SURVRD for Existing Feature Models file in FDOTSS4 OpenRoads

Production Support Office - CADD

Chris Thorp

What is a SURVRD file?

- SURVRD – Survey Development Model for 3D Design
  - ✓ It is a critical file for SS4 Corridor Modeling projects
  - ✓ Important to be using GEOPAK version 08.11.09.878
  - ✓ The SURVRD file contains all of the survey data which was previously broken out into 4 separate files (DREXRD, UTEXRD, GDTMRD and TOPORD)

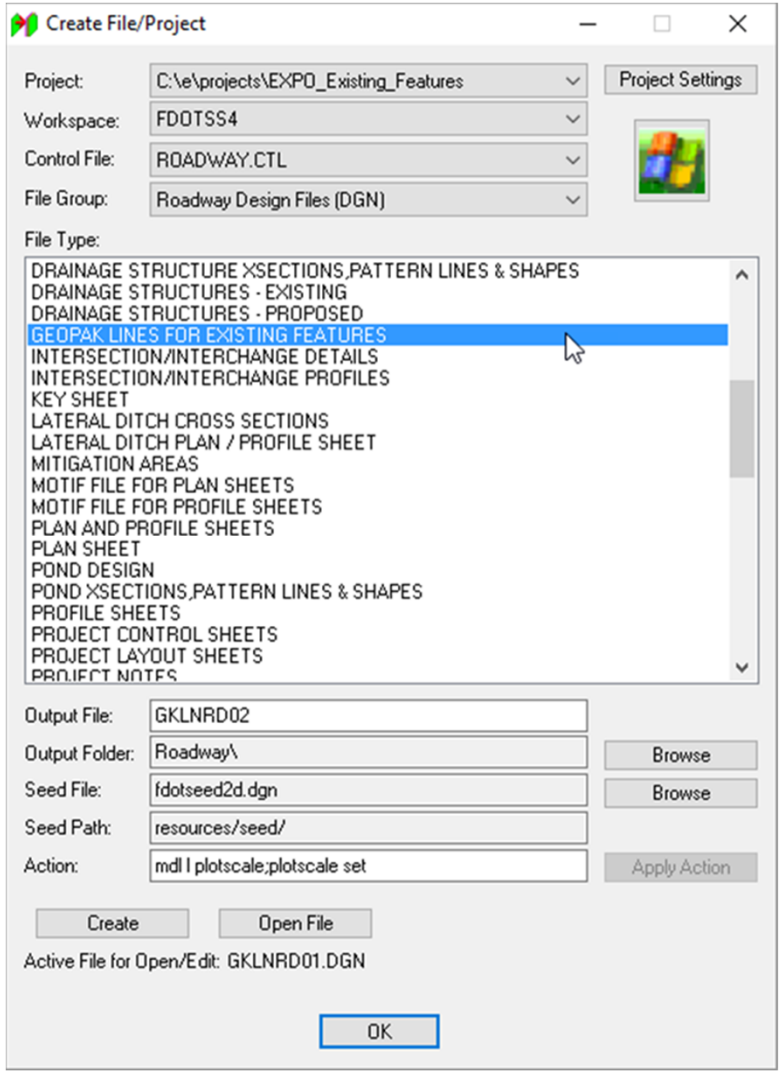
Topics Covered

- Create and Set Up the GKLNRD using SURVRD
- Create Shapes using FDOT Create Existing Features
- Create Existing Feature Terrains
- Clip Terrains
- Apply Surface Templates
- Edit Existing Feature Depth
- Add Curbs to the Existing Features

Create the GKLNRD File

The GKLNRD file will store the existing features model.

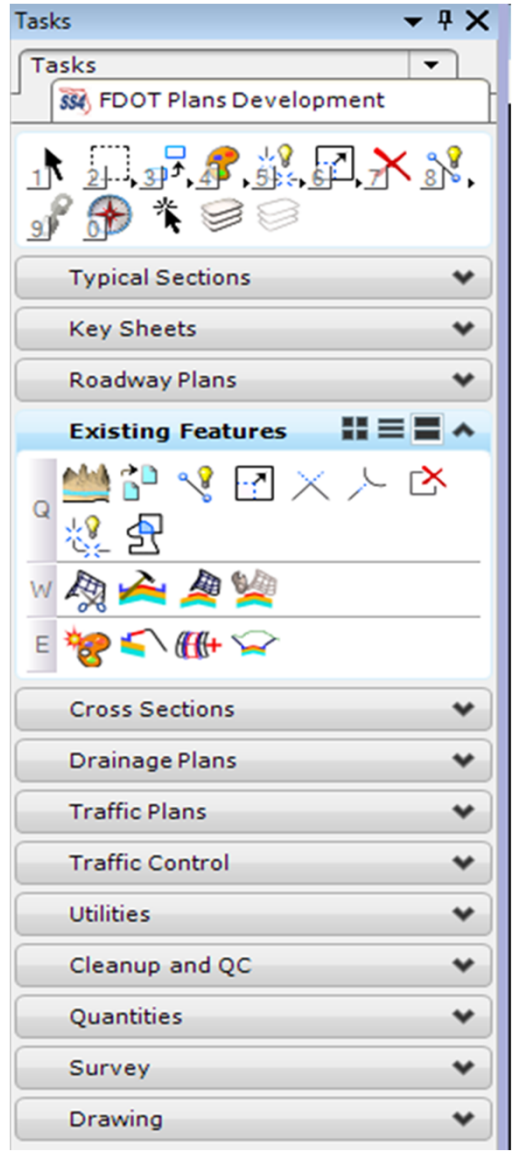
- Launch the FDOT create file application
  - ✓ Select the desired project
  - ✓ Choose the ROADWAY.CTL Control File
  - ✓ Choose the “Roadway Design Files (DGN)” File Group
  - ✓ Select the File Type “GEOPAK Lines for Existing Features”
  - ✓ Click the Create button
  - ✓ Click the Open button
  - ✓ Click the OK button to close the Create File/Project dialog



Existing Features Task Menu

The Existing Features task menu contains tools frequently used during the creation of Existing Features models.

