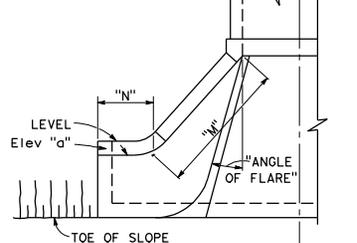
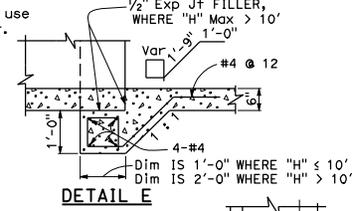
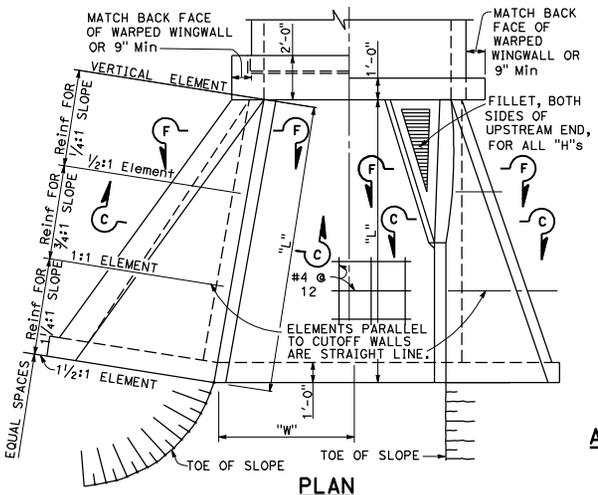
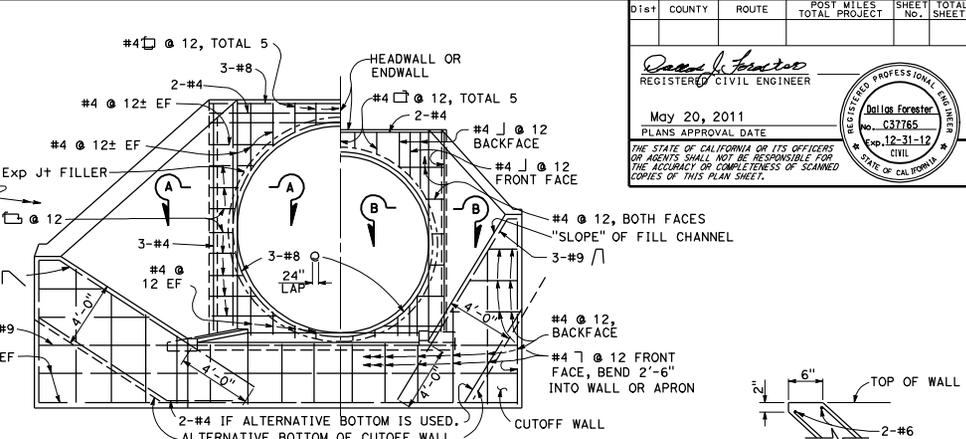


NOTE: PART LONGITUDINAL SECTION

RCP shown. Metal pipe similar except eliminate the expansion joint and use hook bolts @ 1'-7" ± spacing. Size and length provided by manufacturer.

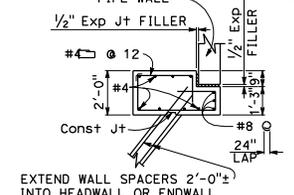


Use where additional protection to toe of embankment is required. If at upstream end, fillet is not shown.

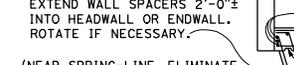


END ELEVATION

If at upstream end, fillet is not shown.

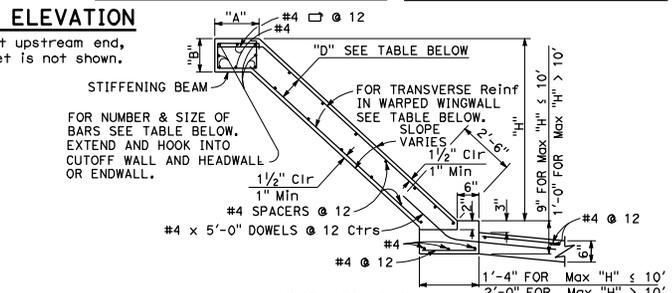


EXTEND WALL SPACERS 2'-0" ± INTO HEADWALL OR ENDWALL.

