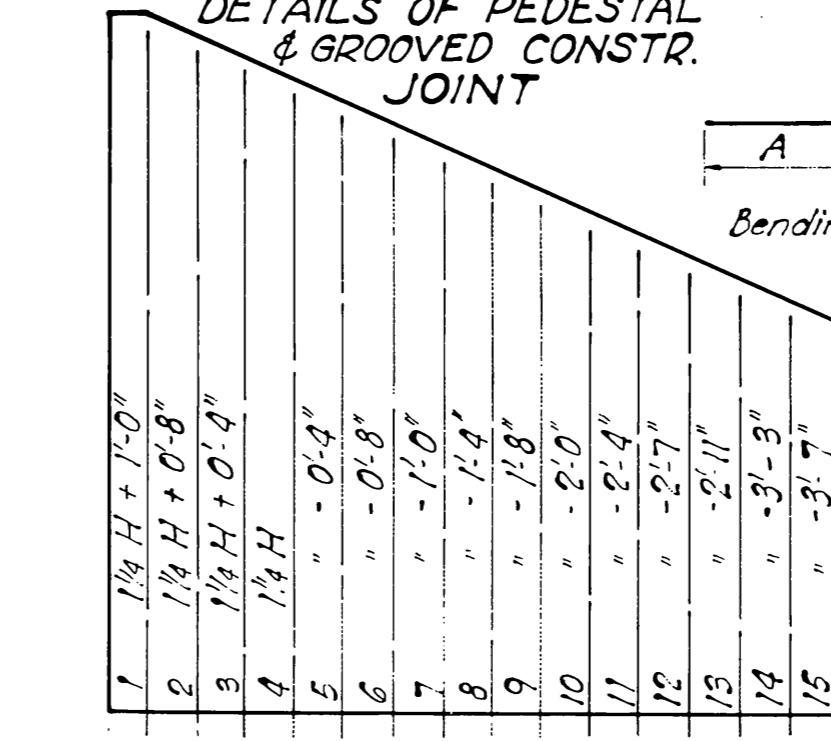
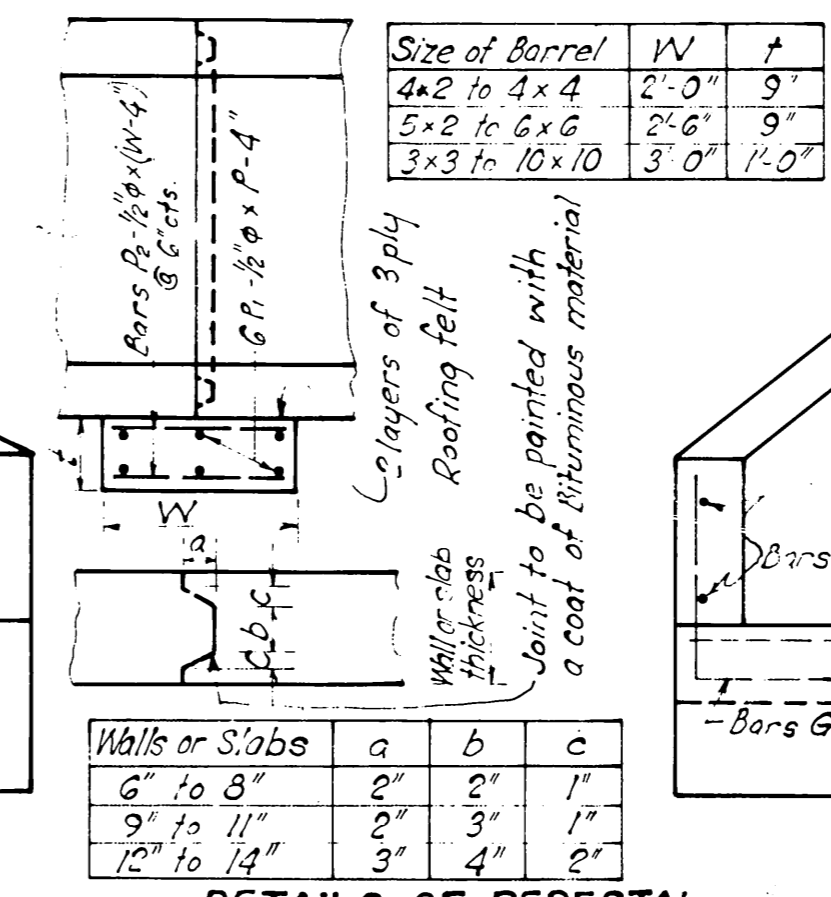