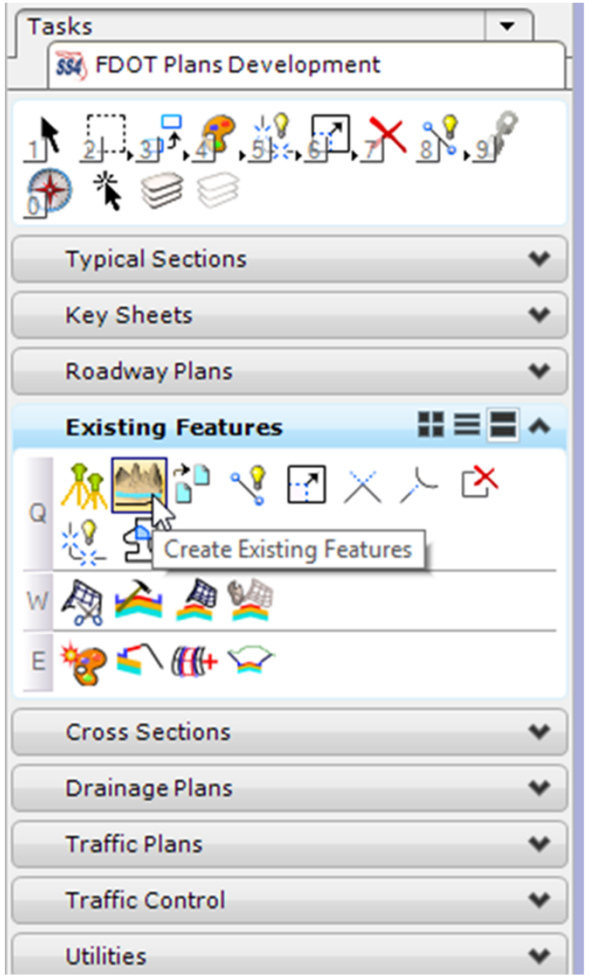
- The Q row contains tools for creating the shapes
- The W row contains terrain tools
- The E row contains tools for linear templates and cross section viewing



FDOT's Existing Features Application

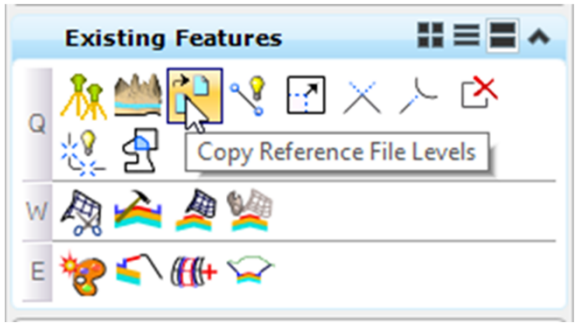
With the GKLNRD file open, run the Create Existing Features tool.

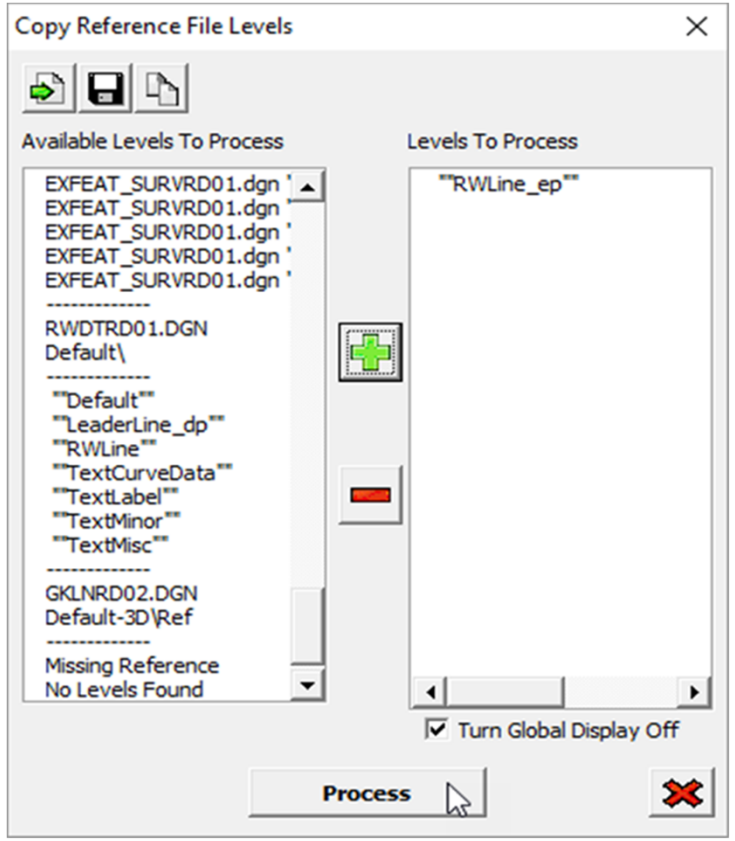
- On the Task menu select the "FDOT Plans Development Workflow > Existing Features > Create Existing Features"
- When Prompted, browse to and select the SURVRD file
  - ✓ Once selected the SURVRD file is referenced and the levels used to create existing features are copied into the GKLNRD file.



Adding Right of Way Lines

- Attach the RWDTRD file
- Run the Copy Reference File Levels tool
  - ✓ From the FDOT Plans Development>Existing Features Task, select the Copy Reference File Levels icon
  - ✓ On the Copy Reference dialog, select the level RWLine_ep, click the Add button and then Process to complete.

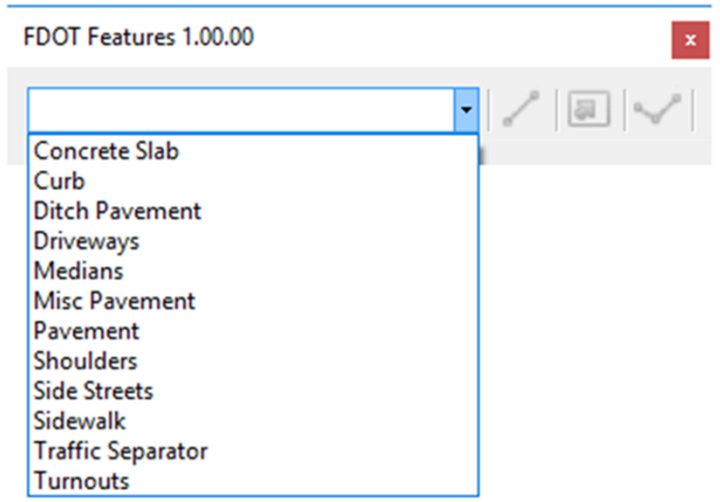




Creating Shapes With the Existing Features Application

The FDOT Features app manages the active level and the display of levels

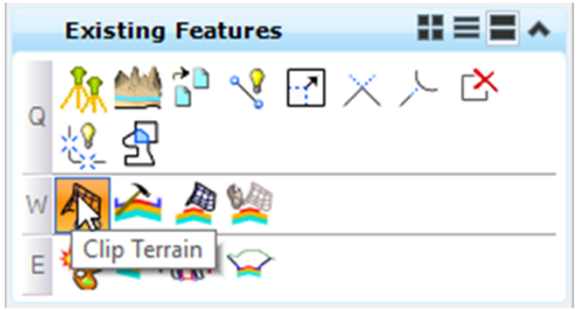
1. Choose Feature
2. Close areas of shape using Place Feature Line command
3. Use Create Feature Shapes by Flood (middle icon) to create complex shape elements for each existing feature area

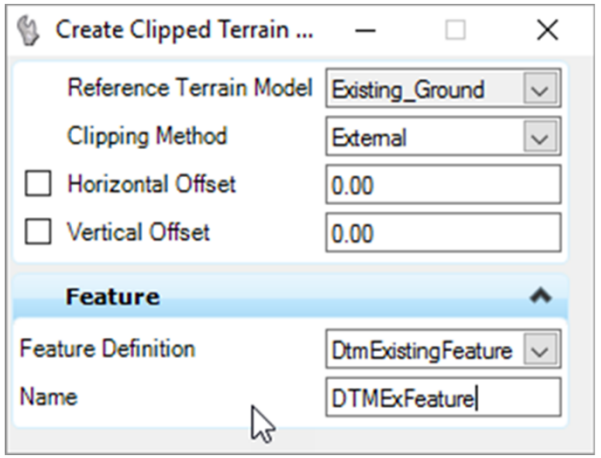


Clipping Terrains

The shapes created in the previous steps will be used to clip areas from the existing ground terrain in the GDTMRD

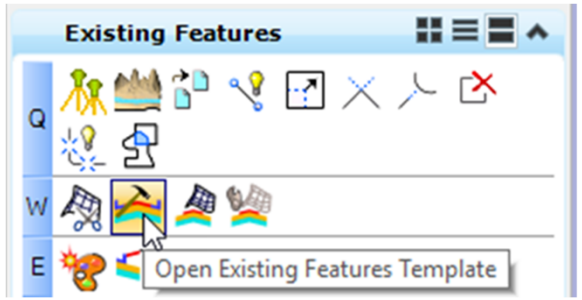
- Use the FDOT Features app to manage levels
- Select the Clip Terrain tool from the Existing Features task menu
  - ✓ Set Clipping Method to External
  - ✓ Set Feature Definition to “DtmExistingFeature”
  - ✓ Set Name to represent area
  - ✓ Follow prompts on cursor

