Using OpenRoads Designer and the ODOT Drawing Boundary Seeds

This document shows detailed steps to create sheet-type models of plans, profiles, cross sections, and combined plan-plan and plan-profile sheets. Drawing boundary seed are provided for many scales – the steps for plan and profile show screenshots using 1”=100’ scale and cross section screenshots use 1”=20’.

For all methods listed below, open a file with references to geometries, terrains, corridors, etc. with OpenRoads Designer. Optional for the OPNP file is to annotate the main line geometry in the Default model. For the XSEC_bas file, a 3D view is required to cut sections.

The order of the steps is important. When you perform steps out of order, values entered in fields may change. If boundaries have not yet been placed, you can begin again by using the Element Selection tool to cancel out of the Place Named Boundaries tool. It is important to validate every field before clicking [OK] to proceed. Be aware that loading a different drawing boundary seed will not affect some of the check boxes.

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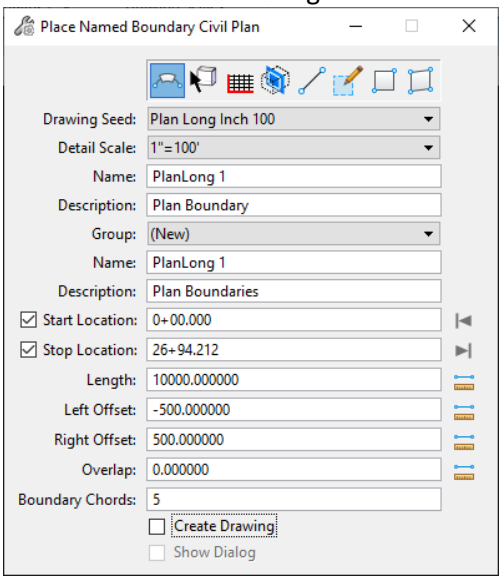
Create Uncut, Long, Alternating Plan and Profile Sheets

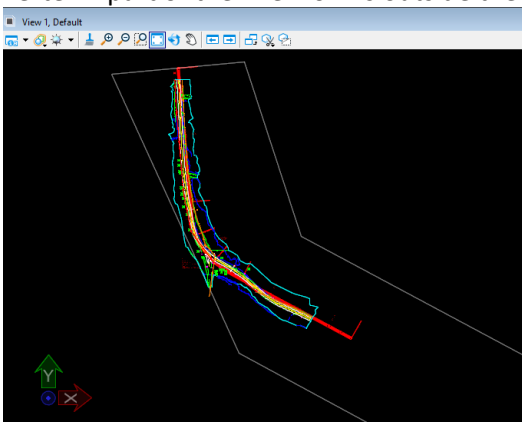
In an OPNP file, the Place Named Boundary tool should be run twice (plan and profile) before creating the drawings from the Named Boundaries dialog.

To place Civil Plan named boundaries:

Place Named Boundary (Civil Plan)
Drawing Seed: **Plan Long Inch 100** (pick off list)
Identify Complex Element: left-click on the alignment to select as the Path Element
Set Start and Stop to beginning and end of alignment using the lock icons.
Name = Plan**Long** 1 (edit the name seed for the boundary and models)
Description = **Plan Boundary** (optional entry)
Group = (New)
Name = PlanLong 1 (named boundary group name automatically change to the name of the boundary – you don't need to change this)
Description = **Long Plan Boundaries** (optional entry to describe the group)
Boundary Chords = 5 (Increase # chords if alignment is really curvy)
Make sure Create Drawing is OFF or UNCHECKED

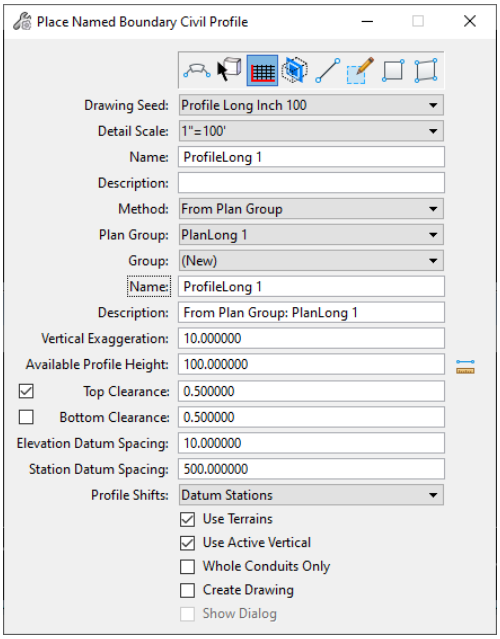


Left-click 3 times in the 2D plan view to place the boundary.
Adjust named boundary vertices – it's optional for this chorded named boundary, to move a vertex if part of the line work is outside the boundary.

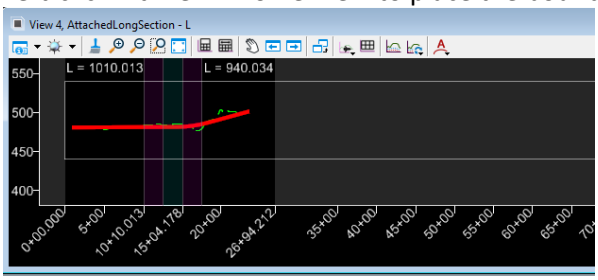


To place Civil Profile named boundaries:

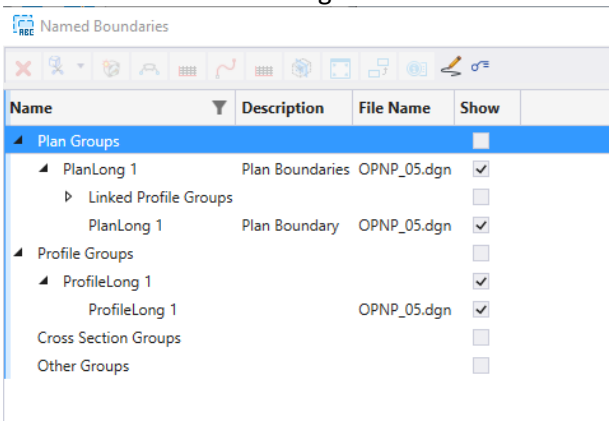
Open Profile Window for the alignment - use View 4
Save Settings (recommended)
Place Named Boundary (Civil Profile)
Left-Click in the Profile view (this fills in the Group Name with the horizontal alignment name)
Drawing Seed: **Profile Long Inch 100**
Name = Profile**Long** 1 (edit the name seed for the boundary and models)
Description = Profile Boundary (Optional entry that may not even be used)
Method = **From Plan Group** (select this option)
Plan Group = PlanLong 1
Group = (New)
Name = ProfileLong 1 (named boundary group name may automatically change to the name of the boundary – you don't need to change this)
Description = From Plan Group: PlanLong 1
Check "Use Terrains"
Make sure Create Drawing is OFF or UNCHECKED



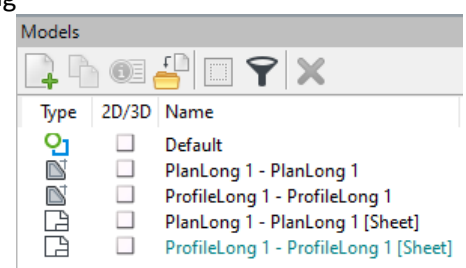
Left-click 1 time in Profile View to place the boundary

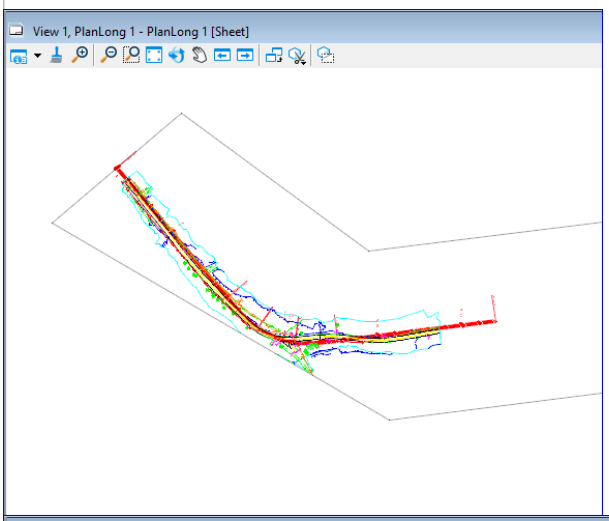


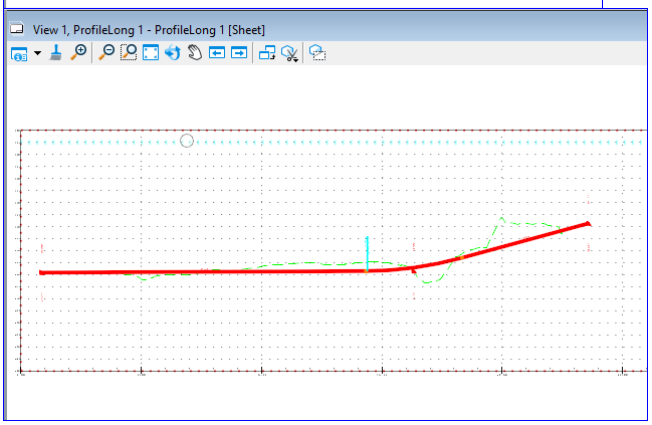
Open the Named Boundaries dialog



Right-click on Plan Groups name PlanLong 1 (Plan Boundaries) - select “Create alternate plan profile drawing”





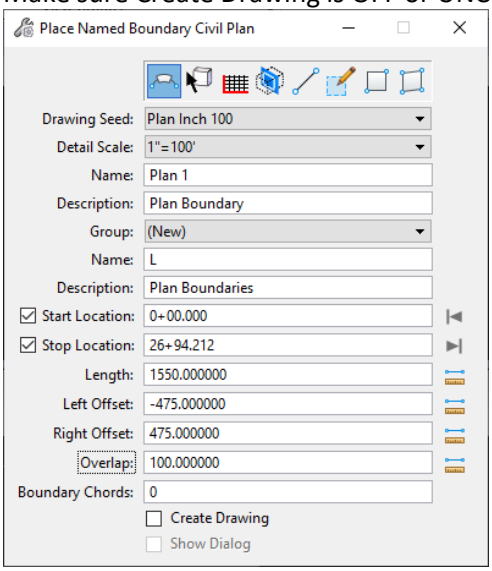


Create Cut, 11x17, Alternating Plan and Profile Sheets

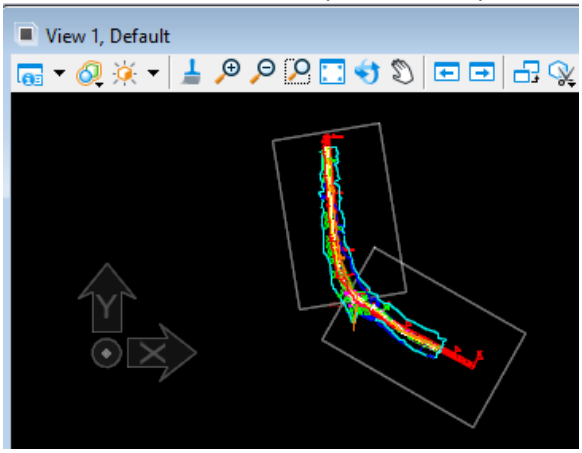
In an OPNP file, the Place Named Boundary tool should be run twice (plan and profile) before creating the drawings from the Named Boundaries dialog.

