

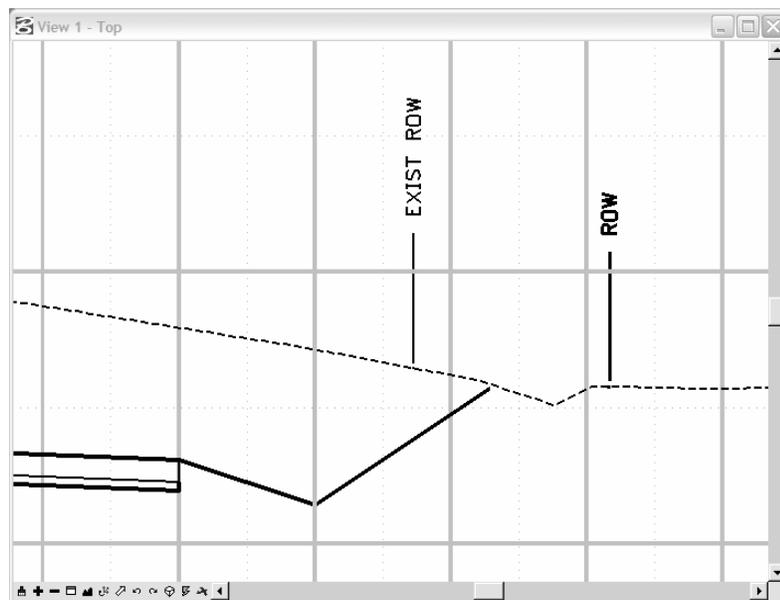
# CDOT Alignment Display in Cross Section



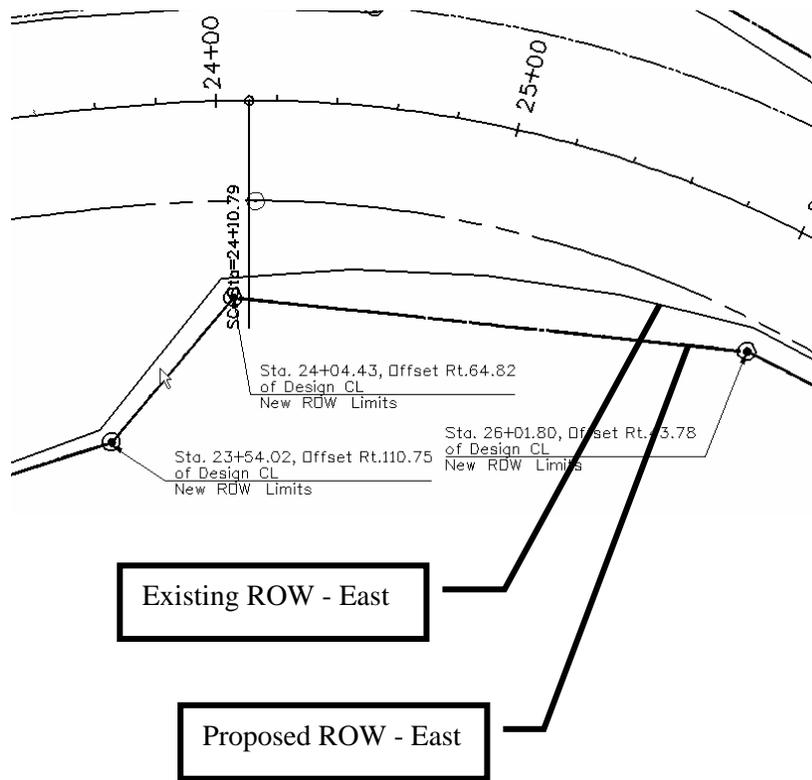
This document guides you through the process of displaying the location of alignments such as Right-of-Way locations in cross section or profile views.

