

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

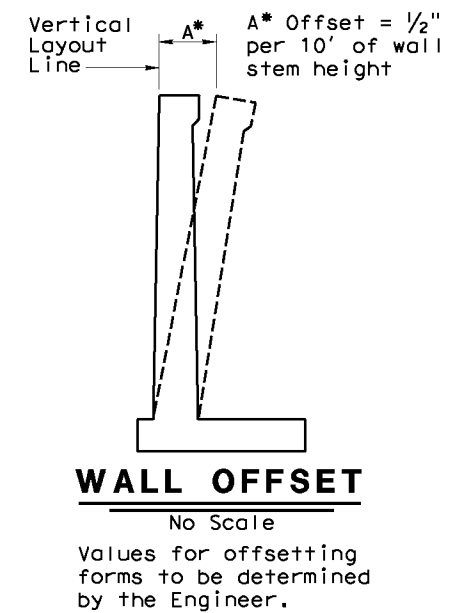
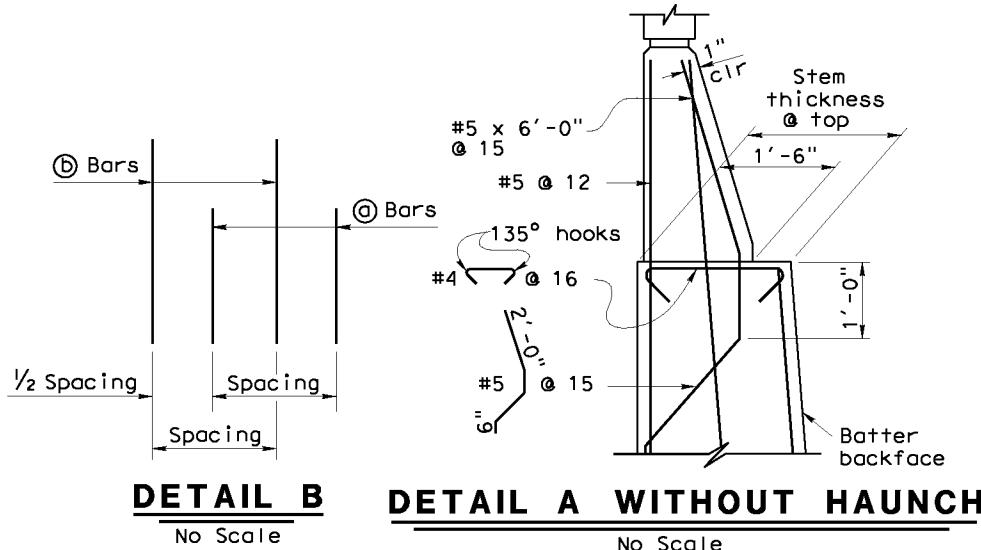
REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

**GENERAL NOTES**

- For soundwall and retaining wall architectural finish or texture, see details elsewhere in project plans.
- For details not shown and drainage notes, see (B3-8)
- Footing cover, 1'-6" minimum.
- Limit of no splicing rebars = 3 times the bottom thickness of the stem.
- Placement of reinforcements :
  - (b) & (c) bars are spliced together.
  - \* (a) & (b) bars are bundled together.
  - \*\* Alternate (a) & (b) bars are shown in "Detail B".
- For Soundwall & Barrier reinforcement, see "Soundwall Masonry Block on Barriers" sheets in Standard Plans.

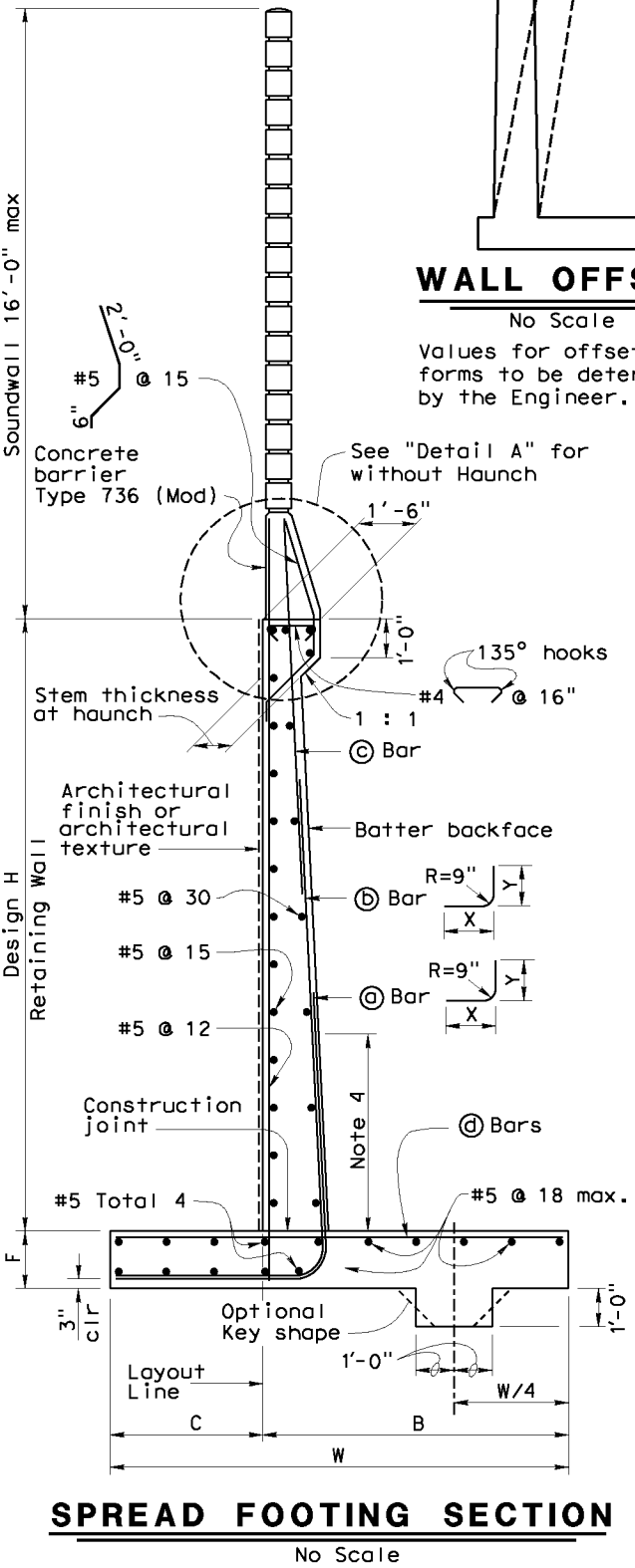


**TABLE 1: TABLE OF REINFORCING STEEL DIMENSIONS AND DATA**

Design H	Stem With Haunch													
	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'
W	7'-9"	8'-0"	8'-9"	9'-9"	10'-9"	12'-0"	13'-0"	14'-3"	15'-3"	16'-6"	18'-6"	19'-9"	21'-3"	22'-6"
C	2'-9"	2'-9"	3'-0"	3'-3"	3'-6"	4'-0"	4'-3"	4'-9"	5'-0"	5'-6"	6'-3"	6'-9"	7'-3"	7'-9"
B	5'-0"	5'-3"	5'-9"	6'-6"	7'-3"	8'-0"	8'-9"	9'-6"	10'-3"	11'-0"	12'-3"	13'-0"	14'-0"	14'-9"
F Spread footing	1'-3"	1'-3"	1'-3"	1'-3"	1'-3"	1'-6"	1'-6"	1'-6"	2'-0"	2'-3"	2'-9"	3'-0"	3'-3"	3'-9"
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 thckn. @ Haunch	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"
(a) Bars				#6 @ 18**	#7 @ 18**	#8 @ 18**	#9 @ 18**	#10 @ 18**	#8 @ 9*	#8 @ 9*	#7 @ 6*	#10 @ 12**	#9 @ 9*	#11 @ 12**
X				Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
Y				8'-0"	6'-6"	7'-6"	8'-6"	9'-6"	9'-6"	11'-0"	11'-6"	13'-0"	14'-0"	15'-6"
(b) Bars	#5 @ 12	#5 @ 12	#5 @ 9	#6 @ 18**	#7 @ 18**	#8 @ 18**	#9 @ 18**	#10 @ 18**	#8 @ 9*	#8 @ 9*	#7 @ 6*	#10 @ 12**	#9 @ 9*	#11 @ 12**
X	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	5'-6"	6'-6"	7'-0"	8'-0"	8'-6"
Y	Cont	Cont	Cont	Cont	10'-6"	13'-0"	15'-0"	17'-6"	19'-6"	21'-0"	18'-6"	19'-0"	25'-6"	23'-6"
(c) Bars				#6 @ 18	#6 @ 18	#6 @ 18	#6 @ 18	#6 @ 18	#6 @ 18	#6 @ 18	#6 @ 12	#7 @ 12	#7 @ 18	#7 @ 12
(d) Bars	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 9	#6 @ 9	#6 @ 9	#6 @ 6	#8 @ 9	#8 @ 9	#8 @ 9	#7 @ 6	#7 @ 6	#9 @ 9	#9 @ 9
Ultimate Bearing Capacity Req'd k/sf	4.6	5.5	6.1	6.6	7.3	8.1	9.0	9.9	11.3	12.2	12.5	13.4	14.1	15.4

