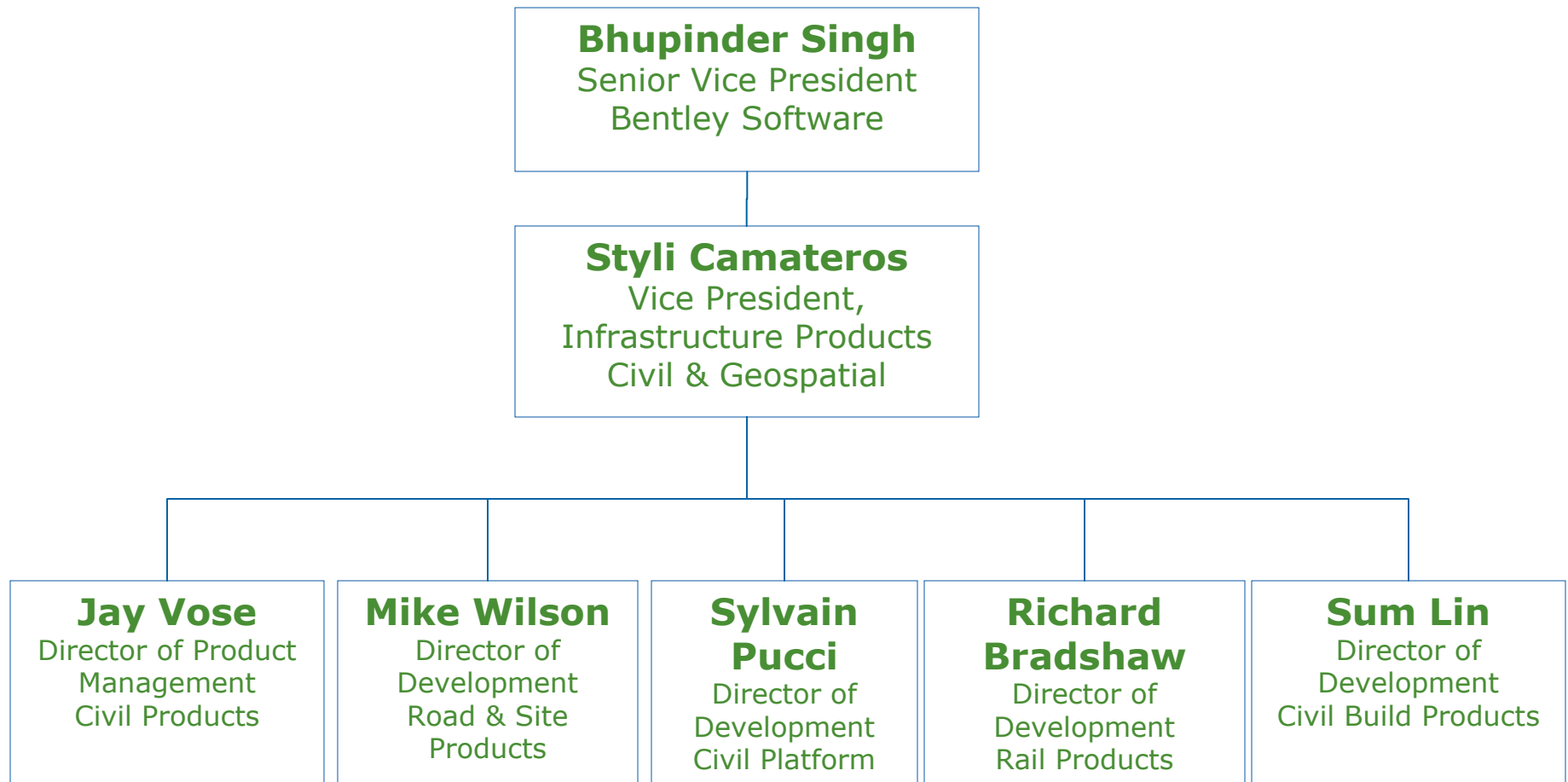




InRoads XM Update

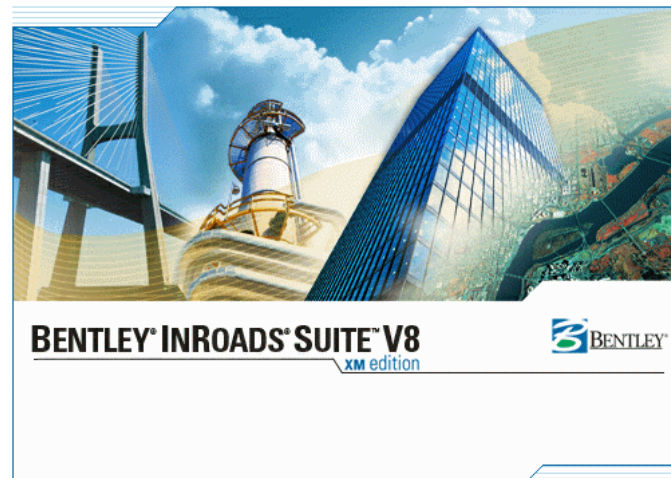
Mike Wilson

Bentley Software Organization



InRoads Release Update

- InRoads XM Family of Products
 - Released December, 2006
 - SP1 released in May, 2007
 - SP2 released February, 2008
 - SP3 being discussed for later this year



InRoads XM SP1

- Initial release allowed support for ...
 - MicroStation XM with ProjectWise XM or
 - MicroStation 2004 with ProjectWise 2004 or
- SP1 adds support for ...
 - MicroStation 2004 with ProjectWise XM
 - AutoCAD 2007 and 2008
 - Quantities Enhancements
 - Fixes

InRoads XM SP2

- SP2 contains...
 - Survey Enhancements
 - Small number of minor fixes

InRoads XM SP3

- SP3 contains...
 - ?
 - And we always come away from the conferences and meetings like this one with ideas, suggestions and other items from **YOU** that need to be addressed.

“Peaceful Coexistence”

- Mike’s definition: The ability for multiple versions of InRoads to reside on the same machine and work peacefully without interfering with the other version(s).
- Bottom line: The ability for you to begin moving to the next version of InRoads and keep using the previous version for your “**projects in the pipeline**”.

InRoads 8.5 SP7

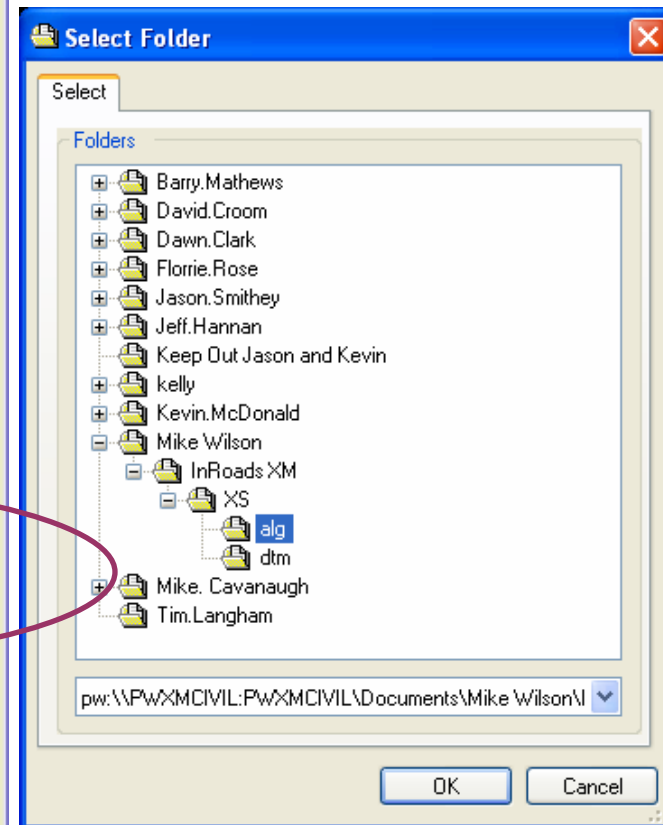
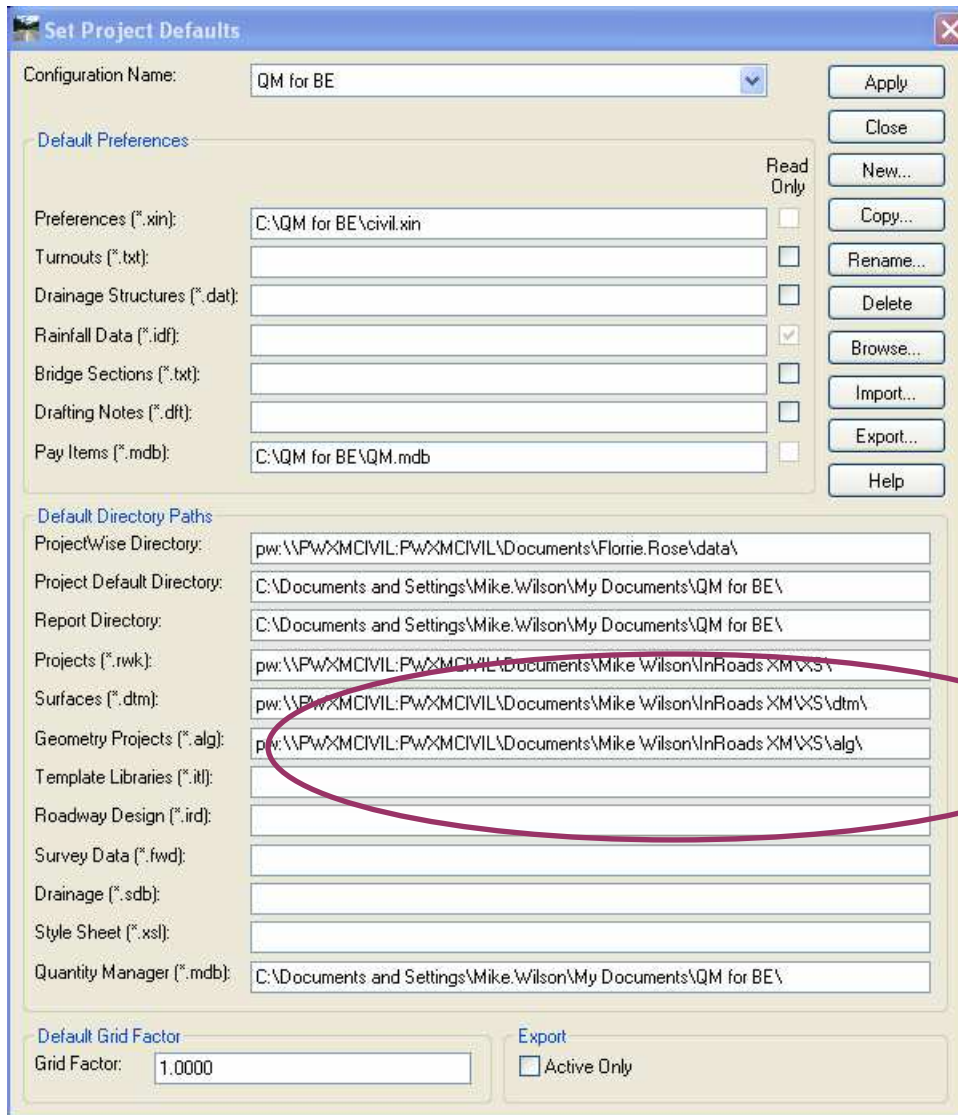
- Continue our “Peaceful Coexistence” effort
- Added support for ProjectWise XM
 - Stay on MicroStation 2004 and InRoads 8.5
- Allows for incremental XM deployment
 - Move up to ProjectWise XM first
 - Then move to MicroStation XM and InRoads XM
- Released April 24th, 2007
- Complete details in the README

InRoads Family of Products

- “Peaceful Coexistence”
 - Multiple InRoads Versions
 - InRoads 8.5 – February 2004
 - InRoads 8.7 – June 2005
 - InRoads 8.8 – June 2006
 - InRoads 8.9 – December 2006

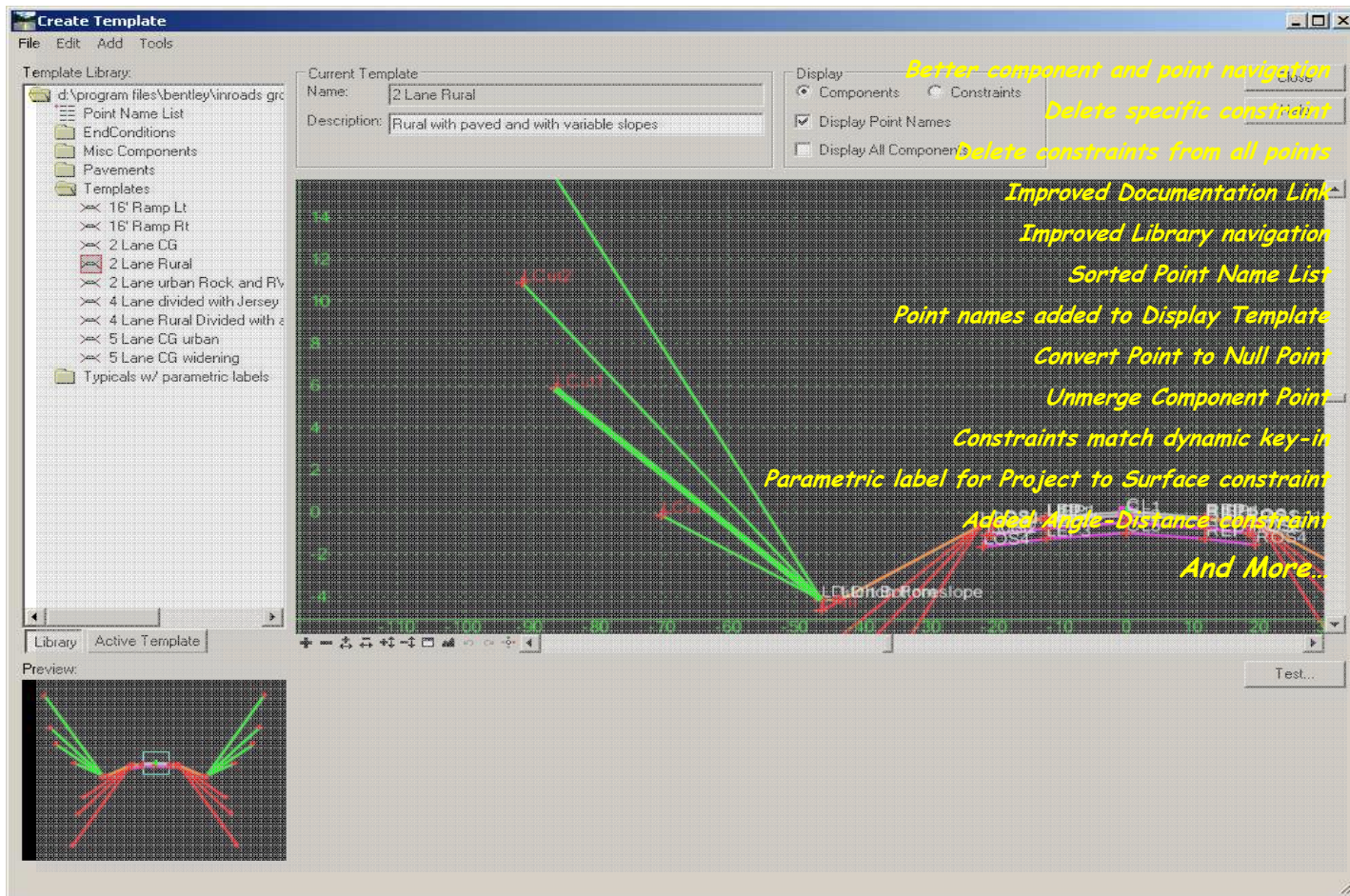
	InRoads			
	8.5	8.7	8.8	8.9
MicroStation 2004	X	X	X	X
ProjectWise 2004	X	X	X	X
MicroStation XM				X
ProjectWise XM	X			X

Improved ProjectWise Integration in SP1



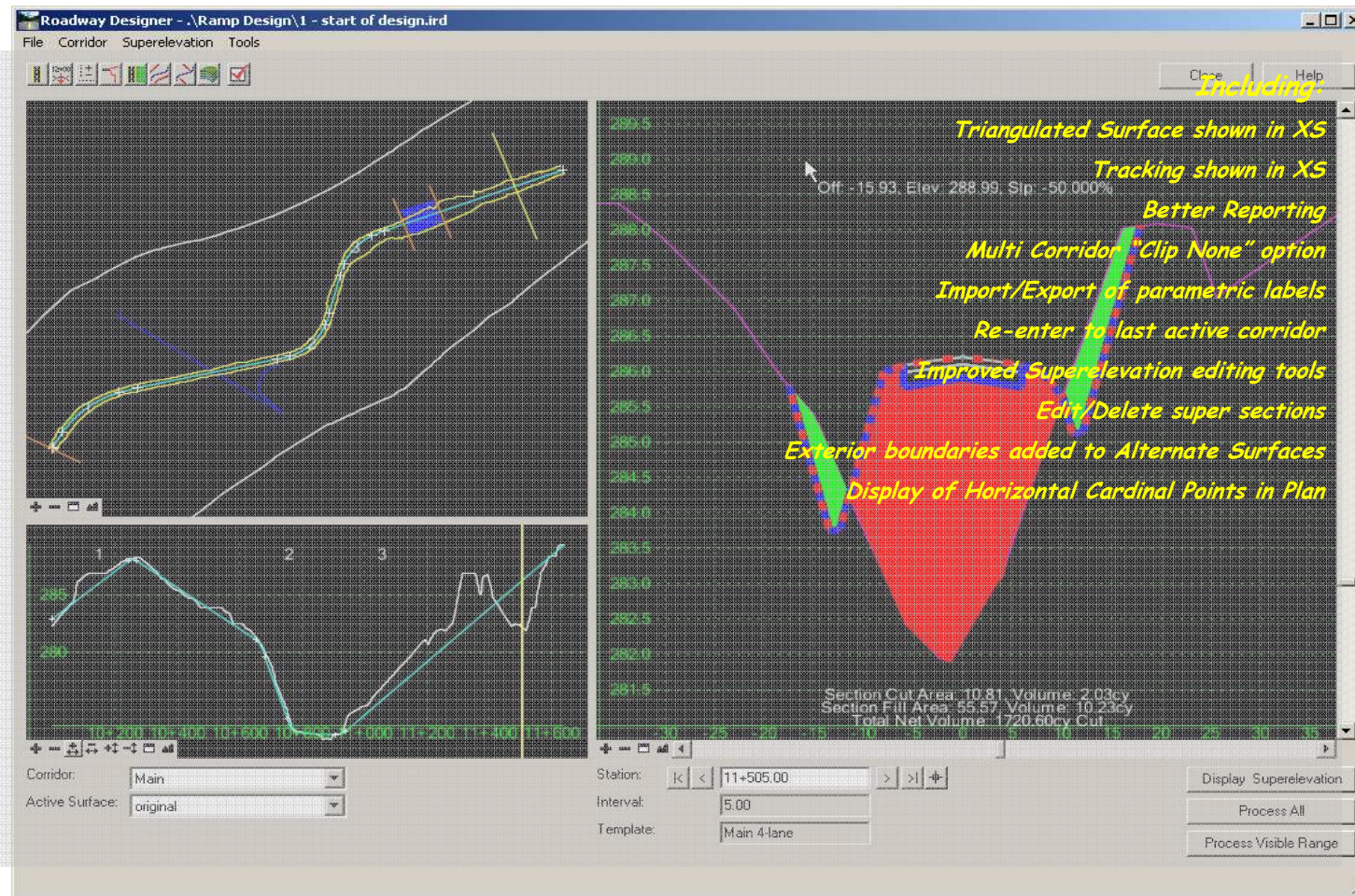
Create Template

- Continued enhancements for productivity and workflow



Roadway Designer

- Again, continued enhancements



Quantities Enhancements

Quantities from Graphic Elements

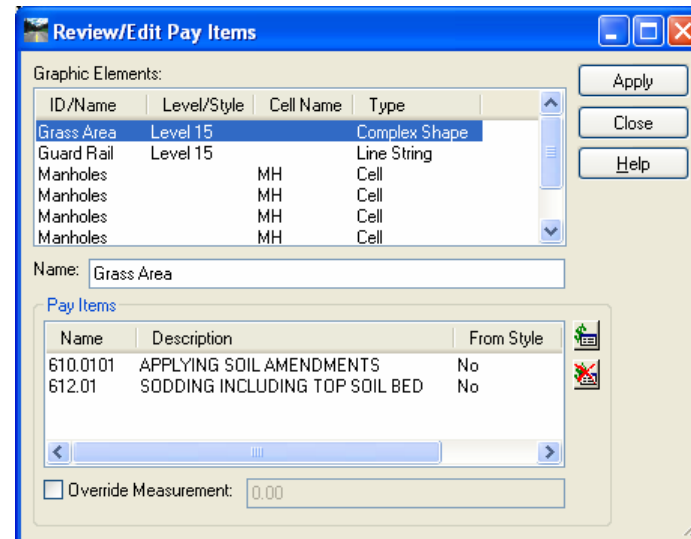
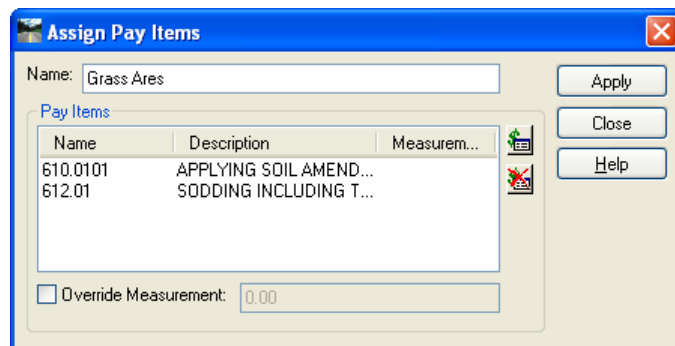
- Pay Items can be assigned to graphic elements.
- Graphic elements are quantified like features.
- Names can be associated with graphic elements.
- An element's measurement can be overridden.

Automated Sheet Quantities

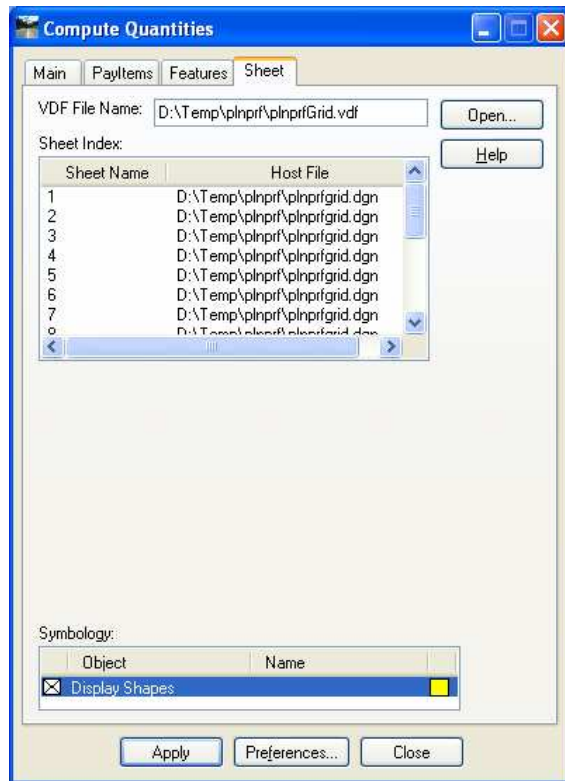
- New *Sheet* mode produces quantities by sheet.
- Sheet mode takes VDF files as input.

New Pay Item Commands

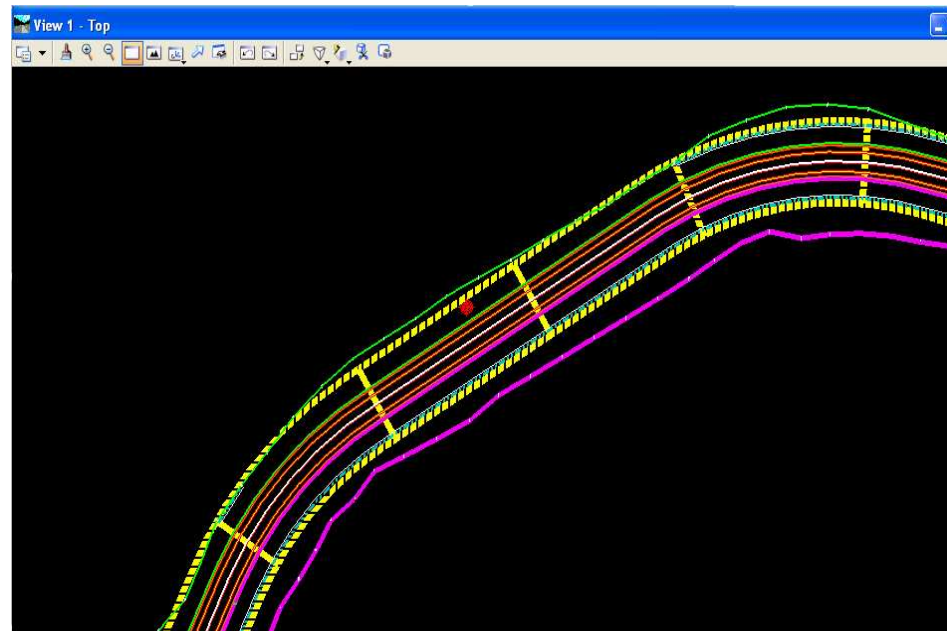
Assign Pay Items and *Review/Edit Pay Items* provide the ability to assign and manage pay items on graphic elements and DTM features.



Automated Sheet Quantities



Sheet names and boundaries are extracted from the selected VDF file.



Quantity Manager

Sheet quantities are separated by sheet.

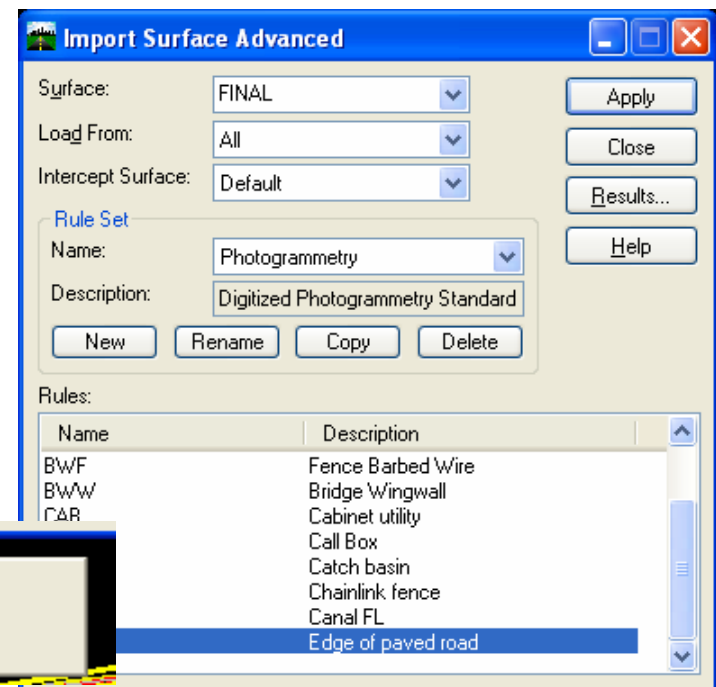
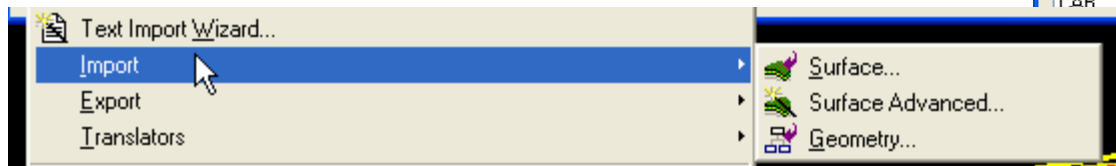
Quantities from graphic elements report Element Id, DGN Filename, and other MicroStation specific information.

Payitem	Run Name	Boundary	Net Value	Measurement Basis	Measurement Value	Computed Value	Rounded Value
604.5	By Sheet	Sheet : 1	1.000	Each	1.000	1.000	1.000
604.5	By Sheet	Sheet : 2	1.000	Each	1.000	1.000	1.000
604.5	By Sheet	Sheet : 4	1.000	Each	1.000	1.000	1.000
604.5	By Sheet	Sheet : 5	1.000	Each	1.000	1.000	1.000
604.5	By Sheet	Sheet : 6	1.000	Each	1.000	1.000	1.000

Name	Type	Native Id	Document	Begin X	Begin Y	Begin Stati...	Begin Reg...	Format
Manholes	Cell	23283	D:\Temp\InprfModelCenterline.dgn	11,737.440	11,800.804	100.000	1	1+00.00

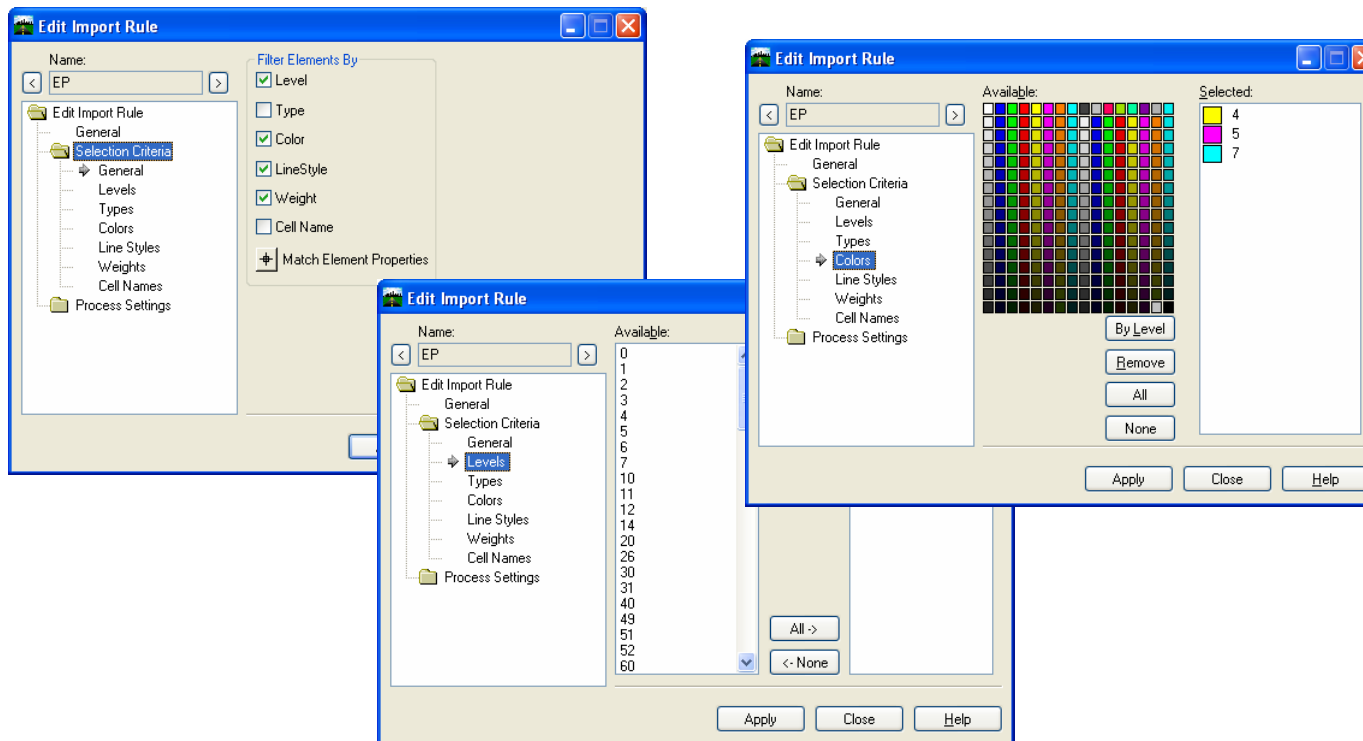
Importing Data

- Import -> Surface Advanced
 - The tool for photogrammetry data
 - Bulk imports graphic surface data
 - Reusable standards stored as Rule Sets
 - This is an additional command. We did not remove the current Import Graphics command.



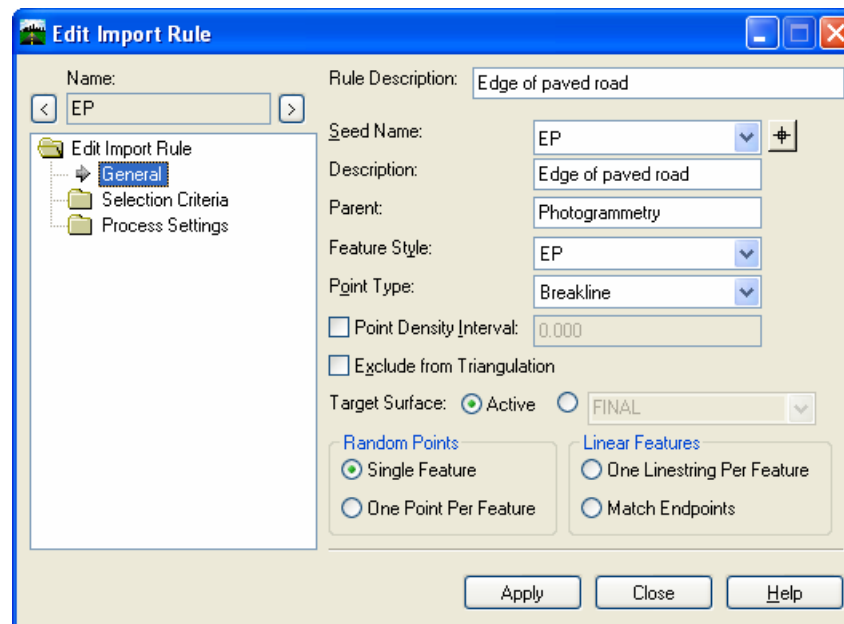
Importing Data

- Import -> Surface Advanced
 - User definable rules filter elements by graphic properties (type, level, color, weight, style).



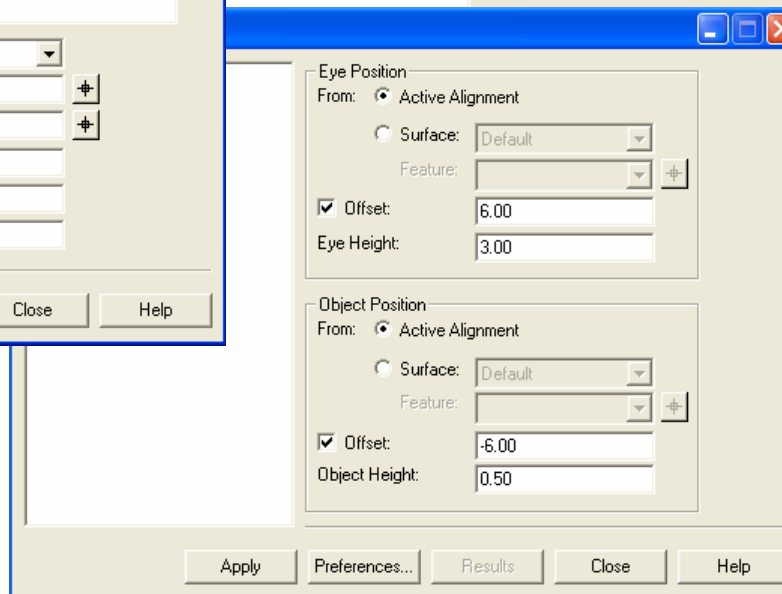
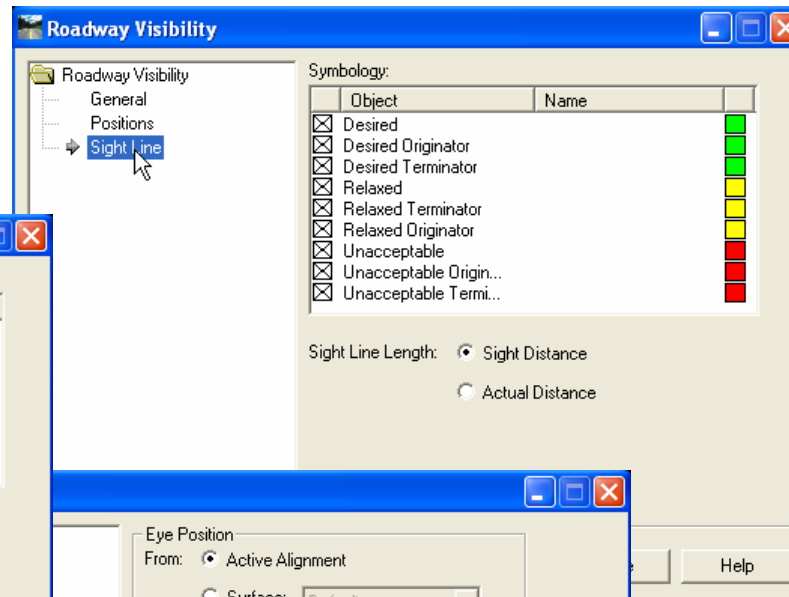
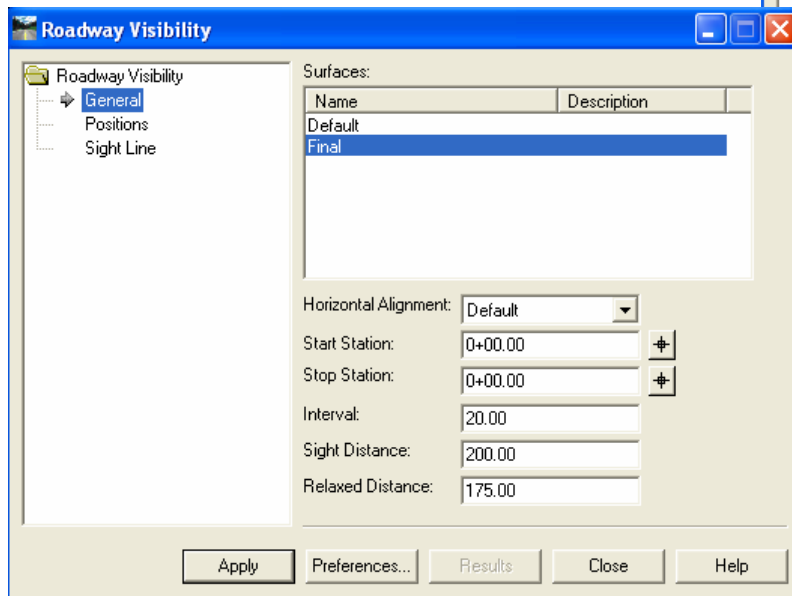
Importing Data

- Import -> Surface Advanced
 - Rules determine the feature properties of imported elements. (Name, Type, Style, etc.)

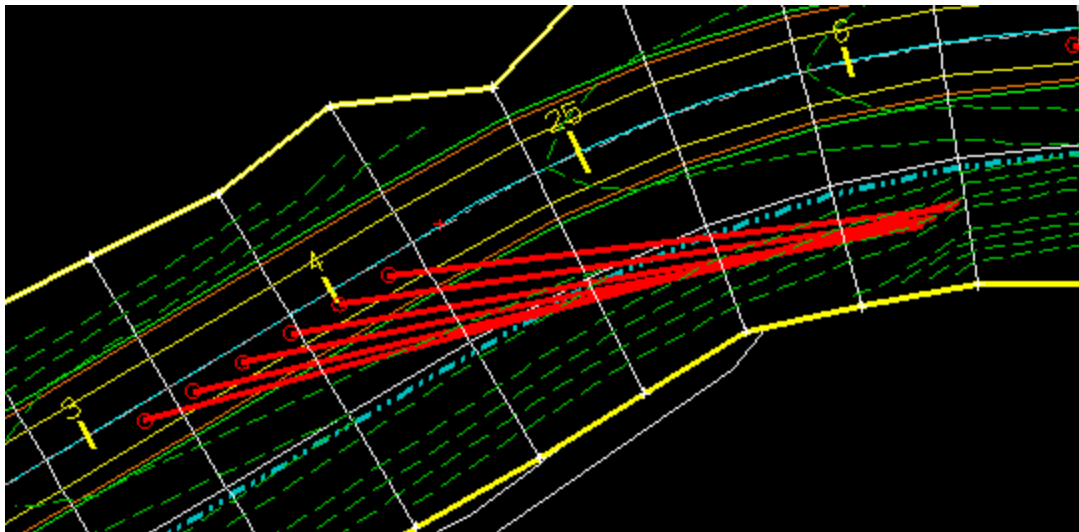
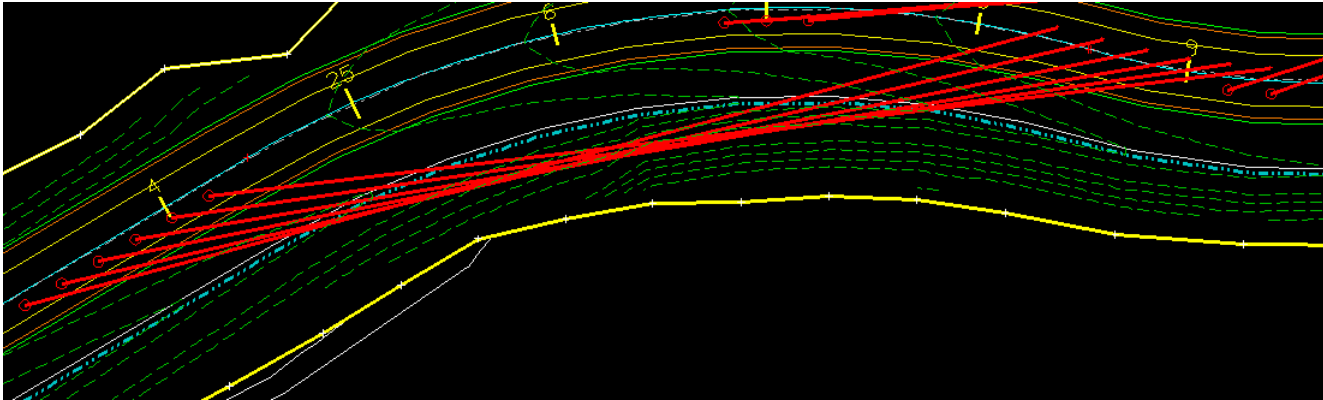


