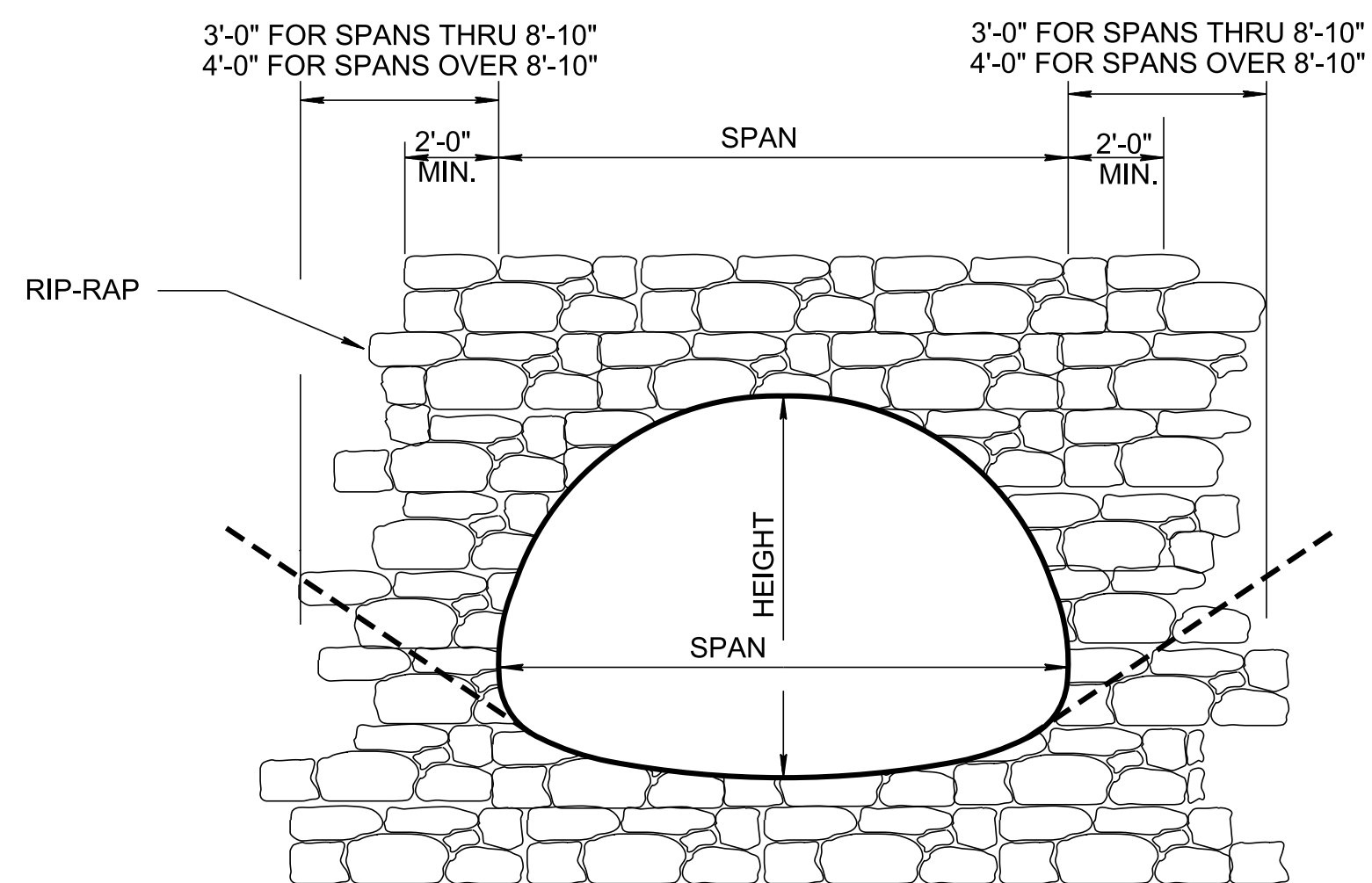
