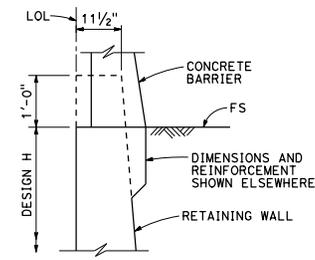


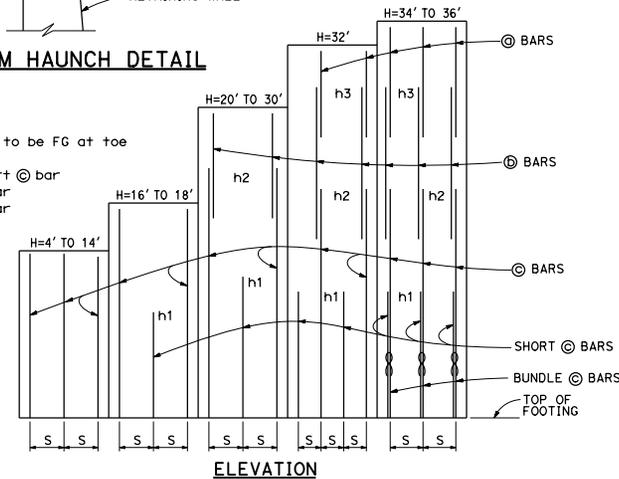
TYPICAL SECTION

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 © bars:  
 $H < 6'$ , 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.
- Bundle © bars for  $H = 34'$  &  $36'$ .
- Provide #6 @  $10' \times 15'-0"$  © bars over a distance of 8'-0" measured from all expansion joints, begin wall and end wall locations. For  $H \leq 14'$ , hook © bar into footing and reduce bar length as needed to maintain Min Clr cover.



STEM HAUNCH DETAIL



ELEVATION

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 the table.

DESIGN NOTES:

- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
- LS: Varied surcharge on level ground surface
- DC: Stem Architectural Treatment of thickness up to 6' of concrete (75 psf) considered
- CT: 54 kip transverse force applied at  $H_e = 32'$ , distributed over 10 feet at the top of wall and 1:1 distribution down and outward. Distribution below footing taken no less than 40'.
- SEISMIC:  $k_h = 0.2, k_v = 0.0$
- SOIL:  $\phi = 34^\circ, \gamma = 120$  pcf
- REINFORCED CONCRETE:  $f'_c = 3,600$  psi,  $f_y = 60,000$  psi
- LOAD COMBINATIONS AND LIMIT STATES:  
 Service I  $Q = 1.00DC+1.00EV+1.00EH+1.00LS$   
 Strength I  $Q = aDC+PEV+nEH+1.75LS$   
 Extreme I  $Q = 1.00DC+1.00EV+1.00EH+1.00EOD+1.00EQE$   
 Extreme II  $Q = 1.00DC+1.00EV+1.00EH+1.00CT$
- Where:  
 Q: Force Effects  
 $\phi$ : 1.25 or 0.90, Whichever Controls Design  
 $\rho$ : 1.35 or 1.00, Whichever Controls Design  
 $n$ : 1.50 or 0.90, Whichever Controls Design  
 DC: Dead Load of Structure Components  
 EH: Horizontal Earth Fill Pressure  
 EV: Vertical Earth Pressure from Earth Fill Weight  
 LS: Live Load Surcharge  
 EQE: Seismic Earth Pressure  
 EOD: Soil and Structural and Nonstructural Components Inertia  
 CT: Vehicular Collision Force

TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA																								
DESIGN H	4'	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'	34'	36'							
W	6'-10"	7'-0"	7'-3"	7'-7"	8'-4"	9'-7"	10'-9"	12'-3"	13'-3"	14'-6"	15'-9"	17'-1"	18'-5"	19'-10"	21'-2"	22'-7"	24'-0"							
C	2'-2"	2'-3"	2'-3"	2'-4"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-5"	6'-0"	6'-6"	7'-2"	7'-8"	8'-2"	9'-0"							
B	4'-8"	4'-9"	5'-0"	5'-3"	5'-10"	6'-7"	7'-3"	8'-0"	8'-9"	9'-6"	10'-4"	11'-1"	11'-11"	12'-8"	13'-6"	14'-5"	15'-0"							
F	1'-4"	1'-4"	1'-4"	1'-4"	1'-6"	1'-8"	1'-8"	1'-9"	1'-9"	1'-11"	2'-2"	2'-5"	2'-10"	3'-3"	3'-6"	4'-0"	4'-3"							
BATTER	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	1/2:12	5/8:12	5/8:12	3/4:12	3/8:12	1:12	1:12	1:12							
SPACING "S"	9"	9"	9"	9"	9"	9"	6"	5"	6"	6"	6"	6"	6"	6"	6"	10"	8"							
© BARS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#7	#6							
Ⓞ BARS	-	-	-	-	-	-	-	-	#7	#7	#7	#7	#7	#7	#7	#9	#8							
Ⓢ BARS	#6	#6	#6	#6	#6	#6	#7	#7	#8	#9	#9	#10	#10	#10	#11	#11	#11							
Ⓣ BARS	#5	#5	#6	#6	#6	#6	#9	#8	#8	#9	#9	#10	#10	#10	#11	#11	#11							
h1	-	-	-	-	-	5'-9"	5'-10"	8'-0"	9'-0"	10'-1"	11'-0"	12'-1"	13'-0"	13'-0"	12'-7"	11'-6"	-							
h2	-	-	-	-	-	-	-	10'-5"	13'-0"	14'-7"	17'-6"	19'-0"	20'-5"	19'-0"	18'-0"	20'-2"	-							
h3	-	-	-	-	-	-	-	-	-	-	-	-	-	21'-2"	21'-10"	24'-0"	-							
ZONE 1 © BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12							
ZONE 2 © BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12							
ZONE 1 Ⓢ BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18							
ZONE 2 Ⓢ BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#5 @ 12	#5 @ 12							
Ser: B', q <sub>o</sub>	6.8, 0.7	6.5, 1.0	6.2, 1.3	6.0, 1.6	6.3, 2.0	7.5, 2.1	8.6, 2.2	9.8, 2.3	11.0, 2.4	12.1, 2.5	13.2, 2.8	14.4, 2.9	15.5, 3.1	16.8, 3.3	18.0, 3.5	19.2, 3.7	20.6, 3.7							
Str: B', q <sub>o</sub>	6.6, 1.6	5.0, 1.8	3.6, 2.3	3.0, 3.3	3.2, 4.0	4.3, 3.8	5.3, 3.7	6.4, 3.7	7.4, 3.8	8.2, 4.1	9.0, 4.4	9.9, 4.6	10.7, 4.9	11.7, 5.2	12.6, 5.4	13.6, 5.8	14.6, 5.9							
Ext I: B', q <sub>o</sub>	5.2, 1.1	4.7, 1.5	3.9, 2.2	3.1, 3.4	2.8, 4.8	3.2, 5.3	3.6, 5.7	4.1, 6.1	4.6, 6.4	5.0, 6.9	5.3, 7.6	5.8, 8.1	6.1, 8.9	6.7, 9.4	7.1, 10.0	7.5, 10.7	8.2, 10.9							
Ext II: B', q <sub>o</sub>	2.6, 2.2	2.7, 2.6	2.8, 3.1	2.9, 3.6	3.7, 3.6	5.2, 3.3	6.7, 3.1	8.3, 3.0	9.8, 3.0	11.2, 3.1	12.5, 3.2	13.9, 3.4	15.2, 3.6	16.7, 3.8	18.0, 4.0	19.3, 4.2	20.8, 4.3							

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

RETAINING WALL TYPE 1 (CASE 1)

NO SCALE

B3-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

October 30, 2015  
 PLANS APPROVAL DATE  
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