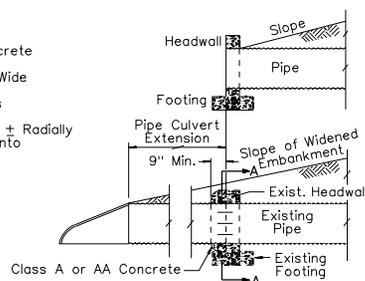
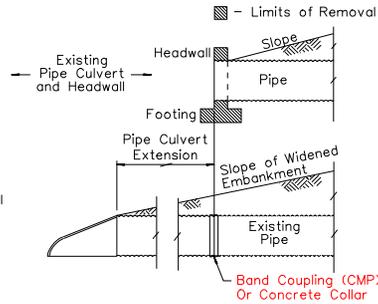


SECTION A-A

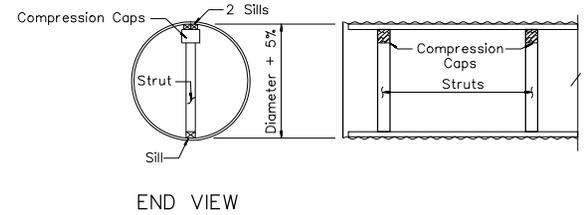


TYPE 2 MODIFIED



TYPE 1 MODIFIED

PIPE CULVERT EXTENSION
For Additional Information See Sheet R-1.1.2



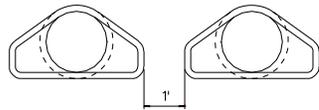
END VIEW

FIELD STRUTTING CMP

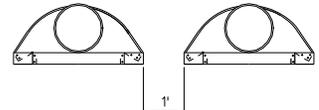
For Strut, Cap, Sill Size, and Spacing Use Manufacturers Recommendations. Struts, Caps and Sills To Be the Same Dimension. For Maximum Fill Heights, See Sheet R-1.3.1.2 Under Columns Designated "E". Struts Shall Be Left in Place Until Fill Has Been Completed and Compacted, Unless Otherwise Directed By the Engineer.

R-10

SEPARATION FOR MULTIPLE INSTALLATIONS WITH END SECTIONS

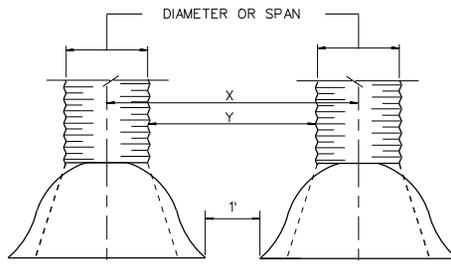


PRECAST END SECTIONS



METAL END SECTIONS

MULTIPLE INSTALLATIONS WITH END SECTIONS



When Y Distance Exceeds 5', Structure Excavation and Backfill Quantities Shall Be Calculated For Each Culvert.

DIA.	CMP/HDPE		CMAP			RCP		
	X	Y	SPAN	X	Y	DIA.	X	Y
			21" X 15"	5' - 2"	3' - 5"	18"	4' - 4"	2' - 6"
			24" X 18"	5' - 10"	3' - 10"	24"	5' - 5"	3'
			28" X 20"	6' - 6"	4' - 2"	30"	6' - 6"	3' - 6"
24"	6' - 8"	4' - 8"	35" X 24"	7' - 8"	4' - 9"	36"	7' - 7"	4'
30"	8'	5' - 6"	42" X 29"	9' - 3"	5' - 9"	42"	8' - 2"	4'
36"	9' - 4"	6' - 4"	49" X 33"	10' - 3"	6' - 2"	48"	8' - 9"	4'
42"	10' - 8"	7' - 2"	57" X 38"	11' - 6"	6' - 9"	54"	8' - 7"	3' - 4"
48"	11' - 6"	7' - 6"	64" X 43"	12' - 6"	7' - 2"			
54"	12' - 6"	8'	71" X 47"	13' - 6"	7' - 7"			
60"	13' - 6"	8' - 6"	77" X 52"	14' - 6"	8' - 1"			
66"	14'	8' - 6"	83" X 57"	15' - 6"	8' - 7"			
72"	14' - 6"	8' - 6"						
78"	15'	8' - 6"						
84"	15' - 6"	8' - 6"						

