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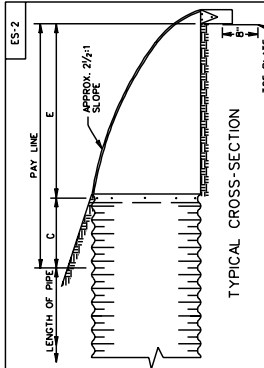
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DESIGNED BY _____

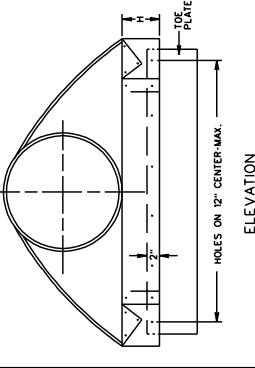
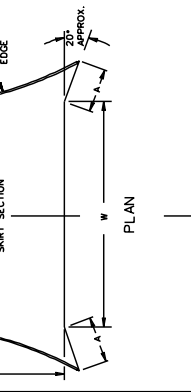
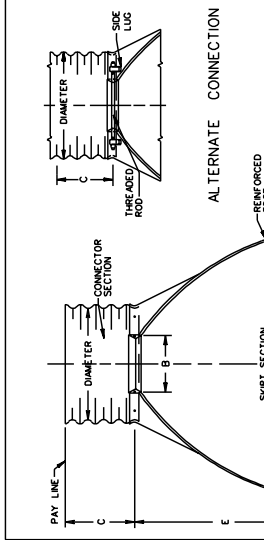
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



PIPE DIAMETER	SHEET THICKNESS		DIMENSIONS					
	STEEL	ALUMINUM	A	B	H	W	C	
12"	.064"	.060"	6"	6"	21"	24"	24"	
15"	.064"	.060"	7"	8"	26"	30"	24"	
18"	.064"	.060"	8"	10"	31"	36"	24"	
21"	.064"	.060"	9"	12"	36"	42"	24"	
24"	.064"	.060"	10"	14"	41"	48"	24"	
27 1/2"	.064"	.075"	12"	16"	46"	54"	24"	
36"	.064"	.075"	14"	19"	51"	60"	24"	
42"	.064"	.105"	16"	22"	56"	66"	36"	
48"	.064"	.105"	18"	26"	61"	72"	36"	
54"	.064"	.105"	20"	30"	66"	78"	36"	
60"	.064"	.135"	22"	33"	71"	84"	36"	

NOTES:

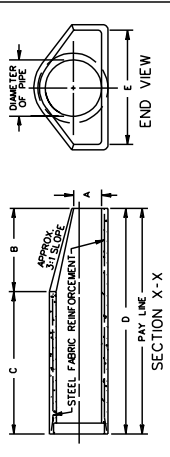
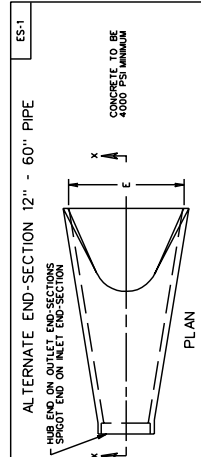
- TOE PLATE TO BE PUNCHED TO MATCH HOLES IN SHIRT LIP. 3/4" GALVANIZED BOLTS TO BE FURNISHED. LENGTH OF TOE PLATE IS W + 10" FOR 12" TO 30" DIAMETER PIPE AND W + 22" FOR 36" TO 60" DIAMETER PIPE.
- SHORT SECTION 12" TO 30" DIAMETER PIPE TO BE MADE IN ONE PIECE.
- SHORT SECTION FOR 36" TO 54" DIAMETER PIPE MAY BE MADE FROM TWO SHEETS JOINED BY RIVETING ON BEARING ON CENTER LINE. 180° MAY BE CONSTRUCTED IN 3 PIECES.
- CONNECTOR SECTION, CORNER PLATE AND TOE PLATE TO BE SAME SHEET THICKNESS AS SHIRT.
- END-SECTION AND FITTINGS ARE TO BE STEEL FOR USE WITH ALUMINUM ALLOY PIPE.
- END-SECTION AND FITTINGS ARE TO BE ALUMINUM ALLOY FOR USE WITH ALUMINUM ALLOY PIPE.
- EITHER THE STEEL OR ALUMINUM END-SECTION DETAILED MAY BE USED FOR PLASTIC PIPE SIZES SHOWN IN STD. PC-1 OR AN APPROVED PLASTIC END-SECTION MAY BE USED.
- WHERE FLARED END-SECTION ARE TO BE USED WITH ASPHALT COATED AND PAVED METAL PIPE, END SECTIONS DO NOT NEED TO BE COATED OR PAVED.



