



CONNECT DOCUMENTATION

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MicroStation

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Getting Started with MicroStation Connect

MicroStation CONNECT Training

Many MicroStation training lessons exist between Bentley's LearnServer, Communities videos and YouTube channel. Lessons on the LearnServer can usually be downloaded to the local computer. NHDOT staff should visit the CAD/D Training page for details on additional options. Bentley has a YouTube channel with MicroStation Connect training videos. See the full playlist at: https://www.youtube.com/c/BentleyMicroStation/playlists?view=50&sort=dd&shelf_id=2.

Updating MicroStation SS4 files to CONNECT

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Before You Begin

This process is to update SS4 MicroStation drawings to MicroStation Connect. NHDOT staff must have a Connect Edition project created by the CADD staff to use. You should not use MicroStation Connect or OpenRoads Designer to work on SS4 files in an SS4 project.

SS4 linestyles are typically not visible when opening the drawing in a Connect version product. This is intentional so you know that they need to be updated. A macro has been developed to make the conversion.



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Open MicroStation CONNECT – Attach and Merge DGN from SS4 Project

CONNECT Edition elements are set up to use Annotation scale. Drawings that were populated with SS4 elements need to be updated to use the new levels, linestyles and fonts as well as having Annotation scale on for all models and cells.

Open

MicroStation CONNECT. Set the workspace to **NHDOT** and the Project to yours.



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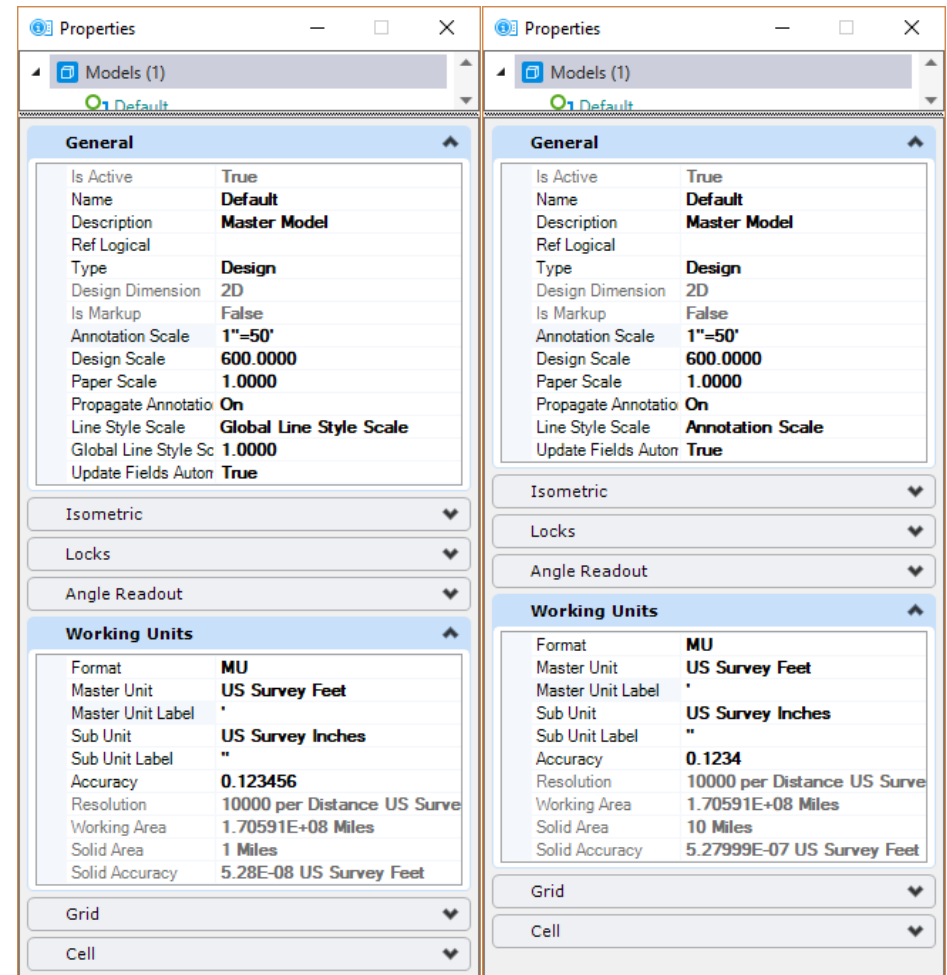
Model information on the left is from an SS4 model, on the right is a MicroStation Connect model. The primary differences are the linestyle scale and the Solid Area. The solids area was updated per Bentley for use with 3D Bridge Models that need a higher level of detail.

Some projects created during the early stages of the transition have MicroStation drawings in the *PRJ* folder created from an old MicroStation seed file. These should be replaced with new files created from the MicroStation Connect seed file ***NH_Seed2D_Design.dgn***. The seed project has been updated but it is wise to check if you know your project was created before May of 2019. It is best to move any SS4 files to a separate folder so they will not be confused with Connect files in the future.

To convert SS4 data to Connect, create a new file with the Connect seed file which will ultimately replace the current drawing.

Once the new file is created, it will open. The next step is to **attach** the corresponding SS4 drawing as a Reference File. Turn on all levels in the active view. In the Reference file dialog box, select the dgn file name and use *Tools > Merge into Master*. Click on the screen to copy the detail into the new CONNECT drawing. This will also detach the reference file.

If the drawing contains design data which needs to have Feature Definitions applied for use in OpenRoads Designer, see the SS4 to Connect Project Conversions section at the beginning of the [OpenRoads Designer Survey](#) documentation to continue this process.



Property	SS4 Model (Left)	Connect Model (Right)
Is Active	True	True
Name	Default	Default
Description	Master Model	Master Model
Ref Logical		
Type	Design	Design
Design Dimension	2D	2D
Is Markup	False	False
Annotation Scale	1"=50'	1"=50'
Design Scale	600.0000	600.0000
Paper Scale	1.0000	1.0000
Propagate Annotation	On	On
Line Style Scale	Global Line Style Scale	Annotation Scale
Global Line Style Sc	1.0000	
Update Fields Auton	True	True
Isometric	▼	▼
Locks	▼	▼
Angle Readout	▼	▼
Working Units		
Format	MU	MU
Master Unit	US Survey Feet	US Survey Feet
Master Unit Label	'	'
Sub Unit	US Survey Inches	US Survey Inches
Sub Unit Label	"	"
Accuracy	0.123456	0.1234
Resolution	10000 per Distance US Surve	10000 per Distance US Surve
Working Area	1.70591E+08 Miles	1.70591E+08 Miles
Solid Area	1 Miles	10 Miles
Solid Accuracy	5.28E-08 US Survey Feet	5.27999E-07 US Survey Feet
Grid	▼	▼
Cell	▼	▼

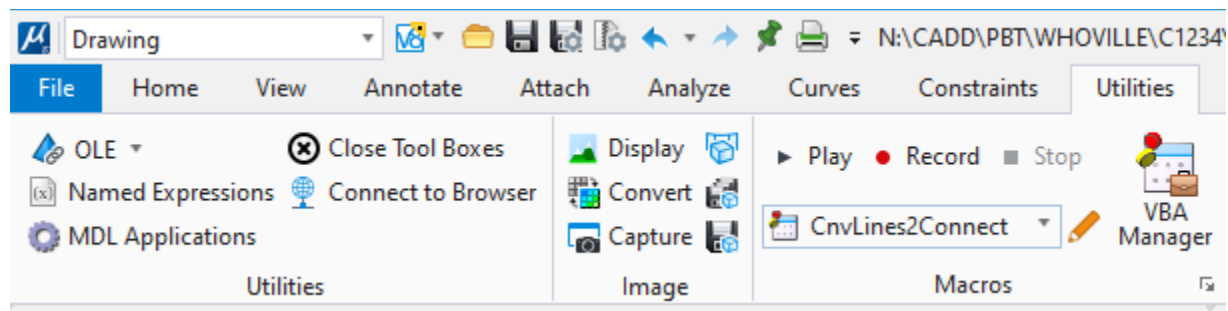
Changing Levels, Linestyles and Fonts

Now that the MicroStation graphics are copied into the drawing, they need to be updated to the correct attributes. Note that lines with the Arrow linestyle may have huge arrowheads. This is due to the line style scale being multiplied by the annotation scale.



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To replace SS4 linestyles with CONNECT ones, run a macro called **CnvLines2Connect**. Macros can be found within the *Utilities* tab of the *Drawing* workflow. Select the macro from the dropdown list and click **Play**.



Level names and fonts have also been updated in CONNECT. A macro called **CnvLevels2Connect** has been developed to move elements to the new levels. Then **CnvText2Connect** modifies text by changing the **nh_engineering** font to a text style which uses the **Engineering Vert Mono** font. It also turns annotation scale on for the text elements and resizes them according to the annotation scale set for the drawing. Depending on the settings of the drawing, some text may become unusually large or small.

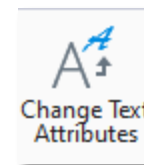
A fourth conversion macro - **CnvCells2Connect** - has been developed to substitute v8i cells with their Connect equivalents. To simplify the conversion, most Connect cells retain the names of their v8i predecessors. If the macro is not able to find appropriate replacements for particular cells, it puts that information in a file called *unedited-cells_drawing name.txt* in the same folder as the drawing.



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Right-of-Way Text Drawings

Using the macros (except **CnvCells2Connect**) above may not be entirely successful on older Right-of-Way text drawings. In particular, the parcel and lot cells may not update to the new cells and styles. To manually edit these, select the cells on the drawing and issue the **Change Text Attributes** command.



