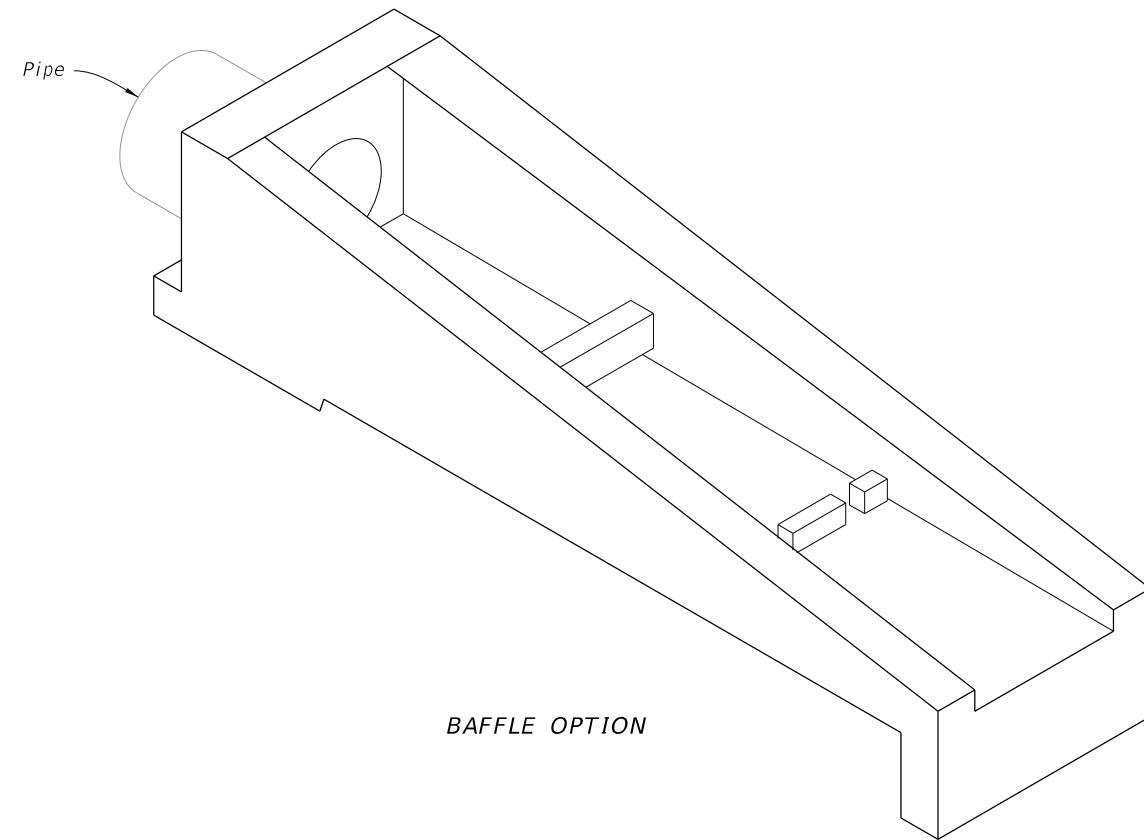
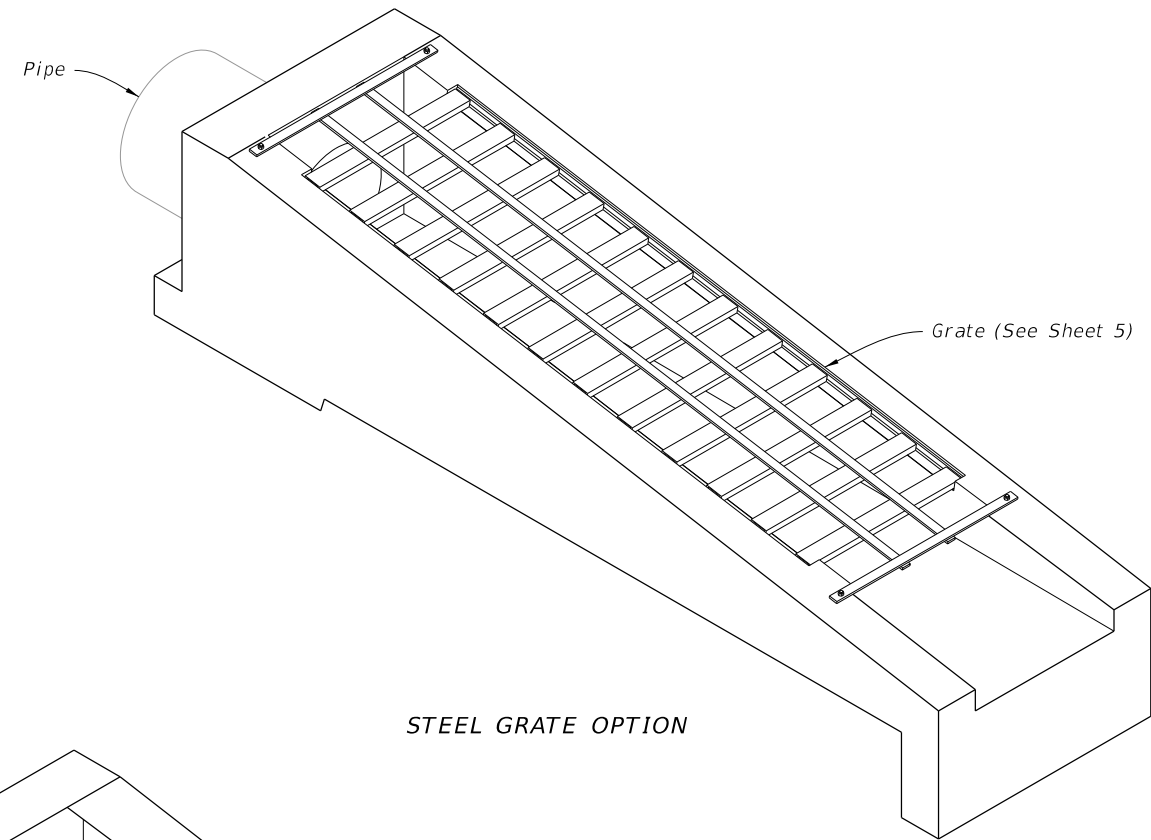


