Existing Link**

1. Select the Element Selector tool from the MicroStation Main toolbar.

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💒 Colorado DOT	## ≡ ≡ ∧

- 2. Move the cursor on to the edge of the linked text (the edge will highlight) and double click (<D> <D>). This will open the JPC#DES\_GenNote.doc file in a session of Word.
- 3. Make the desired changes in the text, **Save**, and **Close** the Word document. The changes will be automatically displayed in the JPC#DES\_GenINote##.dgn file.
- 4. Select Edit > Update Links so that the change will show in document.

# Setting Up a Word Document for Linking

The following section contains guidelines for setting up a Word document for linking to MicroStation. Please be aware that MicroStation interprets Word 2007 documents and Word 2010 documents differently. Because of this, the setting for both Word 2007 and Word 2010 are given below. Other information, detailed below the page set-up section, pertains equally to both versions of Word.

### Page Set-up for Word Documents

#### Settings for Word 2007

The following settings are used when creating a new Word 2007 document for General Notes or SWMP Plans.

Page Size	11x17 (11" x 17")
Orientation	Landscape
Top Margin	1.00"
Bottom Margin	1.40"
Left Margin	1.00"
Right Margin	3.00"
Columns	Two
Column 1 Width	6.25"
Column 2 Width	8.85"
Column Spacing	0.00"
Column 1 Left Indent	0.13"
Column 1 Right Indent	0.15"
Column 2 Left Indent	0.50" for General Notes 0.13" for SWMP Plans
Column 2 Right Indent	2.35" for General Notes 2.22" for SWMP Plans
Font	Arial Monospaced for SAP
Font Size	10

*Note:* Due to the column with limitations with Word 2007, use an 8 point font size for Word 2007 General Notes and SWMP sheets.

**Note:** The Arial font should be used in documents where items are not put into columns. The Arial Monospaced for SAP font is required for columns of data to line up correctly

#### Settings for Word 2010

The following settings are used when creating a new Word 2010 document for General Notes or SWMP Plans.

Page Size	11x17 (11" x 17")
Orientation	Landscape
Top Margin	0.50"
Bottom Margin	0.50"
Left Margin	0.25"
Right Margin	0.25"
Columns	Two
Column 1 Width	8.00"
Column 2 Width	8.00"
Column Spacing	0.50"
Column 1 Left Indent	0.00"
Column 1 Right Indent	0.00"
Column 2 Left Indent	0.00"
Column 2 Right Indent	0.00"
Font	Arial Monospaced for SAP
Font Size	10

**Note:** The Arial font should be used in documents where items are not put into columns. The Arial Monospaced for SAP font is required for columns of data to line up correctly.

### **General Information for Creating Word Documents**

• The Auto-numbering function in Word will not function properly. Once the copied text is pasted into MicroStation, the first item of the copied text is renumbered starting at 1. This occurs even if the auto-numbering is set to start with a number other than 1.

• If you wish to number the items, set the *Indentation Special* to Hanging with a *By* value of 0.25", then physically type in the numbers. Also, clear any tabs set, as these may cause problems with the formatting.

Paragraph			? <b>×</b>
Indents and Spa	acing Line and Pa	age Breaks	
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Right:	0.13" 🚔	Hanging	▼ 0.25" 🚖
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**Note:** The image above shows the indents for a 2007 Word document. The Left and Right Indentation settings are 0.00 for a 2010 Word document.

- Use a "hard" return (by pressing the Enter key) at the end of each page. This will ensure that there is no text wrapping between pages.
- A Word 2007 document has a maximum viewable width of 13" when linked to MicroStation.
- A Word 2010 document has a maximum viewable width equal to the paper size when linked to MicroStation.
- When changing the source of a a linked Word document in MicroStation, the viewable area of the document will match the version of Word installed on the computer.
  - If a link containing a Word 2010 document has the source changed on a computer with Word 2007 installed, the reduction of the viewable area will result in approximately 3" of data on the right side of the document being hidden. It may also affect fonts used in the Word document.
  - If a link containing a Word 2007 document has the source changed on a computer with Word 2010 installed, the image of the document is reduced in size to fit the entire paper area into the area of the existing link. It may also affect fonts used in the Word document.

## **Preparing Word Documents that Contain a Table**

Some Word documents, like the SWMP plan sheets contain tables. If the table does not fit into a single column it may not display correctly when pasted into MicroStation. One method of correcting this problem is explained below.

The illustration below shows a table running on to two pages.

	roject Special - Topsoil for additional topsoil amendm	ente [Include toneoi]	212	Soil Conditioning	Acre	
project special provision] Placing compost when required to amend embankment and as soil			213	Mulching (Weed Free Hay)	Acre	
conditioner may be combined as a single application.		213	Mulching (Weed Free)	Acre		
	and, be comprised as a single approaction.		213 213	Mulching (Weed Free Straw)	Acre	
E BLANKE	F. BLANKET APPLICATION: On slopes and ditches requiring a blanket, the blanket shall be			Mulch Tackifier	LB	
	lieu of mulch and mulch tackifier. See SWMP for blan		213	Soil Binder	Acre	
			213	Spray-on Mulch Blanket	Acre	
G. RESEED	ING OPERATIONS/CORRECTIVE STABILIZATION		216	Soil Retention Blanket (Straw/Coconut)	SY	
	inal_acceptance_			(Biodegradable Class 1)		
	em(s) that apply, delete references to all others]		216	Soil Retention Blanket (Straw/Coconut)	SY	
1. S	eeded areas shall be reviewed during the 14 day inspe	ctions by the Erosion		(Photodegradable Class 1)		
	rol Supervisor for bare soils caused by surface or wi		216	Soil Retention Blanket (Excelsion)	SY	
	ed by surface or gully erosion, blown away mulch, etc			(Biodegradable Class 1)		
	ed, mulched and have mulch tackifier (or blanket) app	lied as necessary, at no	216	Soil Retention Blanket (Excelsion)	SY	
ibbe	tional cost to the project.			(Photodegradable Class 1)		
			L			
	Soil Retention Blanket (Coconut)	SY				
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16	(Biodegradable Class 2) Soil Retention Blanket (Coconut)	5Y 5Y				
16	(Biodegradable Class 2) Soil Retention Blanket (Coconut) (Photodegradable Class 2)	SY				
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\*It is anticipated that additional BMPs and BMP quantities not shown on the

- 1.  $\langle \mathbf{R} \rangle$  in the first cell of the first row of the table that is on the second page.
- 2. From the right click menu, select Insert > Insert Rows Above. This adds a blank row of cells at the top of the second sheet.

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	<u></u>	Table Properties	and Disposal of Sediment (Labor). All other BMP cost of the BMP Device.	

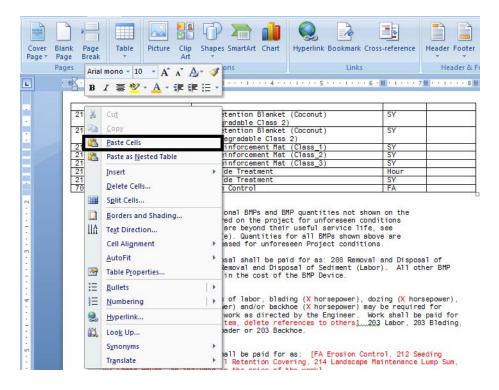
3. Next, highlight the heading row of the table.

T.

4. **<R>** in any cell in the heading row and select **Copy** from the right click menu.

Engin seed, the a 3. Th	eas where seed has not germinated afte eer and CDOT Landscape Architect. Are mulch and mulch <u>tack(siter</u> , (or blanket ppropriate bid item. e Contractor shall maintain seeding/mu herbicide to control weeds in the see L ACCEPTANCE	as ti ) rei lch/; ded i	hat have not germinate applied. Work shall b tackifier, mow to cont areas until Final Acce	d shall have e paid for by rol weeds or ptance.
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11. TABULATION OF	STORMWATER QUANTITIES	B	I 🗏 💇 🛛 🗛 📲 🕼	
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Pay Item	Description		1	
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203	Dozing	43	Copy	
207	Topsoil		Paste	
207	Stockpile Topsoil	_		
208	Sweeping (Sediment Removal		Insert	· · · ·
208	Removal of Trash	1	Delete Cells	
208	Silt Dike	1	Delete Celis	
208	Erosion Log (12 Inch)		Merge Cells	
208	Erosion Log (20 Inch)			
208	Erosion Bales (Weed Free)		Borders and Shading	
208	Sand Bag	- 11A	Text Direction	
208	Silt Fence	1111	rext Direction	
208	Silt Fence (Reinforced)	_	Cell Alignment	· · ·
208	Sediment Basin	-		
208	Sediment Trap	_	AutoFit	• •
208	Check Dam	-	Table Properties	
	Concrete Washout Structure			

5. <R> in the first cell of the blank row added above and select **Paste** from the right click menu.



Now both pages of the table will have the proper header and can be linked to MicroStation.

\*Biological <u>nutrient...shall</u> not exceed 8-8-8 (N-P-K). <u>Humate</u> based material shall be in accordance to Section 212 and compost shall be in accordance to Special Provision 212. Refer to Project Special - Topsoil for additional topsoil amendments\_\_ILnclude topsoil project special provision] Placing compost when required to amend embankment and as soil conditioner may be combined as a single application.

F. <u>BLANKET APPLICATION:</u> On slopes and ditches requiring a blanket, the blanket shall be placed in lieu of mulch and mulch <u>tackifier</u>. See SMMP for blanket locations.

G. <u>RESEDING OPERATIONS/CORRECTIVE STABILIZATION</u> Rrier.to.final.acceptance. [Select items(s) that apply, delete references to all others] 1. Seeded areas shall be reviewed during the 14 day inspections by the Erosion Control Supervisor for bare soils caused by surface or wind erosion. Bare areas caused by surface or gully erosion, blown away mulch, etc. shall be regraded, seeded, mulched and have mulch tackifier (or blanket) applied as necessary, at no additional cost to the project.

212	Seeding (Native)	Acre	
212	Seeding (Temporary)	Acre	
212	Soil Conditioning	Acre	
213	Mulching (Weed Free Hay)	Acre	
213	Mulching (Weed Free)	Acre	
213	Mulching (Weed Free Straw)	Acre	
213	Mulch Tackifier	LB	
213	Soil Binder	Acre	
213	Spray-on Mulch Blanket	Acre	
216	Soil Retention Blanket (Straw/Coconut)	SY	
	(Biodegradable Class 1)		
216	Soil Retention Blanket (Straw/Coconut)	SY	
	(Photodegradable Class 1)		
216	Soil Retention Blanket (Excelsior)	SY	
	(Biodegradable Class 1)		
216	Soil Retention Blanket (Excelsior)	SY	
	(Photodegradable Class 1)	1 I	

Pay Item	Description	Pay Unit	*Quantity
216	Soil Retention Blanket (Coconut)	SY	
	(Biodegradable Class 2)		
216	Soil Retention Blanket (Coconut)	SY	
	(Photodegradable Class 2)		
216	Turf Reinforcement Mat (Class_1)	SY	
216	Turf Reinforcement Mat (Class 2)	SY	
216	Turf Reinforcement Mat (Class_3)	SY	
217	Herbicide Treatment	Hour	
217	Herbicide Treatment	SY	
768	Erosion Control	FA	

\*It is anticipated that additional BMPs and BMP quantities not shown on the SMMP Site Maps shall be required on the project for unforeseen conditions and replacement of items that are beyond their useful service life, see subsection 208.63 and 208.04 (e). Quantities for all BMPs shown above are

**Note:** On tables such as the one shown above, if the table is divided at a location where a cell contains two lines of text, make sure that both lines of text are visible in the row at the end of the first page and the beginning of the second page. If a line of text is "lost" between the pages, the table will not copy properly. Adding a blank row above the row with the missing line will correct this problem.

### **Preparing the Documents in ProjectWise**

Linking a ProjectWise document to a MicroStation drawing allows you to change the document and have those changes automatically reflected in the MicroStation drawing. This is a two stage process. The first step is to create a logical set of documents called a *Document Set*. The second step is to use the set to link the documents with the MicroStation drawing.

#### Creating a Document Set

- 1. In the ProjectWise Explorer select the folder where the parent drawing is located. This will usually be the \Drawings folder of the specialty group.
- 2. **Right-click** on the parent drawing file and select **Set** > **New** from the right click menu. This will display the *Create Document Set* dialog box.

Modify Modify Spatial Attributes Add Comment		
Set	+	New
Send To	×	Modify
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Attributes	•	Referenced By
Change State	•	
Properties		Show References Show Markups
Batch Print	•	Scan References and Link Sets

3. Enter a *Name:* and *Description:* for the new document set. Consider using the name of the MicroStation file as the *Name:* of the new document set. This will help with knowing which document set is associated with a drawing. Click **OK**.

💦 Create Docume	nt Set
Create	
-Document Set	]
Name:	12345ROW_TabProp01
Description:	Documents for the ROW Tabulation Sheet
	OK Cancel

The *Document Set* window will appear with the parent drawing listed in the window.

r	Drawings - 12345ROW_1	FabProp01
	Always Use Active Version	Name / 📈 12345ROW_TabProp01.dgn
	•	Þ

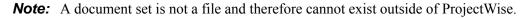
4. Next, **Drag and drop** any Excel or Word documents that will be referenced to the parent drawing into the document set window.



**Note:** Although documents can be added to the Document Set from any folder within the active ProjectWise datasource, ideally they would be added from folders within the same project.

5. Once all of the desired documents are added to the document set, close the document set window. The Document Set will appear in the ProjectWise Explorer window as indicated by the icon. Notice how the document set has a Name but no FileName as shown below.

Name	File Name	Status	Out to
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Not the second s			
I2345ROW_Cnty-24x18_##.dgn	12345ROW_Cnty-24x18_##.dgn	Checked In	
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Non01.dgn 2345ROW_Mon01.dgn	12345ROW_Mon01.dgn	Checked In	
Non02.dgn 12345ROW_Mon02.dgn	12345ROW_Mon02.dgn	Checked In	
	12345ROW_Ownership##.dgn	Checked In	
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12345ROW_TabProp01		Checked In	
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Number of the second se	12345ROW_TabProp02.dgn	Checked In	
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🥒 🖊 12345ROW_TabProp04.dgn	12345ROW_TabProp04.dgn	Checked In	
Nabra 12345ROW_TabRAS##.dgn	12345ROW_TabRAS##.dgn	Checked In	
12245DOM/ TitleSht dan	102//SDOW/ TitleSht dap	Checked In	



Using the document set, all files associated with the drawing file can be checked in/out together. It ensures that the correct files are being used in the linked document and are available to other team members when changes are made to the base files.

### **Creating a New Link**

Use the following procedure when changes to the JPC#DES\_GenNote.doc will increase or decrease the original number of lines in the document.

- 1. Select Delete from the MicroStation Main toolbar.
- 2. <D> on the linked text. <D> again to accept the command and delete the link.

3. Open the edited JPC#DES\_GenNote.doc and highlight the entire page of text that is to be linked.

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4. Select Edit > Copy from the menu (or press CTRL + C) to copy the text to the clipboard.

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5. Go to the MicroStation session with the JPC#DES\_GenINote##.dgn file open and select Edit > Paste Special.



6. From the Paste Special window, select *Linked Microsoft Office Word Document*, then <D> Paste.



7. In the Paste OLE tool dialog box, set the Method to By Corners.

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- 8. <T> to the left end of the guide line and <D>.
- 9. <T> to the right end of the guide line and <D> to complete the link.

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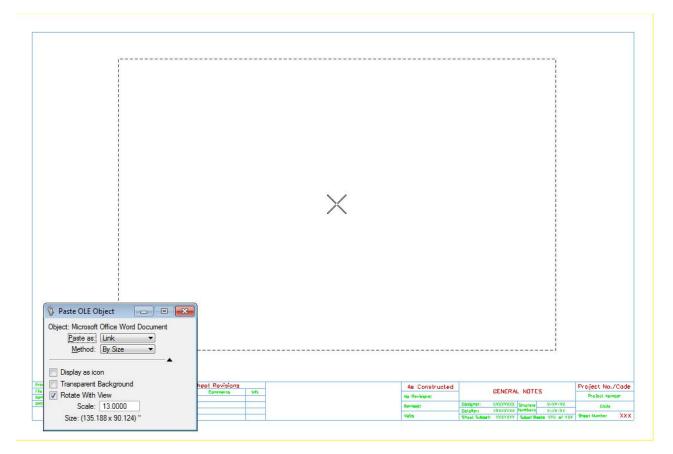
An alternative method when attaching the linked document is to use the size option in the Paste OLE dialog box.

- 1. Follow steps 1 through 6 described above.
- 2. In the Paste OLE tool dialog box, set the Method to *By Size*.

