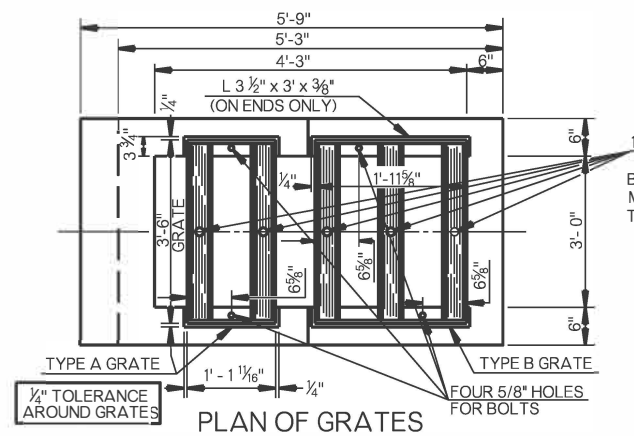
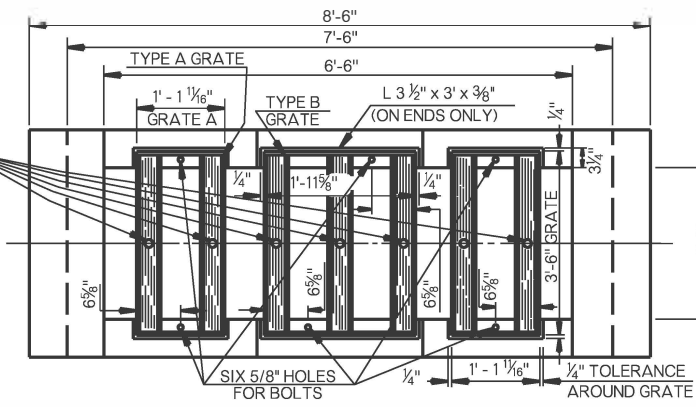
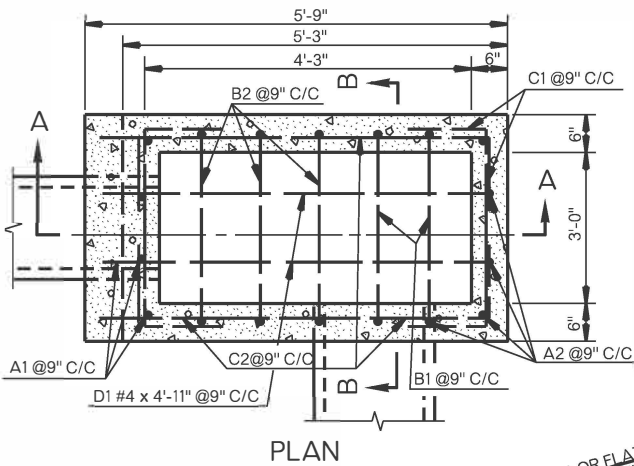




1/4" DIA. (MAX.) DRAIN HOLES TO BE PUNCHED OR DRILLED THROUGH BOTTOM SIDE OF STEEL PIPE AT THE MID POINT, AS SHOWN FOR GRATES THAT ARE HOT-DIPPED GALVANIZED ONLY.

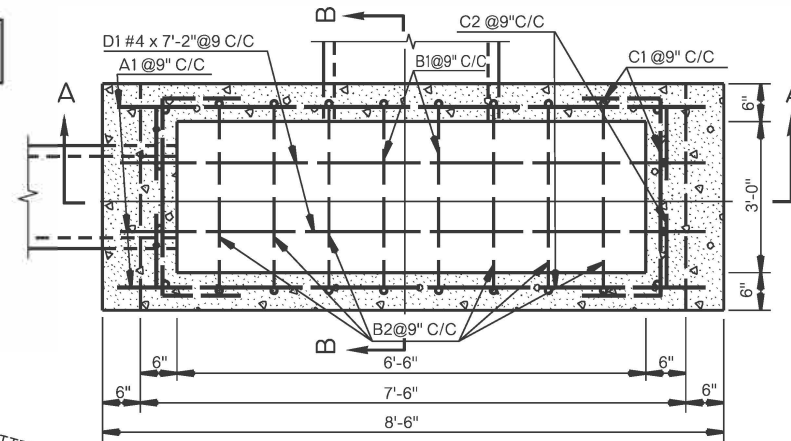


PLAN OF GRATES

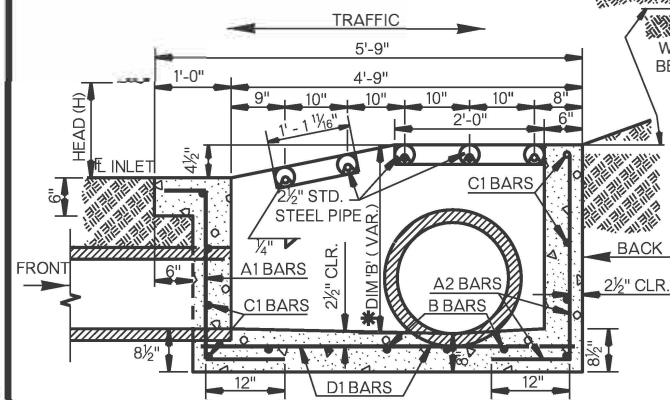


PLAN

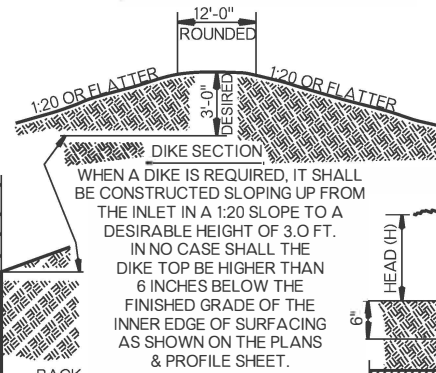
NOTE: REINF. STEEL TO BE CUT AND/OR BENT TO CLEAR PIPE IN FIELD.



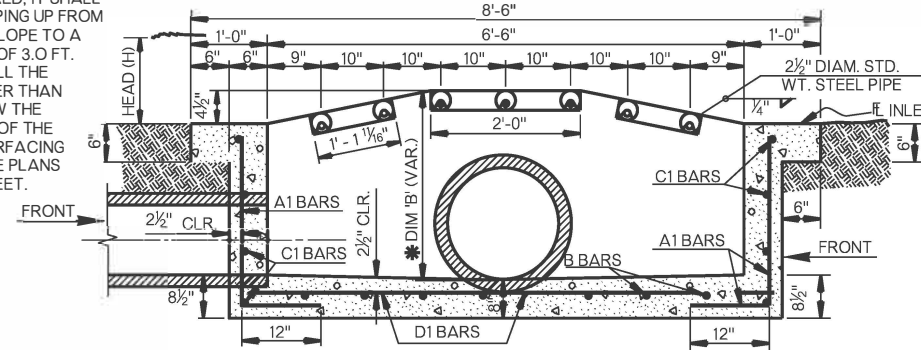
PLAN



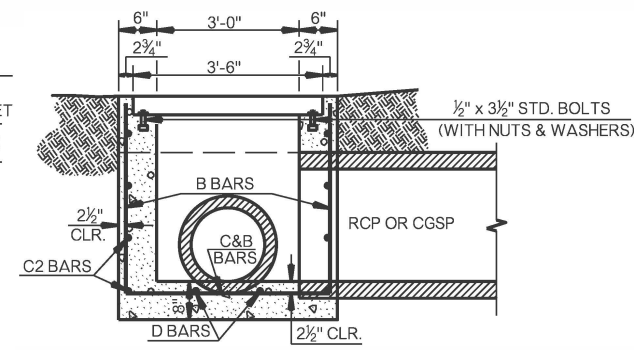
SECTION A - A  
TYPE 1



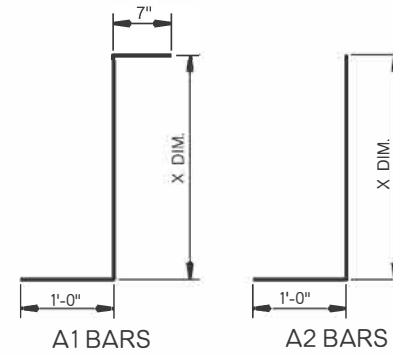
WHEN A DIKE IS REQUIRED, IT SHALL BE CONSTRUCTED SLOPING UP FROM THE INLET IN A 1:20 SLOPE TO A DESIRABLE HEIGHT OF 3.0 FT. IN NO CASE SHALL THE DIKE TOP BE HIGHER THAN 6 INCHES BELOW THE FINISHED GRADE OF THE INNER EDGE OF SURFACING AS SHOWN ON THE PLANS & PROFILE SHEET.



SECTION A - A  
TYPE 2



SECTION B - B

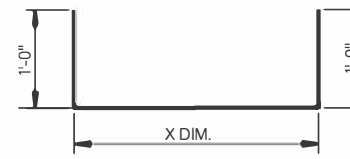


A1 BARS

A2 BARS

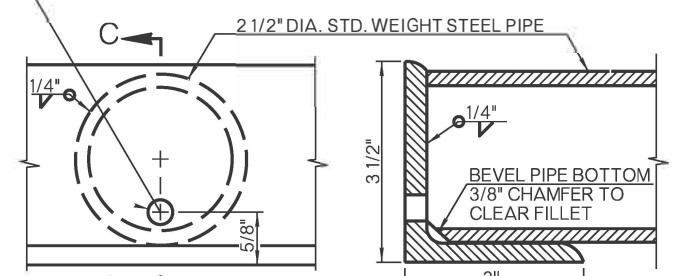


B1 & B2 BARS



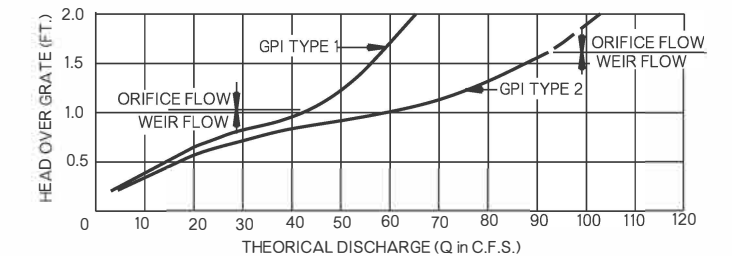
C1 & C2 BARS

1/2" MAX. DIA. VENT HOLES TO BE PUNCHED OR DRILLED THROUGH EACH ANGLE AS SHOWN FOR GRATES THAT ARE GALVANIZED ONLY.



VENT HOLE DETAIL

SECTION C - C



HYDRAULIC PERFORMANCE CHART

TO ALLOW FOR CLOGGING 60% THEORETICAL DISCHARGE IS THE RECOMMENDED FACTOR TO USE IN AREAS SUBJECT TO DEBRIS.

### GENERAL NOTES

- ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2019 ODOT STANDARD SPECIFICATIONS.
- VENT HOLES AND DRAIN HOLES FOR HOT-DIP GALVANIZATION SHALL BE DRILLED OR PUNCHED IN THE GRATE AS SHOWN.
- WHEN INLET DEPTH B (★) EXCEEDS VALUE LISTED IN TABLE SUMMARY SHOWN IN LOWER LEFT CORNER OF SHEET, THE ADDITIONAL DEPTH SHALL BE PAID FOR AS "ADDITIONAL DEPTH IN INLET". SPECIFIC ADDITIONAL DEPTH DATA FOR EACH STRUCTURE SHALL BE SHOWN ON THE PLANS.

