

Quantities shown below are for two headwalls (For estimating only)

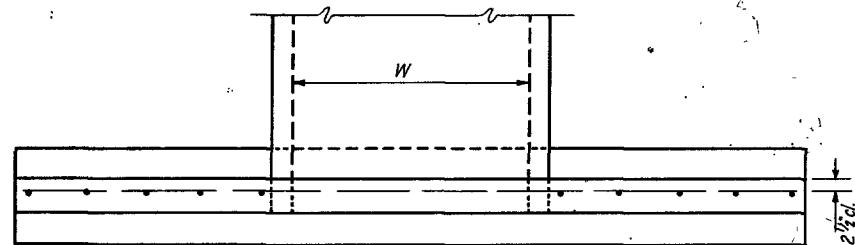
OVAL RCP SIZE W & H	RCP SIZE	OVAL RCP AREA SQ FT	T	L	SINGLE OVAL RCP								DOUBLE OVAL RCP							
					0° SKEW		15° SKEW		30° SKEW		45° SKEW		0° SKEW		15° SKEW		30° SKEW		45° SKEW	
					CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB
23"x14"	18"	1.82	2 3/4"	4' 9"	1.37	57	1.49	60	1.52	61	1.60	63	1.94	74	2.08	77	2.18	80	2.40	86
30"x19"	24"	3.21	3 3/4"	6' 3"	1.95	79	2.13	82	2.17	83	2.27	86	2.64	98	2.85	103	2.97	106	3.25	113
34"x22"	27"	4.20	3 1/2"	7' 0"	2.30	87	2.50	92	2.55	93	2.66	96	3.11	110	3.34	116	3.49	119	3.81	127
38"x24"	30"	5.15	3 3/4"	7' 6"	2.57	93	2.79	99	2.85	100	2.98	104	3.49	119	3.75	125	4.07	129	4.28	137
42"x27"	33"	6.39	3 3/4"	8' 3"	2.94	113	3.20	120	3.26	121	3.40	125	4.00	141	4.30	148	4.49	153	2.91	162
45"x29"	36"	7.37	4 1/2"	9' 0"	3.31	122	3.53	128	3.68	130	3.82	134	4.48	152	4.81	159	5.04	164	5.47	174
53"x34"	42"	10.15	5"	10' 3"	4.06	164	4.42	173	4.50	175	4.68	180	5.48	199	5.90	209	6.14	214	6.69	226
60"x38"	48"	12.86	5 1/2"	11' 6"	4.81	182	5.24	192	5.33	194	5.54	199	6.49	221	6.98	231	7.26	238	7.90	251

Quantities shown below are for one headwall

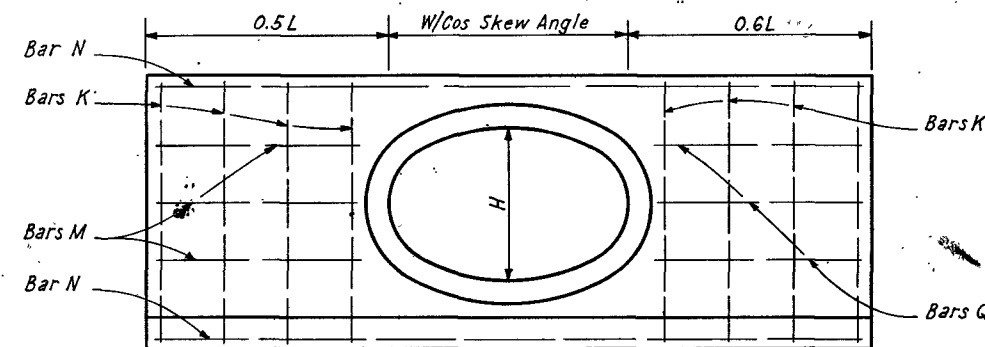
OVAL RCP SIZE W & H	LENGTH OF REINFORCING BARS															
	SINGLE OVAL RCP					SINGLE OR DOUBLE OVAL RCP								DOUBLE OVAL RCP		
	0° - 45°	0°	15°	30°	45°	0°	15°	30°	45°	0° - 45°	0°	15°	30°	45°		
	N° 4	N° 5	N° 5	N° 5	N° 5	N° 4	N° 4	N° 4	N° 4	N° 4	N° 4	N° 4	N° 4	N° 5	N° 5	N° 5
	K	N	N	N	N	M	M	M	Q	M	Q	M	Q	K	N	N
23"x14"	6@3'1"	2@6'5"	2@7'0"	2@7'2"	2@7'8"	2@1'11"	1@1'9"	1@2'6"	1@1'8"	1@2'7"	1@1'5"	1@2'10"	7@3'1"	2@3'7"	2@10'3"	2@12'2"
30"x19"	6@3'6"	2@8'6"	2@9'3"	2@9'6"	2@10'2"	4@2'7"	2@2'5"	2@3'3"	2@2'4"	2@3'4"	2@2'1"	2@3'7"	7@3'6"	2@12'3"	2@13'1"	2@15'6"
34"x22"	6@3'10"	2@9'7"	2@10'4"	2@10'9"	2@11'5"	4@3'0"	2@2'10"	2@3'9"	2@2'9"	2@3'10"	2@2'6"	2@4'1"	7@3'10"	2@13'11"	2@14'10"	2@17'6"
38"x24"	6@4'1"	2@10'5"	2@11'3"	2@11'8"	2@12'6"	4@3'2"	2@3'0"	2@4'0"	2@2'11"	2@4'1"	2@2'8"	2@4'4"	7@4'1"	2@15'2"	2@16'3"	2@19'3"
42"x27"	8@4'4"	2@11'6"	2@12'5"	2@12'11"	2@13'9"	4@3'7"	2@3'5"	2@4'6"	2@3'6"	2@4'9"	2@3'3"	2@5'0"	9@4'4"	2@16'10"	2@17'11"	2@21'3"
45"x29"	8@4'7"	2@12'6"	2@13'6"	2@14'0"	2@14'11"	4@3'10"	2@3'8"	2@4'9"	2@3'7"	2@4'10"	2@3'4"	2@5'1"	9@4'7"	2@18'2"	2@19'5"	2@23'0"
53"x34"	10@5'1"	2@14'5"	2@15'7"	2@16'2"	2@17'3"	6@4'6"	3@4'4"	3@5'7"	3@4'3"	3@5'8"	3@4'0"	3@5'11"	11@5'1"	2@21'1"	2@22'6"	2@26'9"
60"x38"	10@5'6"	2@16'3"	2@17'7"	2@18'2"	2@19'6"	6@5'1"	3@4'11"	3@6'3"	3@4'10"	3@6'4"	3@4'7"	3@6'7"	11@5'6"	2@23'9"	2@25'5"	2@30'2"

GENERAL NOTES

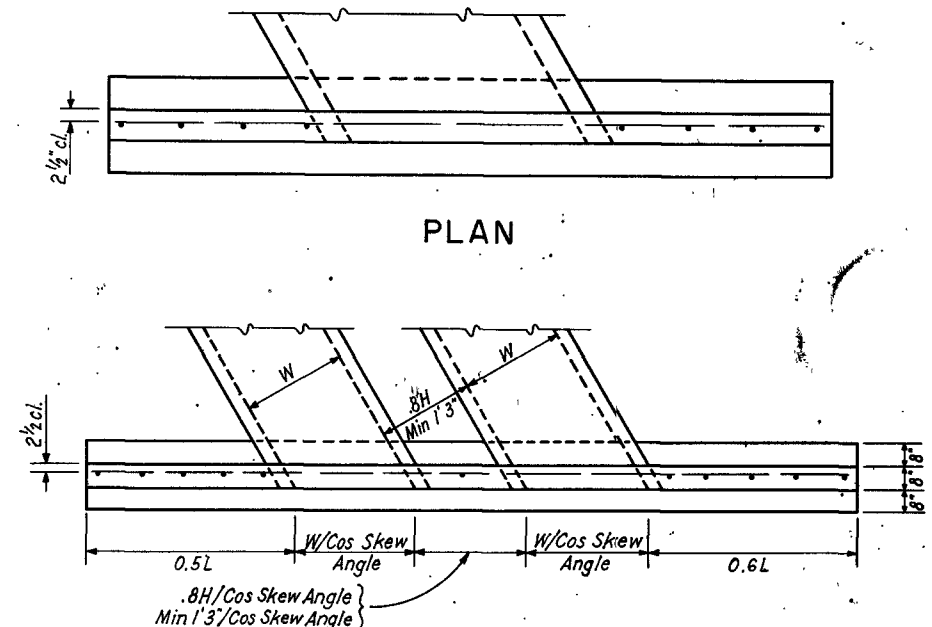
- Concrete shall be class A or AA.
- Reinforcing steel shall be intermediate grade deformed bars with maximum spacing of 18" set 2 1/2" clear of surface of concrete except as noted. Bar ends shall be kept 1 1/2" clear of surface of concrete. Reinforcing bars may be cut and bent in field.
- Footings shown are of minimum depth and shall be extended if soil is unsuitable or liable to scour.
- Culvert pipes to be set on a skew shall be mitered at the factory when headwalls are constructed. When headwalls are not constructed the pipes shall not be mitered except in overflow section.
- Length of pipe culverts shall be increased under high fills as follows:
 - With headwalls, Consider each side separately. Measure pipe from roadbed centerline to intersection of top of pipe and fillslope plus headwall thickness. To this dimension add 1.0' when cover at shoulder is 5.0' to 10.0', an additional 0.5' for each succeeding 5.0' of cover or portion thereof.
 - Without headwalls, Consider each side separately. Measure pipe from roadbed centerline to intersection of pipe flowline and fillslope. To this dimension add 2.0' when cover at shoulder is 1.0' to 10.0', add an additional 0.5' for each succeeding 5.0' of cover or portion thereof.
- For estimating headwall quantities on skewed culverts:
 - 0° to 10° ~ Use quantities for 0° skew.
 - 11° to 25° ~ Use quantities for 15° skew.
 - 26° to 40° ~ Use quantities for 35° skew.
 - 41° to 55° ~ Use quantities for 45° skew.
 - Over 55° ~ Calculate quantities required.
 Culverts should be installed on 0°, 15°, 30°, or 45° where it is feasible.



