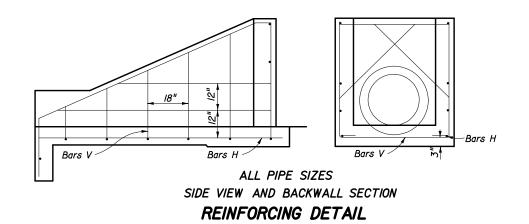


DIMENSIONAL DETAILS



DIMENSIONAL DETAILS

	DIMENSIONS AND QUANTITIES FOR ONE U-ENDWALL														
	Pipe	Size								X Baffle		Y Baffle R	einf. Steel	Concrete	Reinf.
	D	Area Sq. Ft.	L	н	w	s	В	С	P	a	R	Bar M	Bar N	Class I Cu. Yd.	Steel Lbs.
	<i>15"</i>	1.23	5'-9"	2'-3½"	3'-7"	2'-3"	/'-3"	2'-3"	4"	4"	4"	2 #4	l #4	1.61	72
Ī	18"	1.77	6'-6"	2'-5"	3'-10"	2'-6"	l'-6"	2'-6"	4"	4"	5"	3 #4	2 #4	1.89	86
	24"	3.14	8'-0"	2'-8"	4'-4"	3'-0"	2'-0"	3'-0"	5"	5"	6"	4 #4	3 #4	2.52	108
	30"	4.9/	9'-6"	2'-11"	4'-10"	3'-6"	2'-6"	3'-6"	5"	5"	7"	4 #4	4 #4	3.34	131

Bars V Bars H Bars V M ALL PIPE SIZES

SIDE VIEW AND BACKWALL SECTION
REINFORCING DETAIL

DIMENS	IONS AN	ID QU	ANTIT	IES FO	OR ONE	U-ENDWALL
Pipe	Size				Concrete	Reinf.
D	Area Sq. Ft.	L	н	W	Class I Cu. Yd.	Steel Lbs.
15"	1.23	3'-3"	/'- 7½"	3'-7"	0.89	39
18"	1.77	3'-9"	/'- 10 ½"	3'-10"	1.05	43
24"	3.14	4'-9"	2'-4 <u>1</u> "	4'-4"	1.40	55
30"	4.91	5'-9"	2' - 10 ½"	4'-10"	1.88	64

WITH BAFFLES WITHOUT BAFFLES

ENDWALLS FOR 2: 1 SLOPES

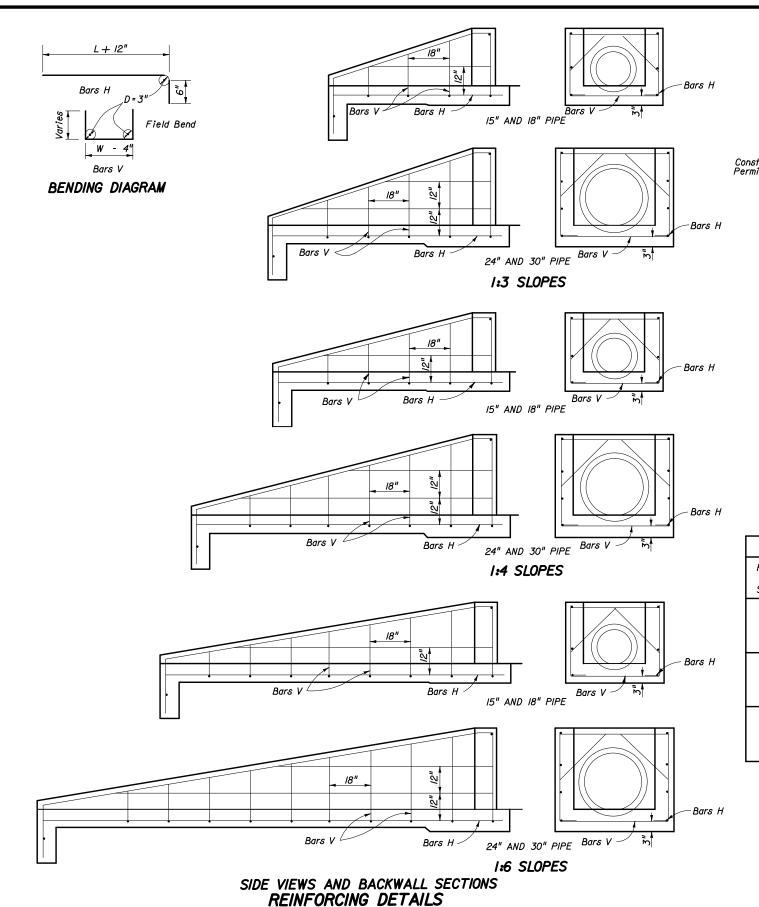
GENERAL NOTES

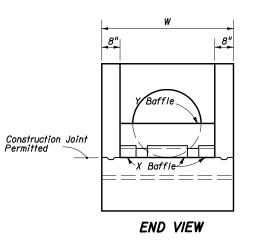
- I. Baffles to be constructed only when called for in plans.
- 2. When steel grating is required on endwall see Sheet 3 of 3 for details.
- 3. All reinforcing No. 4 bars with 2" clearance except as noted.
- 4. All angles, channels and bars shall be ASTM A242/A242M, A572/A572M or A588/A588M Grade 50 steel, when designated Alternate G in the plans galvanized in accordance with Section 962-7 of the Standard Specifications.
- 5. Channel section C 3 x 6 may be substituted for C 4 x 5.4 channel.
- 6. 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. 20I for opening and grouting details.
- 7. Concrete meeting the requirements of ASTM C-478 (4000 psi) may be used in lieu of Class I concrete in precast units manufactured in plants which are under the Standard Operating Procedures for the inspection of precast drainage products.
- 8. Sodding shall be in accordance with Index No. 281, and paid for under the contract unit price for Sodding, SY.
- 9. Endwall to be paid for under the contract unit price for Class I Concrete (Endwalls), CY and Reinforcing Steel (Roadway), LB. Cost of grates to be paid for under the contract unit price for Endwall Grate, LB, plan quantity. Cost of galvanized bolts and nuts to be included in the bid price for the grate.

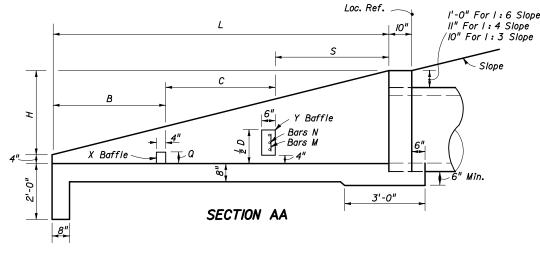
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

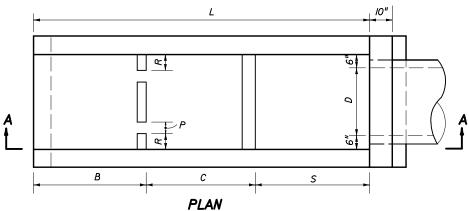
U-TYPE CONCRETE ENDWALLS
BAFFLES AND GRATE OPTIONAL
15" TO 30" PIPE

	Names	Dates	Approve	d By	11 1	M l
Designed By				<i>A</i> ↓ State Dr	ainage	Engineer
Drawn By	dds	09/85	Revision	She	et No.	Index No.
Checked By			00	1 01	· 3	<i>261</i>









DIMENSIONAL DETAILS

		DIMENS	IONS	AND	QUANT	TITIES	FOR	ONE	U-ENDW	'ALL
Rate Of	Pipe Size Area					Baffle Locations (When Required)			Concrete Class I	Reinf. Steel
Slope	D	Sq. Ft.	L	Н	W	S	В	С	Cu. Yd.	Lbs.
	15"	1.23	5'-3"	l'-9"	3'-7"	l'-9"	l'-9"	l'-9"	1.19	5/
1:3	18"	1.77	6'-0"	2'-0"	3'-10"	2'-0"	2'-0"	2'-0"	1.42	56
7.5	24"	3.14	7'-6"	2'-6"	4'-4"	2'-6"	2'-6"	2'-6"	1.94	77
	30"	4.9/	9'-0"	3'-0"	4'-10"	3'-0"	3'-0"	3'-0"	2.54	96
	15"	1.23	7'-4"	1'-10"	3'-7"	2'-6"	2'-6"	2'-4"	1.54	64
1:4	18"	1.77	8'-4"	2'-1"	3'-10"	2'-10"	2'-10"	2'-8"	1.84	71
1.7	24"	3.14	10'-4"	2'-7"	4'-4"	3'-6"	3'-6"	3'-4"	2.53	92
	30"	4.91	12'-4"	3'-/"	4'-10"	4'-2"	4'-2"	4'-0"	3.34	124
	15"	1.23	II'-6"	/'-//"	3'-7"	3'-10"	3'-10"	3'-10"	2.19	89
1:6	18"	1.77	13'-0"	2'-2"	3'-10"	4'-4"	4'-4"	4'-4"	2.63	103
,	24"	3.14	16'-0"	2'-8"	4'-4"	5'- 4 "	5'-4"	5'-4"	3.59	143
	30"	4.91	19'-0"	3'-2"	4'-10"	6'-4"	6'-4"	6'-4"	4.81	180

