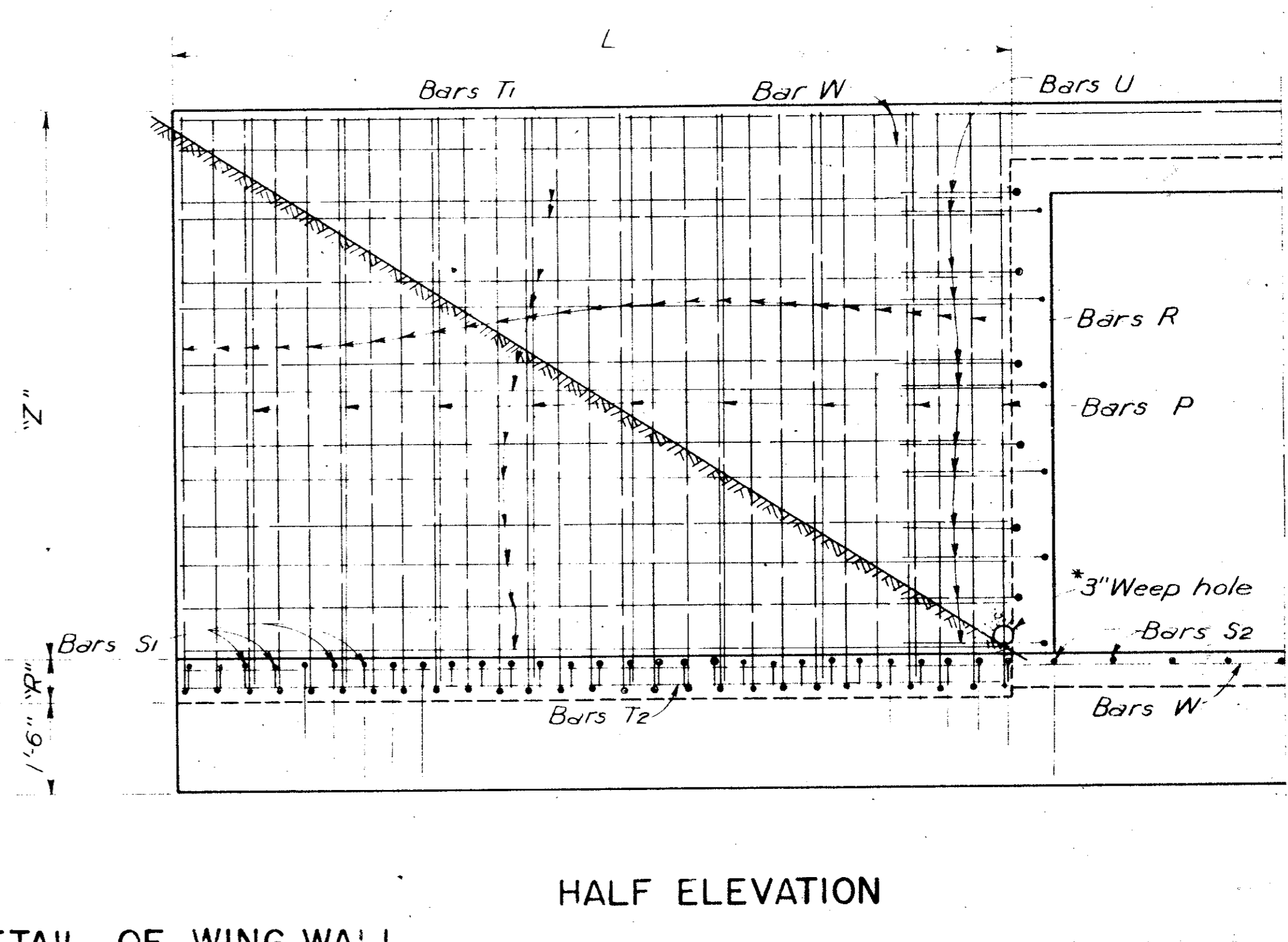
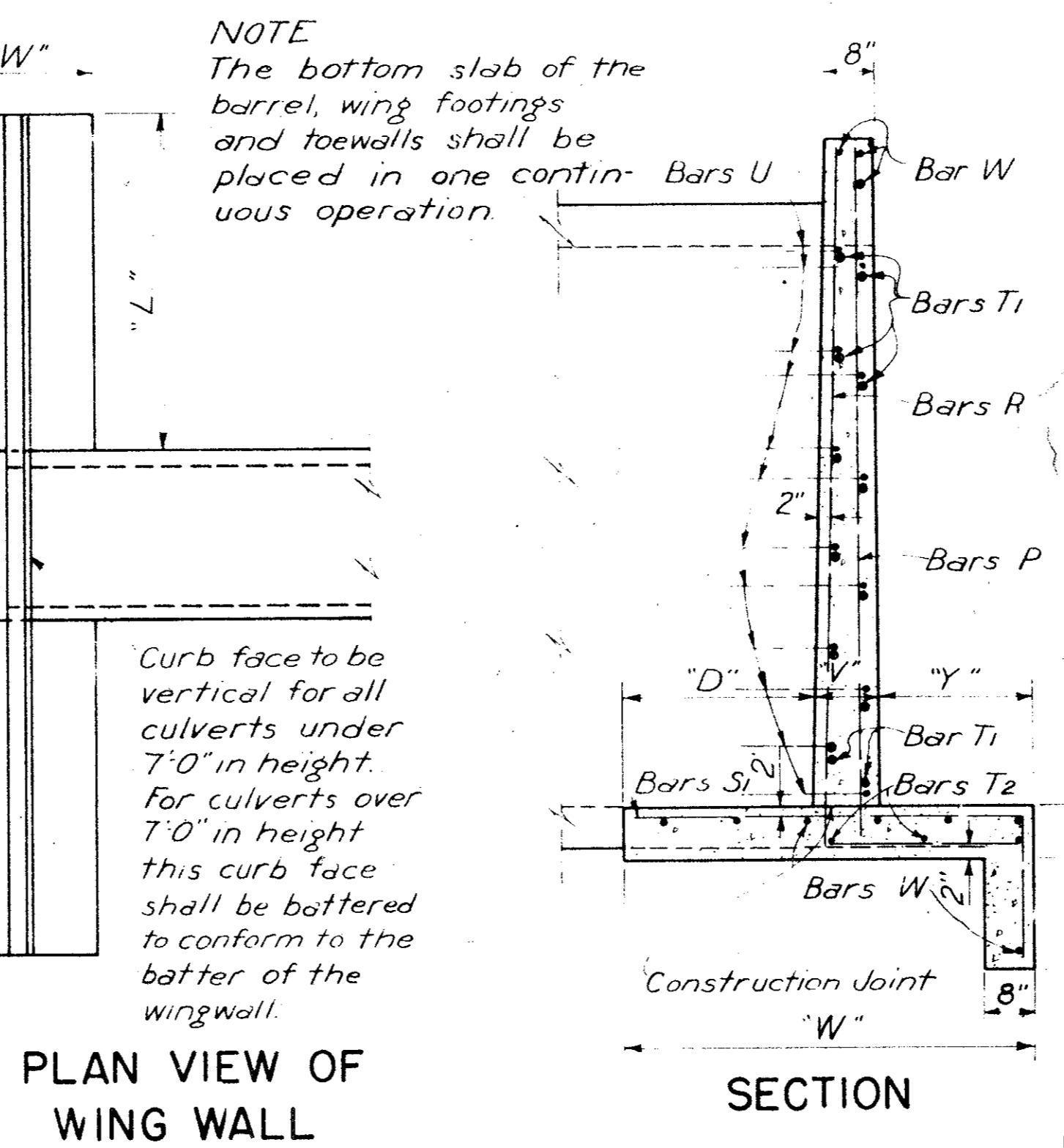
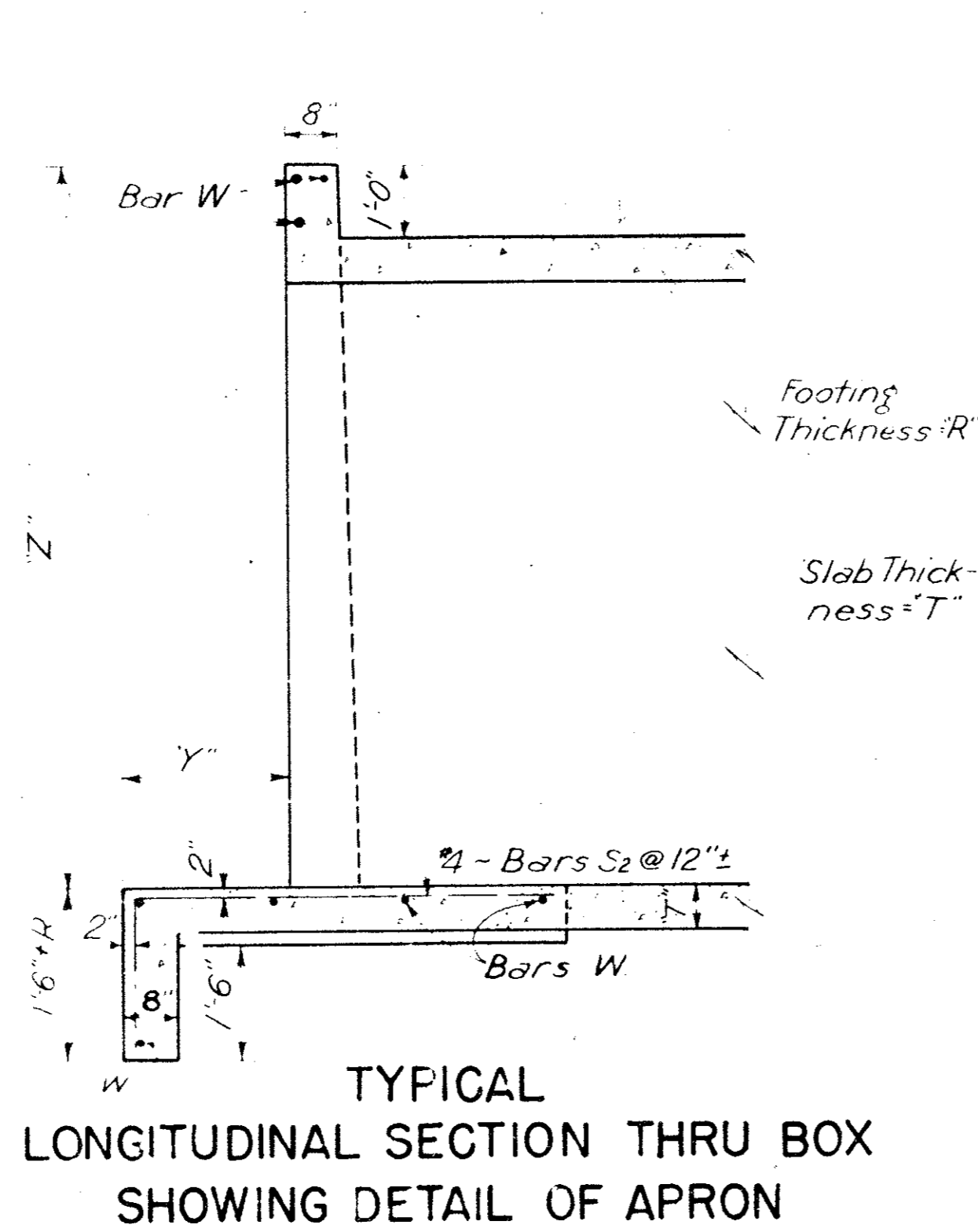
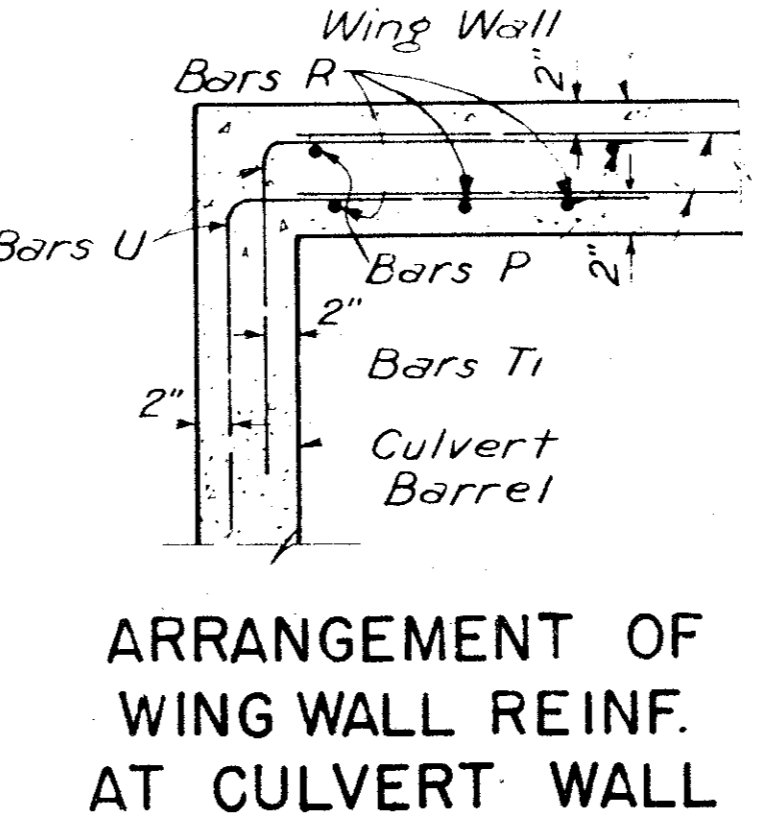


CULVERT SIZE	SLAB DEPTH	MAX WING HEIGHT	WING LENGTH	TOTAL QUANT. 4 WING WALLS		TABLE OF DIMENSIONS		WING SIZE		BARS R		BARS S <sub>1</sub>		#4 BARS T <sub>1</sub> @ 18"±		#4 BARS T <sub>2</sub> @ 12"±		BARS U		#4 BARS P @ 18"±		#4 BARS W @ 12"±		TOTAL WEIGHT																	
				CY	LB	R	V	D	Y	Z	L	NO	SIZE	SPAC	LENGTH	WEIGHT	NO	LENGTH	WEIGHT	NO	SIZE	SPAC	LENGTH		WEIGHT	SPAC	LENGTH	WEIGHT	NO	LENGTH	WEIGHT	NO	LENGTH	WEIGHT							
3 x 2	6"	14"	3'-6"	5'-3"	4.10	558	6 1/2"	2'-6"	8"	10'	1'-0"	3'-6"	5'-3"	24	#4	12"	5'-1"	81	24	#4	12"	3'-11"	63	16	5'-0"	53	8	5'-0"	27	16	#5	18"	6'-0"	100	20	3'-9"	50	28	8'-9"	164	538