Set the *Font* to **Engineering Vert Mono**

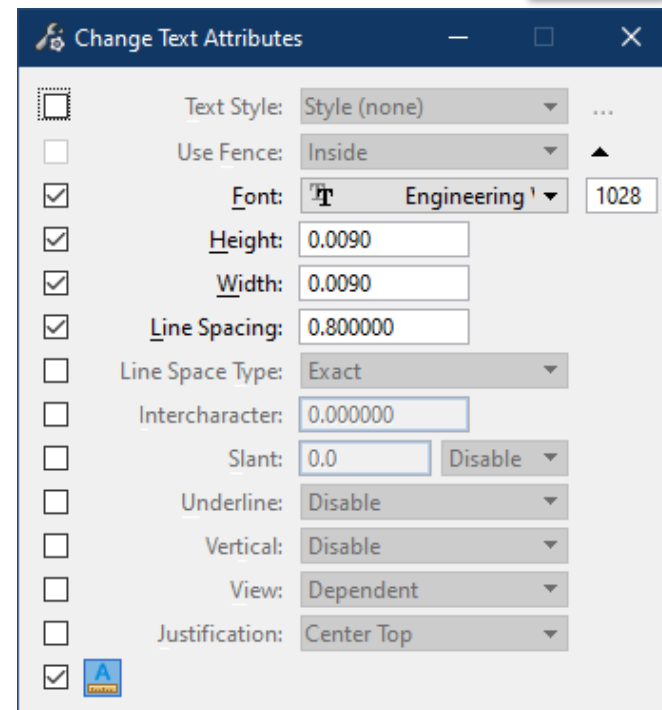
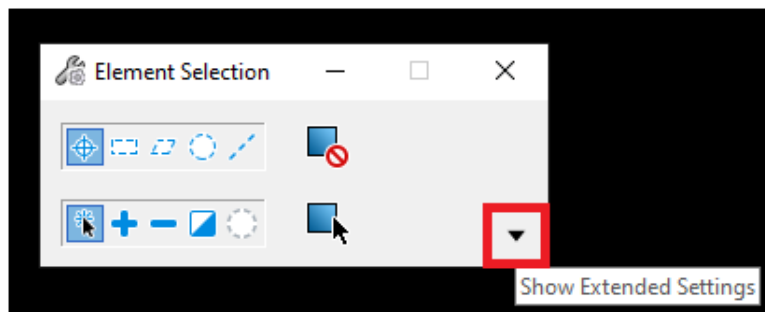
Set the *Height* and *Width* to **0.009**

Set *Line Spacing* to **0.8**

Check the box at the bottom for *Annotation Scale*

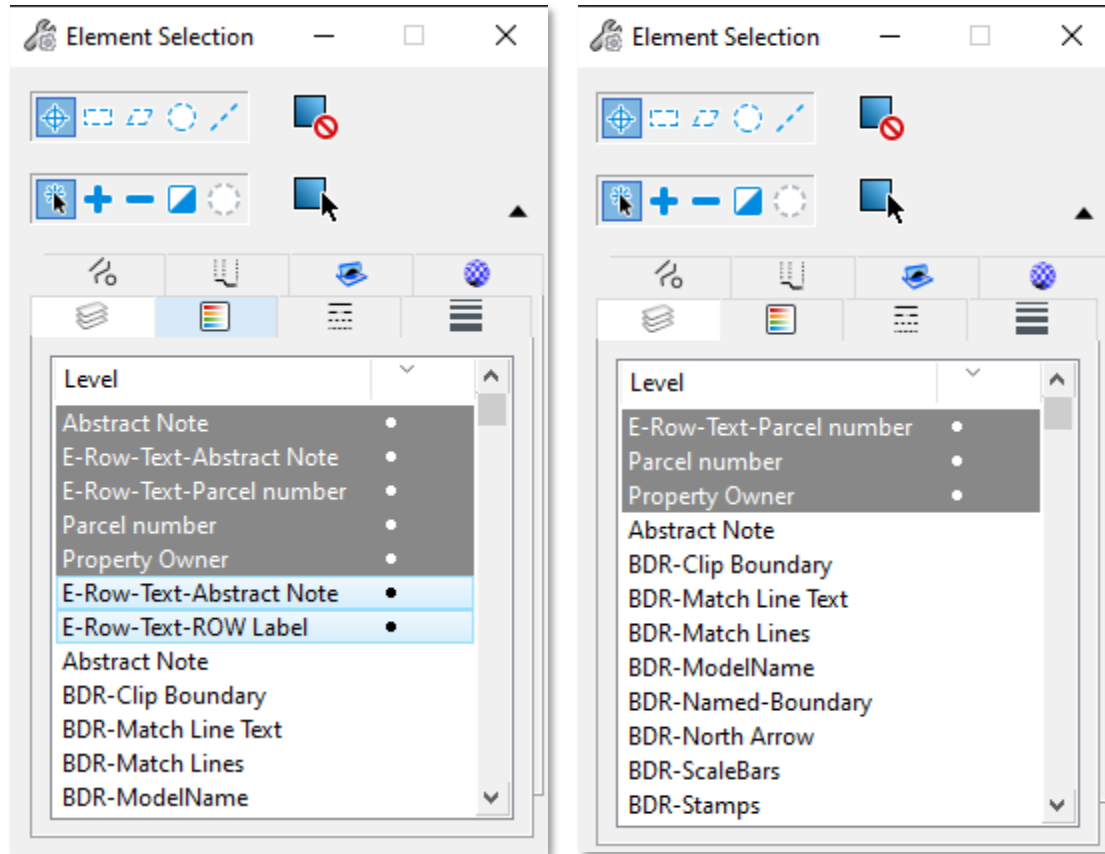
Click within the drawing area to accept the changes.

You will also need to update the levels, to do this, select everything on your drawing, click on show extended setting in the extended setting with everything selected, you can deselect levels to isolate the one you want to change





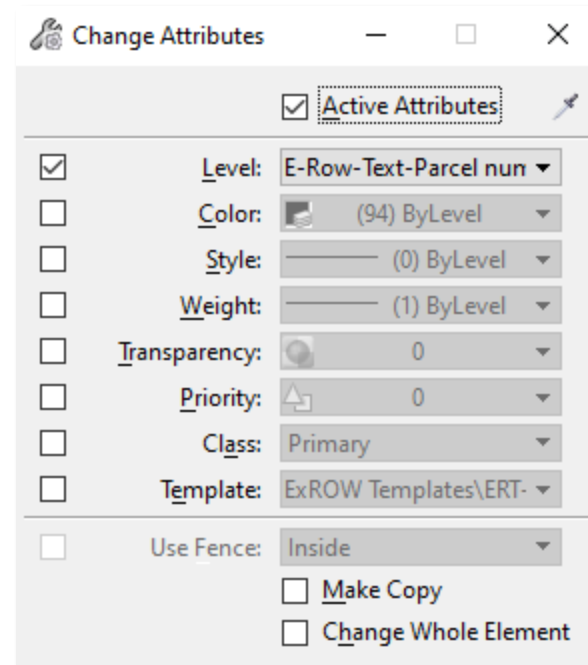
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With the level you want to change selected, in this case the parcel number, on the task list click on parcel number. This is to set the correct level. With the correct level set, issue the change element attributes and accept the selection on your screen. Repeat this for each level you want to change.





MicroStation Connect - MSC

P-7-1: Working in MicroStation Connect

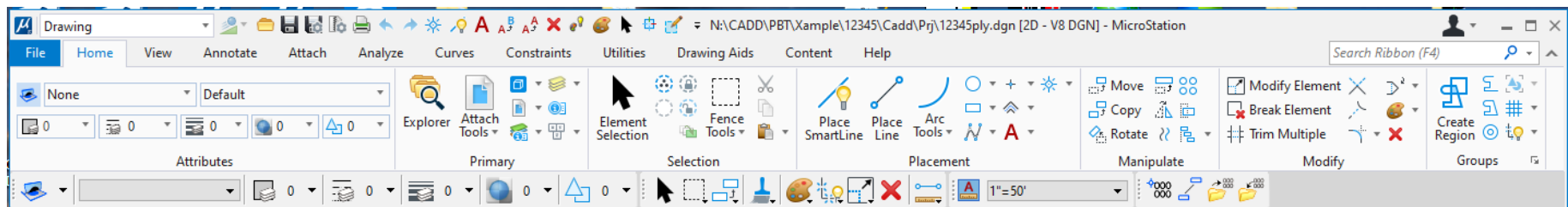
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Prerequisites

Must have MicroStation Connect Installed and have your user profiles created by a member of the CADD Staff. Additionally, a Connect edition project should have been created for your use. Connect Edition project files should be kept separate from v8i files. When a project is converted from v8i to Connect, NHDOT has been appending the old folder name with “-SS4”. Those projects and files use different settings for Global linestyle scale and do not use annotation scale as well as using different levels. You should not use MS Connect to work on SS4 files and vice versa.

Most user settings should already be defined from the Default configuration. Open MicroStation and select Workspace: *NHDOT* and then the *Project*. Next either *Browse* to open an existing drawing or select *New* to create a new dgn in the appropriate directory.

Working in MSC – The ribbon



When MicroStation opens you will see the ribbon across the top showing the different tabs of the *Drawing Workflow* as indicated in the upper left. To the right of the *Workflow* the *Select V8i Mode* button can be used to set/change Task’s modes. Use the Dialog setting for the Task Lists that are similar to the SS4 Task Lists specific to each drawing.

On the *Help* Tab you can select *Help Contents* to view the information on all of the MicroStation functionality which will not be covered in the NHDOT CADD Documentation. It is suggested that you review the information found in the Help Contents. Much of the work you will perform can be done from the Tabs found on the Drawing Workflow while using the element templates.

