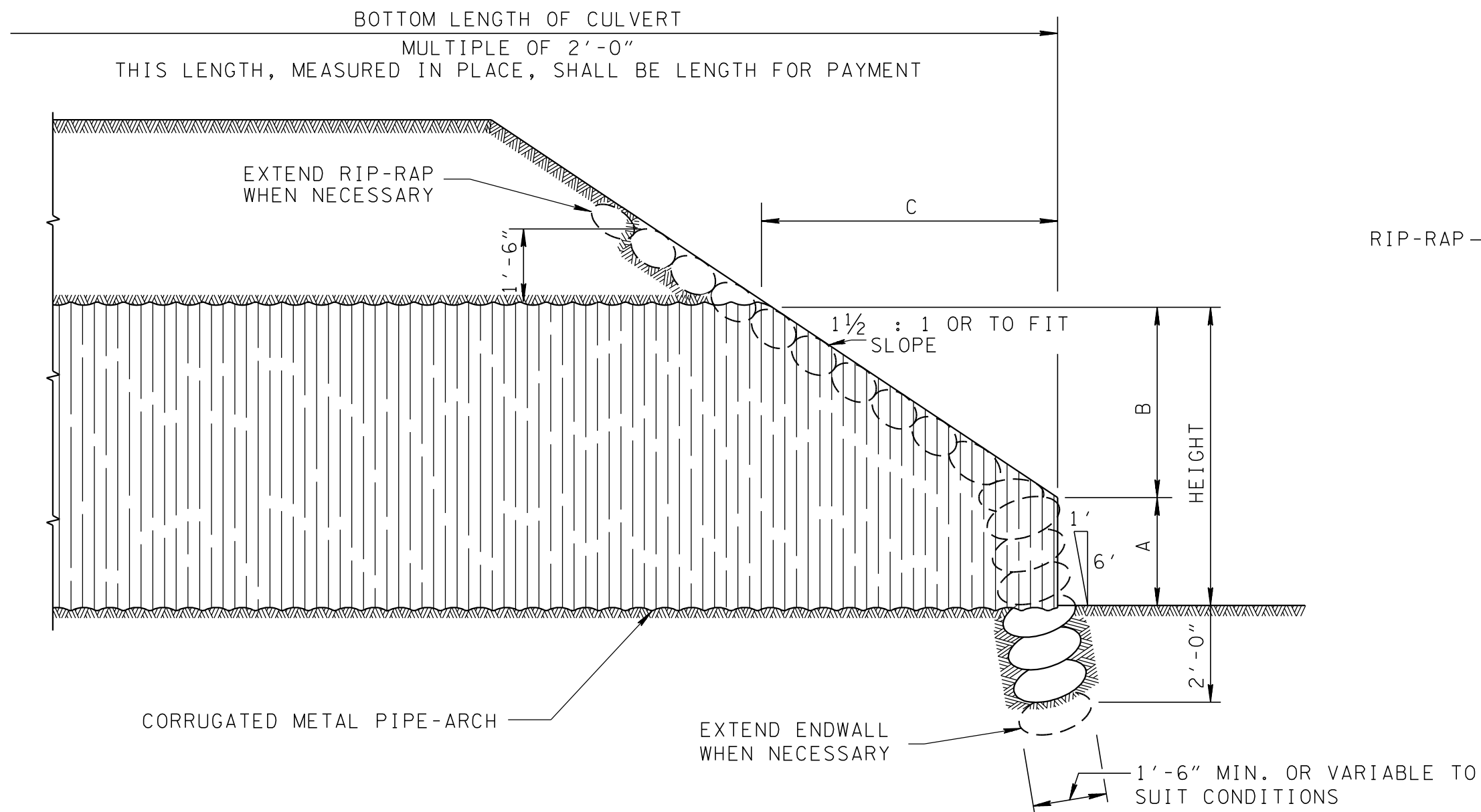