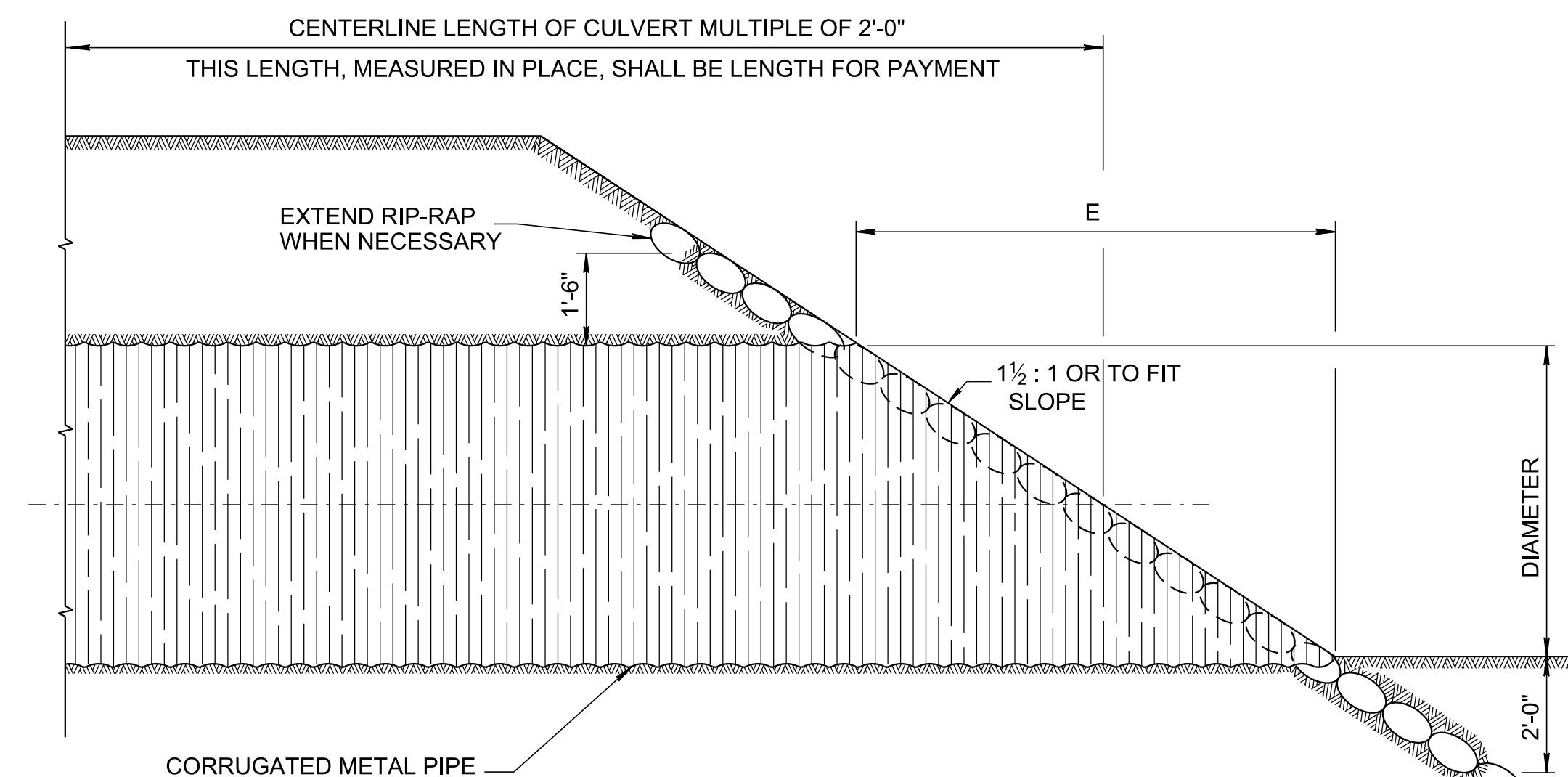


SECTION ON CENTERLINE

BEVELED END PIPE-ARCH

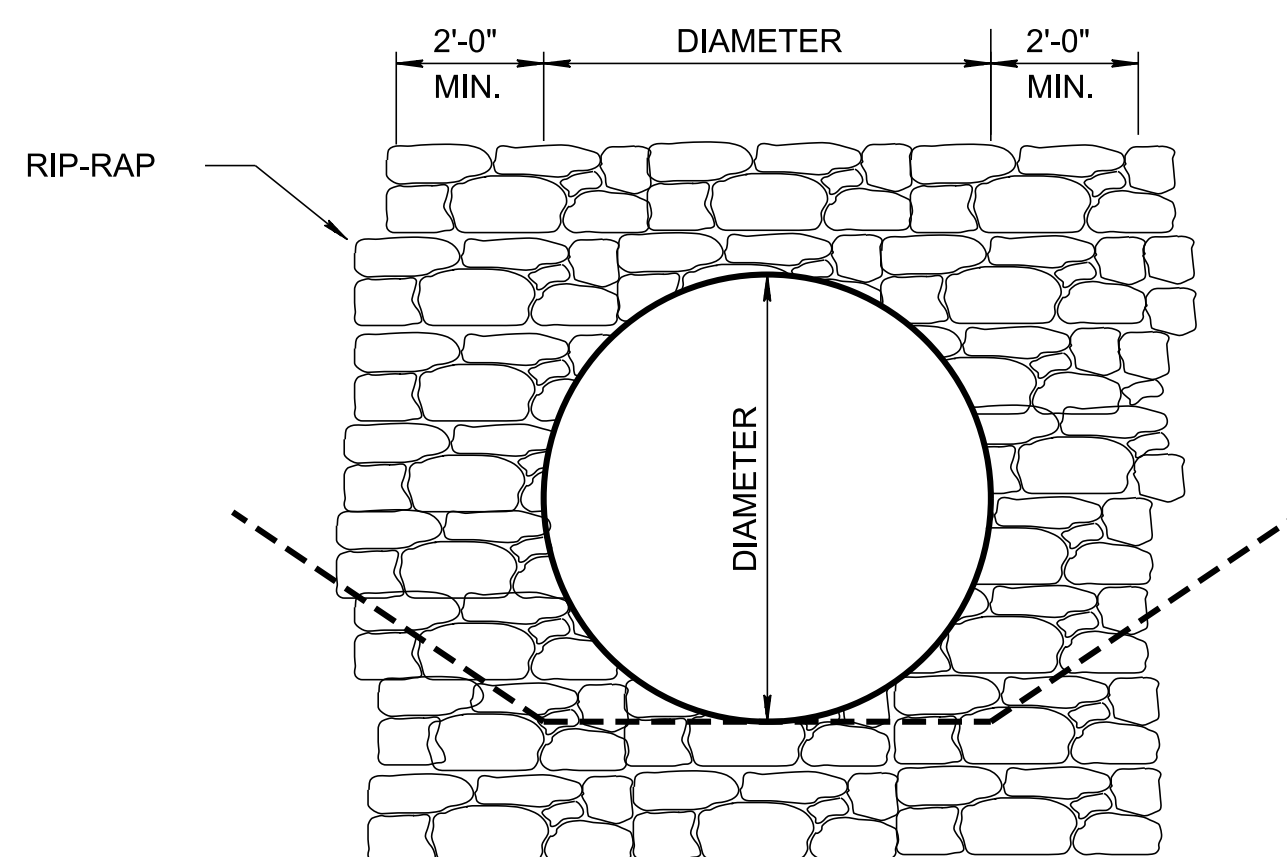


ELEVATION

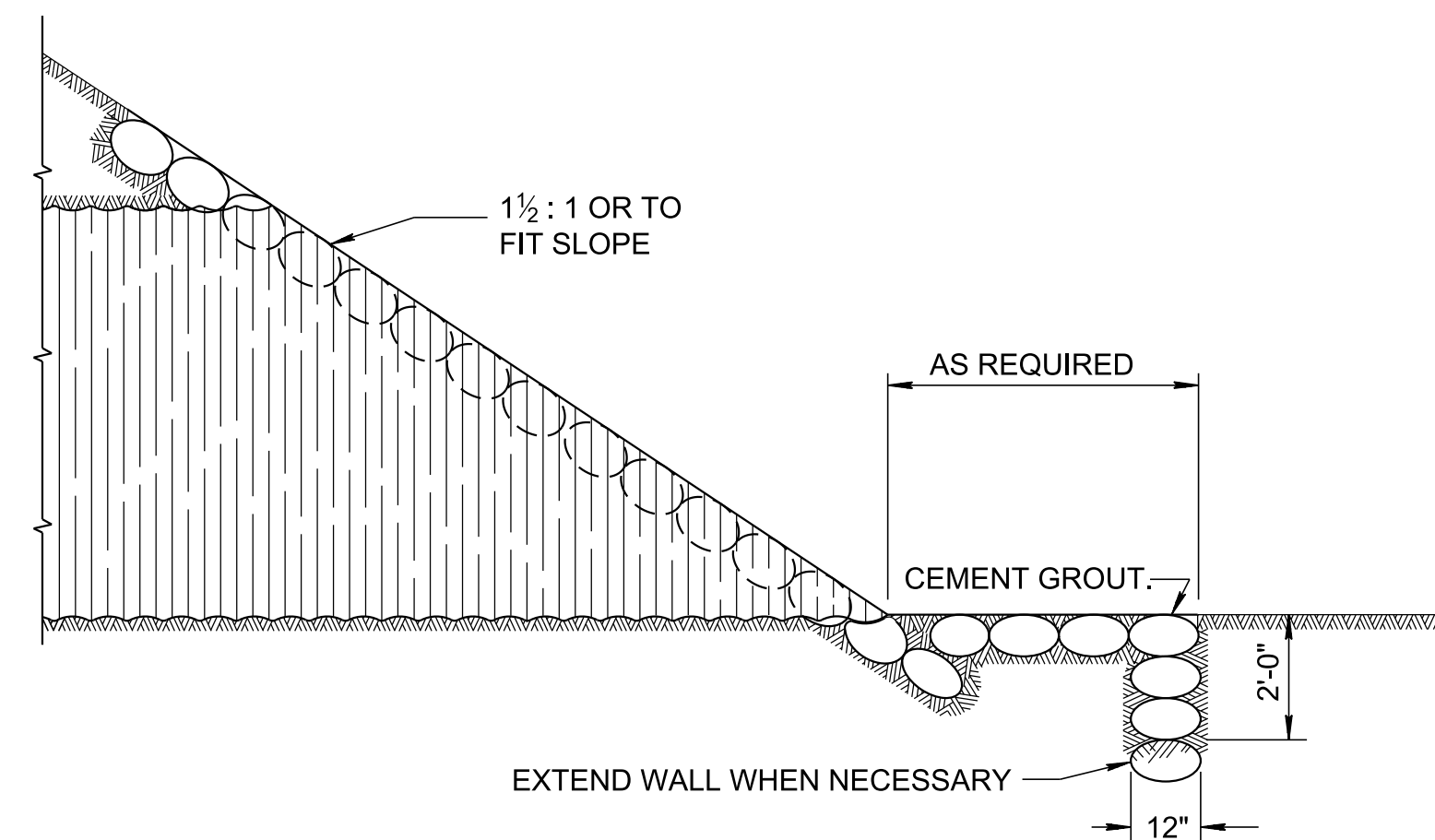


SECTION ON CENTERLINE

BEVELED END PIPE

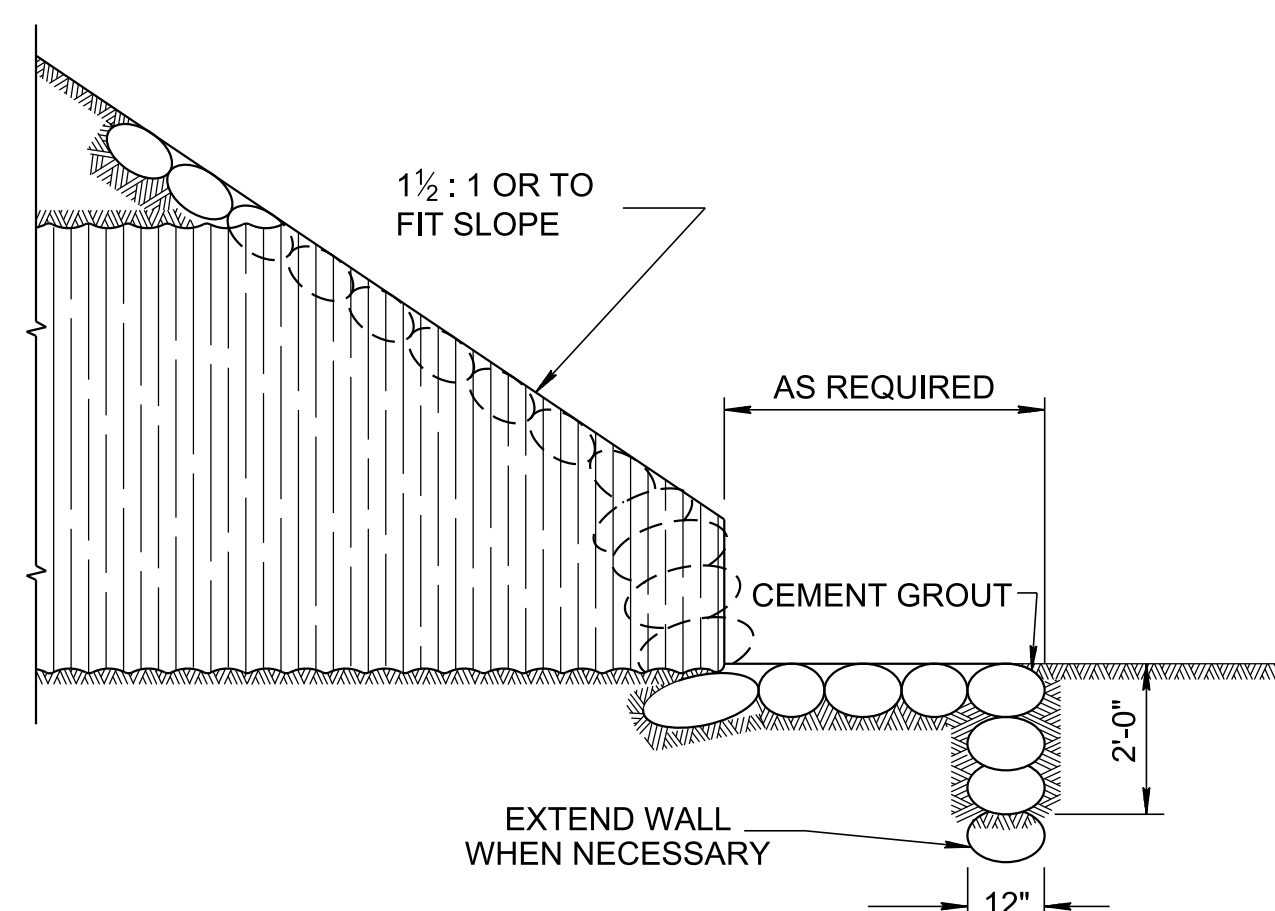


ELEVATION



DETAIL OF APRON FOR OUTLET END OF PIPE

USE ONLY WHEN NECESSARY



DETAIL OF APRON FOR OUTLET END OF PIPE-ARCH

USE ONLY WHEN NECESSARY

PIPE - ARCH CULVERTS						
SPAN	HEIGHT	RIP-RAP C.Y. (ONE END)		A	B	C
		ONE LINE	TWO LINES			
58"	36"	2.7	4.2	1'-0"	2'-0"	3'-0"
65"	40"	2.9	4.4	1'-0"	2'-4"	3'-6"
72"	44"	3.1	5.0	1'-0"	2'-8"	4'-0"
6'-1"	4'-7"	3.1	5.0	2'-3"	2'-4"	3'-6"
6'-4"	4'-9"	3.3	5.4	2'-1"	2'-8"	4'-0"
6'-9"	4'-11"	3.4	5.6	2'-5"	2'-6"	3'-9"
7'-0"	5'-1"	3.5	5.8	2'-3"	2'-10"	4'-3"
7'-3"	5'-3"	3.6	6.0	2'-1"	3'-2"	4'-9"
7'-8"	5'-5"	3.7	6.3	2'-4"	3'-1"	4'-7 1/2"
7'-11"	5'-7"	3.9	6.7	2'-2"	3'-5"	5'-1 1/2"
8'-2"	5'-9"	4.0	6.9	2'-0"	3'-9"	5'-7 1/2"
8'-7"	5'-11"	4.1	7.1	2'-4"	3'-7"	5'-4 1/2"
8'-10"	6'-1"	4.3	7.5	2'-2"	3'-11"	5'-10 1/2"
9'-4"	6'-3"	4.9	8.3	2'-5"	3'-10"	5'-9"
9'-6"	6'-5"	5.0	8.5	2'-4"	4'-1"	6'-1 1/2"
9'-9"	6'-7"	5.2	8.9	2'-2"	4'-5"	6'-7 1/2"
10'-3"	6'-9"	5.3	9.2	2'-5"	4'-4"	6'-6"
10'-8"	6'-11"	5.4	9.4	2'-9"	4'-2"	6'-3"
10'-11"	7'-1"	5.6	9.9	2'-7"	4'-6"	6'-9"
11'-5"	7'-3"	5.7	10.1	2'-10"	4'-5"	6'-7 1/2"
11'-7"	7'-5"	5.9	10.5	2'-8"	4'-9"	7'-1 1/2"
11'-10"	7'-7"	6.1	11.0	2'-6"	5'-1"	7'-7 1/2"
12'-4"	7'-9"	6.2	11.2	2'-10"	4'-11"	7'-4 1/2"
12'-6"	7'-11"	6.3	11.4	2'-8"	5'-3"	7'-10 1/2"
12'-8"	8'-1"	6.5	11.7	2'-6"	5'-7"	8'-4 1/2"
