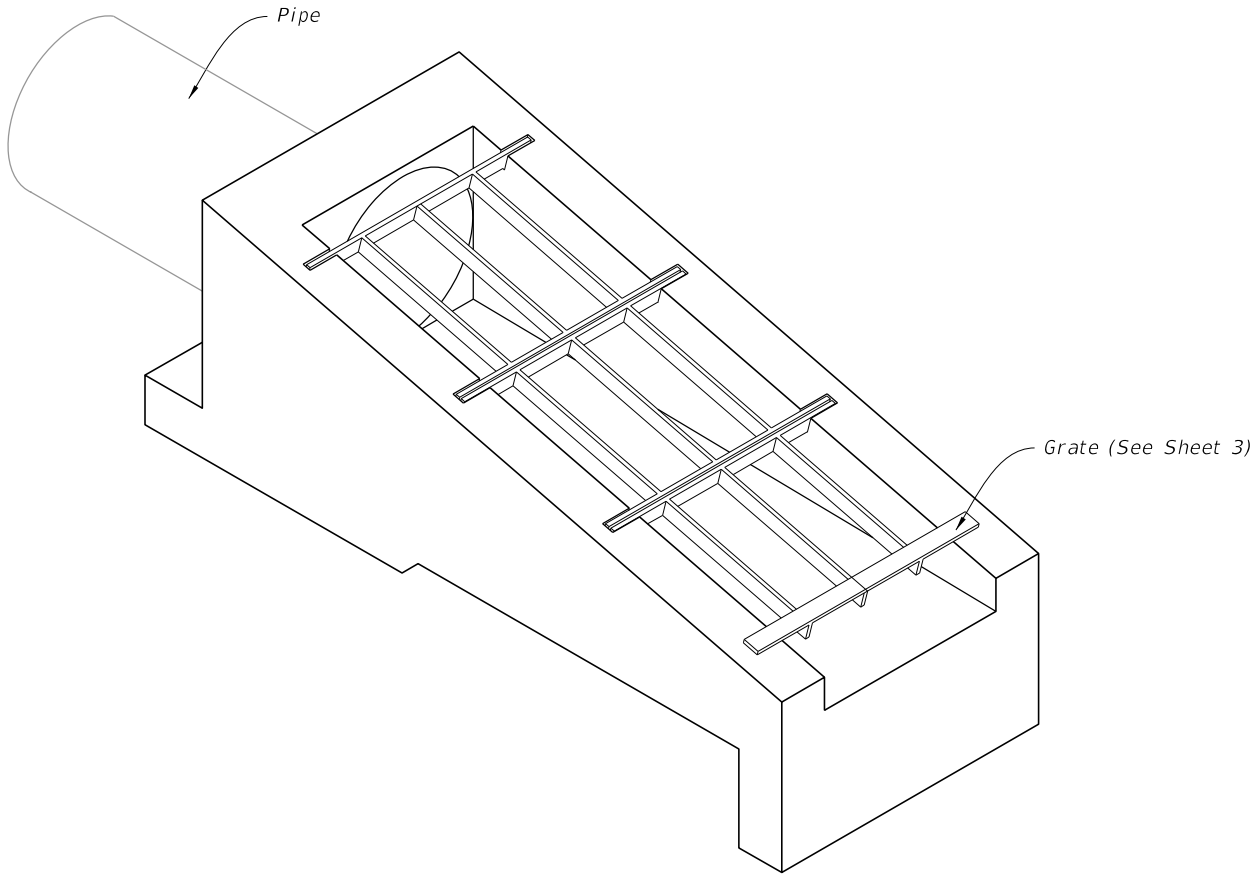


GENERAL NOTES:

- 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)

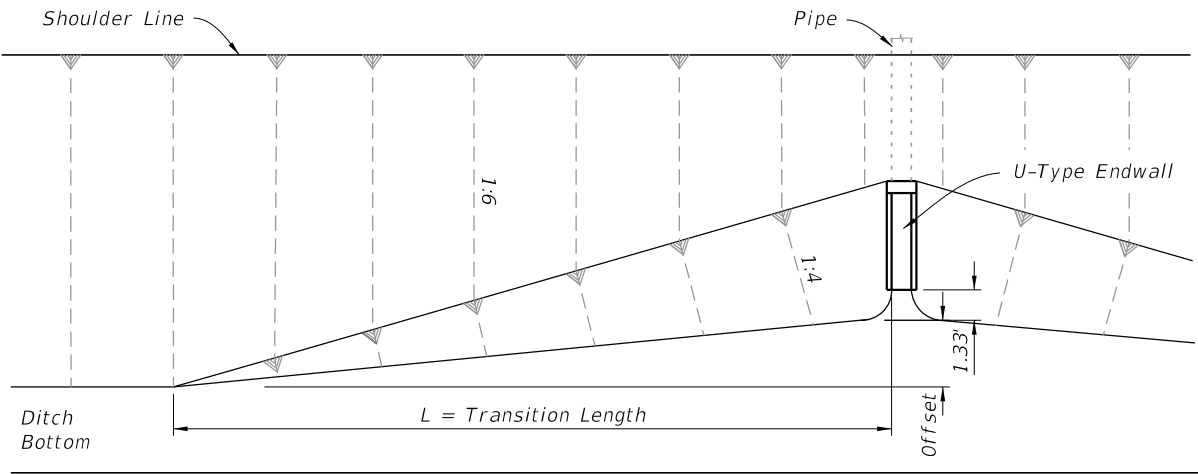
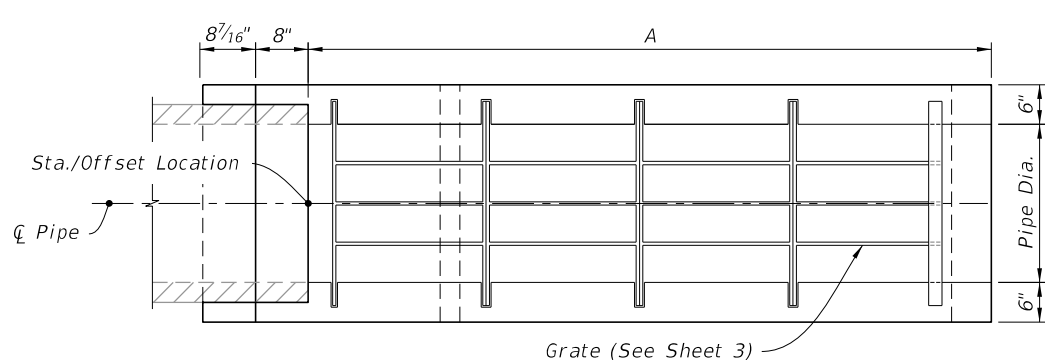


TABLE 1 SLOPE TRANSITIONS			
Slope 1:4	Pipe Dia.	Offset (Ft.)	L (Ft.)
	15"	4.2	42
	18"	4.8	48
	24"	5.8	58
	30"	6.9	69