GENERAL NOTES:

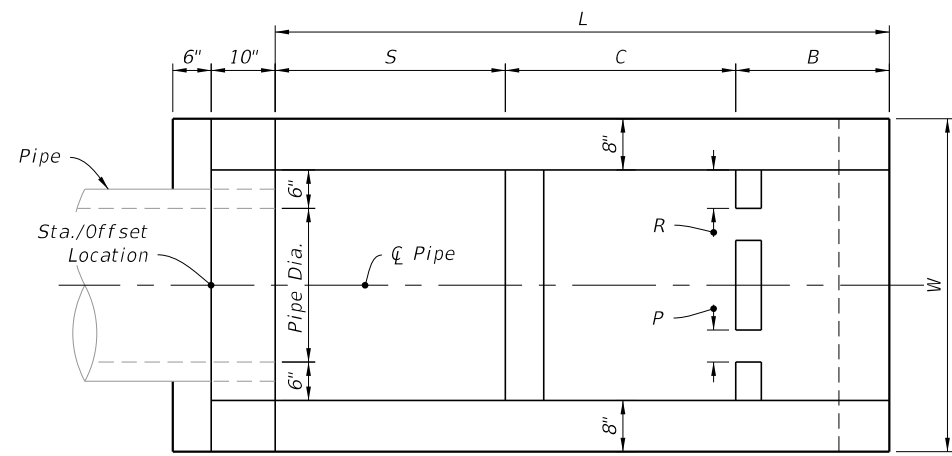
1. Use Class II concrete.
2. Construct Baffles only when called for in Plans.
3. See Sheet 5 when steel grating is required on endwall.
4. All reinforcing #4 bars with 2" clearance except as noted.
5. Channel section C 3x6 may be substituted for C 4x5.4 channel.
6. Endwall may be cast in place or precast 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 |

