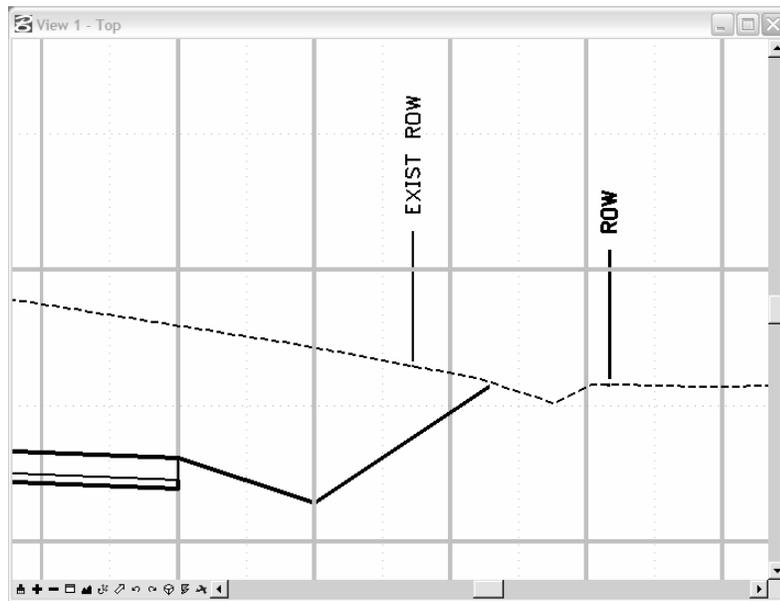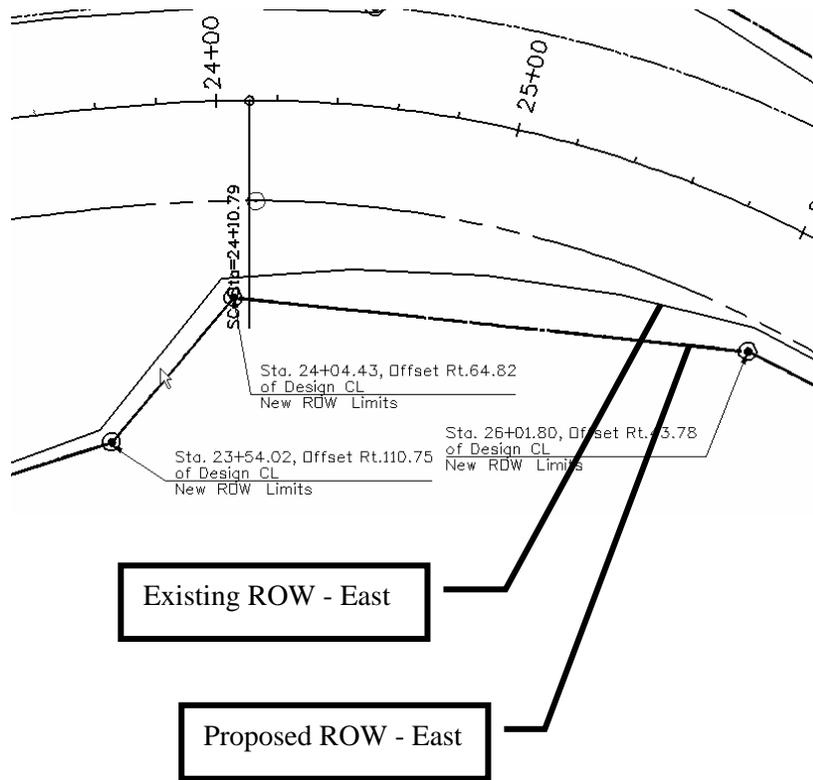# CDOT Alignment Display in Cross Section

This document guides you through the process of displaying the location of alignments such as Right-of-Way locations in cross section or profile views.
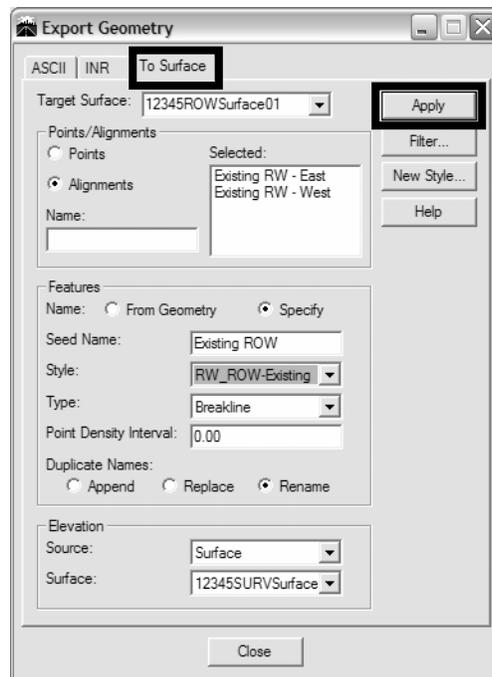
## Desired result

The overall workflow is to export horizontal alignments to a surface as features with the appropriate feature styles assigned. A surface feature that is defined as having breakline properties can be displayed a 'crossing point' in cross sections or profiles. A cell is used to indicate this 'crossing point'.

**Exporting the Alignment**



1. Once the alignment has been created, as shown above, select **File > Export > Geometry** from the InRoads pull down menu. The export Geometry dialog will appear.
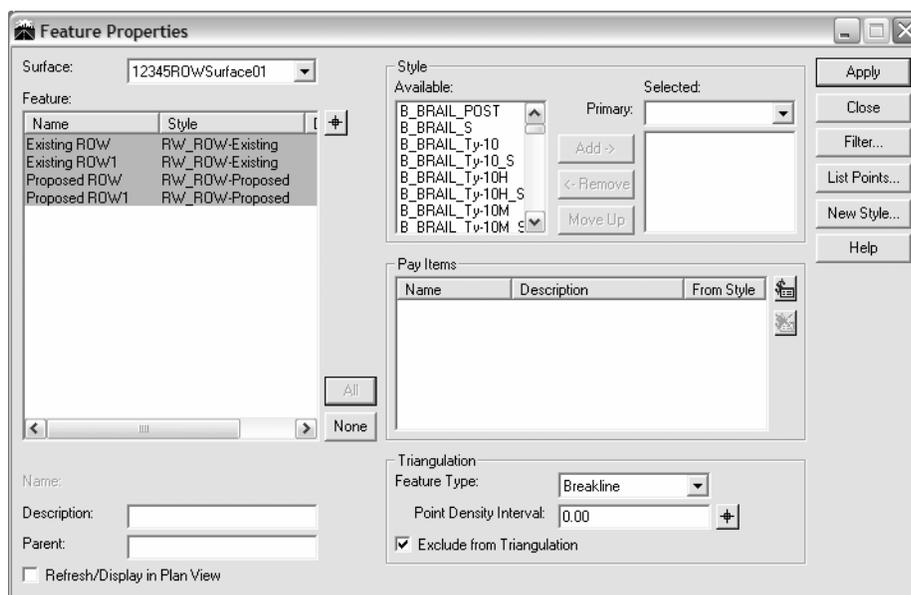
- **Target Surface**: Surface to be created or appended that will contain the alignment features

- **Alignments**: Alignments identified for exporting

- Name: Set to 'Specify'

- Seed Name: key-in the name of initial feature to be created. InRoads will automatically increment the seed name for multiple features.

- Style: Select RW_ROW-Existing or RW_ROW-Proposed

- Type: Breakline

- Point Density Interval: Set to 0

- Duplicate Names: As with all InRoads dialogs (rename is a good default setting)

- Elevation: Set to Surface

- Surface: Select the surface for extraction of Elevation information for placement of the annotation.

**Note:** Existing and proposed alignments should be exported separately as they require different feature styles assignments.

2. Select **Apply**, the target surface will be created or appended

3. Repeat above steps to export additional alignments

4. From the InRoads pull down menu select **Surface > Feature > Feature Properties;** the Feature Properties dialog will appear.

5. Verify the features were added to the surface.

6. Select the features created and enable the **Exclude from Triangulation** check box
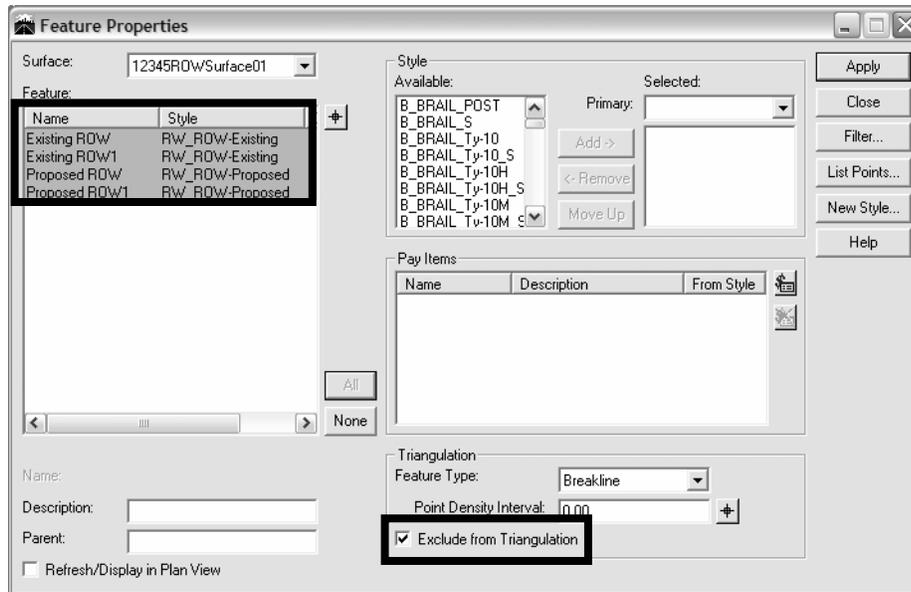


7. Select **Apply** then **Close** icons.

    **Note:** Excluding the features from triangulation eliminates the possibility of the exported alignments becoming part of a surface (contoured) model. Features excluded from triangulation can be displayed in cross sections or profiles as crossing features.

8. Select **Evaluation > Cross Section > Update Cross Section**  (or **Evaluation > Profile > Update Profile**) to add, remove, or update the display for the new features.

9. Select the desired **Cross Section Set** using the pull down menu.

10. Select the **Display On** radio button then select the **Feature** radio button.

11. Highlight the surface containing the alignment features.

12. Highlight the features to be displayed then select the **Apply** icon.  Select the **Close** icon to dismiss the window.
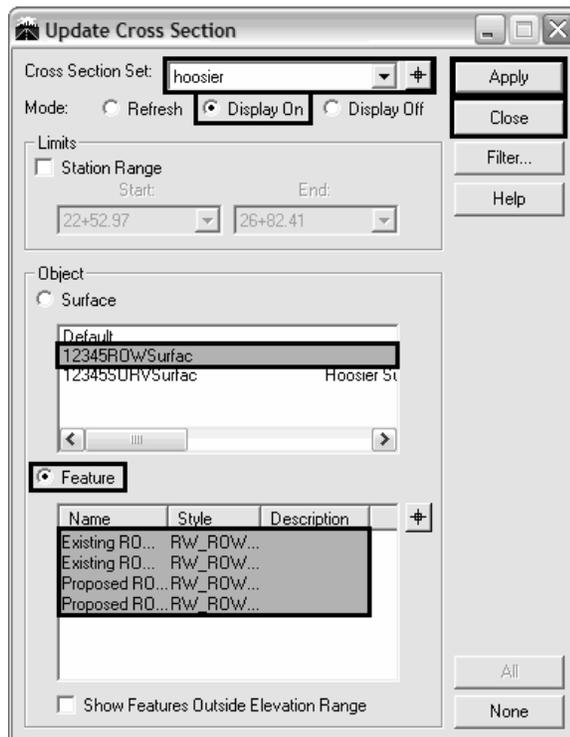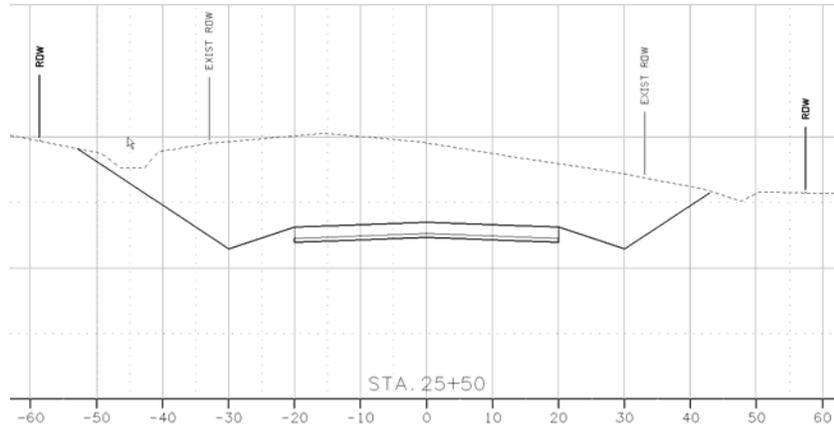
**Note:** The InRoads global scale factor values should be set as they were when the cross sections were originally created. Additionally, the default vertical exaggeration for CDOT cross sections is a factor of 2:1. The feature styles used to place the cells depicting the ROW locations have been created at this ratio. See the following workflow to accommodate varying ratios.

## Adjusting vertical distortion

Adjusting vertical scale of cells representing ROW limits can be accomplished in 2 ways. First is scaling the cells placed, second is temporarily modifying the named Symbologies used to place the cells.
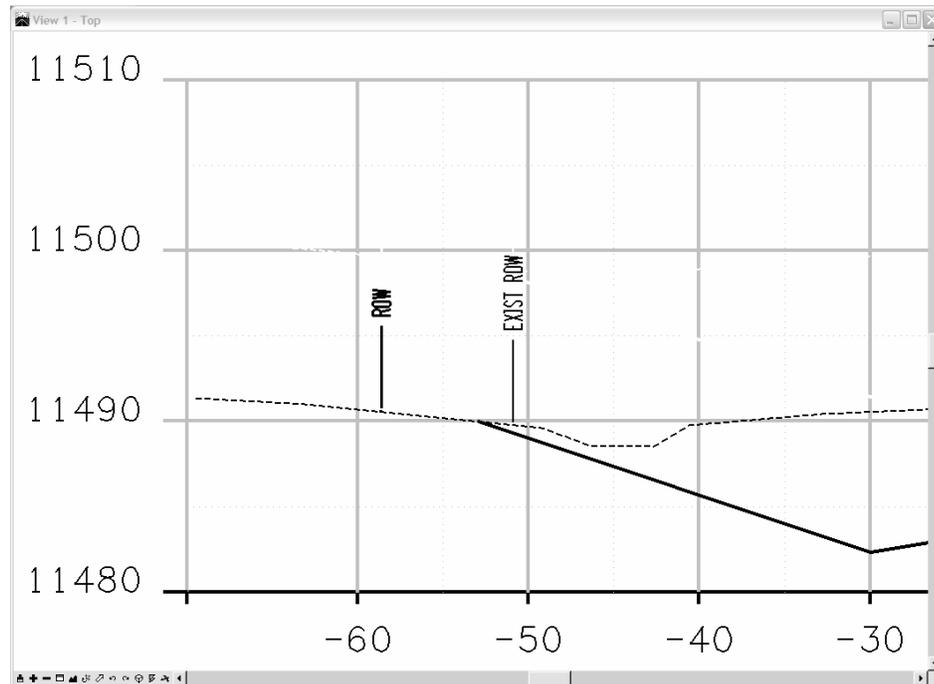
### Method One

1. Select the cells for scaling using the **Element Selection, Power Selector, Select by Element**, or by isolating the level(s) and using a Fence.

