

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

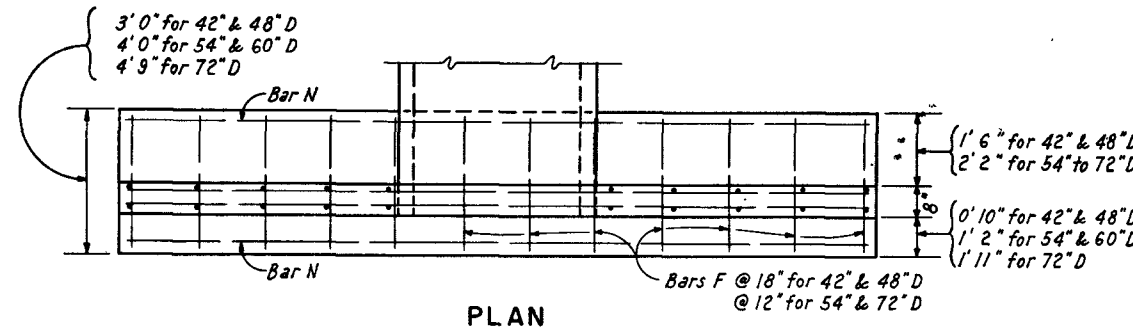
RCP SIZE D	RCP AREA SQ. FT.	SINGLE RCP								DOUBLE RCP								X	Y	L	H	RCP SIZE D
		0° SKEW		15° SKEW		30° SKEW		45° SKEW		0° SKEW		15° SKEW		30° SKEW		45° SKEW						
		CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB	CONC CU YD	STEEL LB					
42"	9.62	6.10	571	6.66	624	6.76	627	6.98	666	8.18	692	8.80	748	9.15	790	9.91	877	1'-0¼"	2'-0¼"	12'-0"	6'-6½"	42"
48"	12.57	7.41	688	8.10	745	8.21	781	8.46	792	9.88	829	10.65	889	11.07	935	11.96	1030	1'-1"	2'-1"	13'-9"	7'-2"	48"
54"	15.90	9.81	990	10.71	1091	10.87	1096	11.21	1146	13.11	1236	14.12	1340	14.68	1395	15.86	1562	1'-1½"	2'-1½"	15'-6"	7'-9"	54"
60"	19.64	11.29	1137	12.32	1244	12.50	1250	12.88	1332	15.08	1407	16.25	1537	16.88	1596	18.25	1774	1'-2"	2'-2"	17'-0"	8'-4"	60"
72"	28.27	15.62	1825	17.05	2002	17.30	2045	17.83	2170	20.87	2247	22.49	2464	23.36	2596	25.26	2881	1'-3"	2'-3"	20'-3"	9'-6"	72"

