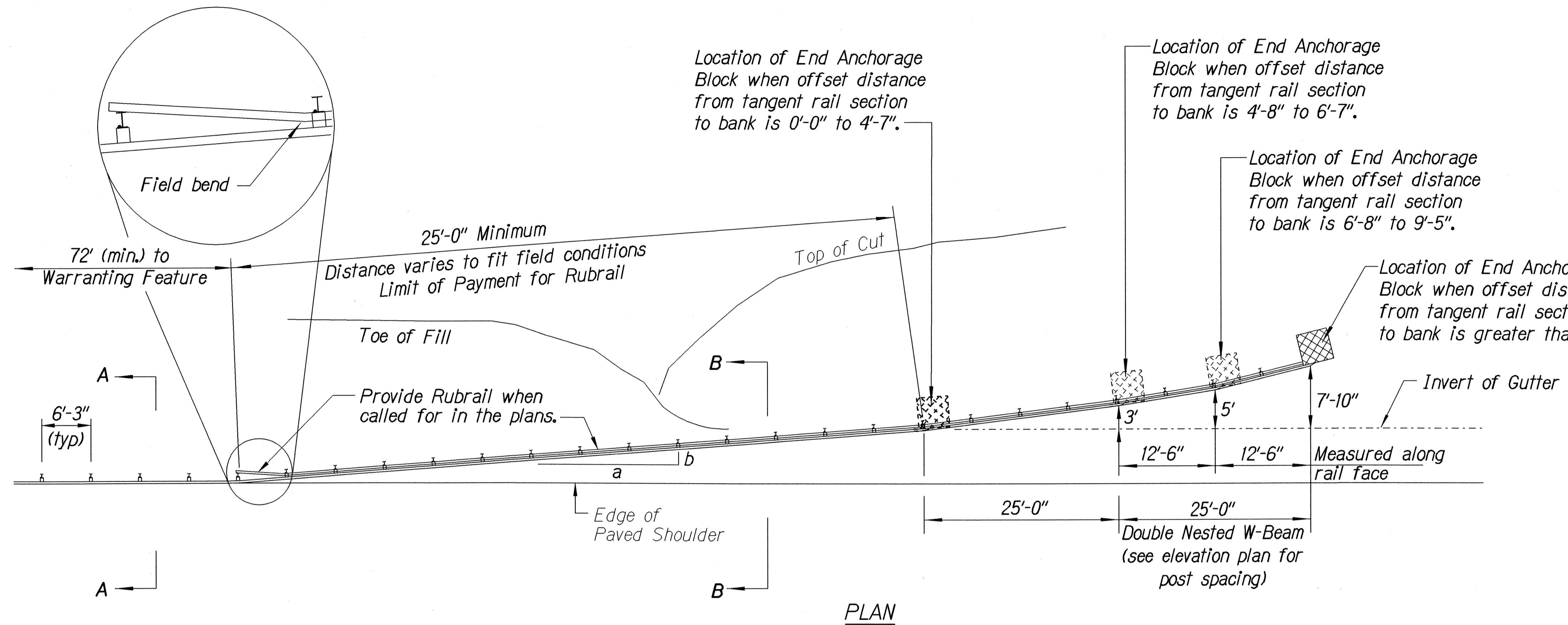


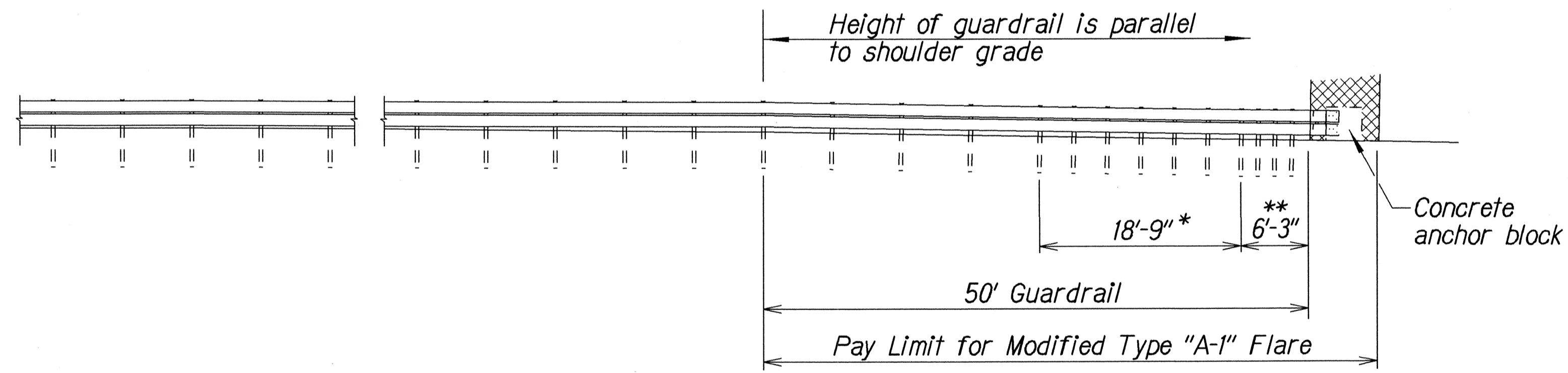
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-050-1(24)	2002	29	40

General Notes

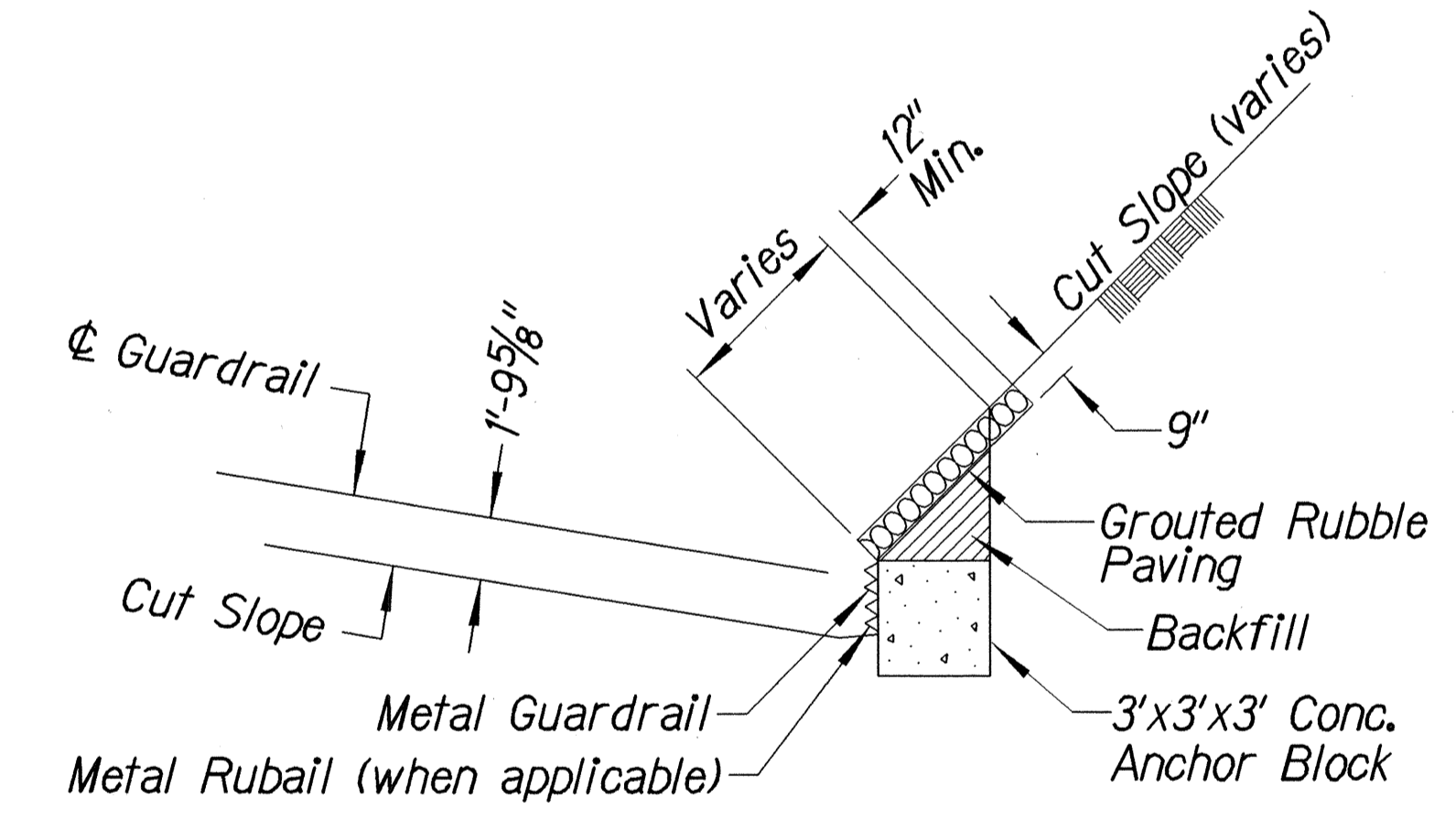
- All posts are 6'-0" in length within the 50'-0" pay limit for the Modified Type "A-1" Flare without rubrail.
- Whenever swales or a change in grade is encountered within the 50'-0" pay limit for the Modified Type "A-1" Flare, a rubrail shall be installed and all posts shall have a minimum embedment of 4'-0". Post lengths shall be adjusted to provide the minimum embedment.
- 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 and HDOT's Statewide Guideline for Permanent Highway Safety Hardware.
- Limit of payment for Modified Type "A-1" Flare shall be 50'-0" from End Shoe including Rubrail (when applicable), Anchor Block and GRP work.
- Excavation, Anchor Block, Backfill and GRP work shall be considered incidental to the Modified Type "A-1" Flare.