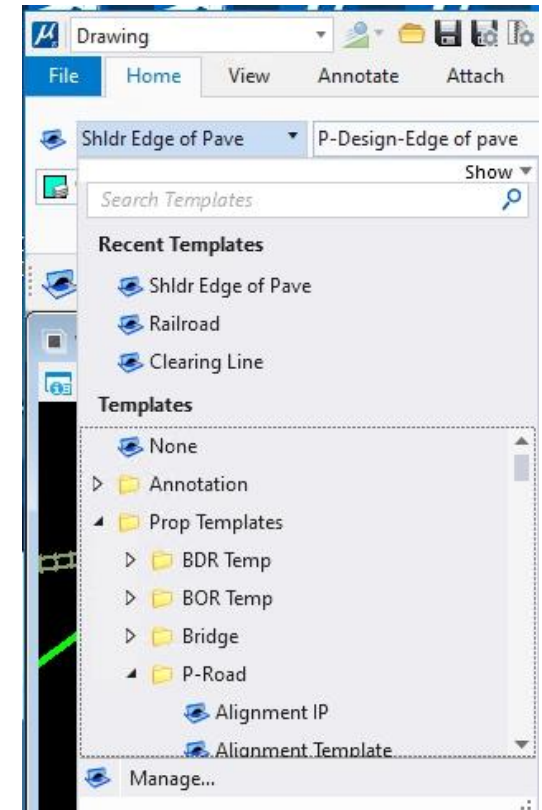


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Element Templates – Defining Element Attributes

When drafting the Home tab's first pane - *Attributes* shows the element template dropdown list with the level and other element attributes. An element template can be chosen from the list setting all the element attributes and then an appropriate command can be used to draw the desired element.

The Element Templates list is divided up similar to the drawing types. Expand the *Prop Templates* folder to see the templates that have been defined. The *P-Road* folder contains templates for Travelled Ways, Edge of Pavements, Cut/Fill Lines and other roadway elements. Other element templates for PLY features can be found in the *PLY Temp(lates)* folder. Recently used templates can be found at the top.

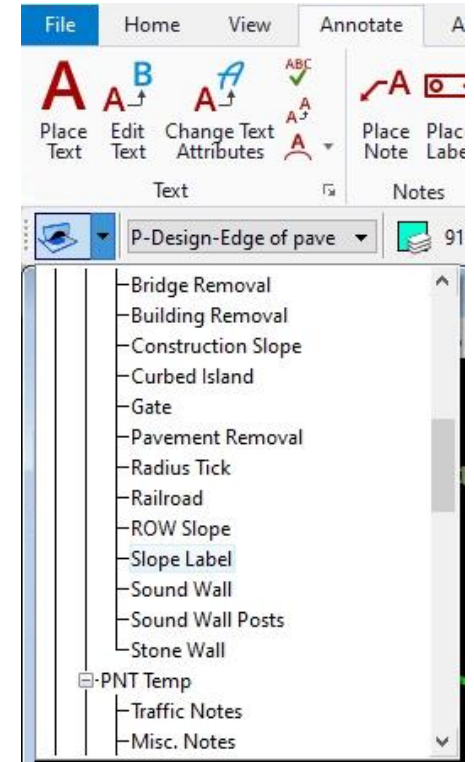




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The *Element Attributes* tool bar can be opened and docked below the ribbon on the left (by default – can be moved) and can be used to select the Element Template when not on the *Home* Tab. Most element templates use By-Level settings and can be associated to the graphics drawn, though this is not necessary. The element templates may also include text styles, dimension styles, possible overrides as well as cell names and scales.

An optional way to draft elements is to have your attributes set to By-Level and just set the active level appropriately. This will not define any text styles or cell names but is a valid work flow as all the levels exist with their attributes defined.





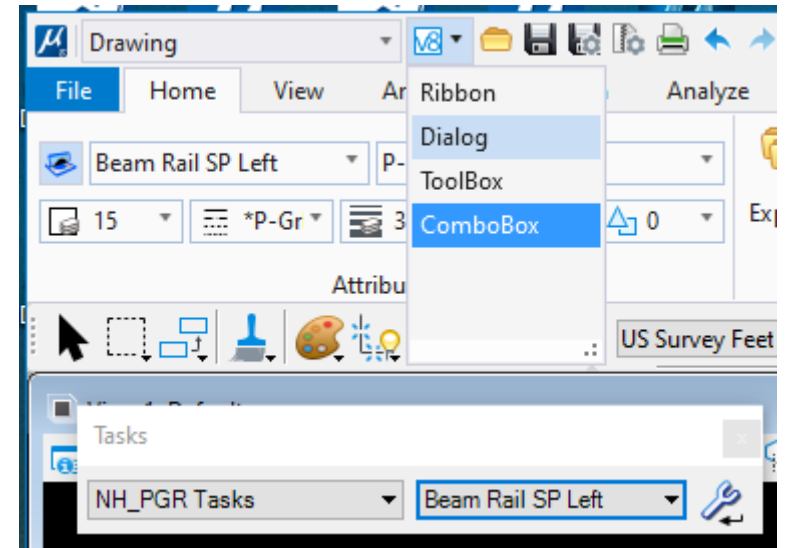
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Task Navigation – Select V8i Mode

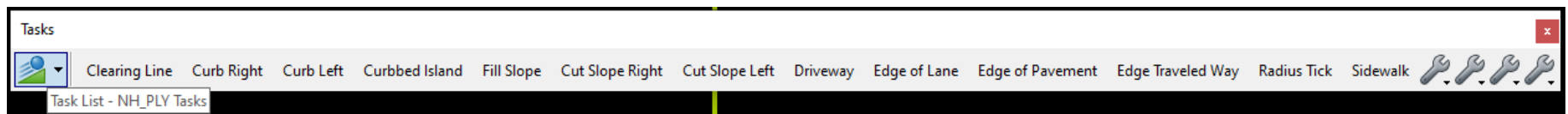
The WorkFlow in the top left can be set to *Task Navigation*. Beside the WorkFlow the *Select V8i Mode* drop down list can be used to select the mode desired. These tasks are similar to what was used in V8i. Meaning that they will set the Element Template – defining the element attributes as well as giving a *Key-in* command to activate the most common tool for the type of element you have selected. For instance, when selecting *Fill Slope*, it will activate the *Place Line* command and for a *Clearing Line* it will activate the *Move/Copy Parallel* command.

Selecting **Ribbon** will change the workflow to Task Navigation and load the current task list inside the ribbon with the mode button allowing the different task lists to be selected. To change to a different type, the Workflow would need to be changed back to drawing or general.

The **ComboBox** option is shown. It can be docked as a regular tool box. The first button allows for selection of the task list. The second button selects the specific task and clicking on the last button *Run Current Tool* enacts it.



The **Tool Box** option shown below can be docked but can present issues as it is not a set width. Its size varies with the length of the task list. Task sub menus within it can be hard to determine as they are shown with a Tool picture.





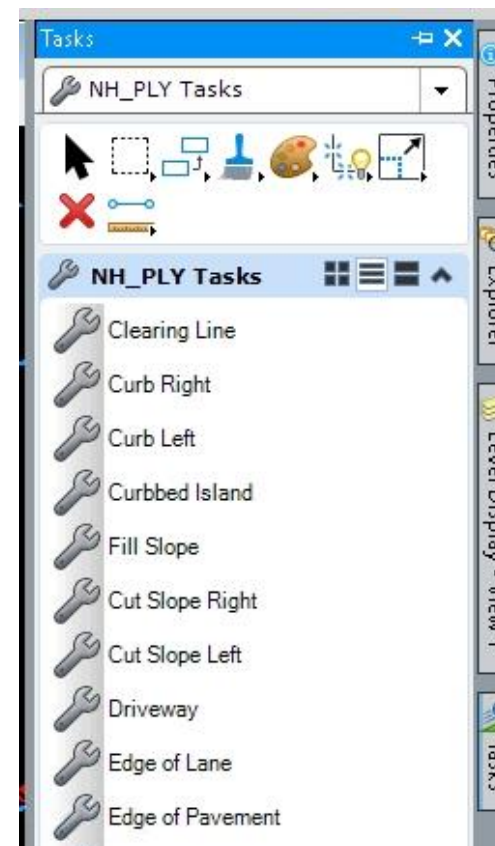
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The **Dialog** option brings up the Task list as it appeared in SS4. Next to the Task list name is a dropdown used to select the specific Task list you want.

The Task list can be docked and pinned closed on the right side of your session. Hover over it to expand it, and pin it open if desired.

The list can be changed by selecting the dropdown (black triangle) next to the title of the task list. Change it to match the drawing type that you are working in.

When using the tasks or any Element Templates to create features, please report any issues or changes which you feel are appropriate to a member of the CAD/D Staff.





