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TABLE OF VARIABLE DIMENSIONS (5) AND QUANTITIES FOR ONE HEADWALL

| Slope | Dia of Pipe (D) | Values for One Pipe | | Values To Be Added for Each Add'l Pipe | | | |
|-------|-----------------|---------------------|-----------------|--|----------|-----------------|---------------|
| | | W | Reinf (Lbs) (1) | Conc (CY) (2) | W | Reinf (Lbs) (1) | Conc (CY) (2) |
| 2:1 | 12" | 9' - 0" | 122 | 1.1 | 1' - 9" | 15 | 0.2 |
| | 15" | 10' - 3" | 136 | 1.3 | 2' - 2" | 16 | 0.2 |
| | 18" | 11' - 6" | 163 | 1.5 | 2' - 8" | 19 | 0.3 |
| | 21" | 12' - 9" | 200 | 1.8 | 3' - 1" | 31 | 0.4 |
| | 24" | 14' - 0" | 217 | 2.1 | 3' - 7" | 34 | 0.4 |
| | 27" | 15' - 3" | 254 | 2.4 | 3' - 11" | 37 | 0.5 |
| | 30" | 16' - 6" | 272 | 2.7 | 4' - 4" | 40 | 0.6 |
| | 33" | 17' - 9" | 314 | 3.1 | 4' - 8" | 43 | 0.6 |
| | 36" | 19' - 0" | 371 | 3.9 | 5' - 1" | 46 | 0.8 |
| | 42" | 21' - 6" | 442 | 4.9 | 5' - 10" | 52 | 1.0 |
| | 48" | 25' - 0" | 569 | 6.4 | 6' - 7" | 59 | 1.3 |
| | 54" | 27' - 6" | 701 | 7.5 | 7' - 6" | 82 | 1.6 |
| | 60" | 30' - 0" | 794 | 8.8 | 8' - 3" | 90 | 1.8 |
| | 66" | 32' - 6" | 894 | 10.2 | 8' - 9" | 96 | 2.0 |
| 72" | 35' - 0" | 1,055 | 11.7 | 9' - 4" | 103 | 2.3 | |
| 3:1 | 12" | 13' - 0" | 175 | 1.6 | 1' - 9" | 14 | 0.2 |
| | 15" | 14' - 9" | 193 | 1.9 | 2' - 2" | 17 | 0.2 |
| | 18" | 16' - 6" | 228 | 2.2 | 2' - 8" | 19 | 0.3 |
| | 21" | 18' - 3" | 299 | 2.6 | 3' - 1" | 31 | 0.4 |
| | 24" | 20' - 0" | 323 | 3.0 | 3' - 7" | 33 | 0.4 |
| | 27" | 21' - 9" | 371 | 3.5 | 3' - 11" | 37 | 0.5 |
| | 30" | 23' - 6" | 415 | 4.0 | 4' - 4" | 40 | 0.5 |
| | 33" | 25' - 3" | 469 | 4.6 | 4' - 8" | 43 | 0.6 |
| | 36" | 27' - 0" | 556 | 5.7 | 5' - 1" | 46 | 0.8 |
| | 42" | 30' - 6" | 675 | 7.1 | 5' - 10" | 52 | 1.0 |
| | 48" | 35' - 6" | 837 | 9.2 | 6' - 7" | 59 | 1.3 |
| | 54" | 39' - 0" | 1,015 | 11.0 | 7' - 6" | 84 | 1.6 |
| | 60" | 42' - 6" | 1,171 | 12.9 | 8' - 3" | 91 | 1.8 |
| | 66" | 46' - 0" | 1,298 | 14.9 | 8' - 9" | 98 | 2.0 |
| 72" | 49' - 6" | 1,561 | 17.1 | 9' - 4" | 103 | 2.3 | |
| 4:1 | 12" | 17' - 0" | 229 | 2.0 | 1' - 9" | 15 | 0.2 |
| | 15" | 19' - 3" | 266 | 2.4 | 2' - 2" | 17 | 0.2 |
| | 18" | 21' - 6" | 308 | 2.9 | 2' - 8" | 19 | 0.3 |
| | 21" | 23' - 9" | 382 | 3.5 | 3' - 1" | 31 | 0.3 |
| | 24" | 26' - 0" | 430 | 3.9 | 3' - 7" | 34 | 0.4 |
| | 27" | 28' - 3" | 486 | 4.7 | 3' - 11" | 37 | 0.5 |
| | 30" | 30' - 6" | 539 | 5.2 | 4' - 4" | 40 | 0.6 |
| | 33" | 32' - 9" | 603 | 6.0 | 4' - 8" | 42 | 0.6 |
| | 36" | 35' - 0" | 738 | 7.5 | 5' - 1" | 47 | 0.8 |
| | 42" | 39' - 6" | 881 | 9.3 | 5' - 10" | 52 | 1.0 |
| | 48" | 46' - 0" | 1,102 | 12.1 | 6' - 7" | 61 | 1.3 |
| | 54" | 50' - 6" | 1,364 | 14.4 | 7' - 6" | 84 | 1.6 |
| | 60" | 55' - 0" | 1,547 | 16.9 | 8' - 3" | 91 | 1.8 |
| | 66" | 59' - 6" | 1,741 | 19.5 | 8' - 9" | 98 | 2.0 |
| 72" | 64' - 0" | 2,077 | 22.4 | 9' - 4" | 102 | 2.3 | |
| 6:1 | 12" | 25' - 0" | 336 | 3.0 | 1' - 9" | 14 | 0.2 |
| | 15" | 28' - 3" | 384 | 3.6 | 2' - 2" | 17 | 0.2 |
| | 18" | 31' - 6" | 452 | 4.2 | 2' - 8" | 19 | 0.3 |
| | 21" | 34' - 9" | 581 | 5.1 | 3' - 1" | 31 | 0.4 |
| | 24" | 38' - 0" | 644 | 5.8 | 3' - 7" | 34 | 0.4 |
| | 27" | 41' - 3" | 737 | 6.9 | 3' - 11" | 37 | 0.5 |
| | 30" | 44' - 6" | 807 | 7.7 | 4' - 4" | 39 | 0.6 |
| | 33" | 47' - 9" | 912 | 8.9 | 4' - 8" | 44 | 0.6 |
| | 36" | 51' - 0" | 1,108 | 11.0 | 5' - 1" | 48 | 0.8 |
| | 42" | 57' - 6" | 1,318 | 13.7 | 5' - 10" | 54 | 1.0 |
| | 48" | 67' - 0" | 1,682 | 17.9 | 6' - 7" | 59 | 1.3 |
| | 54" | 73' - 6" | 2,072 | 21.3 | 7' - 6" | 83 | 1.6 |
| | 60" | 80' - 0" | 2,351 | 24.9 | 8' - 3" | 89 | 1.8 |
| | 66" | 86' - 6" | 2,643 | 28.9 | 8' - 9" | 96 | 2.0 |
| 72" | 93' - 0" | 3,121 | 33.1 | 9' - 4" | 101 | 2.3 | |

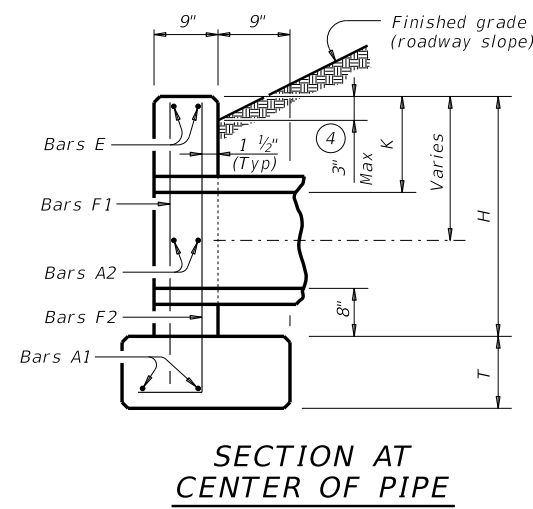
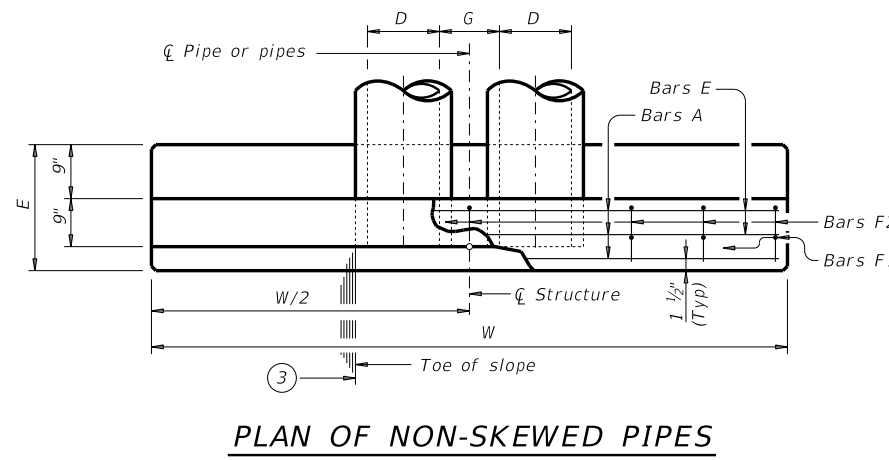
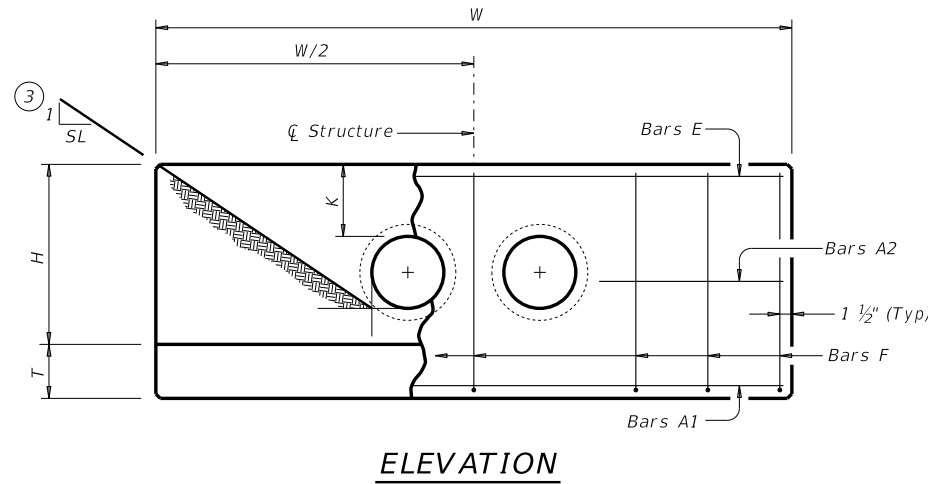
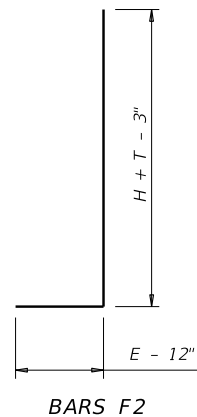


TABLE OF CONSTANT DIMENSIONS

| Dia of Pipe (D) | G | K (5) | H | T | E |
|-----------------|----------|---------|----------|---------|---------|
| 12" | 0' - 9" | 1' - 0" | 2' - 8" | 0' - 9" | 1' - 9" |
| 15" | 0' - 11" | 1' - 0" | 2' - 11" | 0' - 9" | 1' - 9" |
| 18" | 1' - 2" | 1' - 0" | 3' - 2" | 0' - 9" | 1' - 9" |
| 21" | 1' - 4" | 1' - 0" | 3' - 5" | 0' - 9" | 2' - 0" |
| 24" | 1' - 7" | 1' - 0" | 3' - 8" | 0' - 9" | 2' - 0" |
| 27" | 1' - 8" | 1' - 0" | 3' - 11" | 0' - 9" | 2' - 3" |
| 30" | 1' - 10" | 1' - 0" | 4' - 2" | 0' - 9" | 2' - 3" |
| 33" | 1' - 11" | 1' - 0" | 4' - 5" | 0' - 9" | 2' - 6" |
| 36" | 2' - 1" | 1' - 0" | 4' - 8" | 1' - 0" | 2' - 6" |
| 42" | 2' - 4" | 1' - 0" | 5' - 2" | 1' - 0" | 2' - 9" |
| 48" | 2' - 7" | 1' - 3" | 5' - 11" | 1' - 0" | 3' - 0" |
| 54" | 3' - 0" | 1' - 3" | 6' - 5" | 1' - 0" | 3' - 3" |
| 60" | 3' - 3" | 1' - 3" | 6' - 11" | 1' - 0" | 3' - 6" |
| 66" | 3' - 3" | 1' - 3" | 7' - 5" | 1' - 0" | 3' - 9" |
| 72" | 3' - 4" | 1' - 3" | 7' - 11" | 1' - 0" | 4' - 0" |

TABLE OF REINFORCING STEEL (6)

| Bar | Size | Spa | No. |
|-----|------|---------|-----|
| A1 | #5 | ~ | 2 |
| A2 | #5 | 1' - 6" | ~ |
| E | #5 | ~ | 2 |
| F | #5 | 1' - 0" | ~ |

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class C concrete (f'c = 3,600 psi).

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

- Total quantities include one 3'-1" lap for bars over 60' in length.
- Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
- Indicated slope is perpendicular to centerline pipe or pipes.
- For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- Dimensions shown are usual and maximum.
- Quantities shown are for one structure end only (one headwall).

Texas Department of Transportation Bridge Division Standard

CONCRETE HEADWALLS WITH PARALLEL WINGS FOR NON-SKEWED PIPE CULVERTS

CH-PW-0

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|----------------------|-----------|-----------|-----------|-----------|
| FILE: CD-CH-PW-0.dgn | DN: TxDOT | CK: TxDOT | OW: TxDOT | CK: TxDOT |
| ©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | DIST | COUNTY | SHEET NO. | |

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