# PRELIMINARY DESIGN CHECKLIST – PIPE CULVERT (CONNECT)

**Date: 8-1-2021**

**County:**_____ **Check By:**_____ **Date:**_____

**Project Location:**_____ **Consultant:**_____

## GENERAL

___ Abbreviations - Use as needed. Reference [BDM 13.1.4]

___ Survey Control Point – Use coordinates/description per plan set

___ Hydraulic Data table - include Drainage Area, $Q_{50}$ cfs.

___ Location table

___ Title Block – Diameter x Length including pipe type

___ Skew angle – same as shown in plan view___ Project number and file number

___ Scale bar

___ North arrow

___ Culvert staging details: denote how drainage accounted for between stages

___ NOTES: use as needed

___ Structural Design: if required due to use of flume, drop inlet, scour floor, etc., use RCB plan development format/checklist. Design number is required.

___ Use Class B bedding for all roadway pipe applications

___ Use Class C bedding for temporary, entrance, levee or dike pipe applications

## PLAN VIEW

___ Label “Plat Plan”

___ Ground elevations, contours, and topography. Label contour elevations

___ Existing utilities: as noted in CAD from survey

___ Existing structures: include general description

___ Proposed length: include dimensions as-needed from culvert typicals, e.g., lengths left and right, total length, dimensions A, B, C, etc.

___ Proposed station on road construction centerline

___ Skew angle of culvert to roadway. A whole degree skew is preferred.

___ Skew angle of extension to existing pipe, if other than 0 degrees

___ Proposed lane and shoulder widths

___ Show proposed roadway embankment and ditch grading. Verify with Road Design.

___ Label centerline culvert/road construction

___ Label stationing on at least two “tic” marks in the plan view

___ Drainage: show direction of flow

___ Check that all text and dimensioning is legible and not placed on top of other text or features

___ Trenchless construction: use concrete pipe unless dictated by clearance or construction schedule. Use current specification directives

___ Do not show revetment at pipe inlet/outlet – to be provided by Road Design

## LONGITUDINAL SECTION

___ Roadway section drawn along pipe centerline

___ Existing ground line and proposed grade line shown and labeled

___ Show existing structure(s)

___ Proposed flow-lines at inlet, outlet, or other breaks as needed from culvert typicals

___ Label degree of elbows used (1201, 1501, etc.)

___ Label roadway fore-slope used (e.g., 6:1, 3.5:1)

___ Profile grade elevation at intersection of culvert and road centerline

___ Q ‘Design’ water surface elevation (per data block)

___ Show maximum fill height and location.

___ If fill height greater than Road Standard Plan RF-31 Class B bedding charts, use PipePac for special design

## CADD Checklist

Refer to: Preliminary Bridge - Connect Applications

___ Verify Iowa Regional Coordinate System is correct for the project site.

___ CONNECT ProjectWise folder structure is being used.

___ Correct seed files are being used.

___ MicroStation File naming conventions are being followed.

___ Correct MicroStation Model naming conventions are being followed.

___ STRUCTURES_OVER_VIEW file resides in the Bridge root folder

- STRUCTURES_OVER_VIEW_2D (model)
- STRUCTURES_OVER_VIEW_3D (model)

___ ORD PIPE_CULVERTS file contains the road pipe layout and modeling and STR info. The file resides in the Bridge root folder. The ORD file contains the Longitudinal Section drawing models.

___ The correct levels, element templates, or features are being used. (to ensure the correct font style is applied).

___ The Design Events B2 folder contains the Pipe Plat and the Preliminary Schedule Tab pdf.