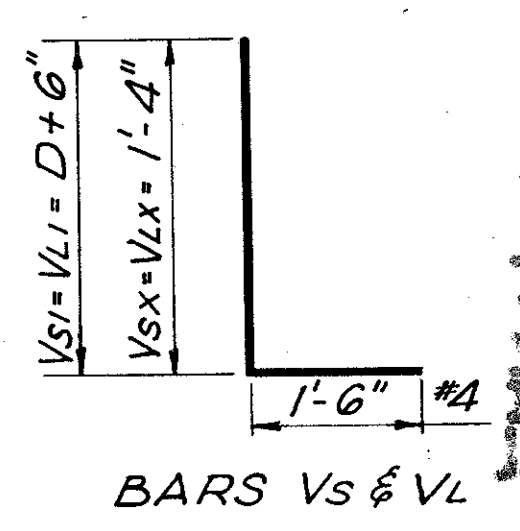
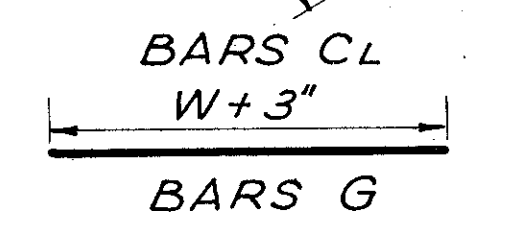
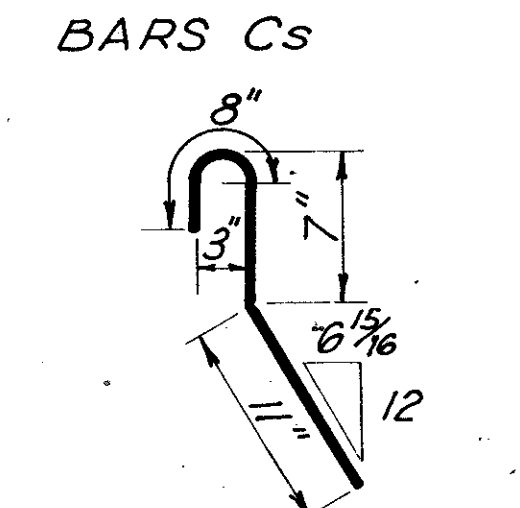
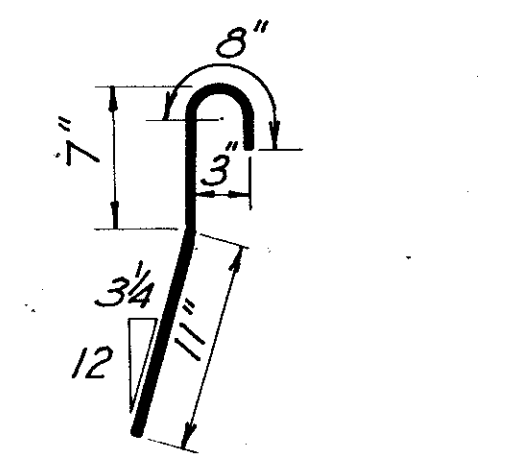


BILL OF REINFORCING STEEL FOR TWO COMPLETE HEADWALLS

NO. OF PIPES	PIPE DIAM.	TABLE OF DIMENSIONS										BARS										* TOTAL QUANTITIES		*These Total Quantities are for (2 Aprons, 2 Headwalls & 4 Wingwalls) W+5/4"													
		D	G	K	X	H	Y	W	S	L	BARS A1-Ax #1 @ 12"±	BARS B #3 @ 18"±	BARS B1-Bx #3 @ 18"±	CS=2'0" CL=2'0" #4 @ 12"±	BARS DSI-Dsx #3 @ 12"±	BARS DLI-DLx #3 @ 12"±	BARS E 8-#5	BARS F	BARS G 4-#3	BARS Ss 6-#4	BARS SL 6-#4	BARS VSI-Vsx #4 @ 12"±	BARS VLI-VLx #4 @ 12"±		BARS WS 2-#5	BARS WL 2-#5	LBS.	C.Y.									
1	12"	~	12"	2'-5 1/2"	2'-0"	1'-0"	2'-2 1/2"	10 3/8"	10 3/8"	2	2'-8"	4	4	2'-7"	4	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	69	.54

