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

REGISTERED CIVIL ENGINEER _____ DATE _____

PLANS APPROVAL DATE _____

REGISTERED PROFESSIONAL ENGINEER No. _____ Exp. _____ CIVIL 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.

The Registered Civil Engineer for the project is responsible for the selection and proper application of the component design and any modifications shown.

TABLE OF REINFORCING STEEL DIMENSIONS AND DATA

DESIGN H	6′	8′	10′	12′	14′	16′	18′	20′	22′	24′	26′	28′	30′	32′
W	8′- 3"	8′- 6"	9′- 0"	9′- 6"	10′- 0"	10′- 9"	11′- 3"	12′- 0"	13′- 3"	14′- 3"	15′- 9"	16′- 9"	18′- 0"	19′- 9"
C	2′- 9"	2′- 9"	3′- 0"	3′- 3"	3′- 4"	3′- 6"	3′- 9"	4′- 0"	4′- 3"	4′- 9"	5′- 3"	5′- 6"	5′- 9"	6′- 7"
B	5′- 6"	5′- 9"	6′- 0"	6′- 3"	6′- 8"	7′- 3"	7′- 6"	8′- 0"	9′- 0"	9′- 6"	10′- 6"	11′- 3"	12′- 3"	13′- 2"
F PILE FOOTING	1′- 6"	1′- 6"	1′- 6"	1′- 6"	1′- 9"	2′- 0"	2′- 0"	2′- 6"	2′- 9"	2′- 9"	3′- 0"	3′- 3"	3′- 9"	4′- 0"
M	1′- 3"	1′- 6"	1′- 6"	1′- 9"	1′- 10"	2′- 0"	2′- 3"	2′- 6"	2′- 9"	3′- 3"	3′- 9"	4′- 0"	4′- 3"	5′- 1"
N	4′- 0"	4′- 3"	4′- 6"	4′- 9"	5′- 2"	5′- 9"	6′- 0"	6′- 6"	7′- 6"	8′-0"	9′-0"	9′- 9"	10′- 9"	11′- 8"
ROW 1 SPACING	12′- 3"	10′- 3"	8′- 9"	7′- 6"	6′- 3"	5′- 3"	4′- 9"	4′- 0"	3′- 9"	3′- 9"	4′-0"	3′- 9"	3′- 9"	3′- 9"
ROW 2 SPACING	14′- 0"	12′- 9"	11′- 6"	10′- 3"	9′- 3"	8′- 3"	7′- 9"	6′- 6"	7′- 6"	6′- 0"	4′- 0"	4′- 0"	3′- 9"	3′-9"
ROW 3 SPACING									6′- 0"	5′- 3"	5′-0"	4′- 0"	6′- 0"	4′- 0"
ROW 4 SPACING													3′- 9"	3′-9"
STEM WITH HAUNCH, BATTER	0	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	3/4:12	7/8:12	1:12	1:12
STEM WITHOUT HAUNCH, BATTER	0	0	0	0	0	0	0	0	1/4:12	1/4:12	1/2:12	3/4:12	3/4:12	3/4:12
ⓐ BARS						#7 @ 14	#7 @ 12	#7 @ 12	#8 @ 12	#6 @ 6	#6 @ 6	#6 @ 6	#8 @ 9	#9 @ 9
ⓑ BARS	#8 @ 12	#7 @ 9	#7 @ 6	#7 @ 6	#7 @ 6	#9 @ 7	#9 @ 6	#10 @ 6	#10 @ 6	#8 @ 6ϒ	#8 @ 6ϒ	#8 @ 6ϒ	#10 @ 9ϒ	#11 @ 9ϒ
ha			5′- 0"	6′- 0"	7′- 0"	7′ - 0"	6′- 0"	7′- 0"	7′- 0"	7′- 6"	8′- 6"	9′- 3"	15′- 0"	11′- 3"
hb						11′ - 6"	12′- 0"	13′- 3"	16′- 0"	15′- 6"	17′- 6"	18′- 9"	21′- 0"	20′- 9"
ⓒ BARS	#6 @ 12	#6 @ 9	#6 @ 6	#6 @ 6	#6 @ 6	#8 @ 7	#8 @ 6	#9 @ 6	#9 @ 6	#10 @ 6	#10 @ 6	#11 @ 6	#10 @ 9ϒ	#10 @ 9ϒ
ⓓ BARS	#5 @ 12	#5 @ 9	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 14	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 12	#6 @ 12	#7 @ 12	#6 @ 9	#9 @ 9
ⓔ BARS	10-#7 @ 6	8-#7 @ 7	10-#6 @ 6	8-#6 @ 6	6-#6 @ 12	6-#5 @ 12	6-#5 @ 12	6-#5 @ 15	#5 @ 15	#5 @ 15	#5 @ 15	#5 @ 15	#5 @ 15	#5 @ 15
ⓕ BARS	10-#8 @ 7	10-#8 @ 6	10-#7 @ 8	12-#6 @ 7	8-#7 @ 11	8-#6 @ 13	8-#6 @ 12	8-#5 @ 15	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18

NOTE:

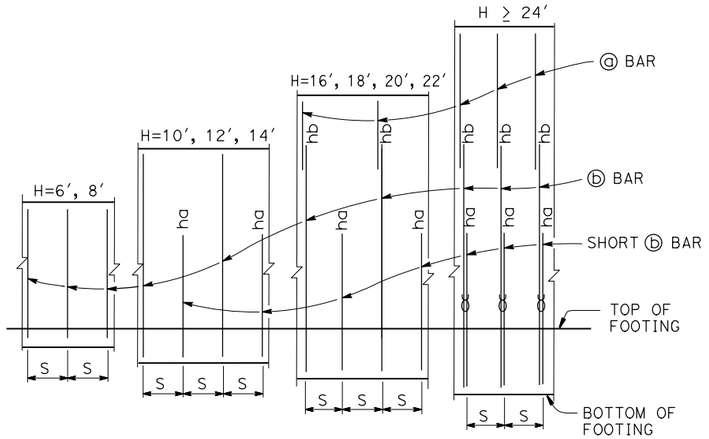
Total ⓔ bars and ⓕ bars shown are total number of top and bottom bars combined.

LEGEND:

ϒ : 2 bar bundle

NOTES:

1. All piles are class 90 concrete piles.
2. Pile batter shown are 1:3.
3. Minimum distance between center of pile and edge of footing is 1′-6".
4. Lateral resistance of each pile:
   30 kip for strength limit states.
   40 kip for extreme limit states.
   Pile group reduction factors are not applied unless soil passive resistance on footing is included.
5. Maximum spacing between piles is shown in the table. Reduce to suit the length of footing.
6. Minimum distance between any two piles is 3′-0". Reduce to suit the length of footing.
7. For sound wall and retaining wall architectural finish or texture, see details elsewhere in Project Plans.
8. For details not shown and drainage notes, see B3-5.
9. Footing cover, 1′-6" minimum.
10. For sound wall and Barrier reinforcements see "SOUND WALL - MASONRY BLOCK WITH BARRIER ON RETAINING WALL" sheets.
11. For H=6′ through 14′, extend ⓑ bars into Barrier for stem with haunch.
12. For H≥16′, extend ⓐ bars into Barrier for stem with haunch.
13. For H≤8′, provide additonal #6 @ 12 ⓑ bars over the distance of 8′-0" measured from all expansion joints, begin wall and end wall locations.

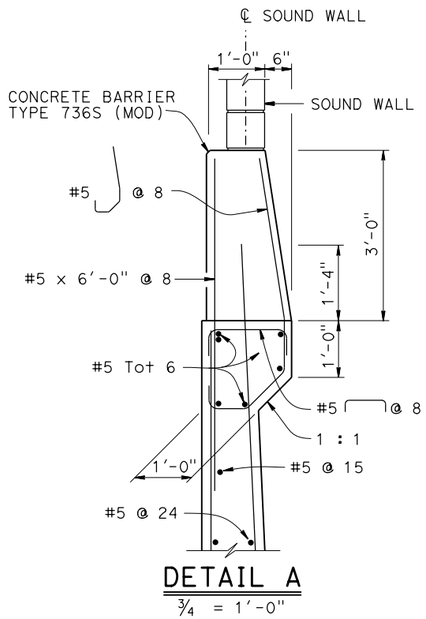


ELEVATION

NO SCALE

NOTE:

"ha" and "hb" above ⓑ bars indicate distance from top of footing to upper end of ⓑ bars, see table.
"S" is ⓑ bar spacing, see table.
ϒ : 2 bar bundle



DETAIL A

¾ = 1′-0"

OPTIONAL DETAIL A

¾ = 1′-0"

For Details not shown, see "DETAIL A"

DESIGN DATA

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

WS: 33 psf on Sound Wall and Barrier

LS: Varied surcharge on level ground surface

CT: 54 kip maximum traffic impact loading evenly distributed over 10 feet at top of the barrier and 1:1 distribution down and outward

EQE: Mononabe-Okabe Method
K_h = 0.3
K_v = 0.0

Soil: ø = 34°
γ = 120 pcf

Reinforced Concrete: f′c = 3600 psi
fy = 60,000 psi

Load Combinations and Limit States

Service I	Q=1.00DC+1.00EV+1.00EH+1.00LS+0.30WS
Service II	Q=1.00DC+1.00EV+1.00EH+1.00WS
Strength I	Q=αDC+βEV+1.50EH+1.75LS Q=1.25DC + 1.35EV + 0.90EH +1.75LS (for piles at heel)
Strength III	Q=αDC+βEV+1.50EH+1.40WS
Strength V	Q=αDC+βEV+1.50EH+1.35LS+0.40WS
Extreme I	Q=1.00DC+1.00EV+1.00EH+1.00EQD+1.00EQE
Extreme II	Q=1.00DC+1.00EV+1.00EH+1.00CT

Where:

Q: Force Effects
α: 1.25 or 0.90, Which ever Controls Design
β: 1.35 or 1.00, which ever Controls Design
DC: Dead Load of Structure Components
EV: Vertical Earth Fill Pressure
LS: Live Load Surcharge
EQE: Seismic Earth Pressure
EQD: Soil and Structure Components Inertia. Soil inertia ignored for stem design
WS: Wind Load on Sound Wall and Barrier
CT: Vehicular Collision Force

BRIDGE STANDARD DETAILS					
xs14-320-1 FILE NO.	October 2014 APPROVAL DATE	*The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California*	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. / POST MILE

RETAINING WALL TYPE 1SWBP-DETAILS No. 1

Refer to: http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheets/index.html

FILE => xs14-320-1.dgn
USERNAME => s136236 TIME PLOTTED => 10:45 DATE PLOTTED => 18-JUL-2016

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: PROJECT NUMBER & PHASE: CONTRACT NO.:

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
6-19-14	8-24-15	7-14-16	8-19-15		