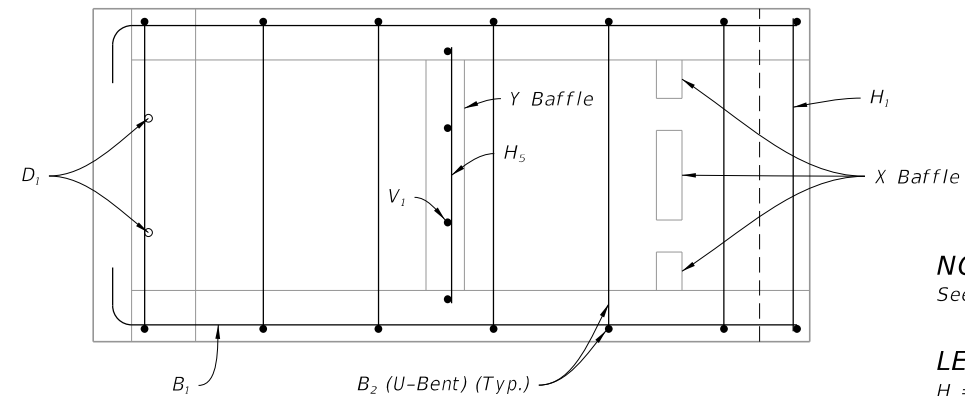


U-TYPE CONCRETE ENDWALLS

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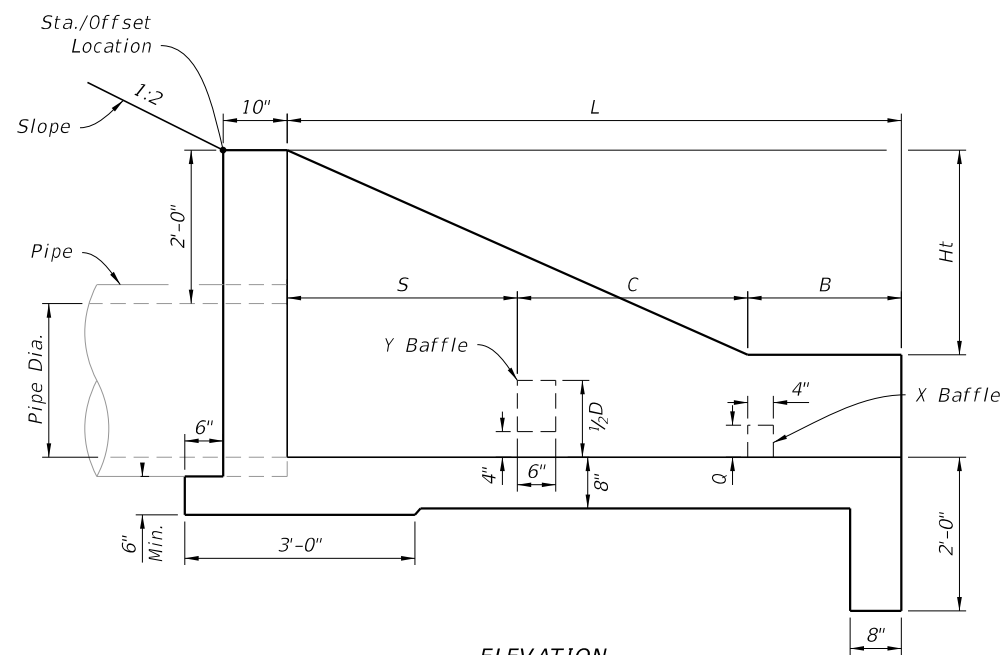
PLAN



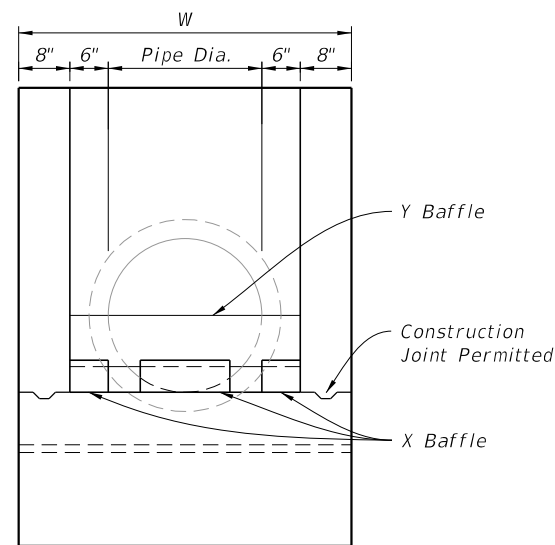
PLAN

NOTE:
See Sheet 3 for Bar Bending Diagram.

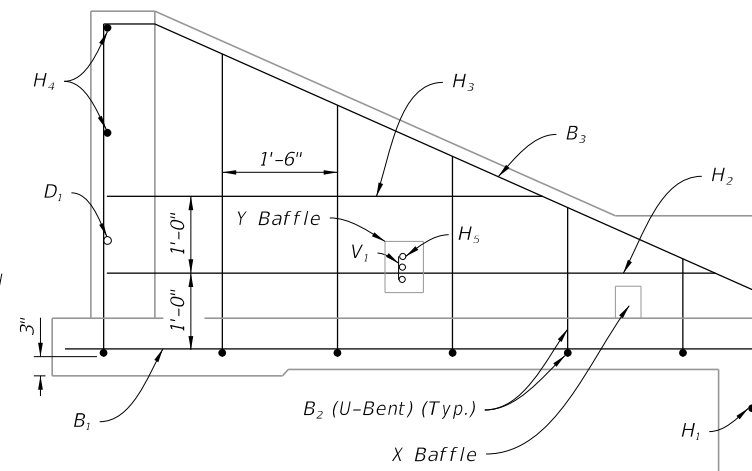
LEGEND:
H = Horizontal Bars
V = Vertical Bars
B = Bent Bars
D = Dowels or Diagonal Bars



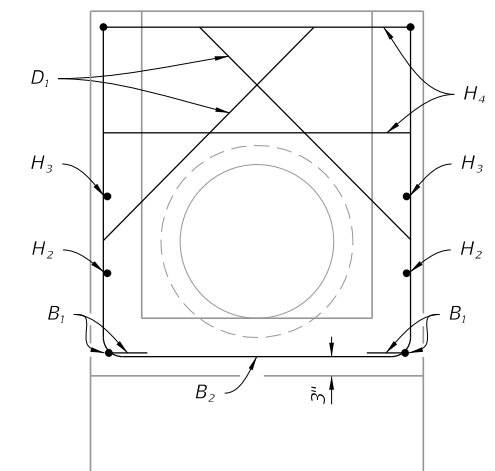
ELEVATION



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 |

ENDWALLS FOR 1:2 SLOPES WITH BAFFLES

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| | |
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| LAST REVISION 11/01/21 | DESCRIPTION: |
|---------------------------|--------------|

