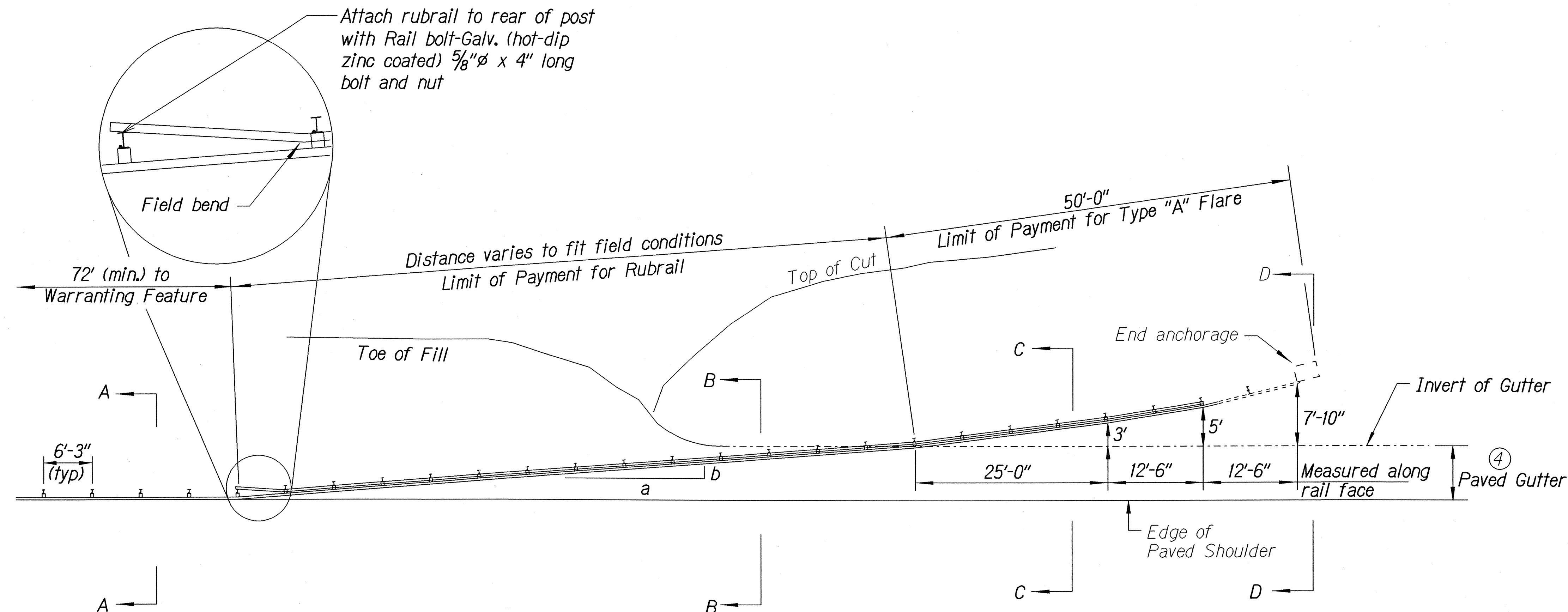


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	440B-01-04M	2004	56	58

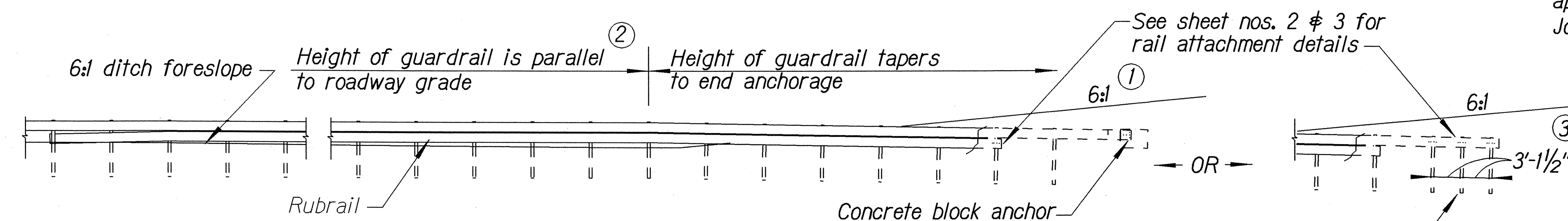
# General Notes

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. Variable Paved Gutter offsets may be used to fit field conditions.
5. The Guardrail Posts shall be located away from the gutter/swale invert.
6. 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.

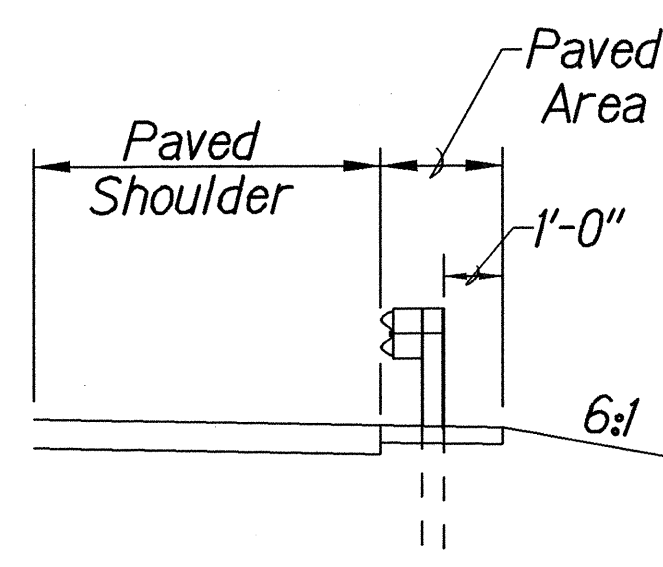


PLAN

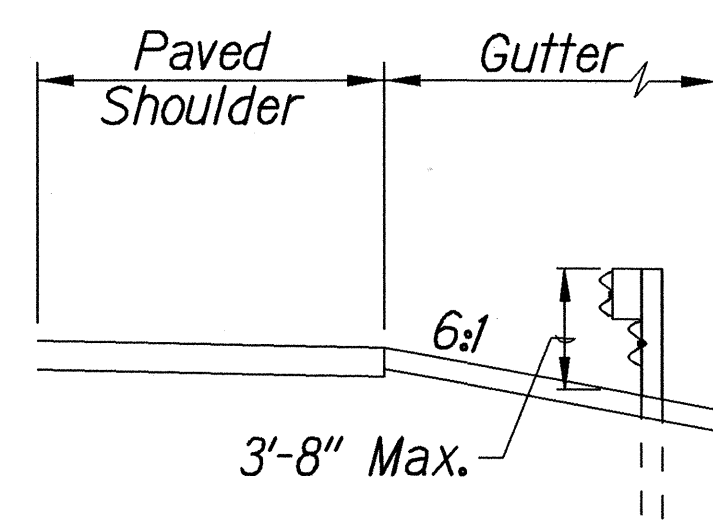
Design speed mph	a:b
68	15:1
62	13:1
56	12:1
50	11:1
43	10:1
37	9:1
31	7:1



