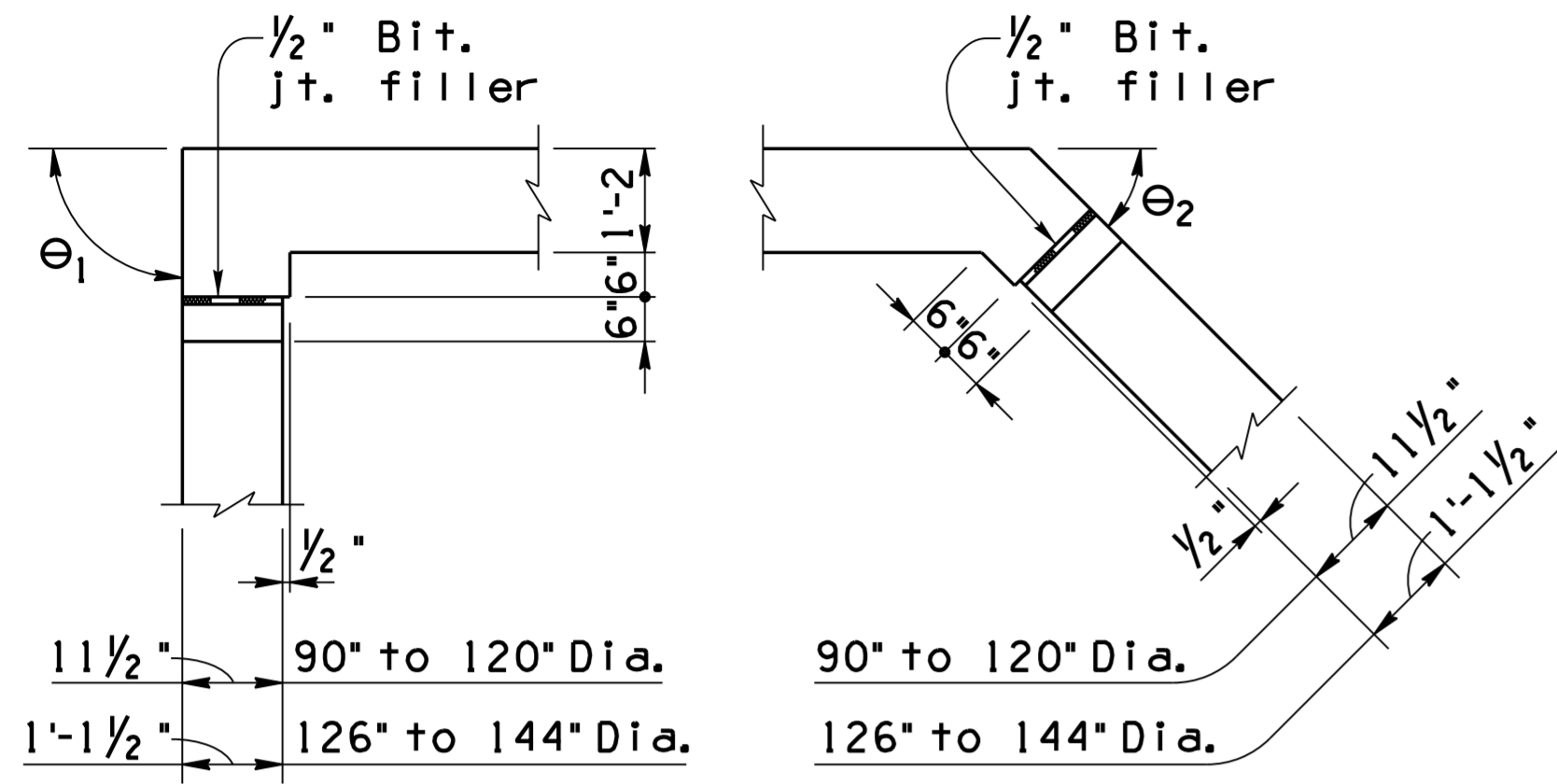