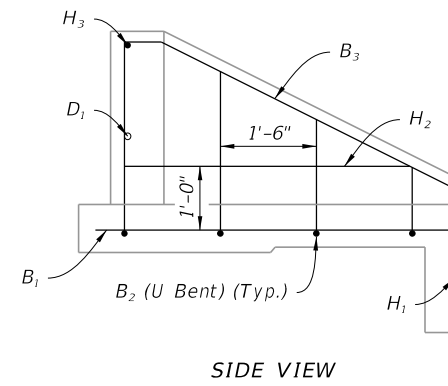
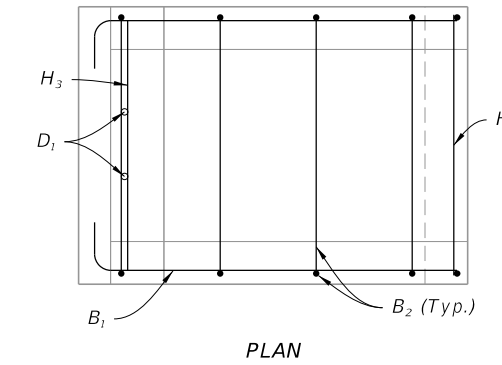
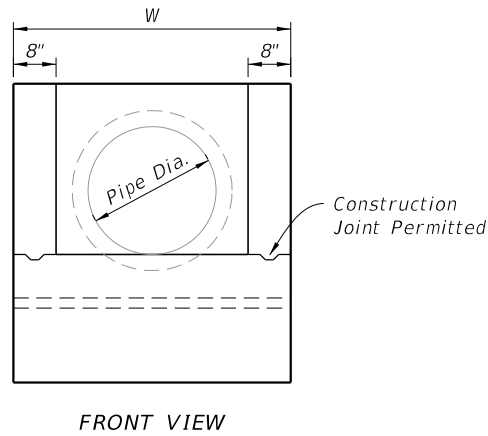
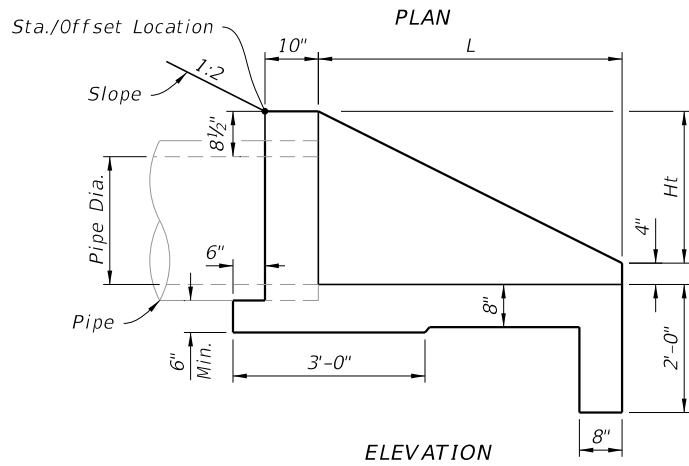
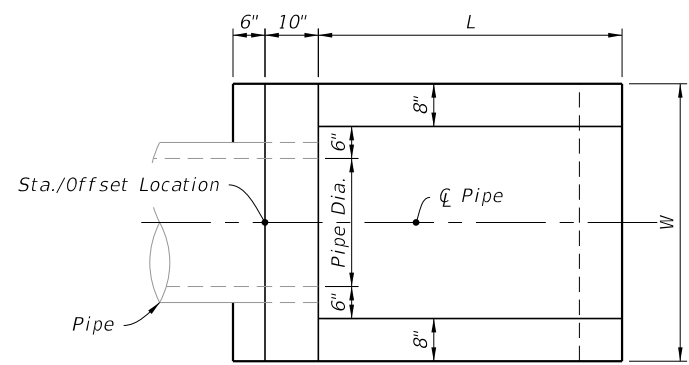


FY 2022-23
STANDARD PLANS

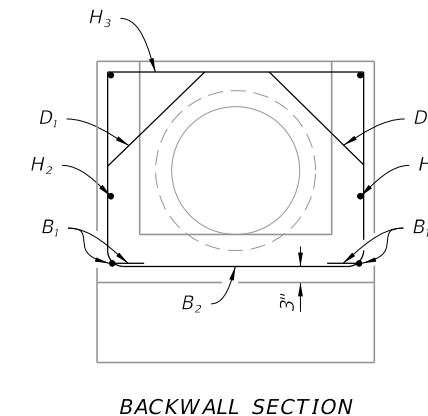
U-TYPE CONCRETE ENDWALLS BAFFLES
& GRATE OPTIONAL 15" TO 30" PIPE

INDEX
430-011

SHEET
2 of 5



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



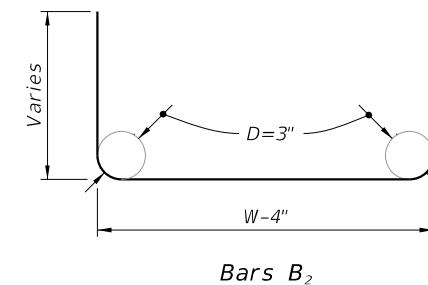
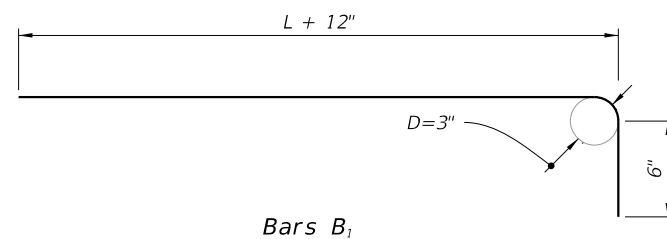
DIMENSIONAL DETAILS

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'-7 1/2" | 3'-7" | 0.89 | 39 |
| 18" | 1.77 | 3'-9" | 1'-10 1/2" | 3'-10" | 1.05 | 43 |
| 24" | 3.14 | 4'-9" | 2'-4 1/2" | 4'-4" | 1.40 | 55 |
| 30" | 4.91 | 5'-9" | 2'-10 1/2" | 4'-10" | 1.88 | 64 |

ENDWALL WITHOUT BAFFLES



BENDING DIAGRAM

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

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| | |
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FY 2022-23
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U-TYPE CONCRETE ENDWALLS BAFFLES
& GRATE OPTIONAL 15" TO 30" PIPE

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SHEET
3 of 5

NOTE:

1. Reinforcing similar to Sheets 2 and 3.
2. See Sheet 3 for Bar Bending Diagram.

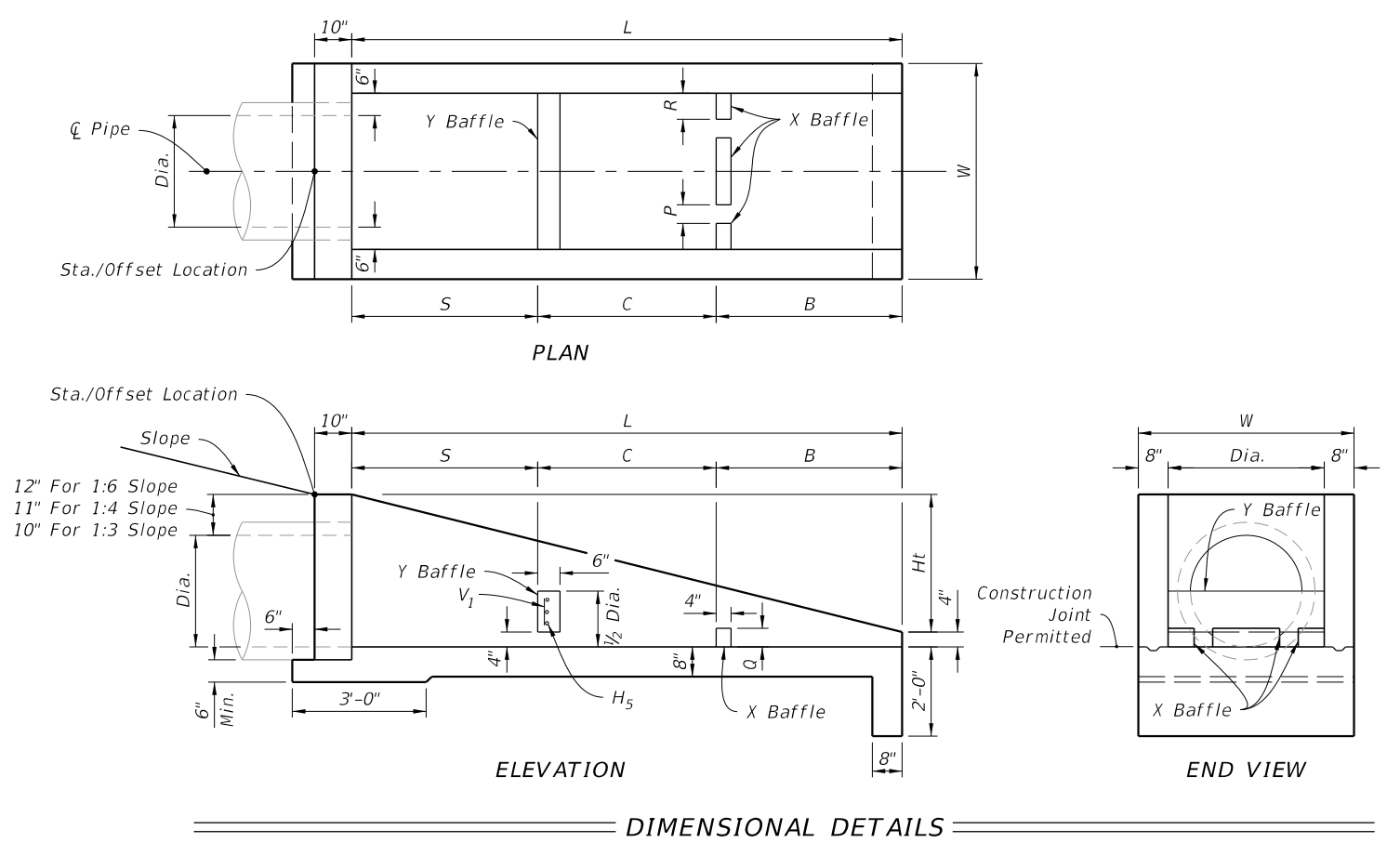
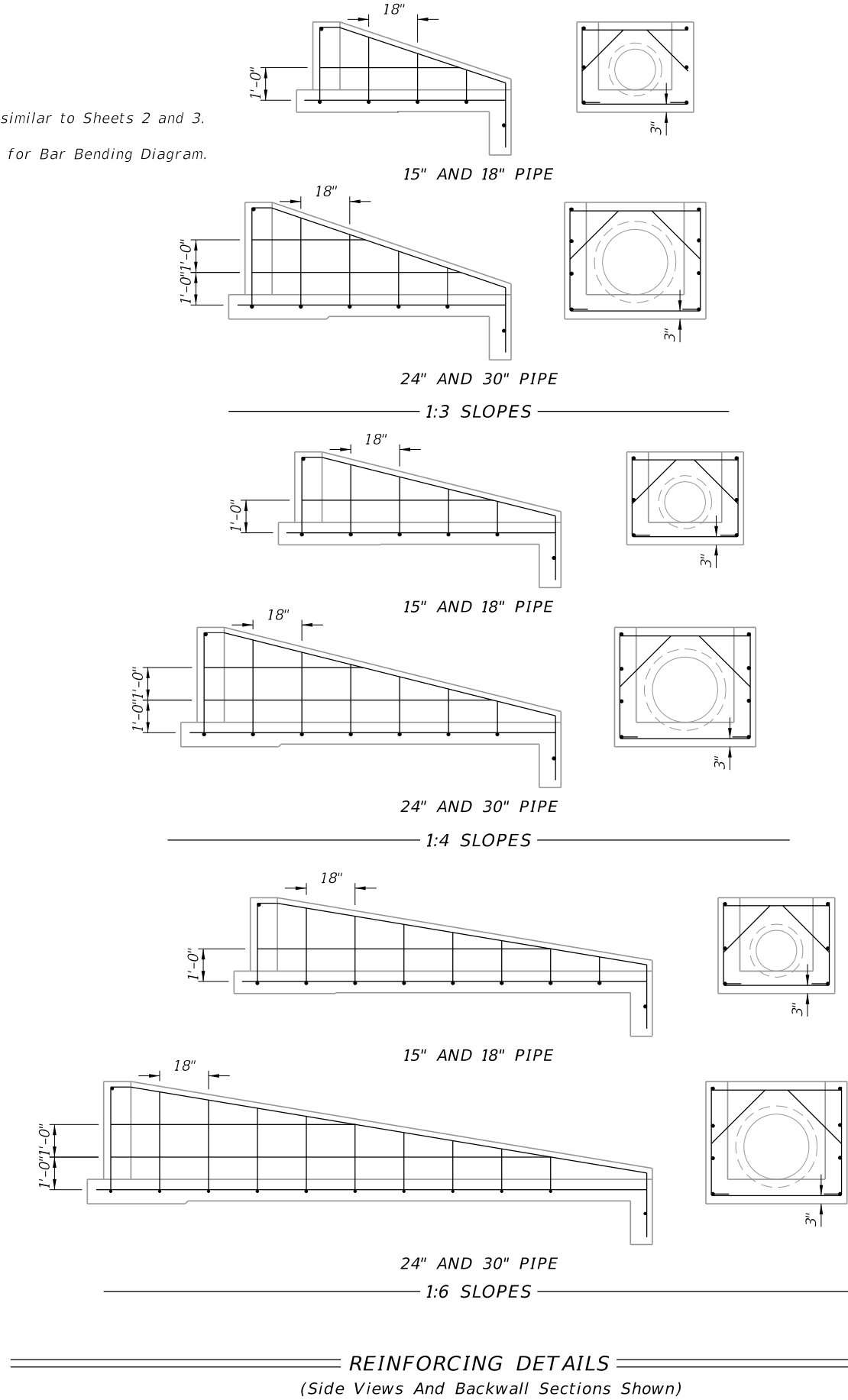


