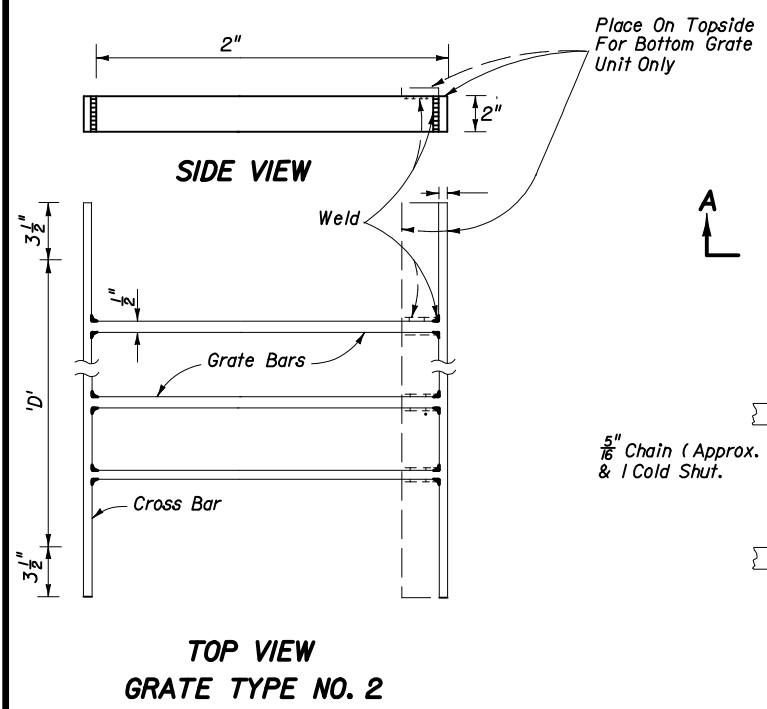
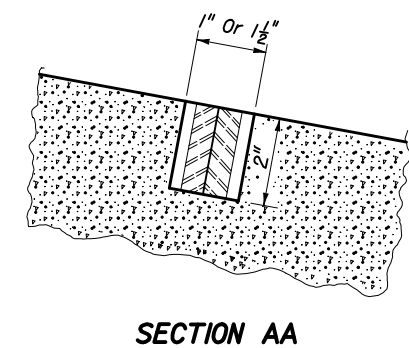


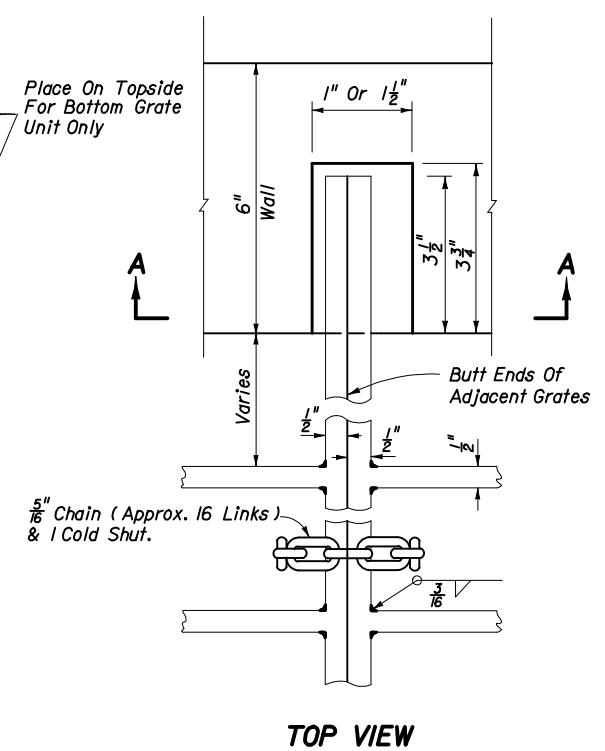
Pipe Size	Grate Bars Req'd.	Grate LB.
15"	2	28.93

Bars to be evenly spaced across dimension 'D'.
All bars 1/2" x 2".

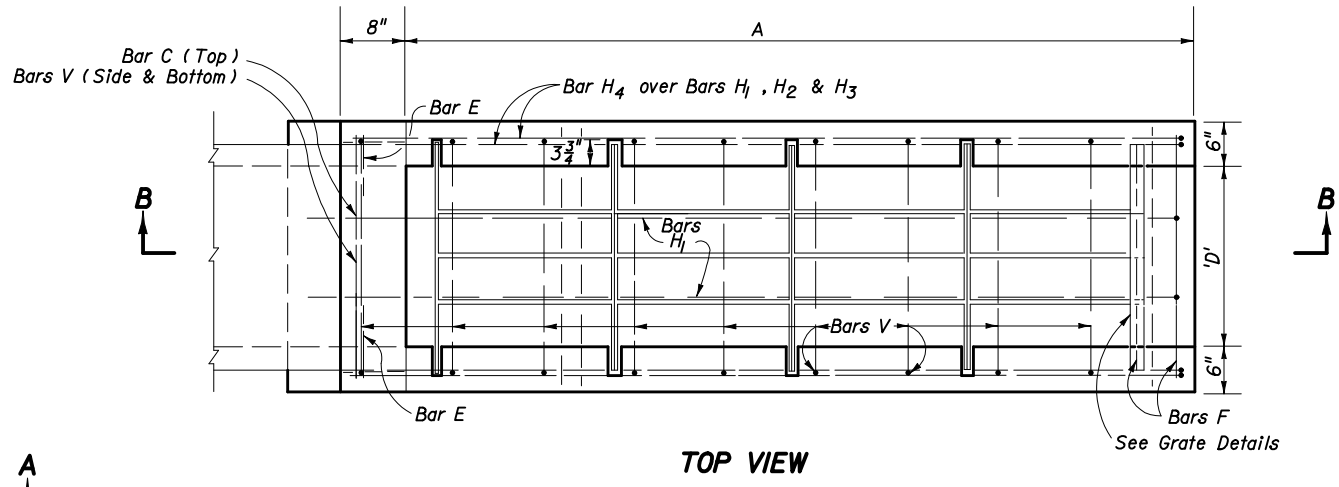
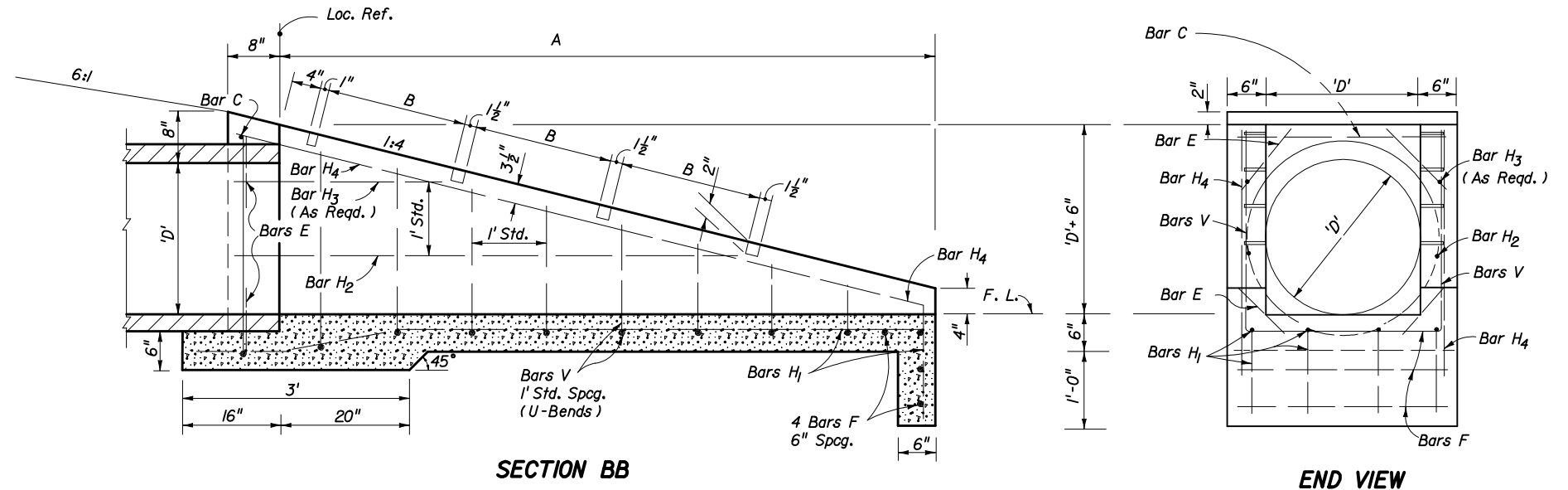


Pipe Size	Grate Bars Req'd.	Grate LB.
18"	3	33.69
24"	4	43.63
30"	5	53.55

Bars to be evenly spaced across dimension 'D'.
All bars 1/2" x 2".



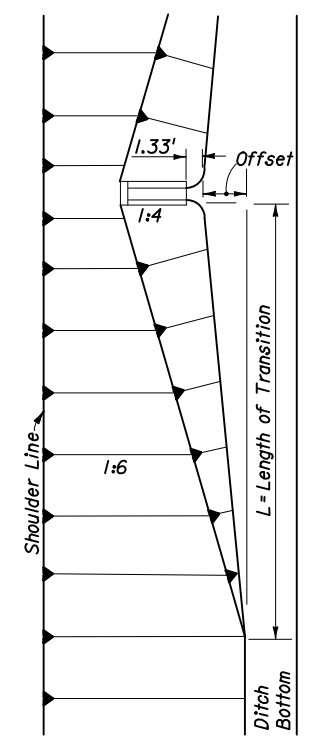
GRATE, SEAT, WELD & CHAIN DETAIL



Slope	Pipe Size D	TABLE OF DIMENSIONS AND QUANTITIES		Conc. Class I (CY)	Reinf. Steel (Lbs.)	Number Of Grates Req'd		Total Grate Wt. (Lbs.)	Sodding (SY)	Slope Transition	
		A	B			Type No. 1	Type No. 2			Offset	L
4:1	15"	5.67'	2.38'	0.85	56	2	0	57.86	15	4.2'	42'
	18"	6.67'	1.875'	1.01	73	0	3	101.08	16	4.8'	48'
	24"	8.67'	1.875'	1.65	97	0	4	174.52	19	5.8'	58'
	30"	10.67'	1.875'	2.33	129	0	5	267.75	21	6.9'	69'

GENERAL NOTES

- This endwall is to be used only in the clear zone for the drainage of medians and other areas having low design velocities and negligible debris. Grates exposed to salt water shall be designated in the plan as Alternate G.
- Reinforcing steel: All bars are size #4. Spacings shown are center to center. Laps to be 12" minimum. Clearance 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.
- Grates shall be ASTM A242/A242M, A572/A572M or ASTM A588/A588M, Grade 50 steel, and galvanized in accordance with Section 962-7 of the Standard Specifications.
- Endwall to be paid for under the contract unit price for U-Endwall With Grate, Each. Payment shall include cost of concrete, reinforcing steel, grate, and accessories. Quantities shown are for estimating purposes only.
- Sod slopes 5' each side and above endwall. Sodding to be paid for under contract unit price for sodding.
- Precasting of this endwall will be permitted. Precast units shall conform to the dimensions shown or in accordance with approved shop drawings. Request for shop drawing approval shall be directed to the State Drainage Engineer. Use Index No. 201 for opening and grouting details.
- Concrete meeting the requirements of ASTM C 478 (4,000 P.S.I.) may be used in lieu of Class I concrete for precast units manufactured in plants which are under the Standard Operating Procedures for the inspection of precast drainage products.



FRONT SLOPE TRANSITION AT ENDWALL

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

U-TYPE CONCRETE ENDWALLS WITH GRATES

15" TO 30" PIPE

Names	Dates	Approved By
Designed By: EGR	06/77	S. A. McHenry State Drainage Engineer
Drawn By: HKH	06/77	
Checked By: JVG	06/77	

Revision	Sheet No.	Index No.
00	1 of 1	260