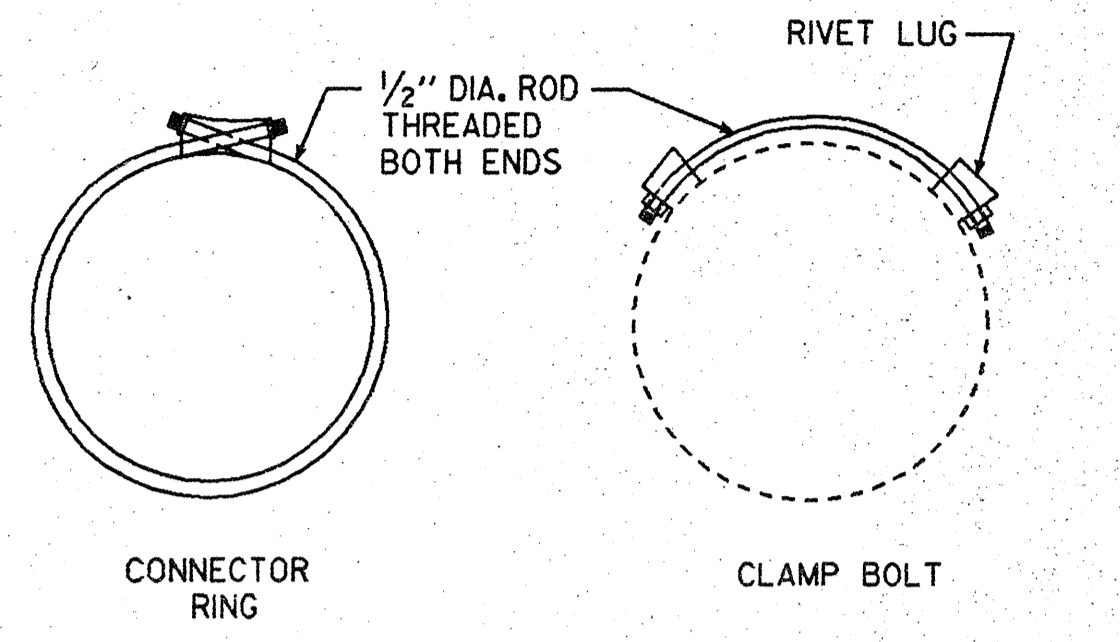
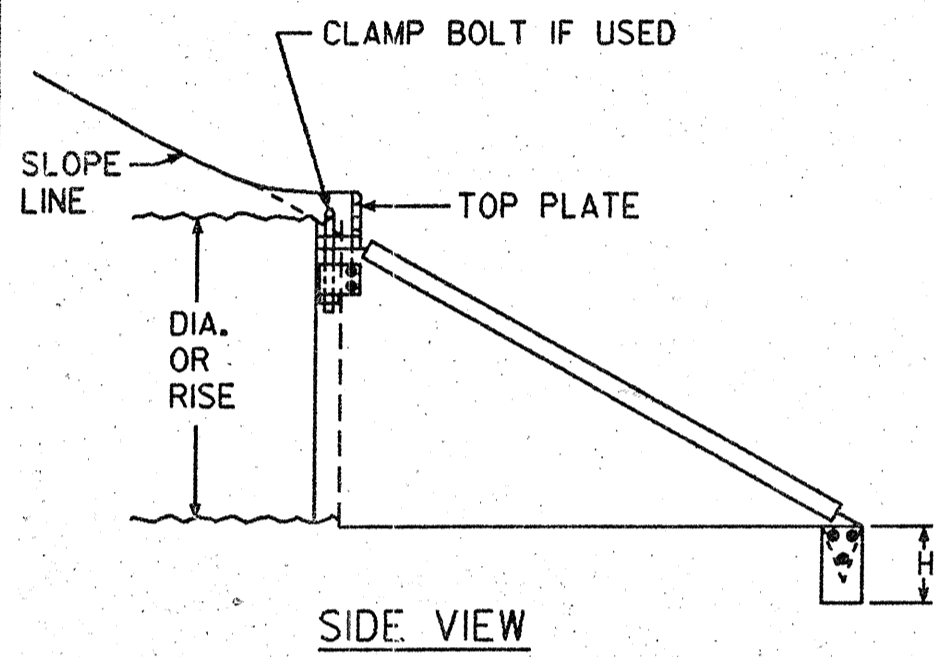
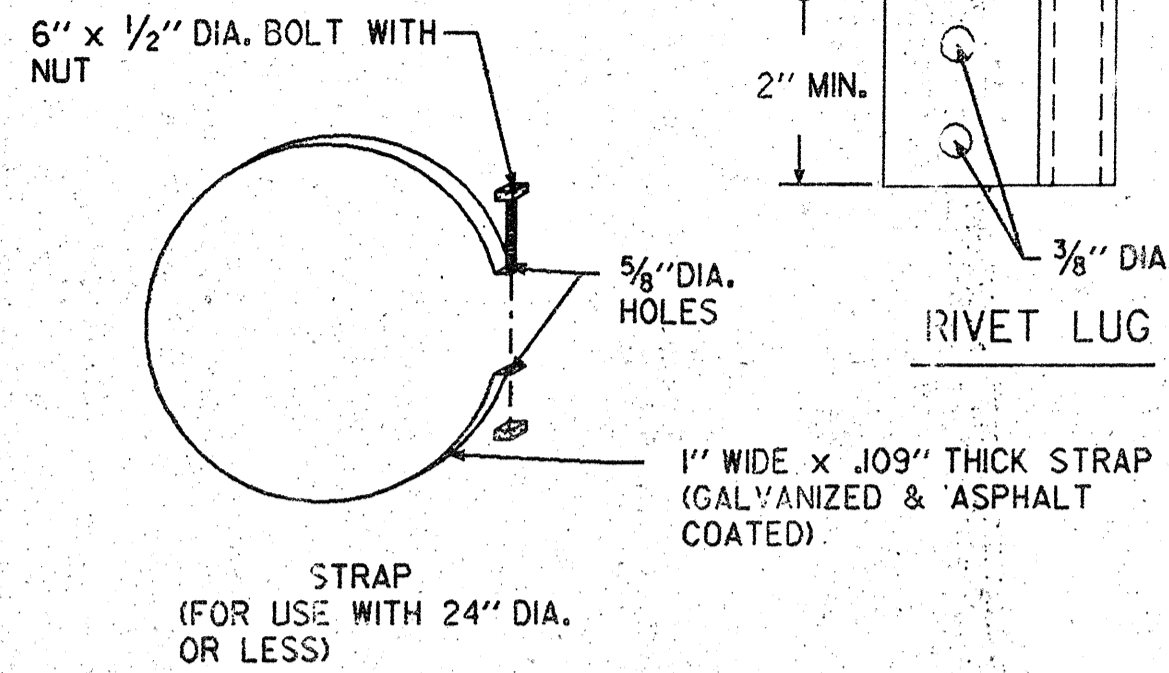


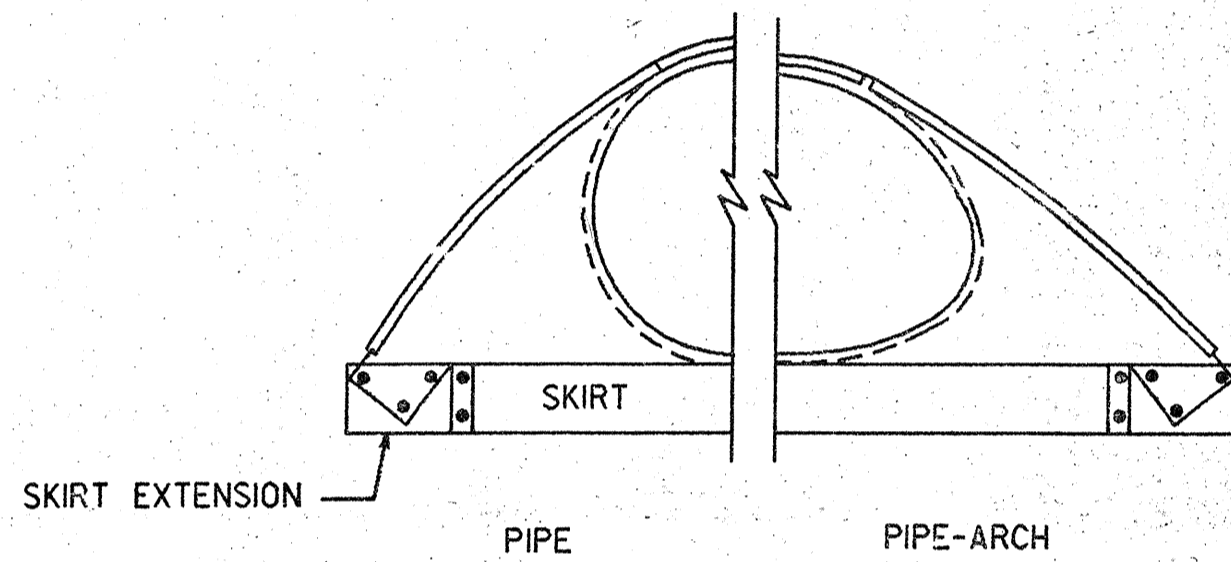
PLAN



ATTACHMENT SYSTEMS

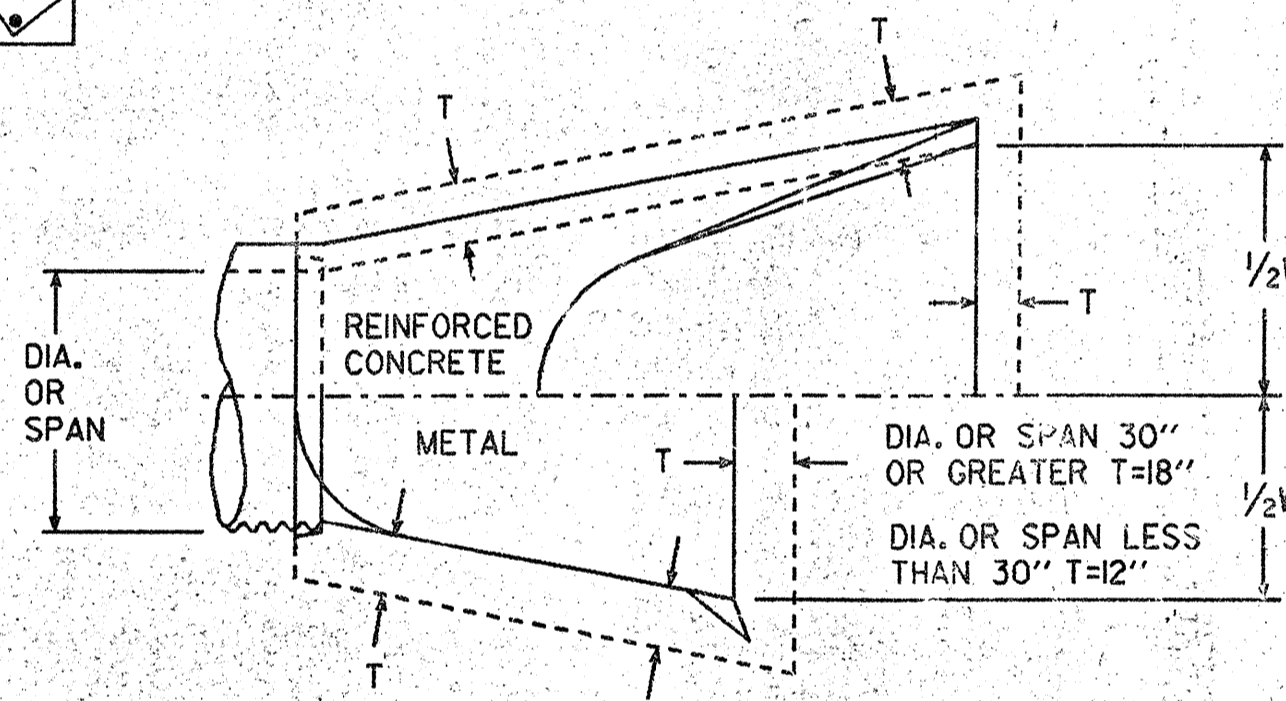


SIDE VIEW

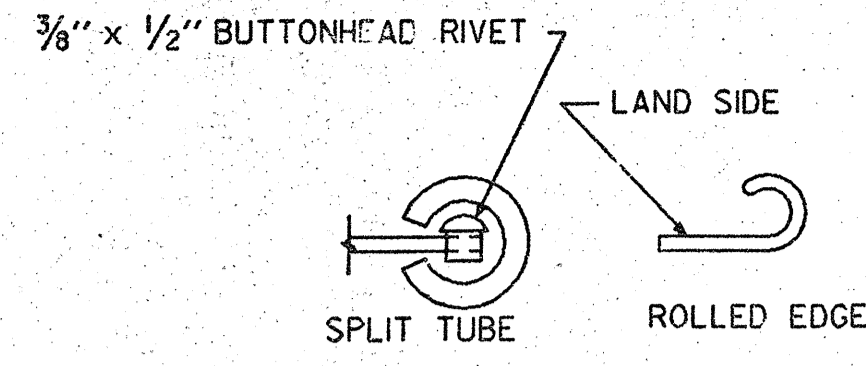


END VIEW

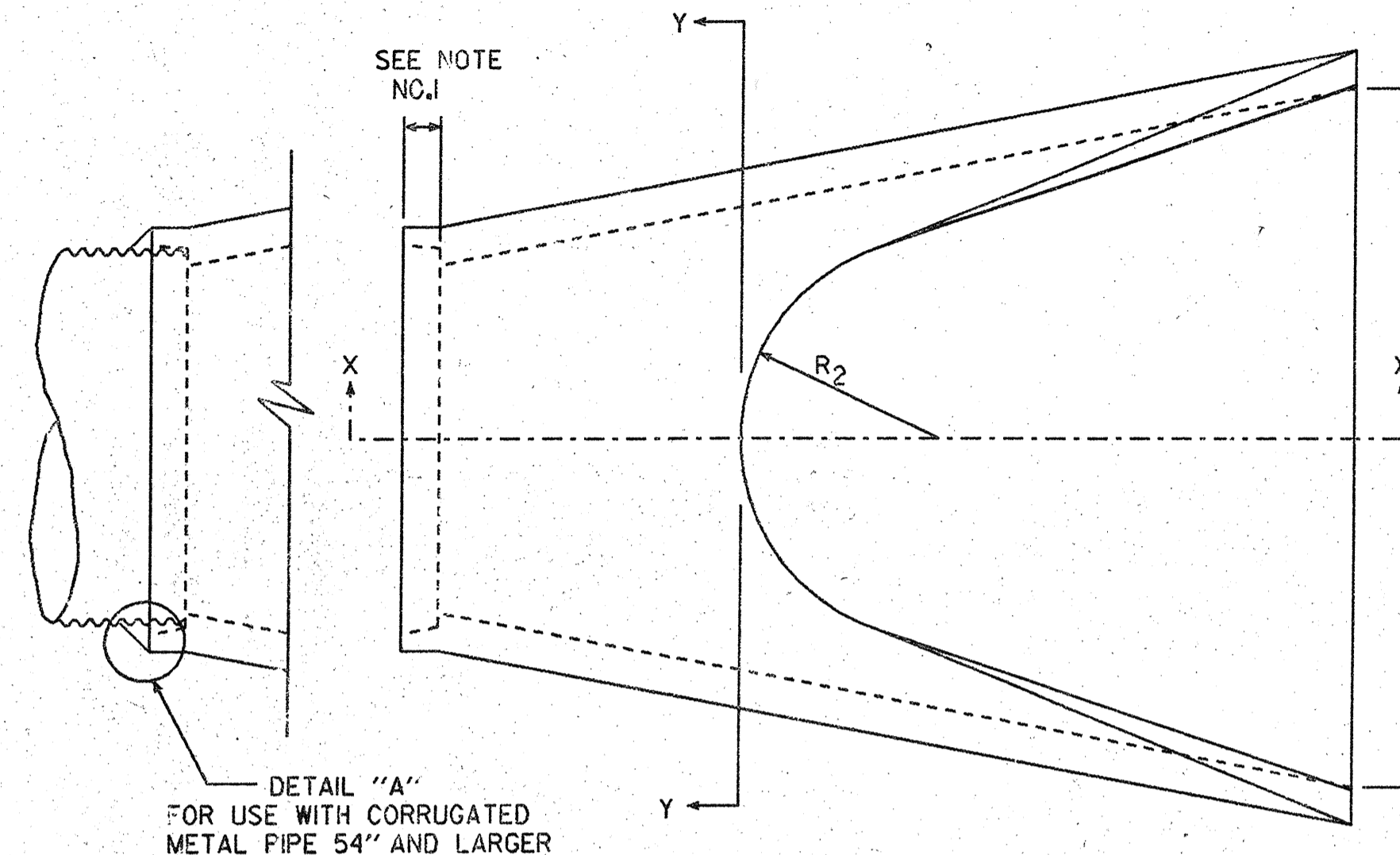
PIPE SIZE	ARCH SIZE	DIMENSIONS FOR METAL CULVERT END					THICKNESS (INCHES)
SPAN	RISE	B (MAX.)	H (± 1")	L (± 1 1/2")	W (± 2")		
17"	13"	9"	6"	19"	30"	.064	
21"	15"	10"	6"	23"	36"	.064	
24"	18"	12"	6"	28"	42"	.064	
28"	20"	14"	6"	32"	48"	.064	
35"	24"	16"	6"	39"	60"	.079	
42"	29"	18"	8"	46"	75"	.079	
49"	33"	21"	9"	53"	85"	.109	
57"	38"	26"	12"	63"	90"	.109	
64"	43"	30"	12"	70"	102"	.109	
71"	47"	33"	12"	77"	114"	.103	



