



# Textual Reporting with InRoads

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## This presentation...

takes a look into various techniques for *creating textual reports* within InRoads. It focuses on getting InRoads data into textual format and workflows for geometry, legal descriptions, cross-sections, and volumes. In addition, you will become familiar with other workflows like survey, drainage and bridge.





## What's generally available in InRoads?

- Reporting can be accomplished in several ways:
  - Review type reports
    - » Presentation / formatting controlled by the product
  - XML / XSL reports
    - » Presentation / formatting controlled by the user (as defined in a style sheet / XSL file)
    - » InRoads produces the XML data
    - » InRoads **Report Browser** utilizes XSL to transform the XML data to text or HTML
  - InRoads SDK, but it requires programming



# Where have we come from?

- InRoads 8.2 Service Pack 5
  - Introduced ***XML Reports***
    - » Side by side with ***DBAccess Reporting***
- With InRoads 8.5, XML reporting was available for the following:
  - Surfaces
  - Geometry
  - Light Rail Manufacturing
  - Bridge
  - Survey Adjustments
- InRoads 8.7 completed the transition to XML / XSL
  - Cross sections
  - Volumes
  - Introduced ***Report Browser***



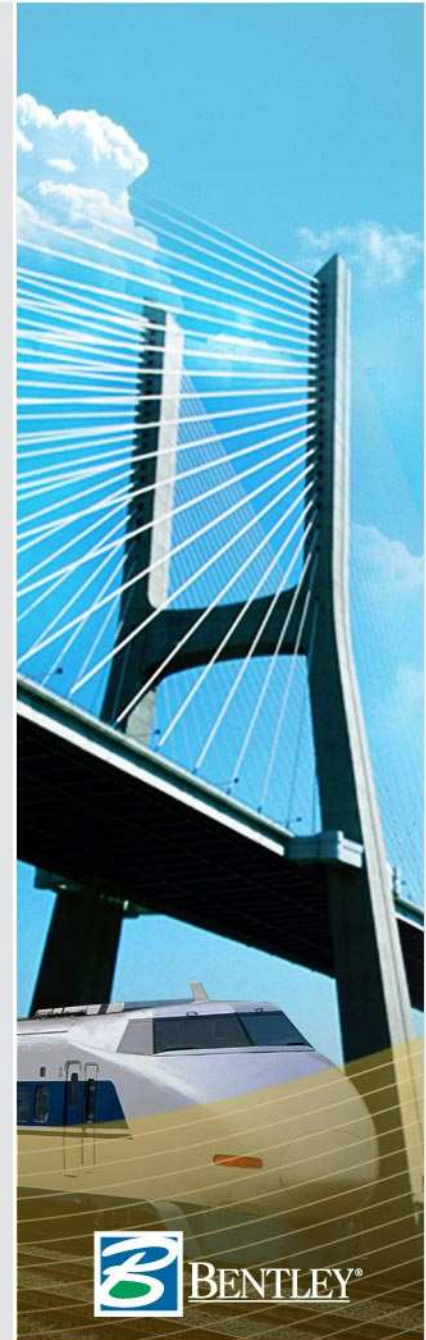
# And within InRoads 8.9?

- Separated commands
- Added
  - **Map Check**
  - **Station Alignment Intersection**
  - **Surface Check**
- Replaced some **Reviews** with **XML**
  - **Horizontal Slew**
  - **Vertical Slew**
  - **Cant**
- XML file is transient
  - Created in a temporary folder similar to *C:\Documents and Settings\Richard.Bradshaw\Local Settings\Temp*
- Report Browser
  - Style sheet help
  - Additional formatting options



## Report Browser

- Manage “default” report style sheet for each type of report
- Style sheet “Help” documents what is required to use a specific style sheet
- Manage formatting with *Tools>Format Options*
  - Decimal precision
  - Formatting
    - » Stationing
    - » Angles
    - » Directions
    - » Slopes
- Allows *multiple* looks at the same data





# Report Browser

Bentley InRoads Report Browser - C:\DOCUME~1\RICHAR~1\BRA\LOCAL5~1\Temp\RPT849.xml

File Tools Help

D:\program files\Bentley\InRoads Group V8.11\XML Data\

- Evaluation
- Geometry
  - Area.xml
  - ControlLineData.xml
  - HorizontalAlignmentAndEvents.xml
  - HorizontalAlignmentCurveSetReview.xml
  - HorizontalAlignmentData.xml
  - HorizontalAlignmentLengths.xml
  - HorizontalAlignmentRamp.xml
  - HorizontalAlignmentRamp.xml
  - HorizontalAlignmentRamp.xml
  - HorizontalAlignmentS...
  - HorizontalAndVertical...
  - HorizontalElementsT...
  - HorizontalElementsX...
  - HorizontalEvents.xml
  - HorizontalInterpolate...
  - ListCoordinates.xml
  - ListCoordinatesStati...
  - ProfileStationElevati...
  - ProfileStationElevati...
  - ProjectAlignmentListi...
  - ProjectAlignmentListi...
  - SettingOutTable.xml
  - SlewDiagram.xml
  - SlewDiagramLegacyF...
  - Traverse.xml
  - TraverseCurveASCI1...
  - TraverseCurveASCI2...
  - TraverseCurveASCI3...
  - TraversePoints.xml
  - VerticalAlignment3Pe...
  - VerticalAlignmentAnd...
  - VerticalAlignmentPoi...
  - VerticalAlignmentRev...
  - VerticalAlignmentRev...
  - VerticalAlignmentSigh...
  - VerticalEvents.xml
  - VerticalInterpolatedS...
  - VerticalSlewDiagram.x...
- ICS
- Images
- IntersectingAlignmentStations
- LegalDescription

Style Sheet Help

- Set as Default: Surfaces
- Set as Default: Surface Check
- 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: Map Check
- Set as Default: Intersecting Alignment Stations
- Set as Default: Horizontal Annotation Tabling
- Set as Default: Cant
- Set as Default: Turnouts
- Set as Default: Light Rail Manufacturing
- Set as Default: Horizontal Slew
- Set as Default: Vertical Slew
- Set as Default: Bridge
- Set as Default: Cross Section
- Set as Default: End Area Volume
- Set as Default: Triangle Volume
- Set as Default: Roadway Visibility
- Set as Default: Survey
- Set as Default: Roadway Design
- Set as Default: Superelevation
- Set as Default: Template Library

### Horizontal Alignment Review

Report Created: 10/11/2007  
Time: 2:45pm

**Project:** Ramp E-287

**Description:**

**File Name:** D:\data\Ramp E287 - Prestressed Concrete

**Last Revised:** Richard.Bradshaw 10/11/2007 2:28:40 PM

**Input Grid Factor:** 1.00000000 **Note:** All units in this report are

**Alignment Name:** Ramp E-287

**Alignment Description:**

**Alignment Style:** Default

	Station	Northing	Easting
Element: Linear			
POB (pi0)	6+50.00	392827.606	2055811.372
PC ( )	8+69.27	392895.958	2056019.715
Tangential Direction:	N 71°50'12" E		
Tangential Length:	219.269		
Element: Circular			
PC ( )	8+69.27	392895.958	2056019.715
PI ( )	10+54.63	392953.740	2056195.840
CC ( )	12+37.94	391534.937	2056466.231
PT ( )	12+37.94	392964.786	2056380.872
Radius:	1432.394		
Delta:	14°44'49" Right		
Degree of Curvature (Arc):	4°00'00"		
Length:	368.674		
Tangent:	185.361		
Chord:	367.657		
Middle Ordinate:	11.845		
External:	11.944		

### Format Options

Mode	Precision	Format	
Northing/Easting:	0.123		
Elevation:	0.123		
Angular:	Degrees	0	ddd^mm'ss.s" <input type="checkbox"/> Include Angular Suffix
Slope:	0.1234	50%	
Use Alternate Slope if Slope Exceeds:	10.0000%		
Alternate Slope:	0	2.0:1	
Linear:	0.123		
Station:	0.12	ss+ss.ss	
Acres/Hectares:	0.123		
Area Units:	0		
Cubic Units:	0	<input checked="" type="checkbox"/> Convert to Cubic Yards	
Direction:	Bearings	0	ddd^mm'ss.s"
Face:	Right Face		
Vertical Observation:	Zenith		

Close Help



# What's available in XML?

- Geometry
  - Horizontal
  - Vertical
- Surfaces
- Cross sections
- Volumes
- Survey
- Others





# Geometry

- Alignments
  - Horizontal
  - Vertical
  - Cant
  - Events
    - » Including regression points
    - » Including computed events
  - Cogo points
- Turnouts
- Light rail manufacturing



# Geometry Report

## Horizontal and Vertical Alignment Review Report

Report Created: 10/11/2007  
Time: 2:52pm

**Project:** Ramp E-287  
**Description:**  
**File Name:** D:\data\Ramp E287 - Prestressed Concrete\Ramp E-287.alg  
**Last Revised:** Richard Bradshaw 10/11/2007 2:43:19 PM  
**Input Grid Factor:** 1.00000000 **Note:** All units in this report are in feet unless specified otherwise

**Horizontal Alignment:** Ramp E-287  
**Horizontal Description:**  
**Horizontal Style:** Default

		Station	Northing	Easting
Element: Linear				
POB	(p0)	6+50.00	392827.606	2055811.372
PC	( )	8+69.27	392895.958	2056019.715
Tangential Direction:		N 71°50'12" E		
Tangential Length:		219.269		
Element: Circular				
PC	( )	8+69.27	392895.958	2056019.715
PI	( )	10+54.63	392953.740	2056195.840
CC	( )	391534.937	2056466.231	
PT	( )	12+37.94	392964.786	2056380.872
Radius:		1432.394		
Delta:		14°44'49" Right		
Degree of Curvature (Arc):		4°00'00"		
Length:		368.674		

		Station	Elevation	Northing	Easting
Element: Linear					
	POB	6+50.00	628.140	392827.606	2055811.372
	PVC	6+74.00	627.545	392835.087	2055834.176
	Tangent Grade:	-2.4800%			
	Tangent Length:	24.000			
Element: Symmetrical Parabola					
	PVC	6+74.00	627.545	392835.087	2055834.176
	PVI	8+48.00	623.230	392889.328	2055999.506
	PVT	10+22.00	625.293	392935.749	2056167.097
	VLOW	9+09.44	624.626		
	Length:	348.000			
	Entrance Grade:	-2.4800%			
	Exit Grade:	1.1856%			

**Geometry Report**

Horizontal Alignments

Include: \*

Selected:

Name	Style
PED 298	pedestal
PED 299	pedestal
PED 300	pedestal
Ramp E-287	Default
SA1	slab
SA2	slab
SA3	slab
SA4	slab
SA5	slab

Cogo Points

Include:

Selected:

Name	Description	Style

Include Vertical Alignments  
 All  Active

Interval: 50.00

Include Cant Alignments  
 All  Active

Limits  
 Station  
 Start: 0+00.00  
 Stop: 0+00.00

Include Vertical Event Points

Include Horizontal Event Points

# Station and Offset

- Why two commands ***Station Base*** and ***Station Offset***?
- What's the difference?
  - Primarily it has to do with whether you increment along the active alignment / feature or the selected alignments / features





# Station Base Report

- Increments along the *From* object
- Allows you to define station limits

**Transverse Feature Report**

Report Created: 10/15/2007  
Time: 11:38am

Rail Modeling\railway.alg  
Bradshaw 10/15/2007 11:23:38 AM

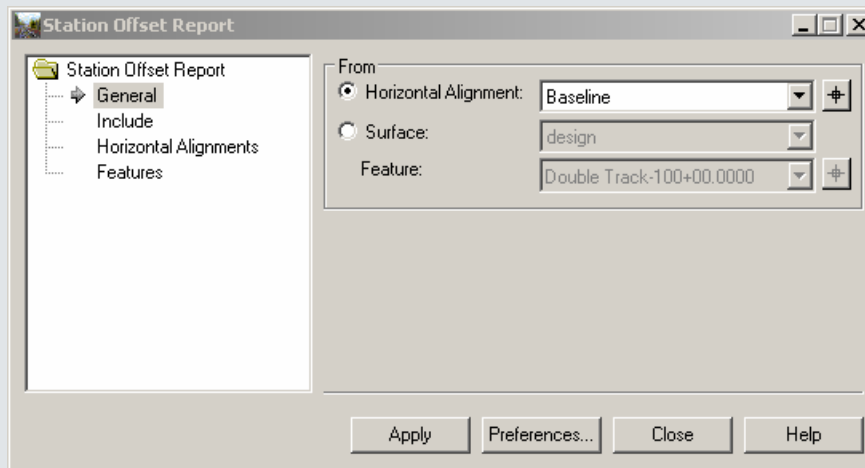
Note: All units in this report are in feet unless specified otherwise.

Station	Offset	Elevation	Northing	Easting
0+00.00	-35.628	101.838	10344.231	4594.046
0+00.00	-33.583	100.816	10342.665	4592.731
0+00.00	-31.583	100.816	10341.133	4591.446
0+00.00	-27.583	102.816	10338.069	4588.875
0+00.00	-26.127	103.544	10336.954	4587.939
100+00.00	-24.386	103.616	10336.620	4586.820
100+00.00	-20.083	105.768	10332.323	4584.054
100+00.00	-14.750	104.018	10328.238	4580.625
100+00.00	-9.417	105.768	10324.152	4577.197
100+00.00	-7.375	104.747	10322.588	4575.885
100+00.00	-7.375	104.325	10322.588	4575.885
100+00.00	-7.375	103.658	10322.588	4575.885
100+00.00	-5.333	105.768	10321.024	4574.573
100+00.00	0.000	104.018	10316.939	4571.144



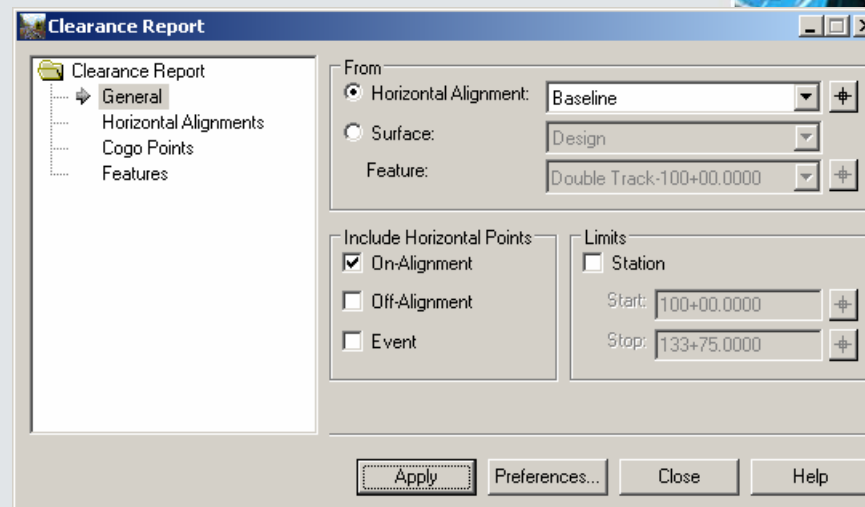
# Station Offset Report

- Increments along the *Selected* object



# Clearance Report

- Computes station and offset from actual data
  - Horizontal cardinal points
  - Cogo points
  - Features





# Stakeout Report

**Stakeout Report**

- Stakeout Report
  - General
  - Horizontal Alignments
  - Cogo Points
  - Features

From:

Horizontal Alignment: Traverse

Occupied Point:

Backsight Point:

Include Horizontal Points:

On-Alignment  Off-Alignment

Event

Interval: 50.0000

Offset: 50.0000

Apply Preferences... Close Help

## Centerline Stakeout Report

Report Created: 10/15/2007  
Time: 12:25pm

Modeling\railway.alg  
adshaw 10/15/2007 12:24:09 PM

**Note:** All units in this report are in feet unless specified otherwise.

Offset From Centerline	BS	OC	FS Station	Angle Right	Distance
0.000	trv102	trv101	100+00.00	325°25'42"	133.880
0.000	trv102	trv101	102+00.00	359°20'37"	296.628
0.000	trv102	trv101	103+50.00	6°20'19"	439.986
0.000	trv101	trv102	111+75.00	194°34'32"	293.204
0.000	trv102	trv103	113+25.00	26°24'24"	270.616
0.000	trv103	trv104	120+25.00	30°37'32"	218.664
0.000	trv103	trv104	121+75.00	60°55'08"	87.178
0.000	trv104	trv105	127+75.00	301°11'14"	114.603
0.000	trv104	trv105	129+25.00	247°49'12"	186.858
0.000	trv105	trv106	133+75.00	32°23'50"	115.544
0.000	trv102	trv101	100+00.00	325°25'42"	133.880

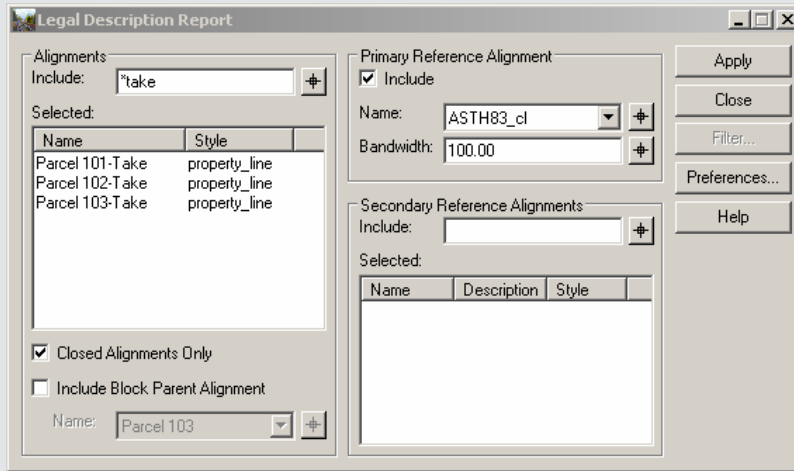


# *Legal Description Report*

- Simple boundary
  - Includes typical distances, bearings and curve data
  - Includes areas
  - Includes closures
- Right-of-way takes & easements
  - Include references (i.e. station & offsets) to multiple alignments



# Legal Description Report



**Alignment Description:**

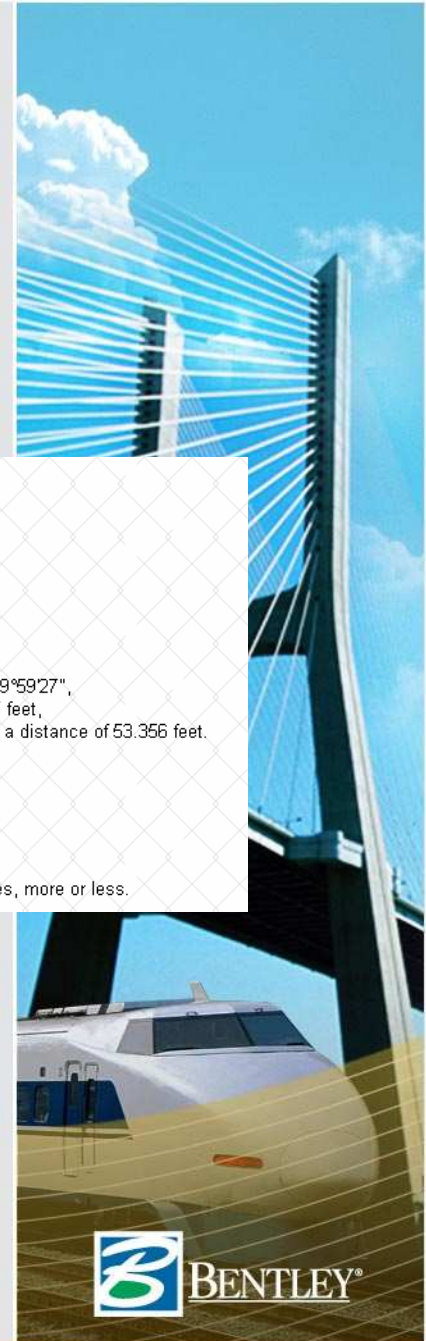
Beginning at a point 16.129 feet left of ASTH83\_cl at Station 14+90.29 thence S 90°00'00" E a distance of 53.772 feet to a point 36.910 feet right of ASTH83\_cl at Station 14+80.54 thence S 0°00'00" W a distance of 92.202 feet to a point 11.000 feet left of ASTH83\_cl at Station 13+90.92 thence along an arc 53.627 feet to the right, having a radius of 153.700 feet, the chord of which is N 37°36'54" W for a distance of 53.356 feet, to a point 11.000 feet left of ASTH83\_cl at Station 14+40.71 thence N 31°23'27" W a distance of 10.154 feet to a point 12.000 feet left of ASTH83\_cl at Station 14+50.06 thence N 29°31'47" W a distance of 8.044 feet to a point 13.000 feet left of ASTH83\_cl at Station 14+57.40 thence N 25°54'20" W a distance of 8.726 feet to a point 14.000 feet left of ASTH83\_cl at Station 14+65.32 thence N 19°45'19" W a distance of 13.052 feet to a point 15.000 feet left of ASTH83\_cl at Station 14+77.14 thence N 16°27'56" W a distance of 10.638 feet to a point 16.000 feet left of ASTH83\_cl at Station 14+86.69 thence N 10°17'00" W a distance of 4.001 feet to a point 16.129 feet left of ASTH83\_cl at Station 14+90.29 and the POINT OF BEGINNING.

The above described parcel contains ± 0.069 acres (3022 sq. ft.)

**Alignment Name:** Parcel 101-Take

**Alignment Description:**

Commencing at 32, said point being the POINT OF BEGINNING; thence S 90°00'00" E, 53.772 feet, thence S 0°00'00" W, 92.202 feet, to a point on a curve 36, having a radius of 153.700 feet and a central angle of 19°59'27", thence along the arc of said curve a distance of 53.627 feet, said arc subtended by a chord bearing N 37°36'54" W, a distance of 53.356 feet, thence N 31°23'27" W, 10.154 feet, thence N 29°31'47" W, 8.044 feet, thence N 25°54'20" W, 8.726 feet, thence N 19°45'19" W, 13.052 feet, thence N 16°27'56" W, 10.638 feet, thence N 10°17'00" W, 4.001 feet, and the POINT OF BEGINNING; Containing 0.069 acres, more or less.





# Map Check Report

- Multiple parcels at one time
- Curvilinear & angular data is rounded

**File Name:** D:\program files\Bentley\InRoads Group V8.11\Sample Data\Site\Elite Center.alg

**Last Revised:** Richard.Bradshaw 10/11/2007 1:42:10 PM

**Input Grid Factor:** 1.00000000 **Note:** All units in this report are

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**Alignment Name:** Elite Center  
**Alignment Description:** Property Boundary

Point	Angle	Distance	X	Y
POB (1)			10038.683	9773.608
	S 89°40'00" W	252.54		
PI (2)			10037.214	9521.072
	N 0°55'02" E	360.09		
PI (3)			10397.254	9526.837
	N 89°40'00" E	210.56		
PI (4)			10398.479	9737.394
	S 26°51'50" E	90.04		
PI (5)			10318.152	9778.082
	S 0°55'02" W	279.50		
POE (1)			10038.683	9773.608

**POE (1)** 10038.683 9773.608 0.000

**Northing Error:** 0.012 ft  
**Easting Error:** -0.003 ft  
**Closing Direction:** S 11°56'56" E  
**Closing Distance:** 0.013 ft  
**Closed Area:** 89223 sq ft 2 ac  
**Perimeter:** 1192.735 ft  
**Precision:** 94586.253

**Map Check Report**

Alignments Include:

Selected:

Name	Description	Style
Elite Center	Property Bo... property_li...	

Closed Alignments Only

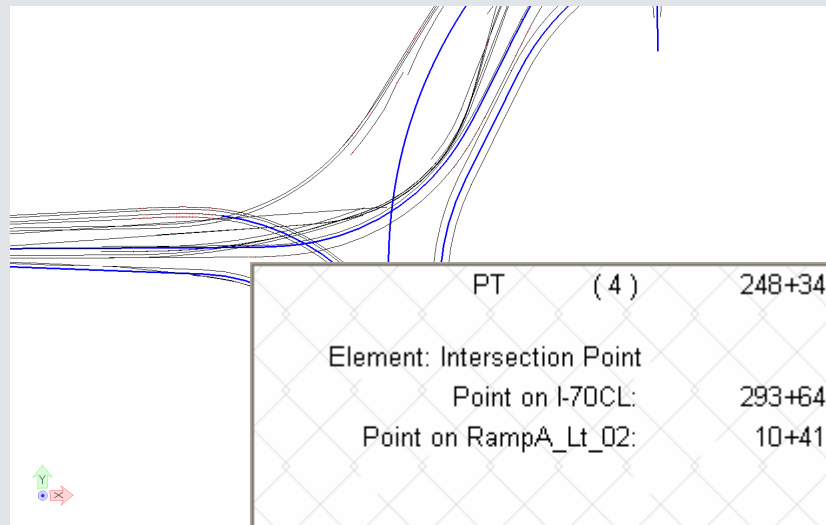
Output Precision  
 Linear: 0.12  
 Direction: 0

