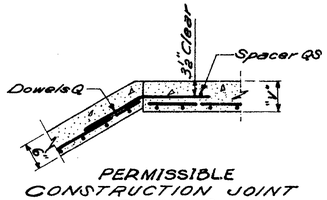



## CULVERT DIMENSIONS / ESTIMATED QUANTITIES

| CLEAR SPAN | MAX. COVER | T | V | W | Y | CULVERT (L=150') CONC. CU. YD. | CULVERT (L=150') REINF. STEEL LB. | PER. LIN. FT. BARREL CONC. CU. YD. | PER. LIN. FT. BARREL REINF. STEEL LB. | 1 AUX. SLAB "J" CONC. CU. YD. | 1 AUX. SLAB "J" REINF. STEEL LB. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5' | 18' | 7" | 7" | 1'-5" | 14'-11⅜" | 80.36 | 11,238 | 0.4825 | 69.4 | 0.30 | 18 |
| 6' | 16' | 7½" | 7" | 1'-5½" | 15'-11⅜" | 90.71 | 13,675 | 0.5478 | 85.4 | 0.35 | 21 |
| 7' | 13' | 8" | 7" | 1'-6" | 16'-11⅜" | 101.99 | 15,347 | 0.6193 | 96.0 | 0.40 | 23 |
| 8' | 10' | 8½" | 7" | 1'-6½" | 17'-11⅜" | 114.21 | 17,035 | 0.6970 | 107.1 | 0.45 | 26 |
| 9' | 8' | 9" | 7" | 1'-7" | 18'-11⅜" | 127.36 | 20,102 | 0.7803 | 126.7 | 0.50 | 29 |
| 10' | 8' | 9½" | 7½" | 1'-7½" | 19'-11⅜" | 144.49 | 23,848 | 0.8912 | 151.6 | 0.56 | 32 |
| 12' | 6' | 10" | 8" | 1'-8" | 21'-11⅜" | 172.40 | 28,506 | 1.0700 | 181.7 | 0.66 | 38 |

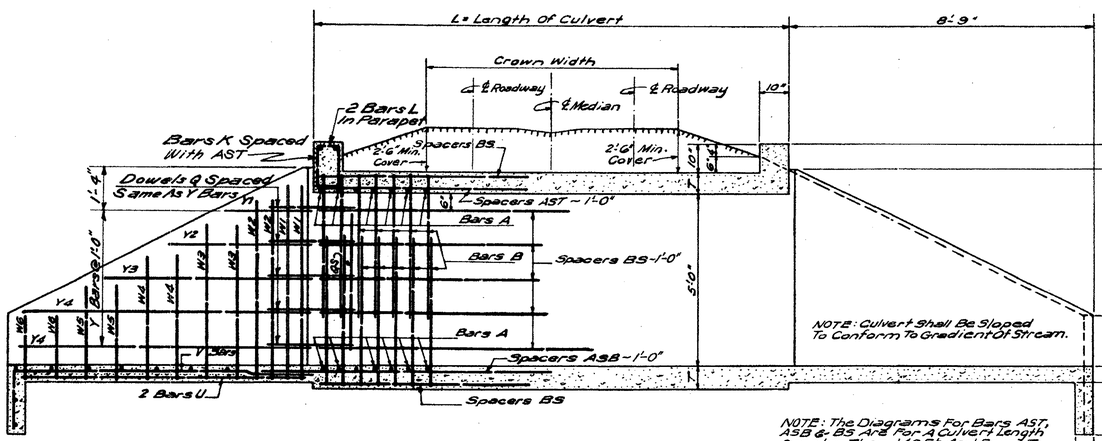
## BAR LIST FOR BARREL (L=150') PARAPETS & 2 AUXILIARY SLABS "J"

| BARS "A" NO. | SIZE | SPAC. | LGTH. | BARS "B" NO. | SIZE | SPAC. | LGTH. | DOWELS "Q"–#4 NO. | LGTH. | SPACERS "QS"–#4 NO. | LGTH. | SETS OF BARS AST #4 ● NO. | LGTH. | SETS OF BARS ASB #4 ● NO. | LGTH. | SETS OF BARS BS #4 ● NO. | LGTH. | BARS "K" #4 NO. | LGTH. | BARS "L" #4 NO. | LGTH. | BARS "M" #4 NO. | LGTH. | BARS "N" #4 NO. | LGTH. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 552 | #5 | 6½" | 5'-11" | 2052 | #3 | 3½" | 5'-5" | 20 | 2'-6" | 4 | 4'-7" | 5 | 152'-9" | 5 | 155'-7" | 18 | 152'-9" | 10 | 4'-0" | 4 | 5'-8" | 4 | 5'-10" | 14 | 2'-2" |
| 626 | #5 | 5¾" | 6'-11" | 1248 | #4 | 5¾" | 5'-10" | 20 | 2'-6" | 4 | 4'-7" | 6 | 152'-9" | 6 | 155'-7" | 22 | 152'-9" | 12 | 4'-1" | 4 | 6'-8" | 4 | 6'-10" | 16 | 2'-2" |
| 654 | #5 | 5½" | 7'-11" | 1308 | #4 | 5½" | 6'-2" | 20 | 2'-6" | 4 | 4'-7" | 7 | 152'-9" | 7 | 155'-7" | 22 | 152'-9" | 14 | 4'-2" | 4 | 7'-8" | 4 | 7'-10" | 18 | 2'-2" |
| 684 | #5 | 5¼" | 8'-11" | 1368 | #4 | 5¼" | 6'-5" | 20 | 2'-6" | 4 | 4'-7" | 8 | 152'-9" | 8 | 155'-7" | 22 | 152'-9" | 16 | 4'-3" | 4 | 8'-8" | 4 | 8'-10" | 20 | 2'-2" |
| 516 | #6 | 7" | 9'-11" | 1032 | #5 | 7" | 6'-10" | 20 | 2'-6" | 4 | 4'-7" | 9 | 152'-9" | 9 | 155'-7" | 22 | 152'-9" | 18 | 4'-4" | 4 | 9'-8" | 4 | 9'-10" | 22 | 2'-2" |
| 576 | #6 | 6¼" | 11'-0" | 1152 | #5 | 6¼" | 7'-2" | 20 | 2'-6" | 4 | 4'-7" | 10 | 152'-9" | 10 | 155'-7" | 26 | 152'-9" | 20 | 4'-5" | 4 | 10'-8" | 4 | 10'-11" | 24 | 2'-2" |
| 438 | #7 | 8¼" | 13'-1" | 1308 | #5 | 5½" | 7'-9" | 20 | 2'-6" | 4 | 4'-7" | 12 | 152'-9" | 12 | 155'-7" | 26 | 152'-9" | 24 | 4'-6" | 4 | 12'-8" | 4 | 13'-0" | 28 | 2'-2" |

● NOTE: The Number And Length Of Bars Are Listed For Sets Of Bars Composed Of Sections As Shown In Bar Bending Details. See Elevation Of Culvert For Number Of Sections.

## BAR LIST FOR WINGS & APRONS

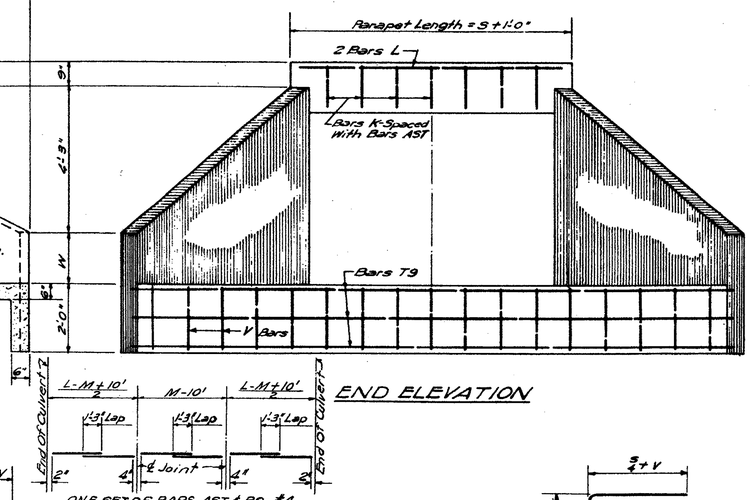
| BAR | SIZE | NO. REQUIRED SPAN 5' | 6' | 7' | 8' | 9' | 10' | 12' | DIM. X | DIM. X1 | LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 | #4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | S+1'-0" |
| T2 | #4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | S+2'-2" |
| T3 | #4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | S+3'-4" |
| T4 | #4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | S+4'-6" |
| T5 | #4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | S+5'-8" |
| T6 | #4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | S+6'-10" |
| T7 | #4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | S+8'-0" |
| T8 | #4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | S+9'-2" |
| T9 | #4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | | | S+10'-2" |
| U | #4 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | | | 9'-6" |
| V1 | #4 | 14 | 16 | 18 | 20 | 22 | 24 | 28 | 0'-5" | 1'-8" | 10'-1" |
| V2 | #4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 6'-6" | 1'-8" | 8'-2" |
| V3 | #4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4'-9" | 1'-8" | 6'-5" |
| V4 | #4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3'-1" | 1'-8" | 4'-9" |
| V5 | #4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1'-5" | 1'-8" | 3'-1" |
| W1 | #4 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 3'-0" | W+4'-1" | W+7'-1" |
| W2 | #4 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 2'-10" | W+3'-8" | W+6'-6" |
| W3 | #4 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 2'-7" | W+2'-11" | W+5'-6" |
| W4 | #4 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 2'-3" | W+2'-1" | W+4'-4" |
| W5 | #4 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 2'-0" | W+1'-3" | W+3'-3" |
| W6 | #4 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 1'-9" | W+4" | W+2'-1" |
| Y1 | #4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | | 2'-7" |
| Y2 | #4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | | 4'-11" |
| Y3 | #4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | | 7'-2" |
| Y4 | #4 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | | | 9'-6" |



