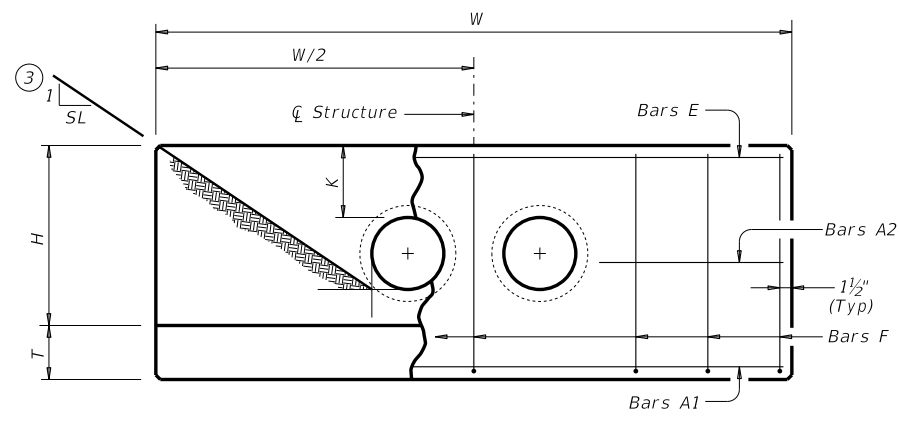


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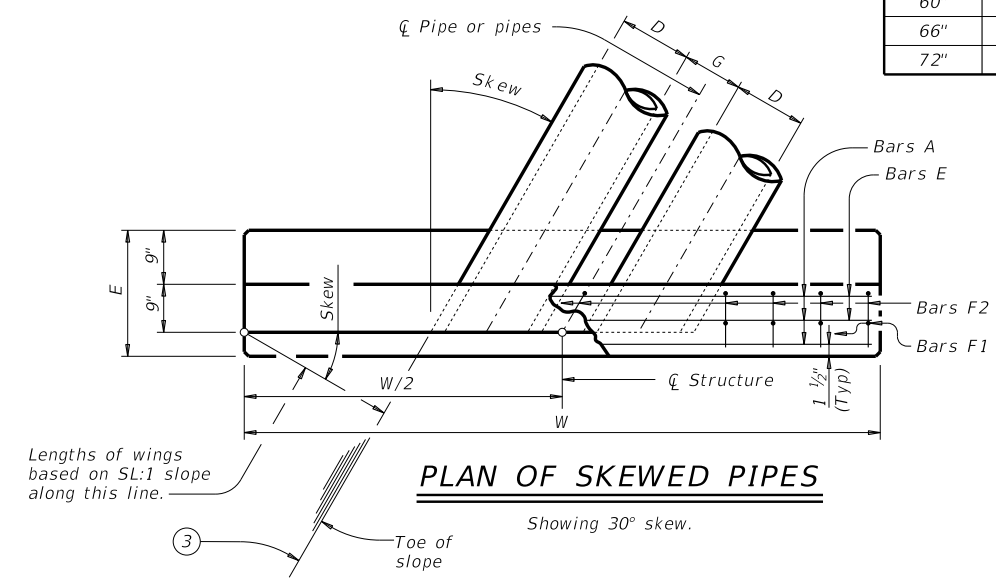
DATE:

TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (5)

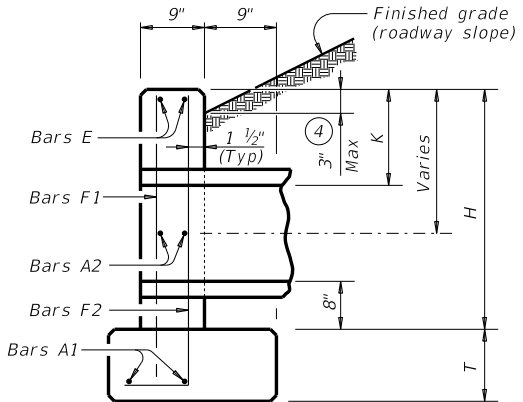
Slope	15° Skew						30° Skew						45° Skew						
	Values for One Pipe			Values To Be Added For Each Add'l Pipe			Values for One Pipe			Values To Be Added For Each Add'l Pipe			Values for One Pipe			Values To Be Added For Each Add'l Pipe			
	W	Reinf (Lbs) (1)	Conc (CY) (2)	W	Reinf (Lbs) (1)	Conc (CY) (2)	W	Reinf (Lbs) (1)	Conc (CY) (2)	W	Reinf (Lbs) (1)	Conc (CY) (2)	W	Reinf (Lbs) (1)	Conc (CY) (2)	W	Reinf (Lbs) (1)	Conc (CY) (2)	
2:1	12"	9'-4"	124	1.1	1'-9 3/4"	15	0.2	10'-5"	130	1.2	2'-0"	16	0.2	12'-9"	159	1.5	2'-5 3/4"	17	0.3
	15"	10'-7"	136	1.3	2'-3"	17	0.2	11'-10"	159	1.5	2'-6"	18	0.2	14'-6"	191	1.8	3'-0 3/4"	20	0.3
	18"	11'-11"	165	1.5	2'-9"	19	0.3	13'-3"	174	1.7	3'-1"	29	0.3	16'-3"	207	2.1	3'-9 1/4"	33	0.4
	21"	13'-2"	203	1.9	3'-2 1/4"	31	0.4	14'-9"	233	2.1	3'-6 3/4"	33	0.4	18'-0"	276	2.6	4'-4 1/4"	36	0.5
	24"	14'-6"	240	2.1	3'-8 1/4"	34	0.4	16'-2"	251	2.4	4'-1 3/4"	36	0.5	19'-10"	318	2.9	5'-0 3/4"	39	0.6
	27"	15'-9"	258	2.5	4'-0 3/4"	38	0.5	17'-7"	292	2.8	4'-6 1/4"	39	0.6	21'-7"	342	3.4	5'-6 1/4"	44	0.7
	30"	17'-1"	297	2.8	4'-5 3/4"	40	0.6	19'-1"	311	3.1	5'-0"	42	0.6	23'-4"	388	3.8	6'-1 3/4"	47	0.8
	33"	18'-5"	320	3.3	4'-9 3/4"	43	0.6	20'-6"	358	3.6	5'-4 3/4"	46	0.7	25'-1"	439	4.4	6'-7 1/4"	51	0.9
	36"	19'-8"	401	4.0	5'-3"	47	0.9	21'-11"	422	4.5	5'-10 3/4"	50	0.9	26'-10"	517	5.5	7'-2 1/4"	55	1.2
	42"	22'-3"	476	5.0	6'-0 3/4"	53	1.1	24'-10"	528	5.6	6'-8 3/4"	56	1.2	30'-5"	634	6.9	8'-3"	76	1.4
	48"	25'-11"	577	6.6	6'-9 3/4"	60	1.3	28'-10"	637	7.3	7'-7 1/4"	79	1.5	35'-4"	791	9.0	9'-3 3/4"	88	1.8
	54"	28'-6"	711	7.8	7'-9"	83	1.6	31'-9"	781	8.7	8'-8"	81	1.8	38'-11"	958	10.7	10'-7 1/4"	97	2.2
60"	31'-1"	805	9.2	8'-6 1/4"	91	1.9	34'-8"	881	10.2	9'-6 1/4"	97	2.1	42'-5"	1,113	12.5	11'-8"	124	2.6	
66"	33'-8"	907	10.6	9'-0 3/4"	98	2.1	37'-6"	1,028	11.8	10'-1 1/4"	102	2.4	46'-0"	1,235	14.5	12'-4 1/4"	132	2.9	
72"	36'-3"	1,071	12.1	9'-8"	105	2.4	40'-5"	1,207	13.5	10'-9 1/4"	110	2.6	49'-6"	1,446	16.6	13'-2 1/4"	141	3.2	
3:1	12"	13'-6"	178	1.6	1'-9 3/4"	15	0.2	15'-0"	189	1.8	2'-0"	15	0.2	18'-5"	237	2.2	2'-5 3/4"	17	0.2
	15"	15'-3"	212	1.9	2'-3"	17	0.2	17'-0"	223	2.1	2'-6"	17	0.3	20'-10"	276	2.6	3'-0 3/4"	20	0.3
