GROUP III DIAGRAMS
6-12 FT. TRAFFIC LANES ~4 FT. THRU 36 FT. MEDIANS
OR 4-12 FT. (PRESENT) & 2-12 FT. (FUTURE) TRAFFIC LANES
WITH 28 FT. THRU 60 FT. MEDIANS

SIDE ELEVATION OF CULVERTS CONSTRUCTED NORMAL TO ℄ ROADWAY
SHOWING BARREL JOINTS AND AUXILIARY SLABS "J."

GROUP IV DIAGRAMS
TYPICAL DIAGRAMS FOR SKEWED CULVERTS

APPLICATION OF DIAGRAMS:
The Following Diagrams Show The General Application Of JOINT LOCATION DIAGRAMS In Groups I, II & III To Skewed Culverts
LOCATION OF BARREL JOINTS FOR SKEWED CULVERTS IS DETERMINED AS FOLLOWS
1. With LSK (Length Of Skewed Culvert Along ℄ Barrel) Given And Number Of Joints And Length Of Barrel Sections Required, MULTIPLY LSK By The COSINE Of The SKEW ANGLE (θ) To Obtain L (Length Of Culvert Normal To ℄ Roadway).
2. Enter Group I, II Or III (Determined By Roadway Cross Section) With L To Determine The Number Of Joints And Length Of Each Barrel Section For A Culvert Constructed Normal To ℄ Roadway.
3. DIVIDE Each Length Of Section By The COSINE Of The SKEW ANGLE (θ) To Determine The Length Of Each Barrel Section Along ℄ Barrel.
4. Place The Barrel Joints (Type Per Basic Dwg.) At These Locations. If The Length Of Any Section Exceeds 70 Ft. And A Construction Joint Is Desired (To Reduce Yardage Of Pour) Place A Construction Joint In Center Of Section.

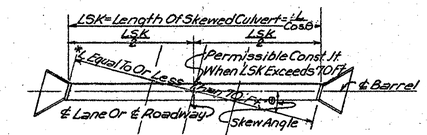


DIAGRAM "A"
PLAN OF SKEWED CULVERT
TYPICAL FOR DIAGRAM "A" GROUP I AND SKEWED 15° RIGHT FORWARD
(NO BARREL JOINTS REQUIRED)
NOTE: LSK = 1.03528L FOR 15° SKEW.

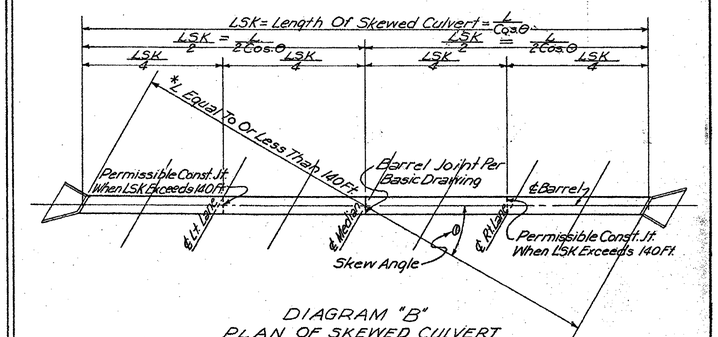


DIAGRAM "B"
PLAN OF SKEWED CULVERT
TYPICAL FOR DIAGRAM "B" GROUP III AND SKEWED 30° RIGHT FORWARD
(ONE BARREL JOINT REQUIRED)
NOTE: LSK = 1.15470L FOR 30° SKEW

GROUP II DIAGRAMS
4-12 FT. TRAFFIC LANES
4 FT. THRU 60 FT. MEDIANS

SIDE ELEVATION OF CULVERTS CONSTRUCTED NORMAL TO ℄ ROADWAY
SHOWING BARREL JOINTS AND AUXILIARY SLABS "J."

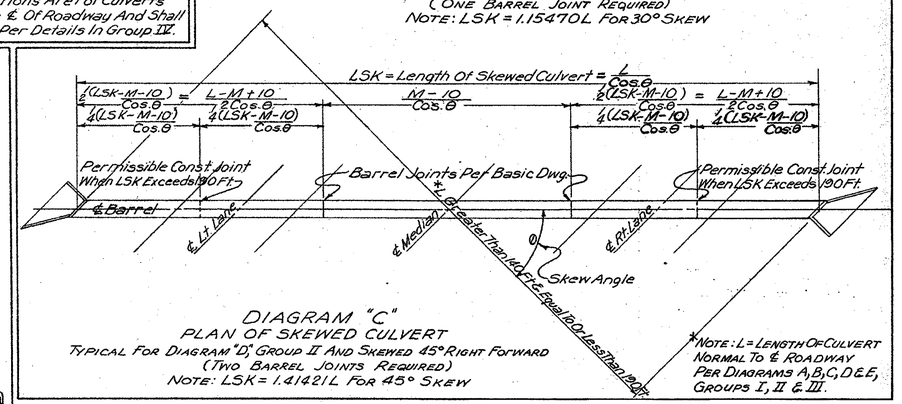
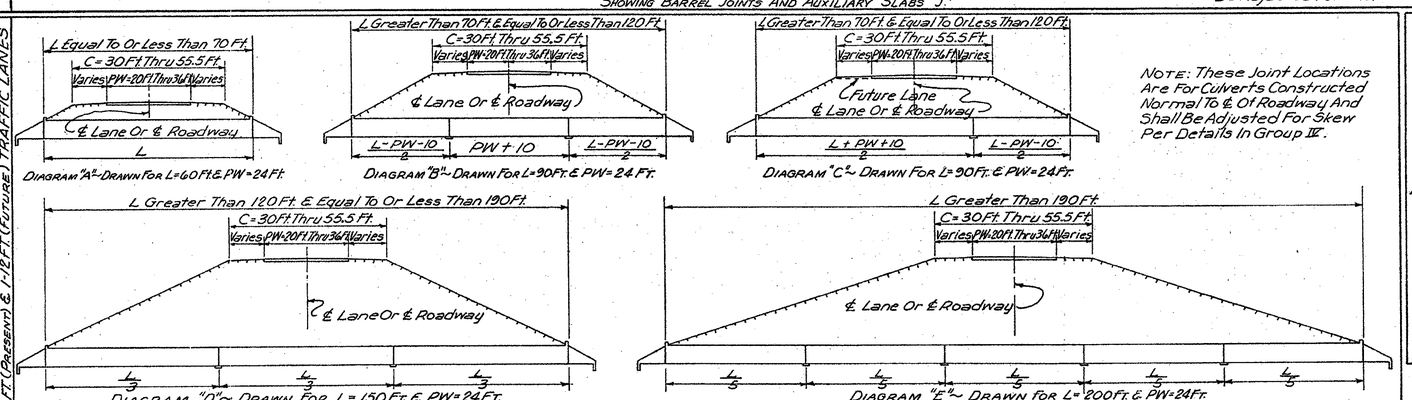


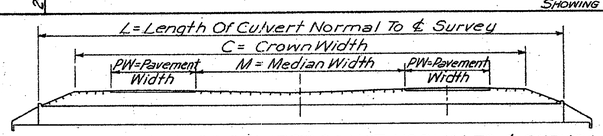
DIAGRAM "C"
PLAN OF SKEWED CULVERT
TYPICAL FOR DIAGRAM "D" GROUP II AND SKEWED 45° RIGHT FORWARD
(TWO BARREL JOINTS REQUIRED)
NOTE: LSK = 1.41421L FOR 45° SKEW

*NOTE: L = LENGTH OF CULVERT NORMAL TO ℄ ROADWAY PER DIAGRAMS A, B, C, D & E, GROUPS I, II & III.

GROUP I DIAGRAMS
2 OR 3-10 FT. THRU 12 FT. TRAFFIC LANES
OR
2-12 FT. (PRESENT) & 1-12 FT. (FUTURE) TRAFFIC LANES



SIDE ELEVATION OF CULVERTS CONSTRUCTED NORMAL TO ℄ ROADWAY
SHOWING BARREL JOINTS AND AUXILIARY SLABS "J."



SIDE ELEVATION OF CULVERT CONST. NORMAL TO ℄ SURVEY
SHOWING VARIABLES FOR DIAGRAMS IN GROUPS I, II & III SHOWN ABOVE

GENERAL NOTES:
This Drawing Shows The Barrel Joint Locations For Box Culverts Constructed Normal To ℄ Of Roadway And General Details Necessary To Locate Joints For Culverts On 15, 30 And 45° Skews.
The Diagrams On This Sheet Show Joint Locations For Culverts Under Variable Amounts Of Cover, Crown Width And Side Slopes.
Barrel Joints Shall Be Of Type Per Basic Drawing And Shall Be Placed Only At Locations Shown Unless Otherwise Stated.
Joints Shall Not Be Located Closer Than 5 Ft. Outside Pavement For Cover Of 8 Ft. Or Less Except In Cases Where Median Is Less Than 10 Ft. 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. Where Cover Exceeds 8 Ft. Joints May Be Located Without Regard To Pavement Edge.
Construction Joints Per Group IV, If Required, Shall Have Reinforcement Continuous Thru Joint And Shall Be Placed Only At Locations Indicated.
General Requirements Of Basic Culvert Drawings Shall Apply Except As Specifically Modified Hereon.

DATE	REVISION	BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION	
			BOX CULVERT DRAWING	
			BARREL JOINT LOCATIONS	
			NORMAL AND SKEWED CULVERTS	WORKING NUMBER SD-IBJL-1
			FILENAME:	SHEET NUMBER
			DESIGN TEAM ____ CHECKED ____ DATE ____	

COUNTY:
DESIGN TEAM:
PROJECT NO.:
FILENAME: