

*State of Florida  
Department of Transportation*



# **FDOT Civil 3D Roadway Design & 3D Modeling - Advanced**

## **User Training Guide**

April 7, 2021

PRODUCTION SUPPORT CADD OFFICE  
TALLAHASSEE, FLORIDA

<http://www.fdot.gov/cadd/>





# *FDOT Civil 3D Roadway Design & 3D Modeling*

## *Advanced*

### *Description*

This 2-day course provides participants with advanced training on Civil 3D design workflow of creating a Corridor with the FDOT Subassemblies within depth focus on Regions and Targeting using the latest FDOT CADD Software suite release.

This course will demonstrate the workflows for base map compilation, displaying and editing roadway features in plan and profile views and creating finished ground terrain models. Roadway alignments, profile views, and digital terrain models are utilized to display and edit the roadway parts during the design process.

This course includes examples of intersection design, corridor modeling, traffic separator design, traffic island design, along with 3D visualization tools to enable the user to quickly recognize errors and confirm satisfaction of design intent.

### *Objectives*

The student will have a basic understanding of ....

- FDOT Civil 3D State Kit Tools
- Intersection Creation
- Alignments and Profiles
- Surfaces
- Grading
- Annotation
- Data Management Techniques Annotating Plans

### *Audience*

This course is intended for roadway designers.

### *Prerequisites*

Participants need to have a (basic) understanding of AutoCAD and Civil 3D.

*Duration:* 16 Hours

*Professional Credit Hours:* 16 PDHs

**Note** PDH Credit will only be available with Instructor lead or Computer Based Training (CBT) thru Learning Curve.

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# 1 GETTING STARTED

## DESCRIPTION

This chapter provides the background information and context to help the user prepare to use this manual.

## OBJECTIVES

This chapter is divided into two sections:

- Introduction
  - Purpose
  - Terminology
  - Civil 3D Objects
  - About Civil 3D
  - About this Manual
  - Resources
- Project Components
  - Civil 3D Drawings

## PREREQUISITES

Basic understanding of AutoCAD and Civil 3D.

## INTRODUCTION

### PURPOSE

This manual serves two primary functions. It is a training manual for instructor-led training, and a user's manual for roadway engineers, designers, and technicians. Lab exercises are provided at the end of the chapters, although the instructor-based classes may not use all the exercises or cover all the chapters.

### TERMINOLOGY

Throughout this document the term “Department” refers to the Florida Department of Transportation. The Department’s standards for roadway design are provided in the Roadway Manual. Guidelines for roadway design are provided in the various roadway handbooks The Department’s Plans Preparation Manual and CADD Manual provide the standards for preparing the construction plan sets. Discussions about how to best use Civil 3D to comply with the Department’s CADD standards and guidelines are included in this document where appropriate.

## CIVIL 3D OBJECTS USED IN THE DATASETS FOR THIS MANUAL

- Surface
- Feature Line
- Alignment
- Profile
- Profile View
- Corridor

**Note** Descriptions for each object can be found in the Civil 3D Online Help system:

<https://knowledge.autodesk.com/support/autocad-civil-3d>

## ABOUT CIVIL 3D

Civil 3D is a comprehensive application for designing a roadway design. Civil 3D includes a comprehensive set of tools for designing roadways in a dimensionally accurate 3D model. The FDOT Civil 3D State Kit contains custom assemblies and sub-assemblies used for roadway design.

The assemblies and sub-assemblies objects can be edited graphically or numerically using a variety of convenient user interface features including interactive dialog boxes, cursor menus, tool tips, toolbars, ribbons, palettes, with most of these having context sensitive behaviors. Predefined styles compliant with FDOT standards are included with the FDOT Civil 3D State Kit. These styles control the graphical appearance of the assemblies and sub-assemblies, their labels and much more.

Preset command behaviors simplify the use of commands so Civil 3D objects such as assemblies and sub-assemblies are created and labeled simultaneously using the desired styles. Designs are produced with less effort and eliminate labeling errors.

## CIVIL 3D DRAWINGS

Civil 3D Drawing Files are in a binary format with a .dwg file extension. They contain object tables and databases. When opened in an AutoCAD environment the drawing displays graphical and textual content. Civil 3D objects are created and stored in this dwg file format along with native AutoCAD objects.

## RESOURCES

- Roadway Design  
<http://www.fdot.gov/roadway/Drainage/Manualsandhandbooks.shtm>
- CADD Manual  
<http://www.fdot.gov/cadd/downloads/publications/publications.shtm>
- FDOT Civil 3D State Kit  
<http://www.fdot.gov/cadd/downloads/software/software.shtm>



# 2 CREATE INTERSECTION – DEFAULT SETTINGS

## DESCRIPTION

This chapter introduces the Create Intersection wizard tool to create Intersection content to the drawings. You will create a Corridor model at the Intersection of SR61 and US98 using this tool. You will work with both Data Shortcuts References and External References files. These references will help you depict the project limits, display planimetric geometry, and elevation data within the project limits. As part of this exercise, you will manage an aerial photo which will be displayed with the site's coordinate system.

## OBJECTIVES

In this chapter, you will learn about:

- Setup Data Shortcuts
- Check Referenced Data
- Manage External References
- Intersection Wizard
- Review Default Settings
- Create Intersection
- Review Results

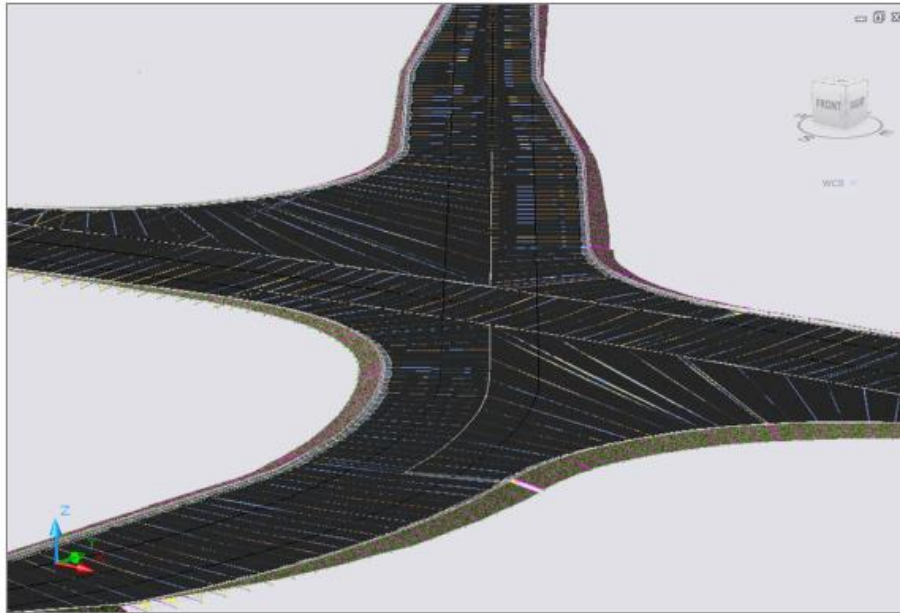
## CHAPTER SETUP

Run the Chapter 2 - 22049555201.exe file and restore all files to the **C:\Civil 3D 2017** Projects folder.

Do not change the location in which the Practice Files are installed. Doing so can cause errors when completing the exercises in this training manual.

## CREATE INTERSECTION WIZARD OVERVIEW

Before creating an intersection object, you must have two alignments that intersect. If you want to create a three-dimensional intersection model, you must also have profiles associated with the intersecting alignments. Once you have the desired prerequisites, then you can create the intersection object using the Create Intersection wizard.



When the intersection object is created, a variety of tasks can be performed automatically, including the following:

- Creating offset alignments for the roads included in the intersection.
- Creating curb return alignments (curb returns) in the intersection area.
- Creating profiles for the offset alignments and curb return alignments that were created when the intersection was created.

**Note** An exception: if you set pre-defined static alignments as offsets, it is expected that you will specify profiles too. No dynamic offset profiles will be created. Creating new corridor regions for the existing corridors in the intersection area, or creating new corridor objects in the intersection area

- Locking the profile elevations of the secondary road to the main (primary) road profile

Some of these tasks are optional. They depend on options selected in the Create Intersection wizard.

CREATING A SIMPLE 2D INTERSECTION

The simplest way to create a basic two-dimensional intersection object is to start with two alignments that intersect each other only once. You cannot use the Create Intersection wizard if the alignments do not intersect.

When your drawing has two intersecting alignments that meet the criteria, you can create a basic 2D intersection object using the Create Intersection wizard. Simply start the command, follow the prompts, and accept the default choices on the wizard dialog boxes.

CREATING A 3D INTERSECTION WITH CORRIDOR OBJECTS, ALIGNMENTS, AND PROFILES

To create a 3D intersection that includes a corridor, you will need to first create the road geometry (road centerline alignments and profiles) and existing ground surface in your drawing. Once these components exist in the drawing, you can proceed with using the Create Intersection wizard. The wizard prompts you to select the location in the drawing where the two road centerline alignments intersect.

You can start with the following data combinations:

- Two intersecting centerline alignments
- Two intersecting centerline alignments with one or more road edge offset alignments and or their profiles.

You can have profiles defined already, or not. However, if profiles are not available, then features that are associated with 3D modeling will not be available in the Intersection Wizard. For example, if you begin creating an intersection object with no profiles, then the following wizard options will not be available for selection:

- Creating offset alignment and curb return profiles
- The ability to create a new corridor.
- To add to an existing corridor in the intersection area

With any of the scenarios just described, you can start the Create Intersection command, select the point where the centerline alignments intersect, and proceed with creating an intersection using the Create Intersection wizard.

INTERSECTION ROAD PRIORITY

When you create an intersection object, a Priority value is assigned to the main (primary) and secondary (side) road alignments. The following table lists the value of the Priority property:

Road (alignment)	Priority
Main (primary) road alignment	1
Secondary road alignment	2

If you are creating a T-shaped (3-way) intersection, then the alignment that passes through the intersection is automatically specified as the primary road (main road). In this situation, the Priority is automatically set to a value of 1 for that alignment, and you are not prompted to specify which road is the primary road because this happens automatically.

You cannot change the priority of a road in an intersection after it has been created. However, if you want to change the priority of the alignments during the intersection creation, you can do so from the Geometry Details page of the Create Intersection wizard.

It is also important to note that typically, the secondary road (or lower priority) profile is automatically locked at the intersection location to the elevation of the main road (higher priority) main road. The profile of the main road is not modified.

### INTERSECTION GRADING OPTIONS

The Intersection Corridor Type property identifies the type of grading that will be applied to roads in an intersection object: Primary Road Crown Maintained or All Crowns Maintained. You must specify this type when you create the intersection, on the General page of the Create Intersection wizard.

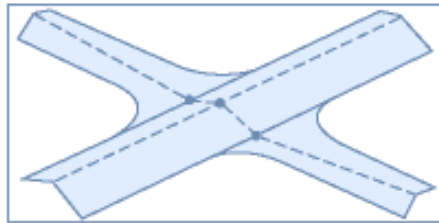
For existing intersections, the intersection corridor type is displayed on the Intersection Details tab of the Intersection Properties dialog box, in the Intersection Quadrants section. You can set the creation default for this option on the Edit Command Settings - CreateIntersection dialog box.

Once the intersection is created, you cannot change the value of the Intersection Corridor Type property. If you do want to change this option after the intersection object is created, you must delete the intersection object, and create a new one with the desired Intersection Corridor Type.

#### PRIMARY ROAD CROWN MAINTAINED

In this type of intersection, the crown of the primary road is maintained, while the crown (profile) of the secondary road is adjusted to match the edge of the primary road and the intersection point. The crown (profile and edges) of the primary road are not affected.

The following conceptual graphic is displayed on the wizard dialog when you select this option:

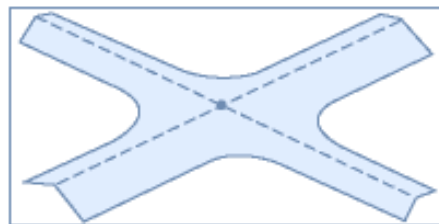


This represents how the grading occurs for the intersection object.

#### ALL CROWNS MAINTAINED

In this type of intersection, the profile of the side road is adjusted to match the main road elevation at the intersection point. The main road profile is not affected. The edges are blended together along the curb returns (via the curb return profiles).

The following conceptual graphic is displayed on the wizard dialog when you select this option:



**Note** Once an intersection object is created, you cannot change the value of the intersection Corridor Type property.

### INTERSECTION OBJECT CONSIDERATIONS

It is important to understand the following before you begin creating intersections:

- Using the Create Intersection wizard, you can create an intersection object that contains up to four quadrants.
- If the default intersection assembly mapping and target assignments does not meet your design requirements, you can create the intersection using these components, and then edit the intersection regions manually to satisfy your design requirements.
- If you create an intersection, and then manually edit the intersection corridor regions, those changes will be overwritten if the intersection is regenerated (by clicking Recreate Corridor Regions on the Intersection tab) or by rebuilding the intersection.
- When creating an intersection, targeting (both horizontally and vertically) is done automatically. If you want to change targets, you must manually modify the intersection corridor region(s) using the Corridor Properties dialog box.
- Typically, when an intersection object is created, the following objects are automatically added to the current drawing: intersection object, corridor(s), assemblies, subassemblies, offset alignments, and curb return alignments. However, assemblies, subassemblies, corridors, and profiles are only added if the appropriate options are selected.

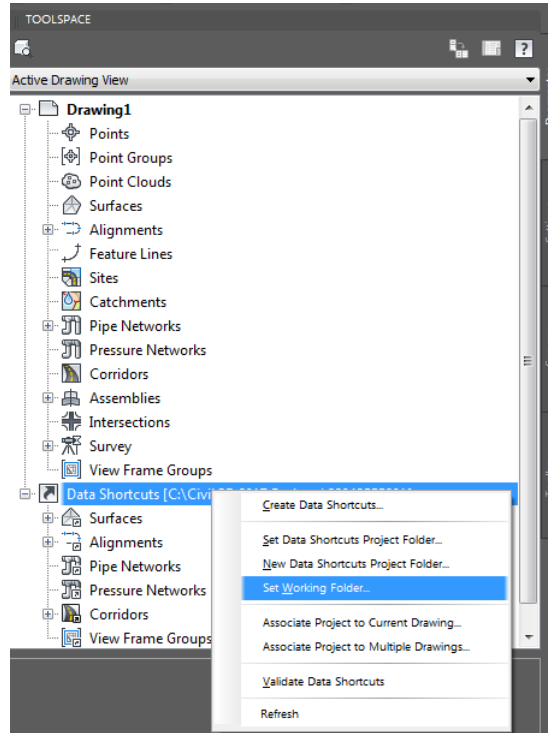
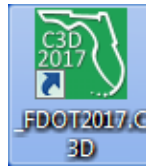


Contained in the FDOT Civil 3D Roadway Design & 3D Modeling -Advanced Manual you will be creating the above SR61 and US98 intersection.

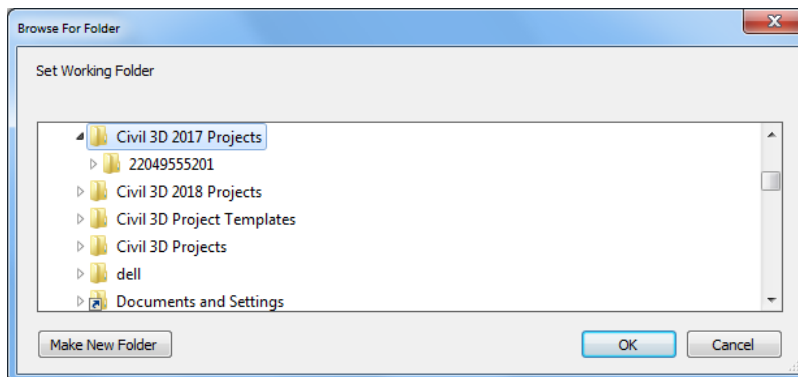
## Exercise 2.1 Set Data Shortcuts Paths

In this exercise you will be setting up the Data Shortcut paths for the 22049555201project.

1. Start the FDOT Civil 3D State Kit by double clicking the **\_FDOT20##.C3D** icon as shown below:

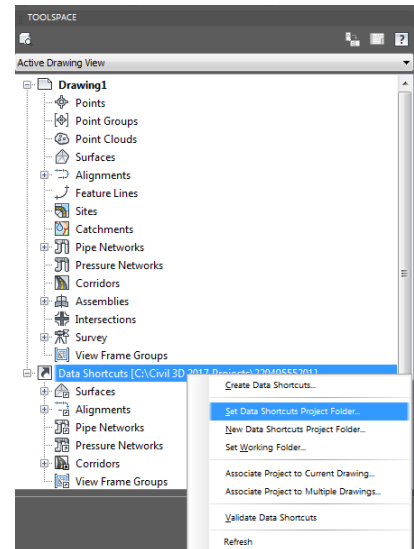


2. From *TOOLSSPACE* > *Prospector tab* > *Data Shortcuts*, right click to display popup menu and select **Set Working Folder**.

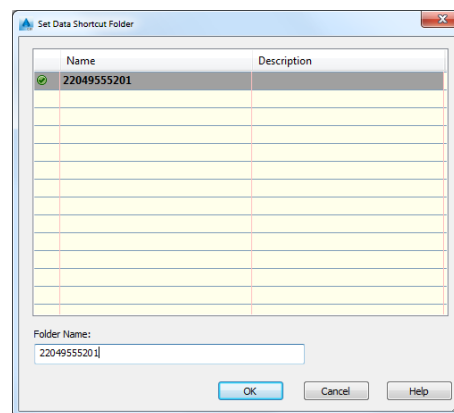


3. From the Browse For Folder dialog box, use the scroll bar to navigate and click on the **C:\Civil 3D 2017 Projects** folder. Click **OK** to close the Browse For Folder dialog.

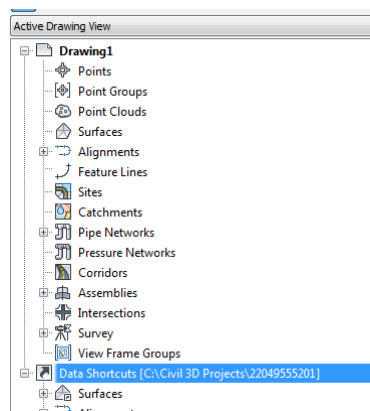
- From *TOOLSPACE > Prospector tab > Data Shortcuts*, right click and select **Set Data Shortcuts Project Folder**.



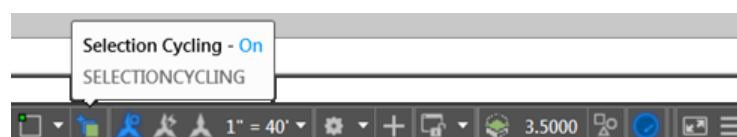
- From the Set Data Shortcut Folder dialog box, select 22049555201 from the list.
- Click **OK** to close the Set Data Shortcut Folder dialog..



- The Data Shortcuts are now set to reference the C:\Civil 3D 2017 Projects\22049555201 folder.



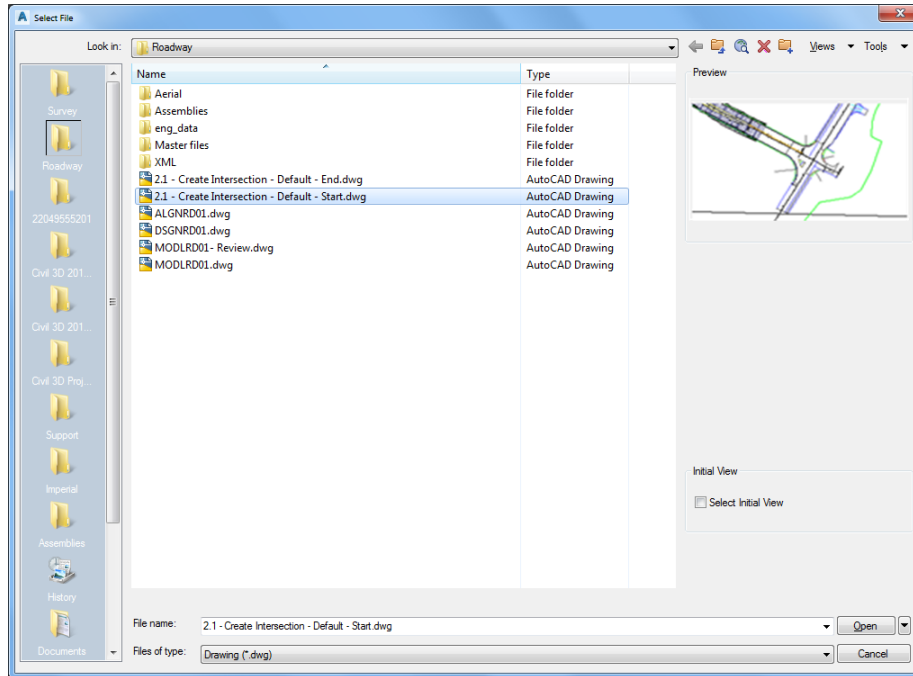
- From the Status Bar at the bottom of the window toggle **On Selection Cycling** if not on by clicking on the icon as shown below. Selection Cycling is not drawing specific but an option that you can toggle on or off at any time. If a new drawing is created or opened the Selection Cycling option will retain the previous toggle setting.



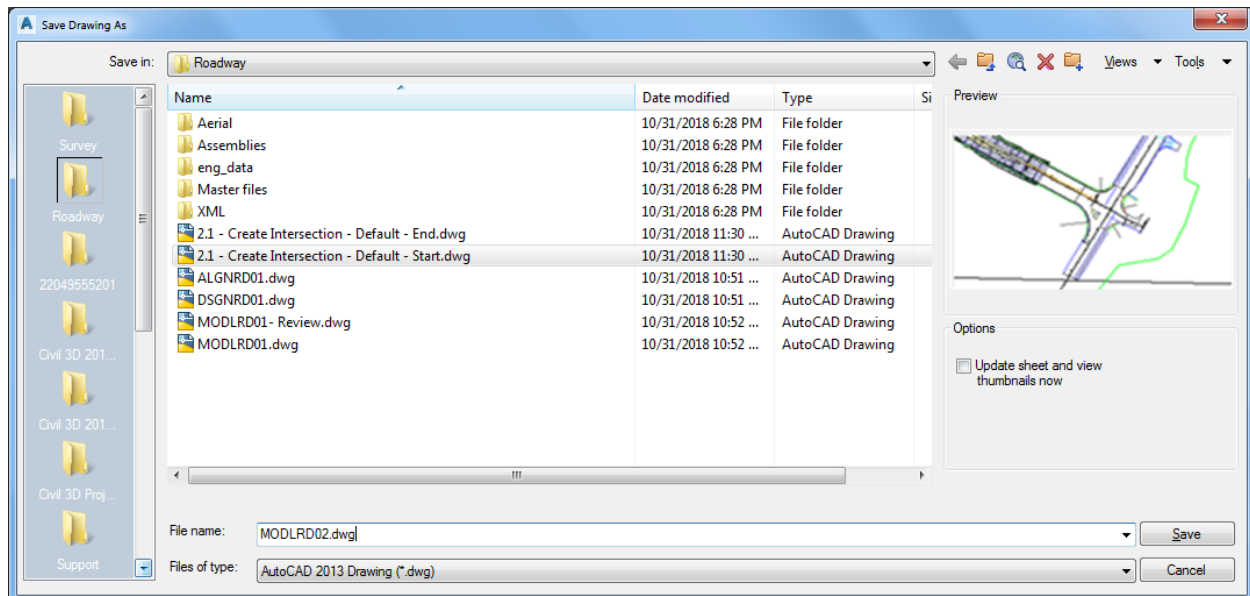
## Exercise 2.2 Create MODLRD02 File

In this exercise you will create the MODLRD02 file to create an Intersection using the default settings.

1. From the **Select File** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and select **Open 2.1 - Create Intersection - Default - Start.dwg**. Click **Open** to close the **Select File** dialog.



2. From the **Save Drawing As** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and name to **MODLRD02.dwg**. Click **Save** to close the **Save Drawing As** dialog.

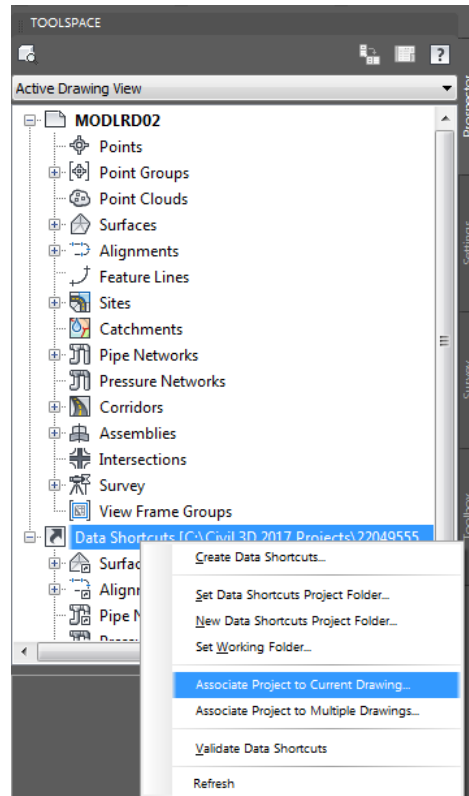




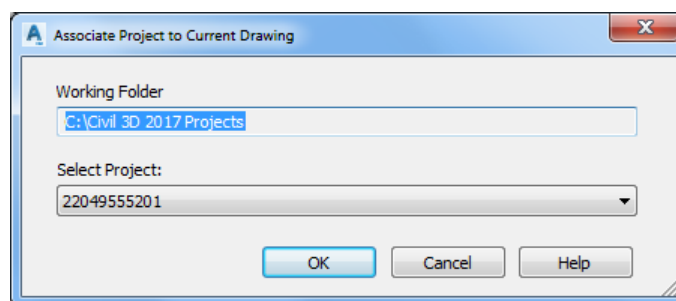
### Exercise 2.3 Associate MODLRD02.dwg File to the Project

In this exercise you will associate MODLRD02.dwg File to the Project.

1. From the *TOOLSPACE* > *Prospector tab* > *Data Shortcuts* [C:\Civil 3D 2017 Projects\22049555201], right-click and select **Associate Project to Current Drawing**.



2. From Associate Project to Current Drawing dialog, set the following values:
  - *Working Folder*: set to C:\Civil 3D 2017 Projects
  - *Select Project*: click **22049555201** from drop down list



3. Click **OK** to close Associate Project to Current Drawing dialog.
4. **MODLRD02.dwg** is now associated to the C:\Civil 3D 2017 Projects\22049555201 Project.

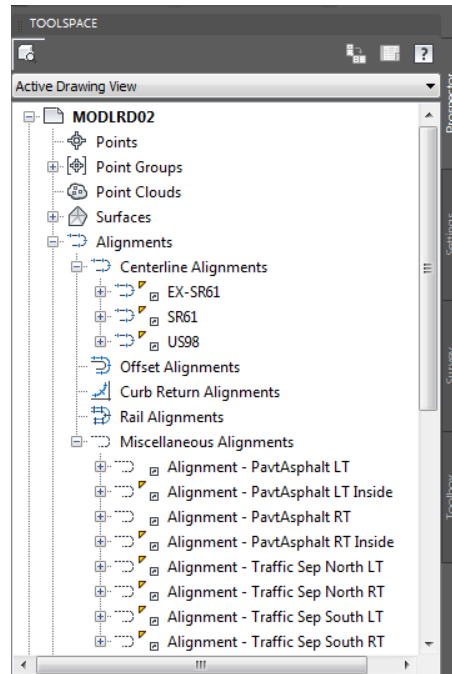


5. **Save** your file before continuing.

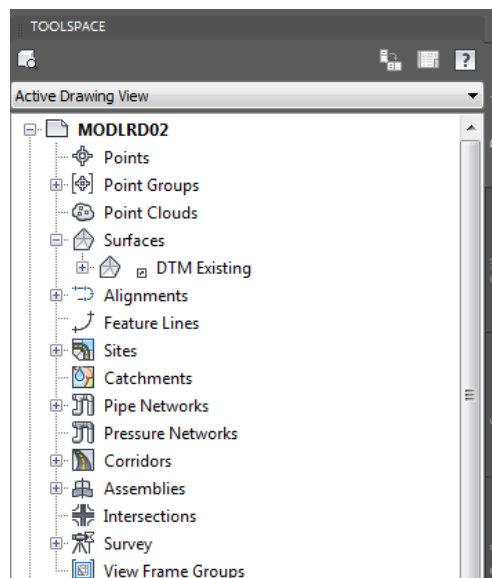
### Exercise 2.4 Review Referenced Data

In this exercise you will review referenced data.

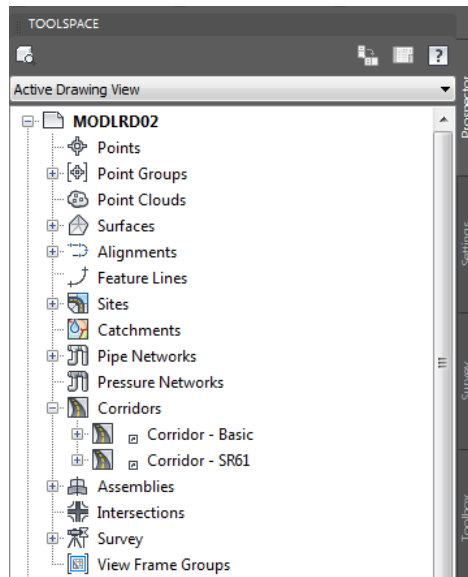
1. Review *Data Referenced Alignments* in MODLRD02 from *TOOLSPACE > Prospector tab*, expand **Alignments > Centerline Alignments**.



2. Review *Data Referenced Alignments* in MODLRD02 from *TOOLSPACE > Prospector tab*, expand **Alignments > Miscellaneous Alignments**.



3. Review Data Referenced Surfaces in MODLRD02 from TOOLSPACE > Prospector tab, expand **Surfaces**.

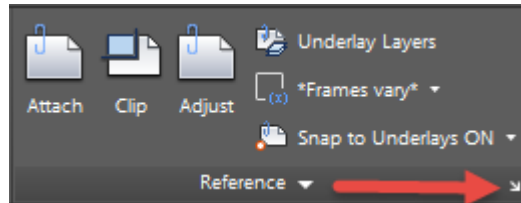
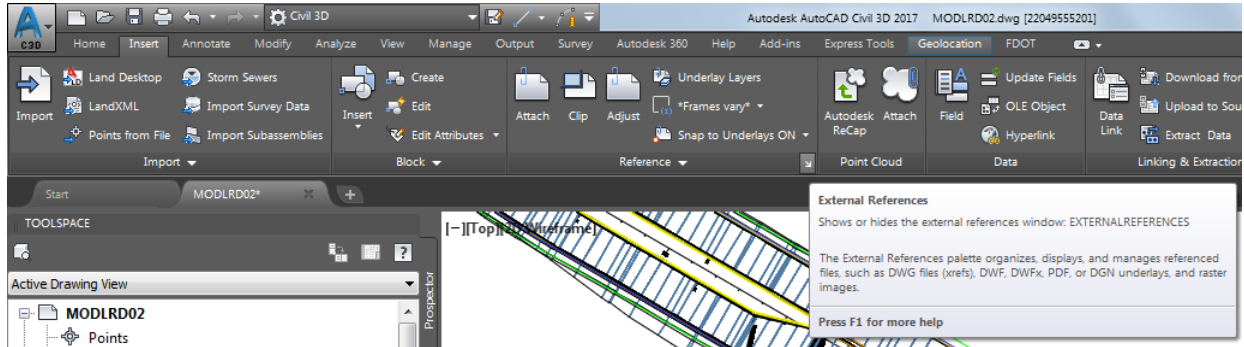


4. Review *Data Referenced Surfaces* in MODLRD02 from TOOLSPACE > Prospector tab, expand **Corridors**

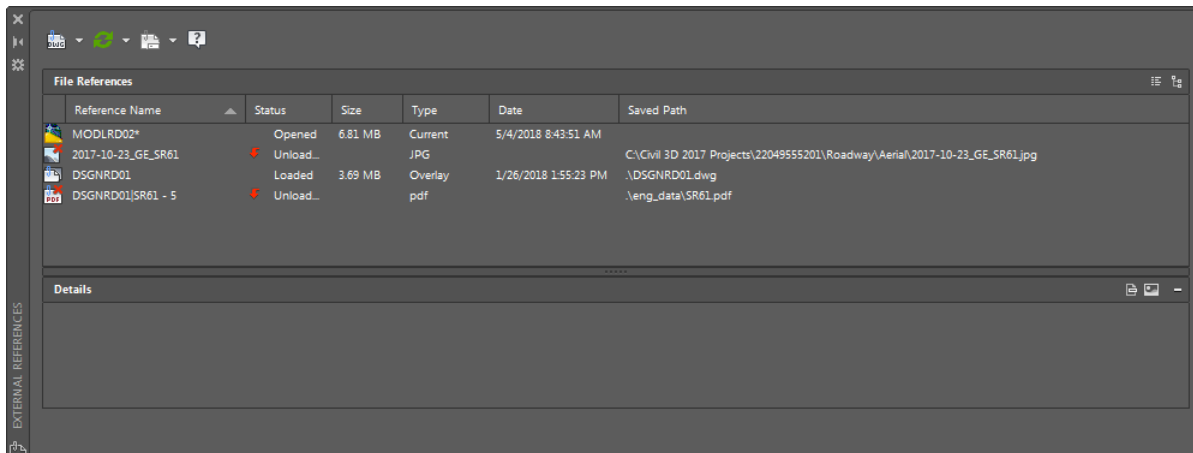
### Exercise 2.5 Review Attached External Reference Files (Xrefs)

This exercise will show you how to review the attached External Reference files (Xrefs) in the MODLRD02.dwg.

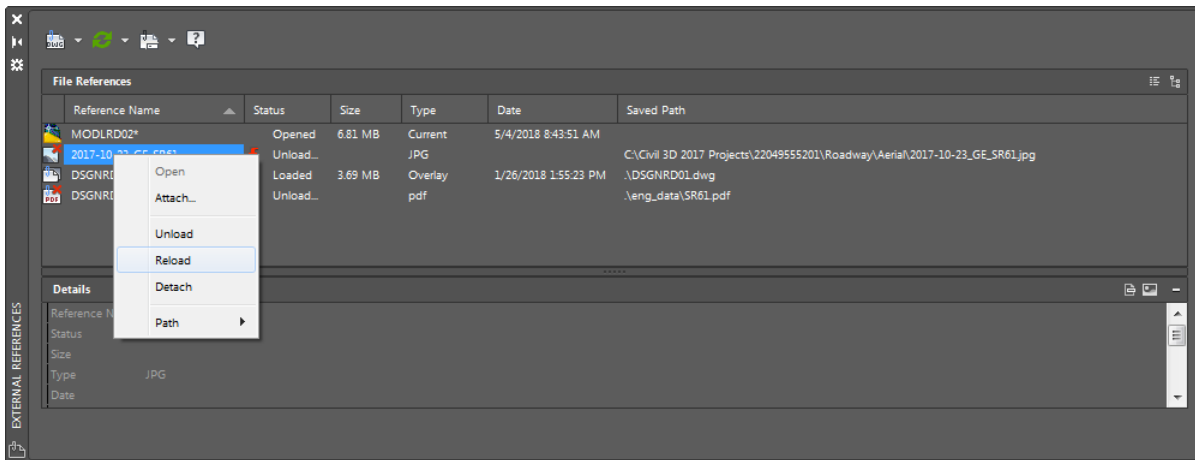
1. From the *Insert Tab > Reference panel*, click the **arrow** located in the lower right hand corner to open the *External Reference* tool palette.



2. The External References tool palette is displayed.
  - ✓ 2017-10-23-GE-SR61 is listed as Unloaded as a JPG (Image) attachment.
  - ✓ DSGNRD01.dwg is listed as Loaded as an Overlay attachment.
  - ✓ DSGNRD01|SR61 - 5 is listed as Unloaded as an PDF attachment.



- The next steps will show you how to Reload the attached 2017-10-23\_GE\_SR61 image Xref from the MODLRD02.dwg



- In the list, right-click on 2017-10-23\_GE\_SR61 and select **Reload**. By reloading the external reference 2017-10-23\_GE\_SR61 the drawing editor now displays the 2017-10-23\_GE\_SR61.jpg aerial image
- Close External References** tool palette.
- Review Image



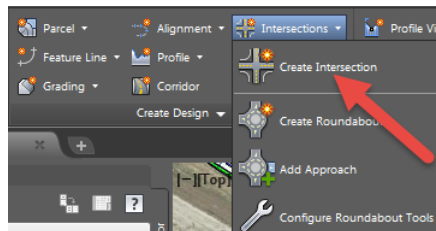
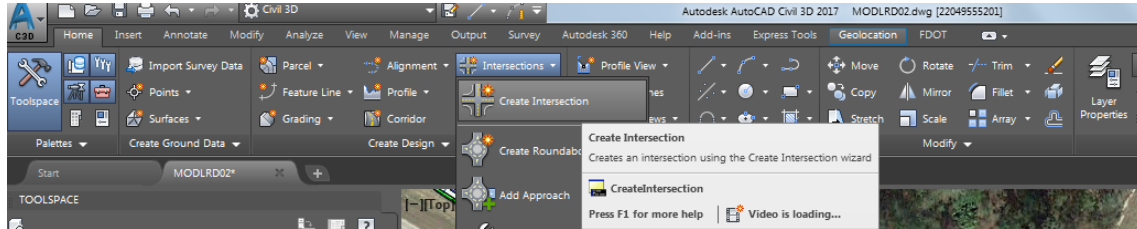
- Save** your file before continuing.



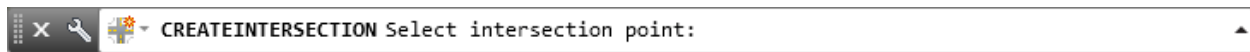
### Exercise 2.6 *Intersection Wizard - Create Intersection using default values*

This exercise will show you how to use the Intersection Wizard to create an Intersection using default values.

1. From the Home Tab > Create Design panel, click on Intersections, then from the list select Create Intersections to start the Intersection Wizard.



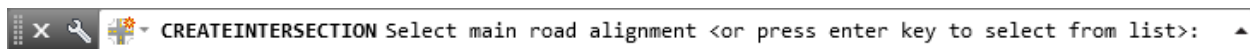
2. The command line prompts you to Select intersection point:



3. Select the intersection of the SR61 and US98 alignments

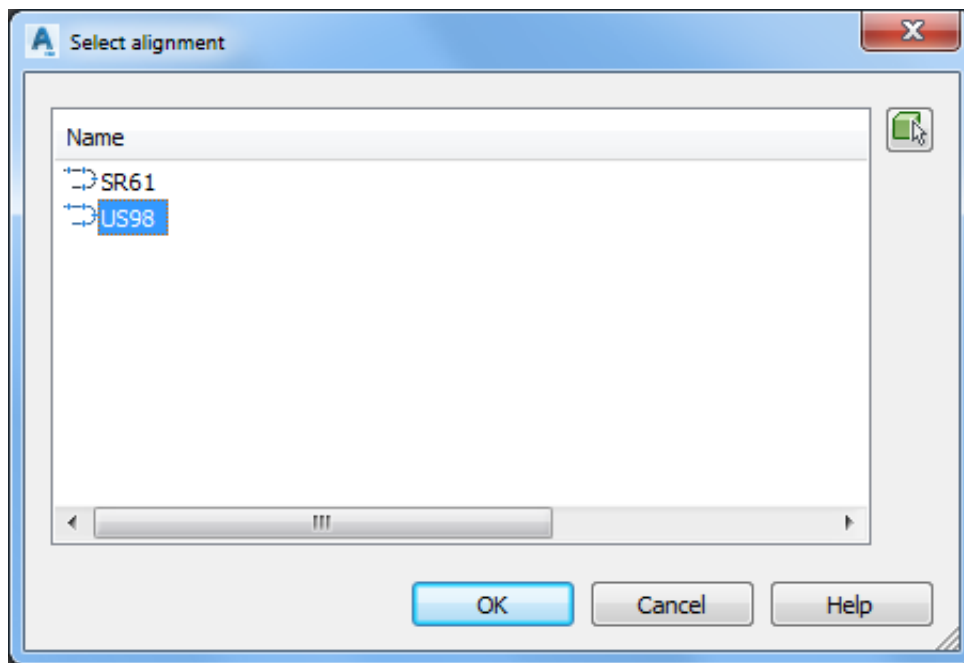


4. The command line prompts you to Select main road alignment < or press enter key to select from list>:



5. Press the Enter key.

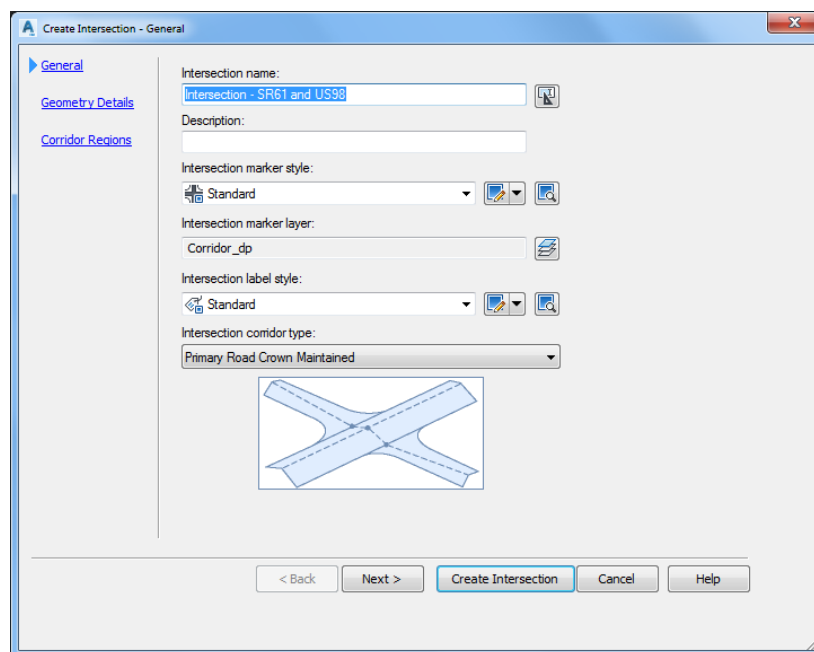
- From the **Select alignment** dialog select US98 as the Primary Road, then click OK to continue



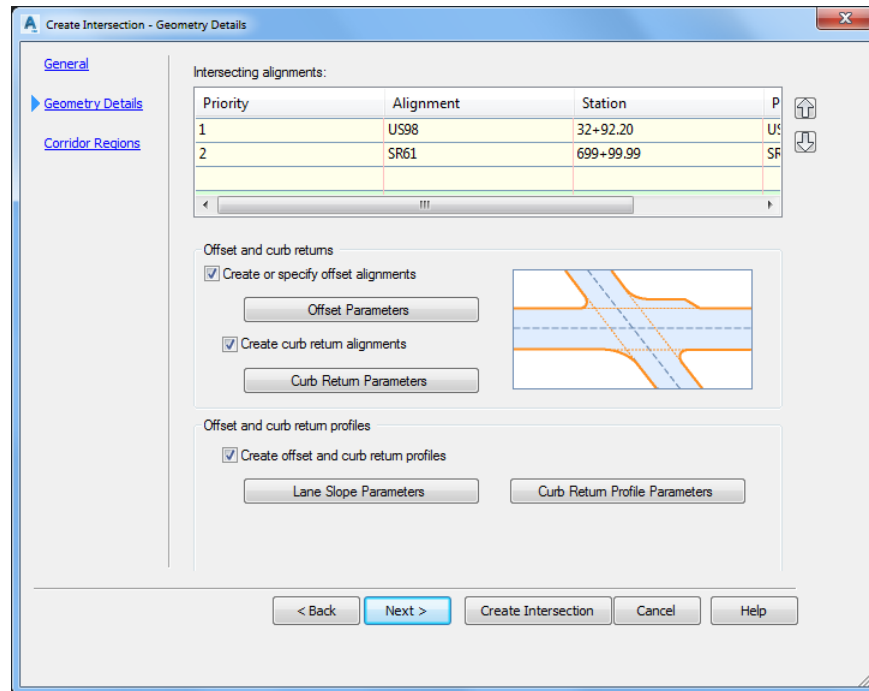
- From the **Create Intersection** dialog:

➤ **General Panel:**

- Set *Intersection name* - Intersection - SR61 and US98
- Set *Intersection corridor type*: Primary Road Crown Maintained
- Review other default settings
- Click **Next >** to continue



➤ **Geometry Details Panel:**



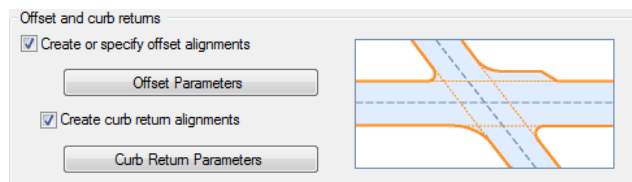
1. Intersecting alignments:

- ✓ Alignment US98 has been set as the *Primary Alignment*.
- ✓ Alignment SR61 set as the *Secondary Alignment*.

Priority	Alignment	Station	P
1	US98	32+92.20	US
2	SR61	699+99.99	SF

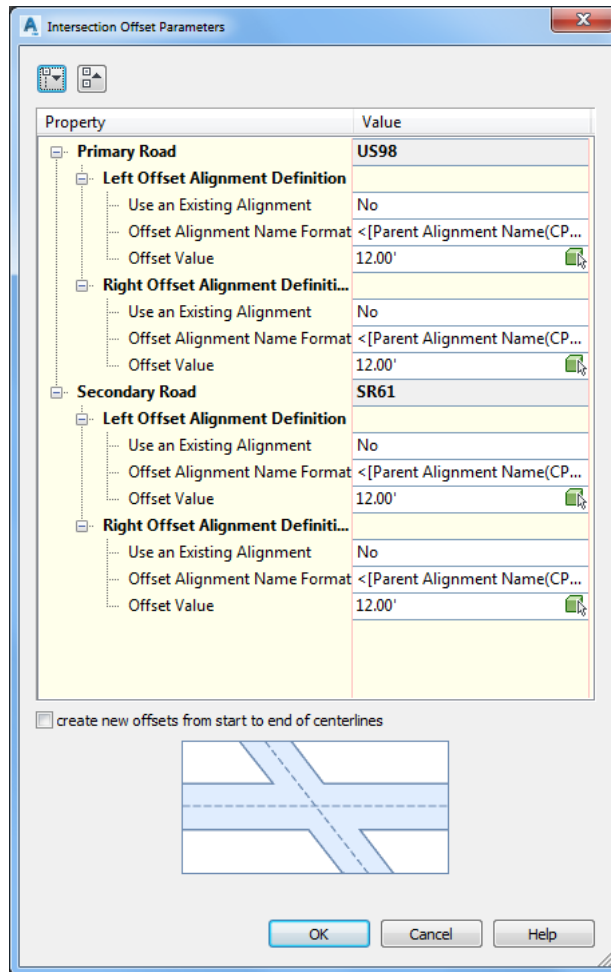
2. Offset and curb returns:

- Check *Create or specify offset alignments* box: Click **Offset Parameters**.

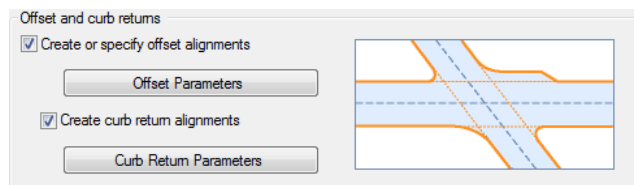




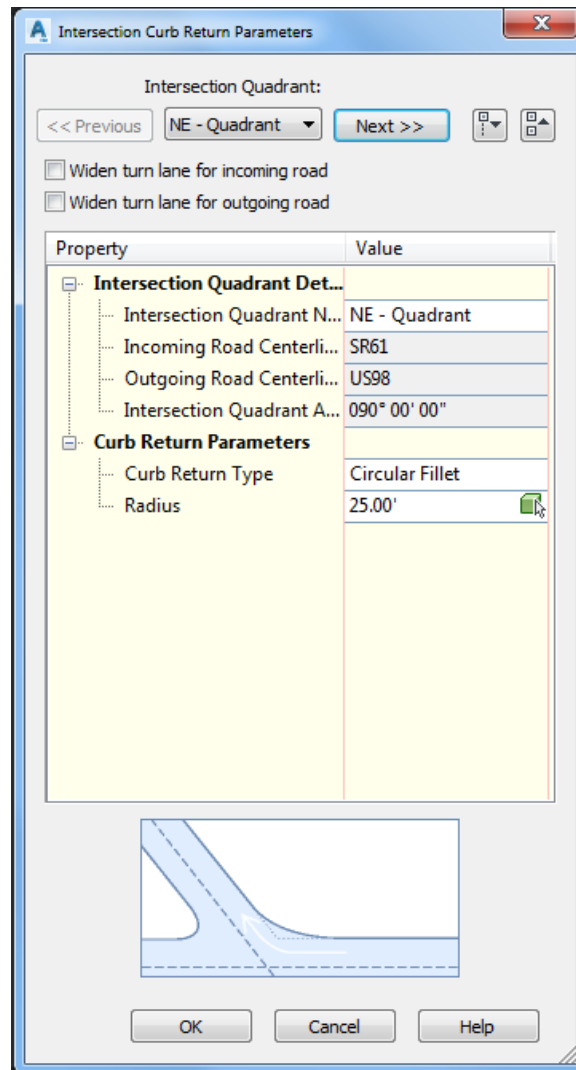
- ✓ Intersection Offset Parameters dialog, review default settings, then Click **OK** to continue



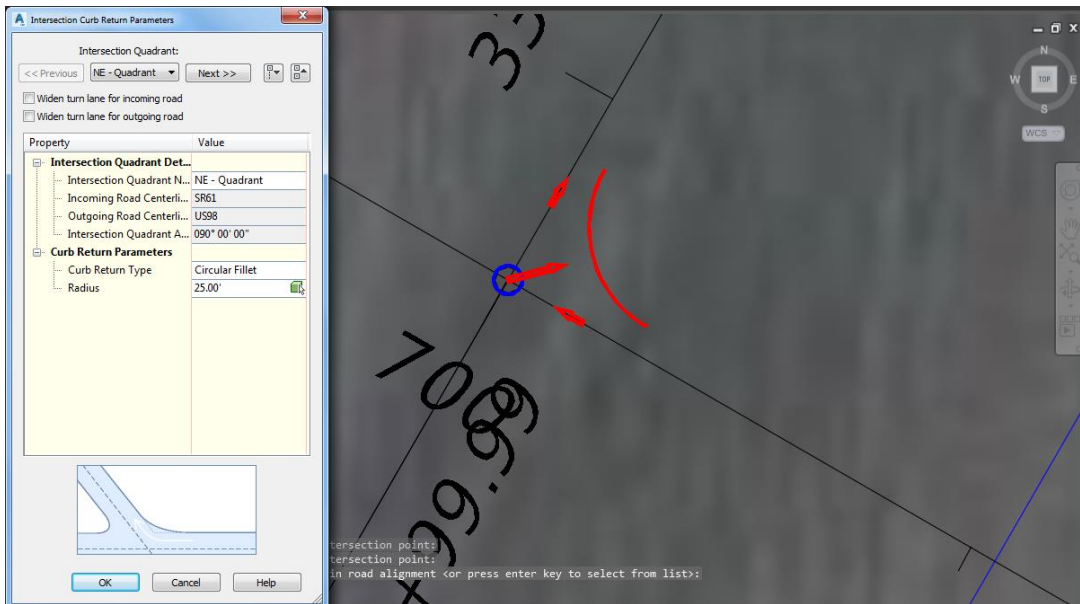
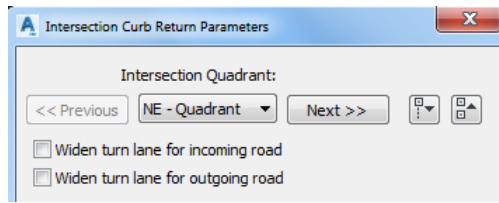
- Check *Create curb return alignments* box: Click **Curb Return Parameters**



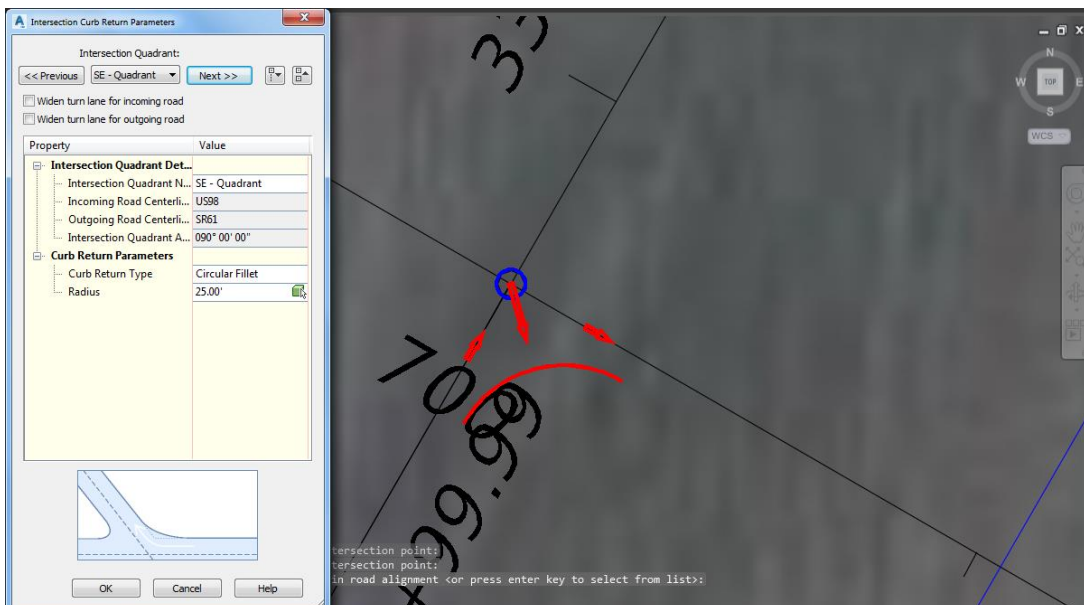
- ✓ Intersection Curb Return Parameters dialog
  - Intersection Quadrant: Cycle through each Quadrant by clicking **Next >>**
  - Review default settings in dialog and preview graphics displayed on the screen.



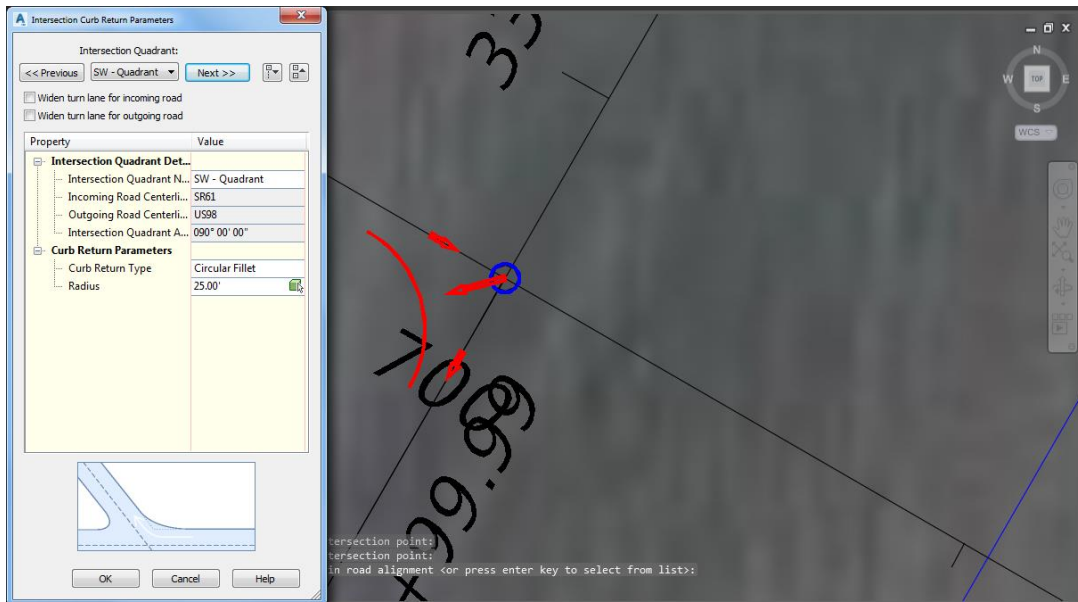
- NE – Quadrant. Click Next >>



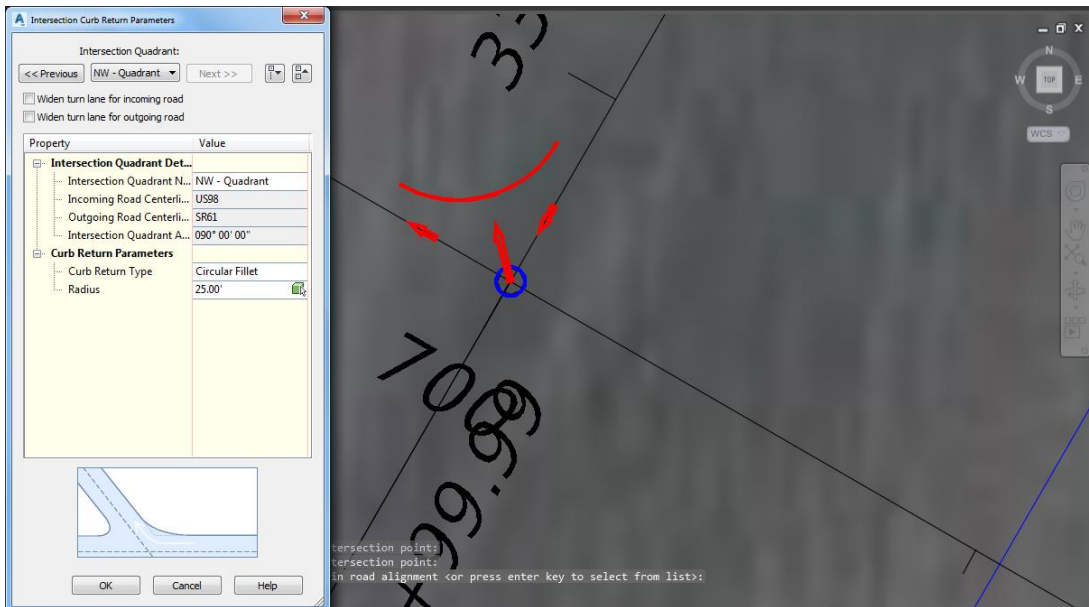
- SE – Quadrant. Click Next >>



- SW – Quadrant. Click **Next >>**

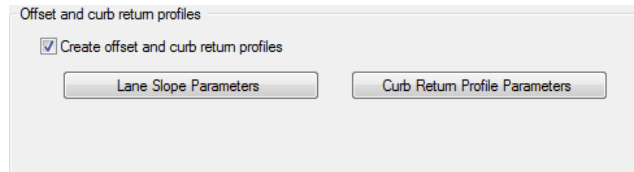


- NW - Quadrant. Click **OK** to continue



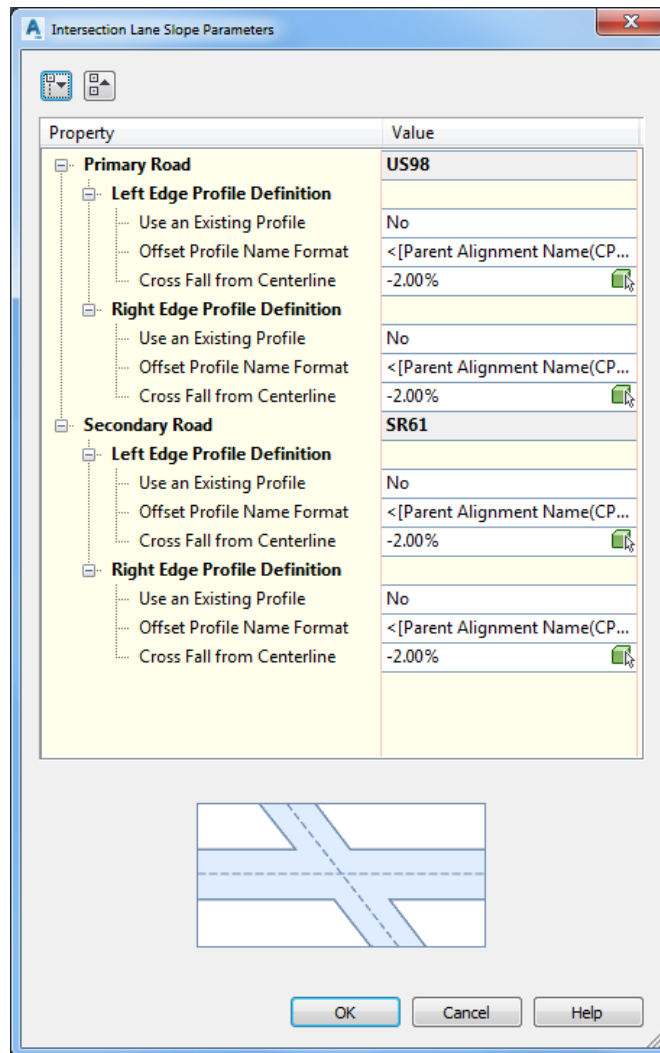
3. Offset and curb return profiles.

- o Check *Create offset and curb return profiles* box and click **Lane Slope Parameters**

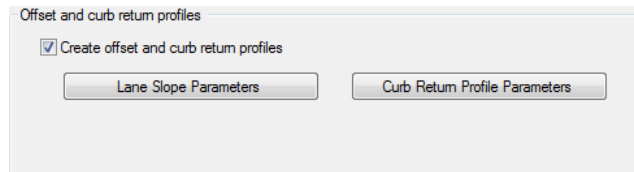


✓ Intersection Lane Slope Parameters dialog

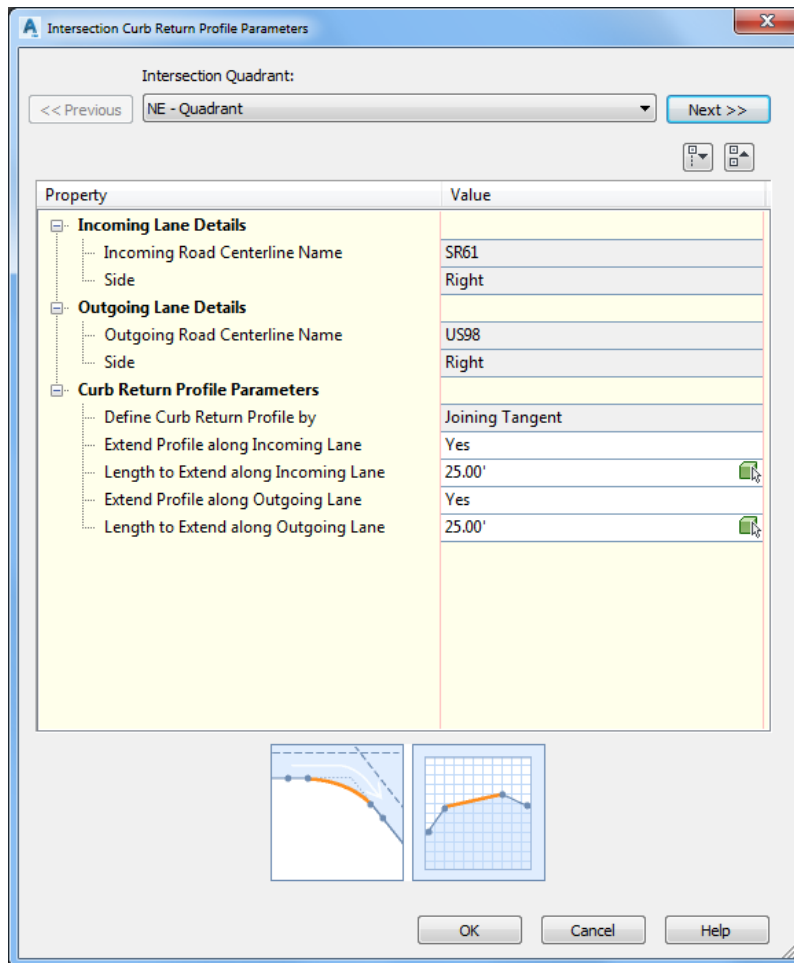
- o Review default settings. Click **OK** to continue



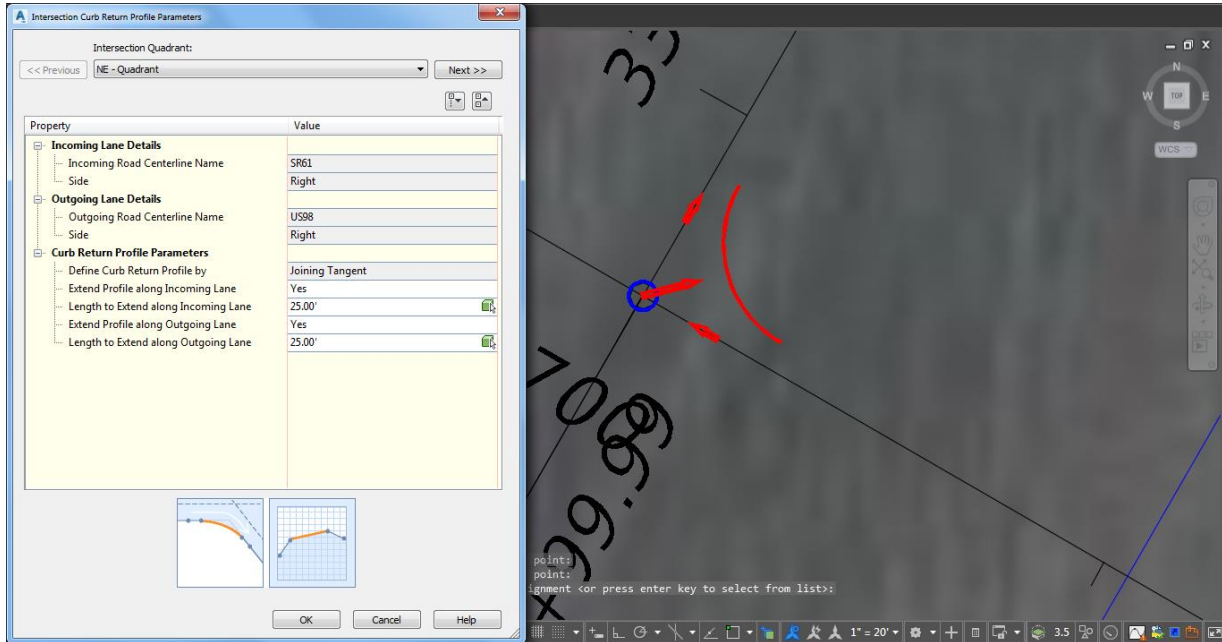
- Offset and curb return profiles. Click Curb Return Profile Parameters



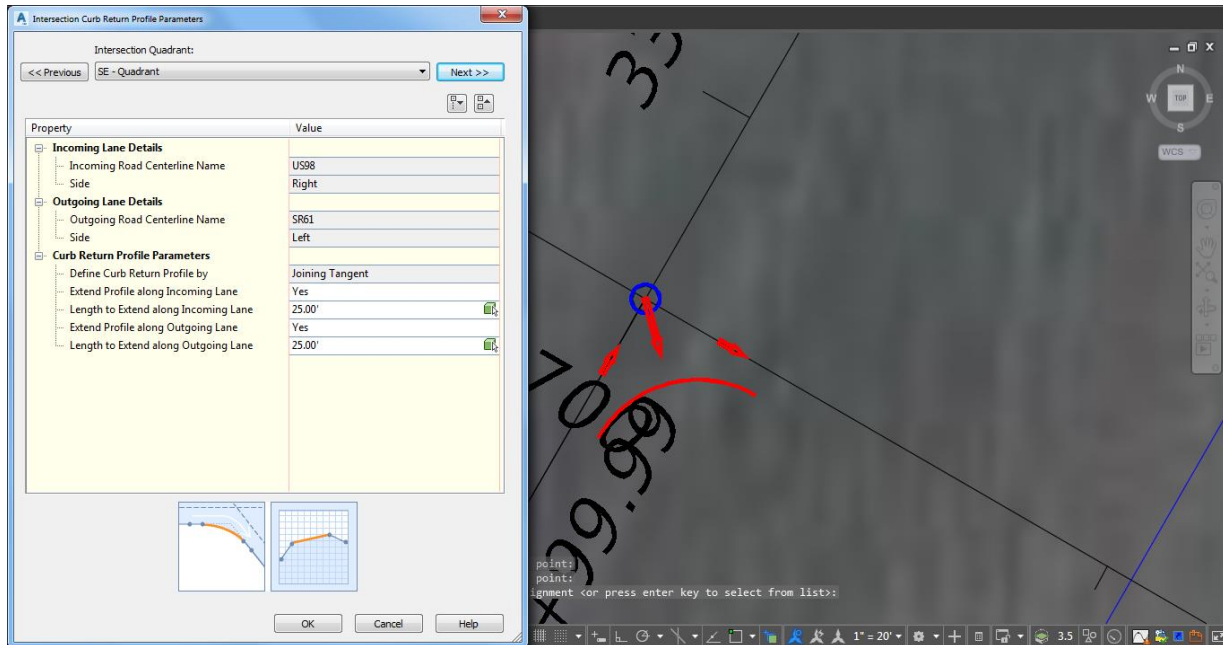
- ✓ Intersection Curb Return Profile Parameters dialog:
  - Intersection Quadrant: Cycle through each Quadrant by Clicking Next >>
  - Review default settings in dialog and preview graphics displayed on screen.



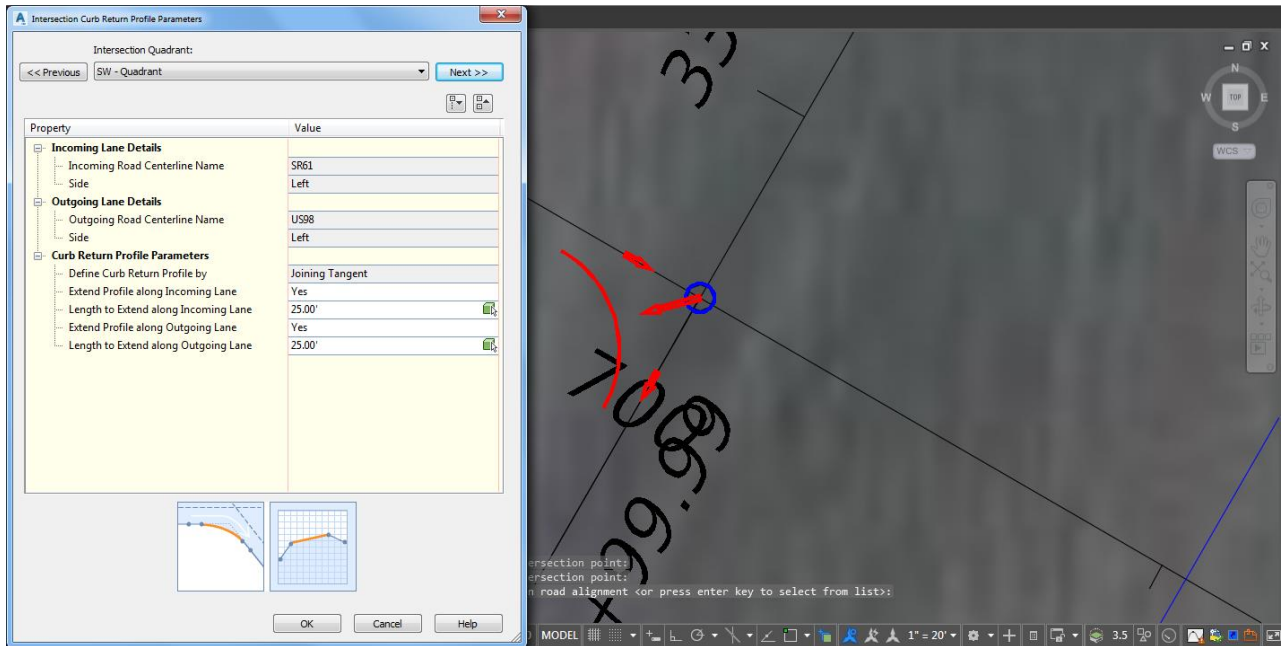
- NE – Quadrant. Click Next >>



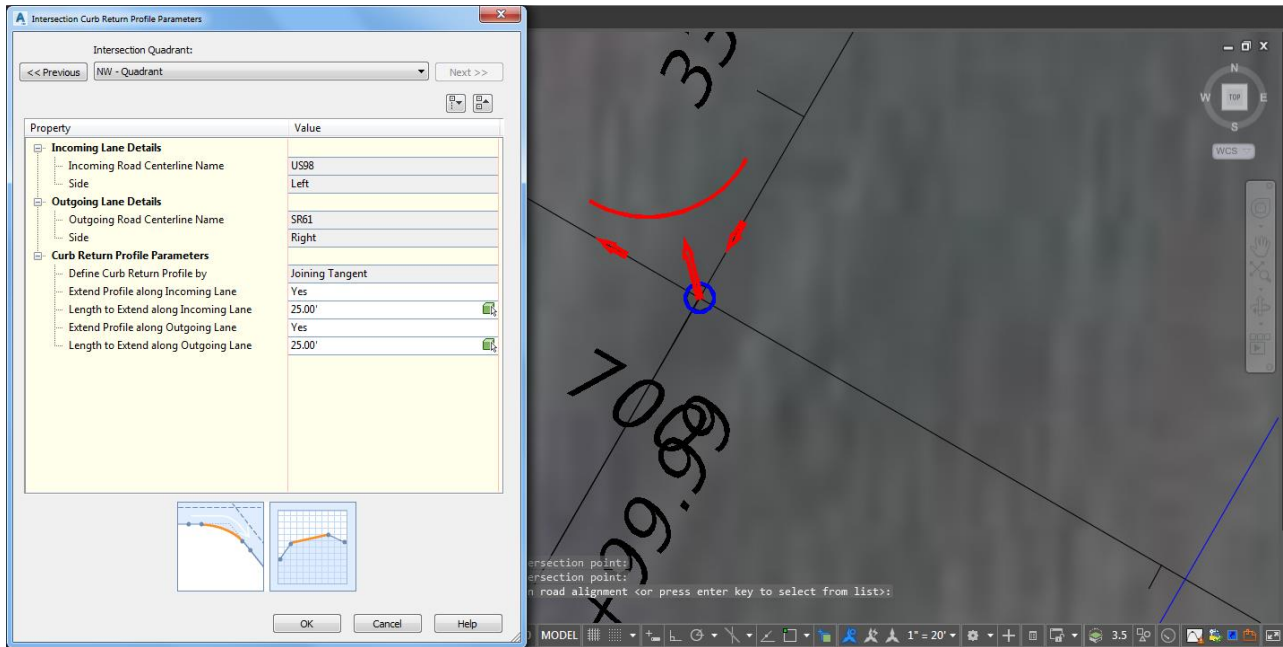
- SE – Quadrant. Click Next >>



- SW – Quadrant. Click **Next >>**

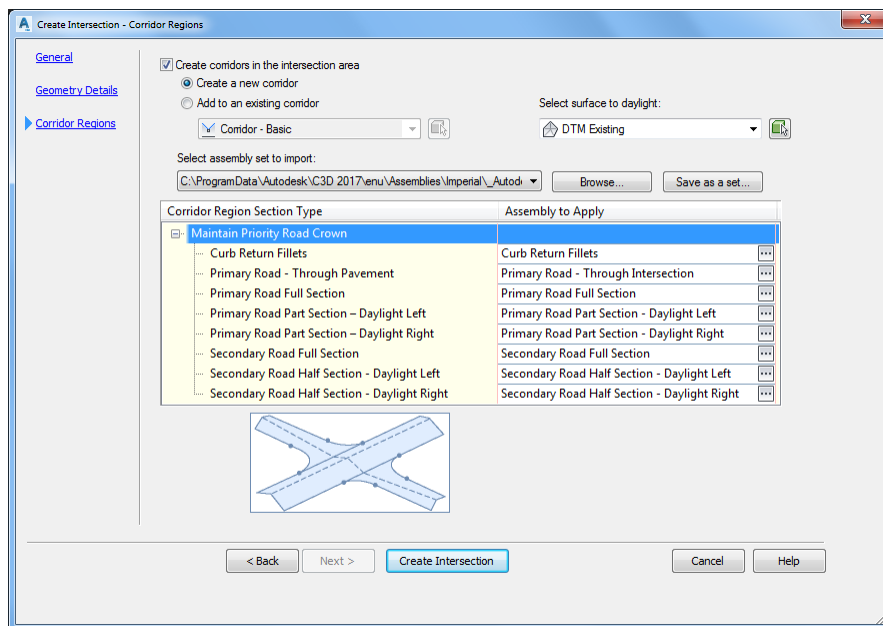


- NW – Quadrant. Click **OK** to continue >>

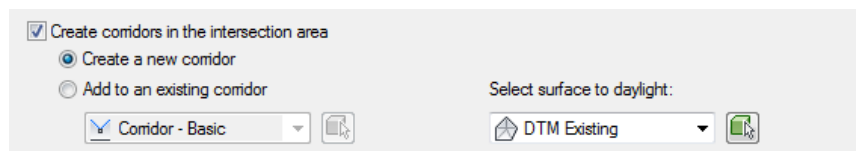




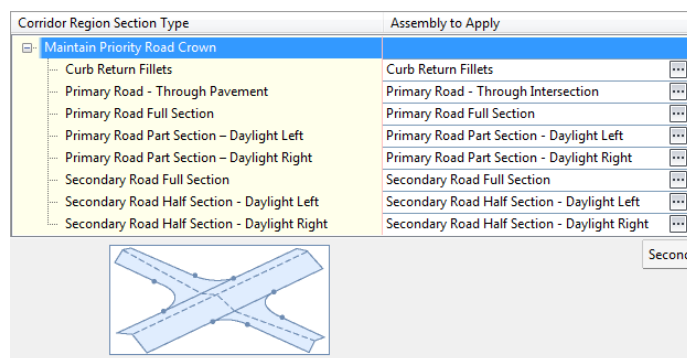
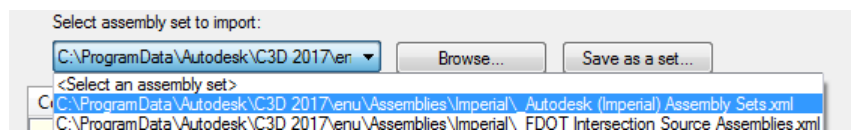
➤ **Corridor Regions Panel :**



1. Check Create corridors in the intersection area.
  - Click **Create a new corridor**.
  - *Select surface to daylight: **DTM Existing*** from dropdown list.



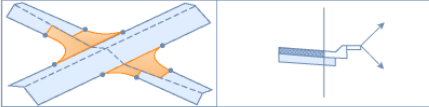
2. Select assembly set to import:
  - Select from list **\_Autodesk (Imperial) Assembly Sets.xml**



- Review each *Corridor Region Section Type and Assembly to Apply*.

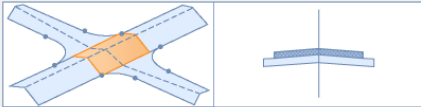
Curb Return Fillets

Corridor Region Section Type	Assembly to Apply
[-] Maintain Priority Road Crown	
Curb Return Fillets	Curb Return Fillets
Primary Road - Through Pavement	Primary Road - Through Intersection
Primary Road Full Section	Primary Road Full Section
Primary Road Part Section – Daylight Left	Primary Road Part Section - Daylight Left
Primary Road Part Section – Daylight Right	Primary Road Part Section - Daylight Right
Secondary Road Full Section	Secondary Road Full Section
Secondary Road Half Section - Daylight Left	Secondary Road Half Section - Daylight Left
Secondary Road Half Section - Daylight Right	Secondary Road Half Section - Daylight Right



Primary Road - Through Pavement

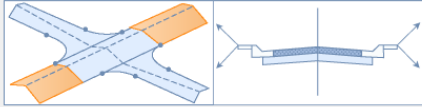
Corridor Region Section Type	Assembly to Apply
[-] Maintain Priority Road Crown	
Curb Return Fillets	Curb Return Fillets
Primary Road - Through Pavement	Primary Road - Through Intersection
Primary Road Full Section	Primary Road Full Section
Primary Road Part Section – Daylight Left	Primary Road Part Section - Daylight Left
Primary Road Part Section – Daylight Right	Primary Road Part Section - Daylight Right
Secondary Road Full Section	Secondary Road Full Section
Secondary Road Half Section - Daylight Left	Secondary Road Half Section - Daylight Left
Secondary Road Half Section - Daylight Right	Secondary Road Half Section - Daylight Right



**Important!**

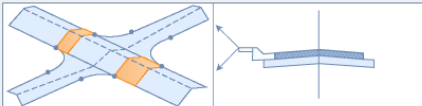
Primary Road Full Section

Corridor Region Section Type	Assembly to Apply
[-] Maintain Priority Road Crown	
Curb Return Fillets	Curb Return Fillets
Primary Road - Through Pavement	Primary Road - Through Intersection
Primary Road Full Section	Primary Road Full Section
Primary Road Part Section – Daylight Left	Primary Road Part Section - Daylight Left
Primary Road Part Section – Daylight Right	Primary Road Part Section - Daylight Right
Secondary Road Full Section	Secondary Road Full Section
Secondary Road Half Section - Daylight Left	Secondary Road Half Section - Daylight Left
Secondary Road Half Section - Daylight Right	Secondary Road Half Section - Daylight Right



Primary Road Part Section - Daylight Left

Corridor Region Section Type	Assembly to Apply
[-] Maintain Priority Road Crown	
Curb Return Fillets	Curb Return Fillets
Primary Road - Through Pavement	Primary Road - Through Intersection
Primary Road Full Section	Primary Road Full Section
Primary Road Part Section – Daylight Left	Primary Road Part Section - Daylight Left
Primary Road Part Section – Daylight Right	Primary Road Part Section - Daylight Right
Secondary Road Full Section	Secondary Road Full Section
Secondary Road Half Section - Daylight Left	Secondary Road Half Section - Daylight Left
Secondary Road Half Section - Daylight Right	Secondary Road Half Section - Daylight Right



### Primary Road Part Section - Daylight Right

Corridor Region Section Type	Assembly to Apply
[-] Maintain Priority Road Crown	
[-] Curb Return Fillets	Curb Return Fillets ...
[-] Primary Road - Through Pavement	Primary Road - Through Intersection ...
[-] Primary Road Full Section	Primary Road Full Section ...
[-] Primary Road Part Section – Daylight Left	Primary Road Part Section - Daylight Left ...
<b>Primary Road Part Section – Daylight Right</b>	<b>Primary Road Part Section - Daylight Right ...</b>
[-] Secondary Road Full Section	Secondary Road Full Section ...
[-] Secondary Road Half Section - Daylight Left	Secondary Road Half Section - Daylight Left ...
[-] Secondary Road Half Section - Daylight Right	Secondary Road Half Section - Daylight Right ...

### Secondary Road Full Section

Corridor Region Section Type	Assembly to Apply
[-] Maintain Priority Road Crown	
[-] Curb Return Fillets	Curb Return Fillets ...
[-] Primary Road - Through Pavement	Primary Road - Through Intersection ...
[-] Primary Road Full Section	Primary Road Full Section ...
[-] Primary Road Part Section – Daylight Left	Primary Road Part Section - Daylight Left ...
[-] Primary Road Part Section – Daylight Right	Primary Road Part Section - Daylight Right ...
<b>Secondary Road Full Section</b>	<b>Secondary Road Full Section ...</b>
[-] Secondary Road Half Section - Daylight Left	Secondary Road Half Section - Daylight Left ...
[-] Secondary Road Half Section - Daylight Right	Secondary Road Half Section - Daylight Right ...

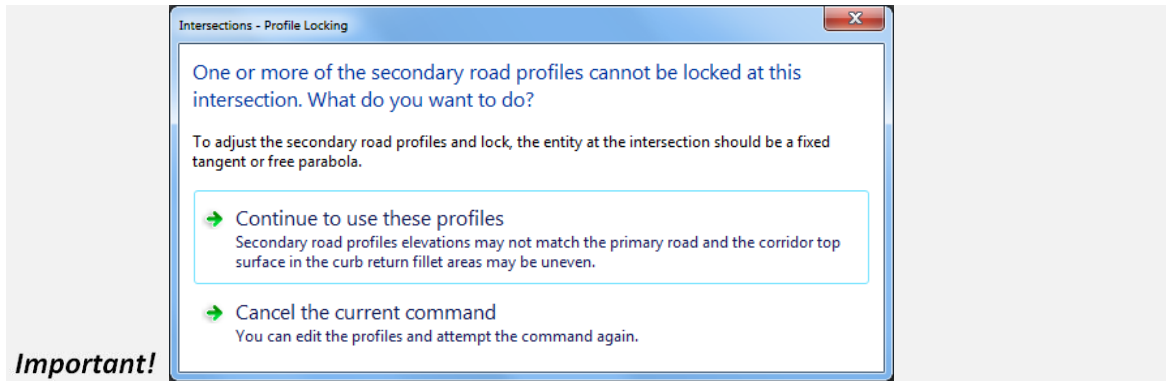
### Secondary Road Full Section - Daylight Left

Corridor Region Section Type	Assembly to Apply
[-] Maintain Priority Road Crown	
[-] Curb Return Fillets	Curb Return Fillets ...
[-] Primary Road - Through Pavement	Primary Road - Through Intersection ...
[-] Primary Road Full Section	Primary Road Full Section ...
[-] Primary Road Part Section – Daylight Left	Primary Road Part Section - Daylight Left ...
[-] Primary Road Part Section – Daylight Right	Primary Road Part Section - Daylight Right ...
[-] Secondary Road Full Section	Secondary Road Full Section ...
<b>Secondary Road Half Section - Daylight Left</b>	<b>Secondary Road Half Section - Daylight Left ...</b>
[-] Secondary Road Half Section - Daylight Right	Secondary Road Half Section - Daylight Right ...

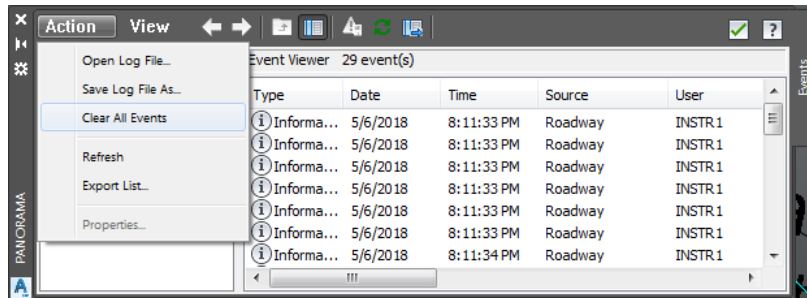
### Secondary Road Full Section - Daylight Right

Corridor Region Section Type	Assembly to Apply
[-] Maintain Priority Road Crown	
[-] Curb Return Fillets	Curb Return Fillets ...
[-] Primary Road - Through Pavement	Primary Road - Through Intersection ...
[-] Primary Road Full Section	Primary Road Full Section ...
[-] Primary Road Part Section – Daylight Left	Primary Road Part Section - Daylight Left ...
[-] Primary Road Part Section – Daylight Right	Primary Road Part Section - Daylight Right ...
[-] Secondary Road Full Section	Secondary Road Full Section ...
[-] Secondary Road Half Section - Daylight Left	Secondary Road Half Section - Daylight Left ...
<b>Secondary Road Half Section - Daylight Right</b>	<b>Secondary Road Half Section - Daylight Right ...</b>

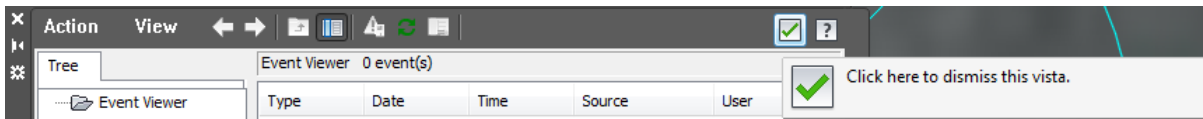
3. Click **Create Intersection to create Intersection**. If the Intersection - Profile Locking message is displayed, click on **Continue to use these profiles**



4. The Panorama tool palette (Event Viewer) is displayed. Select the Events tab to review the Events, then right-click on the Action tab, select Clear All Events.



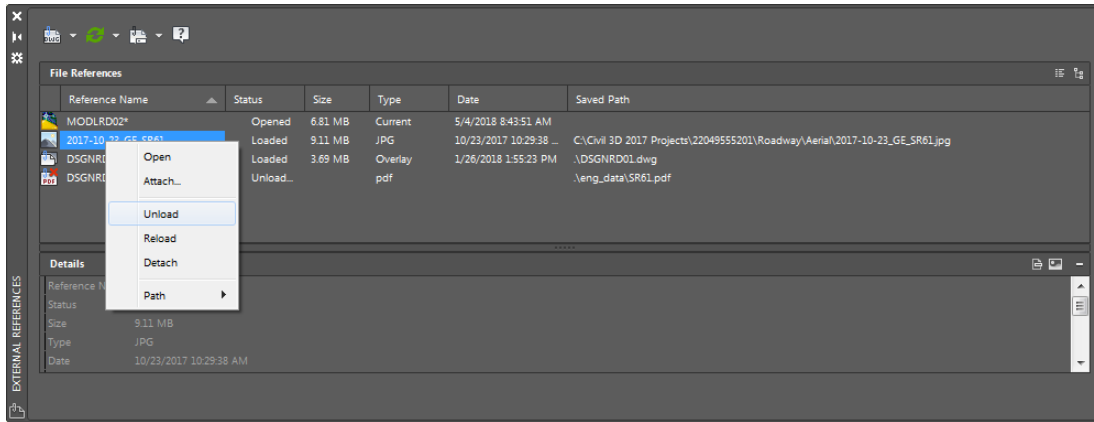
5. To close Panorama tool palette (Event Viewer) click on the **Green Check** to close.



### Exercise 2.7 Unload Xref from MODLRD

The next steps will show you how to Unload the attached 2017-10-23\_GE\_SR61 image Xref from the MODLRD02.dwg.

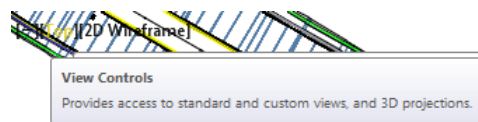
1. From the *Insert Tab > Reference panel*, click the **arrow** located in the lower right-hand corner to open the *External Reference* tool palette.
2. In the list, right-click on 2017-10-23\_GE\_SR61 and select **Unload**. By unloading the external reference 2017-10-23\_GE\_SR61 the drawing editor no longer displays the 2017-10-23\_GE\_SR61.jpg aerial image.



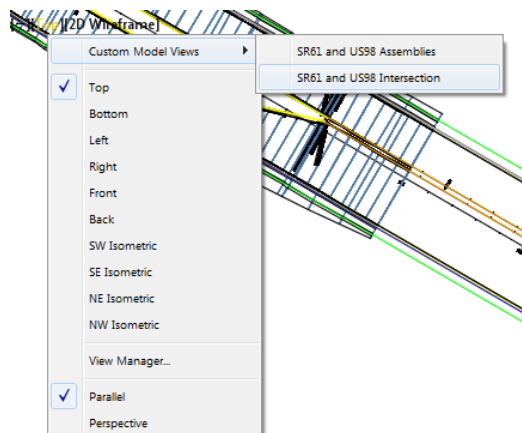
3. **Close** *External References* tool palette.
4. **Save** your file before continuing.

### Exercise 2.8 Restore a Custom Model View

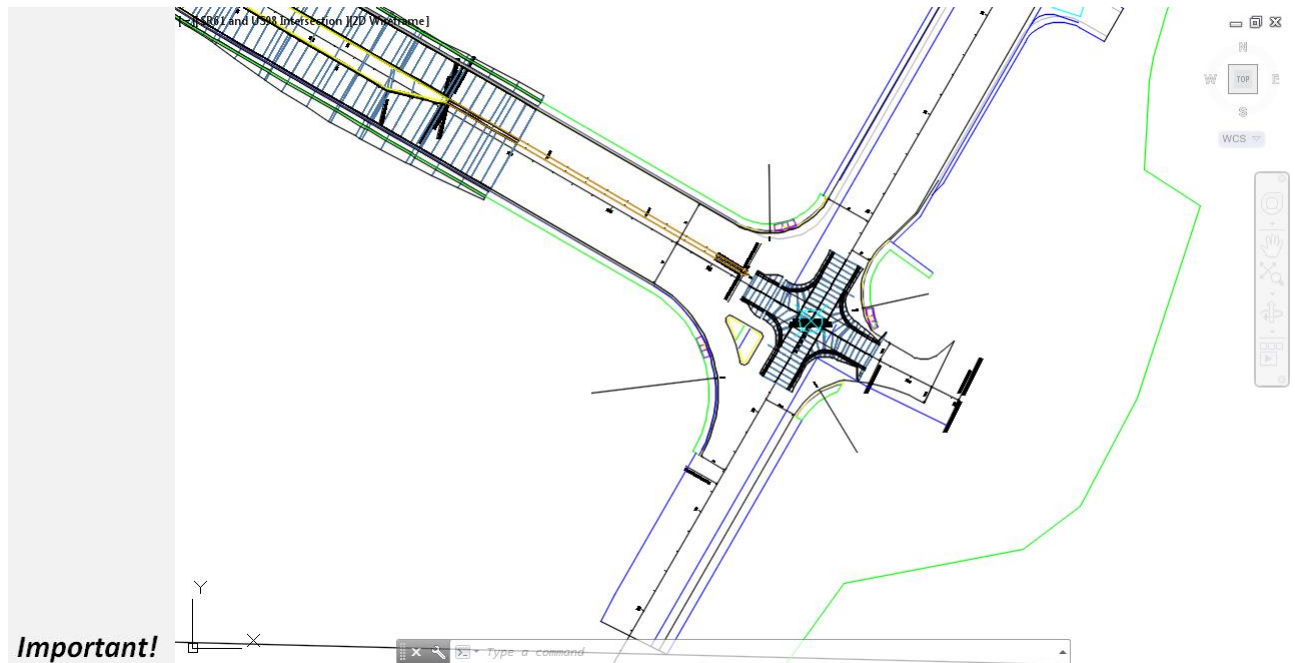
Next you are going to restore a Restore a Custom Model View: SR61 and US98 Intersection using View Controls.



1. From the Drawing Editor window, in the upper left corner Click on **Top**, then hover over **Custom Model Views**, and select **SR61 and US98 Intersection**. (Both of these custom model views have been pre-created for use with this dataset)

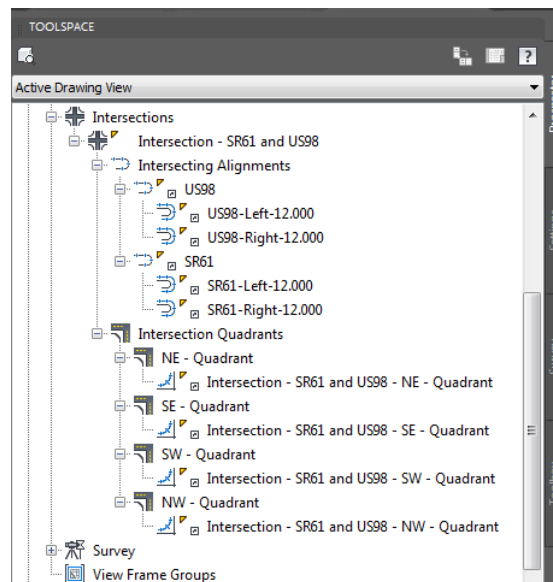


- Review results of SR61 and US98 intersection created using the Intersection wizard with the default values.



- **Review results of Intersection creation from the TOOLSPACE > Prospector tab**

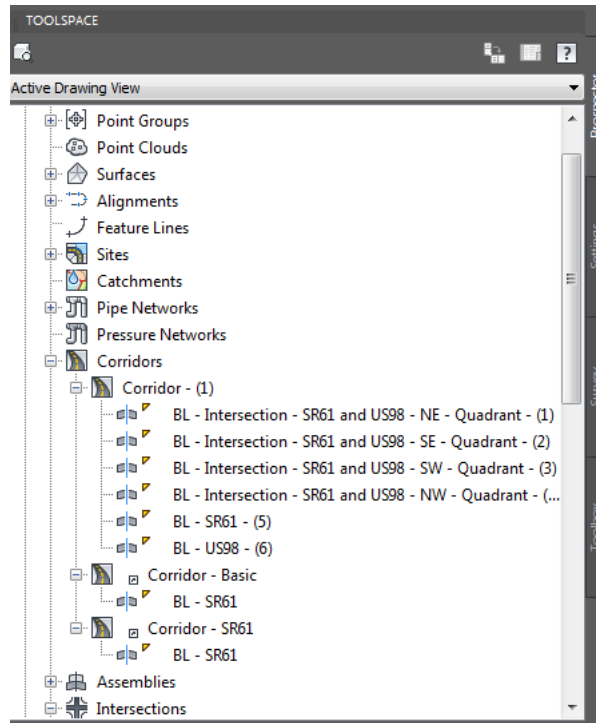
- From the *TOOLSPACE > Prospector* tab, select the “+” next to *Intersections* to expand the list.



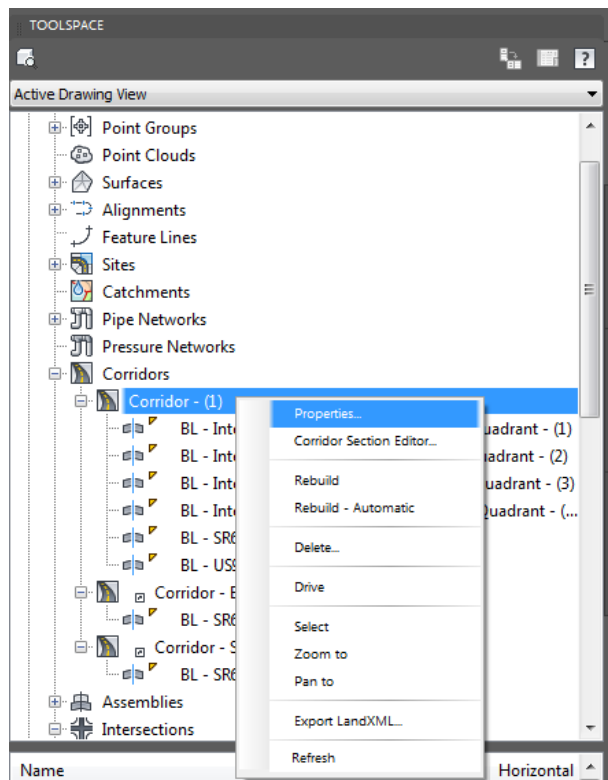
- Select the “+” next to *Intersection - SR61 and US98* to expand the list.
- Select the “+” next to *Intersecting Alignments* to expand the list.
- Select the “+” next to *US98* and the “+” next to *SR61* to display the created *Offset Alignments* list.
- Select the “+” next to *Intersection Quadrants* to expand the list.
- Select the “+” next to *NE - Quadrant*, *SE - Quadrant*, *SW - Quadrant*, and *NW - Quadrant*, to display the *Curb Return Alignments* for each Quadrant.

➤ **Review results of Corridor creation from the TOOLSPACE > Prospector tab**

1. From the TOOLSPACE > Prospector tab, select the “+” next to *Corridors* to expand the list.

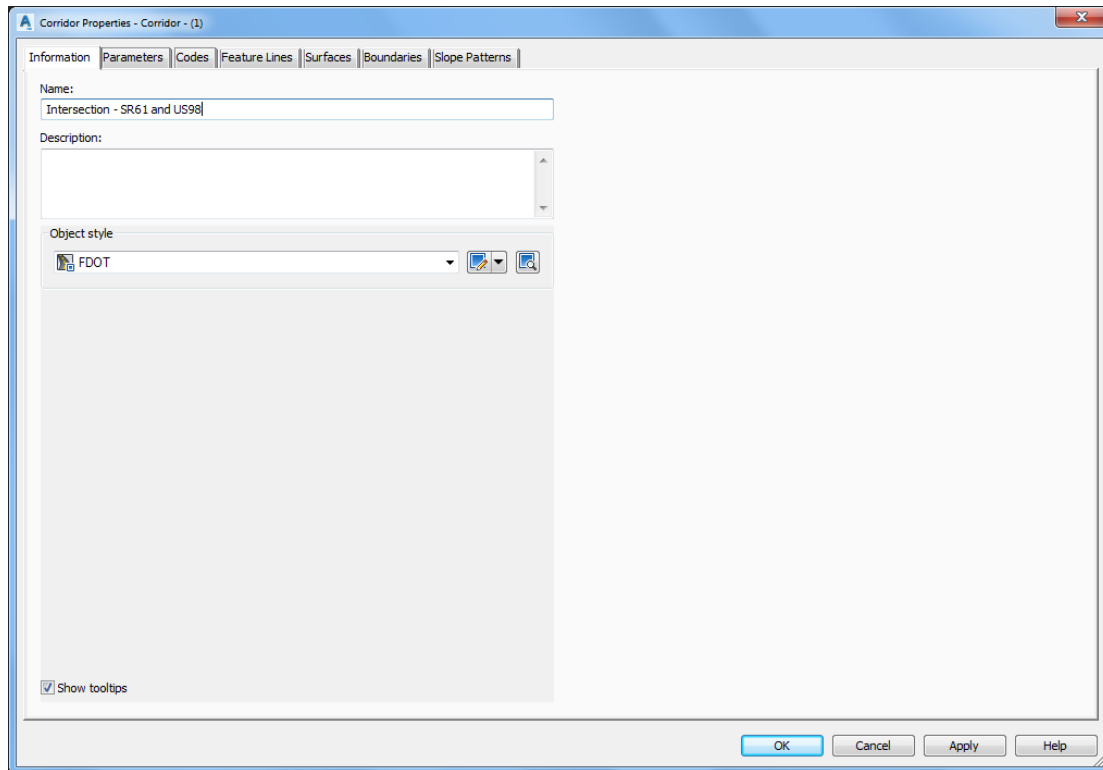


2. Select the “+” next to *Corridor - (1)* to expand the list.

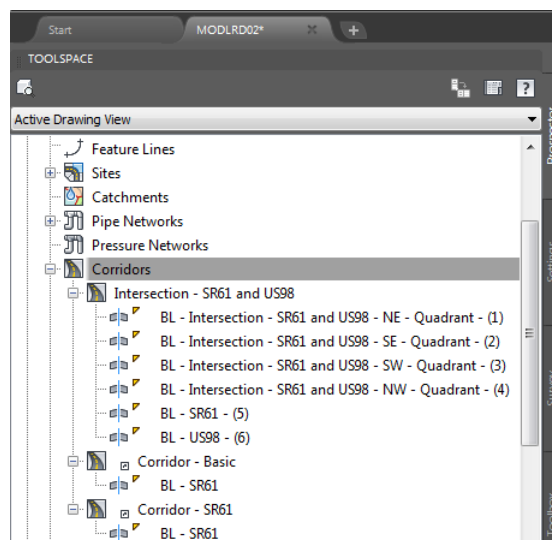


➤ **Rename the Corridor created during the Intersection creation.**

1. Right-click on *Corridor - (1)*, select **Properties**.
2. From the Corridor Properties - Corridor - (1) dialog, select the *Information* tab, then in the *Name: section* rename Corridor - (1) to **Intersection - SR61 and US98**. Click **OK** to continue.

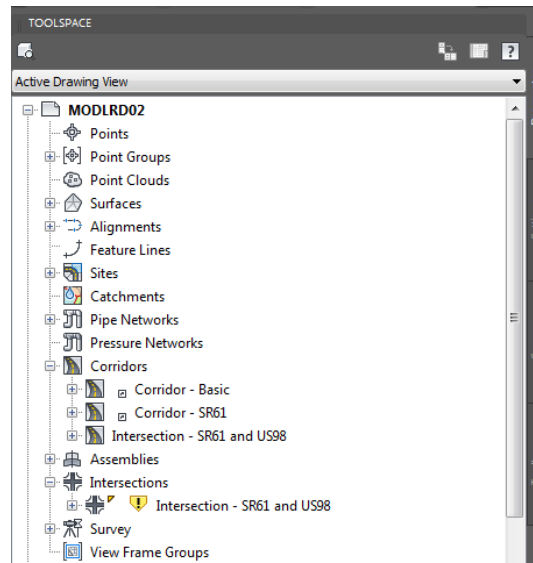


3. From the TOOLSPACE > Prospector tab, select the “+” next to *Corridors* to expand the list.

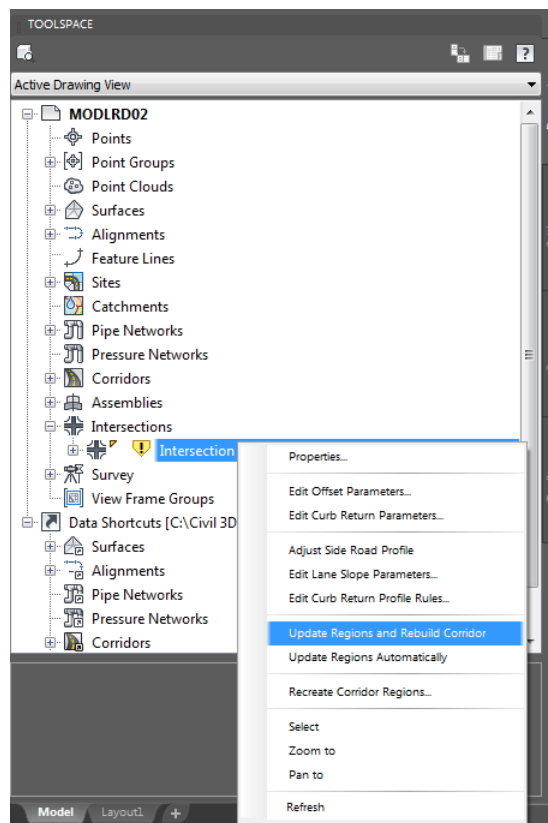




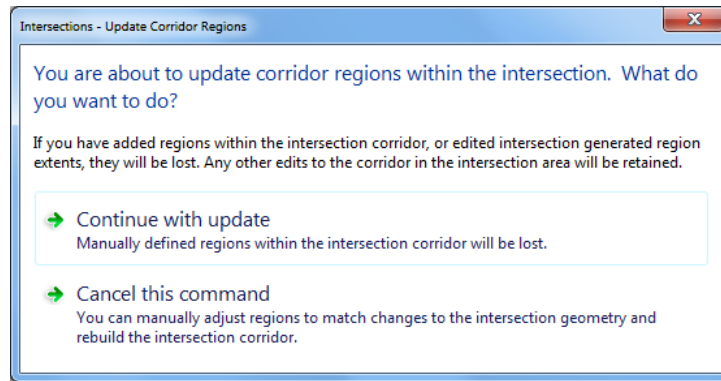
4. Select the “+” next to *Intersection - SR61 and US98* to expand the list to display the Baselines created for each Quadrant.



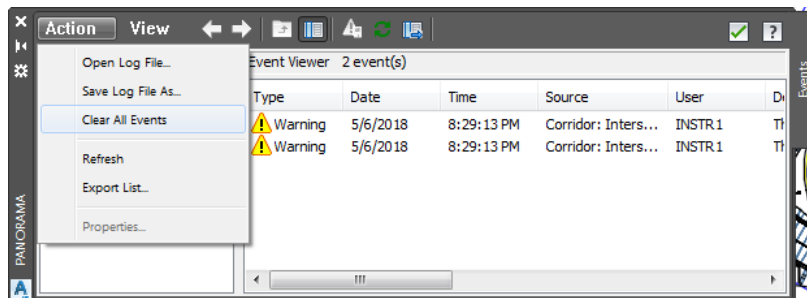
5. After renaming the Corridor- (1) to Intersection - SR61 and US98, a Gold Shield may appear next to the Intersection - SR61 and US98 in the Toolspace > Prospector tab > Intersection.
6. To remove the Gold Shield, from the Toolspace > Prospector tab > Intersection, right-click on Intersection - SR61 and US98, review the options displayed, and then select **Update Regions and and Rebuild Corridor**.



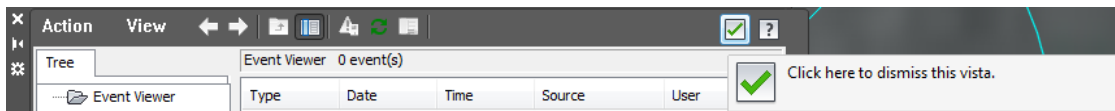
- From the Intersections - Update Corridor Regions dialog, select Continue with Update.



- The Panorama tool palette (Event Viewer) is displayed, click on the Events tab, then review the Events. Next right-click on the Action tab, select Clear All Events.

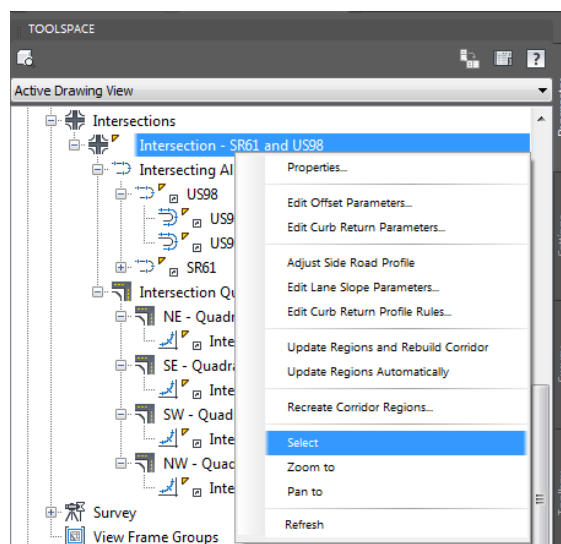


- To close Panorama tool palette (Event Viewer) Click on the Green check to close

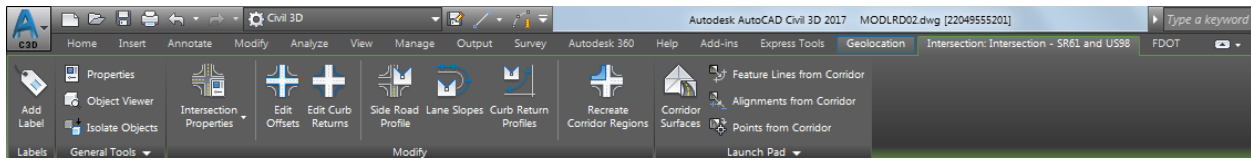


- From the TOOLSPACE > Prospector tab, select the "+" next to Intersections to expand the list.

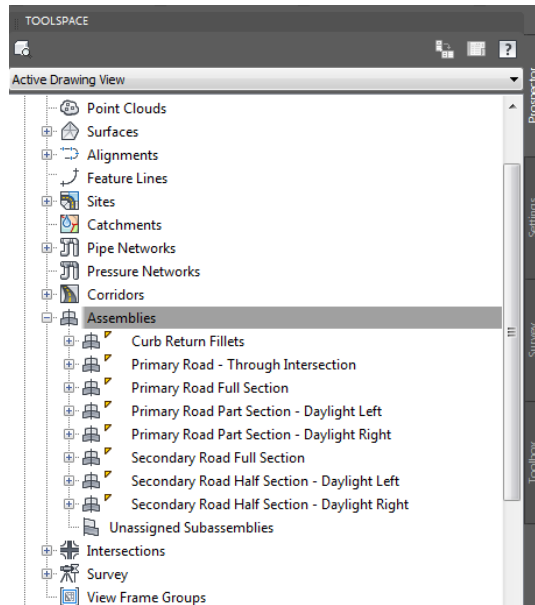
- Select the *Intersection - SR61 and US98*, right-click and then select **Select**.



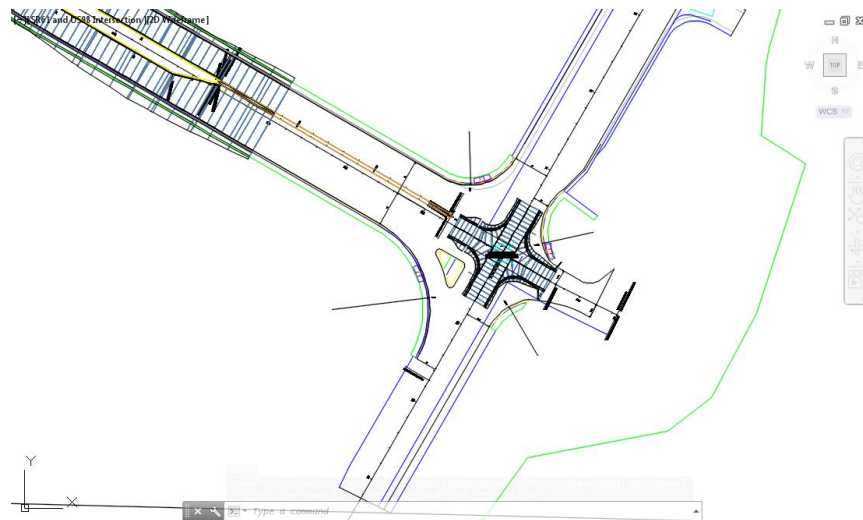
12. Review the options displayed in the Ribbon > Intersection - SR61 and US98 tab. Press ESC to clear the selection.



13. From the TOOLSPACE > Prospector tab, select the “+” next to *Assemblies* to expand the list.



14. Review the list of Assemblies inserted into the MODLRD02 file by the Intersection wizard used for the creation of the Intersection - SR61 and US98 Intersection and Intersection - SR61 and US98 Corridor.



15. Follow the prior steps to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.

16. Save MODLRD02 file and close MODLRD02 file

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# 3 CREATE INTERSECTION – PROJECT SETTINGS

## DESCRIPTION

This chapter uses the Create Intersection wizard tool to create Intersection content to the drawings. You will create a Corridor model at the Intersection of SR61 and US98 using the Intersection Wizard and apply the project settings. You will work with External References files to help you depict the project limits, display planimetric geometry, and elevation data within the project limits. As part of this exercise, you will manage an aerial photo which will be displayed with the site's coordinate system.

## OBJECTIVES

In this chapter, you will learn about:

- Check referenced data:
- Manage External References
- Intersection Wizard
- Review project settings
- Create Intersection
- Review results

## CHAPTER SETUP

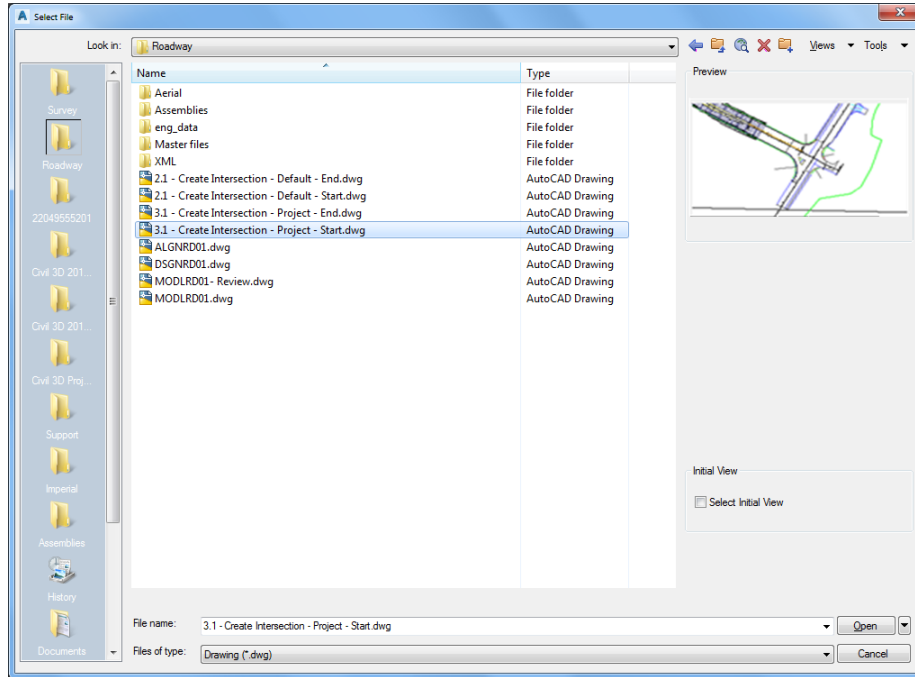
Run the Chapter 3 - 22049555201.exe file and restore all files to the **C:\Civil 3D 2017 Projects** folder.

Do not change the location in which the Practice Files are installed. Doing so can cause errors when completing the exercises in this training manual.

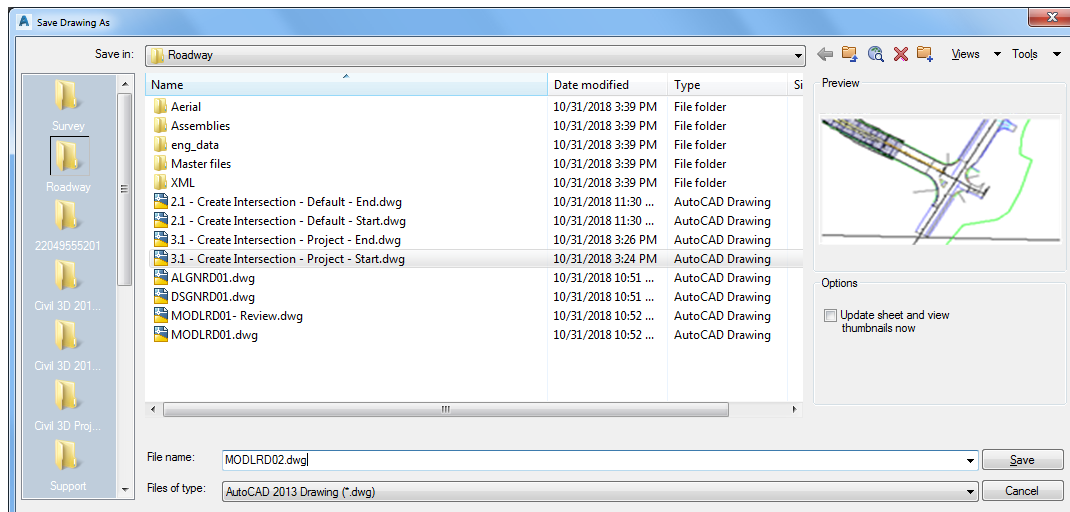
### Exercise 3.1 Create MODLRD02 File

In this exercise you will create the MODLRD02 file again to create an Intersection using the project's settings.

1. From the **Select File** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and select **Open 3.1 - Create Intersection - Project - Start.dwg**. Click **Open** to close the **Select File** dialog box.



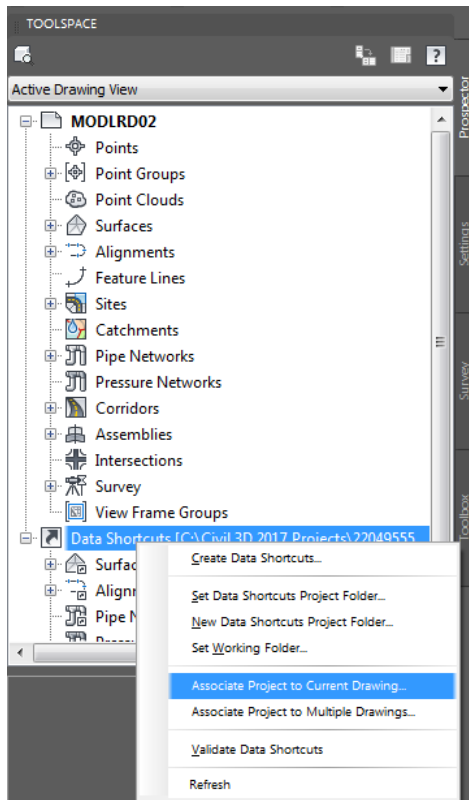
2. From the **Save Drawing As** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and **MODLRD02.dwg**. Click **Save** to close the **Save Drawing As** dialog box.



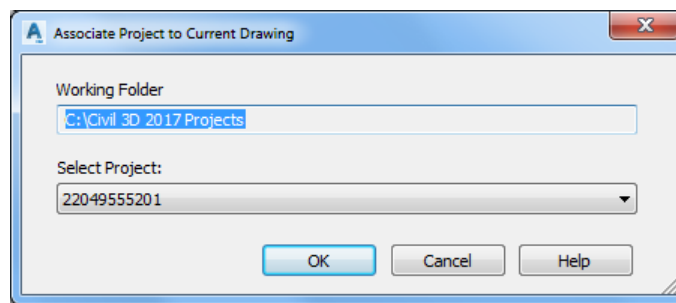
### Exercise 3.2 Associate MODLRD02.dwg File to the Project

In this exercise you will associate MODLRD02.dwg File to the Project.

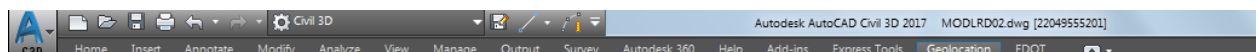
1. From the *TOOLSPACE* > *Prospector* tab > *Data Shortcuts* [C:\Civil 3D 2017 Projects\22049555201], right-click and select **Associate Project to Current Drawing**.



2. From Associate Project to Current Drawing dialog box, set the following values:
  - *Working Folder*: set to C:\Civil 3D 2017 Projects
  - *Select Project*: click **22049555201** from drop down list



3. Click **OK** to close Associate Project to Current Drawing dialog box.
4. **MODLRD02.dwg** is now associated to the C:\Civil 3D 2017 Projects\22049555201 Project.

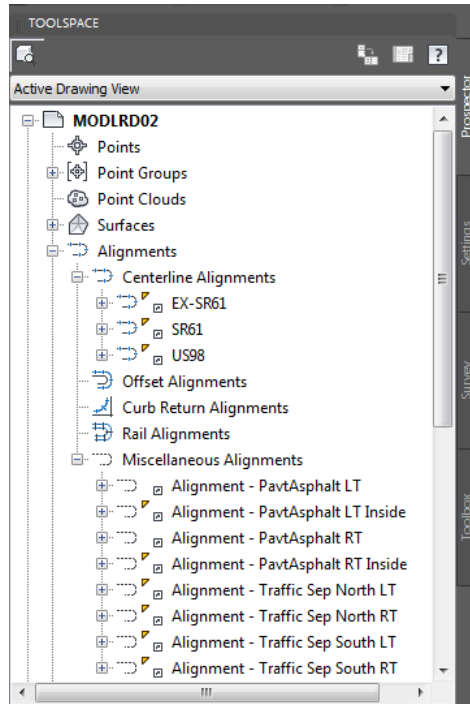


5. Save your file before continuing.

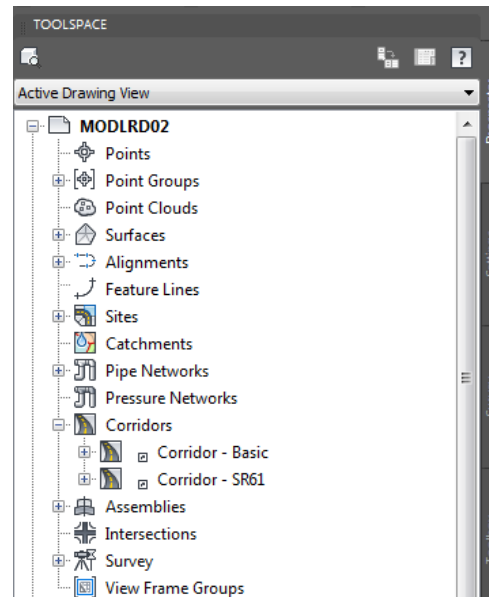
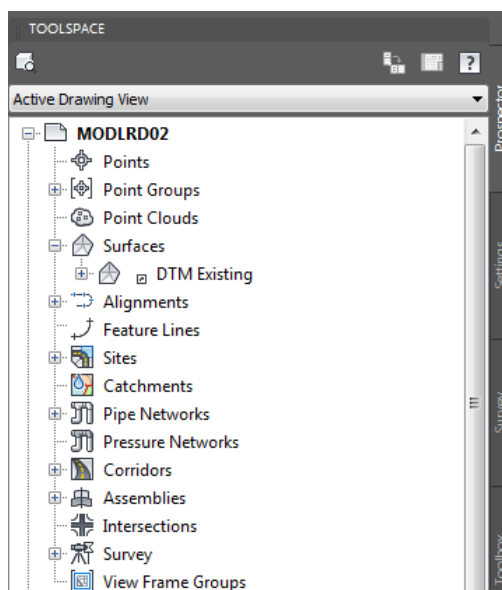
### Exercise 3.3 Review Referenced Data

In this exercise you will review referenced data.

1. Review *Data Referenced Alignments* in MODLRD02 from *TOOLSPACE* > *Prospector* tab, expand **Alignments** > **Centerline Alignments** and **Miscellaneous Alignments**.



2. Review *Data Referenced Surfaces* in MODLRD02 from *TOOLSPACE* > *Prospector* tab, expand **Surfaces** and **Corridors**

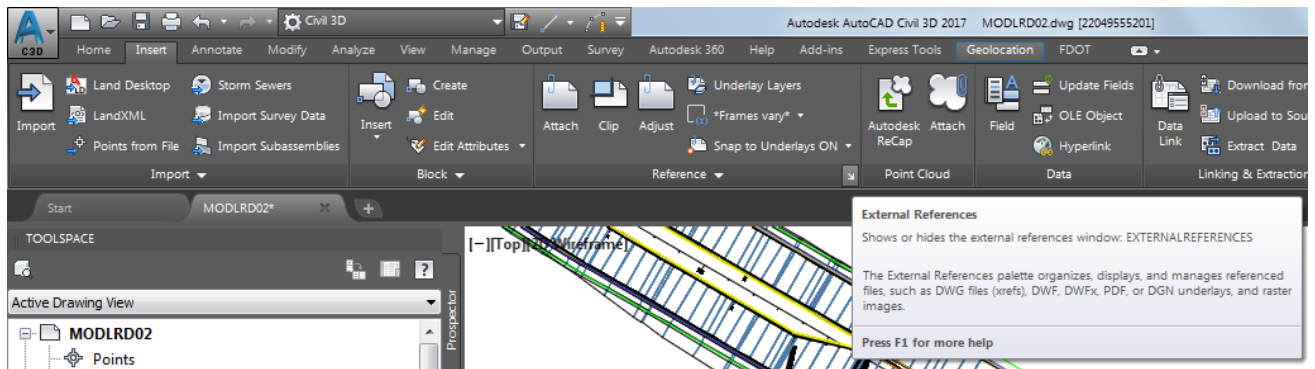
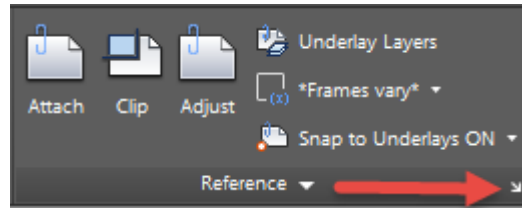




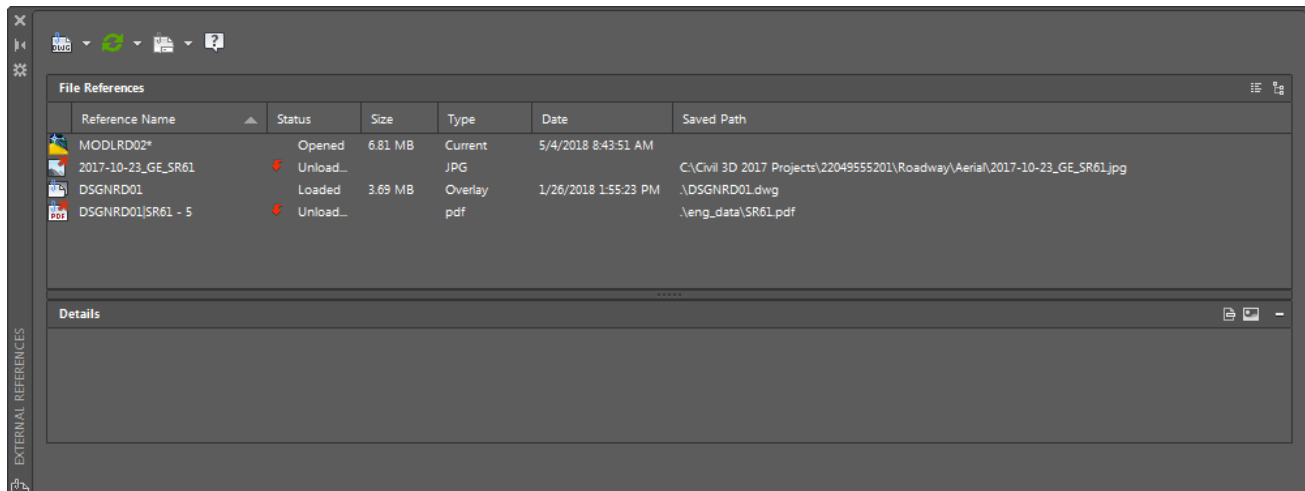
### Exercise 3.4 Review Attached External Reference Files (Xrefs)

In this exercise you will review the attached External Reference files (Xrefs) in the MODLRD02.dwg

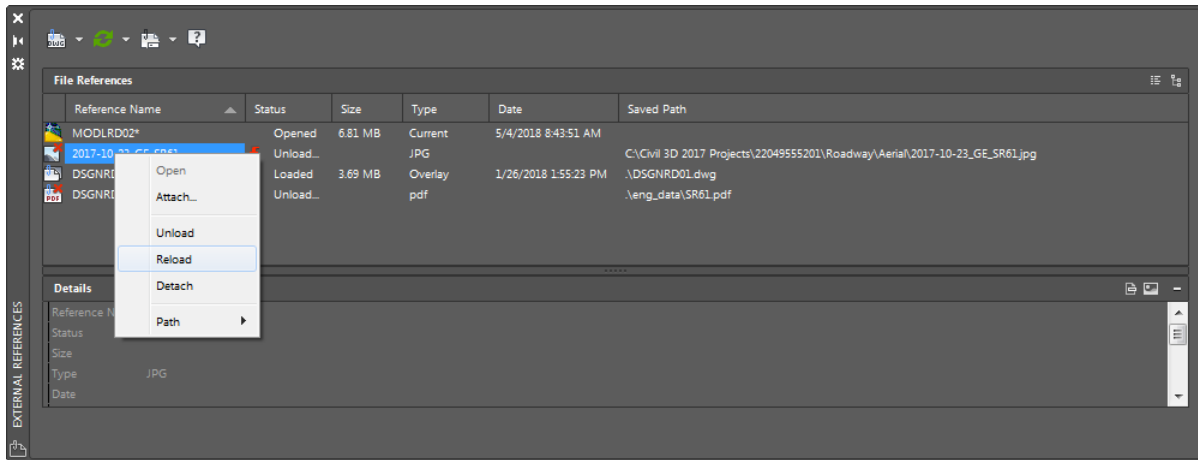
1. From the *Insert Tab > Reference panel*, click the **arrow** located in the lower right hand corner to open the *External Reference* tool palette.



2. The External References tool palette is displayed:
  - ✓ 2017-10-23-GE-SR61 is listed as Unloaded as a JPG (Image) attachment.
  - ✓ DSGNRD01.dwg is listed as Loaded as an Overlay attachment.
  - DSGNRD01|SR61 - 5 is listed as Unloaded as an PDF attachment



3. The next steps will show you how to Reload the attached 2017-10-23\_GE\_SR61 image Xref from the MODLRD02.dwg



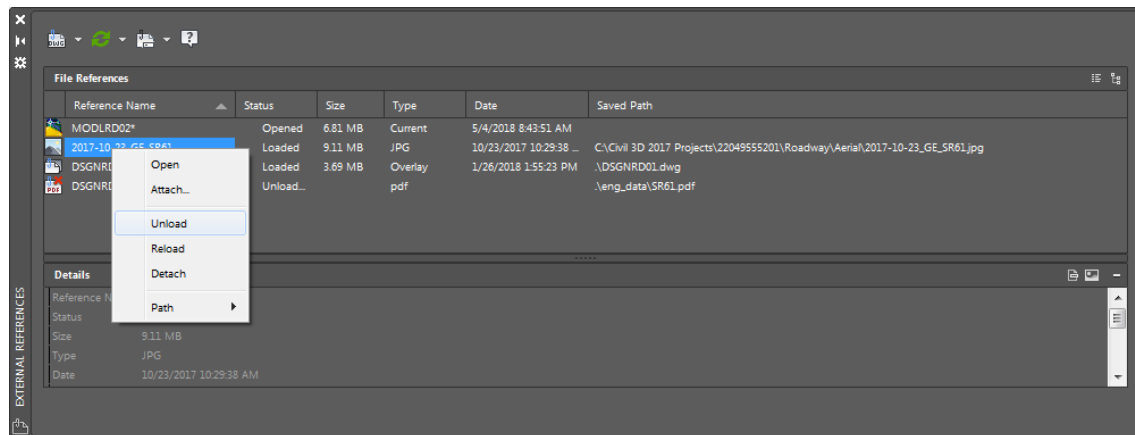
4. In the list, right-click on 2017-10-23\_GE\_SR61 and select **Reload**. By reloading the external reference 2017-10-23\_GE\_SR61 the drawing editor now displays the 2017-10-23\_GE\_SR61.jpg aerial image.
5. **Close External References** tool palette and review Image



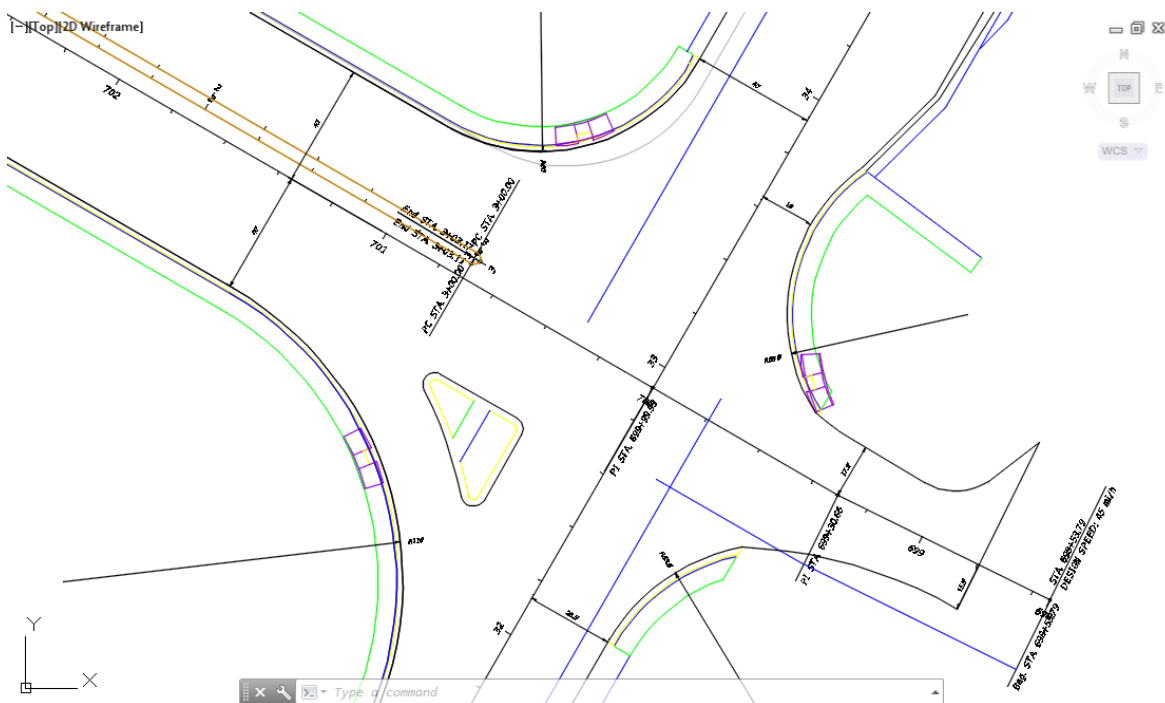
### Exercise 3.5 Unload Attached 2017-10-23\_GE\_SR61 Image Xref

The next steps will show you how to Unload the attached 2017-10-23\_GE\_SR61 image Xref from the MODLRD02.dwg.

1. From the *Insert Tab > Reference panel*, click the **arrow** located in the lower right hand corner to open the *External Reference* tool palette.
2. In the list, right-click on 2017-10-23\_GE\_SR61 and select **Unload**. By unloading the external reference 2017-10-23\_GE\_SR61 the drawing editor no longer displays the 2017-10-23\_GE\_SR61.jpg aerial image.



3. **Close External References** tool palette and review Dimensions displayed on attached DSGNRD01.dwg external reference.

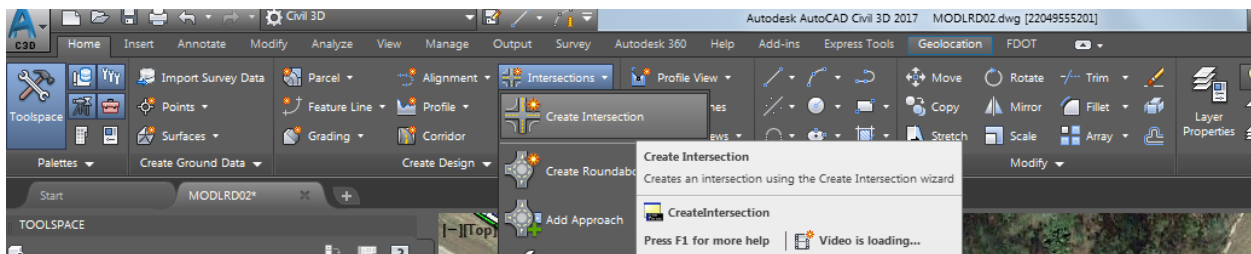
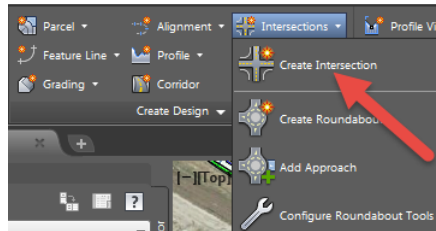


4. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
5. **Save** your file before continuing.

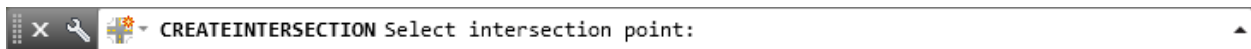
### Exercise 3.6 *Intersection Wizard - Create Intersection using project values*

In this exercise you will learn how by using the Intersection Wizard to create an Intersection using project values.

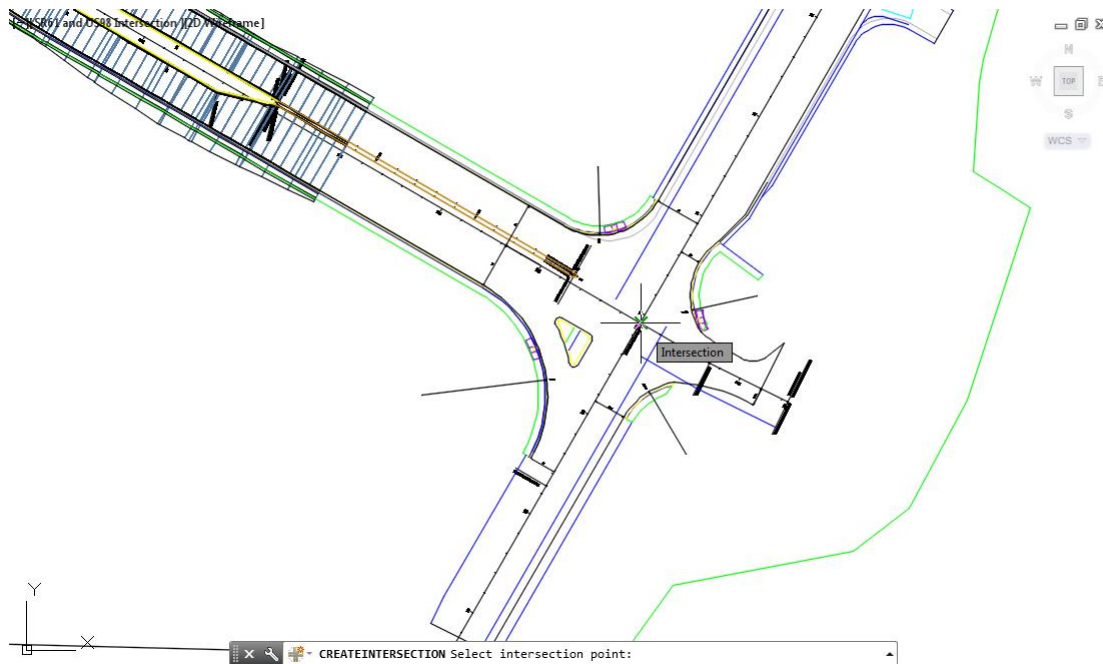
1. From the Home Tab > Create Design panel, click on Intersections, then from the list select Create Intersections to start the Intersection Wizard.



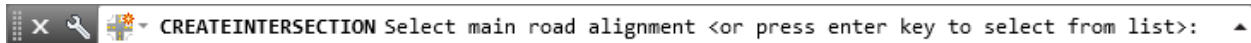
2. The command line prompts you to Select intersection point:



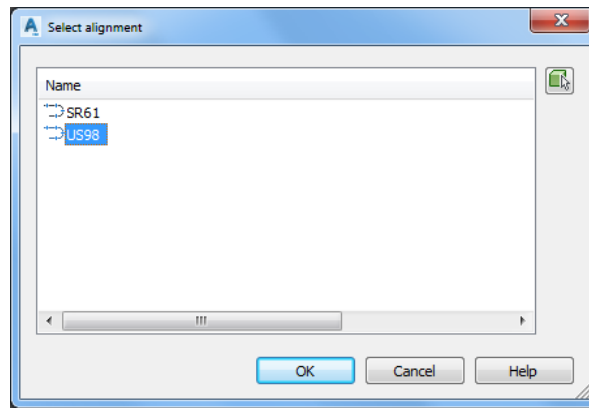
3. Select the intersection of the SR61 and US98 alignments



4. The command line prompts you to Select main road alignment <or press enter key to select from list>: Press the Enter key.

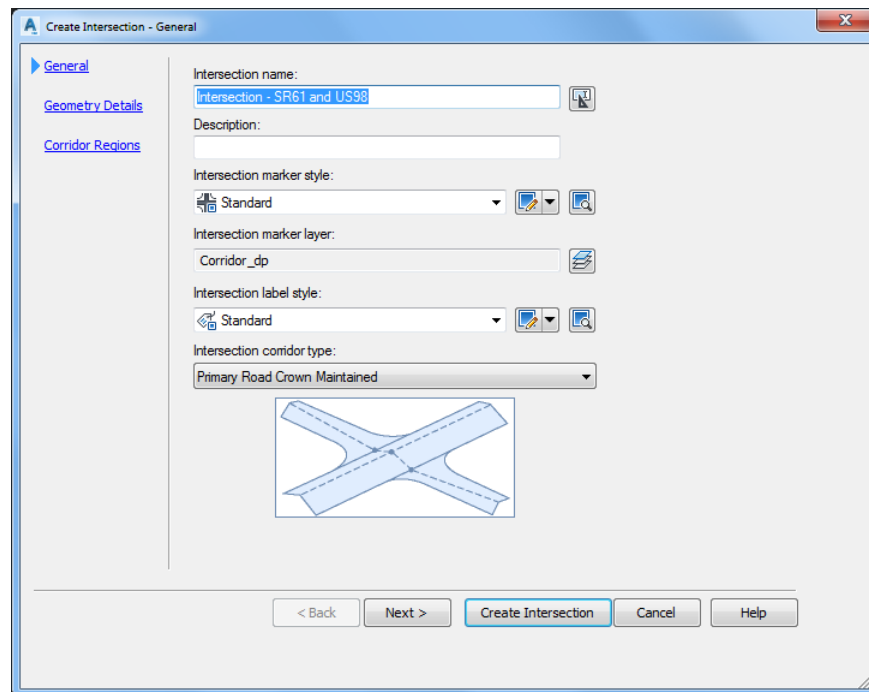


- From the Select alignment dialog select **US98** as the *Primary Road*, then click **OK** to continue



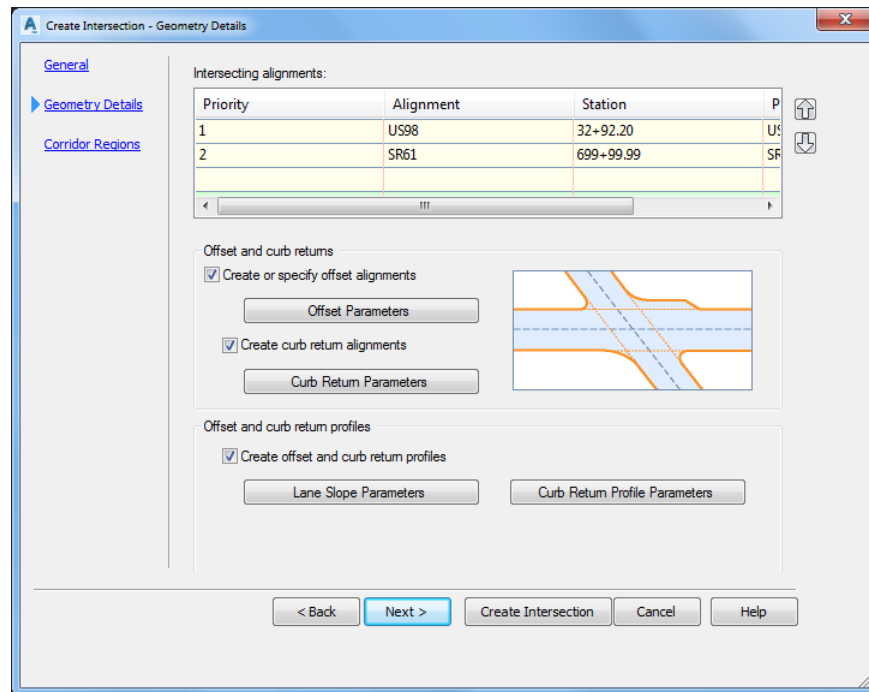
- From the Create Intersection dialog:

➤ **General Panel:**



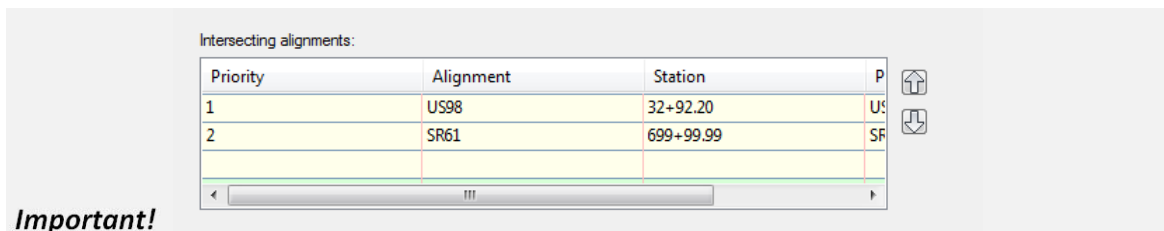
- Set *Intersection name* - Intersection - SR61 and US98
- Set *Intersection corridor type*: **Primary Road Crown Maintained**
- Review other default settings.
- Click **Next >** to continue

➤ **Geometry Details panel:**



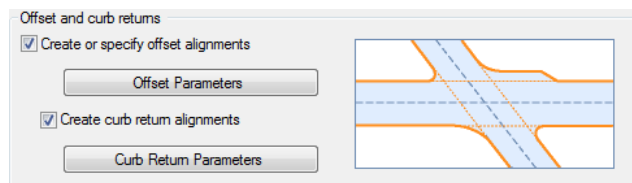
1. Intersecting alignments:

- ✓ Alignment US98 has been set as the Primary Alignment
- Alignment SR61 set as the Secondary Alignment



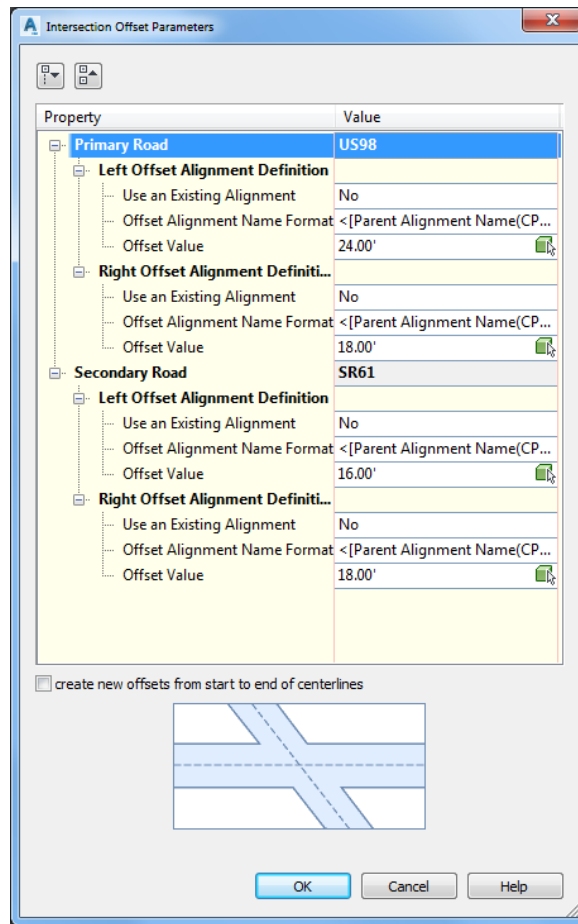
2. Offset and curb returns:

- Check *Create or specify offset alignments* box and click **Offset Parameters**





- ✓ The Intersection Offset Parameters dialog is displayed:

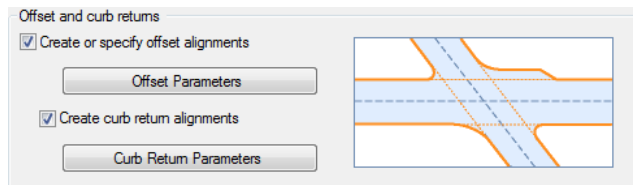


Primary Road US98: Left offset: 24.0, Right Offset: 18.0

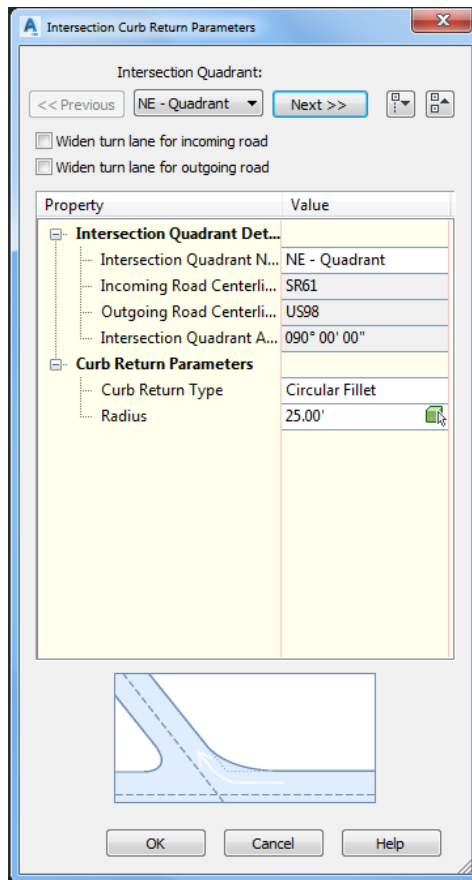
Secondary Road SR61: Left offset: 16.0, Right Offset: 18.0

Click OK to continue

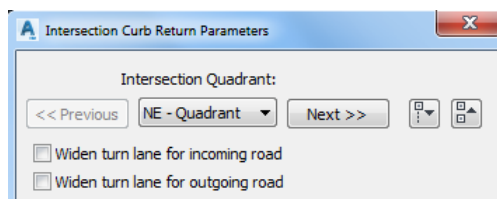
- Check *Create curb return alignments* box and click **Curb Return Parameters**



- ✓ The Intersection Curb Return Parameters dialog is displayed:



Intersection Quadrant: Cycle through each Quadrant by Clicking **Next >>**



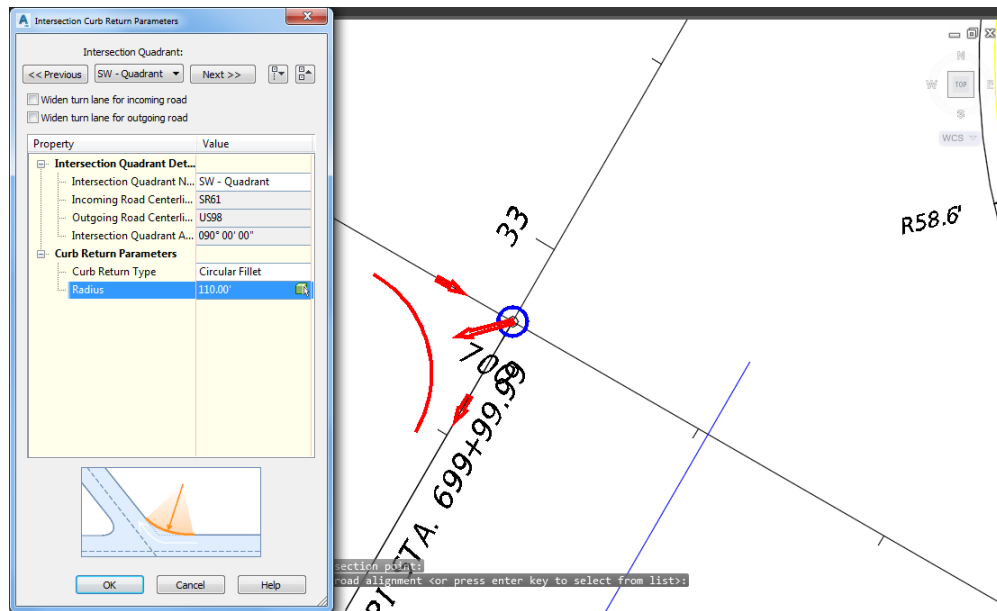
Review default settings in dialog and preview graphics displayed on screen starting with the NE - Quadrant, set the following Parameters:

- NE - Quadrant Curb Return Radius: 58.6
- SE - Quadrant Curb Return Radius: 63.5
- SW - Quadrant Curb Return Radius: 110
- NW - Quadrant Curb Return Radius: 60

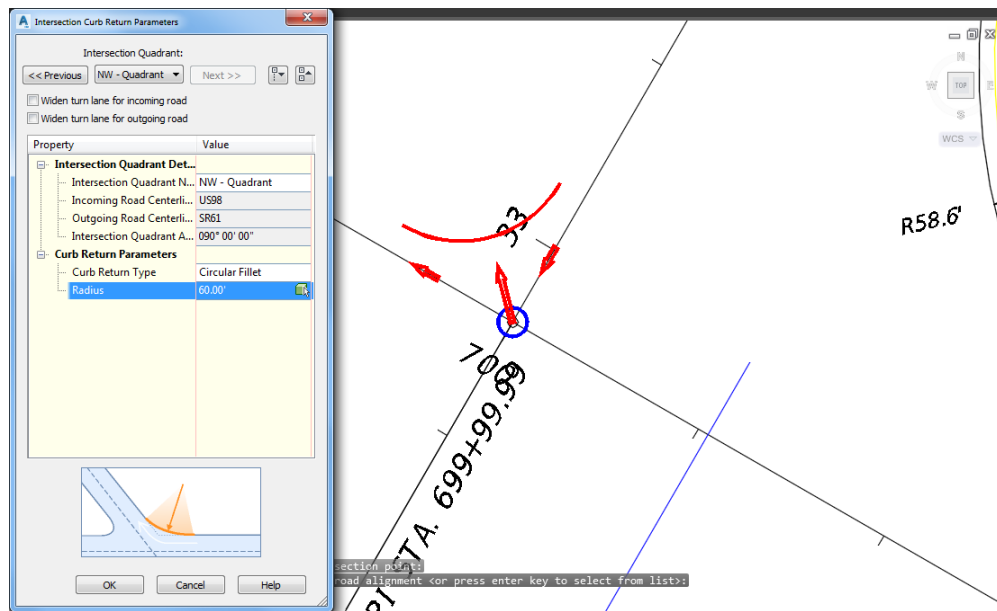




SW – Quadrant: Set the Curb Return Parameters, Radius: 110'. Click Next >>

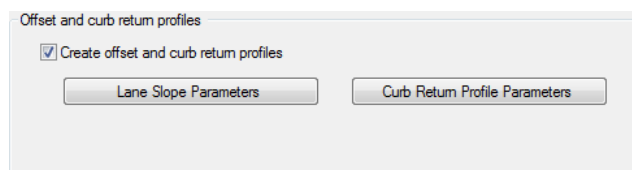


NW – Quadrant: Set the Curb Return Parameters, Radius: 60'. Click **OK** to continue

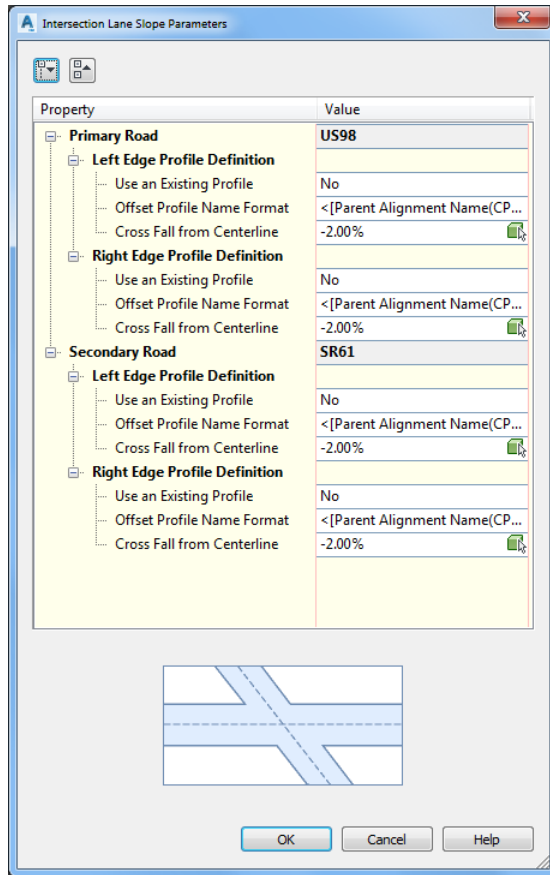


### 3. Offset and curb return profiles:

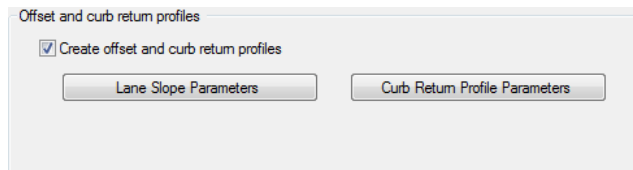
- Check *Create offset and curb return profiles* box and click **Lane Slope Parameters**



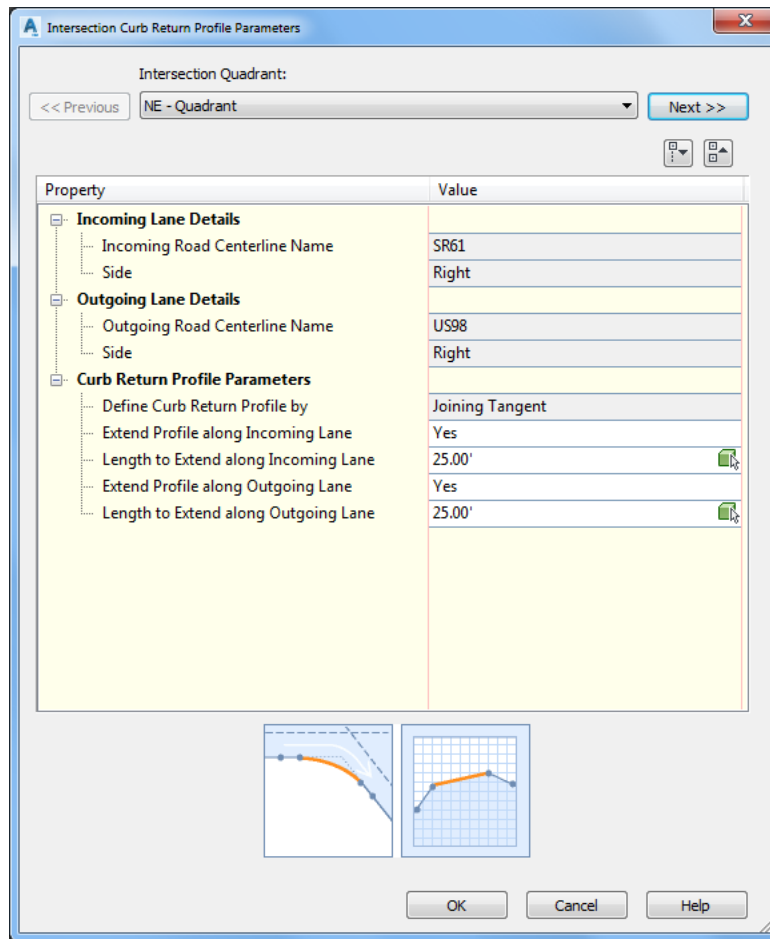
- ✓ The Intersection Lane Slope Parameters dialog is displayed:



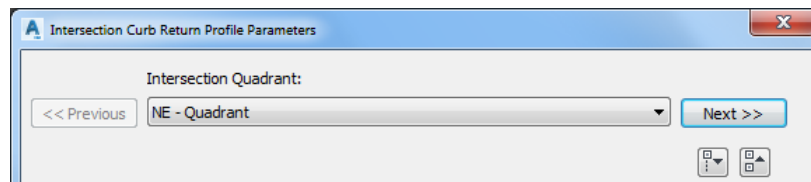
Review default settings and click **OK** to continue



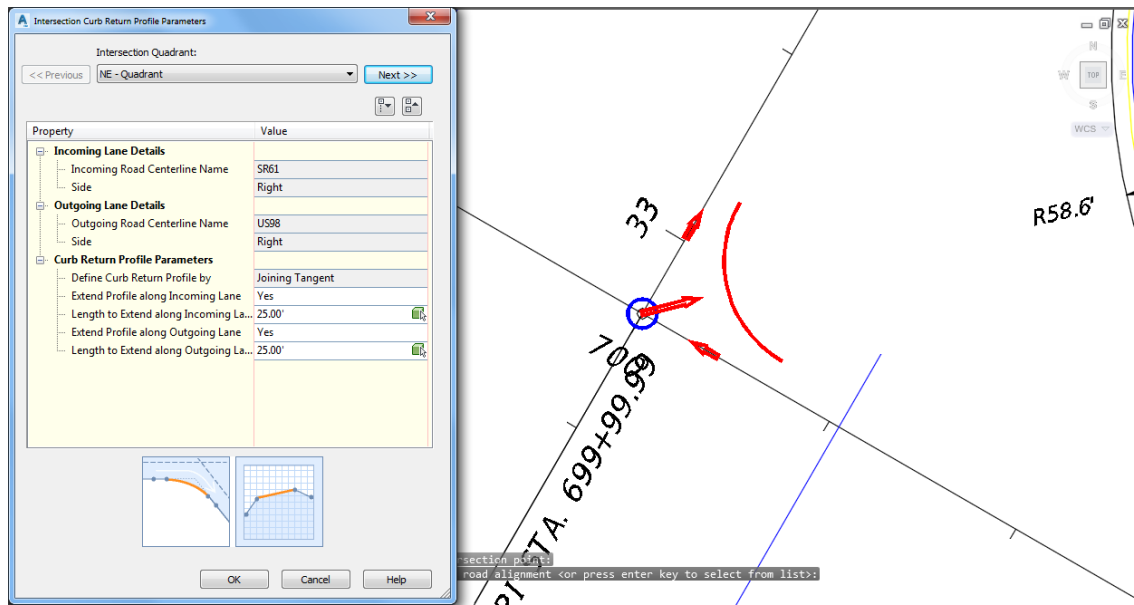
- ✓ Click **Curb Return Profile Parameters**. The Intersection Curb Return Profile Parameters dialog is displayed:



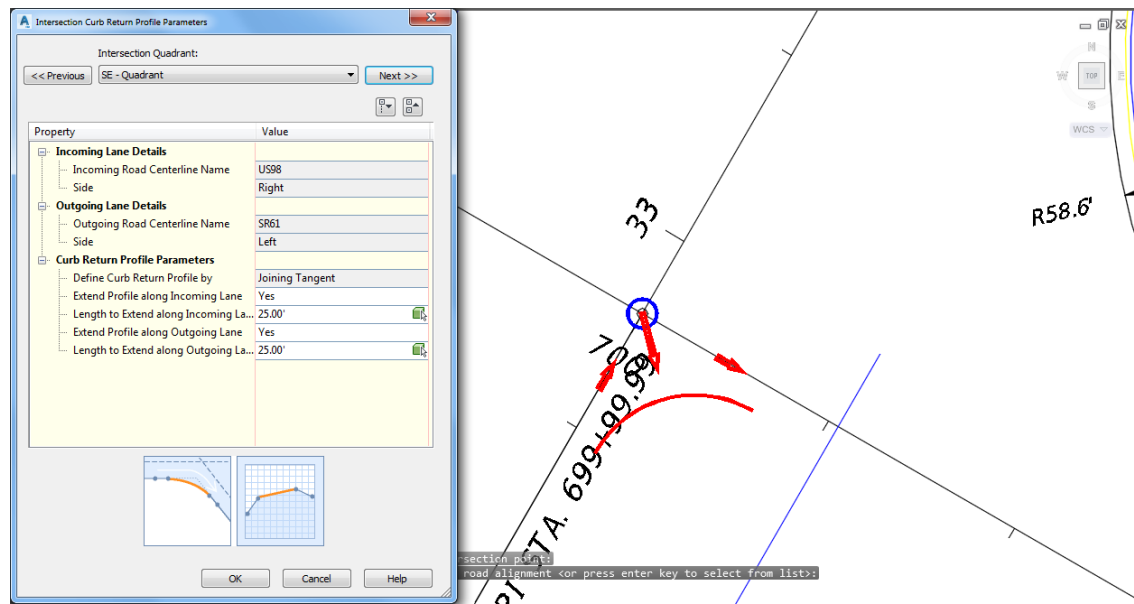
- ✓ *Intersection Quadrant*: Cycle through each Quadrant by clicking **Next >>** and review default settings in dialog and preview graphics displayed on screen



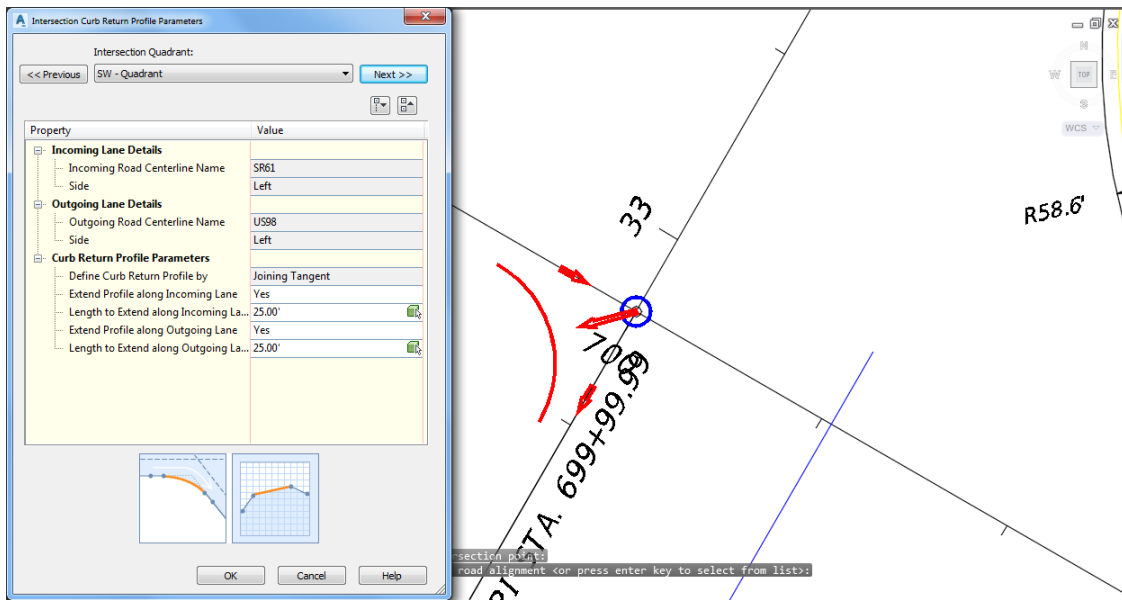
- NE – Quadrant. Click Next >>



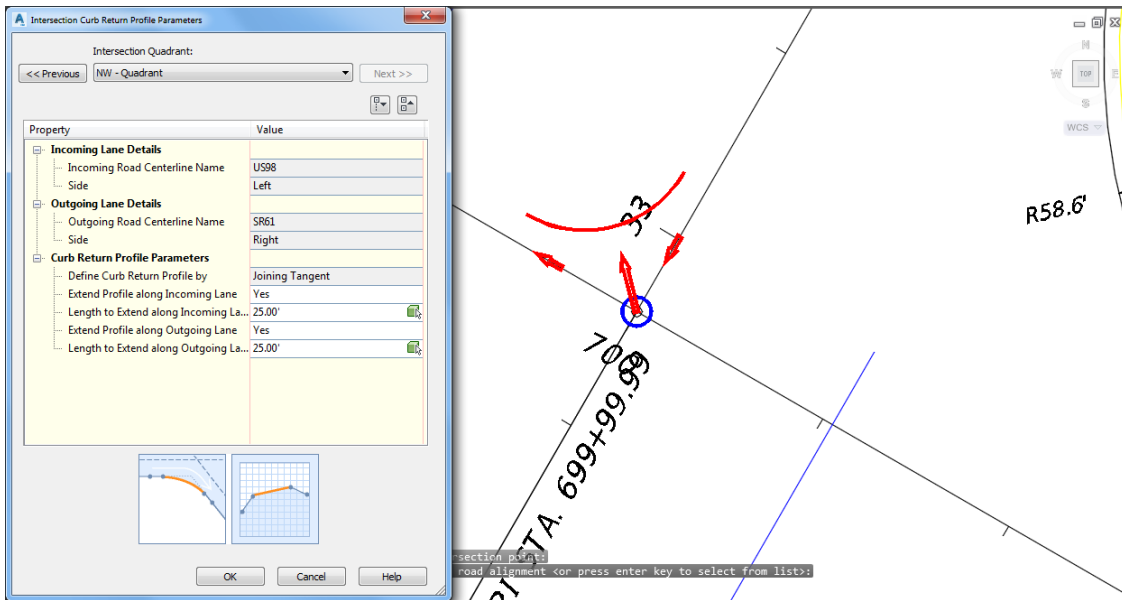
- SE – Quadrant. Click Next >>



- SW – Quadrant. Click **Next >>**

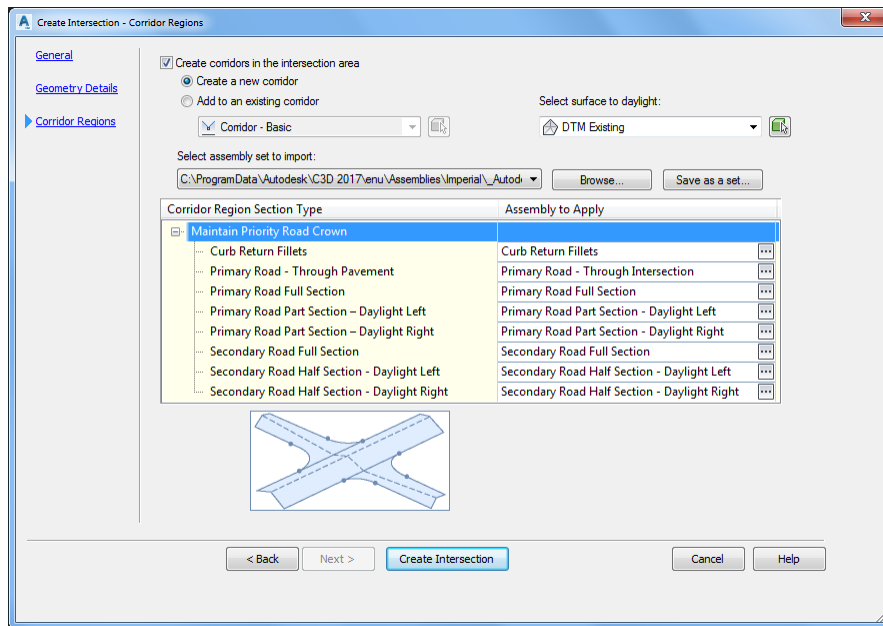


- NW – Quadrant. Click **OK** to continue.

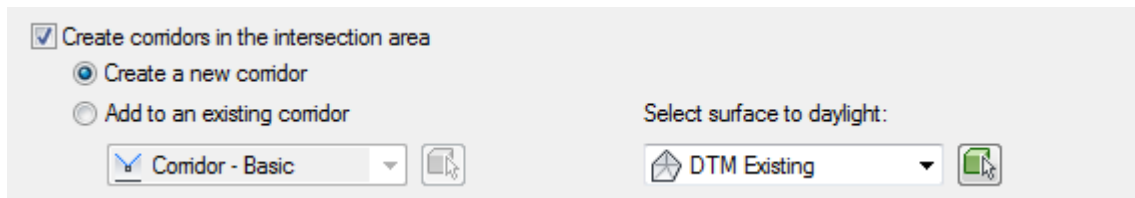


4. Click **Next >** to continue

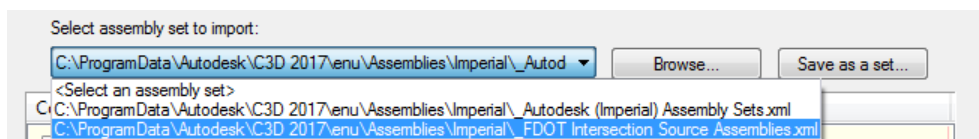
➤ **Corridor Regions Panel :**



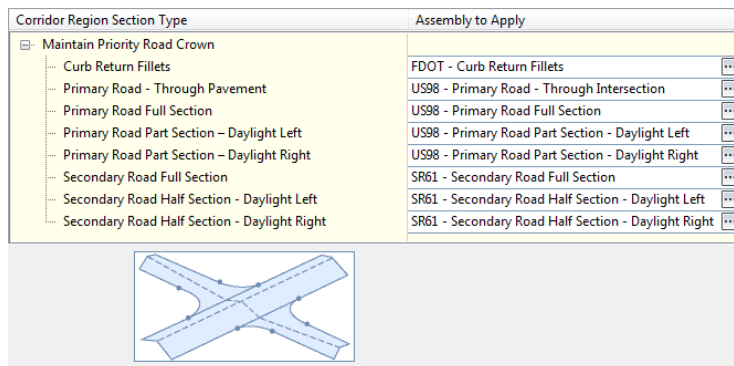
1. Check **Create corridors in the intersection area**: Click **Create a new corridor** and *Select surface to daylight*: **DTM Existing** from the dropdown list.



2. Select assembly set to import:
  - Select from list **\_FDOT Intersection Source Assemblies.xml**

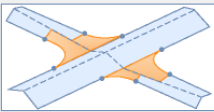
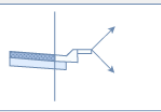


- Review each **Corridor Region Section Type and Assembly to Apply**:



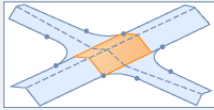
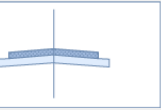
### Curb Return Fillets

Corridor Region Section Type	Assembly to Apply
<ul style="list-style-type: none"> <li>[-] Maintain Priority Road Crown                             <ul style="list-style-type: none"> <li>Curb Return Fillets</li> <li>Primary Road - Through Pavement</li> <li>Primary Road Full Section</li> <li>Primary Road Part Section – Daylight Left</li> <li>Primary Road Part Section – Daylight Right</li> <li>Secondary Road Full Section</li> <li>Secondary Road Half Section - Daylight Left</li> <li>Secondary Road Half Section - Daylight Right</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>FDOT - Curb Return Fillets</li> <li>US98 - Primary Road - Through Intersection</li> <li>US98 - Primary Road Full Section</li> <li>US98 - Primary Road Part Section - Daylight Left</li> <li>US98 - Primary Road Part Section - Daylight Right</li> <li>SR61 - Secondary Road Full Section</li> <li>SR61 - Secondary Road Half Section - Daylight Left</li> <li>SR61 - Secondary Road Half Section - Daylight Right</li> </ul>

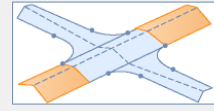
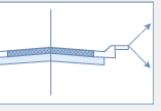
### Primary Road - Through Pavement

Corridor Region Section Type	Assembly to Apply
<ul style="list-style-type: none"> <li>[-] Maintain Priority Road Crown                             <ul style="list-style-type: none"> <li>Curb Return Fillets</li> <li>Primary Road - Through Pavement</li> <li>Primary Road Full Section</li> <li>Primary Road Part Section – Daylight Left</li> <li>Primary Road Part Section – Daylight Right</li> <li>Secondary Road Full Section</li> <li>Secondary Road Half Section - Daylight Left</li> <li>Secondary Road Half Section - Daylight Right</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>FDOT - Curb Return Fillets</li> <li>US98 - Primary Road - Through Intersection</li> <li>US98 - Primary Road Full Section</li> <li>US98 - Primary Road Part Section - Daylight Left</li> <li>US98 - Primary Road Part Section - Daylight Right</li> <li>SR61 - Secondary Road Full Section</li> <li>SR61 - Secondary Road Half Section - Daylight Left</li> <li>SR61 - Secondary Road Half Section - Daylight Right</li> </ul>

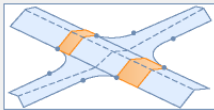
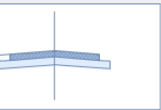
### Primary Road Full Section

Corridor Region Section Type	Assembly to Apply
<ul style="list-style-type: none"> <li>[-] Maintain Priority Road Crown                             <ul style="list-style-type: none"> <li>Curb Return Fillets</li> <li>Primary Road - Through Pavement</li> <li>Primary Road Full Section</li> <li>Primary Road Part Section – Daylight Left</li> <li>Primary Road Part Section – Daylight Right</li> <li>Secondary Road Full Section</li> <li>Secondary Road Half Section - Daylight Left</li> <li>Secondary Road Half Section - Daylight Right</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>FDOT - Curb Return Fillets</li> <li>US98 - Primary Road - Through Intersection</li> <li>US98 - Primary Road Full Section</li> <li>US98 - Primary Road Part Section - Daylight Left</li> <li>US98 - Primary Road Part Section - Daylight Right</li> <li>SR61 - Secondary Road Full Section</li> <li>SR61 - Secondary Road Half Section - Daylight Left</li> <li>SR61 - Secondary Road Half Section - Daylight Right</li> </ul>

### Primary Road Part Section - Daylight Left

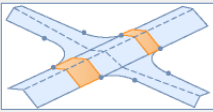
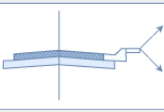
Corridor Region Section Type	Assembly to Apply
<ul style="list-style-type: none"> <li>[-] Maintain Priority Road Crown                             <ul style="list-style-type: none"> <li>Curb Return Fillets</li> <li>Primary Road - Through Pavement</li> <li>Primary Road Full Section</li> <li>Primary Road Part Section – Daylight Left</li> <li>Primary Road Part Section – Daylight Right</li> <li>Secondary Road Full Section</li> <li>Secondary Road Half Section - Daylight Left</li> <li>Secondary Road Half Section - Daylight Right</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>FDOT - Curb Return Fillets</li> <li>US98 - Primary Road - Through Intersection</li> <li>US98 - Primary Road Full Section</li> <li>US98 - Primary Road Part Section - Daylight Left</li> <li>US98 - Primary Road Part Section - Daylight Right</li> <li>SR61 - Secondary Road Full Section</li> <li>SR61 - Secondary Road Half Section - Daylight Left</li> <li>SR61 - Secondary Road Half Section - Daylight Right</li> </ul>



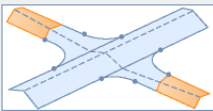
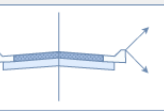
Primary Road Part Section - Daylight Right

Corridor Region Section Type	Assembly to Apply
<ul style="list-style-type: none"> <li>[-] Maintain Priority Road Crown                             <ul style="list-style-type: none"> <li>- Curb Return Fillets</li> <li>- Primary Road - Through Pavement</li> <li>- Primary Road Full Section</li> <li>- Primary Road Part Section – Daylight Left</li> <li style="background-color: #e0e0e0;">- Primary Road Part Section – Daylight Right</li> <li>- Secondary Road Full Section</li> <li>- Secondary Road Half Section - Daylight Left</li> <li>- Secondary Road Half Section - Daylight Right</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>FDOT - Curb Return Fillets</li> <li>US98 - Primary Road - Through Intersection</li> <li>US98 - Primary Road Full Section</li> <li>US98 - Primary Road Part Section - Daylight Left</li> <li style="background-color: #e0e0e0;">US98 - Primary Road Part Section - Daylight Right</li> <li>SR61 - Secondary Road Full Section</li> <li>SR61 - Secondary Road Half Section - Daylight Left</li> <li>SR61 - Secondary Road Half Section - Daylight Right</li> </ul>

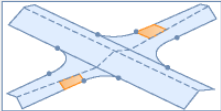
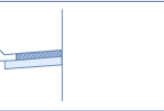
Secondary Road Full Section

Corridor Region Section Type	Assembly to Apply
<ul style="list-style-type: none"> <li>[-] Maintain Priority Road Crown                             <ul style="list-style-type: none"> <li>- Curb Return Fillets</li> <li>- Primary Road - Through Pavement</li> <li>- Primary Road Full Section</li> <li>- Primary Road Part Section – Daylight Left</li> <li>- Primary Road Part Section – Daylight Right</li> <li style="background-color: #e0e0e0;">- Secondary Road Full Section</li> <li>- Secondary Road Half Section - Daylight Left</li> <li>- Secondary Road Half Section - Daylight Right</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>FDOT - Curb Return Fillets</li> <li>US98 - Primary Road - Through Intersection</li> <li>US98 - Primary Road Full Section</li> <li>US98 - Primary Road Part Section - Daylight Left</li> <li>US98 - Primary Road Part Section - Daylight Right</li> <li style="background-color: #e0e0e0;">SR61 - Secondary Road Full Section</li> <li>SR61 - Secondary Road Half Section - Daylight Left</li> <li>SR61 - Secondary Road Half Section - Daylight Right</li> </ul>

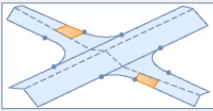
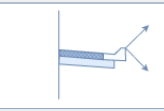
Secondary Road Full Section - Daylight Left

Corridor Region Section Type	Assembly to Apply
<ul style="list-style-type: none"> <li>[-] Maintain Priority Road Crown                             <ul style="list-style-type: none"> <li>- Curb Return Fillets</li> <li>- Primary Road - Through Pavement</li> <li>- Primary Road Full Section</li> <li>- Primary Road Part Section – Daylight Left</li> <li>- Primary Road Part Section – Daylight Right</li> <li>- Secondary Road Full Section</li> <li style="background-color: #e0e0e0;">- Secondary Road Half Section - Daylight Left</li> <li>- Secondary Road Half Section - Daylight Right</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>FDOT - Curb Return Fillets</li> <li>US98 - Primary Road - Through Intersection</li> <li>US98 - Primary Road Full Section</li> <li>US98 - Primary Road Part Section - Daylight Left</li> <li>US98 - Primary Road Part Section - Daylight Right</li> <li>SR61 - Secondary Road Full Section</li> <li style="background-color: #e0e0e0;">SR61 - Secondary Road Half Section - Daylight Left</li> <li>SR61 - Secondary Road Half Section - Daylight Right</li> </ul>

Secondary Road Full Section - Daylight Right

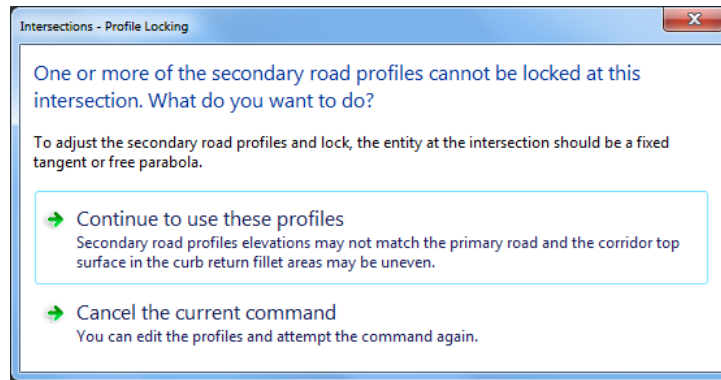
Corridor Region Section Type	Assembly to Apply
<ul style="list-style-type: none"> <li>[-] Maintain Priority Road Crown                             <ul style="list-style-type: none"> <li>- Curb Return Fillets</li> <li>- Primary Road - Through Pavement</li> <li>- Primary Road Full Section</li> <li>- Primary Road Part Section – Daylight Left</li> <li>- Primary Road Part Section – Daylight Right</li> <li>- Secondary Road Full Section</li> <li>- Secondary Road Half Section - Daylight Left</li> <li style="background-color: #e0e0e0;">- Secondary Road Half Section - Daylight Right</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>FDOT - Curb Return Fillets</li> <li>US98 - Primary Road - Through Intersection</li> <li>US98 - Primary Road Full Section</li> <li>US98 - Primary Road Part Section - Daylight Left</li> <li>US98 - Primary Road Part Section - Daylight Right</li> <li>SR61 - Secondary Road Full Section</li> <li>SR61 - Secondary Road Half Section - Daylight Left</li> <li style="background-color: #e0e0e0;">SR61 - Secondary Road Half Section - Daylight Right</li> </ul>

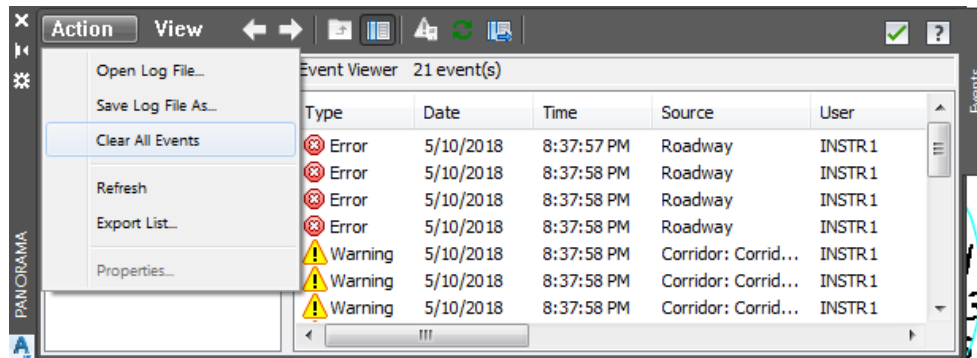
3. Click Create Intersection to create Intersection.



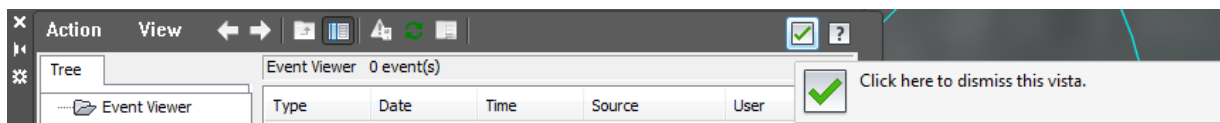
4. If the Intersection - Profile Locking dialog is displayed, click on **Continue to use these profiles**



5. The Panorama tool palette (Event Viewer) is displayed, Click on the Events tab, then review the Events. Next right-click on the Action tab, select Clear All Events.



6. To close Panorama tool palette (Event Viewer) Click on the Green check to close



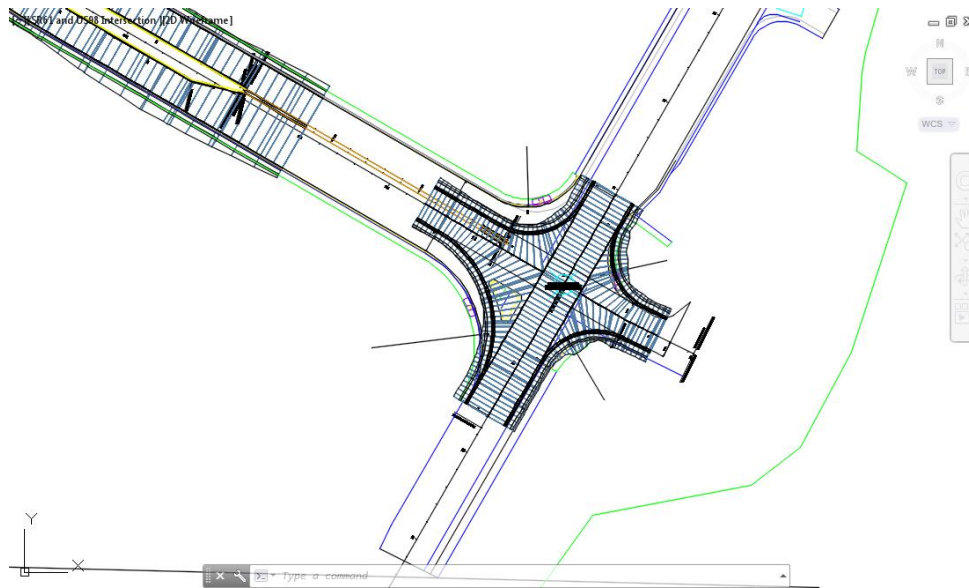
7. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls. **Save** your file before continuing.

### Exercise 3.7 Review Results of SR61 and US98 Intersection

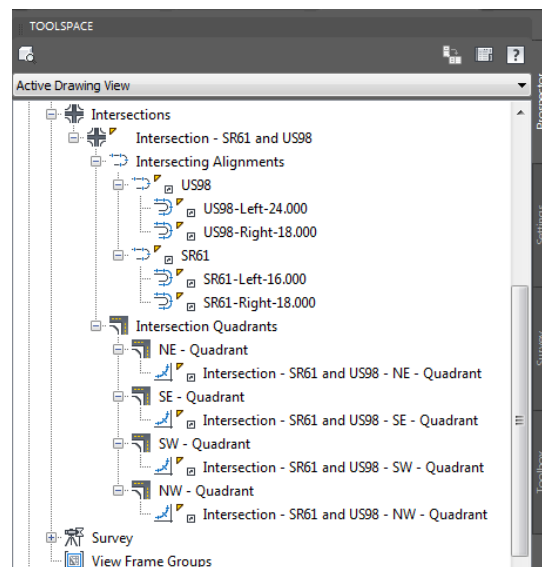
- **Review results of SR61 and US98 Intersection created using the Intersection wizard with the project values.**

You may have to perform a **Regen** to display the SR61 and US98 Intersection.

1. Review results of Intersection creation from the TOOLSPACE > Prospector tab



2. From the TOOLSPACE > Prospector tab, select the “+” next to Intersections to expand the list.

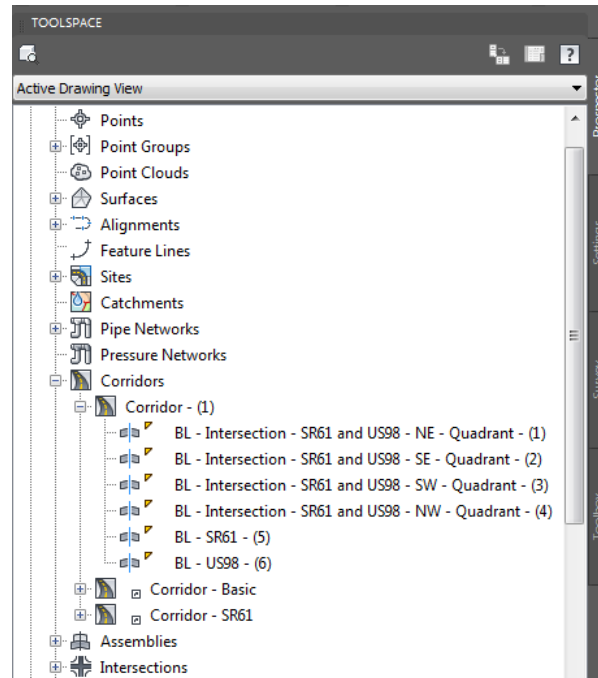


3. Select the “+” next to Intersection - SR61 and US98 to expand the list.
4. Select the “+” next to Intersecting Alignments to expand the list.
5. Select the “+” next to US98 and the “+” next to SR61 to display the created Offset Alignments list.
6. Select the “+” next Intersection Quadrants to expand the list.
7. Select the “+” next to NE - Quadrant, SE - Quadrant, SW - Quadrant, and NW - Quadrant, to display the Curb Return Alignments for each Quadrant.

### ➤ Review Results of Corridor Creation

Review results of Corridor creation from the TOOLSPACE > Prospector tab

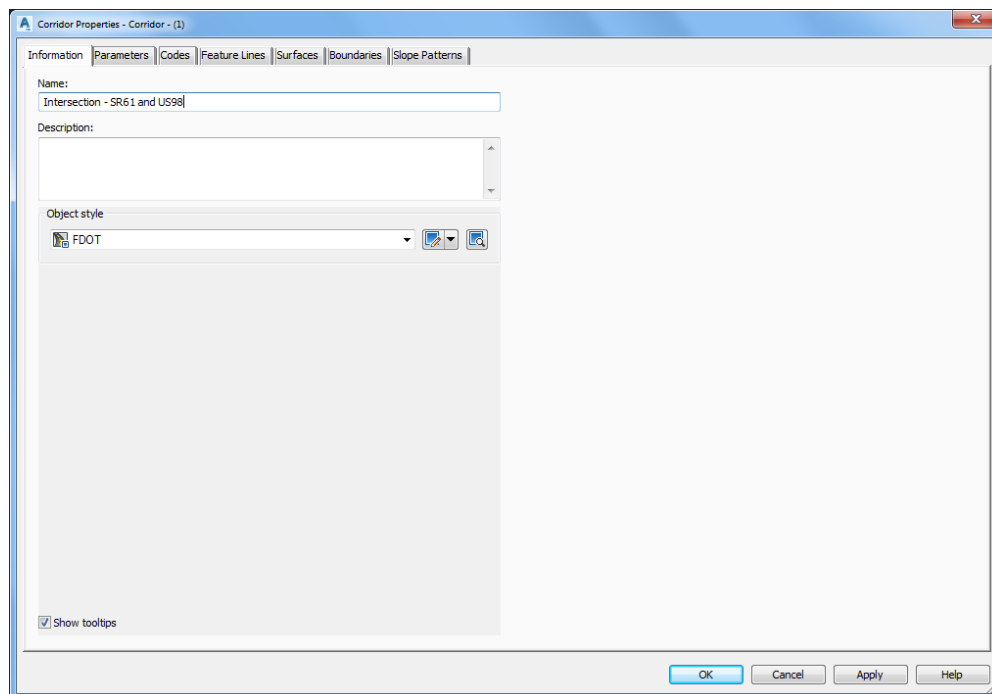
1. From the TOOLSPACE > Prospector tab, select the “+” next to Corridors to expand the list.
2. Select the “+” next to *Corridor - (1)* to expand the list.



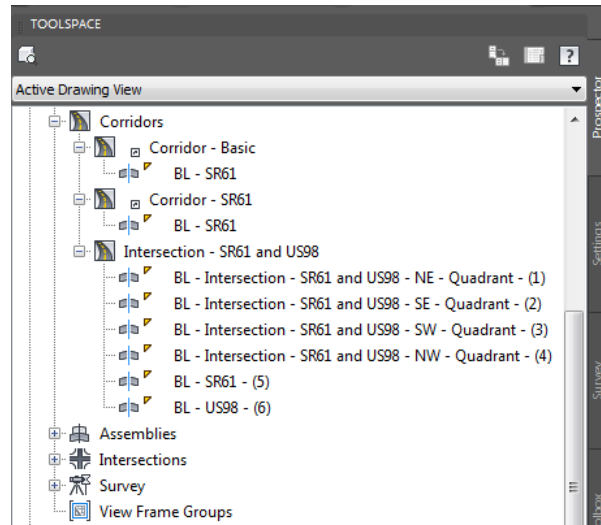
3. Rename the *Corridor* created during the Intersection creation.

Right-click on Corridor - (1), select Properties

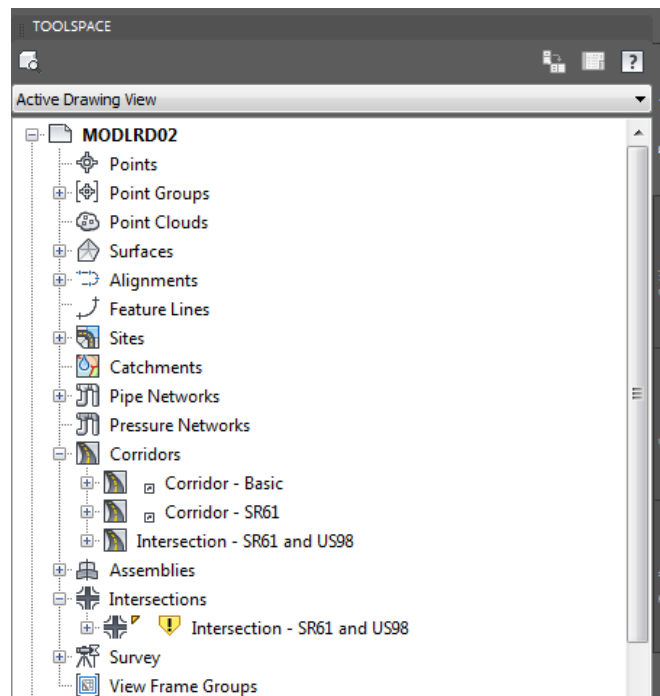
4. From the Corridor Properties - Corridor - (1) dialog, select the *Information* tab, then in the *Name:* section rename Corridor - (1) to **Intersection - SR61 and US98**. Click **OK** to continue.



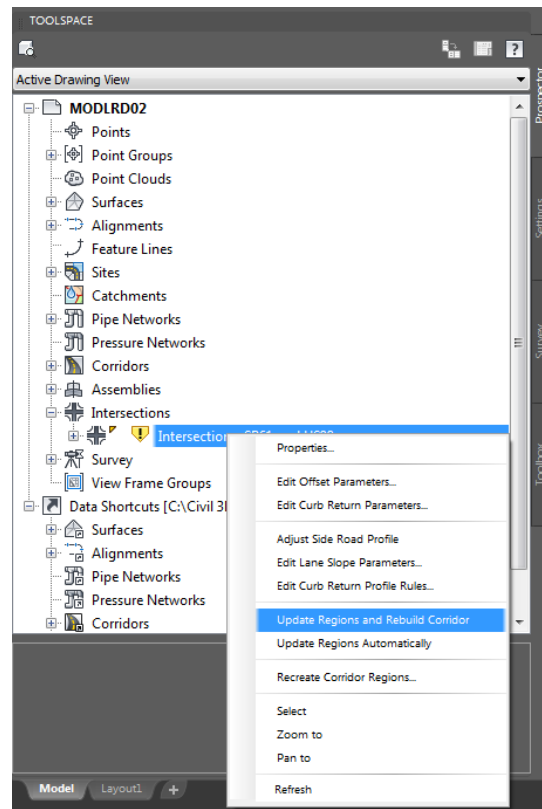
- From the TOOLSPACE > Prospector tab, select the “+” next to *Corridors* to expand the list.
- Select the “+” next to *Intersection - SR61 and US98* to expand the list to display the Baselines created for each Quadrant.



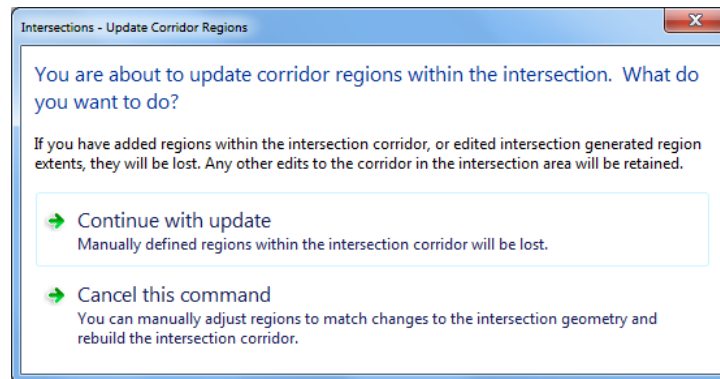
- After renaming the *Corridor- (1)* to *Intersection - SR61 and US98*, a Gold Shield may appear next to the *Intersection - SR61 and US98* in the Toolspace > Prospector tab > Intersection.



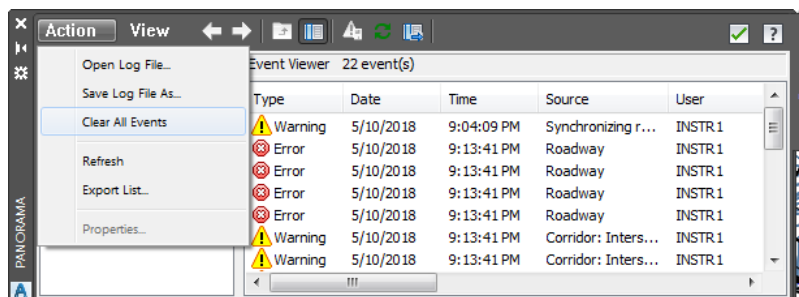
8. To remove the Gold Shield, from the Toolspace > Prospector tab > Intersection, right-click on Intersection - SR61 and US98, review the options displayed, and then select Update Regions and Rebuild Corridor.



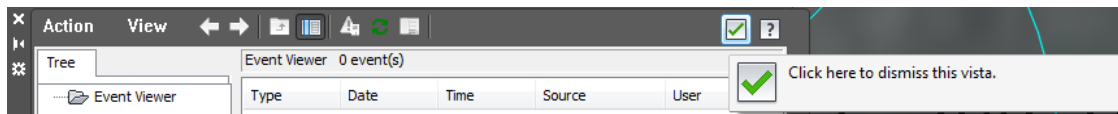
9. From the Intersections - Update Corridor Regions dialog, select **Continue with Update**.



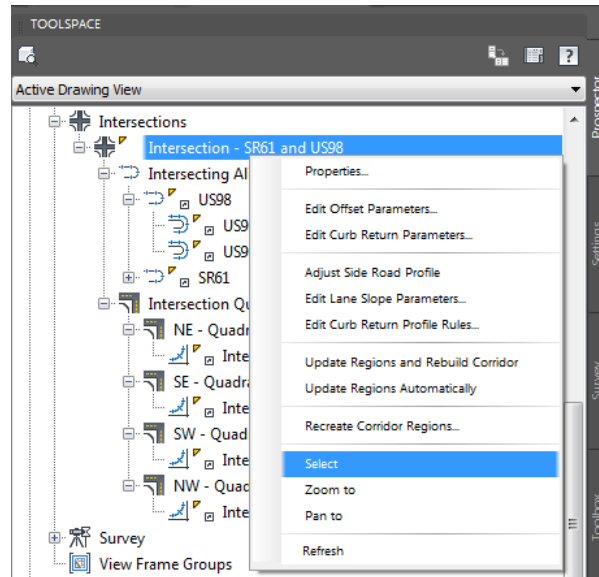
10. The Panorama tool palette (Event Viewer) is displayed, Click on the Events tab, then review the Events. Next right-click on the Action tab, select Clear All Events.



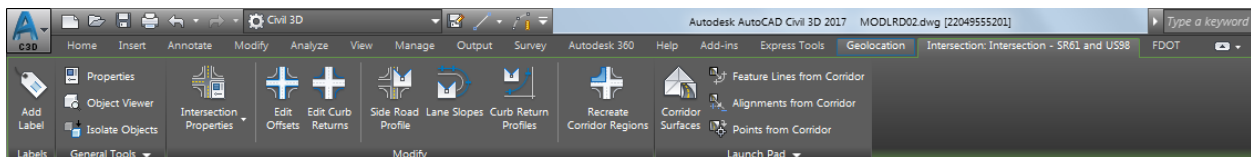
11. To close Panorama tool palette (Event Viewer) Click on the Green check to close.



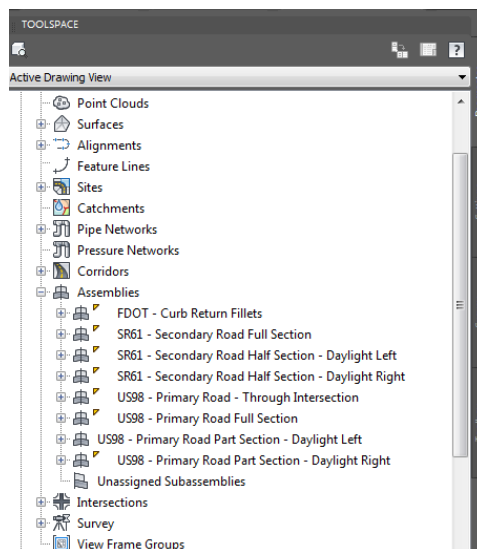
12. From the TOOLSPACE > Prospector tab, select the “+” next to *Intersections* to expand the list. Select the **Intersection - SR61**, right-click and then select **Select**.



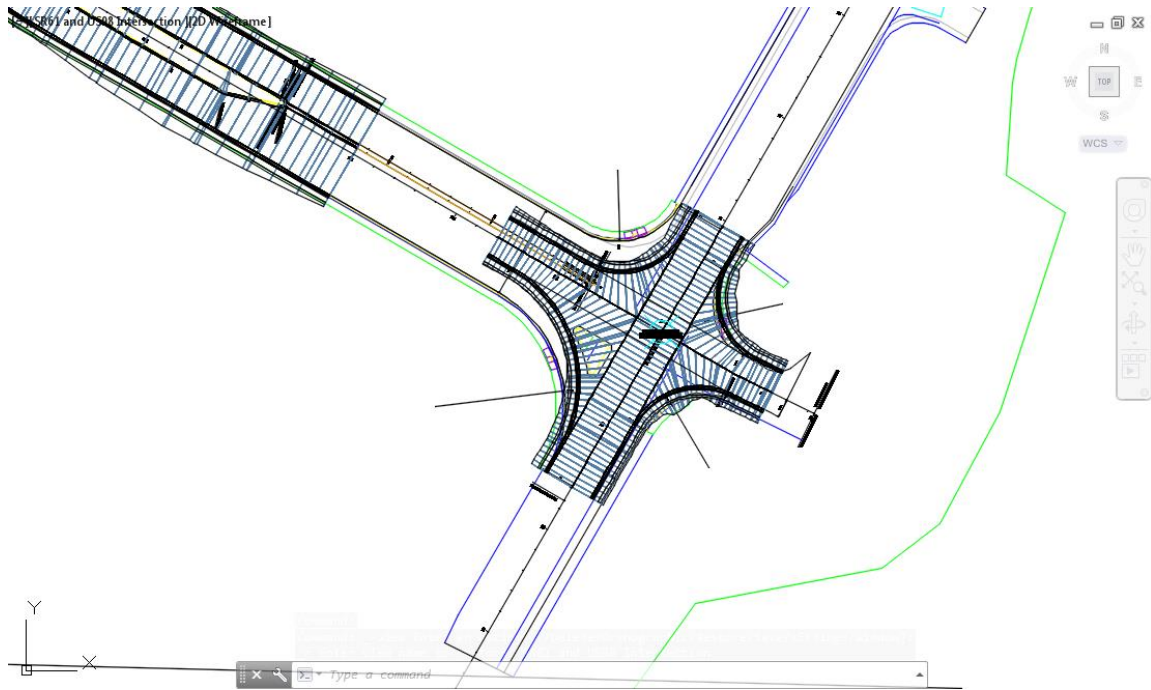
13. Review the options displayed in the Ribbon > Intersection - SR61 and US98 tab. Press ESC to clear the selection



14. From the TOOLSPACE > Prospector tab, select the “+” next to *Assemblies* to expand the list.



15. Review the list of Assemblies inserted into the MODLRD02 file by the Intersection wizard used for the creation of the Intersection - SR61 and US98 Intersection and Intersection - SR61 and US98 Corridor.



16. Follow the prior steps to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
17. Save and close MODLRD02.dwg



# 4 EDIT INTERSECTION

## DESCRIPTION

In this chapter you will continue the process editing the Intersection SR61 and US98 which was created using the Intersection Wizard with project settings.

## OBJECTIVES

In this chapter, you will learn about:

- Review project dimensions
- Check referenced data.
- Review Assemblies
- Manage External References
- Edit Intersection SR61 and US98
- Review Results

## CHAPTER SETUP

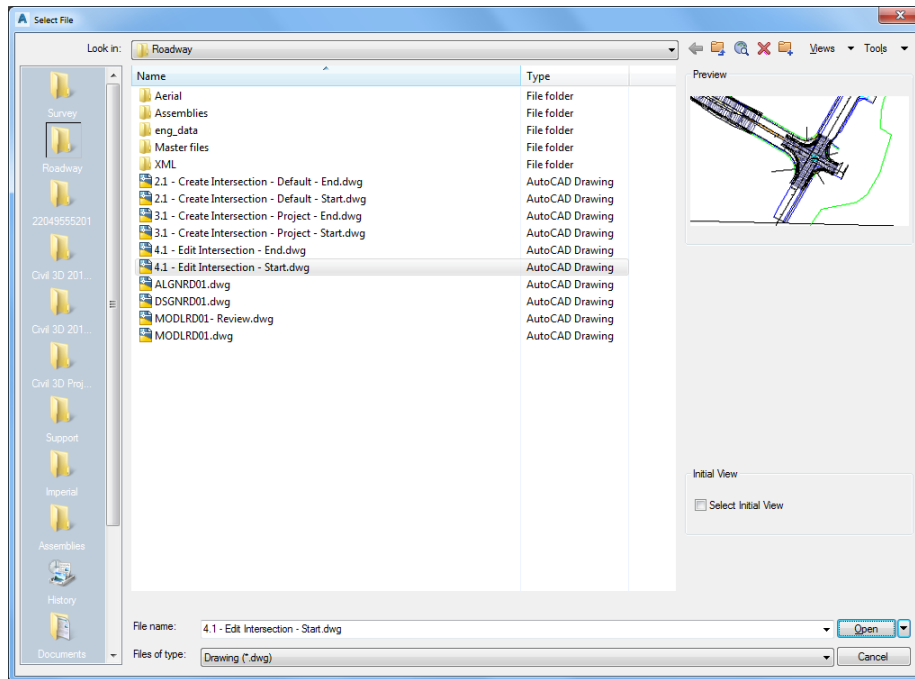
Run the Chapter 4 - 22049555201.exe file and restore all files to the **C:\Civil 3D 2017** Projects folder.

Do not change the location in which the Practice Files are installed. Doing so can cause errors when completing the exercises in this training manual.

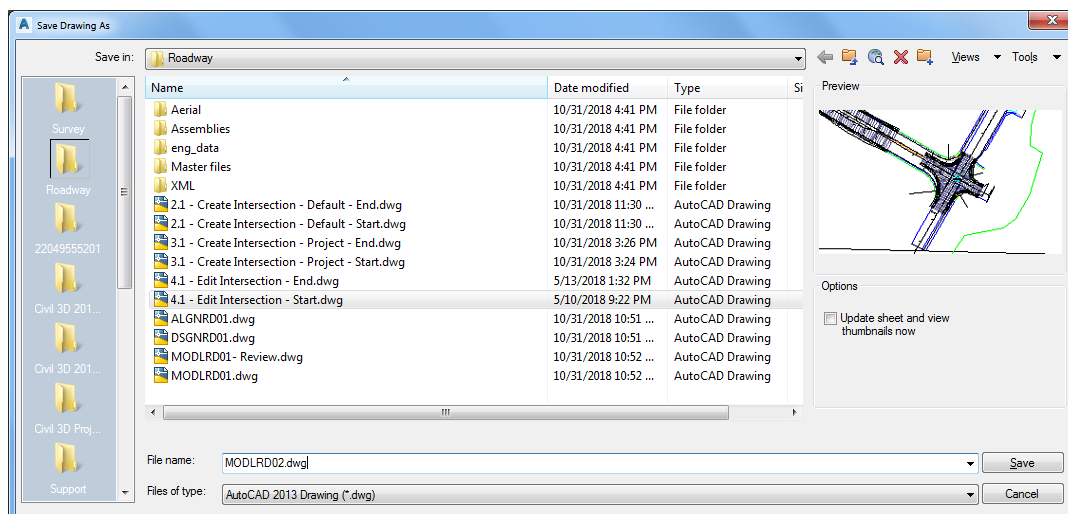
### Exercise 4.1 Create MODLRD02 File

In this exercise you will create the MODLRD02 file to start editing process of the Intersection SR61 and US98 which was created using the Intersection Wizard with project settings.

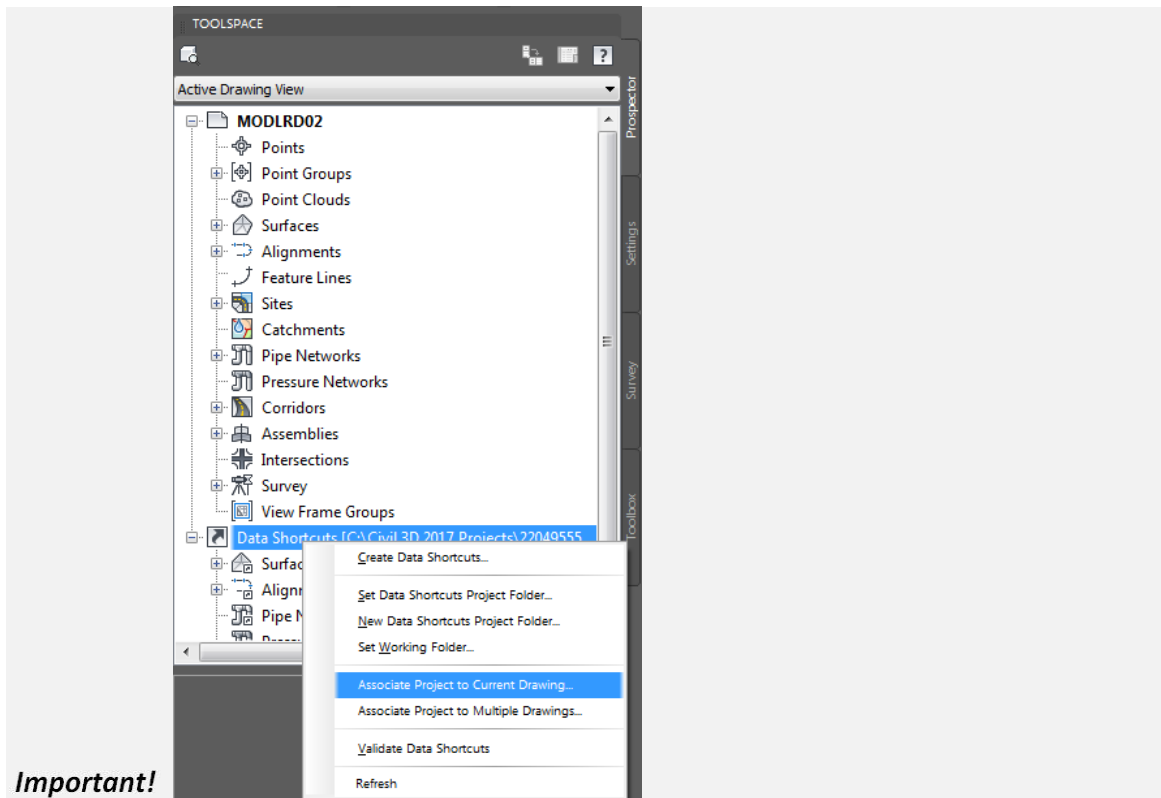
1. From the **Select File** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and select **Open 4.1 - Edit Intersection - Start.dwg**. Click **Open** to close the **Select File** dialog box.



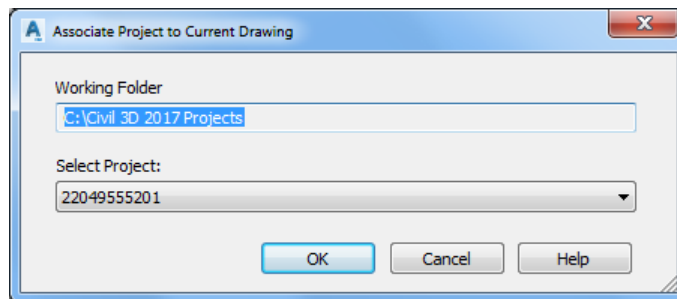
2. From the **Save Drawing As** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and **MODLRD02.dwg**. Click **Save** to close the **Save Drawing As** dialog box.



3. Associate *MODLRD02.dwg* file to the Project: from the TOOLSPACE > Prospector tab > Data Shortcuts [C:\Civil 3D 2017 Projects\22049555201], right-click and select **Associate Project to Current Drawing**.



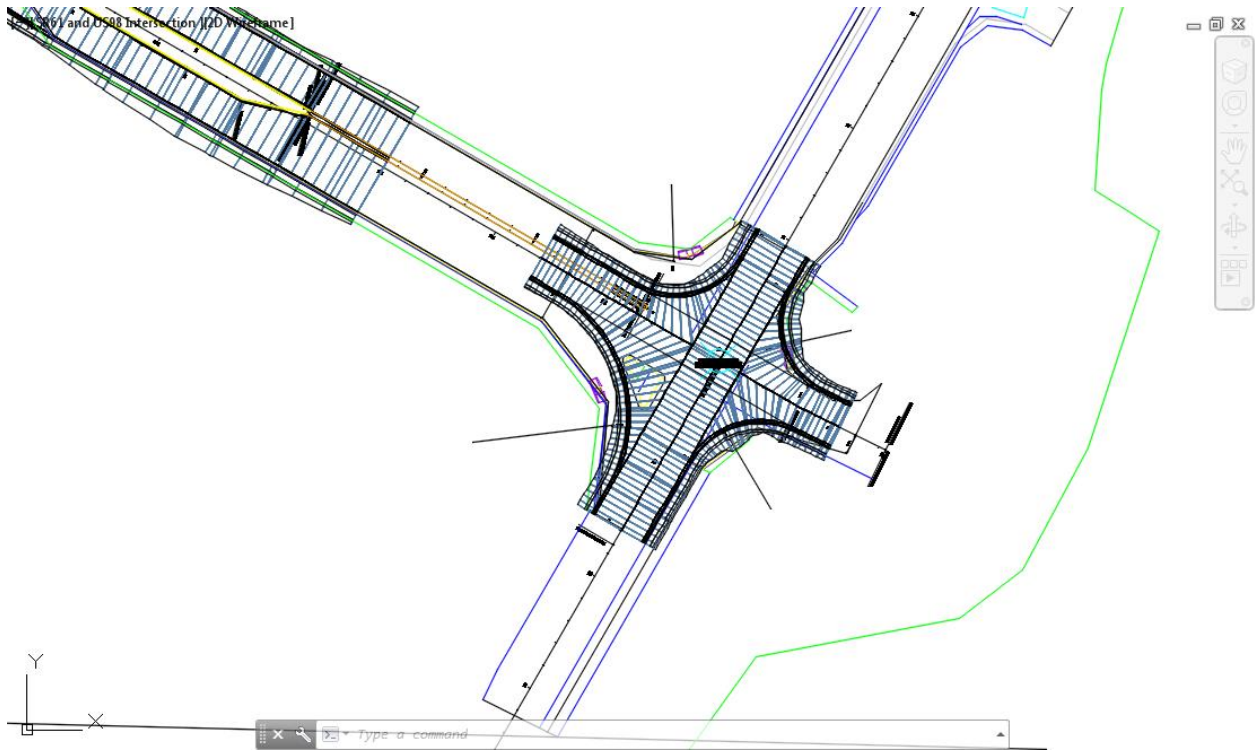
4. From Associate Project to Current Drawing dialog box, set the following values:
  - Working Folder: set to C:\Civil 3D 2017 Projects.
  - Select Project: click 22049555201 from drop down list.



5. Click **OK** to close Associate Project to Current Drawing dialog box.
6. *MODLRD02.dwg* is now associated to the C:\Civil 3D 2017 Projects\22049555201 Project.



7. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.

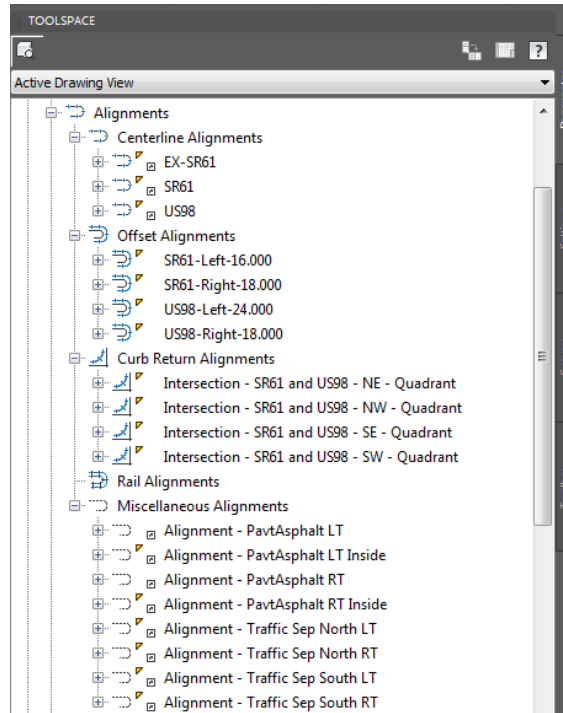


8. **Save** your file before continuing.

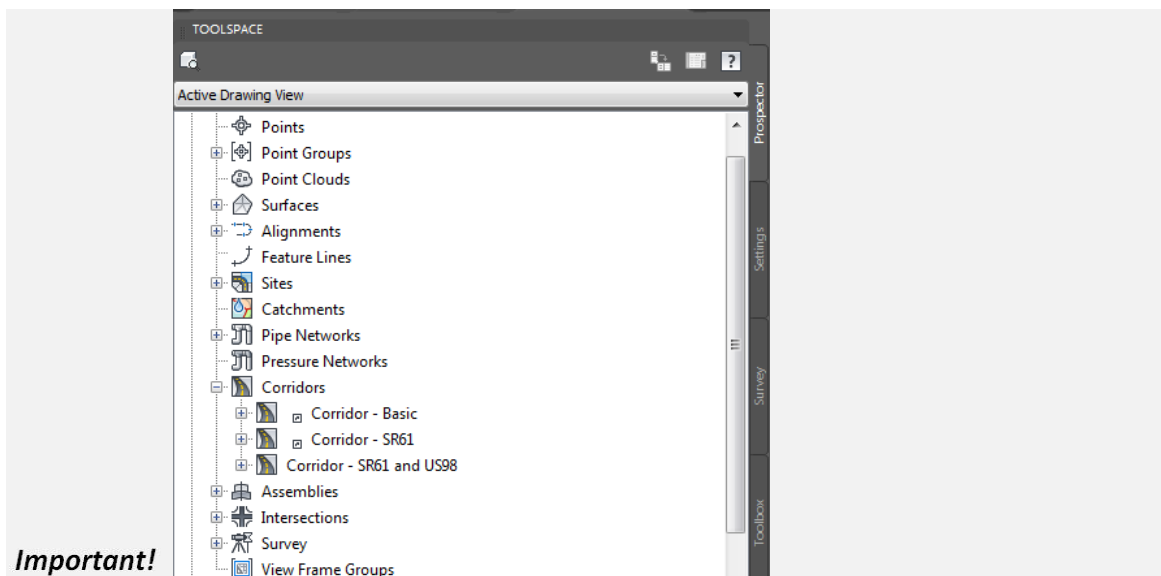
### Exercise 4.2 Review Referenced Data

In this exercise you will review referenced data.

1. Review *Data Referenced Alignments* in MODLRD02 from *TOOLSPACE > Prospector tab*, expand Alignments > Centerline Alignments, Offset Alignments, Curb Return Alignments, and Miscellaneous Alignments.



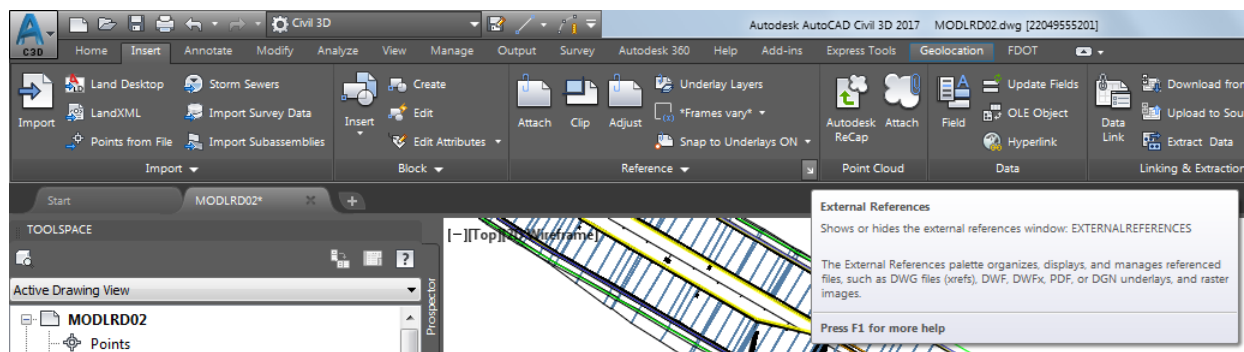
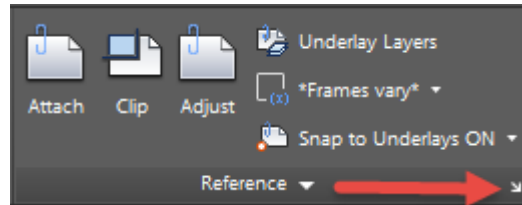
2. Review *Data Referenced Surfaces* in MODLRD02 from *TOOLSPACE > Prospector tab*, expand **Surfaces** and **Corridors**.



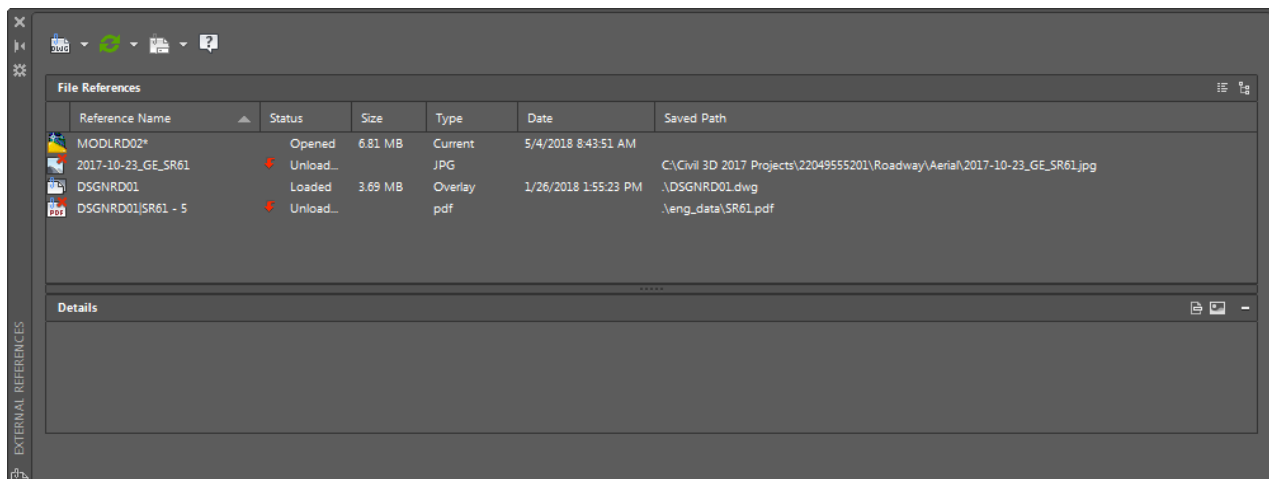
### Exercise 4.3 Review Attached External Reference Files (Xrefs)

In this exercise you will review the attached External Reference files (Xrefs) in the MODLRD02.dwg

1. From the *Insert Tab > Reference panel*, click the **arrow** located in the lower right hand corner to open the *External Reference* tool palette. Use the red arrow as a reference.

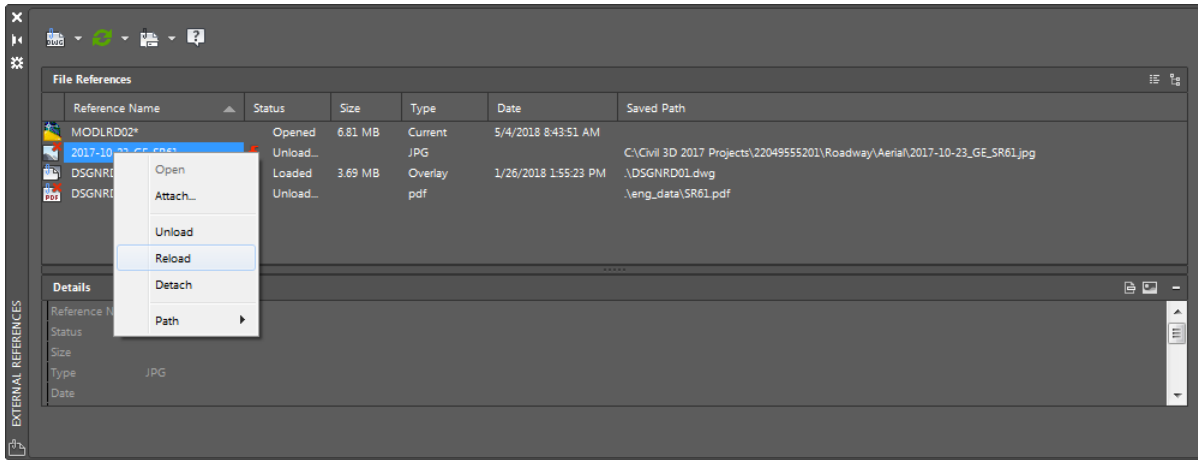


2. The External References tool palette is displayed.
  - ✓ 2017-10-23-GE-SR61 is listed as *Unloaded* as a JPG (Image) attachment.
  - ✓ DSGNRD01.dwg is listed as *Loaded* as an Overlay attachment.
  - ✓ DSGNRD01|SR61 - 5 is listed as *Unloaded* as an PDF attachment.



➤ **Reload attached 2017-10-23\_GE\_SR6a image Xref from the MODLRD02.dwg.**

1. In the list, right-click on 2017-10-23\_GE\_SR61 and select **Reload**. By reloading the external reference 2017-10-23\_GE\_SR61 the drawing editor now displays the 2017-10-23\_GE\_SR61.jpg aerial image.



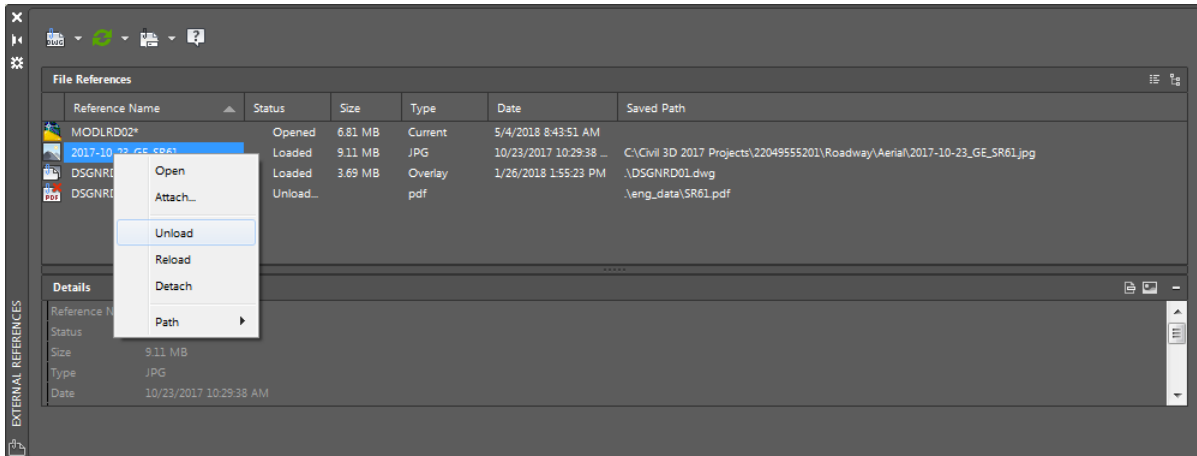
2. **Close External References** tool palette.
3. **Review Image**



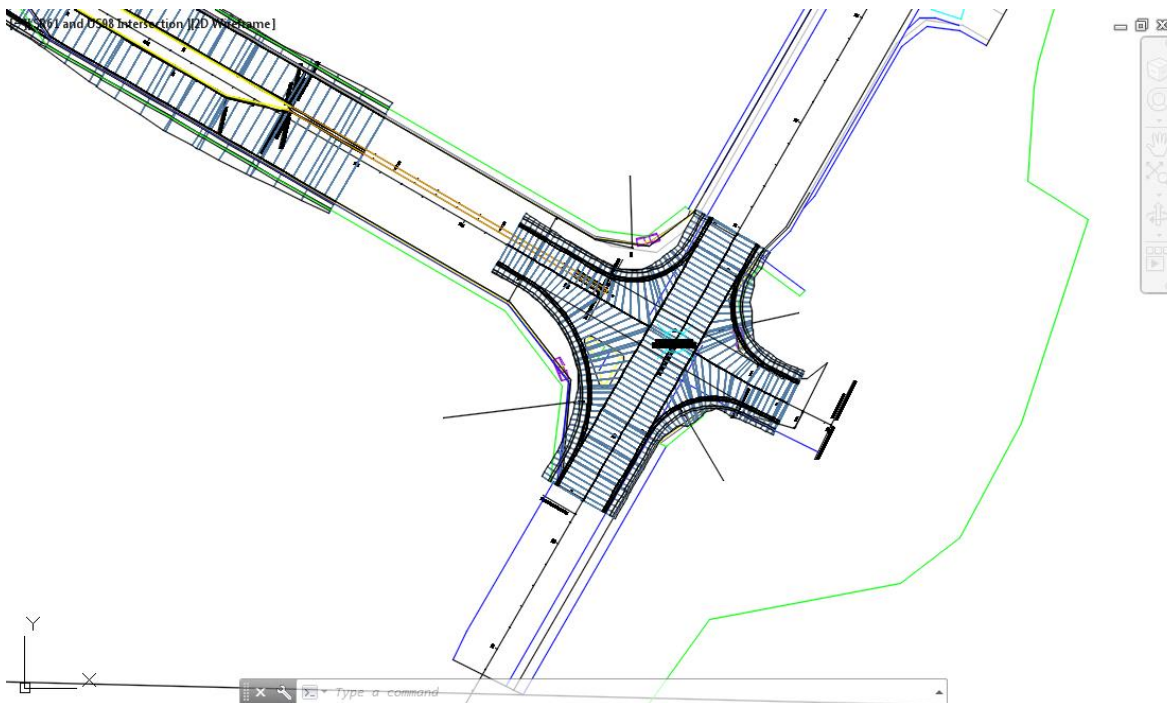


➤ **Unload the attached 2017-10-23\_GE\_SR61 image Xref from the MODLRD02.dwg.**

1. From the *Insert Tab > Reference panel*, click the **arrow** located in the lower right hand corner to open the *External References* tool palette.
2. In the list, right-click on 2017-10-23\_GE\_SR61 and select **Unload**. By unloading the external reference 2017-10-23\_GE\_SR61 the drawing editor no longer displays the 2017-10-23\_GE\_SR61.jpg aerial image.



3. **Close** *External References* tool palette.
4. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.



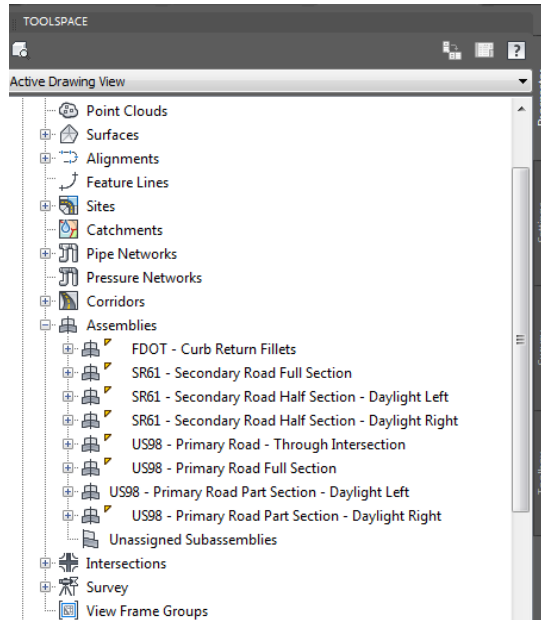
5. **Save** your file before continuing.



### Exercise 4.4 Review Assemblies

In this exercise you will review the FDOT Custom Assemblies which were inserted into the MODLRD02.dwg from the Intersection Wizard creation process.

1. From the TOOLSPACE > Prospector tab, select the “+” next to *Assemblies* to expand the list.



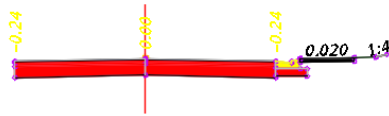
2. Follow the prior steps from Chapter 2 to restore a Restore custom model view: *SR61 and US98 Assemblies* using View Controls.

[--SR61 and US98 Assemblies ][2D Wireframe]



3. Use Zoom and Pan commands to review Assemblies

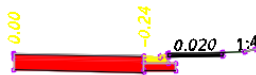
[Top] 2D Wireframe



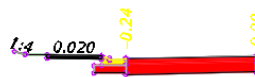
US98 - Primary Road Part Section - Daylight Right



US98 - Primary Road Part Section - Daylight Left



SR61 - Secondary Road Half Section - Daylight Right



SR61 - Secondary Road Half Section - Daylight Left

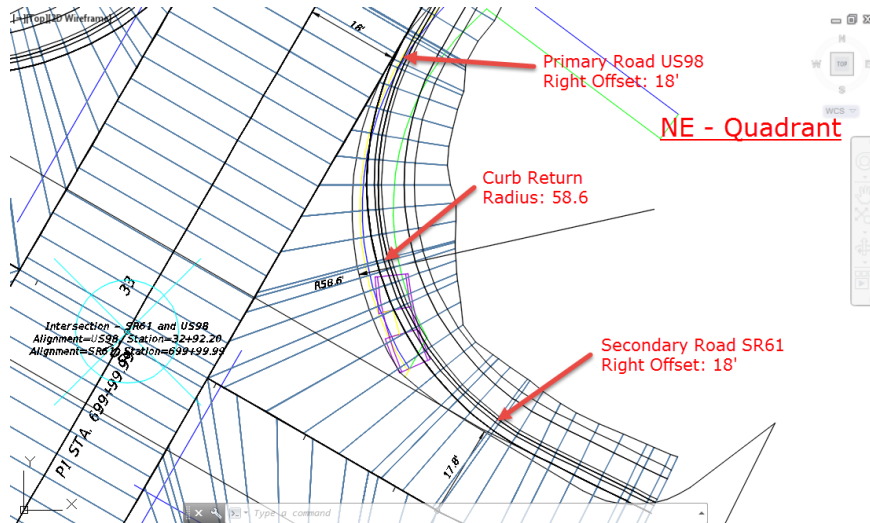


4. Follow the prior steps from Chapter 2 to restore a Restore custom model view: **SR61 and US98 Intersection** using View Controls.
5. **Save** your file before continuing.

### Exercise 4.5 Review Project Dimensions

In this exercise you need to review the project dimensions displayed on the attached DSGNRD01.dwg external reference file by quadrants.

1. Zoom to display the *NE - Quadrant* dimensions.

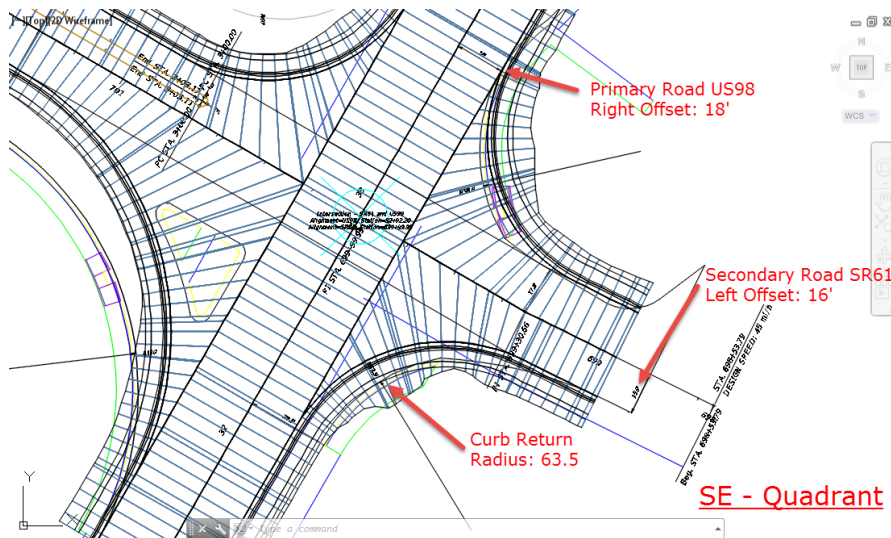


- Offsets Alignments:

Primary Road US98, Right Offset Alignment Definition Value: 18' (Round up from 17.8')  
 Secondary Road SR61, Right Offset Alignment Definition Value: 18'

- Curb Returns: NE – Quadrant, Parameter Radius Value: 58.6'

2. Zoom to display the *SE - Quadrant* dimensions.

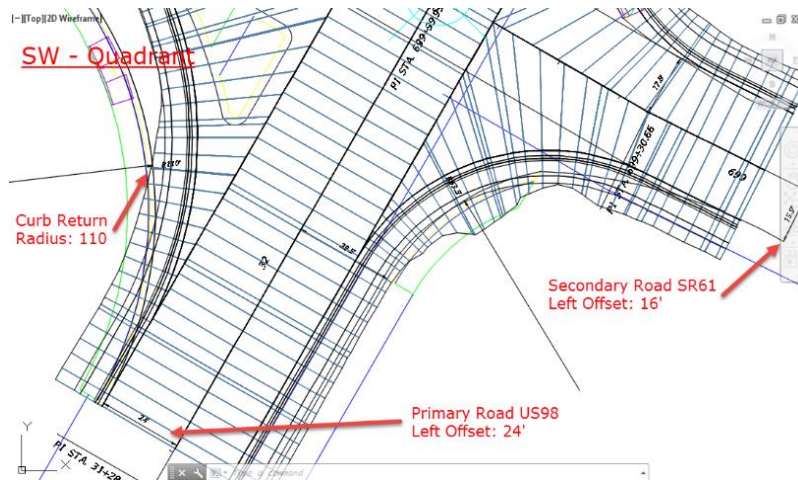


- Offsets Alignments:

Primary Road US98, Right Offset Alignment Definition Value: 18'  
 Secondary Road SR61, Left Offset Alignment Definition Value: 16' (Round up from 15.9')

- Curb Returns: SE – Quadrant, Parameter Radius Value: 63.5'

3. Zoom to display the *SW - Quadrant* dimensions.



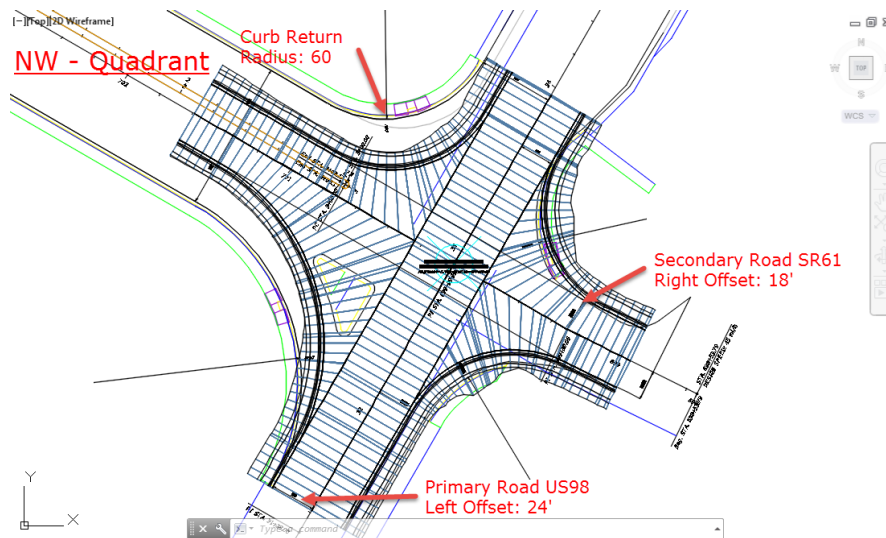
- Offsets Alignments:

Primary Road US98, Left Offset Alignment Definition Value: 24'

Secondary Road SR61, Left Offset Alignment Definition Value: 16' (Round up from 15.9')

- Curb Returns: SW – Quadrant, Radius Value: 110'

4. Zoom to display the NW - Quadrant dimensions.



- Offsets Alignments:

Primary Road US98, Left Offset Alignment Definition Value: 24'

Secondary Road SR61, Right Offset Alignment Definition Value: 18' (Round up from 17.8')

- Curb Returns: NW – Quadrant, Radius Value: 60'

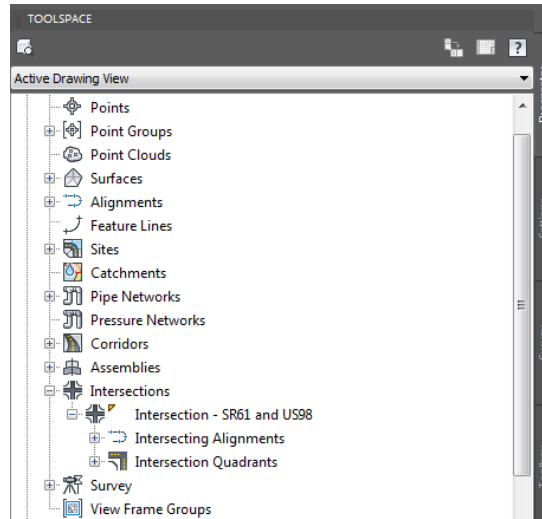
5. Follow the prior steps from Chapter 2 to restore a Restore custom model view: **SR61 and US98 Intersection** using View Controls.
6. **Save** your file before continuing.

### Exercise 4.6 Review Options to Edit Intersection SR61 and US98

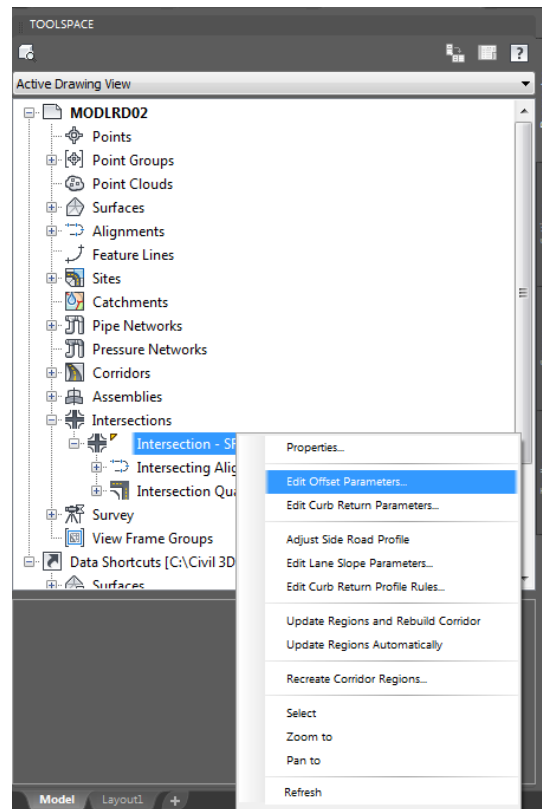
Now you are going to start the process of editing the Intersection SR61 and US98 by editing the Offsets Alignments and Curb Returns using the values from the prior exercise and various methods .

➤ **Method: Edit Offset Alignments from the TOOLSPACE > Prospector Tab**

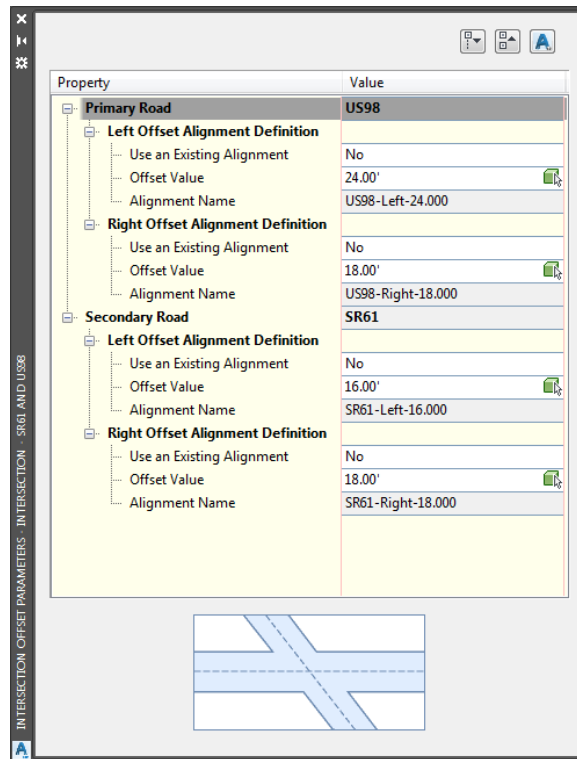
1. To edit *Offset Alignments*, one method is from the TOOLSPACE > Prospector tab, select the “+” next to *Intersections* to expand the list.



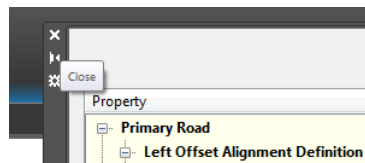
2. Select the Intersection - SR61 and US98, right-click select *Edit Offset Parameters...*



3. The Intersection Offset Parameters - Intersection SR61 and US98 tool palette is displayed.

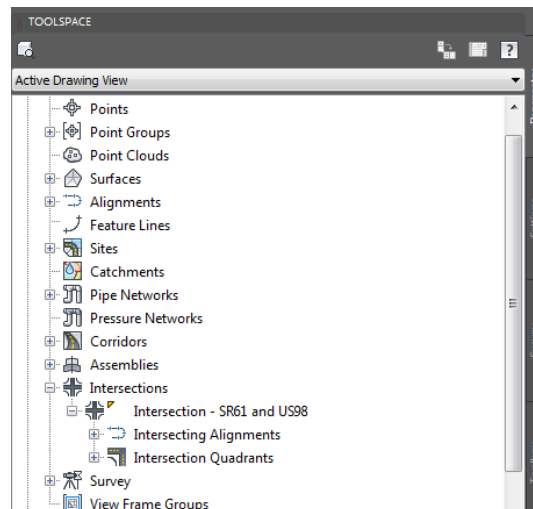


4. Select the X to Close

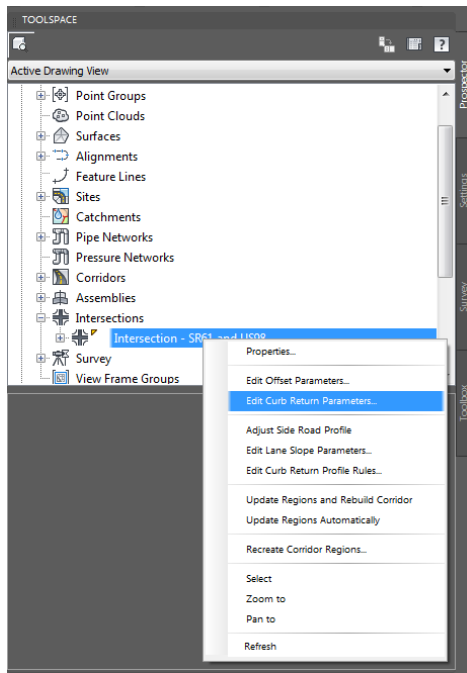


➤ **Method: Edit Curb Returns from the TOOLSPACE > Prospector Tab**

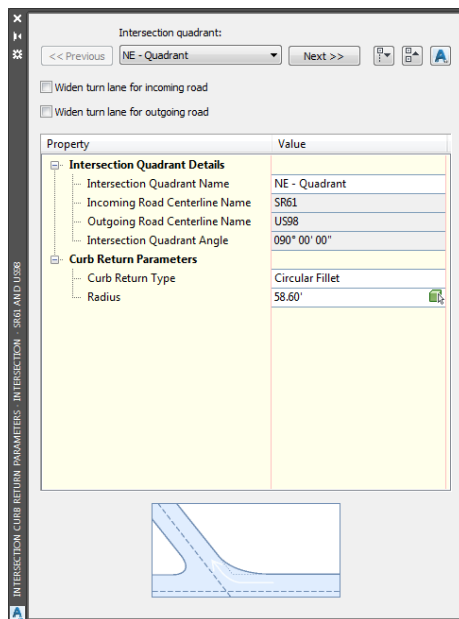
1. To edit *Curb Returns*, one method is from the TOOLSPACE > Prospector tab, select the “+” next to *Intersections* to expand the list.



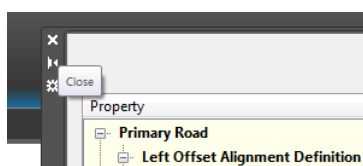
2. Select the Intersection - SR61 and US98, right-click select *Edit Curb Return Parameters...*



3. The Intersection Curb Return Parameters - Intersection SR61 and US98 tool palette is displayed.

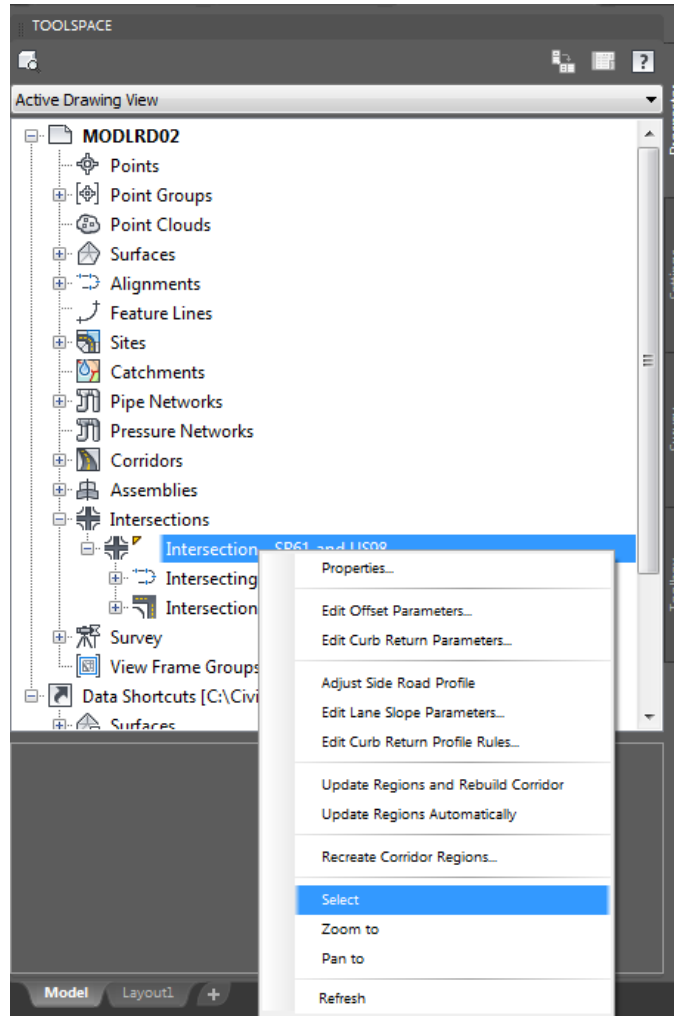


4. Select the X to Close

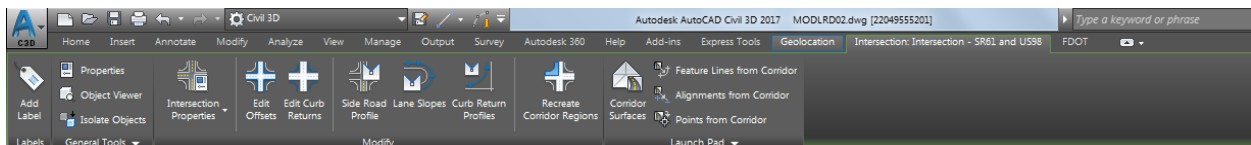


➤ **Method: Edit Offset Alignments and Curb Returns from the Context Sensitive Tab**

1. Press **Esc** to clear any selections in the Drawing Editor
2. From the TOOLSPACE > Prospector tab, select the “+” next to *Intersections* to expand the list.
3. Select the **Intersection - SR61 and US98**, right-click then select *Select*.

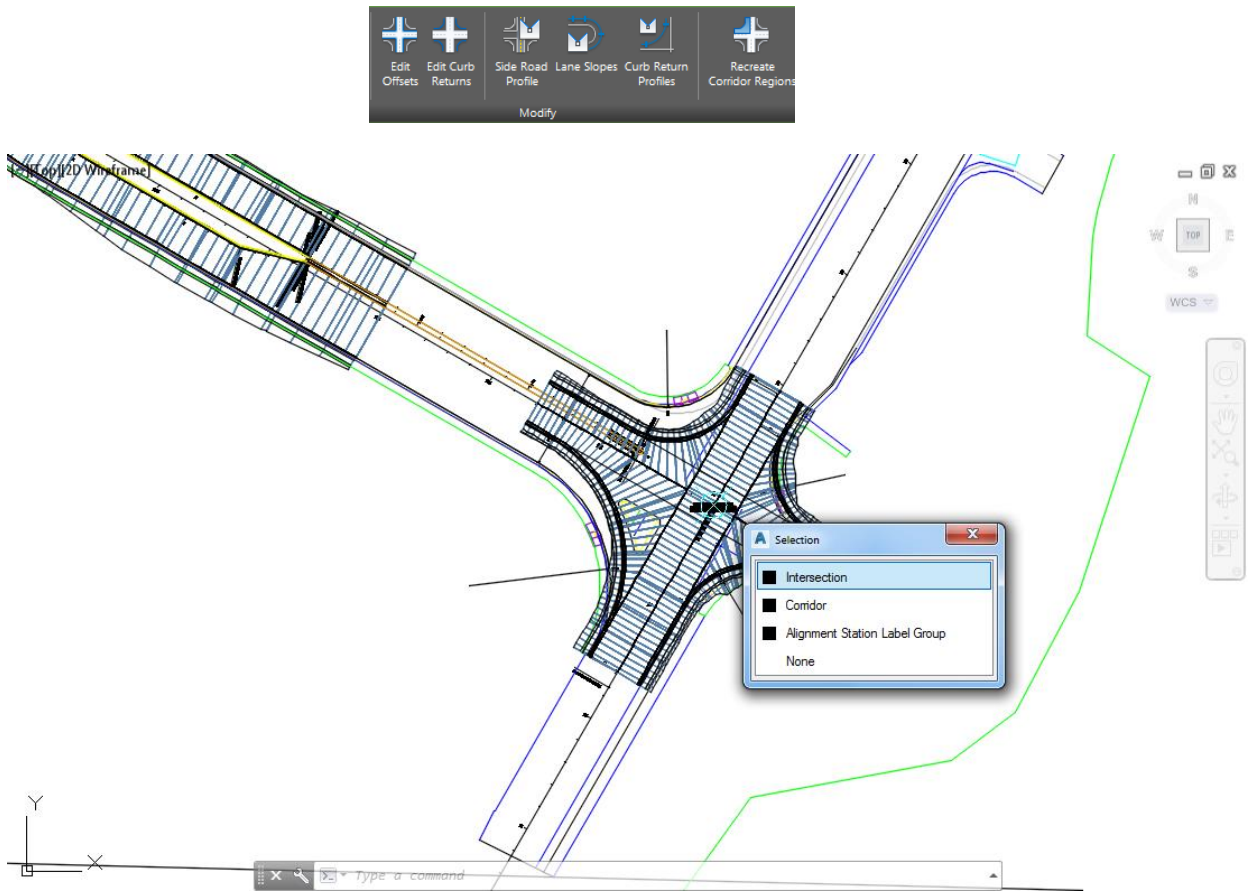


4. A new Tab named *Intersection: Intersection - SR61 and US98* appears in the ribbon. All the tools for editing an Intersection are displayed in each panel.



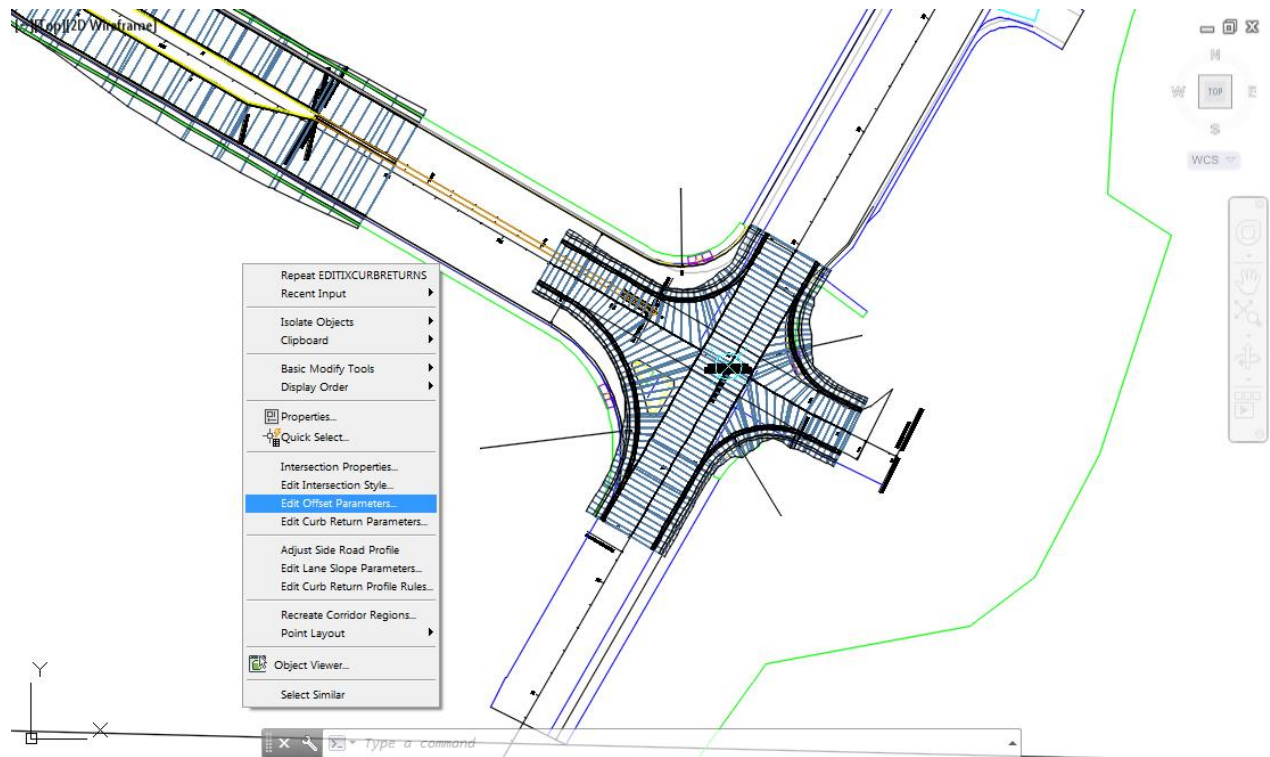


- The Modify panel contains the *Edit Offset and Edit Curb Return* tools. Both tools display the same tool palettes as shown by right-clicking on a named *Intersection* listed under Intersections in the TOOLSPACE > Prospector tab.



➤ **Method: Select the Intersection Marker in the Drawing Editor.**

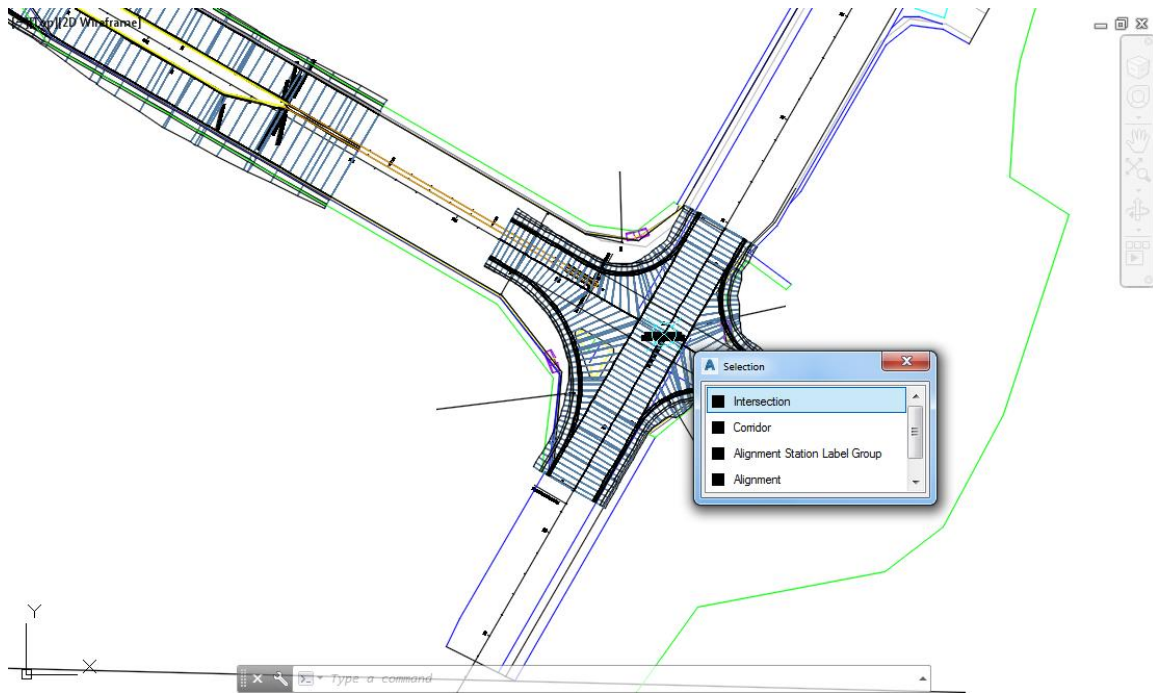
1. Select the Intersection - SR61 and US98 marker in the Drawing Editor, then right-click and select **Edit Offset Parameters...** or **Edit Curb Return Parameters**.
2. Both selections display the same tool palettes as shown by right-clicking on the *Intersection - SR61 and US98* listed under *Intersections* in the TOOLSPACE > Prospector tab or from the tab named Intersection: Intersection - SR61 and US98 Modify panel Edit Offset and Edit Curb Return tools.



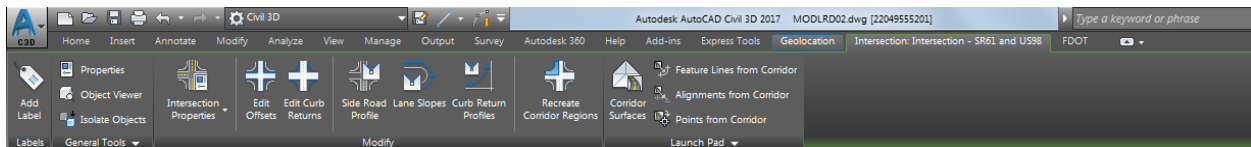
3. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using *View Controls*
4. **Save** your file before continuing.

### Exercise 4.7 Edit Intersection SR61 and US98 - NE - Quadrant

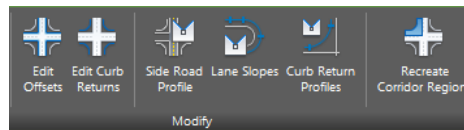
In this exercise you will edit the Intersection SR61 and US98 - NE - Quadrant.



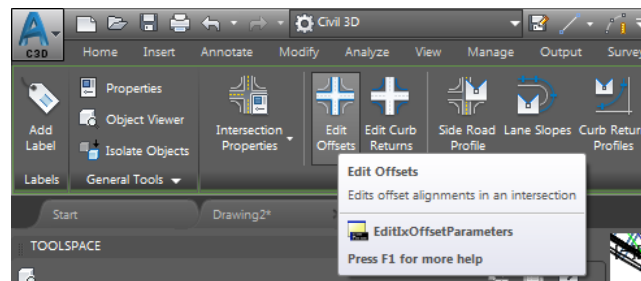
1. Press **Esc** to clear any selections in the Drawing Editor
2. Select the **Intersection - SR61 and US98 marker** in the Drawing Editor, from the Selection dialog select **Intersection**.



3. A new Tab named *Intersection: Intersection - SR61 and US98* displays in the ribbon.

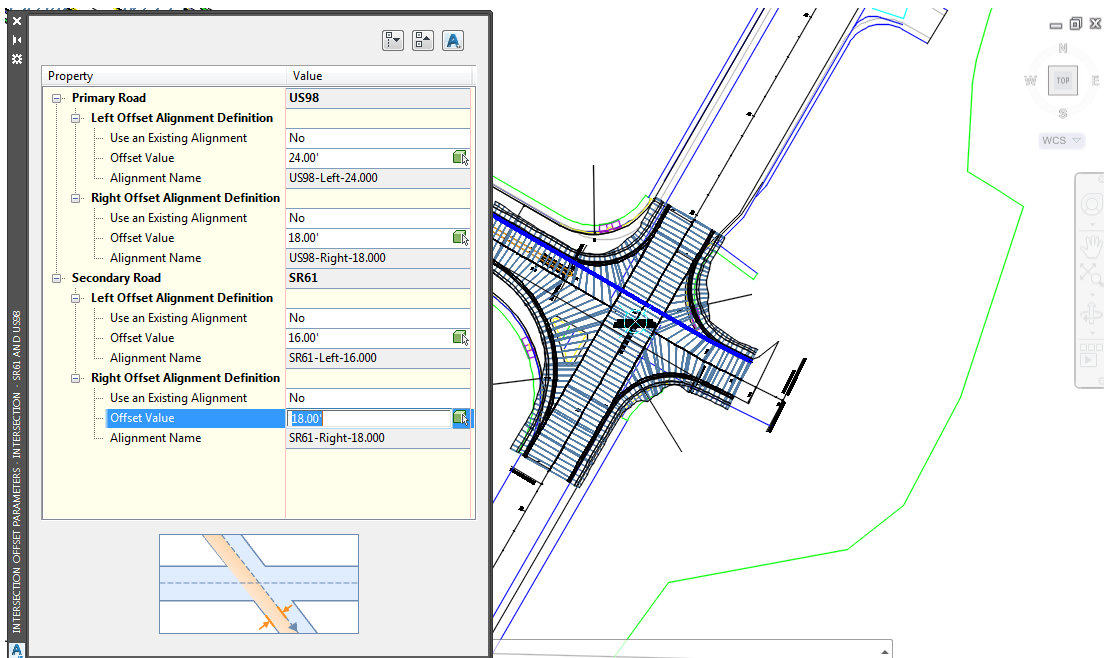
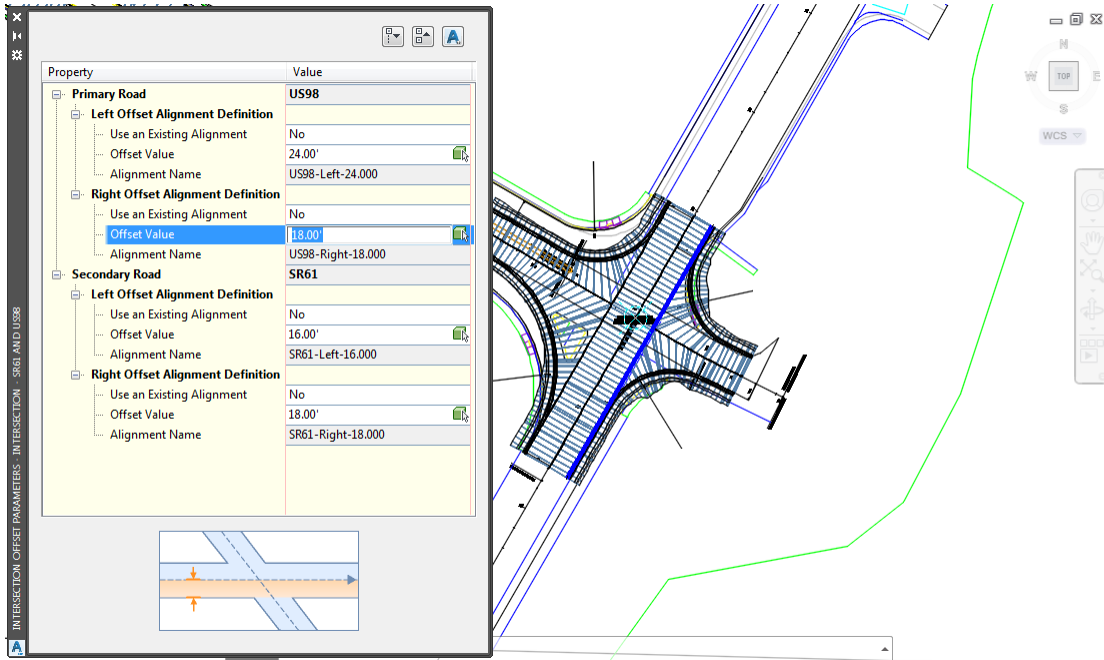


4. From the *Modify* panel, select **Edit Offsets**.

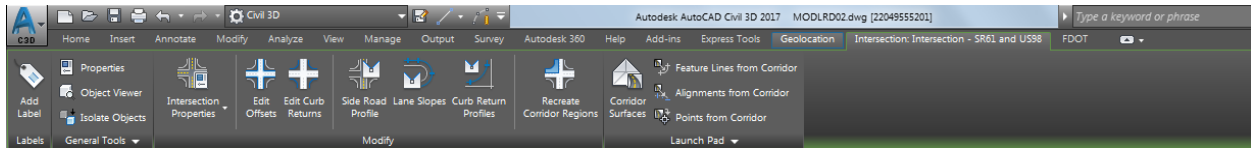


5. From the Intersection Offset Parameters - Intersection - SR61 and US98 tool palette, enter these values:
  - Primary Road US98, Right Offset Alignment Definition Value: 18' (Round up from 17.8')
  - Secondary Road SR61, Right Offset Alignment Definition Value: 18'

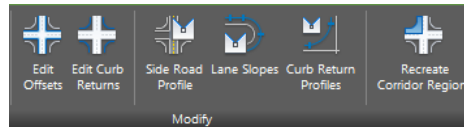
**Note** Notice as you enter in the Values as preview appears in the Drawing Editor displaying which Offset Alignment you are editing.



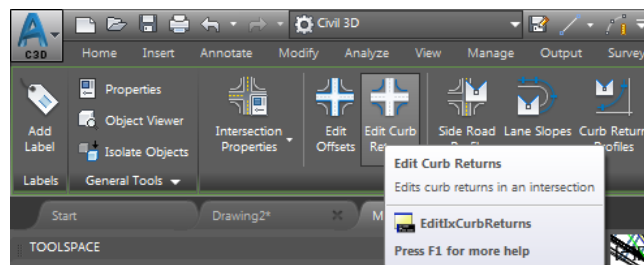
6. Press the **X** to Close the Intersection Offset Parameters - Intersection - SR61 and US98 tool palette.
7. With the Intersection - Intersection - SR61 and US98 Marker still selected, move on to editing the *Curb Returns Alignments*.



8. The Tab named *Intersection: Intersection - SR61 and US98* should still appear in the ribbon.

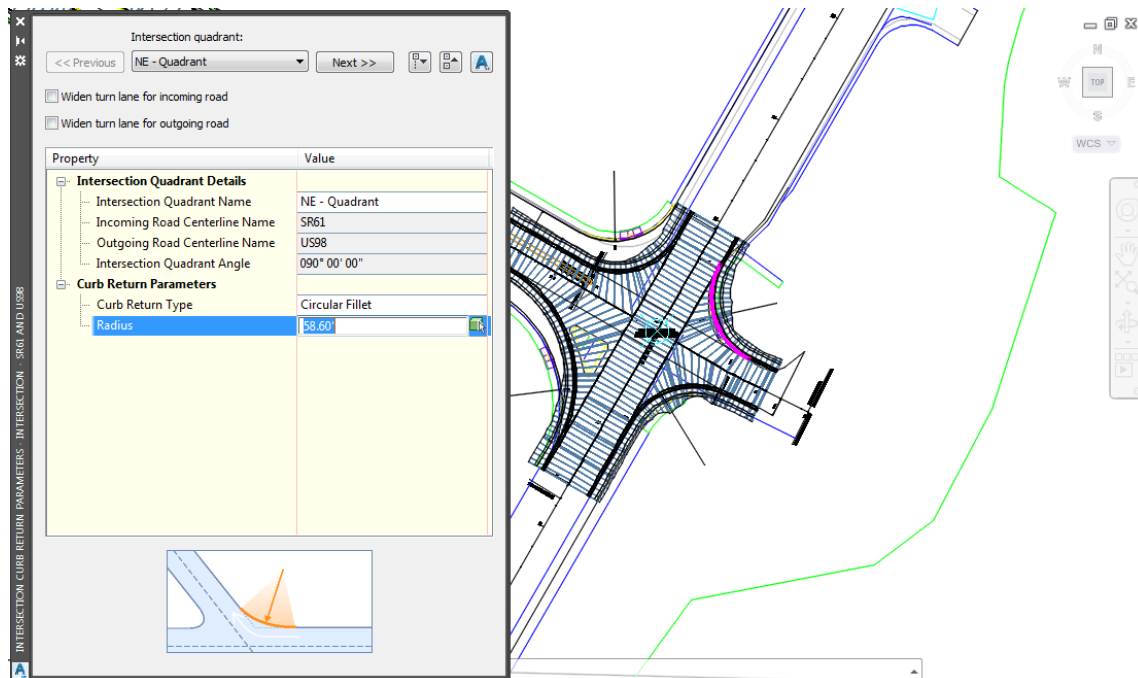


9. From the *Modify* panel, select **Edit Curb Returns**.

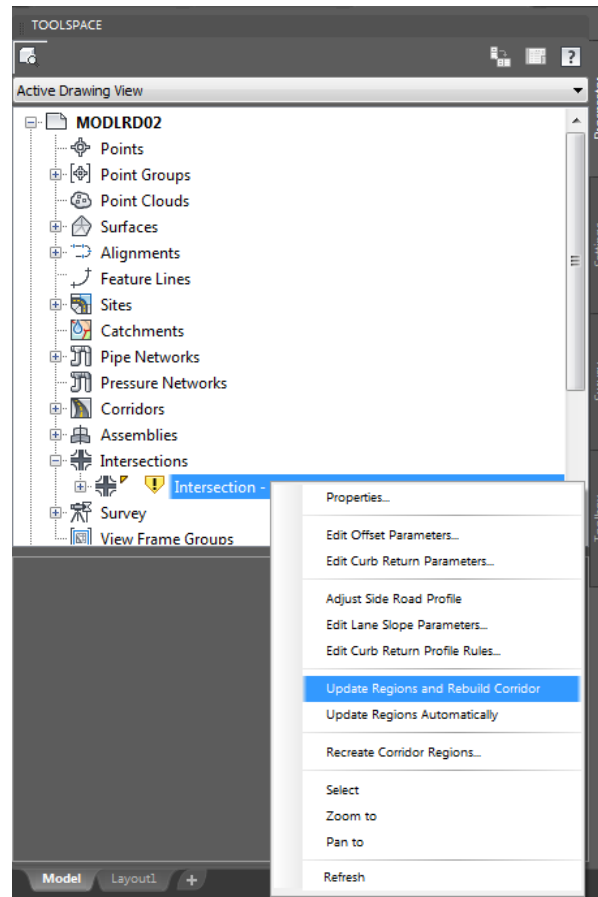


10. From the *Intersection Curb Return Parameters - Intersection - SR61 and US98* tool palette, enter these values: **NE - Quadrant: Curb Returns Parameters: Radius Value: 58.6'**

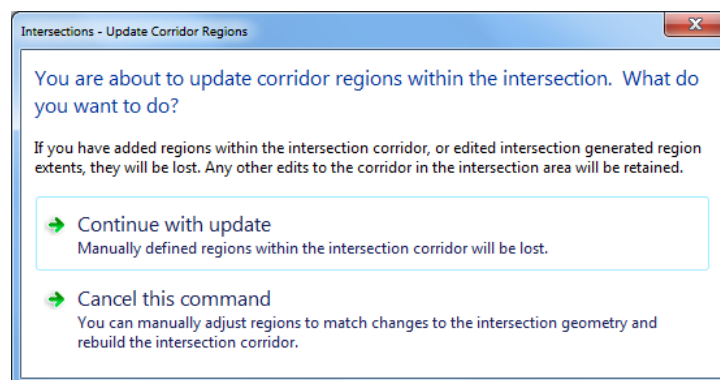
**Note** Notice as you enter in the Values as preview appears in the Drawing Editor displaying which Curb Return Alignment you are editing.



11. Press the **X** to Close the Intersection Curb Return Parameters - Intersection - SR61 and US98 tool palette.
12. From the TOOLSPACE > Prospector tab, select the “+” next to *Intersections* to expand the list.
13. A Gold shield now appears to identify that the *Intersection - SR61 and US98* needs updating, this is caused by the Offset Alignments and Curb Return Alignments edits performed in the prior steps.
14. Select the Intersection - SR61 and US98, right-click then select Update Regions and Rebuild Corridor.

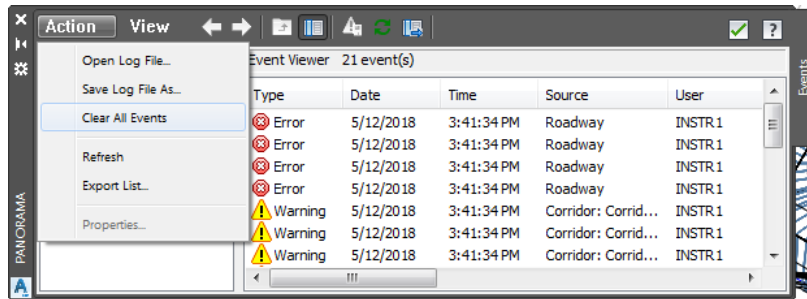


15. The Intersections - Update Corridor Regions dialog is displayed, select **Continue with Update**.

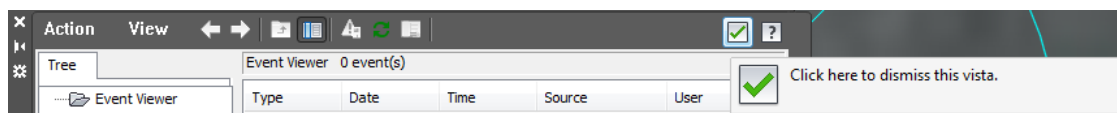




- The *Panorama* tool palette (Event Viewer) is displayed, Click on the *Events* tab, review the Events, then right-click on the *Action* tab, select **Clear All Events**.

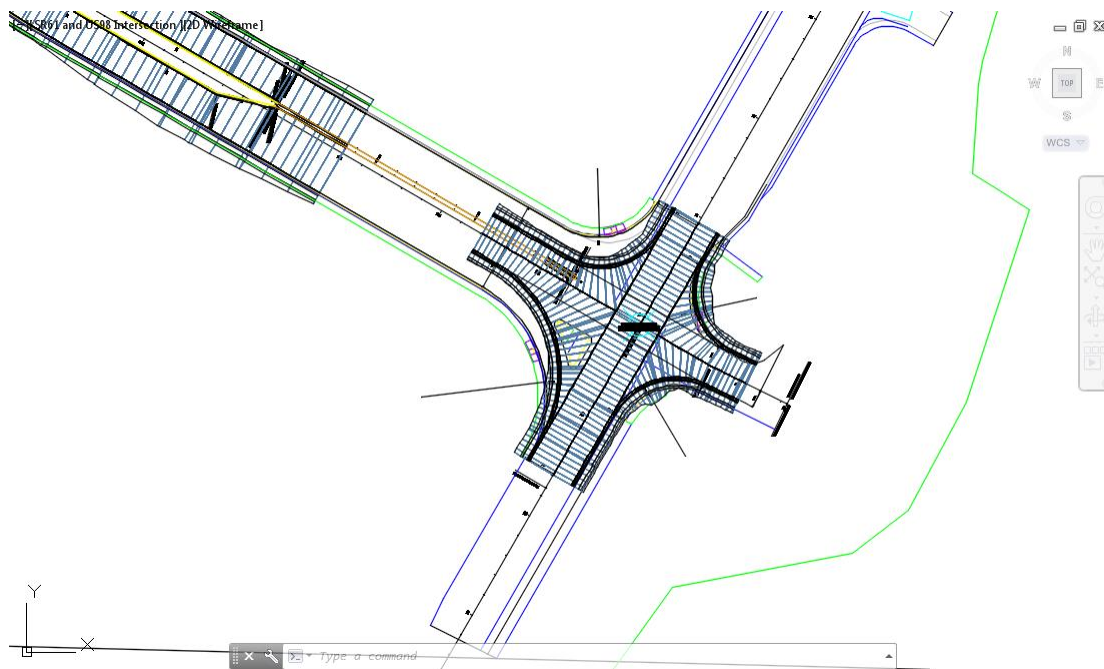


- To close *Panorama* tool palette (Event Viewer) click on the **green check** to close



- Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.

- Review the results of editing the NE - Quadrant of Intersection - SR61 and US98.

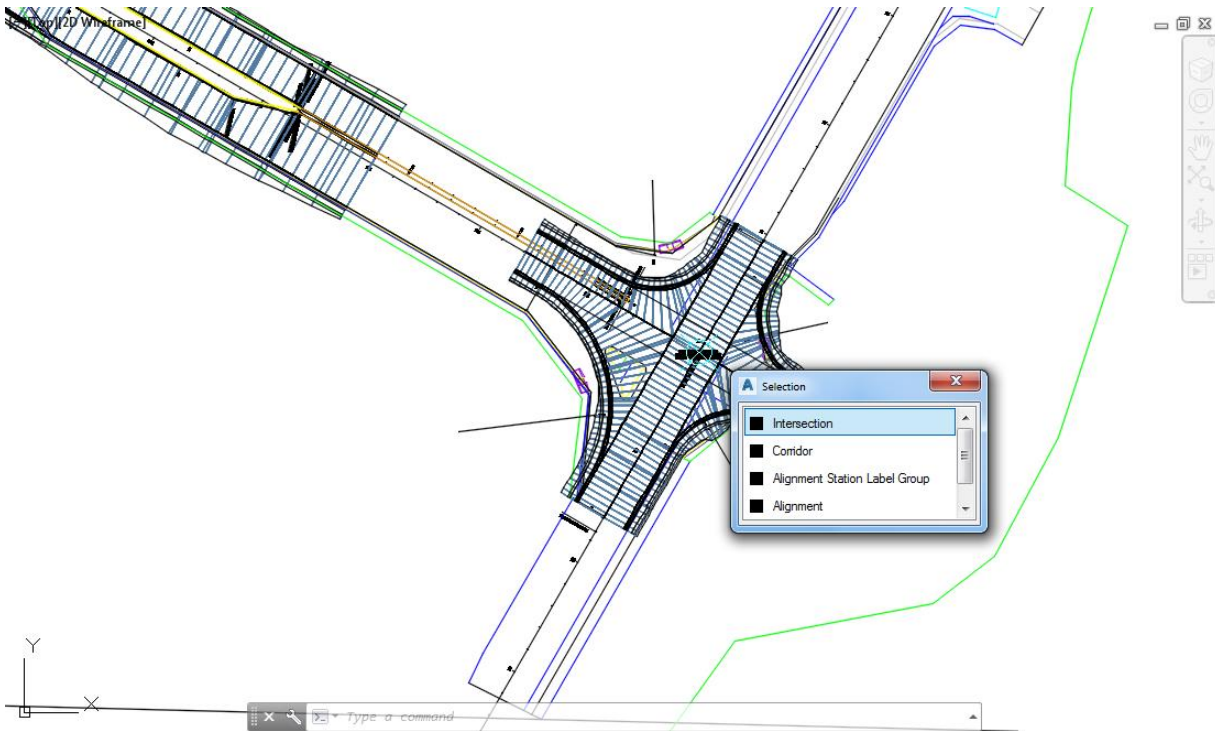


- Save** your file before continuing.

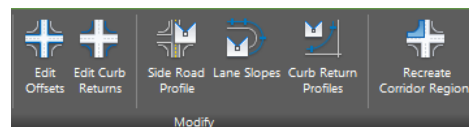
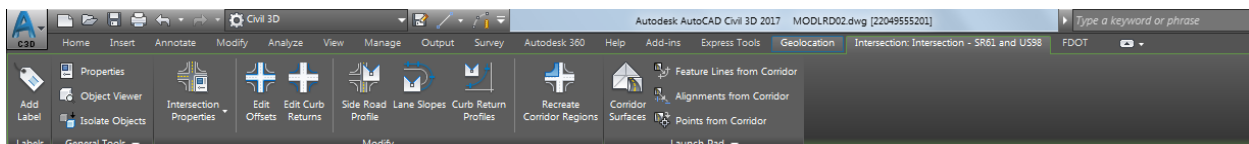
### Exercise 4.8 *Edit Intersection SR61 and US98 - SE - Quadrant*

In this exercise you will edit the Intersection SR61 and US98 - SE - Quadrant.

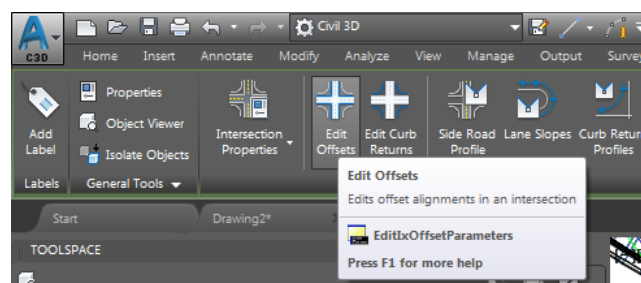
1. Press **Esc** to clear any selections in the Drawing Editor.
2. Select the **Intersection - SR61 and US98 Marker** in the Drawing Editor, from the Selection dialog select **Intersection**.



3. From the Intersection: Intersection - SR61 and US98 tan in the Ribbon.



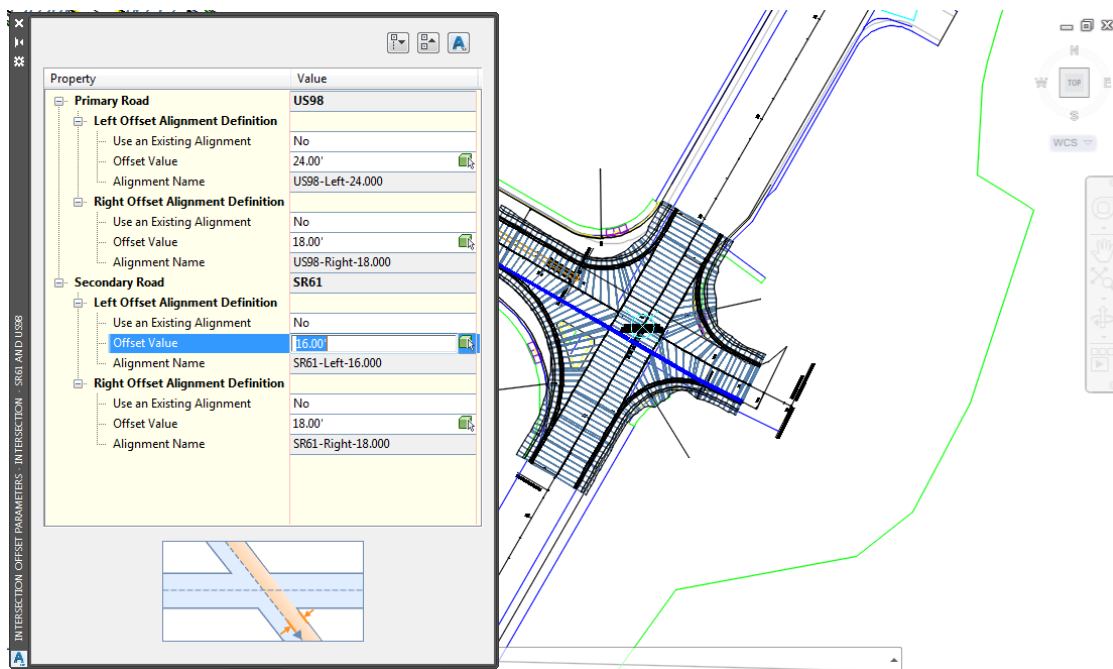
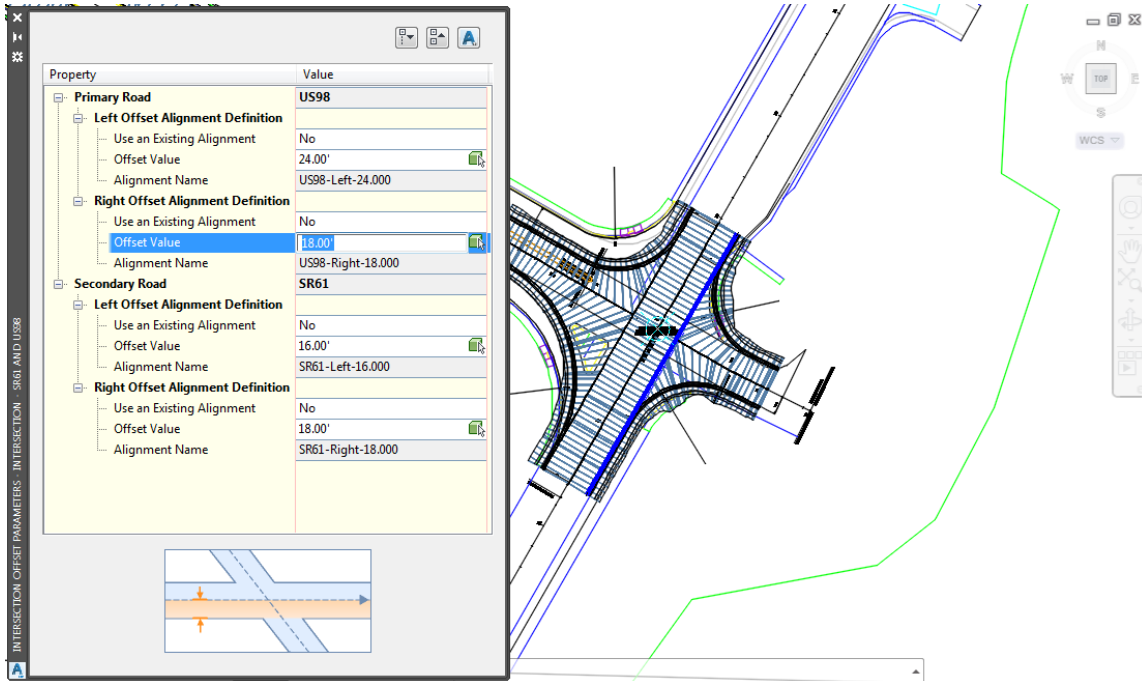
4. From the Modify panel, select Edit Offsets.





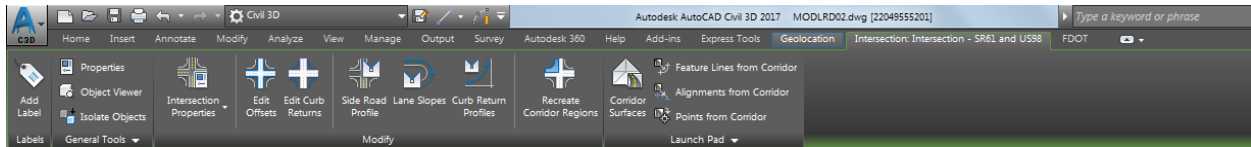
5. From the Intersection Offset Parameters - Intersection - SR61 and US98 tool palette, enter these values:
  - Primary Road US98, Right Offset Alignment Definition Value: 18' (Round up from 17.8')
  - Secondary Road SR61, Left Offset Alignment Definition Value: 16'

**Note** Notice as you enter in the Values as preview appears in the Drawing Editor displaying which Offset Alignment you are editing.

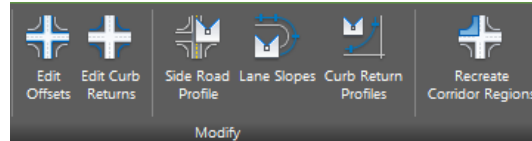


6. Press the **X** to Close the Intersection Offset Parameters - Intersection - SR61 and US98 tool palette.

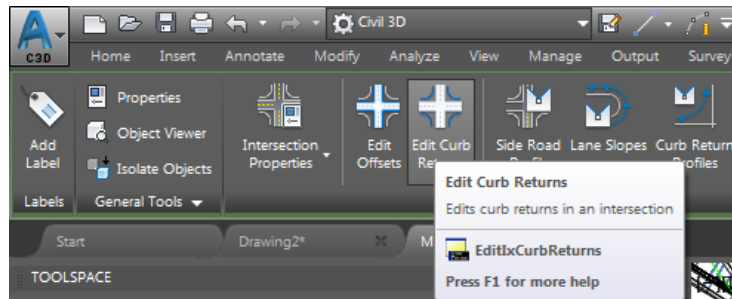
7. With the Intersection - Intersection - SR61 and US98 Marker still selected move on to editing the Curb Returns Alignments.



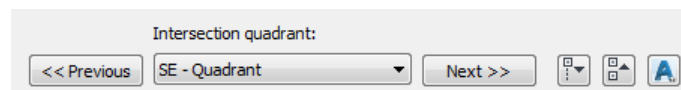
8. The Tab named *Intersection: Intersection - SR61 and US98* should still appear in the ribbon. If not, repeat the prior steps in this chapter.



9. From the *Modify* panel, select **Edit Curb Returns**.

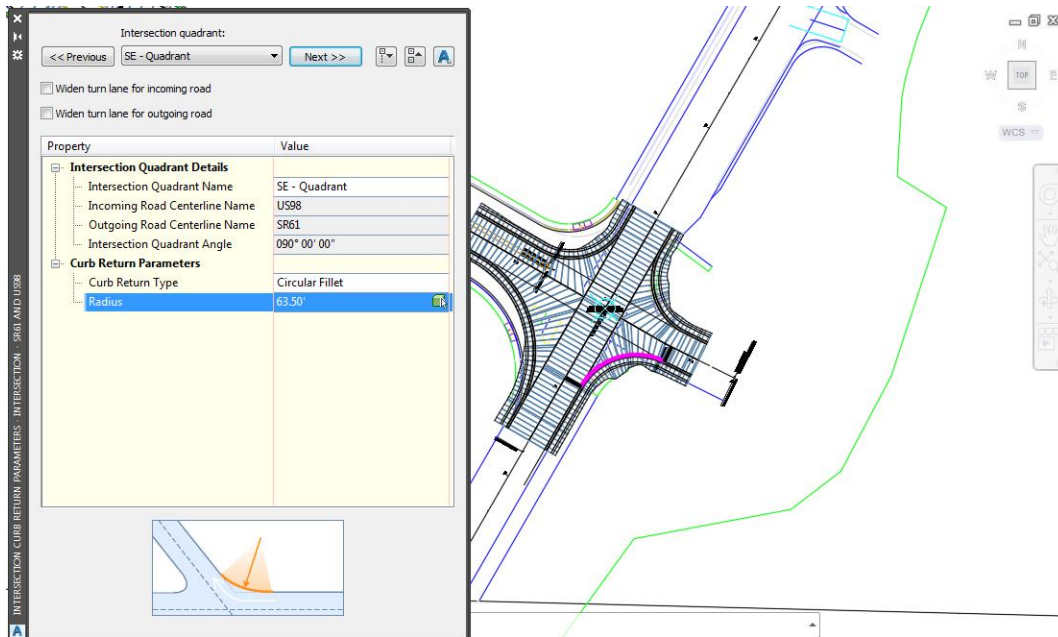


10. From the Intersection Curb Return Parameters - Intersection - SR61 and US98 tool palette, click Next >> to cycle to the **SE – Quadrant**.

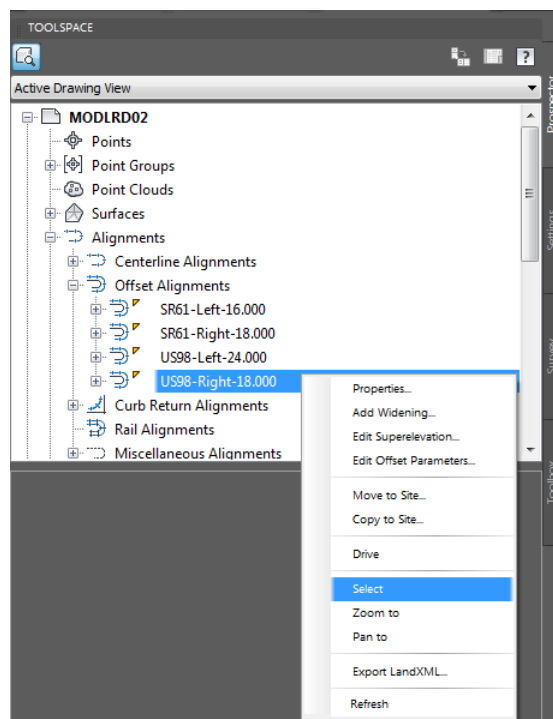


- Enter these values: Curb Returns Parameters: Radius Value: 63.5'

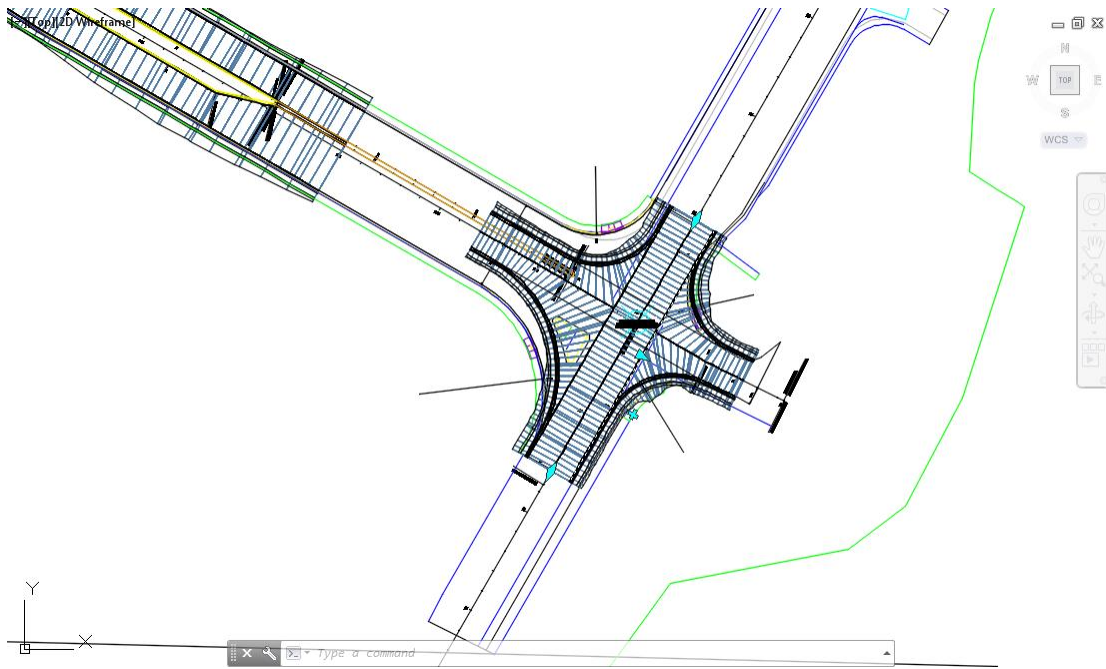
**Note** Notice as you enter in the Values as preview appears in the Drawing Editor displaying which Curb Return Alignment you are editing.



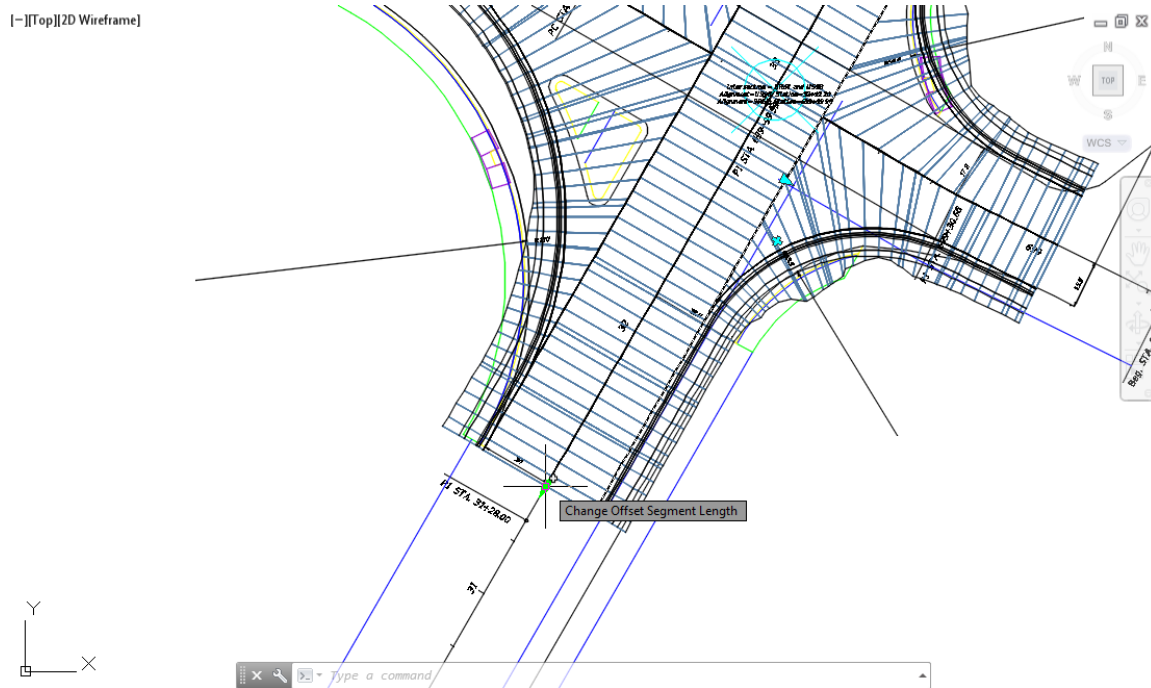
- Press the **X** to Close the Intersection Curb Return Parameters - Intersection - SR61 and US98 tool palette.
- The *Offset Alignment US98 - Right -18.00* need to to be Stretched Station 31+00 to allow for a Widening turn lane to be added for the incoming road US98.
- From the **TOOLSPACE > Prospector** tab, select the “+” next to *Alignments* to expand the list and select the “+” next to *Offset Alignments* to expand the list, right-click and select **Select**.



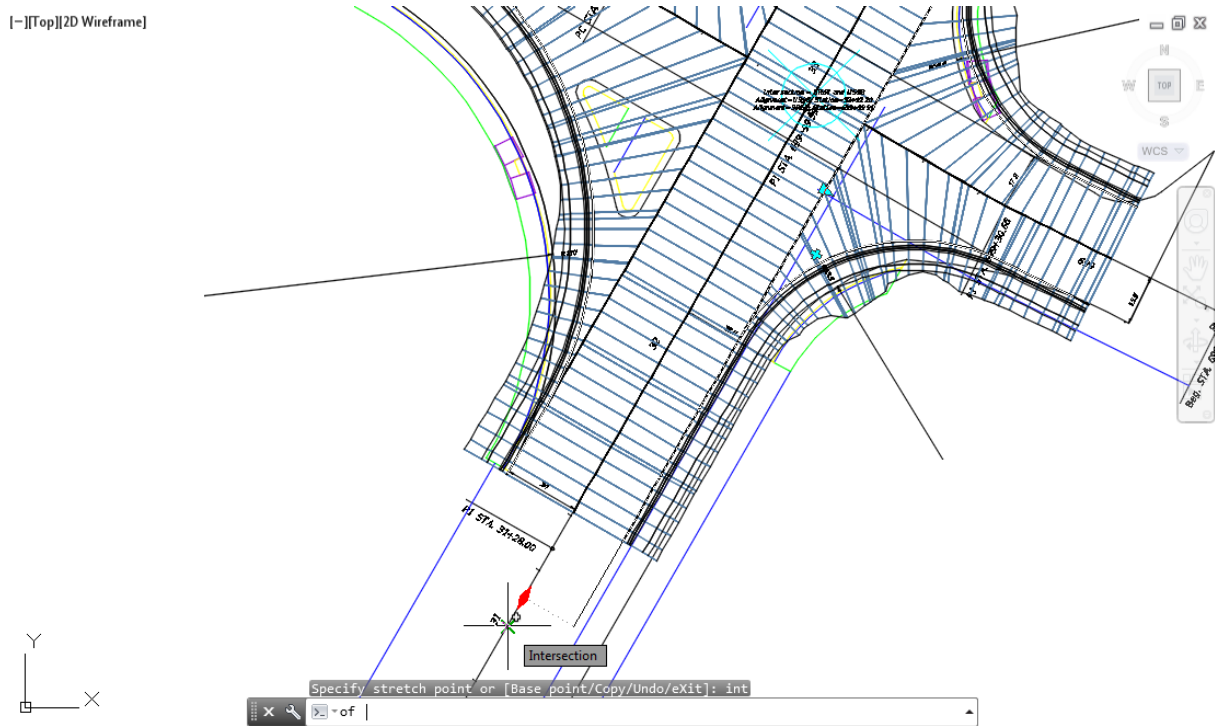
15. The selected Offset Alignment US98 - Right -18.00 grips are displayed.



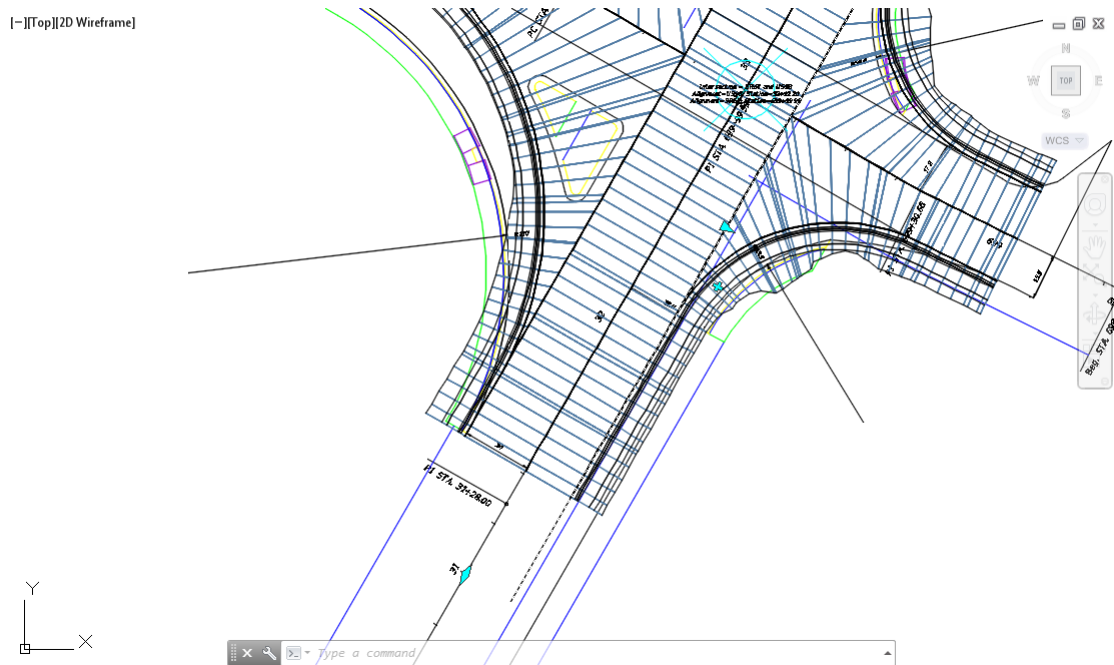
16. Hover over the Diamond shaped grip near Station 31+00, then Click on the **Grip**.



17. Drag the grip, and using an Intersection Osnap, picking a point on Station 31 “+” 00.



18. Review results of Stretching the Offset Alignment US98 - Right -18.00 to Station 31+00

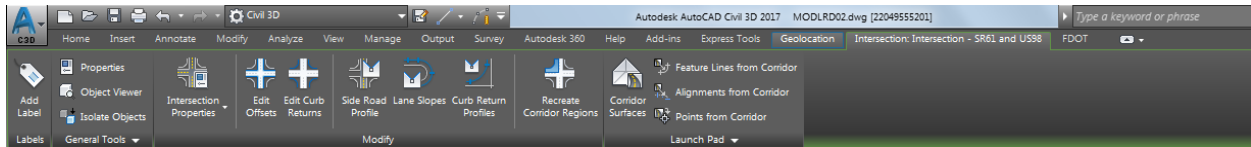


19. Press **Esc** to clear grips

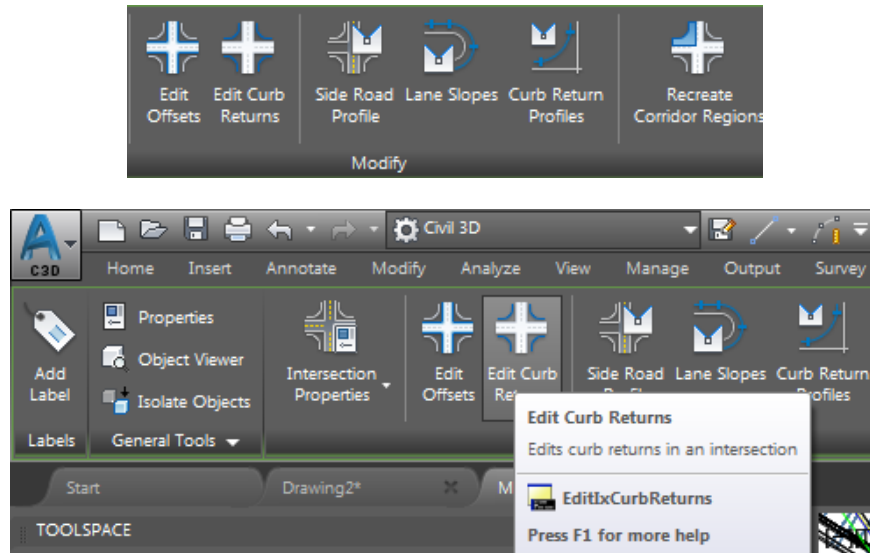
20. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.

21. **Save** your file before continuing.

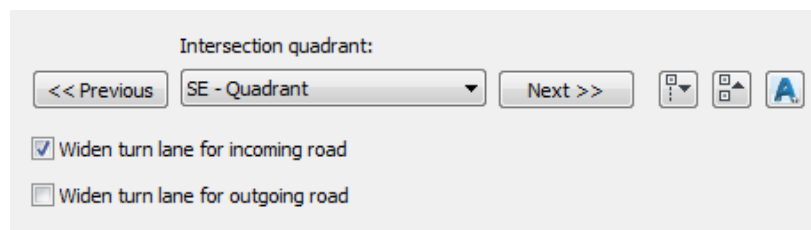
22. Select the *Intersection - SR61 and US98 Marker* in the Drawing Editor, from the Selection dialog select **Intersection**.



23. From the *Intersection: Intersection - SR61 and US98* tab in the ribbon, from the *Modify* panel, select **Edit Curb Returns**.



24. From the *Intersection Curb Return Parameters - Intersection - SR61 and US98* tool palette, select **Next >>** to cycle to the **SE - Quadrant**.





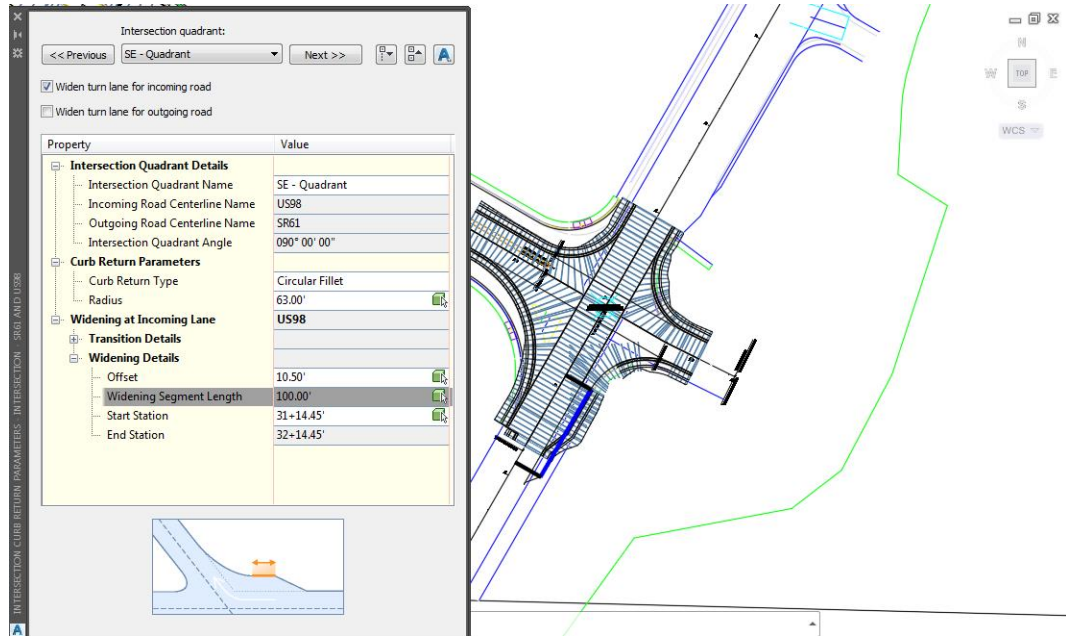
- Check box for **Widen turn lane for incoming road.**

Select the “+” next to **Widening** at incoming lane to expand the list.

Select the “+” next to **Widening Details**

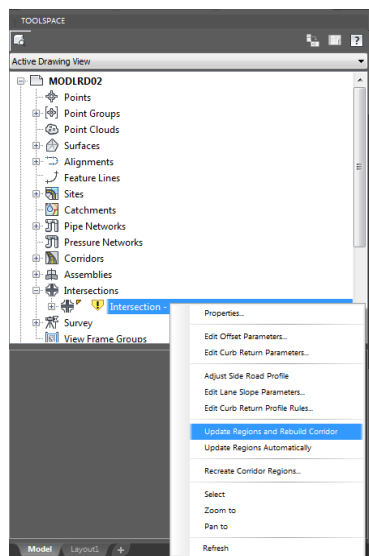
Enter these values: **Offset: 10.5, Widening Segment Length: 100**

**Note** Widening Offset is the difference of dimensioned offset less the starting offset:  $28.5 - 18 = 10.5$

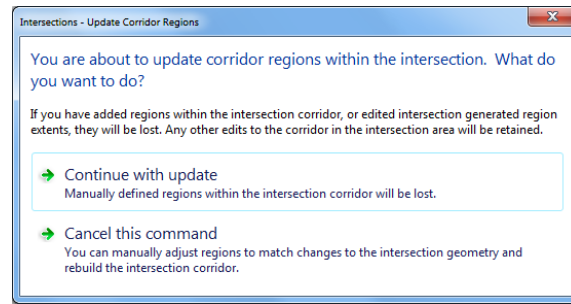


**Note** Notice as you enter in the Values as preview appears in the Drawing Editor displaying which Curb Return Alignment you are editing.

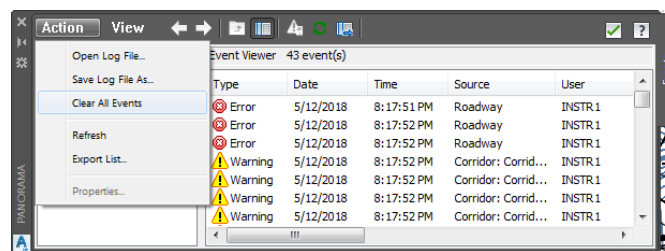
25. Press the **X** to Close the Intersection Curb Return Parameters - Intersection - SR61 and US98 tool palette.
26. From the **TOOLSPACE > Prospector** tab, select the “+” next to **Intersections** to expand the list. A Gold shield now appears to identify that the **Intersection - SR61 and US98** needs updating, this is caused by the Curb Return Alignments and Widening edits performed in the prior steps.
27. Select the Intersection - SR61 and US98, right-click then select **Update Regions and Rebuild Corridor.**



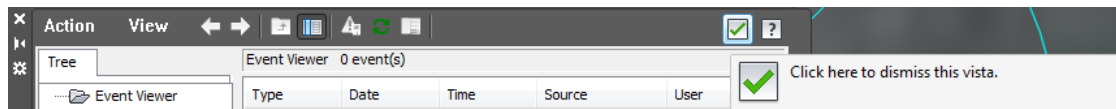
28. The Intersections - Update Corridor Regions dialog is displayed, select **Continue with Update**.



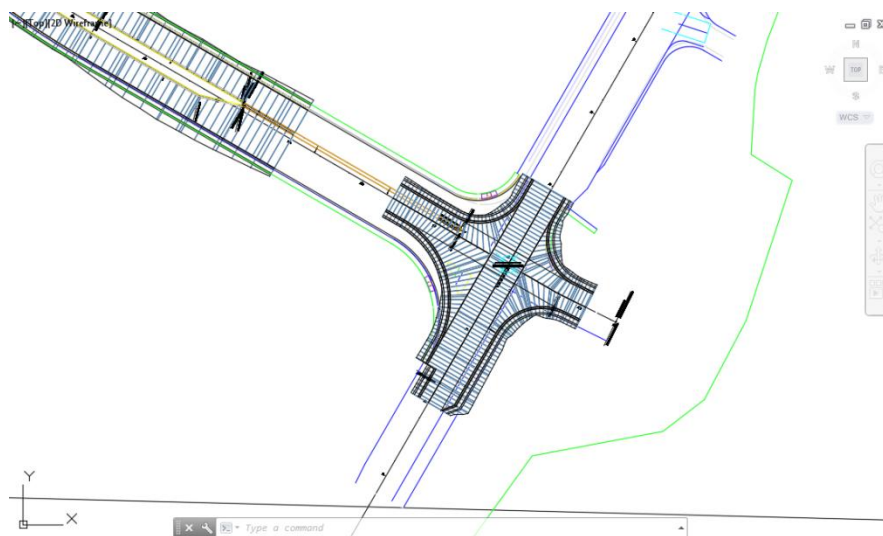
29. The Panorama tool palette (Event Viewer) is displayed, Click on the Events tab, then review the Events. Next right-click on the Action tab, select Clear All Events.



30. To close *Panorama* tool palette (Event Viewer) click on the **Green Check**.



31. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
32. Review the results of editing the SE - Quadrant of Intersection - SR61 and US98.



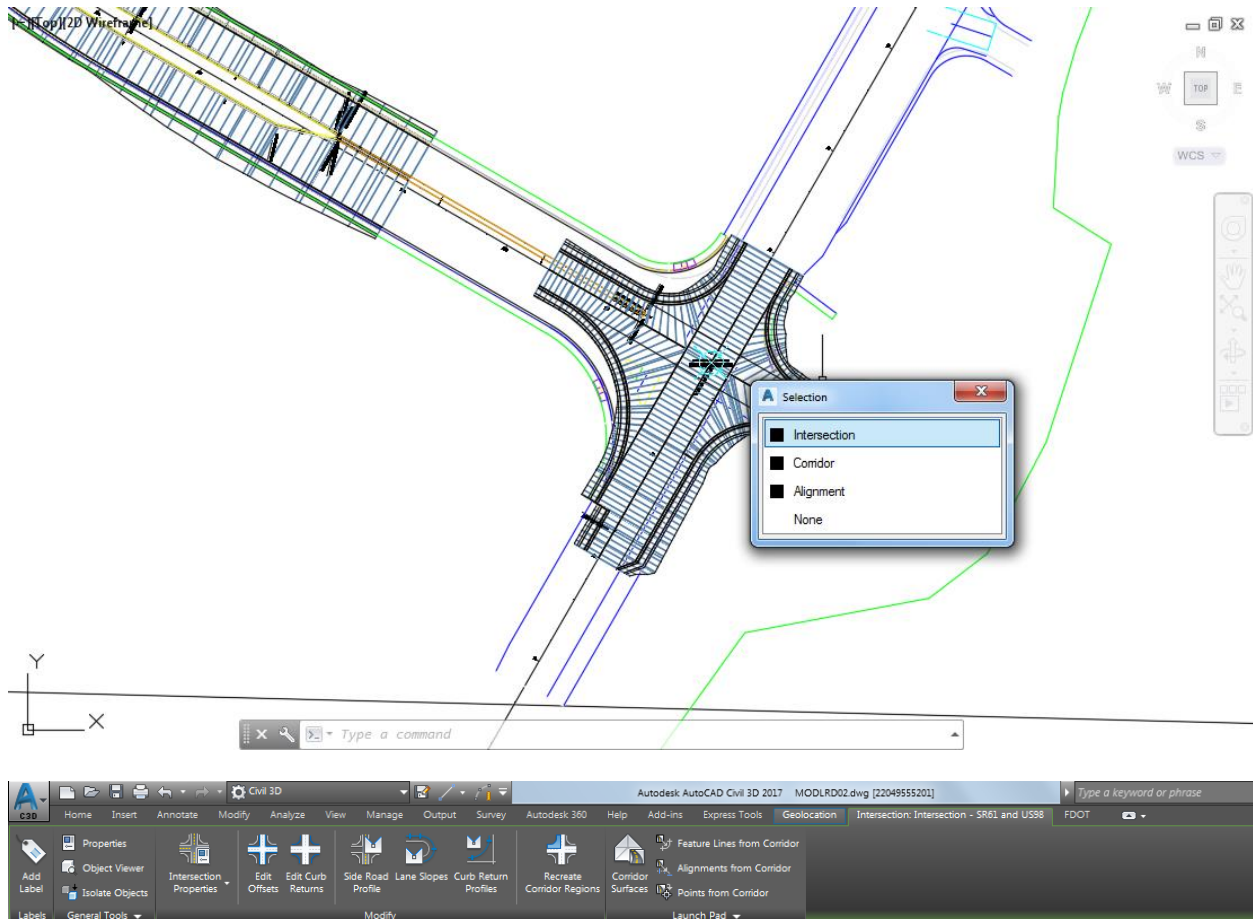
33. **Save** your file before continuing.



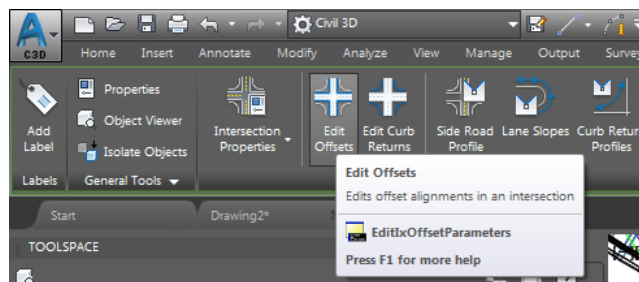
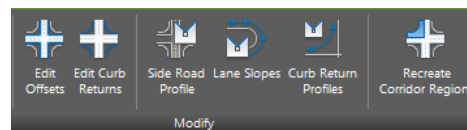
### Exercise 4.9 Edit Intersection SR61 and US98 - SW - Quadrant

In this exercise you will edit the Intersection SR61 and US98 - SW - Quadrant.

1. Press **Esc** to clear any selections in the Drawing Editor.
2. Select the **Intersection - SR61 and US98 marker** in the Drawing Editor, from the Selection dialog select **Intersection**.

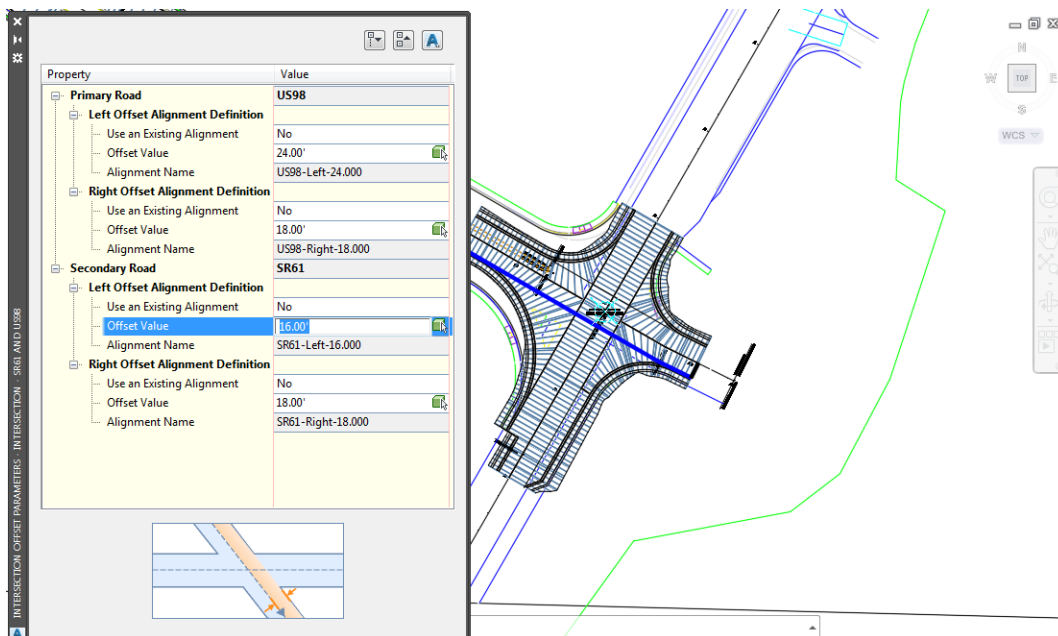
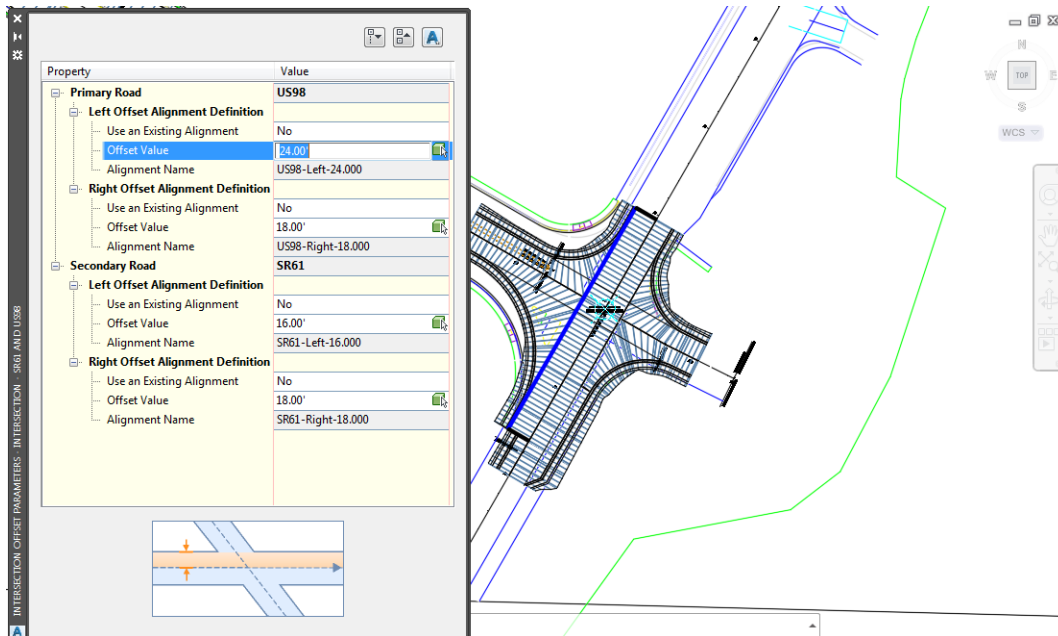


3. From the Intersection: Intersection - SR61 and US98 tab in the ribbon, from the *Modify* panel, select **Edit Offsets**.



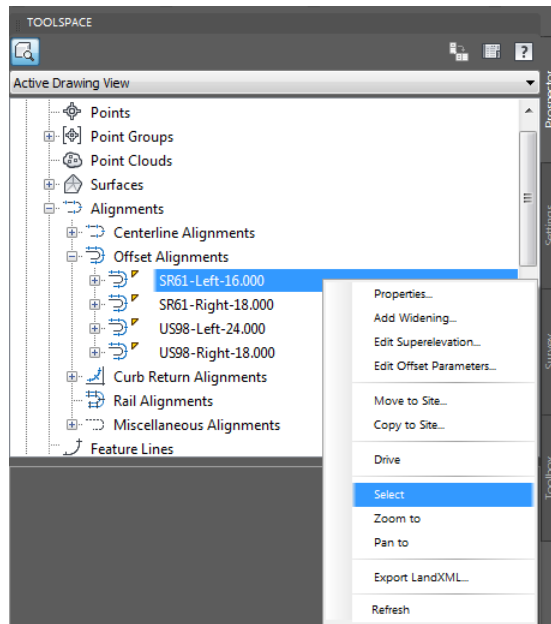
4. From the Intersection Offset Parameters - Intersection - SR61 and US98 tool palette, enter these values:
  - Primary Road US98, Left Offset Alignment Definition Value: 24'
  - Secondary Road SR61, Left Offset Alignment Definition Value: 16'

**Note** Notice as you enter in the Values a preview appears in the Drawing Editor displaying which Offset Alignment you are editing.

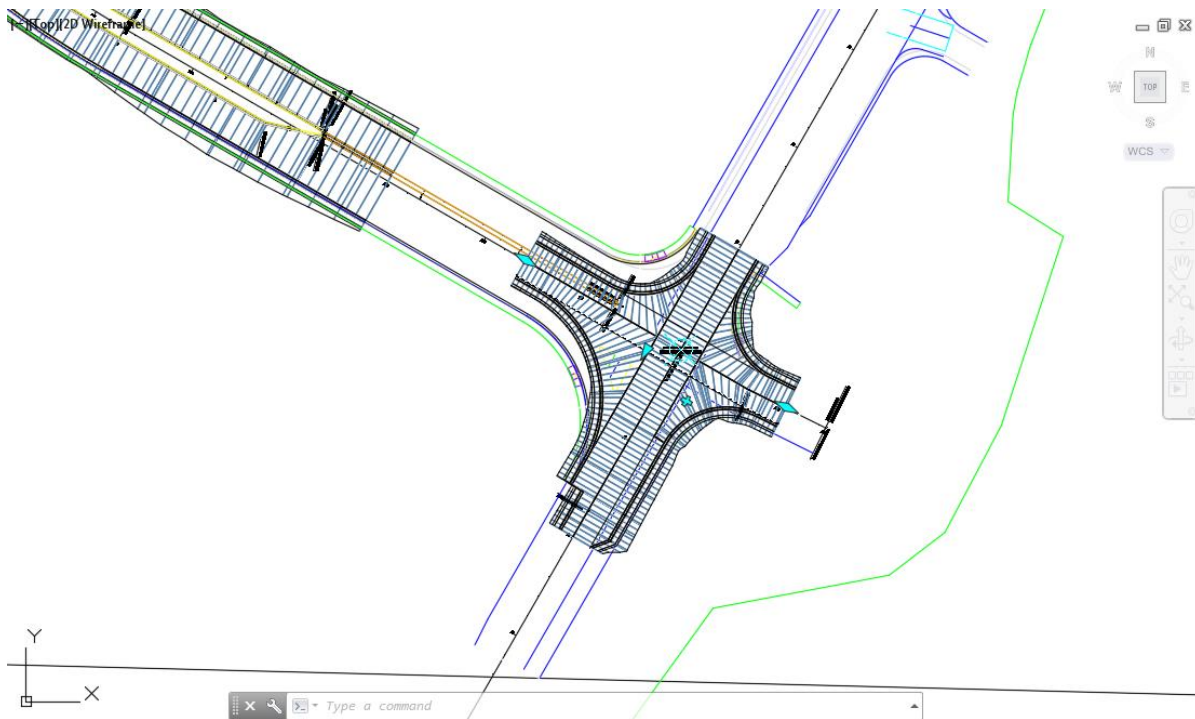


5. Press the **X** to Close the Intersection Offset Parameters - Intersection - SR61 and US98 tool palette.
6. The *Offset Alignment SR61 - Left -16.00* need to be Stretched Station 703 “+” 00 to allow for a Widening turn lane to be added for the incoming road SR61.
7. From the **TOOLSPACE > Prospector** tab, select the “+” next to *Alignments* to expand the list

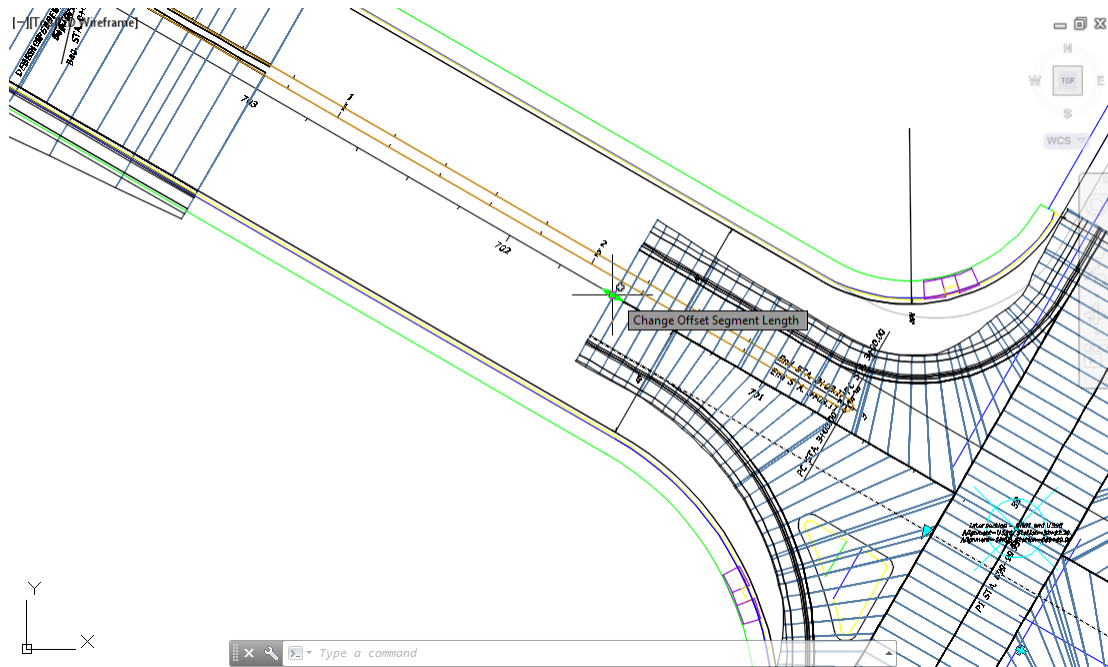
- Select the “+” next to *Offset Alignments* to expand the list, right-click on *SR61 - Left -16.00* and select **Select**.



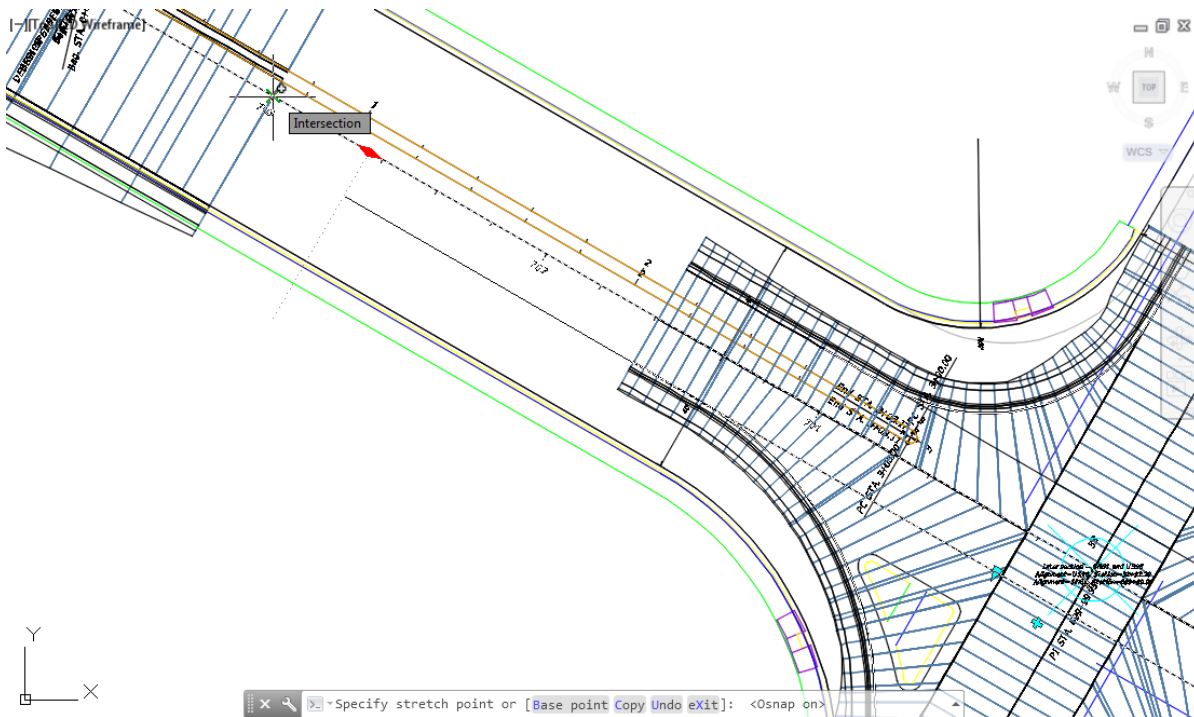
- The selected Offset Alignment SR61 -Left -16.00 grips are displayed.



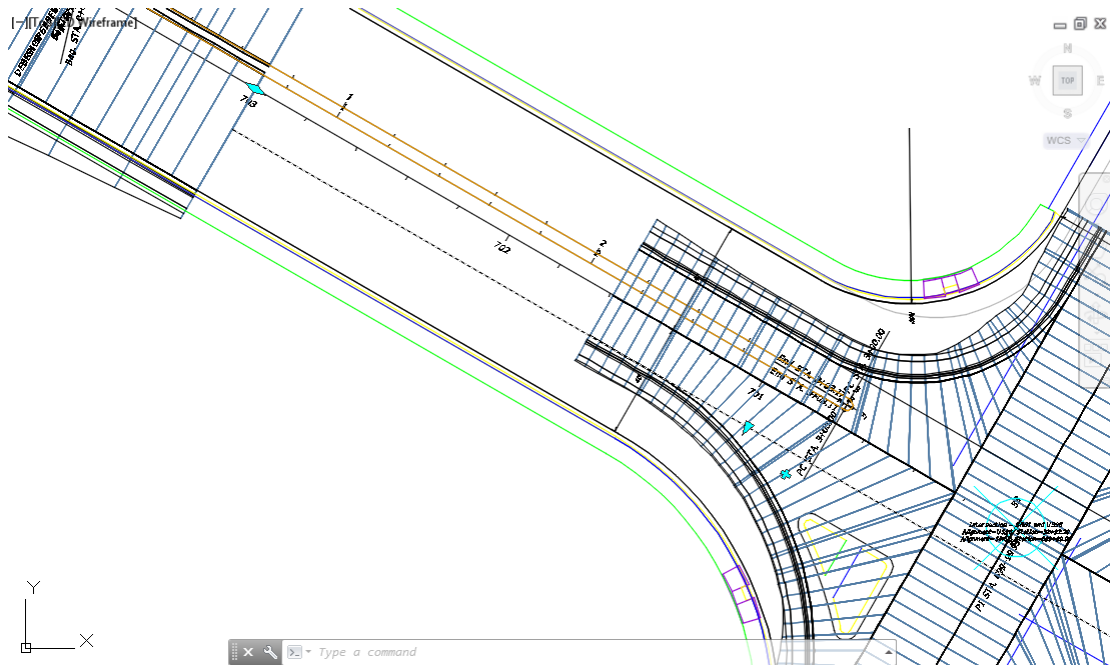
10. Hover over the *Diamond shaped grip* near Station 702 “+” 00, then click on the **Grip**



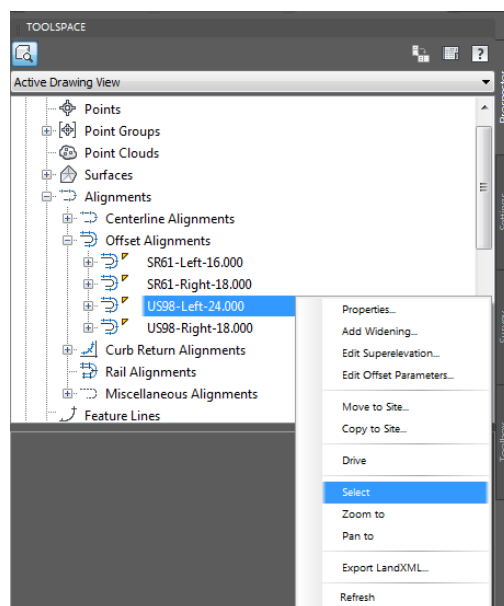
11. Drag the grip, and using an *Intersection Osnap*, pick a point on **Station 703 “+” 00**.



12. Review results of Stretching the Offset Alignment SR61 -Left -16.00 to Station 703 “+” 00.

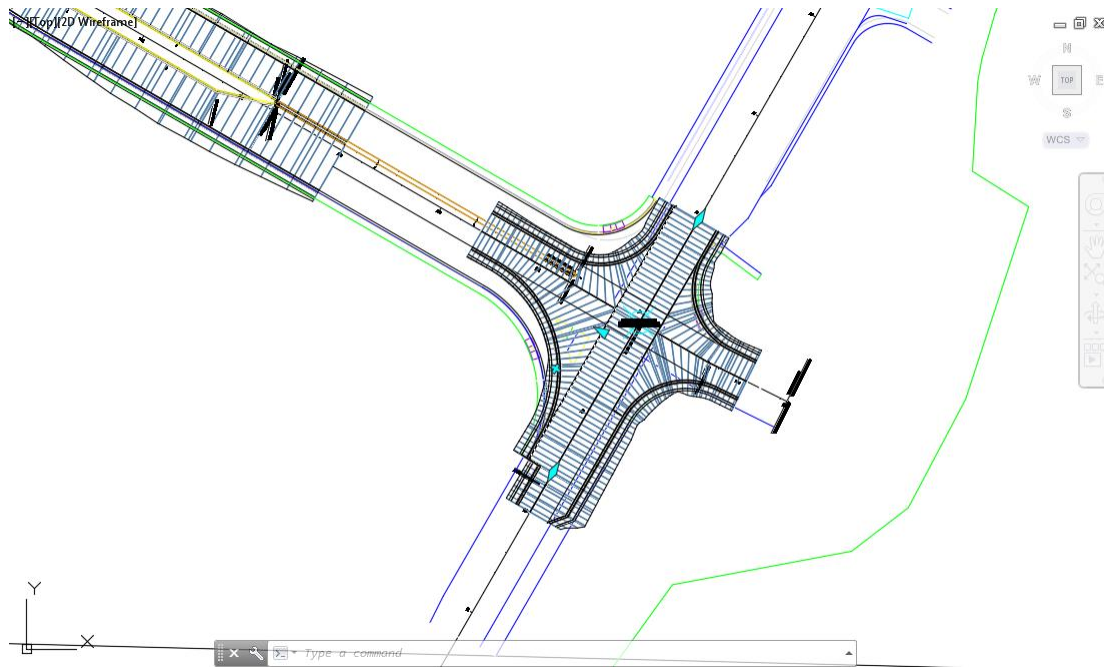


13. Press **Esc** to clear grips
14. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
15. **Save** your file before continuing.
16. The Offset Alignment US98 - Left -24.00 need to to be Stretched Station 31 “+” 00 to allow for a Widening turn lane to be added for the incoming road US98.
17. From the TOOLSPACE > Prospector tab, select the “+” next to Alignments to expand the list
18. Select the “+” next to *Offset Alignments* to expand the list, right-click on US98 - Left -24.00 and select **Select**.

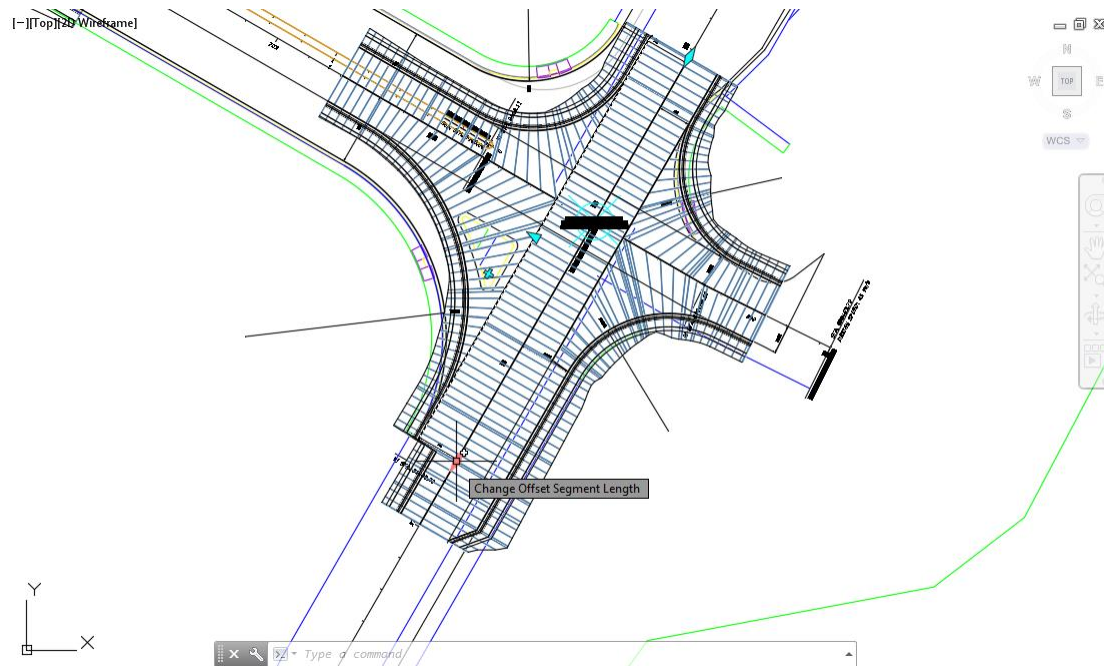




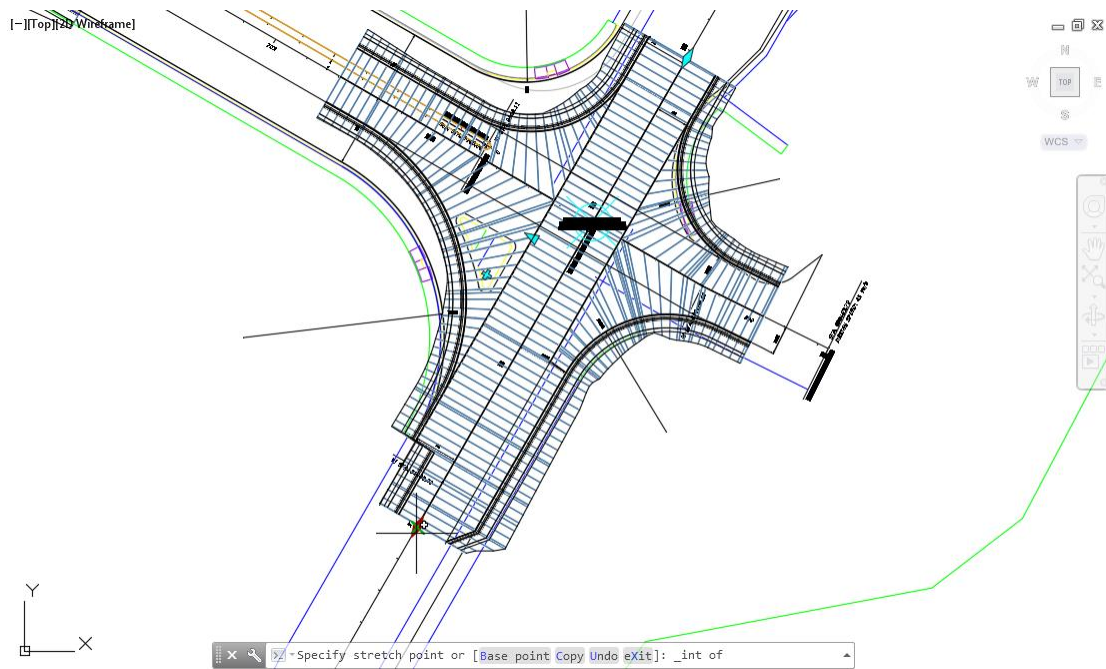
19. The selected Offset Alignment US98 - Left -24.00 grips are displayed.



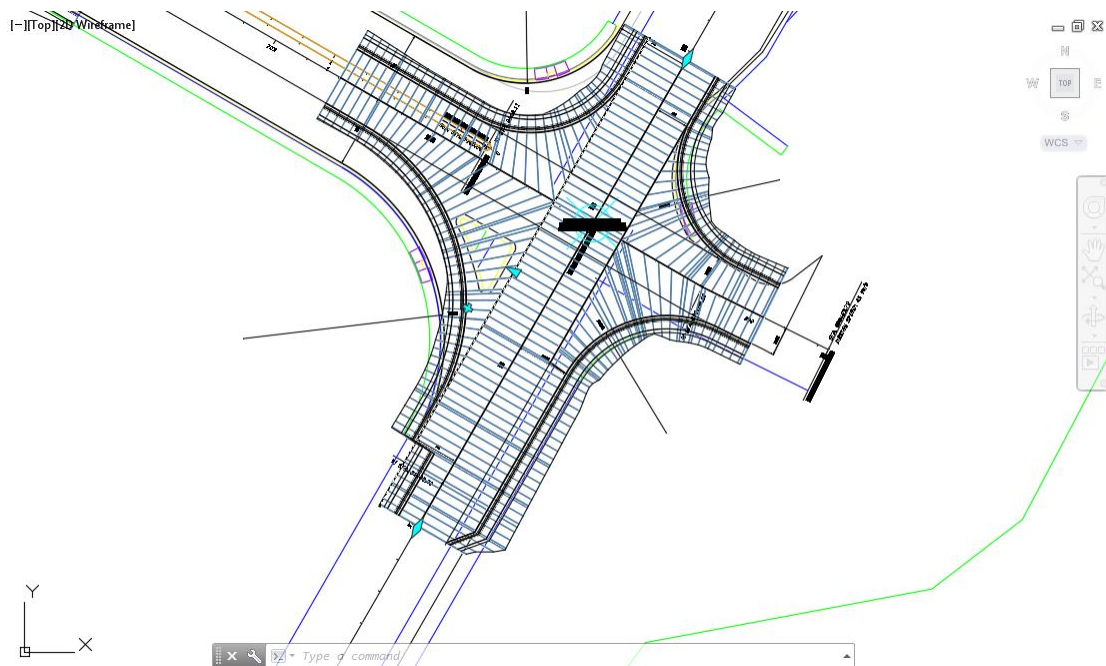
20. Hover over the *Diamond shaped grip* near Station 31 “+” 00, then click on the **Grip**.



21. Drag the grip, and using an Intersection Osnap, picking a point on Station 31 "+" 00.

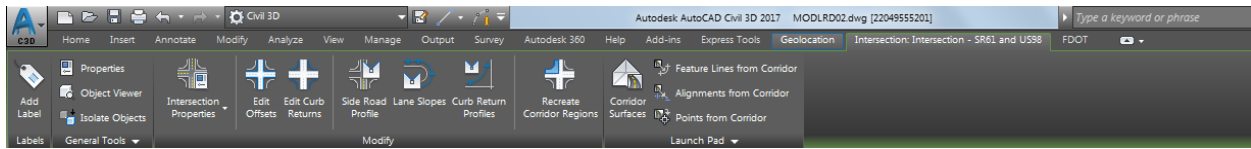


22. Review results of Stretching the Offset Alignment Alignment US98 - Left -24.00 to Station 31 "+" 00.

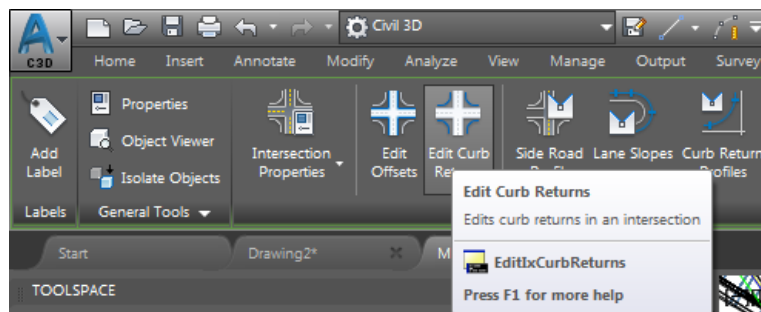
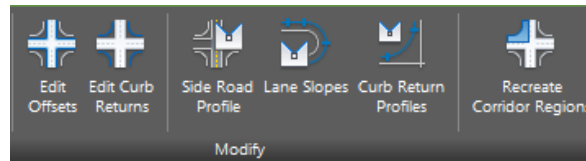


23. Press **Esc** to clear grips
24. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
25. Stretching the Offset Alignment - Alignment SR61 - Left -18.00 to Station 703 "+" 00 and the Offset Alignment - Alignment US98 - Left -24.00 to Station 31 "+" 00 was required to allow the input of large Curb Return radius for the Widening which are going to be added in the next steps.

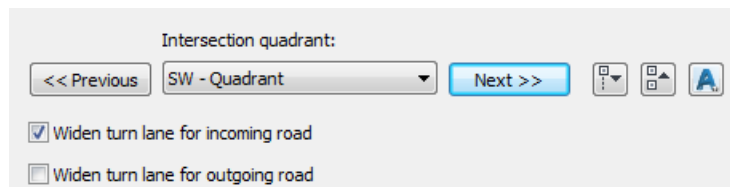
26. **Save** your file before continuing.
27. Select the **Intersection - SR61 and US98 marker** in the Drawing Editor, from the Selection dialog select **Intersection**.



28. From the *Intersection: Intersection - SR61 and US98* tab in the ribbon, from the *Modify* panel, select **Edit Curb Returns**.

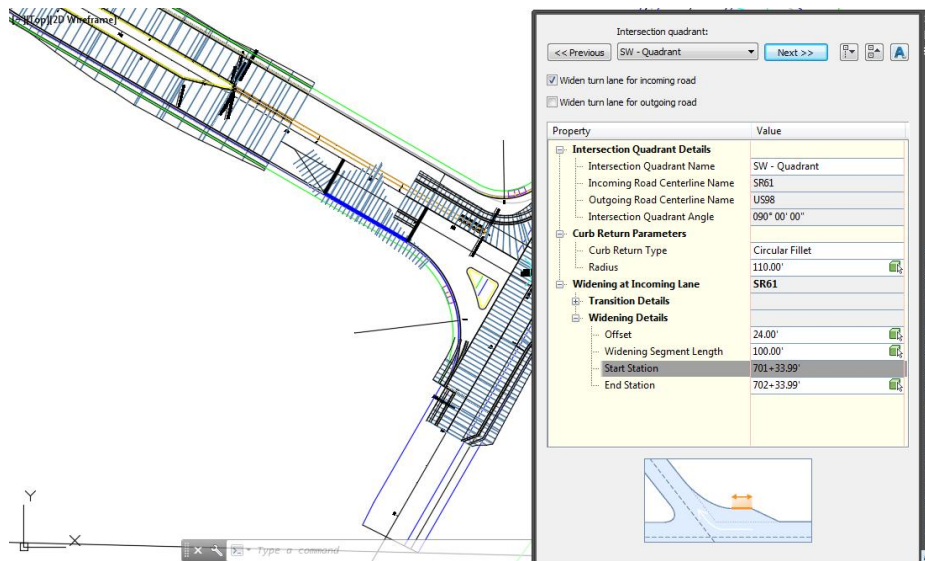


29. From the Intersection Curb Return Parameters - Intersection - SR61 and US98 tool palette, select **Next >>** to cycle to the **SW - Quadrant**.





30. Check box for **Widen turn lane for incoming road.**



31. Select the “+” next to *Widening at Incoming Lane* to expand the list.

32. Select the “+” next to Widening Details and enter these values: Offset: **24'**, *Widening Segment Length: 100'*

**Note** Widening Offset is the difference of dimensioned offset less the starting offset: 40' - 16' = 24'

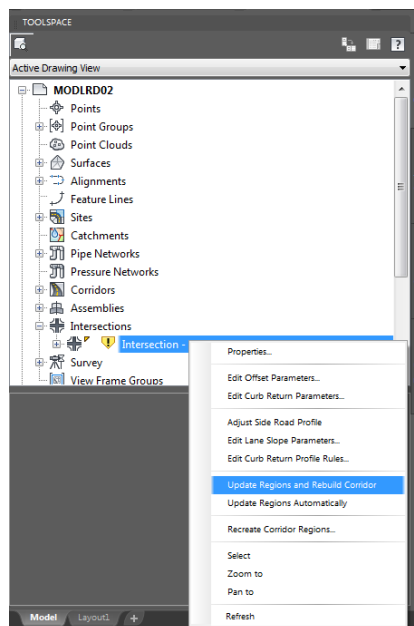
Notice as you enter in the Values as preview appears in the Drawing Editor displaying which Curb Return Alignment you are editing.

33. Press the **X** to Close the Intersection Curb Return Parameters - Intersection - SR61 and US98 tool palette.

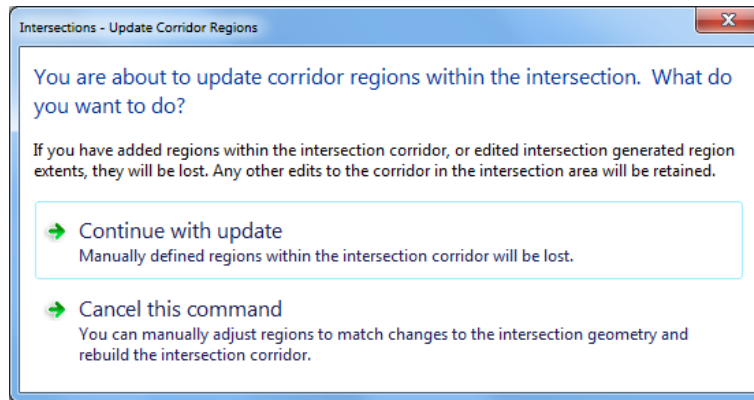
34. **Save** your file before continuing.

35. From the **TOOLSPACE** > Prospector tab, select the “+” next to *Intersections* to expand the list. A Gold shield now appears to identify that the **Intersection - SR61 and US98** needs updating, this is caused by the Curb Return Alignments and Widening edits performed in the prior steps.

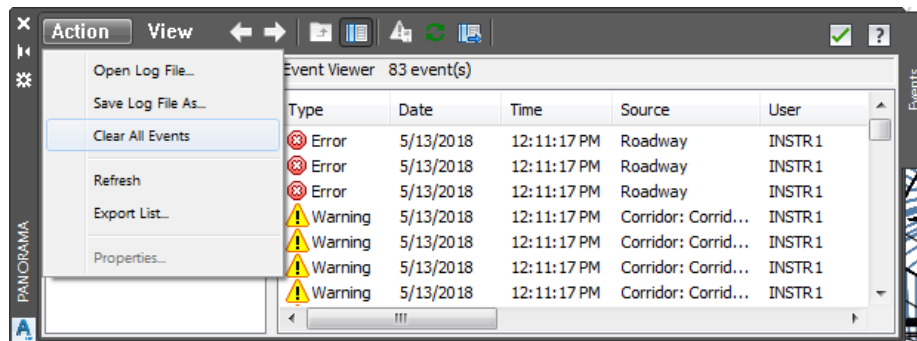
36. Select the Intersection - SR61 and US98, right-click then select *Update Regions and Rebuild Corridor*.



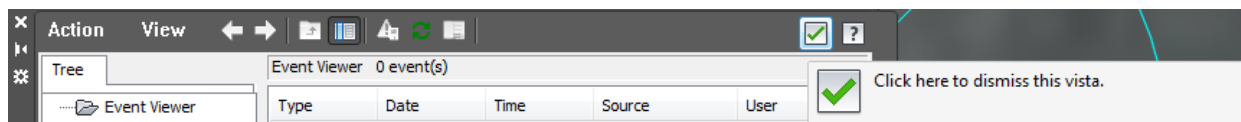
37. The Intersections - Update Corridor Regions dialog is displayed, select **Continue with Update**.



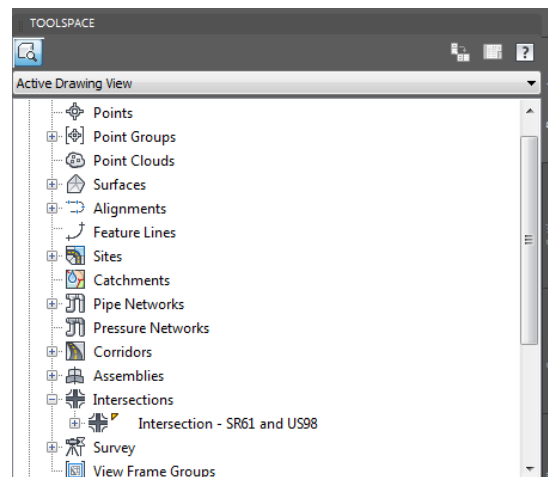
38. The *Panorama* tool palette (Event Viewer) is displayed. Click on the *Events* tab, review the *Events*, then right-click on the *Action* tab, select **Clear All Events**.



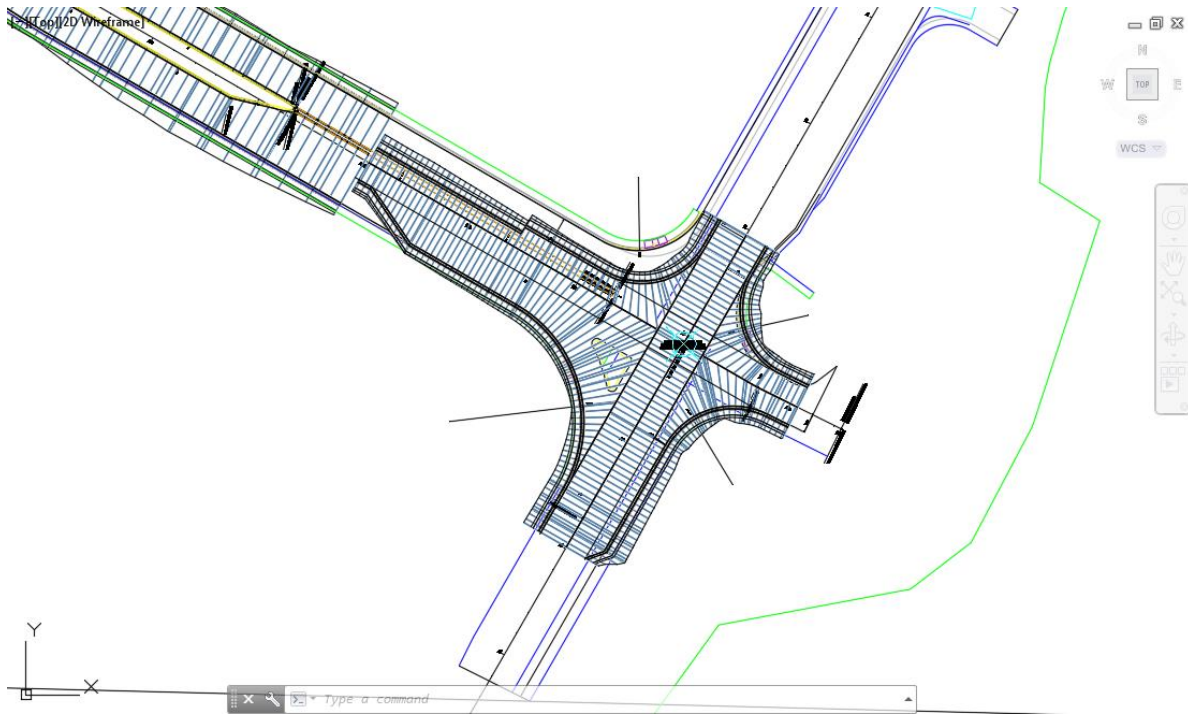
39. To close *Panorama* tool palette (Event Viewer) click on the **Green Check**.



40. The Gold shield next to the *Intersection - SR61 and US98* is no longer displayed, as the *Update Regions and Rebuild Corridor* has been performed.



41. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
42. Review the results of editing the SW - Quadrant of Intersection - SR61 and US98.

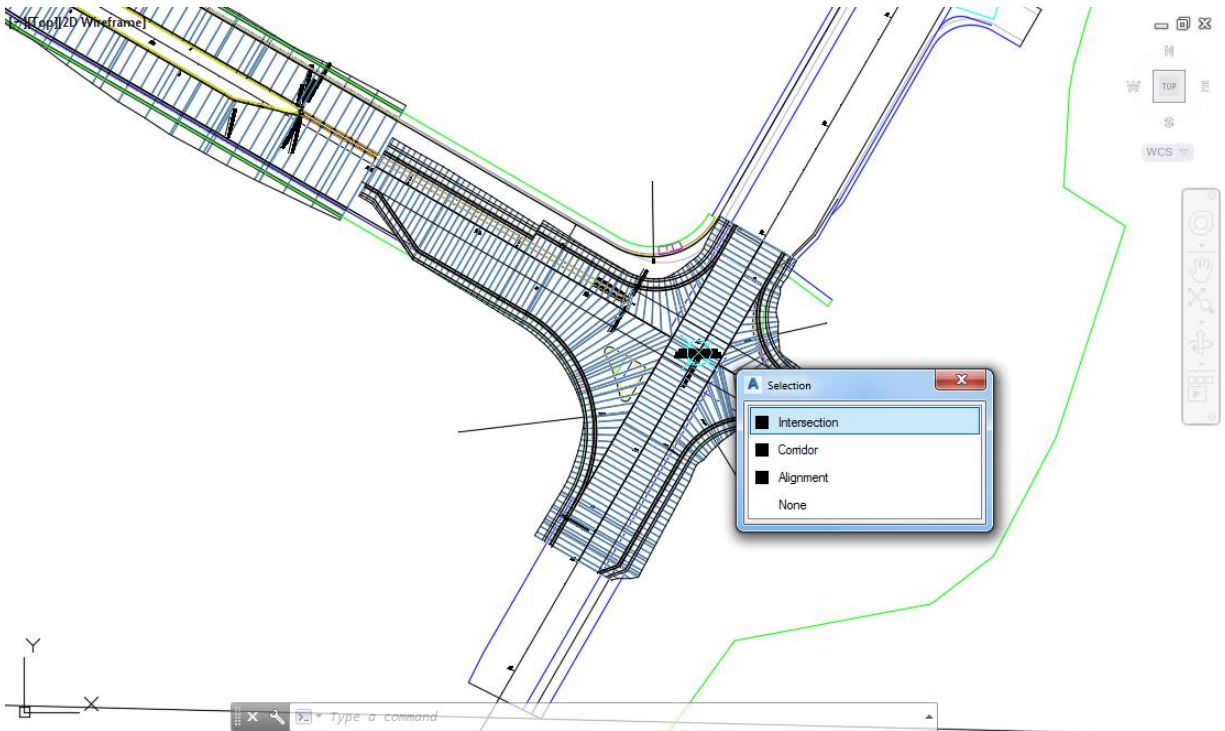


43. **Save** your file before continuing.

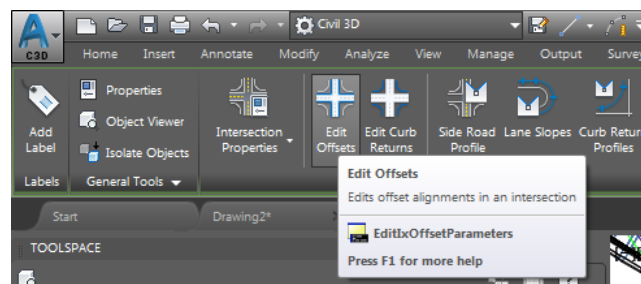
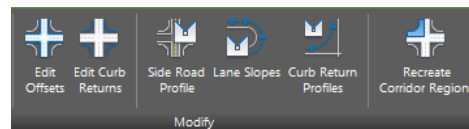
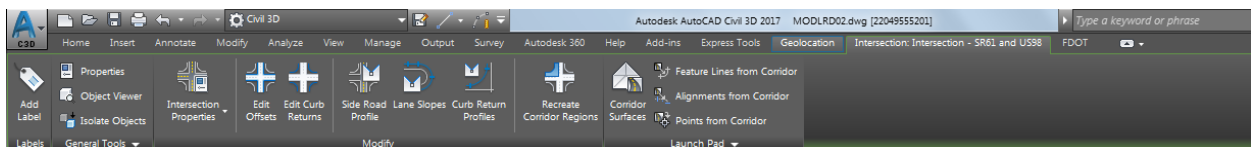
### Exercise 4.10 Edit Intersection SR61 and US98 - NW - Quadrant

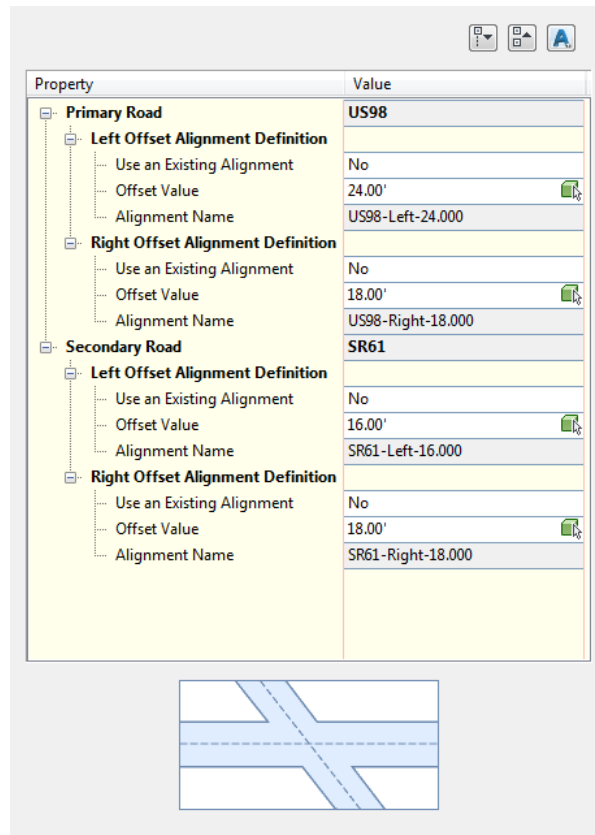
In this exercise you will edit the Intersection SR61 and US98 - NW - Quadrant.

1. Press **Esc** to clear any selections in the Drawing Editor
2. Select the *Intersection - SR61 and US98 Marker* in the Drawing Editor, from the Selection dialog select **Intersection**.



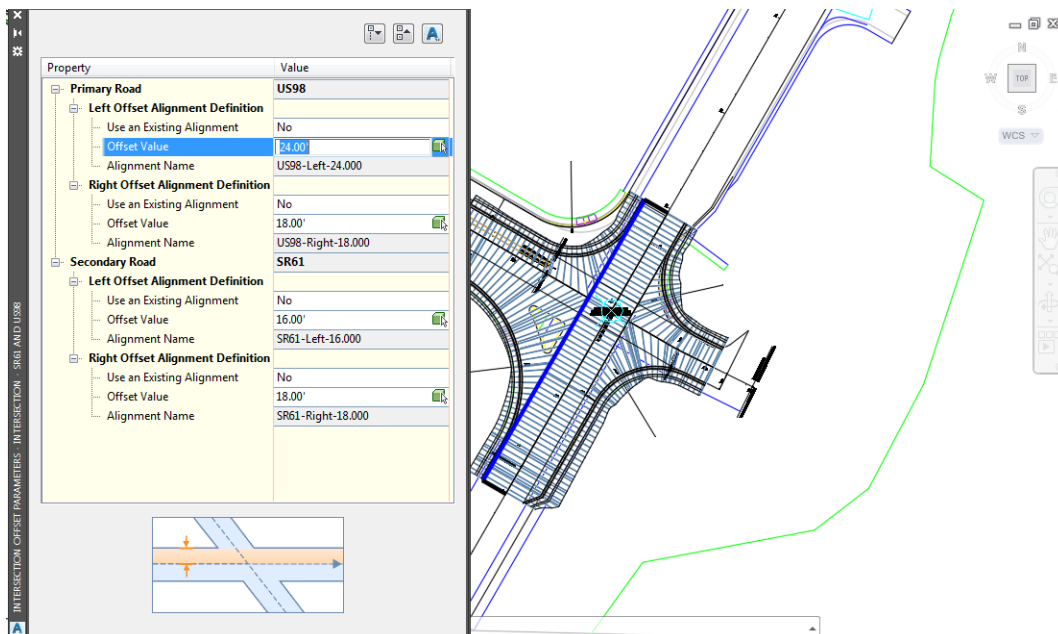
3. From the *Intersection: Intersection - SR61 and US98* tab in the ribbon, from the *Modify* panel, select **Edit Offsets**.

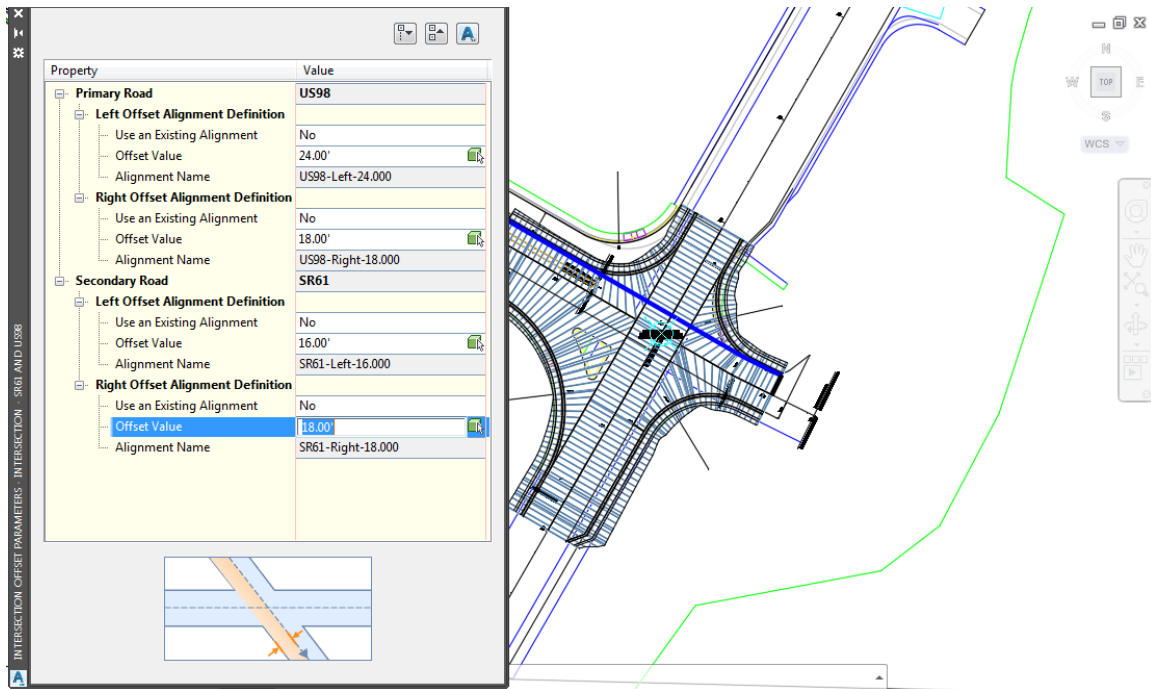




4. From the Intersection Offset Parameters - Intersection - SR61 and US98 tool palette, enter these values:
  - o Primary Road US98, Left Offset Alignment Definition Value: 24'
  - o Secondary Road SR61, Left Offset Alignment Definition Value: 18'

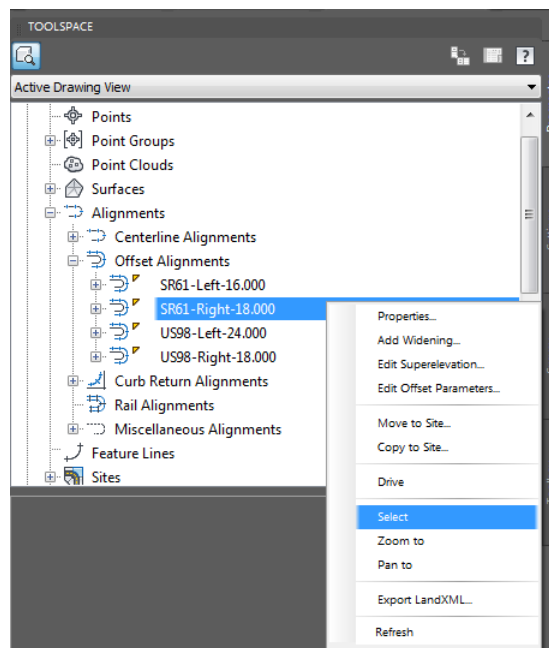
**Note** Notice as you enter in the Values a preview appears in the Drawing Editor displaying which Offset Alignment you are editing.





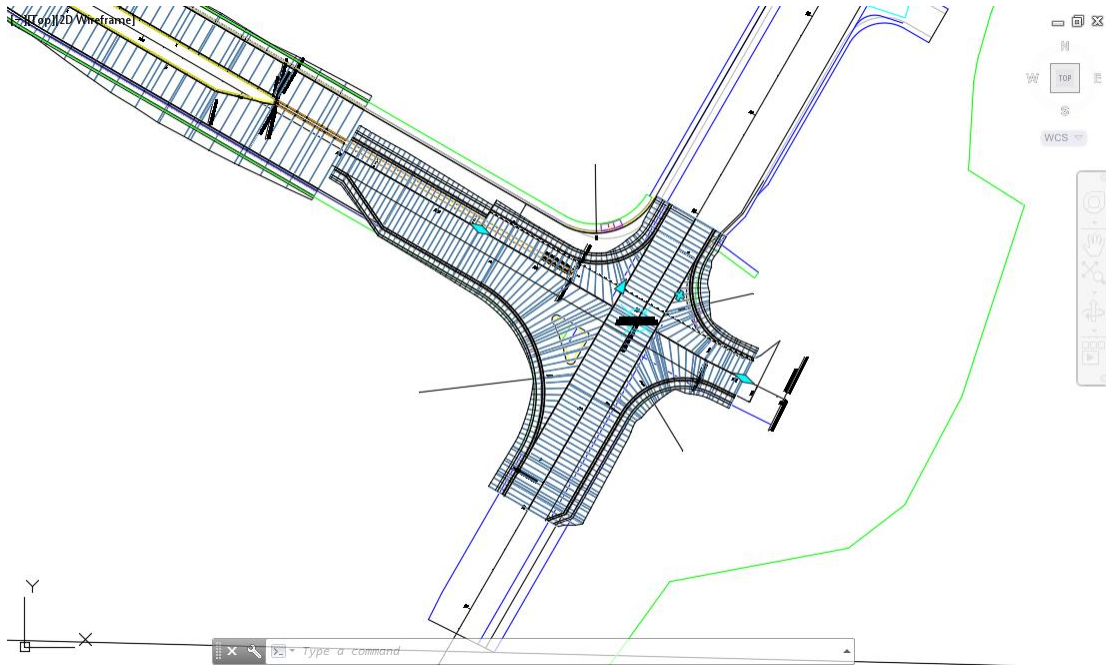
5. Press the **X** to Close the Intersection Offset Parameters - Intersection - SR61 and US98 tool palette.
6. The Offset Alignment SR61 - Right -18.00 need to to be Stretched Station 703 “+” 00 to allow for a Widening turn lane to be added for the incoming road SR61.

From the **TOOLSPACE > Prospector** tab, select the “+” next to *Alignments* to expand the list. Select the “+” next to *Offset Alignments* to expand the list, right-click on SR61 - Right -18.00 and select **Select**

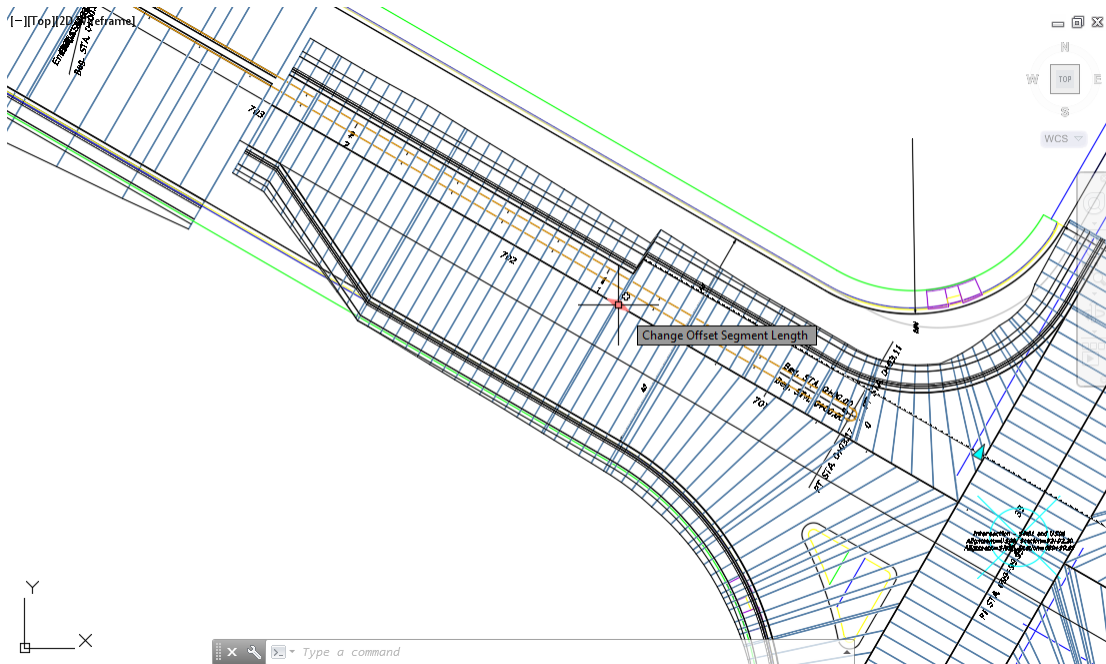




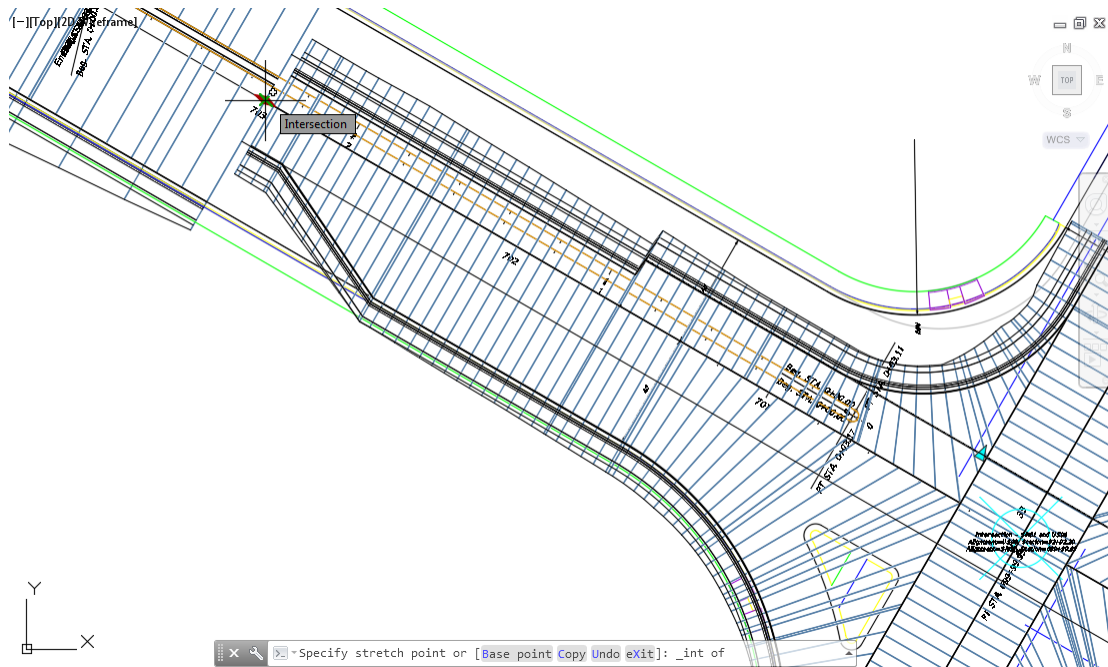
- 7. The selected Offset Alignment SR61 - Right -18.00 grips are displayed.



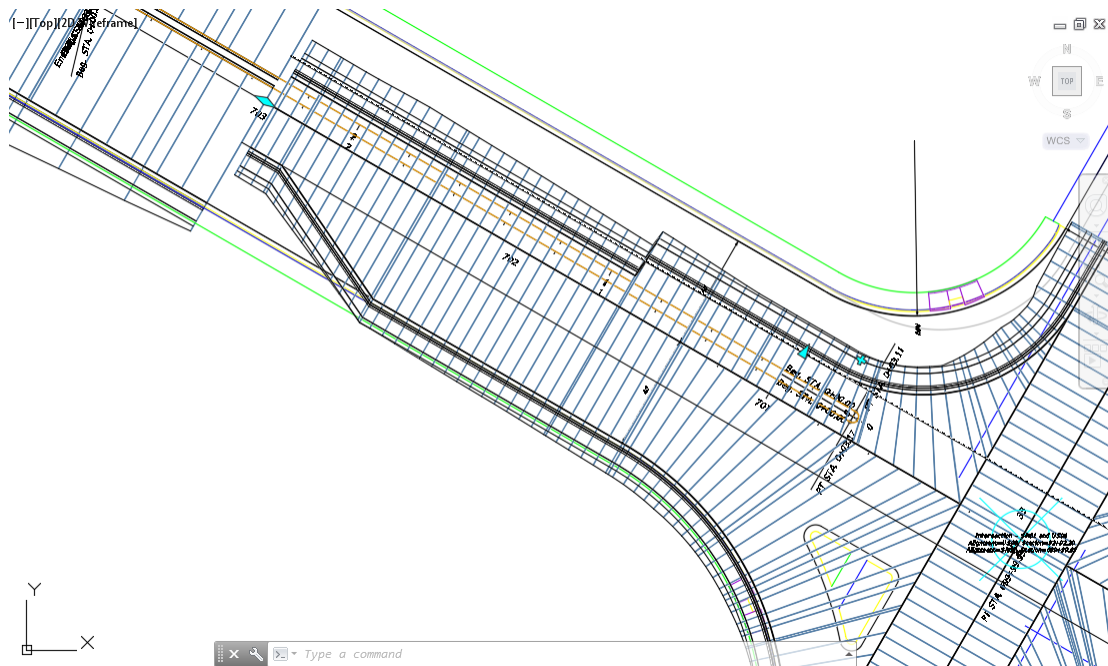
- 8. Hover over the Diamond shaped grip near Station 702 “+” 00, then click on the **Grip**.



9. Drag the grip, and using an Intersection Osnap, picking a point on Station 703 “+” 00.



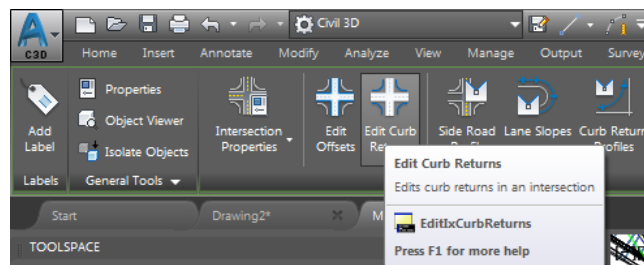
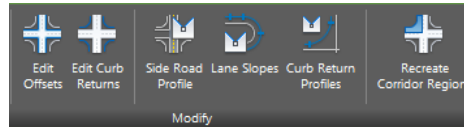
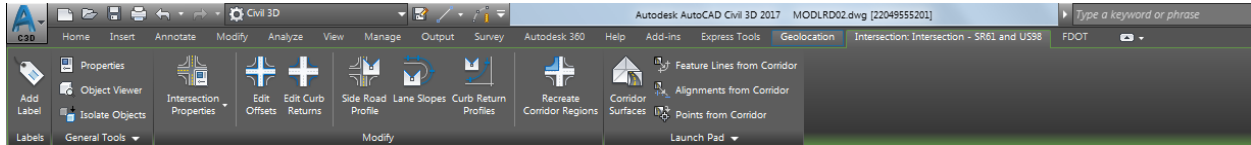
10. Review results of Stretching the Offset Alignment SR61 - Right -18.00 to Station 703 “+” 00.



11. Press **Esc** to clear grips
12. Stretching the Offset Alignment - Alignment SR61 - Right -18.00 to Station 703 “+” 00 was required to allow the input of large Curb Return radius for a Widening which is going to be added in the next steps.
13. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
14. **Save** your file before continuing.



15. Select the **Intersection - SR61 and US98** marker in the Drawing Editor, from the Selection dialog select Intersection.
16. From the *Intersection: Intersection - SR61 and US98* tab in the ribbon, from the *Modify* panel, select **Edit Curb Returns**.



Intersection quadrant:

<< Previous **NW - Quadrant** Next >>

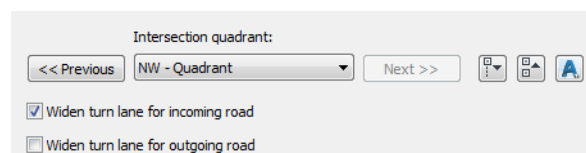
Widen turn lane for incoming road

Widen turn lane for outgoing road

Property	Value
<b>Intersection Quadrant Details</b>	
Intersection Quadrant Name	NW - Quadrant
Incoming Road Centerline Name	US98
Outgoing Road Centerline Name	SR61
Intersection Quadrant Angle	090° 00' 00"
<b>Curb Return Parameters</b>	
Curb Return Type	Circular Fillet
Radius	60.00'
<b>Widening at Incoming Lane</b>	
<b>Transition Details</b>	
<b>Widening Details</b>	
Offset	16.00'
Widening Segment Length	12.50'
Start Station	33+70.20'
End Station	33+82.70'

**Important!**

17. From the Intersection Curb Return Parameters - Intersection - SR61 and US98 tool palette, select Next >> to cycle to the NW - Quadrant.



18. Check box for **Widen turn lane for incoming road**, enter values: *Curb Return Parameters: Radius: 60'*
19. Select the “+” next to *Widening at Incoming Lane* to expand the list.
20. Select the “+” next to *Widening Details*, and enter the values:

- Widening Details: Offset: 16'
- Widening Segment Length: 12.50'

**Note** Widening Offset is the difference of dimensioned offset less the starting offset:  $40' - 16' = 24'$

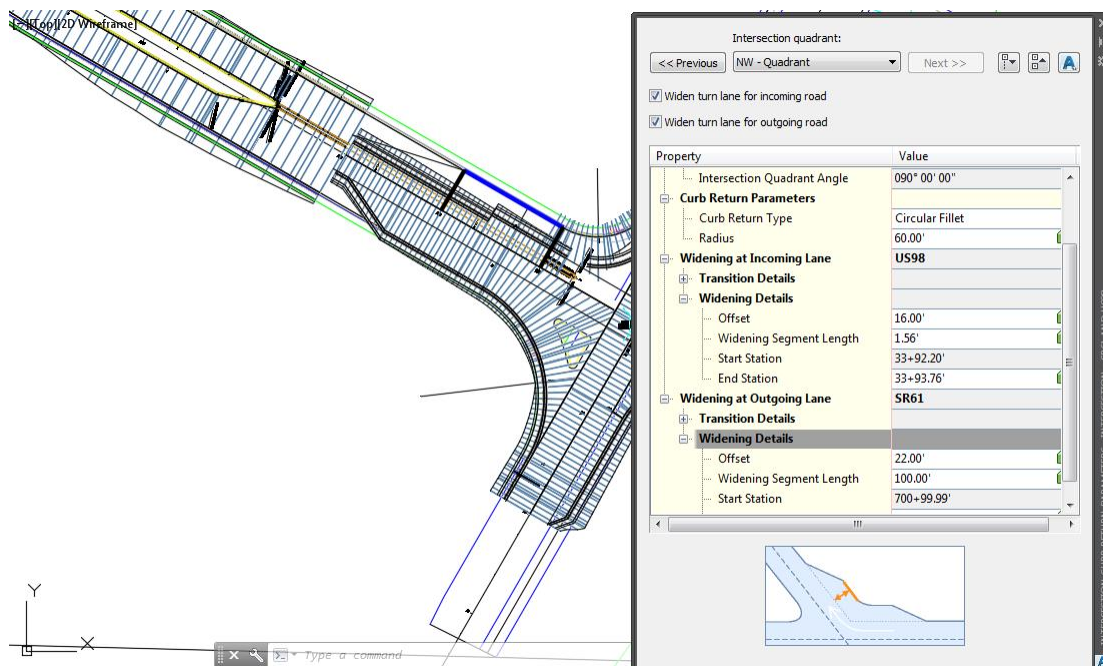
Notice as you enter in the Values as preview appears in the Drawing Editor displaying which Curb Return Alignment you are editing.

21. From the *Intersection Curb Return Parameters - Intersection - SR61 and US98* tool palette, select **Next >>** to cycle to the **NW - Quadrant**.
22. Check box for **Widen turn lane for outgoing road**.
23. Select the “+” next to *Widening at outgoing lane* to expand the list.
24. Select the “+” next to *Widening Details* and enter these values:

- Widening Details: Offset: 22'
- Widening Segment Length: 100'

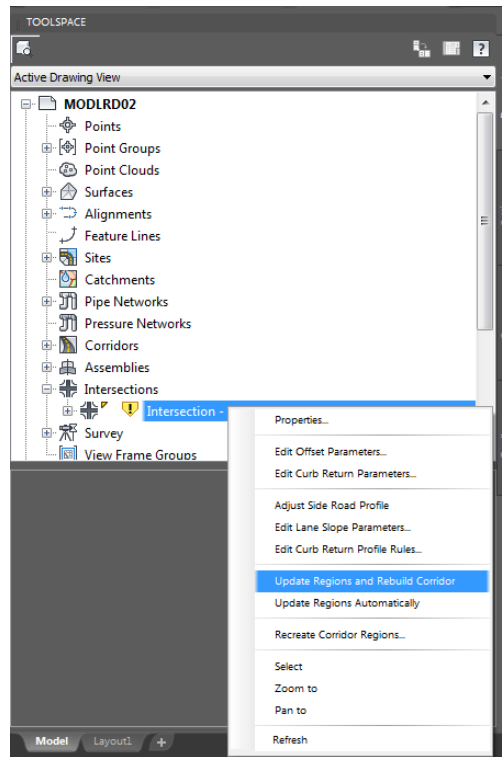
**Note** Widening Offset is the difference of dimensioned offset less the starting offset:  $40' - 18' = 22'$

Notice as you enter in the Values as preview appears in the Drawing Editor displaying which Curb Return Alignment you are editing.

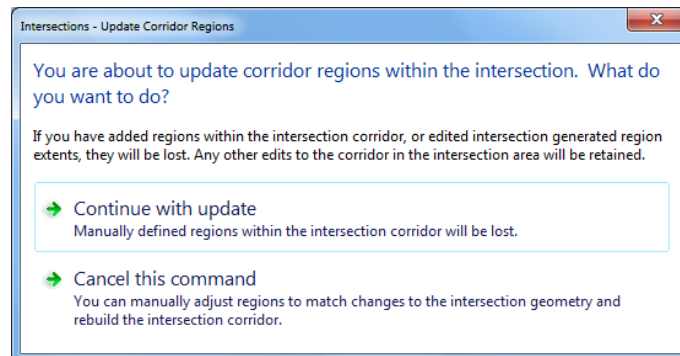


25. Press the **X** to Close the Intersection Curb Return Parameters - Intersection - SR61 and US98 tool palette.
26. **Save** your file before continuing.
27. From the **TOOLSPACE > Prospector** tab, select the “+” next to *Intersections* to expand the list. A Gold shield now appears to identify that the **Intersection - SR61 and US98** needs updating, this is caused by the Curb Return Alignments and Widening edits performed in the prior steps.

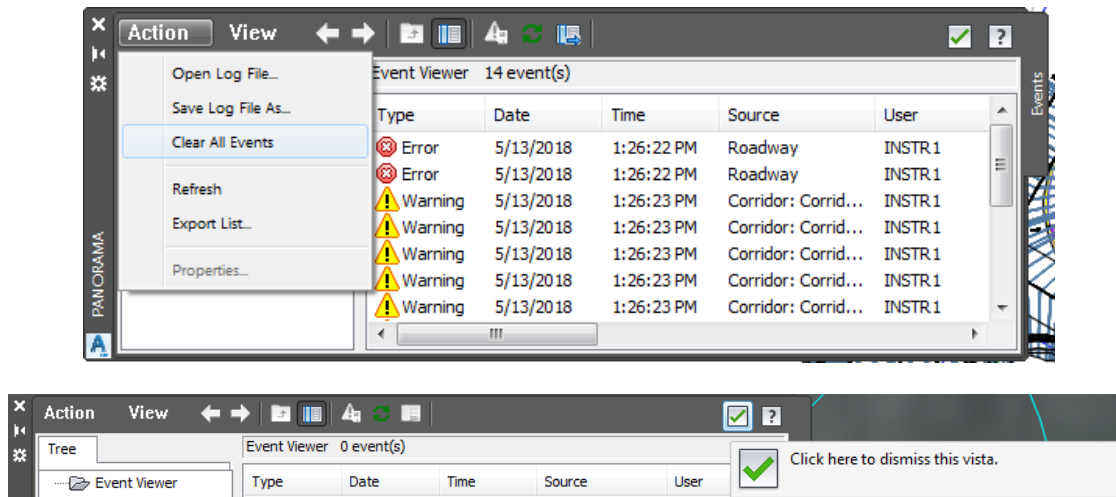
28. Select the Intersection - SR61 and US98, right-click then select Update Regions and Rebuild Corridor.



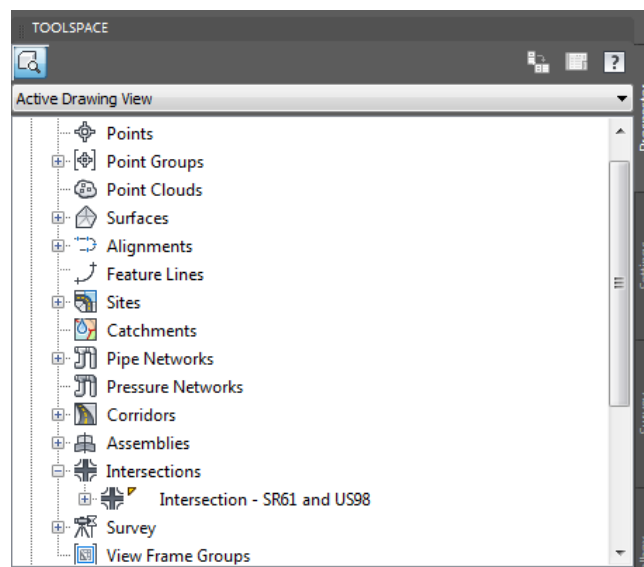
29. The Intersections - Update Corridor Regions dialog is displayed, select **Continue with Update**.



30. The Panorama tool palette (Event Viewer) is displayed, Click on the Events tab, then review the Events. Next right-click on the Action tab, select Clear All Events.

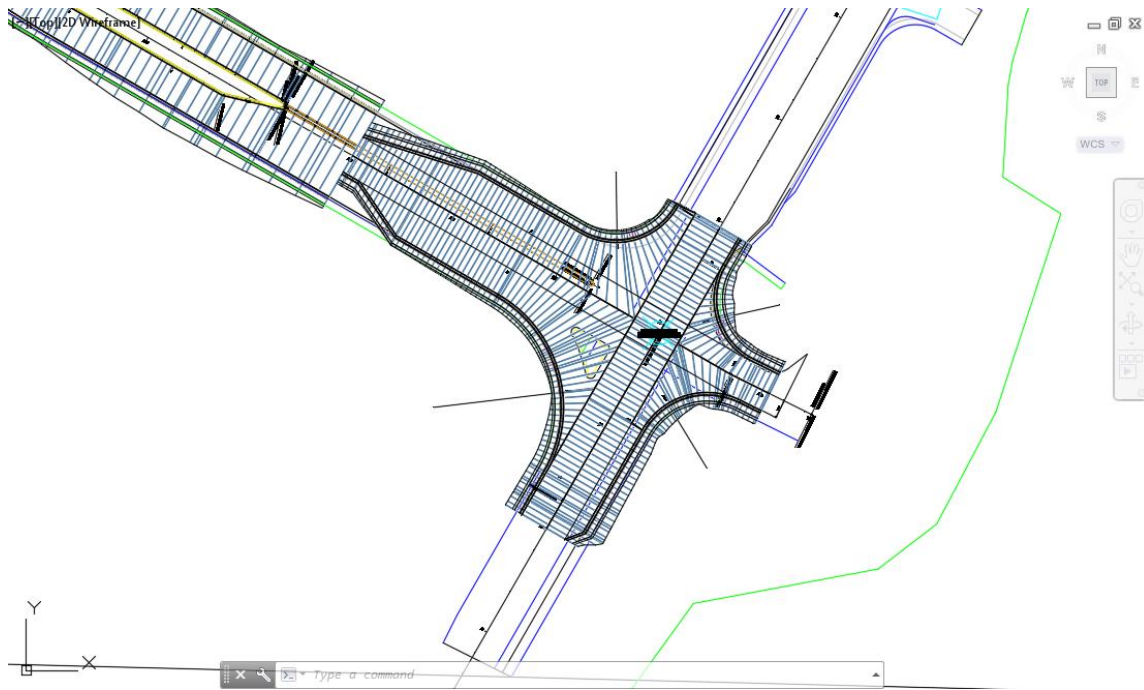


31. To close *Panorama* tool palette (Event Viewer) click on the **Green Check** . The Gold shield next to the Intersection - SR61 and US98 is no longer displayed, as the *Update Regions and Rebuild Corridor* has been performed.



32. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.

33. Review the results of editing the NW - Quadrant of Intersection - SR61 and US98



34. **Save** and **Close** MODLRD02.dwg

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# 5 EDIT CORRIDOR

## DESCRIPTION

In this chapter, you will edit the Corridor - SR61 and US98 created using the Intersection Wizard with project settings.

## OBJECTIVES

In this chapter, you will learn about:

- Review referenced data
- Review Assemblies
- Review how Intersection Wizard organized the Corridor Model
- Review Corridor Properties
- Highlight Corridor Regions in Corridor Properties and see the Region highlighted in drawing editor
- Review how Targets work
- Edit Intersection Corridor - SR61 and US98
- Use the commands:
  - Ncopy
  - Join
  - Break at point:
    - Create feature line from objects
    - Create Alignment from Objects
- Grip Edit Corridor - SR61 and US98 Regions then review results
- Data Shortcut
  - Create Data Shortcuts: Corridor - SR61 and US98
- Applying Common Sense Rules of Thumb
- A Technique Offering Speed and Flexibility for Inlet Placement

## CHAPTER SETUP

Run the Chapter 5 - 22049555201.exe file and restore all files to the C:\Civil 3D 2017 Projects folder.

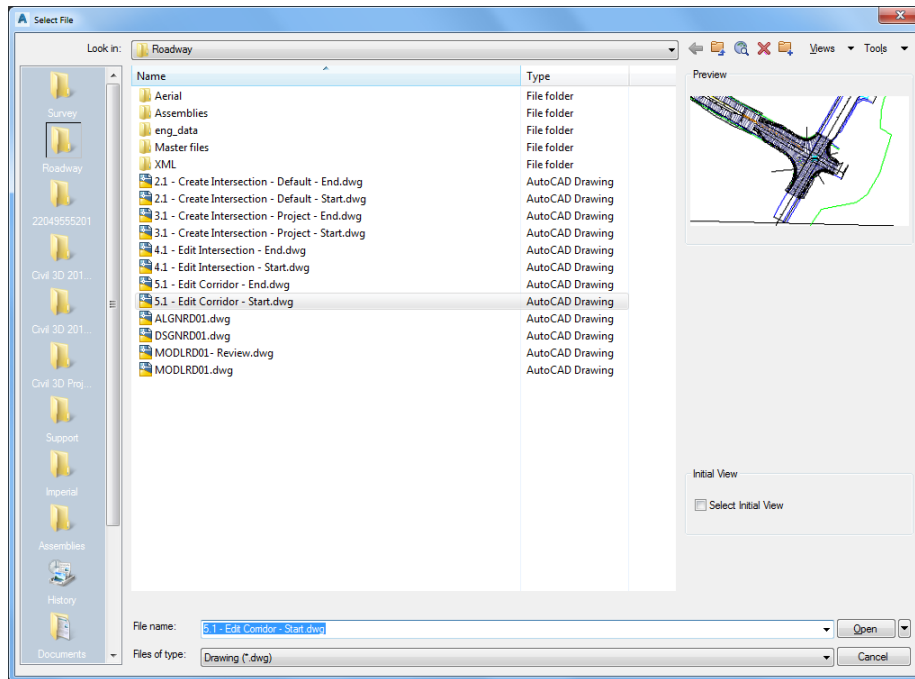
Do not change the location in which the Practice Files are installed. Doing so can cause errors when completing the exercises in this training manual.



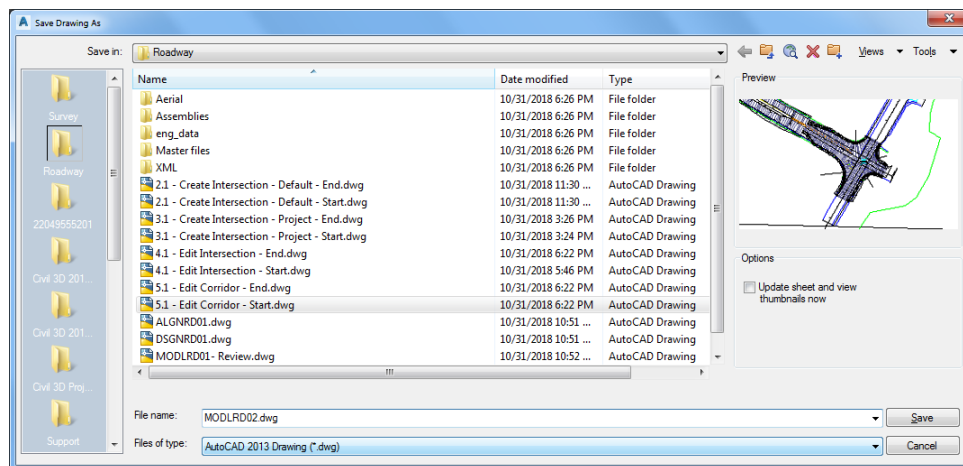
### Exercise 5.1 Create MODLRD02 File

In this exercise you will create the MODLRD02 file to be used to edit the Corridor - SR61 and US98 created using the Intersection Wizard with project settings.

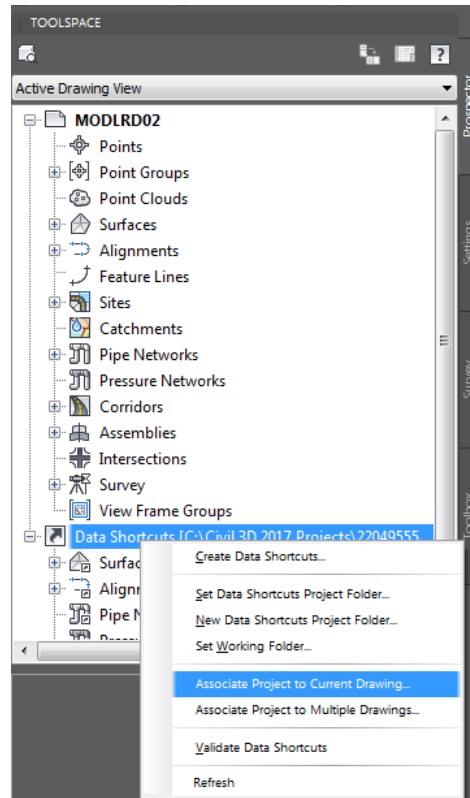
1. From the **Select File** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and select **Open 5.1 - Edit Corridor - Start.dwg**. Click **Open** to close the **Select File** dialog box.



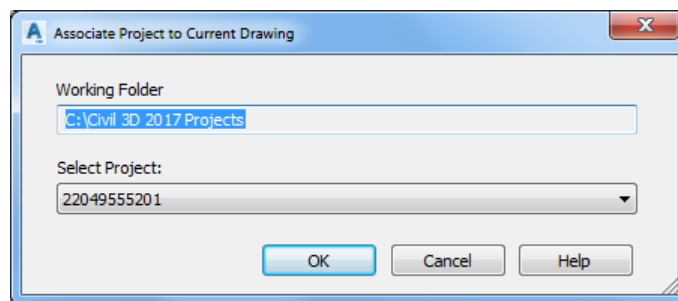
2. From the **Save Drawing As** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and **MODLRD02.dwg**. Click **Save** to close the **Save Drawing As** dialog box.



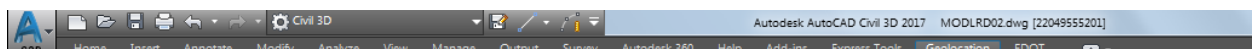
3. Associate MODLRD02.dwg File to the Project. From the *TOOLSPACE* > *Prospector tab* > *Data Shortcuts* [C:\Civil 3D 2017 Projects\22049555201], right-click and select **Associate Project to Current Drawing**.



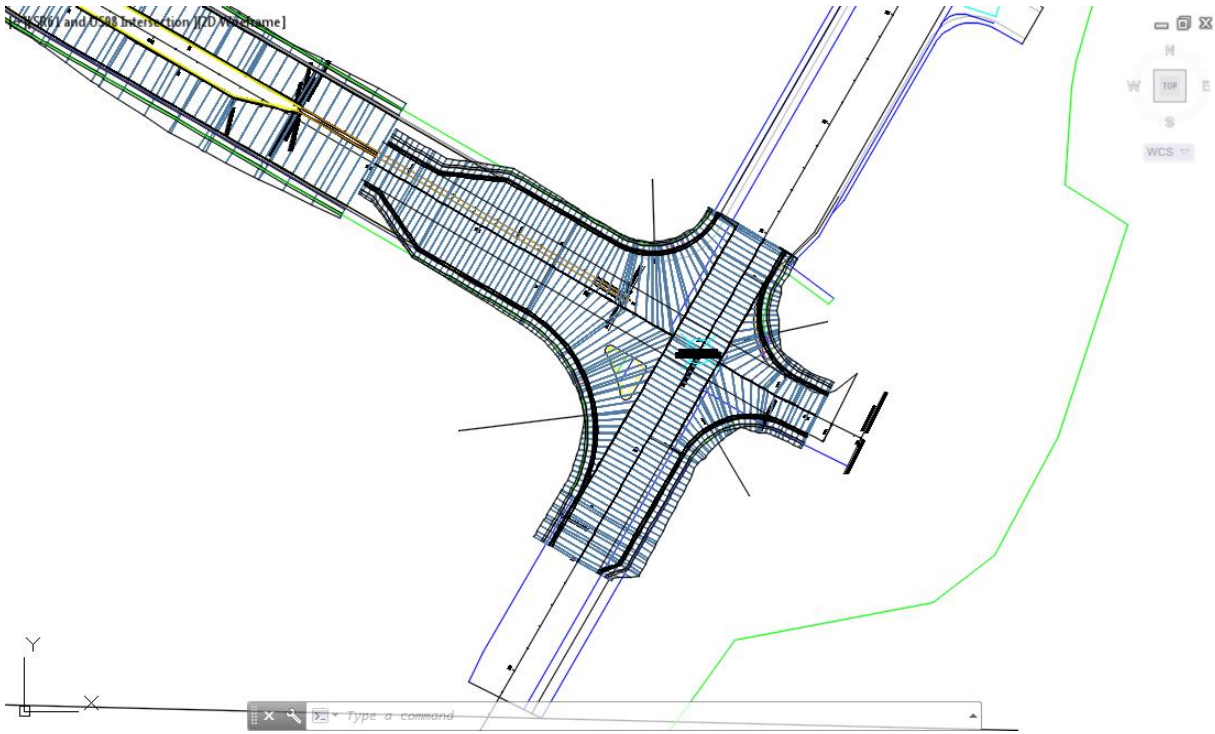
4. From Associate Project to Current Drawing dialog box, set the following values:
  - *Working Folder*: set to C:\Civil 3D 2017 Projects
  - *Select Project*: click 22049555201 from drop down list
5. Click OK to close Associate Project to Current Drawing dialog box.



6. *MODLRD02.dwg* is now associated to the C:\Civil 3D 2017 Projects\22049555201 Project.



7. **Save** your file before continuing.



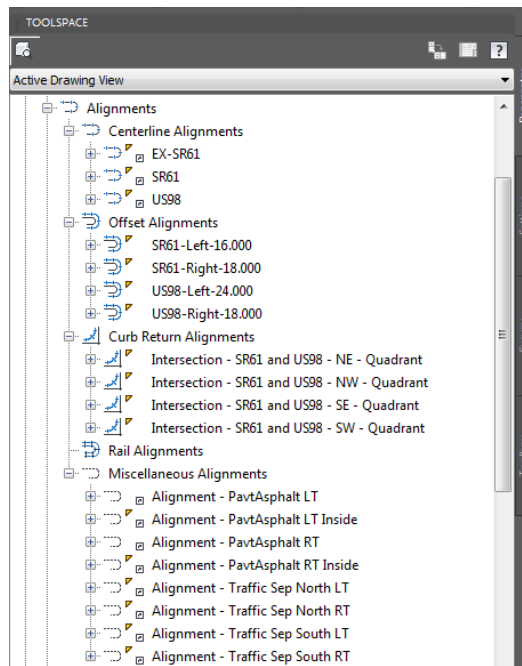
8. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.

### Exercise 5.2 Review Referenced Data

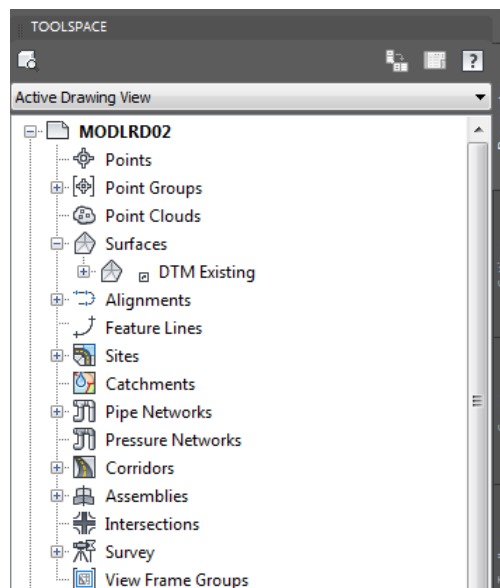
In this exercise you will review referenced data.

1. Review Data Referenced Alignments in MODLRD02 from TOOLSPACE > Prospector tab, expand Alignments > Centerline Alignments, Offset Alignments, Curb Return Alignments, and Miscellaneous Alignments. Only the Centerline Alignment and the Miscellaneous Alignments are Data References.

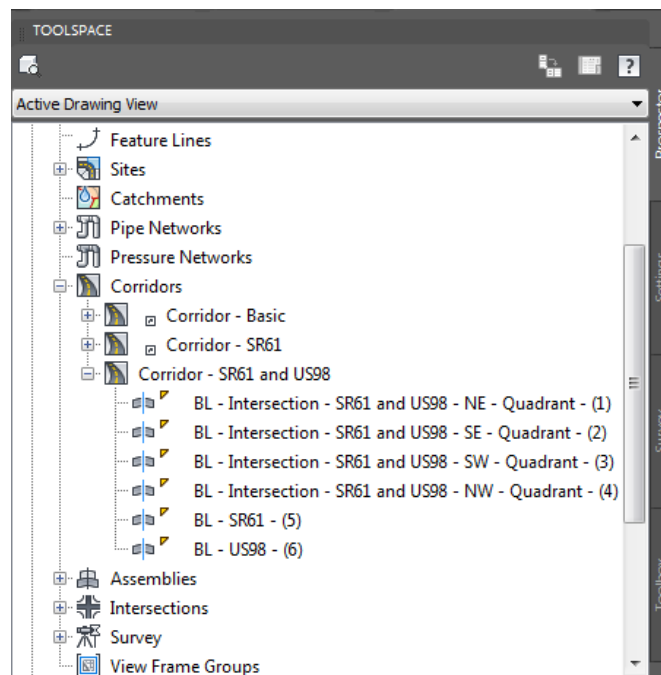
Notice the next to the Alignment name a small box with the arrow pointing to the right which denotes that the Alignment is a Data Reference.



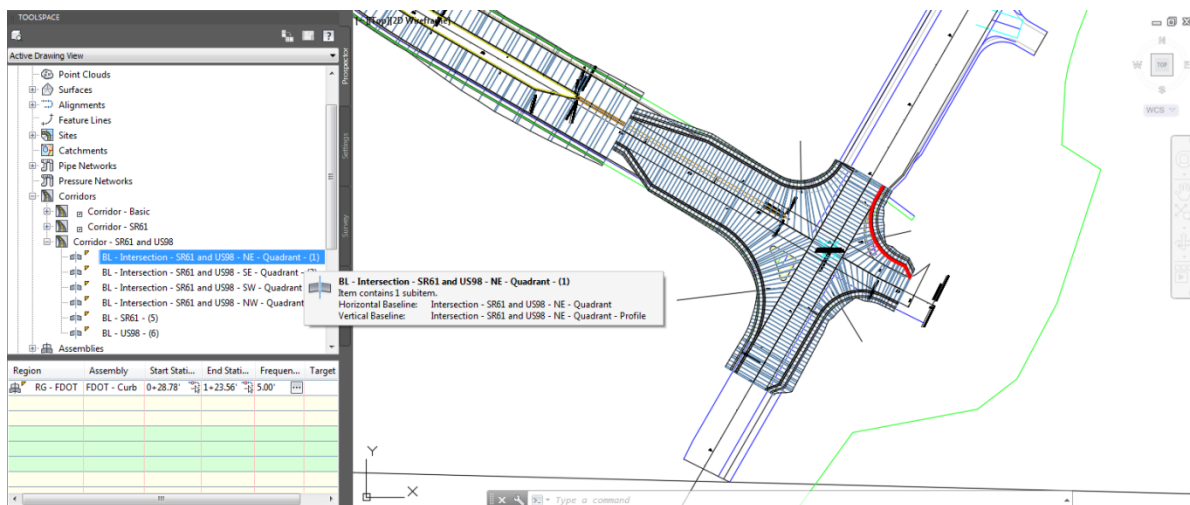
2. Review **Data Referenced Surfaces** in MODLRD02 from TOOLSPACE > Prospector tab, expand **Surfaces**.



- Review Corridors in MODLRD02 from TOOLSPACE > Prospector tab, expand **Corridors**, then expand **Corridor - SR61 and US98** to list the Baselines created during the creation of the Intersection using the Intersection Wizard.

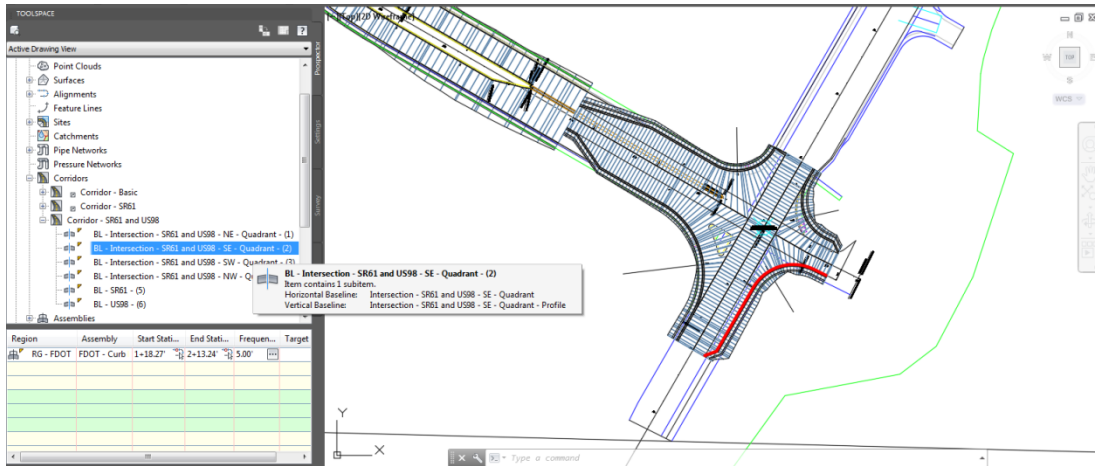


- From the TOOLSPACE > Prospector tab > Corridors, select **BL - Intersection - SR61 and US98 - NE - Quadrant - (1)** to display the BL's location in the Corridor.

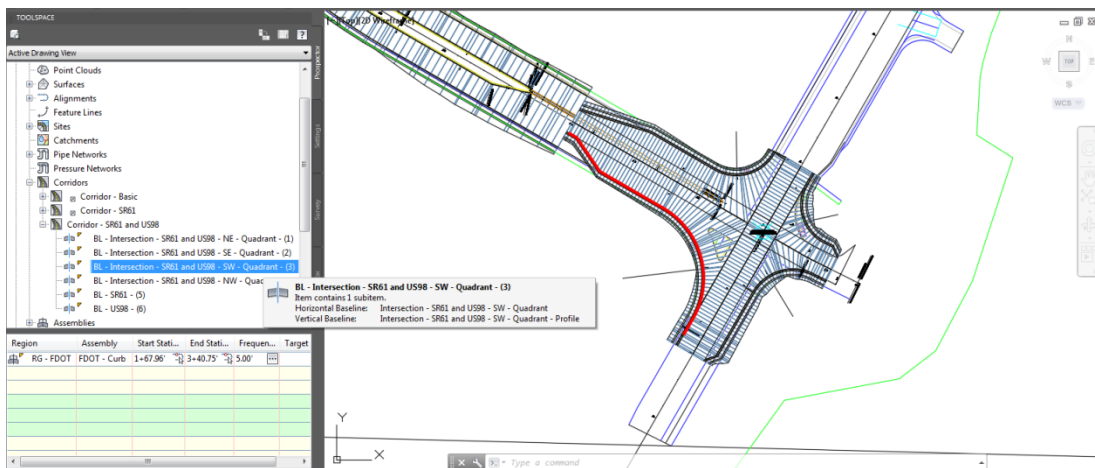


5. Repeat this process for the following **Baselines**:

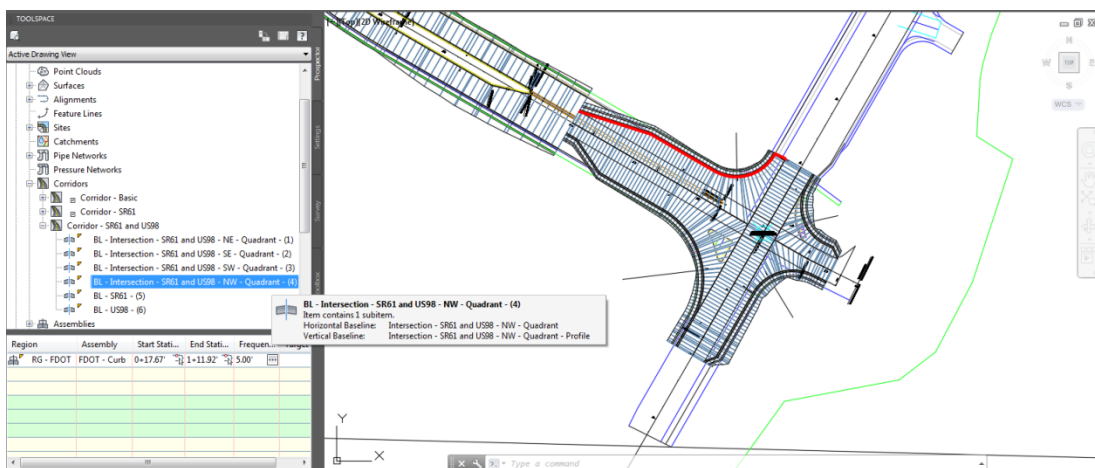
- ✓ BL - Intersection - SR61 and US98 - NE - Quadrant - (2)



- ✓ BL - Intersection - SR61 and US98 - SW - Quadrant - (3)

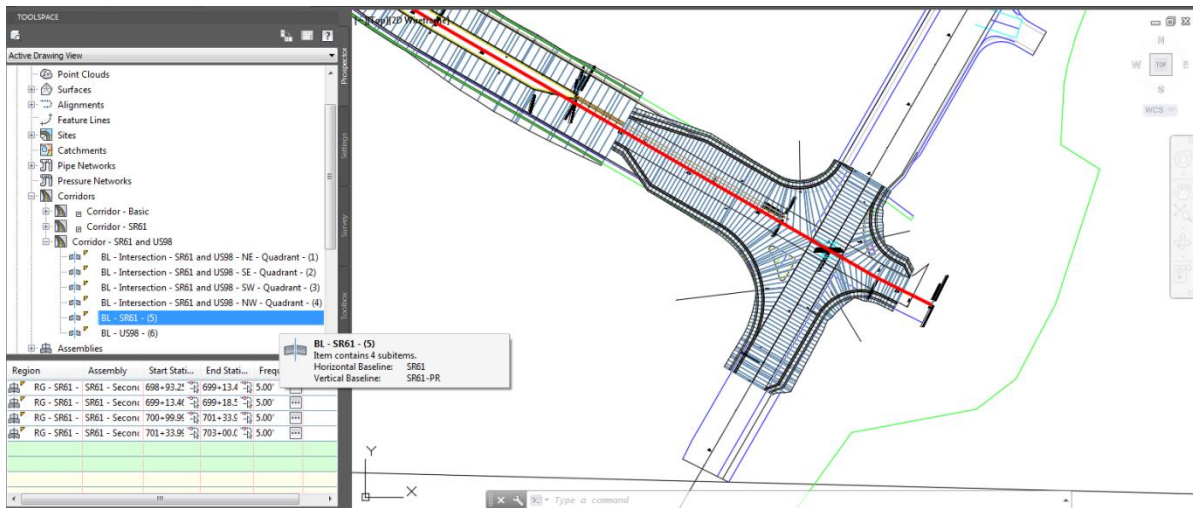


- ✓ BL - Intersection - SR61 and US98 - NE - Quadrant - (4)

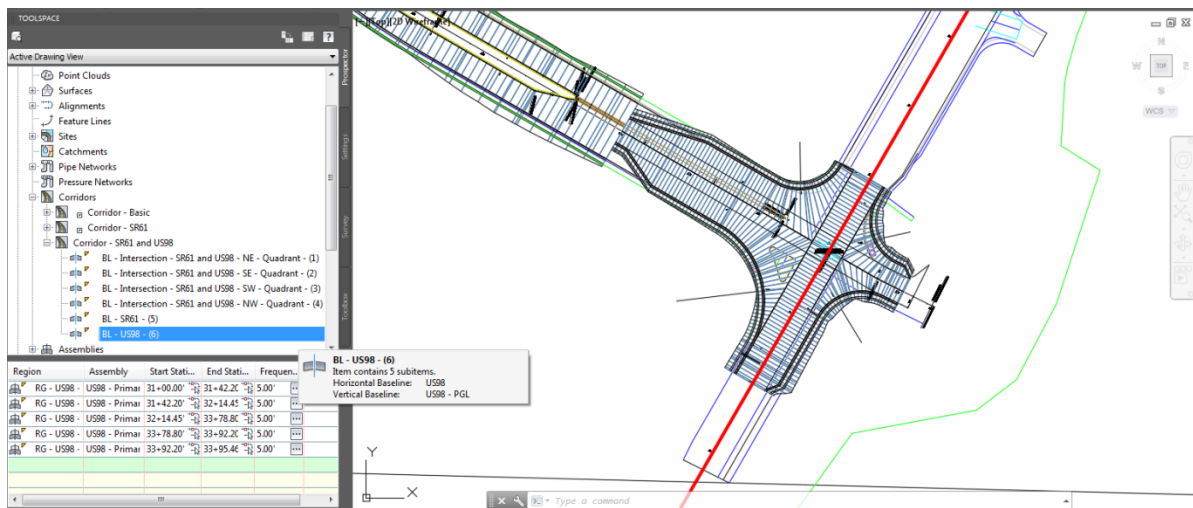




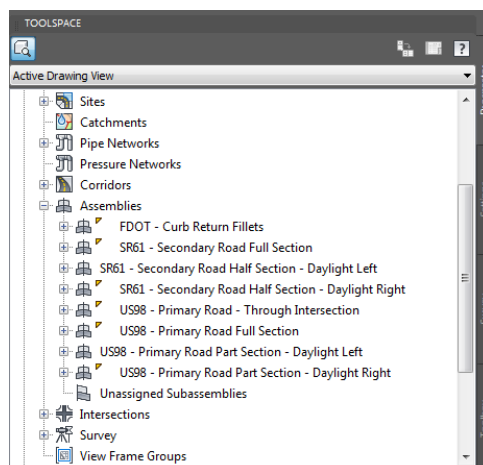
✓ BL - SR61 - (5)



✓ BL - SR61 - (6)



6. Review **Assemblies** in MODLRD02 from TOOLSSPACE > Prospector tab. **Assemblies**, listed were used during the creation of the Intersection using the Intersection Wizard.



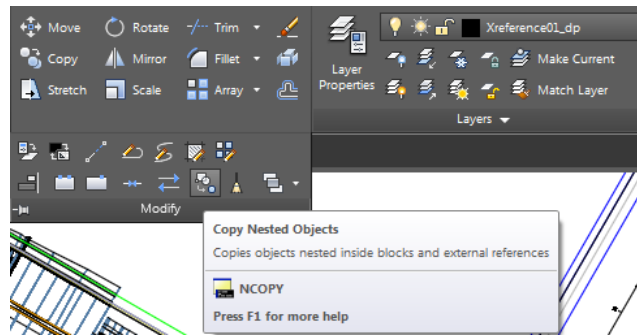
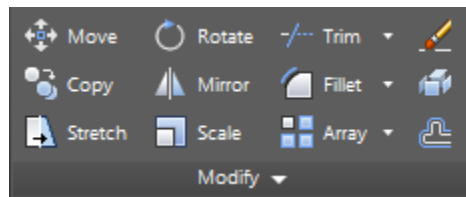
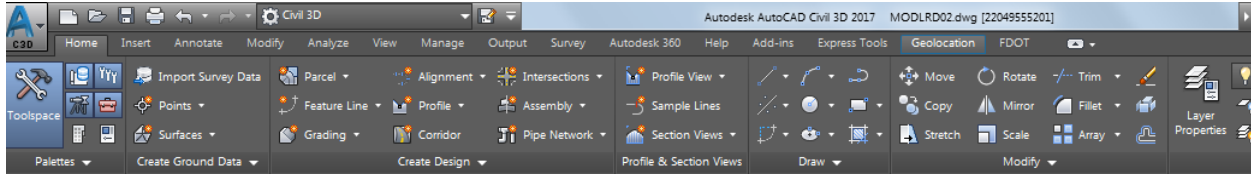


**Exercise 5.3** *NCOPY to Extract Additional Targets for Intersection Corridor - SR61 and US98.*

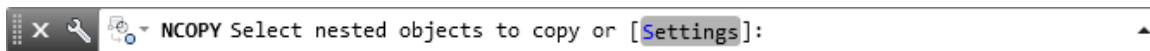
In this exercise you need to add additional targets to the Intersection Corridor - SR61 and US98 corridor model. This can be done by using the NCOPY command to extract geometry from an attached external reference.

First, you will use NCOPY to extract the edge of asphalt geometry on the left side of the Primary Road US98.

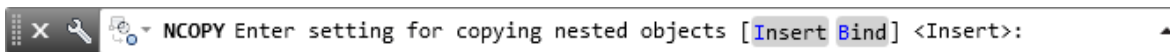
1. From the Home tab > Modify panel > select **Modify**, then select **Copy Nested Objects**.



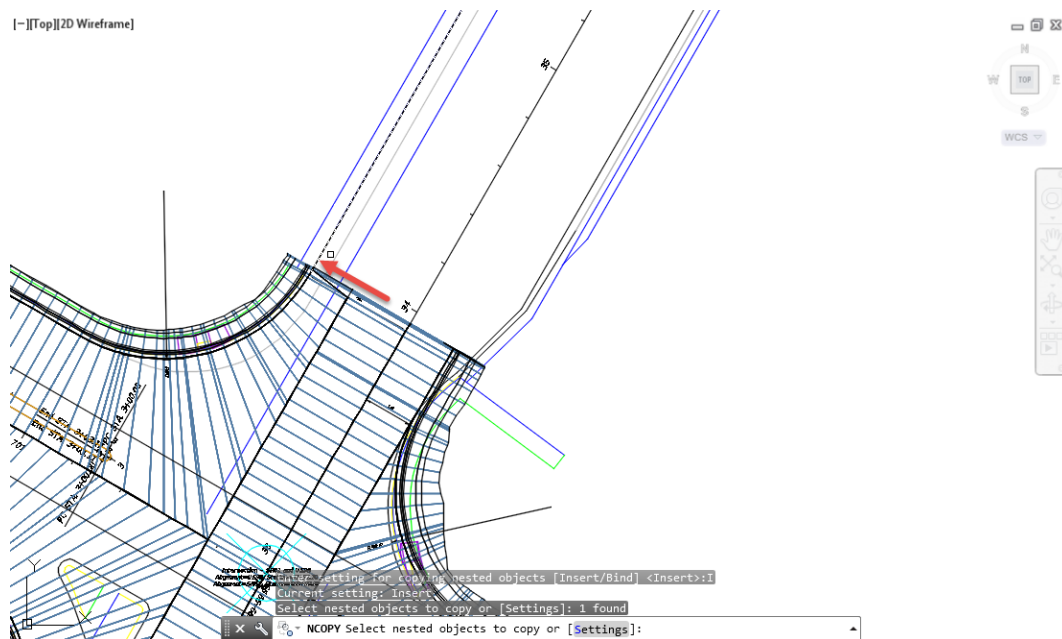
2. From the Command line select Settings option



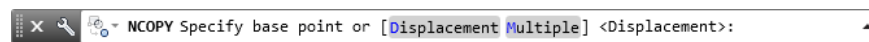
3. From the Command line select Insert option



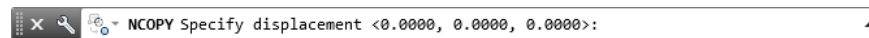
4. Select geometry from attached external reference which represents the *edge of asphalt on the left side* of the Primary Road US98. Use the red arrow as a reference for selecting the edge of asphalt geometry. Then press **Enter**.



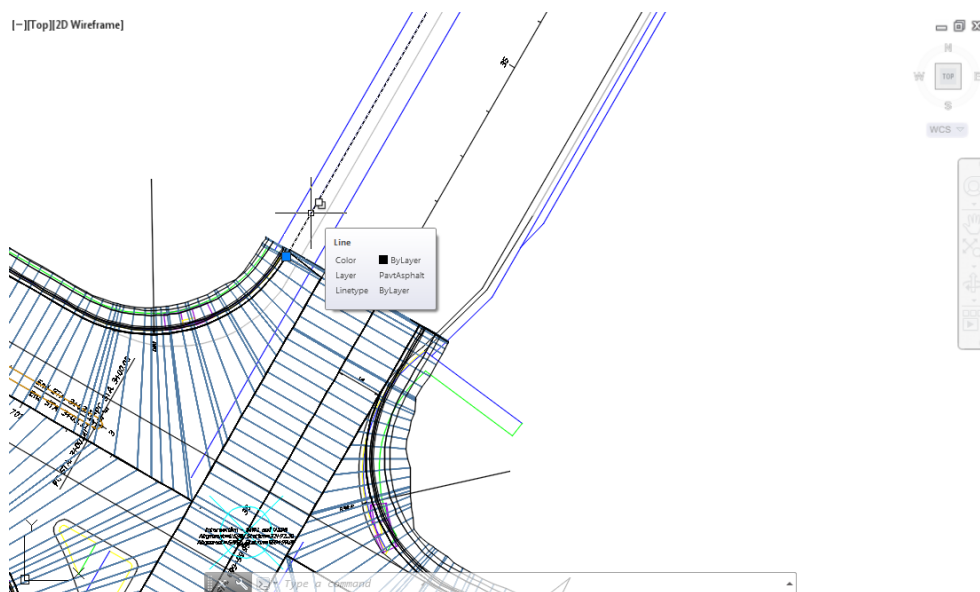
5. From the Command line Press Enter to use <Displacement> option



6. From the Command line Press Enter to Specify displacement of <0.00, 0.00, 0.00>

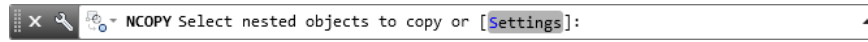


7. Hover over the geometry you just inserted using the NCOPY command.

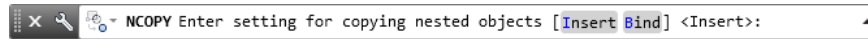


8. **Save** your file before continuing.

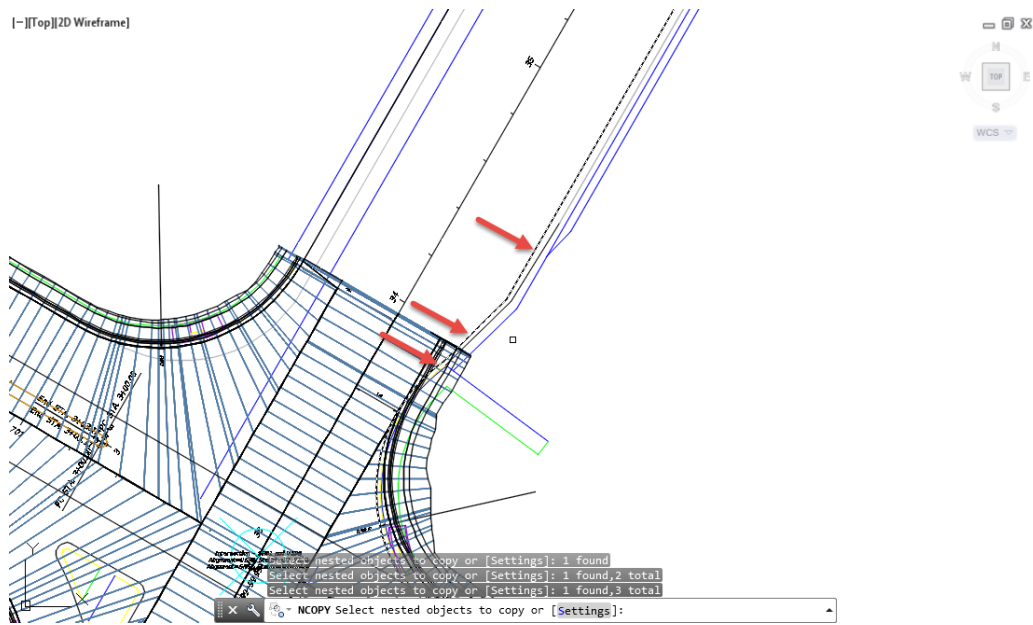
9. Second, you will use NCOPY to extract the edge of asphalt geometry on the right side of the Primary Road US98. From the Home tab > Modify panel > select **Modify**, then select **Copy Nested Objects**.
10. From the Command line select **Settings** option.



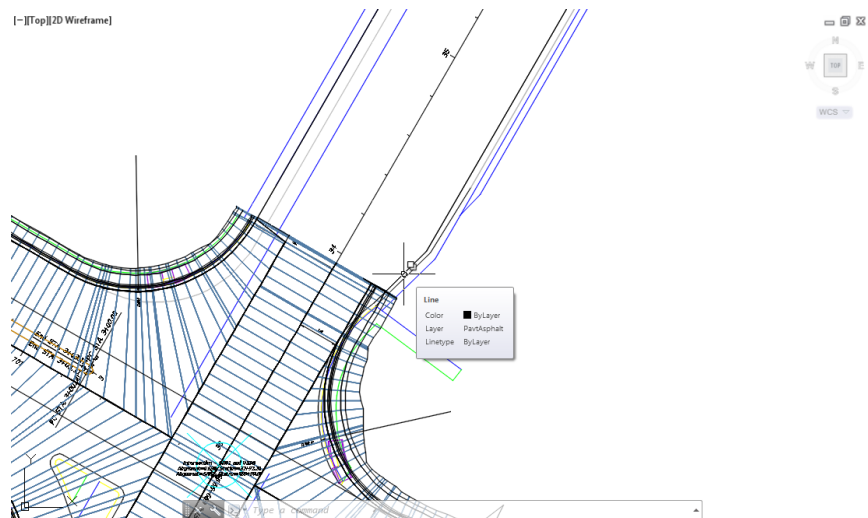
11. From the Command line select **Insert** option.



12. Select geometry from attached external reference which represents the *edge of asphalt on the right side* of the Primary Road US98. Use the red arrows as a reference for selecting the edge of asphalt geometry. Then press **Enter**.



13. Hover over the geometry you just inserted using the NCOPY command.

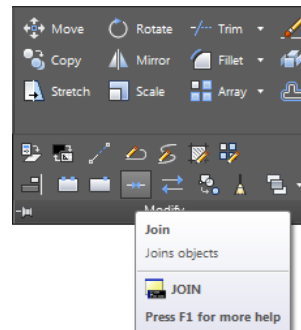
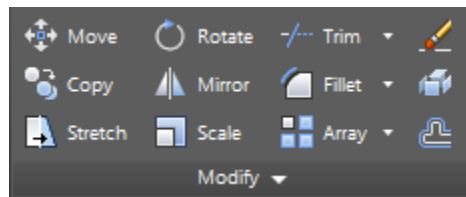
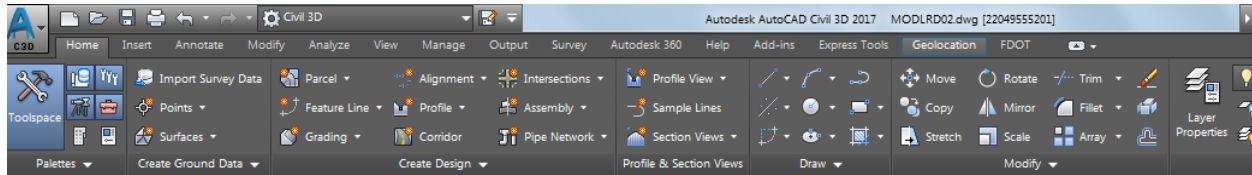


Save your file before continuing.

## Exercise 5.4 Join Geometry Extracted for Additional Targets for Intersection Corridor - SR61 and US98

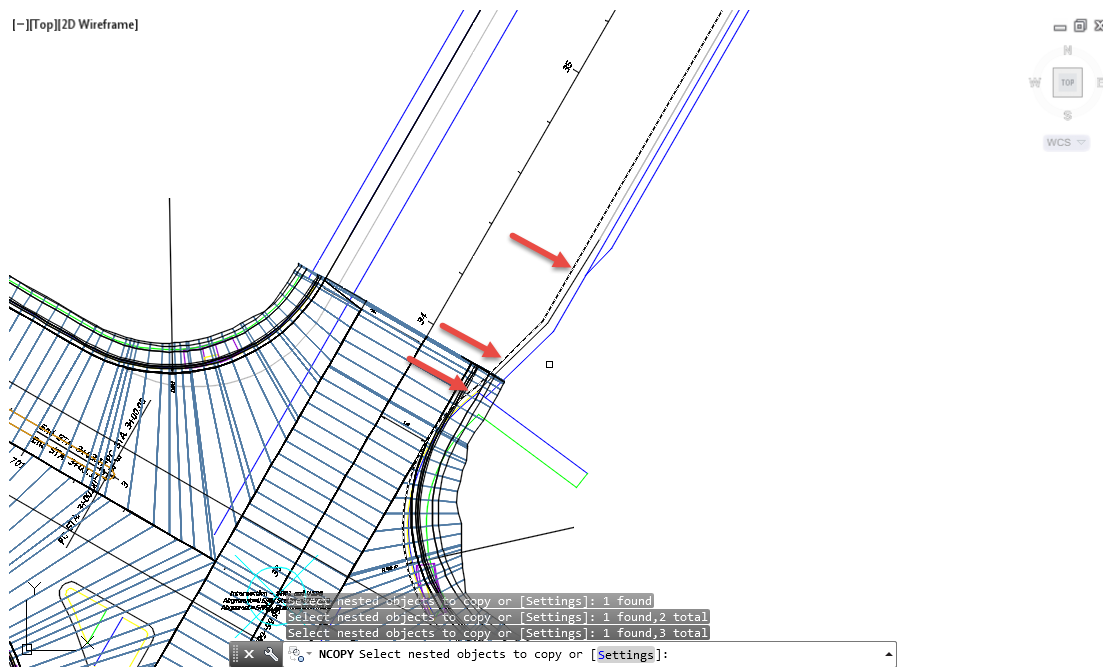
In this exercise you need to use the JOIN command to join the two lines and one polyline just inserted using NCOPY which represents the edge of asphalt on the right side of the Primary Road US98.

1. From the Home tab > Modify panel > select **Modify**, then select **Join**.

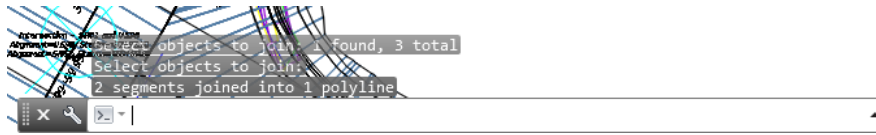


JOIN Select source object or multiple objects to join at once:

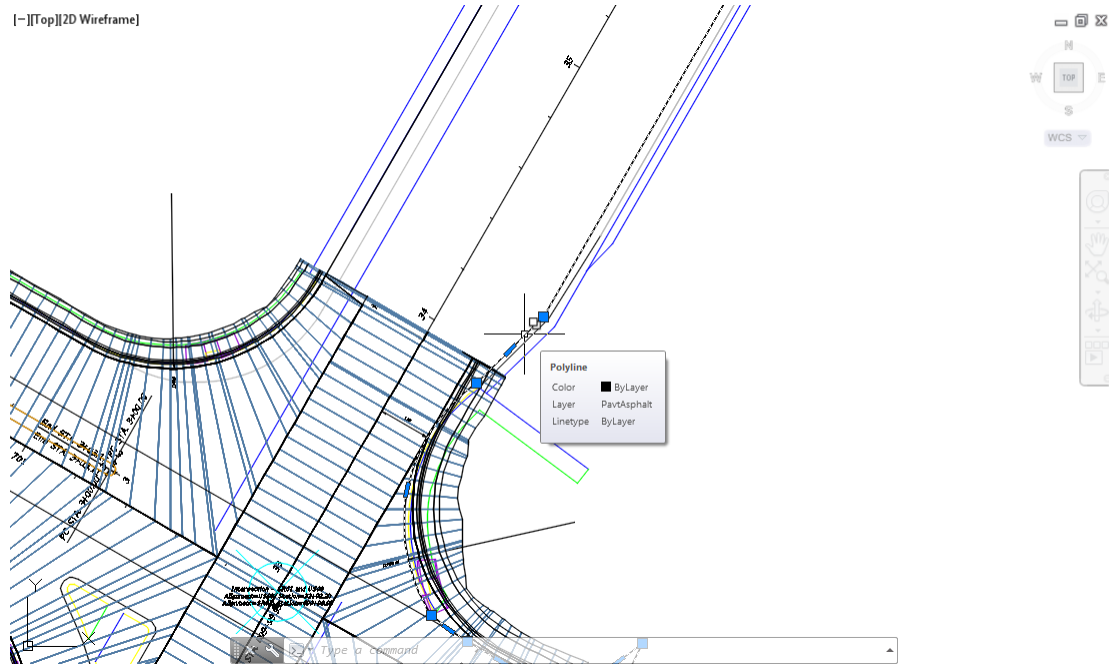
2. Select the *two lines* and *one polyline* you just inserted using NCOPY. Use the *red arrows* as a reference for selecting this *edge of asphalt* geometry. Then press **Enter**.



3. Above the Command line the message **2 segments joined into 1 polyline** should display.



4. Hover over the geometry you just joined the JOIN command.

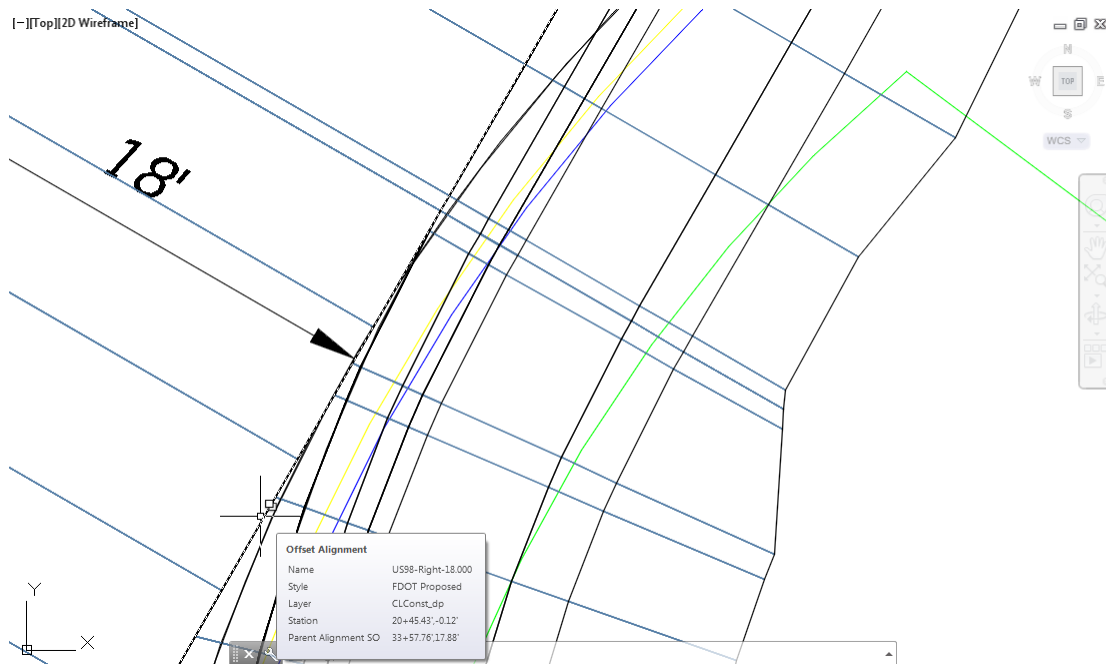


5. Save your file before continuing.

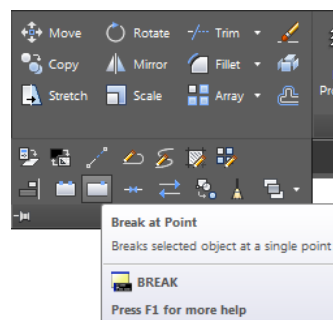
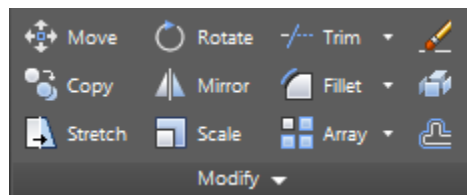
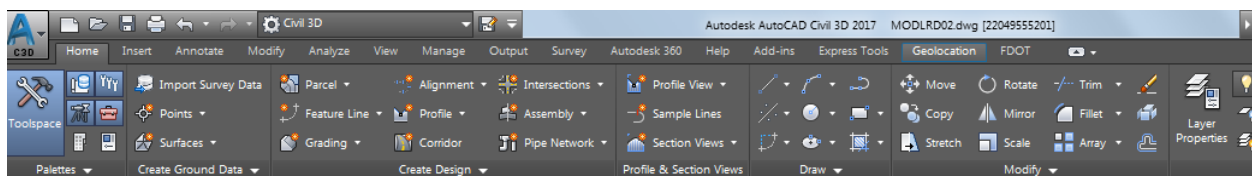
### Exercise 5.5 Break Geometry Extracted for Additional Targets for Intersection Corridor - SR61 and US98.

In this exercise you will use the Break at point command to break the polyline created in the prior exercise at a point where the polyline crosses the Offset alignment US98 Right.

1. Use **Zoom** and **Pan** commands to display where the polyline crosses the *Offset alignment US98 Right*. Hover over the *Offset alignment US98 Right* to display its properties.



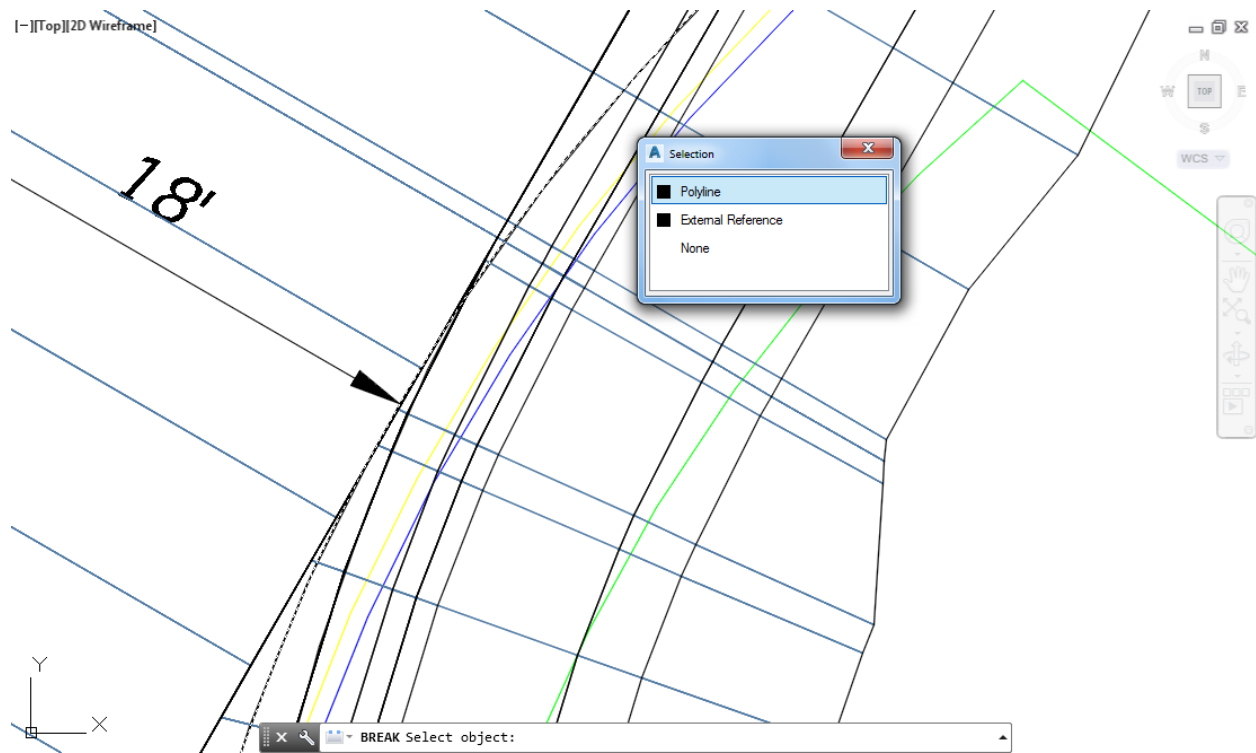
2. From the Home tab > Modify panel > select Modify, then select Break at Point.



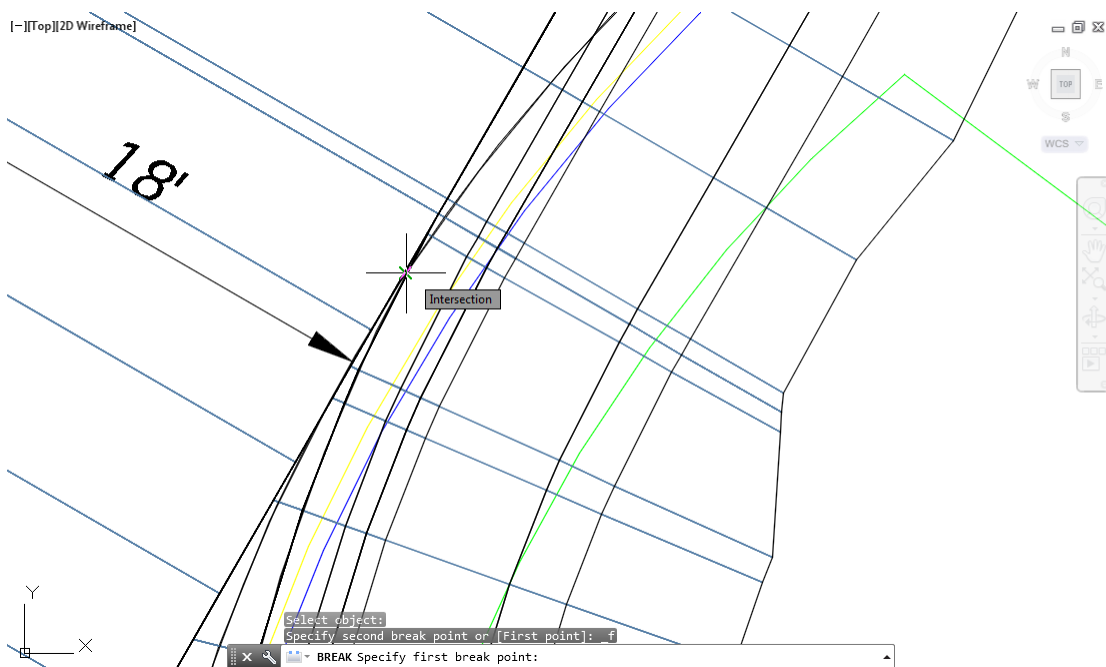
3. From the Command line you are prompted to **Select object**.



4. Select the polyline created in the prior exercise, then from the Selection dialog select **Polyline**.

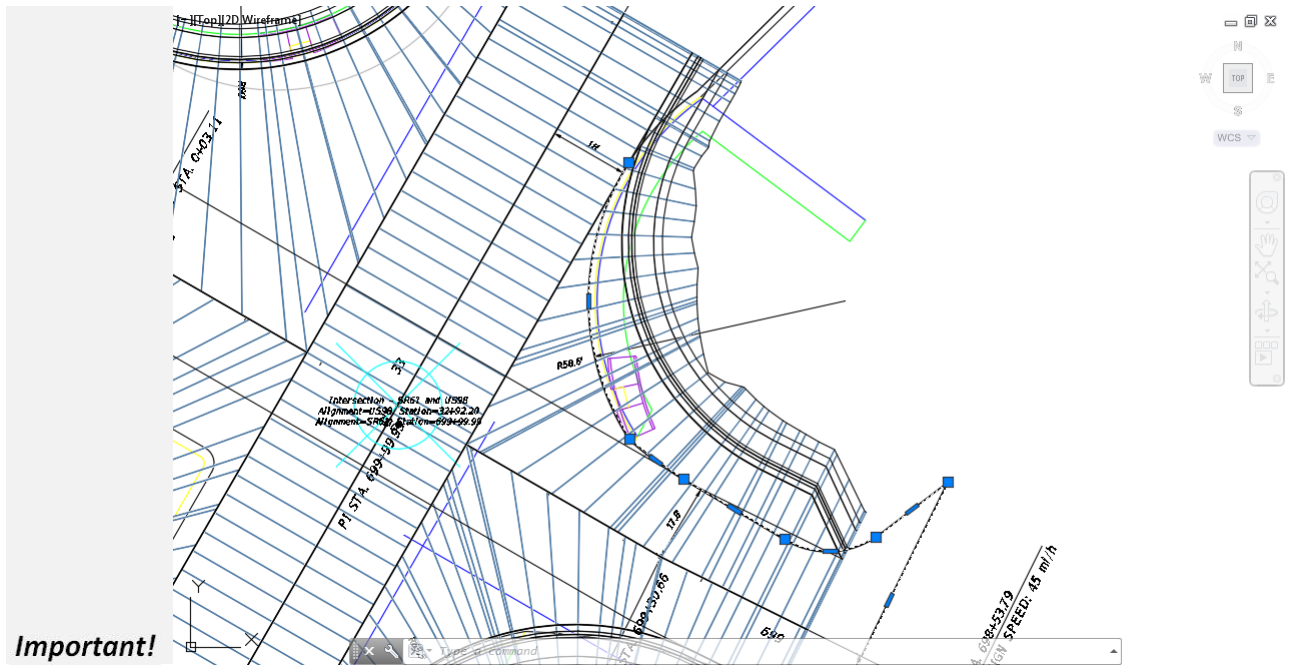


5. Select at a point using an *Intersection osnap* where the polyline crosses the *Offset alignment US98 Right*.

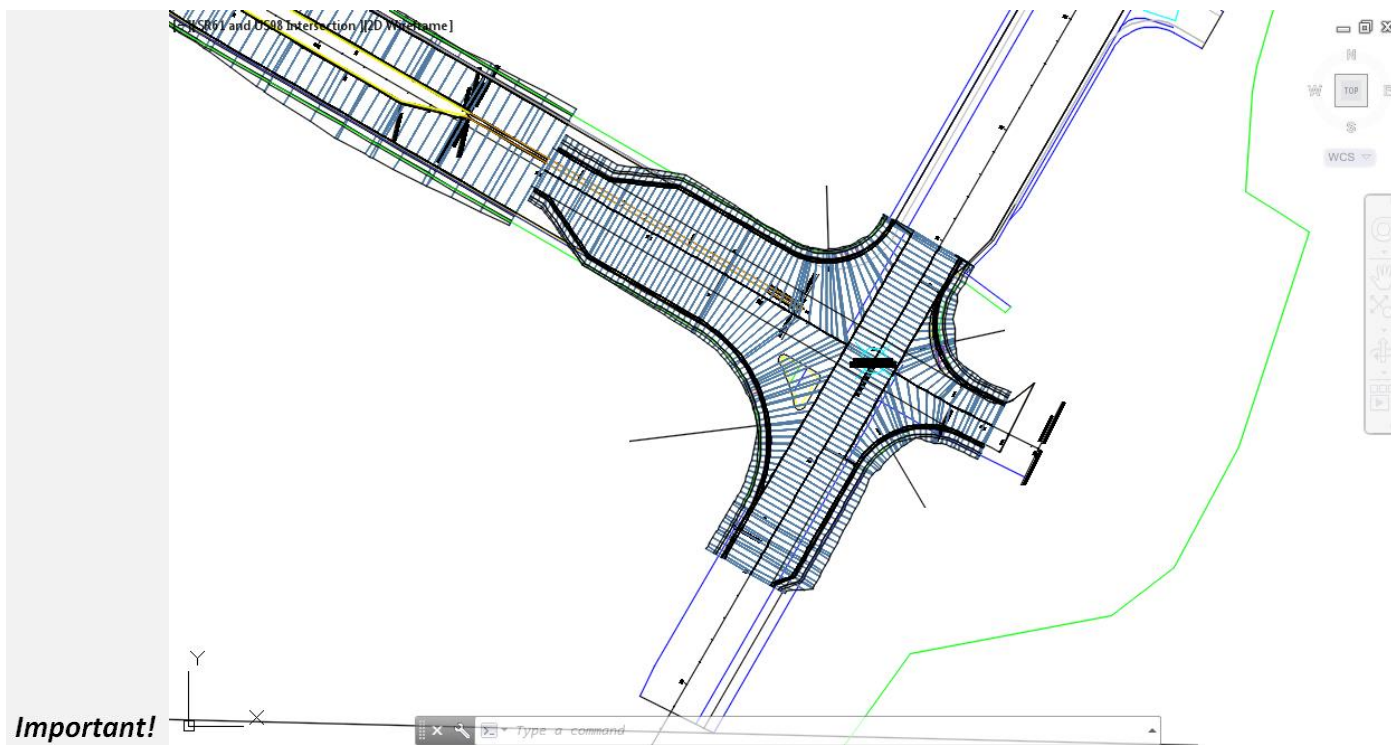




6. Select the southern end of the polyline that was just broken using the *Break at point* command, then press **Delete**.



7. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.



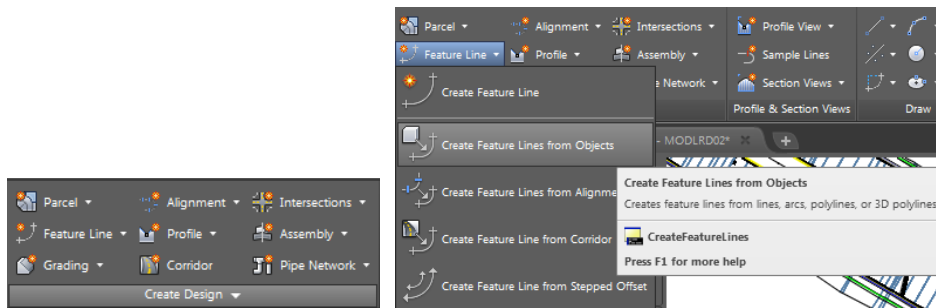
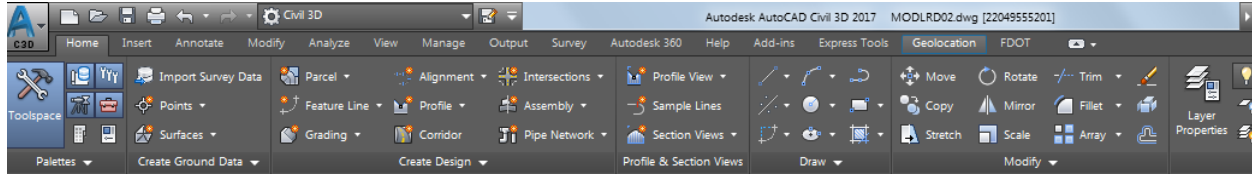
8. **Save** your file before continuing.



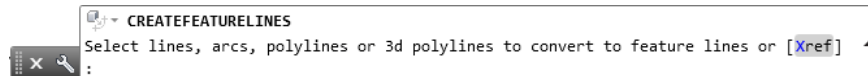
### Exercise 5.6 Create Feature Lines from Objects

In this exercise you need to create Feature Lines from the geometry you extracted from the external file using NCOPY, and then edited using the JOIN and Break at Point commands.

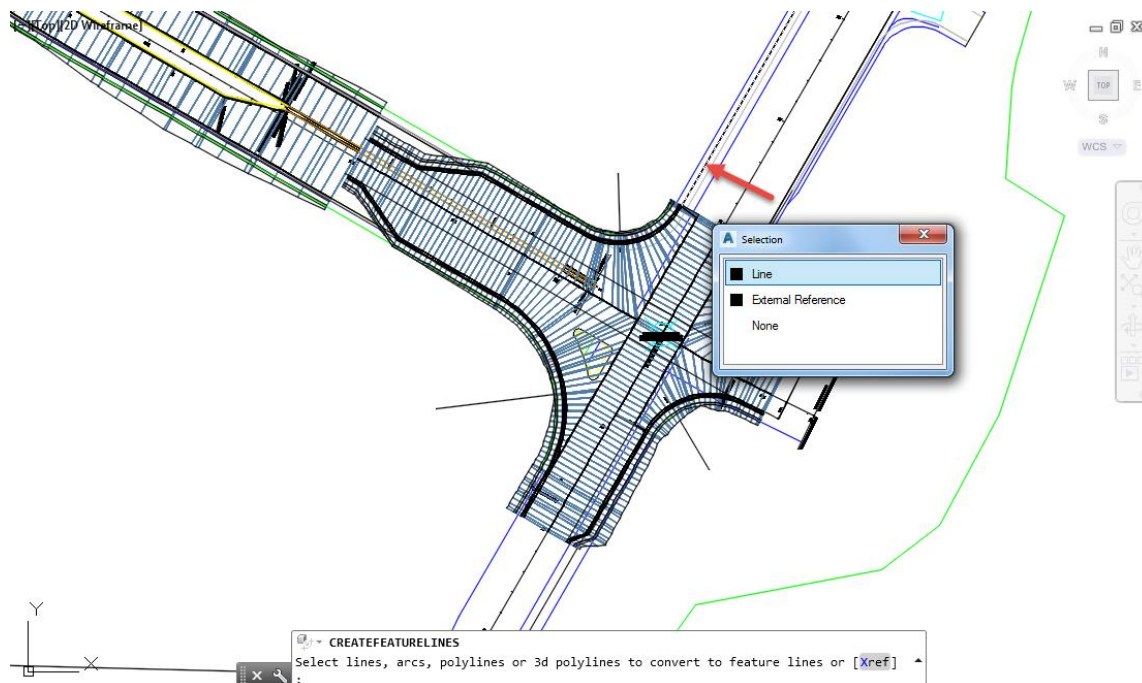
1. From the Home tab > Design panel > select Modify, then select **Create Feature Lines from Objects**.



2. From the Command line you are prompted to **Select lines, arcs, polylines or 3d polylines** to convert to feature lines.



3. Select the Line created using NCOPY which represents the *edge of asphalt on the left side* of the Primary Road US98. Use the red arrow as a reference for selecting this edge of asphalt geometry, then from the Selection dialog select **Line**. Press **Enter** to continue.



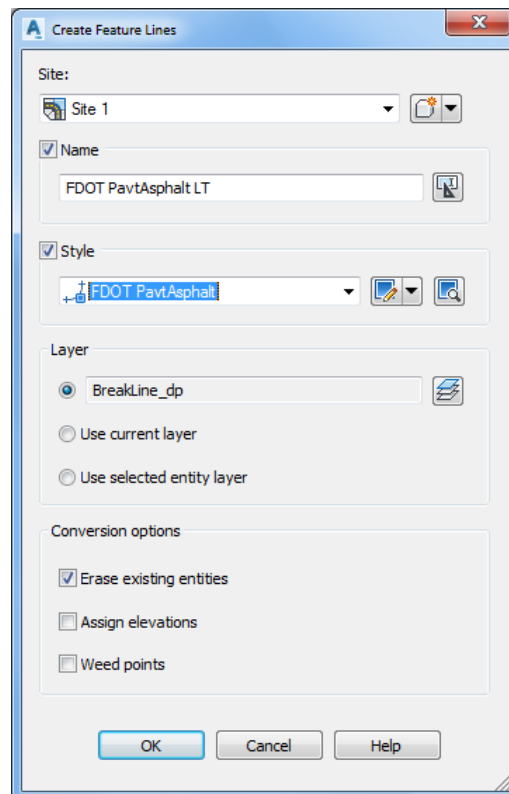
4. From the Create Feature Lines dialog, use the following values:
  - Site: **Site 1**
  - Check *Name* box and enter **FDOT PavtAsphalt LT**
  - Check *Style* box and select **FDOT PavtAsphalt**
  - *Layer*: **Breakline\_dp**
  - *Conversion options*:

Check: Erase existing entities

Uncheck: Assign elevations

Uncheck: Weed points

5. Select **OK** to continue

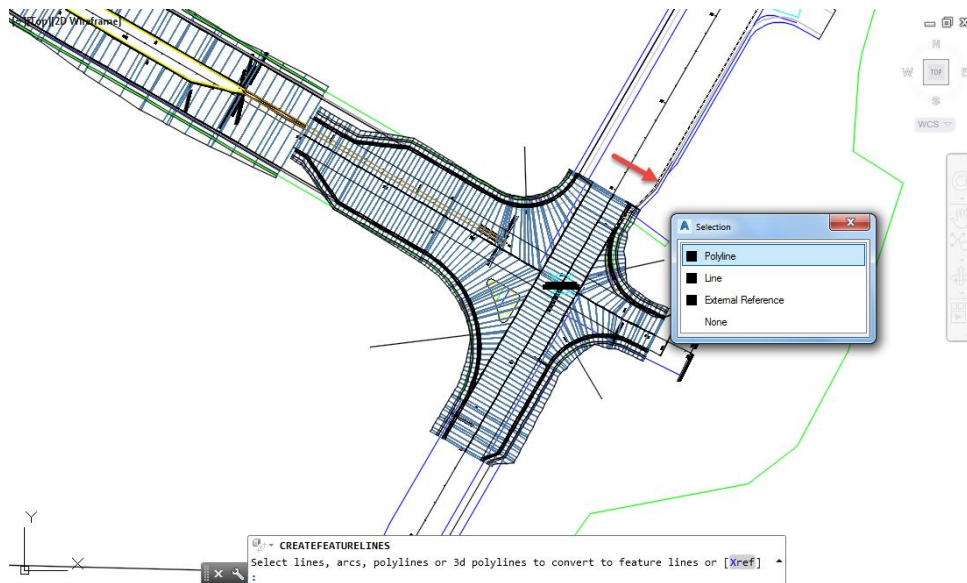


6. Above the Command line the message **Feature line adds to Site 1** should display.



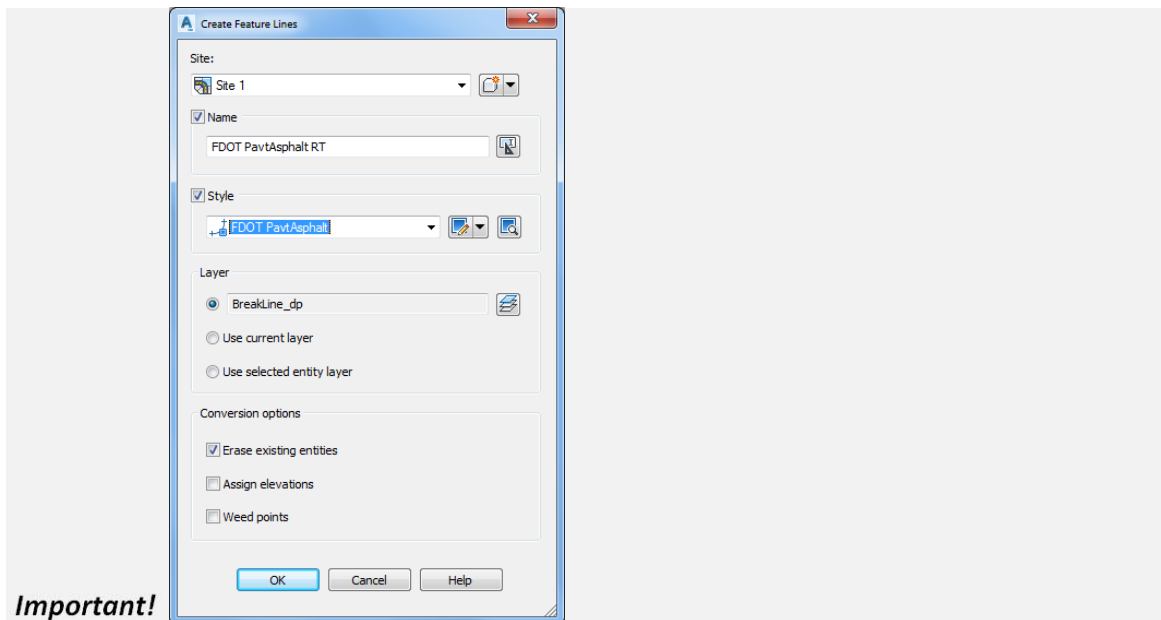
7. **Save** your file before continuing.
8. Repeat the steps to use **Create feature line** from objects command.

9. Select the polyline created using NCOPY, JOIN, and *Break at Point* commands which represents the *edge of asphalt on the right side* of the Primary Road US98, use the red arrow as a reference for selecting this edge of asphalt geometry, then from the Selection dialog select **Polyline**. Press **Enter** to continue.



10. From the Create Feature Lines dialog, use the following values:

- *Site:* **Site 1**
- Check *Name* box and enter **FDOT PavtAsphalt RT**
- Check *Style* box and select **FDOT PavtAsphalt**
- *Layer:* **Breakline\_dp**
- *Conversion options:*
  - Check: **Erase existing entities**
  - Uncheck: **Assign elevations**
  - Uncheck: **Weed points**

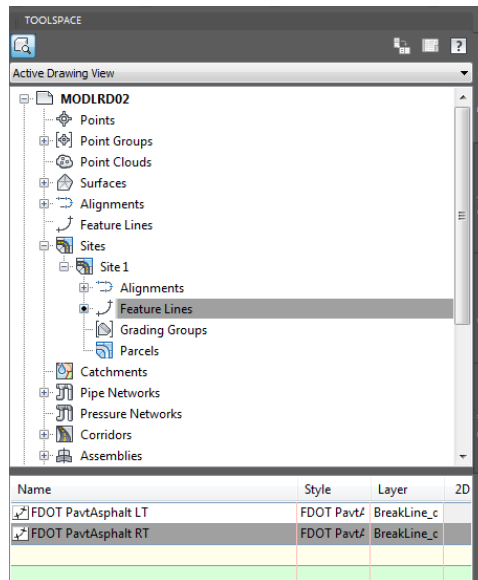


11. Select **OK** to continue

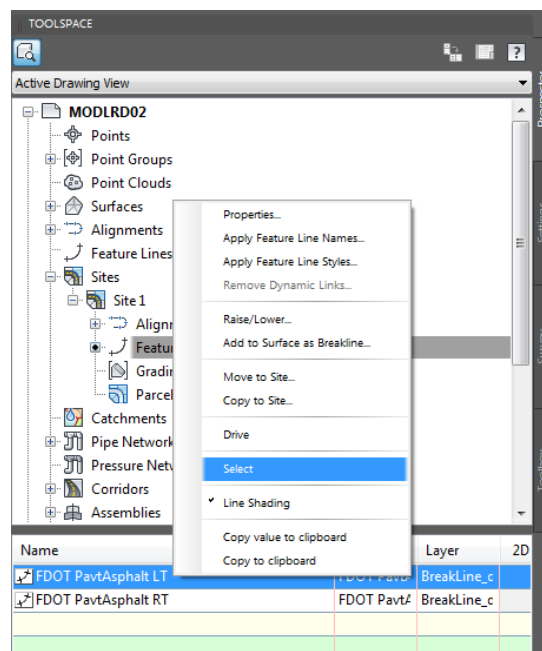
12. Above the Command line the message Feature line added to Site 1 should display.

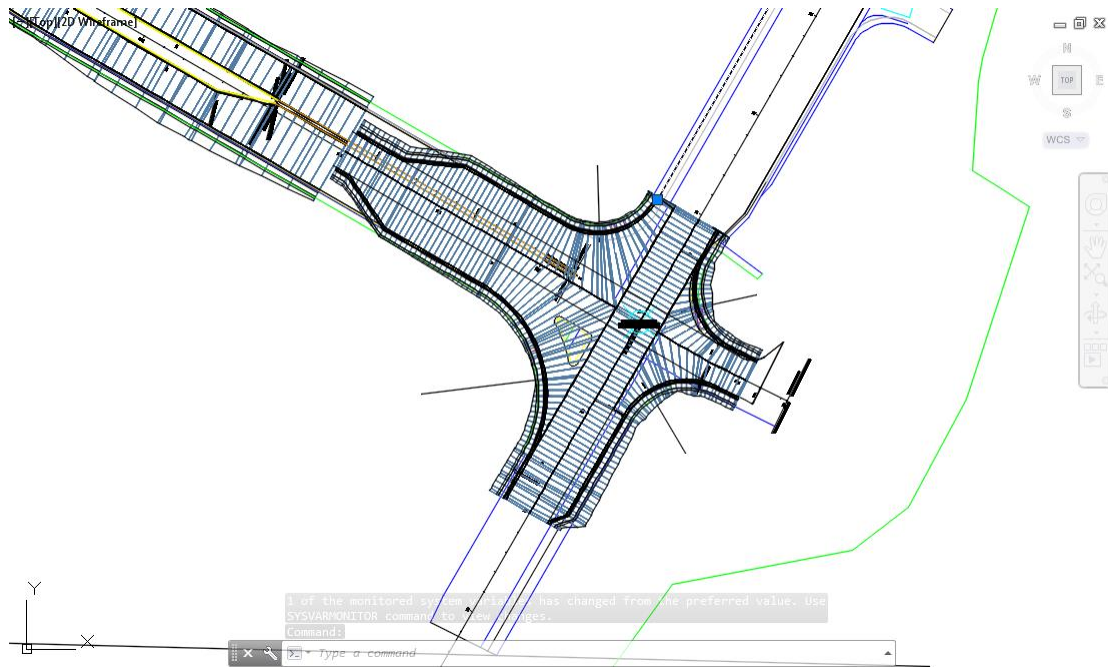


13. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
14. **Save** your file before continuing.
15. Review the new Feature Lines in Site 1 from TOOLSPACE > Prospector tab, expand **Sites**, then expand **Site 1**, select **Feature Lines** to list the Features Lines you just created.

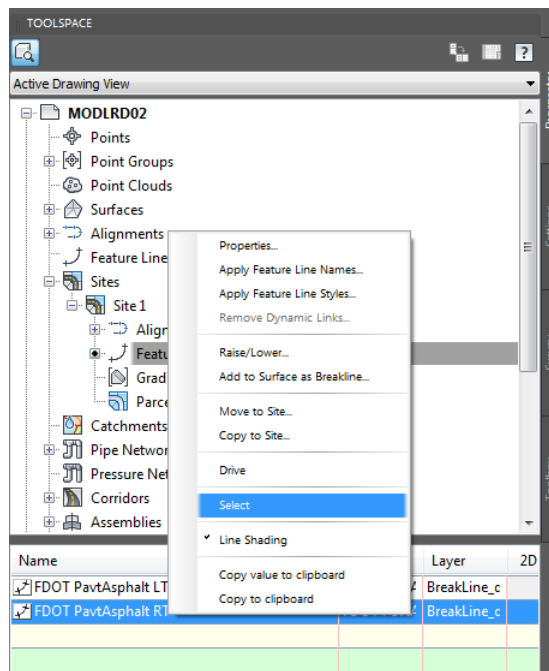


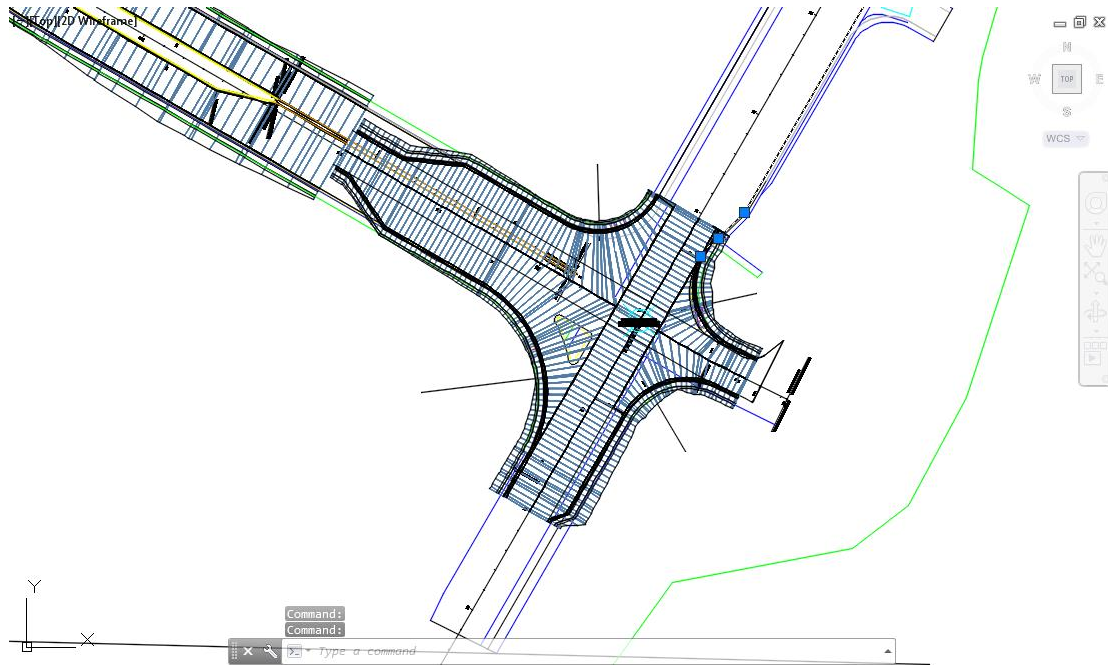
16. From the TOOLSPACE > Prospector tab > Sites > Site 1 > Feature Lines, right-click on **FDOT PavtAsphalt LT**, select **Select** to display the FDOT PavtAsphalt LT location in the Corridor





- From the TOOLSPACE > Prospector tab > Sites > Site 1 > Feature Lines, right-click on FDOT PavtAsphalt RT, select Select to display the FDOT PavtAsphalt RT location in the Corridor.



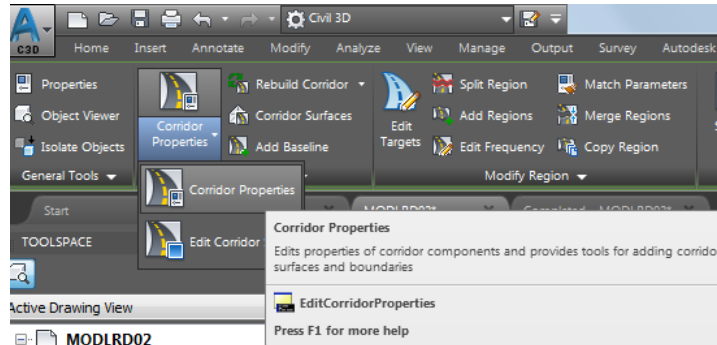


18. **Save** your file before continuing.

### Exercise 5.7 Edit the Region Targets for the Corridor - SR61 and US98 NE - Quadrant

In this exercise you are going to edit the region targets for the Corridor - SR61 and US98 NE - Quadrant using the Corridor Properties workflow.

1. Select the **Corridor - SR61 and US98** in the Drawing Editor. From the *Modify Corridor* panel, select **Corridor Properties**



2. From the Corridor Properties - Corridor SR61 and US98 dialog, select the **Parameters** tab.

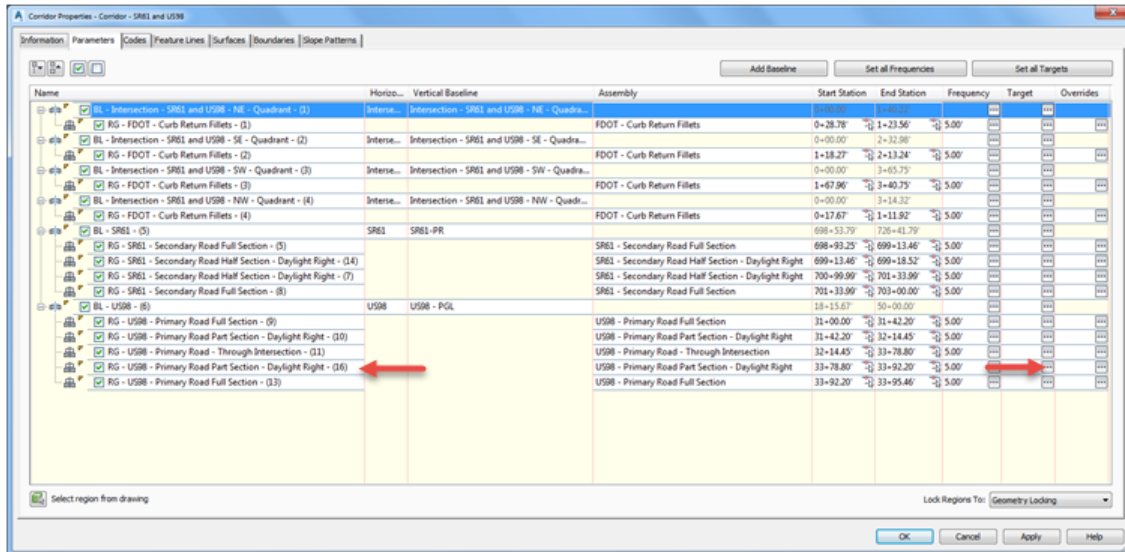
Important!

The screenshot shows the 'Corridor Properties - Corridor - SR61 and US98' dialog box with the 'Parameters' tab selected. The dialog box contains a table with columns: Name, Horiz..., Vertical Baseline, Assembly, Start Station, End Station, Frequency, Target, and Overrides. The table lists various corridor components and their properties.

Name	Horiz...	Vertical Baseline	Assembly	Start Station	End Station	Frequency	Target	Overrides
BL - Intersection - SR61 and US98 - NE - Quadrant - (1)	Interse...	Intersection - SR61 and US98 - NE - Quadra...		0+00.00'	1+40.21'			
RG - FDOT - Curb Return Fillets - (1)			FDOT - Curb Return Fillets	0+28.78'	1+23.56'	5.00'		
BL - Intersection - SR61 and US98 - SE - Quadrant - (2)	Interse...	Intersection - SR61 and US98 - SE - Quadra...		0+00.00'	2+32.98'			
RG - FDOT - Curb Return Fillets - (2)			FDOT - Curb Return Fillets	1+18.27'	2+13.24'	5.00'		
BL - Intersection - SR61 and US98 - SW - Quadrant - (3)	Interse...	Intersection - SR61 and US98 - SW - Quadra...		0+00.00'	3+65.75'			
RG - FDOT - Curb Return Fillets - (3)			FDOT - Curb Return Fillets	1+67.96'	3+40.75'	5.00'		
BL - Intersection - SR61 and US98 - NW - Quadrant - (4)	Interse...	Intersection - SR61 and US98 - NW - Quadra...		0+00.00'	3+14.32'			
RG - FDOT - Curb Return Fillets - (4)			FDOT - Curb Return Fillets	0+17.67'	1+11.92'	5.00'		
BL - SR61 - (5)	SR61	SR61-PR		698+53.79'	726+41.79'			
RG - SR61 - Secondary Road Full Section - (5)			SR61 - Secondary Road Full Section	698+93.25'	699+13.46'	5.00'		
RG - SR61 - Secondary Road Half Section - Daylight Right - (14)			SR61 - Secondary Road Half Section - Daylight Right	699+13.46'	699+18.52'	5.00'		
RG - SR61 - Secondary Road Half Section - Daylight Right - (7)			SR61 - Secondary Road Half Section - Daylight Right	700+99.99'	701+33.99'	5.00'		
RG - SR61 - Secondary Road Full Section - (8)			SR61 - Secondary Road Full Section	701+33.99'	703+00.00'	5.00'		
BL - US98 - (6)	US98	US98 - PGL		18+15.67'	50+00.00'			
RG - US98 - Primary Road Full Section - (9)			US98 - Primary Road Full Section	31+00.00'	31+42.20'	5.00'		
RG - US98 - Primary Road Part Section - Daylight Right - (10)			US98 - Primary Road Part Section - Daylight Right	31+42.20'	32+14.45'	5.00'		
RG - US98 - Primary Road - Through Intersection - (11)			US98 - Primary Road - Through Intersection	32+14.45'	33+78.80'	5.00'		
RG - US98 - Primary Road Part Section - Daylight Right - (16)			US98 - Primary Road Part Section - Daylight Right	33+78.80'	33+92.20'	5.00'		
RG - US98 - Primary Road Full Section - (13)			US98 - Primary Road Full Section	33+92.20'	33+95.46'	5.00'		

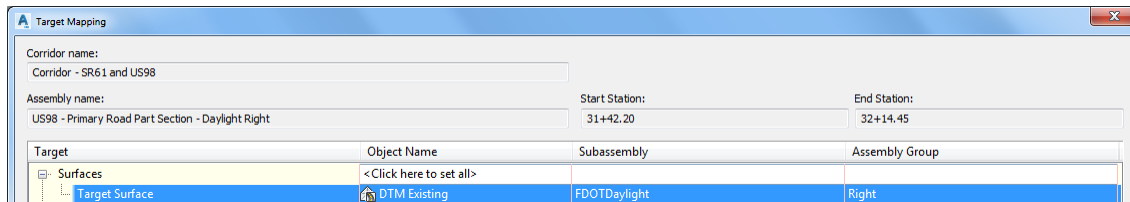


3. From the *Name* column select **RG - US98 - Primary Road Part Section - Daylight Right - (16)**, then from the *Target* column select the box with the three dots.

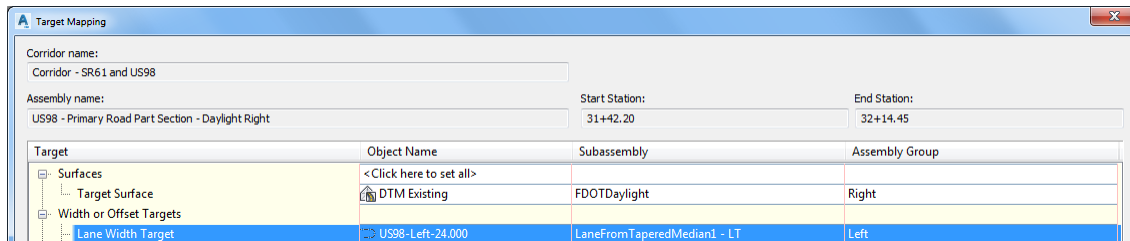


4. From the Target Mapping dialog , use the following values:

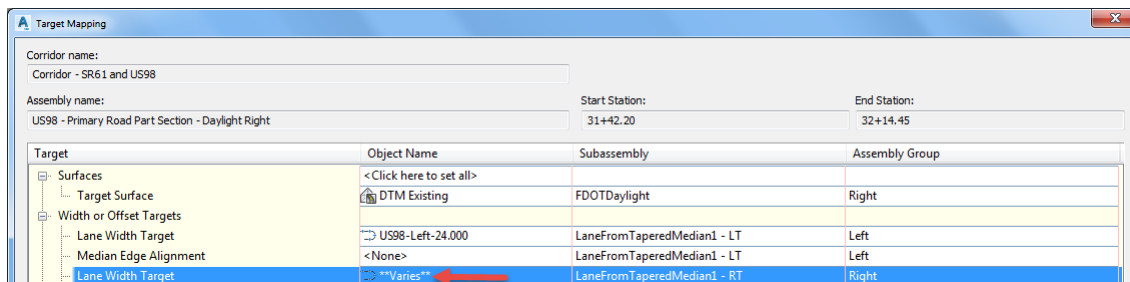
- o Surfaces: Target Surface: **DTM Existing**



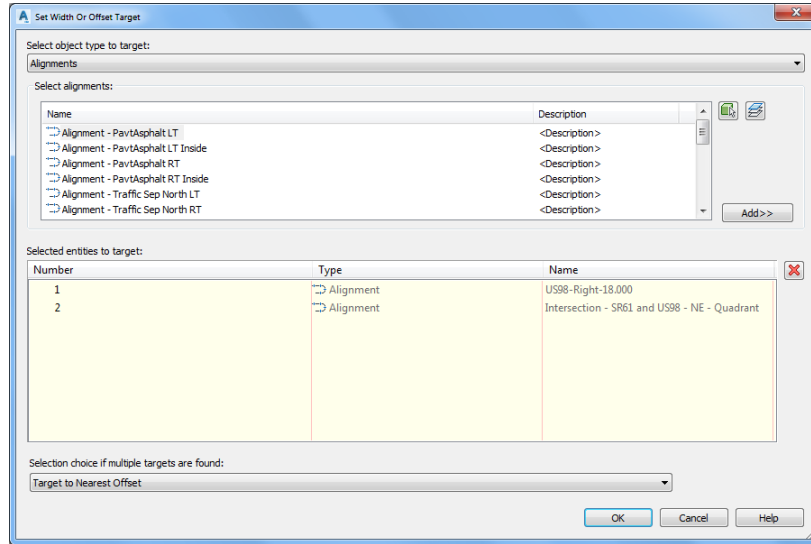
- o Width or Offset Targets: Left: Lane Width Target: **US98-Left-24.000**



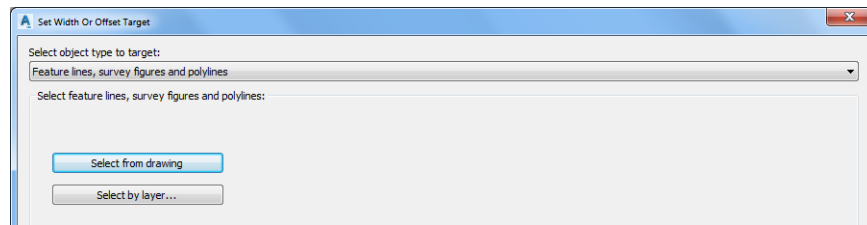
- o Right: Lane Width Target select **Varies** from Object Name Column



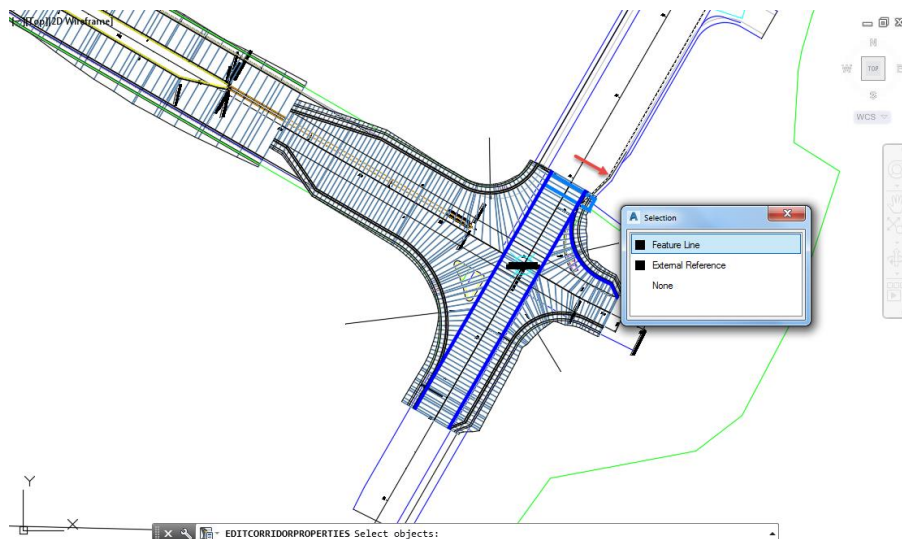
5. From Set Width or Offset Target dialog, set *Select object type to target*: **Alignments**.
6. Set *Selected entities to target*:
  - o US98-Right-18.000
  - o Intersection - SR61 and US98 - NE Quadrant



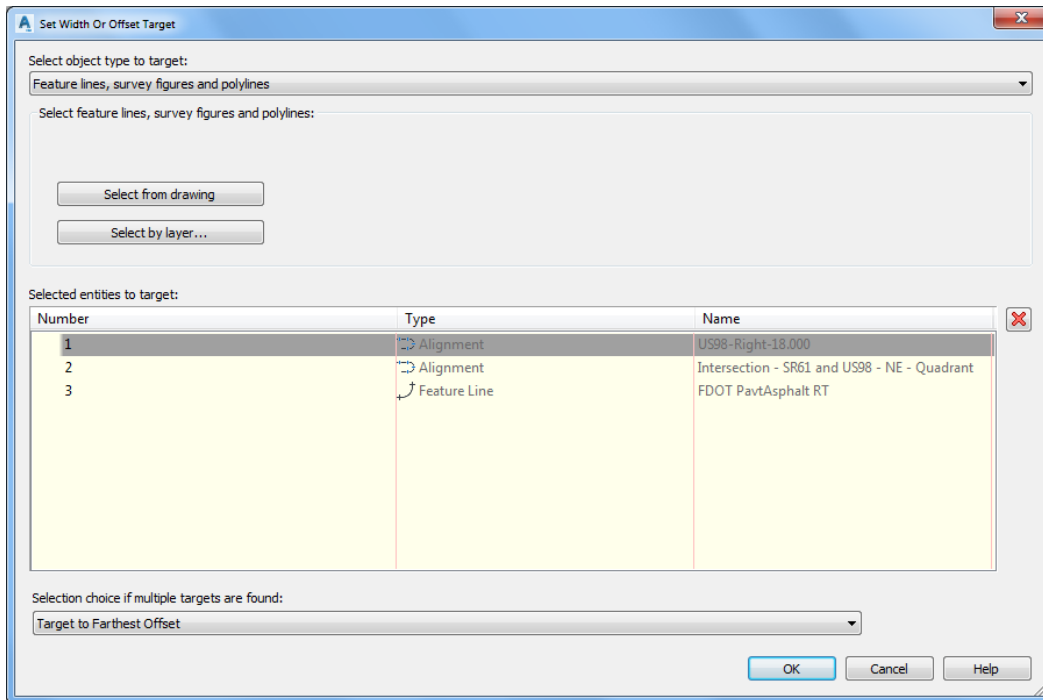
7. From Set Width or Offset Target dialog, set *Select object type to target*: **Feature lines, survey figures, and polylines**. Click **Select from drawing** button.



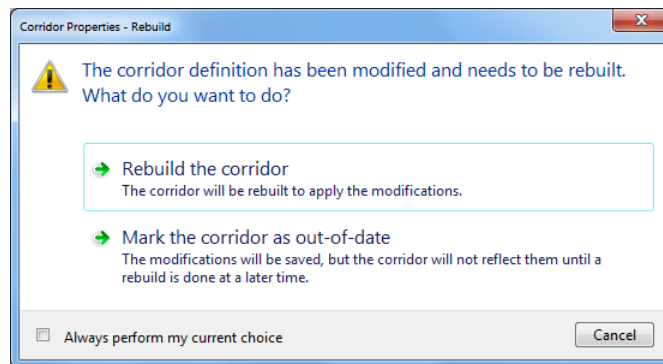
8. Select **FDOT PavtAsphalt RT** feature line, use the red arrow as a reference for selecting this *edge of asphalt* feature line, then from the Selection dialog select **Feature Line**. Press **Enter** to continue.



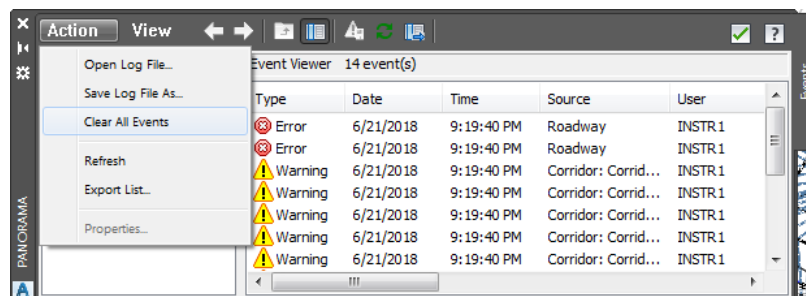
9. Set Selection choice if multiple targets are found: **Target to Farthest Offset**. Click **OK** to continue.



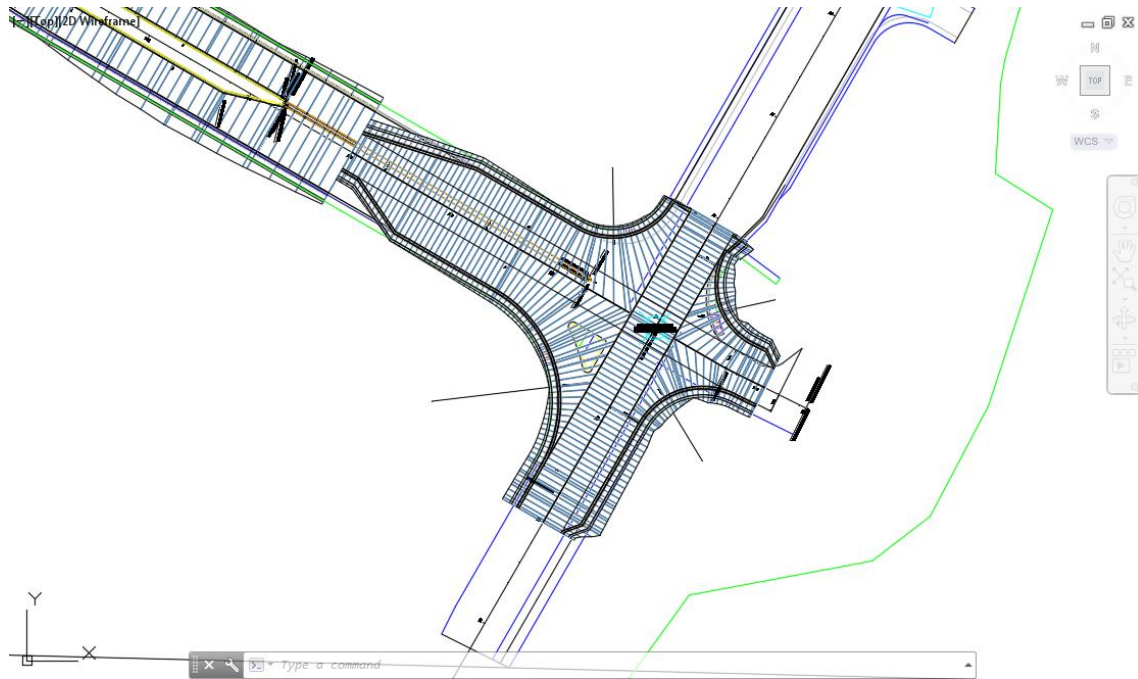
10. Click **OK** to continue and to close the Target Mapping dialog.
11. Click **OK** to continue and to close the Corridor Properties - Corridor - SR61 and US98 dialog  
From the Corridor Properties - Rebuild dialog, select **Rebuild Corridor**.



13. From the Event Viewer tool palette, select **Action**, then **Clear All Events**, select the **Green Check** to close the *Event Viewer* tool palette.



14. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.

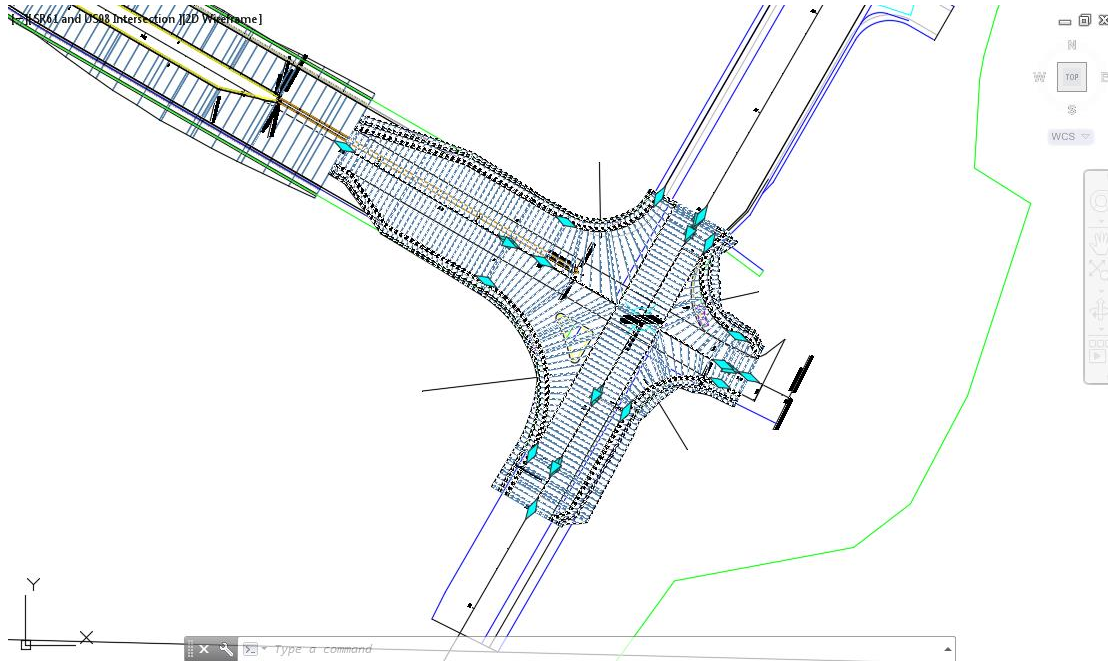


15. **Save** your file before continuing.

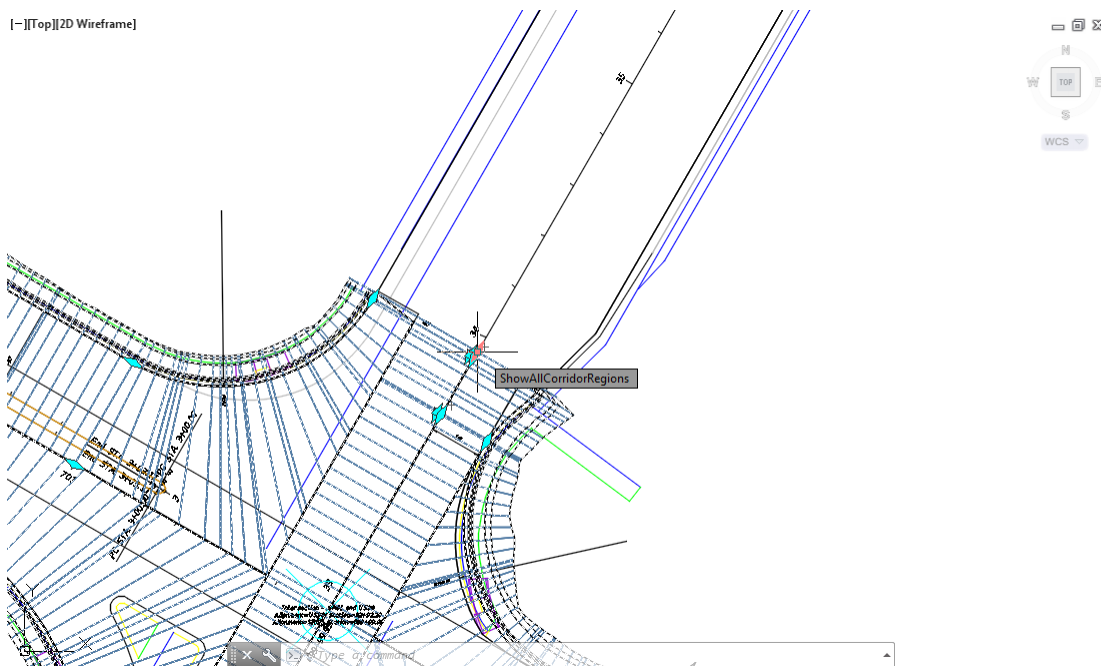
### Exercise 5.8 Grip Edit Corridor - SR61 and US98 NE - Quadrant Region:

In this exercise you will Grip Edit Corridor - SR61 and US98 NE - Quadrant Region Limits for RG - US98 - Primary Road Full Section to Station 35+00.

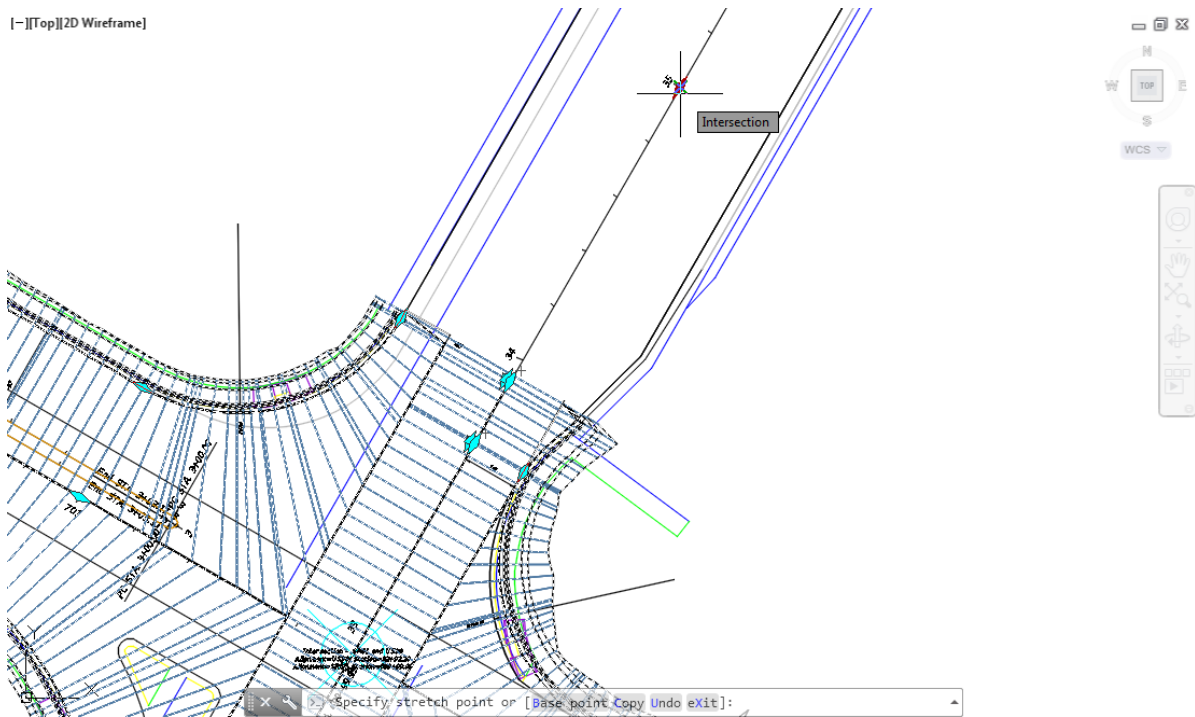
1. Select the **Corridor - SR61 and US98** in the Drawing Editor.



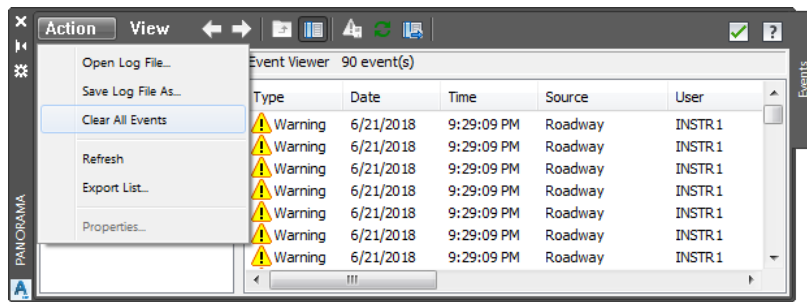
2. Use **Zoom** and **Pan** commands to display the NE quadrant of Corridor - SR61 and US98 and Station 35+00.



3. Hover over the diamond shaped grip until it displays *ShowAllCorridorRegions*, then select the **Grip**.



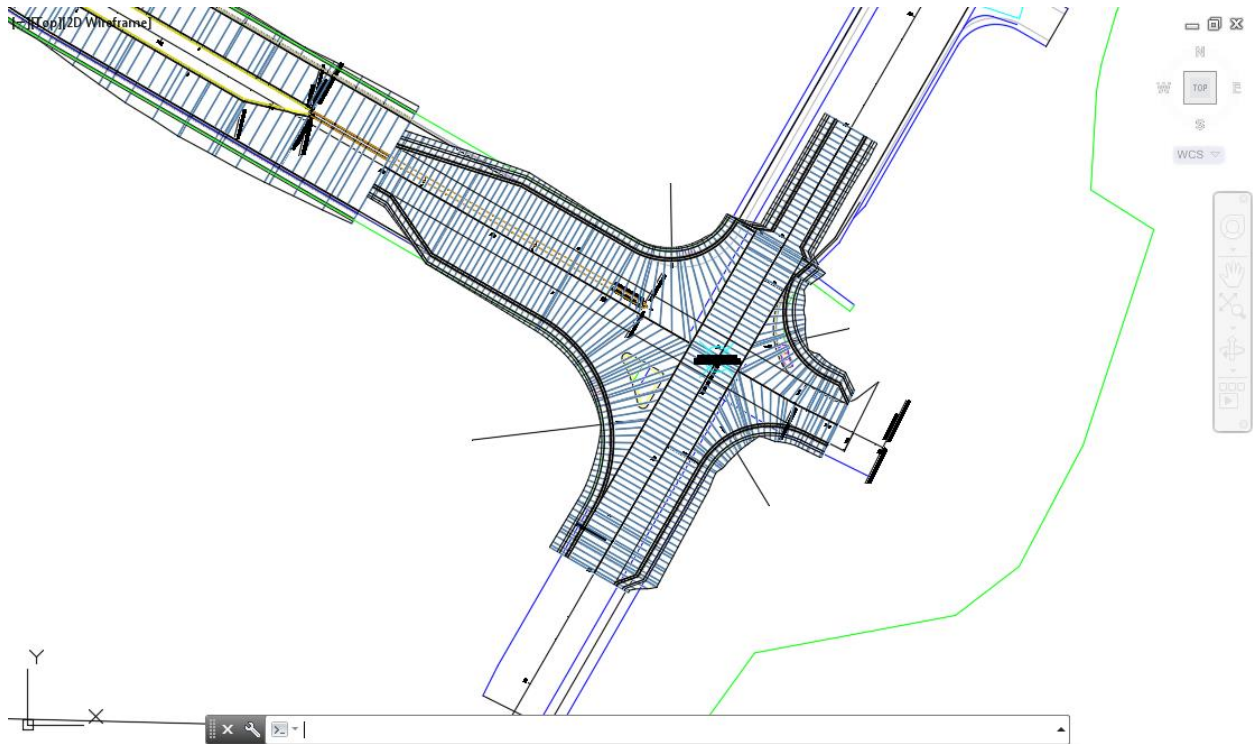
4. Drag the grip to *station 35+00*, using a *Intersection osnap* to place



5. From the *Event Viewer* tool palette, select **Action**, then **Clear All Events**, select the **Green Check** to close the *Event Viewer* tool palette.



6. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.



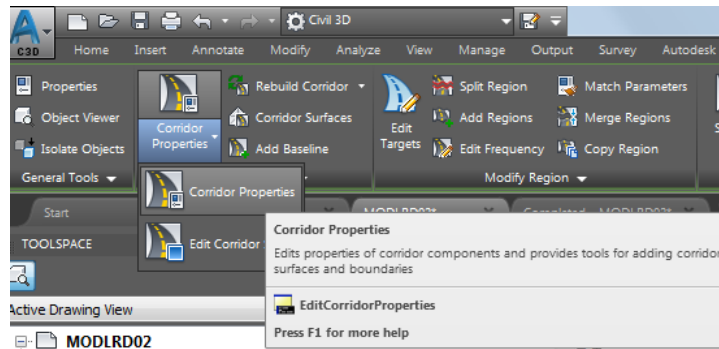
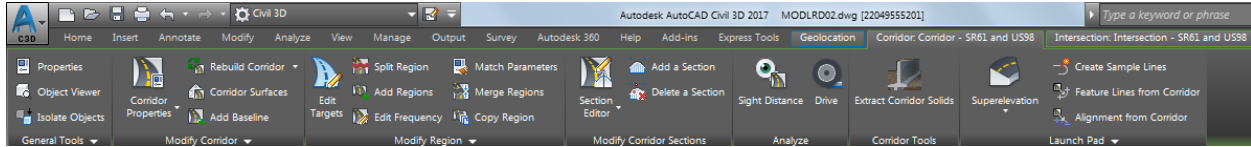
7. **Save** your file before continuing.



### Exercise 5.9 Continue Editing the Region Targets for the Corridor - SR61 and US98 NE - Quadrant

In this exercise you will continue Editing the Region Targets for the Corridor - SR61 and US98 NE - Quadrant.

1. Select the **Corridor - SR61 and US98** in the Drawing Editor.
2. The Intersection: Intersection SR61 and US98 tab is now displayed in the ribbon. From the *Modify Corridor* panel, select **Corridor Properties**.

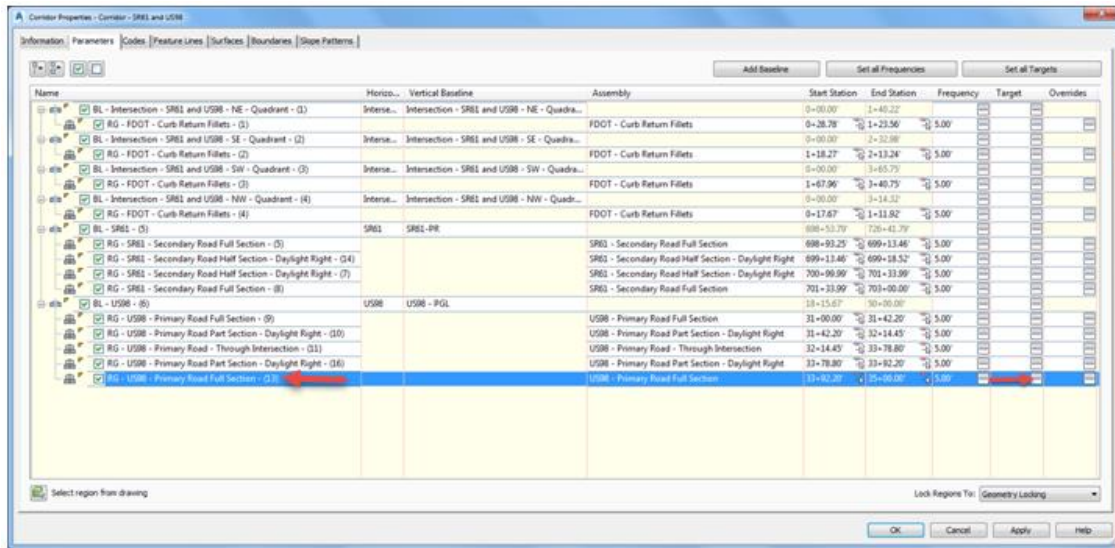


3. From the Corridor Properties - Corridor SR61 and US98 dialog, select the **Parameters** tab.

This screenshot shows the 'Corridor Properties - Corridor - SR61 and US98' dialog box with the 'Parameters' tab selected. The dialog has tabs for 'Information', 'Parameters', 'Codes', 'Feature Lines', 'Surfaces', 'Boundaries', and 'Slope Patterns'. The 'Parameters' tab contains a table with columns: Name, Horizontal Baseline, Vertical Baseline, Assembly, Start Station, End Station, Frequency, Target, and Overrides. The table lists various corridor components and their properties.

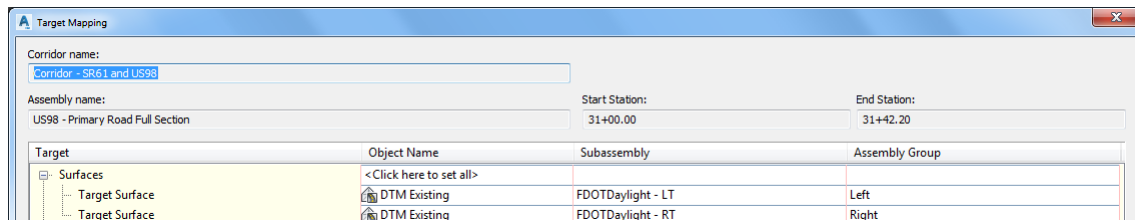
Name	Horizo...	Vertical Baseline	Assembly	Start Station	End Station	Frequency	Target	Overrides
BL - Intersection - SR61 and US98 - NE - Quadrant - (1)	Interse...	Intersection - SR61 and US98 - NE - Quadra...		0+00.00	0+40.25			
RG - FDOT - Curb Return Fillets - (1)			FDOT - Curb Return Fillets	0+28.78	1+23.56	5.00		
BL - Intersection - SR61 and US98 - SE - Quadrant - (2)	Interse...	Intersection - SR61 and US98 - SE - Quadra...		0+00.00	2+32.98			
RG - FDOT - Curb Return Fillets - (2)			FDOT - Curb Return Fillets	1+18.27	2+13.24	5.00		
BL - Intersection - SR61 and US98 - SW - Quadrant - (3)	Interse...	Intersection - SR61 and US98 - SW - Quadra...		0+00.00	3+65.75			
RG - FDOT - Curb Return Fillets - (3)			FDOT - Curb Return Fillets	1+67.96	3+40.75	5.00		
BL - Intersection - SR61 and US98 - NW - Quadrant - (4)	Interse...	Intersection - SR61 and US98 - NW - Quadra...		0+00.00	3+14.32			
RG - FDOT - Curb Return Fillets - (4)			FDOT - Curb Return Fillets	0+17.67	1+11.92	5.00		
BL - SR61 - (5)	SR61	SR61-PR		698+53.79	726+41.79			
RG - SR61 - Secondary Road Full Section - (5)			SR61 - Secondary Road Full Section	698+93.25	699+13.46	5.00		
RG - SR61 - Secondary Road Half Section - Daylight Right - (14)			SR61 - Secondary Road Half Section - Daylight Right	699+13.46	699+18.52	5.00		
RG - SR61 - Secondary Road Half Section - Daylight Right - (7)			SR61 - Secondary Road Half Section - Daylight Right	700+99.99	701+33.99	5.00		
RG - SR61 - Secondary Road Full Section - (8)			SR61 - Secondary Road Full Section	701+33.99	703+00.00	5.00		
BL - US98 - (6)	US98	US98 - PGL		18+15.67	50+00.00			
RG - US98 - Primary Road Full Section - (9)			US98 - Primary Road Full Section	31+00.00	31+42.20	5.00		
RG - US98 - Primary Road Part Section - Daylight Right - (10)			US98 - Primary Road Part Section - Daylight Right	31+42.20	32+14.45	5.00		
RG - US98 - Primary Road - Through Intersection - (11)			US98 - Primary Road - Through Intersection	32+14.45	33+78.80	5.00		
RG - US98 - Primary Road Part Section - Daylight Right - (16)			US98 - Primary Road Part Section - Daylight Right	33+78.80	33+92.20	5.00		
RG - US98 - Primary Road Full Section - (13)			US98 - Primary Road Full Section	33+92.20	33+95.46	5.00		

4. From the *Name* column select **RG - US98 - Primary Road Full Section - (13)**, then from the *Target* column select the box with the three dots.

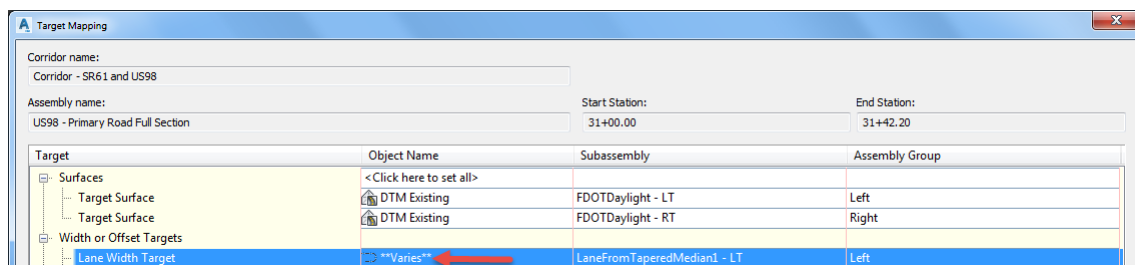


5. From the Target Mapping dialog , use the following values:

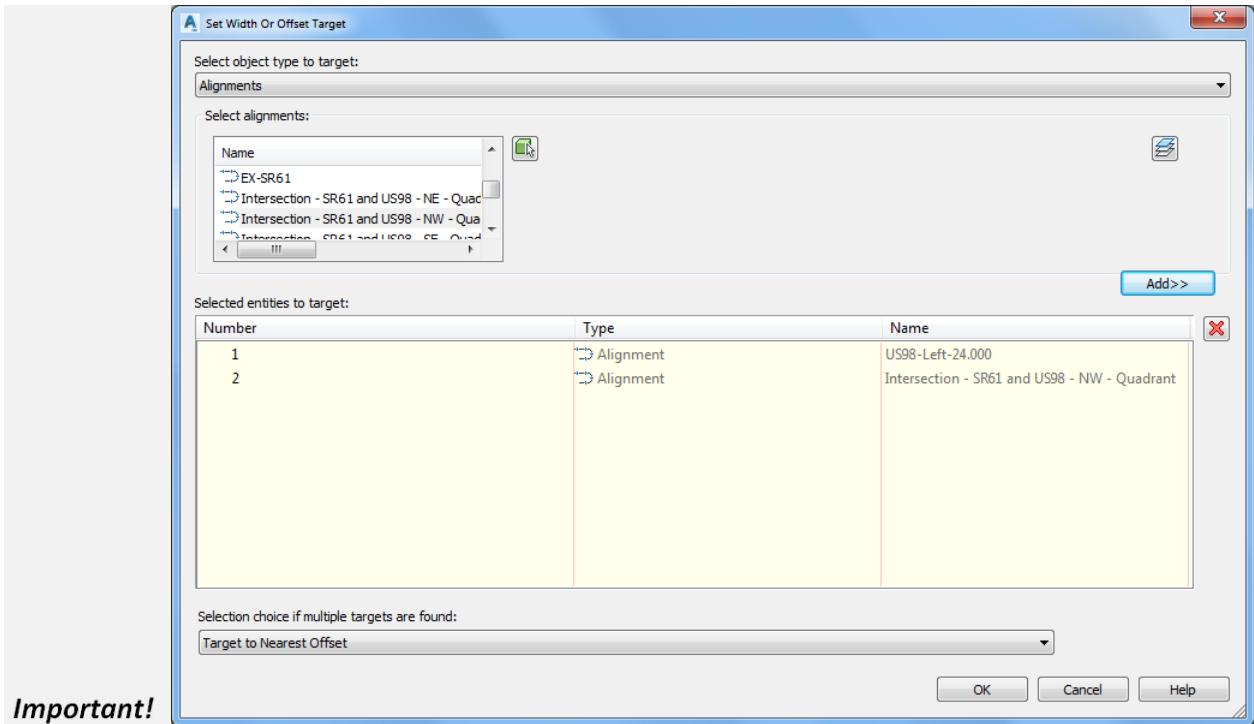
- o Surfaces: Target Surface: **DTM Existing**



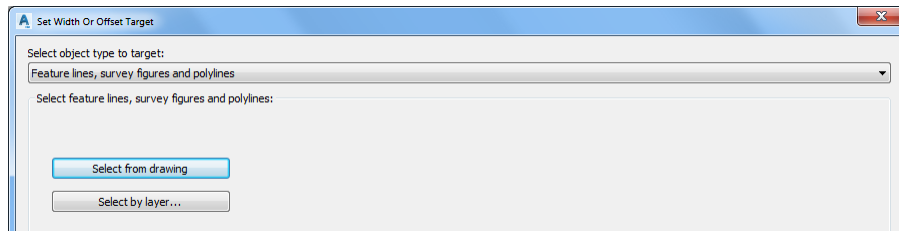
- o Width or Offset Targets: Left Side: Lane Width Target select **Varies** from Object Name Column



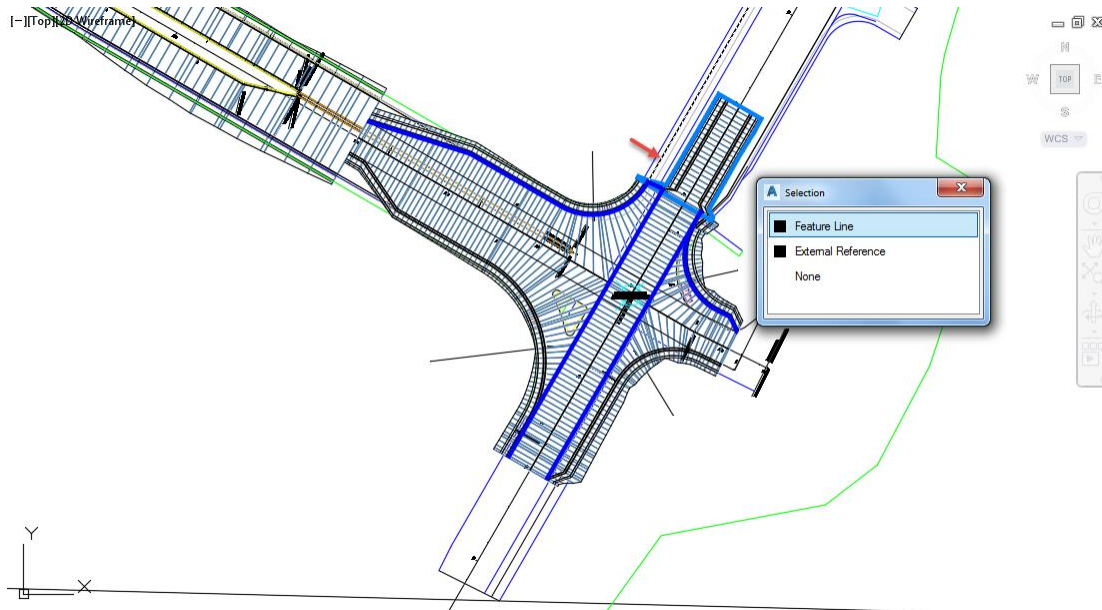
6. From Set Width or Offset Target dialog, set *Select object type to target:* **Alignments**. Set Selected entities to target:
  - o US98-Left - 24.000
  - o Intersection - SR61 and US98 - NW - Quadrant



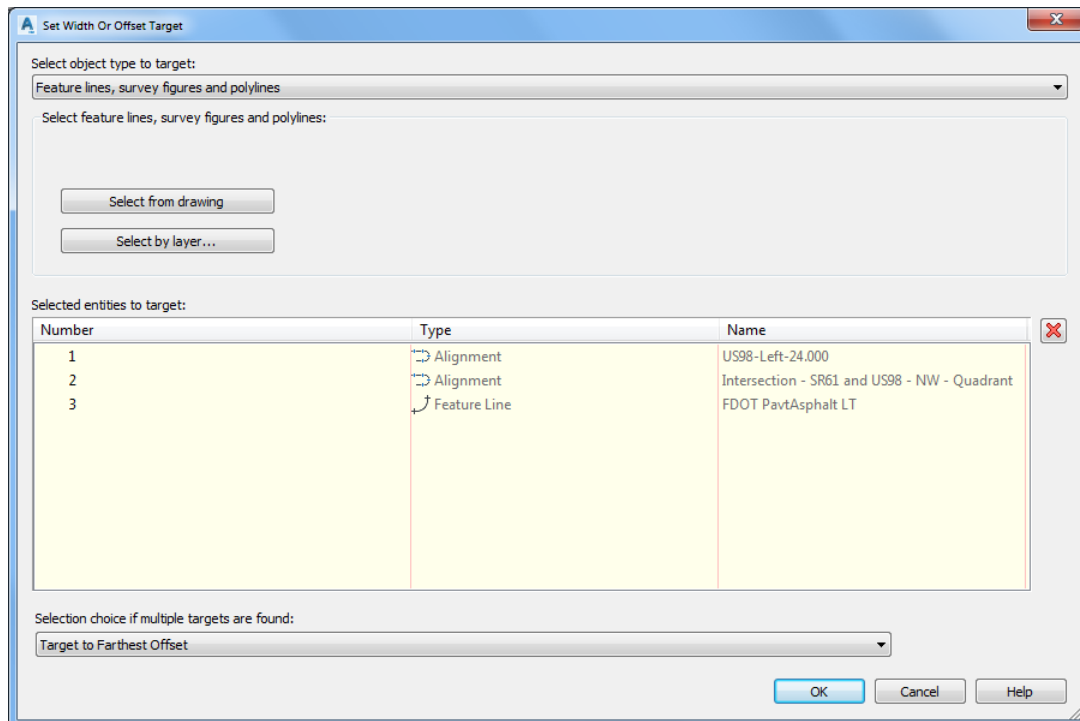
7. From Set Width or Offset Target dialog, set *Select object type to target:* **Feature lines, survey figures, and polylines**. Click **Select from drawing** button.



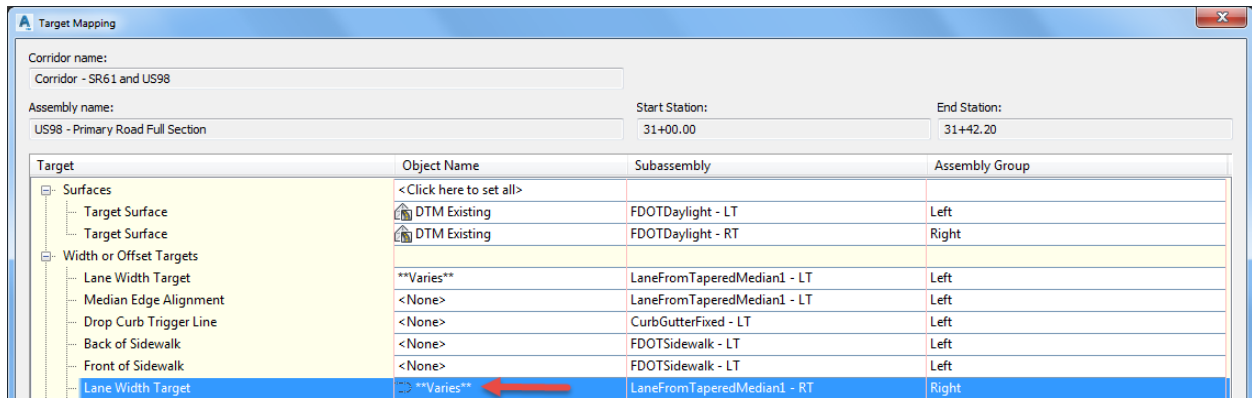
8. Select **FDOT PavtAsphalt LT** feature line, use the red arrow as a reference for selecting this *edge of asphalt* feature line, then from the Selection dialog select **Feature Line**. Press **Enter** to continue.



9. Set Selection choice if multiple targets are found: **Target to Farthest Offset**. Click **OK** to continue and to close the Set Width or Offset Target dialog

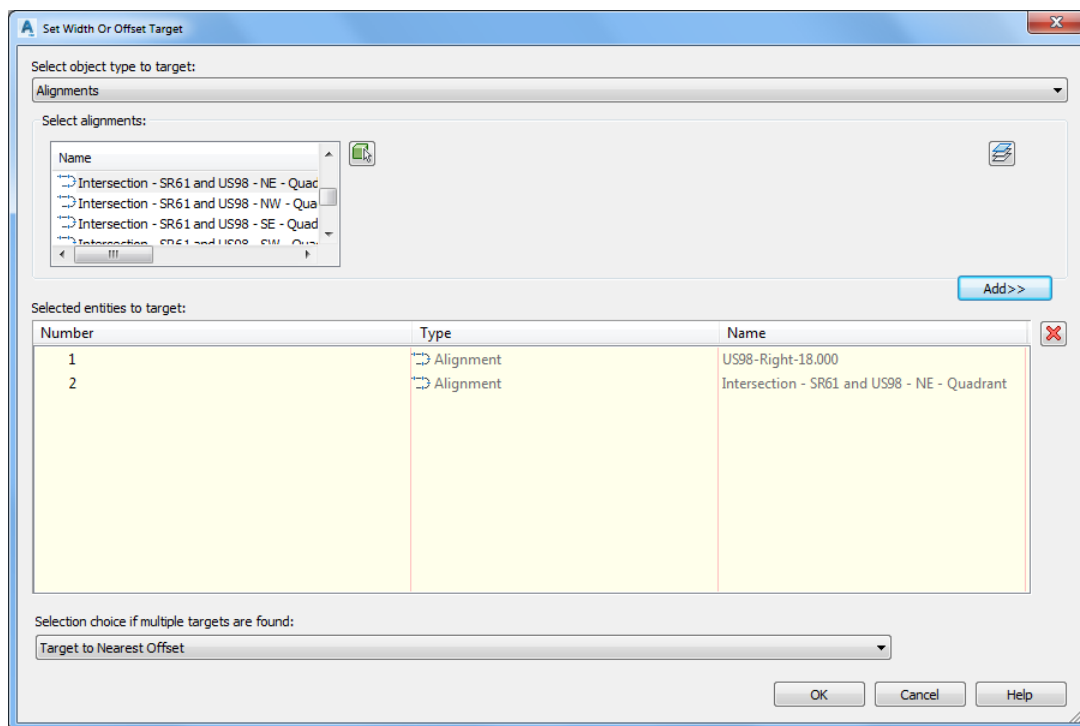


10. Right Side: Lane Width Target select **Varies** from Object Name Column

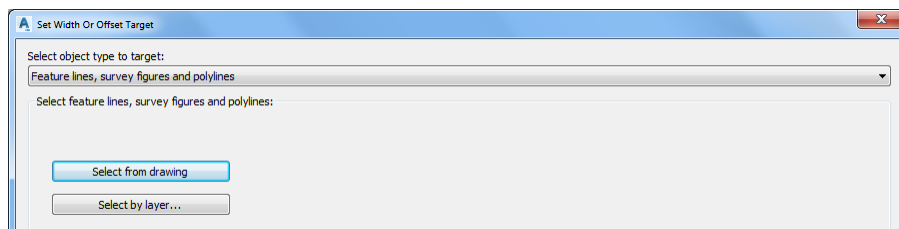


11. From Set Width or Offset Target dialog, set *Select object type to target:* **Alignments**. Set Selected entities to target:

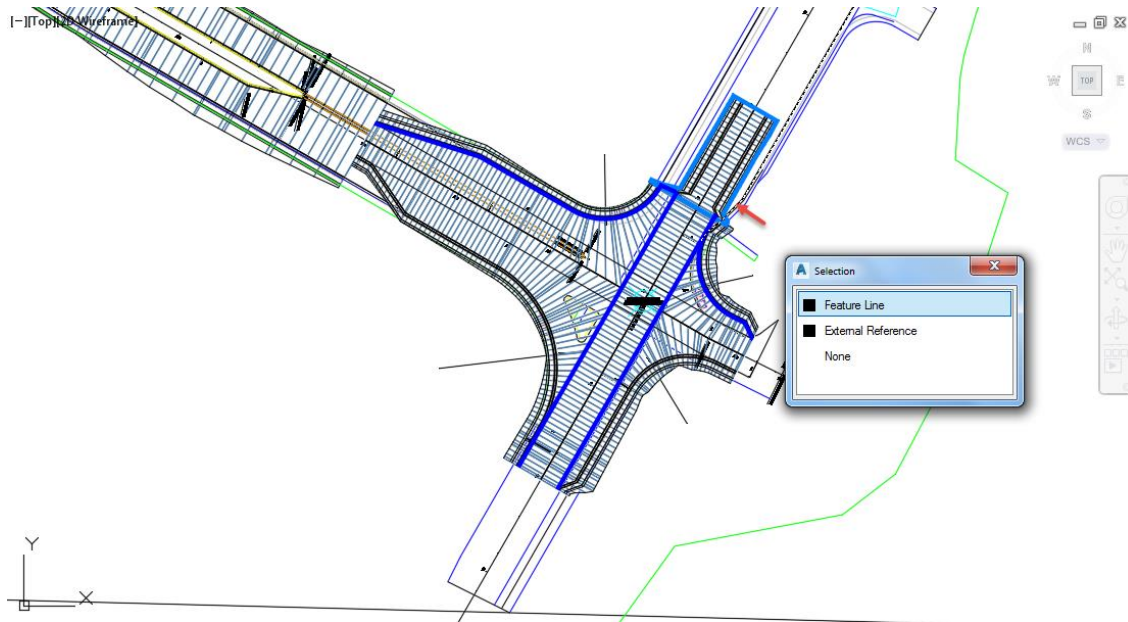
- US98-Right-18.00
- Intersection SR61 and US98 - NE - Quadrant



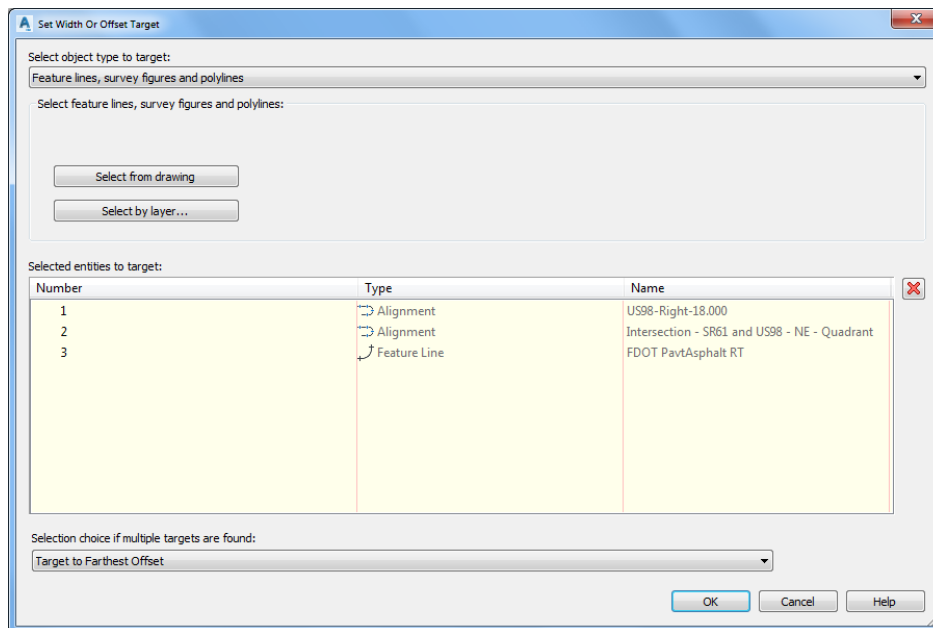
12. From Set Width or Offset Target dialog, set *Select object type to target:* **Feature lines, survey figures, and polylines**. Click **Select from drawing**



13. Select **FDOT PavtAsphalt RT** feature line, use the red arrow as a reference for selecting this *edge of asphalt* feature line, then from the Selection dialog select **Feature Line**. Press **Enter** to continue.



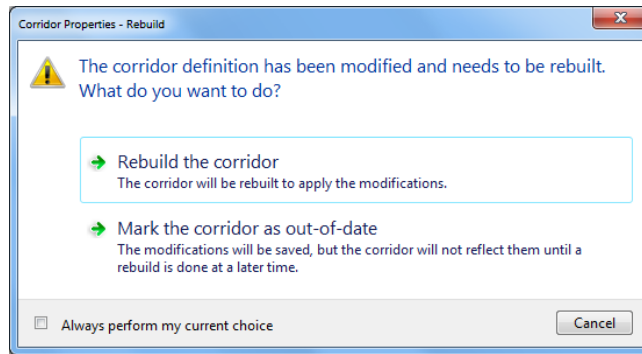
14. Set Selection choice if multiple targets are found: **Target to Farthest Offset**. Click **OK** to continue and to close the Set Width or Offset Target dialog.



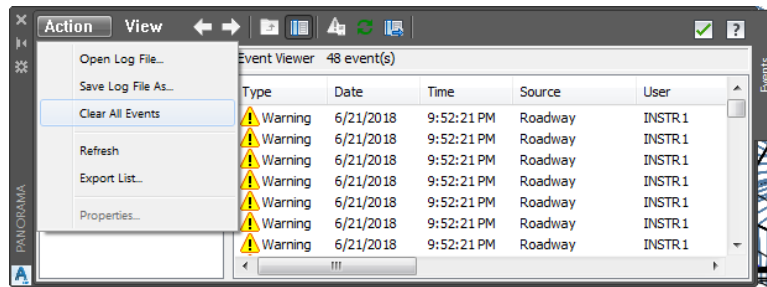
15. Click **OK** to continue and to close the Target Mapping dialog.  
 16. Click **OK** to continue and to close the Corridor Properties - Corridor - SR61 and US98 dialog



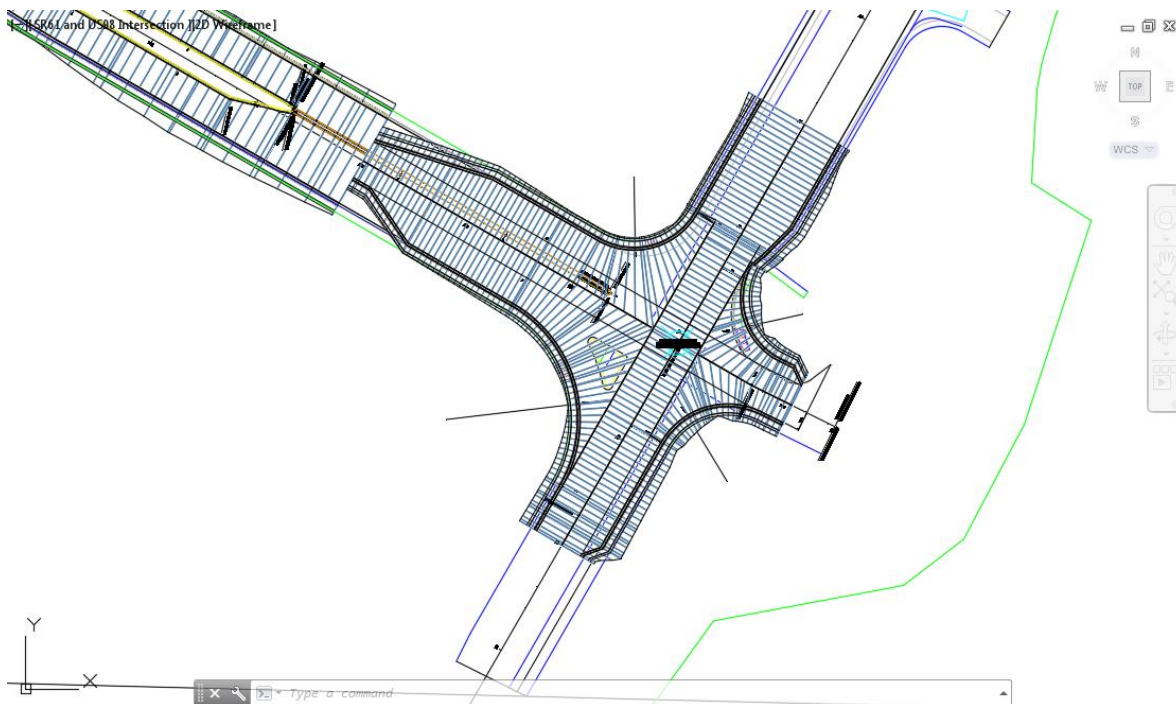
17. From the Corridor Properties - Rebuild dialog, select **Rebuild Corridor**



18. From the *Event Viewer* tool palette, select **Action**, then **Clear All Events**, select the **Green Check** to close the *Event Viewer* tool palette.



19. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.



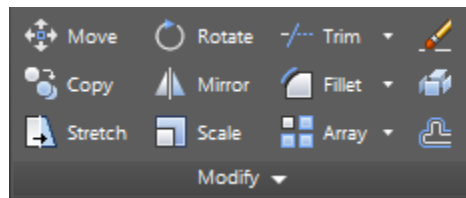
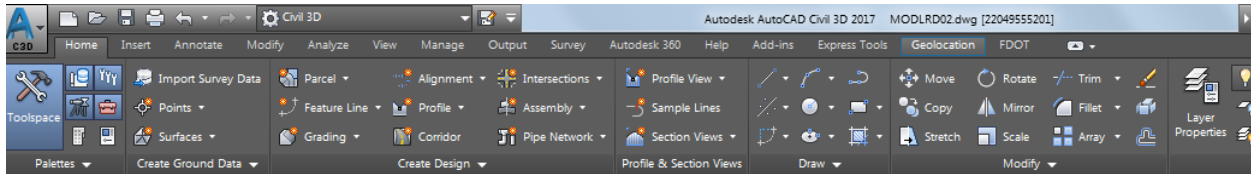
20. **Save** your file before continuing.



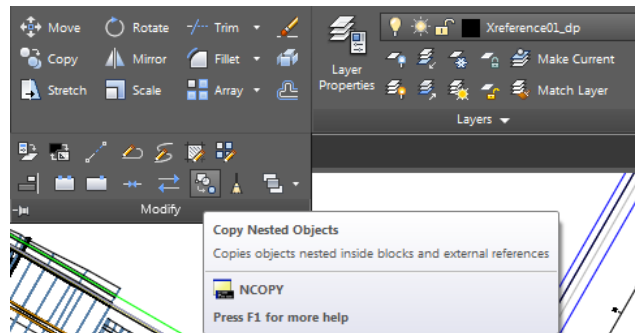
### Exercise 5.10 Create New Alignment for Corridor - SR61 and US98 SE - Quadrant

In this exercise you are going to use the NCOPY command to extract geometry from an external reference file, then you will use the Create Alignment from Objects command to create an Alignment from the extracted geometry which you will add as additional targets for the corridor. Next, you will edit the region targets for the Corridor - SR61 and US98 SE - Quadrant using the Edit Corridor Regions Targets workflow.

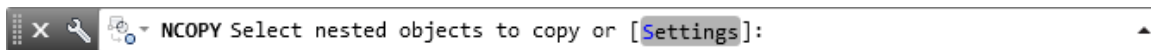
1. First, you will use NCOPY to extract the edge of asphalt geometry on the right side of the Primary Road US98.



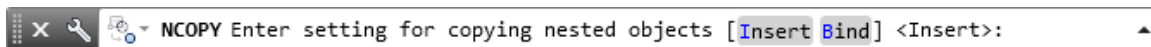
2. From the Home tab > Modify panel > select **Modify**, then select **Copy Nested Objects**.



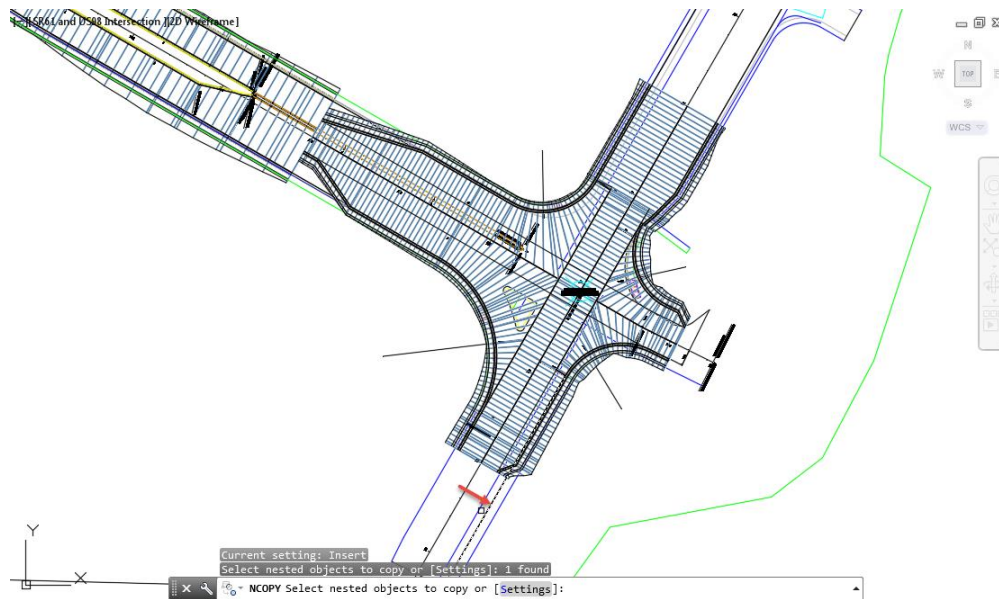
3. From the Command line select Settings option



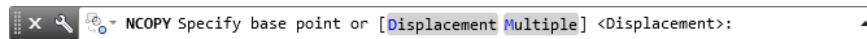
4. From the Command line select Insert option



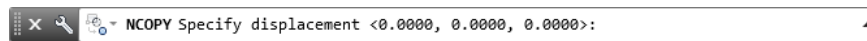
5. Select geometry from attached external reference which represents the edge of asphalt on the right side of the Primary Road US98. Use the red arrow as a reference for selecting the edge of asphalt geometry. Then press Enter.



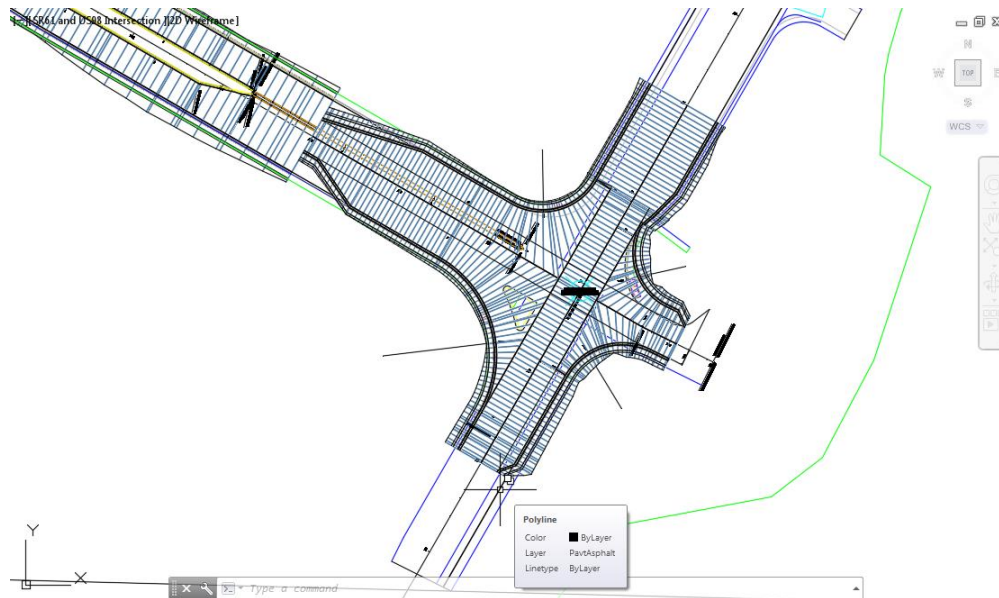
6. From the Command line press **Enter** to use <Displacement> option



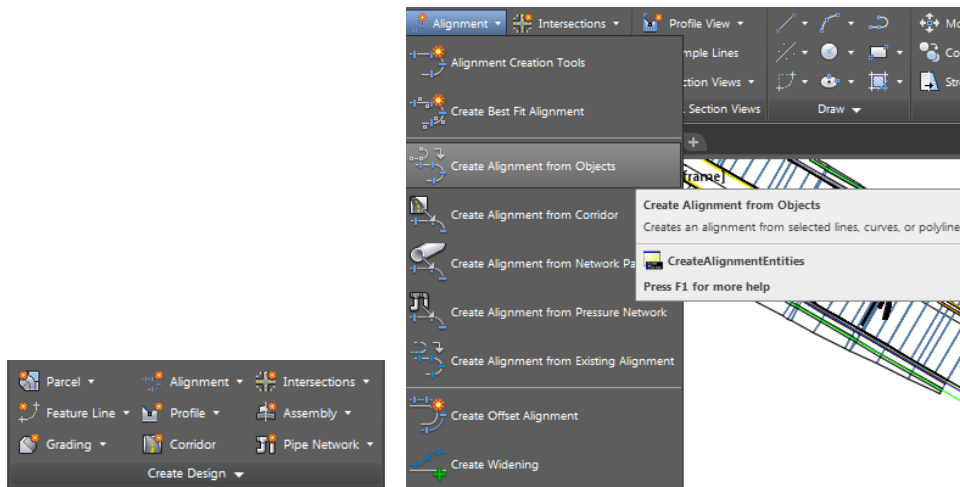
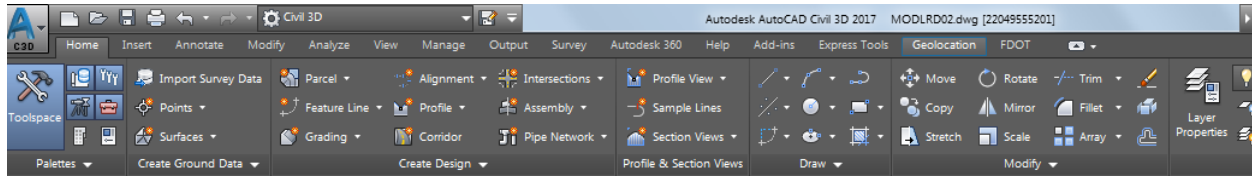
7. From the Command line press **Enter** to Specify displacement of <0.00, 0.00, 0.00>



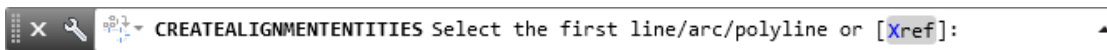
8. Hover over the geometry you just extracted using the NCOPY command.



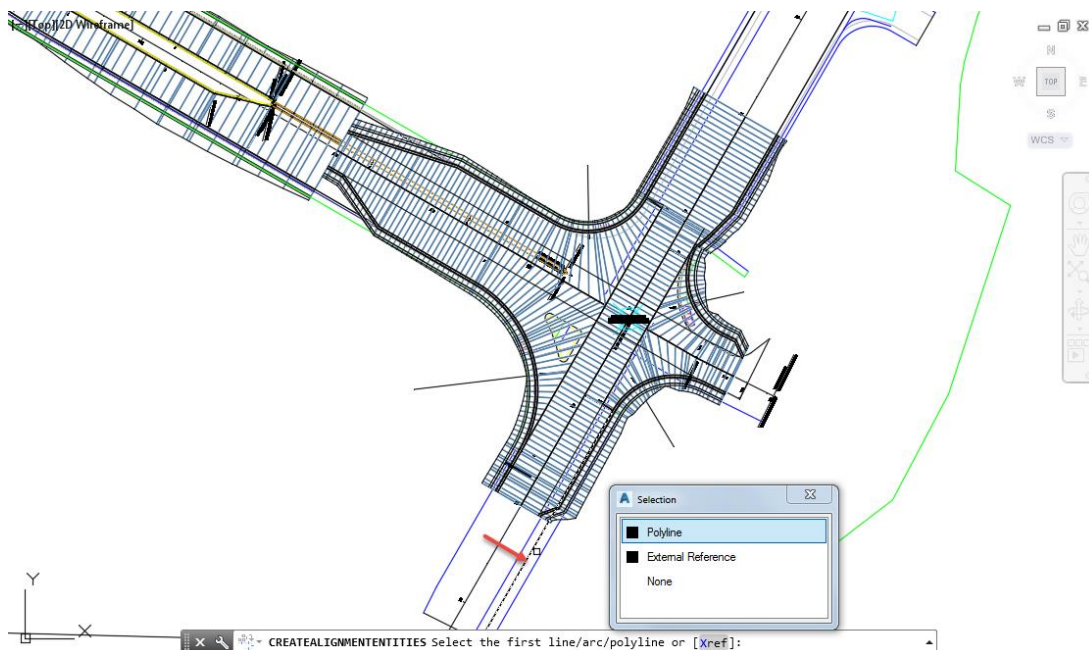
9. **Save** your file before continuing.
10. From the Home tab > Create Design panel > select **Alignment**, then select **Create Alignment from Objects**.



11. From the Command line you are prompted to Select the first line/arc/polyline or [Xref].

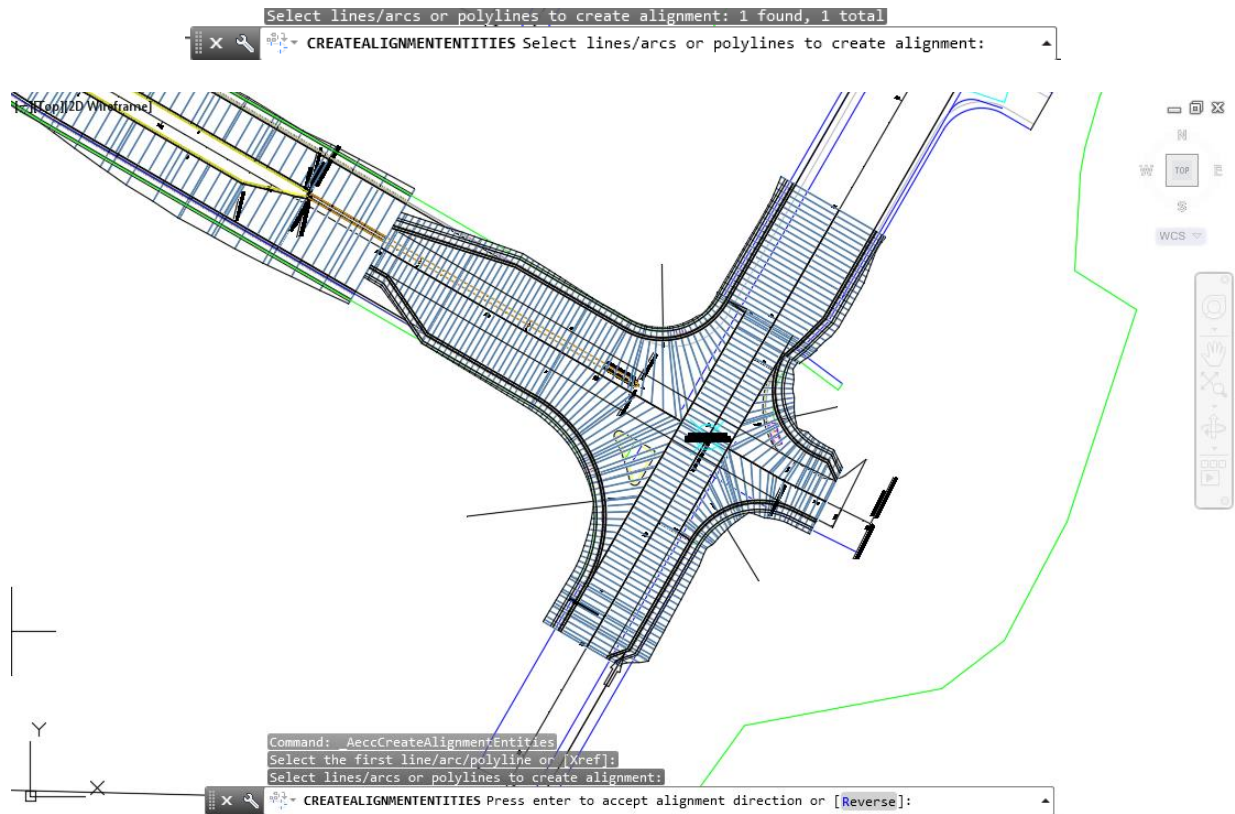


12. Select polyline just inserted using ncopy which represents the *edge of pavement on the right side of the Primary Road US98*, use the red arrow as a reference for selecting this edge of asphalt geometry. From the Selection dialog select **Polyline**.



13. Press **Enter** to continue.

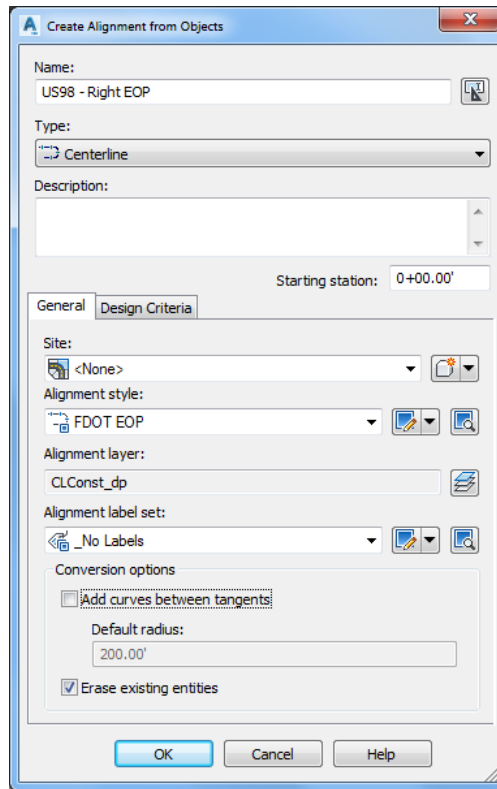
14. From the Command line you are prompted. press **Enter** to accept *Alignment direction or [Reverse]*. Press **Enter** to continue.



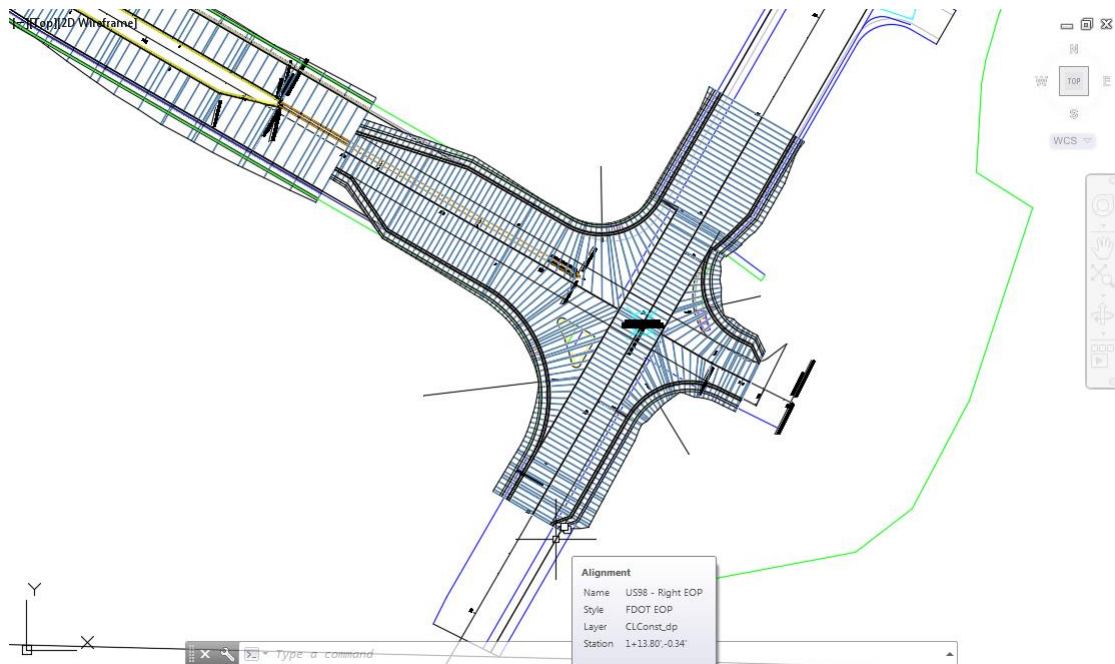
15. From the Create Alignment from Objects dialog, use the following values:

- *Name:* **US98 - Right EOP**
- *Type:* **Centerline**
- *Site:* **None**
- *Alignment style:* **FDOT EOP**
- *Alignment label set:* **\_No labels**
- *Conversion options:*
  - Uncheck: **Add curves between tangents**
  - Check: **Erase existing entities**

16. Click **OK** to continue.



17. Hover over the *Alignment* you just create to display its properties.



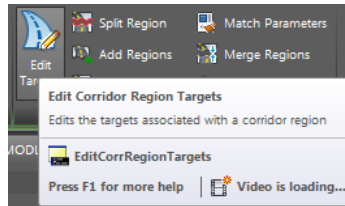
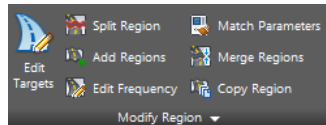
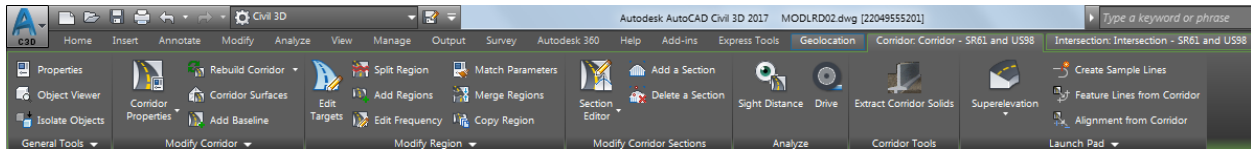
18. **Save** your file before continuing.



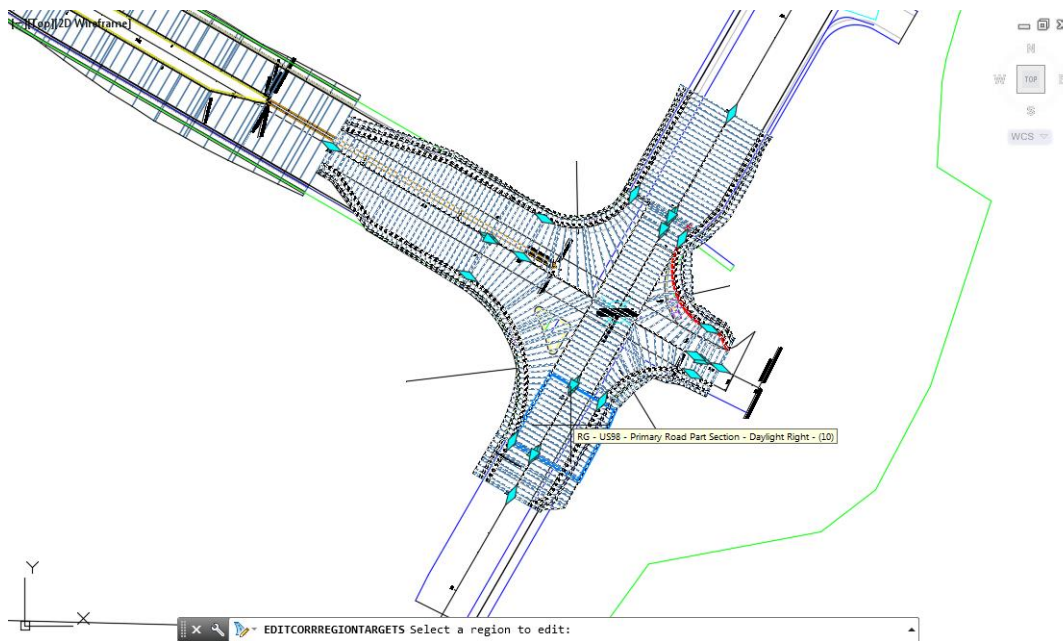
### Exercise 5.11 Edit the Region Targets for the Corridor - SR61 and US98 SE - Quadrant

In this exercise you will edit the region targets for the Corridor - SR61 and US98 SE - Quadrant Region RG - US98 - Primary Road Part Section - Daylight Right - (10) using the Edit Corridor Regions Targets workflow.

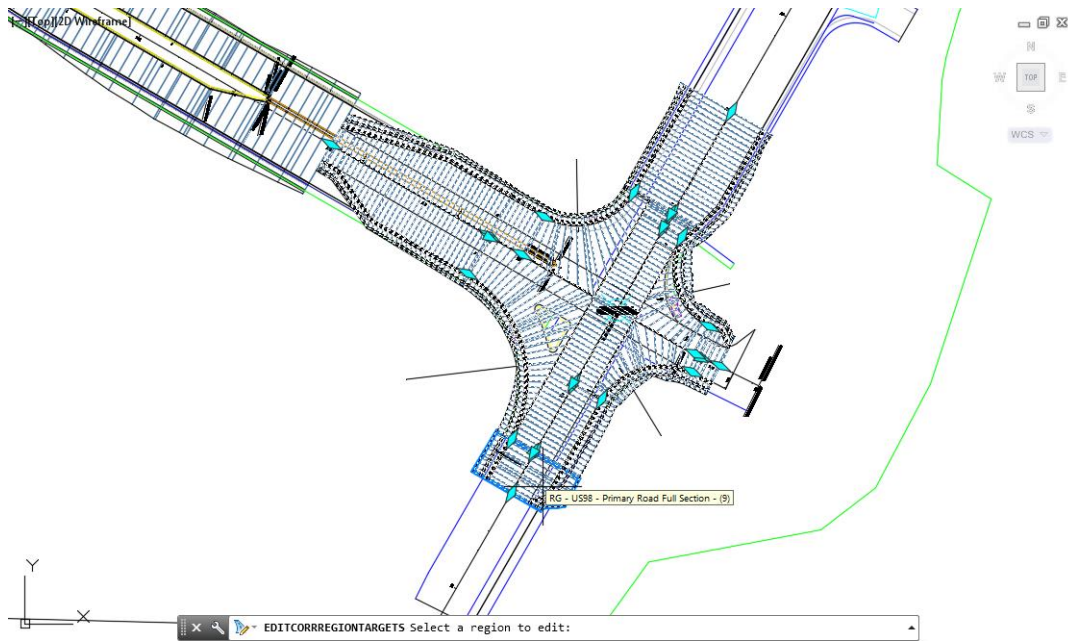
1. Select the **Corridor - SR61 and US98** in the Drawing Editor.
2. The *Intersection: Intersection SR61 and US98* tab is now displayed in the ribbon. From the *Modify Region* panel, select **Edit Targets**



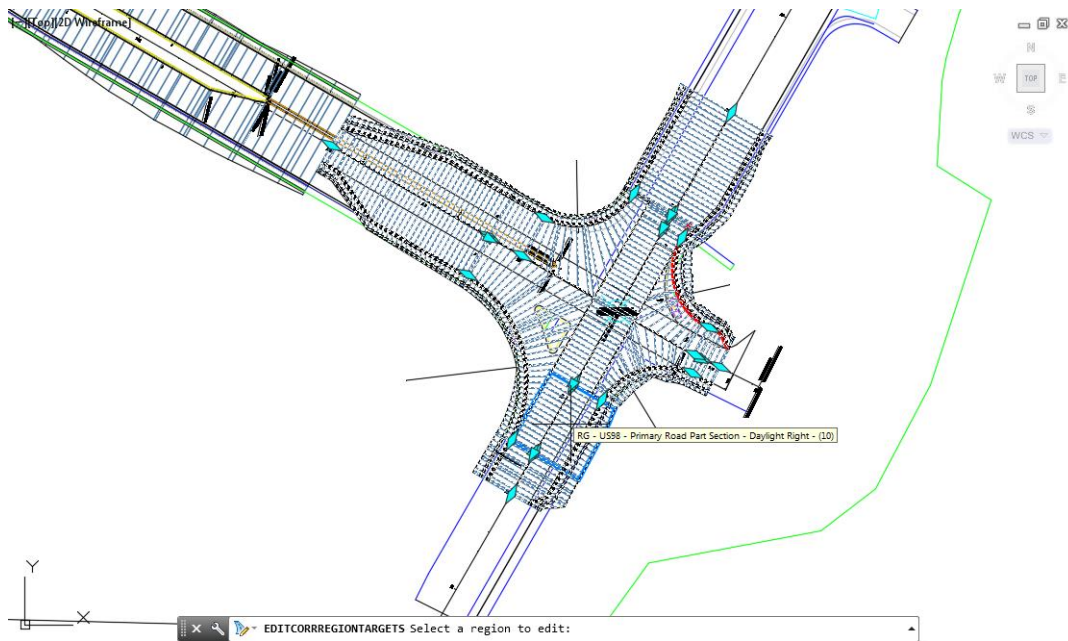
3. Before you start the target editing' let's identify the regions you will be working in:
  - o Region RG - US98 - Primary Road Part Section - Daylight Right - (10) is displayed.



- o Region RG - US98 - Primary Road Full Section - (9) is displayed.



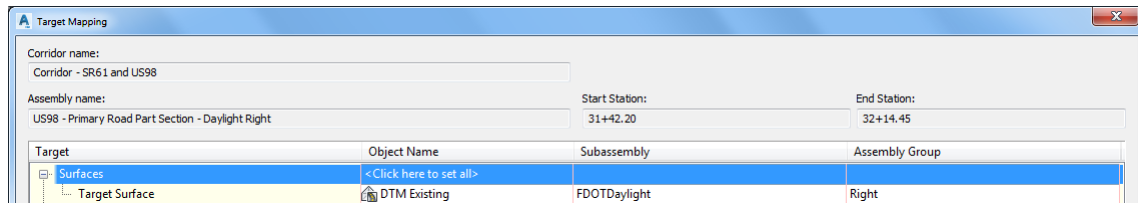
4. Select the Region RG - US98 - Primary Road Part Section - Daylight Right - (10) region.



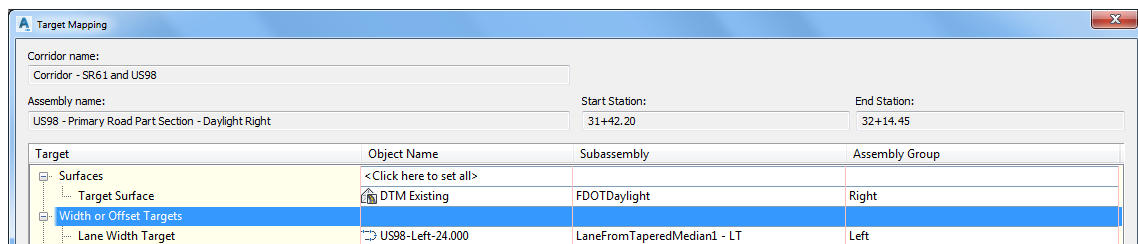


5. From the Target Mapping dialog , use the following values:

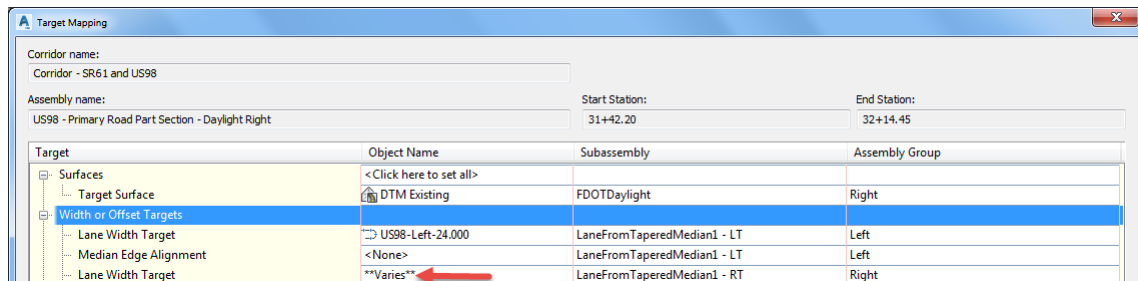
- Surfaces: Target Surface: **DTM Existing**



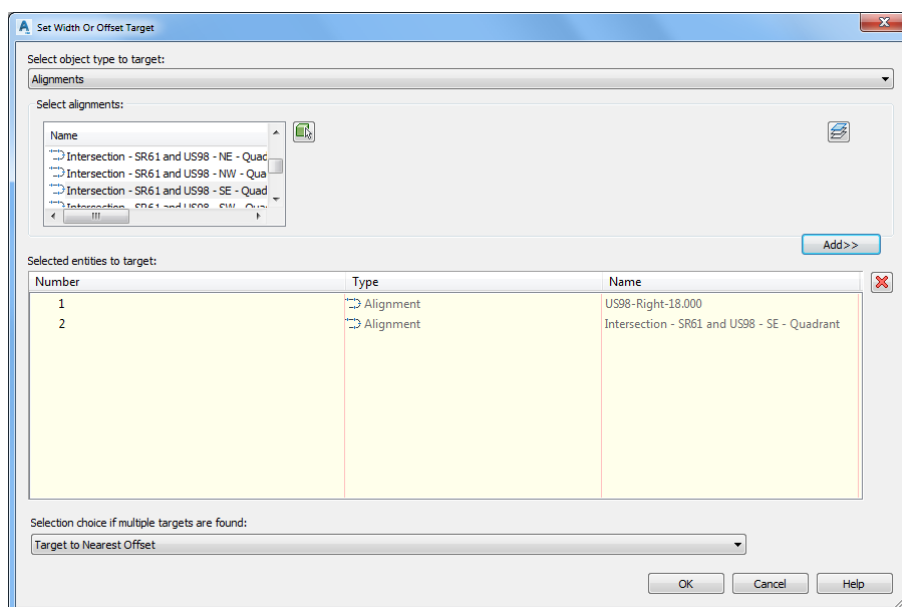
- Width or Offset Targets: Left Side: Lane Width Target: **US98-Left-24.000**



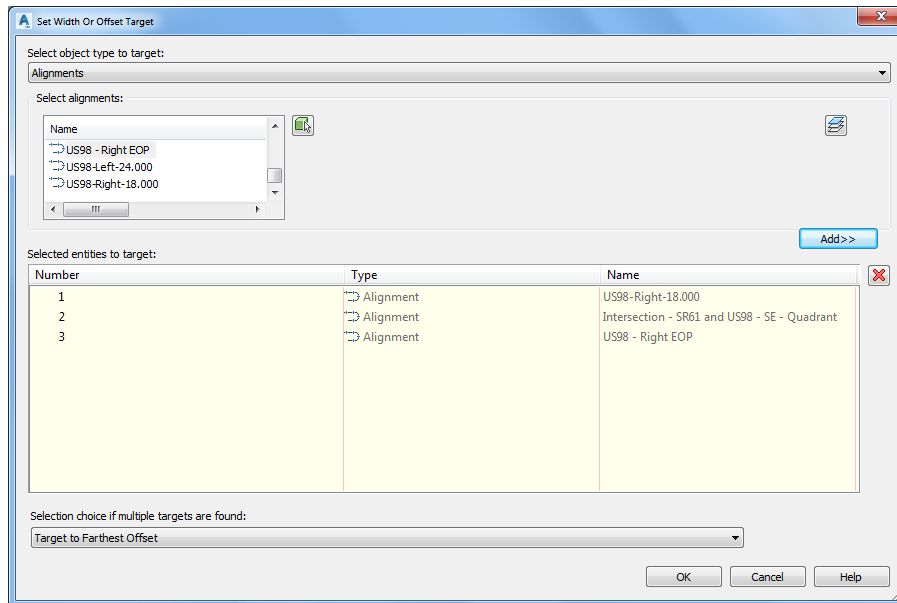
- Right Side: Lane Width Target select **Varies** from Object Name Column



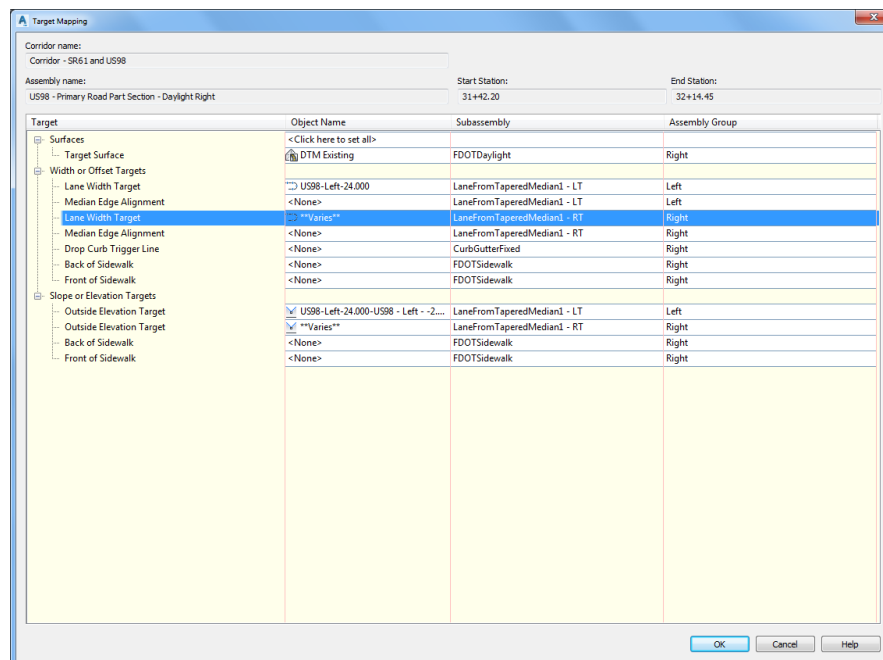
6. From Set Width or Offset Target dialog, set Select object type to target: **Alignments**.



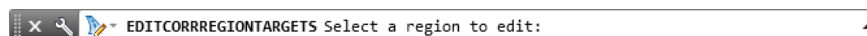
7. Set Selected entities to target:
  - US98-Right-18.000
  - Intersection - SR61 and US98 - SE - Quadrant
  - US98 - Right EOP
8. Set Selection choice if multiple targets are found: **Target to Farthest Offset**. Click **OK** to continue and to close the **Set Width or Offset Target** dialog.



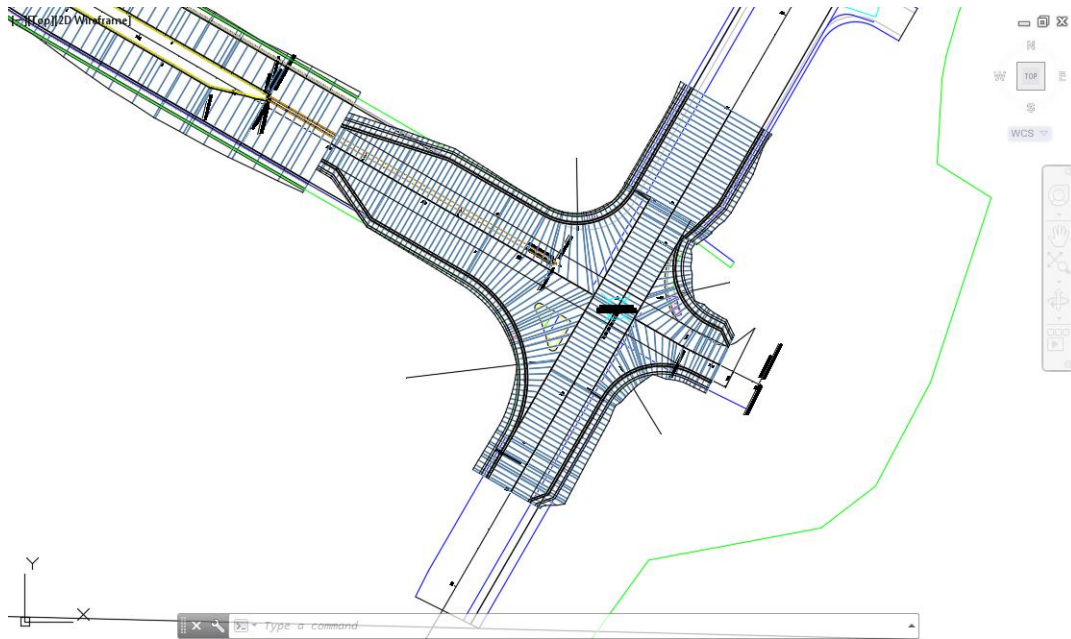
9. Click **OK** to continue and to close the **Target Mapping** dialog.



10. Press **Enter** to end Edit Corridor Regions Targets command.



11. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.

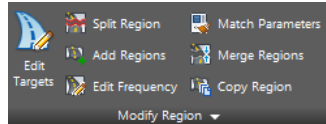
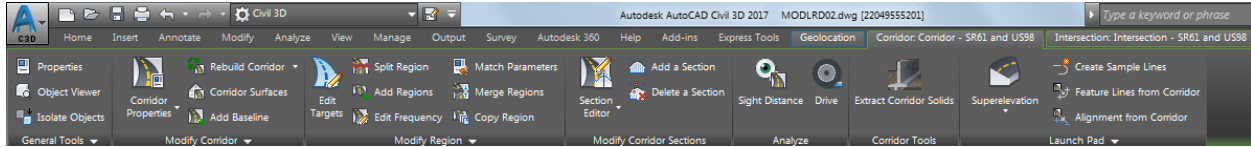


12. **Save** your file before continuing.

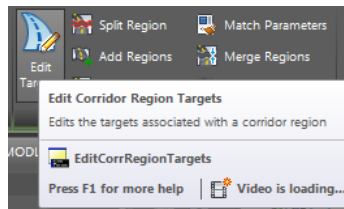
### Exercise 5.12 Continue Editing the Region Targets for the Corridor - SR61 and US98 SE – Quadrant

In this exercise you will edit the region targets for the Corridor - SR61 and US98 SE - Quadrant Region RG - US98 - Primary Full Section using the Edit Corridor Regions Targets workflow.

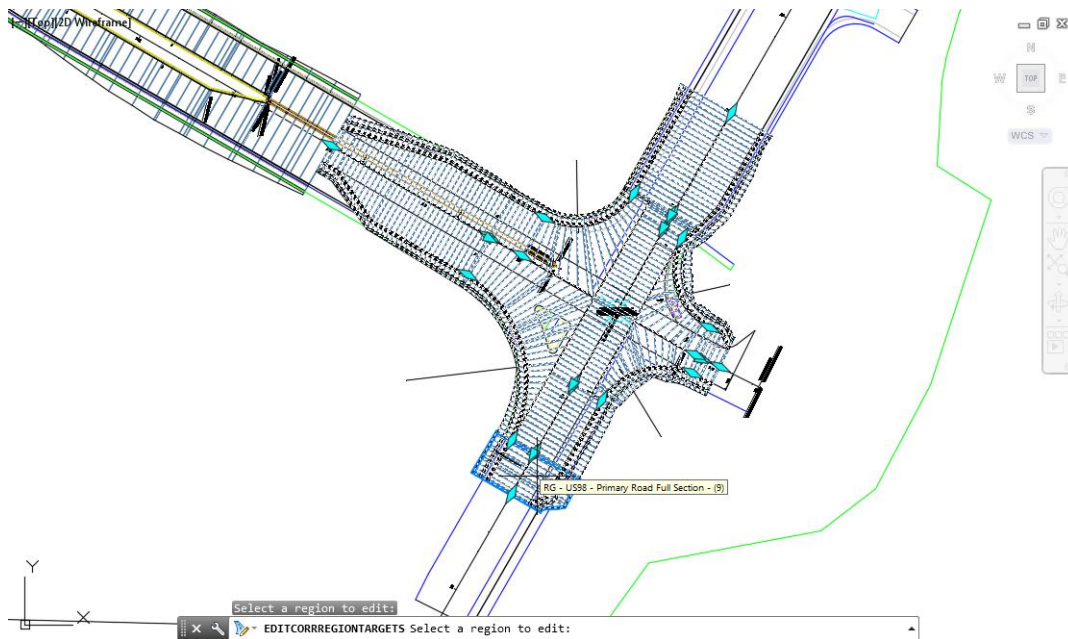
1. Select the **Corridor - SR61 and US98** in the Drawing Editor.
2. The Intersection: Intersection SR61 and US98 tab is now displayed in the ribbon.



3. From the *Modify Region* panel, select **Edit Targets**

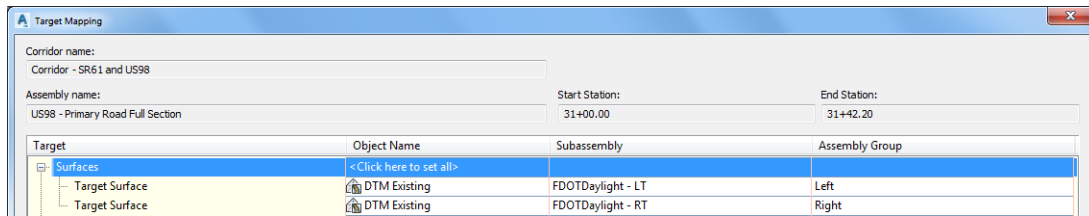


4. Select the Region **RG - US98 - Primary Road Full Section - (9)** region.

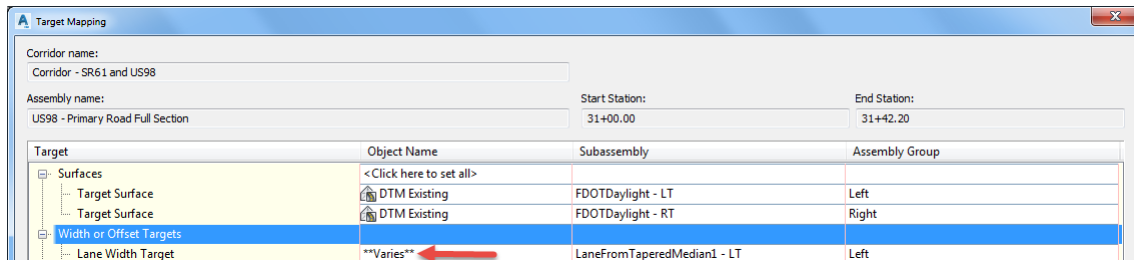


5. From the Target Mapping dialog , use the following values:

- o Surfaces: Target Surface: **DTM Existing**



- o Width or Offset Targets: Left Side: Lane Width Target select **Varies** from Object Name Column

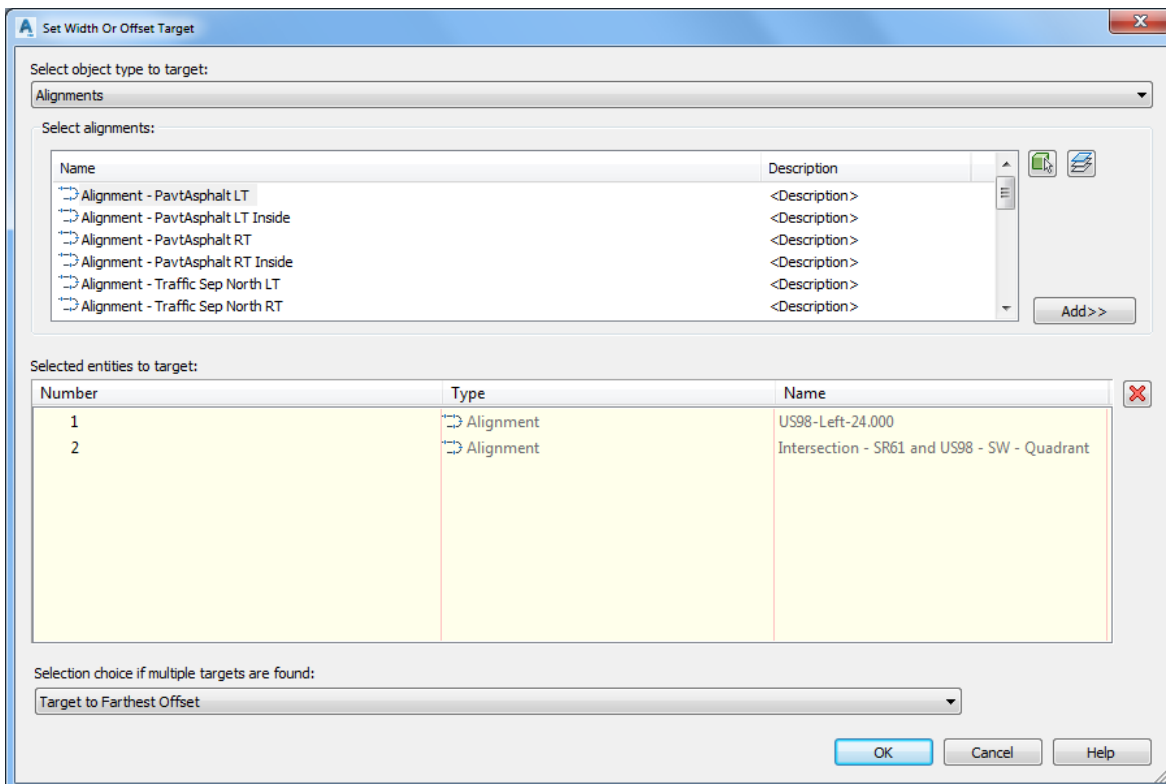


6. From Set Width or Offset Target dialog, set *Select object type to target*: **Alignments**.

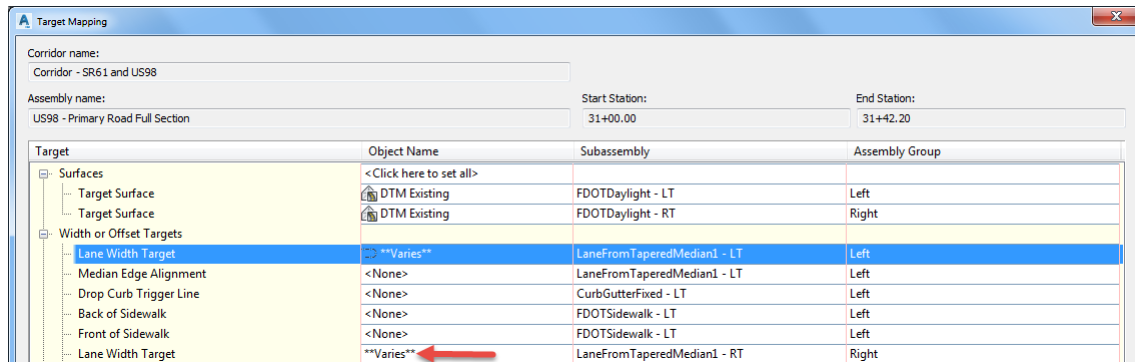
7. Set Selected entities to target:

- o US98-Left-24.000
- o Intersection - SR61 and US98 - SW - Quadrant

8. Set Selection choice if multiple targets are found: **Target to Farthest Offset**. Click **OK** to continue and to close the Set Width or Offset Target dialog.



9. Right Side: Lane Width Target select **Varies from Object Column**

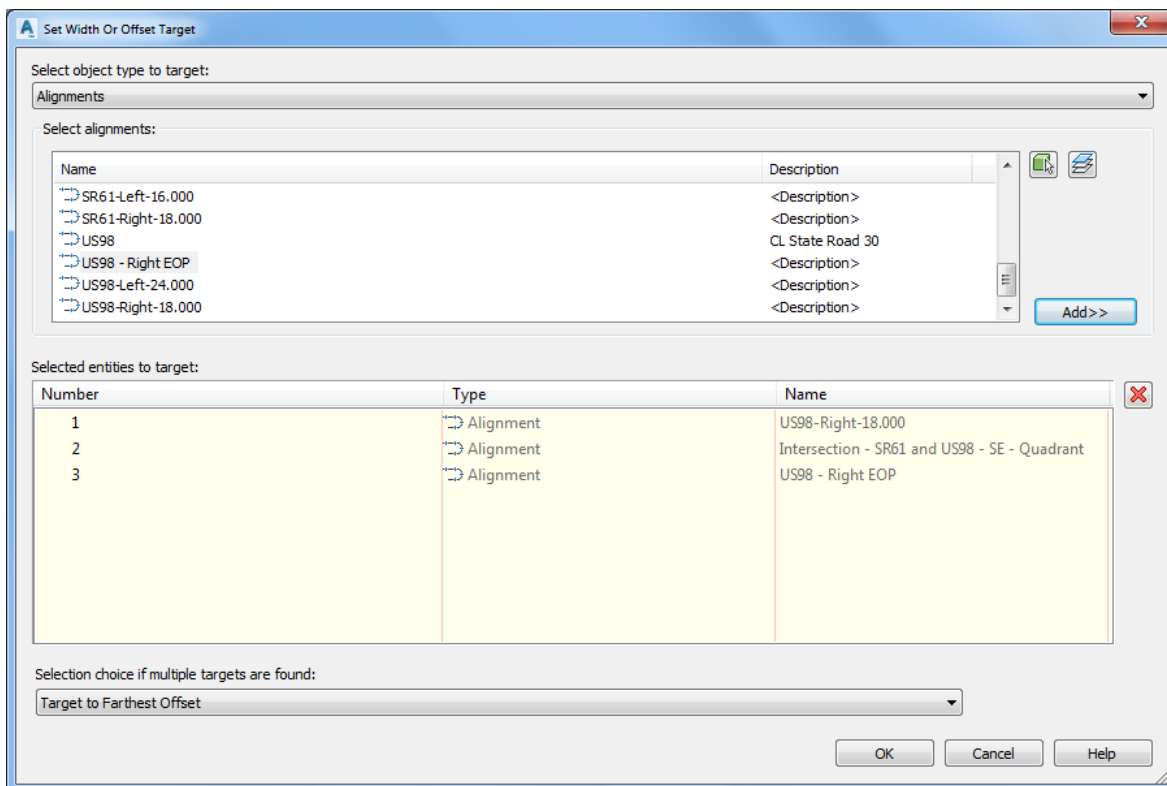


10. From Set Width or Offset Target dialog, set *Select object type to target*: **Alignments**.

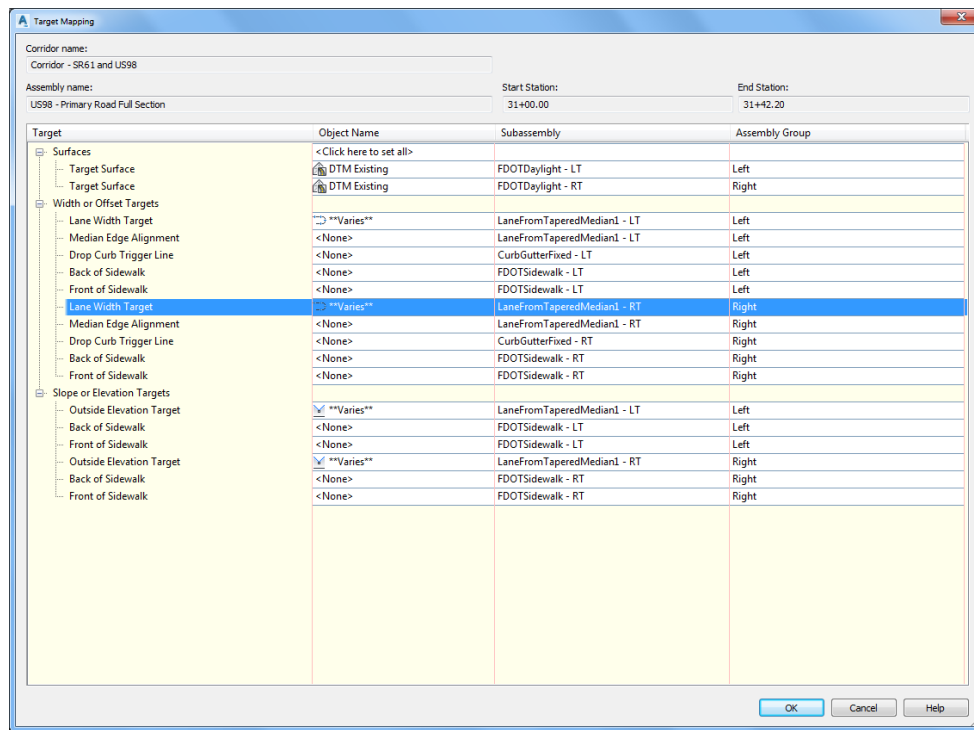
11. Set Selected entities to target:

- US98-Right-18.00
- Intersection - SR61 and US98 - SE - Quadrant
- US98-Right EOP

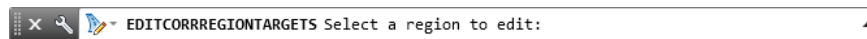
12. Set Selection choice if multiple targets are found: **Target to Farthest Offset**. Click **OK** to continue and to close the Set Width or Offset Target dialog.



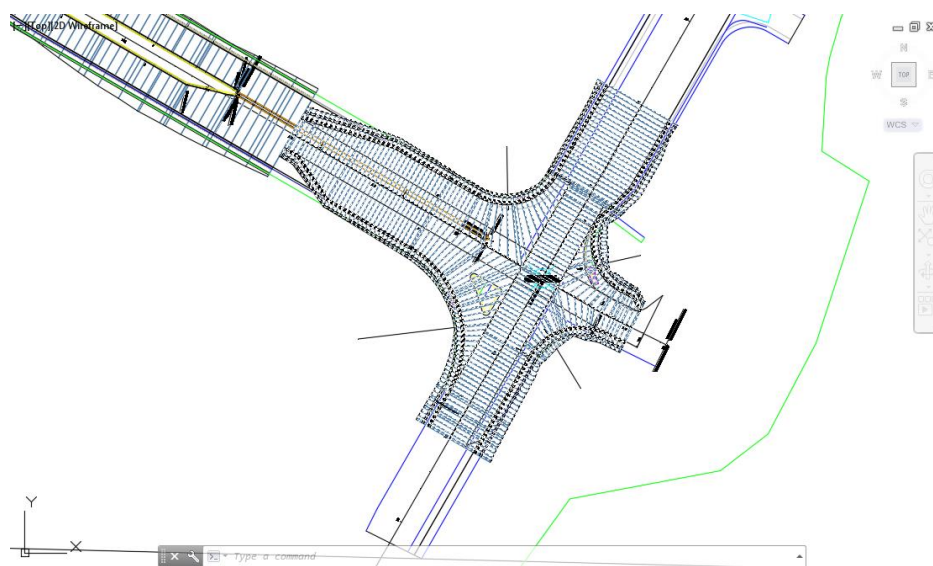
13. Click **OK** to continue and to close the Target Mapping dialog.



14. Press **Enter** to end Edit Corridor Regions Targets command.



15. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.



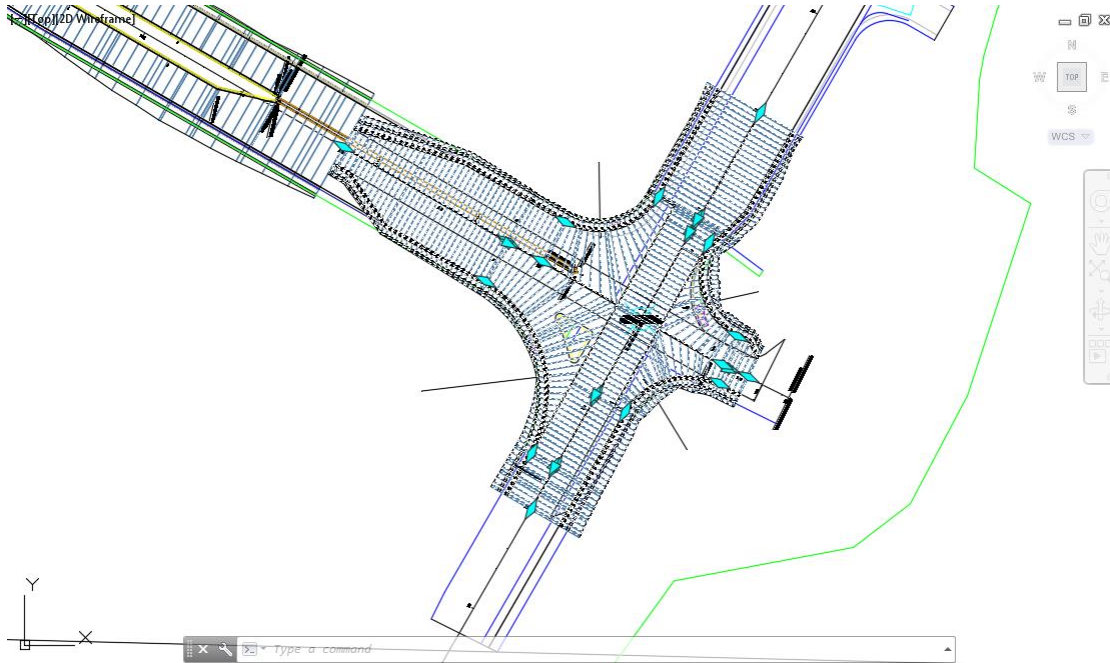
16. **Save** your file before continuing.



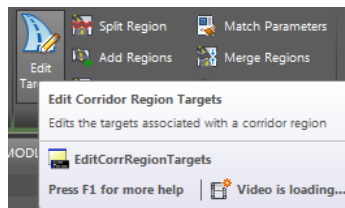
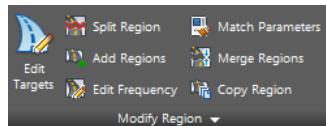
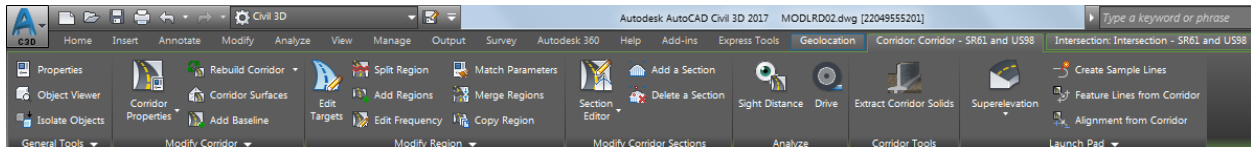
### Exercise 5.13 Edit the Region Targets for the Corridor - SR61 and US98 SW - Quadrant

In this exercise you will edit the region targets for the Corridor - SR61 and US98 SE - Quadrant Region RG - SR61 - Secondary Road Full Section - (8) using the Edit Corridor Regions Targets workflow.

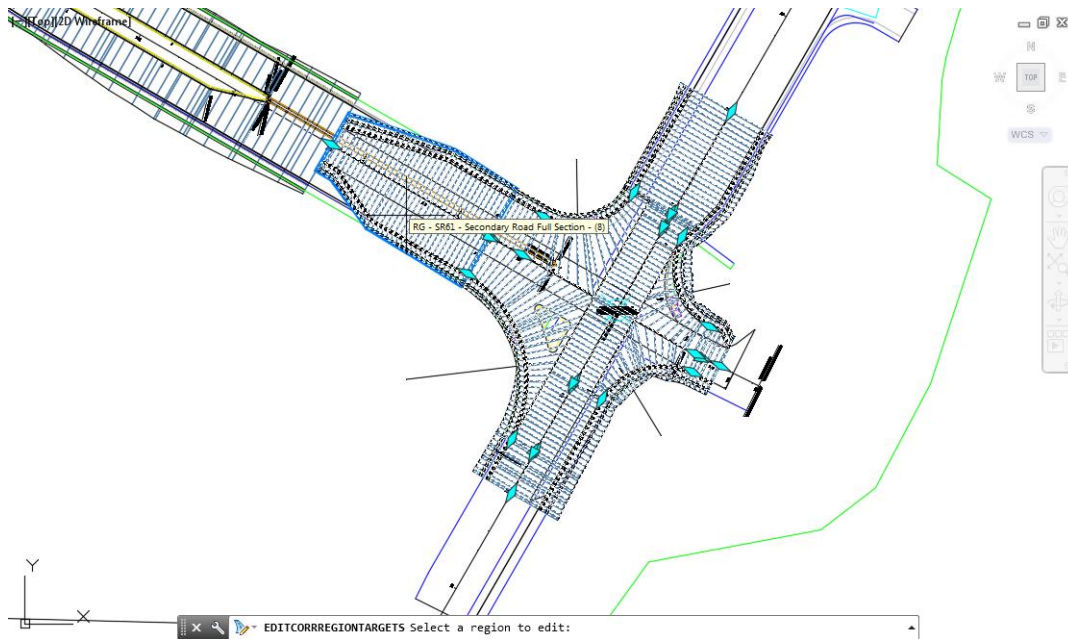
1. Select the **Corridor - SR61 and US98** in the Drawing Editor.



2. The Intersection: Intersection SR61 and US98 tab is now displayed in the ribbon. From the *Modify Region* panel, select **Edit Targets**.

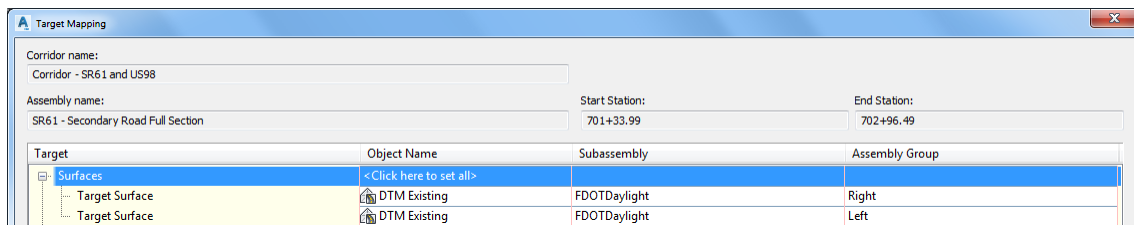


3. Select the Region RG - SR61 - Secondary Road Full Section - (8) region.

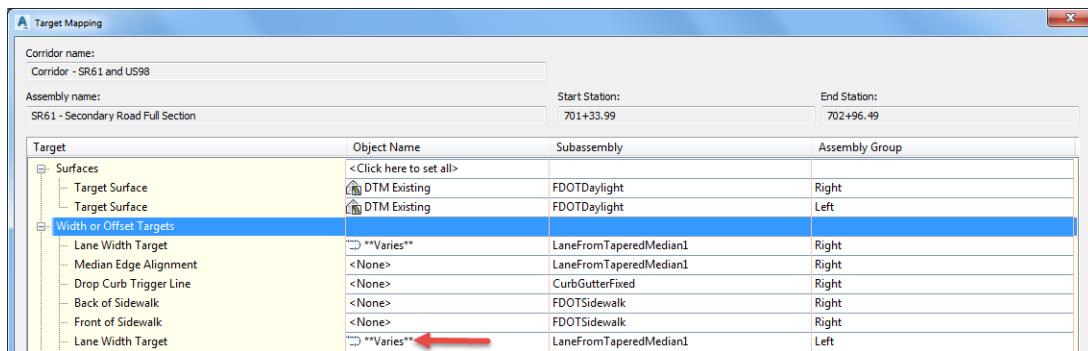


4. From the Target Mapping dialog , use the following values:

- o Surfaces: Target Surface: **DTM Existing**



- o Width or Offset Targets: Left Side: Lane Width Target select **Varies** from Object Name Column

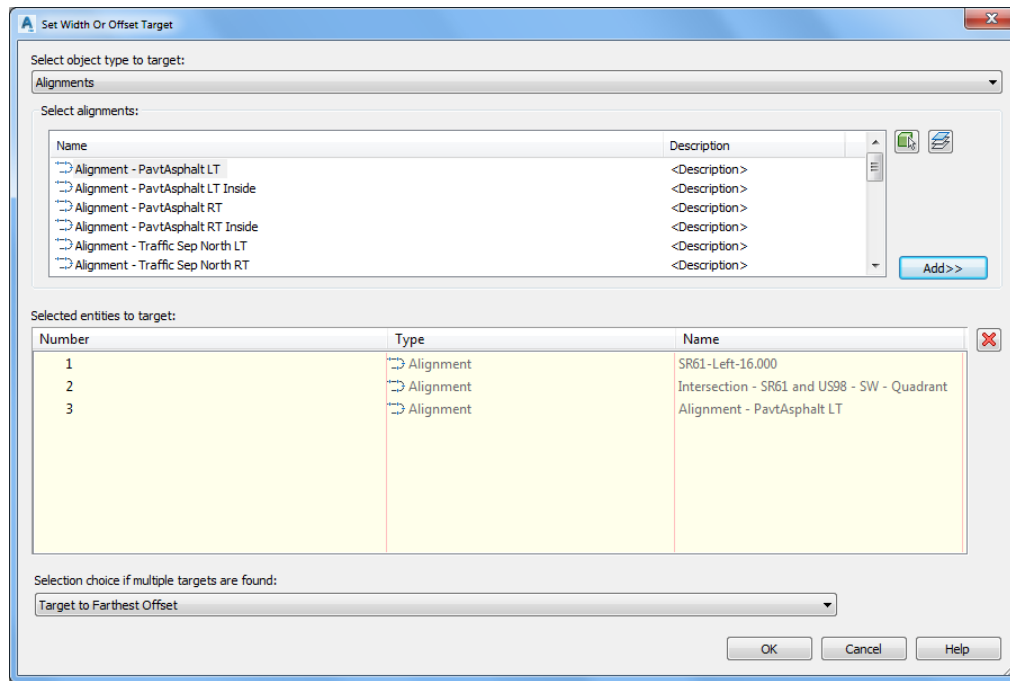


5. From Set Width or Offset Target dialog, set *Select object type to target*: **Alignments**.

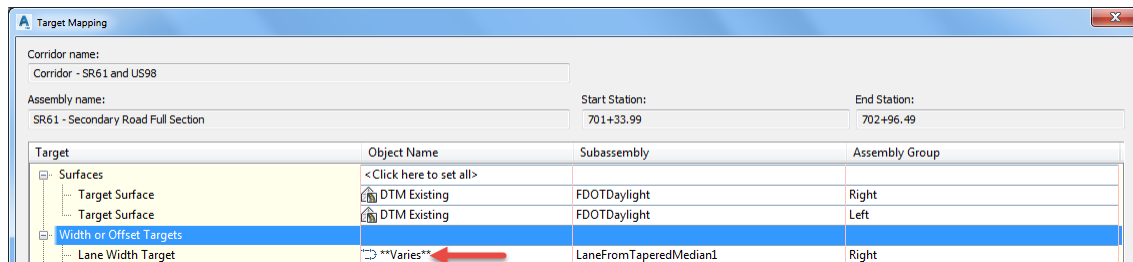
6. Set Selected entities to target:

- o SR61-Left-16.000
- o Intersection SR61 and US98 - SW – Quadrant
- o Alignment - PavtAsphalt LT

7. Set Selection choice if multiple targets are found: **Target to Farthest Offset**. Click **OK** to continue and to close the **Set Width or Offset Target** dialog.



8. Right Side: Lane Width Target select **Varies** from Object Column

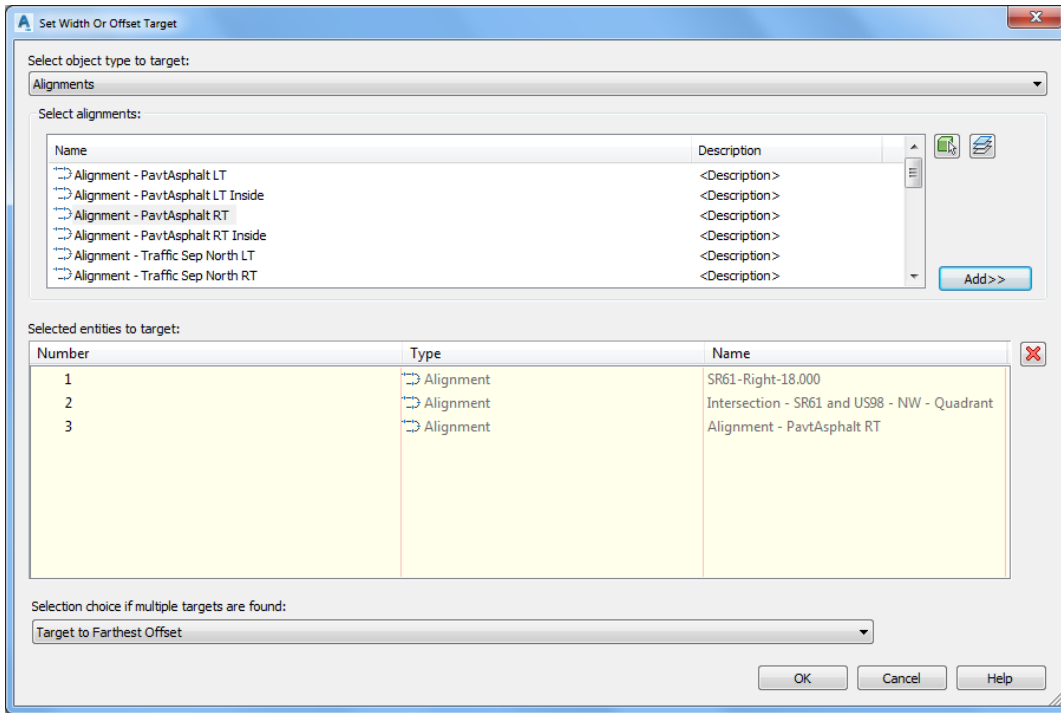


9. From **Set Width or Offset Target** dialog, set *Select object type to target*: **Alignments**.

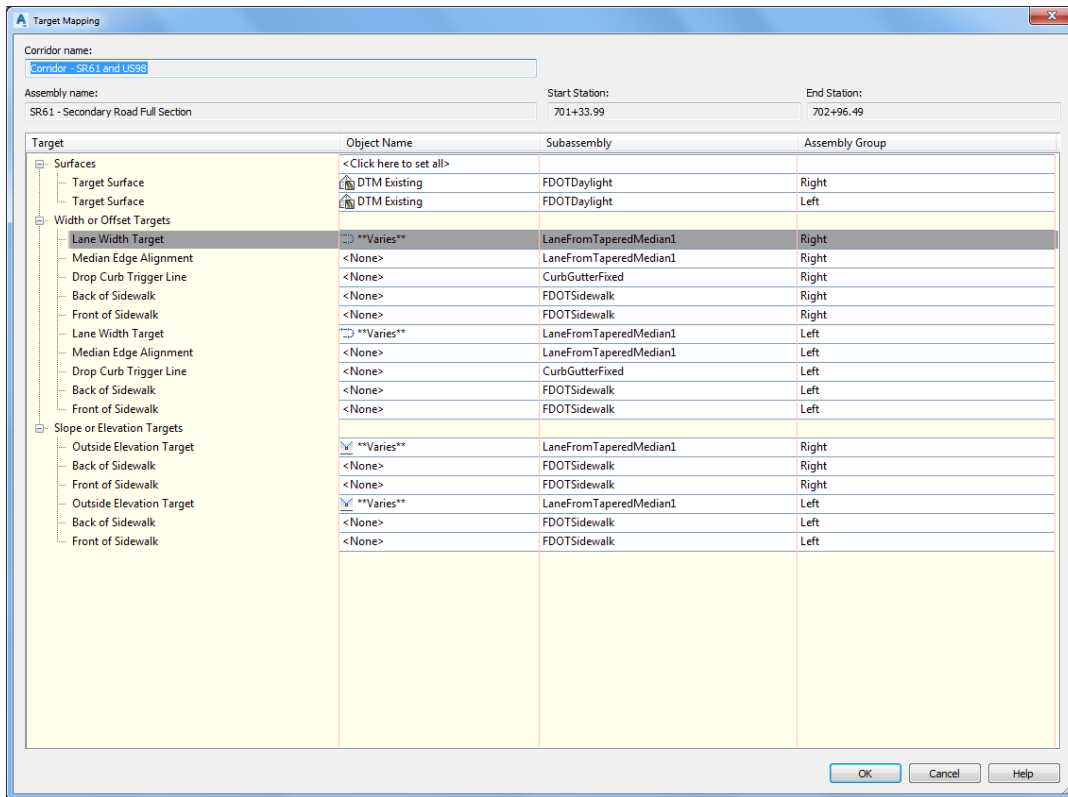
10. Set Selected entities to target:

- SR61-Left-18.000
- Intersection SR61 and US98 - NW – Quadrant
- Alignment - PavtAsphalt RT

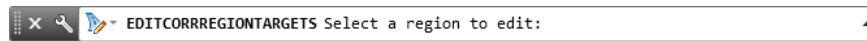
- Set Selection choice if multiple targets are found: **Target to Farthest Offset**. Click **OK** to continue and to close the Set Width or Offset Target dialog.



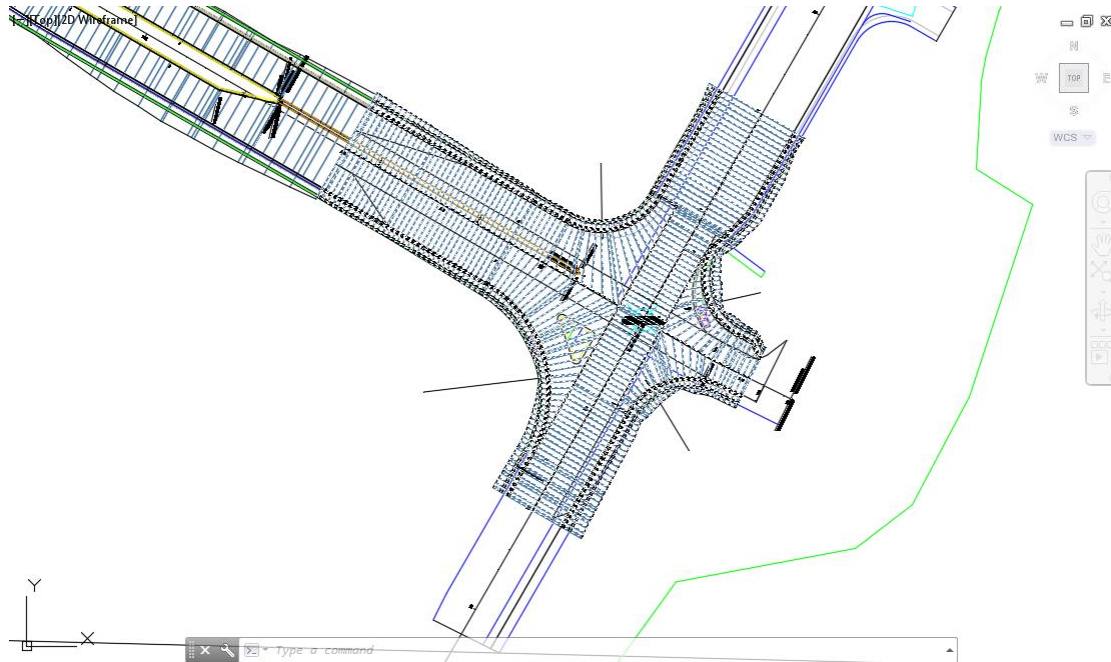
- Click **OK** to continue and to close the Target Mapping dialog.



13. Press Enter to end Edit Corridor Regions Targets command.



14. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.

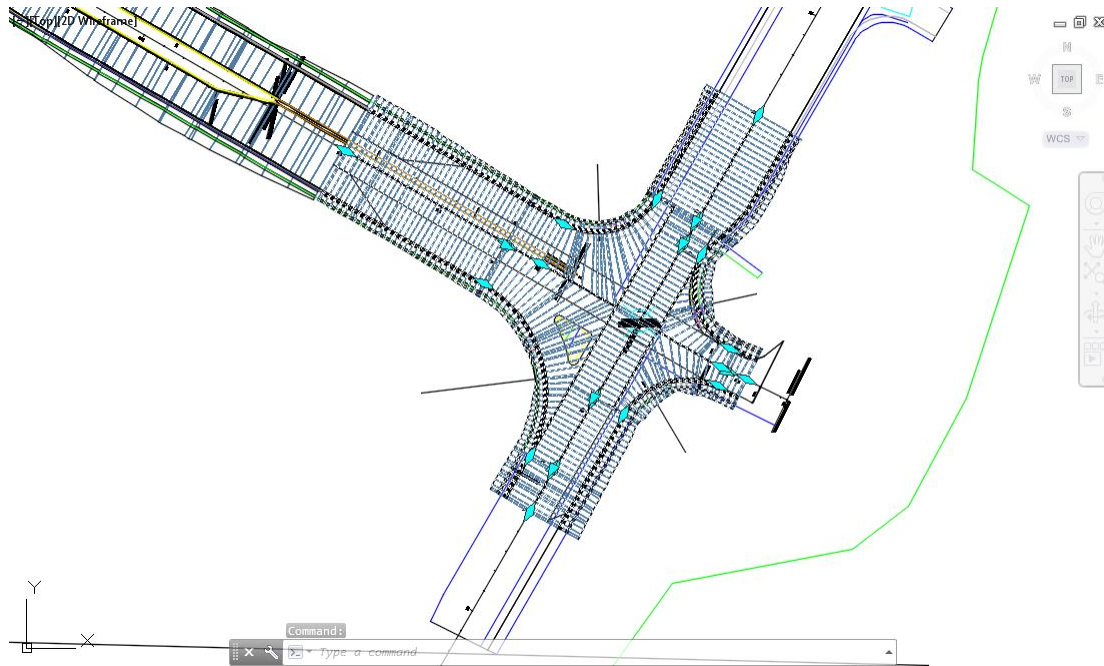


15. Save your file before continuing.

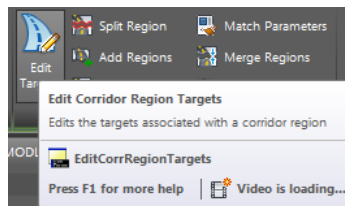
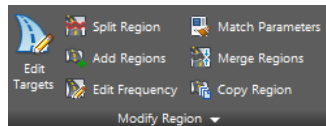
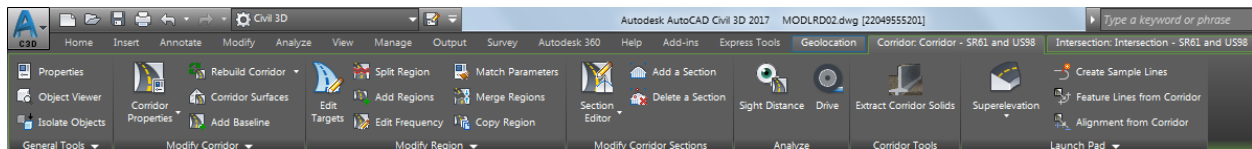
### Exercise 5.14 Edit the Median Targets for the Corridor - SR61 and US98 SW - Quadrant

In this exercise you will edit the median targets for the Corridor - SR61 and US98 SW- Quadrant Region RG - SR61 - Secondary Road Full Section - (8) using the Edit Corridor Regions Targets workflow.

1. Select the **Corridor - SR61 and US98** in the Drawing Editor.

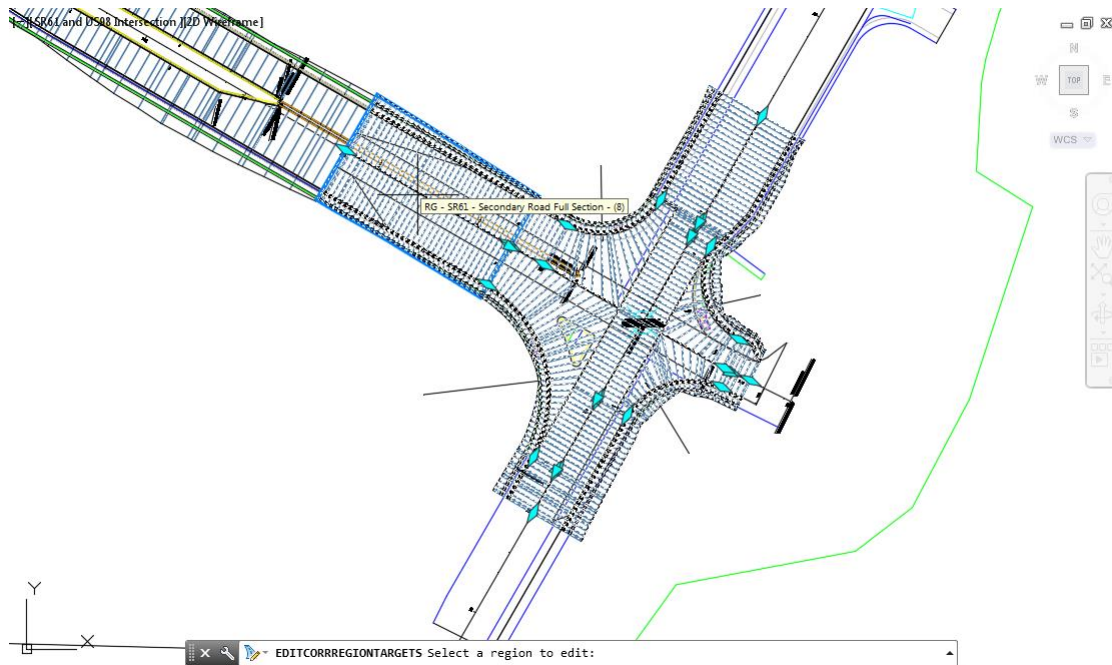


2. The Intersection: Intersection SR61 and US98 tab is now displayed in the ribbon. From the Modify Region panel, select Edit Targets.



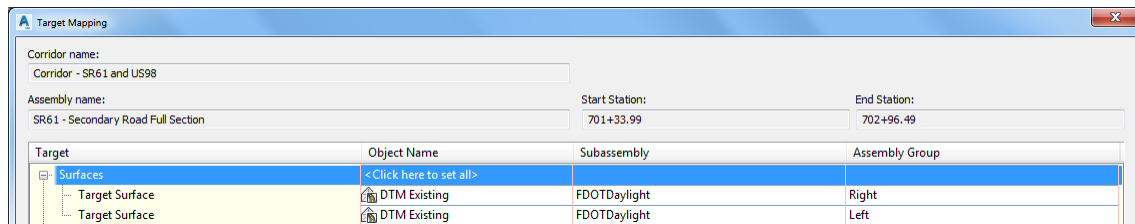


3. Select the Region RG - SR61 - Secondary Road Full Section - (8) region.

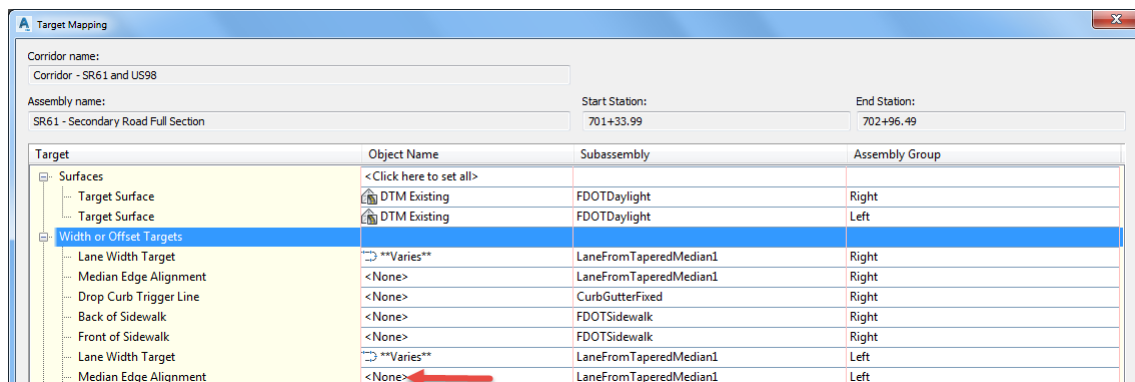


4. From the Target Mapping dialog , use the following values:

- Surfaces: Target Surface: **DTM Existing.**

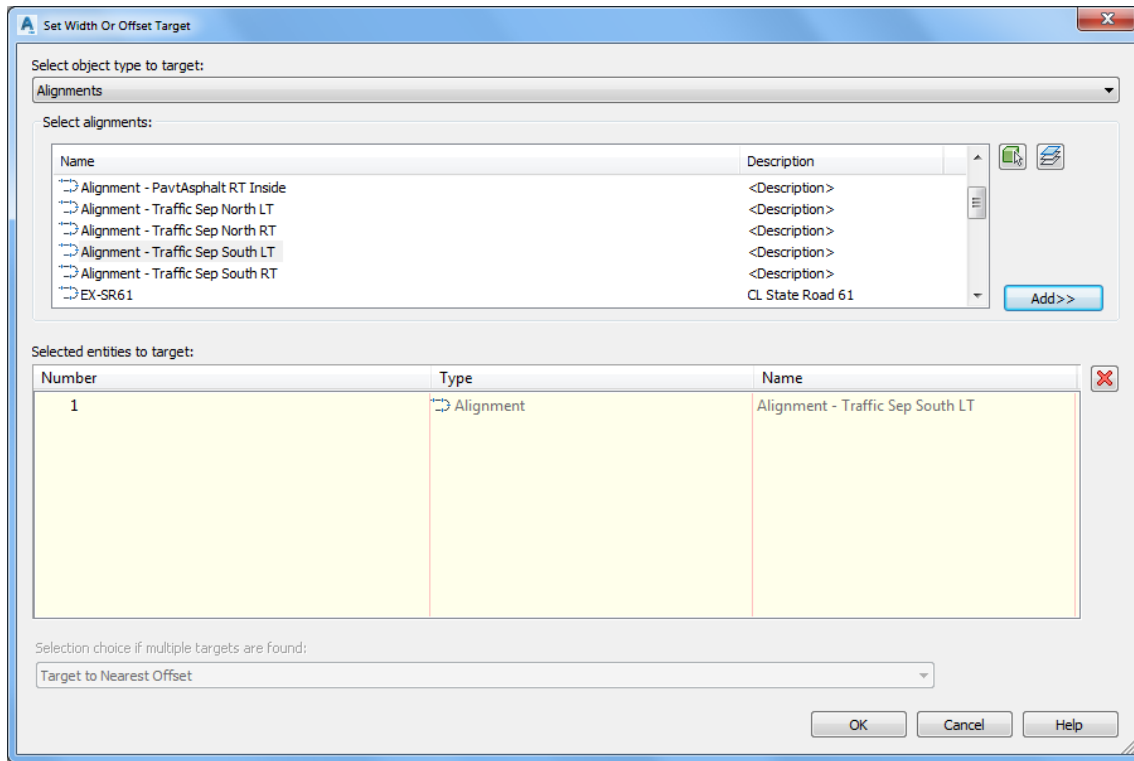


- Width or Offset Targets: Left Side: Median Edge Alignment select **<None>** from Object Name Column.

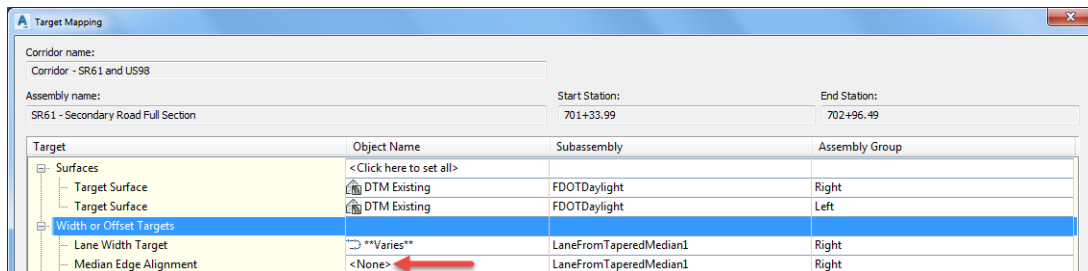




- From Set Width or Offset Target dialog, set *Select object type to target*: **Alignments**.

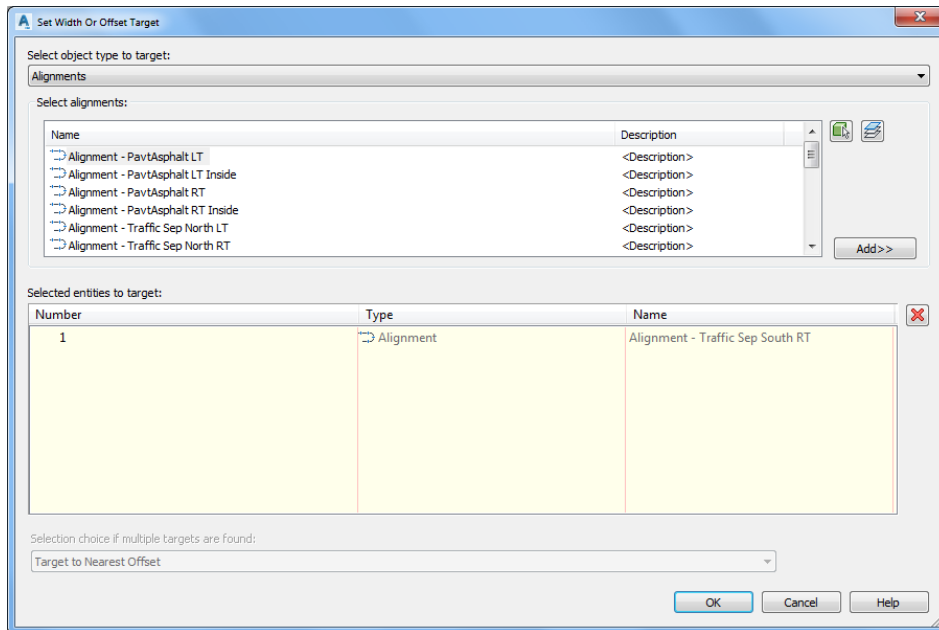


- Set Selected entities to target:
  - Alignment - Traffic Sep South LT
- Click **OK** to continue and to close the Set Width or Offset Target dialog.
- Right Side: Median Edge Alignment select **<None>** from Object Name Column.

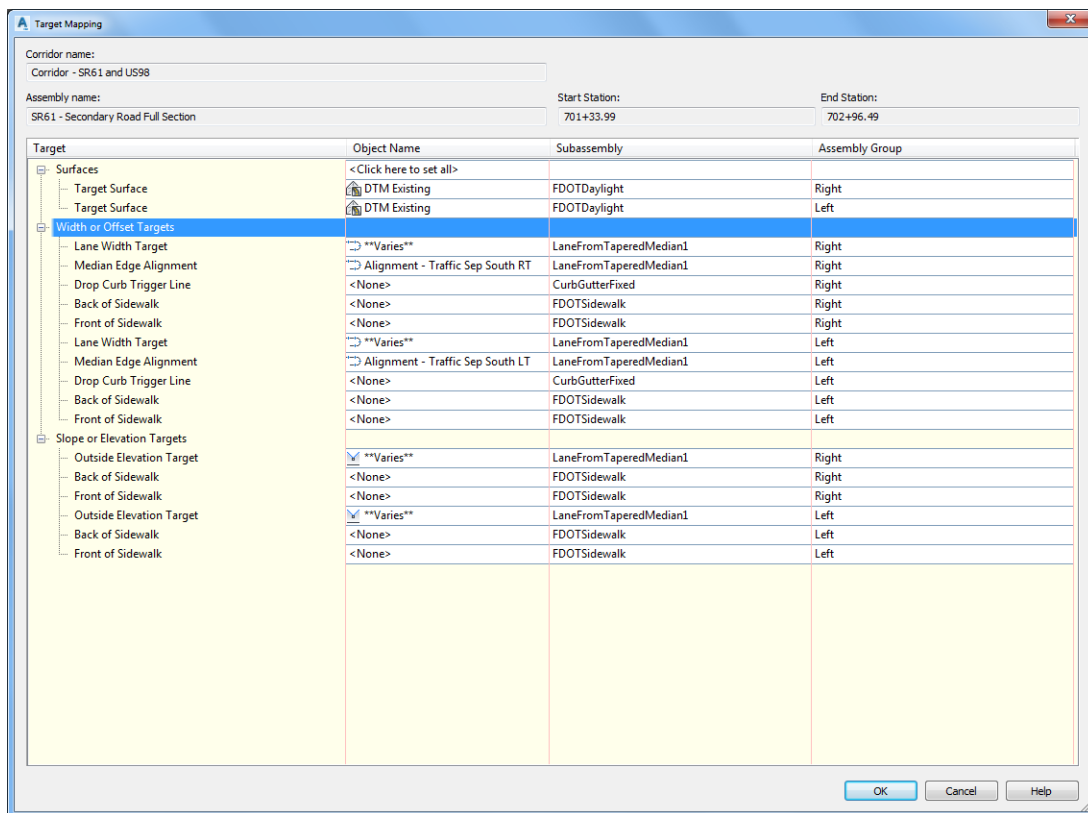


- From Set Width or Offset Target dialog, set *Select object type to target*: **Alignments**.
- Set Selected entities to target:
  - Alignment - Traffic Sep South RT

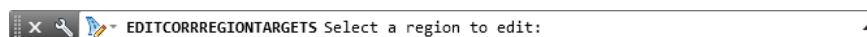
11. Click **OK** to continue and to close the Set Width or Offset Target dialog.



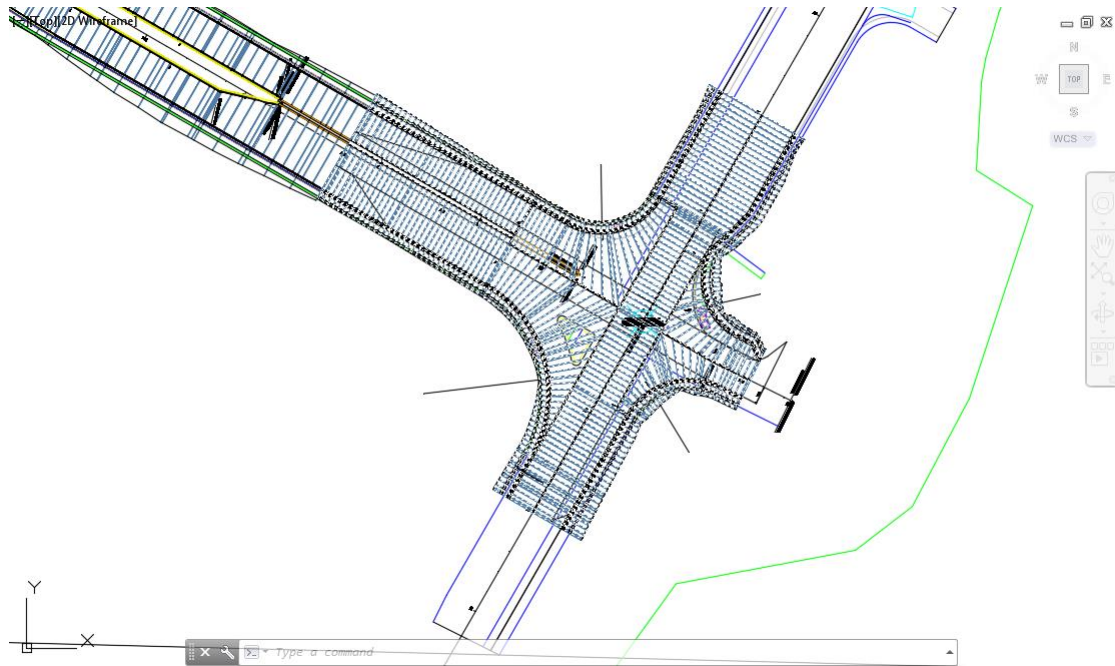
12. Click **OK** to continue and to close the Target Mapping dialog.



13. Press **Enter** to end Edit Corridor Regions Targets command.



14. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.



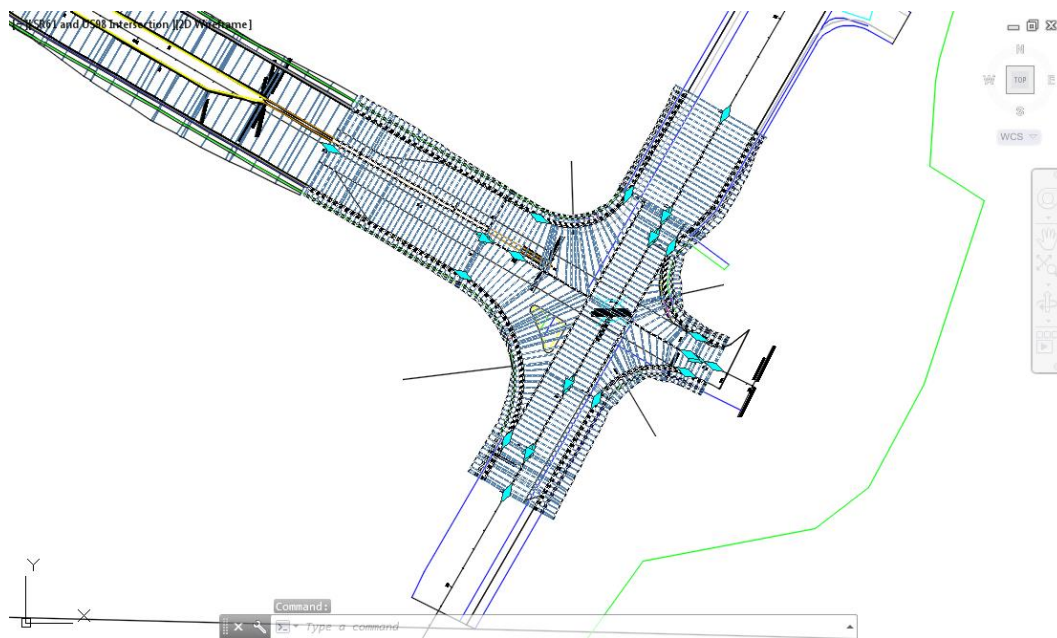
15. **Save** your file before continuing.

### Exercise 5.15 Grip Edit Corridor - SR61 and US98 SW - Quadrant Region:

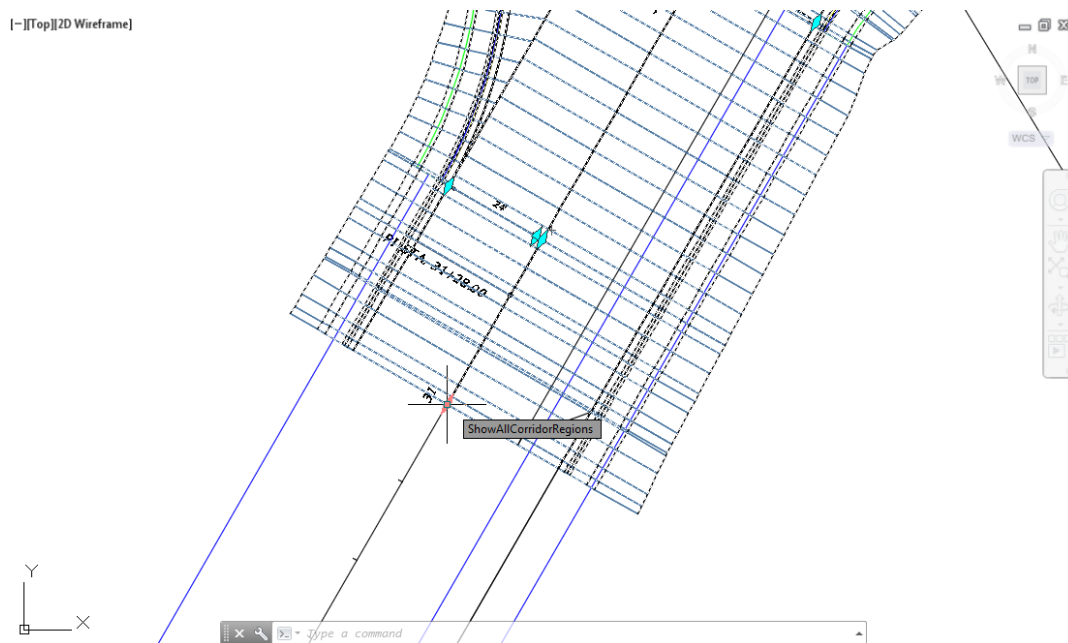
In this exercise you will Grip Edit Corridor - SR61 and US98 SW - Quadrant Region Limits for RG - US98 - Primary Road Full Section - (9) to Station 31+00. You will also Grip Edit Corridor - SR61 and US98 SW - Quadrant Region Limits for RG - SR61 - Secondary Road Full Section - (8) to Station 703.00.

First, you will Grip Edit Corridor - SR61 and US98 SW - Quadrant Region Limits for RG - US98 - Primary Road Full Section - (9) to Station 31+00

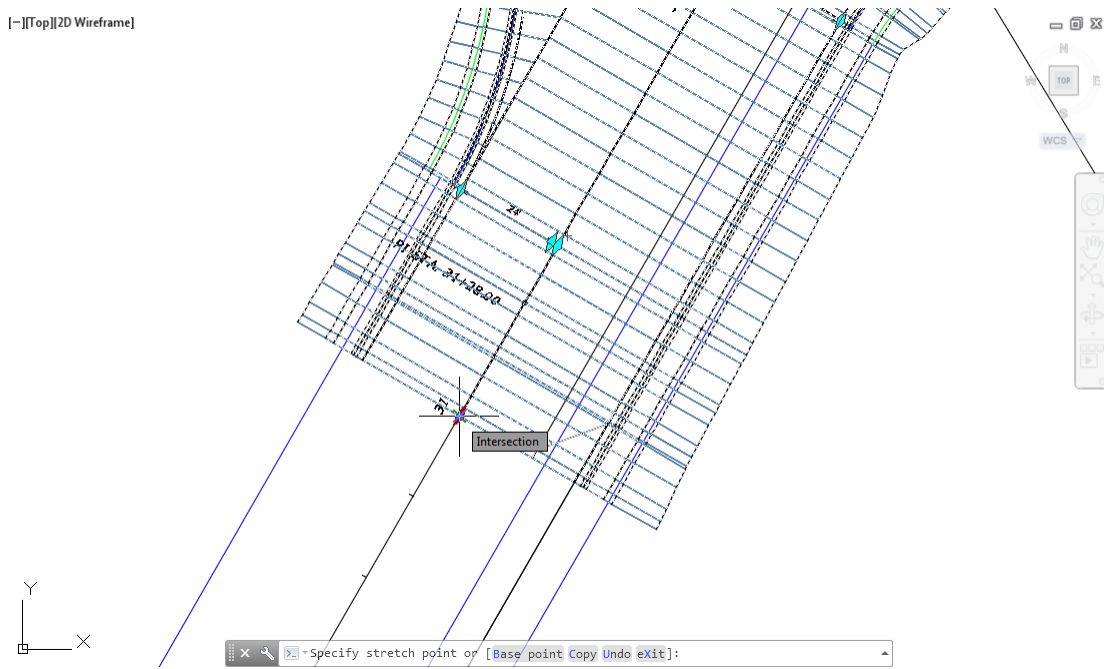
1. Select the **Corridor - SR61 and US98** in the Drawing Editor.



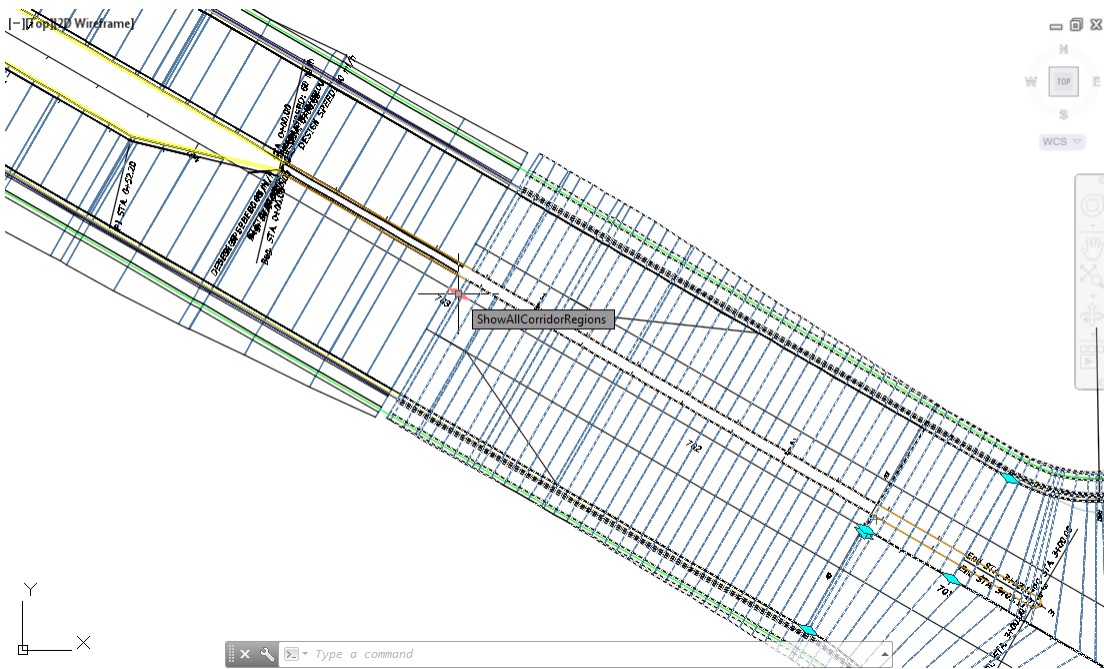
2. Use **Zoom** and **Pan** commands to display the SW quadrant of Corridor - SR61 and US98 and station 31+00. Hover over the diamond shaped grip until it displays ShowAllCorridorRegions, then select the **Grip**.



