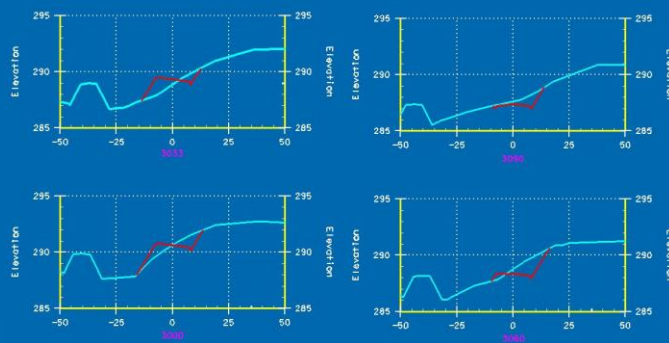




# Evaluation - Objectives

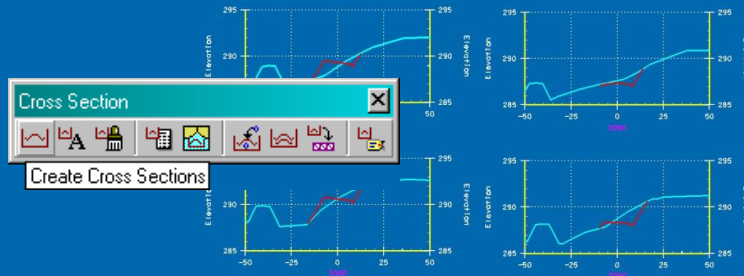
- Creating a new Cross Section Set
- X-Section Set-up, Controls, Spacing, ...etc
- Cross Section Surface Symbology
- Surface Features X-Section symbology
- Calculating End Area Volumes
- Capturing End Area Volume Results
- Components in End Area Volumes
- End Area Vol Adjustments & Exclusions

## Cross Sections



- Cross Sections, like profiles, are only CAD representations of the surface data along a defined path

# InRoads X-Sections



- ***InRoads > Evaluation > Cross Sections > Create Cross Sections***
- Much of the Cross Section configuration & settings are similar to Profiling

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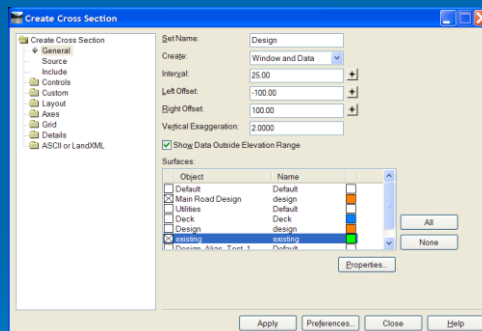
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## X-Sections - General

- The **General** leaf identifies

- ▲ X-section Set Name
- ▲ Interval
- ▲ Offsets
  - Left (negative value)
  - Right (positive value)
- ▲ Vertical Exaggeration
- ▲ Surfaces to display

- Surface symbology driven by the *Surface Property*

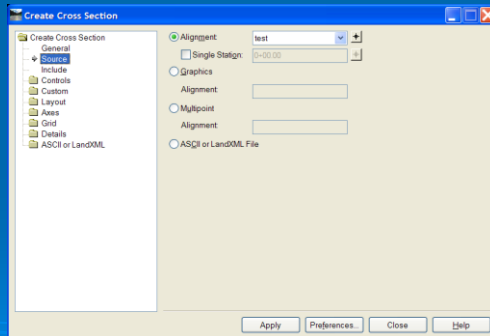


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# X-Sections - Source

- The **Source** leaf identifies the path along which the sections will be created
  - ♣ Alignment
  - ♣ Graphics
  - ♣ Multipoint
  - ♣ ASCII file
- Graphic & Multipoint sources can now be auto-converted into Geometry to allow for updating later