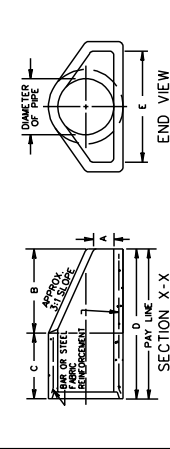
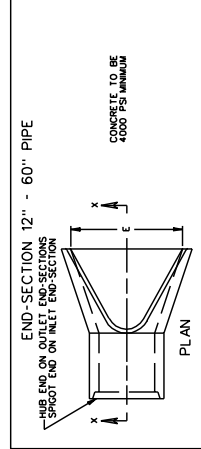
FLARED END-SECTION FOR 12"-60" CORRUGATED PIPE CULVERTS
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 302

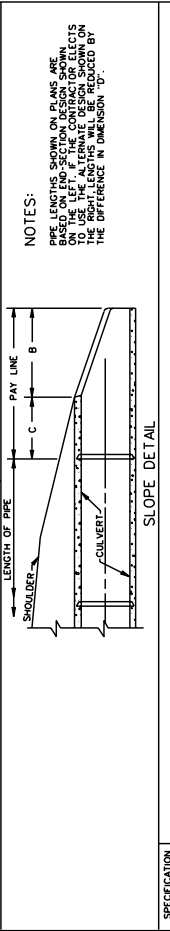
REV. 7/01
102.03



PIPE DIAMETER	END SECTION DIMENSIONS					
	A	B	C	D	E	
12"	4"	2'-0"	4'-1"	6'-1"	2'-0"	
15"	5"	2'-3"	3'-0"	6'-1"	2'-0"	
18"	6"	2'-6"	3'-0"	6'-1"	2'-0"	
21"	8"	2'-11"	3'-2"	6'-1"	3'-0"	
24"	10"	3'-7"	2'-8"	6'-3"	4'-0"	
27"	10 1/2"	4'-0"	2'-11"	6'-3"	4'-0"	
30"	11"	4'-3"	2'-11"	6'-3"	4'-0"	
33"	11 1/2"	4'-10 1/2"	2'-10 1/2"	6'-3"	5'-0"	
36"	1'-3"	5'-3"	2'-10 1/2"	6'-3"	6'-0"	
42"	1'-9"	5'-3"	2'-11"	6'-2"	6'-5"	
48"	2'-0"	6'-0"	2'-2"	6'-2"	7'-0"	
54"	2'-6"	6'-0"	2'-2"	6'-2"	7'-0"	
60"	2'-11"	5'-0"	3'-3"	6'-3"	8'-0"	



PIPE DIAMETER	END SECTION DIMENSIONS					
	A	B	C	D	E	
12"	4"	2'-0"	2'-0"	4'-0"	2'-0"	
15"	5"	2'-3"	1'-9"	4'-0"	2'-0"	
18"	6"	2'-6"	1'-9"	4'-0"	2'-0"	
21"	8"	2'-11"	2'-11"	5'-0"	3'-0"	
24"	9 1/2"	3'-7"	2'-6"	6'-1"	4'-0"	
27"	10 1/2"	4'-0"	2'-11"	6'-1"	4'-0"	
30"	11"	4'-3"	2'-11"	6'-1"	4'-0"	
33"	11 1/2"	4'-10 1/2"	2'-10 1/2"	6'-1"	5'-0"	
36"	1'-3"	5'-3"	2'-10 1/2"	6'-1"	6'-0"	
42"	1'-9"	5'-3"	2'-11"	6'-2"	6'-5"	
48"	2'-0"	6'-0"	2'-2"	6'-2"	7'-0"	
54"	2'-6"	6'-0"	2'-2"	6'-2"	7'-0"	
60"	2'-11"	5'-0"	3'-3"	6'-3"	8'-0"	



NOTES:

PIPE LENGTHS SHOWN ON PLANS ARE BASED ON END-SECTION DESIGN SHOWN. TO USE THE ALTERNATE DESIGN SHOWN ON THIS DRAWING, THE LENGTHS SHOWN ON THE PLANS MUST BE REDUCED BY THE DIFFERENCE IN DIMENSION 'D'.

FLARED END-SECTION FOR 12"-60" CONCRETE PIPE CULVERTS
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 302

REV. 7/01
102.01

NEW 7-01
SPECIAL DESIGN SECTION
DRAWING NO. A 147