3 x 3	6"	14"	4'-6"	6'-9"	6.11	818	7"	2'-10"	8"	1'-2"	1'-0"	4'-6"	6'-9"	32	#4	11"	6'-1"	130	32	#4	11"	4'-3"	91	24	6'-6"	104	8	6'-6"	35	24	#5	18"	6'-0"	150	24	4'-9"	76	28	11'-3"	210	796
4 x 2	6"	12"	3'-6"	5'-3"	4.21	564	6 1/2"	2'-6"	8"	10'	1'-0"	5'-6"	8'-3"	60	#4	7"	7'-3"	291	60	#4	7"	4'-10"	194	32	8'-0"	171	8	8'-0"	43	32	#5	18"	6'-0"	200	28	5'-9"	108	32	13'-3"	283	1290
4 x 3	6"	12"	4'-6"	6'-9"	6.23	824	7"	2'-10"	8"	1'-2"	1'-0"	6'-6"	9'-9"	56	#5	8 1/2"	8'-5"	492	60	#5	8"	5'-5"	339	32	9'-6"	203	12	9'-6"	76	32	#5	18"	6'-0"	200	32	6'-9"	144	36	15'-9"	379	1833
4 x 4	6"	12"	5'-6"	8'-3"	8.75	1322	7"	3'-5"	8"	1'-7"	1'-2"	7'-6"	11'-3"	80	#5	7"	9'-10"	820	80	#5	7"	6'-1"	507	40	11'-0"	294	12	11'-0"	88	40	#5	18"	6'-0"	250	36	7'-9"	186	36	17'-3"	415	2560
5 x 2	6"	8"	3'-6"	5'-3"	4.33	569	7"	2'-6"	8"	10'	1'-0"	8'-6 1/2"	12'-10"	112	#5	5 1/2"	11'-4"	1324	104	#5	6"	6'-7"	714	48	12'-7"	403	12	12'-7"	101	48	#5	18"	6'-0"	300	40	8'-9"	234	40	18'-11"	505	3581
5 x 3	6"	8"	4'-6"	6'-9"	6.34	829	7"	2'-10"	8"	1'-2"	1'-0"	9'-6 1/2"	14'-4"	108	#6	6 1/2"	12'-9"	2068	116	#6	6"	7'-4"	1277	48	14'-1"	452	16	14'-1"	150	48	#5	18"	6'-0"	300	44	9'-9"	287	44	20'-6"	603	5137
5 x 4	6"	8"	5'-6"	8'-3"	8.87	1328	7"	3'-5"	8"	1'-7"	1'-2"	10'-7"	15'-10"	140	#6	5 1/2"	14'-4"	3013	140	#6	5 1/2"	7'-11"	1665	56	15'-7"	583	16	15'-7"	167	56	#5	18"	6'-0"	350	48	10'-10"	347	44	22'-0"	647	6772
