



February 2016

CONNECTICUT DEPARTMENT OF TRANSPORTATION

AEC Applications – Division of Facilities & Transit

CTDOT *MicroStation* V8i Guide for Traffic Design

Architectural, Engineering and Construction Applications

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Thanks!

Thanks go out to all that contributed to the creation of this document, especially to Sarah Rose who assisted with the writing and development; Gerald Fascione and Michael Cloutier for sharing their Traffic Design CAD standard knowledge; Diane Swinburne, James Massini and Lisa Conroy for their Traffic Engineering expertise. The support that they have provided has been invaluable and is appreciated beyond measure.

Elaine Richard

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Introduction

This manual was put together to serve as a course manual as well as a reference document used to guide State Engineers and Consultant Engineers through the standard CAD procedures. New MicroStation tools for Traffic Design are now available to assist with the adherence to the standards. For State Engineers these tools can be found in the existing workspace. For consultants these tools can be downloaded with the **CTDOT Digital Design Environment** found on the following web page.

http://www.ct.gov/dot/cwp/view.asp?a=3194&q=483668&PM=1

Please read a detailed description of the issues that we are trying to avoid and how this manual and the new procedures will assist in the effort.

1. Graphics from reference files are being copied into the traffic sheets and then those levels are shut off in the reference files. ROW lines from the existing survey ground file are one example. This is done so the weight can be changed. Referenced design features from other units are copied in as well. This is done primarily when there are items on the same levels and some need to be displayed and others do not. This practice makes it easy to miss updates made to the reference files and then the sheet goes out with the old outdated information.

Solution: No copying, use Reference Level Overrides and screening on references

- 2. All traffic appurtenances are being placed in the sheet model. The intersection is then being cut up and portions are moved to fit within the sheet border. This causes multiple issues because the traffic signal appurtenances are no longer in the correct geospatial location.
 - Makes it impossible for other engineers to reference the intersection layout back into the main design files from Highway and Structure Bridge.
 - Makes it difficult to find existing underground utility conflicts. The existing survey
 gets referenced into the sheet and then the underground utility levels get shut off.
 When portions of the intersection gets moved to fit within the sheet they copy
 and move only the existing ground features from levels that are turned on. The
 levels that where shut off never get copied and moved with the other signal
 appurtenances so conflicts will never be seen.

Solution: All traffic appurtenances should be placed in a Design Model so it retains its geospatial location.

3. Contract Plan CAD Standards not being followed (adopted April 3, 2007) <u>http://www.ct.gov/dot/lib/dot/documents/deng/CAD Standards.pdf</u>

Solution: Created Tasks for placing standard annotation

4. Traffic appurtenances are copied numerous times for blow ups and details. The design gets edited and not all copies are getting updated.

Solution: All traffic appurtenances are placed in the Design model. The deign model referenced in to the sheet model at 40 scale for entire intersection. The design model is referenced again at needed scale for detail blow ups.

5. The MicroStation pull down menu was confusing because it used abbreviated items, for example CIJBP (Cast Iron Junction Box).

Solution: Created Tasks that lists the full name for what is being placed.

Questions or inquiries regarding the subject matter can be forwarded to the following contacts:

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Section 1 Getting Started

1.1 Opening MicroStation through Accounting

1. Double click on the **Accounting** icon located on your desktop.

-9
Accounting
V8.1

- 2. Within the Accounting Menu select Run Program, choose MicroStation V8i HQ (1).
- Select a project number from Available Accounts (2) and then highlight it within the Frequently Used Accounts. If you do not have a project number you can pick Overhead.
- 4. Select the correct **Resource Type (3)**. If you picked Overhead you do not have to pick a resource type.
- 5. Click on the **Start (4)** button.

V8.1 CT DOT Accounting	Menu								
File Help									
Run Program: MicroSt	ation V8i HQ	Start							
Elapsed Time:	Inactive Ve	Close							
Selected Account: DO	T57197-0156-0171	PE-PE02O							
Frequently Used Accounts	Available	Accounts							
DOT57197-0156-0171PE-PE0	DOT57197-0156-0171PE-PE020 DOT57197-0156-0170CN-IN01R DOT57197-0156-0179CN-IN010 DOT57197-0156-0179CN-IN010 DOT57197-0156-0178PE-PE010 DOT57197-0156-0180PE-PE010 DOT57197-0157-0081CN-IN010 DOT57197-0157-0083CN-IN020 DOT57197-0157-0084CN-IN010 DOT57197-0158-0193PE-PE010 DOT57197-0158-0201CN-IN010								
Clear Frequently Used Acc	ounts Config	jure Location							
Resource Type: PE1	153 🔽								
Limit to Project #:	3 Filter	Show All Projects							
Instructions:	•								
Please select a Resour	се Туре.								
User: HallockGa	Computer:	DOT-WH3AEC013							

1.2 Creating a User Configuration File

1. The first time into MicroStation the "out of the box" MicroStation Manager Interface will appear. Select the **Interface** pull down **first**, pick **new** and type in your **Windows Login user name**.

It must match your computer login exactly.

🧾 File Open - C:	\Bentley_V8i\WorkS	pace\Projects\Examples\Civil\d	lgn\							—
Look in:	퉲 dgn	•	0	ø	🖻 🖽	-	1 🗃 🚺	*	2D - V8 DGN	
Recent Places Desktop Libraries Computer	Image: Signature Signature Image: Signature Signatu	Arawing.dgn dgn talAlignment.Drawing.dgn ofile.dgn dgn isign.dgn rvey.dgn rrain.dgn Create User Interface Name Windows Log-in		<u>0</u>			Open Cancel	, Marina Proj	MicroStation angaer Interfact ser: CTD0Tdefault ect: CTD0Tdefault	
		Description: abdissah abdissaht ahmadh akosae almodovara	•	Can	cel	J			test themenj Witikmp wongmw wyskielj yeomanskg yss yupw zhuox zukc New	

Click the **OK** button.

2. Select the **User** pull down second, pick **new** and type in your **Windows Login user name**. This will create your user configuration file (.ucf). Click the **OK** button.

	User:	CTDOTdefault	-	
	Project:	ucarb ucarf		1
	Interface:	vailmr vanderwendep vanottij veronesid verovmf		
K Create User Configuration File	- 23	watrasca whogan WilkieCT williamsba		I
Name: Windows Log-in		wilsonsr Witikmp wongmw wyskielj		I
anmadn.ucr		yeomanskg youngdj YSS yupw		I
Enter name of user configuration file.		Zhuox zombamj zukc		н
		New		τ.

- 3. In the **Project** drop down select one of your design projects.
- 4. Browse to any .dgn file, **open** the file and then immediately **Exit** out of MicroStation.

1.3 Picking a Project and the CTDOT Workspace

- 1. Once you get into MicroStation through Accounting you will see the dialog box for opening or creating new files.
- 2. Next you will choose a project folder to work in based on what type of file you will be working on.

1.3.1 Traffic Projects with a Project Number

- 1. If you are working on a Traffic project with a project number, select the project number from the Project pull down.
- 2. Picking the project number will direct you into the project folder.
- File Open \\sh3dgs18\CTDOT_projects\999_Student01_2007\Traffic\Signals\ ? X 🧊 📂 🖽 Look in: 🔁 Signals 🗋 🚰 💽 2D - V8 DGN Name -Size Type TR_MSH_TCS_1234_1234_001.dgn DGN File 860 KB My Recent TR_MSH_TCS_1234_1234_TRAINING.dgn 94 KB DGN File Documents Desktop My Documents < > My Computer TR_MSH_TCS_1234_1234_001.dgn File name Open Project: 999_Student01_2007 Files of type: MicroStation DGN Files (".dgn) Cancel Open as read-only My Network
- 3. Open the Traffic folder.