Rev. July 31-1962 Revised 1951
 Rev. Note for Reinf. Wts. 5-7-63 Revised 5-2-1962
 Rev. Reinf. Wts. 5-7-65
 P=1.5' for Clear Height of 5'-0" and less
 P=1.5' for Clear Height of 6'-0" and over

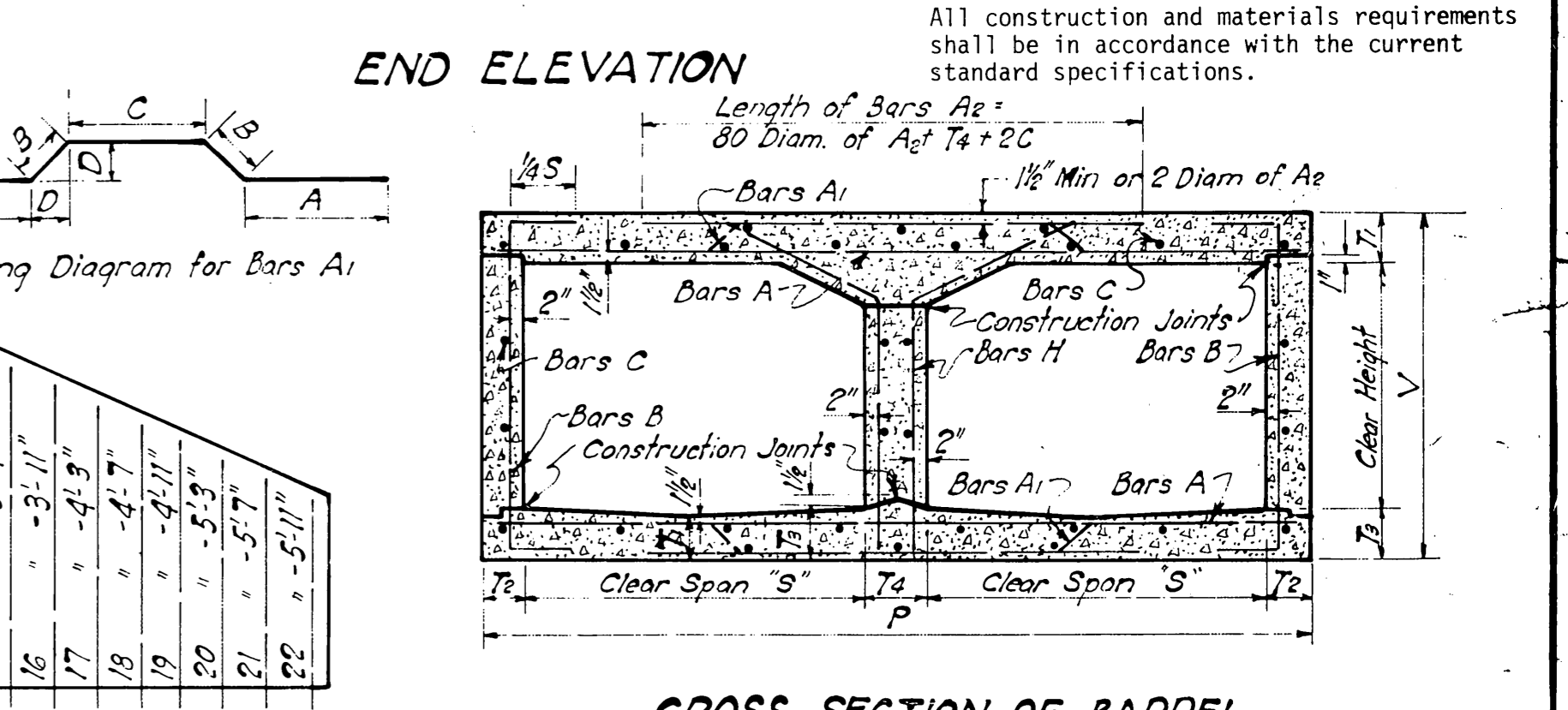
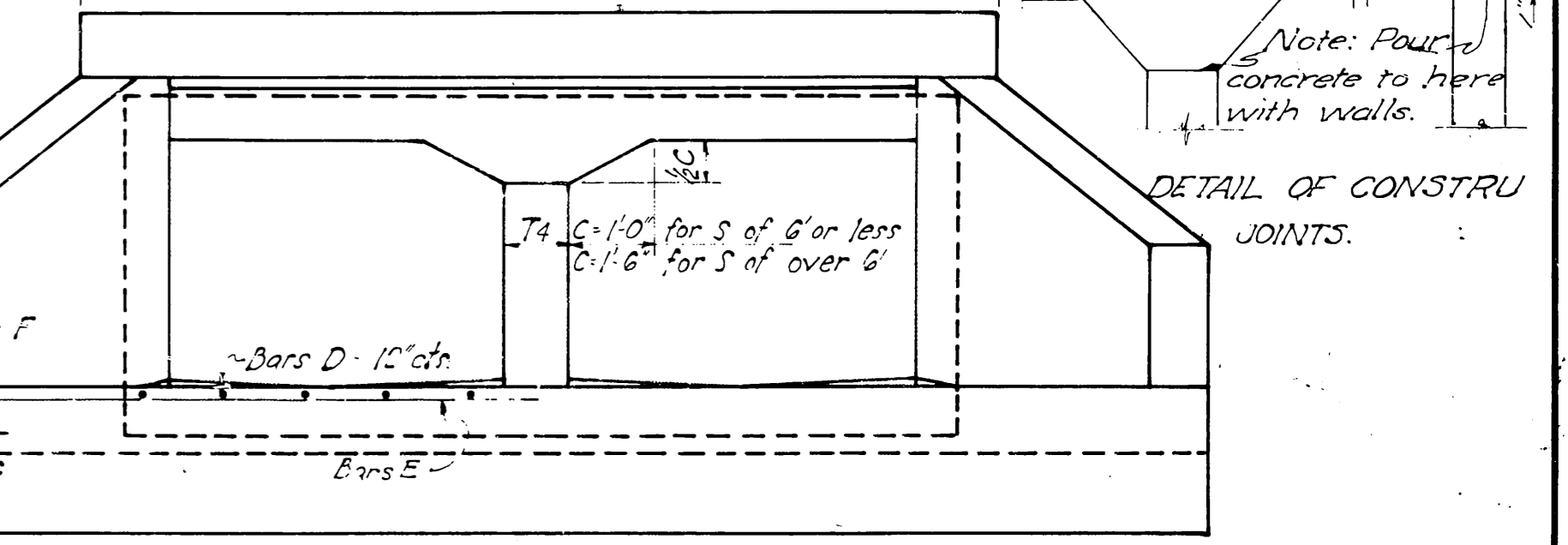


SPACING OF BARS G FOR CLEAR HEIGHT OF 6'-0" AND LESS

Clear Height	Bar Spacing
1	2S + 1'-8" + T4
2	2S + 2'-10" + T4
3	2S + 4'-0" + T4
4	2S + 5'-2" + T4
5	2S + 6'-4" + T4
6	2S + 7'-6" + T4
7	2S + 8'-8" + T4
8	2S + 9'-10" + T4
9	2S + 11'-0" + T4
10	2S + 12'-2" + T4
11	2S + 13'-4" + T4
12	2S + 14'-6" + T4
13	2S + 15'-8" + T4
14	2S + 16'-10" + T4
15	2S + 18'-0" + T4

