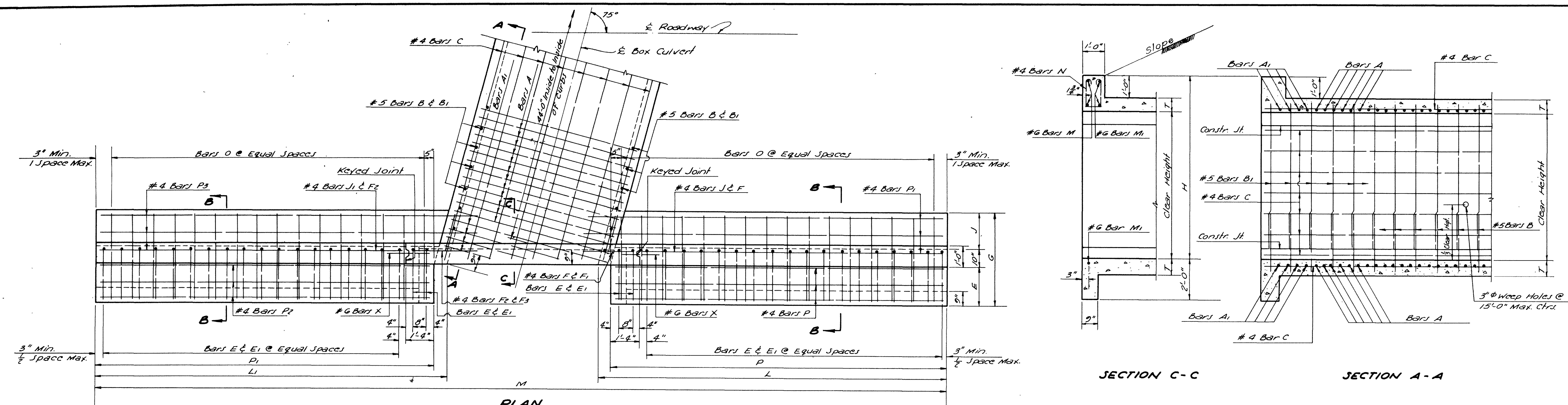
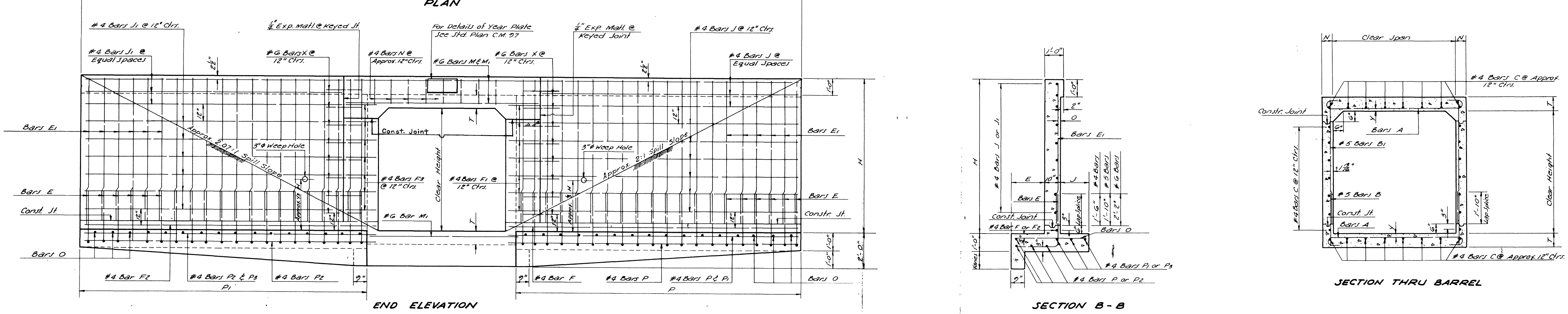
| | | | STATE PROJECT | PARISH | SHEET NO. |
|---|---|---|---|---|---|
| | | | | | |