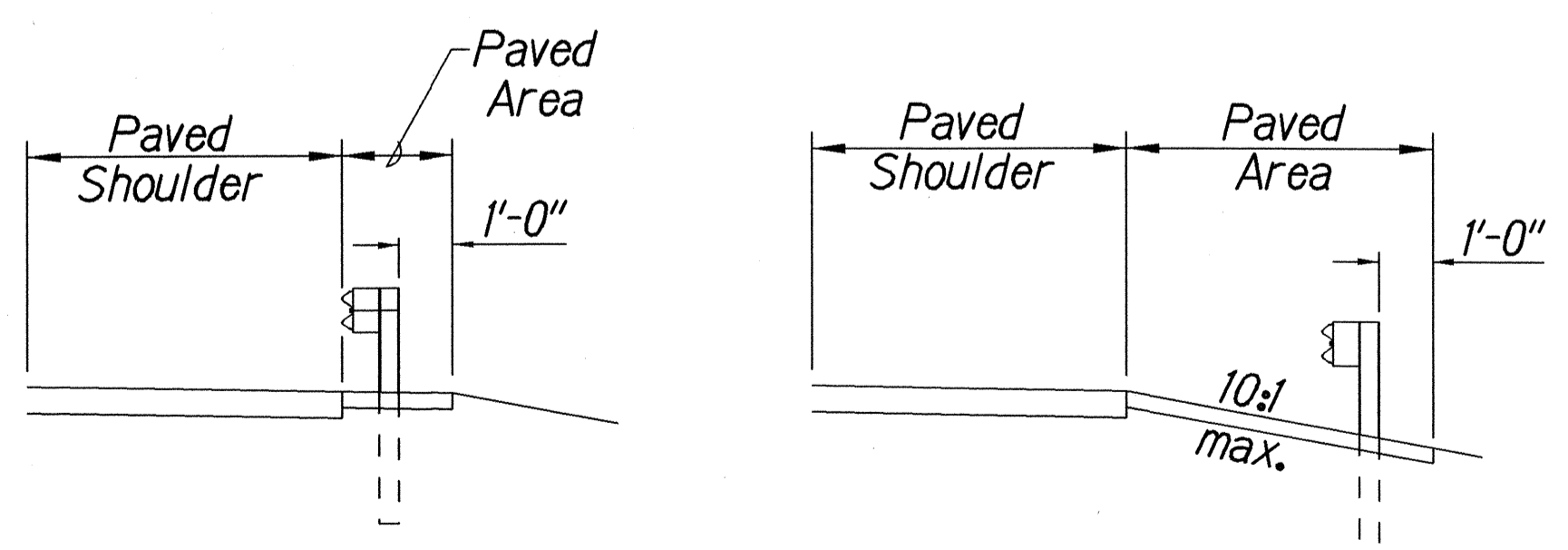
Design speed mph	a:b
68	15:1
62	13:1
56	12:1
50	11:1
43	10:1
37	9:1
31	7:1



ELEVATION (Profile Along Rail)

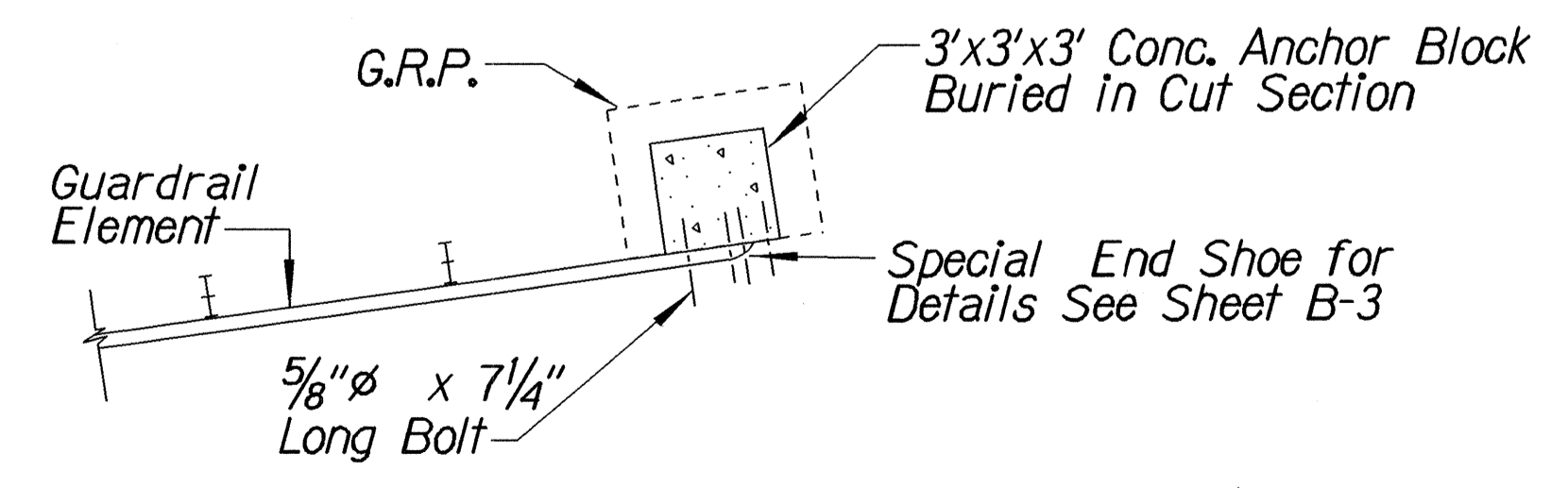


ANCHOR BLOCK IN CUT SECTION