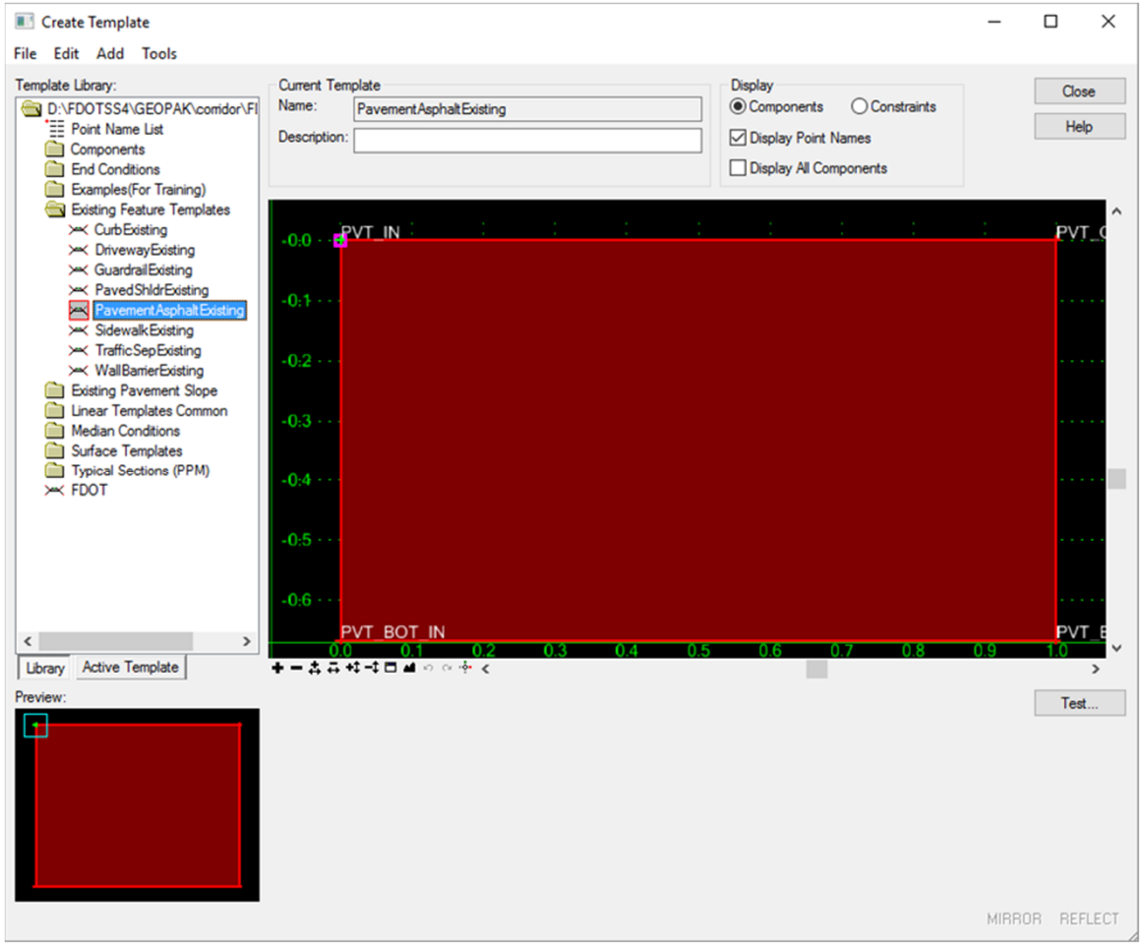




Surface Templates

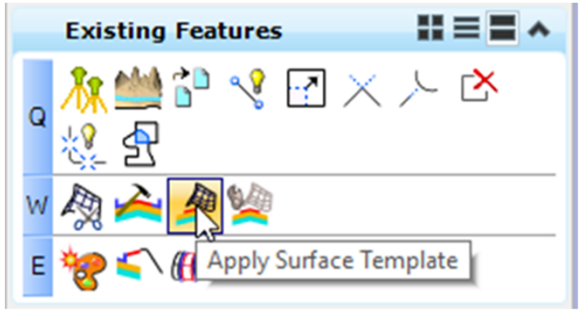
Surface Templates can be applied to each terrain to define depth and symbology.

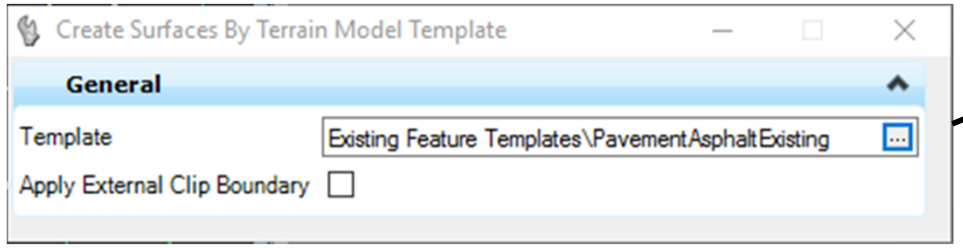


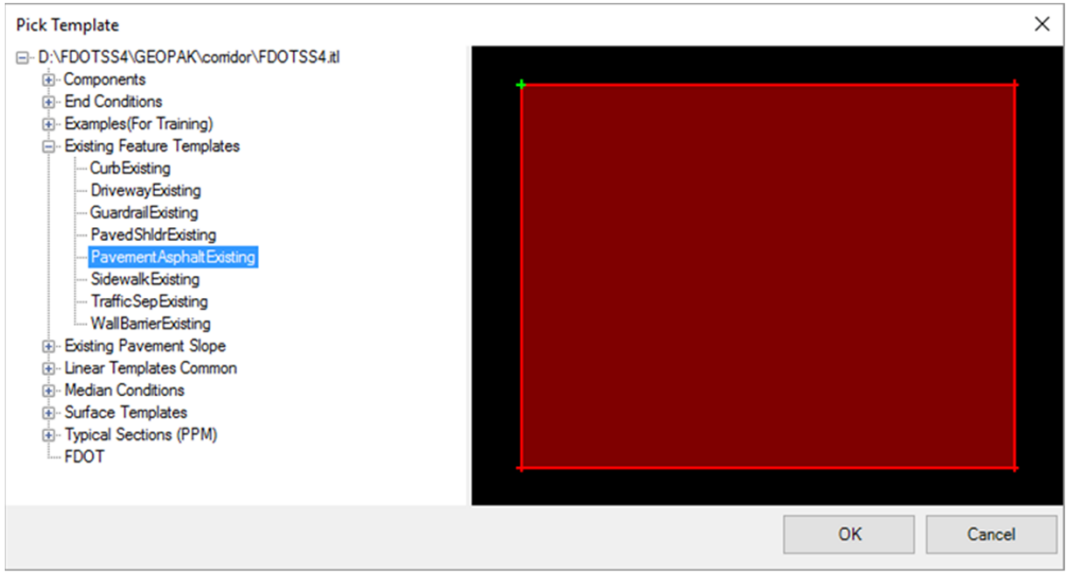


Apply Surface Template

- Click on the Apply Surface Template icon
- Select the Template to be applied
- Click on terrain boundary of the existing feature
- Follow cursor prompts