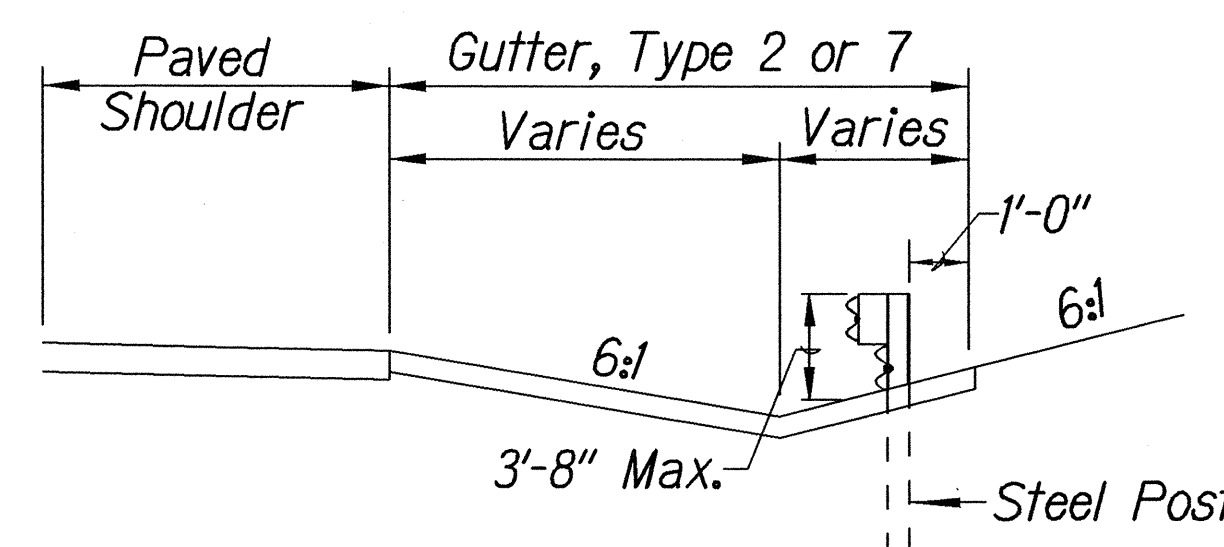
ELEVATION (Profile Along Rail)



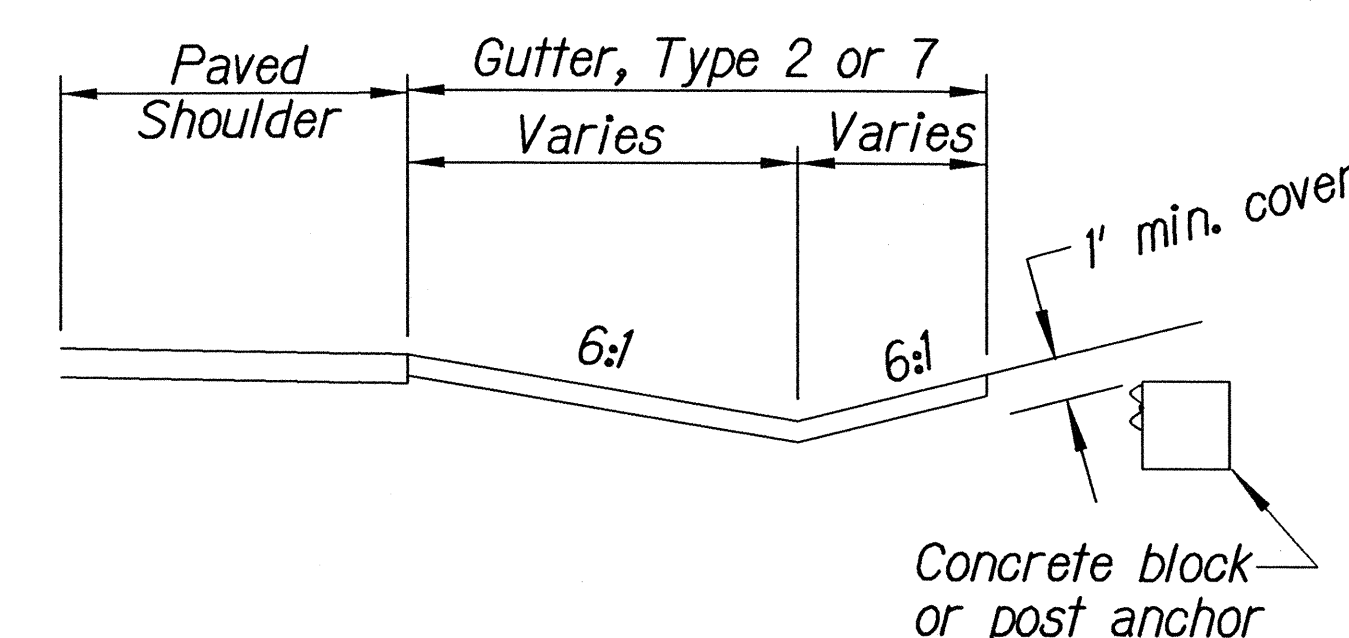
Section A-A



Section B-B  
(With Rubrail)



Section C-C  
(With Rubrail)



Concrete block  
or post anchor

## BACKSLOPE ANCHOR TERMINAL (WITH 6:1 PAVED GUTTER AND TYPE "A" FLARE)

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

TYPE "A" FLARE

MANELE ROAD RESURFACING

Lanai City Towards Manele Bay

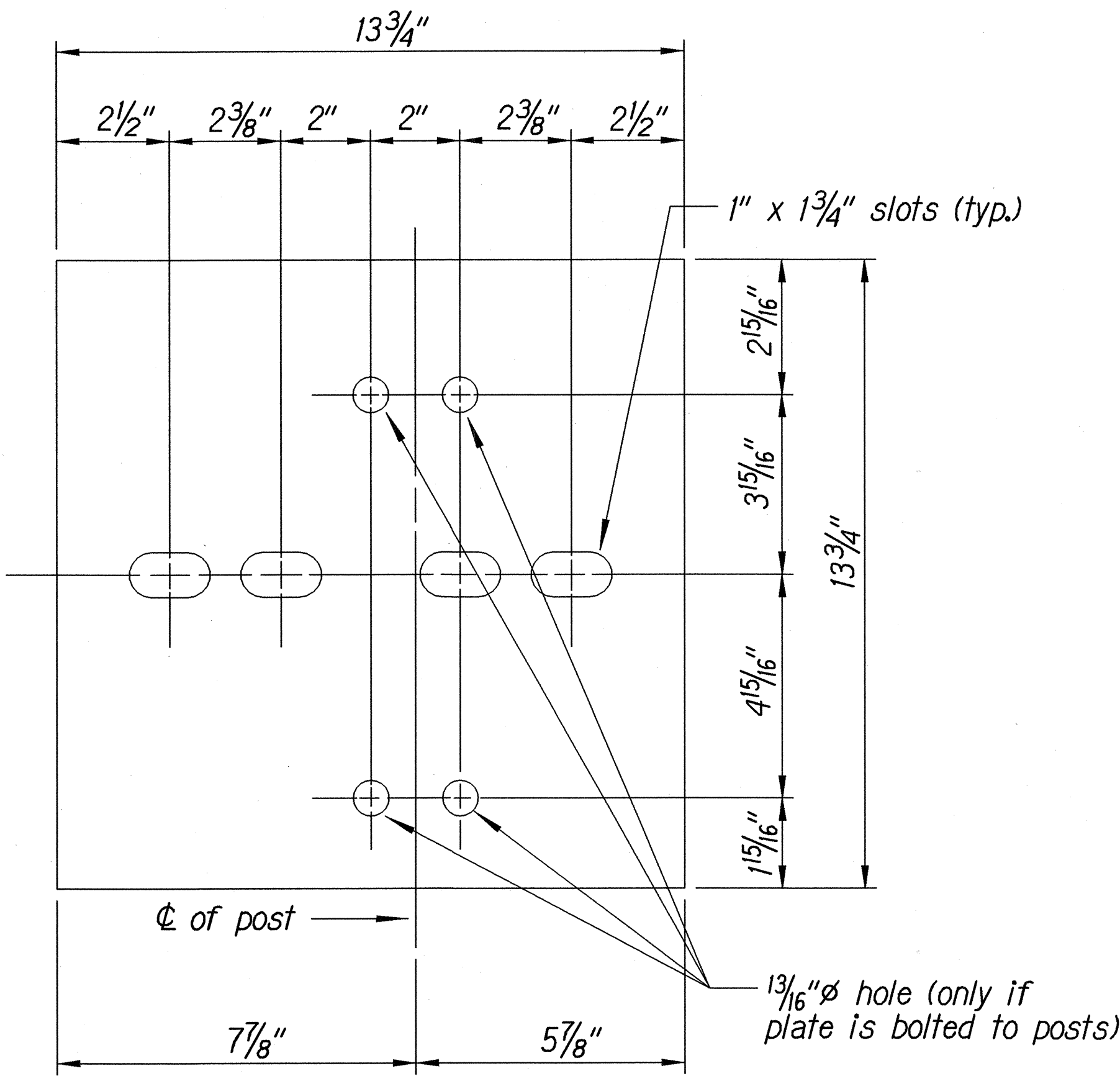
Project No. 440B-01-04M

Scale: NTS

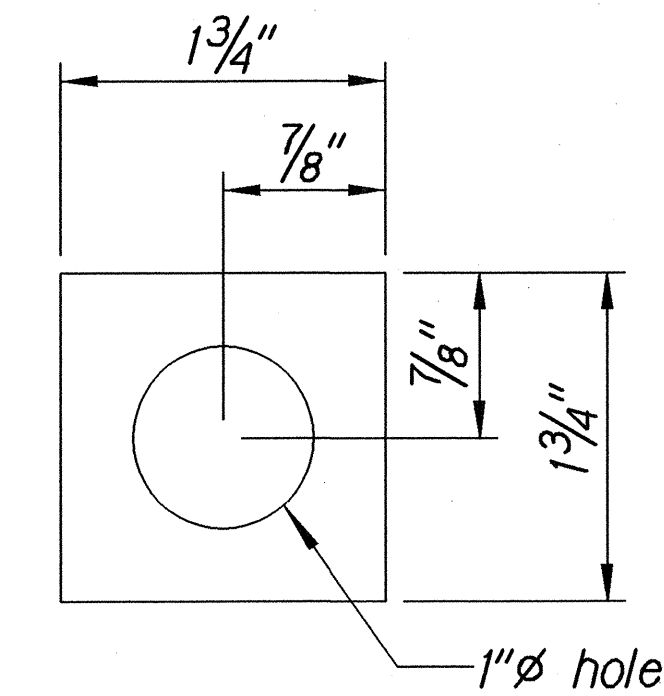
Date: September, 2003

SHEET No. 1 OF 3 SHEETS

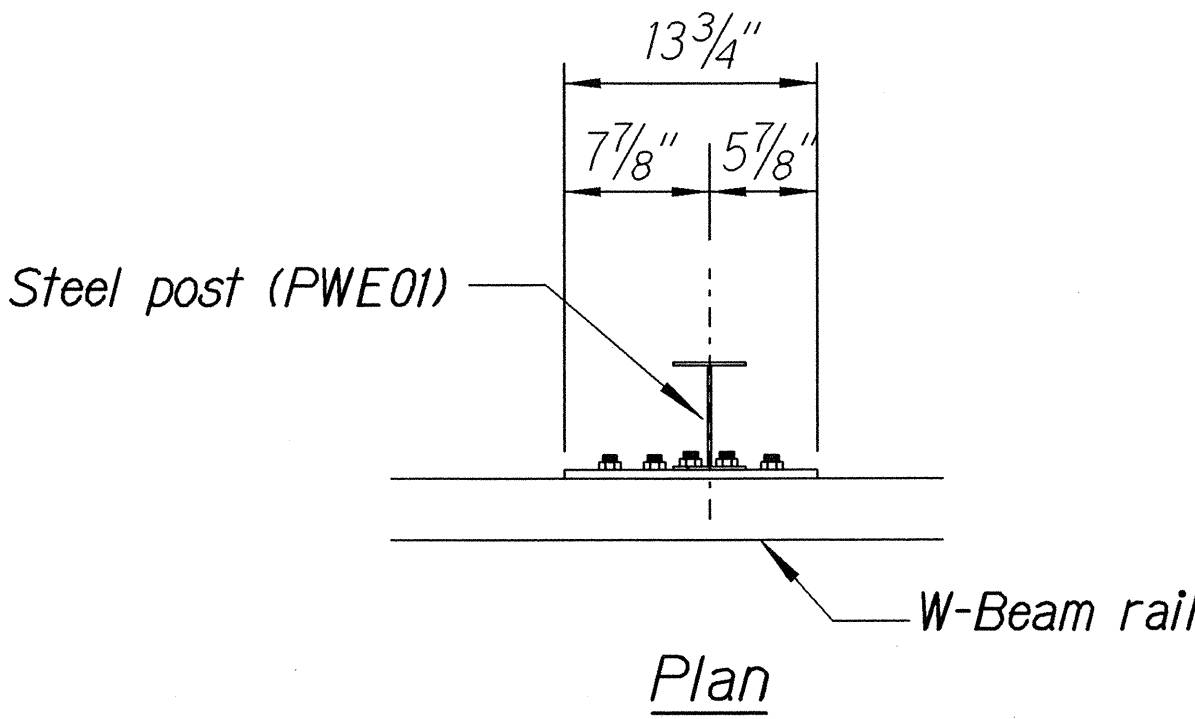
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	440B-01-04M	2003	57	58



