RETAINING WALLS WITH LEVEL FILL

GRADE I SOIL

Dimensions							Reinforcing Steel							Footing Quantities per lin. ft.		Properties (per linear foot)				
							J			K			Y	Reinf.	Conc.		Vert. Load	Horiz. Ld.	Toe press.	
H	A	b	w	c	d	e	Size	Spa.	L	Size	Spa.	L	no.	Lbs.	Cu. Yd.	x	R_V Lb.	F_n Lb.	P_t lb/ft²	H
6'	2'-9"	1'-9"	1'-9"	7 1/8"	4 5/8"	9"							1	1	.19	.92	2100	600	1480	6'
8'	3'-9"	1'-10"	1'-10 5/8"	1'-0 3/8"	10"	9"							1	1	.27	1.26	3600	1120	1790	8'
10'	4'-9"	2'-0"	2'-0"	1'-5 1/4"	1'-3 1/4"	9"							1	1	.37	1.60	5200	1800	2110	10'
12'	5'-9"	2'-1"	2'-1 3/8"	1'-10 1/2"	1'-9 1/8"	1'-0"	5	3'-0"	3'-8"	5	3'-0"	3'-4"	5	8	.47	1.93'	7100	2650	2420	12'
14'	6'-10"	2'-3"	2'-2 5/8"	2'-4 3/8"	2'-2 3/8"	1'-0"	5	3'-0"	4'-3"	5	3'-0"	3'-9"	6	9	.60	2.27'	9300	3650	2730	14'
16'	8'-0"	2'-4"	2'-4 1/4"	2'-10 1/8"	2'-9"	1'-0"	5	1'-6"	4'-11"	5	1'-6"	4'-4"	6	13	.72	2.79'	12,200	4800	3000	16'
18'	9'-4"	2'-6"	2'-5 5/8"	3'-5 5/8"	3'-4 1/2"	1'-3"	6	1'-4"	5'-7"	5	1'-4"	4'-11"	7	18	.90	3.45'	15,500	6120	3000	18'
20'	10'-10"	2'-7"	2'-7"	4'-2"	4'-1"	1'-6"	6	1'-0"	6'-5"	5	1'-0"	5'-8"	8	24	1.08	4.20'	19,400	7600	3000	20'
22'	12'-5"	2'-8"	2'-8 1/2"	4'-10 3/4"	4'-9 3/4"	1'-6"	6	9"	7'-3"	6	9"	6'-9"	8	37	1.28	5.03'	23,800	9250	3000	22'
24'	14'-0"	2'-10"	2'-9 3/8"	5'-7 1/4"	5'-6 3/8"	1'-6"	7	9"	8'-1"	6	9"	7'-9"	9	47	1.53	5.91'	28,600	11,050	3000	24'
26'	15'-8"	2'-11"	2'-11 1/4"	6'-4 3/8"	6'-4 3/8"	1'-6"	8	10"	8'-11"	7	10"	8'-10"	10	61	1.76	6.85'	34,000	13,000	3000	26'
28'	17'-5"	3'-1"	3'-0 3/4"	7'-2 1/4"	7'-2"	1'-6"	8	8"	9'-11"	7	8"	9'-5"	11	80	2.06	7.85	40,000	15,120	3000	28'

