

CASE II: 3H:1V BACKFILL

SEISMIC LATERAL WALL COEFFICIENT, kh=0.10																	
H	B	C	T	L	Bars a	Bars b	Bars c	Bars d, g	Bars e, f	Conc. Cu. Yd./Lin.Ft.	Reinf. Lb./Lin.Ft.	Effective Bearing Width, B' (ft) & Factored Soil Pressure, qu/ϕ (psf)					
												Service		Strength-I		Extreme-I; kh=0.1	
4'-0"	3'-0"	1'-0"	1'-0"	-----	#4 @ 18"	#4 @ 18"	-----	#4 @ 18"	#4 @ 18"	0.24	15.70	2.7 ft	500 psf	2.7 ft	1200 psf	2.9 ft	600 psf
6'-0"	3'-6"	1'-3"	1'-0"	-----	#4 @ 18"	#4 @ 18"	-----	#4 @ 18"	#4 @ 18"	0.35	19.30	3.3 ft	700 psf	3.4 ft	3500 psf	3.0 ft	1000 psf
8'-0"	4'-9"	1'-6"	1'-0"	-----	#5 @ 12"	#4 @ 12"	-----	#4 @ 12"	#4 @ 12"	0.51	40.60	4.6 ft	900 psf	4.7 ft	2700 psf	4.0 ft	1400 psf
10'-0"	6'-0"	1'-9"	1'-2"	-----	#5 @ 9"	#4 @ 9"	-----	#4 @ 12"	#4 @ 12"	0.71	57.10	5.9 ft	1100 psf	5.9 ft	2700 psf	4.9 ft	1800 psf
12'-0"	7'-6"	2'-3"	1'-4"	-----	#6 @ 9"	#5 @ 9"	-----	#4 @ 12"	#4 @ 12"	0.94	75.30	7.3 ft	1400 psf	7.4 ft	3200 psf	6.3 ft	2100 psf
14'-0"	9'-0"	2'-6"	1'-4"	-----	#5 @ 6"	#5 @ 6"	-----	#4 @ 12"	#4 @ 12"	1.16	95.70	8.7 ft	1600 psf	8.9 ft	3800 psf	7.5 ft	2400 psf
16'-0"	10'-6"	3'-0"	1'-6"	-----	#6 @ 8"	#6 @ 8"	-----	#4 @ 12"	#4 @ 12"	1.44	112.80	10.1 ft	1900 psf	10.3 ft	4400 psf	8.9 ft	2700 psf
18'-0"	11'-6"	3'-0"	1'-7"	-----	#6 @ 6"	#7 @ 6"	-----	#4 @ 12"	#4 @ 12"	1.70	158.40	11.3 ft	2100 psf	11.4 ft	5000 psf	9.4 ft	3300 psf
20'-0"	13'-0"	3'-9"	1'-10"	-----	#7 @ 6"	#7 @ 6"	-----	#5 @ 12"	#5 @ 12"	2.06	237.10	12.7 ft	2300 psf	12.8 ft	5400 psf	10.9 ft	3400 psf
22'-0"	15'-0"	4'-6"	1'-11"	-----	#8 @ 6"	#9 @ 6"	-----	#5 @ 12"	#5 @ 12"	2.43	335.20	14.1 ft	2500 psf	14.4 ft	6000 psf	13.2 ft	3600 psf
24'-0"	17'-0"	6'-0"	2'-1"	-----	#8 @ 6"	#10 @ 6"	-----	#5 @ 12"	#5 @ 12"	2.86	406.70	15.2 ft	2700 psf	15.5 ft	6400 psf	15.8 ft	3400 psf

SEISMIC LATERAL WALL COEFFICIENT, kh=0.20																	
H	B	C	T	L	Bars a	Bars b	Bars c	Bars d, g	Bars e, f	Conc. Cu. Yd./Lin.Ft.	Reinf. Lb./Lin.Ft.	Effective Bearing Width, B' (ft) & Factored Soil Pressure, qu/ϕ (psf)					
												Service		Strength-I		Extreme-I; kh=0.20	
4'-0"	3'-0"	1'-0"	1'-0"	-----	#4 @ 18"	#4 @ 18"	-----	#4 @ 18"	#4 @ 18"	0.24	15.70	2.7 ft	500 psf	2.7 ft	1200 psf	2.5 ft	800 psf
6'-0"	3'-6"	1'-3"	1'-0"	-----	#4 @ 18"	#4 @ 18"	-----	#4 @ 18"	#4 @ 18"	0.35	19.30	3.3 ft	700 psf	3.4 ft	3500 psf	2.3 ft	1400 psf
8'-0"	4'-9"	1'-6"	1'-0"	-----	#5 @ 12"	#4 @ 12"	-----	#4 @ 12"	#4 @ 12"	0.51	40.60	4.6 ft	900 psf	4.7 ft	2700 psf	3.0 ft	2000 psf
10'-0"	6'-0"	1'-9"	1'-2"	-----	#5 @ 9"	#4 @ 9"	-----	#4 @ 12"	#4 @ 12"	0.71	57.10	5.9 ft	1100 psf	5.9 ft	2700 psf	3.6 ft	2600 psf
12'-0"	7'-6"	2'-3"	1'-4"	1'-0"	#6 @ 9"	#5 @ 9"	#4 @ 18"	#4 @ 12"	#4 @ 12"	1.05	77.80	7.2 ft	1500 psf	7.3 ft	3400 psf	4.9 ft	2900 psf
14'-0"	9'-0"	2'-6"	1'-4"	1'-0"	#7 @ 9"	#6 @ 9"	#4 @ 18"	#4 @ 12"	#4 @ 12"	1.27	107.00	8.6 ft	1700 psf	8.8 ft	4000 psf	5.9 ft	3400 psf
16'-0"	10'-6"	3'-0"	1'-8"	1'-0"	#9 @ 8"	#6 @ 8"	#4 @ 18"	#4 @ 12"	#4 @ 12"	1.61	162.60	10.0 ft	1900 psf	10.2 ft	4500 psf	7.0 ft	3800 psf
18'-0"	12'-6"	3'-3"	1'-10"	1'-0"	#6 @ 6"	#7 @ 6"	#4 @ 18"	#5 @ 12"	#4 @ 12"	1.96	181.80	11.9 ft	2200 psf	12.1 ft	5200 psf	8.6 ft	4200 psf
20'-0"	14'-0"	3'-9"	2'-1"	1'-6"	#7 @ 6"	#7 @ 6"	#4 @ 18"	#5 @ 12"	#5 @ 12"	2.43	256.00	13.3 ft	2500 psf	13.4 ft	5900 psf	9.8 ft	4600 psf
22'-0"	16'-0"	4'-3"	2'-2"	1'-6"	#8 @ 6"	#9 @ 6"	#4 @ 18"	#5 @ 12"	#5 @ 12"	2.82	347.70	14.8 ft	2800 psf	15.1 ft	6500 psf	11.6 ft	4900 psf
24'-0"	18'-0"	5'-0"	2'-6"	1'-6"	#8 @ 6"	#10 @ 6"	#4 @ 18"	#5 @ 12"	#5 @ 12"	3.37	415.60	16.4 ft	3000 psf	16.7 ft	7200 psf	13.5 ft	5100 psf

