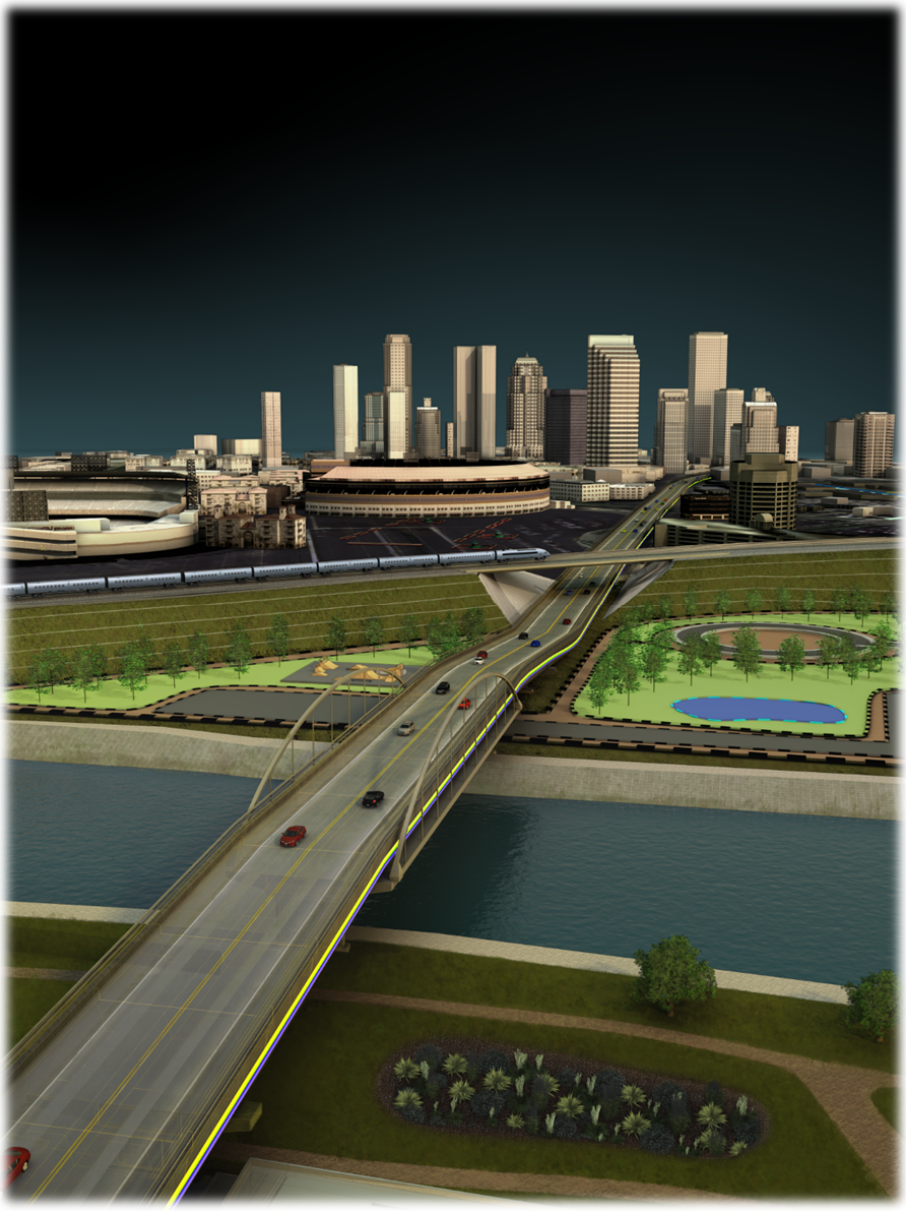
AutoCAD® Civil 3D® 2014
South African Country Kit



Contents

1 General

1.1 Introduction from the author and creator

The document is an overview of RSA settings for AutoCAD Civil 3D 2014 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 2014 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.

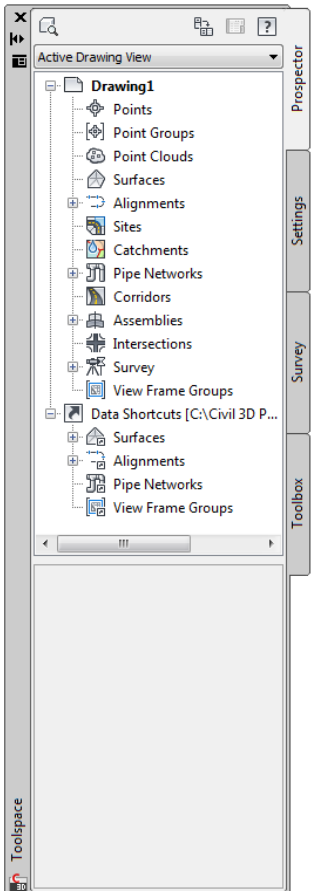
Toolspace is the Primary Civil 3D property window. This window is used for handling Civil 3D objects and settings of all Civil 3D styles for Civil 3D objects and labels.

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.

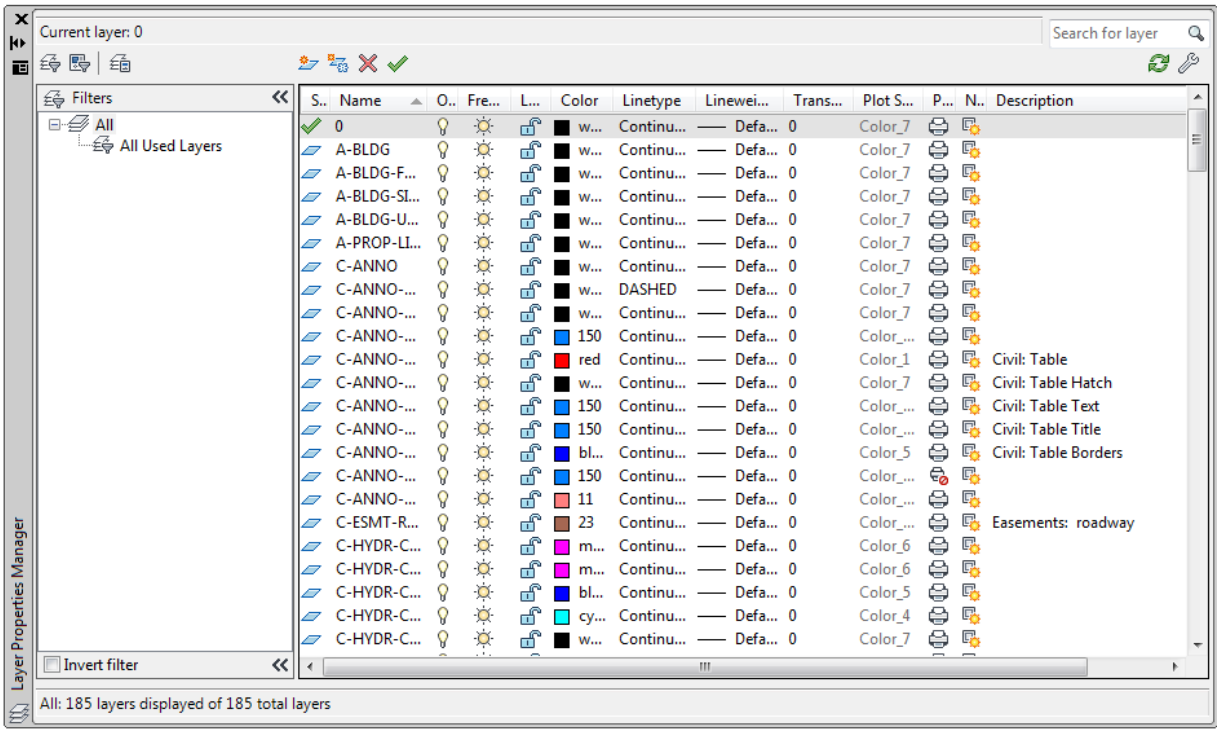
1.2.2 Settings

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.

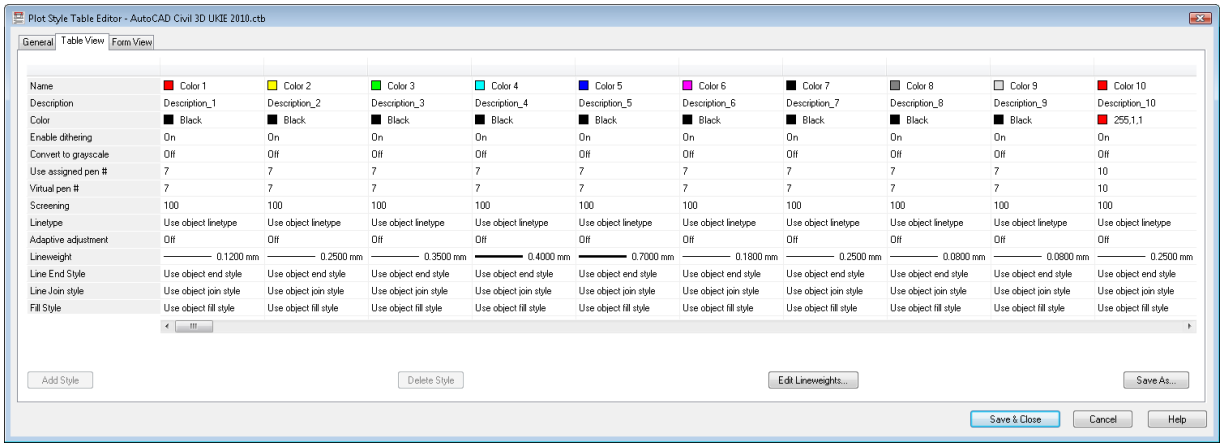
All styles are set to Bylayer so that control of colour, linetype, lineweight, on or off etc can be controlled through the layer manager and also enables the use of XREF into plain AutoCAD software.
As there are many layers, filters have been added to make it quick and easy to navigate the layers



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 adjust 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

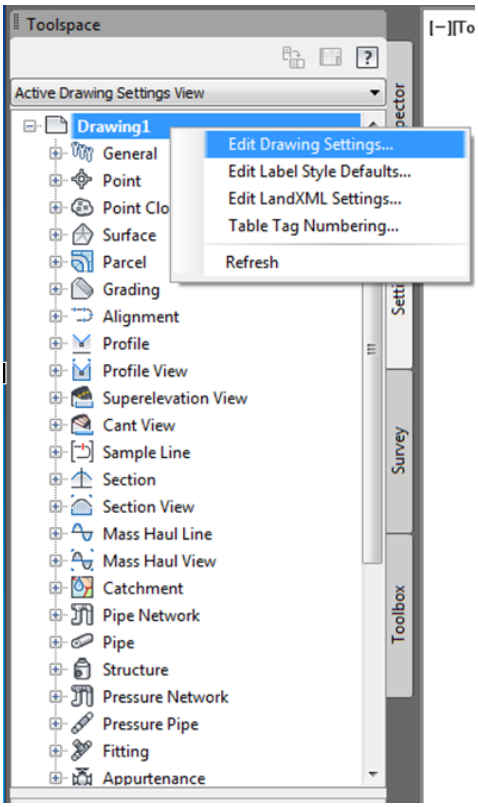
The table below lists used text styles.

