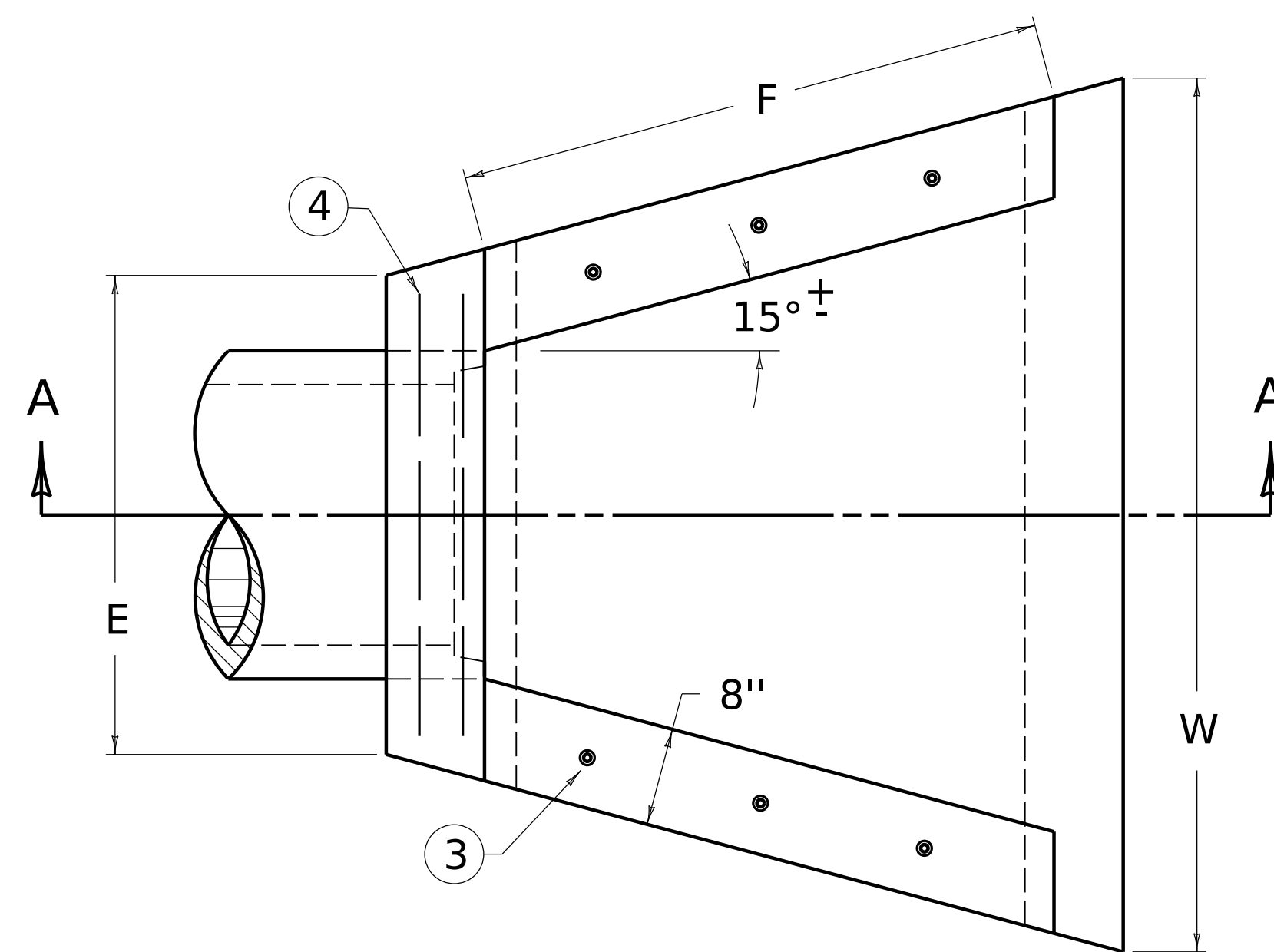