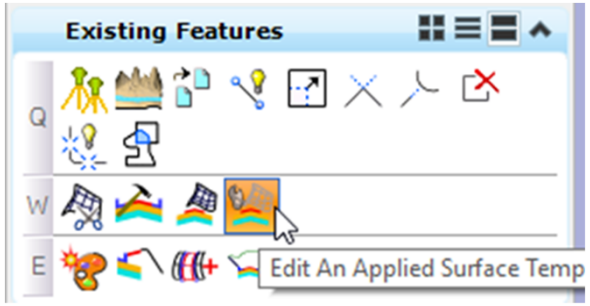


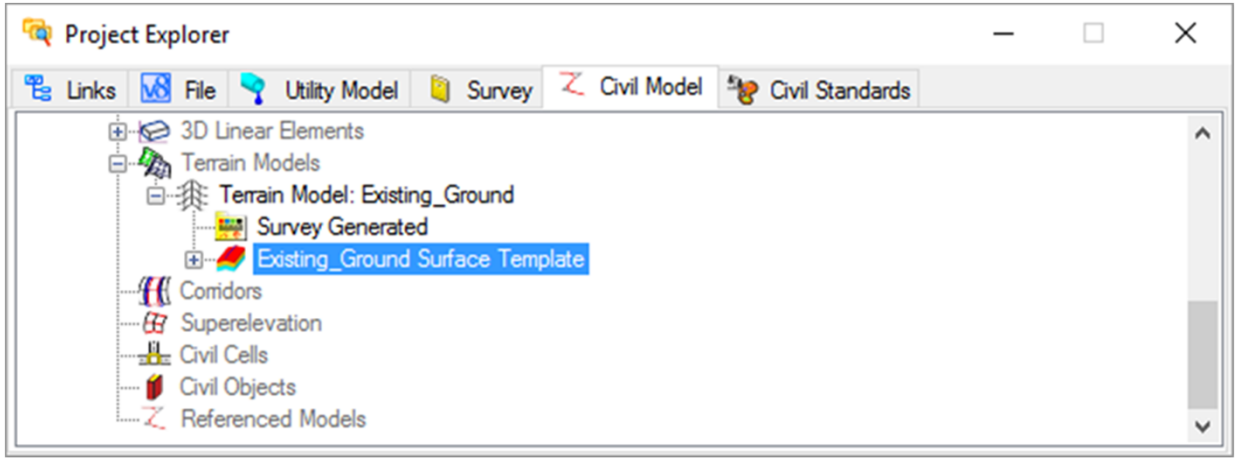


Edit an Applied Surface Template

There are a couple ways to edit a Surface Template after it has been applied:

- Click “Edit An Applied Surface Template” on the Existing Features task menu
- In Project Explorer, right-click on the Surface Template listed under the Terrain Model





Curb and Gutter

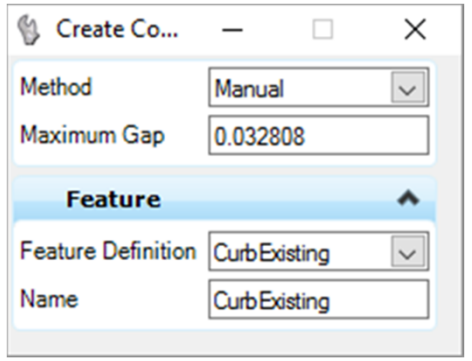
Existing Features, such as curb and gutter, that do not have a constant thickness will not work with Surface Templates. A Linear Template will be used to define the subsurface lines of the curb and gutter.

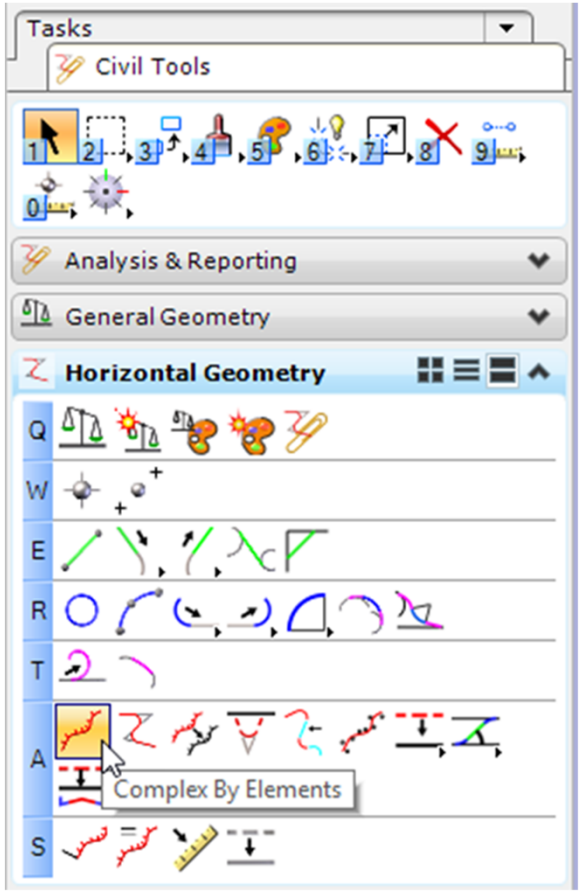
1. Create a chain of the back of curb, if necessary
    1. Task Menu>Civil Tools>Horizontal Geometry>Complex by Element
2. Open Profile view for back of curb and set the existing ground as the “Active” profile
3. Apply linear template to back of curb line, in plan view
4. Set the “Feature” for the existing edge of pavement to “Pavement Existing”
5. Add the existing edge of pavement as a “Corridor Reference”

1. Complex by Element

This step is only needed if the existing back of curb line is broken into several pieces.