## Desired result

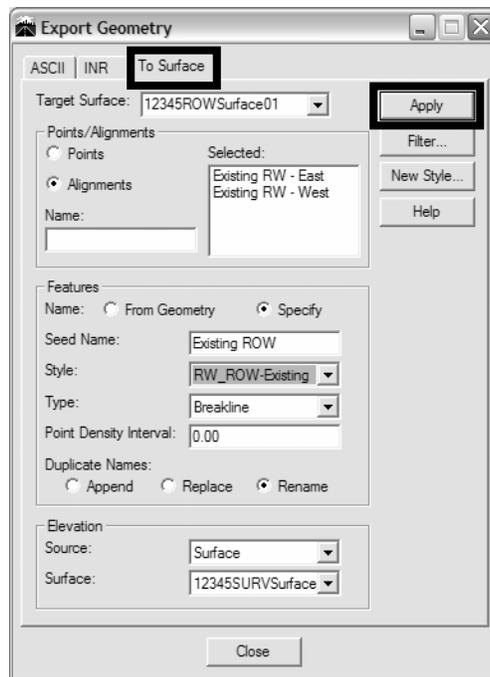
The overall workflow is to export horizontal alignments to a surface as features with the appropriate feature styles assigned. A surface feature that is defined as having breakline properties can be displayed as a 'crossing point' in cross sections or profiles. A cell is used to indicate this 'crossing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



### Exporting the Alignment



1. Once the alignment has been created, as shown above, select **File > Export > Geometry** from the InRoads menu. The **Export Geometry** dialog will appear.



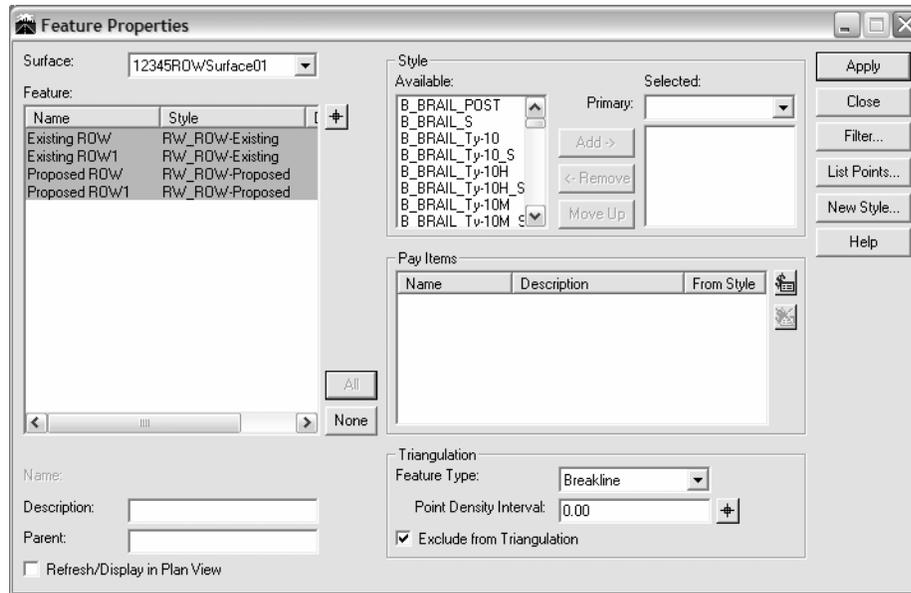
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- **Target Surface:** Surface to be created or appended that will contain the alignment features
- **Alignments:** Alignments identified for exporting
- **Name:** Set to ***Specify***
- **Seed Name:** key-in the name of initial feature to be created. InRoads will automatically increment the seed name for multiple features.
- **Style:** Select ***RW\_ROW-Existing*** or ***RW\_ROW-Proposed***
- **Type:** ***Breakline***
- **Point Density Interval:** **0**
- **Duplicate Names:** ***Rename*** is a good default setting
- Under ***Elevation:*** Set **Source** to ***Surface***
- Under ***Elevation:*** Select the **Surface** for extraction of Elevation information for placement of the annotation.

