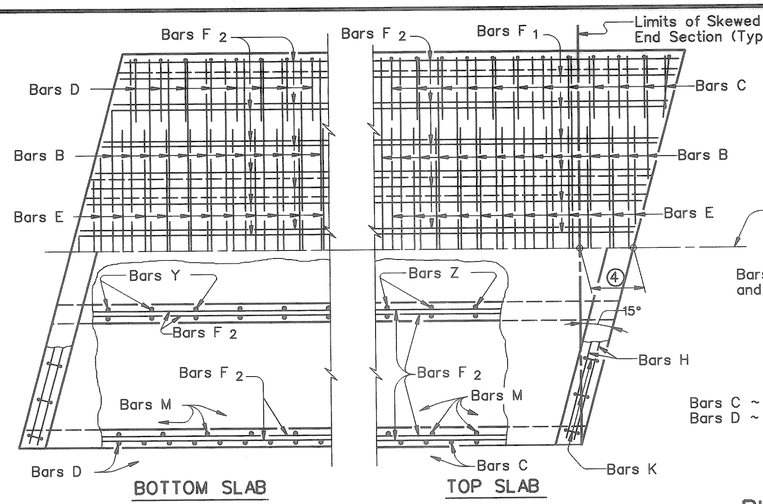
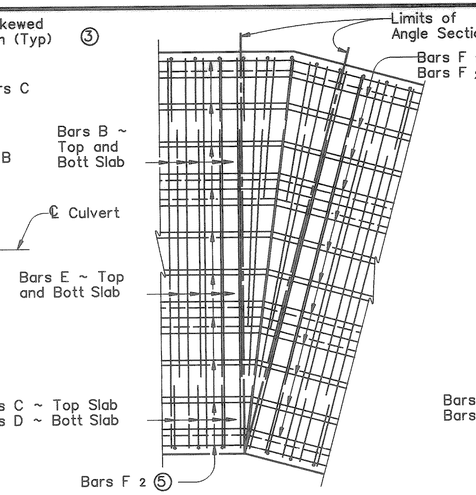
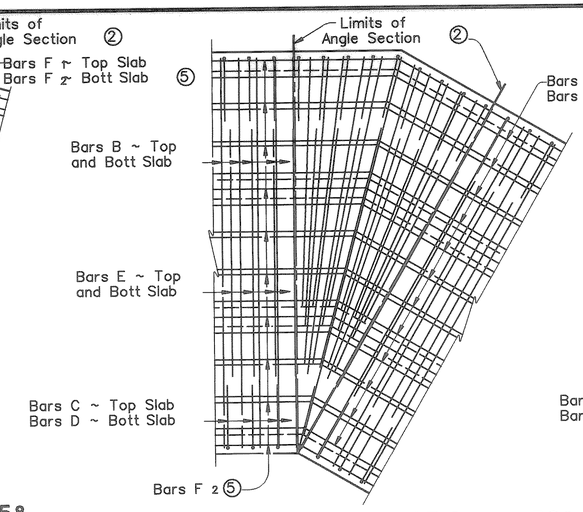