- If the project you are working on does not have a project folder on the X-drive yet, then contact Ron Tellier and/or John Rinaldi to request a new project folder. Send an email to Ron <u>and</u> John requesting the project folder; please include project number and a short project description (5 – 7 words).
- 5. From here continue to Section 2, if you are creating a design file or Section 3, if you are making a sheet model.

1.3.2 Revisions to Traffic Signal Plans

- 1. If you are working on a traffic signal plan that is stored in the archive you will select the project number from the Project drop down.
- 2. Then pick the **Look in:** drop down at the top of the dialog box and select the X Drive.

💹 File Open - X:\					×
Look in:	👳 DGS CTDOT_Projects (SH3DGS18) (X:)	G 🜶 🖻 🗔 -	"D 줄 🗈		
Recent Places	Secent Items ■ Desktop Network Image sh3dgs18 CTDOT projects	Pate modified 8/3/2015 2:03 PM 3/19/2015 2:03 PM	Type File fol		
Desktop	999_Student01 Survey Libraries Hallock. Gabriele	3/26/20 AM 7/29/2013 3:02 PM 3/29/2012 8:23 AM	File fol File fol File fol		
Libraries	Computer Solisk (C:) Data (D:) Constant (D:) Co	4/1/2008 9:17 AM 4/4/2013 8:16 AM 9/30/2014 7:57 AM	File fol File fol File fol		
Computer	DVD RW Drive (G:) S GIS Data (L:) S Intersection Magic (M:)	3/29/2012 7:29 AM 1/23/2015 9:21 AM	File fol		
Network	GROUPS (\\SDCDBS60) (S:) GROUPS (\\SDCDBS60) (S:) TRU Maps (T:) GROLAGA\$ (\\SDCDBS60) (U:)	• [Open Cancel	User: Project:	HallockGa
	V8 Workspaces - SH3DGS18 (W:) DGS CTDOT_Projects (SH3DGS18) (X:) Favorites New folder	2	Options	Interface:	hallockga ▼

3. Now scroll down and select TRAFFIC_SIGNAL_PLANS > Traffic > WORKING_FILES and select the folder for the town where your signal is located.

File Open - X:\			
Look in:	Projects (SH3DGS18) (X:)	- 🕝 🌶 📂 🖽	10 🗃 🖸
æ	Name	Date modified	Туре 🖍
	TR_BUS_C2_URS2_2007	3/7/2013 7:51 AM	File fol
Recent Places	TR_BUS_C2_URS3_2007	3/7/2013 7:51 AM	File fol
	TR_BUS_C3_BAKER_2007	3/7/2013 7:53 AM	File fol
	TR_BUS_C3_LOCH_2007	9/18/2014 9:08 AM	File fol
Desktop	TR_BUS_C3_SEA_2007	3/7/2013 7:54 AM	File fol
<u></u>	TR_BUS_C3_URS_2007	3/7/2013 7:52 AM	File fol
6 3	TR_BUS_C4_LOCH_2007	3/7/2013 7:54 AM	File fol
Libraries	TRAFFIC_NONPROJECTS	8/10/2015 12:56 PM	File fol
	TRAFFIC_SIGNAL_PLANS	2015 11:46 AM	File fol
	📙 V8_Admin	/2015 11:23 AM	File fol
Computer	Viz_Resources	5/0/2013 3:29 PM	File fol 🖕
	•		F.
			<u> </u>

4. Now select your dgn file and click **Open**.

1.3.3 Non-Project and Non-Signal CAD Design

- 1. If you are working on a CAD file that <u>does not</u> have a project number and is <u>not</u> a signal plan, then select **TRAFFIC_NONPROJECTS** from the Project drop down.
- 2. Select the folder with the name of the town where your job is located.

Look in:	🖟 TRAFFIC_NONPROJECTS 🗲 🗧 🕇 👻	G 🤌 📂 🖽 🗸	Ë 逽 (
Æ	Name	Date modified	Туре 🔺
2	000-Folder and File Naming Conventions	12/4/2014 10:37 AM	File fol
ecent Places	001-ANDOVER	10/8/2014 11:30 AM	File fol
	D02-ANSONIA	10/8/2014 11:27 AM	File fol
	003-ASHFORD	10/8/2014 11:32 AM	File fol
Desktop	🐌 004-AVON	10/8/2014 11:32 AM	File fol
E a	005-BARKHAMSTED	10/8/2014 11:32 AM	File fol
	006-BEACON FALLS	10/8/2014 11:32 AM	File fol
Libraries	🐌 007-BERLIN	7/24/2015 1:43 PM	File fol
	008-BETHANY	10/8/2014 11:33 AM	File fol
	D09-BETHEL	10/14/2014 9:53 AM	File fol
Computer	III 010-BETHLEHEM	10/8/2014 11:33 AM	File fol 🖕
			•

3. Create your dgn files here.

1.4 Seed Files

A seed file is MircoStation's term for a template. When you select **File/New** or click the **New** icon, MicroStation makes a copy of the selected seed file, places it in your selected project folder and you give it a new name.

The MicroStation seed files can be found in W:\Workspace\Standards\seed

- For Design Models used to layout design features use the seed file
 CT_Design_2D_V8i.dgn
- For Sheet Files that use a border cell and will contain the annotation use the seed file CT_Sheet_Civil_2D_V8i.dgn

New - W:\Work	cspace\Standard	slseedl							? X
Save in:	🚞 seed			*	3 🕫	P 🛙	•	3	*
My Recent Documents Desktop My Documents	AutoCADD AutoCADD CD PSET Standard_Draw CT_CGR_CPS_F CT_Design_2D CT_Design_3D CT_Sheet_Arch CT_Sheet_Arch CT_Sheet_Civil CT_Sheet_Civil MCT_Sheet_Civil MCT_Sheet_Civil SV_Data_Acqui SV_Design_2D	ings Proj_Numb_TitleSheet.dgn V8i.dgn V8i.dgn 2D_V8i(3 Lines for Drawing Title).dgn 2D_V8i.dgn 2D_V8i.dgn 3D_V8i.dgn sition.dgn V8idgn	SV_Design_3D_V8i.dgn SV_Shape_CT_NAD27FT.dgn SV_Shape_CT_NAD27M.dgn SV_Shape_CT_NAD83FT.dgn SV_Shape_CT_NAD83M.dgn						
	File name:					*		Save	
My Network	Save as type:	MicroStation DGN Files (*.dgn)				*		Cance	
	Seed:	W:\Workspace\Standards\seed\CT_S	 Sheet_Civil_2D_V8i.dgn					Browse	• .::

Section 2 Design Models

2.1 Creation

1. Once you have gone through Accounting and chosen your project folder go into the folder where you want your design file to be located. Click on **New File** icon.



2. On the bottom right, next to the file path for the seed file, click on **Browse**.

📈 New - \\sh3d	lgs18\CTDOT_proje	cts\999_Student01\Traffic\				—
Save in:			•	G 🦻	► 🔝 🏷	S 💽
Rer + P' 25	_all_other_da _Eng_Data	ta	\sim	\sim	~	
Network	File name: Save as type:	MicroStation DGN Files (*.dgr	1)		•	Open Cancel
	Seed:	\\sh3dgs18\CTDOT_V8_Wo	rkspac	es\Works	space	Browse

- Browse to W:\Workspace\Standards\seed\CT_Design_2D_V8i.dgn seed file and click Open.
- 4. Type in **File name:** For files used to develop a design for construction projects use the following file name TR_MST_SSP_####_####.dgn and Click **Save**. For non-project study related you can use any file name.

```
TR = Traffic (Discipline Designator)
MST = MicroStation Design/Layout (MOdel Type)
<u>Specific Use Three Digit Code</u>
SSP = Signal, Signing and Pavement Marking
DTR = Detour
```

🦉 New - \\sh3dg	gs18\CTDOT_proje	cts\999_Student01\Traffic\						×
Save in:	🐌 Traffic		•	G	ø	Þ	•••	3 🖲
Recent Places Desktop	 _all_other_dat _Eng_Data Consultants Sign_Details Signals Signing_Pvmt Special_Provis Typical_Sheet 	a :_Markings_Plans sions s						
Network	File name:	TR_MST_SSP_1234_1234.dg	n			•]	Save
	Save as type:	MicroStation DGN Files (*.dgn)				•]	Cancel
	Seed:	rkspace\Standards\seed\CT_[Desig	in_20)_V8	.dgn		Browse

5. Select the file you just created and click **Open**.

🥂 File Open - \\	sh3dgs18\CTDOT_	projects\999_Student01\Traffic\		
Look in:	퉬 Traffic	•	G 🤌 📂 🛄 🗸	1 🔄 🖻 🕻
Recent Places Desktop Libraries Computer	 _all_other_da _Eng_Data Consultants Sign_Details Signing_Pvm Special_Provi Typical_Shee TR_MST_SSP 	ta t_Markings_Plans isions ts 1234_1234.dqn	•	
Network	File name:	TR_MST_SSP_1234_1234.dgn	- (Open
	Files of type:	CAD Files (*.dgn;*.dwg;*.dxf)	•	Cancel
$\sim\sim\sim\sim$	$\sim\sim\sim\sim$	Open as read-only	\sim	And

6. In the newly created file, **Click** on **Workspace > Preferences**, select **Reference** and Toggle on **Use Color Table**.

7. Next **Click** on the **References button** to open the References dialog box.



8. In the References dialog box select **Attach Reference** icon.

	🖄 References (0 of 0 unique, () display
	<u>S</u> ettings	
		\$
	Slot P Glo Nome	Mo
IJ		\sim

9. Navigate to the Survey folder and reference the **Survey *.dgn** file, use **Survey** as *Logical Name* and **No Nesting** for *Nested Attachments*.



10. Select **Attach** from the References dialog box again. Navigate to the Highways folder, then the MSta Design folder and reference the highway design file, use **Highway** as *Logical Name* and **No Nesting** for *Nested Attachments*.



- Select Level Display and turn off desired levels in the reference files.
 Select File > Save Settings.
- 12. You can also use the tool in the Traffic task menu **Select Traffic > Getting Started > Set Design Model Reference Levels.**



2.2 Drawing Tasks

In this section you will draw a lane line for a shoulder, place some signs, place some metal conduits, and draw a traffic signal assembly. These are just a few examples of the many Traffic Tools.

2.2.1 Tasks Menu

What is a task?

A task is a set of tools grouped to facilitate a particular job/task. Tasks comprise a command with the correct symbology for a feature and/or pay item.

If you don't see the Main Task menu click on "**Tools**" and toggle on "**Tasks**", usually it pops back to the left side of your MicroStation view.

You can dock it where you want it, by dragging the menu to either left or right, up or down to the arrows appearing when close to the edge.



2.2.2 Drawing a Shoulder Line

1. Here is one way to draw a shoulder line. Make sure the **Pavement Marking Lines** tab is open on the task bar and then click on **Lane Line White**.



2. This sets the correct level, color, line style, and weight for a lane line. This tool also activates the place smart line tool. In this example you won't be drawing the line, you will copy the edge of road.

3. At the top of the task menu select the Manipulate tools and then Move Parallel.



- 4. Set up the Copy Parallel dialog box as shown above. The top button should be set to **Element** because you will be copying an entire element. The Mode is set to **Miter**. This mode will lengthen or shorten the element to try to match the shape of the original. The distance is set to **4** feet. Check **Use Active Attributes** to create the copy using the active attributes. Most importantly check **Make Copy** or else you won't get a copy.
- 5. Now click on one of the pink edge of road lines and move the cursor to the inside of the road and click. Now you should have a shoulder line 4 feet away and parallel to the edge of road.



2.2.3 Placing a Sign

- 1. Make sure the Sheet Aluminum Signs tab is open on the task bar. Then click on **1 Post**. Then click to place the sign cell. Next you will want to rotate the cell so the sign face is aligned with the roadway.
- 2. In the Place Active Cell Dialog select Interactive and Rotate Only
- 3. Data Point where you would like to place the sign and spin it by moving the curser to the desired rotation. If you do not like where you originally intended the sign to be placed simply right click to release and then Data Point in the correct location. Spin the curser again and Data Point a second time to place.

Pavement Marking Lines		
Traffic Signal Signs	<u>~</u>	
Sheet Aluminu	•	
🔆 Q 1 Post	<u> </u>	
→ W 2 Side by Side 1 Post		
→ E 3 Side by Side 1 Post	🖇 Place Active Cell 📃 📼 💌	
🔆 R 1 Post Back to Back Mount	Active Cell: SGN_1	
→ T 2 Posts Back to Back Mou	Active <u>Angle</u> : 0.0000°	
🔆 A 2 Posts	Y Scale: 1.000000	
→ S 3 Posts	_	
🔆 D Parapet Mounted Right	✓ <u>T</u> rue Scale	
F Parapet Mounted Left	<u>R</u> elative Horizontal	Т Т П
🔆 G Overhead Mounted	Interactive Rotate Only ▼	
Extruded Aluminum Signs	<u>H</u> atten▼ <u>S</u> cale Multi-line Offsets	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Scale <u>D</u> imension Values	•
	Scale Annotations	

## 2.2.4 Placing a Metal Conduit

1. First select the **Ground Equipment** tab from the Task Menu.

Tasks 🔻 🕈 🗙
G - D - <u>*</u>
Tasks 💌
Traffic
Getting Started
Ground Equipment
🔆 Q Pedestrian Push Button
→ W Pedestrian Push Button Left
🔆 E Pedestrian Push Button Right
B Pedestal Mounting

2. Then select the **Rigid Metal Conduit** tool.



3. You can place the conduit as straight sections as shown below.



4. Then select Construct Circular Fillet.



5. Type in a radius of 10 and truncate both.



6. Click one line then the other and an arch will be constructed between the lines.



7. Once you have placed all the segments of the conduit, select the Create Complex Chain tool to connect all of the segments. Click on each segment and this will redraw the line as one continuous element.



# 2.2.5 Placing a Signal Assembly

1. First place some Steel Span Poles. Select a **Steel Span Pole** cell then place the poles. Rotate as needed.



- 2. Now click on the **Span Wire / Mast Arm** tool and place the spans or mast arms. Also use the **Span Wire** tool and draw lines that will connect from the Spans/mast arms to the traffic signal face symbols.
- 3. Select the **Traffic Signal Face** tools to place the triangle symbols to the line placed in step 3 and clip the lines to the signal face symbols.