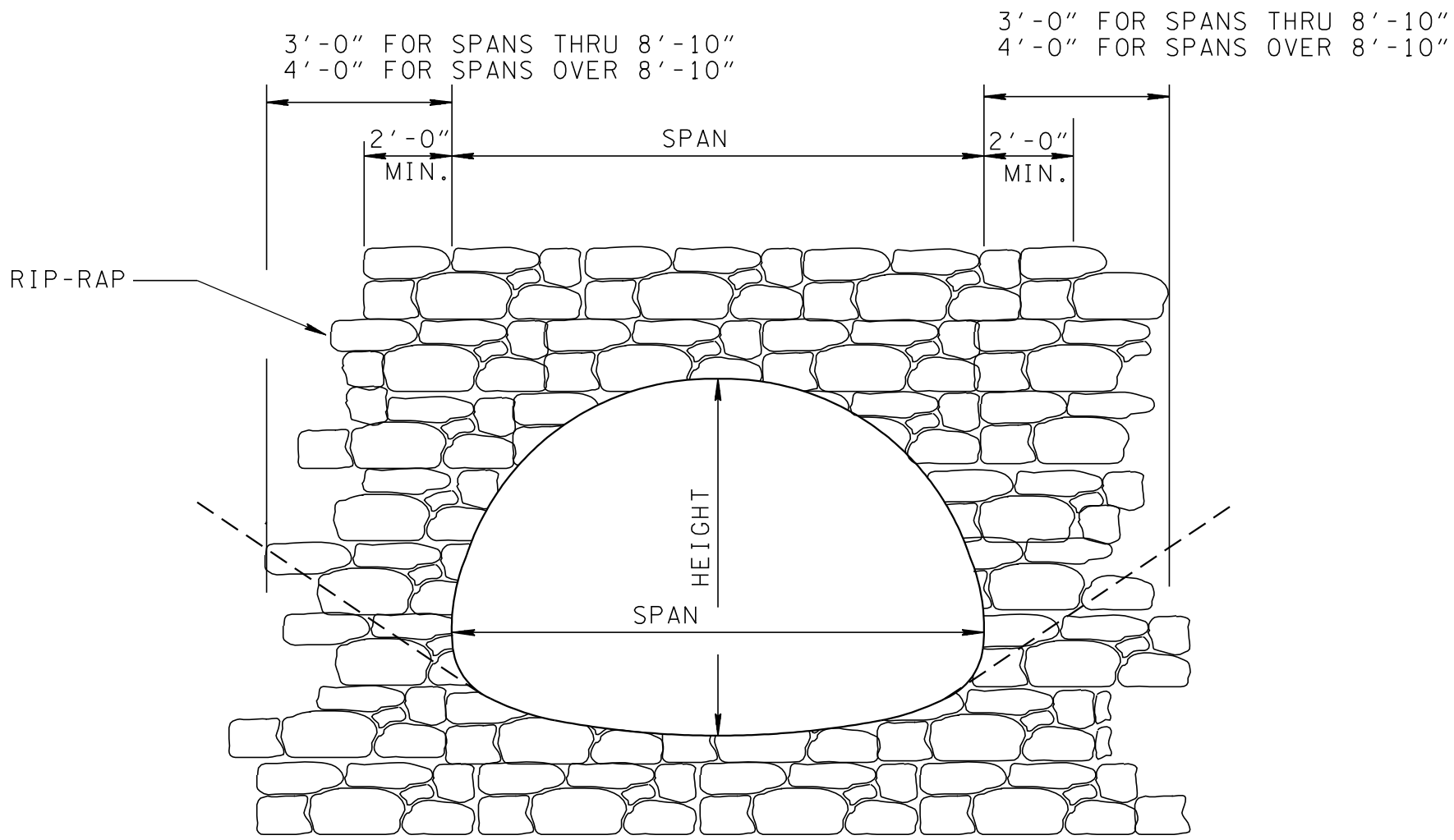
REV. 7-1-72; CHANGED
DEPARTMENT NAME.