SPACING OF BARS G & G1 FOR CLEAR HEIGHT OF 7'-0" OR OVER

Clear Height	Bar Spacing
1	2S + 1'-8" + T4
2	2S + 2'-10" + T4
3	2S + 4'-0" + T4
4	2S + 5'-2" + T4
5	2S + 6'-4" + T4
6	2S + 7'-6" + T4
7	2S + 8'-8" + T4
8	2S + 9'-10" + T4
9	2S + 11'-0" + T4
10	2S + 12'-2" + T4
11	2S + 13'-4" + T4
12	2S + 14'-6" + T4
13	2S + 15'-8" + T4
14	2S + 16'-10" + T4
15	2S + 18'-0" + T4



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" = .20, 3/8" = .31, 1/2" = .44, 3/4" = .60, 1" = .79. 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.

Unless otherwise specified, all exposed concrete surfaces shall have a finish in accordance with the current standard specifications.

All exposed edges shall have a 3/8" chamfer. Design Data: Specifications

* Quantities for 50' Roadway do not include Pedestal Quantities. Grooved Construction Joints and Pedestals shall be used when and where noted on Summary Sheet.

In general, Grooved Construction Joints and Pedestals shall be placed as follows: 60' to 100' of barrel, use 1 constr. joint & pedestal. 100' to 140' " " " 2 " " " 140' to 180' " " " 3 " " "

All slab reinforcing steel shall be supported on approved metal supports.

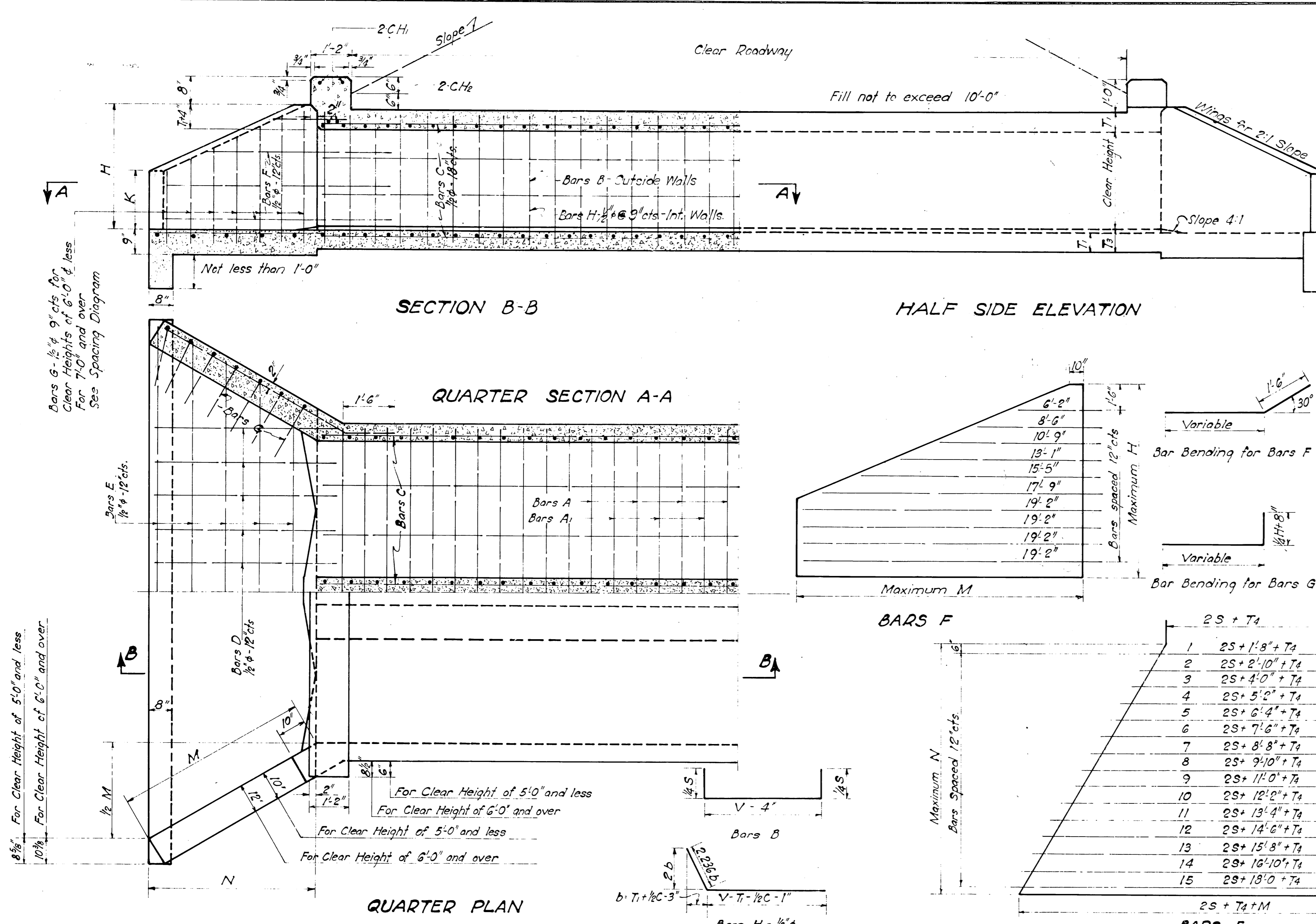
Note: Reinforcing Steel weights shown on this std. are for estimating purposes only. Final pay weights for reinforcing steel will be calculated using the approved AASHTO or CRSI weights for reinforcing steel.

Design Loading H20-S16 & PPM 20-4

OKLAHOMA DEPARTMENT OF TRANSPORTATION

STANDARD CONCRETE BOX CULVERTS. SPANS 4 TO 10 FEET FOR FILLS 3 TO 10 FEET

Quantities shown for reinforcing steel shall be reduced by 10% to 15% to allow for lap splicing and other factors. Final pay weights for reinforcing steel will be calculated using the approved AASHTO or CRSI weights for reinforcing steel.



DESIGN NO.	BARREL OF CULVERT										TWO WINGS AND ONE APRON										TWO CURBS										TOTAL QUANTITIES		DESIGN NO.														
	DIMENSIONS					REINFORCING STEEL					QUANTITIES		DIMENSIONS					REINFORCING STEEL					QUANTITIES		QUANTITIES																						
1	2'-0"	6"	6"	7 1/2"	9"	3'-2"	9'-9"	1/2" @ 10' cts.	9'-5"	1/2" @ 10' cts.	9'-8"	2'-6"	5"	3'-9"	3"	1/2" @ 10' cts.	6'-1"	1/2" @ 9' cts.	4'-10"	24	3'-10"	71.14	0.557	2'-11"	1'-5 1/2"	4'-4"	3'-9"	10	4'-2"	4	2	6'-2"	2	7'-2"	12	106	1.98	0.87	10'-5"	9'-5"	54	0.359	4,002	34.51	84	0.54	1
2	2'-6"	6"	6"	7 1/2"	9"	3'-8"	9'-9"	1/2" @ 10' cts.	9'-5"	1/2" @ 10' cts.	9'-8"	2'-6"	5"	3'-9"	3"	1/2" @ 10' cts.	6'-1"	1/2" @ 9' cts.	5'-4"	24	4'-4"	72.96	0.590	3'-5 1/2"	1'-7 1/2"	5'-1"	4'-4"	10	4'-10"	4	2	6'-2"	4	7'-11"	14	121	2.47	0.87	10'-5"	9'-5"	54	0.377	4,157	37.24	84	0.54	2
3	3'-0"	6"	6"	7 1/2"	9"	4'-2"	9'-9"	1/2" @ 10' cts.	9'-5"	1/2" @ 10' cts.	9'-8"	2'-6"	5"	3'-9"	3"	1/2" @ 10' cts.	6'-1"	1/2" @ 9' cts.	5'-10"	28	4'-10"	77.49	0.622	3'-11"	1'-9"	5'-10"	5'-0"	10	5'-6"	5	2	6'-2"	4	7'-11"	14	158	3.00	0.87	10'-5"	9'-5"	54	0.396	4,444	40.01	84	0.54	3
4	4'-0"	6"	6"	7 1/2"	9"	5'-2"	10'-1"	1/2" @ 10' cts.	9'-9"	1/2" @ 10' cts.	10'-0"	2'-8"	5"	3'-9"	3"	1/2" @ 10' cts.	6'-1"	1/2" @ 9' cts.	6'-10"	28	5'-10"	82.14	0.751	4'-11"	2'-0"	7'-3"	6'-3"	10	6'-8"	6	4	Var.	4	9'-4"	18	216	4.12	0.90	10'-9"	9'-9"	56	0.431	4,904	49.05	85	0.56	4
