

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

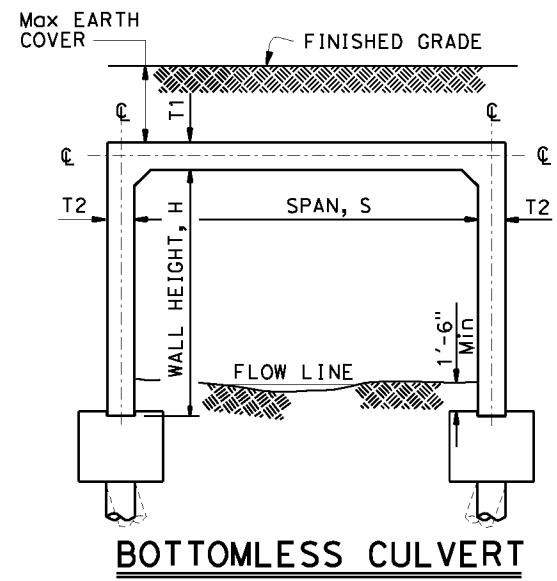
X
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

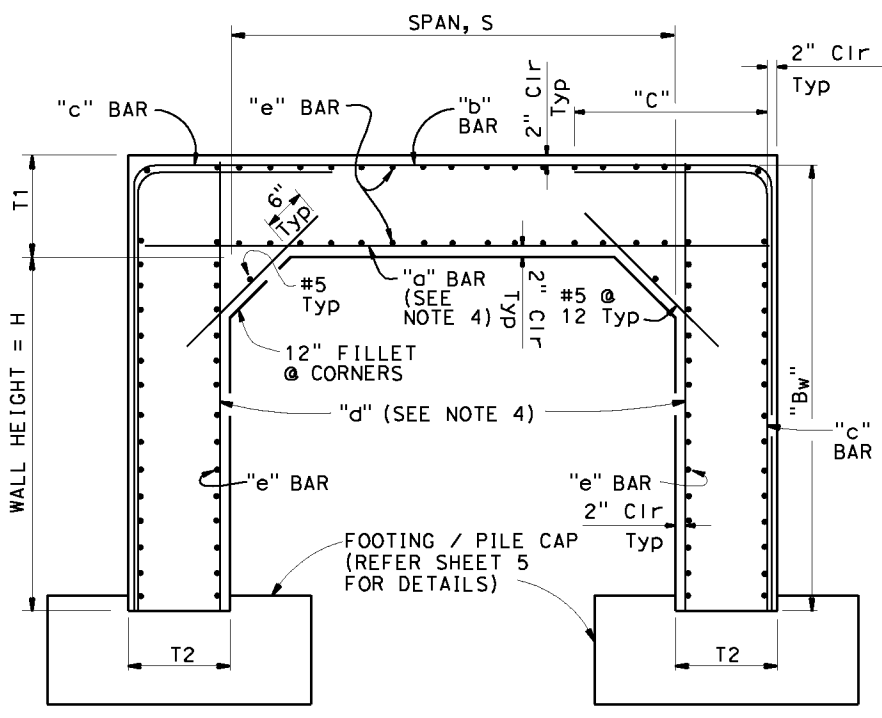
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REGISTERED PROFESSIONAL ENGINEER
No. X
Exp. X
CIVIL
STATE OF CALIFORNIA

SPAN, S	12'												14'												16'												
	6'		8'		10'		12'		14'		15'		6'		8'		10'		12'		14'		15'		6'		8'		10'		12'		14'		15'		
WALL HEIGHT, H	6'	8'	10'	12'	14'	15'	6'	8'	10'	12'	14'	15'	6'	8'	10'	12'	14'	15'	6'	8'	10'	12'	14'	15'	6'	8'	10'	12'	14'	15'	6'	8'	10'	12'	14'	15'	
Max Earth Cover	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'			
Concrete	Roof T1	11"	1'-2"	1'-0"	1'-3"	1'-3"	1'-5"	1'-6"	1'-8"	2'-1"	2'-1"	2'-3"	2'-3"	11"	1'-3"	1'-1"	1'-4"	1'-3"	1'-5"	1'-6"	1'-8"	1'-10"	2'-0"	1'-11"	2'-4"	1'-2"	1'-4"	1'-3"	1'-5"	1'-4"	1'-6"	1'-7"	1'-9"	1'-10"	2'-0"	2'-0"	2'-2"
	Walls T2	11"	1'-2"	1'-0"	1'-3"	1'-3"	1'-5"	1'-6"	1'-8"	1'-9"	2'-0"	1'-11"	2'-2"	11"	1'-2"	1'-0"	1'-4"	1'-3"	1'-5"	1'-6"	1'-8"	1'-10"	2'-0"	2'-0"	2'-3"	11"	1'-3"	1'-1"	1'-3"	1'-3"	1'-5"	1'-7"	1'-9"	1'-10"	2'-1"	2'-1"	2'-3"
Reinforcement	Spacing	12"	10"	12"	9"	12"	9"	11"	9"	10"	9"	9"	8"	10"	9"	10"	8"	10"	8"	10"	8"	10"	8"	10"	8"	10"	9"	10"	9"	10"	8"	10"	8"	10"	8"	10"	8"
	"a" Bar size	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9
	"b" Bar size	#6	#6	#6	#6	#7	#6	#9	#8	#10	10	#10	#10	#6	#7	#6	#6	#6	#7	#8	#8	#10	#8	#10	#9	#6	#8	#6	#8	#6	#8	#7	#8	#9	#8	#9	#9
	*Bw - Cut-off Length	Full Height																																			
	"c" Bar size	#6	#6	#6	#6	#6	#6	#7	#7	#7	#7	#7	#7	#6	#7	#6	#7	#6	#7	#7	#7	#8	#8	#8	#8	#6	#8	#6	#8	#6	#8	#7	#8	#8	#8	#8	#8
	C - Cut-off Length	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-6"	2'-6"	2'-9"	2'-6"	3'-0"	2'-6"	3'-3"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	3'-0"	2'-6"	3'-3"	2'-9"	4'-6"	3'-0"	4'-6"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	3'-3"	2'-6"	3'-6"	2'-9"	3'-9"	3'-0"	4'-0"
"d" Bar size	#6	#6	#6	#6	#6	#6	#7	#7	#8	#8	#8	#8	#6	#6	#6	#6	#6	#6	#7	#7	#8	#8	#8	#8	#6	#6	#6	#6	#6	#6	#6	#7	#7	#8	#8	#8	#8
"e" Bar size	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
Quantities	Concrete CF/LF	24.7	31.7	31.0	39.1	44.1	50.3	59.5	66.6	82.3	90.3	94.1	102.8	26.5	35.4	34.3	44.6	46.6	53.2	62.5	69.9	84.7	93.0	95.5	106.6	32.8	40.7	41.0	47.2	50.7	57.6	69.3	77.1	88.4	99.7	103.8	112.9
	Reinf lb/LF	220	264	252	328	307	374	484	547	694	773	807	912	275	312	313	411	354	467	512	638	743	819	863	921	298	448	336	499	374	618	504	745	715	885	833	990