4. Now you are going to use <u>AccuSnap</u> to place the Span Wire Attachment circles at the intersections of the span lines. If you don't already have the Snap buttons docked on your screen go to Settings < Snaps < Button Bar. Then drag the button bar and dock it where you like it on the screen. Double click on the Intersect Snap to lock it.</p>



Another good choice for snapping is the **Key Point Snap**. That is usually the snap turned on by default. That is the second snap from the left. You may want to double click that snap after placing the circles.

5. Now select the **Span Wire Attachment** tool from the Task Bar and click on the intersection of the span lines.



6. Now select the Trim Multiple tool and set it to Trim.



7. Select the Circle for the cutting edge and click on the ends sticking out of the circle and click on the line segments inside of the circle.



# Section 3 Sheet Models

# 3.1 Creation

1. Create a new dgn file (we will be creating a Traffic Control Signal Plan), but this time use the seed file W:\Workspace\Standards\seed\CT_Sheet_Civil_2D_V8i.dgn.

Use the chart below as a guide for naming the file. Use either the project number or Intersection number in the name along with the drawing number as needed.

Traffic Control Signal Plan Sheet	TR_MSH_TCS_1234_1234_###.dgn
Detour Plan Sheet	TR_MSH_DTR_1234_1234_###.dgn
Pavement Marking Plan Sheet	TR_MSH_PVT_1234_1234_###.dgn
Signing and Pavement Marking Plans Sheet	TR_MSH_SPM_1234_1234_###.dgn
Signing Plan Sheet	TR_MSH_SGN_1234_1234_###.dgn
Maintenance and Protection of Traffic	TR_MSH_MPT_1234_1234_###.dgn

2. Reference in your Traffic Design File completed in Section 2. Turn on **Save Relative Path** and click **Open**.

🖉 Attach Refe	erence - X:\99	9_Student_01_Tra	ffic\Traffic\		<b>X</b>
Look in:	👢 Traffic		<b>▼</b> 🖻 🖽 ▼	3 🖹	2D - V8 DGN
Recent Places Desktop Libraries	<ul> <li>_all_other_dat</li> <li>_Eng_Data</li> <li>Consultants</li> <li>Sign_Details</li> <li>Signing_Pvmt</li> <li>Special_Provi</li> <li>Typical_Sheet</li> <li>// TR_MST_SSP_</li> <li>// TR_MST_SSP_</li> </ul>	ta _Markings_Plans sions ts 1234_1234.dgn 1234_1234_Class-Final.c	Traffic Design I created in Sect	File ion 2	Attachment Method
	File name: Files of type:	TR_MST_SSP_1234_1 CAD Files (*.dgn:*.dwg; Save Relative Path	1234.dgn	Open Cancel Options	<b>Solution</b>

- 3. Give it a Logical Name of Traffic Design and Nested Attachments should be set to **No Nesting.**
- 4. Repeat for the Survey Ground File. Give it a Logical Name of **SWW Survey** and Nested Attachments should be set to **No Nesting**.

- 5. If required repeat for the Highway Design file. Give it a Logical Name of **Highway** and Nested Attachments should be set to **No Nesting**.
- 6. Rotate view as needed. Select the Method 2 Points and data point following the prompts to Define your X axis.



7. Access the **Sheet Composition Task**. Now you will see another set of tasks, all related to working on Traffic Sheets.

sks 👻 🕈 🕇		
• ⊕ -   <u>^</u>		
Tasks 🔹		
Traffic		
◣▯₃ァჅჅぷぽ♪×ӭ≞҄ぷ _尸 О, ํํํํํฺ А, җ ํ๚	Tasks     ▼       ③     •       ③     •       ∴     Tasks       ▼     Tasks	
Getting Started 🔹 👻	Sheet Composition	L
Ground Equipment 😽	IK 🕞 🖳 🤌 🕼 🔽 🗙 💀 📢	
Span and Mount Assembly 🔷		•
Detectors 😽	Setup and Borders	*
Innerconnect 🗸 🗸	General Annotation	*
Miscellaneous Features 🔷 😽	Signal Plan Annotation	*
Pavement Marking Symbols 🔹 👻	Signal Head Diagram	*
Pavement Marking Lines 🔹 👻	Phasing and Movements	*
Traffic Signal Signs 🔹 👻	Charts	*
Sheet Aluminum Signs 🔹 🗸	Sign Details	*
Extruded Aluminum Signs 🔹 👻	Route Markers	*
Accident Symbols 🔹 👻	Miscellaneous Symbols and Details	*
Sheet Composition	Dimensioning	*

# 3.2 Attaching a Border and Clipping the References

Major changes have been made to the signal border, there were four to choose from and now it has been combined into one. All other types of sheets will use the general plan sheet border.

- 1. Before clipping your Reference files **copy** in the North Arrow from the Survey Ground file.
- 2. Go to the Setup and Borders Task Menu and select a border cell and place it. When working on a Signal Plan as we are, you will also need to attach the Detector Chart, Program Chart and Phase Chart. These are cells that can be attached using the Sheet Composition Task. These cells will be placed under the Signal Border Movement Diagram from left to right in the order below.

#### PLEASE NOTE:

Do not use the Drop Element command on the cell borders, this will cause multiple issues.

s	et	up and Borders					
9	Q	Set Sheet Model Reference Levels					
🔆 😾 Plan Border							
✻	Е	Signal Border 1					
✻	R	Movement Diagram Detector Chart 2					
✻	т	Movement Diagram Program Chart 3					
🔆 🗛 Movement Diagram Phase Chart 4							
Sign with Flashers Intersection #							
✻	→ D Index of Drawings Table						
✻	F 11x8 Border						
✻	G	8x11 Border					
✻	z	Flashing Sign Border					
✻	х	Collision Diagram Border					
°	С	Edit Tags					
ABC	V	Fill In Single Enter-Data Field					
A ⁵	в	Edit Text					
	Cr	eate Clipping Boundary Shape					
S	en	ieral Annotation					

3. Select the **Create Clipping Boundary Shape** on the same task menu. Place a shape around what you want inside your Border



- 4. Now go to the **References** dialog box and select all of the reference files. Right click on them and select **Clip Boundary**.
- 5. Select the Method **Element** and data point on the element that was placed in step 3.



#### PLEASE NOTE:

If you are unable to fit the entire design within one border, make additional dgn files; one file for each sheet. You can also reference all the files in again (Traffic Design Highway Design and the Survey Ground file) and then move them together to a blank area on the sheet and clip them as needed. Do not copy in these reference files.

6. Click on the Models Icon.



7. Use the **Sheet Boundary** tools to move your Transient Shape (Plotting Boundary) into place around the Border Cell. Use the Move and Rotate tools shown below and follow the MicroStation prompts for accurate placement.