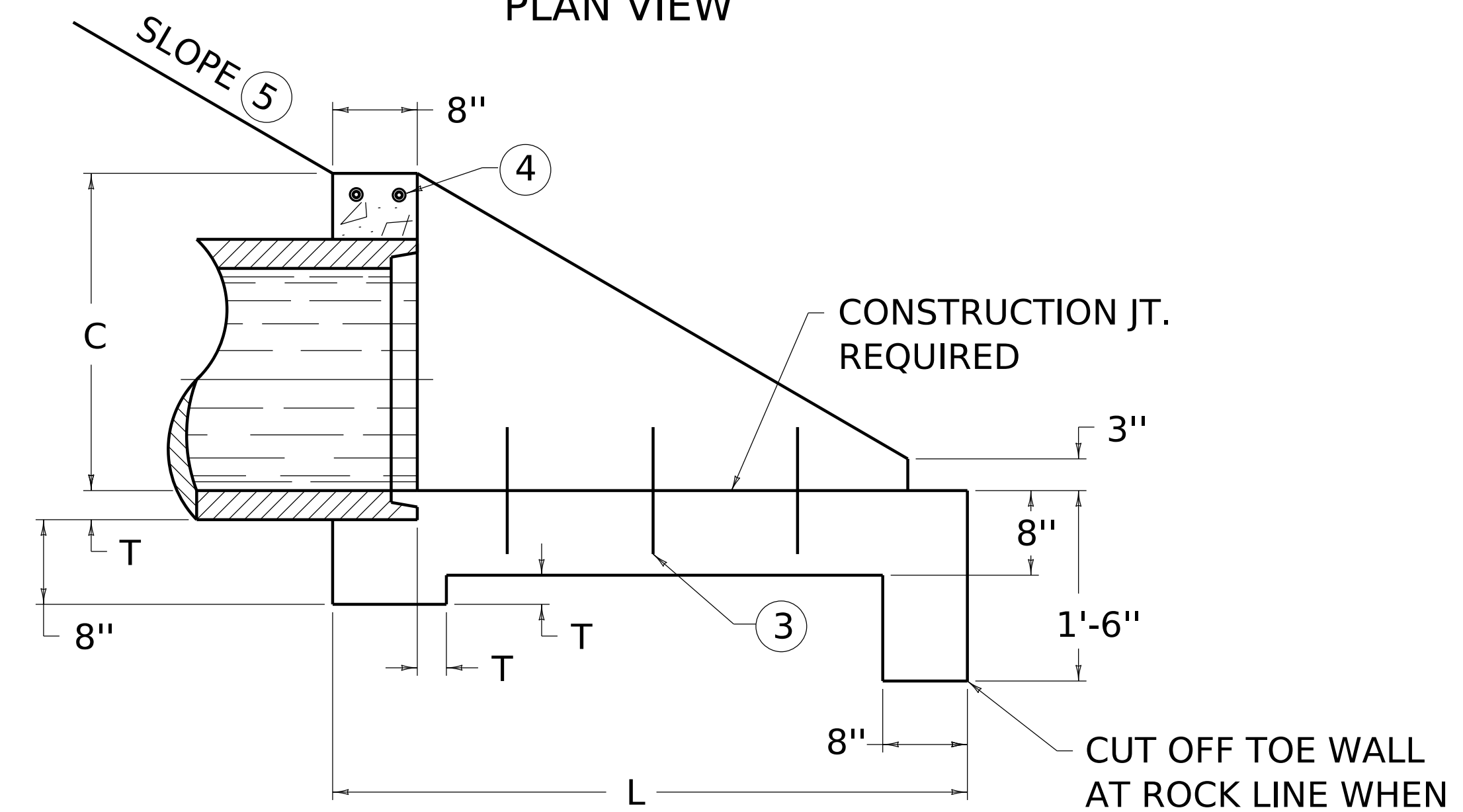