SPAN, S	18'												20'																					
	6'		8'		10'		12'		14'		15'		6'		8'		10'		12'		14'		15'											
WALL HEIGHT, H	6'	8'	10'	12'	14'	15'	6'	8'	10'	12'	14'	15'	6'	8'	10'	12'	14'	15'	6'	8'	10'	12'	14'	15'										
Max Earth Cover	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'	10'	20'
Concrete	Roof T1	1'-4"	1'-6"	1'-4"	1'-7"	1'-5"	1'-8"	1'-7"	1'-9"	1'-11"	2'-1"	2'-1"	2'-3"	1'-6"	1'-8"	1'-6"	1'-9"	1'-7"	1'-10"	1'-9"	2'-2"	2'-0"	2'-2"	2'-1"	2'-4"									
	Walls T2	11"	1'-3"	1'-0"	1'-3"	1'-4"	1'-6"	1'-7"	1'-8"	1'-9"	2'-2"	2'-1"	2'-4"	11"	1'-4"	1'-0"	1'-6"	1'-2"	1'-7"	1'-7"	1'-9"	1'-11"	2'-2"	2'-2"	2'-4"									
Reinforcement	Spacing	11"	9"	11"	9"	11"	8"	11"	8"	11"	8"	11"	8"	11"	9"	11"	8"	11"	8"	11"	8"	11"	8"	11"	8"									
	"a" Bar size	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9									
	"b" Bar size	#7	#8	#7	#8	#7	#8	#7	#8	#7	#8	#7	#8	#7	#8	#7	#8	#7	#8	#7	#8	#7	#8	#7	#8									
	*Bw - Cut-off Length	Full Height																																
	"c" Bar size	#7	#7	#7	#8	#7	#7	#7	#8	#7	#7	#8	#8	#7	#8	#7	#7	#7	#7	#7	#7	#7	#7	#8	#8									
	C - Cut-off Length	2'-0"	3'-0"	2'-0"	3'-3"	2'-0"	3'-6"	2'-6"	3'-9"	3'-9"	4'-3"	4'-3"	4'-3"	2'-0"	3'-6"	2'-0"	3'-9"	2'-0"	4'-0"	2'-6"	4'-3"	3'-0"	4'-6"	3'-6"	4'-6"									
"d" Bar size	#6	#6	#6	#6	#6	#6	#7	#7	#8	#8	#8	#8	#6	#6	#6	#6	#6	#6	#7	#7	#8	#8	#8	#8										
"e" Bar size	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4										
Quantities	Concrete CF/LF	38.4	46.8	43.7	53.5	56.9	66.0	72.5	78.3	96.5	108.2	109.7	119.1	44.8	54.8	50.0	65.3	60.0	75.1	79.5	93.9	102.3	114.4	116.7	122.8									
	Reinf lb/LF	325	469	394	568	438	639	516	743	653	827	760	1028	346	583	446	622	490	679	574	791	675	922	783	1069									



- NOTES:
- Culverts are defined as having spans of less than 20' (AASHTO)
 - For boxes of height less than that shown in table, use next greater table height slab, wall dimensions, and reinforcing steel. Make necessary changes in bar lengths, number of spacers, and quantities
 - Shear reinforcement shall be provided as required
 - The "a" and "d" bars are at half spacings
 - Refer to Sheet 5 for foundation details

* U shape bars vertical legs may be spliced per Standard Specifications.

TYPICAL REINFORCEMENT
No Scale

STANDARD DRAWING		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES		X CIP BOTTOMLESS CULVERT FOUNDATION PILES/FOOTINGS ON SOIL	
FILE NO. xs17-040	APPROVAL DATE November 2011			BRIDGE NO. X		SHEET X OF X	
				POST MILE X		CONTRACT NO.: X	
DS OSD 21474 (ENGLISH STANDARD DRAWING "XS" BORDER REV. [02-02-11])				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: X PROJECT NUMBER & PHASE: X	
				0 1 2 3		DISREGARD PRINTS BEARING EARLIER REVISION DATES	

DATE PLOTTED => \$DATE USERNAME => \$USER