Bentley
Sustaining Infrastructure

Understanding Features

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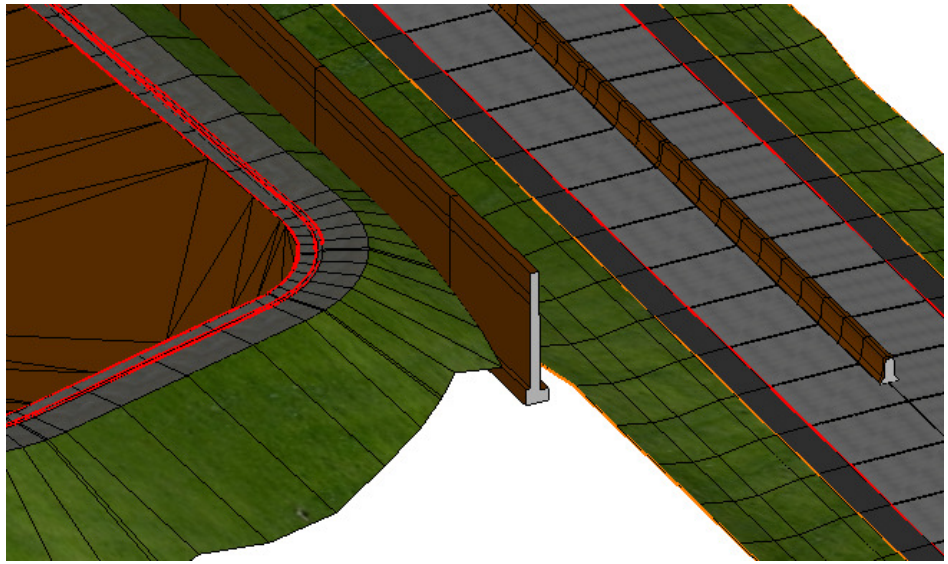
Features

- What is a "***Feature***"?
  - At it's simplest, a ***Feature*** is anything in your design that represents a real-world entity.
    - Curb and Gutter
    - Asphalt Pavement
    - Manhole
    - Wall
    - Aggregate Base
    - R/W Marker
    - Ditch
    - Fill Slope
    - Etc.



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Feature Definitions

- What is a "***Feature Definition***"?
  - Properties used to define how a feature is to be displayed, annotated, computed, etc..
  - These are normally customized by each organization.
  - These are normally created in advance and propagated across an organization in order to standardize designs.

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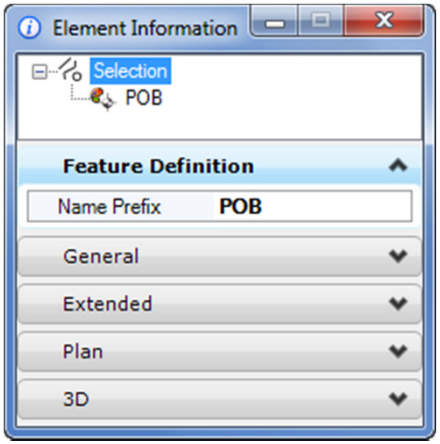
Types of Feature Definitions

- 3 types of feature definitions are supported.
  - ***Point Feature***
    - R/W Marker
    - Control Point
    - Iron Pin
  - ***Linear Feature***
    - Curb & Gutter
    - Wall
    - Ditch
  - ***Surface Feature***
    - Existing Ground
    - Aggregate Base
    - Asphalt Pavement

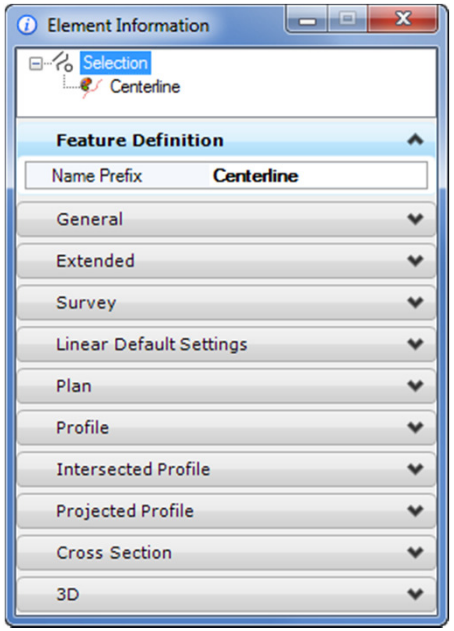
Types of Feature Definitions

- Depending on its type, a feature definition will have various properties that are available for definition.