	18"	17'-1"	231	2.3	2'-9"	19	0.3	19'-1"	259	2.5	3'-1"	29	0.3	23'-4"	318	3.1	3'-9 1/4"	32	0.4
	21"	18'-11"	306	2.7	3'-2 1/4"	31	0.4	21'-1"	339	3.0	3'-6 3/4"	33	0.4	25'-10"	413	3.7	4'-4 1/4"	36	0.5
	24"	20'-8"	345	3.1	3'-8 3/4"	35	0.4	23'-1"	384	3.5	4'-1 3/4"	36	0.5	28'-3"	462	4.2	5'-0 3/4"	40	0.6
	27"	22'-6"	376	3.7	4'-0 3/4"	38	0.5	25'-1"	438	4.1	4'-6 1/4"	39	0.6	30'-9"	522	5.0	5'-6 1/4"	44	0.7
	30"	24'-4"	422	4.1	4'-5 3/4"	40	0.6	27'-2"	466	4.6	5'-0"	42	0.6	33'-3"	578	5.6	6'-1 3/4"	47	0.8
	33"	26'-2"	476	4.8	4'-10"	43	0.6	29'-2"	522	5.3	5'-4 3/4"	46	0.7	35'-9"	644	6.5	6'-7 1/4"	51	0.9
	36"	27'-11"	590	5.9	5'-3"	47	0.8	31'-2"	645	6.6	5'-10 3/4"	50	0.9	38'-2"	787	8.0	7'-2 1/4"	56	1.2
	42"	31'-7"	684	7.3	6'-0 1/4"	53	1.1	35'-3"	776	8.2	6'-8 3/4"	56	1.2	43'-2"	933	10.0	8'-3"	79	1.4
	48"	36'-9"	880	9.6	6'-9 3/4"	61	1.3	41'-0"	953	10.7	7'-7 1/4"	81	1.5	50'-2"	1,166	13.1	9'-3 3/4"	88	1.8
	54"	40'-5"	1,065	11.4	7'-9"	85	1.6	45'-0"	1,185	12.7	8'-8"	89	1.8	55'-2"	1,435	15.5	10'-7 1/4"	97	2.2
60"	44'-0"	1,224	13.3	8'-6 1/4"	93	1.9	49'-1"	1,356	14.8	9'-6 1/4"	96	2.1	60'-1"	1,635	18.2	11'-8"	124	2.6	
66"	47'-7"	1,357	15.4	9'-1"	98	2.1	53'-1"	1,497	17.2	10'-1 1/4"	103	2.3	65'-1"	1,892	21.1	12'-4 1/4"	130	2.9	
72"	51'-3"	1,624	17.7	9'-8"	105	2.3	57'-2"	1,787	19.7	10'-9 1/4"	109	2.6	70'-0"	2,218	24.1	13'-2 1/4"	139	3.2	
4:1	12"	17'-7"	232	2.1	1'-9 3/4"	15	0.2	19'-8"	259	2.4	2'-0"	16	0.2	24'-0"	314	2.9	2'-5 3/4"	18	0.2
	15"	19'-11"	272	2.5	2'-3"	17	0.2	22'-3"	301	2.8	2'-6"	18	0.3	27'-3"	361	3.5	3'-0 3/4"	21	0.3
	18"	22'-3"	313	3.0	2'-9"	19	0.3	24'-10"	344	3.3	3'-1"	29	0.3	30'-5"	427	4.0	3'-9 1/4"	32	0.4
	21"	24'-7"	407	3.6	3'-2 1/4"	31	0.4	27'-5"	446	4.0	3'-6 3/4"	33	0.4	33'-7"	549	4.9	4'-4 1/4"	36	0.5
	24"	26'-11"	455	4.1	3'-8 3/4"	35	0.4	30'-0"	499	4.5	4'-1 3/4"	36	0.5	36'-9"	609	5.6	5'-0 3/4"	40	0.6
	27"	29'-3"	514	4.8	4'-0 3/4"	38	0.5	32'-7"	562	5.4	4'-6 1/4"	40	0.6	39'-11"	703	6.6	5'-6 1/4"	43	0.7
	30"	31'-7"	568	5.4	4'-5 3/4"	40	0.6	35'-3"	620	6.0	5'-0"	42	0.6	43'-2"	768	7.4	6'-1 3/4"	49	0.8
	33"	33'-11"	634	6.2	4'-10"	43	0.7	37'-10"	710	7.0	5'-4 3/4"	46	0.7	46'-4"	848	8.5	6'-7 1/4"	52	0.9
	36"	36'-3"	776	7.7	5'-3"	48	0.9	40'-5"	868	8.6	5'-10 3/4"	49	0.9	49'-6"	1,058	10.6	7'-2 1/4"	56	1.1
	42"	40'-11"	921	9.6	6'-0 1/4"	53	1.0	45'-7"	1,022	10.7	6'-8 3/4"	57	1.2	55'-10"	1,262	13.1	8'-3"	78	1.4
	48"	47'-7"	1,152	12.6	6'-10"	61	1.3	53'-1"	1,268	14.0	7'-7 1/4"	80	1.5	65'-1"	1,587	17.2	9'-3 3/4"	86	1.8
	54"	52'-3"	1,416	14.9	7'-9 1/4"	86	1.6	58'-4"	1,589	16.6	8'-8"	89	1.8	71'-5"	1,924	20.4	10'-7 1/4"	95	2.2
60"	56'-11"	1,606	17.5	8'-6 3/4"	92	1.9	63'-6"	1,806	19.5	9'-6 1/4"	95	2.1	77'-9"	2,192	23.9	11'-8"	122	2.6	
66"	61'-7"	1,819	20.2	9'-0 3/4"	97	2.1	68'-8"	2,019	22.5	10'-1 1/4"	101	2.4	84'-2"	2,472	27.6	12'-4 1/4"	131	2.9	
72"	66'-3"	2,150	23.2	9'-8"	104	2.4	73'-11"	2,379	25.9	10'-9 1/4"	108	2.6	90'-6"	2,937	31.7	13'-2 1/4"	138	3.2	
6:1	12"	25'-11"	342	3.1	1'-9 3/4"	15	0.2	28'-10"	374	3.5	2'-0"	16	0.2	35'-4"	456	4.3	2'-5 3/4"	17	0.2
	15"	29'-3"	390	3.7	2'-3"	17	0.2	32'-7"	442	4.2	2'-6"	18	0.2	39'-11"	549	5.1	3'-0 3/4"	20	0.3
	18"	32'-7"	459	4.4	2'-9"	20	0.3	36'-4"	515	4.9	3'-1"	29	0.3	44'-7"	629	6.0	3'-9 1/4"	33	0.4
	21"	36'-0"	608	5.3	3'-2 1/4"	31	0.4	40'-2"	660	5.9	3'-6 3/4"	33	0.4	49'-2"	823	7.2	4'-4 1/4"	38	0.5
	24"	39'-4"	672	6.0	3'-8 3/4"	35	0.4	43'-11"	748	6.7	4'-1 3/4"	36	0.5	53'-9"	920	8.2	5'-0 3/4"	42	0.6
	27"	42'-8"	770	7.1	4'-0 3/4"	38	0.5	47'-8"	852	8.0	4'-6 1/4"	41	0.5	58'-4"	1,039	9.7	5'-6 1/4"	45	0.7
	30"	46'-1"	839	8.0	4'-5 3/4"	40	0.6	51'-5"	949	8.9	5'-0"	44	0.6	62'-11"	1,162	10.9	6'-1 3/4"	48	0.8
	33"	49'-5"	947	9.2	4'-10"	45	0.7	55'-2"	1,040	10.3	5'-4 3/4"	48	0.7	67'-6"	1,292	12.6	6'-7 1/4"	50	0.9
	36"	52'-10"	1,151	11.4	5'-3"	49	0.8	58'-11"	1,287	12.7	5'-10 3/4"	51	1.0	72'-1"	1,583	15.6	7'-2 1/4"	55	1.1
	42"	59'-6"	1,365	14.2	6'-0 1/4"	55	1.0	66'-5"	1,530	15.8	6'-8 3/4"	57	1.2	81'-4"	1,875	19.4	8'-3"	76	1.4
	48"	69'-4"	1,737	18.5	6'-10"	59	1.3	77'-4"	1,942	20.7	7'-7 1/4"	79	1.5	94'-9"	2,368	25.3	9'-3 3/4"	86	1.8
	54"	76'-1"	2,138	22.0	7'-9 1/4"	83	1.6	84'-10"	2,378	24.6	8'-8"	87	1.8	103'-11"	2,912	30.1	10'-7 1/4"	95	2.2
60"	82'-10"	2,426	25.8	8'-6 3/4"	90	1.9	92'-5"	2,681	28.8	9'-6 1/4"	94	2.1	113'-2"	3,294	35.3	11'-8"	122	2.6	
66"	89'-7"	2,730	29.9	9'-0 3/4"	96	2.1	99'-11"	3,038	33.3	10'-1 1/4"	101	2.4	122'-4"	3,697	40.8	12'-4 1/4"	130	2.9	
72"	96'-3"	3,218	34.2	9'-8"	102	2.4	107'-5"	3,580	38.2	10'-9 1/4"	108	2.6	131'-6"	4,372	46.8	13'-2 1/4"	139	3.2	