GRADE II SOIL

6' to 14' Same as above

16'	7'-9"	2'-4"	2'-4 1/4"	2'-8 1/4"	2'-7 3/8"	1'-0"	5	1'-6"	4'-9"	5	1'-6"	4'-3"	6	13	.70	2.60'	11,800	4800	3030	16'
18'	8'-9"	2'-6"	2'-5 5/8"	3'-2 1/8"	3'-1 1/4"	1'-0"	6	1'-4"	5'-4"	5	1'-4"	4'-8"	7	17	.85	2.94'	14,600	6120	3330	18'
20'	9'-9"	2'-7"	2'-7"	3'-7 1/2"	3'-6 1/2"	1'-0"	6	1'-0"	5'-1"	5	1'-0"	5'-2"	7	22	.97	3.27'	17,700	7600	3620	20'
22'	10'-9"	2'-8"	2'-8 1/2"	4'-0 3/8"	3'-11 7/8"	1'-0"	7	1'-0"	6'-5"	6	1'-0"	5'-1"	8	30	1.11	3.60'	21,100	9250	3920	22'
24'	11'-9"	2'-10"	2'-9 7/8"	4'-5 7/8"	4'-5 1/4"	1'-3"	8	1'-0"	7'-0"	7	1'-0"	6'-8"	9	41	1.28	3.95'	24,800	11,050	4200	24'
26'	12'-9"	2'-11"	2'-11 1/4"	4'-10 7/8"	4'-10 7/8"	1'-6"	8	10"	7'-6"	7	10"	7'-2"	9	51	1.43	4.28'	28,800	13,000	4460	26'
28'	13'-10"	3'-1"	3'-0 3/4"	5'-4 1/2"	5'-4 3/4"	1'-6"	8	9"	8'-1"	7	9"	7'-8"	9	59	1.63	4.70'	33,100	15,120	4710	28'
30'	15'-0"	3'-2"	3'-1 3/4"	5'-11 5/8"	5'-11 1/4"	1'-6"	9	9"	8'-9"	8	9"	8'-5"	10	80	1.82	5.20'	37,900	17,400	4950	30'
32'	16'-4"	3'-3"	3'-3"	6'-6 1/2"	6'-6 1/2"	1'-6"	10	10"	9'-7"	9	10"	9'-4"	10	98	2.03	5.78	43,300	19,850	5000	32'

ROCK OR SHALE

6'	2'-4"	1'-9"	1'-9 1/4"	4 3/4"	2"	9"‡							1	1	.16	.61'	1800	600	1930	6'
8'	3'-3"	1'-10"	1'-10 5/8"	9 5/8"	6 3/4"	9"‡							1	1	.23	.83	3100	1120	2400	8'
10'	4'-1"	2'-0"	2'-0"	1'-1 1/2"	11 1/2"	9"‡							1	1	.32	1.07	4500	1800	2850	10'
12'	5'-0"	2'-1"	2'-1 3/8"	1'-6 3/8"	1'-4 1/4"	9"‡							1	1	.41	1.28	6300	2650	3290	12'
14'	5'-11"	2'-3"	2'-2 7/8"	1'-11 1/8"	1'-9"	9"‡	5	3'-0"	3'-10"				2	4	.52	1.50	8400	3650	3720	14'
16'	6'-9"	2'-4"	2'-4 1/4"	2'-3"	2'-1 3/4"	9"‡	5	1'-6"	4'-3"	5	3'-0"	3'-9"	6	11	.61	1.73	10,700	4800	4110	16'
18'	7'-8"	2'-6"	2'-5 5/8"	2'-7 3/8"	2'-6 5/8"	9"‡	6	1'-6"	4'-2"	6	1'-6"	4'-10"	6	14	.74	1.96	13,300	6120	4500	18'
20'	8'-7"	2'-7"	2'-7"	3'-0 5/8"	2'-11 3/8"	9"	7	1'-6"	5'-4"	6	1'-6"	4'-11"	7	20	.86	2.18	16,100	7600	4890	20'
22'	9'-5"	2'-8"	2'-8 1/2"	3'-4 3/8"	3'-4 1/8"	9"	7	1'-2"	5'-9"	7	1'-2"	5'-3"	7	24	.97	2.40	19,200	9250	5280	22'
24'	10'-4"	2'-10"	2'-9 7/8"	3'-9 1/8"	3'-9"	9"	8	1'-3"	6'-3"	7	1'-3"	6'-0"	8	32	1.12	2.62	22,400	11,050	5670	24'
26'	11'-3"	2'-11"	2'-11 1/4"	4'-2"	4'-1 3/4"	9"	8	1'-0"	6'-9"	7	1'-0"	6'-5"	8	40	1.26	2.84'	25,900	13,000	6070	26'
28'	12'-2"	3'-1"	3'-0 3/4"	4'-6 5/8"	4'-6 3/8"	9"	8	10"	7'-4"	7	10"	6'-10"	8	49	1.44	3.06'	29,700	15,120	6470	28'
30'	13'-0"	3'-2"	3'-1 3/4"	4'-10 3/8"	4'-10 1/8"	9"	8	8"	7'-9"	7	8"	7'-3"	9	63	1.58	3.28'	33,700	17,400	6860	30'
32'	13'-11"	3'-3"	3'-3"	5'-3 7/8"	5'-4 1/8"	9"	9	8"	8'-4"	8	8"	7'-10"	9	83	1.73	3.50'	38,100	19,850	7260	32'