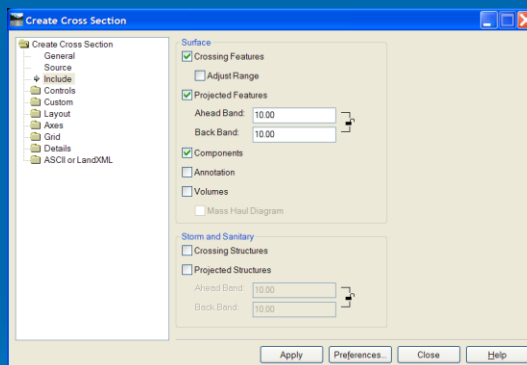


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# Cross Sections - Include

- The **Include** leaf toggles on and further defines what other surface data will be shown on the X-Sections
  - ♣ Crossings
  - ♣ Projected
  - ♣ Components
  - ♣ Point / Line Anno.
  - ♣ Volumes
  - ♣ S & S data



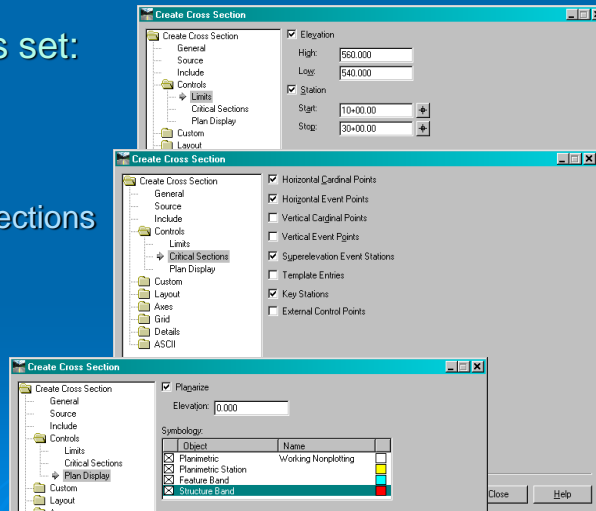
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# X-Sections - Controls

## Controls leafs set:

- ▲ Limits
  - Elevation
  - Station
- ▲ Cut Critical Sections
- ▲ Planimetrics
  - Planarize
  - Symbology

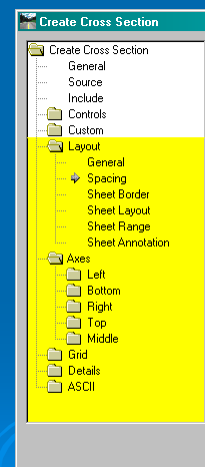


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# X-Section Settings & Symbology

- *Spacing* arranges X-sections so they will 'auto' fit on a specified sheet size or in a column with a number of rows
  - ▲ *Sheet Range Annotation* applies to sheet spacing
- *ASCII* creates various captures of the data that's inside the cross section window
- Other leafs on the X-section dialog contain setup & symbology for the:
  - ▲ Axes, Grid, Legend, and Title tabs



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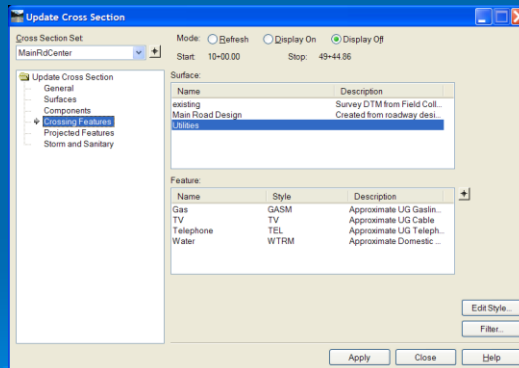
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# Update Cross Sections

## ● InRoads>Evaluation>Cross Section>Update Cross Section

### ● Update Section data

- Surfaces
- Components
- Crossing Data
- Projected Data
- S & S Data



# Volumes

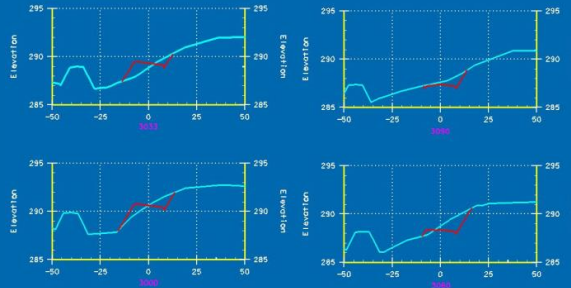
## ● InRoads has 4 different volume calculation methods:

- Triangle Volumes
- Grid Volumes
- End-Area Volumes
- Triangle Volume by Station



