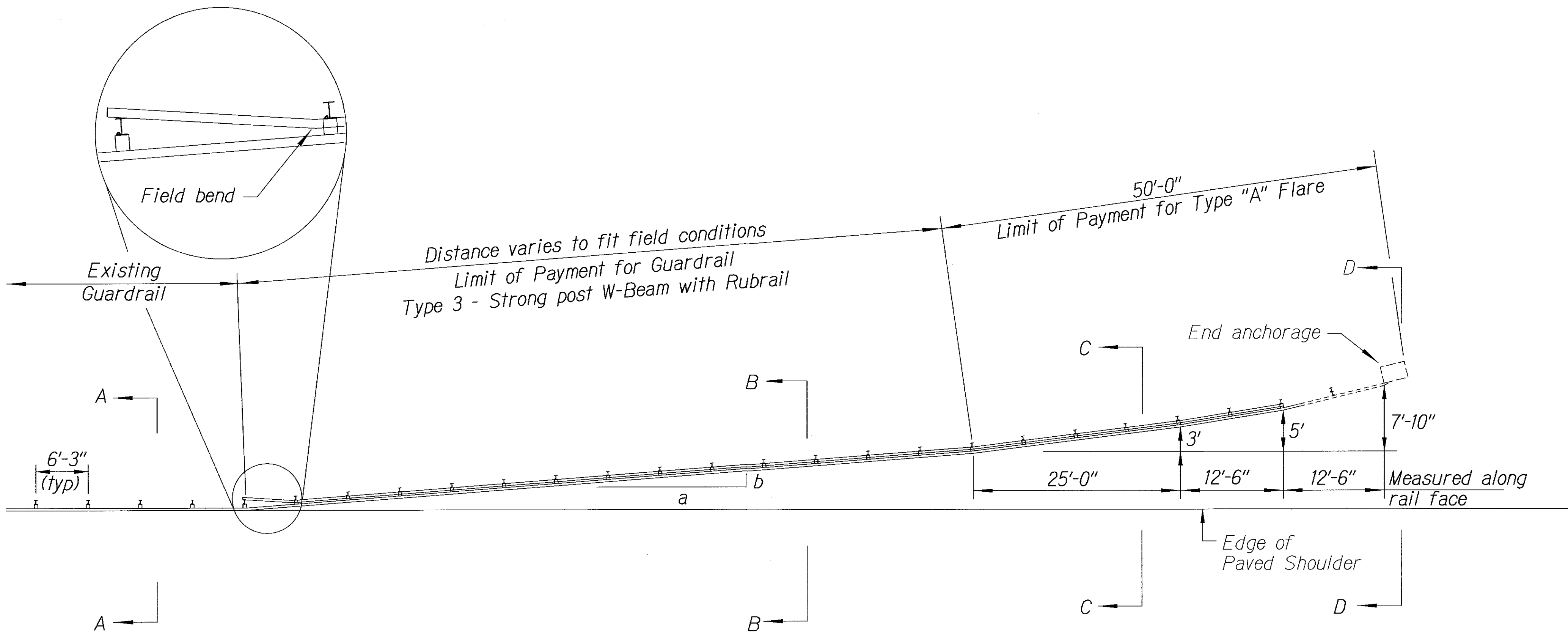


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	61C-01-04M	2004	22	91

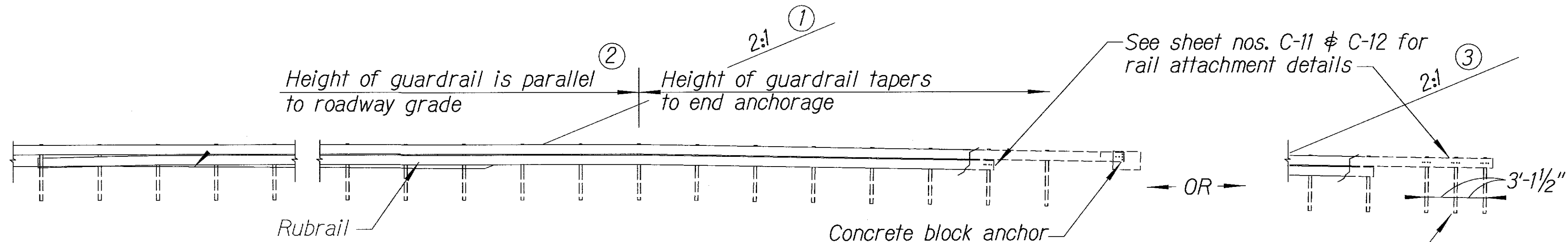
General Notes

1. A 6:1 or flatter slope is desirable. However, a steeper or flatter existing slope may be used.
2. Height of guardrail may be tapered down in elevation to maintain 3'-8" maximum height.
3. All posts are 8'-0" in length from where the guardrail flares away from the shoulder back to the post anchor. Posts for the post anchor are 6'-0" long.
4. The Guardrail Posts shall be located away from the gutter/swale invert.
5. All fasteners, posts, blocks and rail elements shall conform to the latest edition and amendments of "A Guide to Standardized Highway Barrier Rail Hardware," a report prepared and approved by the AASHTO-AGCARTBA Joint Cooperative Committee.

