



2015
Design Training
Expo

Migrating to SS4

Software Release Schedule

- July 2015
 - FDOTSS2 MR4
 - FDOTSS4
 - FDOT2015.C3D MR2
- January 2016
 - FDOTSS4 MR1
 - FDOT2015.C3D MR3

Maintenance of FDOTSS2 will end after July 2015 release

- This means that any changes to design criteria (Design Standards, Plans Preparations Manual, Basis of Estimates, ...) after July 2015 will only be available in FDOTSS4 and FDOT2015.C3D.



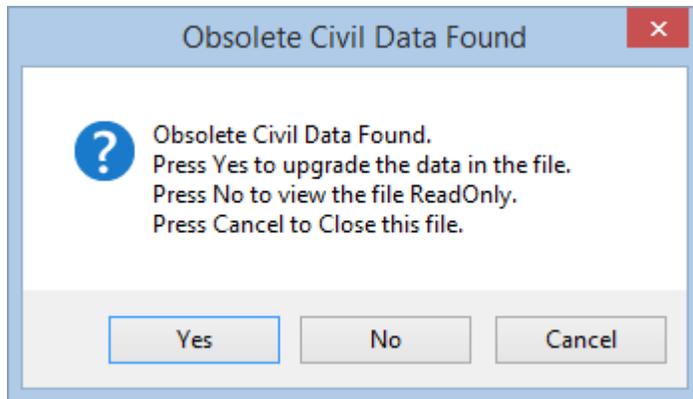
What's Different between SS2 and SS3

- Bentley's new "Open Roads" technology in GEOPAK Select Series 3 (SS3) and later will require existing Corridor Modeling projects be imported.
- The Corridor Modeling dialog has been removed.
- The Roadway Designer dialog has been removed.
- Open Roads reads and saves data in the DGN file instead of external files like the GPK, ALG,ITL, IRD, and TIN.
- Features replace the Drafting Standards & Styles.



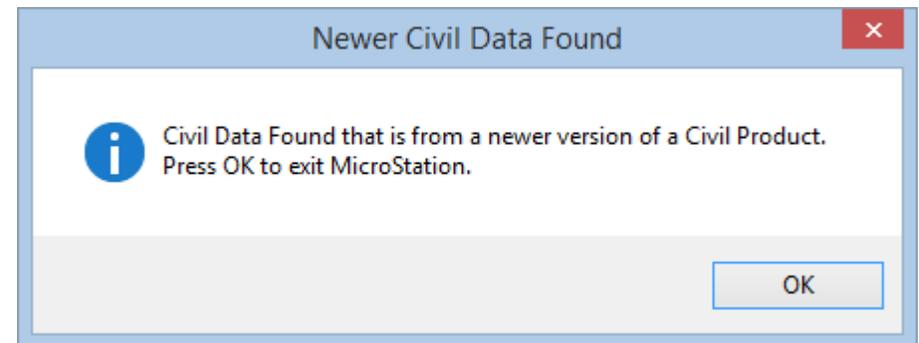
What's Different between SS3 and SS4

- Many bug fixes. Testers and other agencies report it being more stable.
- The primary change to GEOPAK in SS4 is a updated Civil Model format. The Civil Model was updated to provide a direct data exchange with Trimble via I-Models.



- Only files containing "Civil Data" created using the OpenRoads technology require the upgrade

- Once upgraded to SS4, a file cannot be opened again in SS3.



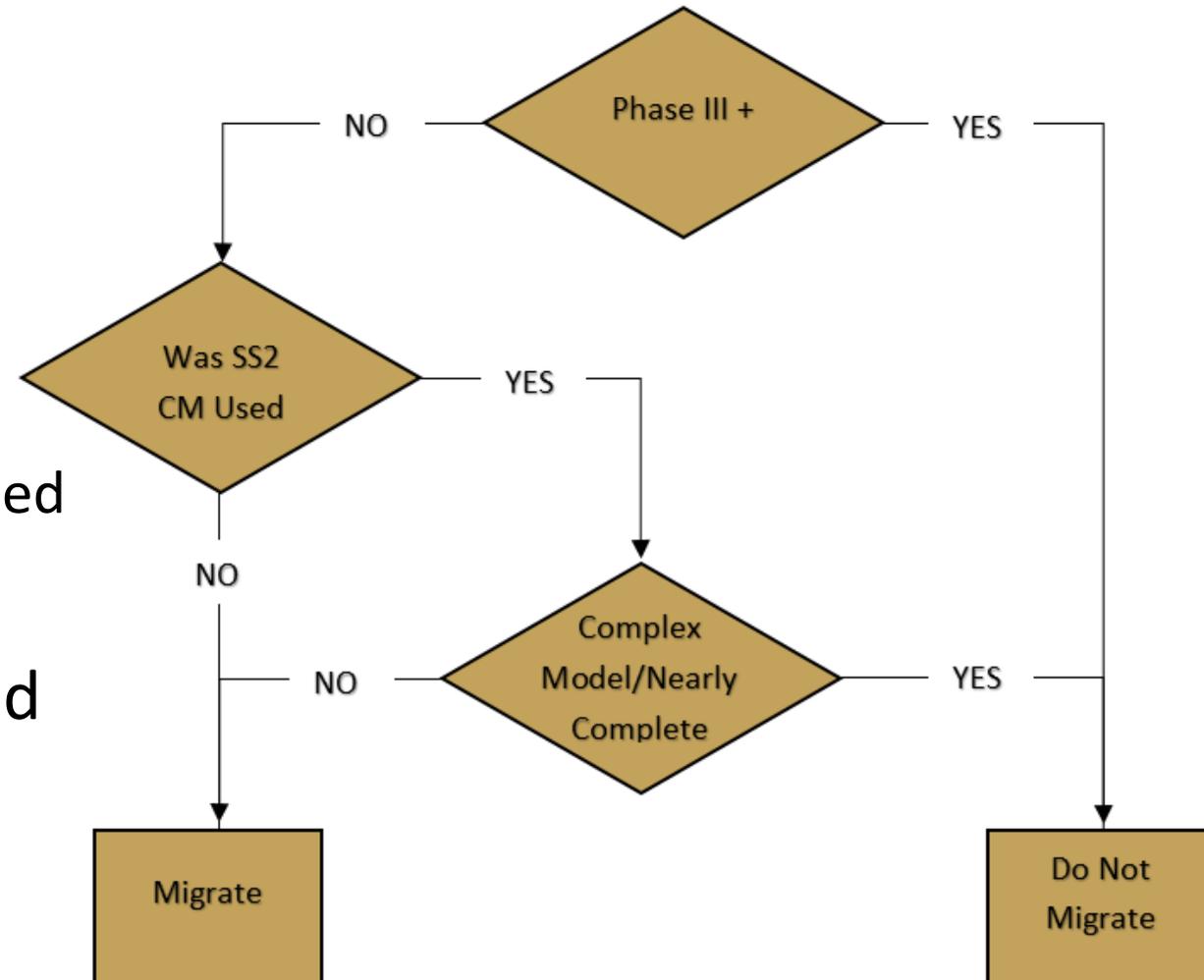
- SS4 files can be opened in SS2 but the Civil intelligence is lost.



Software Upgrade Consideration

Evaluate each project individually

- There are two primary considerations
 1. Phase of Project
 2. Was SS2 Corridor Modeling applied
- Any project in early phases should be brought forward.



Bringing SS2 Models Forward

When you decide to bring a model started in SS2 forward there are options.

- Convert only ITL and ALG files the recreate corridors in SS3\SS4 using templates created in SS2
 - Basically a search and replace of old “Drafting Standards” to new “Civil Features”
- Convert everything (IRD,ITL, and ALG) and import SS2 corridors into SS3\SS4
 - Importing corridors brings in things like:
 - Template Drops
 - Key Stations
 - Point Controls



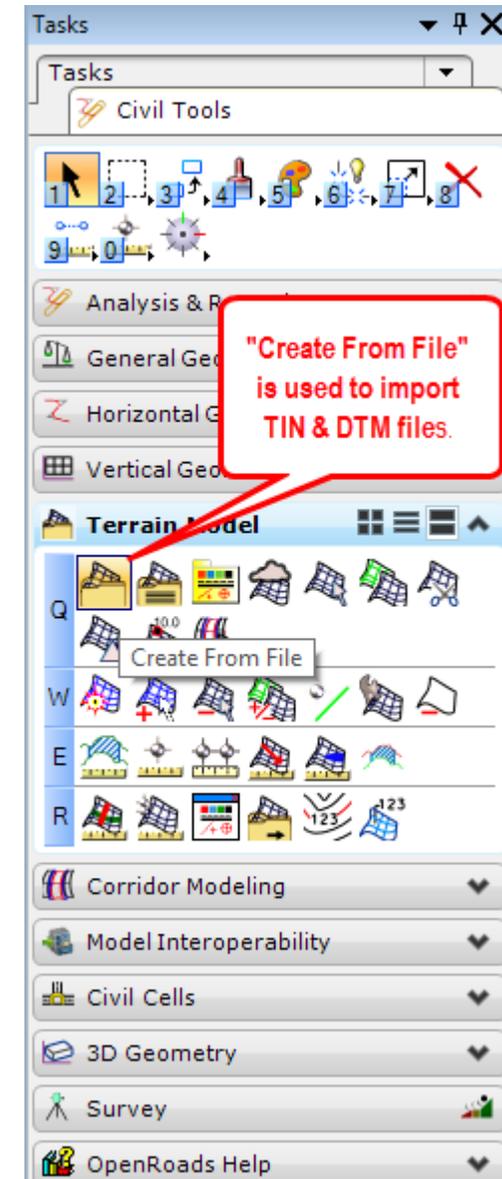
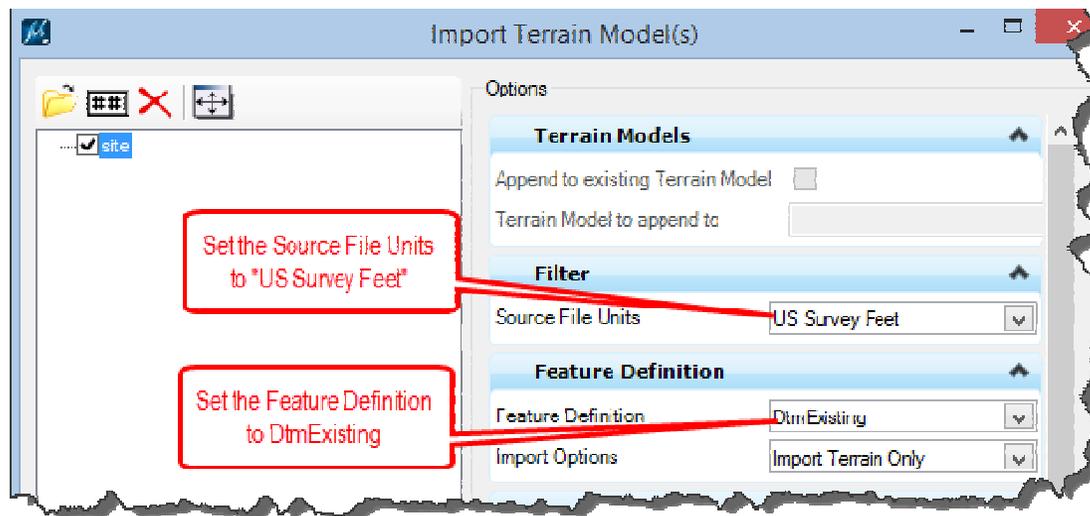
Migration Workflow