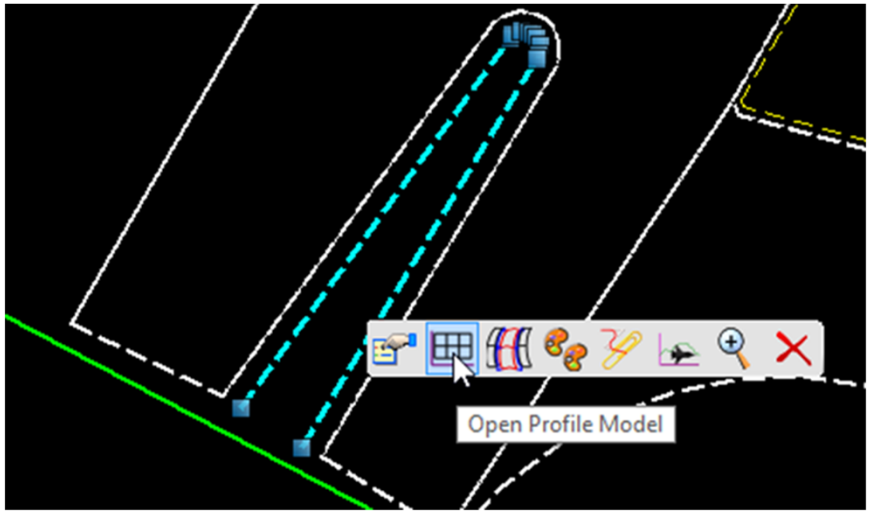
- On the Task menu select “Civil Tools > Horizontal Geometry > Complex by Element”
- Set the Feature to “CurbExisting”
- Follow prompts on cursor

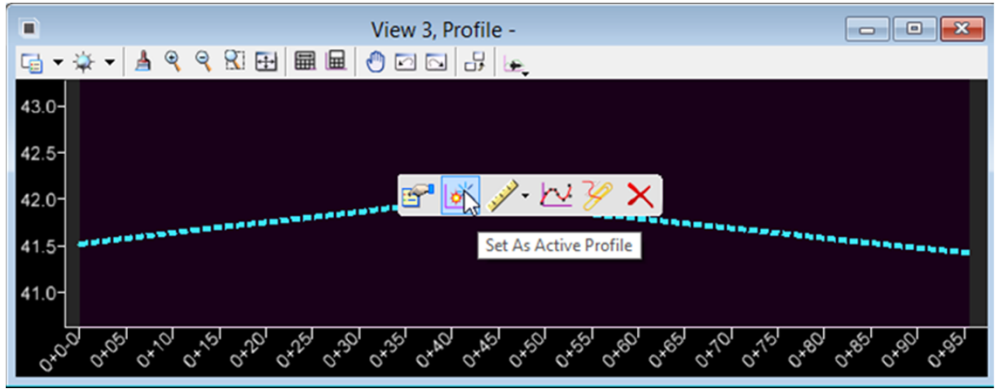




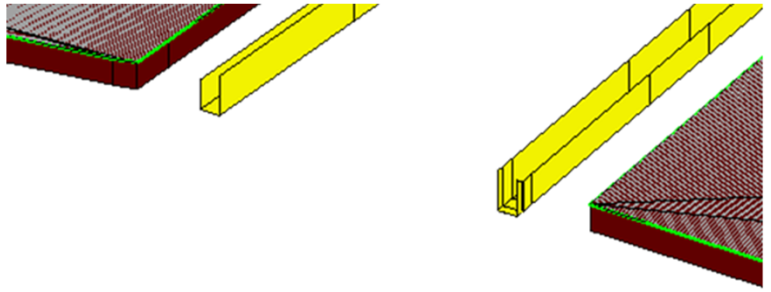
2. Open Profile View for Back of Curb

- Select the back of curb element then hover over it to get the context menu
  - ✓ Select “Open Profile Model” from the context menu and then select the view to open the profile in
- Select the profile then hover over it to get the context menu
  - ✓ Select “Set as Active Profile”