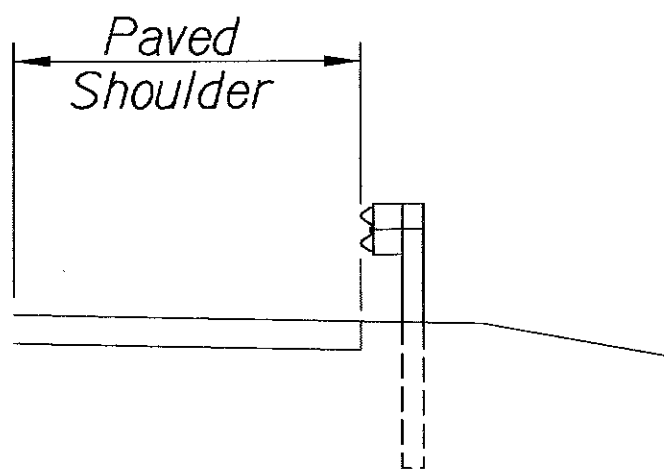


PLAN

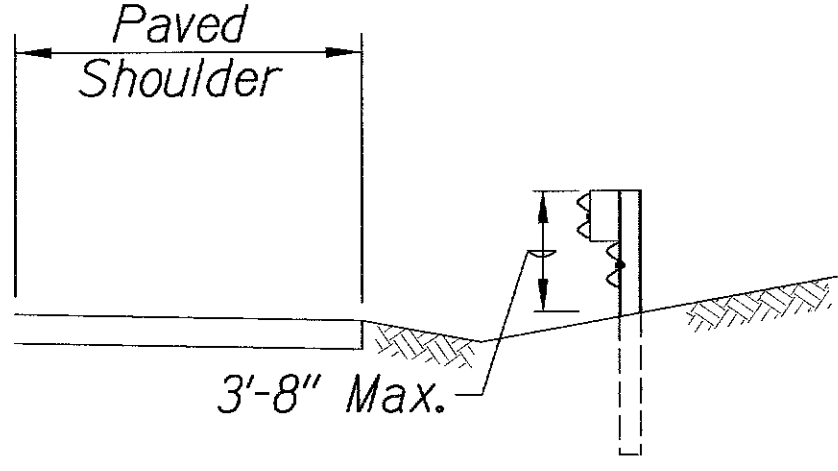
Design speed mph	a:b
68	15:1
62	13:1
56	12:1
50	11:1
43	10:1
37	9:1
31	7:1



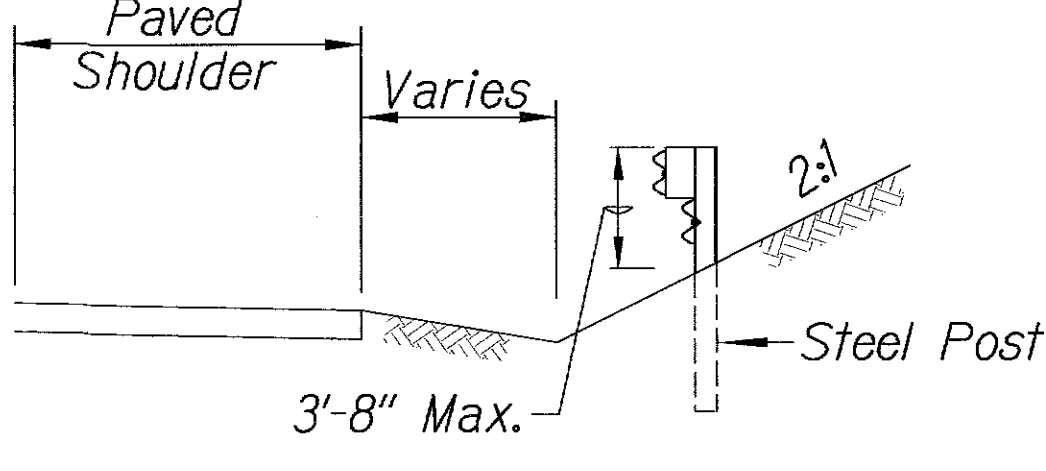
ELEVATION (Profile Along Rail)



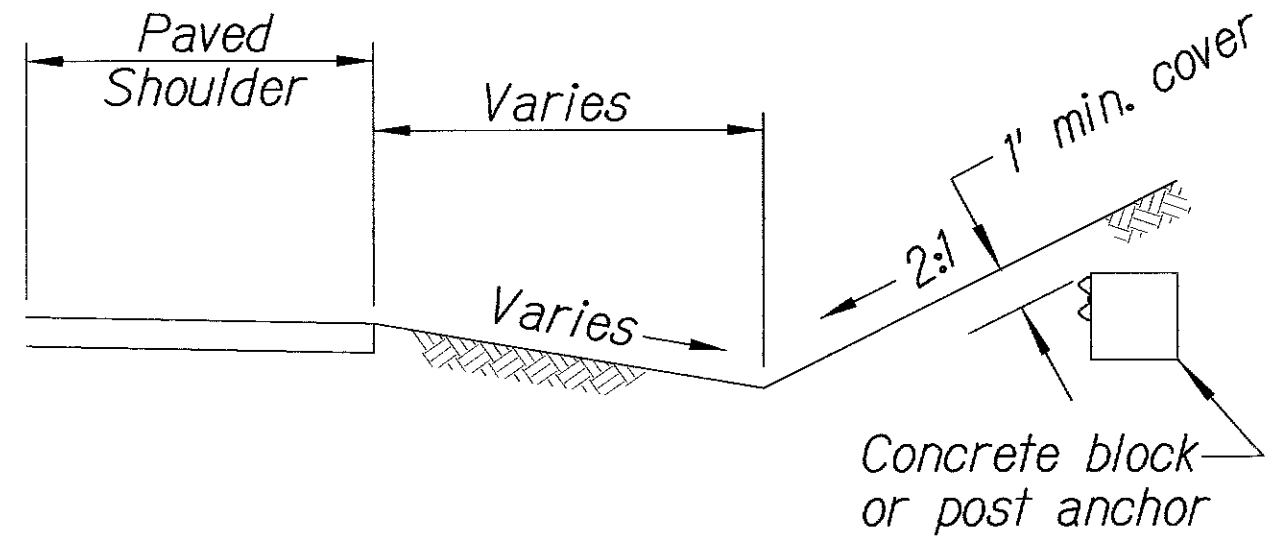
Section A-A



Section B-B  
(With Rubrail)



Section C-C  
(With Rubrail)



BACKSLOPE ANCHOR TERMINAL (WITH TYPE "A" FLARE)

THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.  
Date: 9/24/04

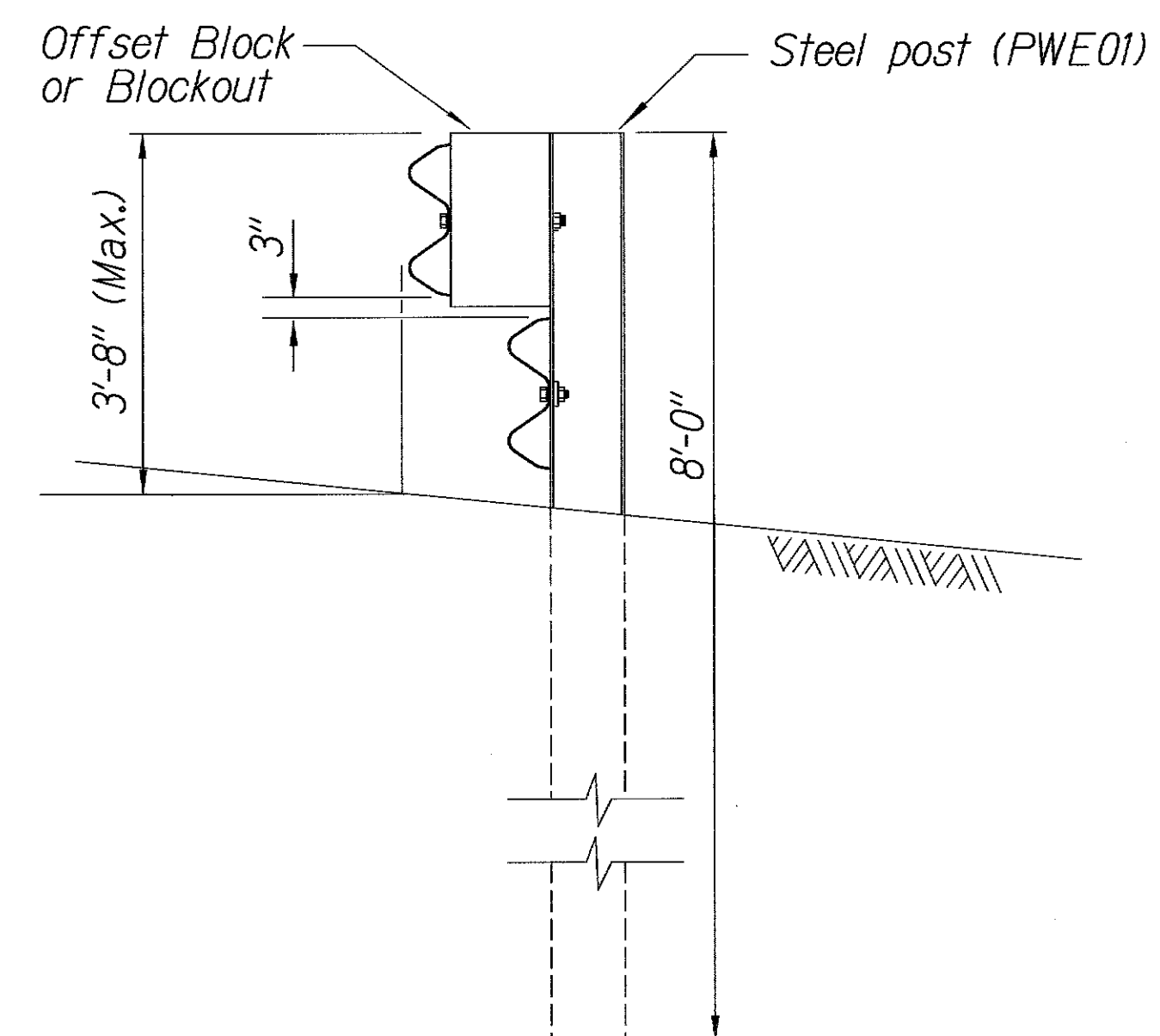
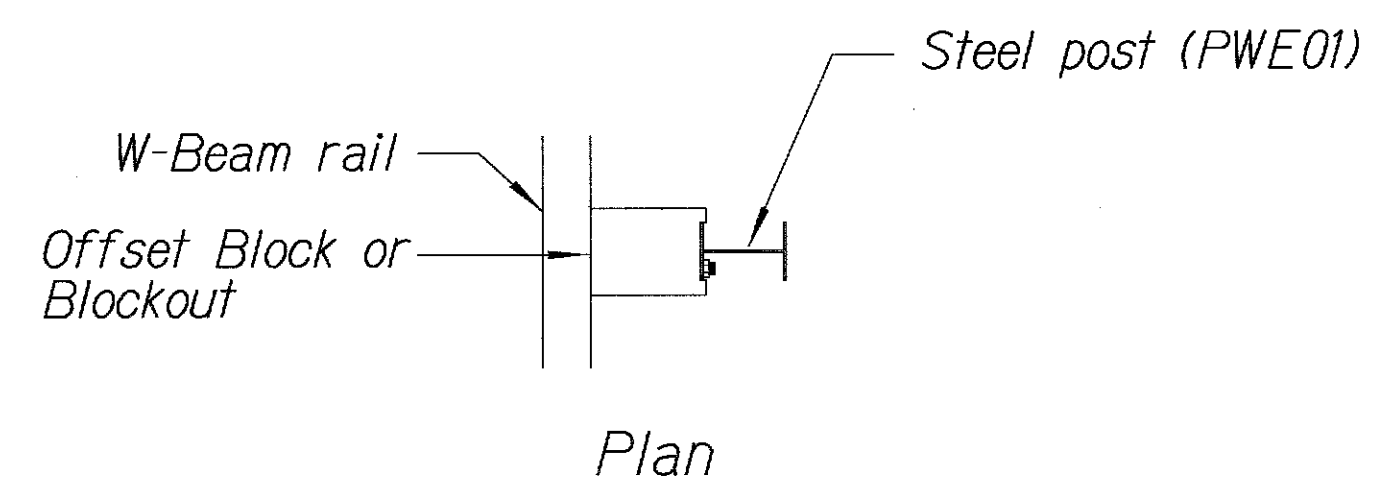
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TYPE "A" FLARE**

