

Corridor Solids from Civil 3D to Navisworks

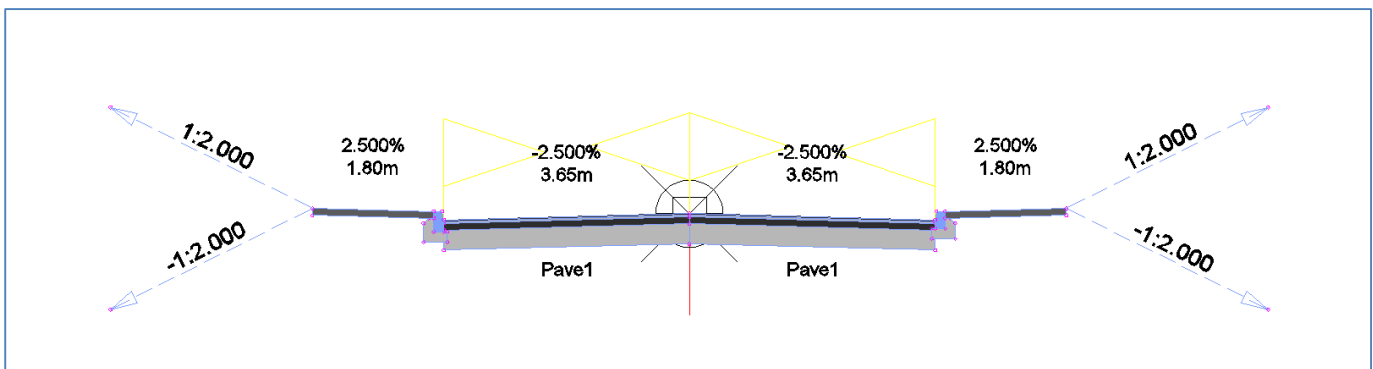
Creating 3D solid objects from Civil 3D corridors for use in a Navisworks model

Introduction

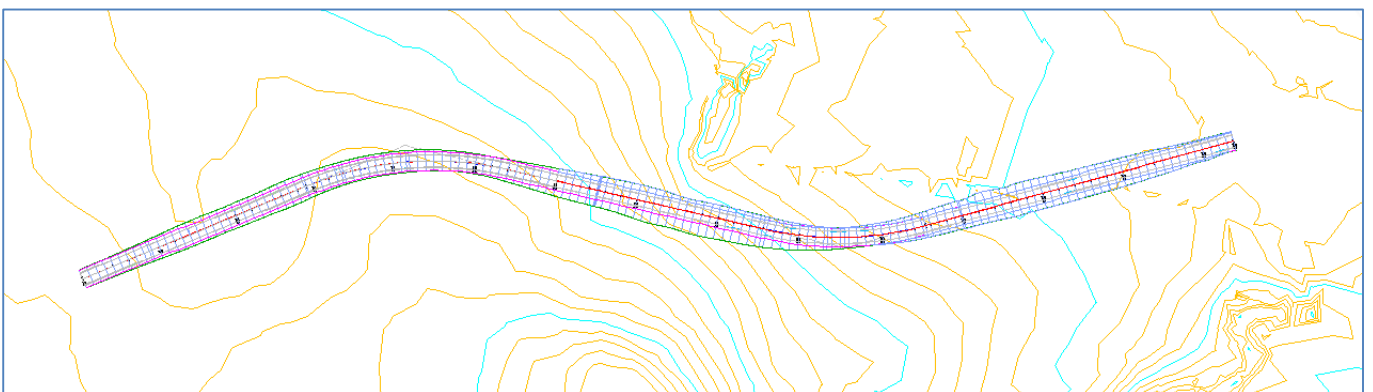
With the increasing use of BIM in designing infrastructure projects there is a requirement to extract as much information from your finished detailed design as possible. This white paper shows how corridors created in Civil 3D can be exported as 3D solid objects into Navisworks to allow the preparation of construction schedules, linking those schedules to specific timelines and the detection of any clashes between civil objects

Workflow

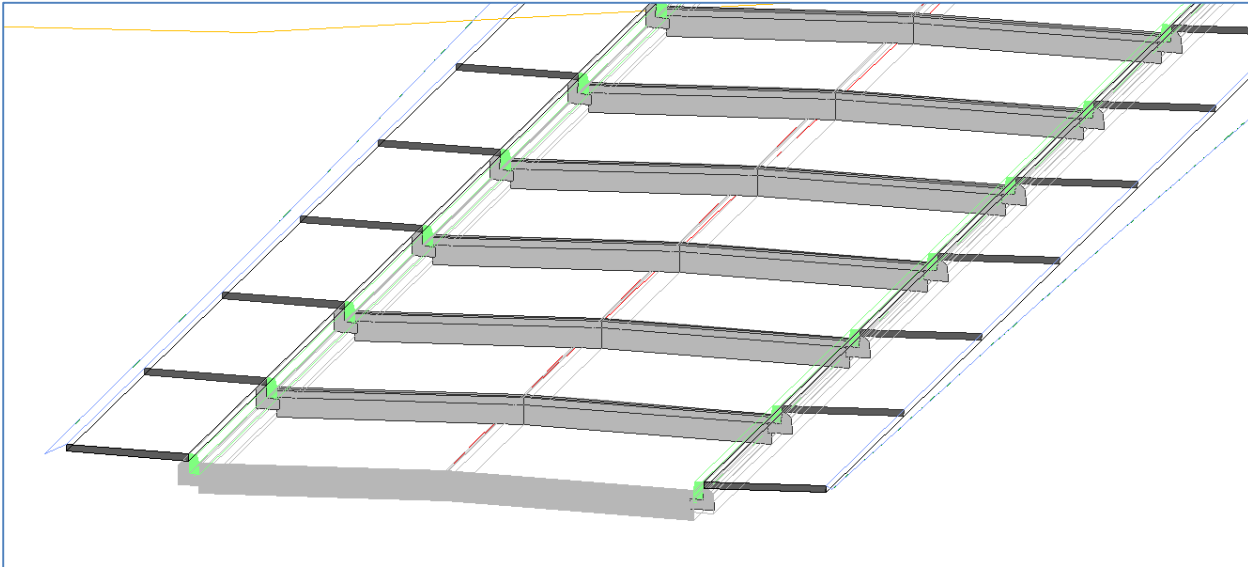
Firstly create a corridor using a horizontal alignment, vertical alignment and an assembly such as the one shown below:



The resulting corridor will look similar to below:



The way the corridor is displayed depends on which Code Set is selected in Corridor Properties.



Code Sets are used to define how corridor points, links and shapes are linked and displayed. For creating 3D Solids the corridor shape codes are particularly important as they define the style of the solids.

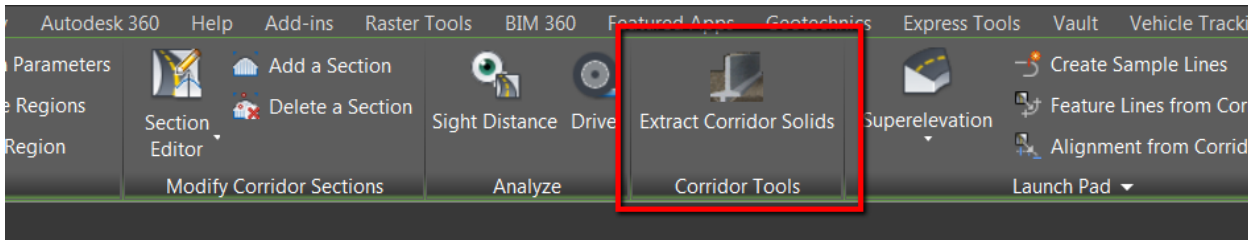
Corridor Properties - New Road Corridor

Information | Parameters | Codes | Feature Lines | Surfaces | Boundaries | Slope Markings