5	2'-0"	7"	6"	8"	9"	3'-3"	11'-9"	5/8" @ 14' cts.	11'-5"	5/8" @ 14' cts.	11'-8"	3'-6"	5 1/2"	3'-9"	4"	3/4" @ 14' cts.	7'-9"	1/2" @ 9' cts.	5'-5"	26	3'-11"	94.60	0.677	3'-0"	1'-5 1/2"	4'-5"	3'-10"	12	4'-3"	4	2	6'-2"	4	7'-11"	14	123	2.24	1.04	10'-5"	11'-5"	101	0.410	5,296	41.54	117	0.82	5
6	3'-0"	7"	6"	8"	9"	4'-3"	11'-9"	1/2" @ 10' cts.	11'-5"	1/2" @ 10' cts.	11'-8"	3'-6"	5 1/2"	3'-9"	4"	1/2" @ 10' cts.	7'-9"	1/2" @ 9' cts.	6'-5"	30	4'-11"	100.95	0.742	4'-0"	1'-6"	5'-10"	5'-0"	12	5'-6"	5	4	Var.	4	7'-11"	14	173	3.30	1.04	10'-5"	11'-5"	101	0.445	5,791	47.11	117	0.82	6
7	4'-0"	7"	6"	8"	9"	5'-3"	12'-1"	1/2" @ 10' cts.	11'-9"	1/2" @ 10' cts.	12'-0"	3'-8"	5 1/2"	3'-9"	4"	1/2" @ 10' cts.	7'-9"	1/2" @ 9' cts.	7'-5"	30	5'-11"	105.74	0.871	5'-0"	2'-2"	7'-4"	6'-4"	12	6'-9"	6	4	Var.	4	9'-5"	18	236	4.54	1.06	10'-9"	11'-9"	104	0.482	6,112	56.40	119	0.84	7
8	5'-0"	7"	6"	8"	9"	6'-3"	12'-3"	1/2" @ 10' cts.	11'-11"	1/2" @ 10' cts.	12'-11"	3'-9"	5 1/2"	3'-9"	4"	1/2" @ 10' cts.	7'-9"	1/2" @ 9' cts.	8'-5"	34	6'-11"	112.66	0.987	6'-0"	2'-7"	8'-9"	7'-7"	13	8'-0"	6	4	Var.	4	10'-10"	22	327	5.99	1.08	10'-11"	11'-11"	105	0.517	6,661	65.30	122	0.85	8
9	6'-0"	7"	6"	8"	9"	7'-3"	12'-3"	1/2" @ 10' cts.	11'-11"	1/2" @ 10' cts.	12'-2"	3'-9"	5 1/2"	3'-9"	4"	1/2" @ 10' cts.	7'-9"	1/2" @ 9' cts.	9'-5"	38	7'-11"	119.02	1.070	7'-0"	2'-11"	10'-3"	8'-10"	13	9'-4"	6	4	Var.	4	12'-4"	26	410	8.31	1.10	13'-4"	14'-4"	107	0.561	7,164	74.48	122	0.85	9
10	2'-0"	7 1/2"	6"	8 1/2"	9"	3'-4 1/2"	13'-9"	5/8" @ 12 1/2' cts.	13'-5"	5/8" @ 12 1/2' cts.	13'-9"	4'-0"	6"	3'-9"	4 1/2"	3/4" @ 13 1/2' cts.	7'-9"	1/2" @ 9' cts.	6'-0"	28	4'-1"	109.46	0.815	3'-0"	1'-6"	4'-5"	3'-10"	14	4'-4"	4	2	6'-2"	2	6'-7"	12	135	2.52	1.20	14'-5"	15'-5"	118	0.461	6,149	49.54	137	0.96	10