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

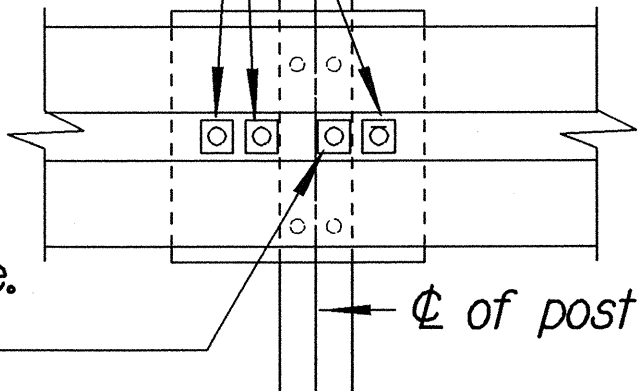


Square Washer  
(3/16" Thick - Hot-dip  
Zinc Coated Galvanized)

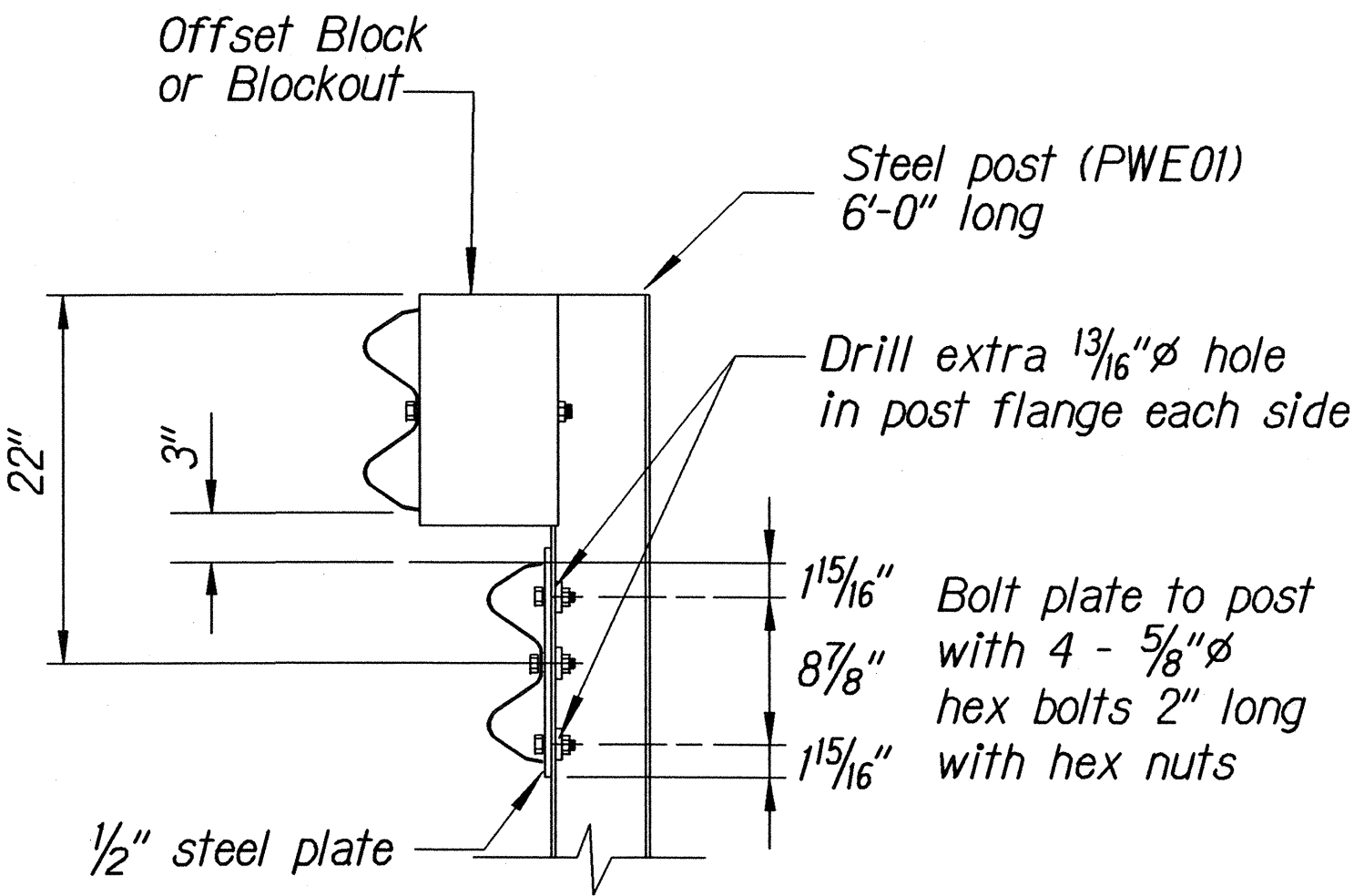


3 - 7/8"ø holes to be field drilled in rail and attached to steel plate with 7/8"ø hex bolts 1 5/16" long with square washer