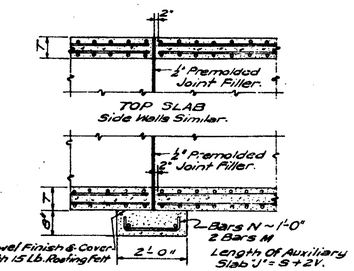

LONGITUDINAL SECTION

NOTE: Culvert Shall Be Sloped To Conform To Gradient Of Stream.

NOTE: The Diagrams For Bars AST, ASB & BS Are For A Culvert Length Greater Than 140 Ft And Equal To Or Less Than 190 Ft With A Median Of 40 Ft Thru 60 Ft. For Conditions Other Than These, Use Sections As Shown On Elevation Of Culvert.



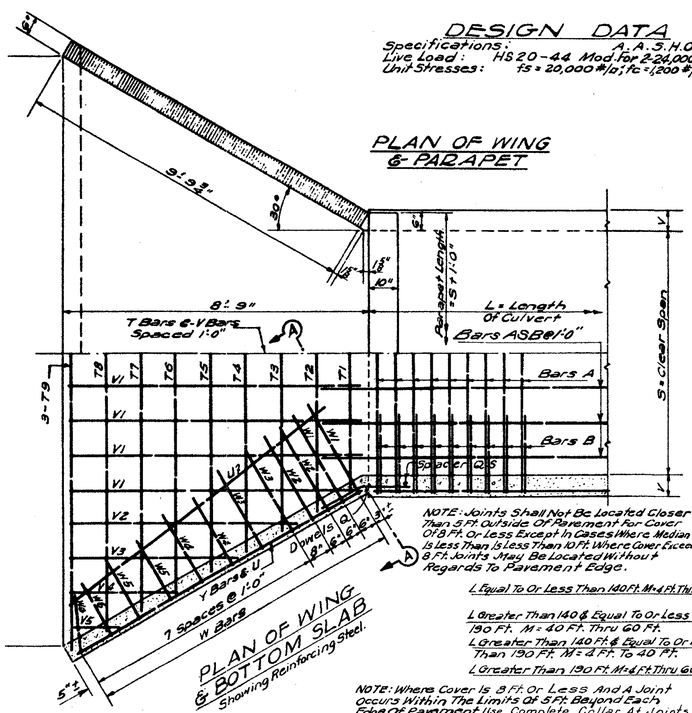

END ELEVATION




DETAILS OF BARREL JOINT & AUXILIARY SLAB "J"

## DESIGN DATA

Specifications: A.A.S.H.O. 1969.
Live Load: HS 20-44 Mod. for 24,000 # Axles.
Unit Stresses: fs = 20,000 #/□"; fc = 1,200 #/□"; n = 10.

