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Customizing XSLs for XML Reporting

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What Reports are 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

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Understanding XML

- Extensible Markup Language (XML) composed of tags and attributes and XML is used for data exchange

- Extensible Stylesheet Language Transformation (XSLT) -
  – Defines the presentation of an XML document

- XML must be well formed

- One root element with a unique name

- Elements are properly nested -- no overlap.

- Tags must be closed.

- XML is case sensitive

- All element attributes are enclosed in quotation marks

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What Can Style sheets Accomplish?

- Transform XML into HTM, text or another XML.

- Filter and sort XML data.

- Address parts of an XML document.

- Format XML data based on the data value, like displaying negative numbers in red.

XSL Elements

- xsl:apply-templates

- xsl:attribute

- xsl:call-template

- xsl:choose

- xsl:comment

- xsl:copy

- xsl:copy-of

- xsl:element

- xsl:for-each

XSL Elements Continued

- xsl:if

- xsl:include

- xsl:otherwise

- xsl:output

- xsl:param

- xsl:sort

- xsl:stylesheet

- xsl:template

- xsl:text

InRoads XML Report Tool

- To Access select InRoads > Tools > XML Report

- The Report Tool Extracts an XML file from the InRoads binary data structures based on the criteria submitted.

- The XML file is temporary and written to the location of the systems TEMP variable

- Save any files to be reused to alternate location.

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

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Report Browser

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Geometry Report Types Available

- Geometry

- Station Base

- Station Offset

- Clearance

- Stakeout

- Legal Description

- Map Check

- Intersecting Alignment Stations

- Point Validation

Geometry Report

	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%			

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	(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	( )		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		

Geometry Report [dialog window]

Horizontal Alignments
Include: *
Selected:

Name	Style
PED298	pedestal
PED299	pedestal
PED300	pedestal
Ramp E-287	Default
SA1	slab
SA2	slab
SA3	slab
SA4	slab
SA5	slab

☑ Include Vertical Alignments
  ○ All ● Active
☐ Include Cant Alignments
  ● All ○ Active
☑ Include Vertical Event Points
☑ Include Horizontal Event Points

Cogo Points
Include:
Selected:

Name	Description	Style

☐ Interval: 50.00
Limits
☐ Station
Start: 0+00.00
Stop: 0+00.00

Apply
Close
Filter...
Preferences...
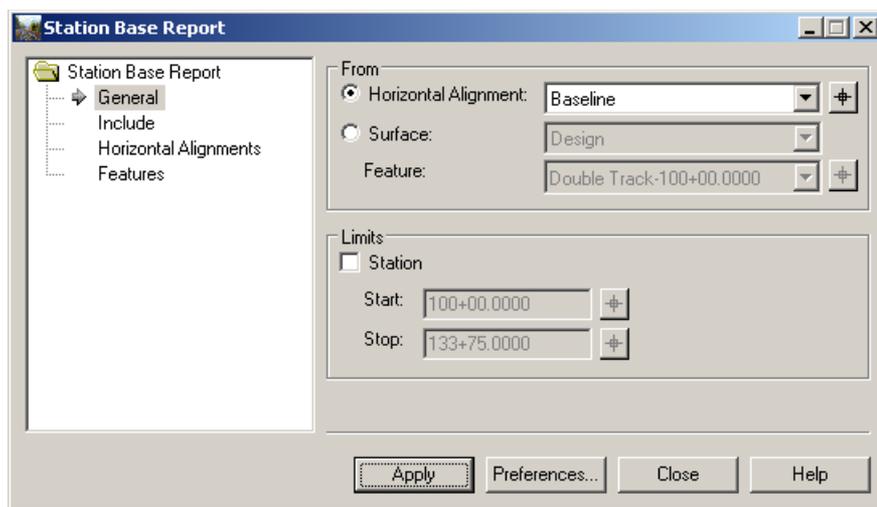Help

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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
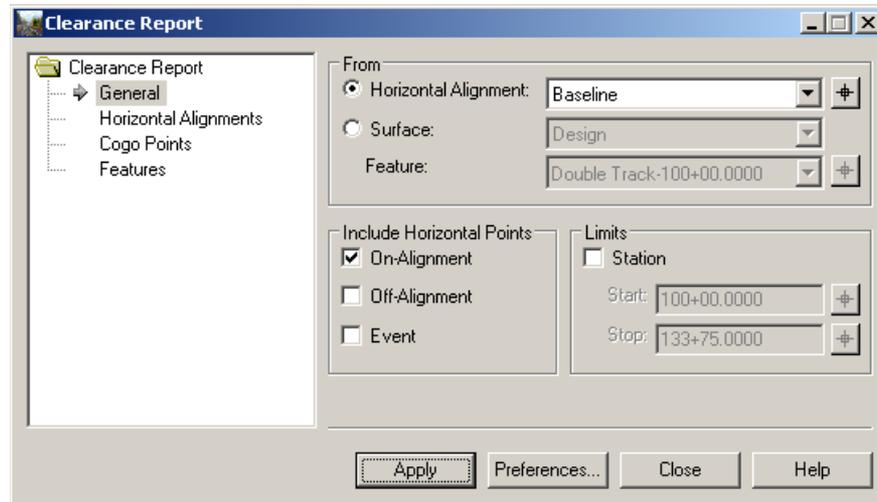
Station Offset Report

- Increments along the *Selected* object
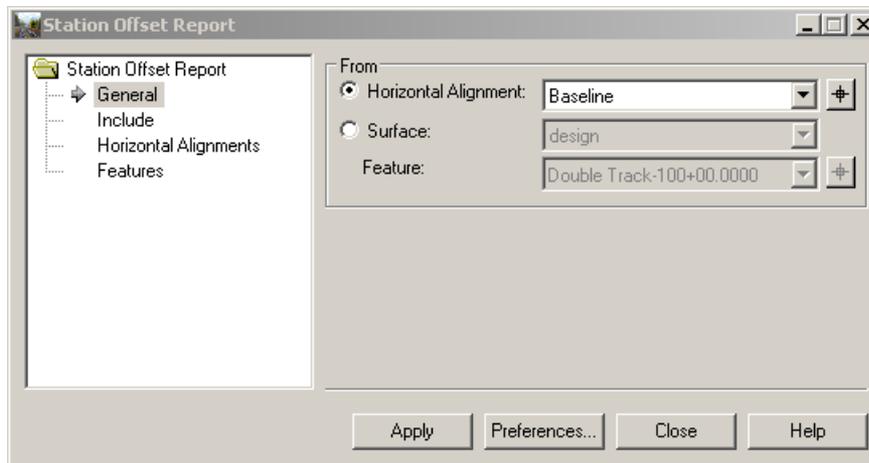
Clearance Report

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

Stakeout Report

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

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Legal Description Report

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.

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.)

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Map Check Report

- Multiple parcels at one time

- Curvilinear & angular data is rounded

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Intersecting Alignment Stations Report

- *Complements Drafting > Intersecting Alignment Note*

Surface Report Types Available

- Surfaces

- Surface Check

Surfaces Report

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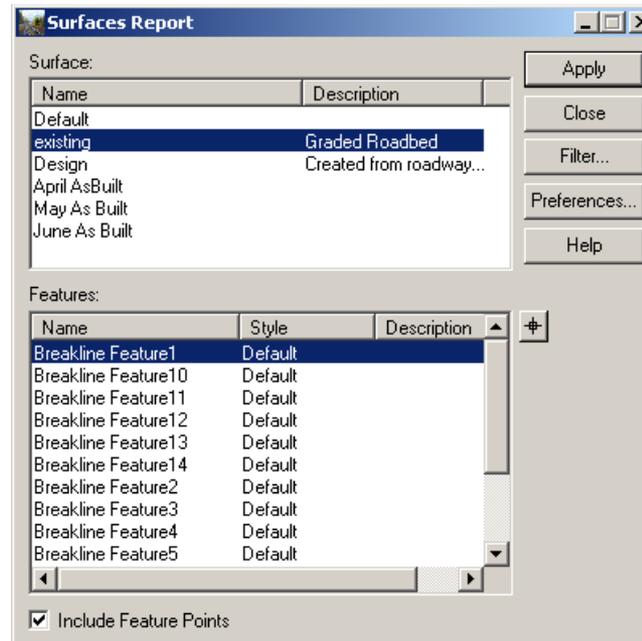
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Surface Check Report

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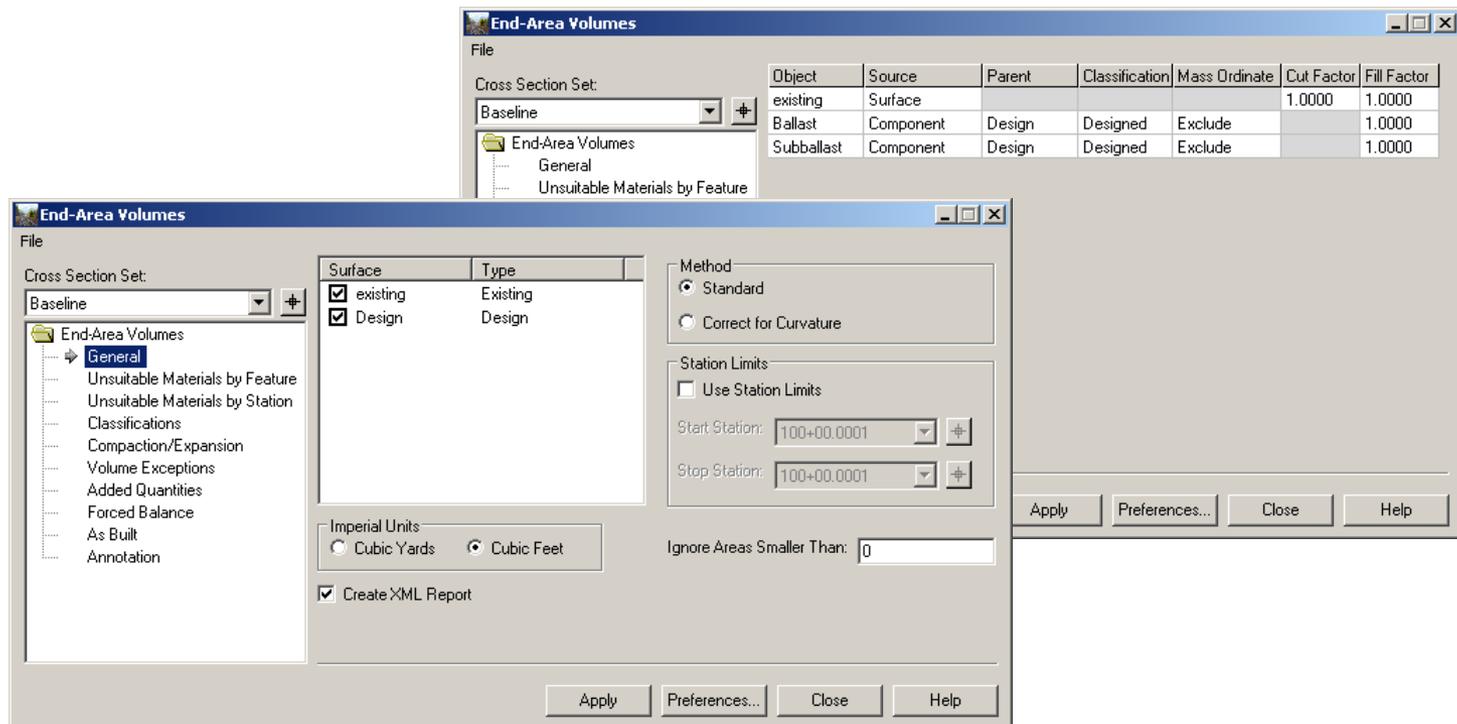
- Similar to *Compare Surface*

End-Area Volumes

- Volumes from cross-section sets

Multiple *looks* at the data

- Volumes

- Grade book

- Many style sheets!

Station	Type	Area	Volume	Factor	Adjusted Volume	Included in Mass Ordinate?	Mass Ordinate
100+00.00							0
	Normal Cut:	133	0	1.000	0	Yes	
	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	
101+00.00							278
	Normal Cut:	79	393	1.000	393	Yes	
	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		Cut				Fill			Mass Ordinate
	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

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End-Area Volumes & As Builts

- 1st month (yellow)

- 2nd month (green)
  - Computed to design lines not over-constructed lines!
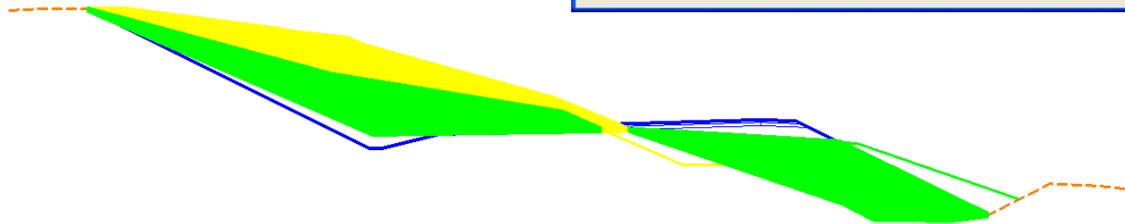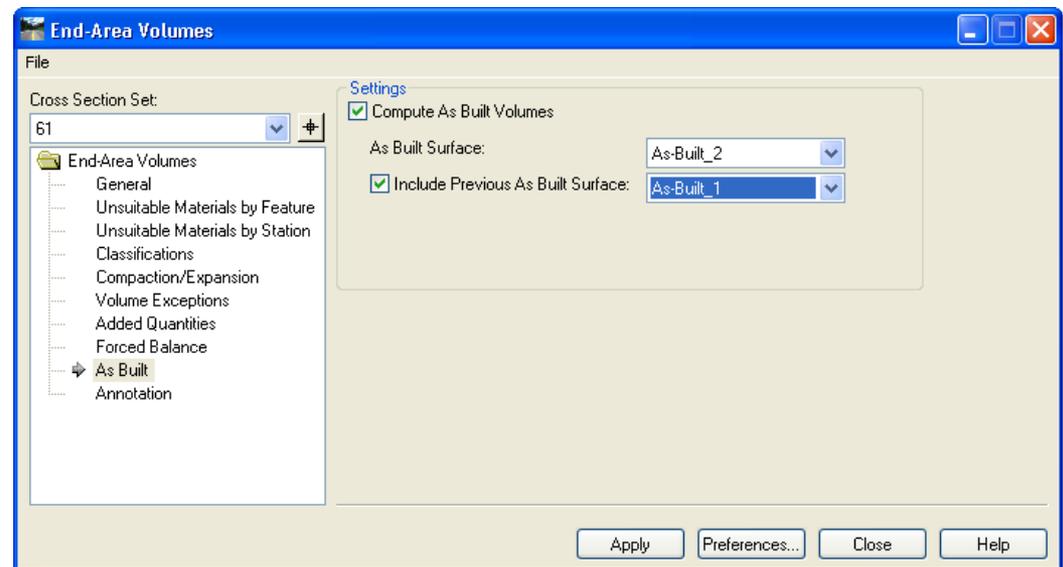
Mass-Haul Diagram

- 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
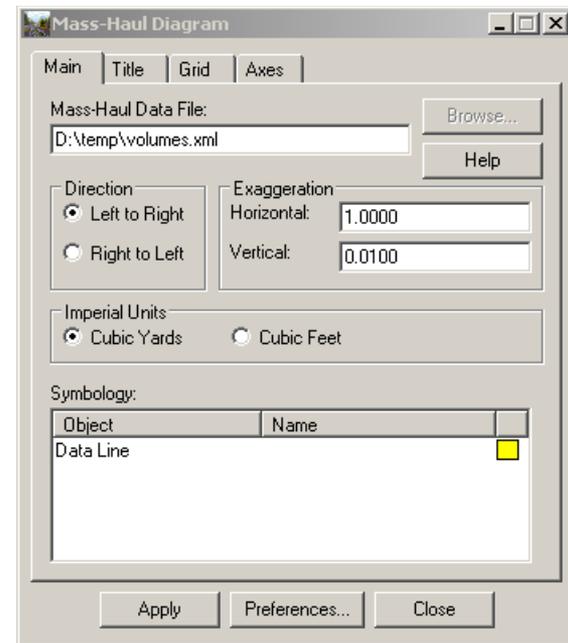
Other XML files

- XIN

- ITL

- IRD
  - Which can be loaded into the Report Browser
  - Also now accessible through Roadway designer

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Report Browser & .XIN

Report Browser & .IRD

- ## File>Open

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	Value	Parent	Slope	Width	Delta Y
				- - - - Constraints - - - -				
B2	-5.250	-0.583	Horizontal	-5.250	PGL			
			Vector	-5.250	Left Rail			
						50.0000%	-4.296	-2.148
B3	-9.546	-2.731	Slope	50.0000%	B2			
			Slope	4.1667%	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	-4.1667%	SB1			
			Slope	-50.0000%	B5			
						-50.0000%	-4.296	2.148
B5	5.250	-0.583	Horizontal	5.250	PGL			
			Vector	5.250	Left Rail			
						0.0000%	10.500	0.000

Component: Subballast
Description:

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

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Additional information in the XML Data directory

- ASCII output Style sheets
  - *Creating ASCII Output Style Sheets.pdf*

- Inclusion of an XML in an XML
  - *XML Lookup Table Style Sheets.pdf*

Supportive files

- Report element formatting
  - *format.xsl*
  - *Raw-xml.xsl*
  - *ShowAll.xsl*

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Style Sheet Modifications

- Look at the schema
  - *XML Data\en\Schemas*
  - *Only in English*

- Look at style sheets that are close to what you want!
  - It is always easier to start from something than nothing!

- Look at the Raw-xml.xsl to verify the data required is available in the similar report.

- Make a copy of close XSLT that contains the data.

- Open that copy in your preferred XML editor
  - Notepad ++ is great and free!
  - http://notepad-plus-plus.org/

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What's next?

- Test your XSLT!!! Think of all the ways your users will run it.

- Edit the help so that end users of the report will be able to run it successfully

- If you want a special java script solution or HTML solution search the web for examples

- For XSLT help search Google

- Check out http://www.w3schools.com/xsl/xsl_summary.asp

  a Great source!

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Lets take a look

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