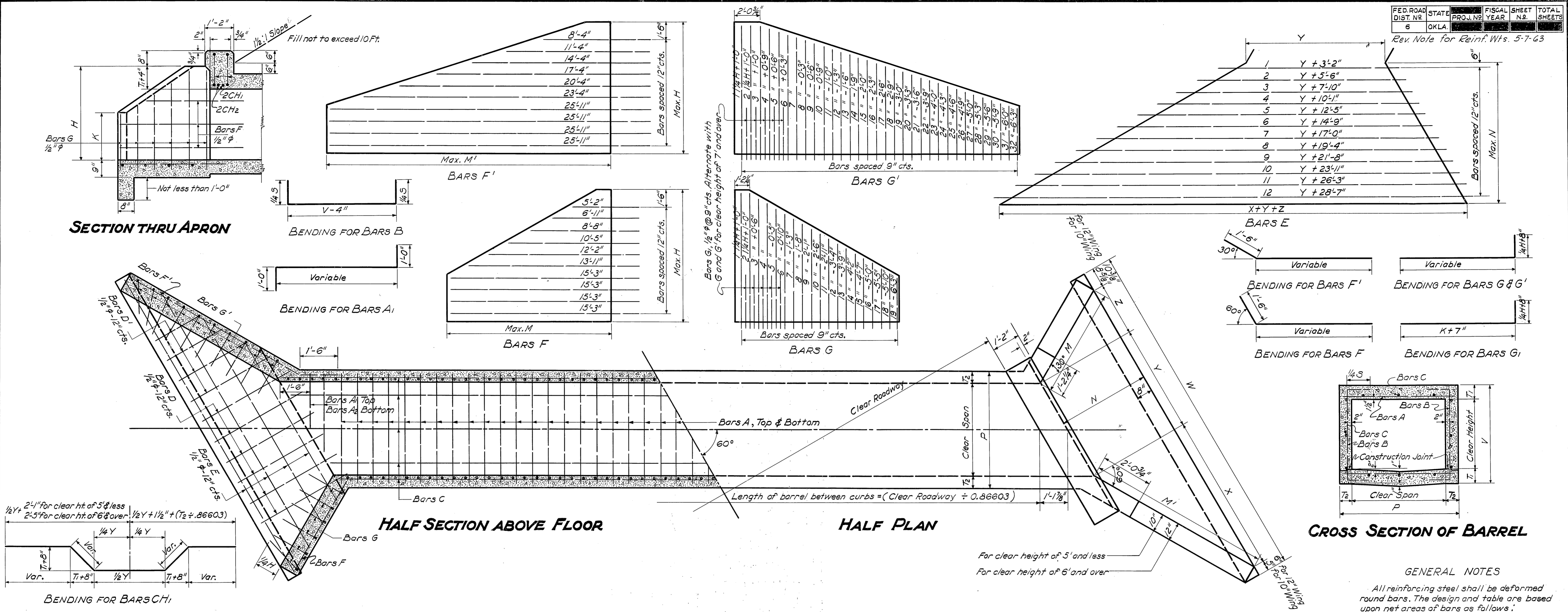


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	OKLA.				

Rev. Note for Reinf. Wfs. 5-7-63



GENERAL NOTES

All reinforcing steel shall be deformed round bars. The design and table are based upon net areas of bars as follows: 1/2" φ = 0.1963 sq. in., 3/8" φ = 0.3068 sq. in., 3/4" φ = 0.442 sq. in. Other sizes may be used provided they are spaced so as to give as much net sectional area per foot width of slab. Plans showing such changed sizes and spacing must be approved. Bars when lapped shall be lapped 50 diameters. All exposed surfaces to have carborundum finish and this shall be included in price bid per cu. yd. for Concrete. All exposed edges shall have 3/4" chamfer.

DESIGN DATA
 Dead Load 1000 Lbs.
 Live Load None
 Impact None

Quantities shown for reinforcing steel shall be reduced by 1% (0.015) to comply with approved C.R.S.I. weights per foot for reinforcing bars.

OKLAHOMA STATE STANDARD CONCRETE BOX CULVERTS SKEWED 60° LT. FWD. SPANS 2 Ft. to 10 Ft. FOR FILLS 3 Ft. to 10 Ft.

DESIGN NO.	WATERWAY	BARREL OF CULVERT												TWO WINGS AND ONE APRON												TWO CURBS			TOTAL QUANTITIES		DESIGN NO.										
		DIMENSIONS				REINFORCING STEEL				DIMENSIONS				REINFORCING STEEL				QUANTITIES			QUANTITIES																				
		Ti	Tz	V	P	Size and Spacing	Length	Ai and Az	Length	Size and Spacing	Length	No.	Steel per Lin. Ft.	Concrete per Lin. Ft.	Cu. Yds.	H	K	M	M'	N	W	X	Y	Z	No.	Length	No.	Length	No.	Length		No.	Length	Steel Lbs.	Concrete Cu. Yds.	Reinf. Steel Cu. Yds.					
1	2	2'-0"	4'-0"	6"	6"	3'-0"	3'-0"	1/2" φ 6"	2'-8"	2	4'-6"	2'-6"	1/2" φ 9"	3'-8"	1/2" φ 18"	8	19.34	0.185	2'-10"	1'-8"	3'-2"	5'-6"	2'-9"	9'-9"	4'-9"	2'-3"	1'-7"	4	3'-2"	3	1'-2"	77	1.25	6'-11"	3'-5"	26	0.41	0.242	11.94	1078	1
2	3	2'-0"	6'-0"	6"	6"	3'-0"	4'-0"	1/2" φ 6"	3'-8"	2	4'-6"	2'-6"	1/2" φ 9"	4'-2"	1/2" φ 18"	8	22.97	0.222	2'-10"	1'-8"	3'-2"	5'-6"	2'-9"	10'-11"	4'-9"	3'-5"	1'-7"	5	3'-2"	3	1'-2"	81	1.34	7'-3"	4'-6"	32	0.52	0.270	13.99	1239	2
3	3	2'-6"	7'-5"	6"	6"	3'-6"	4'-0"	1/2" φ 6"	3'-8"	2	4'-6"	2'-6"	1/2" φ 9"	4'-2"	1/2" φ 18"	8	23.88	0.241	3'-4"	1'-10"	3'-0"	6'-8"	3'-4"	12'-3"	5'-9"	"	1'-11"	5	3'-9"	4	1'-2"	100	1.80	7'-3"	4'-6"	32	0.52	0.304	15.86	1339	3
4	4	3'-0"	9'-0"	6"	6"	4'-0"	4'-0"	1/2" φ 6"	3'-8"	2	4'-6"	2'-6"	1/2" φ 9"	5'-2"	1/2" φ 18"	10	26.14	0.259	3'-10"	1'-11"	4'-6"	7'-9"	3'-0"	13'-7"	6'-9"	"	2'-3"	5	4'-4"	5	1'-2"	137	2.30	7'-3"	4'-6"	32	0.52	0.336	17.76	1520	4
5	4	2'-0"	8'-0"	7"	6"	3'-2"	5'-0"	3/8" φ 8"	4'-8"	4	5'-8"	3'-8"	1/2" φ 9"	4'-0"	1/2" φ 18"	10	30.40	0.290	2'-11"	1'-9"	3'-2"	5'-6"	2'-9"	12'-11"	4'-9"	4'-7"	1'-7"	6	3'-2"	3	1'-2"	87	1.45	8'-5"	5'-7"	59	0.60	0.299	17.49	1642	5
6	4	2'-6"	10'-0"	7"	6"	3'-8"	5'-0"	"	4'-8"	4	5'-8"	3'-8"	"	5'-4"	"	10	31.31	0.308	3'-5"	1'-11"	3'-0"	6'-8"	3'-4"	13'-5"	5'-9"	"	1'-11"	6	3'-9"	4	1'-2"	106	1.93	8'-5"	5'-7"	59	0.60	0.332	19.35	1722	6
7	7	3'-0"	12'-0"	7"	6"	4'-2"	5'-0"	"	4'-8"	4	5'-8"	3'-8"	"	5'-10"	"	12	33.58	0.327	3'-11"	2'-0"	4'-6"	7'-9"	3'-0"	14'-9"	6'-9"	"	2'-3"	6	4'-4"	5	1'-2"	145	2.45	8'-5"	5'-7"	59	0.60	0.364	21.33	1917	7
8	8	4'-0"	16'-0"	7"	6"	5'-2"	5'-4"	"	5'-0"	4	5'-8"	3'-8"	"	6'-10"	"	12	36.45	0.428	4'-11"	2'-3"	5'-9"	10'-4"	3'-0"	17'-4"	8'-8"	"	2'-10"	6	5'-0"	7	1'-2"	215	3.64	8'-7"	5'-10"	62	0.62	0.430	28.53	2193	8
9	9	2'-0"	10'-0"	8"	6"	3'-4"	6'-0"	3/8" φ 8"	5'-8"	6	6'-8"	4'-8"	1/2" φ 9"	5'-6"	1/2" φ 18"	12	38.72	0.370	3'-0"	1'-10"	3'-2"	5'-6"	2'-9"	13'-3"	4'-9"	5'-9"	1'-7"	7	3'-2"	3	1'-2"	92	1.56	9'-8"	6'-9"	70	0.70	0.327	21.57	2054	9
10	10	3'-0"	15'-0"	8"	6"	4'-4"	6'-0"	"	5'-8"	6	6'-8"	4'-8"	"	6'-2"	"	14	41.90	0.407	4'-0"	2'-4"	4'-6"	7'-9"	3'-0"	15'-6"	6'-9"	"	2'-3"	7	4'-4"	4	1'-2"	152	2.61	9'-8"	6'-9"	70	0.70	0.393	25.51	2323	10
11	5	4'-0"	20'-0"	8"	6"	5'-4"	6'-4"	"	6'-0"	6	6'-8"	4'-8"	"	7'-6"	"	14	44.92	0.511	5'-0"	2'-3"	5'-9"	10'-1"	3'-0"	18'-6"	8'-8"	"	2'-10"	7	5'-6"	7	1'-2"	223	3.82	9'-10"	6'-11"	71	0.72	0.458	32.88	2606	11
12	12	5'-0"	25'-0"	8"	10"	6'-4"	6'-8"	"	6'-4"	6	6'-8"	4'-8"	"	8'-6"	"	16	49.30	0.638	6'-0"	2'-6"	7'-2"	12'-5"	3'-0"	21'-2"	10'-9"	"	3'-7"	7	6'-8"	9	1'-2"	309	5.29	10'-0"	7'-11"	72	0.73	0.525	41.83	2980	12
13	6	6'-0"	30'-0"	8"	10"	7'-4"	6'-8"	"	6'-4"	6	6'-8"	4'-8"	"	9'-6"	"	18	52.47	0.700	7'-0"	2'-9"	8'-5"	14'-8"	3'-0"	24'-11"	12'-8"	"	4'-3"	7	7'-8"	11	1'-2"	409	7.81	10'-4"	7'-5"	75	0.76	0.596	49.90	3332	13
14	14	2'-0"	12'-0"	9"	6"	3'-8"	7'-0"	3/8" φ 8"	6'-8"	8	7'-8"	5'-8"	1/2" φ 9"	6'-2"	1/2" φ 18"	12	47.61	0.463	3'-11"	1'-11"	3'-2"	5'-6"	2'-9"	14'-7"	4'-9"	6'-11"	1'-7"	8	3'-2"	3	1'-2"	97	1.67	10'-10"	7'-11"	80	0.79	0.356	26.23	2480	14
15	15	3'-0"	18'-0"	9"	8"	4'-6"	7'-4"	"	7'-0"	8	7'-8"	5'-8"	"	7'-6"	"	14	52.19	0.556	4'-4"	2'-2"	4'-6"	7'-9"	3'-0"	17'-0"	6'-9"	"	2'-3"	8	4'-4"	5	1'-2"	160	2.73	11'-1"	8'-11"	81	0.81	0.421	32.79	2818	15
16	16	4'-0"	24'-0"	9"	8"	5'-8"	7'-4"	"	7'-0"	8	7'-8"	5'-8"	"	8'-2"	"	14	54.01	0.605	5'-4"	2'-9"	5'-9"	10'-4"	3'-0"	19'-3"	8'-8"	"	2'-10"	8	5'-6"	7	1'-2"	235	4.02	11'-1"	8'-11"	81	0.81	0.487	37.77	3052	16
17	17	5'-0"	30'-0"	9"	10"	6'-6"	7'-8"	"	7'-4"	8	7'-8"	5'-8"	"	9'-2"	"	16	58.59	0.734	6'-4"	2'-7"	7'-2"	12'-5"	6'-2"	22'-0"	10'-9"	"	3'-7"	8	6'-8"	9	1'-2"	321	5.54	11'-3"	8'-3"	83	0.83	0.553	46.92	3445	17
18	18	6'-0"	36'-0"	9"	10"	7'-8"	7'-8"	"	7'-4"	8	7'-8"	5'-8"	"	10'-2"	"	18	61.76	0.796	7'-4"	2'-10"	8'-5"	14'-8"	3'-0"	25'-3"	12'-8"	"	4'-3"	8	7'-9"	11	1'-2"	423	8.12	11'-7"	8'-7"	86	0.85	0.624	55.11	3804	18
19	19	3'-0"	24'-0"	12"	8"	5'-0"	9'-4"	3/4" φ 6"	9'-0"	12	9'-8"	6'-8"	1/2" φ 9"	8'-8"	1/2" φ 18"	18	73.46	0.839	4'-4"	2'-5"	4'-6"	7'-9"	3'-0"	19'-9"	6'-9"	9'-2"	2'-3"	11	4'-4"	4	1'-2"	175	3.07	13'-7"	10'-5"	146	1.00	0.479	46.85	4138	19
