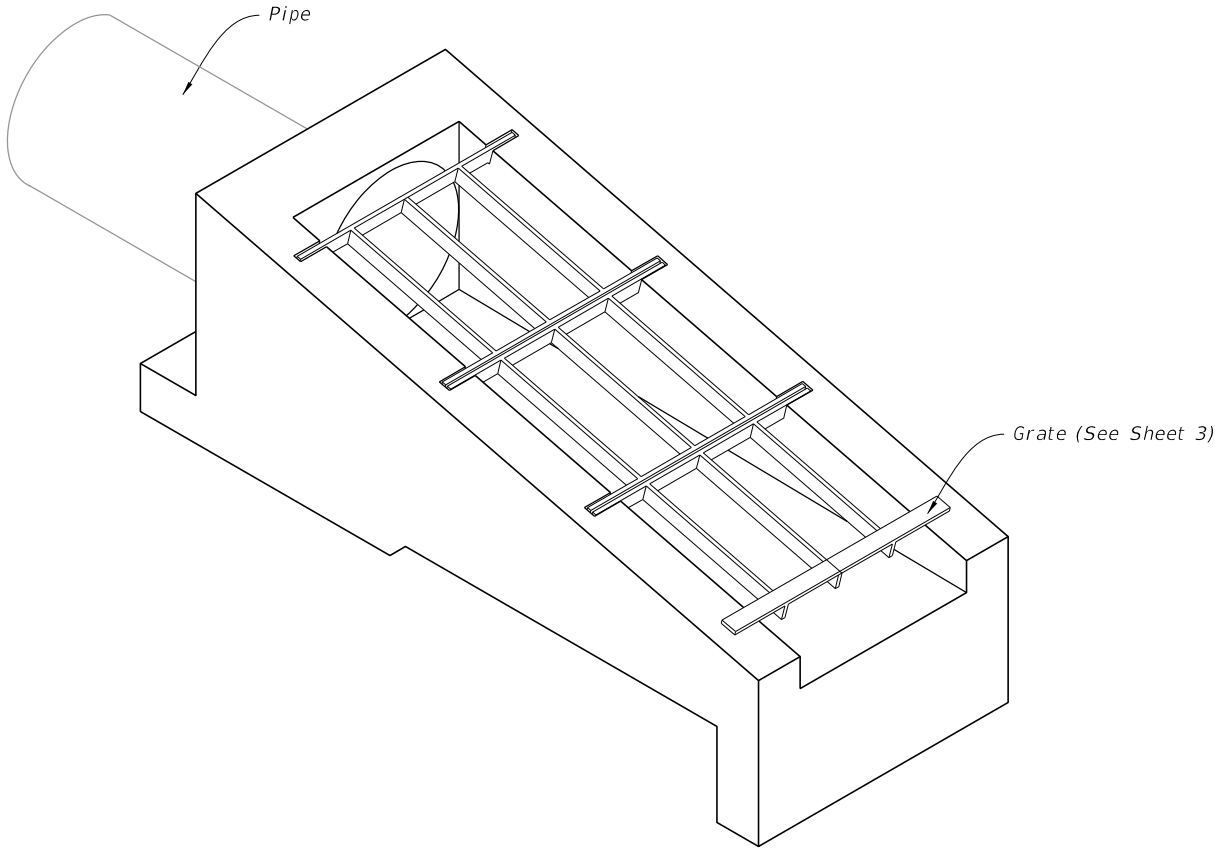


GENERAL NOTES:

1. Use Class II concrete.
2. Reinforcing steel: All bars are size #4. Spacings shown are center to center. Laps to be 1'-5" minimum. Cover is 2" except as noted. Square welded wire fabric (two cages max.) having an equivalent cross sectional area (0.20 sq. in.) may be substituted for bar reinforcement.
3. Endwall may be cast in place or precast concrete. Construct precast units to dimensions shown, or as shown in approved shop drawings. Use Index 425-001 for opening and grouting details.
4. Quantities shown are for estimating purposes only.

