

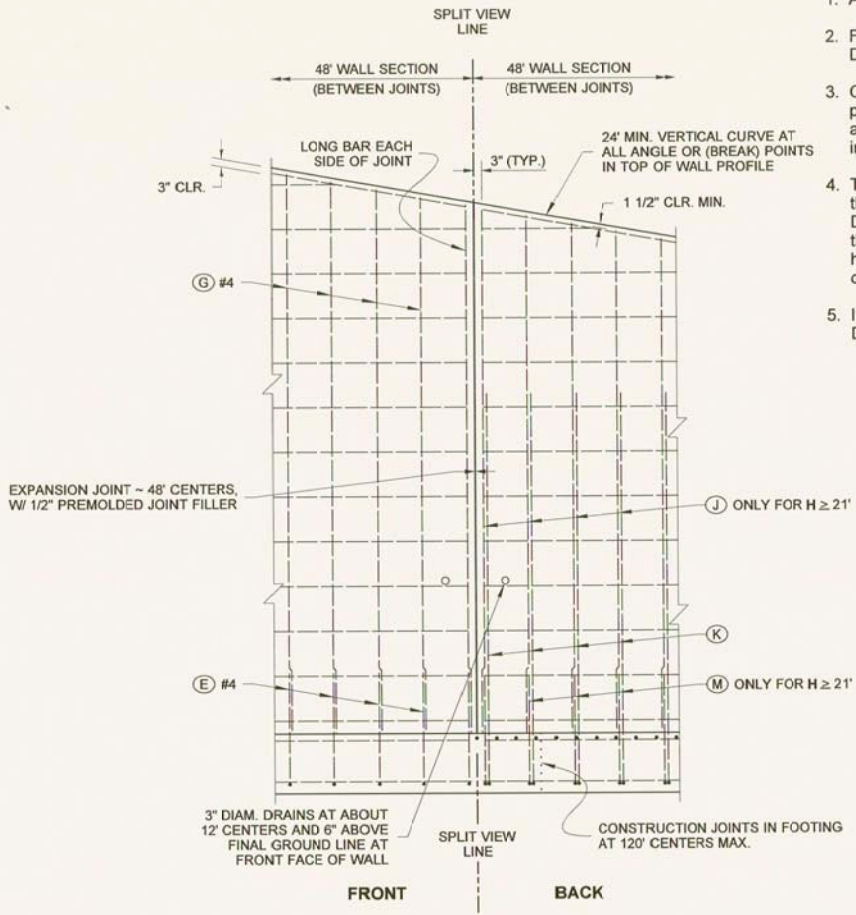
BAR (Q) #4

LOCATION	WALL HEIGHT (H)	QTY.
TOP OF FOOTING	≤ 12'	5
	13' ≤ 16'	6
	17' ≤ 22'	7
	23' ≤ 28'	9
BOTTOM OF FOOTING	≤ 12'	5
	13' ≤ 16'	6
	17' ≤ 22'	7
	23' ≤ 28'	9
	29' ≤ 35'	11

TYPICAL SECTION

① OFFSET - SET TOP OF WALL BACK:
 $H \leq 20'$ OFFSET = 1/2"
 $H \geq 20'$ OFFSET (inches) = $\frac{H(ft)}{8} - 2$

② WHEN THE CONTRACT SPECIFIES CABLE FENCE, BACKFILL AND THE CEMENT CONCRETE GUTTER SHALL BE PLACED 6" MIN. FROM THE TOP OF THE WALL.



SPLIT ELEVATION VIEW
(SHOWING SEPARATE REBAR LAYERS)

NOTES

- All concrete shall be Class 4000, except as noted.
- For backfill requirements, see Standard Plan D-4.
- Concrete in the 48 foot wall sections shall be placed separately between expansion joints with a minimum 24 hour period before placing concrete in the adjacent section.
- This wall has been designed in accordance with the requirements of the AASHTO LRFD Bridge Design Specifications 4th Edition 2007 and interims through 2008. The seismic design of these walls has been completed using an effective PGA of 0.20 g.
- If Traffic Barriers are required. See Standard Plans D-15.10, D-15.20 and D-15.30.