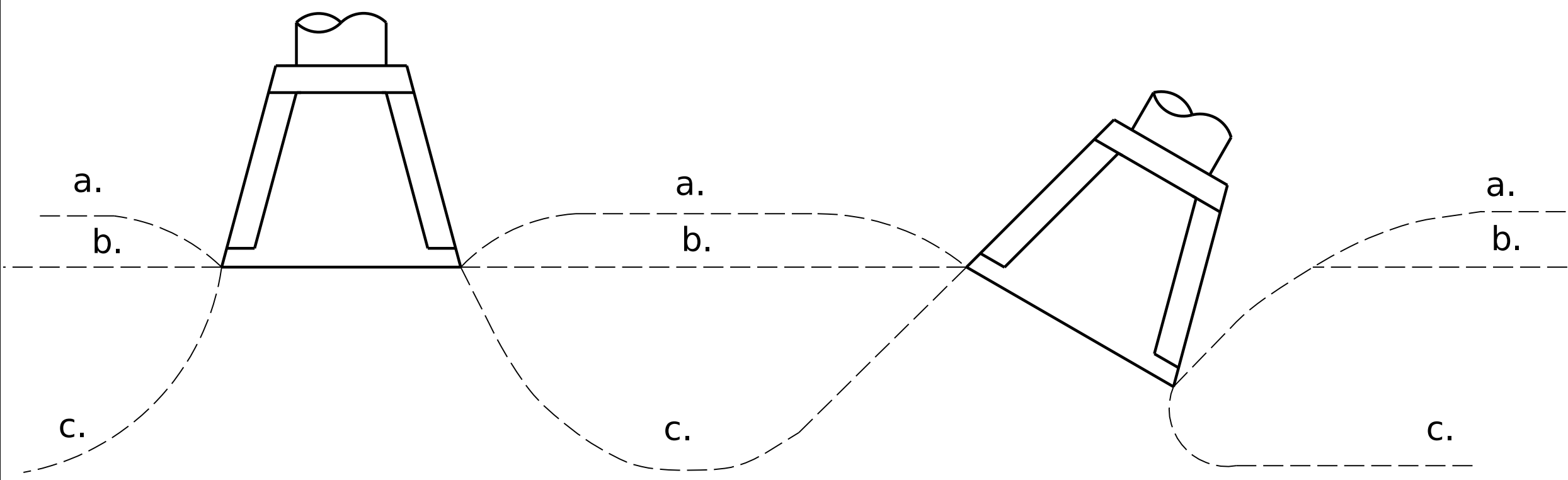
DRAWING SCALE:  
1" : 1'