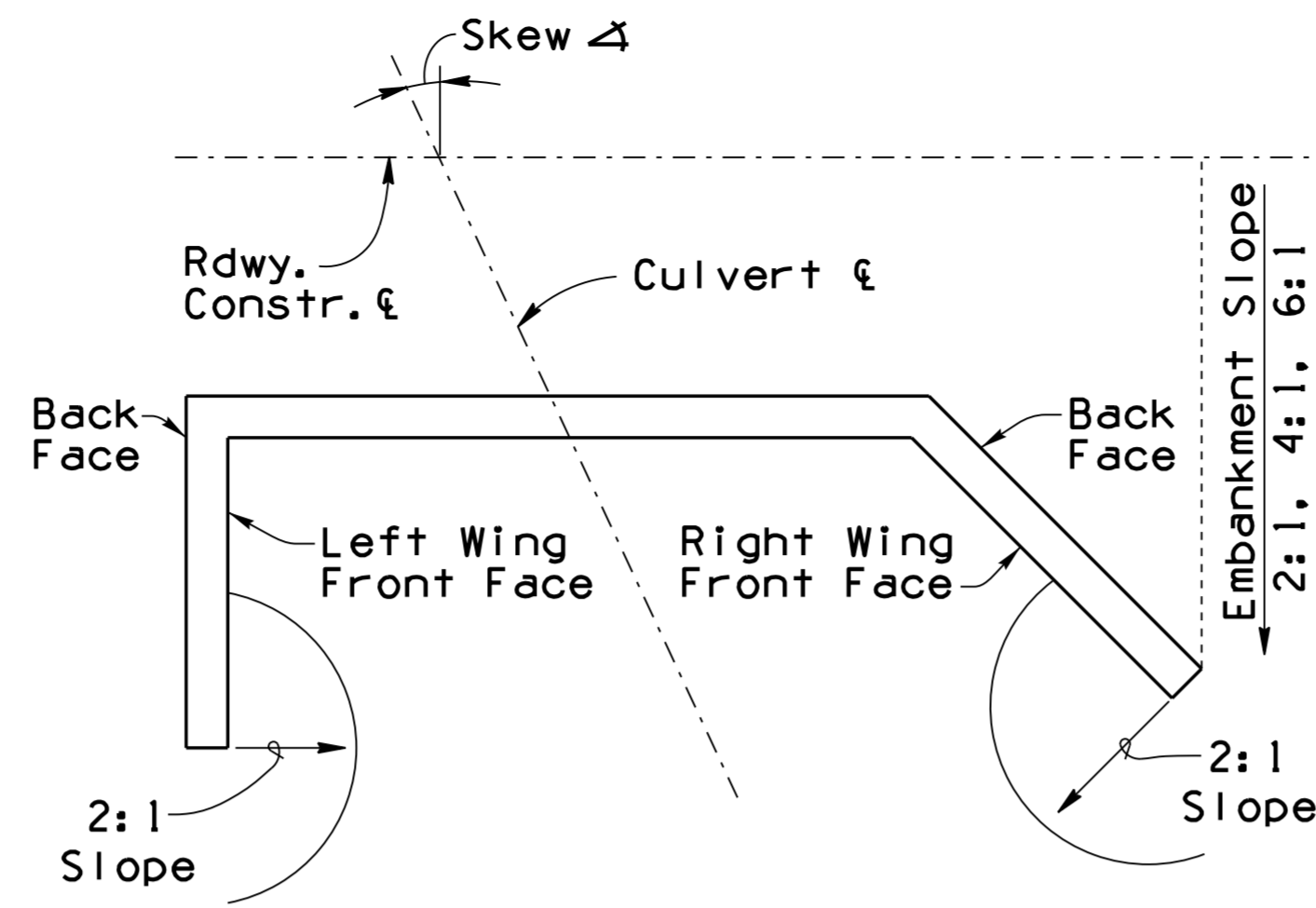


	Inlet End			Outlet End		
Skew Δ	15°	30°	45°	15°	30°	45°
Θ_1	75°	90°	90°	85°	90°	90°
Θ_2	45°	40°	25°	55°	40°	25°

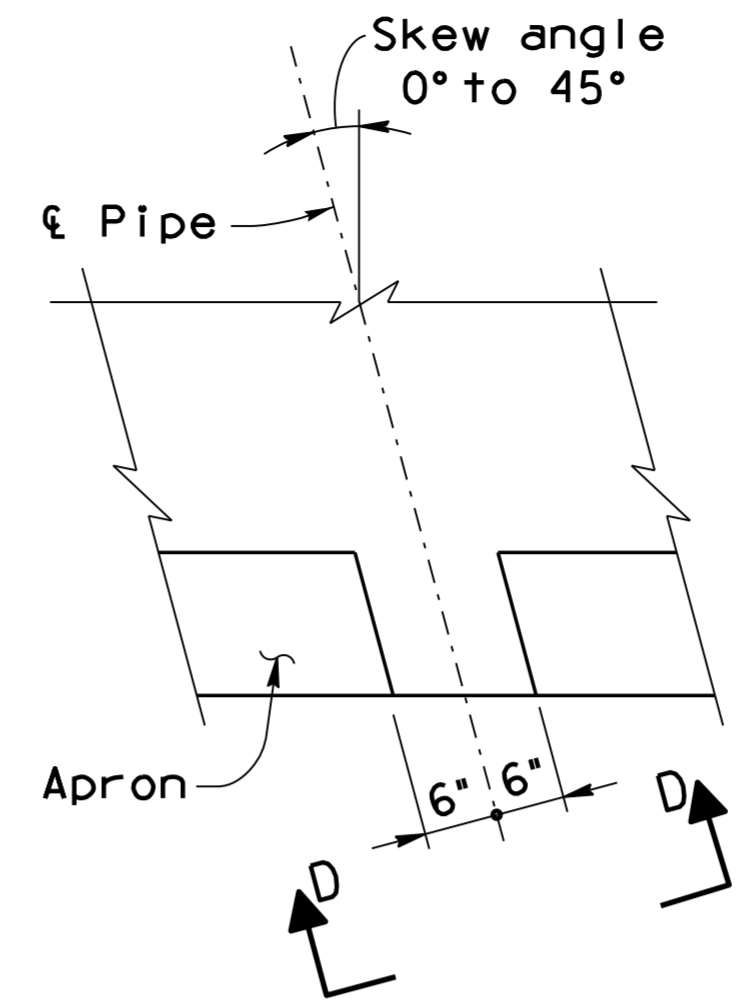


DETAIL B

DETAIL C



FILL PLACEMENT DETAIL



PLAN AT APRON DRAIN

GENERAL NOTES:

Construction Specification - Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.

Design Specifications - AASHTO LRFD Bridge Design Specifications, 6th Edition 2012.

Loading Class - HL-93.

Design Soil weight = 120 p. c. f.

All Concrete shall be Class "S" (f'c = 3000 psi).

Reinforcing steel shall conform to ASTM Specification A615. All reinforcing shall be furnished as Grade 60.

All bends and hooks shall meet the requirements of AASHTO LRFD Article 5.10. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2 inch clear cover unless noted otherwise.

Chamfer all exposed corners 3/4" unless noted otherwise.

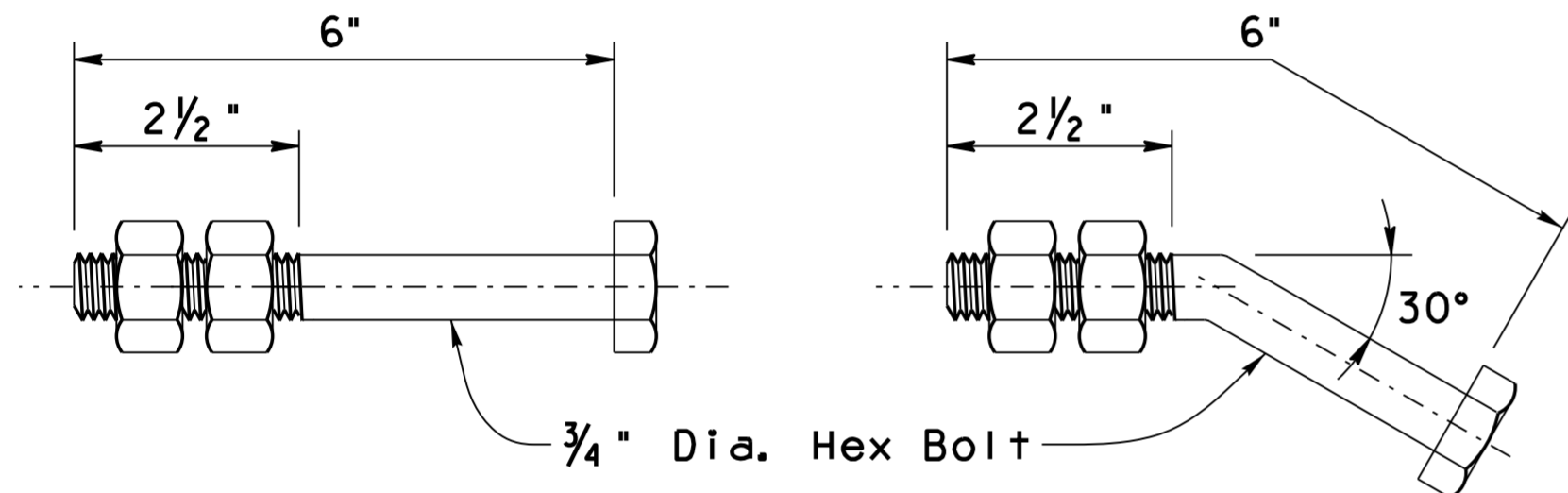
Bolt material shall conform to ASTM A307. Bolts shall be galvanized to conform to ASTM A153.

Disturbed area of pipe shall be treated in accordance with Standard Specifications requirements when end of pipe is cut to fit skew or slope.

Compact backfill for footing and wing base minimum 95 percent of ASTM D698 maximum dry density.

See Project Plans for culvert layout, invert elevations, finished grade elevations, headwall, apron, and other site specific details. Headwall Quantity Tables are approximate and for information purpose only.

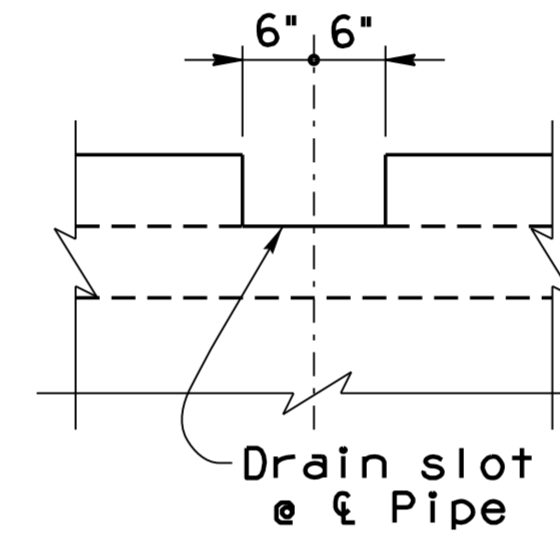
Dimensions shall not be scaled from drawings.