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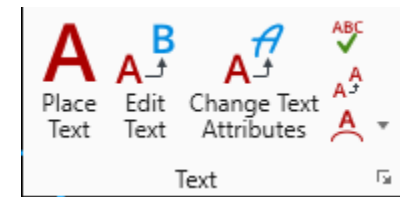
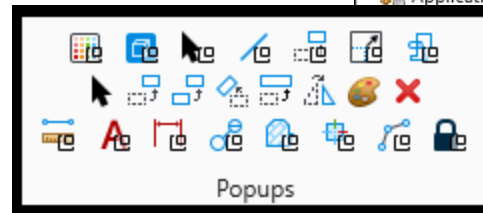
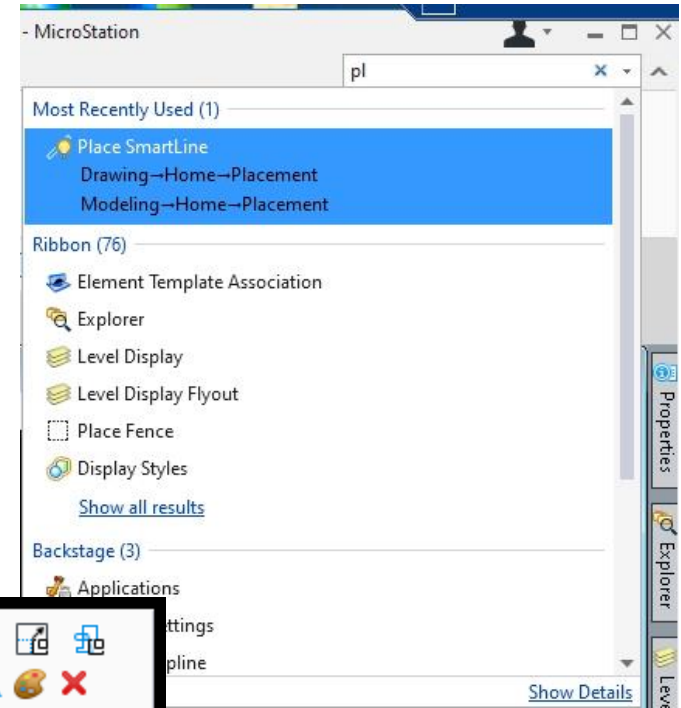
General – Search Ribbon, Tool Boxes and Tools

While the most common tools are set for each Task in the Task Lists, the Drawing WorkFlow can be used to select other tools. In some cases, switching between them looking for tools can be frustrating as well as time consuming. In the top right had corner of the ribbon is the *Search Ribbon (F4)*. Click inside the blank box and start typing the name of a command. As you type, common tools fitting the characters are displayed. Hovering on them expands them to show what Ribbon they are located on for future reference. Select the tool to activate it.

An additional way to locate and use tools is to type **Tool** into the box which will bring up *Tool Boxes* as a choice. Click on *Tool Boxes* when it appears in the list. This will bring up the *Tool Box* selection list. Select any tool boxes from the list to open them, click OK to close, then move and dock the tool boxes where you want them.

The most commonly used commands can also be found on the **Space Bar Pop-up**. With *Element Selector* active and your cursor in a view, press the Space Bar. This Key Board Shortcut will display the *Popups* tool selector. Select a command, the tool will activate.

If the tool icon contains a symbol in the bottom right, clicking on it will actually bring up a new tool box of the associated commands which can be selected.





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Quick Access Tool Bar

The Quick Access Tool Bar is located at the top of the screen next to the WorkFlow selection box. It contains some commonly used commands and can easily be modified to remove or add additional commands by clicking on the last button *Customize Quick Access Toolbar*. By clicking on the last button in the toolbar you can also hide/unhide commands using the check marks next to each tool.

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P-7-3: Creating Detail Sheets – For Proposal Projects (8½" x 11")

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Before You Begin

Determine what and how you want to sheet and start at the appropriate section. Sheets along an alignment, from clipping references, or from 2 points, are three different workflows. A variable in the projects .cfg file can be defined to set the default sheet size. MS_SHTSIZE = A defines the size of the sheet models when creating plans. The Options are D-22x34, B-11x17 and A-8.5x11.

Open MicroStation Connect – Select the *NHDOT* Workspace and select the Project.

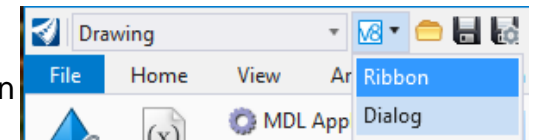
It may be helpful to open the Drawing Scale tool box and the Key-in tool and dock them.

Create a Detail or Typical DGN

Use the *New File* button to create a new dgn file. Verify the Seed - NH_Seed2D_Design.dgn, set the file directory and enter a name for the file with the project number as a prefix. (12345Details)

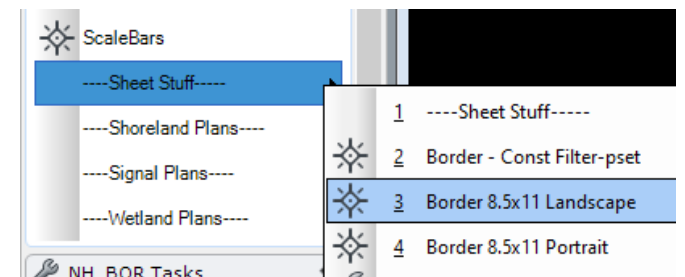
If only one detail is to be on the sheet, create your graphics in the *Default* model. If multiple details at different scales are needed, create new models to place each detail in and leave the *Default* model blank.

Use *Element Templates* to set your symbology and draw your detail using the standard MicroStation commands. Task lists exist to assist in assigning symbology and plotting cells. To open a task list, set the *WorkFlow* to **Drawing** if it isn't already. Note the *V8i mode* button immediately right of the *WorkFlow* dropdown. Click on it and select **Dialog**. Change to a different task list as appropriate. *NH_TYP* Tasks can be used for typicals. When ready to dimension or label the detail, the sheet size (scale) should be determined.



Determine Annotation Scale and place the Border

Set the annotation scale to *Full Size 1=1*. Open *NH_BDR* Tasks. Select the *Sheet Stuff* category and then either *Border 8.5x11 Landscape* or *Border 8.5x11 Portrait*. This will start the *Place Cell* command with the active cell *BDR-CUTSH-C*. Change the cell scale until it encompasses the detail... 48, 60, 120, 240, 600, 1200.... change the scale back to **1** and **Reset** to not place the cell.

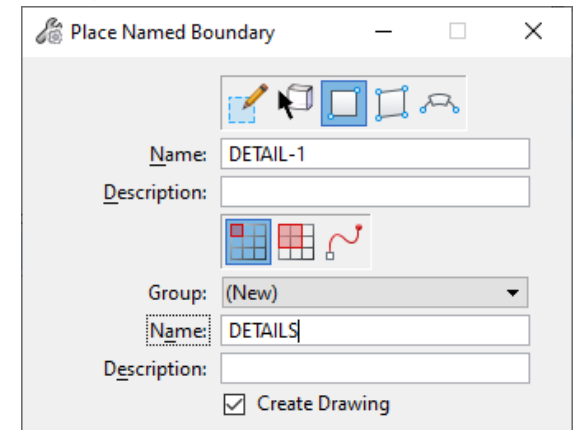


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Enable *Annotation Scale* if is not already activated and set it to the value determined by dividing the scale number by 12 to calculate the inches to feet annotation scale. (i.e. $120 / 12 = 1" = 10'$). Select the 8x11 Border task again and place border cell. The cell will take on the annotation scale size as appropriate.

Select all the elements in the drawing and use the *Move* command to move the graphics from the bottom left corner of the border and Keyin **XY=0,0** and press *Enter* to move the detail. *Right click* to end the move and then *Fit View*.

Continue working on the detail placing text and dimensions making sure to use *Text and Dimension Styles* as the annotation scale will size them correctly. Tasks can be selected from the 8x11 *nh811typ* Task list to create text and dimension lines.

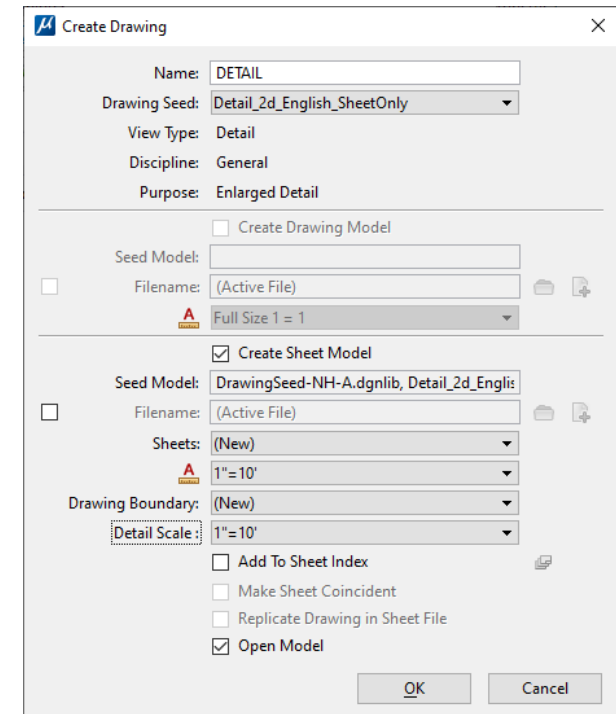


Create the Named Boundary and Detail Sheet Model

When ready to create the actual Sheet model, set the element template to *Modeling\Sheets\Named Boundary*.

Set the Workflow to *Drawing, View* tab, and select the *Place Named Boundary* tool. See the graphic for recommended settings. Type: *By 2 Points*. Name: **DETAIL**. Place single (picture top left). Group: **(New)** or none. Name: **Details**. Check the *Create Drawing* box. Click on opposite border corners then click in the view to *Accept*.

In the *Create Drawing* box – Name the created sheet - this will show up in the sheet index as well as the model name. Set the *Drawing Seed* to **Detail_2D_English_SheetOnly**. Change the Annotation Scale and the Detail Scale to the scale of the border. Check the **Add to Sheet Index** option and select the folder if desired. Click **OK**.



Results

This creates callout links in the design model to the cut sheet model, as well as a saved view of the sheet within the DGN and a new Sheet model which is used for printing. The sheet will also be added to the Sheet Index if you checked that box.

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P-7-4: Creating Plan Sheets - For Proposal projects (8½" x 11")

Create\Open the 12345mth.dgn. This file will contain the clipping elements as well as being used as the seed dgn for the cut sheet drawings.

Attach References

Use NHREF macro to attach the project's roll plan drawings. Set the annotation scale to 1"=100'.

Determine whether to create your cut sheets **A** - along an alignment, or **B** - from clip area boxes placed in some matrix layout.