11	3'-0"	7 1/2"	6"	8 1/2"	9"	4'-4 1/2"	13'-9"	1/2" @ 10' cts.	13'-5"	1/2" @ 10' cts.	13'-9"	4'-0"	6"	3'-9"	4 1/2"	1/2" @ 10' cts.	7'-9"	1/2" @ 9' cts.	7'-0"	32	5'-11"	115.81	0.879	4'-0"	1'-6"	5'-11"	5'-11"	14	5'-7"	5	4	Var.	4	8'-0"	16	194	3.66	1.20	14'-5"	15'-5"	118	0.496	6,602	55.22	137	0.96	11
12	4'-0"	7 1/2"	6"	8 1/2"	9"	5'-4 1/2"	14'-1"	1/2" @ 10' cts.	13'-9"	1/2" @ 10' cts.	14'-1"	4'-1"	6"	3'-9"	4 1/2"	1/2" @ 10' cts.	7'-9"	1/2" @ 9' cts.	8'-0"	32	6'-1"	120.69	1.010	5'-0"	2'-2"	7'-5"	6'-5"	14	6'-10"	4	4	Var.	4	9'-6"	20	275	4.98	1.23	14'-9"	15'-9"	121	0.533	7,025	64.78	139	0.82	12
13	5'-0"	7 1/2"	6"	8 1/2"	9"	6'-4 1/2"	14'-3"	1/2" @ 10' cts.	13'-11"	1/2" @ 10' cts.	14'-3"	4'-1"	6"	3'-9"	4 1/2"	1/2" @ 10' cts.	7'-9"	1/2" @ 9' cts.	9'-0"	36	7'-1"	127.66	1.127	6'-0"	2'-7"	8'-11"	7'-8"	15	8'-2"	6	4	Var.	4	11'-0"	24	359	6.57	1.25	14'-11"	15'-11"	122	0.577	7,561	74.02	142	0.98	13
14	6'-0"	7 1/2"	6"	8 1/2"	9"	7'-4 1/2"	14'-3"	1/2" @ 10' cts.	13'-11"	1/2" @ 10' cts.	14'-3"	4'-1"	6"	3'-9"	4 1/2"	1/2" @ 10' cts.	7'-9"	1/2" @ 9' cts.	10'-0"	40	8'-1"	134.01	1.210	7'-0"	2'-11"	10'-4"	8'-10"	15	9'-5"	6	4	Var.	4	12'-8"	28	446	8.93	1.27	15'-5"	15'-11"	124	0.619	8,072	83.28	142	0.99	14
15	3'-0"	8 1/2"	6"	11 1/2"	9"	4'-8 1/2"	17'-9"	5/8" @ 11' cts.	17'-5"	5/8" @ 11' cts.	17'-10"	5'-0"	8"	4'-9"	5 1/2"	3/4" @ 11' cts.	9'-7"	1/2" @ 9' cts.	8'-4"	38	5'-10"	176.33	1.278	4'-0"	1'-6"	5'-5"	5'-5"	18	4'-4"	4	2	6'-2"	4	8'-4"	16	447	4.60	1.54	18'-5"	17'-5"	156	0.603	9,856	78.40	202	1.97	15