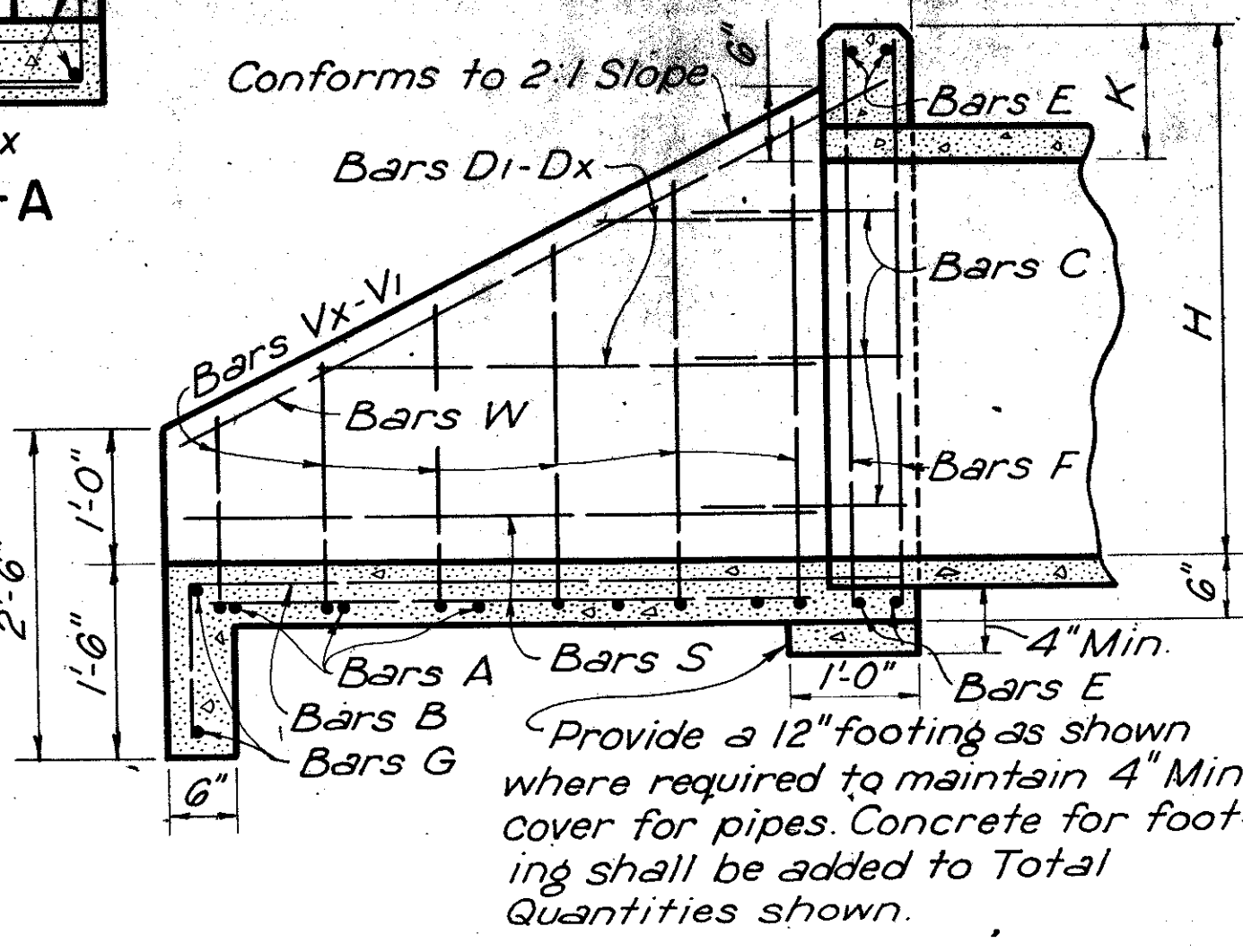
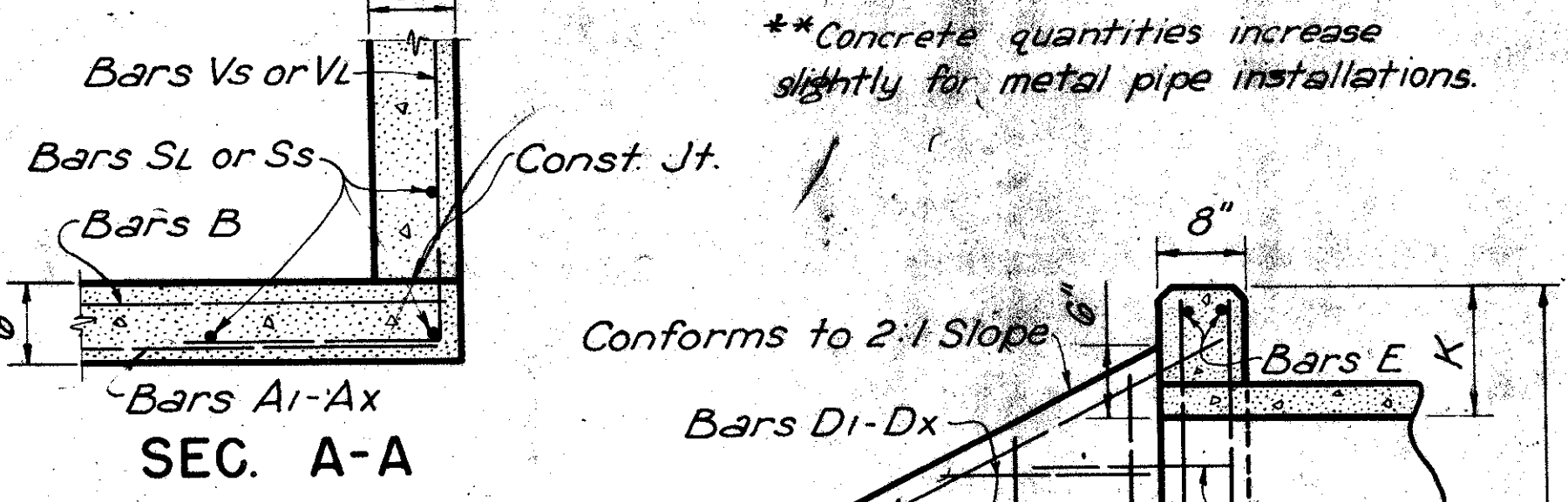