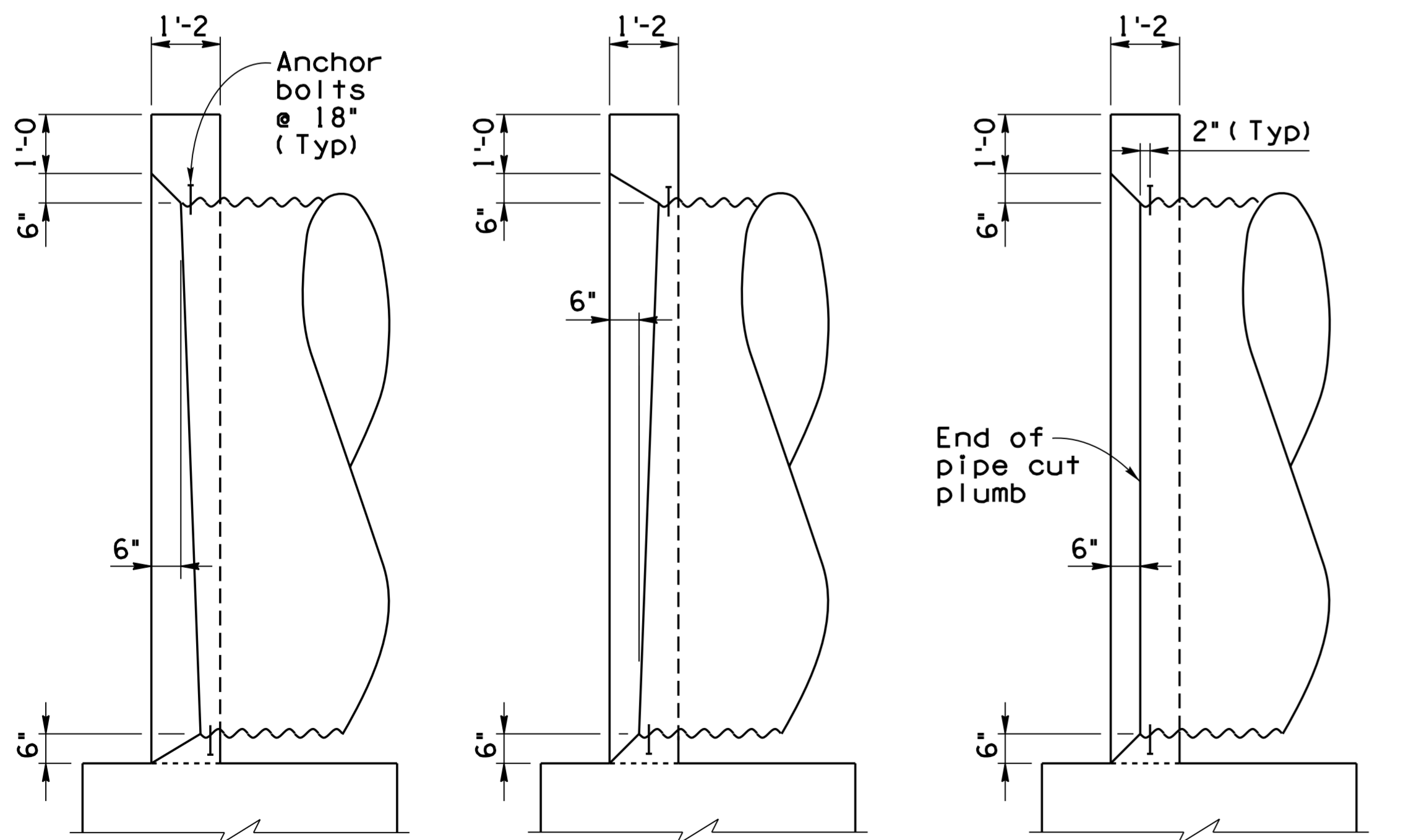
ANCHOR BOLT DETAIL

ALTERNATE ANCHOR BOLT DETAIL

NOTE:
When straight anchor bolt will not fit in headwall use alternate anchor bolt.



