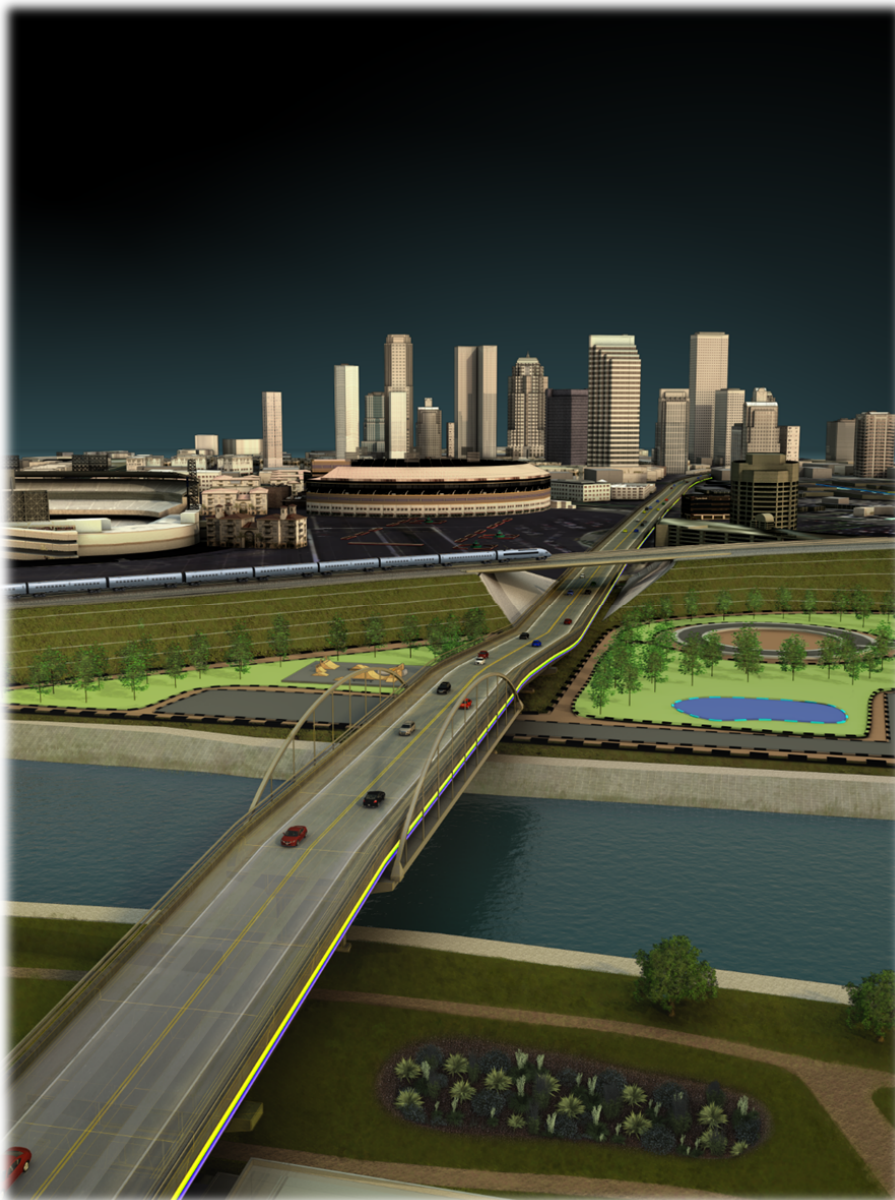


AutoCAD® Civil 3D® 2013 South African Country Kit



Contents

1	General.....	3
1.1	Introduction from the author and creator.....	3
1.2	Overview	4
2	Drawing Settings.....	8
2.1	Edit Drawing Settings.....	8
3	Layers	12
4	Reports.....	13
5	Object styles	15
5.1	Multi-purpose Styles.....	15
5.2	Points.....	15
5.3	Surfaces	20
5.4	Parcels.....	27
5.5	Grading	28
5.6	Alignments	29
5.7	Profiles.....	31
5.8	Sections	34
5.9	Pipe Networks.....	38
5.10	Corridors.....	40
5.11	Plan and Profile Sheets.....	41
6	Pipe and Structure Catalogue.....	43
6.1	Pipes and Structures.....	44
6.2	Pressure Network Fittings.....	46
7	Intersections (also known as Junctions in the UK and Ireland).....	48
8	Roundabouts.....	49

1 General

1.1 Introduction from the author and creator

The document is an overview of RSA settings for AutoCAD Civil 3D 2013 Country Kit for South Africa. Only new and changed settings are documented. As South Africa has no true drawings standards the styles provided should give results that are familiar to the users and to be similar to other civil design software in some cases.

The content is an example of what is possible and to what a user of AutoCAD Civil 3D should require to start using the product from out of the box.

For any organisation, the templates provided should be used as a base to adjust the content for their own needs where some changes to layer names, colours, linetypes and drawing border frames can be achieved with only AutoCAD knowledge.

The templates then could be located on a network location so to standardise that organisation with consistent results. Any styles created on the fly for specific needs can be always dragged and dropped back into the master templates for reuse.

The country kit is an ongoing development and is based on user feedback, so please feel free to suggest additions, amendments as needed. These are assisted by an example drawing and user case. The new QTO feature also will be enhanced over time to support other methods of measurement in due course.

1.2 Overview

South Africa Country Kit contains folders mention below:

- **_Autodesk Civil 3D 2013 RSA.dwt** template for South African styles for Civil 3D objects and labels.
- **RSA Pipes Catalog:** Folder with pipes files that correspond with Parts Lists (styles) in the template.
- **RSA Structures Catalog**
- **Plan Production:** Folder with templates that contains settings for Plan Production
- **Corridor Design Standards:** A setup file for Design Criteria and Superelevation for Corridor models based on AASHTO standards.
- **Quantity Reports:** Folder within files containing settings for generating reports of volume for Corridor models or dynamic tables in the current drawing.
- **Toolbox:** Containing reports, which can be run from the Toolbox tab in the Toolspace?
- **Assemblies:** Folder containing drawings with predefined assemblies that can be used with the Intersection functionality.

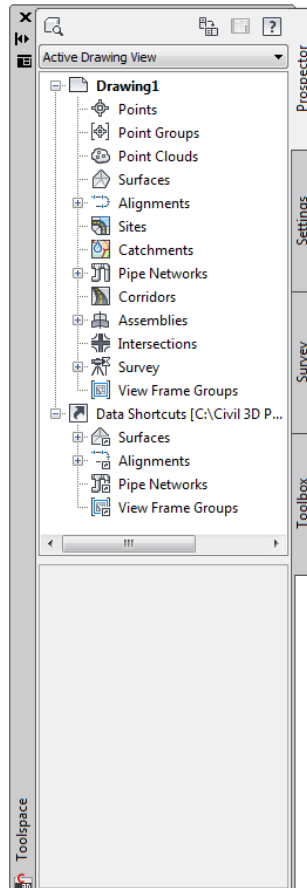
Toolspace is the Primary Civil 3D property window. This window is used for handling Civil 3D objects and settings of all Civil 3D styles for Civil 3D objects and labels.

The Toolspace has two important tabs:

- **Prospector.** Use this tab for handling properties and styles for Civil 3D objects and labels.
- **Settings.** Use this tab for general settings of Civil 3D styles.

1.2.1 Prospector

Any Civil 3D object contains its own style. This style controls the Civil 3D object appearance (object and label) in the drawing. The Prospector tab in the Toolspace is the Primary window for handling property, styles and commands for all Civil 3D objects.



From the Prospector tab in the Toolspace it is possible to create, copy or edit styles for Civil 3D objects. In addition to this labels are generated as dynamic data mostly annotative.

1.2.2 Settings

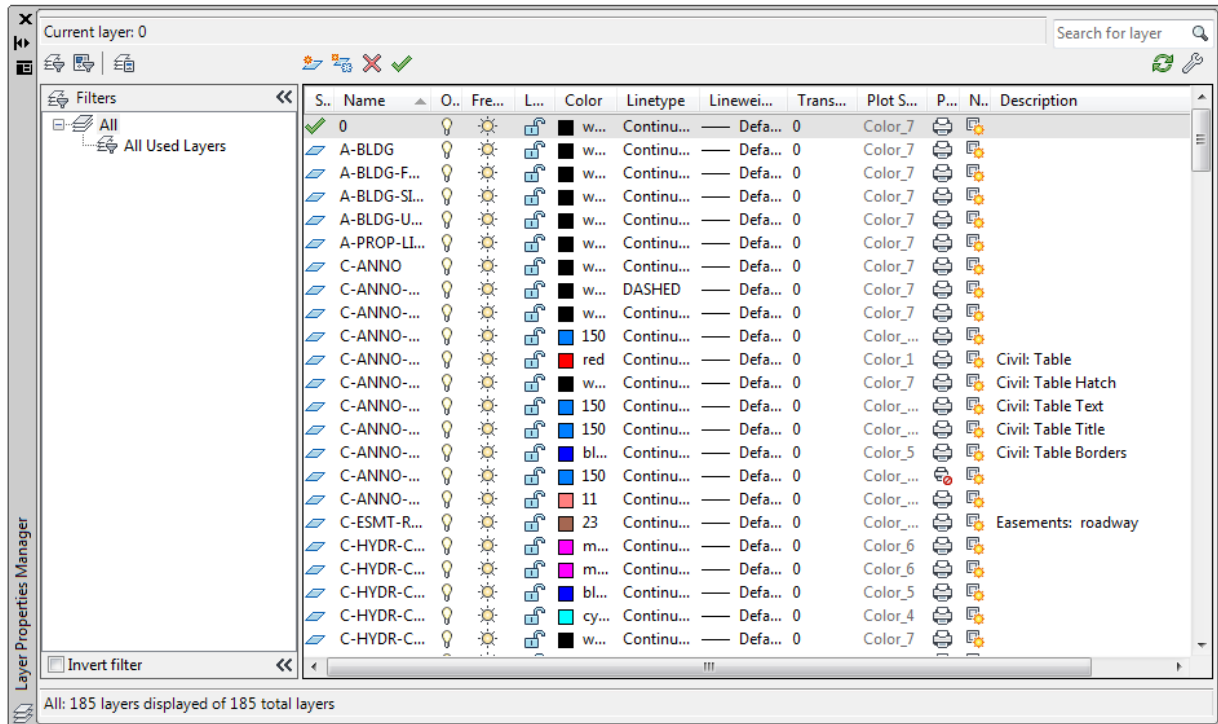
Civil 3D objects are generated with their own styles when created in the drawing with a Civil 3D command.

It is recommended to start from the RSA template and bring data into that template

Here it is possible to create, copy or edit Civil 3D styles. Note that new or edited styles will not automatically be saved in the template. This has to be done manually with Drag and Drop.

All styles are set to Bylayer so that control of colour, linetype, lineweight, on or off etc can be controlled through the layer manager and also enables the use of XREF into plain AutoCAD software.

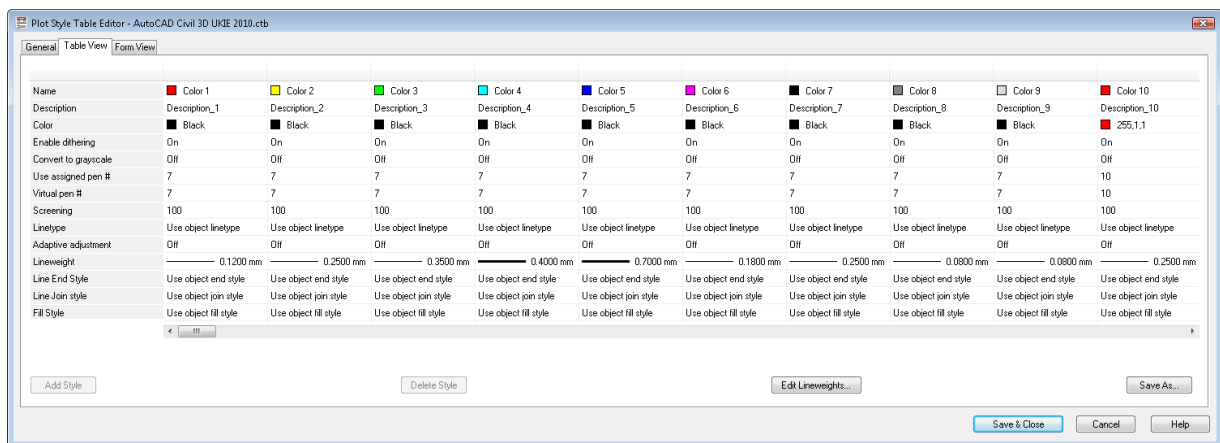
As there are many layers, filters have been added to make it quick and easy to navigate the layers



1.2.3 Colours

A suggested line colour scheme has been implemented to give suitable results from plotting. Your current plot styles should be adapted to suit the template, or alternatively the template must be adjusted according to your current ctb files.

The primary AutoCAD colours have been reserved for black linework in varying thicknesses and colours from 10 are retained as colour in 2.5mm thickness



- **Black/white color.** Is primary used for labels and tables created in the drawing

1.2.4 Text

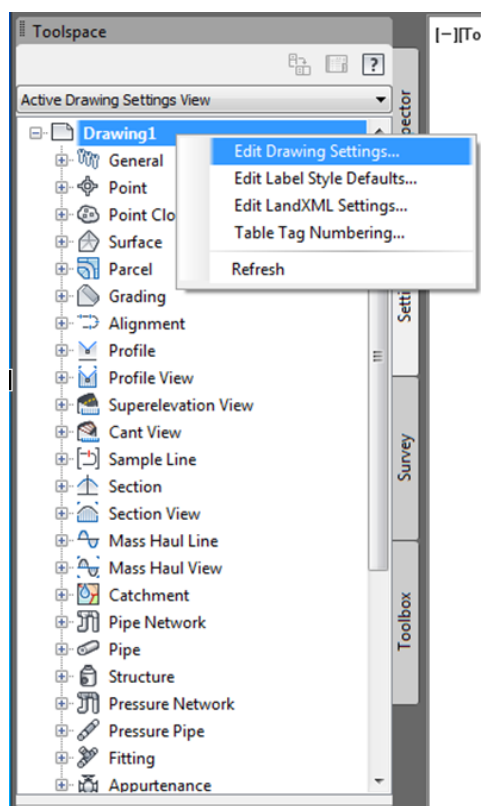
The table below lists used text styles.

Text Style	Description	Font
Civil 3D Standard Text		Arial

2 Drawing Settings

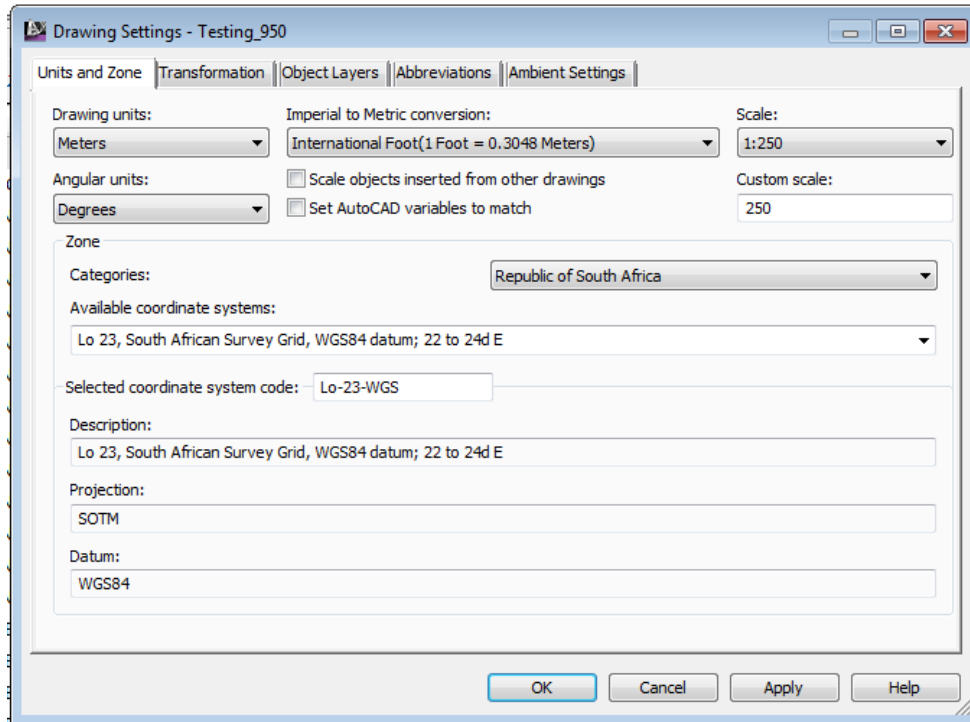
2.1 Edit Drawing Settings...