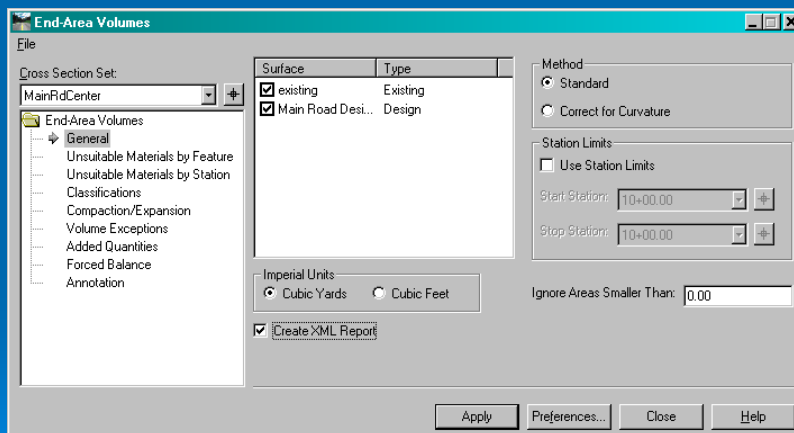
- A *Mass Haul Diagram* can be created after End-Area Volumes have been done
- The *Surface Area* command calculates both the planer and true area of a surface

# End-Area Volumes



- End-Area Volumes require that X-Sections be written to the CAD file through InRoads
- Certain 'intelligence' is tagged on to these graphics that InRoads can understand

## EAV - General



# End Area Volume Results

- End Area Volume results can be captured in the standard results box with the **Create XML Report** option toggled *on*.

Basic Volume Report - Road Runner High Speed Online

Basic Volume Report

Report Created: 3/4/2007  
Time: 10:23am

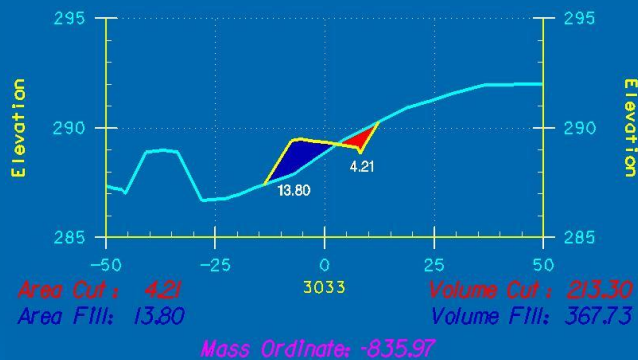
Cross Section Set Name: MainRdCenter  
Alignment Name: MainRdCenter  
Input Grid Factor: 1.000000 Note: All units in this report are in feet, square feet and cubic yards unless specified otherwise.

Station Quantities									
Baseline Station	Cut				Fill				Mass Ordinate
	Factor	Area	Volume	Adjusted	Factor	Area	Volume	Adjusted	
10+00.00	1.00	118.70	0.0	0.0	1.00	11.38	0.0	0.0	0.0
10+10.57	1.00	118.36	46.4	46.4	1.00	11.37	4.5	4.5	42.0
10+25.00	1.00	118.24	63.2	63.2	1.00	60.89	19.3	19.3	85.9
10+50.00	1.00	117.46	109.1	109.1	1.00	44.68	48.9	48.9	146.1
10+75.00	1.00	127.64	113.5	113.5	1.00	49.95	43.8	43.8	215.8

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# End Area Volume Results

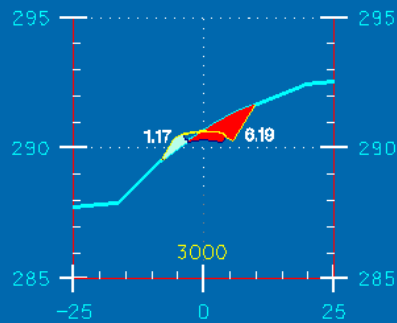
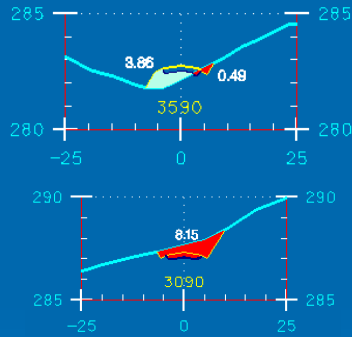


- End Area Volumes results can also be captured graphically on the cross sections themselves.

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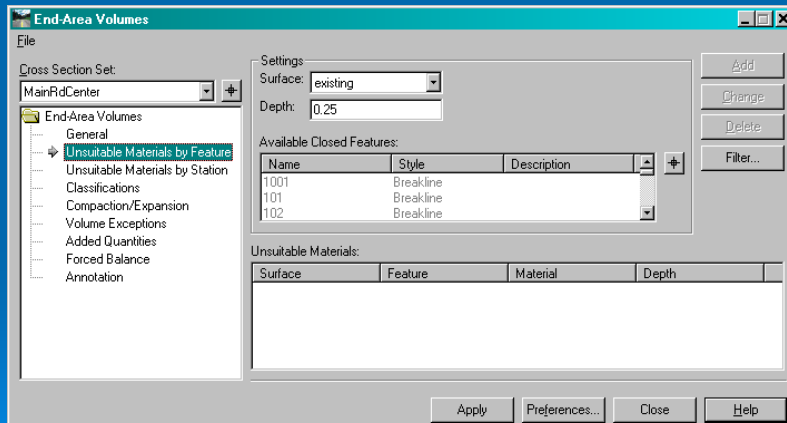
# EAV Results w/ Components



- End-Area Volumes can also take the Subgrade into consideration when it is determining Cut & Fill volumes

## Unsuitable – By Feature

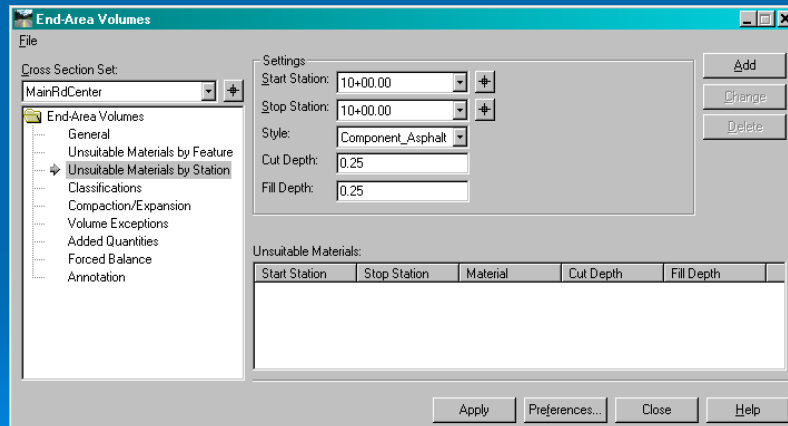
- Uses a “Do Not Triangulate” shape Feature