SLOPING FACE WALL DESIGN WITH A 250 PSF SURCHARGE OR TRAFFIC BARRIER



REINFORCED CONCRETE RETAINING WALL TYPE 8
STANDARD PLAN D-10.45-00

SHEET 1 OF 2 SHEETS

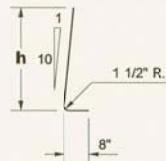
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STATE DESIGN ENGINEER _____ DATE _____
 Washington State Department of Transportation

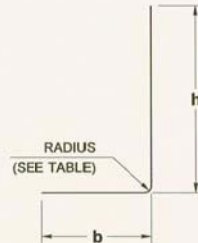
WALL HT H	DIMENSIONS				FOOTING REINFORCEMENT												STEM REINFORCEMENT				MATERIAL QUANTITY		MAXIMUM SOIL PRESSURE (PSF)									
					BAR (E) #4		BAR (F)		BAR (H)		BAR (K)				BAR (M)				BAR (J)		(G) #4	CONC. CY/LF	STEEL LBS/LF	SERVICE	STRENGTH	EXTREME EVENT 1	EXTREME EVENT 2					
	B	C _v	D	A	LENGTH	h	SIZE	SPA.	LENGTH	SIZE	SPA.	LENGTH	h	b	SIZE	SPA.	LENGTH	h	b	SIZE	SPA.	LENGTH	LENGTH									
5'	6'-9"	3'-0"	1'-0"	1'-3"	2'-6 1/2"	2'-0"	#4	1'-6"	6'-6"	#4	1'-6"	6'-6"	#4	1'-6"	5'-1 1/2"	4'-7"	8"	N/A	N/A	N/A	N/A	N/A	N/A	3'-10"	0.41	22.5	854	1189	1051	1568		
6'	6'-9"	3'-0"	1'-0"	1'-4 1/2"	2'-6 1/2"	2'-0"	#4	1'-6"	6'-6"	#4	1'-6"	6'-6"	#4	1'-6"	6'-1 1/2"	5'-7"	8"	N/A	N/A	N/A	N/A	N/A	N/A	4'-10"	0.46	24.9	938	1291	1234	1805		
7'	7'-0"	3'-3"	1'-0"	1'-5 1/2"	2'-6 1/2"	2'-0"	#4	1'-6"	6'-9"	#4	1'-6"	6'-9"	#4	1'-6"	7'-1 1/2"	6'-7"	8"	N/A	N/A	N/A	N/A	N/A	N/A	5'-10"	0.52	27.6	1013	1378	1376	1918		
8'	7'-0"	3'-3"	1'-0"	1'-7"	2'-6 1/2"	2'-0"	#4	1'-0"	6'-9"	#4	1'-6"	6'-9"	#4	1'-0"	8'-1 1/2"	7'-7"	8"	N/A	N/A	N/A	N/A	N/A	N/A	6'-10 1/2"	0.58	33.4	1146	1573	1607	2217		
9'	7'-3"	3'-6"	1'-0"	1'-8"	2'-6 1/2"	2'-0"	#4	1'-0"	7'-0"	#4	1'-6"	7'-0"	#4	1'-0"	9'-1 1/2"	8'-7"	8"	N/A	N/A	N/A	N/A	N/A	N/A	7'-10 1/2"	0.65	36.3	1242	1710	1768	2355		
10'	7'-6"	3'-6"	1'-0"	1'-9"	2'-6 1/2"	2'-0"	#4	10"	7'-3"	#4	1'-6"	7'-3"	#4	1'-0"	10'-1 1/2"	9'-7"	8"	N/A	N/A	N/A	N/A	N/A	N/A	8'-10 1/2"	0.72	40.3	1401	1937	2034	2591		
11'	7'-9"	3'-6"	1'-0"	1'-10 1/2"	2'-6 1/2"	2'-0"	#4	7"	7'-6"	#4	1'-6"	7'-6"	#4	10"	11'-1 1/2"	10'-7"	8"	N/A	N/A	N/A	N/A	N/A	N/A	9'-10 1/2"	0.80	47.3	1574	2186	2334	2852		
12'	8'-0"	3'-9"	1'-0"	1'-11 1/2"	2'-6 1/2"	2'-0"	#5	9"	7'-9"	#4	1'-6"	7'-9"	#4	10"	12'-1 1/2"	11'-7"	8"	N/A	N/A	N/A	N/A	N/A	N/A	10'-10 1/2"	0.88	52.4	1688	2355	2533	3028		
13'	8'-3"	3'-9"	1'-0"	2'-1"	2'-6 1/2"	2'-0"	#5	7"	8'-0"	#4	1'-6"	8'-0"	#4	9"	13'-1 1/2"	12'-7"	8"	N/A	N/A	N/A	N/A	N/A	N/A	11'-10 1/2"	0.96	61.4	1883	2640	2888	3328		
14'	8'-6"	3'-9"	1'-0"	2'-2"	2'-6 1/2"	2'-0"	#5	6"	8'-3"	#4	1'-6"	8'-3"	#4	8"	14'-1 1/2"	13'-7"	8"	N/A	N/A	N/A	N/A	N/A	N/A	12'-10 1/2"	1.05	68.9	2094	2949	3284	3654		
15'	8'-9"	3'-9"	1'-0"	2'-3 1/2"	2'-6 1/2"	2'-0"	#6	7"	8'-6"	#4	1'-6"	8'-6"	#4	7"	15'-1 1/2"	14'-7"	8"	N/A	N/A	N/A	N/A	N/A	N/A	13'-10 1/2"	1.14	77.5	2321	3284	3725	4006		
16'	9'-3"	4'-0"	1'-3"	2'-4"	2'-9 1/2"	2'-3"	#6	7"	9'-0"	#4	1'-6"	9'-0"	#5	10"	16'-2 1/2"	15'-7"	9"	N/A	N/A	N/A	N/A	N/A	N/A	14'-7 1/2"	1.31	85.3	2434	3444	3913	4058		
17'	9'-9"	4'-3"	1'-3"	2'-5"	2'-9 1/2"	2'-3"	#6	7"	9'-6"	#4	1'-6"	9'-6"	#5	9"	17'-2 1/2"	16'-7"	9"	N/A	N/A	N/A	N/A	N/A	N/A	15'-7 1/2"	1.42	92.4	2533	3586	4082	4113		
18'	10'-3"	4'-6"	1'-3"	2'-6 1/2"	2'-9 1/2"	2'-3"	#6	6"	10'-0"	#4	1'-0"	10'-0"	#5	8"	18'-2 1/2"	17'-7"	9"	N/A	N/A	N/A	N/A	N/A	N/A	16'-8"	1.54	107.0	2631	3728	4251	4181		
19'	11'-0"	5'-0"	1'-6"	2'-7 1/2"	3'-0 1/2"	2'-6"	#6	6"	10'-9"	#4	1'-0"	10'-9"	#5	8"	19'-2 1/2"	18'-7"	9"	N/A	N/A	N/A	N/A	N/A	N/A	17'-5"	1.75	114.6	2622	3702	4176	4037		
20'	11'-3"	5'-0"	1'-6"	2'-8 1/2"	3'-0 1/2"	2'-6"	#7	7"	11'-0"	#4	1'-0"	11'-0"	#5	7"	20'-2 1/2"	19'-7"	9"	N/A	N/A	N/A	N/A	N/A	N/A	18'-5"	1.86	129.2	2844	4030	4614	4367		
21'	12'-0"	5'-6"	1'-6"	2'-10"	3'-0 1/2"	2'-6"	#7	6"	11'-9"	#4	9"	11'-9"	#5	1'-0"	7'-2 1/2"	6'-6 1/2"	9"	#5	1'-0"	4'-1"	3'-4 1/2"	9"	#5	1'-0"	19'-3"	19'-5"	2.00	139.4	2819	3985	4517	4234
22'	12'-6"	5'-9"	1'-9"	2'-10 1/2"	3'-3 1/2"	2'-9"	#7	6"	12'-3"	#4	9"	12'-3"	#5	1'-0"	8'-4"	7'-8"	9"	#5	1'-0"	4'-4"	3'-7 1/2"	9"	#5	1'-0"	20'-0"	20'-2"	2.23	146.1	2936	4149	4715	4363
23'	13'-0"	6'-0"	1'-9"	3'-0"	3'-3 1/2"	2'-9"	#7	6"	12'-9"	#4	8"	12'-9"	#5	10"	7'-11 1/2"	7'-3 1/2"	9"	#5	10"	4'-4"	3'-7 1/2"	9"	#5	10"	21'-0"	21'-2"	2.37	161.0	3035	4290	4885	4472
24'	13'-6"	6'-3"	2'-0"	3'-1"	3'-6 1/2"	3'-0"	#7	6"	13'-3"	#4	8"	13'-3"	#5	10"	9'-1"	8'-5"	9"	#5	10"	4'-7"	3'-10 1/2"	9"	#5	10"	21'-9"	21'-11"	2.61	166.8	3151	4454	5085	4607
25'	14'-3"	6'-6"	2'-3"	3'-1 1/2"	3'-9 1/2"	3'-3"	#7	6"	14'-0"	#4	8"	14'-0"	#5	10"	10'-2 1/2"	9'-7"	9"	#5	10"	4'-10"	4'-1 1/2"	9"	#5	10"	22'-6"	22'-8"	2.88	176.6	3238	4560	5216	4665
26'	14'-9"	6'-9"	2'-3"	3'-3"	3'-9 1/2"	3'-3"	#8	7"	14'-6"	#4	7"	14'-6"	#5	9"	10'-4 1/2"	9'-9"	9"	#5	9"	4'-10"	4'-1 1/2"	9"	#5	9"	23'-6"	23'-8"	3.04	197.1	3337	4701	5388	4784
27'	15'-3"	7'-0"	2'-6"	3'-4"	4'-0 1/2"	3'-6"	#8	7"	15'-0"	#4	7"	15'-0"	#5	8"	10'-6"	9'-10"	9"	#5	8"	5'-1"	4'-4 1/2"	9"	#5	8"	24'-3"	24'-5"	3.32	210.4	3454	4865	5589	4928
28'	15'-9"	7'-3"	2'-6"	3'-5"	4'-0 1/2"	3'-6"	#8	7"	15'-6"	#4	6"	15'-6"	#5	8"	11'-8 1/2"	10'-10 1/2"	9"	#5	8"	5'-1"	4'-4 1/2"	9"	#5	8"	25'-3"	25'-5 1/2"	3.49	222.9	3552	5006	5761	5050
29'	16'-3"	7'-6"	2'-9"	3'-6"	4'-3 1/2"	3'-9"	#8	7"	16'-0"	#4	6"	16'-0"	#6	1'-0"	13'-4 1/2"	12'-7 1/2"	11"	#6	1'-0"	5'-10 1/2"	5'-0 1/2"	11"	#6	1'-0"	26'-0"	26'-2 1/2"	3.78	228.9	3670	5171	5962	5198
30'	17'-0"	8'-0"	3'-0"	3'-7"	4'-6 1/2"	4'-0"	#8	7"	16'-9"	#4	6"	16'-9"	#6	1'-0"	14'-6"	13'-8 1/2"	11"	#6	1'-0"	6'-1 1/2"	5'-3 1/2"	11"	#6	1'-0"	26'-9"	26'-11 1/2"	4.11	238.4	3683	5176	5935	5180
31'	17'-6"	8'-3"	3'-0"	3'-8"	4'-6 1/2"	4'-0"	#8	6"	17'-3"	#5	8"	17'-3"	#6	1'-0"	15'-6"	14'-9"	11"	#6	1'-0"	6'-1 1/2"	5'-3 1/2"	11"	#6	1'-0"	27'-9"	27'-11 1/2"	4.30	264.8	3781	5316	6107	5306
32'	18'-3"	8'-6"	3'-3"	3'-9"	4'-9 1/2"	4'-3"	#8	6"	18'-0"	#5	8"	18'-0"	#6	1'-0"	16'-7 1/2"	15'-10"	11"	#6	1'-0"	6'-4 1/2"	5'-6 1/2"	11"	#6	1'-0"	28'-6"	28'-8 1/2"	4.66	275.1	3874	5433	6253	5402
33'	18'-9"	8'-9"	3'-6"	3'-10"	5'-0 1/2"	4'-6"	#8	6"	18'-6"	#5	8"	18'-6"	#6	1'-0"	17'-8 1/2"	16'-11"	11"	#6	1'-0"	6'-7 1/2"	5'-9 1/2"	11"	#6	1'-0"	29'-3"	29'-5 1/2"	5.00	283.7	3993	5598	6456	5555
34'	19'-3"	9'-0"	3'-9"	3'-10 1/2"	5'-3 1/2"	4'-9"	#8	6"	19'-0"	#5	8"	19'-0"	#6	10"	17'-1 1/2"	16'-4 1/2"	11"	#6	10"	6'-10 1/2"	6'-0 1/2"	11"	#6	10"	30'-0"	30'-2 1/2"	5.35	306.0	4111	5763	6658	5710
35'	19'-9"	9'-3"	3'-9"	4'-0"	5'-3 1/2"	4'-9"	#9	7"	19'-6"	#5	7"	19'-6"	#6	8"	15'-11 1/2"	15'-2"	11"	#6	8"	6'-10 1/2"	6'-0 1/2"	11"	#6	8"	31'-0"	31'-2 1/2"	5.56	350.6	4209	5902	6830	5839