Ð				
	🖬 Models			
	Type 2D/3D Name	Description CT_Civil_Sheet	 → Design File √\TR_MSH_TCS_12	Sheet Name 34_1234_0 CT_Civil_2D_Sheet
	< [		Sheet E	Boundary - P ×
			Scale: Border:	CT40 ▼ *



8. Use the Edit Tags tools to fill out the Blue Town, Drawing Title, Project Number and Drawing No.. Use the Data Field and Edit Text tools to complete edit the green text.

	ji i i ji i i i i i i i i i i i i i i i	K <u>8</u> , 98	E					
Setup and Bo	orders		^					
3 Q Set Sheet M	Nodel Reference	Levels	R.					
ENGINEER	TRAFFIC	DATE	ELECTRICAL	DATE	REV #	INTE	ERSECTION #	
CHECKED BY					ENERG	YBY	ADD	RESS #
APPOUVED BY	,		14 (1990) AL		MAINT L	EVEL	SERVI	CE POLE
APPROVED D	ATE					1 Marca 100 1	METERED OR UN	METELED SERVICE
	STRE STRE STRE	ET/ROUTE ET/ROUTE ET/ROUTE				N NAME	2 1	DRAWING NO. TCS-##
	STRE	ET/ROUTE	SCALE	1' = 40'		IC CONT		SHEET NO.
							/	
C Edit Tags								
Q V Fill In Singl	e Enter-Data Fie	eld	R					

3.3 Adjusting the Appearance of the Sheet

# 3.3.1 Update the Display Sequence of Reference Files

- In the references dialog box click on Settings > Update Sequence. The sequence is the order in which MicroStation loads the files. When a file is listed at the top of the sequence, that means it is loaded first and will appear on the bottom as if it is below the other files.
- Using the Update Sequence... tools (up and down arrows) move the files either up or down to the desired location(s). The <u>Active Design file</u> should be the last file in the update sequence, meaning this is the last layer the printer/plotter prints, see update sequence graphic. When finished click Ok.

			References (6 o <u>Tools Settings     <u>Attachr</u> <u>Update</u>     Slot Adjust </u>	f 6 unique, 6 disp ment Sequence Colors	layed)
		ndate Sequence	OVE FILES UP	or DOWN	
1	Slot	File Name	Model	Logical Name	_
	1	\HW MST MDL 1234 1234 La	ayou. 3D Design	Highway	
J	2	\\SV_D1_1234_1234_GRN.d	Ign 3D Design	SWW Survey	
	3	\TR_MST_SSP_1234_1234_Clas	s 2D Design	Traffic	
	5	\HW_MST_MDL_1234_1234_La	you. 3D Design	Highway-1	
	6	\TR_MST_SSP_1234_1234_Clas	s 2D Design	Traffic-1	
	7	\TR_MST_SSP_1234_1234_Clas	s 2D Design	Traffic-2	
		TR_MSH_TCS_1234_1234_001.dg	gn CT_Civil_2D_Sheet	Active Design File	
	•	1			F
ĺ		Default <u>O</u> K	Cancel	BEFORE	

Image: Weight of the sequence       Image: The sequence									
Slot	File Name	Model	Logical Name						
2	\\Survey\SV D1 1234 1234 GRN.dgn	3D Design	SWW Survey						
1	\HW MST MDL 1234 1234 Layout.don	3D Design	Highway						
3	\TR_MST_SSP_1234_1234_Class.dgn	2D Design	Traffic						
5	\HW_MST_MDL_1234_1234_Layout.dgn	3D Design	Highway-1						
6	\TR_MST_SSP_1234_1234_Class.dgn	2D Design	Traffic-1						
7	\TR_MST_SSP_1234_1234_Class.dgn	2D Design	Traffic-2						
	TR_MSH_TCS_1234_1234_001.dgn	CT_Civil_2D_Sheet	Active Design						
•			•						
	Default <u>O</u> K	Cancel A	FTER						

UPDATE SEQUENCE GRAPHIC



## 3.3.2 Level Display

- You will need to turn off some unneeded levels from the highway or ground file. Click on Level Display to open the Level Display Dialog box. This way you will see which levels get turned off.
- 2. Select the Setup and Borders tab on the Sheet Composition task and select **Set Model Reference Levels**.



# 3.4 Pull Down Menu

There have been many changes made to the drop down menu. The drop down menu formerly had a section called Traffic and a section called Signing. These sections have been renamed to **Traffic Notes** and **Sign Details**. The items from the drop down menu that represent physical objects, such as aluminum signs or pavement markings, were relocated to the Task Menu. The items that are graphics or text used for annotation, such as notes or sign details, were left in the drop down menu.



# 3.5 Sheet Composition Task

In this section you will be using some of the new tools that were created for making sheets. There are two menus for Annotation; General and Signal Plan. The General Annotation has a larger font size and the Signal Plan Annotation has a smaller font size. The Sheet Composition Task can be found using this path in the task menu **Traffic > Sheet Composition**.

isks	<b>→</b> ‡ X
9 - 0 - 🕂	
Tasks	•
Traffic	
Sheet Composition	
	8 9 .
₽ ○  А 🔆 🖽	
Setup and Borders	*
General Annotation	*
Signal Plan Annotation	*
Signal Head Diagram	*
Phasing and Movements	*
Charts	*
Sign Details	*
Route Markers	*
Miscellaneous Symbols and Det	tails 🔹 👻
Dimensioning	*

## 3.5.1 General Call Outs

1. Select the General Annotation or Signal Plan Annotation tab on the Task Menu.



- 2. Select the **Call Out** tool. In the Place Note Dialog box make sure the left tool **'Place Note'** is active and **Start At** is set to **Terminator**.
- 3. Type in the note you wish to place in the text box that appears.

🖞 Place Note 🗖 🔲 🖾	🖉 Text Editor - Word Processor 📃 🗉 💌
	$\begin{array}{                                    $
Text Style:	<u> </u>
Text Rotation: Horizontal	2" RMC, 14/9, 14/5
Text Frame: None	
Height: 4.800	
Apply changes to all text	
Leader Type: Line	
Start At: Terminator	
Horizontal Attachment: Auto	

4. Click on the item you wish to annotate and then click in the location you want the note to be located. Right click to place the call out.

### 3.5.2 Circle and Hexagon Text Frames

- Typically on a Traffic Signal Plan signs are annotated with a circle text frame. On the Task Menu make sure you are in the Signal Plan Annotation tab. Then select the Circle Text Frame tool.
- 2. Make sure the **Place Note** dialog box that comes up is set to **Place Callout**.

Plan Annotation
Signal Plan Annotation
W General Notes Title
E General Notes Text Rotation: Horizo
R HexagonText Frame Circle
T Circle Text Frame Width: 3.200
A Detailing Note General Notes
S Detailing Text

3. In the Text Editor dialog box type in the letter for the callout. Then click on the screen to place the callout bubble.



4. Construction notes use a hexagon text frame. You should follow the same procedure shown above, but choose the **Hexagon Text Frame** tool instead.

# 3.5.3 Labeling and Notes

Select General Annotation and browse through the labeling and notes options.

1. The General Note Title uses larger text than the General Notes.



2. The **Approx. R.O.W.** text will appear in the dialog box automatically and you choose the method of placement for example: Below or Above Element.

Setup and Borders 🔹 🔺	
General Annotation	Ma Text Editor - Word Processor
Signal Plan Annotation 🔡 🗮 🔺	
✓A Q Call Out	
A W General Notes Title	Approx. R.O.W.
A E General Notes	-
A HexagonText Frame	
(▲) ⊤ Circle Text Frame	Place Text
✓A A Detailing Note	<u>M</u> ethod: <u>Below Element</u> ▼ <u>T</u> ext Style: ☆ CT_080 ▼ ♀ ⊕,
A S Detailing Text	Active Angle: 0.0000°
A D Proposed by othersText	
A F Existing Text	Apply changes to all text
A G Approx. R.O.W.	Eont: 229 229 verdana
A Z Approx. Street Line	Justification: Left Top ▼ Line Spacing: 0.675000 1200
A × Taking Line	Interchar Spacing: 0.000000
A C Street Name	Text Node Lock
A	

3. Some more examples of annotations.

A G Approx. R.O.W.