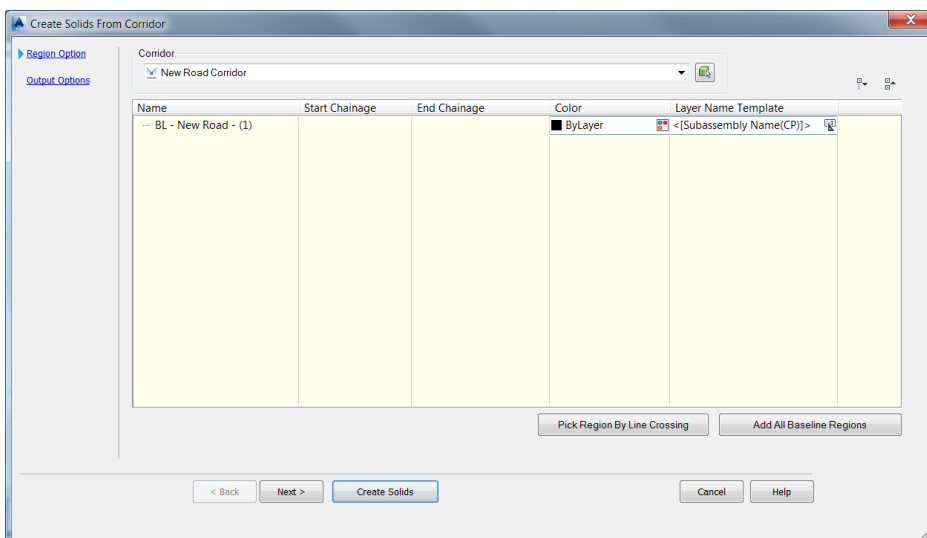
Code set style:
Assembly Creation

Name	Description	Style	Label Style	Render Material
Link				
<No Codes>		2D Links Only	<none>	<none>
Top	Top formation links	2D Links Only	<none>	<none>
Pave	Any finished grade surface on a paved section	2D Links Only	Link Details	Asphalt 2
Pave1	First pavement surface below finish grade	2D Links Only	<none>	<none>
Pave2	Second pavement surface below finish grade	2D Links Only	<none>	<none>
Base	Link on the base surface of paved sections	2D Links Only	<none>	<none>
SubBase	Links on subbase surface of paved sections	2D Links Only	<none>	<none>
Formation		2D Links Only	<none>	<none>
Kerb	Link comprising a curb or curb and gutter	2D Links Only	<none>	Precast Smooth
Footpath		2D Links Only	Link Details	<none>
Daylight	Daylight links	2D Links Only	Rise : Run Slopes ...	Grass - Short
Daylight_Fill	Fill daylight links	2D Links Only	<none>	<none>
Daylight_Cut	Cut daylight links	2D Links Only	<none>	<none>
Point				
Shape				
<No Codes>		Uncoded	<none>	<none>
Pave1	Top pavement course area in paved sections	Colours_Dark Grey Solid (251)	Shape Code Low...	<none>
Pave2	Second pavement course area in paved sections	Colours_Light Grey Solid (25...	<none>	<none>
Base	Base course area in paved sections	Colours_Dark Grey Solid (251)	<none>	<none>
SubBase		Colours_Light Grey Solid (25...	<none>	<none>
Kerb	Closed area withing concrete curb (and gutter)	Colours_Light Blue (161)	<none>	<none>
Backing		Colours_Light Grey Solid (25...	<none>	<none>

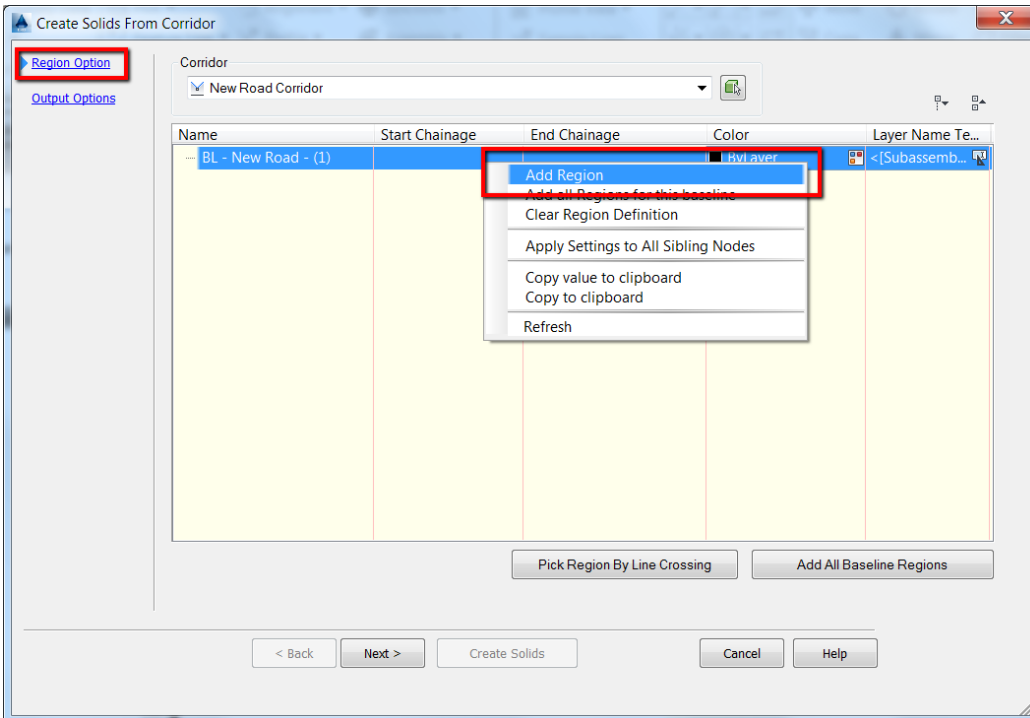
To extract 3D Solids, select a corridor then on the corridor contextual menu select 'Extract Corridor Solids'



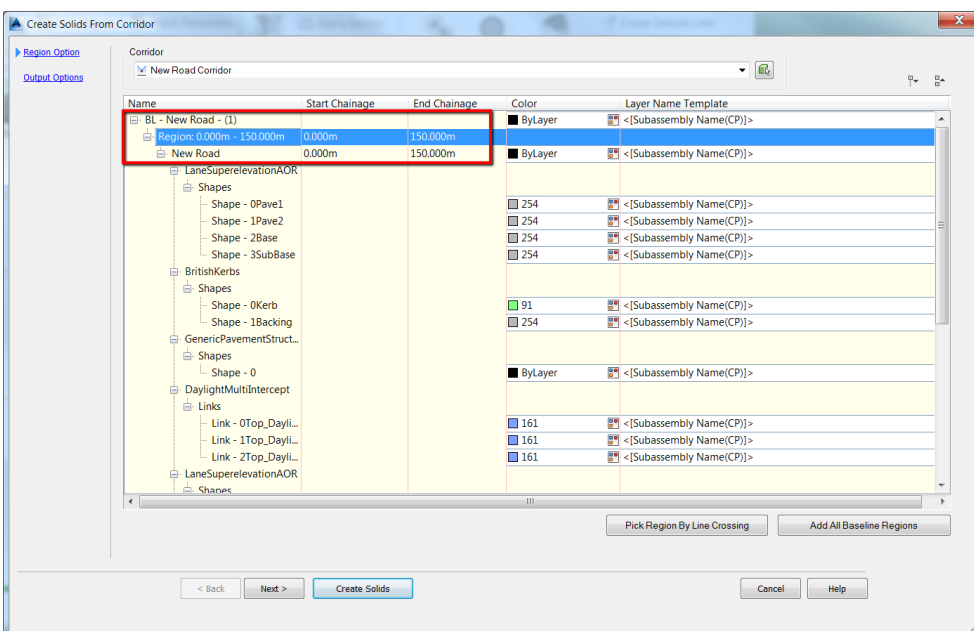
The panel below will be displayed showing all the corridor baselines available in your drawing. In this case there is only one:



If there is a requirement to schedule the construction of your project into phases within Navisworks the base line can be broken down into regions:

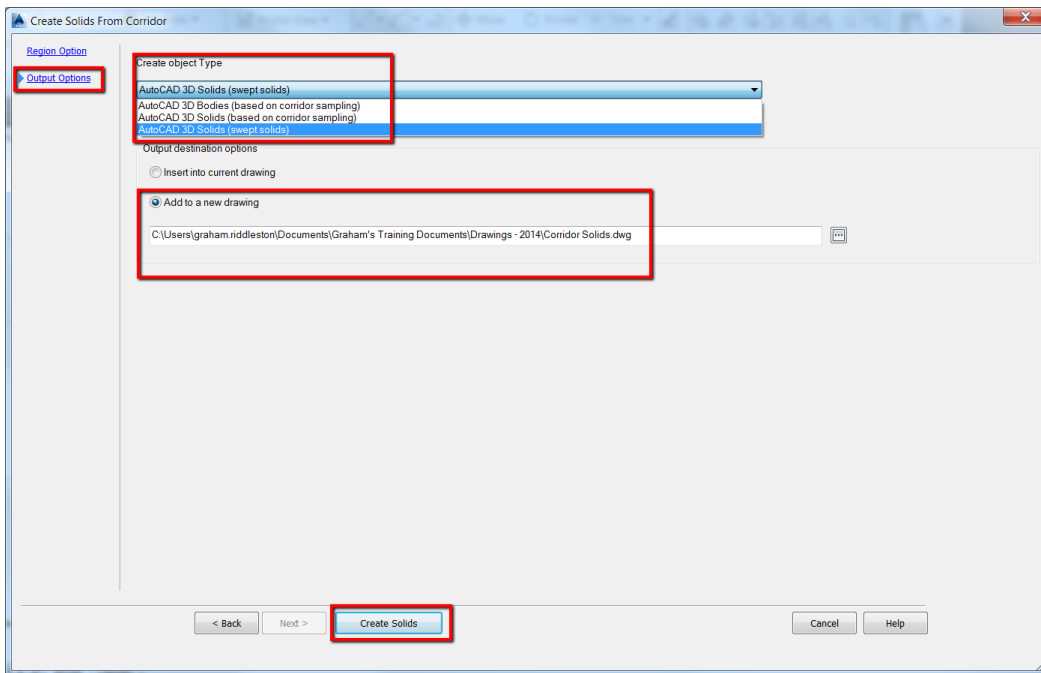


In this case I have set a region from 0m to 150m. You can also see details of all the assembly shape codes and their associated colours for each region:

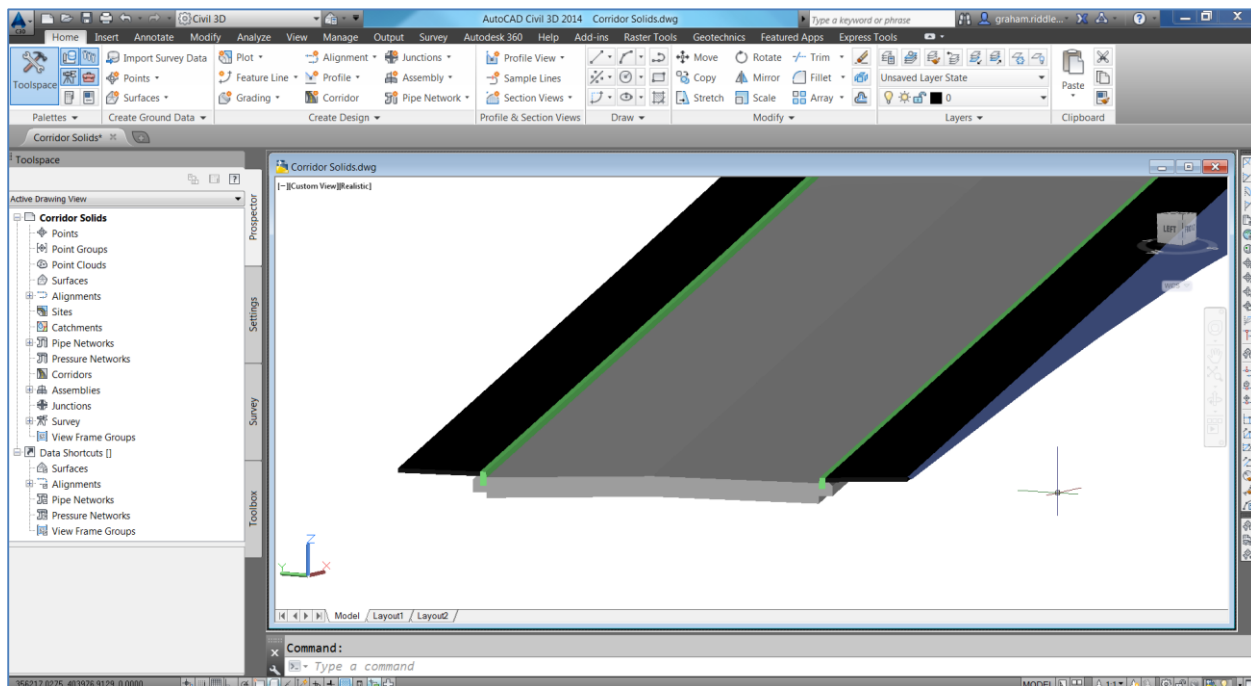


On the **Output Options** panel you can decide whether the corridor solids will be added to the existing DWG or to a new a drawing. Also, the **Object Creation Type** can be selected. In this case I've selected **Swept Solids**.

Select 'Create Solids'



The image below shows the resulting drawing in Civil 3D :



The same dwg can now be opened in Navisworks:

