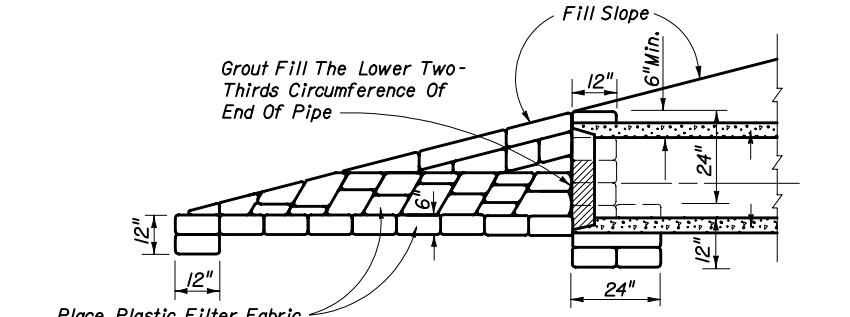
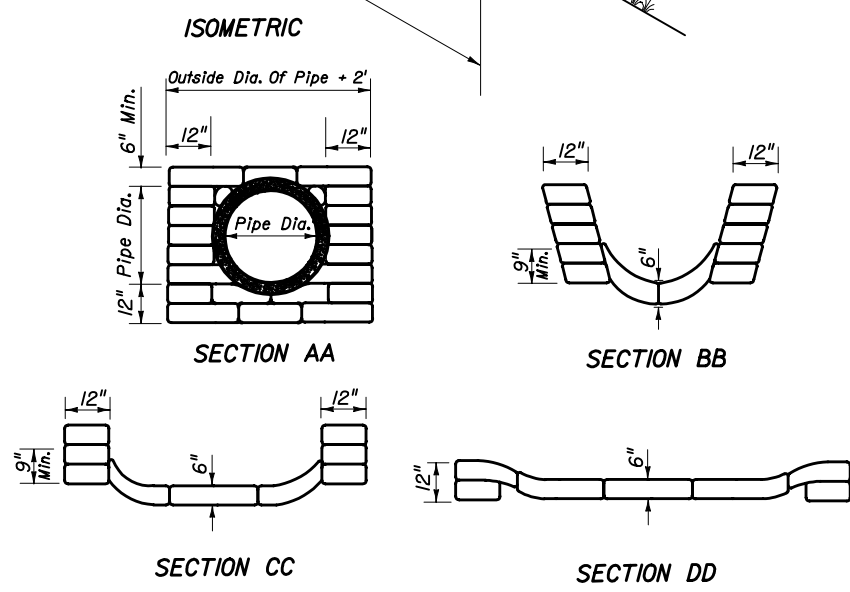


Place Plastic Filter Fabric Type D-4 (See Index No. 199) Around And Below Sand Cement Riprap. Cost Of Fabric To Be Included In Cost Of Sand Cement Riprap

**DETAILS FOR SINGLE METAL PIPE ARCH CULVERTS**

NOTE: For multiple metal pipe arch culvert spacing between arch centers = X



Place Plastic Filter Fabric Type D-4 (See Index No. 199) Around And Below Sand Cement Riprap. Cost Of Fabric To Be Included In Cost Of Sand Cement Riprap