RETAINING WALLS WITH 2 FT. LIVE LOAD SURCHARGE

GRADE I SOIL

Dimensions							Reinforcing Steel							Footing Quantities per lin. ft.		Properties (per linear foot)				
							J			K			Y	Reinf.	Conc.		Vert. Load	Horiz. Ld.	Toe press.	
H	A	b	w	c	d	e	Size	Spa.	L	Size	Spa.	L	no.	Lbs.	Cu. Yd.	x	R_V Lb.	F_n Lb.	P_t lb/ft²	H
6'	4'-0"	1'-9"	1'-9"	1'-2 1/4"	1'-0 1/2"	9"							1	1	.28	1.36	2800	1040	1400	6'
8'	5'-0"	1'-10"	1'-10 5/8"	1'-7 1/2"	1'-5 7/8"	9"	5	3'-0"	3'-2"				2	3	.36	1.69	4500	1720	1720	8'
10'	6'-1"	2'-0"	2'-0"	2'-1 1/2"	1'-11 1/2"	9"	5	3'-0"	3'-10"	5	3'-0"	3'-7"	6	9	.48	2.03	6300	2560	2020	10'
12'	7'-1"	2'-1"	2'-1 3/8"	2'-6 5/8"	2'-5"	1'-0"	5	2'-0"	4'-5"	5	2'-0"	4'-0"	6	11	.58	2.37	8400	3560	2330	12'
14'	8'-2"	2'-3"	2'-2 5/8"	3'-0 3/8"	2'-10 3/8"	1'-3"	5	1'-6"	5'-0"	5	1'-6"	4'-6"	6	13	.72	2.71'	10,800	4720	2640	14'
16'	9'-5"	2'-4"	2'-4 1/4"	3'-7 1/8"	3'-5 3/8"	1'-6"	6	1'-6"	5'-8"	6	1'-6"	5'-5"	7	19	.85	3.24'	13,800	6040	2950	16'
18'	10'-9"	2'-6"	2'-5 5/8"	4'-2 1/4"	4'-1 1/8"	1'-6"	7	1'-4"	6'-4"	6	1'-4"	6'-0"	8	25	1.04	3.91'	17,300	7520	3000	18'
20'	12'-3"	2'-7"	2'-7"	4'-10 1/2"	4'-9 1/2"	1'-6"	7	1'-0"	7'-1"	6	1'-0"	6'-9"	8	33	1.22	4.70'	21,300	9160	3000	20'
22'	13'-10"	2'-8"	2'-8 1/2"	5'-6 3/8"	5'-6 5/8"	1'-6"	7	9"	8'-0"	6	9"	7'-6"	9	46	1.43	5.58'	25,700	10,960	3000	22'
24'	15'-7"	2'-10"	2'-9 7/8"	6'-5"	6'-4 1/2"	1'-6"	8	10"	8'-11"	7	10"	8'-7"	10	60	1.70	6.54'	31,000	12,920	3000	24'