12'-10"	8'-4"	6.7	12.1	2'-4"	6'-0"	9'-0"
13'-5"	8'-5"	6.9	12.5	2'-7"	5'-10"	8'-9"
13'-11"	8'-7"	7.0	12.7	2'-11"	5'-8"	8'-6"
14'-1"	8'-9"	7.1	12.8	2'-9"	6'-0"	9'-0"
14'-3"	8'-11"	7.3	13.2	2'-7"	6'-4"	9'-6"
14'-10"	9'-1"	7.5	13.6	2'-11"	6'-2"	9'-3"
15'-4"	9'-3"	7.6	13.8	3'-2"	6'-1"	9'-1 1/2"
15'-6"	9'-5"	7.8	14.2	3'-0"	6'-5"	9'-7 1/2"
15'-8"	9'-7"	7.9	14.3	2'-10"	6'-9"	10'-1 1/2"
15'-10"	9'-10"	8.2	14.9	2'-8"	7'-2"	10'-9"
16'-5"	9'-11"	8.3	15.1	3'-0"	6'-11"	10'-4 1/2"
16'-7"	10'-1"	8.5	15.5	2'-10"	7'-3"	10'-10 1/2"

ROUND PIPE CULVERTS

PIPE SIZE	RIP-RAP (ONE END) C.Y.		E
	ONE LINE	TWO LINES	
42"	2.9	4.7	5'-3"
48"	3.2	5.4	6'-0"
54"	3.5	6.1	6'-9"
60"	3.8	6.7	7'-6"
66"	4.1	7.4	8'-3"
72"	4.5	8.4	9'-0"
78"	4.8	9.1	9'-9"
