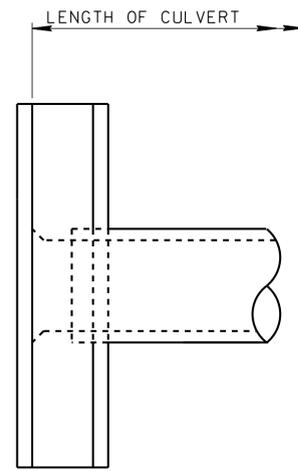
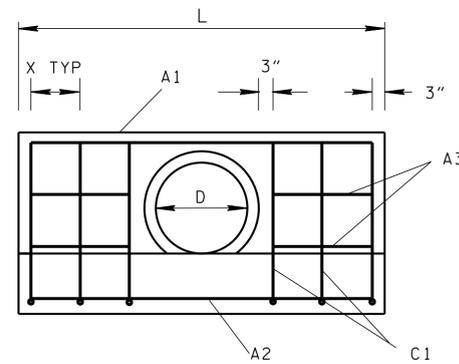


REV. 9-28-83: REDREW AND ADDED TABLE FOR STRAIGHT ENDWALL WHEN PIPE IS SKEWED.
 REV. 2-19-88: ADDED SAFETY ADJUSTMENTS "U" TYPE ENDWALL.
 REV. 1-19-94: REDREW AND REORGANIZED DRAWING. ELIMINATED TYPE "U" ENDWALL FOR 3:1 SLOPE.
 REV. 1-19-97: ADDED UNITS TO HEADING FOR TABLE FOR SKEWED PIPE.
 REV. 6-1-09: ADDED GENERAL NOTE (D).
 REV. 7-19-10: REMOVED GENERAL NOTE (D).
 REV. 1-15-13: ADDED REINFORCEMENT AND CHANGED NOTES. ADDED BILL OF STEEL, REMOVED "U" AND "L" TYPE ENDWALL.

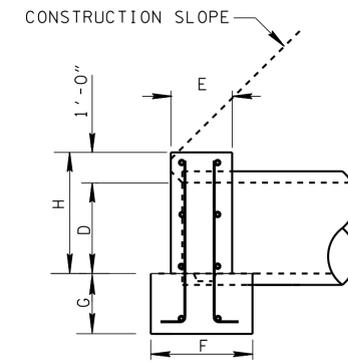


PLAN

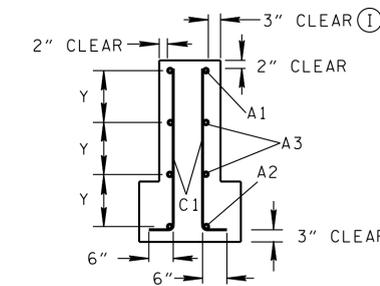
NOTE: ALL BARS ARE #4.



FRONT ELEVATION



SIDE ELEVATION



REINFORCING DIAGRAM

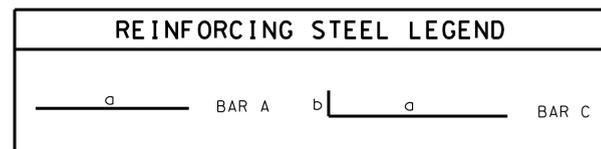
STRAIGHT TYPE CONCRETE ENDWALL

TABLE OF DIMENSIONS AND ESTIMATED QUANTITIES FOR ONE STRAIGHT CONCRETE ENDWALL (SKEW 90°)

DIA.	DIMENSIONS					CONC. IN ONE ENDWALL		REINF. STEEL LB
	WALL			FOOTING		TOTAL	C.Y.	
	L	H	E	F	G			
18"	6'-0"	2'-6"	1'-3"	2'-1"	1'-3"	1.16	40	
24"	8'-0"	3'-0"	1'-4"	2'-2"	1'-4"	1.86	68	
30"	10'-0"	3'-6"	1'-6"	2'-4"	1'-6"	2.98	90	

NOTE: WHEN PIPE IS ON A SKEW USE TWO STRAIGHT ENDWALLS AND MAKE "L" EQUAL TO "L" IN TABLE ABOVE DIVIDED BY SINE OF ANGLE OF SKEW. TO ADJUST QUANTITIES MULTIPLY BY TWO AND DIVIDE BY SINE OF ANGLE OF SKEW.

BAR SPACING		
DIA.	X	Y
18"	2 @ 18.5	4 @ 13
24"	3 @ 13.5	4 @ 15.33
30"	3 @ 17.75	5 @ 13.5



BILL OF STEEL												
STRAIGHT ENDWALL												
BAR	18" PIPE				24" PIPE				30" PIPE			
	a	b	LENGTH	NUMBER	a	b	LENGTH	NUMBER	a	b	LENGTH	NUMBER
A1	66	0	66	2	90	0	90	2	114	0	114	2
A2	66	0	66	2	90	0	90	2	114	0	114	2
C1	40	6	46	8	47	6	53	12	55	6	61	12
A3	18.5	0	18.5	8	27	0	27	8	35.5	0	35.5	12
TOTAL			706 in	TOTAL			1212 in	TOTAL			1614 in	
LB			40	LB			68	LB			90	

- GENERAL NOTES**
- (A) CONCRETE ENDWALL SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATION, SECTION 611, AND/OR SPECIAL PROVISIONS.
 - (B) ALL STRAIGHT CONCRETE ENDWALLS ON THE INLET END OF PIPE, AND AT 90° SKEW SHALL BE BEVELED AT 3" AT AN 45° ANGLE. BEVEL WILL NOT BE REQUIRED WHEN ENDWALL IS CONSTRUCTED ON THE "BELLED" END OF CONCRETE PIPE.
 - (C) MAY BE MODIFIED TO ACCOMMODATE MULTIPLE PIPES WHEN MORE THAN ONE LINE OF PIPE IS REQUIRED THE DISTANCE FROM CENTER TO CENTER OF PIPE SHALL BE D + 1'-0".
 - (D) PAYMENT FOR ENDWALLS WILL BE MADE AS FOLLOWS:
 ITEM 611-07.01, CLASS "A" CONCRETE (PIPE ENDWALLS)----CUBIC YARD.
 ITEM 611-07.02, STEEL BAR REINFORCING (PIPE ENDWALLS)---POUND.
 - (E) SEE 6.04.3.3 IN THE TDOT DRAINAGE MANUAL FOR RIPRAP APRON REQUIREMENT.
 - (F) PRECASTING IS ALLOWED.
 - (G) PIPE OPENING TO BE BASED ON TYPE "B" WALL THICKNESS (AASHTO M170).
 - (H) PIPE ENDWALLS FOR SLOPES STEEPER THAN 3:1 (PREVIOUSLY TYPE "U") WILL NOW USE TYPE "B" SEE D-PE-9.
 - (I) THE FACE OF THE ENDWALL PLACED AGAINST EARTH SHALL HAVE 3" COVER.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STRAIGHT
CONCRETE ENDWALL