Civil 3D object layers are available from Edit Drawing Settings. The figure below shows from where the command is accessible.



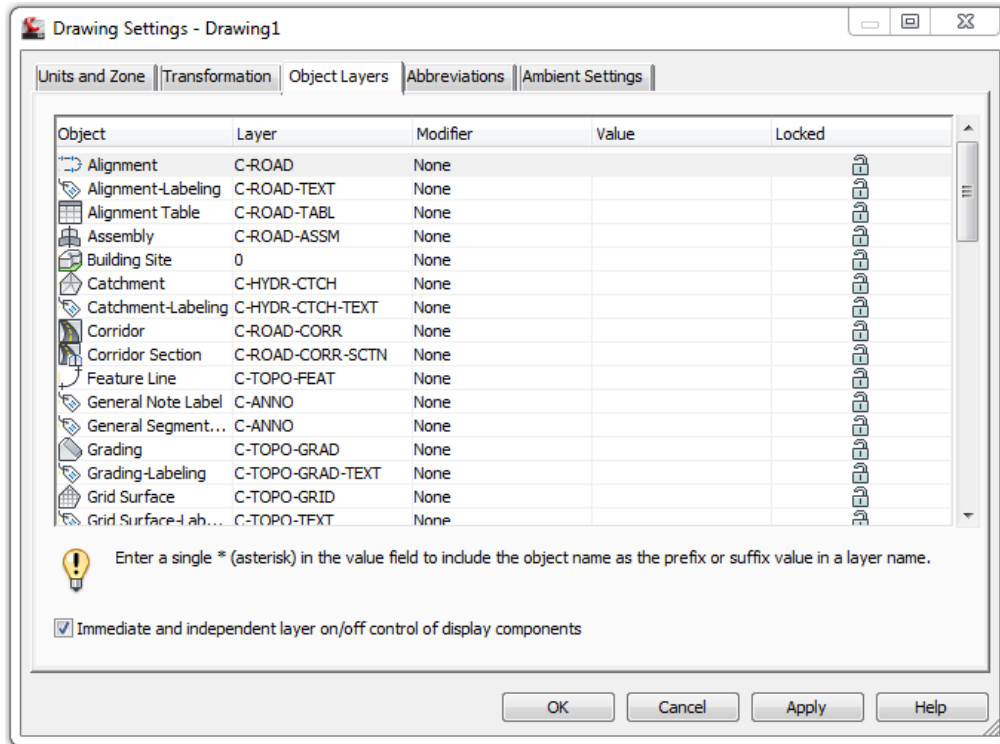
2.1.1 Units and Zone

The figure below show the local coordinate systems and zones.



2.1.2 Object Layers

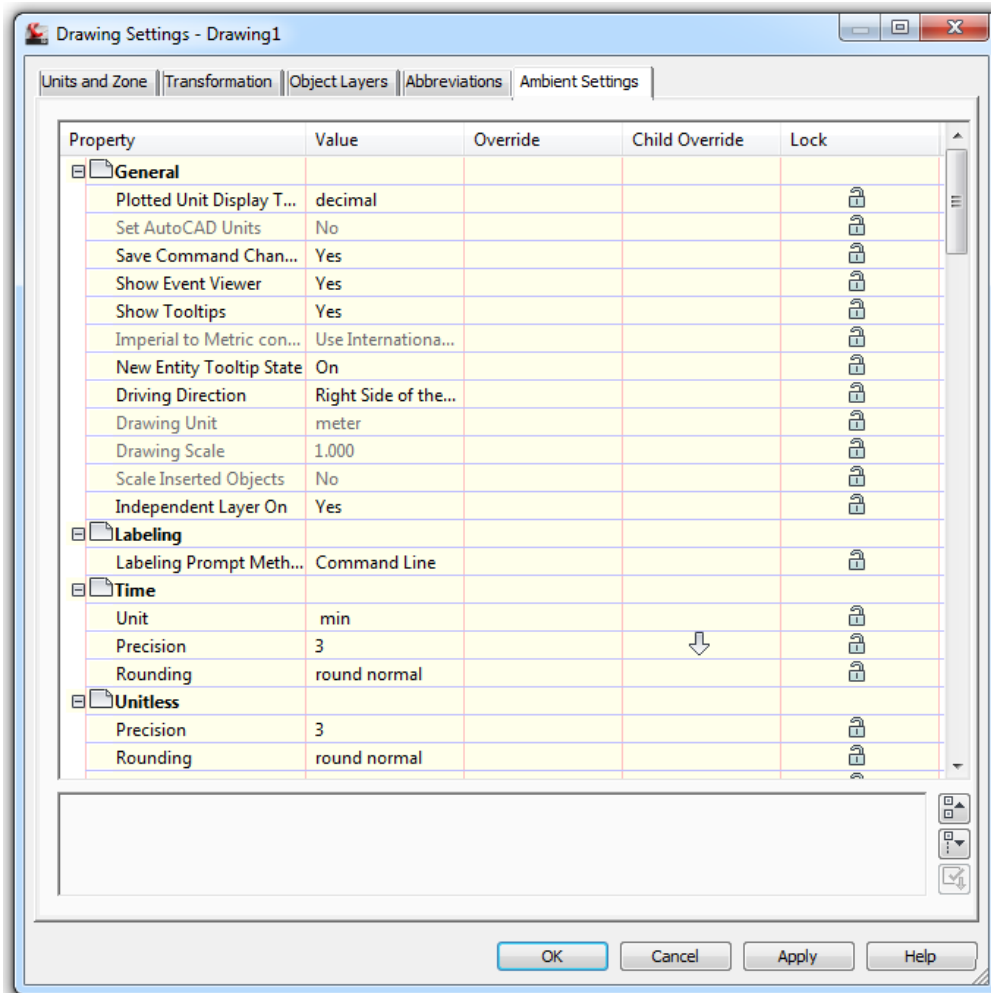
As mentioned above all the Civil 3D objects are by default placed on layers automatically.



Once placed, they can be moved to alternative layers if required.

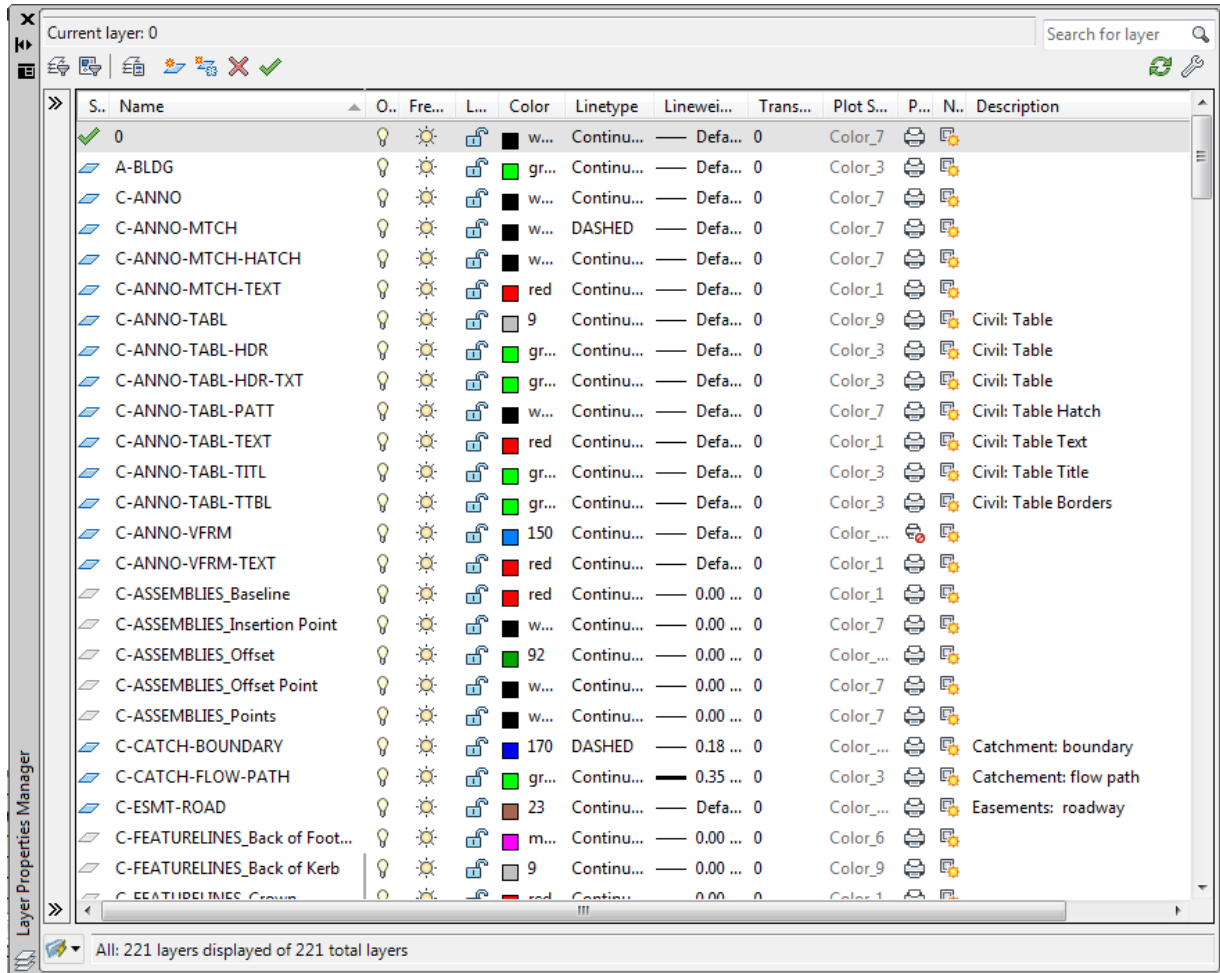
2.1.3 Ambient Settings...

The figure below lists all values for Cviil 3D units.



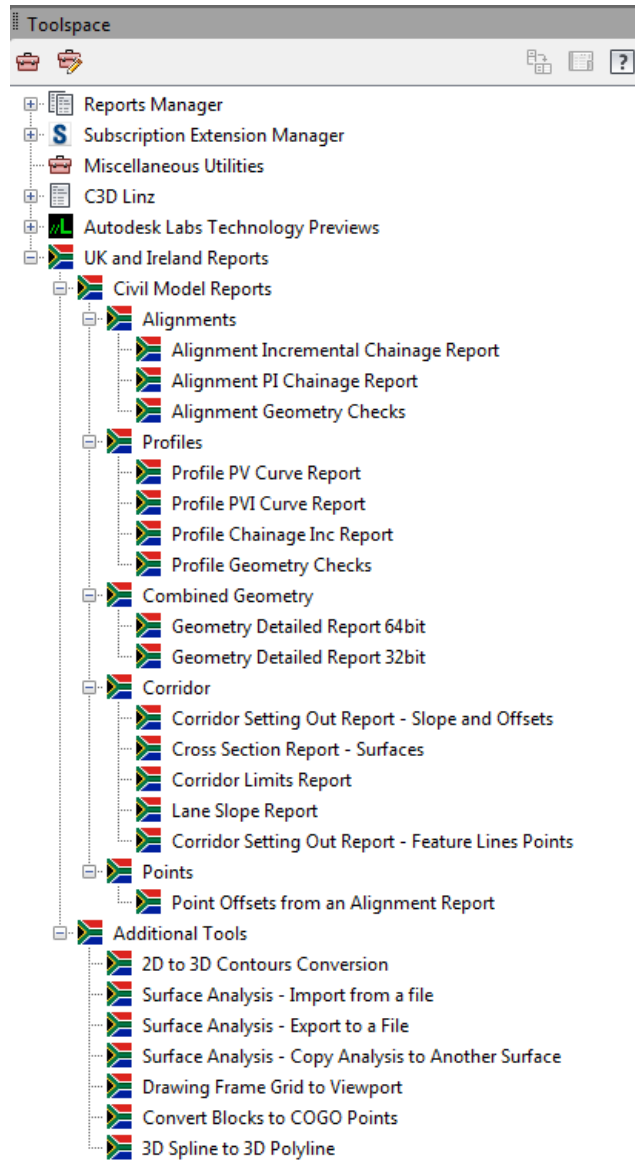
3 Layers

Figure below show the window and tab with Object Layers. All sub layers are based on these core names.



4 Reports

The table below lists all RSA and also included (Toolspace .-> Toolbox >

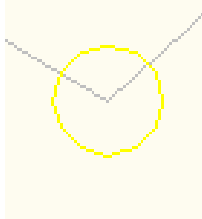


Report Name	Description
Civil Model Reports	
Alignment Incremental Chainage Report	Creates a report at chainages specified of the alignment and profile geometry with levels and bearings
Alignment PI Chainage Report	Reports the intersection points of alignments
Alignment Superelevation	Superelevation data from an alignment
You created this PDF from an application that is not licensed to print to novaPDF printer (http://www.novapdf.com)	
Crossfall Report	
Alignment Geometry Checks	Reports the alignment based on the design criteria applied
Profile PV Curve Report	Reports the vertical profile point information
Profile PVI Curve Report	Reports the vertical profile point information
Profile Chainage Inc. Report	Reports the profile data at a chainage interval
Profile Geometry Checks	Reports the profile based on the design criteria applied
Geometry Detailed Report	Coordinates, levels, bearings and element types along an alignment and profile
Geometry Simple Report	Coordinates and levels along an alignment and profile
Corridor Setting Out Report	Reports a corridor for offset and slope
Points Offsets from an Alignment Report	Will report the offset and chainage value of COGO points from an Alignment
Surface Sampling along an Alignment Report	Require sample lines and will read a surface at 5m interval offsets
Additional Tools	
2D to 3D Contour Conversion	A tool which by specifying a fence line through contour polyline will convert the elevation of the line to the level specified
Surface Analysis – Import/Export to a file	Export and Import desired settings for reuse
Drawing Frame Grid to Viewport	Place a grid on a viewport
Convert Blocks to COGO Points	As described
3D Spline to 3D Polyline	As described

5 Object styles

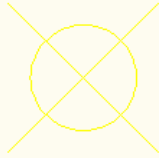


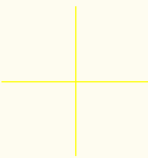
All Civil 3D object styles in the RSA template.



5.1 Multi-purpose Styles

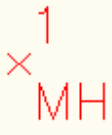

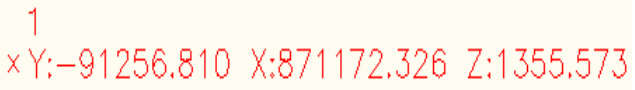
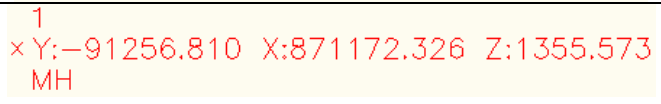

Marker Styles	Description	Screen grab / DWF / DWG	Default
RSA Point of Intersection	Marker style for use with horizontal alignments		Yes

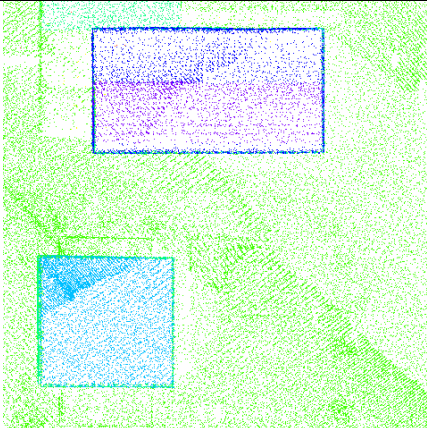
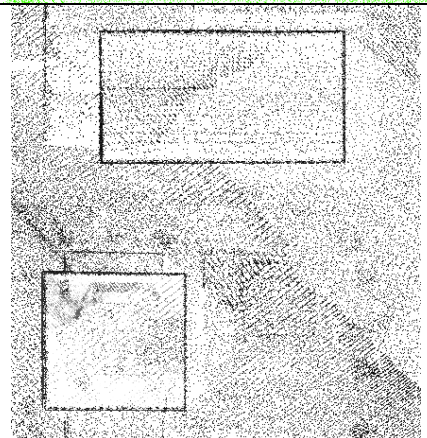
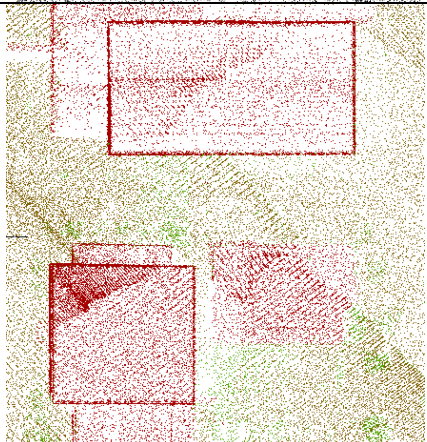
5.2 Points

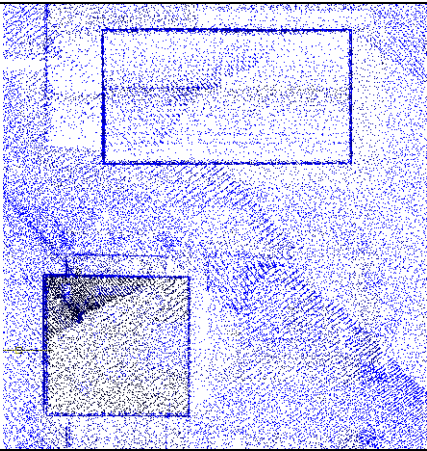
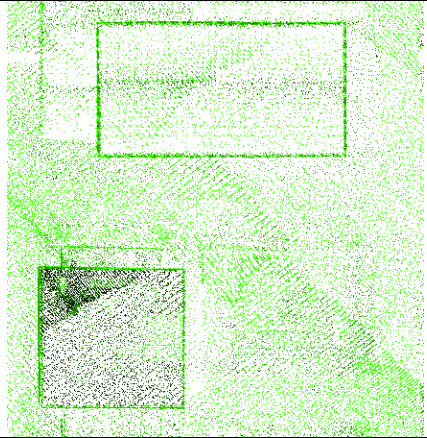
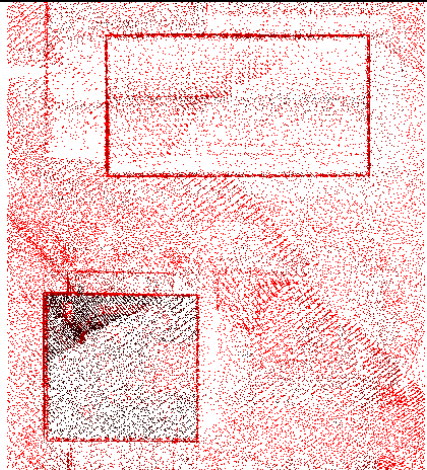
User Defined Attribute Classifications	Description	Screen grab / DWF / DWG	Default
<None>			

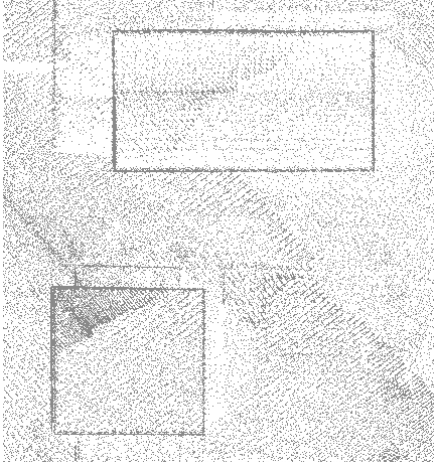
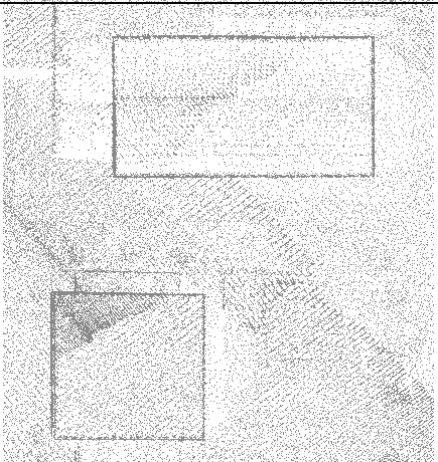
Point Styles	Description	Screen grab / DWF / DWG	Default
RSA Circle			
RSA Cross			
RSA Dot			
RSA Plus			

RSA Tick			
RSA X			

Point Label Styles	Description	Screen grab / DWF / DWG	Default
RSA Point Number + D			
RSA Point Number + YX			
RSA Point Number + YXZ			
RSA Point Number + YXZD			
RSA Point Number only			

Point Clouds	Description	Screen grab / DWF / DWG	Default
Elevation Ranges:			
Grayscale Intensity:			
LIDAR Point Classification:			

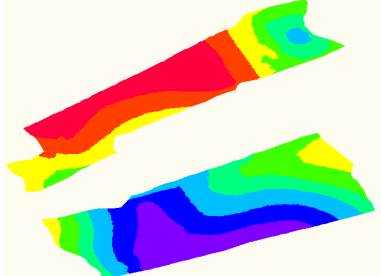
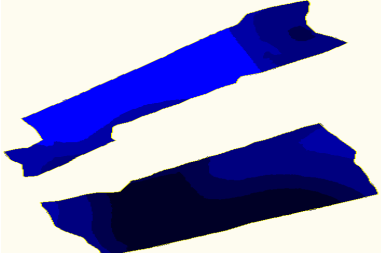
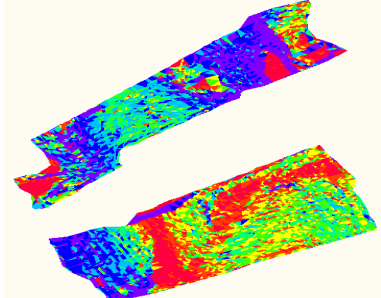
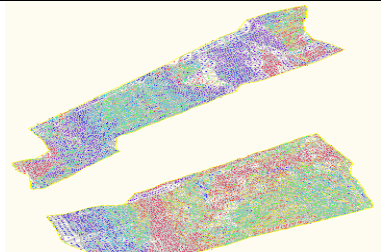
Scaled Color Intensity - Blue:			
Scaled Color Intensity - Green:			
Scaled Color Intensity - Red:			

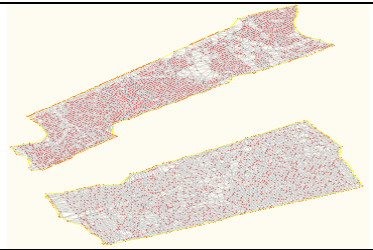
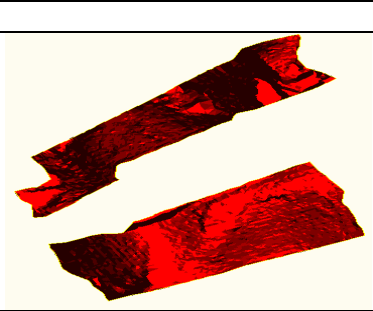
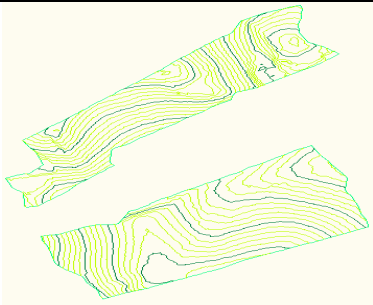
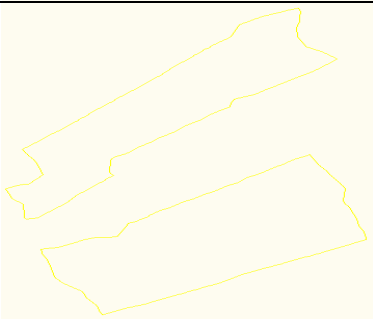
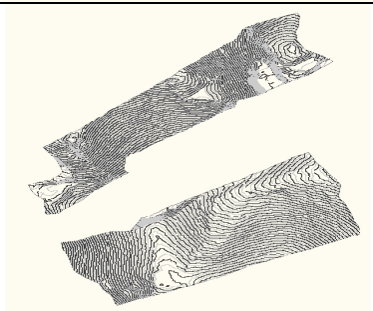
Single Colour:			
True Color:			

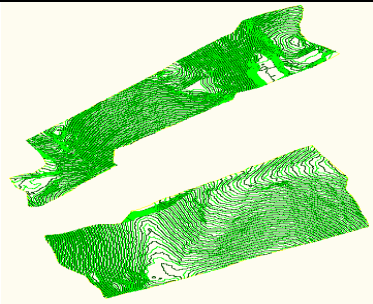
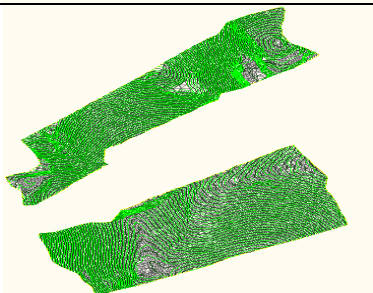
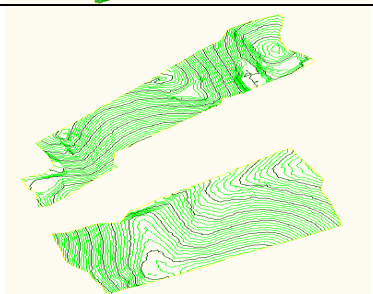
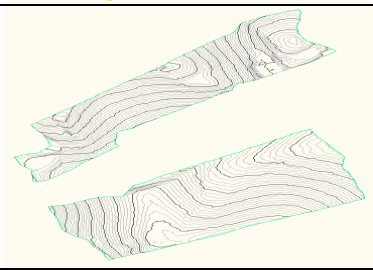

Point Table Styles	Description	Screen grab / DWF / DWG	Default																												
RSA Coordinate Table - PYZ		<table border="1"> <thead> <tr> <th colspan="4" data-bbox="687 1370 1289 1451">List of Coordinates</th> </tr> <tr> <th data-bbox="687 1451 775 1491">Point</th> <th data-bbox="775 1451 975 1491">Y Coordinate</th> <th data-bbox="975 1451 1174 1491">X Coordinate</th> <th data-bbox="1174 1451 1289 1491">Level</th> </tr> </thead> <tbody> <tr> <td data-bbox="687 1491 775 1532">1</td> <td data-bbox="775 1491 975 1532">-92080.078</td> <td data-bbox="975 1491 1174 1532">871659.221</td> <td data-bbox="1174 1491 1289 1532">1381.529</td> </tr> <tr> <td data-bbox="687 1532 775 1572">2</td> <td data-bbox="775 1532 975 1572">-92106.007</td> <td data-bbox="975 1532 1174 1572">871567.932</td> <td data-bbox="1174 1532 1289 1572">1377.946</td> </tr> <tr> <td data-bbox="687 1572 775 1612">3</td> <td data-bbox="775 1572 975 1612">-92058.657</td> <td data-bbox="975 1572 1174 1612">871599.489</td> <td data-bbox="1174 1572 1289 1612">1380.674</td> </tr> <tr> <td data-bbox="687 1612 775 1653">4</td> <td data-bbox="775 1612 975 1653">-92158.991</td> <td data-bbox="975 1612 1174 1653">871603.996</td> <td data-bbox="1174 1612 1289 1653">1378.051</td> </tr> <tr> <td data-bbox="687 1653 775 1682">5</td> <td data-bbox="775 1653 975 1682">-92134.188</td> <td data-bbox="975 1653 1174 1682">871650.204</td> <td data-bbox="1174 1653 1289 1682">1380.195</td> </tr> </tbody> </table>	List of Coordinates				Point	Y Coordinate	X Coordinate	Level	1	-92080.078	871659.221	1381.529	2	-92106.007	871567.932	1377.946	3	-92058.657	871599.489	1380.674	4	-92158.991	871603.996	1378.051	5	-92134.188	871650.204	1380.195	
List of Coordinates																															
Point	Y Coordinate	X Coordinate	Level																												
1	-92080.078	871659.221	1381.529																												
2	-92106.007	871567.932	1377.946																												
3	-92058.657	871599.489	1380.674																												
4	-92158.991	871603.996	1378.051																												
5	-92134.188	871650.204	1380.195																												

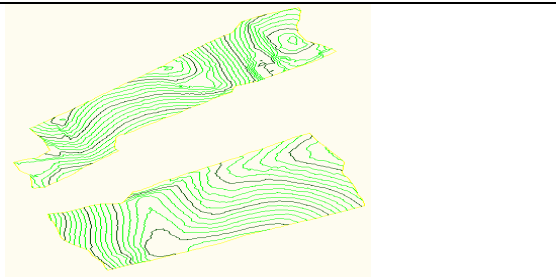
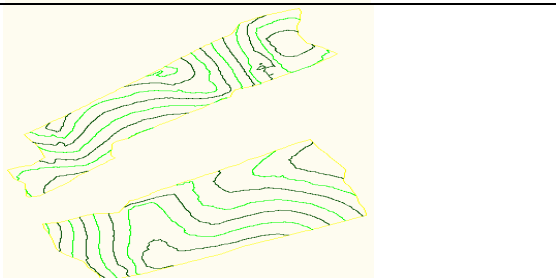
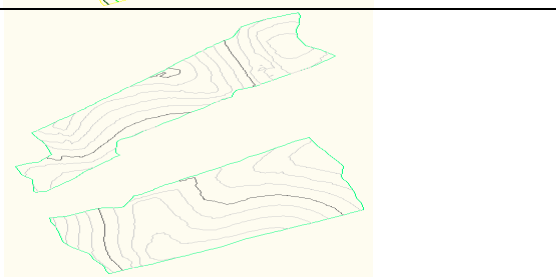

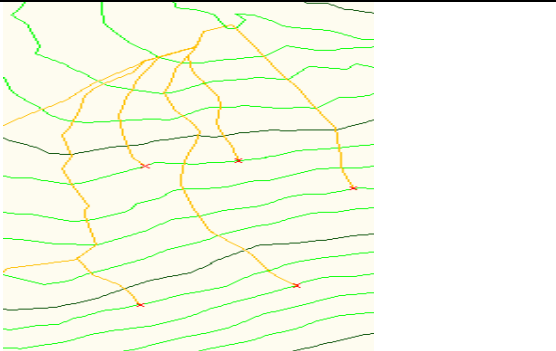
RSA Setting Out Lo 25 - PYZ		<table border="1" style="margin: auto;"> <tr> <th colspan="4" style="text-align: center;">Setting out Coordinates Lo 25</th> </tr> <tr> <th>Point</th> <th>Y Coordinate</th> <th>X Coordinate</th> <th>Level</th> </tr> <tr> <td>1</td> <td>-91949.805</td> <td>871379.668</td> <td>1380.007</td> </tr> <tr> <td>2</td> <td>-91949.805</td> <td>871405.898</td> <td>1381.558</td> </tr> <tr> <td>3</td> <td>-91951.385</td> <td>871433.509</td> <td>1382.040</td> </tr> <tr> <td>4</td> <td>-91949.805</td> <td>871456.584</td> <td>1382.601</td> </tr> <tr> <td>5</td> <td>-91949.805</td> <td>871481.236</td> <td>1382.988</td> </tr> </table>	Setting out Coordinates Lo 25				Point	Y Coordinate	X Coordinate	Level	1	-91949.805	871379.668	1380.007	2	-91949.805	871405.898	1381.558	3	-91951.385	871433.509	1382.040	4	-91949.805	871456.584	1382.601	5	-91949.805	871481.236	1382.988	
Setting out Coordinates Lo 25																															
Point	Y Coordinate	X Coordinate	Level																												
1	-91949.805	871379.668	1380.007																												
2	-91949.805	871405.898	1381.558																												
3	-91951.385	871433.509	1382.040																												
4	-91949.805	871456.584	1382.601																												
5	-91949.805	871481.236	1382.988																												

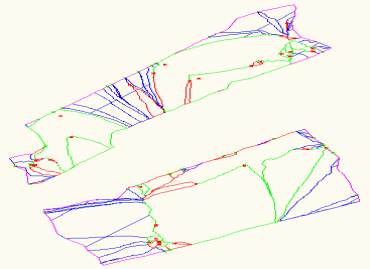
5.3 Surfaces

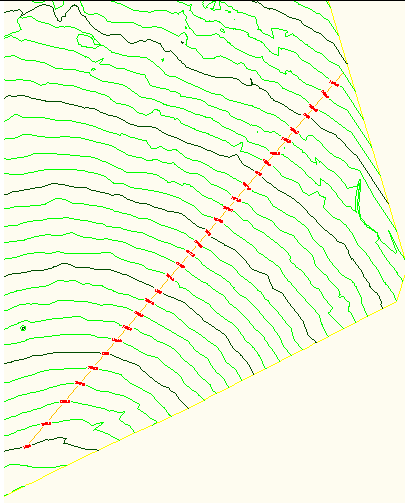
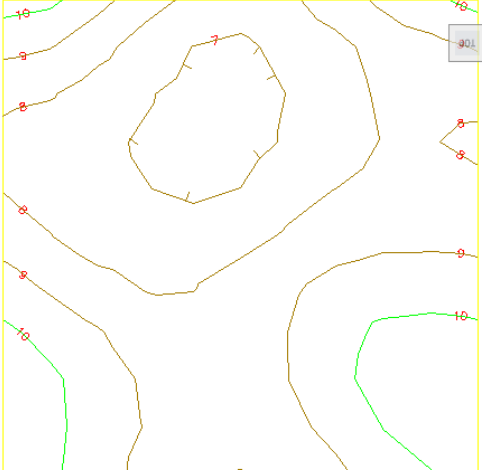
Surface Styles	Description	Screen grab / DWF / DWG	Default
RSA_Elevation Banding (2D)			
RSA_Elevations			
RSA_Slope Banding (2D)			
RSA_Slope Arrows			