GRADE II SOIL

6' to 14' Same as above

16'	9'-2"	2'-4"	2'-4 1/4"	3'-5 5/8"	3'-4 1/2"	1'-3"	6	1'-3"	5'-6"	5	1'-3"	4'-11"	7	18	.83	3.05	13,500	6040	2950	16'
18'	10'-2"	2'-6"	2'-5 5/8"	3'-10 3/8"	3'-9 7/8"	1'-3"	7	1'-4"	6'-0"	6	1'-4"	5'-9"	8	24	.98	3.39	16,600	7520	3260	18'
20'	11'-2"	2'-7"	2'-7"	4'-4"	4'-3"	1'-3"	7	1'-0"	6'-7"	6	1'-0"	6'-2"	8	31	1.11	3.73'	19,900	9160	3570	20'
22'	12'-2"	2'-8"	2'-8 1/2"	4'-8 3/4"	4'-8 5/8"	1'-6"	7	9"	7'-1"	6	9"	6'-8"	8	41	1.25	4.08	23,400	10,960	3860	22'
24'	13'-2"	2'-10"	2'-9 7/8"	5'-2"	5'-2"	1'-6"	8	10"	7'-8"	7	10"	7'-5"	9	53	1.44	4.42	27,200	12,920	4140	24'
26'	14'-3"	2'-11"	2'-11 1/4"	5'-7 3/8"	5'-7 1/8"	1'-6"	8	8"	8'-3"	7	8"	7'-10"	10	67	1.60	4.77'	31,300	15,040	4410	26'
28'	15'-3"	3'-1"	3'-0 3/4"	6'-1 1/4"	6'-1"	1'-6"	9	9"	8'-10"	8	9"	8'-7"	11	82	1.80	5.11'	35,800	17,320	4650	28'
30'	16'-4"	3'-2"	3'-1 3/4"	6'-6 7/8"	6'-7 3/8"	1'-6"	10	9"	9'-5"	9	9"	9'-5"	11	109	1.98	5.55'	40,800	19,760	4880	30'
32'	17'-7"	3'-3"	3'-3"	7'-1 1/2"	7'-2 1/2"	1'-6"	10	8"	10'-0"	9	8"	10'-0"	12	128	2.19	6.11'	46,400	22,360	5000	32'

ROCK OR SHALE

6'	3'-5"	1'-9"	1'-9 1/4"	11"	8 3/4"	9"‡							1	1	.24	.91'	2500	1040	1820	6'
8'	4'-4"	1'-10"	1'-10 5/8"	1'-3 1/4"	1'-1 5/8"	9"‡							1	1	.31	1.13'	3900	1720	2280	8'
10'	5'-3"	2'-0"	2'-0"	1'-8 1/4"	1'-6 3/4"	9"‡							1	1	.41	1.38'	5600	2560	2730	10'
12'	6'-2"	2'-1"	2'-1 3/8"	2'-1 1/8"	1'-11 1/2"	9"‡	5	2'-0"	3'-11"				2	4	.50	1.60'	7500	3560	3170	12'
14'	7'-1"	2'-3"	2'-2 7/8"	2'-5 3/4"	2'-4 7/8"	9"	5	1'-6"	4'-5"	5	1'-6"	3'-11"	6	12	.62	1.82	9700	4720	3580	14'
16'	8'-0"	2'-4"	2'-4 1/4"	2'-10 1/2"	2'-9 1/4"	9"	6	1'-6"	4'-11"	5	1'-6"	4'-4"	6	14	.72	2.04	12,200	6040	3980	16'
18'	8'-11"	2'-6"	2'-5 5/8"	3'-3 1/4"	3'-2 1/8"	9"	7	1'-6"	5'-5"	6	1'-6"	5'-1"	7	20	.86	2.27	14,900	7520	4380	18'
20'	9'-10"	2'-7"	2'-7"	3'-8"	3'-7"	9"	7	1'-0"	5'-11"	6	1'-0"	5'-6"	7	28	.98	2.50	17,800	9160	4770	20'
22'	10'-9"	2'-8"	2'-8 1/2"	4'-0 3/8"	3'-11 7/8"	9"	7	10"	6'-5"	6	10"	5'-11"	8	35	1.01	2.71'	21,000	10,960	5160	22'
24'	11'-8"	2'-10"	2'-9 7/8"	4'-5 1/2"	4'-4 7/8"	9"	8	10"	6'-10"	7	10"	6'-7"	9	48	1.27	2.94'	24,500	12,920	5540	24'
26'	12'-6"	2'-11"	2'-11 1/4"	4'-9 1/4"	4'-9 1/8"	9"	8	9"	7'-4"	7	9"	7'-0"	9	55	1.40	3.17'	28,300	15,040	5940	26'
28'	13'-5"	3'-1"	3'-0 3/4"	5'-1 7/8"	5'-2 1/8"	9"	9	10"	7'-11"	8	10"	7'-8"	10	68	1.59	3.38'	32,300	17,320	6330	28'
30'	14'-4"	3'-2"	3'-1 3/4"	5'-6 7/8"	5'-7 3/8"	9"	9	8"	8'-5"	8	8"	8'-1"	10	86	1.74	3.61'	36,500	19,760	6720	30'
32'	15'-3"	3'-3"	3'-3"	5'-11 3/4"	6'-0 1/4"	9"	10	9"	9'-0"	9	9"	8'-10"	11	102	1.90	3.84'	41,100	22,360	7120'	32'

