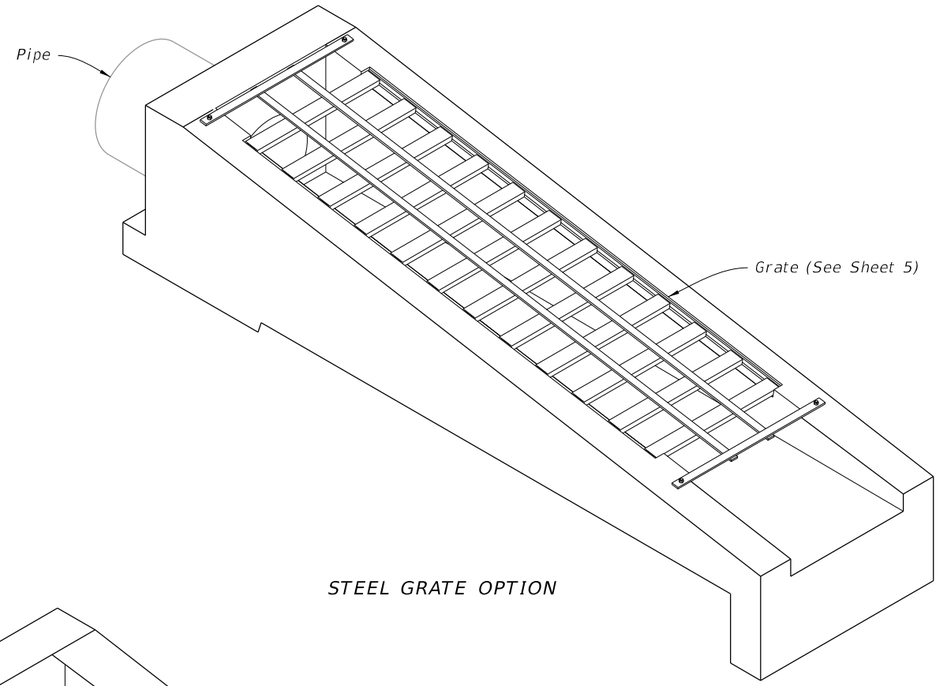
## GENERAL NOTES:

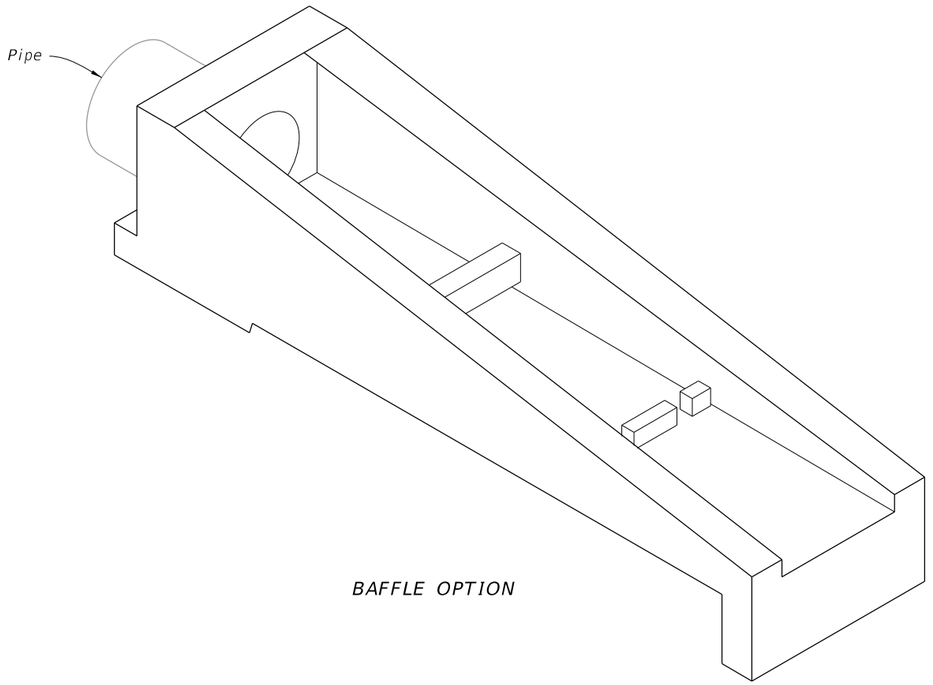
1. Use Class II concrete.
2. Construct Baffles only when called for in Plans.
3. See Sheet 5 when steel grating is required on endwall.
4. All reinforcing #4 bars with 2" clearance except as noted.
5. Channel section C 3x6 may be substituted for C 4x5.4 channel.
6. Endwall may be cast in place or precast concrete. Construct precast units to dimensions shown, or as shown in approved shop drawings. Submit requests for shop drawing approvals to the Engineer. Use Index 425-001 for opening and grouting details.
7. Quantities shown are for estimating purposes only.