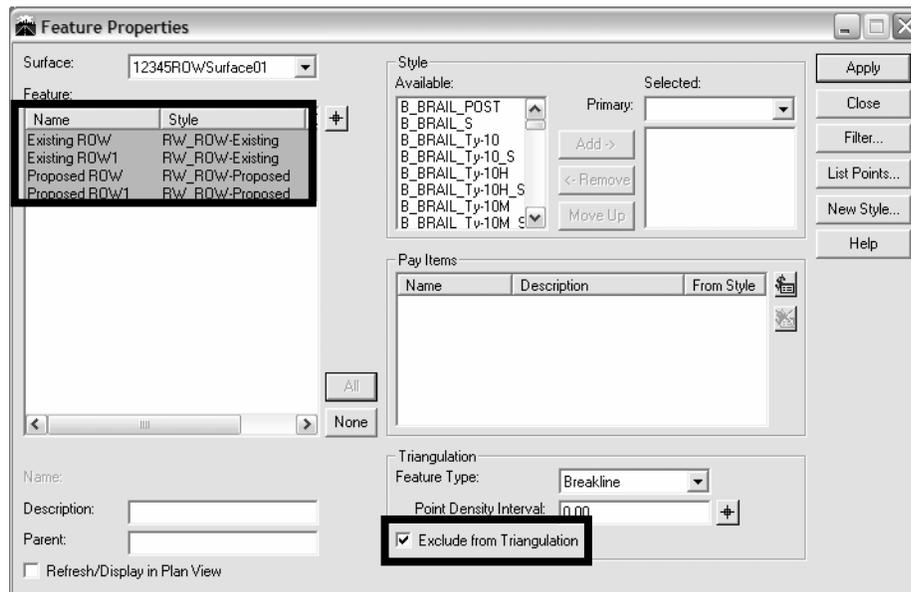
**Note:** Existing and proposed alignments should be exported separately as they require different feature styles assignments.

2. <D> **Apply** to create or append the target surface
3. Repeat above steps to export additional alignments. Continue to Step 4 when all alignments have been exported.
4. Make sure that 12345ROWSurface01 is the *Active Surface*. From the InRoads pull down menu select **Surface > Feature > Feature Properties** the **Feature Properties** dialog will appear.

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5. Verify the features were added to the surface.
6. Select the features created and place a check in the **Exclude from Triangulation** check box

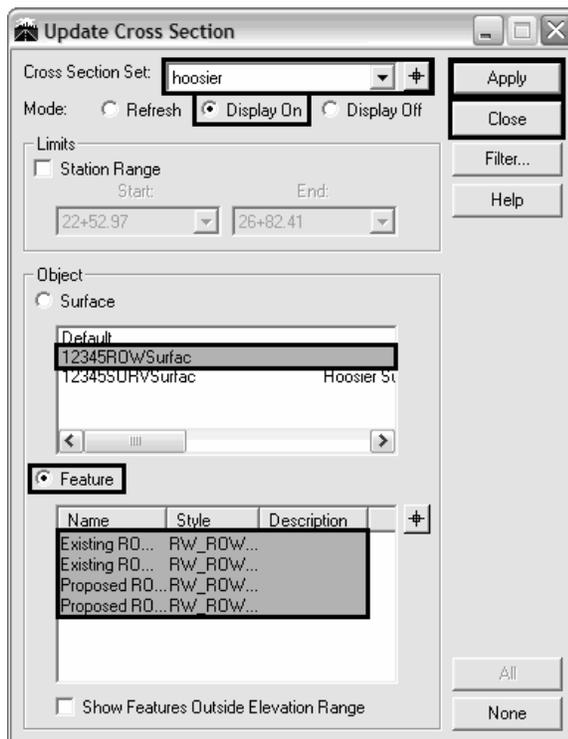


7. <D> Apply then <D> Close.

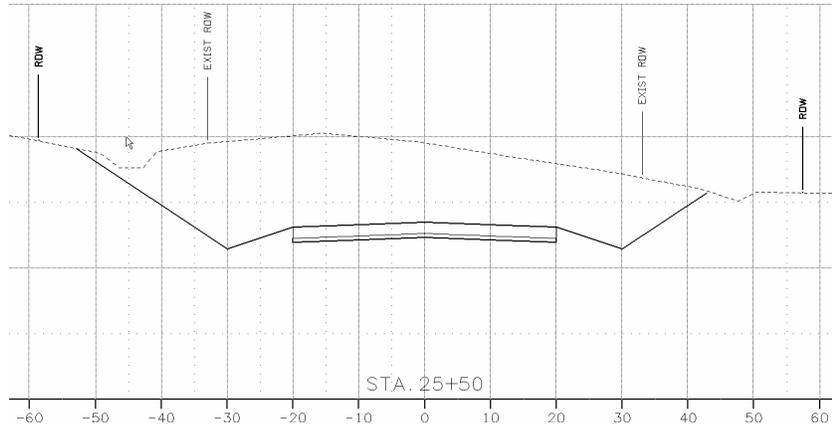
**Note:** Excluding the features from triangulation eliminates the possibility of the exported alignments becoming part of a surface (contoured) model. Features excluded from triangulation can be displayed in cross sections or profiles as crossing features, which is why these alignments were imported into the Surface as features.

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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** from the drop-down list.
10. Highlight the **Display On** radio button then highlight the **Feature** radio button.
11. From within the Surface list box, highlight the **Surface** containing the alignment features.
12. Highlight the **Features** to be displayed then **<D> Apply**. **<D> Close** to dismiss the window.



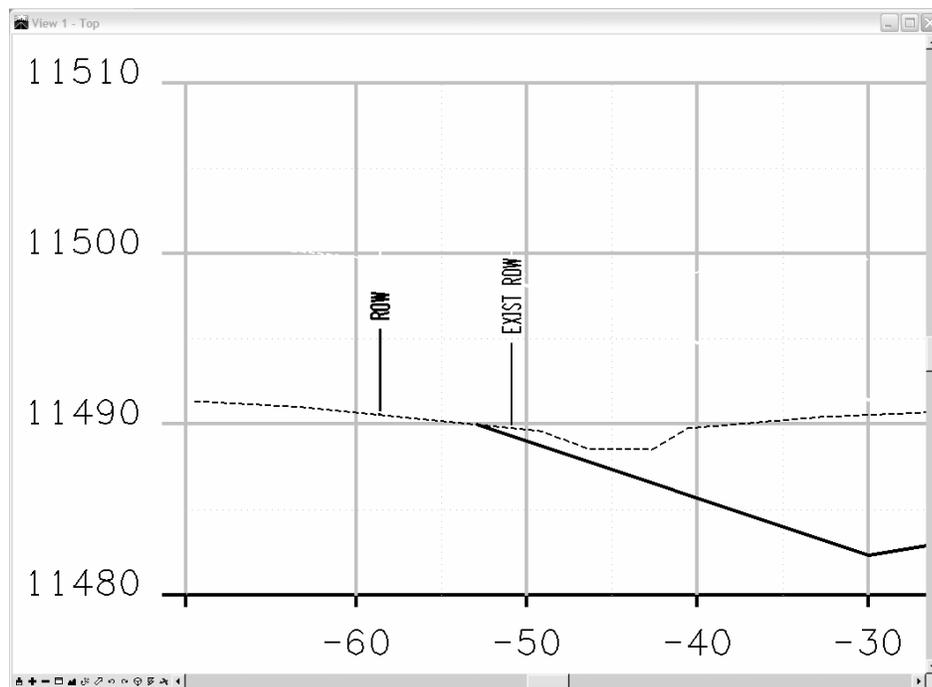
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**Note:** The InRoads global scale factor values should be set as they were when the cross sections were originally created. Additionally, the default vertical exaggeration for CDOT cross sections is a factor of 2:1. The feature styles used to place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

### Adjusting vertical distortion

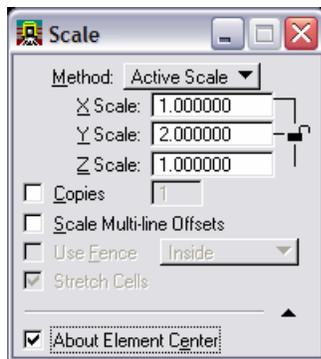
Adjusting vertical scale of cells representing ROW limits can be accomplished in 2 ways. First is scaling the cells placed, second is temporarily modifying the named Symbolologies used to place the cells.



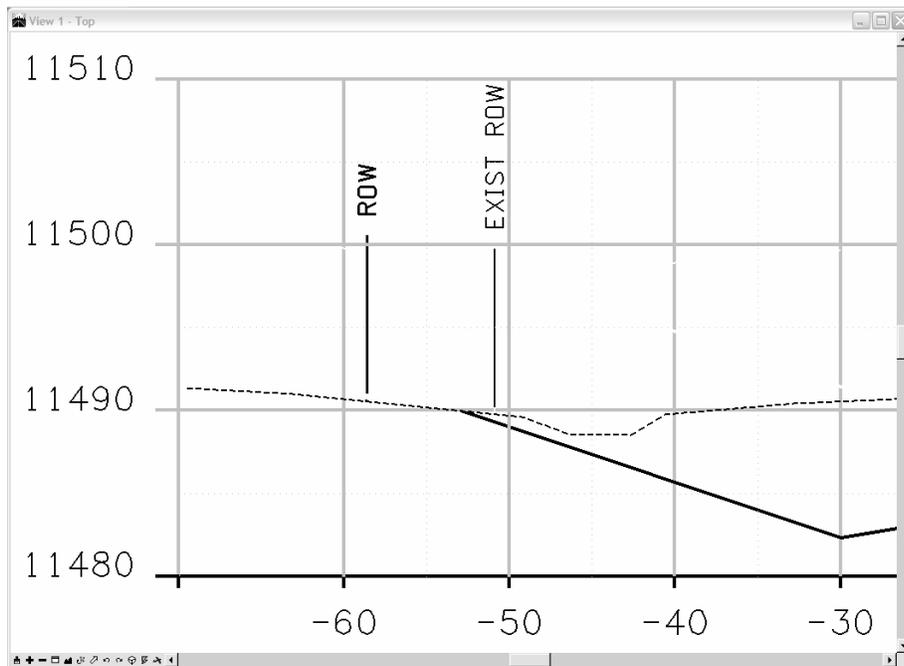
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### Method One

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 in graphic under Step 5. 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. Place a check in the **About Element Center** checkbox (scales about the cell origin)



6. <D> in the MicroStation view to execute the scale command



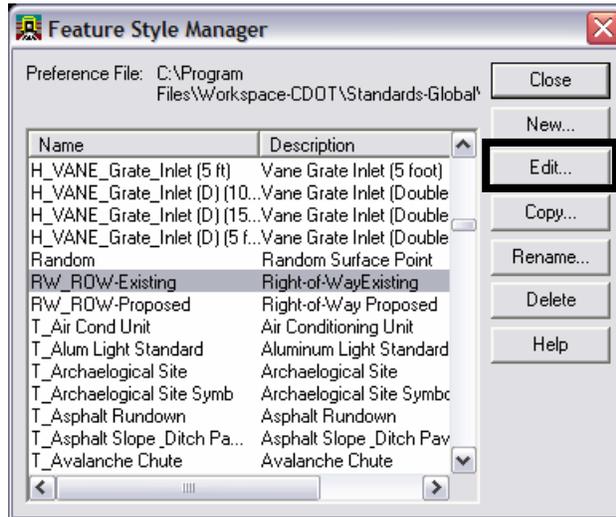
**Note:** The cells should now be updated to the desired scale factor.

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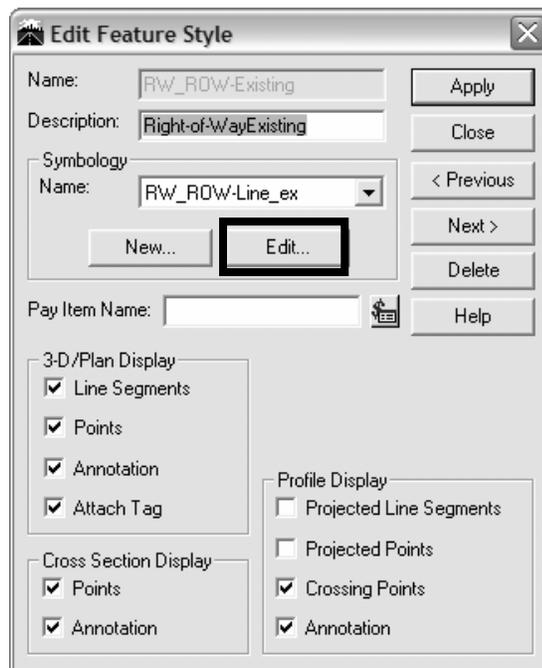
### Method Two

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

7. Select **Tools > Feature Style Manager** and the **Feature Style Manager** dialog will appear. Identify and highlight the appropriate feature style from the list and **<D> Edit**.

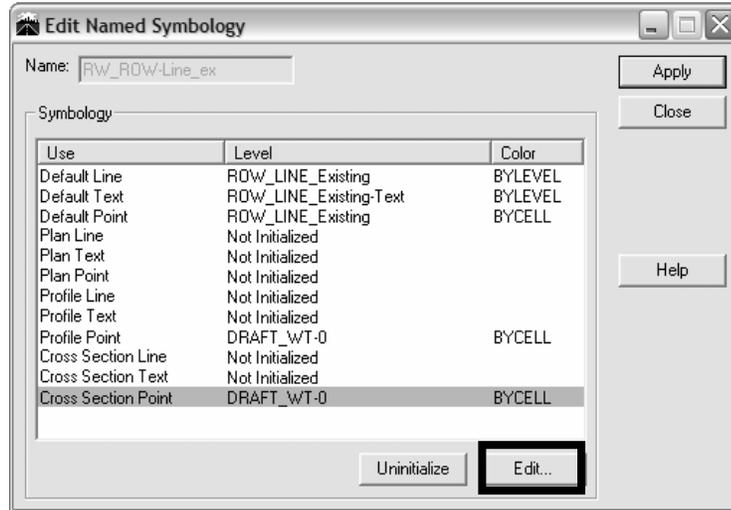


8. The named symbology that is associated with the feature style(s) used to create the features will be edited. In this example **RW\_ROW-Existing** and **RW\_ROW-Proposed** will be modified.

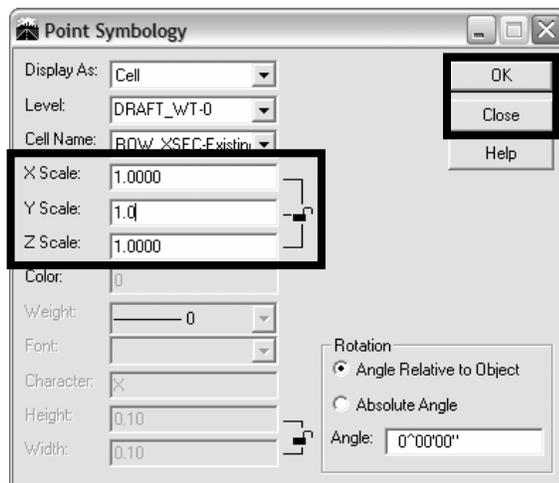


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9. <D> Edit in the *Symbology* section of the Edit Feature Style dialog. The Edit Named Symbology dialog will appear.



10. Identify and highlight the *Cross Section Point* and <D> Edit. The Point Symbology dialog now appears.



**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.

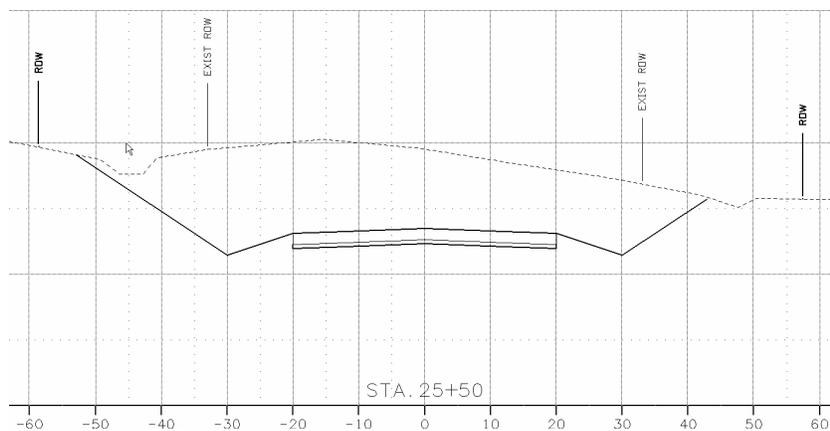
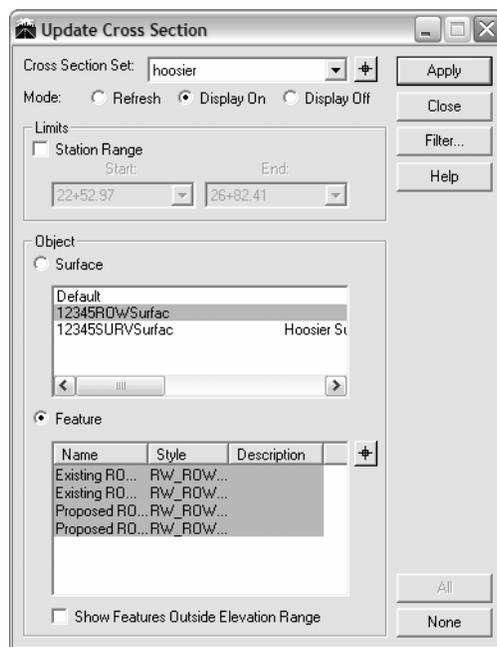
11. Set the appropriate **Y Scale** For a cross section without a vertical exaggeration (1:1), input a value of **1** in the **Y Scale** field .
12. <D> OK then <D> Close in the Point Symbology dialog.

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**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. <D> **Apply** in the **Edit Named Symbology** dialog. The **Edit Named Symbology** dialog will be dismissed.
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**.