TABLE-3
DIMENSIONS AND QUANTITIES FOR BAFFLES

| 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

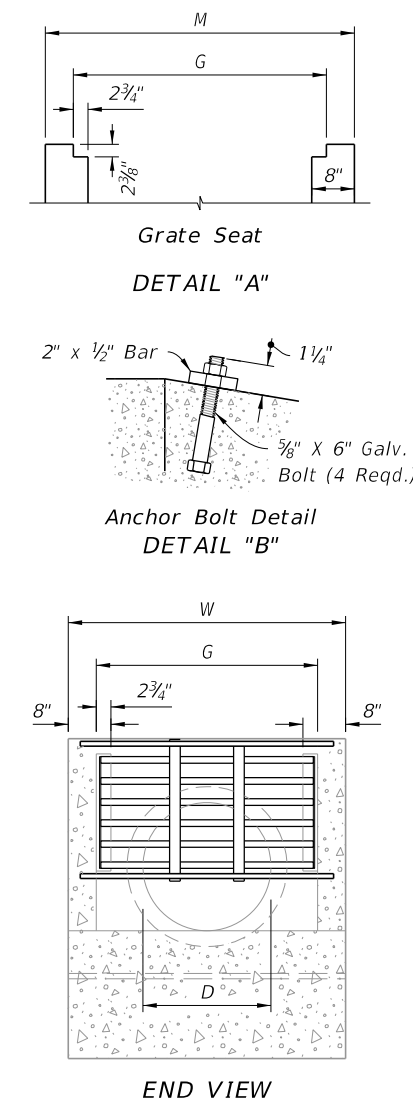
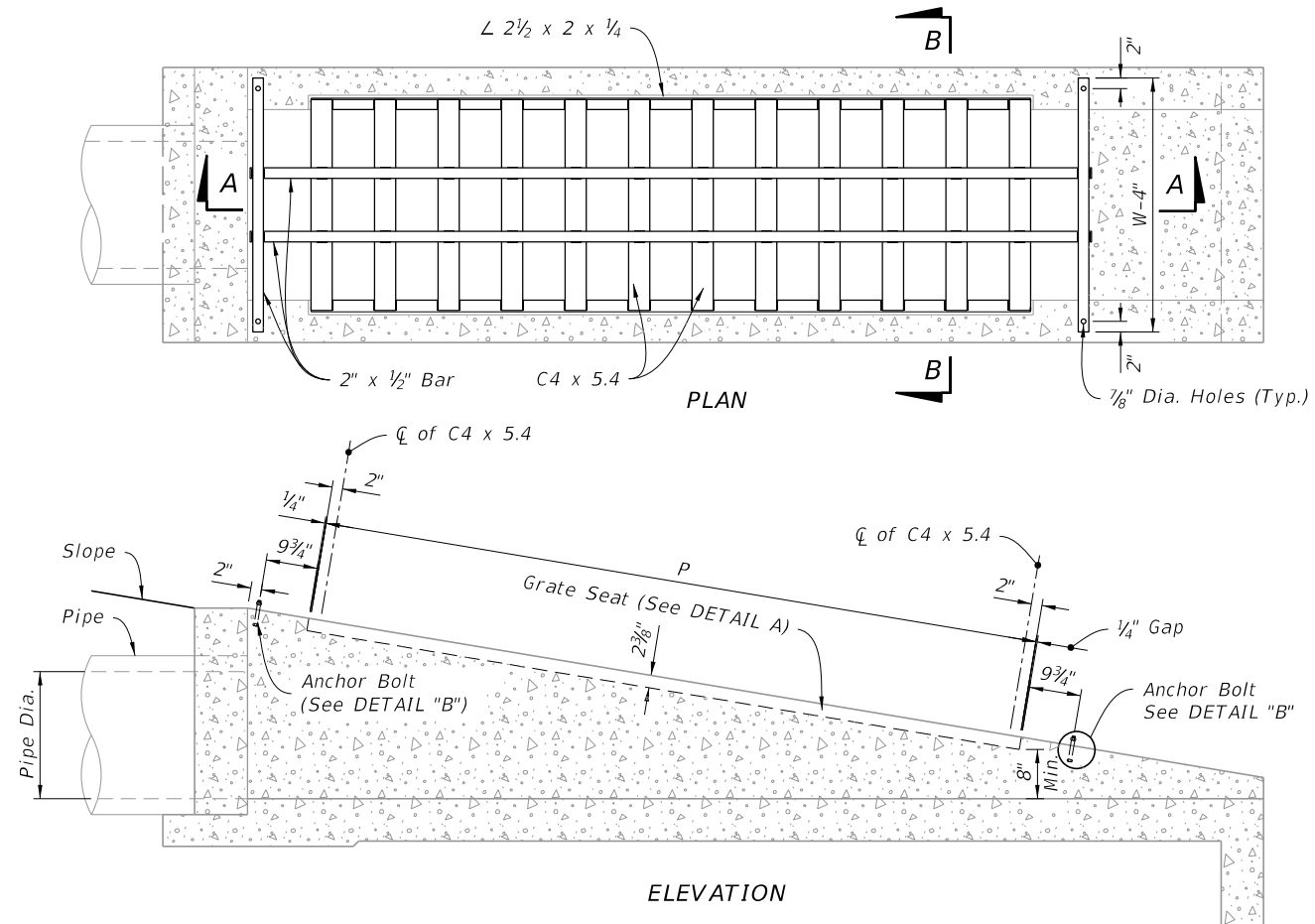
| Rate Of Slope | Pipe | | L | Ht | W | Baffle Locations (When Required) | | | Class II Concrete Cu. Yd. | Reinf. Steel lbs. |
|---------------|------|----------------|--------|--------|--------|----------------------------------|--------|--------|---------------------------|-------------------|
| | 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 |
| 1 : 6 | 15" | 1.23 | 12'-4" | 3'-1" | 4'-10" | 4'-2" | 4'-2" | 4'-0" | 3.34 | 124 |
| | 18" | 1.77 | 11'-6" | 1'-11" | 3'-7" | 3'-10" | 3'-10" | 3'-10" | 2.19 | 89 |
| | 24" | 3.14 | 13'-0" | 2'-2" | 3'-10" | 4'-4" | 4'-4" | 4'-4" | 2.63 | 103 |
| | 30" | 4.91 | 16'-0" | 2'-8" | 4'-4" | 5'-4" | 5'-4" | 5'-4" | 3.59 | 143 |
| | | | 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