A X Taking Line

A C Street Name

A V Match Mark Text

A Begin Project Limits

A End Project Limits

B Match Mark Line

A Z Approx. Street Line



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DR.

16+00

ROUTE 139 (NORTH

# 3.5.4 Labeling the Traffic Signal Faces

- 1. Even though the labeling of the traffic signal faces is annotation, it should be placed in the traffic signal plan. This way you can make a blow up to more clearly show the intersection and the signal face annotation will scale along with the rest of the design file.
- 2. Highlight the Traffic Signal Plan file in the References dialog box.
- 3. Right click on the reference and select Activate.

References (6 of 6 unique, 6 displayed)		
Tools Settings		
Slot 🏱 🛅 Logical 🛛 File Name	Model	Description
2         SWW Survey         .\.\Survey\SV_D1_1234_1234           3         Traffic         .\TR_MST_SSP_1234_1234_0           5         Highway-1         .\\HW_MST_MDL_1234_12           6         Traffic-1         .\TR_MST_SSP_1234_1234_0           7         Traffic-2         .\TR_MST_SSP_1234_1234_0	Attach Detach Reload Exchange	3D Design Seed Aligned with Maste 3D Design Seed Aligned with Maste Aligned with Maste
•	Open in New Session	
Scale 1.000000 : 1.000000	Activate Deactivate	Wifset X 0.000
New Level Display: Config Variable Scienced: No	<u>M</u> ove <u>C</u> opy	
	Scale	

4. Now the elements in the active reference appear in their normal colors, but everything else appears grey. You can now manipulate the reference file and the elements within it.



 In the Signal Plan Annotation tab select the General Notes tool. Set the Method to Above Element. Type the number for the signal and click on the triangle that represents the signal. The number will appear aligned with the triangle for the signal face. Click to accept, and then move the number as needed to fit inside of the triangle.



6. When you are done making your changes to the Traffic Design file, right click the reference file and select **Deactivate**. Now the changes will be applied to the reference file.

# 3.5.5 Linear Dimensioning

1. Go to the Dimensioning Tab on the Task Menu.



2. Select the Sheet Aluminum Dimensioning Level tool to set the active level.



- 3. Select the **Dimension Linear** tool.
- 4. In the Linear Dimensioning dialog box set the Alignment to **True** and then click the magnifying glass to open the Dimension Styles dialog box.

🚯 Linear Dimensioning 💼 📼 💌
Taffic 🔻 🔍 💽
Alignment: True
Location: Manual

5. In the Dimension Styles dialog box go to the **Units** tab. For the Units change the **Accuracy to 0**.

M Dimension Styles - CT_Dim	Traffic	
<u>Style Vi</u> ew	/	
		17 A
Dimension Styles	Geometry Units Text Symbology Advance	ed
₩ 200	Primary Units	Secondary Units
☞ 500	Use Working Units	Show Secondary Units
Se 1000	Label Format: MU label	Label Format: MU
≥ 2000	Master Units: 40 foot er	Master Units: Meters
CT_Addendum_CO	Sub Units: 40 ind. eng V	Sub Units: Meters
CT_BOP		
CI_ConstrLimit	Main Prefix: Main Suffix:	
CT_Dim_Lane	Upper Prefix: Upper Suffix:	Lower Prefix:
CT Dim Traffic 20	✓ Alternate Label Settings ▼	Altemate Label Settings 🔻
Sect Dim Traffic 30		
V CT Drainage	Scale	Angle Format
Sect_Drainage_XSC	Reference Scale	Units: Angle 💌
S CT_EOP	Scale Factor: 1.000000	<u>D</u> isplay: <b>D</b> .DDDD ▼
☆ CT_General		Accuracy: 0.1
Victor CT_NonPay	Metric Format	Leading Zero Trailing Zeros
CT_PdByOthers	Use <u>Comma for Decimal</u>	
CT_ROW	Units Separator: 1234.56	
CT_ROW_Hex		
CT_Traffic_Circles		
More CI_Iraffic_Hex		C DB
V Full R PM analas Dasi assa	16'	60° XXX Yyy Xxxxx Yyyyy
PM angles DMS original		Хх Үү

6. Now click on the object you are using for a reference (1 – catch basin), and then click on the sign (2). Next click to determine how far the dimension will extend (3). Click one more time to place the number value for the dimension (4). At this point you can right click to finish using the tool, <u>or</u> if you have another sign farther down the alignment you can click to that sign and an additional dimension will be drawn.



## 3.5.6 Dimensioning Length Along a Curve

- 1. First click on the tool to select the level of the object you are dimensioning.
- 2. Then click on **Dimension Along Curve**.



3. Click the magnifying glass to open the Dimension Styles dialog box.

🖏 Angular Dimensioning 💼 🔳
Alignment: True Location: Manual

4. In the Dimension Style dialog box, go to the Units tab. Set the Units Accuracy to **0** and set Angle Format – Units: to **Length**.

M Dimension Styles - CT_Dim_1	Fraffic	
<u>Style</u> <u>Vi</u> ew		
		1
Dimension Styles	Geometry Units Text Symbology Advance	d
Style:(none)	Primary Units	Secondary Units
	Use Working Units	Show Secondary Units
₩1 	Label Format: MU label	Label Format: MU
₩ 181/2	Master Units: 40 foot eng	Master Units: Meters
₩ 1/2 ■	Sub Units: 40 inchera	Sub Units: Meters
S 1/4 S 1/0	Accuracy: 0	Accuracy: 0.1234
₩ 1/8 ₩ 1/10	Main Prefix: Main Suffix:	
	Upper Prefix: Upper Suffix:	Lower Prefix: Lower Suffix:
\$ 3/4	Leading Zero	Leading Zero
\$ 3/8		
₩ 3/16	✓ Altemate Label Settings ▼	Altemate Label Settings
₩ 3/32		
₩5	Scale	Angle Format
<b>₩</b> 6	<u>R</u> eference Scale	Units: Length
SP 10	Scale_Factor: 1.000000	Display: D.DDDD
Se 20		Accuracy: 0.1
₩ 25	Metric Format	Leading Zero Trailing Zeros
Se 30	Use <u>C</u> omma for Decimal	
S 40	Units Separator: 1234.56	
\$ 50		
₩ 80 ₩ 100		
S 200		4.71 Vvv
\$ 500	16'	17 Ххххх Туу Ххххх Тууууу
\$ 1000		Хх Үү
-		

5. Click on the two points on the curve you wish to dimension. Then click again to select the length of the dimension lines. Click again to place the number. Then right click to accept the dimensioning.

	SNET 7070 DR.	0
19-	120'	29+00
	°	

## 3.5.7 Sign Details

1. First select the needed sign detail from the **Sign Details** drop down menu and place it at desired location on sheet.



2. Next select the **Bubble** or **Block** cell for Sheet Aluminum or Extruded Aluminum depending on which one you need and place it next to Sign Detail.



 Select the Arc tool for either sheet or extruded aluminum and place it to connect the detail and call out. For Method select Start, Mid, End and follow the prompts for placement.



- 4. Then select the **Line** tool and connect the call out to the sign you are detailing.
- 5. Select Fill in Single Enter Data Field in the call out bubble/location box.
- 6. Add Text and Edit Text as needed
- 7. Add all elements of the sign detail to a Graphic Group



## 3.5.8 Detail Blow ups

When doing blow up details it is better to reference the layout model(s), and move and scale, rather than to copy the features into the sheet model, this way the blow-up stays current with design changes.