## TABLE OF CONTENTS:


| Sheet | Description |
|---|---|
| 1 | General Notes and Contents |
| 2 | Endwalls for 1:2 Slopes With Baffles |
| 3 | Endwalls for 1:2 Slopes Without Baffles and Bending Bar Diagram |
| 4 | Endwalls for 1:3, 1:4, and 1:6 Slopes |
| 5 | Steel Grate Option |


STEEL GRATE OPTION

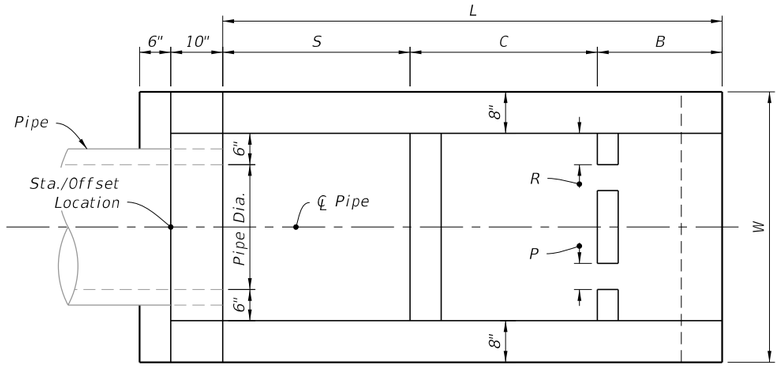



BAFFLE OPTION

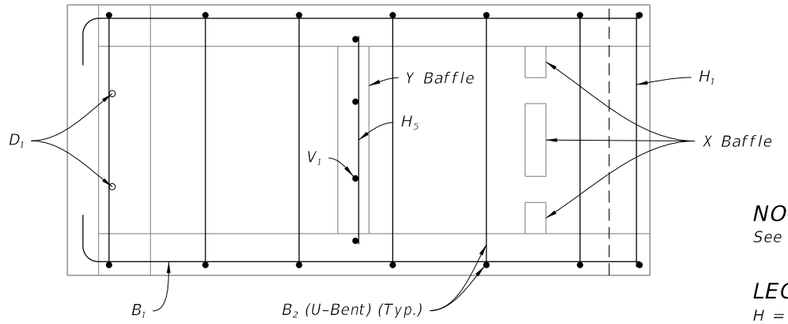
U-TYPE CONCRETE ENDWALLS

10/6/2022 1:53:11 PM

| LAST REVISION | REVISION | DESCRIPTION: | FDOT | FY 2023-24 STANDARD PLANS | U-TYPE CONCRETE ENDWALLS BAFFLES AND GRATE OPTIONAL 15" TO 30" PIPE | INDEX | SHEET |
|---|---|---|---|---|---|---|---|
| 11/01/21 | | | | | | 430-011 | 1 of 5 |



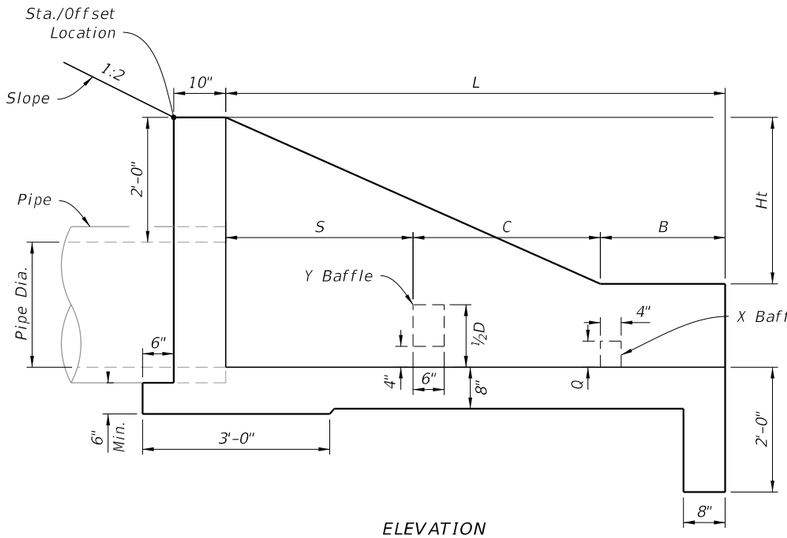

PLAN



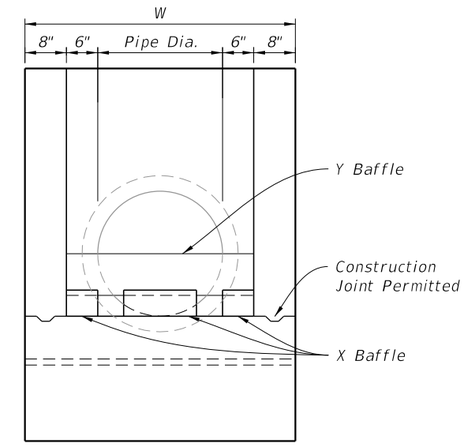

PLAN

**NOTE:**
See Sheet 3 for Bar Bending Diagram.

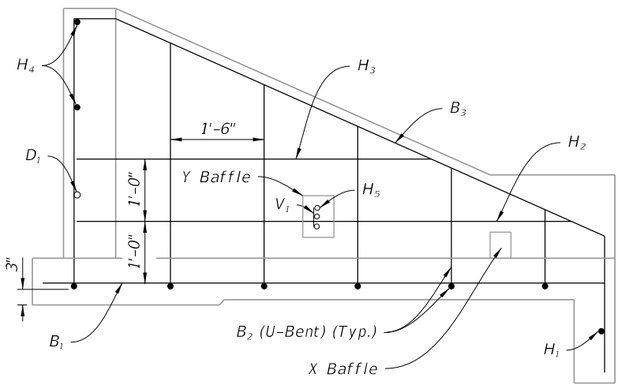
**LEGEND:**
H = Horizontal Bars
V = Vertical Bars
B = Bent Bars
D = Dowels or Diagonal Bars



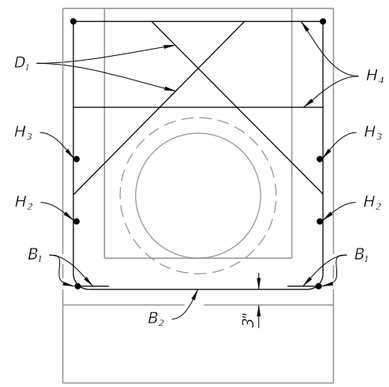

ELEVATION




FRONT VIEW




ELEVATION




BACK VIEW

## DIMENSIONAL DETAILS

## REINFORCING DETAILS

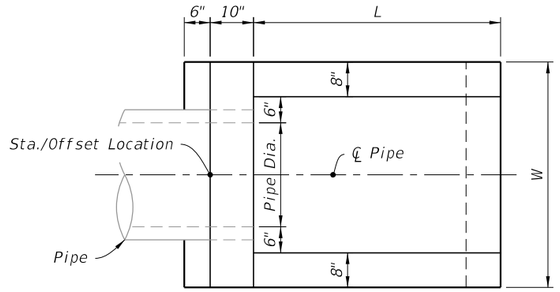
TABLE-1
DIMENSIONS AND QUANTITIES FOR ONE U-ENDWALL

| Pipe | | L | Ht | W | S | B | C | X Baffle | | | Y Baffle Reinf. Steel | | Class II Conc. Cu. Yd. | Reinf. Steel lbs. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dia. | Area Sq. Ft. | | | | | | | P | Q | R | Bars $V_1$ | Bars $H_5$ | | |
| 15" | 1.23 | 5'-9" | 2'-3½" | 3'-7" | 2'-3" | 1'-3" | 2'-3" | 4" | 4" | 4" | 2 #4 | 1 #4 | 1.61 | 72 |
| 18" | 1.77 | 6'-6" | 2'-5" | 3'-10" | 2'-6" | 1'-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" | 4.91 | 9'-6" | 2'-11" | 4'-10" | 3'-6" | 2'-6" | 3'-6" | 5" | 5" | 7" | 4 #4 | 4 #4 | 3.34 | 131 |

