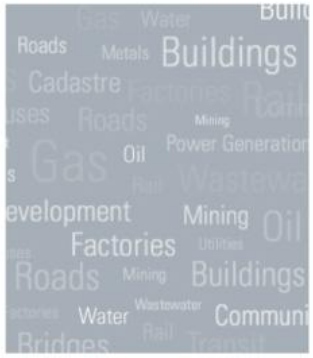

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# *Roadway Designer Overview*

Derricke Gray
GEOPAK Product Manager

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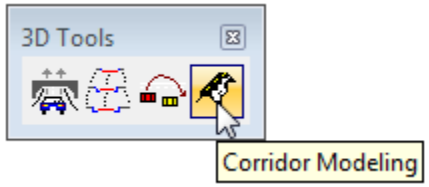
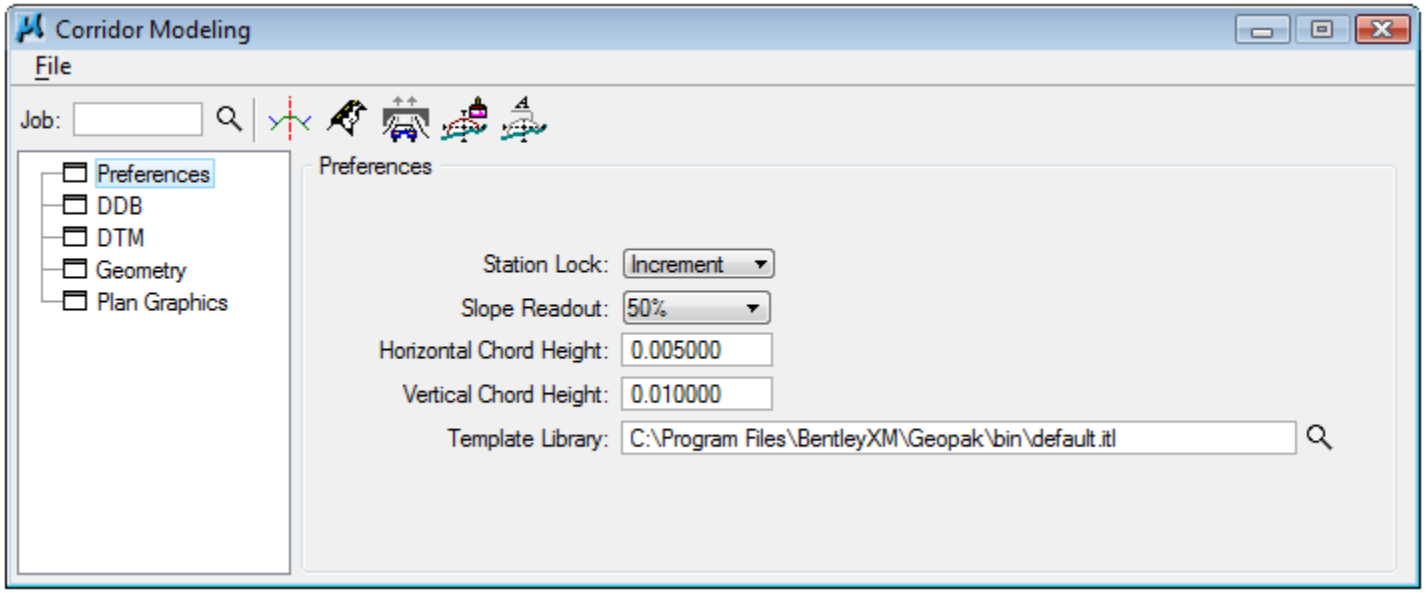
Sustaining Infrastructure

# Corridor Modeling

## Corridor Modeling Application

*Applications > Road > 3D Tools > Corridor Modeling*

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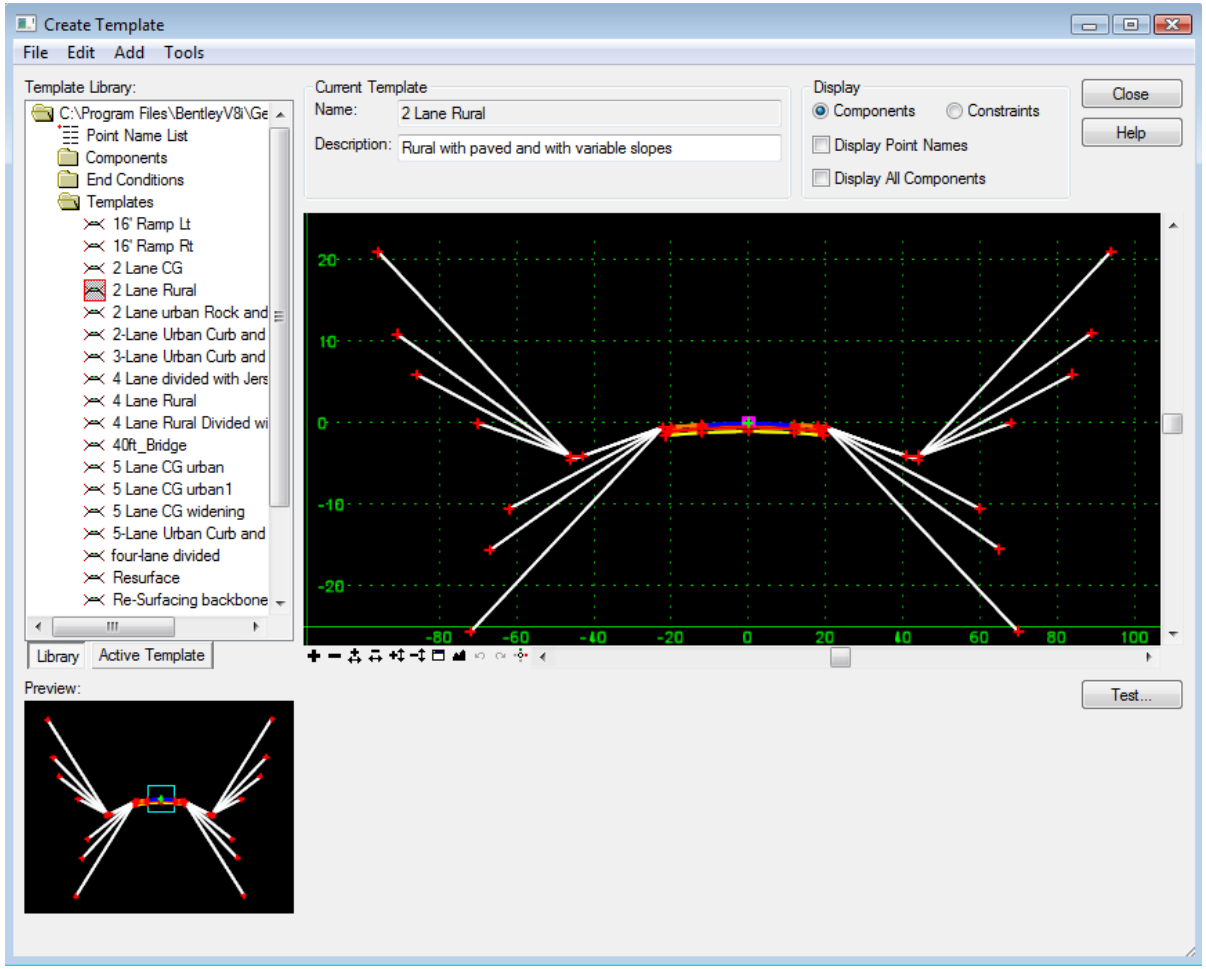
# Corridor Modeling

## Create Template

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# Corridor Modeling

## Roadway Designer

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# Roadway Designer

- With the exception of the *Vertical Gore* tool, the Roadway Designer application is exactly the same in both InRoads and GEOPAK.
- The Vertical Gore tool is scheduled to be added to the GEOPAK version in V8*i* (SELECTseries 2).

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# THE BASICS

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# Roadway Designer

- At its most basic, the Roadway Designer workflow is very simple.

  ***Create a Corridor***

  ***Apply a template***

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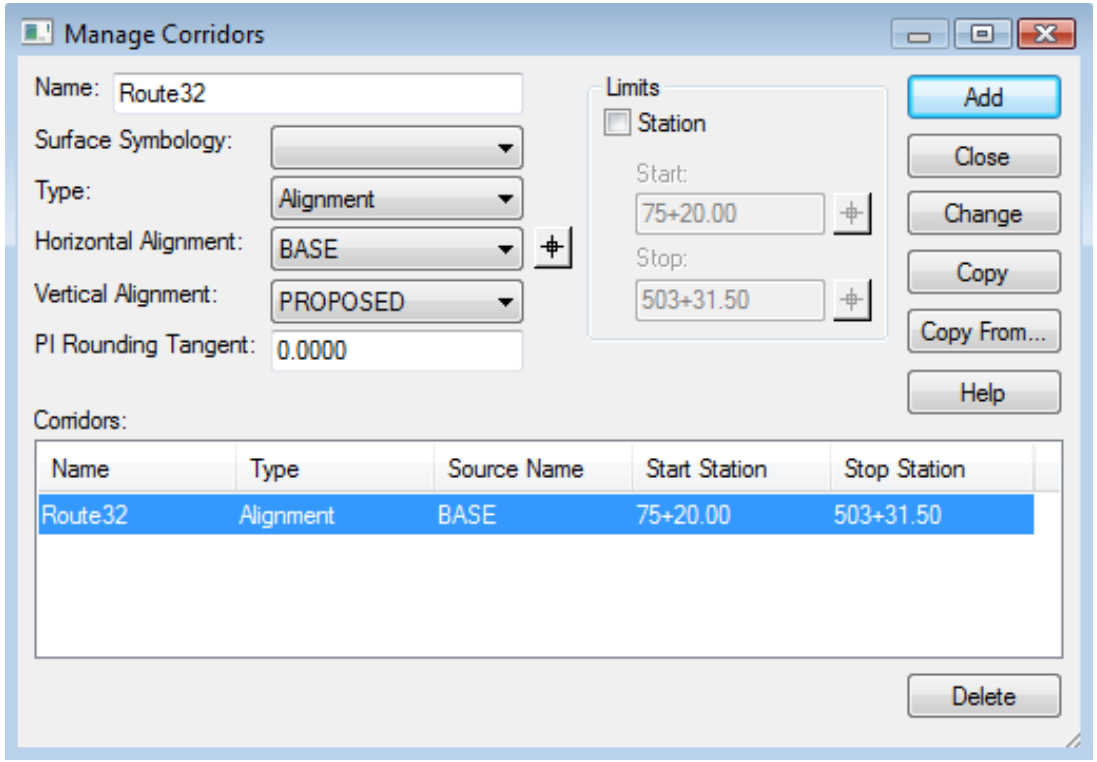
# Manage Corridors

- The creation of corridors is handled via the Manage Corridors tool. A corridor is created using a specified Horizontal and Vertical alignment.