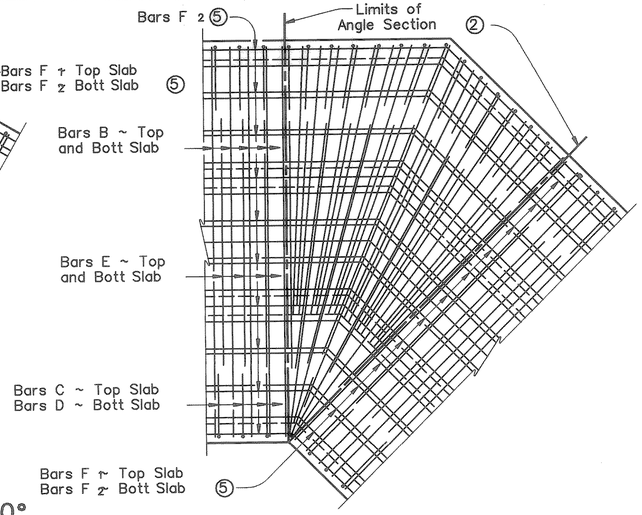
PLAN OF SKEWED ENDS ~ 15° ⑦



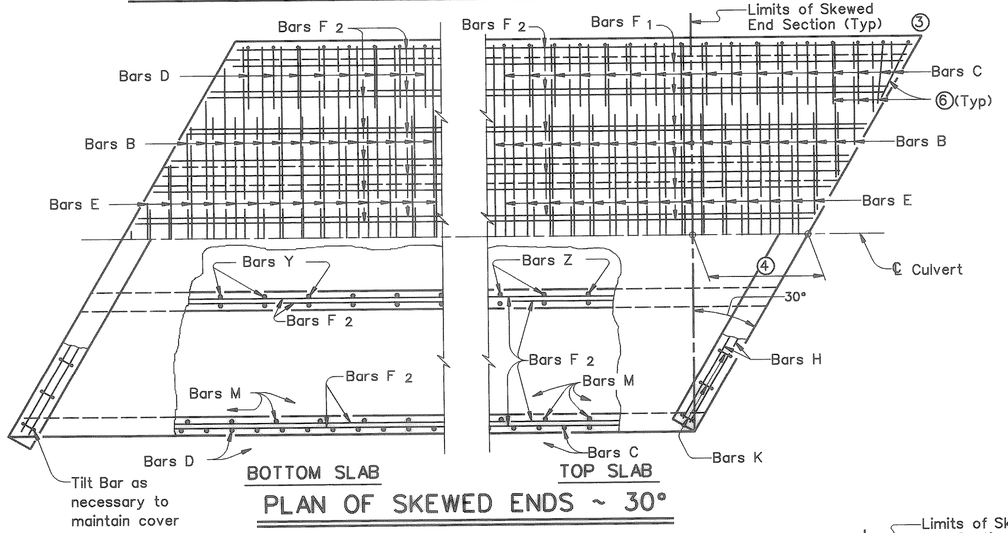
PLAN OF ANGLE SECTION ~ 15°



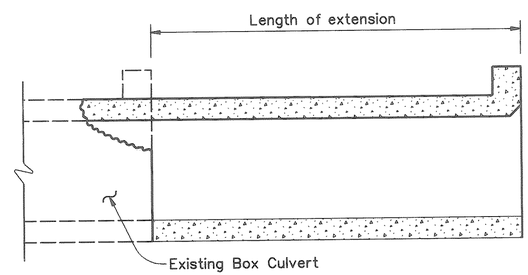
PLAN OF ANGLE SECTION ~ 30°



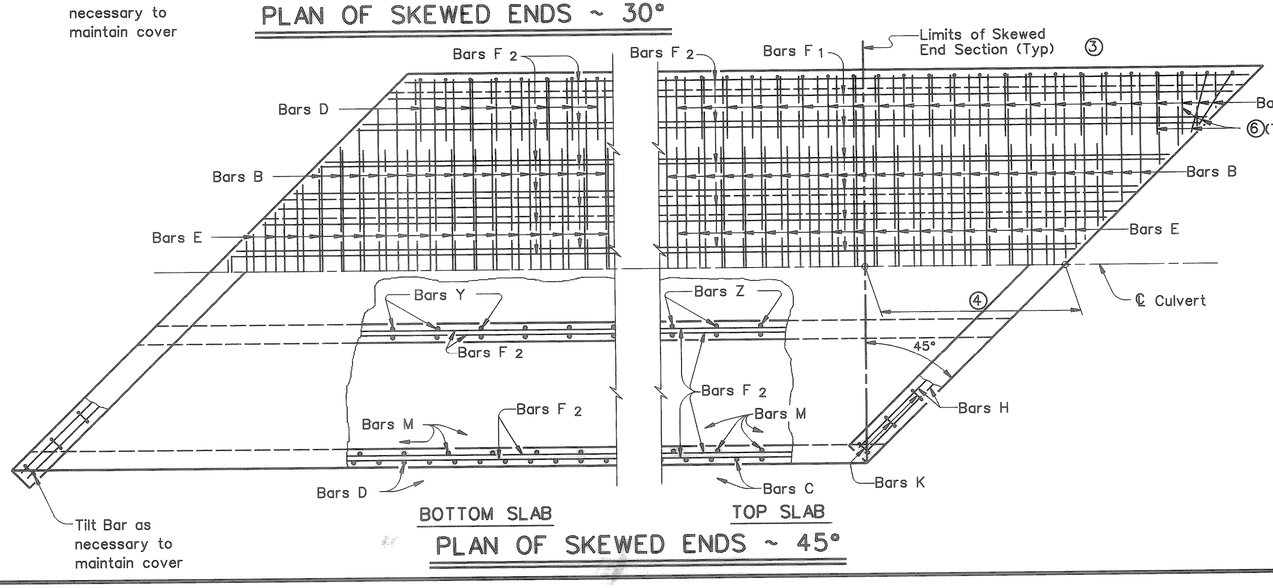
PLAN OF ANGLE SECTION ~ 45°



PLAN OF SKEWED ENDS ~ 30°



LENGTHENING DETAIL ①



PLAN OF SKEWED ENDS ~ 45°

① For box culverts with less than 2'-0" of fill, the top slab shall be broken back to provide a minimum 1'-10" lap of the existing longitudinal bars with the longitudinal bars in the extension. If the depth of fill is 2'-0" or greater, the top slab shall be broken back to provide a 1'-0" minimum embedment of existing longitudinal reinforcing into the extension. Alternatively, if the fill height is greater than 2'-0", the existing curb may be left in place and 2'-0" long #6 bars shall be drilled and grouted 1'-0" into the existing top slab at 1'-6" center to center spacing. Wings and apron shall be broken back as necessary to install the extension. Exposed wingwall and apron reinforcing may be removed or cleaned and included in the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, horizontal and vertical transitions shall be formed as directed by the Engineer. Bottom slabs shall match to maintain an uninterrupted flow line. Existing and new reinforcing shall be field bent into transition maintaining specified cover requirements. For direct traffic culverts, the "H" dimension may be adjusted to provide a smooth riding surface.

② When the spacing between Bars B or Bars E becomes less than half of the normal spacing, bars shall be cut to avoid fouling

③ The length of Bars B and E will vary in the skewed end sections

④ [One half of overall width] x [Tan of the skew angle]

⑤ Bars F 1 and F 2 shall be continuous through the angle section. They shall be bent to remain parallel to the walls of the Box Culvert.

⑥ When necessary to avoid fouling in acute corners, the slab extension leg of Bars C and Bars D may be shortened to a minimum of 1'-6" for skews of 30° and 45°.

