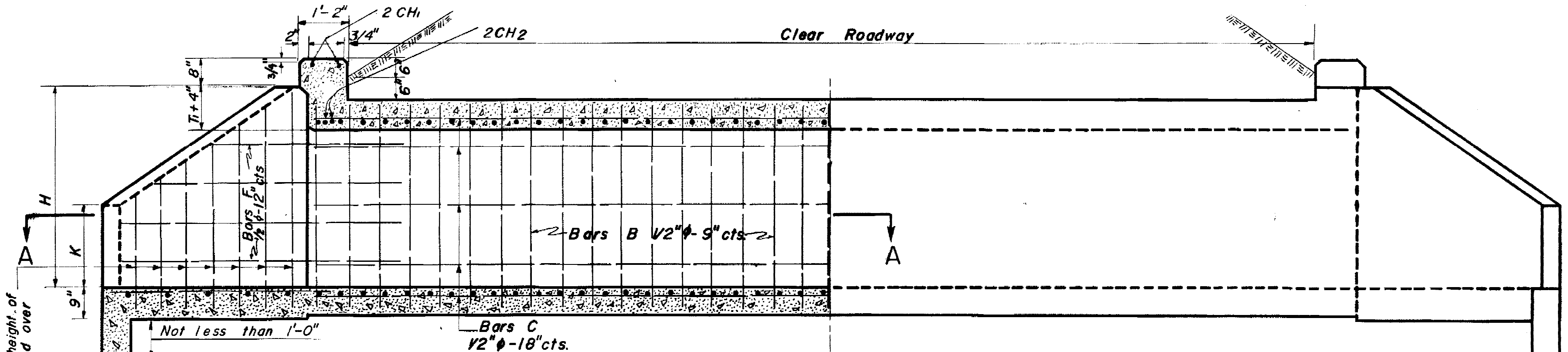
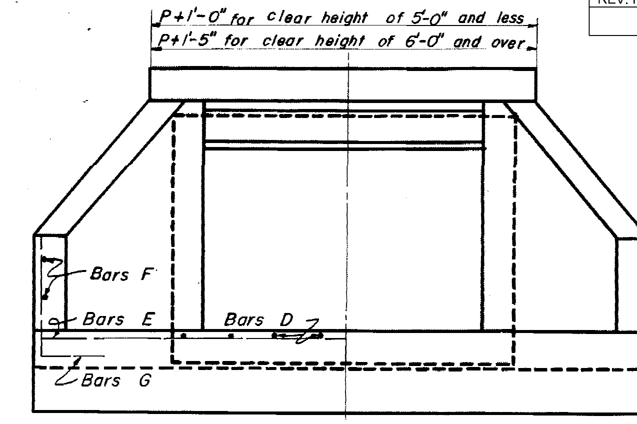
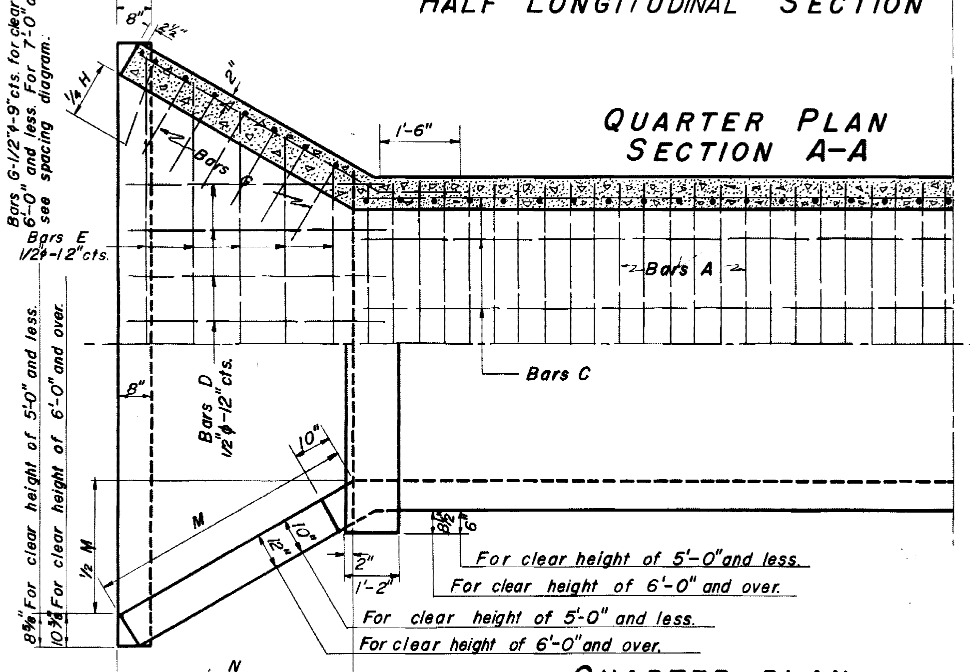