Quantities shown below are for one headwall

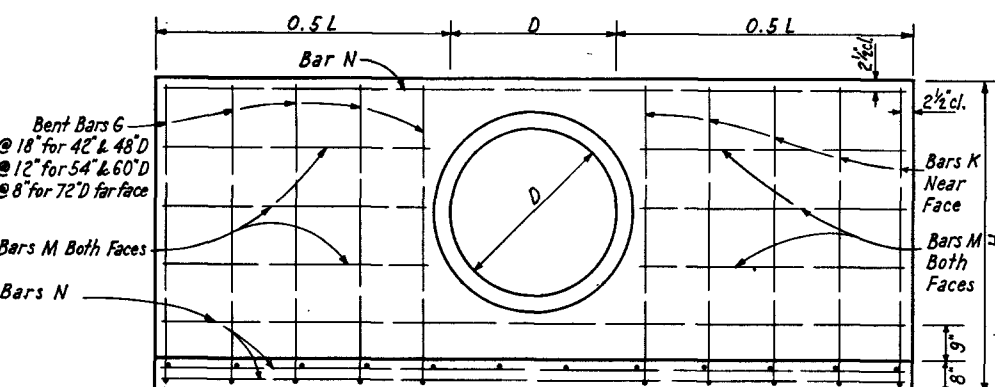
LENGTH OF REINFORCING BARS																							
RCP SIZE	SINGLE RCP																						
	0° SKEW					15° SKEW						30° SKEW						45° SKEW					
	Nº 5		Nº 4			Nº 5		Nº 4				Nº 5		Nº 4				Nº 5		Nº 4			
	F	G	M	N	K	F	G	M	Q	N	K	F	G	M	Q	N	K	F	G	M	Q	N	K
42"	12@2'9"	10@7'6"	12@5'5"	9@15'3"	10@5'8"	13@2'9"	11@7'6"	6@5'3"	6@6'6"	9@16'7"	11@5'8"	13@2'9"	11@7'6"	6@5'1"	6@6'6"	9@17'0"	11@5'8"	14@2'9"	12@7'6"	6@4'11"	6@6'6"	9@7'11"	12@5'8"
48"	13@2'9"	12@8'1"	12@6'3"	9@17'6"	12@6'3"	14@2'9"	13@8'1"	6@6'1"	6@7'5"	9@19'0"	13@6'3"	15@2'9"	14@8'1"	6@5'11"	6@7'5"	9@19'6"	14@6'3"	15@2'9"	14@8'1"	6@5'9"	6@7'5"	9@20'6"	14@6'3"
54"	21@3'9"	16@9'1"	16@7'1"	10@19'9"	12@6'10"	23@3'9"	18@9'1"	8@6'11"	8@8'5"	10@21'6"	13@6'10"	23@3'9"	18@9'1"	8@6'9"	8@8'5"	10@22'0"	13@6'10"	24@3'9"	19@9'1"	8@6'7"	8@8'5"	10@23'2"	14@6'3"
60"	23@3'9"	18@9'8"	16@7'9"	10@21'9"	14@7'5"	25@3'9"	20@9'8"	8@7'7"	8@9'4"	10@23'8"	15@7'5"	25@3'9"	20@9'8"	8@7'5"	8@9'4"	10@24'3"	15@7'5"	27@3'9"	22@9'8"	8@7'3"	8@9'4"	10@25'6"	16@7'5"
72"	27@4'6"	30@11'7"	20@9'11"	12@26'0"	16@8'7"	29@4'6"	33@11'7"	10@9'2"	10@11'3"	12@28'3"	18@8'7"	30@4'6"	34@11'7"	10@9'0"	10@11'3"	12@29'0"	18@8'7"	32@4'6"	37@11'7"	10@8'10"	10@11'3"	12@30'6"	19@8'7"
DOUBLE RCP																							
42"	16@2'9"	11@7'6"	12@5'5"	9@21'6"	11@5'8"	17@2'9"	12@7'6"	6@5'3"	6@6'6"	9@23'1"	12@5'8"	18@2'9"	13@7'6"	6@5'1"	6@6'6"	9@24'3"	13@5'8"	20@2'9"	15@7'6"	6@4'11"	6@6'6"	9@26'10"	15@5'8"
48"	18@2'9"	13@8'1"	12@6'3"	9@24'9"	13@6'3"	19@2'9"	14@8'1"	6@6'1"	6@7'5"	9@26'6"	14@6'3"	20@2'9"	15@8'1"	6@5'11"	6@7'5"	9@27'10"	15@6'3"	22@2'9"	17@8'1"	6@5'9"	6@7'5"	9@30'9"	17@6'3"
54"	29@3'9"	19@9'1"	16@7'0"	10@27'10"	14@6'10"	31@3'9"	21@9'1"	8@6'11"	8@8'5"	10@29'10"	15@6'10"	32@3'9"	22@9'1"	8@6'9"	8@8'5"	10@31'4"	16@6'10"	36@3'9"	26@9'1"	8@6'7"	8@8'5"	10@34'8"	18@6'10"
60"	32@3'9"	21@9'8"	16@7'9"	10@30'9"	14@7'5"	35@3'9"	24@9'8"	8@7'7"	8@9'4"	10@33'0"	16@7'5"	36@3'9"	25@9'8"	8@7'5"	8@9'4"	10@34'8"	17@7'5"	40@3'9"	29@9'8"	8@7'3"	8@9'4"	10@38'3"	19@7'5"
72"	37@4'6"	35@11'7"	20@9'11"	12@36'10"	19@8'7"	40@4'6"	39@11'7"	10@9'2"	10@11'3"	12@39'5"	21@8'7"	42@4'6"	42@11'7"	10@9'0"	10@11'3"	12@41'5"	22@8'7"	46@4'6"	48@11'7"	10@8'10"	10@11'3"	12@45'10"	25@8'7"

GENERAL NOTES

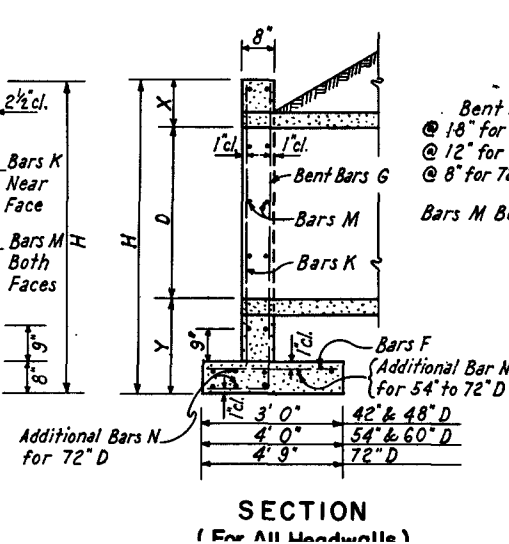
- Concrete shall be class A or AA.
- Reinforcing steel shall be intermediate grade deformed bars with maximum spacing of 18" set 2 1/2" clear of surface of concrete except as noted. Bar ends shall be kept 1 1/2" clear of surface of concrete. Reinforcing bars may be cut and bent in field.
- Footings shown 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.