Text Style	Description	Font
Civil 3D Standard Text		Arial

2 Drawing Settings

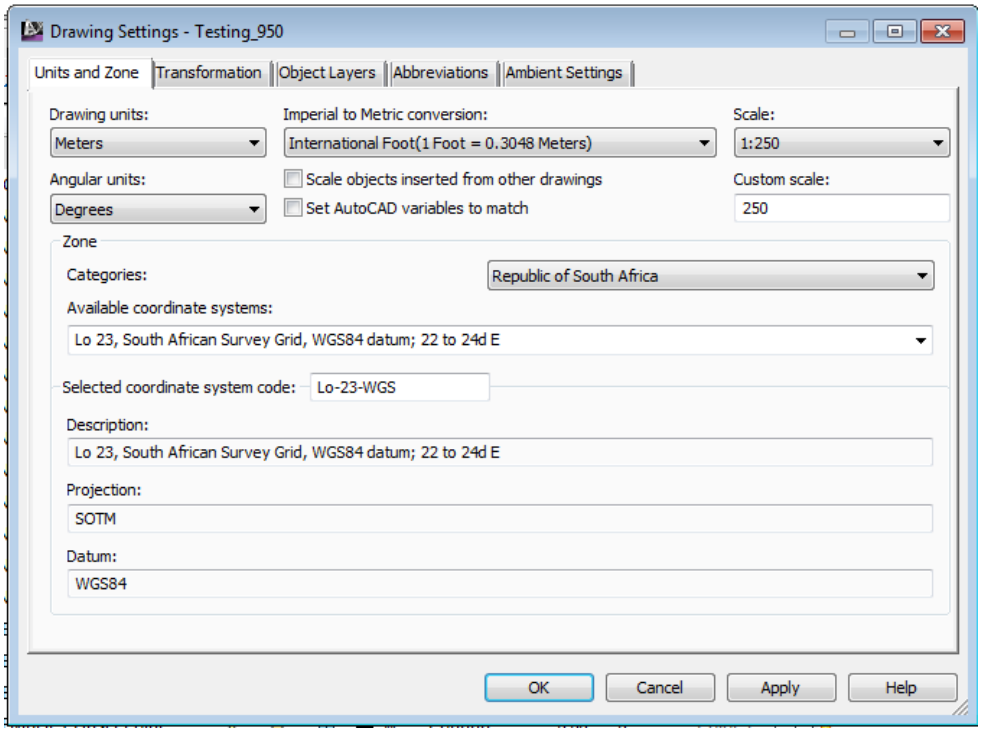
2.1 Edit Drawing Settings...

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



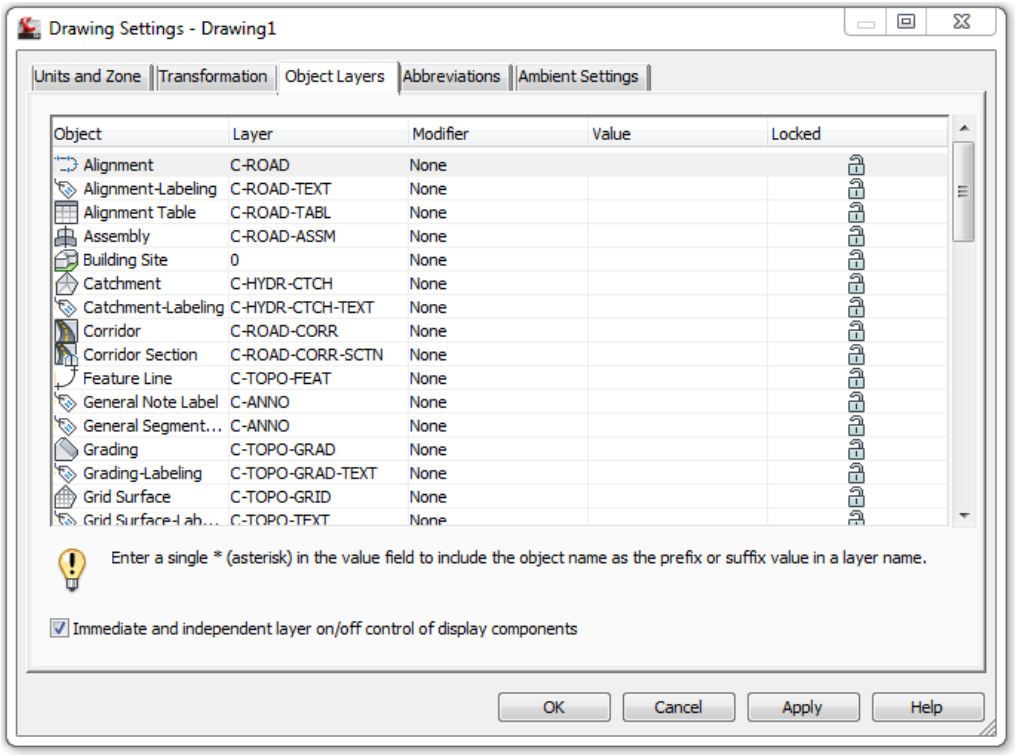
2.1.1 Units and Zone

The figure below show the local coordinate systems and zones.



2.1.2 Object Layers

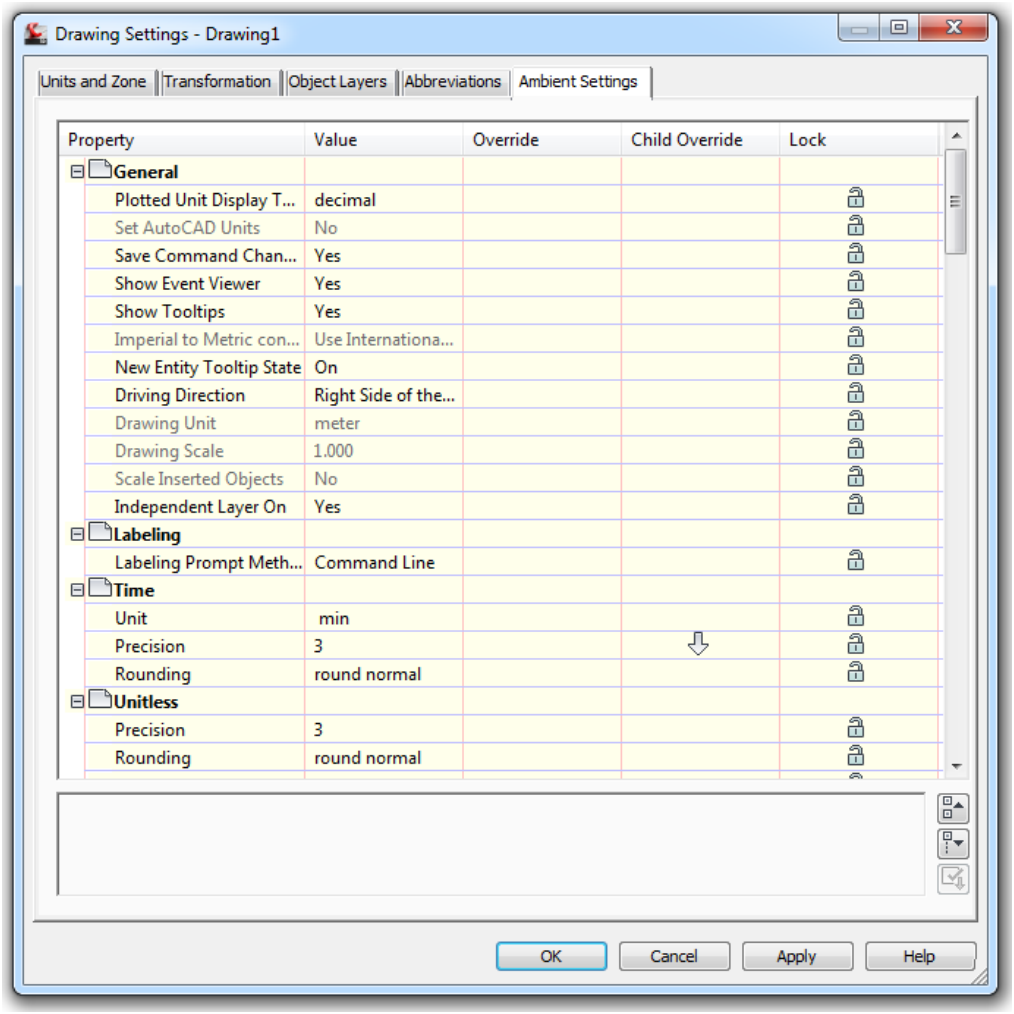
As mentioned above all the Civil 3D objects are by default placed on layers automatically.



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

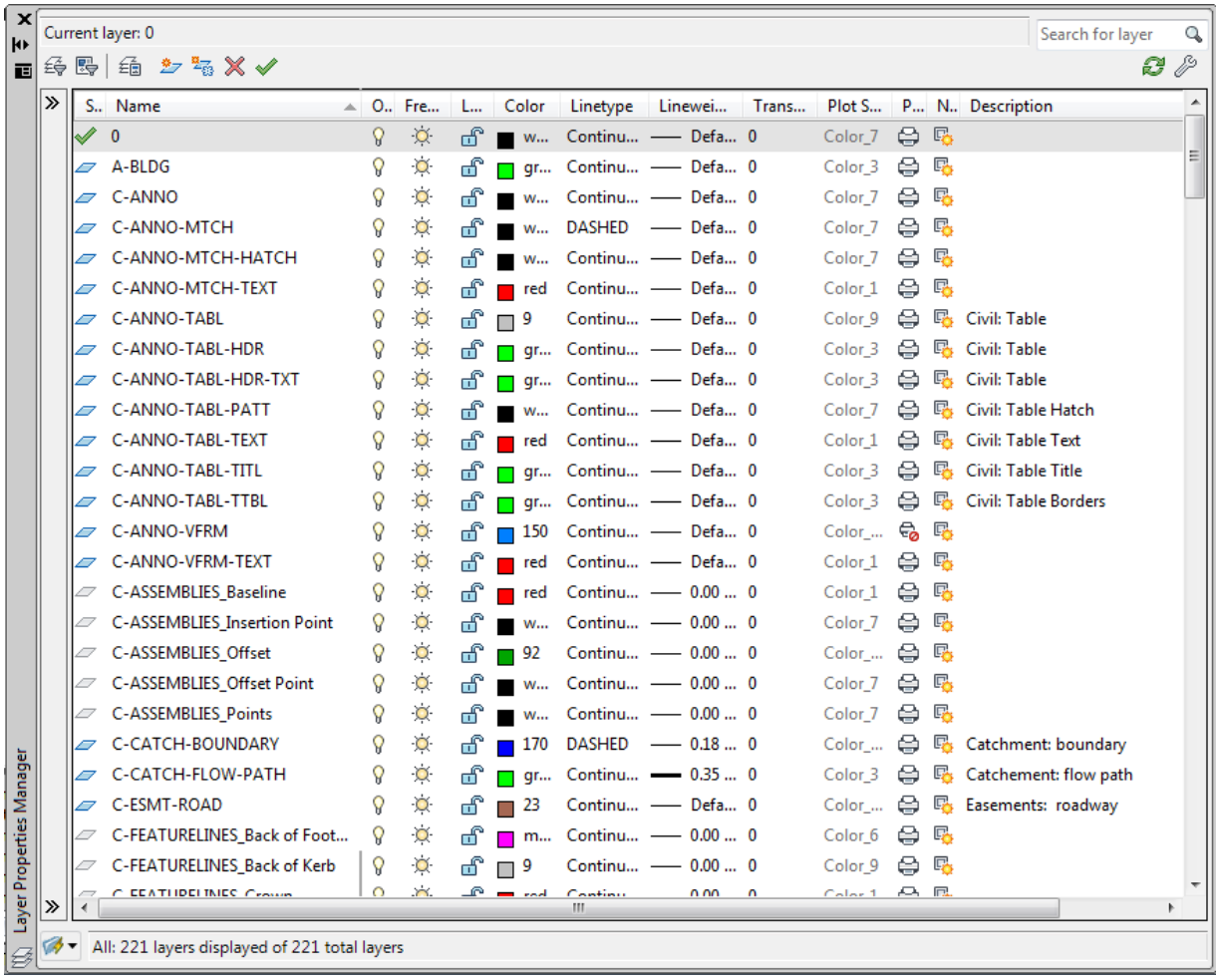
2.1.3 Ambient Settings...