HALF LONGITUDINAL SECTION

HALF SIDE ELEVATION

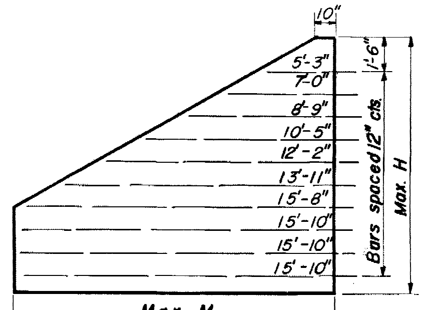


END ELEVATION

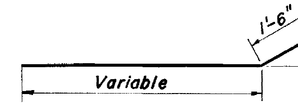


QUARTER PLAN SECTION A-A

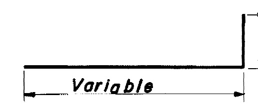
QUARTER PLAN



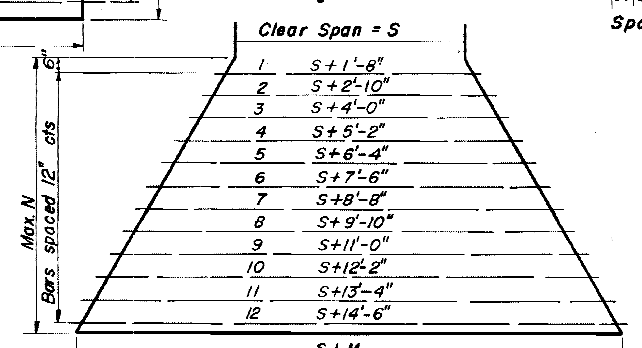
Bars F



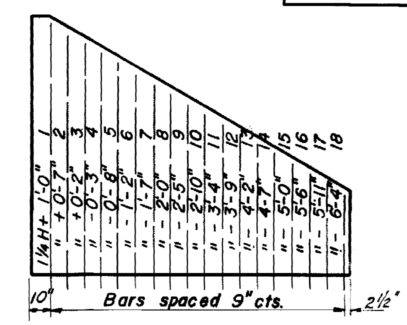
Bending for Bars F



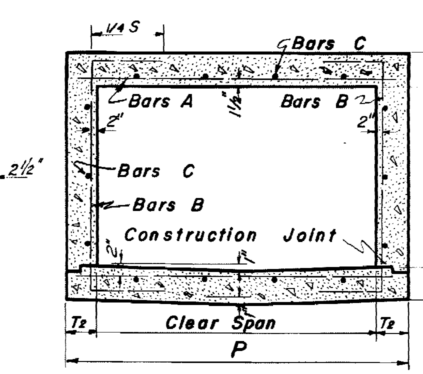
Bending for Bars G



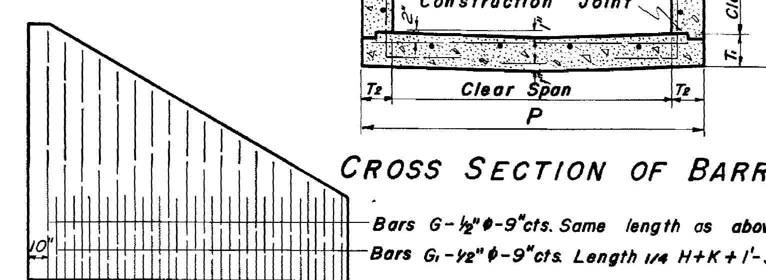
Bars E



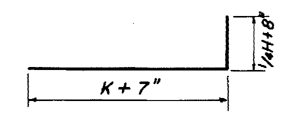
Spacing of Bars G for clear height of 6'-0" and less



CROSS SECTION OF BARREL



Spacing of Bars G and G1 for clear height of 7'-0" and over.



Bending for Bars G1

* NOTE: The weight of the CH1 & CH2 bars is included in the weight of the total quantities for 26' & 30' Rdy.

DESIGN NO.	WATERWAY: Clear Span Ft.	Clear Height Ft.	Area Opening Sq. Ft.	BARREL OF CULVERT — DIMENSIONS: T1	T2	V	P	REINFORCING STEEL — BARS-A: Size & Spacing	Length	BARS-B BENT: Size & Spacing	Length	BARS-C: Size & Spacing	No.	QUANTITIES: Steel per lin. ft. lbs.	Concrete per Lin. ft. Cu. Yds.	TWO WINGS AND ONE APRON — DIMENSIONS: H	K	M	N	REINFORCING STEEL — BARS-D: No.	Length	BARS E: No.	Length	BARS-F: No.	Length	No.	Length	BARS-G: No.	Length	BARS-G1: No.	Length	QUANTITIES: Steel	CL. AA CONCRETE	Concrete in Two Curbs Cu. Yds.	Concrete in One Curtain Wall Cu. Yds. per ft. of depth	TOTAL QUANTITIES — 26' ROADWAY: Steel	CL. AA CONCRETE	30' ROADWAY: Steel	CL. AA CONCRETE	DESIGN NO.	Two Curbs Reinf. Steel Same Size As A Bars: *4CH1	*4CH2
1	2	2'-0"	4.0	6"	6"	3'-0	3'-0"	½"ϕ-6"	2'-8"	½"ϕ-9"	3'-8"	½"ϕ-18"	8	19.34	0.185	2'-10"	1'-6"	3'-2"	2'-9"	4	3'-2"	3		2	5'-2"	2	5'-2"	8				54	.87	.31	.163	667	7.56	744	8.30	1	3'-8"	2'-8"
2		2'-0"	6.0	6"	6"	3'-0"	4'-0"	½"ϕ-6"	3'-8"	½"ϕ-9"	4'-2"	½"ϕ-18"	8	22.97	0.222	2'-10"	1'-6"	3'-2"	2'-9"	5	3'-2"	3		2	5'-2"	2	5'-2"	8				58	.95	.40	.188	782	8.89	874	9.78	2	4'-8"	3'-8"
3	3	2'-6"	7.5	6"	6"	3'-6"	4'-0"	"	3'-8"	"	4'-8"	"	8	23.88	0.241	3'-4"	1'-7"	3'-10"	3'-4"	5	3'-9"	3		2	5'-3"	2	5'-10"	10				69	1.25	.40	.204	830	10.06	925	11.02	3	4'-8"	3'-8"
4		3'-0"	9.0	6"	6"	4'-0"	4'-0"	"	3'-8"	"	5'-2"	"	10	26.14	0.259	3'-10"	1'-9"	4'-6"	3'-10¾	5	4'-4"	4		2	5'-3"	4	6'-6"	10				91	1.60	.40	.221	937	11.29	1,041	12.33	4	4'-8"	3'-8"
5		2'-0"	8.0	7"	6"	3'-2"	5'-0"	⅝"ϕ-8"	4'-8"	½"ϕ-9"	4'-10"	½"ϕ-18"	10	30.40	0.290	2'-11"	1'-7"	3'-2"	2'-9"	6	3'-2"	3		2	5'-2"	2	5'-2"	8				63	1.04	.48	.213	1,021	11.11	1,143	12.27	5	5'-8"	4'-8"
6		2'-6"	10.0	7"	6"	3'-8"	5'-0"	"	4'-8"	"	5'-4"	"	10	31.31	0.308	3'-5"	1'-8"	3'-10"	3'-4"	6	3'-9"	3		2	5'-3"	2	5'-10"	10				74	1.37	.48	.229	1,069	12.30	1,194	13.53	6	5'-8"	4'-8"
7	4	3'-0"	12.0	7"	6"	4'-2"	5'-0"	"	4'-8"	"	5'-10"	"	12	33.58	0.327	3'-11"	1'-10	4'-6"	3'-10¾	6	4'-4"	4		2	5'-3"	2	6'-6"	10				97	1.73	.48	.246	1,178	13.59	1,318	14.90	7	5'-8"	4'-8"
8		4'-0"	16.0	7"	8"	5'-2"	5'-4"	"	5'-0"	"	6'-10"	"	12	36.45	0.428	4'-11"	2'-0"	5'-10"	5'-0½"	6	5'-6"	5		4	Var.	4	7'-10"	14				144	2.51	.50	.278	1,356	18.06	1,501	19.77	8	6'-0"	5'-0"
9		2'-0"	10.0	7½"	6"	3'-3"	6'-0"	⅝"ϕ-7½"	5'-8"	½"ϕ-9"	5'-5"	½"ϕ-18"	12	37.20	0.352	2'-11½"	1'-8"	3'-2"	2'-9"	7	3'-2"	3	VARIABLE SEE DIAGRAM	2	5'-2"	2	5'-2"	8	VARIABLE SEE DIAGRAM			67	1.13	.56	.237	1,228	13.15	1,376	14.56	9	6'-8"	5'-8"
10		3'-0"	15.0	7½"	6"	4'-3"	6'-0"	"	5'-8"	"	6'-5"	"	14	40.38	0.389	3'-11½"	1'-10"	4'-6"	3'-10¾	7	4'-4"	4		2	5'-3"	4	6'-6"	10				103	1.85	.56	.270	1,383	15.69	1,550	17.25	10	6'-8"	5'-8"
11	5	4'-0"	20.0	7½"	8"	5'-3"	6'-4"	"	6'-0"	"	7'-5"	"	14	43.32	0.490	4'-11½"	2'-1"	5'-10"	5'-0½"	7	5'-6"	5		4	Var.	4	7'-10"	14				151	2.67	.58	.303	1,570	20.25	1,743	22.21	11	7'-0"	6'-0"
12		5'-0"	25.0	7½"	10"	6'-3"	6'-8"	"	6'-4"	"	8'-5"	"	16	47.62	0.617	5'-11½"	2'-4"	7'-2"	6'-2½"	7	6'-8"	6		6	Var.	4	9'-2"	18				207	3.65	.61	.336	1,805	25.86	1,996	28.33	12	7'-4"	6'-4"
13		6'-0"	30.0	7½"	10"	7'-3"	6'-8"	"	6'-4"	"	9'-5"	"	18	50.79	0.679	6'-11½"	2'-6"	8'-6"	7'-4¼	7	7'-9"	7		6	Var.	6	10'-6"	22				270	537	.64	.376	2,027	31.14	2,225	33.86	13	7'-9"	6'-4"
14		2'-0"	120	8½"	6"	3'-5"	7'-0"	⅝"ϕ-6½"	6'-8"	½"ϕ-9"	6'-1"	½"ϕ-18"	12	45.28	0.441	3'-0½"	1'-8"	3'-2"	2'-9"	8	3'-2"	3		2	5'-2"	2	5'-2"	8				72	1.22	.64	.262	1,473	15.95	1,654	17.72	14	7'-8"	6'-8"
15		3'-0"	18.0	8½"	8"	4'-5"	7'-4"	"	7'-0"	"	7'-1"	"	14	49.76	0.533	4'-0½"	1'-11"	4'-6"	3'-10¾	8	4'-4"	4		2	5'-3"	4	6'-6"	10				109	1.94	.67	.295	1,675	20.06	1,874	22.20	15	8'-0"	7'-0"
16	6	4'-0"	24.0	8½"	8"	5'-5"	7'-4"	"	7'-0"	"	8'-1"	"	14	51.57	0.582	5'-0½"	2'-1"	5'-10"	5'-0½"	8	5'-6"	5		4	Var.	4	7'-10"	14				159	2.83	.67	.328	1,826	23.28	2,032	25.61	16	8'-0"	7'-0"
17		5'-0"	30.0	8½"	10"	6'-5"	7'-8"	"	7'-4"	"	9'-1"	"	16	56.04	0.711	6'-0½"	2'-5"	7'-2"	6'-2½"	8	6'-8"	6		6	Var.	4	9'-2"	18				217	3.86	.69	.361	2,069	29.04	2,293	31.88	17	8'-4"	7'-4"
18		6'-0"	36.0	8½	10"	7'-5"	7'-8"	"	7'-4"	"	10'-1"	"	18	59.22	0.772	7'-0½"	2'-8"	8'-6"	7'-4¼	8	7'-9"	7		6	Var.	6	10'-6"	22				281	5.65	.72	.401	2,288	34.44	2,525	37.53	18	8'-9"	7'-4"
19		3'-0"	240	10"	8"	4'-8"	9'-4"	¾"ϕ-7"	9'-0"	½"ϕ-9"	8'-4"	½"ϕ-18"	18	74.24	0.724	4'-2"	2'-1"	4'-6"	3'-10¾	10	4'-4"	4		2	5'-3"	4	6'-6"	10				122	2.20	.83	.344	2,439	26.19	2,736	29.09	19	10'-0"	9'-0"
20		4'-0"	32.0	10"	8"	5'-8"	9'-4"	"	9'-0"	"	9'-4"	"	18	76.06	0.773	5'-2"	2'-3"	5'-10"	5'-0½	10	5'-6"	5		4	Var.	4	7'-10"	14				175	3.16	.83	.377	2,596	29.55	2,900	32.64	20	10'-0"	9'-0"
21		5'-0"	40.0	10"	10"	6'-8"	9'-8"	"	9'-4"	"	10'-4"	"	20	80.96	0.905	6'-2"	2'-6"	7'-2"	6'-2½	10	6'-8"	6		6	Var.	4	9'-2"	18				236	4.25	.85	.410	2,859	35.51	3,183	39.13	21	10'-4"	9'-4"
22	8	6'-0"	48.0	10"	10"	7'-8"	9'-8"	"	9'-4"	"	11'-4"	"	22	84.14	0.967	7'-2"	2'-9"	8'-6"	7'-4¼	10	7'-9"	7		6	Var.	6	10'-6"	22				304	6.13	.88	.450	3,086	41.14	3,422	44.98	22	10'-9"	9'-4"
23		7'-0"	56.0	10"	10"	8'-8"	9'-8"	"	9'-4"	"	12'-4"	"	22	85.95	1.028	8'-2"	3'-0"	9'-10"	8'-6"	10	8'-11"	9		8	Var.	6	11'-10"	26		24	6'-4"	495	7.70	.88	.483	3,519	46.03	3,862	50.14	23	10'-9"	9'-4"
24		8'-0"	64.0	10"	11"	9'-8"	9'-10"	"	9'-6"	"	13'-4"	"	24	89.99	1.150	9'-2"	3'-2"	11'-2"	9'-8"	10	10'-1"	10		10	Var.	6	13'-2"	28		28	6'-9"	596	9.39	.89	.516	3,836	52.90	4,196	57.50	24	10'-11"	9'-6"
25		3'-0"	30.0	11"	8"	4'-10"	11'-4"	¾"ϕ-6"	11'-0"	½"ϕ-9"	9'-6"	½"ϕ-18"	20	97.70	0.917	4'-3"	2'-2"	4'-6"	3'-10½	12	4'-4"	4		2	5'-3"	4	6'-6"	10				134	2.44	.99	.394	3,144	32.33	3,534	36.00	25	12'-0"	11'-0"
26		4'-0"	40.0	11"	8"	5'-10"	11'-4"	"	11'-0"	"	10'-6"	"	20	99.52	0.967	5'-3"	2'-4"	5'-10"	5'-0½	12	5'-6"	5		4	Var.	4	7'-10"	14				190	3.47	.99	.427	3,307	35.86	3,705	39.73	26	12'-0"	11'-0"
27		5'-0"	50.0	11"	10"	6'-10"	11'-8"	"	11'-4"	"	11'-6"	"	22	104.71	1.101	6'-3"	2'-7"	7'-2"	6'-2½	12	6'-8"	6		6	Var.	4	9'-2"	18				254	4.63	1.02	.460	3,584	42.03	4,008	46.43	27	12'-4"	11'-4"
28		6'-0"	60.0	11"	10"	7'-10"	11'-8"	"	11'-4"	"	12'-6"	"	24	107.89	1.163	7'-3"	2'-10"	8'-6"	7'-4¼	12	7'-9"	7		6	Var.	6	10'-6"	22				325	6.59	1.05	.500	3,817	47.79	4,248	52.45	28	12'-9"	11'-4"
29	10	7'-0"	70.0	11"	10"	8'-10"	11'-8"	"	11'-4"	"	13'-6"	"	24	109.70	1.224	8'-3"	3'-1"	9'-10"	8'-6"	12	8'-11"	9		8	Var.	6	11'-10"	26		24	6'-5"	523	8.23	1.05	.533	4,264	52.85	4,702	57.74	29	12'-9"	11'-4"
30		8'-0"	80.0	11"	11"	9'-10"	11'-10"	"	11'-6"	"	14'-6"	"	26	113.89	1.347	9'-3"	3'-3"	11'-2"	9'-8"	12	10'-1"	10		10	Var.	6	13'-2"	28		28	6'-10"	627	9.99	1.06	.566	4,591	59.89	5,046	65.28	30	12'-11"	11'-6"
31		9'-0"	90.0	11"	12"	10'-10"	12'-0"	"	11'-8"	"	15'-6"	"	28	118.08	1.482	10'-3"	3'-6"	12'-6"	10'-10"	13	11'-3"	11		12	Var.	6	14'-6"	32		32	7'-4"	758	11.95	1.07	.599	4,972	67.66	5,445	73.59	31	13'-1"	11'-8"
32		10'-0"	100.0	11"	12"	11'-10"	12'-0"	"	11'-8"	"	16'-6"	"	28	119.89	1.556	11'-3"	3'-9"	13'-10"	11'-11½	13	12'-5"	12		14	Var.	6	15'-10"	36		34	7'-10"	882	14.07	1.07	.631	5,271	74.04	5,750	80.26	32	13'-1"	11'-8"
33	5	7'-0"	35.0	7½"	10"	8'-3	6'-8"	⅝"ϕ7½"	6'-4"	½"ϕ-9"	10'-5"	½"ϕ-18"	18	52.60	.741	7'-11½"	2'-9"	9'-10"	8'-6"	7	8'-11"	9		8	Var.	6	11'-10"	26		24	6'-0"	450	6.81	.64	.409	2,433	35.83	2,643	38.79	33	7'-9"	6'-4"

Quantities shown for reinforcing steel shall be reduced by 1½% (.015) to comply with approved C.R.S.I. weights per foot for reinforcing bars.

GENERAL NOTES

All reinforcing steel shall be be deformed round bars. The design and table are based upon net areas of bars as follows: ½" ϕ = 0.1963 sq. in., ⅝" ϕ = 0.3068 sq. in., ¾" ϕ = 0.442 sq. in. Other sizes may be used provided they are spaced so as to give as much net sectional area per ft. width of slab. Plans showing such changed sizes and spacing must be approved.

All exposed surfaces to have carborundum finish and this shall be included in price bid per cu. yd. for concrete.

DESIGN DATA

Conc. slab 6' span 8½"	106 lbs.	L.L.M. = 909 X 40¼ =	36590 in. lbs.
Dirt fill	100 "	I = 30 % L L =	10 980 " "
Paving 6"	75 "	D.L.M. = ⅛ WL² = ⅛ X 281X6.71X12 =	19 000 " "
	281 "		66570 " "

L.L. 1818 — 909 | 6'-8½" | 909

5.5 | 10,000 — 1,818

All exposed edges shall have a 3/4" chamfer.

EW115 OVER TEXANNA CREEK — MCINTOSH CO.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

DESIGN		
DRAWN	GLH	
CHECKED	GCS	
APPROVED		
SQUAD	KCS	

STRUCTURE NO. 3 & 5 DETAILS

STATE JOB NO. 29374(04) — SHEET NO. U001

N:\AF34-CED2-1 - MCINTOSH-BR052\DRAWINGS\AF34 STR 3 DETAILS.DWG 8/11/2017