A - Create Named Boundaries Along Alignment

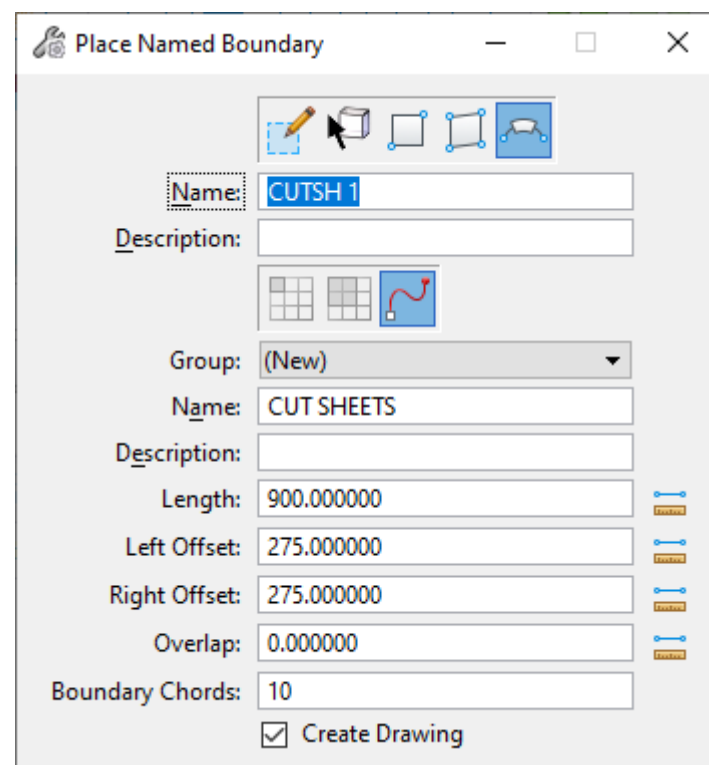
Set the element template to **Modeling\Sheets\Named Boundary** and enable the **Associate Element Template** button. A continuous line must exist through the project to place the sheets along.

Use *Drawing Workflow's, View tab, Place Named Boundary* tool. Choose the *By Length* option and see the graphic at the right. Name: **CUTSH 1**. Select the *Place Along Path* button. Group: (New) or (none). Name: **CUT SHEETS**. Length: 1000, Offsets: 275. Uncheck the *Create Drawing* box so only the named boundaries are created. Select the Path element at the location of the first named boundary, this will display the first cut sheet outline. Move your cursor along the path displaying the sheet indicators to the desired location of the last border and left click to create the named boundaries. If the *Create Drawings* box pops up just close it without creating the drawings!

Other alignments can be selected to create additional named boundaries. The named boundary elements can also be modified where side roads intersect to avoid overlaps.

When finished creating the boundaries, *Save Settings* and *Save* the dgn. This is the Project's CUT SHEET SEED file!!!

Skip procedure B and proceed to [Create Cut Sheet Drawing](#).



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B - Create Named Boundaries from Clip Boundary Elements

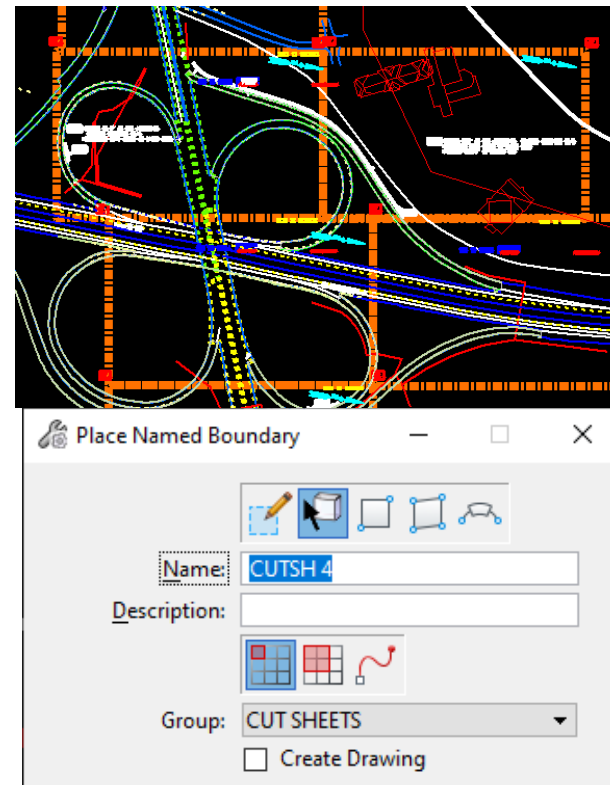
Use *NH_BDR* Task **Clip Boundary** to set the symbology of the clipping boxes. Rotate the display and use *Place Block* with the polygon option to create a clip area box, 1000 feet long by 600 high if using 1"=100' with 8½" x 11" sheets. After placing the box, copy it until the desired area is covered.

Set the element template to **Modeling\Sheets\Named Boundary** and enable the *Associate Element Template* button.

Create a named boundary of each Clip Boundary using the *Drawing Workflow's*, *View* tab, *Place Named Boundary* tool using the settings shown at the right. *By Elements* setting. Name: CUTSH 1. Select the *Place Single* option (picture top left). Group: CUT SHEETS. Un-Check *Create Drawing*. Select one *Clip Boundary*. This will create a named boundary and change the clip symbology to that of a Named Boundary. The name should automatically increment the boundaries.

When placing subsequent boundaries **select the Group that was created** when you created the first named boundary! Keep Creating the Named Boundaries until all the placed clip outlines have been done.

When finished creating the boundaries *Save Settings*, and *Save* the dgn. This is the Project's CUT SHEET SEED file!!!



Create Cut Sheet Drawings

If still in the 12345mth drawing, use a *File > Save As* command and save the dgn into the POP folder with the name of the type of cut sheet you want to create.... 12345-GenPlans, 12345-DivPlans or 12345-PavPlans. Optionally in windows explorer copy the 12345-mth drawing to the POP folder to create the different cut sheet dgn drawings.

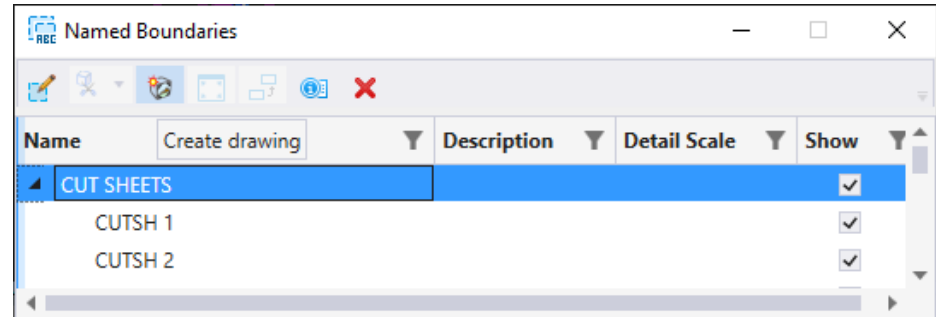


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Open the Cut sheet drawing. In *Drawing Workflow's, View* tab, Open the *Named Boundaries* tool box by clicking in the bottom right of the Named Boundary Group.

In the named boundaries box highlight the group name and then click *Create Drawing*.

In the Create Drawing box - Set the Name to GENSH 1... or PVTSH 1.... set the drawing seed to **Detail_2D_English_SheetOnly**.

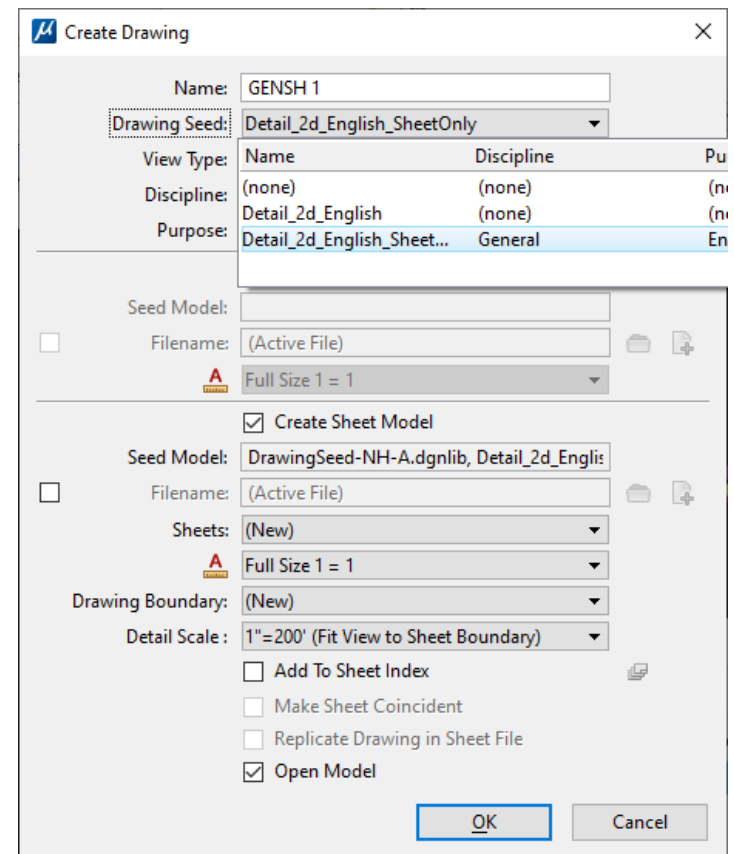


Change the sheet's *Annotation Scale* and the *Detail Scale* to **1"=100'**, the scale of the design model.

Check *Add to Sheet Index* and select the folder if desired, then click **OK**.

Results

This creates callout links in the *Default* model to each cut sheet, as well as a saved view of each sheet within the DGN and new Sheet models which are used for printing.



Additional Cut Sheet Work

Set the WorkFlow to *Task Navigation*, Select Task - *V8i Task Theme* then in the task list select the *NH_BDR* tasks.