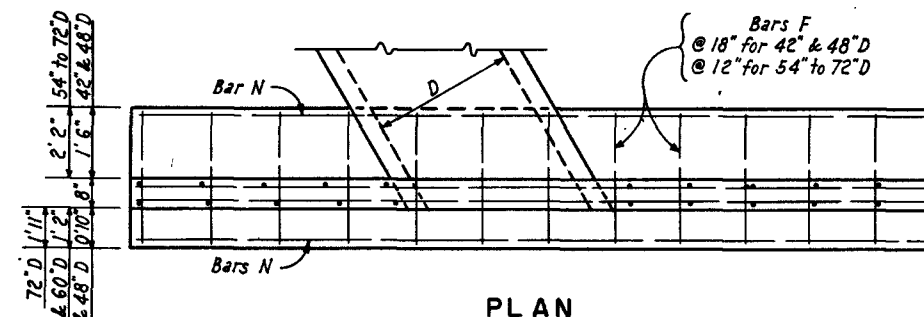
PLAN



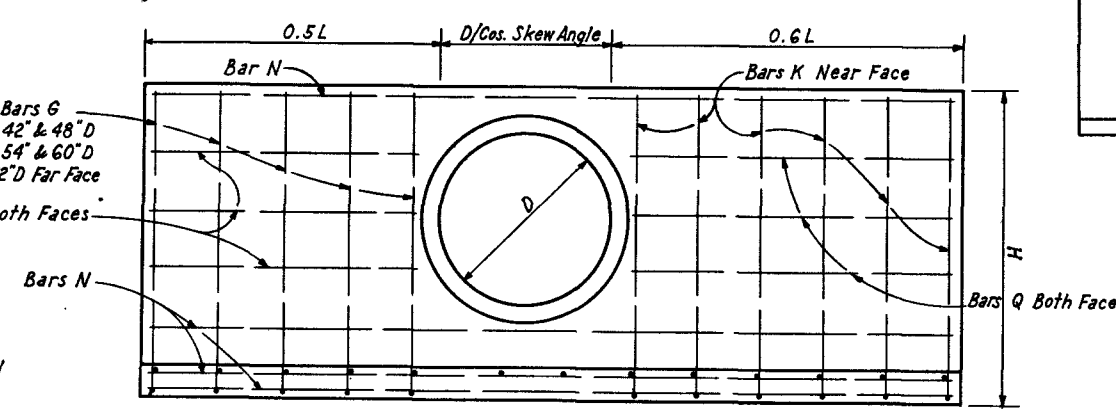
ELEVATION
SINGLE RCP
0° SKEW



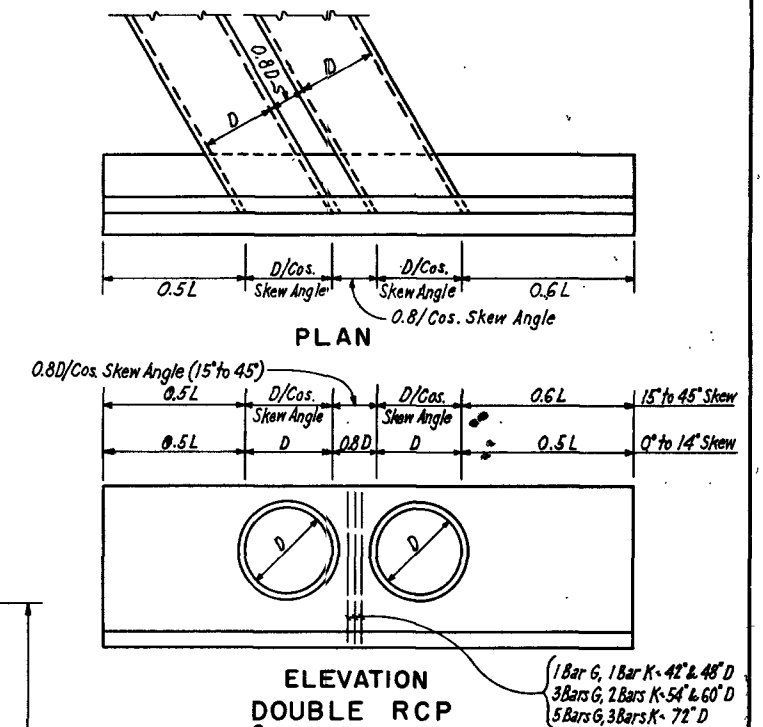
SECTION
(For All Headwalls)



PLAN



ELEVATION
SINGLE RCP
15° TO 45° SKEW



ELEVATION
DOUBLE RCP
0° TO 45° SKEW

STATE OF NEVADA
DEPARTMENT OF HIGHWAYS

STANDARD RCP
CULVERT HEADWALLS
42" TO 72" RCP

APPROVED BY: *Chen W. Walker*

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