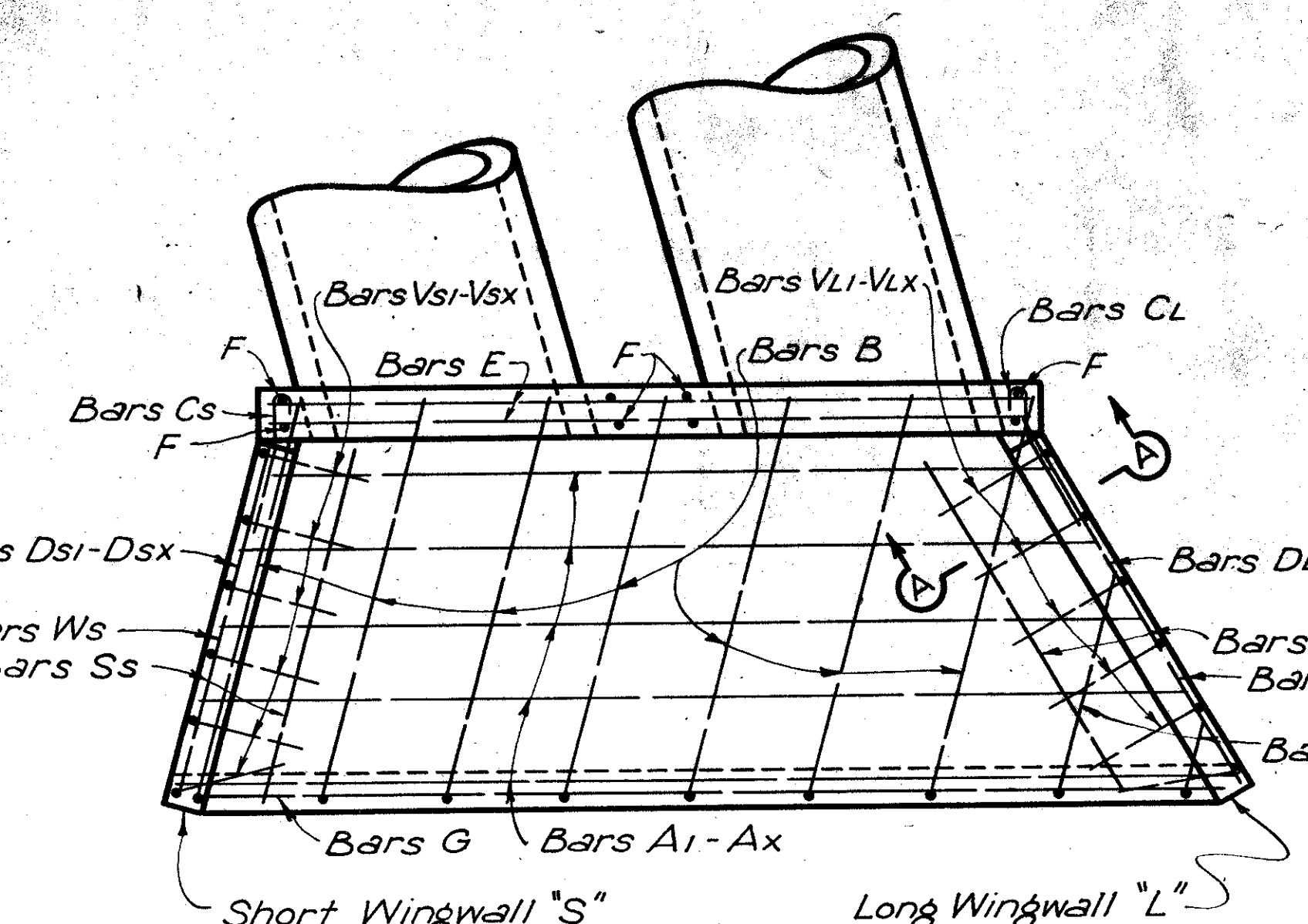
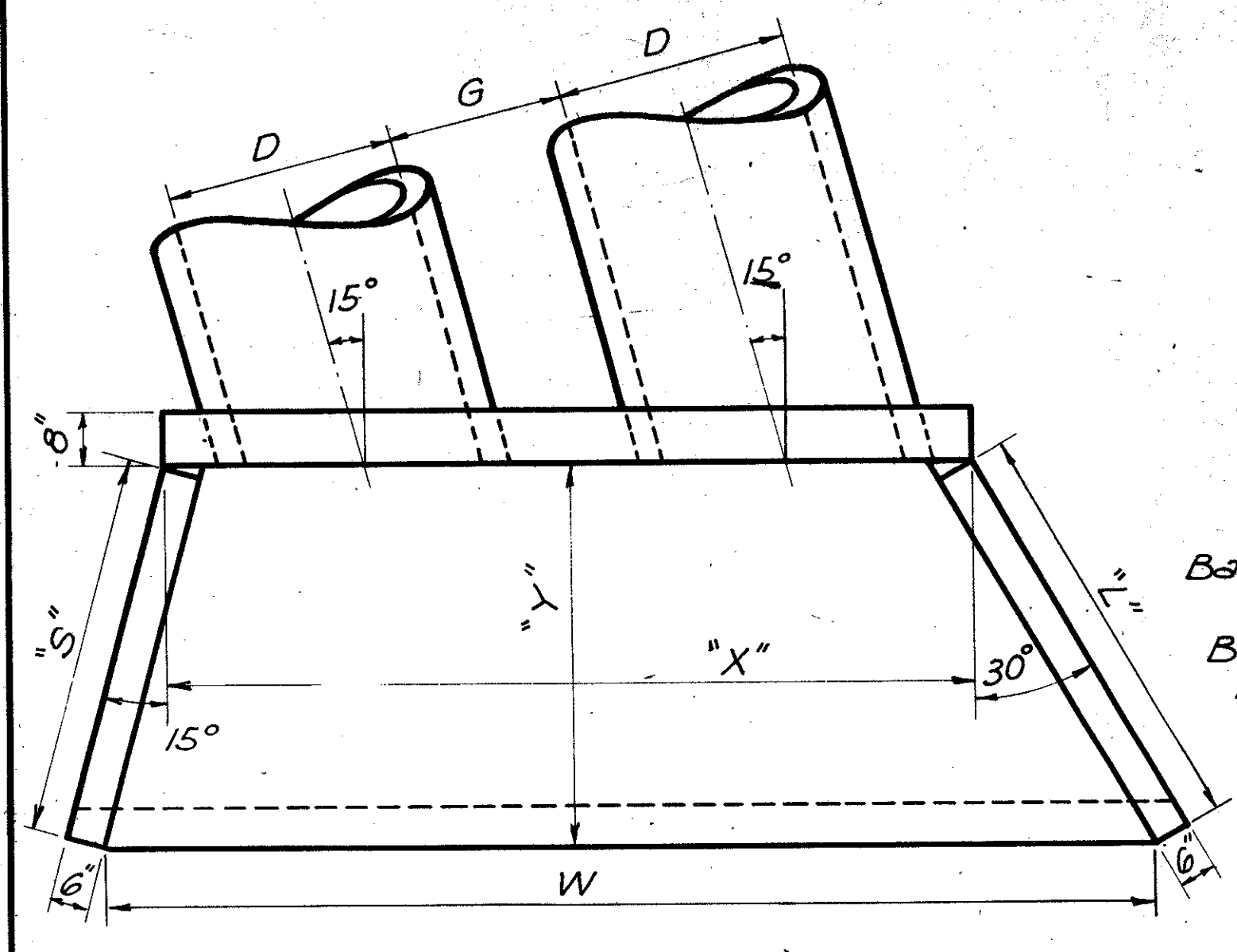
Reduce this dimension by an increment of 10% for each successive bar.
 $B = S + 6/4$
 $B_1 = 6$

