



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

Inlets Sized for Elevation A-A  
(Pipe Diameter/Culvert HT)

0.1

0.2

0.3

0.4

0.5

0.6

0.7

0.8

0.9

Ex: Use 0.5 detail for 36" pipe into a 6' tall culvert.

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 Pipe Inlet Details ④

Supplemental Reinforcement Table (Nonstandard culverts with only one design fill height) ⑤

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	x	x	x	x	x	x	x	x	x

Substitute table for tables shown on Standard Plan 703.47

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

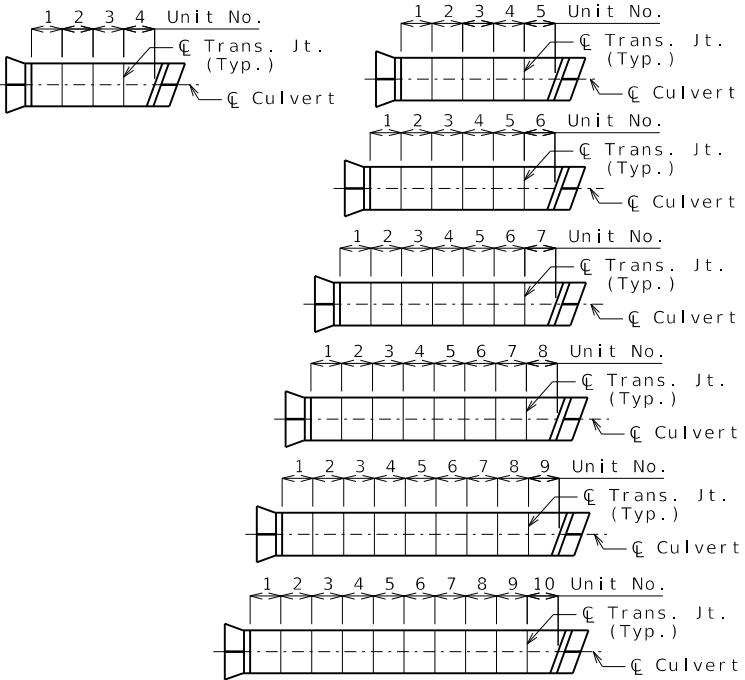
Some details have been grouped together to allow easy substitution with alternate details. To edit grouped details, select them and press <Ctrl> U.

- 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 @ Rdwy and insert another row for the other lane.
- ⑦ For skews 20° or more, remove Detail C, remove TT from the equation for D and place "N/A" in the Dim. column for Dim. TT. Will first need to drop Detail C from group by selecting it, then pressing <Ctrl> U.

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

- Ⓐ Select and delete the details grouped with the Fill Heights table. Select and move the alternate grouped details to drawing.
- Ⓑ 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.
- Ⓒ Remove blank rows. End units may have different design fill heights but both units need to have the same member thicknesses.
- Ⓓ 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.

Alternate Plan of Transverse Joints

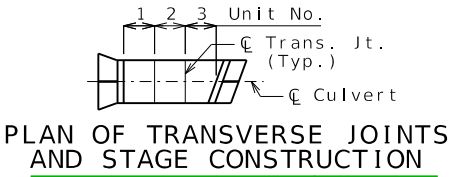
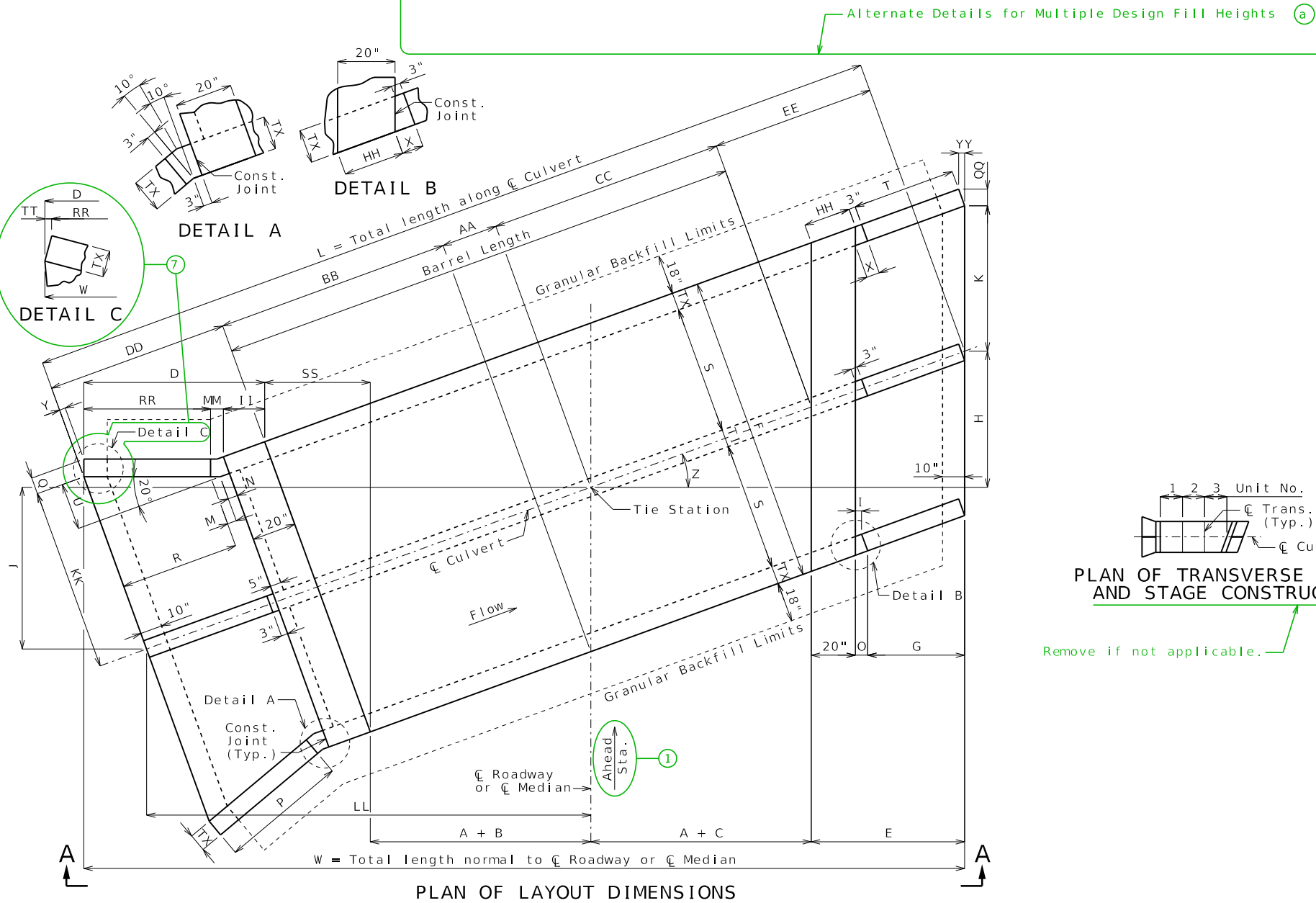


If any part of the barrel is exposed, the roadway fill shall be warped to provide 12 inches minimum cover. (Roadway Item)

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.

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



Remove if not applicable.

Fill Heights			
centerline of roadway at centerline of 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		

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

Unit No.		Unit Length	Member Thickness				Top Slab Reinforcement												Bottom Slab Reinforcement										Wall Reinforcement																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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