## QUANTITIES

| OPENING | | PER LIN. FT. OF BARREL | | 44'-0" CULVERT | |
|---|---|---|---|---|---|
| CLEAR SPAN | CLEAR HGT. | STEEL | CONC. | STEEL | CONC. |
| FT. | FT. | LBS. | CU. YDS. | LBS. | CU. YDS. |
| 7 | 7 | 107.29 | 0.7654 | 6866 | 66.07 |
| 8 | 7 | 116.18 | 0.8776 | 7315 | 71.51 |
| | 8 | 121.82 | 0.9805 | 8146 | 83.55 |
| 9 | 7 | 138.97 | 1.0247 | 8402 | 79.12 |
| | 8 | 143.40 | 1.0741 | 9023 | 87.57 |
| | 9 | 150.80 | 1.1898 | 10244 | 101.49 |
| 10 | 7 | 148.83 | 1.1245 | 8902 | 83.92 |
| | 8 | 153.61 | 1.2346 | 9544 | 95.19 |
| | 9 | 163.80 | 1.2901 | 10878 | 106.33 |
| | 10 | 173.27 | 1.4187 | 12881 | 121.64 |

Ⓐ #6 Bars X to be ¾"φ Smooth and Greased for 1'-0" of Length.

## DIMENSIONS

| OPENINGS | | | MAX. FILL | | BARREL | | | | WINGS AND CURBS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLEAR SPAN | CLEAR HGT. | AREA | SLAB | WALL | N | T | O | Y | E | J | G | H | L | L1 | P | P1 | M |
| FT. | FT. | SQ. FT. | FT. | FT. | IN. | IN. | IN. | IN. | FT. IN. | FT. IN. | FT. IN. | FT. IN. | FT. IN. | FT. IN. | FT. IN. | FT. IN. | FT. IN. |
| 7 | 7 | 49 | 13 | 6 | 7 | 9 | 1 3/4 | 1 7/8 | 1-11 | 1-8 | 4-5 | 8-9 | 16-8 1/4 | 16-10 1/4 | 16-1 | 16-3 | 40-9 7/16 |
| 8 | 7 | 56 | 13 | 6 | 7 | 10 | 1 3/4 | 1 7/8 | 1-11 | 1-8 | 4-5 | 8-10 | 16-8 1/4 | 16-10 1/4 | 16-1 | 16-3 | 41-9 7/8 |
| | 8 | 64 | 12 | 5 | 8 | 10 | 1 13/16 | 1 7/8 | 2-0 | 2-0 | 4-10 | 9-10 | 18-7 5/16 | 19-4 5/16 | 17-11 | 18-8 | 46-2 15/16 |
| 9 | 7 | 63 | 11 | 8 | 8 | 10 1/2 | 1 3/4 | 1 15/16 | 1-11 | 1-8 | 4-5 | 8-10 1/2 | 16-9 5/16 | 17-7 5/16 | 16-1 | 16-11 | 43-8 3/8 |
| | 8 | 72 | 11 | 5 | 8 | 10 1/2 | 1 13/16 | 1 15/16 | 2-0 | 2-0 | 4-10 | 9-10 1/2 | 18-4 5/16 | 19-1 5/16 | 17-8 | 18-5 | 46-9 3/8 |
| | 9 | 81 | 10 | 5 | 9 | 10 1/2 | 1 13/16 | 1 15/16 | 2-2 | 2-4 | 5-4 | 10-10 1/2 | 20-8 5/16 | 21-5 5/16 | 19-11 | 20-8 | 51-5 7/16 |
| 10 | 7 | 70 | 8 | 7 | 8 | 11 | 1 3/4 | 1 15/16 | 1-11 | 1-8 | 4-5 | 8-11 | 16-9 5/16 | 17-7 5/16 | 16-1 | 16-11 | 44-8 13/16 |
| | 8 | 80 | 7 | 6 | 9 | 11 | 1 13/16 | 1 15/16 | 2-0 | 2-0 | 4-10 | 9-11 | 18-5 5/16 | 19-2 5/16 | 17-8 | 18-5 | 47-11 7/8 |
| | 9 | 90 | 6 | 5 | 9 | 11 | 1 13/16 | 1 15/16 | 2-2 | 2-4 | 5-4 | 10-11 | 20-8 5/16 | 21-5 5/16 | 19-11 | 20-8 | 52-5 7/8 |
| | 10 | 100 | 6 | 6 | 10 | 11 | 1 7/8 | 1 15/16 | 2-4 | 2-8 | 5-10 | 11-11 | 22-8 3/8 | 24-0 3/8 | 21-10 | 23-2 | 57-0 15/16 |