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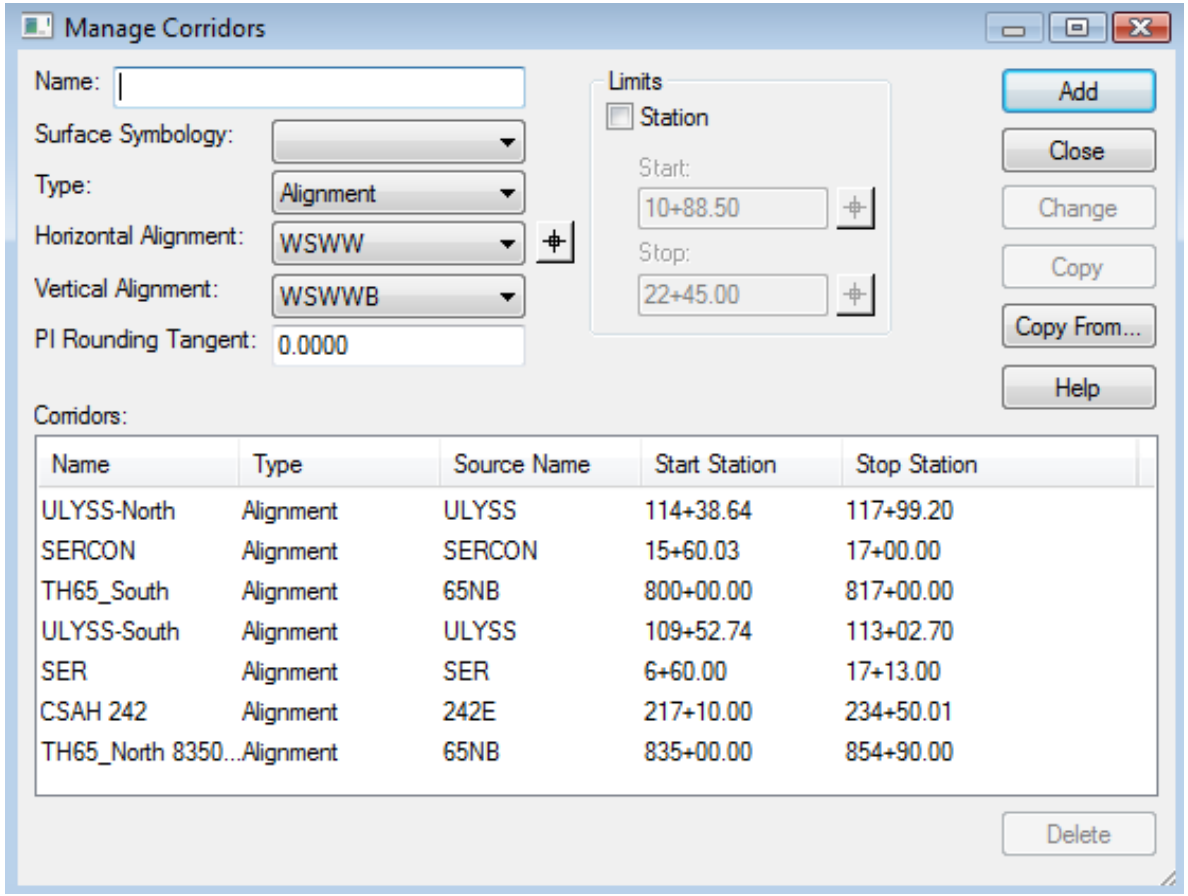
# Manage Corridors

- You may have multiple corridors on a given project.

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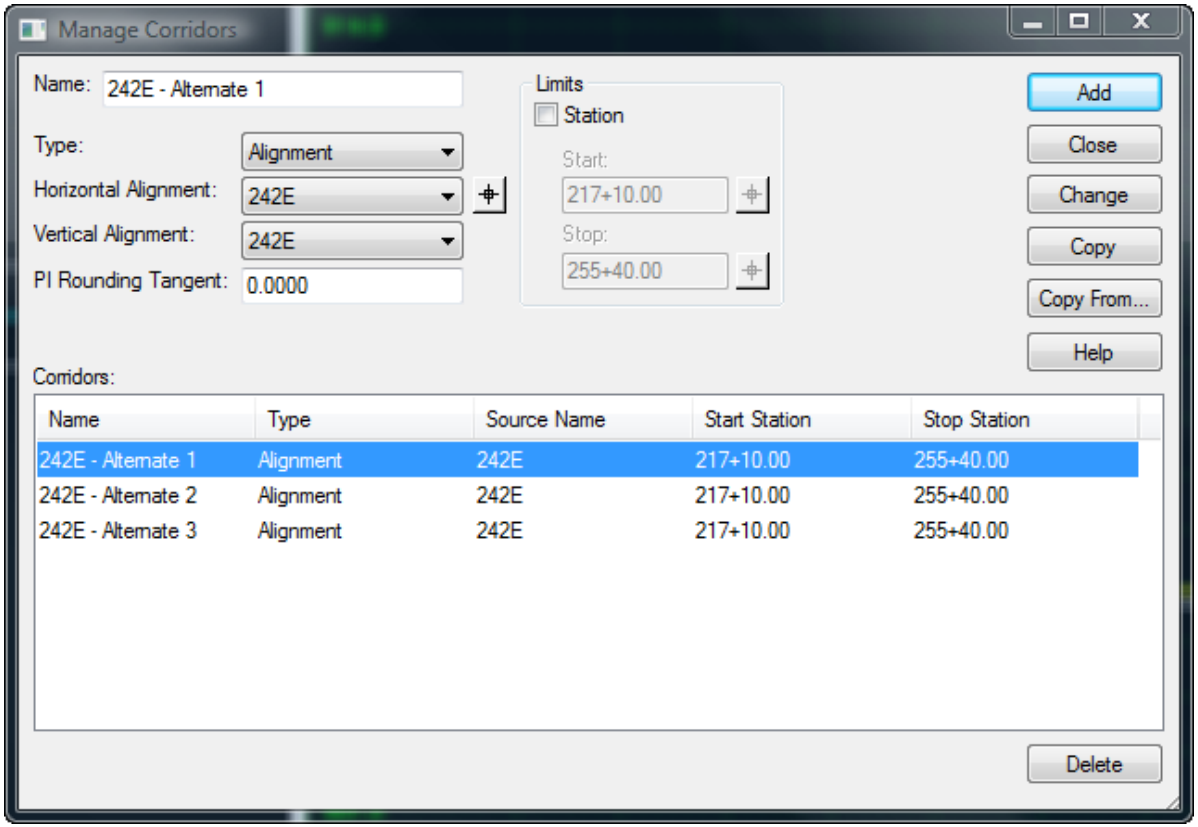
# Managing Corridors

- However, keep in mind that the Manage Corridors tool provides the means to evaluate several design alternatives as well.

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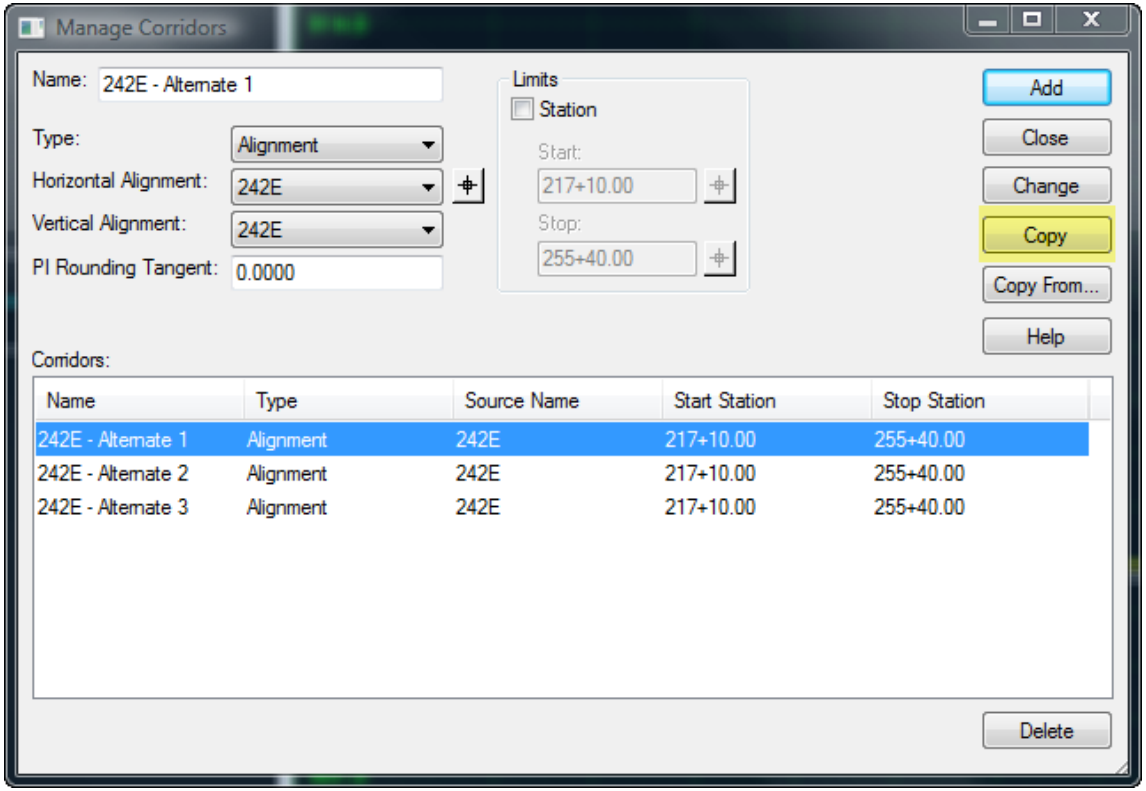
# Managing Corridors

- Using the Copy command, a user can copy a complete design to an alternate Corridor name within the same design IRD file.