1. Create new GDTMRDxx.DGN
 - a) Import existing terrain.
2. Create a new ALGNRDxx.DGN
 - a) Use D&C Manager to plot Stations and Tics for each scale
3. Create DSGNRDxx.DGN
 - a) Reference GDTMRDxx.DGN
 - b) Reference ALGNRDxx.DGN
 - c) Convert ITL and IRD files with FDOT Conversion Tools.
 - d) Import Geometry from GPK file
 - e) Set the Feature for Imported Chains
 - f) Set profile for each alignment to "Active"
 - g) Copy in MicroStation Elements
 - h) Set Features on Corridor Targets
 - i) Attach Project ITL
 - j) Arrange views to see 2D plan and 3D views
 - k) Review Corridor Dependencies
 - l) Import IRD Files
 - m) Add Corridor References



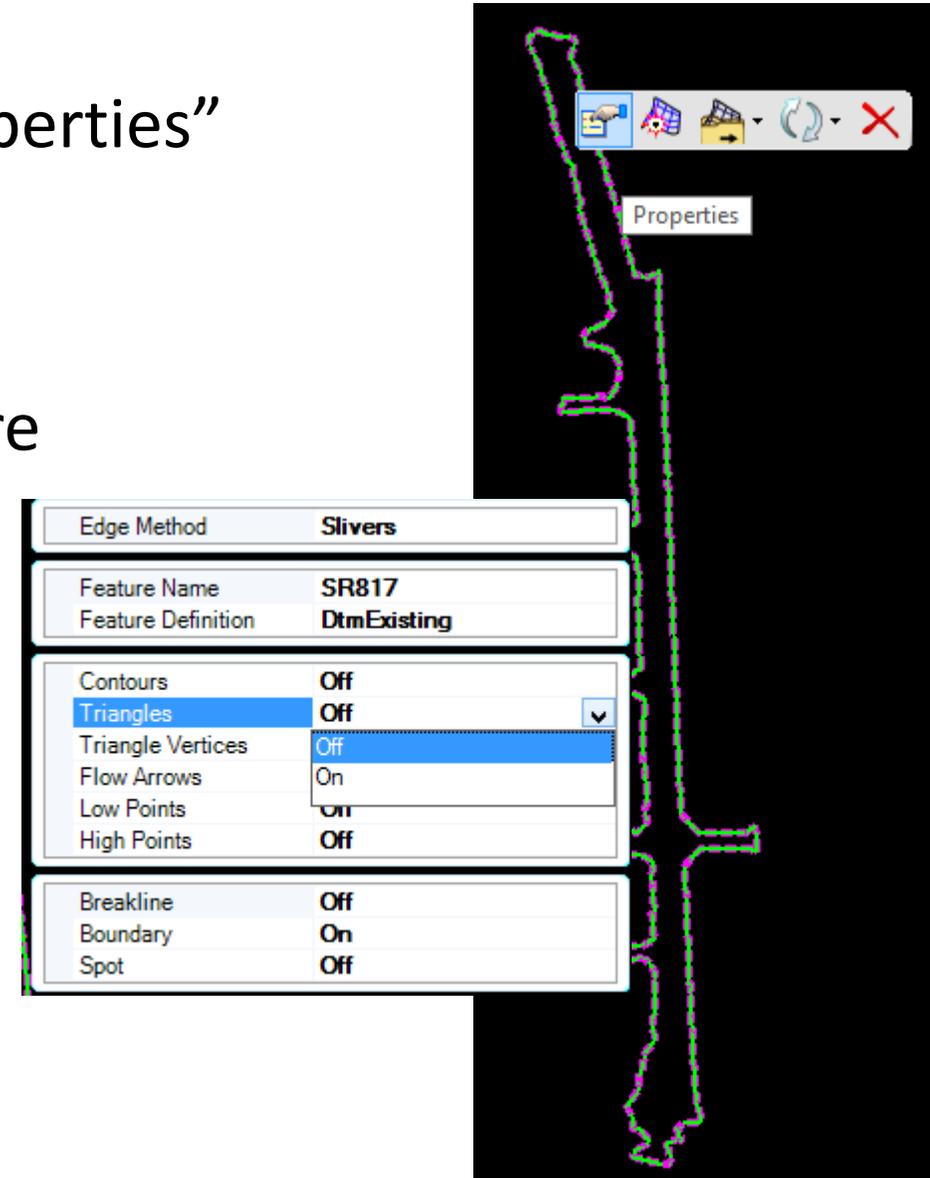
1. a) Import Existing Terrain

- From the “Civil Tools” Workflow select “Terrain Model > Create From File”
- When prompted browse for the TIN or DTM to be imported.
- On the Import Terrain Models dialog select the appropriate Feature Definition and Click Import.



Terrain Properties

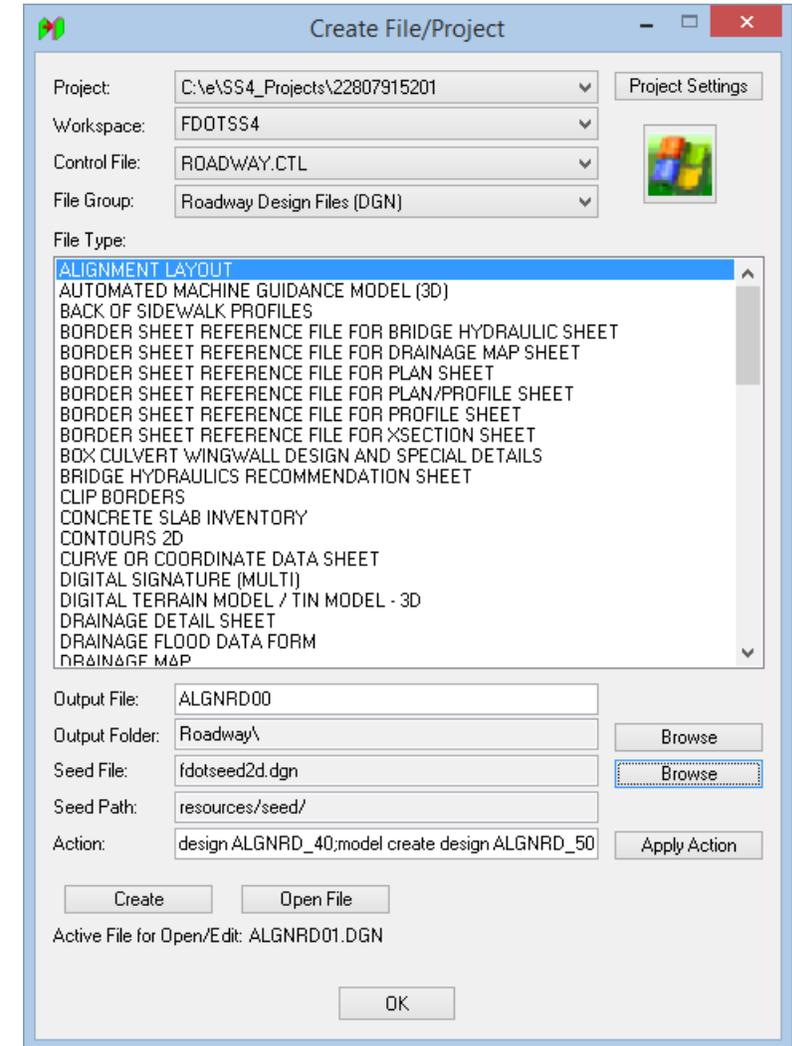
- Hover over the terrain hull and select “Properties” from the context menu.
- Properties of the terrain such as the Feature Definition and if Triangles, Contours, and such are displayed can be adjusted here.
 - These properties can also be adjusted using Element Info and Project Explorer.



2. Create a New ALGNRDxx.DGN

The ALGNRD file will contain the stations, labels, and tick marks only. The chains will be plotted into the DSGNRD file.