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

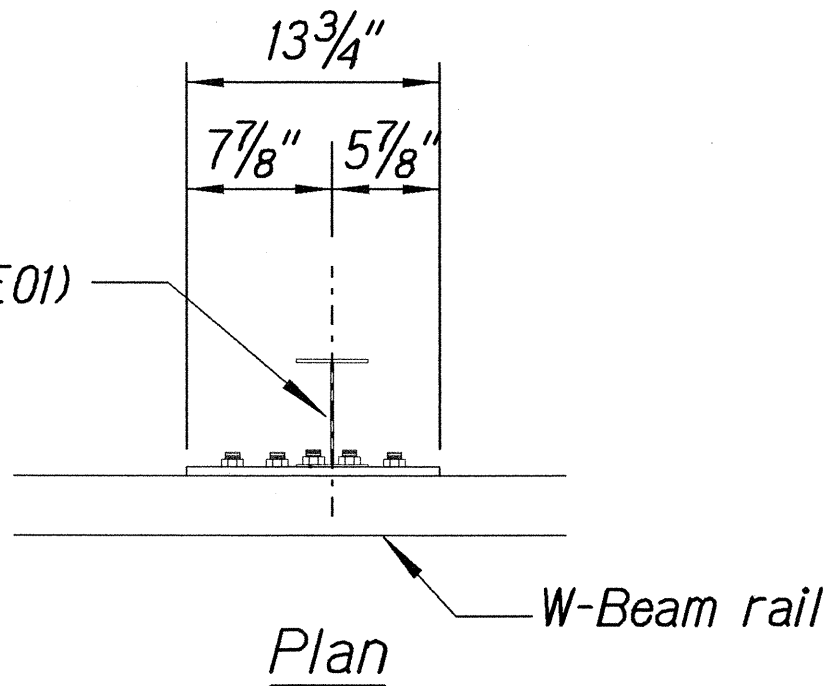


Front View



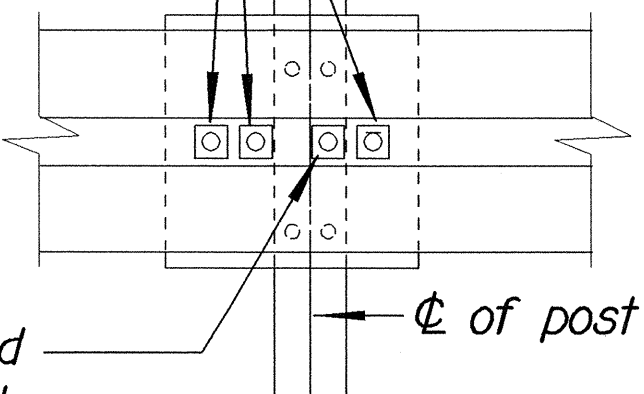
Elevation

RUBRAIL ANCHOR DETAILS

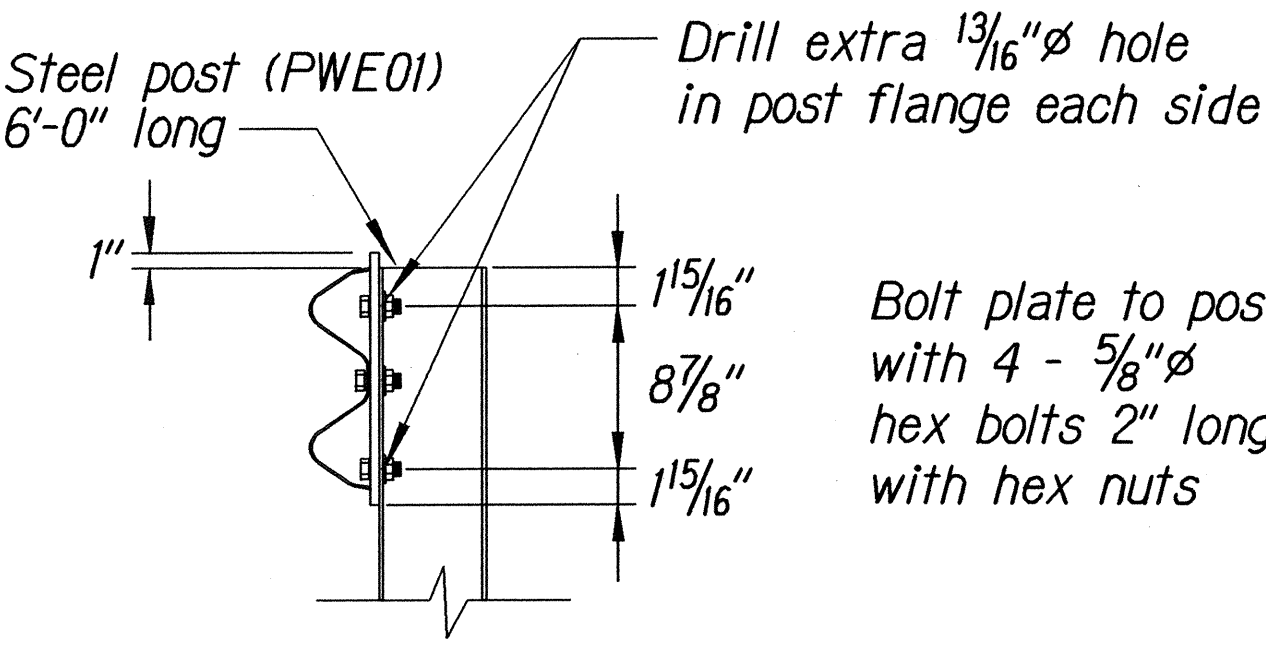


3 - 7/8"ø holes to be field drilled in rail and attached to steel plate with 7/8"ø hex bolts 1 5/16" long with square washer

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



Front View



Elevation

POST ANCHOR DETAILS

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.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TYPE "A" FLARE**