Roadway Visibility

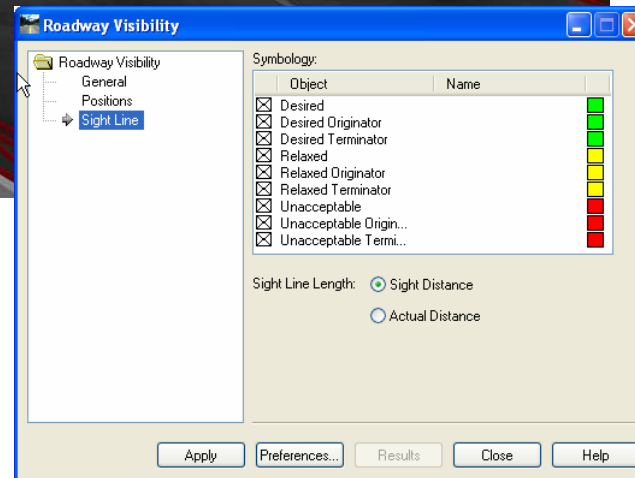
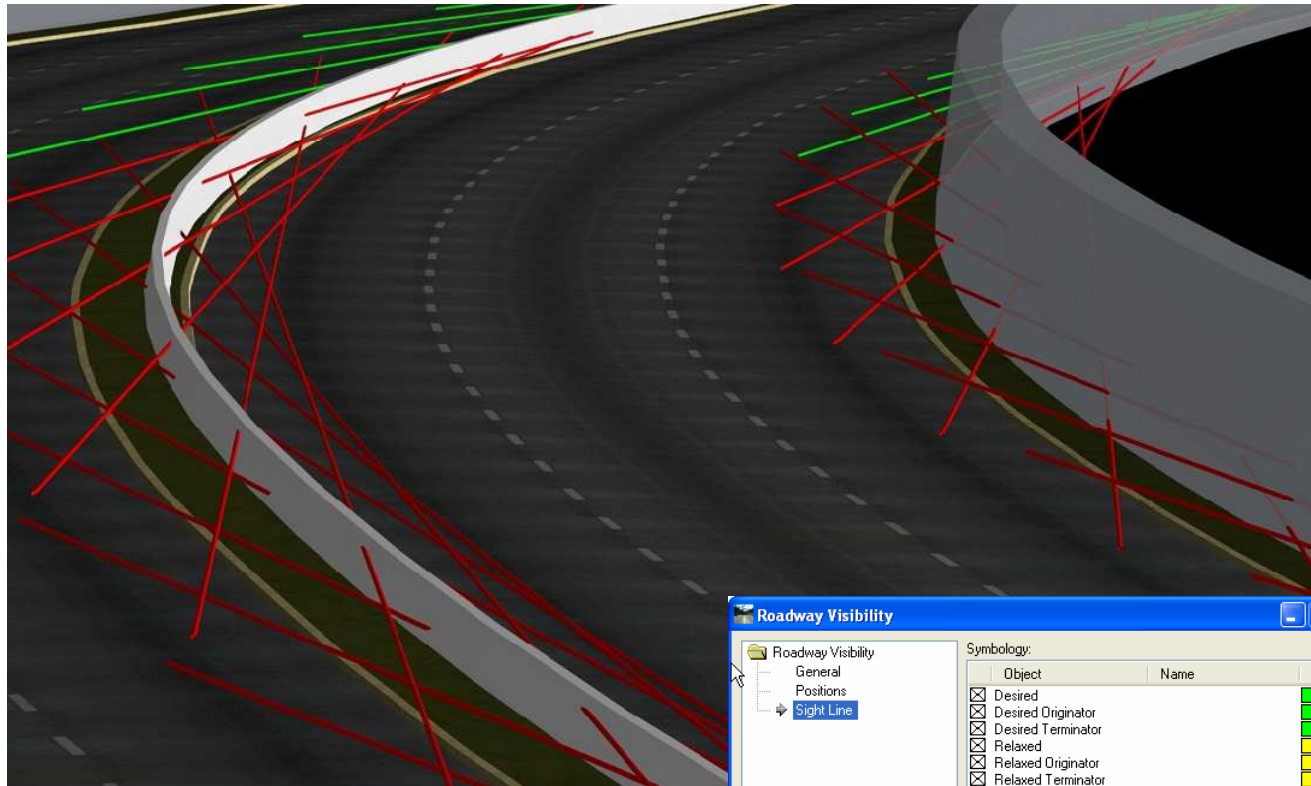
What can I see?



Roadway Visibility



Roadway Visibility



ARUP

 Bentley

Surface Visibility

New tools for visibility analysis of DTMs.

Three modes of operation:

Surface Points

Displays all DTM points and distinguishes those that are visible from those that are not visible; from a given eye position.

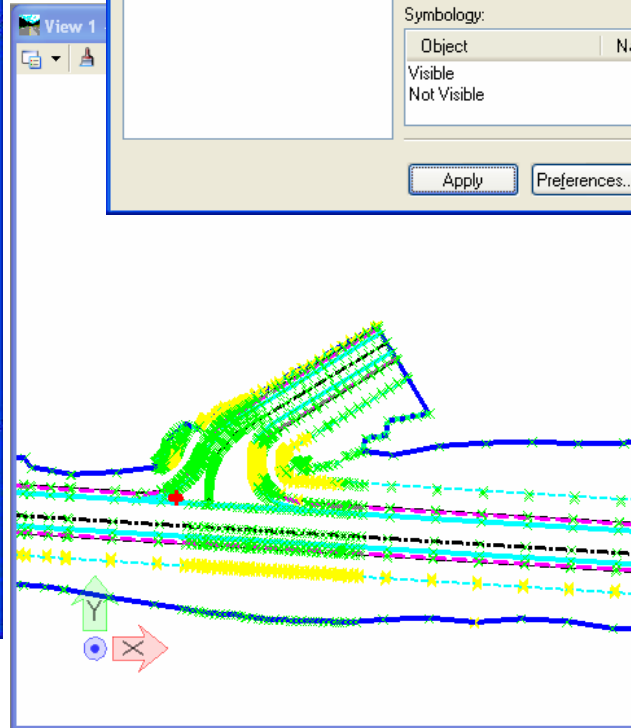
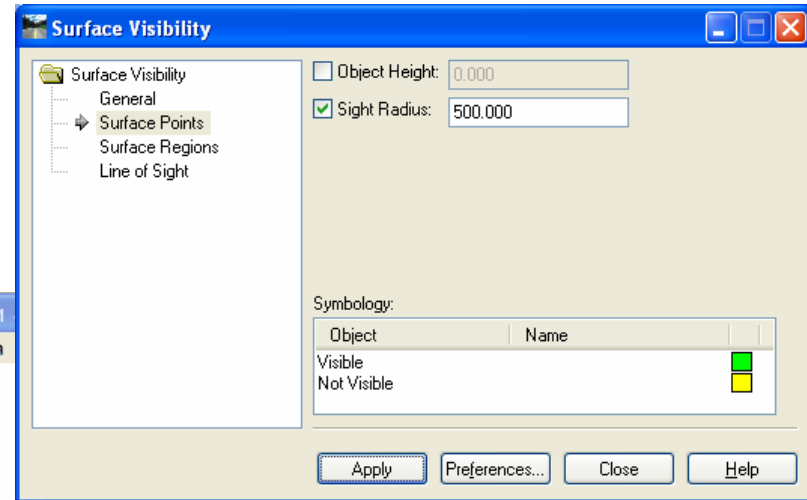
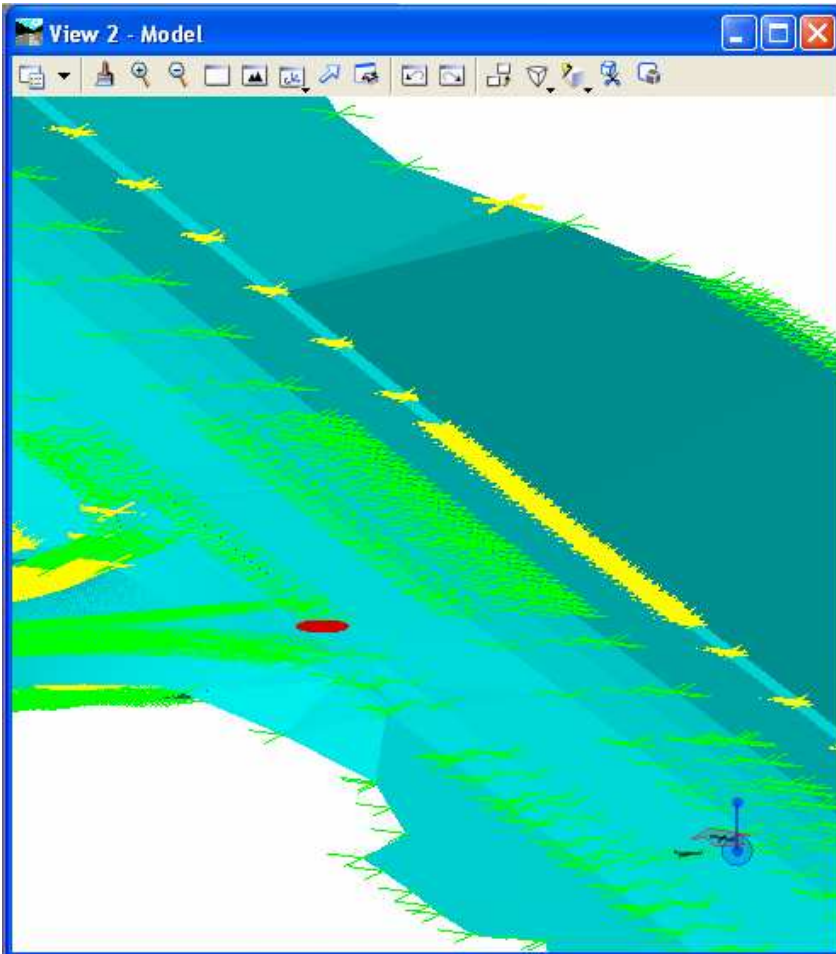
Surface Regions

Generates and drapes lines of sight that radiate outward from an eye position. Distinguishes between visible and not visible portions of the lines of sight.

