

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

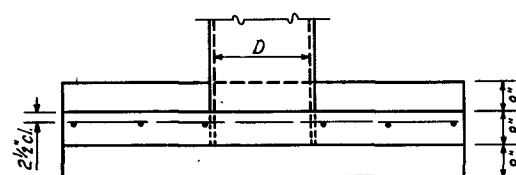
RCP SIZE D	RCP AREA SQ. FT.	SINGLE RCP								DOUBLE RCP								X	Y	L	H
		0° SKEW		15° SKEW		30° SKEW		45° SKEW		0° SKEW		15° SKEW		30° SKEW		45° SKEW					
		CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB				
12"	0.79	1.00	46	1.09	49	1.10	49	1.14	50	1.41	59	1.52	62	1.58	64	1.73	67	0'-10"	1'-2"	4'-0"	3'-0"
15"	1.23	1.32	55	1.45	58	1.47	59	1.52	60	1.80	70	1.93	73	2.01	75	2.18	79	0'-10 1/4"	1'-2 1/4"	5'-0"	3'-3 1/2"
18"	1.77	1.62	69	1.77	73	1.80	74	1.85	75	2.15	85	2.31	89	2.40	91	2.60	96	0'-10 1/2"	1'-2 1/2"	5'-9"	3'-7"
21"	2.41	1.95	77	2.13	82	2.16	83	2.23	85	2.59	95	2.79	101	2.90	103	3.13	108	0'-10 3/4"	1'-2 3/4"	6'-6"	3'-10 1/2"
24"	3.14	2.27	96	2.48	102	2.52	103	2.60	105	3.01	116	3.24	122	3.37	125	3.64	131	0'-11"	1'-3"	7'-3"	4'-2"
27"	3.98	2.62	105	2.86	111	2.90	112	2.99	114	3.48	128	3.75	134	3.89	137	4.21	144	0'-11 1/2"	1'-3 1/2"	8'-0"	4'-5"
30"	4.91	3.08	117	3.37	123	3.41	124	3.44	127	4.07	141	4.38	148	4.55	152	4.90	159	0'-11 3/4"	1'-3 3/4"	9'-0"	4'-9"
33"	5.94	3.50	125	3.82	132	3.87	134	3.98	137	4.62	153	4.98	160	5.17	164	5.56	172	0'-11 3/4"	1'-3 3/4"	9'-9"	5'-1 1/2"
36"	7.07	3.93	161	4.29	169	4.34	171	4.47	174	5.19	190	5.59	200	5.80	204	6.24	213	1'-0"	1'-4"	10'-6"	5'-4"

Quantities shown below are for one headwall

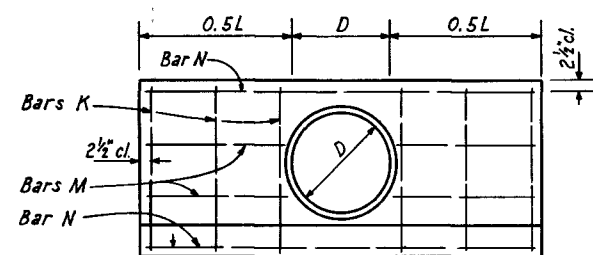
RCP SIZE	LENGTH OF REINFORCING BARS															
	SINGLE					SINGLE OR DOUBLE					DOUBLE					
	0° To 45°	0°	15°	30°	45°	0°	15°	30°	45°	0° To 45°	0°	15°	30°	45°		
	N# 4	N# 5	N# 5	N# 5	N# 5	N# 4	N# 4	N# 4	N# 4	N# 4	N# 4	N# 5	N# 5	N# 5	N# 5	N# 5
	K	N	N	N	N	M	M	Q	M	Q	M	Q	K	N	N	N
12"	6@2'9"	2@4'9"	2@5'2"	2@5'4"	2@5'7"	2@1'7"	1@1'5"	1@2'1"	1@1'4"	1@2'2"	1@1'1"	1@2'5"	7@2'9"	2@7'0"	2@7'6"	2@8'9"
15"	6@3'1"	2@6'0"	2@6'6"	2@6'8"	2@7'0"	2@2'1"	1@1'11"	1@2'8"	1@1'10"	1@2'9"	1@1'7"	1@3'0"	7@3'1"	2@8'6"	2@9'2"	2@10'7"
18"	6@3'4"	2@7'0"	2@7'8"	2@7'10"	2@8'2"	4@2'5"	2@2'3"	2@3'1"	2@2'2"	2@3'2"	2@1'11"	2@3'5"	7@3'4"	2@9'9"	2@10'6"	2@11'0"
21"	6@3'8"	2@8'0"	2@8'9"	2@8'11"	2@9'5"	4@2'9"	2@2'7"	2@3'6"	2@2'6"	2@3'7"	2@2'3"	2@3'10"	7@3'8"	2@11'2"	2@12'0"	2@13'10"
24"	8@3'11"	2@9'0"	2@9'10"	2@10'1"	2@10'7"	4@3'2"	2@3'0"	2@4'0"	2@2'11"	2@4'1"	2@2'8"	2@4'4"	9@3'11"	2@12'7"	2@13'7"	2@15'8"
27"	8@4'2"	2@10'0"	2@10'11"	2@11'2"	2@11'9"	4@3'6"	2@3'4"	2@4'4"	2@3'3"	2@4'5"	2@3'0"	2@4'8"	9@4'2"	2@14'1"	2@15'1"	2@17'6"
30"	8@4'6"	2@11'3"	2@12'3"	2@12'7"	2@13'2"	4@4'0"	2@3'10"	2@5'0"	2@3'9"	2@5'1"	2@3'6"	2@5'4"	9@4'6"	2@15'9"	2@16'11"	2@17'9"
33"	8@4'10"	2@12'3"	2@13'4"	2@13'8"	2@14'4"	4@4'3"	2@4'1"	2@5'3"	2@4'0"	2@5'4"	2@3'9"	2@5'7"	9@4'10"	2@17'3"	2@18'6"	2@19'5"
36"	10@5'1"	2@13'3"	2@14'5"	2@14'9"	2@15'7"	6@4'8"	3@4'6"	2@5'9"	3@4'5"	3@5'10"	3@4'2"	3@6'1"	11@5'1"	2@18'8"	2@20'0"	2@23'2"

