

Standard Drawing Guidance
(Do not show on plans. Turn off the Bridge Construction level to hide)

Some details have been grouped together to allow easy substitution with alternate details. To edit grouped details, select them and press <Ctrl> U.

- 1 Ahead station is shown for streams flowing left to right. Arrow must be flipped for streams that flow right to left.
- 2 Modify Estimated Quantities as required. Don't leave blank rows but leave space between Estimated Quantities and General Notes for at least one pay item to be added during construction. See Alternate Details for culvert extensions, or if five items are required.
- 3 Add any required transverse joints proportionally spaced along the barrel. Label units and add actual lengths of units along the barrel.

- 4 Insert STD 703.60 when pipe inlets are required. Add pipe inlets to Plan of Layout Dimensions at appropriate locations and to Elevation A-A if visible from elevation. Add inlet data using notes where space allows, or use tables.
- 5 For nonstandard culverts with only one design fill height, add supplemental reinforcement table.
- 6 No need to revise General Elevation A-A for dual roadways. In Fill Heights table add a lane designation after ϵ Rdwy and insert another row for the other lane.

***** VARIABLE DESIGN FILL HEIGHTS *****

- a Select and delete the details grouped with the Fill Heights table. Select and move the alternate details to drawing.
- b Place "See Member Thickness table" in the Equation column and place "Varies" in the Dim. column. If Dimension F varies, place "Varies" in the Dim. column.
- c Remove blank rows. End units may have different design fill heights but both units need to have the same member thicknesses.
- d This portion of table required when design fill height exceeds limits of the standard plans or when culvert cell height or span is not standard. If only a portion of the units are nonstandard, fill out entire table using the values from the standard table where applicable. Omit if not required.

If any part of the barrel is exposed, the roadway fill shall be warped to provide 12 inches minimum cover. (Roadway Item)

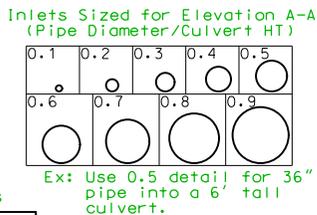
Construction joint key not shown for clarity, see standard plans for details.

If unsuitable material is encountered, excavation of unsuitable material and furnishing and placing of granular backfill shall be in accordance with Sec 206.

ALTERNATE AND SUPPLEMENTAL DETAILS

Pipes With Same Diameter

XX" Pipe Inlet Data		
Station	Offset	F.L. Elev.
xx+xx.xx	xx.xx' XX	xxx.xx
xx+xx.xx	xx.xx' XX	xxx.xx
xx+xx.xx	xx.xx' XX	xxx.xx



Pipes With Different Diameters

Pipe Inlet Data			
Station	Offset	Dia.	F.L. Elev.
xx+xx.xx	xx.xx' XX	xx"	xxx.xx
xx+xx.xx	xx.xx' XX	xx"	xxx.xx
xx+xx.xx	xx.xx' XX	xx"	xxx.xx

Supplemental Reinforcement Table (Nonstandard culverts with only one design fill height)

Top Slab Reinforcement						Bottom Slab Reinforcement						Wall Reinforcement				
A1 Bars	J3 Bars		H1 Bars		H2 Bars	A2 Bars	J4 Bars		H3 Bars		B1 Bars	B2 Bars				
Sz. Spa.	Sz. Spa.	C1	K2	Sz. Spa.	C5	Sz. Spa.	C6	Sz. Spa.	Sz. Spa.	C4	K3	Sz. Spa.	C7	Sz. Spa.	Sz. Spa.	G1
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Substitute table for tables shown on Standard Plan 703.47