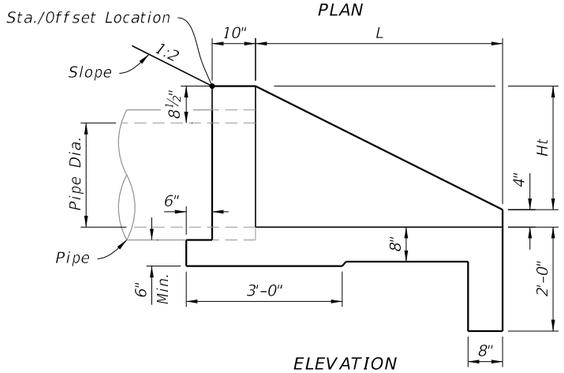
10/6/2022 1:53:11 PM

ENDWALLS FOR 1:2 SLOPES WITH BAFFLES

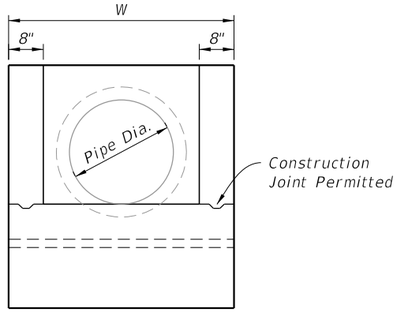
| LAST REVISION | REVISION | DESCRIPTION: | | | | |
|---|---|---|---|---|---|---|
| 11/01/21 | | | FY 2023-24 STANDARD PLANS | U-TYPE CONCRETE ENDWALLS BAFFLES AND GRATE OPTIONAL 15" TO 30" PIPE | INDEX 430-011 | SHEET 2 of 5 |



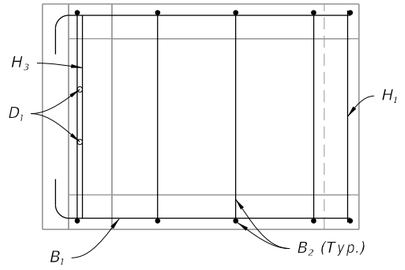

PLAN



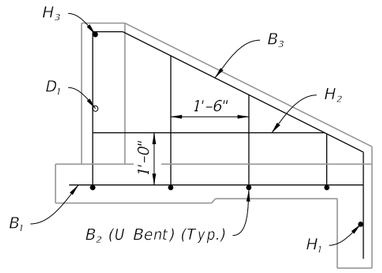

ELEVATION




FRONT VIEW




PLAN




SIDE VIEW

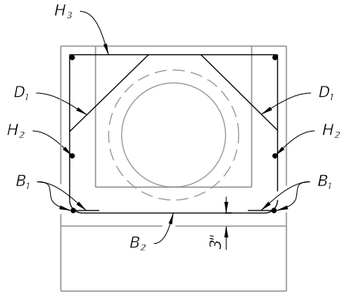
## LEGEND:

H = Horizontal Bars

V = Vertical Bars

B = Bent Bars

D = Dowels or Diagonal Bars




BACKWALL SECTION

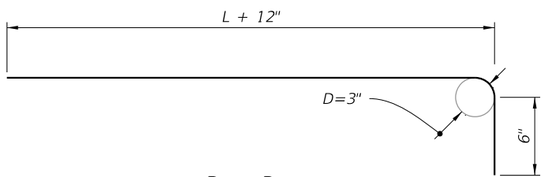
DIMENSIONAL DETAILS

REINFORCING DETAILS

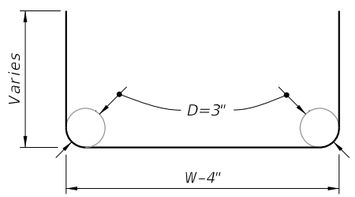
TABLE-2
DIMENSIONS AND QUANTITIES FOR ONE U-ENDWALL

| Pipe | | L | Ht | W | Class II Conc. Cu. Yd. | Reinf. Steel lbs. |
|---|---|---|---|---|---|---|
| Dia. | Area Sq. Ft. | | | | | |
| 15" | 1.23 | 3'-3" | 1'-7½" | 3'-7" | 0.89 | 39 |
| 18" | 1.77 | 3'-9" | 1'-10½" | 3'-10" | 1.05 | 43 |
| 24" | 3.14 | 4'-9" | 2'-4½" | 4'-4" | 1.40 | 55 |
| 30" | 4.91 | 5'-9" | 2'-10½" | 4'-10" | 1.88 | 64 |