## BILL OF REINFORCING STEEL FOR 44'-0" CULVERT

### BARREL REINFORCEMENT

| OPENING | | BARS A | | | | BARS A1 | | | | | | #5 BARS B & B1 | | | | #4 BARS C | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLEAR SPAN | CLEAR HGT. | SIZE | Nº | LGTH. | SPAC. | SIZE | Nº | SHORT BAR | VAR. | LONG BAR | SPAC. | Nº | LENGTH B | LENGTH B1 | SPAC. | Nº | ⊕ LGTH. |
| FT. | FT. | | | FT. IN. | IN. | | | FT. IN. | IN. | FT. IN. | IN. | | FT. IN. | FT. IN. | IN. | | FT. IN. |
| 7 | 7 | #6 | 210 | 9-2 1/2 | 5 | #6 | 16 | 3-3 | 18.6667 | 7-11 | 5 | 92 | 2-11 | 7-1 | 12 | 30 | 47-3 |
| 8 | 7 | #6 | 208 | 10-2 1/2 | 5 | #6 | 20 | 3-3 | 18.5000 | 9-5 | 5 | 92 | 3-0 | 7-2 | 12 | 32 | 47-3 |
| | 8 | #6 | 208 | 10-4 1/2 | 5 | #6 | 20 | 3-4 | 18.5000 | 9-6 | 5 | 96 | 3-0 | 8-2 | 11 1/2 | 34 | 47-3 |
| 9 | 7 | #7 | 174 | 11-7 1/2 | 6 | #7 | 16 | 3-5 | 22.3333 | 9-0 | 6 | 92 | 3-0 | 7-2 | 12 | 34 | 47-3 |
| | 8 | #7 | 174 | 11-7 1/2 | 6 | #7 | 16 | 3-5 | 22.3333 | 9-0 | 6 | 96 | 3-0 | 8-2 | 11 1/2 | 36 | 47-3 |
| | 9 | #7 | 174 | 11-9 1/2 | 6 | #7 | 16 | 3-6 | 22.3333 | 9-1 | 6 | 106 | 3-0 | 9-2 | 10 1/2 | 38 | 47-3 |
| 10 | 7 | #7 | 172 | 12-7 1/2 | 6 | #7 | 20 | 3-5 | 22.5000 | 10-11 | 6 | 92 | 3-1 | 7-3 | 12 | 36 | 47-3 |
| | 8 | #7 | 172 | 12-9 1/2 | 6 | #7 | 20 | 3-6 | 22.5000 | 11-0 | 6 | 92 | 3-1 | 8-3 | 12 | 38 | 47-3 |
| | 9 | #7 | 172 | 12-9 1/2 | 6 | #7 | 20 | 3-6 | 22.5000 | 11-0 | 6 | 116 | 3-1 | 9-3 | 9 1/2 | 40 | 47-3 |
| | 10 | #7 | 172 | 12-11 1/2 | 6 | #7 | 20 | 3-7 | 22.5000 | 11-1 | 6 | 130 | 3-1 | 10-3 | 8 1/2 | 42 | 47-3 |

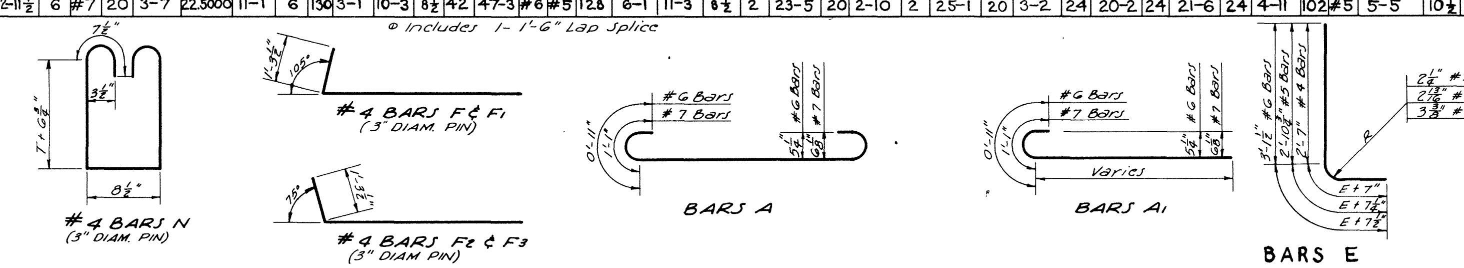
⊕ Includes 1- 1'-6" Lap Splice

### WINGS AND CURB REINFORCEMENT

| OPENING | | BARS E & E1 | | | | | | #4 BARS F | | #4 BARS F1 | | #4 BARS F2 | | #4 BARS F3 | | #4 BARS J | | #4 BARS J1 | | #4 BARS N | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLEAR SPAN | CLEAR HGT. | SIZE E | SIZE E1 | Nº | LENGTH E | LENGTH E1 | SPAC. | Nº | LGTH. | Nº | LGTH. | Nº | LGTH. | Nº | LGTH. | Nº | LGTH. | Nº | LGTH. | Nº | LGTH. |
| FT. | FT. | | | | FT. IN. | FT. IN. | IN. | | FT. IN. | | FT. IN. | | FT. IN. | | FT. IN. | | FT. IN. | | FT. IN. | | FT. IN. |
| 7 | 7 | #4 | #4 | 80 | 5-1 | 8-1 | 10 | 2 | 17-5 | 14 | 2-7 | 2 | 17-11 | 14 | 2-11 | 18 | 14-5 | 18 | 14-7 | 18 | 4-7 |
| 8 | 7 | #4 | #4 | 80 | 5-1 | 8-2 | 10 | 2 | 17-5 | 14 | 2-7 | 2 | 17-11 | 14 | 2-11 | 18 | 14-5 | 18 | 14-7 | 20 | 4-9 |
| | 8 | #5 | #4 | 90 | 5-6 | 9-2 | 10 | 2 | 19-4 | 16 | 2-8 | 2 | 20-5 | 16 | 3-0 | 20 | 16-3 | 20 | 17-0 | 20 | 4-9 |
| 9 | 7 | #4 | #4 | 82 | 5-1 | 8-2 | 10 | 2 | 17-6 | 14 | 2-8 | 2 | 18-8 | 14 | 3-0 | 18 | 14-5 | 18 | 15-3 | 22 | 4-10 |
| | 8 | #5 | #4 | 82 | 5-6 | 9-2 | 11 | 2 | 19-1 | 16 | 2-8 | 2 | 20-2 | 16 | 3-0 | 20 | 16-0 | 20 | 16-9 | 22 | 4-10 |
| | 9 | #5 | #4 | 122 | 5-8 | 10-2 | 8 | 2 | 21-5 | 18 | 2-9 | 2 | 22-6 | 18 | 3-1 | 22 | 18-3 | 22 | 19-0 | 22 | 4-10 |
| 10 | 7 | #4 | #4 | 82 | 5-1 | 8-3 | 10 | 2 | 17-6 | 14 | 2-8 | 2 | 18-8 | 14 | 3-0 | 18 | 14-5 | 18 | 15-3 | 24 | 4-11 |
| | 8 | #5 | #4 | 82 | 5-6 | 9-3 | 11 | 2 | 19-2 | 16 | 2-9 | 2 | 20-3 | 16 | 3-1 | 20 | 16-0 | 20 | 16-9 | 24 | 4-11 |
| | 9 | #5 | #4 | 122 | 5-8 | 10-3 | 8 | 2 | 21-5 | 18 | 2-9 | 2 | 22-6 | 18 | 3-1 | 22 | 18-3 | 22 | 19-0 | 24 | 4-11 |
| | 10 | #6 | #5 | 128 | 6-1 | 11-3 | 8 1/2 | 2 | 23-5 | 20 | 2-10 | 2 | 25-1 | 20 | 3-2 | 24 | 20-2 | 24 | 21-6 | 24 | 4-11 |