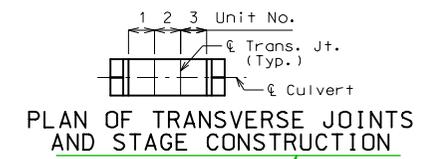
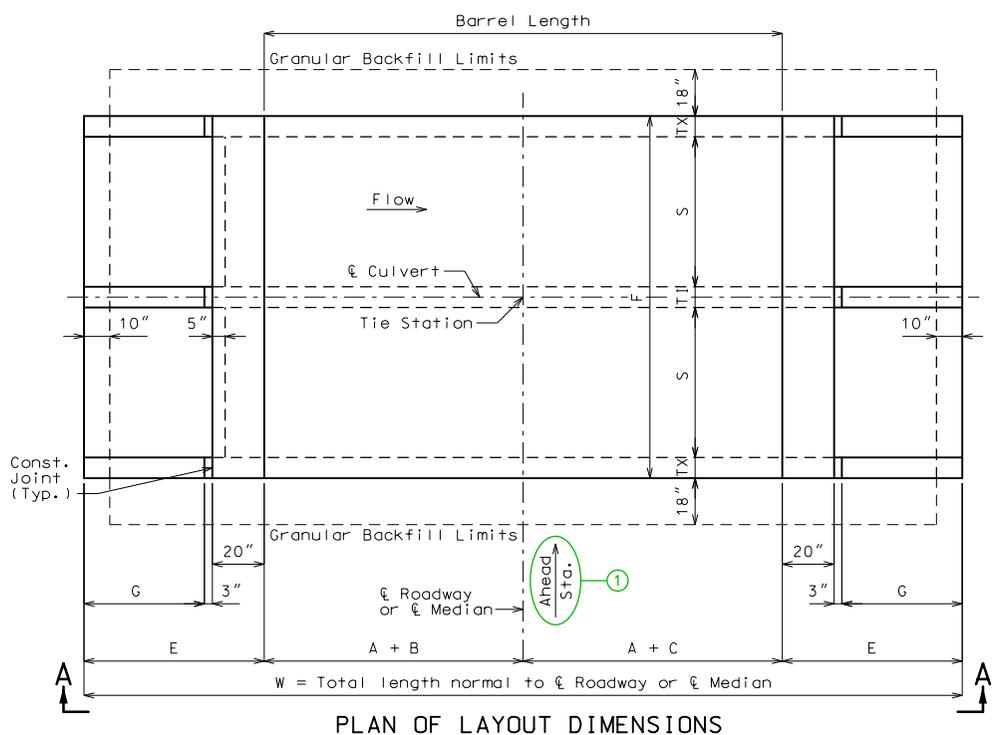
Fill Heights

ϵ Rdwy at ϵ Culvert =	ft
Design (Units 1 &) =	ft
Design (Units &) =	ft
Design (Units &) =	ft

Dimensions are based on end units, except AA is based on Unit . Fill heights are measured from the top of top slab to the top of earth fill or roadway.

Estimated Quantities

		Final
Class 4 Excavation	cu. yard	x
Temporary Shoring	lump sum	1
Partial Removal of Culvert-Bridge Concrete	lump sum	1
Class B-1 Concrete (Culverts-Bridge)	cu. yard	x
Reinforcing Steel (Culverts-Bridge)	pound	x

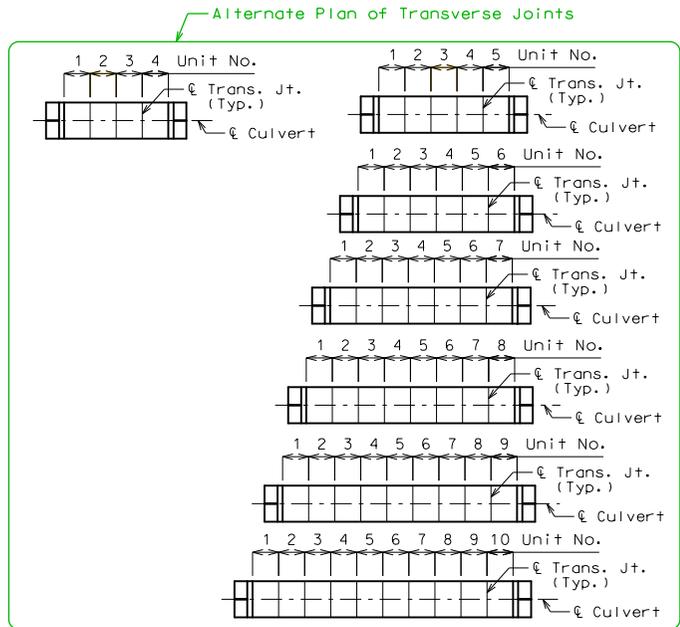


Remove if not applicable.

Supplemental Reinforcement Table (Nonstandard culverts with only one design fill height)

Unit No.	Unit Length	Member Thickness					Top Slab Reinforcement						Bottom Slab Reinforcement						Wall Reinforcement			
		TS	BS	TX	TI	F	A1 Bars	J3 Bars		H1 Bars		H2 Bars	A2 Bars	J4 Bars		H3 Bars		B1 Bars	B2 Bars			
						Sz. Spa.	Sz. Spa.	C1	K2	Sz. Spa.	C5	Sz. Spa.	C6	Sz. Spa.	Sz. Spa.	C4	K3	Sz. Spa.	C7	Sz. Spa.	Sz. Spa.	G1
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Substitute table for tables shown on Standard Plan 703.47



Corresponds to the border of the standard drawing for ease in moving alternate details (Snap to corner)

Alternate Estimated Quantities for Culvert Extensions or when Five Items are Required