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



3 Layers

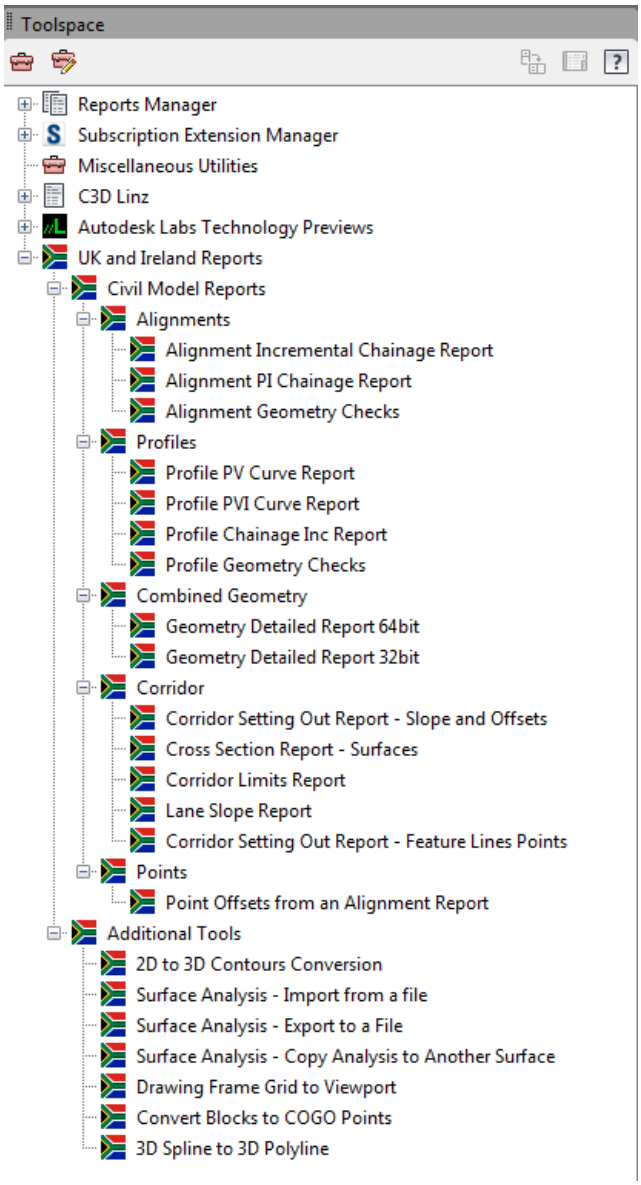
Figure below show the window and tab with Object Layers. All sub layers are based on these core names.



S..	Name	O..	Fre...	L...	Color	Linetype	Linewei...	Trans...	Plot S...	P...	N..	Description
✓	0				w...	Continu...	Defa...	0	Color_7			
	A-BLDG				gr...	Continu...	Defa...	0	Color_3			
	C-ANNO				w...	Continu...	Defa...	0	Color_7			
	C-ANNO-MTCH				w...	DASHED	Defa...	0	Color_7			
	C-ANNO-MTCH-HATCH				w...	Continu...	Defa...	0	Color_7			
	C-ANNO-MTCH-TEXT				red	Continu...	Defa...	0	Color_1			
	C-ANNO-TABL				9	Continu...	Defa...	0	Color_9			Civil: Table
	C-ANNO-TABL-HDR				gr...	Continu...	Defa...	0	Color_3			Civil: Table
	C-ANNO-TABL-HDR-TXT				gr...	Continu...	Defa...	0	Color_3			Civil: Table
	C-ANNO-TABL-PATT				w...	Continu...	Defa...	0	Color_7			Civil: Table Hatch
	C-ANNO-TABL-TEXT				red	Continu...	Defa...	0	Color_1			Civil: Table Text
	C-ANNO-TABL-TITL				gr...	Continu...	Defa...	0	Color_3			Civil: Table Title
	C-ANNO-TABL-TTBL				gr...	Continu...	Defa...	0	Color_3			Civil: Table Borders
	C-ANNO-VFRM				150	Continu...	Defa...	0	Color_...			
	C-ANNO-VFRM-TEXT				red	Continu...	Defa...	0	Color_1			
	C-ASSEMBLIES_Baseline				red	Continu...	0.00 ...	0	Color_1			
	C-ASSEMBLIES_Insertion Point				w...	Continu...	0.00 ...	0	Color_7			
	C-ASSEMBLIES_Offset				92	Continu...	0.00 ...	0	Color_...			
	C-ASSEMBLIES_Offset Point				w...	Continu...	0.00 ...	0	Color_7			
	C-ASSEMBLIES_Points				w...	Continu...	0.00 ...	0	Color_7			
	C-CATCH-BOUNDARY				170	DASHED	0.18 ...	0	Color_...			Catchment: boundary
	C-CATCH-FLOW-PATH				gr...	Continu...	0.35 ...	0	Color_3			Catchement: flow path
	C-ESMT-ROAD				23	Continu...	Defa...	0	Color_...			Easements: roadway
	C-FEATURELINES_Back of Foot...				m...	Continu...	0.00 ...	0	Color_6			
	C-FEATURELINES_Back of Kerb				9	Continu...	0.00 ...	0	Color_9			

4 Reports

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

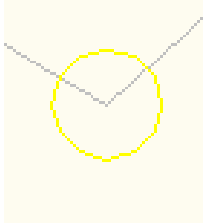


Report Name	*Description*
Civil Model Reports	
Alignment Incremental Chainage Report	Creates a report at chainages specified of the alignment and profile geometry with levels and bearings
Alignment PI Chainage Report	Reports the intersection points of alignments
Alignment Superelevation	Superelevation 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	As described

5 Object styles

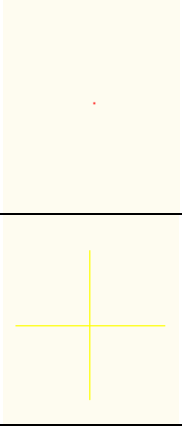
All Civil 3D object styles in the RSA template.

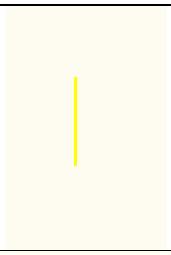
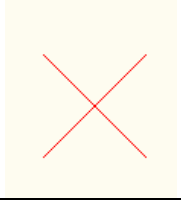
5.1 Multi-purpose Styles

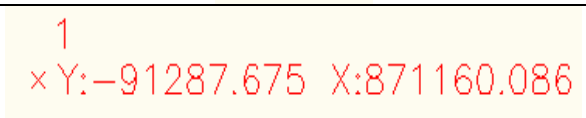
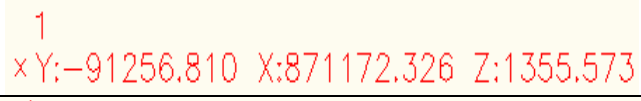
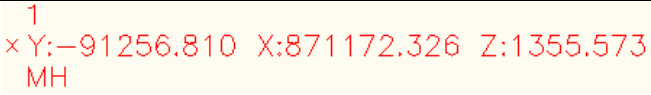
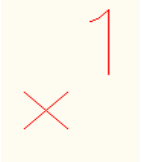
Marker Styles	Description	Screen grab / DWF / DWG	Default
RSA Point of Intersection	Marker style for use with horizontal alignments		Yes

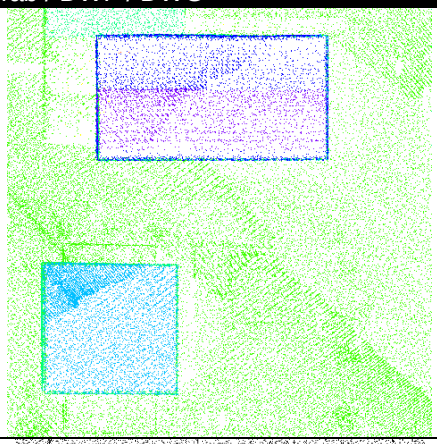
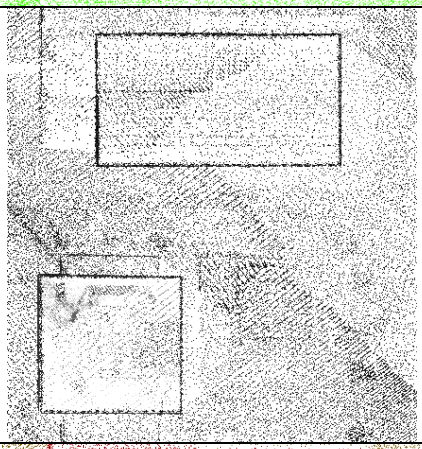
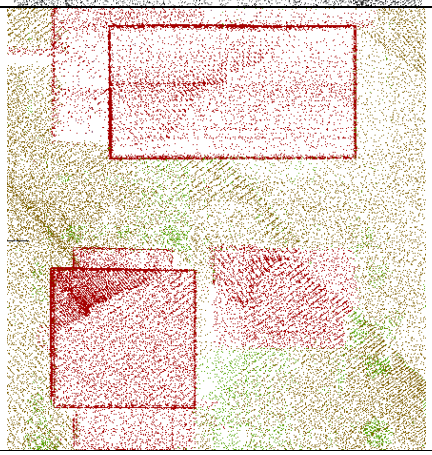
5.2 Points

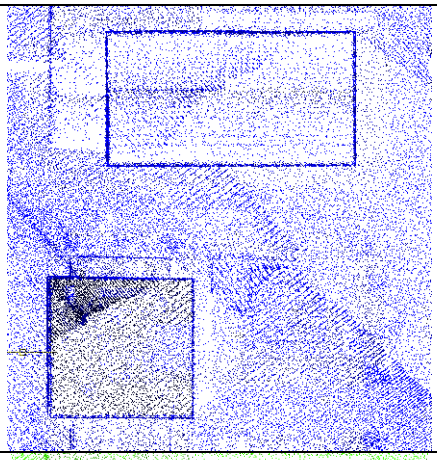
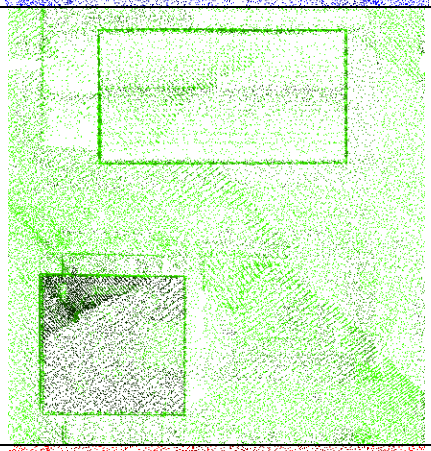
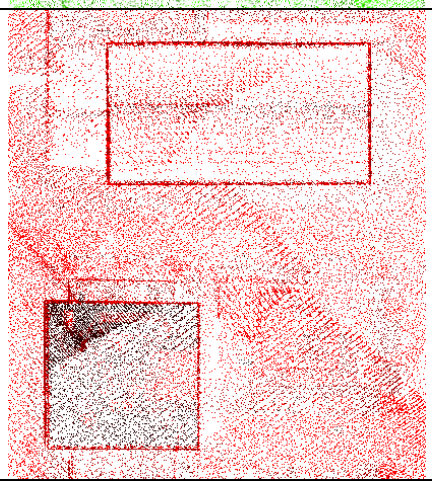
User Defined Attribute Classifications	Description	Screen grab / DWF / DWG	Default
<None>			

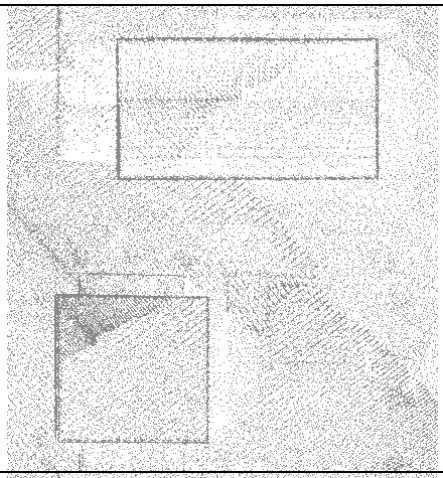
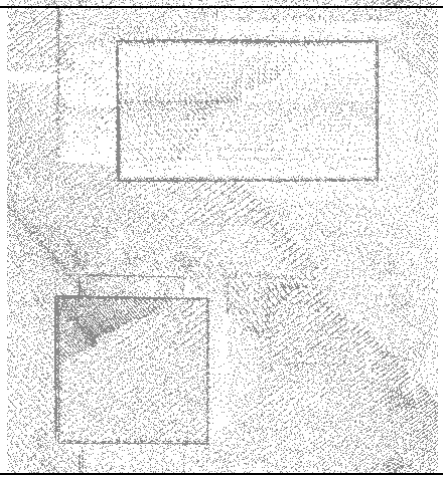
Point Styles	Description	Screen grab / DWF / DWG	Default
RSA Circle			
RSA Cross			
RSA Dot			
RSA Plus			