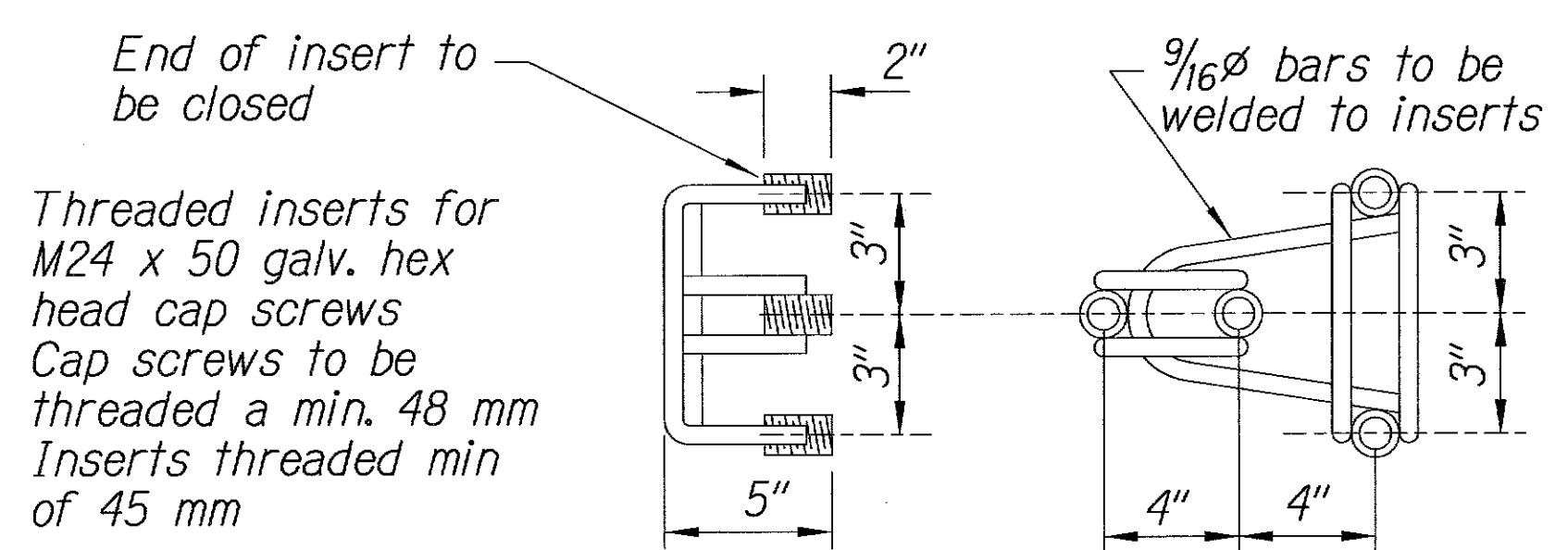
KALANIANA'OLE HIGHWAY  
EMERGENCY LANDSLIDE REPAIRS AT CASTLE JUNCTION

PROJECT NO. 61C-01-04M  
Scale: NTS Date: Sept. 26, 2003

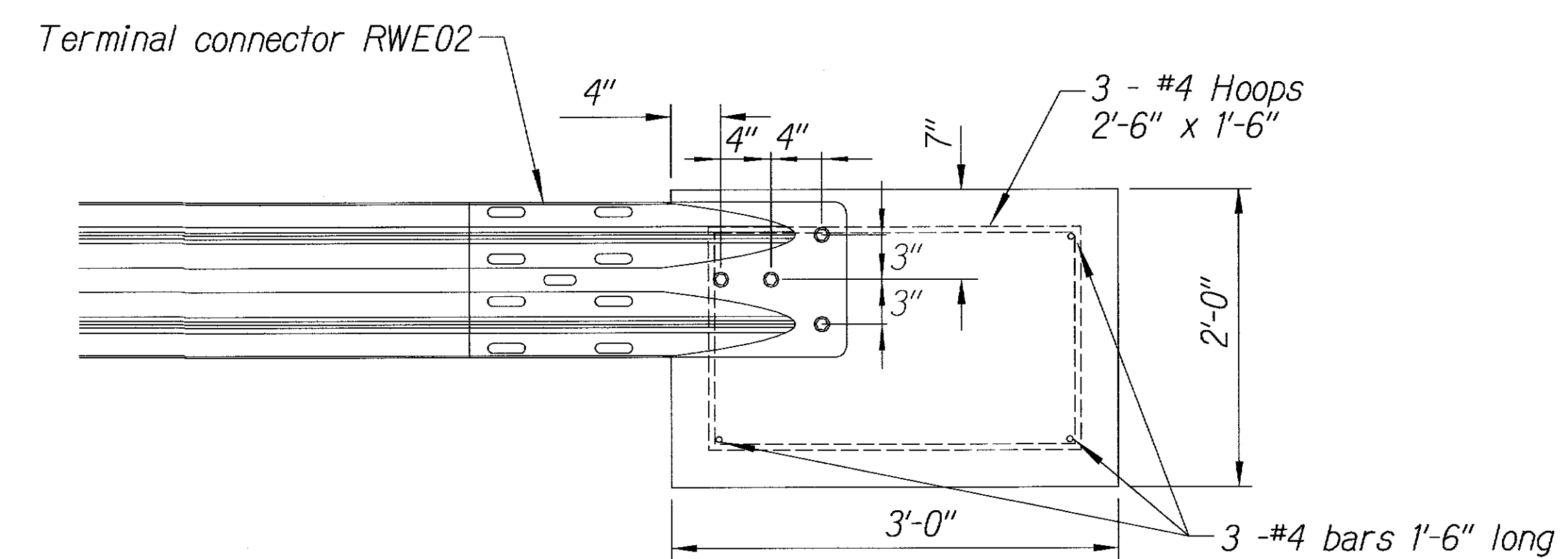
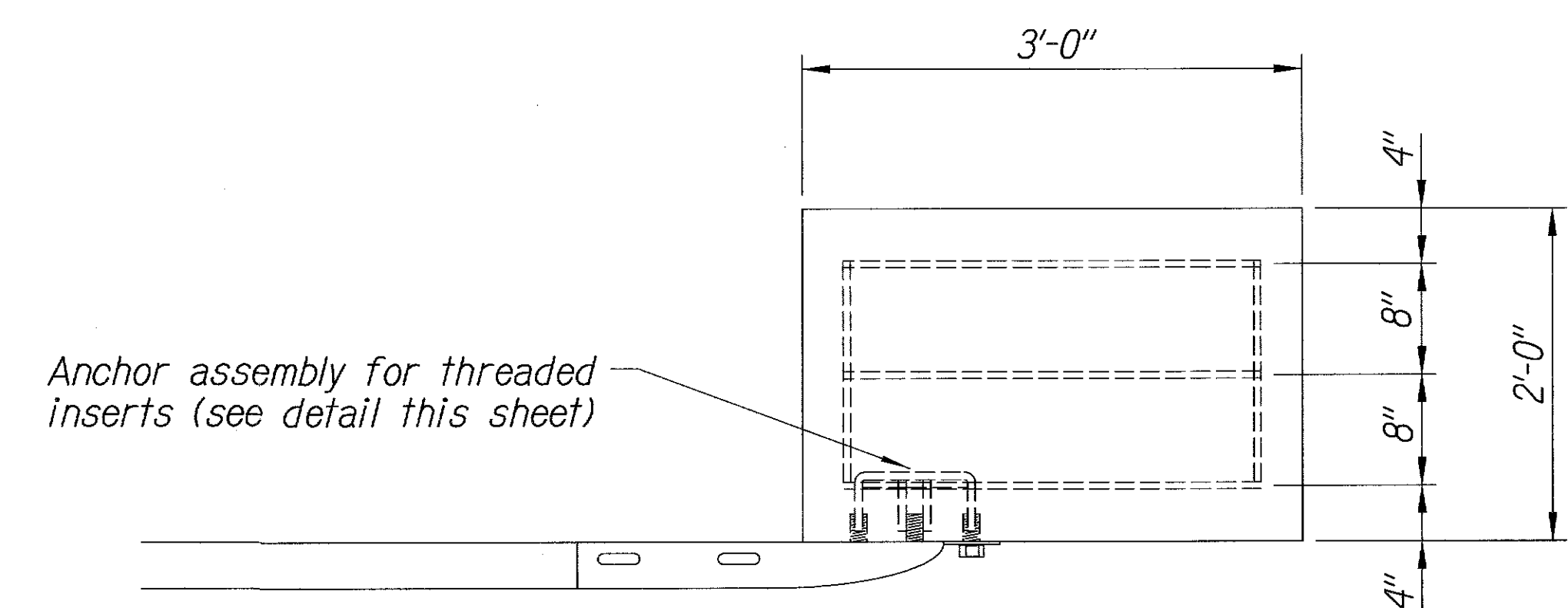
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	61C-01-04M	2004	23	91