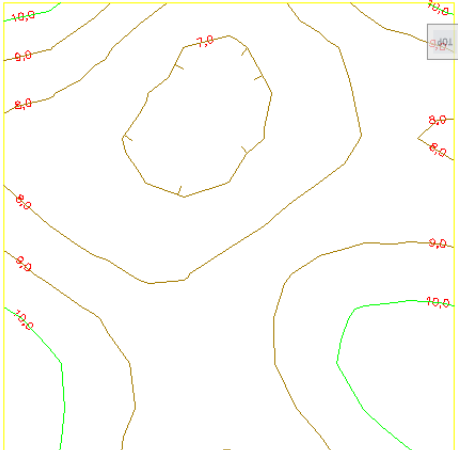
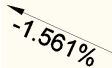



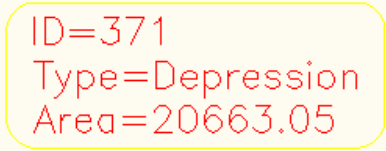
<p>RSA Points- Triangulation- Border</p>			
<p>All off RSA_Slopes</p>			
<p>RSA Contours 2m and 10m (design)</p>			
<p>RSA Border Only</p>			
<p>RSA Contours 0.5m and 1m (Background)</p>			

<p>RSA Contours 0.5m and 1m (design)</p>					
<p>RSA Contours (0.5m and 1m) and Triangles</p>					
<p>RSA Contours 1m and 5m (design)</p>					
<p>RSA Contours 1m and 5m (Background)</p>					
<p>RSA Contours 2m and 10m (Background)</p>					

<p>RSA Contours 2m and 10m (design)</p>				
<p>RSA Contours 5m and 10m (design)</p>				
<p>RSA Contours 5m and 25m (Background)</p>				
<p>RSA Contours 5m and 25m (design)</p>				
<p>Waterdrop</p>				

RSA_Watersheds			
----------------	--	------------------------------------------------------------------------------------	--

Surface Label Styles Name/Type	Description	Screen grab / DWF / DWG	Default
Contour Contour - Multiple			
RSA Major Contours			

RSA Minor Contours			
Slope			
Percent Slope			
Rise : Run Slope (1:x)			
Run : Rise Slope (x:1)			
Spot Elevation			
Spot Elevation			
Watershed			
ID - Type - Area			

Surface Table Styles Name/Type	Description	Screen grab / DWF / DWG	Default																																																																																				
Directions																																																																																							
Levels																																																																																							
RSA Elevations Table		<table border="1"> <thead> <tr> <th colspan="5">Elevations Table</th> </tr> <tr> <th>Number</th> <th>Minimum Elevation</th> <th>Maximum Elevation</th> <th>Area</th> <th>Color</th> </tr> </thead> <tbody> <tr><td>1</td><td>1314.79</td><td>1332.53</td><td>266536.27</td><td>■</td></tr> <tr><td>2</td><td>1332.53</td><td>1339.57</td><td>220210.40</td><td>■</td></tr> <tr><td>3</td><td>1339.57</td><td>1348.00</td><td>348377.80</td><td>■</td></tr> <tr><td>4</td><td>1348.00</td><td>1355.54</td><td>423544.50</td><td>■</td></tr> <tr><td>5</td><td>1355.54</td><td>1362.59</td><td>688818.15</td><td>■</td></tr> <tr><td>6</td><td>1362.59</td><td>1371.68</td><td>732961.45</td><td>■</td></tr> <tr><td>7</td><td>1371.68</td><td>1381.59</td><td>426439.80</td><td>■</td></tr> <tr><td>8</td><td>1381.59</td><td>1393.67</td><td>393033.08</td><td>■</td></tr> </tbody> </table>	Elevations Table					Number	Minimum Elevation	Maximum Elevation	Area	Color	1	1314.79	1332.53	266536.27	■	2	1332.53	1339.57	220210.40	■	3	1339.57	1348.00	348377.80	■	4	1348.00	1355.54	423544.50	■	5	1355.54	1362.59	688818.15	■	6	1362.59	1371.68	732961.45	■	7	1371.68	1381.59	426439.80	■	8	1381.59	1393.67	393033.08	■																																			
Elevations Table																																																																																							
Number	Minimum Elevation	Maximum Elevation	Area	Color																																																																																			
1	1314.79	1332.53	266536.27	■																																																																																			
2	1332.53	1339.57	220210.40	■																																																																																			
3	1339.57	1348.00	348377.80	■																																																																																			
4	1348.00	1355.54	423544.50	■																																																																																			
5	1355.54	1362.59	688818.15	■																																																																																			
6	1362.59	1371.68	732961.45	■																																																																																			
7	1371.68	1381.59	426439.80	■																																																																																			
8	1381.59	1393.67	393033.08	■																																																																																			
Slopes																																																																																							
RSA Slope Table		<table border="1"> <thead> <tr> <th colspan="5">Slopes Table</th> </tr> <tr> <th>Number</th> <th>Minimum Slope</th> <th>Maximum Slope</th> <th>Area</th> <th>Color</th> </tr> </thead> <tbody> <tr><td>1</td><td>0.00%</td><td>3.14%</td><td>651550.32</td><td>■</td></tr> <tr><td>2</td><td>3.14%</td><td>4.70%</td><td>829941.14</td><td>■</td></tr> <tr><td>3</td><td>4.70%</td><td>6.18%</td><td>796043.60</td><td>■</td></tr> <tr><td>4</td><td>6.18%</td><td>7.85%</td><td>550296.95</td><td>■</td></tr> <tr><td>5</td><td>7.85%</td><td>10.26%</td><td>377177.67</td><td>■</td></tr> <tr><td>6</td><td>10.26%</td><td>15.00%</td><td>143568.34</td><td>■</td></tr> <tr><td>7</td><td>15.00%</td><td>26.32%</td><td>99273.95</td><td>■</td></tr> <tr><td>8</td><td>26.32%</td><td>556609.54%</td><td>73870.37</td><td>■</td></tr> </tbody> </table>	Slopes Table					Number	Minimum Slope	Maximum Slope	Area	Color	1	0.00%	3.14%	651550.32	■	2	3.14%	4.70%	829941.14	■	3	4.70%	6.18%	796043.60	■	4	6.18%	7.85%	550296.95	■	5	7.85%	10.26%	377177.67	■	6	10.26%	15.00%	143568.34	■	7	15.00%	26.32%	99273.95	■	8	26.32%	556609.54%	73870.37	■																																			
Slopes Table																																																																																							
Number	Minimum Slope	Maximum Slope	Area	Color																																																																																			
1	0.00%	3.14%	651550.32	■																																																																																			
2	3.14%	4.70%	829941.14	■																																																																																			
3	4.70%	6.18%	796043.60	■																																																																																			
4	6.18%	7.85%	550296.95	■																																																																																			
5	7.85%	10.26%	377177.67	■																																																																																			
6	10.26%	15.00%	143568.34	■																																																																																			
7	15.00%	26.32%	99273.95	■																																																																																			
8	26.32%	556609.54%	73870.37	■																																																																																			
Slope Arrows																																																																																							
RSA Slope Arrow Table		<table border="1"> <thead> <tr> <th colspan="4">Slope Arrows Table</th> </tr> <tr> <th>Number</th> <th>Minimum Slope</th> <th>Maximum Slope</th> <th>Color</th> </tr> </thead> <tbody> <tr><td>1</td><td>0.00%</td><td>3.14%</td><td>■</td></tr> <tr><td>2</td><td>3.14%</td><td>4.70%</td><td>■</td></tr> <tr><td>3</td><td>4.70%</td><td>6.18%</td><td>■</td></tr> <tr><td>4</td><td>6.18%</td><td>7.85%</td><td>■</td></tr> <tr><td>5</td><td>7.85%</td><td>10.26%</td><td>■</td></tr> <tr><td>6</td><td>10.26%</td><td>15.00%</td><td>■</td></tr> <tr><td>7</td><td>15.00%</td><td>26.32%</td><td>■</td></tr> <tr><td>8</td><td>26.32%</td><td>556609.54%</td><td>■</td></tr> </tbody> </table>	Slope Arrows Table				Number	Minimum Slope	Maximum Slope	Color	1	0.00%	3.14%	■	2	3.14%	4.70%	■	3	4.70%	6.18%	■	4	6.18%	7.85%	■	5	7.85%	10.26%	■	6	10.26%	15.00%	■	7	15.00%	26.32%	■	8	26.32%	556609.54%	■																																													
Slope Arrows Table																																																																																							
Number	Minimum Slope	Maximum Slope	Color																																																																																				
1	0.00%	3.14%	■																																																																																				
2	3.14%	4.70%	■																																																																																				
3	4.70%	6.18%	■																																																																																				
4	6.18%	7.85%	■																																																																																				
5	7.85%	10.26%	■																																																																																				
6	10.26%	15.00%	■																																																																																				
7	15.00%	26.32%	■																																																																																				
8	26.32%	556609.54%	■																																																																																				
Watersheds																																																																																							
RSA Watersheds Table		<table border="1"> <thead> <tr> <th colspan="7">Watersheds Table</th> </tr> <tr> <th>ID</th> <th>Type</th> <th>Drains Into</th> <th>Description</th> <th>Segment Display</th> <th>Area Display</th> <th>Area (m2)</th> </tr> </thead> <tbody> <tr><td>1</td><td>Boundary point</td><td></td><td>Description 1</td><td>—————</td><td>6606.195sq.m</td><td>6606.42</td></tr> <tr><td>2</td><td>Boundary point</td><td></td><td>Description 2</td><td>—————</td><td>4840sq.m</td><td>4.84</td></tr> <tr><td>3</td><td>Boundary point</td><td></td><td>Description 3</td><td>—————</td><td>53.463sq.m</td><td>53.46</td></tr> <tr><td>4</td><td>Boundary point</td><td></td><td>Description 4</td><td>—————</td><td>27124.417sq.m</td><td>27124.42</td></tr> <tr><td>5</td><td>Boundary point</td><td></td><td>Description 5</td><td>—————</td><td>4202.574sq.m</td><td>4202.57</td></tr> <tr><td>6</td><td>Boundary point</td><td></td><td>Description 6</td><td>—————</td><td>2638.890sq.m</td><td>2638.81</td></tr> <tr><td>7</td><td>Boundary point</td><td></td><td>Description 7</td><td>—————</td><td>166922sq.m</td><td>16.69</td></tr> <tr><td>8</td><td>Boundary point</td><td></td><td>Description 8</td><td>—————</td><td>1921.633sq.m</td><td>1921.63</td></tr> <tr><td>9</td><td>Boundary point</td><td></td><td>Description 9</td><td>—————</td><td>4911.502sq.m</td><td>4911.50</td></tr> <tr><td>10</td><td>Boundary point</td><td></td><td>Description 10</td><td>—————</td><td>141.779sq.m</td><td>141.78</td></tr> </tbody> </table>	Watersheds Table							ID	Type	Drains Into	Description	Segment Display	Area Display	Area (m2)	1	Boundary point		Description 1	—————	6606.195sq.m	6606.42	2	Boundary point		Description 2	—————	4840sq.m	4.84	3	Boundary point		Description 3	—————	53.463sq.m	53.46	4	Boundary point		Description 4	—————	27124.417sq.m	27124.42	5	Boundary point		Description 5	—————	4202.574sq.m	4202.57	6	Boundary point		Description 6	—————	2638.890sq.m	2638.81	7	Boundary point		Description 7	—————	166922sq.m	16.69	8	Boundary point		Description 8	—————	1921.633sq.m	1921.63	9	Boundary point		Description 9	—————	4911.502sq.m	4911.50	10	Boundary point		Description 10	—————	141.779sq.m	141.78	
Watersheds Table																																																																																							
ID	Type	Drains Into	Description	Segment Display	Area Display	Area (m2)																																																																																	
1	Boundary point		Description 1	—————	6606.195sq.m	6606.42																																																																																	
2	Boundary point		Description 2	—————	4840sq.m	4.84																																																																																	
3	Boundary point		Description 3	—————	53.463sq.m	53.46																																																																																	
4	Boundary point		Description 4	—————	27124.417sq.m	27124.42																																																																																	
5	Boundary point		Description 5	—————	4202.574sq.m	4202.57																																																																																	
6	Boundary point		Description 6	—————	2638.890sq.m	2638.81																																																																																	
7	Boundary point		Description 7	—————	166922sq.m	16.69																																																																																	
8	Boundary point		Description 8	—————	1921.633sq.m	1921.63																																																																																	
9	Boundary point		Description 9	—————	4911.502sq.m	4911.50																																																																																	
10	Boundary point		Description 10	—————	141.779sq.m	141.78																																																																																	

RSA Contours Table	Contours Table		
	Number	Minimum Elevation	Maximum Elevation
	1	1323.27	1348.49
	2	1348.49	1364.65
	3	1364.65	1377.85
	4	1377.85	1393.67

5.4 Parcels




User-Defined Attributes	Description	Screen grab / DWF / DWG	Default
<None>			

Parcel Styles	Description	Screen grab / DWF / DWG	Default
Council Owned Land			
Private			
Housing			
Proposed Housing			
Retail			
Proposed Retail			
Protected Ecology			
Leisure			
Roads			
Proposed Roads			
Unknown			

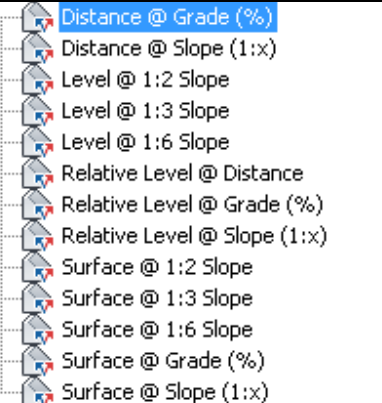
Parcel Label Styles	Description	Screen grab / DWF / DWG	Default
Number Area & Bearing over distance			
Number only		173	

Parcel Table Styles	Description	Screen grab / DWF / DWG	Default																																																								
Area		<table border="1"> <thead> <tr> <th colspan="2">PARCELS/PLOTS</th> </tr> <tr> <th>PARCEL/PLOT</th> <th>AREA</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>92419.66</td> </tr> <tr> <td>2</td> <td>110393.09</td> </tr> <tr> <td>3</td> <td>10183.66</td> </tr> <tr> <td>4</td> <td>10424.52</td> </tr> <tr> <td>5</td> <td>16535.45</td> </tr> </tbody> </table>	PARCELS/PLOTS		PARCEL/PLOT	AREA	1	92419.66	2	110393.09	3	10183.66	4	10424.52	5	16535.45																																											
PARCELS/PLOTS																																																											
PARCEL/PLOT	AREA																																																										
1	92419.66																																																										
2	110393.09																																																										
3	10183.66																																																										
4	10424.52																																																										
5	16535.45																																																										
Full descriptions		<table border="1"> <thead> <tr> <th colspan="4">PARCELS/PLOTS DATA</th> </tr> <tr> <th>PARCELS/PLOTS</th> <th>AREA</th> <th>PERIMETER</th> <th>SEGMENT LENGTH</th> </tr> </thead> <tbody> <tr> <td rowspan="5">1</td> <td rowspan="5">92419.66</td> <td rowspan="5">1348.09</td> <td>14.97</td> </tr> <tr> <td>193.28</td> </tr> <tr> <td>193.26</td> </tr> <tr> <td>12.91</td> </tr> <tr> <td>47.80</td> </tr> <tr> <td rowspan="5">2</td> <td rowspan="5">110393.09</td> <td rowspan="5">2468.08</td> <td>119.26</td> </tr> <tr> <td>227.69</td> </tr> <tr> <td>40.64</td> </tr> <tr> <td>62.52</td> </tr> <tr> <td>81.23</td> </tr> <tr> <td rowspan="5">3</td> <td rowspan="5">10183.66</td> <td rowspan="5">421.90</td> <td>421.90</td> </tr> <tr> <td>0.00</td> </tr> <tr> <td>19.41</td> </tr> <tr> <td>107.02</td> </tr> <tr> <td>41.10</td> </tr> <tr> <td rowspan="5">4</td> <td rowspan="5">10424.52</td> <td rowspan="5">288.44</td> <td>288.44</td> </tr> <tr> <td>379.58</td> </tr> <tr> <td>188.72</td> </tr> <tr> <td>42.32</td> </tr> <tr> <td>16.86</td> </tr> <tr> <td rowspan="5">5</td> <td rowspan="5">16535.45</td> <td rowspan="5">2468.08</td> <td>0.00</td> </tr> <tr> <td>417.33</td> </tr> <tr> <td>109.04</td> </tr> <tr> <td>62.52</td> </tr> <tr> <td>70.99</td> </tr> <tr> <td rowspan="5">6</td> <td rowspan="5">227.69</td> <td rowspan="5">107.12</td> <td>107.12</td> </tr> <tr> <td>0.00</td> </tr> <tr> <td>0.00</td> </tr> <tr> <td>0.00</td> </tr> <tr> <td>0.00</td> </tr> </tbody> </table>	PARCELS/PLOTS DATA				PARCELS/PLOTS	AREA	PERIMETER	SEGMENT LENGTH	1	92419.66	1348.09	14.97	193.28	193.26	12.91	47.80	2	110393.09	2468.08	119.26	227.69	40.64	62.52	81.23	3	10183.66	421.90	421.90	0.00	19.41	107.02	41.10	4	10424.52	288.44	288.44	379.58	188.72	42.32	16.86	5	16535.45	2468.08	0.00	417.33	109.04	62.52	70.99	6	227.69	107.12	107.12	0.00	0.00	0.00	0.00	
PARCELS/PLOTS DATA																																																											
PARCELS/PLOTS	AREA	PERIMETER	SEGMENT LENGTH																																																								
1	92419.66	1348.09	14.97																																																								
			193.28																																																								
			193.26																																																								
			12.91																																																								
			47.80																																																								
2	110393.09	2468.08	119.26																																																								
			227.69																																																								
			40.64																																																								
			62.52																																																								
			81.23																																																								
3	10183.66	421.90	421.90																																																								
			0.00																																																								
			19.41																																																								
			107.02																																																								
			41.10																																																								
4	10424.52	288.44	288.44																																																								
			379.58																																																								
			188.72																																																								
			42.32																																																								
			16.86																																																								
5	16535.45	2468.08	0.00																																																								
			417.33																																																								
			109.04																																																								
			62.52																																																								
			70.99																																																								
6	227.69	107.12	107.12																																																								
			0.00																																																								
			0.00																																																								
			0.00																																																								
			0.00																																																								