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:			

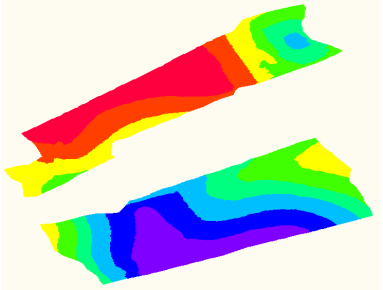
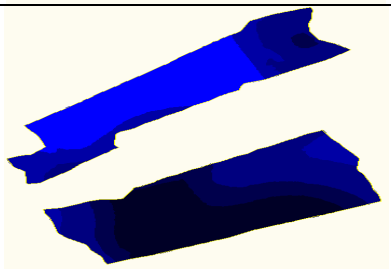
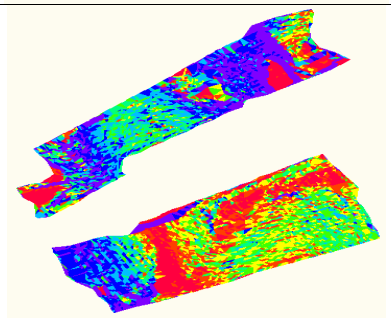
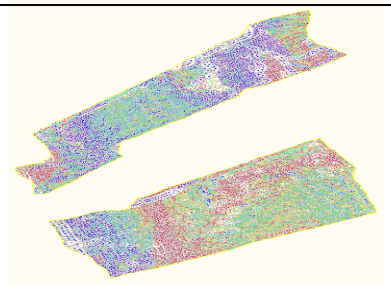
Single Colour:			
True Color:			

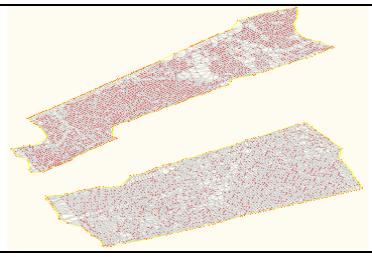
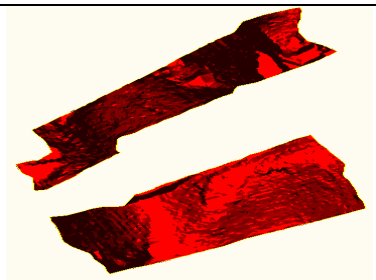
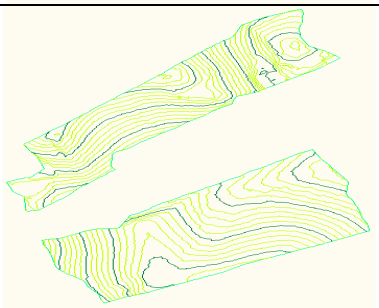
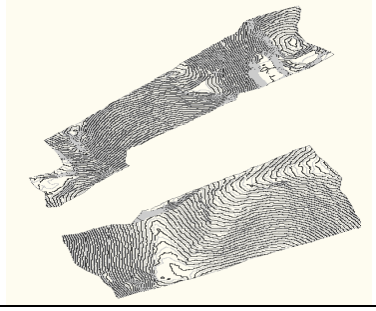
Point Table Styles	Description	Screen grab / DWF / DWG	Default
RSA Coordinate Table - PYXZ		List of Coordinates	

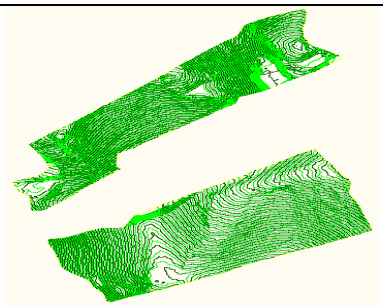
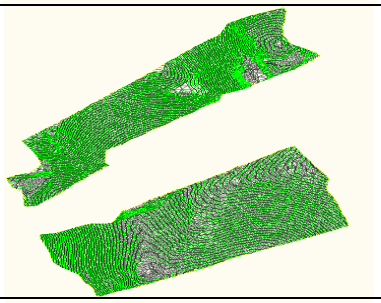
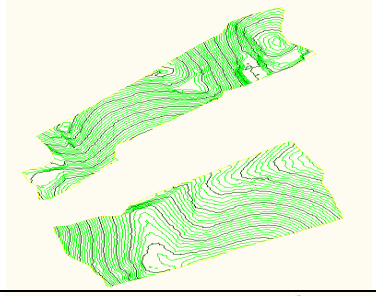
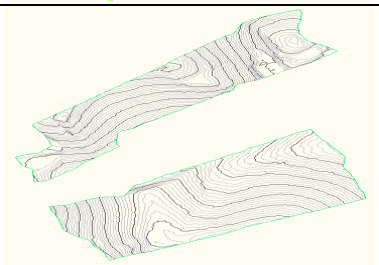
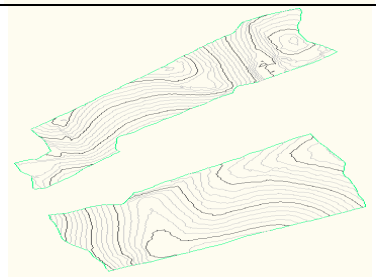
Point	Y Coordinate	X Coordinate	Level
1	-92080.078	871659.221	1381.529
2	-92106.007	871567.932	1377.946
3	-92058.657	871599.489	1380.674
4	-92158.991	871603.996	1378.051
5	-92134.188	871650.204	1380.195

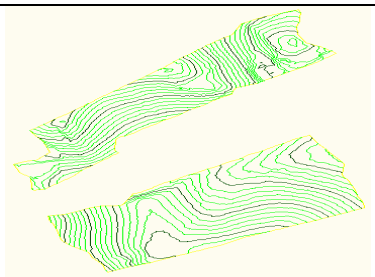
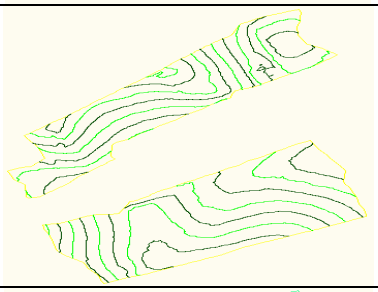
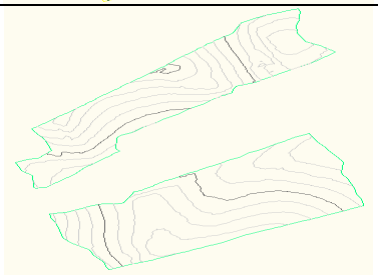
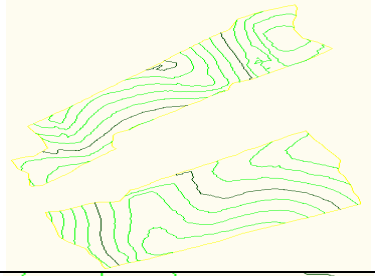
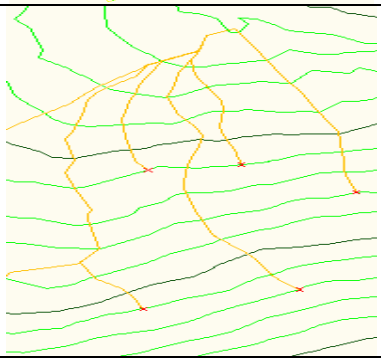
RSA Setting Out Lo 25 - PYXZ		Setting out Coordinates Lo 25 Point | Y Coordinate | X Coordinate | Level 1 | -91949.805 | 871379.668 | 1380.007 2 | -91949.805 | 871405.898 | 1381.558 3 | -91951.385 | 871433.509 | 1382.040 4 | -91949.805 | 871456.584 | 1382.601 5 | -91949.805 | 871481.236 | 1382.988	

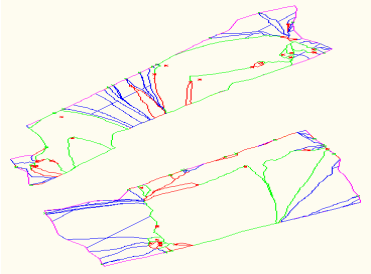
5.3 Surfaces

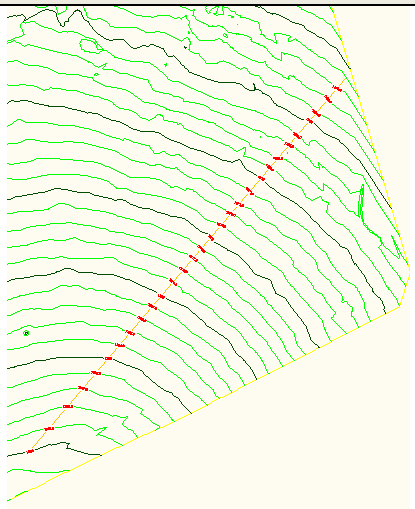
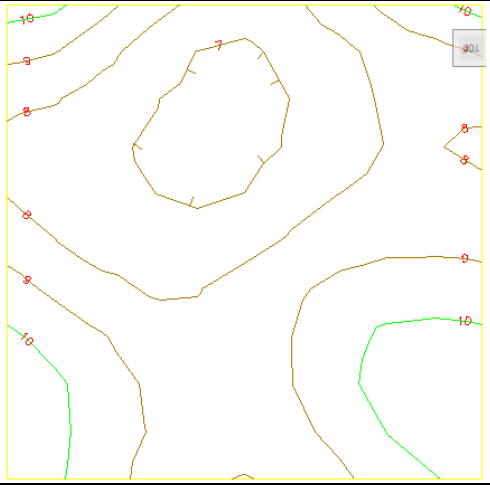
Surface Styles	Description	Screen grab / DWF / DWG	Default
RSA_Elevation Banding (2D)			
RSA_Elevations			
RSA_ Slope Banding (2D)			
RSA_Slope Arrows			

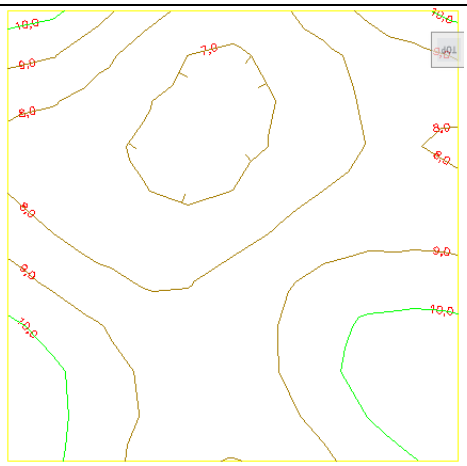
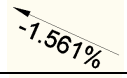
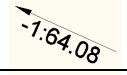
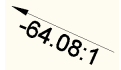
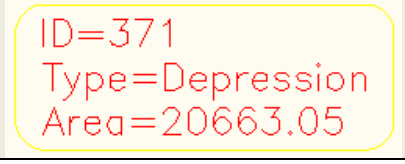
RSA Points-Triangulation-Border			
All off			
RSA_Slopes			
RSA Contours 2m and 10m (design)			
RSA Border Only			
RSA Contours 0.5m and 1m (Background)			

RSA Contours 0.5m and 1m (design)			
RSA Contours (0.5m and 1m) and Triangles			
RSA Contours 1m and 5m (design)			
RSA Contours 1m and 5m (Background)			
RSA Contours 2m and 10m (Background)			

RSA Contours 2m and 10m (design)			
RSA Contours 5m and 10m (design)			
RSA Contours 5m and 25m (Background)			
RSA Contours 5m and 25m (design)			
Waterdrop			

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		(see Elevations Table below)	

Elevations Table

Number	Minimum Elevation	Maximum Elevation	Area	Color
1	1314.79	1332.53	288538.27	
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	888816.15	
6	1362.59	1371.68	732961.45	
7	1371.68	1381.59	426438.80	
8	1381.59	1393.67	383033.08	