REV. 1-1-76; CHANGED DWG. NO.
FROM CM-1-5(68) TO D-PE-8.

REV. 1-19-97; REDREW,
REORGANIZED AND REDESIGNED
SHEET ON CADD.

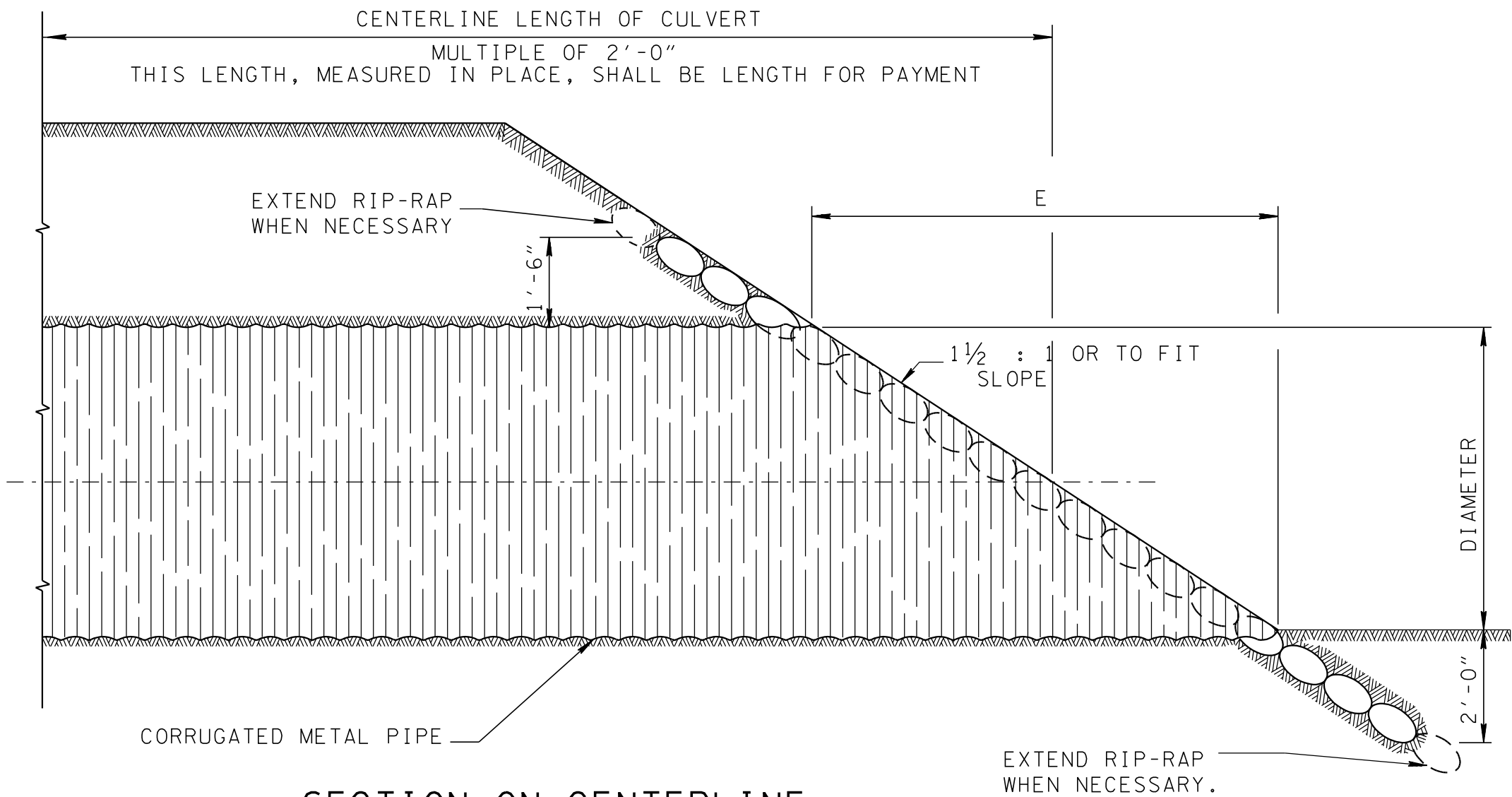


SECTION ON CENTERLINE