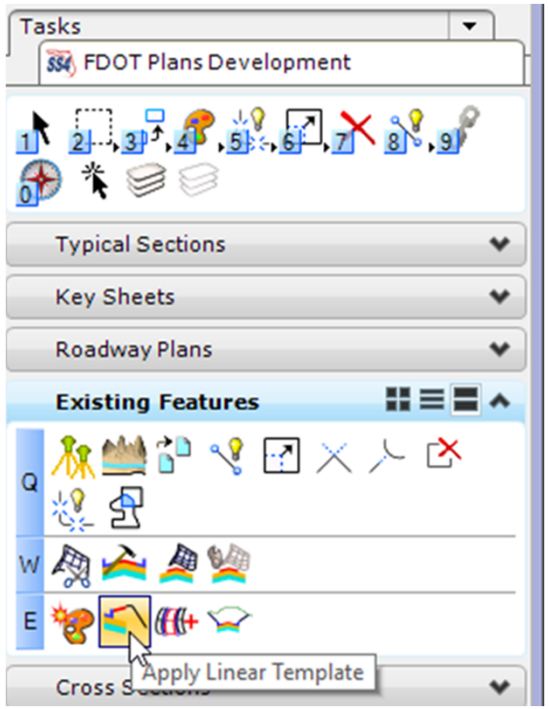


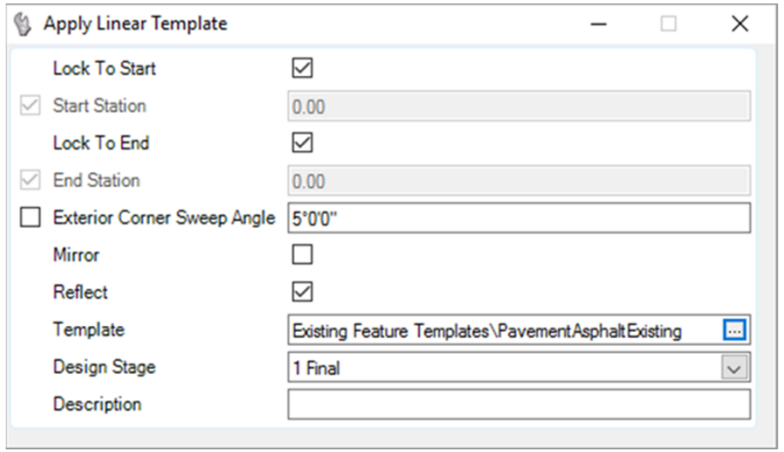


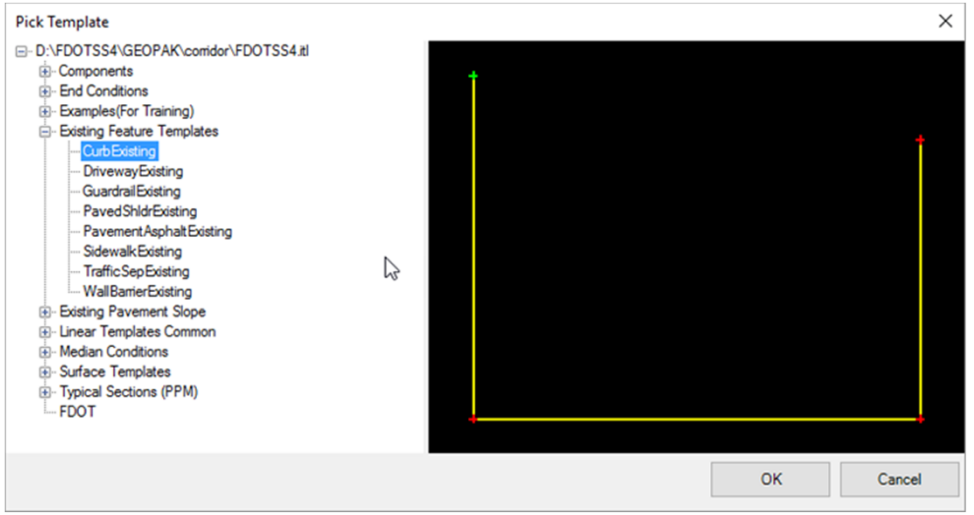
3. Apply Linear Template



- Select “Apply Linear Template”
- Click the Browse button to choose a template
- Follow prompts on cursor



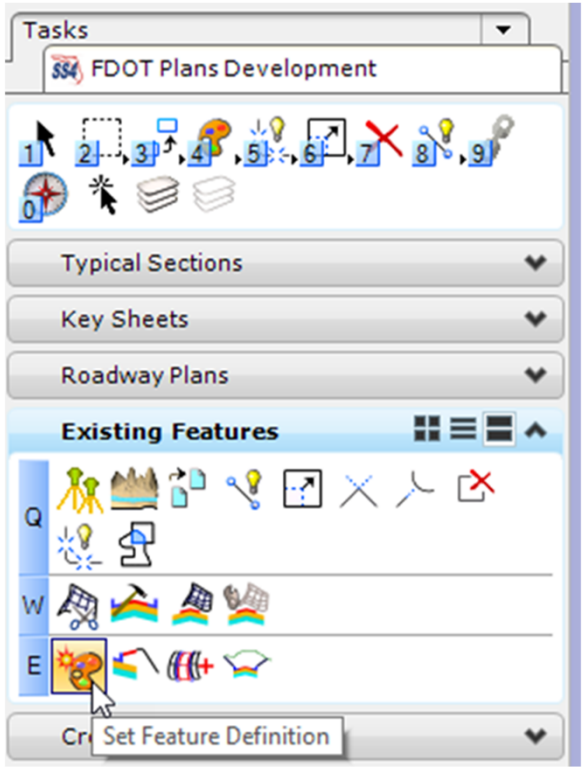


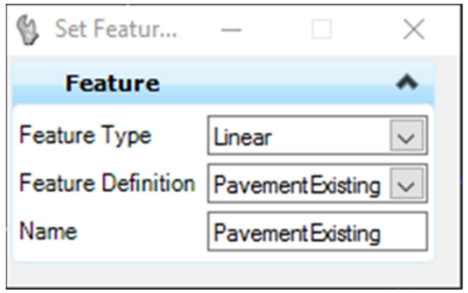


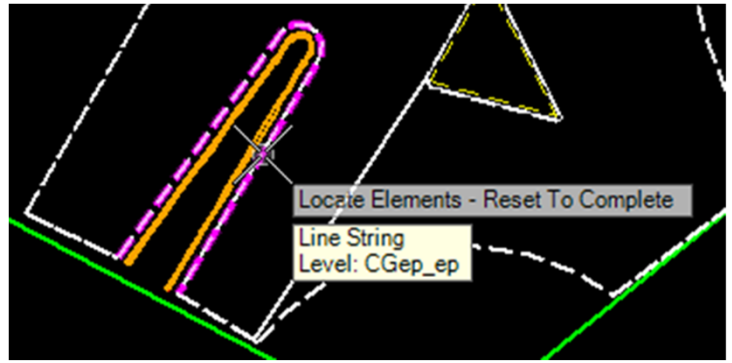
4. Set Feature for Existing EOP

The Linear Template is using a Horizontal Feature Constraint to search for an element with a Feature Definition of “PavementExisting.”

