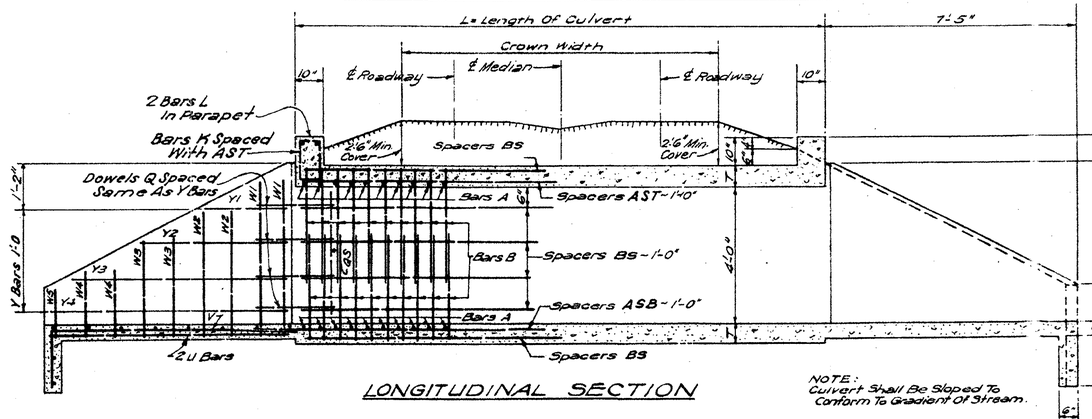
CULVERT DIMENSIONS						ESTIMATED QUANTITIES				BAR LIST FOR BARREL (L=150') PARAPETS & 2 AUXILIARY SLABS "J"																							
						CULVERT (L=150')		PER LIN. FT. BARREL		1 AUX. SLAB "J"		BARS "A"				BARS "B"				DOWELS Q-#4		SPACERS QS-#4		SETS OF BARS AST #4 ⊕		SETS OF BARS ASB #4 ⊕		SETS OF BARS BS #4 ⊕		BARS K #4		BARS L #4		BARS M #4		BARS N #4	
CLEAR SPAN	MAX. COVER	T	V	W	Y	CONCRETE CU. YD.	REINF. STEEL LB.	CONCRETE CU. YD.	REINF. STEEL LB.	CONCRETE CU. YD.	REINF. STEEL LB.	NO.	SIZE	SPAC.	LENGTH	NO.	SIZE	SPAC.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
4'	23'	6½"	6½"	1'-0½"	12'-5"	60.45	8,515	0.3644	52.9	0.25	15	480	#5	[illegible]	4'-10"	1280	#3	4"	4'-7"	16	2'-6"	4	3'-7"	4	152.9#	4	55.7#	16	152.9#	8	3'-11"	4	4'-8"	4	4'-9"	12	2'-2"
5'	21'	7½"	6½"	1'-1½"	13'-5"	72.64	10,987	0.4421	68.9	0.30	18	600	#5	[illegible]	5'-10"	1200	#4	6"	5'-1"	16	2'-6"	4	3'-7"	5	152.9#	5	55.7#	16	152.9#	10	4'-1"	4	5'-8"	4	5'-9"	14	2'-2"
6'	16'	7½"	6½"	1'-1½"	14'-5"	80.07	12,466	0.4884	78.4	0.35	21	600	#5	[illegible]	6'-10"	1200	#4	6"	5'-4"	16	2'-6"	4	3'-7"	6	152.9#	6	55.7#	20	152.9#	12	4'-1"	4	6'-8"	4	6'-9"	10	2'-2"
7'	14'	8"	7"	1'-2"	15'-5"	93.73	14,908	0.5761	94.4	0.40	23	450	#6	[illegible]	7'-11"	900	#5	8"	5'-9"	16	2'-6"	4	3'-7"	7	152.9#	7	55.7#	20	152.9#	14	4'-2"	4	7'-8"	4	7'-10"	18	2'-2"
8'	11'	8½"	7"	1'-2½"	16'-5"	105.90	17,396	0.6538	110.4	0.45	26	498	#6	[illegible]	8'-11"	996	#5	7½"	6'-1"	16	2'-6"	4	3'-7"	8	152.9#	8	55.7#	20	152.9#	16	4'-3"	4	8'-8"	4	8'-10"	20	2'-2"
9'	10'	9"	7½"	1'-3"	17'-5"	121.55	19,823	0.7546	126.4	0.51	29	534	#6	[illegible]	10'-0"	1068	#5	6¾"	6'-5"	16	2'-6"	4	3'-7"	9	152.9#	9	55.7#	20	152.9#	18	4'-4"	4	9'-8"	4	9'-11"	22	2'-2"
10'	8'	9½"	7½"	1'-3½"	18'-5"	135.59	22,693	0.8449	145.0	0.56	32	402	#7	[illegible]	11'-0"	1200	#5	6"	6'-8"	16	2'-6"	4	3'-7"	10	152.9#	10	55.7#	24	152.9#	20	4'-5"	4	10'-8"	4	10'-11"	24	2'-2"

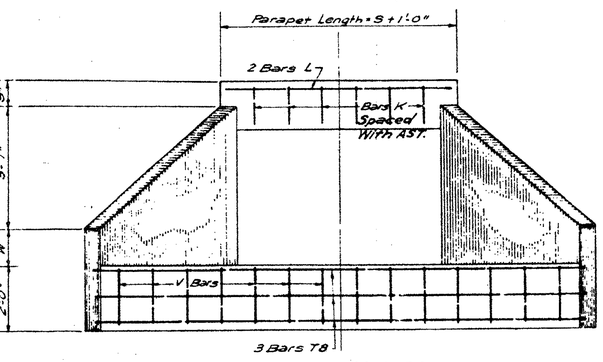
* NOTE: The Number And Length Of Bars Are Listed For Sets Of Bars Composed Of Sections As Shown In Bar Bending Details. See Elevation Of Culvert For Number Of Sections.

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

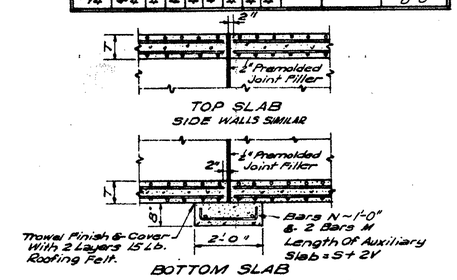


LONGITUDINAL SECTION

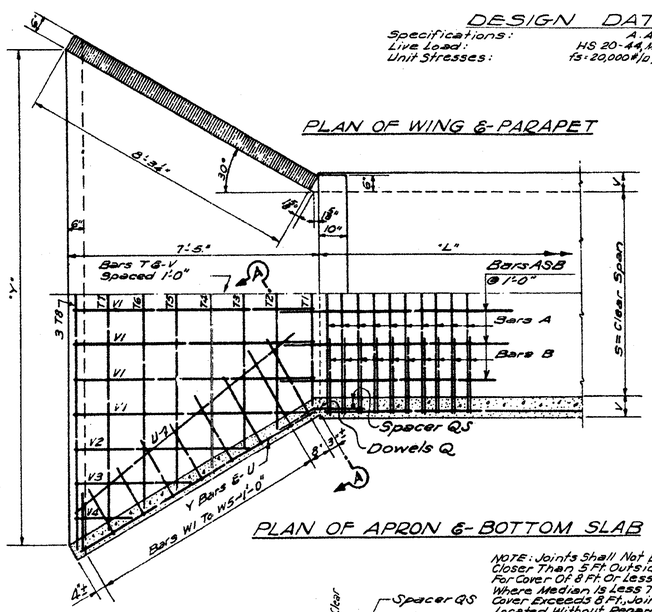
NOTE: Culvert Shall Be Sloped To Conform To Gradient Of Stream.



END ELEVATION



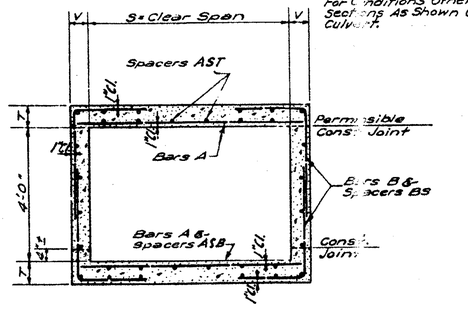
DETAIL OF BARREL JOINT & AUXILIARY SLAB "J"



PLAN OF WING & PARAPET

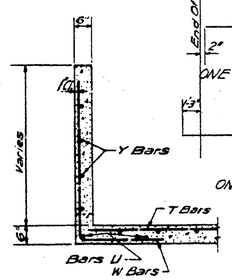
PLAN OF APRON & BOTTOM SLAB

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 10 Ft. Where Cover Exceeds 8 Ft., Joints May Be Located Without Regards To Pavement Edge.

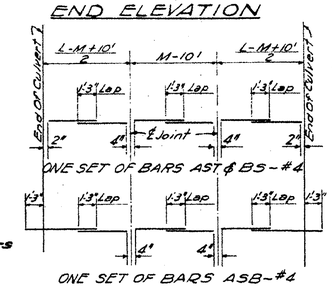


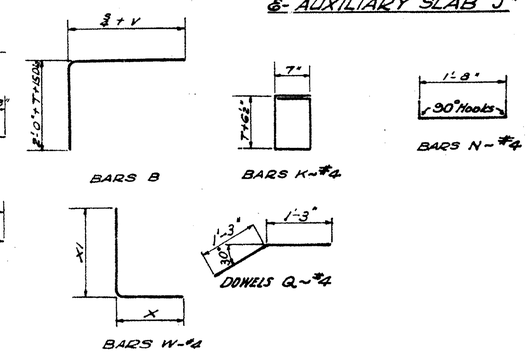
CROSS SECTION

Spacers AST Tie To Bars A In Top Slab
Spacers ASB Tie To Bars A In Bottom Slab
Spacers BS Tie To Bars B



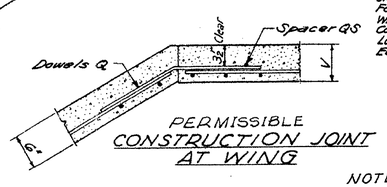
SECTION "A"-"A"





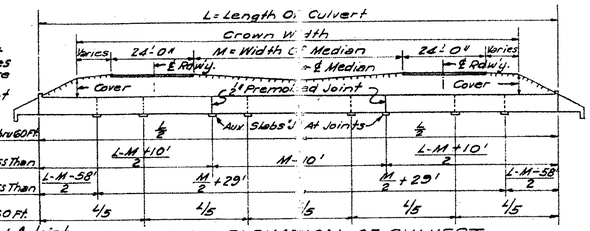
BAR BENDING DETAILS

Dimensions Are Out To Out.



PERMISSIBLE CONSTRUCTION JOINT AT WING

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 Collar At Joints Per Drawing ICJ-1 Or ICJS-1.



SIDE ELEVATION OF CULVERT

Showing ½" Joints And Auxiliary Slabs "J" Drawn For L = 150 Ft. & M = 60 Ft.

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.

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 The 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 IBJL-1 For Additional Joint Locations.

DATE	REVISION	BY

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

BASIC CULVERT DRAWING

SINGLE CELL

HEIGHT 4 FT.
SPANS 4–10 FT.

WORKING NUMBER SD-IBS-4-2W

SHEET NUMBER

FILENAME:
DESIGN TEAM CHECKED DATE

COUNTY:
DESIGN TEAM:
PROJECT NO.:
FILENAME: