

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

X
DATE

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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.



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

LEGEND:
 Ø : 2 bar bundle

GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

- Design: AASHTO LRFD Bridge Design Specifications 8th edition with California Amendments, Preface dated April 2019.
- WS: Wind perpendicular to plane of sound barrier. Exposure Category D.
- LS: Variable live load surcharge on level ground surface
- DC: Stem Architectural Treatment of thickness up to 2" of concrete
- CT: 54 kip transverse force on soundwall applied at 6'-0" above finished grade, distributed over 3'-6" and 1:1 distribution down and outward. Load distribution of 1V:0.6H applied at begin wall, end wall and on either side of expansion joints.

Seismic: $K_h = 0.3$
 $K_v = 0.0$

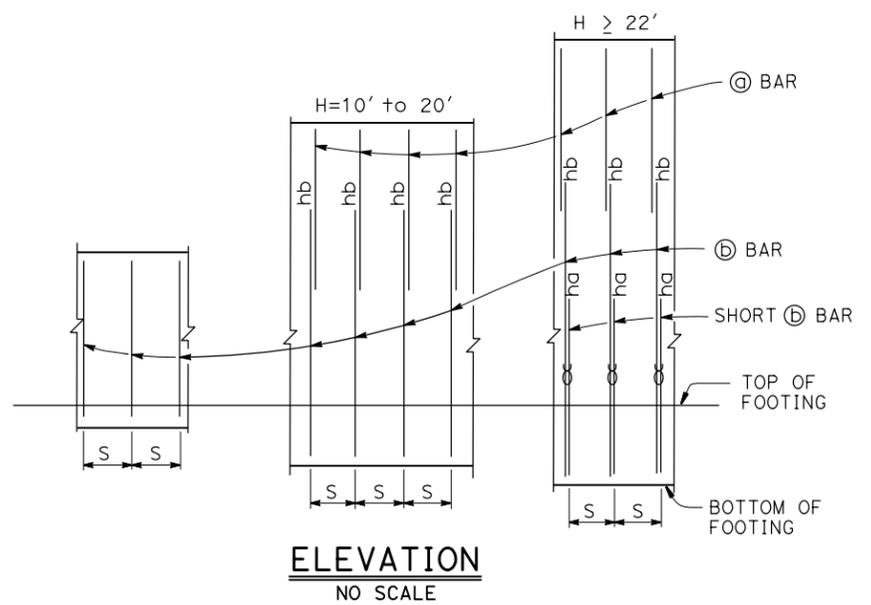
Soil: $\phi = 34^\circ$
 $\gamma = 120$ pcf

Reinforced Concrete: $f'_c = 3600$ psi
 $f_y = 60,000$ psi

- Load Combinations and Limit States
- Service I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00LS + 1.00WS$
 - Strength I $Q = aDC + \beta EV + \eta EH + 1.75LS$
 - Strength III $Q = aDC + \beta EV + 1.50EH + 1.00WS$
 - Strength V $Q = aDC + \beta EV + 1.50EH + 1.35LS + 1.00WS$
 - 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
 - a: 1.25 or 0.90, Which ever Controls Design
 - B: 1.35 or 1.00, which ever Controls Design
 - DC: Dead Load of Structural Components
 - EV: Vertical Earth Fill Pressure
 - LS: Live Load Surcharge
 - EQE: Seismic Earth Pressure
 - EQD: Soil and Structural Components Inertia
Soil inertia ignored for stem design
 - WS: Wind Load on Sound Wall and Barrier
 - CT: Vehicular Collision Force

- NOTES:
- All piles are class 90 concrete piles.
 - Pile batter shown are 1:3.
 - Minimum distance between center of pile and edge of footing is 1'-6".
 - Lateral resistance of each pile:
18 kip for service limit states.
30 kip for strength limit state.
40 kip for extreme event limit state.
 - Soil passive resistance with $\phi=34^\circ$ considered for strength and extreme event limit states. Soil friction at footing bottom ignored.
 - Maximum spacing between piles is shown in the table. Reduce to suit the length of footing.
 - Minimum distance between any two piles is 3'-3".
 - For sound wall and retaining wall Architectural Treatment, see details elsewhere in Project Plans.
 - For details not shown and drainage notes, see Standard Plans B0-3, B3-5 & B3-6.
 - Footing cover, 1'-6" minimum.
 - For sound wall and barrier reinforcement details, see xs15-130-1 and xs15-130-2.
 - For H=6' and 8', extend Ⓑ bars into barrier for stem with haunch.
 - For H ≥ 10', extend Ⓐ bars into barrier for stem with haunch.
 - Provide additional #6 x 18'-0" @ 6 bars over a distance of 8'-0" measured from all expansion joints, begin wall and end wall locations. For H < 14', hook the additional #6 bars into footing.



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

BRIDGE STANDARD DETAILS		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES	BRIDGE No.	X
xs14-320-1 FILE NO.	April 2022 APPROVAL DATE			XX-XXXX POST MILE	
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.		PROJECT NUMBER & PHASE: XXXXXXXXXX1		CONTRACT No.: XX-XXXXXX4	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		DATE PLOTTED => 8-MAR-2022 FILE => 20220308_xs14-320-1.dgn	TIME PLOTTED => 10:37 USERNAME => s148360	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES REVISION DATES: 01/11/22 02/24/22 03/08/22
				SHEET	OF
				X	X