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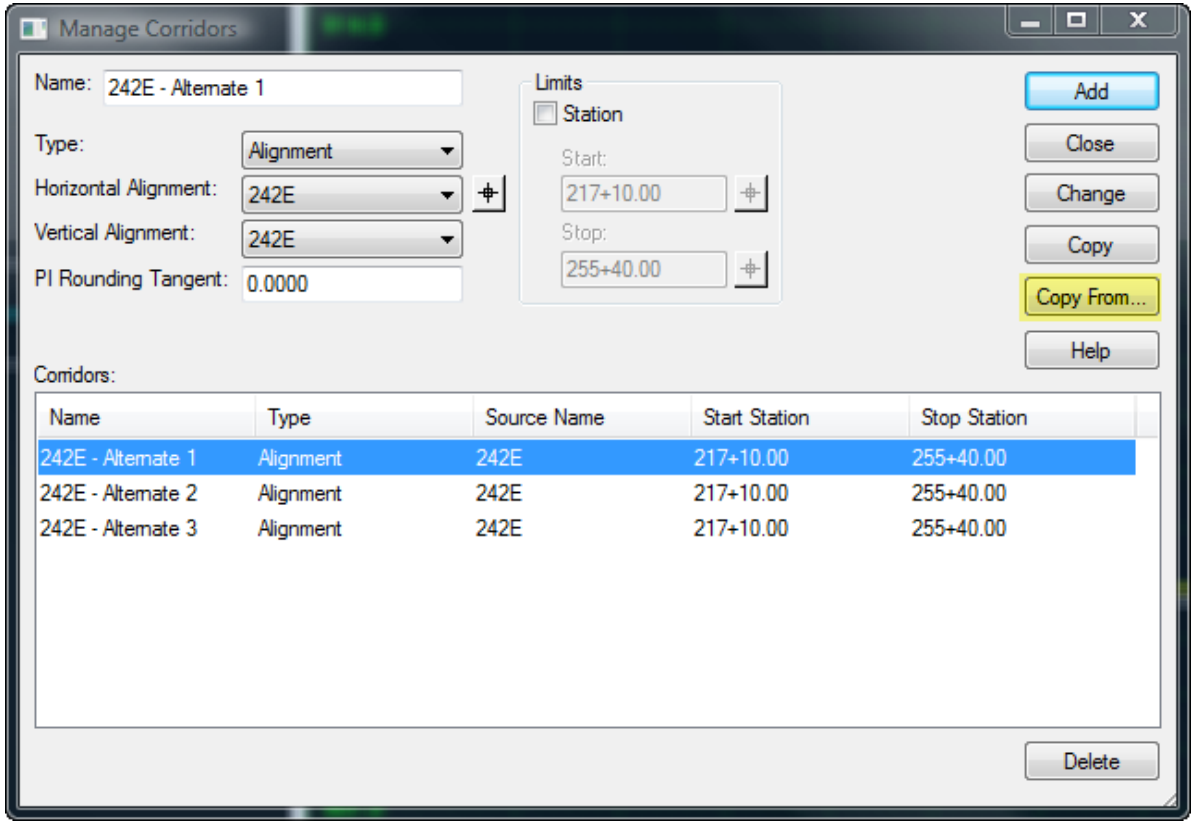
# Managing Corridors

- Likewise using the Copy From command, a user can copy a complete design to an alternate Corridor name from within another design IRD file.

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# Managing Corridors

- By copying a design corridor to a different alternate name a user can easily evaluate design changes such as:
  - Profile alternates
  - Design speed changes
  - Super elevation changes
  - Etc.

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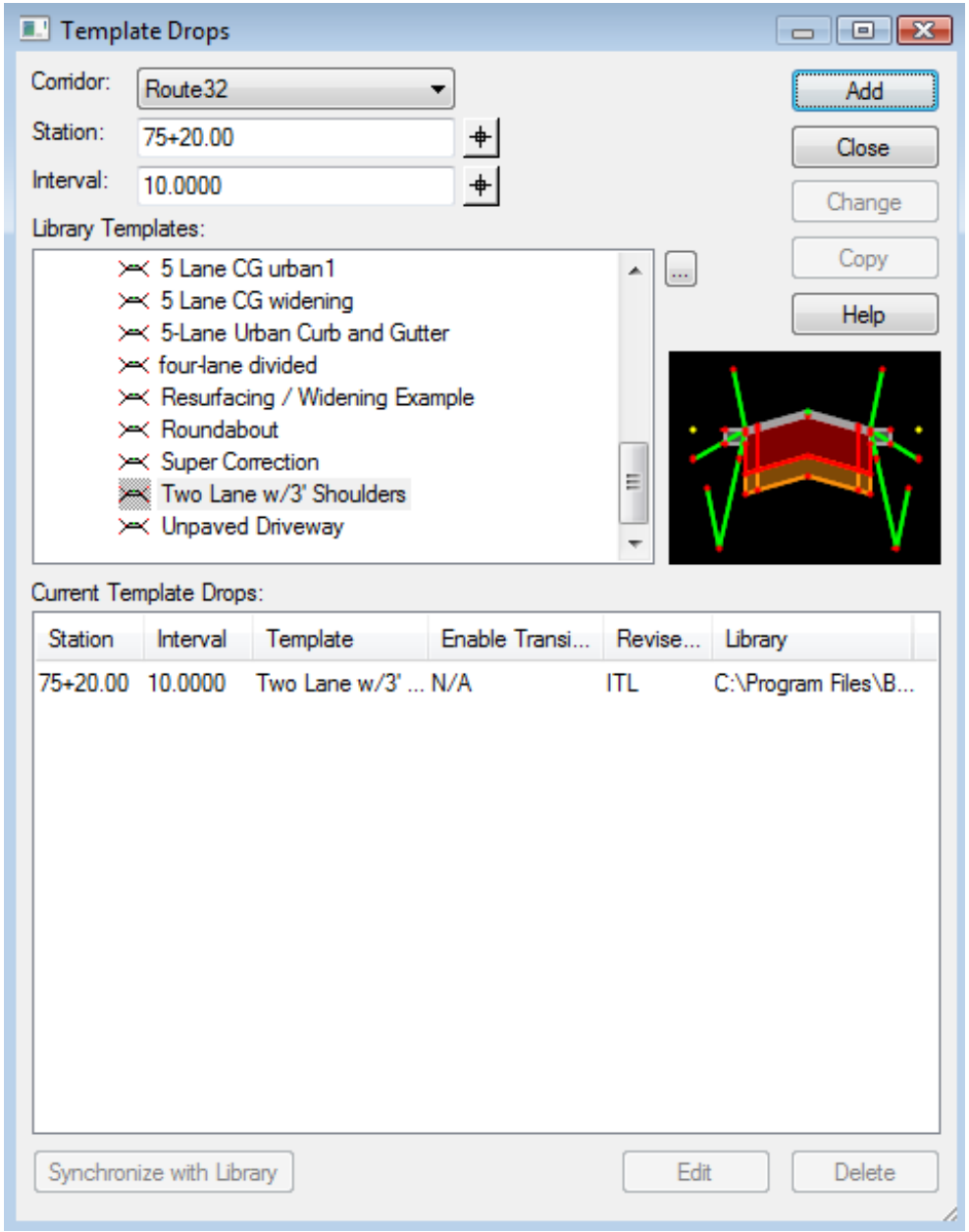
# Template Drops

- Once a corridor is created, templates can be dropped at specified intervals along the corridor.

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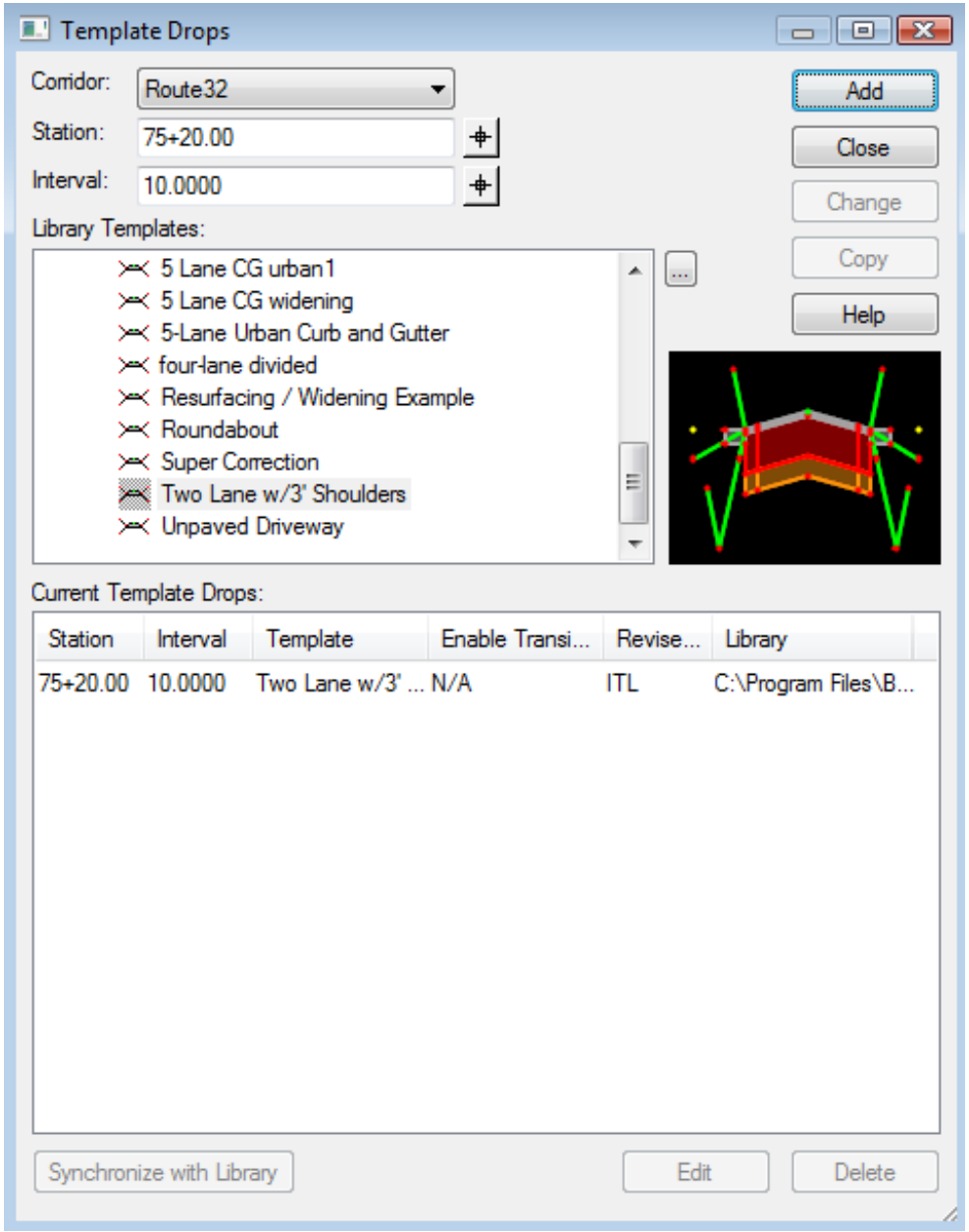
# Template Drops

- Once a corridor is created, templates can be dropped at specified intervals along the corridor.

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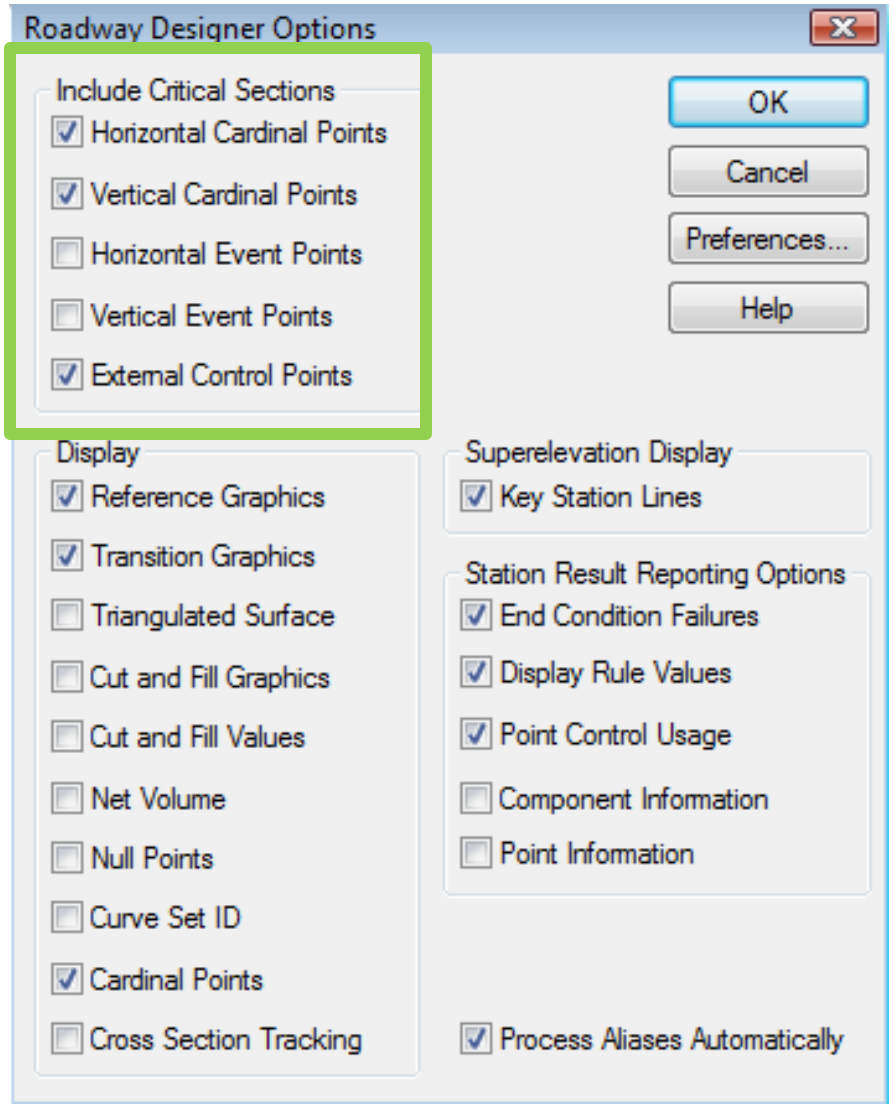
# Critical Sections

- The *Options* dialog also provides the ability to create critical sections at the following locations:

  ***Horizontal Control Points (PC, PT, etc.)***

  ***Vertical Control Points (VPI, VPC, etc.)***

  ***External Control Points***

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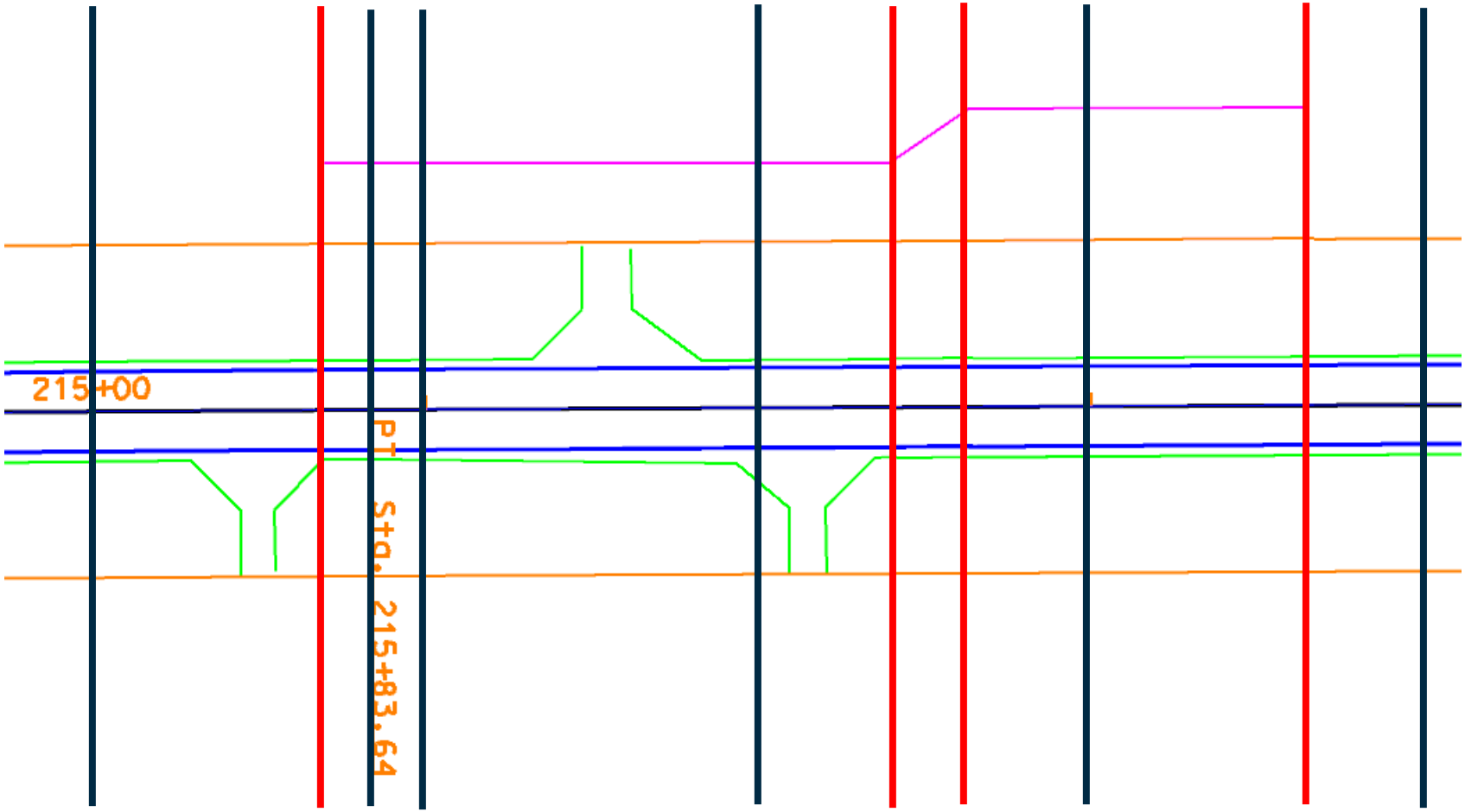
# External Control Points

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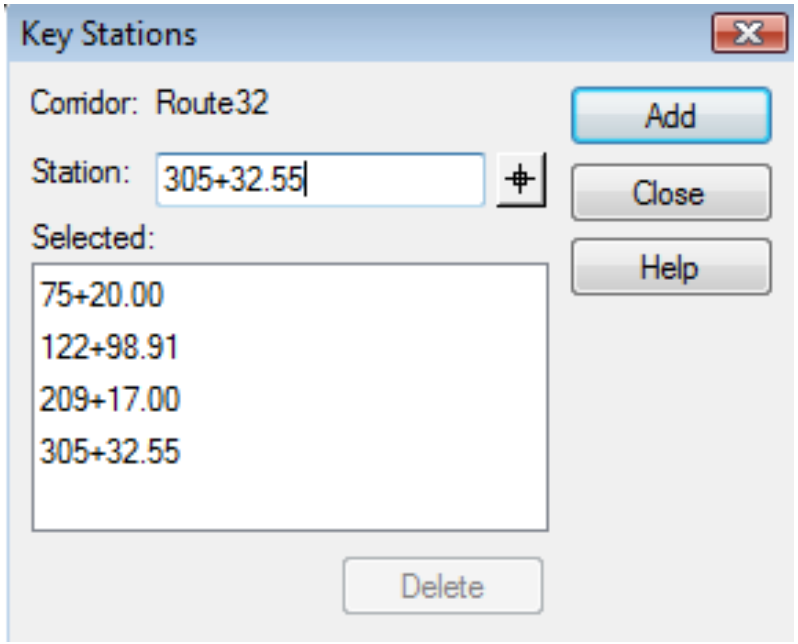
# Key Stations

- The Key Stations dialog also allows you to create critical sections at any location that you wish.

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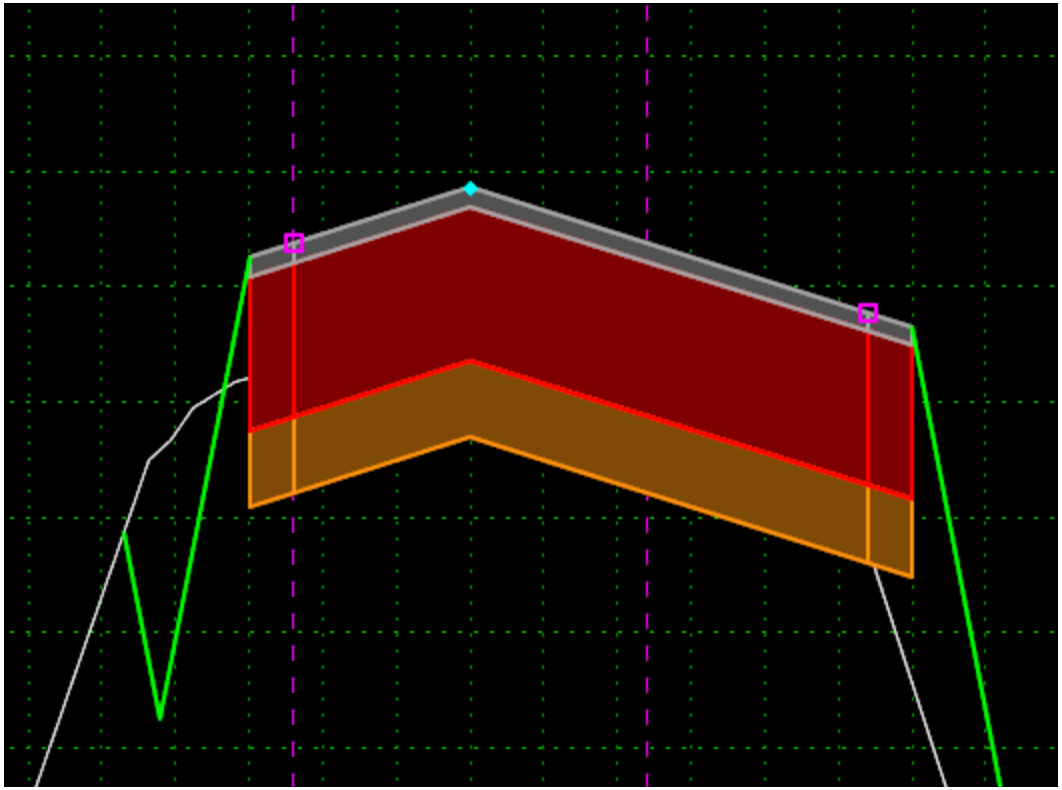
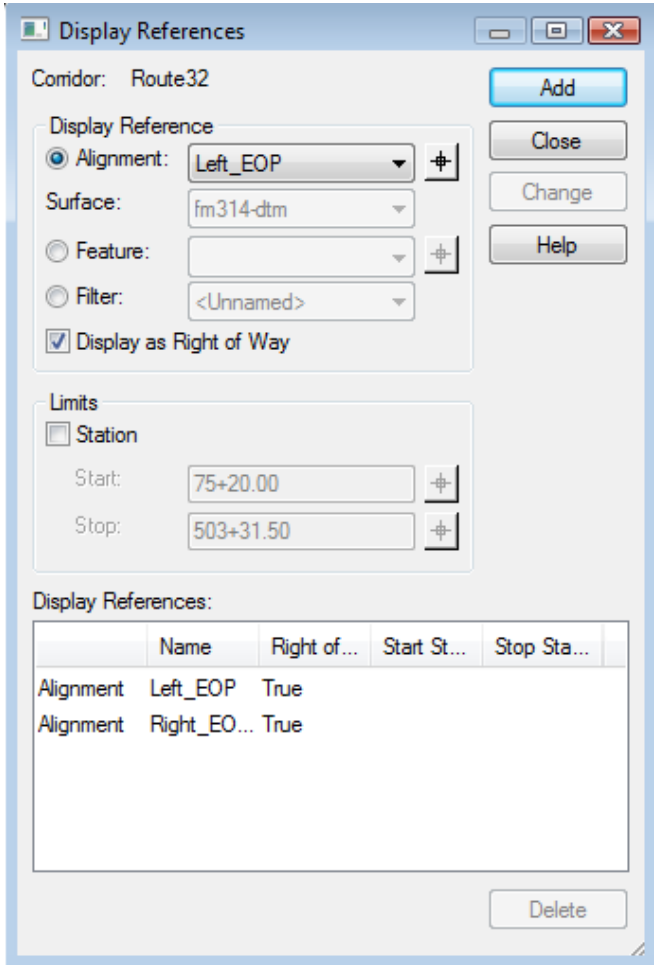
# Display References

- Display References can be used to display selected alignments in both the plan and cross section views of Roadway Designer.



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# *Live Demo*

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# OVERRIDING THE TEMPLATE

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# Overriding the Template

- As good as a template may be, there will always be times on project where you need to 'override' the original template settings.

  For example, the template may call for a 6:1 fill but for R/W reasons you may want to use a 3:1 slope.

  There are several tools available in Roadway Designer that give the user control over the behavior of a template.

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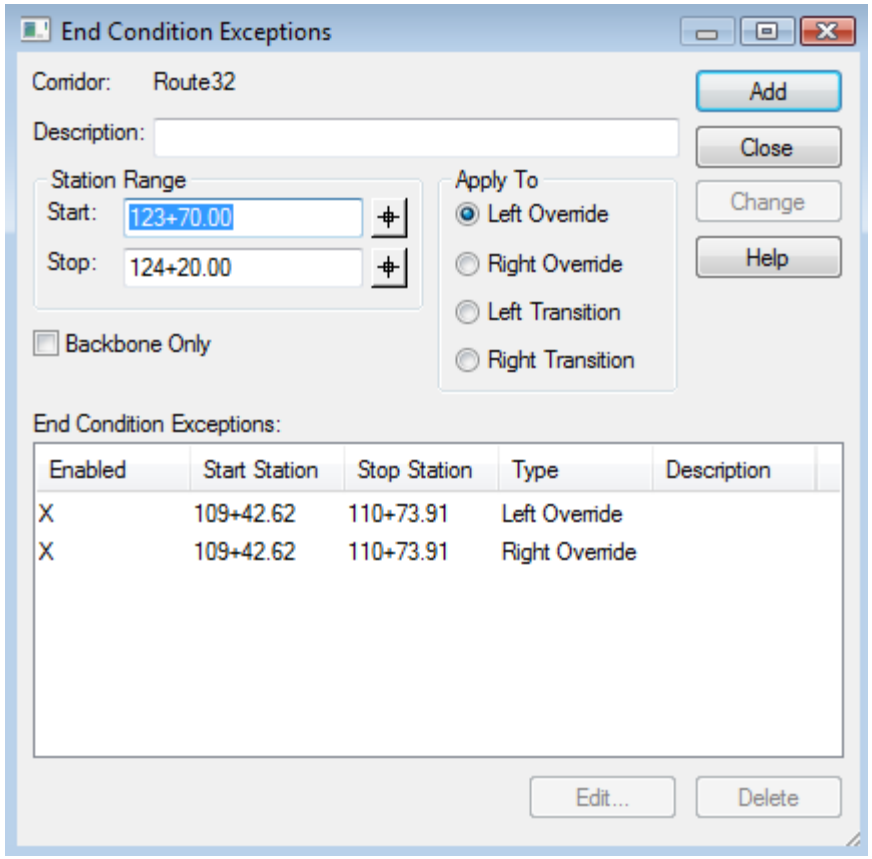
# End Condition Exceptions

- End Condition Exceptions are used to modify the behavior of an end condition solution without requiring the use of additional template drops.

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# *Live Demo*

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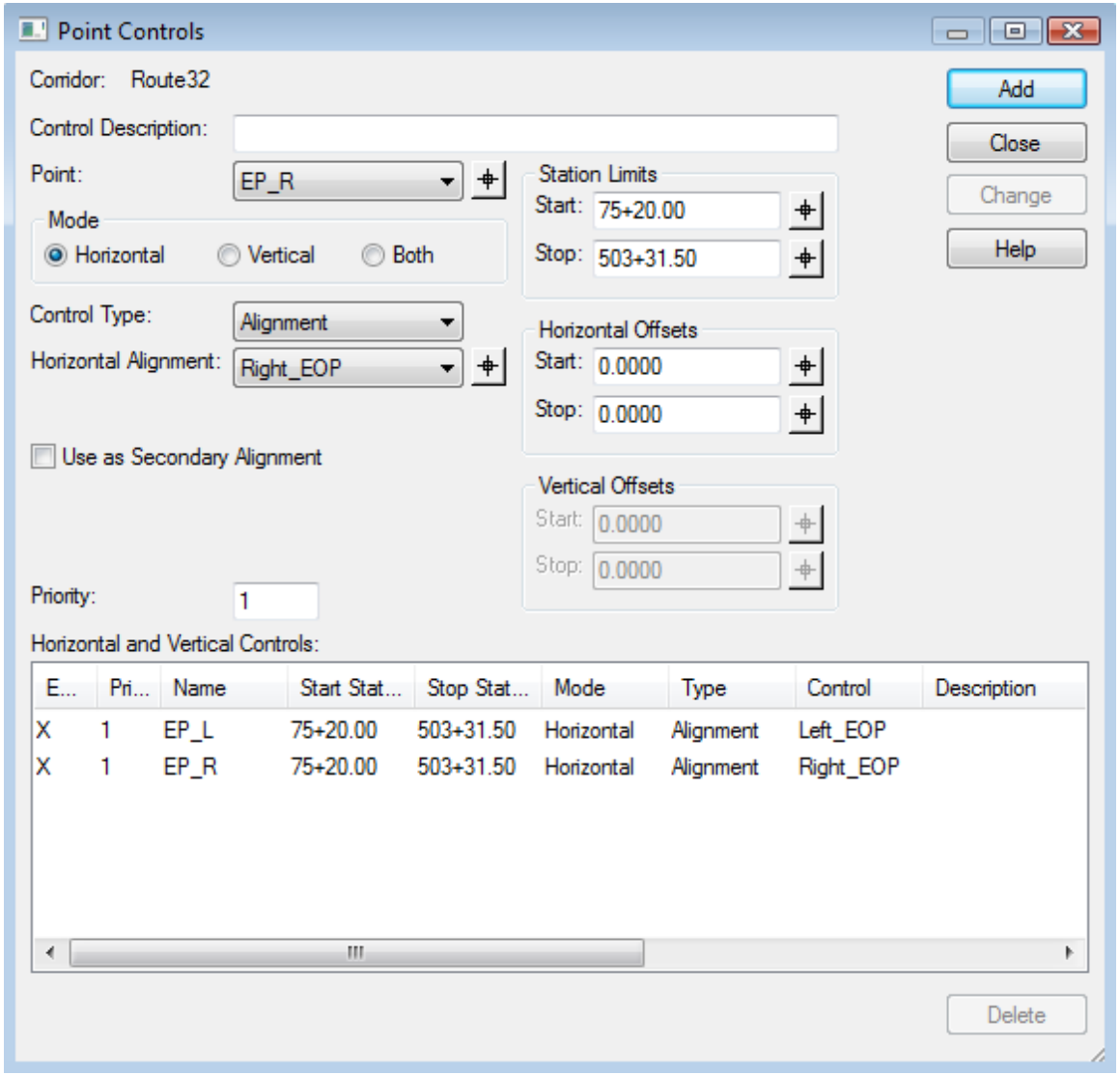
# Point Controls

- Point controls are used to modify the behavior of points in a template. These controls take precedence over existing constraints on the point.

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# *Live Demo*

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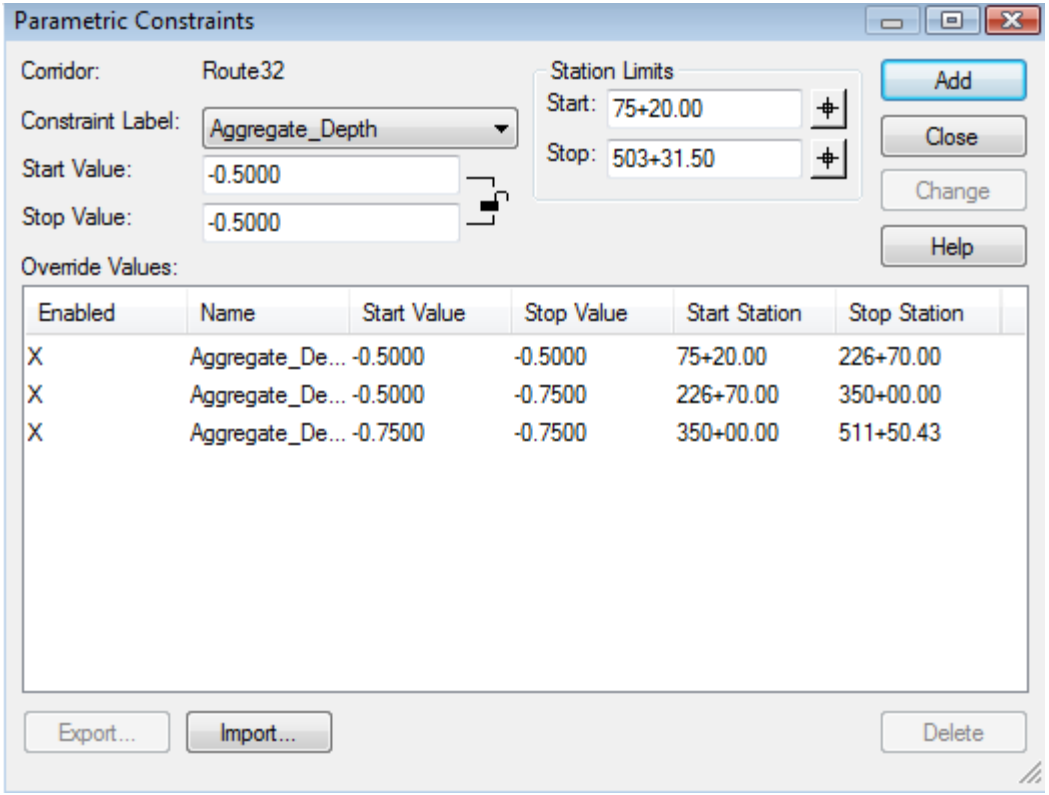
# Parametric Constraints

- These user defined values are used to override template constraint values for specified station ranges.

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# *Live Demo*

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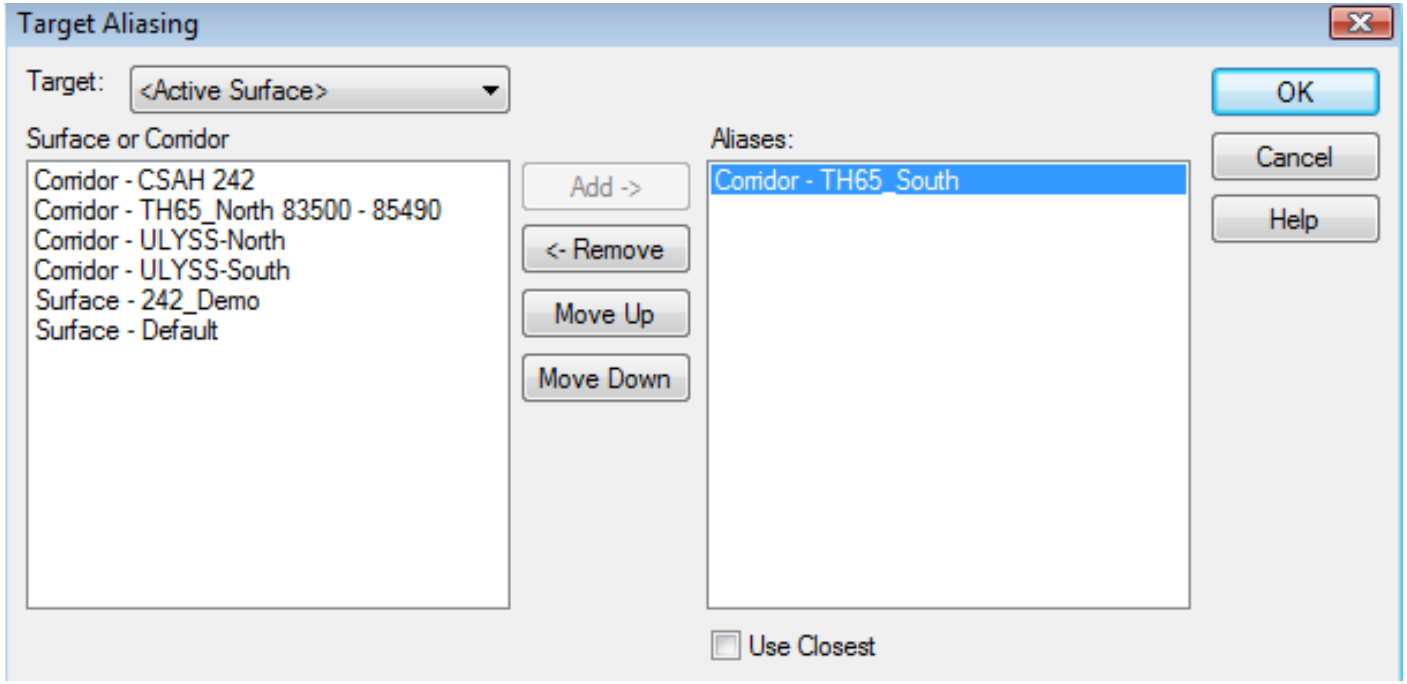
# Target Aliasing

- Target aliases can be used so that one corridor can target the solution of another corridor.