- From the FDOT menu select “Actions > Create/Edit File”
- From the Roadway Design Files File Group select Alignment Layout
- Click “Create” and then Click “Open File”



2. a) Create Stationing and Tic Marks

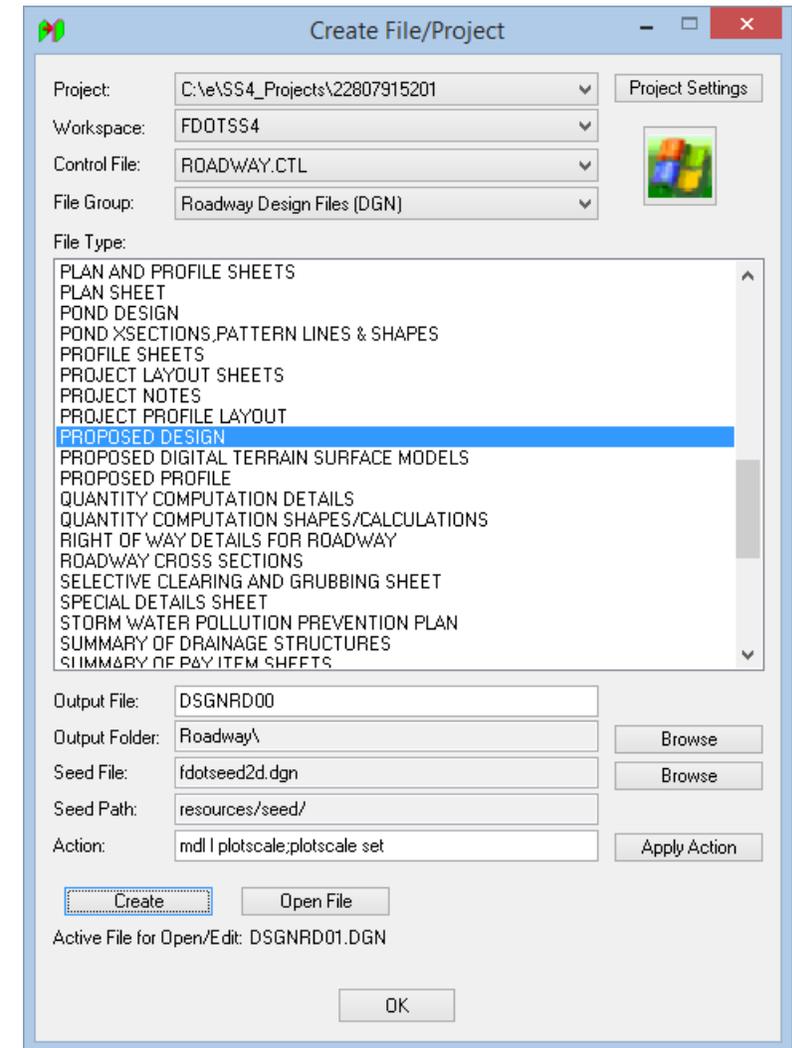
- Using D&C Manager, plot the stations, labels, and tick marks.

The screenshot displays the Bentley Design and Computation Manager (D&C Manager) interface. The main workspace shows a plan view of a roadway with stationing and tick marks. The stationing is labeled with numbers 11, 12, 13, and 14. A specific stationing point is labeled 'PI STA. 7+471.58'. The 'Draw Plan & Profile' dialog box is open, showing the 'Item' as 'CL Centerline of Construction (with stationing)', 'Element Type' as 'Stationing', and 'Label Scale' as '50'. The 'Key-in Points' field is empty. The 'Select Chain to Draw' list includes: 200, BL817, IMPORT, PETER, PETER_NE, PETER_NW, PETER_SE, PETER_SW, PGL-LT, and PGL-RT. The 'Tick Marks' section is checked, with 'Tick Marks' and 'Tick Mark Stations' selected. The 'PC/PT/TS/CS/SC/ST/PI Labels' section is unchecked. The 'PI Labels' section is checked. The 'Small Ticks' dropdown is set to 'Ticks Left; Labels Left'. The 'Large Ticks' dropdown is also set to 'Ticks Left; Labels Left'. The 'Control Point Labels' dropdown is set to 'As Per Preferences'. The 'Design and Computation Manager' window is also open, showing a tree view of the project structure. The tree view includes: Topography, Structures, RW Items for Roadway Plans, Roadway Design, Plan Features, AS Archeological Sites, BLDGP Buildings (Proposed), BSW Back of Sidewalk, CI COGO Information, CL Centerline of Construction (with stationing) (highlighted), C&CD Curve & Coordinate Data, CZ Clear Zone, DITCH Ditch Line, DWY Driveway, Lane, Turnout, and EFS1 Edge of Front Slope 1 for Criteria.

3. Create new DSGNRDxx.DGN

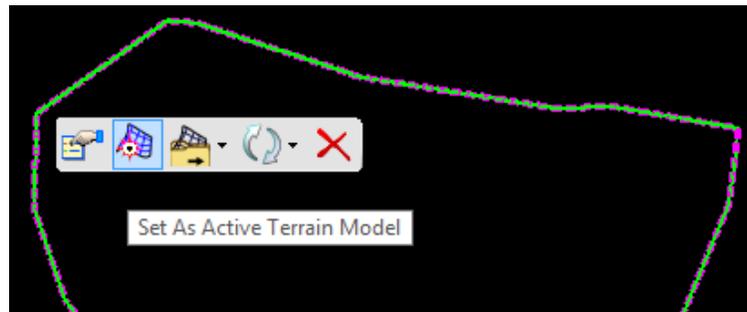
The DSGNRD file will contain the proposed design elements and corridors.

- From the FDOT menu select “Actions > Create/Edit File”
- From the Roadway Design Files File Group select Proposed Design
- Click Create and then Click Open

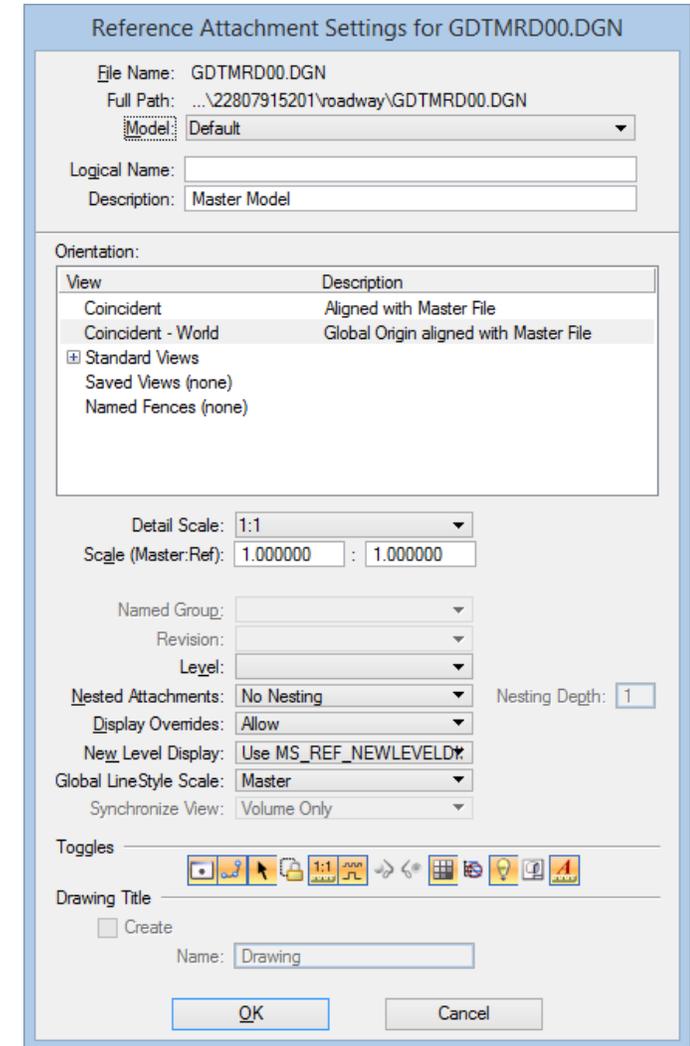
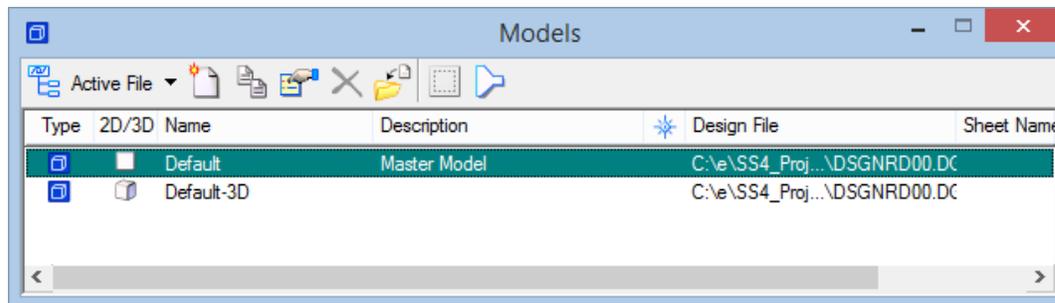


3. a) Reference GDTMRDxx.DGN

- Reference the GDTMRD file.
- After fitting the view, select & hover over the terrain hull then select “Set As Active Terrain Model” from the context menu.

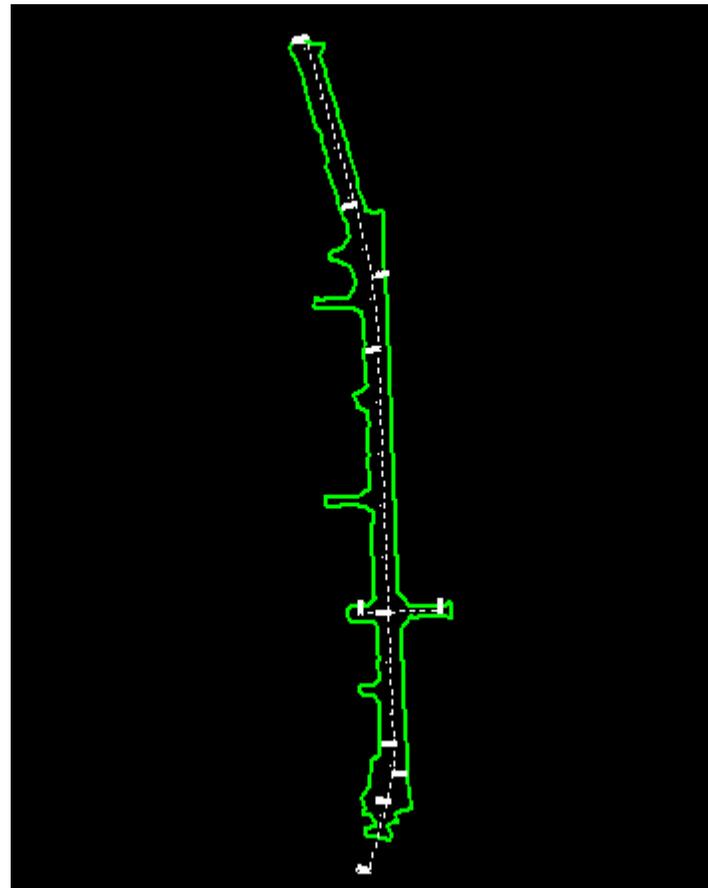


- This will cause a 3D model to be created.