Open each Sheet model in turn and perform the following tasks

Fit View, Use the task *Place cell - BDR-8x11 Landscape*

Place cell scale bar - *BDR-ScaleBar50*

Key-in **REFERENCE SET NESTOVERRIDES=NEVER** or in the reference file dialog box select the attached *Default* model and set the Display Overrides to **Never**. This will keep the display of all the sheets in sync with the display settings of the Default model. Move the Reference file up a little as needed.



P-7-5: Front Sheets

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Reference the Detail Drawings

Open the *Default* model of 12345fsc.dgn in MicroStation Connect. Attach the Existing Detail and Geometry drawing's appropriate models as reference attachments. OpenRoads Designer detail features are generally found in the *Default-3D* model of the drawings. Fit View.

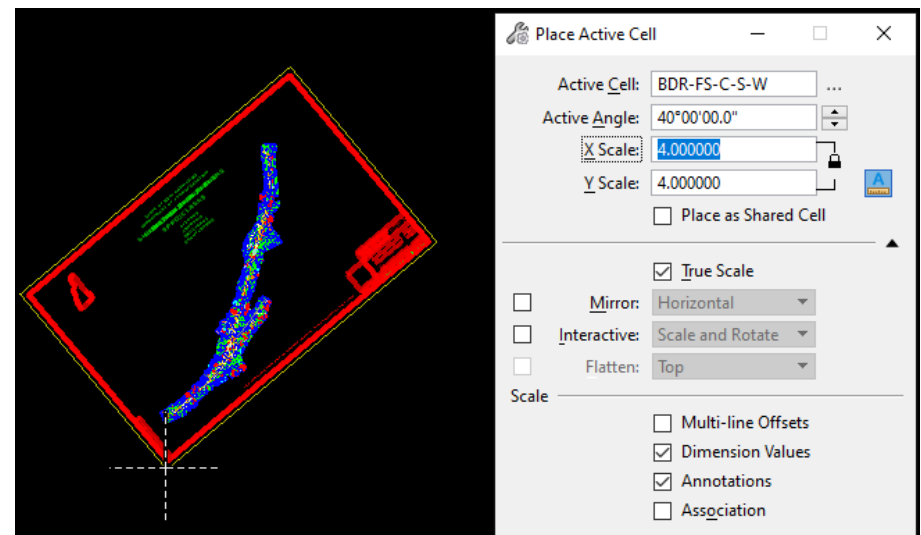
Bring up the *NH_FSH* Tasks by setting the *Select V8i mode* to **Dialog**. Use the first task - *Front Sheet Cells* - to open the cell selector N:\CADD\CADD\Connect-Workspace\Workspaces\NHDOT\Standards\Cell\NH_FSH.csf file. Cells can also be selected from the NH-CE-Borders.cel file directly.

Rotate and Scale the border to fit the Detail

Select the *BDR-FS-C-S-W* border from the Cell Selector. This will bring up the place cell command with that cell active. The default Annotation Scale should be 1"=50'. Use the X-Scale and Active Angle settings in the Place Active Cell tool to manipulate the cell to encompass the detail.

A large text label can be added outside the border indicating the rotation and scale used for reference. Note that the detail's scale will actually be the X Scale factor multiplied by the Annotation Scale, 1"=50' in this example. For the actual MicroStation scale multiply by 12. In this case the scale factor of 4 x 50 is 1"=200' x12 gives a MicroStation scale of 1:2400.

Rotate the view along the bottom edge of the Border cell.

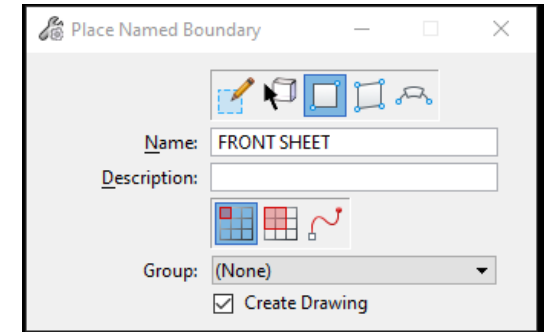




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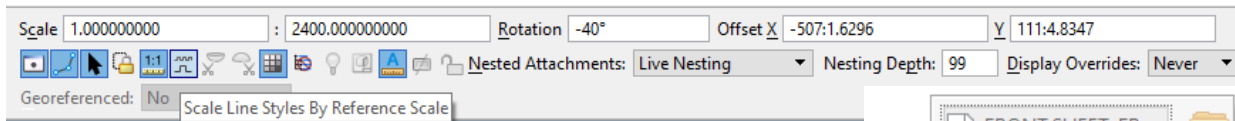
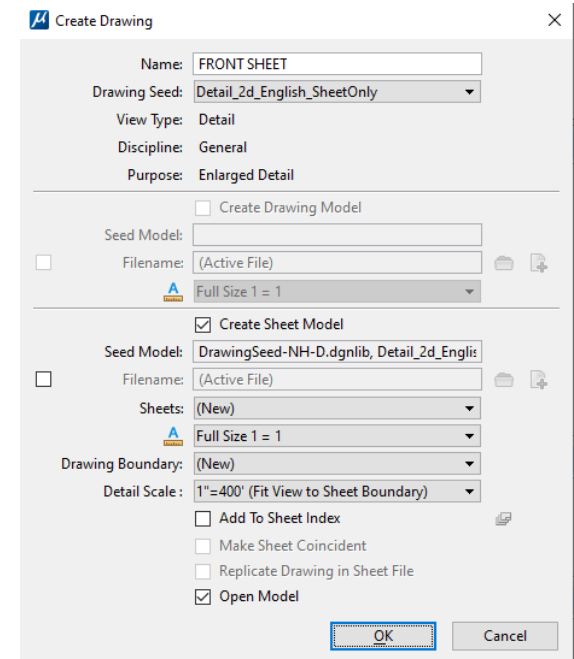
Place Named Boundary to Create the Sheet model

Use Task - *Place Named Boundary* or go to the Ribbon and open the View Tab and select the *Place Named Boundary* tool. Use **By 2 Points**, check the *Create Drawing* box, name it **FRONT SHEET**, place corners, and Accept.

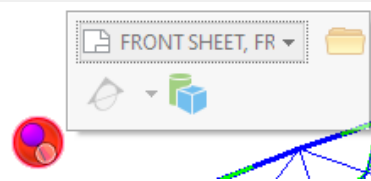


In the *Create Drawing* box - Set the *Drawing Seed* to **Detail_2d_English_SheetOnly** and set the Detail Scale to the value determined during the border's placement. Click **OK**.

When the sheet opens, open the reference files box and select the referenced *Default* model attachment. Verify the scale, Change the Display Overrides to **Never** and unselect the Scale Line Style by Reference Scale.



Re-open the *Default* model by using the magnifying glass link to the Design model or the models tab.



Work in the *Default* model – the Front Sheet Detail

Delete the border placed earlier. The outline of the Named Boundary should remain indicating where the sheet was created in relation to the detail. A closed Clip Boundary can be created around the detail if necessary. In the reference file dialog box highlight the referenced Detail drawing(s), then select the *Clip Reference* tool, method **Element**, select the element and accept.

Use *Level Display* to turn Levels on/off to match the Construction plan check list.



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Other Drawings can be attached as needed. These may include the ETXT drawing for road names and “To Town” labels, the PNT drawing for construction limits and the ERL\ERT drawings for property lines and boundaries. In some cases, it may be easier to copy needed graphics from the referenced drawings into the *Default* model, use the Tasks to set attributes and then use *Change Element Attributes* or *Change Text Attributes*. Or use the Tasks and create new notes for the construction limits and other text that are referenced. Shut off the display of referenced files or levels when done. Save Settings and Save.

Work in the FRONT SHEET sheet model

Open the sheet model. The detail from the referenced *Default* model should appear as it was just defined and saved. To finish the Front Sheet, add the following cells from the Cell Selector or the NH-CE-Borders.cel library using the *Place Cell* tool. These cells should be at 1 scale with the origin placed in the bottom left corner of the sheet model.

- BDR-FS-C-S-W
- BDR-FS-LOCMAPGIS
- BDR-FSC-FSTXT

The BDR-DOTNTH north arrow cell can be placed using a negative rotation of the referenced detail's Default model.

Create and Attach the GIS Location Map

Follow the procedure outlined in [create-gis-locmap.pdf](#) to create an 8½" x 11" location map PDF file. That document references seed GIS file called TOWN_12345_LOC.mxd which can be copied into the project from *N:\CADD\CADD\Connect-Workspace\Workspaces\NHDOT\Standards\Data*. Directions for attaching the PDF as a raster reference are covered in [attach-locmap-pdf.pdf](#).

Raster Reference the locmap pdf into the cell's placement points.

Clip the raster. Save Settings and Save the dgn.



P-7-6: Station Offset Macro - Ohio

Description:

This application is used to place station and offset labels relative to a selected MicroStation curvilinear element. It uses the active level and Text Style so they should be set appropriately before starting the macro.

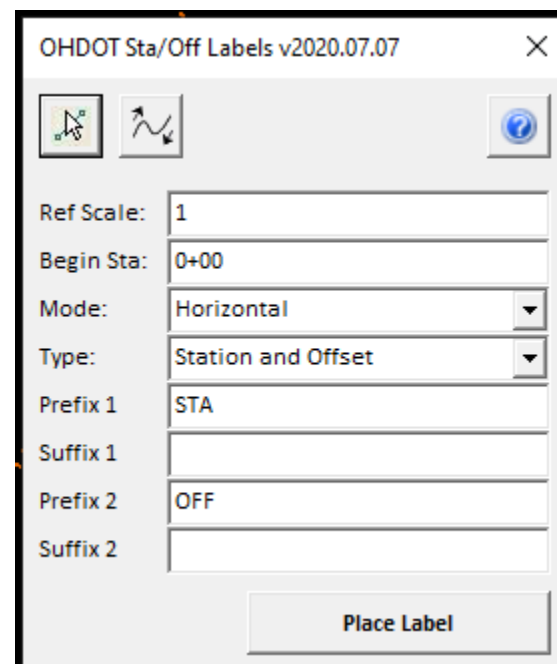
Opening the Application:

The application is loaded in MicroStation Connect Edition or OpenRoads Designer Connect Edition by issuing the key-in:

```
vba load OHDOT_PlanLabels.mvba;vba run OHDOT_PlanLabelsMain
```

Application Operation:

When the application is opened, a dialog like the example below is displayed.