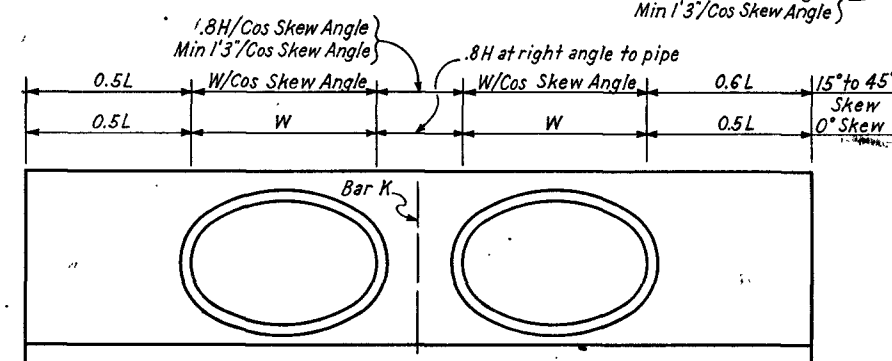
PLAN



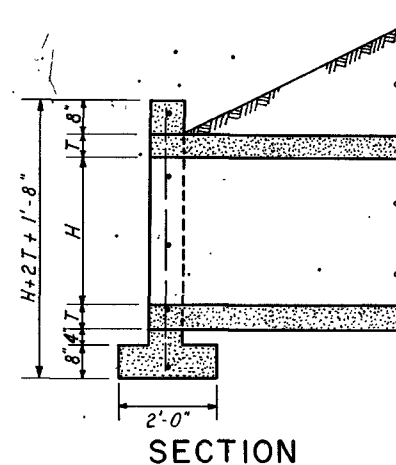
ELEVATION
SINGLE OVAL RCP
15° TO 45° SKEW



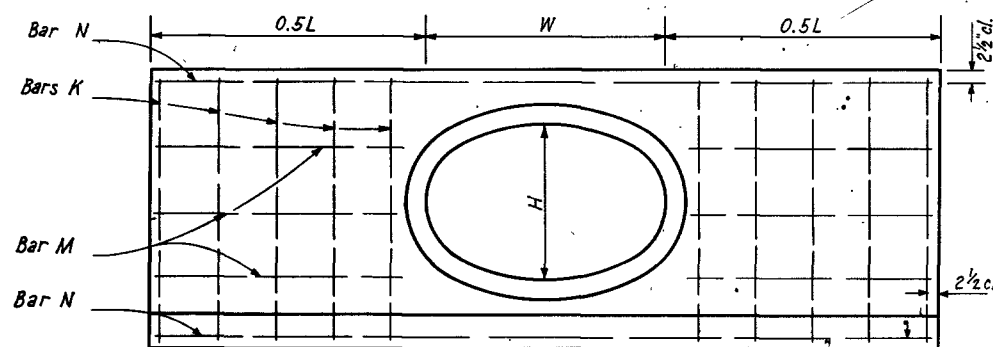
PLAN



ELEVATION
DOUBLE OVAL RCP



SECTION



ELEVATION
SINGLE OVAL RCP

59329

107V3834

STATE OF NEVADA
DEPARTMENT OF HIGHWAYS

STANDARD OVAL RCP
CULVERT HEADWALLS

23" X 14" TO 60" X 38"