Section A-A

Section B-B

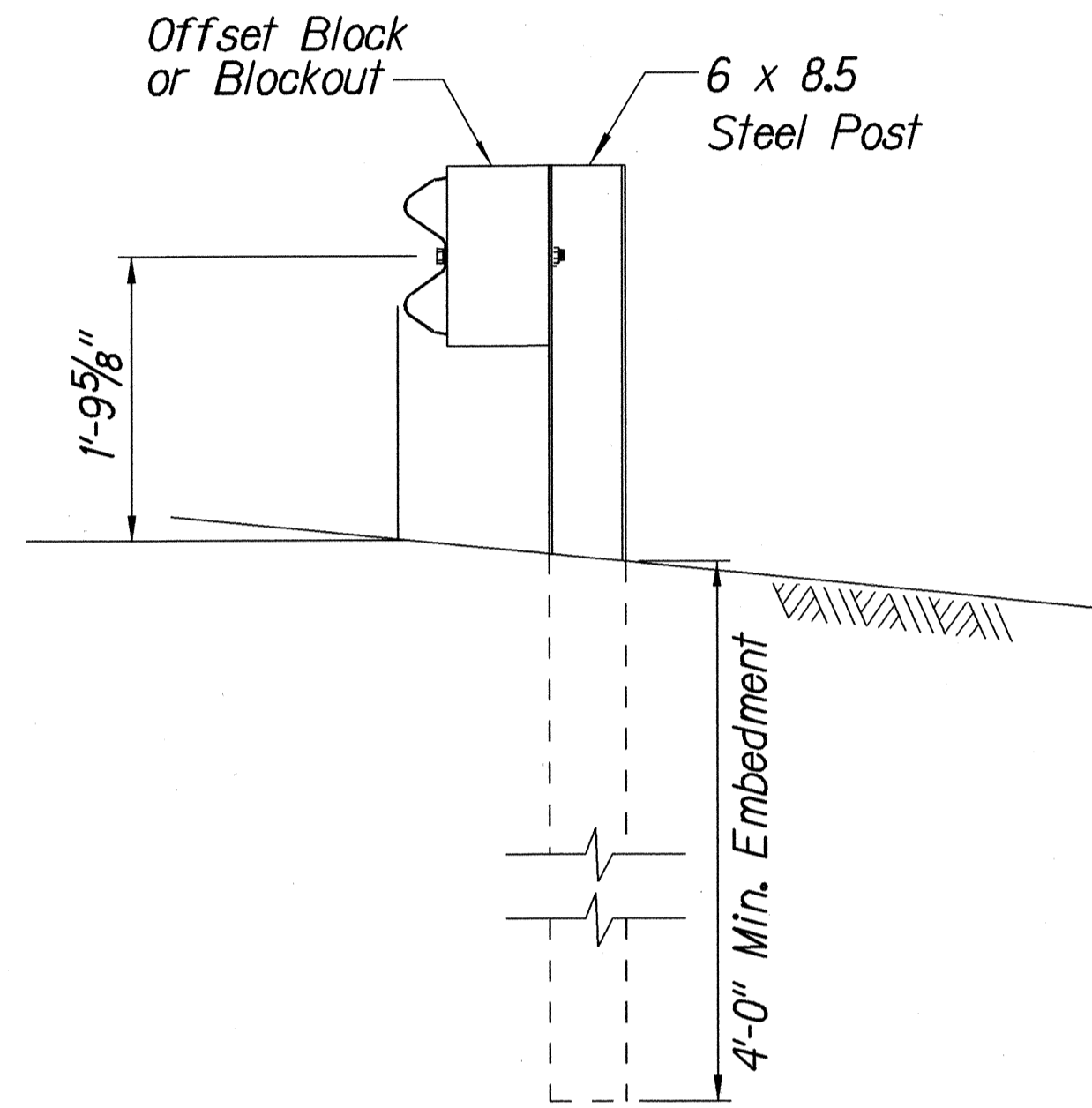
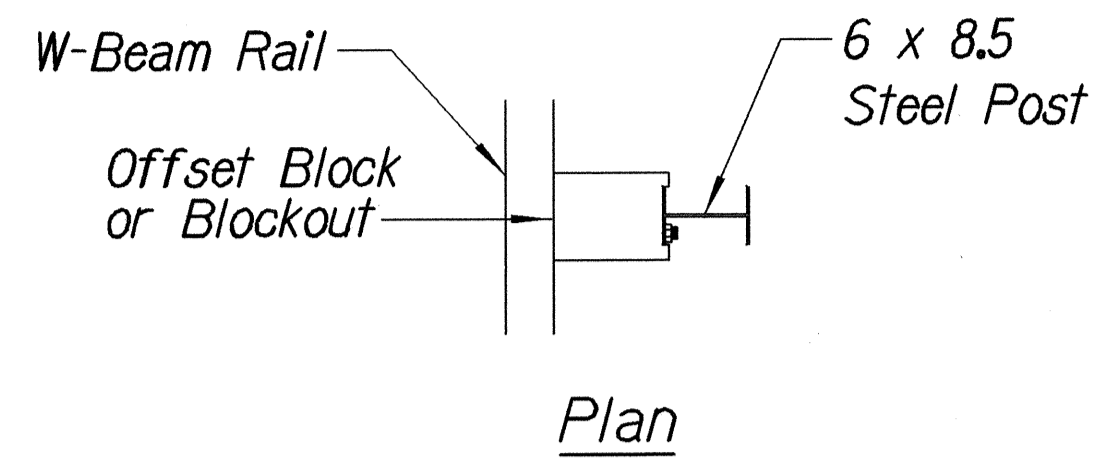