ELEVATION D-D



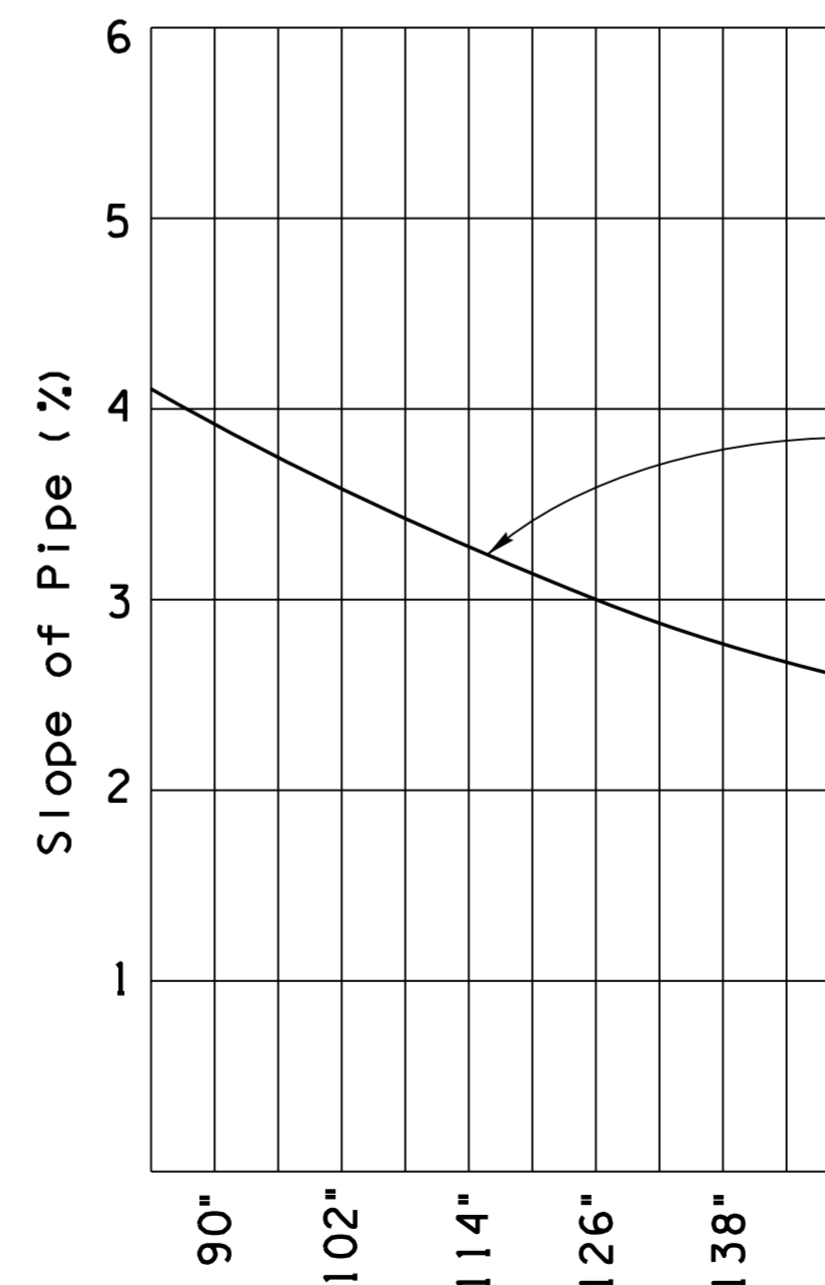
Outlet End

Inlet End

Outlet or Inlet End

DETAIL D

DETAIL E



PIPE DIAMETER CHART
(Use to determine pipe end treatment)

Cut end of pipe plumb if pipe slope vs. pipe dia. falls above line. See DETAIL E.

No cut required when pipe slope vs. pipe dia. falls below line. See DETAIL D.

NOTE:

Headwall details shown on this sheet are for pipes 90" in diameter or greater.

NOTE:

For Dimensions, Quantities and additional Details, see SD 6.30 (2 to 5).

Note to Designer: The information presented in this Standard Detail has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.

NO.	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	Original Issue	SJH	7-12
2			
3			
4			

DESIGN APPROVED <i>Shafiq U. Hasan</i>		ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION BRIDGE GROUP STRUCTURE DETAIL	
APPROVED FOR DISTRIBUTION <i>Teon A. Nehme</i>		PIPE CULVERT HEADWALLS MISCELLANEOUS DETAILS	
ROUTE	PROJECT NO.	FA NO.	DRAWING NO. SD 6.30 (1 of 5)
LOCATION			SHEET NO. OF