1. Open the References dialog box. Select the Layout Model(s) and copy the attachments, Right click and select **Copy**.

🕒 References (6 of 6 unique, 6 di	splayed)			_ 0	x
<u>T</u> ools <u>S</u> ettings					
Ē • 隆 🔒 🗈	🕵 🐟 🔄 🔁		Nod	e: Boundaries	•
Slot 🏲 🛅 Logical	File Name		Model ion	Presentation	Visit 🔺
1 Highway	\\HW_MST_MDL_1234	4_1234_Layout.dgn	3D Desient	Wireframe	Dyn
2 SWW Survey	1 10	234_GRN.dgn	3D Desient	Wireframe	Dyn
3 Traffic	<u>Attach</u>	_Class.dgn	2D Desient	Wireframe	
	<u>D</u> etach				
Scale 1.000000 :	R <u>el</u> oad Exchange	ptation 0°	0.0	00	
🖸 🎜 🔪 🤷 🚹 🛄 🛒 🌛 🚱 🖡	Open in New Session	Nested Attachments	s: No Ne Allow	Nesting	De <u>p</u> th:
New Level Display: Config Variable	Activate	<b></b>			
	Deactivate				
	Move				
(	<u>C</u> opy				
	<u>S</u> cale				
	$\sim$				

2. Toggle on as shown below and data point in View 1 and then again to where you would like to move them and reset to accept.

🖏 Copy Reference Attachment 🛛 📼 💌
<ul> <li>✓ Copies</li> <li>✓ Move Boundary with Reference</li> </ul>
Use References Dialog List
Use <u>F</u> ence: Inside

 Select the copied reference attachments, right click and select Scale, or click on the Scale Reference icon. Make sure all needed files are highlighted.

🗈 Refe	erences (6 of 6 unique, 6 d	isplayed)	
<u>T</u> ools	Settings		
Ē	- 🔁 📐 🛅	🕵 🐟 🔄 📬	1 1 2 2 4
Slot	🏲 🚹 Logical	File Name	Scale Reference
1 2 3 5 6 7	Highway SWW Survey Traffic Highway-1 Traffic-1 Traffic-2	\\HW_MST_MDL_1234_1234 \\Survey\SV_D1_1234_1234_GF \TR_MST_SSP_1234_1234_Class \\HW_MST_MDL_1234_1234 \TR_MST_SSP_1234_1234_Class \TR_MST_SSP_1234_1234_Class	Layout.dgn 3D Design 3N RN.dgn 3D Design 3N dgn 2D Design AN Layout.dgn 3D Design 3N dgn 2D Design AN dgn 2D Design AN
S <u>c</u> ale	1.000000 :	1.000000 <u>R</u> otation	0° Offset X Attachments: No Nesting
Ne <u>w</u> Le	evel Display: Config Variable	Georeferenced: No	· · · · · · · · · · · · · · · · · · ·

4. In the Scale Reference box input a scale factor and follow the prompts to accept.



5. In the Sheet Composition Task select **Signal Plan Annotation** > **Circle Detail Blow Up** and place a circle around what you would like to detail. This will serve as the clipping boundary. In the reference dialog box select the files you need clipped, right click, and select **Clip Boundary**. Select the element method and click on the circle.



6. Use the tools **Circle Detail Blow Up, Detailing Note,** and **Detailing Text** to label the detail. Turn Off levels as needed.



- 7. Move the reference files in the detail around as needed and adjust the size and placement of the clipping circle.
- To dimension the Detail you will need to select the correct dimension style. The base scale for all tools in Traffic Dimensioning Tasks is 1in = 40 ft, if you scaled the reference files by 2 you will need to set a Dimension Style that uses 1 in = 20 ft.
- 9. Select **Element > Dimension Styles**, select **CT_DIM_Traffic_20** (if you scaled the references by 1.5 use CT_Dim_Traffic_30)
- 10. Use the Dimensioning tools to dimension the detail.
- 11. Select **Detailing Text** to label the scale of the detail.

# Section 4 Additional Workflows and Help

# 4.1 Screening and Level Display Automation

# 4.1.1 Set Reference Levels Tools

The Traffic Task includes two tools to help automate turning on and off levels and adjusting their appearance in your reference files. The tool shown below on the left is to be used when you are in a <u>design model</u> laying out the features. The tool shown below on the right is to be used when you are in a <u>cut sheet</u> (sheet model) doing the annotation. This tool also overrides the level symbology of the reference files to the preferred look for PDF creation.

#### **PLEASE NOTE:**

Do not use nesting when referencing, if you would like to be able to utilize these tools.



## 4.1.2 Reference File Logical Names

The correct logical name is needed for the <u>Set Reference Levels Tools</u> to work properly. If you don't put these names in correctly, you will not get the desired outcome when running the tools.

It should be noted that these tools only turn on and off Traffic, Survey and Highway levels, other discipline reference files level will need to be turned on and off manually in the Level Display dialog box.

To do this simply open the references dialog Box and double click on the reference file. In the Logical Name field type in Logical Names listed in 4.1.2.1 and 4.1.2.2. Each logical name needs to be unique, it is suggested to use numbers following each name.

**SWW** stands for <u>Screen</u> <u>W</u>ith <u>W</u>eights, this will plot the level screened at the weight in your level overrides.

🔀 Attachment Setting	s: sv_d1_1234_1234_grn.dgn	23	Þ
<u>Fi</u> le Name: Full Path: <u>M</u> odel:	\\Survey\SV_D1_1234_1234_GRN.dgn \survey\sv_d1_1234_1234_gm.dgn 3D Design	<u>B</u> rowse	
Logical Name:	SWW Survey 1	$\supset$	Þ
Description:	3D Design Seed		þ

#### 4.1.2.1 Set Design Model Reference Levels

Since you do not print from the design model, you do not have to screen any reference files.

- Survey ground files Logical Name: Survey
- Highway design models
   Logical Name: Highway

🗈 Refe	erences (3 of 3 uniqu	ue, 2 displayed)			5
<u>T</u> ools	<u>S</u> ettings				ځ_
Ē	- 🔁 📐	🖹 🕵 🖘	@ @ @ i		Ŕ
Slot	P 🖹 Logical	File Name		Model	ह
1	Survey	\Survey\SV_D1	1234_1234_GRN.dgn	3D Design	3
2	Highway	\H\HW_MST_	MDL_1234_1234_Layout.d	lgn 3D Design 🀧	5
	$\bigcirc$				1
•				4	2
S <u>c</u> ale	1.000000	: 1.000000	Rotation 0	° 0	H
•	1 4 1:1 77 2	> <= III III III III III III III III III	〗 <u>∡</u> ऴ <u>Ъ</u> <u>N</u> ested Att	achments:	3
Ne <u>w</u> Le	evel Display:	▼ <u>G</u> eoref	erenced:	<b>T</b>	<

- 4.1.2.2 Set Sheet Model Reference Levels
- 4.1.2.2.1 Major projects in involving Highway Design
  - Survey ground files published using screening Logical Name: SWW Survey
  - Highway design models Logical Name: **Highway**
  - Traffic design models Logical Name: Traffic

Your Sheet Models should follow the example below for logical name and Update Sequence order.