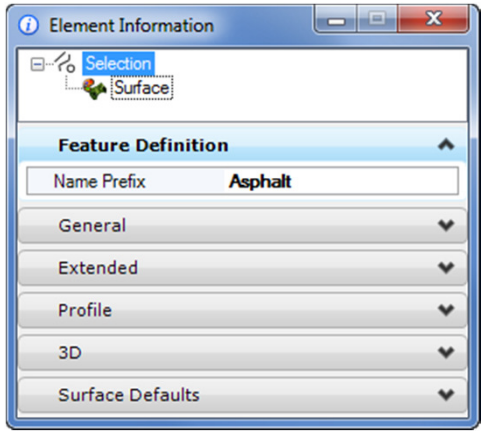
Point



Linear



Surface



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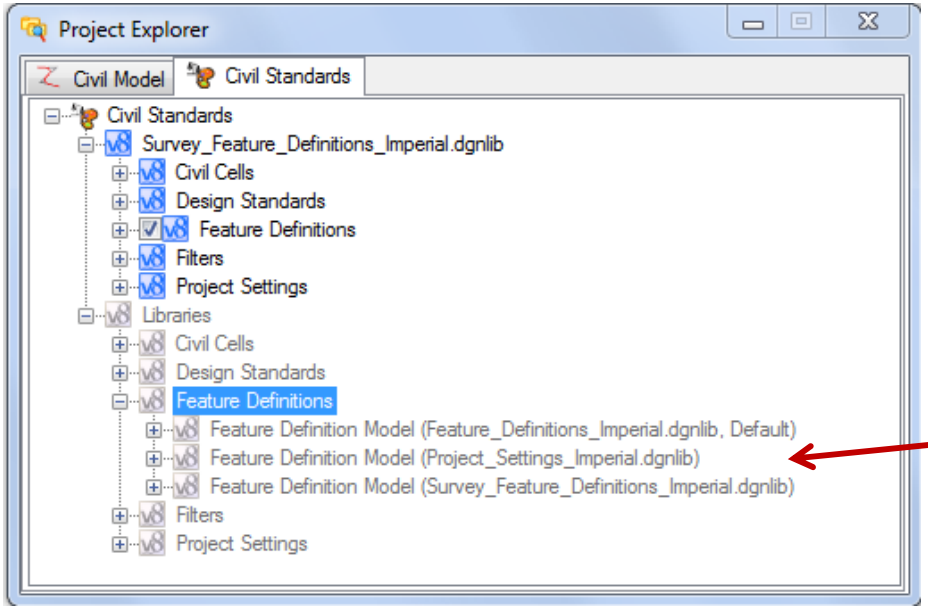
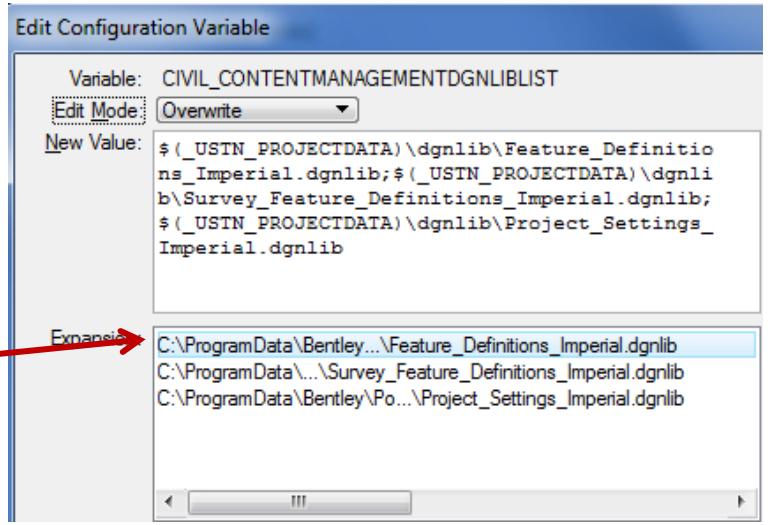
DGN Libraries

- Feature definitions reside in DGN Files/Libraries.
  - ***DGN Libraries (optimal)***
    - Allows for propagation of standards across an organization
  - ***DGN Files***
    - Can be created directly in DGN file, but this is not the recommended procedure
- Note: When a feature definition is used from a DGN Library, the feature definition will be copied into the DGN file. This is standard MicroStation functionality (e.g. levels, line_styles, fonts, etc.).

Civil_ContentManagementDGNLiblist

- This variable is used to define which specific DGN Libraries are to be used to define your features.
- If this variable is not set, then all the DGN Libraries will be read and any that contain features will be listed.





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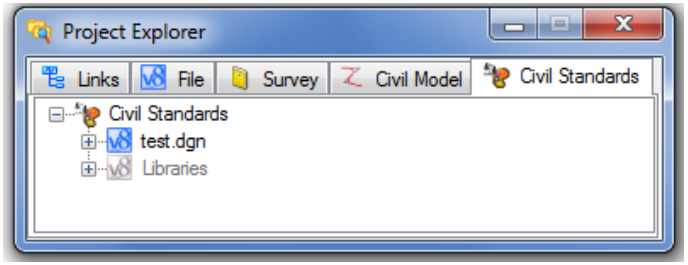
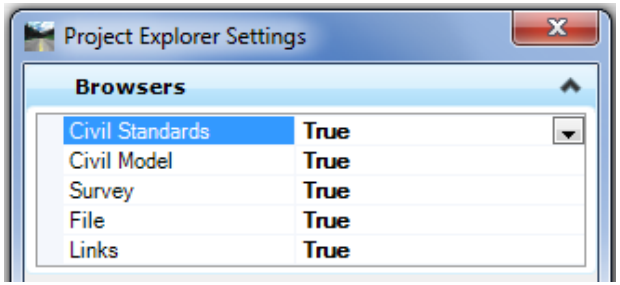
Project Explorer

- Feature Definitions are created, modified and reviewed in MicroStation's Project Explorer application.
  - ***MicroStation File > Project Explorer > Civil Standards***



  - ***Note: Tab Display Controlled by Settings > Project Explorer***



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Creating Feature Definitions

- How do I create a ***Feature Definition***?
  - ***Link To Native (automatic)***
    - InRoads – XIN File
    - GEOPAK – DDB File, XML File (Survey)
    - MX – PSS File
  - ***Manual Creation***
  - ***Combination of both***
  - ***Note: Feature Name <u>MUST</u> be unique***

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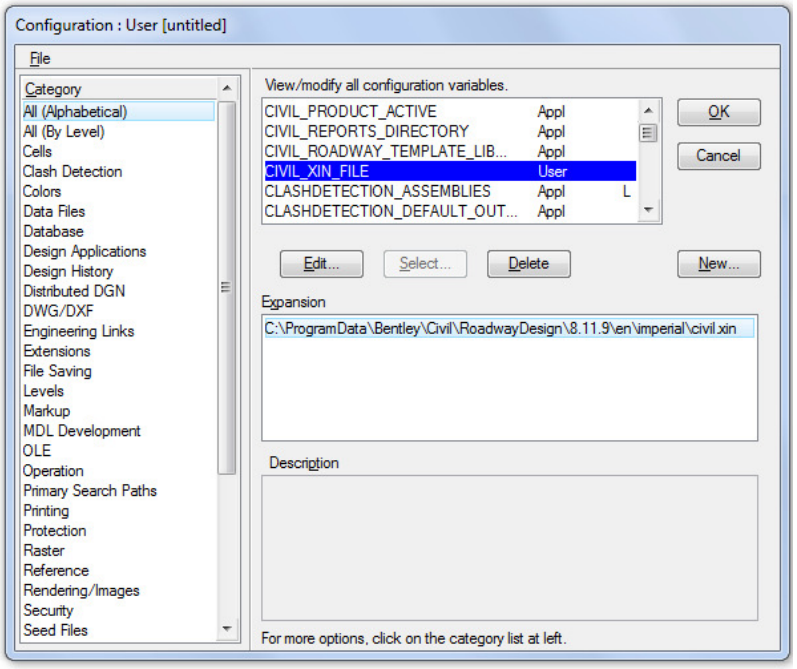
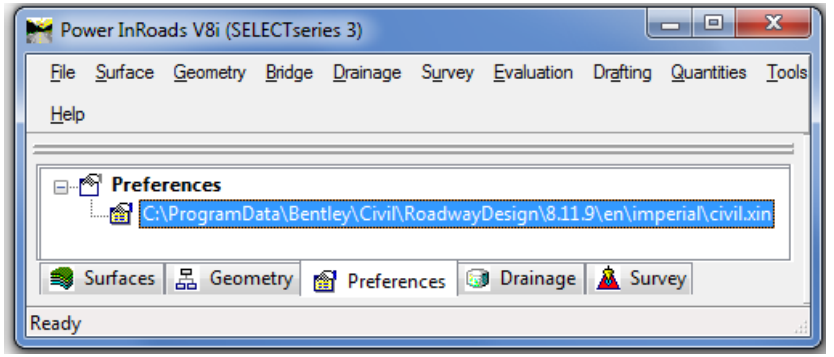
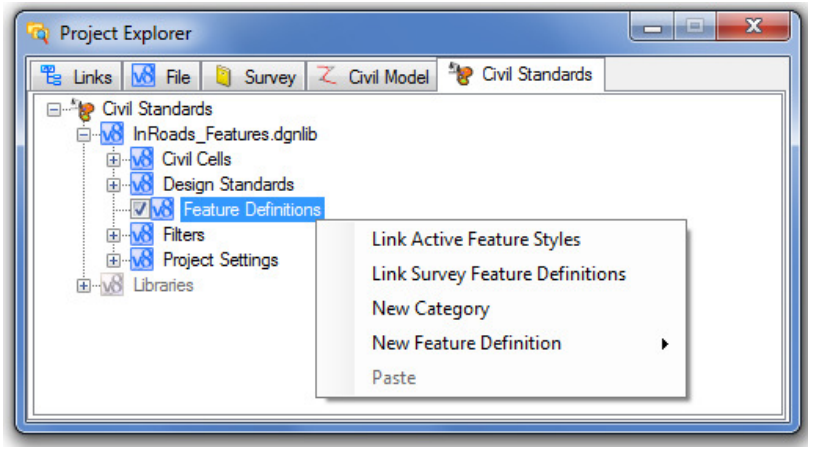
Link to Native (InRoads)

- Uses Active XIN File
- Creates an actual link back to the XIN file







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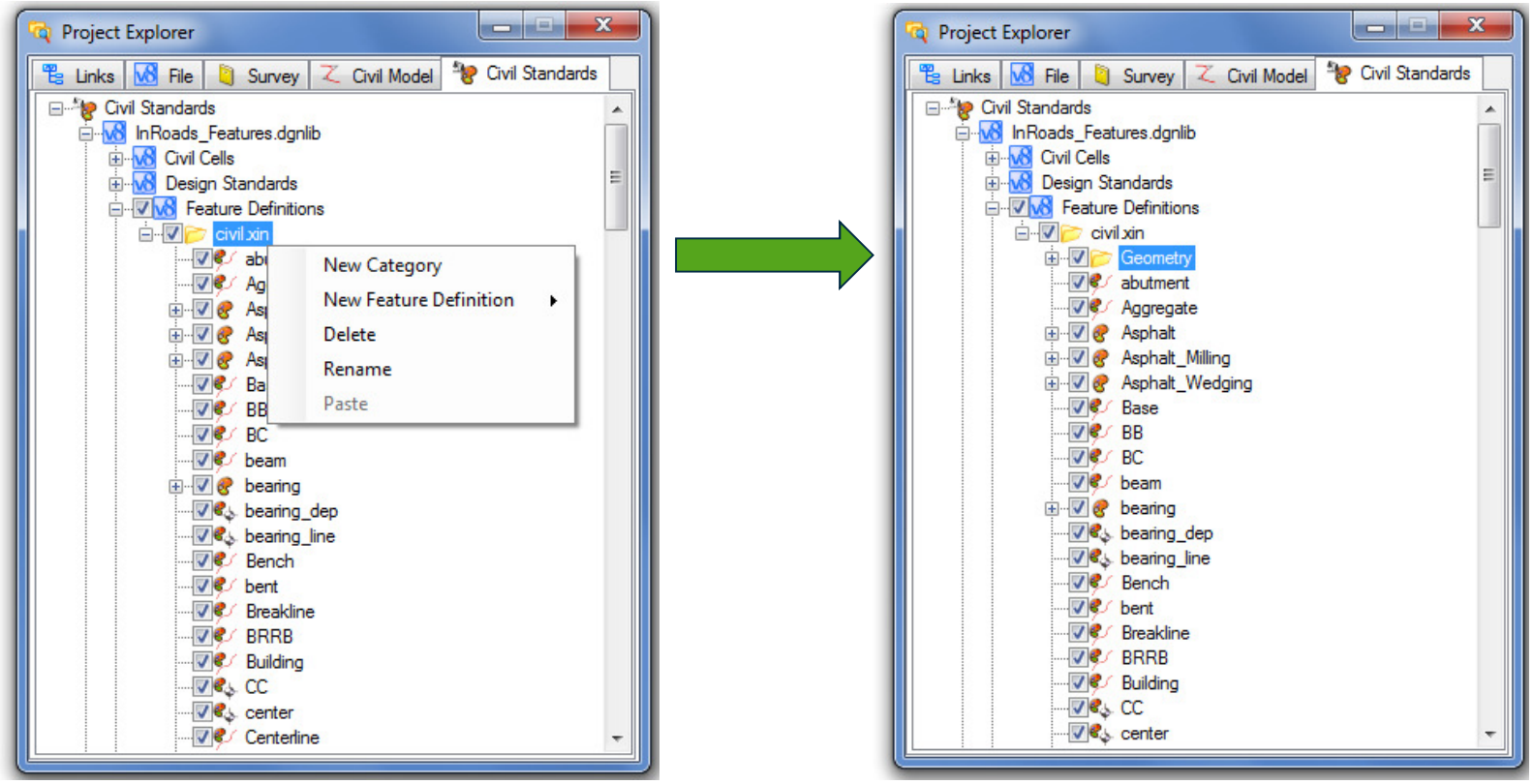
Link to Native (InRoads)

- However, right-clicking gives you the ability to create categories.



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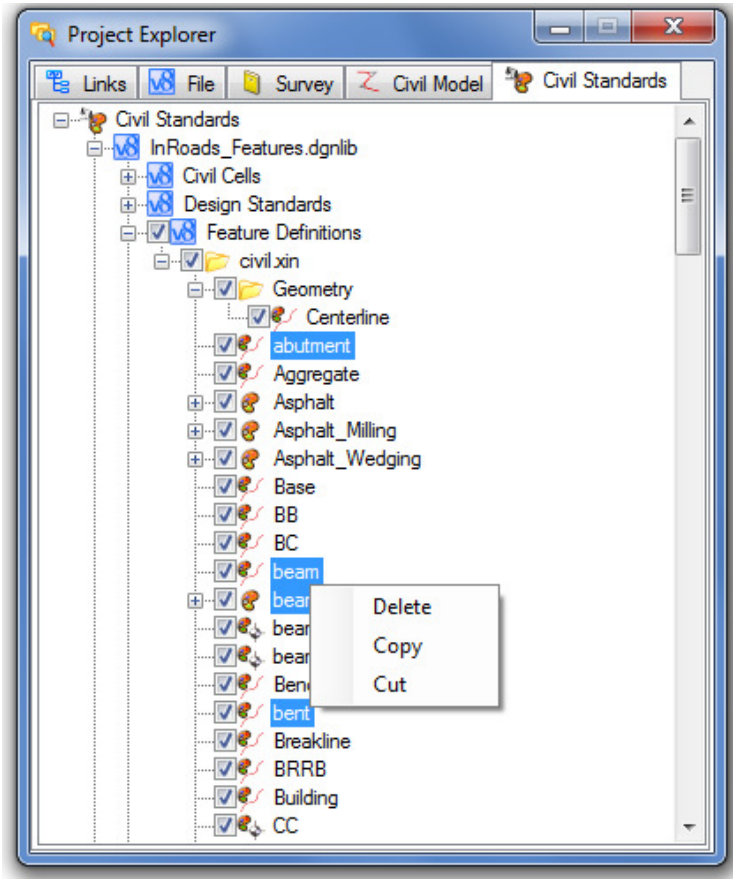
Link to Native (InRoads)

- You could then use standard cut/paste techniques to re-organize your feature definitions.



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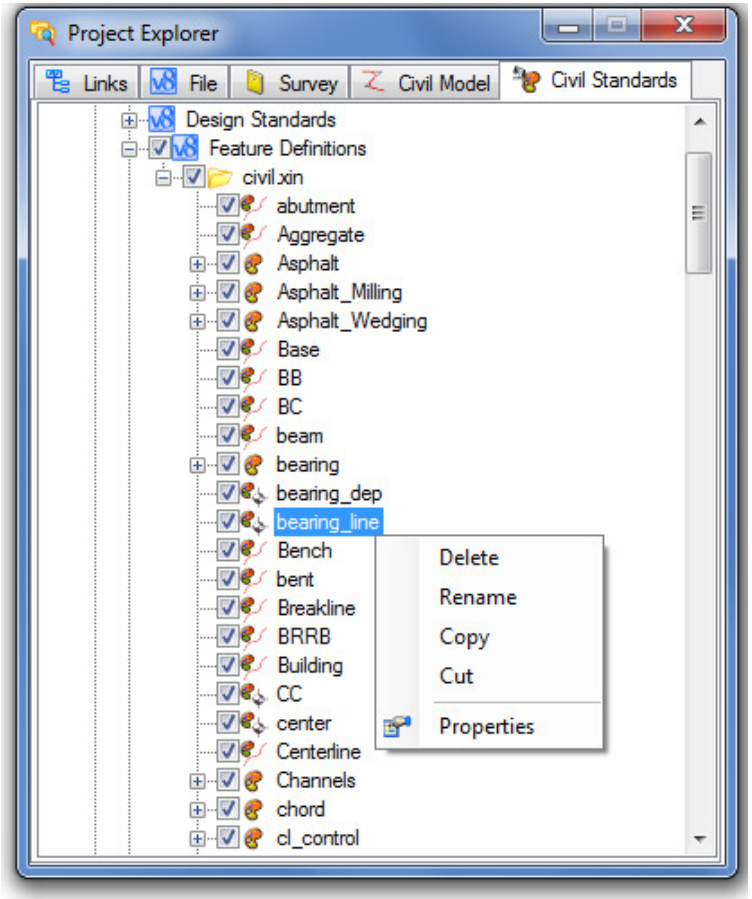
Link to Native (InRoads)

- Right-Clicking on any feature definition give you access to multiple options, including the ability to review the properties.



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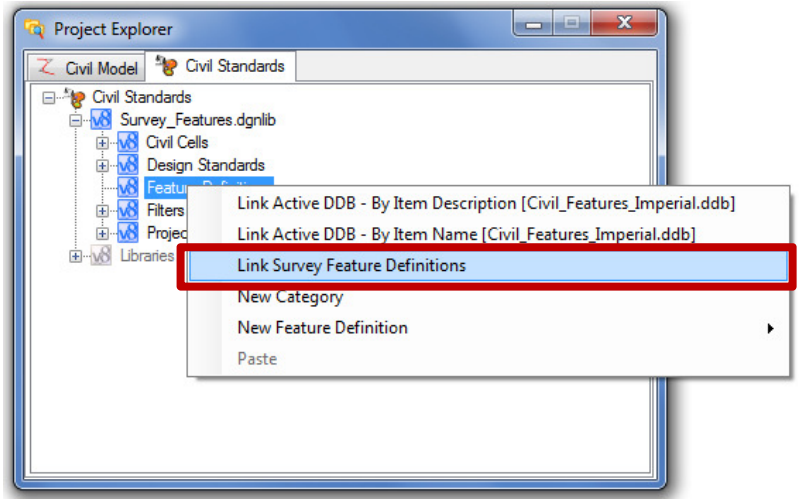
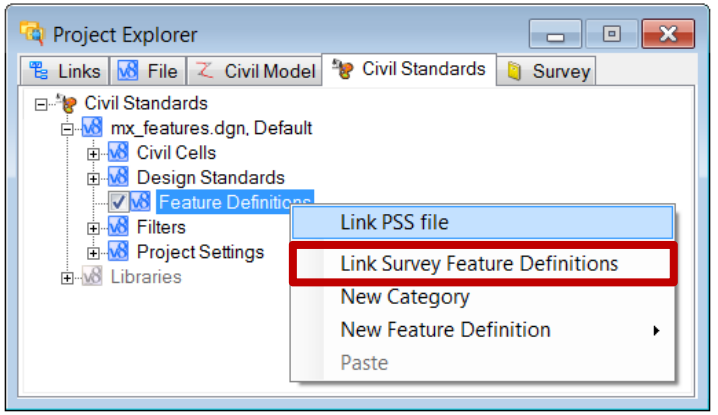
Link to Native (MX)

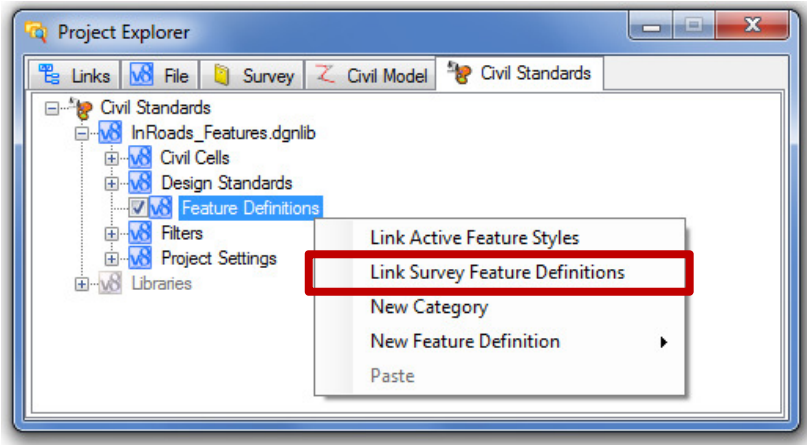
- MX String dimensions dictate the resulting mapping to Civil Feature Definitions.
- ***Linear***
  - All Feature strings are given Linear Feature Definitions
  - All Section Strings are given both Linear and Surface Feature Definitions
- ***Point***
  - All Point String types are given Point Feature Definitions.
- ***Surface***
  - MX Triangulation.pts stylesets are given a surface feature definitions.

Link to Survey

- The process or workflow for linking to the native survey legacy file is the same for all three products.







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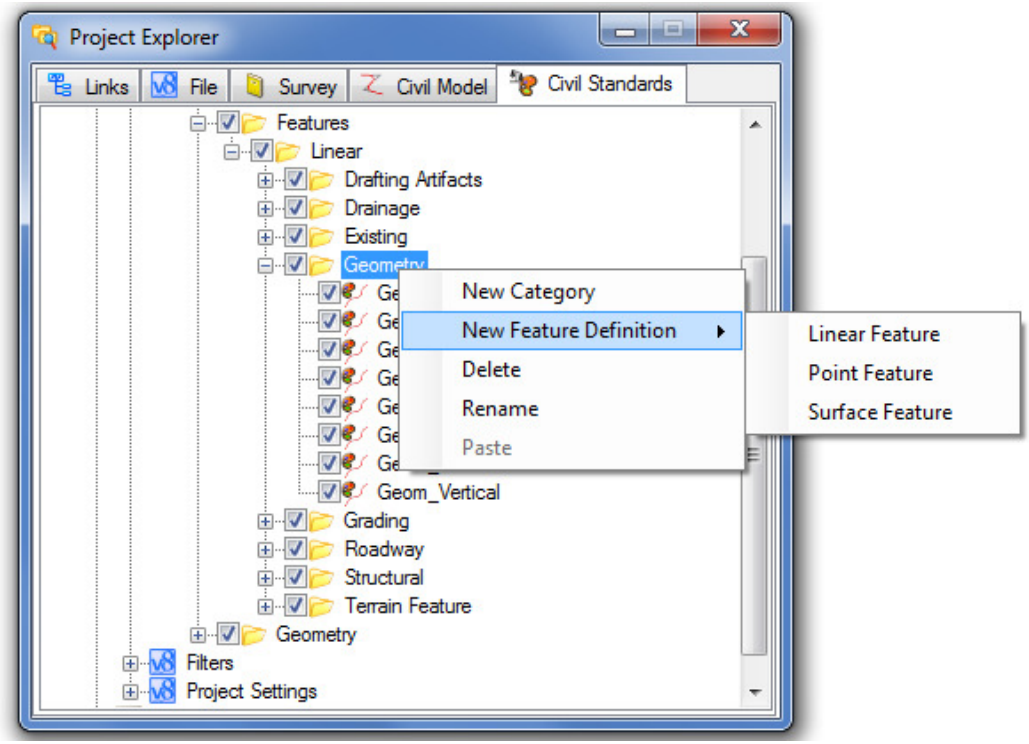
Manual Creation of Feature Definitions

- A feature definition can be manually created at any point by right-clicking and selecting the desired option. The properties of the feature definition would then need to be set manually as well.



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Best Practice

- Linking to your legacy style files is intended to be a ‘starting point’ to help you get your feature definitions created quickly.

  Best practice is to do this once.

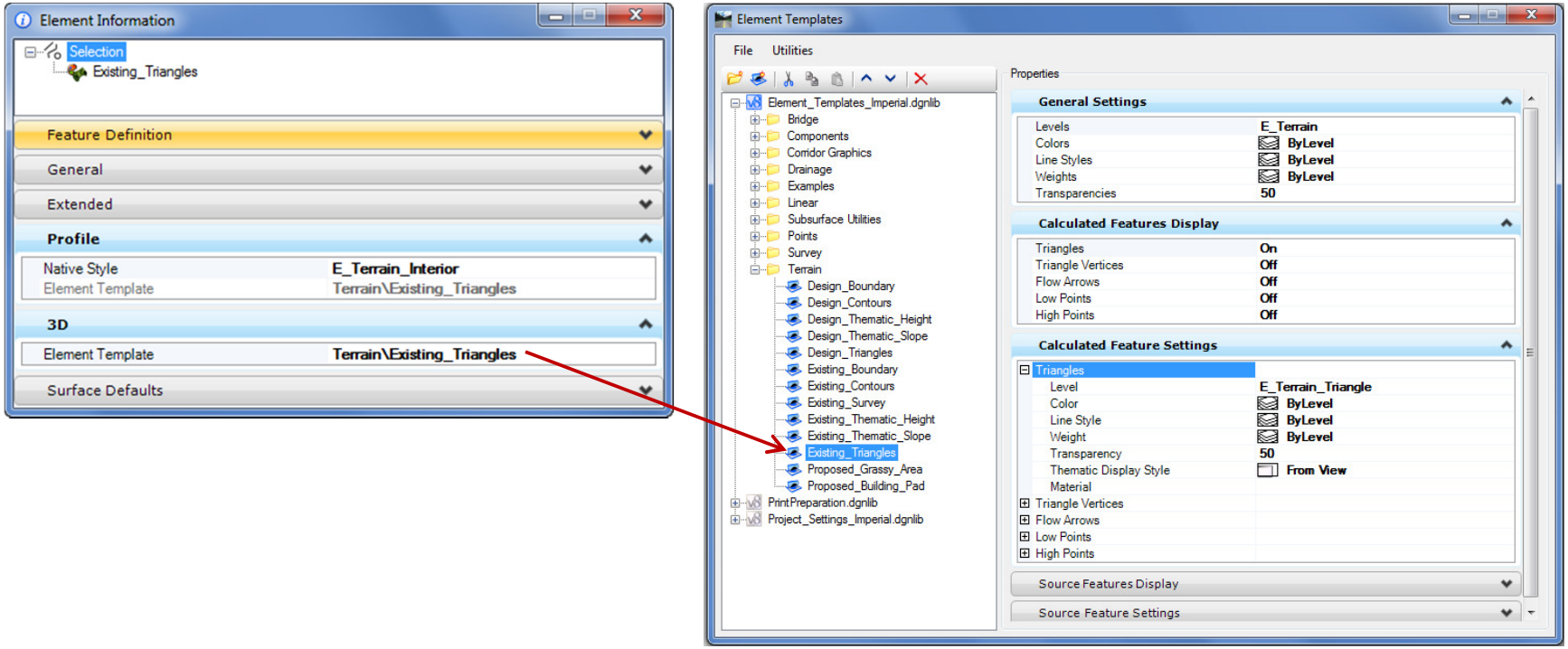
  After the initial linking has been done, any structural changes to the feature definition tree (new features, renaming of features, etc.) should be made directly in the DGN Lib.

  Note: An exception would be changes to symbology or annotation, which would be made in the legacy style file.

Element Templates vs. Native Styles

- In some situations the Element Template is desirable as opposed to the Native Style

Surfaces Feature Definitions used for Existing Terrain Models



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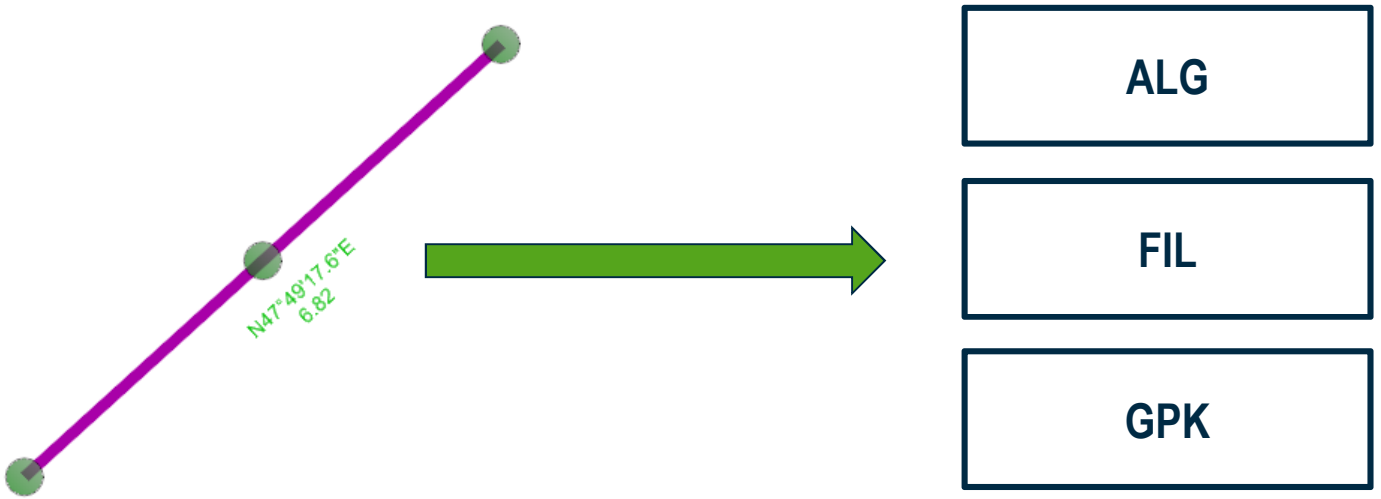
Auto Export

- If set to ***True***, then any geometry elements created using this feature will be automatically exported to the appropriate legacy coordinate geometry database (FIL, ALG, GPK).
- If set to ***False***, then this export would not occur.



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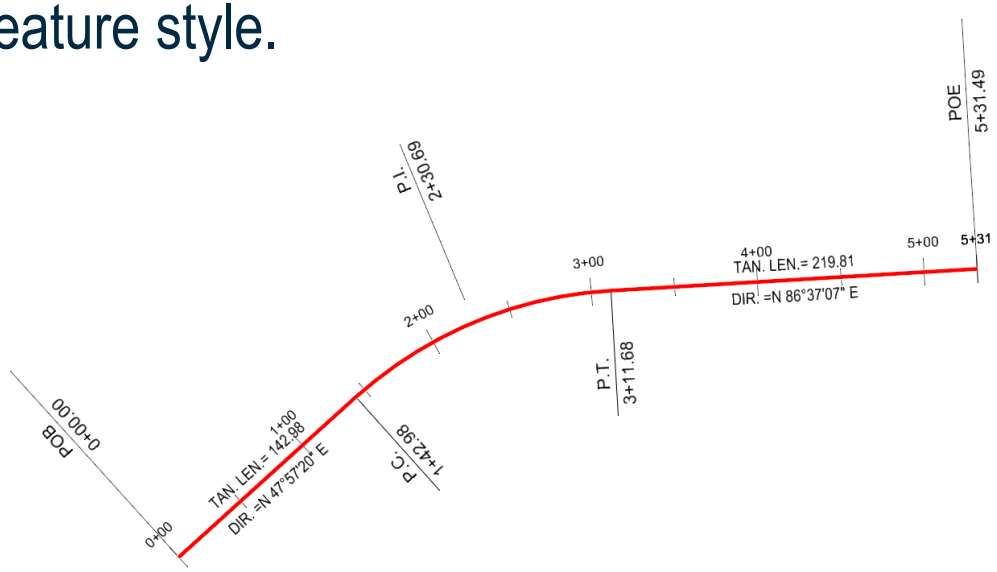
Auto Annotate

- If set to ***True***, then the horizontal geometry element will be annotated immediately whenever it is created or modified.
- If set to ***False***, then annotation would not occur.
- Note: You ***MUST*** use a Native Style in order to produce annotation, as the specifications for the annotation are based on the native feature style.



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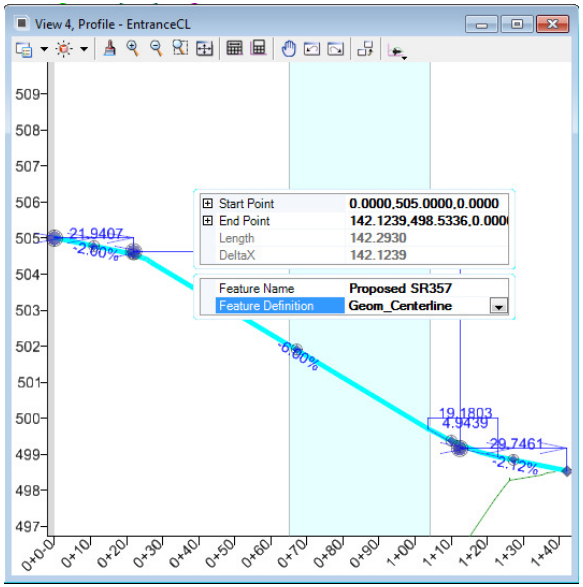
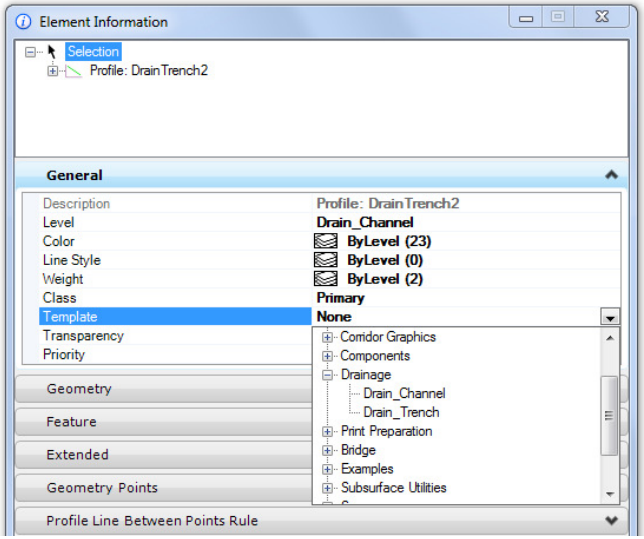
Profile Property (Linear Feature Type)

- The profile symbology can be overridden at placement by the specification of an ***Element Template***.



- After placement, the symbology can be overridden via the assignment of an ***Element Template*** in the ***Element Information*** dialog.