GENERAL NOTES

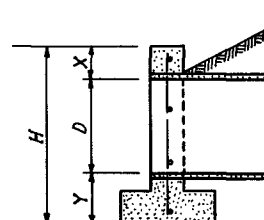
- Concrete shall be class A or AA.
- Reinforcing steel shall be intermediate grade deformed bars with maximum spacing of 18" set 2 1/2" clear of surface of concrete except as noted. Bar ends shall be kept 1 1/2" clear of surface of concrete. Reinforcing bars may be cut and bent in field.
- Footings shown 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 road-bed 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', add an additional 0.5' for each succeeding 5.0' of cover or portion thereof.
 - Without headwalls, Consider each side separately. Measure pipe from road-bed 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 30° 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.
- Dimensions X, Y, L and H to remain constant regardless of minor variations in wall thickness due to class of pipe used.



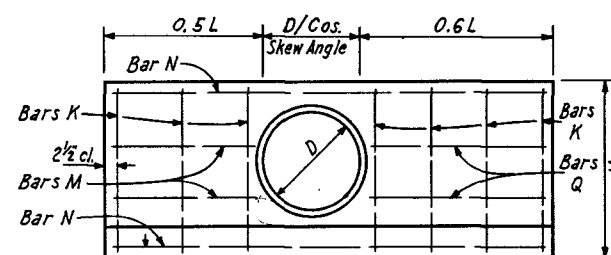
PLAN



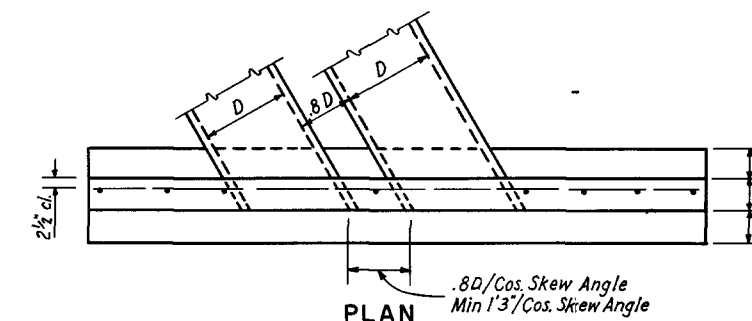
ELEVATION
SINGLE RCP
0° SKEW



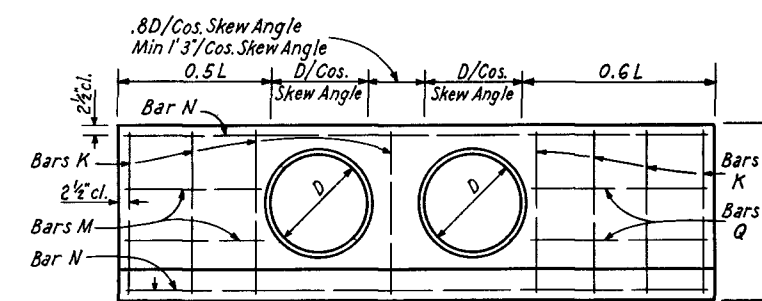
SECTION
(For All Headwalls)



ELEVATION
SINGLE RCP
15° TO 45° SKEW



PLAN



ELEVATION
DOUBLE RCP
15° TO 45° SKEW

59327

ELEVATION
DOUBLE RCP

107V3834

STATE OF NEVADA
DEPARTMENT OF HIGHWAYS

93

STANDARD RCP
CULVERT HEADWALLS
12" TO 36" RCP