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Design.dgn, Default (2D - V8 DGN) - MicroStation V8 XM Edition

File Edit Element Settings Tools Utilities Workspace Applications Window Help

RDWIZARD OPENROADWAYDESIGNER

View 1 - Default

Corridor Modeling

File

Job: 001

- Preferences
- DDB
- DTM
- Geometry
- Plan Graphics

| Chain | Profile | Drafting Standard |
|---|---|---|
| 242E | 242E | Default |
| 242W | 242W | Default |
| 65NB | 65NB | Default |
| 65SB | 65SB,65SB_LT... | Default |
| MATCHLINE | MATCHLINE | Matchline |

Chain: <Select>

Drafting Standard: Aggregate Base

Profile(s)
242E
242W
65NB
65SB

Import

Default Views

0.0000

90°0'0.0000"

CG

Roadway Desig... | Active Inbox in ... | Stories|Features... | 2 MicroStatio... | 10:59 AM

Design.dgn [2D - V8 DGN] - MicroStation V8i (SELECTseries 1)

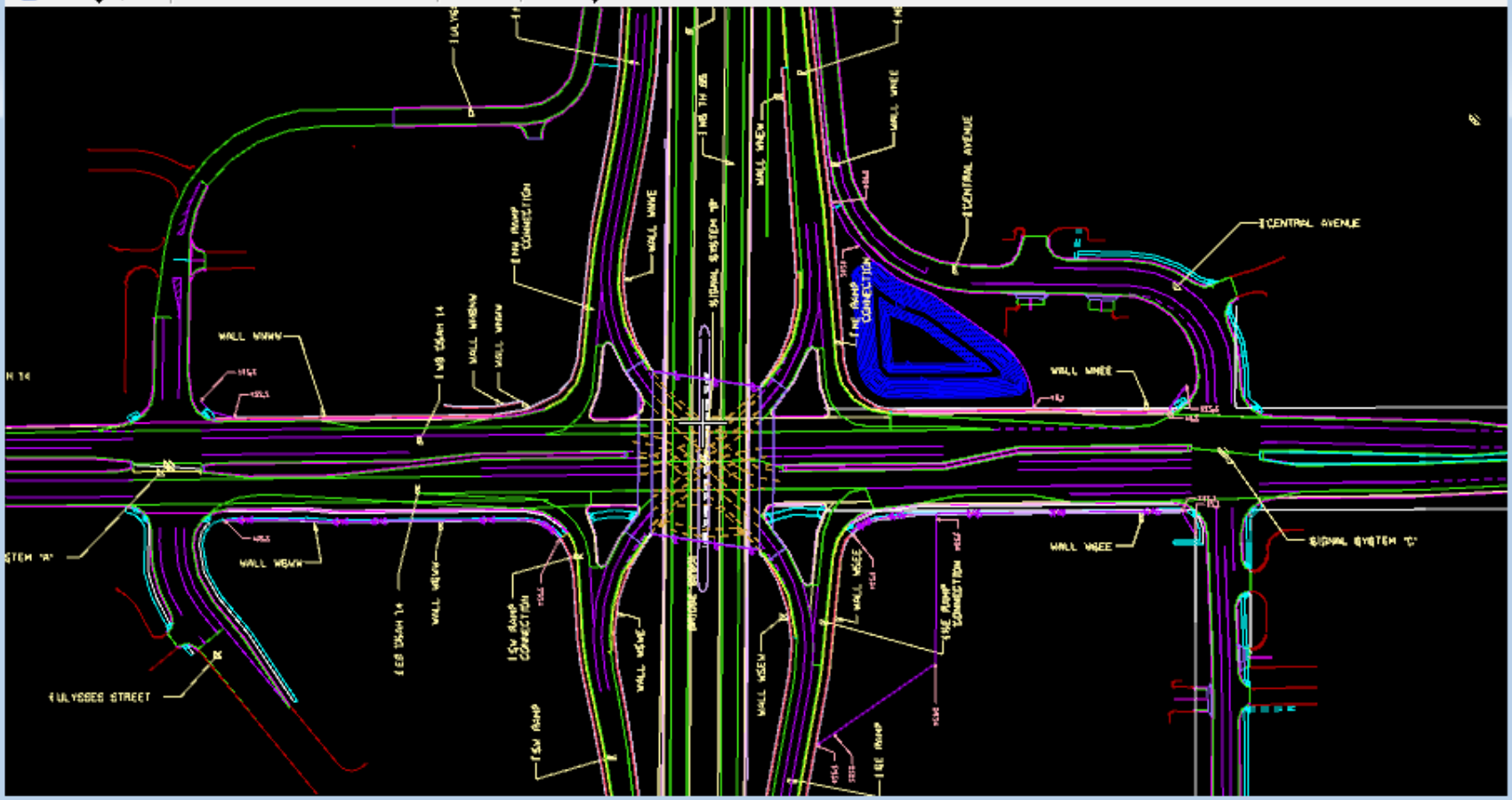
File Edit Element Settings Tools Utilities Workspace Applications Window

RDWIZARD OPENROADWAYDESIGNER

CG 3 0 6 0 0

Tasks

View 1, Chuck Alignments




Chuck Alignments 1 2 3 4 5 6 7 8

CG

# TEMPLATE TRANSITIONS

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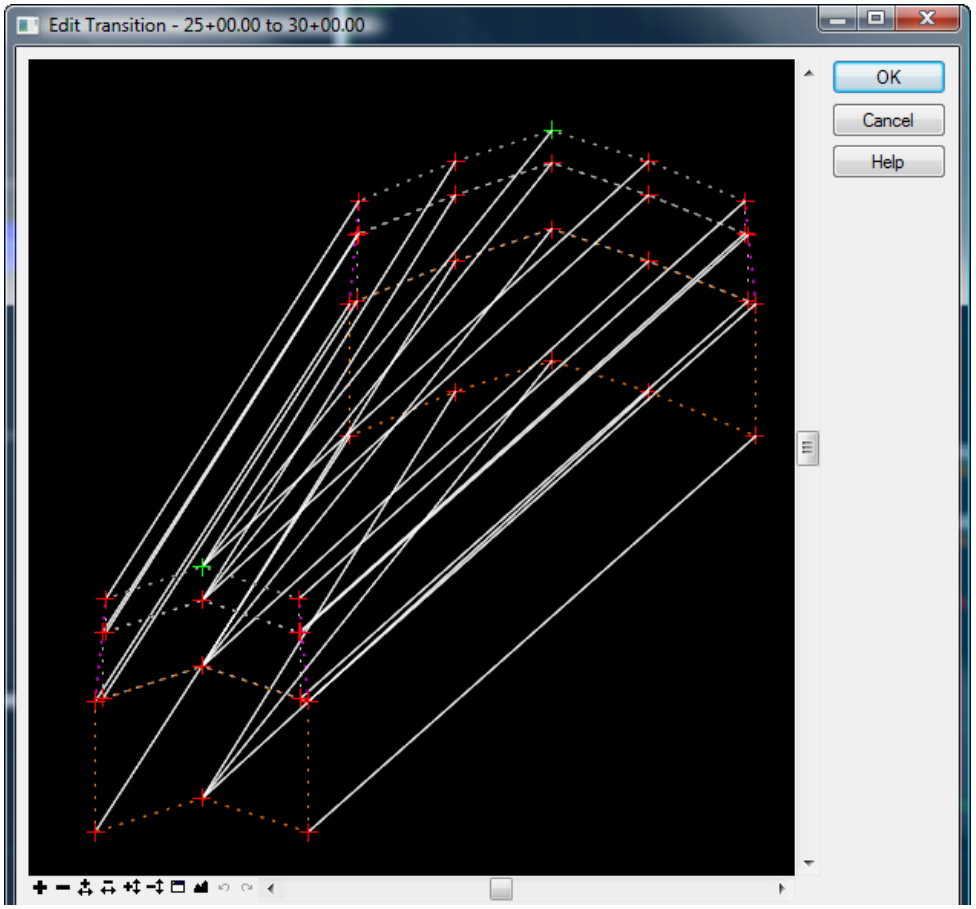
# Template Transitions

- Point naming consistency between templates allows transitions to complete automatically.

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# Template Transitions

- If the transition is not handled automatically, then the transitioning between different templates can be handled in two different ways:

  ***Edit Transition dialog***

  ***Template Stationing***

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# *Live Demo*

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# SUPERELEVATION

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# Superelevation

- Superelevation in Roadway Designer can be handled using two different methods:

  ***Superelevation Wizard***

  ***Import GEOPAK Shape Input File***

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plan.dgn, Default (2D - V8 DGN) - MicroStation V8 XM Edition

File Edit Element Settings Tools Utilities Workspace Applications Window Help

RDWIZARD OPENROADWAYDESIGNER

View 1 - Default

Corridor Modeling

File

Job: 314

- Preferences
- DDB
- DTM
- Geometry
- Plan Graphics

Preferences

Station Lock: Increment

Slope Readout: 50%

Horizontal Chord Height: 0.005000

Vertical Chord Height: 0.010000

Template Library: C:\Program Files\BentleyXM\Geopak\bin\default.itl

215+00

PI Sta. 2

Default

0.0000

0.0000°

D_DITCH_1

Corridor Modeling | Active Inbox in P... | plan.dgn, Default... | Corridor Modeling | 8:27 PM

plan.dgn, Default (2D - V8 DGN) - MicroStation V8 XM Edition

File Edit Element Settings Tools Utilities Workspace Applications Window Help

D_DITCH_1 | 7 | 0 | 1 | 0 | 0

Pan View

View 1 - Default

Corridor Modeling

File

Job: 314

- Preferences
- DDB
- DTM
- Geometry
- Plan Graphics

Preferences

Station Lock: Increment

Slope Readout: 50%

Horizontal Chord Height: 0.005000

Vertical Chord Height: 0.010000

Template Library: C:\Program Files\BentleyXM\Geopak\bin\default.itl

215+00

PI

Sta. 2

Default | 1 2 3 4 5 6 7 8 | 0.0000 | 0.0000°

Pan View > Select View | D_DITCH_1

Corridor Modeling | Active Inbox in Pers... | plan.dgn, Default (2... | 8:17 PM

# Shoulder Rollover

- Similarly, shoulder rollovers can be handled in multiple ways as well.