STEEL POST GUARDRAIL  
WITH RUBRAIL



ANCHOR ASSEMBLY  
CONCRETE BLOCK ANCHOR



CONCRETE BLOCK ANCHOR  
(2' X 2' X 3')

BACKSLOPE ANCHOR TERMINAL END ANCHORAGE DETAILS  
(TYPE "A" FLARE)

Note:

All fasteners, posts, blocks and rail elements shall conform to the latest edition and amendments of "A Guide to Standardized Highway Barrier Rail Hardware," a report prepared and approved by the AASHTO-AGCARTBA Joint Cooperative Committee.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

4/1/CASTLE JUNCTION/STATE/GADET/Idon

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

*Randall M. Urasaky*  
9/24/04

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

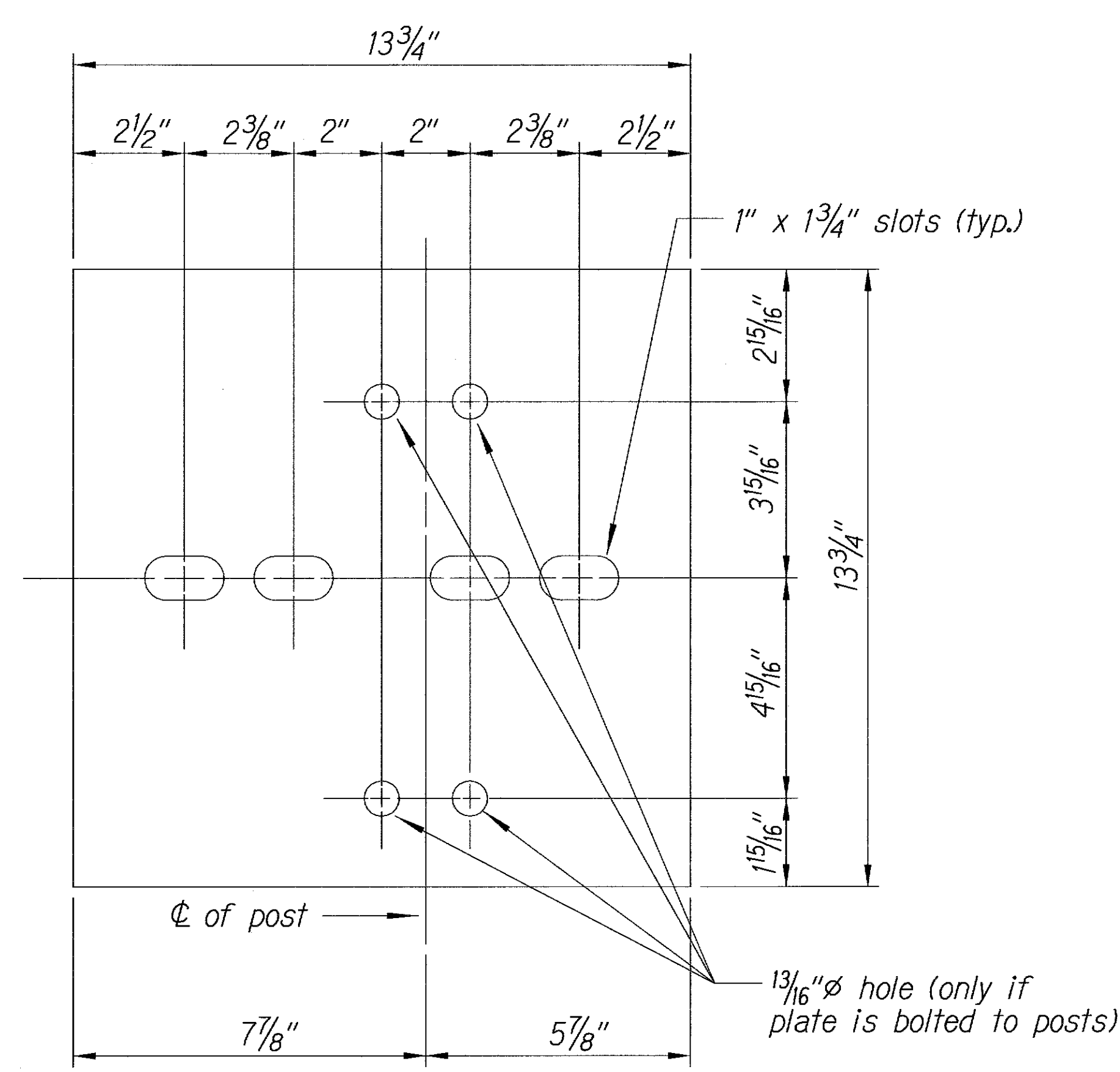
**TYPE "A" FLARE**

KALANIANA'OLE HIGHWAY  
EMERGENCY LANDSLIDE REPAIRS AT CASTLE JUNCTION

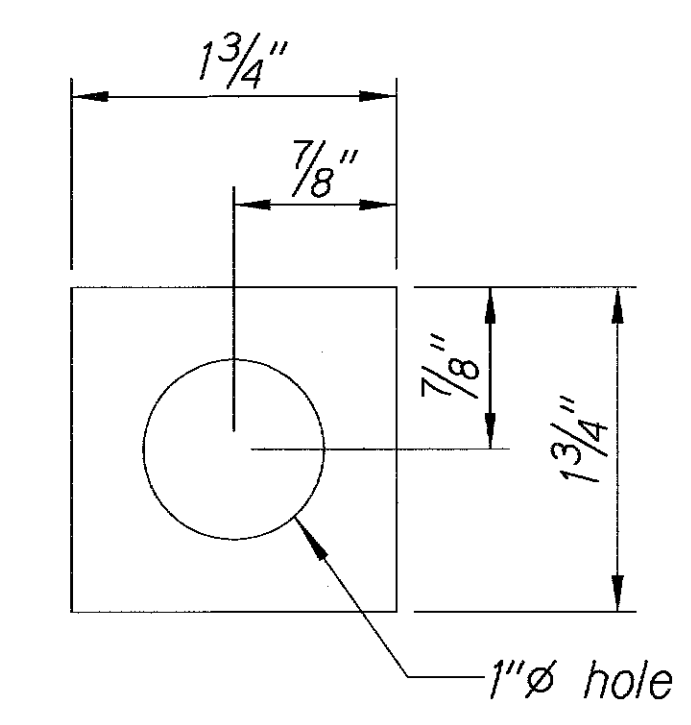
PROJECT NO. 61C-01-04M  
Scale: NTS Date: Sept. 26, 2003

SHEET No. C-11 OF 12 SHEETS

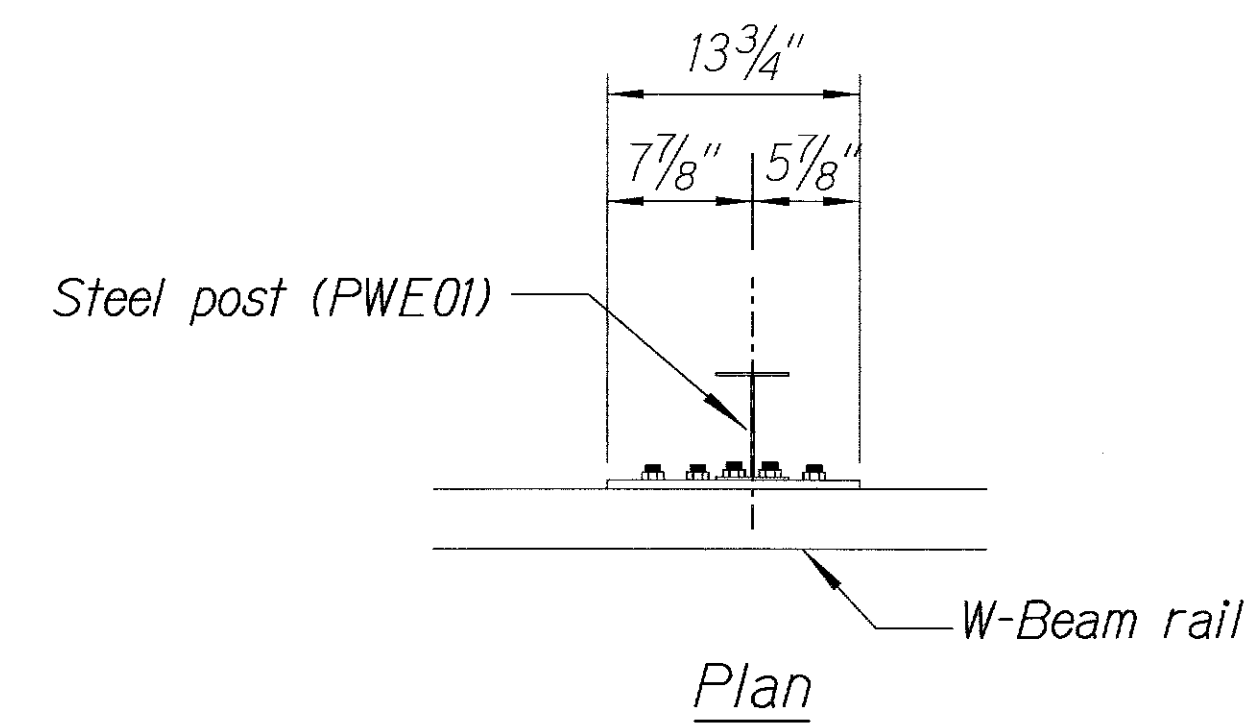
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	61C-01-04M	2004	24	91



Steel Plate - 1/2"  
(Hot-dip Zinc Coated Galvanized  
Welded or Bolted to Post)

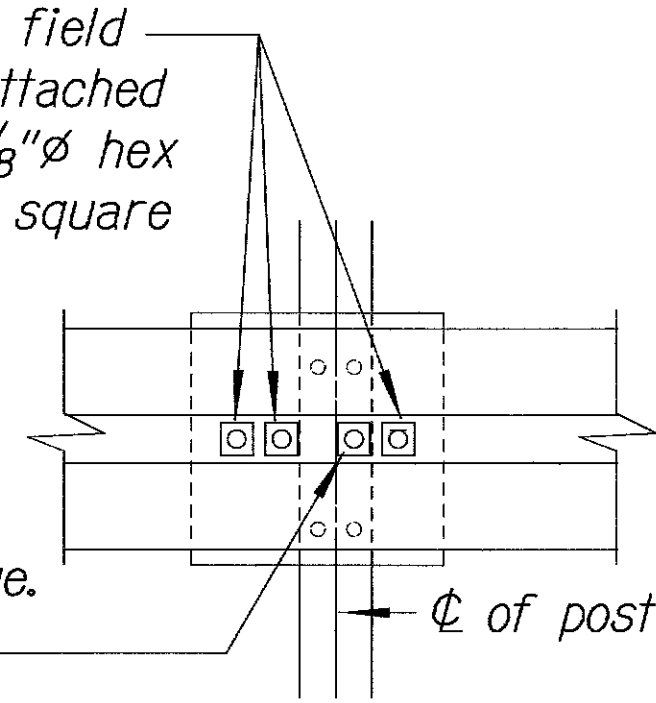


Square Washer  
(3/16" Thick - Hot-dip  
Zinc Coated Galvanized)

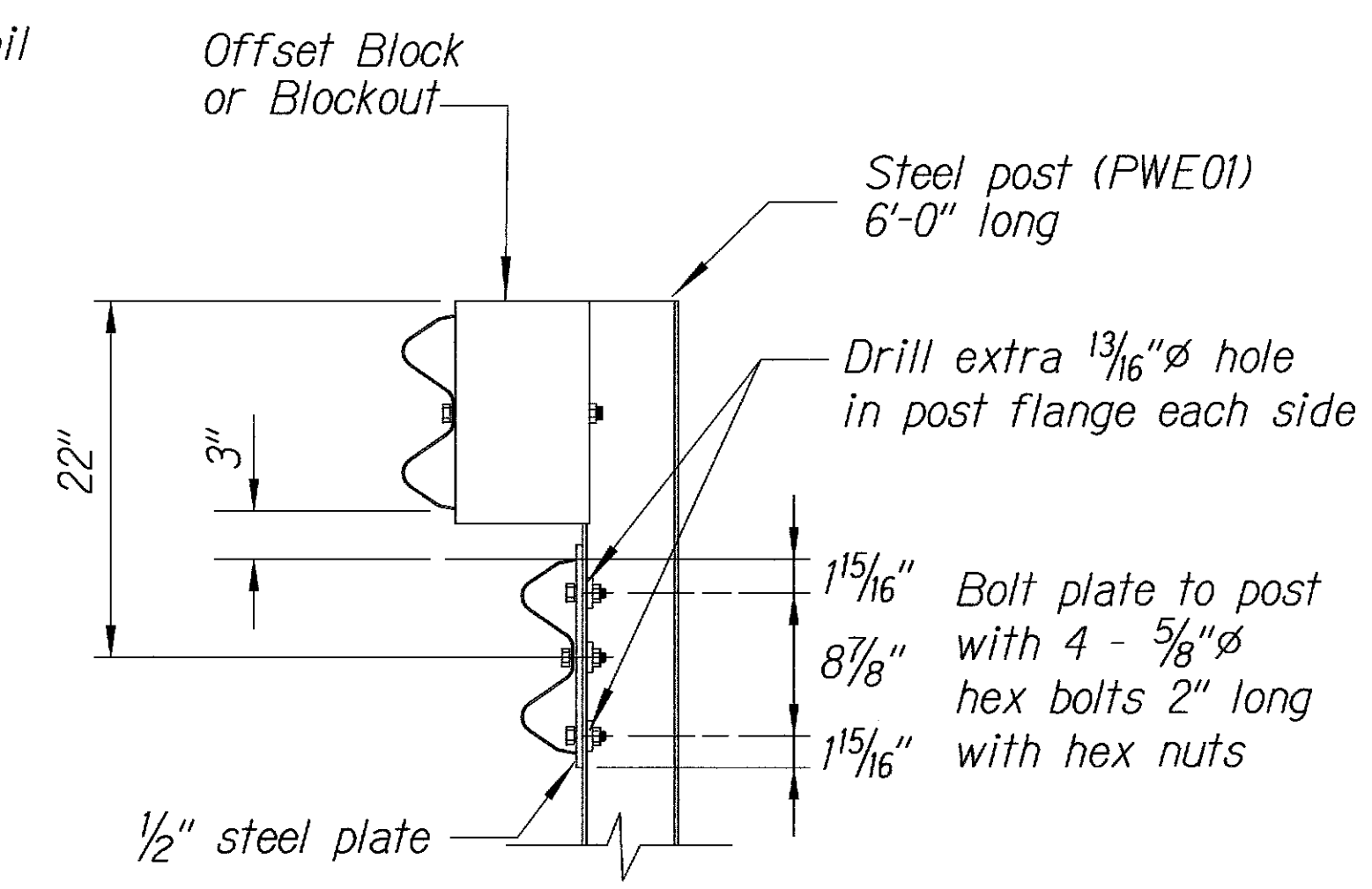


3 - 7/8" holes to be field drilled in rail and attached to steel plate with 7/8" hex bolts 1 5/16" long with square washer

1" holes to be field drilled in rail and through post flange. Attach to steel plate with 7/8" hex bolts 2" long with square washer