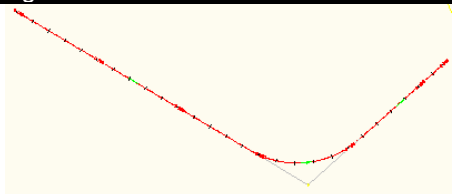
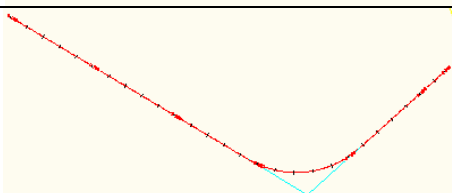
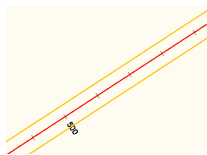
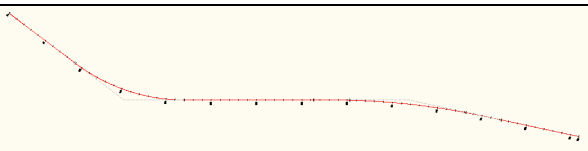
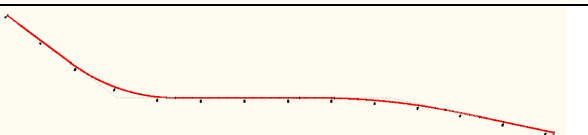
5.5 Grading

Grading Styles	Description	Screen grab / DWF / DWG	Default
Fill			Yes
Cut			Yes
Offset			Yes

Grading Criteria Sets	Description	Screen grab / DWF / DWG	Default
-----------------------	-------------	-------------------------	---------

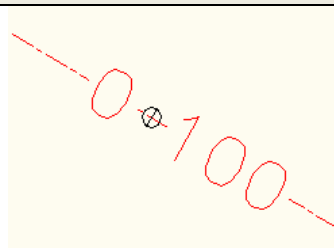
Basic	Some examples of offsets and tie in to surfaces with some default values. All values are unlocked so they can be overridden when applied		
-------	------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------	--

5.6 Alignments

Alignment Style	Description	Screen grab / DWF / DWG	Default
RSA - Urban	Style to give the user and easy understanding of the elements in the alignment.		
RSA - Highway	As above with lineweight applied to thicken the line		
Offsets	Style to show alignments that are an offset from an alignment baseline		
Plotting Style	Style in one colour and linetype (centerline) for plotting purposes		
Plotting Style LWT	As above with lineweight		

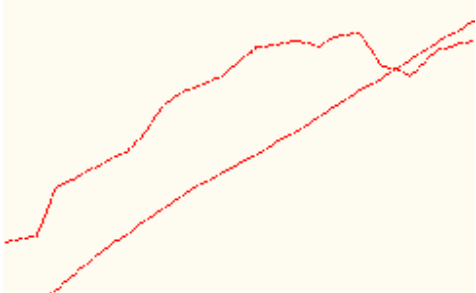
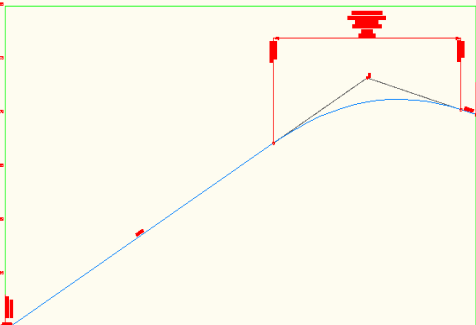

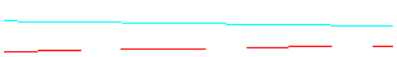
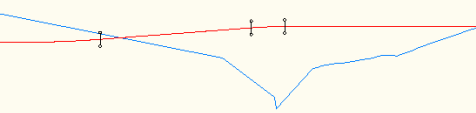
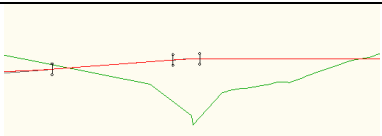
Alignment Design Checks	Description	Screen grab / DWF / DWG	Default
TD 93a standards check	Checks for the transition		

	length		
--	--------	--	--


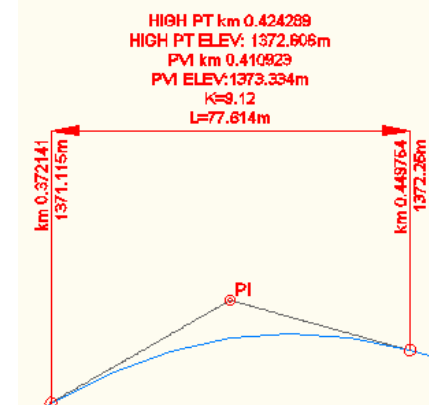
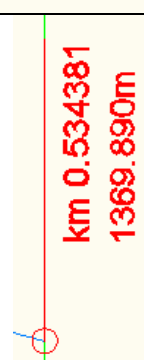
Alignment Label Type/Name	Description	Screen grab / DWF / DWG	Default
RSA – Major / Minor Chainage	Dumbbell type markers at change of element, pip markers at every 10m		Yes
RSA Station Offset – Fixed point		ALIGNMENT=HA STREET 2 STATION=0+026.84 OFFSET=41.99m L NORTHING=-869851.20 EASTING=92268.64	

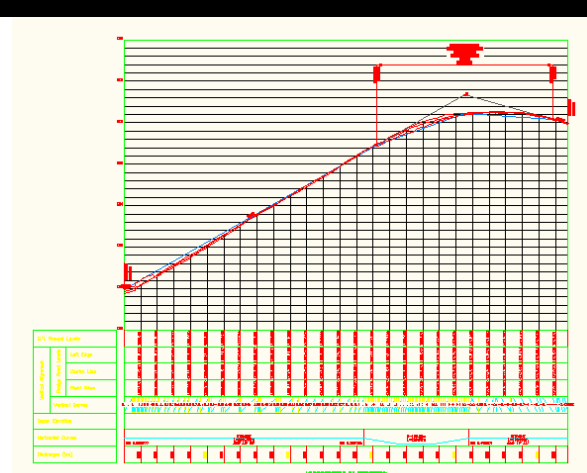
Alignment Table Type/Name	Description	Screen grab / DWF / DWG	Default																														
Line																																	
Line # & Length & Bearing & Start & End		<table border="1"> <thead> <tr> <th colspan="6">ALIGNMENT LINE DATA</th> </tr> <tr> <th>LINE #</th> <th>LENGTH</th> <th>BEARING</th> <th>START POINT</th> <th colspan="2">END POINT</th> </tr> </thead> <tbody> <tr> <td>L1</td> <td>192.654</td> <td>S62° 60' 16.72"E</td> <td>(956788.4048, 409867.5528)</td> <td colspan="2">(356941.9358, 403751.1752)</td> </tr> <tr> <td>L2</td> <td>235.366</td> <td>N53° 03' 11.89"E</td> <td>(956182.9651, 403750.7217)</td> <td colspan="2">(356371.5477, 403892.5540)</td> </tr> <tr> <td>L3</td> <td>227.570</td> <td>S73° 10' 39.86"E</td> <td>(956549.6428, 409924.1664)</td> <td colspan="2">(956757.4749, 403858.2959)</td> </tr> </tbody> </table>	ALIGNMENT LINE DATA						LINE #	LENGTH	BEARING	START POINT	END POINT		L1	192.654	S62° 60' 16.72"E	(956788.4048, 409867.5528)	(356941.9358, 403751.1752)		L2	235.366	N53° 03' 11.89"E	(956182.9651, 403750.7217)	(356371.5477, 403892.5540)		L3	227.570	S73° 10' 39.86"E	(956549.6428, 409924.1664)	(956757.4749, 403858.2959)		
ALIGNMENT LINE DATA																																	
LINE #	LENGTH	BEARING	START POINT	END POINT																													
L1	192.654	S62° 60' 16.72"E	(956788.4048, 409867.5528)	(356941.9358, 403751.1752)																													
L2	235.366	N53° 03' 11.89"E	(956182.9651, 403750.7217)	(356371.5477, 403892.5540)																													
L3	227.570	S73° 10' 39.86"E	(956549.6428, 409924.1664)	(956757.4749, 403858.2959)																													
Curve																																	
Curve # & Radius & Length & Chord Bearing & Start & End		<table border="1"> <thead> <tr> <th colspan="6">ALIGNMENT CURVE DATA</th> </tr> <tr> <th>CURVE #</th> <th>RADIUS</th> <th>LENGTH</th> <th>CHORD BEARING</th> <th>START POINT</th> <th>END POINT</th> </tr> </thead> <tbody> <tr> <td>C1</td> <td>200.000</td> <td>258.899</td> <td>S89.89E</td> <td>(356941.9358, 403751.1752)</td> <td>(356182.9651, 403750.7217)</td> </tr> <tr> <td>C2</td> <td>200.000</td> <td>187.699</td> <td>N79.94E</td> <td>(356371.5477, 403892.5540)</td> <td>(356549.6428, 409924.1664)</td> </tr> </tbody> </table>	ALIGNMENT CURVE DATA						CURVE #	RADIUS	LENGTH	CHORD BEARING	START POINT	END POINT	C1	200.000	258.899	S89.89E	(356941.9358, 403751.1752)	(356182.9651, 403750.7217)	C2	200.000	187.699	N79.94E	(356371.5477, 403892.5540)	(356549.6428, 409924.1664)							
ALIGNMENT CURVE DATA																																	
CURVE #	RADIUS	LENGTH	CHORD BEARING	START POINT	END POINT																												
C1	200.000	258.899	S89.89E	(356941.9358, 403751.1752)	(356182.9651, 403750.7217)																												
C2	200.000	187.699	N79.94E	(356371.5477, 403892.5540)	(356549.6428, 409924.1664)																												
Transition																																	
Transition # & Value & Length & Start Direction & Start Point & End Point		<table border="1"> <thead> <tr> <th colspan="6">ALIGNMENT TRANSITION DATA</th> </tr> <tr> <th>TRANSITION #</th> <th>LENGTH</th> <th>START DIRECTION</th> <th>START POINT</th> <th colspan="2">END POINT</th> </tr> </thead> <tbody> <tr> <td>S1</td> <td>40.000</td> <td>S34° 44' 03.19"E</td> <td>(356969.8119), (403181.8590)</td> <td colspan="2">(356994.4970), (403150.6333)</td> </tr> <tr> <td>S2</td> <td>40.000</td> <td>S88° 27' 02.43"E</td> <td>(357061.0159), (403122.8377)</td> <td colspan="2">(357100.7194), (403127.0744)</td> </tr> </tbody> </table>	ALIGNMENT TRANSITION DATA						TRANSITION #	LENGTH	START DIRECTION	START POINT	END POINT		S1	40.000	S34° 44' 03.19"E	(356969.8119), (403181.8590)	(356994.4970), (403150.6333)		S2	40.000	S88° 27' 02.43"E	(357061.0159), (403122.8377)	(357100.7194), (403127.0744)								
ALIGNMENT TRANSITION DATA																																	
TRANSITION #	LENGTH	START DIRECTION	START POINT	END POINT																													
S1	40.000	S34° 44' 03.19"E	(356969.8119), (403181.8590)	(356994.4970), (403150.6333)																													
S2	40.000	S88° 27' 02.43"E	(357061.0159), (403122.8377)	(357100.7194), (403127.0744)																													
Segment																																	
Length of Line & Curve & Transition		<table border="1"> <thead> <tr> <th colspan="4">ALIGNMENT - (2)</th> </tr> <tr> <th>NUMBER</th> <th>LENGTH</th> <th>RADIUS</th> <th>LINE / CHORD BEARING</th> </tr> </thead> <tbody> <tr> <td>C3</td> <td>73.753</td> <td>100.000</td> <td>S97° 19' 18.28"E</td> </tr> <tr> <td>L4</td> <td>198.828</td> <td></td> <td>S34° 44' 03.19"E</td> </tr> <tr> <td>L6</td> <td>202.952</td> <td></td> <td>N60° 06' 24.81"E</td> </tr> <tr> <td>S1</td> <td>40.000</td> <td>INFINITY</td> <td></td> </tr> <tr> <td>S2</td> <td>40.000</td> <td>100.000</td> <td></td> </tr> </tbody> </table>	ALIGNMENT - (2)				NUMBER	LENGTH	RADIUS	LINE / CHORD BEARING	C3	73.753	100.000	S97° 19' 18.28"E	L4	198.828		S34° 44' 03.19"E	L6	202.952		N60° 06' 24.81"E	S1	40.000	INFINITY		S2	40.000	100.000				
ALIGNMENT - (2)																																	
NUMBER	LENGTH	RADIUS	LINE / CHORD BEARING																														
C3	73.753	100.000	S97° 19' 18.28"E																														
L4	198.828		S34° 44' 03.19"E																														
L6	202.952		N60° 06' 24.81"E																														
S1	40.000	INFINITY																															
S2	40.000	100.000																															

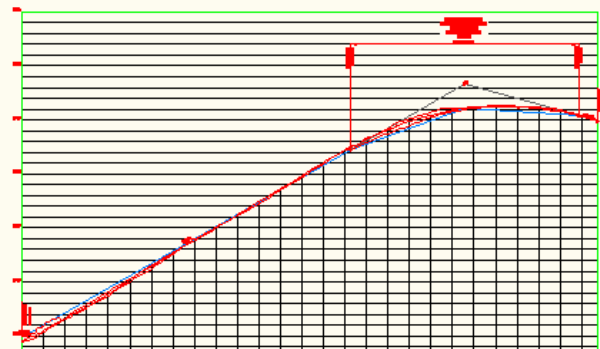

5.7 Profiles

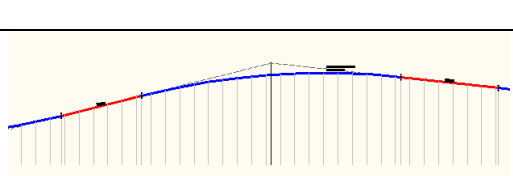
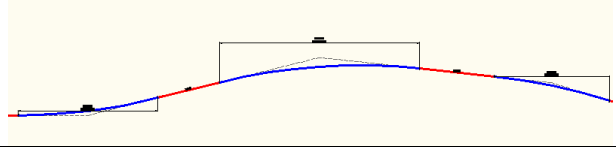

Profile Style	Description	Screen grab / DWF / DWG	Default
RSA Existing Ground Profile	Red dashed line for ground surface profiles		Yes
RSA Design Profile			
RSA Left Sample Profile:			
RSA Right Sample Profile:			
Plotting Style	Style to use for plotting purposes		
Ground Plotting Style			