RETAINING WALLS WITH 2:1 INFINITE SLOPE FILL

GRADE I SOIL

Dimensions							Reinforcing Steel							Footing Quantities per lin. ft.		Properties (per linear foot)				
							J			K			Y	Reinf.	Conc.		Vert. Load	Horiz. Ld.	Toe press.	
H	A	b	w	c	d	e	Size	Spa.	L	Size	Spa.	L	no.	Lbs.	Cu. Yd.	x	R_V Lb.	F_n Lb.	P_t lb/ft²	H
6'	3'-1"	1'-9"	1'-9 1/2"	9 3/4"	6 3/8"	9"							1	1	.21	1.02	2500	1010	1640	6'
8'	4'-4"	1'-10"	1'-10 5/8"	1'-4 5/8"	1'-1 1/4"	1'-0"							1	1	.31	1.44'	4500	1880	2030	8'
10'	5'-7"	2'-0"	2'-0"	1'-10 3/4"	1'-8 1/4"	1'-3"	5	3'-0"	3'-7"	5	3'-0"	3'-3"	4	7	.44	1.87'	6800	3150	2410	10'
12'	6'-10"	2'-1"	2'-1 3/8"	2'-5 1/2"	2'-3 1/8"	1'-6"	5	1'-6"	4'-3"	5	1'-6"	3'-10"	5	11	.56	2.29'	9700	4750	2780	12'
14'	8'-4"	2'-3"	2'-2 7/8"	3'-1 1/8"	3'-0"	1'-6"	6	1'-4"	5'-0"	6	1'-4"	4'-11"	6	17	.73	2.94'	13,300	6720	3000	14'
16'	10'-4"	2'-4"	2'-4 1/4"	4'-0 5/8"	3'-11 1/8"	1'-6"	6	9"	6'-1"	6	9"	5'-10"	7	31	.94	3.93'	17,900	9100	3000	16'
18'	12'-5"	2'-6"	2'-5 5/8"	5'-0 1/2"	4'-10 3/8"	1'-6"	7	9"	7'-2"	7	9"	7'-2"	8	47	1.20	5.01'	23,500	11,900	3000	18'
20'	14'-6"	2'-7"	2'-7 5/8"	5'-11 5/8"	5'-11 5/8"	1'-6"	8	10"	8'-9"	9	10"	8'-9"	10	73	1.45	6.18'	29,900	15,020	3000	20'