ENDWALL WITHOUT BAFFLES




Bars $B_1$




Bars $B_2$

BENDING DIAGRAM

ENDWALLS FOR 1:2 SLOPES WITHOUT BAFFLES AND BAR BENDING DIAGRAM

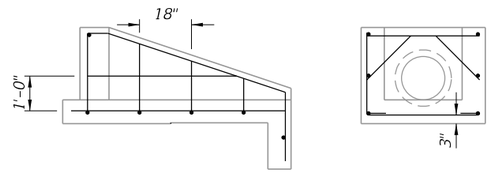
10/6/2022 1:53:12 PM

| LAST REVISION | REVISION | DESCRIPTION: | | | | |
|---|---|---|---|---|---|---|
| 11/01/21 | | | FY 2023-24 STANDARD PLANS | U-TYPE CONCRETE ENDWALLS BAFFLES AND GRATE OPTIONAL 15" TO 30" PIPE | INDEX 430-011 | SHEET 3 of 5 |

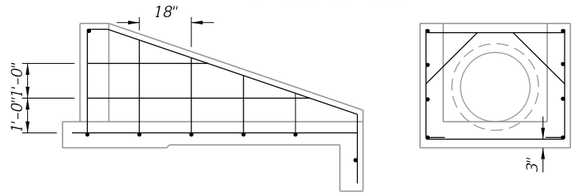
NOTE:

1. Reinforcing similar to Sheets 2 and 3.

2. See Sheet 3 for Bar Bending Diagram.

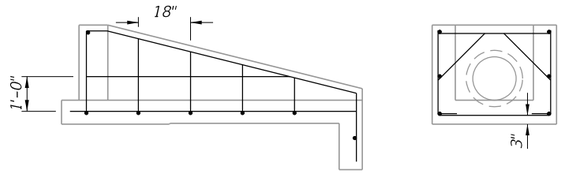



15" AND 18" PIPE

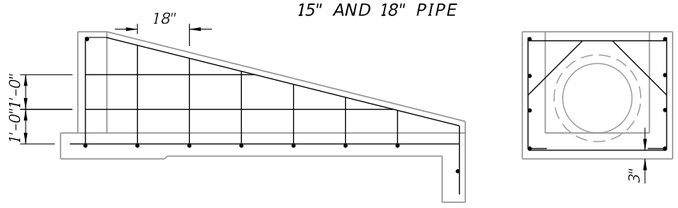



24" AND 30" PIPE

## 1:3 SLOPES

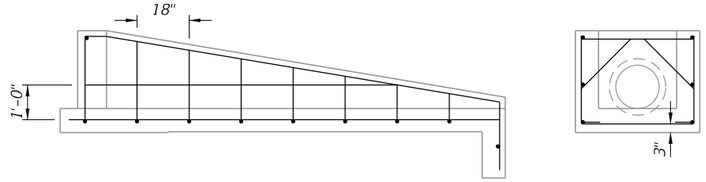



15" AND 18" PIPE

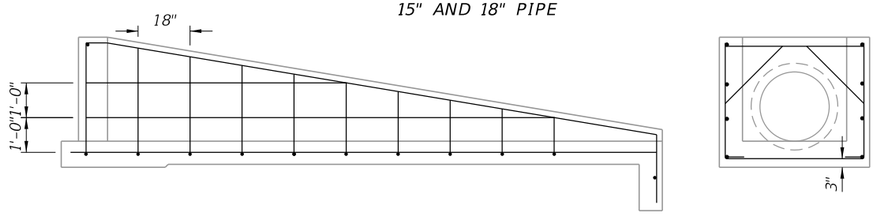



24" AND 30" PIPE

## 1:4 SLOPES




15" AND 18" PIPE

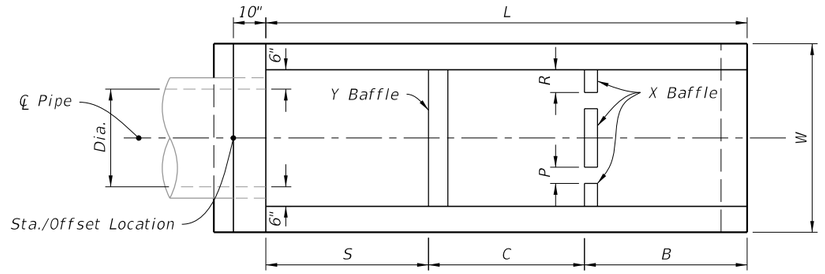



24" AND 30" PIPE

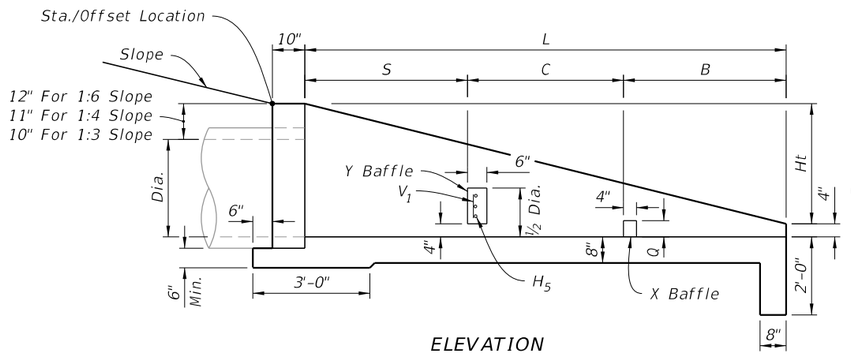
## 1:6 SLOPES

## REINFORCING DETAILS

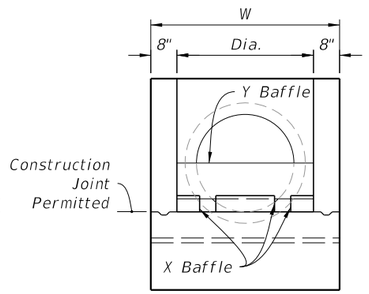
(Side Views And Backwall Sections Shown)




PLAN




ELEVATION




END VIEW

## DIMENSIONAL DETAILS

TABLE-3
DIMENSIONS AND QUANTITIES FOR BAFFLES

| Pipe Dia. | X Baffle | | | Y Baffle Reinf. Steel | | Class II Concrete Cu. Yd. | Reinf. Steel lbs. |
|---|---|---|---|---|---|---|---|
| | P Width | Q Height | R Length | Bar $V_1$ | Bar $H_5$ | | |
| 15" | 4" | 4" | 4" | 2- #4 | 1- #4 | 0.10 | 4 |
| 18" | 4" | 4" | 5" | 3- #4 | 2- #4 | | 8 |
| 24" | 5" | 5" | 6" | 4- #4 | 3- #4 | | 12 |
| 30" | 5" | 5" | 7" | 4- #4 | 4- #4 | | 16 |

TABLE-4
DIMENSIONS AND QUANTITIES FOR ONE U-ENDWALL

| Rate Of Slope | Pipe | | L | Ht | W | Baffle Locations (When Required) | | | Class II Concrete Cu. Yd. | Reinf. Steel lbs. |
|---|---|---|---|---|---|---|---|---|---|---|
| | Dia. | Area (Sq. Ft.) | | | | S | B | C | | |
| 1 : 3 | 15" | 1.23 | 5'-3" | 1'-9" | 3'-7" | 1'-9" | 1'-9" | 1'-9" | 1.19 | 51 |
| | 18" | 1.77 | 6'-0" | 2'-0" | 3'-10" | 2'-0" | 2'-0" | 2'-0" | 1.42 | 56 |
| | 24" | 3.14 | 7'-6" | 2'-6" | 4'-4" | 2'-6" | 2'-6" | 2'-6" | 1.94 | 77 |
| | 30" | 4.91 | 9'-0" | 3'-0" | 4'-10" | 3'-0" | 3'-0" | 3'-0" | 2.54 | 96 |
| 1 : 4 | 15" | 1.23 | 7'-4" | 1'-10" | 3'-7" | 2'-6" | 2'-6" | 2'-4" | 1.54 | 64 |
| | 18" | 1.77 | 8'-4" | 2'-1" | 3'-10" | 2'-10" | 2'-10" | 2'-8" | 1.84 | 71 |
| | 24" | 3.14 | 10'-4" | 2'-7" | 4'-4" | 3'-6" | 3'-6" | 3'-4" | 2.53 | 92 |
| | 30" | 4.91 | 12'-4" | 3'-1" | 4'-10" | 4'-2" | 4'-2" | 4'-0" | 3.34 | 124 |
| 1 : 6 | 15" | 1.23 | 11'-6" | 1'-11" | 3'-7" | 3'-10" | 3'-10" | 3'-10" | 2.19 | 89 |
| | 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 |