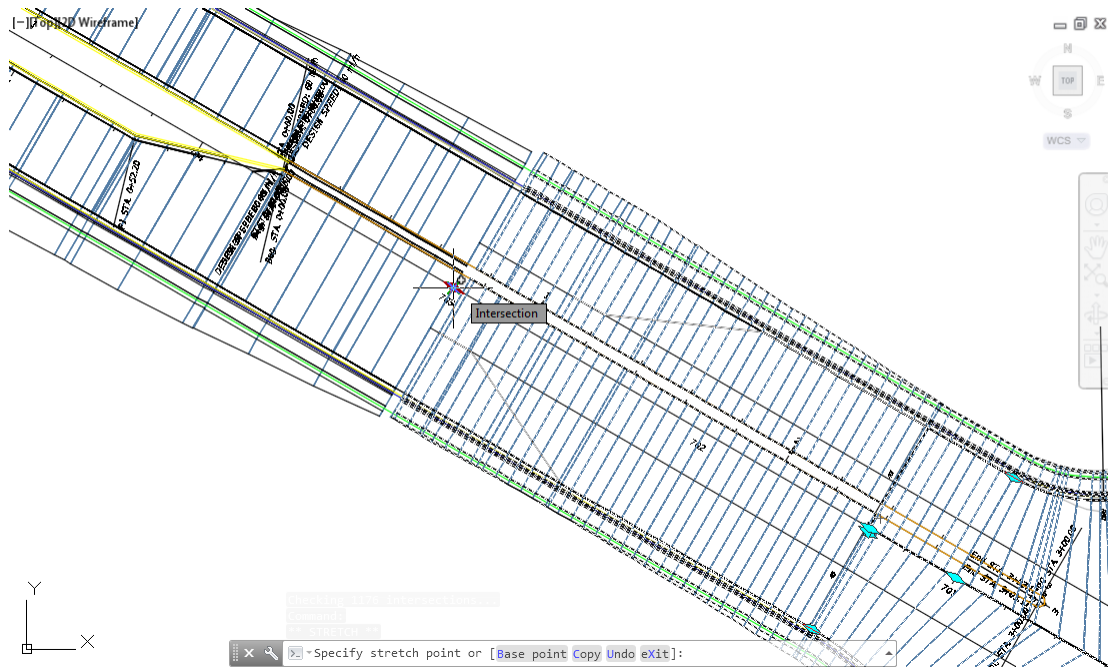
3. Drag the grip to station 31+00, using a *Intersection osnap* to place.



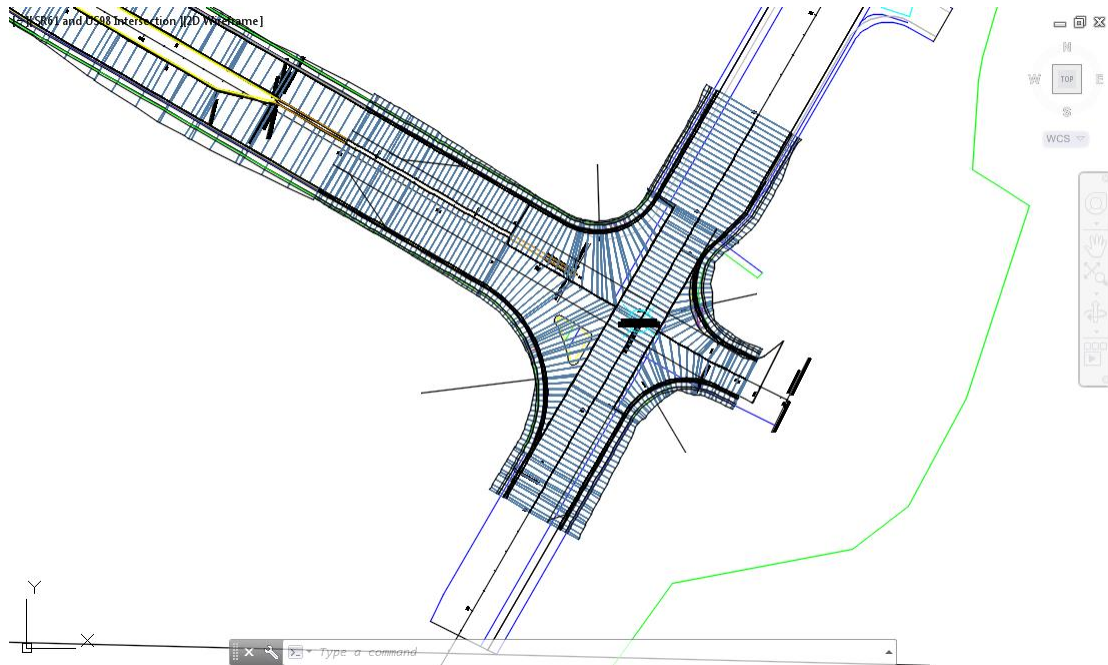
4. Next you will Grip Edit Corridor - SR61 and US98 SW - Quadrant Region Limits for RG - SR61 - Secondary Road Full Section - (8) to Station 703.00. Use **Zoom** and **Pan** commands to display the *SW quadrant of Corridor - SR61 and US98 and station 703+00*.
5. Hover over the diamond shaped grip until it displays *ShowAllCorridorRegions*, then select the **Grip**.



6. Drag the grip to station 703+00, using a Intersection osnap to place.



7. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
8. Review results of Corridor - SR61 and US98 edits.



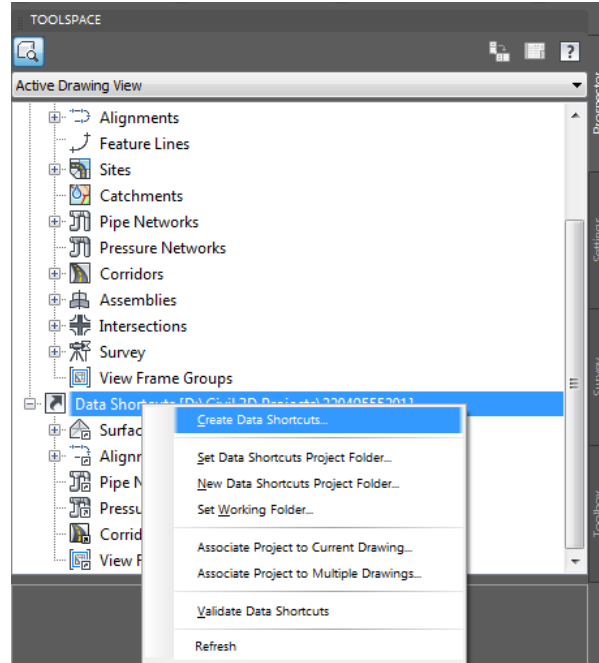
9. **Save** your file before continuing.



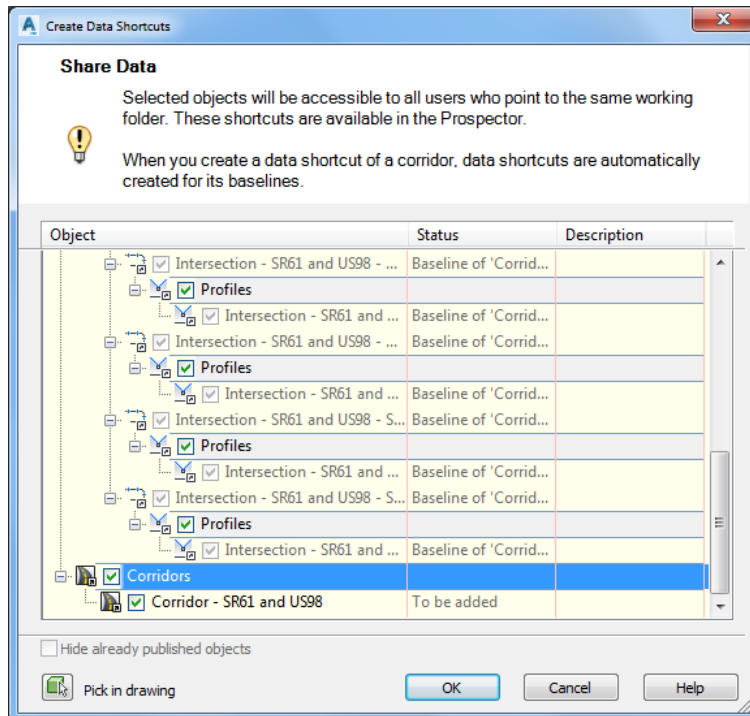
### Exercise 5.16 Create Corridor Data Shortcuts

In this exercise you will create a Data Shortcut for the Corridor: Corridor - SR61 and US98

1. From *TOOLSPACE > Prospector tab > Data Shortcuts*, right click to display popup menu and select **Create Data Shortcuts...**

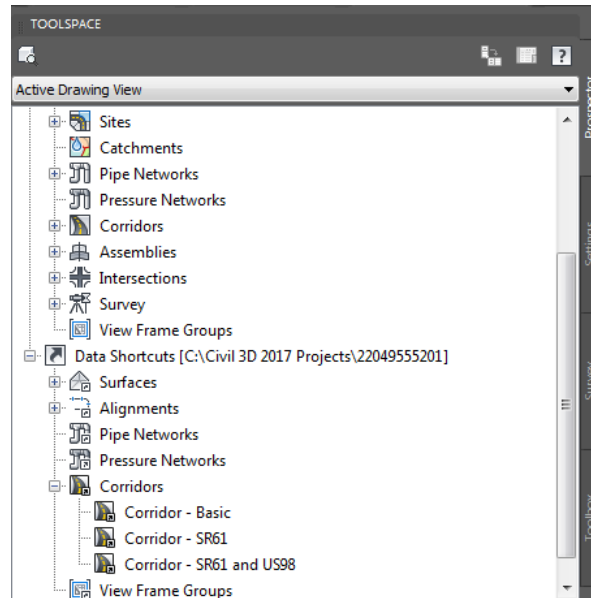


2. From the Create Data Shortcuts dialog, check the box next to **Corridors**.
3. Click **Ok** to create the *Corridor Data Shortcut* and close the Create Data Shortcuts dialog.





- From *TOOLSPACE* > *Prospector tab* > *Data Shortcuts*, expand **Corridors** to display the **Corridor - SR61 and US98** Data Shortcut.



- Save and Close** the MODLRD02.dwg

# 6 CREATE CORRIDOR – SR61 & US98 CORRIDOR SURFACE

## DESCRIPTION

In this chapter you will learn how to create a both a Surface and Surface boundaries from the Corridor - SR61 and US98 corridor. Then you will create Data Shortcuts for the Surface: Corridor - SR61 and US98 Surface - Top.

## OBJECTIVES

In this chapter, you will learn about:

- Review referenced data
- Create Data Shortcuts Reference:
  - Corridor: Corridor - SR61 and US98
- Create Corridor Surface from Corridor - SR61 and US98
- Create Corridor Surface Boundary for Corridor - SR61 and US98 Surface - Top
- Create Data Shortcuts:
  - Surface: Corridor - SR61 and US98 Surface - Top
- Review Results

## CHAPTER SETUP

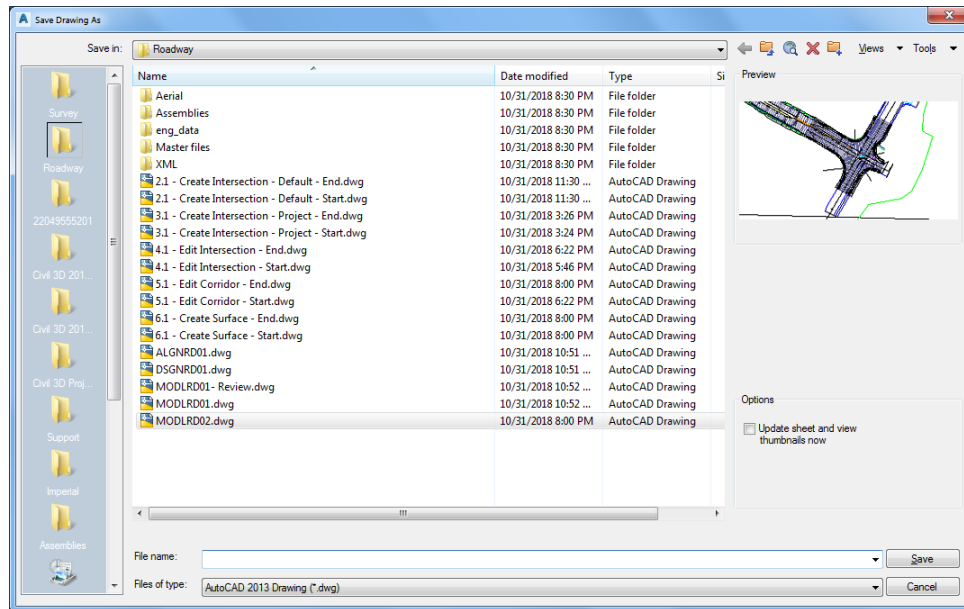
Run the Chapter 6 - 22049555201.exe file and restore all files to the C:\Civil 3D 2017 Projects folder.

Do not change the location in which the Practice Files are installed. Doing so can cause errors when completing the exercises in this training manual.

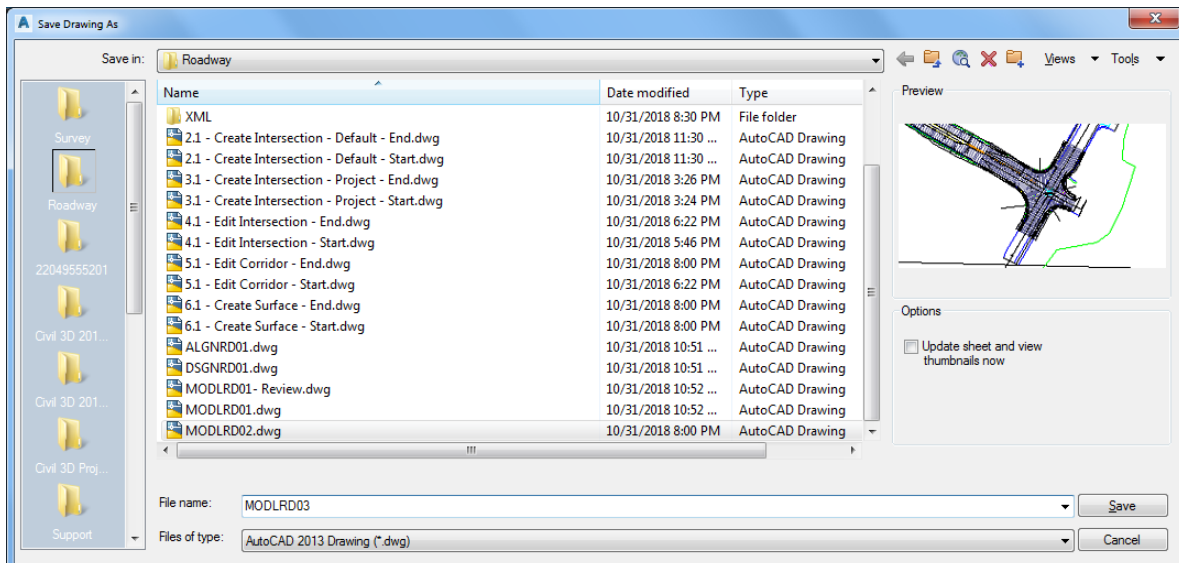
### Exercise 6.1 Create MODLRD03 File

In this exercise you will create the MODLRD03 file to create a both a Surface and Surface boundaries from the **Corridor - SR61 and US98** corridor. Then you will create Data Shortcuts for the Surface: **Corridor - SR61 and US98 Surface - Top**.

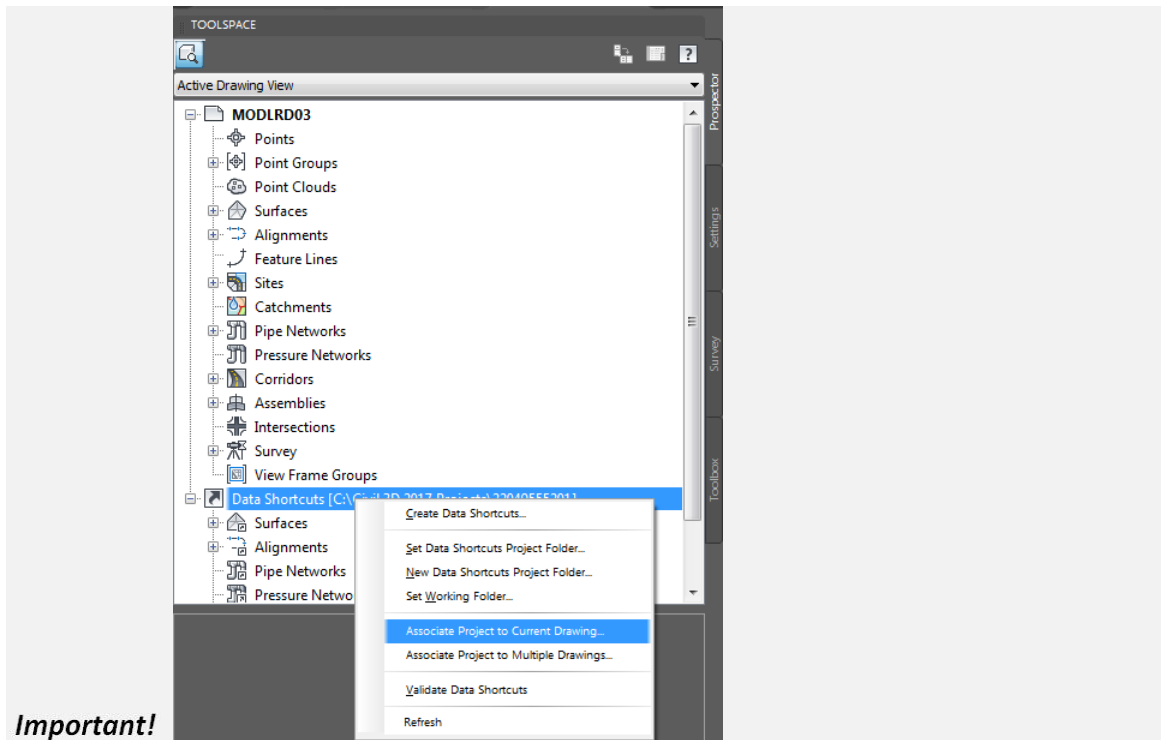
1. From the Select File dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and select **Open 6.1 - Create Surface - Start.dwg**. Click **Open** to close the Select File dialog box.



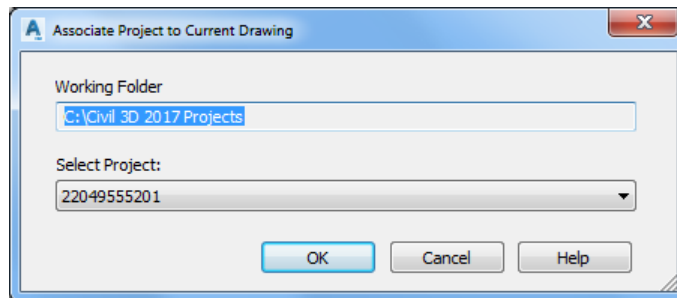
2. From the Save Drawing As dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and **MODLRD03.dwg**. Click **Save** to close the Save Drawing As dialog box.



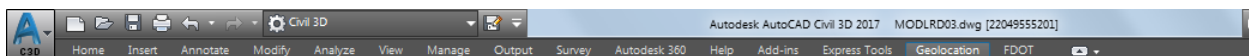
3. Associate MODLRD03.dwg File to the Project. From the *TOOLSPACE > Prospector tab > Data Shortcuts* [C:\Civil 3D 2017 Projects\22049555201], right-click and select **Associate Project to Current Drawing**.



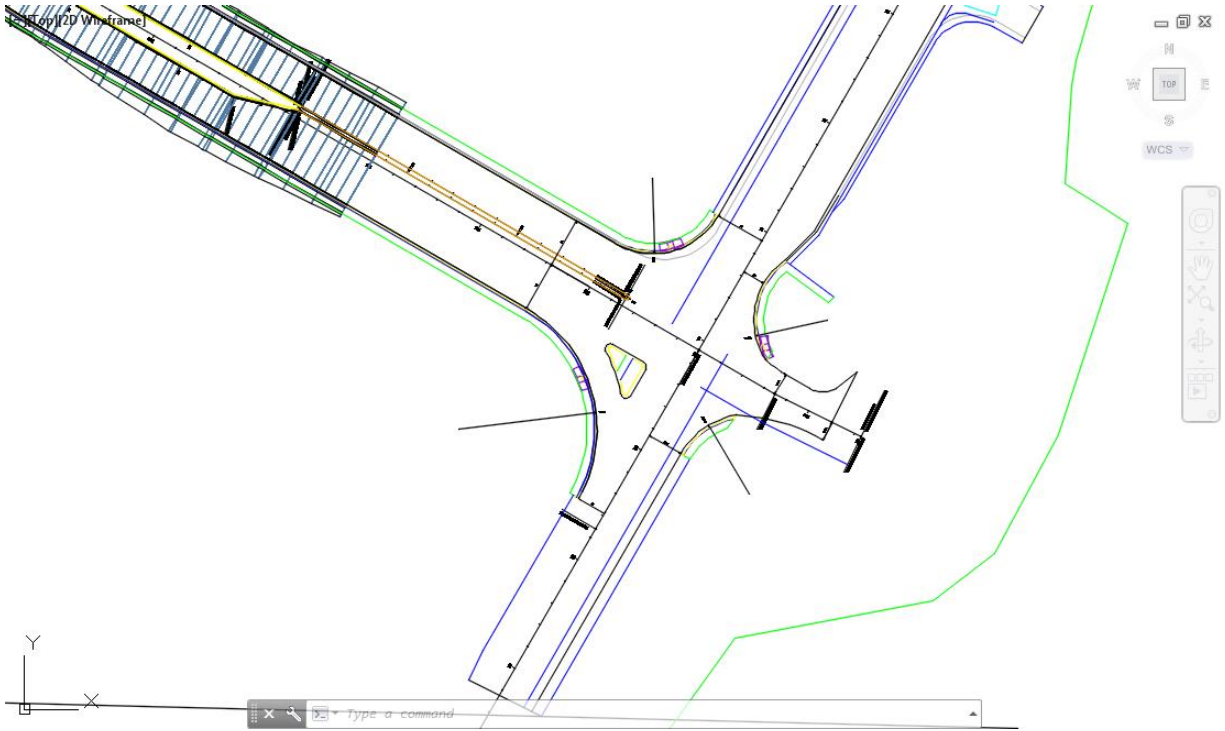
4. From Associate Project to Current Drawing dialog box, set the following values:
  - o Working Folder: set to C:\Civil 3D 2017 Projects
  - o Select Project: click 22049555201 from drop down list
5. Click **OK** to close Associate Project to Current Drawing dialog box.



6. **MODLRD03.dwg** is now associated to the C:\Civil 3D 2017 Projects\22049555201 Project.



7. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.

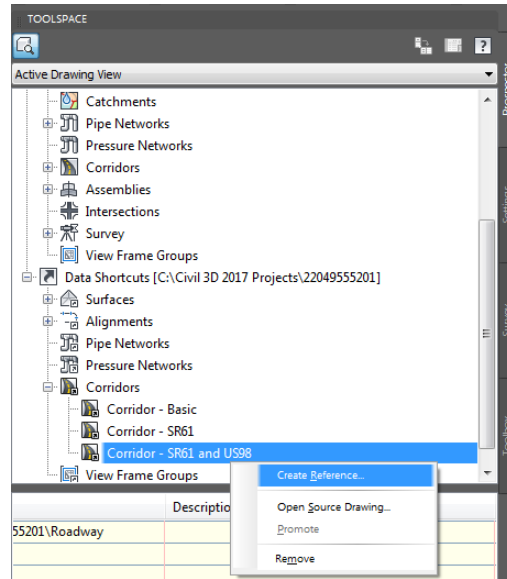


8. **Save** your file before continuing.

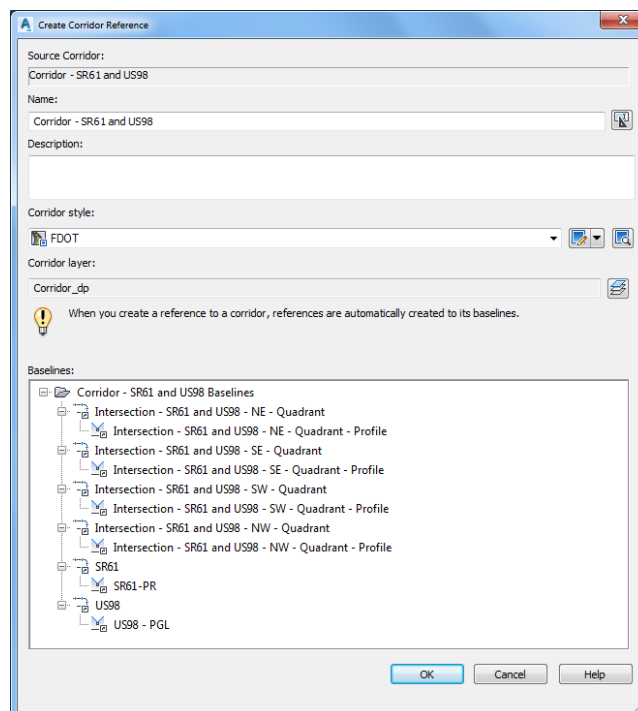
### Exercise 6.2 Create Data Shortcuts Reference to Corridor: Corridor - SR61 and US98

In this exercise you will create Data Shortcut References to the *Corridor - Corridor - SR61 and US98* you created using the Intersection wizard and then edited in the prior chapter.

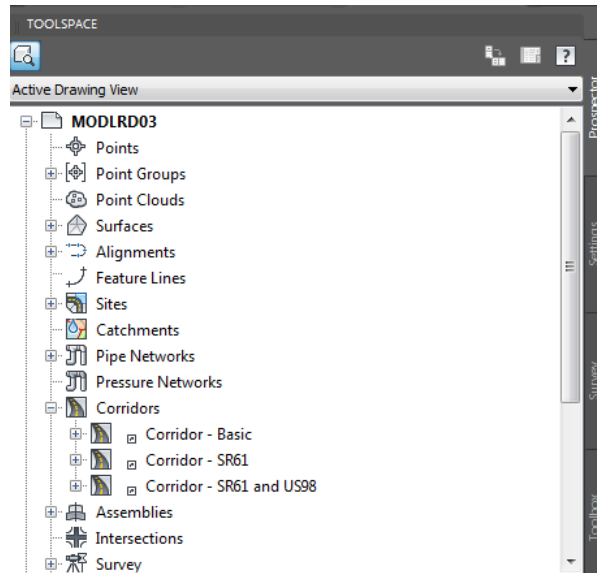
- From the *TOOLSPACE > Prospector tab > Data Shortcuts* [C:\Civil 3D 2017 Projects\22049555201], right-click and select **Create Reference...**



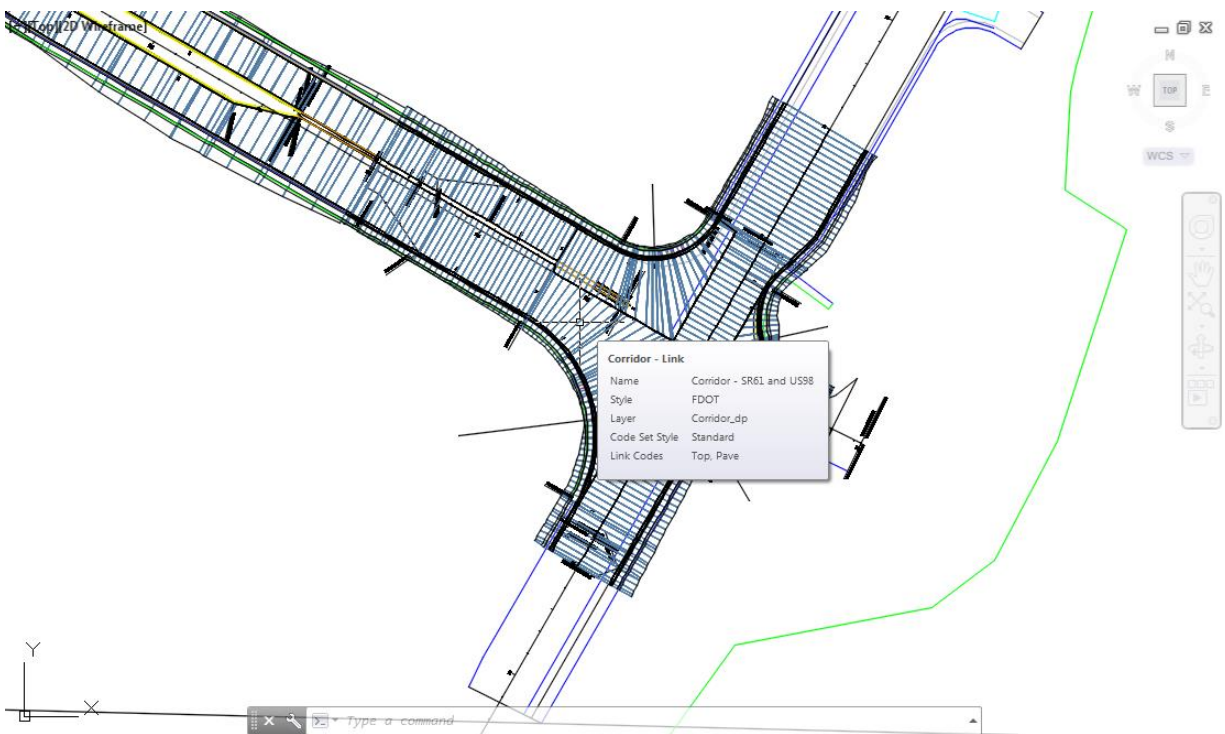
- From the Create Corridor Reference dialog, set the following values:
  - Name: Corridor - SR61 and US98
  - Corridor style: FDOT
- Click **OK** to close Create Corridor Reference dialog.



- Review Corridors in MODLRD03 from TOOLSPACE > Prospector tab, expand Corridors, the data referenced *Corridor - SR61 and US98* is now displayed in the list.



- Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.



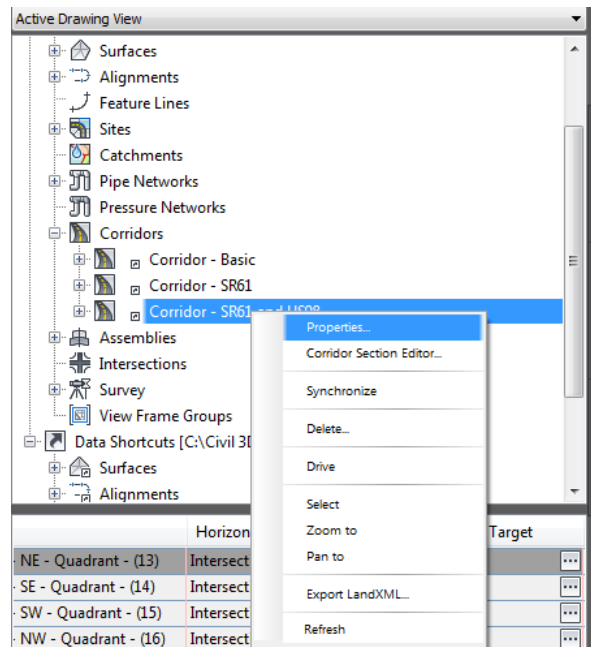
- Save your file before continuing.



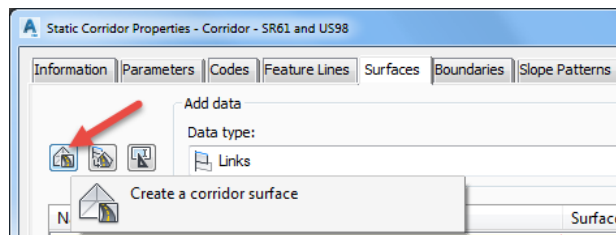
### Exercise 6.3 Create Corridor Surface from Corridor - SR61 and US98

In this chapter you will create a Surface from the *Corridor - SR61 and US98* corridor.

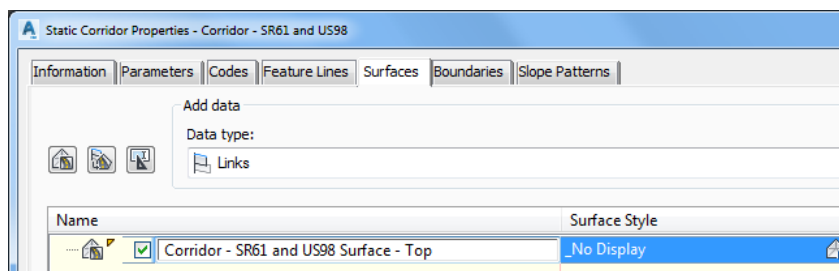
1. From TOOLSPACE > Prospector tab, expand Corridors, select Corridor - SR61 and US98, then right-click and select **Properties...**



2. From the Static Corridor Properties - Corridor - SR61 and US98 dialog, select the **Surfaces** tab.
3. Select the **Create a corridor surface** button, referenced by the red arrow.

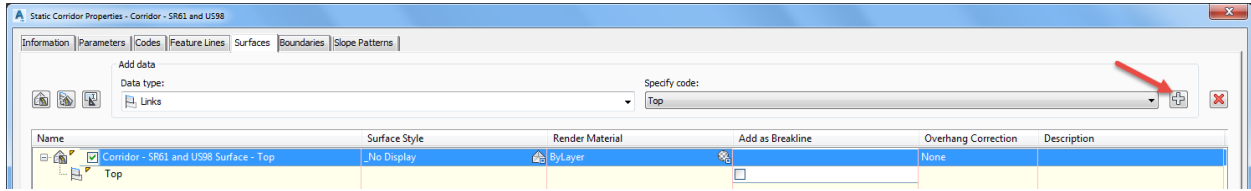


4. Rename the surface to: Corridor - SR61 and US98 Surface - Top



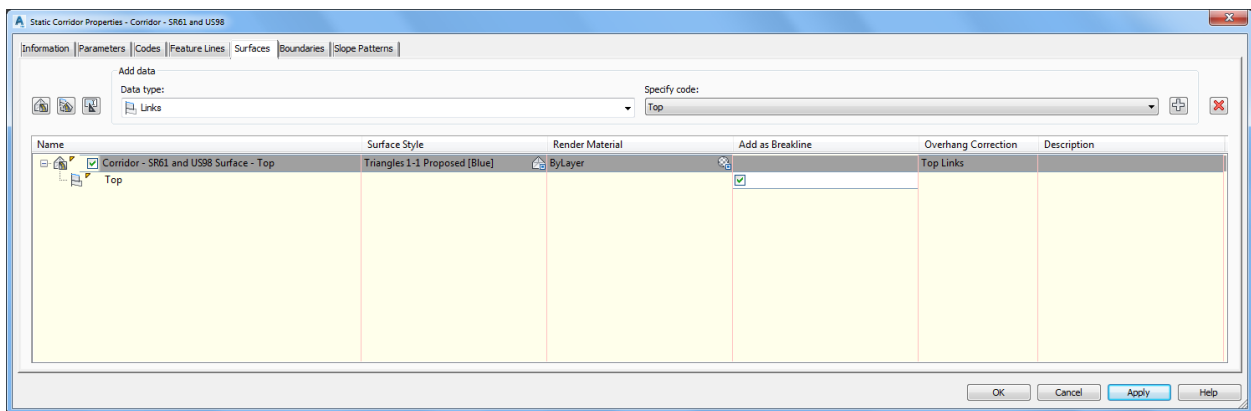
5. Add data to the *Corridor - SR61 and US98 Surface - Top* surface, set the following values:
  - Set Data type: **Links**
  - Set Specify code: **Top**

6. Click on the **Plus sign** to add data to the *Corridor - SR61 and US98 Surface - Top* surface, referenced by the red arrow.

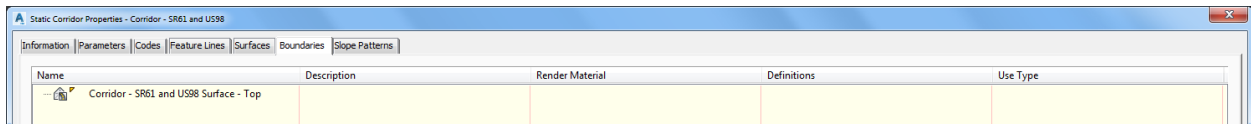


7. Then for the *Corridor - SR61 and US98 Surface - Top* surface, set the following values:

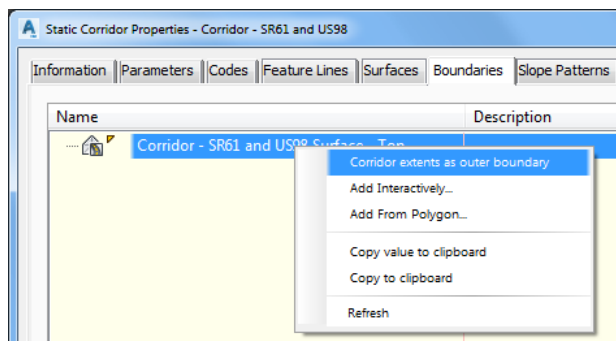
- Set Surface style to Triangles 1:1 Proposed [Blue]
- Check Add as Breaklines box
- Set Overhang Correction to Top Links



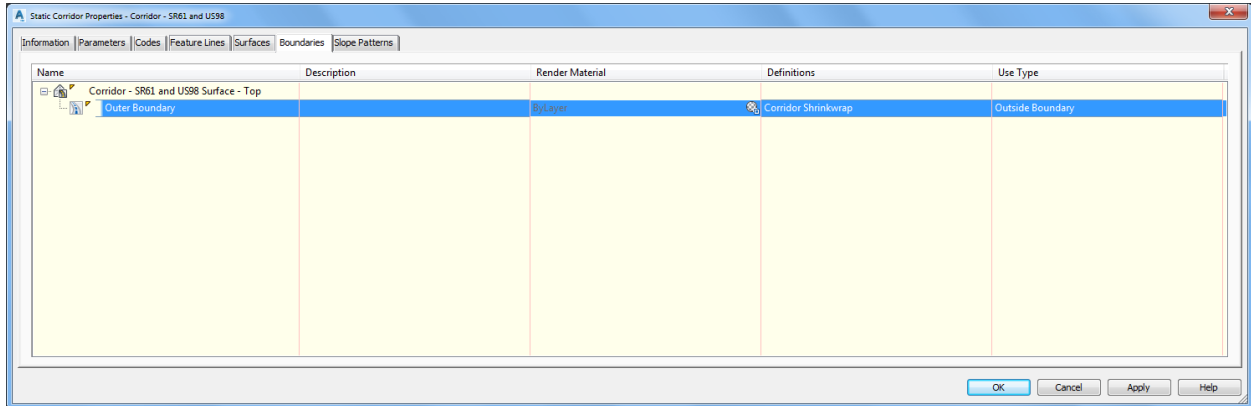
8. From the Static Corridor Properties - Corridor - SR61 and US98 dialog, select the **Boundaries** tab.



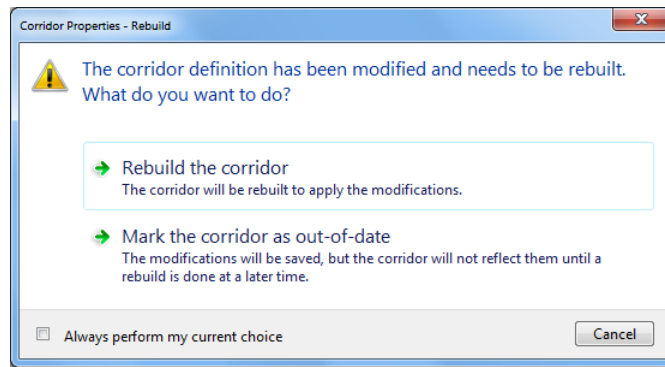
9. Right-click on the *Corridor - SR61 and US98 Surface - Top* surface, then select Corridor extents as outer boundary.



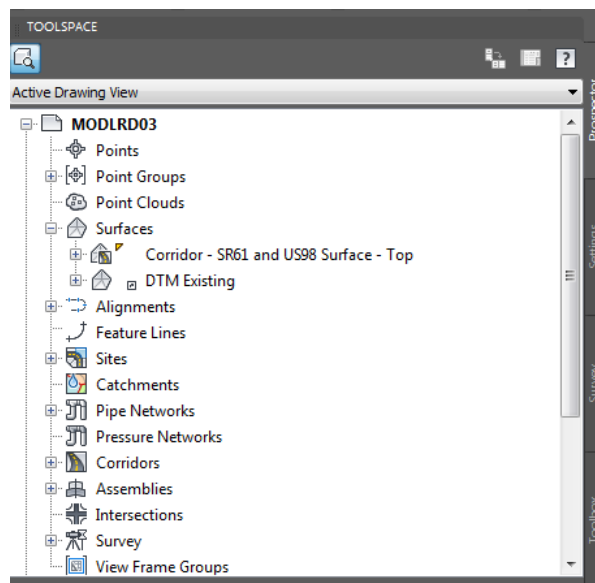
10. Rename Boundary to: **Outer Boundary**. Click **OK** to continue and close the Static Corridor Properties - Corridor - SR61 and US98 dialog.



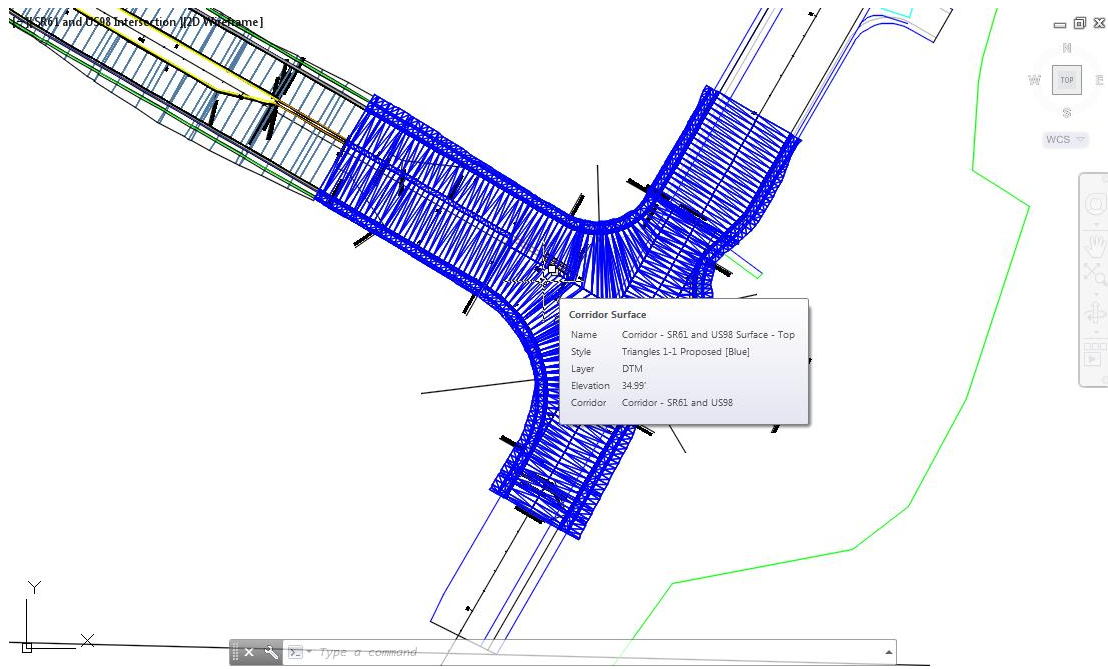
11. From the Corridor Properties - Rebuild dialog, select **Rebuild the corridor**.



12. Review Data Referenced Surfaces in MODLRD03 from TOOLSPACE > Prospector tab, expand **Surfaces**. the surface created from the Corridor - SR61 and US98 named *Corridor - SR61 and US98 Surface - Top* is now displayed in the list.



- 13. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
- 14. The new Corridor - SR61 and US98 Surface - Top surface is displayed

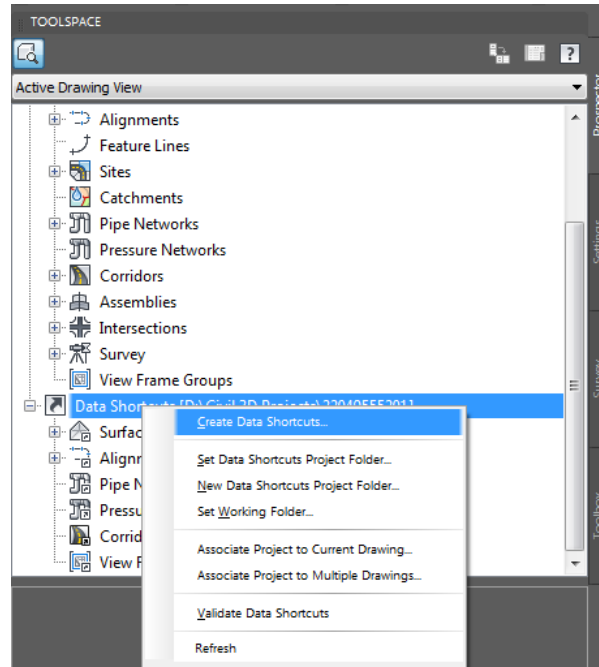


- 15. **Save** your file before continuing.

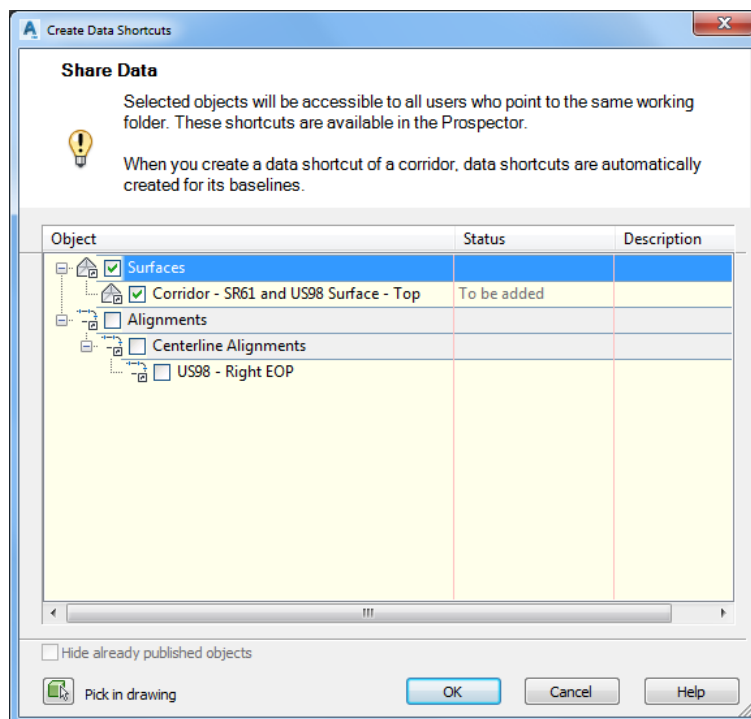
### Exercise 6.4 Create Corridor Surface Data Shortcuts

In this exercise you will create a Data Shortcut for the Corridor: *Corridor - SR61 and US98 Surface - Top* surface.

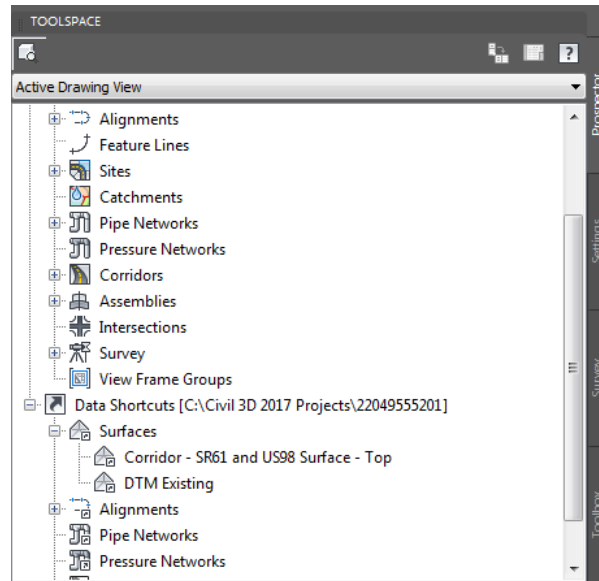
1. From *TOOLSPACE > Prospector tab > Data Shortcuts*, right click to display popup menu and select **Create Data Shortcuts...**



2. From the Create Data Shortcuts dialog, check the box next to **Surfaces**. Click OK to create the Surface Data Shortcut and close the Create Data Shortcuts dialog.



3. From TOOLSPACE > Prospector tab > Data Shortcuts, expand **Surfaces** to display the **Corridor - SR61 and US98 - Top** Surface Data Shortcut.



4. **Save and Close** MODLRD03.dwg

# 7 USING THE FDOT DRIVEWAY BLOCK

## DESCRIPTION

In this chapter you will learn how to create a Driveway Corridor Model using the FDOT Driveway Block.

## OBJECTIVES

In this chapter, you will learn about:

- Review referenced data
- Create Data Shortcuts Reference:
  - Corridor: Corridor - SR61 and US98
  - Surface: Corridor- Corridor - SR61 and US98 - Top
- Create Driveway layout using FDOT Driveway Block
- Create Feature Lines from Driveway layout lines
- Create Profile and Profile Views
- Create Driveway Assembly
- Create Driveway Corridor Model:
  - SR61 Driveway Left
- Add Targets to Driveway Corridor Model
- Create Corridor Surface from SR61 Driveway Left
- Use the Object Viewer to display Corridor Model SR61 Driveway Left
- Review Results

## CHAPTER SETUP

Run the Chapter 7 - 22049555201.exe file and restore all files to the C:\Civil 3D 2017 Projects folder.

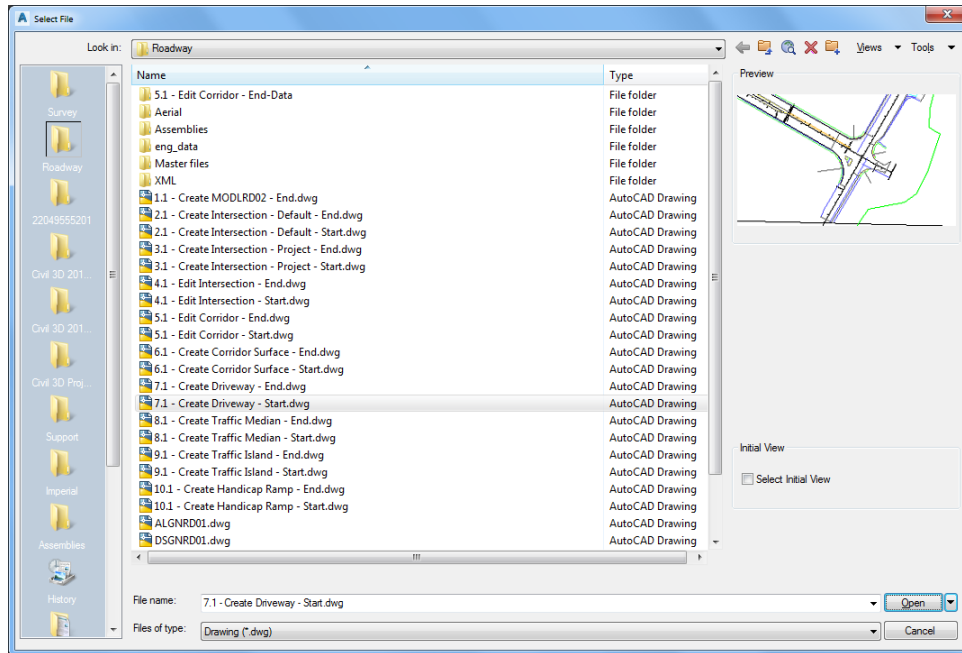
Do not change the location in which the Practice Files are installed. Doing so can cause errors when completing the exercises in this training manual.



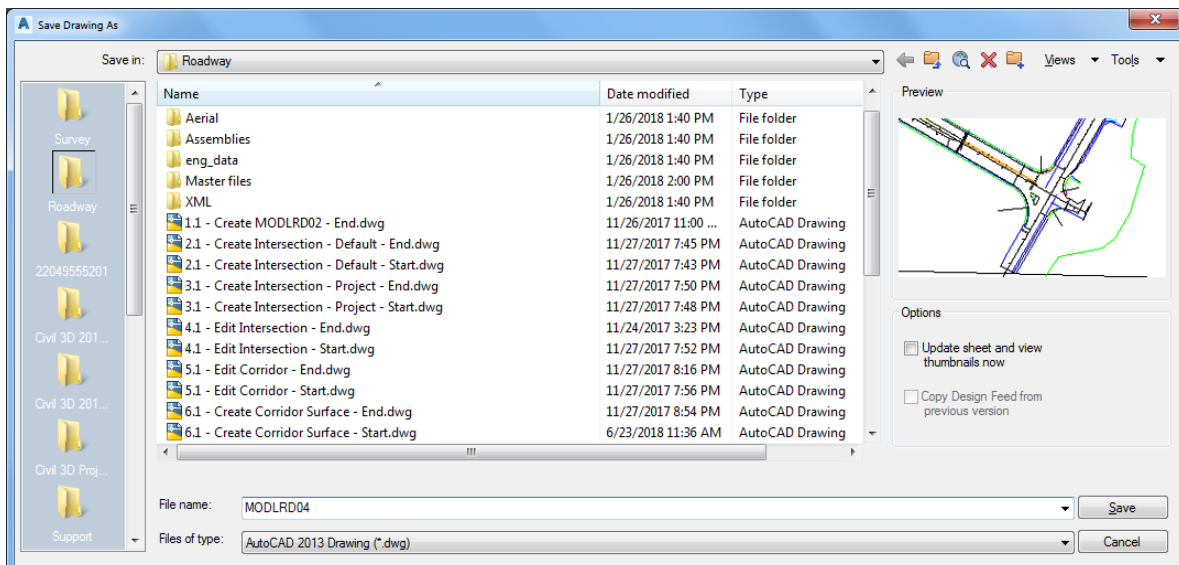
### Exercise 7.1 Create MODLRD04 File

In this exercise you will create the MODLRD04 file to be used to create a Driveway Corridor Model using the FDOT Driveway Block.

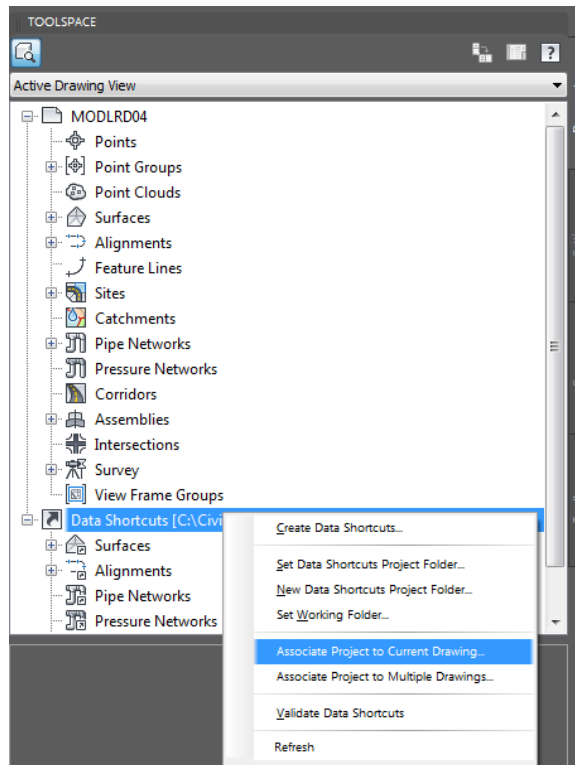
1. From the **Select File** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and select **Open 7.1 - Create Driveway - Start.dwg**. Click **Open** to close the **Select File** dialog box.



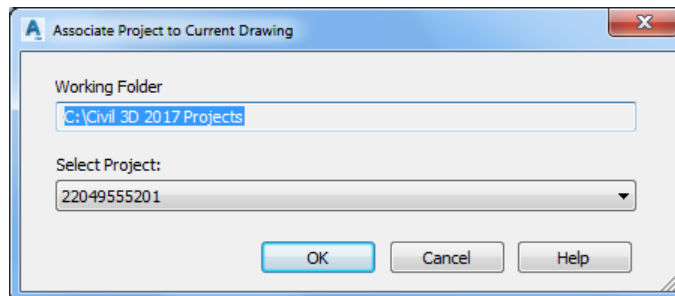
2. From the **Save Drawing As** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and **MODLRD04.dwg**. Click **Save** to close the **Save Drawing As** dialog box.



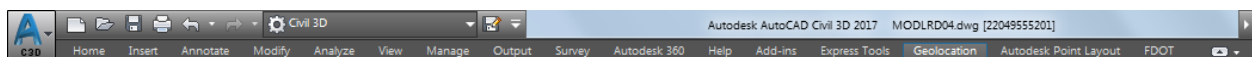
3. Associate MODLRD04.dwg File to the Project. From the *TOOLSPACE > Prospector tab > Data Shortcuts* [C:\Civil 3D 2017 Projects\22049555201], right-click and select **Associate Project to Current Drawing**.



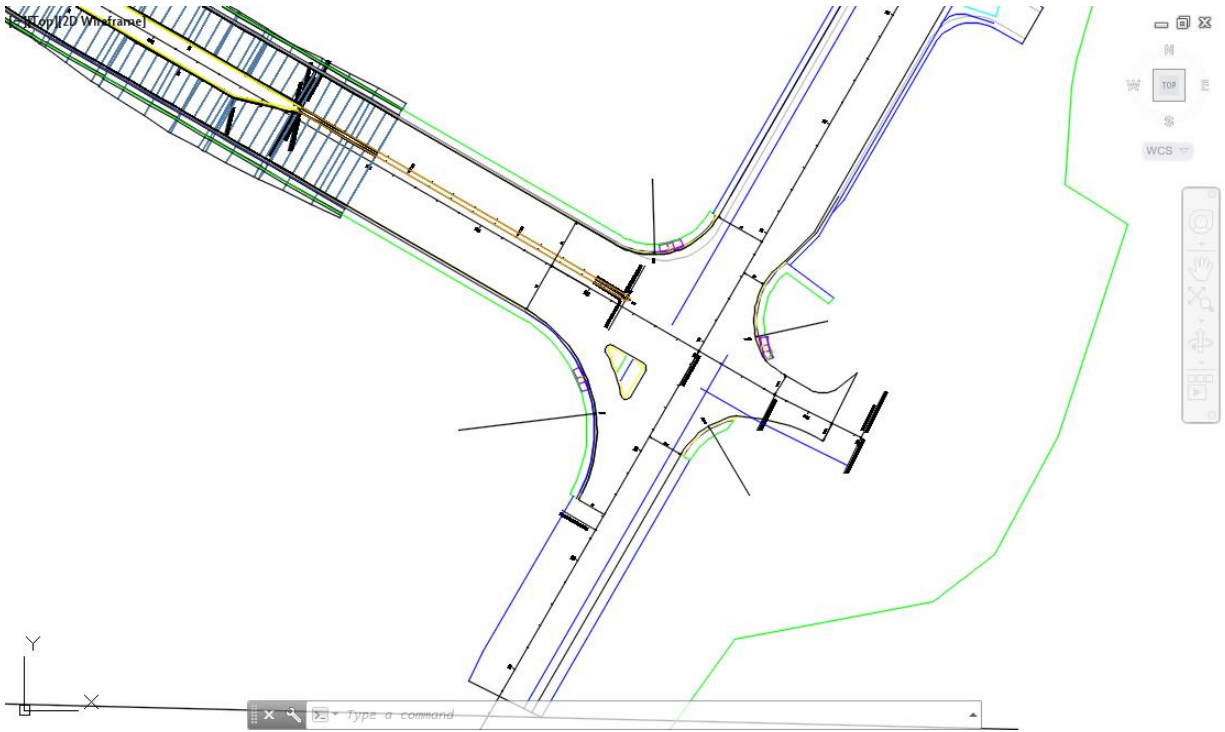
4. From Associate Project to Current Drawing dialog box, set the following values:
  - o Working Folder: set to C:\Civil 3D 2017 Projects
  - o Select Project: click 22049555201 from drop down list
5. Click **OK** to close Associate Project to Current Drawing dialog box.



6. *MODLRD04.dwg* is now associated to the C:\Civil 3D 2017 Projects\22049555201 Project.



7. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.

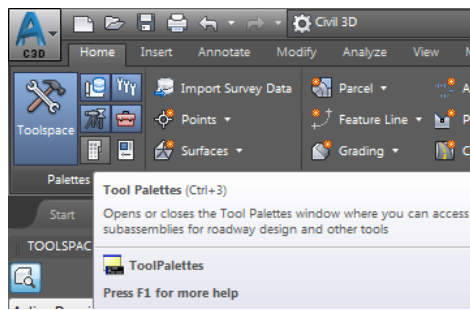
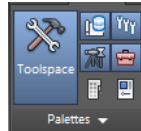
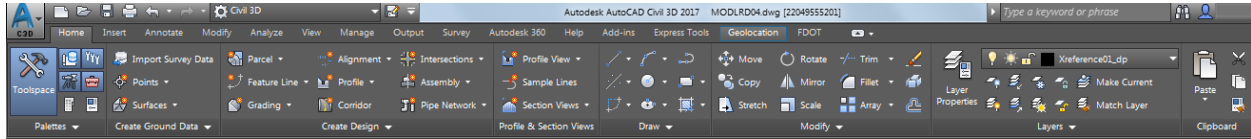


8. **Save** your file before continuing.

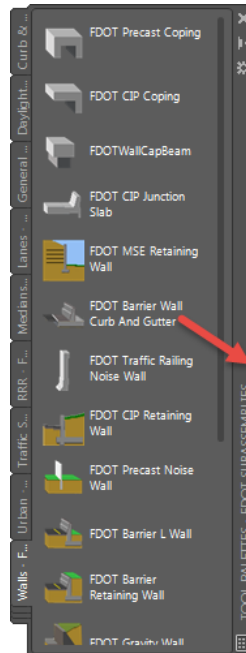
### Exercise 7.2 Insert Driveway Block

In this exercise you will insert the FDOT Dynamic Driveway Block from the FDOT CIVIL BLOCKS tool palette group.

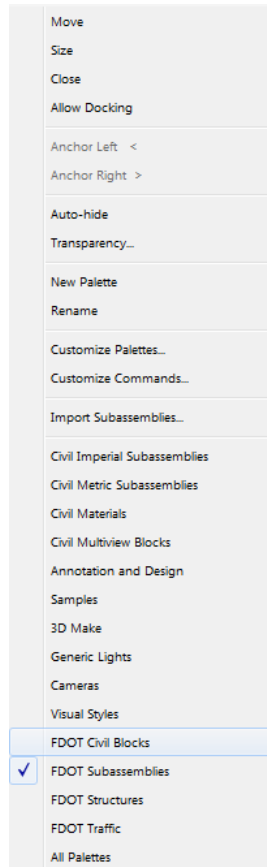
1. From the Home tab > Palettes panel, select the *Tool Palettes* icon.



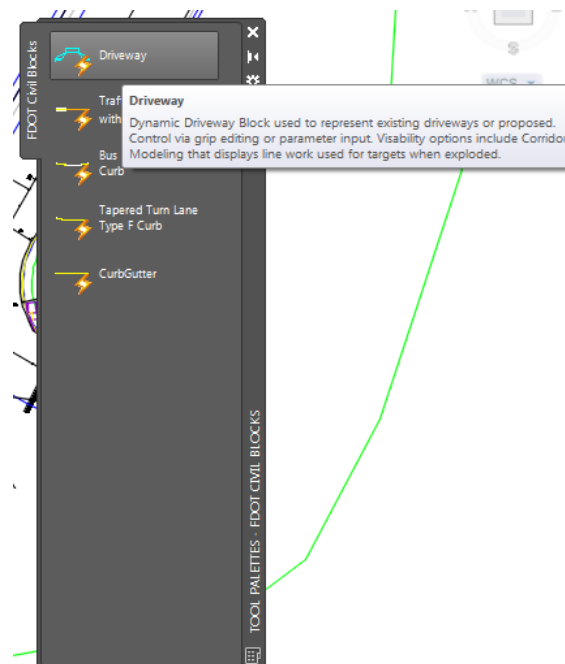
2. Right-click on the Tool Palettes menu bar, use the red arrow as a reference.



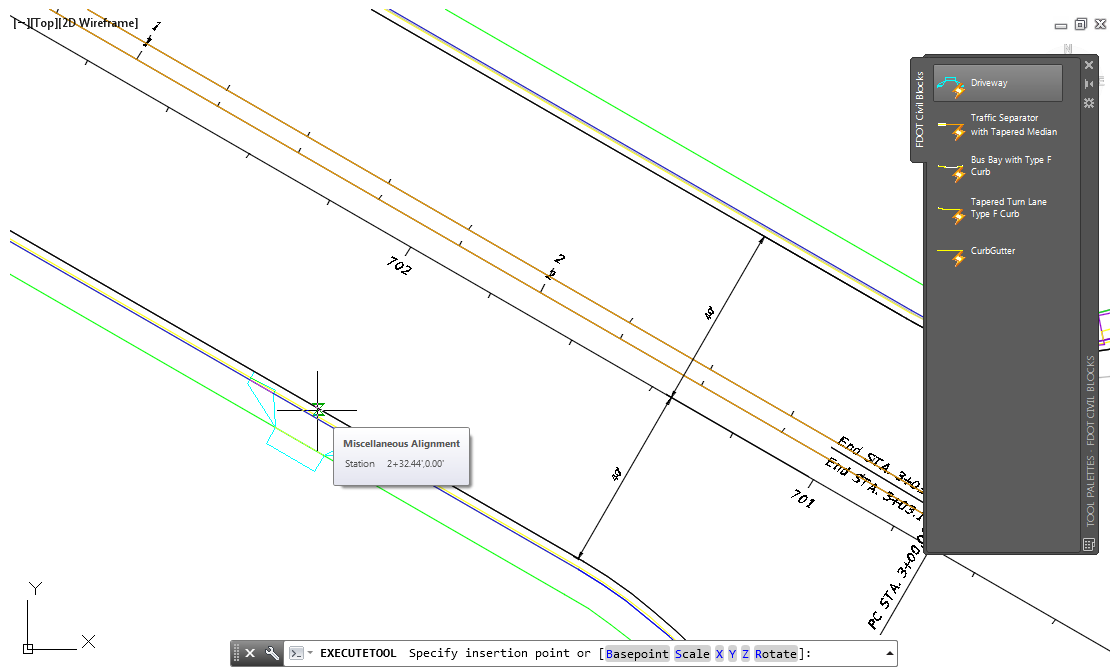
3. Select FDOT Civil Blocks palette group from the list.



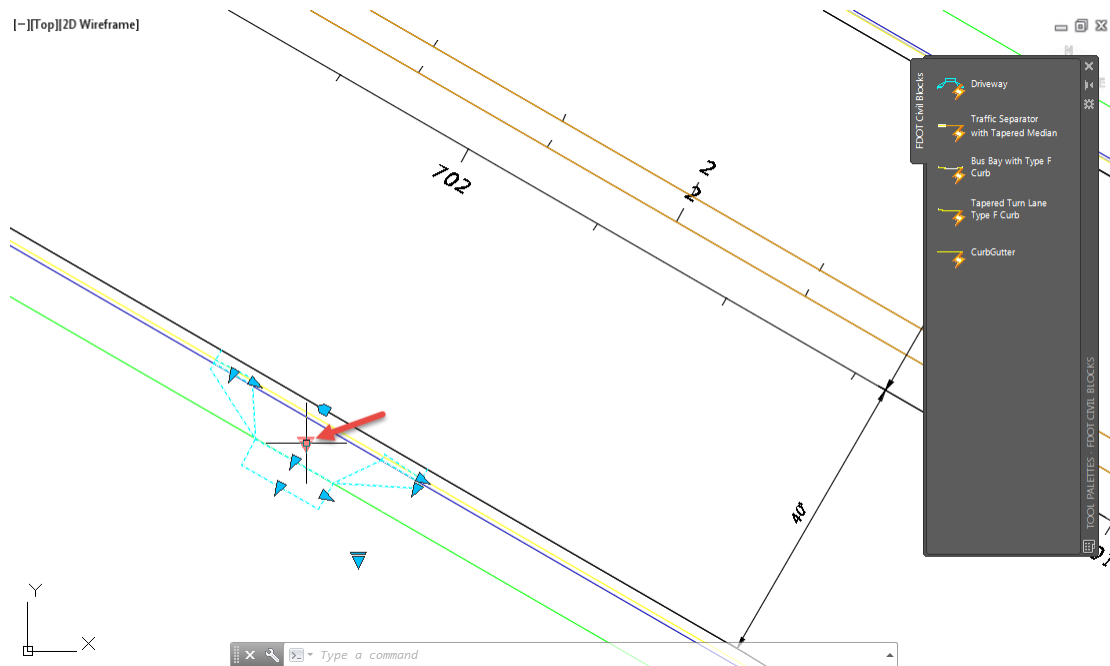
4. Select the **Driveway** block from the Tool Palette FDOT Civil Blocks..



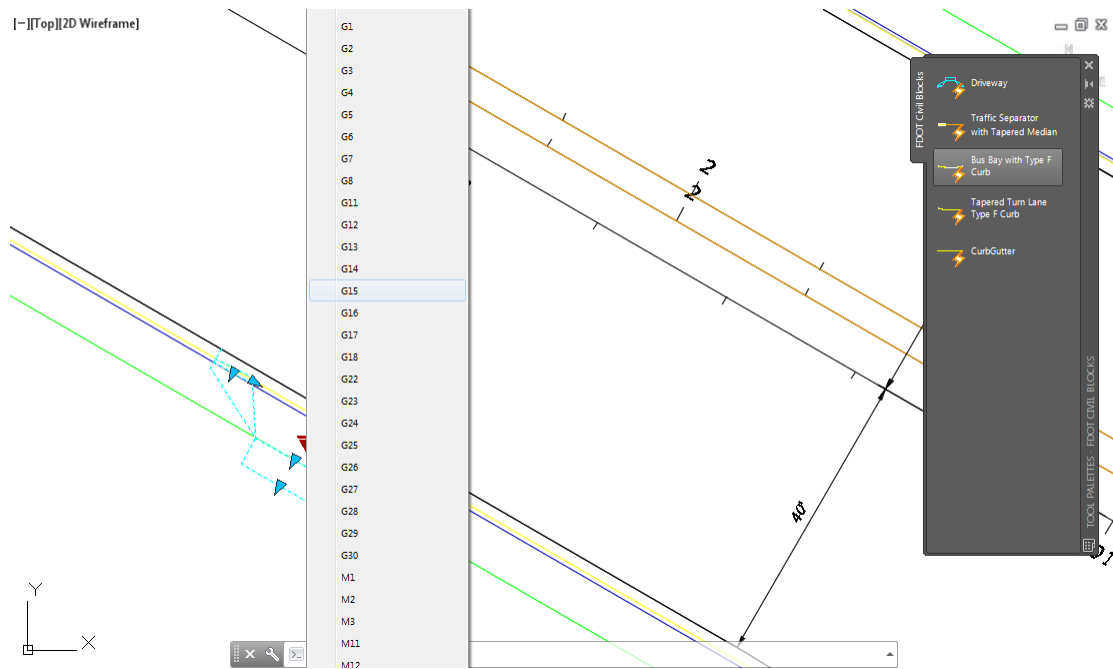
5. Use the **Zoom** and **Pan** commands, then hover over the **Miscellaneous Alignment** on the left ETW along SR61 alignment parallel to station 702.
6. Pick to place the Driveway block when it is positioned with the ramp pointing away from the travel lanes.



7. Select the Driveway Block you just placed, then select the triangle grip located near the center of the Driveway Block with the line above it, use the red arrow as a reference.



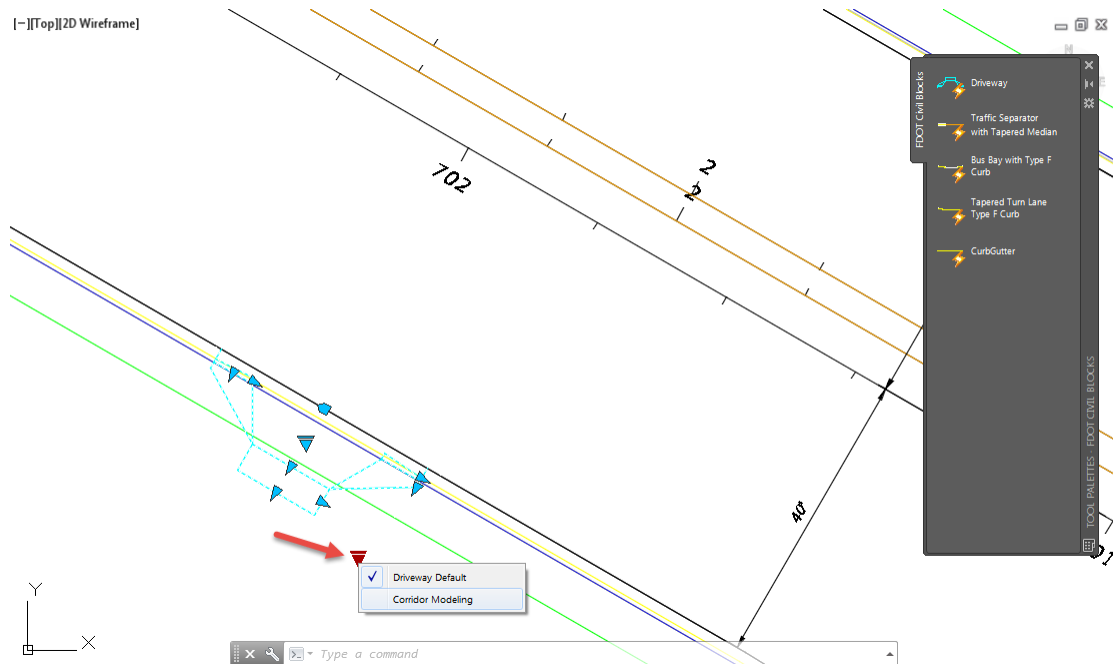
8. From the list choose the G 15 Driveway Type.



9. With the Driveway Block still selected, select the triangle grip located below the Driveway Block with the line above it, use the red arrow as a reference.

**Note** This glyph that looks the same as the Driveway Type has two settings Driveway Default and Corridor Modeling.

10. Select **Corridor Modeling** to change the block display to the minimum geometry needed for corridor model targeting.

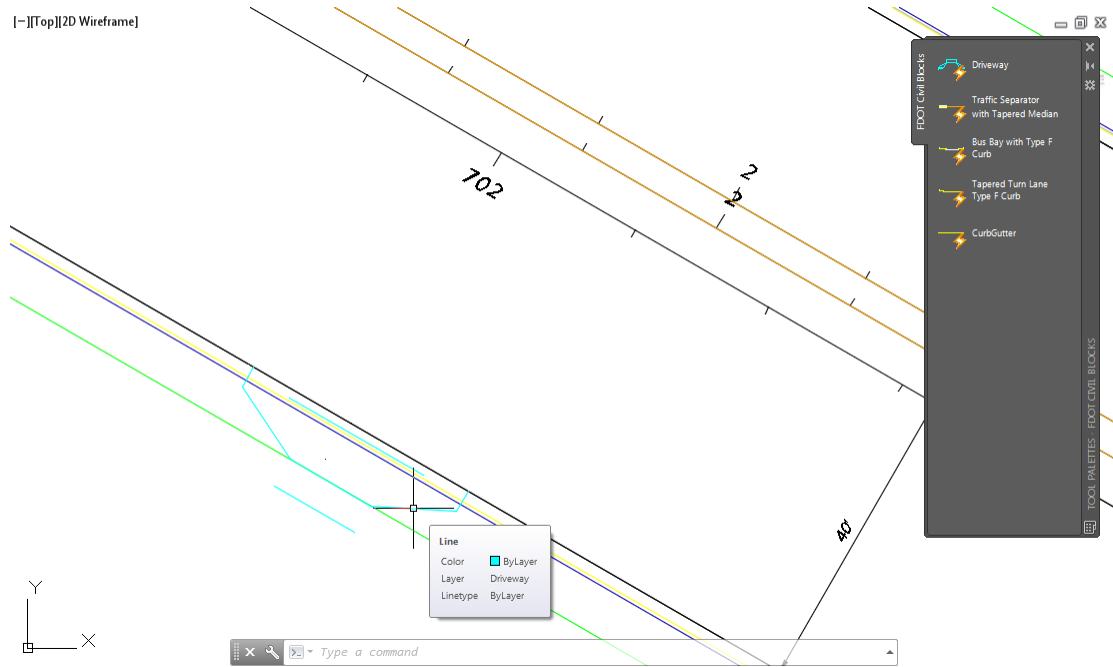




11. With the Driveway Block still selected, type **Explode** on the command line then press the **Enter**



12. The result is lines on layer Driveway.

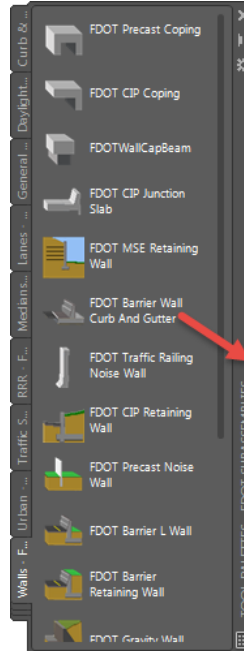


13. **Save** your file before continuing.

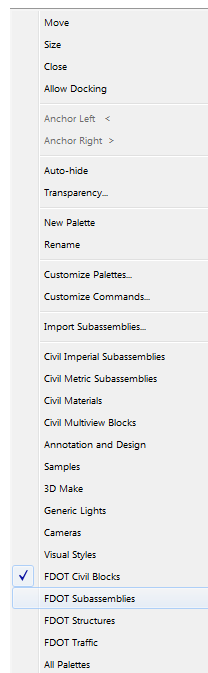
### Exercise 7.3 Driveway Slab Subassemblies Help

In this exercise you will access the Driveway Slab Subassemblies Help to learn about the targets required for the driveway corridor model.

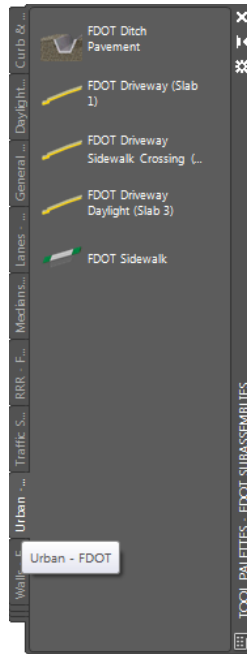
1. Right-click on the Tool Palettes menu bar, use the red arrow as a reference.



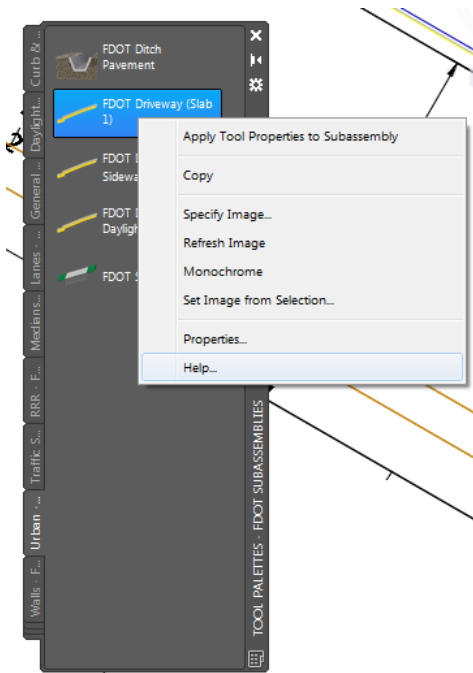
2. Select the FDOT Subassemblies palette group from the list.



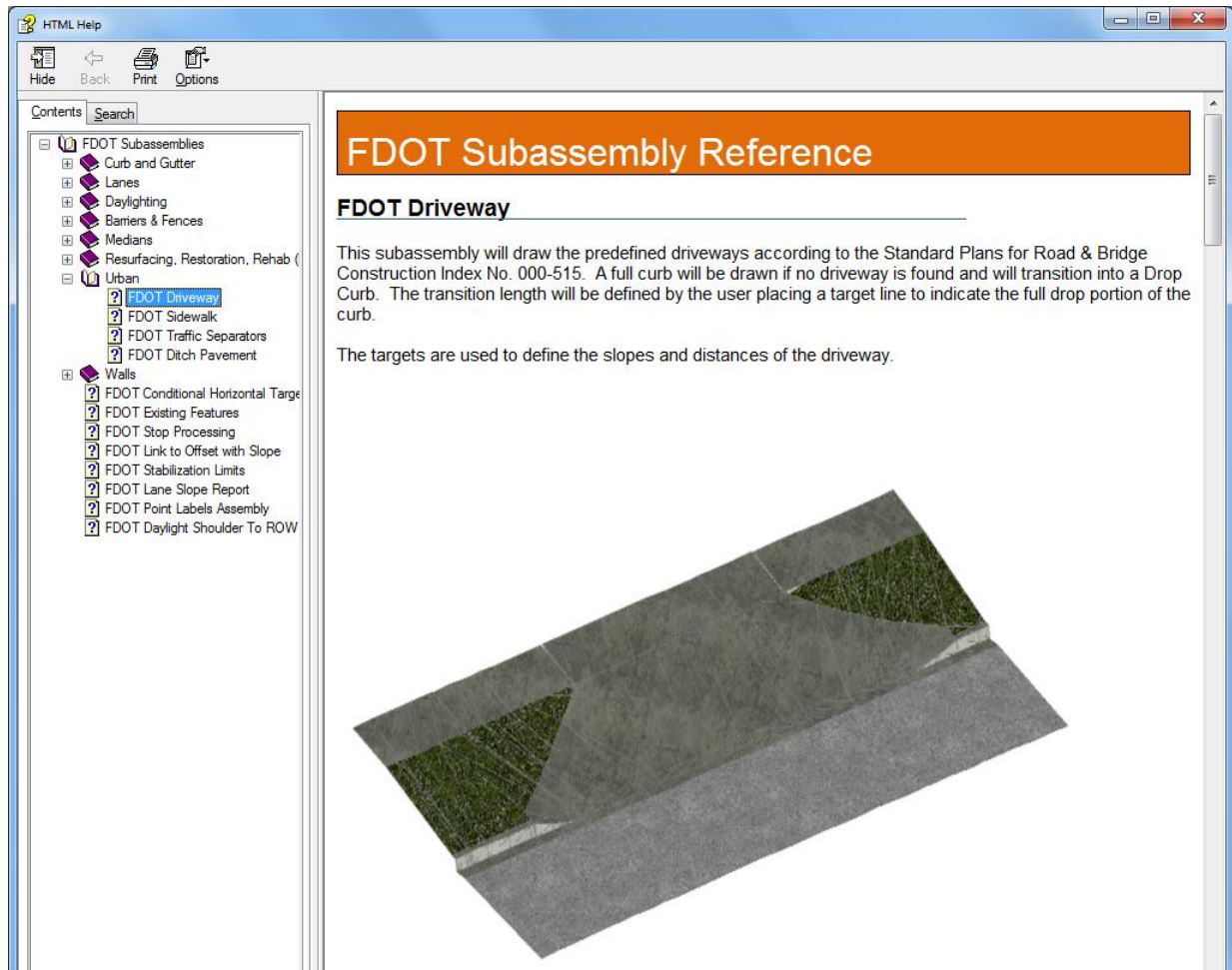
- From the FDOT Subassemblies palette, select the Urban tab.



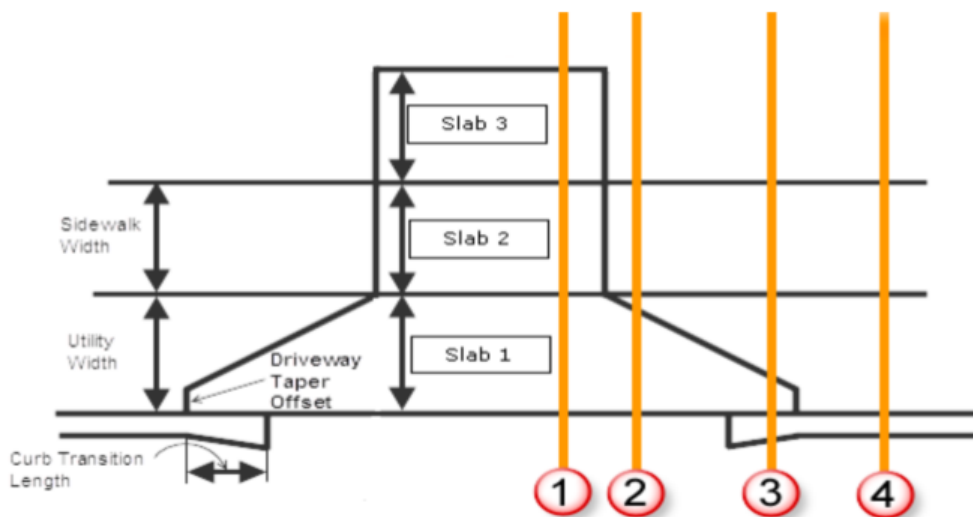
- Right click the FDOT Driveway (Slab 1) subassembly and select Help.



- Expand Urban in the FDOT Subassembly Reference Help documentation. Choose **FDOT Driveway** if it is not already selected



- Review the diagram showing the 3 driveway slabs.



7. Scroll down to Target Parameters and write down the names of the Offset Targets.

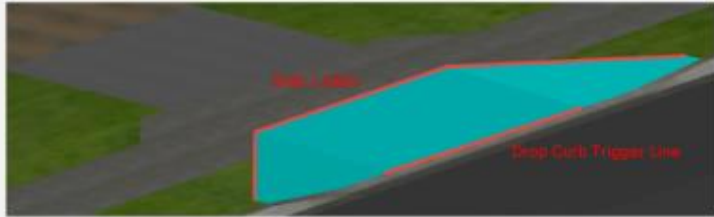
**Target Parameters**

These target lines are used to cause the driveway to be modeled. They also provide offset and elevation information to the subassembly. Some are optional and only need to be drawn or targeted if the design calls for them. Some will be used for more than one purpose and targeted as both Offset and Elevation targets. It is best to use feature lines to draw them due to the fact that feature lines can be named. Naming the feature lines makes it easier to tell which one goes to which driveway, if you have multiple driveways in your project.

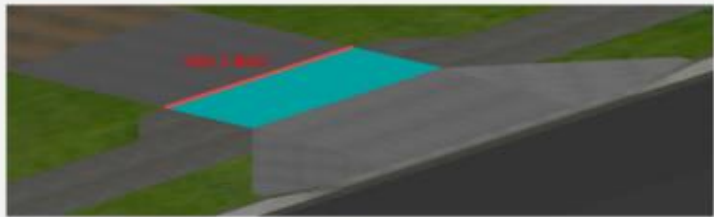
Offset Targets	
Name	Optional (Yes or No)
Slab 1 Back	No
Slab 2 Back	Yes
Slab 3 Trigger Line	Yes
Drop Curb Trigger Line	Yes


Elevation Targets	
Name	Optional (Yes or No)
Slab 1 Back	No
Slab 2 Back	Yes

Slab 1 Back is used as an Offset and Elevation Target Line and is REQUIRED in order to model your basic FDOT Driveway.  
Drop Curb Trigger Line is needed only where and when there is Full Drop Curb to be modeled.

Slab 2 Back is used as an Offset and Elevation Target Line and should be drawn to be coincident with the Back of Sidewalk Line. This is because it will represent where the Slab 2 structure aligns with the back of sidewalk in the model. This line may also be used as the Slab 3 Trigger Line.

Slab 3 Trigger Line is used as a trigger and the Offset and Elevation are not important. The presence of this line causes the Slab 3 structure to be modeled in your corridor. This line may be a shared target line with the Slab 2 Back targeting.

**Note** You will use these as names for Feature Lines created in another step later.

- ✓ Slab 1 Back
- ✓ Slab 2 Back
- ✓ Slab 3 Trigger

8. Review the definitions and parameters requirements for the FDOT Driveway:

- Slab 1: Will always be the first slab placed and is always present if there is a driveway being modeled.



- Slab 2: Will only be needed if the driveway crosses a sidewalk.



- Slab 3: Is used to tie the new driveway to existing ground or as close as possible within design restrictions. The user can restrict the length of Slab 3 by using the Tolerance parameter.



- Input Parameters:

**Input Parameters**

These parameters are used to override the default settings used for certain attributes of the individual FDOT Driveway slabs.

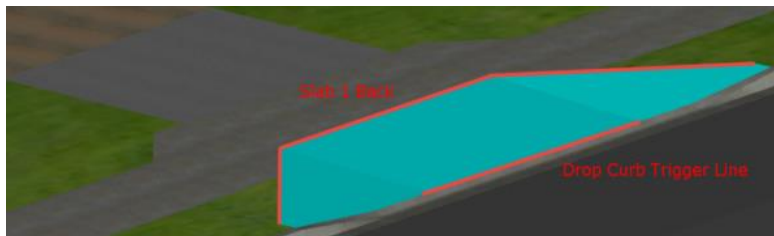
Parameter	Description	Type	Default Value
Side	Specifies which side to place the subassembly.	Left/Right	Right
Driveway Thickness	Specifies the thickness of the driveway slab.	Thickness in decimal feet.	6.00"
Slab 3 Slope	Specifies the slope of the driveway Slab 3.	Double percentage	-4.0 %
Slab 3 Tolerance	Specifies the maximum length of Slab 3 at the current frequency line.	Positive Double > 10	40.00
Link Code - Ground	Code to be applied to all links indicating existing or proposed ground.	String	Sod, Top, Datum
Link Code – Top of Driveway	Code to be applied to all links on the surface of the driveway slabs.	String	Top, Driveway, DrivewaySlopeLabel
Link Code – Driveway Remaining	Code to be applied to all remaining links of the driveway slabs.	String	Datum, Driveway

- Target Parameters:

**Target Parameters**

These target lines are used to cause the driveway to be modeled. They also provide offset and elevation information to the subassembly. Some are optional and only need to be drawn or targeted if the design calls for them. Some will be used for more than one purpose and targeted as both Offset and Elevation targets. It is best to use feature lines to draw them due to the fact that feature lines can be named. Naming the feature lines makes it easier to tell which one goes to which driveway, if you have multiple driveways in your project.

<b>Offset Targets</b>	
<b>Name</b>	<b>Optional (Yes or No)</b>
Slab 1 Back	No
Slab 2 Back	Yes
Slab 3 Trigger Line	Yes
Drop Curb Trigger Line	Yes
<b>Elevation Targets</b>	
<b>Name</b>	<b>Optional (Yes or No)</b>
Slab 1 Back	No
Slab 2 Back	Yes



- Slab 1 Back: Is used as an Offset and Elevation Target Line and is **REQUIRED** in order to model your basic FDOT Driveway. Drop Curb Trigger Line is needed only where and when there is Full Drop Curb to be modeled.



- Slab 2 Back: Is used as an Offset and Elevation Target Line and should be drawn to be coincident with the Back of Sidewalk Line. This is because it will represent where the Slab 2 structure aligns with the back of sidewalk in the model. This line may also be used as the Slab 3 Trigger Line.



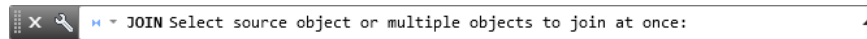
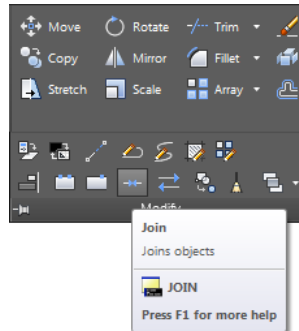
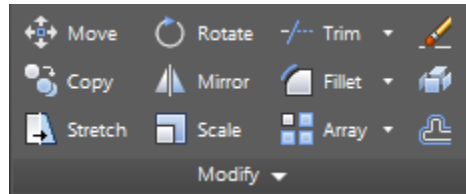
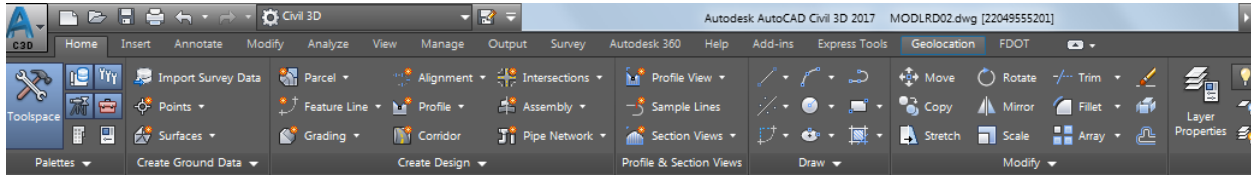
- Slab 3 Trigger Line: Is used as a trigger and the Offset and Elevation are not important. The presence of this line causes the Slab 3 structure to be modeled in your corridor. This line may be a shared target line with the Slab 2 Back targeting. Slab 2 Back / Slab 3 Trigger (usually represented by the same object).



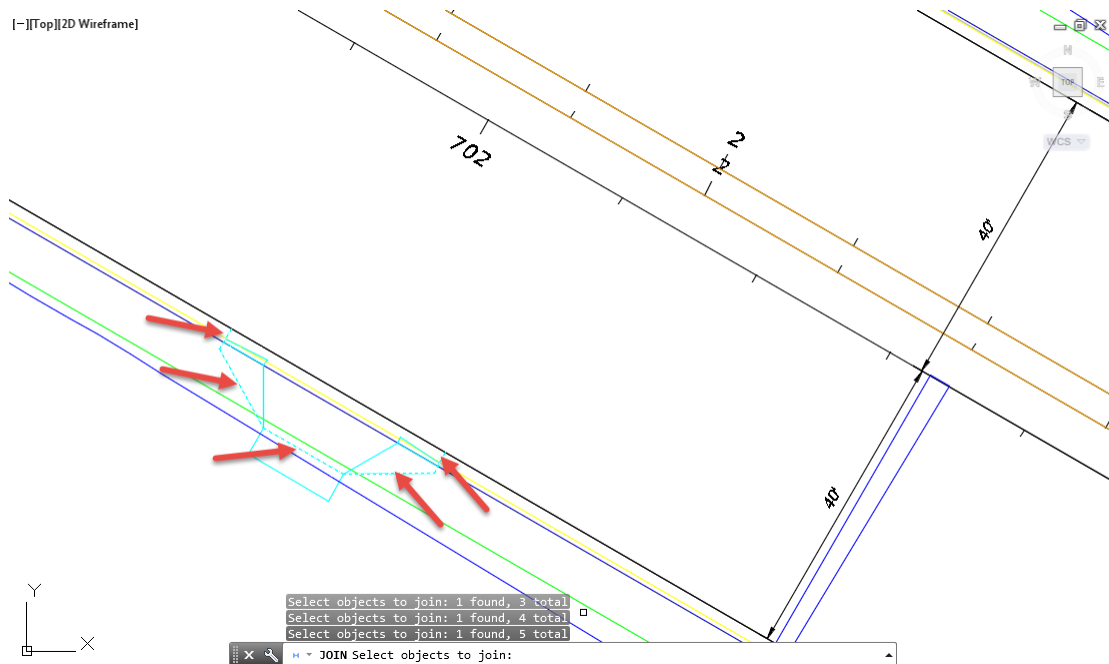
### Exercise 7.4 Use the Join Command to Connect the Individual Line Segments

In this exercise you will use the Join command to connect the individual line segments create when the Driveway Block was exploded.

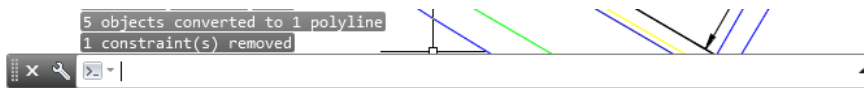
1. From the Home tab > Modify panel > select **Modify**, then select **Join**.



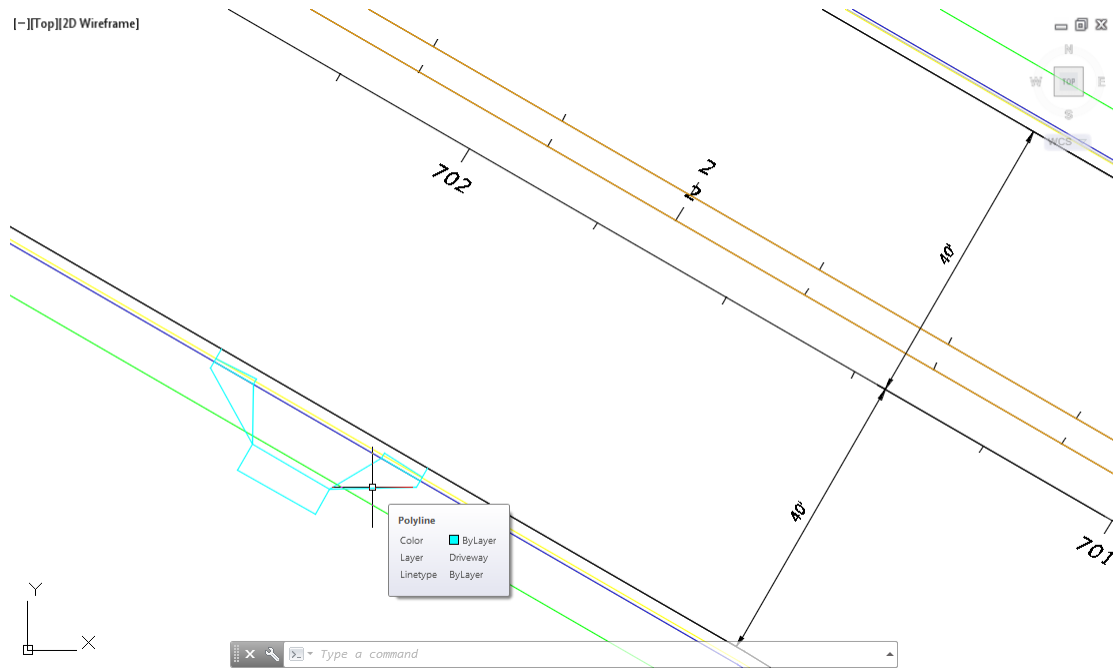
2. Select the five lines that represent the **Slab 1 Back**, use the red arrows as a reference. Then press **Enter**.



3. Above the Command line you should the message 5 objects converted into 1 polyline.



4. Hover over the Polyline just created to display tool tips.

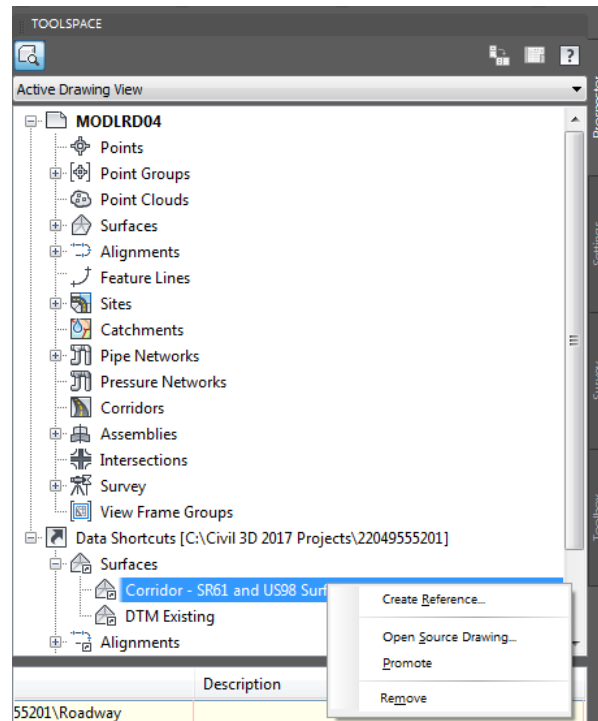


5. Save your file before continuing.

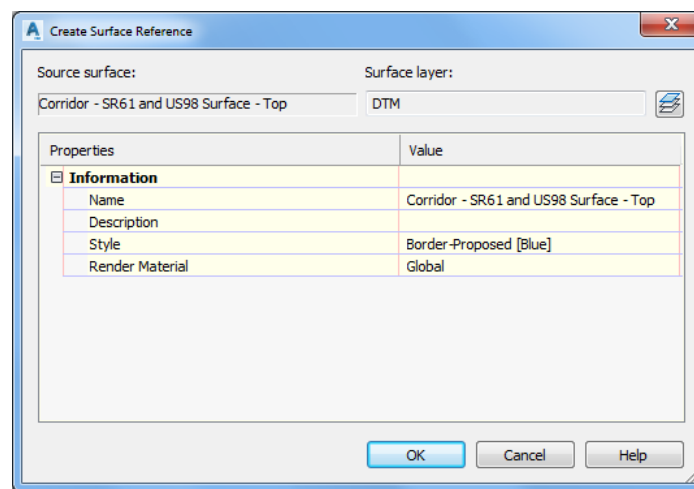
### Exercise 7.5 Create Data Shortcuts Reference to Surface: Corridor - SR61 and US98 Surface - Top

In this exercise you will create Data Shortcut References to the Surface - Corridor - SR61 and US98 Surface - Top you created using the prior chapter.

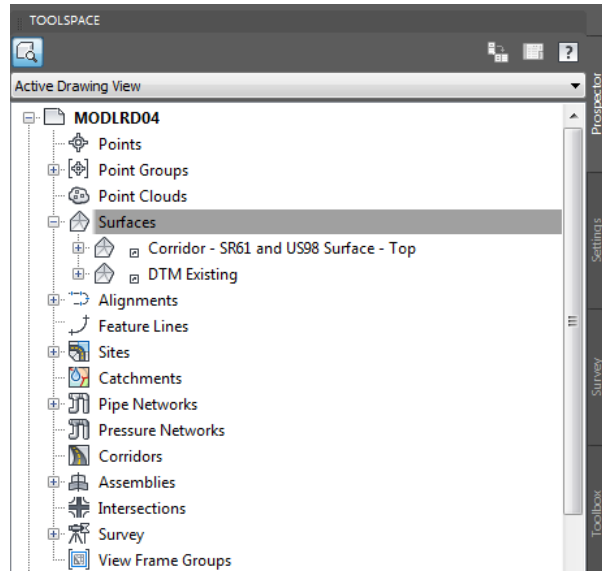
1. From the **TOOLSPACE > Prospector** tab > **Data Shortcuts [C:\Civil 3D 2017 Projects\22049555201]**, right-click and select **Create Reference...**



2. From the **Create Surface Reference** dialog, set the following values:
  - o *Name:* Corridor - SR61 and US98 Surface - Top
  - o *Surface Style:* Border-Proposed [Blue]
3. Click **OK** to close **Create Surface Reference** dialog.



- Review Surfaces in MODLRD04 from TOOLSPACE > Prospector tab, expand Surfaces, the data referenced Surface: Corridor - SR61 and US98 Surface - Top is now displayed in the list.



- Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
- Hover over the data referenced Surface: Corridor - SR61 and US98 Surface - Top to display tool tips.

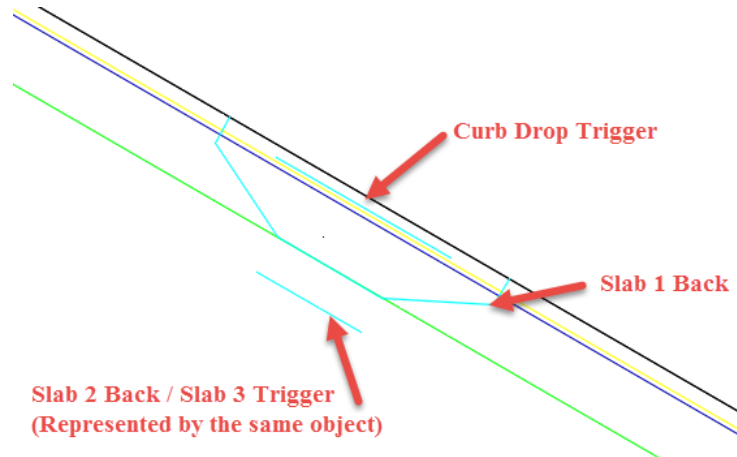


- Save** your file before continuing.

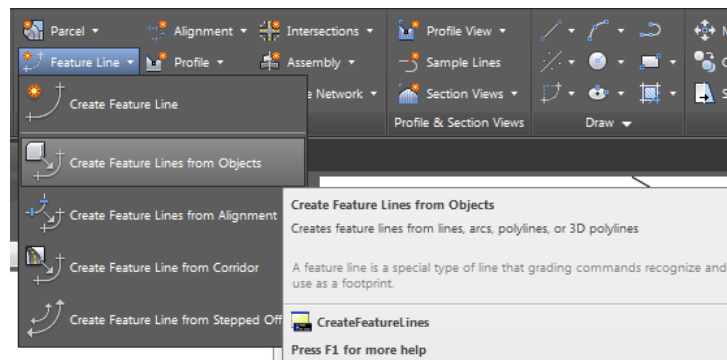
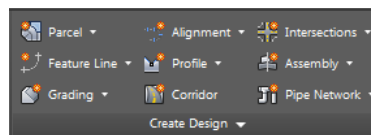
### Exercise 7.6 Create Feature Lines from the Driveway lines

In this exercise you will create Feature Lines from the lines and polylines created from the exploding of the Driveway Block.

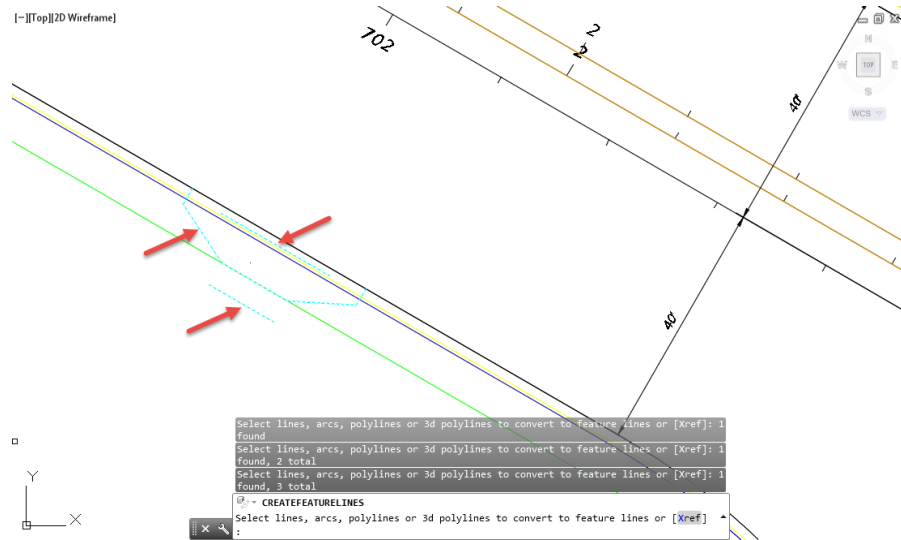
- Using Feature Lines for corridor targeting enables you to see the name of the Feature Line in the dialog after selecting it in the drawing. This reduces confusion and helps to avoid mistakes.



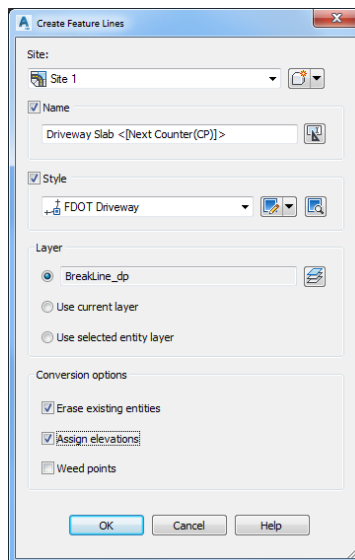
- The geometry for 4 corridor modeling targets created from the Driveway block:
  - ✓ Curb Drop Trigger
  - ✓ Slab 1 Back
  - ✓ Slab 2 Back / Slab 3 Trigger (usually represented by the same object)
- From the Home tab > Create Design panel > select Feature Line, and select Create Feature Lines from Objects command.



4. Select the two lines and one polylines representing the *Drop Curb Trigger*, *Slab 1 Back*, and *Slab 2 Back*. Press **Enter** to continue.

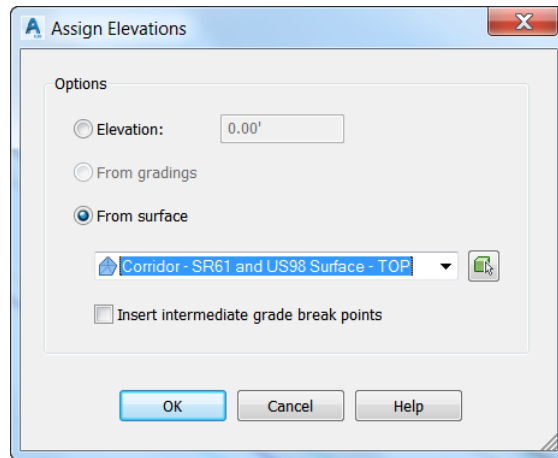


5. From the Create Feature Lines dialog box, set the following values:
  - Set *Site*: **Site 1**
  - Put a check in the box next to **Enable Name and Style**
  - Set *Name*: **Driveway Slab <[Next Counter(CP)]>**
  - Set the *Style* to **FDOT Driveway**
  - Set *Conversion options*:
    - Check **Erase existing entities**
    - Check **Assign elevations**
6. Click **OK** to continue.



7. From the Assign Elevations dialog, set the following values for Options:
  - Set From surface
  - Select Corridor - SR61 and US98 Surface - TOP from the drop-down list
  - Uncheck the box next to Insert intermediate grade break points

8. Click **OK** to continue.

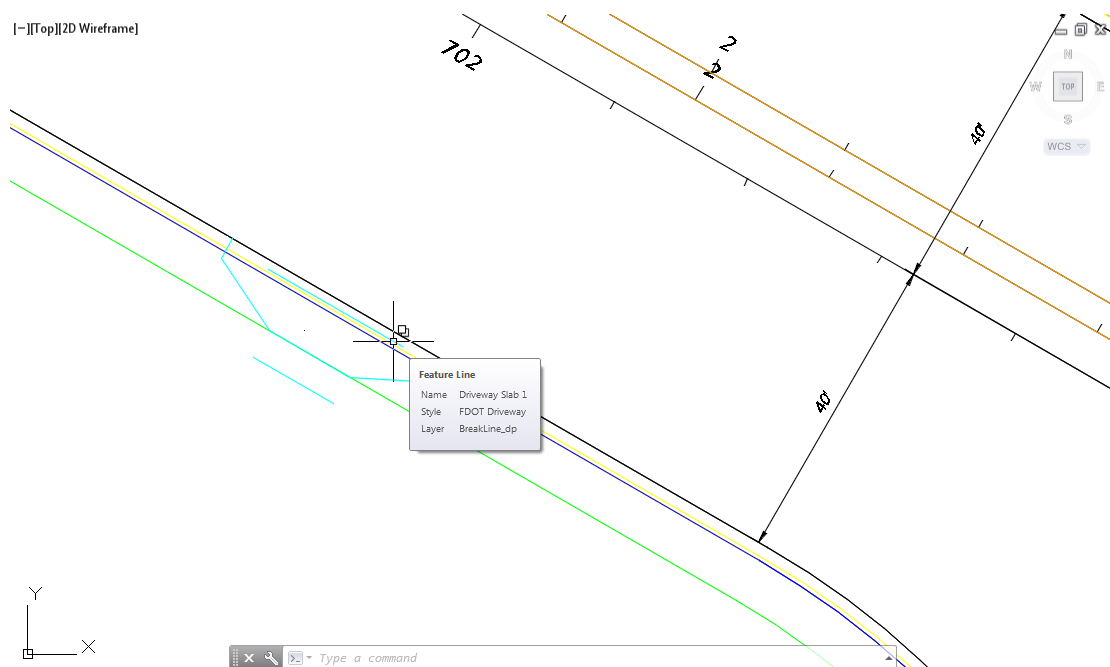


9. Command lines displays 3 feature lines added to site: Site 1.



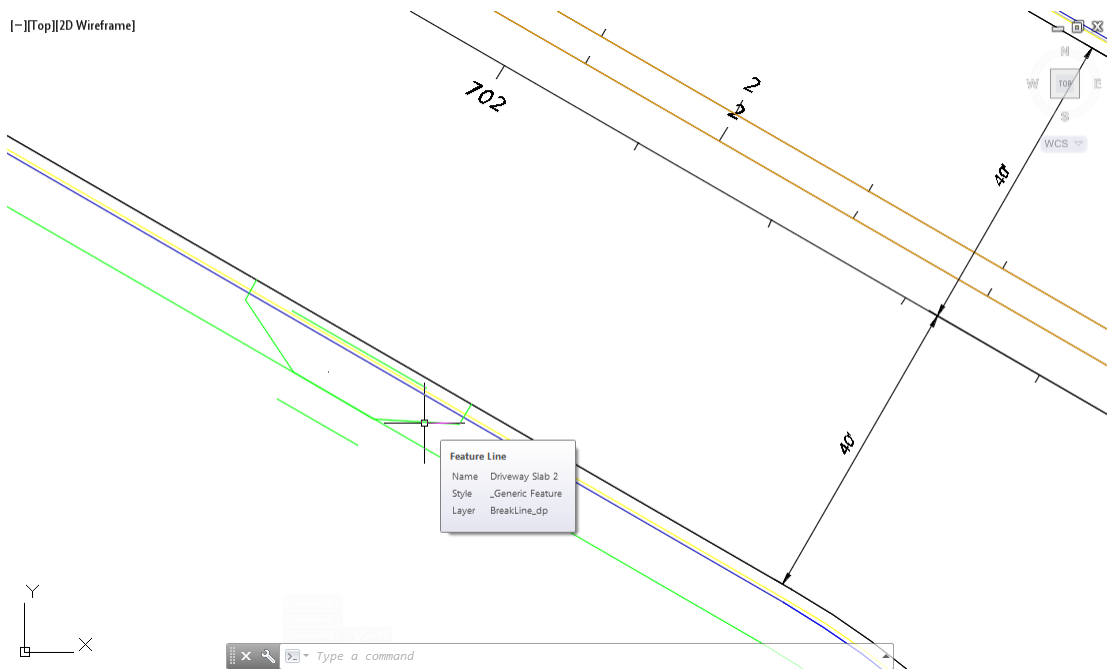
10. Hover over the 3 Feature Lines created the drawing to display tool tips

- Feature Line: Driveway Slab 1

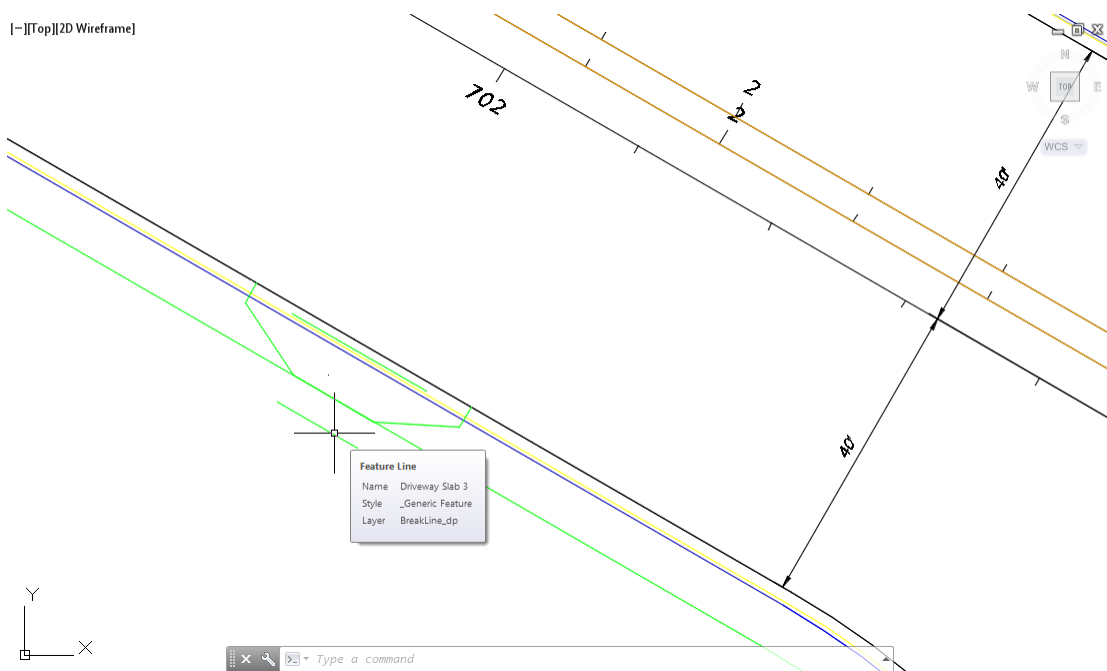




o Feature Line: Driveway Slab 2



o Feature Line: Driveway Slab 1.



**Note** Special notes about the behavior of the Create Feature Lines from Objects command:

- o Duplicate names are not allowed
- o Next Counter follows the order in which you selected objects
- o Group objects for a specific driveway in the same Site
- o Design elevations are assigned at each vertex from the referenced corridor model surface.

11. **Save** your file before continuing.

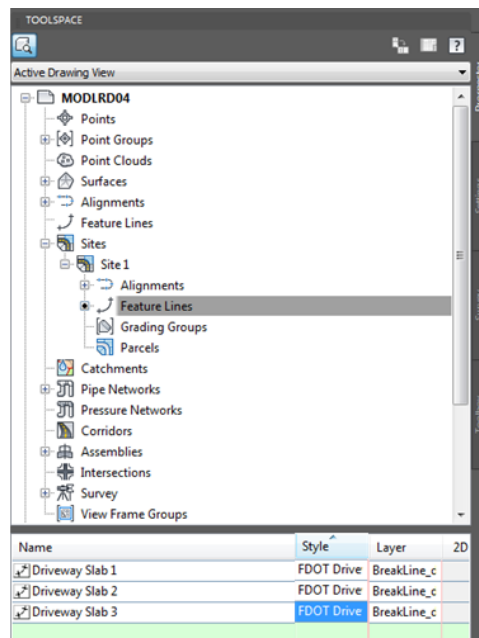
### Exercise 7.7 Edit the Names of the Feature Lines

In this exercise you will edit the names of the feature lines in the Prospector to correct errors and match the target names you wrote down in a prior step.

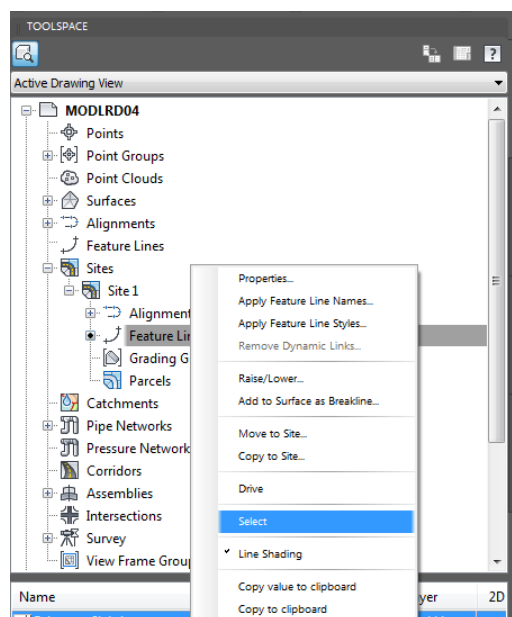
These are the names for Feature Lines you wrote down:

- ✓ Slab 1 Back
- ✓ Slab 2 Back
- ✓ Slab 3 Trigger
- ✓ Drop Curb Trigger

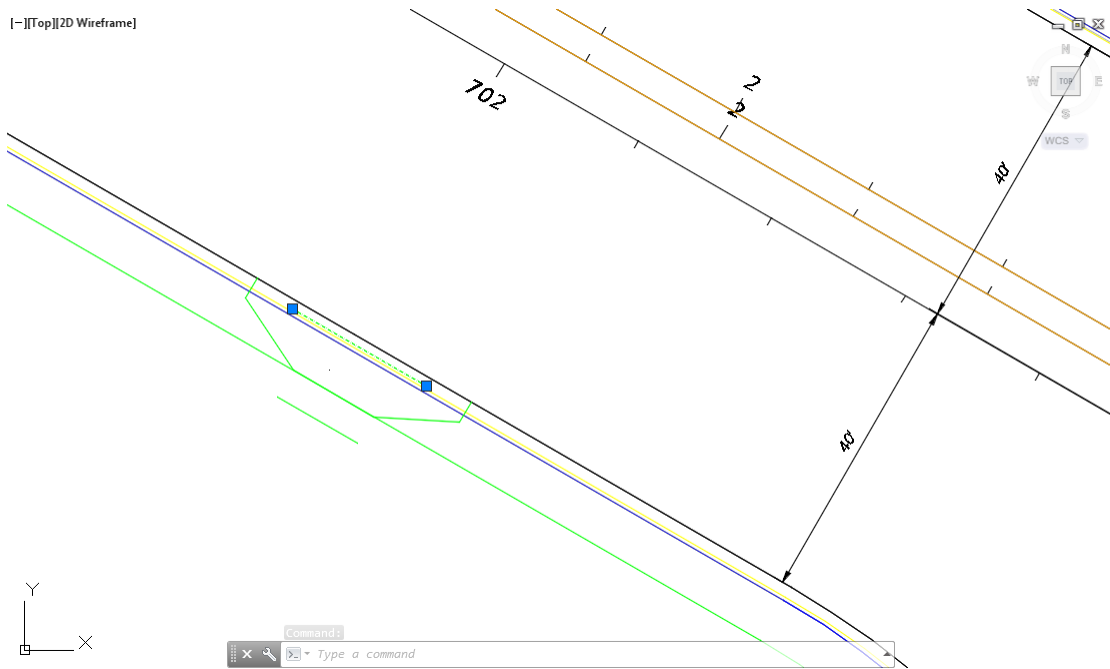
1. From **TOOLSPACE** > **Prospector** tab, expand **Sites**, expand **Site 1**, Select **Feature Lines** to display the individual Feature Lines in the lower pane of the Prospector.



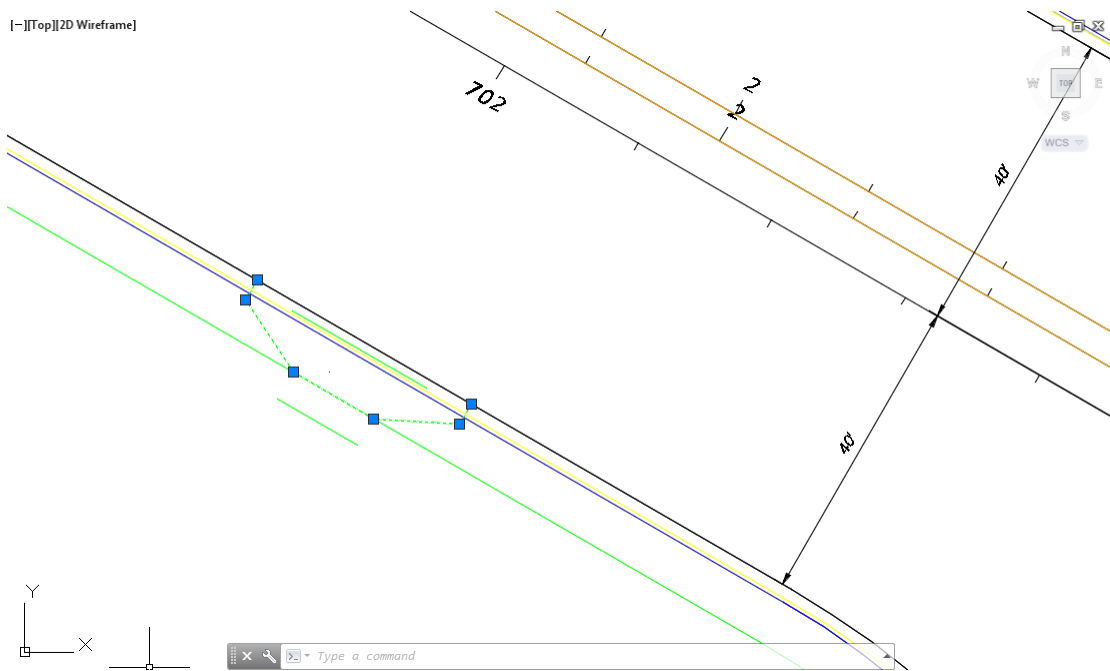
2. Right click *Driveway Slab 1* and choose **Select**.



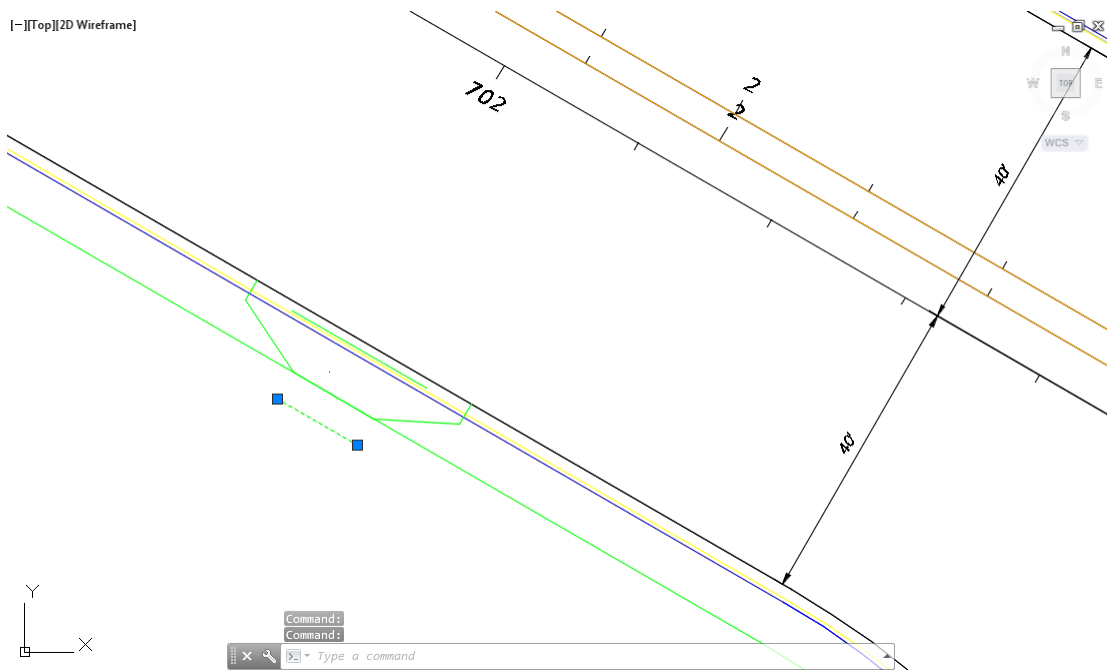
- 3. The Driveway Slab 1 Feature Line is highlighted in the drawing editor.



- 4. Repeat this process for the Driveway Slab 2 and Driveway Slab 2 Feature Lines. Driveway Slab 2 Feature Line.

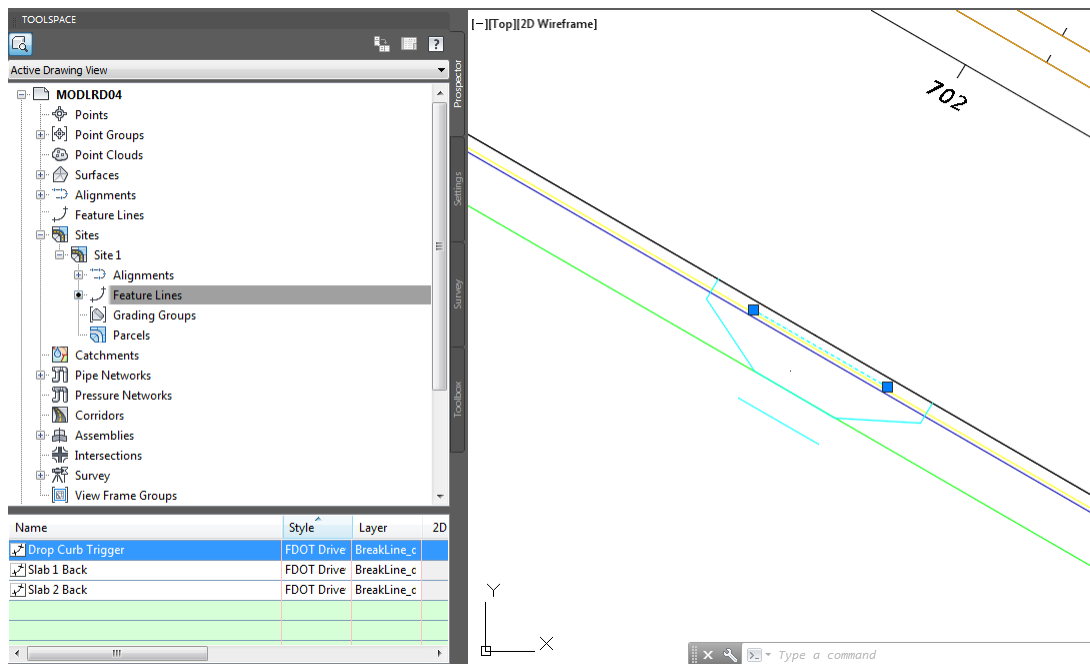


5. Driveway Slab 3 Feature Line.

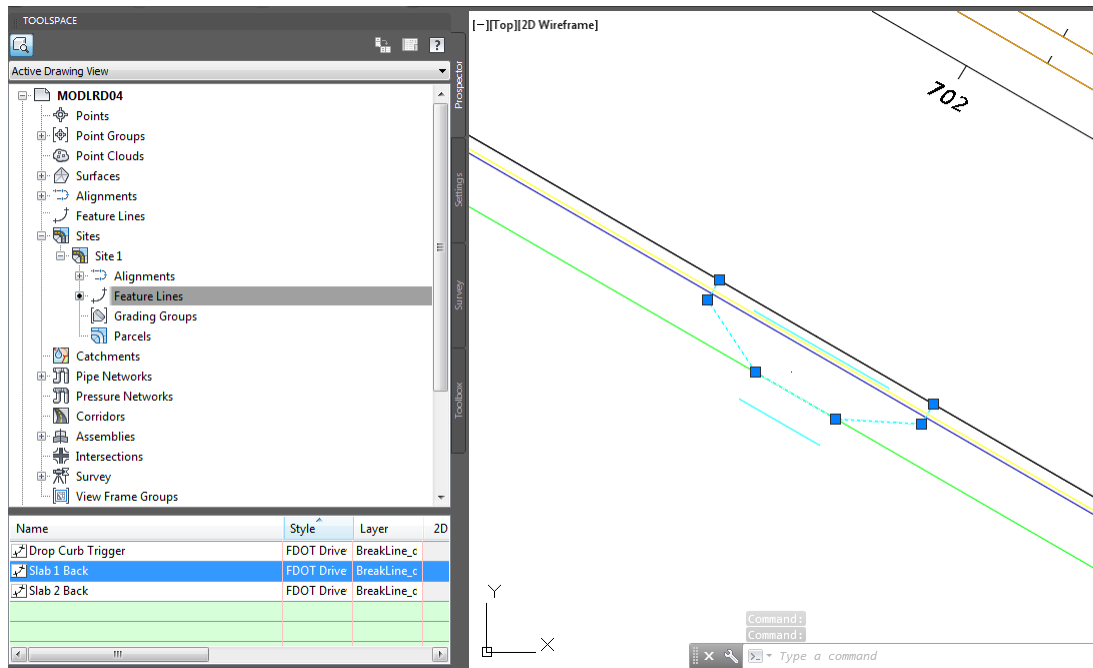


**Note** You may find the names are assigned to the wrong Feature Lines

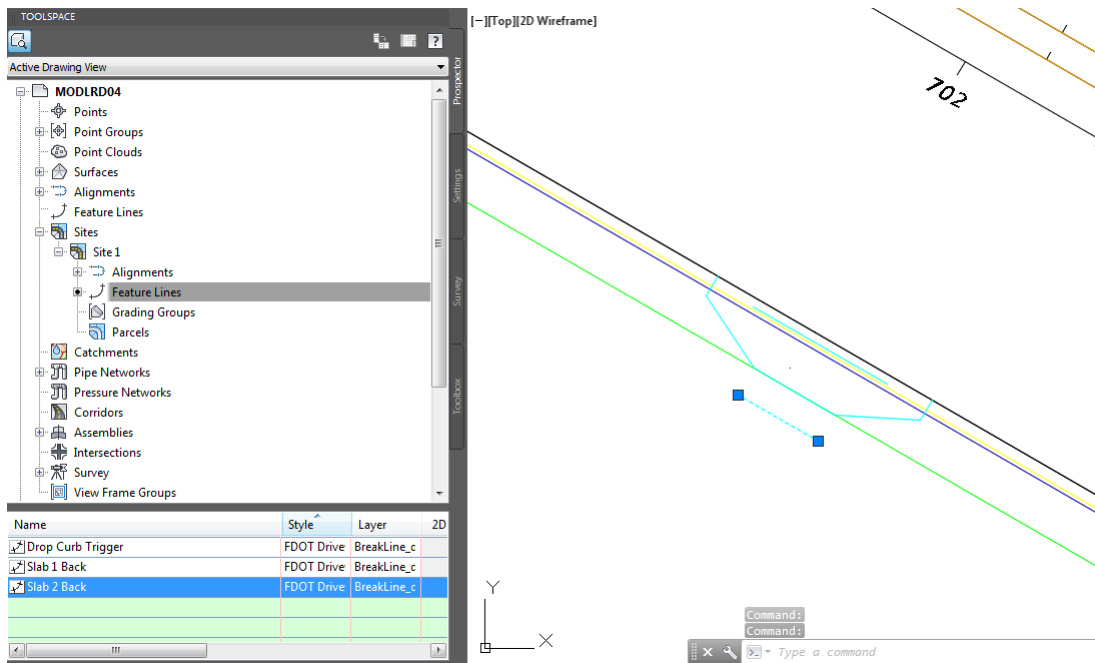
6. **Save** your file before continuing.
7. Click the Feature Line name in the Prospector then click it a second time to edit the name.
8. The Feature Line positioned along the flowline of the curb should be renamed to **Drop Curb Trigger**



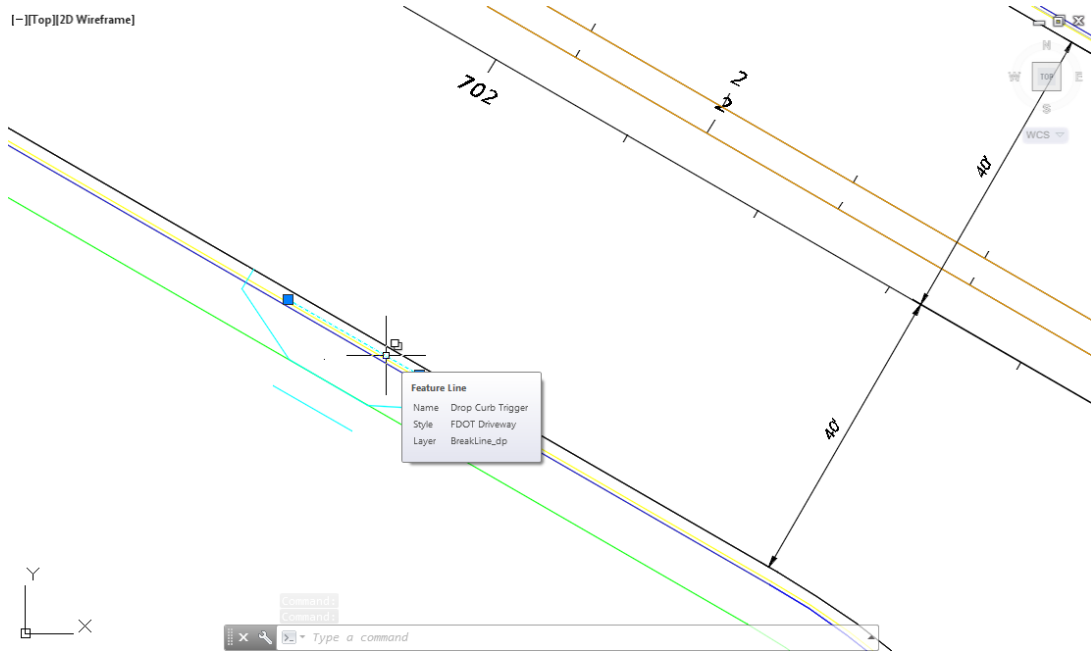
9. Rename Feature Lines to Slab 1 Back and Slab 2 Back respectively. Select Slab 1 Back.



10. Select Slab 2 Back. Slab 2 Back will also be used for Slab 3 Trigger.



11. Hover over the Drop Curb Trigger Feature Line to display Tool Tips to verify you have the correct name assigned.



12. Repeat this process for Slab 1 Back and Slab 2 Back Feature lines.
13. **Save** your file before continuing.
14. What you have learned about Feature Line naming?
  - Use this review and renaming process as a quality check to eliminate errors:

Interaction between the Drawing Editor and the Prospector helps you assign the correct names to the appropriate objects.

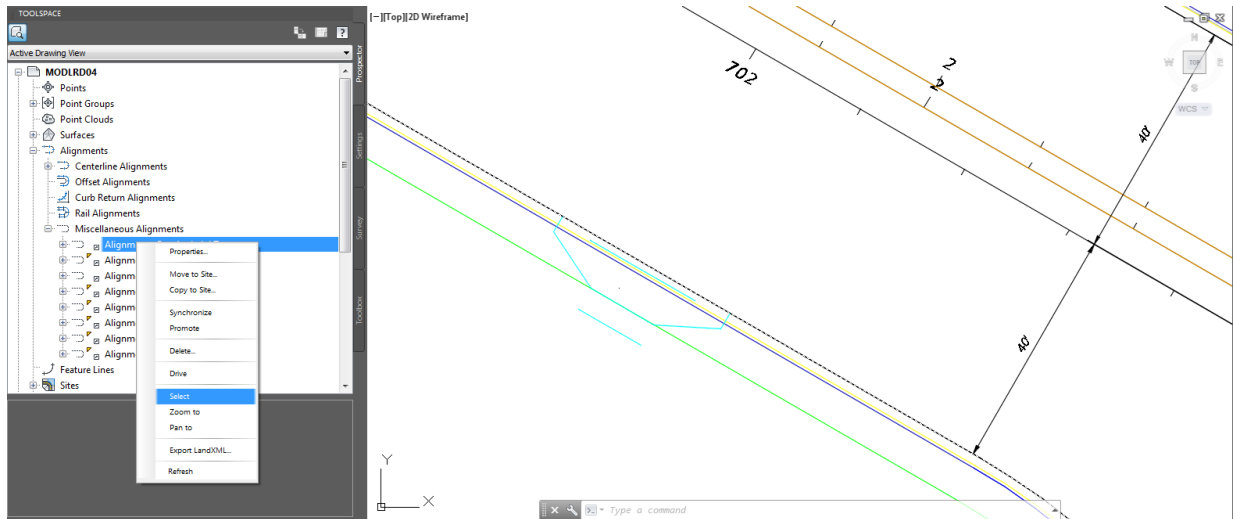
Use names of the targets you wrote down in a previous step.

### Exercise 7.8 Review Driveway Corridor Model Parts

In this exercise you will review the required model parts that you need to create the Driveway corridor model from. To build the Driveway corridor model you will need the following:

- ✓ Alignment
- ✓ Alignment Profile
- ✓ Assembly

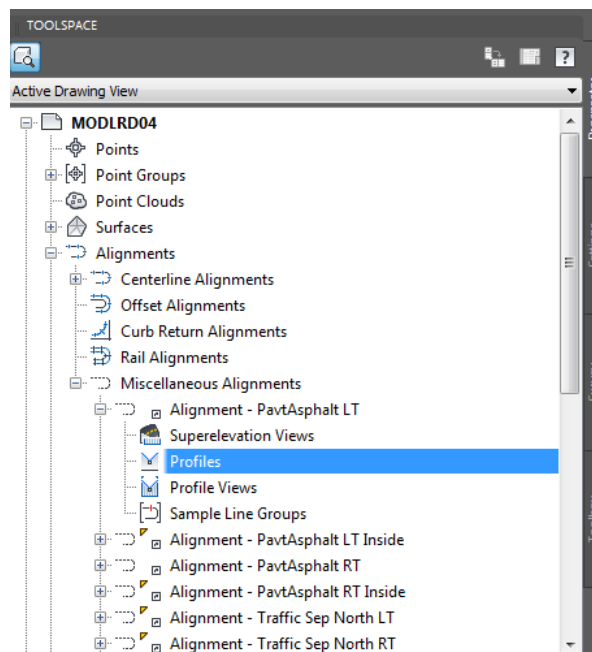
1. From TOOLSPACE > Prospector tab, expand Alignments, expand Miscellaneous Alignments, right-click on Alignment - PavtAsphalt LT, then select **Select**.



**Note** The Alignment - PavtAsphalt LT is displayed in the Drawing Editor. The Alignment - PavtAsphalt LT will be used as the baseline for the Driveway corridor model.

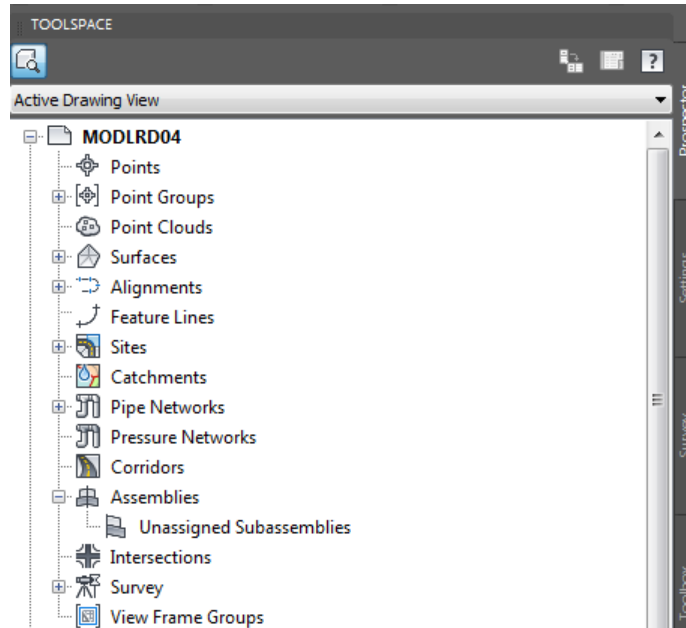
2. From TOOLSPACE > Prospector tab, expand **Alignments**, expand **Miscellaneous Alignments**, expand **Alignment - PavtAsphalt LT**.

**Note** Notice that a Profile for this alignment has not yet been created. You will create the required Profile for the Alignment - PavtAsphalt LT in a later exercise.





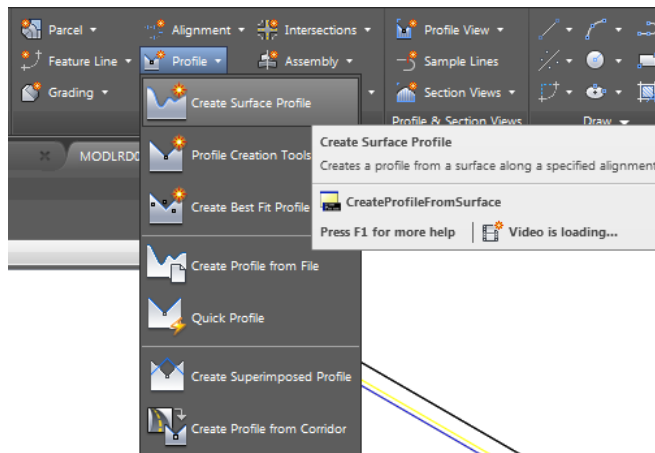
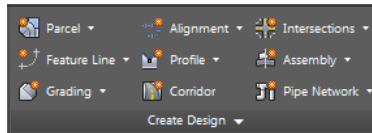
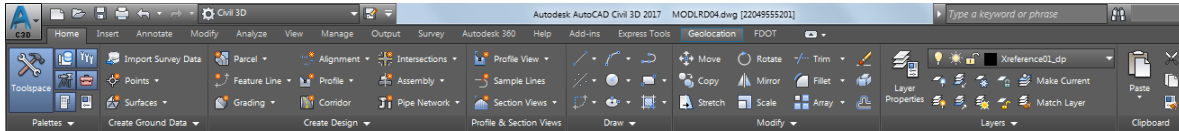
- From **TOOLSPACE > Prospector** tab, expand **Alignments**, expand **Assemblies**. Notice that no **Assemblies** have been created in **MODLRD04**. You will create the required **Assemblies** for the **Driveway** corridor model in a later exercise.



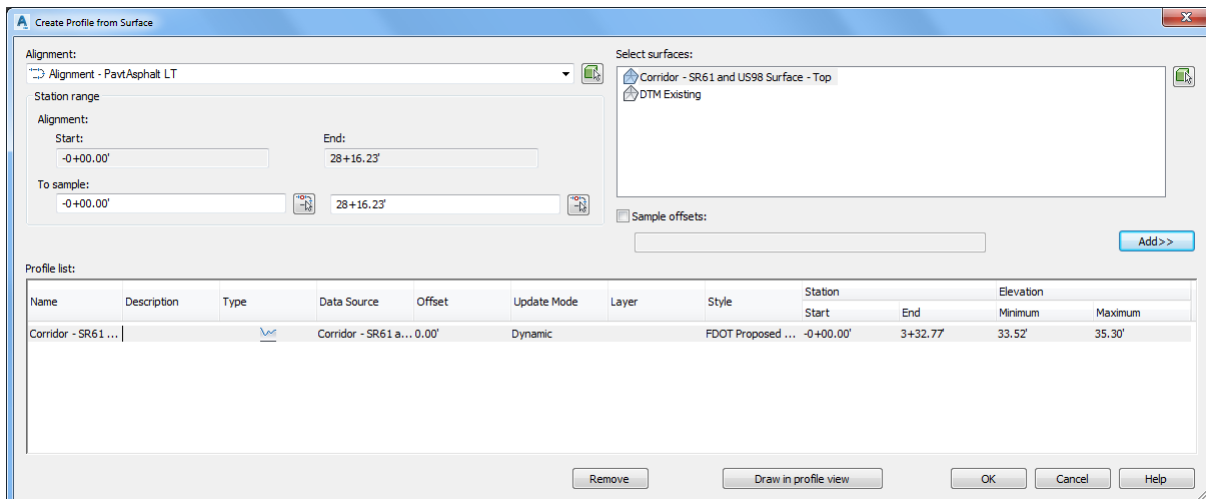
### Exercise 7.9 Create Profile from a Surface for Driveway Model Corridor Left

In this exercise you will Create Design a Profile for Driveway Model Corridor Left using the Alignment: Alignment - PavtAsphalt LT and the Surface: Corridor - SR61 and US98 Surface - Top.

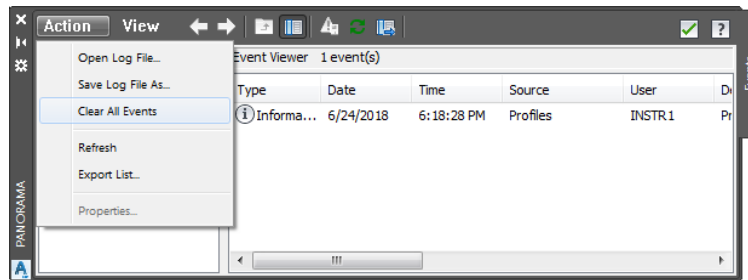
1. From the Home tab > Create Design panel > select Profile, and select Create Surface Profile command.



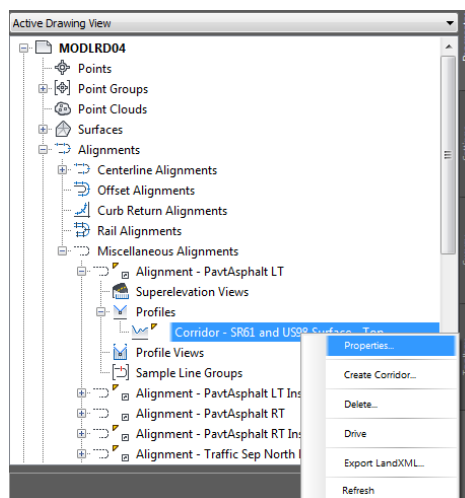
2. From the Create Profile from Surface dialog, set the following values:
  - o Set Alignment: Alignment - PavtAsphalt LT, select from pull down list.
  - o Set Select surfaces: Corridor - SR61 and US98 Surface - Top.
3. Click the Add button. Click Ok to continue and close the Create Profile from Surface dialog.



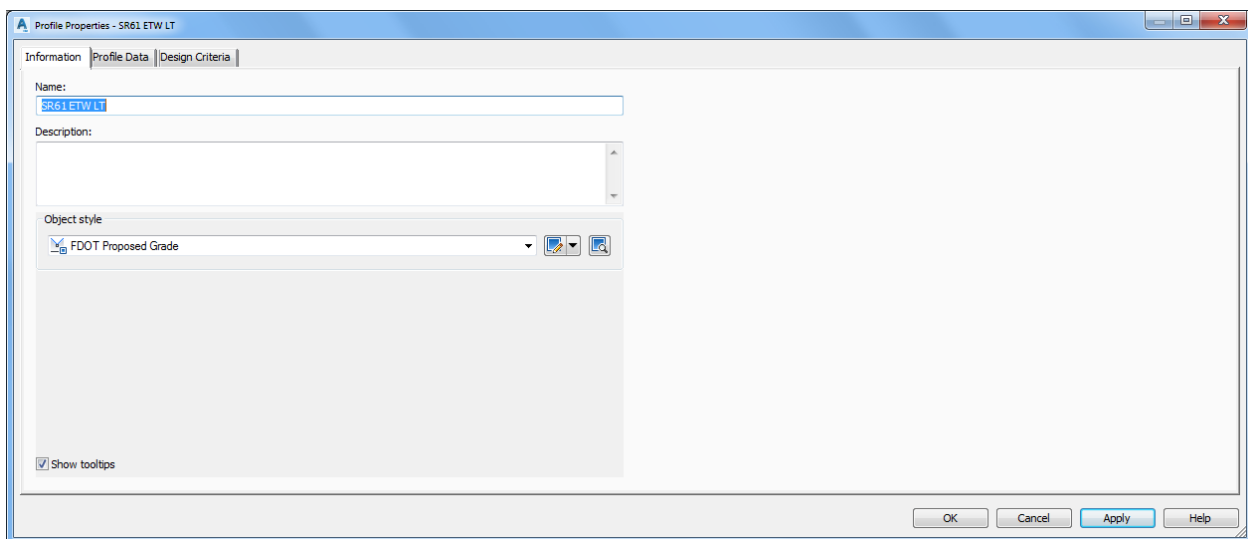
- From the Event Viewer tool palette, select **Action**, then **Clear All Events**, select the **Green Check** to close the Event Viewer tool palette.



- From **TOOLSPACE > Prospector** tab, expand **Alignments**, expand **Miscellaneous Alignments**, expand **Alignment - PavtAsphalt LT**. The new **Profile Corridor - SR61 and US98 - Top** is displayed. Right-click on **Profile Corridor - SR61 and US98 - Top**, then select **Properties**.

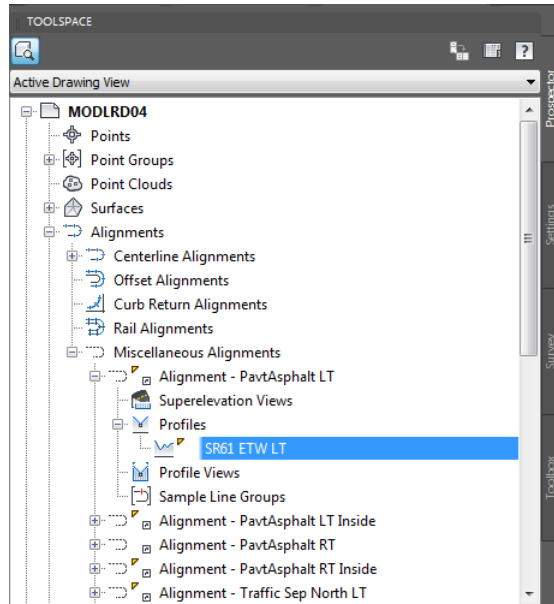


- From the **Profile Properties - Corridor - SR61 and US98 Surface Top** dialog, rename **Profile: SR61 ETW LT**. Click **Apply**.



- Click **Ok** to continue and close the **Profile Properties - SR61 ETW LT** dialog

8. The Profile Corridor - SR61 and US98 Surface Top has been renamed and now displayed as SR61 ETW LT.

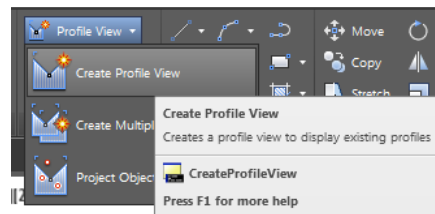
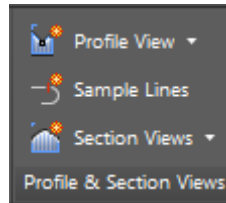
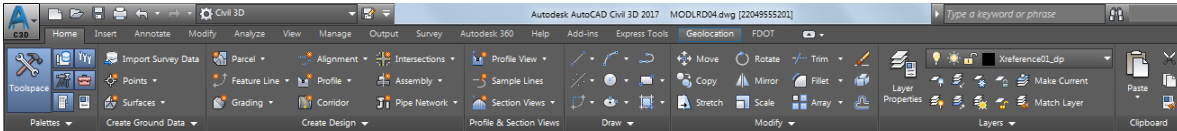


9. **Save** your file before continuing.

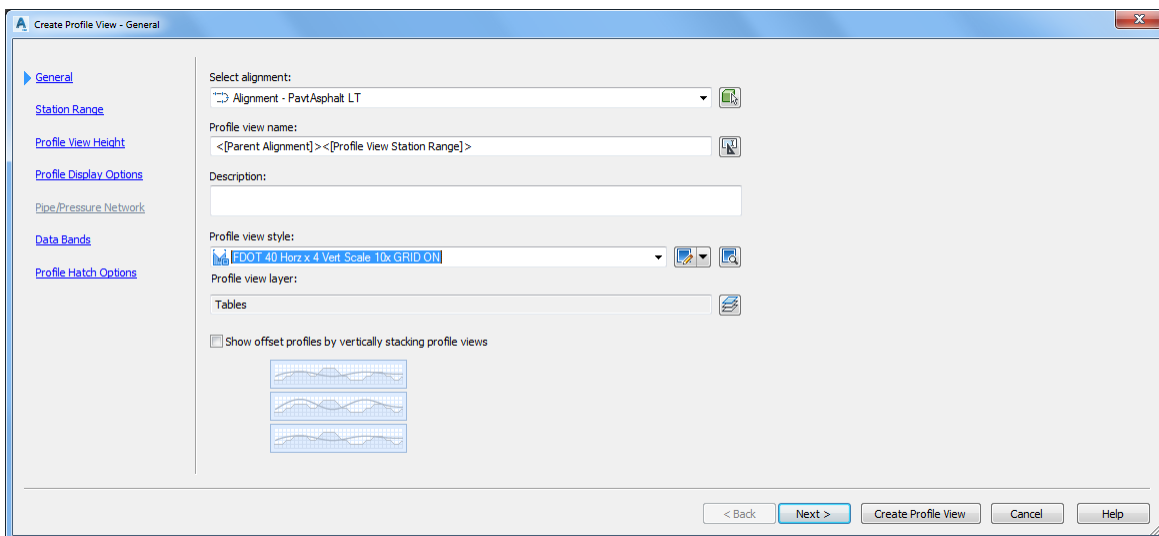
### Exercise 7.10 Create Profile View to display Alignment - PavtAsphalt LT

In this exercise you will create a Profile View to display the Alignment - PavtAsphalt LT.

1. From the Home tab > Profile and Section Views panel > select Profile, and select Create Profile View command.

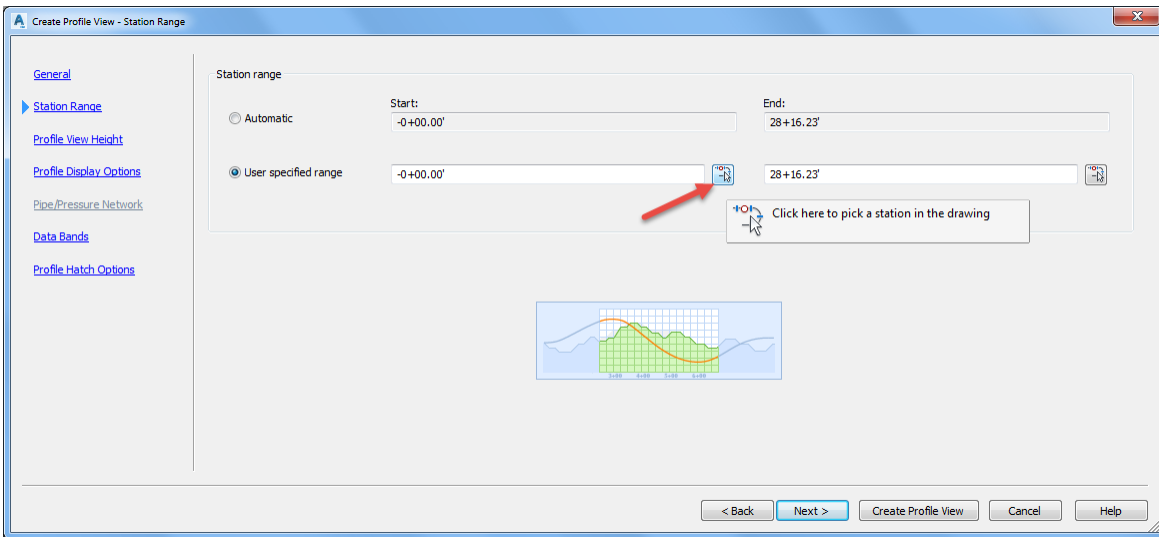


2. From the Create Profile View - General dialog, set the following values:
  - Select **Alignment: Alignment - PavtAsphalt LT** (Select from pull down list)
  - **Profile view name: Use default value**
  - **Description: Leave blank**
  - **Profile view style: FDOT 40 Horz x 4 Vert Scale 10x GRID ON** (Select from pull down list)
  - Uncheck box next to **Show offset profiles by vertically stacking profile views**

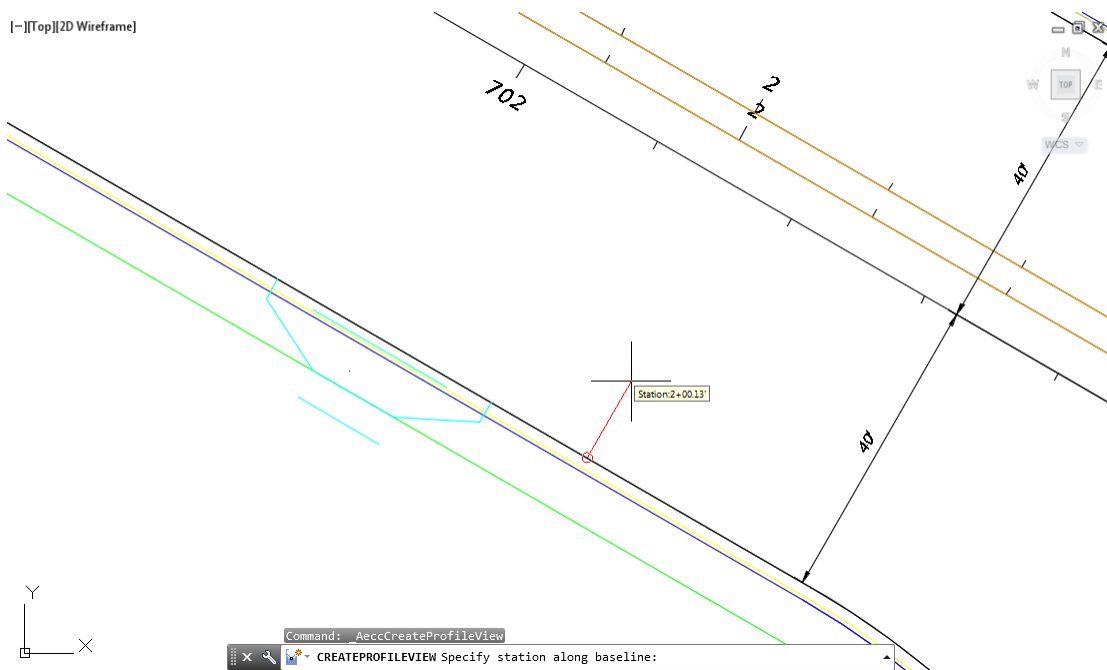


3. Click **Next >** to continue.
4. From the Create Profile View - Station Range dialog, set the following values:
  - Station range: Select **User specified range**.

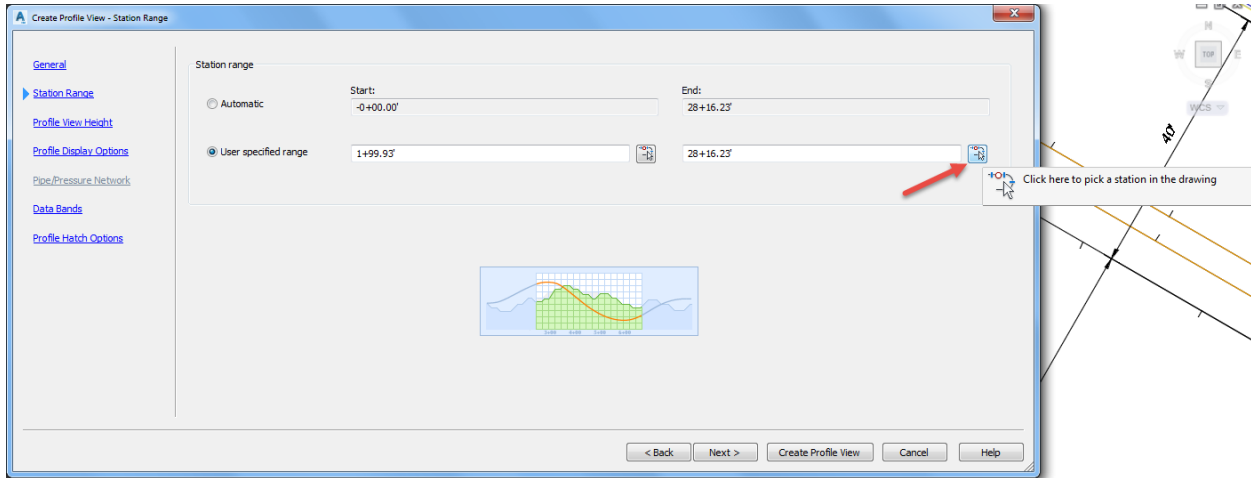
- From Start: select the **Click here to pick a station in the drawing** button, referenced by the red arrow.



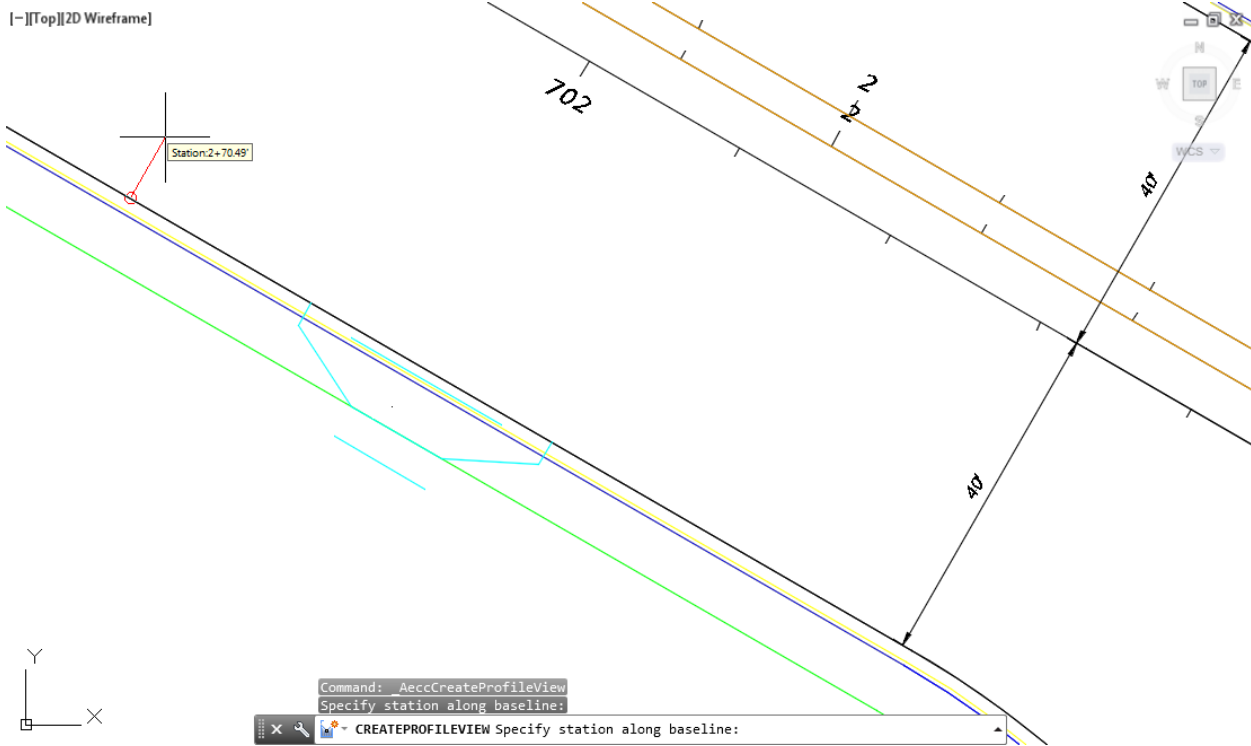
- Pick starting station near station 2+00



- From End: select the **Click here to pick a station in the drawing** button, referenced by the red arrow.

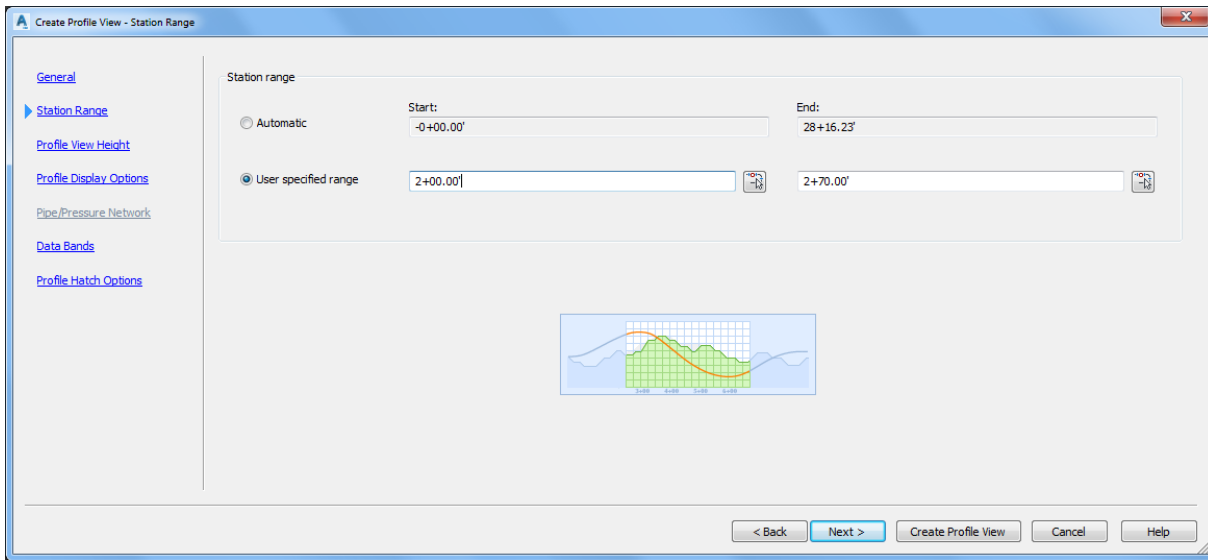


- Pick ending station near station 2+70.

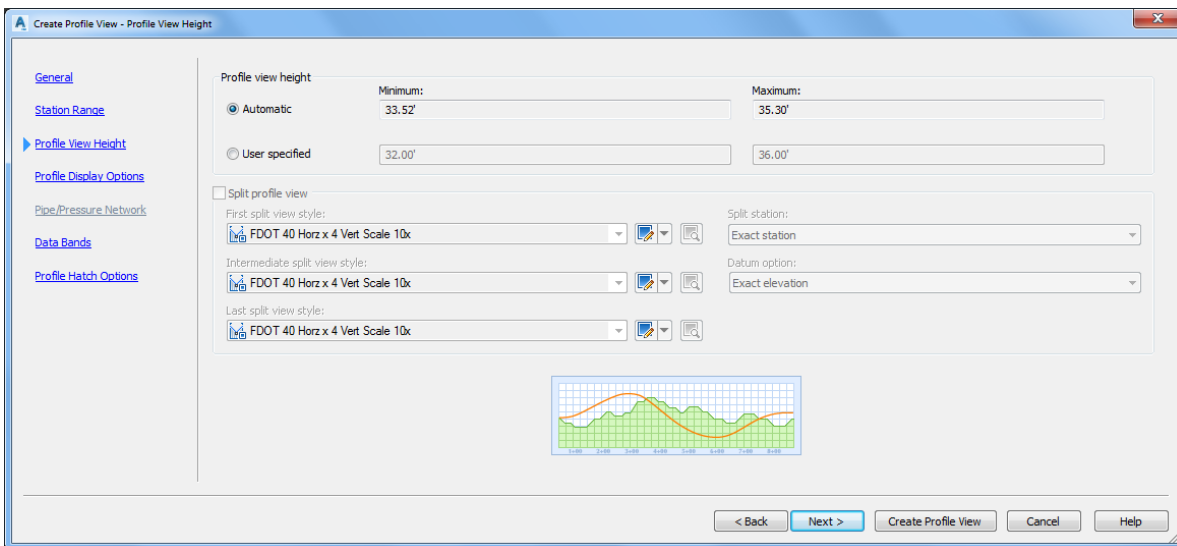




- Find tune the starting and ending stations by typing in for Start: 2+00.00, and then for End: 2+70.00

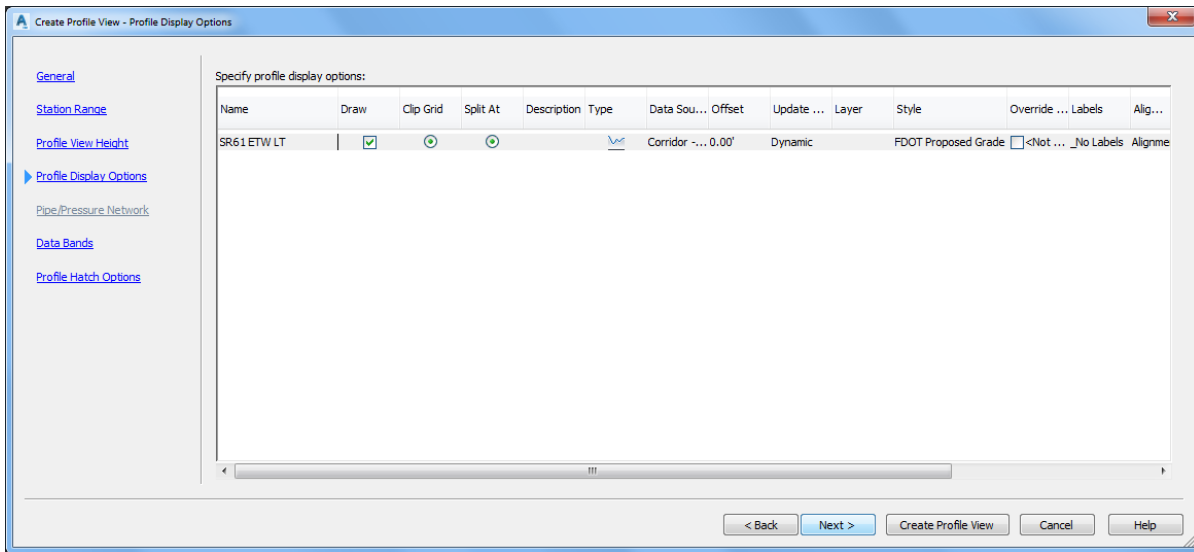


5. Click Next > to continue.
6. From the Create Profile View - Profile View Height dialog, use default values.



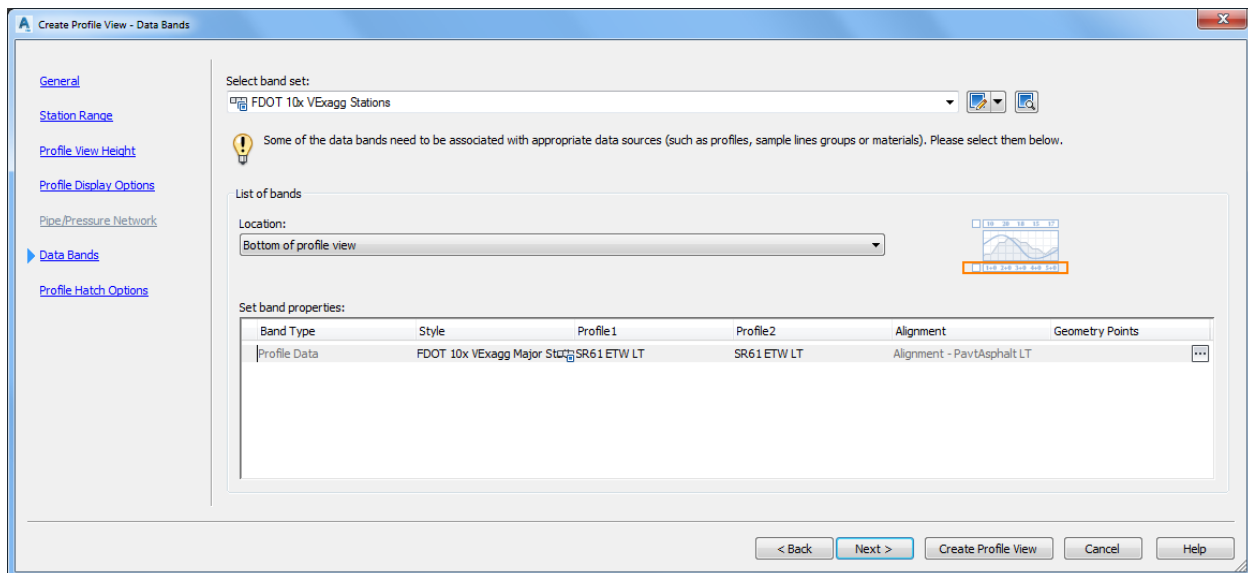
7. Click Next > to continue.

8. From the Create Profile View - Profile Display Options dialog, use default values.



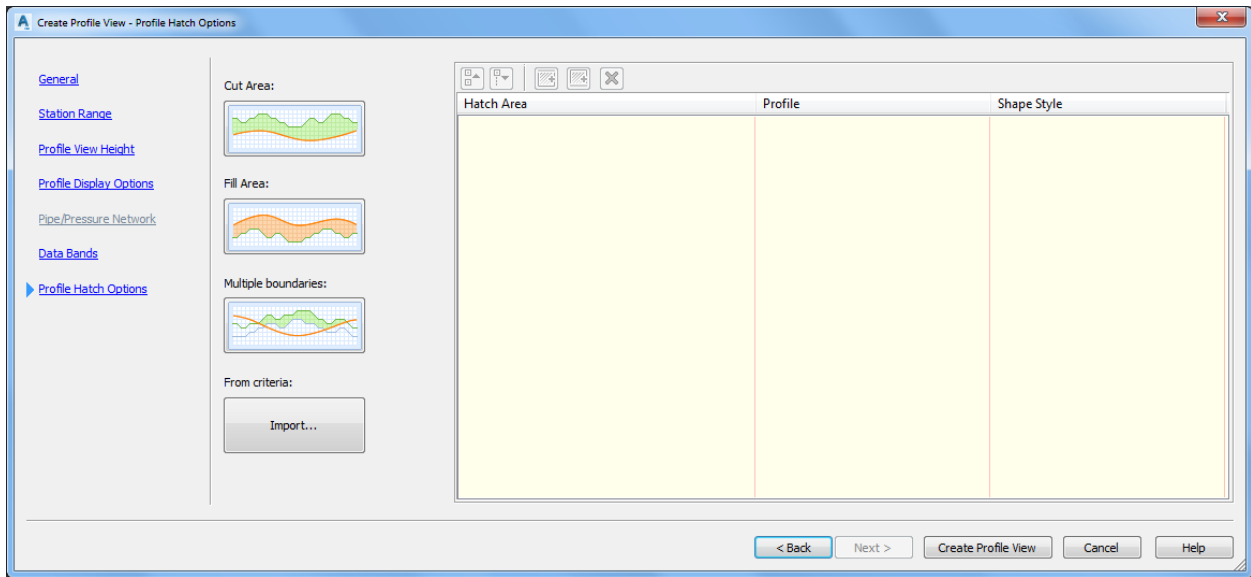
9. Click Next > to continue.

10. From the Create Profile View - Data Bands dialog, use default values.

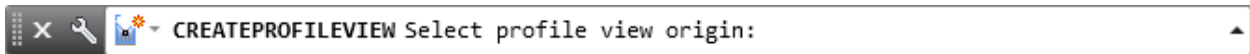


11. Click Next > to continue.

12. From the Create Profile View - Profile Hatch Options dialog, do nothing.



13. Click Create Profile View to continue. The command line prompts you to Select profile view origin:



14. Pick a point for the Profile View in an area to the right away from the plan geometry.



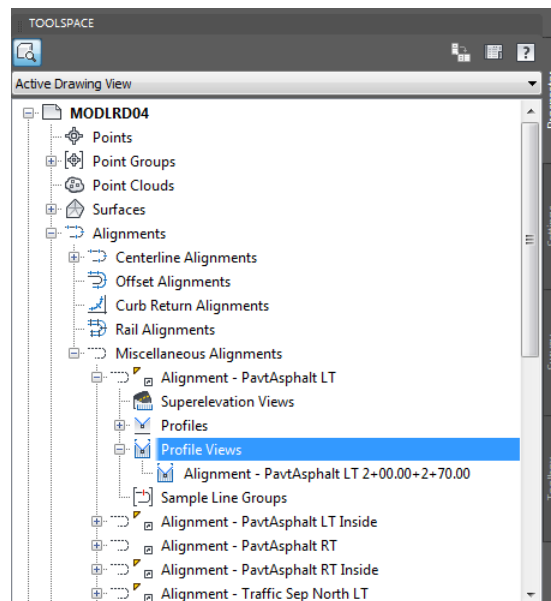
15. Use **Zoom** and **Pan** command to display Alignment - PavtAsphalt LT 2+00.00-2+70.00 Profile View.

[ - ] [Top] [2D Wireframe]

# Alignment - PavtAsphalt LT 2+00.00-2+70.00



16. From **TOOLSPACE** > **Prospector** tab, expand **Alignments**, expand **Miscellaneous Alignments**, expand **Alignment - PavtAsphalt LT**, then expand **Profile Views**, The new Profile View **Alignment - PavtAsphalt LT 2+00.00+2+70.00** is displayed.

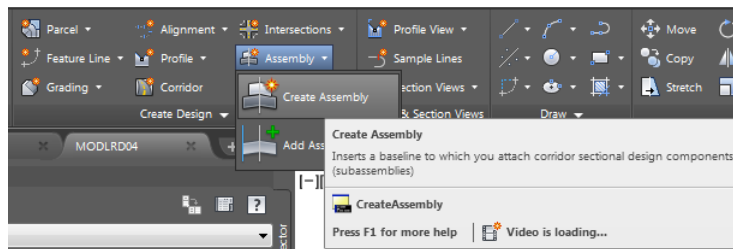
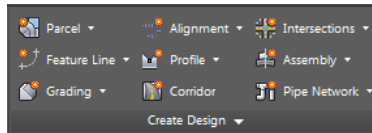
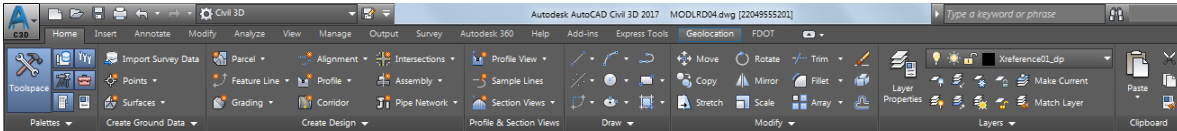


17. **Save** your file before continuing.

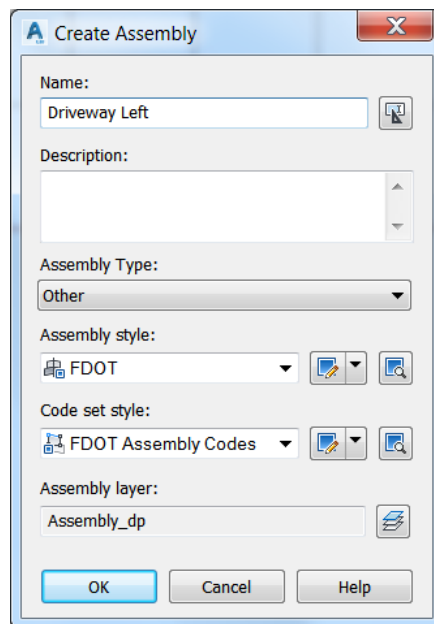
### Exercise 7.11 Create an Assembly Named Driveway Left

In this exercise you will create an Assembly named Driveway Left that you will use in creating the Driveway corridor model.

1. From the Home tab > Create Design panel > select Assembly, and select Create Assembly command.

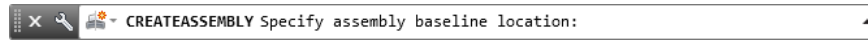


2. From the Create Assembly dialog, set the following values:
  - o Name: Driveway Left
  - o Assembly Type: **Other**
  - o Assembly style: FDOT
  - o Code set style: FDOT Assembly Codes
  - o Assembly layer: **Assembly\_dp (Default setting)**



3. Click OK to continue and to close the Create Assembly dialog.

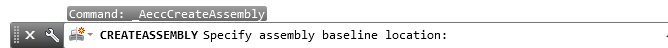
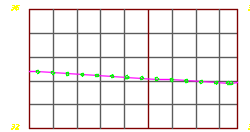
- The command line prompts you to Specify assembly baseline location:



- Use the Zoom and Pan commands to pick an insertion point for the Assembly in an area away from the plan geometry. suggest placing it below the Profile View Alignment - PavtAsphalt LT 2+00.00-2+70.00.

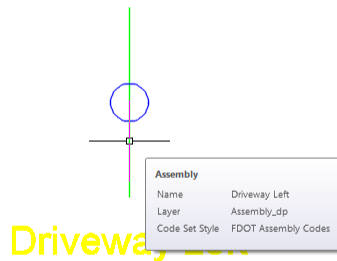
[--][Top][2D Wireframe]

*Alignment - PavtAsphalt LT  
2+00.00-2+70.00*



- Hover over the Drive Left Assembly to display tool tips.

[--][Top][2D Wireframe]

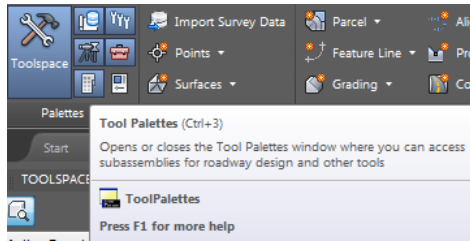


- Save** your file before continuing.

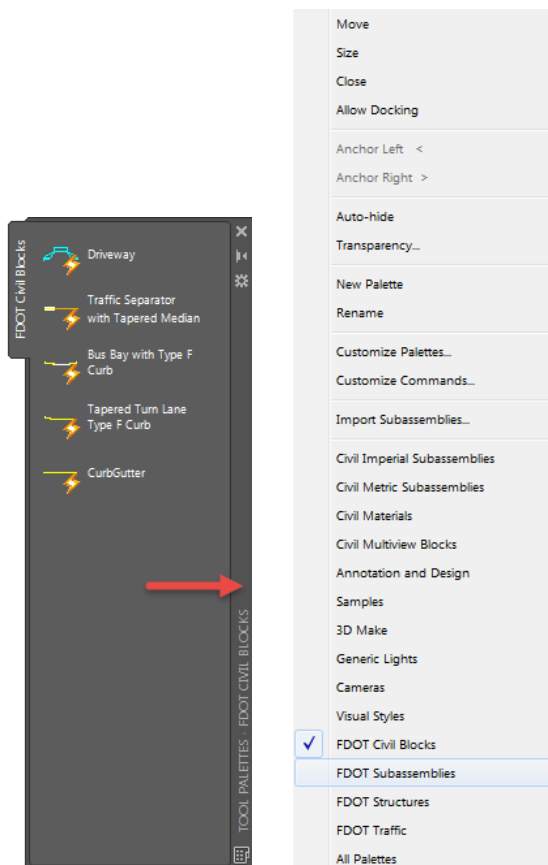
### Exercise 7.12 Adding Sub-Assemblies to the Drive Left Assembly

In this exercise you will add the FDOT Type F Curb sub assembly to the Drive Left assembly.

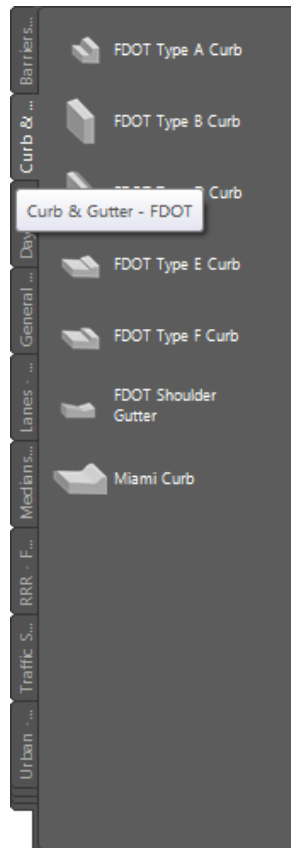
1. From the Home tab > Palettes panel, select Tool Palettes.



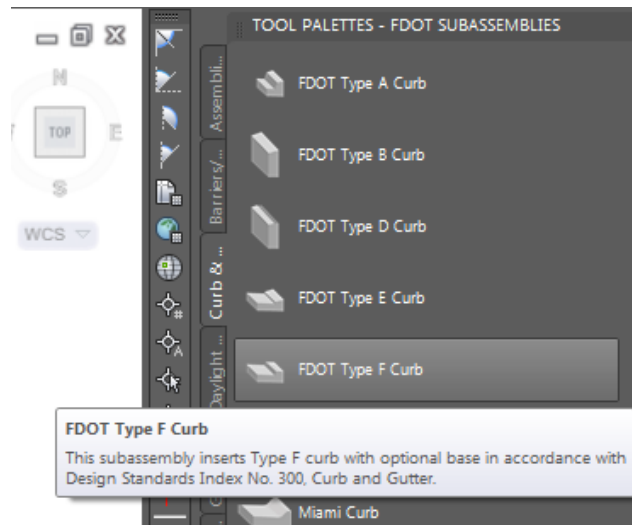
2. Right click the Tool Palette title bar referenced by the red arrow., and choose the FDOT Subassemblies palette group.



3. Select the Curb & Gutter - FDOT tab.

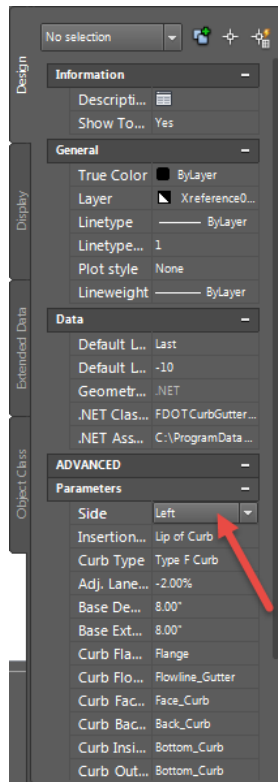


4. Select FDOT Type F Curb

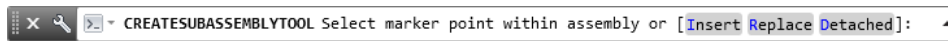




- In the Properties Palette, Parameters section, set the Side to Left, referenced by the red arrow.

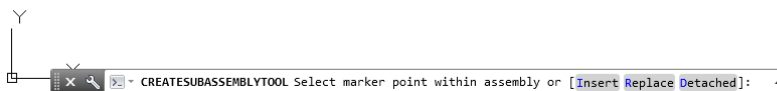
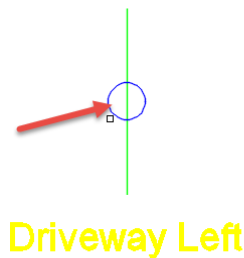


- The command line prompts you to Select marker point within assembly or [Insert Replace Detached]:



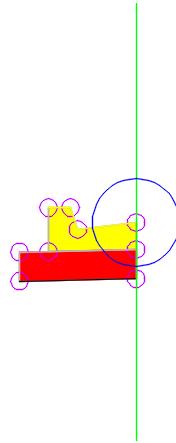
- Use **Zoom** and **Pan** commands to display the Driveway Left marker, then select the Driveway Left Assembly Marker to place the curb subassembly, referenced by the red arrow.

[-][Top]2D Wireframe



8. Press **Enter** to continue.
9. **Close** the Tool Palette.
10. Use **Zoom** and **Pan** commands to display the Driveway Left Assembly.

[-][Top][2D Wireframe]



# Driveway Left

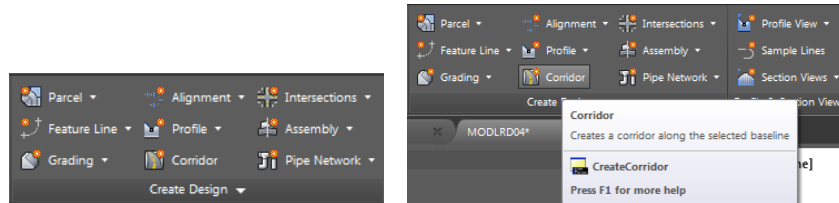
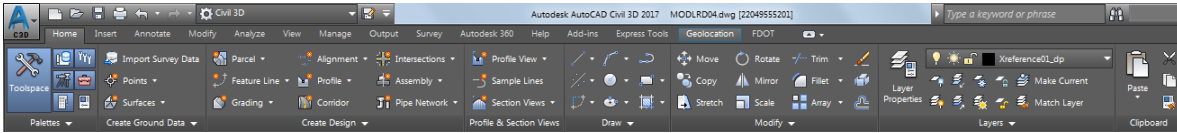


11. **Save** your file before continuing.

### Exercise 7.13 Create Corridor Model: SR61 Driveway Left

In this exercise you will create Corridor Model: SR61 Driveway Left using the Driveway Left Assembly created in the prior exercise.

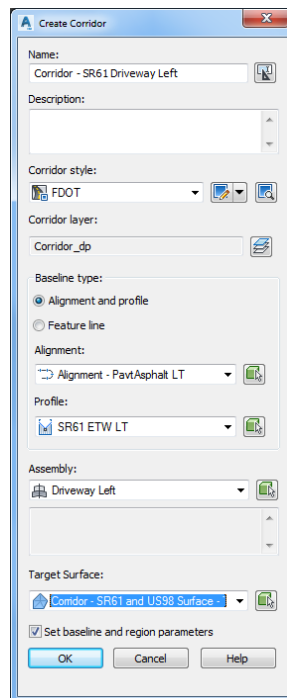
1. From the Home tab > Create Design panel > select Corridor command.



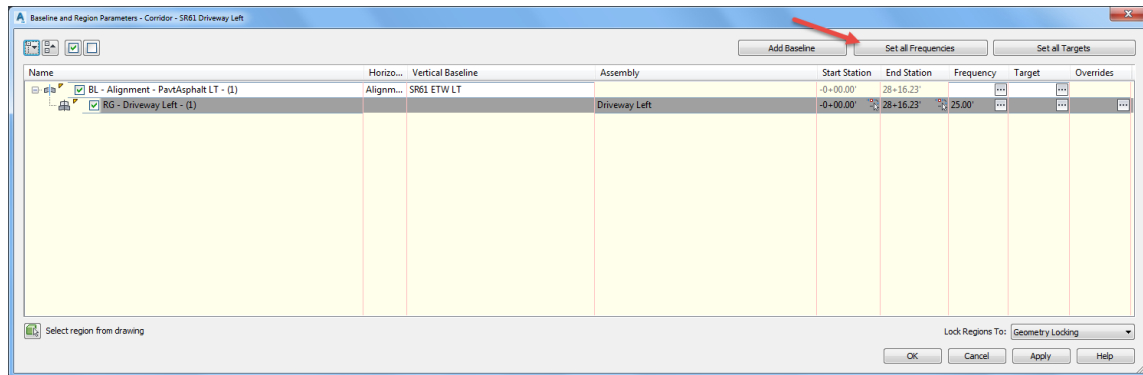
2. From the Create Corridor dialog, set the following values:

- Name: Corridor - SR61 Driveway Left
- Corridor Style: **FDOT**
- Corridor layer: Corridor\_dp (Default setting)
- Baseline type: **Alignment and Profile**
- Profile: **SR61 ETW LT**
- Assembly: **Driveway Left**
- Target Surface: **Corridor - SR61 and US98 Surface - Top**
- Check box next to **Set baseline and region parameters**

3. Click **OK** to continue and to close the Create Corridor dialog.



4. From the Baseline and Regions Parameters - Corridor - SR61 Driveway Left dialog, click the **Set all Frequencies** button, referenced by the red arrow.



5. From the Frequency to Apply Assemblies dialog, set the following values:

- Horizontal Baselines:

Along tangents: 100.00

Along curves: At an increment

Curve increment: 100.00.00

Along spirals: 100

- Vertical Baselines:

Along Vertical curves: 25.00

At vertical geometry points: Yes

At high/low points: Yes

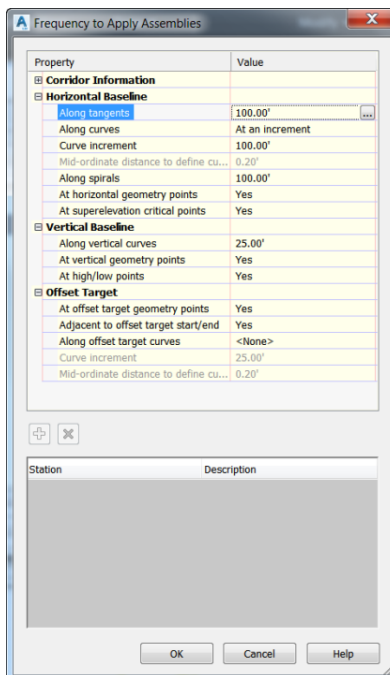
- Offset Target:

At offset target geometry points: Yes

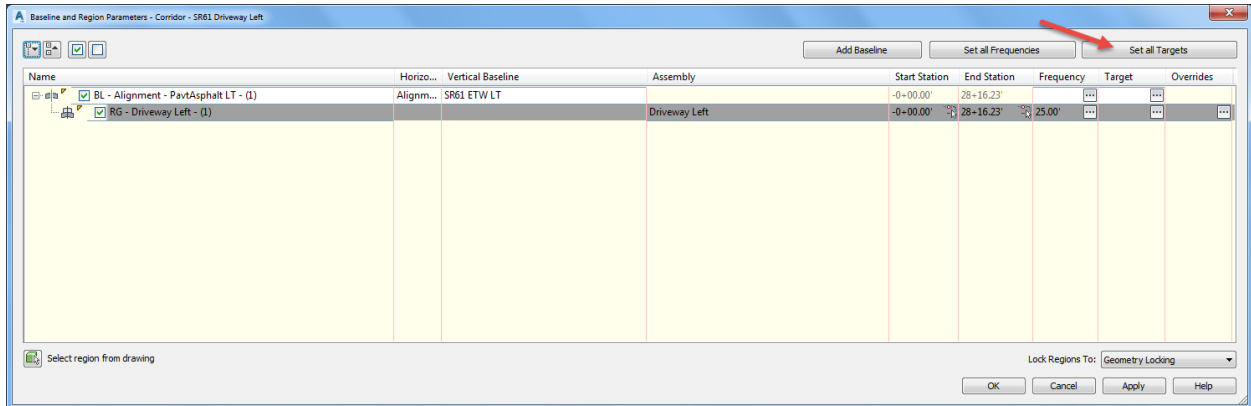
Adjacent to offset target start/end: Yes

Along Offset target curves: <None>

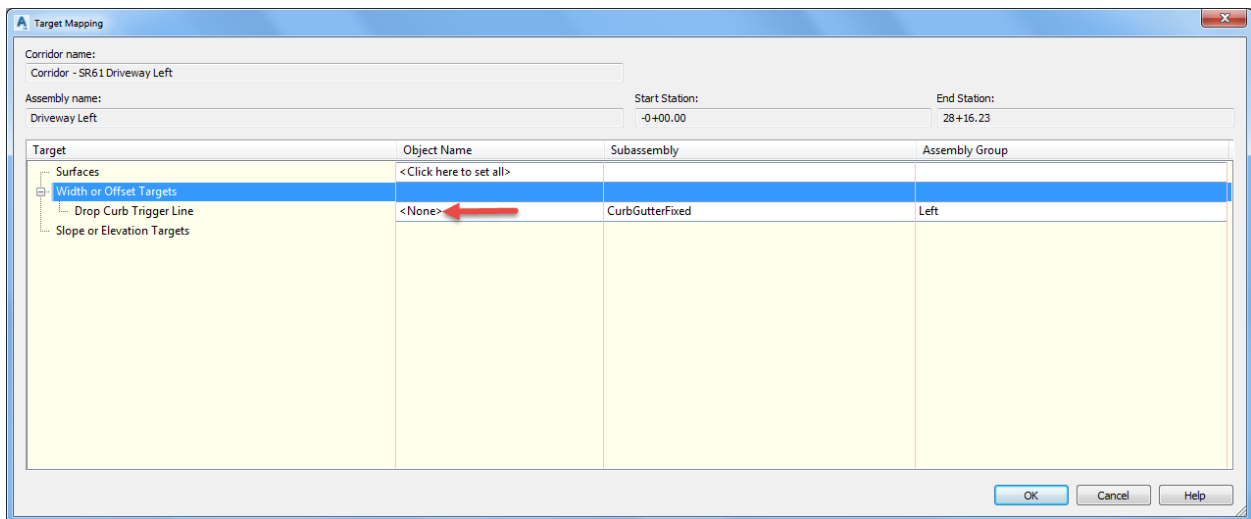
6. Click **OK** to return to the Baseline and Region Parameters dialog.



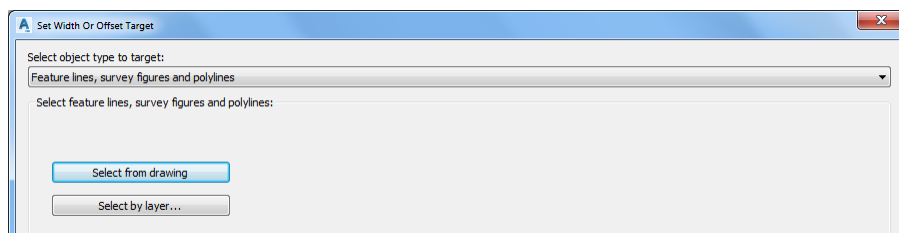
7. From the Baseline and Regions Parameters - Corridor - SR61 Driveway Left dialog, click the Set all Targets button, referenced by the red arrow.



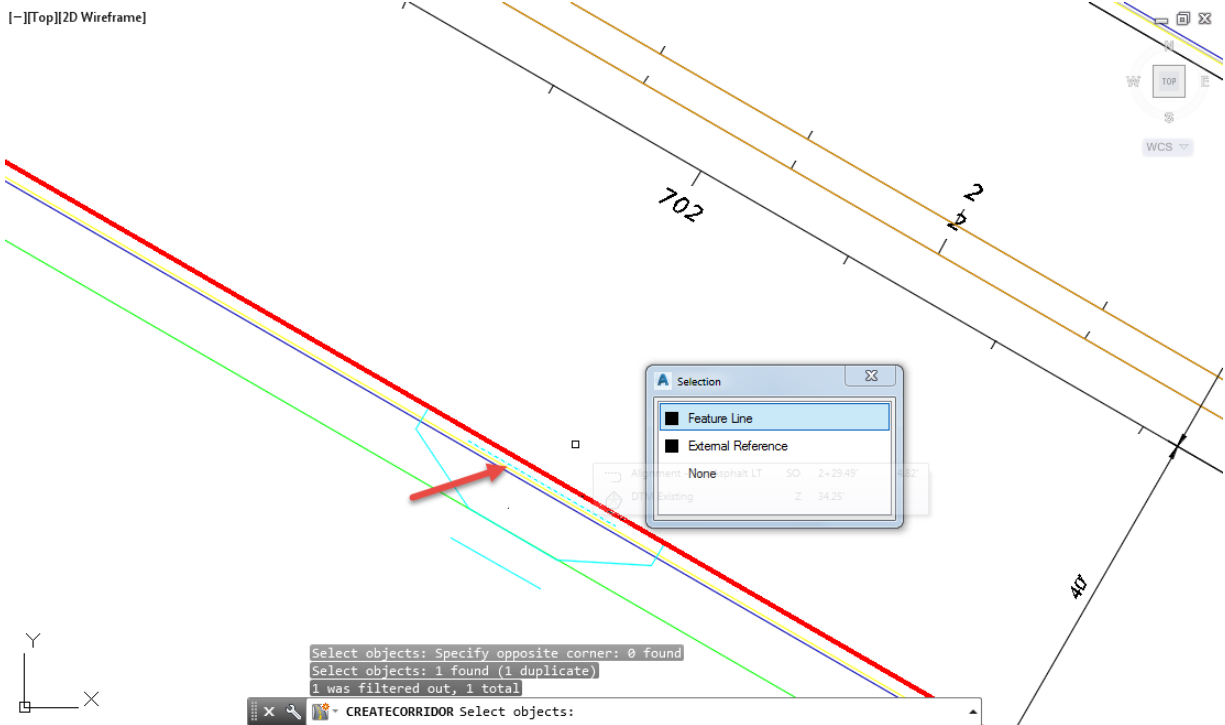
8. From the Target Mapping dialog: Width or Offset Targets: Drop Curb Trigger Line select <None> from Object Name Column.



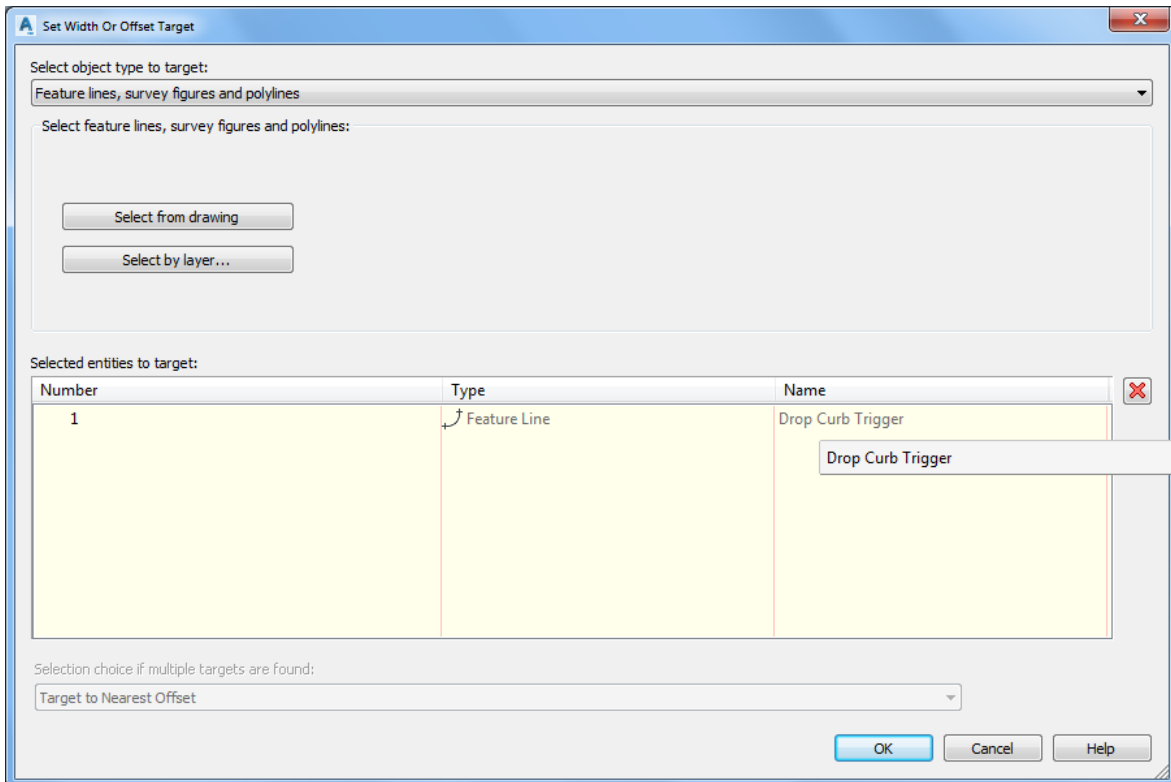
9. From Set Width or Offset Target dialog, set Select object type to target:
  - o Feature lines, survey figures, and polylines
10. Select from drawing button



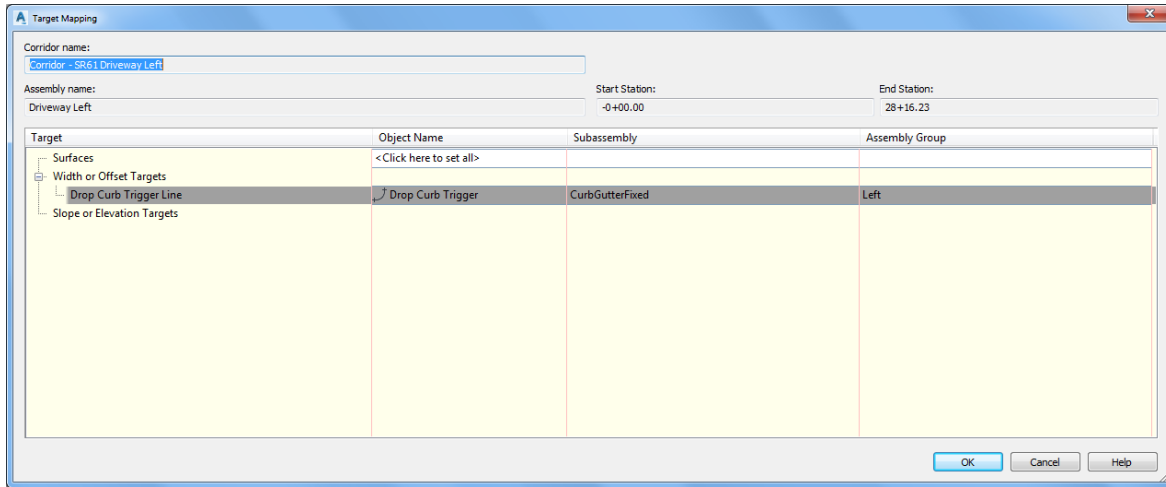
- Use **Zoom** and **Pan** commands to display the Driveway feature lines. Select the Drop Curb Trigger feature line, use the red arrow as a reference for selecting this Drop Curb Trigger feature line. From the Selection dialog select Feature Line. Press Enter to continue.



- Hover over the Name Drop Curb Trigger to display tool tips. Click **OK** to continue and close the Set Width Or Offset Target dialog.



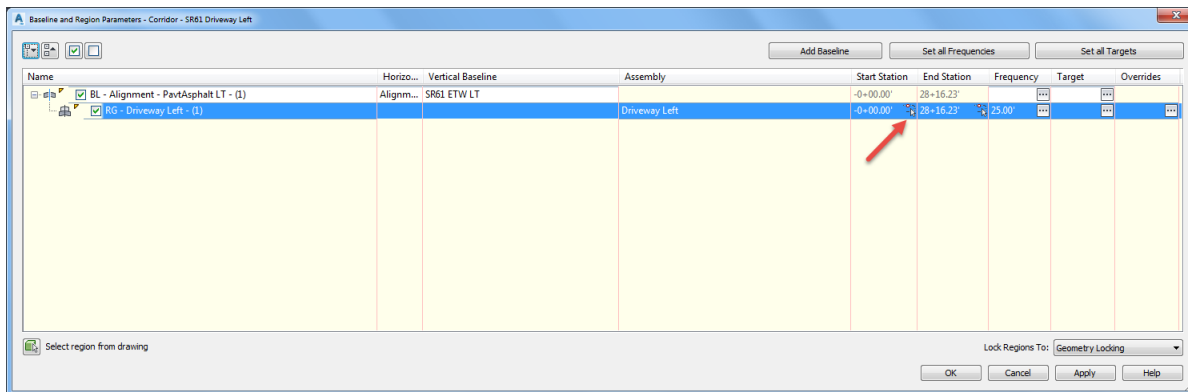
13. Click OK to continue and close the Target Mapping dialog.



14. Set the Region Start and End Stations:

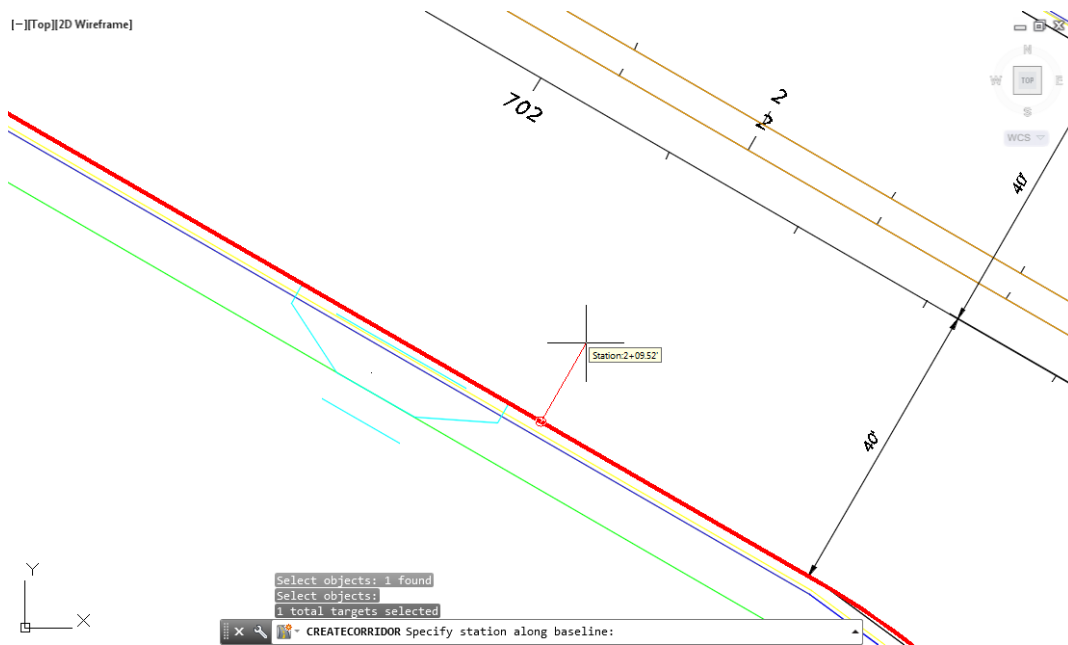
- o Select the Start Station cell for the Region RG - Driveway Left - (1)

15. Pick the browse button on the right edge of the cell, use the red arrow as a reference for selecting.

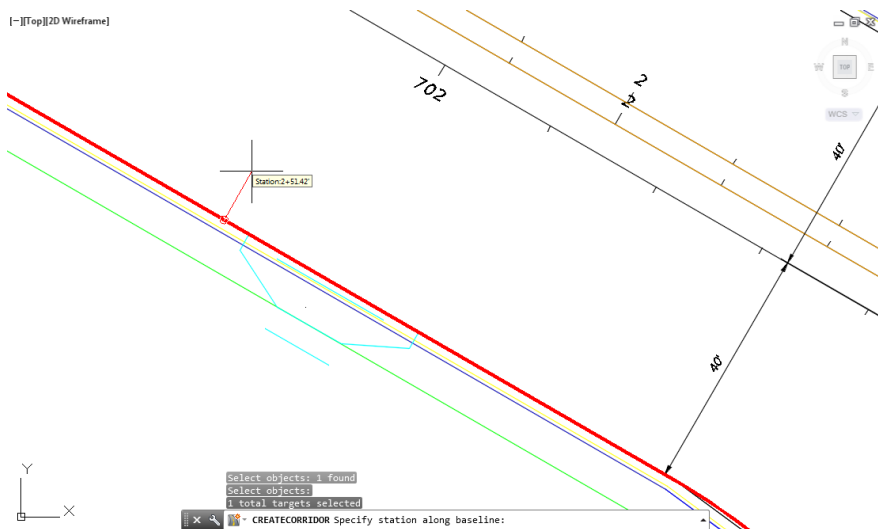
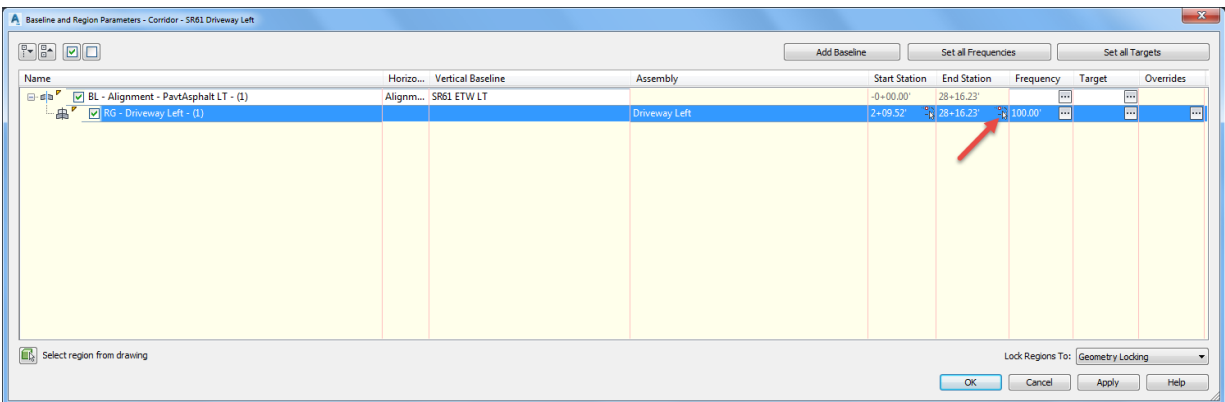


- o A red station jig connects your cursor to the alignment
- o A tool tip appears next to your cursor displaying the station at your cursor position

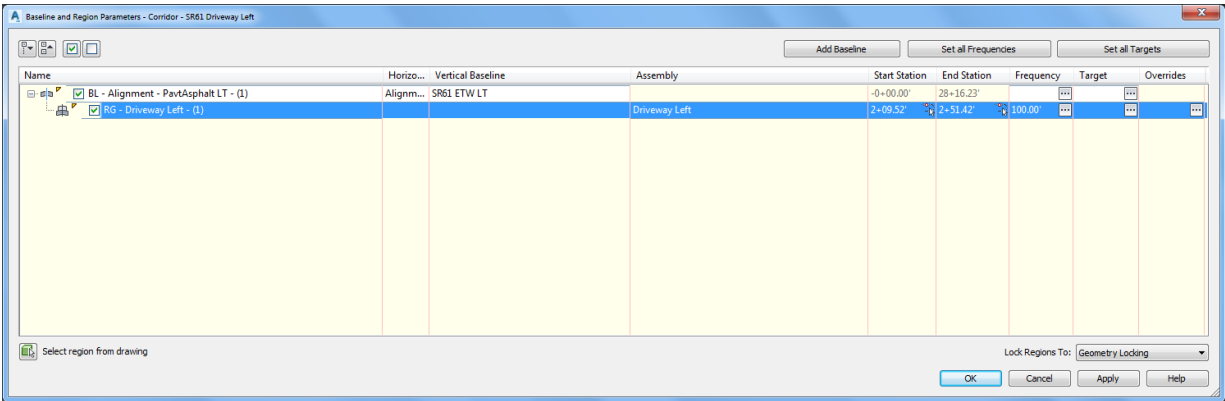
16. Select a point about 5' before the Slab 1 Back feature line near station 2+09



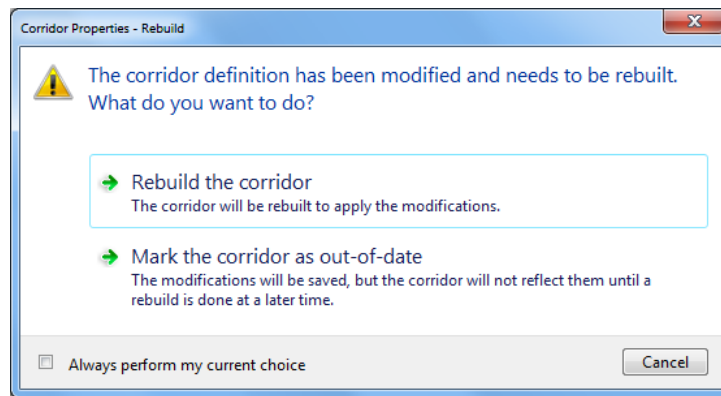
17. After you select a location the Baseline and Region Parameters dialog box reappears. Follow the same process for the End Station by selecting a point about 5' beyond the Slab 1 Back feature line.



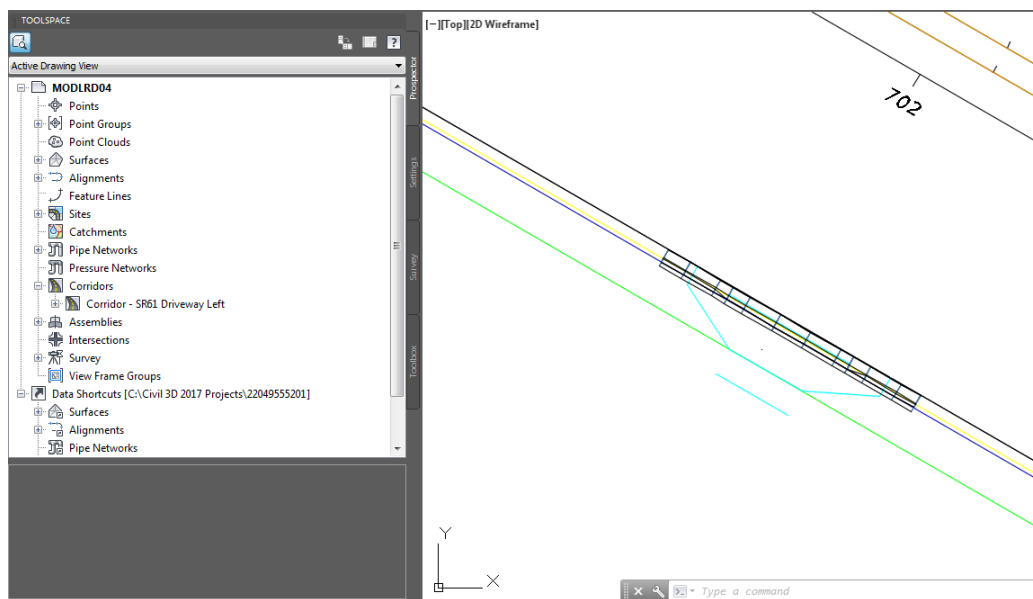




18. Click OK to continue and close the Baseline and Region Parameters dialog.
19. From the Corridor Properties - Rebuild dialog, select **Rebuild Corridor**.



20. The SR61 Driveway Left corridor model appears in the Drawing Editor.
21. Frequency lines appear at the endpoints of the Drop Curb Trigger that was assigned as a target object
22. From TOOLSPACE > Prospector tab, expand Corridors, the Corridor - SR61 Driveway is displayed.