PLAN - ANCHOR BLOCK IN CUT SECTION

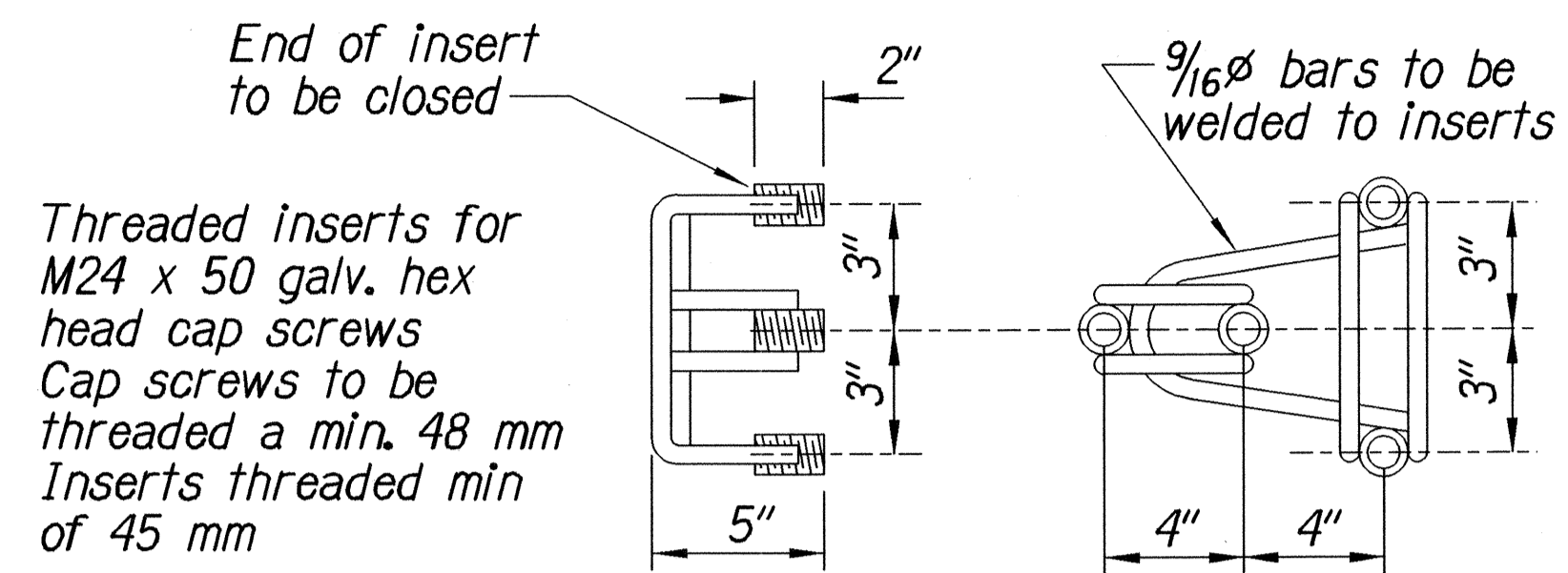
SURVEY PLOTTED BY: DATE: / /
 DESIGNED BY: / /
 CHECKED BY: / /
 QUANTITIES BY: / /
 ORIGINAL PLAN: / /
 15/2/01

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
MODIFIED TYPE "A-1" FLARE
 KAUMUALII HIGHWAY
 Guardrail and Shoulder Improvements
 Omao To Hanapepe
 Fed. Aid Project No. STP-050-1(24)
 Scale: Not To Scale Date: July 2001
 SHEET No. 1 OF 3 SHEETS