3. b) Reference ALGNRDxx.DGN

- Reference the ALGNRD file.



Reference Attachment Settings for ALGNRD00.DGN

File Name: ALGNRD00.DGN
Full Path: ...\\SS4_Projects\\22807915201\\roadway\\ALGNRD00.DGN
Model: ALGNRD_50

Logical Name:
Description: Global Origin aligned with Master File

Orientation:

View	Description
Coincident	Aligned with Master File
Coincident - World	Global Origin aligned with Master File
Standard Views	
Saved Views (none)	
Named Fences (none)	

Detail Scale: 1:1
Scale (Master:Ref): 1.000000 : 1.000000

Named Group:
Revision:
Level:

Nested Attachments: No Nesting Nesting Depth: 1
Display Overrides: Allow
New Level Display: Use MS_REF_NEWLEVELD*

Global LineStyle Scale: Master
Synchronize View: Volume Only

Toggles

Drawing Title
 Create
Name: Drawing

OK Cancel

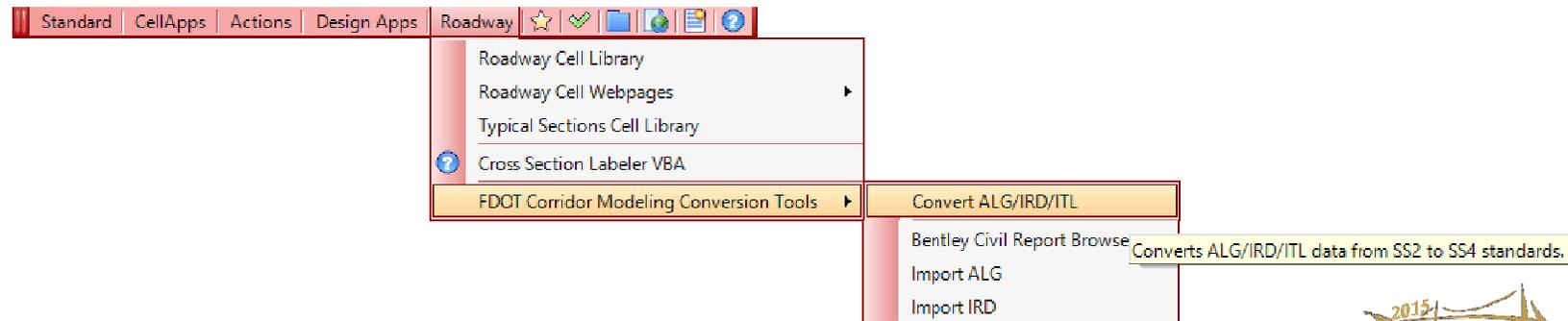
3. c) Convert ITL and IRD files

In an effort to better organize the elements produced in 3D design some of the Styles used in FDOTSS2 were renamed and several new SS3 Features were created.

The ALG, IRD, and ITL files, where these names are stored, will have to be updated before importing or the imported elements will be on the “Default” level.

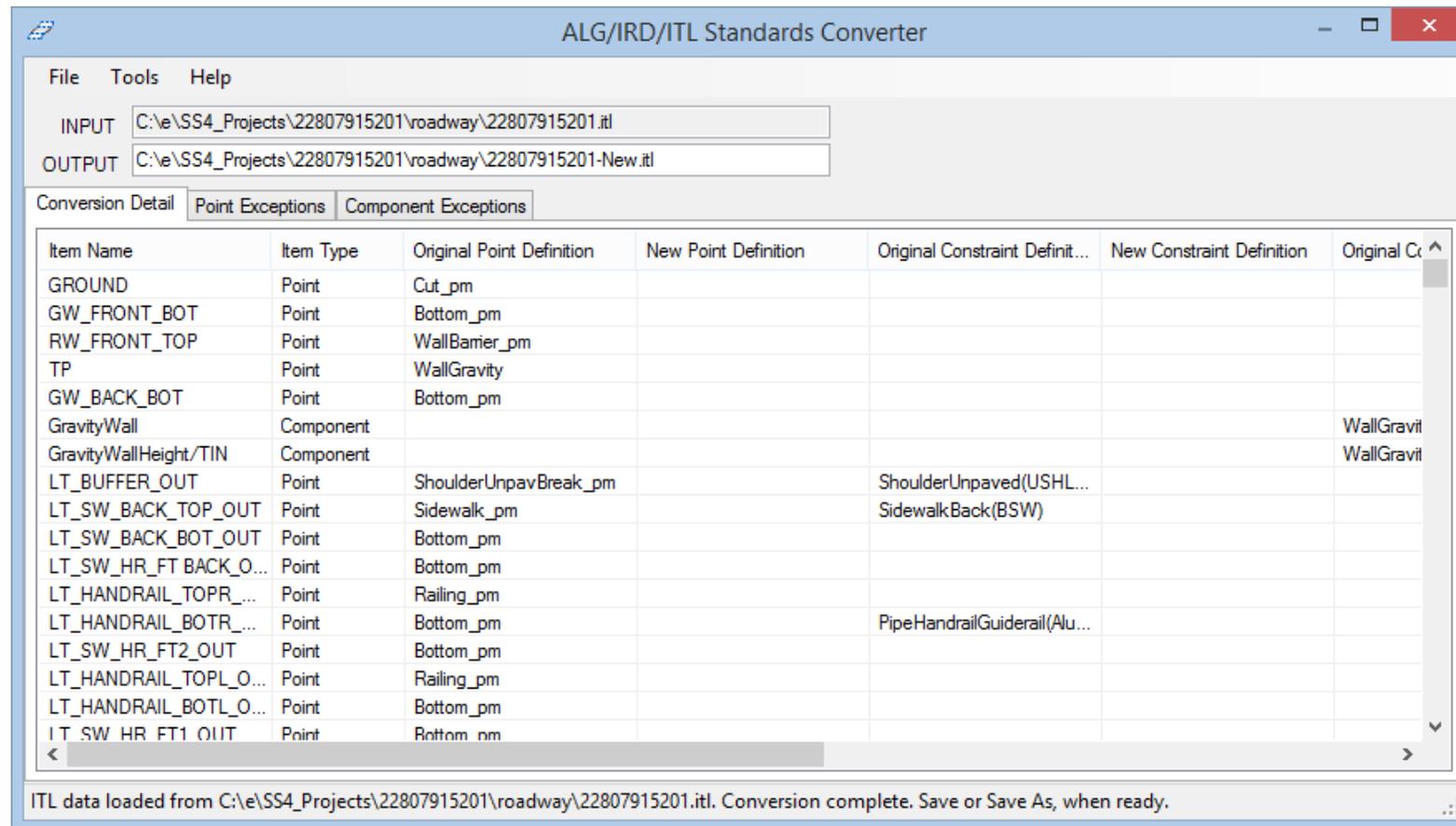
FDOT developed a tool to automat this process.

From the FDOT Menu select Roadway > FDOT Corridor Modeling Tools > Convert ALG/IRD/ITL”



ALG/IRD/ITL Standards Converter

- ALG/IRD/ITL Standards Converter uses an Excel file which renames old FDOTSS2 Styles to new FDOTSS3 Features.



Item Name	Item Type	Original Point Definition	New Point Definition	Original Constraint Definition	New Constraint Definition	Original Co...
GROUND	Point	Cut_pm				
GW_FRONT_BOT	Point	Bottom_pm				
RW_FRONT_TOP	Point	WallBarrier_pm				
TP	Point	WallGravity				
GW_BACK_BOT	Point	Bottom_pm				
GravityWall	Component					WallGravit
GravityWallHeight/TIN	Component					WallGravit
LT_BUFFER_OUT	Point	ShoulderUnpavBreak_pm		ShoulderUnpaved(USHL...		
LT_SW_BACK_TOP_OUT	Point	Sidewalk_pm		SidewalkBack(BSW)		
LT_SW_BACK_BOT_OUT	Point	Bottom_pm				
LT_SW_HR_FT BACK_O...	Point	Bottom_pm				
LT_HANDRAIL_TOPR_...	Point	Railing_pm				
LT_HANDRAIL_BOTR_...	Point	Bottom_pm		PipeHandrailGuiderail(Alu...		
LT_SW_HR_FT2_OUT	Point	Bottom_pm				
LT_HANDRAIL_TOPL_O...	Point	Railing_pm				
LT_HANDRAIL_BOTL_O...	Point	Bottom_pm				
LT_SW_HR_FT1_OUIT	Point	Bottom_pm				

Exceptions

- Items not covered by the Excel file are called Exceptions and can be addressed on the “Point Exceptions” and “Component Exceptions” tabs.

ALG/IRD/ITL Standards Converter

File Tools Help

INPUT C:\e\SS4_Projects\22807915201\roadway\22807915201.itl

OUTPUT C:\e\SS4_Projects\22807915201\roadway\22807915201-New.itl

Conversion Detail Point Exceptions Component Exceptions

Point Name	Point Definition	Constraint Definition	Path
LT_TSSWL_TOP_IN3	Bottom_pm	TrafficSeparatorType(4 Feet)	-> SR817 Components -> FDOT Standard Urban Median
LT_TSSWL_EDGE1_IN	Bottom_pm	TrafficSeparatorType(4 Feet)	-> SR817 Components -> FDOT Standard Urban Median
LT_TSSWL_TOP_IN2	Bottom_pm	TrafficSeparatorType(4 Feet)	-> SR817 Components -> FDOT Standard Urban Median
LT_TSSWL_EDGE2_IN	Bottom_pm	TrafficSeparatorType(4 Feet)	-> SR817 Components -> FDOT Standard Urban Median
LT_TSSWL_EDGE_IN	Bottom_pm	TrafficSeparatorType(4 Feet)	-> SR817 Components -> FDOT Standard Urban Median
LT_TSSWL_TP_IN	Bottom_pm	TrafficSeparatorType(4 Feet)	-> SR817 Components -> FDOT Standard Urban Median
RT_TS_LT_EDGE2	TrafficSeparator_pm	TrafficSeparatorType(4 Feet)	-> SR817 Components -> FDOT Standard Urban Median
RT_TS_LT_EDGE1	TrafficSeparator_pm	TrafficSeparatorType(4 Feet)	-> SR817 Components -> FDOT Standard Urban Median

1. Select items to be updated

2. Select the new definitions to be applied

3. Click Apply

Items not automatically remapped by the Excel file can easily be adjusted before saving a new file.