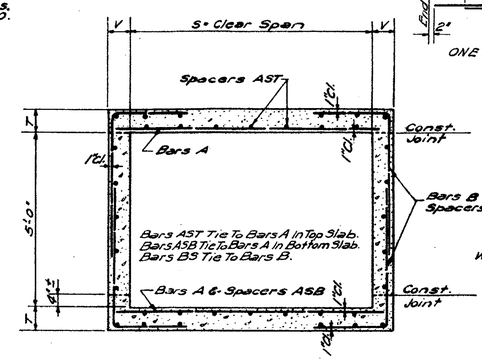



PLAN OF WING & PARAPET

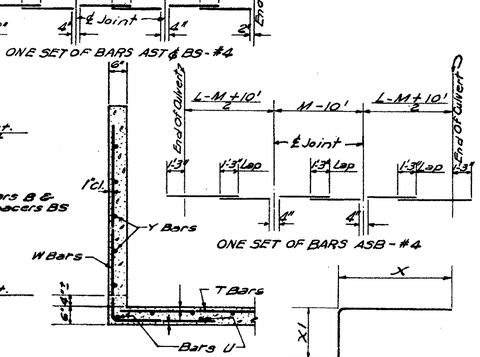
PLAN OF WING & BOTTOM SLAB Showing Reinforcing Steel.

NOTE: Joints Shall Not Be Located Closer Than 5 Ft. Outside Of Pavement For Cover Of 8 Ft. Or Less Except In Cases Where Median Is Less Than Is Less Than 10 Ft. Where Cover Exceeds 9 Ft. Joints May Be Located Without Regards To Pavement Edge.

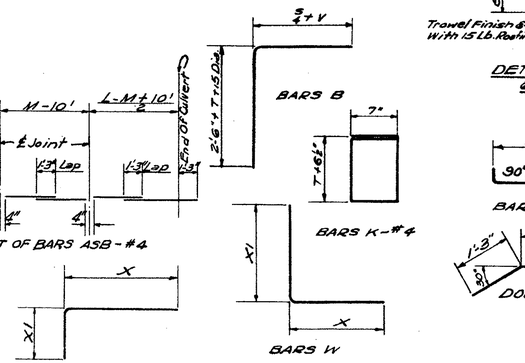
NOTE: Where Cover Is 8 Ft. Or Less And A Joint Occurs Within The Limits Of 5 Ft. Beyond Each Edge Of Pavement Use Complete Cellar At Joints Per Drawing 1CJ-1 Or 1CJS-1.



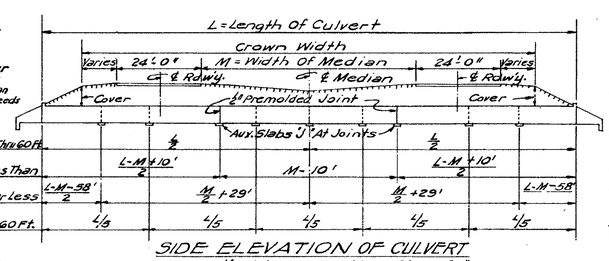

CROSS SECTION




SECTION "A"-"A"




BAR BENDING DETAILS
Dimensions Are Out To Out




SIDE ELEVATION OF CULVERT
Showing ½" Joints And Auxiliary Slabs "J"
Drawn For L = 150 Ft. M = 60 Ft.

## GENERAL NOTES:-

Specifications: Mississippi State Highway Department.
All Concrete Shall Be Class "B".
Concrete Surfaces Shall Be Finished In Accordance With Sub-section 804.24.
All Exposed Corners Shall Be Chamfered ¾ Inch.
Reinforcing Steel Shall Be Placed 1" Clear Minimum From Surface Of The Concrete And Shall Be Adequately Supported From The Forms.
All Bars Shall Be Accurately Spaced And Securely Wired At Each Intersection Before Placing Concrete.
Horizontal Construction Joints Shall Be Placed Only At The Locations Shown, And The Concrete Shall Be Allowed To Set A Minimum Period Of 2 Hours Before Continuing The Pour.
The Quantities Shown Will Be Used As The Basis For Final Payment Unless This Drawing Is Modified.

NOTE: See Drawing 18JL-1 For Additional Joint Locations.

| DATE | REVISION | BY |
|---|---|---|
| | | |

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

# BASIC CULVERT DRAWING

## SINGLE CELL

HEIGHT 5 FT.
SPANS 5–12 FT.

WORKING NUMBER: SD-IBS-5-2W
SHEET NUMBER

FILENAME:
DESIGN TEAM CHECKED DATE

COUNTY:
PROJECT NO.:
DESIGN TEAM:
FILENAME: