



- NOTE:**
- Use the 30° Skew Detail for skew angles greater than 15° to 37°30'.
Use the 45° Skew Detail for skew angles greater than 37°30' to 45°.
 - Quantities shown in table are for one headwall and two wingwalls and are based on CMP. Concrete and steel quantities shown will be used as basis for final payment for headwall/wingwalls constructed according to this standard.
 - For dimensions and reinforcing details not shown, and additional notes see Standards 601-5 and 6.

DIMENSIONS AND QUANTITIES FOR 30° SKEW PIPE

	D (Diameter of pipe culvert)							
	42"	48"	54"	60"	66"	72"	78"	84"
A	13'-11 1/2"	15'-6"	17'-0 1/4"	18'-6 3/4"	20'-1 1/4"	21'-8"	23'-2 1/4"	24'-8 3/4"
C	15'-1 1/4"	16'-7 3/4"	18'-2"	19'-8 1/2"	21'-3"	22'-9 3/4"	24'-4"	25'-10 3/4"
H	6'-0"	6'-10"	7'-8"	8'-6"	9'-4"	10'-2"	11'-0"	11'-10"

DIMENSIONS AND QUANTITIES FOR 45° SKEW PIPE

	D (Diameter of pipe culvert)							
	42"	48"	54"	60"	66"	72"	78"	84"
A	17'-5 1/4"	19'-4"	21'-2 1/4"	23'-1 1/4"	24'-11 1/2"	26'-10 1/2"	28'-9"	30'-7 3/4"
C	18'-5 1/4"	20'-4"	22'-2 1/4"	24'-1 1/4"	25'-11 1/2"	27'-10 1/2"	29'-9"	31'-7 3/4"
H	6'-0"	6'-10"	7'-8"	8'-6"	9'-4"	10'-2"	11'-0"	11'-10"

1V:1.5H fill slope	Conc. (CUYD)	9.9	11.2	12.6	14.0	15.5	17.1	18.6	20.3
	Steel (LB)	797	896	1014	1086	1227	1303	1463	1573
1V:2H fill slope	Conc. (CUYD)	11.9	13.5	15.1	16.9	18.6	20.5	22.4	24.4
	Steel (LB)	945	1070	1196	1313	1456	1578	1728	1877
Add. Conc. per pipe (CUYD)		1.5	1.8	2.1	2.4	2.8	3.1	3.5	3.9
Add. Steel per pipe (LB)		135	152	171	190	223	236	280	293

1V:1.5H fill slope	Conc. (CUYD)	11.3	12.8	14.4	16.1	17.7	19.5	21.3	23.3
	Steel (LB)	926	1037	1180	1269	1453	1541	1708	1843
1V:2H fill slope	Conc. (CUYD)	13.5	15.4	17.2	19.2	21.2	23.4	25.6	27.9
	Steel (LB)	1091	1239	1393	1521	1716	1852	2032	2199
Add. Conc. per pipe (CUYD)		1.8	2.2	2.6	3.0	3.4	3.8	4.3	4.8
Add. Steel per pipe (LB)		158	178	224	241	288	305	350	367

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

FLH STANDARD
CONCRETE HEADWALL/WINGWALL
FOR MULTIPLE SKEW
42" TO 84" PIPE CULVERT

STANDARD APPROVED FOR USE 6/2005
REVISED:

STANDARD
601-8

NO SCALE