Point Definition Constraint Definition

Original Definition [Dropdown]

New Definition Bottom_pm TrafficSeparatorType(4 feet) Apply

ITL data loaded from C:\e\SS4_Projects\22807915201\roadway\22807915201.itl. Conversion complete. Save or Save As, when ready.

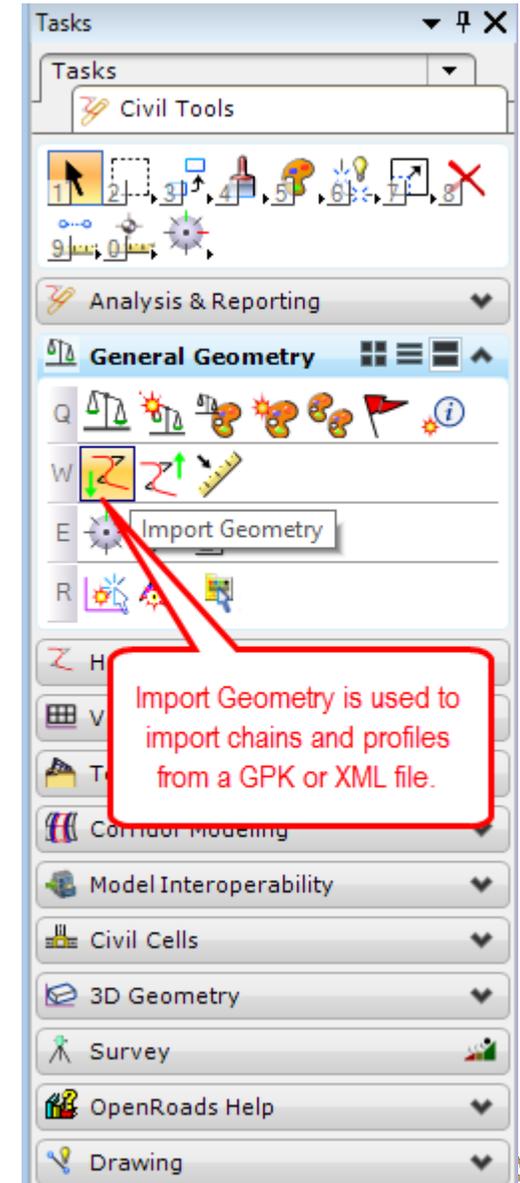
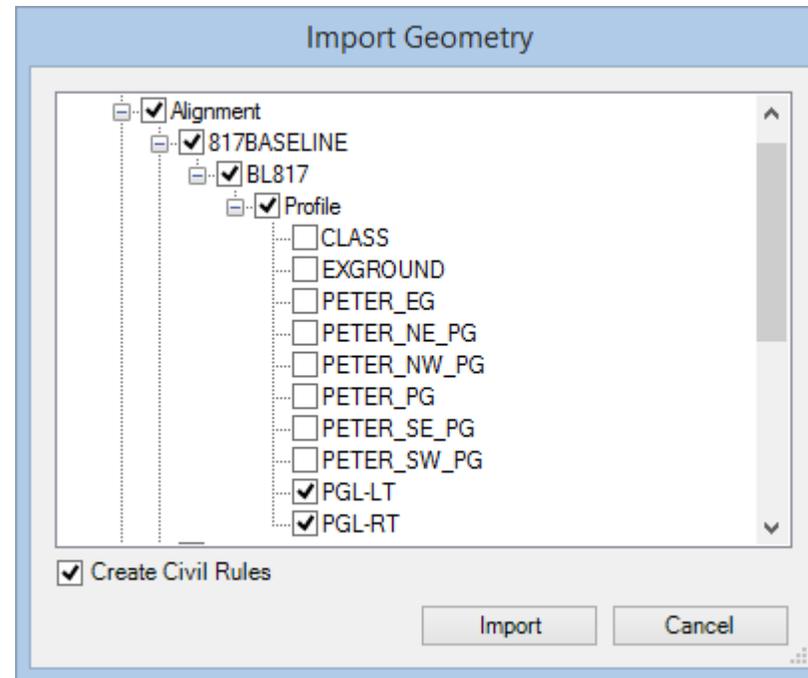
3. d) Import Geometry from GPK file

- From the “Civil Tools” Workflow select “General Geometry > Import Geometry”
- When prompted browse for the GPK file.

On the Import Geometry select the chains and profiles to be imported.

Select “Create Civil Rules”

Click Import



3. e) Set the Feature for Imported Chains

Chains imported from the GPK do not have a Feature Definition so one will need to be applied once imported.

- Select, then hover over the chain to select the Properties icon from the context menu.
- Select a Feature Definition from the drop down.

Properties

Start Point	902067.211800,642241.79
End Point	901458.316000,650266.40
Length	8145.630855

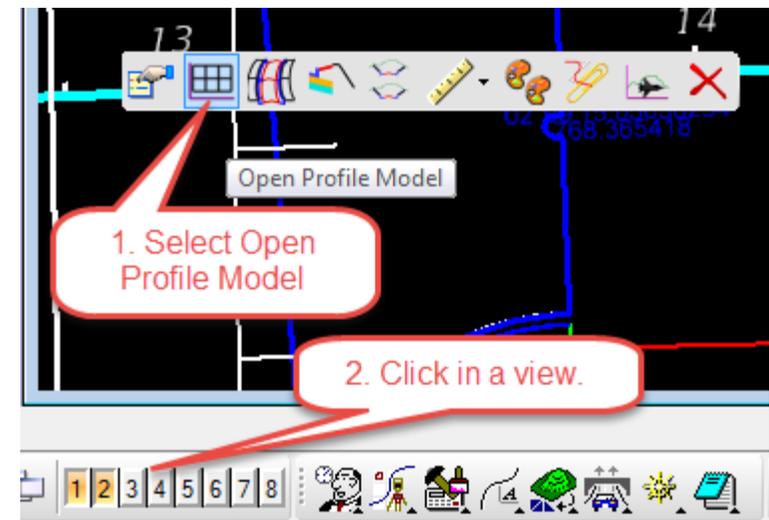
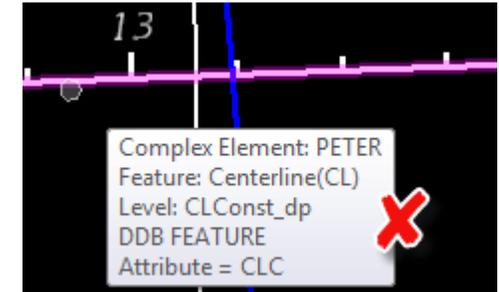
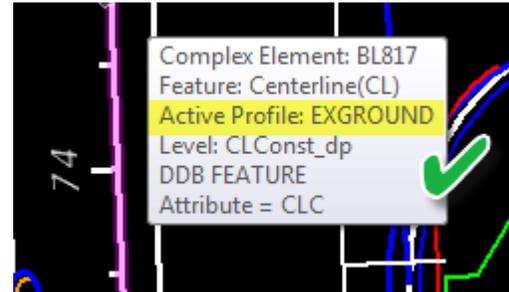
Feature Name: BL817

Feature Definition: Centerline(CL)

- RumbleStrips
- ShoulderPatternLir
- TrafficSeparators
- WallConcreteBarri
- WallRetainingWall
- Archaeological Site
- Baseline(BL)
- Centerline(CL)

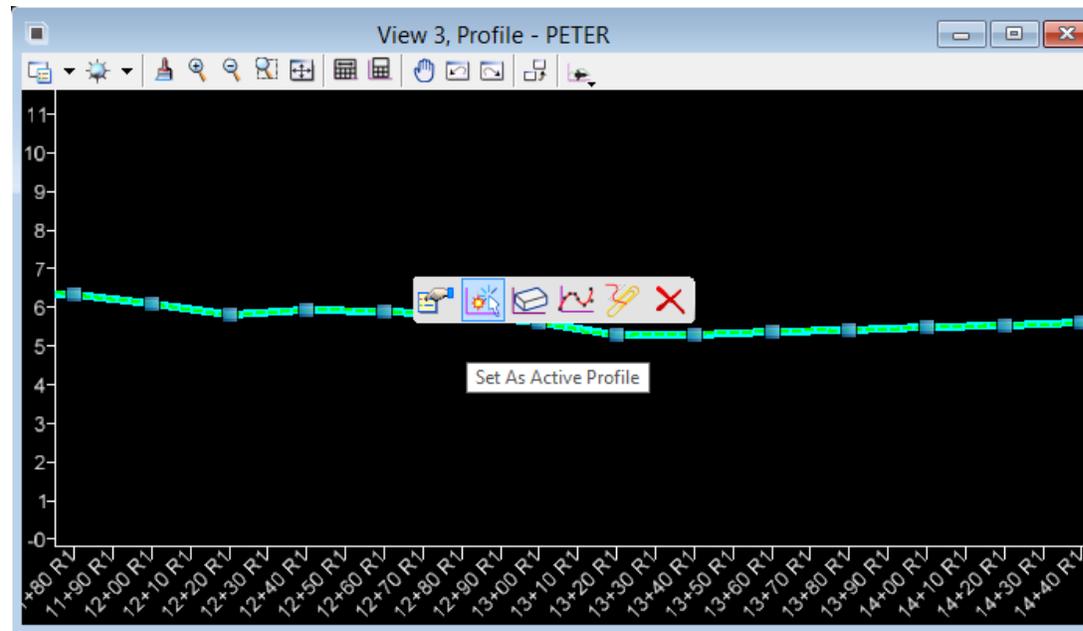
3. f) Set profile for each alignment to "Active"

- Make sure an Active Profile is set for each alignment
- If not hover over the alignment and select "Open Profile Model" from the context menu.
- When prompted open another view window and select it.



f) Set profile for each alignment to "Active"

- In the profile view select the appropriate profile and select Set As Active Profile from the context menu