16	4'-0"	8 1/2"	6"	11 1/2"	9"	5'-8 1/2"	18'-1"	1/2" @ 10' cts.	17'-9"	1/2" @ 10' cts.	18'-2"	6'-0"	8"	4'-9"	5 1/2"	1/2" @ 10' cts.	9'-7"	1/2" @ 9' cts.	9'-4"	38	6'-10"	181.50	1.413	5'-0"	2'-3"	7'-9"	6'-8"	18	7'-2"	4	4	Var.	4	9'-10"	20	323	6.09	1.56	18'-9"	17'-9"	155	0.646	10,281	88.50	203	2.01	16
17	5'-0"	8 1/2"	6"	11 1/2"	9"	6'-8 1/2"	18'-1"	1/2" @ 10' cts.	17'-11"	1/2" @ 10' cts.	18'-4"	6'-10"	8"	4'-9"	5 1/2"	1/2" @ 10' cts.	9'-7"	1/2" @ 9' cts.	10'-4"	42	7'-10"	188.62	1.531	6'-0"	2'-8"	9'-3"	8'-0"	19	8'-5"	6	4	Var.	4	11'-4"	24	413	7.81	1.58	18'-11"	17'-11"	156	0.678	10,838	98.17	207	2.03	17
18	6'-0"	8 1/2"	6"	11 1/2"	9"	7'-8 1/2"	18'-3"	1/2" @ 10' cts.	17'-11"	1/2" @ 10' cts.	18'-4"	6'-10"	8"	4'-9"	5 1/2"	1/2" @ 10' cts.	9'-7"	1/2" @ 9' cts.	11'-4"	46	8'-10"	194.97	1.614	7'-0"	2'-8"	10'-8"	9'-3"	19	9'-8"	6	4	Var.	4	12'-6"	28	477	10.45	1.60	19'-5"	17'-11"	158	0.720	11,363	107.87	207	2.03	18
19	7'-0"	8 1/2"	6"	11 1/2"	9"	8'-8 1/2"	18'-6"	1/2" @ 10' cts.	18'-7"	1/2" @ 10' cts.	18'-7"	6'-10"	8"	4'-9"	5 1/2"	1/2" @ 10' cts.	9'-7"	1/2" @ 9' cts.	12'-4"	46	9'-10"	200.13	1.778	8'-0"	3'-4"	12'-2"	10'-8"	19	11'-0"	11	8	Var.	4	14'-6"	32	508	10.72	1.62	19'-7"	18'-2"	160	0.759	12,157	121.03	208	2.06	19
20	8'-0"	8 1/2"	6"	11 1/2"	9"	9'-8 1/2"	18'-6"	1/2" @ 10' cts.	18'-7"	1/2" @ 10' cts.	18'-7"	6'-10"	8"	4'-9"	5 1/2"	1/2" @ 10' cts.	9'-7"	1/2" @ 9' cts.	13'-4"	50	10'-10"	222.20	1.871	9'-0"	3'-9"	13'-7"	10'-8"	19	12'-2"	10	10	Var.	4	15'-11"	36	571	12.46	1.62	19'-7"	18'-2"	160	0.794	13,599	130.78	208	2.06	20
21	6'-0"	10 1/2"	9"	14"	9"	8'-0"	22'-3"	1/2" @ 10' cts.	21'-11"	1/2" @ 10' cts.	22'-5"	8'-0"	10'	4'-9"	7"	1" @ 12' cts.	10'-5"	1/2" @ 9' cts.	12'-8"	52	9'-5"	258.79	2.116	7'-6"	3'-11"	11'-0"	9'-4"	22	11'-2"	10	6	Var.	4	13'-4"	28	583	12.0										