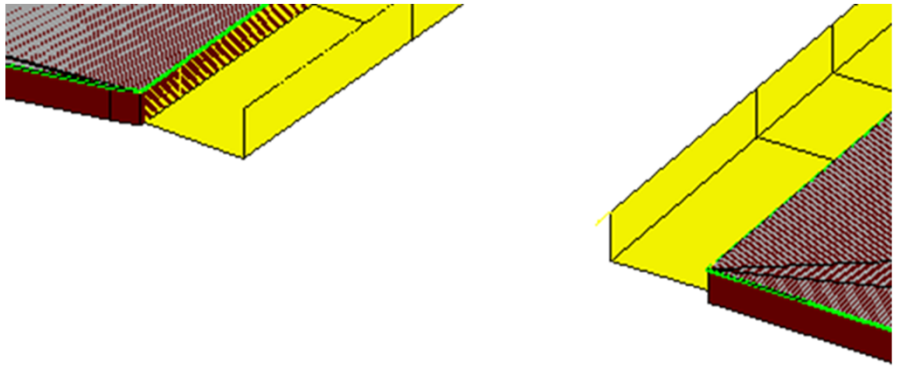
- Select “Set Feature Definition”
- Choose the Feature Definition “PavementExisting”
- Follow prompts on the cursor



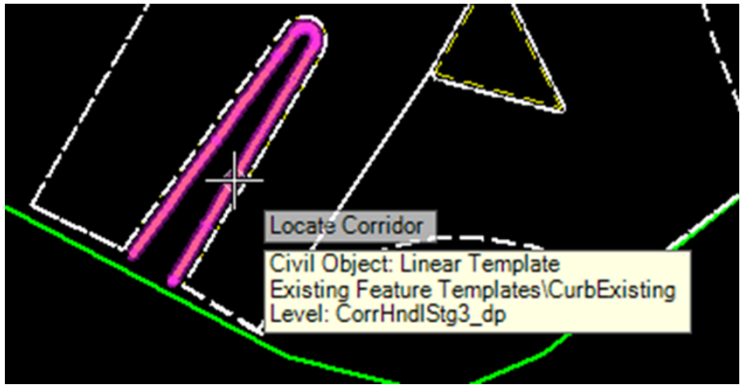


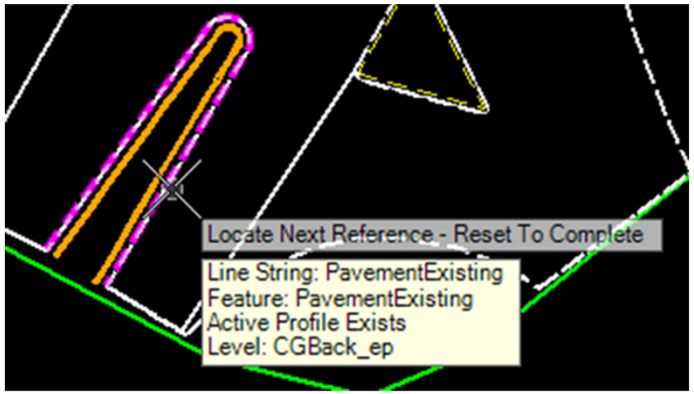


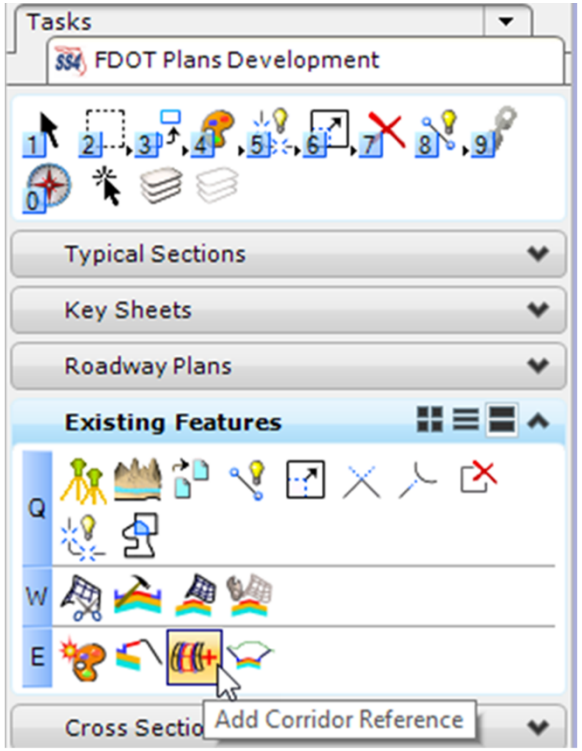
5. Add Corridor Reference



- Select “Add Corridor Reference” from the Existing Features task menu
- Follow prompts on the cursor

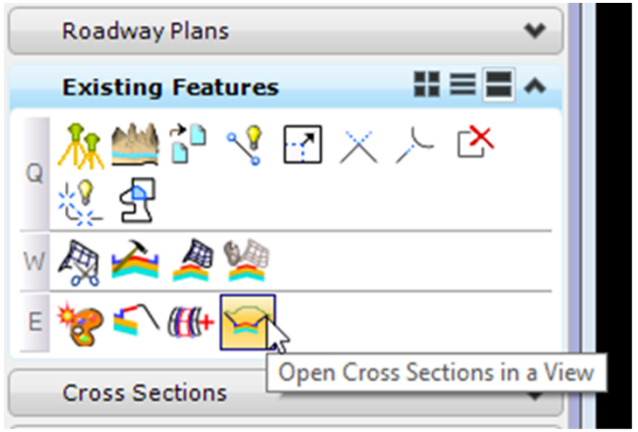






Viewing Cross Sections

To view the Cross Sections ensure the SURVRD.DGN, TOPO reference is displayed with the Survey Baseline level turned on



- Use the Existing Features > Open Cross Sections in a View tool
- Follow the prompts on the cursor
  - ✓ When prompted for Left Offset click on the left side of the baseline to accept.
  - ✓ When prompted for Right Offset click on the right side of the baseline to accept.

Contact Info

Chris Thorp

CADD Support Specialist

Phone No.: 850-414-4884

CADD Support: 850-414-4711

Email: Christopher.Thorp@dot.state.fl.us

cadd.support@dot.state.fl.us

Web: http://www.fdot.gov/cadd