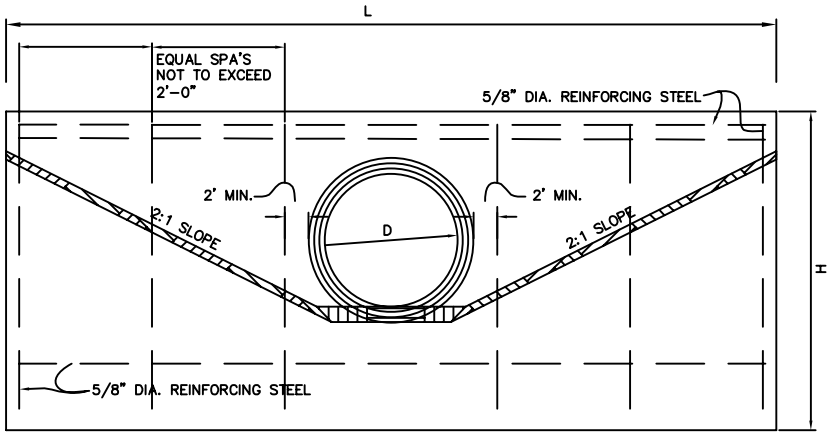
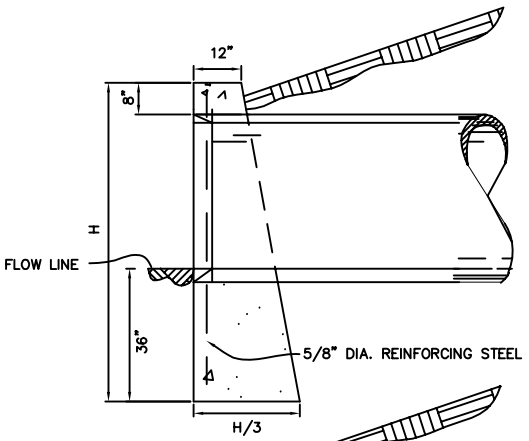




NOTES

NO.1 HEADWALL WHERE REQUIRED WILL BE PROVIDED FOR NON-SKEWED CULVERTS HAVING A DIAMETER OR RISE OF 36" OR LESS.

CONCRETE SHALL BE CLASS C.

REINFORCING STEEL BARS SHALL BE 5/8" ROUND.

DIMENSIONS AND QUANTITES ARE SHOWN FOR CIRCULAR SECTIONS ONLY. IT WILL BE NECESSARY TO DETERMINE DIMENSIONS FOR THE NO.1 HEADWALL REQUIRED FOR REINFORCED ELLIPTICAL CONCRETE PIPE OR CORRUGATED METAL PIPE ARCHES IN ACCORDANCE WITH THE EQUATIONS LISTED ON THIS DRAWING. CHAMFER ALL CORNERS 3/4".

FOUNDATION . WHERE THE SOIL BORINGS INDICATE A BEARING CAPACITY OF LESS THAN 2600 LBS. PER SQUARE FOOT, IT WILL BE NECESSARY TO INCREASE THE WIDTH OF THE BASE.

DIMENSIONS			QUANTITIES ONE HEADWALL	
DIAMETER	H	L	CONCRETE CU. YDS.	REINFORCING STEEL (LBS.)
15"	5'-2"	7'-0"	1.7	41
18"	5'-5"	8'-4"	2.2	57
21"	5'-8"	9'-8"	2.8	62
24"	5'-11"	11'-0"	3.3	69
30"	6'-5"	13'-8"	4.7	92
36"	7'-0"	18'-4"	6.5	105

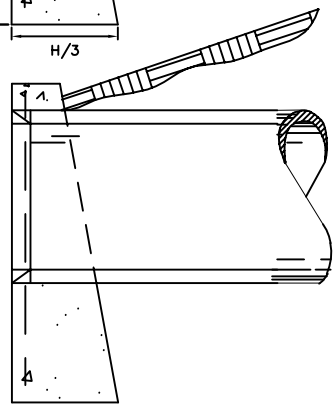
L CIRCULAR SECTIONS = 5D + 4r

L ELLIPTICAL OR PIPE-ARCH = 4R + 4r + S

H CIRCULAR SECTIONS = D + r + 44"

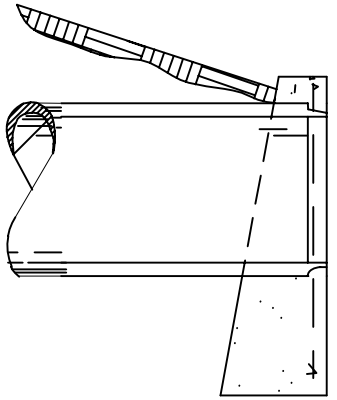
H ELLIPTICAL OR PIPE-ARCH = R + r + 44"

D = DIAMETER OF PIPE
R = RISE OF PIPE
S = SPAN OF PIPE
r = THICKNESS OF BARREL
L = LENGTH OF HEADWALL
H = HEIGHT OF HEADWALL

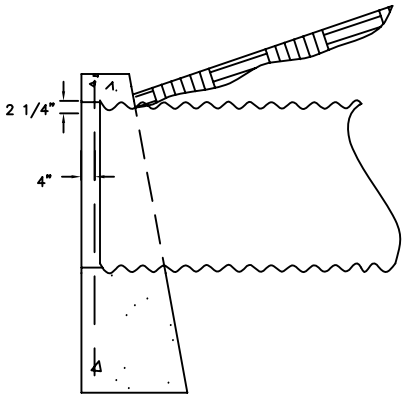


INLET END
GROOVE OR BELL UPSTREAM

RIGID PIPE

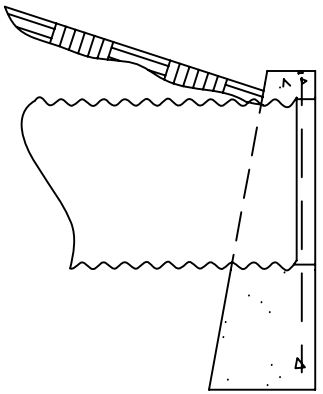


OUTLET END
TONGUE OR SPIGOT DOWNSTREAM



INLET END

CORRUGATED PIPE



OUTLET END

HEADWALLS HW-1

STD0017