PLAN VIEW



SECTION A-A

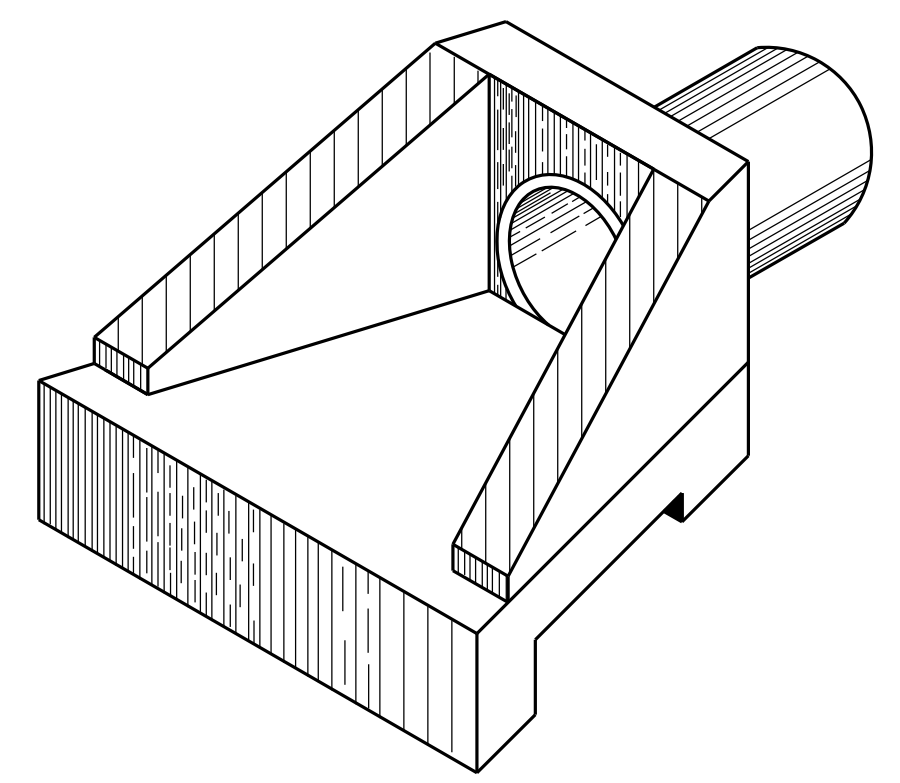


TOE OF SLOPES:  
a. STEEPER THAN 2:1  
b. 2:1  
c. FLATTER THAN 2:1

PIPE		DIMENSIONS						CLASS A CONC	REINF STEEL
DIA. OR EQUIV. DIA.	SHAPE	C	E	F	L	W	T	C. Y.	LBS.
12"	○	1'-9"	2'-6"	2'-3"	3'-6"	4'-0"	2"	0.58	7
15"	○	2'-0"	2'-9"	2'-9"	4'-0"	4'-9"	2 3/4"	0.75	
	○	1'-9"	3'-0"	2'-6"	3'-6"	4'-9"		0.68	
18"	○	2'-3"	3'-0"	3'-6"	4'-6"	5'-3"	2 1/2"	0.93	8
	○	2'-0"	3'-6"	3'-0"	4'-0"	5'-6"		0.89	
21"	○	2'-6"	3'-3"	4'-0"	5'-0"	6'-0"	2 3/4"	1.14	
	○	2'-3"	3'-0"	3'-6"	4'-6"	6'-0"		1.07	
24"	○	2'-9"	3'-6"	4'-6"	5'-6"	6'-6"	3"	1.35	8
	○	2'-6"	4'-0"	4'-0"	5'-0"	6'-9"		3 1/4"	
27"	○	3'-0"	3'-9"	5'-0"	6'-0"	7'-0"	3 1/2"		1.57
	○	2'-9"	4'-6"	4'-3"	5'-3"	7'-3"		1.51	10

NOTES

1. DIMENSIONS AND QUANTITIES ARE BASED ON CONCRETE PIPE AND WILL VARY INSIGNIFICANTLY FOR CORRUGATED METAL PIPE.
2. REINFORCING STEEL : MINIMUM GRADE 40, BARS EVENLY SPACED.
3. 6 - NO. 4 x 1'-0" DOWEL BARS.
4. 2 - NO. 4 x (E DIMENSION MINUS 4").
5. SLOPES SHALL BE WARPED TO FIT HEADWALL WHEN PIPE IS SKEWED AND/OR NORMAL SLOPE VARIES FROM 2:1.
6. VOLUME DISPLACED BY PIPE COMPUTED USING INSIDE DIAMETER OF PIPE.
7. WING ANGLES AND/OR DIMENSIONS MAY BE ALTERED DURING CONSTRUCTION TO ACCOMMODATE FLOW OF WATER.
8. APRON BETWEEN WINGS SHALL BE SLOPED IN DIRECTION OF FLOW EQUAL TO SLOPE OF PIPE. FRONT FACE OF HEADWALL SHALL REMAIN VERTICAL.
9. HEADWALLS ARE FOR CIRCULAR, ARCH, AND HORIZONTAL ELLIPTICAL 12"- 27" EQUIVALENT PIPE SIZES. SEE CURRENT STD. DWG. RDI-016, FOR NON-CIRCULAR PIPE EQUIVALENT SIZES.



ISOMETRIC VIEW

**KENTUCKY  
DEPARTMENT OF HIGHWAYS**

*SLOPED & FLARED  
HEADWALLS FOR  
12" TO 27" PIPE*

STANDARD DRAWING NO. RDH-020-03

SUBMITTED \_\_\_\_\_ DIRECTOR DIVISION OF DESIGN \_\_\_\_\_ DATE \_\_\_\_\_

APPROVED \_\_\_\_\_ STATE HIGHWAY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_