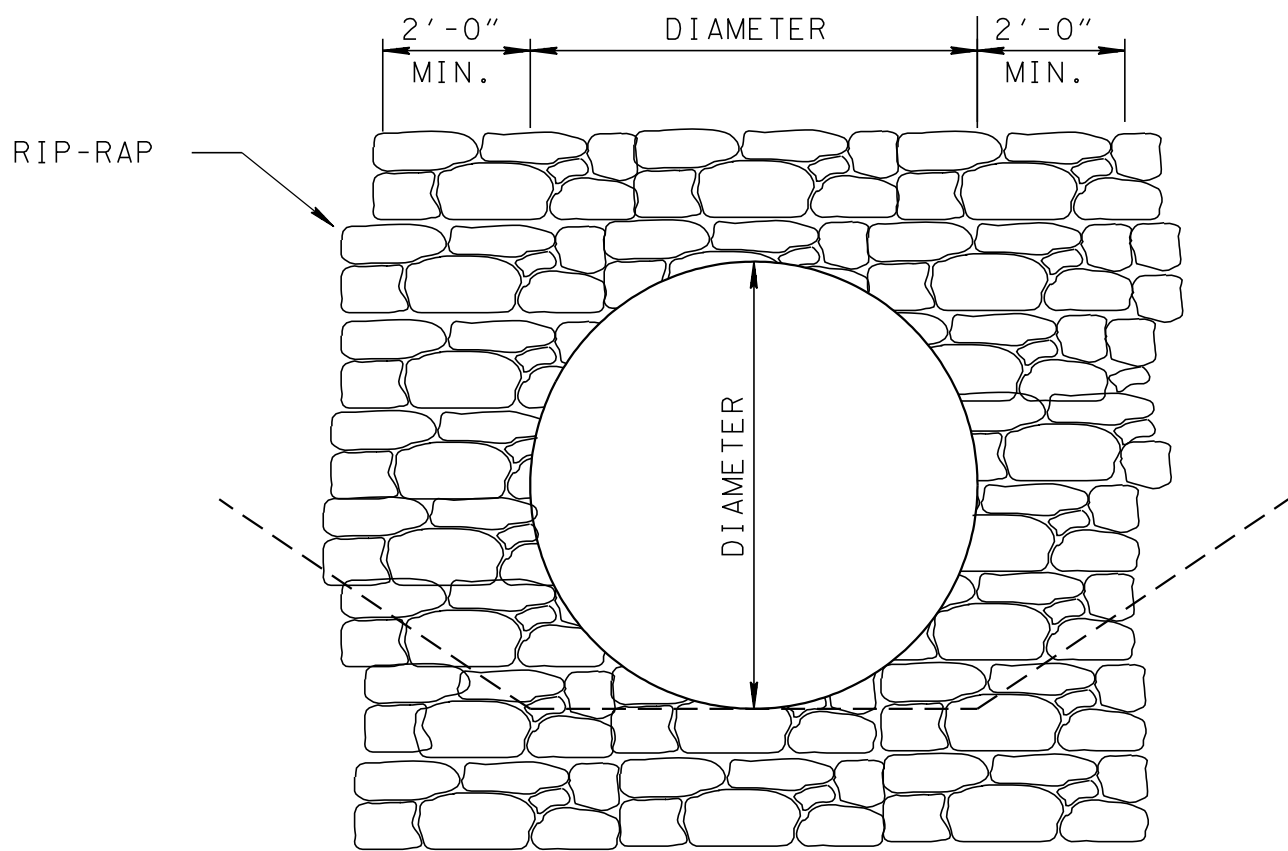


ELEVATION

BEVELED END PIPE-ARCH

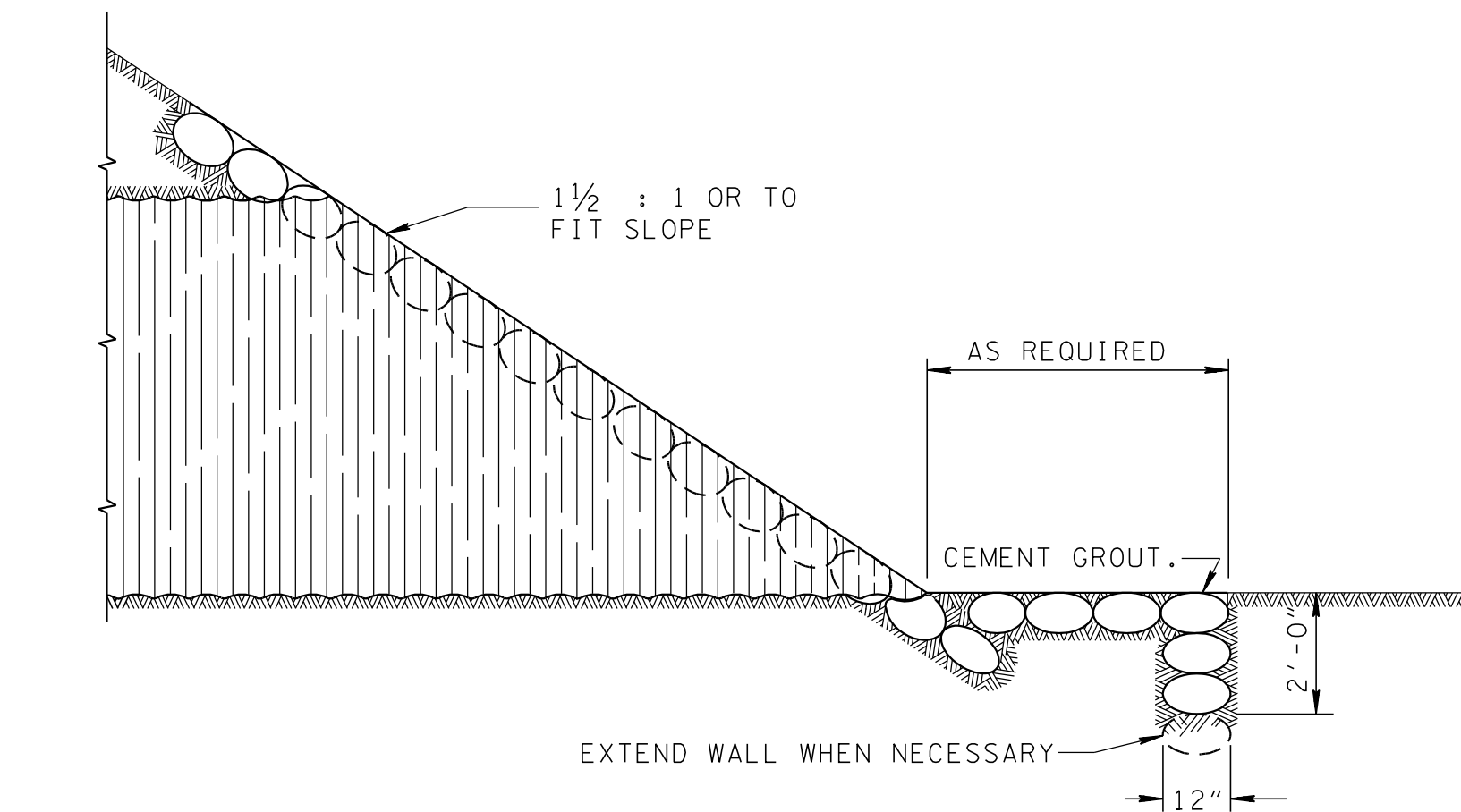


SECTION ON CENTERLINE

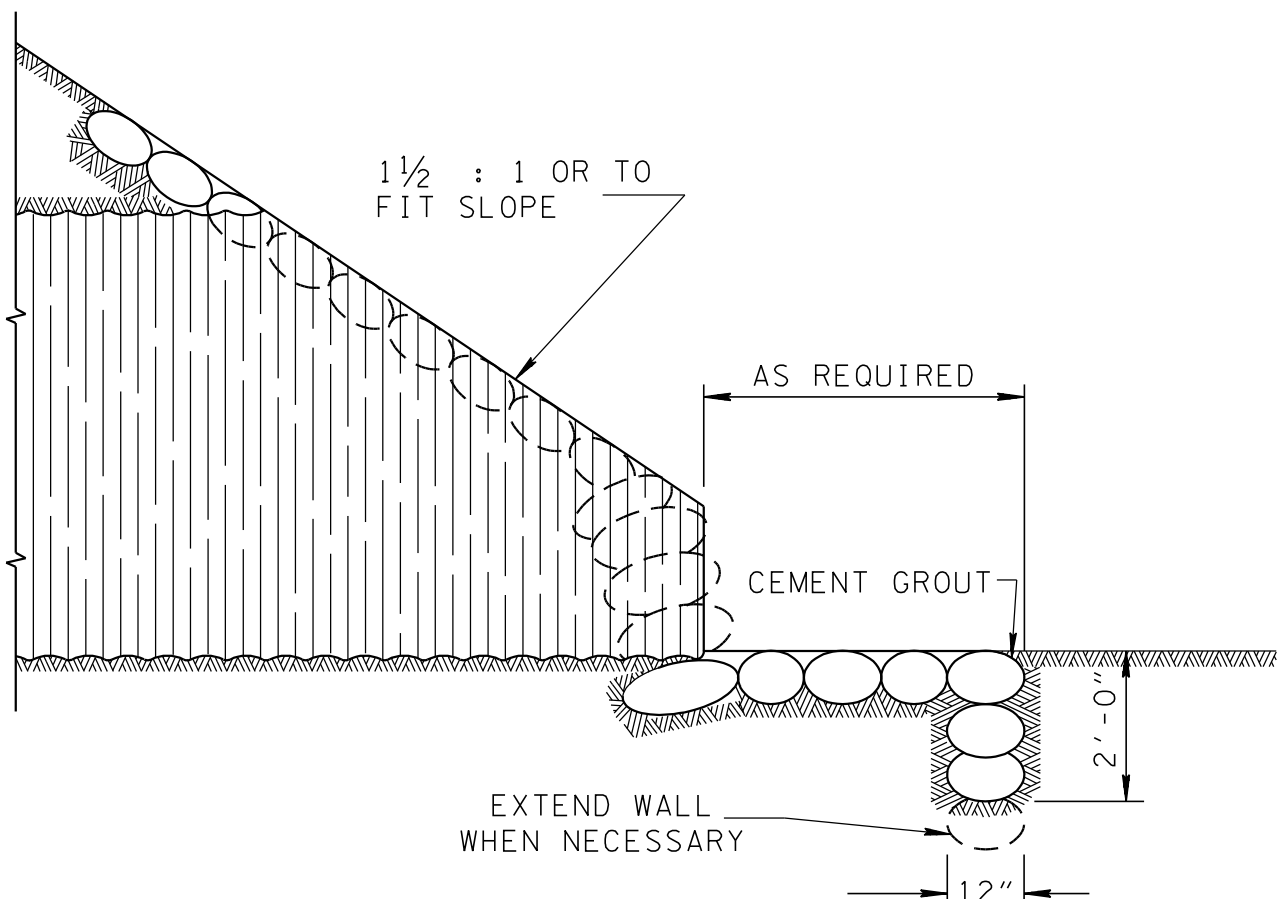


ELEVATION

BEVELED END PIPE



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"

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.

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"

MINOR REVISION -- FHWA
APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

DETAIL OF
STANDARD PIPE
AND PIPE-ARCH
CULVERT WITH BEVELED
ENDS AND RIP-RAP