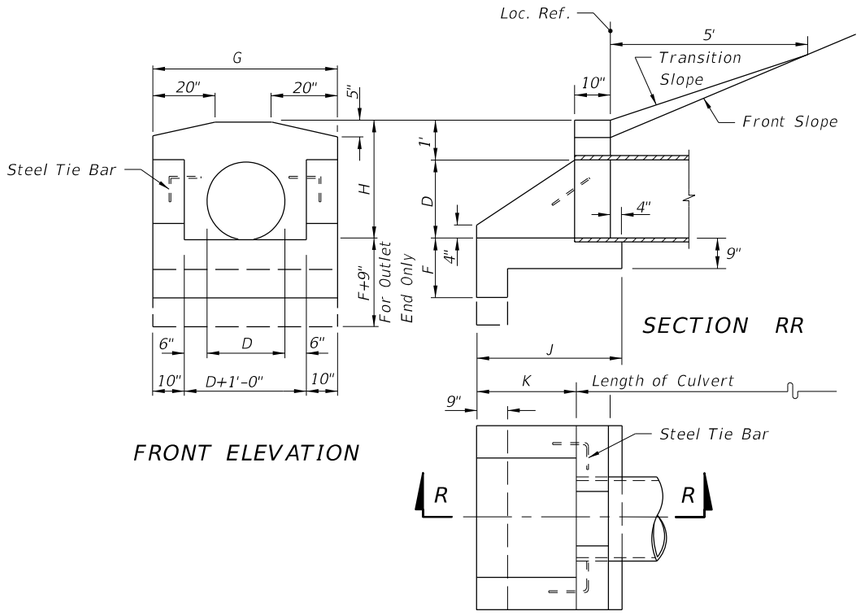
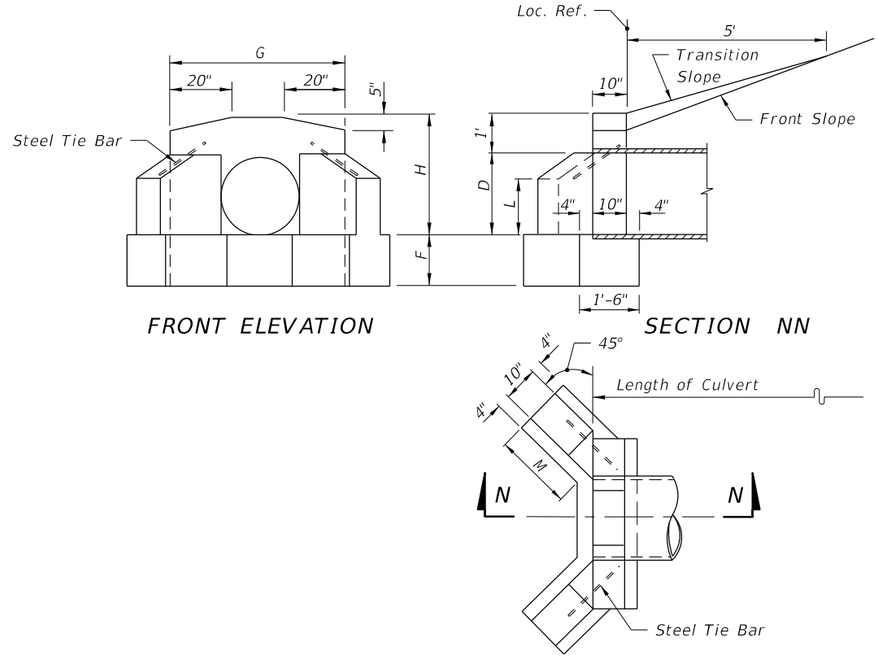



FRONT ELEVATION

SECTION RR

PLAN

CONCRETE ENDWALL WITH U-TYPE WINGS FOR PIPE CULVERTS




FRONT ELEVATION

SECTION NN

PLAN

CONCRETE ENDWALL WITH 45° WINGS FOR PIPE CULVERTS

## TABLE OF DIMENSIONS AND ESTIMATED QUANTITIES
## PIPE CULVERT ENDWALLS WITH U-TYPE WINGS

| DIMENSIONS | | | | | | | QUANTITIES IN ONE ENDWALL | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Opening | | Wall | | | Footing | | Concrete, Class I, Total (CY) | | | | | | Steel Tie Bars |
| | | | | | | | RCP | | CMP | | CIP | | |
| D | Area ($ft^2$) | G | H | K | F | J | Inlet | Outlet | Inlet | Outlet | Inlet | Outlet | |
| 12" | 0.8 | 3'-8" | 2'-0" | 1'-0" | 1'-3" | 2'-2" | 0.48 | 0.55 | 0.49 | 0.57 | 0.49 | 0.57 | none |
| 15" | 1.2 | 3'-11" | 2'-3" | 1'-5" | 1'-3" | 2'-7" | 0.59 | 0.67 | 0.62 | 0.70 | 0.61 | 0.70 | none |
| 18" | 1.8 | 4'-2" | 2'-6" | 1'-9" | 1'-3" | 2'-11" | 0.70 | 0.79 | 0.74 | 0.82 | 0.74 | 0.82 | none |
| 24" | 3.1 | 4'-8" | 3'-0" | 2'-6" | 1'-6" | 3'-8" | 1.01 | 1.11 | 1.06 | 1.16 | 1.06 | 1.16 | 2-#6 Bars x 2'-0" |
| 30" | 4.9 | 5'-2" | 3'-6" | 3'-3" | 1'-6" | 4'-5" | 1.33 | 1.44 | 1.41 | 1.51 | 1.40 | 1.51 | 2-#6 Bars x 2'-0" |
| 36" | 7.1 | 5'-8" | 4'-0" | 4'-0" | 1'-9" | 5'-2" | 1.73 | 1.85 | 1.84 | 1.96 | 1.82 | 1.94 | 2-#6 Bars x 2'-6" |
| 42" | 9.6 | 6'-2" | 4'-6" | 4'-9" | 2'-0" | 5'-11" | 2.19 | 2.32 | 2.32 | 2.45 | | | 2-#6 Bars x 2'-6" |
| 48" | 12.6 | 6'-8" | 5'-0" | 5'-6" | 2'-0" | 6'-8" | 2.64 | 2.78 | 2.81 | 2.95 | | | 2-#6 Bars x 3'-0" |

## TABLE OF DIMENSIONS AND ESTIMATED QUANTITIES
## PIPE CULVERT ENDWALLS WITH 45° WINGS

| DIMENSIONS | | | | | | | QUANTITIES IN ONE ENDWALL | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Opening | | Wall | | | | Footing | Concrete, Class I | | | Steel Tie Bars |
| | | | | | | | Total (CY) | | | |
| D | Area ($ft^2$) | H | G | L | M | F | RCP | CMP | CIP | |
| 15" | 1.2 | 2'-3" | 3'-7" | 1'-0" | 1'-3" | 1'-3" | 0.56 | 0.59 | 0.59 | none |
| 18" | 1.8 | 2'-6" | 3'-10" | 1'-2" | 1'-7" | 1'-3" | 0.74 | 0.77 | 0.77 | none |
| 24" | 3.1 | 3'-0" | 4'-4" | 1'-5" | 2'-1" | 1'-4" | 1.01 | 1.06 | 1.06 | 2 -#6 Bars x 2'-0" |
| 30" | 4.9 | 3'-6" | 4'-10" | 1'-9" | 2'-5" | 1'-6" | 1.32 | 1.40 | 1.39 | 2 -#6 Bars x 2'-0" |
| 36" | 7.1 | 4'-0" | 5'-4" | 2'-0" | 2'-11" | 1'-8" | 1.72 | 1.83 | 1.82 | 2 -#6 Bars x 2'-6" |
| 42" | 9.6 | 4'-6" | 5'-10" | 2'-3" | 3'-6" | 2'-0" | 2.34 | 2.47 | | 2 -#6 Bars x 2'-6" |
| 48" | 12.6 | 5'-0" | 6'-4" | 2'-6" | 4'-0" | 2'-0" | 2.74 | 2.90 | | 2 -#6 Bars x 2'-6" |

## GENERAL NOTES

1. Winged concrete endwalls are intended for use outside the clear zone.
2. Chamfer all exposed edges ¾".
3. Concrete shall be Class I, except ASTM C478 (4000 psi) Concrete may be substituted for precast items manufactured in plants meeting the requirements of Section 449 of the Specifications.
4. Endwall to be paid for under the contract unit price for Class I Concrete.
5. Sodding to be in accordance with Index No. 281, and paid for under the contract unit price for Performance Turf, SY.

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| LAST REVISION | REVISION | DESCRIPTION: | | | INDEX NO. | SHEET NO. |
|---|---|---|---|---|---|---|
| 07/01/09 | | | FDOT FY 2016-17 DESIGN STANDARDS | WINGED CONCRETE ENDWALLS SINGLE ROUND PIPE | 266 | 1 of 1 |