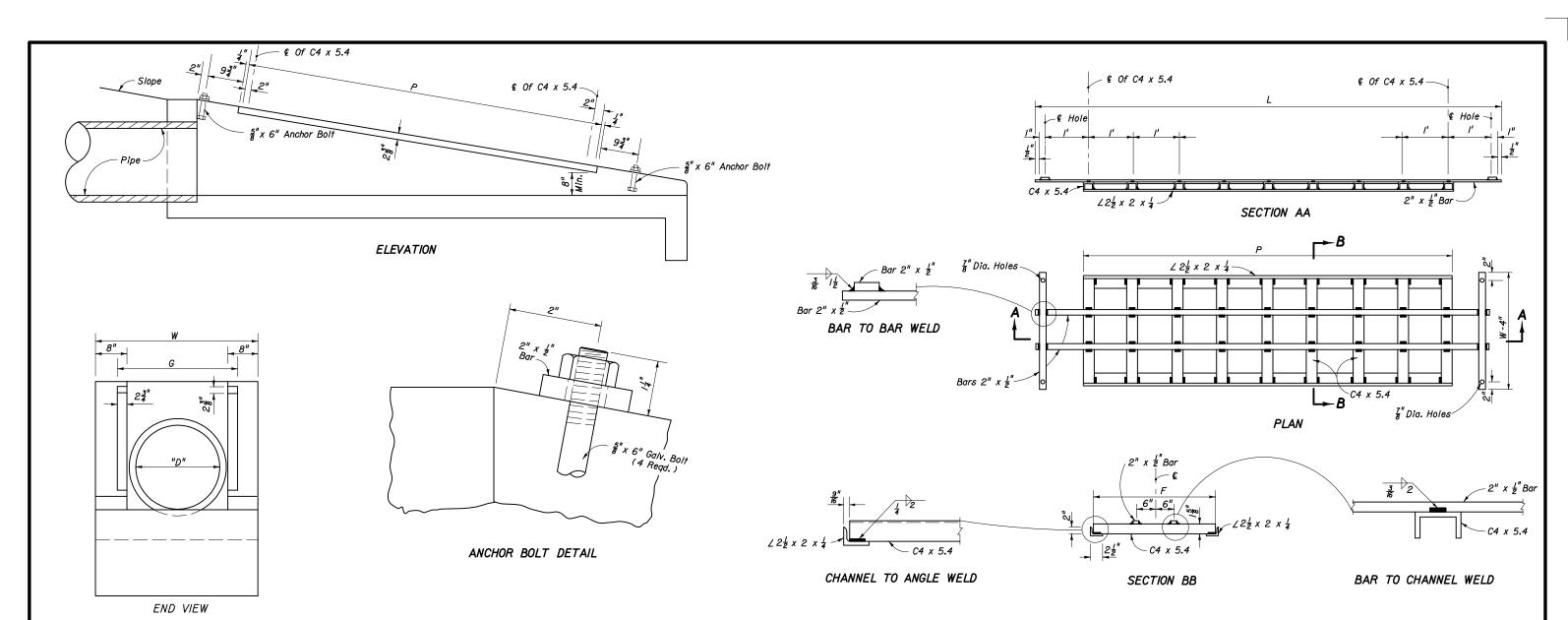
	DIM	ENSION	IS AN	D QUAN	TITIES	FOR BAF	FFLES
Pipe		X Baffle				Concrete	Reinf.
Size	P	Q	R		Reinf. Steel		Steel
D	Width	Height	Length		Bar N	Cu. Yd.	Lbs.
/5"	4"	4"	4"	2-#4	1-#4		4
18"	4"	4"	5"	3-# <i>4</i>	2-# 4	0.10	8
24"	5"	5"	6"	4-#4	3-#4	0.70	12
30"	5"	5"	7"	4-# 4	4-#4		16