**DETAIL FOR SINGLE PIPE CULVERT**

Note: For multiple pipe culvert spacing between pipe centers = X

DIMENSIONS AND QUANTITIES FOR METAL PIPE ARCH CULVERTS																									
Span	Rise	Dimensions								Quantity of Sand-Cement Riprap in Cu. Yds. for One Endwall															
		X				Y				Z				For 1:2 Slopes				For 1:4 Slopes				For 1:6 Slopes			
		1-Arch	2-Arch	3-Arch	4-Arch	1-Arch	2-Arch	3-Arch	4-Arch	1-Arch	2-Arch	3-Arch	4-Arch	1-Arch	2-Arch	3-Arch	4-Arch	1-Arch	2-Arch	3-Arch	4-Arch				
17"	13"	2'-6"	6'-6"	9'-0"	11'-6"	14'-0"	1'-7"	1.0	1.5	2.0	2.5	1.5	2.2	2.9	3.6										
21"	15"	2'-10"	7'-6"	10'-4"	13'-2"	16'-0"	1'-9"	1.2	1.8	2.4	3.0	1.9	2.7	3.5	4.3										
28"	20"	3'-5"	9'-3"	12'-8"	16'-1"	19'-6"	2'-0"	1.7	2.5	3.3	4.1	2.6	3.7	4.8	5.9										
35"	24"	4'-0"	11'-0"	15'-0"	19'-0"	23'-0"	2'-0"	2.2	3.1	4.0	4.9	3.4	4.7	6.0	7.3										
42"	29"	4'-9"	12'-9"	17'-6"	22'-3"	27'-0"	2'-0"	2.9	4.1	5.3	6.5	4.5	6.1	7.7	9.3										
49"	33"	5'-6"	14'-6"	20'-0"	25'-6"	31'-0"	2'-0"	3.5	4.9	6.3	7.7	5.5	7.4	9.3	11.2										
57"	38"	6'-4"	16'-6"	22'-10"	29'-2"	35'-6"	2'-0"	4.4	6.1	7.8	9.5	6.9	9.2	11.5	13.8										
64"	43"	7'-1"	18'-3"	25'-4"	32'-5"	39'-6"	2'-0"	5.1	7.0	8.9	10.8	8.1	10.7	13.3	15.9										
71"	47"	7'-10"	20'-0"	27'-10"	35'-8"	43'-6"	2'-0"	5.9	8.1	10.3	12.5	9.5	12.4	15.3	18.2										

**GENERAL NOTES**

1. U-Type Sand-Cement Endwalls Are Intended For Use Outside The Clear Zone.

DIMENSIONS AND QUANTITIES FOR ROUND PIPE CULVERTS																								
Pipe Dia.	X	Dimensions								Quantity of Sand-Cement Riprap in Cu. Yds. for One Endwall														
		Y				For 1:2 Slopes				For 1:4 Slopes				For 1:6 Slopes										
		1-Pipe	2-Pipes	3-Pipes	4-Pipes	1-Pipe	2-Pipes	3-Pipes	4-Pipes	1-Pipe	2-Pipes	3-Pipes	4-Pipes	1-Pipe	2-Pipes	3-Pipes	4-Pipes							
15"	2'-7"	7'-0"	9'-7"	12'-2"	14'-9"	1.2	1.6	2.1	2.6	1.7	2.4	3.0	3.6											
18"	2'-10"	8'-0"	10'-10"	13'-8"	16'-6"	1.4	2.0	2.6	3.1	2.1	2.9	3.7	4.4											
24"	3'-5"	10'-0"	13'-5"	16'-10"	20'-3"	1.9	2.7	3.5	4.3	2.9	4.0	5.1	6.3											
30"	4'-3"	12'-0"	16'-3"	20'-6"	24'-9"	2.5	3.6	4.8	5.9	3.8	5.4	7.0	8.6											
36"	5'-1"	14'-0"	19'-1"	24'-2"	29'-3"	3.1	4.6	6.2	7.7	4.8	7.0	9.2	11.4											
42"	6'-0"	16'-0"	22'-0"	28'-0"	34'-0"	3.8	5.8	7.7	9.7	6.0	8.8	11.7	14.5											
48"	6'-9"	18'-0"	24'-9"	31'-6"	38'-3"	4.5	7.0	9.4	11.8	7.2	10.8	14.3	17.9											
54"	7'-8"	20'-0"	27'-8"	35'-4"	43'-0"	5.3	8.3	11.3	14.2	8.5	12.9	17.3	21.7											
60"	8'-6"	22'-0"	30'-6"	39'-0"	47'-6"	6.2	9.7	13.3	16.9	10.0	15.3	20.6	25.9											

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

**U-TYPE SAND-CEMENT ENDWALLS**

Designed By	JEP	12/48	Names	Dates	Approved By
Drawn By	HW	03/54	State Drainage Engineer		
Checked By	CDD	03/54	Revision	00	Sheet No. 1 of 1
					Index No. 268