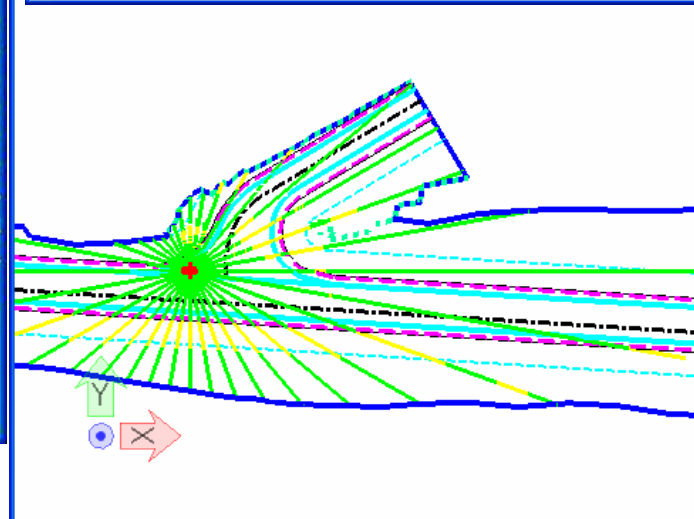
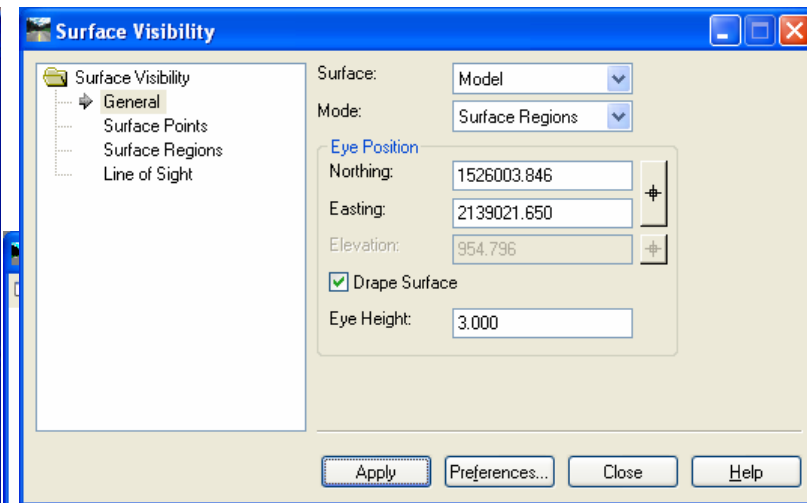
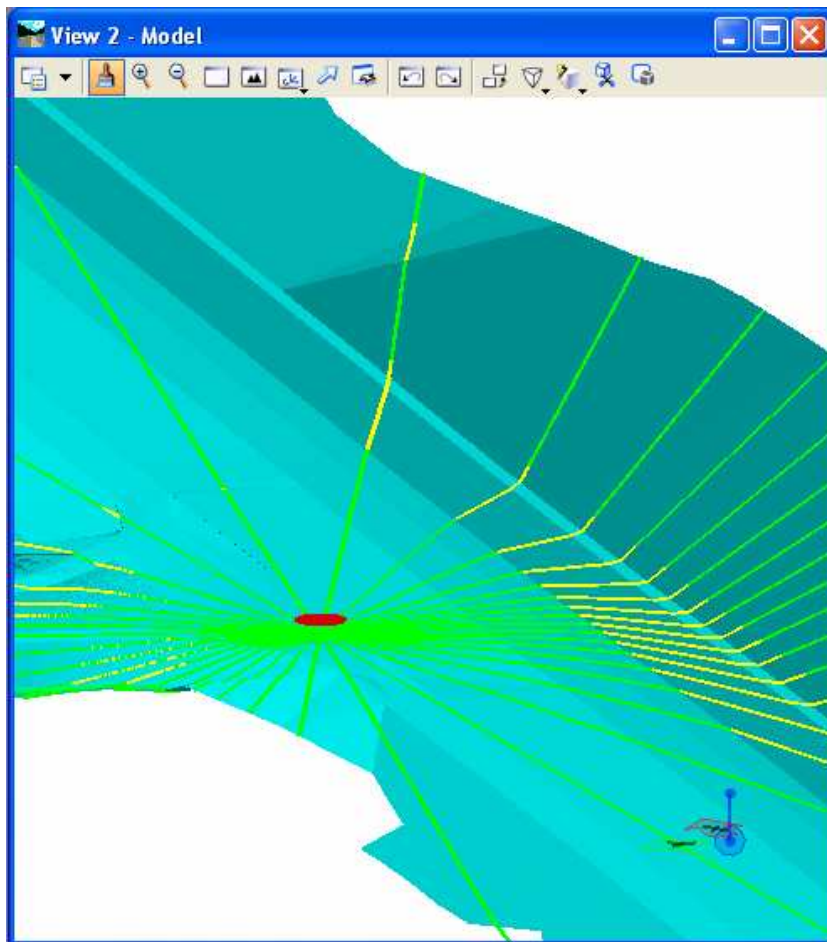
Line of Sight

Determines if an object position is visible from an eye position. Then distinguishes between portions of the line of sight that are above ground and below ground.

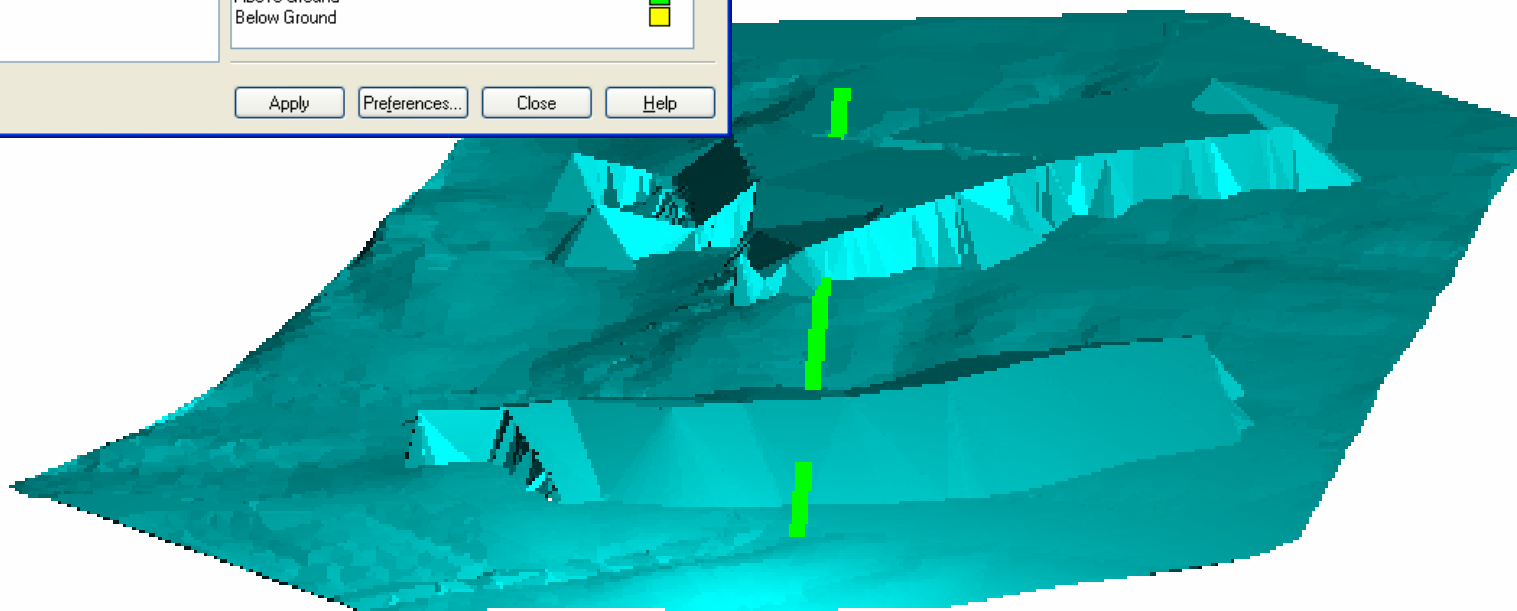
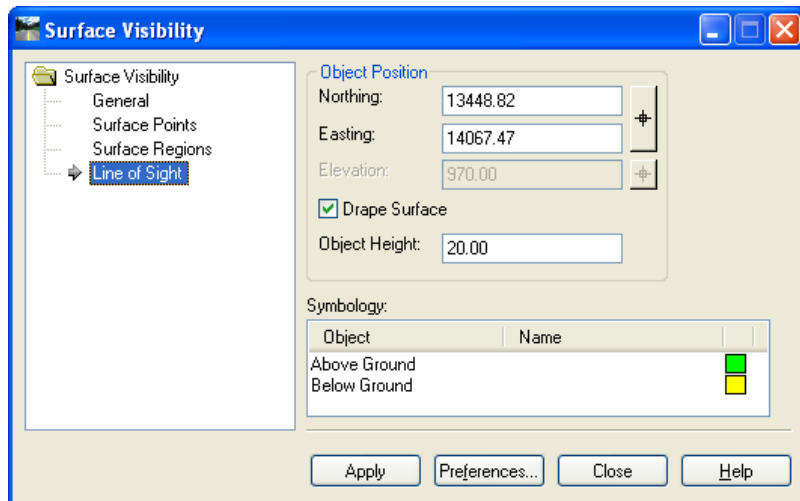
Surface Points