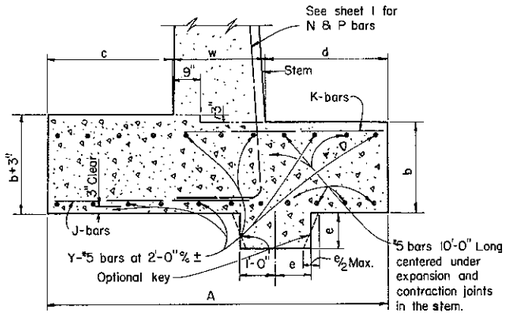
GRADE II SOIL

6' to 12' Same as above

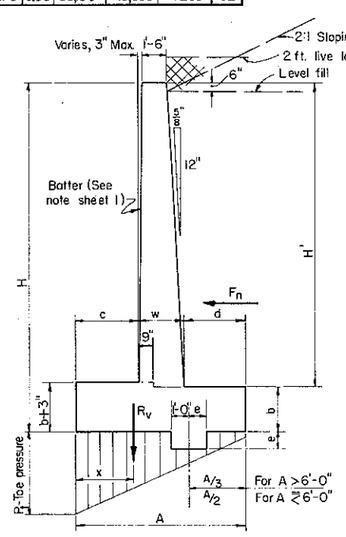
14'	9'-4"	2'-3"	2'-2 7/8"	3'-0"	2'-10 1/2"	1'-6"	6	1'-4"	4'-11"	6	1'-4"	4'-9"	6	17	.71	2.71'	12,800	6700	3170	14'
16'	9'-4"	2'-4"	2'-4 1/4"	3'-6 5/8"	3'-5 1/8"	1'-6"	7	1'-2"	5'-7"	7	1'-2"	5'-8"	7	27	.85	3.13'	16,500	8900	3540	16'
18'	10'-7"	2'-6"	2'-5 5/8"	4'-1 1/2"	3'-11 7/8"	1'-6"	6	9"	6'-3"	7	9"	6'-3"	7	37	1.02	3.55'	20,600	11,400	3900	18'
20'	11'-10"	2'-7"	2'-7"	4'-8 1/4"	4'-6 3/4"	1'-6"	7	9"	6'-11"	8	9"	7'-1"	8	52	1.18	3.97'	25,100	14,080	4260	20'
22'	13'-1"	2'-8"	2'-8 1/2"	5'-2 7/8"	5'-1 5/8"	1'-6"	8	9"	7'-8"	9	9"	8'-0"	9	73	1.35	4.39'	30,100	17,200	4610	22'
24'	14'-5"	2'-10"	2'-9 7/8"	5'-5 3/8"	5'-5 1/8"	1'-6"	9	9"	8'-6"	10	8"	9'-0"	10	107	1.57	4.97'	36,100	20,760	4950	24'
26'	16'-2"	2'-11"	2'-11 1/4"	6'-7 7/8"	6'-7 5/8"	1'-6"	9	7"	9'-3"	10	7"	9'-10"	11	139	1.82	5.78'	43,100	24,750	5000	26'
28'	18'-0"	3'-1"	3'-0 3/4"	7'-5 1/8"	7'-6 1/8"	1'-6"	10	7"	10'-6"	11	7"	11'-1"	11	191	2.13	6.73'	50,900	29,170	5000	28'
30'	19'-11"	3'-2"	3'-1 3/4"	8'-3 3/4"	8'-5 1/8"	1'-6"	10	6"	11'-5"	11	6"	12'-0"	12	238	2.42	7.77'	59,700	33,950	5000	30'

ROCK OR SHALE

6'	2'-7"	1'-9"	1'-9 1/4"	6 3/8"	3 3/8"	9"‡							1	1	.18	.66'	2300	970	2220	6'
8'	3'-8"	1'-10"	1'-10 5/8"	1'-0 1/8"	9 1/4"	9"							1	1	.27	.92'	3800	1830	2780	8'
10'	4'-0"	2'-0"	2'-0"	1'-6 3/4"	1'-3 1/2"	9"							1	1	.38	1.19'	5900	3040	3320	10'
12'	5'-10"	2'-1"	2'-1 3/8"	1'-11 1/2"	1'-9 1/8"	9"	5	2'-0"	3'-9"	5	2'-0"	3'-4"	5	9	.47	1.48'	8300	4580	3840	12'
14'	6'-11"	2'-3"	2'-2 7/8"	2'-4 3/8"	2'-3 1/8"	9"	5	1'-3"	4'-4"	5	1'-3"	3'-10"	5	12	.61	1.77'	11,200	6410	4370	14'
16'	8'-0"	2'-4"	2'-4 1/4"	2'-10 1/2"	2'-9"	9"	6	1'-0"	4'-8"	6	1'-0"	4'-3"	6	21	.72	2.04	14,600	8510	4880	16'
18'	9'-1"	2'-6"	2'-5 5/8"	3'-4 1/4"	3'-3 1/8"	9"	6	9"	5'-6"	6	9"	5'-2"	7	29	.88	2.33'	18,300	10,900	5380	18'
20'	10'-2"	2'-7"	2'-7"	3'-9 3/8"	3'-9 1/8"	9"	7	9"	6'-1"	7	9"	6'-0"	8	41	1.01	2.59'	22,400	13,620	5870	20'
22'	11'-3"	2'-8"	2'-8 1/2"	4'-3 1/2"	4'-3"	9"	8	9"	6'-8"	8	9"	6'-9"	8	56	1.16	2.87'	26,800	16,650	6370	22'
24'	12'-5"	2'-10"	2'-9 7/8"	4'-10"	4'-9 7/8"	9"	9	9"	7'-6"	9	9"	7'-7"	8	77	1.35	3.13'	31,700	20,000	6860	24'
26'	13'-6"	2'-11"	2'-11 1/4"	5'-3 3/8"	5'-3"	9"	10	9"	8'-6"	9	9"	8'-6"	9	106	1.52	3.41'	37,100	23,620	7330	26'
28'	14'-7"	3'-1"	3'-0 3/4"	5'-8 3/4"	5'-9 1/4"	9"	11	9"	9'-4"	11	9"	9'-4"	10	143	1.72	3.71'	43,000	27,630	7810	28'
30'	15'-11"	3'-2"	3'-1 3/4"	6'-4 3/8"	6'-4 3/8"	9"	10	6"	9'-6"	10	6"	9'-7"	10	175	1.93	4.18'	49,600	31,920	8000	30'
32'	17'-4"	3'-3"	3'-3"	7'-0 1/2"	7'-0 1/2"	9"	11	6"	10'-5"	11	6"	10'-7"	11	235	2.16	4.78'	56,900	36,500	8000	32'