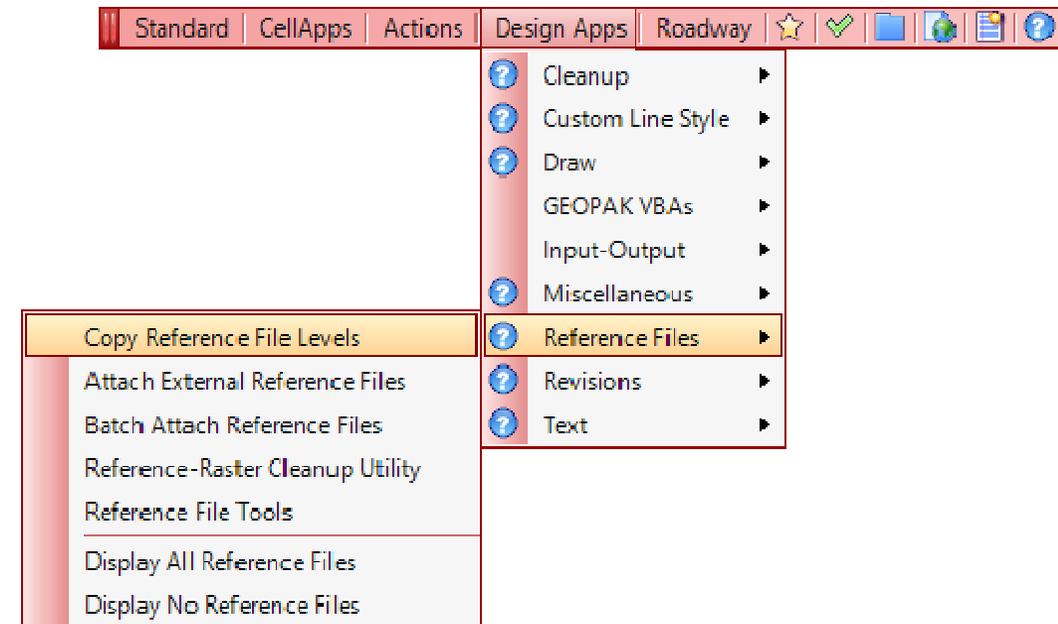
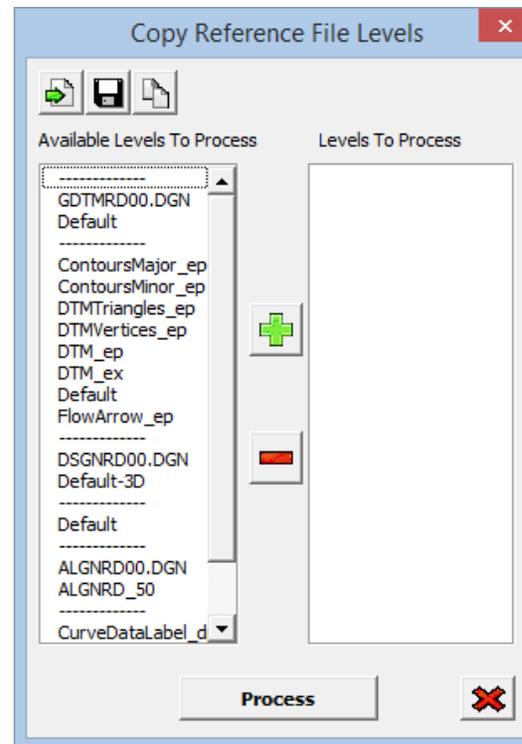


3. g) Copy in MicroStation Elements

- The old DSGNRD file can be referenced to copy in elements that were not imported.
- Select “Design Apps > Reference Files > Copy Reference File Levels” from the FDOT menu.

Levels who's names have changed will be placed on the active level.

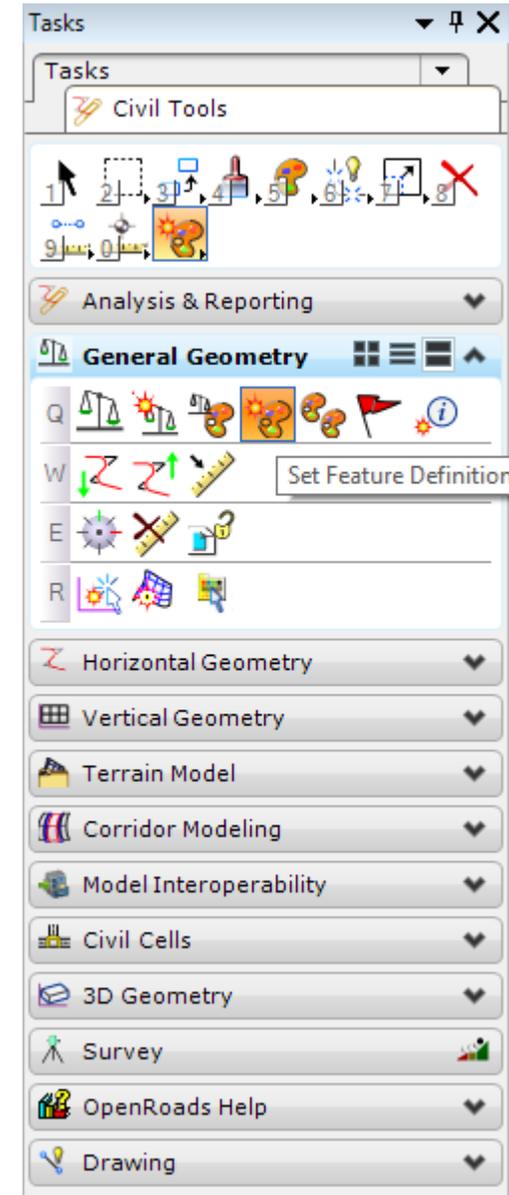
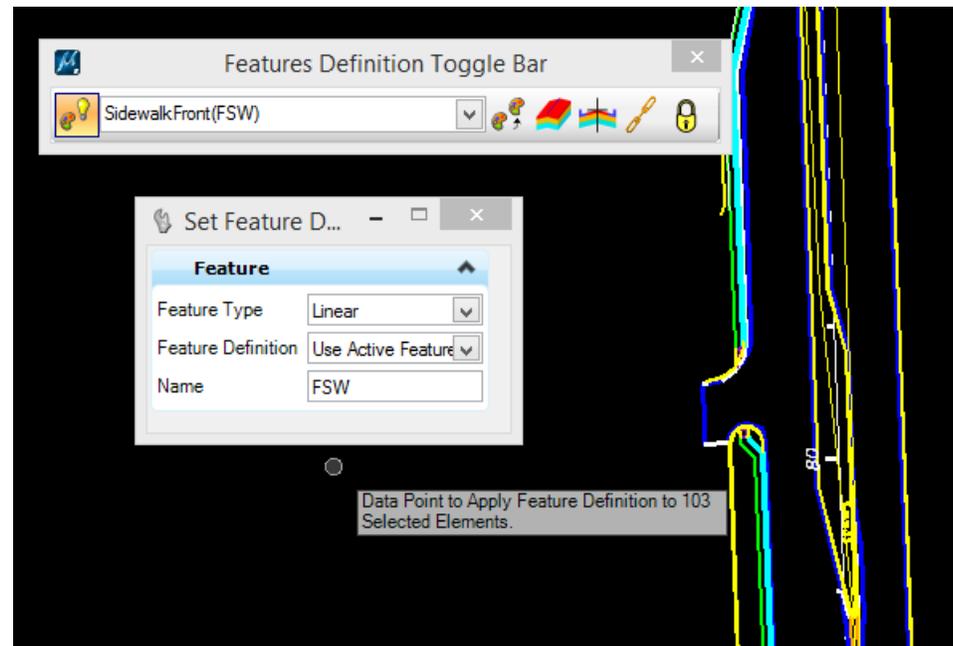
(Pavement Levels have changed)



3. h) Set Features on Corridor Targets

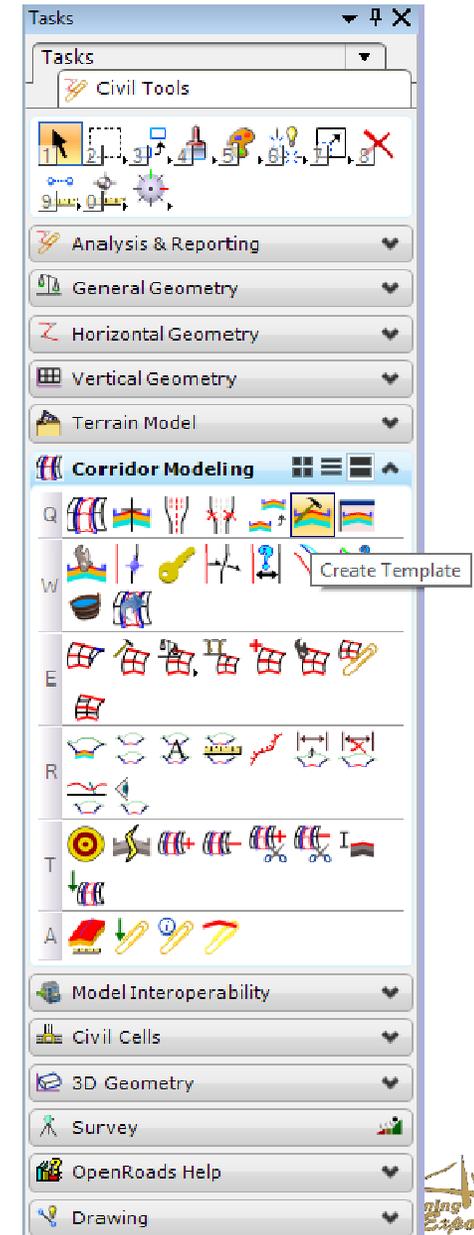
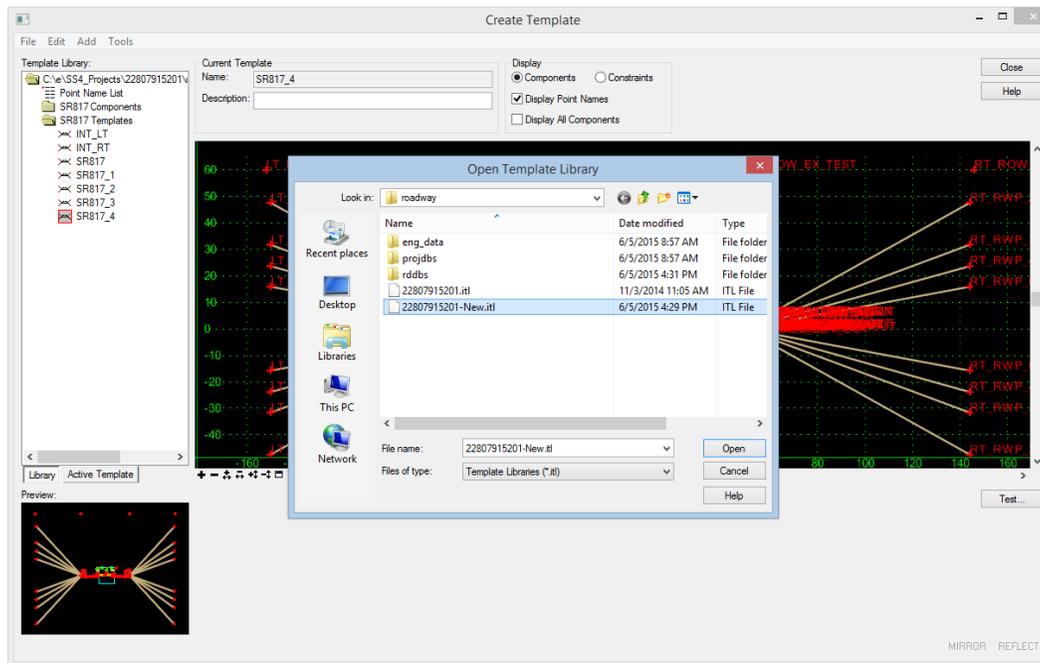
Any elements that will be targeted by a corridor using Feature Constraints will need to have Features applied.