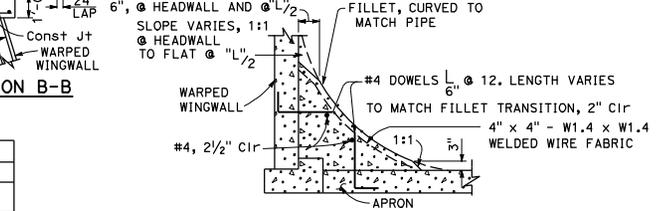


EXTEND WALL SPACERS 2'-0" ± INTO HEADWALL OR ENDWALL. ROTATE IF NECESSARY.

(NEAR SPRING-LINE, ELIMINATE FACE EXTENSION AND HOOK REAR EXTENSION OUTWARD, IF POSSIBLE.)



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



PIPE CULVERT HEADWALLS, ENDWALLS AND WARPED WINGWALLS

NO SCALE

| ELEMENT SLOPE | WALL DIMENSIONS AND REINFORCING | | | | | | | STIFFENING BEAM DIMENSIONS AND REINFORCING | | | | | | | | | |
|--------------------|---------------------------------|---------|---------|---------|---------|---------|---------|--|-----|--|------------|-----|-----|------------|------------|-------------|-----|
| | "H" 8' OR LESS | 10' | 12' | 14' | 16' | 18' | 20' | "H" MAX | 12' | 14' | 16' | 18' | 20' | 25' | 30' | 35' | 40' |
| 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 | | | | | | | |
| | REAR FACE Reinf | #4 @ 12 | #4 @ 12 | #4 @ 12 | #4 @ 12 | #4 @ 12 | #4 @ 12 | #4 @ 12 | 8' | | | | | | | | |
| 3/4:1 | FRONT FACE Reinf | #4 @ 12 | #4 @ 12 | #4 @ 8 | #4 @ 8 | #4 @ 8 | #4 @ 6 | #4 @ 6 | 10' | | | | | | | | |
| | REAR FACE Reinf | #4 @ 12 | #4 @ 12 | #4 @ 12 | #4 @ 10 | #4 @ 7 | #4 @ 6 | #5 @ 8 | 12' | | | | | | | | |
| 1 1/4:1 | FRONT FACE Reinf | #4 @ 12 | #4 @ 12 | #4 @ 12 | #4 @ 12 | #4 @ 12 | #4 @ 12 | #4 @ 12 | 14' | | | | | | | | |
| | REAR FACE Reinf | #4 @ 8 | #4 @ 8 | #4 @ 5 | #5 @ 6 | #6 @ 7 | #6 @ 7 | #7 @ 6 | 16' | | | | | | | | |
| "D" AT CUTOFF WALL | 6" | 6" | 6" | 7 1/2" | 8" | 9 1/2" | 11" | 18" | | | | | | | | | |
| "D" AT CULVERT | 6" | 6" | 6" | 8" | 9 1/2" | 11" | 1'-1" | 20" | | | | | | | | | |
| | | | | | | | | | | TOTAL 6-#6 | | | | "B"= 1'-0" | "B"= 1'-3" | "A"= 1'-10" | |
| | | | | | | | | | | | TOTAL 6-#7 | | | TOTAL 8-#8 | | "B"= 1'-6" | |
| | | | | | | | | | | | | | | | | TOTAL 8-#9 | |

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

D16+ COUNTY ROUTE POST MILES TOTAL PROJECT SHEET TOTAL NO. SHEETS

James J. Foster
 REGISTERED CIVIL ENGINEER

May 20, 2011
 PLANS APPROVAL DATE

Danilo Forester
 REGISTERED PROFESSIONAL ENGINEER
 No. C37265
 Exp. 12-31-12
 CIVIL
 STATE OF CALIFORNIA

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