3				
28000	A 20 0	🗙 Hilite Mode: 🛛 Bo	vundaries 👻	$\frown$
Slot P	File Name		1	Logical
237 5	\\Highways\ \TR_MST_SS \\Survey\SV \\Highways\ \TR_MST_SS	MSt\HW_MST_MDI SP_1234_1234_Class _D1_1234_1234_GRN MSt\HW_MST_MDI SP_1234_1234_Class	1234_1234_Layout.dgn .dgn 4.dgn 1234_1234_Layout.dgn .dgn	Highway Traffic SWW Survey Highway-1 Traffic-1
5				,
Scale 1.00000 Iset X 0.000 Nested Attachm	0 ™IT → ← III ents: No Nest lay: Config Va	: 1.000000 Y 0.000 ing ♥ Displa riable ♥ Georefe	ay Overrides: Allow	Nesting Depth: 1

H Update Sequence 83				
2	$\wedge \vee \cong$			
Slot	File Name	Model	Logical Name	
3	\\Survey\SV_D1_1234_1234_GRN.dgn	3D Design	SWW Survey	
4	\HW_MST_MDL_1234_1234_Layout.dgn	3D Design	Highway-1	
1	\HW_MST_MDL_1234_1234_Layout.dgn	3D Design	Highway	
5	\TR_MST_SSP_1234_1234_Class.dgn	2D Design	Traffic-1	
2	\TR_MST_SSP_1234_1234_Class.dgn	2D Design	Traffic	
	TR_MSH_TCS_1234_1234_007.dgn	CT_Civil_2D_Sheet	Active Design File	
$\sim$				
	Default <u>O</u> K	Cancel		

#### 4.1.2.2.2 Signal only with no major roadway redesign

The Survey file will be referenced in <u>twice</u>. The Existing Edge of Road, Drainage Structures, Guiderail, Utility Poles and related text will be turned on and not be screened in one reference file. All the other levels will be screened in the other reference file.

- Survey ground files published using screening Logical Name: SWW Survey
- Survey ground files with levels on that will **not** be screened. Logical Name: **Bold**
- Traffic design models Logical Name: Traffic

Your Sheet Models should follow the example below for logical name and Update Sequence order.

>	
>	
Hilite Mode: Boundaries -	$\frown$
Slot 🚩 🚺 File Name	Logical
2\TR_MST_SSP_1234_1234_Class.dgn 3\.\Survey\SV_D1_1234_1234_GRN.dgn 5\TR_MST_SSP_1234_1234_Class.dgn	Traffic SWW Survey Traffic-1
6\\Survey\SV_D1_1234_1234_GRN.dgn	Bold
	,
cale 1.000000 : 1.000000 Rotation 0	·
XasetX 0.000 Y 0.000	
<u>N</u> ested Attachments: <u>D</u> isplay Overrides:	<ul> <li>Nesting Depth: 1</li> </ul>
New Level Display: <u>G</u> eoreferenced:	¥

Slot	File Name	Model	Logical Name
3	\\Survey\SV_D1_1234_1234_GRN.dgn	3D Design	SWW Survey
6	\\Survey\SV_D1_1234_1234_GRN.dgn	3D Design	Bold
5	\TR_MST_SSP_1234_1234_Class.dgn	2D Design	Traffic-1
2	\TR_MST_SSP_1234_1234_Class.dgn	2D Design	Traffic
	TR_MSH_TCS_1234_1234_007.dgn	CT_Civil_2D_Sheet	Active Design File

# 4.2 Underground Utilities and Drainage Pipes

In MicroStation the "Set Reference Levels" tool is used when in a cut sheet (Sheet Model) and it will leave the Underground and Drainage levels on. Users will turn these levels off in <u>Bluebeam</u> <u>Revu</u> before getting the plan set signed. Below is the procedure for turning off levels in Bluebeam Revu.

1. Click on the Layers Icon.



2. Select the levels you would like to be off by clicking on the eye next to each level and you will be left with a empty box.



 When you are done turning off all the needed levels, click the arrow to the right of and select Save Configuration.





4. Click on the Save Icon before closing the file.



# 4.3 User Preference File

- 1. On the MicroStation Main Menu select Workspace > Preferences.
- Your <u>Windows login name</u> should appear in the blue title of the Preferences Dialog box and the Name of Preferences field should match the version of MicroStation you are running. To check the version you are running close the Preferences Dialog box and select Help > About MicroStation.

Preferences [HallockGa]		×
Category Database Input Look and Feel Mouse Wheel Operation Position Mapping Raster Manager Reference	Name for preferences 081109578     Set View Window Look/Layout Preferences.     Show View ToolBox     Top     Scroll Bars on View Windows     Black Background -> White     Preserve Aspect Ratio of Views     Fast Visible Edges     * Tool Tips   Tacking   Key-in Browser   Bentley Institute Training   Online Support   Bentley Communities   RS Reader	<u>O</u> K Cancel Defaults
About MicroStation V	8i	×
Micros Versio This Hallo	Station V8i (SELECTseries 3) on 08.11.09.714 product is licensed to:	

 If your login name in the blue portion of the preference both did not match your windows login go back to <u>1.2 Creating a User Configuration File</u>. It is imperative that you follow these directions and you use your Windows Login Name to create your MicroStation User and Interface. 4. If the version Number doesn't match exit MicroStation. **Open Windows Explorer** and navigate to the location (Windows 7):

#### D:\Users\YourUserName\AppData\Local\Bentley\MicroStation\8.11\irRFESEEaUk7nwy13ZRxIQ\prefs

Find your user name with the **UPF** extension and delete it. Open MicroStation back up making sure you use your MicroStation Interface and user names and immediately close MicroStation. The file you just deleted will get automatically recreated. Open MicroStation one more time and check the Name of the Preference and the version numbers should now match.

5. If you are having issues getting raster files to align properly. Select **Raster Manager Georeference Tab**. The setting should match as shown below:

M Preferences [HallockGa	]
Category	Name for preferences 081109578
Category Database Input Look and Feel Mouse Wheel Operation Positic Mapping Raster Manager Reference Spelling Tags Task Navigation Text View Options - Civil View Options	Name for preferences       081109578         Set Raster Manager preferences.       General Default Attributes Georeference Memory <u>OK</u> Sister File Settings <u>OK</u> ✓ Use Sister File, if Present, for <u>Georeferenced Files</u> <u>Cancel</u> <u>Save Location Info in Sister File if Required</u> Defaults         Default Unit Settings <u>Sister File: 1 Unit = 0.002083333</u> <u>Survey_Feet</u> <u>Raster file: 1 Unit = 0.002083333</u> <u>Survey_Feet</u> <u>Survey_Feet</u>
	✓ Use Unit Definition Geokey if Present (override PCS unit)

# 4.4 Links

#### This Document

#### **MicroStation Workflows**





#### CTDOT - SELECTseries DDE (Digital Design Environment)

http://www.ct.gov/dot/cwp/view.asp?a=3194&q=483668&PM=1

This link will give you access to all AEC Applications:

- > CTDOT Guides:
  - MicroStation for Highway Design
  - MicroStation for Traffic engineers (This Guide)
  - InRoads Guide for Designers
  - InRoads Guide for Surveyors
- Miscellaneous Workflows:
  - USGS Permit Plates
  - Project Explorer & managing Drawing No.
  - Data Acquisition Tools
  - StormCAD SS5 for MicroStation
  - InRoads for Survey for designers
  - InRoads Export to HEC-RAS
  - Earth Exploration
- Publishing and Printing
  - Publishing MicroStation content to PDF
  - Printing PDF Engineering content

<u>AASHTO Trnseport</u> (integrated construction contract management system)

http://www.ct.gov/dot/cwp/view.asp?a=3194&q=484952