



SECTION A-A

INLET END
GROOVE OR BELL
UPSTREAM

OUTLET END
TONGUE OR SPIGOT
DOWNSTREAM

END TREATMENT AT ENDWALL

NOTES:

1. HEADWALL WHERE REQUIRED WILL BE PROVIDED FOR NONSKEWED CULVERTS HAVING A DIAMETER OR RISE OF 36" OR LESS.
2. REINFORCING STEEL SHALL BE #5 BAR.
3. DIMENSIONS AND QUANTITIES ARE SHOWN FOR CIRCULAR SECTIONS ONLY. CALCULATE REINFORCEMENT FOR ELLIPTICAL CONCRETE OR CORRUGATED PIPE IN ACCORDANCE WITH EQUATIONS LISTED BELOW.
4. CONCRETE SHALL BE CLASS "C".
5. FOUNDATION: INCREASE WIDTH OF BASE WHERE SOIL BORINGS INDICATE A BEARING CAPACITY LESS THAN 2600 LBS. PER SQ. FT. IT WILL BE NECESSARY TO INCREASE THE WIDTH OF THE BASE.
6. WHEN SLOPES OTHER THAN 2:1 ARE USED ADJUST LENGHT "L" AND HEIGHT "H" AS REQUIRED.

DIMENSIONS			QUANTITIES*	
DIAMETER	H	L	CONCRETE CU. YD.	REINF. STEEL LBS.
8"~12"	4'-9"	5'-8"	1.3	32
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"	16'-4"	6.5	105

LEGEND

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

EQUATIONS:

L CIRCULAR SECTIONS = $5D+4t$
 L ELLIPTICAL OR PIPE ARCH = $4R+t+S$
 H CIRCULAR SECTIONS = $D+t+44"$
 H ELLIPTICAL OR PIPE ARCH = $R+t+44"$

* ONE WALL

Date: 3/14/2018

Standard Construction Drawing



Cast-In-Place Pipe Headwalls
8" to 36" Diameter

Drawing No.
STS-11