2. Initialize the MicroStation **Scale** command

3. Ensure that the scale lock is opened as shown. Click to the lock to change its status. Set **X** & **Z** scale factors to **1.**

4. Set the **Y** scale factor to the appropriate value (2:1 is the default in the configuration). This example used 1:1 for the cross sections. Consequently, the cells are scaled (distorted) ½ the required amount.

5. Enable About **Element Center** (scales about the cell origin)
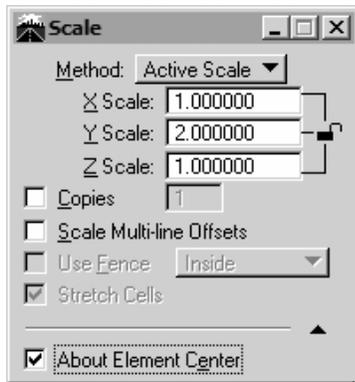


6. Click in the MicroStation view to execute the scale command
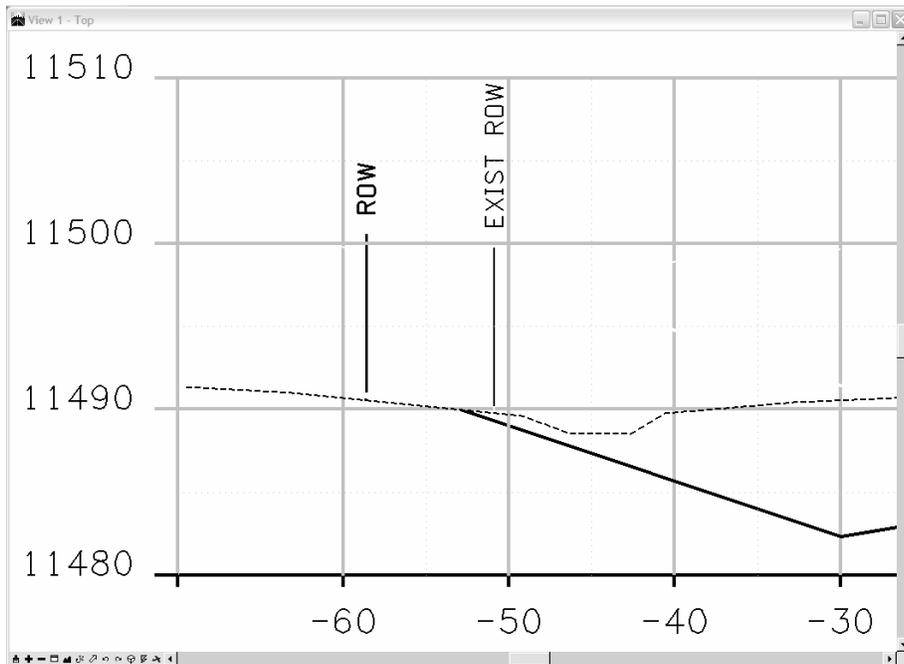


**Note:** The cells should now be updated to the desired scale factor.

## Method Two

The second method is to temporary modify the named symbology used to place the annotation.