Increase this dimension by an increment of 1 1/2% for each successive bar.



PLAN
 PROJECT NO.
 NOTE BOOK NO.
 ALIGNED CHECKED BY
 DATE
 STRUCTURAL NOT REVISION

PROFILE
 PROJECT NO.
 NOTE BOOK NO.
 ALIGNED CHECKED BY
 DATE
 STRUCTURAL NOT REVISION



**Concrete quantities increase slightly for metal pipe installations.

GENERAL NOTES :-
 All Concrete shall be Class A.
 Dimensions relating to reinforcing steel are to centers of bars.
 Steel cover to be 2" from center of outside layer of steel to face of concrete.

Subscripts "s" & "L" for bar markings designate short wingwall (s) and long wingwall (L).
 Chamfer all exposed corners 3/4".

TEXAS HIGHWAY DEPARTMENT
CONCRETE HEADWALLS
 FOR
PIPE CULVERTS
 12 TO 72 INCHES IN DIAMETER
CH-11-B-15°

DRN. T.H.D.	DRAWING	DATE	FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET
CKDN. T.H.D.	Original	Feb. 1950	6	TEXAS		
DW. M.D.A.	Rev. Spec. Bars 3	7-31-51				
CKDW. K.M.	Rev. Jan. 59					
TR. O.C.K.	Re. Nov. 24	Quant note				
CK-TR. M.D.A.						

ALL REINFORCING STEEL SHALL BE CLASS A. ALL DIMENSIONS ARE TO CENTERS UNLESS OTHERWISE NOTED.