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plan.dgn, Default (2D - V8 DGN) - MicroStation V8 XM Edition

File Edit Element Settings Tools Utilities Workspace Applications Window Help

RDWIZARD OPENROADWAYDESIGNER

View 1 - Default

Corridor Modeling

File

Job: 314

- Preferences
- DDB
- DTM
- Geometry
- Plan Graphics

Preferences

Station Lock: Increment

Slope Readout: 50%

Horizontal Chord Height: 0.005000

Vertical Chord Height: 0.010000

Template Library: C:\Program Files\BentleyXM\Geopak\bin\default.itl

215+00

PI Sta. 2

Default 1 2 3 4 5 6 7 8 0.0000 0.0000°

D_DITCH_1

Corridor Modeling | Active Inbox in P... | plan.dgn, Default... | Corridor Modeling | 8:45 PM

# SURFACE CREATION

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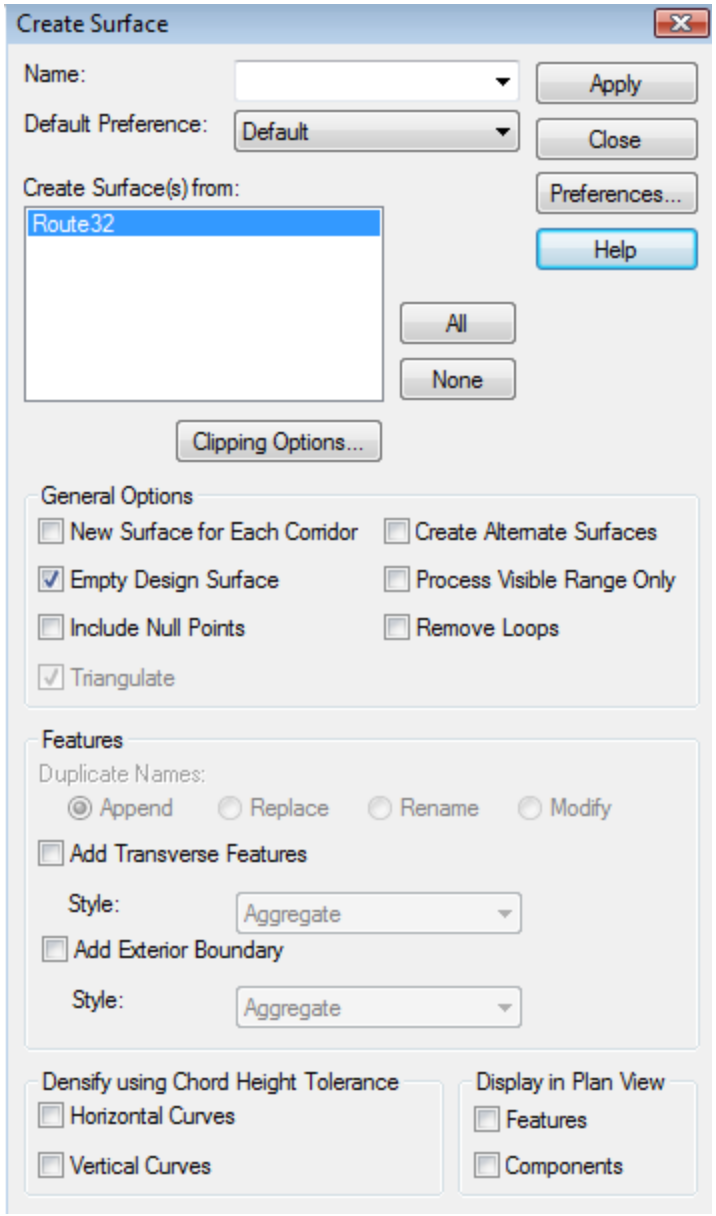
# Create Surface

- Use this dialog to create a surface or surfaces from the roadway design. You can create a unified or merged surface out of all the corridors in the design, or create a separate surface for each corridor.

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# *Live Demo*

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# MISCELLANEOUS

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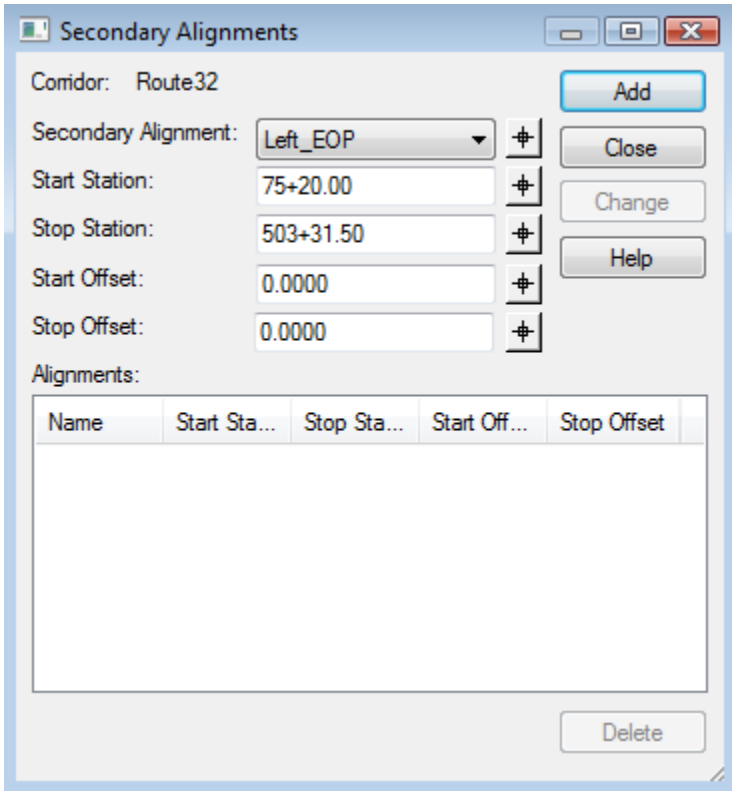
# Secondary Alignments

- Secondary alignments are used to modify the direction of cross section processing. By default, the cross section is created radial to the main alignment/feature.

  If a secondary alignment exists, then that portion of the cross section which lies outside the secondary alignment will be radial to the secondary alignment instead of the main alignment.

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# *Live Demo*

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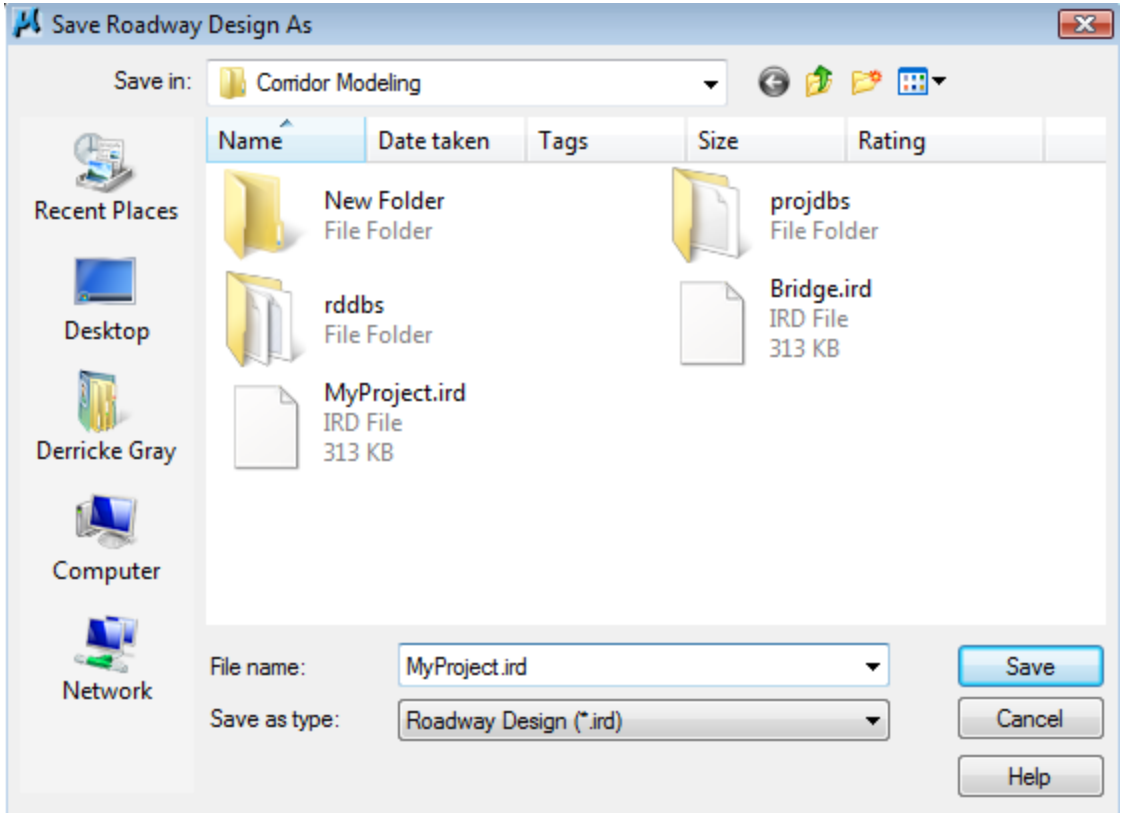
# .IRD

© 2009 Bentley Systems, Incorporated

# .IRD

- Finally, your Roadway Designer session can be saved to an .IRD file. This can then be re-loaded at any time or even sent to another user.

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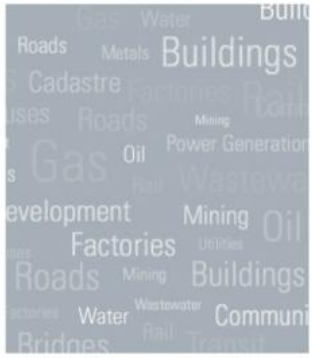

# Roadway Designer Overview

Derricke Gray
GEOPAK Product Manager

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