To place Civil Plan named boundaries:

Place Named Boundary (Civil Plan)
Drawing Seed: **Plan Inch 100** (pick off list)
Identify Complex Element: left-click on the alignment to select as the Path Element
Set Start and Stop to beginning and end of alignment using the lock icons.
Name = **Plan 1** (if ORD has not been restarted, edit the name seed for the boundary and models)
Description = **Plan Boundary** (optional entry)
Group = (New)
Name = L (named boundary group name may automatically change to the name of the alignment – you don't need to change this)
Description = **Plan Boundaries** (optional entry to describe the group)
Overlap = 50 (this may be increased)
Boundary Chords = 0 (do not change this value on rectangular boundaries)
Make sure Create Drawing is OFF or UNCHECKED

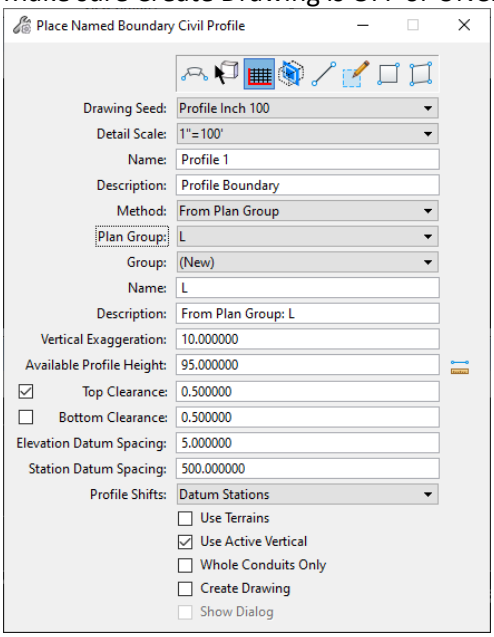


Left-click 3 times in the 2D plan view to place the boundaries.

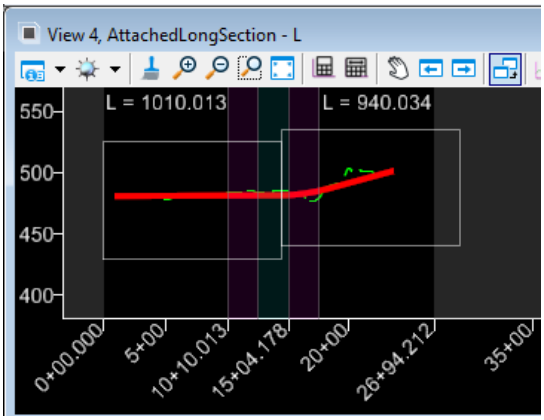


To place Civil Profile named boundaries:

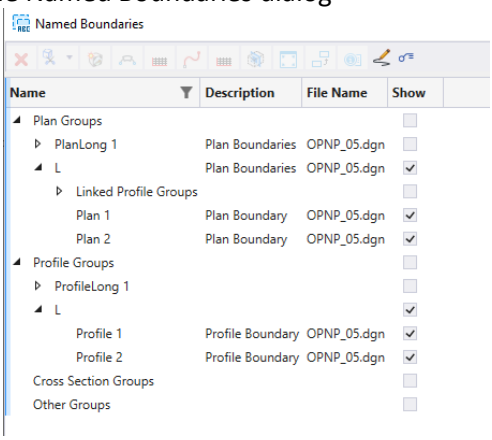
Open Profile Window for the alignment - use View 4
Save Settings (recommended)
Place Named Boundary (Civil Profile)
Left-Click in the Profile view (this fills in the Group Name with the horizontal alignment name)
Drawing Seed: **Profile Inch 100**
Name = Profile 1 (edit the name seed for the boundary and models)
Description = Profile Boundary (Optional entry that may not even be used)
Method = **From Plan Group** (select this option)
Plan Group = L (select the name of the plan group that was created)
Group = (New)
Name = L (named boundary group name may automatically change to the name of the boundary or the plan group name – you don't need to change this)
Description = From Plan Group: L
Check "Use Terrains"
Make sure Create Drawing is OFF or UNCHECKED



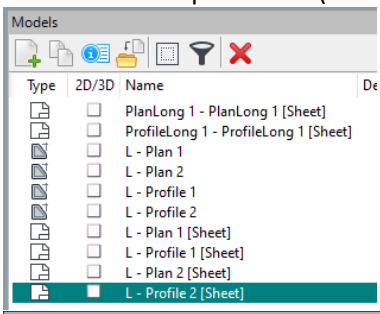
Left-click 1 time in Profile View

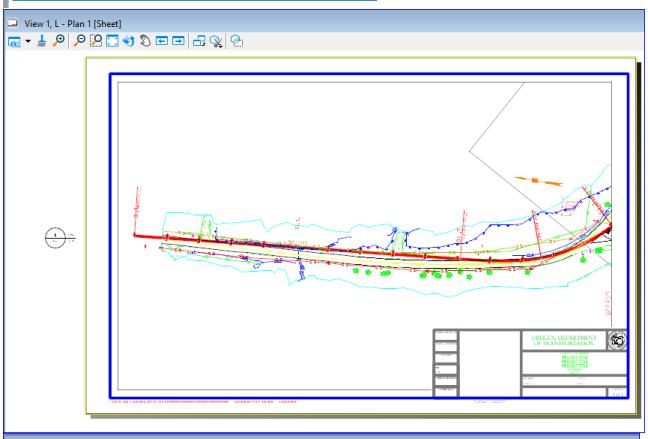


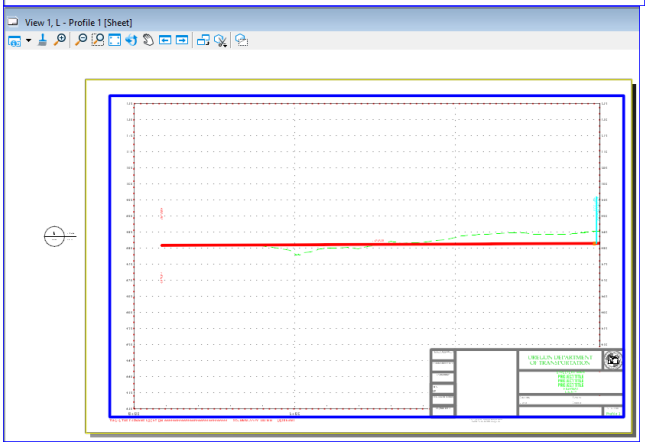
Open the Named Boundaries dialog



Right-click on Plan Groups name L (Plan Boundaries) - select “Create alternate plan profile drawing”





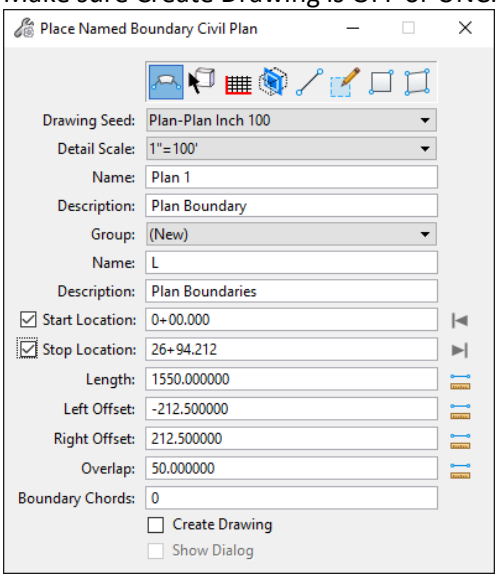


Create Cut, 11x17, Plan-Plan Sheets

In an OPNP file, the Place Named Boundary tool should be run once (plan) before creating the drawings from the Named Boundaries dialog.

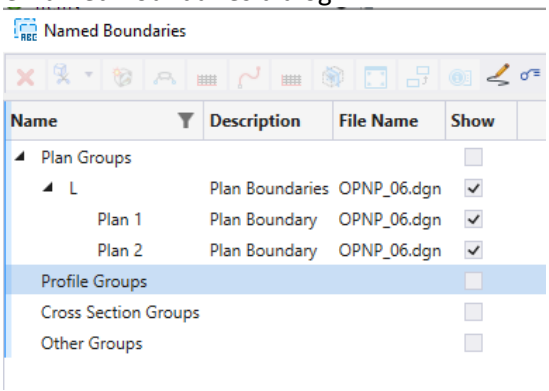
To place Civil Plan named boundaries:

Place Named Boundary (Civil Plan)
Drawing Seed: **Plan-Plan Inch 100** (pick off list)
Identify Complex Element: left-click on the alignment to select as the Path Element
Set Start and Stop to beginning and end of alignment using the lock icons.
Name = **Plan 1** (if ORD has not been restarted, edit the name seed for the boundary and models)
Description = **Plan Boundary** (optional entry)
Group = (New)
Name = L (named boundary group name may automatically change to the name of the alignment – you don't need to change this)
Description = **Plan Boundaries** (optional entry to describe the group)
Overlap = 0 (may be increased if there is line work on a curve that is outside a boundary)
Boundary Chords = 0 (do not change this value on rectangular boundaries)
Make sure Create Drawing is OFF or UNCHECKED

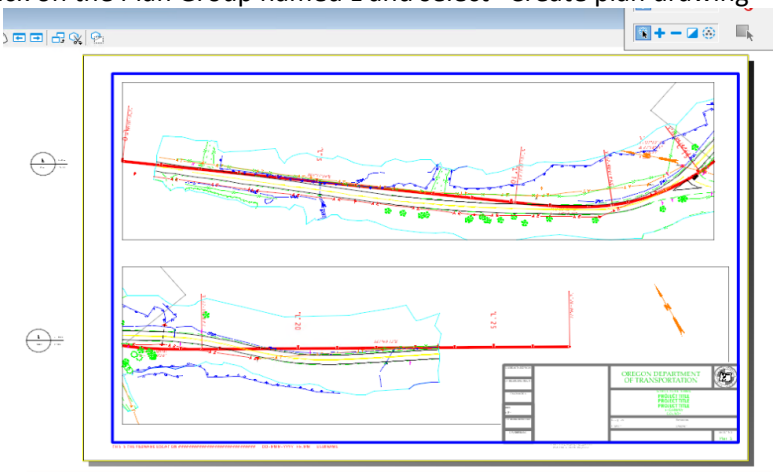


Left-click 3 times in the 2D plan view to place the boundaries.

Open the Named Boundaries dialog

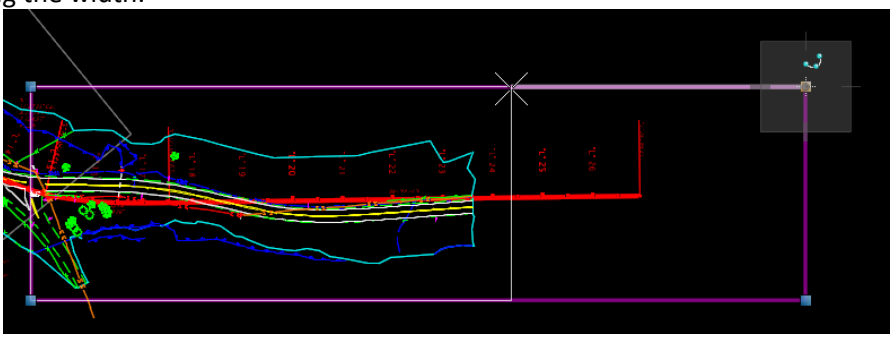


Right-click on the Plan Group named L and select “Create plan drawing”

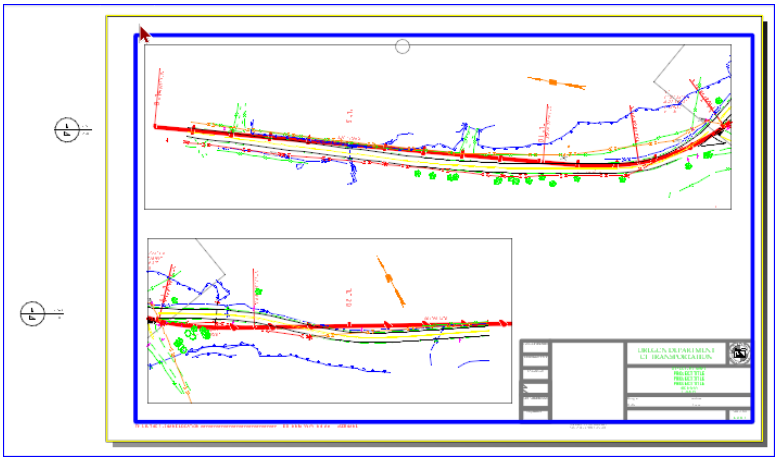


To adjust the named boundaries, use the section callout icon at the left to select “Open Design Model” – this will open the Default model, with the view rotated to align with the sheet.