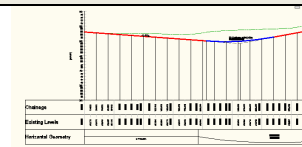
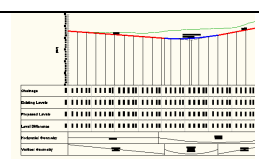
Profile Design Checks	Description	Screen grab / DWF / DWG	Default
Design Check Sets	None implemented at this time		

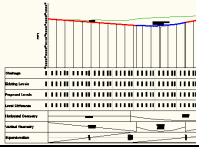
Profile Label Type/Name	Description	Screen grab / DWF / DWG	Default
Profile Label Sets			
RSA Design Profile label			
Annotated Label Set			
Detailed Annotated Label Set			Yes
No labels			

Profile View Type/Name	Description	Screen grab / DWF / DWG	Default
RSA Roads Longsection			Yes

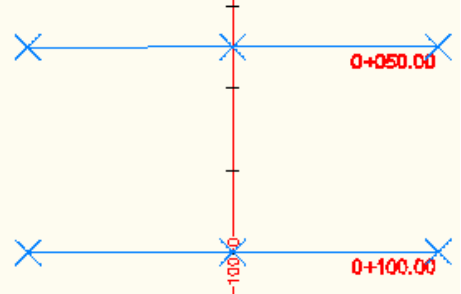
RSA Profiles LS & VA			
RSA Band set with levels			

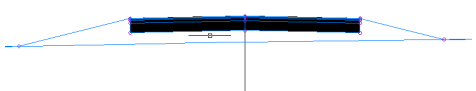
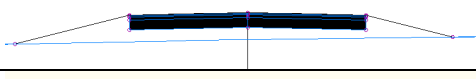
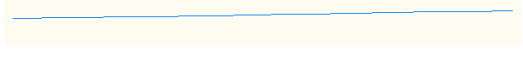
Profile View Label Type/Name	Description	Screen grab / DWF / DWG	Default
Detailed Designed Profile Labels and Ordinates	Element dumbbells, high and low points and ordinates		Yes
Annotated Label Set	Style that adds curve information in a dimension style		
Basic label set	Element dumbbells only		

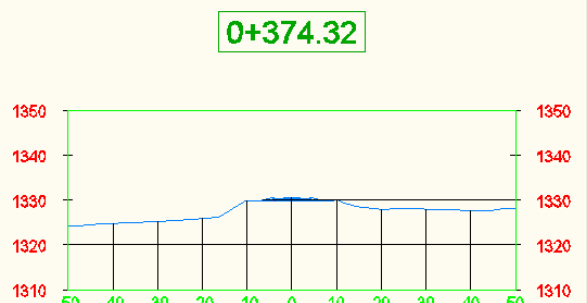
Profile Band Type/Name	Description	Screen grab / DWF / DWG	Default
Profile Band Set			
Chainage and Existing Ground Levels	Labels the existing ground levels, chainages and horizontal geometry		
Levels and Geometry Details	Labels the existing ground levels, proposed levels, chainages, horizontal and		Yes

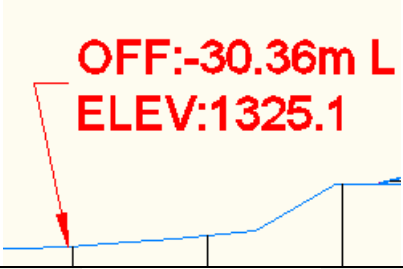
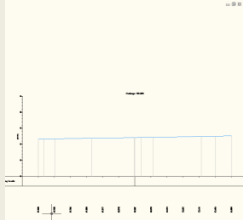
	vertical geometry		
Levels Geometry and Super Level			
Pipe Network			

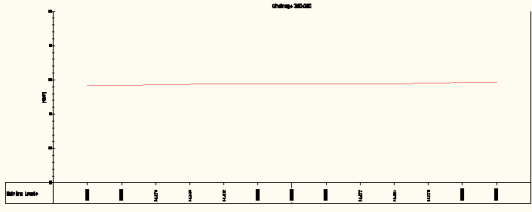
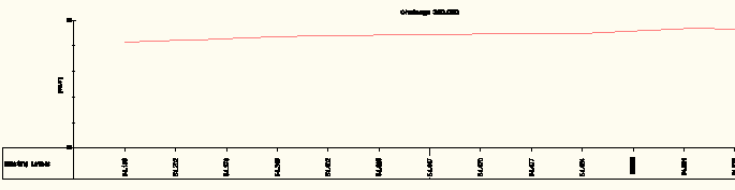
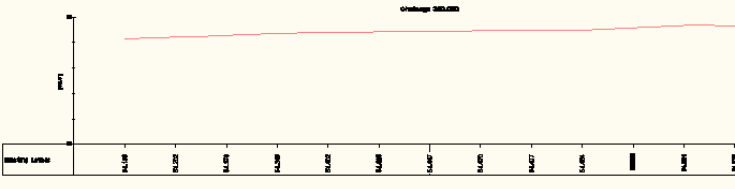
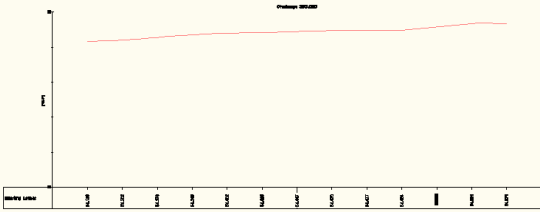
5.8 Sections

Sample Line Styles	Description	Screen grab / DWF / DWG	Default
Sample Lines	Sample line group number and chainage values		Yes

Section Styles	Description	Screen grab / DWF / DWG	Default
RSA Existing Ground	Dashed green line		Yes
RSA Finished Ground	Solid red line		
Additional Surface 1, 2, 3 and 4	A section style to show other surface sections in a different colour		
Corridor Presentation	No visible line shown, but labels are determined from this line		

Section Label Styles	Description	Screen grab / DWF / DWG	Default
Section View	Offset and level data		

FG Labels	Offset, level data, surface grade and name for finished ground surfaces		
Ordinates	Ordinate lines from the grade breaks to the top of the bands		

Section View Styles	Description	Screen grab / DWF / DWG	Default
X Section			Yes
X Section 2x Exaggeration			
X Section 2.5x Exaggeration			
X Section 2.5x Exaggeration			

Label Styles	Description	Screen grab / DWF / DWG	Default
--------------	-------------	-------------------------	---------












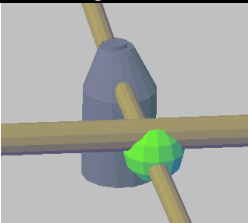
Sections	Choose Section 1 for Existing and Section 2 for Proposed																														
Section Table Styles	Description	Screen grab / DWF / DWG	Default																												
Total Volume																															
Simple		<table border="1"> <thead> <tr> <th colspan="4">Volumes 350.000m</th> </tr> <tr> <th>Material Name</th> <th>Area (m2)</th> <th>Volume (m3)</th> <th>C.Vol (m3)</th> </tr> </thead> <tbody> <tr> <td>Surface</td> <td>0.15</td> <td>7.50</td> <td>52.50</td> </tr> <tr> <td>Binder</td> <td>0.15</td> <td>7.50</td> <td>52.50</td> </tr> <tr> <td>Base</td> <td>0.60</td> <td>30.00</td> <td>210.00</td> </tr> <tr> <td>Sub-Base</td> <td>1.80</td> <td>90.00</td> <td>630.00</td> </tr> <tr> <td>Footpath Surface</td> <td>0.36</td> <td>17.99</td> <td>125.93</td> </tr> </tbody> </table>	Volumes 350.000m				Material Name	Area (m2)	Volume (m3)	C.Vol (m3)	Surface	0.15	7.50	52.50	Binder	0.15	7.50	52.50	Base	0.60	30.00	210.00	Sub-Base	1.80	90.00	630.00	Footpath Surface	0.36	17.99	125.93	
Volumes 350.000m																															
Material Name	Area (m2)	Volume (m3)	C.Vol (m3)																												
Surface	0.15	7.50	52.50																												
Binder	0.15	7.50	52.50																												
Base	0.60	30.00	210.00																												
Sub-Base	1.80	90.00	630.00																												
Footpath Surface	0.36	17.99	125.93																												
Simple - No Lines		<table border="1"> <thead> <tr> <th colspan="4">Volumes 350.000m</th> </tr> <tr> <th>Material Name</th> <th>Area (m2)</th> <th>Volume (m3)</th> <th>C.Vol (m3)</th> </tr> </thead> <tbody> <tr> <td>Surface</td> <td>0.15</td> <td>7.50</td> <td>52.50</td> </tr> <tr> <td>Binder</td> <td>0.15</td> <td>7.50</td> <td>52.50</td> </tr> <tr> <td>Base</td> <td>0.60</td> <td>30.00</td> <td>210.00</td> </tr> <tr> <td>Sub-Base</td> <td>1.80</td> <td>90.00</td> <td>630.00</td> </tr> <tr> <td>Footpath Surface</td> <td>0.36</td> <td>17.99</td> <td>125.93</td> </tr> </tbody> </table>	Volumes 350.000m				Material Name	Area (m2)	Volume (m3)	C.Vol (m3)	Surface	0.15	7.50	52.50	Binder	0.15	7.50	52.50	Base	0.60	30.00	210.00	Sub-Base	1.80	90.00	630.00	Footpath Surface	0.36	17.99	125.93	
Volumes 350.000m																															
Material Name	Area (m2)	Volume (m3)	C.Vol (m3)																												
Surface	0.15	7.50	52.50																												
Binder	0.15	7.50	52.50																												
Base	0.60	30.00	210.00																												
Sub-Base	1.80	90.00	630.00																												
Footpath Surface	0.36	17.99	125.93																												
Material																															
Simple		<table border="1"> <thead> <tr> <th colspan="2">Volume 350.000m</th> </tr> </thead> <tbody> <tr> <td>Cut Area</td> <td>52.47</td> </tr> <tr> <td>Fill Area</td> <td>0.00</td> </tr> <tr> <td>Cut Vol</td> <td>2302.48</td> </tr> <tr> <td>Fill Vol</td> <td>0.00</td> </tr> <tr> <td>Cum Cut Vol</td> <td>8847.33</td> </tr> <tr> <td>Cum Fill Vol</td> <td>53.99</td> </tr> <tr> <td>Net Vol</td> <td>8793.34</td> </tr> </tbody> </table>	Volume 350.000m		Cut Area	52.47	Fill Area	0.00	Cut Vol	2302.48	Fill Vol	0.00	Cum Cut Vol	8847.33	Cum Fill Vol	53.99	Net Vol	8793.34													
Volume 350.000m																															
Cut Area	52.47																														
Fill Area	0.00																														
Cut Vol	2302.48																														
Fill Vol	0.00																														
Cum Cut Vol	8847.33																														
Cum Fill Vol	53.99																														
Net Vol	8793.34																														
Simple - No Lines		<table border="1"> <thead> <tr> <th colspan="2">Volume 350.000m</th> </tr> </thead> <tbody> <tr> <td>Cut Area</td> <td>52.47</td> </tr> <tr> <td>Fill Area</td> <td>0.00</td> </tr> <tr> <td>Cut Vol</td> <td>2302.48</td> </tr> <tr> <td>Fill Vol</td> <td>0.00</td> </tr> <tr> <td>Cum Cut Vol</td> <td>8847.33</td> </tr> <tr> <td>Cum Fill Vol</td> <td>53.99</td> </tr> <tr> <td>Net Vol</td> <td>8793.34</td> </tr> </tbody> </table>	Volume 350.000m		Cut Area	52.47	Fill Area	0.00	Cut Vol	2302.48	Fill Vol	0.00	Cum Cut Vol	8847.33	Cum Fill Vol	53.99	Net Vol	8793.34													
Volume 350.000m																															
Cut Area	52.47																														
Fill Area	0.00																														
Cut Vol	2302.48																														
Fill Vol	0.00																														
Cum Cut Vol	8847.33																														
Cum Fill Vol	53.99																														
Net Vol	8793.34																														

Group Plot Styles	Description	Screen grab / DWF / DWG	Default
Plot All			
Plot by Page A0			
Plot by Page A1			
Plot by Page A2			
Plot by Page A3			

Sheet Styles	Description	Screen grab / DWF / DWG	Default
Sheet Size - A0			
Sheet Size - A1			
Sheet Size - A2			

Sheet Size – A3		
-----------------	--	--

5.9 Pipe Networks

Parts Lists	Description	Screen grab / DWF / DWG	Default
	A selection of lists for drainage and underground utilities	<ul style="list-style-type: none">  _Drainage Foul Water  _Drainage Storm Water  BT Openreach  Cable  CCTV  Electric  Full Catalog  Generic Pipes & Structures  Motorway comms  Transco Gas  Virgin Media 	
Interference Styles	Description	Screen grab / DWF / DWG	Default
Simple Sphere Interference	Shows a green sphere in 3D view		

Pipe Styles	Description	Screen grab / DWF / DWG	Default

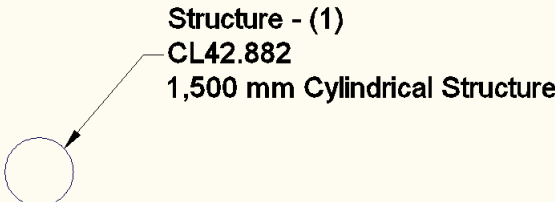
Pipe Rule Set	Description	Screen grab / DWF / DWG	Default
Basic		<ul style="list-style-type: none">  Cover And Slope <ul style="list-style-type: none">  Maximum Cover 7.000m  Maximum Slope 1.000%  Minimum Cover 1.200m  Minimum Slope 0.200%  Length Check <ul style="list-style-type: none">  Maximum Length 100.000m  Minimum Length 1.000m 	Yes

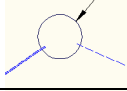

Pipe Label Styles	Description	Screen grab / DWF / DWG	Default
Name Size and 2D Length (Centre to Centre)		Pipe - (7) 4x3 way 100mm dia 430x320 L 56.518	
Name Only		Pipe - (7)	
Pipe Length and Slope		100mm Reinforced Concrete L=56.518m S=3.405%	

Pipe Table Styles	Description	Screen grab / DWF / DWG	Default																								
Pipe Setting Out		<table border="1"> <thead> <tr> <th colspan="6">Pipe Table</th> </tr> <tr> <th>Pipe Name</th> <th>Size (mm)</th> <th>Plan Length (m)</th> <th>Slope</th> <th>Start Invert Level</th> <th>End Invert Level</th> </tr> </thead> <tbody> <tr> <td>Pipe - (3)</td> <td>375</td> <td>140.352</td> <td>-1.10%</td> <td>34.825</td> <td>36.172</td> </tr> <tr> <td>Pipe - (4)</td> <td>375</td> <td>107.979</td> <td>2.24%</td> <td>36.152</td> <td>33.729</td> </tr> </tbody> </table>	Pipe Table						Pipe Name	Size (mm)	Plan Length (m)	Slope	Start Invert Level	End Invert Level	Pipe - (3)	375	140.352	-1.10%	34.825	36.172	Pipe - (4)	375	107.979	2.24%	36.152	33.729	
Pipe Table																											
Pipe Name	Size (mm)	Plan Length (m)	Slope	Start Invert Level	End Invert Level																						
Pipe - (3)	375	140.352	-1.10%	34.825	36.172																						
Pipe - (4)	375	107.979	2.24%	36.152	33.729																						
Simple Summary Pipe List		<table border="1"> <thead> <tr> <th colspan="4">Pipe Table</th> </tr> <tr> <th>Pipe Name</th> <th>Size (mm)</th> <th>Length (m)</th> <th>Slope</th> </tr> </thead> <tbody> <tr> <td>Pipe - (3)</td> <td>375</td> <td>140.352</td> <td>-1.10%</td> </tr> <tr> <td>Pipe - (4)</td> <td>375</td> <td>107.979</td> <td>2.24%</td> </tr> </tbody> </table>	Pipe Table				Pipe Name	Size (mm)	Length (m)	Slope	Pipe - (3)	375	140.352	-1.10%	Pipe - (4)	375	107.979	2.24%									
Pipe Table																											
Pipe Name	Size (mm)	Length (m)	Slope																								
Pipe - (3)	375	140.352	-1.10%																								
Pipe - (4)	375	107.979	2.24%																								

Structure Styles	Description	Screen grab / DWF / DWG	Default

Structure Rule Styles	Description	Screen grab / DWF / DWG	Default																
Basic		<table border="1"> <tbody> <tr> <td>[-] Pipe Drop Across Structure</td> <td></td> </tr> <tr> <td> [-] Drop Reference Location</td> <td>Invert</td> </tr> <tr> <td> [-] Drop Value</td> <td>0.020m</td> </tr> <tr> <td> [-] Maximum Drop Value</td> <td>1.000m</td> </tr> <tr> <td>[-] Maximum pipe size check</td> <td></td> </tr> <tr> <td> [-] Maximum pipe diameter or width</td> <td>1.000m</td> </tr> <tr> <td>[-] Set Sump Depth</td> <td></td> </tr> <tr> <td> [-] Sump Depth</td> <td>0.000m</td> </tr> </tbody> </table>	[-] Pipe Drop Across Structure		[-] Drop Reference Location	Invert	[-] Drop Value	0.020m	[-] Maximum Drop Value	1.000m	[-] Maximum pipe size check		[-] Maximum pipe diameter or width	1.000m	[-] Set Sump Depth		[-] Sump Depth	0.000m	
[-] Pipe Drop Across Structure																			
[-] Drop Reference Location	Invert																		
[-] Drop Value	0.020m																		
[-] Maximum Drop Value	1.000m																		
[-] Maximum pipe size check																			
[-] Maximum pipe diameter or width	1.000m																		
[-] Set Sump Depth																			
[-] Sump Depth	0.000m																		

Structure Label Styles	Description	Screen grab / DWF / DWG	Default
Name Cover and Part Type		 <p>Structure - (1) CL42.882 1,500 mm Cylindrical Structure</p>	

Data with Connected Pipes		 <p>Structure - (1) 2.608 VM 1500mm DIA Reinforced Concrete COVER LEVEL = 43.115 SUMP LEVEL = 40.507 375mm Reinforced Concrete INV OUT LEVEL = 42.69 750mm Reinforced Concrete INV OUT LEVEL = 42.51</p>	
Name Only		 <p>Structure - (1)</p>	

Structure Table Styles	Description	Screen grab / DWF / DWG	Default																									
Simple Summary List		<table border="1"> <thead> <tr> <th colspan="2">Structure Table</th> </tr> <tr> <th>Structure Name</th> <th>Structure Details</th> </tr> </thead> <tbody> <tr> <td>Structure - (1)</td> <td>COVER = 43.115 SUMP = 40.507 Pipe - (1) INV OUT = 42.694 Pipe - (2) INV OUT = 42.507</td> </tr> <tr> <td>Structure - (3)</td> <td>COVER = 42.764 SUMP = -2.188 Pipe - (1) INV IN = -0.188</td> </tr> <tr> <td>Structure - (2)</td> <td>COVER = 42.207 SUMP = -2.375 Pipe - (2) INV IN = -0.375</td> </tr> </tbody> </table>	Structure Table		Structure Name	Structure Details	Structure - (1)	COVER = 43.115 SUMP = 40.507 Pipe - (1) INV OUT = 42.694 Pipe - (2) INV OUT = 42.507	Structure - (3)	COVER = 42.764 SUMP = -2.188 Pipe - (1) INV IN = -0.188	Structure - (2)	COVER = 42.207 SUMP = -2.375 Pipe - (2) INV IN = -0.375																
Structure Table																												
Structure Name	Structure Details																											
Structure - (1)	COVER = 43.115 SUMP = 40.507 Pipe - (1) INV OUT = 42.694 Pipe - (2) INV OUT = 42.507																											
Structure - (3)	COVER = 42.764 SUMP = -2.188 Pipe - (1) INV IN = -0.188																											
Structure - (2)	COVER = 42.207 SUMP = -2.375 Pipe - (2) INV IN = -0.375																											
Structure Setting Out		<table border="1"> <thead> <tr> <th colspan="5">Structure Table</th> </tr> <tr> <th>Structure Name</th> <th>Easting</th> <th>Northing</th> <th>Cover Level</th> <th>Connected Pipes</th> </tr> </thead> <tbody> <tr> <td>Structure - (1)</td> <td>356124.725</td> <td>403493.936</td> <td>43.115</td> <td>Pipe - (1) Inv. 42.694 Pipe - (2) Inv. 42.507</td> </tr> <tr> <td>Structure - (3)</td> <td>356101.857</td> <td>403478.643</td> <td>42.764</td> <td>Pipe - (1) Inv. -0.188</td> </tr> <tr> <td>Structure - (2)</td> <td>356160.071</td> <td>403478.584</td> <td>42.207</td> <td>Pipe - (2) Inv. -0.375</td> </tr> </tbody> </table>	Structure Table					Structure Name	Easting	Northing	Cover Level	Connected Pipes	Structure - (1)	356124.725	403493.936	43.115	Pipe - (1) Inv. 42.694 Pipe - (2) Inv. 42.507	Structure - (3)	356101.857	403478.643	42.764	Pipe - (1) Inv. -0.188	Structure - (2)	356160.071	403478.584	42.207	Pipe - (2) Inv. -0.375	
Structure Table																												
Structure Name	Easting	Northing	Cover Level	Connected Pipes																								
Structure - (1)	356124.725	403493.936	43.115	Pipe - (1) Inv. 42.694 Pipe - (2) Inv. 42.507																								
Structure - (3)	356101.857	403478.643	42.764	Pipe - (1) Inv. -0.188																								
Structure - (2)	356160.071	403478.584	42.207	Pipe - (2) Inv. -0.375																								

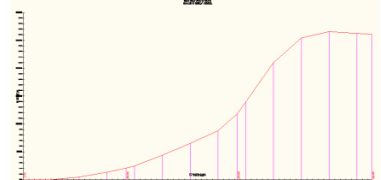
5.10 Corridors

Corridor Styles	Description	Screen grab / DWF / DWG	Default
Edit Regions not Shown			Yes
Edit Style	Shows manual overrides to corridor section to the drawing		

Assembly Styles	Description	Screen grab / DWF / DWG	Default
Basic			

Mass Haul Line Styles	Description	Screen grab / DWF / DWG	Default
Diagonal Hatch			
Solid Hatch			

Mass Haul View Styles	Description	Screen grab / DWF / DWG	Default
-----------------------	-------------	-------------------------	---------

Clipped Grid			Yes
--------------	--	------------------------------------------------------------------------------------	-----

Quantity Takeoff Criteria	Description	Screen grab / DWF / DWG	Default
Footways			
Road Construction			
Road Construction Complete			
Road Narrow Widening			
Road Overlay			
Road Planing			
Two Surfaces			

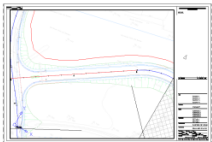
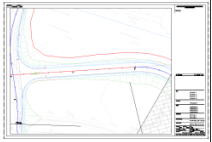
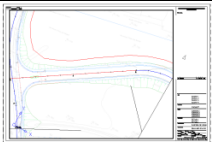
QTO Table Styles	Description	Screen grab / DWF / DWG	Default																																																								
Total Volume																																																											
Total Volume Table		<table border="1"> <thead> <tr> <th colspan="8">Total Volume Table</th> </tr> <tr> <th>Chainage</th> <th>Cut Area</th> <th>Fill Area</th> <th>Cut Vol</th> <th>Fill Vol</th> <th>Cum Cut Vol</th> <th>Cum Fill Vol</th> <th>Net Vol</th> </tr> </thead> <tbody> <tr> <td>0.000</td> <td>0.418m2</td> <td>0.495m2</td> <td>0.000m3</td> <td>0.000m3</td> <td>0.000m3</td> <td>0.000m3</td> <td>0.000m3</td> </tr> <tr> <td>25.000</td> <td>1.045m2</td> <td>0.179m2</td> <td>18.299m3</td> <td>8.428m3</td> <td>18.299m3</td> <td>8.428m3</td> <td>9.872m3</td> </tr> <tr> <td>50.000</td> <td>2.950m2</td> <td>0.000m2</td> <td>49.842m3</td> <td>2.242m3</td> <td>68.242m3</td> <td>10.669m3</td> <td>57.572m3</td> </tr> <tr> <td>75.000</td> <td>6.359m2</td> <td>0.000m2</td> <td>116.869m3</td> <td>0.000m3</td> <td>185.110m3</td> <td>10.669m3</td> <td>174.441m3</td> </tr> <tr> <td>100.000</td> <td>11.475m2</td> <td>0.000m2</td> <td>223.429m3</td> <td>0.000m3</td> <td>408.539m3</td> <td>10.669m3</td> <td>397.870m3</td> </tr> </tbody> </table>	Total Volume Table								Chainage	Cut Area	Fill Area	Cut Vol	Fill Vol	Cum Cut Vol	Cum Fill Vol	Net Vol	0.000	0.418m2	0.495m2	0.000m3	0.000m3	0.000m3	0.000m3	0.000m3	25.000	1.045m2	0.179m2	18.299m3	8.428m3	18.299m3	8.428m3	9.872m3	50.000	2.950m2	0.000m2	49.842m3	2.242m3	68.242m3	10.669m3	57.572m3	75.000	6.359m2	0.000m2	116.869m3	0.000m3	185.110m3	10.669m3	174.441m3	100.000	11.475m2	0.000m2	223.429m3	0.000m3	408.539m3	10.669m3	397.870m3	
Total Volume Table																																																											
Chainage	Cut Area	Fill Area	Cut Vol	Fill Vol	Cum Cut Vol	Cum Fill Vol	Net Vol																																																				
0.000	0.418m2	0.495m2	0.000m3	0.000m3	0.000m3	0.000m3	0.000m3																																																				
25.000	1.045m2	0.179m2	18.299m3	8.428m3	18.299m3	8.428m3	9.872m3																																																				
50.000	2.950m2	0.000m2	49.842m3	2.242m3	68.242m3	10.669m3	57.572m3																																																				
75.000	6.359m2	0.000m2	116.869m3	0.000m3	185.110m3	10.669m3	174.441m3																																																				
100.000	11.475m2	0.000m2	223.429m3	0.000m3	408.539m3	10.669m3	397.870m3																																																				
Material																																																											
Material Volume Table		<table border="1"> <thead> <tr> <th colspan="4">Surface Volume Table</th> </tr> <tr> <th>Chainage</th> <th>Area</th> <th>Volume</th> <th>Cumulative Volume</th> </tr> </thead> <tbody> <tr> <td>0.000</td> <td>0.18</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td>25.000</td> <td>0.18</td> <td>4.50</td> <td>4.50</td> </tr> <tr> <td>50.000</td> <td>0.18</td> <td>4.50</td> <td>9.00</td> </tr> <tr> <td>75.000</td> <td>0.18</td> <td>4.50</td> <td>13.50</td> </tr> <tr> <td>100.000</td> <td>0.18</td> <td>4.50</td> <td>18.00</td> </tr> </tbody> </table>	Surface Volume Table				Chainage	Area	Volume	Cumulative Volume	0.000	0.18	0.00	0.00	25.000	0.18	4.50	4.50	50.000	0.18	4.50	9.00	75.000	0.18	4.50	13.50	100.000	0.18	4.50	18.00																													
Surface Volume Table																																																											
Chainage	Area	Volume	Cumulative Volume																																																								
0.000	0.18	0.00	0.00																																																								
25.000	0.18	4.50	4.50																																																								
50.000	0.18	4.50	9.00																																																								
75.000	0.18	4.50	13.50																																																								
100.000	0.18	4.50	18.00																																																								

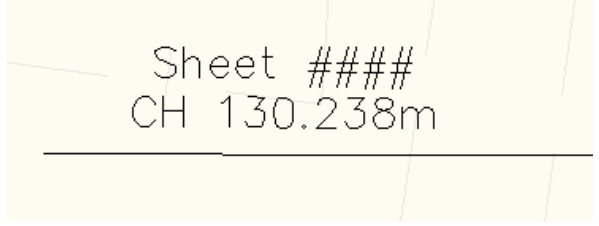
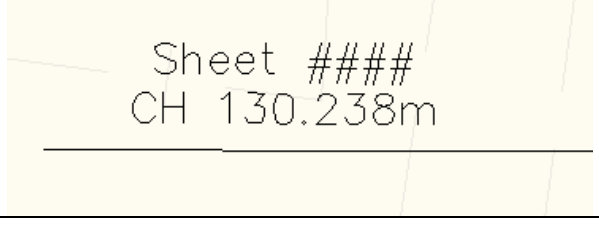
5.11 Plan and Profile Sheets

View Frame Styles	Description	Screen grab / DWF / DWG	Default
Simple			

View Frame Label Styles	Description	Screen grab / DWF	Default
-------------------------	-------------	-------------------	---------

		/ DWG	
Simple			

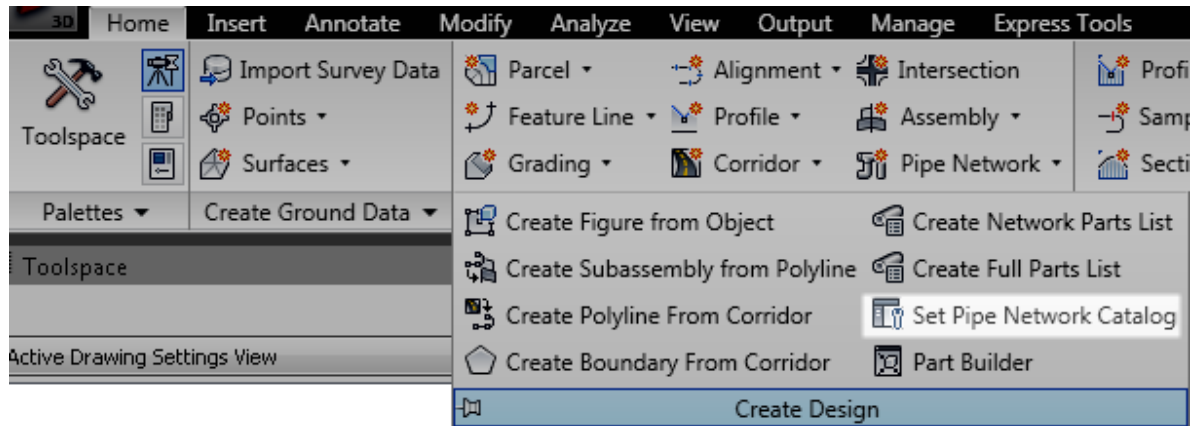
Match Line Styles	Description	Screen grab / DWF / DWG	Default
Simple – ANSI 37 Hatched Masking	Applies a ANSI 37 fill to mask out the next sheet		
Simple – ANSI 38 Hatched Masking	Applies a ANSI 38 fill to mask out the next sheet		
Simple – No Masking	No fill		
Simple – Solid Masking	Applies a white solid fill to mask out the next sheet		

Match Line Label Styles	Description	Screen grab / DWF / DWG	Default
Match Line Left			
Simple			
Match Line Right			
Simple			

6 Pipe and Structure Catalogue

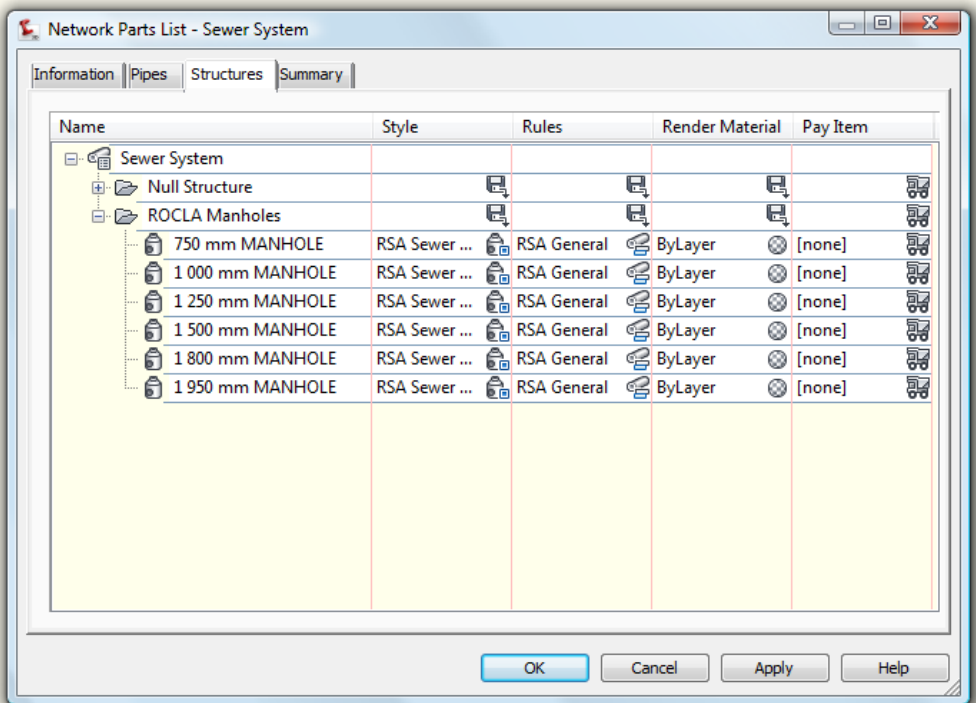
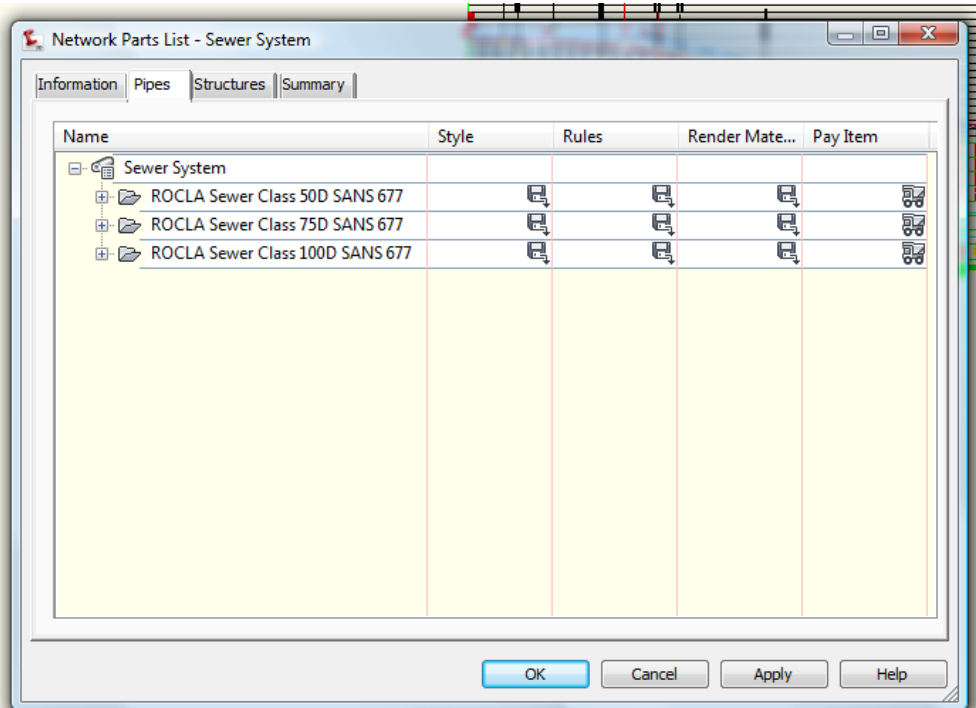
The RSA Country Kit contains a number of parts for drainage and underground utilities.

These are accessed from the RSA Metric Pipes and RSA Metric Structures parts catalog, which must be set first to enable their use

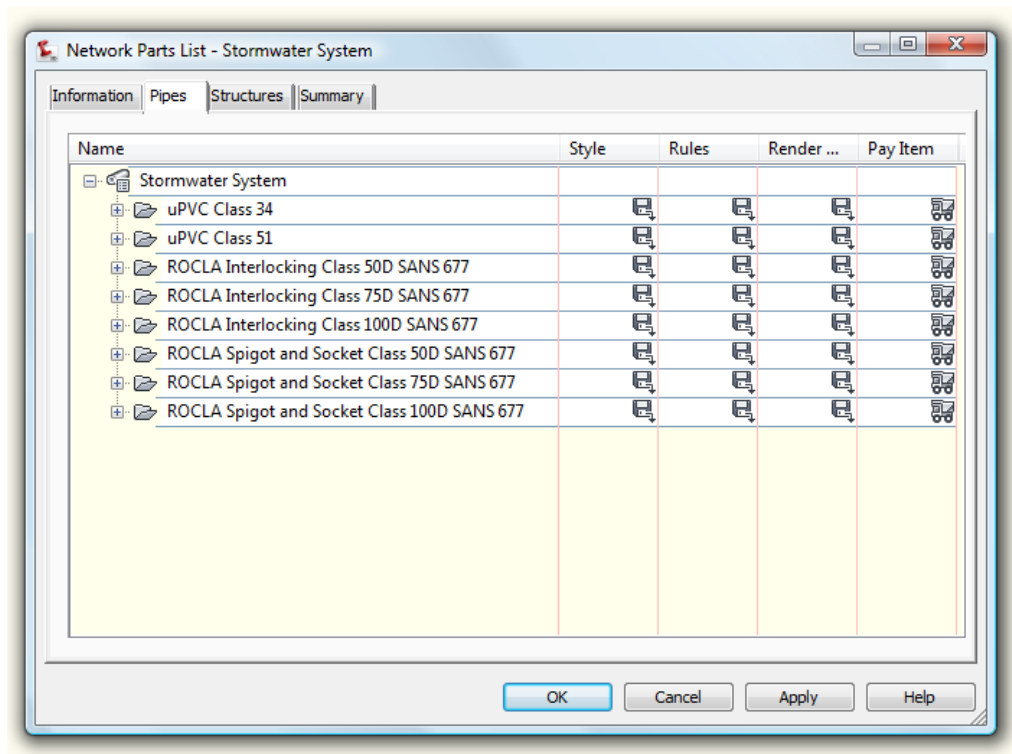


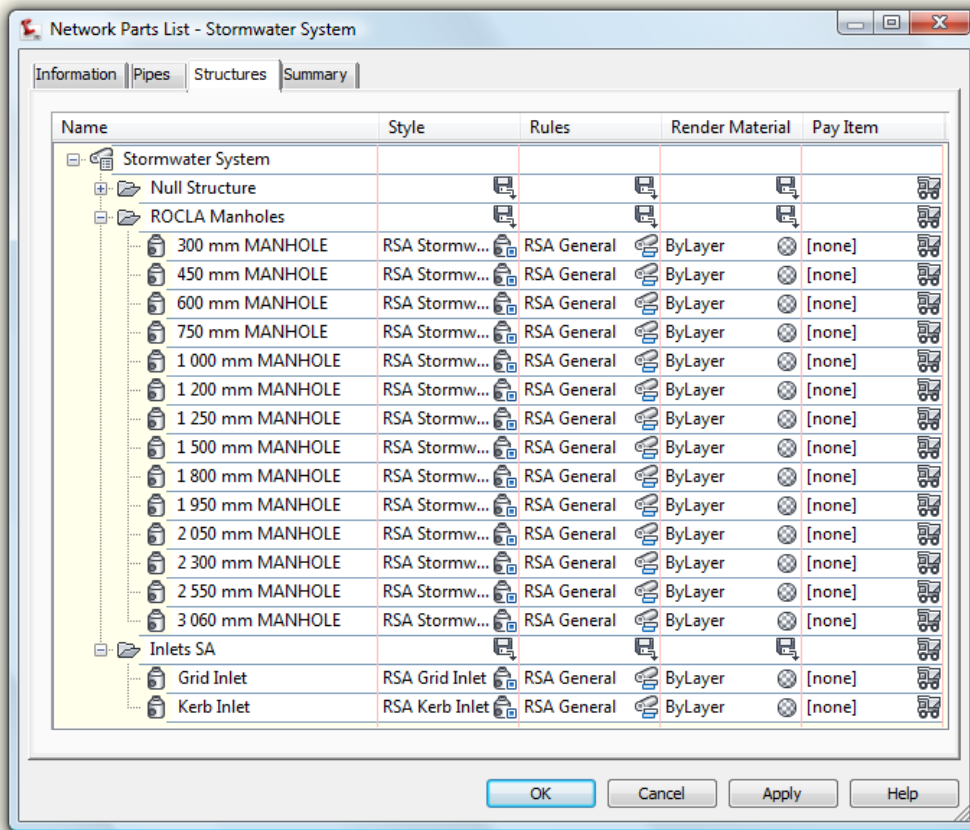
6.1 Pipes and Structures

6.1.1 Sewer System

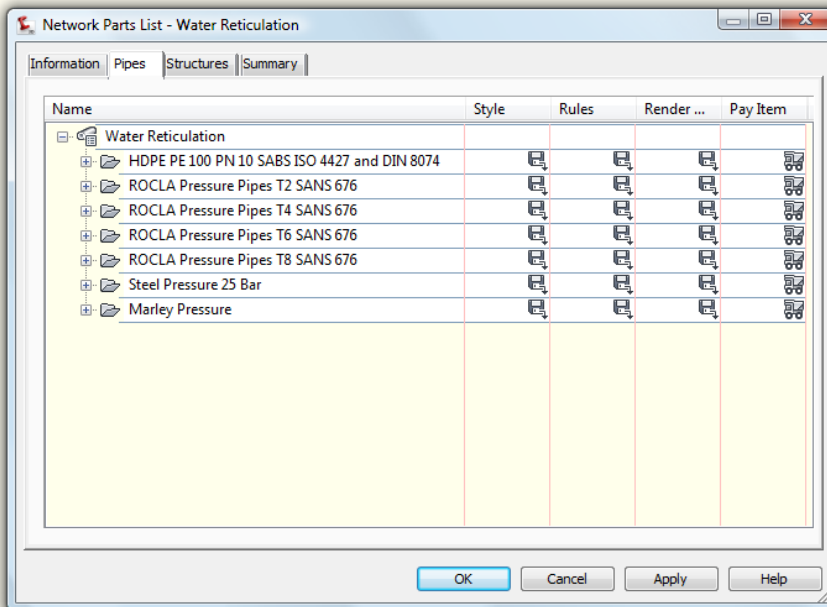


6.1.2 Stormwater System





6.2 Pressure Network Fittings



Network Parts List - Water Reticulation

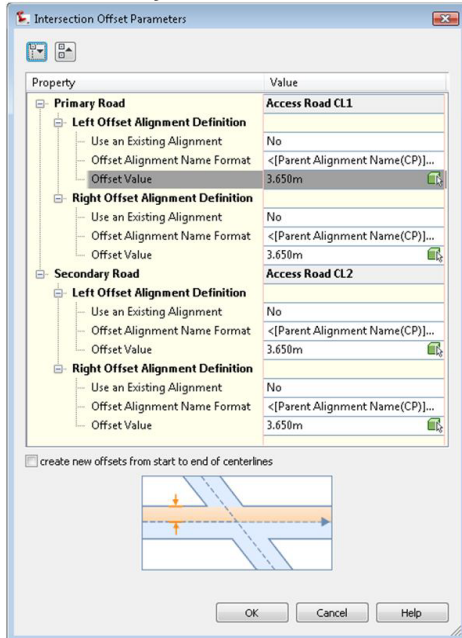
Information | Pipes | Structures | Summary

Name	Style	Rules	Render Material	Pay Item
Water Reticulation				
Null Structure				
Pressure Network				
Reservoir	RSA Reservoir	RSA Pressure	ByLayer	[none]
Pump	RSA Pump	RSA Pressure	ByLayer	[none]
Tank	RSA Tank	RSA Pressure	ByLayer	[none]
Junction	RSA Junction	RSA Pressure	ByLayer	[none]
Single House Connection	RSA Single ...	RSA Pressure	ByLayer	[none]
Double House Connecti...	RSA Double ...	RSA Pressure	ByLayer	[none]
Fire Hydrant	RSA Fire Hy...	RSA Pressure	ByLayer	[none]
Air Valve	RSA Air Valve	RSA Pressure	ByLayer	[none]
Scour Valve	RSA Scour V...	RSA Pressure	ByLayer	[none]
Pressure Reducing Valve	RSA Pressur...	RSA Pressure	ByLayer	[none]
Pressure Sustaining Valve	RSA Pressur...	RSA Pressure	ByLayer	[none]
Pressure Breaker Valve	RSA Pressur...	RSA Pressure	ByLayer	[none]
Flow Control Valve	RSA Flow C...	RSA Pressure	ByLayer	[none]
Throttle Control Valve	RSA Throttl...	RSA Pressure	ByLayer	[none]
General Purpose Valve	RSA General...	RSA Pressure	ByLayer	[none]
Isolating Valve	RSA Isolatin...	RSA Pressure	ByLayer	[none]
Actuating Valve	RSA Actuati...	RSA Pressure	ByLayer	[none]
Non Return	RSA Non Re...	RSA Pressure	ByLayer	[none]
Expansion Joint	RSA Expansi...	RSA Pressure	ByLayer	[none]
Vertical Thrust Block	RSA Vertical...	RSA Pressure	ByLayer	[none]
Horizontal Thrust Block	RSA Horizo...	RSA Pressure	ByLayer	[none]
Combined Thrust Block	RSA Combi...	RSA Pressure	ByLayer	[none]
Crossings				
Road Crossing	RSA Road C...	RSA General	ByLayer	[none]
Rail Crossing	RSA Rail Cro...	RSA General	ByLayer	[none]
Conveyor Crossing	RSA Convey...	RSA General	ByLayer	[none]
Pipe Crossing	RSA Pipe Cr...	RSA General	ByLayer	[none]

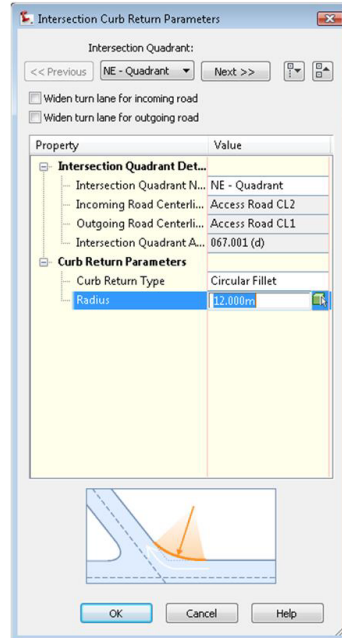
OK Cancel Apply Help

7 Intersections (also known as Junctions in the UK and Ireland)

2D Geometry:

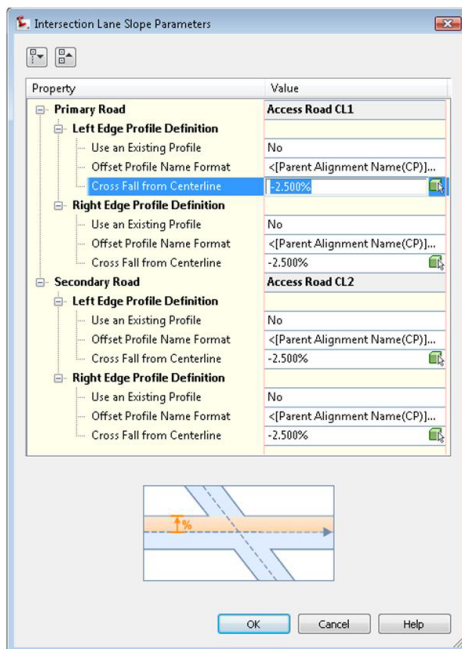


Lane offsets set to 3.00m

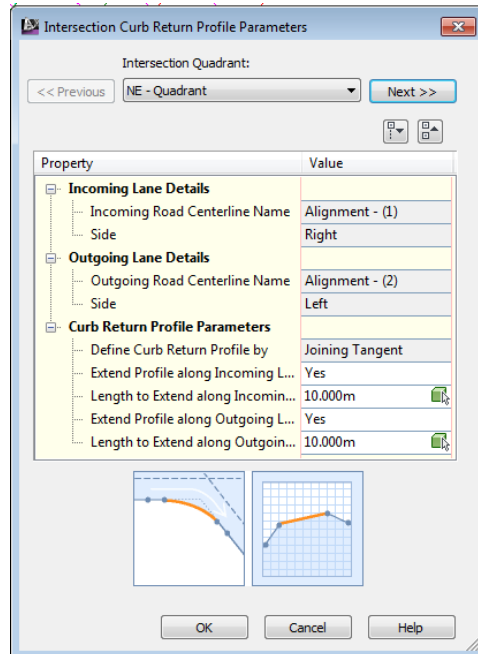


Kerb radius fillets set to 10m circular fillets

3D Geometry:



Lane crossfall set to -2.5% (-1:40)



Using the assembly sets and or customised sets mentioned in the previous section these can be used to automatically build the junction corridor model

8 Roundabouts

A design standards file has been provided to give some suitable values to produce simple roundabout results. As there are no specific tables for all values these settings are to give an outline of a roundabouts to which can be edited depending on results from roundabout traffic analysis for capacity.

Create Roundabout - Circulatory Road

Roundabout center point
X: 92198.055545 Y: -870316.241703

Roundabout parameters
Outer radius: 12
Circulatory road width: 7
Apron width: 1.5

Markings parameters
 Outer offset: 0.5
Number of lanes to mark: 2
 Inner offset: 0.5
Lane marker line width: 0.3
Marker line width: 0.3
Lane marker linetype: Continuous

Drawing standard
Roundabout design standard file: C:\ProgramData\Autodesk\C3D 2013\enu\Data\
Select roundabout standard: US

Predefined parameters to import
Rg = 12

Site: *None*

Alignment style: RSA Road - Urban

Alignment layer: 0

Alignment name prefix: Roundabout

Alignment label set: RSA Urban Road Labels

< Back Next > Cancel Help