**TABLE 2: TABLE OF REINFORCING STEEL DIMENSIONS AND DATA**

Design H	Stem With Haunch						Stem Without Haunch						
	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'
W	8'-0"	8'-6"	9'-3"	10'-3"	11'-3"	13'-0"	13'-9"	16'-0"	16'-6"	18'-6"	20'-0"	20'-6"	21'-9"
C	2'-9"	2'-9"	3'-0"	3'-6"	3'-9"	4'-3"	4'-6"	5'-3"	5'-6"	6'-3"	6'-9"	6'-9"	7'-6"
B	5'-3"	5'-9"	6'-3"	6'-9"	7'-6"	8'-9"	9'-3"	10'-9"	11'-0"	12'-3"	13'-3"	13'-9"	14'-3"
F Spread footing	1'-3"	1'-3"	1'-3"	1'-3"	1'-6"	1'-6"	1'-9"	2'-0"	2'-3"	2'-9"	3'-0"	3'-3"	3'-6"
Batter	0	0	0	0	0	0	0	0	0	1/4:12	1/2:12	1/2:12	1/2:12
Stem thckn. @ Haunch	1'-0"	1'-0"	1'-0"	1'-0"	1'-3"	1'-3"							
Stem thckn. @ top							1'-6"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"
(a) Bars			#6 @ 12**	#5 @ 6*	#9 @ 18**	#9 @ 12**	#9 @ 12**	#9 @ 12**	#7 @ 6*	#7 @ 6*	#7 @ 6*	#9 @ 9*	#11 @ 12**
X			Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
Y			5'-6"	5'-6"	8'-6"	8'-6"	8'-6"	8'-6"	9'-6"	11'-0"	12'-6"	13'-6"	14'-6"
(b) Bars	#5 @ 9	#6 @ 9	#6 @ 12**	#5 @ 6*	#9 @ 18**	#9 @ 12**	#9 @ 12**	#9 @ 12**	#7 @ 6*	#7 @ 6*	#7 @ 6*	#9 @ 9*	#11 @ 12**
X	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	5'-6"	6'-0"	7'-6"	7'-6"	8'-0"
Y	Cont	Cont	Cont	Cont	11'-6"	11'-6"	17'-0"	17'-0"	17'-6"	20'-0"	21'-6"	24'-0"	24'-0"
(c) Bars					#7 @ 18	#7 @ 12	#7 @ 12	#7 @ 12	#6 @ 12	#6 @ 12	#6 @ 12	#7 @ 18	#7 @ 12
(d) Bars	#5 @ 12	#5 @ 9	#5 @ 9	#6 @ 9	#6 @ 9	#9 @ 12	#9 @ 12	#7 @ 7	6 @ 6	#7 @ 6	#7 @ 6	#9 @ 9	#9 @ 9
Ultimate Bearing Capacity Req'd k/sf	5.5	6.5	7.3	7.6	9.0	9.0	10.6	10.5	12.2	12.6	13.3	15.4	16.0



**DESIGN DATA**

DESIGN: Load Factor Design (LFD)

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

LOADING CASE:  
Level ground with 240 psf surcharge and 16' Soundwall

Seismic Load = 0.3 Dead Load  
Wind Load = 30 psf  
Dead Load of Soundwall = 1414 lb/ft  
Dead Load of Barrier = 372 lb/ft

SEISMIC LOAD: SOIL  
Kh = 0.3g  
Kv = 0.0  
Kae : Mononobe-Okabe Method

SOIL: Ø = 34° γ = 120 pcf  
Equivalent fluid pressure:  
= 36 pcf for determination of toe pressure  
= 27 pcf for determination of heel pressure

EXTERNAL STABILITY:  
Group 1 : D + E + SC  
Group 2 : D + E + SC + W  
Group 3 : D + PYM

INTERNAL STABILITY (LFD):  
Group A : βD + 1.7E + 1.7SC  
Group B : βD + 1.7E + 1.3W  
Group C (stem) : 1.0D + 1.0E + 1.0EQD + 1.0EQE  
Group C (footing) : D + PYM

Where : β = 1.0 or 1.3 whichever controls design  
D = Dead Load  
E = Lateral Earth Pressure  
SC = Surcharge  
W = Wind load  
EQD = Seismic Dead Load  
EQE = Seismic Lateral Earth Pressure  
PYM = Probable Yield Moment (1.3 x Nominal Yield Moment of Stem)

STANDARD DRAWING  
FILE NO. **xs14-220x**  
APPROVAL DATE July 2011

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING SERVICES

BRIDGE NO. X  
POST MILE X  
**RETAINING WALL TYPE 1SWB**