| OPENING | | BARS O | | | | #4 BARS P | | #4 BARS P1 | | #4 BARS P2 | | #4 BARS P3 | | #6 BARS M | | #6 BARS M1 | | #6 BARS X Ⓐ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLEAR SPAN | CLEAR HGT. | Nº | SIZE | LGTH. | SPAC. | Nº | LGTH. | Nº | LGTH. | Nº | LGTH. | Nº | LGTH. | Nº | LGTH. | Nº | LGTH. | Nº | LGTH. |
| FT. | FT. | | | FT. IN. | IN. | | FT. IN. | | FT. IN. | | FT. IN. | | FT. IN. | | FT. IN. | | FT. IN. | | FT. IN. |
| 7 | 7 | 64 | #4 | 4-0 | 12 | 8 | 15-9 | 6 | 17-3 | 8 | 15-11 | 6 | 18-2 | 4 | 10-7 | 6 | 8-1 | 32 | 2-0 |
| 8 | 7 | 64 | #4 | 4-0 | 12 | 8 | 15-9 | 6 | 17-3 | 8 | 15-11 | 6 | 18-2 | 4 | 11-7 | 6 | 9-1 | 32 | 2-0 |
| | 8 | 74 | #4 | 4-5 | 12 | 8 | 17-7 | 6 | 19-1 | 8 | 18-4 | 6 | 20-8 | 4 | 11-9 | 6 | 9-3 | 36 | 2-0 |
| 9 | 7 | 66 | #4 | 4-0 | 12 | 8 | 15-9 | 6 | 17-3 | 8 | 16-7 | 6 | 18-11 | 4 | 12-10 | 6 | 10-4 | 32 | 2-0 |
| | 8 | 72 | #4 | 4-5 | 12 | 8 | 17-4 | 6 | 18-10 | 8 | 18-1 | 6 | 20-5 | 4 | 12-10 | 6 | 10-4 | 36 | 2-0 |
| | 9 | 98 | #4 | 4-11 | 10 | 8 | 19-7 | 6 | 21-1 | 8 | 20-4 | 6 | 22-8 | 4 | 13-0 | 6 | 10-6 | 40 | 2-0 |
| 10 | 7 | 66 | #4 | 4-0 | 12 | 8 | 15-9 | 6 | 17-3 | 8 | 16-7 | 6 | 18-11 | 4 | 13-10 | 6 | 11-4 | 32 | 2-0 |
| | 8 | 72 | #4 | 4-5 | 12 | 8 | 17-4 | 6 | 18-10 | 8 | 18-1 | 6 | 20-5 | 4 | 14-0 | 6 | 11-6 | 36 | 2-0 |
| | 9 | 98 | #4 | 4-11 | 10 | 8 | 19-7 | 6 | 21-1 | 8 | 20-4 | 6 | 22-8 | 4 | 14-0 | 6 | 11-6 | 40 | 2-0 |
| | 10 | 102 | #5 | 5-5 | 10 1/2 | 8 | 21-6 | 6 | 23-0 | 8 | 22-10 | 6 | 25-2 | 4 | 14-2 | 6 | 11-8 | 44 | 2-0 |

GENERAL NOTES:
Construction Specifications: Latest Approved La. Dept. of Highways Std. Specifications.
Design Specifications: A.A.S.H.O. 1961 as Amended by Int. Spec. 1964
Live Load: HS 20-44, or Military Loading, whichever is greater.
All Concrete to be Class "A".
All Exposed Corners to have ¾" Chamfer, unless otherwise noted.
Reinforcement shall be Billet-Steel A.S.T.M. A615 or Rail-Steel A.S.T.M. A616 or Axle-Steel A.S.T.M. A617.
Dimensions Relating to Reinforcing Steel are to Bar Centers.
A 1'-6" Square of Plastic Filter Cloth (See Qualified Products List) shall be placed in contact with Concrete behind each Weep Hole, in addition to approx. 2 Cu. Ft. of Concrete Sand.
For Detail of Joints, See Std. Plan C.M. - 49.




| DATE | DESCRIPTION | BY |
|---|---|---|
| 1-11-78 | Rev. Weep Hole Note | W.T.J. |
| 5-30-75 | Revised Spill Slope | W.T.J. |
| 6-8-72 | Rev. General Notes for Steel | W.E.M. |
| 2-4-72 | Added 8'x7' & 9' & 10' Spans | W.E.M. |
| [illegible] | Axle's Axle Steel | W.E.M. |
| 12-16-64 | Rev. General Notes | W.E.M. |
| 11-13-64 | 8'x8' Added & Notes Rev. | N.K.B. W.E.M. |
| 4-3-64 | Deformed Dowels X to Smooth | W.E.M. |

REVISIONS

STANDARD PLAN
**REINF. CONCRETE BOX CULVERTS**
STRAIGHT WINGS 75° CROSSING
2:1 SPILL SLOPE
7' THRU 10' CLEAR SPANS & CLEAR HEIGHTS
DATED Apr. 29, 1963

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED W.E. Marcum | DETAILED | TRACED E. C. Islinger
CHECKED N.K. Brown | CHECKED W.E. Marcum | CHECKED W.E. Marcum

BRIDGE DESIGN SECTION

C·C·S·S·7-10·RS·75°·1

C·C·S·S·7-10·RS·75°·1

APPROVED BY:
Original Signed by Chief Engineer
CHIEF ENGINEER DATE