NOTES:

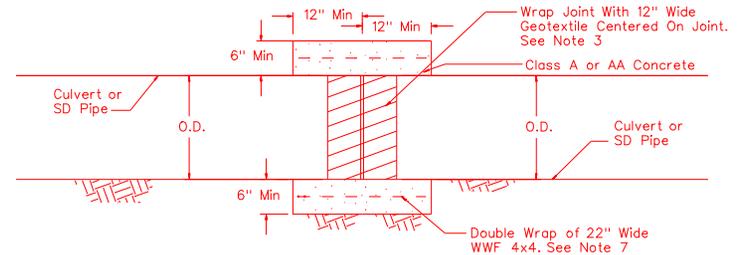
- CONCRETE COLLAR TO BE USED FOR MAKING REPAIR CONNECTIONS. CONNECT DISSIMILAR PIPE MATERIALS, EXTEND OR CONNECT SIMILAR PIPE MATERIALS WHERE BELL AND SPIGOT CONNECTIONS AREN'T POSSIBLE, AND WHERE SPECIFIED.
- MAINTAIN PROPER ALIGNMENT, LINE, AND GRADE ACROSS THE JOINT. SECURE PIPE SECTIONS ADEQUATELY ON EACH SIDE OF JOINT PRIOR TO CASTING CONCRETE TO PREVENT ANY INADVERTENT DISPLACEMENT OR MISALIGNMENT.
- IN LIEU OF A GEOTEXTILE WRAP, RUBBER BOOT ADAPTERS, COUPLING BANDS, OR OTHER SPECIAL ADAPTERS SPECIFIC TO THE APPLICATION AND AS RECOMMENDED BY THE MANUFACTURER MAY BE USED TO FACILITATE CONSTRUCTION AND MAINTAIN JOINT INTEGRITY. USE APPROPRIATE CONNECTION DEVICES IF REQUIRED BY THE ENGINEER OR SPECIAL PROVISIONS TO PROVIDE A COMPETENT OR WATER TIGHT CONNECTION. MAINTAIN A MINIMUM OF 6 INCHES OF CONCRETE COVER ON THE OUTSIDE OF ANY SPECIAL CONNECTION DEVICES.
- FOR HDPE PIPE, USE AN EMBEDDED WATERSTOP GASKET ON EACH SIDE OF THE JOINT WHERE WATER TIGHT CONNECTIONS ARE REQUIRED AND WHERE REQUIRED BY THE ENGINEER.
- NO DIRECT PAYMENT FOR CONCRETE COLLARS OR ASSOCIATED CONNECTION DEVICES. PAYMENT TO BE INCLUDED IN THE PAYMENT FOR PIPE.
- WHERE ANGLE BENDS ARE SPECIFIED, MITER PIPE ENDS TO PROVIDE A TIGHT JOINT CONNECTION WITH A MAXIMUM 1" GAP TOLERANCE.
- PROVIDE A MINIMUM OF 1" CONCRETE COVER FROM COLLAR ENDS AND 2" MINIMUM CLEARANCE FROM INNER TO OUTER SURFACE OF CONCRETE COLLAR.

DIAMETER	MINIMUM SPACE BETWEEN PIPES
12" to 24"	1'
30" to 66"	ONE HALF DIAMETER OF PIPE
72" to 84"	3'

SPAN	MIN. SPACE BETWEEN PIPE ARCHES
17" to 35"	1'
42" to 83"	One Third Span of Pipe Arch

*When Headwalls Are Used or Anticipated For Future Use, Space As Per Headwalls Standard.

MULTIPLE INSTALLATIONS WITHOUT HEADWALLS



CONCRETE COLLAR

NEVADA DEPARTMENT OF TRANSPORTATION

CULVERT INSTALLATION

Signed Original On File R-2.1.1 (601-606)
CHIEF HYDRAULICS ENGINEER ADOPTED 8/69 REVISION 5/09