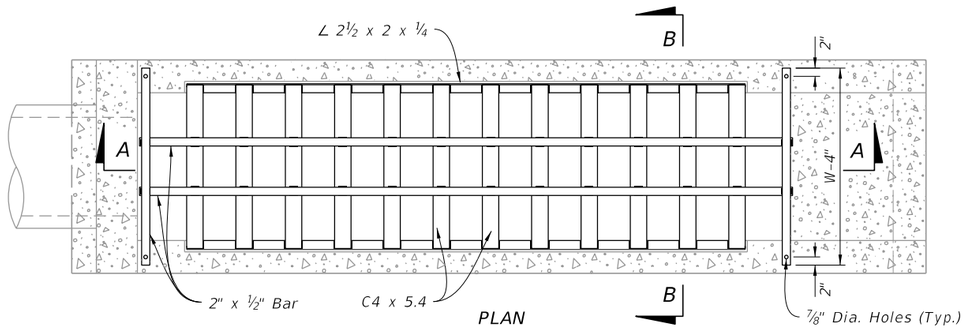
## ENDWALLS WITH AND WITHOUT BAFFLES FOR 1:3, 1:4, AND 1:6 SLOPES

10/19/2022 8:40:43 AM

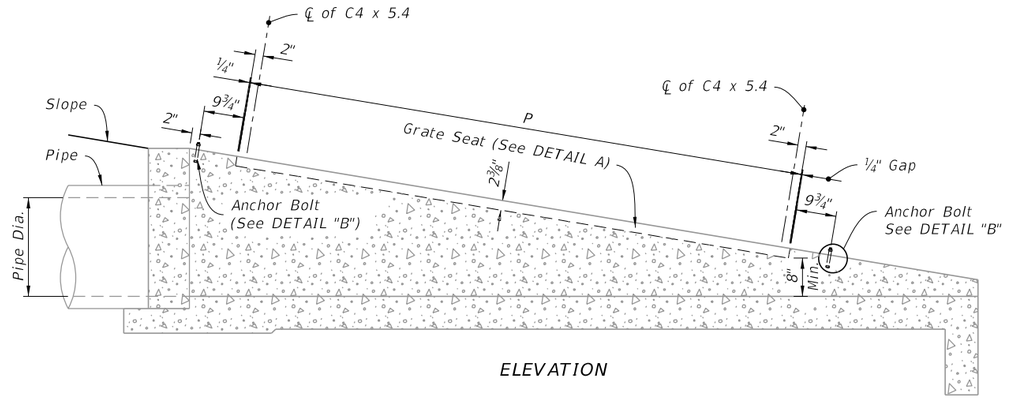
| LAST REVISION | REVISION | DESCRIPTION: | | | | |
|---|---|---|---|---|---|---|
| 11/01/21 | | | FDOT | FY 2023-24 STANDARD PLANS | U-TYPE CONCRETE ENDWALLS BAFFLES AND GRATE OPTIONAL 15" TO 30" PIPE | INDEX 430-011 / SHEET 4 of 5 |

## TABLE-5
## TABLE OF DIMENSIONS AND QUANTITIES FOR ONE GRATE

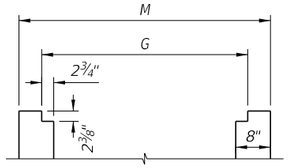
| Rate of Slope | Size Dia. | G | 2 Each Bars @ 3.4 lb/ft | | | (X) Channels @ 5.4 lb/ft | | | 2 Angles @ 3.62 lb/ft | | Total Weight (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | W-4" | lbs | (X) | F | lbs | P | lb | |
| 1:3 | 15" | 2' -8½" | 4'-3" | 3'-3" | 51 | 3 | 2' -6⅞" | 42 | 2'-4" | 17 | 110 |
| | 18" | 2' -11½" | 5'-3" | 3'-6" | 60 | 4 | 2' -9⅞" | 61 | 3'-4" | 24 | 145 |
| | 24" | 3' -5½" | 6'-3" | 4'-0" | 70 | 5 | 3' -3⅞" | 90 | 4'-4" | 31 | 191 |
| | 30" | 3' -11½" | 8'-3" | 4'-6" | 87 | 7 | 3' -9⅞" | 145 | 6'-4" | 46 | 278 |
| 1:4 | 15" | 2' -8½" | 6'-3" | 3'-3" | 65 | 5 | 2' -6⅞" | 70 | 4'-4" | 32 | 167 |
| | 18" | 2' -11½" | 7'-3" | 3'-6" | 73 | 6 | 2' -9⅞" | 92 | 5'-4" | 39 | 204 |
| | 24" | 3' -5½" | 9'-3" | 4'-0" | 90 | 8 | 3' -3⅞" | 144 | 7'-4" | 53 | 287 |
| | 30" | 3' -11½" | 11'-3" | 4'-6" | 107 | 10 | 3' -9⅞" | 206 | 9'-4" | 68 | 381 |
| 1:6 | 15" | 2' -8½" | 9'-3" | 3'-3" | 85 | 8 | 2' -6⅞" | 111 | 7'-4" | 53 | 249 |
| | 18" | 2' -11½" | 10'-3" | 3'-6" | 94 | 9 | 2' -9⅞" | 137 | 8'-4" | 62 | 292 |
| | 24" | 3' -5½" | 13'-3" | 4'-0" | 117 | 12 | 3' -3⅞" | 215 | 11'-4" | 82 | 414 |
| | 30" | 3' -11½" | 16'-3" | 4'-6" | 141 | 15 | 3' -9⅞" | 310 | 14'-4" | 104 | 555 |