- Use “Set Feature Definition” from the General Geometry task



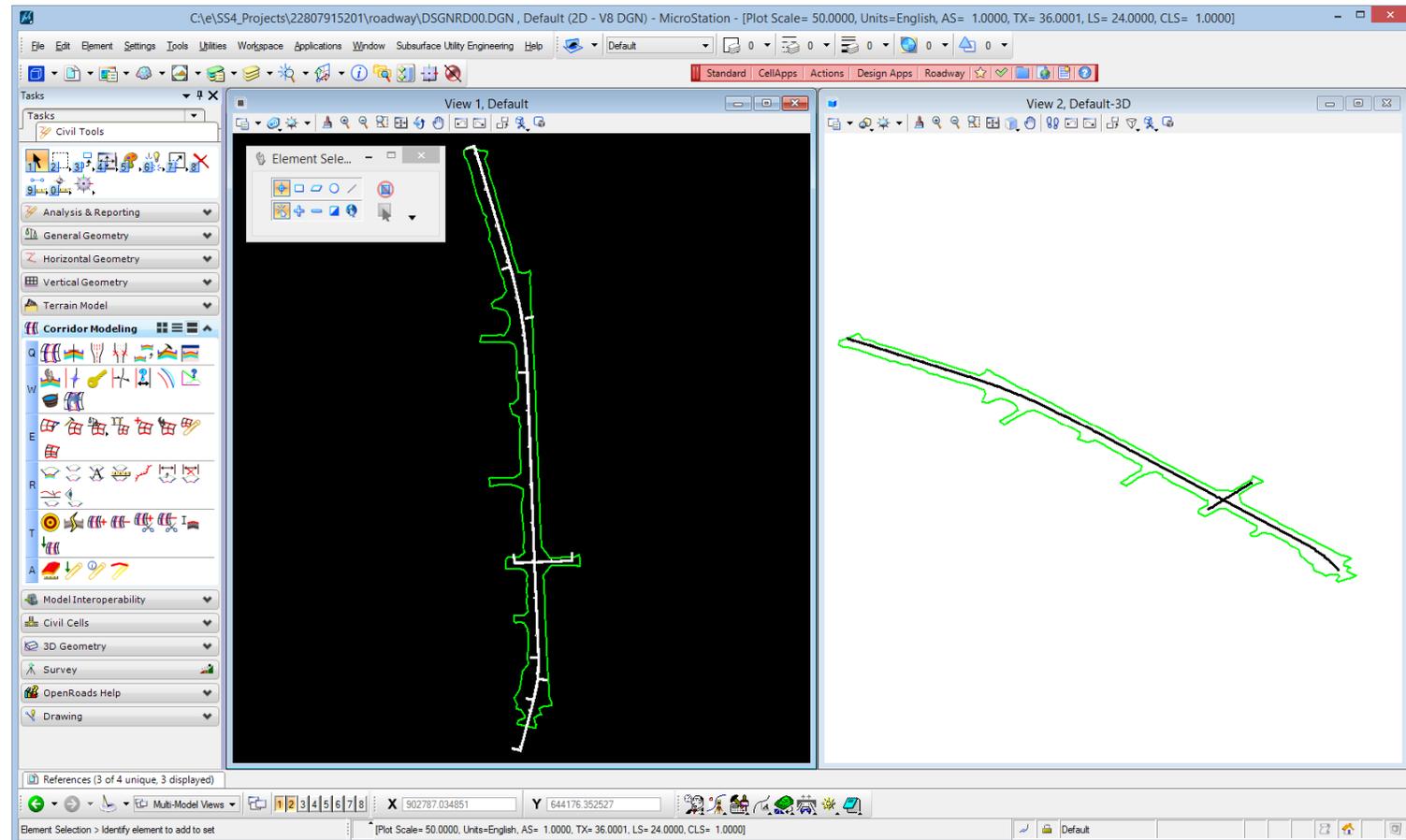
3. i) Attach Project ITL

- If the project ITL is named the same as the project it will automatically be attached. If not you will need to attach the project ITL before you can synchronize template drops.
- Open the “Create Template” dialog from the Corridor Modeling task or hit F12 on the keyboard.
- Select File > Open and browse to the project ITL file.



j) Arrange views to see 2D plan and 3D views

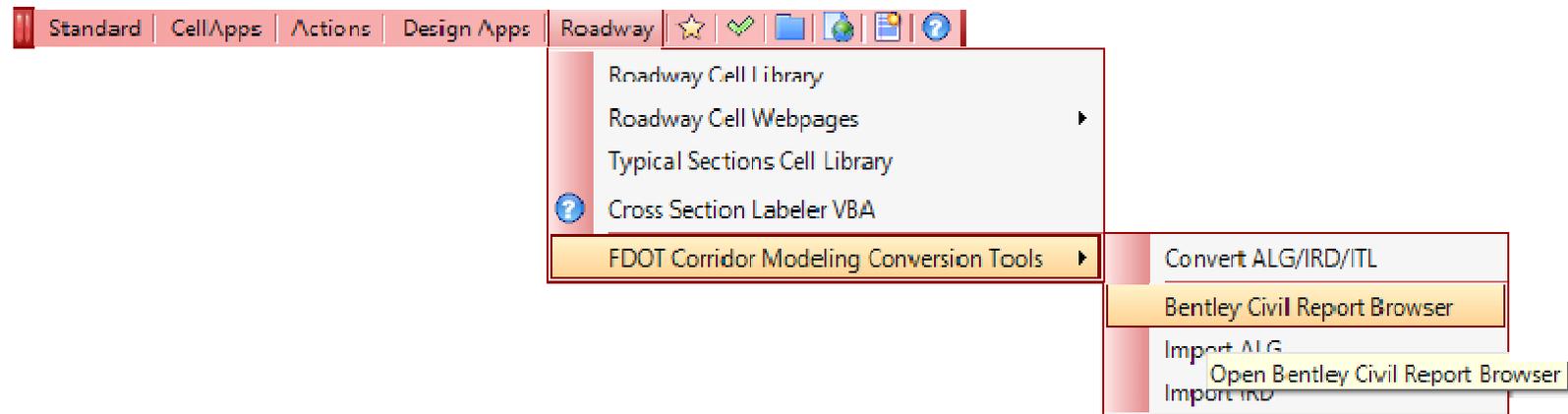
- Function Keys to automate the view arrangements have been added.
 - F2 = 2 views
 - F4 = 4 views
 - F3 = 1 view



3. k) Review Corridor Dependencies

Corridor dependencies must be present in the file before importing a corridor or the dependency will be lost.

- Reports are available to review the dependencies.
- To view reports, elect “Roadway > FDOT Corridor Modeling Conversion Tools > Bentley Civil Report Browser”



3. k) Review Corridor Dependencies

- The Bentley Civil Report Browser allows you to open the IRD files and use style sheets to format the information for easy use.

The screenshot shows the Bentley Civil Report Browser interface. The left pane displays a file tree with folders like Bridge, Civil Terrain, and CorridorModeling. The right pane shows a report titled "Complete Corridor Dependency Report" with a table of point controls. Three red callout boxes provide instructions: 1. Select "File > Open" and browse to the IRD file. 2. Choose a report style sheet from the Corridor Modeling section. 3. Select "File > Save As" to save the report for later review.