SEISMIC LATERAL WALL COEFFICIENT, kh=0.30																	
H	B	C	T	L	Bars a	Bars b	Bars c	Bars d, g	Bars e, f	Conc. Cu. Yd./Lin.Ft.	Reinf. Lb./Lin.Ft.	Effective Bearing Width, B' (ft) & Factored Soil Pressure, qu/ϕ (psf)					
												Service		Strength-I		Extreme-I; kh=0.30	
4'-0"	3'-0"	1'-0"	1'-0"	-----	#4 @ 18"	#4 @ 18"	-----	#4 @ 18"	#4 @ 18"	0.24	15.70	2.7 ft	500 psf	2.7 ft	1200 psf	2.2 ft	900 psf
6'-0"	3'-6"	1'-3"	1'-0"	-----	#4 @ 18"	#4 @ 18"	-----	#4 @ 18"	#4 @ 18"	0.35	19.30	3.3 ft	700 psf	3.4 ft	3500 psf	1.7 ft	1900 psf
8'-0"	4'-9"	1'-6"	1'-0"	1'-0"	#5 @ 12"	#4 @ 12"	#4 @ 18"	#4 @ 12"	#4 @ 12"	0.62	43.00	4.5 ft	1100 psf	4.6 ft	2400 psf	2.5 ft	2600 psf
10'-0"	6'-0"	1'-9"	1'-2"	1'-0"	#5 @ 9"	#4 @ 9"	#4 @ 18"	#4 @ 12"	#4 @ 12"	0.82	59.50	5.8 ft	1200 psf	5.9 ft	2900 psf	2.9 ft	3600 psf
12'-0"	7'-6"	2'-3"	1'-6"	1'-6"	#6 @ 9"	#5 @ 9"	#4 @ 18"	#4 @ 12"	#4 @ 12"	1.17	76.60	7.1 ft	1500 psf	7.3 ft	3500 psf	3.9 ft	4000 psf
14'-0"	9'-0"	2'-6"	2'-0"	2'-0"	#7 @ 9"	#6 @ 9"	#4 @ 18"	#4 @ 12"	#4 @ 12"	1.63	106.20	8.6 ft	1800 psf	8.8 ft	4300 psf	4.8 ft	4800 psf
16'-0"	10'-6"	3'-0"	2'-6"	2'-6"	#9 @ 8"	#6 @ 8"	#4 @ 18"	#5 @ 12"	#4 @ 12"	2.17	173.80	10 ft	2100 psf	10.2 ft	4900 psf	5.8 ft	5300 psf
18'-0"	14'-0"	4'-0"	3'-0"	2'-6"	#6 @ 6"	#7 @ 6"	#4 @ 18"	#6 @ 12"	#4 @ 12"	2.88	213.50	12.7 ft	2400 psf	12.8 ft	5800 psf	9.4 ft	4700 psf
20'-0"	16'-0"	4'-6"	3'-4"	3'-0"	#7 @ 6"	#7 @ 6"	#4 @ 18"	#6 @ 12"	#4 @ 12"	3.58	263.70	14.6 ft	2700 psf	14.5 ft	6500 psf	11 ft	5100 psf
22'-0"	17'-6"	4'-9"	3'-8"	3'-6"	#8 @ 6"	#9 @ 6"	#4 @ 18"	#6 @ 12"	#5 @ 12"	4.29	382.30	15.8 ft	3100 psf	16.0 ft	7200 psf	11.9 ft	5800 psf
24'-0"	19'-0"	5'-0"	4'-0"	4'-0"	#9 @ 6"	#10 @ 6"	#4 @ 18"	#6 @ 12"	#5 @ 12"	5.06	487.00	17.3 ft	3400 psf	17.5 ft	7900 psf	12.7 ft	6500 psf

Accompanied by drawings – BR705, BR706, BR707, BR708 and BR709

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

STANDARD RETAINING WALL REINFORCEMENT DETAILS

CASE II: 3H:1V INCLINED BACKFILL

2024

DATE	REVISION	DESCRIPTION

CALC. BOOK NO. 6402, 6406, 6407

SDR DATE 01-JUL-2020

BR707

Effective Date: June 1, 2026 – November 30, 2026