**MANELE ROAD RESURFACING**

**Lanai City Towards Manele Bay**

**Project No. 440B-01-04M**

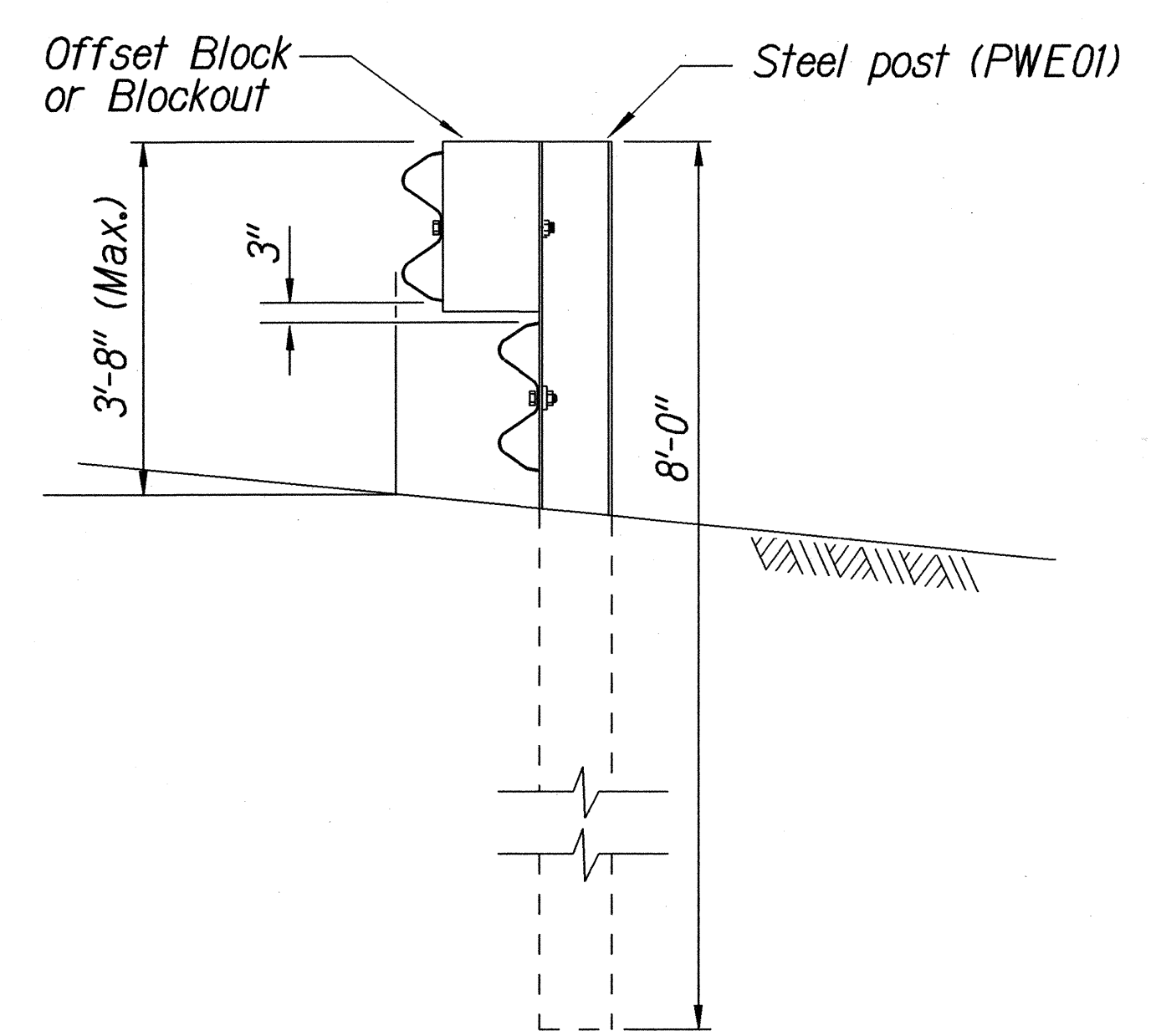
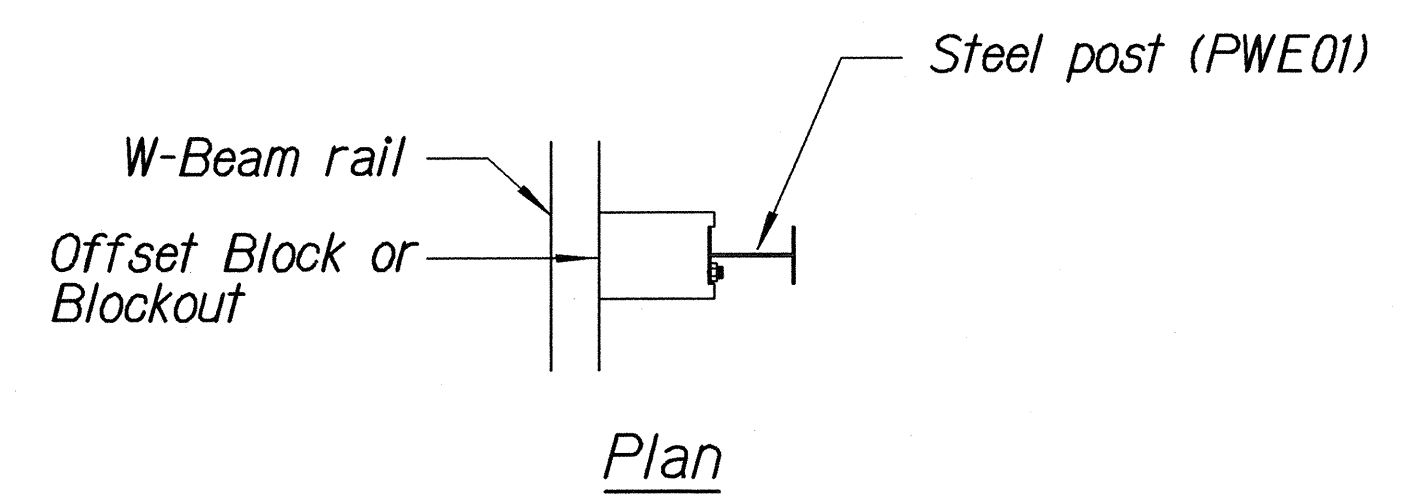
Scale: NTS
Date: September, 2003