20	20	4'-0"	32'-0"	12"	8"	6'-0"	9'-4"	"	9'-0"	12	9'-8"	6'-8"	"	9'-8"	"	18	80.27	0.889	5'-4"	2'-11"	5'-9"	10'-4"	3'-0"	22'-0"	8'-8"	"	2'-10"	11	5'-6"	6	1'-2"	254	4.48	13'-7"	10'-5"	146	1.00	0.544	52.11	4380	20
21	21	6'-0"	40'-0"	12"	10"	7'-0"	9'-8"	"	9'-4"	12	9'-8"	6'-8"	"	10'-8"	"	20	85.32	1.025	6'-4"	2'-11"	7'-2"	12'-5"	6'-2"	24'-0"	10'-9"	"	3'-7"	11	6'-8"	8	1'-2"	346	6.10	13'-9"	10'-7"	148	1.02	0.610	61.79	4797	21
22	22	6'-0"	48'-0"	12"	10"	8'-0"	9'-8"	"	9'-4"	12	9'-8"	6'-8"	"	11'-8"	"	22	88.49	1.086	7'-4"	3'-11"	8'-5"	14'-8"	3'-0"	27'-7"	12'-8"	"	4'-3"	11	7'-9"	10	1'-2"	453	8.81	14'-1"	10'-11"	152	1.04	0.681	70.19	5165	22
23	23	7'-0"	56'-0"	12"	10"	9'-0"	9'-8"	"	9'-4"	12	9'-8"	6'-8"	"	12'-8"	"	22	90.30	1.148	8'-4"	3'-4"	9'-3"	17'-0"	3'-6"	30'-2"	14'-8"	"	4'-10"	11	8'-4"	12	1'-2"	479	11.12	14'-1"	10'-11"	152	1.04	0.747	77.80	5820	23
24	24	8'-0"	64'-0"	12"	10"	10'-0"	9'-0"	"	9'-6"	12	9'-8"	6'-8"	"	13'-8"	"	24	94.41	1.272	9'-4"	3'-7"	11'-2"	19'-4"	3'-6"	32'-11"	16'-8"	"	5'-7"	11	10'-4"	12	1'-2"	604	13.69	14'-3"	11'-0"	154	1.05	0.813	88.81	6344	24
25	25	6'-0"	60'-0"	14"	10"	9'-5"	11'-8"	3/4" φ 5"	11'-4"	22	11'-4"	6'-8"	1/2" φ 9"	13'-11"	1/2" φ 18"	24	122.72	1.415	7'-6"	3'-4"	8'-5"	14'-8"	3'-6"	34'-11"	17'-8"	11'-6"	4'-3"	13	7'-9"	11	1'-2"	503	9.47	16'-7"	13'-3"	181	1.23	0.738	87.01	6947	25
26	26	7'-0"	70'-0"	14"	10"	10'-5"	11'-8"	"	11'-4"	22	11'-4"	6'-8"	"	14'-11"	"	24	124.54	1.477	8'-6"	3'-7"	9'-9"	17'-0"	3'-6"	36'-6"	14'-8"	"	4'-10"	13	8'-4"	13	1'-2"	634	11.89	16'-7"	13'-3"	181	1.23	0.804	94.84	7551	26
27	27	8'-0"	80'-0"	14"	10"	11'-0"	11'-10"	"	11'-6"	22	11'-4"	6'-8"	"	15'-11"	"	26	128.93	1.603	9'-6"	3'-10"	11'-2"	19'-4"	3'-6"	38'-2"	16'-8"	"	5'-7"	13	10'-11"	15	1'-2"	691	13.75	14'-5"	16'-8"	182	1.24	0.870	106.16	8102	27
28	28	9'-0"	90'-0"	14"	12"	11'-5"	12'-0"	"	11'-8"	22	11'-8"	6'-8"	"	16'-11"	"	28	133.32	1.741	10'-6"	4'-0"	12'-6"	21'-4"	3'-6"	40'-7"	18'-8"	"	6'-3"	13	11'-9"	17	1'-2"	844	17.44	16'-9"	13'-5"	183	1.25	0.937	118.42	8680	28
29	29	10'-0"	100'-0"	14"	12"	12'-5"	12'-0"	"	11'-8"	22	11'-8"	6'-8"	"	17'-11"	"	28	135.13	1.815	11'-6"	4'-3"	13'-9"	23'-4"	3'-6"	42'-6"	20'-8"	"	6'-10"	13	12'-5"	19	1'-2"	934	20.57	16'-9"	13'-5"	183	1.25	1.001	128.22	9164	29

Drawn by J.M.P.
 Checked by T.F.T.
 Feb. 1935