TABLE OF CONTENTS:	
Sheet	Description
1	General Notes and Contents
2	Dimensional and Reinforcing Details
3	Type 1 and Type 2 Grate Details



U-TYPE CONCRETE ENDWALLS 15" TO 30" PIPES WITH GRATES
(24" Pipe Shown)

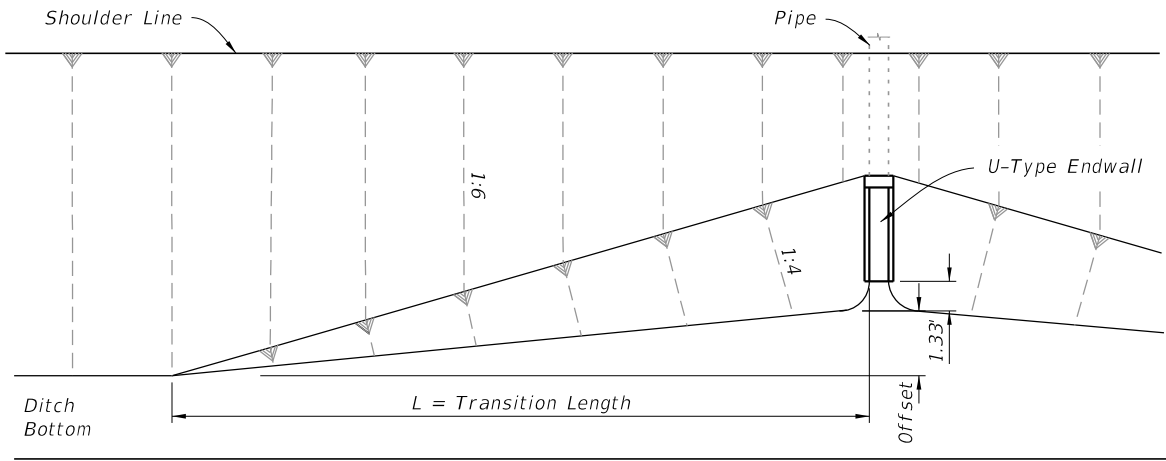
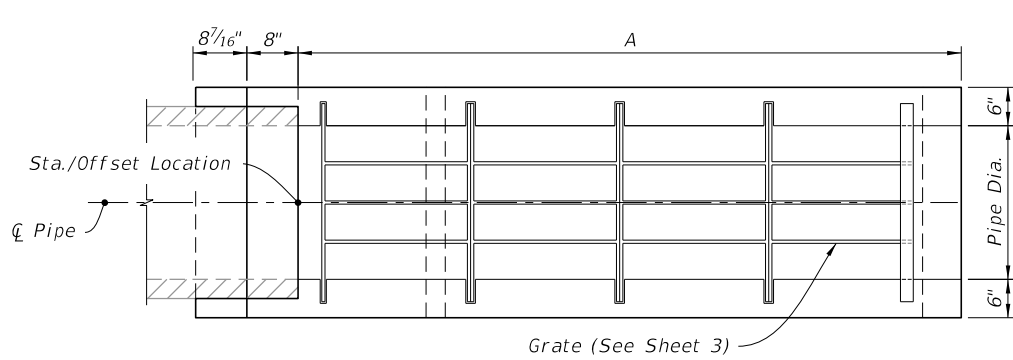


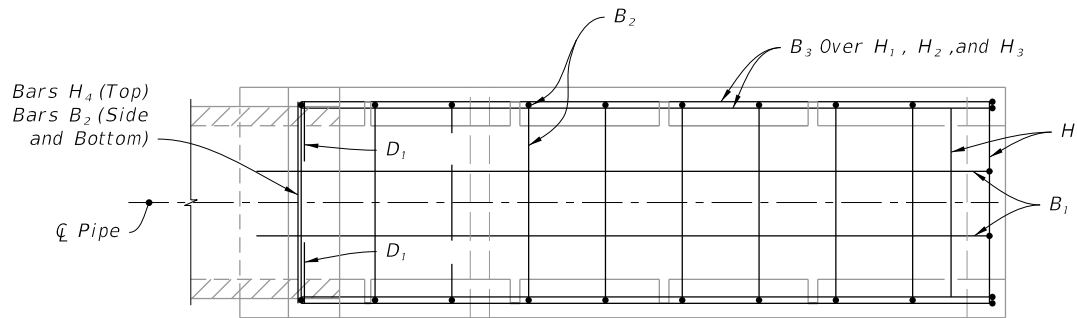
TABLE 1 SLOPE TRANSITIONS			
Slope	Pipe Dia.	Offset (Ft.)	L (Ft.)
1:4	15"	4.2	42
	18"	4.8	48
	24"	5.8	58
	30"	6.9	69