With AccuDraw toggled on, use AccuDraw indexing to maintain the height of the named boundary while adjusting the width.



Return to the sheet model to see the results. The reference to the sheet can be moved for a different alignment in the sheet.

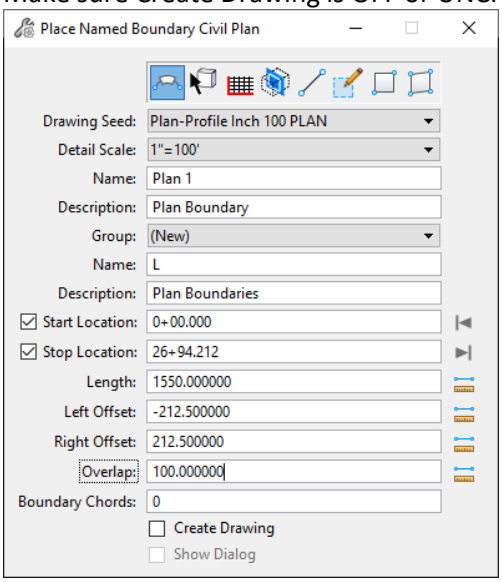


Create Cut, 11x17, Plan-Profile Sheets

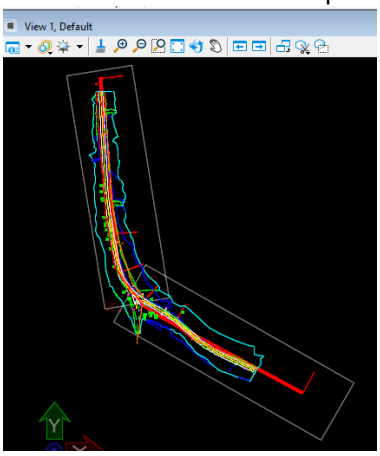
In an OPNP file, the Place Named Boundary tool should be run twice (plan and profile) before creating the drawings from the Named Boundaries dialog.

To place Civil Plan named boundaries:

Place Named Boundary (Civil Plan)
Drawing Seed: **Plan-Profile Inch 100 PLAN** (scroll down and pick off list)
Identify Complex Element: left-click on the alignment to select as the Path Element
Set Start and Stop to beginning and end of alignment using the lock icons.
Name = **Plan 1** (edit the name seed for the boundary and models)
Description = **Plan Boundary** (optional entry)
Group = (New)
Name = L (named boundary group name may automatically change to the name of the alignment – you don't need to change this)
Description = **Plan Boundaries** (optional entry to describe the group)
Overlap = 50 (this may be increased)
Boundary Chords = 0 (do not change this value on rectangular boundaries)
Make sure Create Drawing is OFF or UNCHECKED

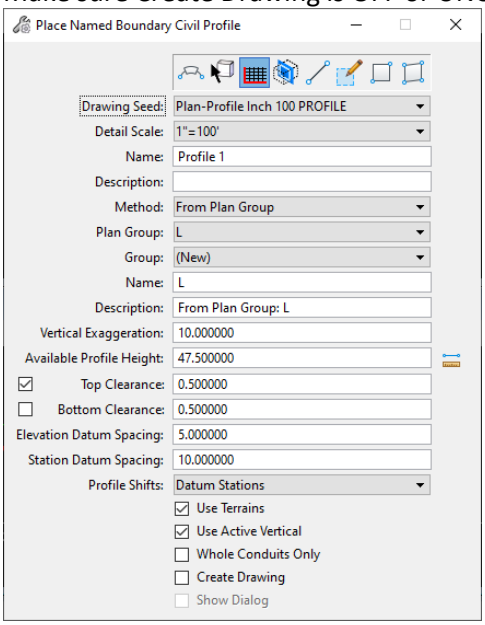


Left-click 3 times in the 2D plan view to place the boundaries.

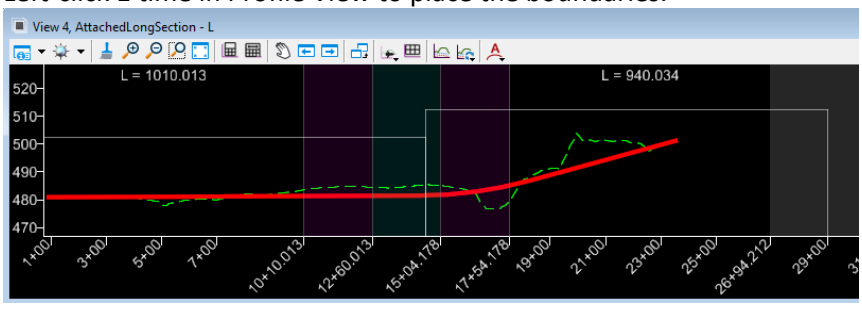


To place Civil Profile named boundaries:

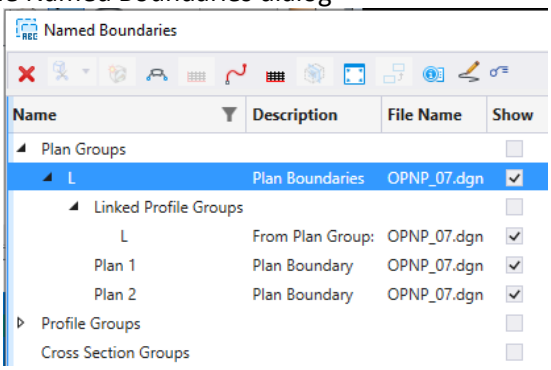
Open Profile Window for the alignment - use View 4
Save Settings (recommended)
Place Named Boundary (Civil Profile)
Left-Click in the Profile view (this fills in the Group Name with the horizontal alignment name)
Drawing Seed: **Plan-Profile Inch 100 PROFILE**
Name = Profile 1 (edit the name seed for the boundary and models)
Description = Profile Boundary (Optional entry that may not even be used)
Method = **From Plan Group** (select this option)
Plan Group = L (select the name of the plan group that was created)
Group = (New)
Name = L (named boundary group name may automatically change to the name of the boundary or the plan group name – you don't need to change this)
Description = From Plan Group: L
Check "Use Terrains"
Make sure Create Drawing is OFF or UNCHECKED