Surface Regions

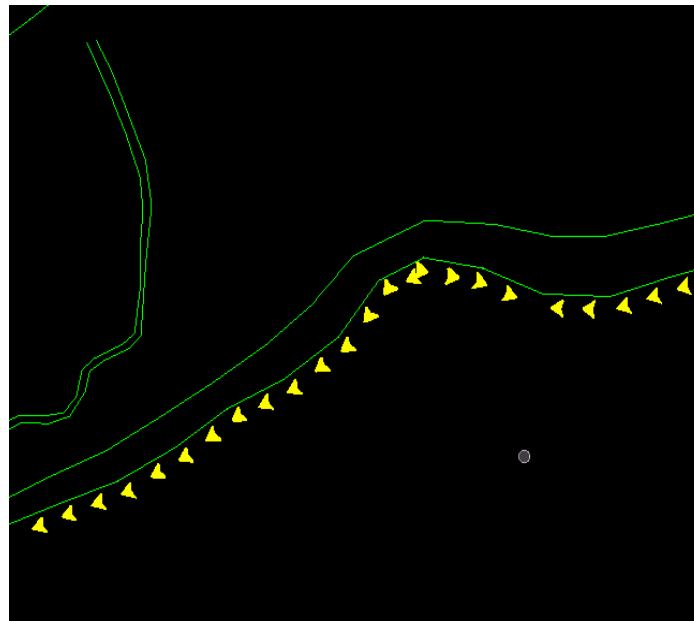
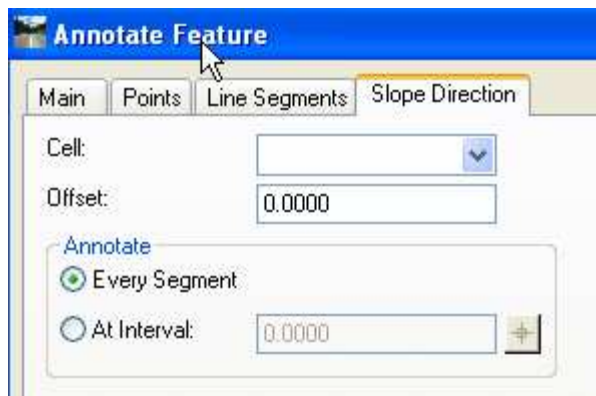


Line of Sight



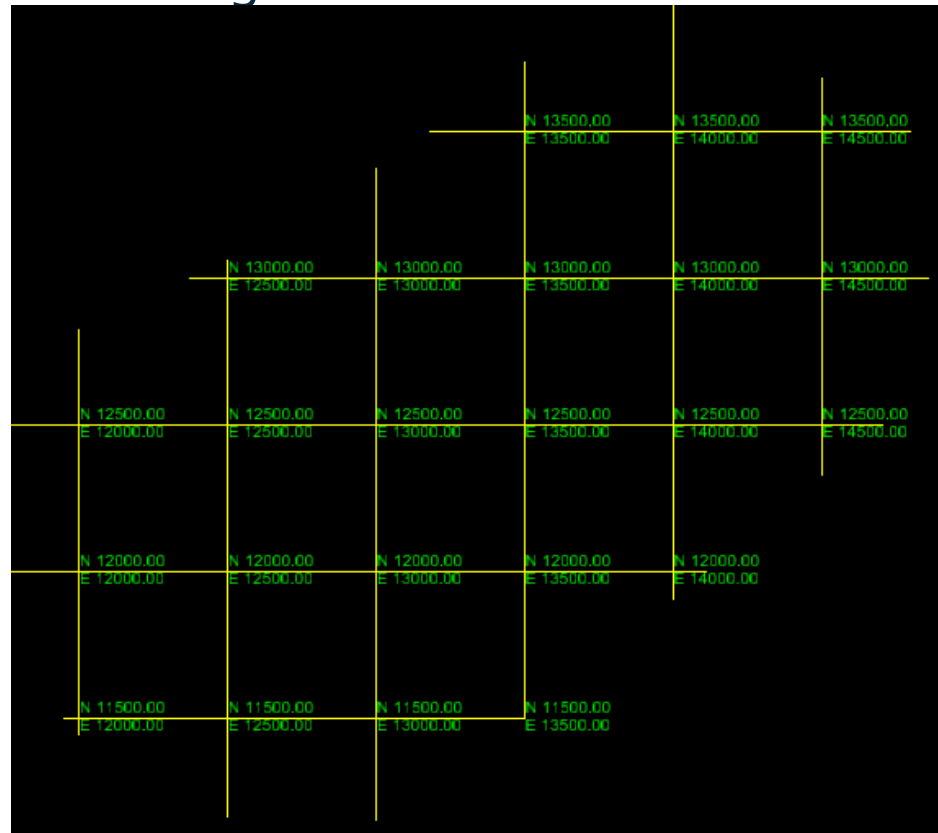
Annotate Slope Direction

- This command allows the user to place flow arrowheads on a feature at a certain interval and offset.
- It places the cells oriented along the feature to show the slope (flow) of the feature.



Place Coordinate Grid

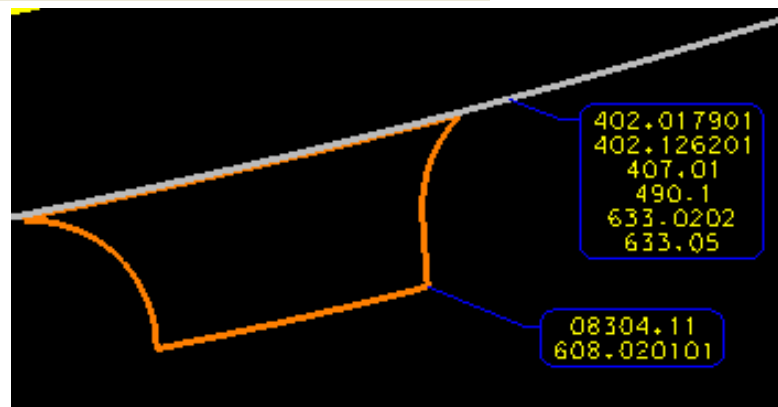
- Places coordinates and grid-lines at user specified intervals.
- Part of the drafting tools.



Quantities in Drafting Notes

- Added keywords for pay item name, code, description, and unit.
- Also added keywords for pay item block and end block so multiple pay items on a single feature can be annotated.

Name	Description	Fr
402.017901 50mm average	TRUE & LEVELING F9, SUPERPAVE HMA, 70 SERIES COMPACTION	No
402.126201 40mm	12.5MM F2 SUPERPAVE HMA, 60 SERIES COMPACTION	No
407.01 Milled Surfaces	TACK COAT	No
490.1	PRODUCTION COLD MILLING BITUMINOUS CONCRETE	No
633.0202	CLEANING EXISTING PAVEMENT AND/OR SHOULDERS	No

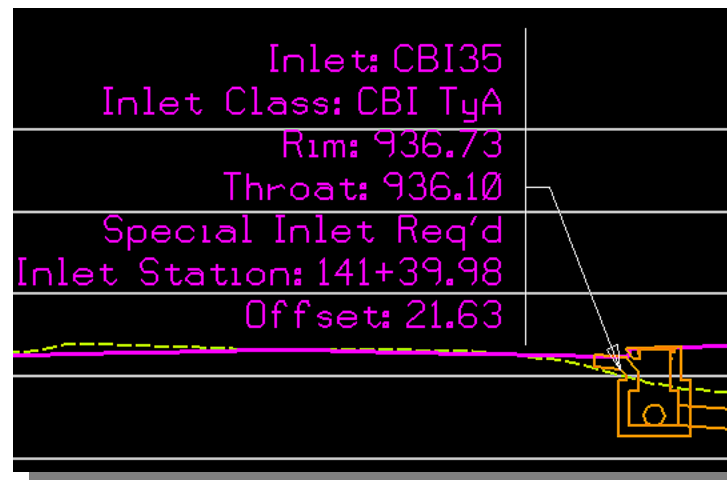
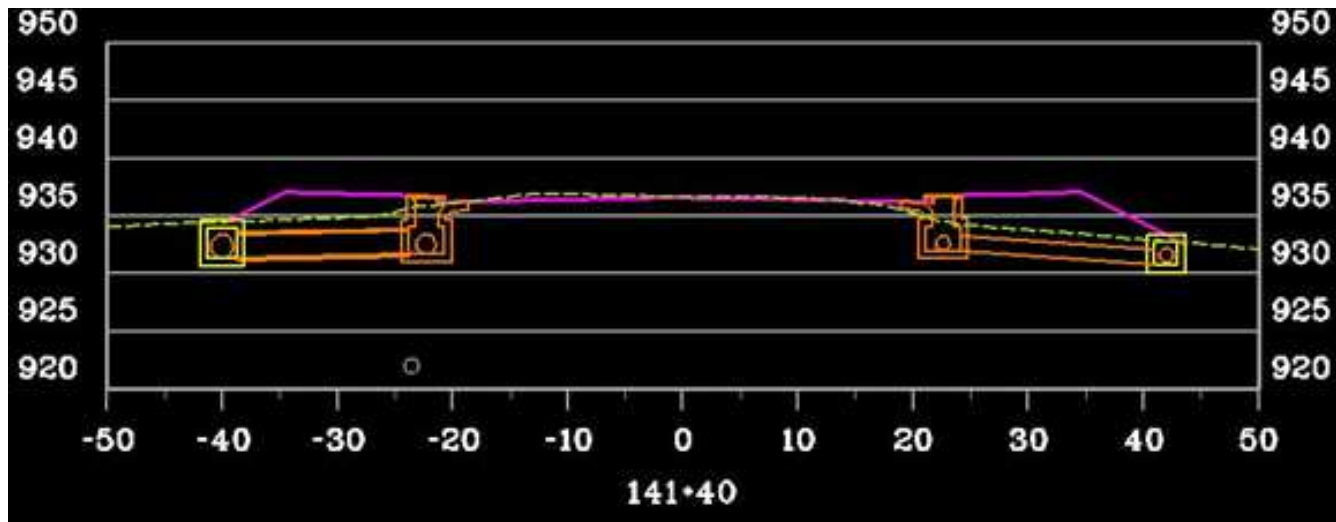