|        |                       | DESIGN NO. | PIPE SIZE  | ★<br>MIN. DIM.<br>"B" | CLASS A CONC. | REINF. STEEL | CONC. PER ADD'L FT. DEPTH | REINF. STEEL PER ADD'L FT. DEPTH | "A1" BARS BENT<br>#4 AT 9" C/C |       | "A2" BARS BENT<br>#4 AT 9" C/C |    | "B" BARS BENT<br>#4 AT 9" C/C |        |    | "B2" BARS BENT<br>#4 AT 9" C/C |        |        | "C1" BARS BENT<br>#4 AT 9" C/C |             |        | "C2" BARS BENT<br>#4 AT 9" C/C |    |       | "D1" BARS STR'T. #4 AT 9" C/C |    |       |        |    |        |
|--------|-----------------------|------------|------------|-----------------------|---------------|--------------|---------------------------|----------------------------------|--------------------------------|-------|--------------------------------|----|-------------------------------|--------|----|--------------------------------|--------|--------|--------------------------------|-------------|--------|--------------------------------|----|-------|-------------------------------|----|-------|--------|----|--------|
|        |                       |            |            |                       |               |              |                           |                                  | NO                             | LGTH  | X DIM.                         | NO | LGTH                          | X DIM. | NO | LGTH                           | X DIM. | Y DIM. | NO                             | LGTH        | X DIM. | Y DIM.                         | NO | LGTH  | X DIM.                        | NO | LGTH  | X DIM. | NO | LGTH   |
|        |                       |            |            |                       | CY            | LB           | CY                        | LB                               | CY                             | LB    | CY                             | LB | CY                            | LB     | CY | LB                             | CY     | LB     | CY                             | LB          | CY     | LB                             | CY | LB    | CY                            | LB | CY    | LB     |    |        |
| TYPE 1 | PIPE AT SIDES OR BACK | 1          | 24"        | 3'-1¼"                | 1.40          | 162.         | .31                       | 36.5                             | 6                              | 4'-5" | 2'-10"                         | 6  | 4'-3"                         | 3'-3"  | 2  | 10'-1"                         | 3'-7"  | 3'-3"  | 3                              | 9'-7" Avg.  | 3'-7"  | 2'-10" to 3'-2"                | 10 | 5'-6" | 3'-6"                         | 10 | 6'-9" | 4'-9"  | 4  | 4'-11" |
|        |                       | 2          | 30"        | 3'-7¾"                | 1.52          | 174.         | .31                       | 36.5                             | 6                              | 5'-0" | 3'-5"                          | 6  | 4'-9"                         | 3'-9"  | 2  | 11'-1"                         | 3'-7"  | 3'-9"  | 3                              | 10'-7" Avg. | 3'-7"  | 3'-4" to 3'-8"                 | 11 | 5'-6" | 3'-6"                         | 10 | 6'-9" | 4'-9"  | 4  | 4'-11" |
|        |                       | 3          | 36"        | 4'-2¼"                | 1.63          | 198.         | .31                       | 36.5                             | 6                              | 5'-6" | 3'-11"                         | 6  | 5'-4"                         | 4'-4"  | 2  | 12'-3"                         | 3'-7"  | 4'-4"  | 3                              | 11'-9" Avg. | 3'-7"  | 3'-11" to 4'-3"                | 13 | 5'-6" | 3'-6"                         | 12 | 6'-9" | 4'-9"  | 4  | 4'-11" |
|        |                       | 4          | 42"        | 4'-8¾"                | 1.73          | 219.         | .31                       | 36.5                             | 6                              | 6'-1" | 4'-6"                          | 6  | 5'-10"                        | 4'-10" | 2  | 13'-3"                         | 3'-7"  | 4'-10" | 3                              | 12'-9" Avg. | 3'-7"  | 4'-5" to 4'-9"                 | 14 | 5'-6" | 3'-6"                         | 14 | 6'-9" | 4'-9"  | 4  | 4'-11" |
|        |                       | 5          | 18" or 24" | 3'-7¾"                | 1.57          | 174.         | .31                       | 36.5                             | 6                              | 5'-0" | 3'-5"                          | 6  | 4'-9"                         | 3'-9"  | 2  | 11'-1"                         | 3'-7"  | 3'-9"  | 3                              | 10'-7" Avg. | 3'-7"  | 3'-4" to 3'-8"                 | 11 | 5'-6" | 3'-6"                         | 10 | 6'-9" | 4'-9"  | 4  | 4'-11" |
|        |                       | 6          | 30"        | 4'-2¼"                | 1.69          | 198.         | .31                       | 36.5                             | 6                              | 5'-6" | 3'-11"                         | 6  | 5'-4"                         | 4'-4"  | 2  | 12'-3"                         | 3'-7"  | 4'-4"  | 3                              | 11'-9" Avg. | 3'-7"  | 3'-11" to 4'-3"                | 13 | 5'-6" | 3'-6"                         | 12 | 6'-9" | 4'-9"  | 4  | 4'-11" |
|        |                       | 7          | 36"        | 4'-8¾"                | 1.79          | 219.         | .31                       | 36.5                             | 6                              | 6'-1" | 4'-6"                          | 6  | 5'-10"                        | 4'-10" | 2  | 13'-3"                         | 3'-7"  | 4'-10" | 3                              | 12'-9" Avg. | 3'-7"  | 4'-5" to 4'-9"                 | 14 | 5'-6" | 3'-6"                         | 14 | 6'-9" | 4'-9"  | 4  | 4'-11" |
| TYPE 2 | PIPE AT SIDES         | 8          | 24"        | 3'-1¼"                | 1.89          | 204.         | .39                       | 44.5                             | 12                             | 4'-5" | 2'-10"                         |    |                               |        | 2  | 10'-1"                         | 3'-7"  | 3'-3"  | 6                              | 9'-7" Avg.  | 3'-7"  | 2'-10" to 3'-2"                | 10 | 5'-6" | 3'-6"                         | 10 | 9'-0" | 7'-0"  | 4  | 7'-2"  |
|        |                       | 9          | 30"        | 3'-7¾"                | 2.05          | 213.         | .39                       | 44.5                             | 12                             | 5'-0" | 3'-5"                          |    |                               |        | 2  | 11'-1"                         | 3'-7"  | 3'-9"  | 6                              | 10'-7" Avg. | 3'-7"  | 3'-4" to 3'-8"                 | 10 | 5'-6" | 3'-6"                         | 10 | 9'-0" | 7'-0"  | 4  | 7'-2"  |
|        |                       | 10         | 36"        | 4'-2¼"                | 2.21          | 243.         | .39                       | 44.5                             | 12                             | 5'-6" | 3'-11"                         |    |                               |        | 2  | 12'-3"                         | 3'-7"  | 4'-4"  | 6                              | 11'-9" Avg. | 3'-7"  | 3'-11" to 4'-3"                | 12 | 5'-6" | 3'-6"                         | 12 | 9'-0" | 7'-0"  | 4  | 7'-2"  |
|        |                       | 11         | 42"        | 4'-8¾"                | 2.35          | 272.         | .39                       | 44.5                             | 12                             | 6'-1" | 4'-6"                          |    |                               |        | 2  | 13'-3"                         | 3'-7"  | 4'-10" | 6                              | 12'-9" Avg. | 3'-7"  | 4'-5" to 4'-9"                 | 14 | 5'-6" | 3'-6"                         | 14 | 9'-0" | 7'-0"  | 4  | 7'-2"  |
|        |                       | 11A        | 48"        | 5'-3¼"                | 2.51          | 302.         | .39                       | 44.5                             | 12                             | 6'-7" | 5'-0"                          |    |                               |        | 2  | 14'-3"                         | 3'-7"  | 5'-4"  | 6                              | 13'-9" Avg. | 3'-7"  | 5'-0" to 5'-4"                 | 16 | 5'-6" | 3'-6"                         | 16 | 9'-0" | 7'-0"  | 4  | 7'-2"  |
|        |                       | 12         | 18" or 24" | 3'-7¾"                | 2.10          | 213.         | .39                       | 44.5                             | 12                             | 5'-0" | 3'-5"                          |    |                               |        | 2  | 11'-1"                         | 3'-7"  | 3'-9"  | 6                              | 10'-7" Avg. | 3'-7"  | 3'-4" to 3'-8"                 | 10 | 5'-6" | 3'-6"                         | 10 | 9'-0" | 7'-0"  | 4  | 7'-2"  |
|        |                       | 13         | 30"        | 4'-2¼"                | 2.26          | 243.         | .39                       | 44.5                             | 12                             | 5'-6" | 3'-11"                         |    |                               |        | 2  | 12'-3"                         | 3'-7"  | 4'-4"  | 6                              | 11'-9" Avg. | 3'-7"  | 3'-11" to 4'-3"                | 12 | 5'-6" | 3'-6"                         | 12 | 9'-0" | 7'-0"  | 4  | 7'-2"  |
|        |                       | 14         | 36"        | 4'-8¾"                | 2.42          | 272.         | .39                       | 44.5                             | 12                             | 6'-1" | 4'-6"                          |    |                               |        | 2  | 13'-3"                         | 3'-7"  | 4'-10" | 6                              | 12'-9" Avg. | 3'-7"  | 4'-5" to 4'-9"                 | 14 | 5'-6" | 3'-6"                         | 14 | 9'-0" | 7'-0"  | 4  | 7'-2"  |

| BASIS OF PAYMENT |                             |      |
|------------------|-----------------------------|------|
| ITEM NO.         | ITEM                        | UNIT |
| 611 (G)          | INLET GPI ■                 | EA   |
| 611 (H)          | ADDITIONAL DEPTH IN INLET ● | VF   |

- SPECIFY TYPE AND DESIGN, EXAMPLE: INLET GPI TYPE 1 (DESIGN 2)
  - SPECIFY TYPE, EXAMPLE: ADDITIONAL DEPTH IN INLET GPI TYPE 1
- NOTE: COST OF INLET PIPE GRATES ( TYPES A & B ) SHALL BE INCLUDED IN THE PRICE BID FOR THE INLET.

APPROVED BY ROADWAY ENGINEER: *[Signature]* DATE: 6/30/22

ROADWAY DESIGN DIVISION STANDARD

CAST-IN-PLACE GRATED PIPE DROP INLET  
(18" TO 42" PIPE)



2019 SPECIFICATIONS

GPI-5 2

R-40