3. Expand the dialog box and set the *Scale* to *13.00*.



- **Note:** Using the 13 scale factor will produce a text height of approximately.07", which is the CDOT standard for a 1"=1' annotation scale. This number can be adjusted if larger text is required.
- 4. Center the outline of the link in the sheet border and *<D>* to place it.



Once the linked document has been placed, it can be repositioned using the MicroStation Move command.

### Notes Placed From a PDF

A PDF file of the notes can be displayed within the MicroStation file to create General Notes and SWMP plan sheets. As with the other options, using a PDF file has advantages and disadvantages. Some of the advantages to using a PDF file are:

- The Word 2010 formatting can be used even on computers with Word 2007
- The autonumbering functions in Word can be used
- If the PDF is recreated, the new PDF in MicroStation is updated as well

Some of the disadvantages to using a PDF are:

- The Word file can be different from the PDF file. You will need to create a new PDF each time the document is edited
- A separate PDF is required for each page in the document
- A PDF that is attached in MicroStation cannot be overwritten while the DGN file is open.
  - Close MicroStation.
  - Create a new pdf. Give it the same name to overwrite the existing one.
  - Open up MicroStation and PDF will be updated

To link a PDF to MicroStation, follow the steps below:

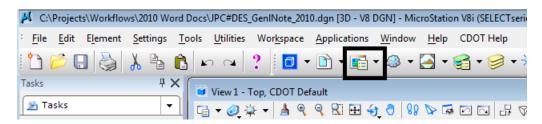
1. Open the Word document (the JPC#DES\_GenNote\_2010.doc is used in this example) and create a separate PDF print of each sheet to be linked.

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Print:	All pages in range		
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Options		OK	Cancel

**Note:** Be sure to name the PDF something meaningful for the print (in this example the PDF was named *JPC#DES\_GenNote\_2010-pg1.pdf*).

2. ).Open MicroStation using the drawing that will contain the PDF (in this example *JPC#DES\_GenNote\_2010.dgn* is used).

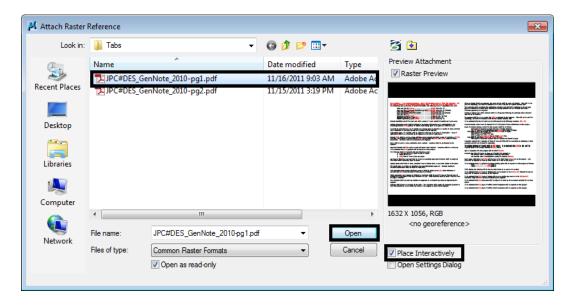
3. Open the MicroStation Raster Manager.



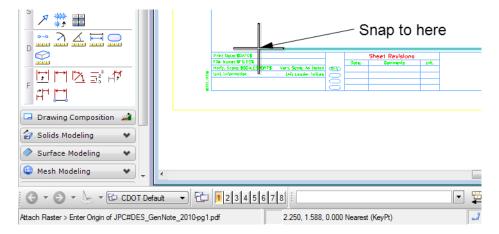
4. In the Raster Manager dialog box, select File > Attach > Raster. This displays the Attach Raster *Reference* dialog box.

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- 5. In the *Attach Raster Reference* dialog box, navigate to the desired location, highlight the desired file, and toggle on **Place Interactively**.
- 6. **<D>** the **Open** button.



7.  $\langle T \rangle$  to the left end of the bottom snap line within the sheet border then  $\langle D \rangle$ .



8.  $\langle T \rangle$  to the right end of the bottom snap line within the sheet border then  $\langle D \rangle$ .

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This completes the attachment of the PDF file. Below is an example of a completed sheet.

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### **Notes Placed as MicroStation Elements**

Included in the workspace are files called *JPC#DES\_GenINoteMsta##.dgn* and *JPC#DES\_SWMP-Msta.dgn*. These are MicroStation files that have the respective notes placed as MicroStation text elements instead of using links to Word. These files do not have an external data source and all editing occurs solely within the MicroStation environment using the Edit Text command.

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Prime Coat (MC-70) [XXXX]
Diluted emulsified asphalt for tack coat shall consist of 1 part emulsified asphalt and 1 part water.

If used, these files should replace those containing the linked Word documents and should not be used in addition to them.