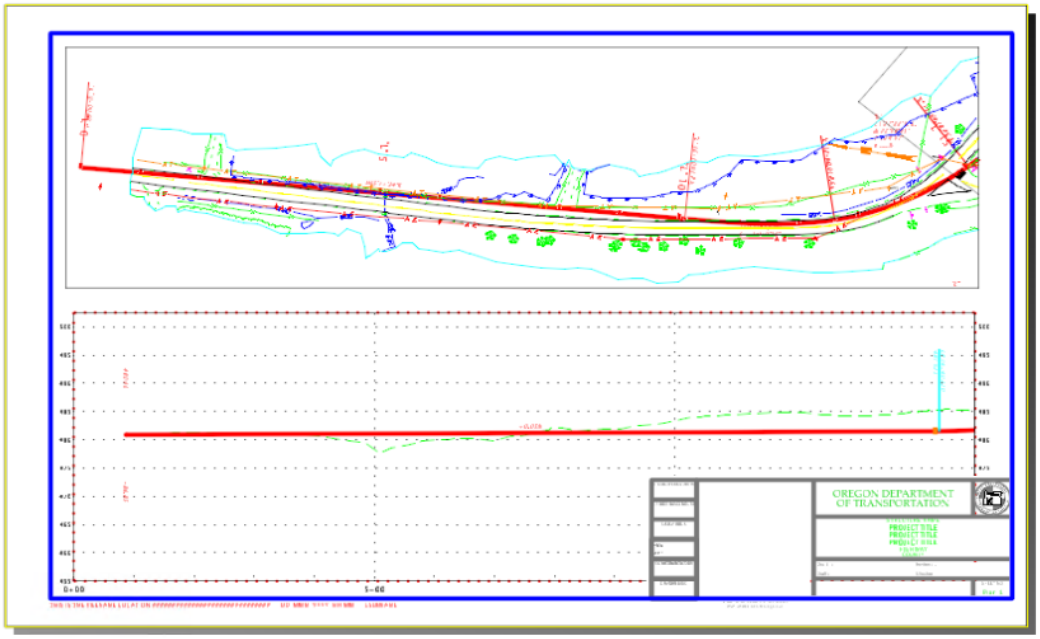
Left-click 1 time in Profile View to place the boundaries.



Open the Named Boundaries dialog



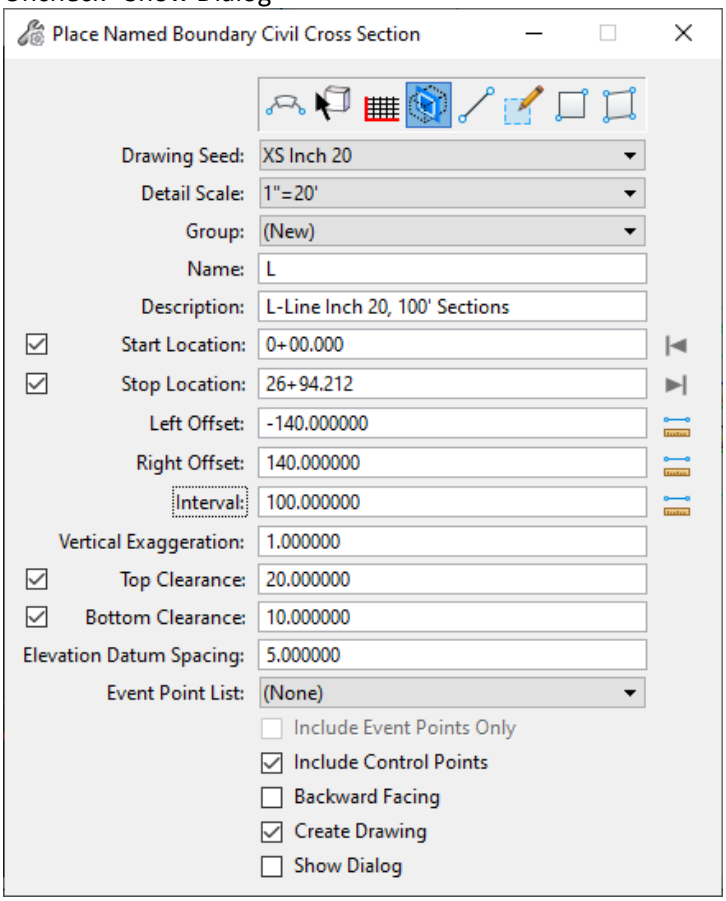
Right-click on the Plan Group named L and select “Create **plan/profile** drawing”



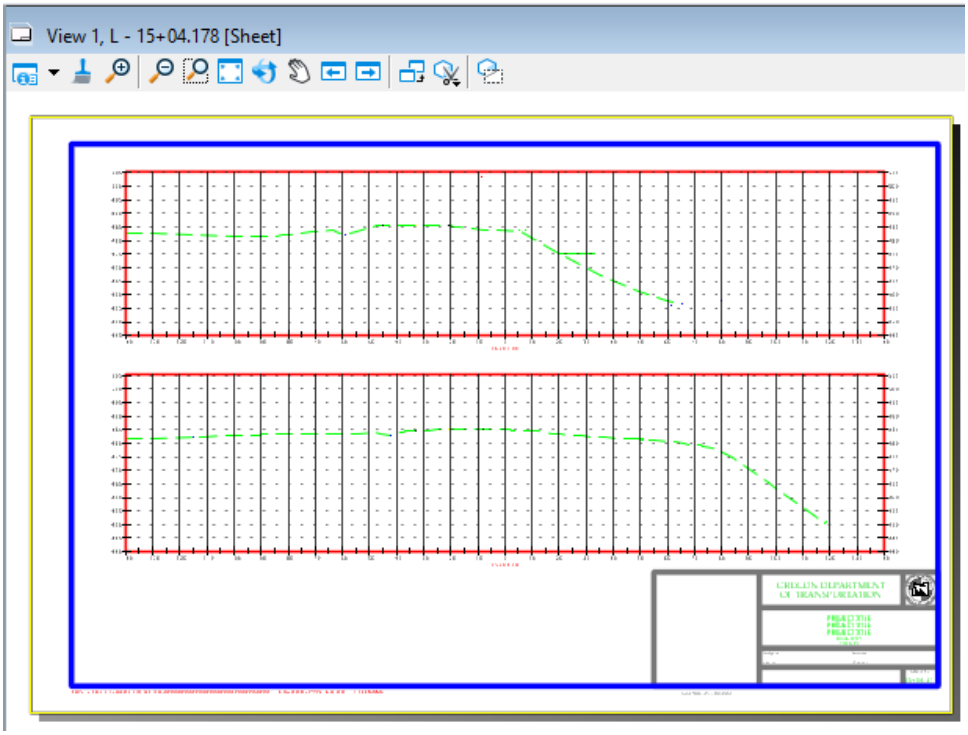
Create Cross Sections in Multiple Sheets