FRONT SLOPE TRANSITION AT ENDWALL

10/12/2026 12:58:02 PM

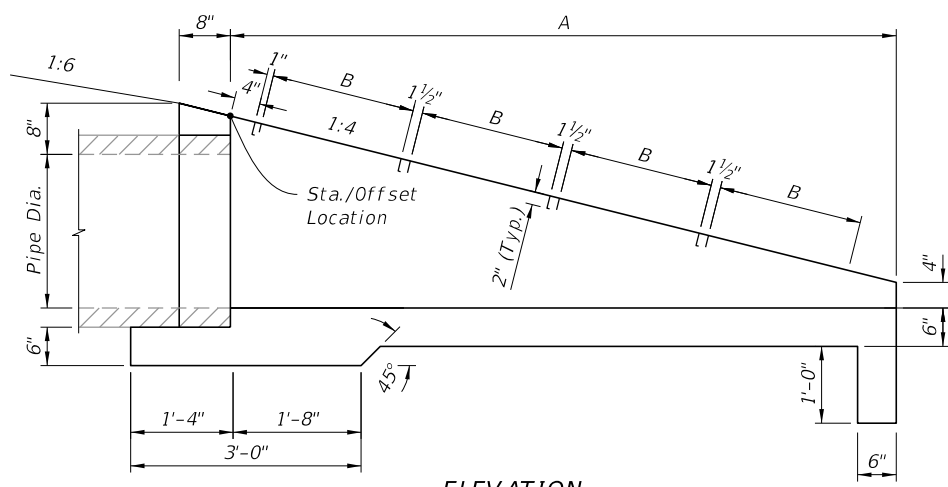


PLAN

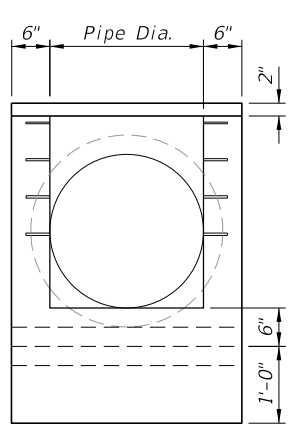


PLAN

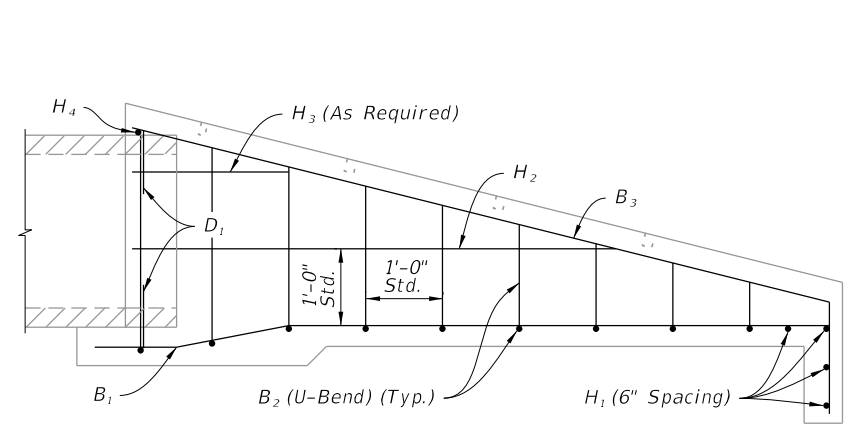
LEGEND:
H = Horizontal Bars
V = Vertical Bars
B = Bent Bars
D = Dowels or Diagonal Bars



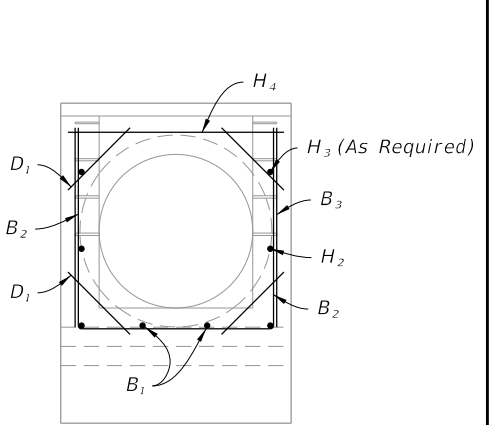
ELEVATION



END VIEW



ELEVATION



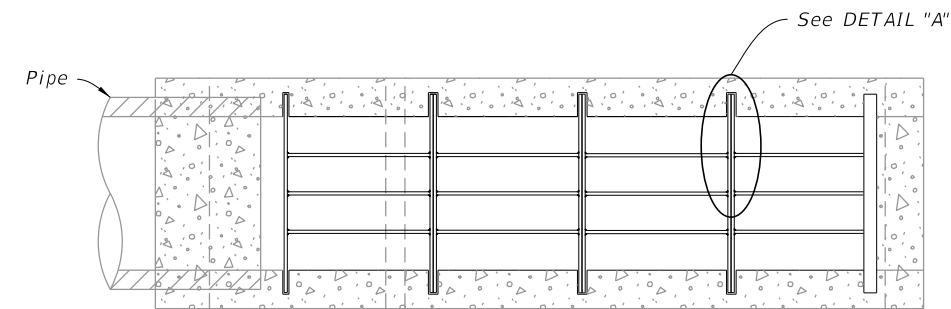
END VIEW

DIMENSIONAL DETAIL

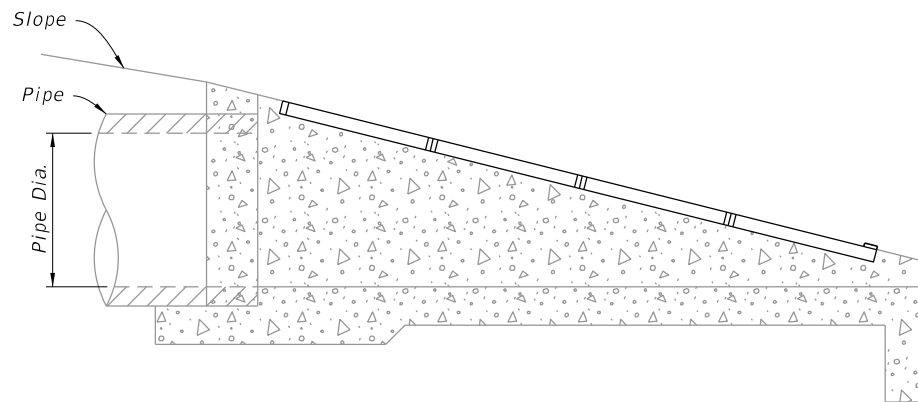
REINFORCING DETAIL

TABLE 2 DIMENSIONS AND QUANTITIES					
Slope	Pipe Dia.	A (Ft.)	B (Ft.)	Class II Conc. (CY)	Reinf. Steel (lbs.)
1:4	15"	5.67	2.38	0.85	56
	18"	6.67	1.875	1.01	73
	24"	8.67	1.875	1.65	97
	30"	10.67	1.875	2.33	129

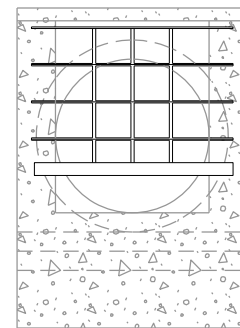
DIMENSIONAL AND REINFORCING DETAILS



PLAN



ELEVATION



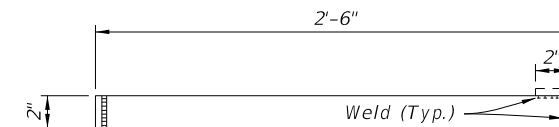
END VIEW

NOTES:

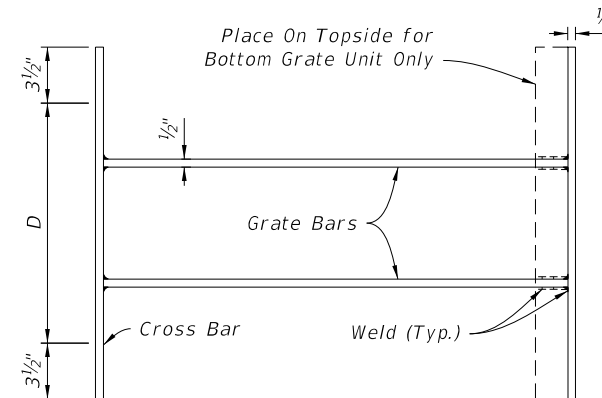
1. Install grate bars evenly spaced across dimension D.
2. All bars and grate bars are $\frac{1}{2}$ " x 2".