7.  Select **Tools> Feature Style Manager** and **t**he Edit Feature Style dialog will appear. Identify the appropriate feature style and Select **Edit**.
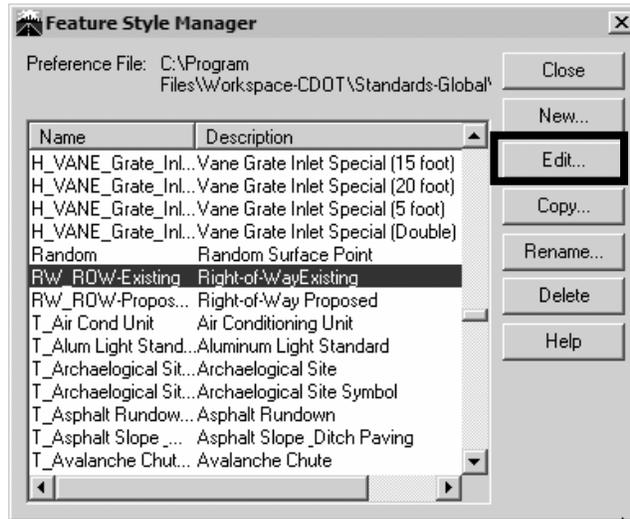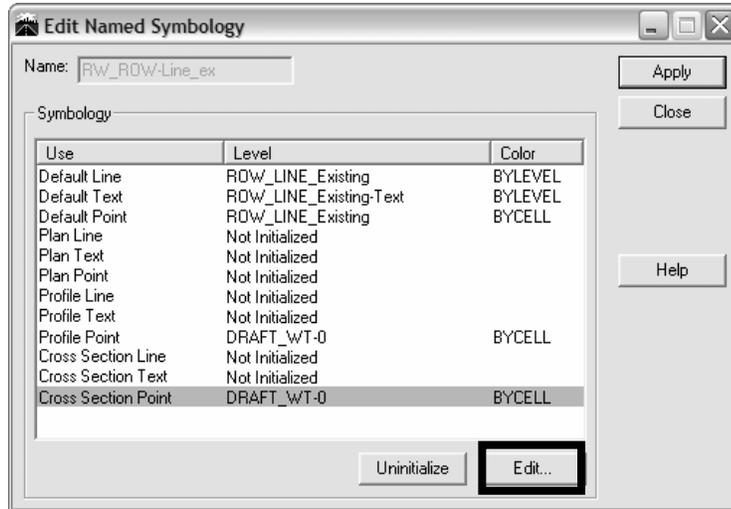


8.  Edit the named symbology that is associated with the feature style(s) used to create the features. In this case RW_ROW-Existing and RW_ROW_Proposed.
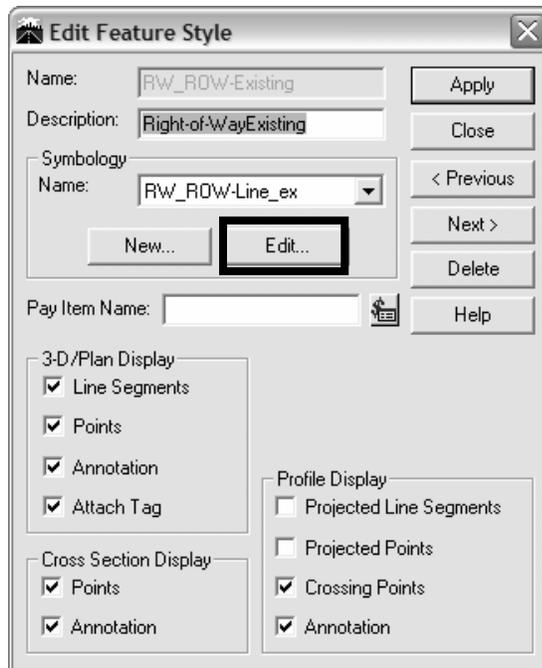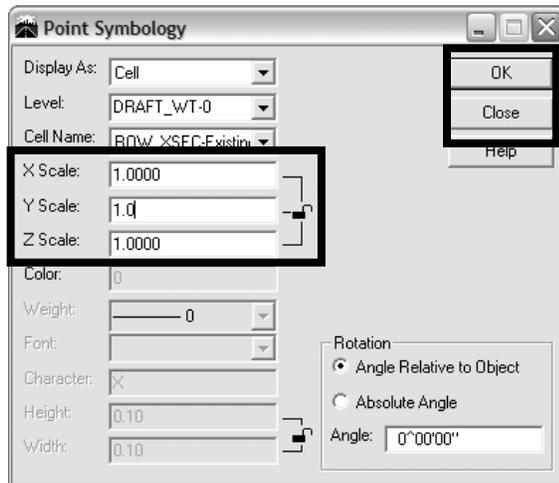