PLAN

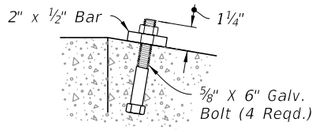



ELEVATION

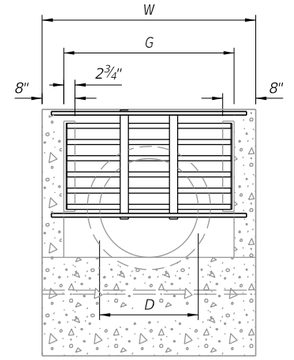



Grate Seat

DETAIL "A"

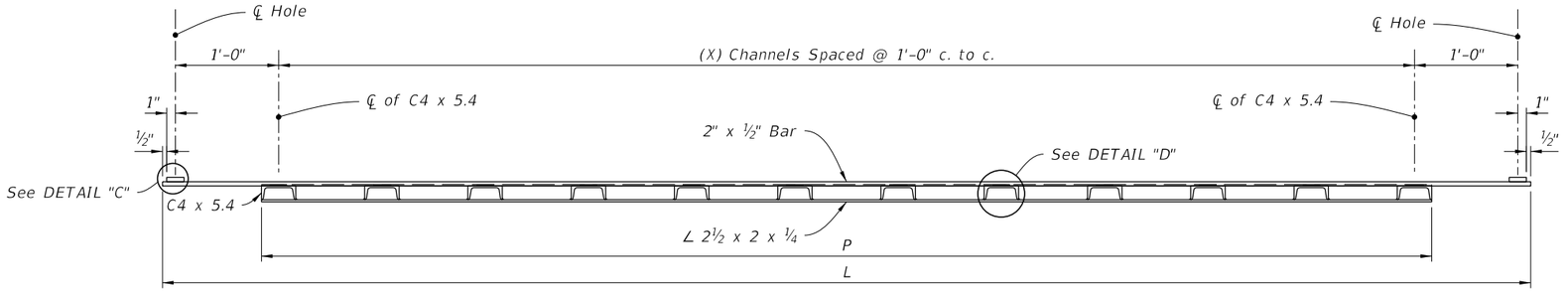



Anchor Bolt Detail
DETAIL "B"

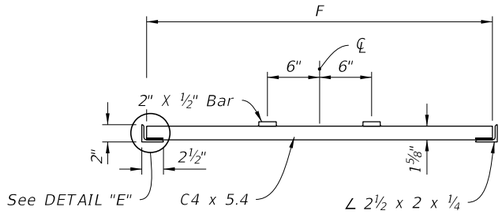



END VIEW

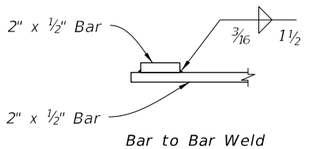
STEEL GRATE MOUNTING



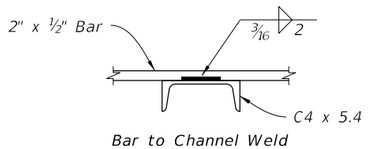

SECTION A-A



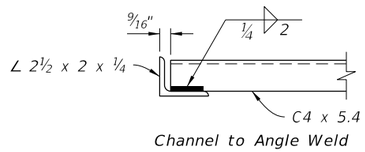

SECTION B-B




Bar to Bar Weld
DETAIL "C"




Bar to Channel Weld
DETAIL "D"




Channel to Angle Weld
DETAIL "E"

STEEL GRATE DETAILS

STEEL GRATE OPTION

10/6/2022 1:53:13 PM

| LAST REVISION | REVISION | DESCRIPTION: | | | | |
|---|---|---|---|---|---|---|
| 11/01/21 | | | FY 2023-24 STANDARD PLANS | U-TYPE CONCRETE ENDWALLS BAFFLES AND GRATE OPTIONAL 15" TO 30" PIPE | INDEX 430-011 | SHEET 5 of 5 |