SHEET No. 2 OF 3 SHEETS

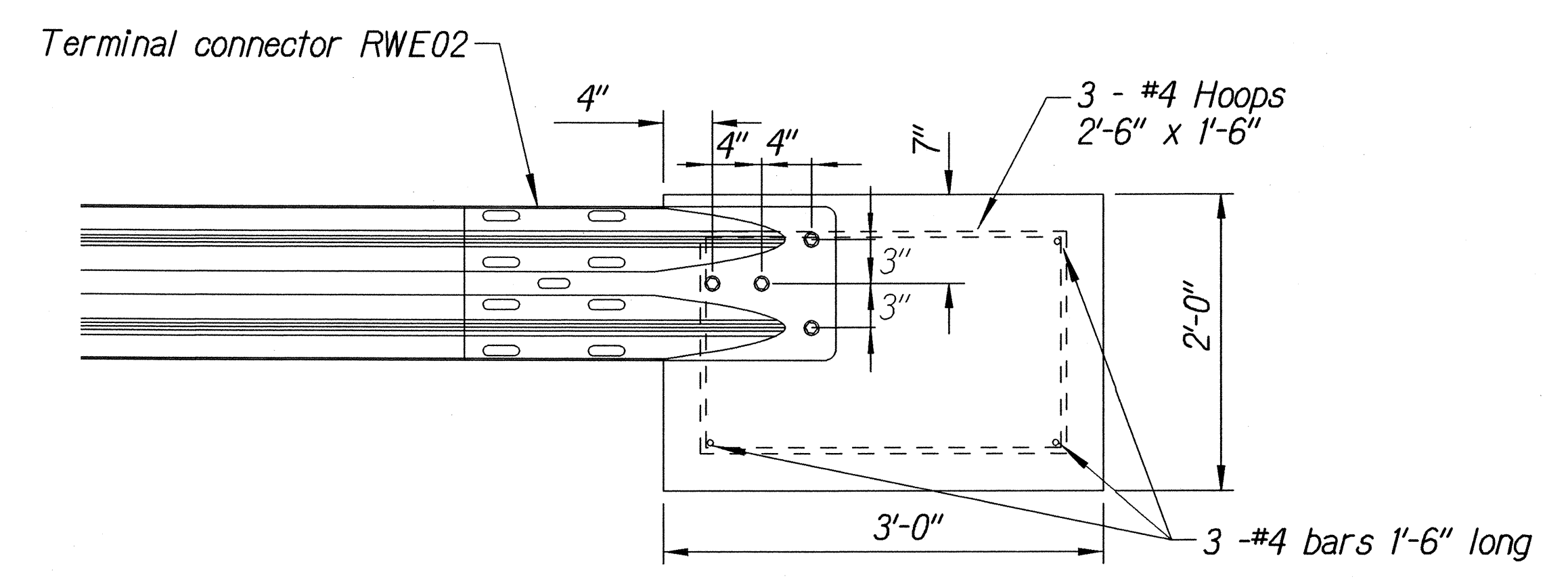
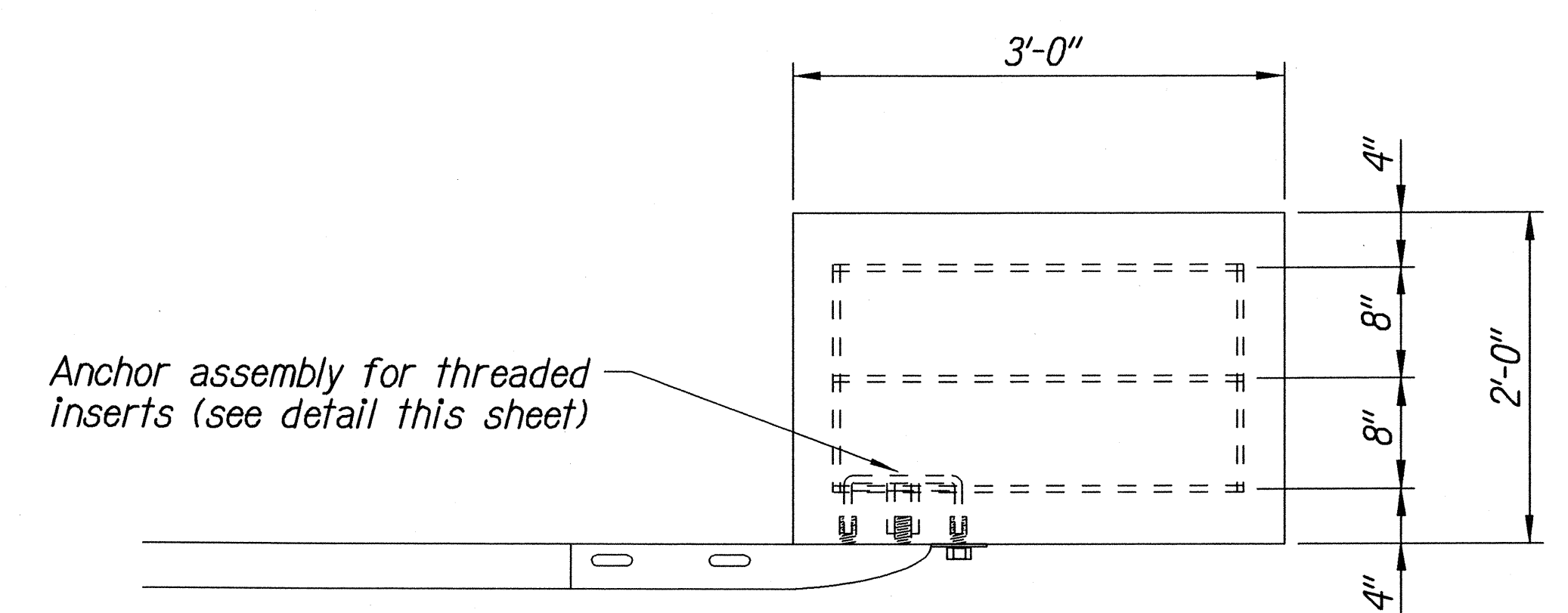
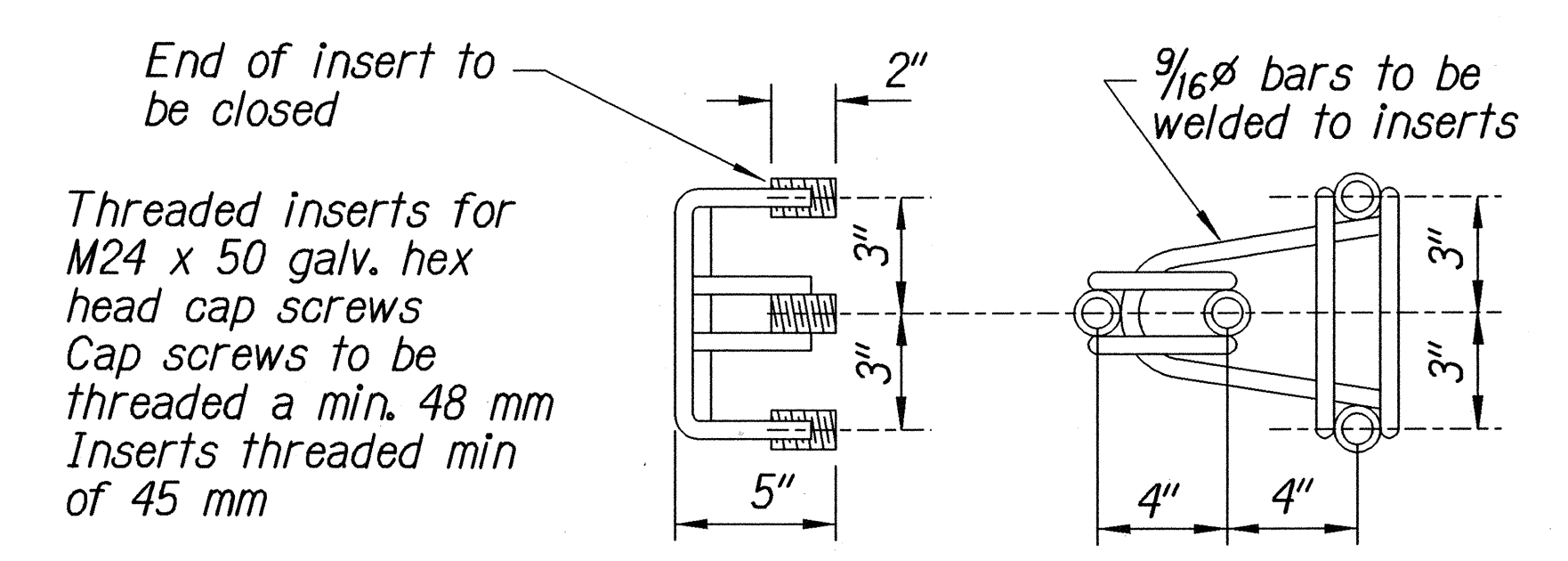
SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO. 0000	
NO. 0000	

