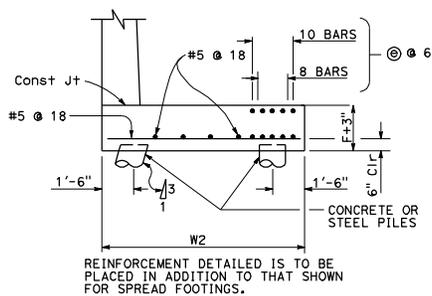


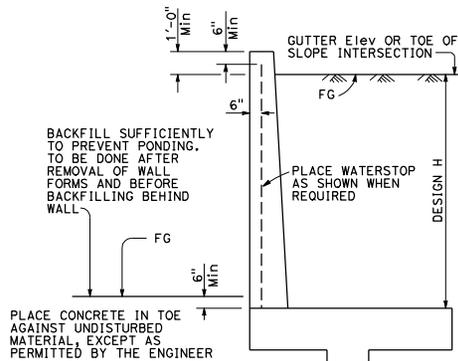
**SPREAD FOOTING SECTION**

Max PILE SPACING FOR 90 KIP PILES		
DESIGN H	FRONT ROW 1:3 BATTER	BACK ROW VERTICAL
4'	15'-0"	18'-0"
6'	10'-0"	16'-0"
8'	6'-0"	14'-0"
10'	5'-0"	12'-0"
12'	4'-0"	8'-0"

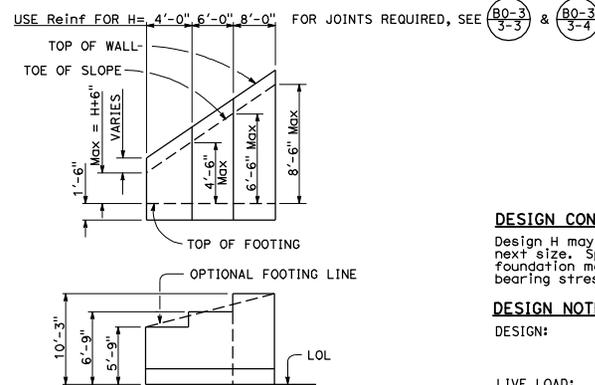
For actual spacing, see Wall Layout. Pile Layout does not apply to case III conditions.



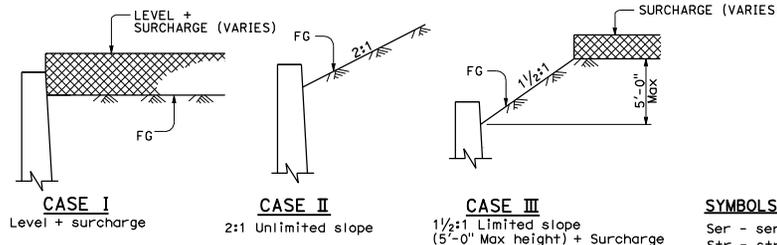
**90 KIP PILE FOOTING SECTION**



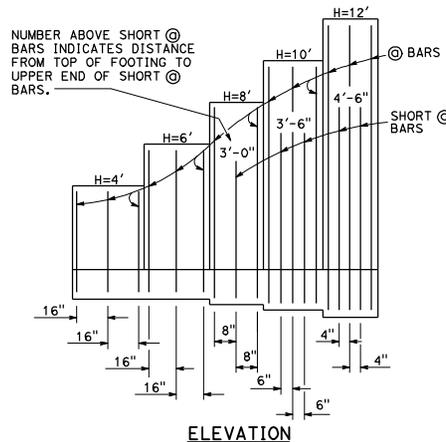
**DESIGN SECTION**



**TYPICAL LAYOUT EXAMPLE**



**DETAIL OF DESIGN LOADING CASES**



**ELEVATION**

TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA						
DESIGN H	4'	6'	8'	10'	12'	
W1	5'-9"	6'-9"	10'-3"	11'-0"	12'-6"	
W2	6'-0"	6'-9"	8'-0"	8'-6"	9'-6"	
F SPREAD FOOTING	1'-6"	1'-6"	1'-6"	1'-6"	1'-10"	
BATTER	NONE	NONE	100:2	100:3	100:6	
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 12	#5 @ 8	
SHORT @ BARS	None	#5 @ 16	#5 @ 12	#5 @ 12	#5 @ 8	
@ BARS	#5 @ 16	#5 @ 8	#6 @ 8	#6 @ 6	#6 @ 4	
TOTAL @ BARS	8 - #8	8 - #8	10 - #8	10 - #7	8 - #6	
LOAD CASE I	Seri: B', q <sub>0</sub>	5.0, 1.2	5.5, 1.5	9.0, 1.6	9.4, 1.9	10.5, 2.2
	Str: B', q <sub>0</sub>	5.0, 2.2	5.4, 2.6	8.9, 2.7	9.2, 3.1	10.4, 3.5
LOAD CASE II	Seri: B', q <sub>0</sub>	5.3, 0.9	5.9, 1.3	9.5, 1.6	9.9, 2.0	11.0, 2.5
	Str: B', q <sub>0</sub>	5.3, 1.5	5.9, 2.1	9.5, 2.5	9.8, 3.1	10.9, 3.8
LOAD CASE III	Seri: B', q <sub>0</sub>	5.2, 1.0	5.4, 1.5	9.0, 1.7	7.4, 2.4	8.7, 2.7
	Str: B', q <sub>0</sub>	4.1, 1.9	4.4, 2.6	7.1, 3.2	7.5, 3.8	8.8, 4.3

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**RETAINING WALL  
TYPE 5**

NO SCALE

**B3-4**

District	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

*Gary Wong*  
REGISTERED CIVIL ENGINEER

May 20, 2011  
PLANS APPROVAL DATE

Gary Wong  
No. C58238  
Exp. 6-30-12  
CIVIL  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**DESIGN CONDITIONS:**

Design H may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in table.

**DESIGN NOTES:**

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th edition with California Amendments

LIVE LOAD: Surcharge on level ground surface

SOIL:  $\phi = 34^\circ$   
 $\gamma = 120$  pcf

REINFORCED CONCRETE:  $f_y = 60,000$  psi  
 $f'_c = 3,600$  psi  
 $n = 8$

**NOTES:**

- For details not shown and drainage notes see (B3-5)
- For wall stem joint details see (B0-3/3-3) and (B0-3/3-4)
- At @ and Short @ bars:  
H  $\leq$  6', no splices are allowed within 1'-8" above the top of footing.  
H > 6', no splices are allowed within H/4 above the top of footing.

**SYMBOLS:**

- Ser - service limit state 1
- Str - strength limit state 1
- B' - effective footing width (ft)
- q<sub>0</sub> - net bearing stress (ksf)
- q<sub>o</sub> - gross uniform bearing stress (ksf)