In an XSEC file, select the terrain element and “Set as Active Terrain Model” – to create the Default-3D model.
Right-press and select View Control>2 Views Plan/3D.
Save Settings
To place Civil Cross Section named boundaries (follow steps in exact order):

Ensure View 1 (2D) is active.
Place Named Boundary (Civil Cross Section)
Select Drawing Seed: **XS Inch 20** (pick off list)
Identify Complex Element: left-click on the alignment to select as the Path Element
Set Start and Stop to beginning and end of alignment using the lock icons.
Group = (New)
Name = L (named boundary group name may automatically change to the name of the alignment – you don’t need to change this)
Description = **L-Line Inch 20, 100’ Sections** (type in a group description)
Interval = 25 (modify this for your needs)
Toggle on “Include Control Points” for cardinal stations
“Create Drawing” Checked On to immediately create sheets.
Uncheck “Show Dialog”



Left-click 3 times – then – wait while the drawing- and sheet-type models are created! Longer if the interval is set to 50 or 25.



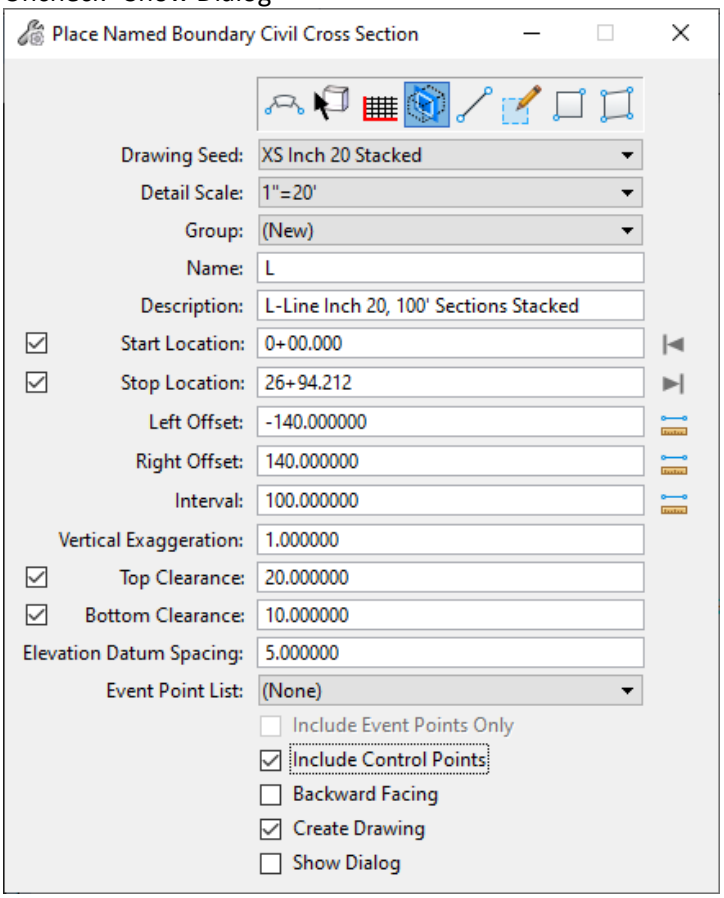
Sheet models are named for the lowest station value displayed in the sheet.
Sections are displayed in a stack on each sheet, beginning above the title block.
The title block contains a Sheet Number cell that displays the Sheet Number from the sheet model properties.

Inch 40 – can fit 2-3 sections on one 11x17 sheet – depending upon height
Inch 20 – can fit 1-3 sections on one 11x17 sheet
Inch 10 – can fit 1-2 sections on one 11x17 sheet
Inch 20 Stacked – puts all sections in one sheet-type model – No title blocks, no sheet borders