The screenshot shows a dialog box titled "OHDOT Sta/Off Labels v2020.07.07". It contains several input fields and dropdown menus. The fields are: "Ref Scale:" with value "1", "Begin Sta:" with value "0+00", "Mode:" with a dropdown menu set to "Horizontal", "Type:" with a dropdown menu set to "Station and Offset", "Prefix 1:" with value "STA", "Suffix 1:" (empty), "Prefix 2:" with value "OFF", and "Suffix 2:" (empty). At the bottom right, there is a "Place Label" button. There are also icons for selecting a centerline element and reversing direction.



Select Centerline Element

Labels are placed relative to a selected MicroStation curvilinear element. This element can be an OpenRoads Designer alignment; however, the application does not read the OpenRoads data and cannot extract the beginning station value, or any station equation information, from the selected element.

The selected element is highlighted with a scarlet arrow displaying the direction of the element.



Reverse Direction

The direction of the selected element is reversed by clicking this button. Note that this reverses the direction of the element in memory only and does not reverse the direction of the selected element.



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Begin Station

Key in the beginning station value for the selected element.

Mode

This option is used to select the placement mode for the label. Two options are available: Perpendicular or Horizontal.

Type

This option is used to select the type of label to be placed. Four options are available: Partial Station, Full Station, Station and Offset, or User Text.

Prefix 1

This field is used to key-in a prefix for the first line of the label.

Suffix 1

This field is used to key-in a suffix for the first line of the label. To use \pm copy from here or use the place text command and select the symbol and copy if from the text editor box.

Prefix 2

This field is used to key-in a prefix for the second line of the label.

Suffix 2

This field is used to key-in a suffix for the second line of the label. To use \pm copy from here or use the place text command and select the symbol and copy if from the text editor box.

Place Label

Place Label

Select this button to initiate the placement process. Labels are placed at the cursor location with computed station and offset values, depending on the Type of label to be placed.



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P-7-7: Civil Labeling

Area Labels

Draw the area in a level that makes sense... Drain 1, Drain 2, ...

Open the *Drawing* workflow. Select the *Annotate* Tab. Select the *Place Label* tool, fill in the box as seen.

Hit on the shape/element to annotate. Then place the text. The text will be the shape's *level* name followed by the *area*.

If the text looks funny after placement, use *Edit Text*. Hit on it and then click away to accept. Not sure why it happens. If a leader is wanted use the first icon at the top left.

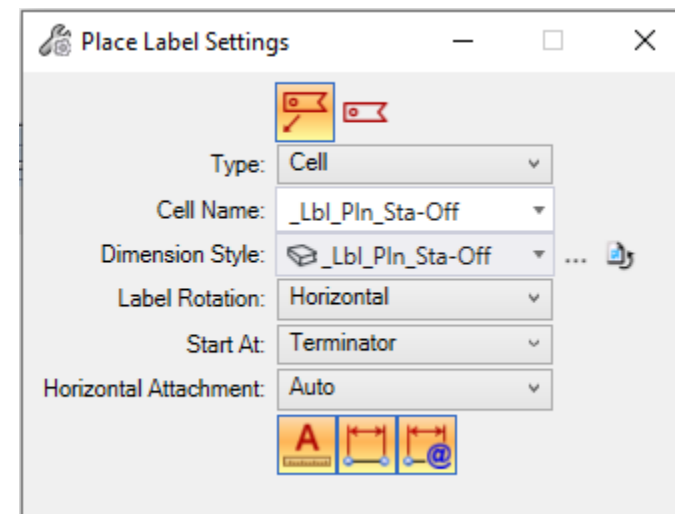
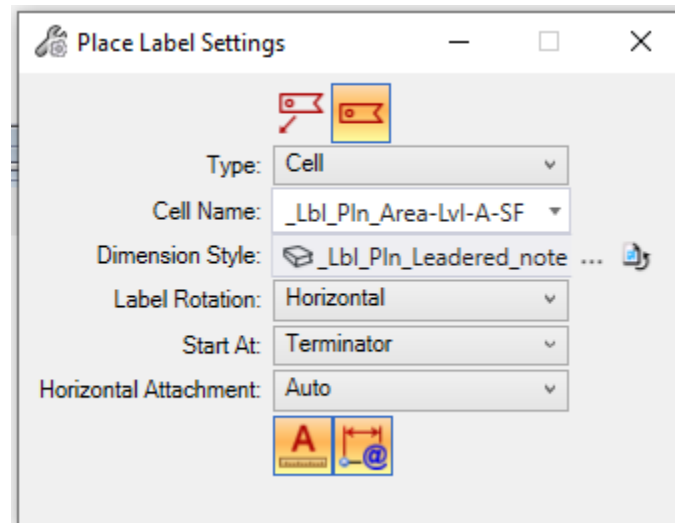
If the shape's level or area changes the text will update. The text used is for 50 scale. It will react to changes in annotation scale.

Station Offset Labels - ORD

Set the level to contain the label as the active level. Open the *Drawing* workflow. Select the *Annotate* Tab. Select *Place Label*, fill in the box as seen.

In the bottom left of your screen there will be a prompt to Identify Element. Hit on the Alignment or feature that the station and offset will come from. May want to tentative snap until the proper alignment is identified and then accept it.

Next select the Point Location and then the location of the flag. The *Start At* point can be changed from *Terminator* to *Flag* if desired.





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Borings and Labels

Features have been created for the various subsurface exploration types. The Bureau of Materials and Research will typically provide a list of station and offsets for layout.

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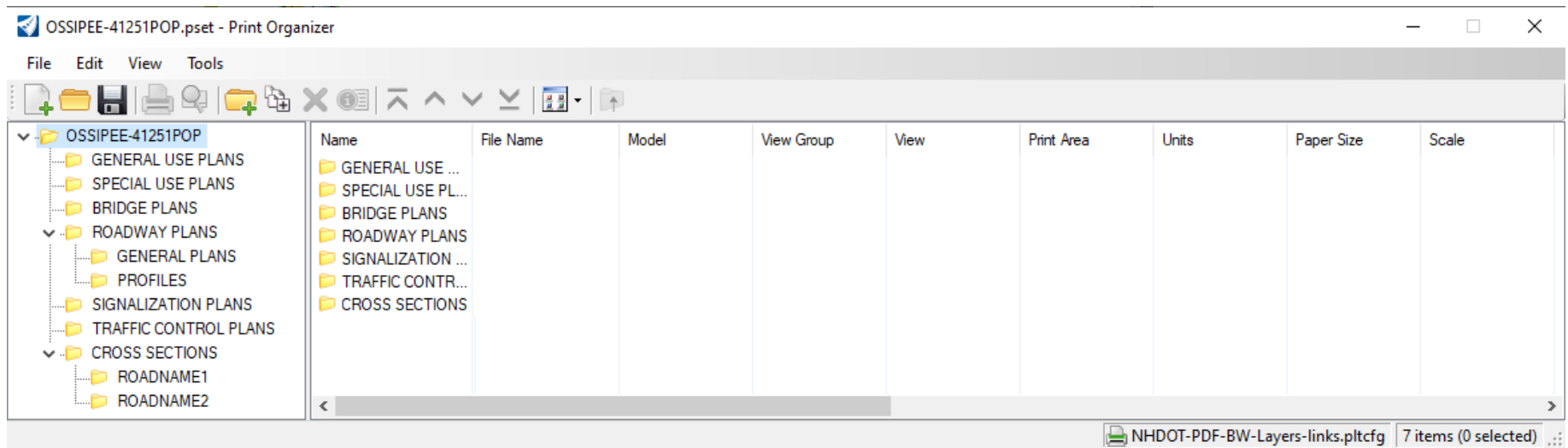
P-7-8: Print Organizer - Not Sheet Index

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Using Print Organizer

Print Organizer is a batch print utility designed for printing and reprinting sets of files, models, and Project Explorer links. A default .pset can be copied from N:\CADD\CADD\Connect_Seed_Project\Imperial - USSF\Cadd\CutSheets\00000POP.pset. This file contains folders to put the sheets into so they are organized like the Sheet Index. Delete unnecessary folders and populate the ones needed.

1. From MicroStation Connect or OpenRoads Designer, Open Print Organizer *File > Print > Print Organizer*. Click on the Open button or *File > Open* and select the pset above that you copied into the project's *PlanPDFs* folder.