84"	5.1	9.8	10'-6"
90"	5.2	10.2	11'-3"
96"	5.5	11.0	12'-0"
102"	6.2	12.4	12'-8"
108"	6.6	13.2	13'-6"
114"	7.0	14.0	14'-3"
120"	7.4	14.8	15'-0"
126"	7.8	15.6	15'-9"
132"	8.2	16.4	16'-6"
138"	8.6	17.2	17'-3"
144"	9.0	18.0	18'-0"
150"	9.4	18.8	18'-9"
156"	9.9	19.8	19'-6"
162"	10.3	20.6	20'-3"
168"	10.8	21.6	21'-0"
174"	11.2	22.4	21'-9"
180"	11.7	23.4	22'-6"

RIP-RAP QUANTITIES NOTE

QUANTITIES SHOWN ARE FOR ONE END AND ARE FOR ESTIMATING PURPOSES ONLY. PAYMENT TO BE MADE FOR QUANTITIES ACTUALLY PLACED AND COMPUTED FOR EACH INSTALLATION.

(Replaced Std Dwg D-PE-8)

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

RIP-RAP END TREATMENT FOR CORRUGATED METAL PIPE, OVAL AND PIPE ARCH CULVERTS WITH BEVELED ENDS (PIPE SIZES 42" & LARGER)