9.  Select **Edit** in the Symbology section of the dialog.  The Edit named Symbology dialog will appear.

10. Identify Cross Section Point and Select **Edit**. The Point Symbology dialog will appear.



**Note:** The Y Scale is set to 0.5 by default to compensate for the default vertical distortion of 2:1 as the cell is created proportionally correct as a 1:1 graphic. In other words, when creating a cross section at 2-vertical:1-Horizontal, the cell would be stretched a factor of 2. The Named Symbology compensates for this by 'offsetting' the effect of vertical distortion.

11. Set the appropriate **Y Scale** For a cross section without a vertical exaggeration (1:1), input a value of **1** in the **Y Scale** field .

12. Select **OK** then **Close** in the Point Symbology dialog.

**Note:** Other useful values for scaling cells with MicroStation or symbology modification would be:

Vertical exaggeration  - Y Scale
1:1 –  1.0
2:1 –  0.5
5:1 –  0.2
10:1 – 0.1

13. Select **Apply** in the Edit Named Symbology dialog.  The Edit Named Symbology dialog will disappear.

14. Use the update commands for Cross Sections or Profiles to add, remove, or update the display for the required features.
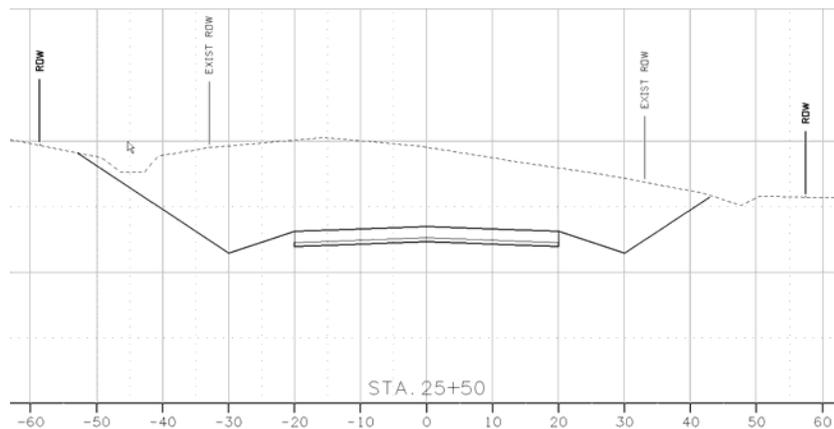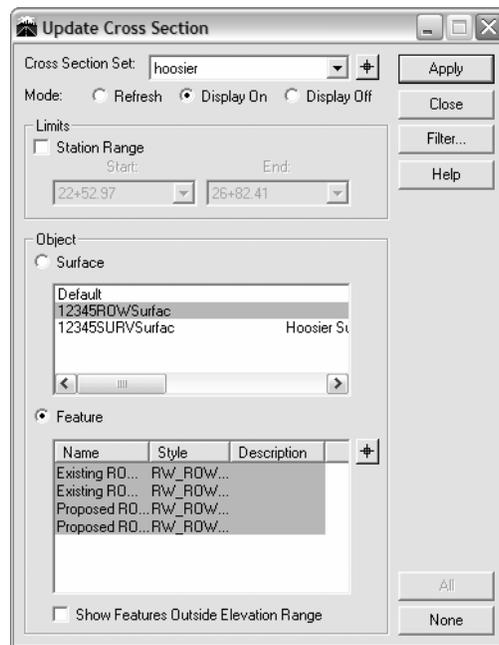




15. Repeat the above steps for the Feature Style **RW_ROW-Proposed.**