Apply  
Close  
Filter...  
Preferences...  
Help



# Intersecting Alignment Stations Report

- Complements *Drafting* > *Intersecting Alignment Note*



PT	( 4 )	248+34.2718	170
Element: Intersection Point			
Point on I-70CL:		293+64.1663	170
Point on RampA_Lt_02:		10+41.3649	
Element: Intersection Point			
Point on I-70CL:		293+89.4762	1707576.3922 3101050.6055
Point on RampA_Lt_01:		15+26.7274	
TS	( 25 )	293+97.2929	1707584.2083 3101050.5062
Tangential Direction: N 0°42'39.0" W			

**Intersecting Alignment Stations Report**

Horizontal Alignment:

Intersecting Alignments:

Include:

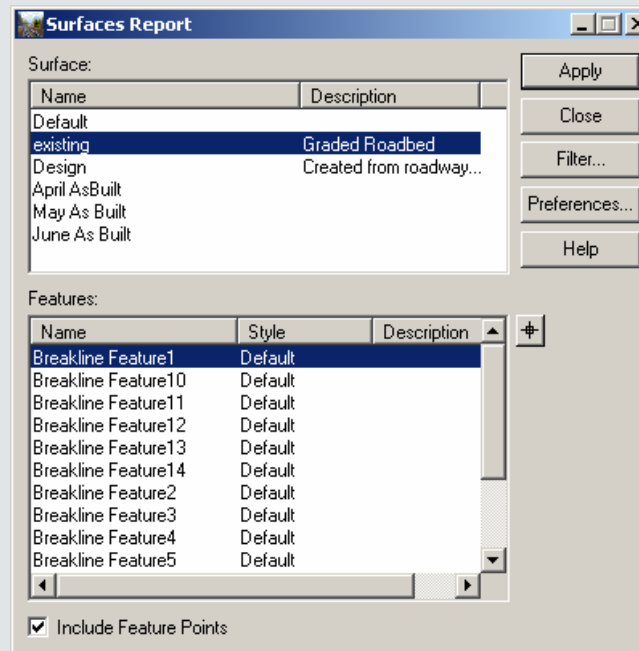
Selected:

Name	Description
Ramp H	6/14/01 wcv
RampA_Lt_01	wcv7-12-02
RampA_Lt_02	wcv7-12-02
RampA_Rt_01	wcv7-12-02
RampH_LT_01	wcv7/18/02
RampH_RT_01	wcv7/18/02
ex ramp A asb 2	ex. ramp A (R...



# Surfaces Report

- Pretty basic reporting, since most surface data is related to cross-sections, volumes, etc.





# Surface Check Report

- Quality checking of a surface to allowable tolerances
- Similar to **Compare Surface**

	7648.007	9341.183	130.705	130.705	0.000	BELOW	0.000	IN	pavement
Pavement 234									
Pavement 235	7669.436	9328.307	130.893	130.893	0.000	BELOW	0.000	IN	pavement
Pavement 236	7690.666	9315.431	131.080	131.080	0.000	BELOW	0.000	IN	pavement

Points Outside of DTM									
<b>Total Points Outside</b>	<b>0</b>								

Summary		
	Group 1	Group 2
Points	170	136
In Tol	170	136
Out of Tol	0	0
% In Tol	100%	100%
% Out Tol	0%	0%
Max Above	0.000	0.000
Max Below	0.000	0.000

Surface Check Report

Surface: Design

First Check Points

Include: [ ]

Selected:

Name	Style
Ground 101	ground
Ground 102	ground
Ground 103	ground
Ground 104	ground
Ground 105	ground
Ground 106	ground
Ground 107	ground
Ground 108	ground
Ground 109	ground

Tolerance: 0.2000

Second Check Points

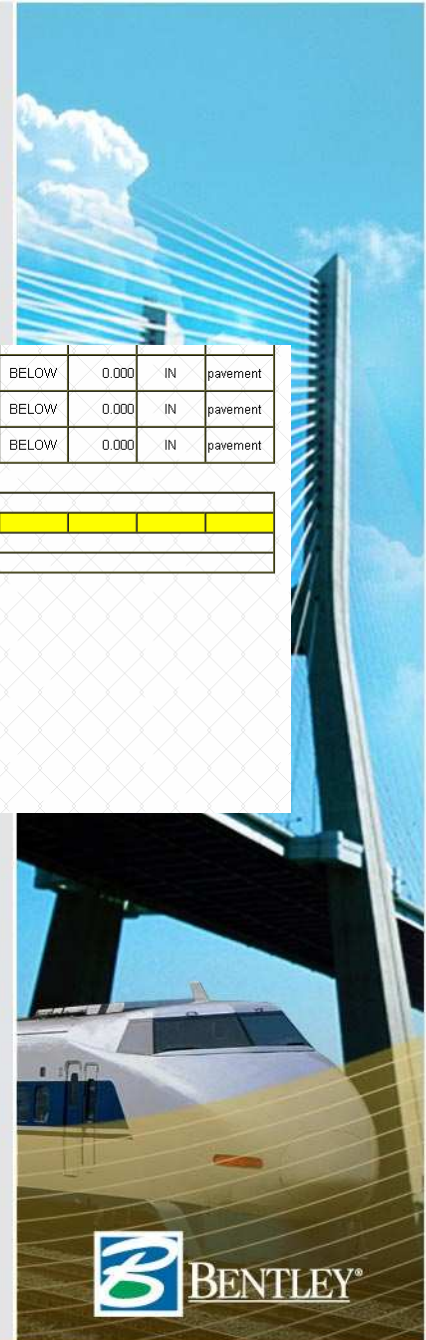
Include: [ ]

Selected:

Name	Style
Pavement 101	pavement
Pavement 102	pavement
Pavement 103	pavement
Pavement 104	pavement
Pavement 105	pavement
Pavement 106	pavement
Pavement 107	pavement
Pavement 108	pavement
Pavement 109	pavement

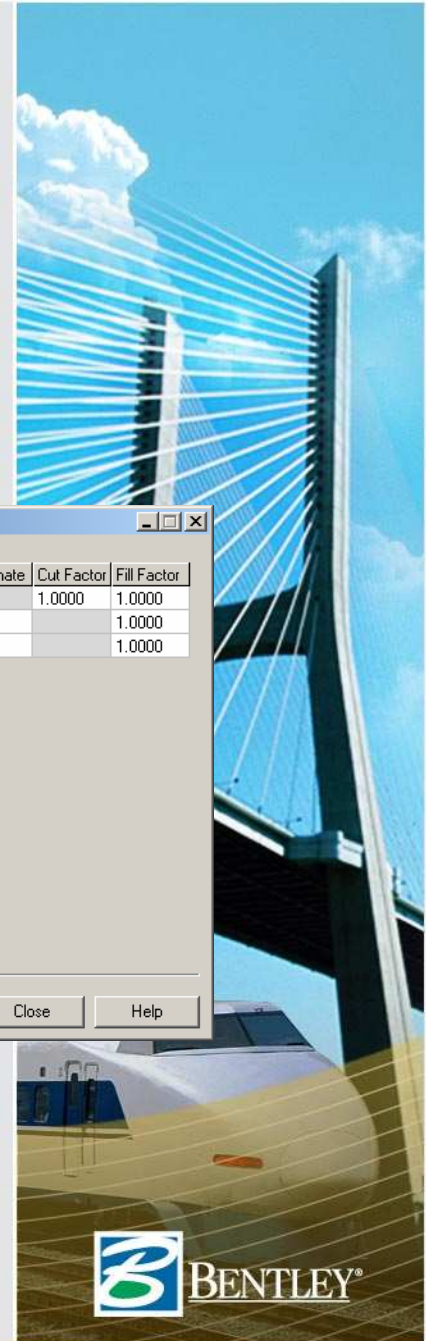
Tolerance: 0.0100

Buttons: Apply, Close, Filter..., Preferences..., Help



# End-Area Volumes

- Volumes from cross-section sets



**End-Area Volumes**

Object	Source	Parent	Classification	Mass Ordinate	Cut Factor	Fill Factor
existing	Surface				1.0000	1.0000
Ballast	Component	Design	Designed	Exclude		1.0000
Subballast	Component	Design	Designed	Exclude		1.0000

**End-Area Volumes**

File

Cross Section Set: **Baseline**

Tree View:

- End-Area Volumes
  - General
  - Unsuitable Materials by Feature
  - Unsuitable Materials by Station
  - Classifications
  - Compaction/Expansion
  - Volume Exceptions
  - Added Quantities
  - Forced Balance
  - As Built
  - Annotation

Surface | Type

<input checked="" type="checkbox"/> existing	Existing
<input checked="" type="checkbox"/> Design	Design

Method

Standard

Correct for Curvature

Station Limits

Use Station Limits

Start Station: 100+00.0001

Stop Station: 100+00.0001

Imperial Units

Cubic Yards  Cubic Feet

Ignore Areas Smaller Than: 0

Create XML Report

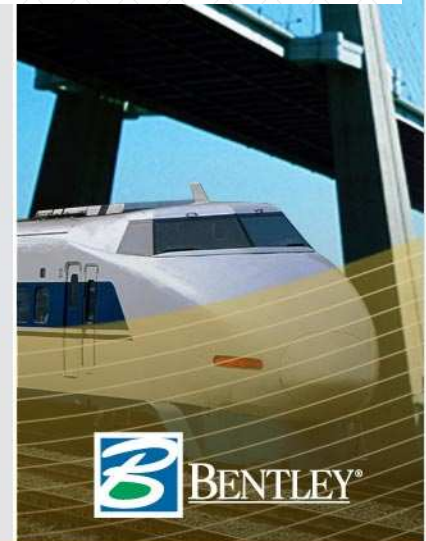
Buttons: Apply, Preferences..., Close, Help

# Multiple *looks* at the data

- Volumes
- Grade book
- Many style sheets!

