

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

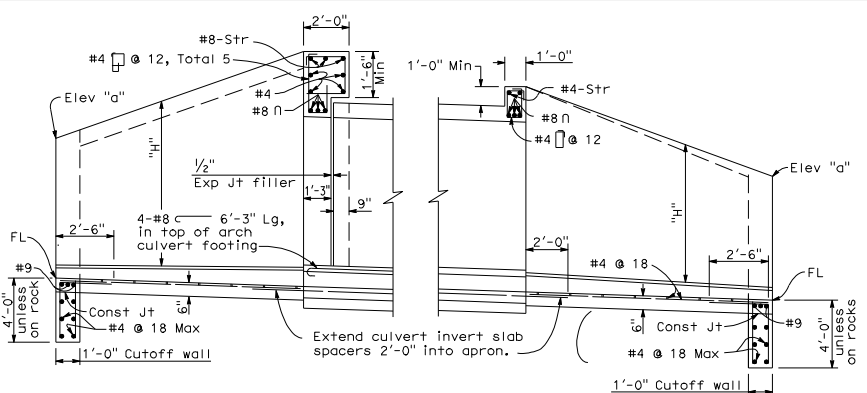
James J. Foster
 REGISTERED CIVIL ENGINEER

May 1, 2006
 PLANS APPROVAL DATE

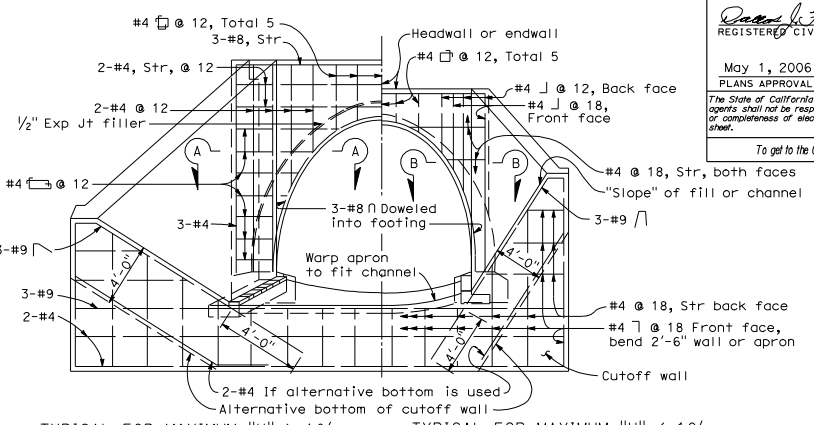
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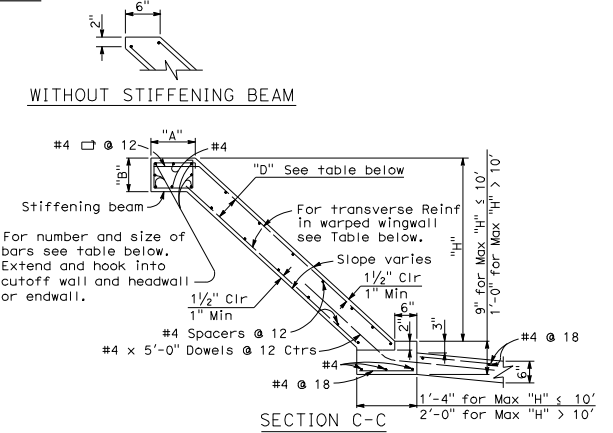
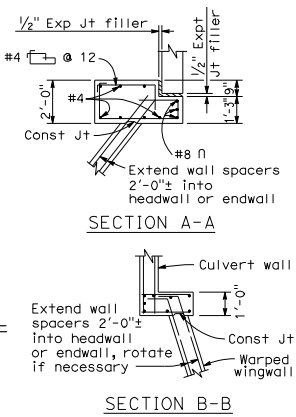
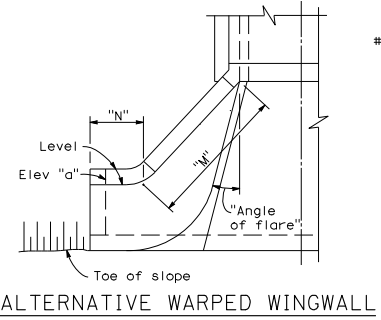
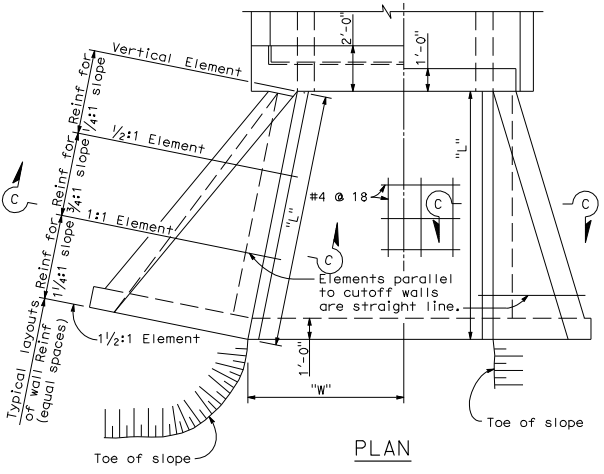
REGISTERED PROFESSIONAL ENGINEER
 Douglas Forester
 No. C37165
 Exp. 12-31-06
 CIVIL
 STATE OF CALIFORNIA



TYPICAL FOR MAXIMUM "H" > 10' TYPICAL FOR MAXIMUM "H" ≤ 10'
 PART LONGITUDINAL SECTION



TYPICAL FOR MAXIMUM "H" > 10' TYPICAL FOR MAXIMUM "H" ≤ 10'
 END ELEVATION



Where abrasion is anticipated, increase apron thickness to 7" minimum to provide 2" minimum reinforcement coverage.

Element Slope	"H"	WALL DIMENSIONS AND REINFORCING							STIFFENING BEAM DIMENSIONS AND REINFORCING											
		8' or less	10'	12'	14'	16'	18'	20'	12'	14'	16'	18'	20'	25'	30'	35'	40' or more			
1/4:1	Front face Reinf	#4 @ 12	#4 @ 7	#5 @ 7	#5 @ 5	#6 @ 6	#7 @ 7	#7 @ 6	6'	No beam. Place 2-#6 in each face along top of wall.										
	Rear face Reinf	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12		#4 @ 12	8'	"A" = 1'-0"								
3/4:1	Front face Reinf	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 10	#4 @ 8	#4 @ 6	10'	"B" = 9"										
	Rear face Reinf	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 10	#4 @ 7	#4 @ 6	#5 @ 8		12'	"A" = 1'-6"									
1 1/4:1	Front face Reinf	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	14'	Total 6-#6 "B" = 1'-0"										
	Rear face Reinf	#4 @ 8	#4 @ 8	#4 @ 5	#5 @ 6	#6 @ 7	#6 @ 6	#7 @ 6		16'	"A" = 1'-10" "B" = 1'-0" "A" = 2'-0"									
"D" at Cutoff Wall		6"	6"	6"	7 1/2"	8"	9 1/2"	11"	18'	Total 6-#8 "B" = 1'-6"										
"D" at Culvert		6"	6"	6"	8"	9 1/2"	11"	1'-1"	20'	Total 8-#9										

NOTES:
 Walls designed for 2'-0" surcharge; earth load = 120 LB/CF; equivalent fluid pressure = 36 LB/CF.
 Vary "D" of warped wall uniformly from that at cutoff wall to that at headwall or endwall, for maximum "H" > 12'.
 Dimensions "L", "W", "H", "M", "N", Elev "a", "Angle of flare", and "Slope" (as apply) are shown on the plans.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ARCH CULVERT
 HEADWALLS, ENDWALLS
 AND WARPED WINGWALLS**

NO SCALE

D86C