Complete Corridor Dependency Report
Report Created: 11/3/2014
Time: 3:16pm
C:\e\SS3_Projects\22807915201\roadway\SR817.ird

Vertical Alignment: PETER_NE_PG

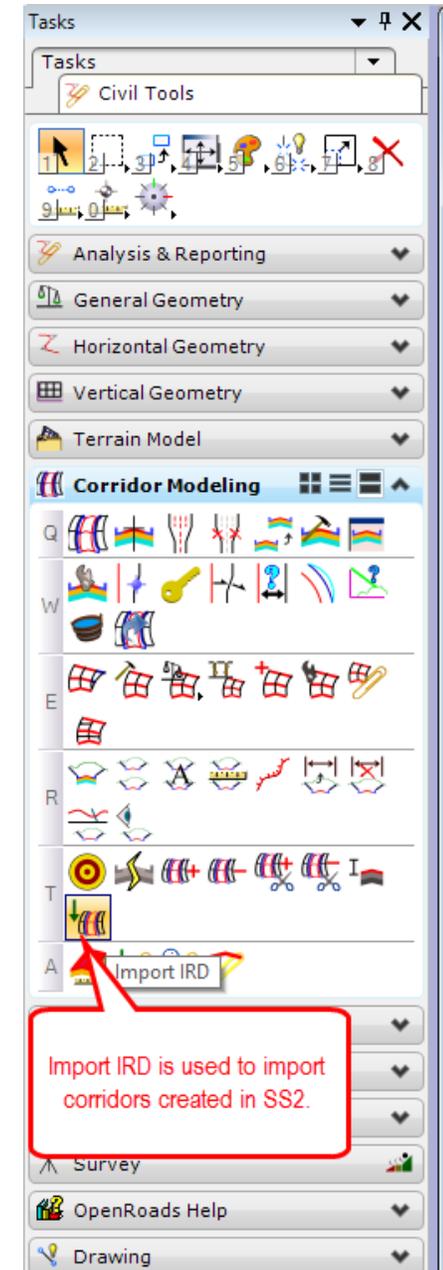
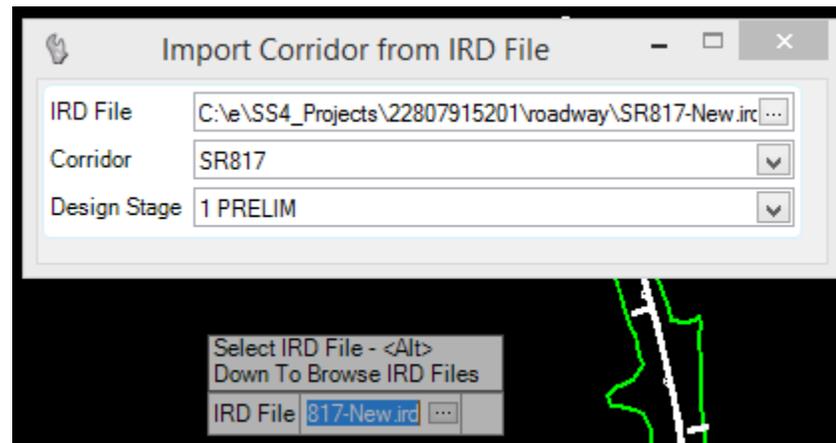
Point Controls

Priority	Point Name	Mode	Control Type	Control Name	Control Point Alignment Name
1	LT_LT_PVT_EOP_IN	Both	Alignment	PETER_PG	PETER
1	LT_LT_PVT_EOP_IN	Both	CorridorPoint	RT_PVT_EOP_OUT	SR817_Peter

Clipping Options

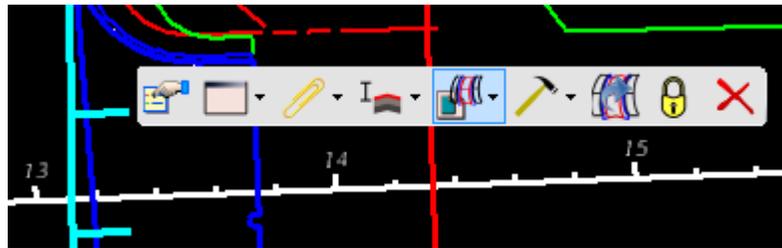
3. 1) Import IRD Files

- From the “Civil Tools” Workflow select “Corridor Modeling > Import IRD”
- On the Import Corridors from IRD File dialog
 - Browse to the converted IRD file.
 - Select the first corridor to be imported
 - Select the 1 PRELIM Design Stage.

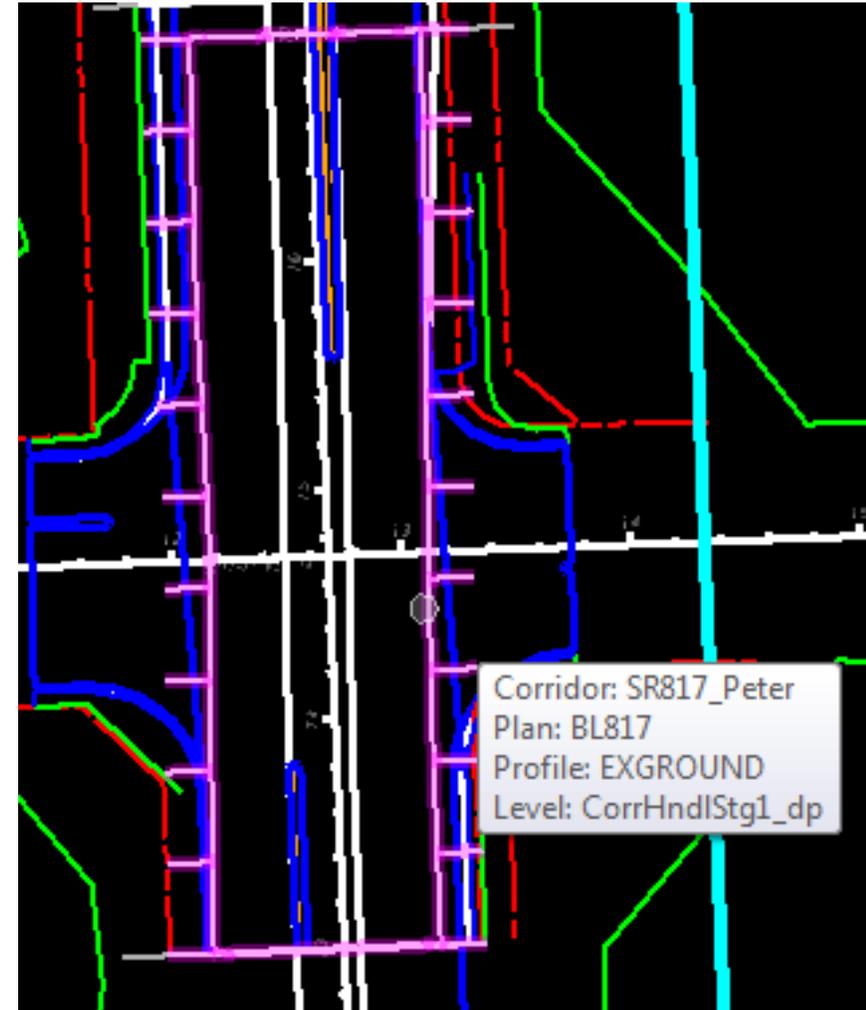
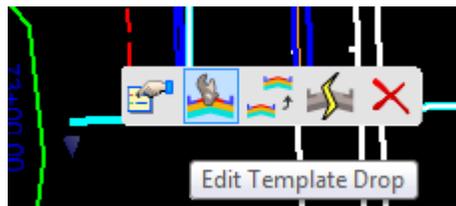


3. 1) Import IRD Files

- Corridors will have a boundary with handles for the corridor and template drops.
- These handles are used to access various properties of the corridor.
 - Corridor Context Menu



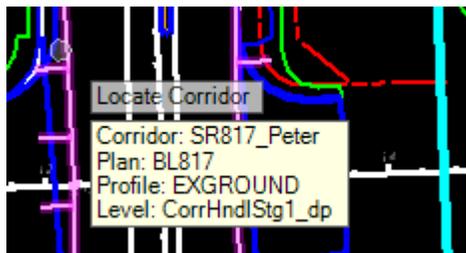
- Template Drops



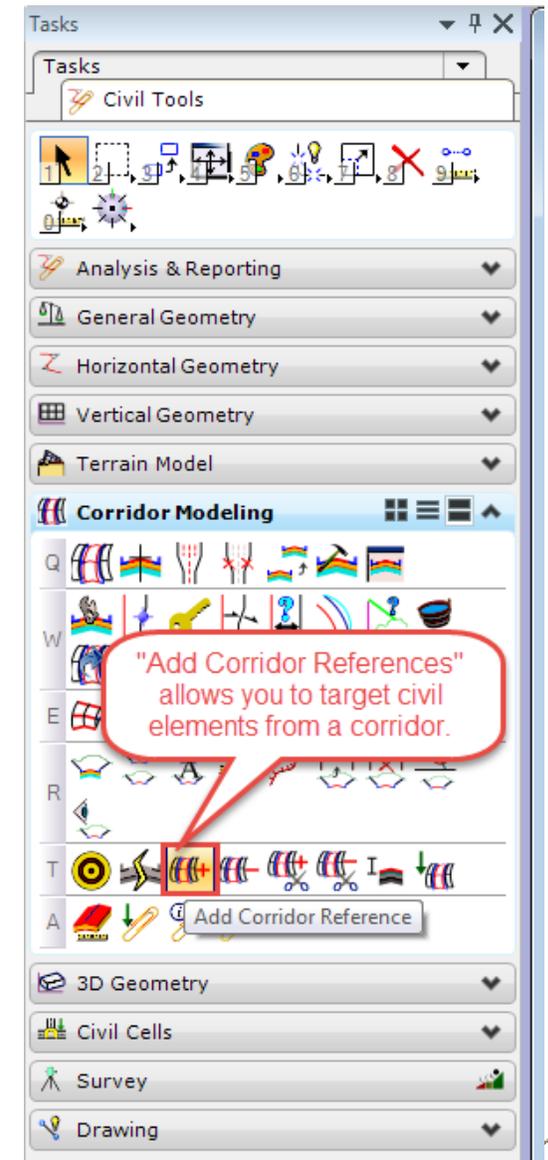
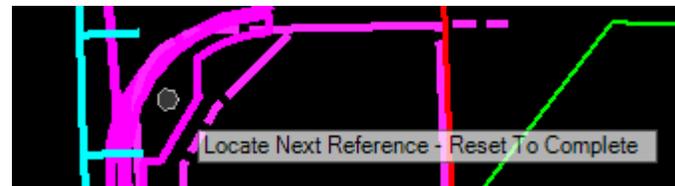
3. m) Add Corridor References

In order to target civil elements in the design file they must be added as corridor references.

- Select the elements to be added as references to one of the corridors.
- Click the “Add Corridor References” tool.
- When prompted, select the corridor.



- Reset to accept.



Contact Information

Jimmie Prow

CADD Support Coordinator

Phone no: (850) 414-4863

Toll Free no: (866) 374-3368 extension 4863

email ecso.support@dot.state.fl.us

jimmie.prow@dot.state.fl.us

web: <http://www.dot.state.fl.us/ecso>