Station	Type	Area	Volume	Factor	Adjusted Volume	Included in Mass Ordinate?	Mass Ordinate
<b>100+00.00</b>							
	Normal Cut:	133	0	1.000	0	Yes	0
	Normal Fill:	6	0	1.000	0	Yes	
	Added Cut:		0	1.000	0	Yes	
	Added Fill:		0	1.000	0	Yes	
	Ballast:	50	0	1.000	0	No	
	Subballast:	26	0	1.000	0	No	
<b>101+00.00</b>							
	Normal Cut:	79	393	1.000	393	Yes	278
	Normal Fill:	56	115	1.000	115	Yes	
	Added Cut:		0	1.000	0	Yes	
			0	1.000	0	Yes	
			184	1.000	184	No	
			96	1.000	96	No	

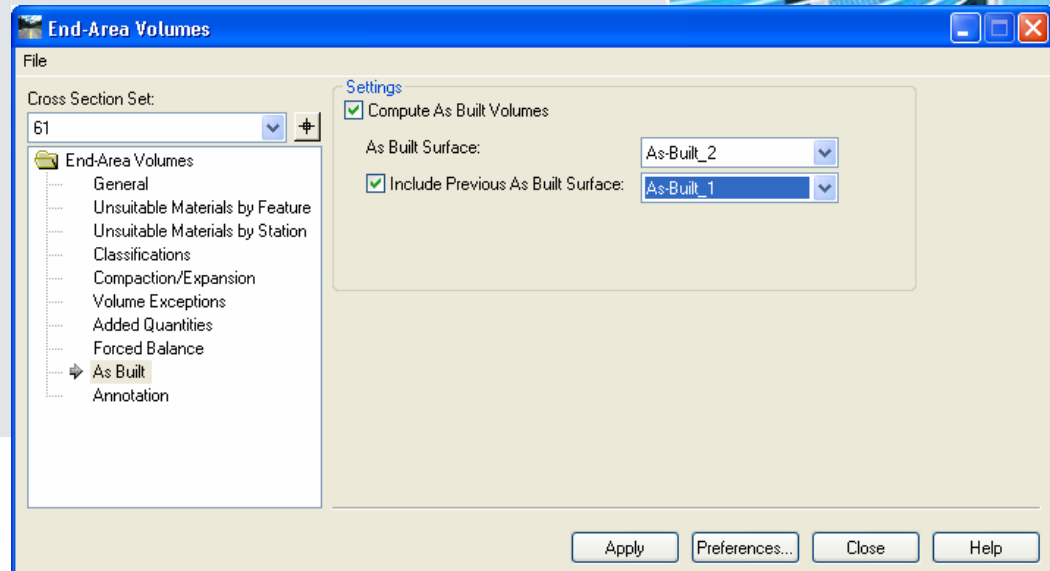
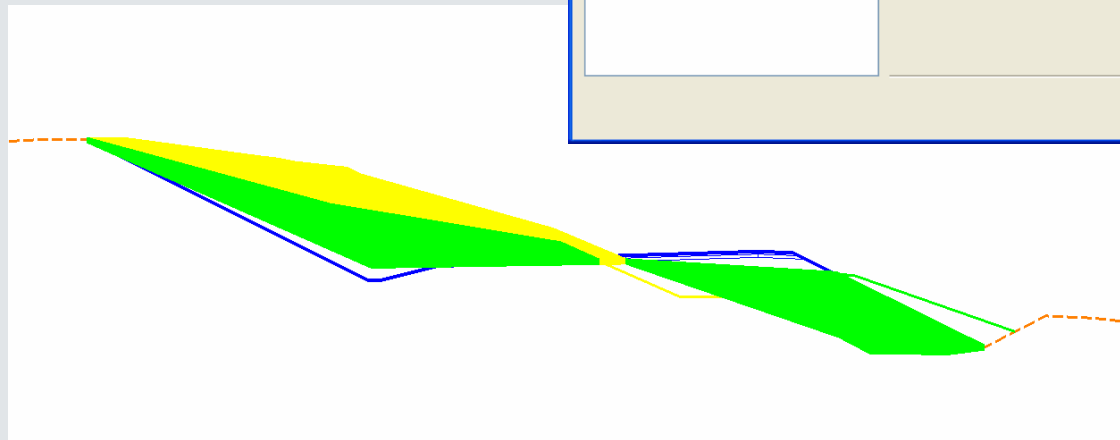
Baseline Station	Station Quantities								Mass Ordinate
	Cut				Fill				
Factor	Area	Volume	Adjusted	Factor	Area	Volume	Adjusted		
100+00.00	1.000	133	0	0	1.000	6	0	0	0
101+00.00	1.000	79	393	393	1.000	56	115	115	278
101+96.05	1.000		166	166	1.000		444	444	0
102+00.00	1.000	14	173	173	1.000	193	462	462	-11
103+00.00	1.000	6	37	37	1.000	141	618	618	-592
103+50.00	1.000	43	46	46	1.000	51	177	177	-724
104+00.00	1.000	67	102	102	1.000	34	78	78	-700
105+00.00	1.000	133	370	370	1.000	0	62	62	-393
105+77.91	1.000		393	393	1.000		0	0	0
106+00.00	1.000	140	504	504	1.000	0	0	0	111
107+00.00	1.000	23	301	301	1.000	29	54	54	359
107+64.53	1.000		27	27	1.000		386	386	0
108+00.00	1.000	0	43	43	1.000	294	598	598	-197
109+00.00	1.000	0	0	0	1.000	607	1669	1669	-1866
110+00.00	1.000	0	0	0	1.000	963	2907	2907	-4773
111+00.00	1.000	0	0	0	1.000	1044	3717	3717	-8490
111+75.00	1.000	0	0	0	1.000	800	2561	2561	-11051
112+00.00	1.000	0	0	0	1.000	688	689	689	-11740





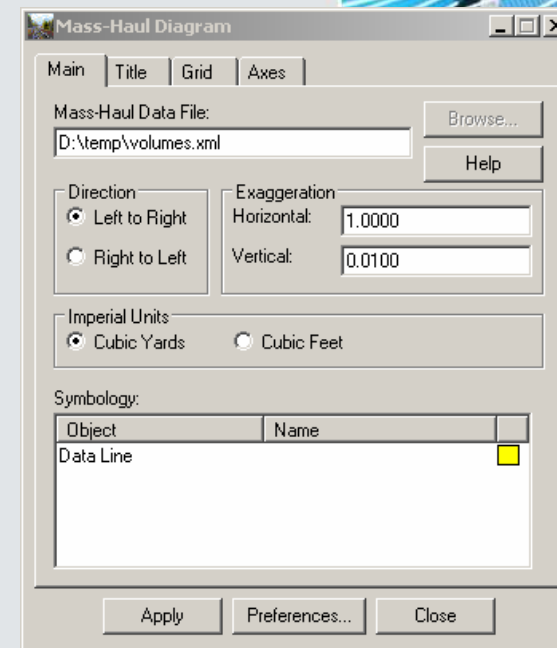
# End-Area Volumes & As Builts

- 1<sup>st</sup> month (yellow)
- 2<sup>nd</sup> month (green)
  - Computed to design lines not over-constructed lines!



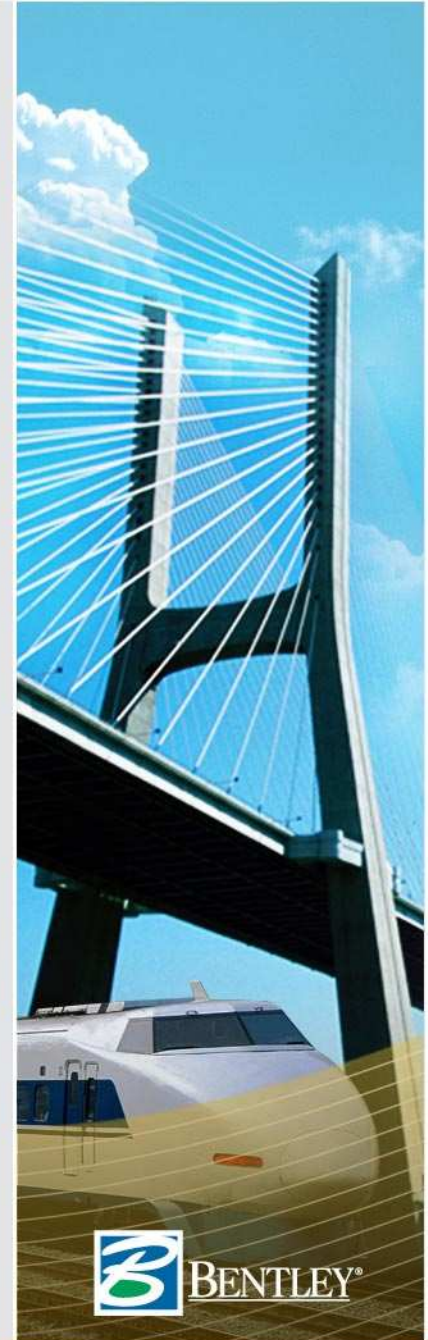
## Mass-Haul Diagram

- Save the results of **End Area Volumes** in the **Report Browser** (as a .xml file)
- Load the XML file in **Mass-Haul Diagram** to display the diagram



# InRoads Survey

- Complements *Text Export Wizard*
- Adjustments





# InRoads Storm & Sanitary

- Currently does not use XML but you can still create user definable reports

Results

Data File: Renfro Drainage

Pipe ID	Shape	Material	Width (in)	Height (in)	Slope (%)
P0	Circular	Concrete	24.00	24.00	2.21
P4	Circular	RC C76-A	12.00	12.00	1.21
P5	Circular	RC C76-A	24.00	24.00	0.41
P6	Circular	RC C76-A	12.00	12.00	1.21
P7	Circular	RC C76-A	12.00	12.00	1.11
P8	Circular	RC C76-A	12.00	12.00	1.01
P9	Circular	RC C76-A	12.00	12.00	0.51
P10	Circular	RC C76-A	12.00	12.00	0.50
P11	Circular	RC C76-A	12.00	12.00	0.50
P29	Circular	RC C76-A	12.00	12.00	0.74
P32	Circular	RC C76-A	18.00	18.00	2.58
P33	Circular	RC C76-A	18.00	18.00	0.92
P36	Circular	RC C76-A	15.00	15.00	1.68
P37	Circular	RC C76-A	18.00	18.00	0.50
P38	Circular	RC C76-A	18.00	18.00	1.41
P39	Circular	RC C76-A	18.00	18.00	1.01
P41	Circular	RC C76-A	15.00	15.00	0.50
P42	Circular	RC C76-A	18.00	18.00	2.73
P43	Circular	RC C76-A	15.00	15.00	1.02
P44	Circular	RC C76-A	15.00	15.00	1.47
P45	Circular	RC C76-A	18.00	18.00	2.21
P46	Circular	RC C76-A	18.00	18.00	2.06
P47	Circular	RC C76-A	18.00	18.00	1.00
P48	Circular	RC C76-A	12.00	12.00	0.95
P49	Circular	RC C76-A	15.00	15.00	0.83
P50	Circular	RC C76-A	15.00	15.00	10.22
P51	Circular	RC C76-A	15.00	15.00	0.96
P52	Circular	RC C76-A	15.00	15.00	0.98
P53	Circular	RC C76-A	15.00	15.00	3.21

Drainage Reports

Main | Formats

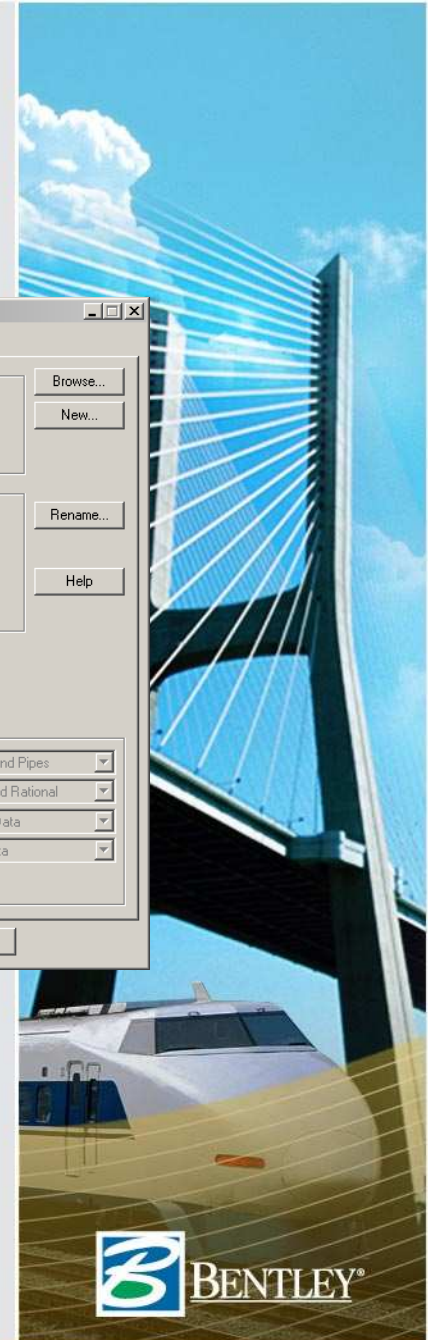
Report Library:  
 Path: D:\Documents and Settings\Richard.Bradshaw\UTC  
 2007\drainage\Report.rpl  
 Name: Reports  
 Description: Delivered report formats

Structures for Report:  
 Outfall: [ ] [ ]  
 Between: [ ] [ ]  
 And: [ ] [ ]  
 Structure Type: Pipes [ ]

Report All Inverts at Structures  
 Display Invert Direction Labels  
 Label Location: After Invert [ ]

Formats:  
 Pipes: Physical data [ ] Inlets: Inlets and Pipes [ ]  
 Channels: Physical data [ ] Areas: Modified Rational [ ]  
 Culverts: Physical data [ ] Zones: Zone Data [ ]  
 Manholes: ABCPhys and Dgn data [ ] Utilities: Util Data [ ]  
 Pumps: Phys and Dgn data [ ]

Apply | Preferences... | Close



# Drainage Reports

The screenshot displays the 'Drainage Reports' application window. The 'Main' tab is active, showing a list of report formats. The 'Physical data' format is selected, and the 'Edit Report Format' dialog box is open for it.

**Drainage Reports - Main Tab**

Name	Description	Structure
Inlet Styles		Inlets
Styles		Pipes
Util Data	ID, Type, Shape, Size	Utilities
Zone Data	ID, Area, Type, Denis, Pop, Flow	Zones
SCS Method	ID, Area, CN, ToC, Q	Areas
Modified Rational	ID, Attach To, A, C, I, Q	Areas
Design data	ID, Flow, Bypass, Efec, Cap, Sp...	Inlets
Physical data	ID, Type, Grate, Vault	Inlets
Inlets and Pipes	ID, Type, Grate, Vault, InvN, Inv...	Inlets
Phys and Dgn dat...	ID, MH_ID, Head, Cap, Disch	Pumps
Phys and Dgn dat...	ID, Shape, Size, Matl, Headloss...	Manholes
ABCPhys and Dgn...	ID, Shape, Size, Matl, Headloss...	Manholes
Design data	ID, Flow, Control, Cap, Vel	Culverts
Physical data	ID, Shape, Size, No Barrels, Matl	Culverts
Design data	ID, Flow, Vel, Depth, Top Width	Channels
Physical data	ID, Shape, Matl	Channels
Design data	ID, Flow, Vel, Cap	Channels
Physical data	ID, Shape, Size, Matl	Channels

**Edit Report Format - Physical data**

Format Name: Physical data  
 Format Description: ID, Shape, Size, Matl  
 Structure Type: Pipes  
 Lines per Page: 50

Report Data:

Attribute: Angle  
 Column Width: 12  
 Precision: 0.12  
 Sum Column:  No  Yes

Attribute	Header	Column Wi...	Precision	Sum
ID	Pipe ID	16	-	-
Shape	Shape	12	-	-
Material	Material	20	-	-
Width	Width	10	2	No
Height	Height	12	2	No
Slope	Slope	12	2	No
PipeSlopeLength	PipeSlopeLength	18	2	Yes



# InRoads Bridge

- Create the geometric model
  - Abutment / Pier / Bearing Lines
  - Girders
  - Define the girder's type
    - » Eliminates a lot of geometric calculations
- Compute clearances between the existing surface (under the bridge) and the superstructure.
- Display girders in sections and plan views





# InRoads Bridge Reports

**Reports**

Main | Slab Elevations | **Girder Elevations** | Vertical Clearances | Screed Elevations

Include Slab Elevations Help

Offsets

	From Alignment	Offset
<input checked="" type="checkbox"/> Left Slab Fascia:	SF1	-10.00
<input checked="" type="checkbox"/> Left Edge of Pavement:	SF1	0.00
<input checked="" type="checkbox"/> Right Edge of Pavement:	SF2	0.00
<input checked="" type="checkbox"/> Right Slab Fascia:	SF2	12.00

Limits

Station Interval: 10.00

Include Abutment/Pier Lines

Start: 6+50.00

Stop: 22+00.00

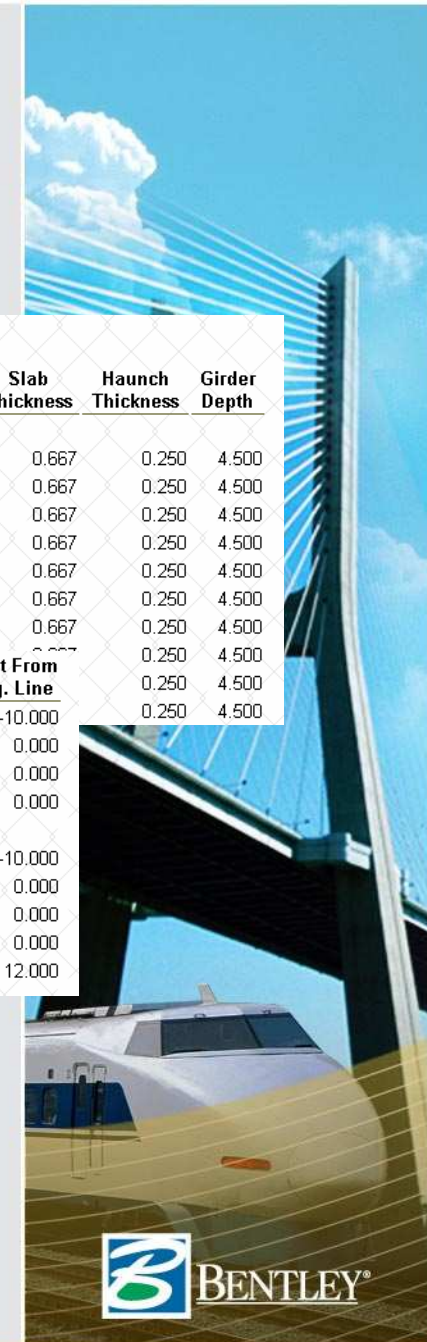
Apply Close

Point	Relative Station (Distance Along)	Top of Slab	Top of Girder	Bottom of Girder	Slab Thickness	Haunch Thickness	Girder Depth
<b>Girder 1 (G1)</b>							
1	0.708	627.839	626.923	622.423	0.667	0.250	4.500
2	10.523	627.606	626.690	622.190	0.667	0.250	4.500
3	20.337	627.383	626.467	621.967	0.667	0.250	4.500
4	30.152	627.170	626.254	621.754	0.667	0.250	4.500
5	39.966	626.968	626.051	621.551	0.667	0.250	4.500
6	49.781	626.775	625.858	621.358	0.667	0.250	4.500
7	59.595	626.592	625.676	621.176	0.667	0.250	4.500
8	69.409	626.420	625.503	620.993	0.667	0.250	4.500
9	79.223	626.257	625.330	620.813	0.667	0.250	4.500
10	89.037	626.094	625.157	620.633	0.667	0.250	4.500

Transverse Line	Station	Offset	Elevation	Northing	Easting	Longitudinal Line	Offset From Long. Line
BT1	6+82.42	-29.000	626.528	392865.266	2055833.133	SF1	-10.000
BT1	6+79.21	-19.000	627.911	392854.766	2055833.207	SF1	0.000
BT1	6+73.13	0.000	627.567	392834.816	2055833.349	Ramp E-287	0.000
BT1	6+70.89	7.000	627.440	392827.466	2055833.402	SF2	0.000
BT2	7+68.00	-29.000	624.861	392891.945	2055914.452	SF1	-10.000
BT2	7+68.00	-19.000	626.173	392882.443	2055917.569	SF1	0.000
				34.390	2055923.492	Ramp E-287	0.000
				57.739	2055925.674	SF2	0.000
				46.336	2055929.415	SF2	12.000

**Span 1**

Girder	Bearing Line	Station	Offset	Northing	Easting	Bearing Depth	Beam Seat Elevation
G1	Back	6+78.96	-16.000	392851.837	2055833.903	0.083	622.339
G1	Ahead	7+67.29	-16.000	392879.372	2055917.832	0.083	620.606
G2	Back	6+76.83	-9.333	392844.837	2055833.953	0.083	622.218
G2	Ahead	7+67.29	-9.333	392873.037	2055919.910	0.083	620.433
G3	Back	6+74.69	-2.667	392837.837	2055834.003	0.083	622.097
G3	Ahead	7+67.29	-2.667	392866.703	2055921.988	0.083	620.259
G4	Back	6+72.56	4.000	392830.837	2055834.053	0.083	621.977
G4	Ahead	7+67.29	4.000	392860.368	2055924.066	0.083	620.086



## Other XML files

- XIN
- ITL
- IRD
  - Which can be loaded into the Report Browser for QC



# Report Browser & .XIN

## Missing Named Symbologies Report

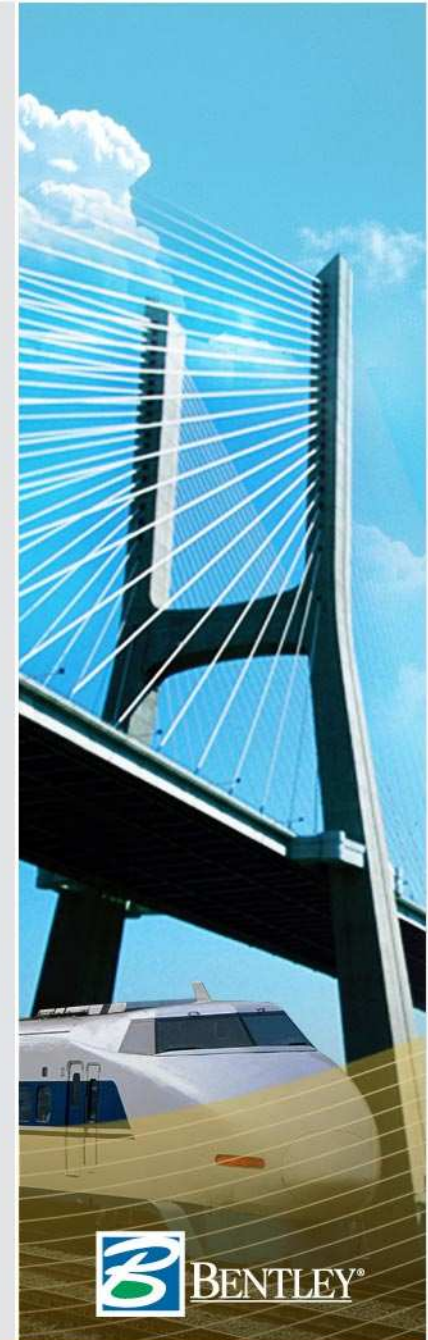
Report Created: 10/15/2007  
Time: 9:43am

Missing Named Symbology	Used By	Type
	Lane line	FeatureStyle

## Named Symbologies Use Report

Report Created: 10/15/2007  
Time: 9:44am

Named Symbology	Used By	Type
<b>abutment</b>	abutment	Geometry Line Feature Style
<b>Aggregate</b>	Aggregate	Surface Feature Style
<b>Annotation-Plan</b>	Default	ViewSurfaceElevations Preference
	Default	ViewSurfaceElevations Preference
	Default	ViewClosedArea Preference
	Default	StationBaseClearanceAnnotation Preference
	Default	StationBaseClearanceAnnotation Preference
	Default	GeneralTracking Preference
	Default	GeneralTracking Preference
<b>Annotation-Profile</b>		
<b>Annotation-XCS</b>		
<b>Ballast</b>	Ballast	Surface Feature Style
<b>Base</b>	Base	Surface Feature Style
<b>BB</b>	BB	Surface Feature Style
	BB	Survey Feature Style
<b>BBERM</b>	BBERM	Survey Feature Style
<b>BBOARD</b>	BBOARD	Survey Feature Style
<b>BC</b>	BC	Survey Feature Style





# Report Browser & .IRD

**File Name:** D:\data\Rail Modeling\railway.ird

**Corridor:** Single Track

**Template:** Single Track - Tangent - Ballasted

**Start Station:** 100+00.00 **Interval:** 10.000000

Component: Ballast

Description:

Point Name	X	Y	Type	----- Constraints -----		Slope	Width	Delta Y
				Value	Parent			
B2	-5.250	-0.583	Horizontal Vector	-5.250 -5.250	P&L Left Rail	50.0000%	-4.296	-2.148
B3	-9.546	-2.731	Slope Slope	50.0000% 4.1667%	B2 SB1	4.1667%	9.546	0.398
SB1	0.000	-2.333	None None			-4.1667%	9.546	-0.398
B4	9.546	-2.731	Slope Slope	-4.1667% -50.0000%	SB1 B5	-50.0000%	-4.296	2.148
B5	5.250	-0.583	Horizontal Vector	5.250 5.250	P&L Left Rail	0.0000%	10.500	0.000

Component: Subballast

Description:

Point Name	X	Y	Type	----- Constraints -----		Slope	Width	Delta Y
				Value	Parent			
SB1	0.000	-2.333	None None			4.1667%	11.545	-0.481
SB2	11.545	-2.814	Slope Slope	50.0000% 4.1667%	SB3 SB1			





# Tips and Tricks

- “At one time I could do annotation with reports” Can I still do that?
- Simple answer is no! Instead use ***Geometry > Utilities > Inverse Direction***
  - Inverse point to point
  - Radial inverse
  - Tangent offset
    - » Check on Annotation
- Or
  - ***Horizontal Annotation***
  - ***View Station Base / Clearance Annotation***
  - ***Drafting Tools***



## Editing alignments via text...

- *Export* data to text, edit and *import* with ***Text Import Wizard***
  - Horizontal Curve Set
  - Vertical Curve Set
  - Cant



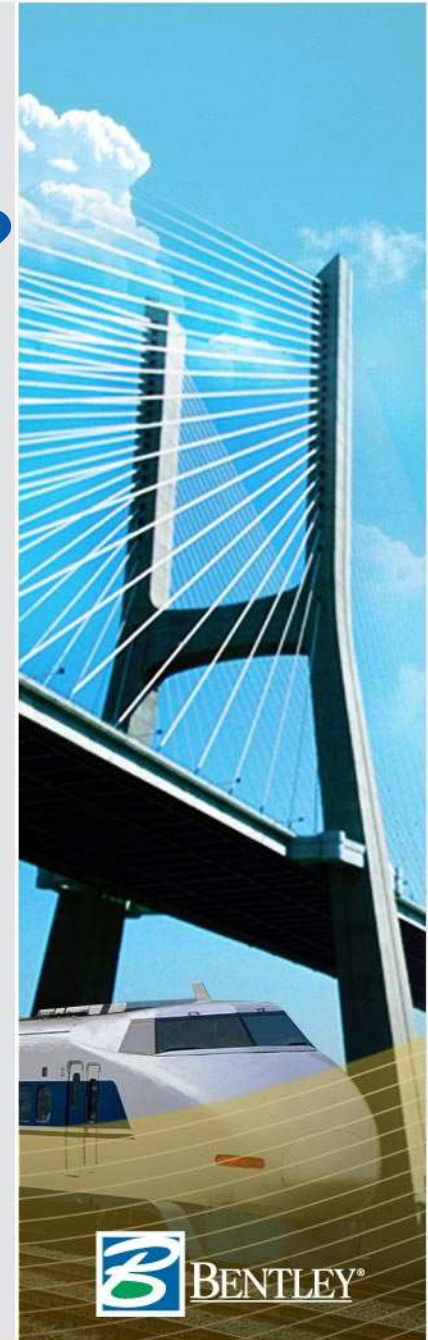
# Horizontal Tabling

- What is the relationship between styles and alternate styles and tabling?
  - Table everything
  - If the annotation does not fit then table some:
    - » Typical line / curve table
    - » Insertion of text into a symbol
    - » Point names as the line / curve table entry



## How to get it into a graphics file?

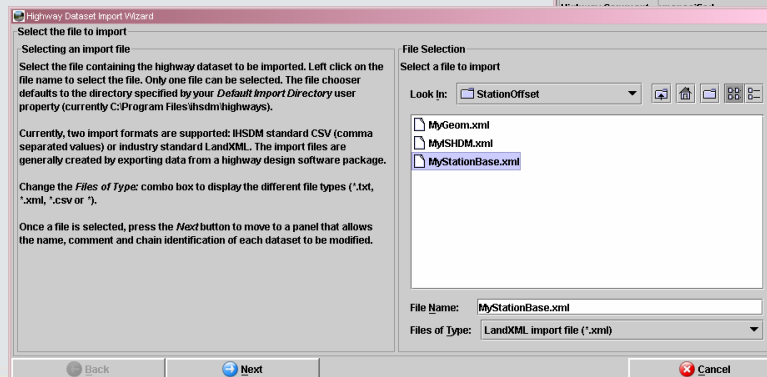
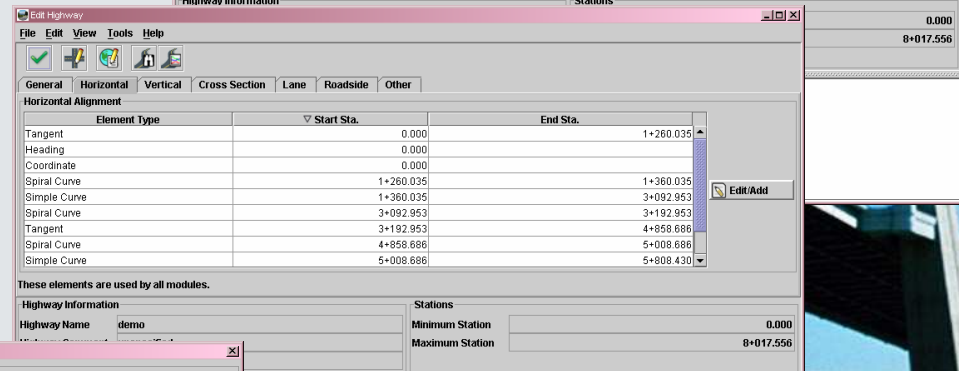
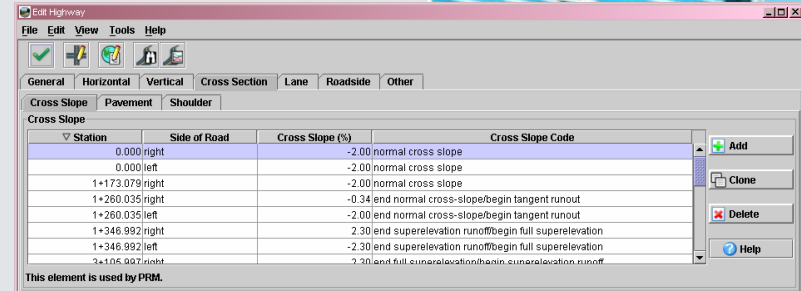
- Cut and paste the ASCII version of the data into the design file
  - From the **Report Browser** cut into the cut / paste buffer (i.e. <Ctrl> C)
  - In **MicroStation** paste the cut / paste buffer (i.e. <Ctrl> V )





# Export XML to IHSDM

- Utilizes **Station Base Report** and surface features
- IHSDMLandXML.xsl and following style sheet help exactly!



# Text Only Style Sheets

- Look at [\Program Files\Bentley\InRoads Group V8.9\XML Data\Creating ASCII Output Style Sheets.pdf](#)
- Look at [\Program Files\Bentley\InRoads Group V8.9\XML Data\Creating XML Lookup Table Style Sheets.pdf](#)



# Style Sheet Modifications

- Look at style sheets that are close to what you want!
  - It is always easier to start from something than nothing!
- Look at the schema
  - *\\Program Files\Bentley\InRoads Group V8.9\XML Data\Schemas\Documentation\InRoads Schema.chm*
- If all else fails contact us!



# Questions?