5 x 5	6"	8"	6'-6"	9'-9"	11.86	1876	7"	4'-0"	8"	2'-0"	1'-4"	11'-7"	17'-4"	168	#6	5"	15'-9"	3974	168	#6	5"	8'-7"	2165	64	17'-1"	730	16	17'-1"	183	64	#5	18"	6'-0"	401	52	11'-10"	411	48	23'-6"	754	8618



WING WALL HEIGHT	WING WALL LENGTH	BARS R	BARS T <sub>1</sub>	BARS S <sub>2</sub> (Culvert Apron)
3'-0"	8'-0"	2'-4"	3'-0"	2'-2"
3'-6"	10'-0"	2'-6"	3'-6"	2'-6"
4'-0"	12'-0"	3'-0"	4'-0"	3'-0"
4'-6"	14'-0"	3'-6"	4'-6"	3'-6"
5'-0"	16'-0"	4'-0"	5'-0"	4'-0"
5'-6"	18'-0"	4'-6"	5'-6"	4'-6"
6'-0"	20'-0"	5'-0"	6'-0"	5'-0"
6'-6"	22'-0"	5'-6"	6'-6"	5'-6"
7'-0"	24'-0"	6'-0"	7'-0"	6'-0"
7'-6"	26'-0"	6'-6"	7'-6"	6'-6"
8'-0"	28'-0"	7'-0"	8'-0"	7'-0"
8'-6"	30'-0"	7'-6"	8'-6"	7'-6"
9'-0"	32'-0"	8'-0"	9'-0"	8'-0"
9'-6"	34'-0"	8'-6"	9'-6"	8'-6"
10'-0"	36'-0"	9'-0"	10'-0"	9'-0"
10'-6"	38'-0"	9'-6"	10'-6"	9'-6"
11'-0"	40'-0"	10'-0"	11'-0"	10'-0"
11'-6"	42'-0"	10'-6"	11'-6"	10'-6"
12'-0"	44'-0"	11'-0"	12'-0"	11'-0"

GENERAL NOTES:  
 All concrete shall be Class C, Chamfer all exposed corners 3/8" unless specified otherwise.  
 All dimensions relating to reinforcing steel are to centers of bars.



TEXAS HIGHWAY DEPARTMENT  
**PARALLEL WINGS-NORMAL**  
 FOR SINGLE BOX CULVERTS  
 3 X 2 TO 10 X 10  
**PWN**

DESIGNED BY	DATE	REVISED BY	DATE
DR. W. H. WILSON	June 1948	DR. W. H. WILSON	Oct 1958
DR. A. B. L.	Jan 1959	DR. W. H. WILSON	Nov 1964

PLAN  
 NOTE BOOK NO.

PROFILE  
 NOTE BOOK NO.