Pond Modeling

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Bentley Systems

Bentley Advancing Infrastructure

Objectives

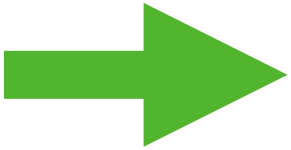
- Horizontal and Vertical Layout
- Side Slope Techniques
  - 3D Geometry
  - Pond by Volume
  - Linear Templates
- Terrain Models
- Volumes
- Civil Cells

Changes in Technology

- Site Modeler

  SS2 and Earlier

  - Element
  - Object
  - Model



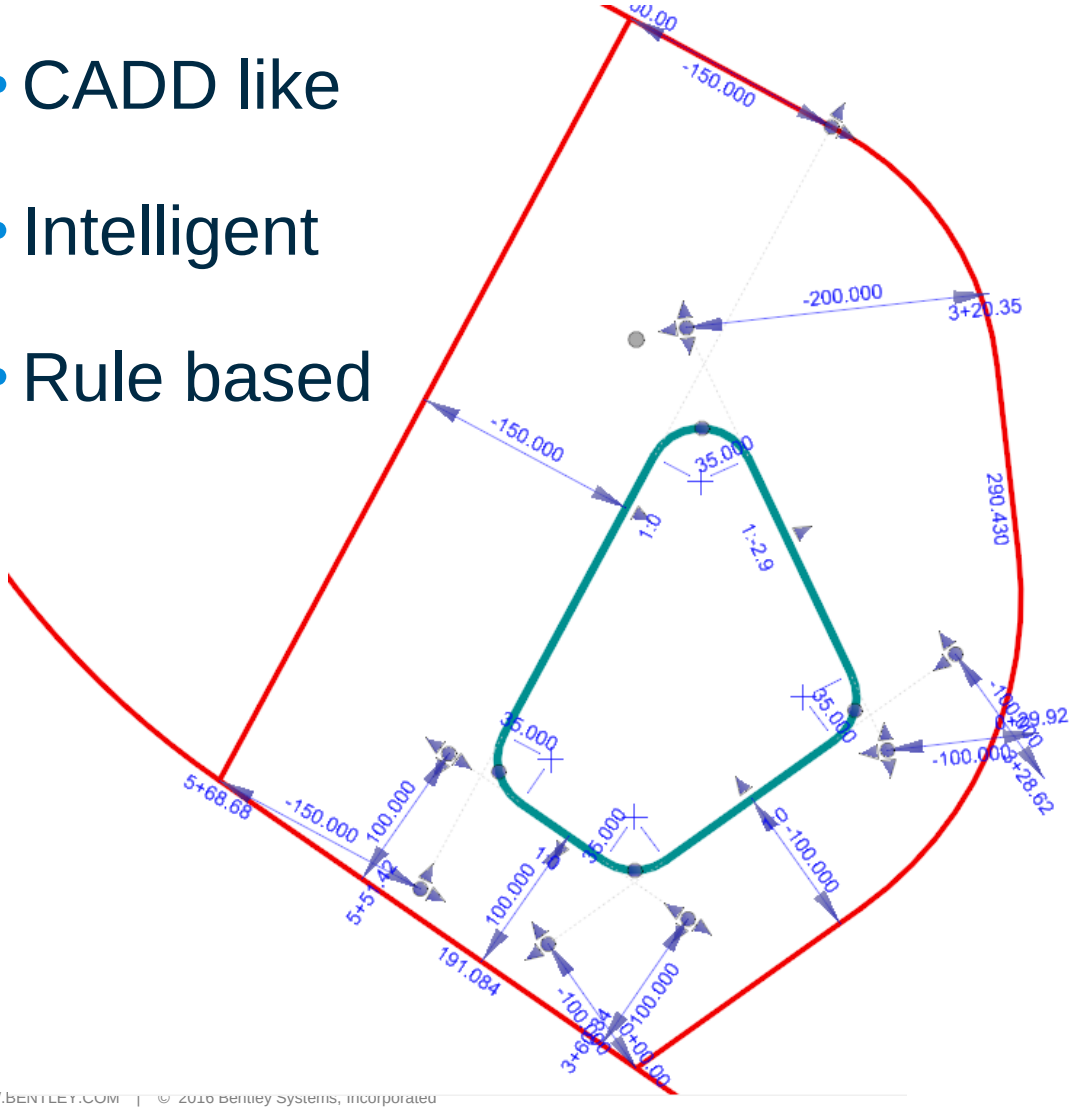
- OpenRoads Technology

  SS3 and Later

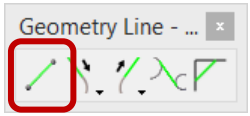
  - Horizontal and Vertical Geometry
    - 3D Geometry
    - Pond by Volume
  - Linear Templates
  - Terrain Models

Horizontal Geometry

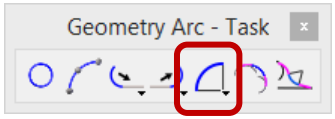
- CADD like
- Intelligent
- Rule based



Line Between Points



Simple Arc



Single Offset Entire Element
Single Offset Partial Element

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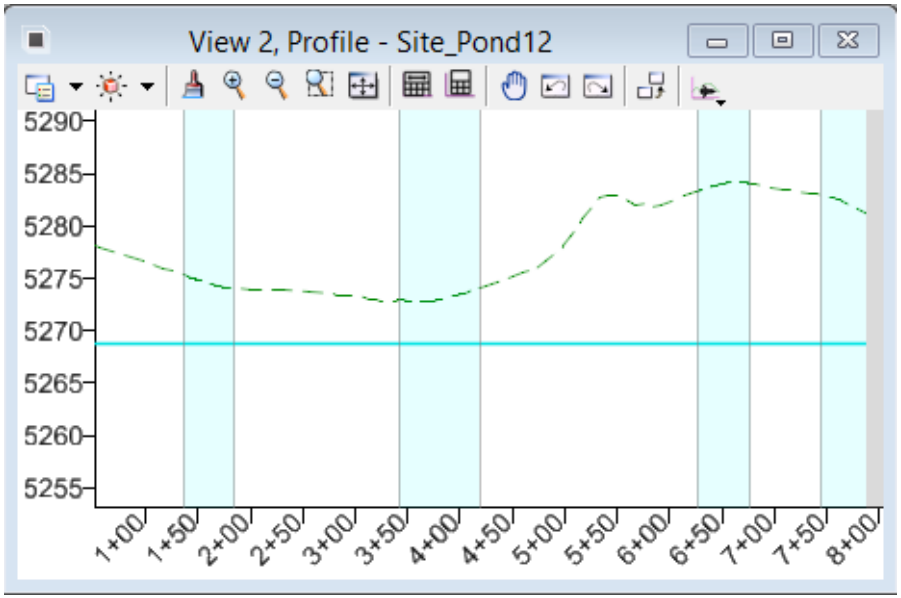
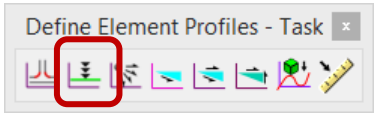
Vertical Geometry

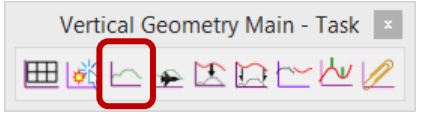
- Child of Horizontal
- CADD like
- Intelligent
- Rule based



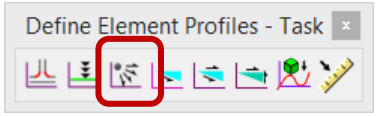
Profile by Constant Elevation



Profile From Surface



Profile by Slope from Point



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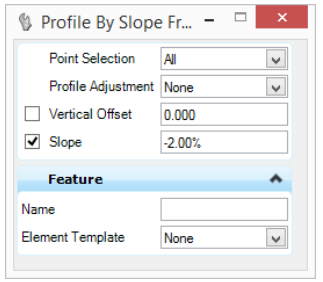
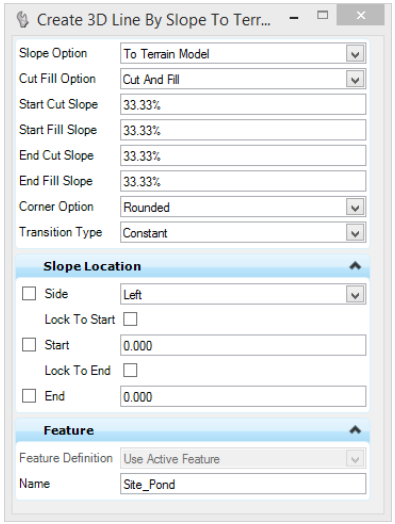
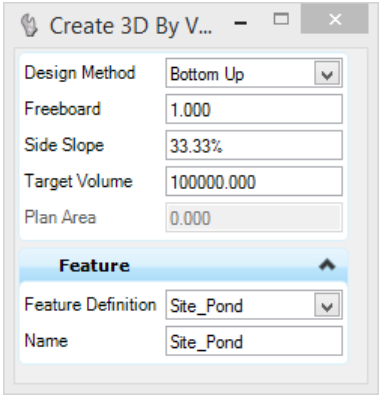
Define Fixed Pond Side Slopes

- Horizontal and Vertical Geometry
- 3D Slope to Target
- 3D By Volume
- Linear Templates







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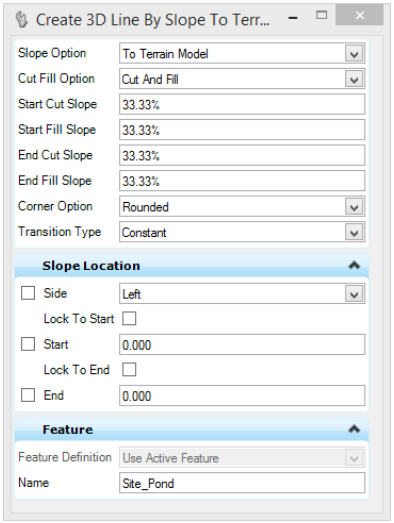
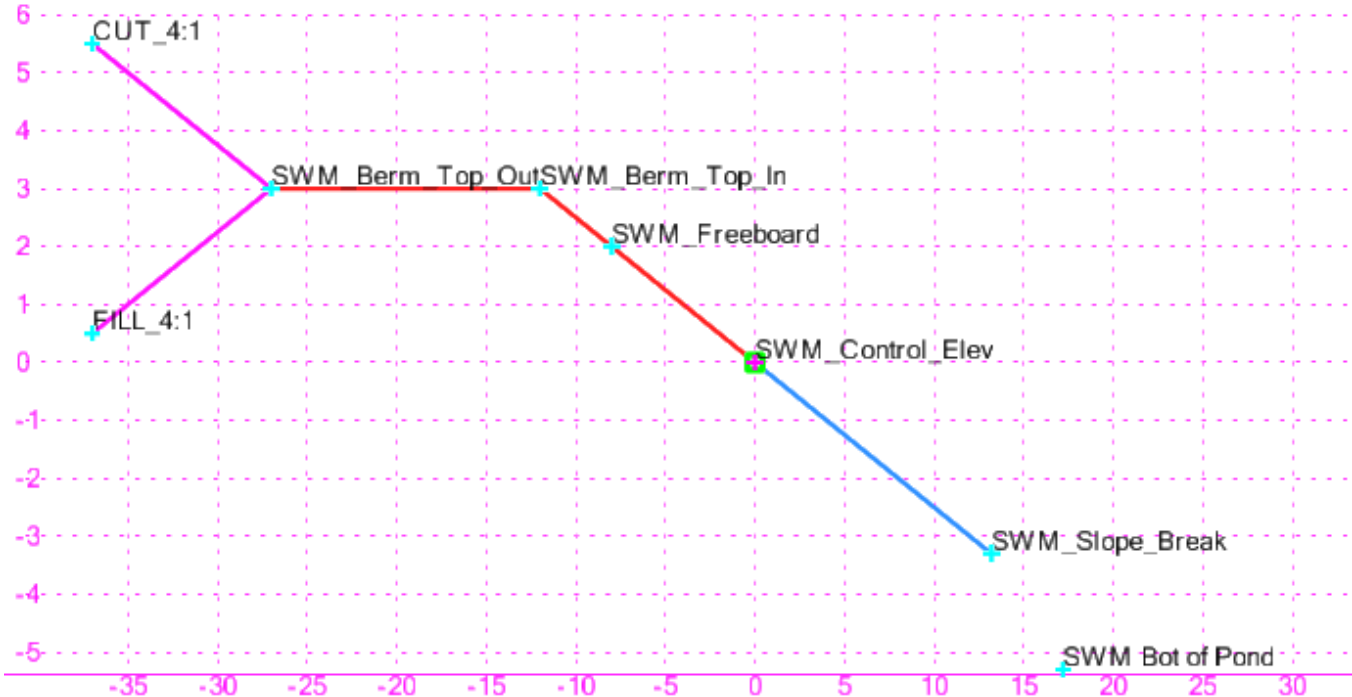
Define Pond Side Slopes to Intercept Ground