Surface Table Styles Name/Type	Description	Screen grab / DWF / DWG	Default
Slopes			
RSA Slope Table		(see Slopes Table below)	

Slopes Table

Number	Minimum Slope	Maximum Slope	Area	Color
1	0.00%	3.14%	651550.32	
2	3.14%	4.70%	829841.14	
3	4.70%	6.18%	784043.60	
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%	99273.96	
8	26.32%	558808.54%	73870.37	

Surface Table Styles Name/Type	Description	Screen grab / DWF / DWG	Default
Slope Arrows			
RSA Slope Arrow Table		(see Slope Arrows Table below)	

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%	555508.54%	

Surface Table Styles Name/Type	Description	Screen grab / DWF / DWG	Default
Watersheds			
RSA Watersheds Table		(see Watersheds Table below)	

Watersheds Table

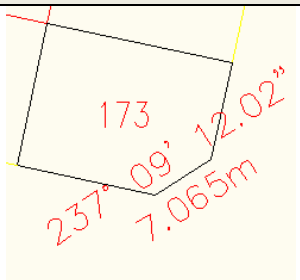
ID	Type	Drains Into	Description	Segment Display	Area Display	Area (m2)
1	Boundary point		Description 1	———	[illegible]	[illegible]
2	Boundary point		Description 2	———	4.845sq.m	4.84
3	Boundary point		Description 3	———	83.483sq.m	83.48
4	Boundary point		Description 4	———	27134.417sq.m	27134.41
5	Boundary point		Description 5	———	4292.374sq.m	4292.37
6	Boundary point		Description 6	———	[illegible]	[illegible]
7	Boundary point		Description 7	———	18.920sq.m	18.92
8	Boundary point		Description 8	———	1831.638sq.m	1831.63
9	Boundary point		Description 9	———	4811.502sq.m	4811.50
10	Boundary point		Description 10	———	141.779sq.m	141.78

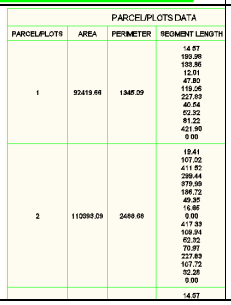
RSA Contours Table		Contours Table Number / Minimum Elevation / Maximum Elevation 1 / 1323.27 / 1348.49 2 / 1348.49 / 1364.65 3 / 1364.65 / 1377.85 4 / 1377.85 / 1393.67	

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			

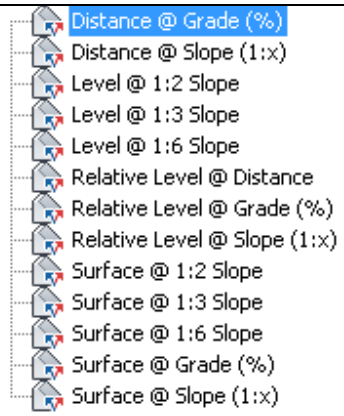
Parcel Label Styles	Description	Screen grab / DWF / DWG	Default
Number Area & Bearing over distance			
Number only			

Parcel Table Styles	Description	Screen grab / DWF / DWG	Default
Area		PARCELS/PLOTS PARCEL/PLOT | AREA 1 | 92419.66 2 | 110393.09 3 | 10183.66 4 | 10424.52 5 | 16535.45	
Full descriptions			

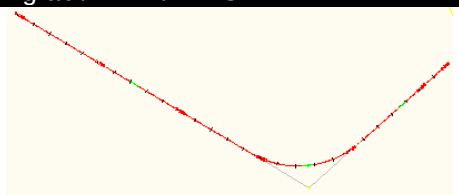
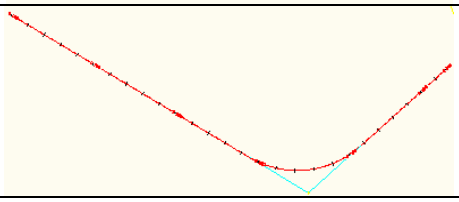
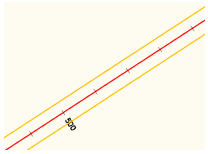
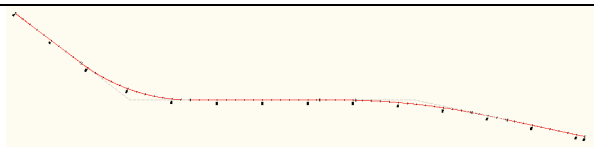
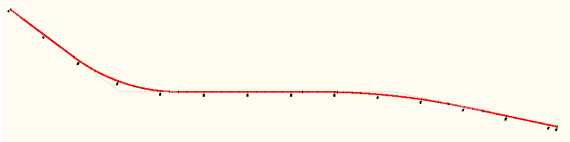
5.5 Grading

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

Grading Criteria Sets	Description	Screen grab / DWF / DWG	Default

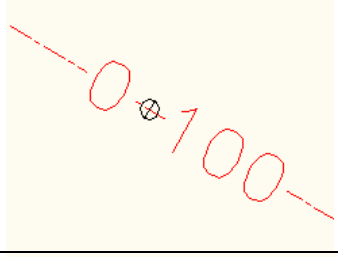
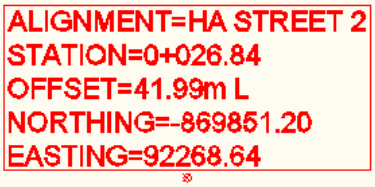
Basic	Some examples of offsets and tie in to surfaces with some default values. All values are unlocked so they can be overridden when applied		

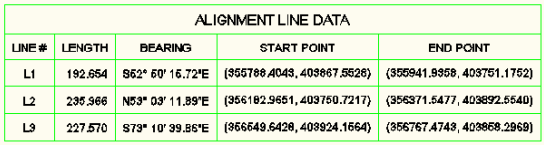
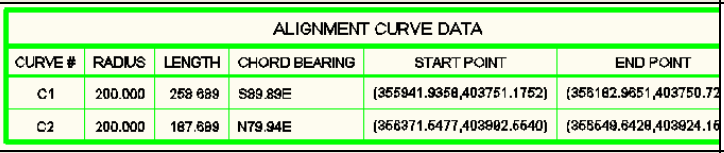
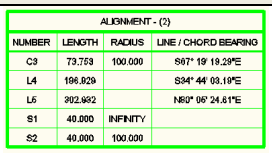
5.6 Alignments

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 Table Type/Name	Description	Screen grab / DWF / DWG	Default
Line			
Line # & Length & Bearing & Start & End			
Curve			
Curve # & Radius & Length & Chord Bearing & Start & End			
Transition			
Transition # & Value & Length & Start Direction & Start Point & End Point			
Segment			
Length of Line & Curve & Transition			

ALIGNMENT LINE DATA

LINE #	LENGTH	BEARING	START POINT	END POINT
L1	192.654	S62° 50' 16.72"E	(355788.4043, 403867.5526)	(355941.9358, 403751.1752)
L2	235.966	N53° 03' 11.89"E	(356162.9651, 403750.7217)	(356371.5477, 403892.5540)
L3	227.570	S73° 10' 39.86"E	(356649.6428, 403924.1664)	(356767.4743, 403868.2969)

ALIGNMENT CURVE DATA

CURVE #	RADIUS	LENGTH	CHORD BEARING	START POINT	END POINT
C1	200.000	258.689	S89.89E	(355941.9358,403751.1752)	(356162.9651,403750.72
C2	200.000	167.689	N79.94E	(356371.5477,403892.5540)	(356649.6428,403924.16

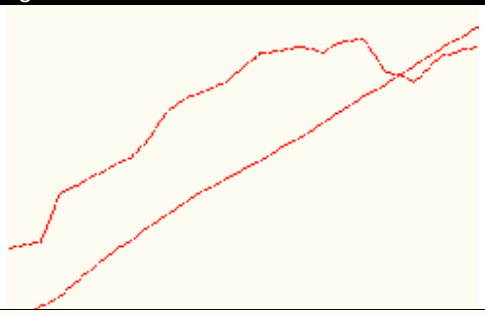
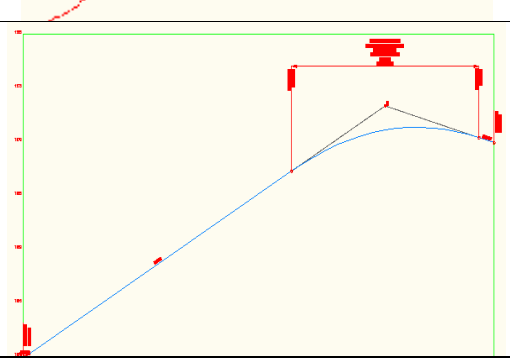
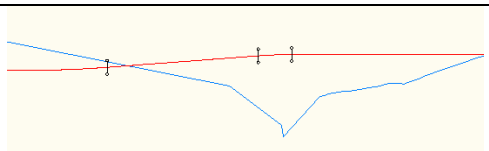
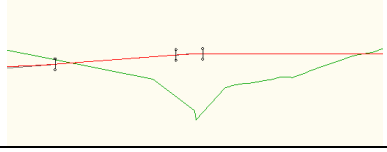
ALIGNMENT TRANSITION DATA

TRANSITION #	LENGTH	START DIRECTION	START POINT	END POINT
S1	40.000	S34° 44' 03.19"E	(356969.6119), (403181.8590)	(356994.4970), (403150.633
S2	40.000	S88° 27' 02.43"E	(357061.0159), (403122.8377)	(357100.7194), (403127.074

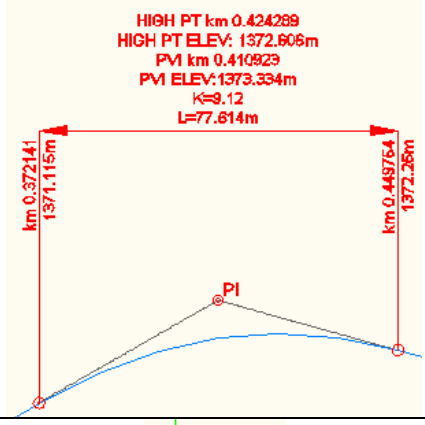
ALIGNMENT - (2)

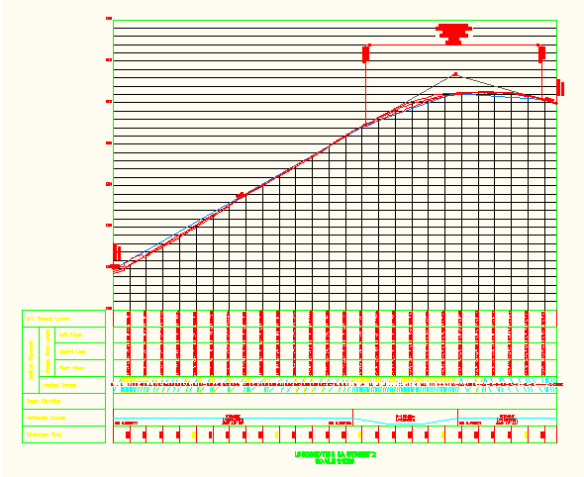
NUMBER	LENGTH	RADIUS	LINE / CHORD BEARING
C3	73.753	100.000	S67° 19' 19.29"E
L4	196.929		S34° 44' 03.19"E
L5	302.992		N80° 06' 24.61"E
S1	40.000	INFINITY	
S2	40.000	100.000	

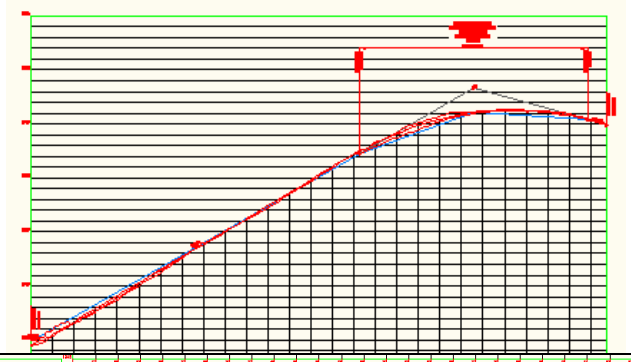
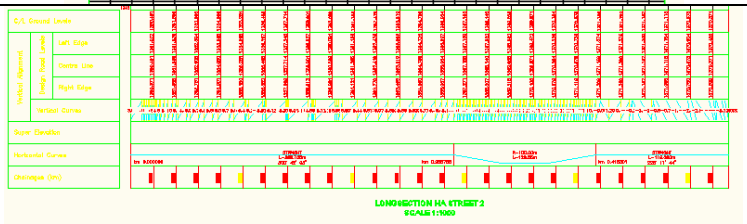
5.7 Profiles

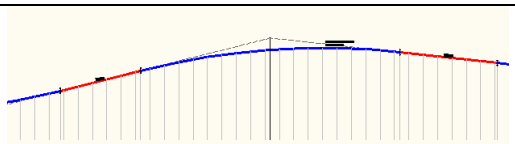
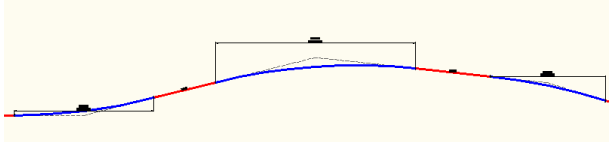
Profile Style	Description	Screen grab / DWF / DWG	Default
RSA Existing Ground Profile	Red dashed line for ground surface profiles		Yes
RSA Design Profile			
RSA Left Sample Profile:			
RSA Right Sample Profile:			
Plotting Style	Style to use for plotting purposes		
Ground			
Plotting Style			

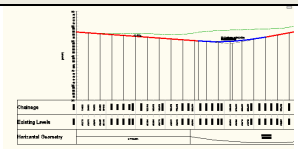
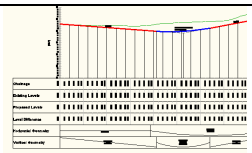
Profile Design Checks	Description	Screen grab / DWF / DWG	Default
Design Check Sets			
	None implemented at this time		

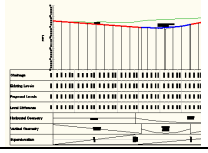
Profile Label Type/Name	Description	Screen grab / DWF / DWG	Default
Profile Label Sets			
RSA Design Profile label			
Annotated Label Set			
Detailed Annotated Label Set			Yes
No labels			

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

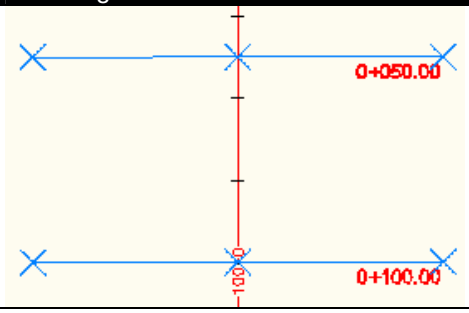
RSA Profiles LS & VA			
RSA Band set with levels			

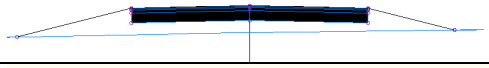
Profile View Label Type/Name	Description	Screen grab / DWF / DWG	Default
Detailed Designed Profile Labels and Ordinates	Element dumbbells, high and low points and ordinates		Yes
Annotated Label Set	Style that adds curve information in a dimension style		
Basic label set	Element dumbbells only		

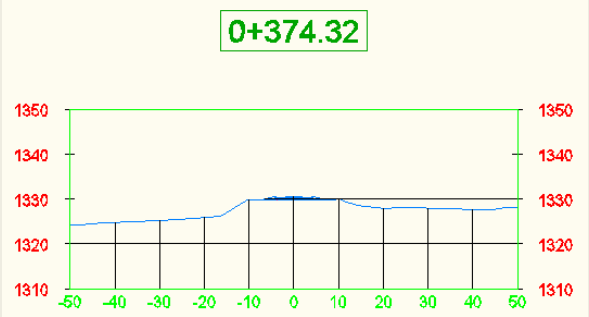
Profile Band Type/Name	Description	Screen grab / DWF / DWG	Default
Profile Band Set			
Chainage and Existing Ground Levels	Labels the existing ground levels, chainages and horizontal geometry		
Levels and Geometry Details	Labels the existing ground levels, proposed levels, chainages, horizontal and	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

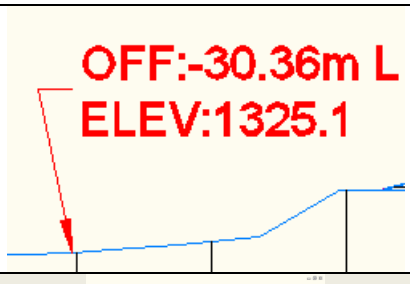
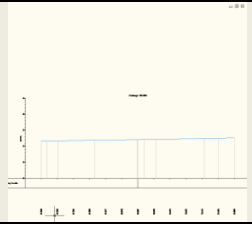
	vertical geometry		
Levels Geometry and Super Level			
Pipe Network			

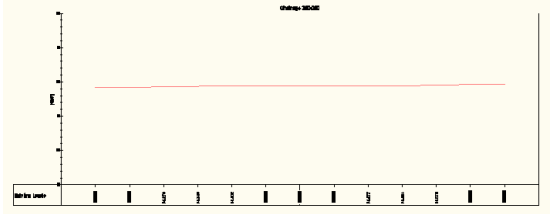
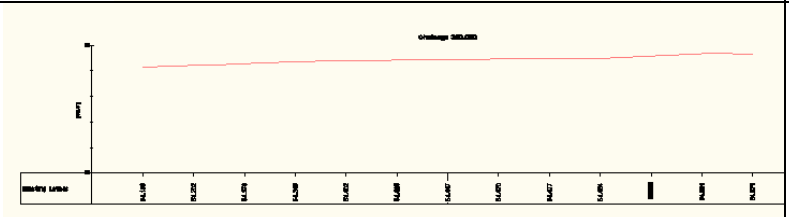
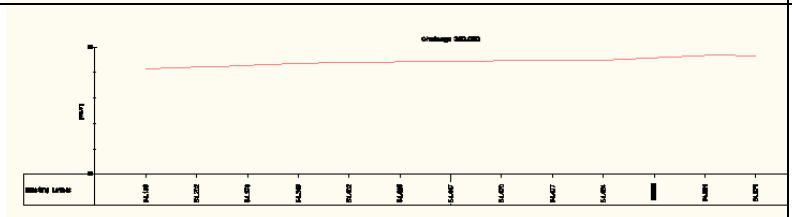
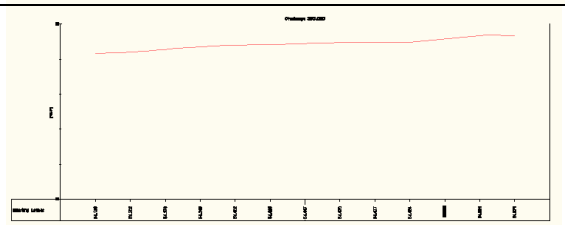
5.8 Sections

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

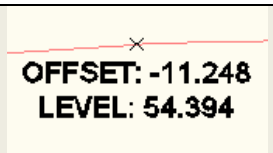
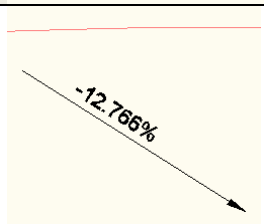
Section Styles	Description	Screen grab / DWF / DWG	Default
RSA Existing Ground	Dashed green line		Yes
RSA Finished Ground	Solid red line		
Additional Surface 1, 2, 3 and 4	A section style to show other surface sections in a different colour		
Corridor Presentation	No visible line shown, but labels are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

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

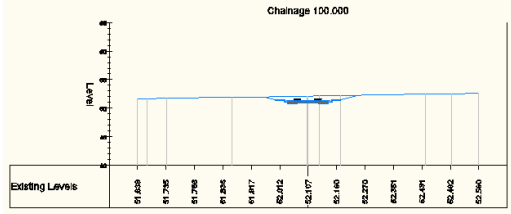
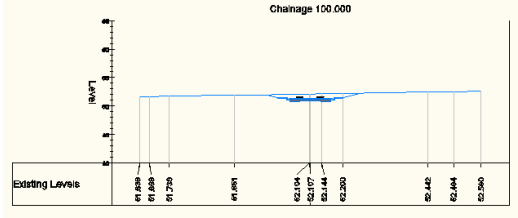
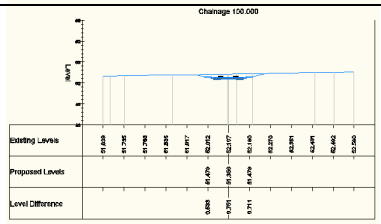
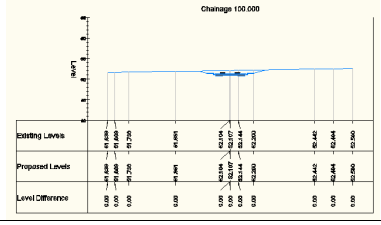
FG Labels	Offset, level data, surface grade and name for finished ground surfaces		
Ordinates	Ordinate lines from the grade breaks to the top of the bands		

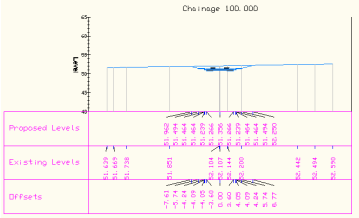
Section View Styles	Description	Screen grab / DWF / DWG	Default
X Section			Yes
X Section 2x Exaggeration			
X Section 2.5x Exaggeration			
X Section 2.5x Exaggeration			

Label Styles	Description	Screen grab / DWF / DWG	Default

Offset and Level	Specify a location and reports the offset from the baseline and level		
Grade	Ability to draw a grade freely		

Due to the new stagger functionality in 2010, this has be enabled as standard so to stop overlapping text labels at close proximity. The recommended method of creating cross sections for corridor design is to create a surface to the 'TOP' links and using the grade break band styles will annotate the corridor features.

Section Band Styles	Description	Screen grab / DWF / DWG	Default
Surface Levels at Major Intervals			
Surface Levels at Grade Intervals			
Two Surface Levels and Difference at Major Intervals	Choose Section 1 for Existing and Section 2 for Proposed		
Two Surface Levels and Difference at Grade Breaks	Choose Section 1 for Existing and Section 2 for Proposed		

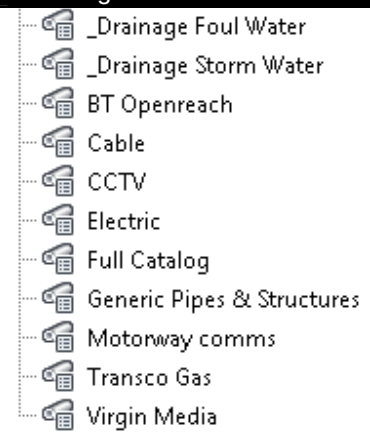
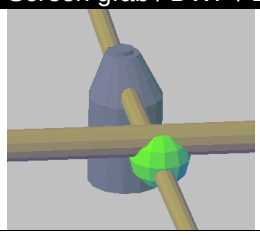
Sections	Choose Section 1 for Existing and Section 2 for Proposed		
Section Table Styles	**Description**	**Screen grab / DWF / DWG**	**Default**
Total Volume			
Simple		Volumes 350.000m Material Name / Area (m2) / Volume (m3) / C.Vol (m3) Surface 0.15 7.50 52.50 Binder 0.15 7.50 52.50 Base 0.60 30.00 210.00 Sub-Base 1.80 90.00 630.00 Footpath Surface 0.36 17.99 125.93	
Simple - No Lines		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		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		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		
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			Yes

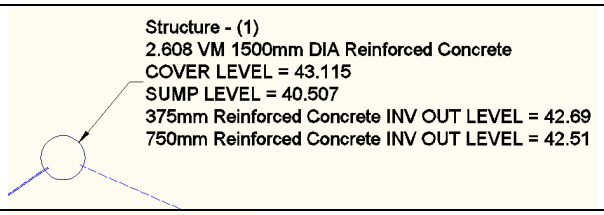
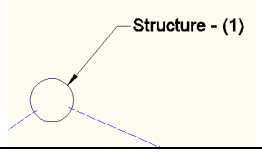
Pipe Label Styles	Description	Screen grab / DWF / DWG	Default
Name Size and 2D Length (Centre to Centre)		Pipe - (7) 4x3 way 100mm dia 430x320 L 56.518	
Name Only		Pipe - (7)	
Pipe Length and Slope		100mm Reinforced Concrete L=56.518m S=3.405%	

Pipe Table Styles	Description	Screen grab / DWF / DWG	Default
Pipe Setting Out		Pipe Table Pipe Name | Size (mm) | Plan Length (m) | Slope | Start Invert Level | End Invert Level Pipe - (3) | 375 | 140.352 | -1.10% | 34.625 | 36.172 Pipe - (4) | 375 | 107.979 | 2.24% | 36.152 | 33.729	
Simple Summary Pipe List		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		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		Structure - (1) CL42.882 1,500 mm Cylindrical Structure	

Data with Connected Pipes			
Name Only			

Structure Table Styles	Description	Screen grab / DWF / DWG	Default
Simple Summary List		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		Structure 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

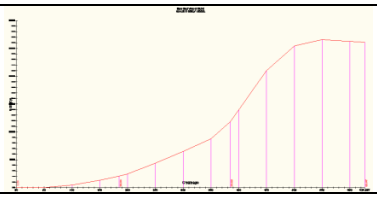
5.10 Corridors

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			

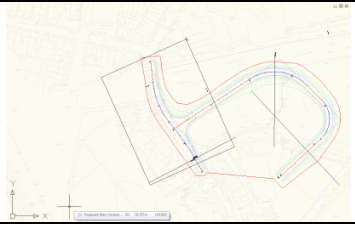
Mass Haul View Styles	Description	Screen grab / DWF / DWG	Default

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			

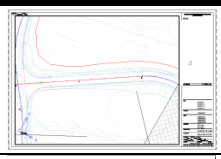
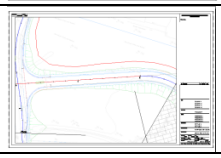
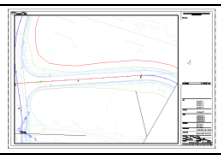
QTO Table Styles	Description	Screen grab / DWF / DWG	Default
Total Volume			
Total Volume Table		Total Volume Table Chainage | Cut Area | Fill Area | Cut Vol | Fill Vol | Cum Cut Vol | Cum Fill Vol | Net Vol 0.000 | 0.419m2 | 0.496m2 | 0.000m3 | 0.000m3 | 0.000m3 | 0.000m3 | 0.000m3 25.000 | 1.045m2 | 0.179m2 | 18.299m3 | 8.428m3 | 18.299m3 | 8.428m3 | 9.872m3 50.000 | 2.950m2 | 0.000m2 | 49.942m3 | 2.242m3 | 68.242m3 | 10.669m3 | 57.572m3 75.000 | 6.399m2 | 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		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			

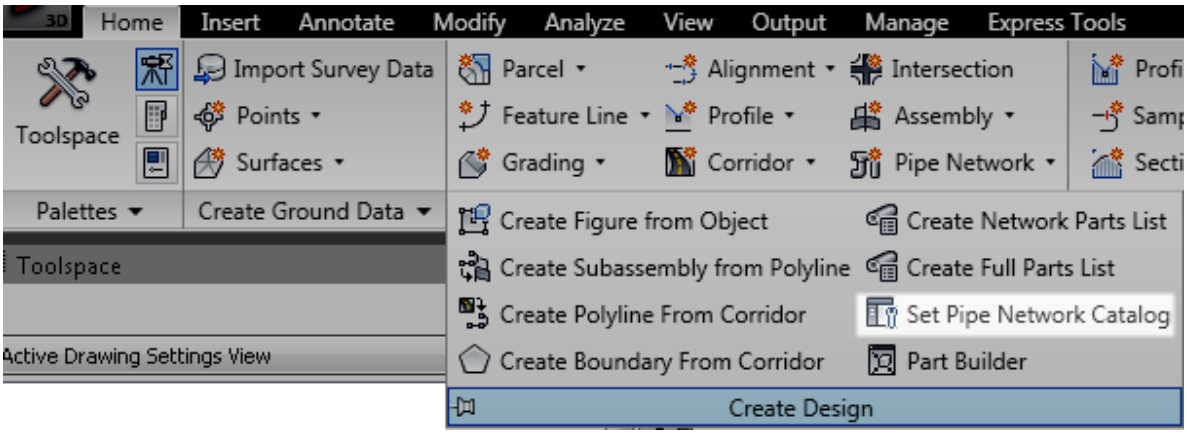
Match Line Styles	Description	Screen grab / DWF / DWG	Default
Simple – ANSI 37 Hatched Masking	Applys a ANSI 37 fill to mask out the next sheet		
Simple – ANSI 38 Hatched Masking	Applies a ANSI 38 fill to mask out the next sheet		
Simple – No Masking	No fill		
Simple – Solid Masking	Applies a white solid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

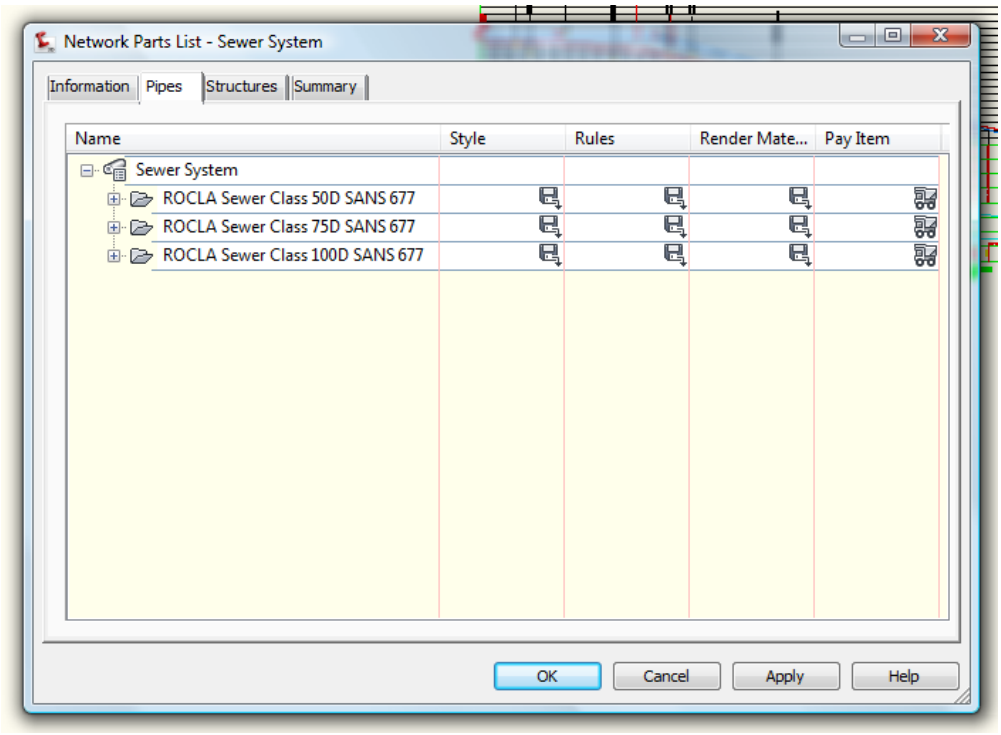
The RSA Country Kit contains a number of parts for drainage and underground utilities.

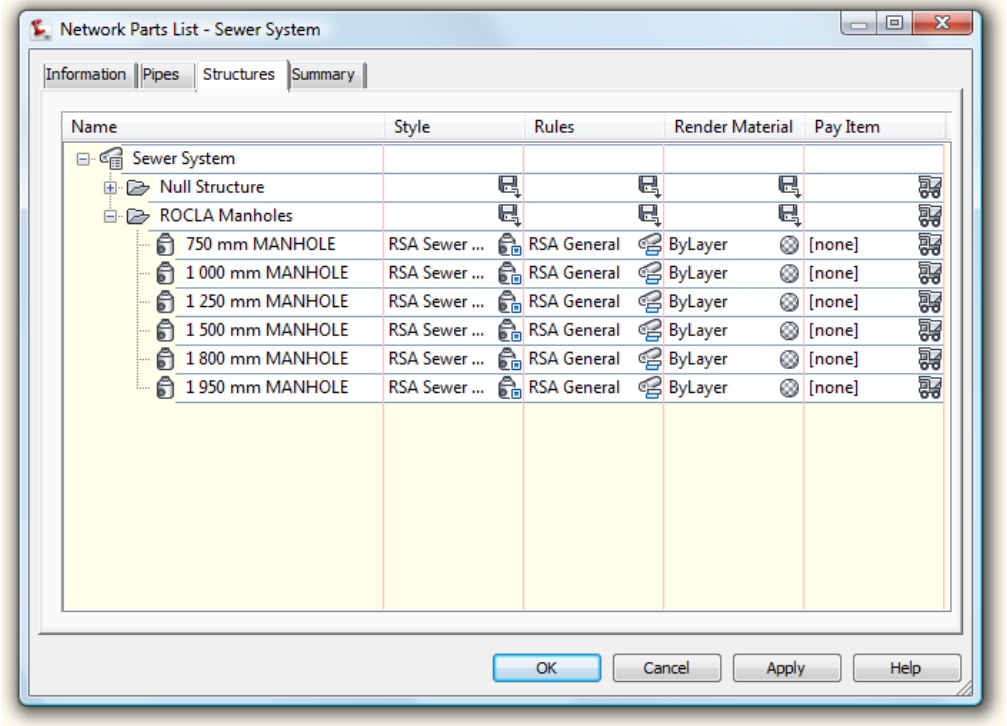
These are accessed from the RSA Metric Pipes and RSA Metric Structures parts catalog, which must be set first to enable their use



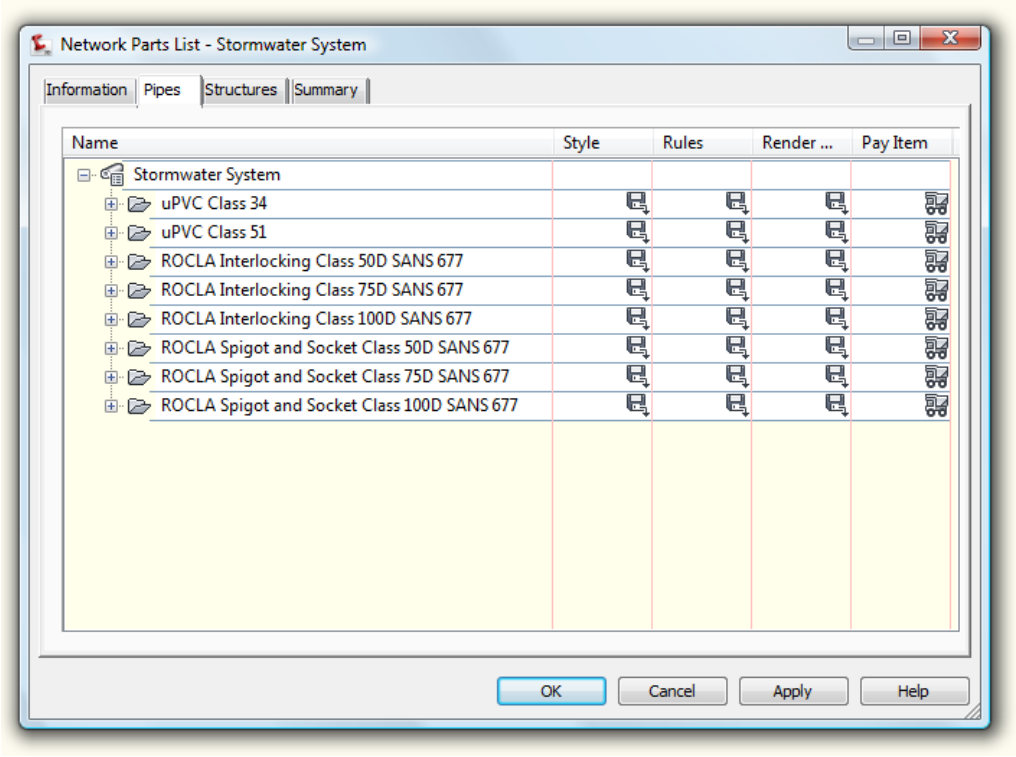
6.1 Pipes and Structures

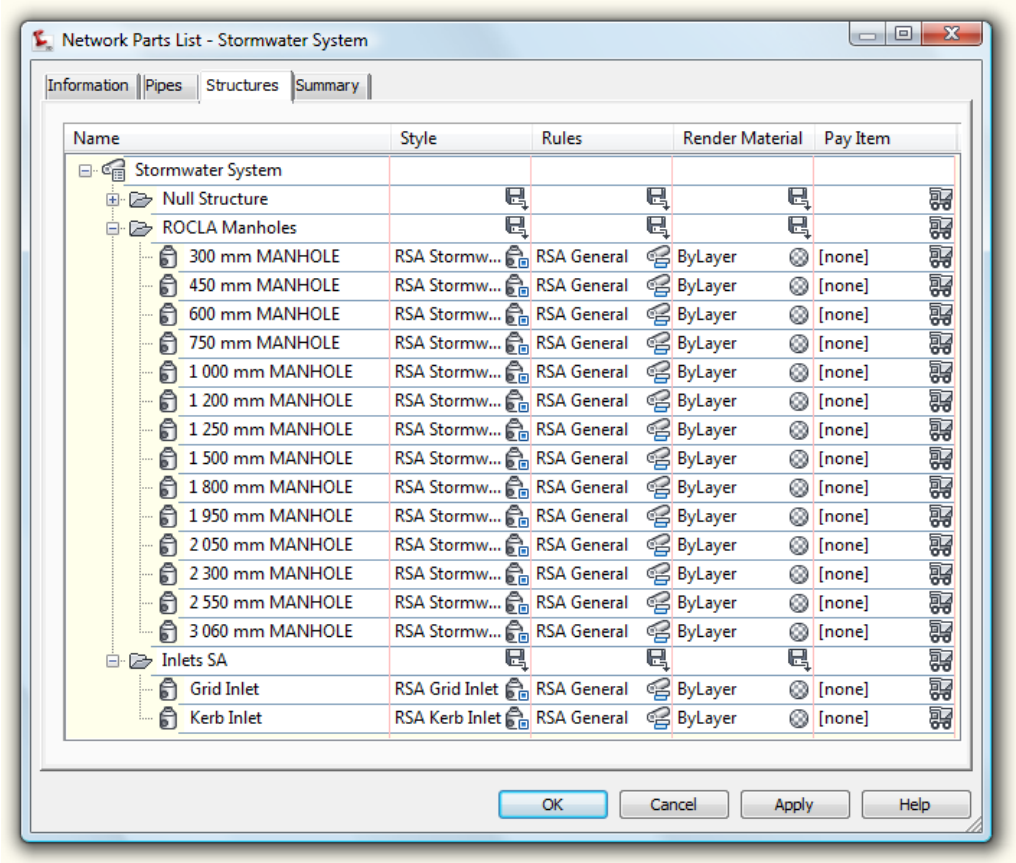
6.1.1 Sewer System



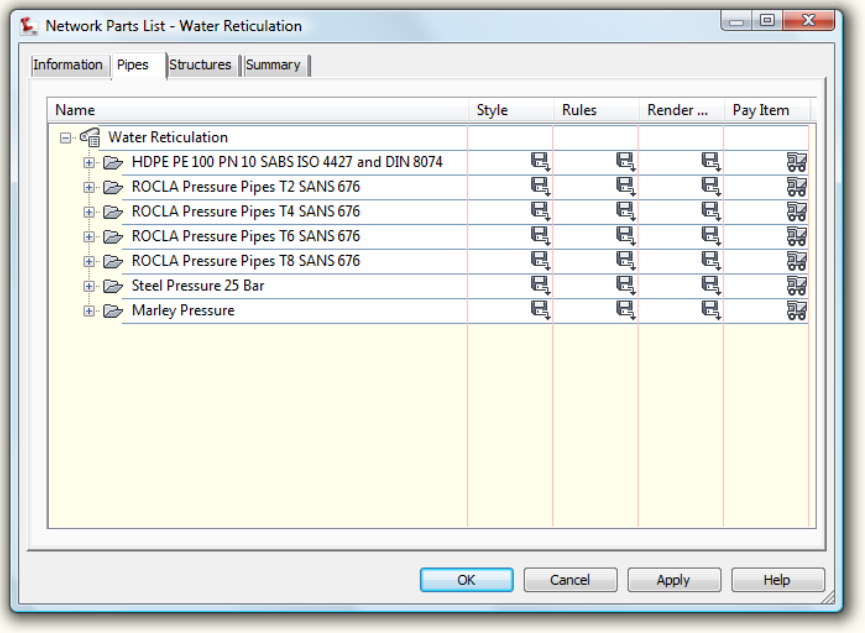


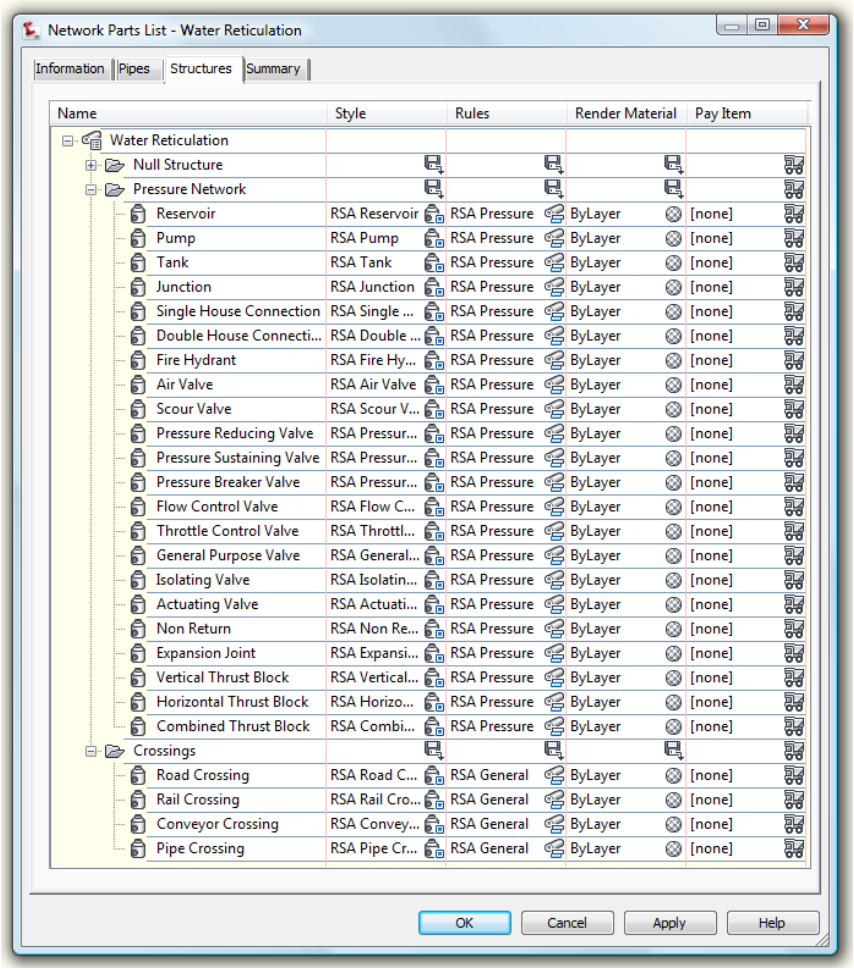
6.1.2 Stormwater System





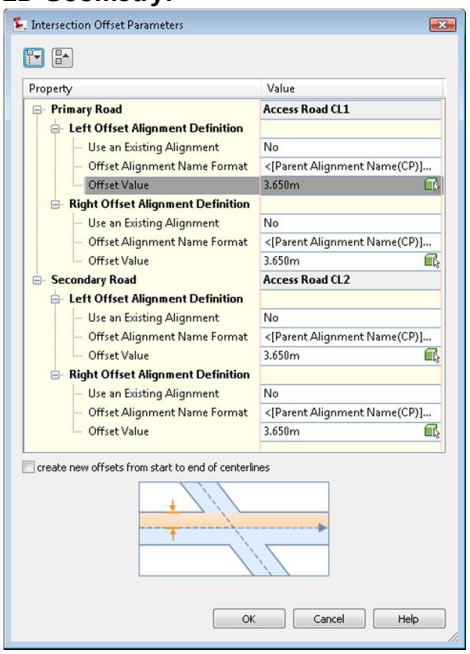
6.2 Pressure Network Fittings



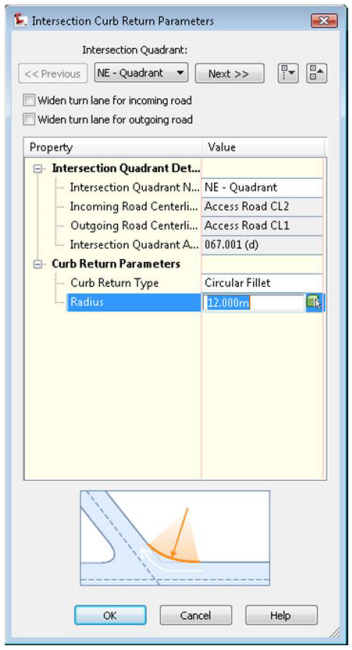

Network Parts List - Water Reticulation
Information
Pipes
Structures
Summary
Name
Style
Rules
Render Material
Pay Item
Water Reticulation
Null Structure
Pressure Network
Reservoir RSA Reservoir RSA Pressure ByLayer [none]
Pump RSA Pump RSA Pressure ByLayer [none]
Tank RSA Tank RSA Pressure ByLayer [none]
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:

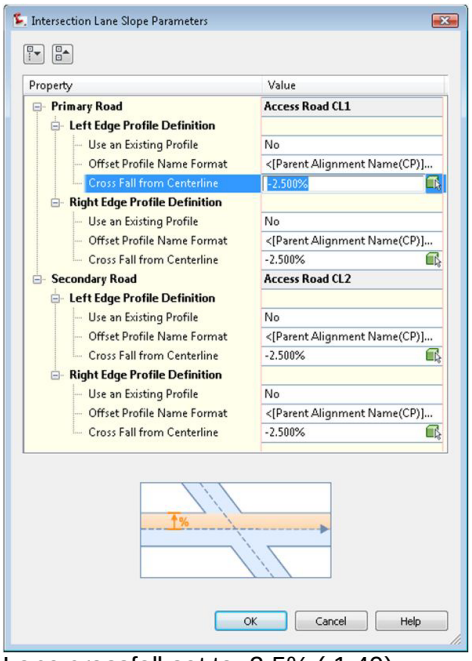


Lane offsets set to 3.00m

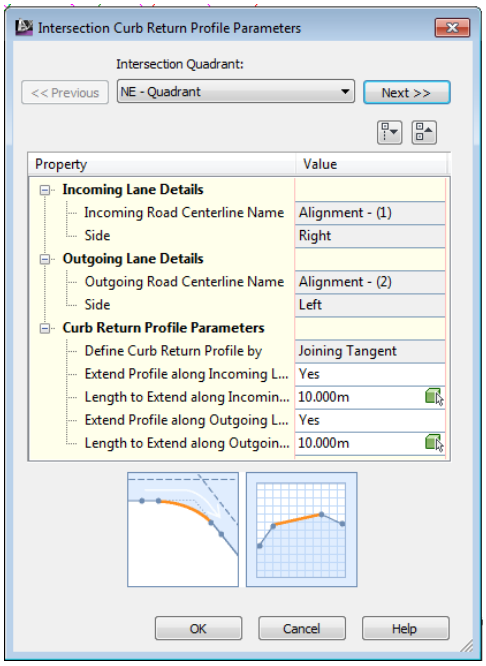


Kerb radius fillets set to 10m circular fillets

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.