ProjectWise Title Block Integration with Cross Sections

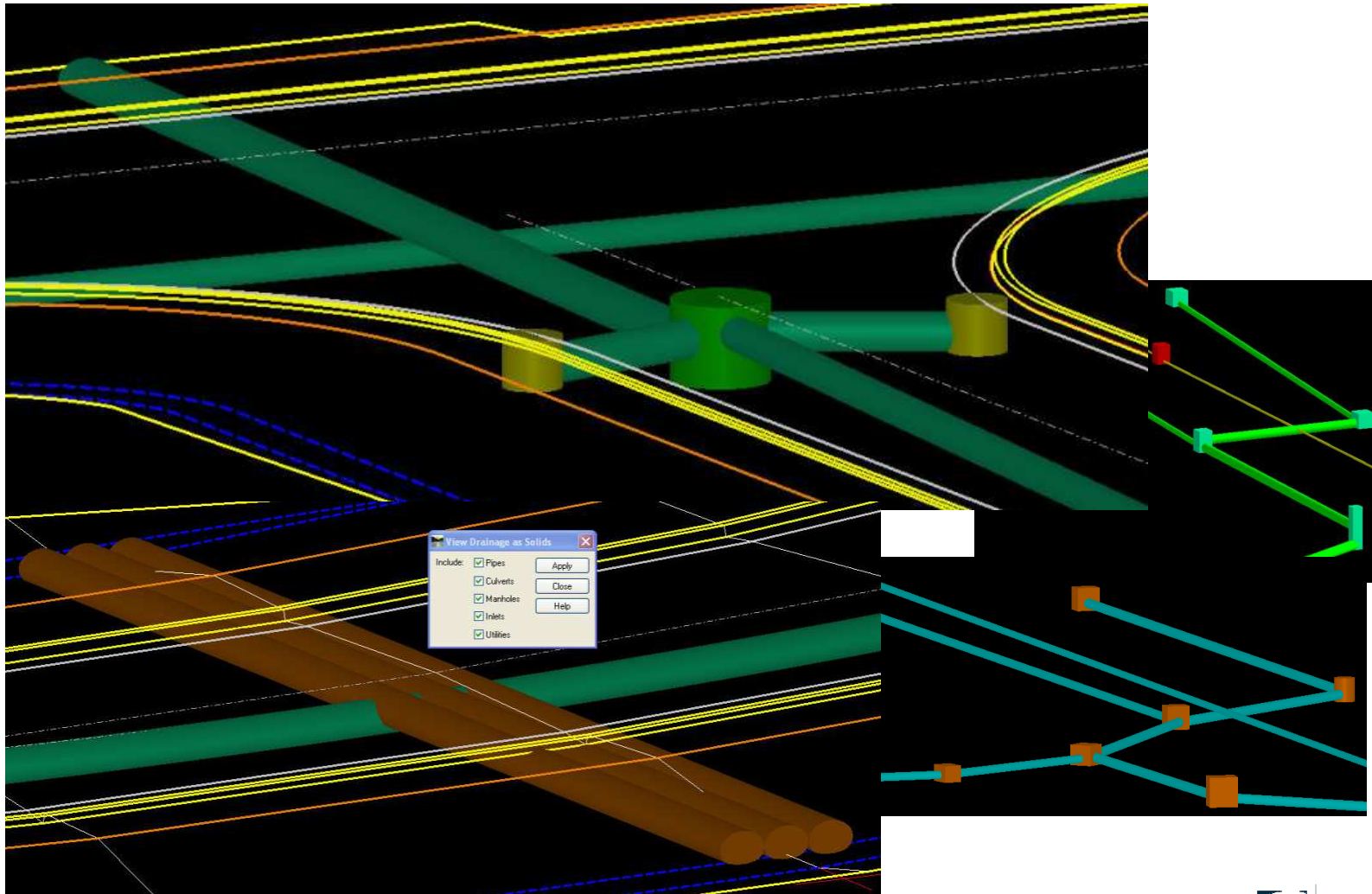
- Two methods:
 - Tagged attributes can be placed directly within border cell
 - Title block cell can be attached by InRoads when using reference file as border

```
NAME: demo.dgn
DESCRIPTION: demo
SIZE: 11X17
DRAWN BY: JS
APPROVED BY: MC
ALIGNMENT: demo_ha1
DATE: 3/27/2007
STATION RANGE: 0+00 TO 8+00
VERTICAL SCALE: 10.00
HORIZONTAL SCALE: 20.00
SHEET NAME: A
SHEET: 1
TOTAL SHEETS: 6
```

Drainage Cross Sections

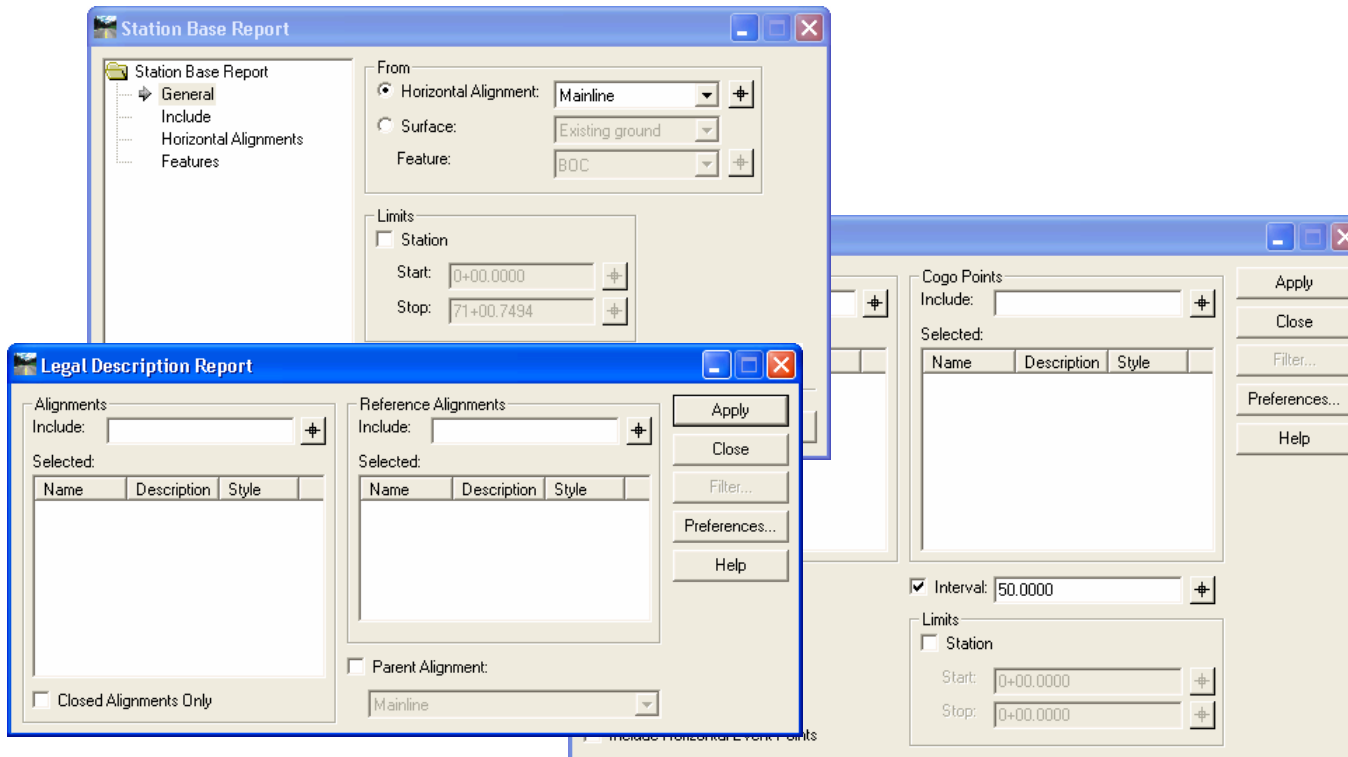


Solids for S&S Networks in SP1



XML Reporting

- Reorganized into multiple commands
- Fewer steps
- XML file is transient



Bentley InRoads Report Browser - C:\DOCUME~1\RICHA~1\BRA\LOCALS~1\Temp\RPT10B.xml

File Tools Help

D:\program files\Bentley\InRoads Group V8.8\X\M

- Bridge
- Cant
- Clearance
- Custom
- DataCollection
- Evaluation
- Geometry
 - Area.xml
 - ControlLineData.xml
 - FigureNameDescription.xml
 - HorizontalAlignmentAndEvents.xml
 - HorizontalAlignmentCurveSetReview.x
 - HorizontalAlignmentData.xml
 - HorizontalAlignmentLengths.xml
 - HorizontalAlignmentReview.xml
 - HorizontalAlignmentReviewASCII.xml
 - HorizontalAlignmentSuperelevationRev
 - HorizontalAndVerticalAlignmentReview
 - HorizontalElementsTable.xml
 - HorizontalElementsXYZ.xml
 - HorizontalEvents.xml
 - ICSAuditTrail.xml
 - ListCoordinates.xml
 - ListCoordinates
 - Locate
 - ProfileStat
 - ProfileStat
 - ProjectAlign
 - ProjectAlign
 - SettingOut
 - SlewDiagr
 - SlewDiagr
 - Traverse.x
 - TraverseP
 - VerticalAlign
 - VerticalAlign
 - VerticalAlign
 - VerticalAlign
 - VerticalAlign
 - VerticalAlign

Element	Point Type	Point Number	Station	Northing	Easting	Radius	Length	Delta / Theta	Rotation Direction	K	P
Alignment Name:			Mainline								
Description:											
Style:			designroad_a								
Tangent	POB										
Tangent	TS										
Clothoid	TS										
Clothoid	SPI									99.9852	1.1109
Clothoid	SC										
Arc	SC										
Arc	PI										
Arc	CC										
Arc	CS										
Compound Clothoid	CS										
Compound Clothoid	SPI										
Compound Clothoid	SC										
	SC										
	PI										
	CC										
	CS										
	CS										
	SPI										
	ST										
	ST		30+40.5714	13							
	PC		42+93.8886	13							
	PC		42+93.8886	13							
	PI		46+96.7450	13							
	CC			13							
	ST		50+00.7707	14							

Style Sheet Help

Notes

You must include at least one horizontal alignment in the *Include* field on the *Tools > XML Reports > Geometry* command to get results from this report.

© 2006 Bentley Systems, Inc

Style Sheet Help

Notes

You must include at least one horizontal alignment or one Cogo point on the *Main* tab of the *Geometry > View Geometry > Horizontal Annotation* command.

You must select *Assigned* or *Active* in the *Apply Style* group and the selected style, whether it is the assigned style or the active, must have the *Allow Tabling* option toggled on for the element type you wish to table. For example, if you wish to table spirals, select the *Tools > Style Manager* command and find your style. Select the *Edit* button and navigate to the *Geometry Feature > Spirals > Alternate* leaf and toggle on the *Allow Tabling* option. Do this for each element type in each feature style that you plan to table.

You must select either *Basic Element Information* or *All Element Information* on the *Tabling* tab of the *Geometry > View Geometry > Horizontal Annotation* command to get results from this report.

Tips

You can place the results of your report into your MicroStation design file by highlighting the text you wish to copy in the *Report Browser*, keying in CTRL+C, and then keying in CTRL+V in your design file.

Style Sheet Help

- Set As Default Surfaces
- Set As Default Geometry
- Set As Default Station and Offset
- Set As Default Clearance
- Set As Default Stakeout
- Set As Default Legal Description
- Set As Default Turnouts
- Set As Default Horizontal Slew
- Set As Default Vertical Slew
- Set As Default Horizontal Annotation Tabling
- Set As Default Light Rail Manufacturing
- Set As Default Bridge
- Set As Default Cross Section
- Set As Default End Area Volume
- Set As Default Triangle Volume
- Set As Default Survey
- Set As Default Roadway Design
- Set As Default Superelevation
- Set As Default Template Library



Design to Construction

- In the delivery directory look for the *Exporting InRoads Data for Construction.pdf* document.
- It defines steps for exporting design data to either field instruments or machine control equipment.

Thank You!