FOOTING SECTION



TYPICAL SECTION
(Footing on soil)

DESIGN ASSUMPTIONS: The following assumed values were used in designing the footings of these retaining walls.

	Grade I Soil	Grade II Soil	Shale	Rock
Angle of internal friction	28°	32°	—	—
Maximum foundation pressure	3000 lb/sq.ft.	5000 lb/sq.ft.	8000 lb/sq.ft.	8000 lb/sq.ft
Equivalent fluid weight(passive)	300 lb/cu.ft.	390 lb/cu.ft	—	—
Coeff. of friction "f" of masonry on subfoundation	0.35	0.45	0.55	0.70

The soil grades shown above are classifications used only as a convenient soil differentiation in the design of these retaining walls. They are not standard soil designations. The proper design choice will depend upon the actual or anticipated subfoundation material encountered at the site. If tests indicate that the subfoundation material has properties inferior to the assumed values, the design should be modified where possible, or the footings should be supported on piling.

The flag 1'-6" indicates that the design, as shown, does not furnish the resistance to horizontal movement required by the specifications. The designs so marked may be used where a foundation investigation indicates soil properties sufficiently above the minimum tabulated values to furnish a safety factor against horizontal movement of 1.5.

FOOTINGS ON PILING: The dimensions shown for Grade II soil shall be used, omitting the key. Horizontal resistance to movement shall be calculated according to Sec. 115 (revised 12-20-63) of the Design Specifications. Reinforcing steel shall be designed to fit the pile pattern.

DEPTH OF FOOTING below ground (or stream bed) shall be not less than 3'-6" with at least 1'-0" of cover on top of footing. If the footing is exposed to the erosive action of a stream the depth shall not be less than specified in Sec. 112 (revised 12-20-63).

FOOTING KEYS: The key for footings on soil shall be placed in a carefully made trench against undisturbed earth.

The key may be omitted for footings on rock where dimension "e" is tabulated thus 9"‡.

The key may be omitted for footings on rock or shale where dimension "e" is tabulated thus 9", provided that the toe of the footing is placed against undisturbed rock or shale to a depth of 12".

FOOTING CONCRETE shall be Class "E".

CONCRETE QUANTITIES tabulated for the footing do not include the quantity for the footing key.

This drawing furnishes information for the designer, but is not intended for use as a construction drawing.

REVISIONS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

FOOTING DESIGN DATA
FOR
REINFORCED CONCRETE
RETAINING WALLS
CANTILEVER TYPE

APPROVED: _____ ENGINEER OF BRIDGES
DATE 12-20-63

DRAWING NUMBER RW-1-63

PREPARED	TRACED	CHECKED	REVIEWED	SHEET
J.M. J.D.R.	C.A.M.	W.C.K.	R.A.G. M.P.B. C.O.B. H.H.H. R.F.G.	SHEET 2 OF 2 SHEETS