**TABLE 3
NUMBER OF GRATE BARS AND GRATES REQUIRED**

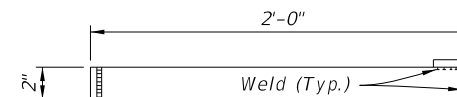
Pipe Dia. D	Grate Bars Req'd.		Grate Wt. (lbs.)	Grate Req'd.		Total Grate Wt. (lbs.)
	Type No. 1	Type No. 2		Type No. 1	Type No. 2	
15"	2	0	28.93	2	0	57.86
18"	0	3	33.69	0	3	101.08
24"	0	4	43.63	0	4	174.52
30"	0	5	53.55	0	5	267.75



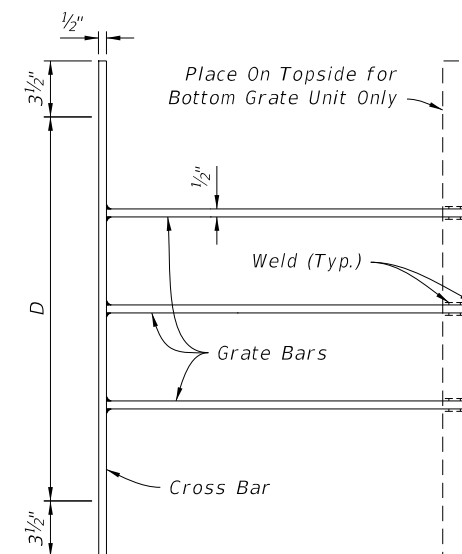
SIDE VIEW



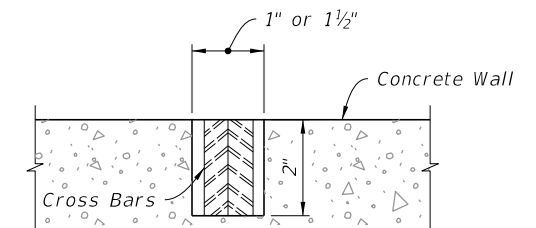
TOP VIEW
TYPE 1



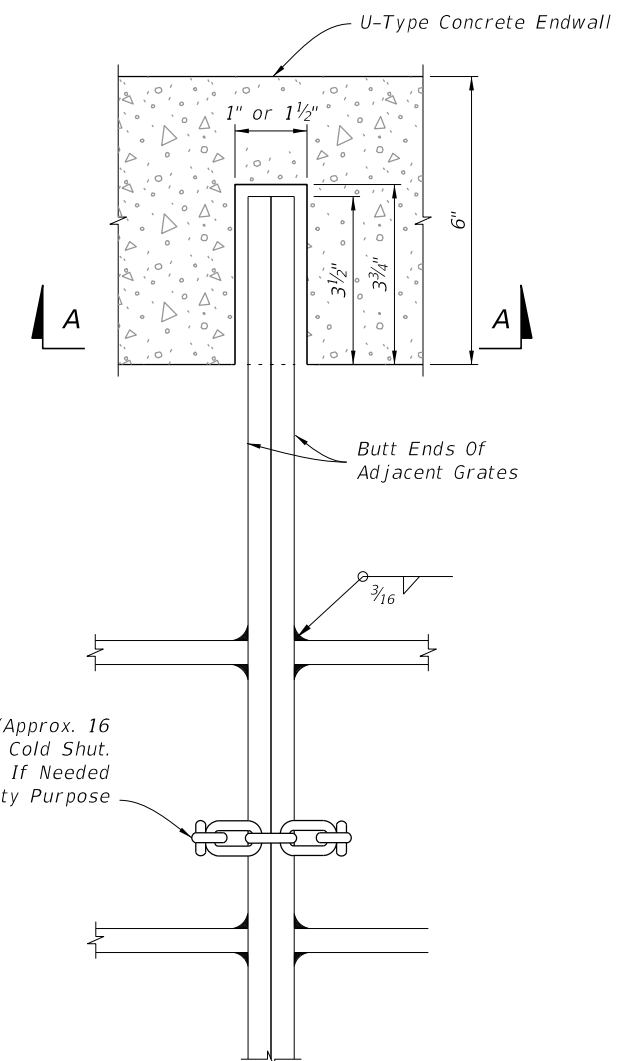
SIDE VIEW



TOP VIEW
TYPE 2



SECTION A-A



GRATE, SEAT, WELD & CHAIN DETAIL

TYPE 1 AND TYPE 2 GRATE DETAILS

DETAIL "A"

TYPE 1 AND TYPE 2 GRATE DETAILS