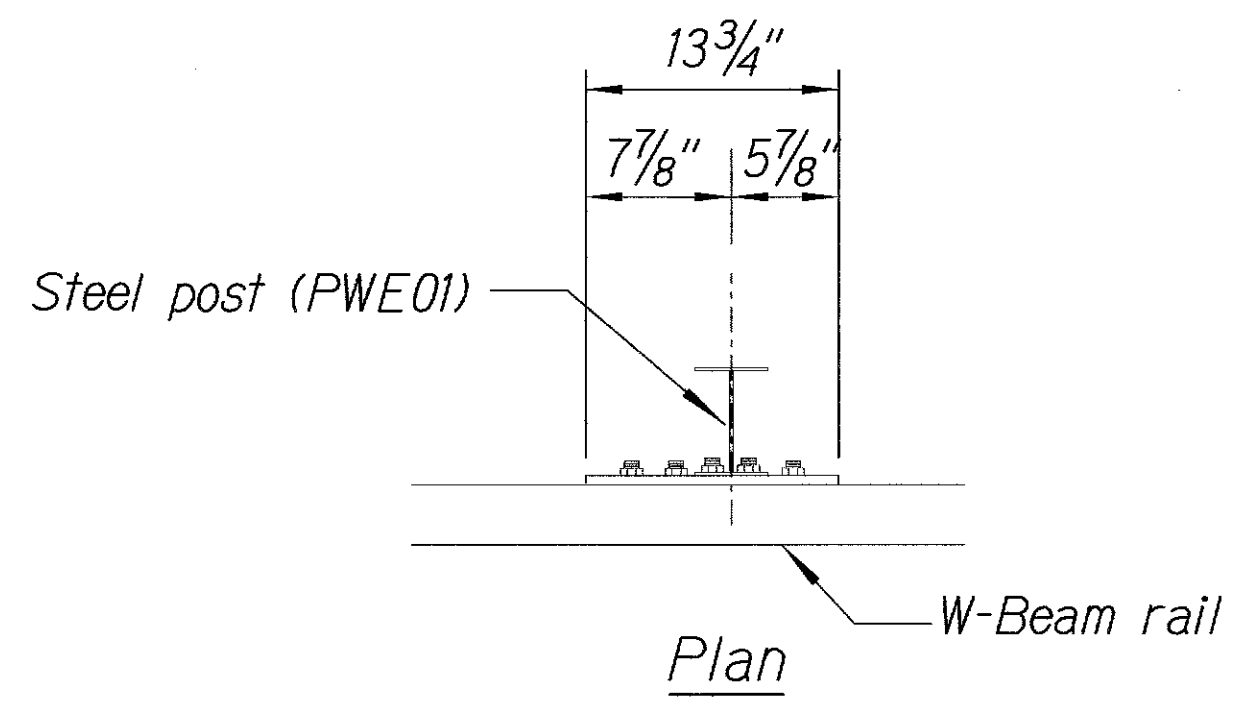
Front View



Elevation

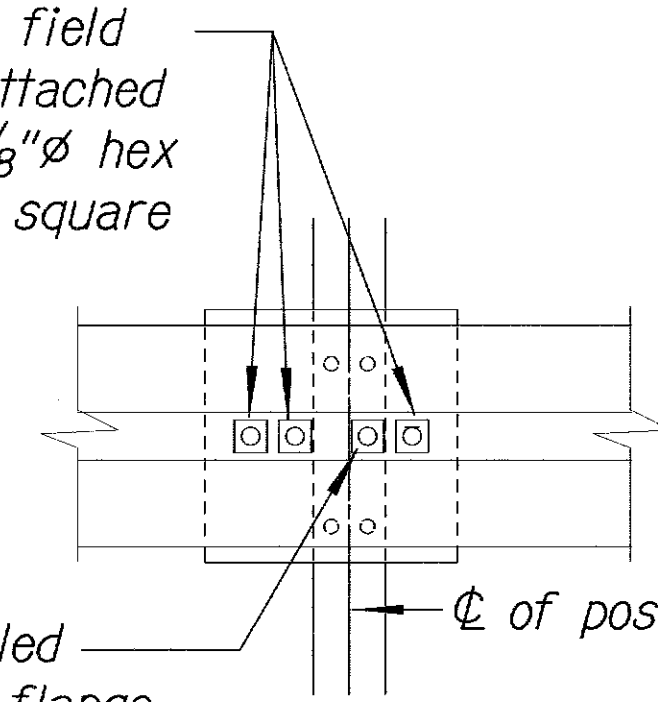
RUBRAIL ANCHOR DETAILS

Note:  
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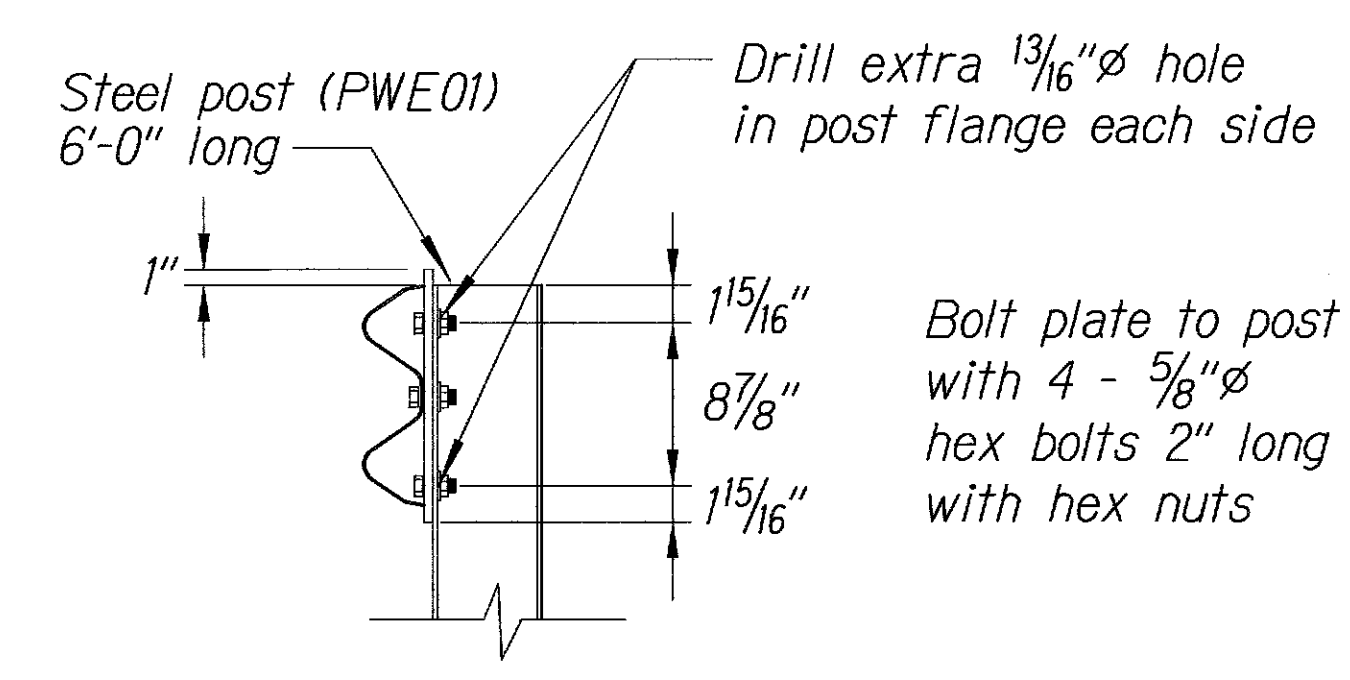


3 - 7/8" holes to be field drilled in rail and attached to steel plate with 7/8" hex bolts 1 5/16" long with square washer

1" holes to be field drilled in rail and through post flange. Attach to steel plate with 7/8" hex bolts 2" long with square washer



Front View



Elevation

POST ANCHOR DETAILS

BACKSLOPE ANCHOR TERMINAL END ANCHORAGE DETAILS  
(TYPE "A" FLARE)

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

*Randall M. Urasaki*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TYPE "A" FLARE**

KALANIANA'OLE HIGHWAY  
EMERGENCY LANDSLIDE REPAIRS AT CASTLE JUNCTION

PROJECT NO. 61C-01-04M  
Scale: NTS Date: Sept. 26, 2003

SHEET No. C-12 OF 12 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
N <sup>o</sup>	

CASTLE JUNCTION/STATE/GADET24gn