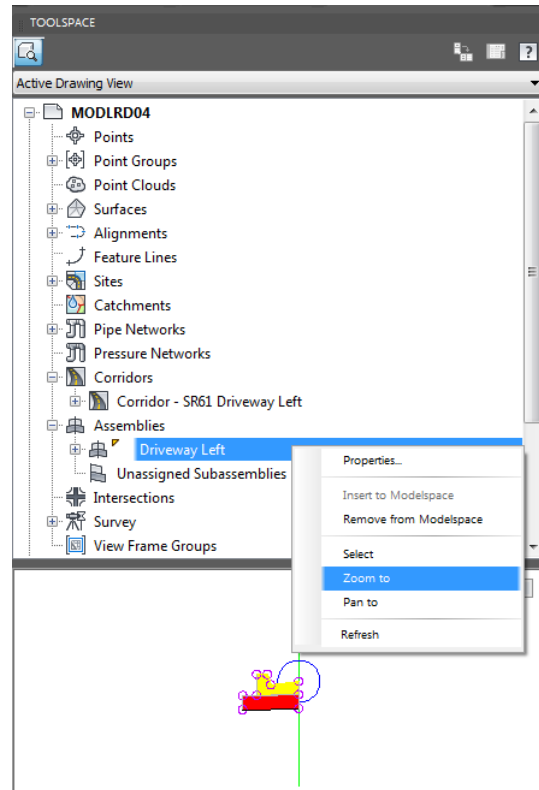


23. Save your file before continuing.

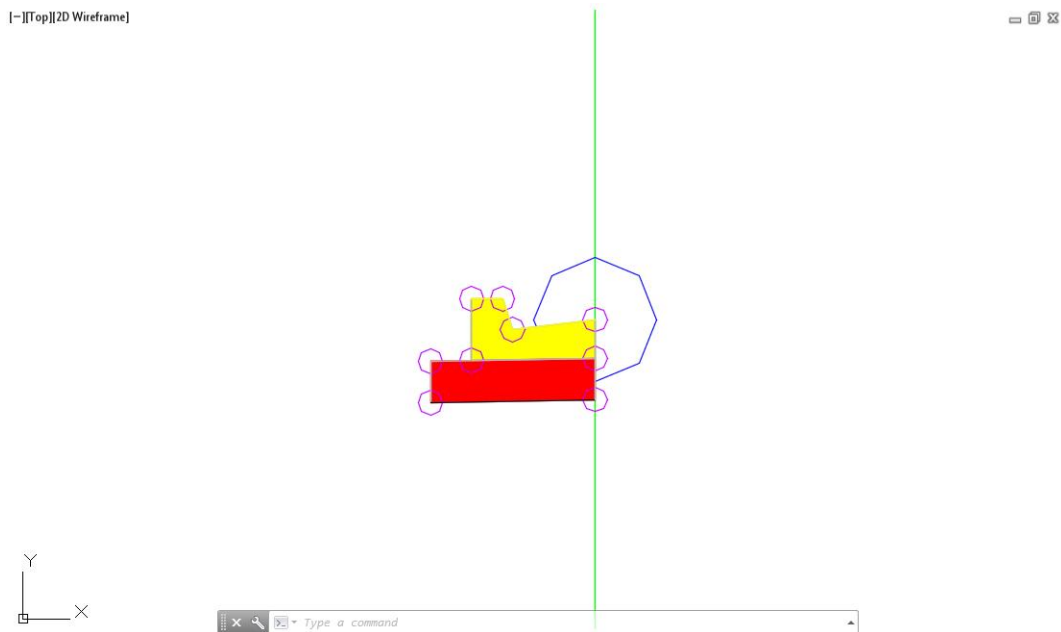
### Exercise 7.14 Add the Driveway Slab 1 Subassembly to the Driveway Left Assembly

In this exercise you will add the Subassembly Driveway Slab 1 to the Assembly Driveway Left.

1. From TOOLSPACE > Prospector tab, expand Assemblies, right-click on Driveway Left assembly, then select Zoom to.

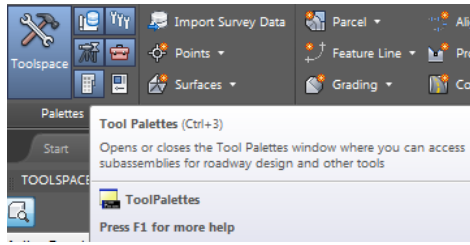


2. The Driveway Left is now on the center of your screen in the drawing editor.

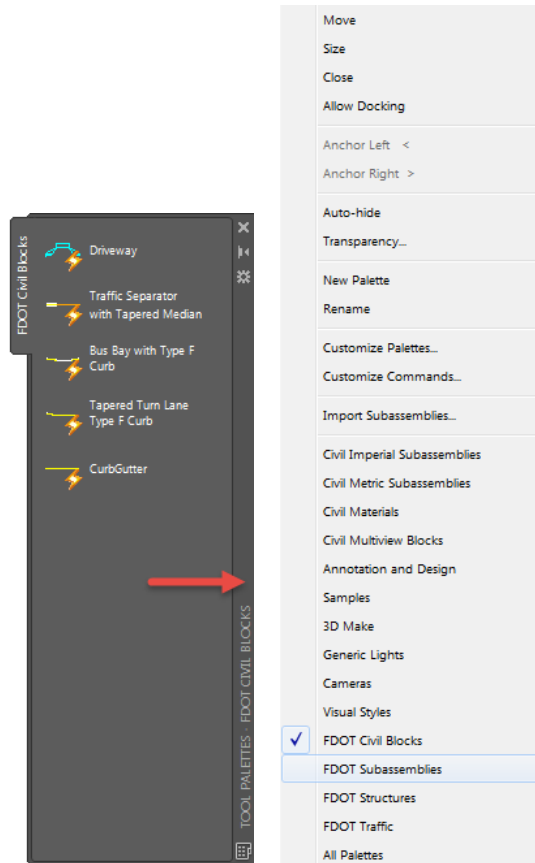


3. Change the Tool Palette to display the FDOT Subassemblies palette group

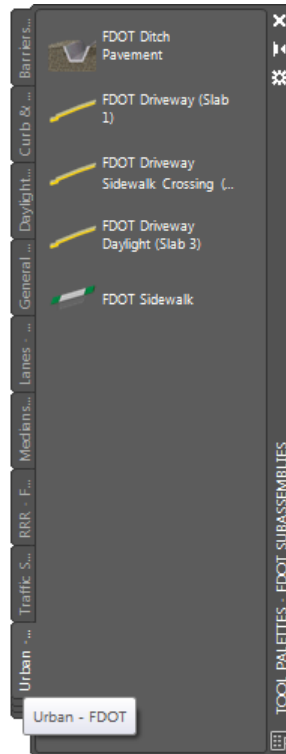
- From the Home tab > Palettes panel, select Tool Palettes.



- Right click the Tool Palette title bar referenced by the red arrow and choose the FDOT Subassemblies palette group.



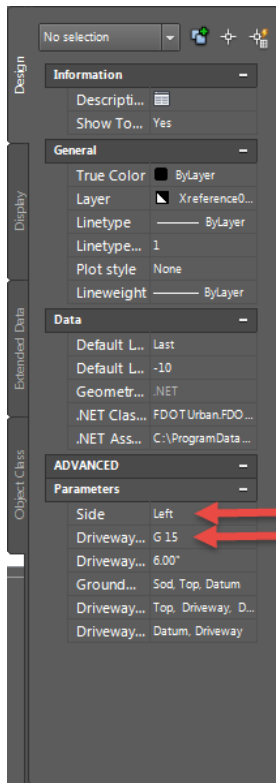
6. Select the Urban - FDOT tab.



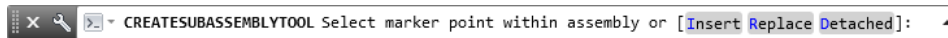
7. Select FDOT Driveway (Slab 1)



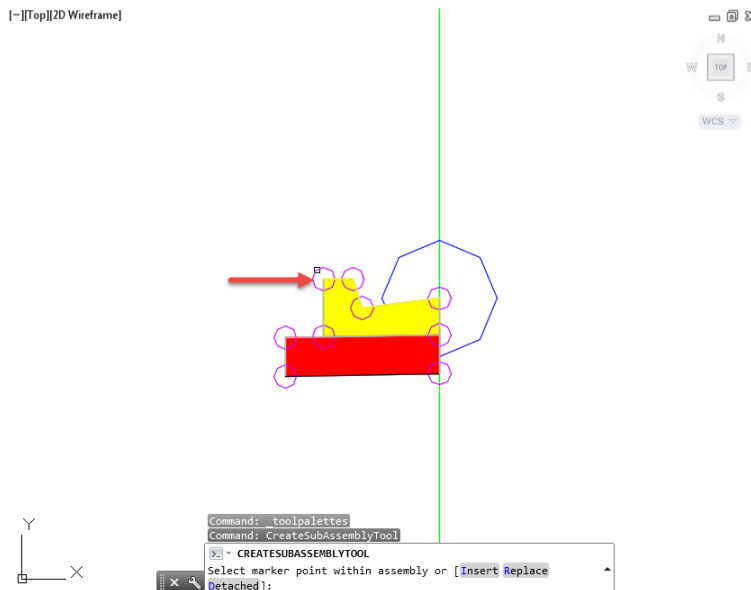
8. In the Properties Palette, Parameters section, set the following values:
  - o Set the Side to Left, referenced by the red arrow.
  - o Set the Driveway Type to G 15, referenced by the red arrow.



9. The command line prompts you to Select marker point within assembly or [Insert Replace Detached]:

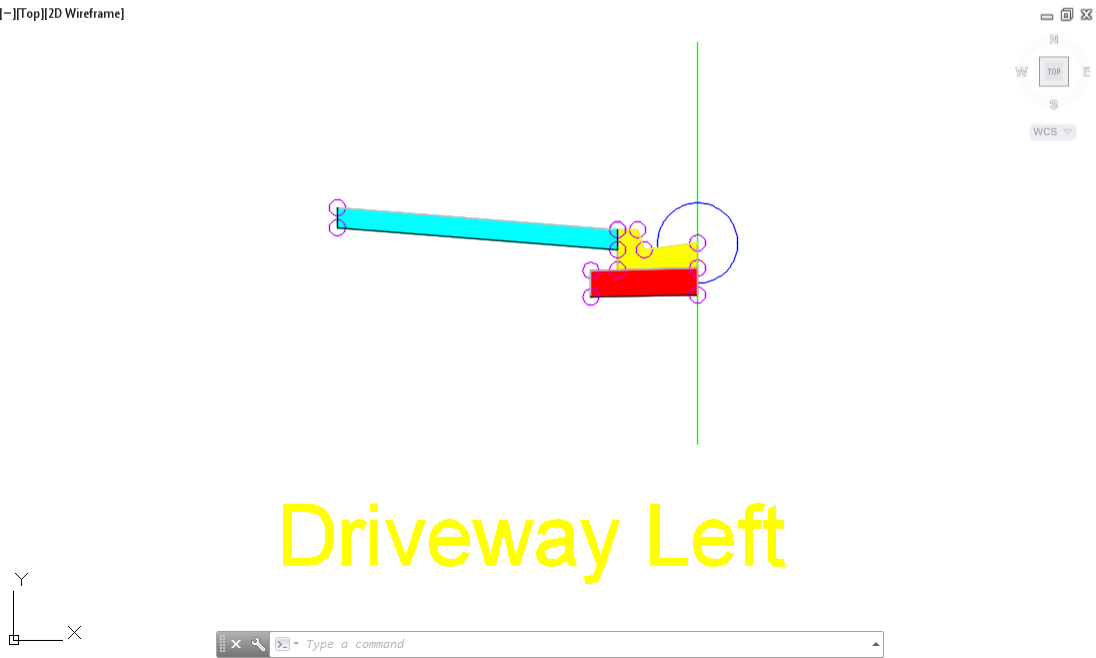


10. Pick the attachment ring to place the subassembly at the Back of Curb, referenced by the red arrow.



11. Press ESC key to terminate the command. Close the Tool Palette.
12. Use **Zoom** and **Pan** commands to display the Driveway Left Assembly.

[~][Top][2D Wireframe]

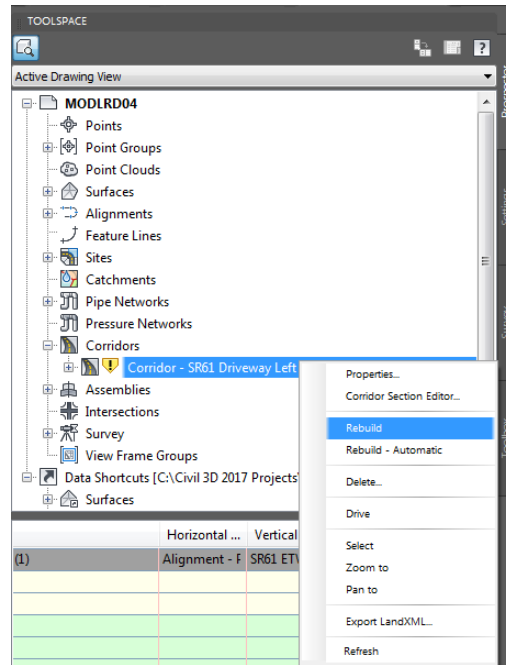


13. **Save** your file before continuing.

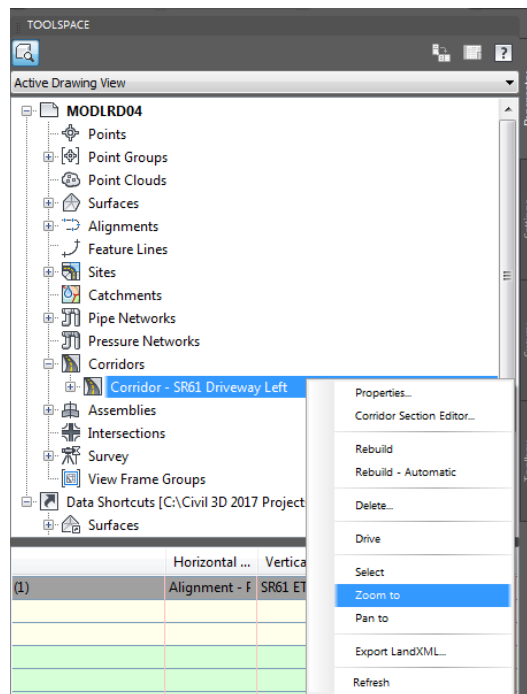
### Exercise 7.15 Assign Targets to Slab 1 Back

In this exercise you will Assign Targets to Slab 1 Back

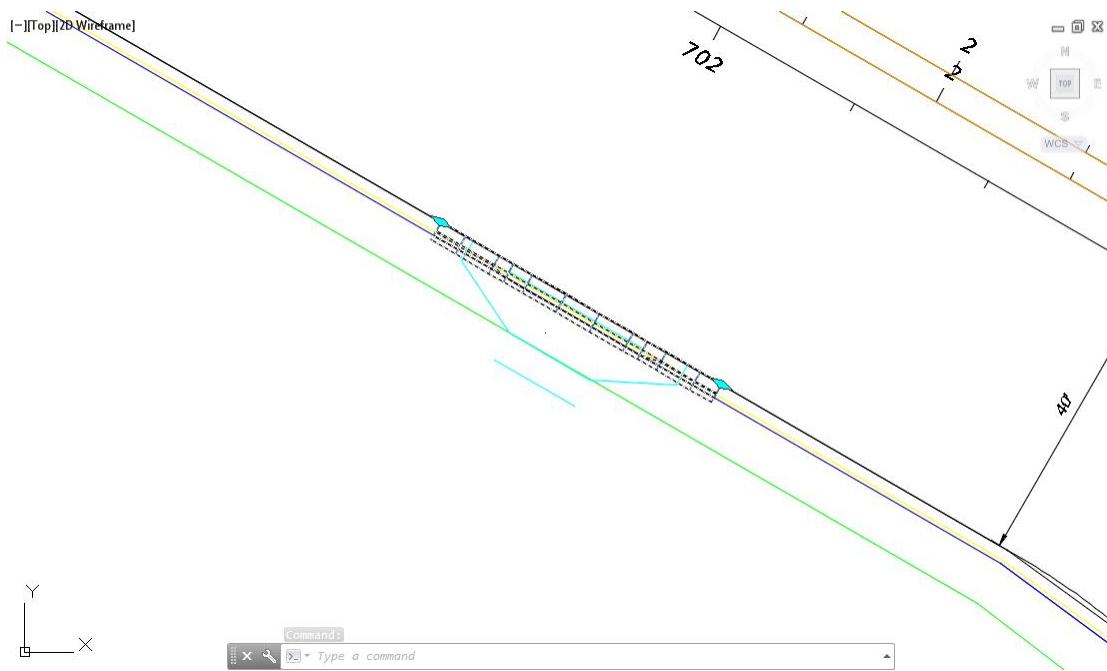
1. From TOOLSPACE > Prospector tab, expand Corridors, notice the Gold Shield is displayed next to the Corridor - SR61 Driveway Left, this means the Corridor - SR61 Driveway Left model needs to be rebuilt. Right-click on Corridor - SR61 Driveway Left, then select Rebuild.



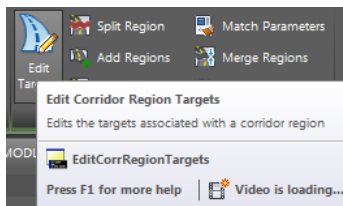
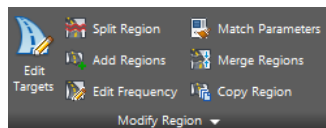
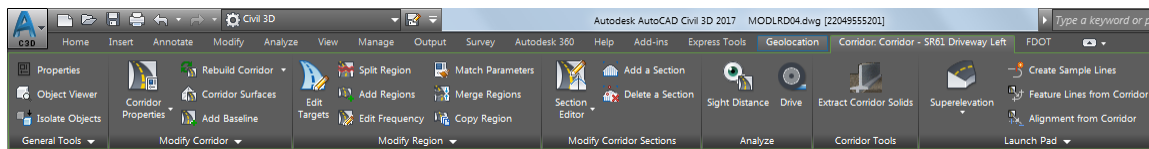
2. From TOOLSPACE > Prospector tab, expand Corridors, Right-click on Corridor - SR61 Driveway Left, then select Zoom to.



3. Select the Corridor - SR61 Driveway Left corridor model to display the grips.

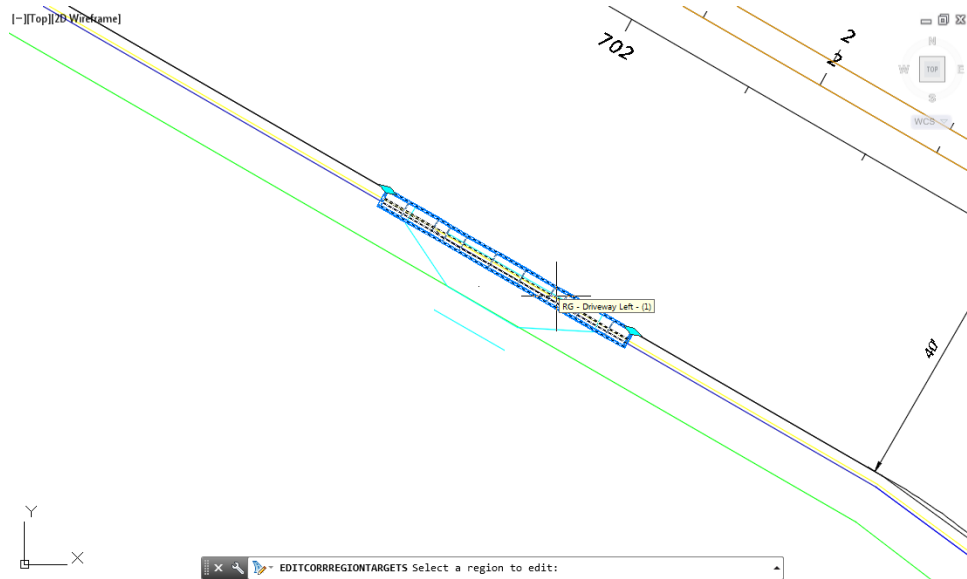


4. The Corridor: Corridor - SR61 Driveway Left tab is now displayed in the ribbon. From the Modify Region panel, select **Edit Targets**.

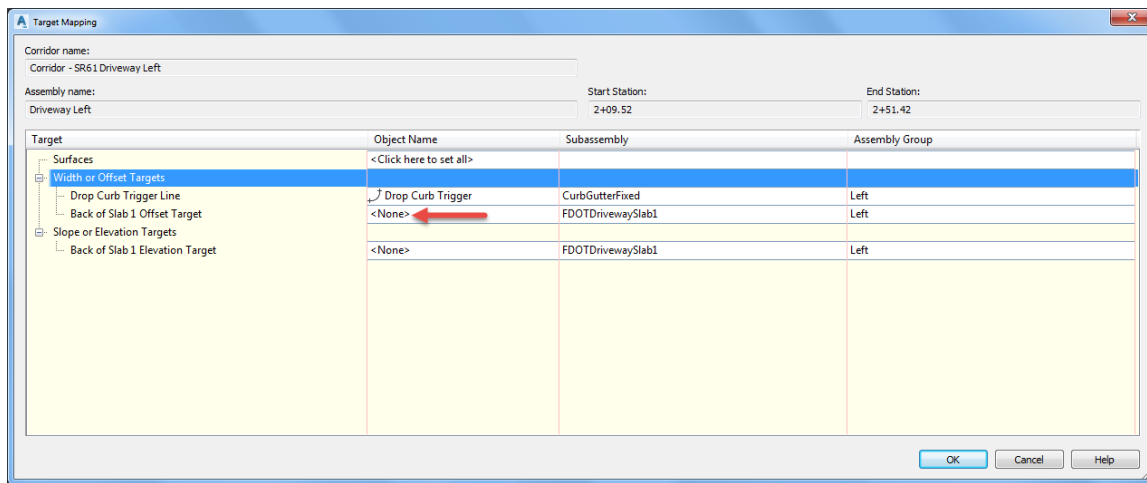




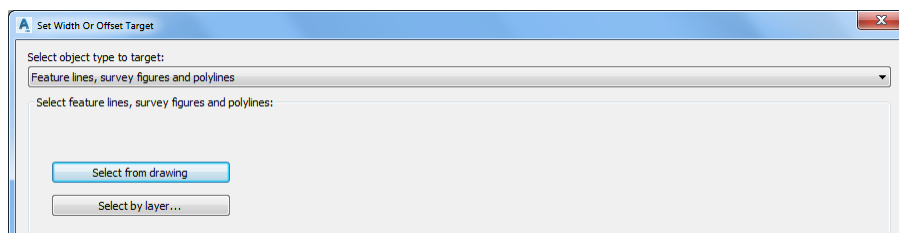
5. Select the Region RG - Driveway Left - (1) region. You will see the preview boundary of the region highlight before you pick



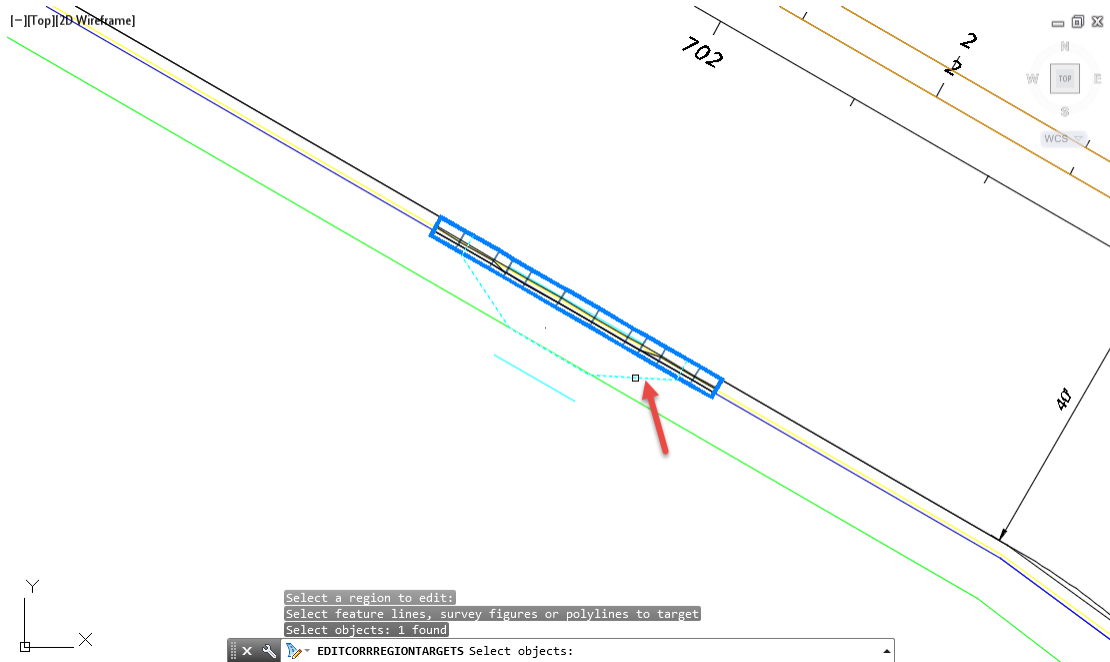
6. From the Target Mapping dialog , use the following values: Width or Offset Targets: **Left Side: Back of Slab 1 Offset Target** select **<None>** from **Object Name** column.



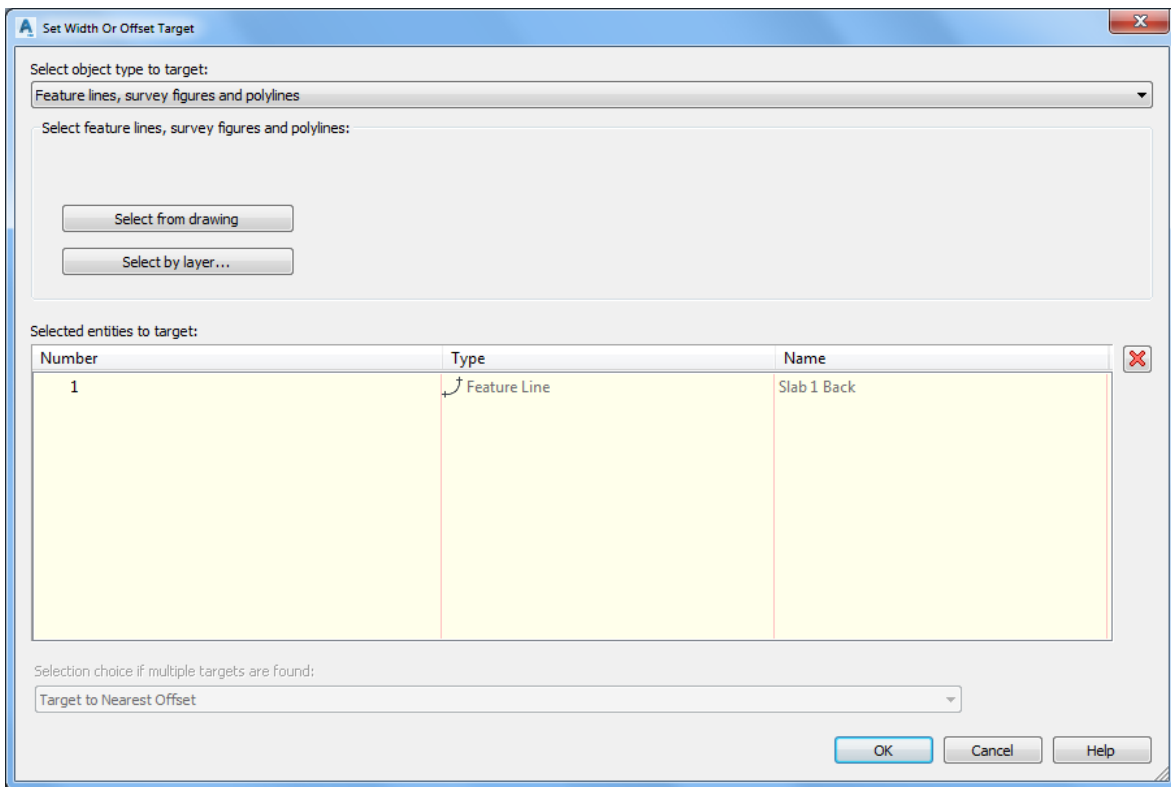
7. From Set Width Or Offset Target dialog, set Select object type to target:
  - o Feature lines, survey figures, and polylines.
8. Click Select from drawing button.



9. Select Slab 1 Back feature line, use the red arrow as a reference for selecting feature line, press **Enter** to continue.

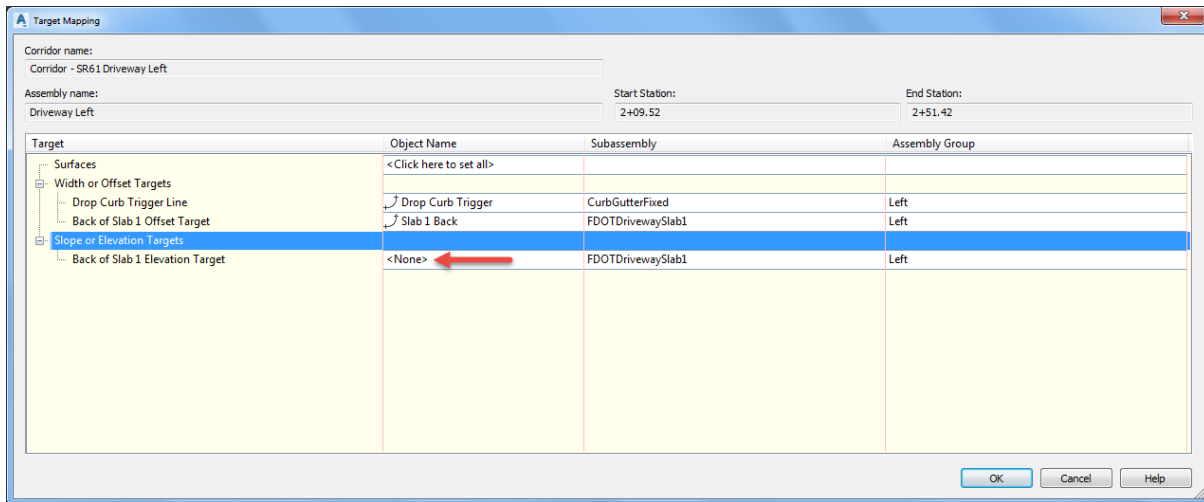


10. You can see the value in having the name of the feature line displayed in the dialog box.



11. Click **OK** to continue and to close the Set Width or Offset Target dialog.

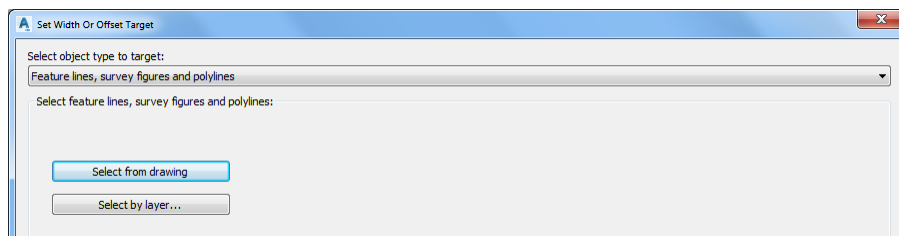
12. Slope or Elevation Targets: Left Side: Back of Slab 1 Elevation Target select <None> from Object Name Column.



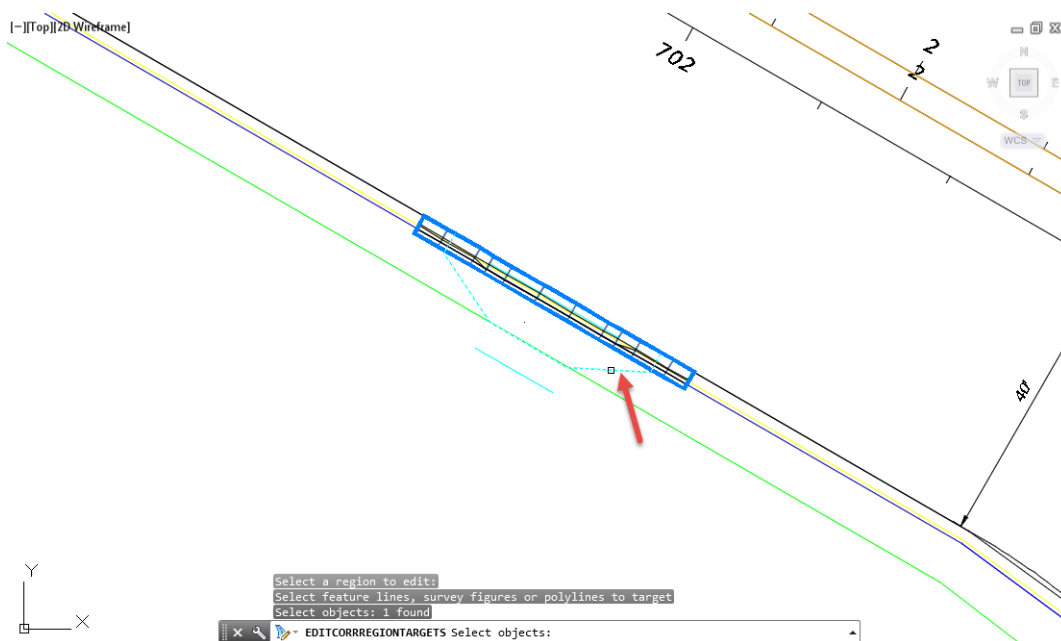
13. From Set Width Or Offset Target dialog, set Select object type to target:

- o Feature lines, survey figures, and polylines

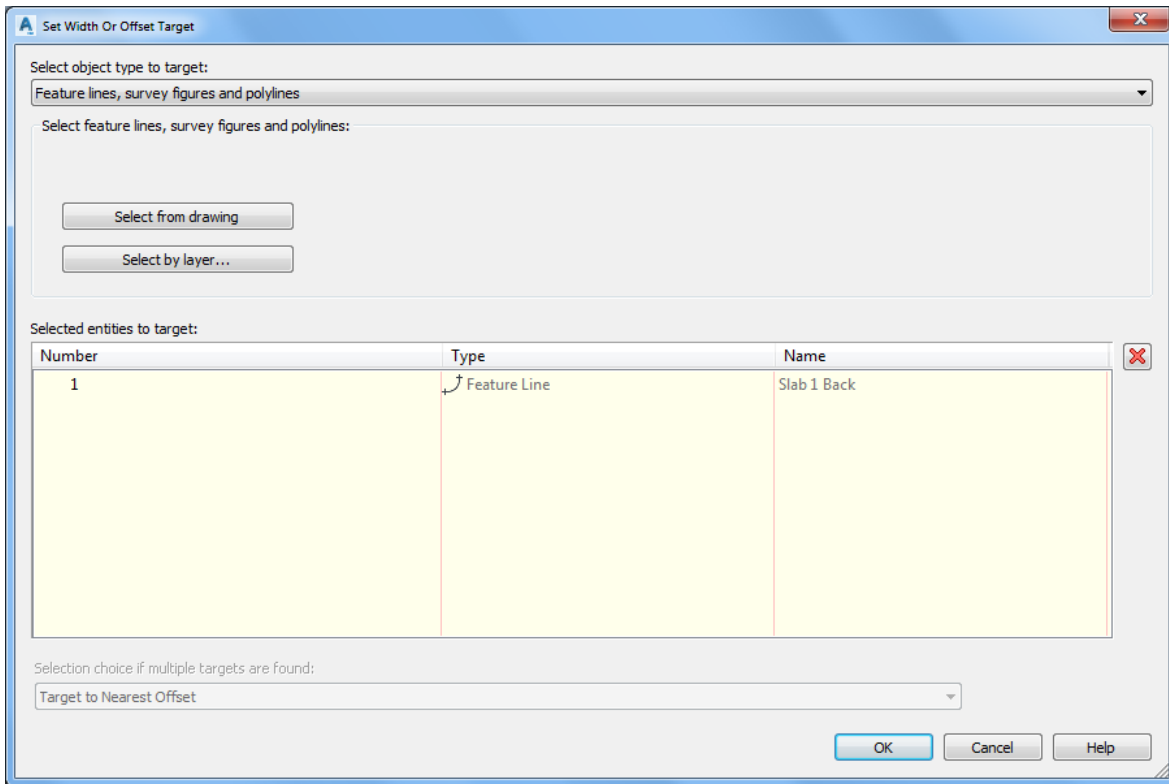
14. Click Select from drawing button



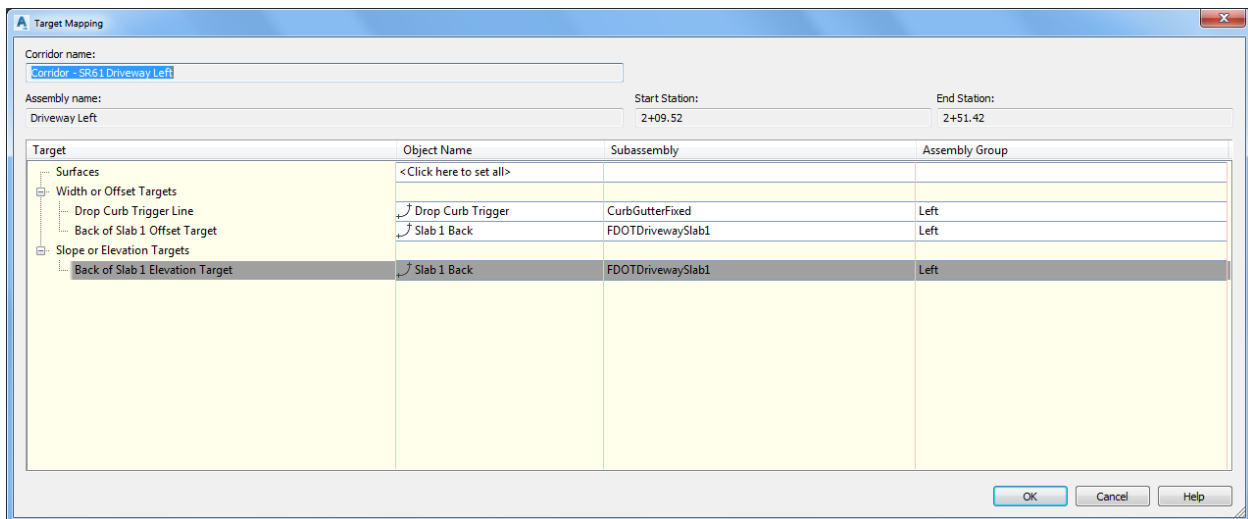
15. Select Slab 1 Back feature line, use the red arrow as a reference for selecting feature line, press Enter to continue.



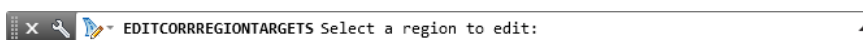
16. Click **OK** to continue and to close the Set Width or Offset Target dialog.



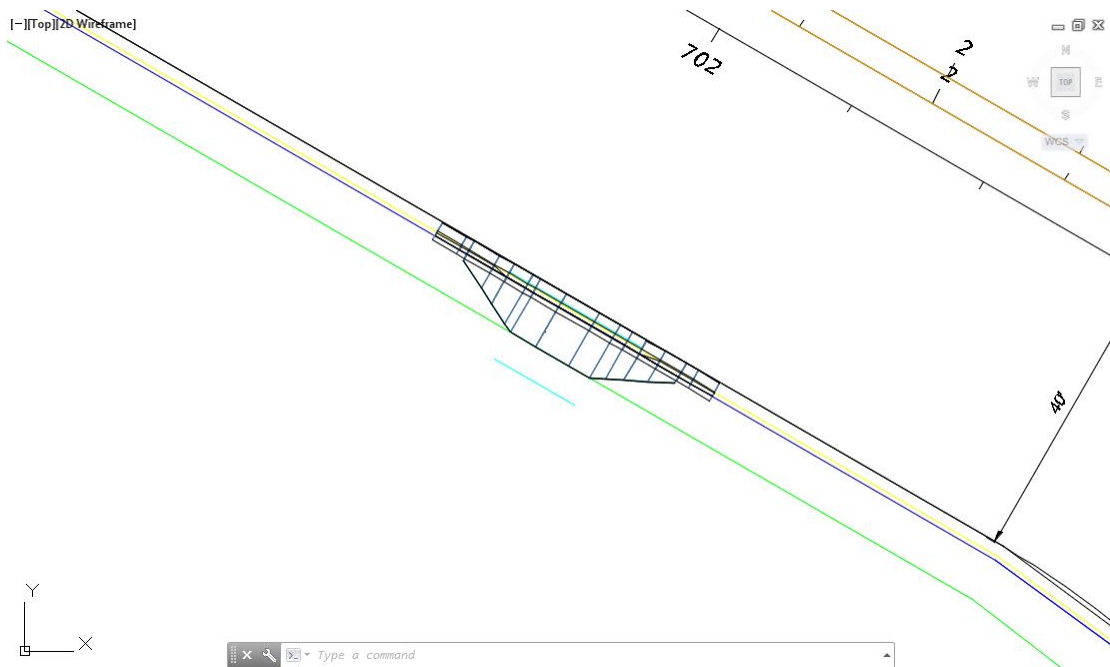
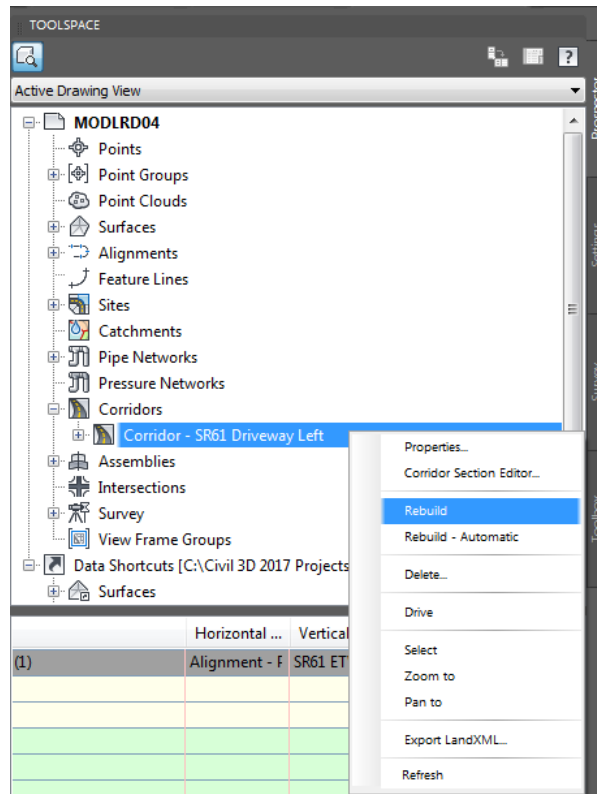
17. Verifying targets is easier when feature line names are like the assigned target names. Click **OK** to continue and to close the Target Mapping dialog.



18. Press **Enter** to end Edit Corridor Regions Targets command.



19. From TOOLSPACE > Prospector tab, expand Corridors, then select **Rebuild**.

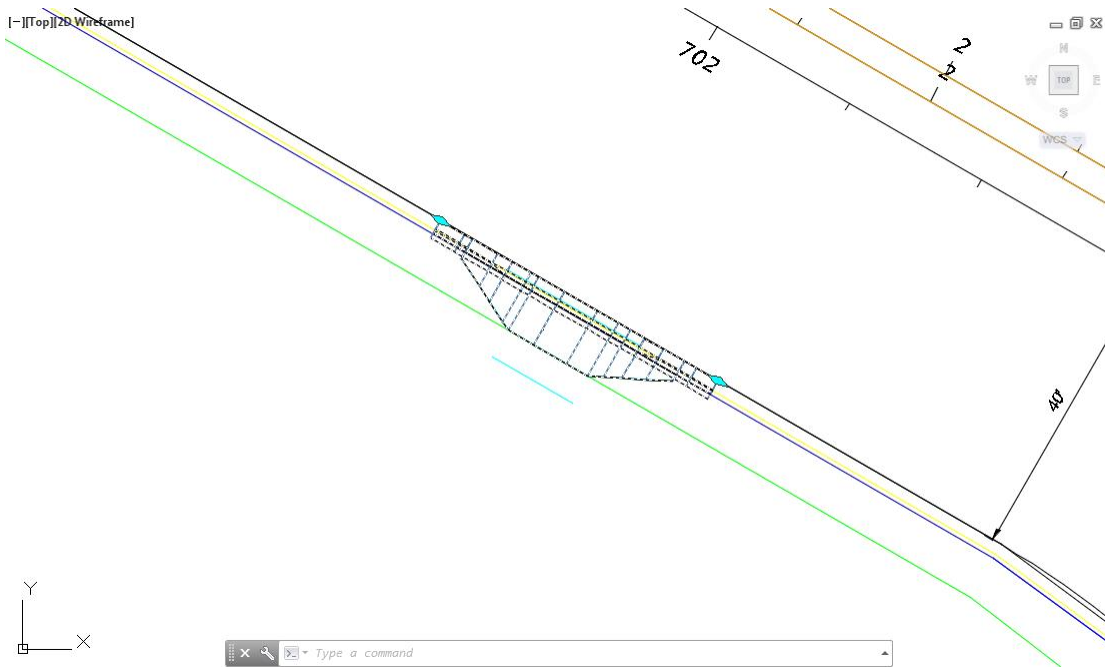


20. **Save** your file before continuing.

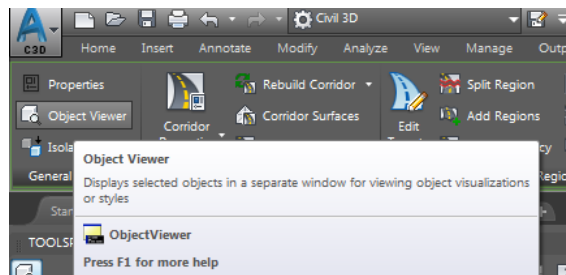
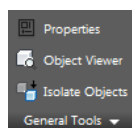
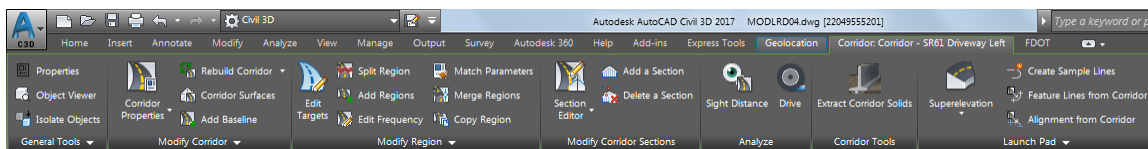
### Exercise 7.16 Display the Corridor - SR61 Driveway Left in the Object Viewer

In this exercise you will display the Corridor - SR61 Driveway Left in the Object Viewer.

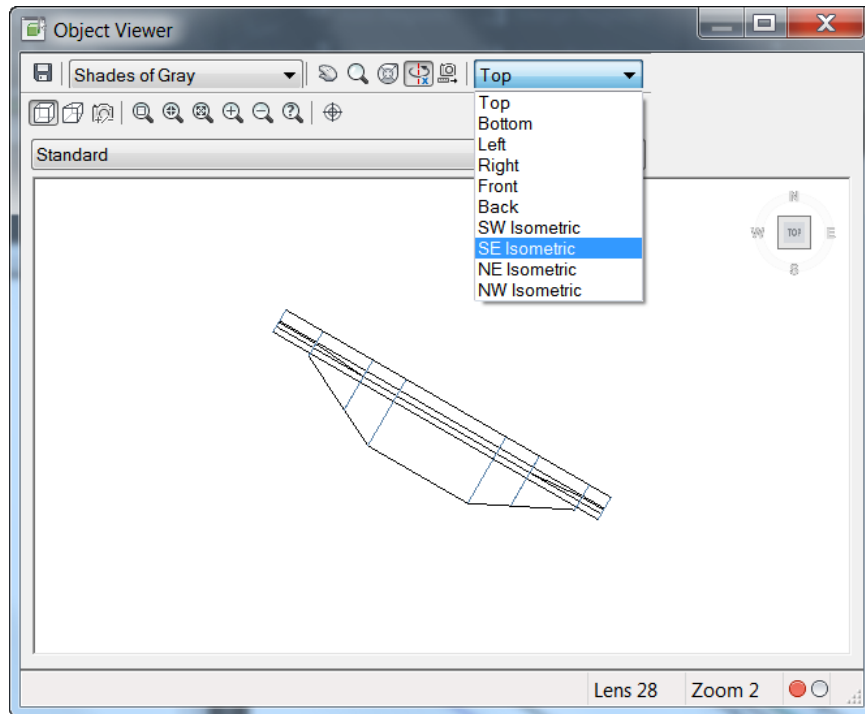
1. Select the **Corridor - SR61 Driveway Left** corridor model to display the grips.



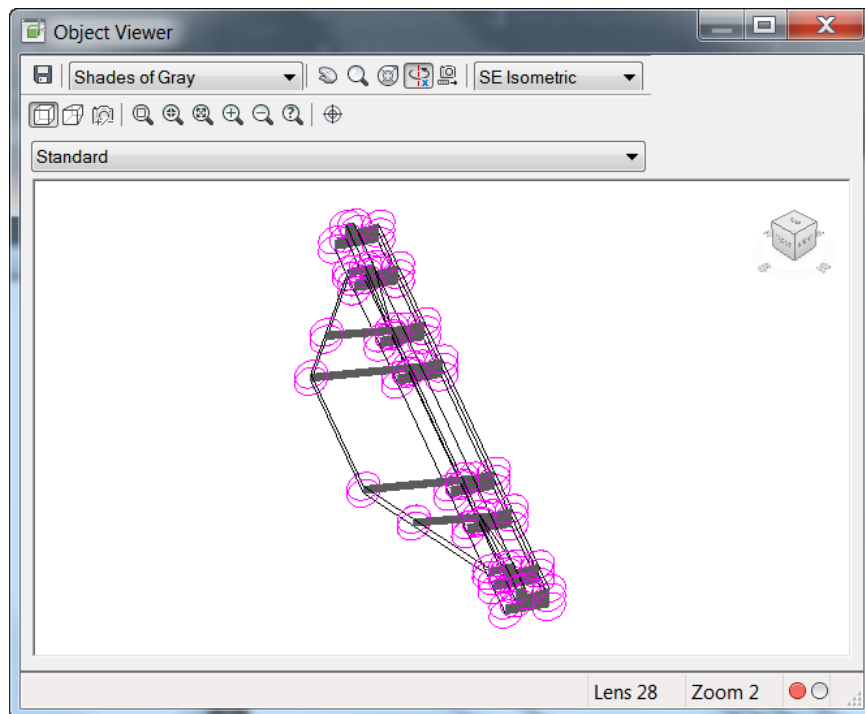
2. The Corridor: Corridor - SR61 Driveway Left tab is now displayed in the ribbon. From the *General Tools* panel, select **Object Viewer**.



3. Select the SE Isometric view from the drop down list.



4. Notice the Drop Curb follows the trigger line and the Slab 1 Back follows the feature line target.

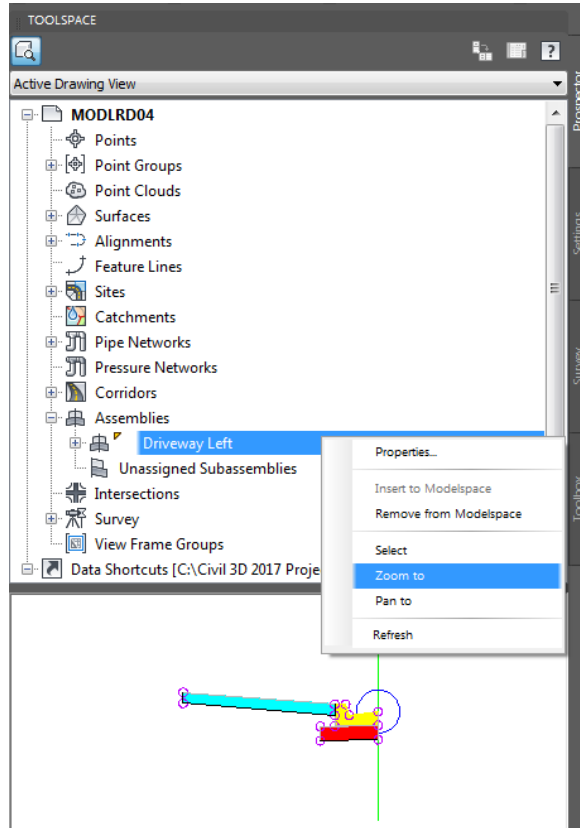


5. Close the Object Viewer.

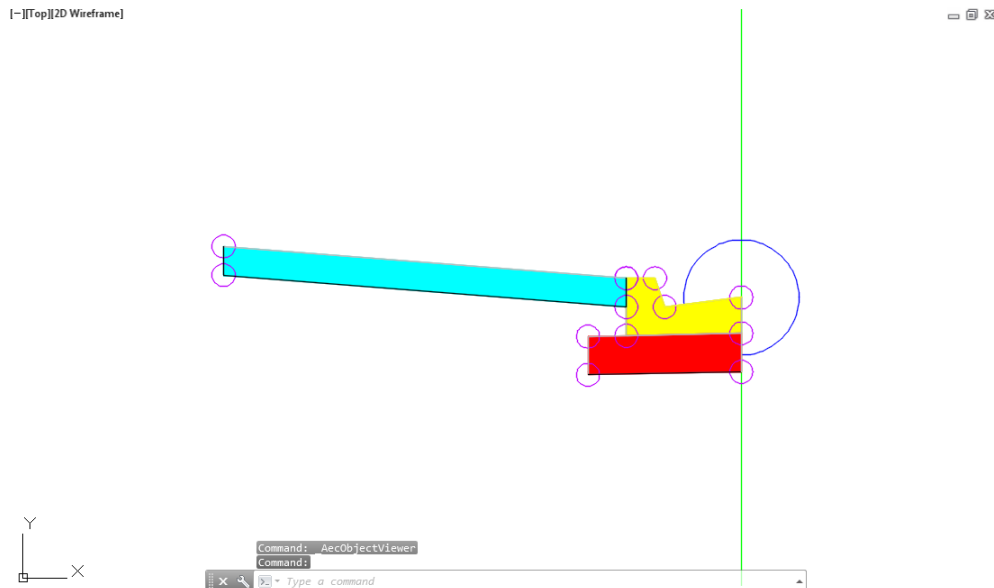
### Exercise 7.17 Add the Driveway Slab 2 subassembly to the Driveway Left Assembly

In this exercise you will add the Driveway Slab 2 subassembly to the Driveway Left Assembly.

1. From TOOLSPACE > Prospector tab, expand Assemblies, right-click on Driveway Left assembly, then select Zoom to.

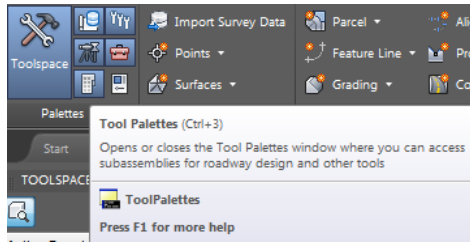


2. The Driveway Left is now on the center of your screen in the drawing editor. Change the Tool Palette to display the FDOT Subassemblies palette group.

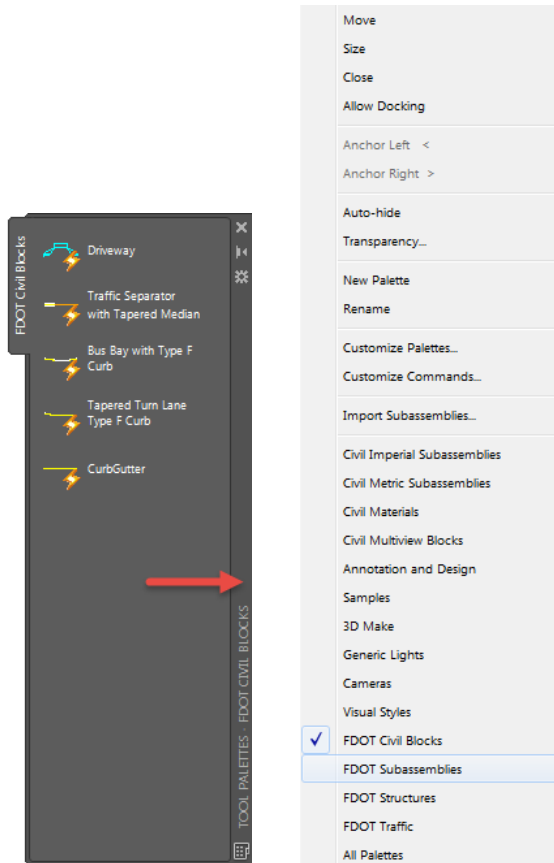




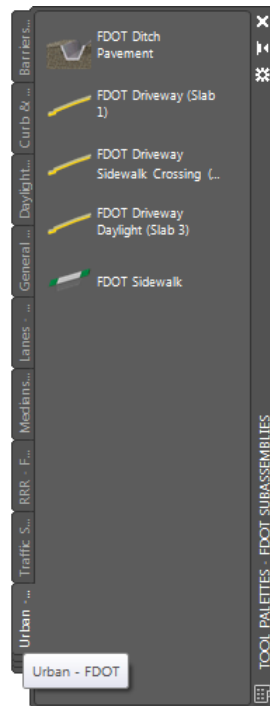
- From the Home tab > Palettes panel, select Tool Palettes.



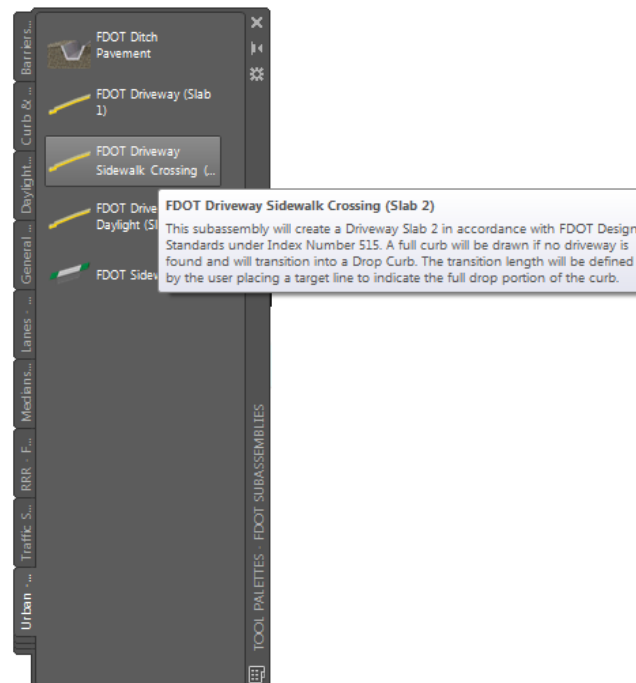
- Right click the Tool Palette title bar referenced by the red arrow., and choose the FDOT Subassemblies palette group.



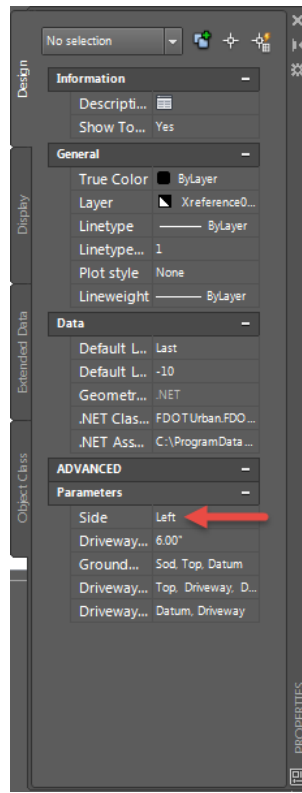
5. Select the Urban - FDOT tab.



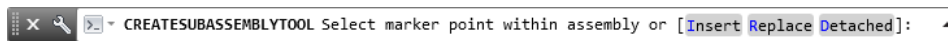
6. Select FDOT Driveway Sidewalk Crossing (Slab 2)



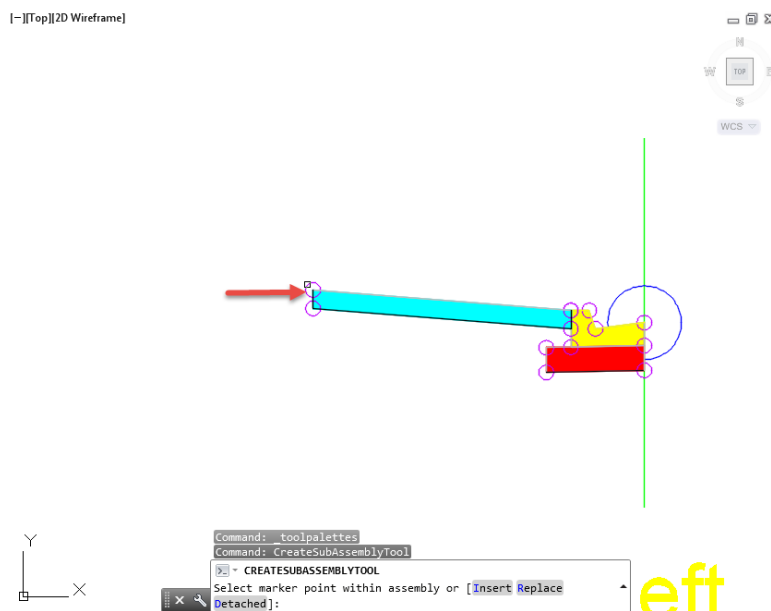
- In the Properties Palette, Parameters section, set the following values: Set the *Side* to **Left**, referenced by the red arrow.



- The command line prompts you to Select marker point within assembly or [Insert Replace Detached]:

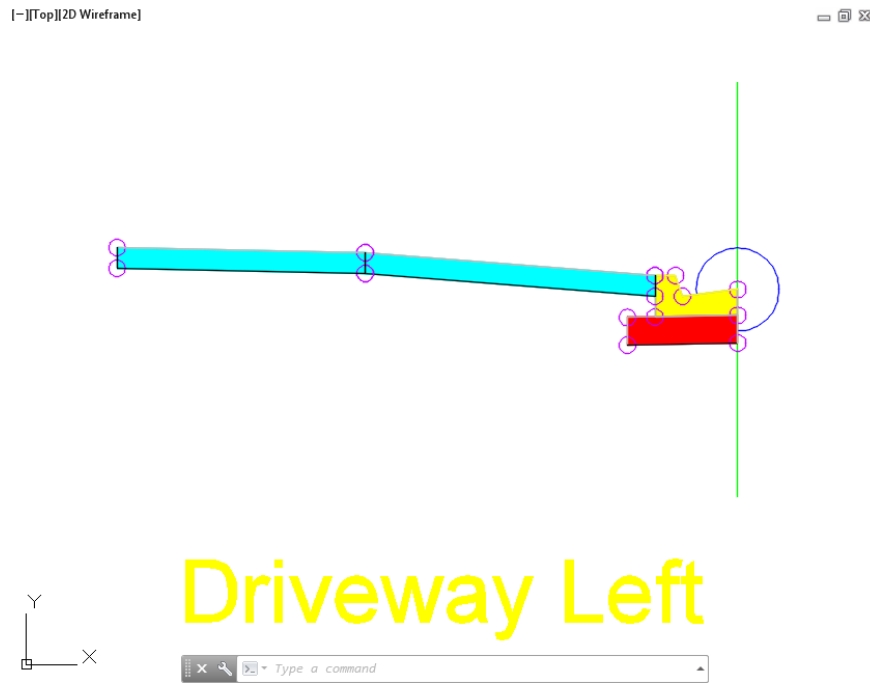


- Pick the attachment ring to place the subassembly at the Back of Slab 1, referenced by the red arrow.



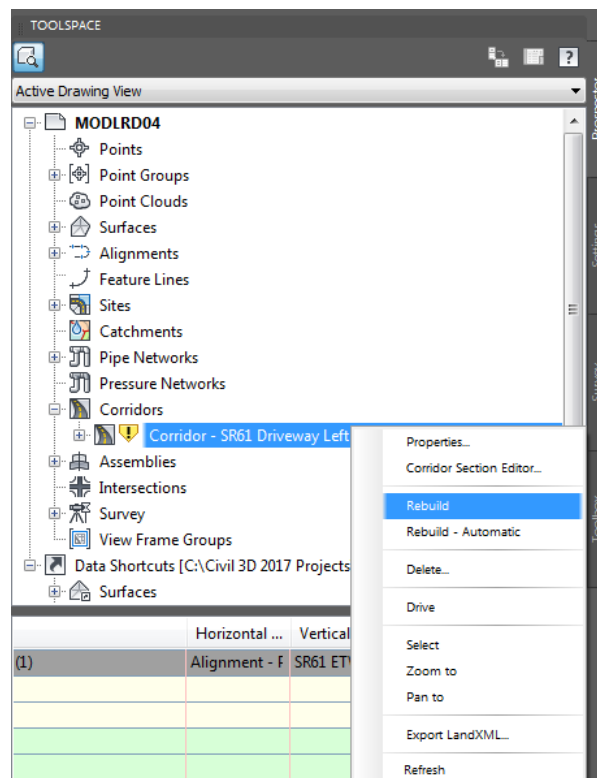
- Press **ESC** key to terminate the command. **Close** the Tool Palette.

11. Use **Zoom** and **Pan** commands to display the Driveway Left Assembly.

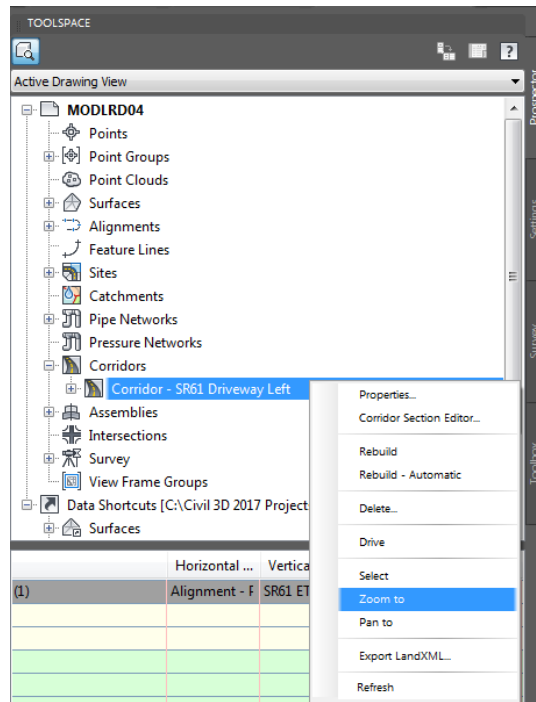


12. **Save** your file before continuing.

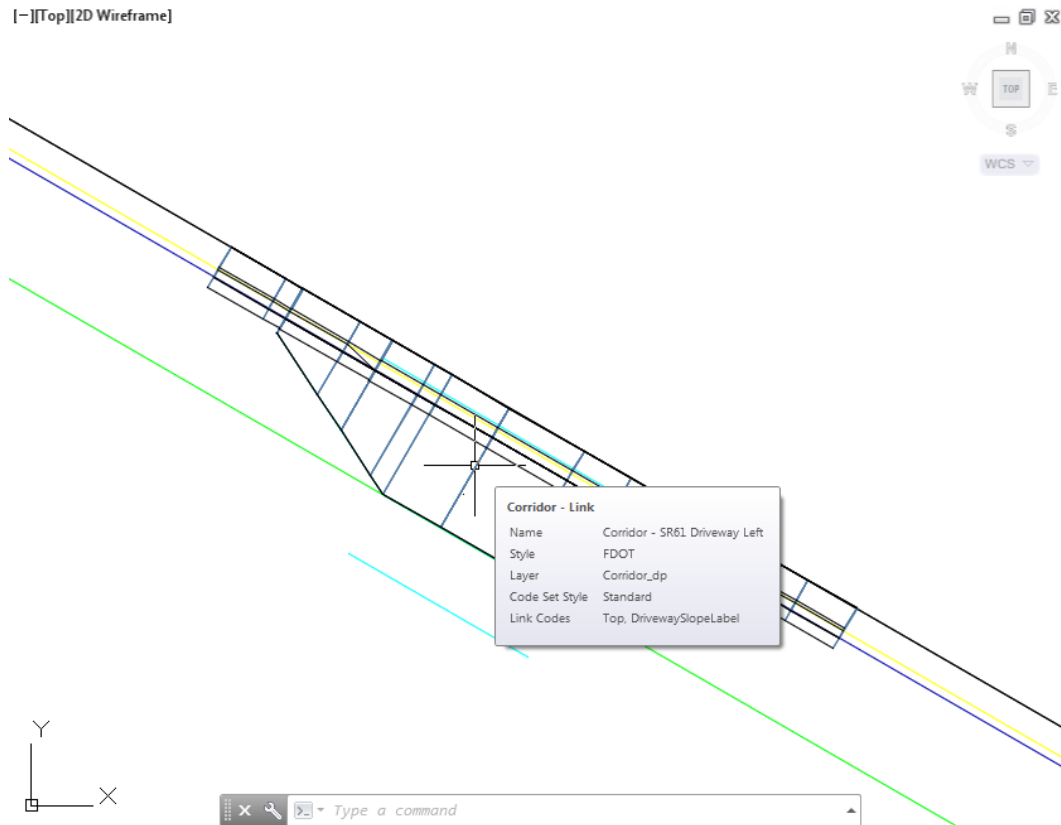
13. From **TOOLSPACE > Prospector** tab, expand **Corridors**, notice the Gold Shield is displayed next to the **Corridor - SR61 Driveway Left**, this means the **Corridor - SR61 Driveway Left** model needs to be rebuilt. Right-click on **Corridor - SR61 Driveway Left**, then select **Rebuild**.



- From TOOLSPACE > Prospector tab, expand Corridors, Right-click on Corridor - SR61 Driveway Left, then select Zoom to.



[ - ] [Top] [2D Wireframe]

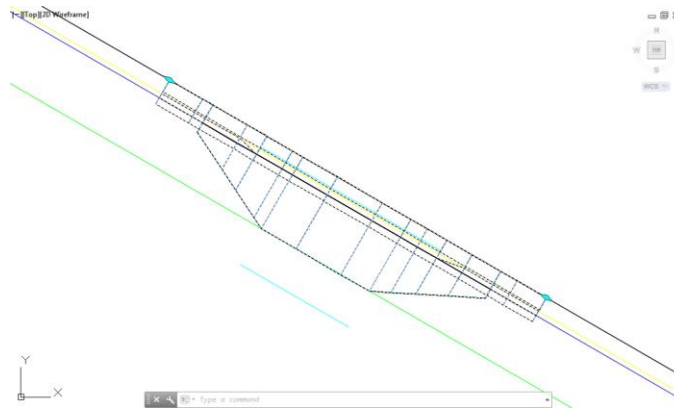


- Save your file before continuing.

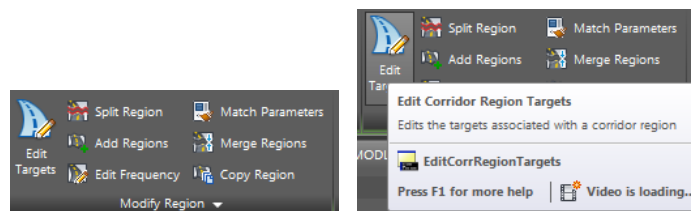
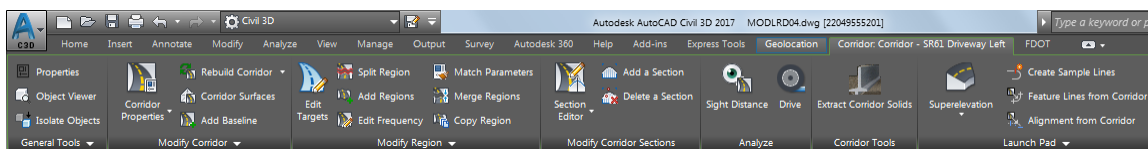
### Exercise 7.18 Assign Target to the Slab 2 Back

In this exercise you will assign Targets to the Slab 2 Back.

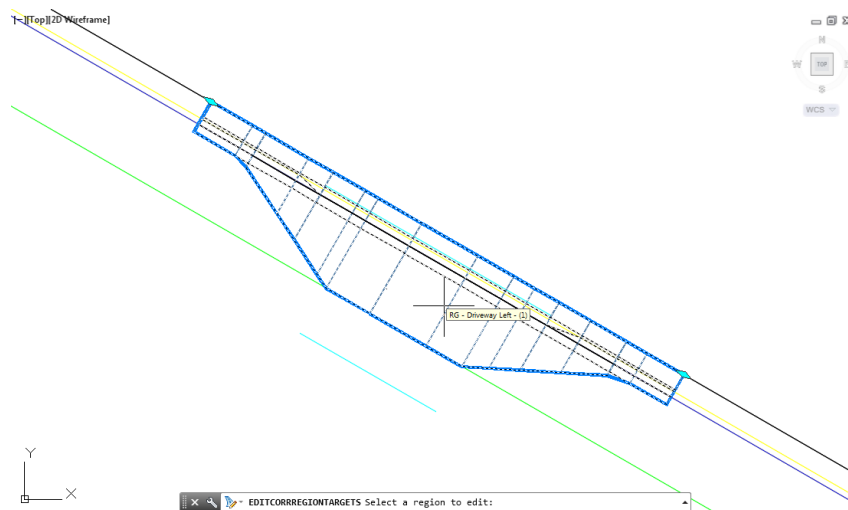
1. Select the Corridor - SR61 Driveway Left corridor model to display the grips.



2. The Corridor: Corridor - SR61 Driveway Left tab is now displayed in the ribbon. Click the **Edit Targets** button on the *Modify Region* panel.

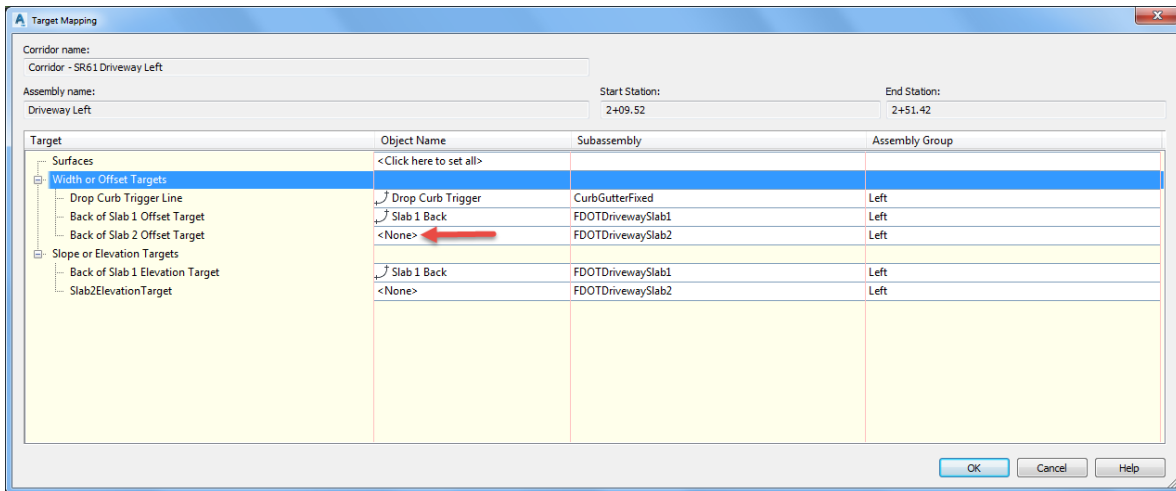


3. Select the Region RG - Driveway Left - (1).

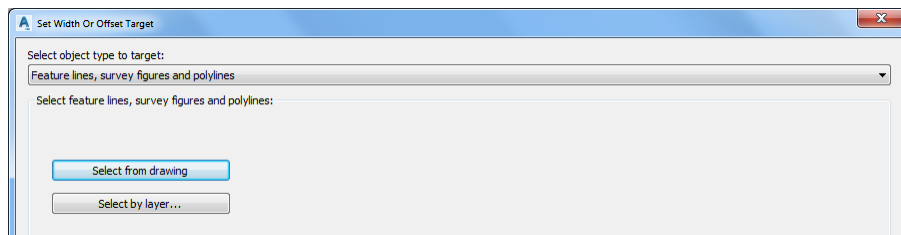


**Note** You will see the preview boundary of the region highlight before you pick. Notice Slab 2 is not displayed in the corridor model yet. It requires a target or it will not display.

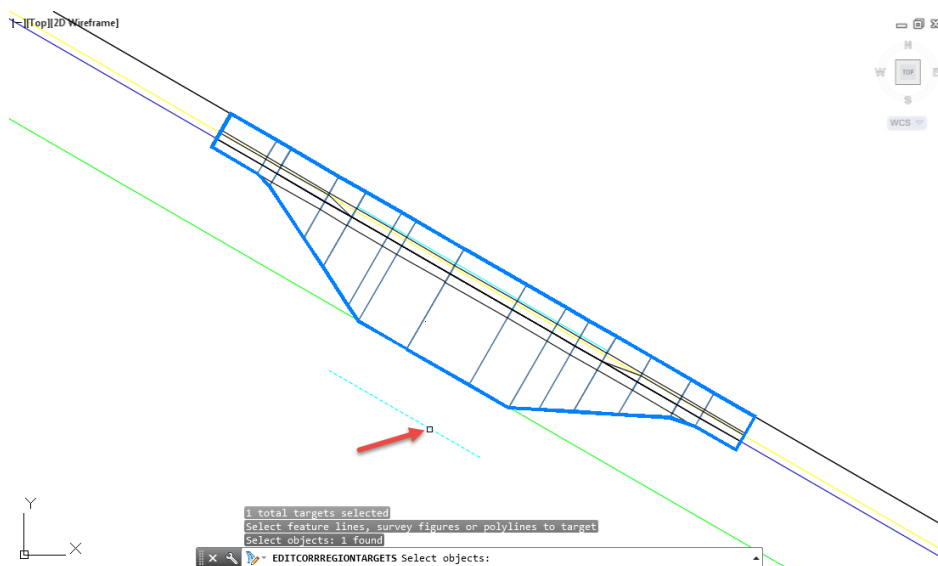
4. From the Target Mapping dialog, use the following values: Width or Offset Targets: **Left Side: Back of Slab 2 Offset Target** select **<None>** from *Object Name* column.



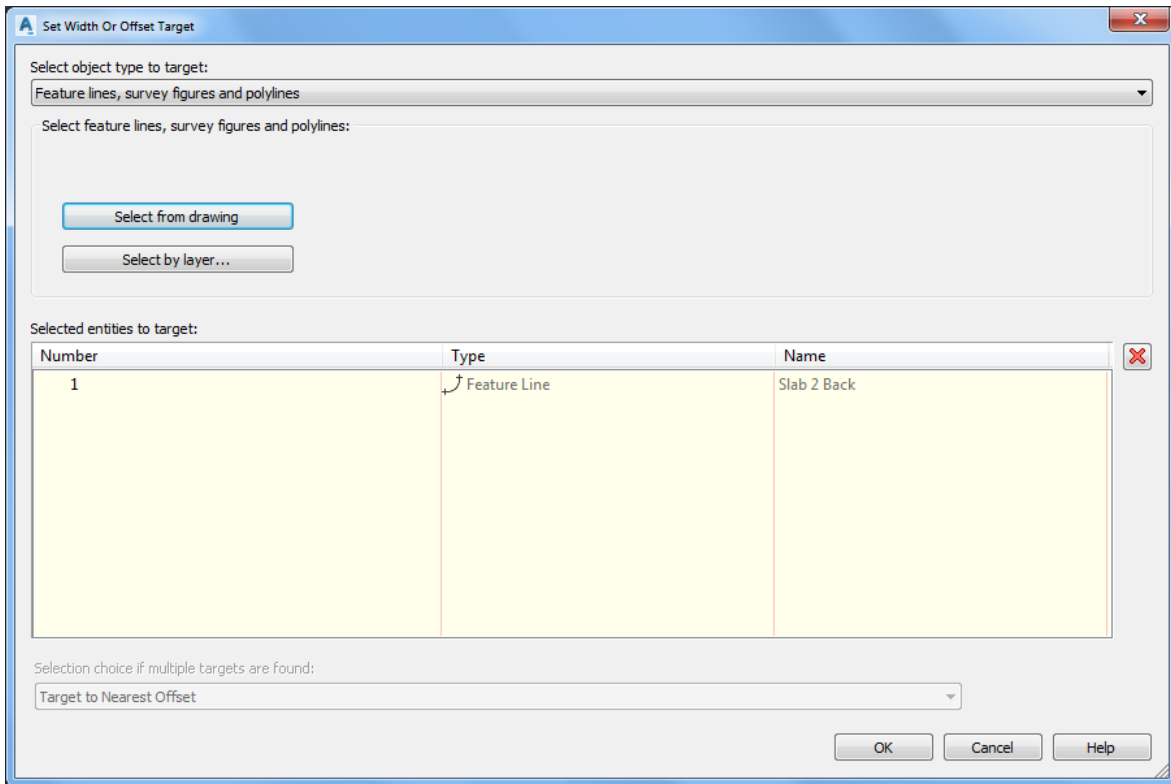
5. From Set Width Or Offset Target dialog, set Select object type to target:
  - o Feature lines, survey figures, and polylines.
6. Click Select from drawing button.



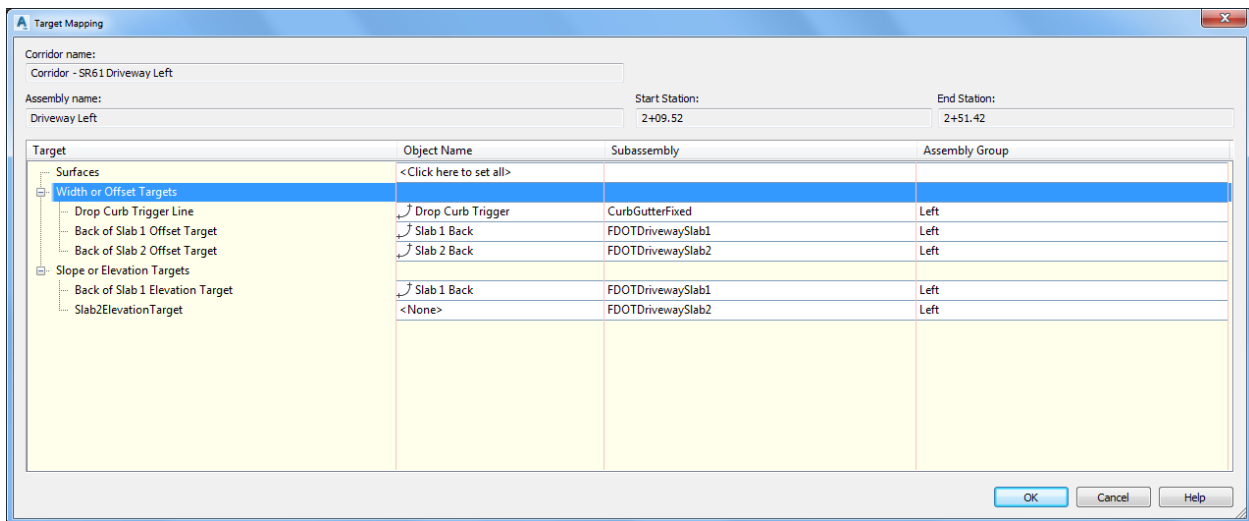
7. Select Slab 2 Back feature line, use the red arrow as a reference for selecting feature line. Press **Enter** to continue.



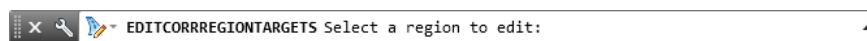
- Click **OK** to continue and to close the Set Width or Offset Target dialog.



- Click **OK** to continue and to close the Target Mapping dialog.

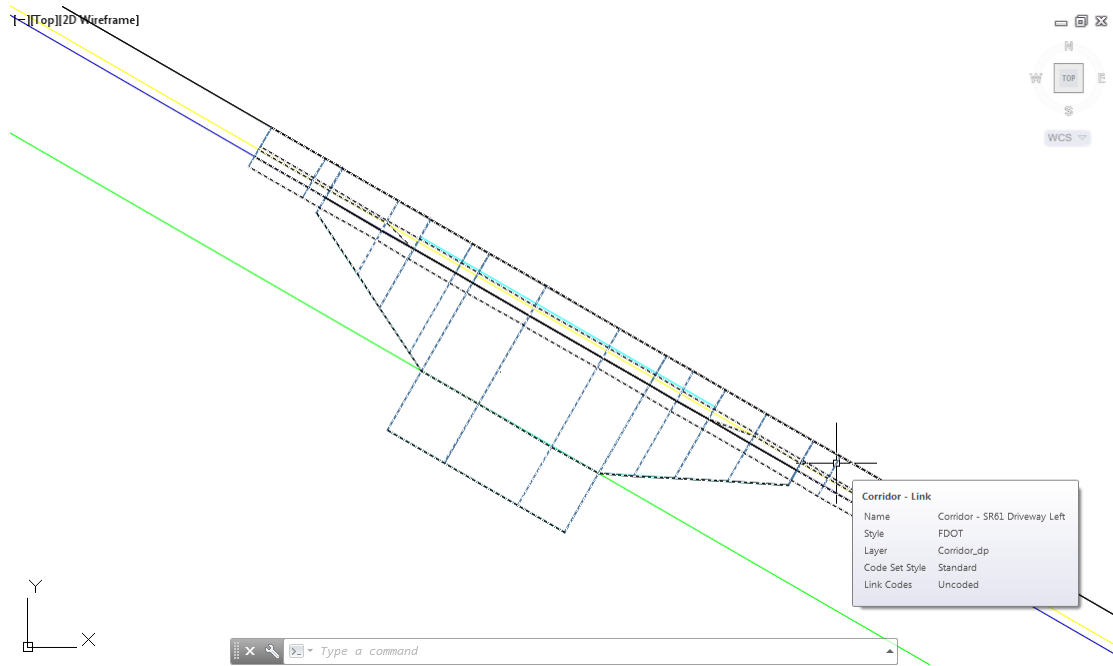


- Press **Enter** to end Edit Corridor Regions Targets command.





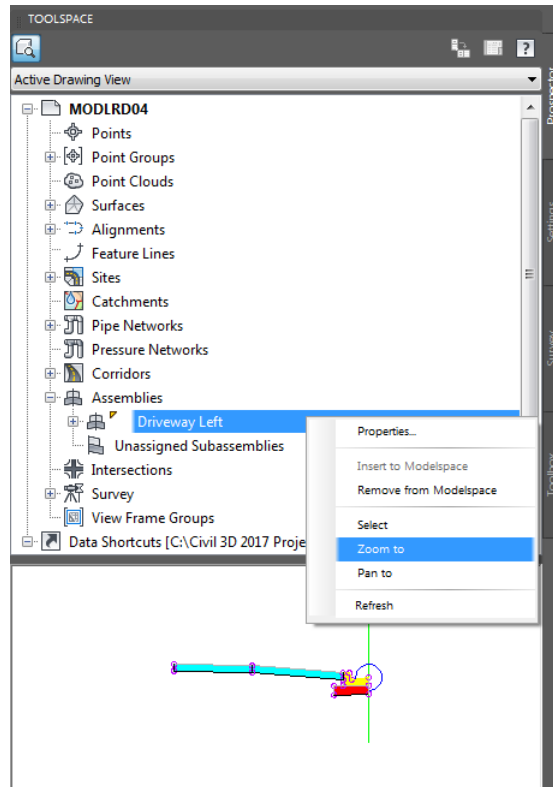
11. Review the design which now displays the Curb, Slab 1, and Slab 2.



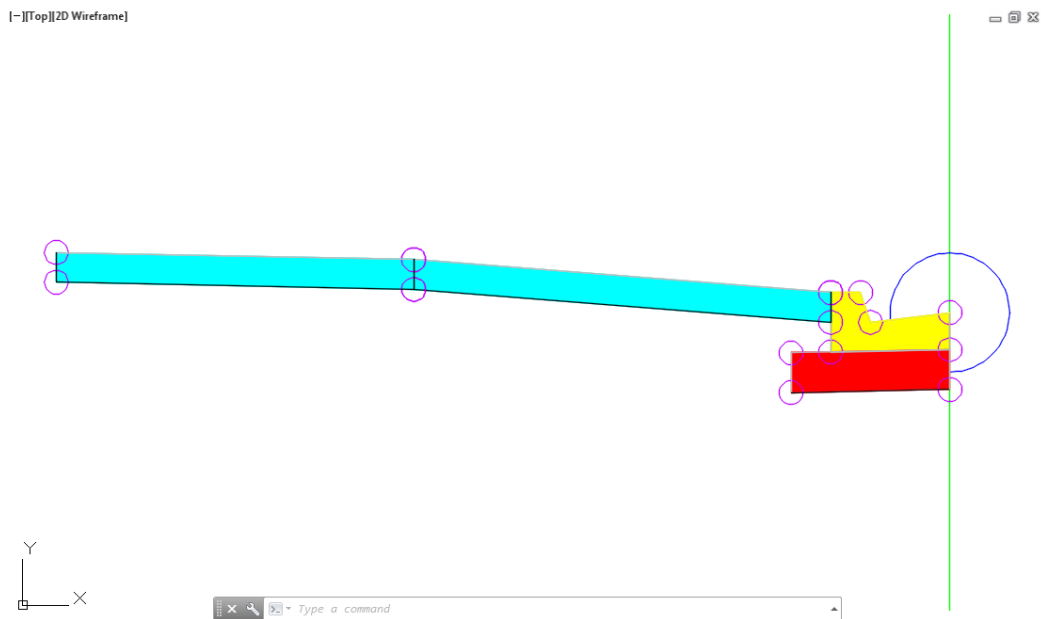
12. **Save** your file before continuing.

**Exercise 7.19** *Add the Driveway Slab 3 subassembly to the Driveway Left Assembly*

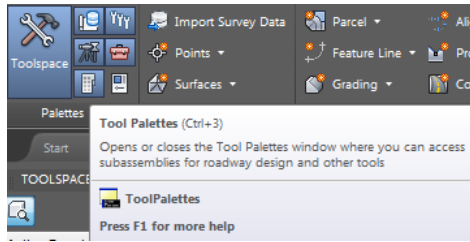
In this exercise you will add the Driveway Slab 3 subassembly to the Driveway Left Assembly.



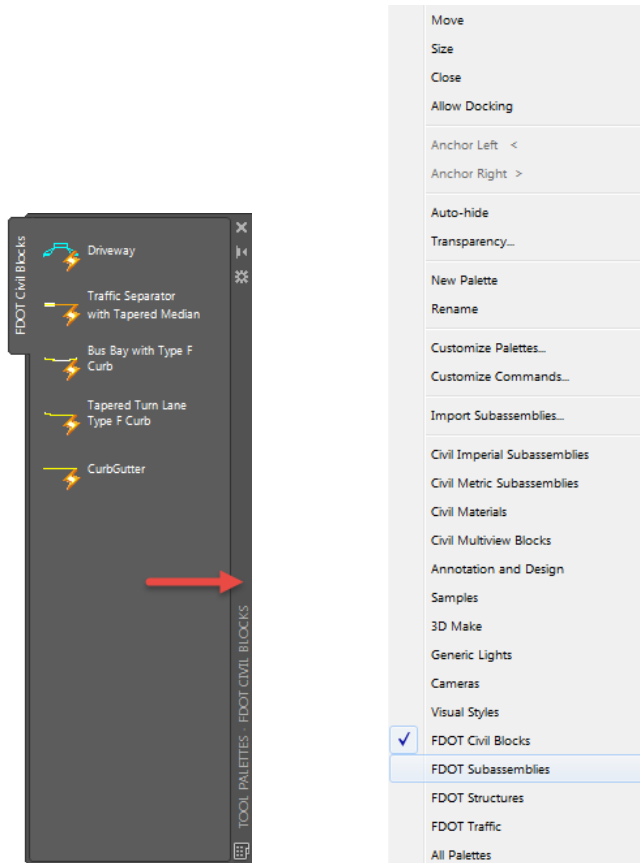
1. From TOOLSSPACE > Prospector tab, expand Assemblies, right-click on Driveway Left assembly, then select Zoom to.



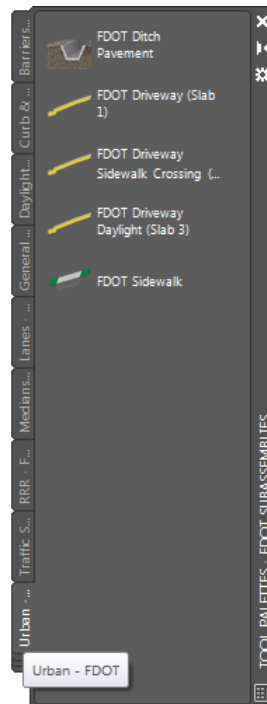
- The Driveway Left is now on the center of your screen in the drawing editor. Change the Tool Palette to display the FDOT Subassemblies palette group



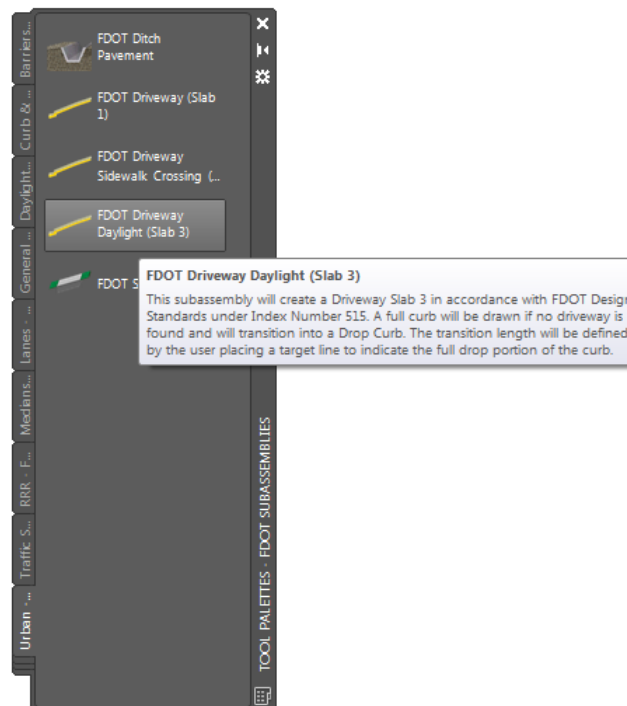
- From the Home tab > Palettes panel, select Tool Palettes.



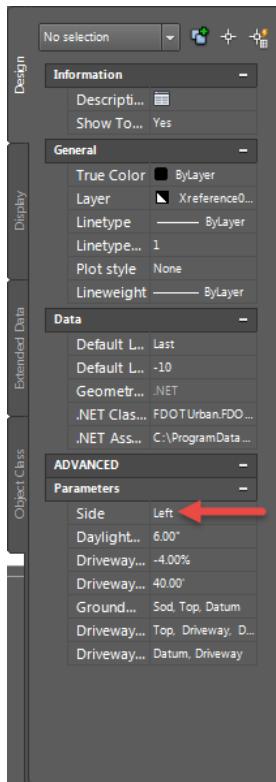
- Right click the Tool Palette title bar referenced by the red arrow., and choose the FDOT Subassemblies palette group.



- Select the Urban - FDOT tab.

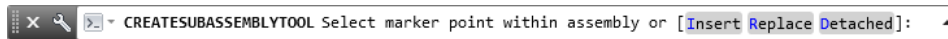


6. Select FDOT Driveway Daylight (Slab 3)



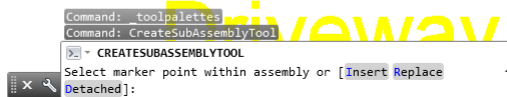
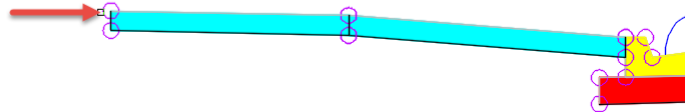
7. In the Properties Palette, Parameters section, set the following values:

Set the Side to Left, referenced by the red arrow



8. The command line prompts you to Select marker point within assembly or [Insert Replace Detached]:

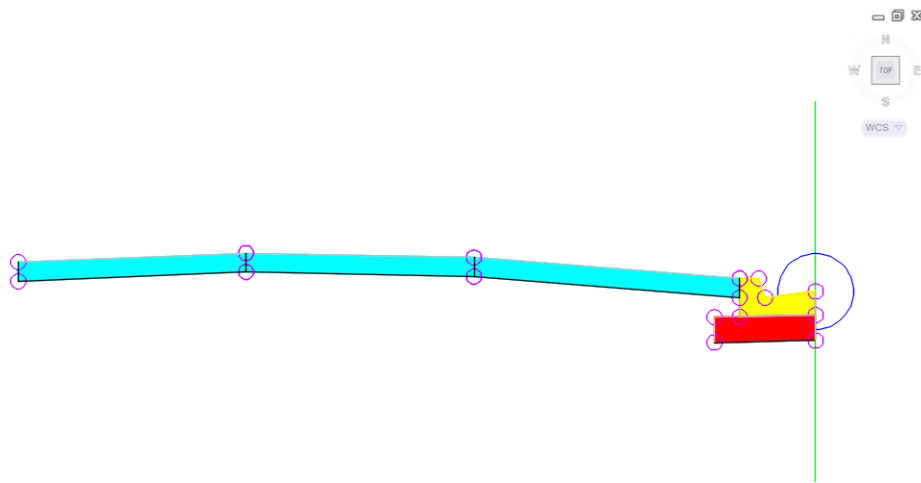
[~]Top]2D Wireframe]



Driveway Left

9. Pick the attachment ring to place the subassembly at the Back of Slab 2, referenced by the red arrow.
10. Press ESC key to terminate the command
11. Close the Tool Palette.

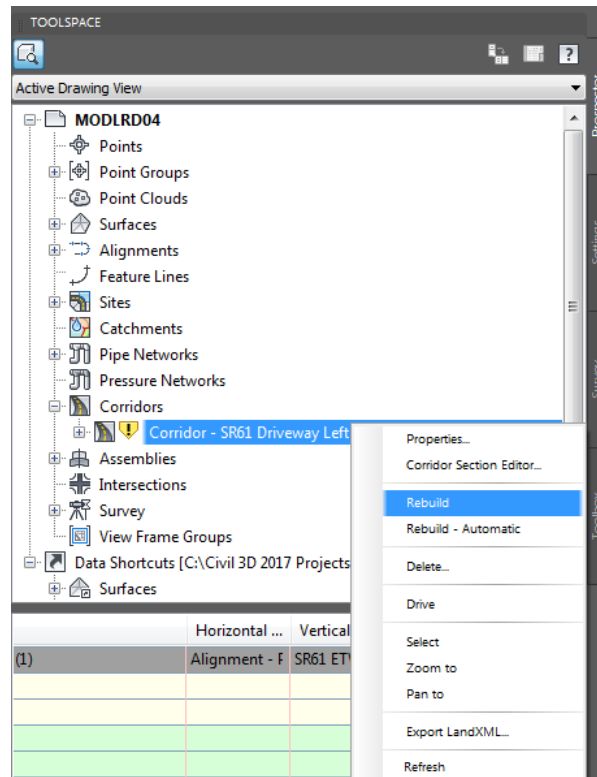
[-][Top][2D Wireframe]



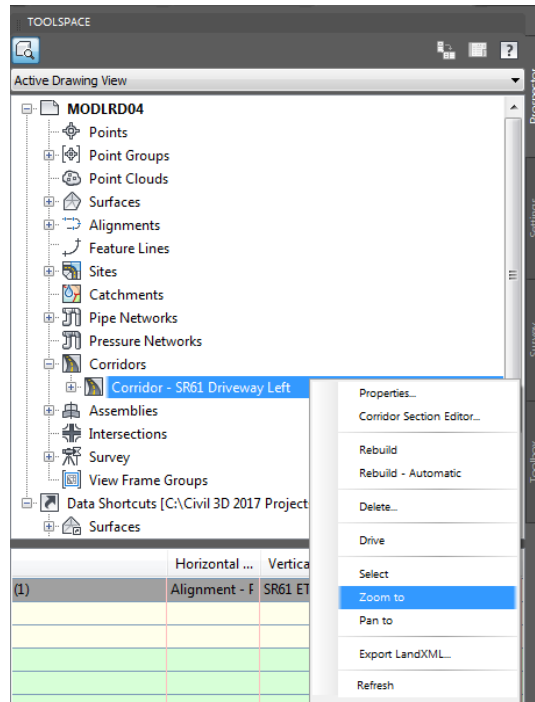
## Driveway Left



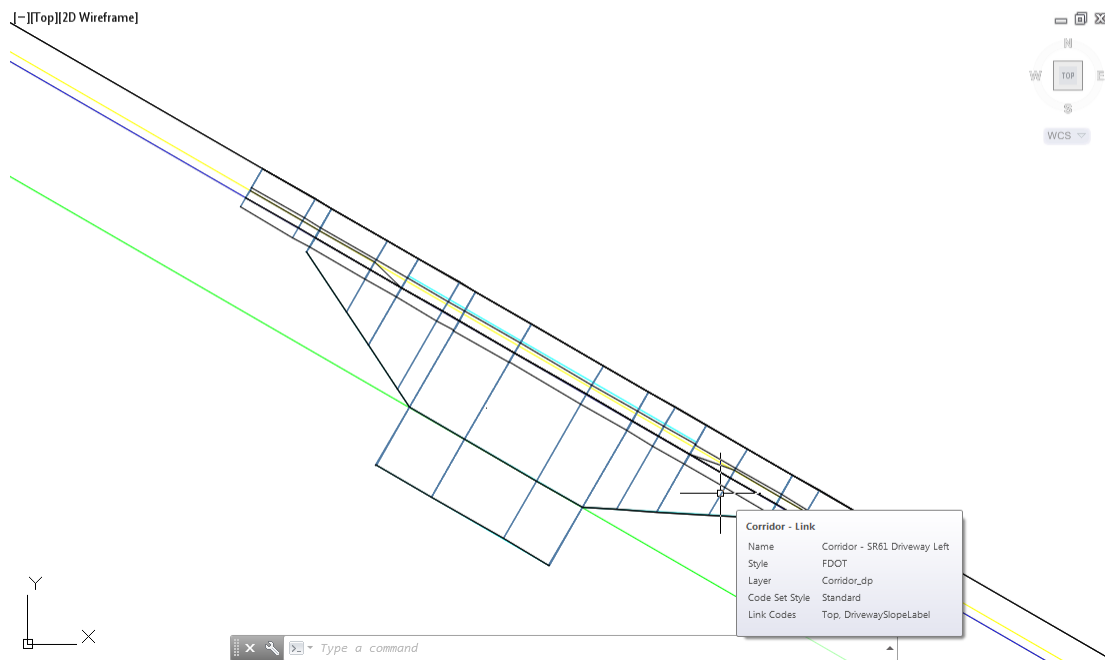
12. Use Zoom and Pan commands to display the Driveway Left Assembly.
13. **Save** your file before continuing.



- From TOOLSPACE > Prospector tab, expand Corridors, notice the Gold Shield is displayed next to the Corridor - SR61 Driveway Left, this means the Corridor - SR61 Driveway Left model needs to be rebuilt. Right-click on Corridor - SR61 Driveway Left, then select Rebuild.



- From TOOLSPACE > Prospector tab, expand Corridors, Right-click on Corridor - SR61 Driveway Left, then select Zoom to.

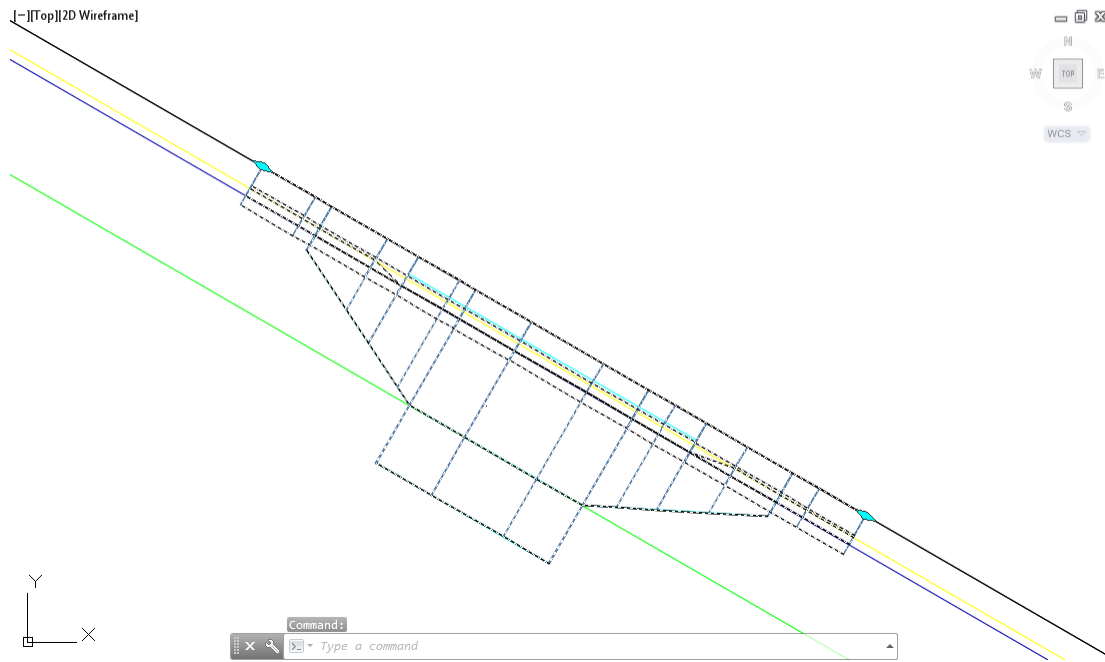


- Save your file before continuing.

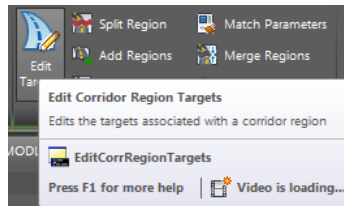
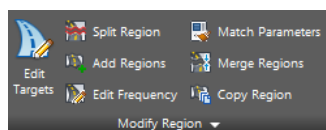
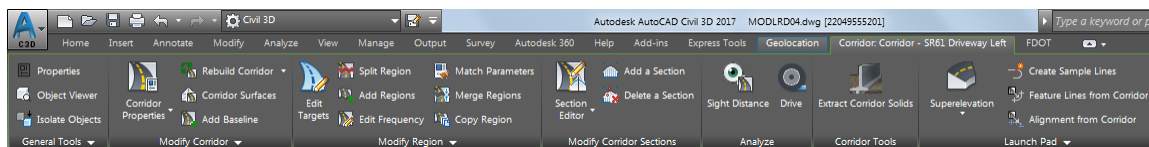
### Exercise 7.20 Assign Targets to the Slab 3 Trigger Target

In this exercise you will assign targets to the Slab 3 Trigger target.

1. Select the Corridor - SR61 Driveway Left corridor model to display the grips.

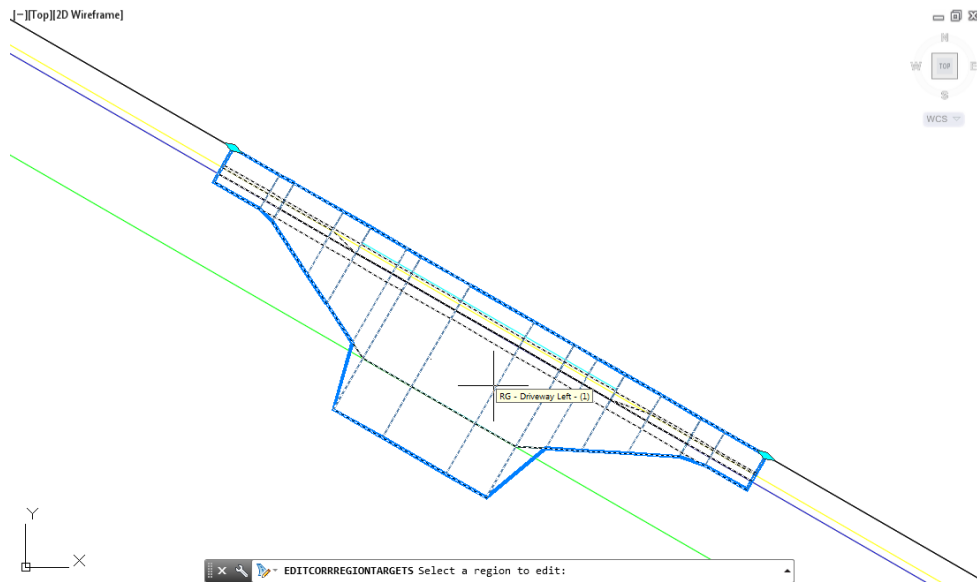


2. The Corridor: Corridor - SR61 Driveway Left tab is now displayed in the ribbon. Click the **Edit Targets** button on the *Modify Region* panel.

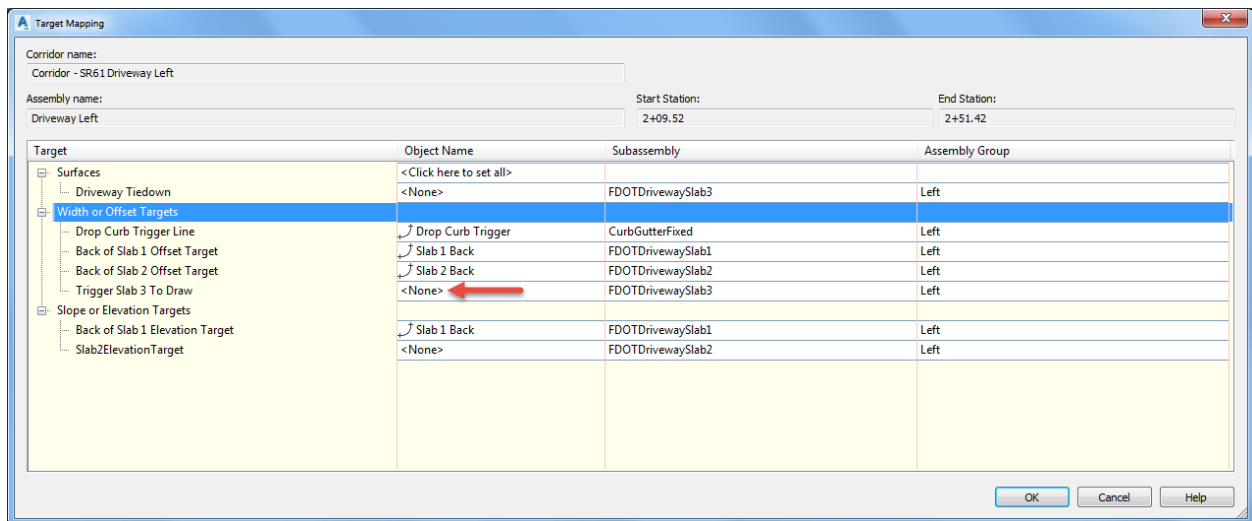




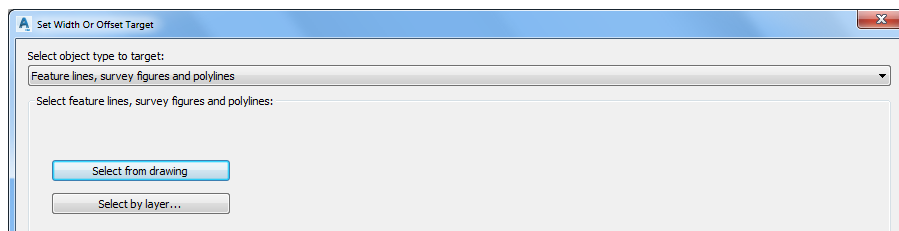
3. Select the Region RG - Driveway Left - (1). You will see the preview boundary of the region highlight before you select.



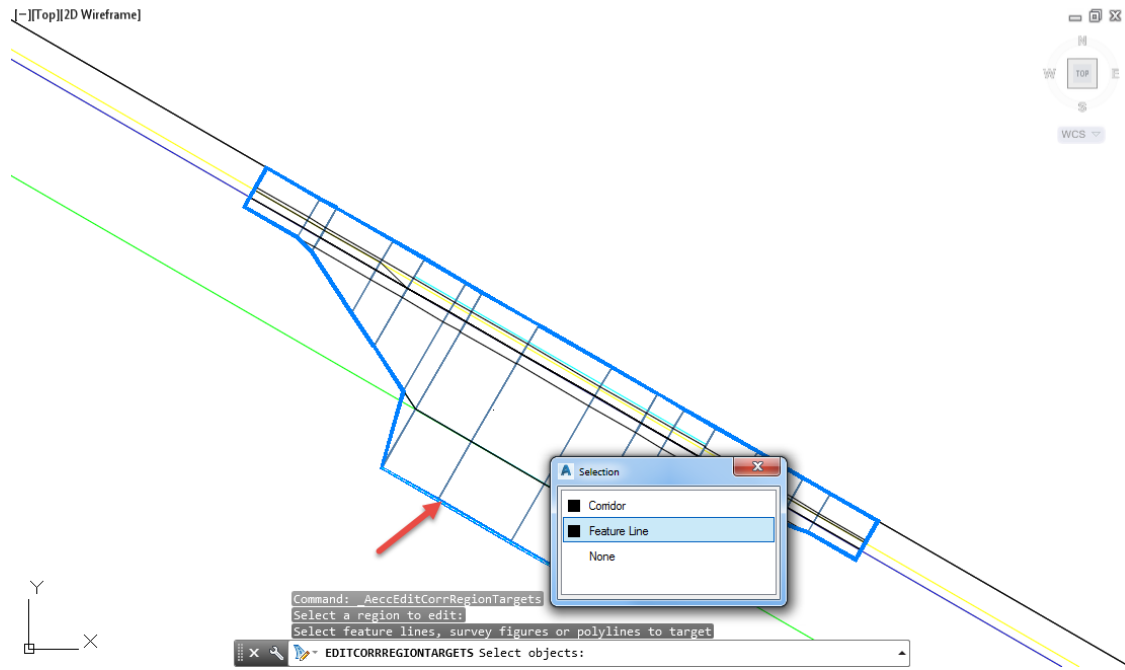
4. From the Target Mapping dialog , use the following values: Width or Offset Targets: Left Side: Trigger Slab 3 To Draw Offset Target select <None> from Object Name Column.



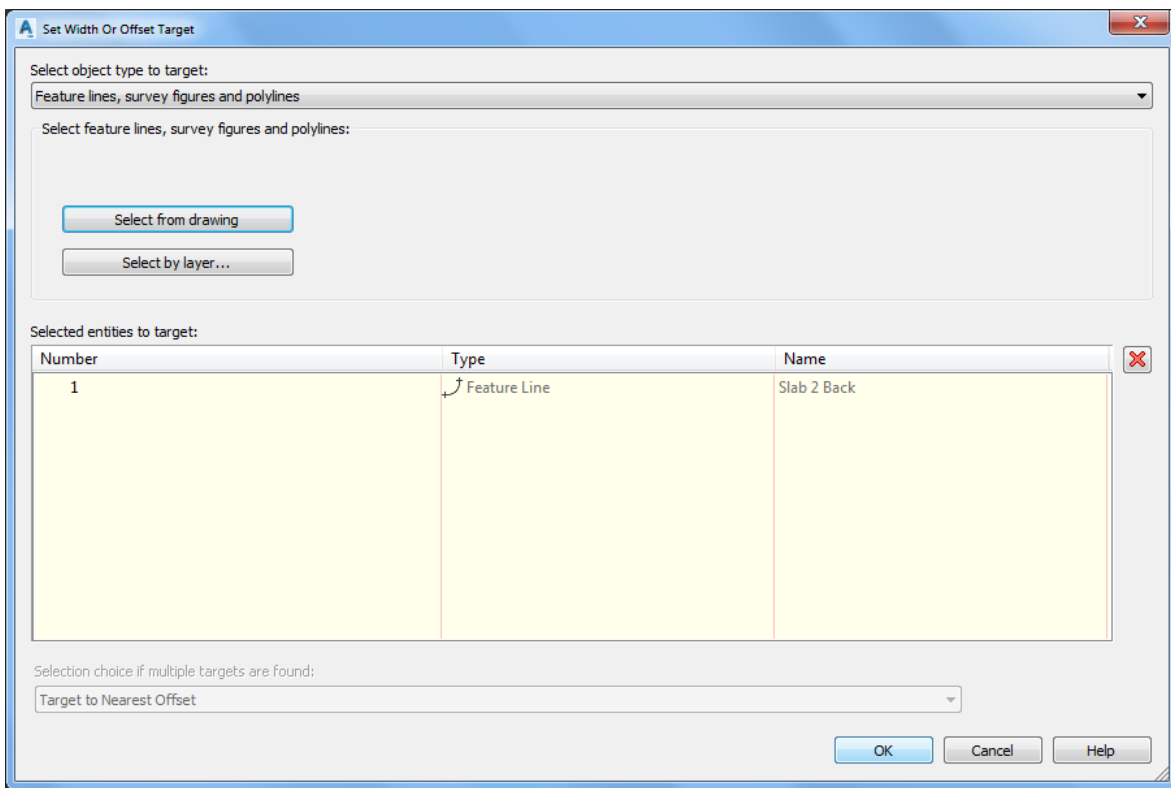
5. From Set Width Or Offset Target dialog, set Select object type to target:
  - o Feature lines, survey figures, and polylines
6. Click Select from drawing button

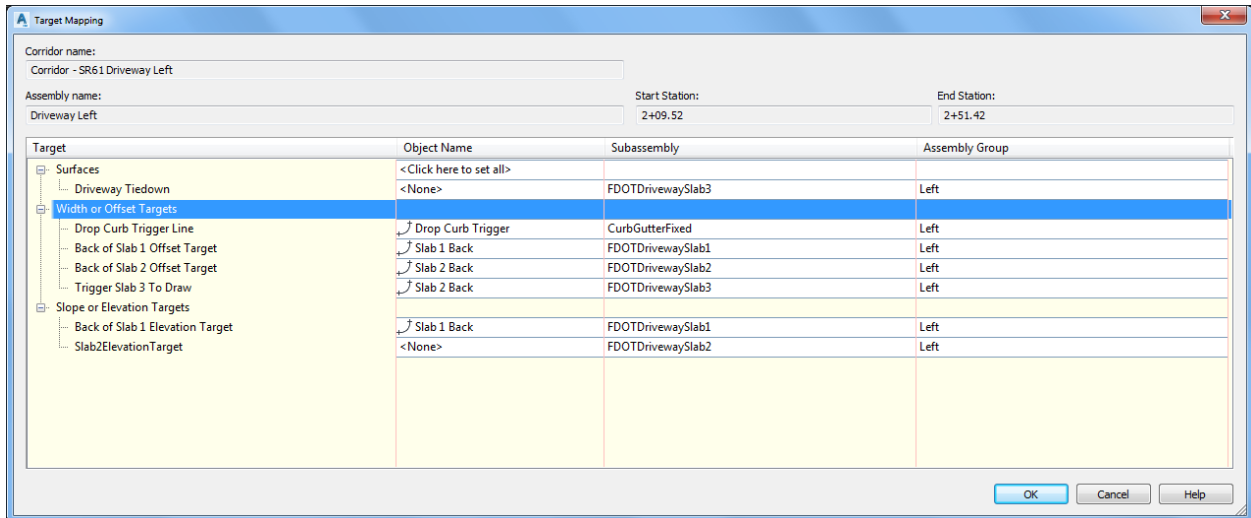


7. Select Slab 2 Back feature line, this also represents the Slab 3 Trigger line, use the red arrow as a reference for selecting feature line, from the Selection dialog select **Feature Line**. Press **Enter** to continue.

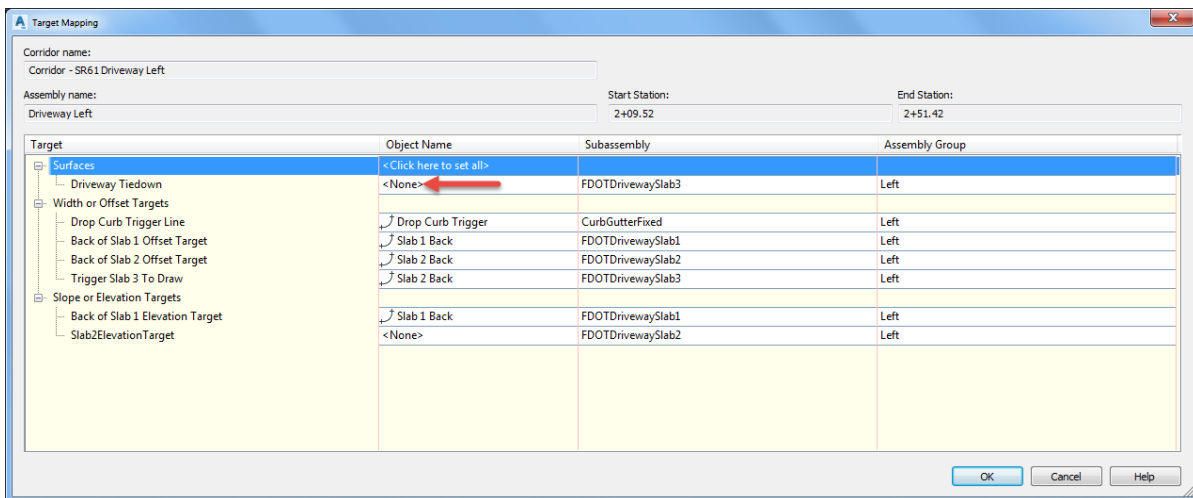


8. Click **OK** to continue and to close the Set Width or Offset Target dialog.

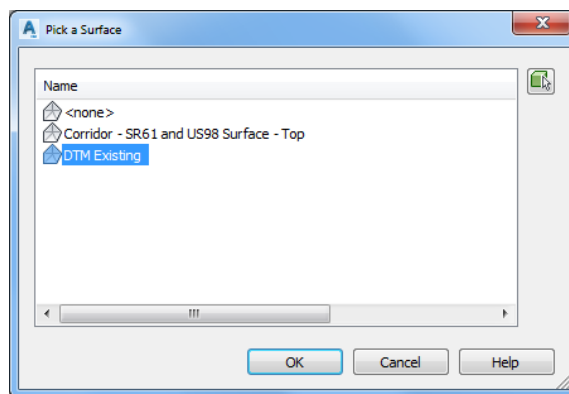




9. Select Surfaces: Driveway Tiedown, then select <None> from Object Name Column.

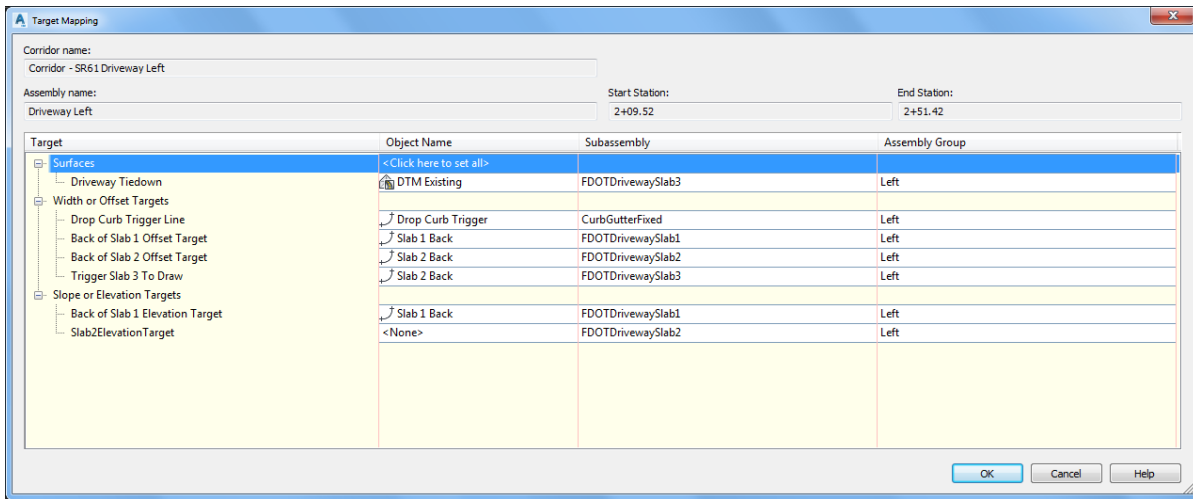


10. From the Pick a Surface dialog, select DTM Existing.

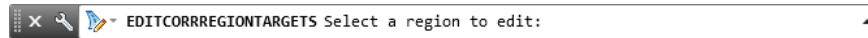


11. Click OK to continue and to close the Pick a Surface dialog/

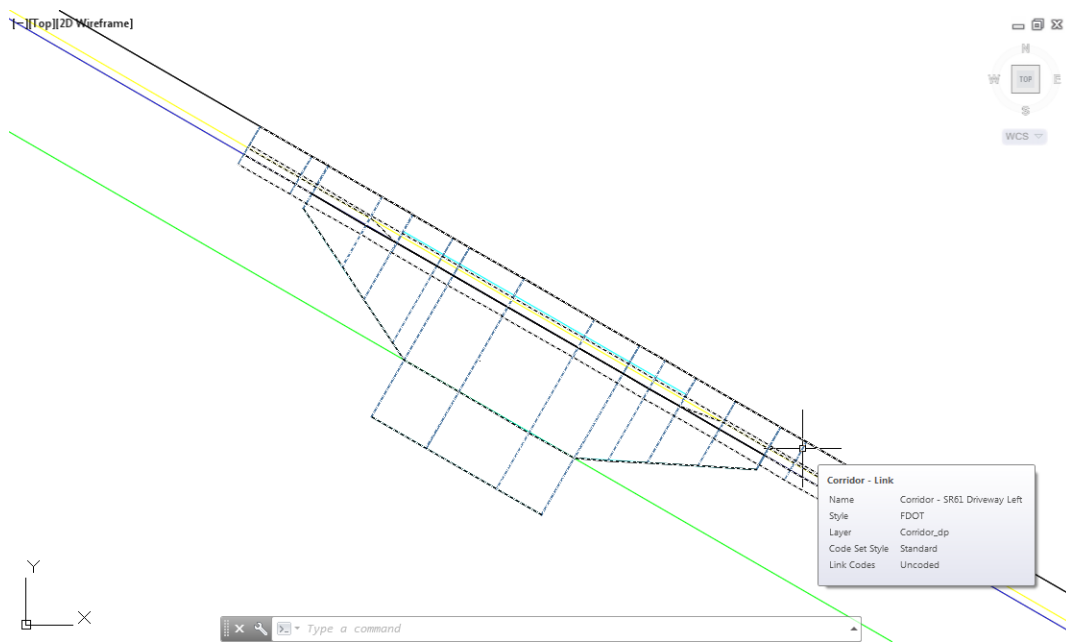
12. Click OK to continue and to close the Target Mapping dialog.



13. Press Enter to end Edit Corridor Regions Targets command.

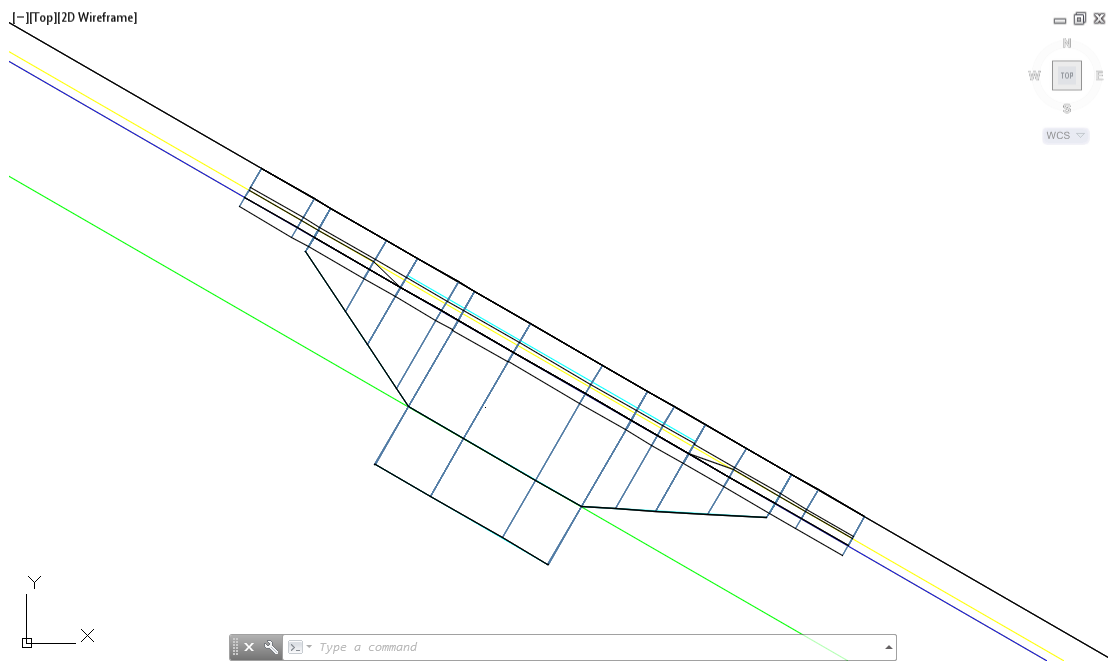
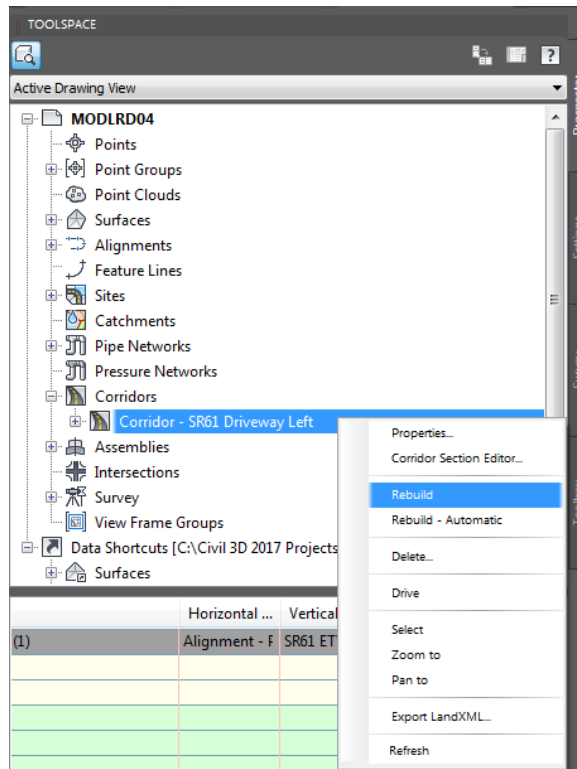


14. Review the design which now displays the Curb, Slab 1, Slab 2, and Trigger Slab 3.



15. **Save** your file before continuing.

16. From TOOLSPACE > Prospector tab, expand Corridors, then select Rebuild.

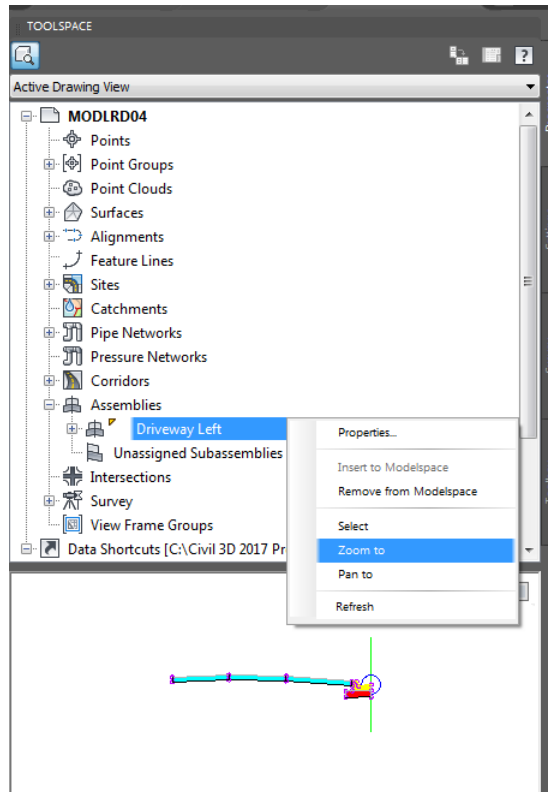


17. **Save** your file before continuing.

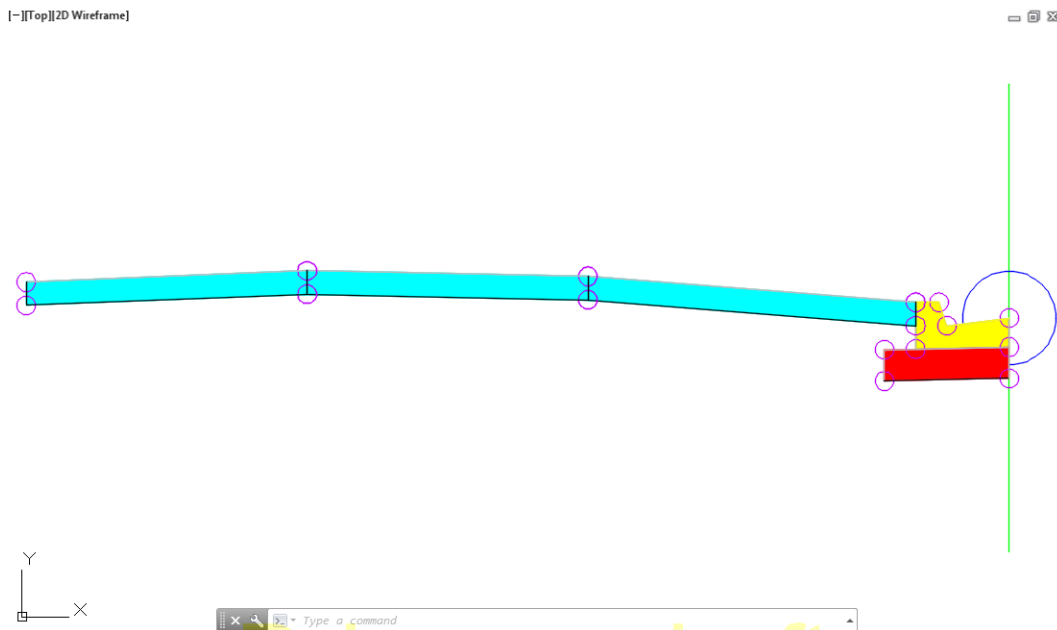
### Exercise 7.21 Getting Slab 3 to Daylight

In this exercise you will be working on getting Slab 3 to daylight to the DTM Existing surface.

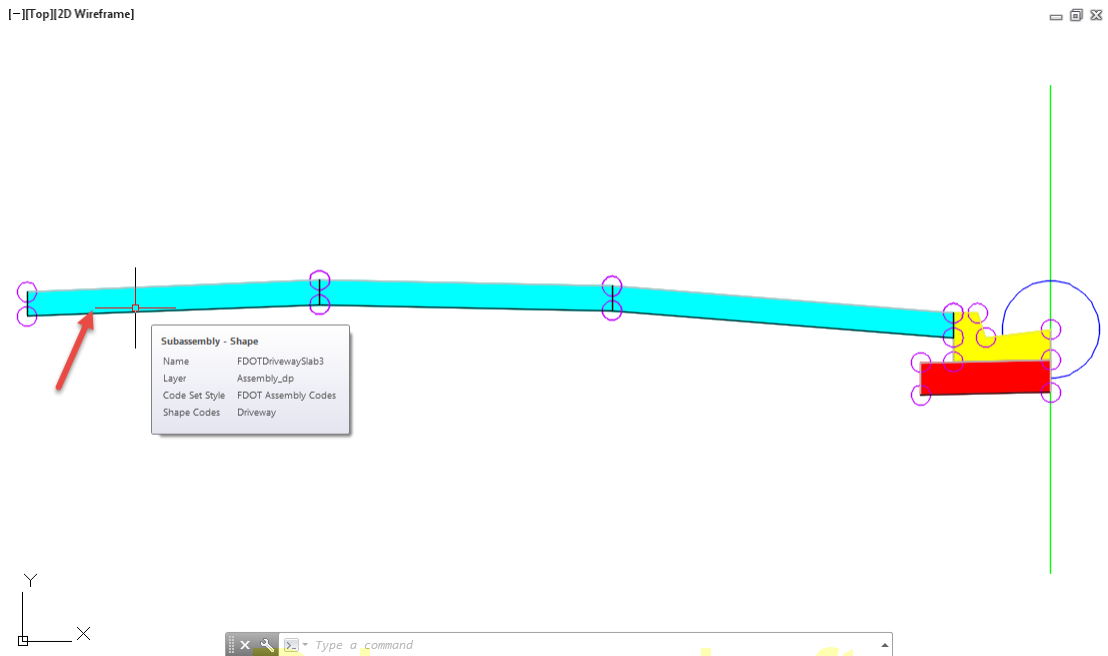
1. From TOOLSPACE > Prospector tab, expand Assemblies, right-click on Driveway Left assembly, then select Zoom to.



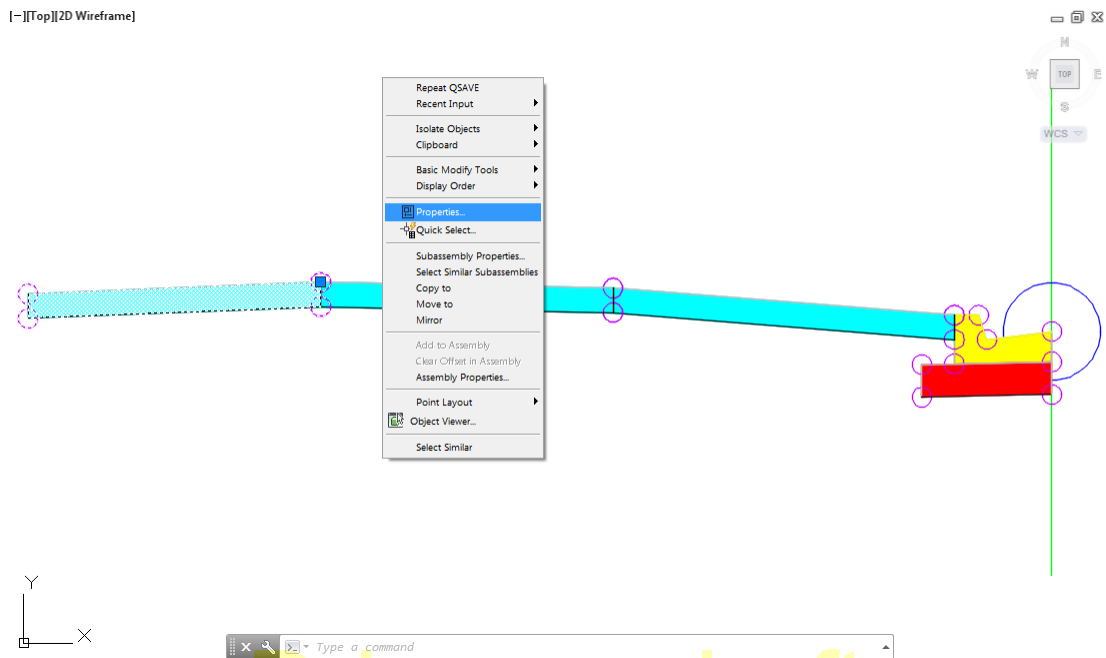
2. The Driveway Left assembly is now in the center of your screen in the drawing editor.



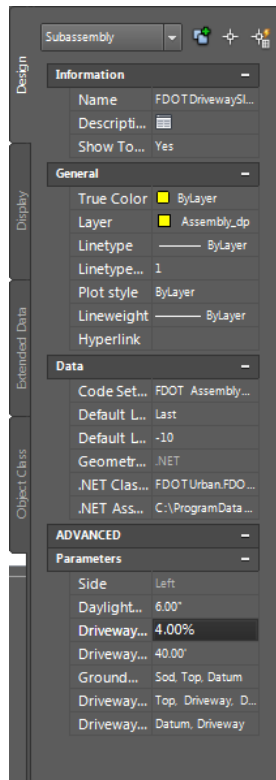
3. Select the Driveway Daylight (Slab 3) subassembly, use the red arrow as a reference for selecting the subassembly.



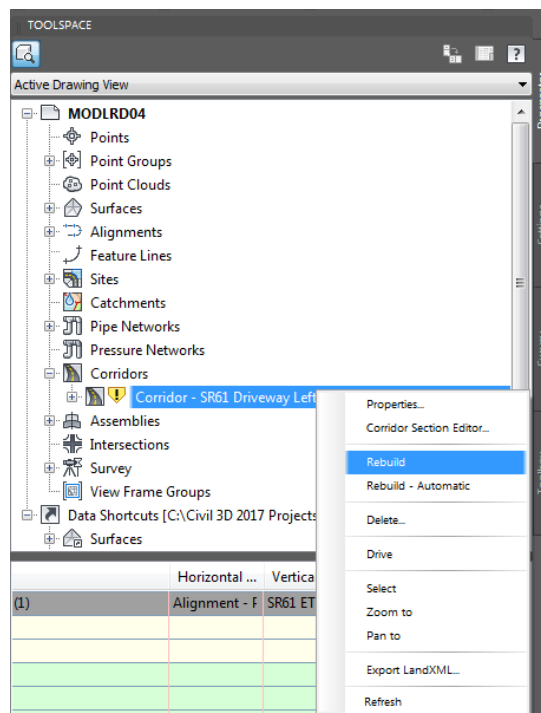
4. Right click and pick Properties to open the Properties Palette.



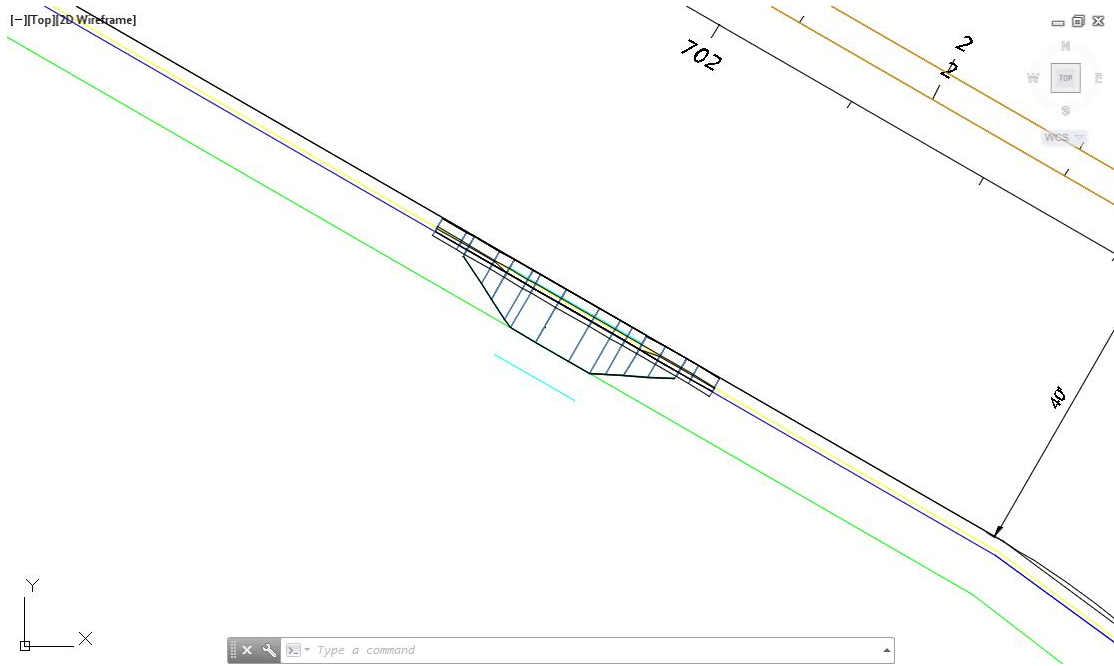
- Under Parameters change the Driveway Daylight Slope from -4% to 4% and then press Enter to accept the value you typed in the field.



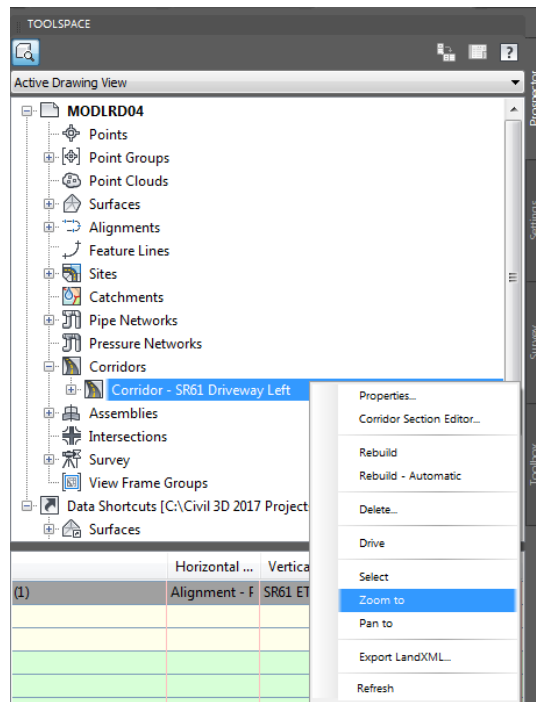
- Close the Properties Palette.
- Press ESC to deselect any selected objects. From TOOLSPACE > Prospector tab, expand Corridors, then select Rebuild.



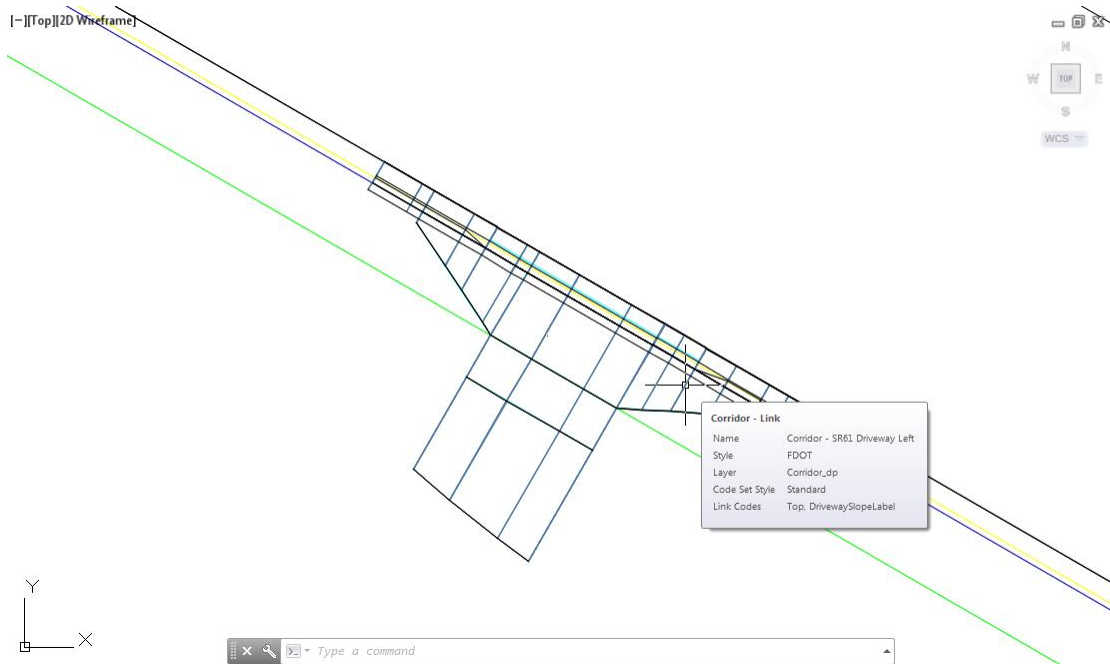




8. From TOOLSPACE > Prospector tab, expand Corridors, Right-click on Corridor - SR61 Driveway Left, then select Zoom to.



- Review the design for the Corridor - SR61 Driveway Left corridor model which now displays the Curb, Slab 1, Slab 2, and Slab 3.

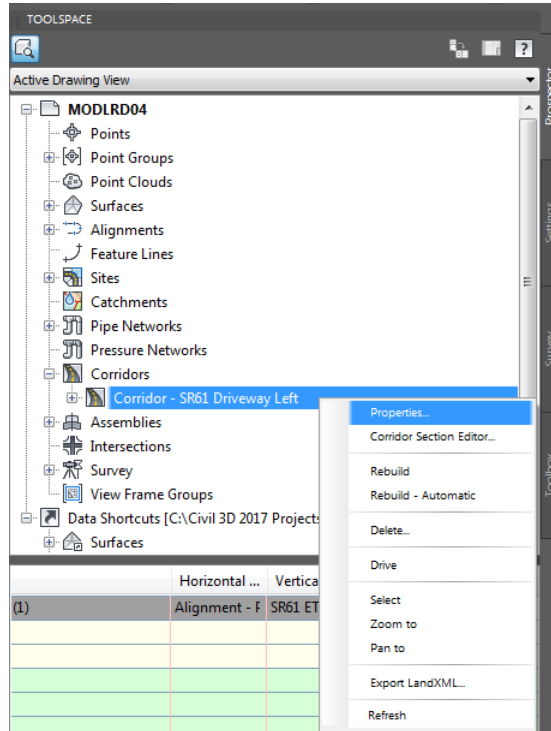


- Save** your file before continuing.

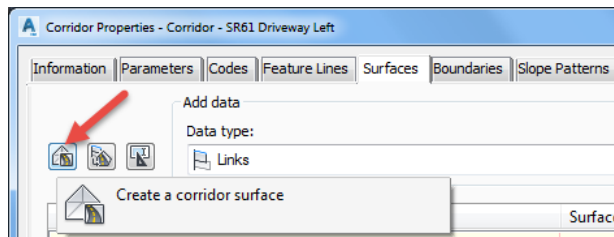
**Exercise 7.22 Create a Corridor Surface for the Corridor - SR61 Driveway Left corridor**

In this exercise you will create a corridor surface for the Corridor - SR61 Driveway Left corridor model.

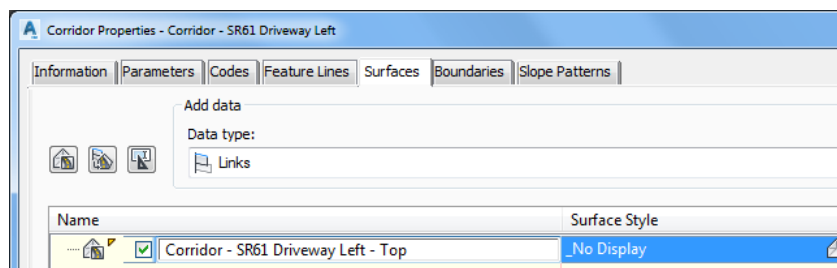
1. From TOOLSPACE > Prospector tab, expand Corridors, select Corridor - SR61 Driveway Left, then right-click and select Properties...



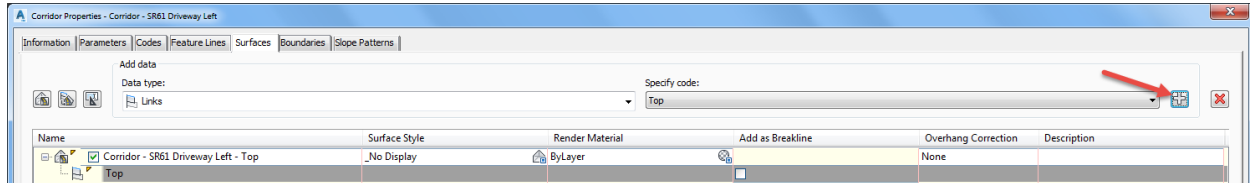
2. From the Corridor Properties - Corridor - SR61 Driveway Left dialog, select the Surfaces tab.
3. Select the Create a corridor surface button, referenced by the red arrow.



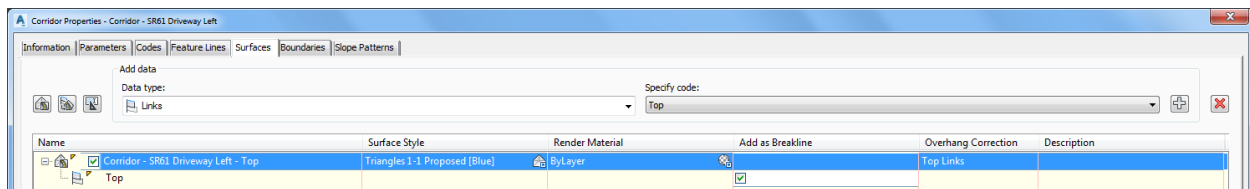
4. Rename the surface to: Corridor - SR61 Driveway Left - Top



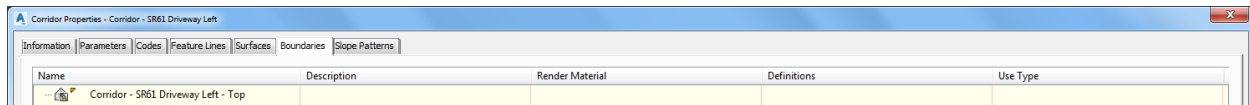
5. Add data to the Corridor - SR61 Driveway Left - Top surface, set the following values:
  - Set Data type: Links
  - Set Specify code: Top
6. Click on the Plus sign to add data to the Corridor - SR61 Driveway Left - Top surface, referenced by the red arrow.



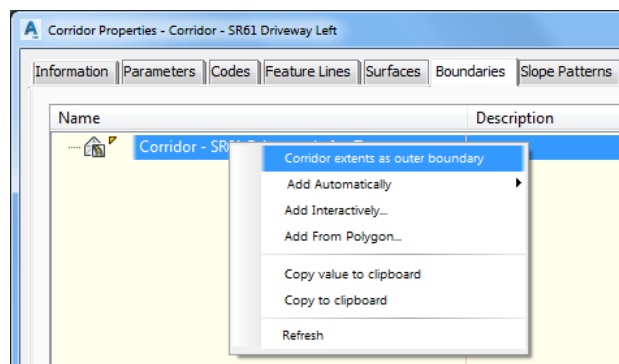
7. Then for the Corridor - SR61 Driveway Left - Top surface, set the following values
  - Set Surface style to Triangles 1:1Proposed [Blue]
  - Check Add as Breaklines box
  - Set Overhang Correction to Top Links



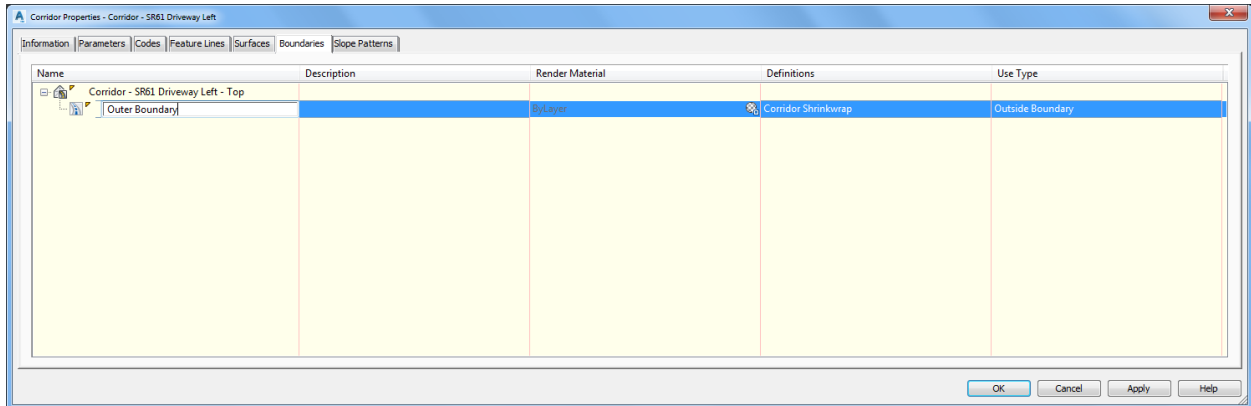
8. From From the Corridor Properties - Corridor - SR61 Driveway Left dialog , select the Boundaries tab.



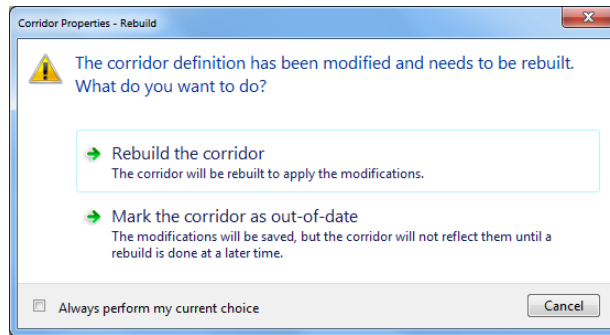
9. Right-click on the Corridor - SR61 Driveway Left - Top surface, then select Corridor extents as outer boundary.



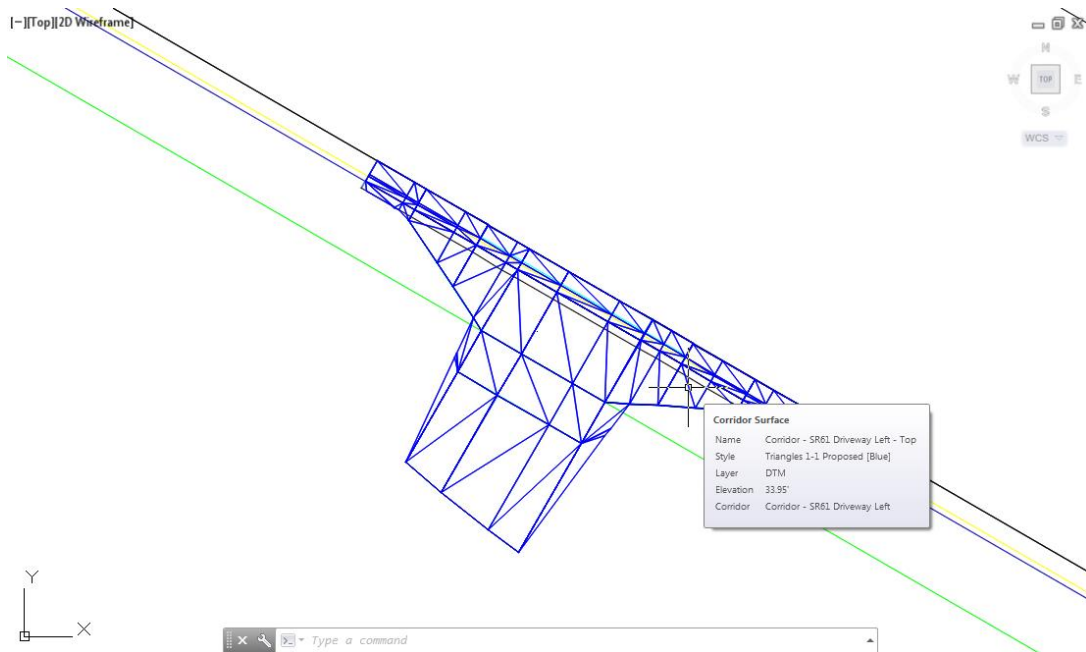
10. Rename Boundary to: Outer Boundary. Click OK to continue and to close the Corridor Properties - Corridor - SR61 Driveway Left dialog.



11. From the Corridor Properties - Rebuild dialog, select Rebuild the corridor.



12. The new Corridor - SR61 Driveway Left - Top surface is displayed.

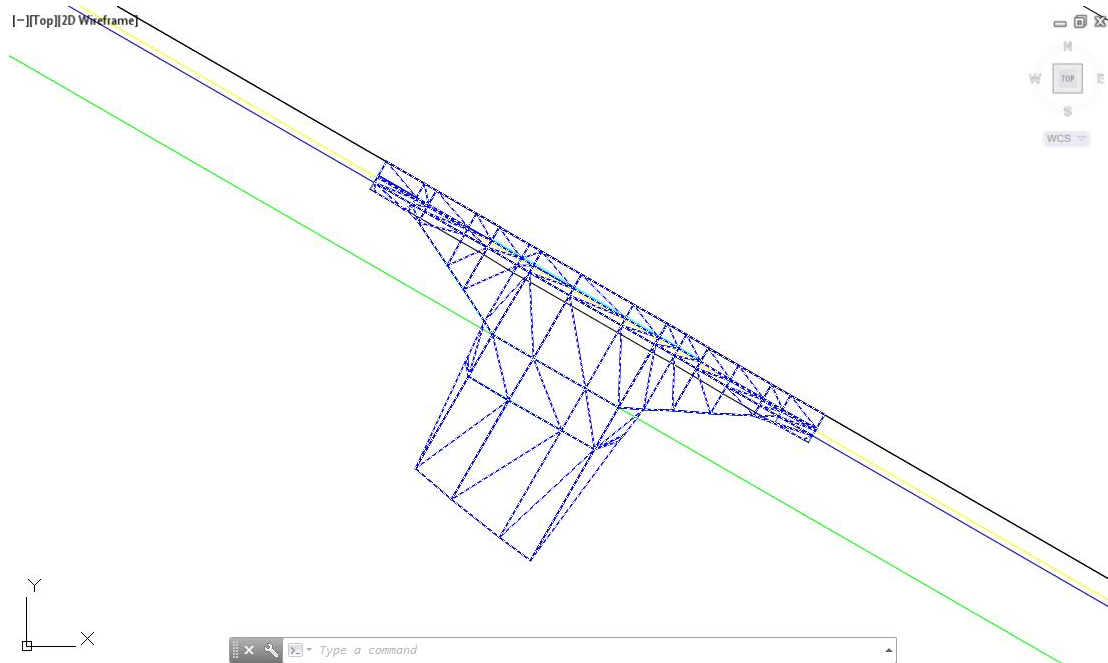


13. **Save** your file before continuing.

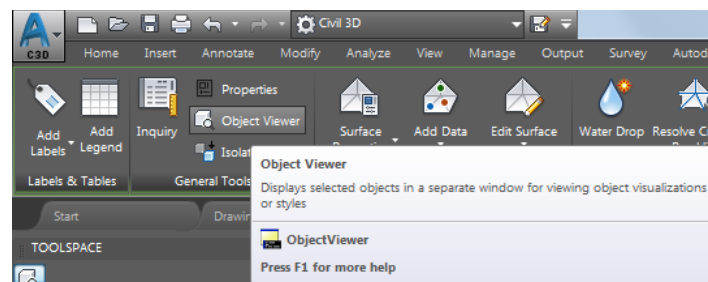
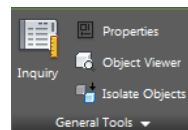
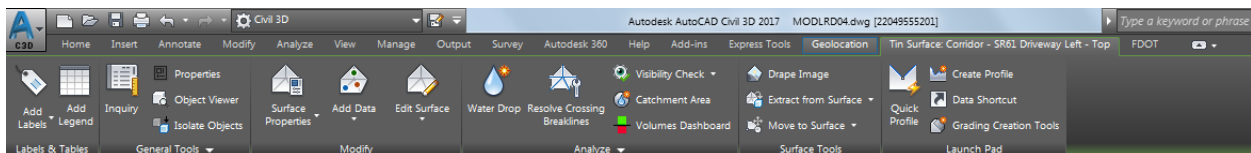
### Exercise 7.23 Display the Corridor - SR61 Driveway Left - Top Surface in the Object Viewer

In this exercise you will display the Corridor - SR61 Driveway Left - Top surface in the Object Viewer.

1. Select the the Corridor - SR61 Driveway Left - Top surface.

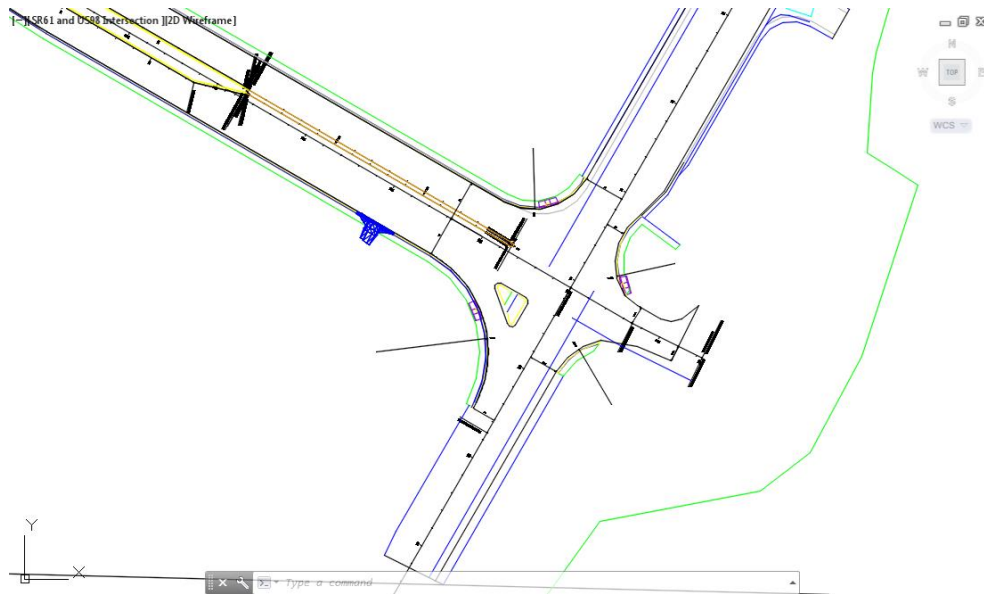
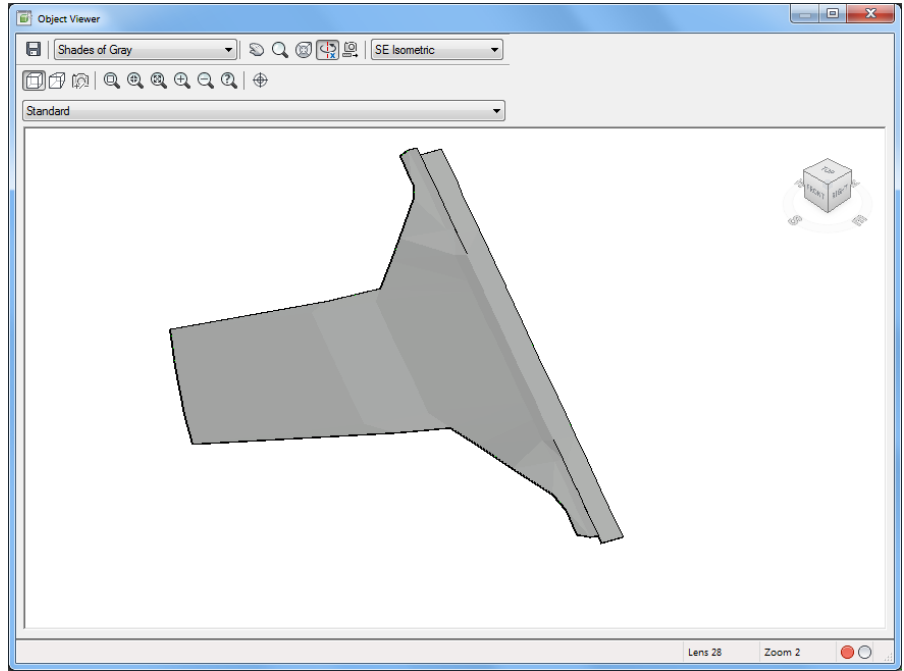


2. The Tin Surface: Corridor - SR61 Driveway Left - Top tab is now displayed in the ribbon. From the General Tools panel, select Object Viewer.



3. Set the View Style to Shades of Gray from the drop down list.
4. Select the SE Isometric view from the drop down list.
5. Notice the Drop Curb follows the trigger line and the Slab 1 Back follows the feature line target.

6. Notice the Drop Curb and different slopes of Slabs 1, Slab 2, and Slab 3.
7. Close the Object Viewer



8. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
9. **Save** and **Close** MODLRD04.dwg

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# 8

# TRAFFIC SEPARATOR

## DESCRIPTION

In this chapter you will create a Traffic Separator Corridor model for the SR61 road.

## OBJECTIVES

In this chapter, you will learn about:

- Traffic Separator Standards
- Review SR61 Project requirements
- Review referenced data
- Create Data Shortcuts Reference:
  - Surface: Corridor- Corridor - SR61 and US98 - Top
- Create Traffic Separator:
  - Traffic Separator Profiles
  - Traffic Separator Assembly
  - Traffic Separator Corridor
  - Traffic Separator Corridor Surface
- Review Results

## CHAPTER SETUP


Run the Chapter 8 - 22049555201.exe file and restore all files to the C:\Civil 3D 2017 Projects folder.

Do not change the location in which the Practice Files are installed. Doing so can cause errors when completing the exercises in this training manual.

### Exercise 8.1 Review Traffic Separator Design Standards

In this chapter you will review the design standards from the FDOT FY 20XX-18 Design Standards eBook.

- Reference document: FDOT-roadway design office - design standards website: see document(s): <http://www.fdot.gov/design/StandardPlans/DS.shtm>.



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TRANSPORTATION**

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**Office of Design**

Office of Design / Standard Plans / Design Standards

**Design Standards**

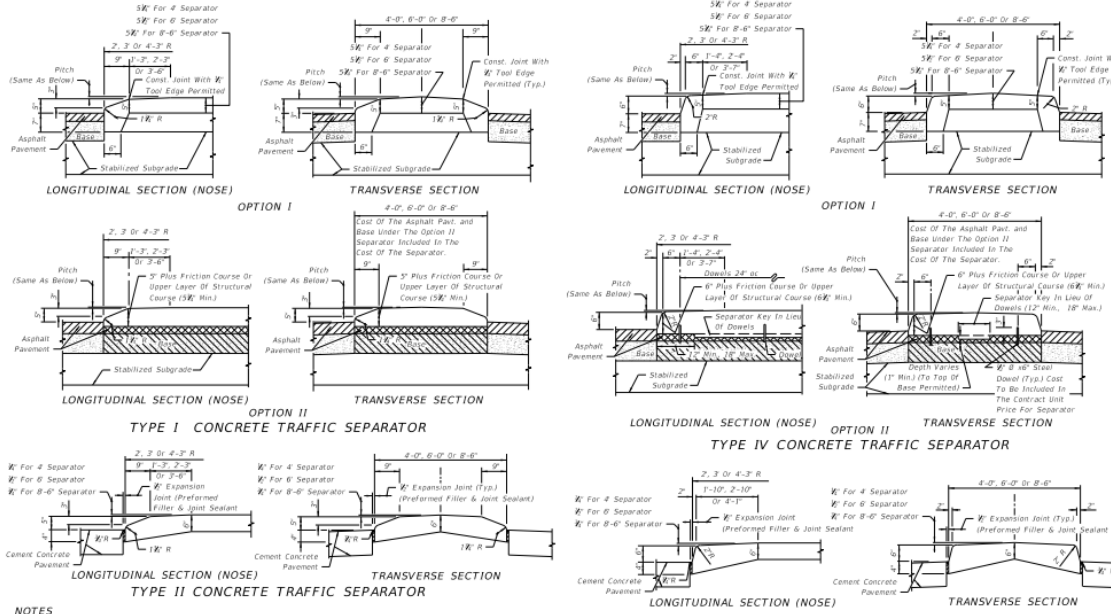


**DESIGN STANDARDS**

Design Standards eBook	Design Standards Revisions	Implementation Bulletin	Effective Date
FY 2017-18	DSR	RDB16-11	07/01/17-06/30/18
FY 2016-17	DSR	RDB15-15	07/01/16-06/30/17
2016	DSR	RDB15-09	01/01/16-06/30/16
2015	DSR	RDB14-14	01/01/15-12/31/15
2014	DSR	RDB13-10	01/01/14-12/31/14
2013	DSR	RDB12-12	01/01/13-12/31/13
FY 2012-13	DSR	RDB12-02	07/01/12-12/31/12

- Refer to section 00302 Traffic Separators: See document(s):

<http://www.fdot.gov/roadway/DS/18/IDx/00302.pdf>

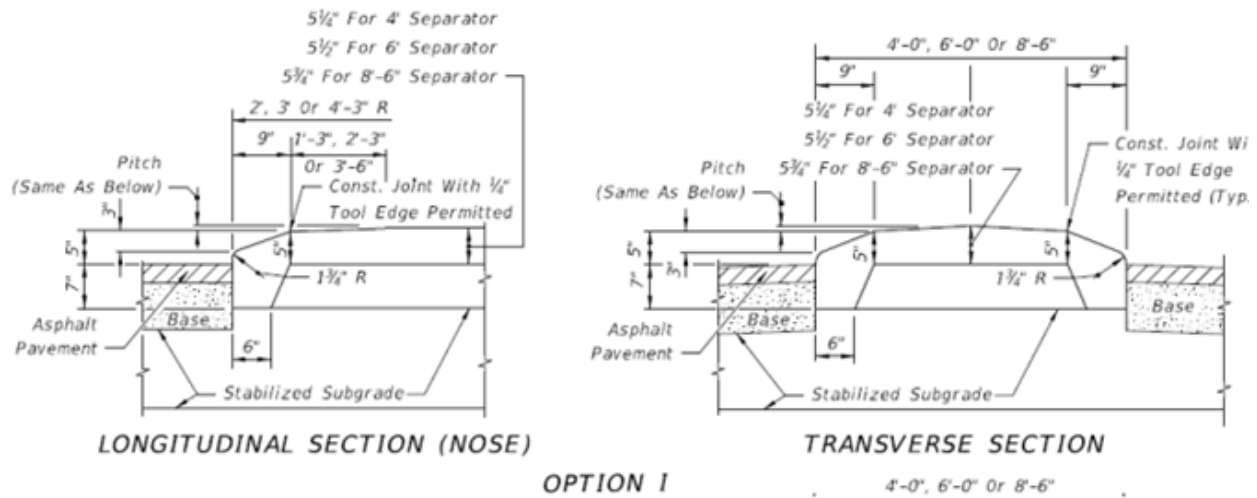


**ROADWAY INSTALLATIONS**

LAST REVISION 07/01/14	DESCRIPTION: FY 2017-18 DESIGN STANDARDS	TRAFFIC SEPARATORS	INDEX NO. 302	SHEET NO. 1 of 4
---------------------------	------------------------------------------------	--------------------	------------------	---------------------

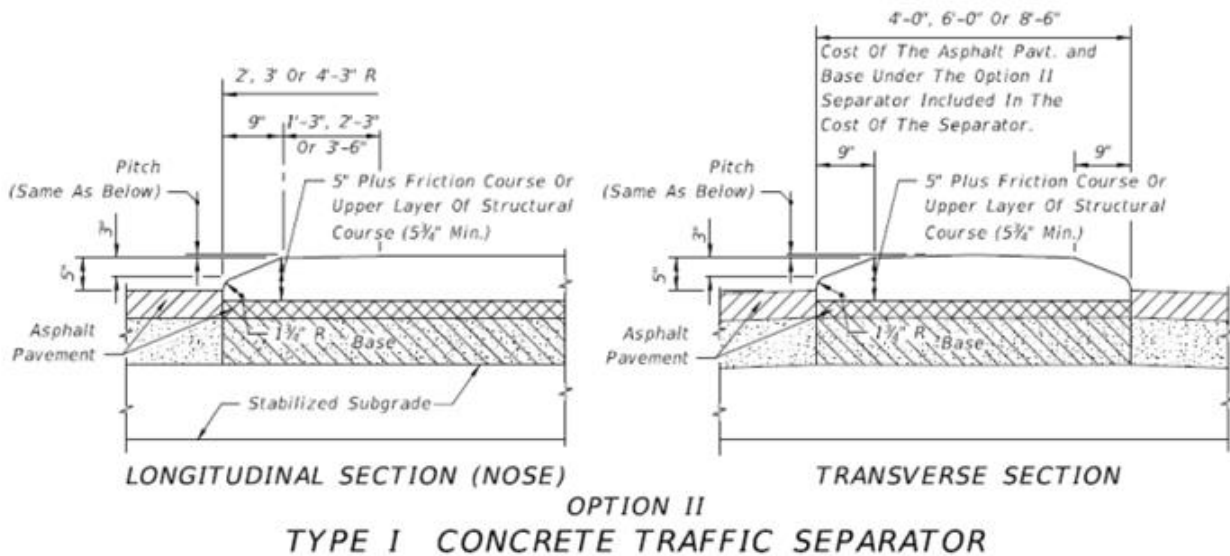
**NOTES**  
 1. Separators Type I and IV are to be used with flexible pavement. Separators Types II and V are to be used with rigid pavement.  
 2. Either Option I or Option II may be used for Types I and IV separators except when a specific option is called for in the plans.  
 3. For all separators provide  $R_c$ ; contraction joints at 10' centers (max.). Contraction joints adjacent to concrete pavement on tangents and flat curves are to match the pavement joints, with intermediate joints not to exceed 10' centers.  
 4. Separators having widths of 4', 6' or 8'-0" shall be paid for under the contract unit price for Concrete Traffic Separator (Type J, Wide LF). Separators having widths other than 4', 6' or 8'-0" shall be detailed in the plans as special separators and paid for under the contract unit price for Concrete Traffic Separator (Special ST).

○ Option I



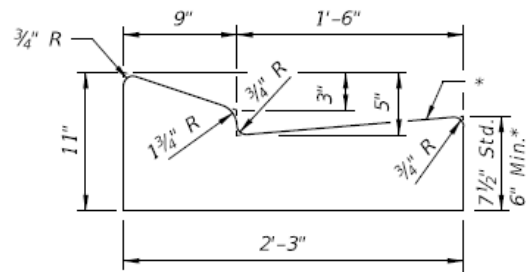
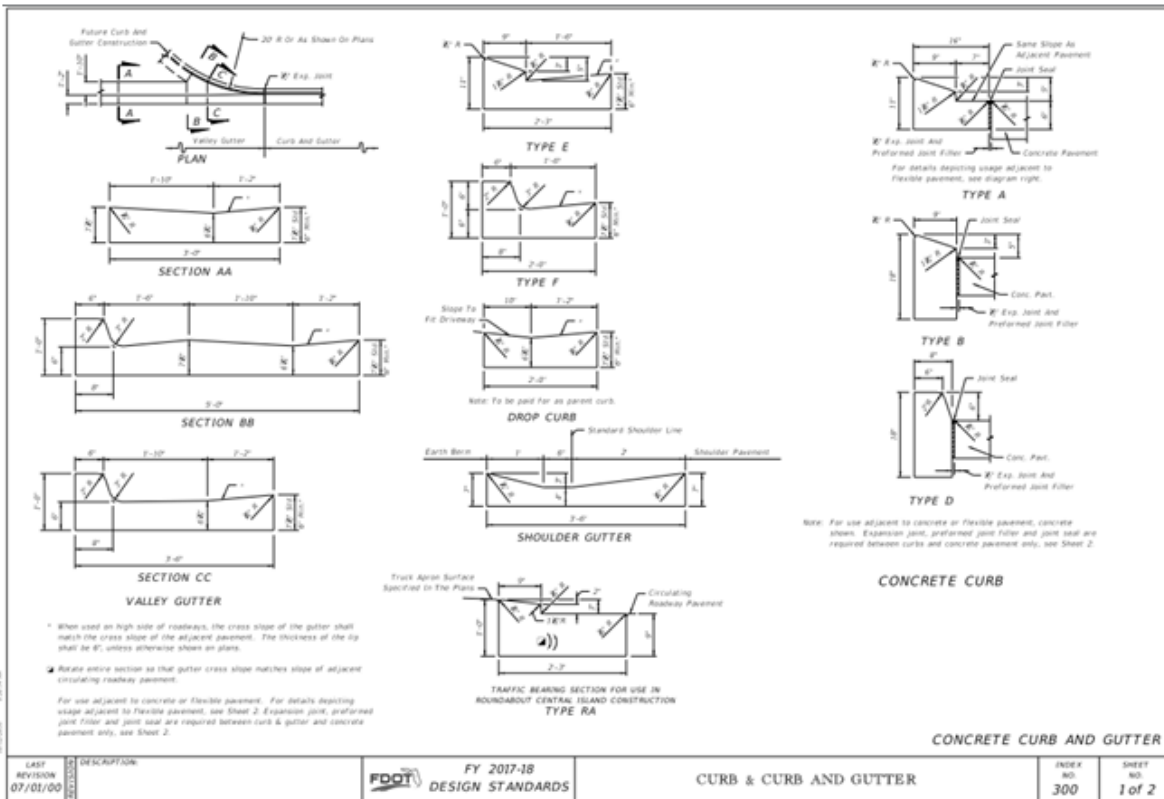
○ Option II

Separators Type I and IV are to be used with flexible pavement.  
Separators Types II and V are to be used with rigid pavement

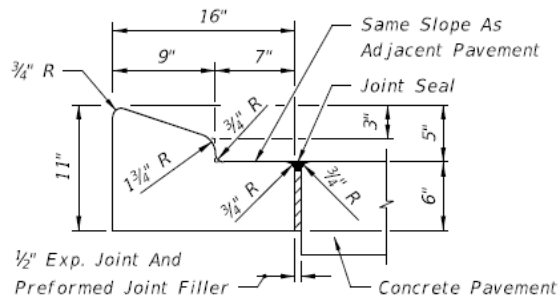


3. Refer to section 00300 Curb and Gutter: See document(s):

<http://www.fdot.gov/roadway/DS/18/IDx/00300.pdf>



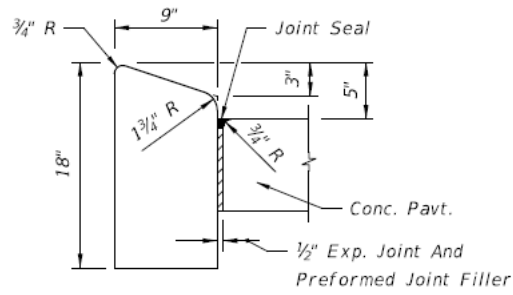
**TYPE E**



For details depicting usage adjacent to flexible pavement, see diagram right.

**TYPE A**

4. The SR61 Traffic Separator Design will use Type B Curb.



**TYPE B**



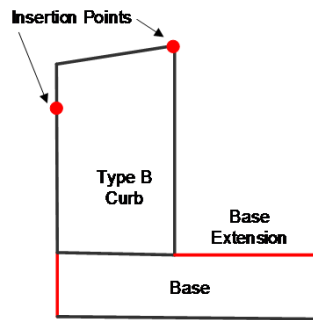
5. On SR61 E Curb edges the grassy median, B Curb forms the traffic separator.



- On SR61 the Concrete Slab slopes straight from curb back to curb back.

**FDOT Type B Curb**

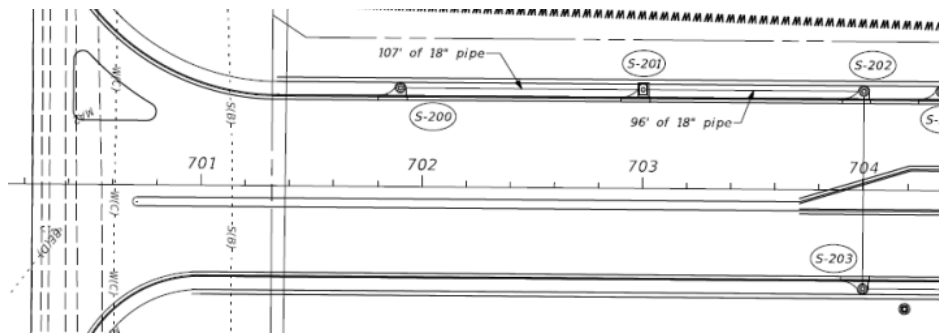
This subassembly inserts Type B curb in accordance with Standard Plans for F



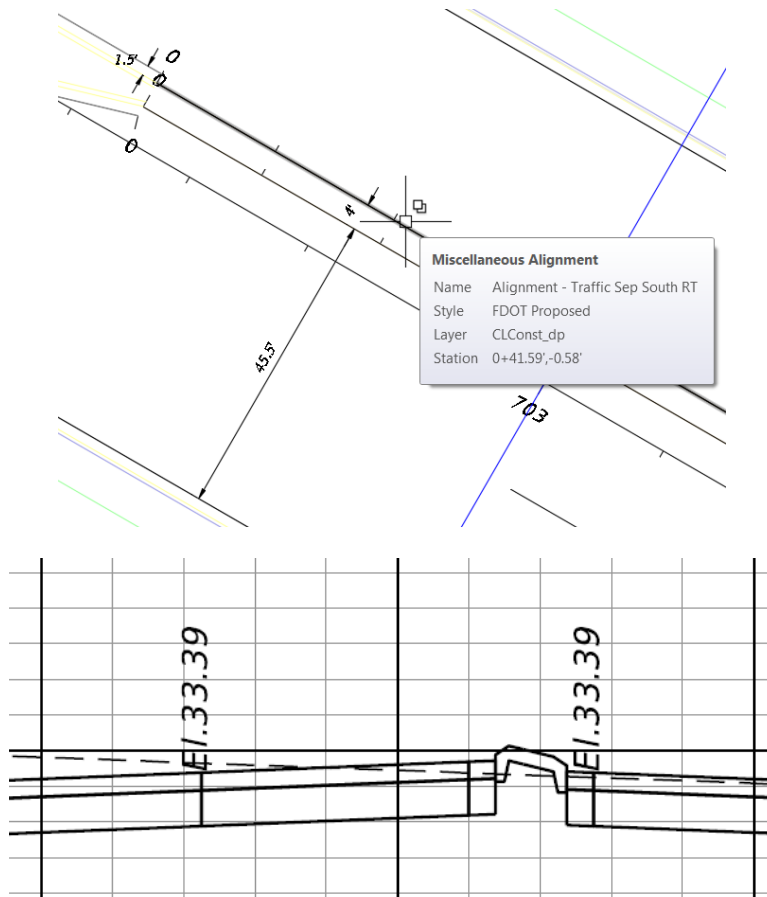
**Attachment**

The attachment point is at the face of the curb at the flow line or back of curb.

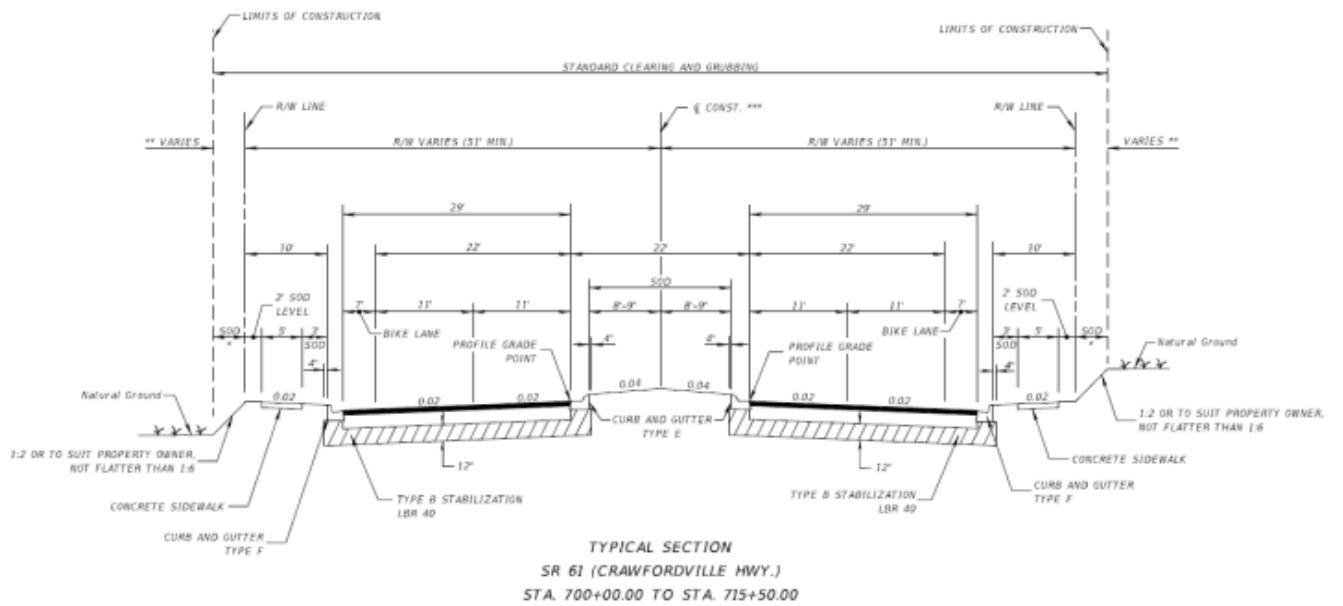
- FDOT Traffic Separator Subassembly does not accommodate different elevations LT and RT and therefore will not be used on the SR61 design.



8. Plan views of the SR61 2D design.

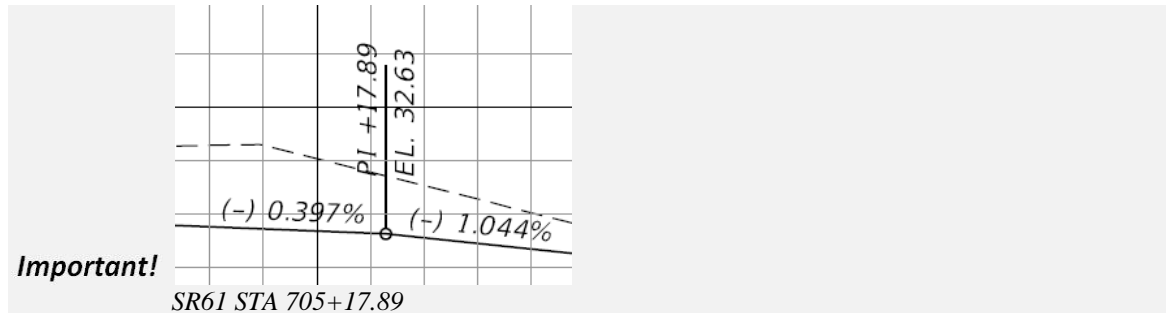


9. Section view at Station 703+00



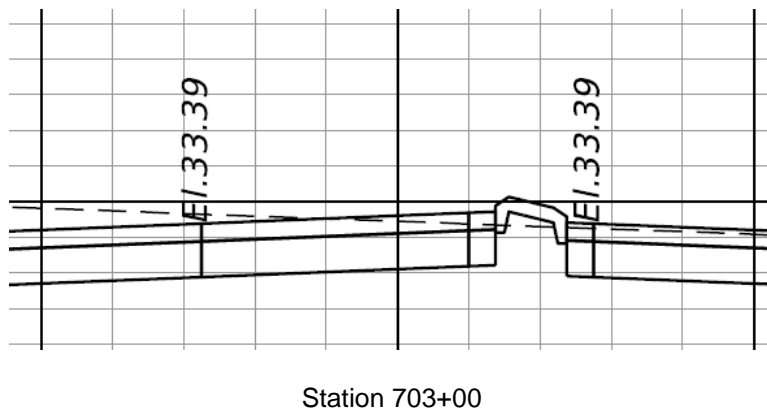
## 10. Profile Geometry design requirement for SR61 Typical Section for Traffic Separator:

- Use SR61 PGL+0.03 at ETW RT
- Elevation change across curb flange is  $0.03=1.5*0.02$
- Use SR61 PGL+0.33 at ETW LT
- Elevation change across turn lane is  $0.33=(45.5-29)*0.02$



## 11. Manage geometry for both traffic separator and corridor lanes using shared targets:

- Horizontal and Vertical geometry for Traffic Separator are also median targets for lanes on SR61
- Alignment - Traffic Sep South LT
- Alignment - Traffic Sep South RT
- Travel Lanes use SR61 PGL at inside edge
- Traffic Separator Design has PGL “+” Curb Flange Slope elevations for RT
- Traffic Separator Design has PGL “+” Turn Lane Slope elevations for LT





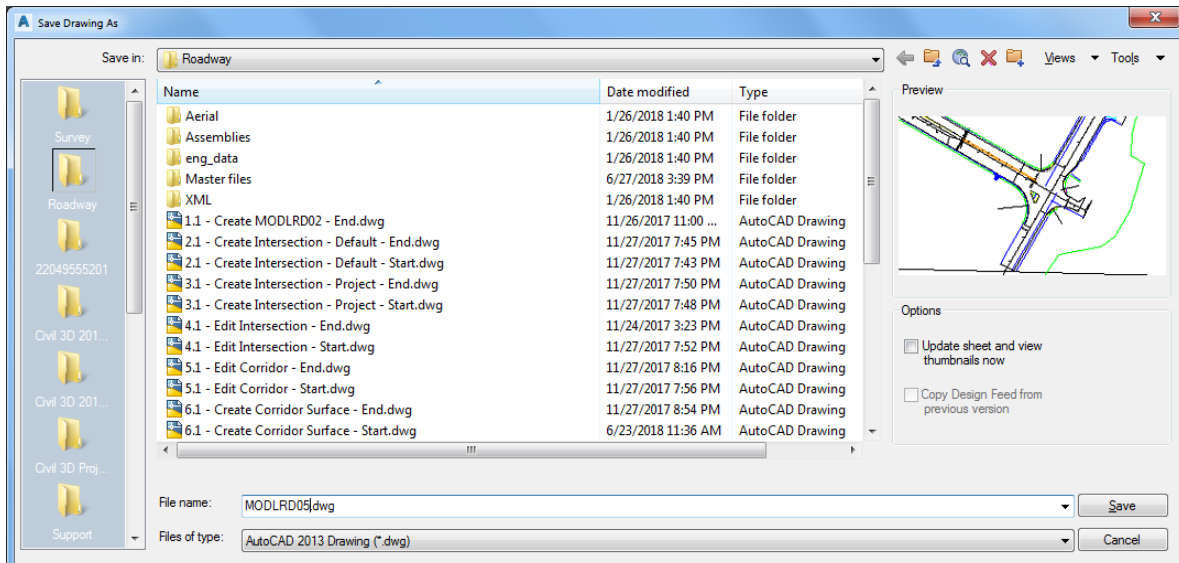
### Exercise 8.2 Create MODLRD05 File

In this exercise you will create the MODLRD05 file which will be used to create the Corridor Model SR61 Traffic Separator.

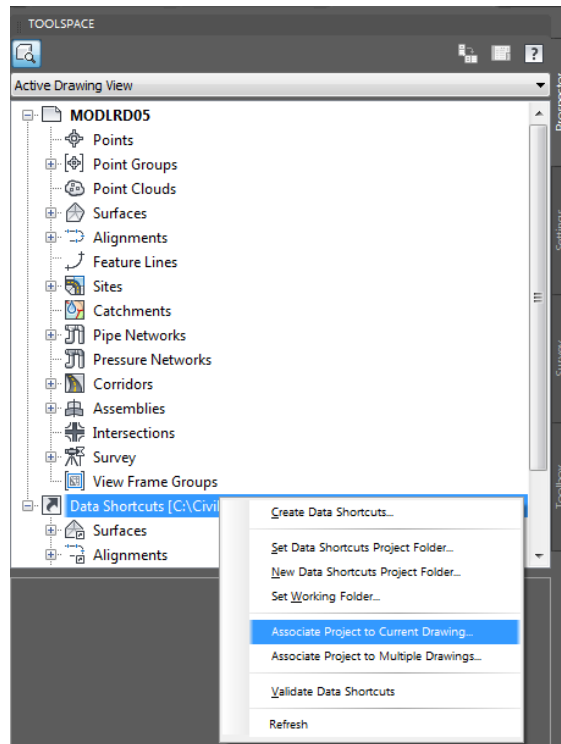
1. From the **Select File** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and select **Open 8.1 - Create Traffic Separator - Start**. Click **Open** to close the **Select File** dialog box.



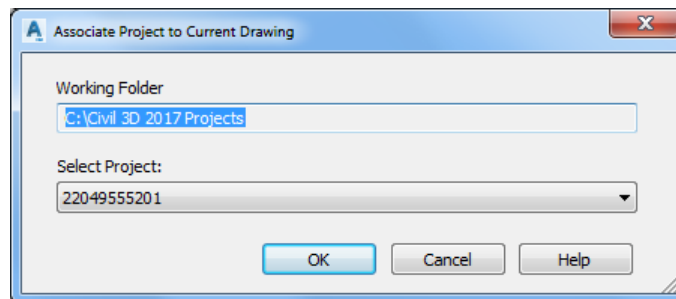
2. From the **Save Drawing As** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and **MODLRD05.dwg**. Click **Save** to close the **Save Drawing As** dialog box.



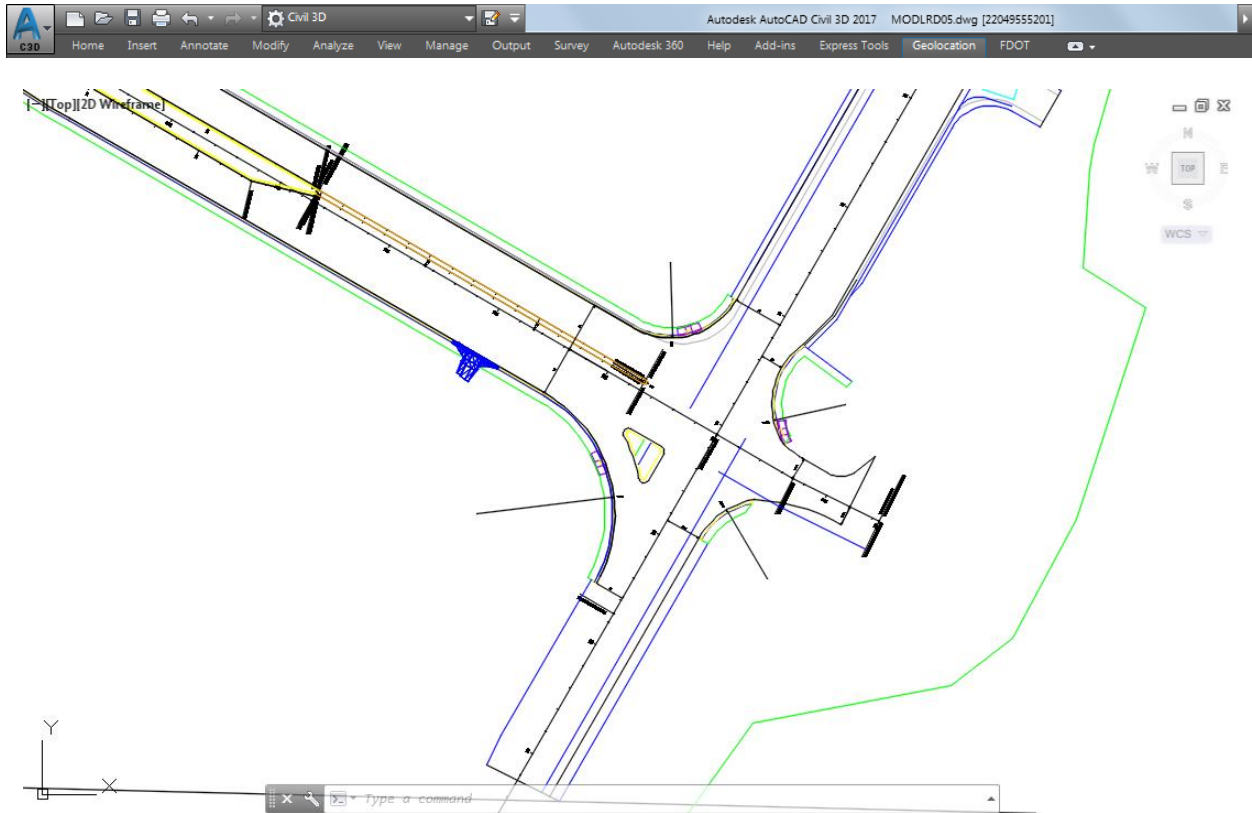
3. Associate MODLRD05.dwg File to the Project. From the *TOOLSPACE* > *Prospector* tab > *Data Shortcuts* [C:\Civil 3D 2017 Projects\22049555201], right-click and select **Associate Project to Current Drawing**.



4. From Associate Project to Current Drawing dialog box, set the following values:
  - o Working Folder: set to C:\Civil 3D 2017 Projects
  - o Select Project: click 22049555201 from drop down list
  - o Click OK to close Associate Project to Current Drawing dialog box.



5. **MODLRD05.dwg** is now associated to the C:\Civil 3D 2017 Projects\22049555201 Project.

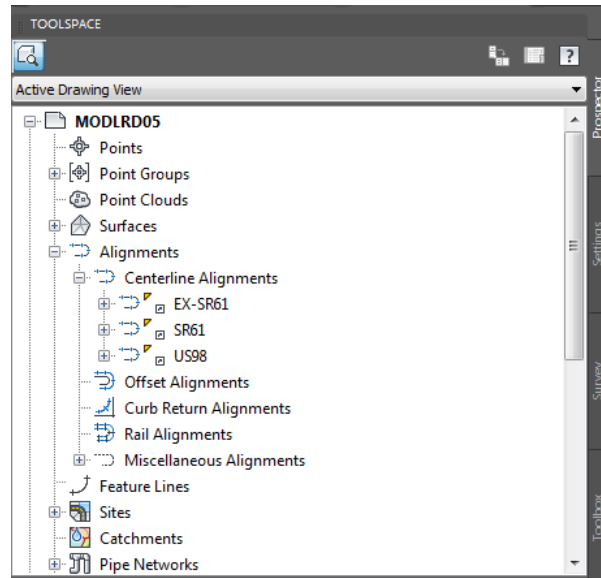


6. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
7. Save your file before continuing.

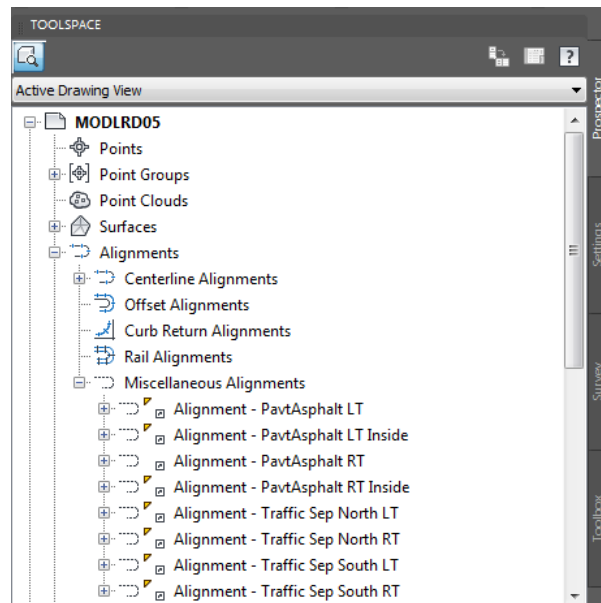
### Exercise 8.3 Review Referenced Data

In this exercise you will review the referenced Alignment, Surface, Corridor and attached external reference data in MODLRD05.

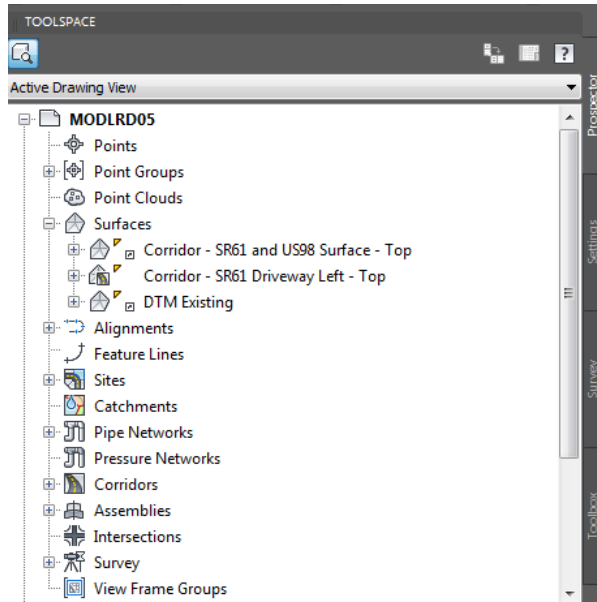
1. Review *Data Referenced Alignments* in MODLRD05 from *TOOLSPACE > Prospector tab*, expand **Alignments > Centerline Alignments**.



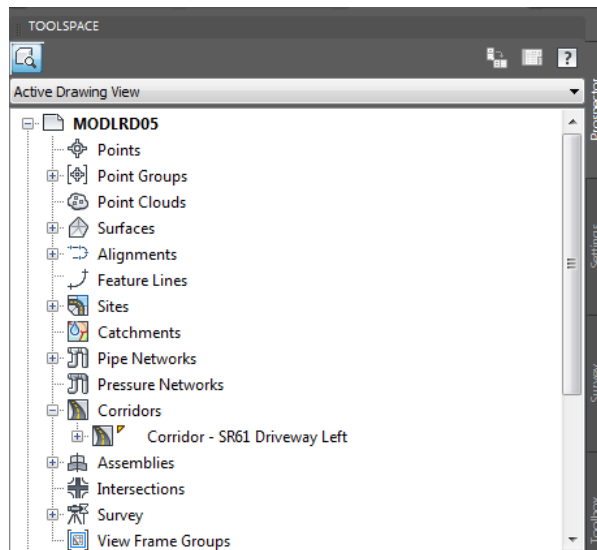
2. Review *Data Referenced Alignments* in MODLRD03 from *TOOLSPACE > Prospector tab*, expand **Alignments > Miscellaneous Alignments**.



- Review Data Referenced Surfaces in MODLRD03 from TOOLSPACE > Prospector tab, expand **Surfaces**.



- Review Corridors in MODLRD05 from TOOLSPACE > Prospector tab, expand Corridors.

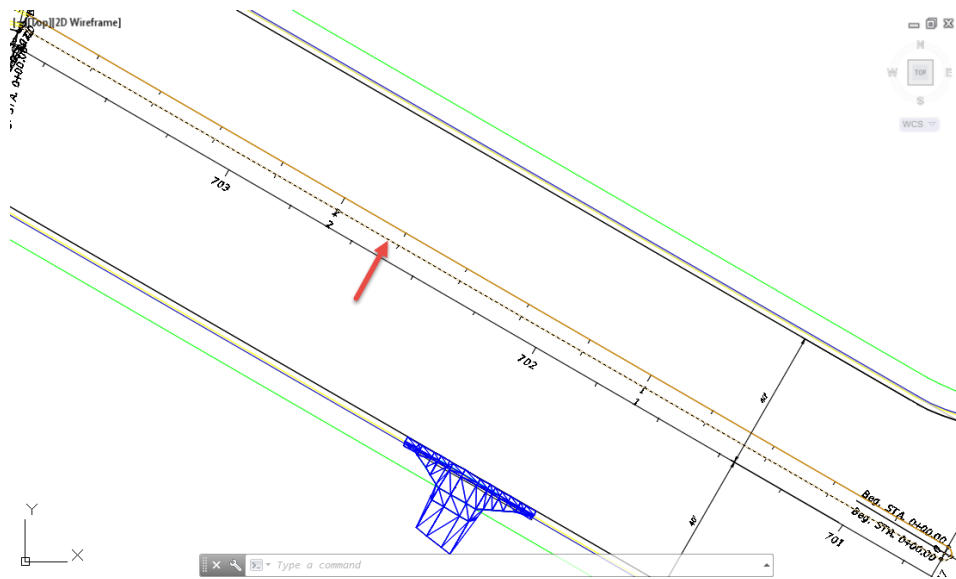


### Exercise 8.4 Corridor - SR61 Traffic Separator Modeling Process

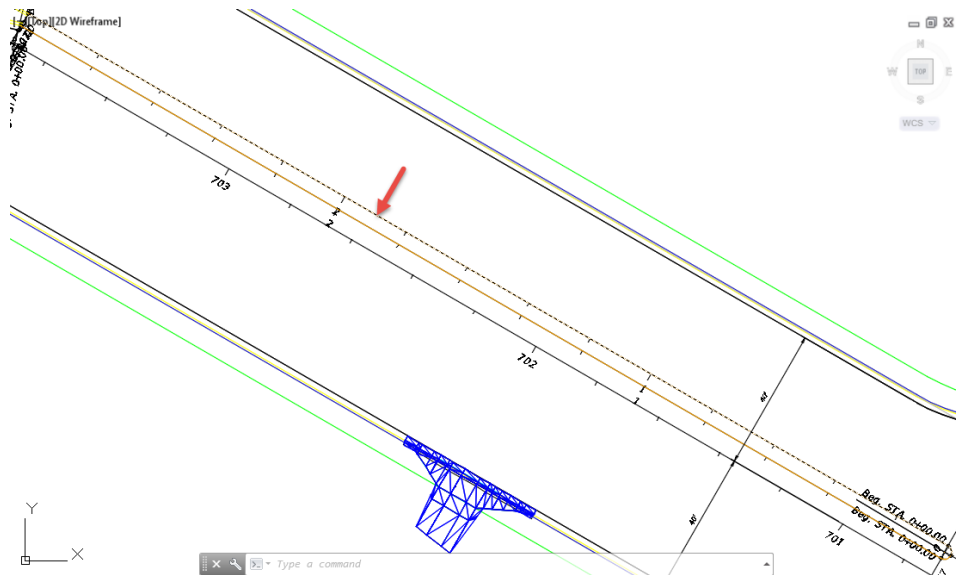
In this exercise you will review any issues that could arise with Object projection for feature lines, polylines, superimposed profiles.

The Traffic Separator Alignments should face in same direction as SR61 alignment.

1. Object projection for feature lines, polylines, superimposed profiles, do not work when facing opposite direction. This may require you to Reverse the direction of these alignments:
  - Alignment - Traffic Sep South LT, use the red arrow as a reference.



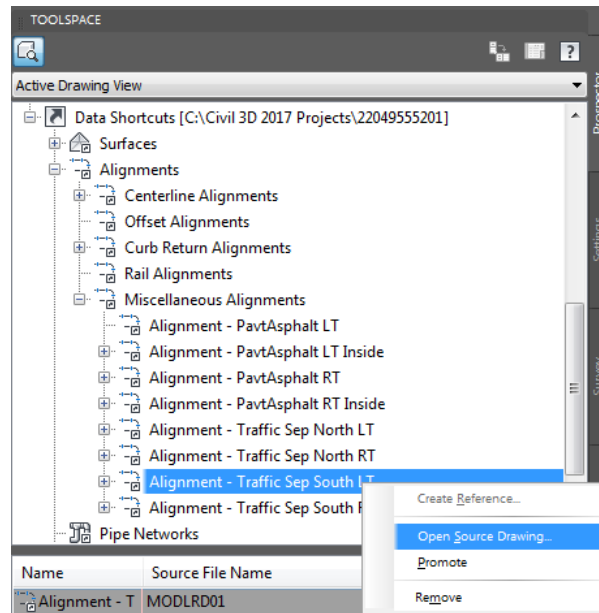
- Alignment - Traffic Sep South RT, use the red arrow as a reference.



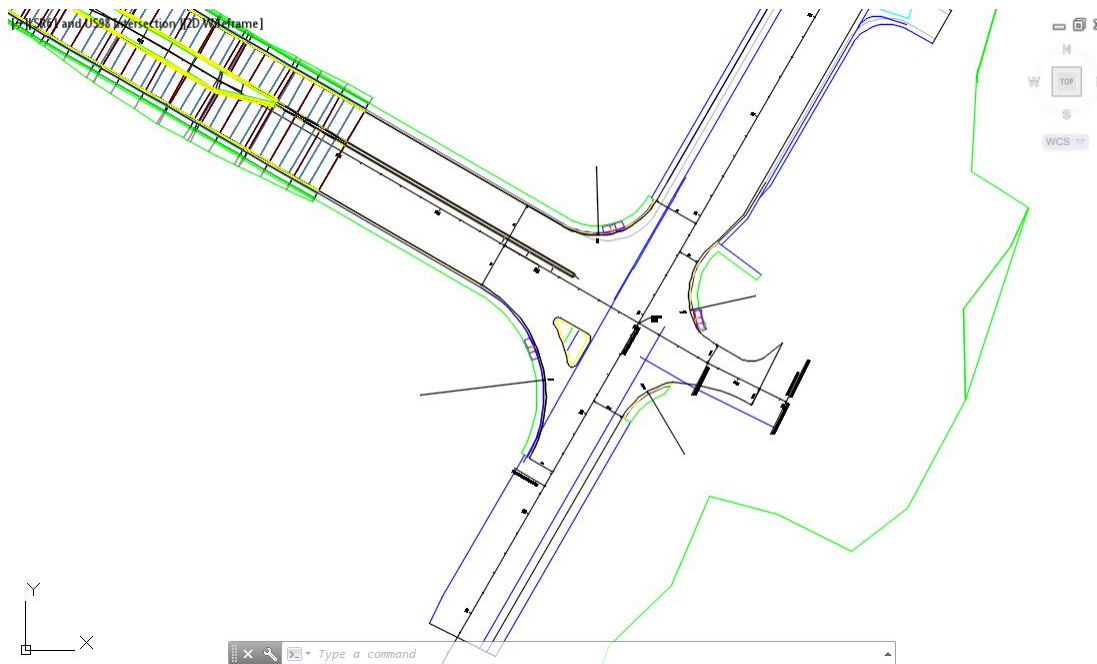
### Exercise 8.5 Review the Direction of the Miscellaneous Alignments

In the exercise you will review the direction of the Traffic Sep South LT and Traffic Sep South RT Miscellaneous Alignments to verify if they match the direction of the SR61 Alignment.

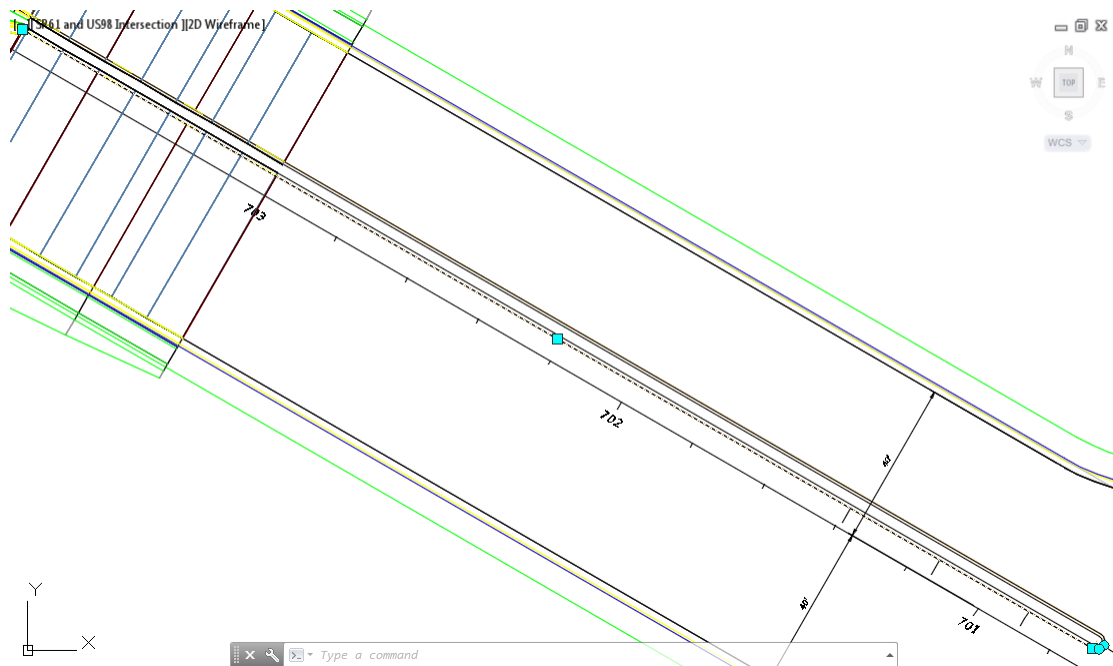
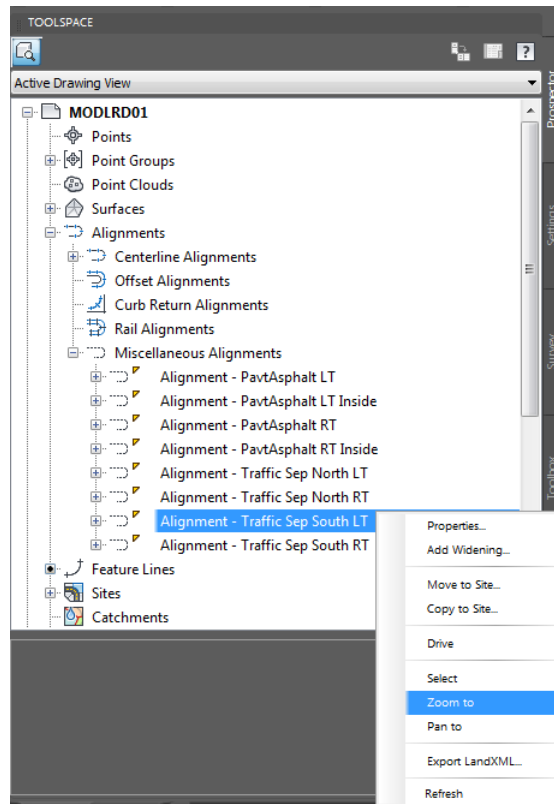
1. From TOOLSPACE > Prospector tab, expand Data Shortcuts [C:\CIVIL 3D 2017 Projects\22049555201], expand Alignments > Miscellaneous Alignments, right-click on Alignment - Traffic Sep South LT, then select Open Source Drawing...



2. The MODLRD01 file is opened for editing.

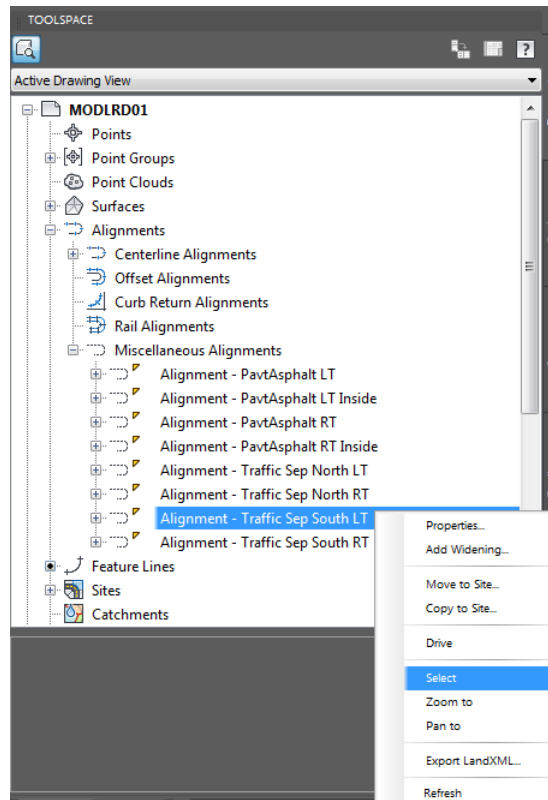


- From TOOLSPACE > Prospector tab, expand Alignments > Miscellaneous Alignments, then right-click on Alignment - Traffic Sep South LT, and select Zoom to.

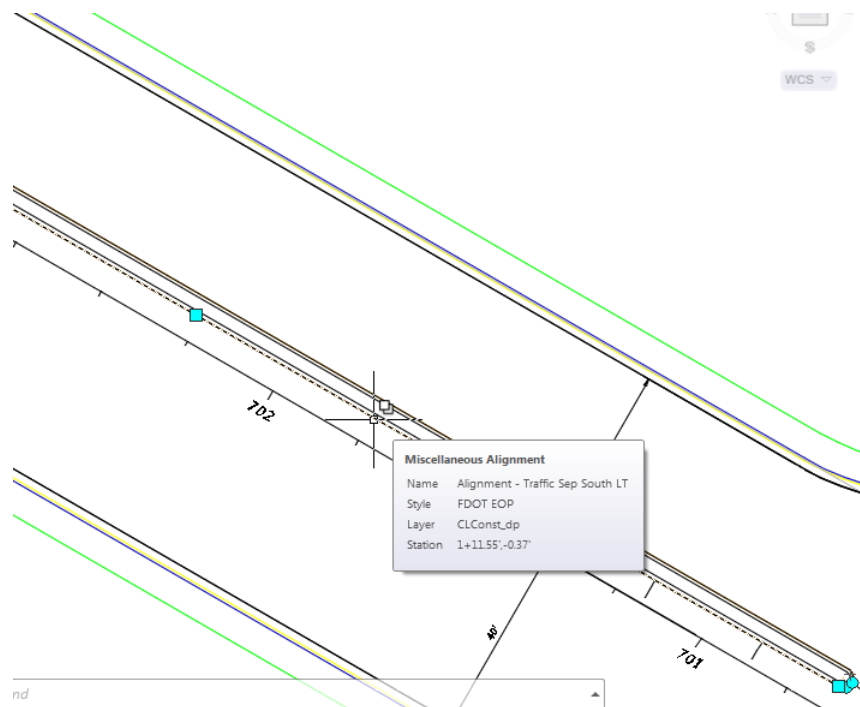




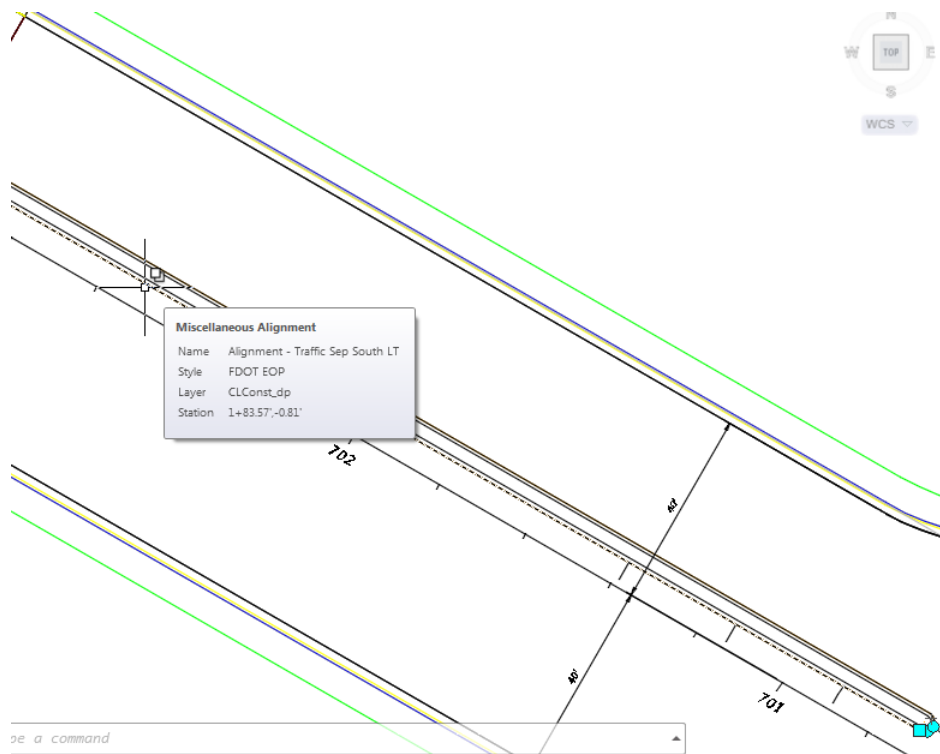
- From TOOLSPACE > Prospector tab, expand Alignments > Miscellaneous Alignments, then right-click on Alignment - Traffic Sep South LT, and select Select.



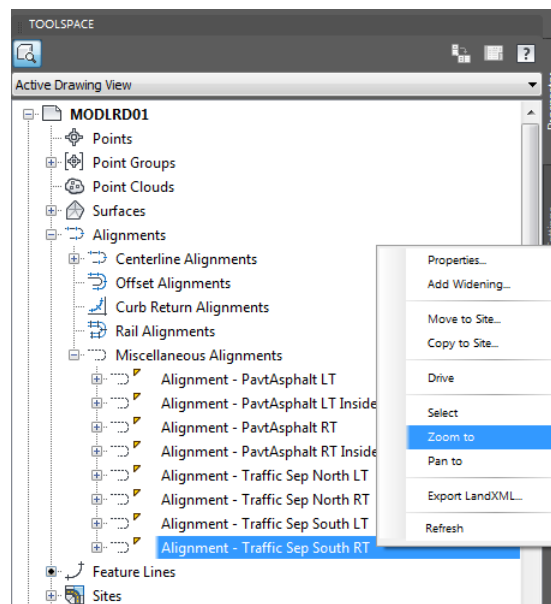
- Hover over the Miscellaneous Alignment - Traffic Sep South LT, just before Station 702+00 and review the Station value.

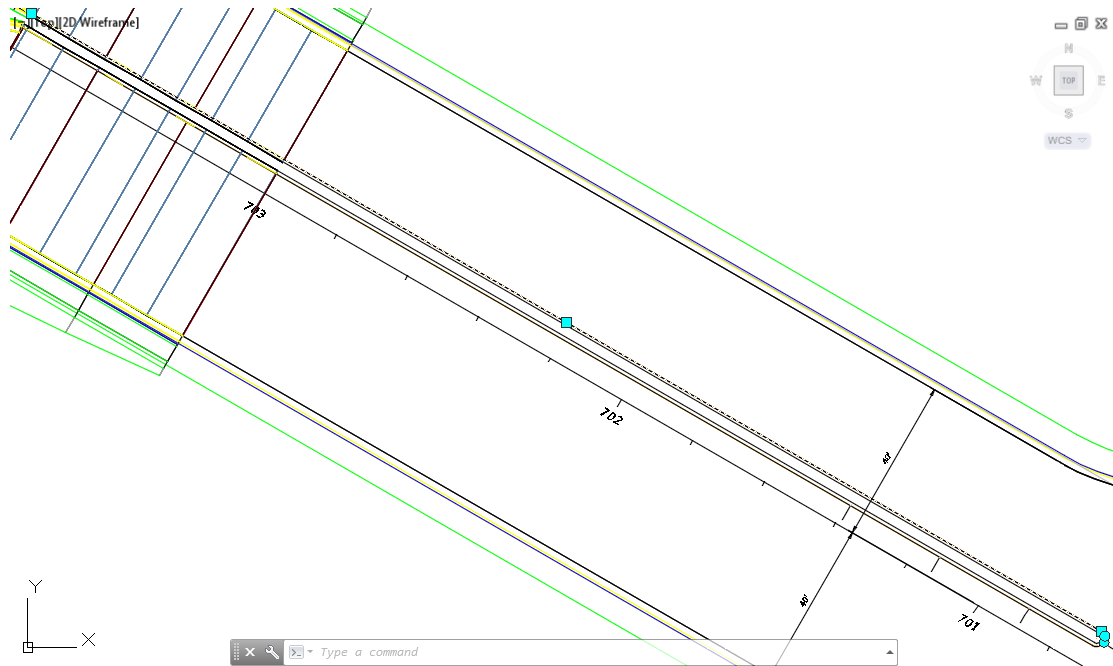


6. Hover over the Miscellaneous Alignment - Traffic Sep South LT, just after Station 702+00 and review the Station value.

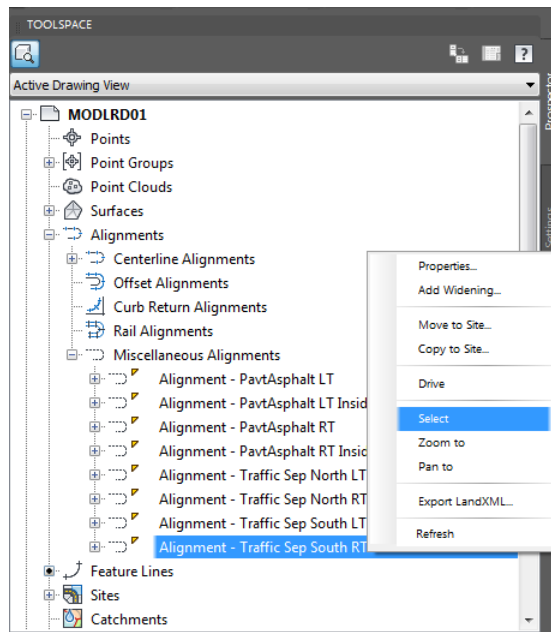


7. The Miscellaneous Alignment - Traffic Sep South LT is facing in same direction as SR61 alignment. Press ESC. From TOOLSPACE > Prospector tab, expand Alignments > Miscellaneous Alignments, then right-click on Alignment - Traffic Sep South RT, and select Zoom to.

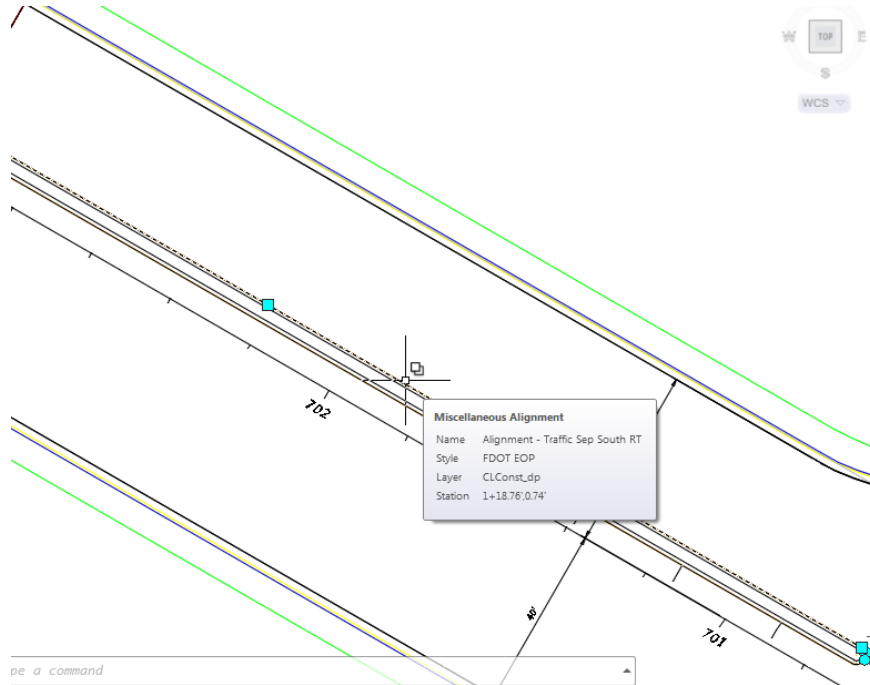




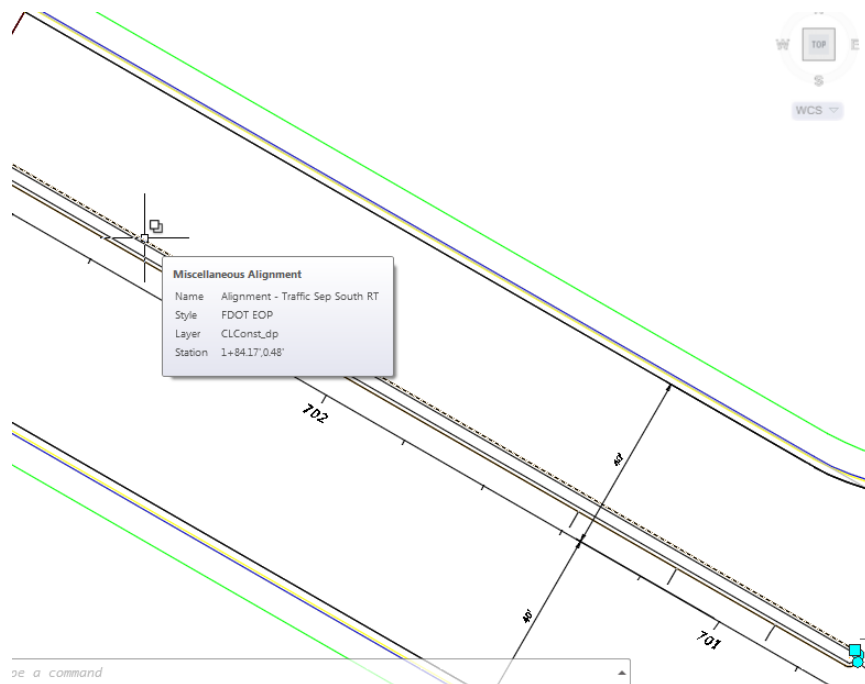
8. From TOOLSPACE > Prospector tab, expand Alignments > Miscellaneous Alignments, then right-click on Alignment - Traffic Sep South RT, and select Zoom Select.



9. Hover over the Miscellaneous Alignment - Traffic Sep South RT, just before Station 702+00 and review the Station value.



10. Hover over the Miscellaneous Alignment - Traffic Sep South RT, just after Station 702+00 and review the Station value.

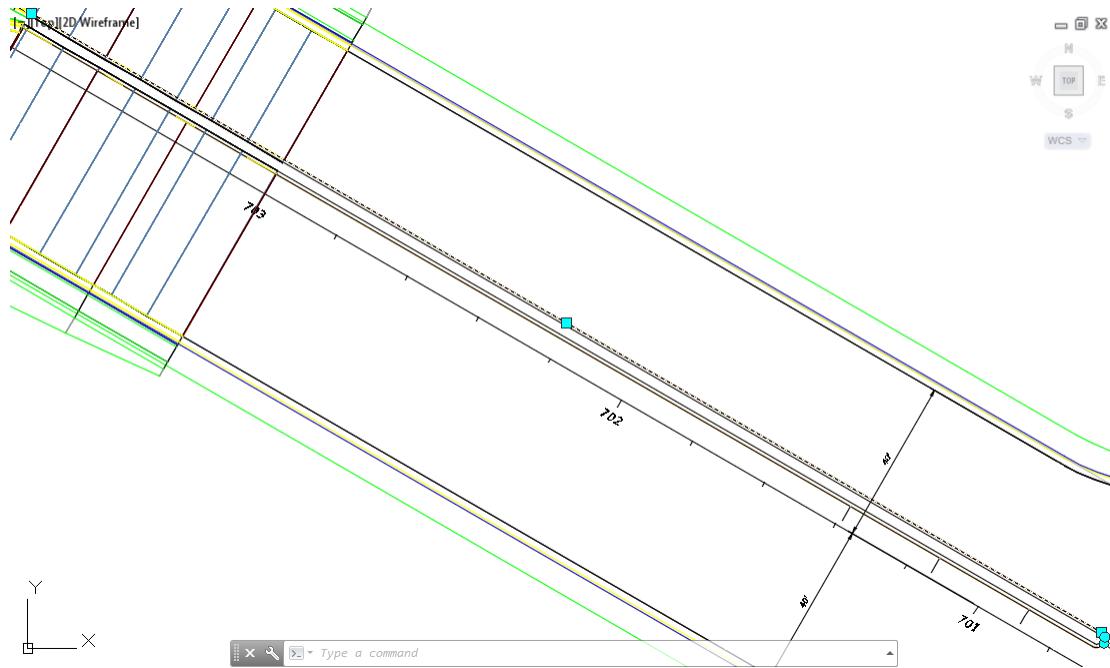


11. The Miscellaneous Alignment - Traffic Sep South RT is facing in the same direction as SR61 alignment. Press ESC.
12. **. Save** your file before continuing.

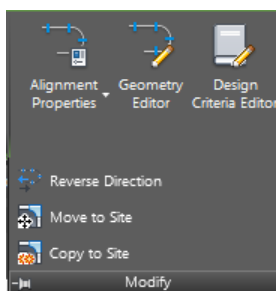
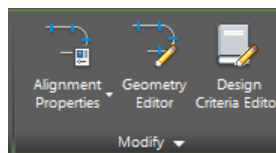
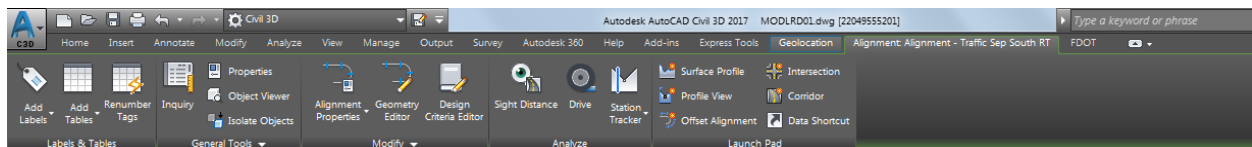
### Exercise 8.6 Reverse the direction of the Miscellaneous Alignments

If either of the Traffic Sep South LT or Traffic Sep South RT Miscellaneous Alignments were not facing in the same direction as SR61 alignment. You would follow the process below to Reverse to Alignments. The Miscellaneous Alignment Traffic Sep South RT will be used for this exercise.-

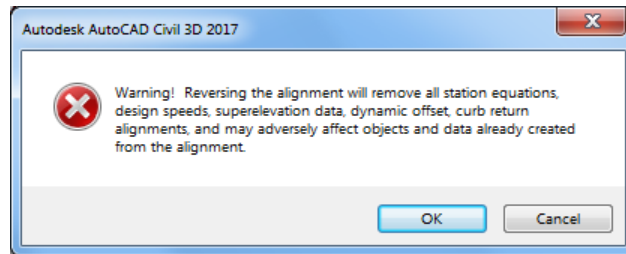
1. From TOOLSPACE > Prospector tab, expand Alignments > Miscellaneous Alignments, then right-click on Alignment - Traffic Sep South RT, and select Zoom Select.



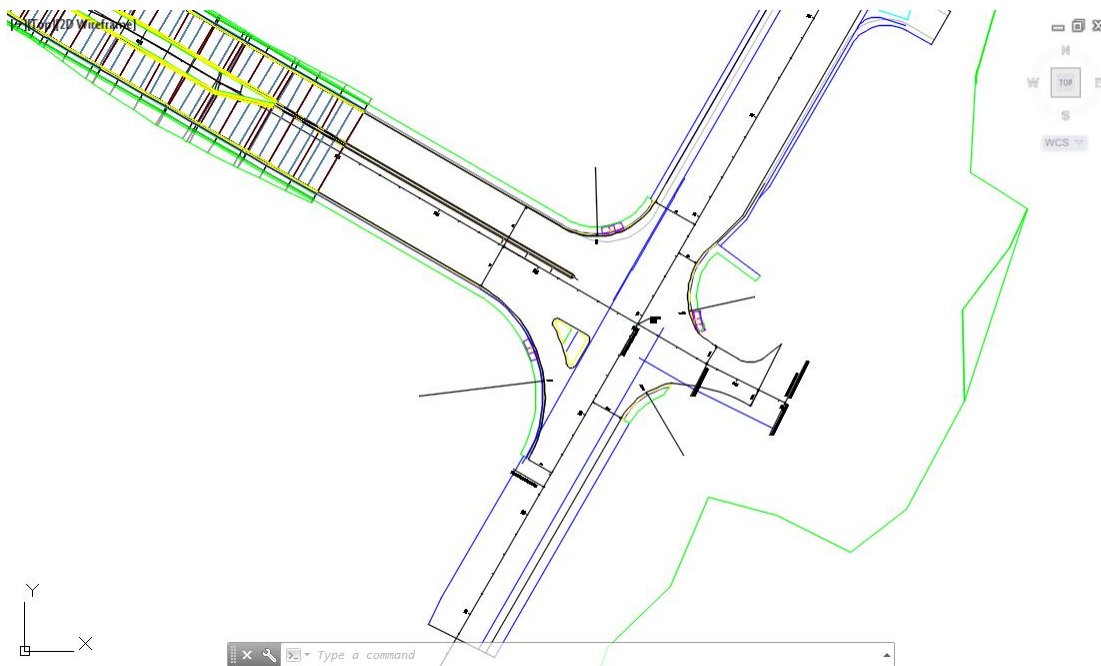
2. The Alignment: Alignment - Traffic Sep South RT tab displayed in the Ribbon. From the Modify panel, select Modify, then select Reverse Direction.



- From the Autodesk AutoCAD Civil 3D 20XX dialog, a warning message is displayed which outlines what happens if you reverse an alignment.



- If you click OK then the alignment direction is reversed.
- In this example click Cancel as the Miscellaneous Alignments - Traffic Sep South RT is already facing in the same direction as SR61 alignment.
- Press Cancel

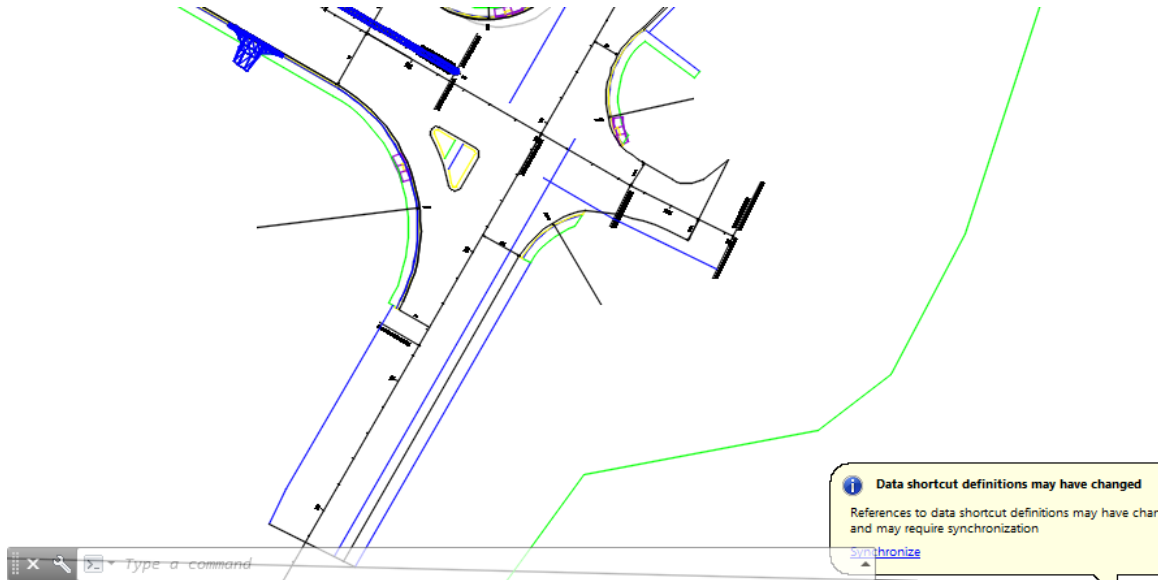


- Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
- Save** and **Close** MODLRD01file.

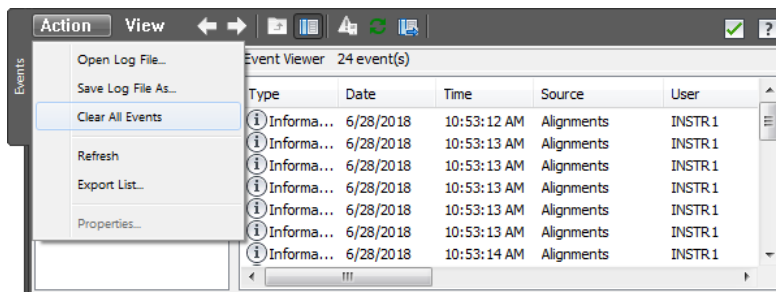
### Exercise 8.7 Synchronize Data Short Definitions

In this exercise you will Synchronize the Data Short Definitions which may have been updated during the editing of the MODLRD01 file in the prior exercise.

1. When you return from editing the MODLRD01 file, in the lower right hand of the drawing editor, a balloon message is displayed requesting you Synchronize your Data Shortcut Definitions. Click on Synchronize.



2. The Panorama tool palette (Event Viewer) is displayed, Click on the Events tab, then review the Events. Next right-click on the Action tab, select Clear All Events.

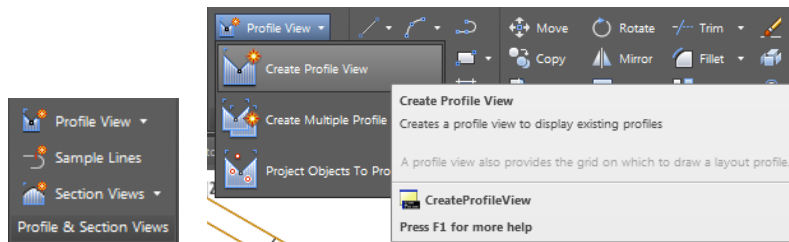
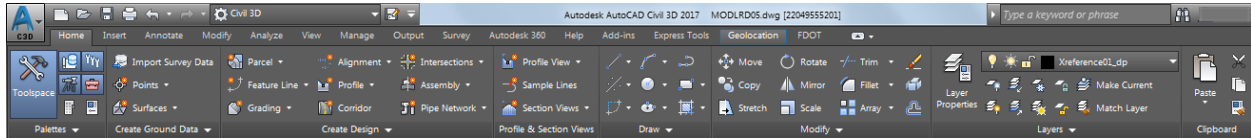


## Exercise 8.8 Create Design Profiles

In this exercise the corridor model must be created from the Traffic Sep alignments. The design profile must be developed from the SR61-PR. This process will transfer the design profiles from SR61 alignment to the Traffic Sep alignments. To do this you must create the Design Profiles for Traffic Separator ETW LT and ETW RT

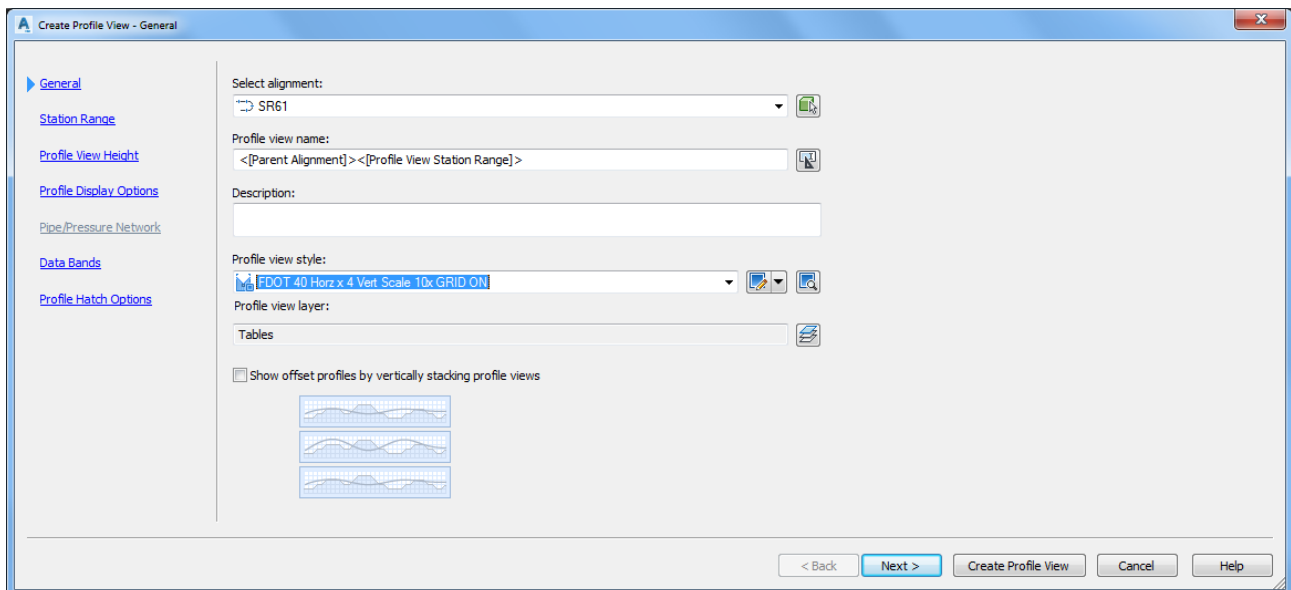
To start the process you will create Profile View for SR61

1. From the *Home Tab > Profile & Section Views panel*, select Profile Views, then select Create Profile View.



2. From the Create Profile View - General dialog, set the following values:

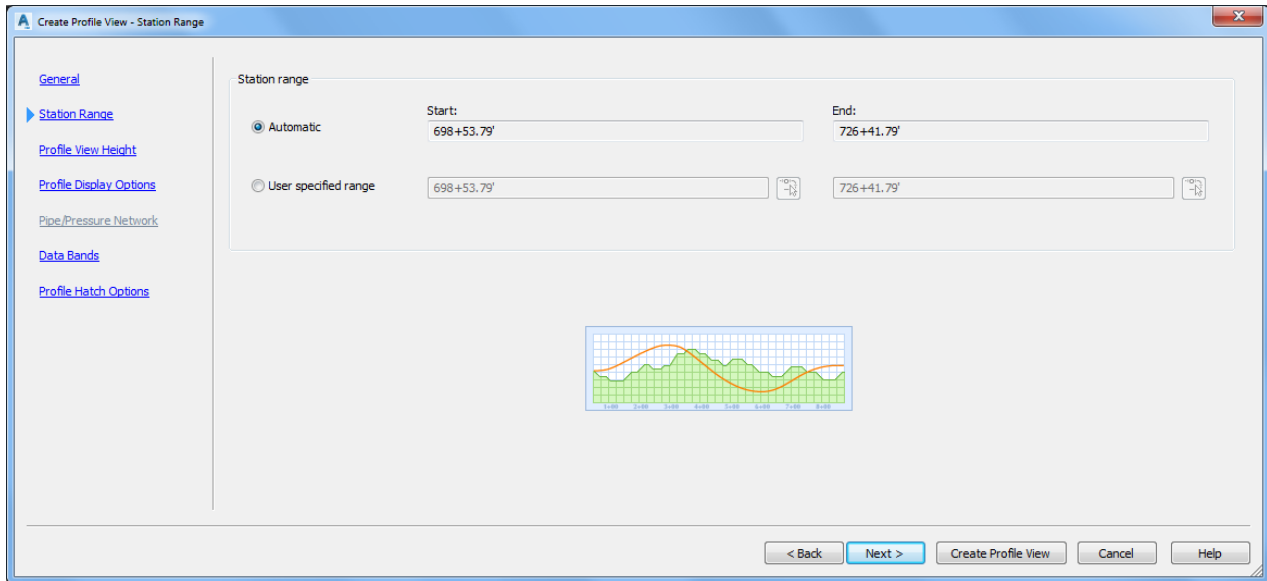
- *Select Alignment:* **SR61** (Select from pull down list)
- *Profile view name:* Use **default value**
- *Description:* Leave **blank**
- *Profile view style:* **FDOT 40 Horz x 4 Vert Scale 10x GRID ON** (Select from pull down list)
- Uncheck box next to Show offset profiles by vertically stacking profile views



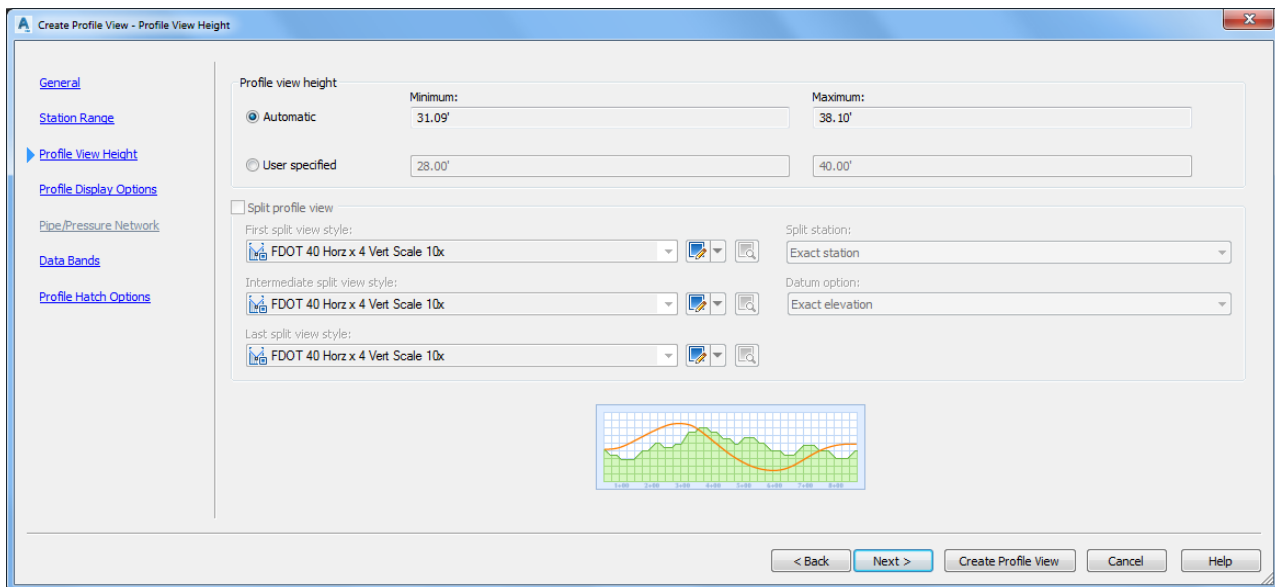
3. Click Next > to continue.



4. From the Create Profile View - Station Range, set the following values:
  - o Station range: Select Automatic

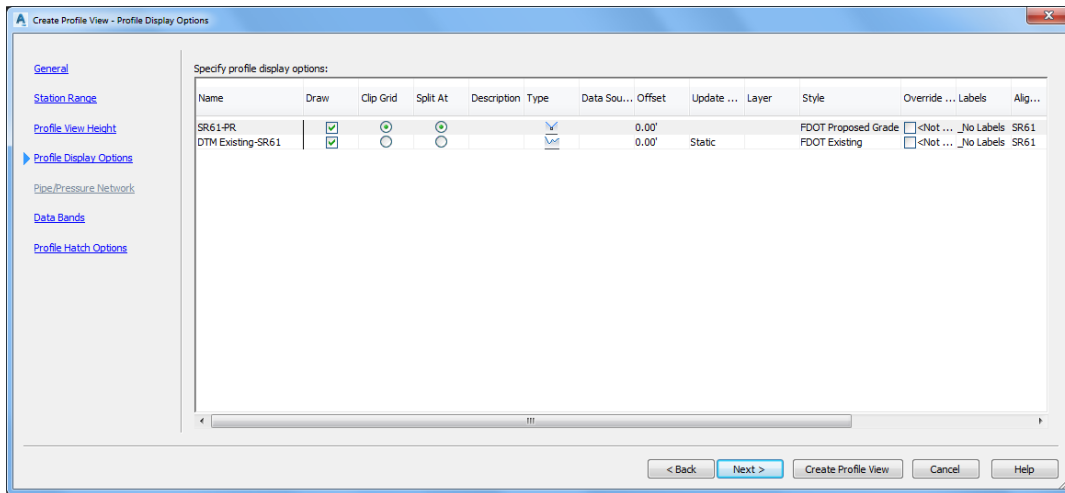


5. Click Next > to continue.
6. From the Create Profile View - Profile View Height, set the following values:
  - o Profile view Height: Automatic.

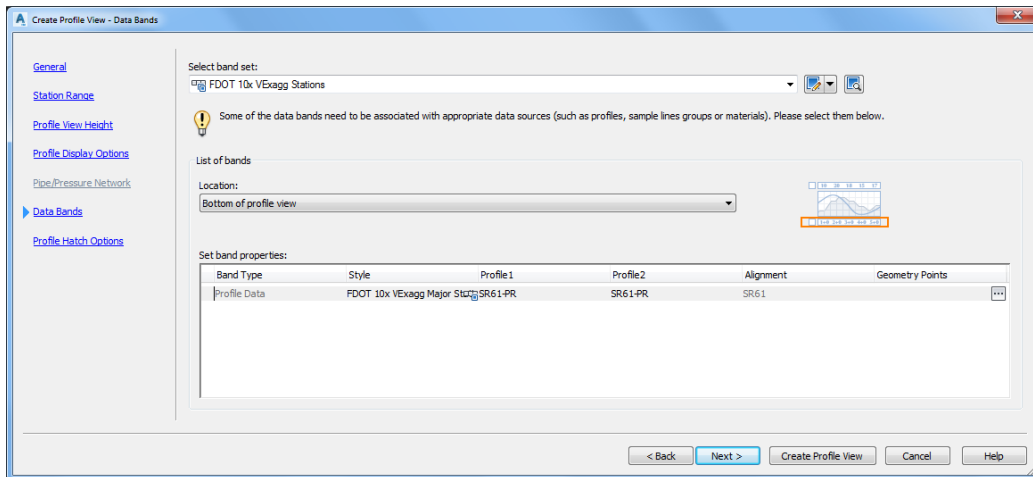


7. Click Next > to continue.

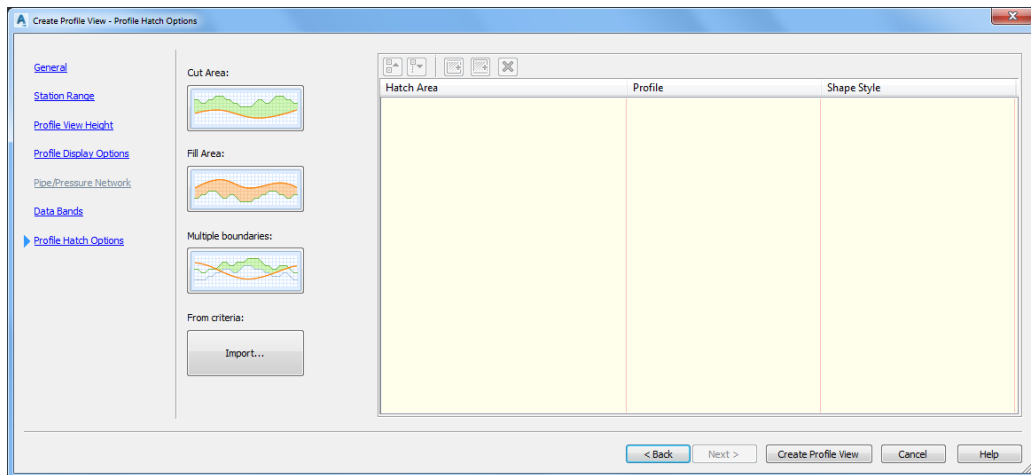
- From the Create Profile View - Profile Display Options dialog, use default values. Click Next > to continue.



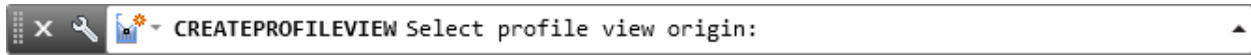
- From the Create Profile View - Data Bands dialog, use default values. Click Next > to continue.



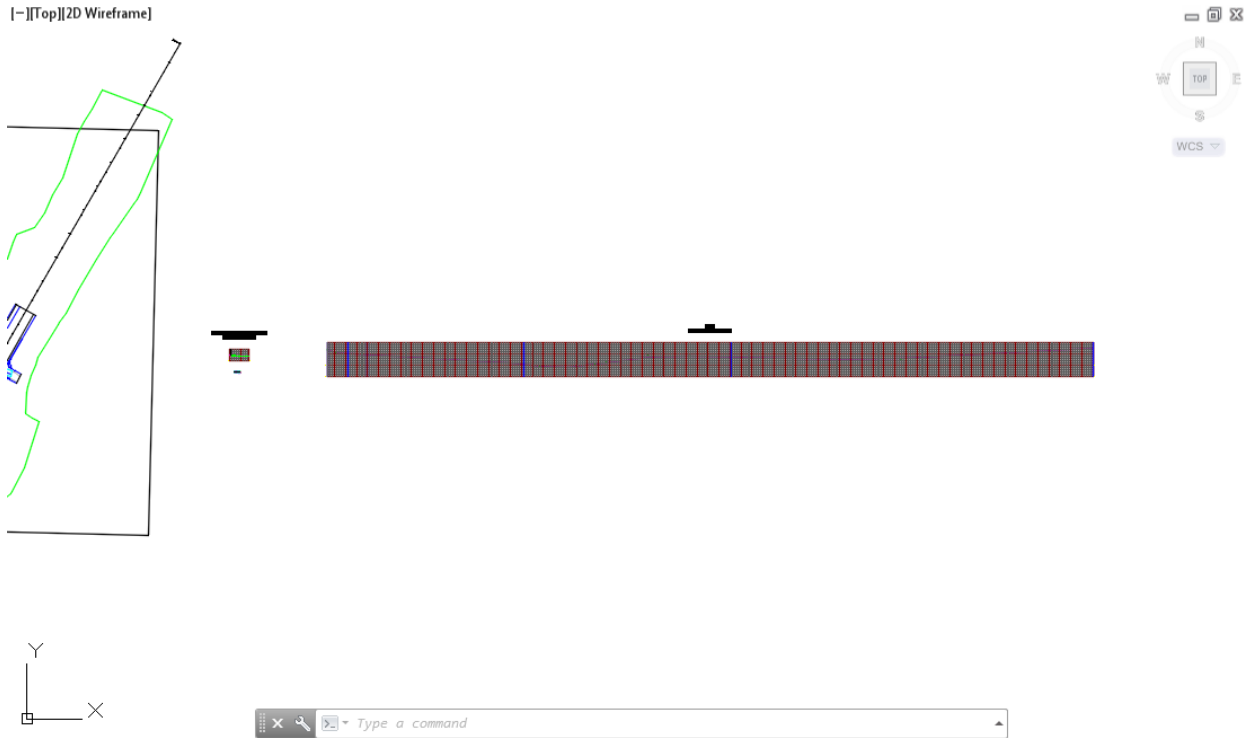
- From the Create Profile View - Profile Hatch Options dialog, do nothing. Click Create Profile View to continue.



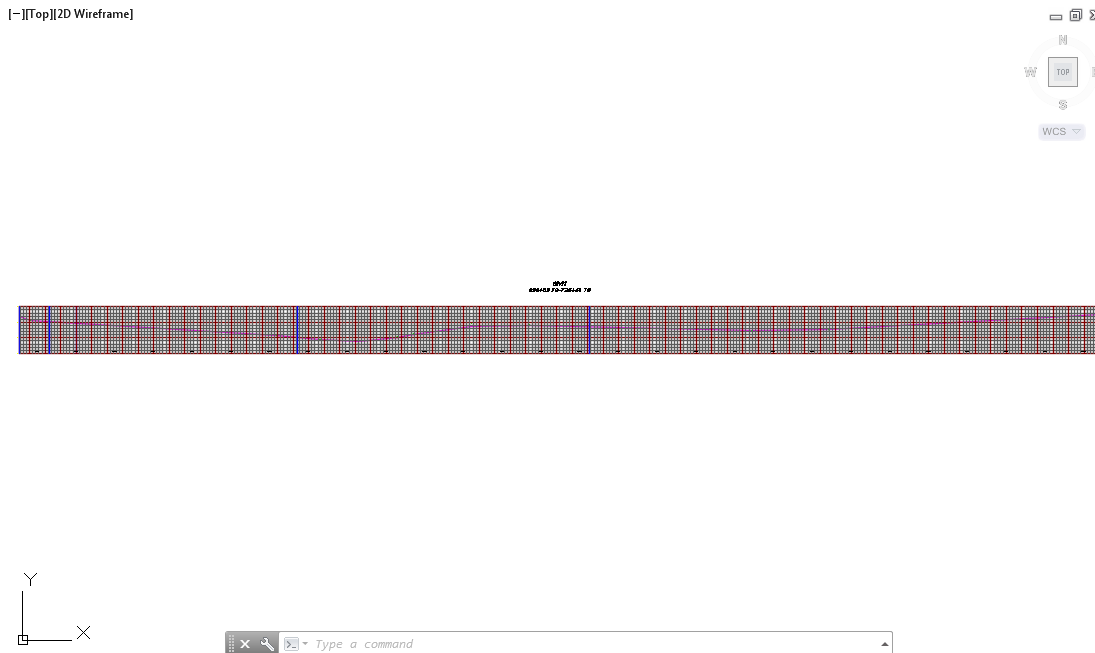
11. The command line prompts you to Select profile view origin:



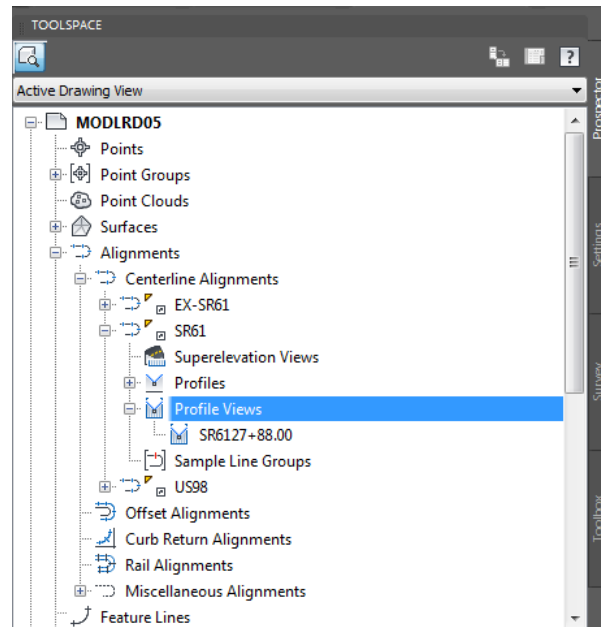
12. Select a point for the Profile View in an area to the right Alignment - PavtAsphalt LT Profile view created in a prior exercise away from the plan geometry.



13. Use Zoom and Pan command to display Alignment - SR61 698+53.79-726+41.79 Profile View.



- From TOOLSPACE > Prospector tab, expand Alignments, expand Miscellaneous Alignments, expand SR61, then expand Profile Views, The new Profile View for SR61 is displayed.

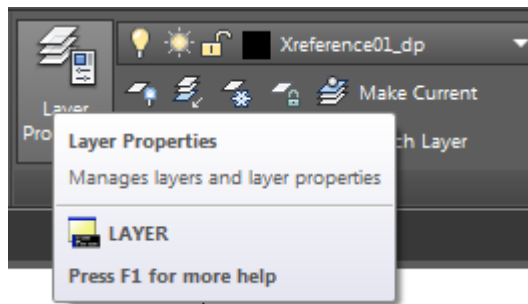
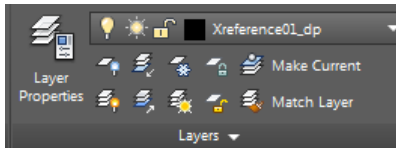
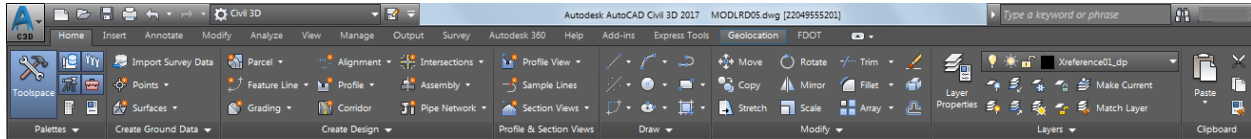


- Save** your file before continuing.

### Exercise 8.9 Set Layer Transparency for Profile View Grid Lines.

In this exercise you will set the layer transparency for the Profile View grid lines, making the Profile Views easier to read.

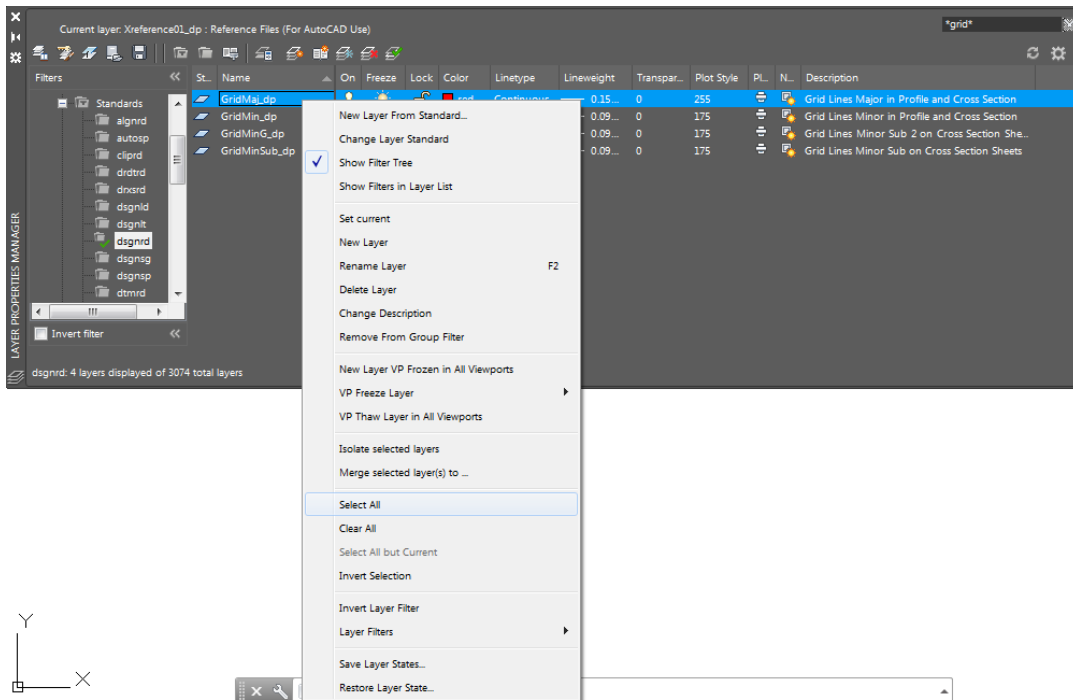
1. From the *Home Tab > Layers panel*, select Layer Properties.



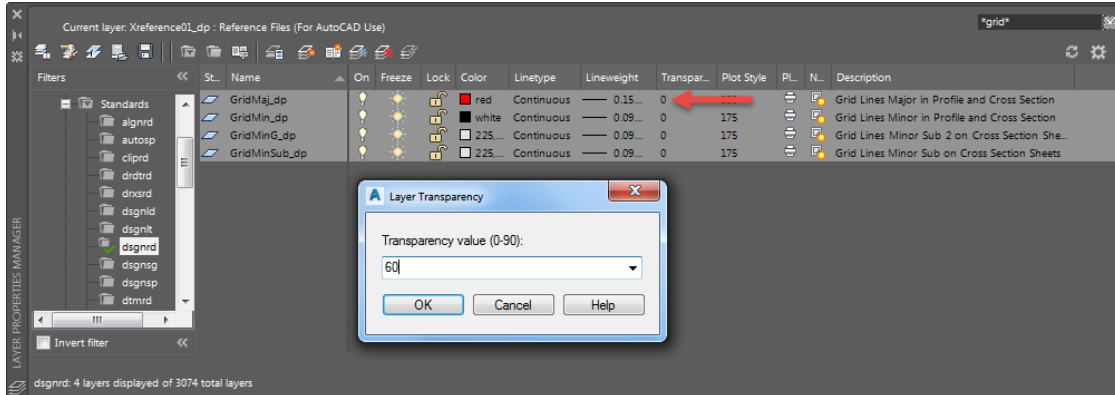
2. From the Layer Properties Manager tool palette, type *\*grid\** in the filter box, referenced by the red arrow, to apply a filter to the current list of layers in the MODLRD05 file.



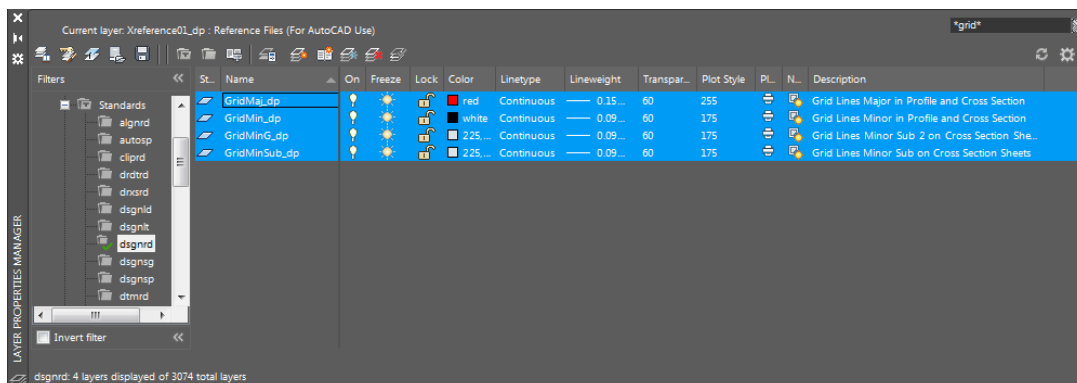
- Right-click on the first layer in the list, and select Select All.



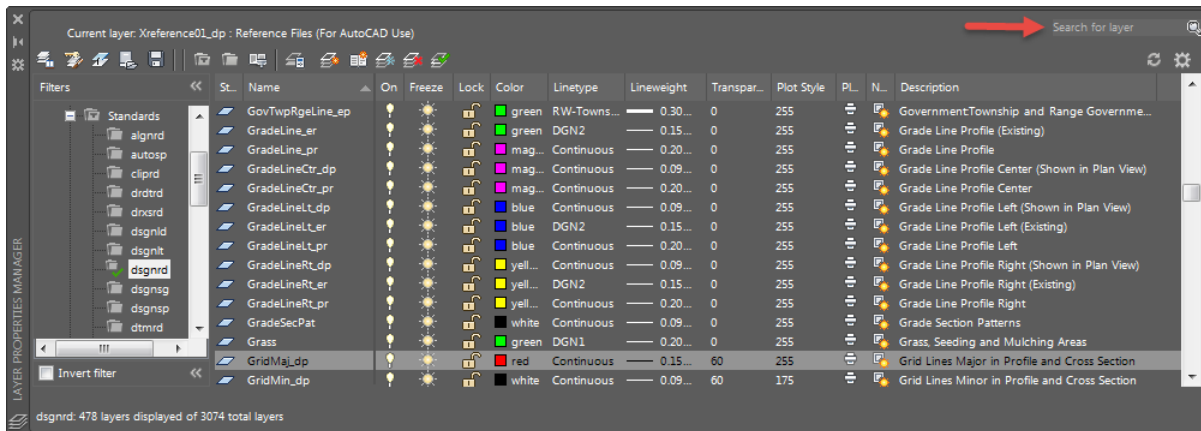
- Right-click the first layer in the layer under the Transparency column, use the red arrow as a reference, from the Layer Transparency dialog, enter in 60. then click OK to continue.



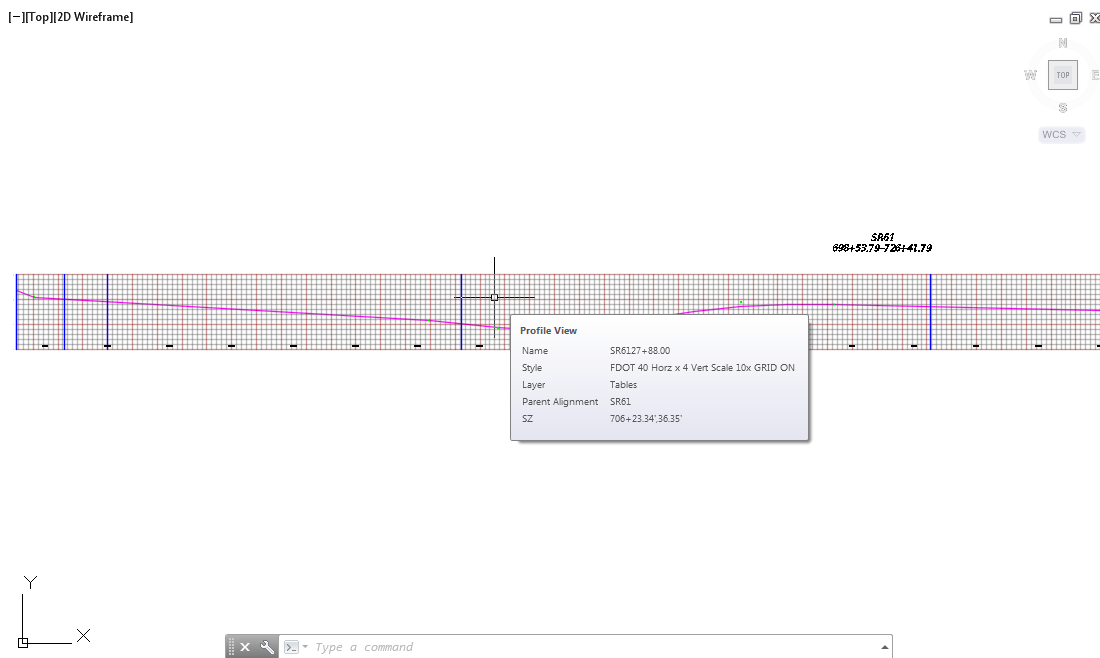
- The Transparency column now displays the value 60 for the four selected layers.



- From the Layer Properties Manager tool palette, clear the \*grid\* filter from the filter box, referenced by the red arrow, to return the full list of current layers in the MODLRD05 file.



- Close the the Layer Properties Manager tool palette.
- Hover over the Profile - SR61 698+53.79-726+41.79 Profile View to display tool tip.



- Save your file before continuing.

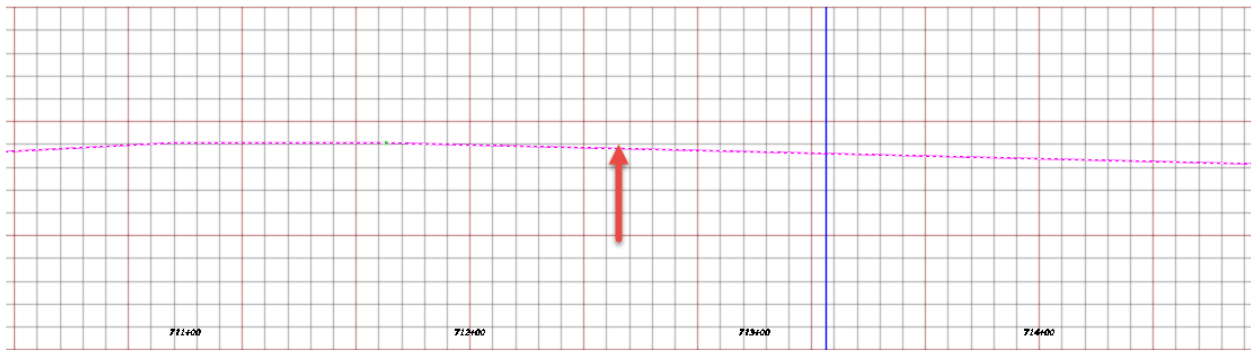
### Exercise 8.10 Copy Profile SR61 - PR to Create Profile SR61- PR [Copy]

In this exercise you will copy the Profile SR61 - PR to create Profile SR61 - PR [Copy]

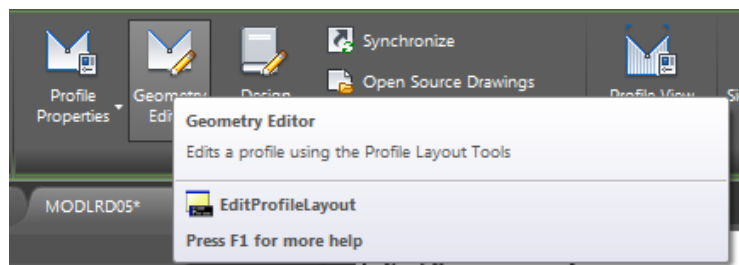
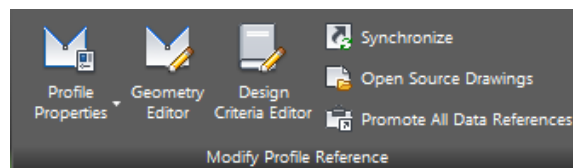
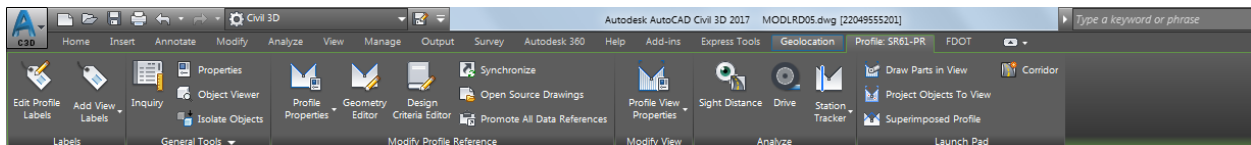
1. Select from the Profile SR61- PR from the SR61 698+53.79-726+41.79 Profile View, use the red arrow as a reference.

[ - ] [ Top ] [ 2D Wireframe ]

**SR61**  
**698+53.79-726+41.79**



2. The Profile: SR61 - PR tab displayed in the Ribbon. From the Modify Profile Preferences panel, select Geometry Editor.

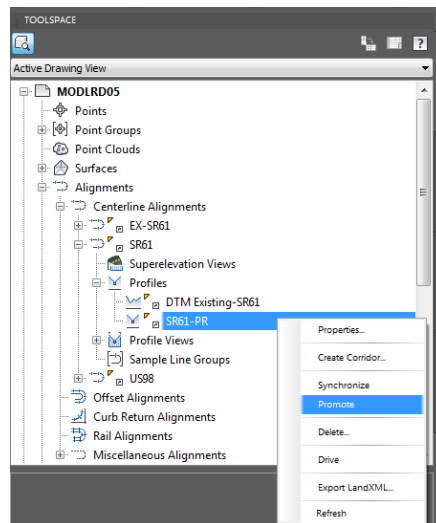




- Notice that the Copy Profile tool is grayed out, use the red arrow as a reference, in the Profile Layout Tools - SR61-PR. Why, because Data Referenced profiles cannot be copied.



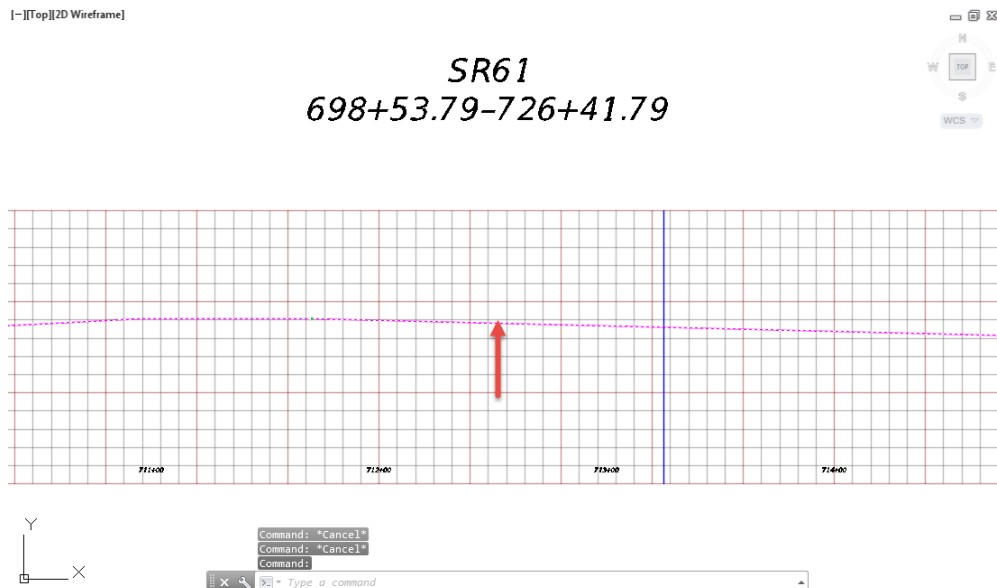
- To resolve this issue, you must Promote the profile, so it becomes an original object in the current drawing. From TOOLSPACE > Prospector tab, expand Alignments > Centerline Alignments, expand Profiles, then right-click on SR61-PR, and select Promote.



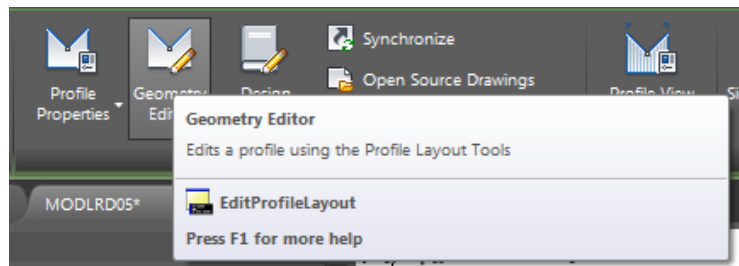
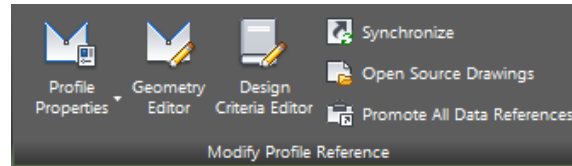
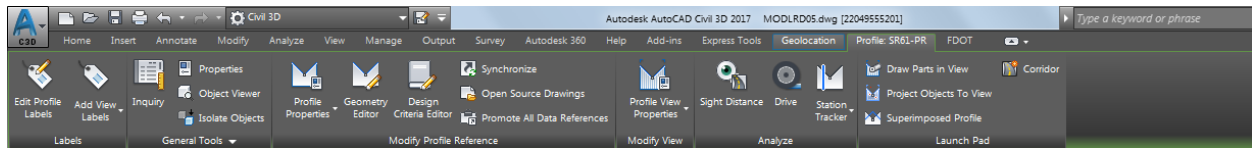
- From the command the message 1 Data References successfully promoted.



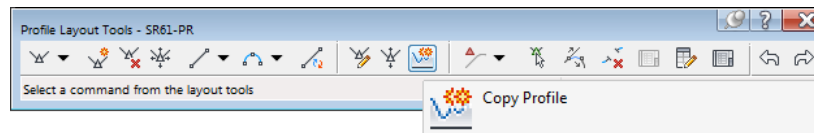
- Again select from the Profile SR61- PR from the SR61 698+53.79-726+41.79 Profile View, use the red arrow as a reference.



7. The Profile: SR61 - PR tab displayed in the Ribbon. From the Modify Profile Preferences panel, select Geometry Editor.

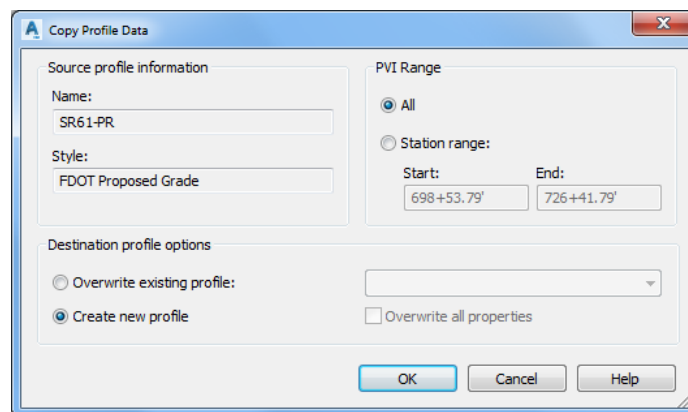


8. From the Profile Layout Tools - SR61 - PR toolbar, select elect Copy Profile.



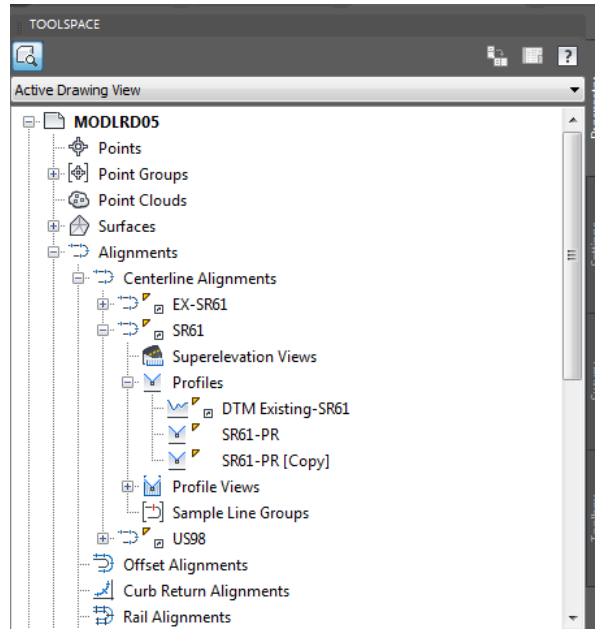
9. From the Copy Profile Data dialog, set these values:
- Destination profile options set to: Create new profile.
  - PVI Range set to: All.

**Note** By selecting Station ranges you will be restricting stations, the Copy Profile will fail if no PVIs are included in the station range.



10. Click OK to continue and close the Copy Profile Data dialog.
11. Close the Profile Layout Tools - SR61 - PR toolbar.

- From *TOOLSPACE* > *Prospector* tab, expand **Alignments** > **Centerline Alignments**, expand SR61, then, expand Profiles. The copied Profile SR61-PR [Copy] is listed.

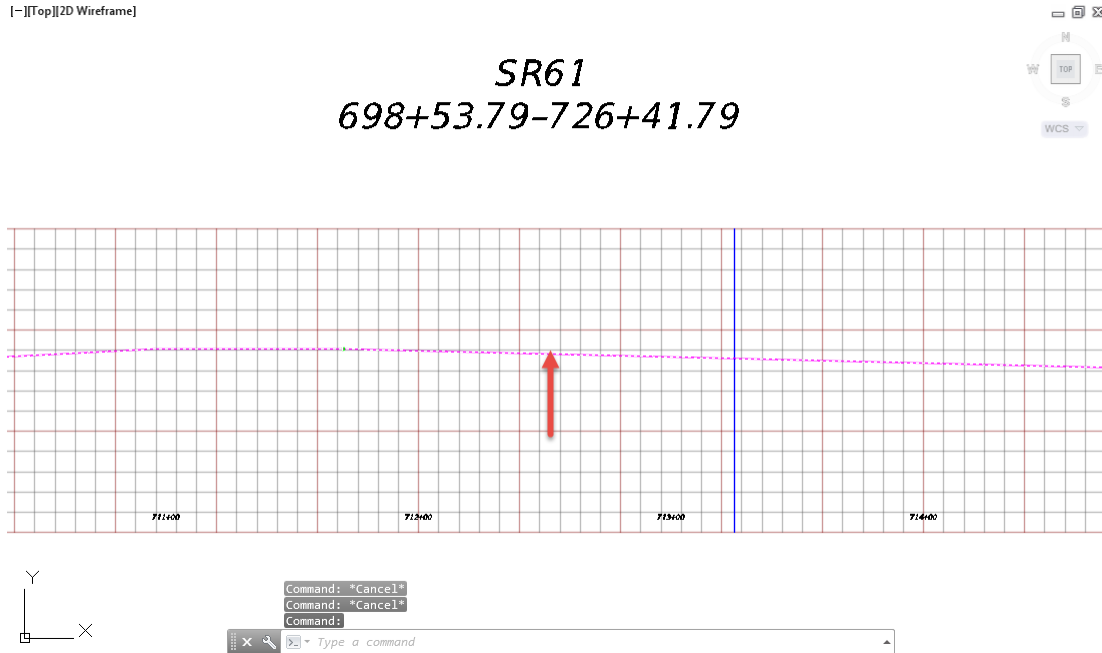


- Save** your file before continuing.

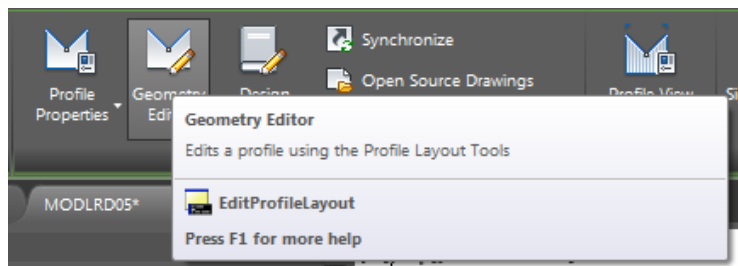
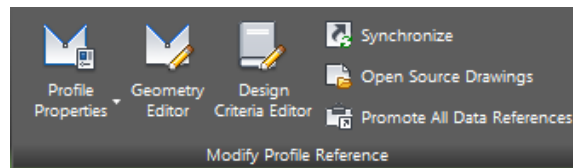
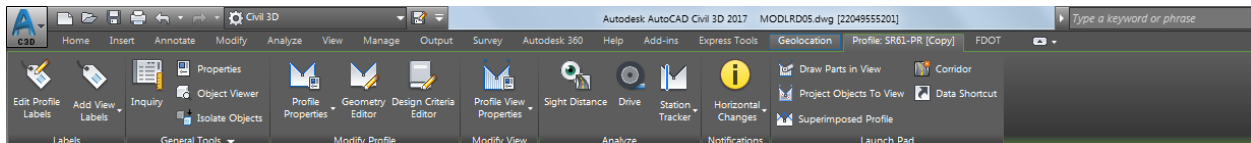
### Exercise 8.11 Raise/Lower PVI On the SR61-PR [Copy]

In this exercise you will raise/lower PVI's on the SR61-PR [Copy] profile.

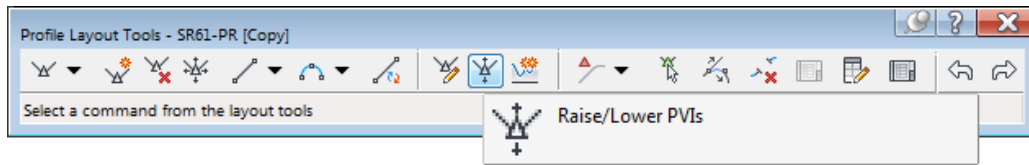
1. Select from the Profile SR61- PR [Copy] from the SR61 698+53.79-726+41.79 Profile View, use the red arrow as a reference.



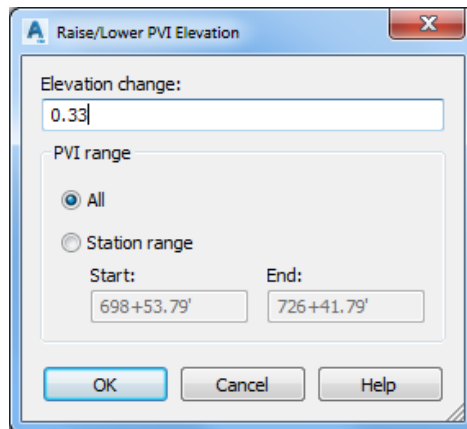
2. The Profile: SR61 - PR [Copy] tab displayed in the Ribbon. From the Modify Profile Preferences panel, select Geometry Editor.



- From the Profile Layout Tools - SR61 - PR [Copy] toolbar, select Raise/Lower PVI's.



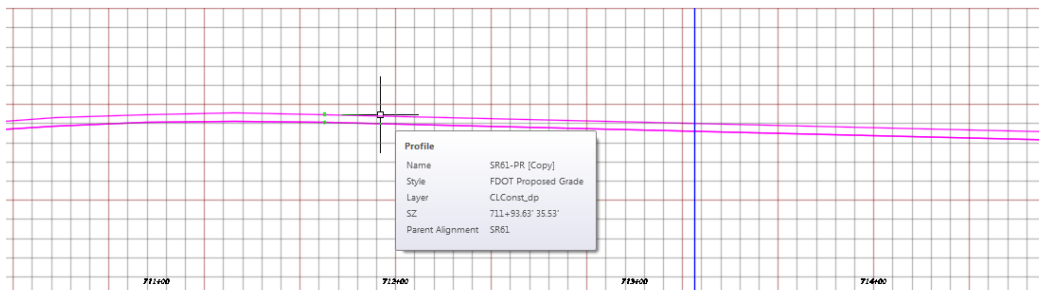
- Raise the SR61 PR [Copy] profile with an elevation change of 0.33 for the ETW LT. From the Raise/Lower PVI Elevation dialog, set these values:
  - Elevation change: 0.33
  - PVI Range: All



- Click OK to continue and close the Raise/Lower PVI Elevation dialog.
- Close the Profile Layout Tools - SR61 - PR [Copy] toolbar.
- Hover over the SR61 - PR [Copy] profile to display tool tips.

[-]Top||2D Wireframe

**SR61**  
**698+53.79-726+41.79**



Type a command

- Save** your file before continuing.

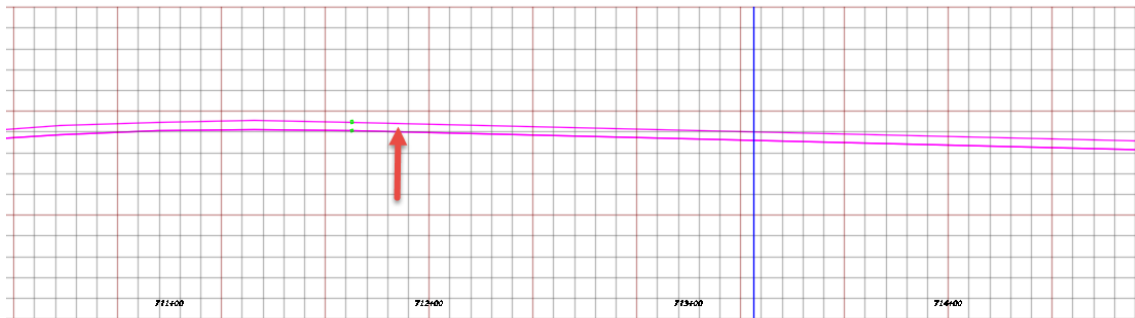
### Exercise 8.12 Copy Profile SR61 - PR to Create Profile SR61- PR [Copy 1]

In this exercise you will copy the Profile SR61 - PR to create Profile SR61 - PR [Copy 1]

1. Select from the Profile SR61- PR from the SR61 698+53.79-726+41.79 Profile View, use the red arrow as a reference.

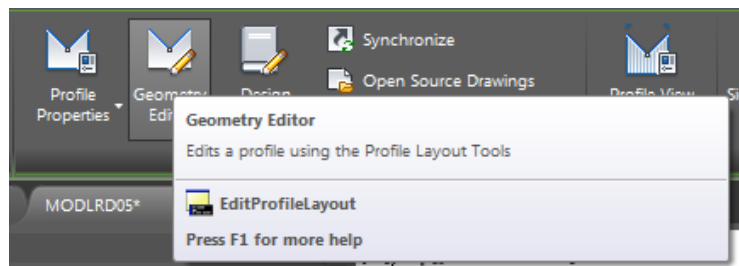
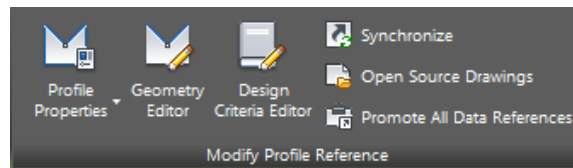
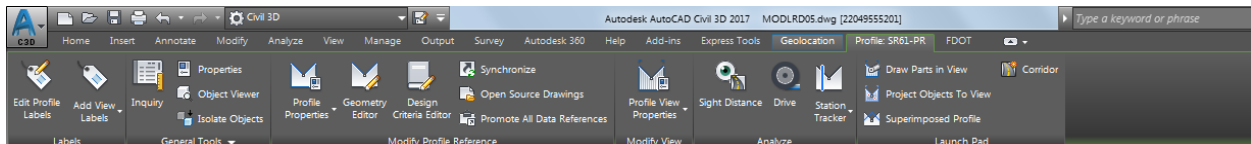
[--][Top][2D Wireframe]

**SR61**  
**698+53.79-726+41.79**

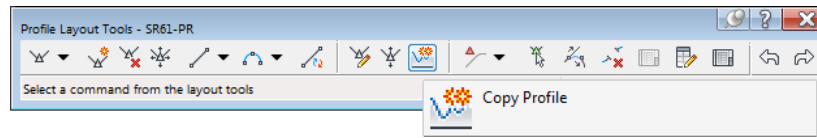


Type a command

2. The Profile: SR61 - PR tab displayed in the Ribbon. From the Modify Profile Preferences panel, select Geometry Editor.

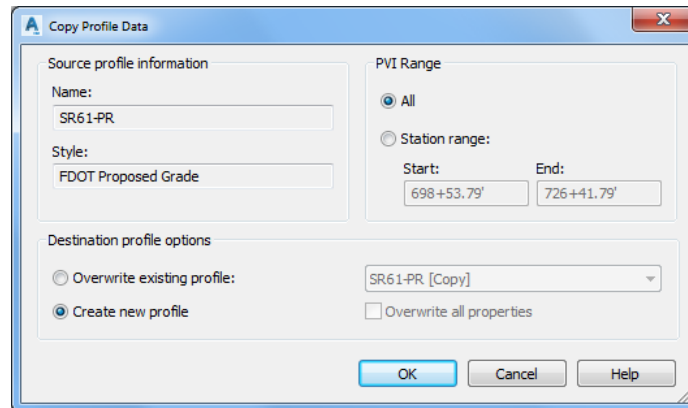


- From the Profile Layout Tools - SR61 - PR, select Copy Profile.

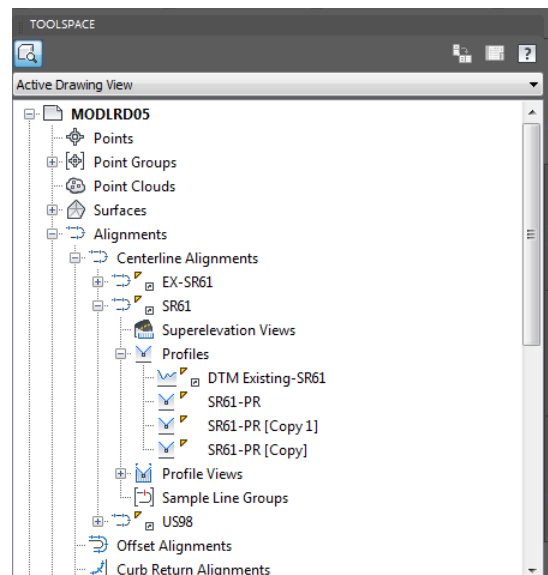


- From the Copy Profile Data dialog, set these values:
  - Destination profile options set to: Create new profile
  - PVI Range set to: All

**Note** By selecting Station ranges you will be restricting stations, the Copy Profile will fail if no PVIs are included in the station range.



- Click OK to continue and close the Copy Profile Data dialog.
- Close the Profile Layout Tools - SR61 - PR toolbar.
- From *TOOLSPACE* > *Prospector* tab, expand **Alignments** > **Centerline Alignments**, expand SR61, then expand Profiles. The copied Profile SR61-PR [Copy 1] is listed.



- Save** your file before continuing.

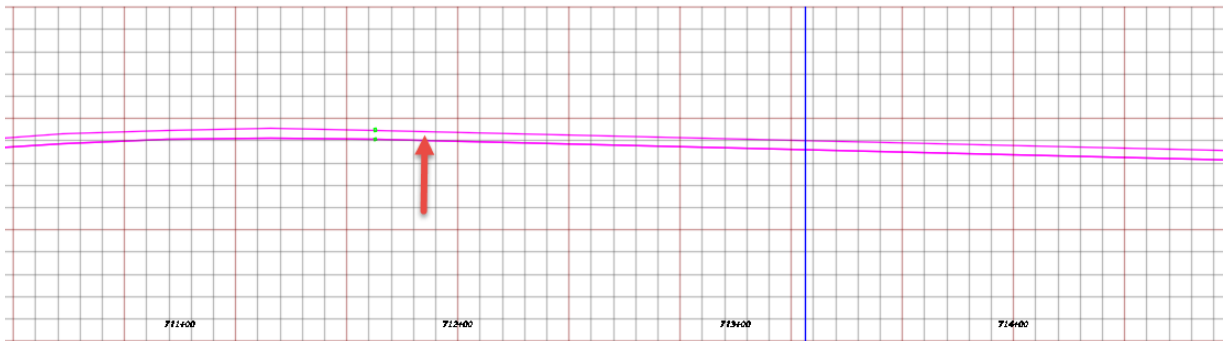
### Exercise 8.13 Raise/Lower PVI On SR61-PR [Copy 1]

In this exercise you will raise/lower PVI's on the SR61-PR [Copy] profile.

1. Select from the Profile SR61- PR [Copy 1] from the SR61 698+53.79-726+41.79 Profile View, use the red arrow as a reference.

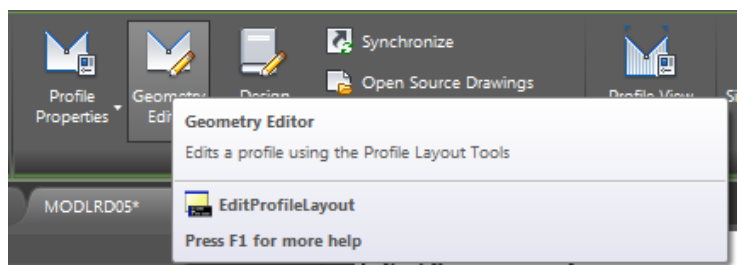
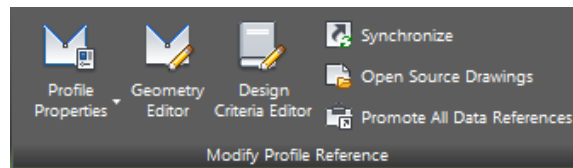
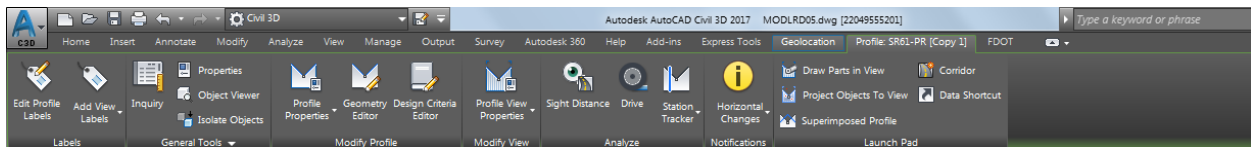
[Top]2D Wireframe

**SR61**  
**698+53.79-726+41.79**



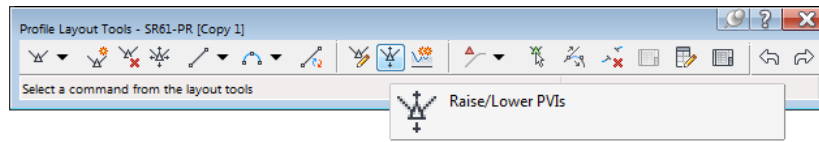
Type a command

2. The Profile: SR61 - PR [Copy 1] tab displayed in the Ribbon. From the Modify Profile Preferences panel, select Geometry Editor.

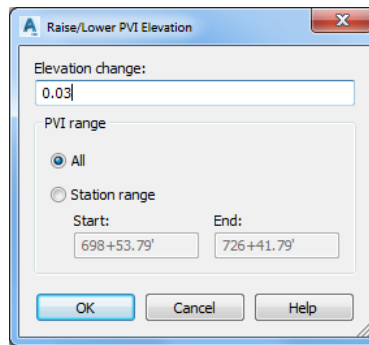




- From the Profile Layout Tools - SR61 - PR [Copy 1] toolbar, select Raise/Lower PVI's.



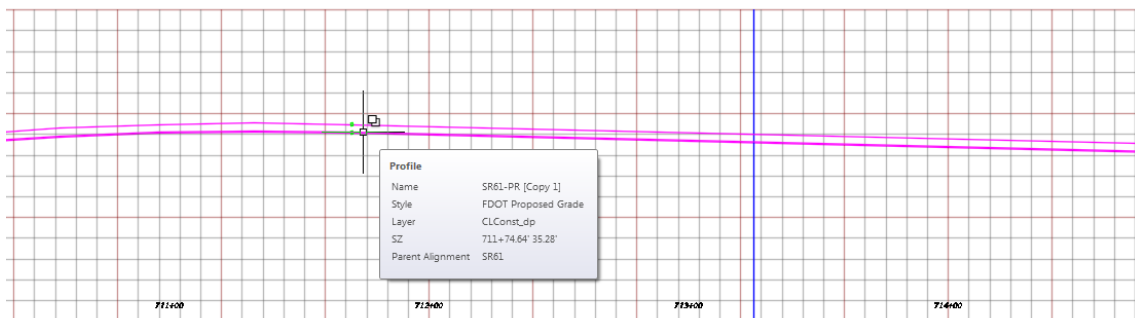
- To raise the SR61 PR [Copy 1] profile with an elevation change of 0.33 for the ETW RTFrom the Raise/Lower PVI Elevation dialog, set these values:
  - Elevation change: 0.03
  - PVI Range: All



- Click OK to continue and close the Raise/Lower PVI Elevation dialog.
- Close the Profile Layout Tools - SR61 - PR [Copy 1] toolbar.
- Hover over the SR61 - PR [Copy 1] profile to display tool tips.

[ - ] [Top] [2D Wireframe]

**SR61**  
**698+53.79-726+41.79**



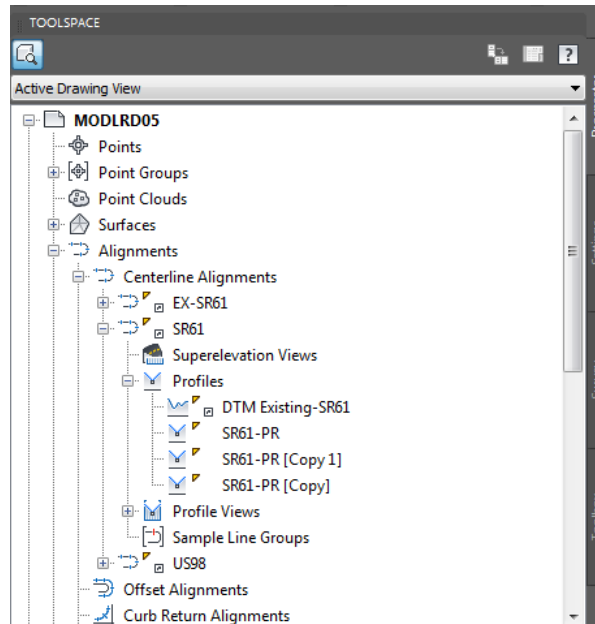
☒ 🔍 Type a command

- Save** your file before continuing.

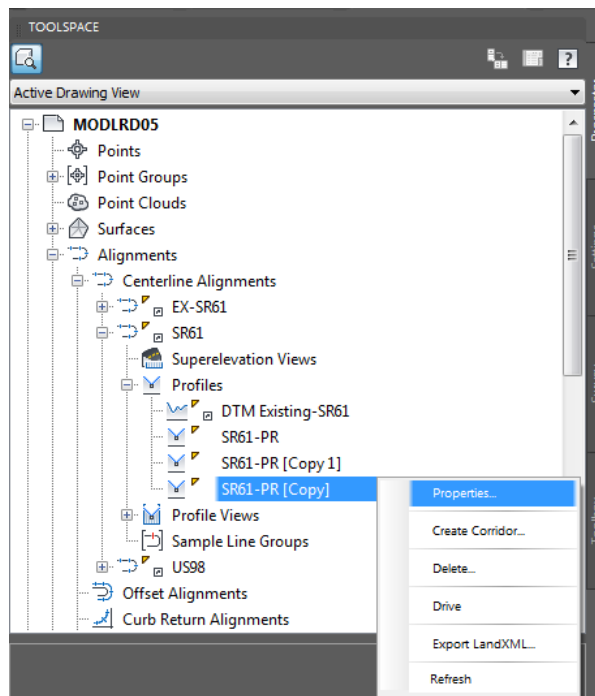
### Exercise 8.14 Rename the Profiles SR61 - PR [Copy] and SR61 - PR [Copy 1]

In this exercise you will rename profile SR61-PR [Copy] to SR61-PR TS ETW LT and the profile SR61-PR [Copy 1] to SR61-PR TS ETW RT.

1. From *TOOLSPACE* > *Prospector* tab, expand **Alignments** > **Centerline Alignments**, expand SR61, then expand Profiles.

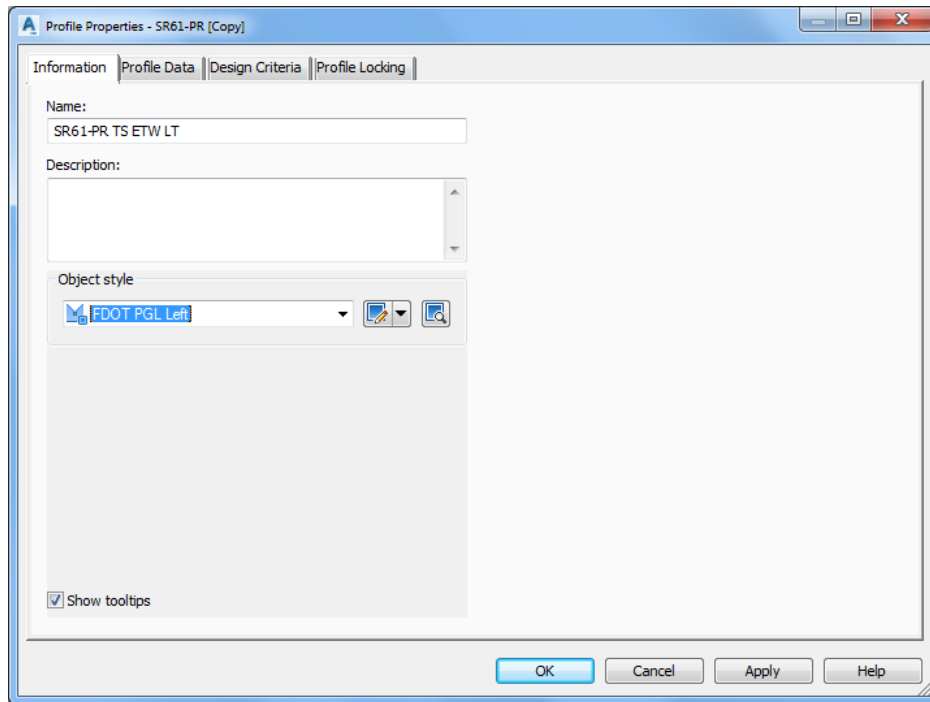


2. Right-click on SR61-PR [Copy], then select Properties...

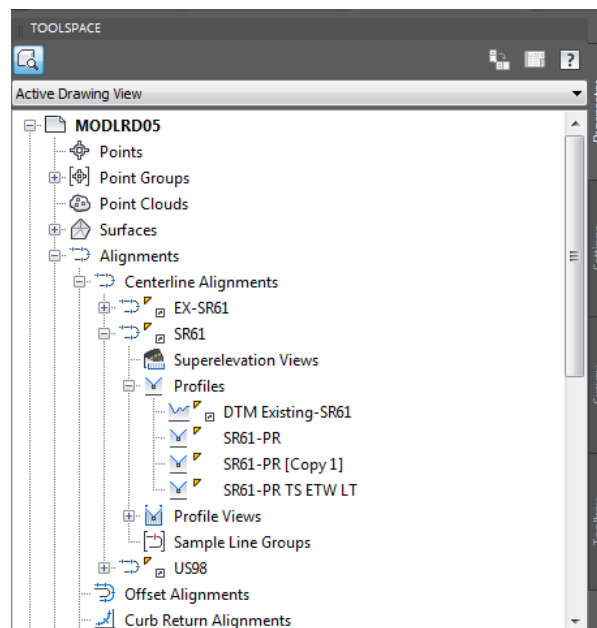


3. From the Profile Properties - SR61 - Pr [Copy] dialog, set these values:

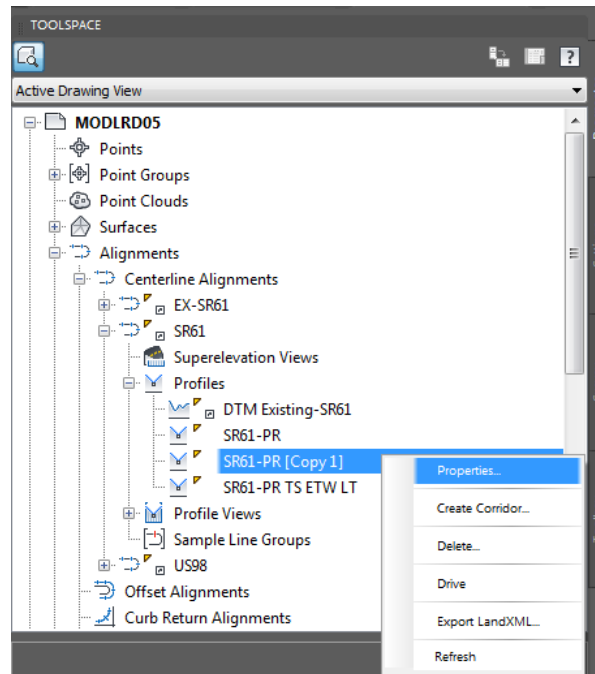
- Name: SR61-PR TS ETW LT
- Object style: FDOT PGL Left



4. Click OK to continue and to close the Profile Properties - SR61 - Pr [Copy] dialog.
5. Repeat the process, From *TOOLSPACE* > *Prospector* tab, expand **Alignments** > **Centerline Alignments**, expand SR61, then expand Profiles.

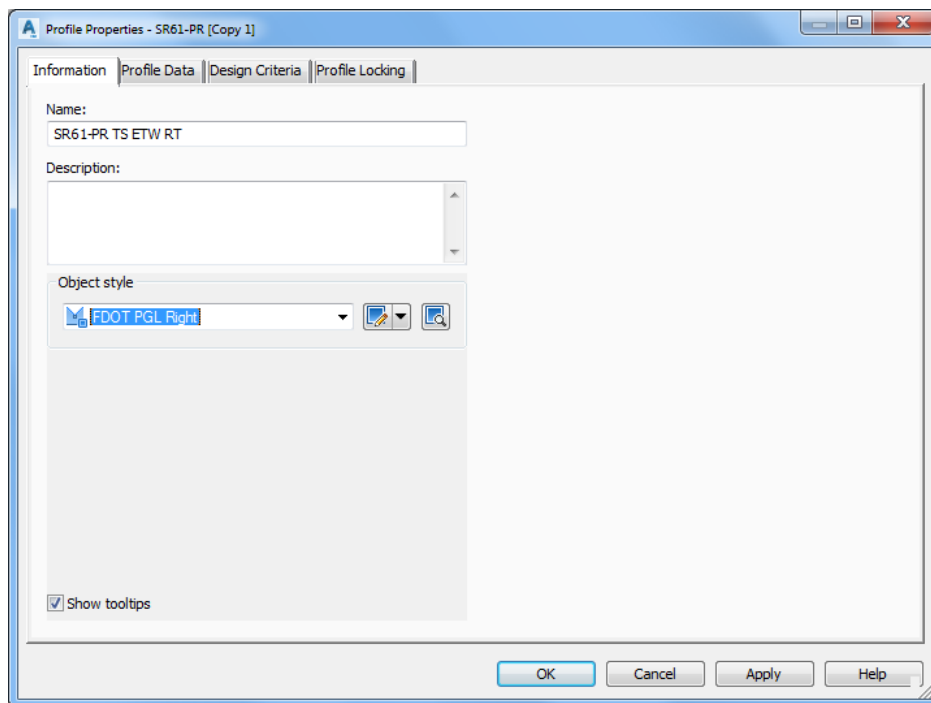


6. Right-click on SR61-PR [Copy 1], then select Properties...



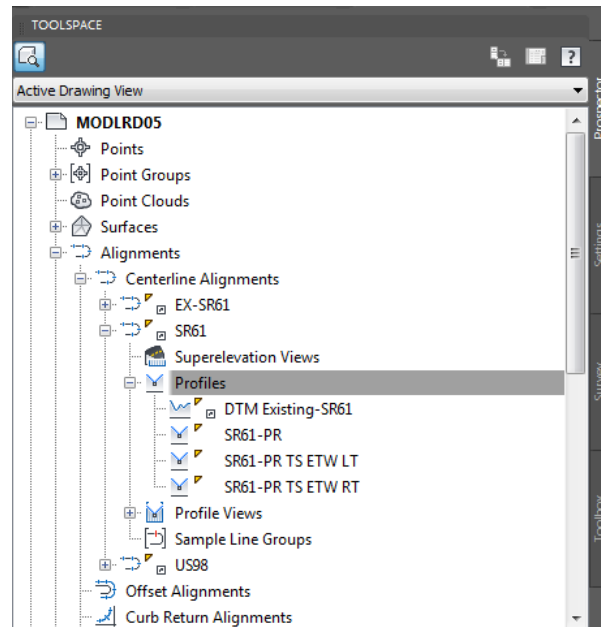
7. From the Profile Properties - SR61 - Pr [Copy 1] dialog, set these values:

- Name: SR61-PR TS ETW RT
- Object style: FDOT PGL Right



8. Click OK to continue and to close the Profile Properties - SR61 - Pr [Copy 1] dialog.

- From *TOOLSPACE* > *Prospector* tab, expand **Alignments** > **Centerline Alignments**, expand SR61, then expand Profiles. Both the SR61 - PR [Copy] and SR61 - PR [Copy 1] have been renamed.



- Save** your file before continuing.

### Exercise 8.15 Repairing "Warning" Multiply Owned Object, Handle

In this exercise you will learn about the "Warning\* Multiply Owned Objects" error message and how to remove them from the MODLRD05 file.

**Note** If you wish to fix the Warning\* Multiply Owned Objects without following the process outlined below then do the following:

From the C:\Civil 3D 2017 Projects\22049555201\Roadway folder open the MODLRD05 - Warning Error Fix.dwg. Next perform a Save As and name it MODLRD05. Then continue to the next exercise.

#### "Warning\* Multiply Owned Objects"

```
Command: _QSAVE
*Warning* Multiply owned object, handle "4046B7B"
*Warning* Multiply owned object, handle "4046B7A"
*Warning* Multiply owned object, handle "4046B79"
*Warning* Multiply owned object, handle "4046B7B"
*Warning* Multiply owned object, handle "4046B7A"
*Warning* Multiply owned object, handle "4046B79"
```

You may have noticed when you save your file in this chapter, that the above error messages displays. This error message basically means that multiple operations are trying to access the same objects at the same time.

#### \*What is the Warning\* Multiply Owned Objects error message?

\*Warning\* Multiply Owned Objects followed by different number i.e. "48A10" (for example) is showing that the dataset is corrupted. It basically means that multiple operations are trying to access the same objects at the same time. This handle ID is specified in the "Multiply Owned Objects " message. Please try following LISP routine to remove these objects:

1. Type in command line: (entdel (handent "handleID")) - to remove that object.

For example: if the object is "4046B7B " – then type in at the command line: **(entdel(handent "4046B7B "))**

2. Repeat the same procedure for all other multiple objects listed below:
  - o (entdel (handent "4046B7A"))
  - o (entdel (handent "4046B79"))
  - o (entdel (handent "4046B7B"))
  - o (entdel (handent "4046B7A"))
  - o (entdel (handent "4046B79"))
3. Type AUDIT and choose to fix all errors

**Warning** Please use caution when implementing this solution. The AutoLISP expression that follows simply deletes the object; it does not ask for confirmation, and it does not tell you what type of object you are deleting. For example, the object you are deleting could be an assembly constraint. Back up the file before executing this code and saving the file.

4. After deleting the object handle you can use AUDIT to check for any other potential problems with the drawing. No errors were found.

Example of what you will see at the Command Line if you choose to run this AutoLISP expression and the Audit command:

```
<Entity name: 6f1a0c30>
Command: (entdel(handent "4046B7B"))
<Entity name: 6f1a0c30>
```

```

<Entity name: 6f1a0c30>
Command: (entdel(handent "4046B7A"))
<Entity name: 6f1a0c20>

<Entity name: 6f1a0c20>
Command: (entdel(handent "4046B79"))
<Entity name: 6f1a0c10>

Command: *Cancel*
Command: (entdel(handent "4046B7B"))
<Entity name: 6f1a0c30>

<Entity name: 6f1a0c30>
Command: (entdel(handent "4046B7A"))
<Entity name: 6f1a0c20>

<Entity name: 6f1a0c20>
Command: (entdel(handent "4046B79"))
<Entity name: 6f1a0c10>

Command: AUDIT
AUDIT Fix any errors detected? [Yes No] <N>: |
    
```

5. Enter Yes

```

Pass 1 19400 objects audited
Auditing Entities Pass 2
Pass 2 19400 objects audited
Auditing Blocks
439 Blocks audited
Auditing AcDsRecords
Total errors found 9 fixed 9
Erased 0 objects
    
```

6. After you run these AutoLISP expressions and the Audit command.

```

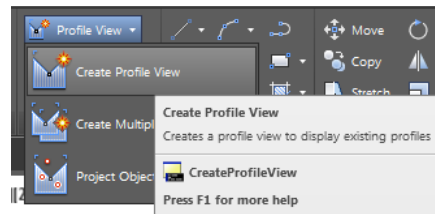
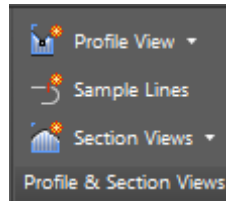
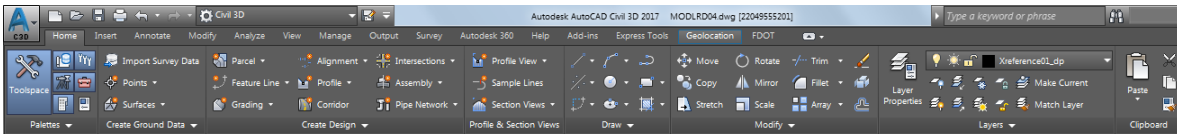
Command: AUDIT
Fix any errors detected? [Yes/No] <N>: y
Auditing Header
Auditing Tables
Auditing Entities Pass 1
Pass 1 19400 objects audited
Auditing Entities Pass 2
Pass 2 19400 objects audited
Auditing Blocks
439 Blocks audited
Auditing AcDsRecords
Total errors found 0 fixed 0
Erased 0 objects
Command:
Command:
Command: _QSAVE
    
```

7. Save your file. You should not see the **Warning\* Multiply Owned Objects** error message.

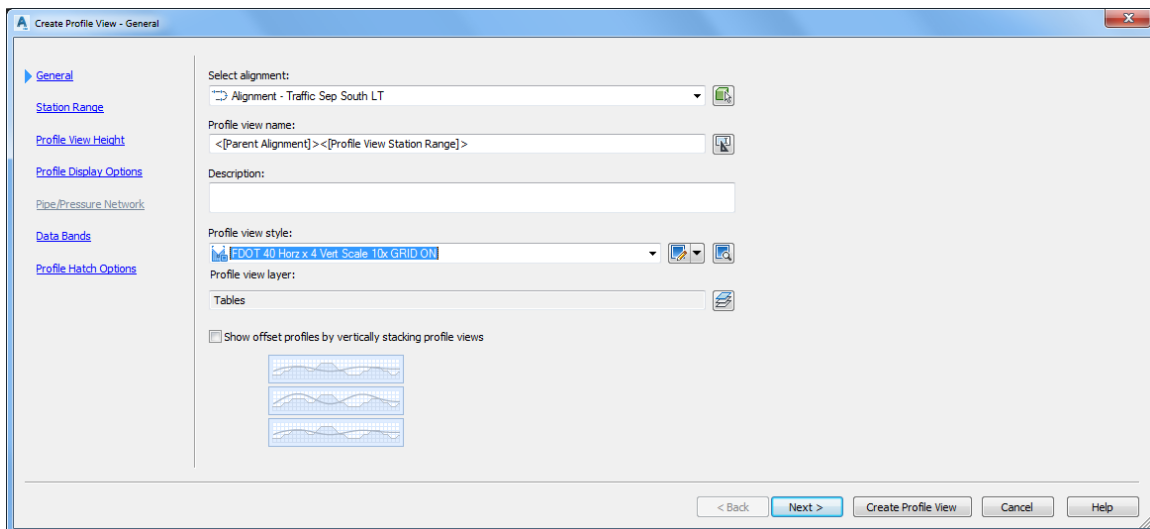
### Exercise 8.16 Create Design Profile for Alignment - Traffic Sep South LT

In this exercise you will create a Profile View for Alignment - Traffic Sep South LT and then create a design for the same alignment.

1. From the Home tab > Profile and Section Views panel > select Profile View, and then select Create Profile View command.



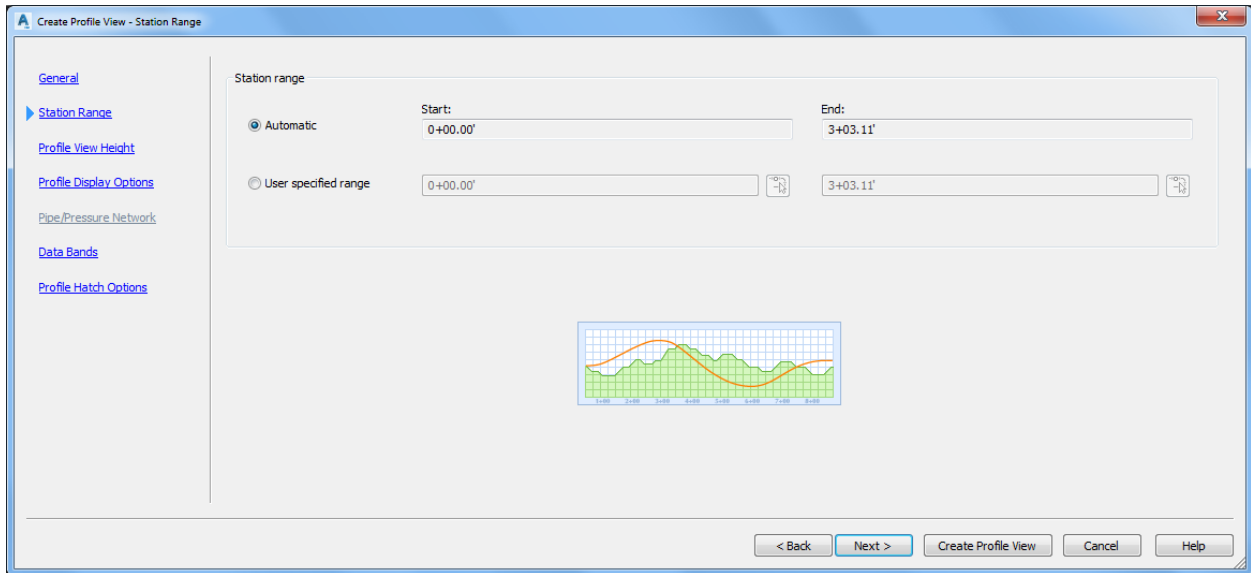
2. From the Create Profile View - General dialog, set the following values:
  - Select Alignment: Alignment - Traffic Sep South LT (Select from pull down list)
  - Profile view name: Use default value
  - Description: Leave blank
  - Profile view style: FDOT 40 Horz x 4 Vert Scale 10x GRID ON (Select from pull down list)
  - Uncheck box next to Show offset profiles by vertically stacking profile views



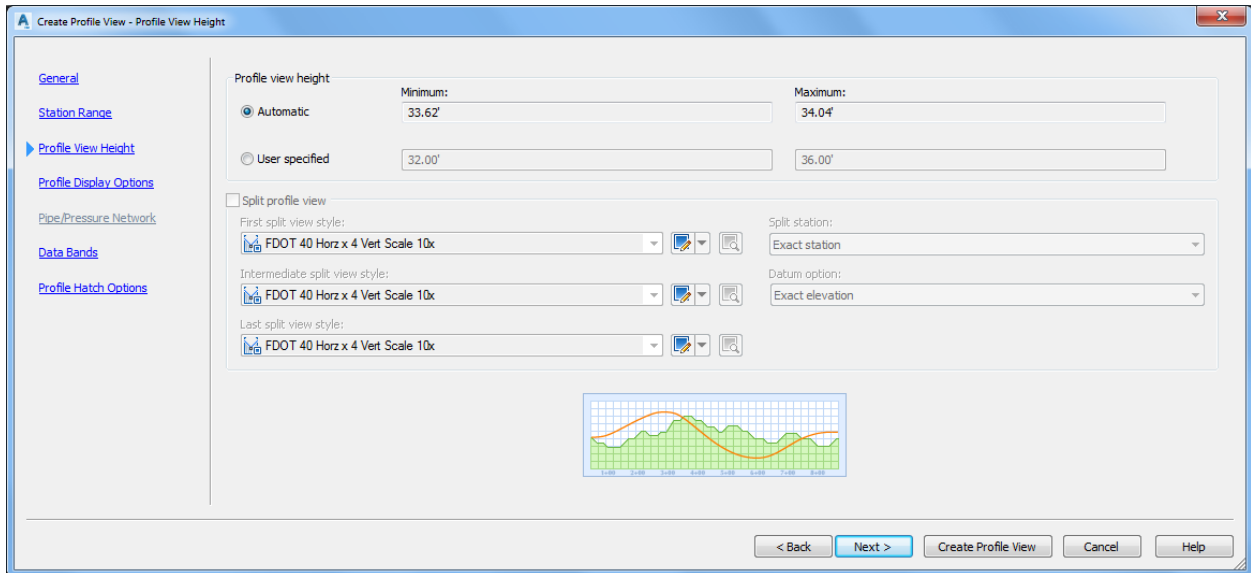
3. Click Next > to continue.



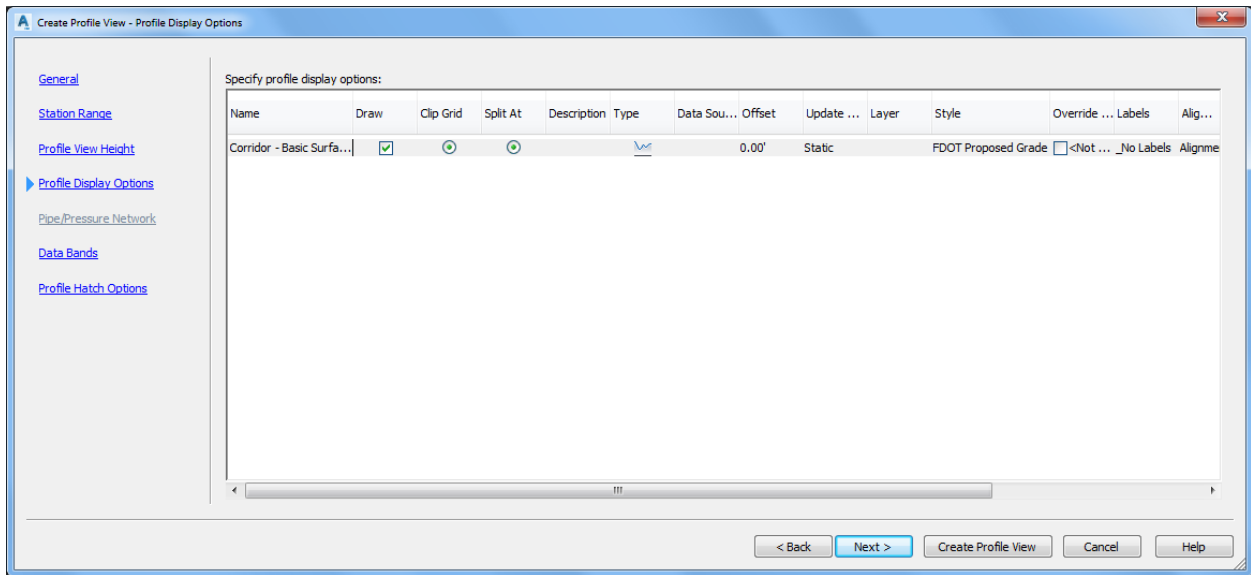
4. From the Create Station Range - General dialog, set the following values:
  - o Station range: Select Automatic



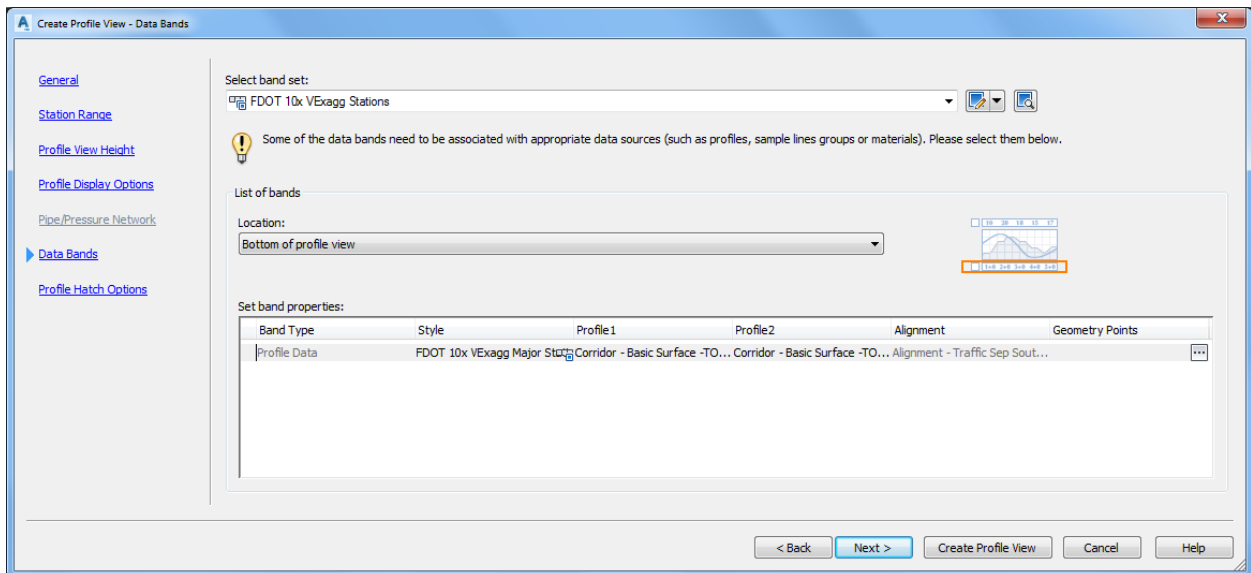
5. Click Next > to continue.
6. From the Create Profile View - Profile View Height dialog, use default values. Click Next > to continue.



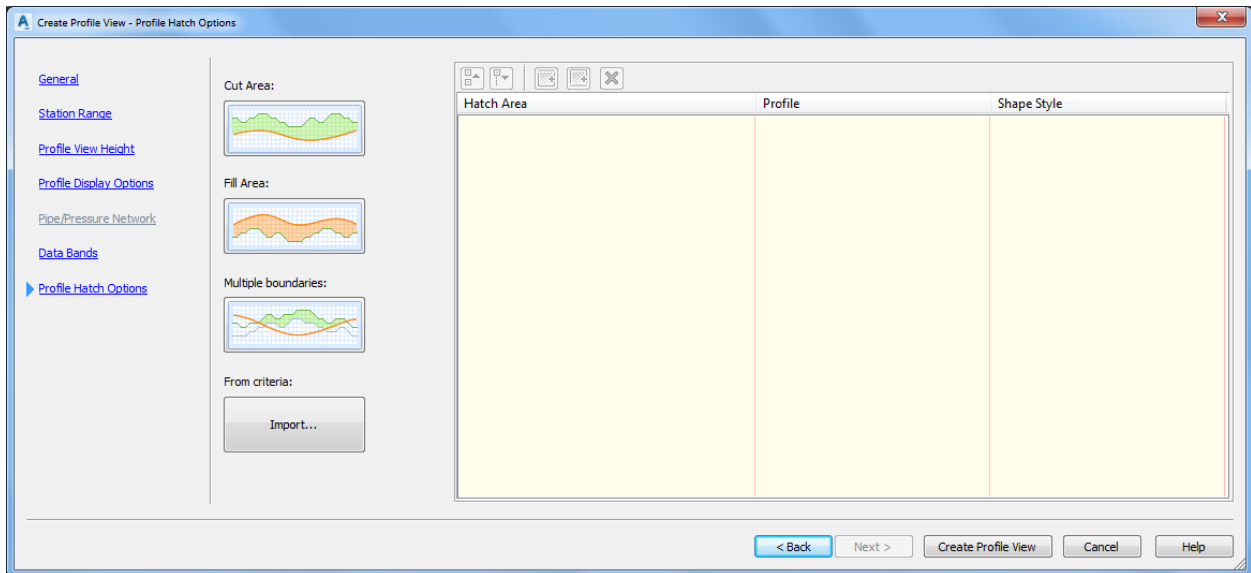
7. From the Create Profile View - Profile Display Options dialog, use default values. Click Next > to continue.



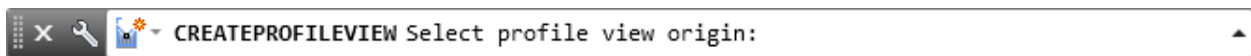
8. From the Create Profile View - Data Bands dialog, use default values. Click Next > to continue.



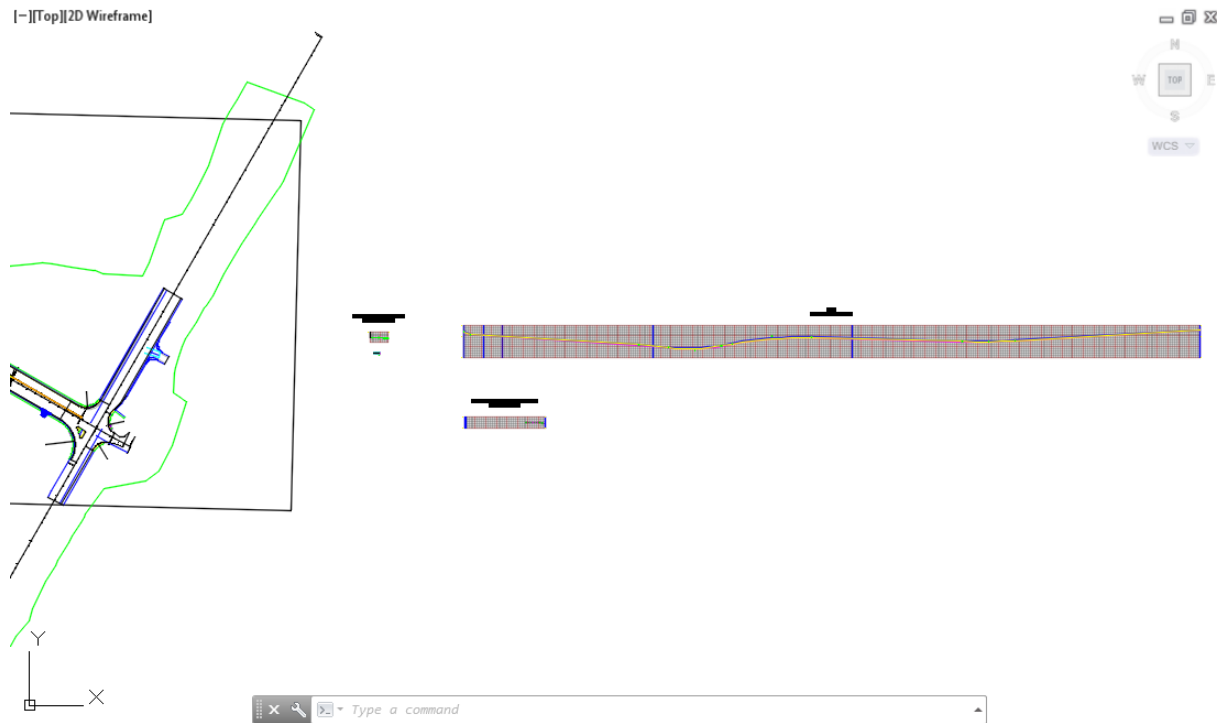
- From the Create Profile View - Profile Hatch Options dialog, do nothing. Click Create Profile View to continue.



- The command line prompts you to Select profile view origin:



- Select a point for the Profile View in an area Below the SR61 Profile View away from the plan geometry.

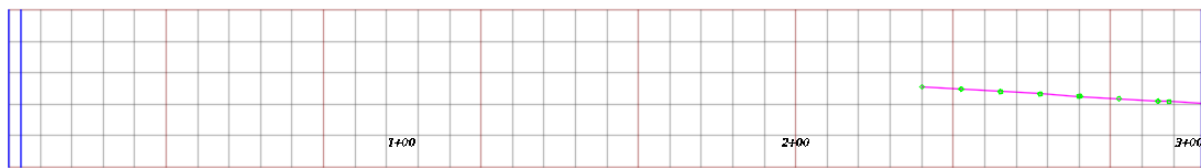


- Use Zoom and Pan commands to display the Alignment - Traffic Sep South LT 0+00.00 - 3+03.11 Profile View.

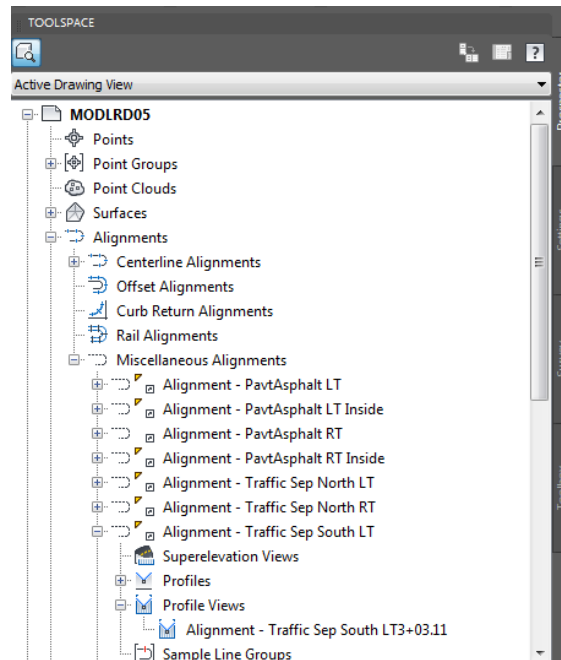
[Top] 2D Wireframe



## Alignment - Traffic Sep South LT 0+00.00-3+03.11



- From TOOLSPACE > Prospector tab, expand Alignments, expand Miscellaneous Alignments, expand Alignment - Traffic Sep South LT, then expand Profile Views, The new Profile View Alignment - Traffic Sep South LT 0+00.00 - 3+03.11 is displayed.



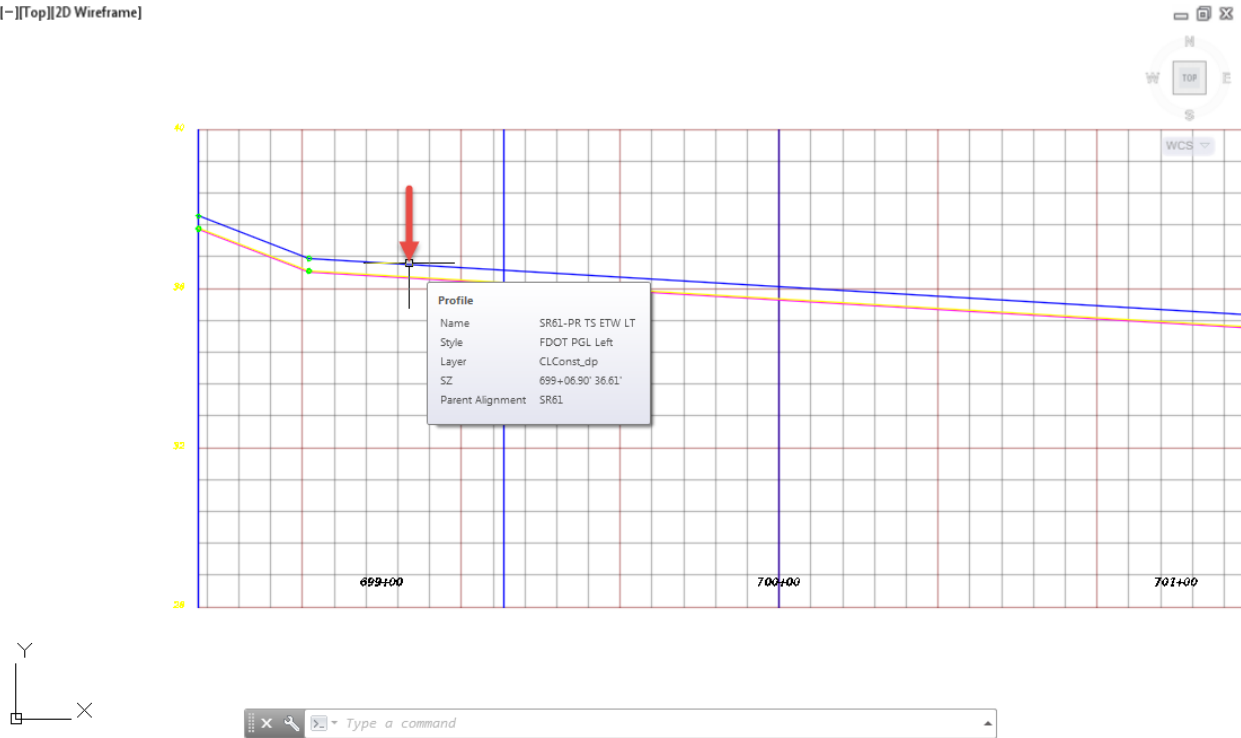
- Save your file before continuing.

### Exercise 8.17 Superimpose Profile from SR61 onto the Profile View Alignment - Traffic Sep South LT

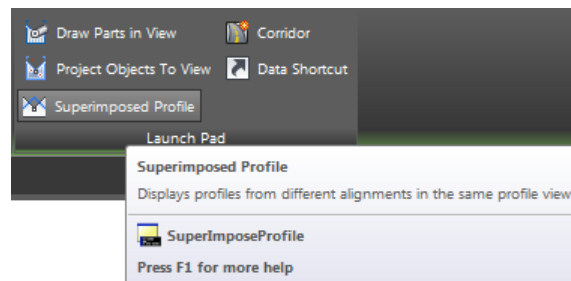
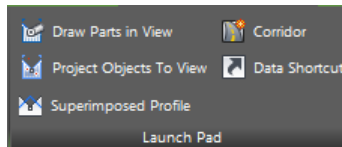
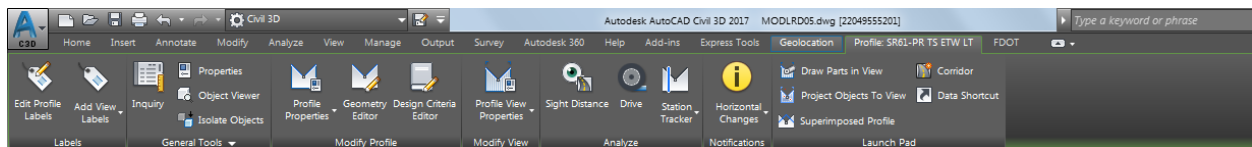
In this exercise you will superimpose the SR61 - PR TS ETW LT Profile from SR61 Profile View onto the Profile View Alignment - Traffic Sep South LT.

1. From the SR61 Profile View, select the SR61 - PR TS ETW LT profile, use the red arrow as a reference.

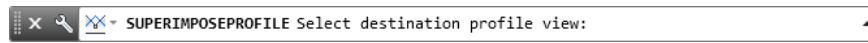
[ - ] [Top] [2D Wireframe]



2. The Profile: SR61 - PR TS ETW LT tab displayed in the Ribbon. From the Lanch Pad panel, Select Superimposed Profile.



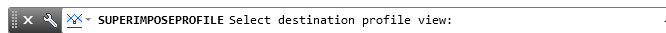
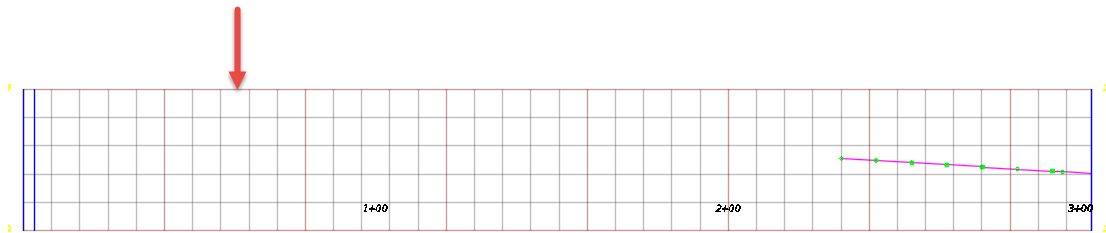
3. The command line prompts you to Select destination profile view:



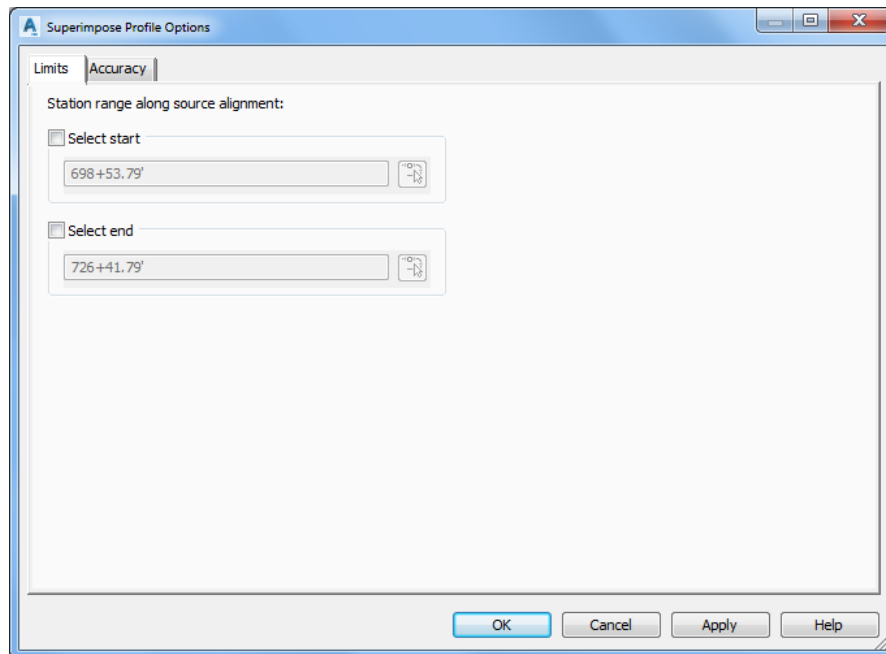
4. Use Zoom and Pan commands to display to the Profile View Alignment - Traffic Sep South LT. then select the Profile View Alignment - Traffic Sep South LT, use the red arrow as a reference.

[--][Top][2D Wireframe]

*Alignment - Traffic Sep South LT  
0+00.00-3+03.11*



5. From the Superimpose Profile Options dialog, to avoid producing a zero length profile, use the default settings. Click OK to continue and to close the Superimpose Profile Options dialog.

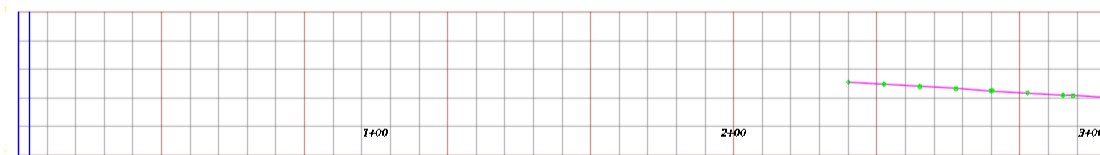


- The superimposed profile does not display because the SR61 profile contains no PVI's within the station range of the Alignment - Traffic Sep South LT. To have the superimposed profile display in the Profile View Alignment - Traffic Sep South LT, you can insert PVI's in Profile SR61-PR TS ETW LT adjacent to Alignment - Traffic Sep South LT.

[Top] 2D Wireframe



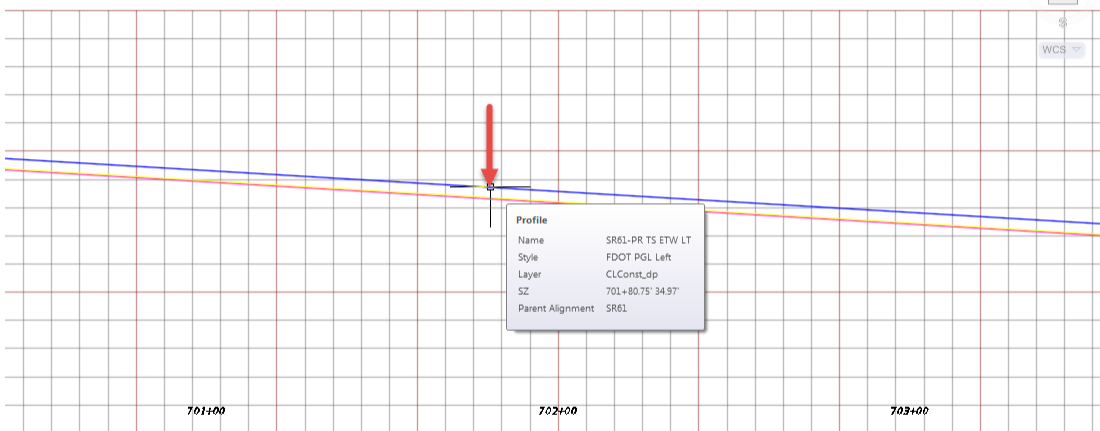
## Alignment - Traffic Sep South LT 0+00.00-3+03.11



Type a command

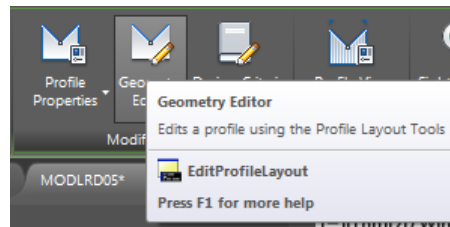
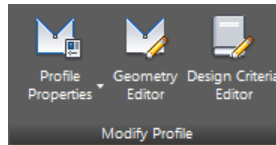
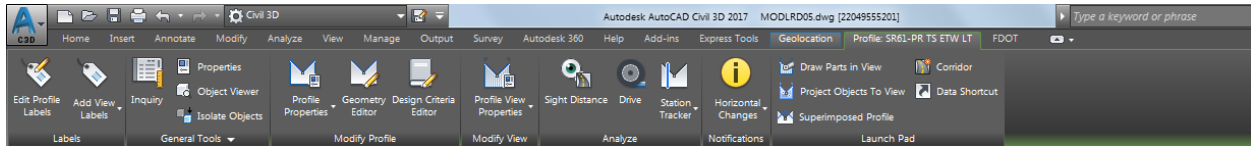
- Use Zoom and Pan commands to display to the Profile View SR61. then select the Profile SR61-PR TS ETW LT, use the red arrow as a reference.

[Top] 2D Wireframe

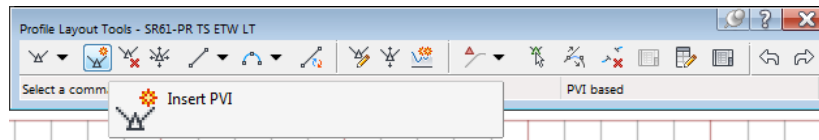


Type a command

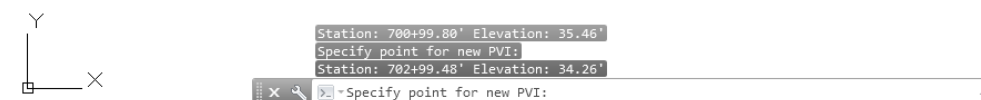
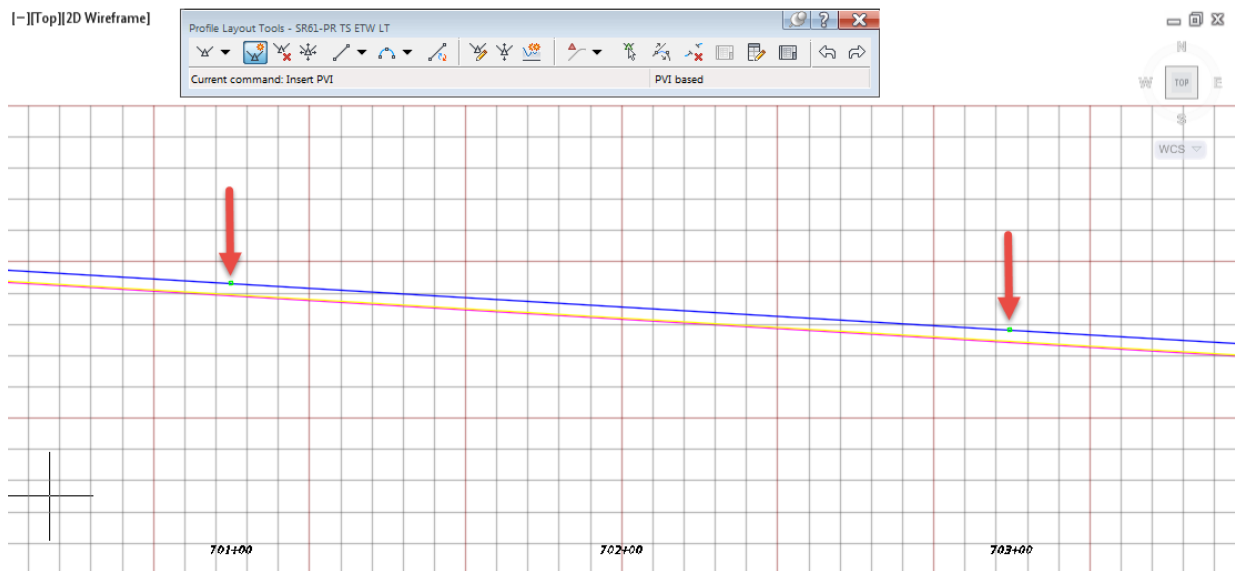
- The Profile: SR61 - PR TS ETW LT tab displayed in the Ribbon. From the Modify Profile Panel , select Geometry Editor.



- From the Profile Layout Tools - SR61 -PR TS ETW LT toolbar, select Insert PVI to insert PVI's adjacent to Alignment - Traffic Sep South LT.

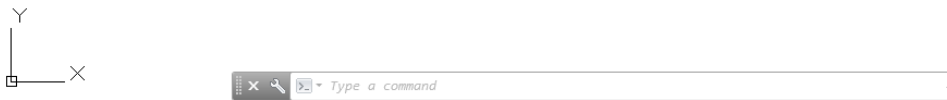
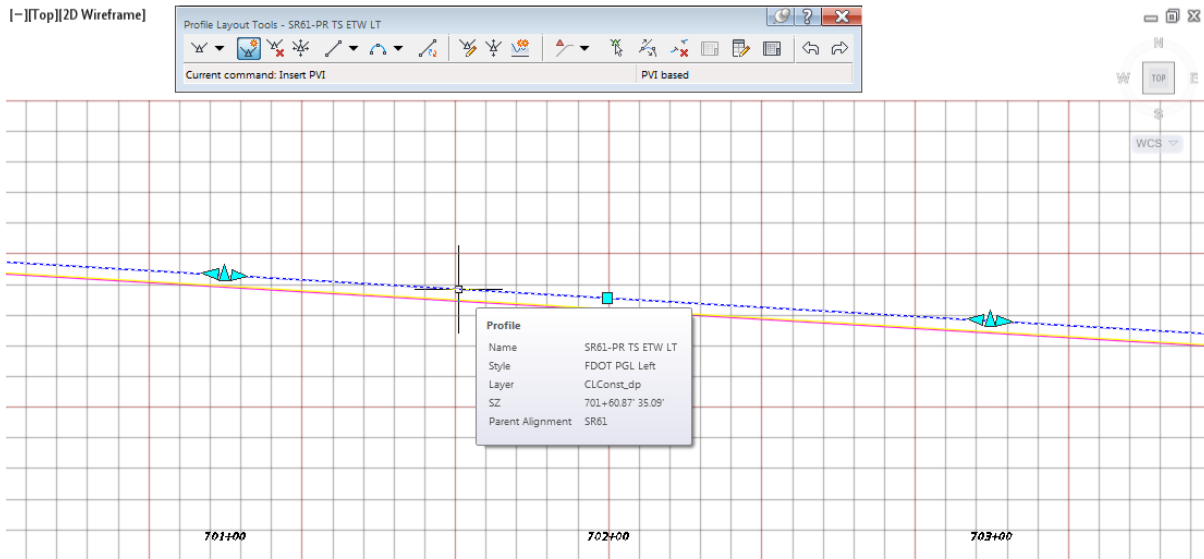


- Select points near Station 701+00 and Station 703+00.

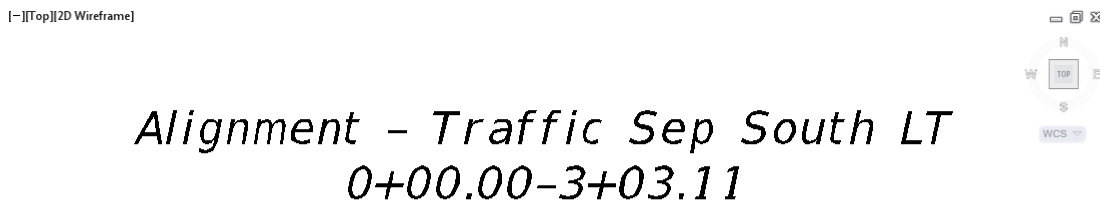




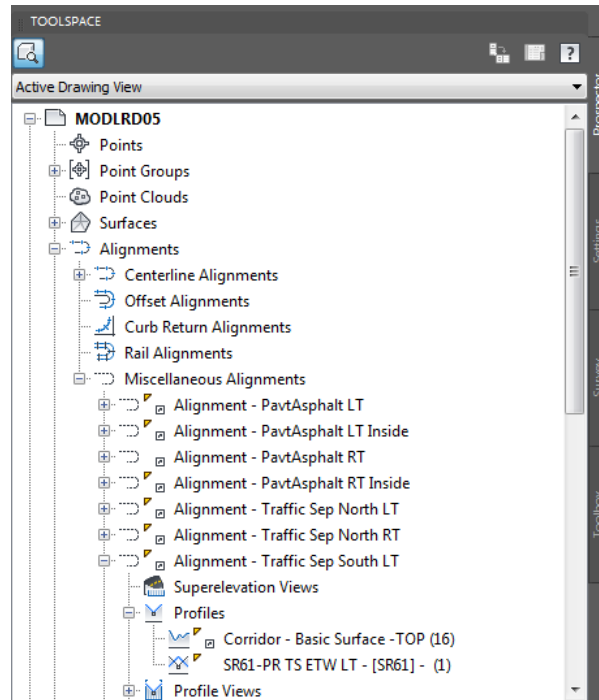
11. Press Enter to end the command.
12. Select the Profile SR61 -PR TS ETW LT to display the grips near the added PVI's.



13. Press ESC to clear grips.
14. Close the Profile Layout Tools - SR61 -PR TS ETW LT toolbar
15. Use Zoom and Pan commands to display the Profile View Alignment - Traffic Sep South LT. The superimposed profile is now displayed.



- From TOOLSPACE > Prospector tab, expand Alignments, expand Miscellaneous Alignments, expand Alignment - Traffic Sep South LT, then expand Profile. The superimposed profile named SR61-PR TS ETW LT - [SR61] - (1) is displayed.

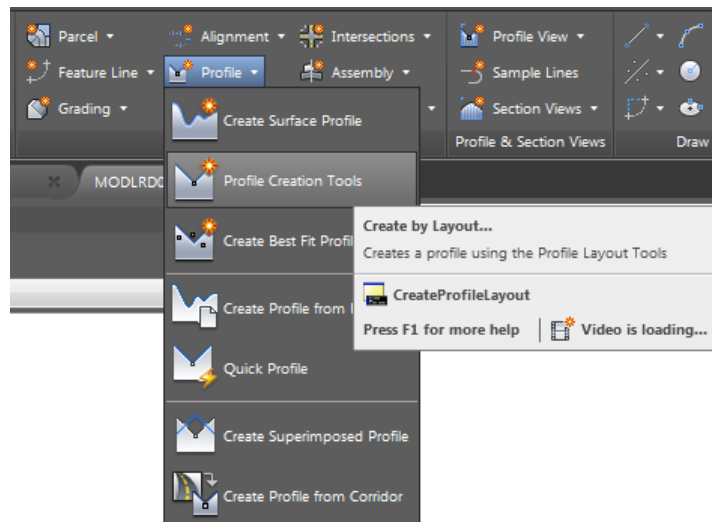
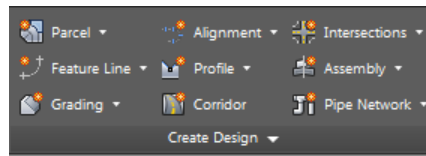
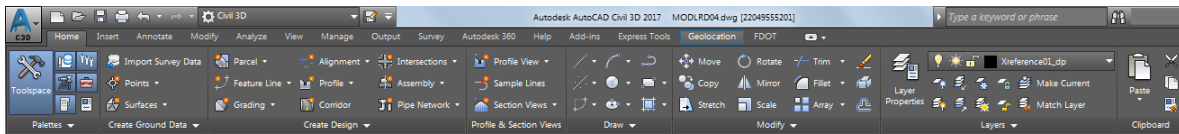


- Save** your file before continuing.

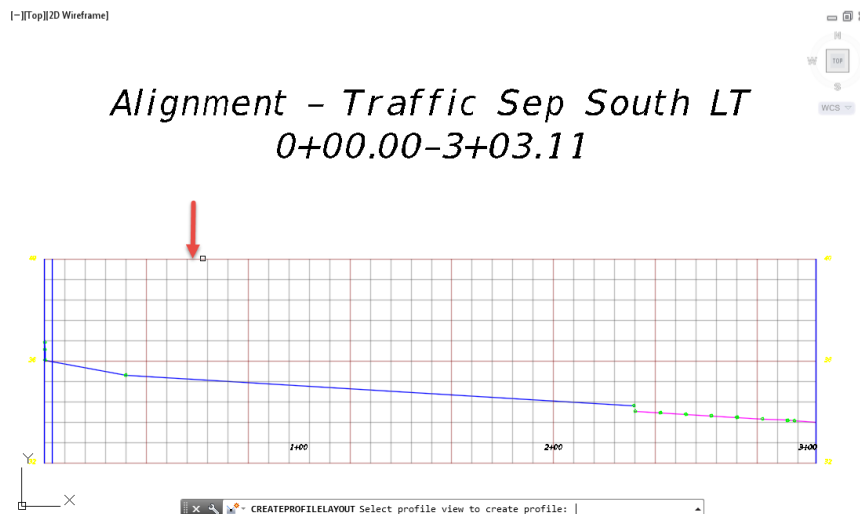
### Exercise 8.18 Create Design (Layout) Profile PGL TS South LT

This exercise you will learn how to control the number of vertices in the profile in case you want to reduce the number of vertices or maintain an exact slope along a single tangent rather than the multiple segments created by the Superimpose Profile command. This design profile will enable you to extend the profile along the full length of the alignment so there are no gaps in elevation data required by the traffic separator corridor model.

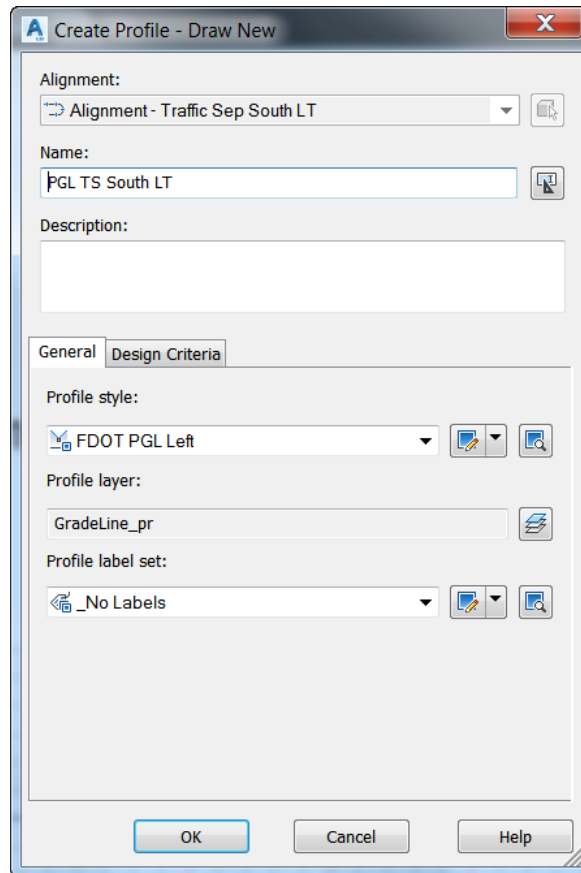
1. From the Home tab > Create Design panel > select Profile, and then select Profile Creation Tools command.



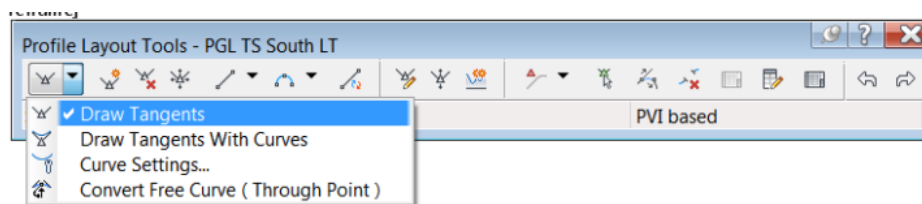
2. The command line prompts you to Select profile view to create profile, select the Profile View Alignment - Traffic Sep South LT, use the red arrow as a reference.



3. From the Create Profile - Draw New dialog, use these values:
  - Alignment: Alignment -Traffic Sep South LT (Pre-Set)
  - Name: PGL TS South LT
  - Profile Style: FDOT PGL Left (Select from list)
  - Profile Layer: Gradeline\_pr (Default layer)
  - Profile label set: \_No Labels (Select from list)

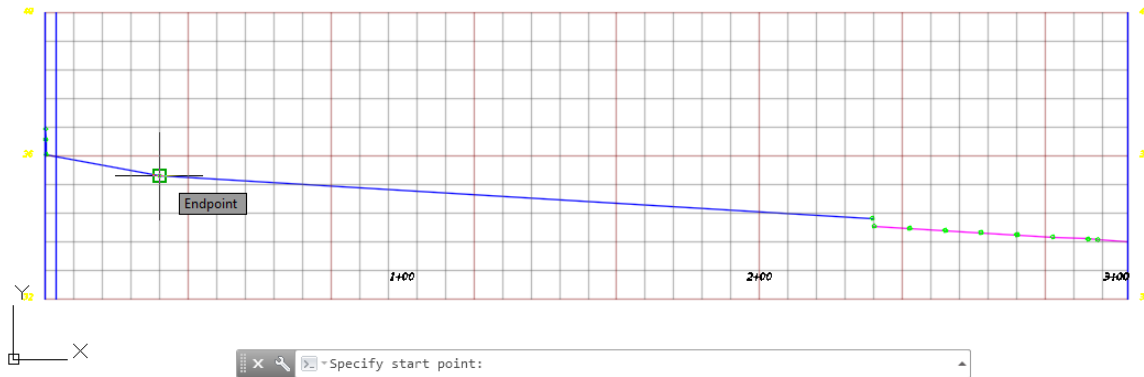


4. Click OK to continue and to close the Create Profile - Draw New dialog.
5. From the Profile Layout Tools - PGL TS South LT toolbar, select Draw Tangents.



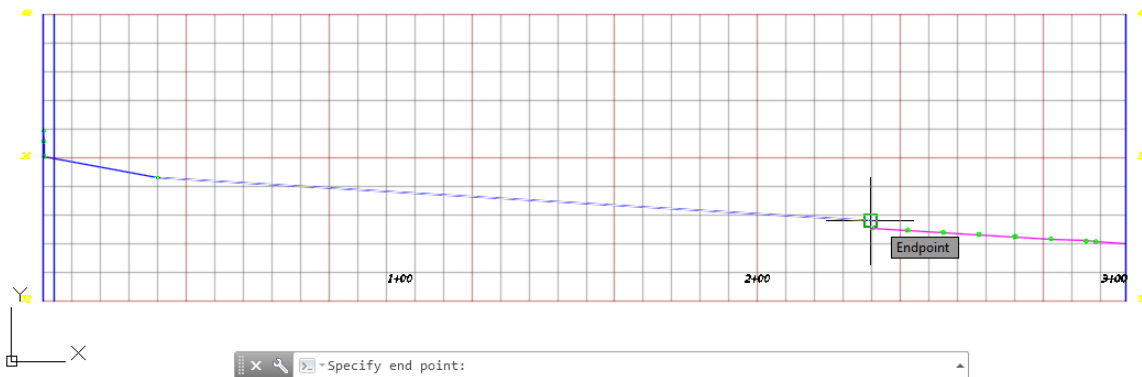
- The command line prompts you to Specify start point. Select using an Endpoint osnap on the superimposed profile near Station 0+32.00.

## Alignment - Traffic Sep South LT 0+00.00-3+03.11

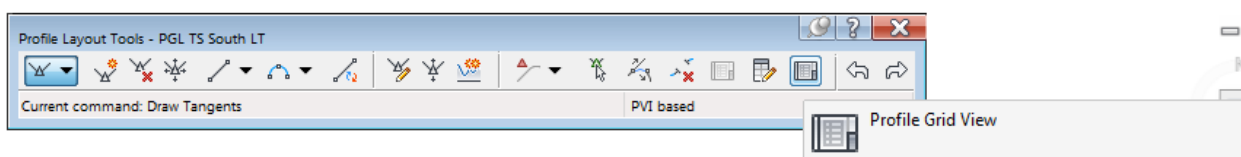


- The command line prompts you to Specify end point. Select using an Endpoint osnap on the superimposed profile near Station 2+32.00.

## Alignment - Traffic Sep South LT 0+00.00-3+03.11



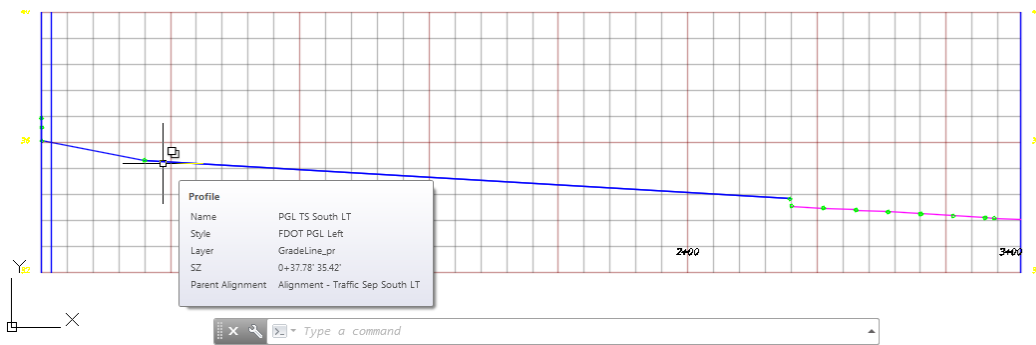
- From the Profile Layout Tools - PGL TS South LT toolbar, select Profile Grid View.



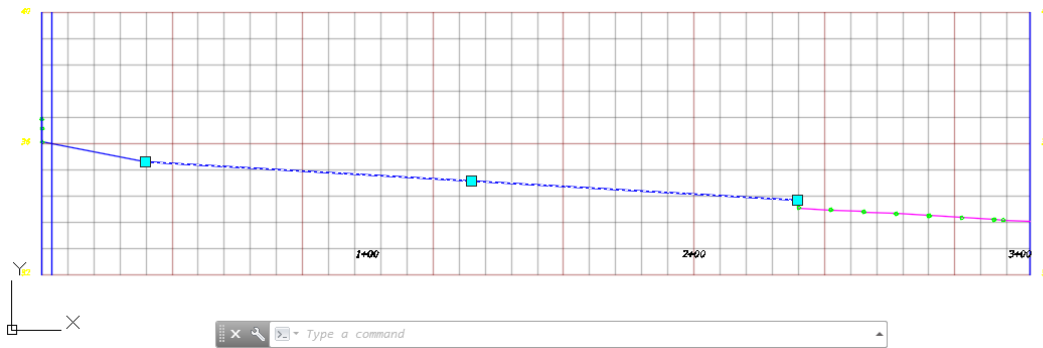
- Use Grips to change the extent of the design profile to maintain the slope along the entire length of the alignment

No.	PVI Station	PVI Elevation	Grade In	Grade Out	A (Grade Change)
1	0+31.92'	35.46'		-0.60%	
2	2+31.60'	34.26'	-0.60%		

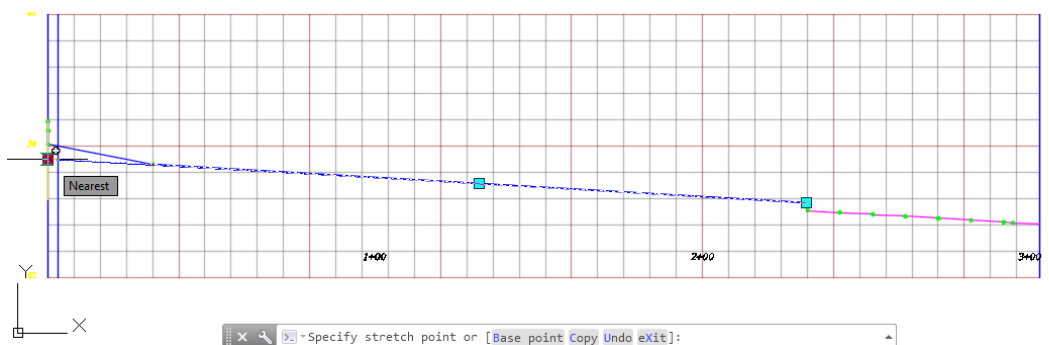
- Hover over the Profile PGL TS South LT to view the tool tip.



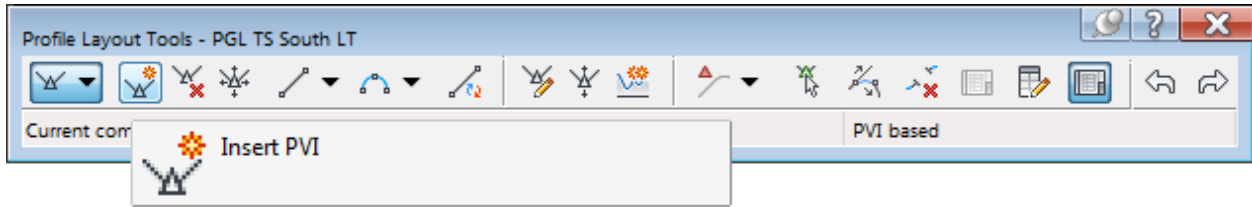
- Select the Profile PGL TS South LT to display the grips.



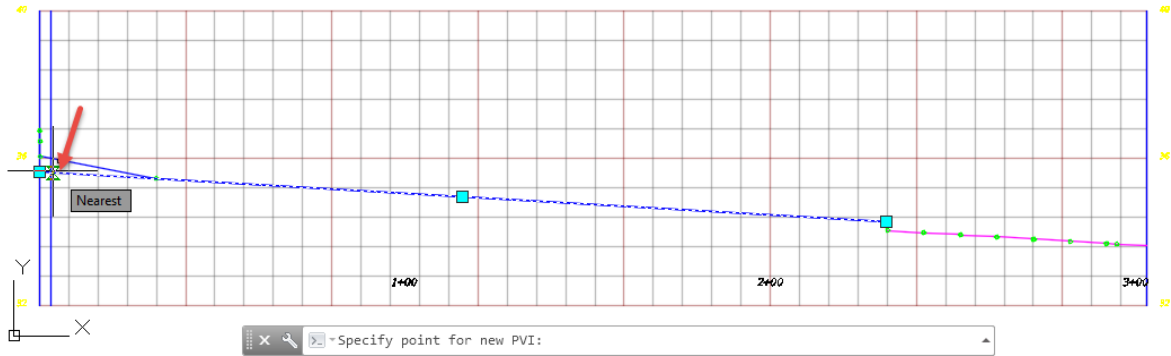
- Select the beginning grip vertex, move it to the beginning grid line representing the starting station of the alignment using the NEAREST osnap.



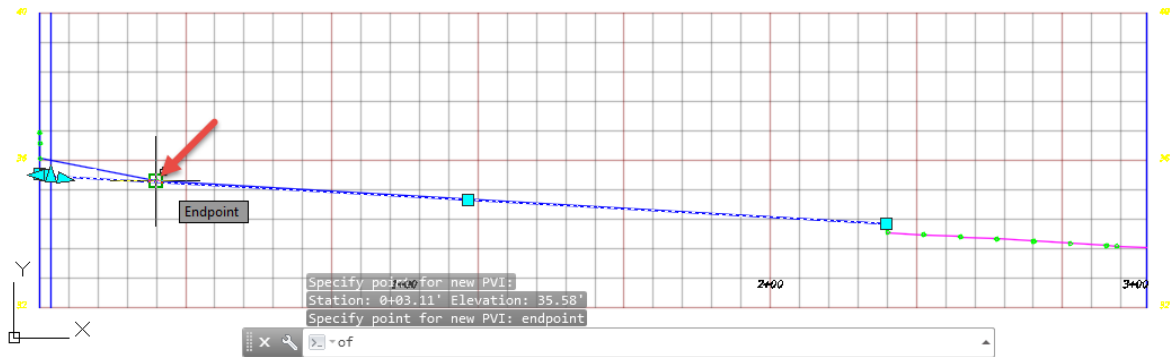
13. From the Profile Layout Tools - PGL TS South LT toolbar, select Insert PVI.



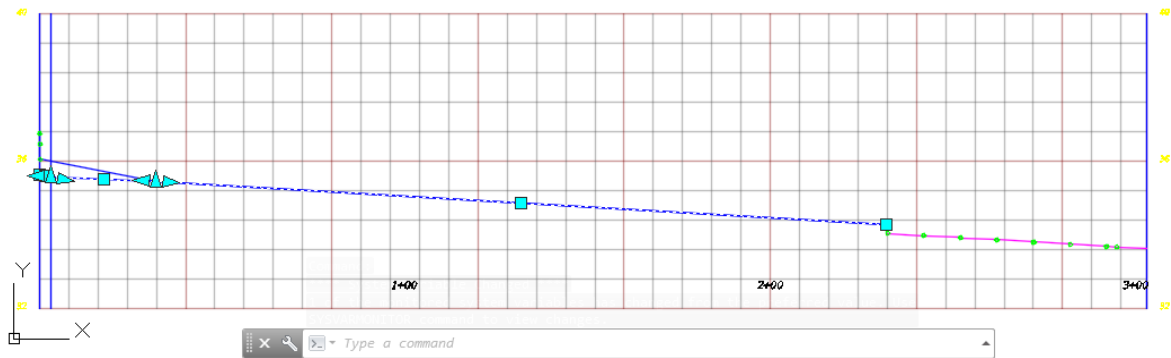
14. Select the PT represented by a blue vertical line using a NEAREST osnap



15. Select using a ENDPOINT osnap on the superimposed profile, use red arrows as a reference



16. Press Enter to end command.



- From the Profile Grid View, edit the Grade In value to -0.59% to make the grade begin at the PT of the curve on the alignment

No.	PVI Station	PVI Elevation	Grade In	Grade Out	A (Grade Change)
1	0+00.00'	35.64'		-0.59%	
2	0+03.11'	35.62'	-0.59%	-0.59%	0.00%
3	0+32.35'	35.45'	-0.59%	-0.59%	0.00%
4	3+03.11'	33.84'	-0.59%		

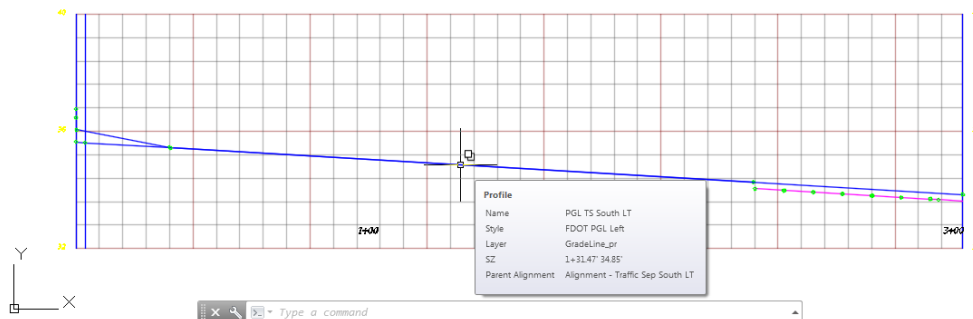
- From the Profile Grid View, change the last PVI Station to match the ending station value 3+03.11 and change the Grade In to -0.59%.

No.	PVI Station	PVI Elevation	Grade In	Grade Out	A (Grade Change)
1	0+00.00'	35.64'		-0.59%	
2	0+03.11'	35.62'	-0.59%	-0.59%	0.00%
3	0+32.35'	35.45'	-0.59%	-0.59%	0.00%
4	3+03.11'	33.84'	-0.59%		

- From the Profile Grid View, set all other PVI Stations, PVI Elevations, Grade In, Grade Out values, to match the above values.
- Close the Profile Grid View.
- Close the Profile Layout Tools - PGL TS South LT toolbar.
- Results of creating Profile PGL TS South LT.

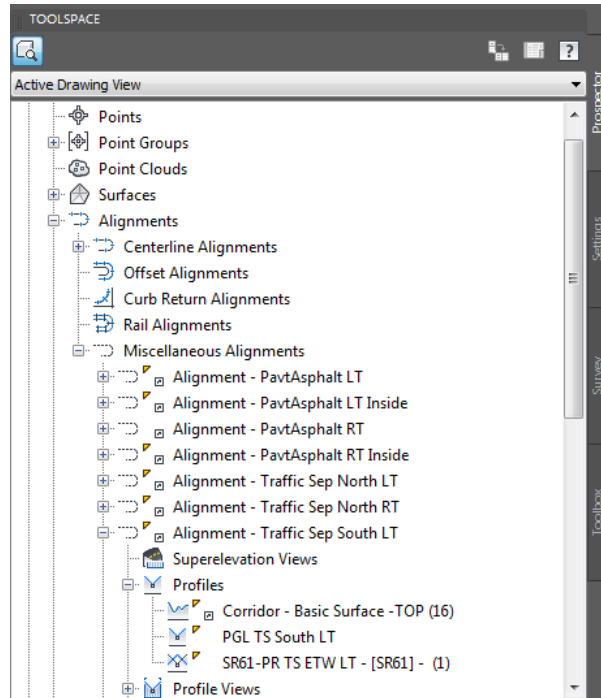
[--][Top]2D Wireframe

## Alignment - Traffic Sep South LT 0+00.00-3+03.11





23. From TOOLSPACE > Prospector tab, expand Alignments, expand Miscellaneous Alignments, expand Alignment - Traffic Sep South LT, then expand Profile. The new Profile PGL TS South LT is displayed.

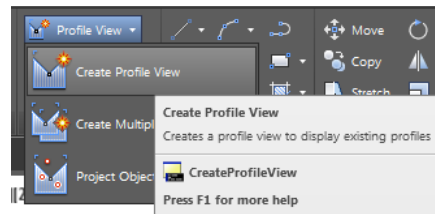
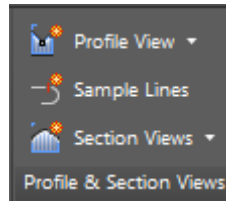
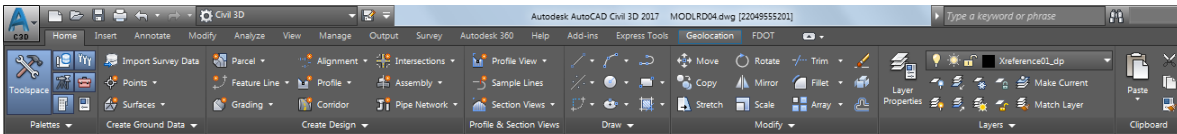


24. **Save** your file before continuing.

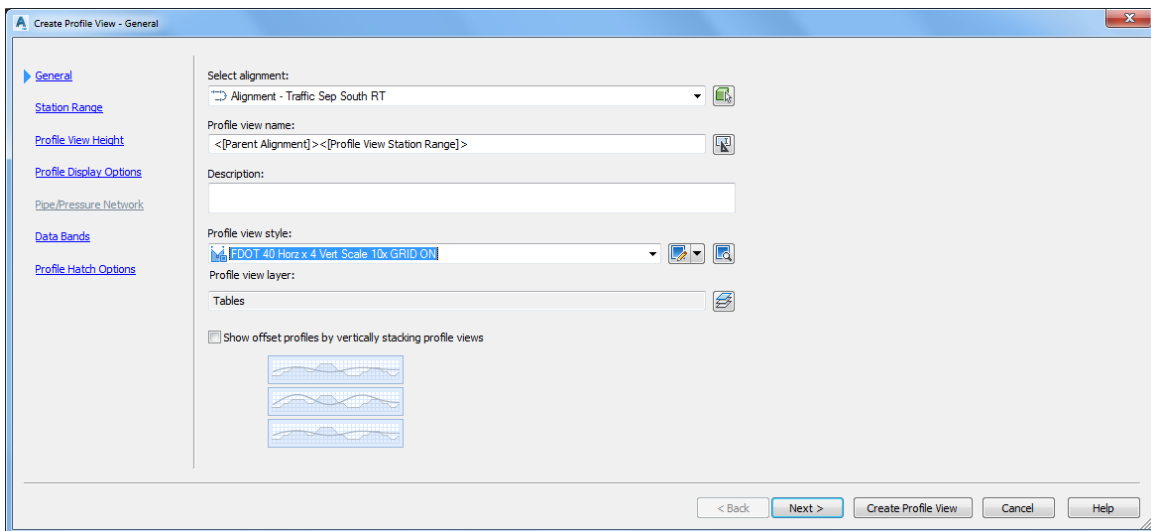
### Exercise 8.19 Create Design Profile for Alignment - Traffic Sep South RT

In this exercise you will create the Design Profile for Alignment - Traffic Sep South RT following the same process described for Alignment - Traffic Sep South LT.

1. From the Home tab > Profile and Section Views panel > select Profile View, and then select Create Profile View command.

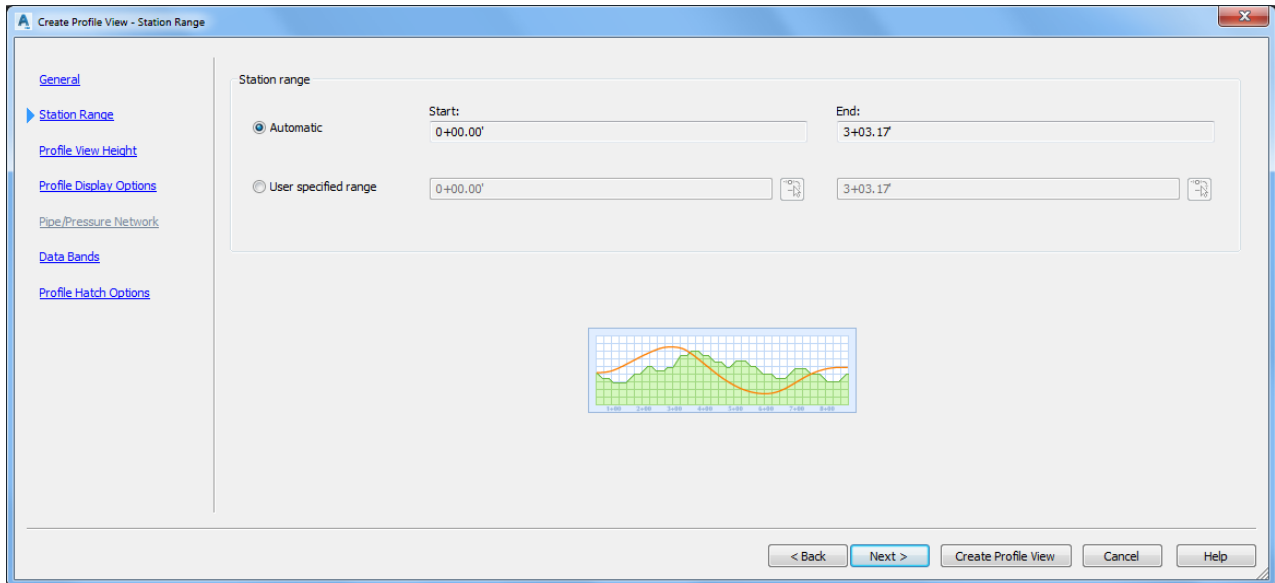


2. From the Create Profile View - General dialog, set the following values:
  - Select Alignment: Alignment - Traffic Sep South RT (Select from pull down list)
  - Profile view name: Use default value
  - Description: Leave blank
  - Profile view style: FDOT 40 Horz x 4 Vert Scale 10x GRID ON (Select from pull down list)
  - Uncheck box next to Show offset profiles by vertically stacking profile views

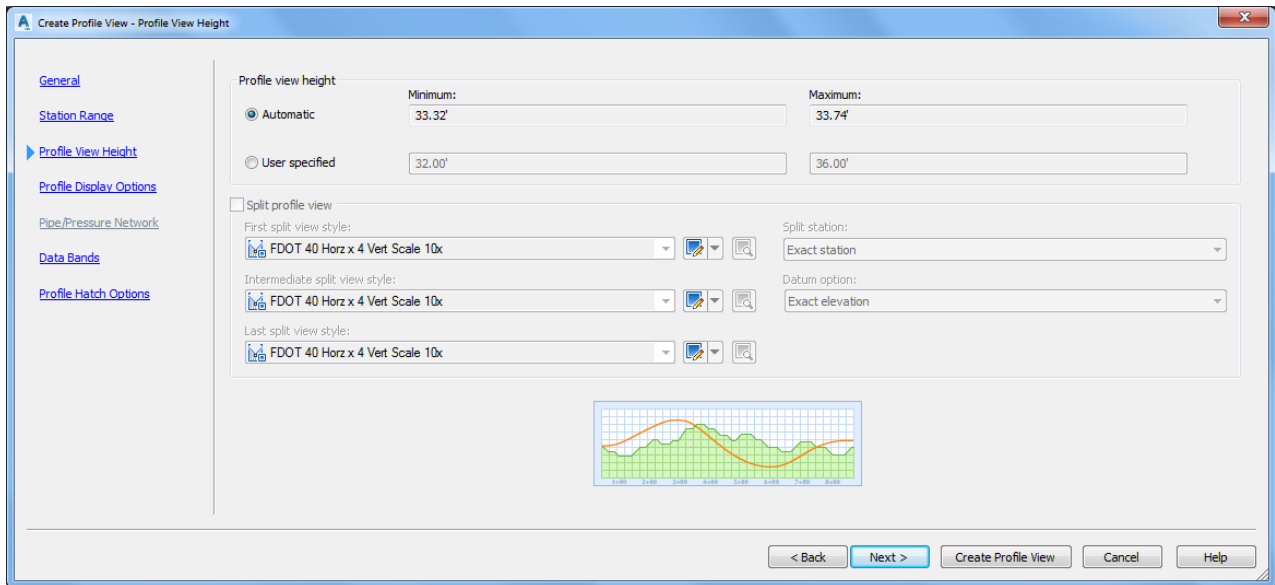


3. Click Next > to continue.

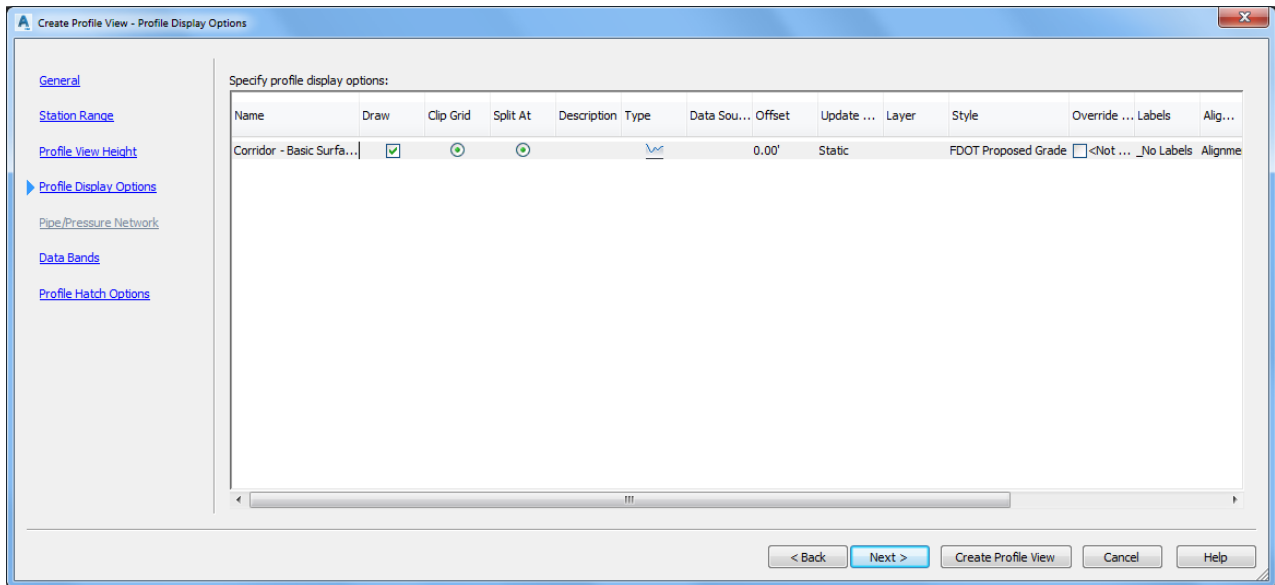
4. From the Create Profile View - Station Range dialog, set the following values:
  - o Station range: Select Automatic



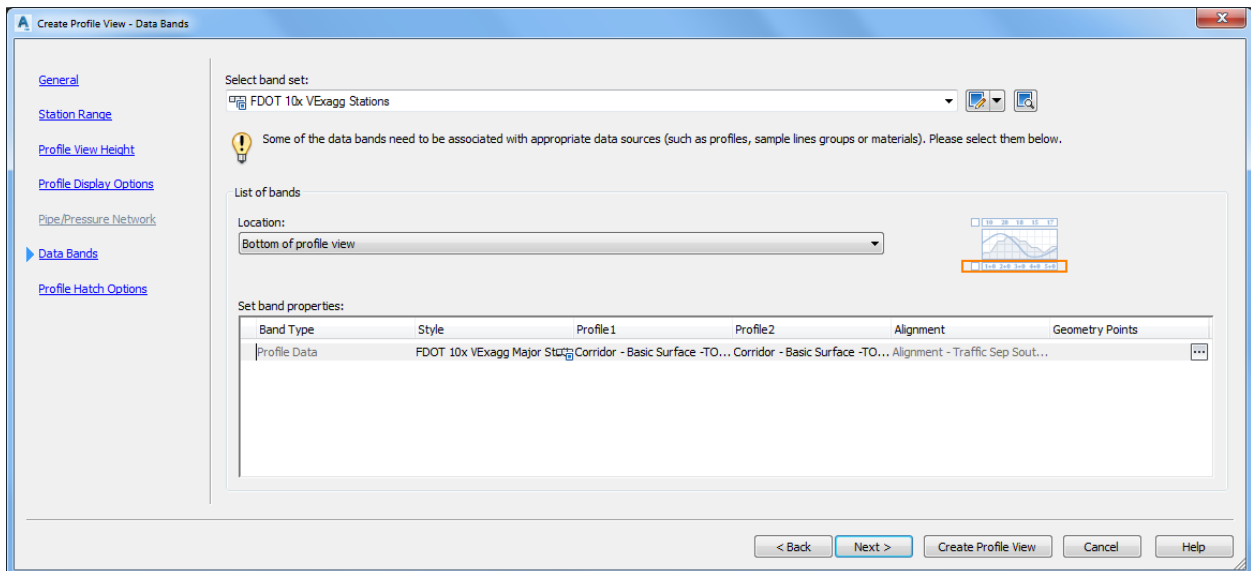
5. Click Next > to continue.
6. From the Create Profile View - Profile View Height dialog, use default values. Click Next > to continue.



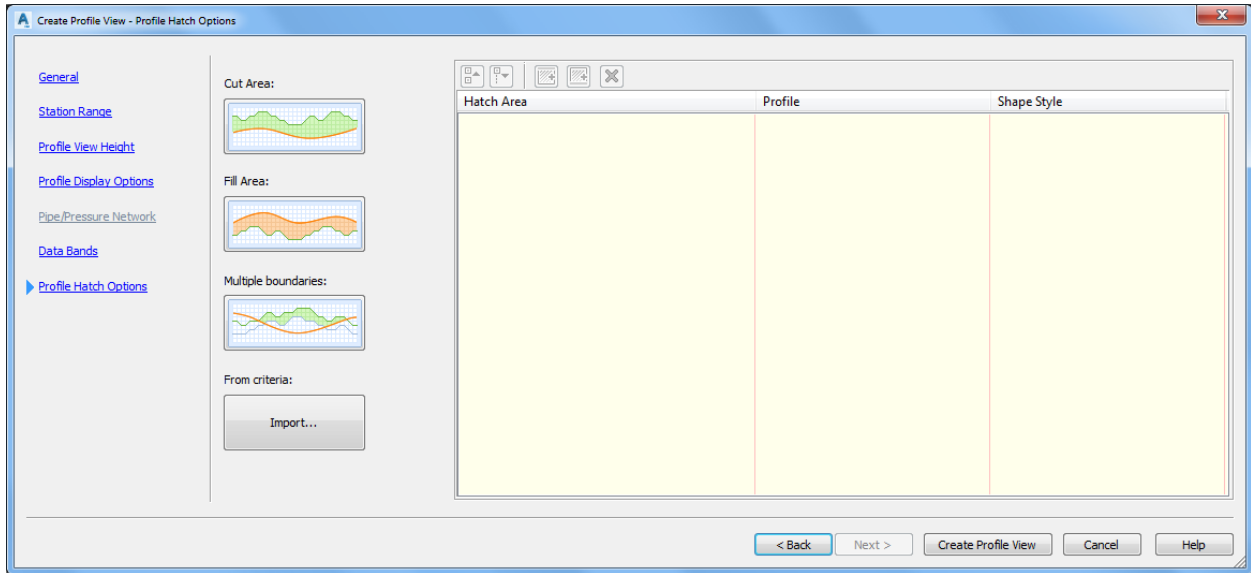
7. From the Create Profile View - Profile Display Options dialog, use default values. Click Next > to continue.



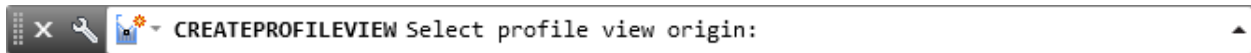
8. From the Create Profile View - Data Bands dialog, use default values. Click Next > to continue.



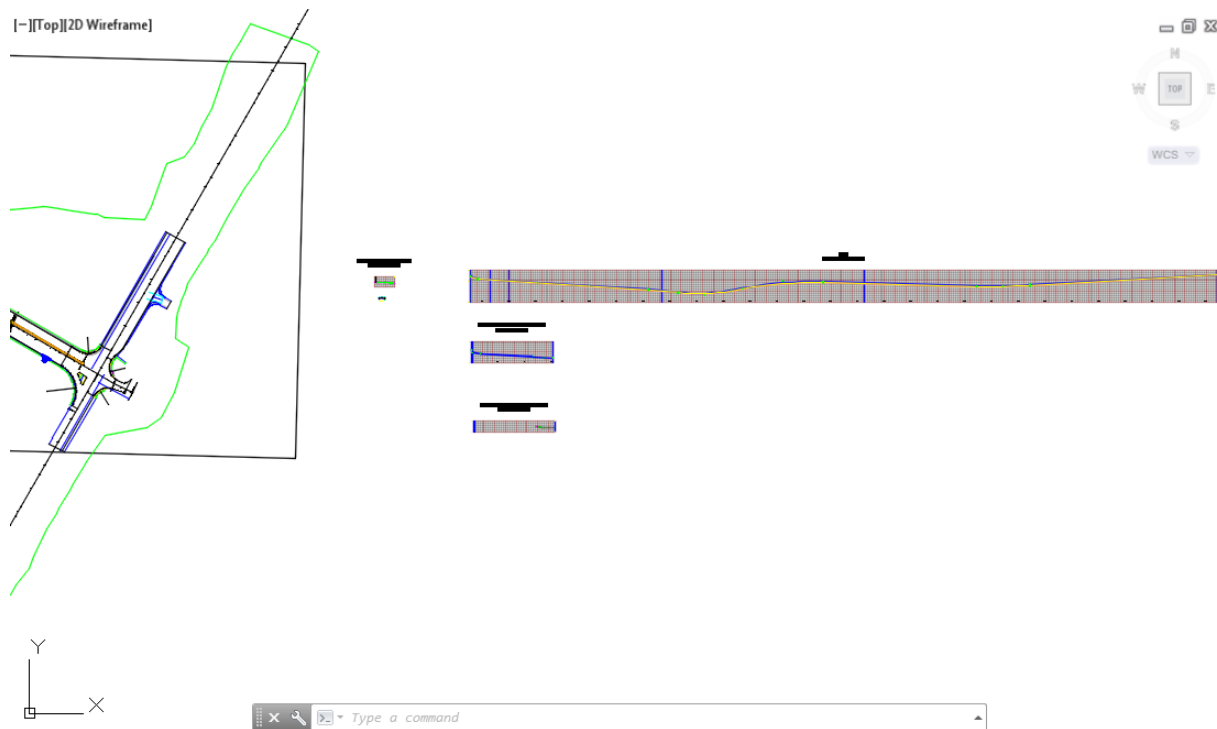
- From the Create Profile View - Profile Hatch Options dialog, do nothing. Click Create Profile View to continue.



- The command line prompts you to Select profile view origin:



- Select a point for the Profile View in an area below the Alignment - Traffic Sep South LT Profile View away from the plan geometry.

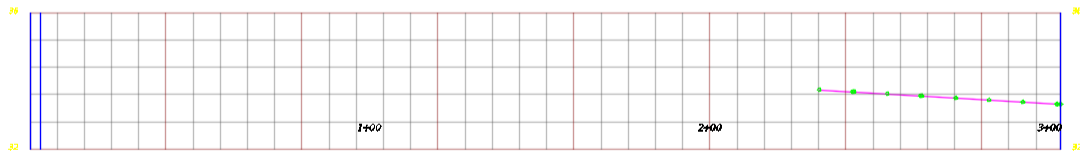


- Use Zoom and Pan commands to display Alignment - Traffic Sep South RT 0+00.00 - 3+03.17 Profile View.

[--][Top][2D Wireframe]

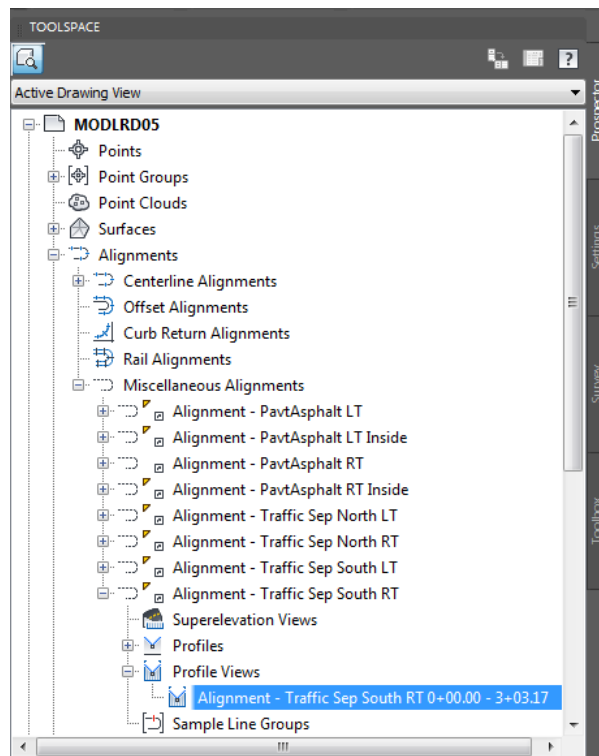


## Alignment - Traffic Sep South RT 0+00.00-3+03.17



Command line: Type a command

- From TOOLSPACE > Prospector tab, expand Alignments, expand Miscellaneous Alignments, expand Alignment - Traffic Sep South LT, then expand Profile Views, The new Profile View Alignment - Traffic Sep South RT 0+00.00 - 3+03.17 is displayed.



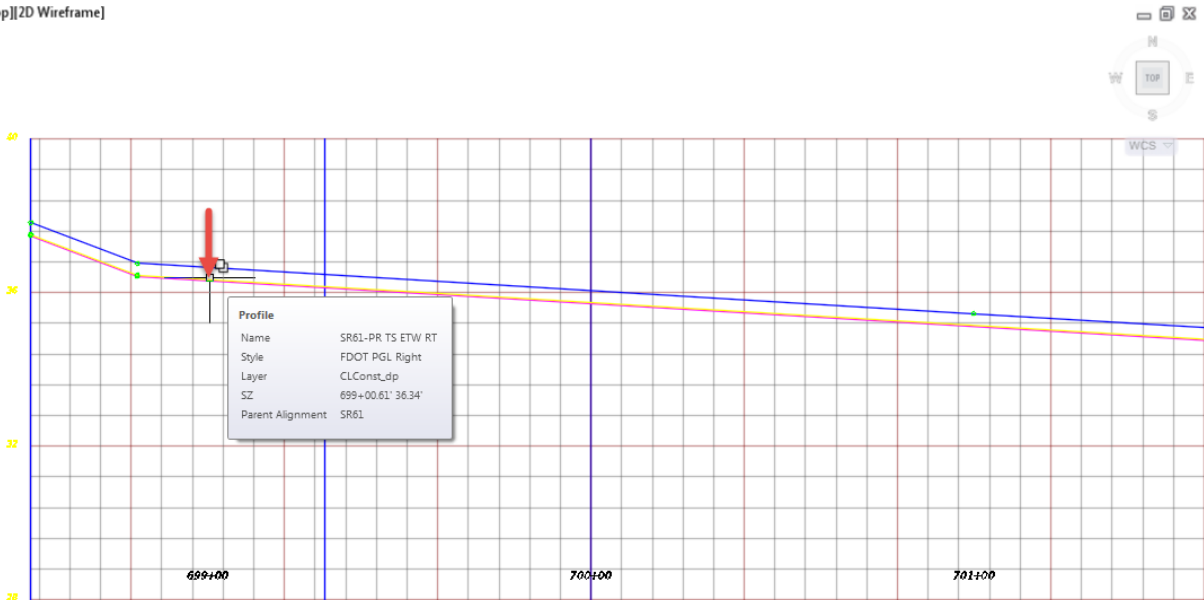
- Save your file before continuing.

### Exercise 8.20 Superimpose Profile from SR61 onto the Profile View Alignment - Traffic Sep South LT

In this exercise you will superimpose the SR61 - PR TS ETW RT Profile from SR61 Profile View onto the Profile View Alignment - Traffic Sep South RT.

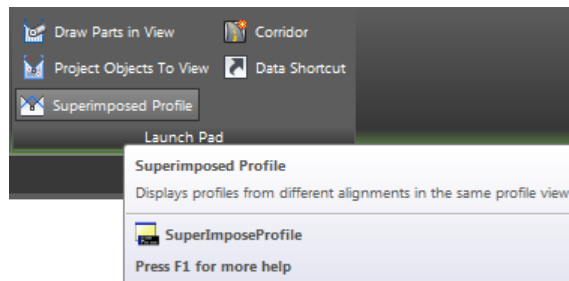
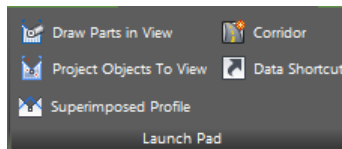
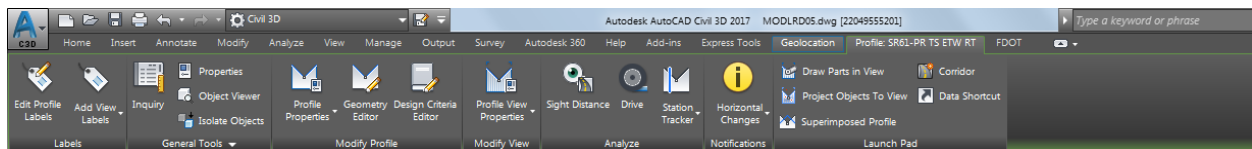
1. From the SR61 Profile View, select the SR61 - PR TS ETW RT profile, use the red arrow as a reference.

[Top] 2D Wireframe

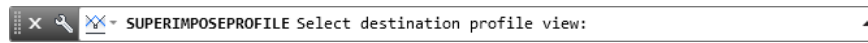


Type a command

2. The Profile: SR61 - PR TS ETW RT tab displayed in the Ribbon. From the Launch Pad panel, Superimposed Profile.



3. The command line prompts you to Select destination profile view:

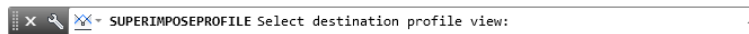
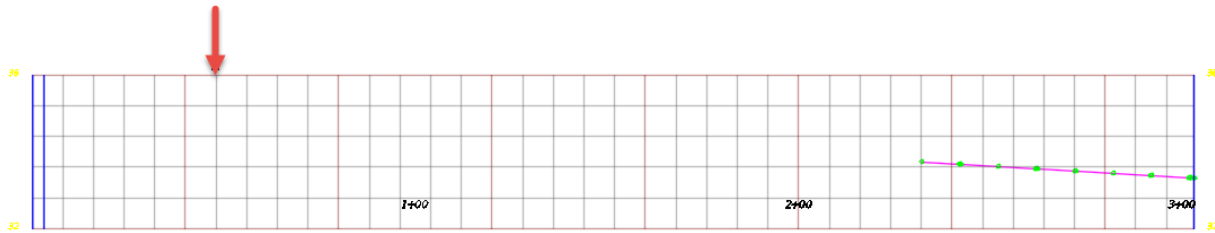


4. Use Zoom and Pan commands to display to the Profile View Alignment - Traffic Sep South RT. then select the Profile View Alignment - Traffic Sep South RT, use the red arrow as a reference.

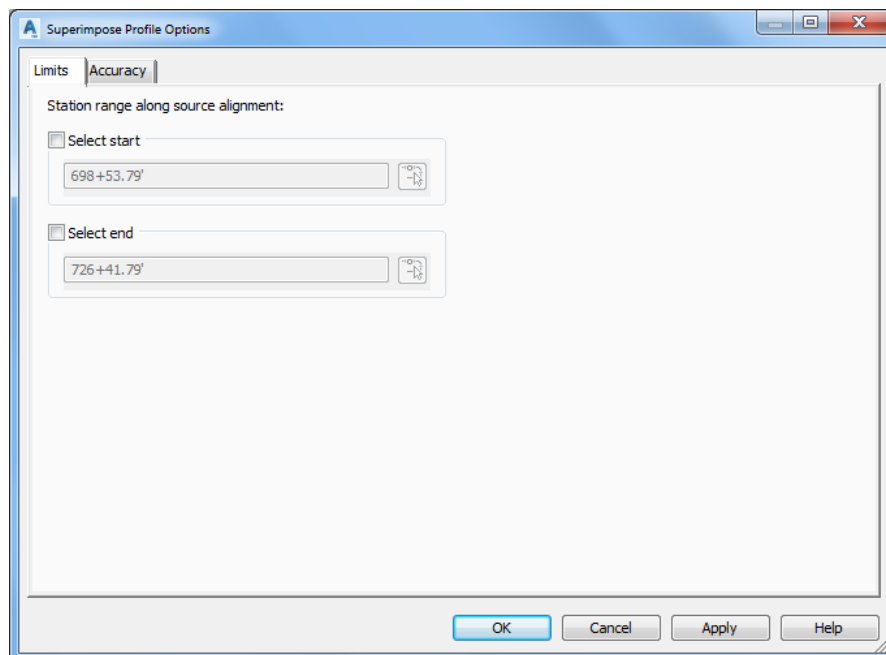
[ - ] [ Top ] [ 2D Wireframe ]



## Alignment - Traffic Sep South RT 0+00.00-3+03.17



5. From the Superimpose Options dialog, to avoid producing a zero length profile, use the default settings. Click OK to continue and to close the Superimpose Options dialog.





- The superimposed profile does not display because the SR61 profile contains no PVI's within the station range of the Alignment - Traffic Sep South RT. To have the superimposed profile display in the Profile View Alignment - Traffic Sep South RT, you can insert PVI's in Profile SR61-PR TS ETW RT adjacent to Alignment - Traffic Sep South RT.

[<] [Top] 2D Wireframe



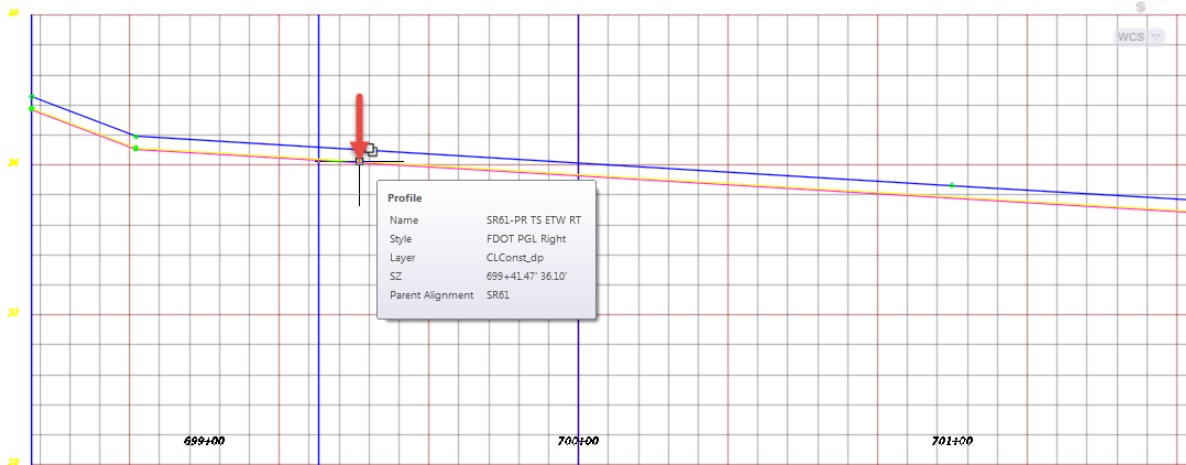
## Alignment - Traffic Sep South RT 0+00.00-3+03.17



☒ 🔍 Type a command

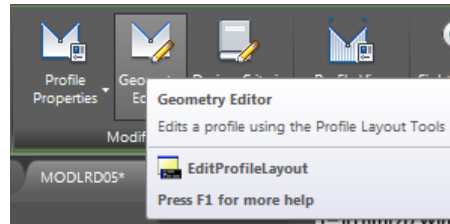
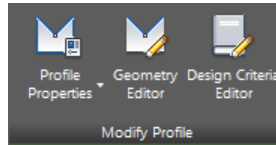
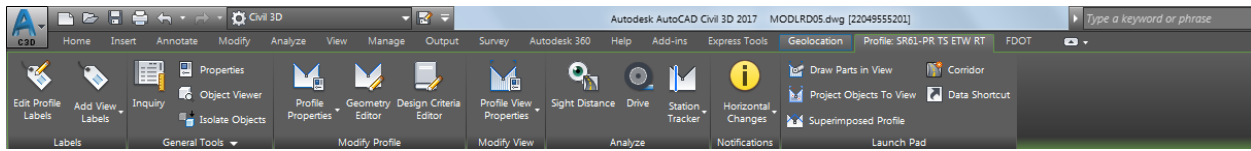
- Use Zoom and Pan commands to display to the Profile View SR61. then select the Profile SR61-PR TS ETW RT, use the red arrow as a reference.

[<] [Top] 2D Wireframe

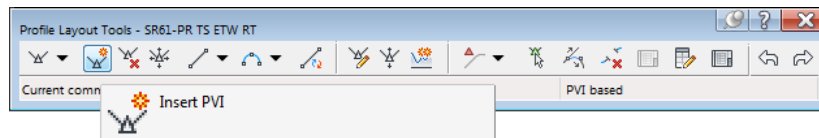


☒ 🔍 Type a command

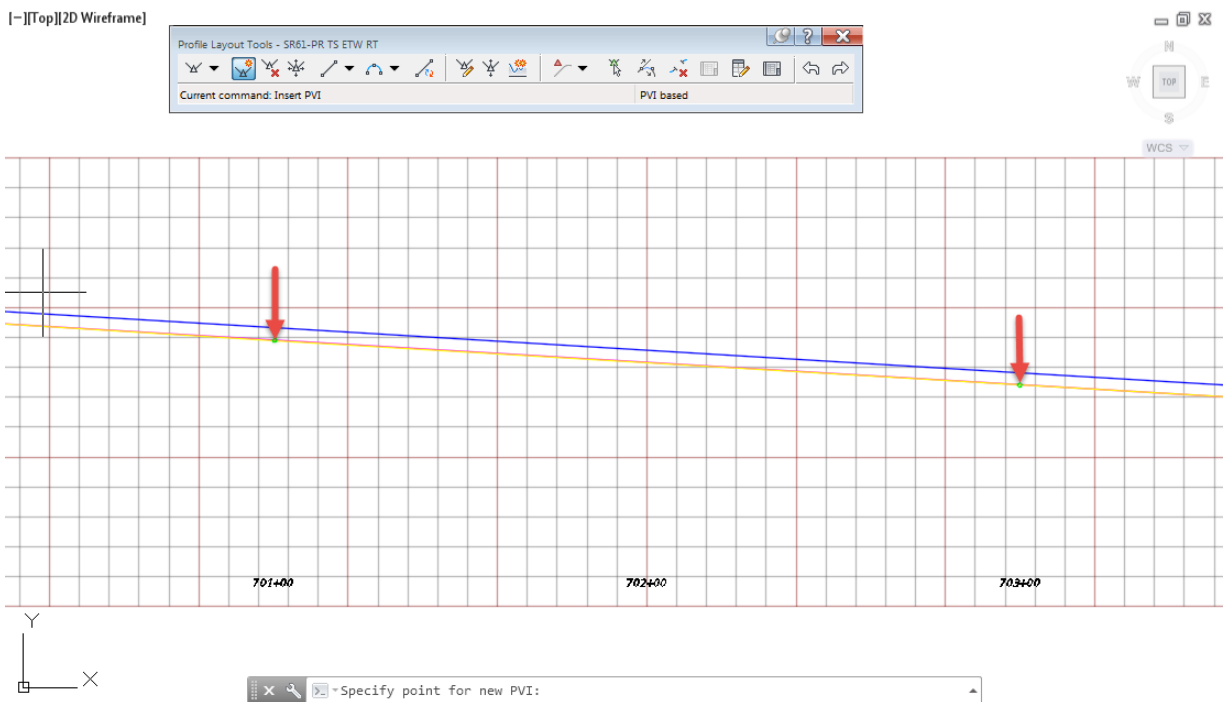
- 8. The Profile: SR61 - PR TS ETW RT tab displayed in the Ribbon. From the Modify Profile Panel , select Geometry Editor.



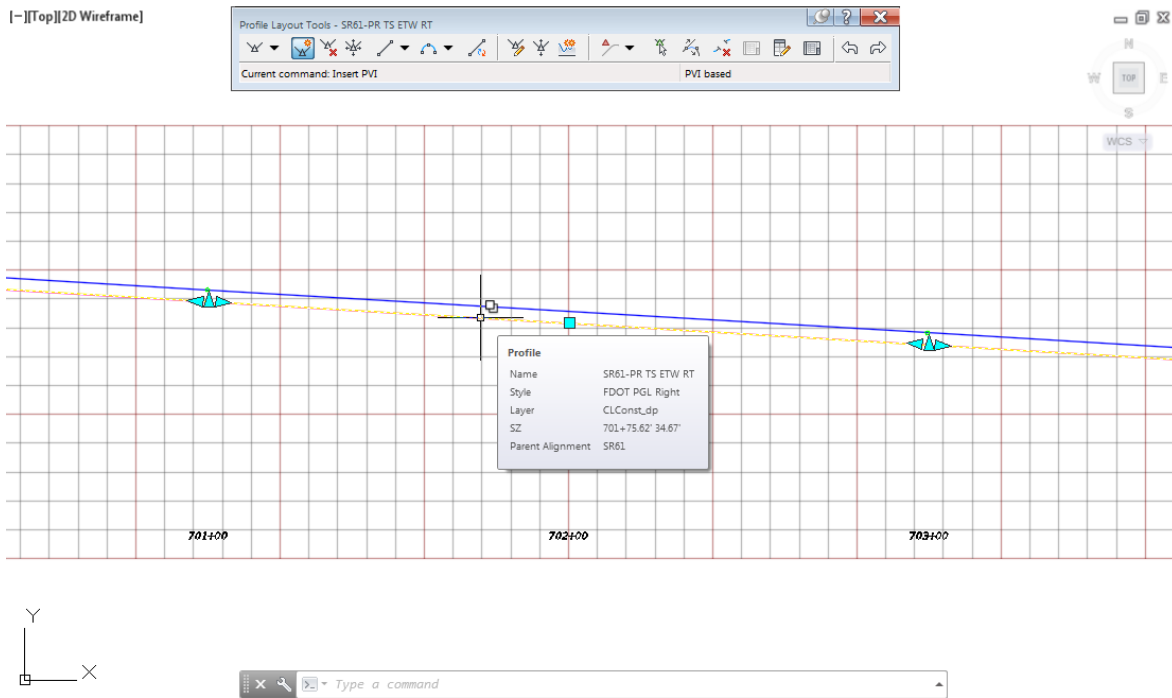
- 9. From the Profile Layout Tools - SR61 -PR TS ETW RT toolbar, select Insert PVI to insert PVI's adjacent to Alignment - Traffic Sep South RT.



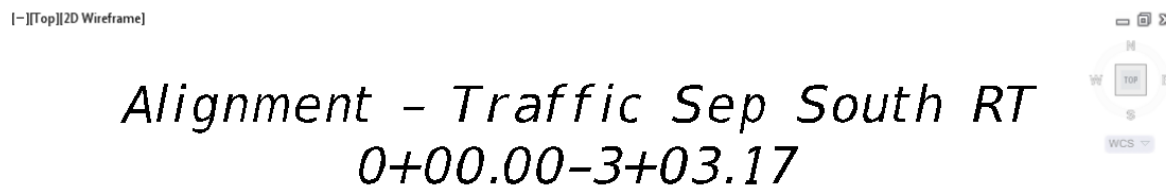
- 10. Select points near Station 701+00 and Station 703+00.



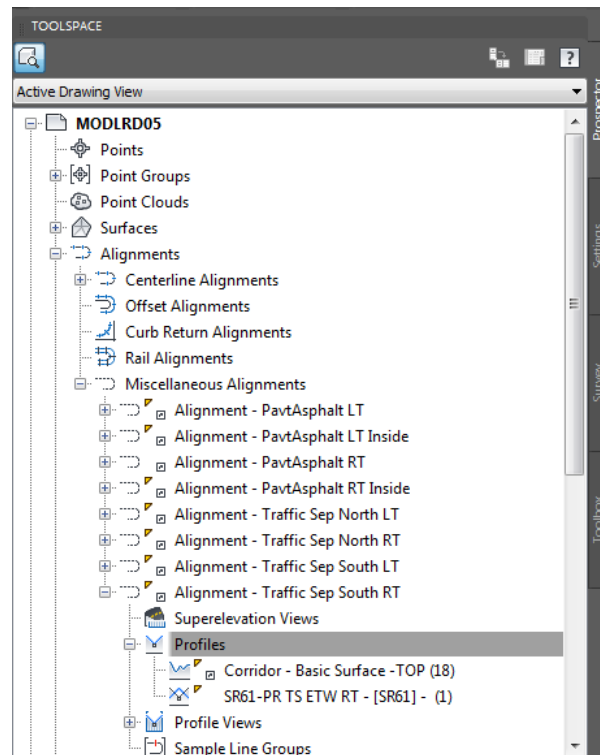
11. Press Enter to end the command.
12. Select the Profile SR61 -PR TS ETW RT to display the grips near the added PVI's.



13. Press ESC to clear grips.
14. Close the Profile Layout Tools - SR61 -PR TS ETW RT toolbar
15. Use Zoom and Pan commands to display the Profile View Alignment - Traffic Sep South LT. The superimposed profile is now displayed.



16. From TOOLSPACE > Prospector tab, expand Alignments, expand Miscellaneous Alignments, expand Alignment - Traffic Sep South RT, then expand Profiles. The superimposed profile named SR61-PR TS ETW RT - [SR61] - (1) is displayed.

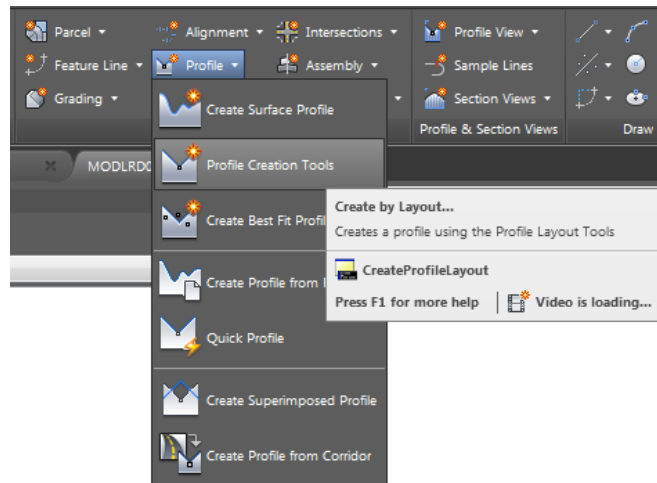
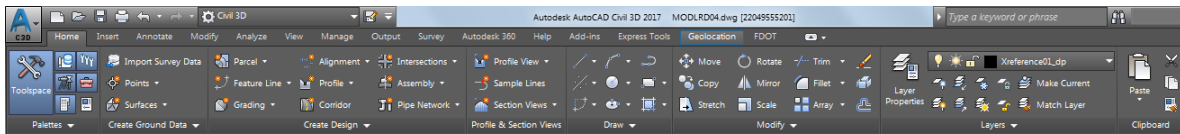


17. **Save** your file before continuing.

### Exercise 8.21 Create Design (Layout) Profile PGL TS South RT

This exercise you will learn how to control the number of vertices in the profile in case you want to reduce the number of vertices or maintain an exact slope along a single tangent rather than the multiple segments created by the Superimpose Profile command. This design profile will enable you to extend the profile along the full length of the alignment so there are no gaps in elevation data required by the traffic separator corridor model.

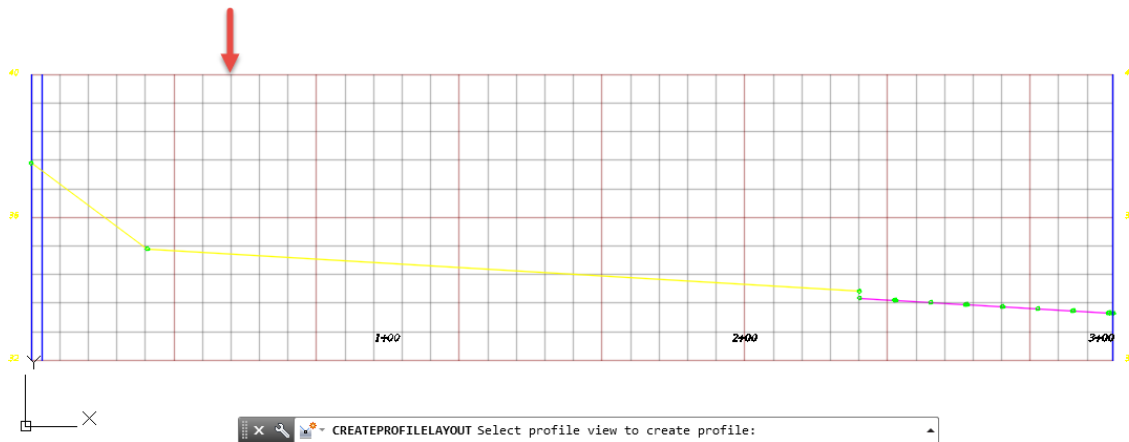
1. From the Home tab > Create Design panel > select Profile, and then select Profile Creation Tools command.



2. The command line prompts you to Select Profile view to create profile, select the Profile View Alignment - Traffic Sep South RT, use the red arrow as a reference.

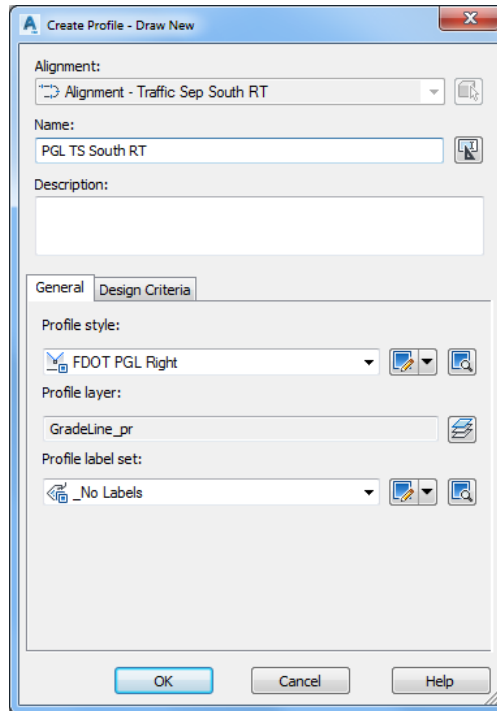
[ - ] [Top] 2D Wireframe

*Alignment - Traffic Sep South RT  
0+00.00-3+03.17*

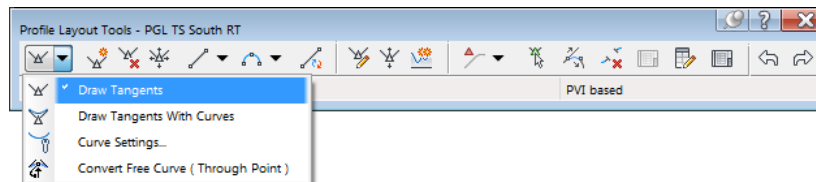


3. From the Create Profile - Draw New dialog, use these values:

- Alignment: Alignment -Traffic Sep South RT (Pre-Set)
- Name: PGL TS South RT
- Profile Style: FDOT PGL Right (Select from list)
- Profile Layer: Gradeline\_pr (Default layer)
- Profile label set: \_No Labels (Select from list)



4. Click OK to continue and to close the Create Profile - Draw New dialog.
5. From the Profile Layout Tools - PGL TS South RT toolbar, select Draw Tangents.

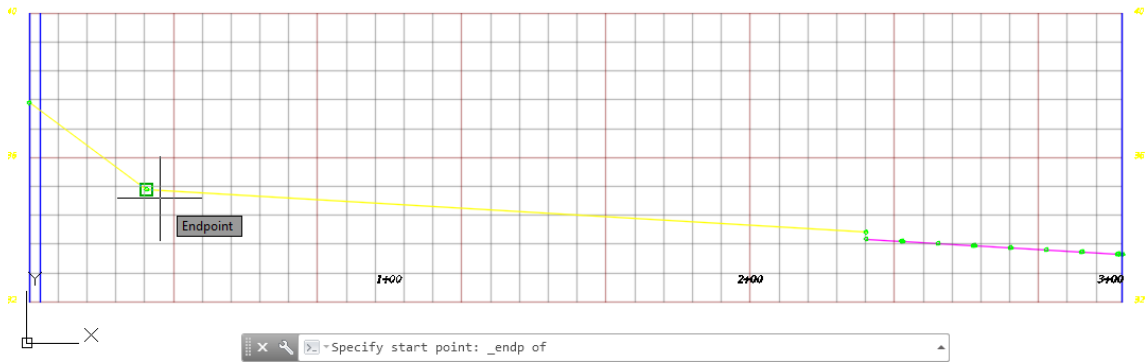


- 6. The command line prompts you to Specify start point. Select using a Endpoint osnap on the superimposed profile near Station 0+32.00.

[-][Top][2D Wireframe]



## Alignment - Traffic Sep South RT 0+00.00-3+03.17

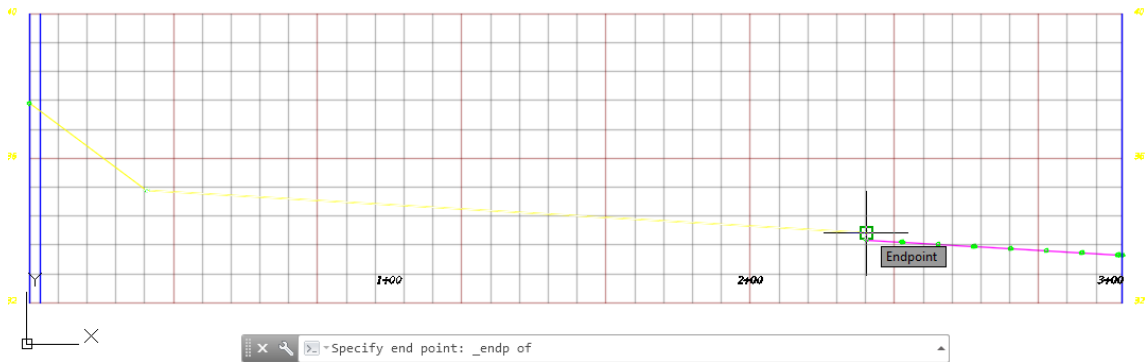


- 7. The command line prompts you to Specify end point. Select using a Endpoint osnap on the superimposed profile near Station 2+32.00.

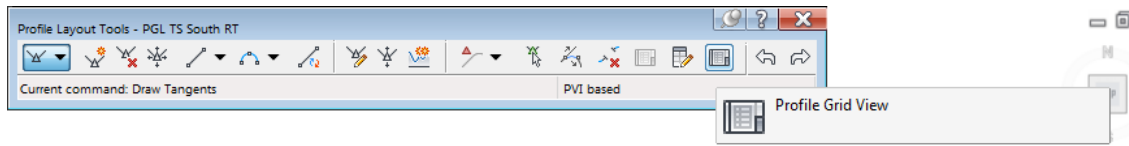
[-][Top][2D Wireframe]



## Alignment - Traffic Sep South RT 0+00.00-3+03.17



8. From the Profile Layout Tools - PGL TS South RT toolbar, select Profile Grid View.

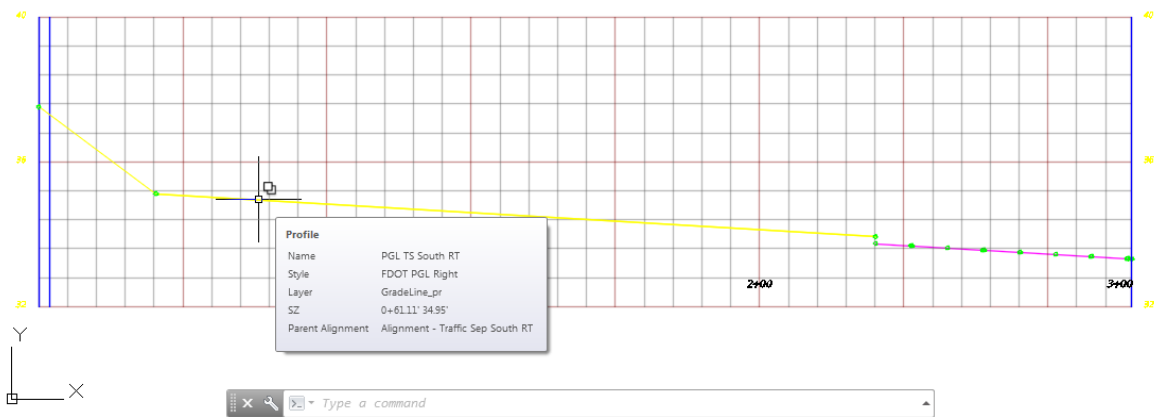


9. Use Grips to change the extent of the design profile to maintain the slope along the entire length of the alignment

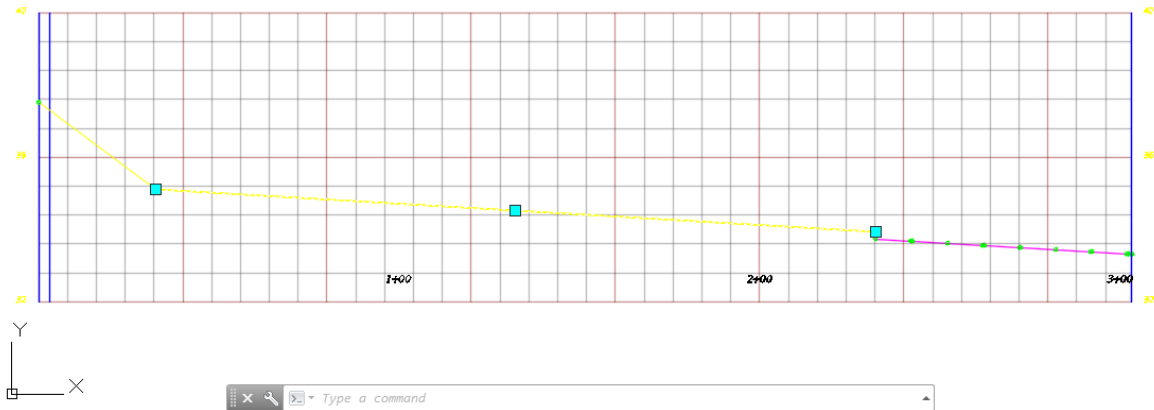
Profile Entities

No.	PVI Station	PVI Elevation	Grade In	Grade Out	A (Grade Change)
1	0+32.55'	35.12'		-0.60%	
2	2+32.13'	33.93'	-0.60%		

10. Hover over the Profile PGL TS South RT to view the tool tip.

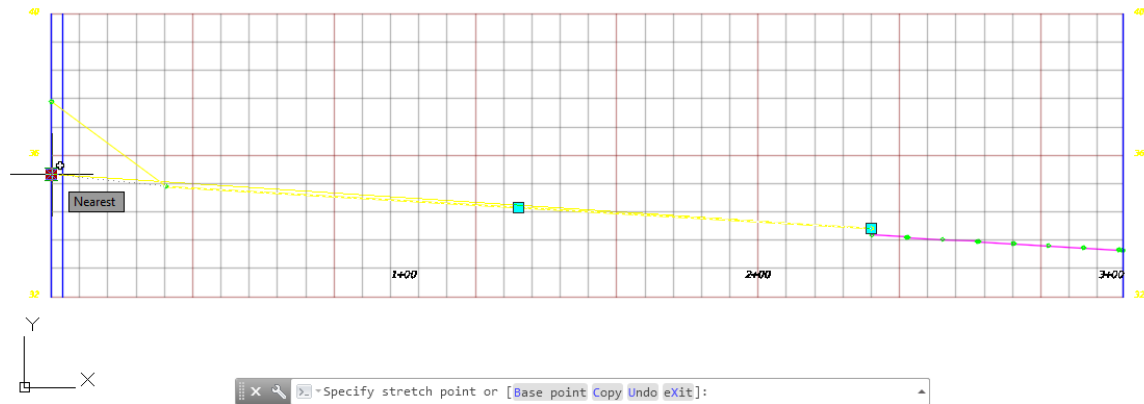


11. Select the Profile PGL TS South RT to display the grips.

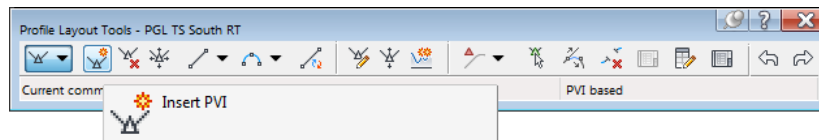




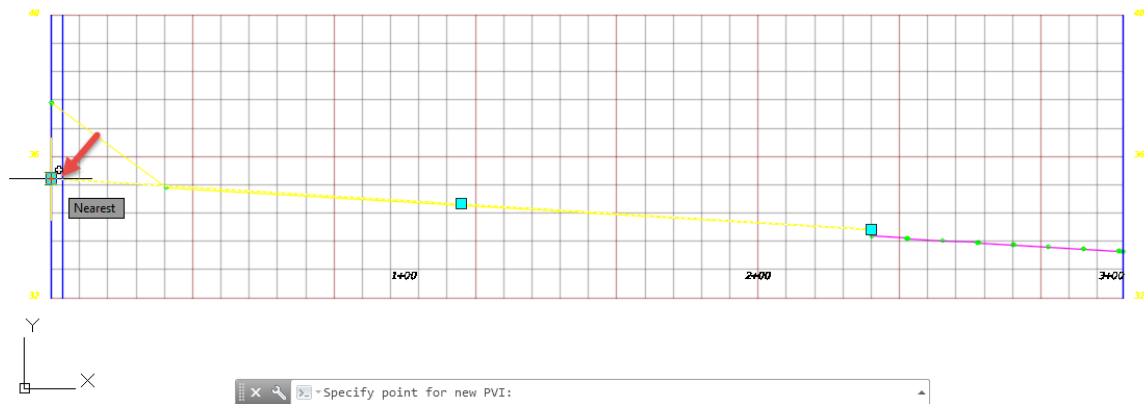
12. Select the beginning grip vertex, move it to the beginning grid line representing the starting station of the alignment using the NEAREST osnap.



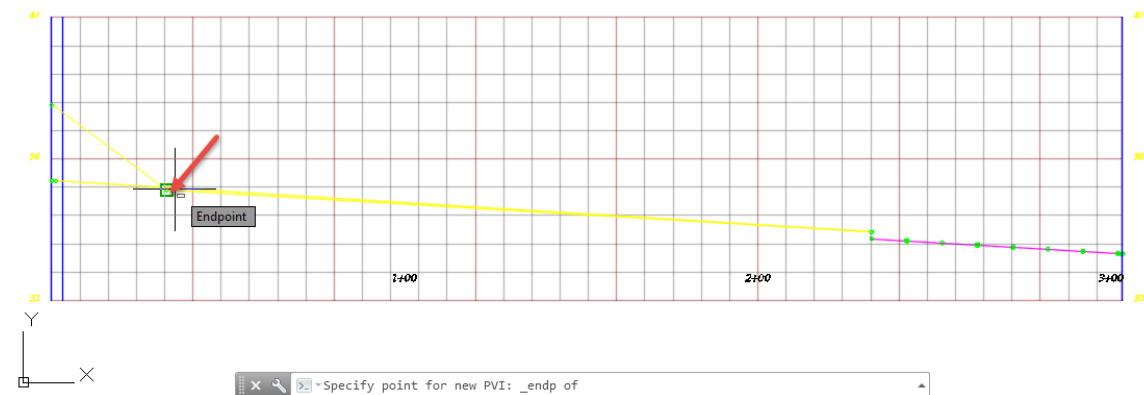
13. From the Profile Layout Tools - PGL TS South RT toolbar, select Insert PVI.



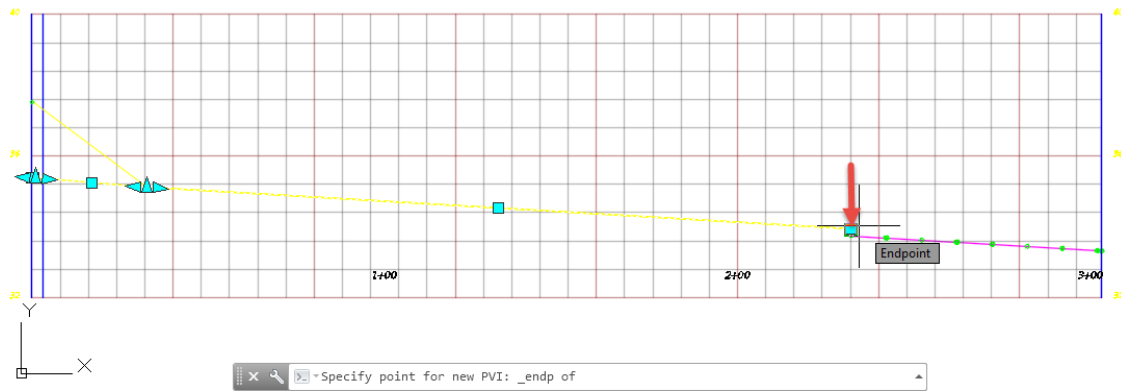
14. Select the PT represented by a blue vertical line using a NEAREST osnap, use red arrows as a reference.



15. Select using a ENDPOINT osnsp on the superimposed profile, use red arrows as a reference.

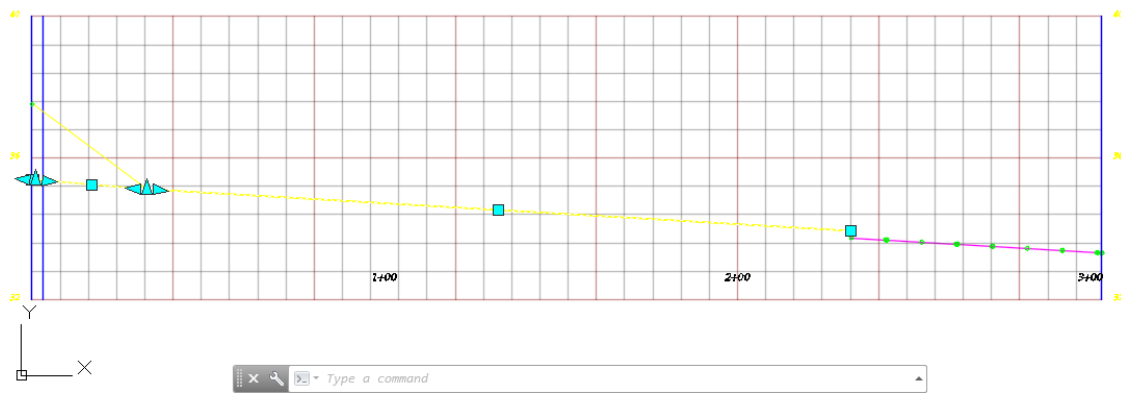


16. Select using a ENDPOINT osnsp on the superimposed profile, use red arrows as a reference.



17. Press Enter to end command.

18. Select the Profile PGL TS South RT to display the grips.



19. From the Profile Grid View, edit the Grade In value to -0.59% to make the grade begin at the PT of the curve on the alignment

No.	PVI Station	PVI Elevation	Grade In	Grade Out	A (Grade Change)
1	0+00.00'	35.38'		-0.59%	
2	0+01.17'	35.37'	-0.59%	-0.59%	0.00%
3	0+32.55'	35.19'	-0.59%	-0.63%	0.04%
4	2+32.13'	33.93'	-0.63%		

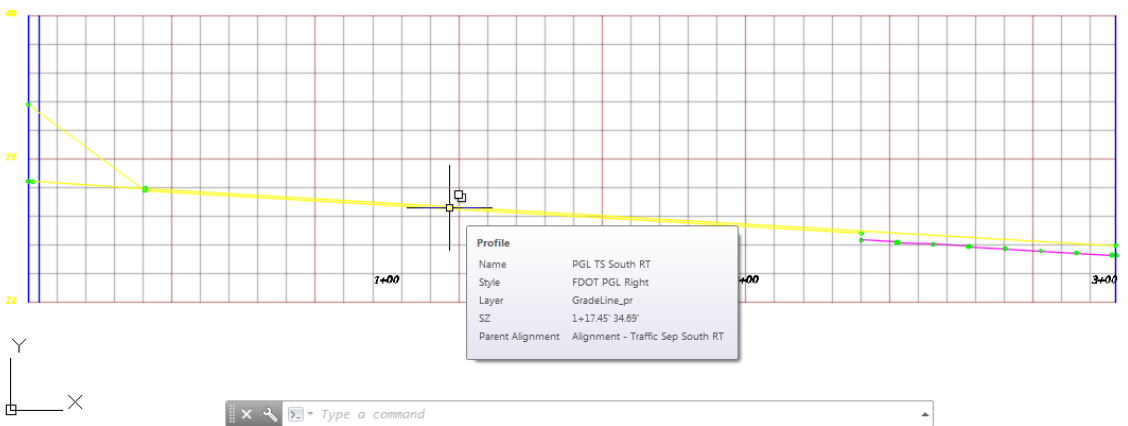
- From the Profile Grid View, change the last PVI Station to match the ending station value 3+03.11 and change the Grade In to -0.59%.

No.	PVI Station	PVI Elevation	Grade In	Grade Out	A (Grade Change)
1	0+00.00'	35.38'		-0.59%	
2	0+01.17'	35.37'	-0.59%	-0.59%	0.00%
3	0+32.55'	35.19'	-0.59%	-0.59%	0.00%
4	3+03.11'	33.59'	-0.59%		

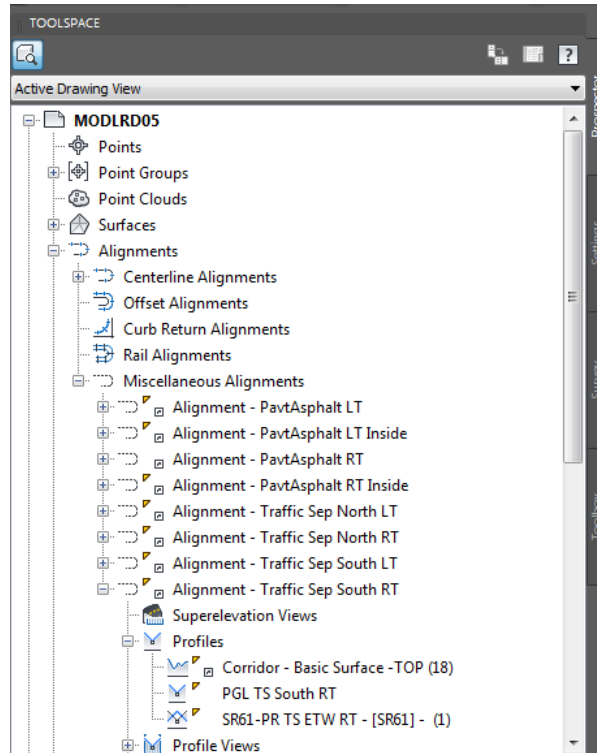
- From the Profile Grid View, set all other PVI Stations, PVI Elevations, Grade In, Grade Out values, to match the above values.
- Close the Profile Grid View.
- Close the Profile Layout Tools - PGL TS South LT toolbar
- Results of creating Profile PGL TS South RT.

[--|Top|]2D Wireframe

## *Alignment - Traffic Sep South RT 0+00.00-3+03.17*



25. From TOOLSPACE > Prospector tab, expand Alignments, expand Miscellaneous Alignments, expand Alignment - Traffic Sep South RT, then expand Profile. The new Profile PGL TS South RT is displayed.

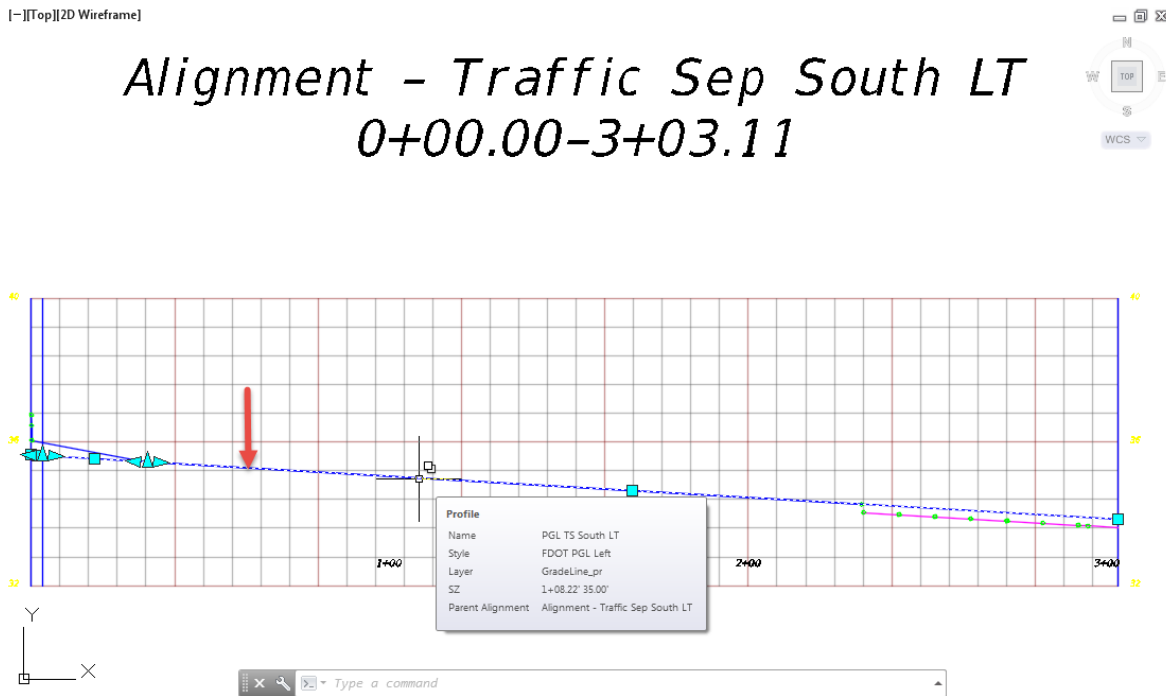


26. **Save** your file before continuing.

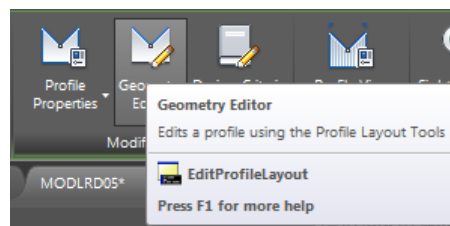
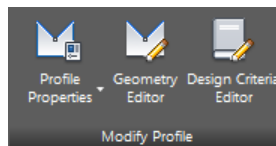
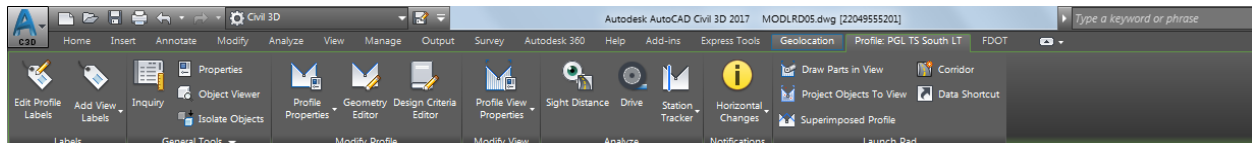
### Exercise 8.2 Calculate and Set the Median Elevation Where the Two Alignments Meet

In this exercise you will set the elevation the same where the two alignments meet. To calculate the median elevation, the PT elevation on LT profile is 35.64 and the PT elevations on RT profile is 35.38. Half way between the two elevations is 35.51. Set each TS profile to use 35.51 at Station 0+00.00.

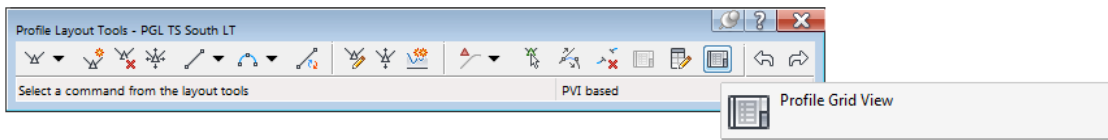
1. Use Zoom and Pan commands to display to the Profile View Alignment - Traffic Sep South LT then select the Profile PGL TS South LT, use the red arrow as a reference.



2. The Profile PGL TS South LT tab displayed in the Ribbon. From the Modify Profile Panel , select Geometry Editor.



- From the Profile Layout Tools - PGL TS South LT toolbar, select Profile Grid View.



- Set the PVI Elevation for PVI Station 0+00.00 to 35.51.

The image shows a window titled "Profile Grid View" containing a table with the following data:

No.	PVI Station	PVI Elevation	Grade In	Grade Out	A (Grade Change)
1	0+00.00'	35.51'		-0.59%	
2	0+03.11'	35.46'	-0.59%	-0.59%	0.00%
3	0+32.35'	35.29'	-0.59%	-0.59%	0.00%
4	3+03.11'	33.69'	-0.59%		

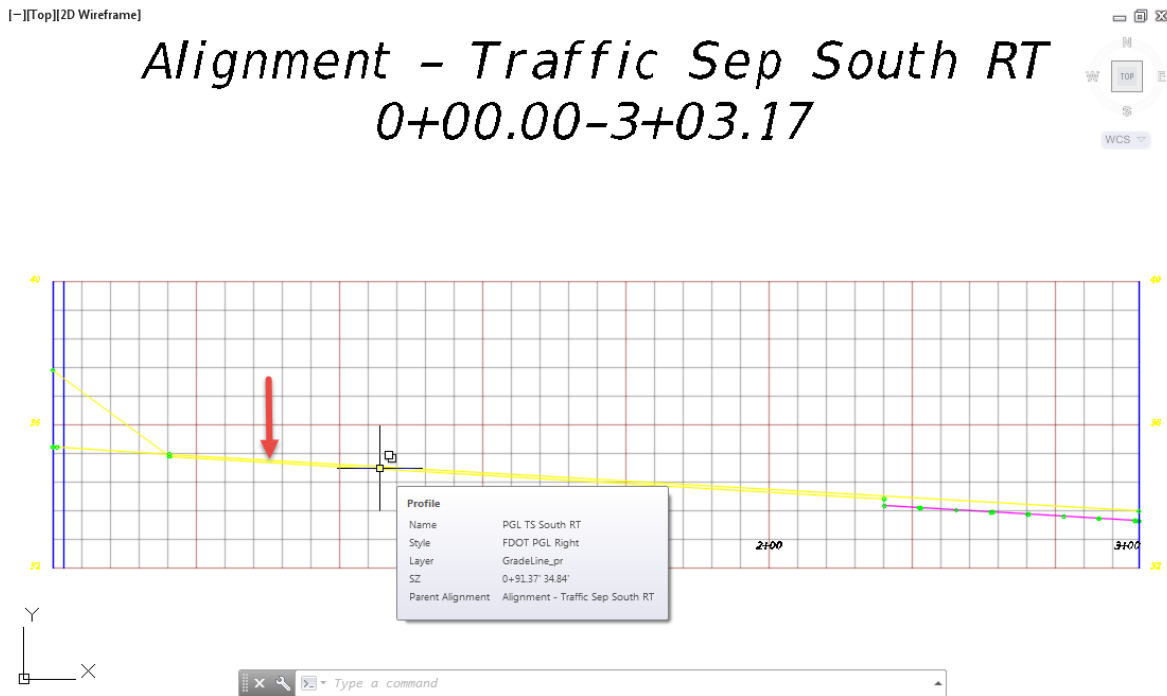
- From the Profile Grid View, set all other PVI Stations, PVI Elevations, Grade In, Grade Out values, to match the above values.

The image shows the same "Profile Grid View" window, but with the following updated data:

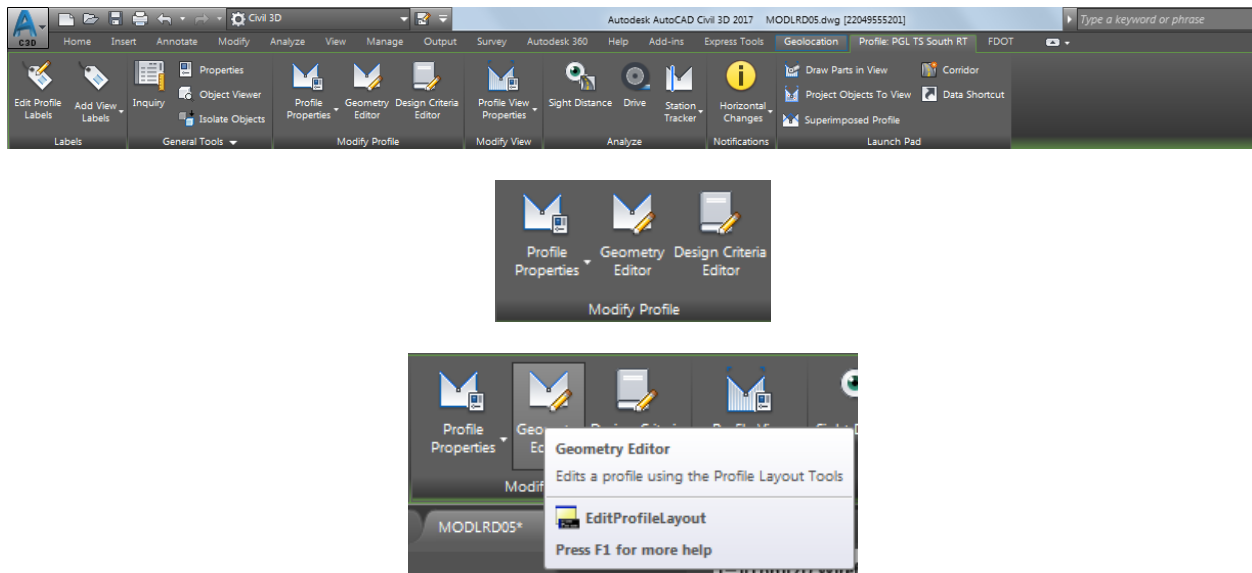
No.	PVI Station	PVI Elevation	Grade In	Grade Out	A (Grade Change)
1	0+00.00'	35.51'		-0.59%	
2	0+03.11'	35.49'	-0.59%	-0.59%	0.00%
3	0+32.35'	35.32'	-0.59%	-0.59%	0.00%
4	3+03.11'	33.72'	-0.59%		

- Close the Profile Grid View.
- Close the Profile Layout Tools - PGL TS South LT toolbar.
- Save** your file before continuing.
- Repeat the prior process for the Profile View Alignment - Traffic Sep South RT.

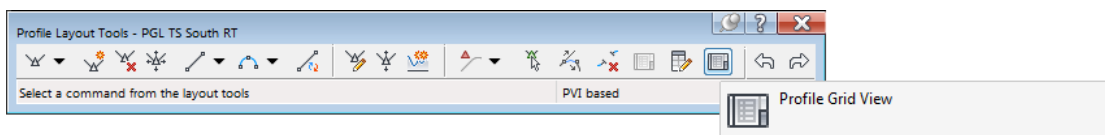
- Use Zoom and Pan commands to display to the Profile View Alignment - Traffic Sep South RT then select the Profile PGL TS South RT, use the red arrow as a reference.



- The Profile PGL TS South RT tab displayed in the Ribbon. From the Modify Profile Panel, select Geometry Editor.



- From the Profile Layout Tools - PGL TS South RT toolbar, select Profile Grid View.



13. Set the PVI Elevation for PVI Station 0+00.00 to 35.51.

No.	PVI Station	PVI Elevation	Grade In	Grade Out	A (Grade Change)
1	0+00.00'	35.51		-0.59%	
2	0+01.17'	35.37'	-0.59%	-0.59%	0.00%
3	0+32.55'	35.19'	-0.59%	-0.59%	0.00%
4	3+03.11'	33.59'	-0.59%		

14. From the Profile Grid View, set all other PVI Stations, PVI Elevations, Grade In, Grade Out values, to match the above values.

No.	PVI Station	PVI Elevation	Grade In	Grade Out	A (Grade Change)
1	0+00.00'	35.51'		-0.59%	
2	0+01.17'	35.50'	-0.59%	-0.59%	0.00%
3	0+32.55'	35.32'	-0.59%	-0.59%	0.00%
4	3+03.11'	33.72'	-0.59%		

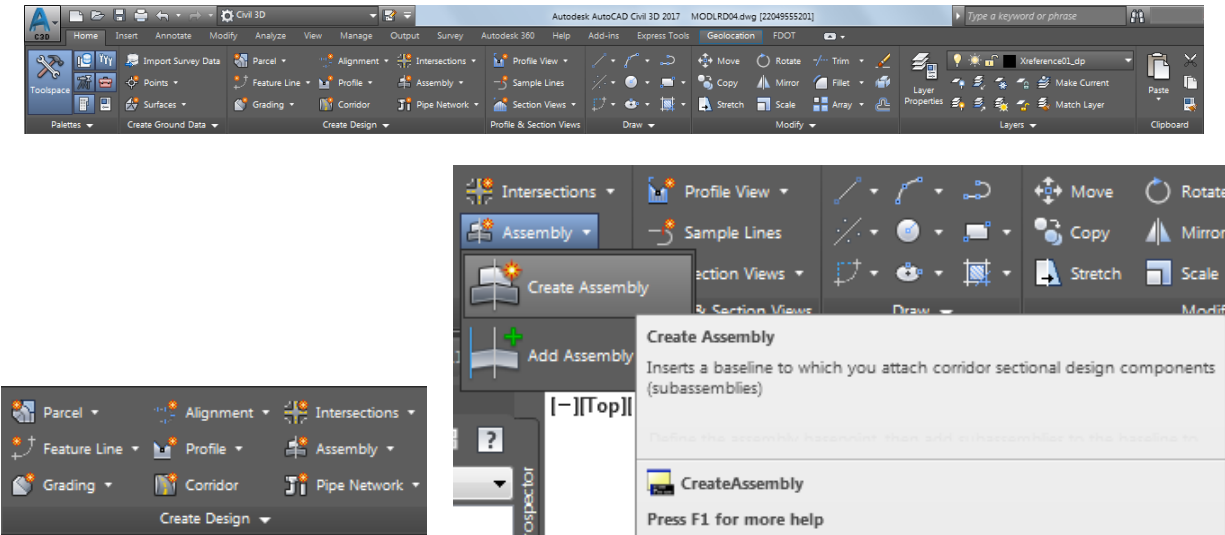
15. Close the Profile Grid View.
16. Close the Profile Layout Tools - PGL TS South LT toolbar.
17. **Save** your file before continuing.



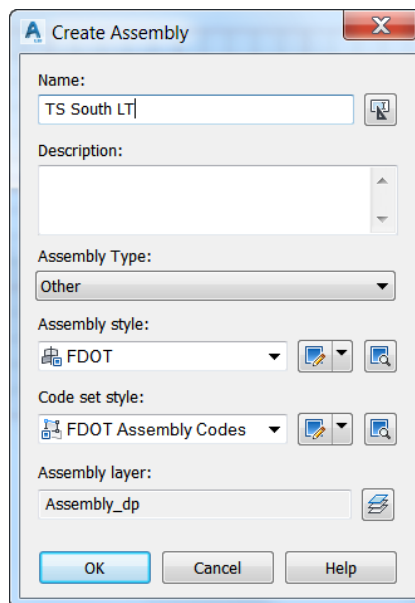
### Exercise 8.23 Create Assemblies TS South LT and TS South RT

In this exercise you will create the Assemblies TS South LT and TS South RT which will be used in the creation of the TS Corridor model.

1. From the Home tab > Create Design panel > select Assembly, and then select Create Assembly command.

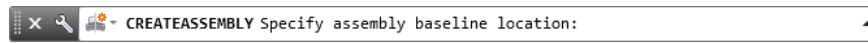


2. From the Create Assembly dialog, use these values:
  - o Name: TS South LT
  - o Description: Leave blank
  - o Assembly Type: Other (Select from list)
  - o Assembly style: FDOT (Select from list)
  - o Code set style: FDOT Assembly Codes (Select from list)
  - o Assembly layer: Assembly\_dp ( Default layer)

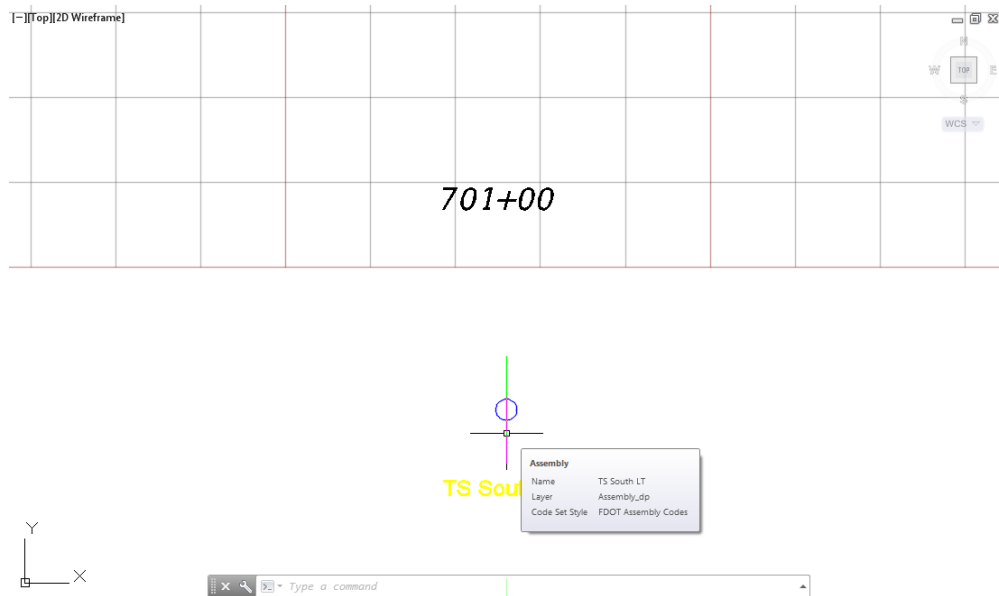


3. Click OK to continue and to close the Create Assembly dialog.

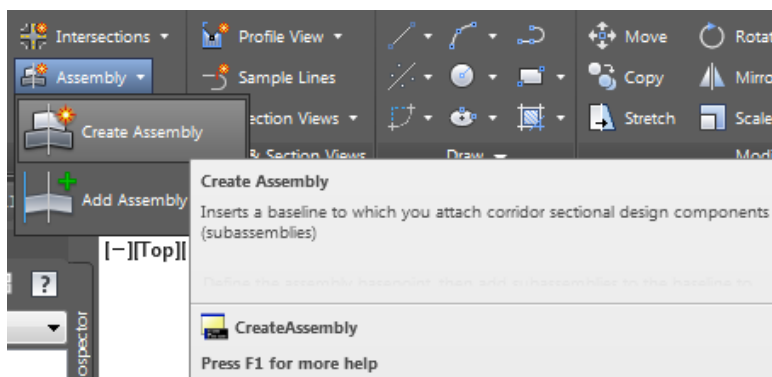
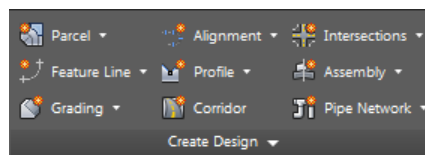
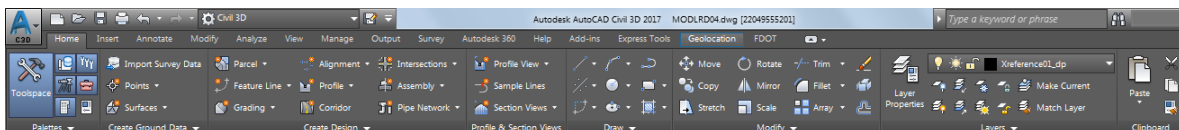
- The command line prompts you to Specify assembly baseline location.



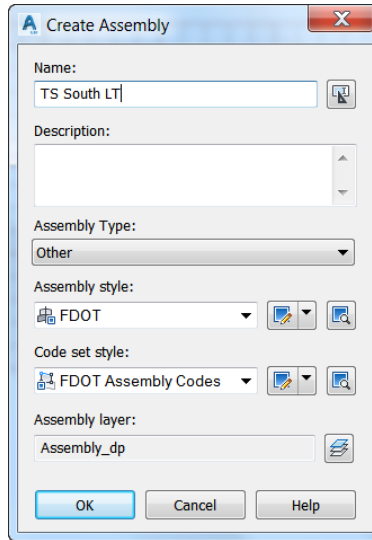
- Use Zoom and Pan commands to place the Assembly TS South LT below station 701 on the Profile View - SR61. Hover over the Assembly TS South LT to display tooltips.



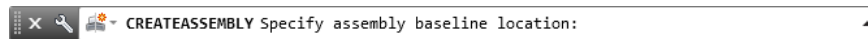
- Save your file before continuing.
- Repeat the Create Assembly process to create Assembly TS South RT. From the Home tab > Create Design panel > select Assembly, and then select Create Assembly command.



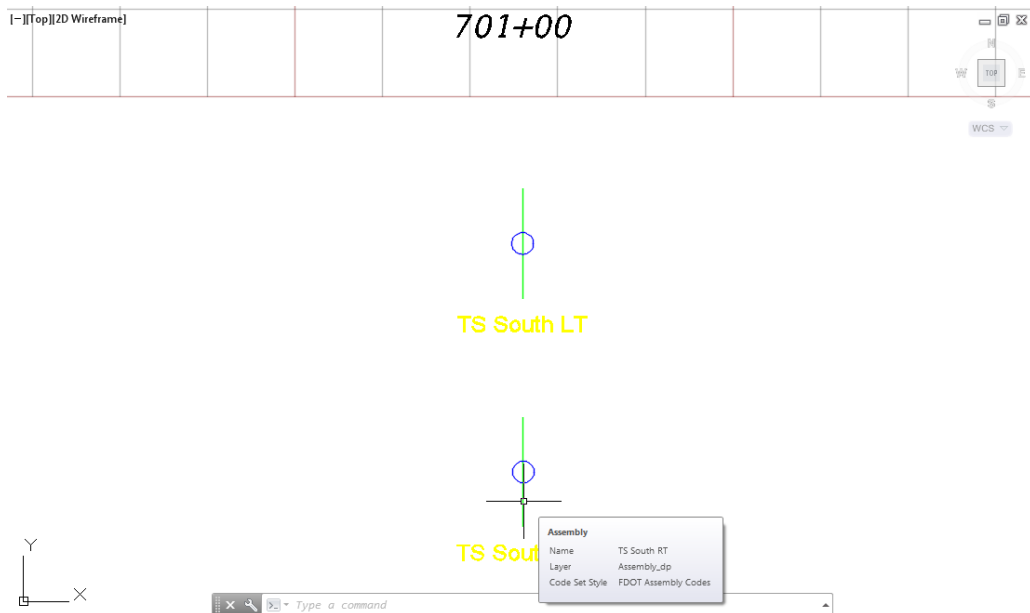
8. From the Create Assembly dialog, use these values:
  - o Name: TS South RT
  - o Description: Leave blank
  - o Assembly Type: Other (Select from list)
  - o Assembly style: FDOT (Select from list)
  - o Code set style: FDOT Assembly Codes (Select from list)
  - o Assembly layer: Assembly\_dp ( Default value)



9. Click OK to continue and to close the Create Assembly dialog.
10. The command line prompts you to Specify assembly baseline location.



11. Use Zoom and Pan commans to place the Assembly TS South RT below Assembly TS South LT under station 701 on the Profile View - SR61. Hover over the Assembly TS South RT to display tooltips.

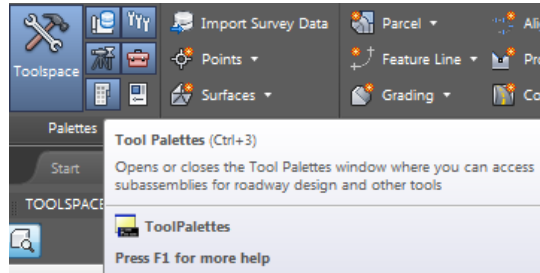


12. **Save** your file before continuing.

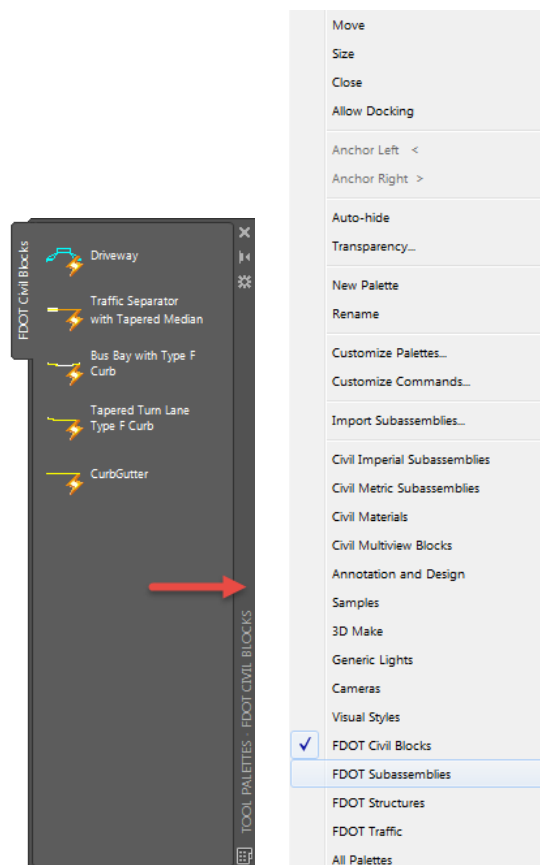
## Exercise 8.24 Add Sub-Assemblies

In this exercise you will add the FDOT Type B Curb Sub-Assemblies to the Assembly TS South LT and TS South RT created in the prior exercise.

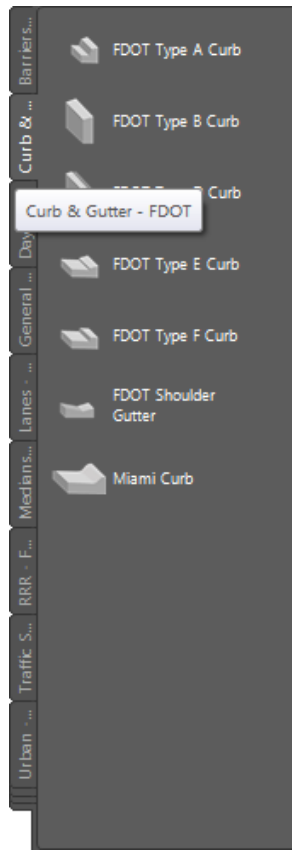
1. From the Home tab > Palettes panel, select Tool Palettes.



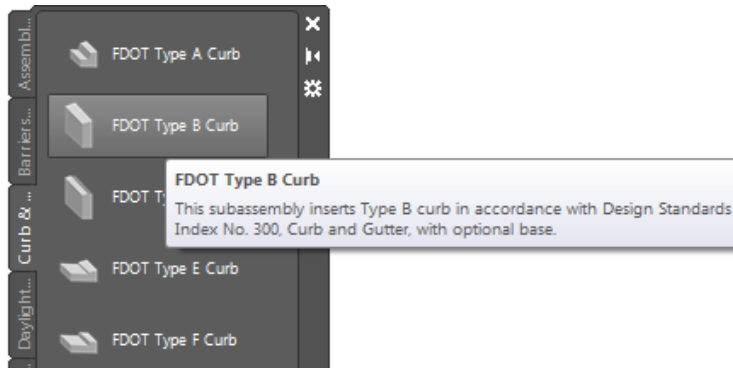
2. Right click the Tool Palette title bar referenced by the red arrow., and choose the FDOT Subassemblies palette group.



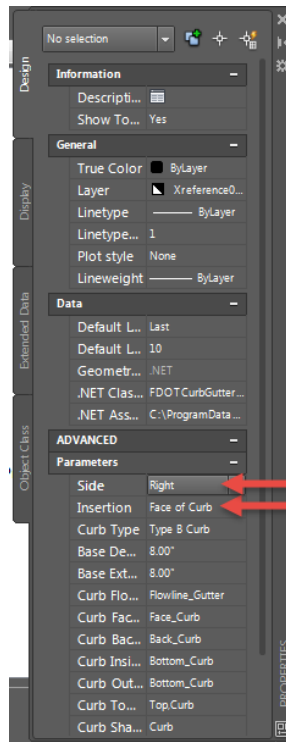
3. Select the Curb & Gutter - FDOT tab.



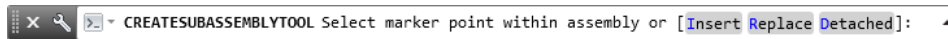
4. Select FDOT Type B Curb



- In the Properties Palette, Parameters section, set the Side to Right, set Insertion to Face of Curb, referenced by the red arrows.

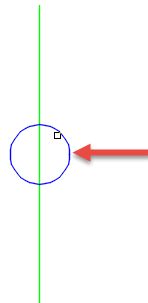


- The command line prompts you to Select marker point within assembly or [Insert Replace Detached]:

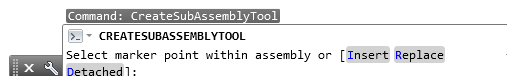


- Use Zoom and Pan commands to display the TS South LT marker, then select the TS South LT Assembly Marker to place the curb subassembly, referenced by the red arrow.

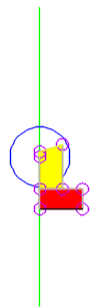
[--Top][2D Wireframe]



TS South LT



[--][Top][2D Wireframe]

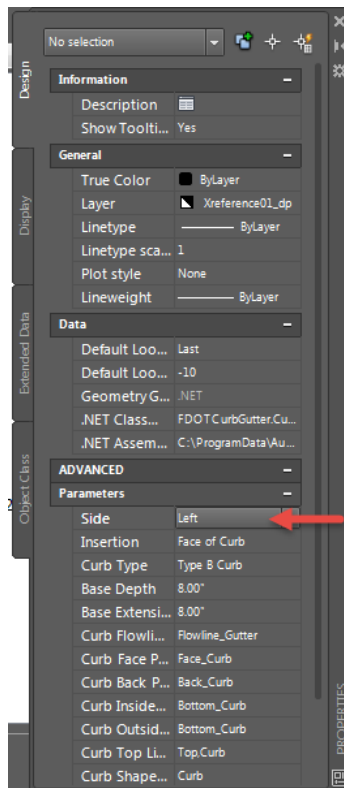


# TS South LT



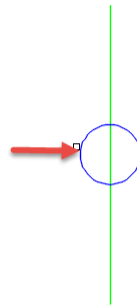
```
Command: CreateSubAssemblyTool
Select marker point within assembly or [Insert/Replace/
Detached]:
C:\ProgramData\Autodesk\LT2018\Toolsets\Autodesk LT2018\
-- CREATESUBASSEMBLYTOOL
Select marker point within assembly or [Insert Replace
Detached]:
```

- Without leaving the command, in the Properties Palette, Parameters section, set the Side to Left, referenced by the red arrow.

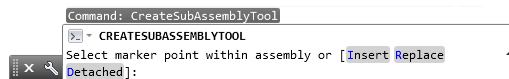


9. Use Zoom and Pan commands to display the TS South RT marker, then select the TS South RT Assembly Marker to place the curb subassembly, referenced by the red arrow.

[--][Top][2D Wireframe]



TS South RT



[--][Top][2D Wireframe]



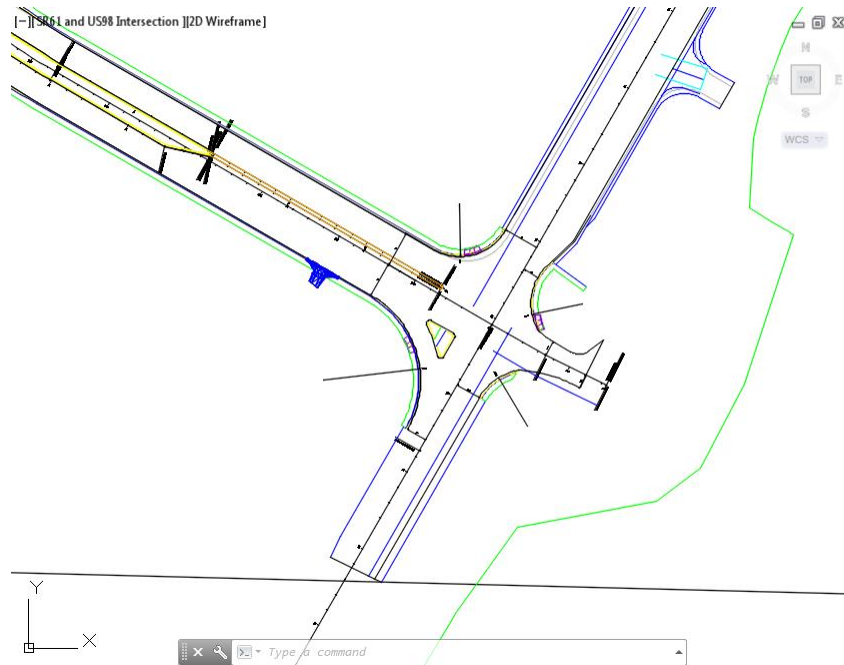
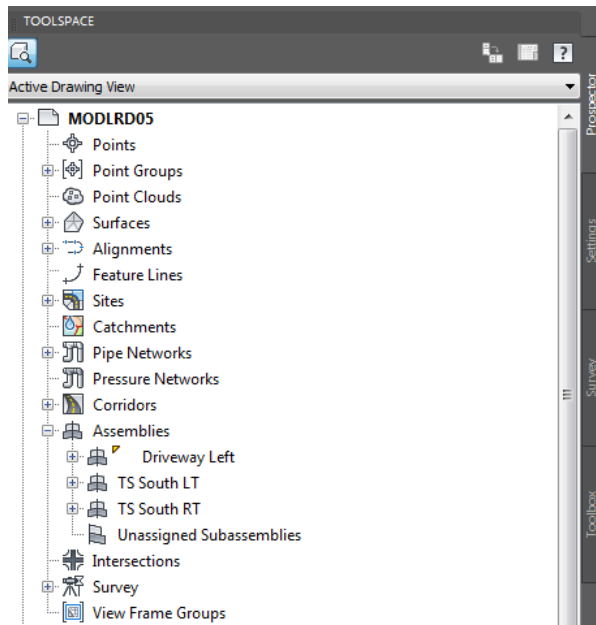
TS South RT



10. Press Enter to end command.



11. From TOOLSPACE > Prospector tab, expand Assemblies, the new Assemblies TS South LT and TS South RT are displayed.

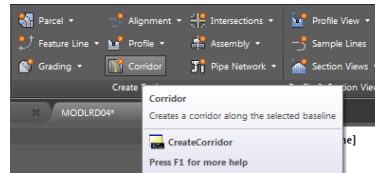
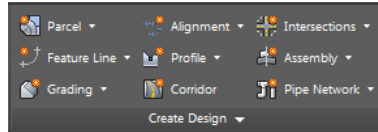
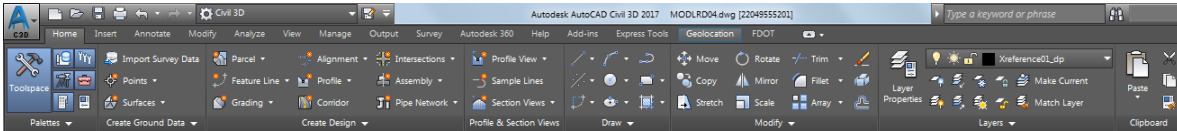


12. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
13. **Save** your file before continuing.

### Exercise 8.25 Create Corridor Model: Corridor - SR61 Traffic Sep Traffic Separator Left

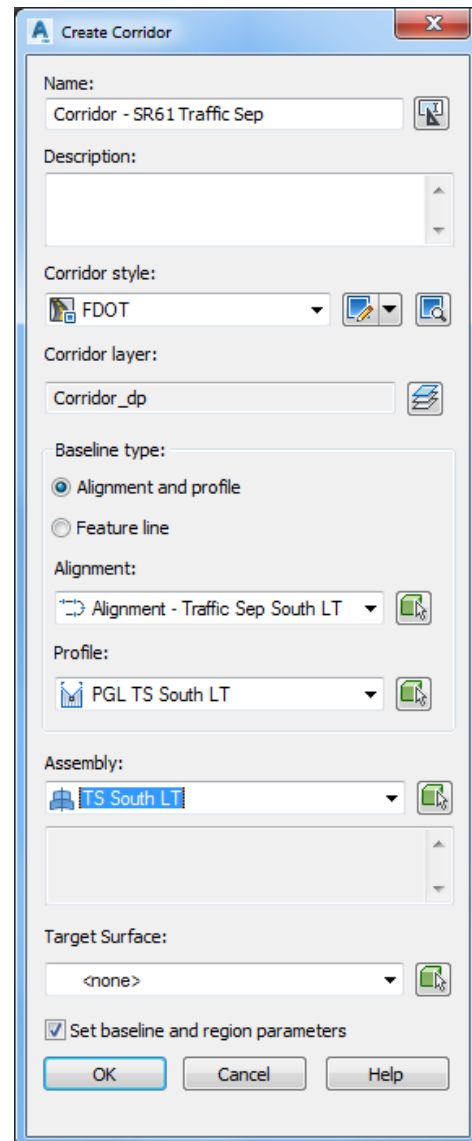
In this exercise you will create a Corridor Model: Corridor - SR61 Traffic Sep using the Assemblies: TS South LT and TS South RT created in the prior exercise. You will build left side first, then the right side.

1. From the Home tab > Create Design panel > select Corridor command.

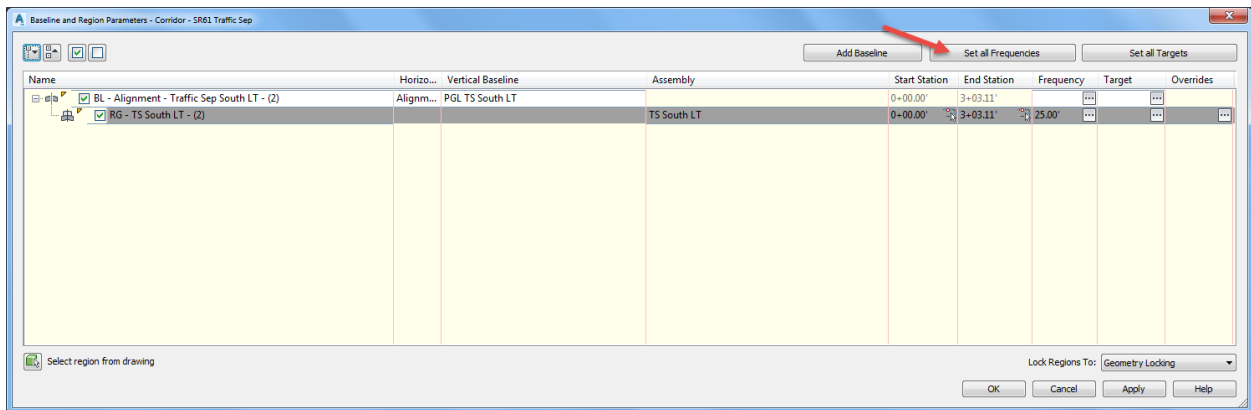


2. From the Create Corridor dialog, set the following values:

- Name: Corridor - SR61 Traffic Sep
- Description: Leave Blank
- Corridor Style: FDOT
- Corridor layer: Corridor\_dp (Default layer)
- Baseline type: Alignment and Profile
- Alignment - Traffic Sep South LT
- Profile: PGL TS South LT
- Assembly: TS South LT
- Target Surface: <None>
- Check box next to Set baseline and region parameters



3. Click OK to continue and to close the Create Corridor dialog.
4. From the Baseline and Regions Parameters - Corridor - SR61 Traffic Sep dialog, click the Set all Frequencies button, referenced by the red arrow



5. From the Frequency to Apply Assemblies dialog, set the following values:

- Horizontal Baselines:

Along tangents: 5.00

Along curves: At an increment

Curve increment: 5.00

Along spirals: 5.00

- Vertical Baselines:

Along Vertical curves: 5.00

At vertical geometry points: Yes

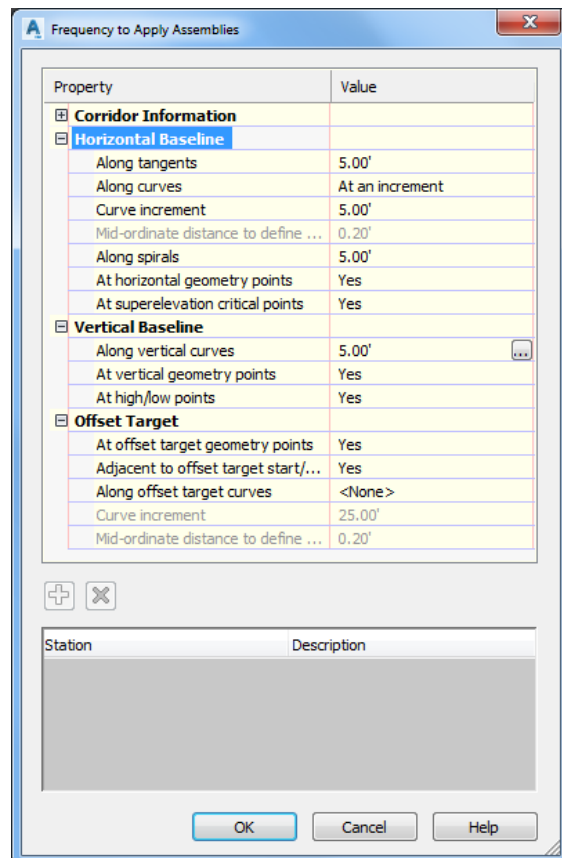
At high/low points: Yes

- Offset Target:

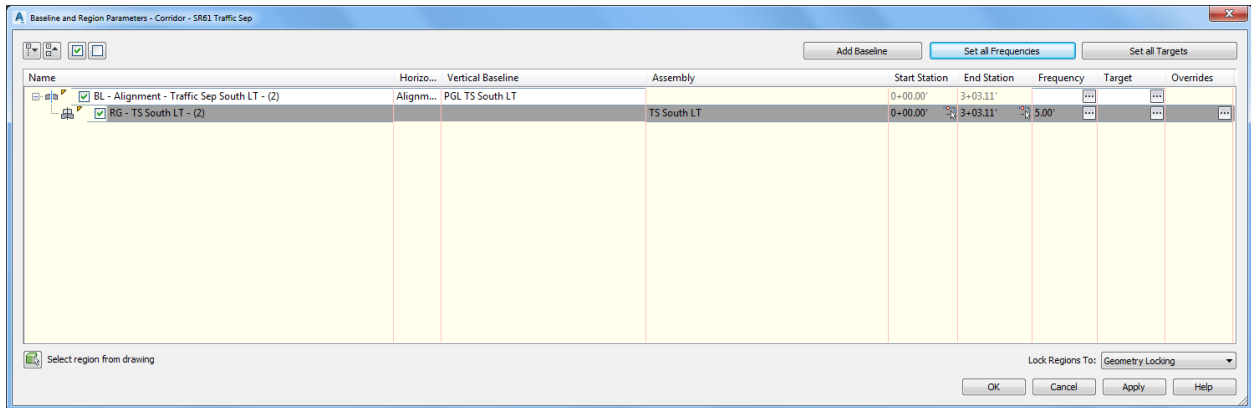
At offset target geometry points: Yes

Adjacent to offset target start/end: Yes

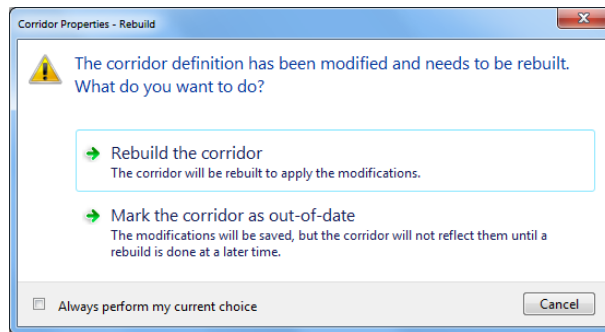
Along Offset target curves: <None>



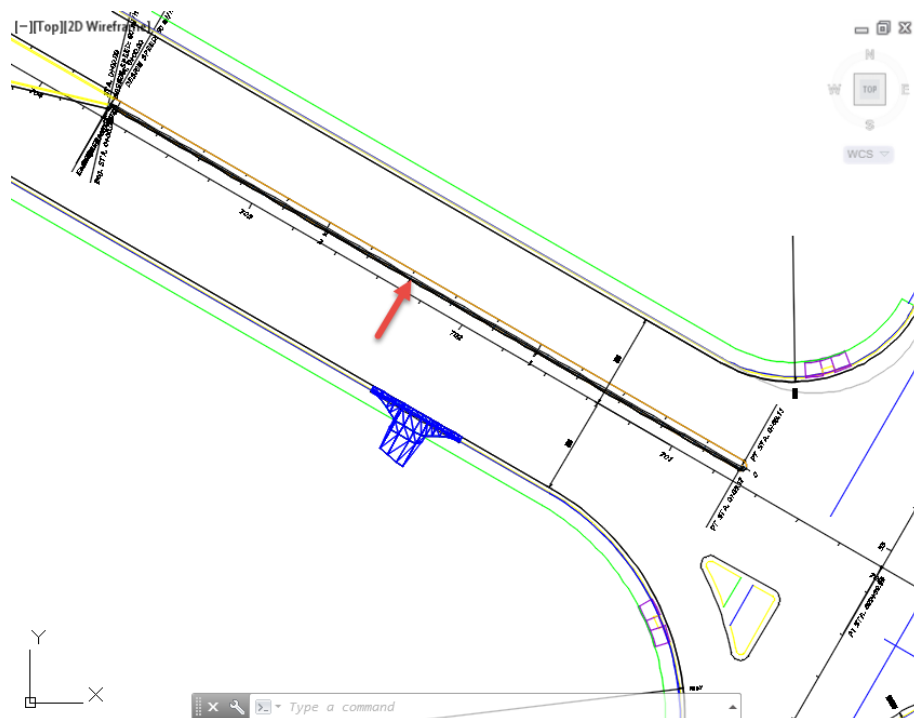
6. Click OK to return to the Baseline and Region Parameters dialog.
7. Click OK to continue and close the Baseline and Region Parameters - Corridor - SR61 Traffic Sep dialog.



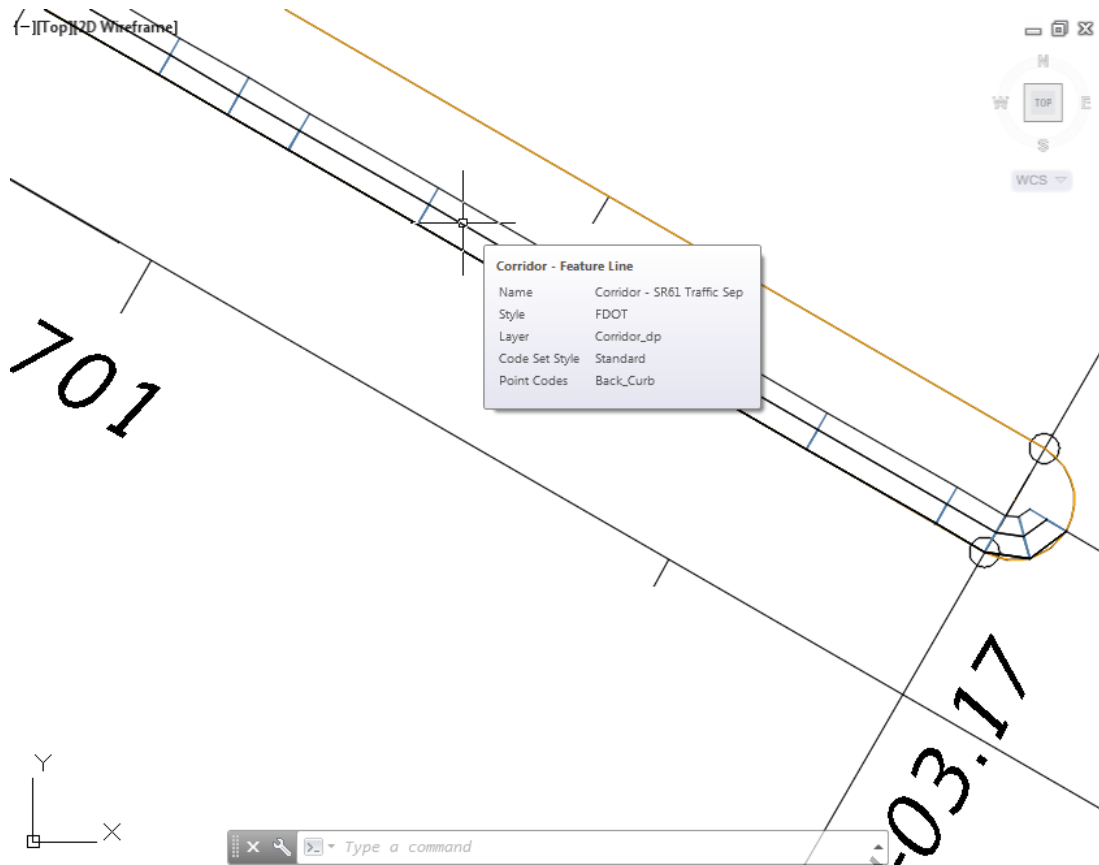
8. From the Corridor Properties - Rebuild dialog, select Rebuild Corridor.



9. Use Zoom and Pan commands to display the Corridor - SR61 The Corridor - SR61 Traffic Sep model in the drawing editor, use the red arrow as a reference.



10. Use Zoom and Pan commands to display the southern end of the Corridor - SR61 Traffic Sep.



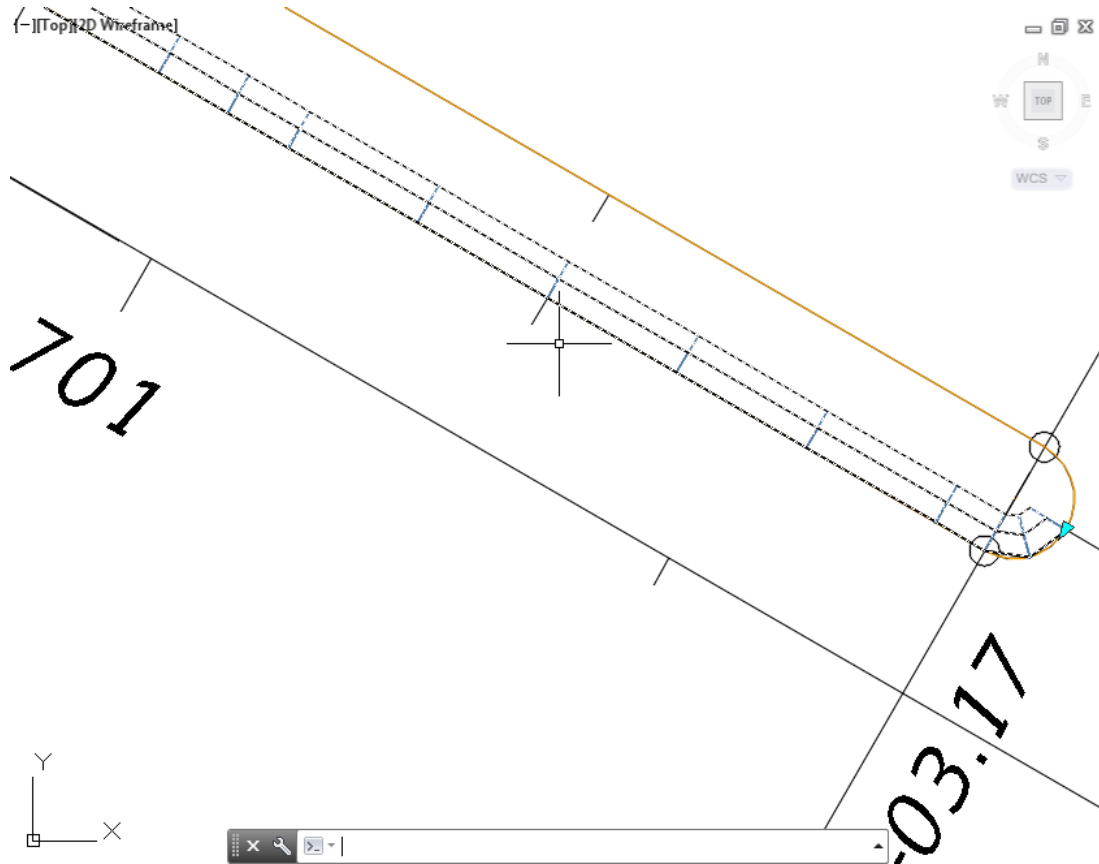
11. You need to change the frequency along curves to 0.1 to produce a smoother model.

12. **Save** your file before continuing.

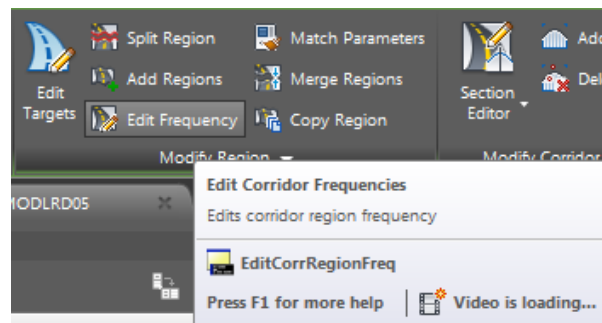
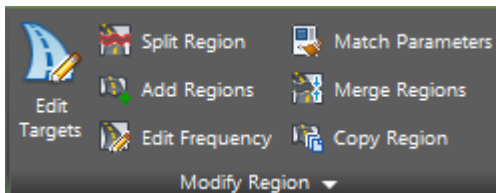
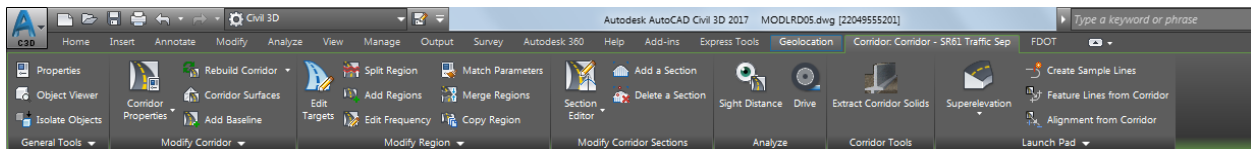
### Exercise 8.26 Edit the Corridor - SR61 Traffic Sep Corridor Frequencies

In this exercise you will edit the Corridor - SR61 Traffic Sep Corridor Frequencies for the Region RG - TS South LT

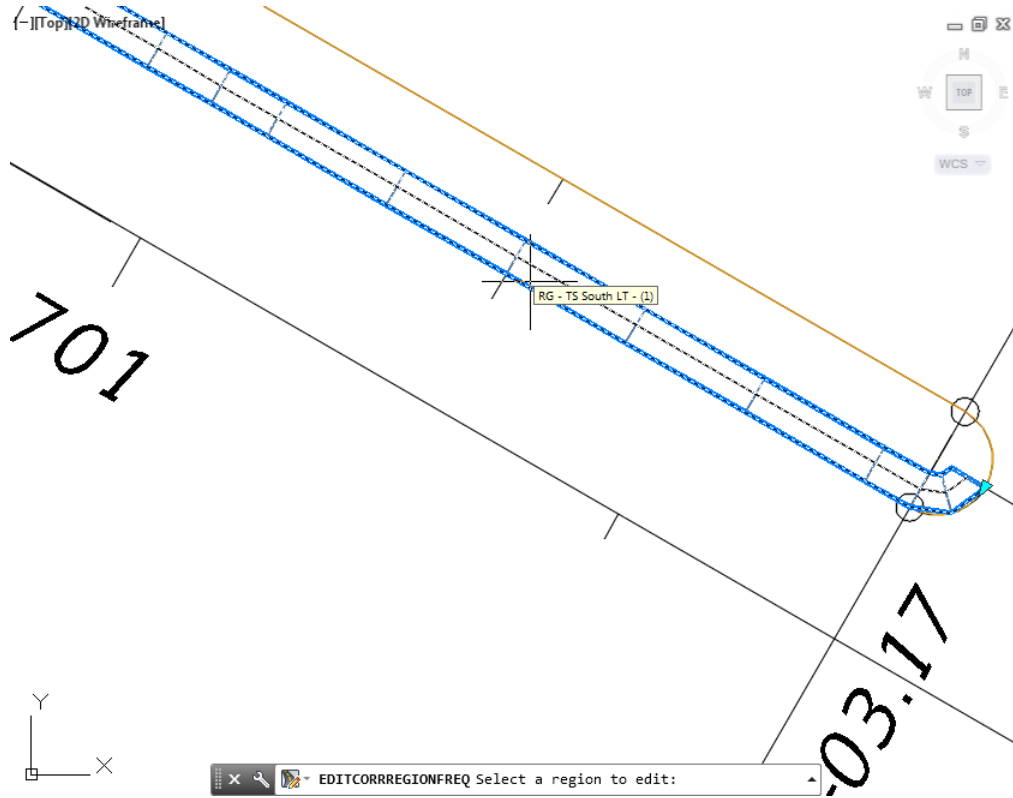
1. Select the corridor model Corridor - SR61 Traffic Sep.



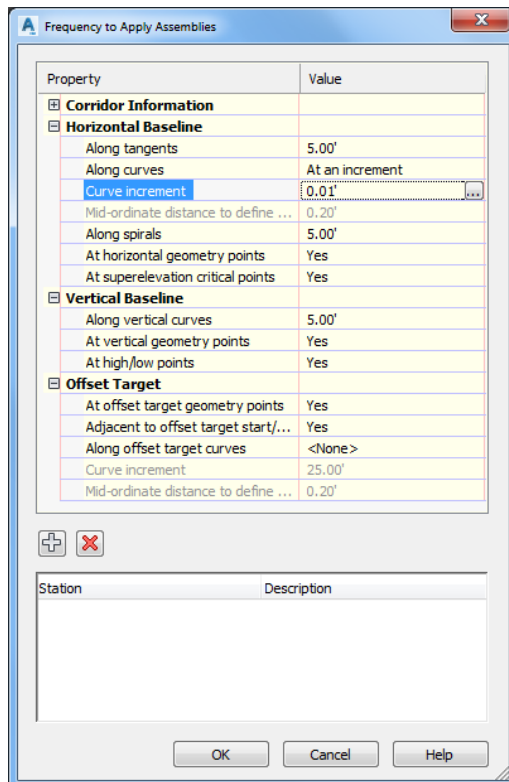
2. The Corridor: Corridor SR61 Traffic Sep tab displayed in the Ribbon. From the Modify Region panel, select the Edit Corridor Frequencies command.



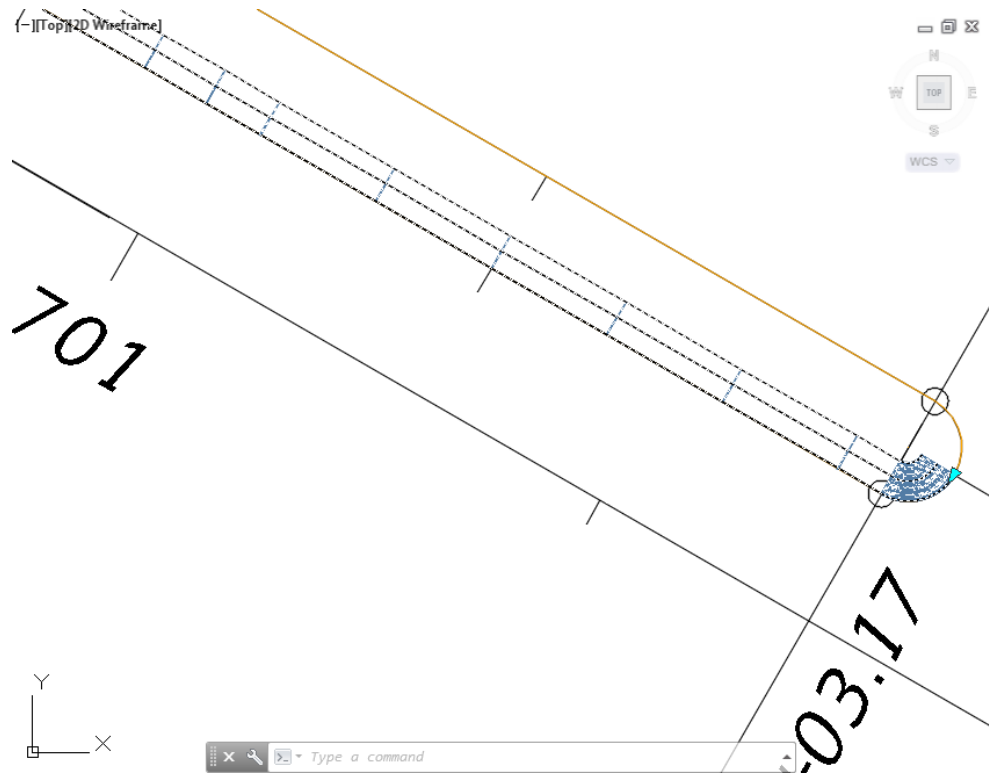
- The command line displays the prompt: Select a region to edit: Pick inside the blue highlighted area to select the region.



- Change the Curve Increment to 0.01. Click OK to close the Frequency to Apply Assemblies dialog.



- 5. The corridor model Corridor - SR61 Traffic Sep updates and displays a higher level of detail along the curve.



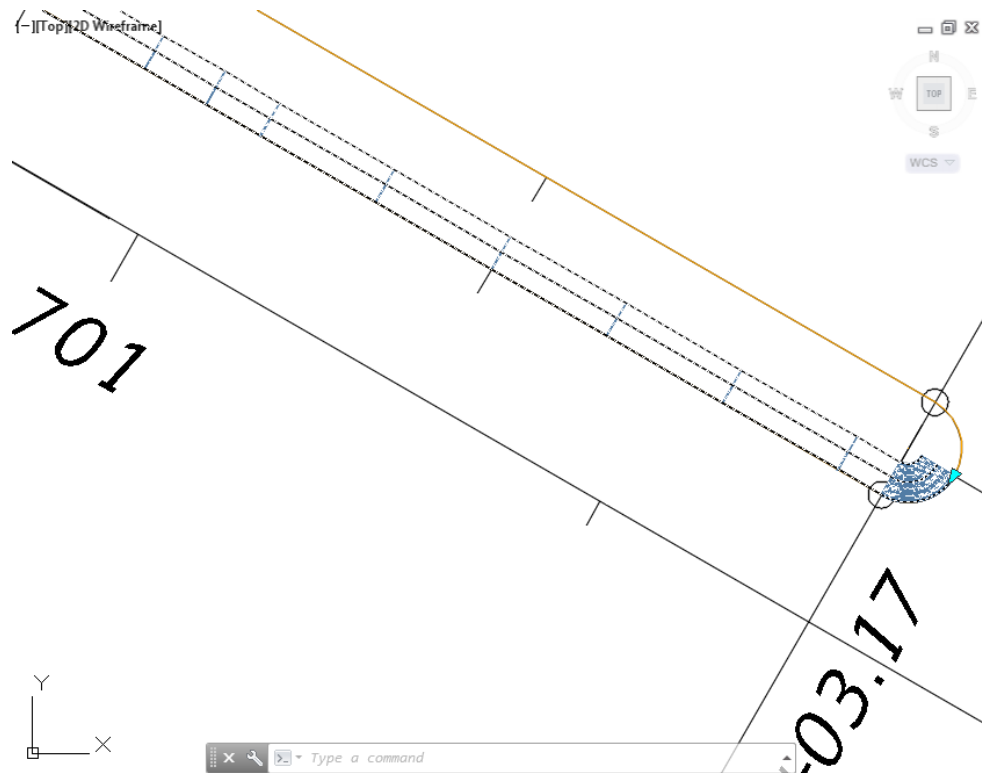
- 6. **Save** your file before continuing.



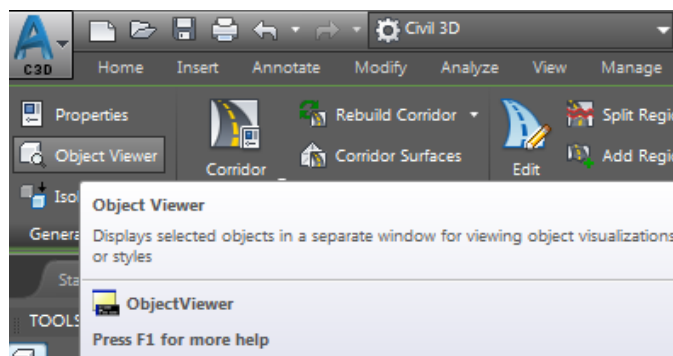
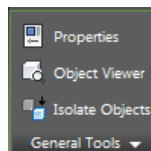
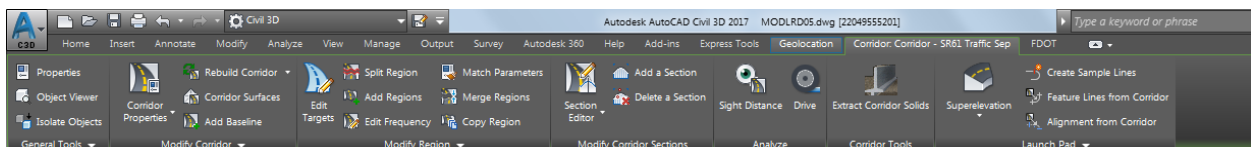
### Exercise 8.27 View the Corridor Model Corridor - SR61 Traffic Sep in 3D

In this exercise you will use the Object viewer to view the Corridor Model Corridor - SR61 Traffic Sep in 3D.

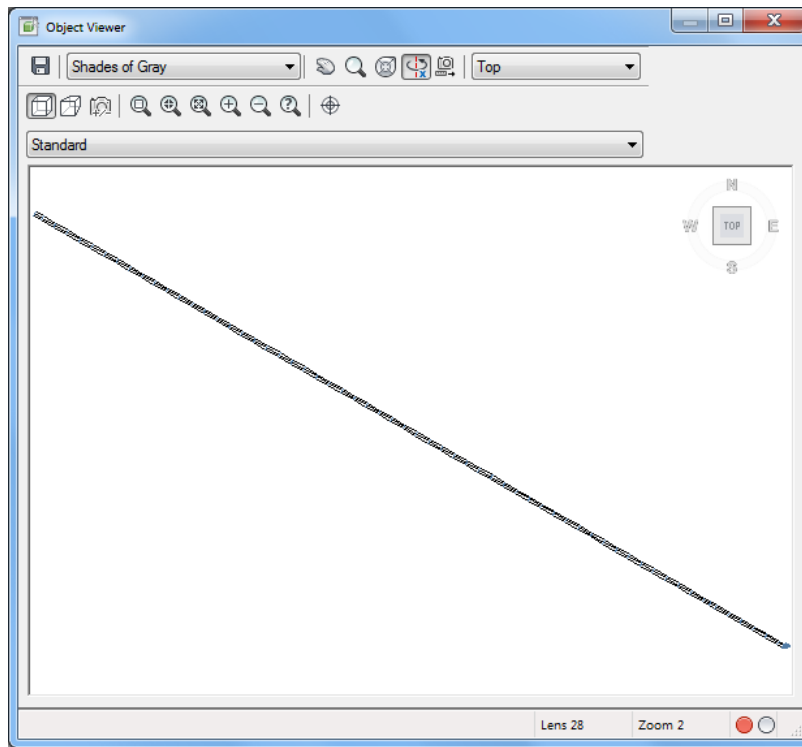
1. Select the corridor model Corridor SR61 - Traffic Sep.



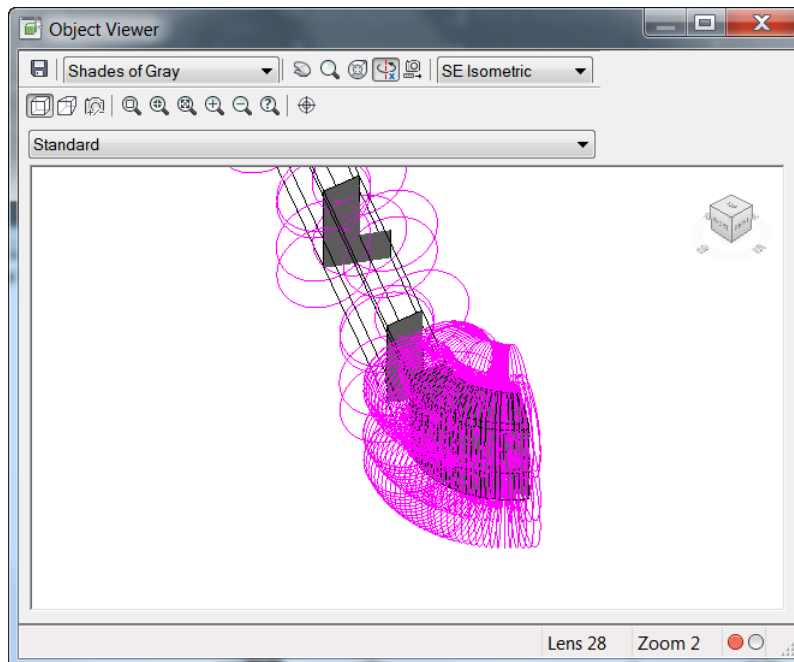
2. The Corridor: Corridor SR61 Traffic Sep tab displayed in the Ribbon. From the General Tools panel, select the Object Viewer command.



3. From the Object Viewer dialog, use the following values:
  - Set SE Isometric from the View Control drop-down list.
  - Set Shades of Gray from the Visual Styles drop down list



4. Use Zoom and Pan commands to view the model.

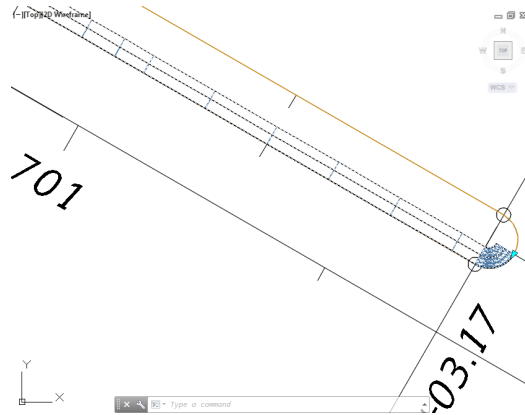


5. Close the Object Viewer.

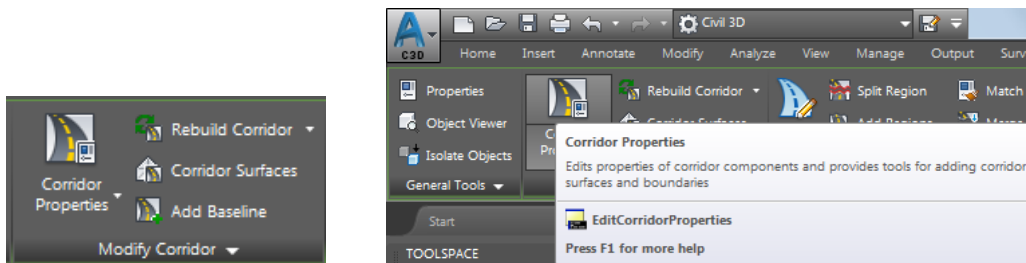
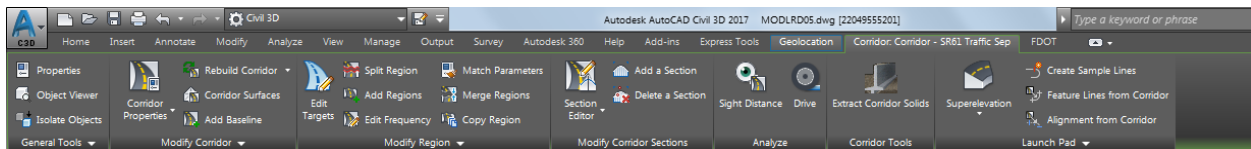
### Exercise 8.28 Create Corridor Model: Corridor - SR61 Traffic Sep Traffic Separator Right Side

In this exercise you will create a Corridor Model: Corridor - SR61 Traffic Sep using the Assemblies: TS South LT and TS South RT created in the prior exercise. In the prior chapter you created the left side first, now create the right side.

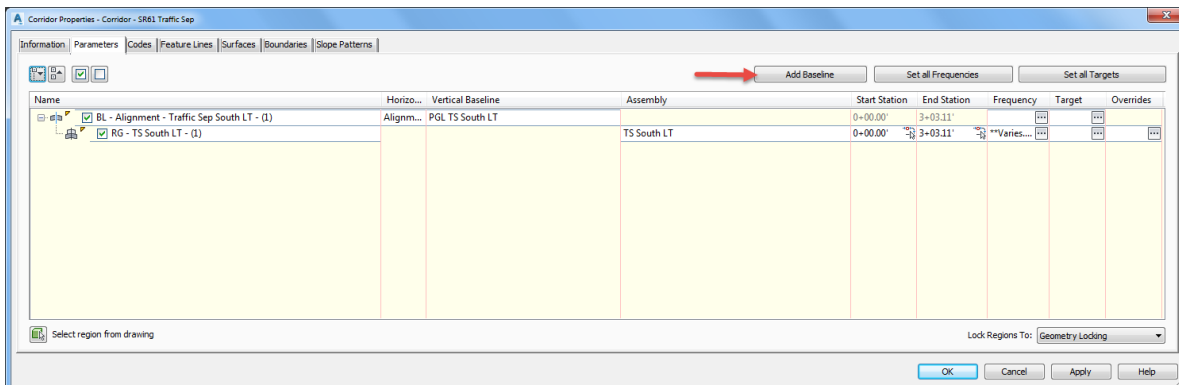
1. Select the corridor model Corridor SR61 - Traffic Sep.



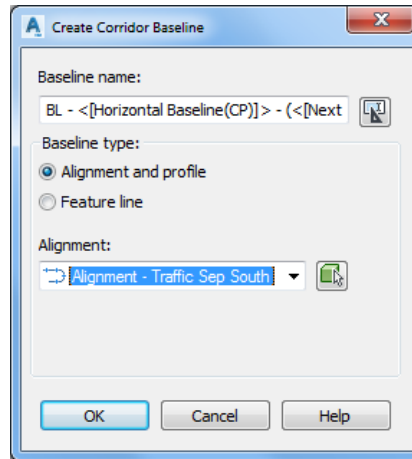
2. The Corridor: Corridor SR61 Traffic Sep tab displayed in the Ribbon. From the Modify Corridor panel, select the Corridor Properties command.



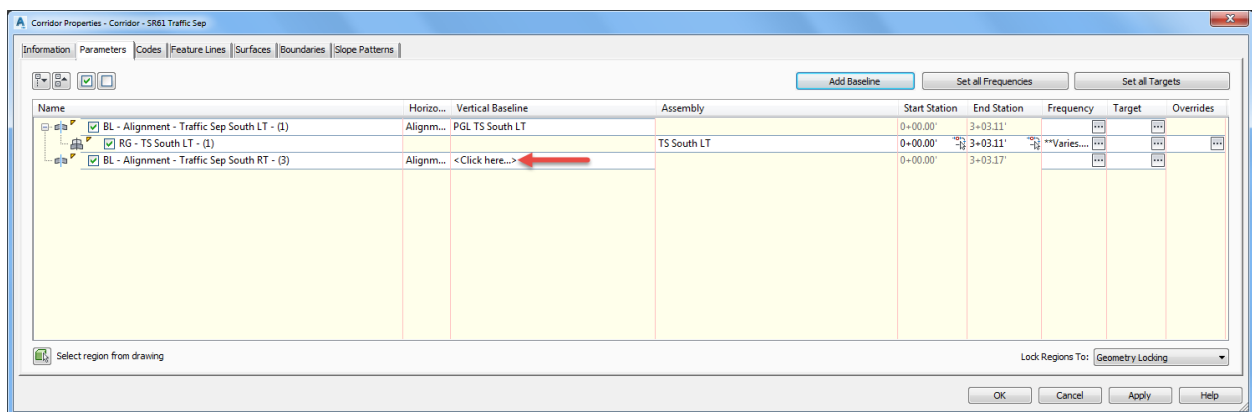
3. From the Corridor Properties - Corridor SR61 Traffic Sep dialog, select Add Baseline button, use the red arrow as a reference.



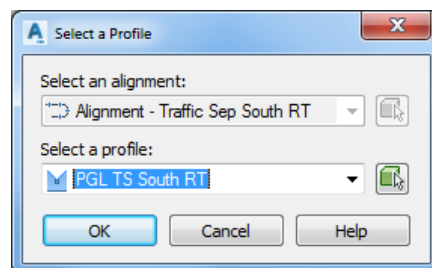
4. From the Create Corridor Baseline dialog, set the following values:
  - Baseline Name: Use default value
  - Baseline type: set to Alignment and Profile
  - Alignment: Alignment - Traffic Sep South RT (Select from drop down list)



5. Click OK to return to the Corridor Properties - Corridor SR61 Traffic Sep dialog.
6. Select <Click here..> under the Vertical Baseline column, use the red arrow as a reference.

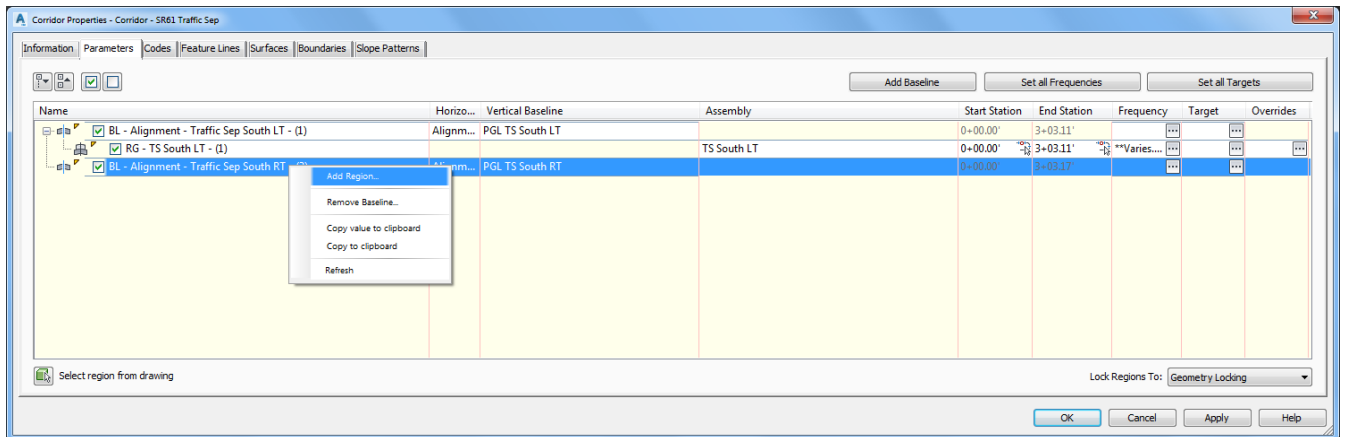


7. From the Select a Profile dialog, set the following values:
  - Select an alignment: Use default value
  - Select a profile: PGL TS South RT (Select from drop down list)



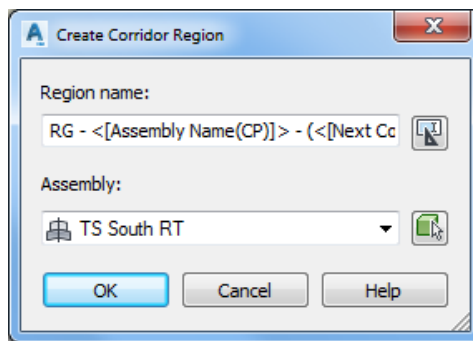
8. Click OK to return to the Corridor Properties - Corridor SR61 Traffic Sep dialog.

9. Right - click Alignment - Traffic Sep South RT in Name column, and select Add Region...



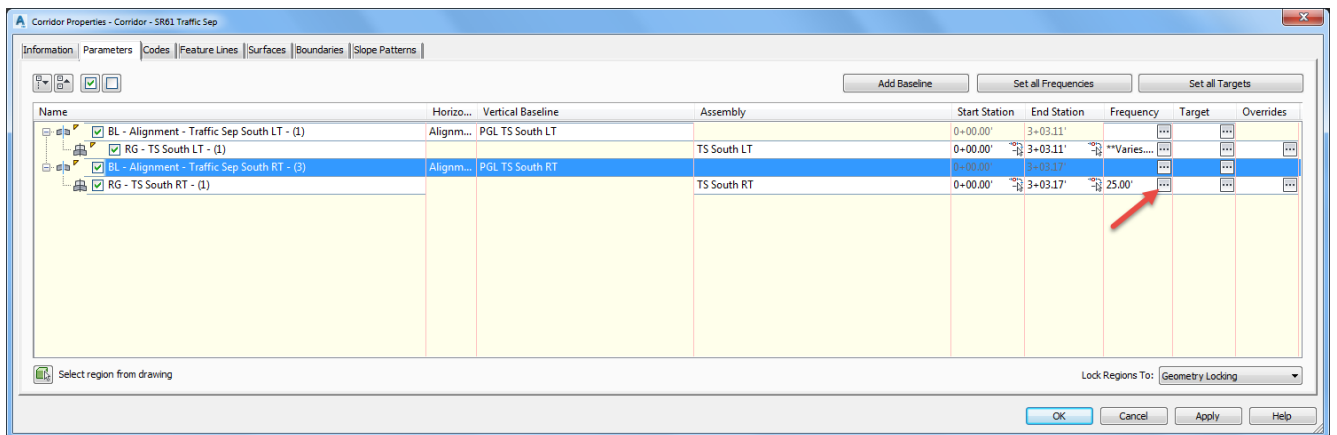
10. From the Create Corridor Region dialog, set the following values:

- o Region name: Use default value
- o Assembly: TS South RT (Select from drop down list)



11. Click OK to return to the Corridor Properties - Corridor SR61 Traffic Sep dialog.

12. Select the “+” next to Alignment - Traffic Sep South RT to display the Region row. Select the button in the Frequencies column in the same row, use the red arrow as a reference.



13. From the Frequency to Apply Assemblies dialog, set the following values:

- Horizontal Baselines:

Along tangents: 5.00

Along curves: At an increment

Curve increment: 0.01

Along spirals: 5.00

- Vertical Baselines:

Along Vertical curves: 5.00

At vertical geometry points: Yes

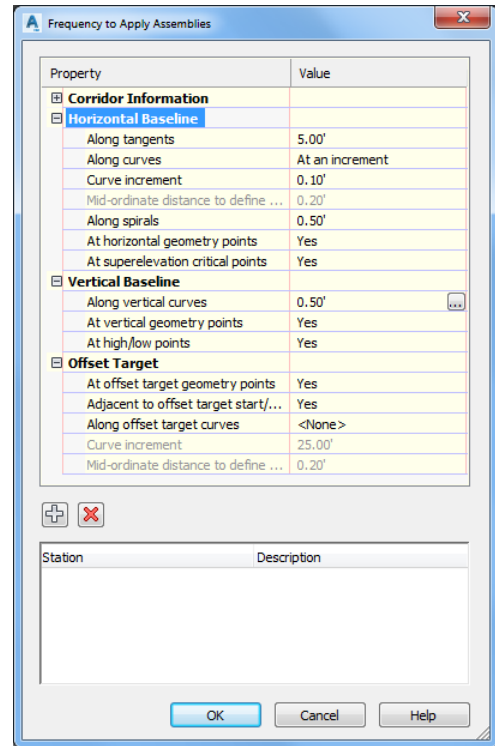
At high/low points: Yes

- Offset Target:

At offset target geometry points: Yes

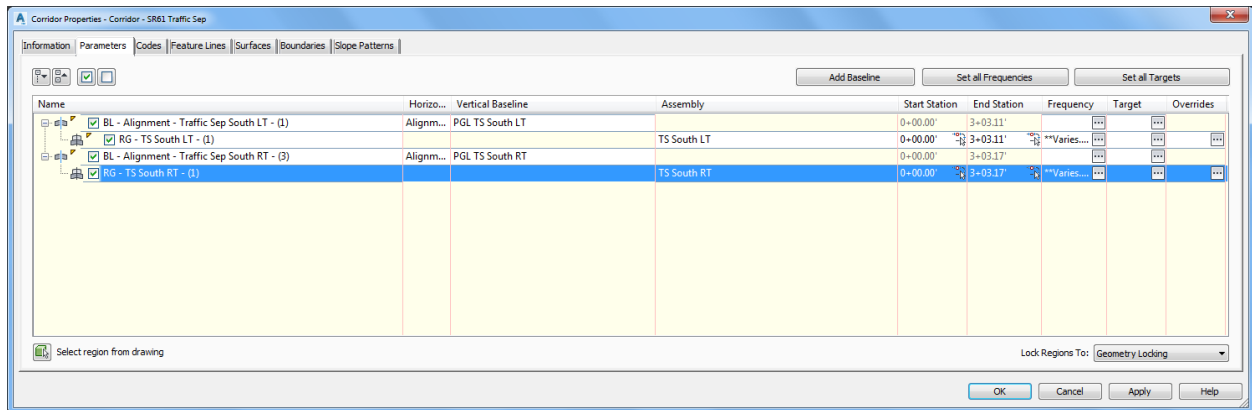
Adjacent to offset target start/end: Yes

Along Offset target curves: <None>

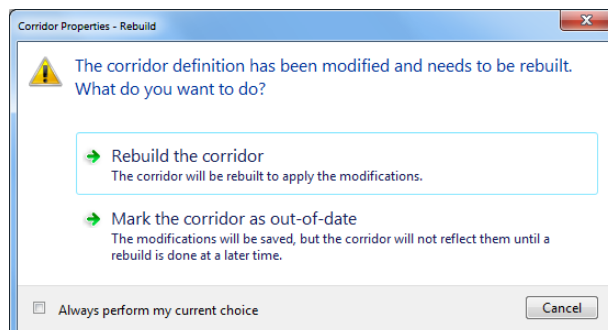


14. Click OK to return to the Baseline and Region Parameters dialog.

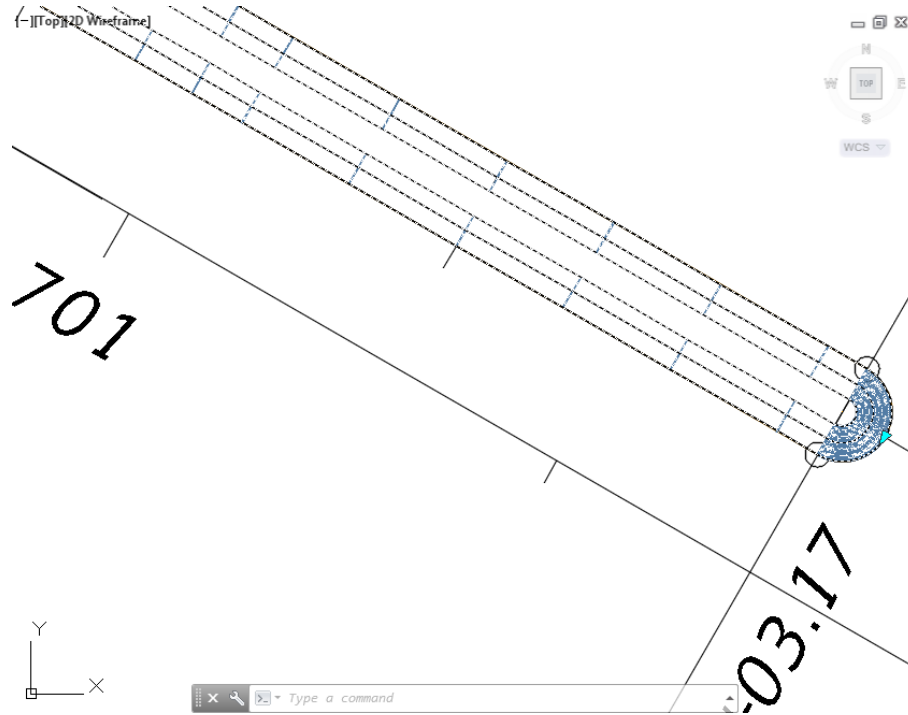
15. Click OK to continue and close the Corridor Properties - Corridor - SR61 Traffic Sep dialog.



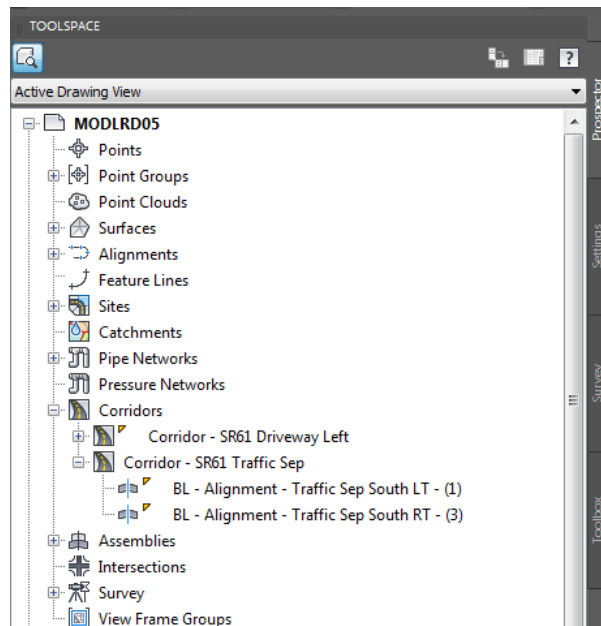
16. From the Corridor Properties - Rebuild dialog, select Rebuild Corridor.



- Use Zoom and Pan commands to display the southern end of the Corridor - SR61 Traffic Sep. Both the left and right sides of the corridor model Corridor - SR61 Traffic Sep are displayed.



- From TOOLSPACE > Prospector tab, expand Corridors, then expand Corridor - Sr61 Traffic Sep, the new Baselines for Alignment - Traffic Sep South LT and Alignment - Traffic Sep South RT are displayed.

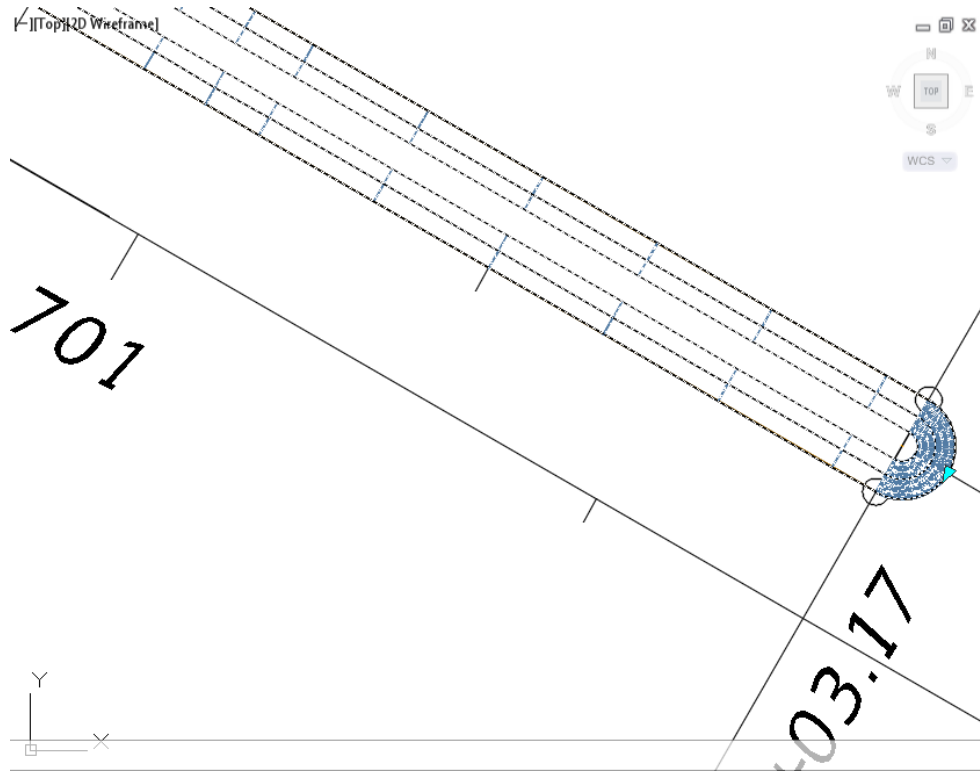


- Save** your file before continuing.

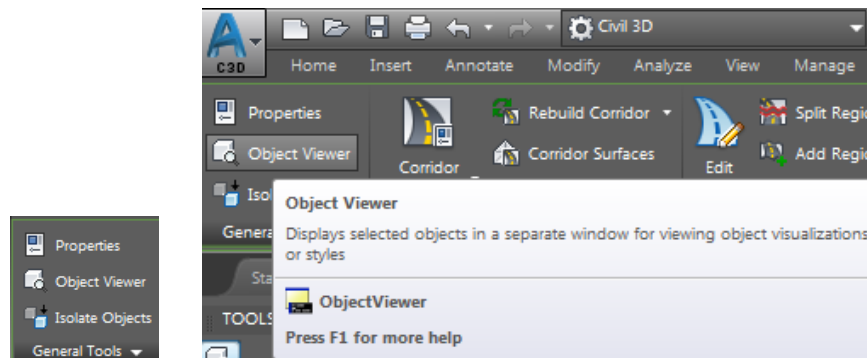
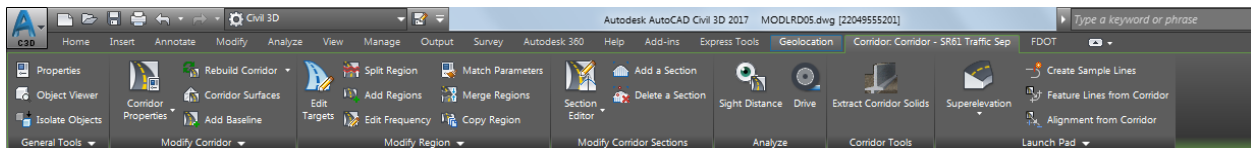
### Exercise 8.29 View Both Sides of the Corridor Model Corridor - SR61 Traffic Sep in 3D

In this exercise you will use the Object viewer to view both sides of the Corridor Model Corridor - SR61 Traffic Sep in 3D.

1. Select the corridor model Corridor SR61 - Traffic Sep.

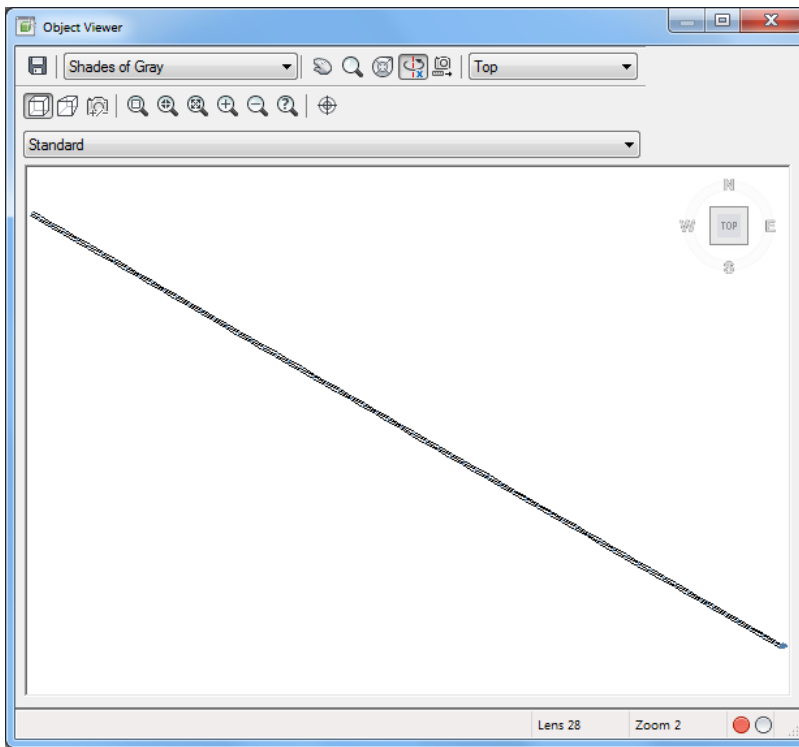


2. The Corridor: Corridor SR61 Traffic Sep tab displayed in the Ribbon. From the General Tools panel, select the Object Viewer command.

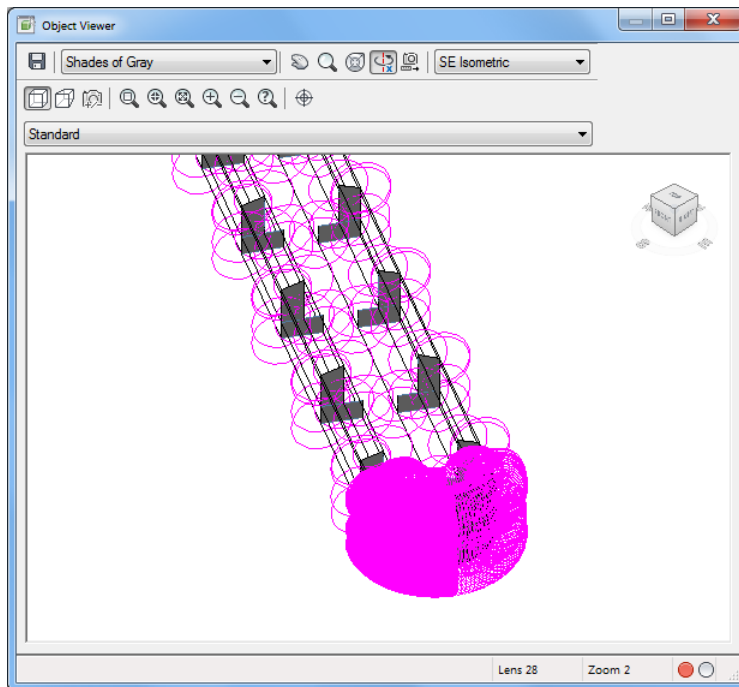




3. From the Object Viewer dialog, use the following values:
  - Set SE Isometric from the View Control drop-down list.
  - Set Shades of Gray from the Visual Styles drop down list



4. Use Zoom and Pan commands to view the model.

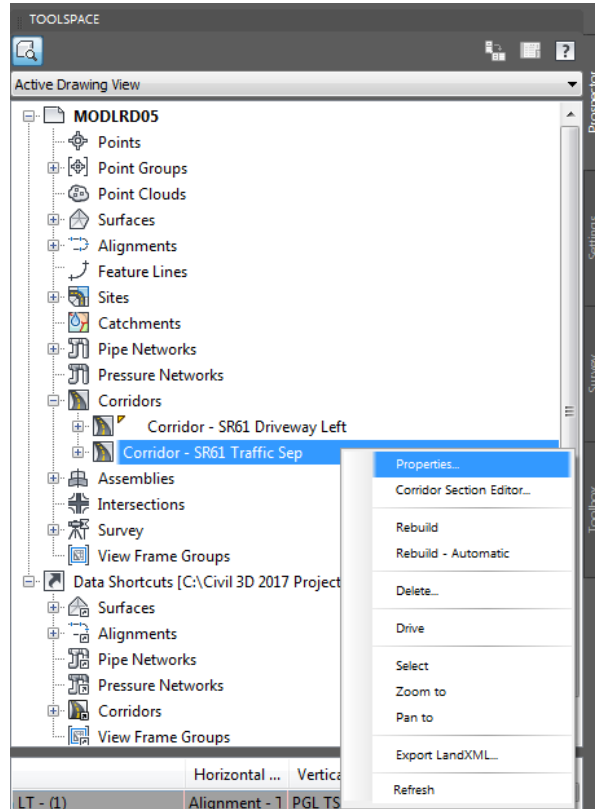


5. **Close** the Object Viewer.

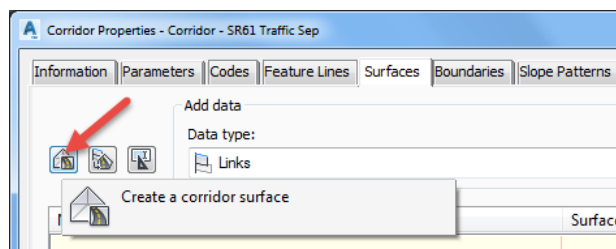
### Exercise 8.30 Create a Corridor Surface for the Corridor - SR61 Traffic Sep Corridor

In this exercise you will create a corridor surface for the Corridor - SR61 Traffic Sep corridor model.

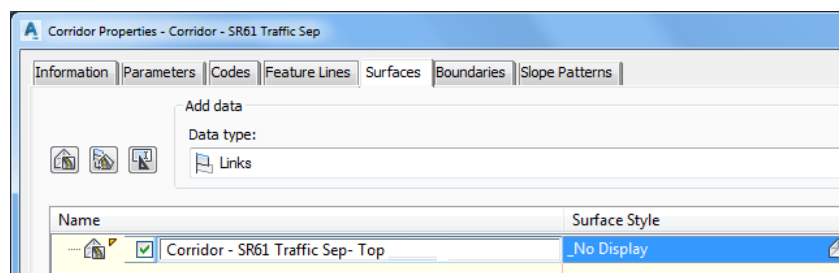
1. From TOOLSPACE > Prospector tab, expand Corridors, select Corridor - SR61 Traffic Sep, then right-click and select Properties...



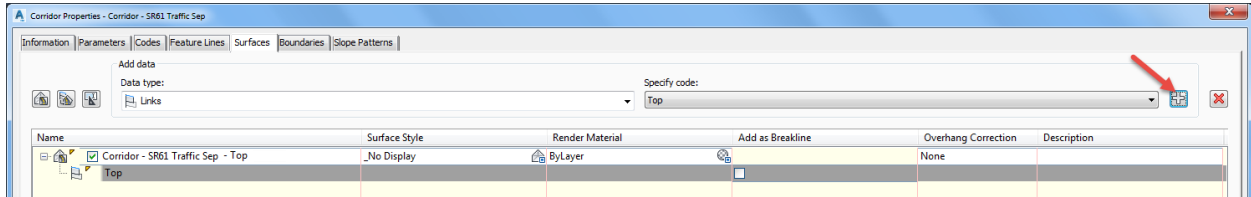
2. From the Corridor Properties - Corridor - SR61 Traffic Sep dialog, select the Surfaces tab. Select the Create a corridor surface button, referenced by the red arrow.



3. Rename the surface to: Corridor - SR61 Traffic Sep – Top.

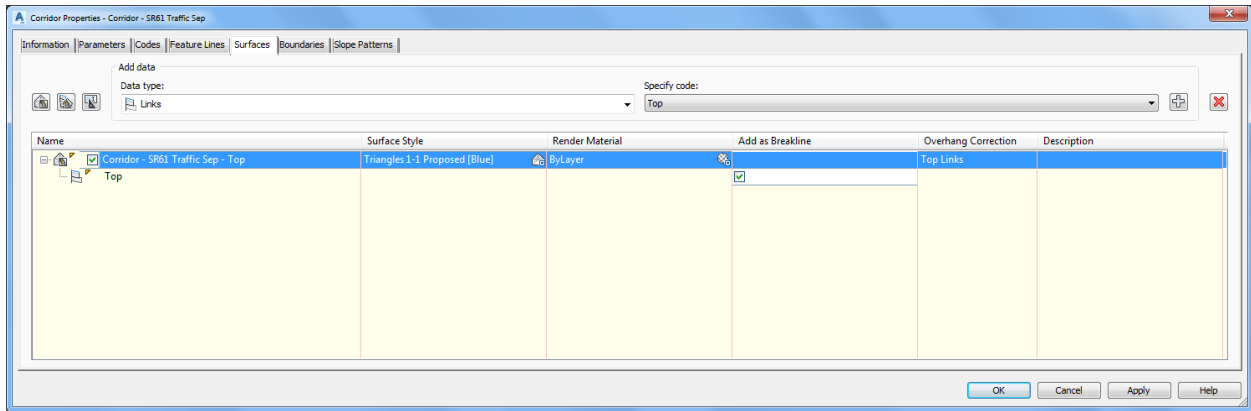


4. Add data to the Corridor - SR61 Traffic Sep surface, set the following values:
  - o Set Data type: Links
  - o Set Specify code: Top
5. Click on the Plus sign to add data to the Corridor - SR61 Traffic Sep - Top surface, referenced by the red arrow.

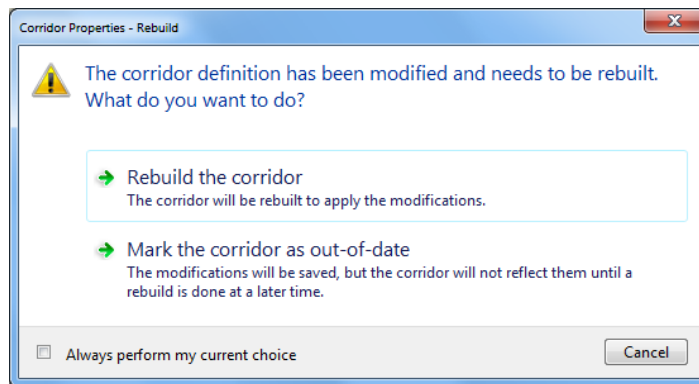


6. For the Corridor - Corridor - SR61 Traffic Sep - Top surface, set the following values
  - o Set Surface style to Triangles 1:1Proposed [Blue]
  - o Check Add as Breaklines box
  - o Set Overhang Correction to Top Links

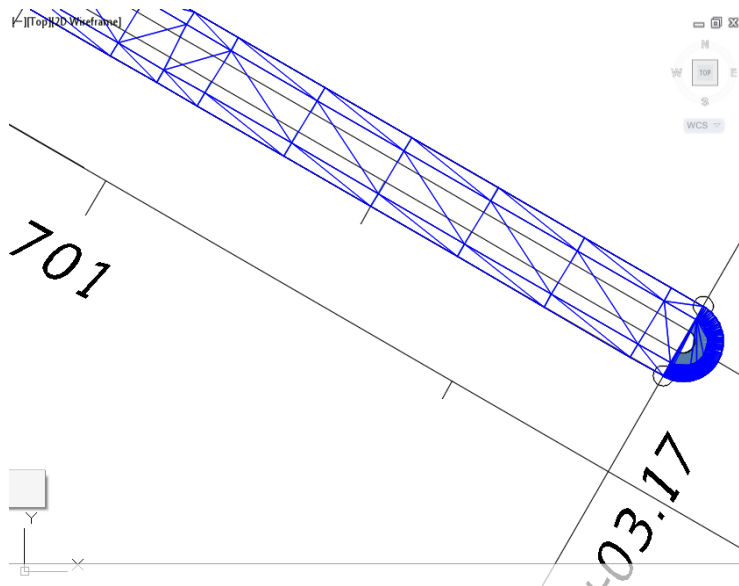
**Note** Do not create a surface boundary. A shrink-wrap will create a void between back of curbs



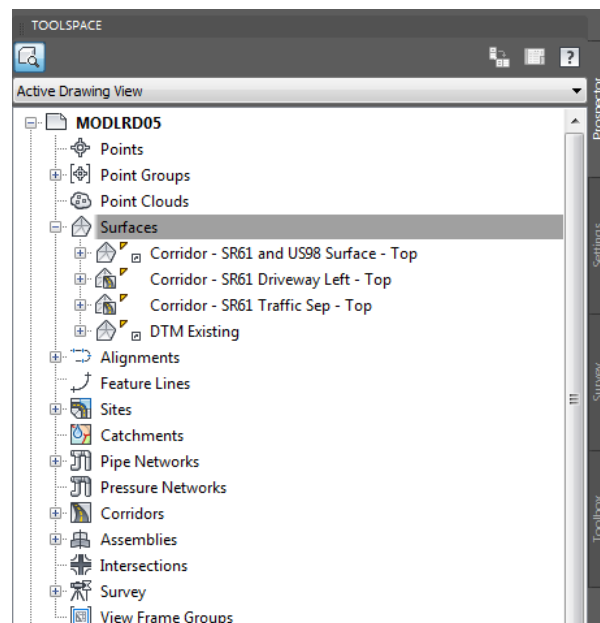
7. Click OK to continue and to close the Corridor Properties - Corridor - SR61 Traffic Sep dialog.
8. From the Corridor Properties - Rebuild dialog, select Rebuild the corridor.



9. The new Corridor - SR61 Traffic Sep - Top surface is displayed



10. From TOOLSPACE > Prospector tab, expand Surfaces, the new Corridor - SR61 Traffic Sep - Top surface is displayed.

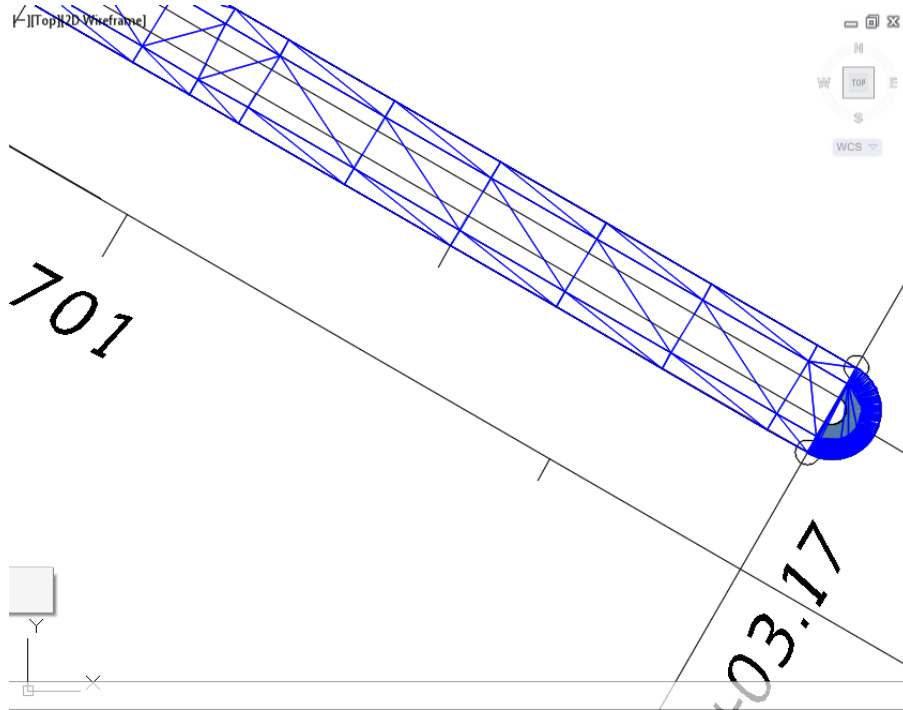


11. **Save** your file before continuing.

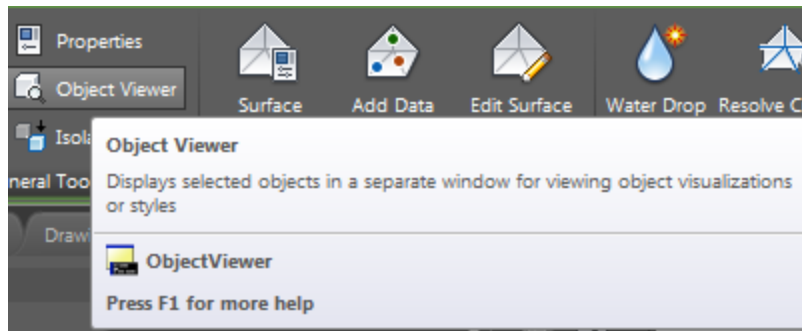
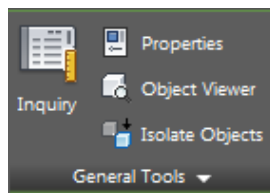
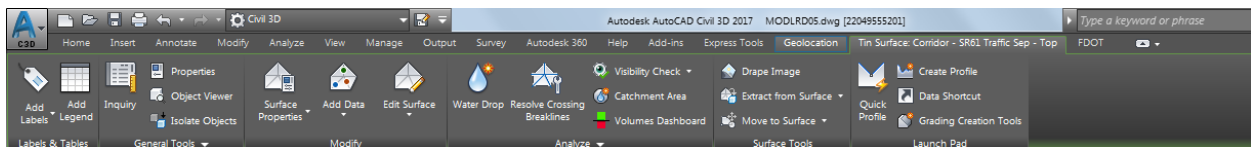
**Exercise 8.31 Display the Corridor - SR61 and US98 - Top Surface in the Object Viewer**

In this exercise you will use the Object viewer to view the Corridor Model Corridor - SR61 Traffic Sep - Top Surface in 3D.

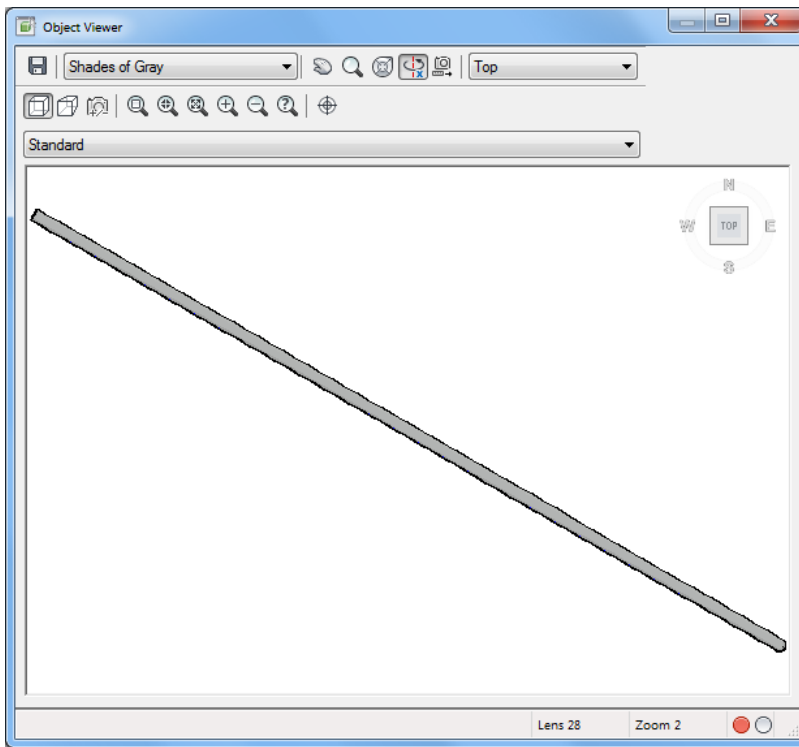
1. Select the corridor model Corridor SR61 - Traffic Sep - Top surface.



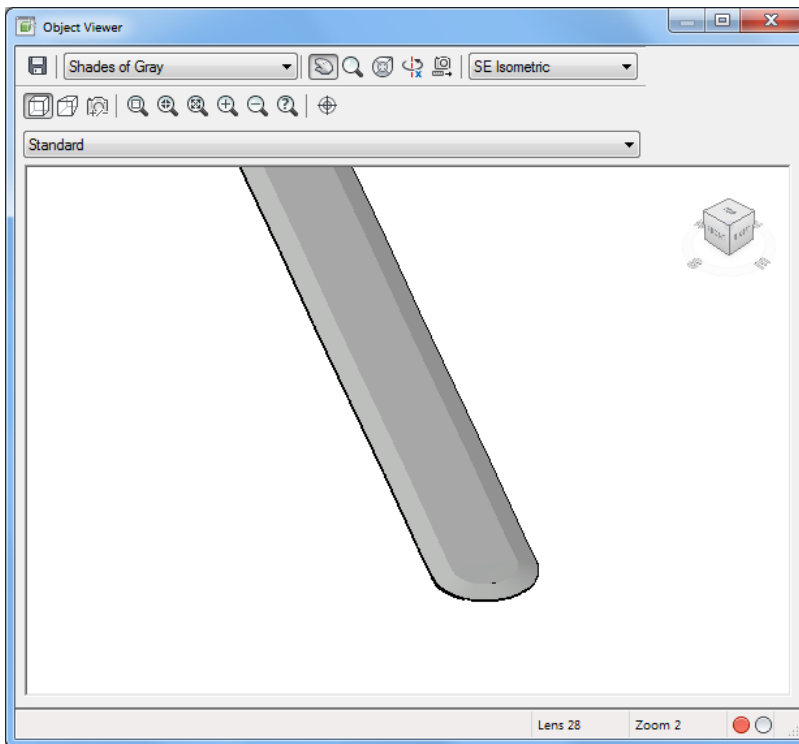
2. The Tin Surface: Corridor - SR61 Traffic Sep -Top tab displayed in the Ribbon. From the General Tools panel, select the Object Viewer command.



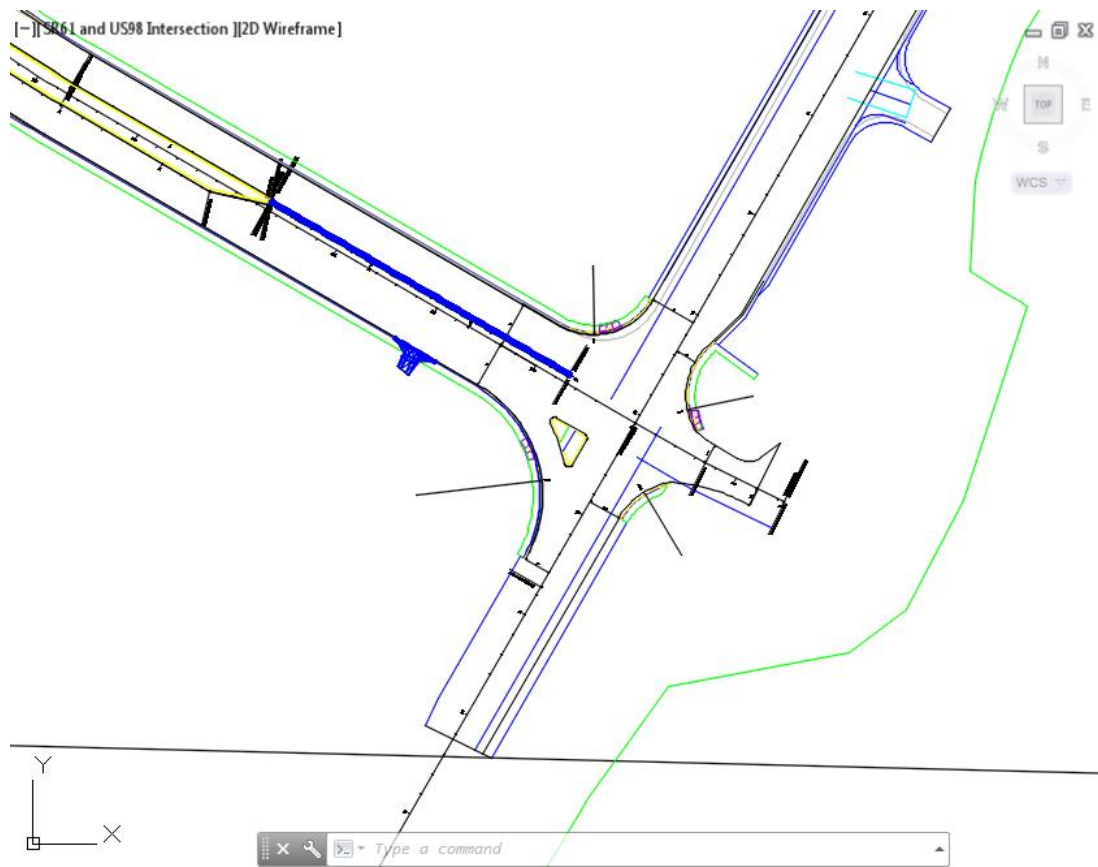
3. From the Object Viewer dialog, use the following values:
  - Set SE Isometric from the View Control drop-down list.
  - Set Shades of Gray from the Visual Styles drop down list



4. Use Zoom and Pan commands to view the model.



5. Close the Object Viewer.
6. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.



7. **Save and Close** MODLRD05.dwg

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# 9 CREATE TRAFFIC ISLAND

## DESCRIPTION

In this chapter, you will a Create Traffic Island at the intersection of SR61 and US98

## OBJECTIVES

In this chapter, you will learn about:

- Review referenced data
- Create Data Shortcuts Reference:
  - Surface: Corridor - SR61 and US98 - TOP
- Create Traffic Island at the intersection of SR61 and US98 using:
  - Ncopy
  - Explode
  - Fillet
  - Join
  - Break at Point
- Create Feature Lines from Objects
  - Traffic Island - Sidewalk
  - Traffic Island - Interior North
  - Traffic Island - Interior South
- Create Traffic Island - Sidewalk Surface
  - Traffic Island - Sidewalk
- Create Curb Return Assembly:
  - FDOT - Traffic Island Curb Returns
- Create a Traffic Island Corridors:
  - Corridor - Traffic Island - Interior North
  - Corridor - Traffic Island - Interior South
- Create Corridor Surface from Corridors:
  - Corridor - Traffic Island - Interior North - TOP
  - Corridor - Traffic Island - Interior South - TOP
  - Set Traffic Island Surfaces styles
- Create Proposed Traffic Island Surface:
  - Proposed Traffic Island
- Paste Surfaces:
  - Traffic Island - Sidewalk
  - Corridor - Traffic Island - Interior North - TOP
  - Corridor - Traffic Island - Interior South - TOP
- Adjust Feature Line locations
- Adjust Feature Line Elevations
- Review Results

## CHAPTER SETUP

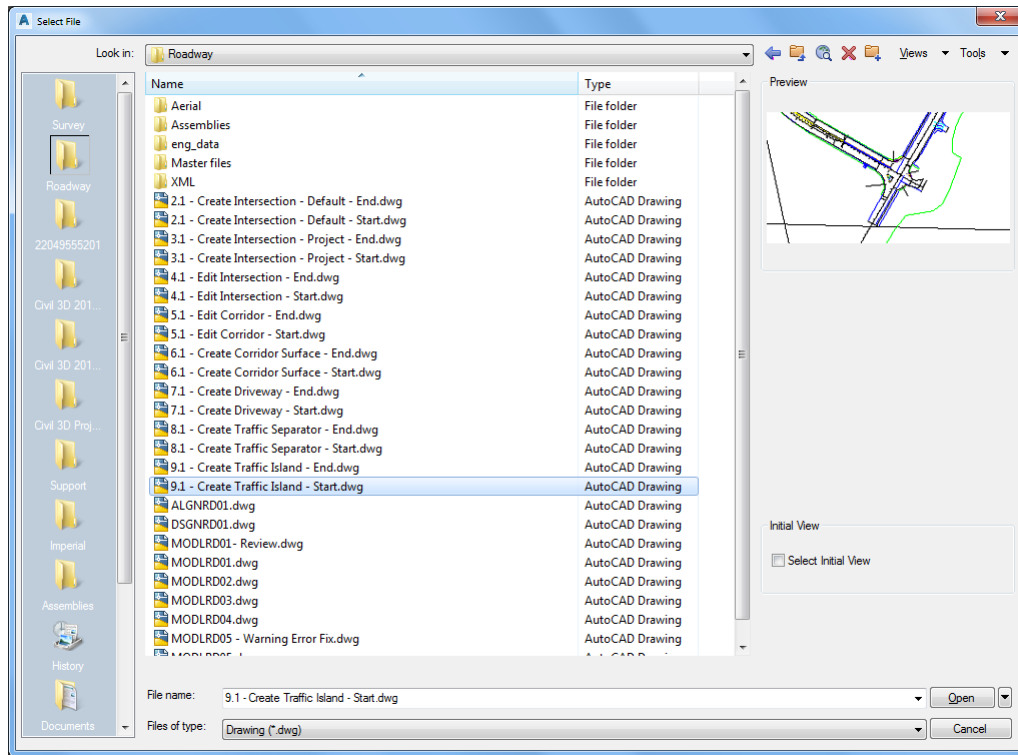
Run the Chapter 9 - 22049555201.exe file and restore all files to the C:\Civil 3D 2017 Projects folder.

Do not change the location in which the Practice Files are installed. Doing so can cause errors when completing the exercises in this training manual.

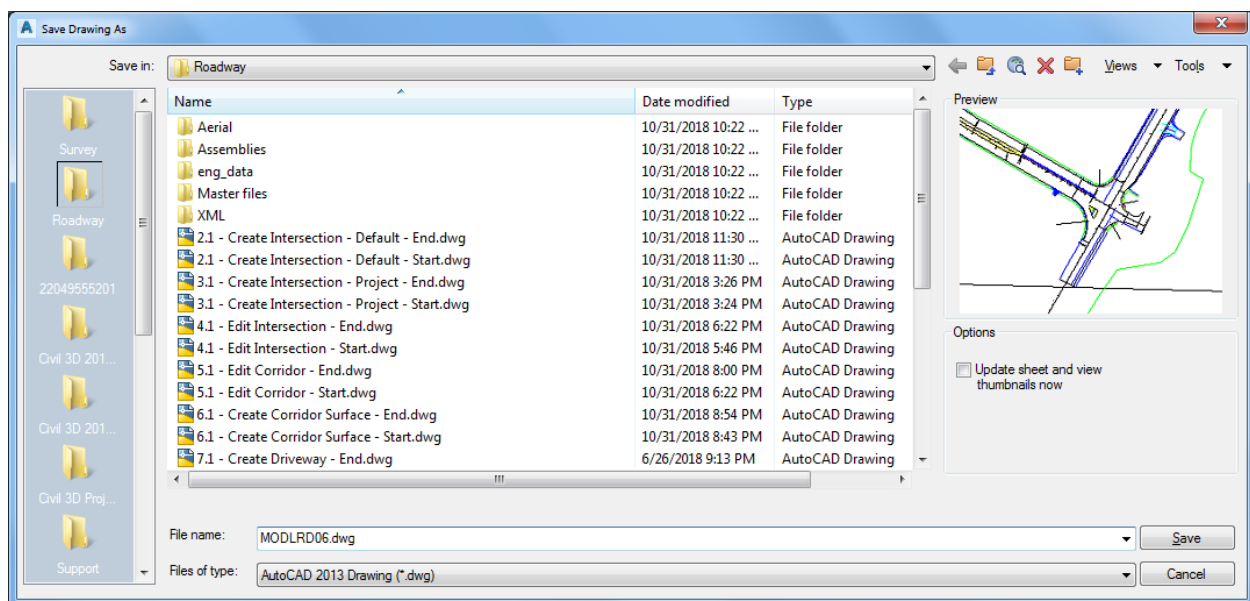
### Exercise 9.1 Create MODLRD06 File

In this exercise you will create the MODLRD06 file which will be used in the creation of a Traffic Island in the intersection of SR61 and US98.

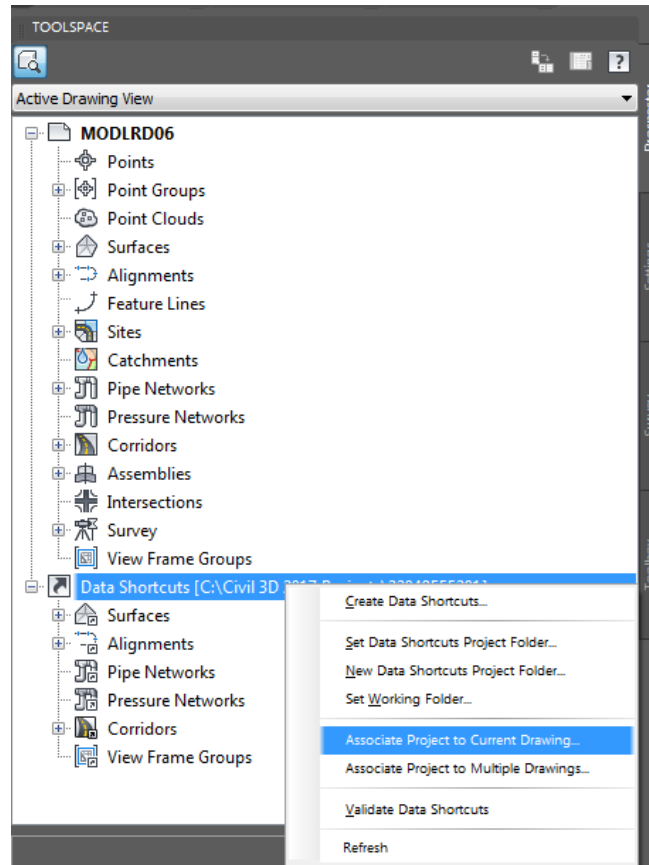
1. From the **Select File** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and select **9.1 - Create Traffic Island - Start.dwg**. Click **Open** to close the **Select File** dialog box.



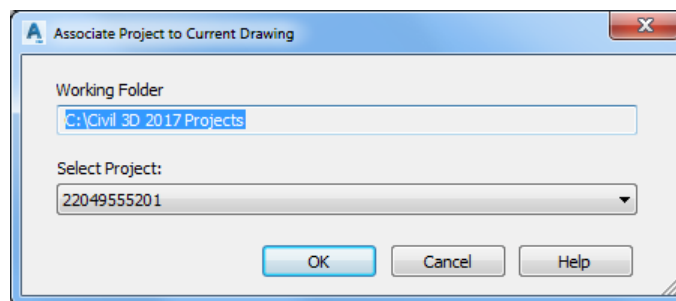
2. From the **Save Drawing As** dialog box, navigate to the *C:\Civil 3D 2017 Projects\22049555201\Roadway* folder and **MODLRD06.dwg**. Click **Save** to close the **Save Drawing As** dialog box.



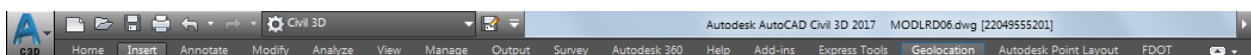
3. Associate MODLRD06.dwg File to the Project. From the *TOOLSPACE > Prospector tab > Data Shortcuts* [C:\Civil 3D 2017 Projects\22049555201], right-click and select **Associate Project to Current Drawing**.



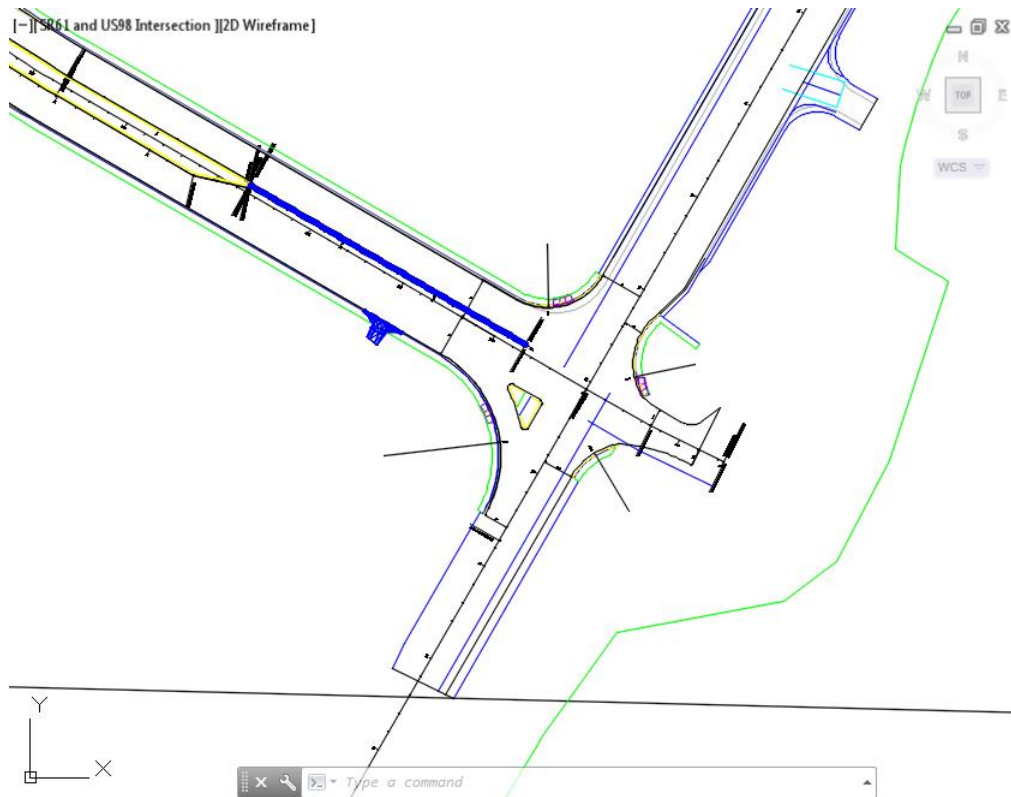
4. From Associate Project to Current Drawing dialog box, set the following values:
  - *Working Folder*: set to C:\Civil 3D 2017 Projects
  - *Select Project*: click 22049555201 from drop down list



5. Click OK to close Associate Project to Current Drawing dialog box.
6. **MODLRD06.dwg** is now associated to the C:\Civil 3D 2017 Projects\22049555201 Project.



7. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection

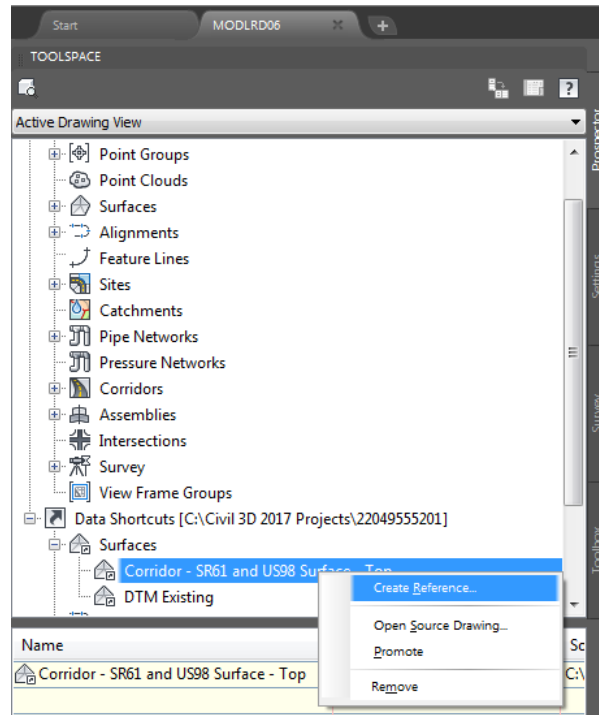


8. **Save** your file before continuing.

### Exercise 9.2 Create Data Shortcuts Reference to Corridor: Corridor - SR61 and US98 - Surface - Top Surface

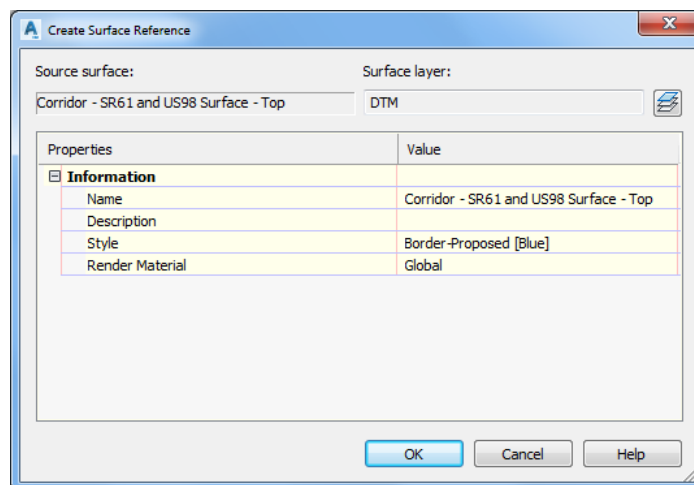
In this exercise you will create Data Shortcut References to the Surface - *Corridor - SR61 and US98 Surface - Top* you created using the prior chapter.

1. From the TOOLSPACE > Prospector tab > Data Shortcuts [C:\Civil 3D 2017 Projects\22049555201], right-click and select Create Reference...



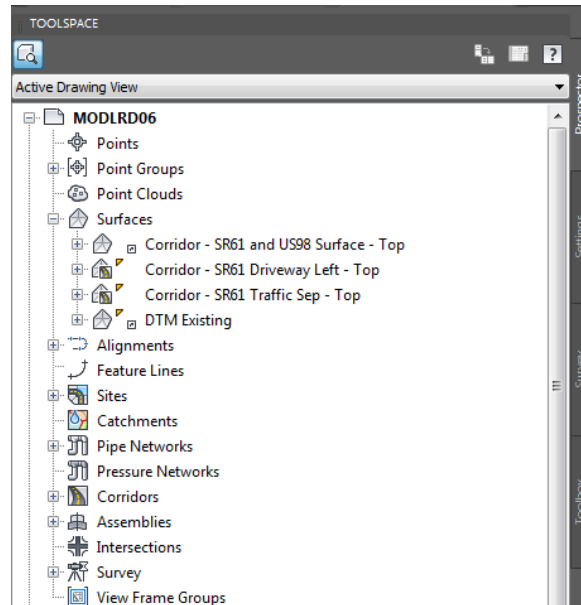
2. From the Create Surface Reference dialog , set the following values:

- o Name: Corridor - SR61 and US98 Surface - Top
- o *Surface Style*: Border-Proposed [Blue]

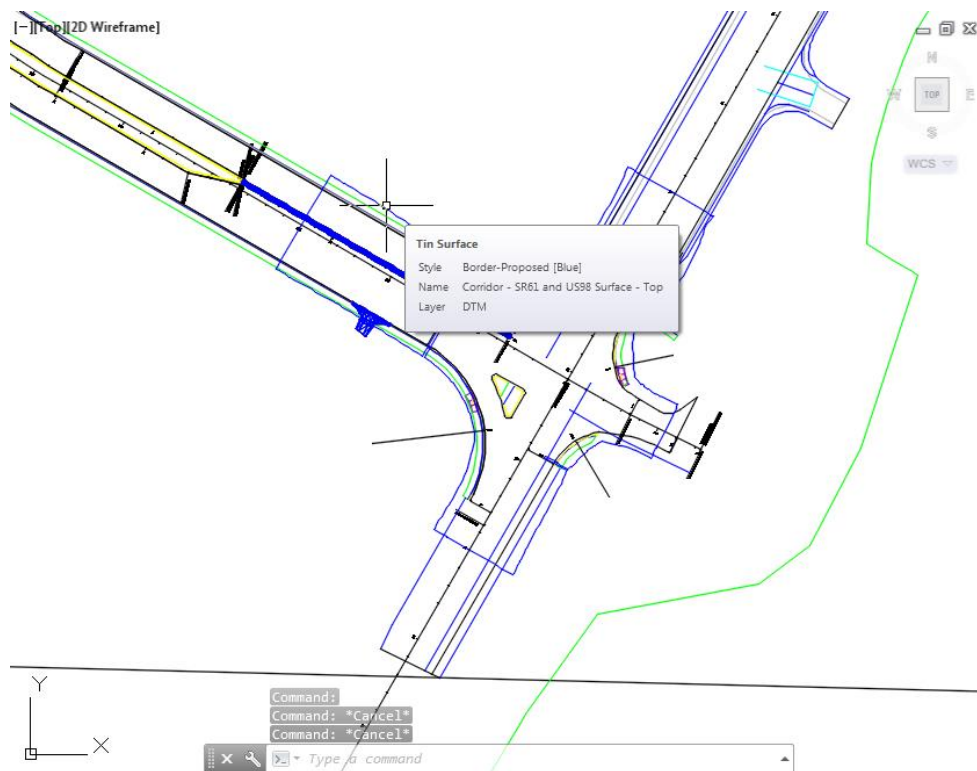


3. Click **OK** to close Create Surface Reference dialog.

- Review Surfaces in MODLRD06 from TOOLSPACE > Prospector tab, expand Surfaces, the data referenced Surface: *Corridor - SR61 and US98 Surface - Top* is now displayed.



- Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.
- Hover over the data referenced Surface: Corridor - SR61 and US98 Surface - Top to display tool tips.



- Save your file before continuing.

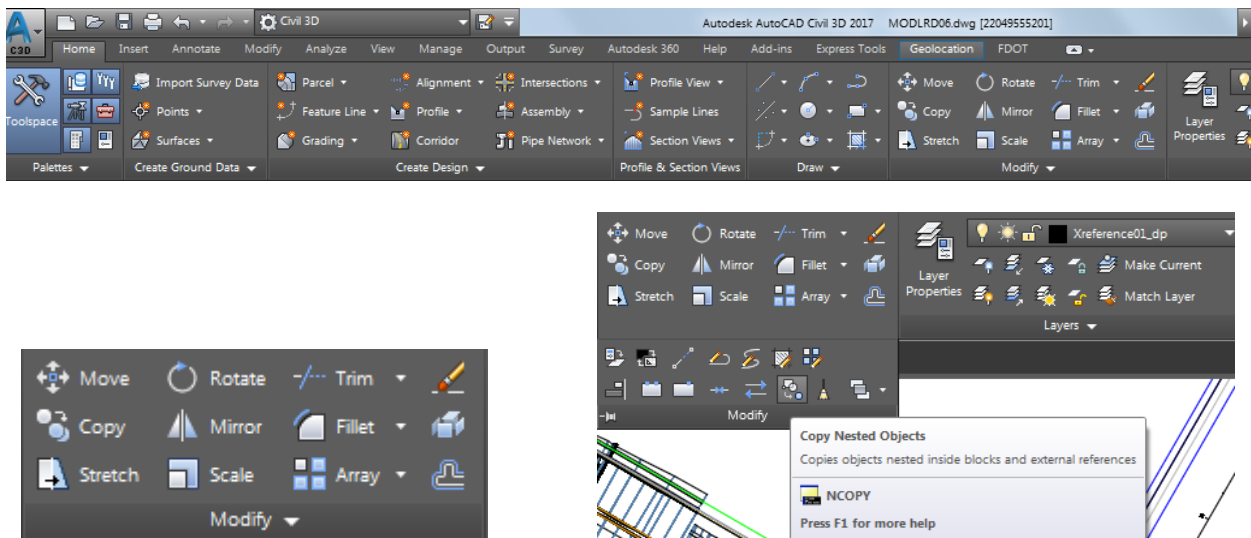
### Exercise 9.3 Create Traffic Island Geometry at Intersection of SR61 and US98

In this exercise you will start the process of creating the Traffic Island geometry at intersection of SR61 and US98 from an attached external reference DSGNRD01. You will use the commands Ncopy, Explode, Join, Fillet, Erase, and Break at point to create the geometry for the Traffic Island layout in later exercises.

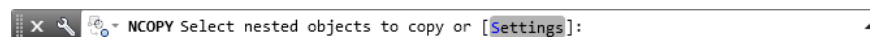
1. Use Zoom and Pan commands to display the layout of the Traffic Island from the attached external reference DSGNRD01.dwg



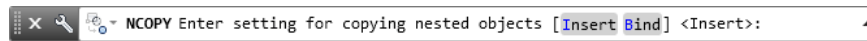
2. First, you will use NCOPY to extract the boundaries of the Traffic Island at intersection of SR61 and US98. From the Home tab > Modify panel > select Modify, then select Copy Nested Objects.



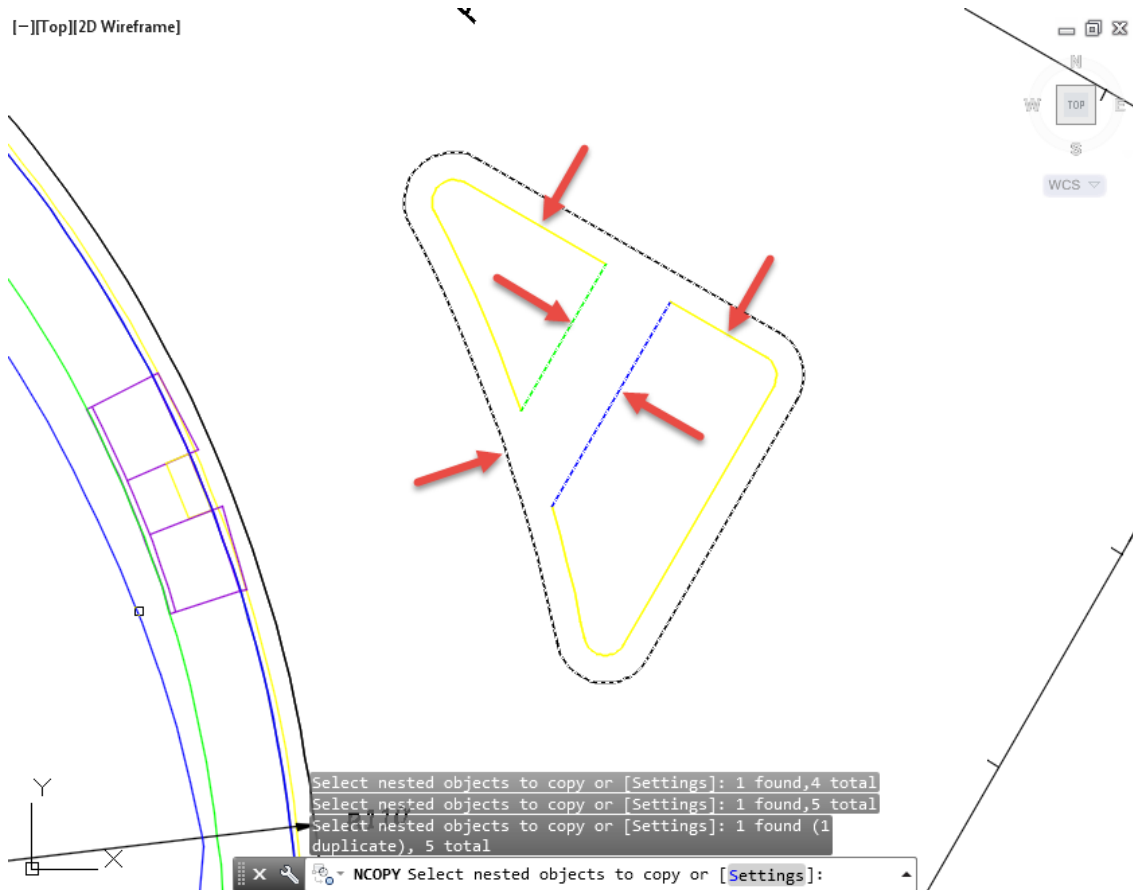
3. From the Command line select Settings option



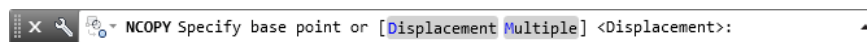
- From the Command line select Insert option



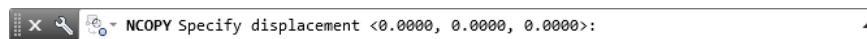
- Select the 5 lines that outline the 2D layout of the Traffic Island, use the red arrows as a reference for selecting the the Traffic Island geometry. Then press Enter.



- From the Command line Press Enter to use <Displacement> option

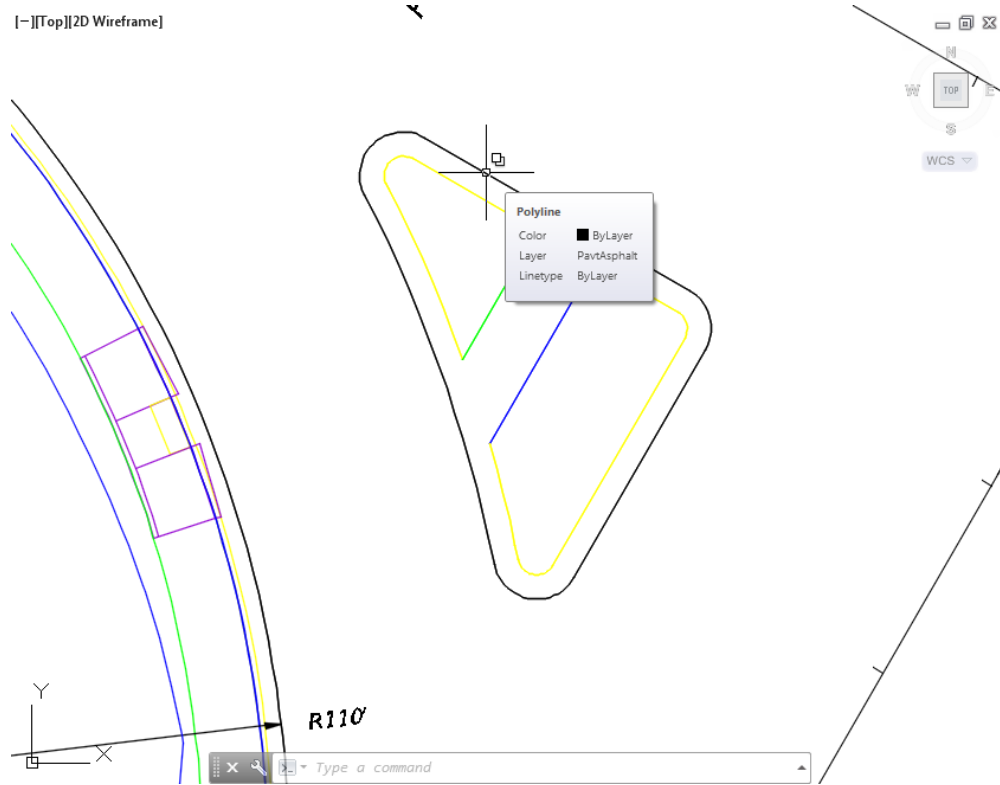


- From the Command line Press Enter to Specify displacement of <0.00, 0.00, 0.00>





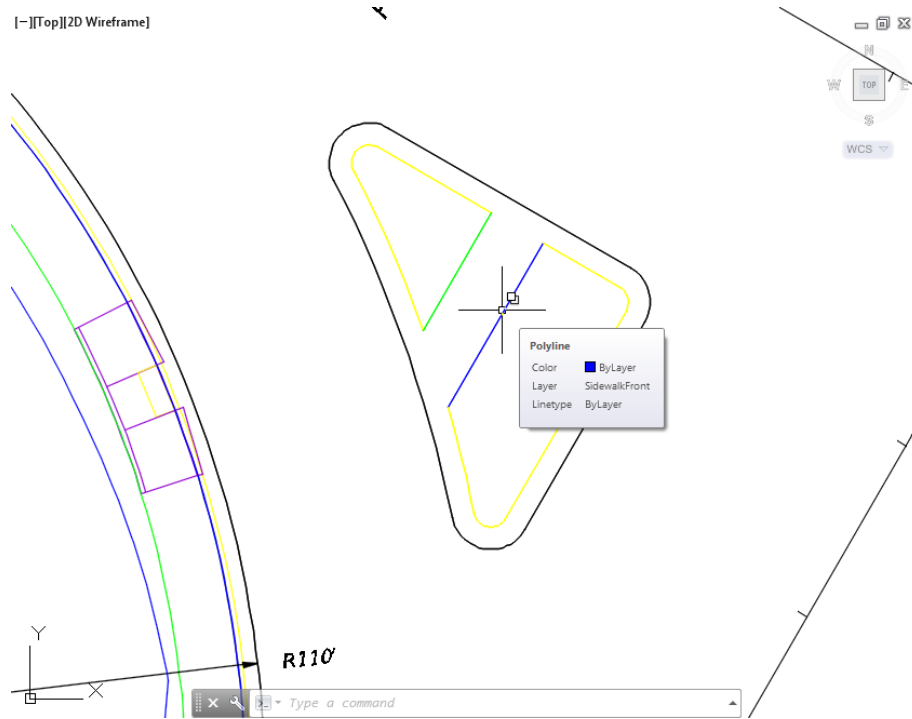
- 8. Hover over the geometry you just inserted using the NCOPY command to display tool tips. This a Polyline which is displayed as the PavtAsphalt.



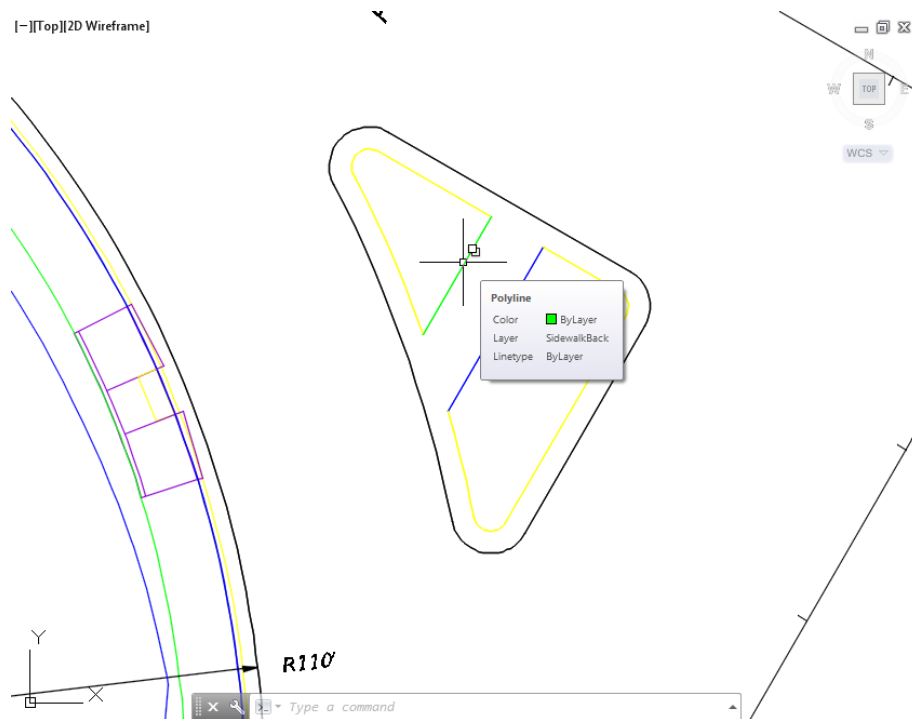
- 9. Hover over the geometry you just inserted using the NCOPY command to display tool tips. This a Polyline which is displayed as the CurbBack.



10. Hover over the geometry you just inserted using the NCOPY command to display tool tips. This a Polyline which is displayed as the SidewalkFront.



11. Hover over the geometry you just inserted using the NCOPY command to display tool tips. This a Polyline which is displayed as the SidewalkBack.



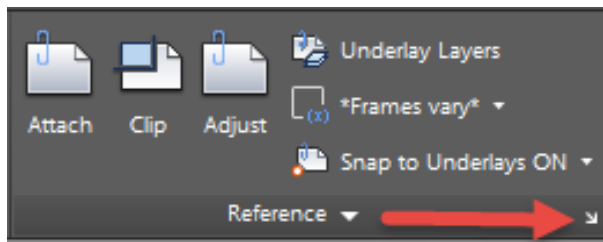
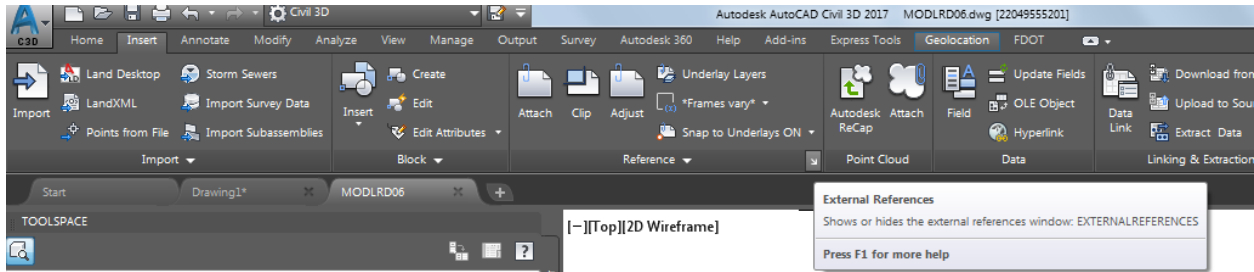
12. **Save** your file before continuing.

### Exercise 9.4 Manage Attached External Reference Files (Xrefs)

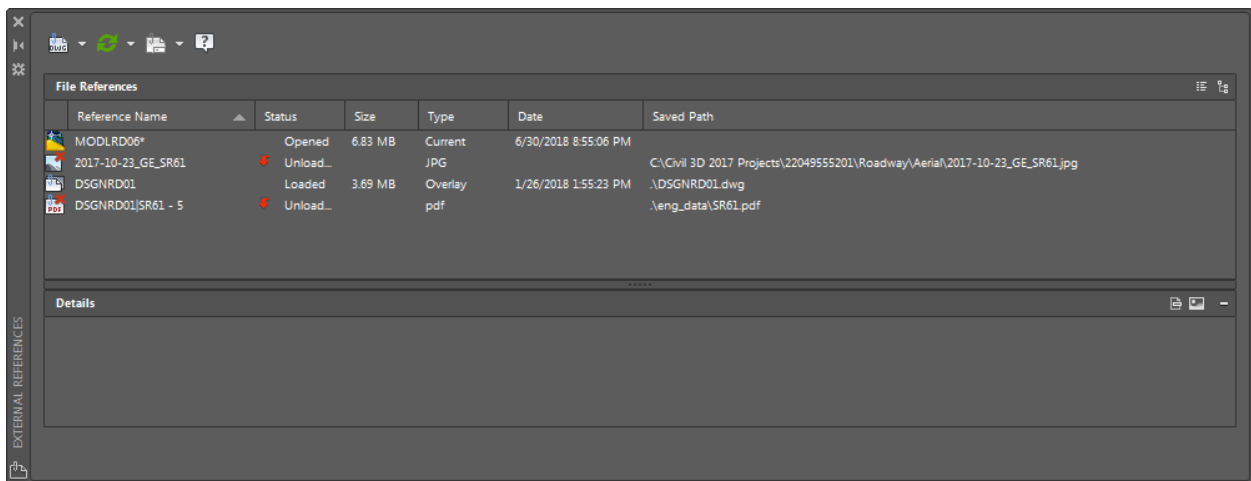
In this exercise you will manage the attached External Reference files (Xrefs) in the MODLRD06.dwg.

You will unload the DSGNRD01.dwg as it no longer needs to be displayed underneath the Traffic Island 2D layout geometry you just inserted using the NCOPY command in the prior exercise.

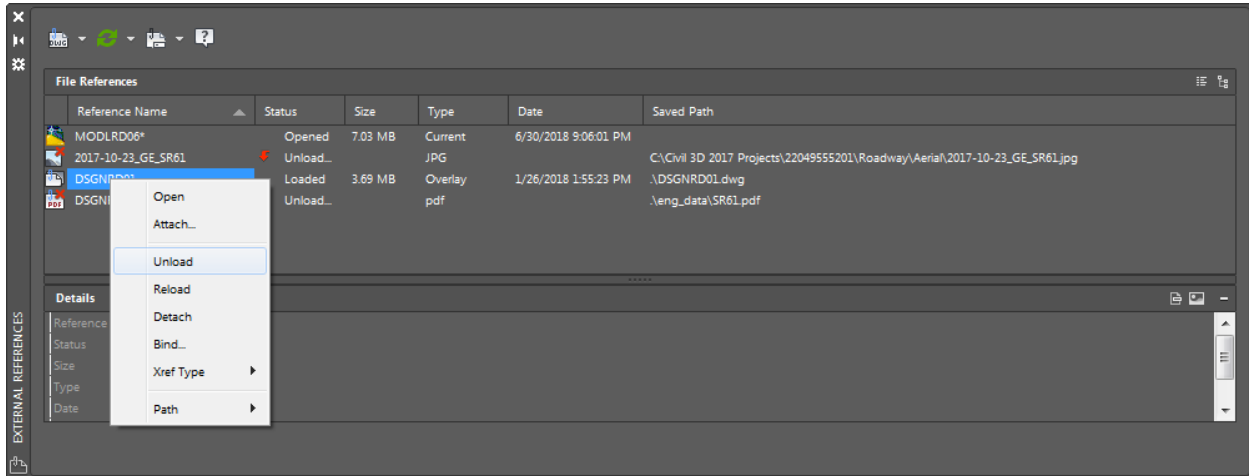
1. From the *Insert Tab > Reference panel*, click the **arrow** located in the lower right hand corner to open the *External Reference* tool palette.



2. The External References tool palette is displayed.
  - ✓ 2017-10-23-GE-SR61 is listed as Unloaded as an JPG (Image) attachment.
  - ✓ DSGNRD01.dwg is listed as Loaded as an Overlay attachment.
  - ✓ DSGNRD01|SR61 - 5 is listed as Unloaded as an PDF attachment.



3. In the list, right-click on DSGNRD01.dwg and select **Unload**. By unloading the external reference DSGNRD01.dwg, the drawing is no longer displayed in the drawing editor.

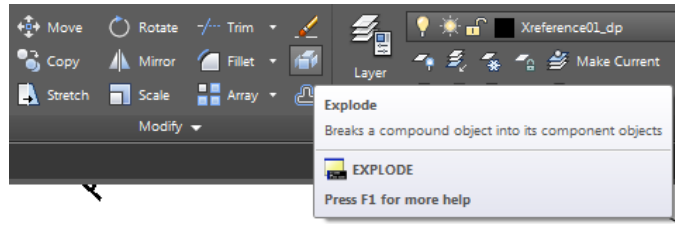
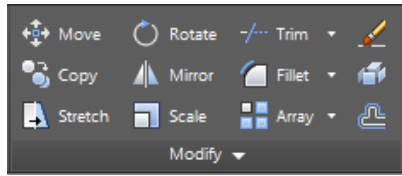
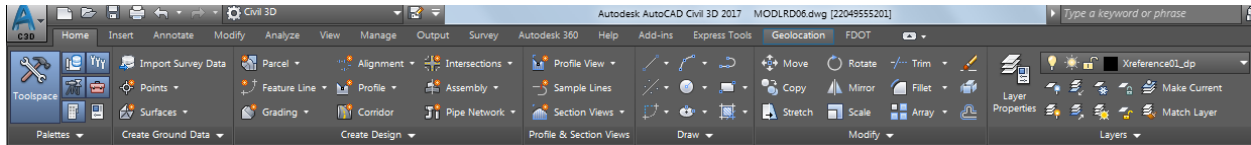


4. **Close** *External References* tool palette.
5. **Save** your file before continuing.

### Exercise 9.5 *Explode the Interior Traffic Island Geometry Inserted Using Ncopy*

In this exercise you will explode the interior traffic island 2D geometry inserted using Ncopy.

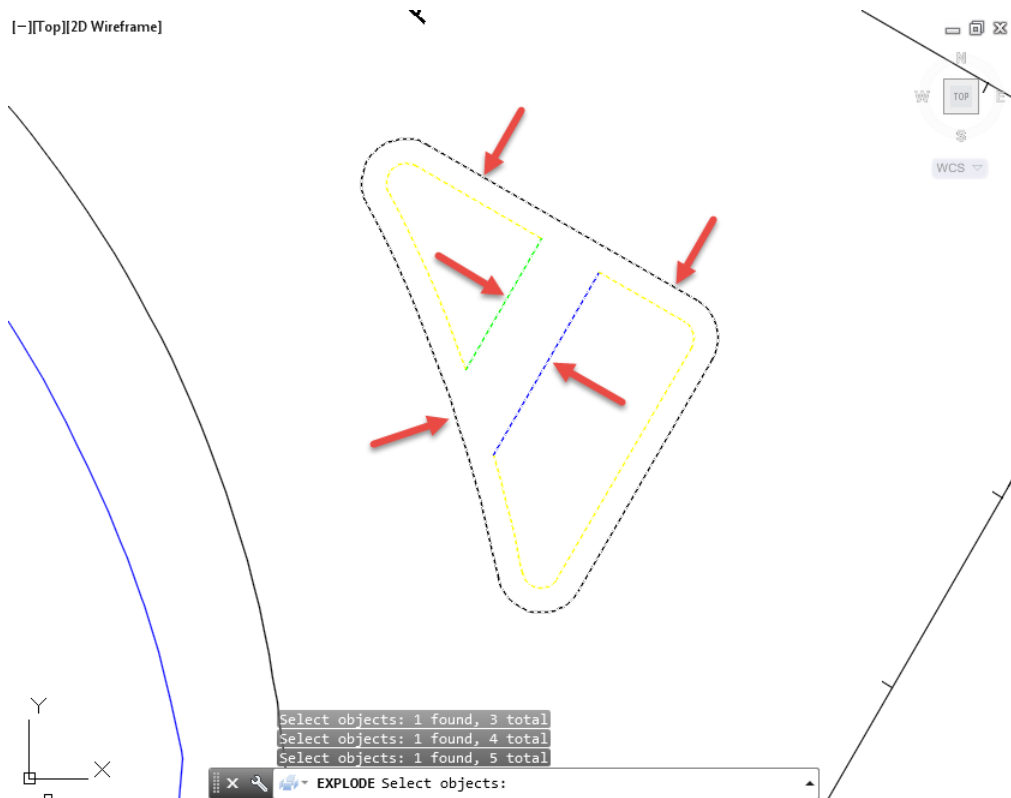
1. From the Home tab > Modify panel > select Explode.



2. The Command line prompts you to Select objects



3. Select the 5 lines that outline the 2D layout of the Traffic Island, use the red arrow as a reference for selecting the the Traffic Island geometry. Then press Enter.

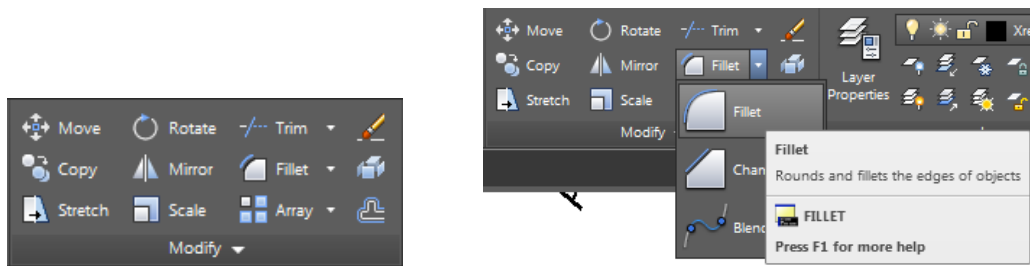
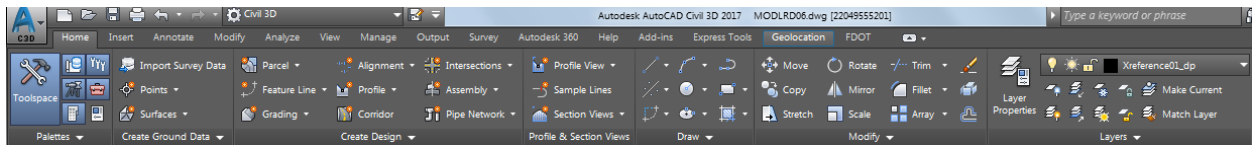


4. **Save** your file before continuing.

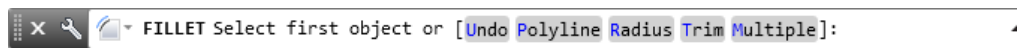
### Exercise 9.6 *Fillet the Corners Which Represent the Interior Sidewalks*

In this exercise you will Fillet the corners which represent the interior sidewalks using a radius of 1.8.

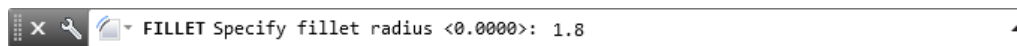
1. From the Home tab > Modify panel > select Fillet, then select Fillet



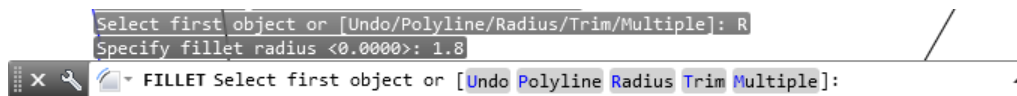
2. The Command line prompts you to Select first object or [Undo Polyline Radius Trim Multiple];, select Radius.



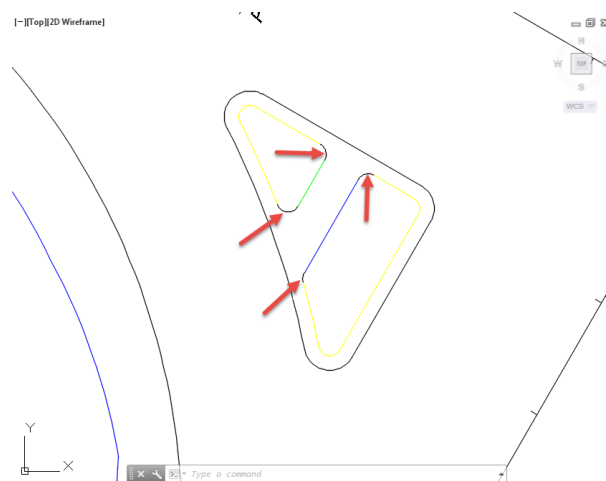
3. The Command line prompts you to Specify fillet radius <0.0000>, enter 1.8, then press Enter.



4. The Command line prompts you to Select first object or [Undo Polyline Radius Trim Multiple];, select Multiple.



5. Fillet the geometry as displayed, use the red arrows as a reference. Press Esc to end command.

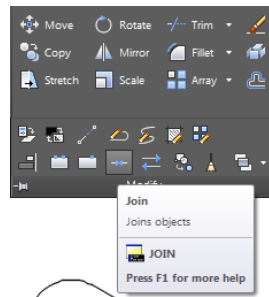
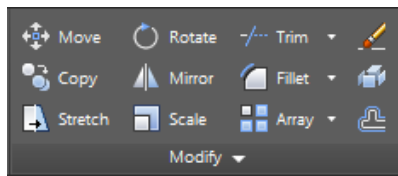
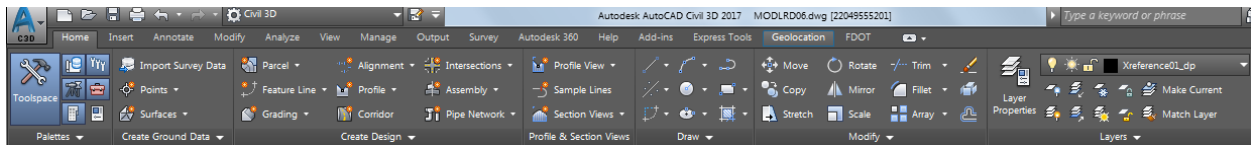


6. **Save** your file before continuing.

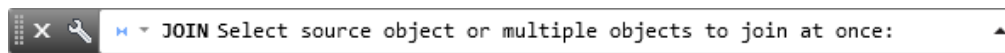
### Exercise 9.7 Join Geometry to Create Three Separate Traffic Islands

In this exercise you will join geometry to create three separate traffic islands boundaries.

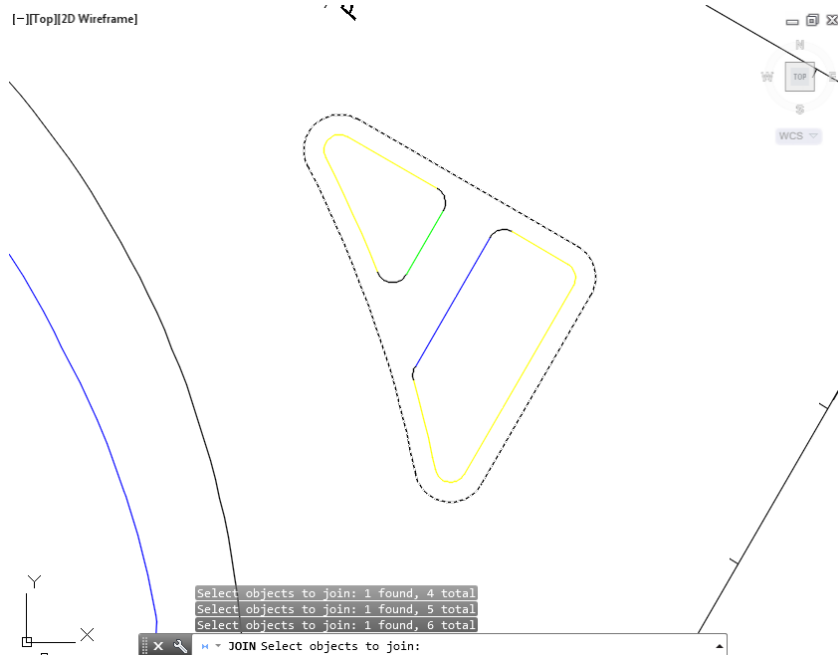
1. From the Home tab > Modify panel > select Modify, then select Join



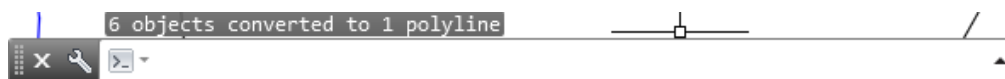
2. First, you will select the geometry to create the exterior traffic island boundary. The Command line prompts you to Select source object or multiple objects to join at once:



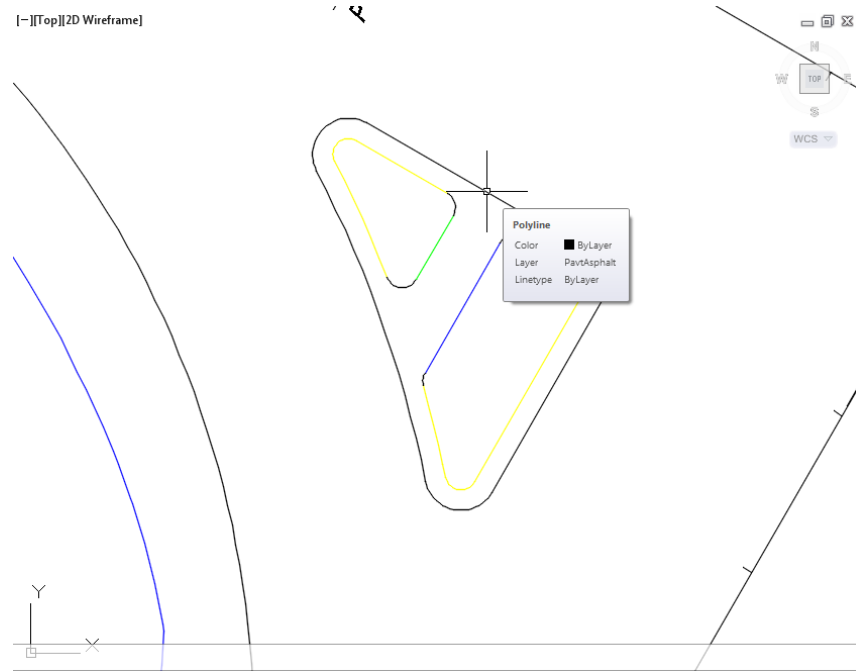
3. Select the geometry displayed to create the exterior traffic island boundary. Press Enter to end command.



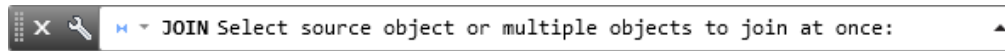
4. Above the command line shows that 6 objects converted to 1 polyline.



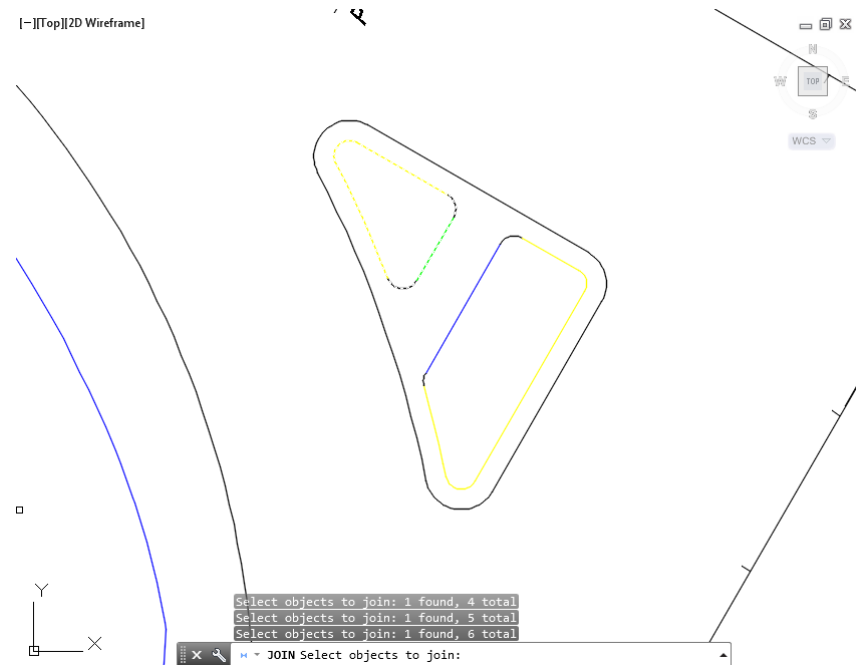
5. Hover over the Polyline to display tool tips.



6. **Save** your file before continuing.
7. Repeat the **Join** command to create the northern interior traffic island boundary. The Command line prompts you to **Select source object or multiple objects to join at once:**

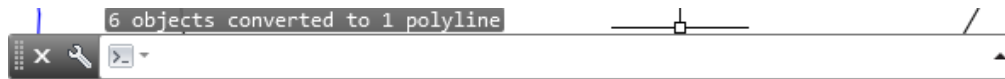


8. Select the geometry displayed to create the northern interior traffic island boundary. Press **Enter** to end command.

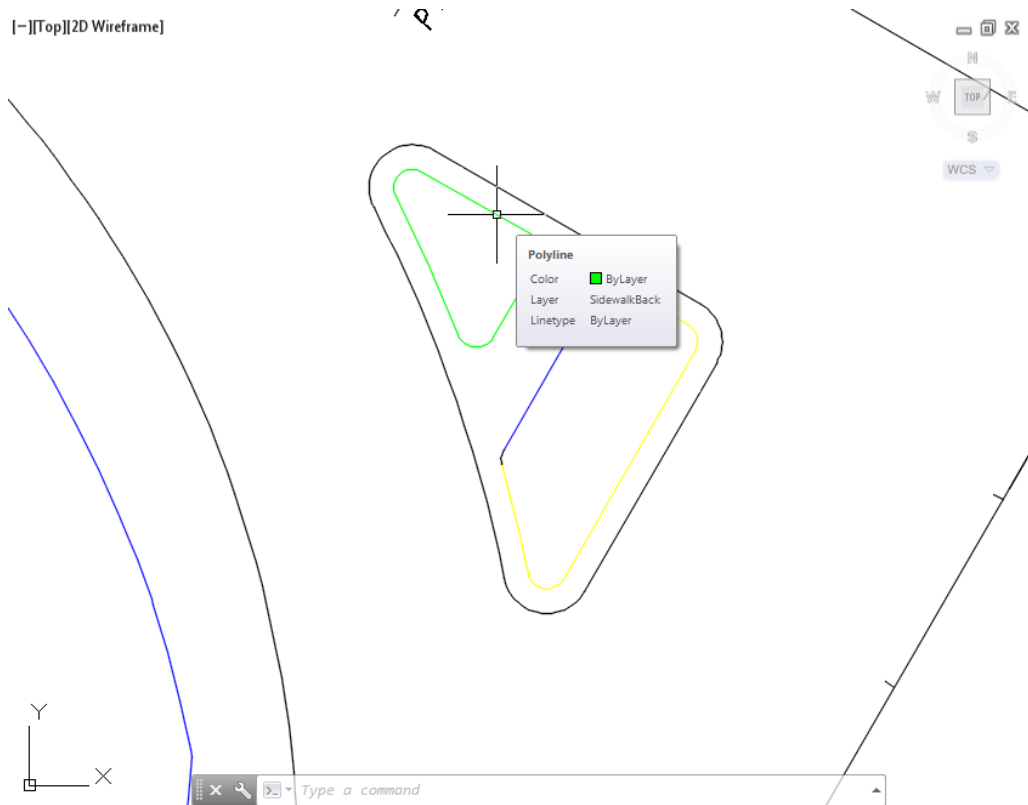




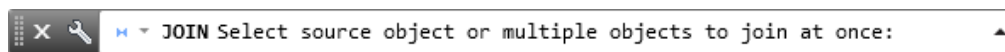
- Above the command line shows that 6 objects converted to 1 polyline



- Hover over the Polyline to display tool tips.



- Save your file before continuing.
- Repeat the Join command again to create the southern interior traffic island boundary. The Command line prompts you to Select source object or multiple objects to join at once:



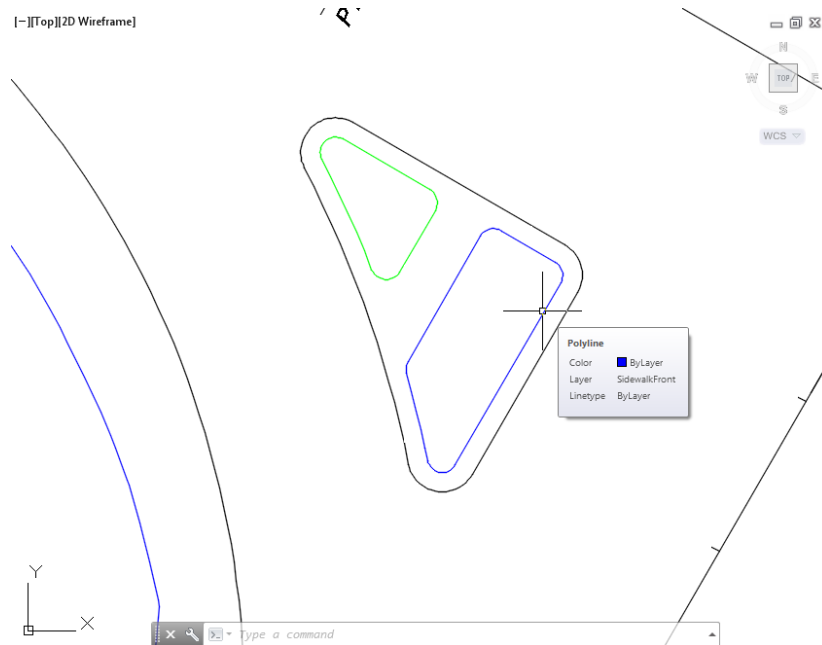
13. Select the geometry displayed to create the southern interior traffic island boundary. Press Enter to end command.



14. Above the command line shows that 9 objects converted to 1 polyline



15. Hover over the Polyline to display tool tips.

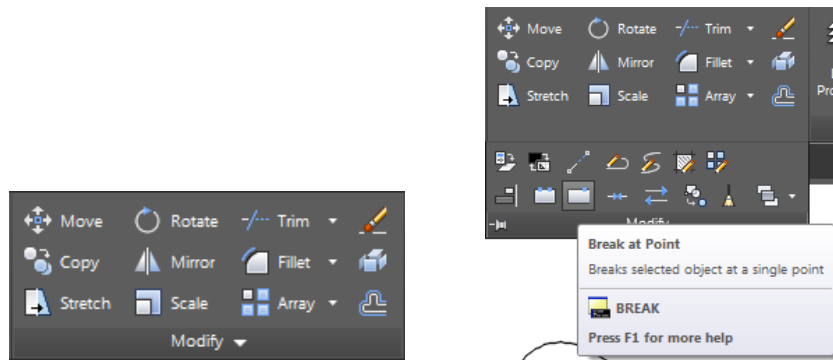
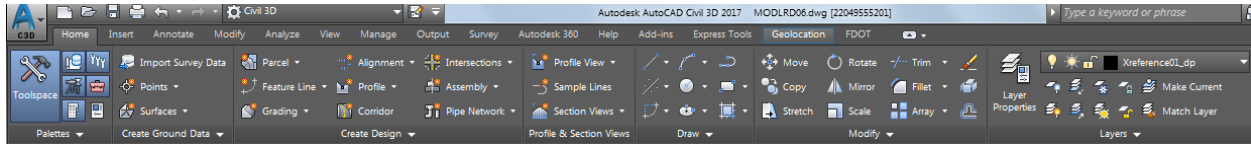


16. Save your file before continuing.

### Exercise 9.8 Use Break at Point Command to Break the Exterior Traffic Island Boundary Polyline

Use Break at point command to break the exterior traffic island boundary polyline to create two segments which represent edge of pavement for the south and north sidewalk

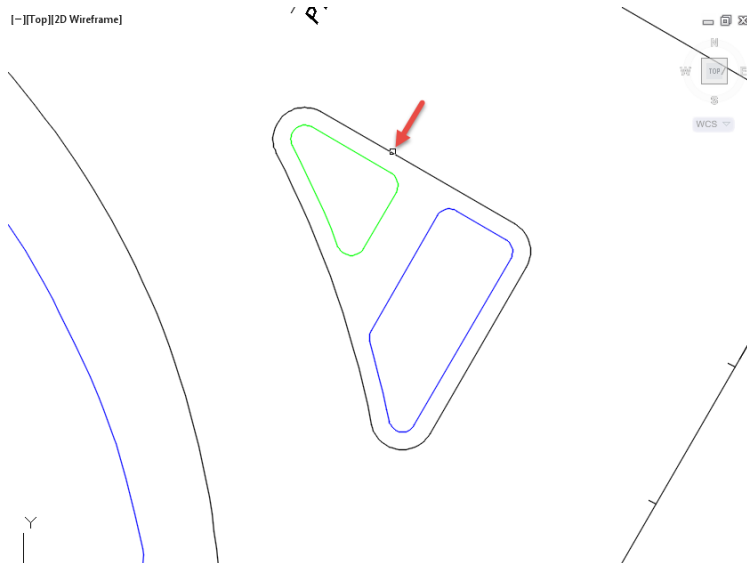
1. From the Home tab > Modify panel > select Modify, then select Break at Point



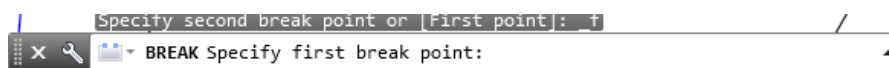
2. The Command line prompts you to Select object:



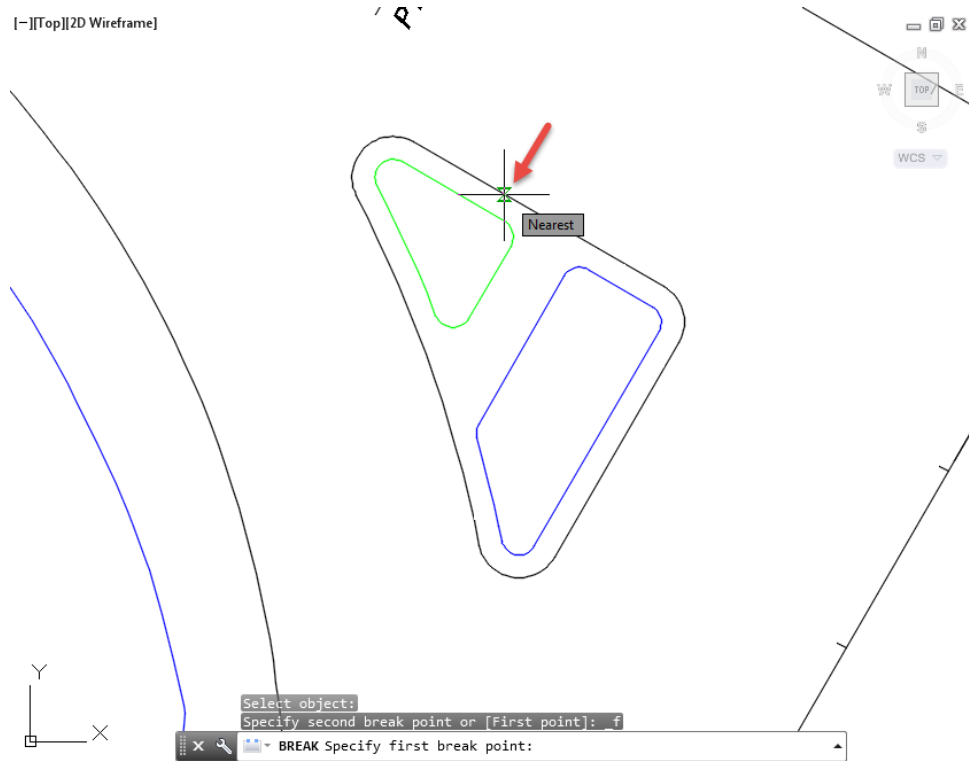
3. Select the polyline as displayed, use the red arrow as a reference.



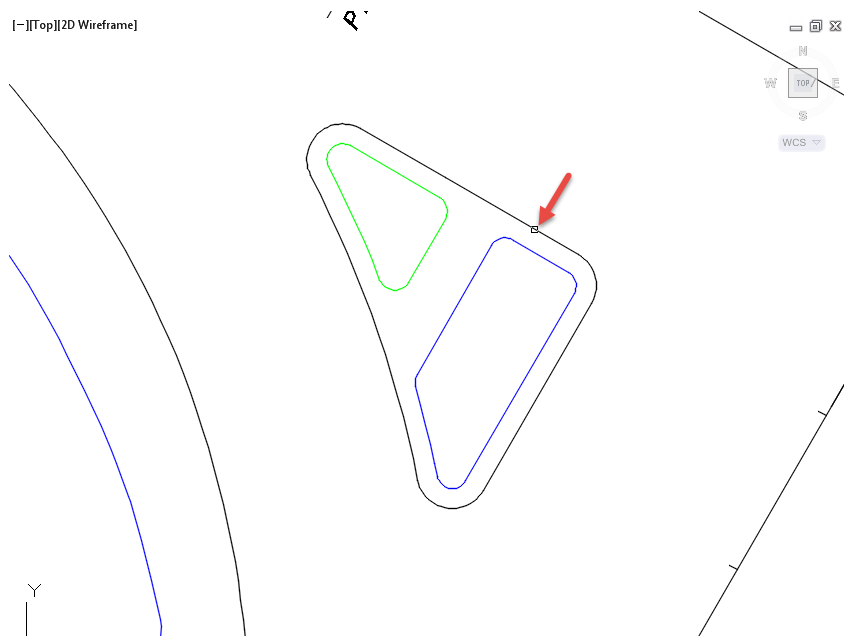
4. The Command line prompts you to Specify first break point:



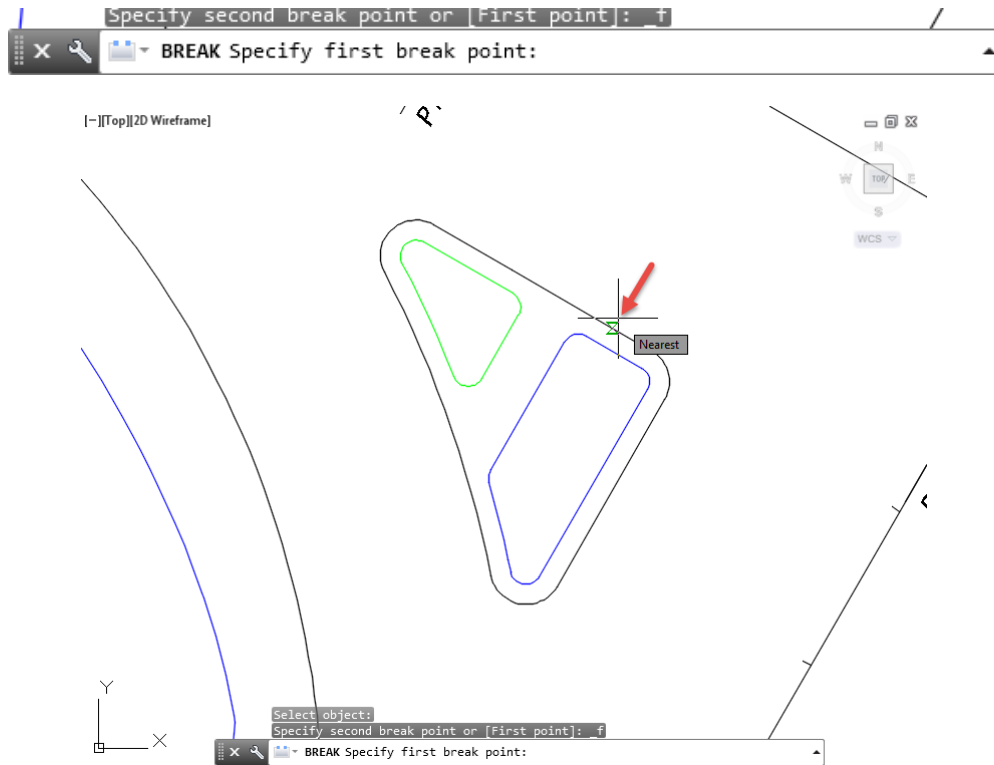
5. Specify the first break point using a Nearest object snap as displayed, use the red arrow as a reference. Repeat the Break at Point command.



6. Select the polyline as displayed, use the red arrow as a reference.

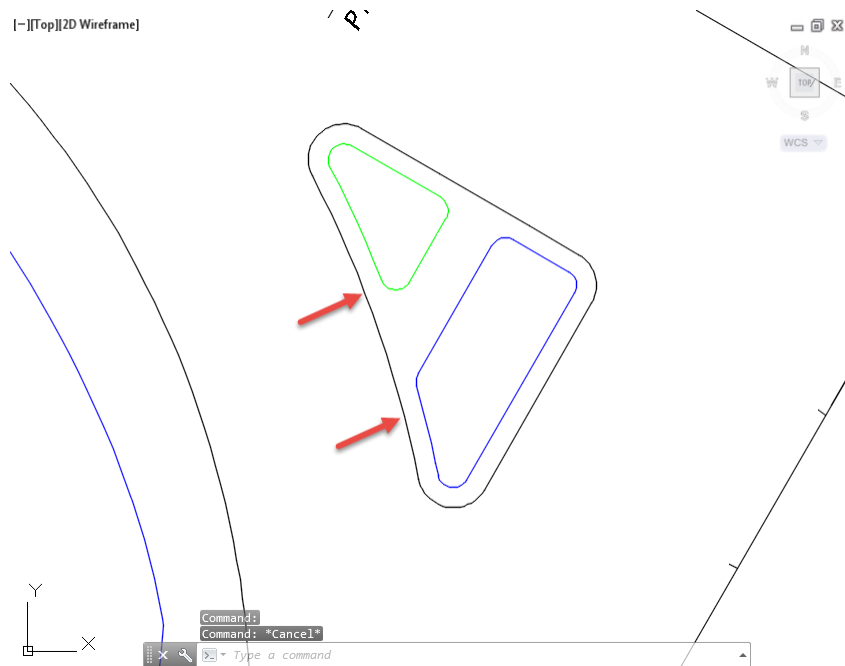


7. The Command line prompts you to Specify first break point:

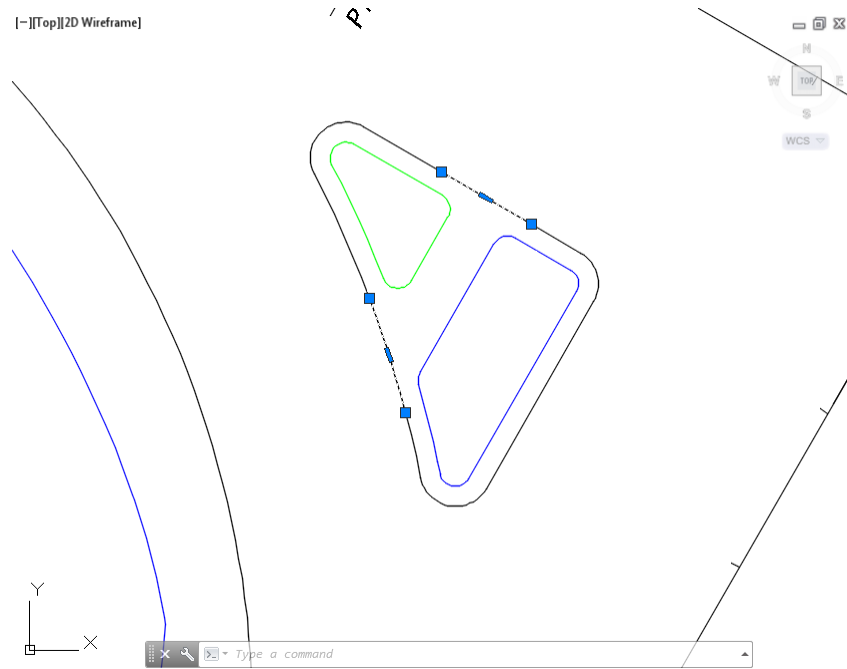


8. **Save** your file before continuing.

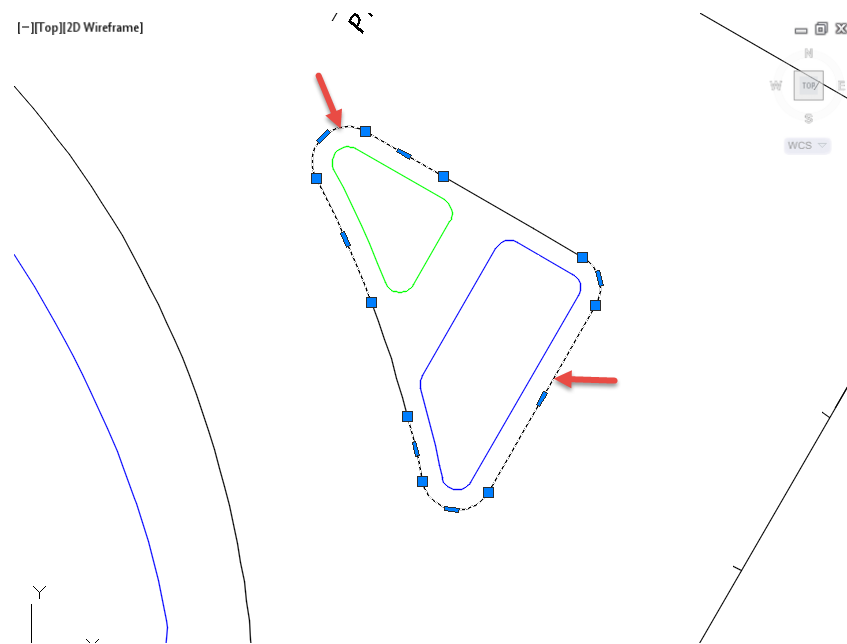
9. Repeat the Break at Point command two more times as displayed , use the red arrow as a reference.



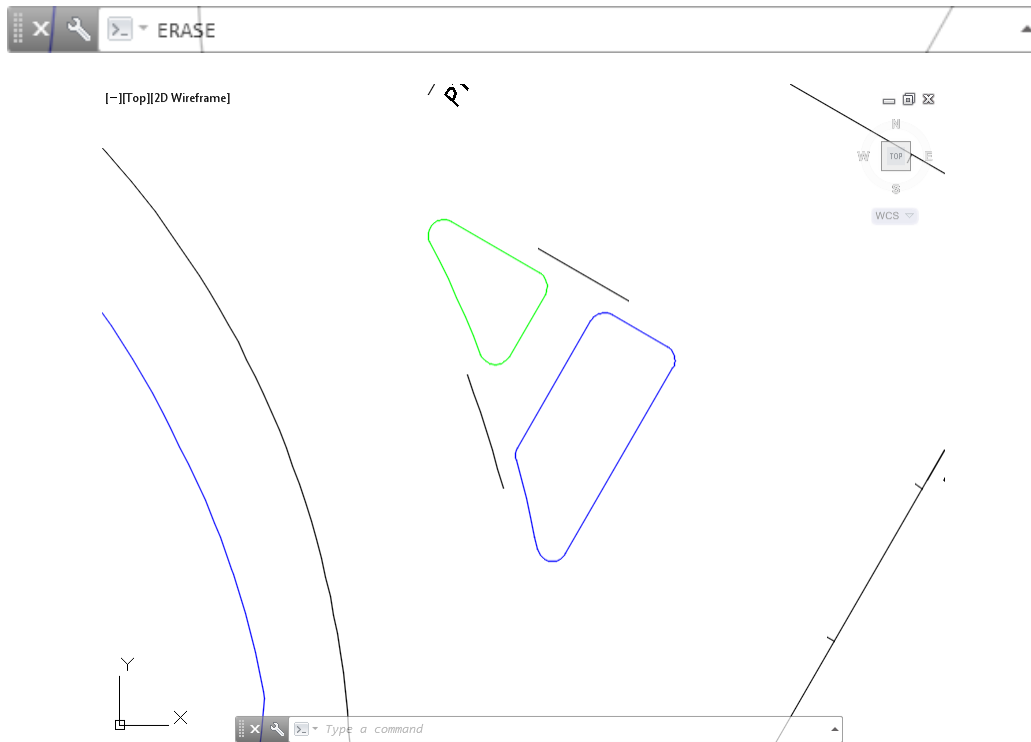
10. Select each of the polylines to review the results of the Break at Point command. Press Esc to clear grips.



11. Select the remaining segments from the exterior traffic island boundary polyline, use the red arrows as a reference.



12. At the Command line, type in Erase, then press Enter to erase the selected polylines.

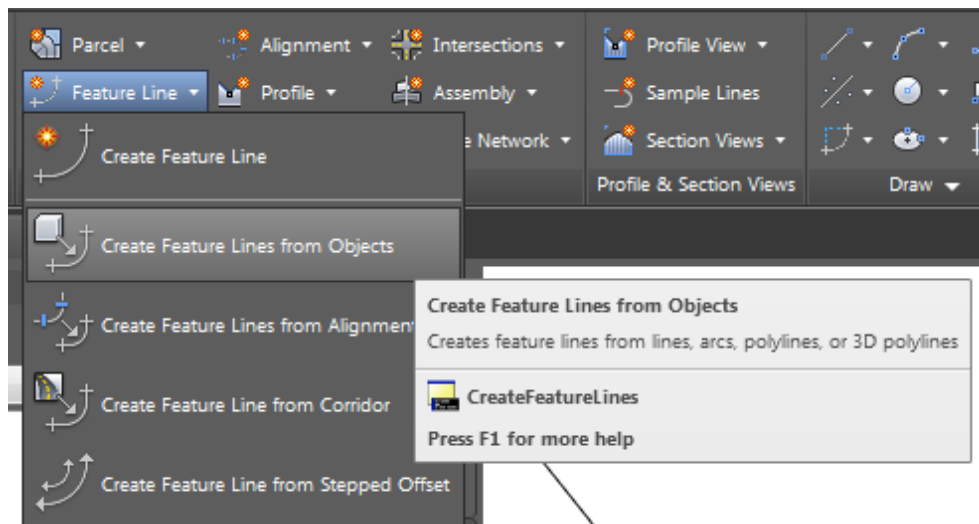
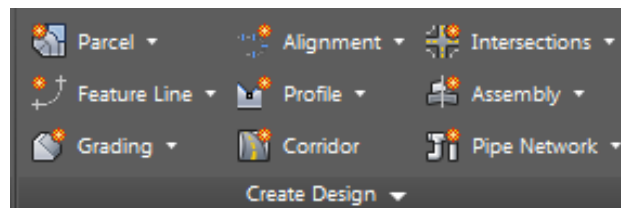
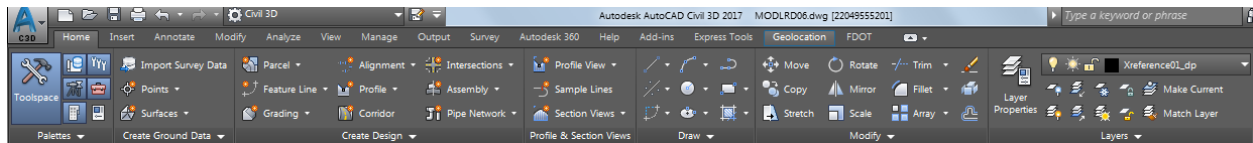


13. **Save** your file before continuing.

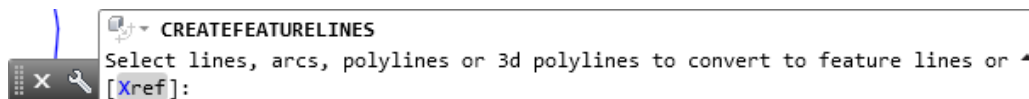
### Exercise 9.9 *Create Feature Lines from Objects for Traffic Island - Edge of Pavement Sidewalk*

In this exercise you will create a feature line from objects which represents the North edge of pavement for the sidewalk. Then you will create a feature line from objects which represents the South edge of pavement for the sidewalk.