REINFORCEMENT NOTES

- ① IF TRAFFIC BARRIER IS USED, ADD 0.110 CY OF CONCRETE CLASS 4000 FOR BARRIER ALTERNATE 1. ADD 0.152 CY/LF OF CONCRETE CLASS 4000 FOR BARRIER ALTERNATE 2. SEE STANDARD PLAN D-15.10
- ② ADD 16 LB/LF OF REINFORCING STEEL FOR BARRIER ALTERNATE 1 OR 23 LB/LF OF REINFORCING STEEL FOR BARRIER ALTERNATE 2. SEE STANDARD PLAN D-15.10



BAR (E)
@ 1'-6" CENTERS



BAR	RADIUS
#4	1 1/2"
#5	1 7/8"
#6	2 1/4"
#7	2 5/8"
#8	3"
#9	4 3/4"
#10	5 3/8"
#11	6"

BARS (K) AND (M)

BAR	MIN. SPLICE
#4	2'-0"
#5	2'-0"
#6	2'-0"
#7	2'-6"
#8	3'-3"
#9	4'-2"
#10	5'-3"

SLOPING FACE WALL DESIGN WITH A 250 PSF SURCHARGE



EXPIRES AUGUST 23, 2008

REINFORCED CONCRETE RETAINING WALL TYPE 8
STANDARD PLAN D-10.45-00

SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER DATE
Washington State Department of Transportation