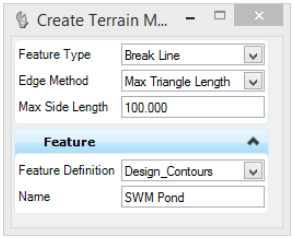
- 3D Slope to Targets
- Linear Templates
  - Can be used to create multiple horizontal and vertical elements in one step
  - Easily create horizontal and vertical relationship

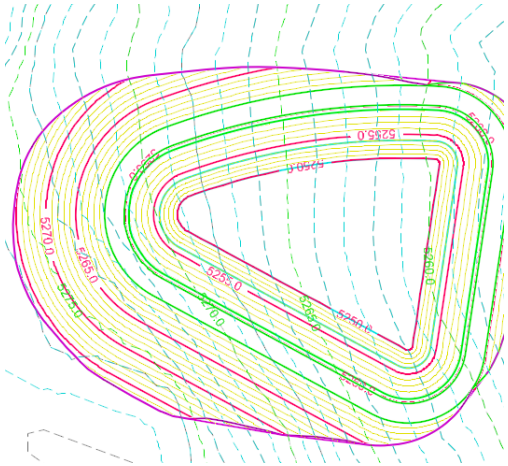


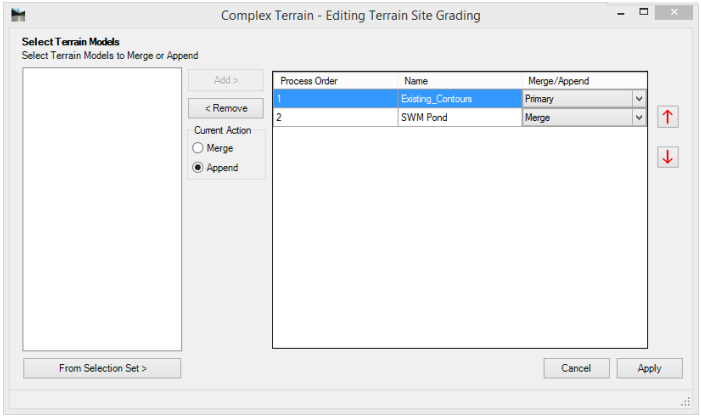


Pond Terrain Models

- Necessary for…
  - Contours
  - Volumes
- Create From Graphics
  - Single pond terrain model
- Create Complex
  - Pond merged into ground or design model terrain model.







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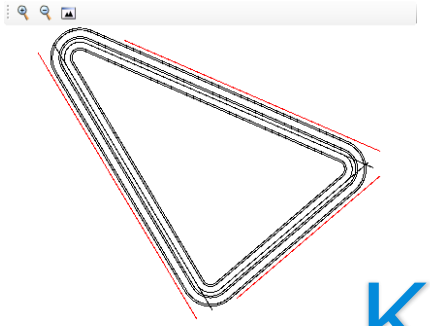
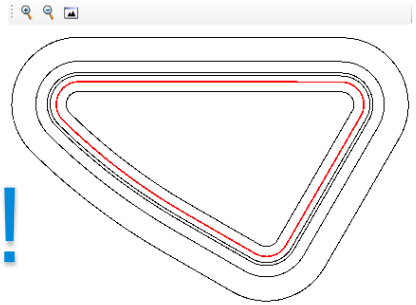
Pond Modeling using Civil Cells

- Collection of Civil Elements
- Consist of Geometry, Templates, Terrain Models
- Relative to one of more Reference Elements
- Can save time and effort
- Replicate series of steps to create Civil Elements





Keep It Simple!

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