1. From the Home tab > Create Design panel > select Feature Line, then select Create Feature Lines from Objects.

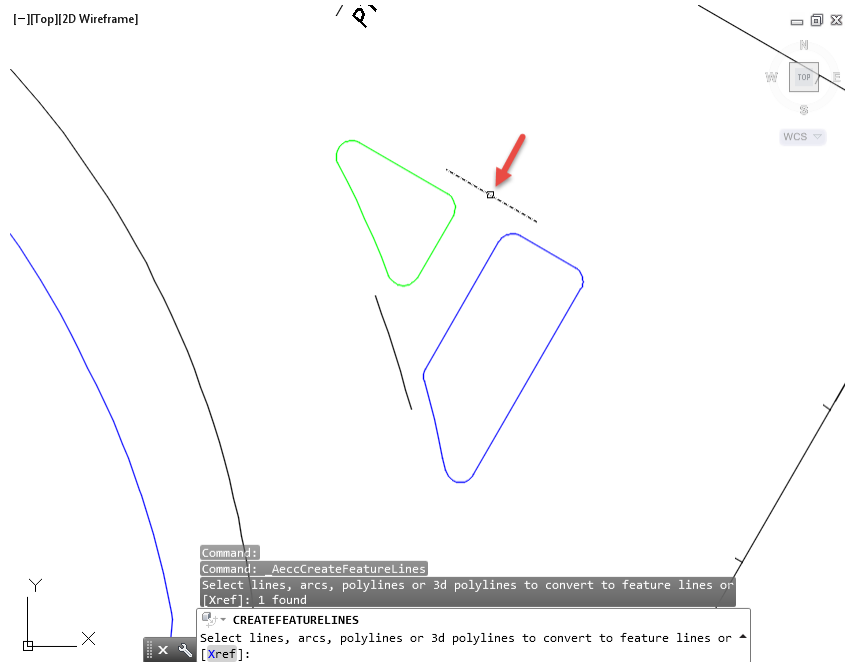


2. The Command line prompts you to Select lines, arcs, polyline or 3d polylines to convert to feature lines or [Xref]



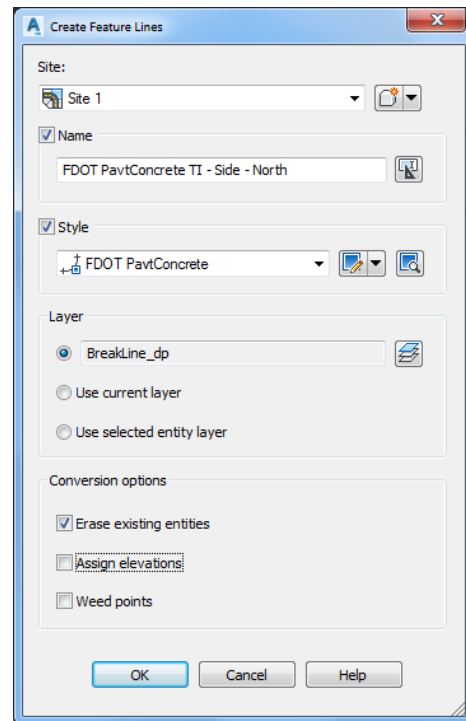


3. Select the polyline created which represents the North edge of pavement for the sidewalk in SW Quadrant at the intersection of SR61 and US9, use the red arrow as a reference. Then press Enter.



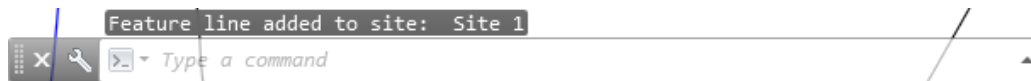
4. From the Create Feature Lines dialog, use these values:
  - o Site: Site 1
  - o Name: FDOT PavtConcrete TI - Side - North
  - o Style: FDOT PavtConcrete (Select from drop down list)
  - o Layer: Breakline\_dp (Default layer)
  - o Conversion options:

Check: Erase existing entities  
 Uncheck: Assign elevations  
 Uncheck: Weed points

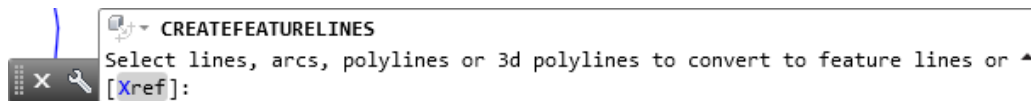


5. Click OK to continue and to close the Create Feature Lines dialog.

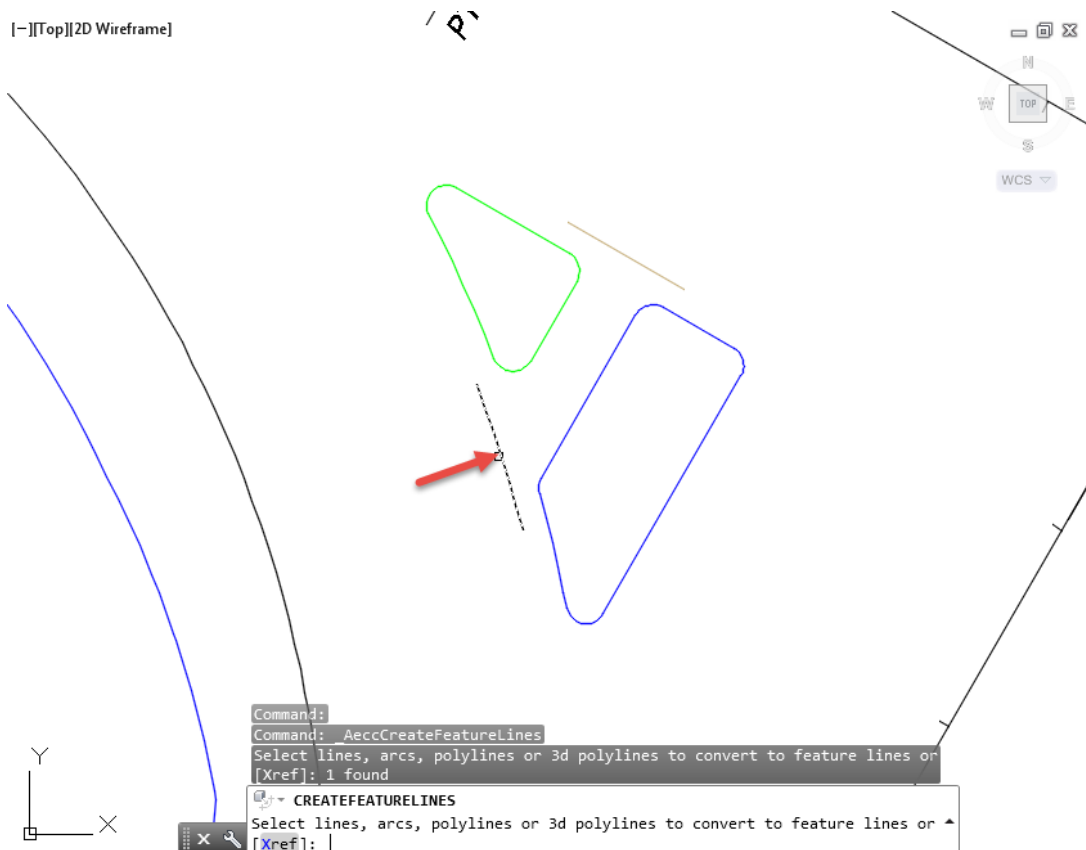
6. The Command line displays Feature line added to site: Site 1



7. **Save** your file before continuing.
8. Repeat the process of creating a feature line from objects which represents the South edge of pavement for the sidewalk.
9. From the Home tab > Create Design panel > select Feature Line, then select Create Feature Lines from Objects.
10. The Command line prompts you to Select lines, arcs, polyline or 3d polylines to convert to feature lines or [Xref]



11. Select the polyline created which represents the South edge of pavement for the sidewalk in SW Quadrant at the intersection of SR61 and US9, use the red arrow as a reference. Then press Enter.



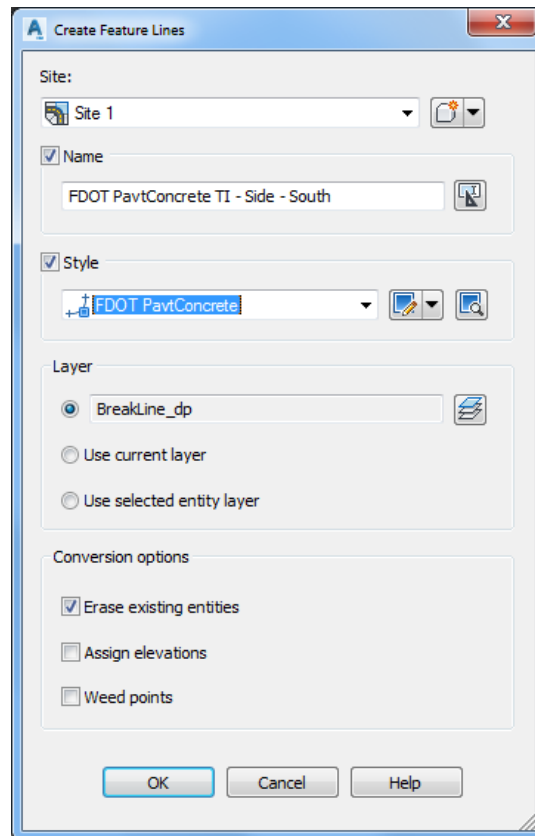
12. From the Create Feature Lines dialog, use these values:

- Site: Site 1
- Name: FDOT PavtConcrete TI - Side - South
- Style: FDOT PavtConcrete (Select from drop down list)
- Layer: Breakline\_dp (Default layer)
- Conversion options:

Check: Erase existing entities

Uncheck: Assign elevations

Uncheck: Weed points



13. Click OK to continue and to close the Create Feature Lines dialog.

14. The Command line displays Feature line added to site: Site 1.

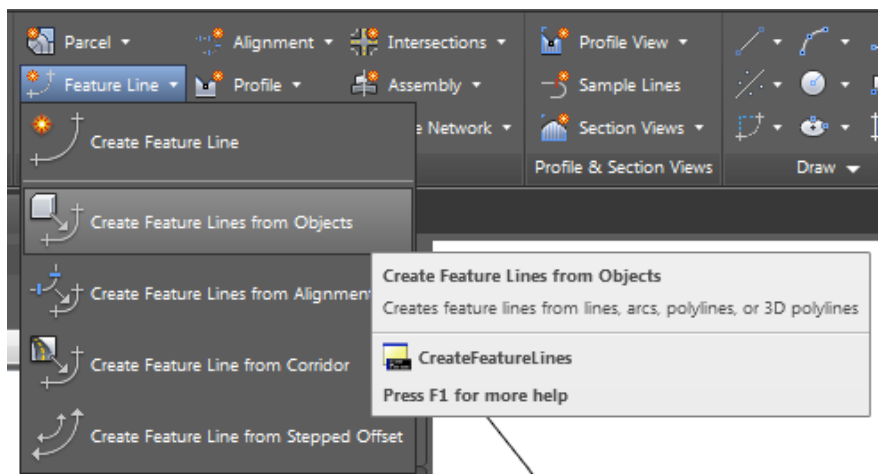
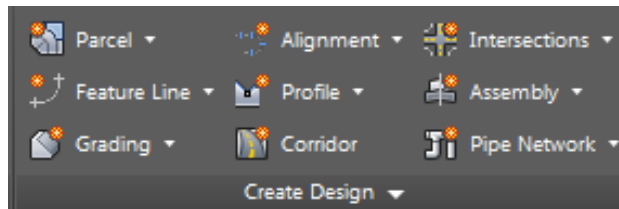
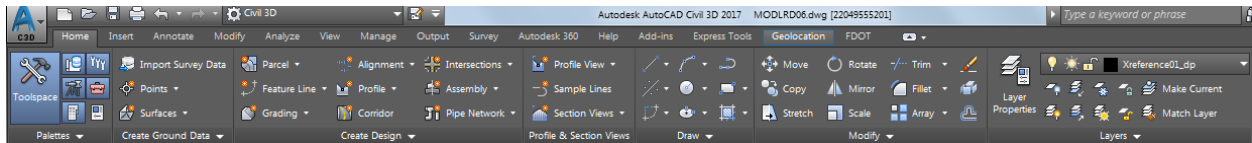


15. **Save** your file before continuing.

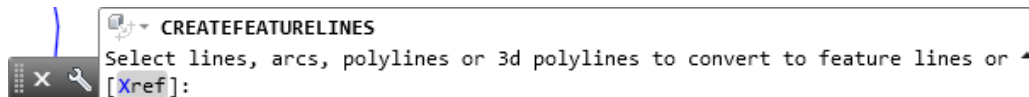
### Exercise 9.10 Create Feature Lines from Objects for Traffic Island - Interior

In this exercise you will create a feature line from objects which represents the Traffic Island - Interior North boundary for the Traffic Island. Then you will create a feature line from objects which represents the Traffic Island -Interior South boundary for the Traffic Island.

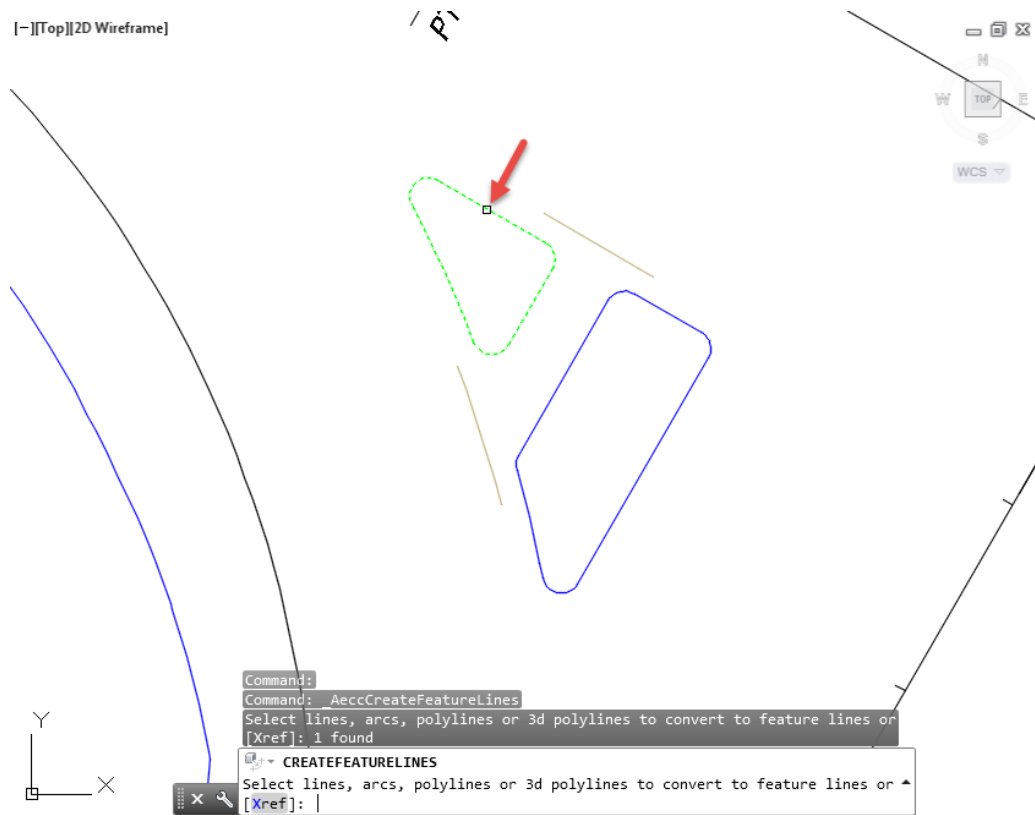
1. From the Home tab > Create Design panel > select Feature Line, then select Create Feature Lines from Objects.



2. The Command line prompts you to Select lines, arcs, polyline or 3d polylines to convert to feature lines or [Xref]

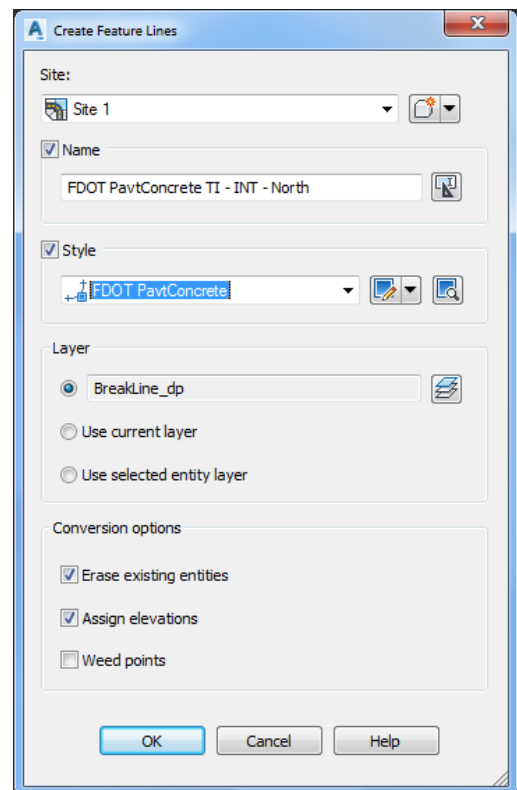


3. Select the polyline created using Join which represents the Traffic Island Interior North boundary of the traffic island located in the SW Quadrant at the intersection of SR61 and US98, use the red arrow as a reference. Then press Enter.

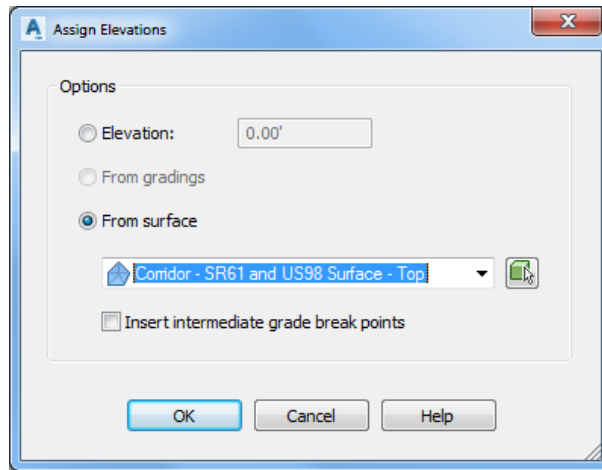


4. From the Create Feature Lines dialog, use these values:
  - o Site: Site 1
  - o Name: FDOT PavtConcrete TI - INT - North
  - o Style: FDOT PavtConcrete (Select from drop down list)
  - o Layer: Breakline\_dp (Default layer)
  - o Conversion options:

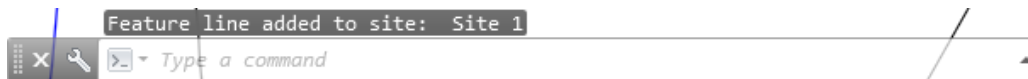
Check: Erase existing entities  
 Check: Assign elevations  
 Uncheck: Weed points



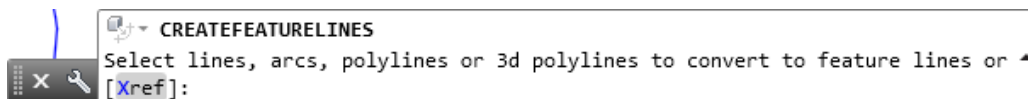
5. From the Assign Elevations dialog, use these Options values:
  - Check From surface
  - Select: Corridor - SR61 and US98 Surface - Top (Select from drop down list)
  - Uncheck Insert intermediate grade break points



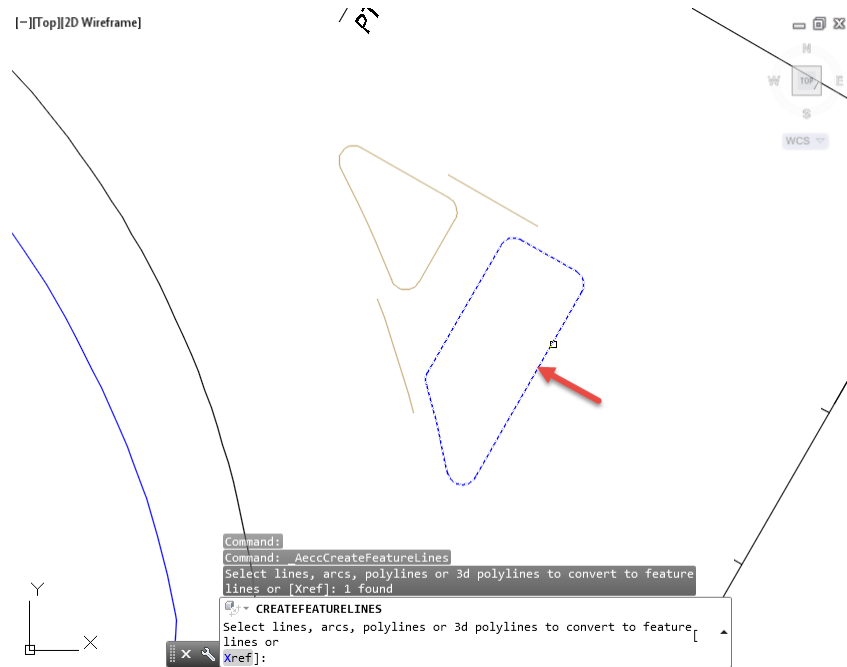
6. Click OK to continue and to close the Create Feature Lines dialog.
7. The Command line displays Feature line added to site: Site 1



8. **Save** your file before continuing.
9. Repeat the process of creating a feature line from objects which represents the Interior South boundary of the traffic island.
10. From the Home tab > Create Design panel > select Feature Line, then select Create Feature Lines from Objects.
11. The Command line prompts you to Select lines, arcs, polyline or 3d polylines to convert to feature lines or [Xref]



12. Select the polyline created using Join which represents the Traffic Island Interior South boundary of the traffic island located in the SW Quadrant at the intersection of SR61 and US98, use the red arrow as a reference. Then press Enter.



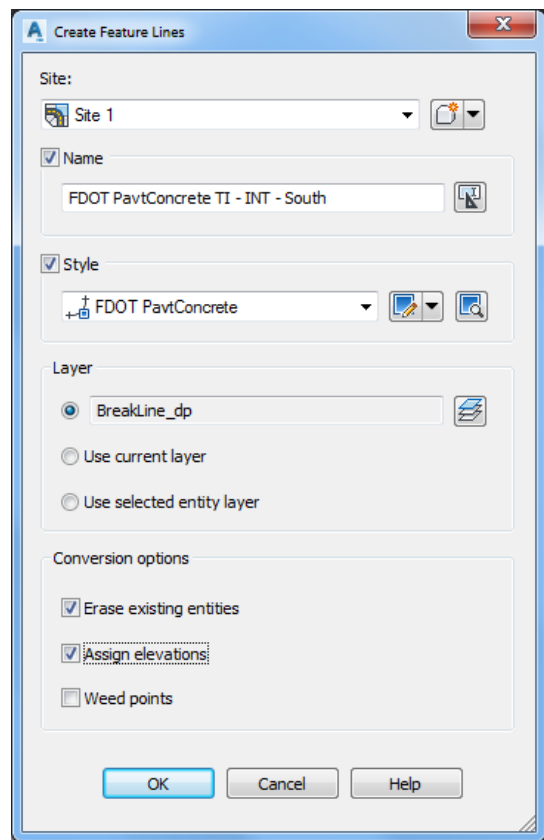
13. From the Create Feature Lines dialog, use these values:

- Site: Site 1
- Name: FDOT PavtConcrete TI - INT - South
- Style: FDOT PavtConcrete (Select from drop down list)
- Layer: Breakline\_dp (Default layer)
- Conversion options:

Check: Erase existing entities

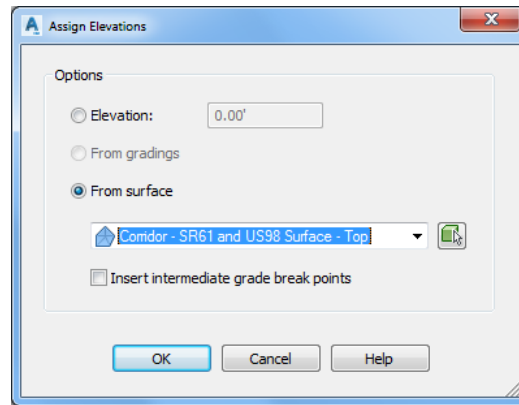
Check: Assign elevations

Uncheck: Weed points



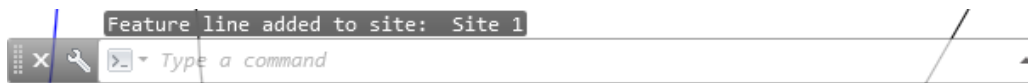
14. From the Assign Elevations dialog, use these Options values:

- Check From surface
- Select: Corridor - SR61 and US98 Surface - Top (Select from drop down list)
- Uncheck Insert intermediate grade break points



15. Click OK to continue and to close the Create Feature Lines dialog.

16. The Command line displays Feature line added to site: Site 1



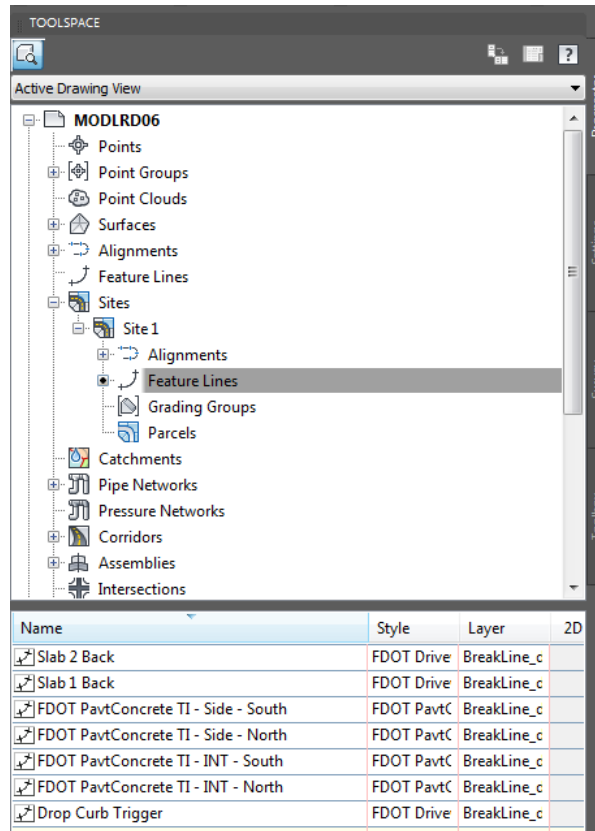
17. Hover over one of the Feature Lines you just created to display tool tips.



18. **Save** your file before continuing.



19. Review Feature Lines in MODLRD06 from TOOLSPACE > Prospector tab, expand Sites, expand Site 1, select Feature Lines, the new TI Feature Lines are now displayed.

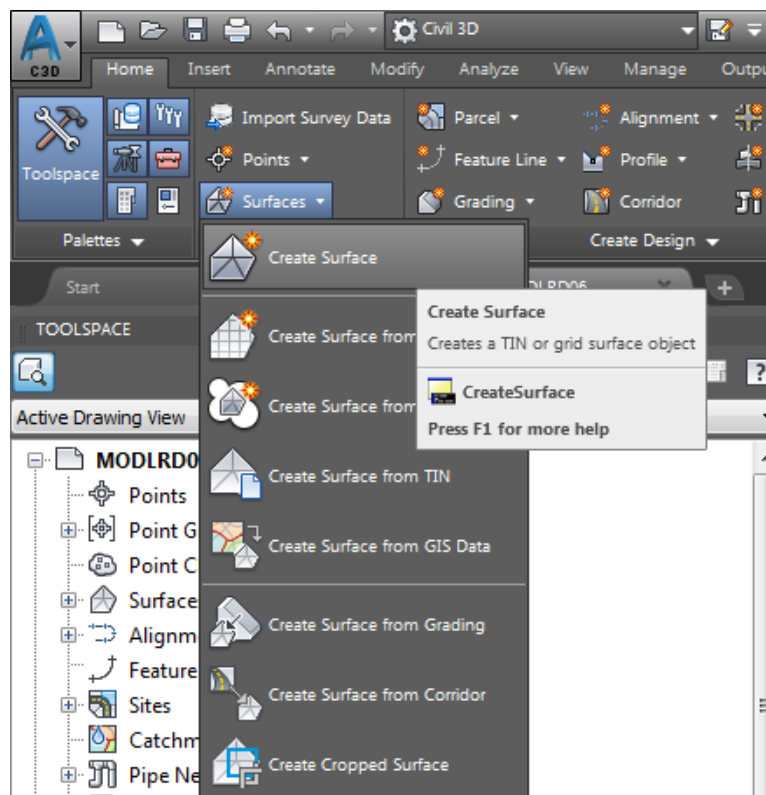
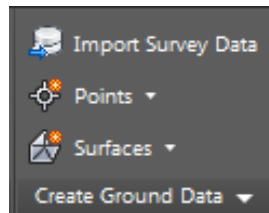
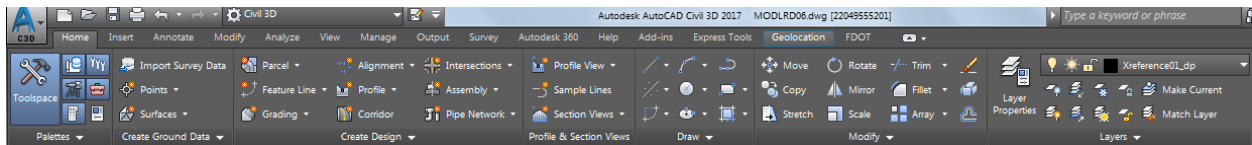


20. **Save** your file before continuing.

### Exercise 9.11 Create Traffic Island - Sidewalk Surface

In this exercise you will create the Traffic Island - Sidewalk Surface definition.

1. From the Home tab > Create Ground Data panel > select Surfaces, then select Create Surfaces.



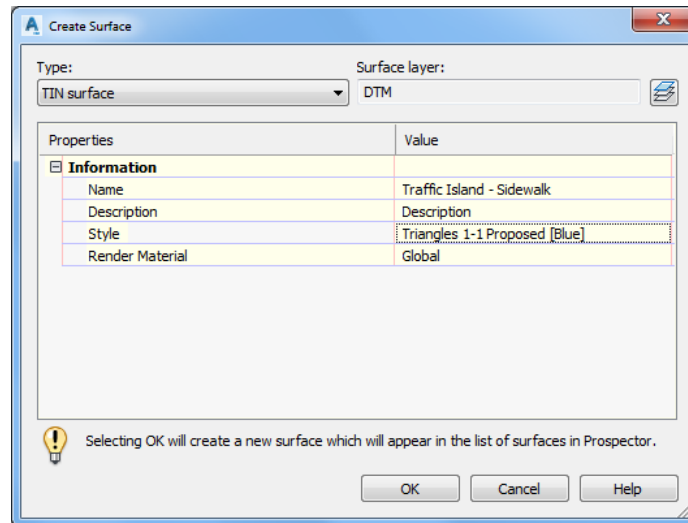
2. From the Create Surface dialog, use these values:
  - Type: Tin Surface
  - Surface Layer: DTM (Default value)
  - Properties

Name: Traffic Island - Sidewalk

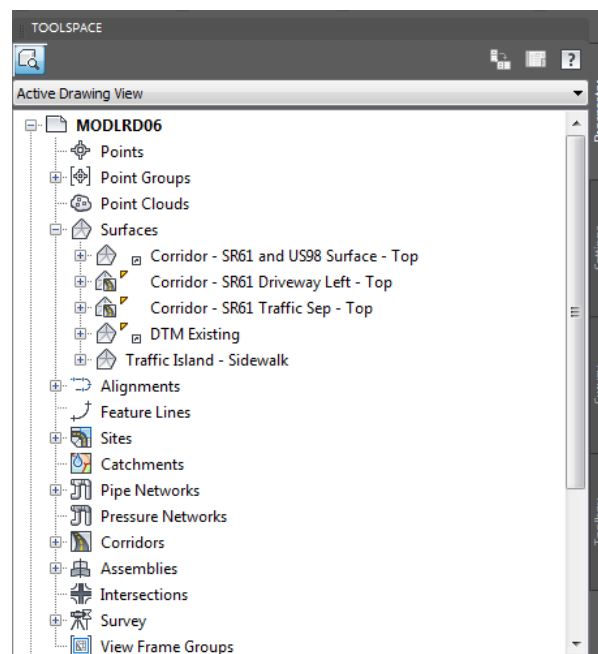
Description: Leave blank

Style: Triangles 1:1 Proposed [Blue] (Select from drop down list)

Render Material: Global (Default value)



3. Click OK to continue and to close the Create Surface dialog.
4. Review Surfaces in MODLRD06 from TOOLSPACE > Prospector tab, expand Surfaces. the new Traffic Island - Sidewalk is displayed.

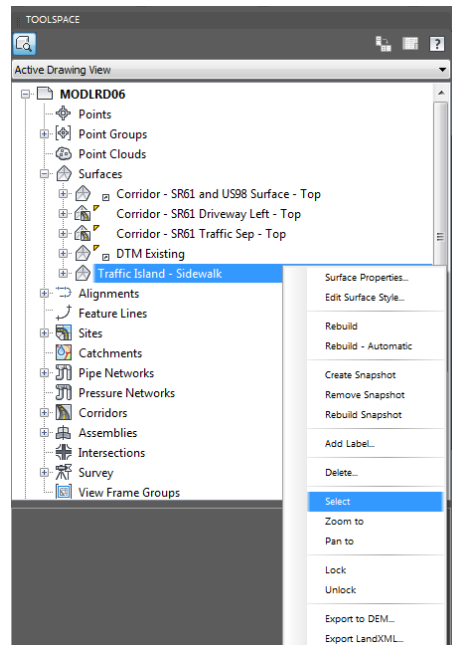


5. **Save** your file before continuing.

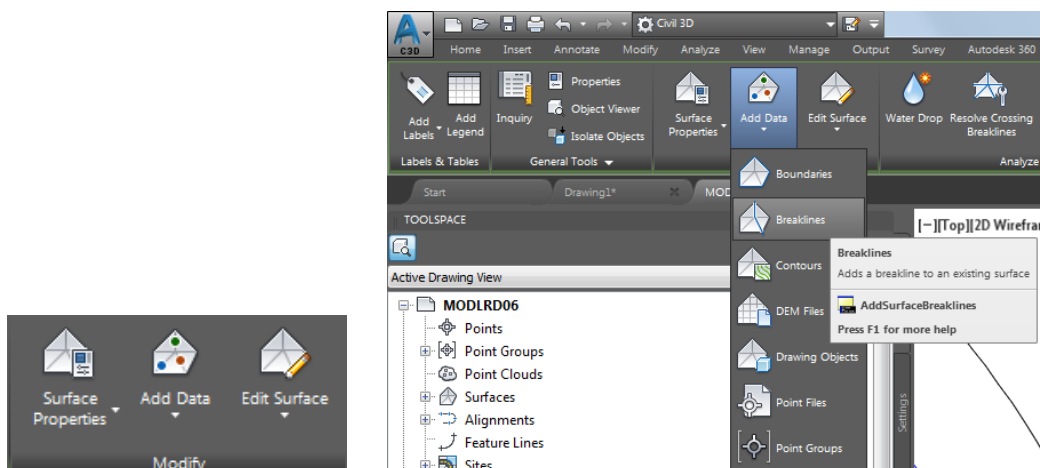
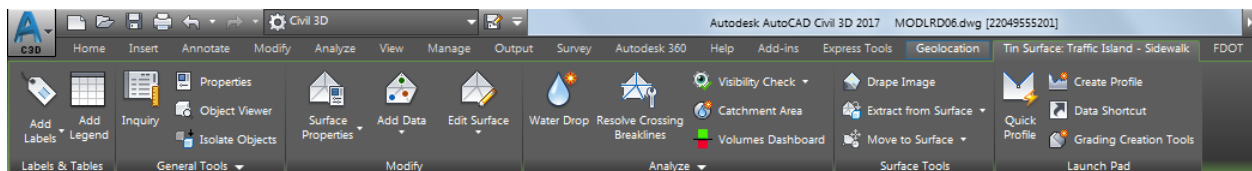
### Exercise 9.12 Add Breaklines to Surface Traffic Island - Sidewalk

In this exercise you will add Feature lines as Breaklines to Surface Traffic Island - Sidewalk that you created in a prior exercise. First, you will add the Feature Line FDOT PavtConcrete TI - Side - North to the Surface Traffic Island - Sidewalk. Then you will add the Feature Line FDOT PavtConcrete TI - Side - South to the Surface Traffic Island - Sidewalk.

1. From **TOOLSPACE** > **Prospector** tab, expand **Surfaces**. Select **Traffic Island - Sidewalk**, then right-click and select **Select**.



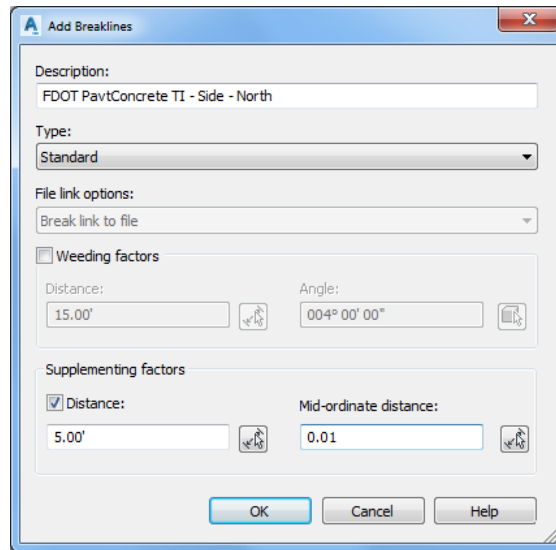
2. The **Tin Surface: Traffic Island - Sidewalk** tab displayed in the Ribbon. From the **Modify** panel, select **Add Data**, then select the **Breaklines** command.



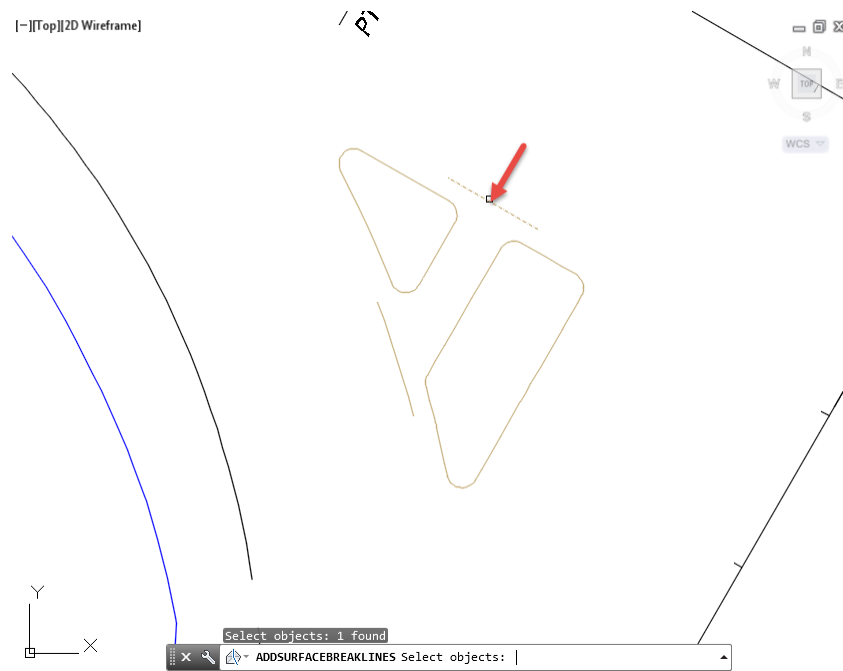
3. From the Add Breaklines dialog, use these values:
  - Description: FDOT PavtConcrete TI - Side - North
  - Type: Standard
  - File link options: Break link to file (Default value)
  - Uncheck Weeding factors
  - Supplementing factors:

Check Distance: 5

Mid-ordinate distance: 0.01



4. Click OK to continue and to close the Add Breaklines dialog.
5. Select FDOT PavtConcrete TI - Side - North feature line, use red arrow as a reference.

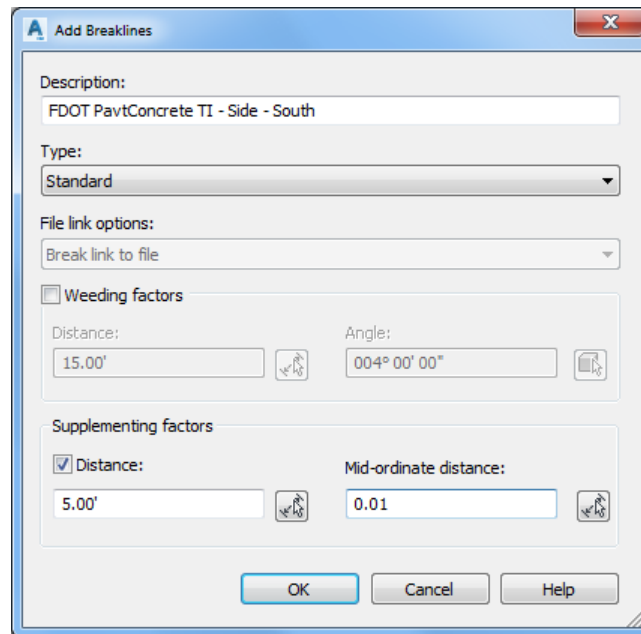


6. **Save** your file before continuing.

7. Repeat the process by adding the Feature Line FDOT PavtConcrete TI - Side - South to the Surface Traffic Island - Sidewalk.
8. From TOOLSPACE > Prospector tab, expand Surfaces. Select Traffic Island - Sidewalk, then right-click and select Select.
9. The Tin Surface: Traffic Island - Sidewalk tab displayed in the Ribbon. From the Modify panel, select Add Data, then select the Breaklines command.
10. From the Add Breaklines dialog, use these values:
  - Description: FDOT PavtConcrete TI - Side - South
  - Type: Standard
  - File link options: Break link to file (Default value)
  - Uncheck Weeding factors
  - Supplementing factors:
    - Distance: 5
    - Mid-ordinate distance: 0.01

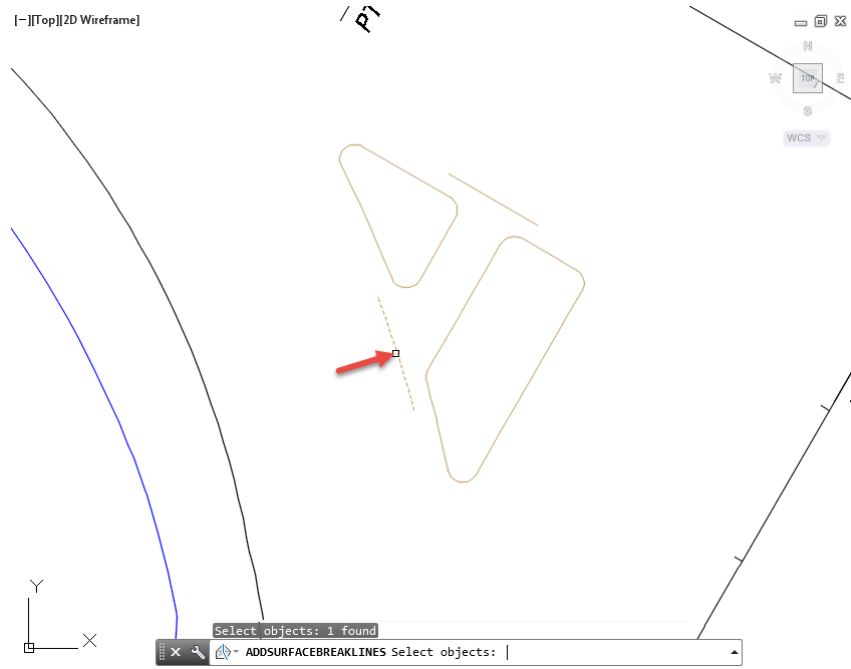
Check Distance: 5

Mid-ordinate distance: 0.01

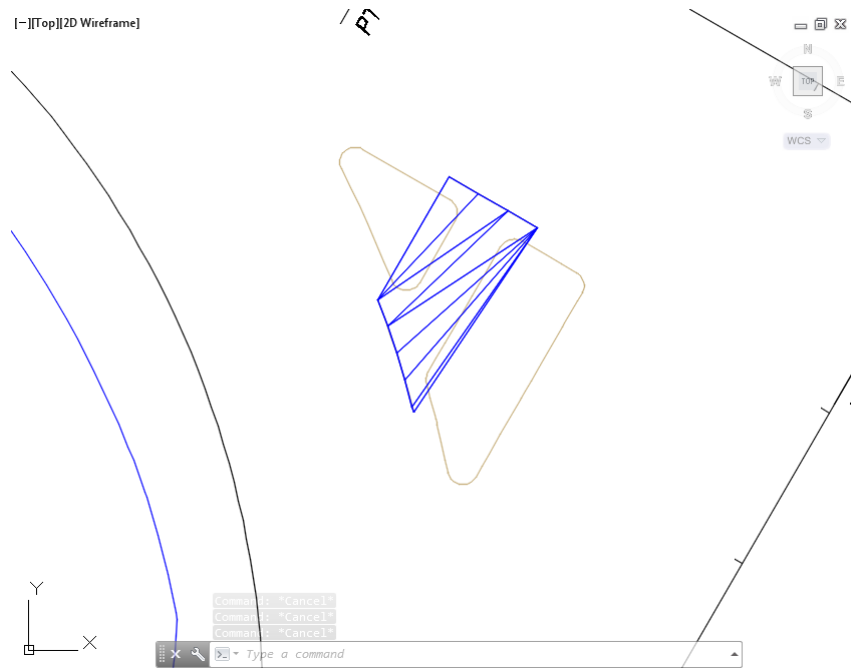


11. Click OK to continue and to close the Add Breaklines dialog.

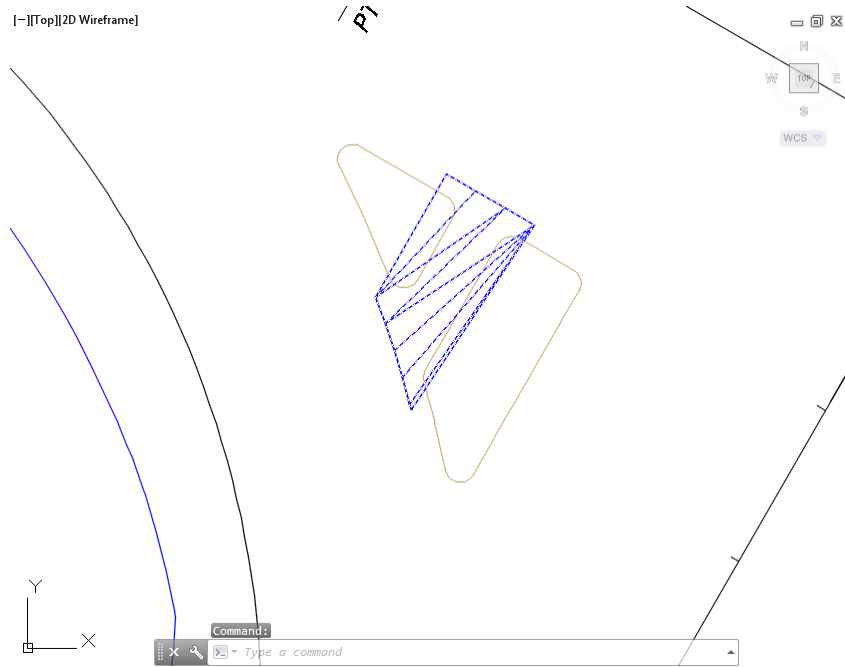
12. Select FDOT PavtConcrete TI - Side - Side feature line, use red arrow as a reference.



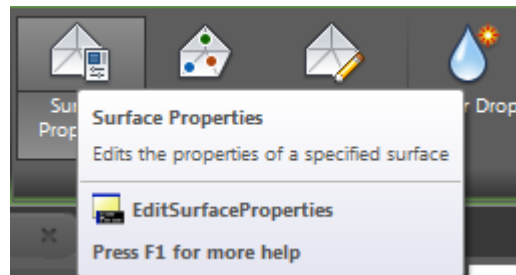
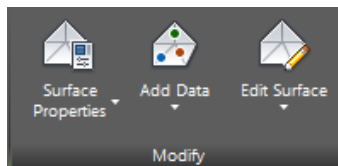
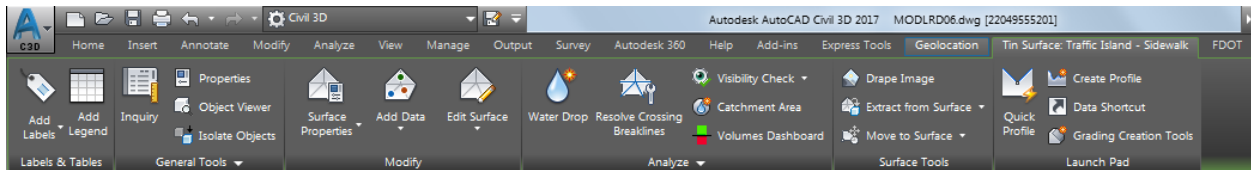
13. Review Traffic Island - Sidewalk Surface



14. Select the Traffic Island - Sidewalk Surface.

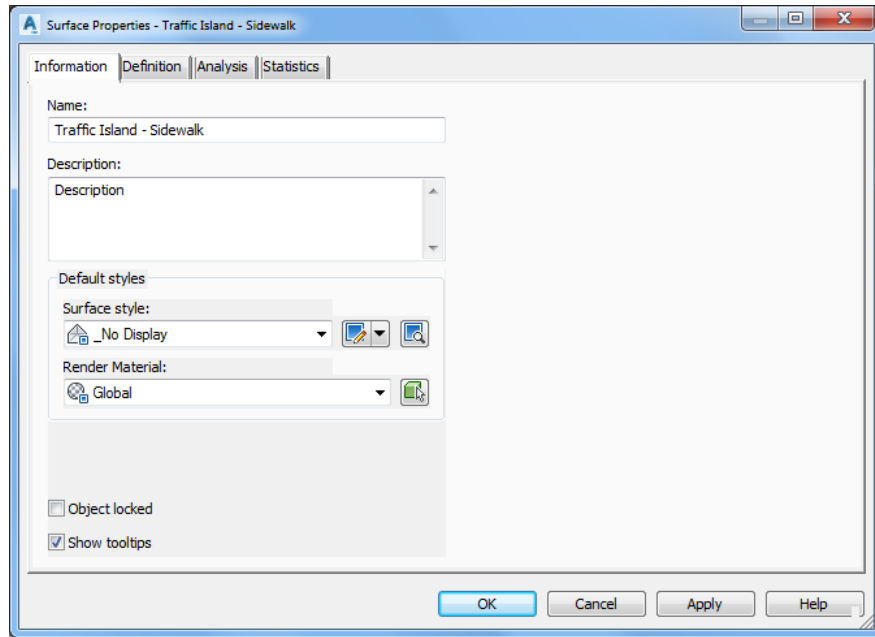


15. The Tin Surface: Traffic Island - Sidewalk tab is displayed in the Ribbon. From the Modify panel, select Surface Properties.

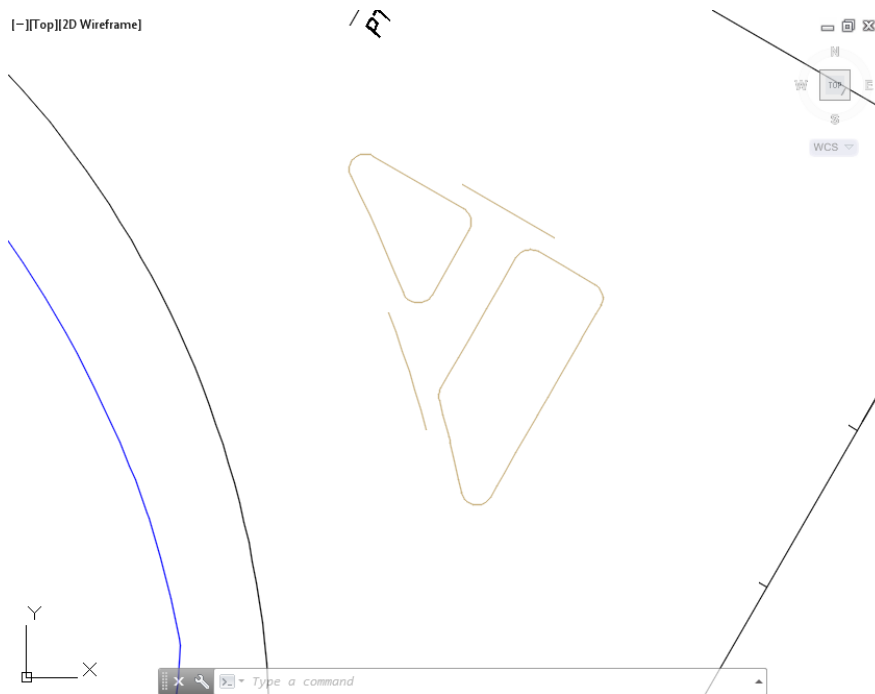




- From the Surface Properties - Traffic Island - Sidewalk dialog, set the Surface style to: `_No Display`. Click OK to continue and to close the Surface Properties - Traffic Island - Sidewalk dialog.



- The Traffic Island - Sidewalk Surface is no longer displayed.

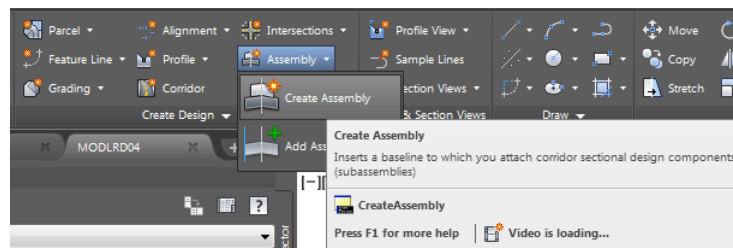
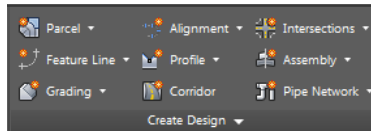
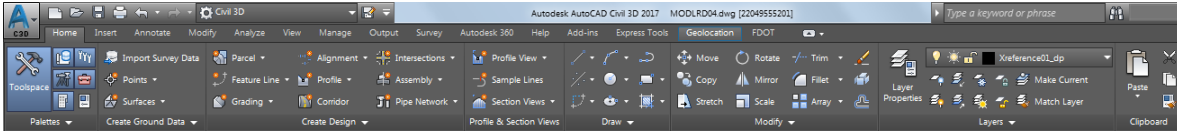


- Save** your file before continuing.

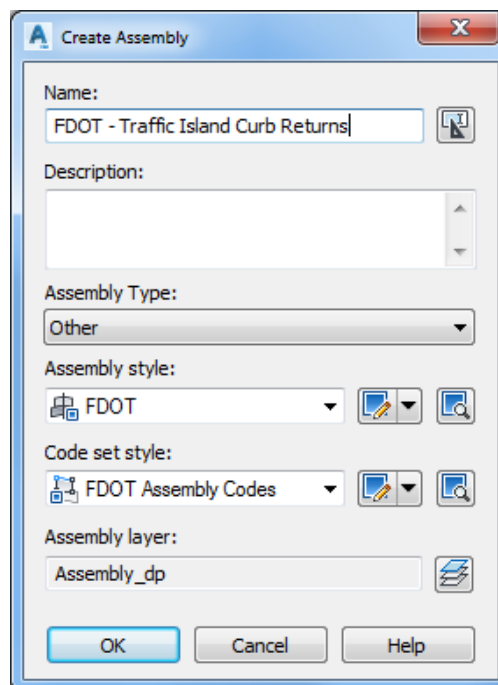
### Exercise 9.13 Create Curb Return Assembly for the Traffic Island

In this exercise you will create a curb return Assembly named FDOT - Traffic Island Curb Returns to use in creating the Traffic Island corridor model.

1. From the Home tab > Create Design panel > select Assembly, and select Create Assembly command.



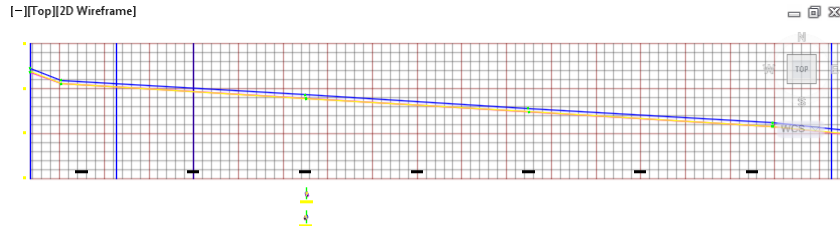
2. From the Create Assembly dialog, set the following values:
  - Name: FDOT - Traffic Island Curb Returns
  - Assembly Type: Other
  - Assembly style: FDOT
  - Code set style: FDOT Assembly Codes
  - Assembly layer: Assembly\_dp (Default setting)



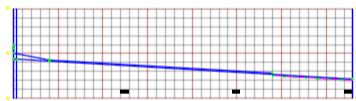
3. Click OK to continue and to close the Create Assembly dialog.
4. The command line prompts you to Specify assembly baseline location:



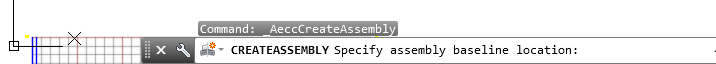
5. Use the Zoom and Pan commands to pick an insertion point for the Assembly in an area away from the plan geometry. suggest placing it below the Profile View Alignment - Traffic Sep South LT 0+00.00-3+03.17.



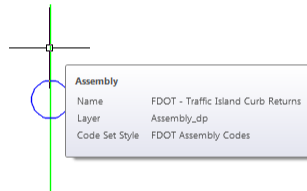
Alignment - Traffic Sep South LT  
0+00.00-3+03.11



Alignment - Traffic Sep South RT  
0+00.00-3+03.17



6. Hover over the FDOT - Traffic Island Curb Return Assembly to display tool tips.



## FDOT - Traffic Island Curb Returns

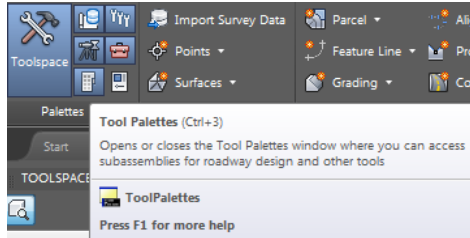


7. **Save** your file before continuing.

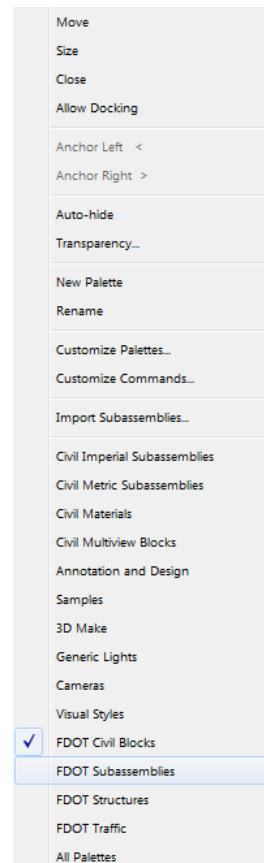
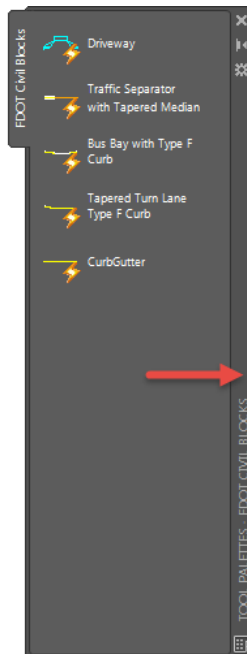
### Exercise 9.14 Adding Sub-Assemblies to the FDOT - Traffic Island Curb Return Assembly

In this exercise you will add the FDOT Type E Curb sub assembly to the FDOT - Traffic Island Curb Return assembly.

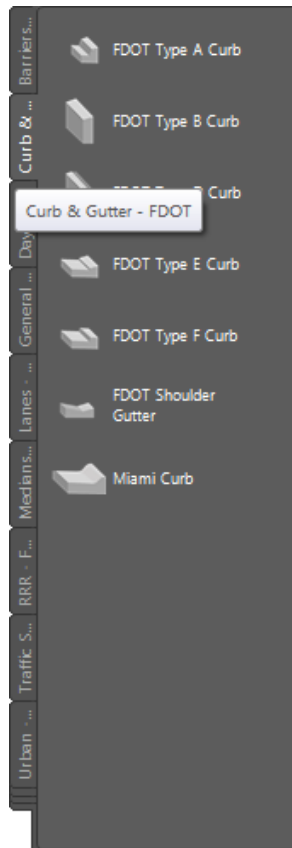
1. From the Home tab > Palettes panel, select Tool Palettes.



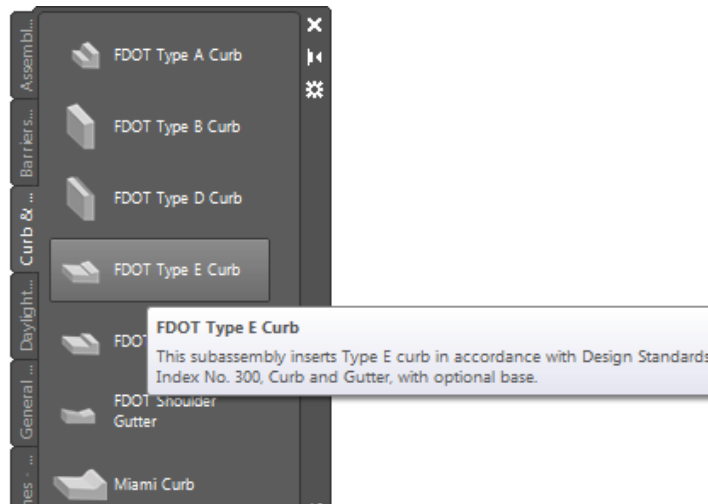
2. Right click the Tool Palette title bar referenced by the red arrow., and choose the FDOT Subassemblies palette group.



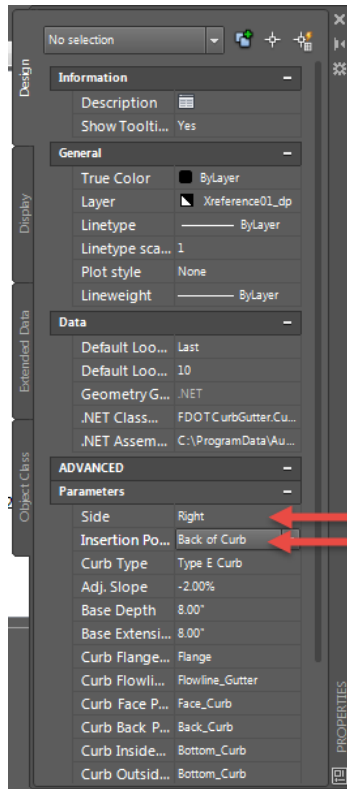
3. Select the Curb & Gutter - FDOT tab.



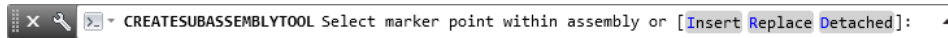
4. Select FDOT Type E Curb



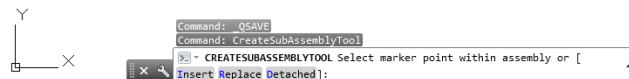
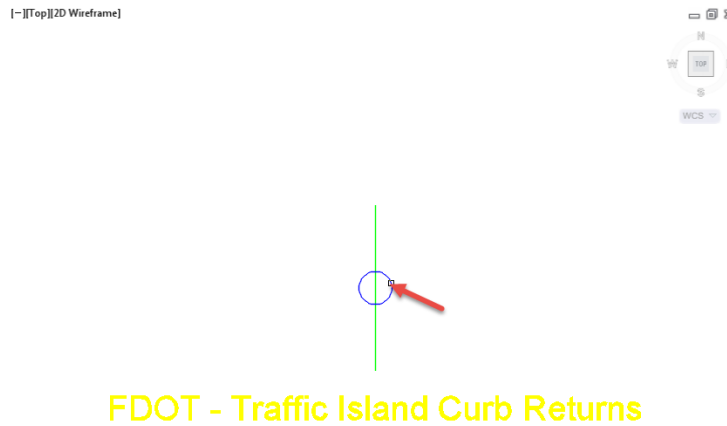
- In the Properties Palette, Parameters section, set the Side to Right, and Insertion Point to Back of Curb referenced by the red arrows.



- The command line prompts you to Select marker point within assembly or [Insert Replace Detached]:

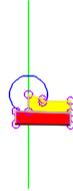


- Use Zoom and Pan commands to display the FDOT - Traffic Island Curb Return marker, then select the FDOT - Traffic Island Curb Return marker to place the curb subassembly, use the red arrow as a reference.



8. Press Enter to end command. Close the Tool Palette.
9. Review the Assembly FDOT - Traffic Island Curb Return.

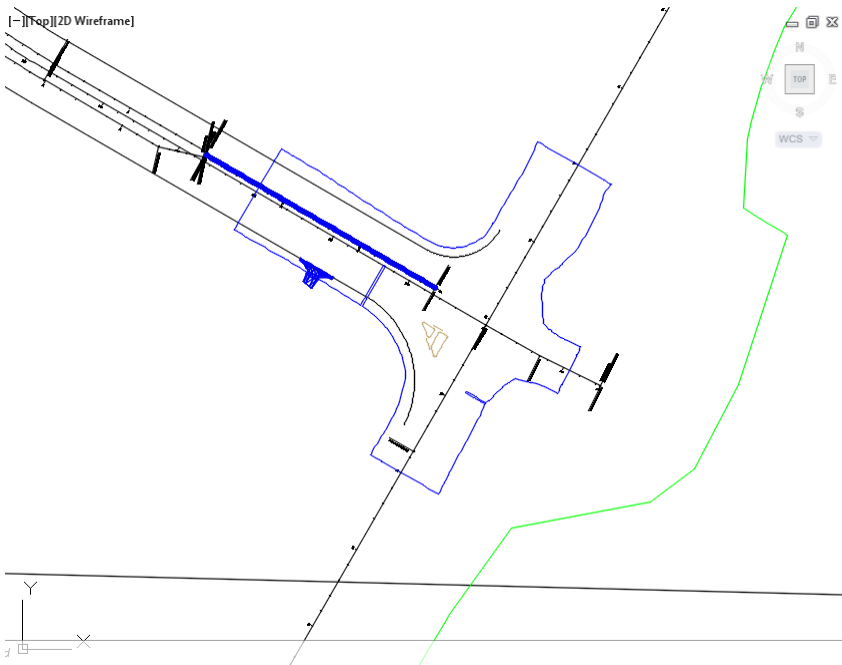
[Top] 2D Wireframe



## FDOT - Traffic Island Curb Returns



10. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection

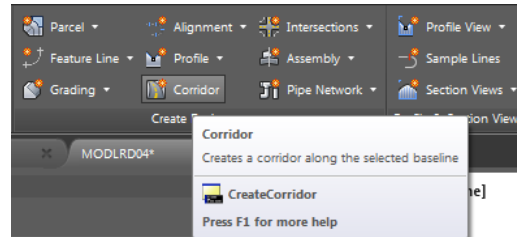
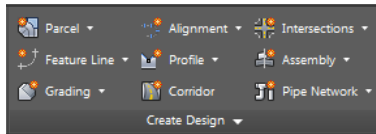
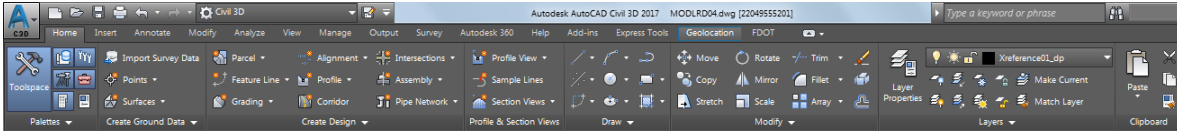


11. **Save** your file before continuing.

### Exercise 9.15 Create Corridor - Traffic Island - Interior North

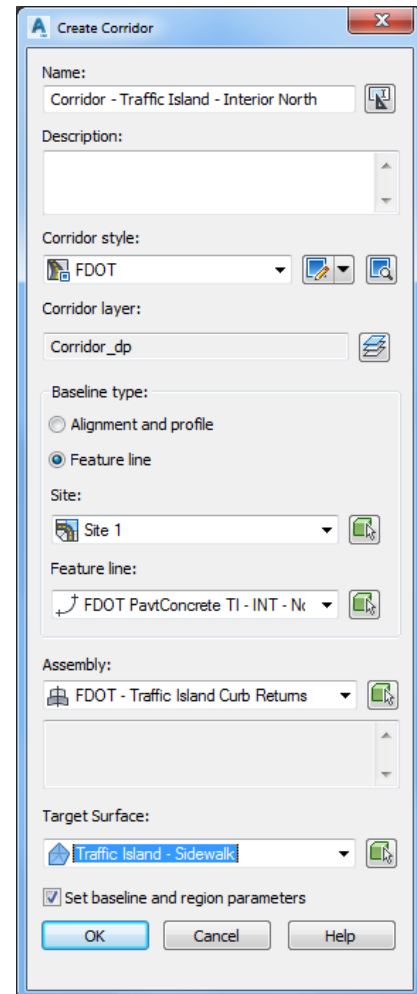
In this exercise you will create the Corridor - Traffic Island - Interior North you will use the Feature Lines and the Assembly FDOT - Traffic Island Curb Return created in the prior exercises.

1. From the Home tab > Create Design panel > select Corridor command.



2. From the Create Corridor dialog, set the following values:

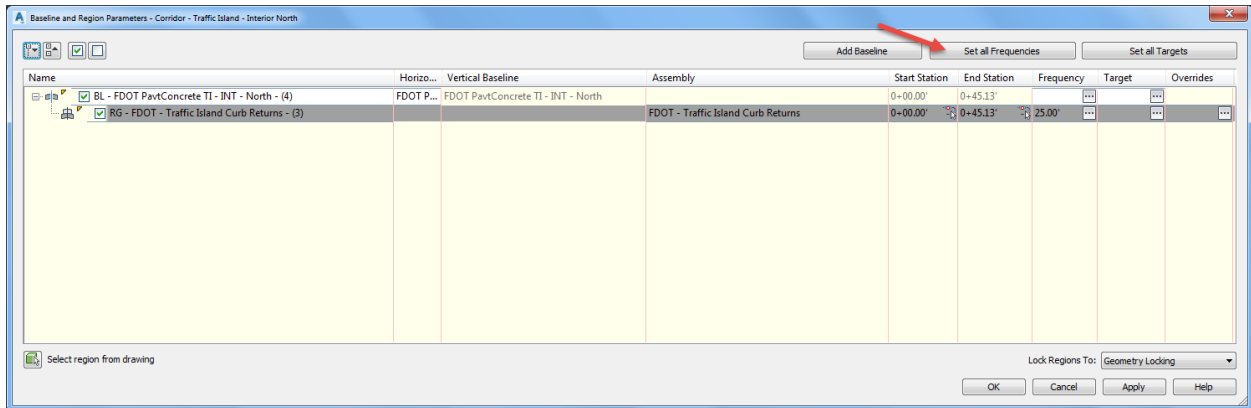
- Name: Corridor - Traffic Island - Interior North
- Corridor Style: FDOT
- Corridor layer: Corridor\_dp (Default setting)
- Baseline type: Feature line
- Site: Site 1
- Feature Line: FDOT PavtConcrete TI - INT - North
- Assembly: FDOT - Traffic Island Curb Return
- Target Surface: Traffic Island - Sidewalk
- Check box next to Set baseline and region parameters



3. Click OK to continue and to close the Create Corridor dialog.



4. From the Baseline and Regions Parameters - Corridor - Traffic Island - Interior North dialog, click the Set all Frequencies button, referenced by the red arrow.



5. From the Frequency to Apply Assemblies dialog, set the following values:

- Horizontal Baselines:

Along tangents: 1.00

Along curves: At an increment

Curve increment: .50

Along spirals: .50

- Vertical Baselines:

Along Vertical curves: .5

At vertical geometry points: Yes

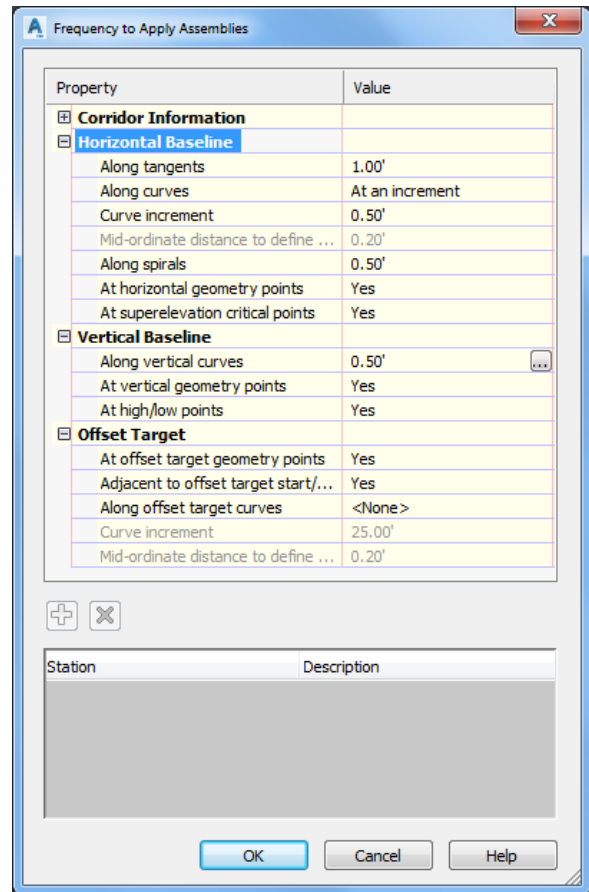
At high/low points: Yes

- Offset Target:

At offset target geometry points: Yes

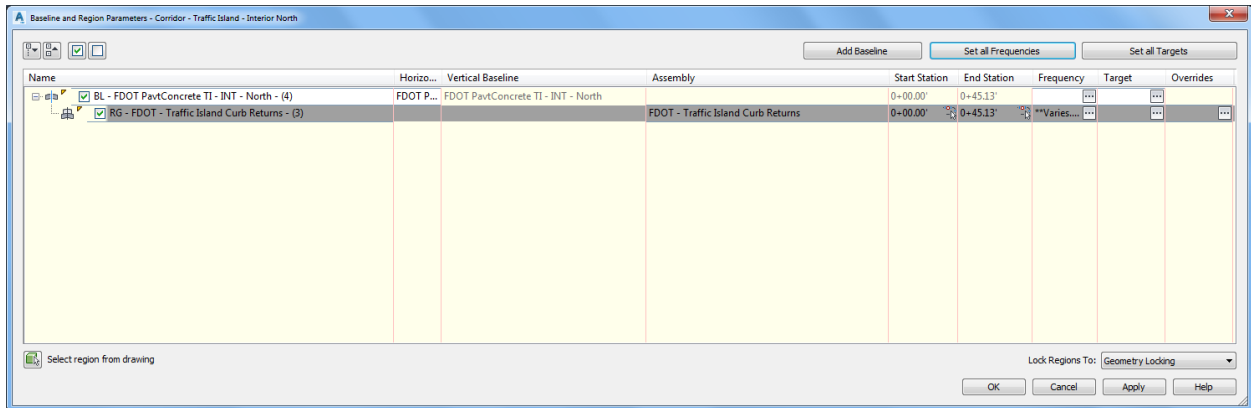
Adjacent to offset target start/end: Yes

Along Offset target curves: <None>

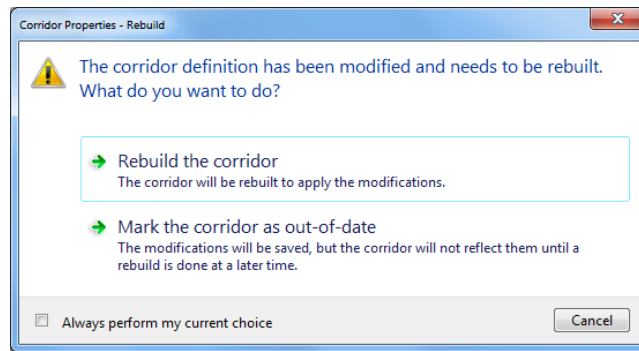


6. Click OK to return to the Baseline and Region Parameters - Corridor - Traffic Island - Interior North dialog dialog.

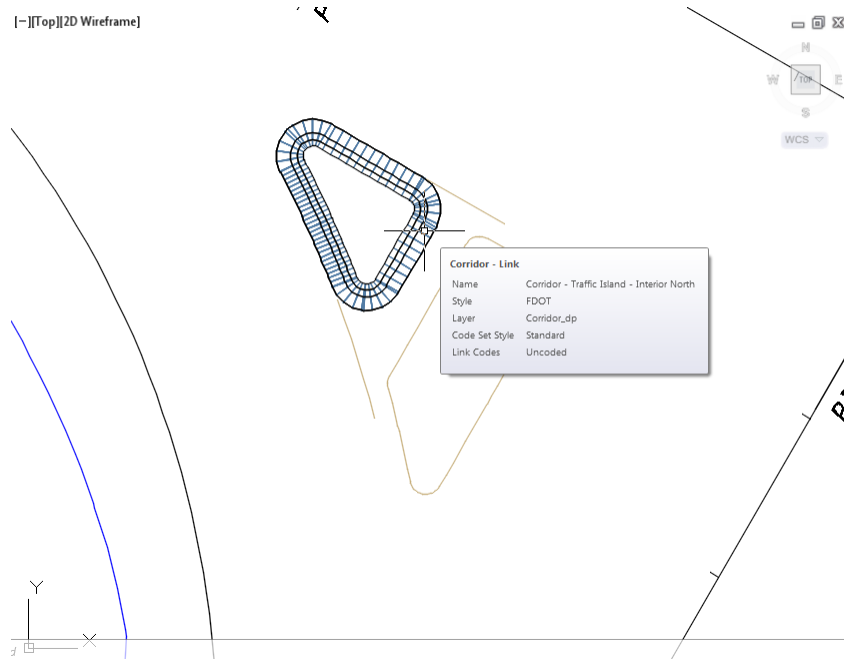
- Click OK to continue and close the Baseline and Region Parameters - Corridor - Traffic Island - Interior North dialog.



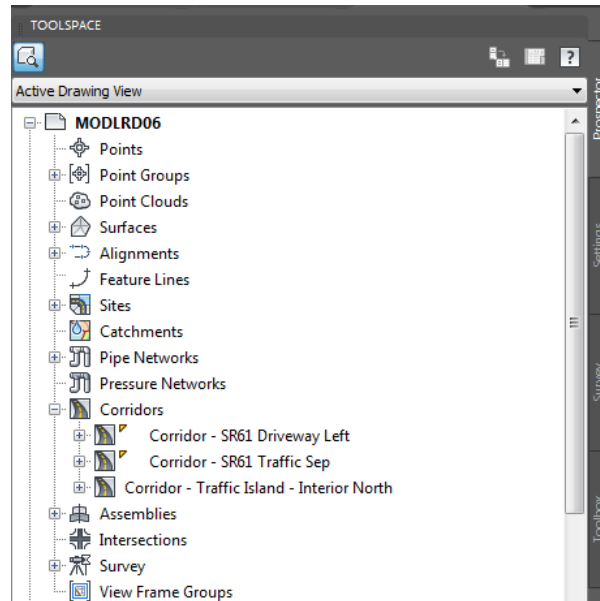
- From the Corridor Properties - Rebuild dialog, select Rebuild Corridor.



- The Corridor - Traffic Island - Interior North corridor model appears in the drawing editor. Hover over the Corridor - Traffic Island - Interior North corridor model to display tool tips



- From TOOLSPACE > Prospector tab, expand Corridors, the Corridor - Traffic Island - Interior North is displayed.

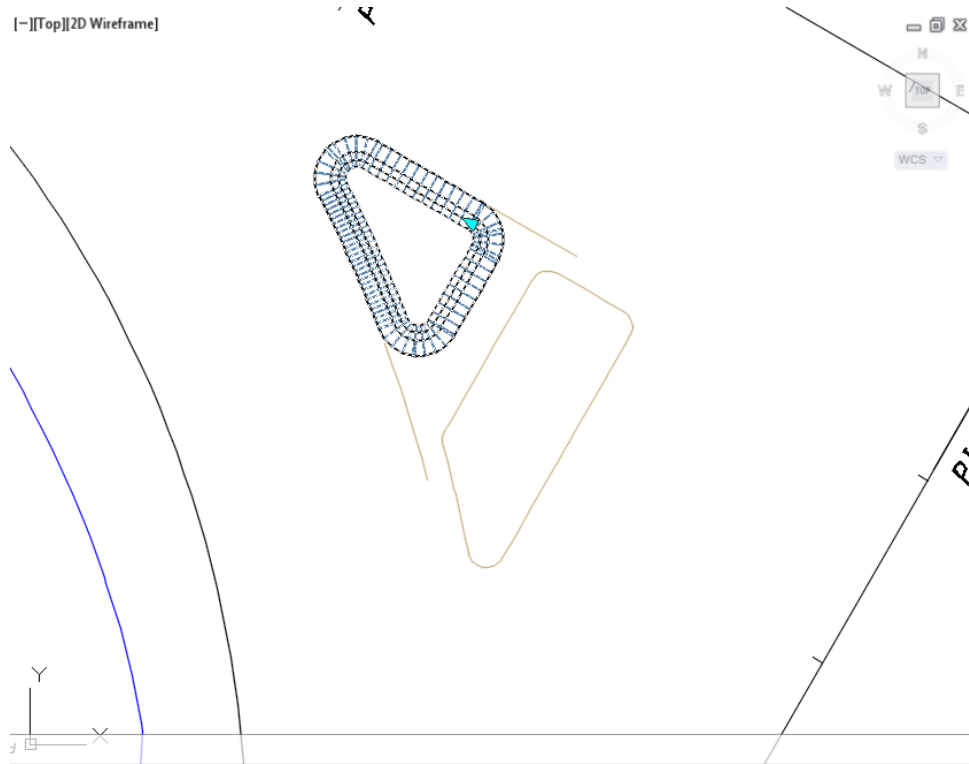


- Save** your file before continuing.

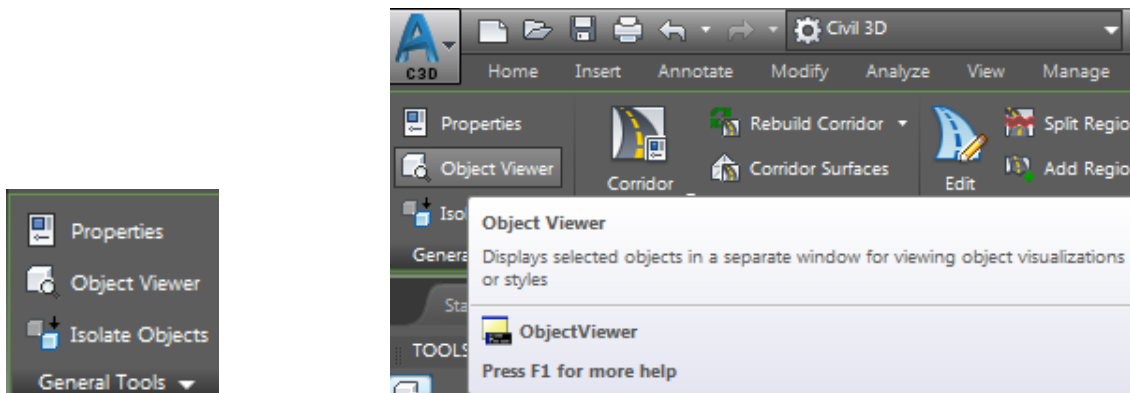
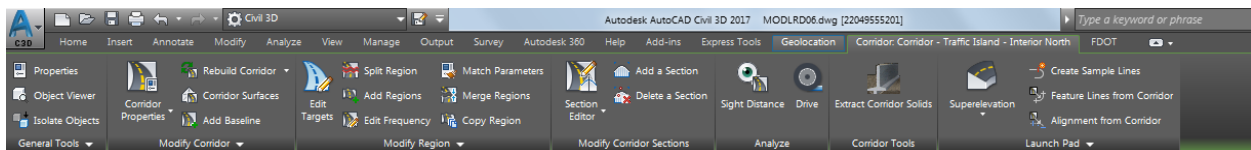
### Exercise 9.16 View the Corridor Model Corridor - Traffic Island - Interior North in 3D

In this exercise you will use the Object viewer to view the Corridor Model Corridor - Traffic Island - Interior North in 3D.

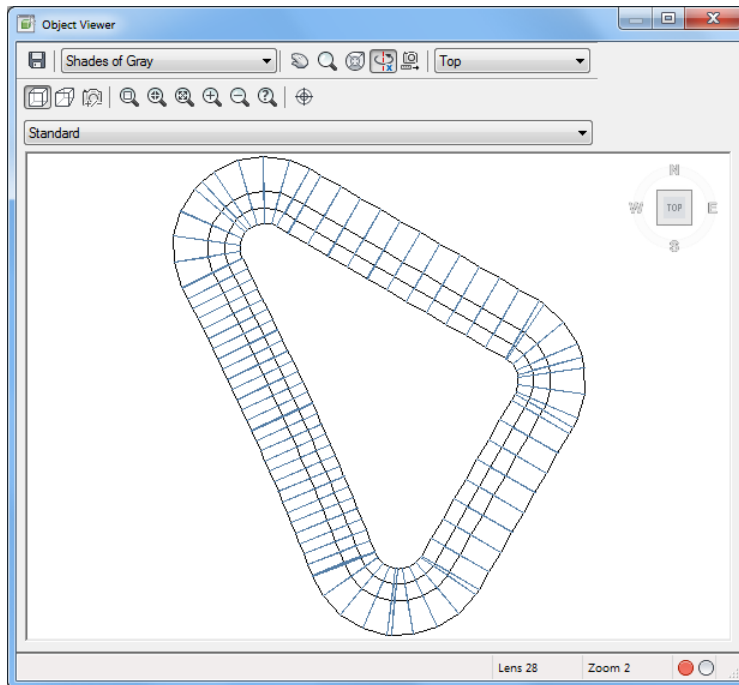
1. Select the corridor model Corridor - Traffic Island - Interior North.



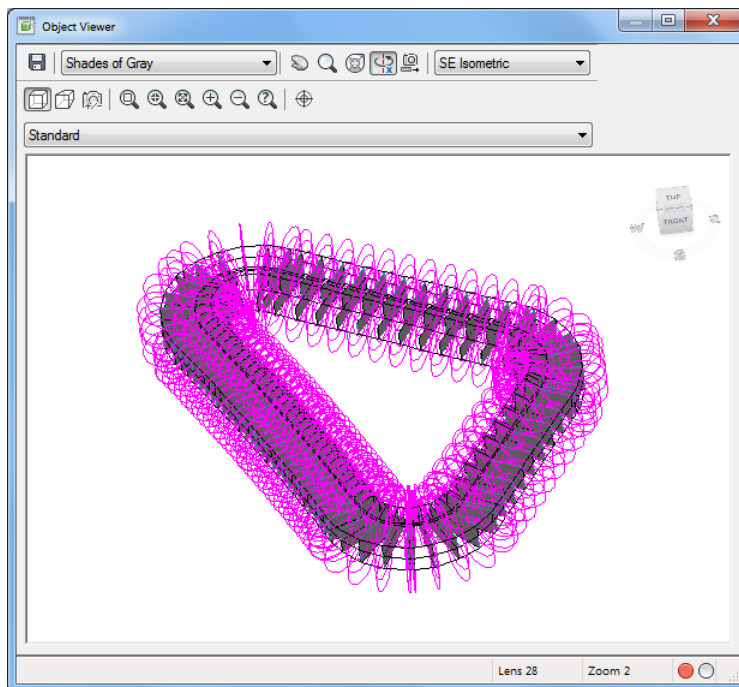
2. The Corridor: Corridor SR61 Traffic Sep tab displayed in the Ribbon. From the General Tools panel, select the Object Viewer command.



3. From the Object Viewer dialog, use the following values:
  - Set SE Isometric from the View Control drop-down list.
  - Set Shades of Gray from the Visual Styles drop down list



4. Use Zoom and Pan commands to view the model.

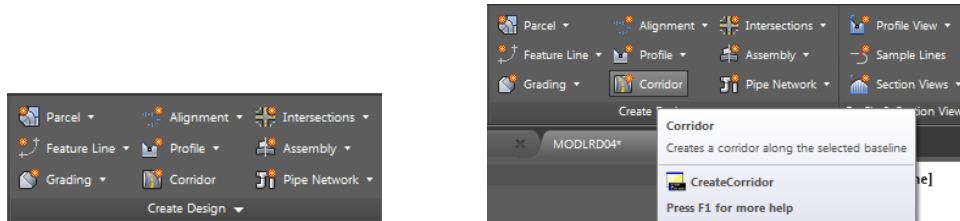
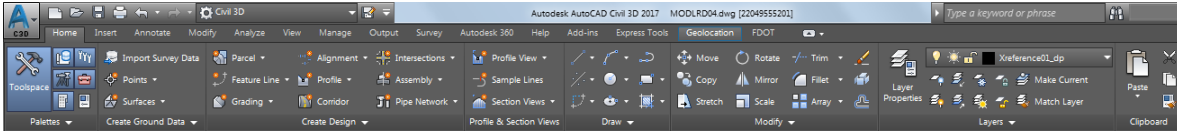


5. **Close** the Object Viewer.
6. **Save** your file before continuing.

### Exercise 9.17 Create Corridor - Traffic Island - Interior South

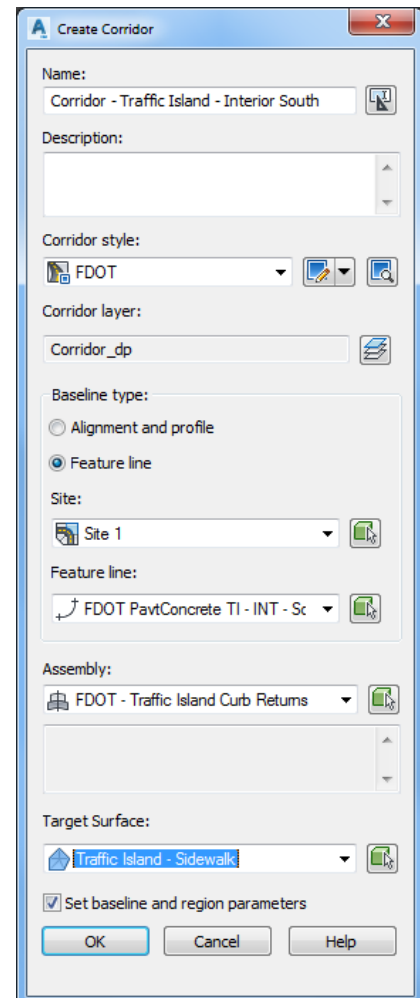
In this exercise you will create the Corridor - Traffic Island - Interior South you will use the Feature Lines and the Assembly FDOT - Traffic Island Curb Return created in the prior exercises.

1. From the Home tab > Create Design panel > select Corridor command.



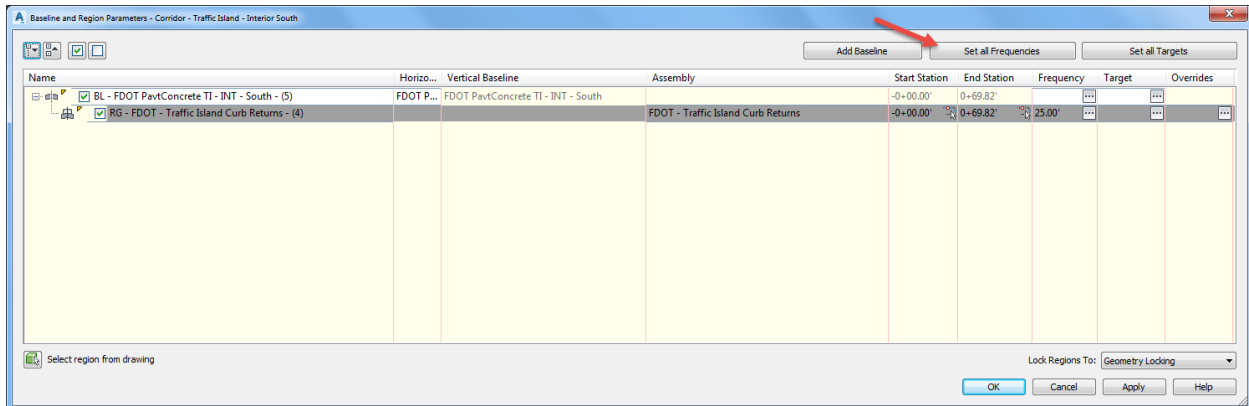
2. From the Create Corridor dialog, set the following values:

- Name: Corridor - Traffic Island - Interior South
- Corridor Style: FDOT
- Corridor layer: Corridor\_dp (Default setting)
- Baseline type: Feature line
- Site: Site 1
- Feature Line: FDOT PavtConcrete TI - INT - South
- Assembly: FDOT - Traffic Island Curb Return
- Target Surface: Traffic Island - Sidewalk
- Check box next to Set baseline and region parameters



3. Click OK to continue and to close the Create Corridor dialog.

4. From the Baseline and Regions Parameters - Corridor - Traffic Island - Interior South dialog, click the Set all Frequencies button, referenced by the red arrow.



5. From the Frequency to Apply Assemblies dialog, set the following values:

- Horizontal Baselines:

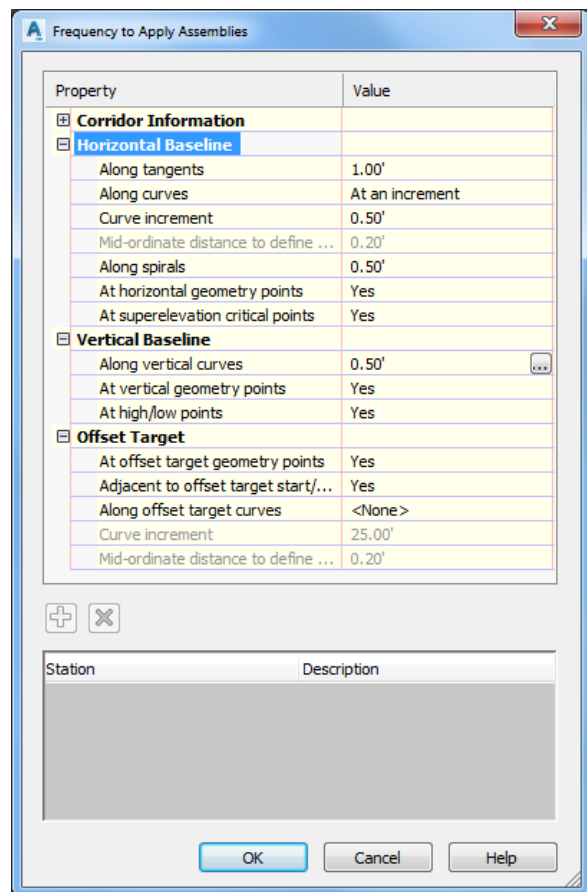
Along tangents: 1.00  
 Along curves: At an increment  
 Curve increment: .50  
 Along spirals: .50

- Vertical Baselines:

Along Vertical curves: .50  
 At vertical geometry points: Yes  
 At high/low points: Yes

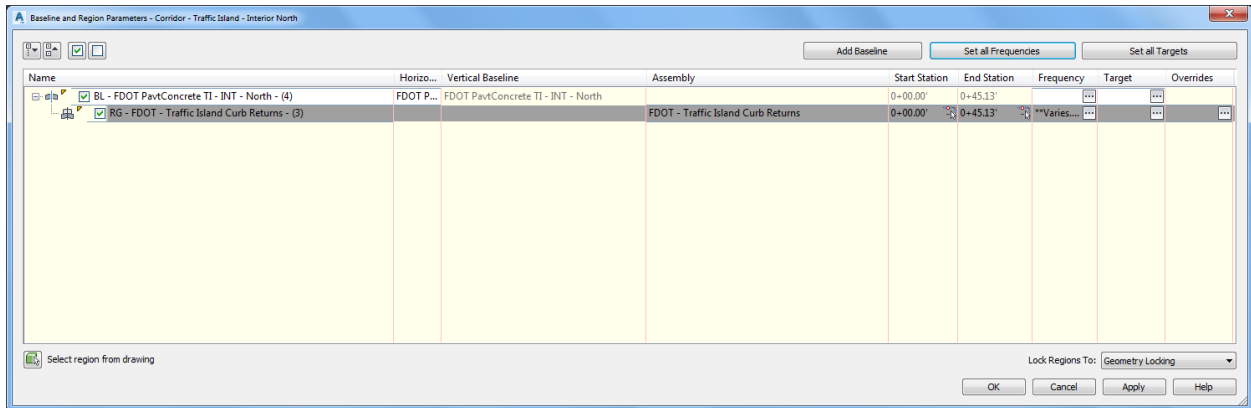
- Offset Target:

At offset target geometry points: Yes  
 Adjacent to offset target start/end: Yes  
 Along Offset target curves: <None>

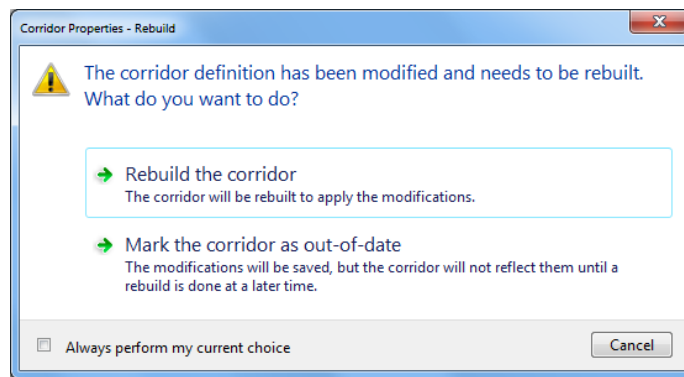


6. Click OK to return to the Baseline and Region Parameters - Corridor - Traffic Island - Interior South dialog dialog.

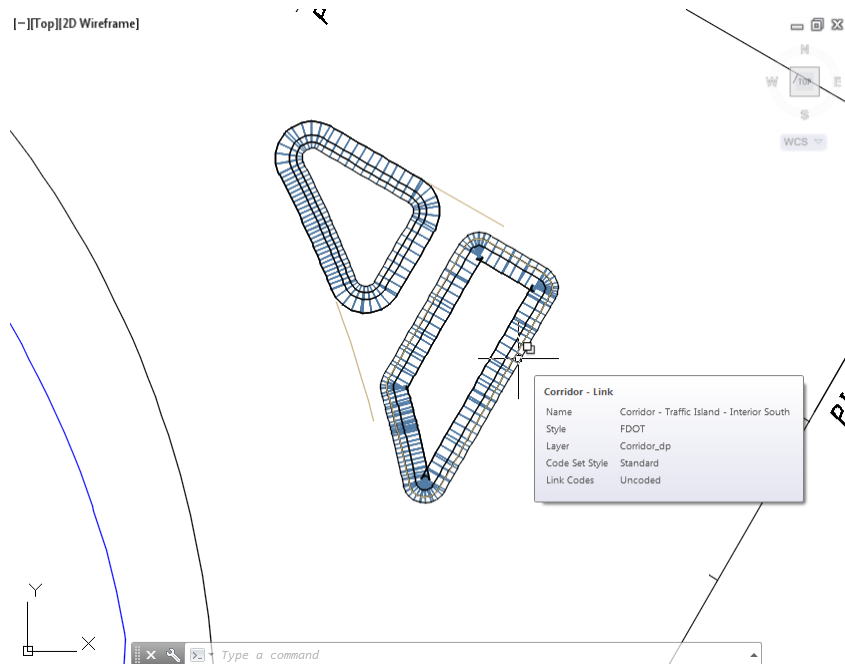
- Click OK to continue and close the Baseline and Region Parameters - Corridor - Traffic Island - Interior South dialog.



- From the Corridor Properties - Rebuild dialog, select Rebuild Corridor.



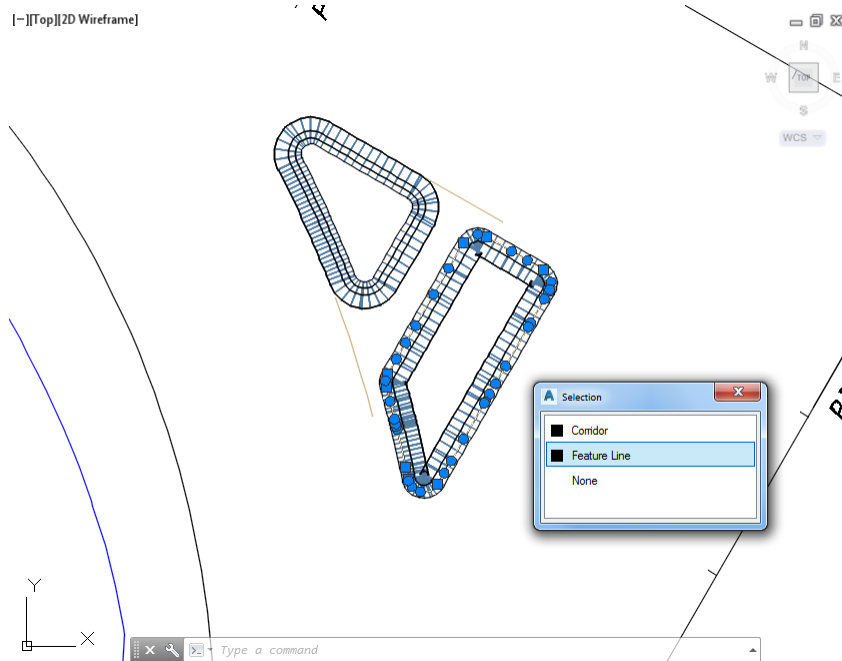
- The Corridor - Traffic Island - Interior South corridor model appears in the drawing editor. Hover over the Corridor - Traffic Island - Interior South corridor model to display tool tips



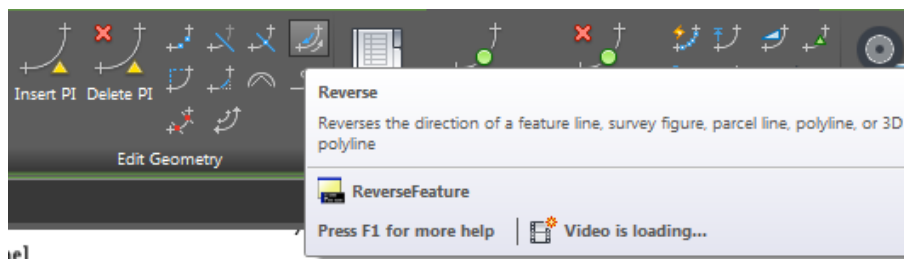
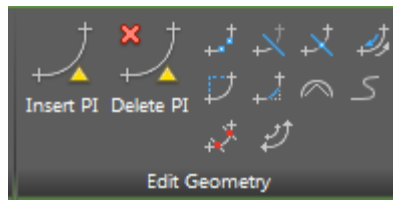
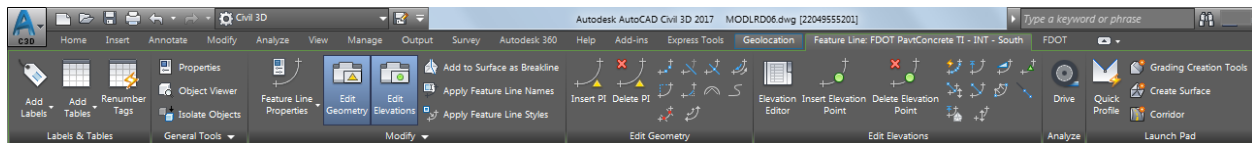


- The FDOT - Traffic Island Curb Return appears to be facing in the wrong direction in the Corridor - Traffic Island - Interior South corridor model. You will have to reverse the direction of the FDOT PavtConcrete TI - INT - South feature line to fix this.

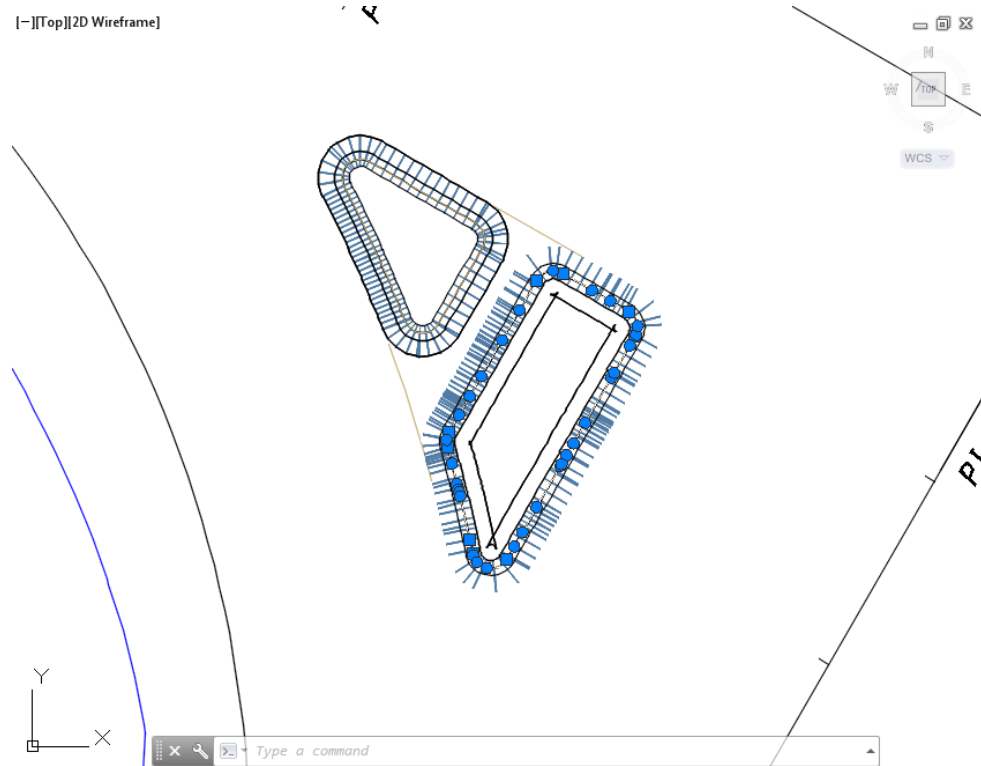
To Reverse this Feature line: select the Feature Line FDOT PavtConcrete TI - INT - South, from the Selection dialog select Feature Line.



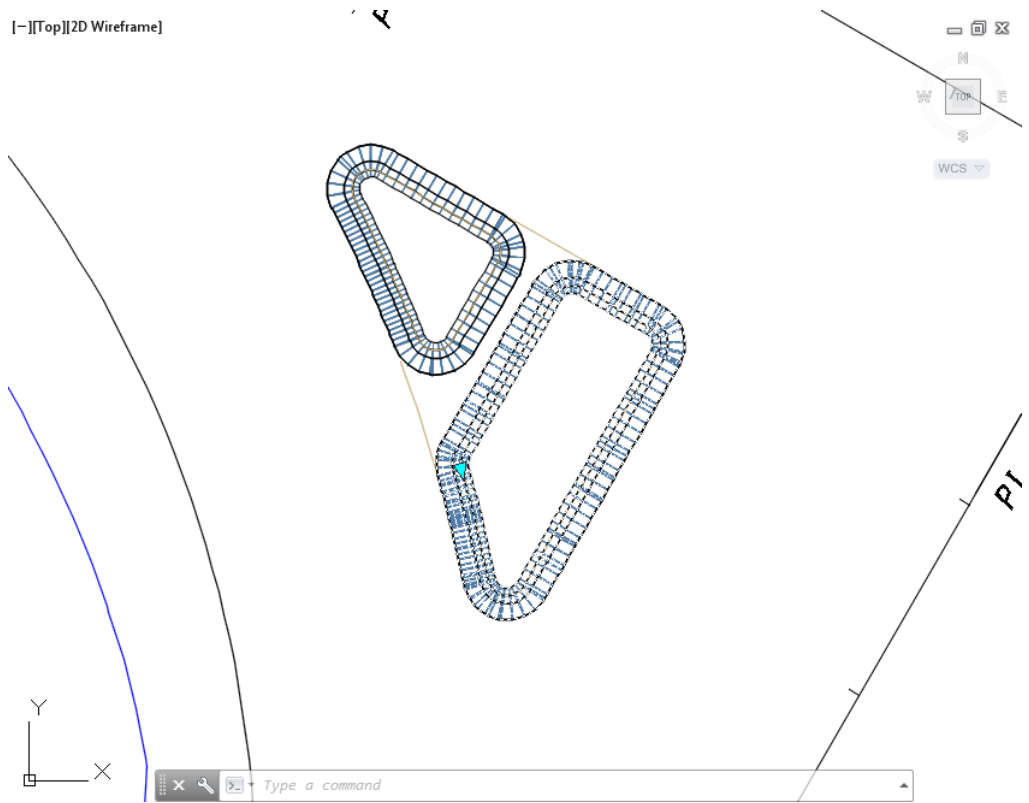
- The Feature Line FDOT PavtConcrete TI - INT - South tab is displayed in the Ribbon. From the Edit Geometry panel, select Reverse



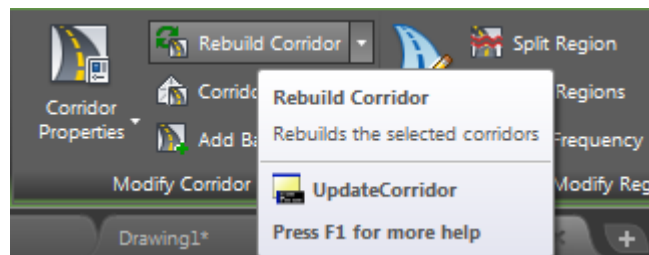
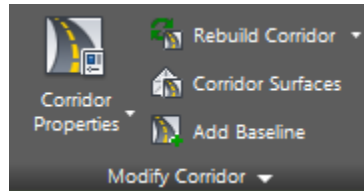
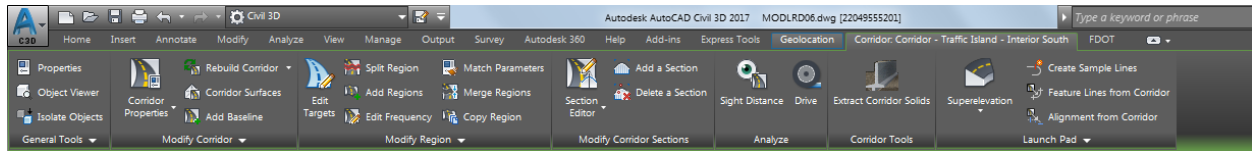
12. Press Esc to clear grips.



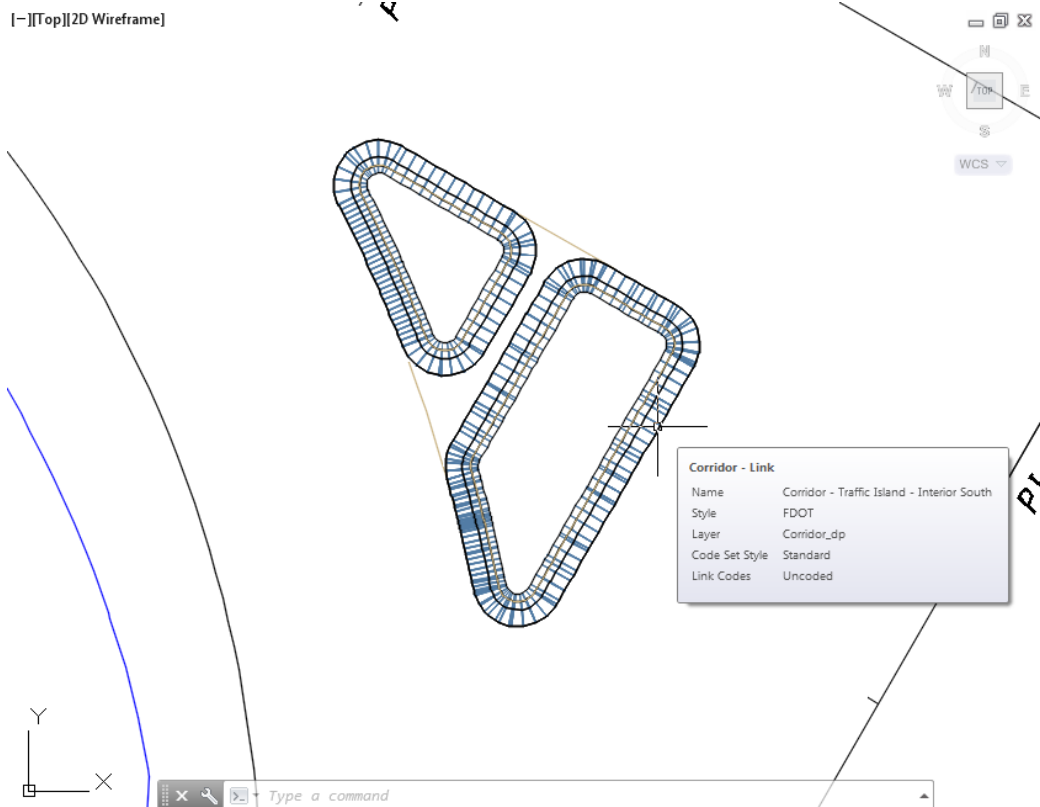
13. If the Corridor - Traffic Island - Interior South corridor model is not displaying correctly, Select the Corridor - Traffic Island - Interior South corridor model.



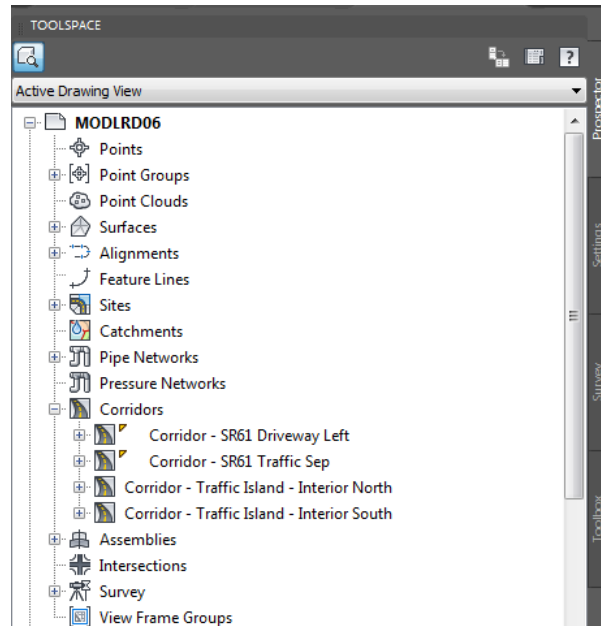
- The Corridor: Corridor - Traffic Island - Interior South tab is displayed in the Ribbon. From the Modify Corridor panel, select Rebuild Corridor.



- The FDOT - Traffic Island Curb Returns assembly should now be facing in the correct direction in the Corridor - Traffic Island - Interior South corridor model. Hover over the Corridor - Traffic Island - Interior South corridor model to display tool tips



- From TOOLSPACE > Prospector tab, expand Corridors, the Corridor - Traffic Island - Interior South is displayed.

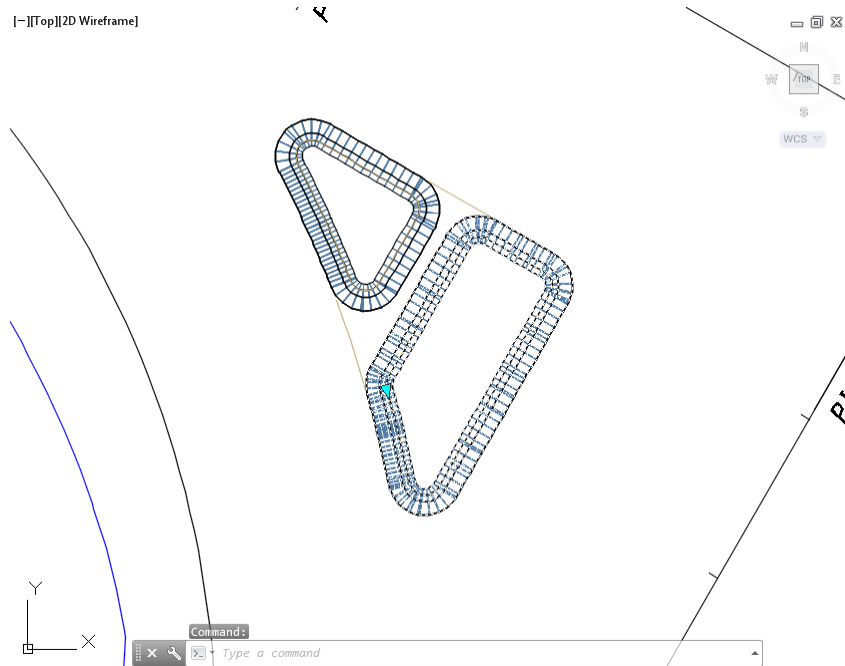


- Save** your file before continuing.

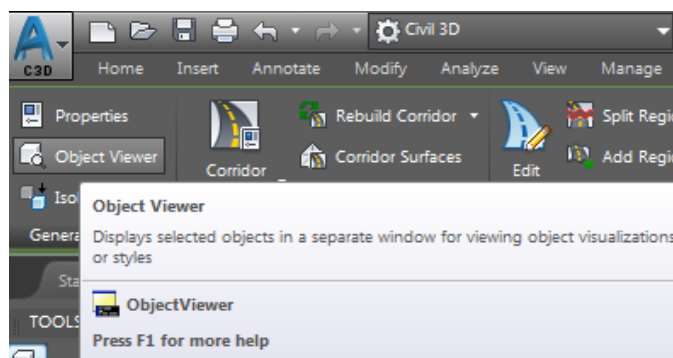
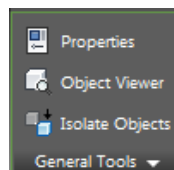
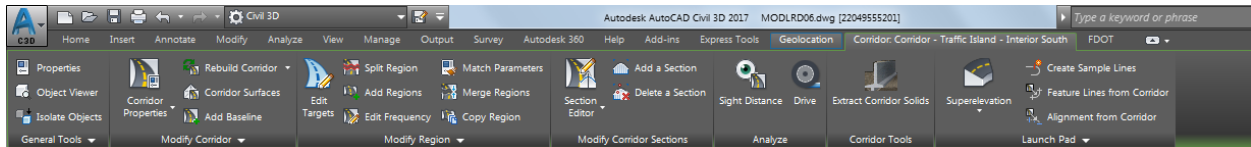
### Exercise 9.18 View the Corridor Model Corridor - Traffic Island - Interior South in 3D

In this exercise you will use the Object viewer to view the Corridor Model Corridor - Traffic Island - Interior South in 3D.

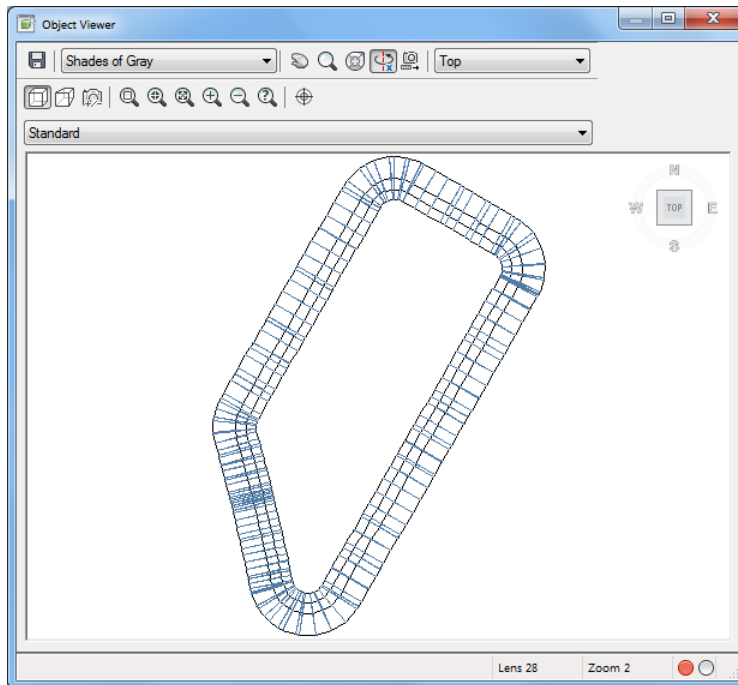
1. Select the corridor model Corridor - Traffic Island - Interior South.



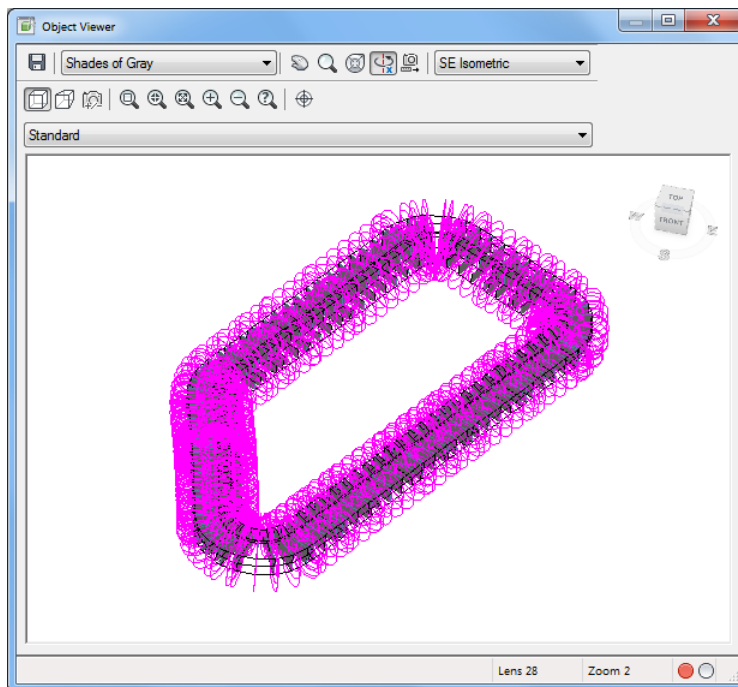
2. The Corridor: Corridor - Traffic Island - Interior South tab is displayed in the Ribbon. From the General Tools panel, select the Object Viewer command.



3. From the Object Viewer dialog, use the following values:
  - Set SE Isometric from the View Control drop-down list.
  - Set Shades of Gray from the Visual Styles drop down list



4. Use Zoom and Pan commands to view the model.

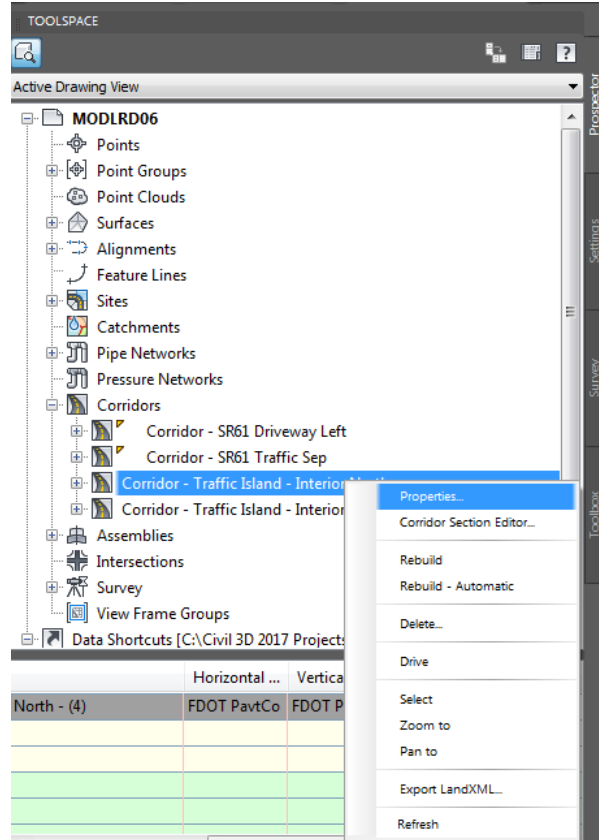


5. **Close** the Object Viewer.
6. **Save** your file before continuing.

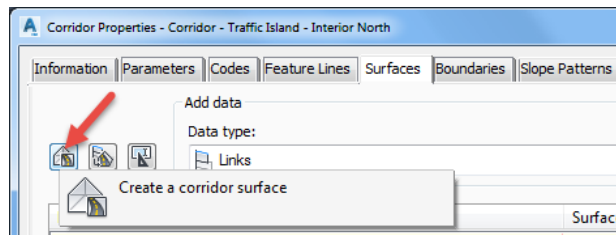
### Exercise 9.19 Create Corridor Surface from Corridor - Traffic Island - Interior North

In this exercise you will create a Corridor Surface from Corridor - Traffic Island - Interior North.

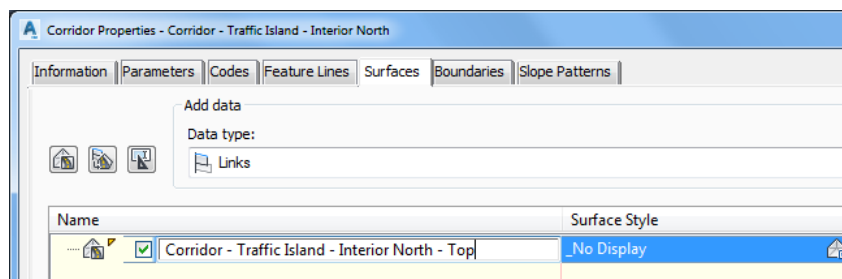
1. From TOOLSPACE > Prospector tab, expand Corridors, select Corridor - Traffic Island - Interior North, then right-click and select Properties.



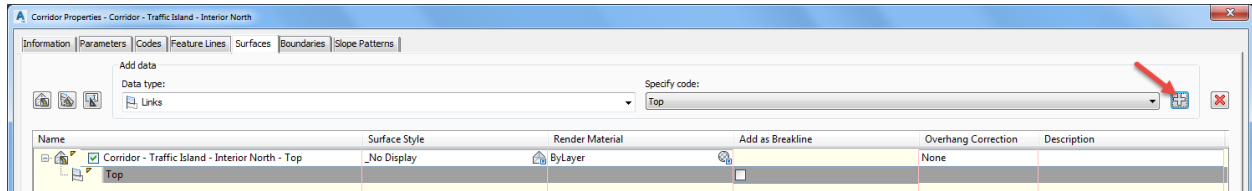
2. From the Corridor Properties - Corridor - Traffic Island - Interior North dialog, select the Surfaces tab. Select the Create a corridor surface button, referenced by the red arrow.



3. Rename the surface to: Corridor - Traffic Island - Interior North - Top



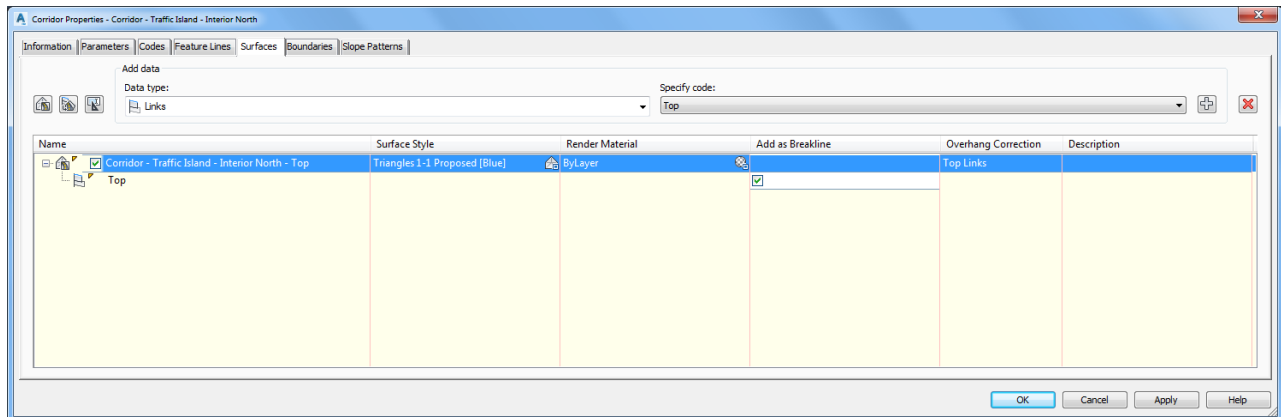
4. Add data to the Corridor - Traffic Island - Interior North - Top surface, set the following values:
  - Set Data type: Links
  - Set Specify code: Top
5. Click on the Plus sign to add data to the Corridor - Traffic Island - Interior North - Top surface, referenced by the red arrow.



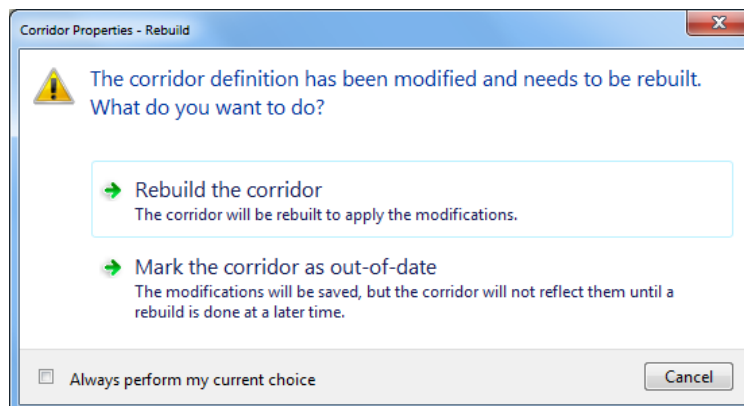
6. Then for the Corridor - Traffic Island - Interior North - Top surface, set the following values
  - Set Surface style to Triangles 1:1 Proposed [Blue]
  - Check Add as Breaklines box
  - Set Overhang Correction to Top Links

**Note** Do not create a surface boundary. A shrink-wrap will create a void between back of curbs

7. Click OK to continue and to close the Corridor Properties - Corridor - Traffic Island - Interior North - Top dialog.

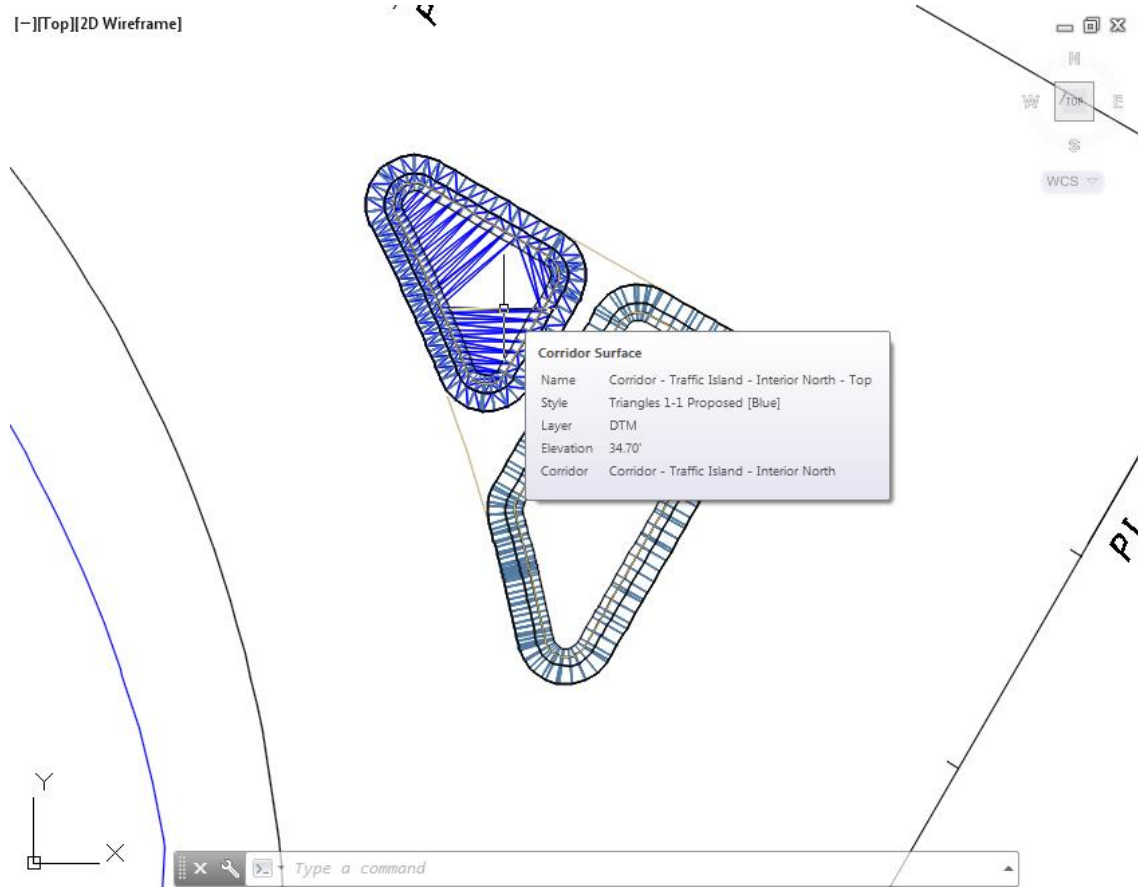


8. From the Corridor Properties - Rebuild dialog, select Rebuild the corridor.





- 9. The new Corridor - Traffic Island - Interior North - Top is displayed. Hover over the Corridor - Traffic Island - Interior North - Top to display tool tips.

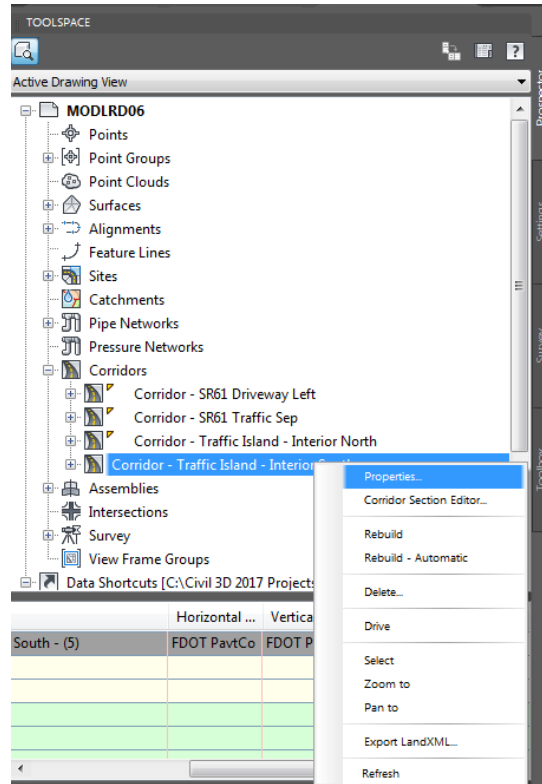


- 10. **Save** your file before continuing.

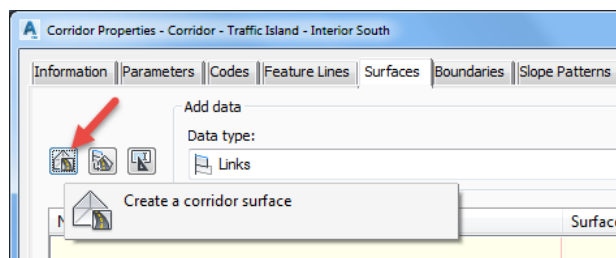
### Exercise 9.20 Create Corridor Surface from Corridor - Traffic Island - Interior South

In this exercise you will create a Corridor Surface from Corridor - Traffic Island - Interior South.

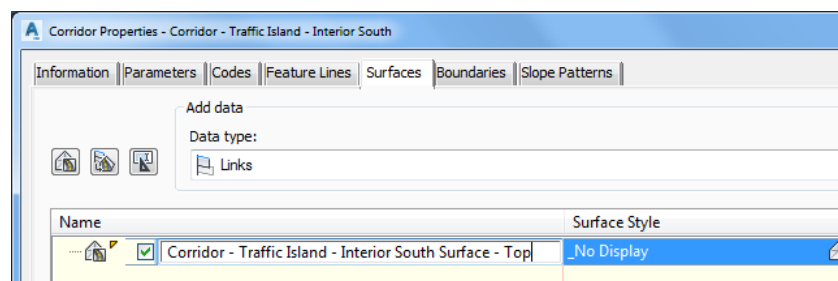
1. From TOOLSPACE > Prospector tab, expand Corridors, select Corridor - Traffic Island - Interior South, then right-click and select Properties.



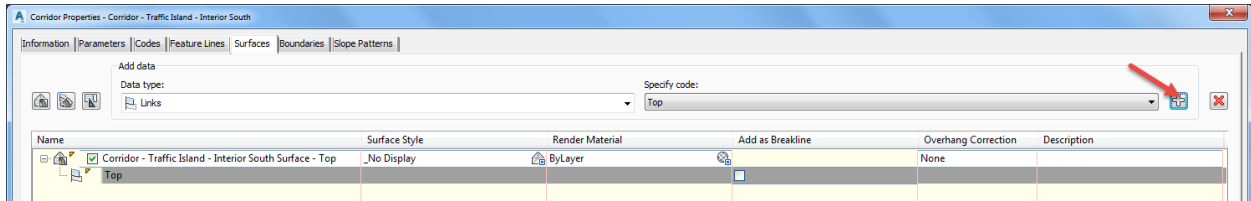
2. From the Corridor Properties - Corridor - Traffic Island - Interior South dialog, select the Surfaces tab. Select the Create a corridor surface button, referenced by the red arrow.



3. Rename the surface to: Corridor - Traffic Island - Interior South - Top



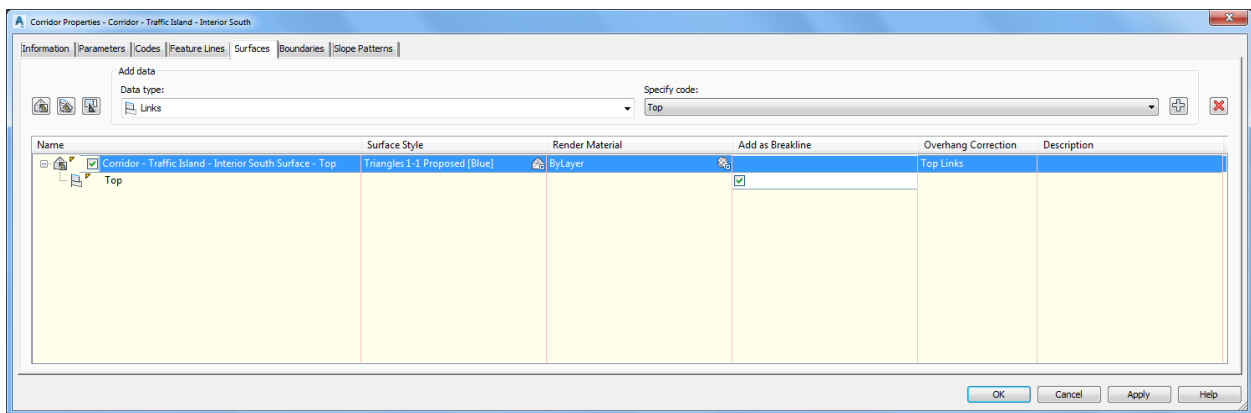
4. Add data to the Corridor - Traffic Island - Interior South - Top surface, set the following values:
  - o Set Data type: Links
  - o Set Specify code: Top
5. Click on the Plus sign to add data to the Corridor - Traffic Island - Interior South - Top surface, referenced by the red arrow.



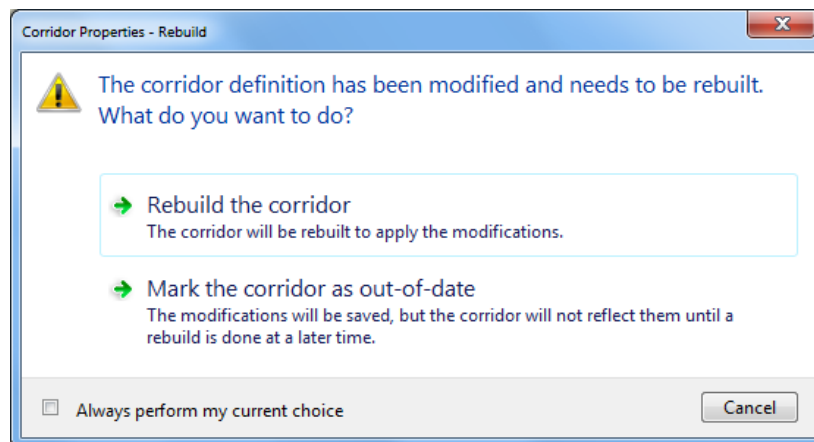
6. Then for the Corridor - Traffic Island - Interior South - Top surface, set the following values
  - o Set Surface style to Triangles 1:1Proposed [Blue]
  - o Check Add as Breaklines box
  - o Set Overhang Correction to Top Links

**Note** Do not create a surface boundary. A shrink-wrap will create a void between back of curbs

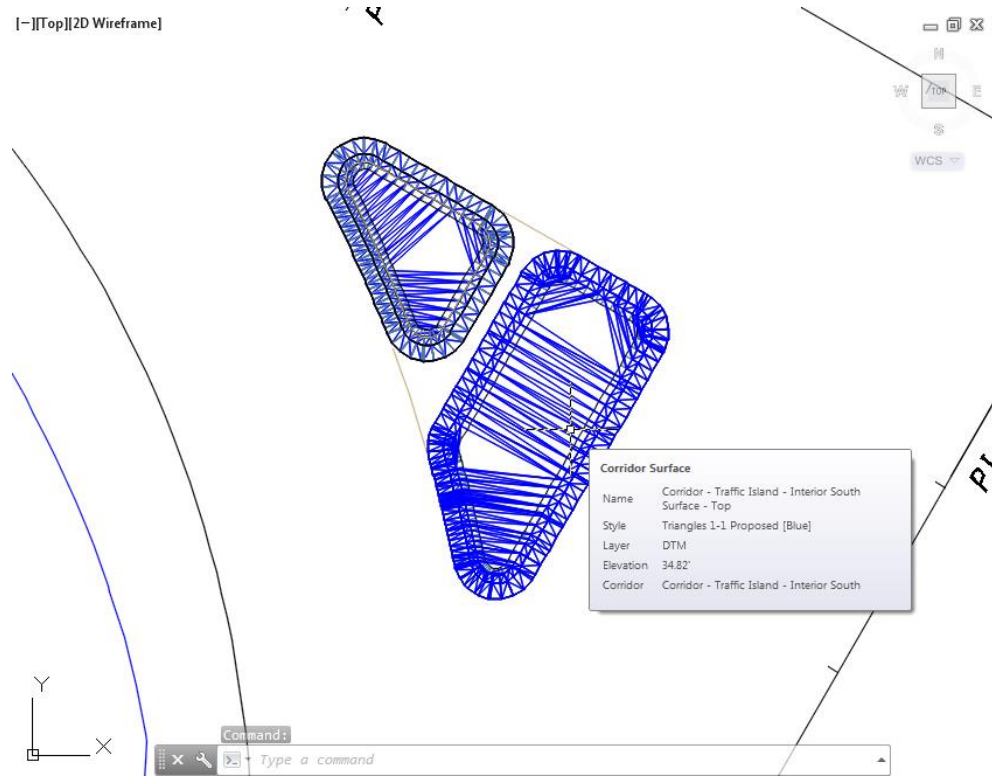
7. Click OK to continue and to close the Corridor Properties - Corridor - Traffic Island - Interior South - Top dialog.



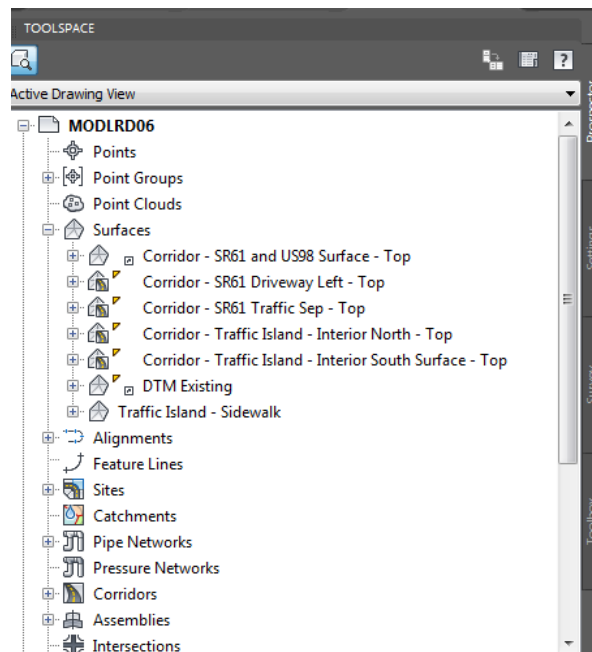
8. From the Corridor Properties - Rebuild dialog, select Rebuild the corridor.



9. The new Corridor - Traffic Island - Interior South is displayed. Hover over the Corridor - Traffic Island - Interior South - Top to display tool tips.



10. From TOOLSPACE > Prospector tab, expand Surfaces, the new Corridor - Traffic Island - Interior North - Top and Corridor - Traffic Island - Interior South - Top are displayed.

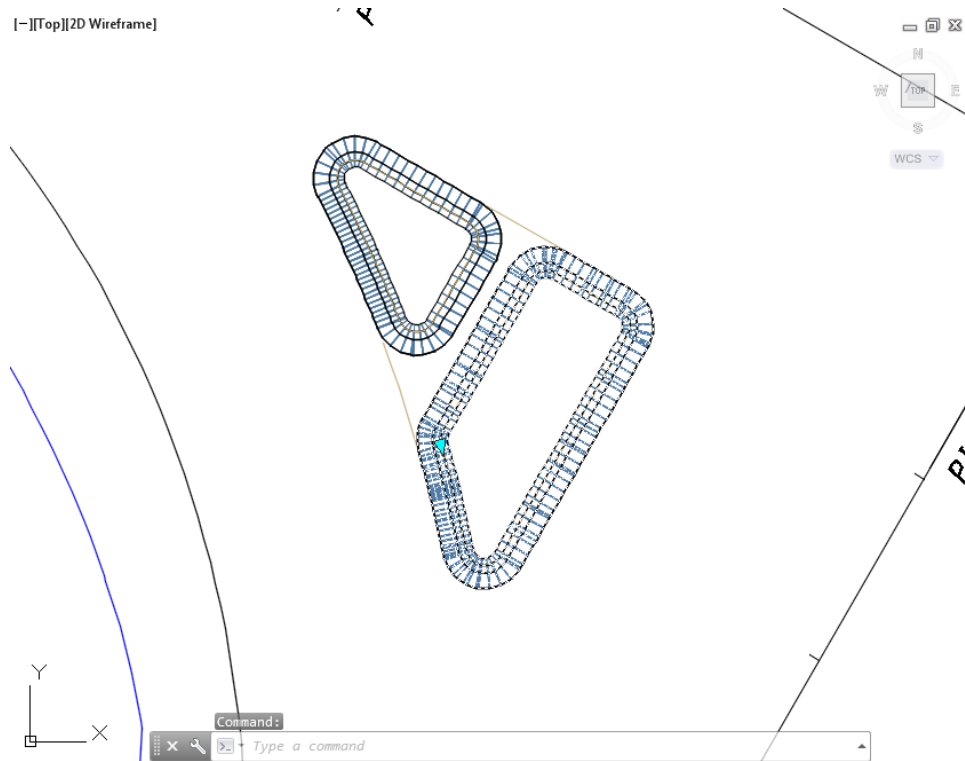


11. **Save** your file before continuing.

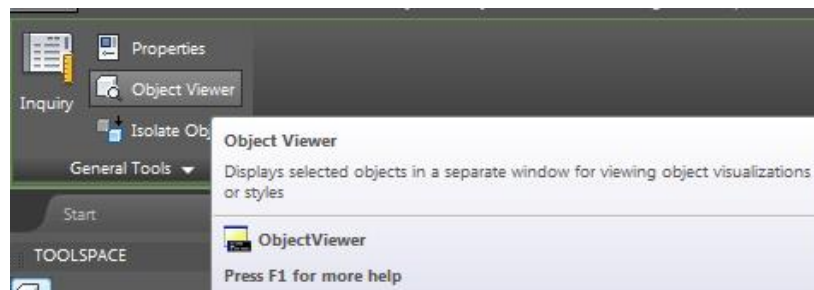
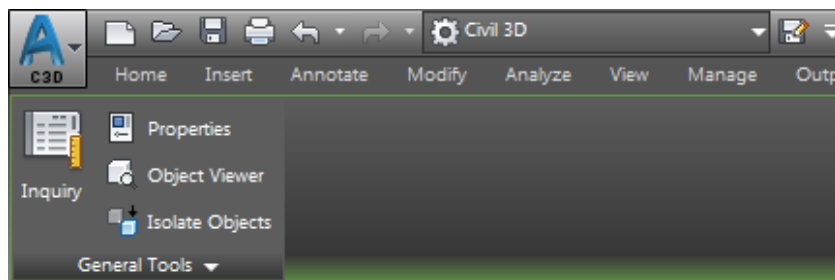
### Exercise 9.21 View the Corridor Surfaces for the - Traffic Island in 3D

In this exercise you will use the Object viewer to view the Corridor Surfaces Corridor - Traffic Island - Interior North - Top and Corridor - Traffic Island - Interior South - Top in 3D.

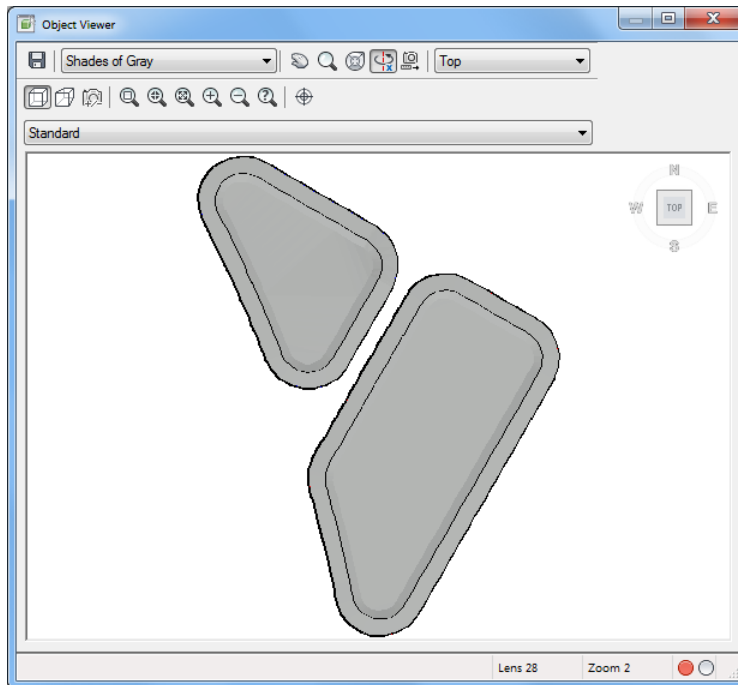
1. Select the corridor surfaces Corridor Surfaces Corridor - Traffic Island - Interior North - Top and Corridor - Traffic Island - Interior South - Top.



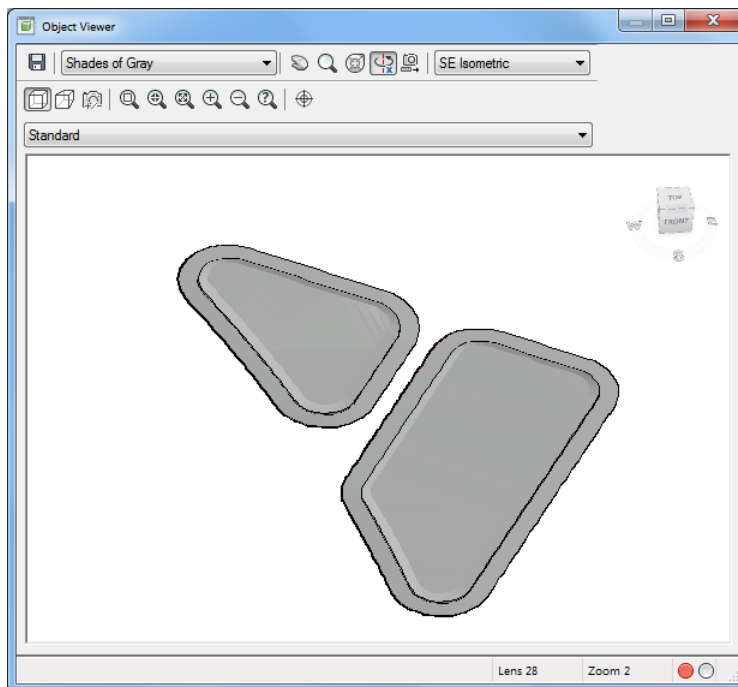
2. Because you selected both the Corridor - Traffic Island - Interior North - Top and Corridor - Traffic Island - Interior South - Top surfaces only the General Tool panel is displayed in the Ribbon. From the General Tools panel, select the Object Viewer command.



3. From the Object Viewer dialog, use the following values:
  - Set SE Isometric from the View Control drop-down list.
  - Set Shades of Gray from the Visual Styles drop down list



4. Use Zoom and Pan commands to view the model.

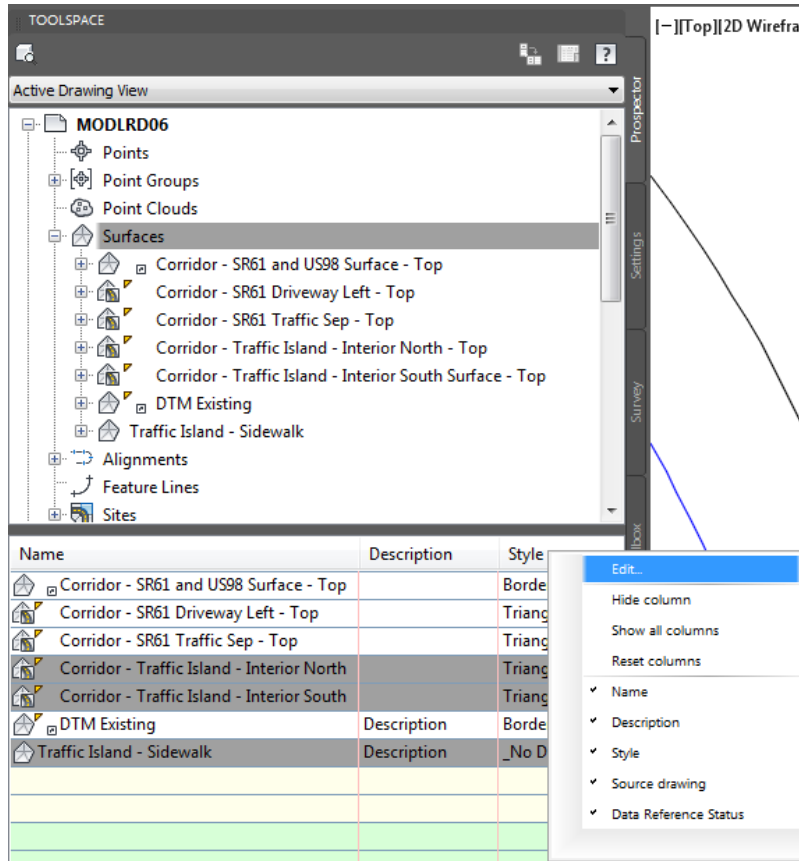


5. **Close** the Object Viewer.
6. **Save** your file before continuing.

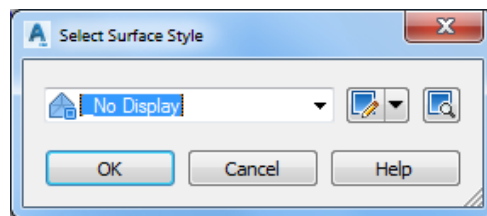
**Exercise 9.22 Set Traffic Island Surfaces Display Properties**

In this exercise you will set all the traffic island surfaces display properties to No Display

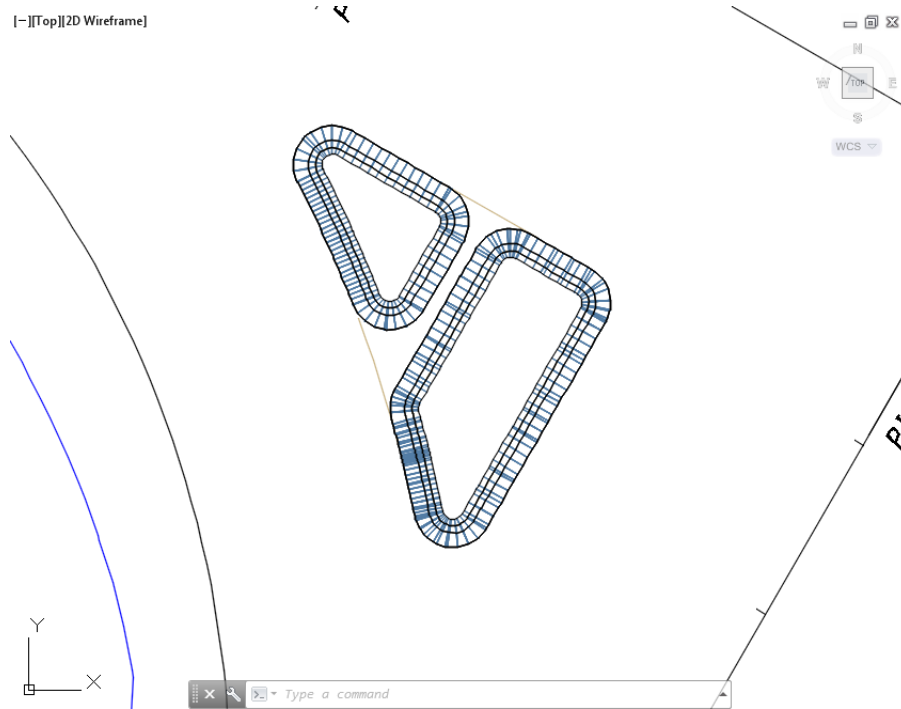
1. From TOOLSPACE > Prospector tab, expand Surfaces, then select Surfaces.
2. From Surface list Name column, select the Corridor - Traffic Island - Interior North - Top, Corridor - Traffic Island - Interior South - Top and the Traffic Island - Sidewalk surfaces by holding down the Ctrl key.
3. Right-click on the Style column, select Edit...



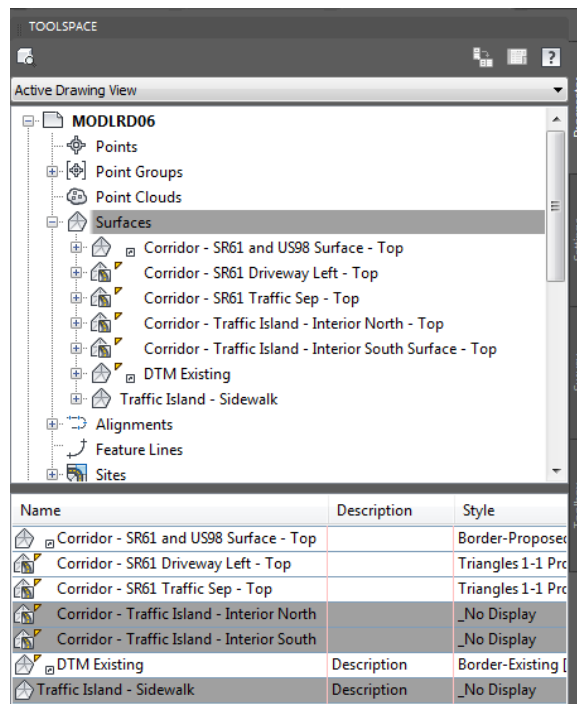
4. From the Select Surface Style dialog, select No Display from the drop down list. Click OK to continue and to close the Select Surface Style dialog.



- The selected surfaces are no longer displayed.



- From **TOOLSPACE** > **Prospector** tab, expand **Surfaces**, then select **Surfaces**. From **Surface** list **Name** column, the **Corridor - Traffic Island - Interior North - Top**, **Corridor - Traffic Island - Interior South - Top** and the **Traffic Island - Sidewalk** surfaces now display **\_No Display** as the **Style**.



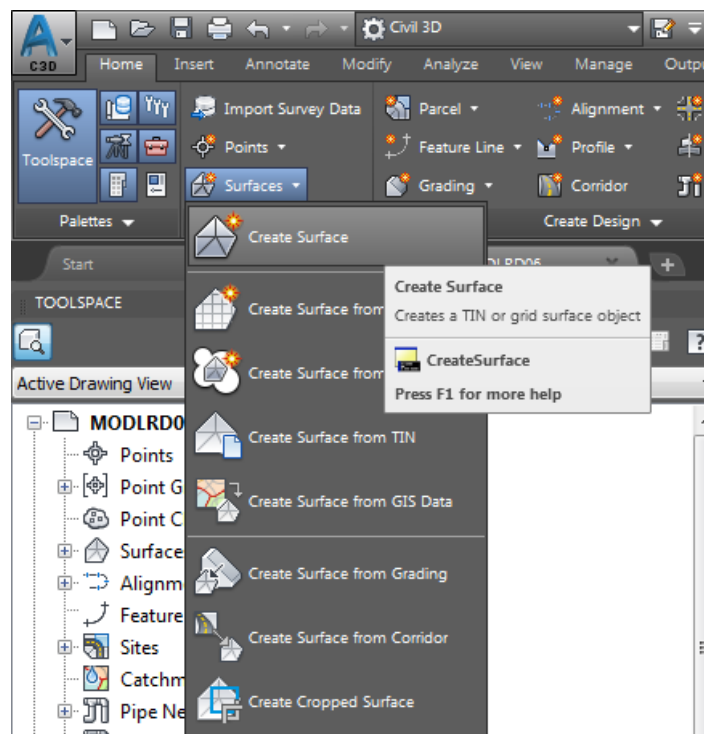
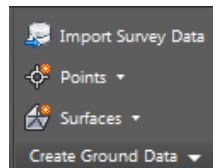
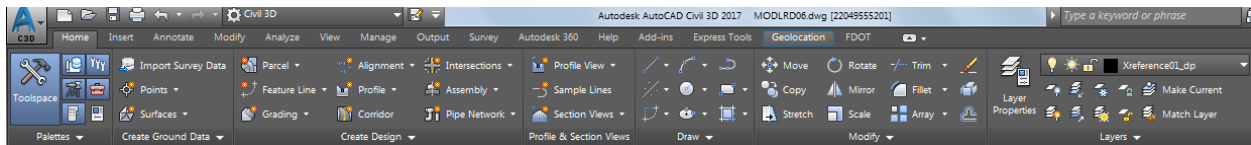
- Save** your file before continuing.



### Exercise 9.23 Create Proposed Traffic Island Surface

In this exercise you will create a proposed traffic island surface definition.

1. From the Home tab > Create Ground Data panel > select Surfaces, then select Create Surfaces.



2. From the Create Surface dialog, use these values:

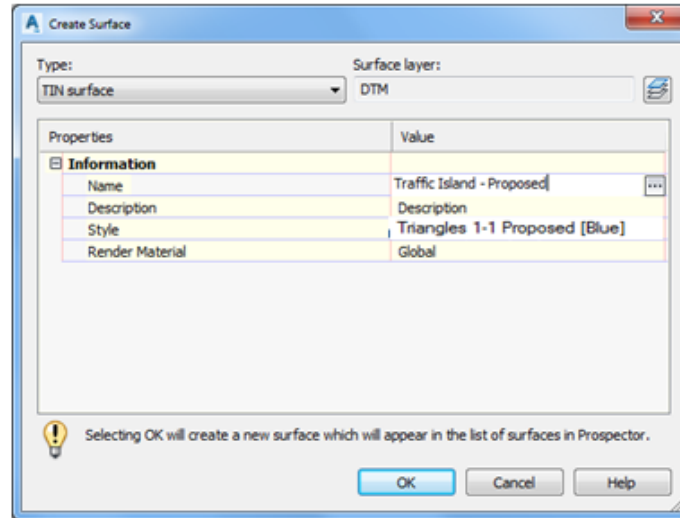
- Type: Tin Surface
- Surface Layer: DTM (Default value)
- Properties

Name: Traffic Island - Proposed

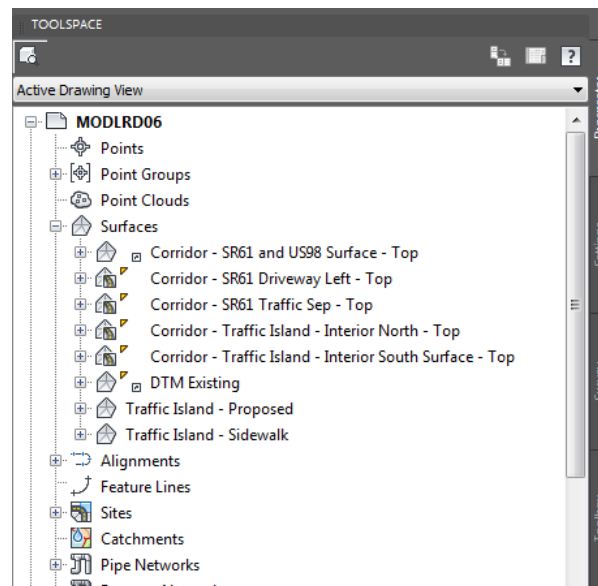
Description: Leave blank

Style: Triangles 1:1 Proposed [Blue] (Select from drop down list)

Render Material: Global (Default value)



3. Click OK to continue and to close the Create Surface dialog.
4. Review Surfaces in MODLRD06 from TOOLSPACE > Prospector tab, expand Surfaces. the new Traffic Island - Proposed is displayed.

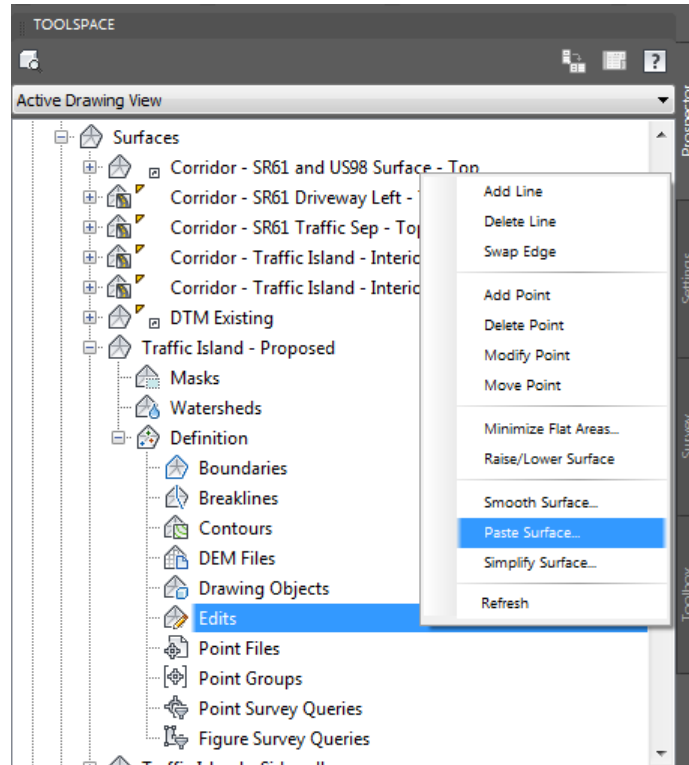


5. Save your file before continuing.

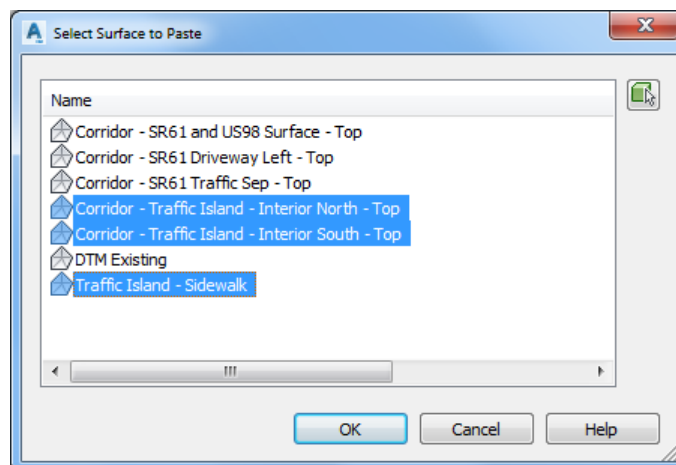
### Exercise 9.24 Paste Surfaces into the Traffic Island - Proposed Surface

In this exercise you will paste multiple surfaces into the Traffic Island - Proposed Surface.

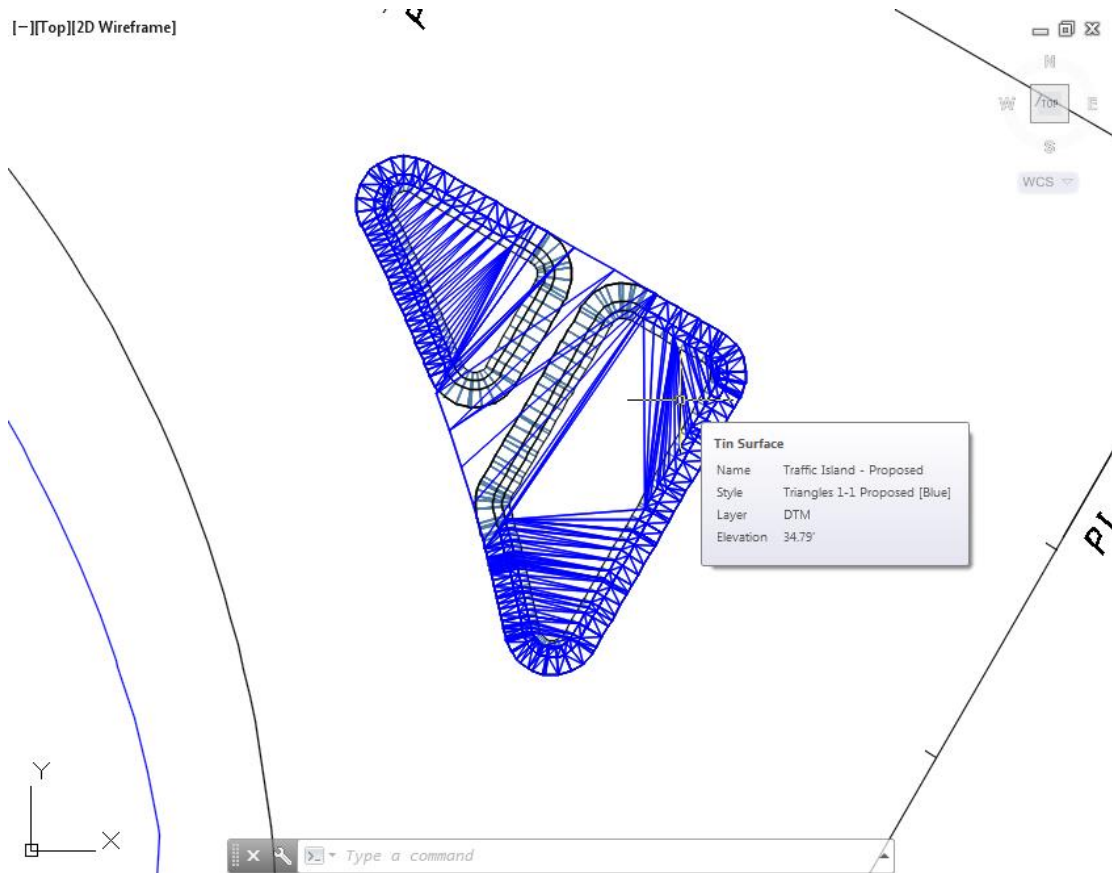
1. From TOOLSPACE > Prospector tab, expand Surfaces, expand Traffic Island - Proposed, expand Definition, right-click on Edits, then select Paste Surface.



2. From the Select Surface to Paste dialog, select the Corridor - Traffic Island - Interior North - Top, Corridor - Traffic Island - Interior South - Top and the Traffic Island - Sidewalk surfaces by holding down the Ctrl key. Click OK to continue and to close the Select Surface to Paste dialog.



3. The surface Traffic Island - Proposed with the three pasted surfaces is displayed. Hover over the Traffic Island - Proposed to display tool tips.

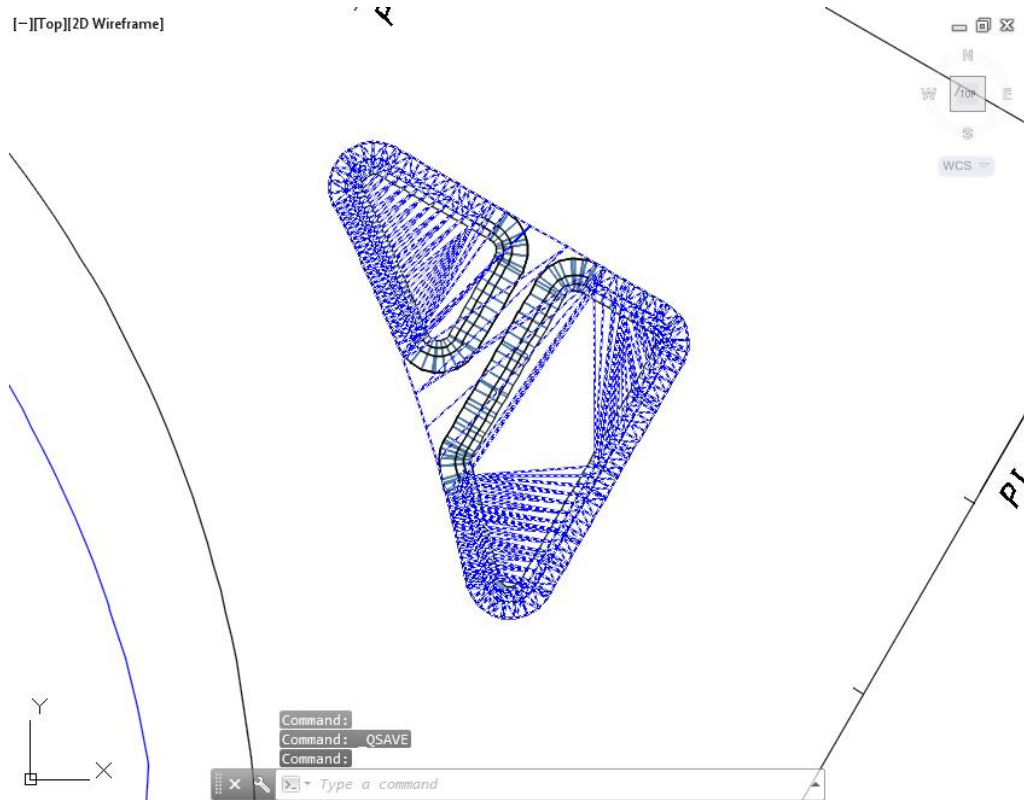


4. **Save** your file before continuing.

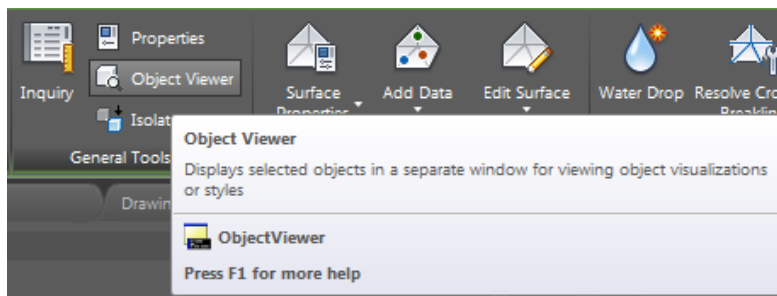
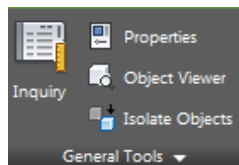
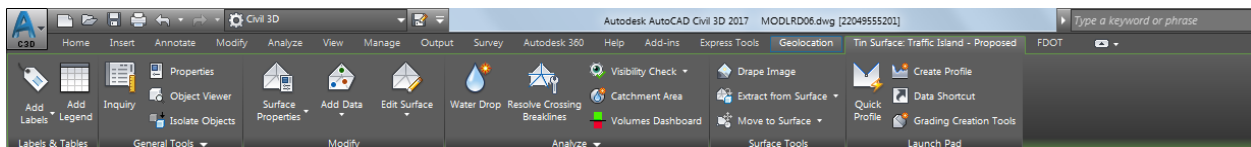
### Exercise 9.25 View Surface Traffic Island - Proposed in 3D

In this exercise you will use the Object Viewer to view surface Traffic Island - Proposed in 3D.

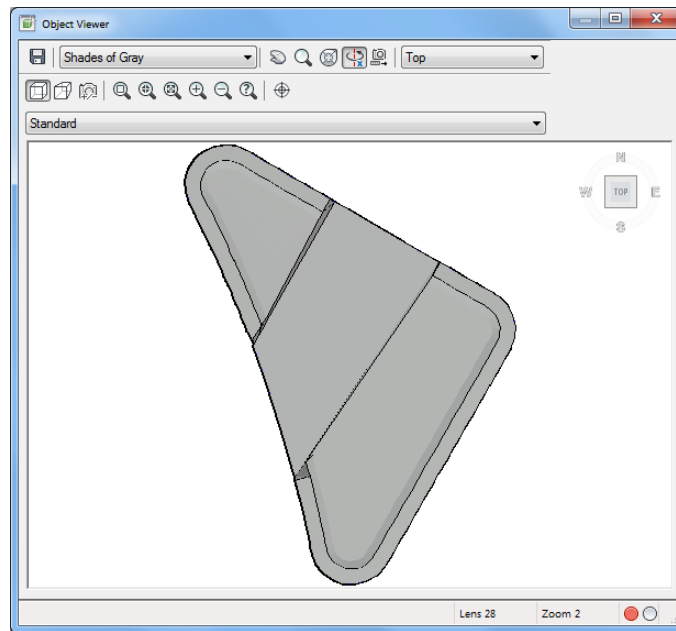
1. Select the Surface Traffic Island - Proposed.



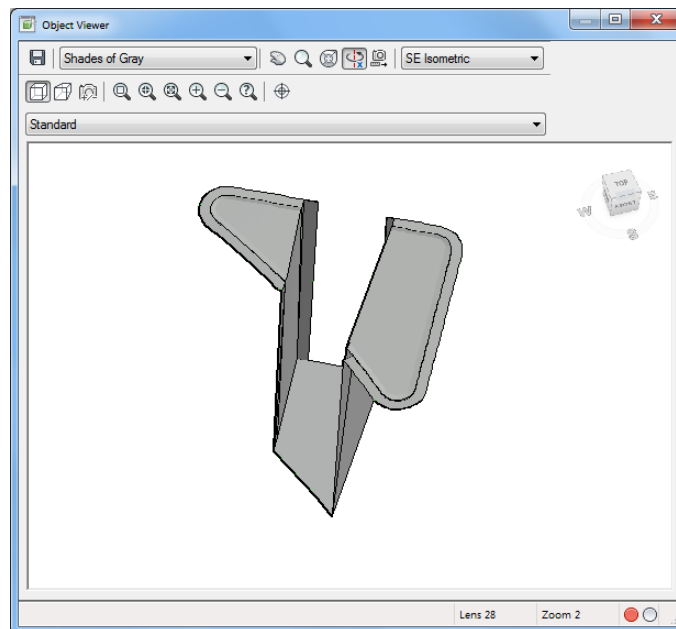
2. The Surface: Surface Traffic Island - Proposed tab displayed in the Ribbon. From the General Tools panel, select the Object Viewer command.



3. From the Object Viewer dialog, use the following values:
  - Set SE Isometric from the View Control drop-down list.
  - Set Shades of Gray from the Visual Styles drop down list



4. Use Zoom and Pan commands to view the model.



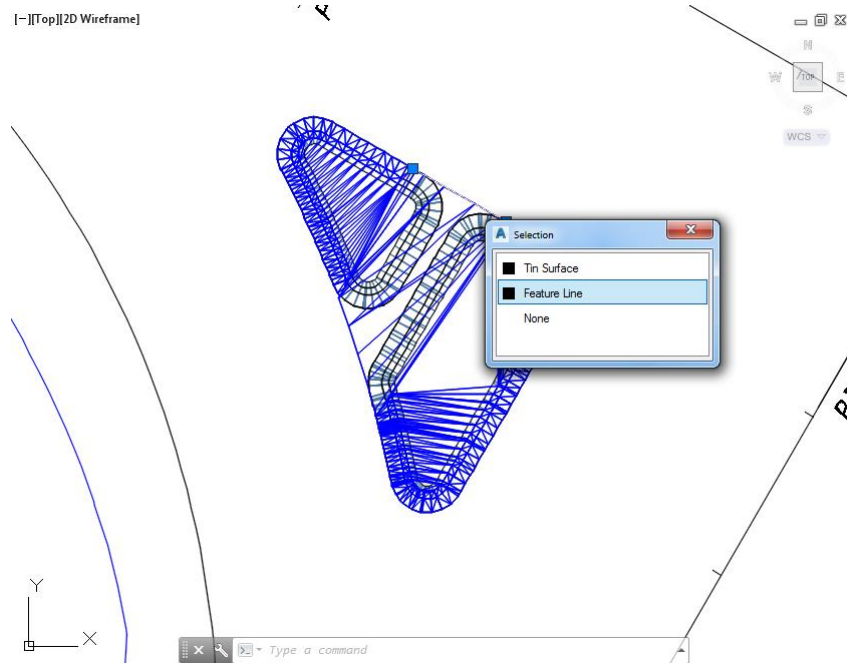
**Note** It appears you have a problem with the elevations on the Feature Lines you used to create the Traffic Island - Sidewalk surface. To fix this issue you will need to adjust the Feature Lines elevations in the next exercise.

5. **Close** the Object Viewer.
6. **Save** your file before continuing.

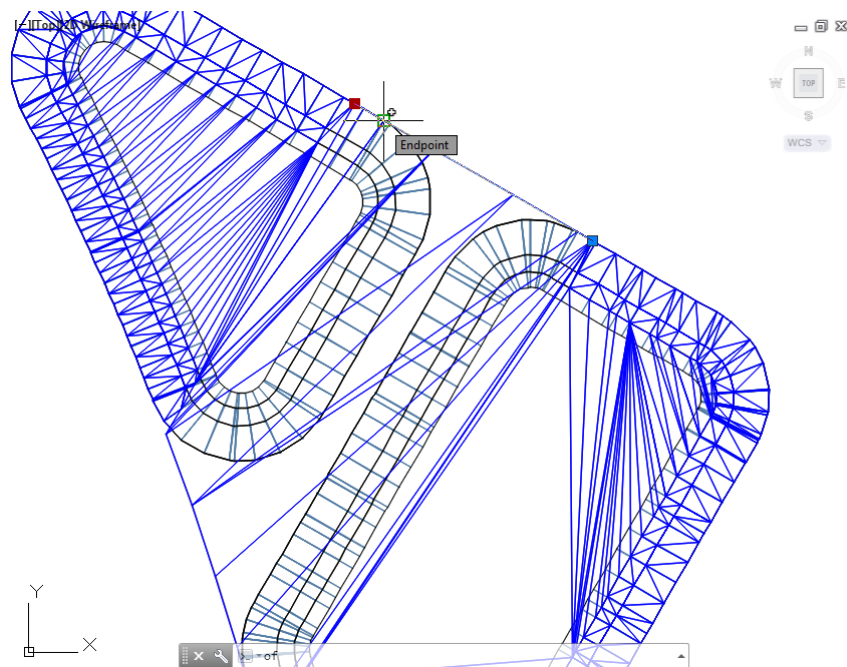
### Exercise 9.26 Adjust Feature Line Elevation Used for the Traffic Island - Sidewalk Surface

In this exercise you will adjust the elevations of the Feature Lines used for the Traffic Island - Sidewalk surface.

1. Select the feature line FDOT PavtConcrete TI - Side - North, from the Selection dialog select Feature Line.

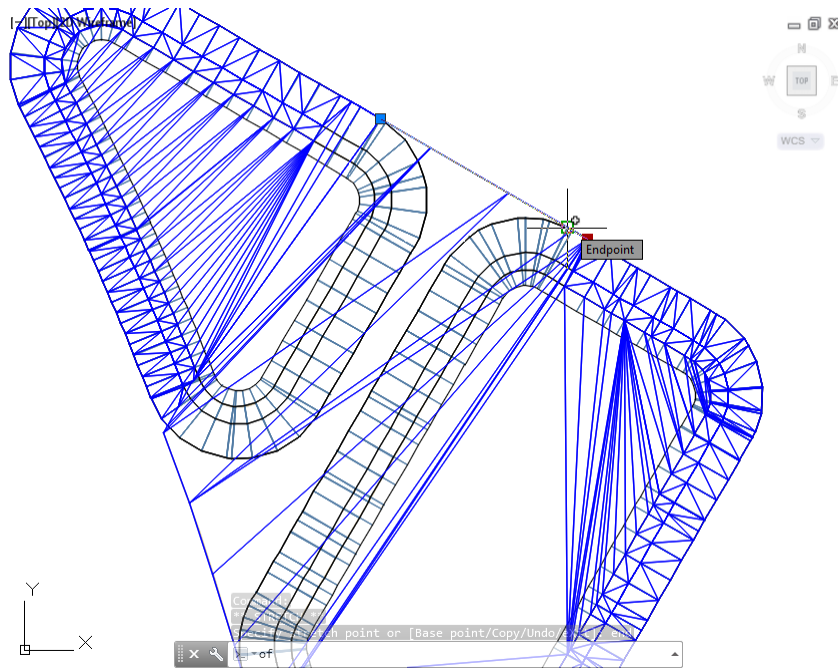


2. Select the grip on the northern end of the Feature line FDOT PavtConcrete TI - Side – North, using a Endpoint object snap to select a point where the Feature line FDOT PavtConcrete TI - Side - North blends into the Corridor - Traffic Island - Interior North.

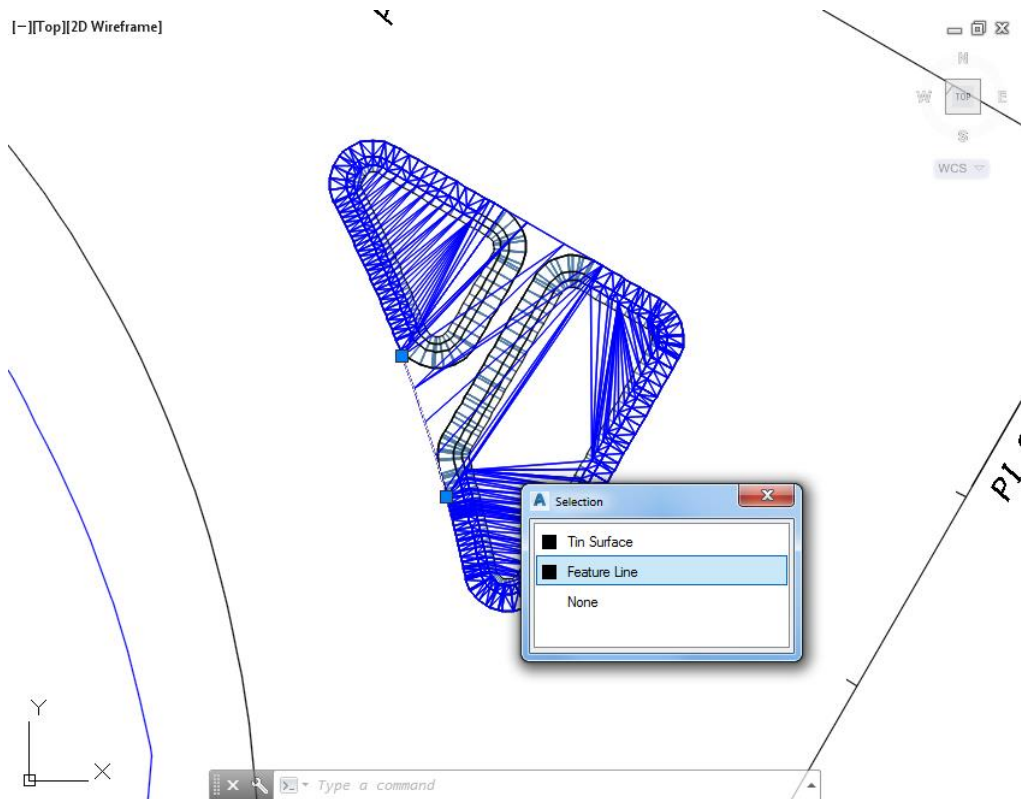




- Now select the grip on the southern end of the Feature line FDOT PavtConcrete TI - Side – North using a Endpoint object snap to select a point where the Feature line FDOT PavtConcrete TI - Side - North blends into the Corridor - Traffic Island - Interior South.

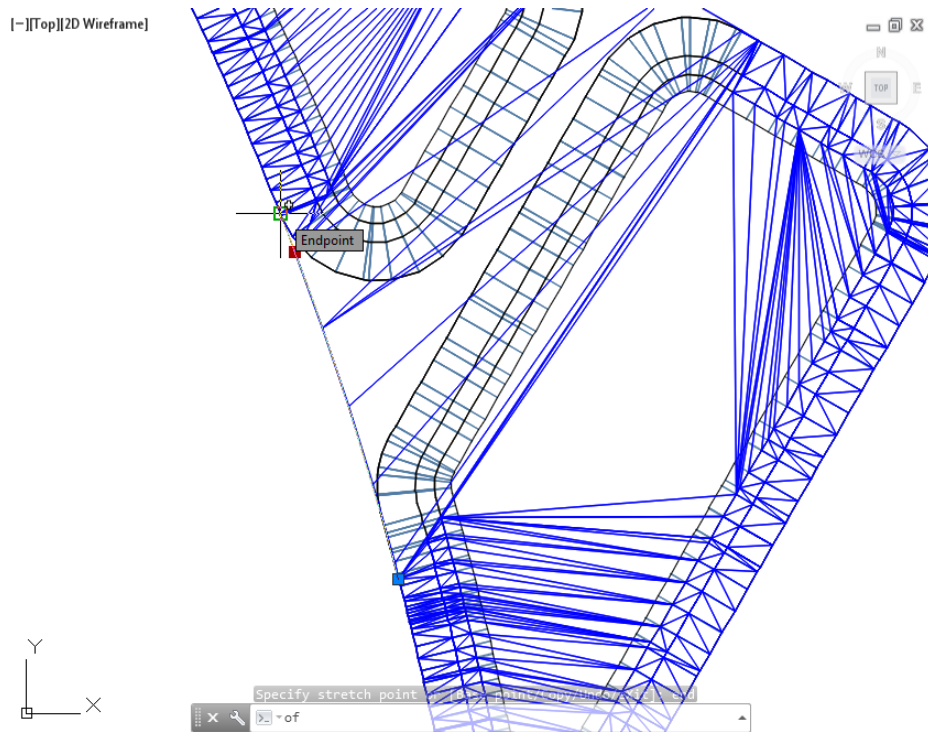


- Repeat the process, select the feature line FDOT PavtConcrete TI - Side - South, from the Selection dialog select Feature Line.

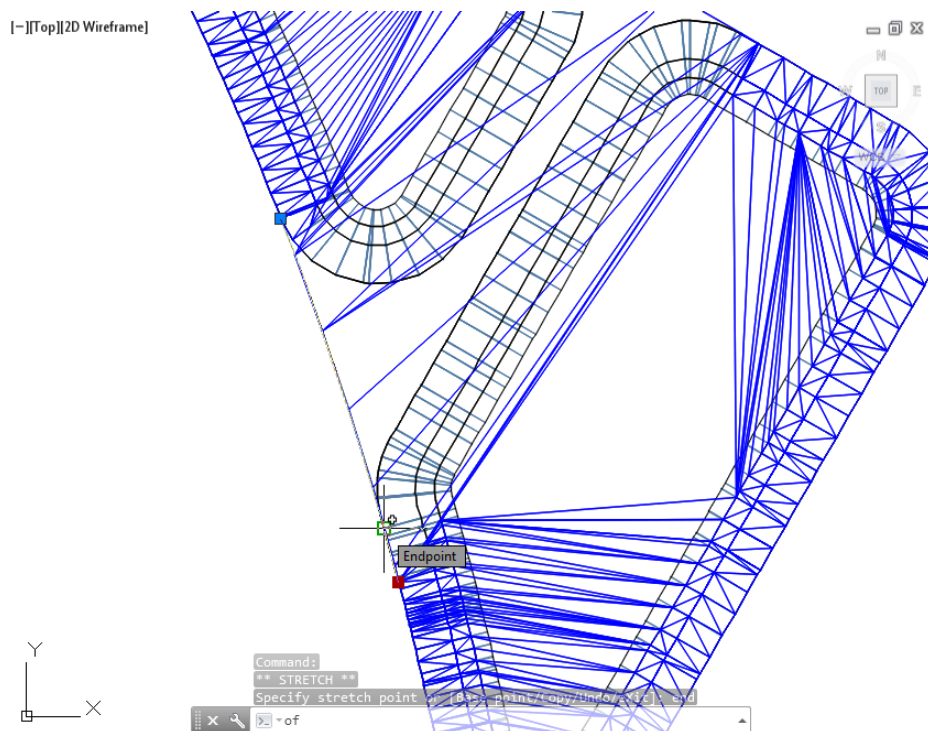




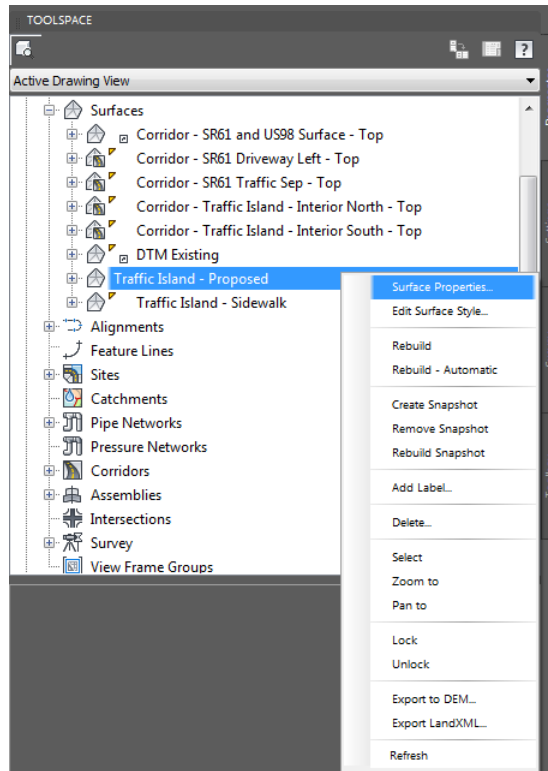
5. Select the grip on the northern end of the Feature line FDOT PavtConcrete TI - Side – South using a Endpoint object snap to select a point where the Feature line FDOT PavtConcrete TI - Side - North blends into the Corridor - Traffic Island - Interior North.



6. Now select the grip on the southern end of the Feature line FDOT PavtConcrete TI - Side - South, using an Endpoint object snap to select a point where the Feature line FDOT PavtConcrete TI - Side - South blends into the Corridor - Traffic Island - Interior South.

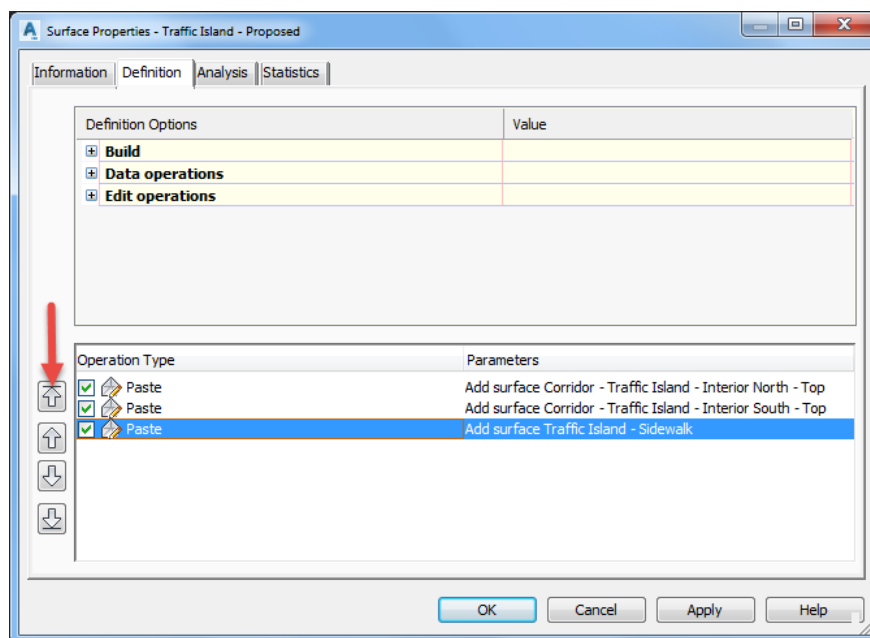


7. The next step in the process is from **TOOLSPACE > Prospector** tab, expand **Surfaces**, select **Traffic Island - Proposed** - Proposed, then right-click, and select **Surfaces Properties**.

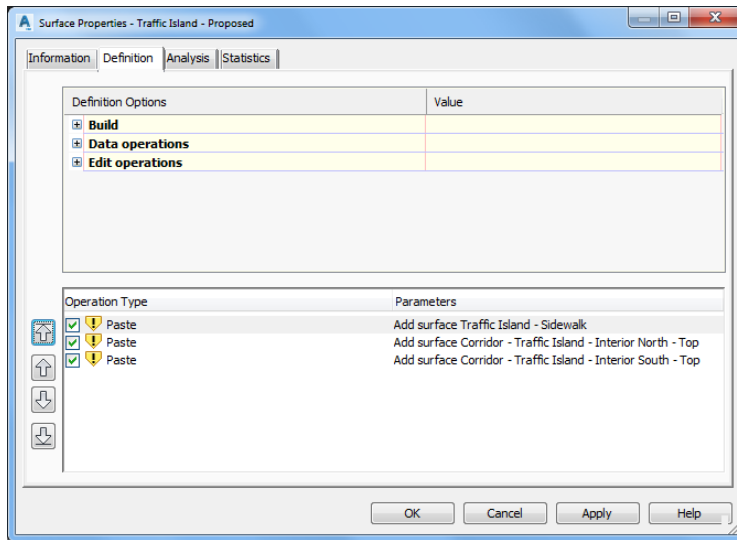


8. From the **Surface Properties - Traffic Island - Proposed** dialog, select the **Definition** tab. Then under the **Parameters** column, select **Add surface Traffic Island - Sidewalk**.

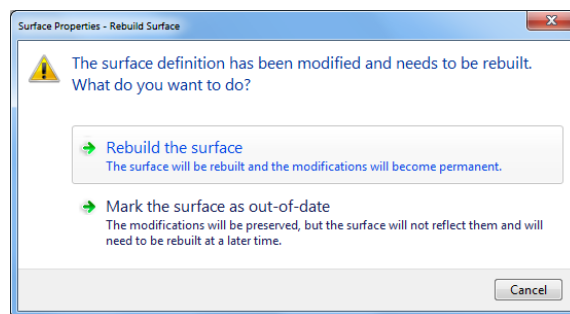
You need to change the order that these surfaces are displayed. With the **Add surface Traffic Island - Sidewalk** selected, select the arrow on the left side with the line above it, use the red arrow as a reference. This will move the **Add surface Traffic Island - Sidewalk** surface above the other surfaces which will cause the surface triangulation to be updated.



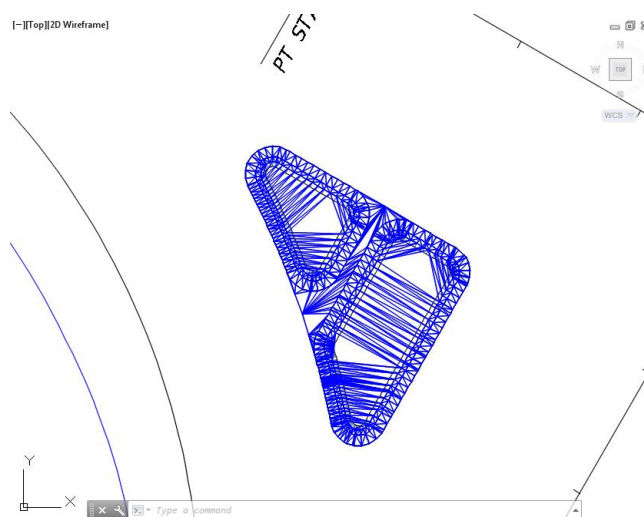
- Click OK to continue and close the Surface Properties - Traffic Island - Proposed dialog



- From the Surface Properties - Rebuild Surface dialog, select Rebuild the surface.



- The Surface Traffic Island - Proposed now displays with Surface Traffic Island - Sidewalk triangulation lines no longer crossing over the Traffic Island corridor models.

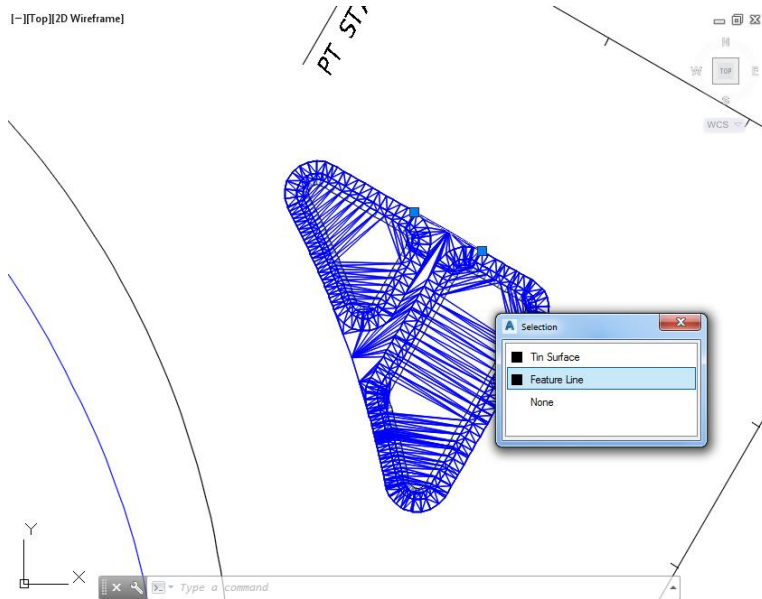


- Save your file before continuing.

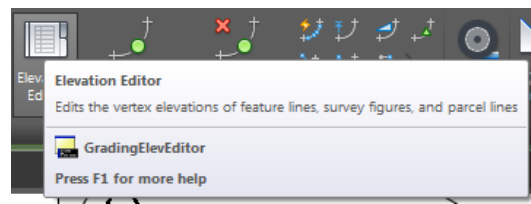
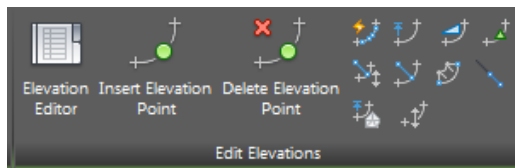
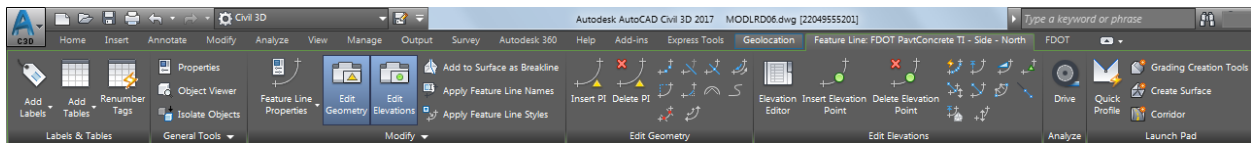
### Exercise 9.27 Adjust Feature Line Elevation Used for the Traffic Island - Sidewalk Surface

In this exercise you will continue to adjust the elevations of the Feature Lines used for the Traffic Island - Sidewalk surface.

1. Select the feature line FDOT PavtConcrete TI - Side - North, from the Selection dialog select Feature Line.



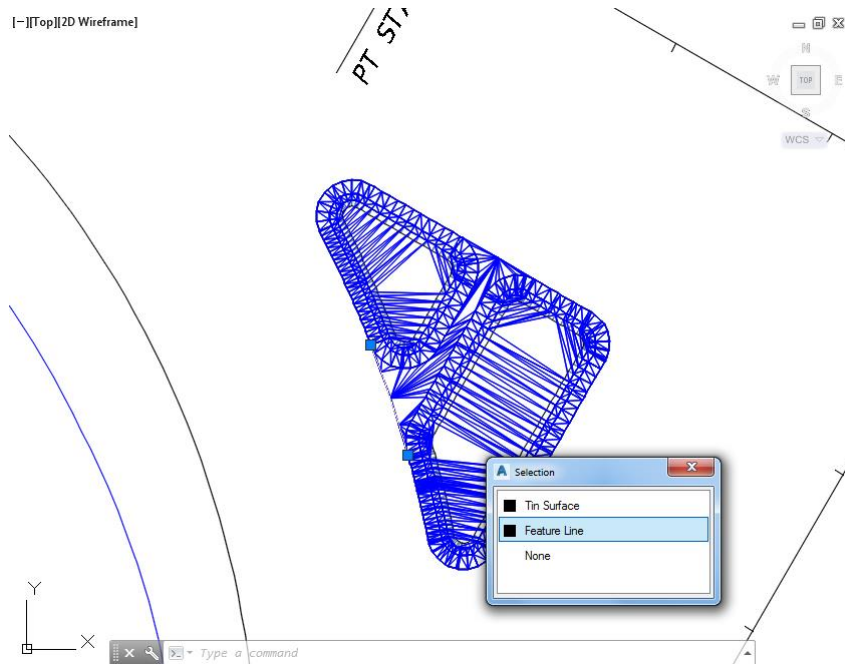
2. The Feature Line: FDOT PavtConcrete TI - Side - North tab displayed in the Ribbon. From the Edit Elevations panel, select Elevation Editor.



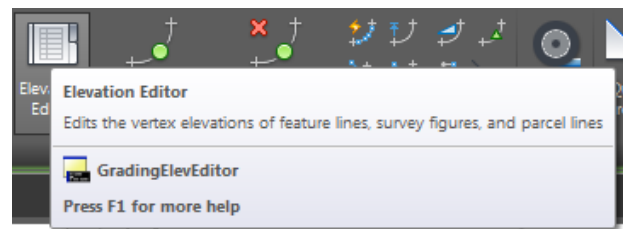
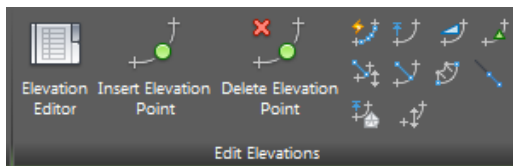
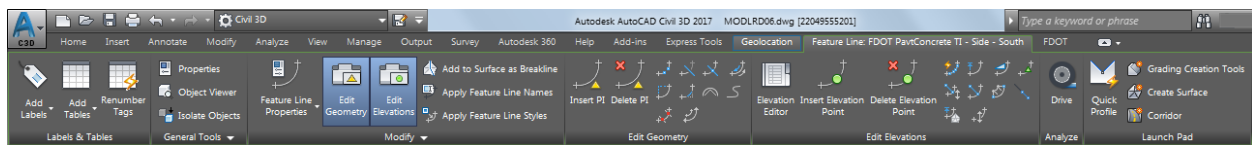
3. From the Elevation Editor, select both station by using the Ctrl key, then select either cell in the Elevation column, enter 34.35 as the new elevation value.

Station	Elevation	Length	Grade Ahead	Grade Back
0+00.00	34.35'	9.60'	0.00%	0.00%
0+09.60	34.35'			

4. Close the Elevation Editor.
5. Repeat the process again , select the feature line FDOT PavtConcrete TI - Side - South, from the Selection dialog select Feature Line.



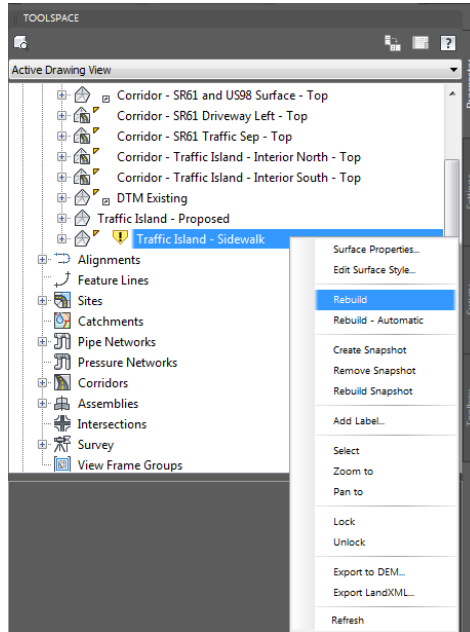
6. The Feature Line: FDOT PavtConcrete TI - Side - South tab is displayed in the Ribbon. From the Edit Elevations panel, select Elevation Editor.



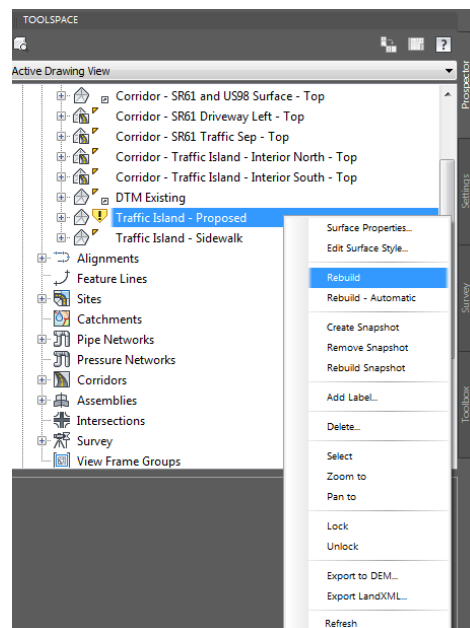
7. From the Elevation Editor, select both stations by using the Ctrl key, then select either cell in the Elevation column, enter 34.35 as the new elevation value.

Station	Elevation	Length	Grade Ahead	Grade Back
0+00.00	34.35	12.91'	0.00%	0.00%
0+12.91	34.35			

8. **Close** the Elevation Editor.
9. **Save** your file before continuing.
10. From TOOLSPACE > Prospector tab, expand Surfaces, a golden shield is now displayed next to the Traffic Island - Sidewalk surface notifying you that the surface needs rebuilding, right-click then select Rebuild.



11. From TOOLSPACE > Prospector tab, expand Surfaces, a golden shield is now displayed next to the Traffic Island - Proposed surface notifying you that the surface needs rebuilding, right-click then select Rebuild.

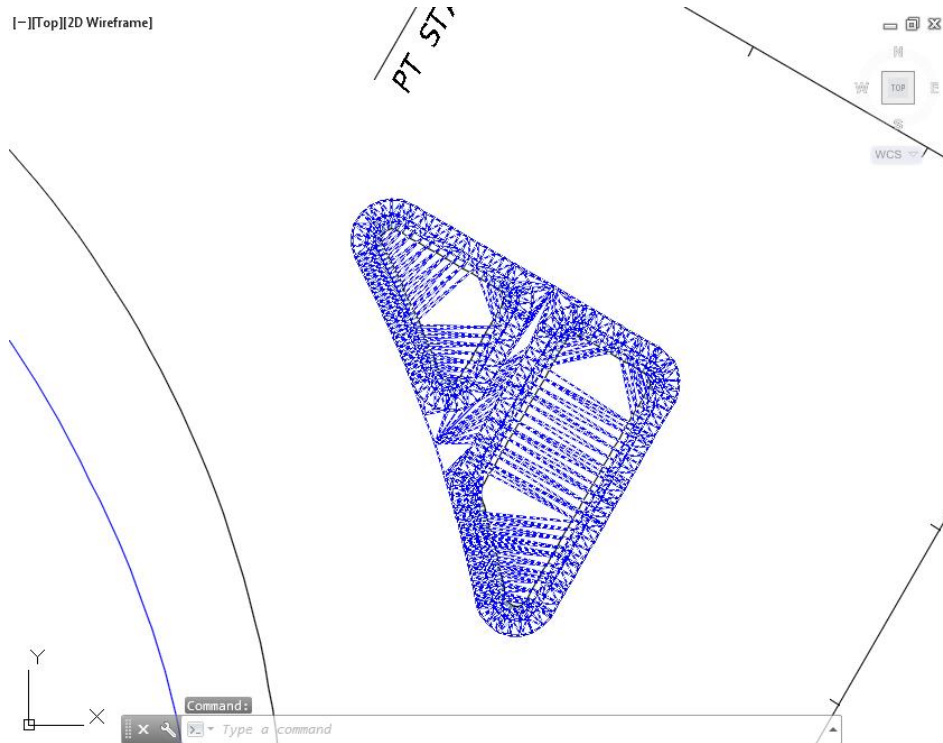


12. **Save** your file before continuing.

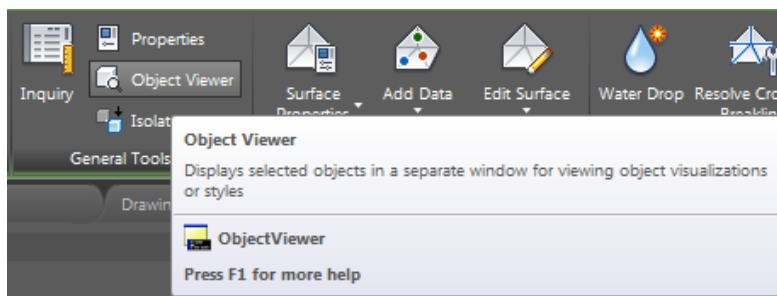
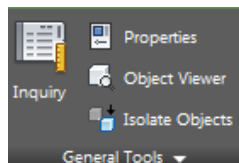
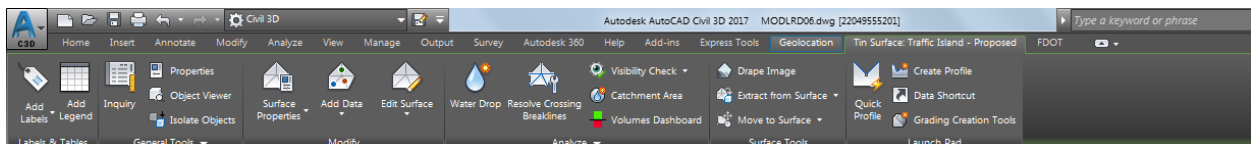
### Exercise 9.28 View Surface Traffic Island - Proposed in 3D

In this exercise you will use the Object Viewer again to view surface Traffic Island - Proposed in 3D after editing the feature lines used to create the Traffic - Island - Proposed surface.

1. Select the Surface Traffic Island - Proposed.

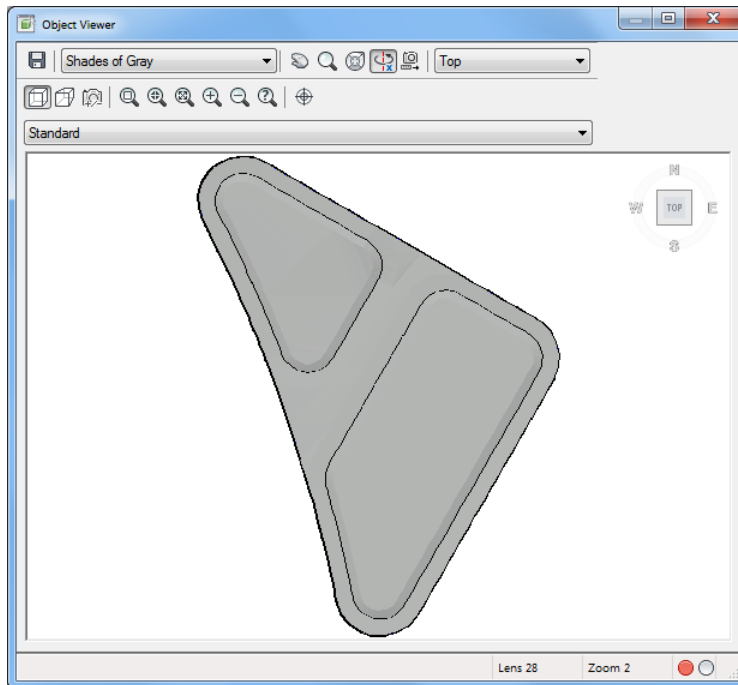


2. The Surface: Surface Traffic Island - Proposed tab displayed in the Ribbon. From the General Tools panel, select the Object Viewer command.

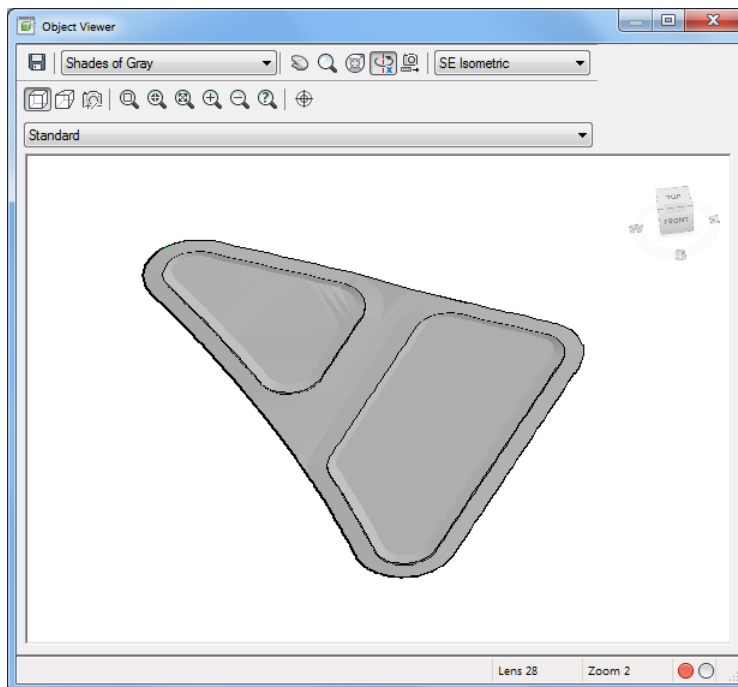




3. From the Object Viewer dialog, use the following values:
  - Set SE Isometric from the View Control drop-down list.
  - Set Shades of Gray from the Visual Styles drop down list

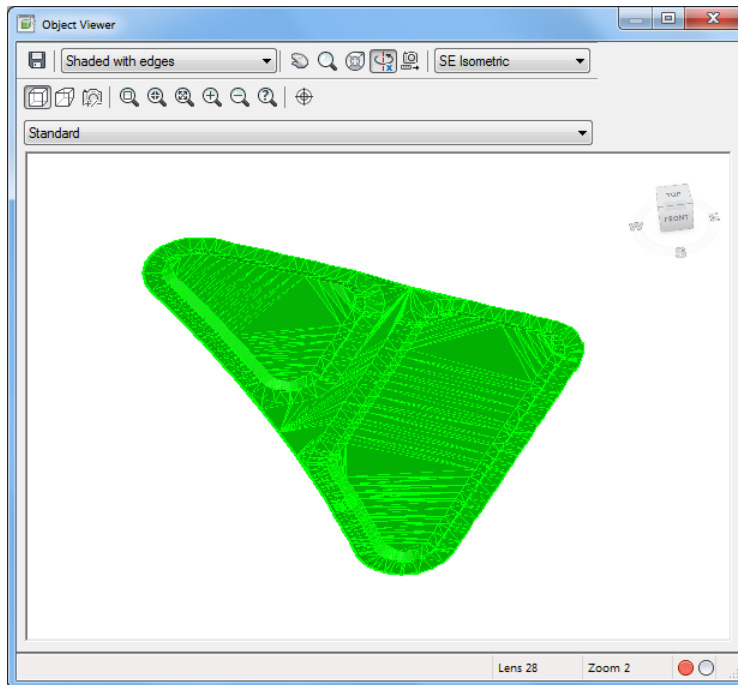


4. Use Zoom and Pan commands to view the model.

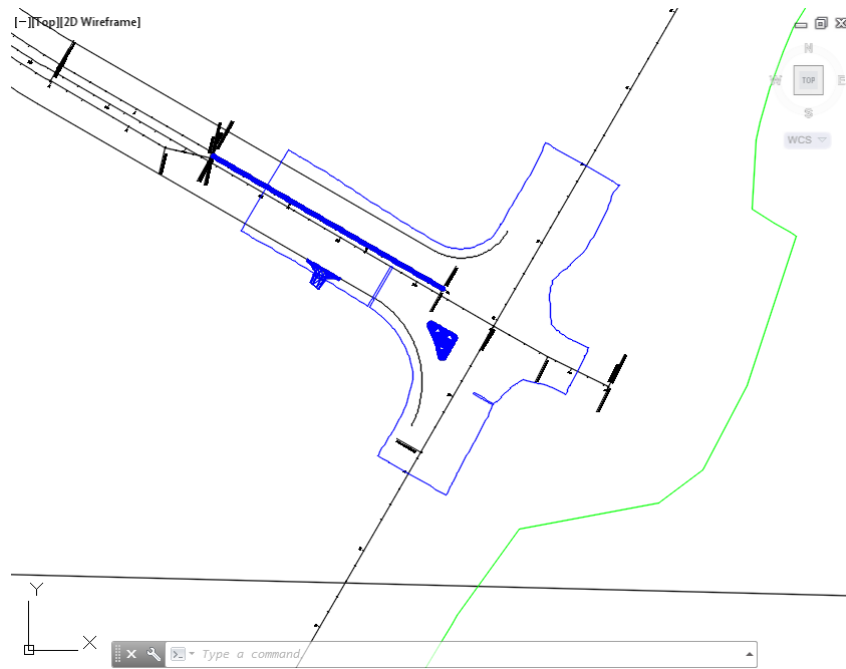




5. From the Object Viewer dialog, use the following values:
  - Set SE Isometric from the View Control drop-down list.
  - Set Shaded with edges from the Visual Styles drop down list



6. Close the Object Viewer.
7. Follow the prior steps from Chapter 2 to restore a Restore custom model view: SR61 and US98 Intersection using View Controls.



8. **Save and Close** MODLRD06.dwg.