ELEVATION



PLAN OF SKEWED PIPES



SECTION AT CENTER OF PIPE

- Total quantities include one 3'-1" lap for bars over 60' in length.
- Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
- Indicated slope is perpendicular to centerline pipe or pipes.
- For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- Dimensions shown are usual and maximum.
- Quantities shown are for one structure end only (one headwall).

TABLE OF CONSTANT DIMENSIONS

Dia of Pipe (D)	G	K (5)	H	T	E
12"	0'-9"	1'-0"	2'-8"	0'-9"	1'-9"
15"	0'-11"	1'-0"	2'-11"	0'-9"	1'-9"
18"	1'-2"	1'-0"	3'-2"	0'-9"	1'-9"
21"	1'-4"	1'-0"	3'-5"	0'-9"	2'-0"
24"	1'-7"	1'-0"	3'-8"	0'-9"	2'-0"
27"	1'-8"	1'-0"	3'-11"	0'-9"	2'-3"
30"	1'-10"	1'-0"	4'-2"	0'-9"	2'-3"
33"	1'-11"	1'-0"	4'-5"	0'-9"	2'-6"
36"	2'-1"	1'-0"	4'-8"	1'-0"	2'-6"
42"	2'-4"	1'-0"	5'-2"	1'-0"	2'-9"
48"	2'-7"	1'-3"	5'-11"	1'-0"	3'-0"
54"	3'-0"	1'-3"	6'-5"	1'-0"	3'-3"
60"	3'-3"	1'-3"	6'-11"	1'-0"	3'-6"
66"	3'-3"	1'-3"	7'-5"	1'-0"</	