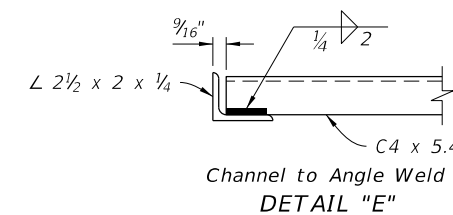
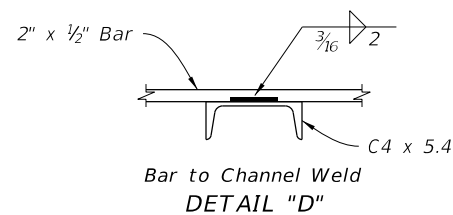
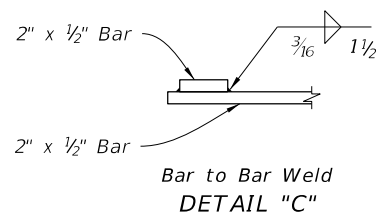
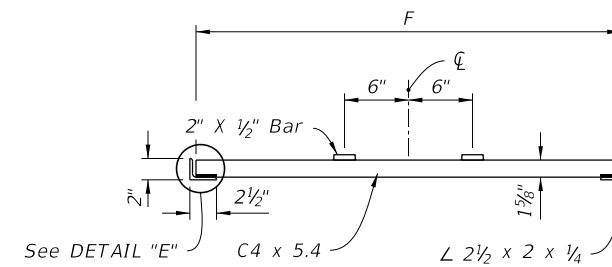
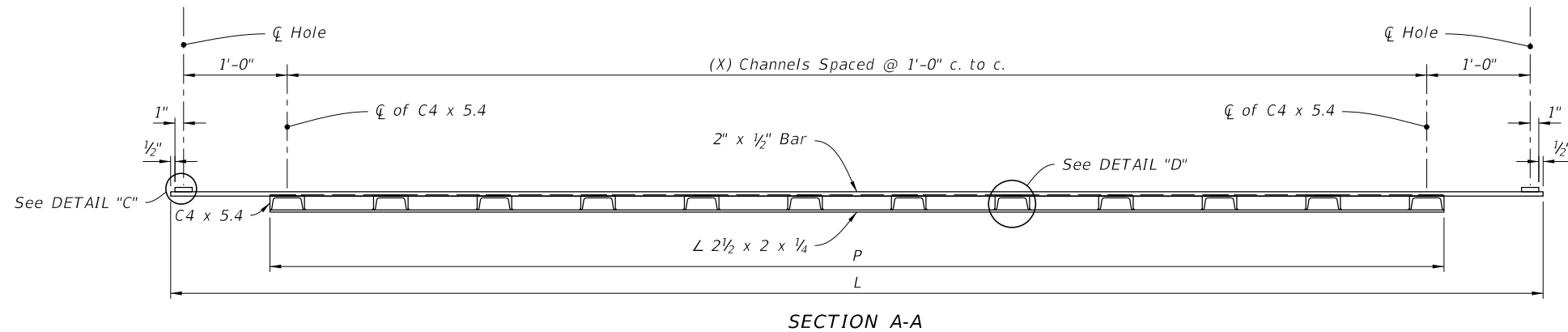
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TABLE-5
TABLE OF DIMENSIONS AND QUANTITIES FOR ONE GRATE

| 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' - 8 1/2" | 4'-3" | 3'-3" | 51 | 3 | 2' - 6 7/8" | 42 | 2'-4" | 17 | 110 |
| | 18" | 2' - 11 1/2" | 5'-3" | 3'-6" | 60 | 4 | 2' - 9 7/8" | 61 | 3'-4" | 24 | 145 |
| | 24" | 3' - 5 1/2" | 6'-3" | 4'-0" | 70 | 5 | 3' - 3 7/8" | 90 | 4'-4" | 31 | 191 |
| | 30" | 3' - 11 1/2" | 8'-3" | 4'-6" | 87 | 7 | 3' - 9 7/8" | 145 | 6'-4" | 46 | 278 |
| 1:4 | 15" | 2' - 8 1/2" | 6'-3" | 3'-3" | 65 | 5 | 2' - 6 7/8" | 70 | 4'-4" | 32 | 167 |
| | 18" | 2' - 11 1/2" | 7'-3" | 3'-6" | 73 | 6 | 2' - 9 7/8" | 92 | 5'-4" | 39 | 204 |
| | 24" | 3' - 5 1/2" | 9'-3" | 4'-0" | 90 | 8 | 3' - 3 7/8" | 144 | 7'-4" | 53 | 287 |
| | 30" | 3' - 11 1/2" | 11'-3" | 4'-6" | 107 | 10 | 3' - 9 7/8" | 206 | 9'-4" | 68 | 381 |
| 1:6 | 15" | 2' - 8 1/2" | 9'-3" | 3'-3" | 85 | 8 | 2' - 6 7/8" | 111 | 7'-4" | 53 | 249 |
| | 18" | 2' - 11 1/2" | 10'-3" | 3'-6" | 94 | 9 | 2' - 9 7/8" | 137 | 8'-4" | 62 | 292 |
| | 24" | 3' - 5 1/2" | 13'-3" | 4'-0" | 117 | 12 | 3' - 3 7/8" | 215 | 11'-4" | 82 | 414 |
| | 30" | 3' - 11 1/2" | 16'-3" | 4'-6" | 141 | 15 | 3' - 9 7/8" | 310 | 14'-4" | 104 | 555 |



STEEL GRATE MOUNTING



STEEL GRATE DETAILS

STEEL GRATE OPTION

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| | | | | | | |
|---------------------------|----------|--------------|----------------------------------|--|------------------|-----------------|
| LAST REVISION 11/01/21 | REVISION | DESCRIPTION: | FY 2022-23 STANDARD PLANS | U-TYPE CONCRETE ENDWALLS BAFFLES & GRATE OPTIONAL 15" TO 30" PIPE | INDEX 430-011 | SHEET 5 of 5 |
|---------------------------|----------|--------------|----------------------------------|--|------------------|-----------------|