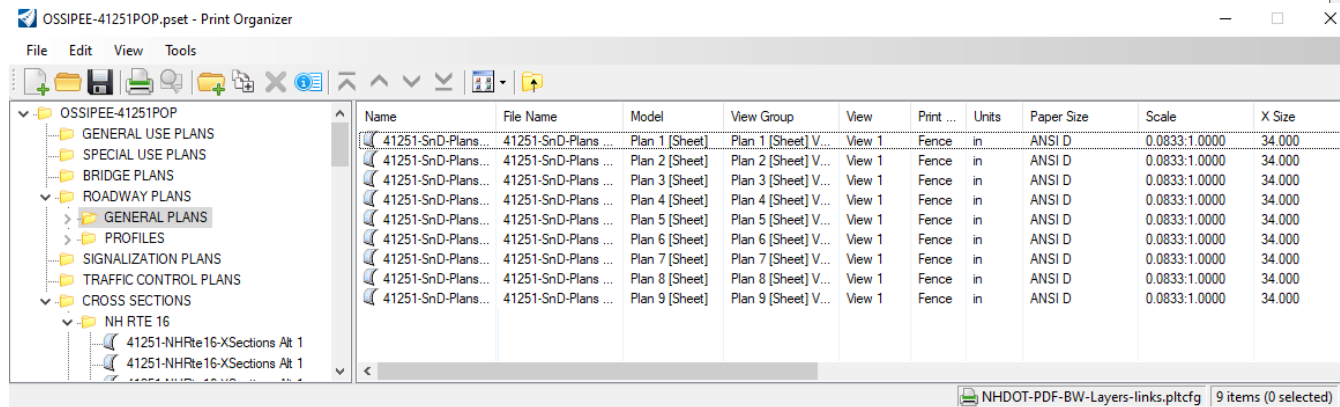
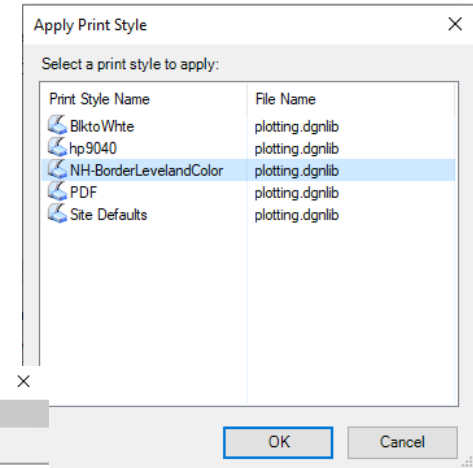


Screen capture of Print Organizer



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- It may be beneficial to select the printer icon and select your printer before adding sheets. From the print box click on Printer Setup. Select the NHDOT-PDF-BW-Layers-links.pltcfg file by clicking on the ... and finding it in the list. OK then Cancel after selecting the printer.
- Select a folder and add files to be printed in Print Organizer using the *Add Files* Button, *File > Add Files to Set*. Click **ADD** to open the *Select Files Box*, browse and add files. Multiple files can be added from the same folder using <CTRL> or <Shift>. Click **Done** to add them to the *Create Print Definitions* box. Click **ADD** again to add files from a different folder. After files have been added, select a Print Style Definition. Use **BorderLevelandColor** when adding OpenRoads Designer or MicroStation Connect plan dgnos containing border cells. Select **OK** and all models from the selected DGN files which contain a border are added to the Print Organizer window. This may take some time if adding many models.



Screen Capture of Print Organizer with files

- Delete any models which were added that do not have Borders in them. Usually these are *Default* models and can be identified from the Model, Print Area and Scale columns as the scale will be odd due to it not having a border. Highlight and hit on the X to remove from the .pset.
- Files can be placed in any order desired by dragging them or selecting them and using the move up or down Icons on the tool bar. Only one file can be moved at a time so if files were placed in the wrong folder it may be easier to remove them and then re-add into the correct folder.



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6. Previews can be generated by selecting all of the files and clicking *File > Print Preview*. If multiple files were selected, you can use the arrows to view previous/view next. It does take a little time for the preview to be generated.
7. If not already named, Save the .pset using *File > Save As*, select the directory. Typically, these files will be stored in the project's \CADD\PlanPDFs\ folder. When naming the file, be aware that the pset file name is used to generate the plot names. For final project pdf prints, the pset should contain all project sheets in order, be stored in a \POP subfolder and be named PRJNAME-12345POP.pset.
8. To print the files, select the desired files or the top level folder in the left pane if printing all the sheets. *File > Print* will bring up the Print Dialog box. The print driver selection can be re-defined here. When creating separate pdf's the Output File Names can be selected as well as the output directory.
9. Output File Names use *Named Expressions* and can be defined in a variety of ways. By default, it uses the format of

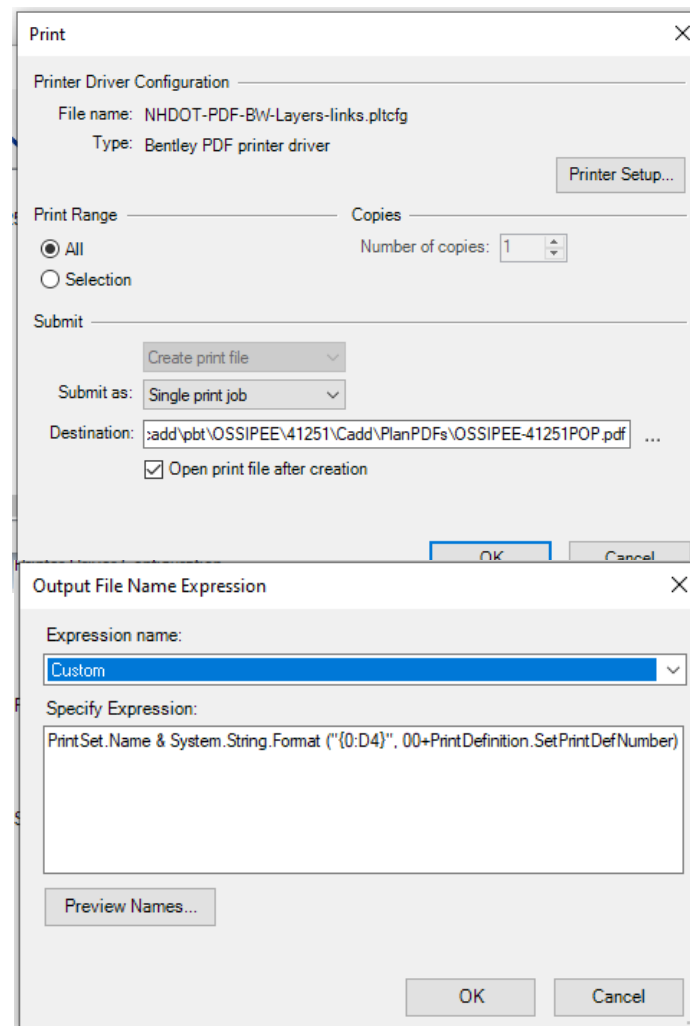
<print counter> - <print set name>

to name the files. Other expressions can be selected and previewed here. For the final PDF plan set, set the *Expression name:* to **Custom** and *Specify Expression* as:

***PrintSet.Name & System.String.Format ("{0:D4}",
00+PrintDefinition.SetPrintDefNumber)***

Click the *Preview Names* button to confirm that the files will be named as expected. Click **OK** when ready. See *Help > Contents > Named Expressions* for documentation on creating your own expressions.

10. Select (all) files and click **OK** to print the files.
11. The Message Center should indicate all the prints generated. It may be necessary to scroll down through the list to find any issues.





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Automatic Sheet Numbering

The use of Named Expressions has been expanded to include automatic sheet numbering. The variables \$PSETNO\$ and \$PSETTOT\$ have been defined in the NHDOT-PEN.TBL and are used on updated border cells. This allows the total number of sheets and the sheet number to be extracted from the pset file. All project plan sheets must be included in the pset for the numbering system to be correct. Additional tasks and filters have been created to place borders in drawings with the PSET variables displayed. Additionally, you can edit the sheet number or total sheets text block to the variables to use them. Previously used sheet number levels would need to be shut off if copying the PSETSHTNO cell onto old borders.

Final PDF Prints

To print a single PDF file with all sheets, change the *Submit as:* from **Separate print job** to **Single print job**. A multipage PDF will be created with the same name as the saved PSET file. Open the combined PDF and review all the sheets. It is easier to look through this combined PDF instead of opening every individual PDF.

The final plan prints should be individual PDF's named for the pset and sheet number as noted above. These pdf files can be stored in a \POP folder under the CADD\PlanPDFs\ directory. A 12345ROW.pset can be created for PDF ROW plans in the same manner.

Print styles

The print style is set in the *Create Print Definitions* box after using *Add* and selecting files to be printed but before hitting *OK*. Click on the magnifying glass and set the desired *Print Style*, hit *OK* and then *OK* again to create the print definitions using the selected style. The print style can be changed later by selecting files in the *Print Organizer* view pane and then selecting *Tools > Apply Print Style*.

Commonly used Print Styles:

- **BorderLevelandColor** - used for cut sheet dgn's with multiple models with the border in them
- **BlktoWhite** - Used for Cutsheet models containing aerials - defines pen table nhdot-pen_white2.tbl and sets Rasterized setting
- **PDF** – will not rotate print area of portrait xsections



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Print Styles - Manual Settings Print organizer - Fence - define from shape settings

When adding drawings to be printed, select the *Manually Specified Options* button to define your own print definition attributes. The *BorderLevelandColor* print style settings are shown to the right, with the addition of the *Main* tab being set to *View 1*. These are all settings that will need to be specified by the user when Manually specifying settings. Other common settings to adjust may be the pen table, settings for user defined borders, rotation of the Fence alignment to X or Y direction, paper size, or the Display list.

A print style could also be created through *Tools > Define Print Style* saved and then applied to a pset rather than manually changing settings. The advantage is that it could then be exported and used in other dgs.

Other Documentation / Information

After opening *Print Organizer* you can open saved .pset's and .job files using the *File > Open* option and selecting the .pset or .job set file. (may need to toggle the Files of type box to see .job files) By saving them all in the CADD\PlanPDFs\ directory of the project they will be easier to locate when needed.

If when adding a file no sheets are added, open the file, open the models dialog box. The *borderlevelandcolor* Print set definition works on cells (shapes) in the master file whose outside edge is color=84, lw=0, and ls=0.

For a more comprehensive look at the Print Organizer utility select *Help > Contents > Working with Complete Designs > Printing > Print Organizer*

Also on the Bentley Communities site MicroStation V8i Print Organizer - Getting Started Guide