⑦ For skews of 15° or less, the contractor has the option of placing Bars B, C, D and E parallel to the skewed end while maintaining spacing along centerline box. Lengths of Bars B and E shown on the standards shall be increased to accommodate the skew.

GENERAL NOTES:

Designed according to current AASHTO Standard and Interim Specifications.

Designed for HS20 loading.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" concrete with a minimum 28 day compressive strength of 3600 psi; except for the top slab of direct traffic culverts, which shall be Class "S" concrete with a minimum 28 day compressive strength of 4000 psi.

Refer to Multiple Box Culverts Cast-in-Place standard for details of straight sections of culvert. For skewed sections and angle sections refer to Multiple Box Culverts Cast- in-Place standard for slab and wall dimensions, bar sizes, maximum bar spacing, and any other details not shown. For Skewed ends with curbs, adjust length of Bars H, number of Bars K, curb concrete volume and reinforcing steel weight by dividing the values shown on the culvert standards by the cosine of the skew angle.

Laps for Bars H, when required, shall be 1'-9" for uncoated bars and 2'-7" for epoxy coated.

HS20 LOADING

RECORD DRAWINGS

These record drawings have been prepared using information provided by the Construction Contractor and/or Owner. The seal and signature below only signifies that the plans have been revised in accordance with the information provided and does not guarantee that these plans accurately show every detail of the constructed project.

Veronique Simon 4-2-02
Signature Date

Texas Department of Transportation
Bridge Division

MULTIPLE BOX CULVERTS MISCELLANEOUS DETAILS

MC-MD

FILE: mc-mdste.dgn	DN: GAF	CK: MAS	DW: MCB	CK: GAF
©TxDOT September 2000	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS				62D
	COUNTY	CONTROL	SECT	JOB	HIGHWAY

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ACC:
LEVELS DISPLAYED
1