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

U-TYPE CONCRETE ENDWALLS
BAFFLES AND GRATE OPTIONAL
15" TO 30" PIPE

	Names	Dates	Approve	d By	11	W P
Designed By				<i>A↓</i> State Dr	ainage	Chemose Engineer
Drawn By	dds	9/85	Revision	She	et No.	Index No.
Checked By			00	20	of 3	<i>261</i>

ENDWALLS WITH AND WITHOUT BAFFLES FOR 1:3, 1:4 AND 1:6 SLOPES



MOUNTING FOR STEEL GRATE

STEEL GRATING USE CRITERIA

- I. Grates to be used on pipe culvert endwalls located within the designated clear zone. Positive debris control shall be provided at all upgradient openings. Grates shall not be used unless one or more of the following conditions exist:
- A. Drainage area to culvert consists of median or infield areas or areas where debris and/or drift is negligible.
- B. Runoff to culvert is by sheet flow or in such ill defined channels that debris transport is not considered a major problem.
- C. Runoff to culvert is minor except on an infrequent basis (10 to 15 year frequency); for example a drainage basin in flat sandy terrain with normally low ground water table.
- D. Areas where culvert blockage with resultant backwater would not seriously affect roadway embankment, traffic operation or upland property.
- 2. Steel grating to be used only where called for in plans.

		TABLE	E OF DI	MENSION	IS AND	QUANTI	TIES FOI	R ONE G	RATE		
Rate Of	Size Pipe		2 Each B	ars @ 3.4	Lbs./L.F.	(X) Channels @ 5.4 Lbs./L.F.			2 Angles @ 3.62 Lbs./L.F.		Total
Slope	" D "	G	L	W-4"	Lbs.	(X)	F	Lbs.	P	Lbs.	Weight Lbs.
	15"	2' -8½"	9'-3"	3'-3"	85	8	2' -67"	///	7'-4"	53	249
I : 6	18"	2' -11 ½"	10'-3"	3'-6"	94	9	2' - 97"	137	8'-4"	62	292
	24"	3′ -5½″	13'-3"	4'-0"	117	12	3' -37"	215	//'- 4 "	82	414
	30"	3' -11½"	16'-3"	4'-6"	141	15	3' -9 7 "	310	14'-4"	104	555
	/5"	2' -8½"	6'-3"	3'-3"	65	5	2' -67"	70	4'-4"	32	167
1:4	<i>18</i> "	2' -11 <u>-1</u> "	7'-3"	3'-6"	73	6	2' -97"	92	5'-4"	39	204
	24"	3' -5½"	9'-3"	4'-0"	90	8	3' -37"	144	7'-4"	53	287
	30"	3' -//½"	//'- 3 "	4'-6"	107	10	3' -9 7 "	206	9'-4"	68	381
	<i>15"</i>	2' -8½"	4'-3"	3'-3"	5/	3	2' -67"	42	2'-4"	17	110
/ : 3	18"	2' -//½"	5'-3"	3'-6"	60	4	2' - 9 7 "	6/	3'-4"	24	<i>14</i> 5
	24"	3' -5½"	6'-3"	4'-0"	70	5	3' -3 7 "	90	4'-4"	3/	191
	30"	3' -//½"	8'-3"	4'-6"	87	7	3' -9 7 "	<i>14</i> 5	6'-4"	46	278

STEEL GRATE

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

U-TYPE CONCRETE ENDWALLS BAFFLES AND GRATE OPTIONAL

15" TO 30" PIPE

	Names	Dates	Approve	1 / / / //	VI P
Designed By				State Drainage B	Chemose Engineer
Drawn By	CDP	07/71	Revision	Sheet No.	Index No.
Checked By			00	3 of 3	<i>261</i>