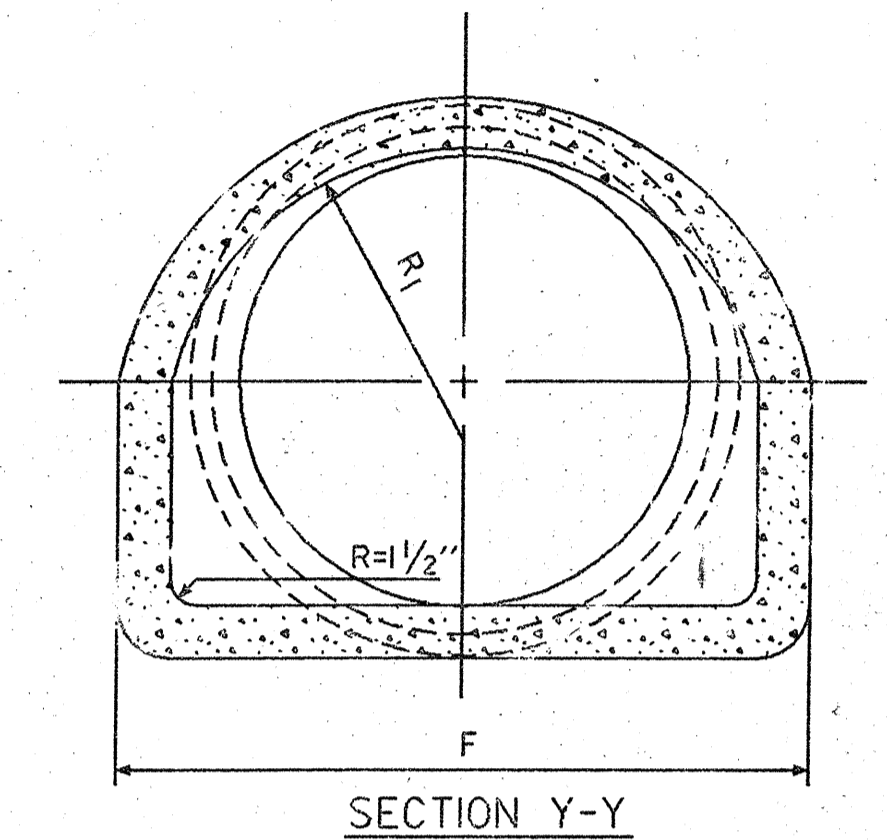
HORIZONTAL PAYMENT LIMITS FOR TRENCH EXCAVATION-CULVERT ENDS



EDGE REINFORCEMENT



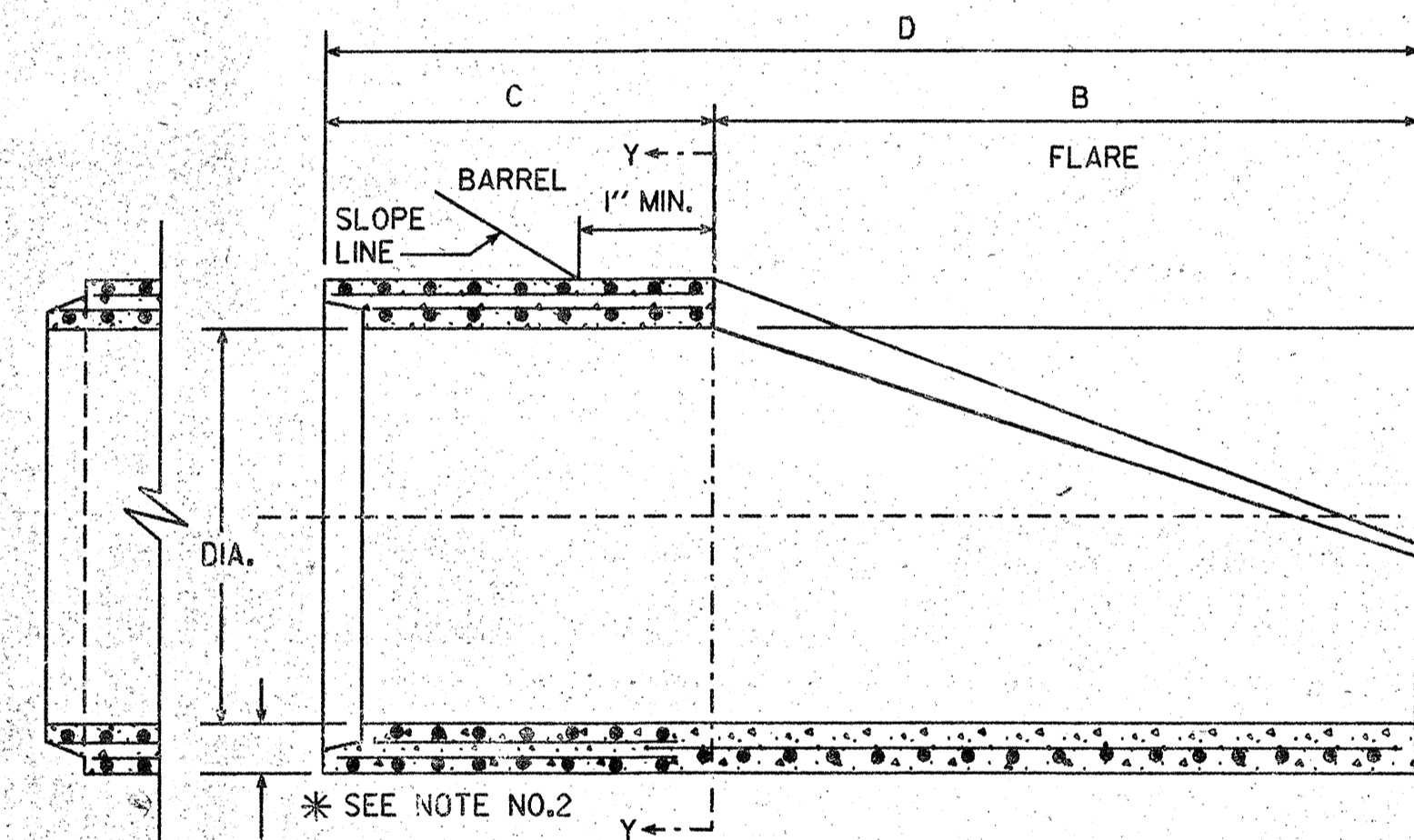
PLAN



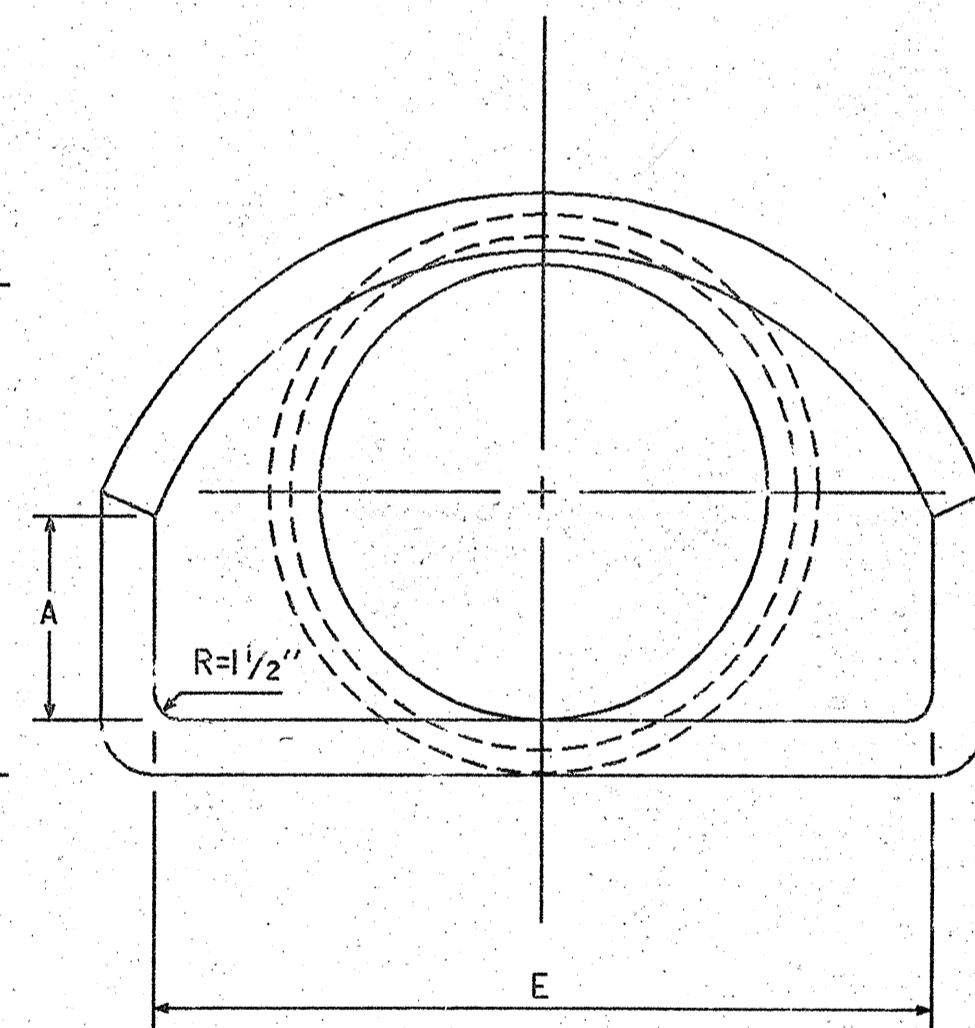
SECTION Y-Y

NOTES

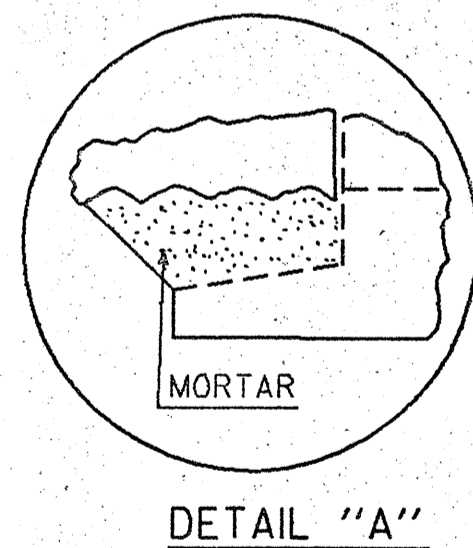
- 1/ JOINTS SHALL BE TONGUE AND GROOVE OR BELL AND SPIGOT AS REQUIRED TO CONFORM TO PIPE INSTALLED.
- 2/ WALL THICKNESS SHALL CONFORM TO PIPE THICKNESS.



SECTION X-X



END VIEW



DETAIL "A"

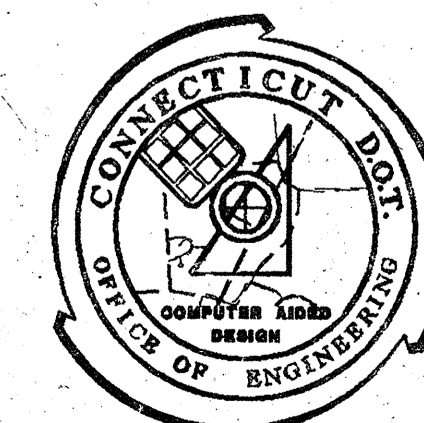
PIPE DIA.	DIMENSIONS FOR METAL CULVERT END					THICKNESS (INCHES)
	B (MAX.)	H (± 1")	L (± 1 1/2")	W (± 2")		
12"	6"	6"	21"	24"	.064	
15"	8"	6"	26"	30"	.064	
18"	10"	6"	31"	36"	.064	
21"	12"	6"	36"	42"	.064	
24"	13"	6"	41"	48"	.064	
30"	16"	8"	51"	60"	.079	
36"	19"	9"	60"	72"	.079	
42"	22"	11"	69"	84"	.109	
48"	27"	12"	78"	90"	.109	
54"	30"	12"	84"	102"	.109	
60"	33"	12"	87"	114"	.109	
66"	36"	12"	87"	120"	.109	
72"	39"	12"	87"	126"	.109	
78"	42"	12"	87"	132"	.109	
84"	45"	12"	87"	138"	.109	

METAL CULVERT END

DIA.	DIMENSIONS FOR REINFORCED CONCRETE CULVERT END							FLARE REINFORCEMENT		
	A	B	C	D	E	F	R ₁	R ₂	ONE LAYER ONLY IN CENTER OF WALL MIN. AREA OF LONGITUDINALS SQ. IN. PER FT.	MIN. AREA OF TRANSVERSE STEEL SQ. IN. PER FT.
12"	4"	2'-0"	4'-0 3/8"	6'-0 3/8"	2'-0"	1'-7 7/8"	10 1/4"	9"	0.048	0.048
15"	6"	2'-3"	3'-10"	6'-1"	2'-6"	2'-0 3/8"	1'-0 1/2"	11"	0.054	0.054
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"	2'-5"	1'-3 1/2"	1'-0"	0.060	0.060
21"	9"	2'-11"	3'-2"	6'-1"	3'-6"	2'-7 1/2"	1'-3"	1'-1"	0.066	0.066
24"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	2'-9 3/8"	1'-4 1/8"	1'-2"	0.072	0.072
30"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3'-1"	1'-6 1/2"	1'-3"	0.084	0.084
36"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3'-1 1/8"	2'-3 3/8"	1'-8"	0.096	0.096
42"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	4'-5 7/8"	2'-1 1/2"	1'-10"	0.108	0.108
48"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	4'-8 1/2"	2'-4 1/2"	1'-10"	0.120	0.120
54"	2'-3"	5'-5"	2'-11"	8'-4"	7'-6"	5'-5 1/2"	2'-9 1/8"	2'-0"	0.132	0.132
60"	2'-9"	5'-0"	3'-3"	8'-3"	8'-0"	6'-0 1/2"	3'-0 1/8"	2'-0"	0.144	0.144

REINFORCED CONCRETE CULVERT END

MANUAL REVISIONS TO THIS DOCUMENT ARE PROHIBITED. ALL REVISIONS MUST BE PERFORMED ON



STANDARD SHEET
CONN. DEPT. OF TRANSPORTATION

METAL & REINFORCED CONCRETE CULVERT END

REVISIONS		DESIGNED BY:	DATE:
NO.	DATE	DESCRIPTION	

Designed by:	R.GESSAY	Date:	NOV. 89
Drafted by:	GLENN L. ARZT	Date:	15 MAY 89
Reviewed by:	T.McMAHON	Date:	MAY 89
Approval/Rec:	J.JENSEN	Date:	JUNE 89
Approved:	<i>[Signature]</i>	Date:	7-90
F.H.W.A. Approval:		Date:	12/3/90

Scale: NOT TO SCALE

STANDARD NUMBER: 652-A