

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

X
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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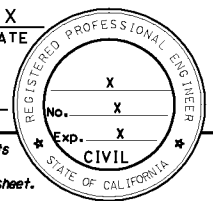


TABLE 1: TABLE OF DIMENSIONS AND PILE LAYOUT

Design H	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'
W	7'-6"	8'-0"	9'-3"	10'-9"	12'-3"	13'-9"	15'-3"	16'-9"	18'-3"	19'-6"	21'-0"	22'-6"	24'-0"
C	6'-0"	6'-6"	7'-6"	9'-0"	10'-3"	11'-6"	13'-0"	14'-3"	15'-3"	16'-6"	17'-6"	18'-6"	20'-0"
B	1'-6"	1'-6"	1'-9"	1'-9"	2'-0"	2'-3"	2'-3"	2'-6"	3'-0"	3'-0"	3'-6"	4'-0"	4'-0"
F	2'-9"	2'-9"	2'-9"	2'-9"	2'-9"	2'-9"	3'-3"	3'-6"	3'-6"	4'-0"	4'-3"	4'-3"	4'-6"
Stem thickness @ Top	1'-0"	1'-0"	1'-3"	1'-3"	1'-6"	1'-9"	1'-9"	2'-0"	2'-0"	2'-0"	2'-0"	2'-3"	2'-3"
Batter	0	0	0	0	0	0	0	0	1/4 : 12	1/4 : 12	1/2 : 12	1/2 : 12	1/2 : 12
Tie Down Design Force (T) K/FT	0	0	3	3	3	8	8	14	14	21	25	29	34
Tie Down Max. Spacing (S) Ft	0	0	24	24	20	18	16	16	14	14	14	13	12
M	4'-6"	5'-0"	6'-0"	6'-6"	7'-0"	8'-3"	9'-3"	10'-6"	13'-3"	14'-3"	15'-0"	15'-9"	17'-0"
N	0	0	0	0	0'-3"	0'-3"	0'-6"	1'-0"	1'-0"	1'-6"	2'-0"	2'-3"	2'-3"
Row 1	26'-0"	23'-0"	13'-0"	10'-0"	8'-0"	6'-0"	5'-0"	4'-0"	7'-6"	6'-6"	5'-6"	5'-0"	4'-0"
Row 2	26'-0"	23'-0"	13'-0"	10'-0"	8'-0"	6'-0"	5'-0"	4'-0"	7'-6"	6'-6"	5'-6"	5'-0"	4'-0"
Row 3									7'-6"	6'-6"	5'-6"	5'-0"	4'-0"
Row 4									7'-6"	6'-6"	5'-6"	5'-0"	4'-0"
Configuration	I	I	I	I	I	I	I	I	II	II	II	II	II

TABLE 2: TABLE OF REINFORCING STEEL

Design H	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'
(a) Bars			#7@18		#9@18	#9@18	#9@12	#9@12	#7@6	#7@6	#10@12	#10@12	#11@12
X			Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont	Cont
Y			5'-6"	5'-6"	8'-6"	8'-9"	8'-9"	9'-0"	9'-9"	11'-3"	13'-3"	14'-3"	15'-3"
(b) Bars	#5@9	#6@9	#7@18	#5@6	#9@18	#9@12	#9@18	#9@12	#7@6	#7@6	#10@12	#10@12	#11@12
X	Cont	Cont	3'-6"	2'-6"	6'-3"	7'-9"	6'-9"	7'-9"	8'-6"	8'-0"	12'-6"	13'-6"	14'-9"
Y	Cont	Cont	Cont	Cont	12'-0"	13'-6"	14'-0"	15'-9"	17'-9"	20'-3"	22'-3"	24'-9"	24'-9"
Placement, (c)			(A)	(B)	(A)	(A)	(A)	(A)	(B)	(B)	(B)	(B)	(A)
(c) Bars					#8@18	#8@18	#8@12	#8@12	#6@6	#6@6	#9@12	#9@12	#10@12
Placement, (c)					(C)	(C)	(C)	(C)	(C)	(C)	(C)	(C)	(C)
(d) Bars	#5@18	#5@18	#5@18	#5@18	#5@18	#5@18	#5@18	#5@18	#5@18	#5@18	#5@18	#5@18	#5@18
(e) Bars	10#8	10#8	8#5	8#5	8#5	8#5	8#5	8#5	20#5	16#5	10#5	10#5	8#5
(f) Bars					#9@18	#9@18	#9@18	#9@18	#9@6	#7@6	#10@6	#10@6	#11@6
(g) Bars (Shear ties)									#4@12	#4@12	#4@12	#4@12	#4@12
X					3'-9"	6'-0"	5'-0"	6'-0"	5'-3"	5'-3"	6'-6"	8'-2"	8'-8"
(h) Bars	#5	#5	#5	#5					7'-6"	7'-6"	8'-9"	9'-10"	11'-10"
U									7'-6"	7'-6"	8'-9"	9'-10"	11'-10"

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 live load surcharge and 16 ft Soundwall
 Seismic Load = 0.3 Dead Load
 Wind Load = 30 psf
 Dead Load of Soundwall = 1414 Lb/ft
SEISMIC LOAD: SOIL
 Kh = 0.3g
 Kv = 0.0
 Kae : Mononobe-Okabe Method
SOIL: φ = 34° γ = 120 pcf
 Equivalent fluid pressure:
 Static = 36 pcf for determination of toe pressure
 Seismic = Coulomb's Theory

LOAD COMBINATIONS:

75% Earth Pressure: (For back row piles)
 Loading 1: βD + 0.75 *(1.0E) + 0.75 *(1.0 Pav) + 0.75 T
 Loading 2: βD + 0.75 *(1.7E) + 0.75 *(1.7 Pav) + 0.75 T
 100% Earth Pressure: (For front row piles)
 Group A1 : βD + 1.7 E + 1.7 SC + 0.75 T
 Group A2 : βD + 1.7 E + 1.7 Pav + 1.7 SC + 0.75 T
 Group B1 : βD + 1.7 E + 1.3 W + 0.75 T
 Group B2 : βD + 1.7 E + 1.7 Pav + 1.3 W + 0.75 T
 Group C :
 Stem : 1.0 D + 1.0 E + 1.0 EQD + 1.0 EQE
 Footing : D + PYM + Pav + V + 1.0 T
 Where : β = 1.0 or 1.3 whichever controls design
 D = Dead Load
 E = Lateral Earth Pressure
 Pav = Vertical Earth Pressure
 SC = Live Load 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)
 T = Design Force for Vertical Tiedown
 V = Possible Shear at Base of Stem associated with Probable Yield Moment

LEGEND FOR BAR PLACEMENT

- (A) : Alternate placement of (a) Bars and (b) Bars are shown in "DETAIL B" on "DETAIL NO. 2" sheet.
 - (B) : Bundle (a) and (b) Bars.
 - (C) : Splice (c) Bars to (b) Bars.
- Cont = Continuous

STANDARD DRAWING		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES		BRIDGE NO. X		X	
FILE NO. xs14-400-1x	APPROVAL DATE July 2011					POST MILE X			
DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. [02-02-11])				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: X PROJECT NUMBER & PHASE: X		CONTRACT NO.: X	
DISREGARD PRINTS BEARING EARLIER REVISION DATES						REVISION DATES		SHEET OF X X	