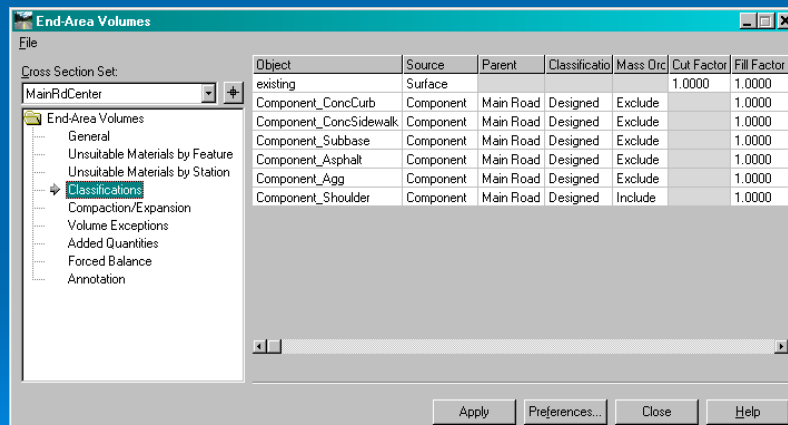
# Unsuitable – By Station

- Another technique for unsuitable material



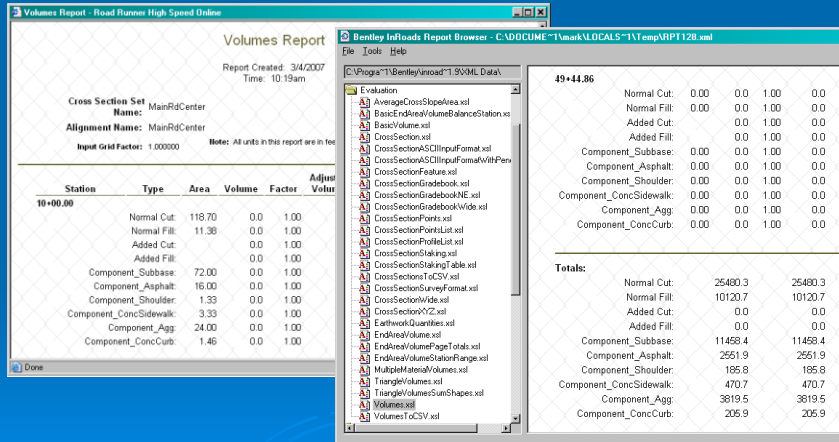
# Classifications

- Calculate Volumes for Components 'parts'...

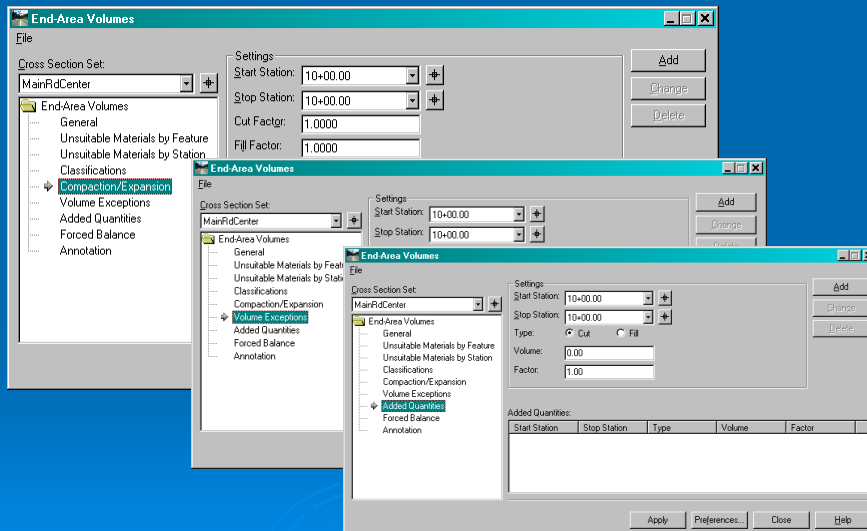


# Classifications - Volumes

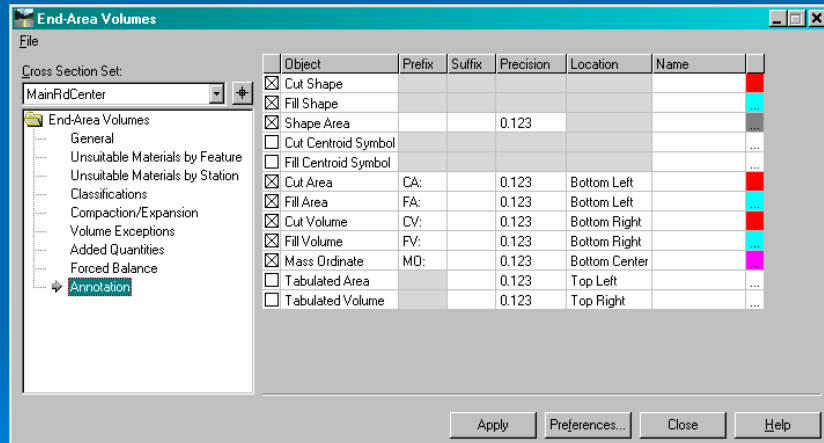
- Different report data is presented in other XSL's



# End Area - Adjustments



# EAV - Annotation



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## Evaluation - Summary

- Cross sections can be run along a **graphic, alignment, or data picks** with multiple surfaces
- X-section set-up can be defined and saved as different preferences
- End Area volumes **require cross sections** run with at least two displayed surfaces
- EAV's are based on the X-section display
- To generate **volume reports** the generate XML Report option must be toggled on
- Some Reports include Component area & vols

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