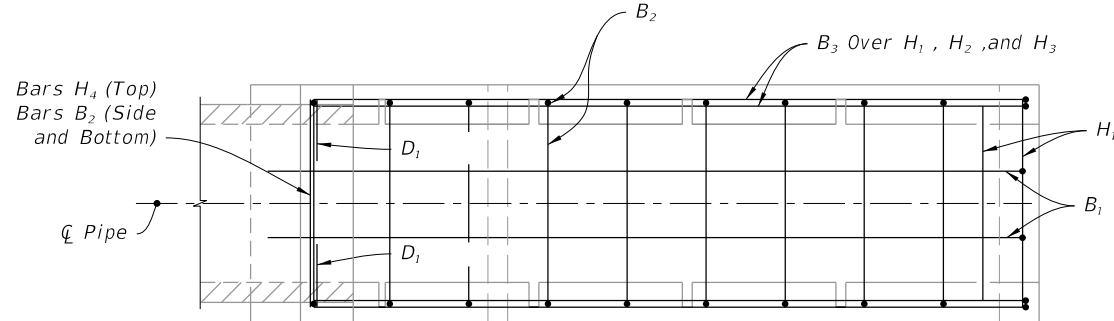
FRONT SLOPE TRANSITION AT ENDWALL

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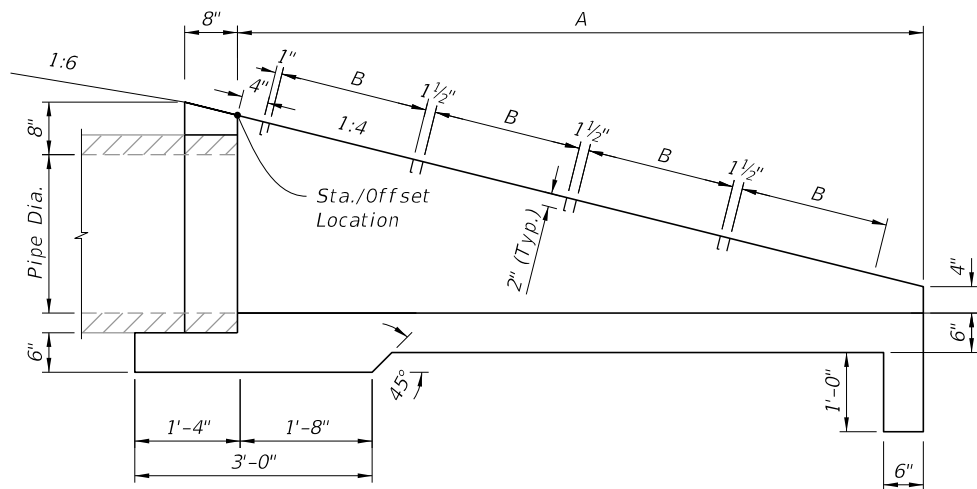


PLAN

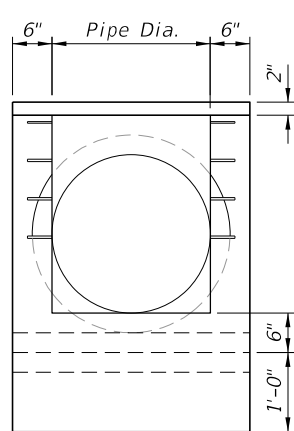


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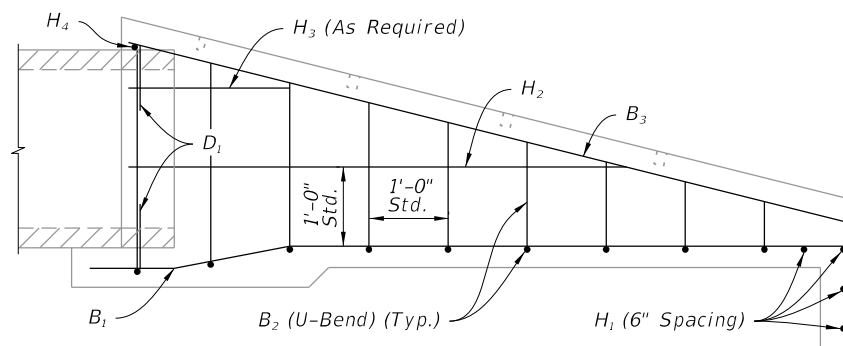
LEGEND:
H = Horizontal Bars
V = Vertical Bars
B = Bent Bars
D = Dowels or Diagonal Bars



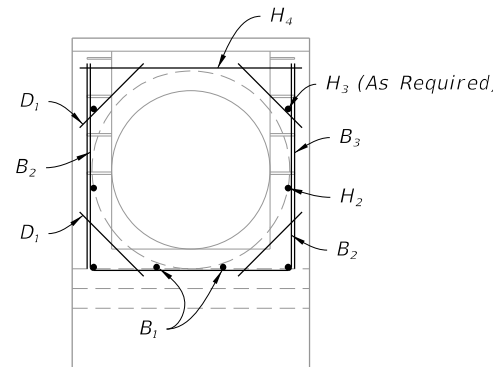
ELEVATION



END VIEW



ELEVATION



END VIEW

DIMENSIONAL DETAIL

REINFORCING DETAIL

TABLE 2
DIMENSIONS AND QUANTITIES

	Pipe Dia.	A (Ft.)	B (Ft)	Class II Conc. (CY)	Reinf. Steel (lbs.)
Slope 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

LAST
REVISION
11/01/21

REVISION

DESCRIPTION:

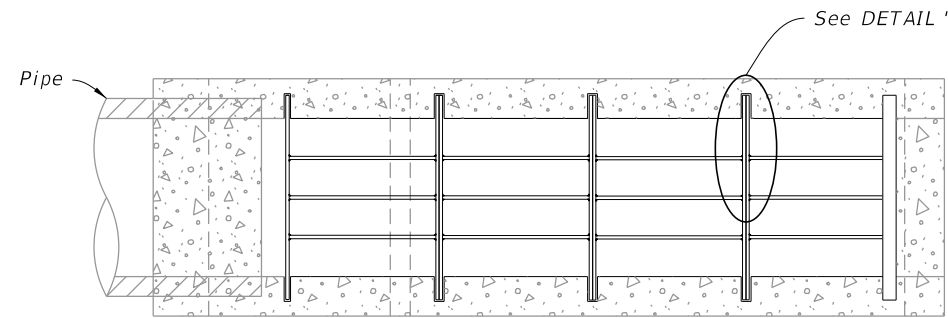


FY 2026-27
STANDARD PLANS

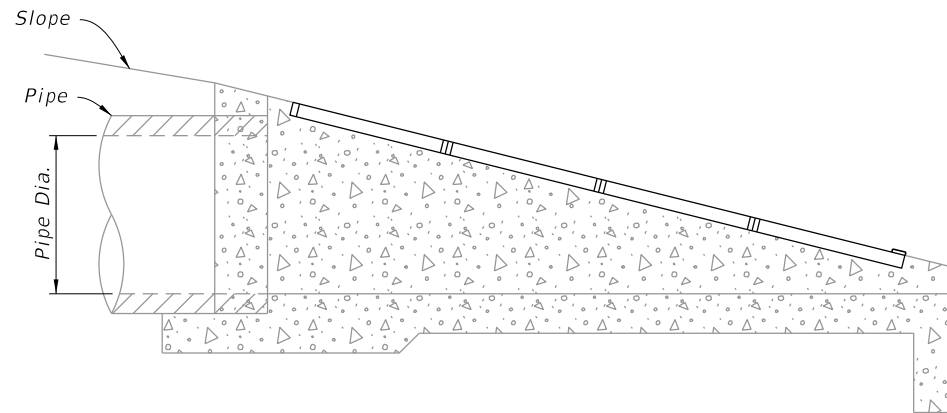
U-TYPE CONCRETE ENDWALLS
15" TO 30" PIPES WITH GRATES

INDEX
430-010

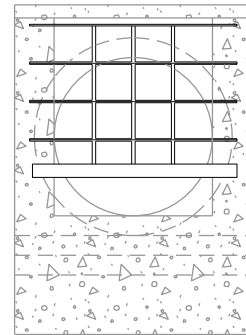
SHEET
2 of 3



PLAN



ELEVATION

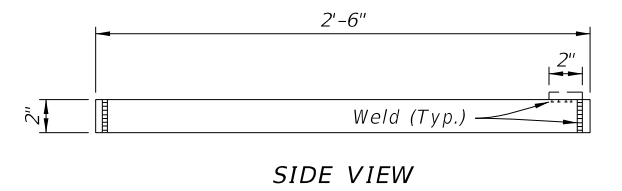


END VIEW

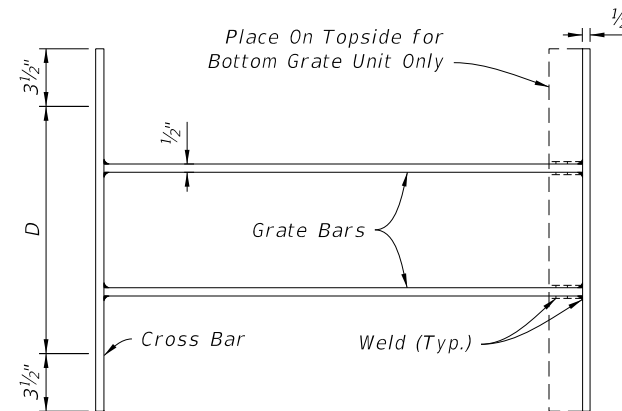
NOTES:

1. Install grate bars evenly spaced across dimension D.
2. All bars and grate bars are 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

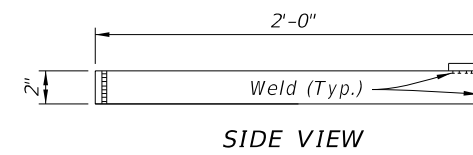


SIDE VIEW

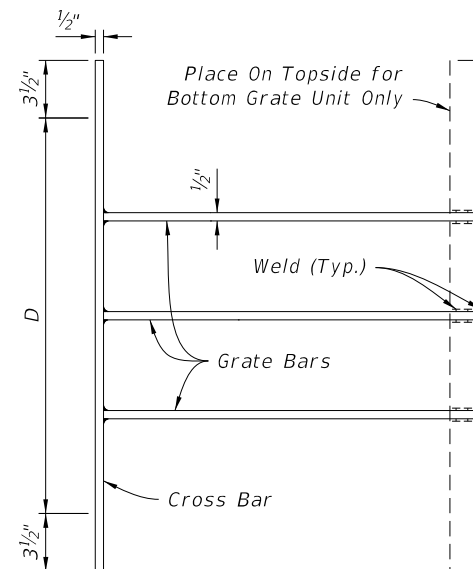


TOP VIEW

TYPE 1

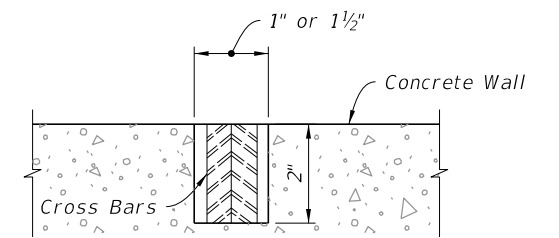


SIDE VIEW

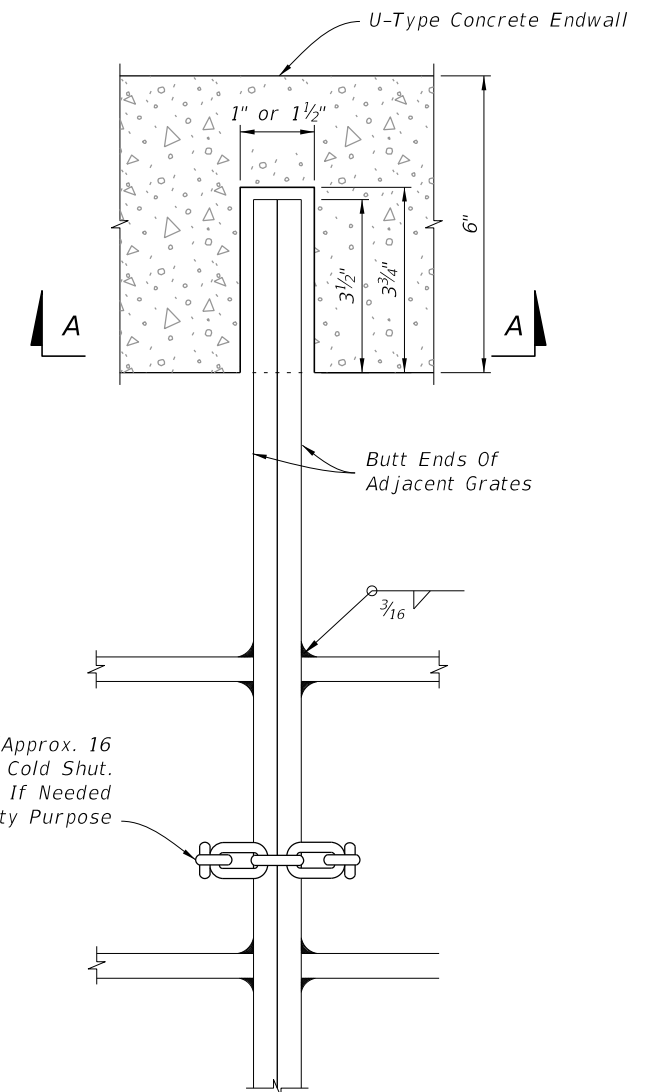


TOP VIEW

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

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