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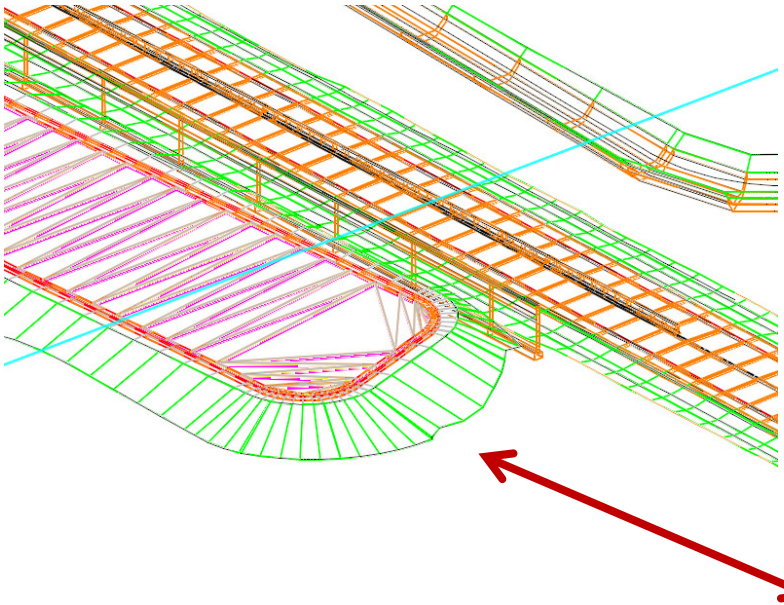
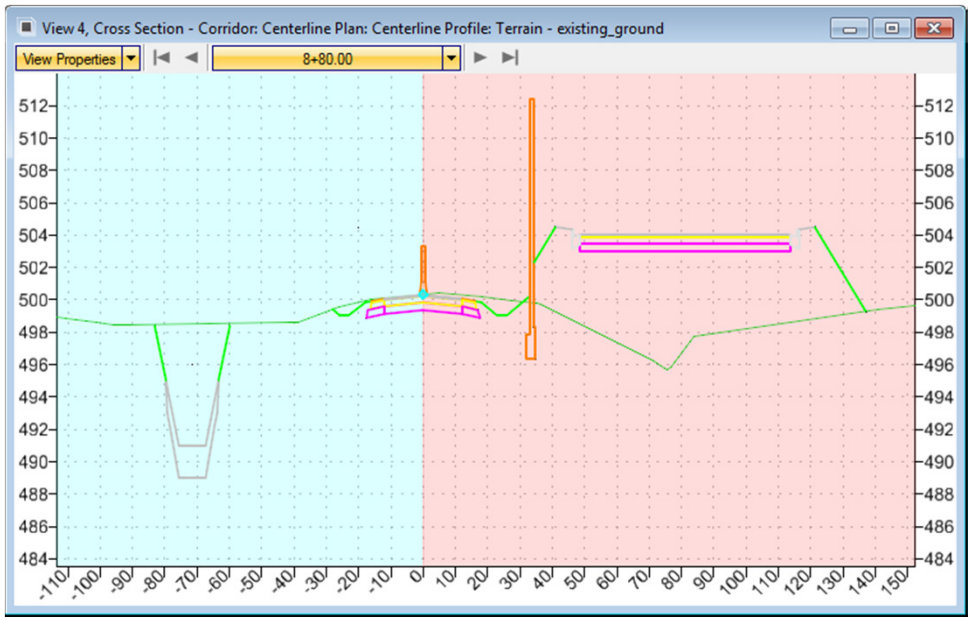
Cross Section View Display

When cross sections are cut, the proposed elements take their symbology directly from the proposed 3D model.





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Demo

- Project Explorer
- Linking and creating features
- Feature toggle bar

Learning Paths:
Ready-Made Training Plans

Choose from:

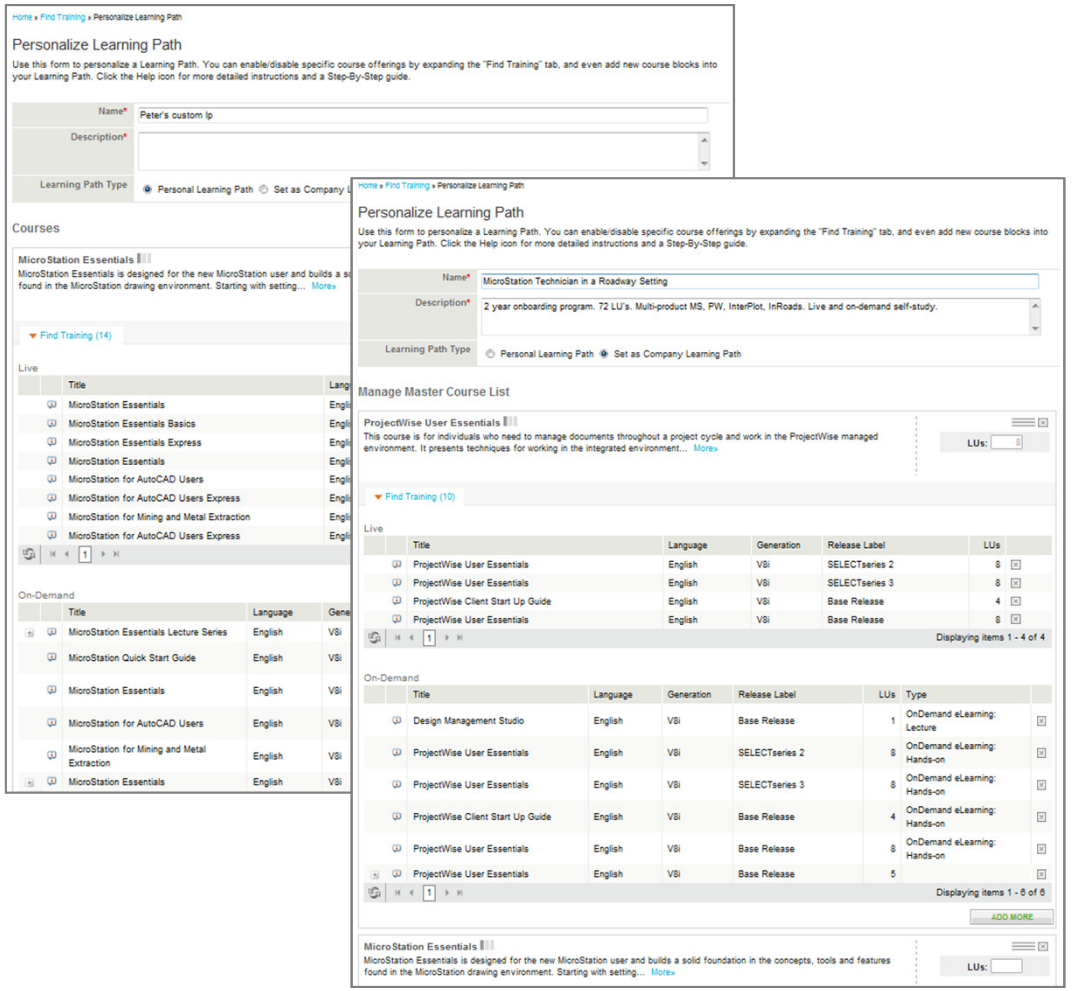
- Bentley recommendations
- Configure your own
  - Organizational
  - Personal

Select:

- Product(s) and version(s)
- Language
- Training type

Enroll team members in:

- One learning path
- Multiple learning paths



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This session's Learning Path:

Here's a link to a short learning path that includes this session and recommended modules that you may share with your colleagues:

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Questions?

Thank you!

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