

The intent of this document is to define the Bureau's current expectations for preliminary design B02 deliverables using Bentley CONNECT software. The following list primarily applies to Pipes that are turned in to the Road Bureau for placement in the Road Plans.

New, Replacement, and Extended Pipe Culverts; and Temporary Detour Pipes at a Stream Crossing

1. Delivery of Traditional B02 Level Plans
 - a. A single pdf file containing pipe culvert cross sections shall be created.
 - b. Cross Section sheets shall be developed using OpenRoads Designer (ORD).
 - c. A Pipe Plat Plan is no longer required for new, replacement, or extended pipe culvert situations. However, a Plan Sheet for temporary detour pipes at a stream crossing is required, intended for placement in the Road Plans.
2. Development of the Preliminary Design Pipe Culvert Model
 - a. An ORD culvert model file for each design section (project code) roadway grading project will contain pipe layouts. Cross section sheets are preferred to be provided in a separate file.
 - b. DOT Policy describing the method for file creation and naming convention is available on the DOT Bridge Bureau website, Automation Tools, Connect Application under workspace documents.
 - c. Use ORD Drainage and Utility tools to develop the 3D culvert models.
 - d. ORD files should include:
 - i. The ultimate 2D and 3D pipe layout models
 - ii. Models associated with preparing the cross section deliverable.
 - iii. Models associated with preparing a plan sheet for temporary detour pipes at a stream crossing (if applicable).
 - iv. When applicable, the 2D model shall show the need line for the jacking pit on the appropriate end of pipes to be installed with trenchless construction. The need for temporary easement will be determined by others.
 - v. Consult with the Prelim Unit leader when a drainage easement is needed.
 - e. Staged pipe lengths within different projects are typically worked out and incorporated into the plans in Road Design, with coordination as needed from Preliminary Bridge.
 - f. ASCII Input file(s) shall document the points and lines used to create the 3D culvert model for proposed pipes.
 - g. There is no requirement to include the proposed culvert revetment or grading surface. On site specific situations as needed, collaborate with the road designer regarding recommended intent for special grading, revetment, or channel change.
 - h. The culvert information shall be entered into the project Bridges&Structures.accdb database. A Culvert Schedule Sheet shall be created from the database.

Structures Overview File

1. Delivery of a Structures Overview File

- a. An ORD STRUCTURES OVER VIEW file shall be created for each project code (formerly known as the PIN). If an Overview file for the project code has already been created, it should be utilized for the culvert referencing.
 - b. At all stages of development, the Structures Overview File includes the referenced preliminary layout models for all proposed structures within a project code. It is created to simplify designer referencing workflow.
2. Development of the Structures Overview File
- a. If the Structures Overview File has been previously created by others, there will only be a need to add the 2D and 3D culvert model references.
 - b. When the Structures Overview File has not previously been created, DOT Policy describing the method for file creation and naming convention is available on the DOT Bridge Bureau website, Automation Tools, Connect Application under workspace documents.
 - c. Examples of typical layout models included in the Structures Overview are proposed bridges, bridge berm terrains/revetment, CIP RCBs, pipe culverts (except entrance pipes), retaining walls (needing a final structural design plan), noise walls, preliminary easements, or miscellaneous structures.
 - d. There are no live elements contained within this file.

Date:

Original: August 12, 2022

Revisions: January 1, 2023