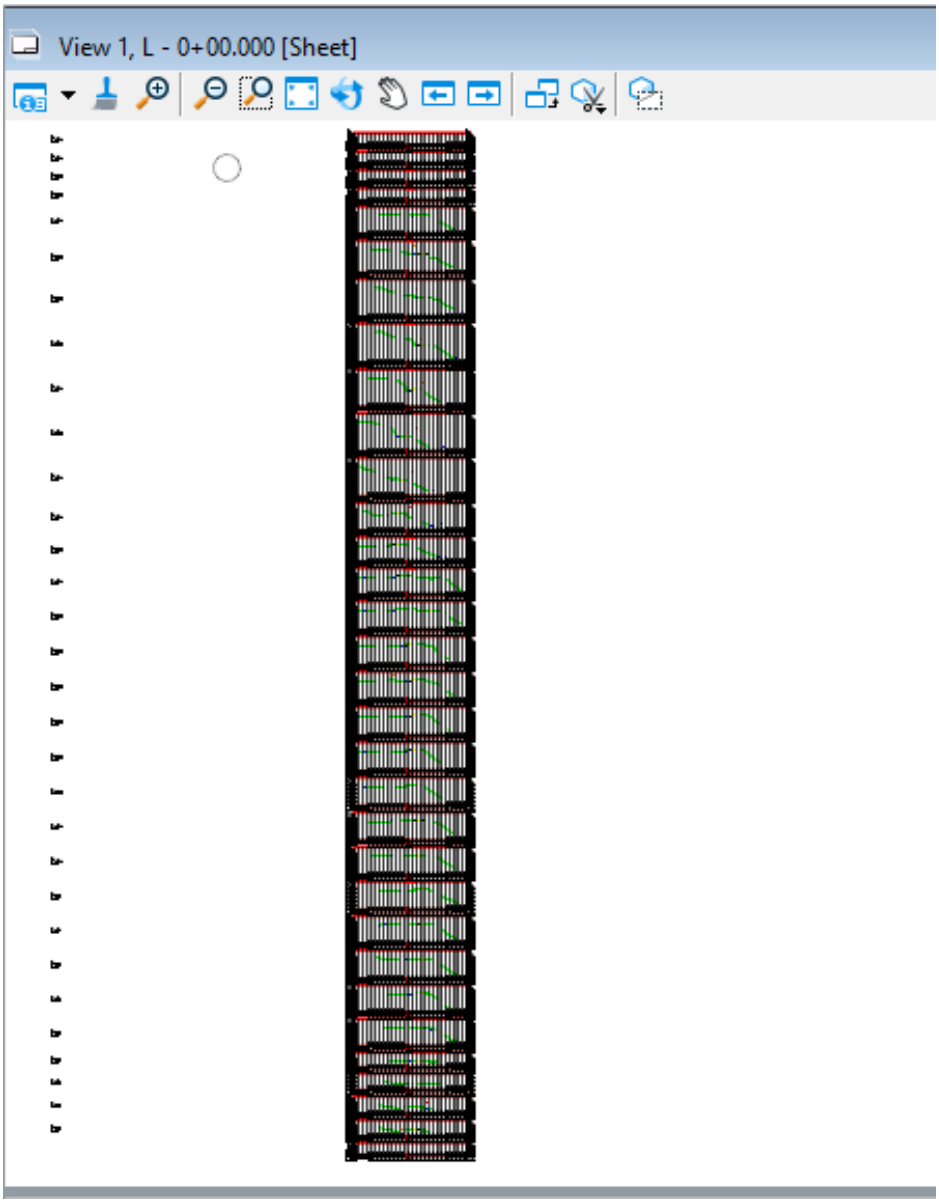
Create Cross Sections Stacked in One Sheet

In an XSEC file, select the terrain element and “Set as Active Terrain Model” – to create the Default-3D model.
Right-press and select View Control>2 Views Plan/3D.
Save Settings
To place Civil Cross Section named boundaries (follow steps in exact order):

Ensure View 1 (2D) is active.
Place Named Boundary (Civil Cross Section)
Select Drawing Seed: **XS Inch 20 Stacked** (pick off list)
Identify Complex Element: left-click on the alignment to select as the Path Element
Set Start and Stop to beginning and end of alignment using the lock icons.
Group = (New)
Name = L (named boundary group name may automatically change to the name of the alignment – you don’t need to change this)
Description = **L-Line Inch 20, 100’ Sections Stacked** (type in a group description)
Interval = 25 (modify this for your needs)
Toggle on “Include Control Points” for cardinal stations
“Create Drawing” Checked On to immediately create sheets.
Uncheck “Show Dialog”



Left-click 3 times – then – wait while the drawing- and sheet-type models are created! Longer if the interval is set to 50 or 25.



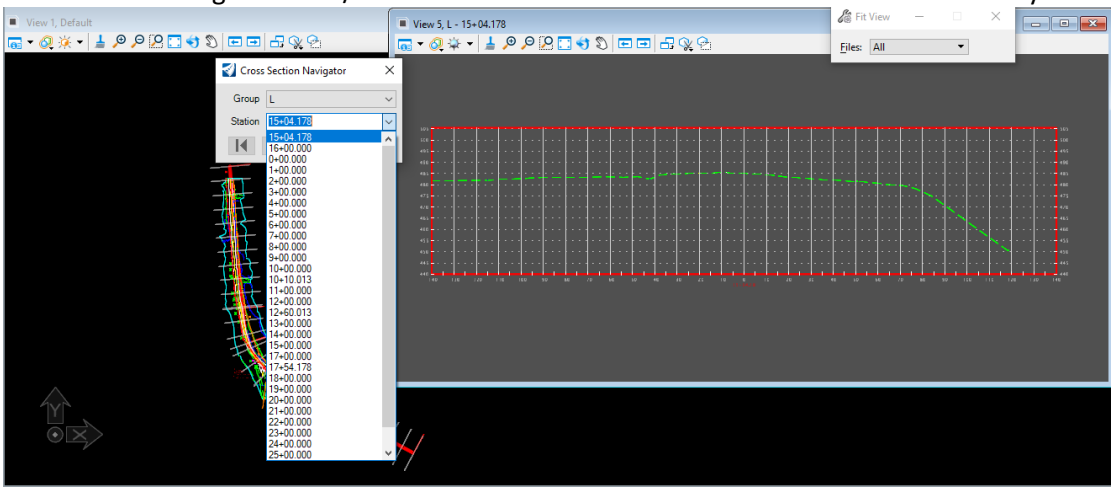
Drawing models are created for each section, then the drawing models are all attached in a stack to the one sheet model.

Cross Section Navigator – OpenRoads Designer only

The Cross Section Navigator functions only in OpenRoads Designer by displaying the reference of the selected section's drawing model in another view window. It can be useful for making annotations in specific sections that will be displayed in the sheets.

Drawing Production>Review>Cross Section Navigator

Use Multi-Model View: Plan/3D – showing the named boundaries in the Default-3D view.
Locate the alignment in the Default view (View 1) – left click on it.
Then choose a view from the View Group Manager and left click in it. The first cross section will be displayed, and the Cross Section Navigator tools will open in the upper left corner.
The Cross Section Navigator references the drawing models into the view window. You can use the arrow buttons to go forward/backward. It maintains the zoom level and area focus as you navigate.



More information can be found in Cross Section Navigator Drawing Tools.