13.01/09 tdruby quadrail/94det2.dgn (standard plan TE-58 07/01/86, TE-59 11/03/89 & TE-60 07/01/86)

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	440B-01-04M	2004	58	58



STEEL POST GUARDRAIL  
WITH RUBRAIL



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	DESIGNED BY	
CHECKED BY	CHECKED BY	
N. 1000		

13/01/99 14/01/99 15/01/99 16/01/99 17/01/99 18/01/99 19/01/99 20/01/99 21/01/99 22/01/99 23/01/99 24/01/99 25/01/99 26/01/99 27/01/99 28/01/99 29/01/99 30/01/99 31/01/99 01/02/00 02/02/00 03/02/00 04/02/00 05/02/00 06/02/00 07/02/00 08/02/00 09/02/00 10/02/00 11/02/00 12/02/00 13/02/00 14/02/00 15/02/00 16/02/00 17/02/00 18/02/00 19/02/00 20/02/00 21/02/00 22/02/00 23/02/00 24/02/00 25/02/00 26/02/00 27/02/00 28/02/00 29/02/00 01/03/00 02/03/00 03/03/00 04/03/00 05/03/00 06/03/00 07/03/00 08/03/00 09/03/00 10/03/00 11/03/00 12/03/00 13/03/00 14/03/00 15/03/00 16/03/00 17/03/00 18/03/00 19/03/00 20/03/00 21/03/00 22/03/00 23/03/00 24/03/00 25/03/00 26/03/00 27/03/00 28/03/00 29/03/00 30/03/00 31/03/00 01/04/00 02/04/00 03/04/00 04/04/00 05/04/00 06/04/00 07/04/00 08/04/00 09/04/00 10/04/00 11/04/00 12/04/00 13/04/00 14/04/00 15/04/00 16/04/00 17/04/00 18/04/00 19/04/00 20/04/00 21/04/00 22/04/00 23/04/00 24/04/00 25/04/00 26/04/00 27/04/00 28/04/00 29/04/00 30/04/00 01/05/00 02/05/00 03/05/00 04/05/00 05/05/00 06/05/00 07/05/00 08/05/00 09/05/00 10/05/00 11/05/00 12/05/00 13/05/00 14/05/00 15/05/00 16/05/00 17/05/00 18/05/00 19/05/00 20/05/00 21/05/00 22/05/00 23/05/00 24/05/00 25/05/00 26/05/00 27/05/00 28/05/00 29/05/00 30/05/00 31/05/00 01/06/00 02/06/00 03/06/00 04/06/00 05/06/00 06/06/00 07/06/00 08/06/00 09/06/00 10/06/00 11/06/00 12/06/00 13/06/00 14/06/00 15/06/00 16/06/00 17/06/00 18/06/00 19/06/00 20/06/00 21/06/00 22/06/00 23/06/00 24/06/00 25/06/00 26/06/00 27/06/00 28/06/00 29/06/00 30/06/00 01/07/00 02/07/00 03/07/00 04/07/00 05/07/00 06/07/00 07/07/00 08/07/00 09/07/00 10/07/00 11/07/00 12/07/00 13/07/00 14/07/00 15/07/00 16/07/00 17/07/00 18/07/00 19/07/00 20/07/00 21/07/00 22/07/00 23/07/00 24/07/00 25/07/00 26/07/00 27/07/00 28/07/00 29/07/00 30/07/00 31/07/00 01/08/00 02/08/00 03/08/00 04/08/00 05/08/00 06/08/00 07/08/00 08/08/00 09/08/00 10/08/00 11/08/00 12/08/00 13/08/00 14/08/00 15/08/00 16/08/00 17/08/00 18/08/00 19/08/00 20/08/00 21/08/00 22/08/00 23/08/00 24/08/00 25/08/00 26/08/00 27/08/00 28/08/00 29/08/00 30/08/00 31/08/00 01/09/00 02/09/00 03/09/00 04/09/00 05/09/00 06/09/00 07/09/00 08/09/00 09/09/00 10/09/00 11/09/00 12/09/00 13/09/00 14/09/00 15/09/00 16/09/00 17/09/00 18/09/00 19/09/00 20/09/00 21/09/00 22/09/00 23/09/00 24/09/00 25/09/00 26/09/00 27/09/00 28/09/00 29/09/00 30/09/00 01/10/00 02/10/00 03/10/00 04/10/00 05/10/00 06/10/00 07/10/00 08/10/00 09/10/00 10/10/00 11/10/00 12/10/00 13/10/00 14/10/00 15/10/00 16/10/00 17/10/00 18/10/00 19/10/00 20/10/00 21/10/00 22/10/00 23/10/00 24/10/00 25/10/00 26/10/00 27/10/00 28/10/00 29/10/00 30/10/00 31/10/00 01/11/00 02/11/00 03/11/00 04/11/00 05/11/00 06/11/00 07/11/00 08/11/00 09/11/00 10/11/00 11/11/00 12/11/00 13/11/00 14/11/00 15/11/00 16/11/00 17/11/00 18/11/00 19/11/00 20/11/00 21/11/00 22/11/00 23/11/00 24/11/00 25/11/00 26/11/00 27/11/00 28/11/00 29/11/00 30/11/00 01/12/00 02/12/00 03/12/00 04/12/00 05/12/00 06/12/00 07/12/00 08/12/00 09/12/00 10/12/00 11/12/00 12/12/00 13/12/00 14/12/00 15/12/00 16/12/00 17/12/00 18/12/00 19/12/00 20/12/00 21/12/00 22/12/00 23/12/00 24/12/00 25/12/00 26/12/00 27/12/00 28/12/00 29/12/00 30/12/00 31/12/00

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TYPE "A" FLARE**

MANELE ROAD RESURFACING  
Lanai City Towards Manele Bay  
Project No. 440B-01-04M

Scale: NTS Date: September, 2003

SHEET No. 3 OF 3 SHEETS