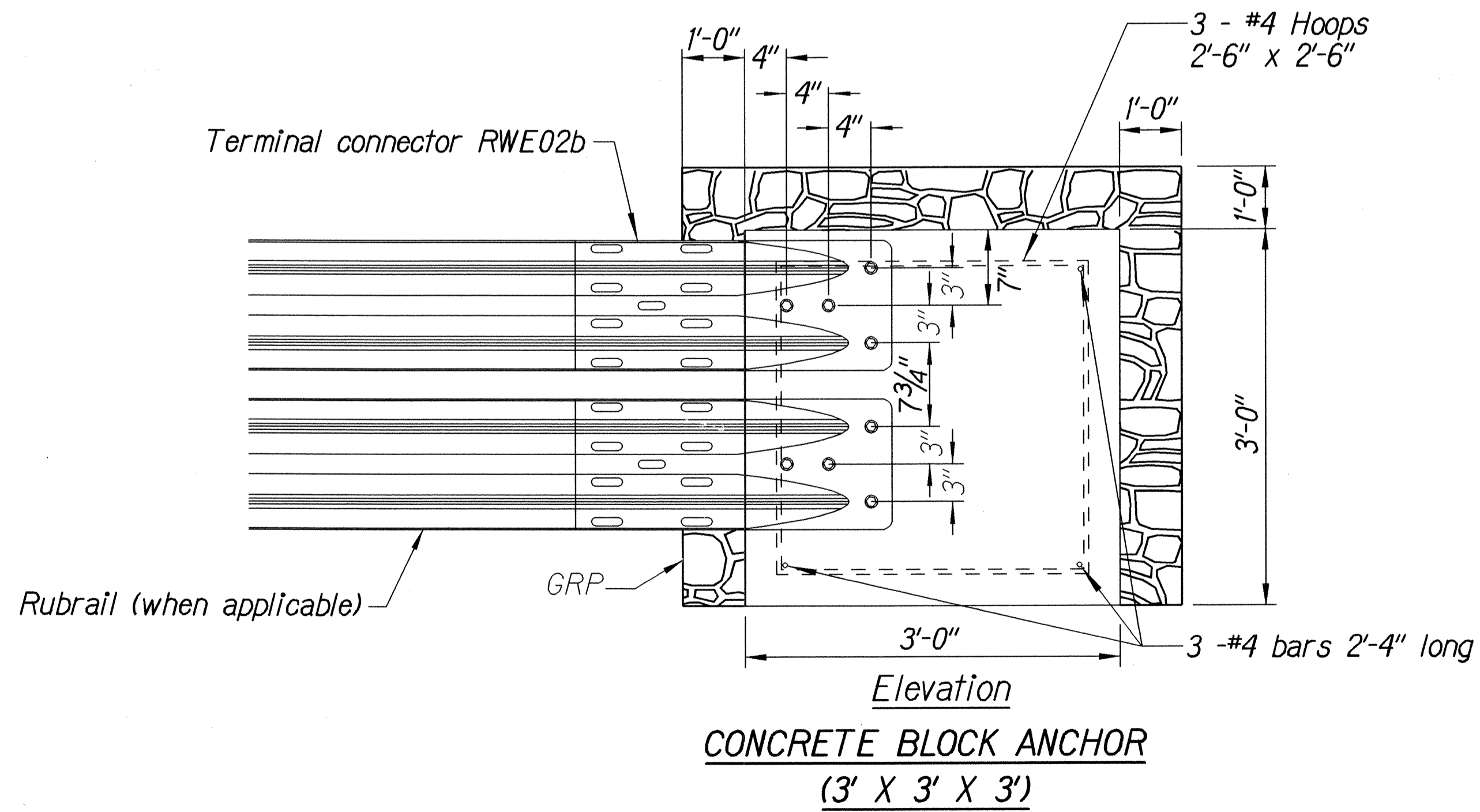
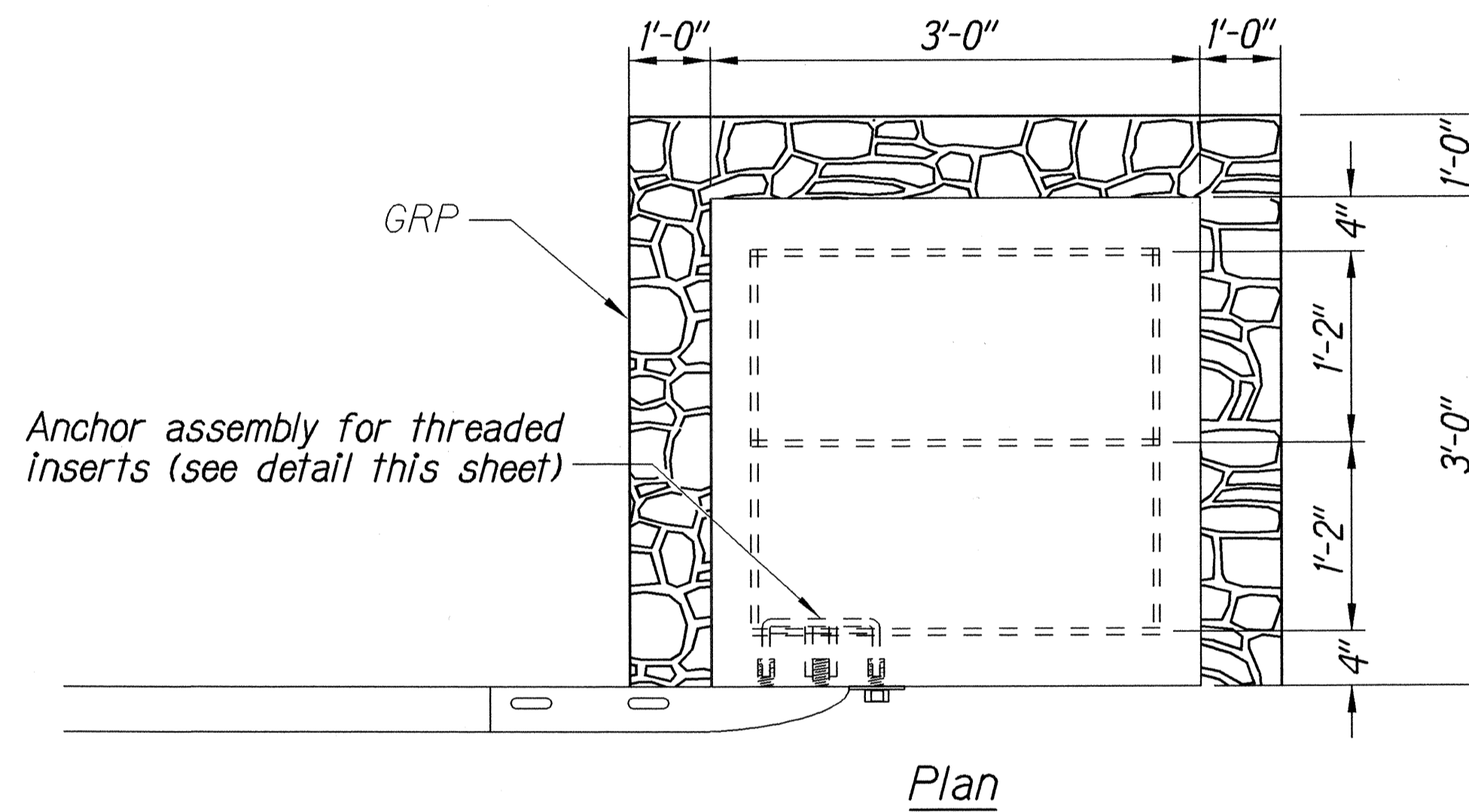
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-050-1(24)	2002	30	40



STRONG POST W-BEAM GUARDRAIL



**ANCHOR ASSEMBLY
CONCRETE BLOCK ANCHOR**



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

**BACKSLOPE ANCHOR TERMINAL END ANCHORAGE DETAILS
MODIFIED TYPE "A-1" FLARE**

Note:

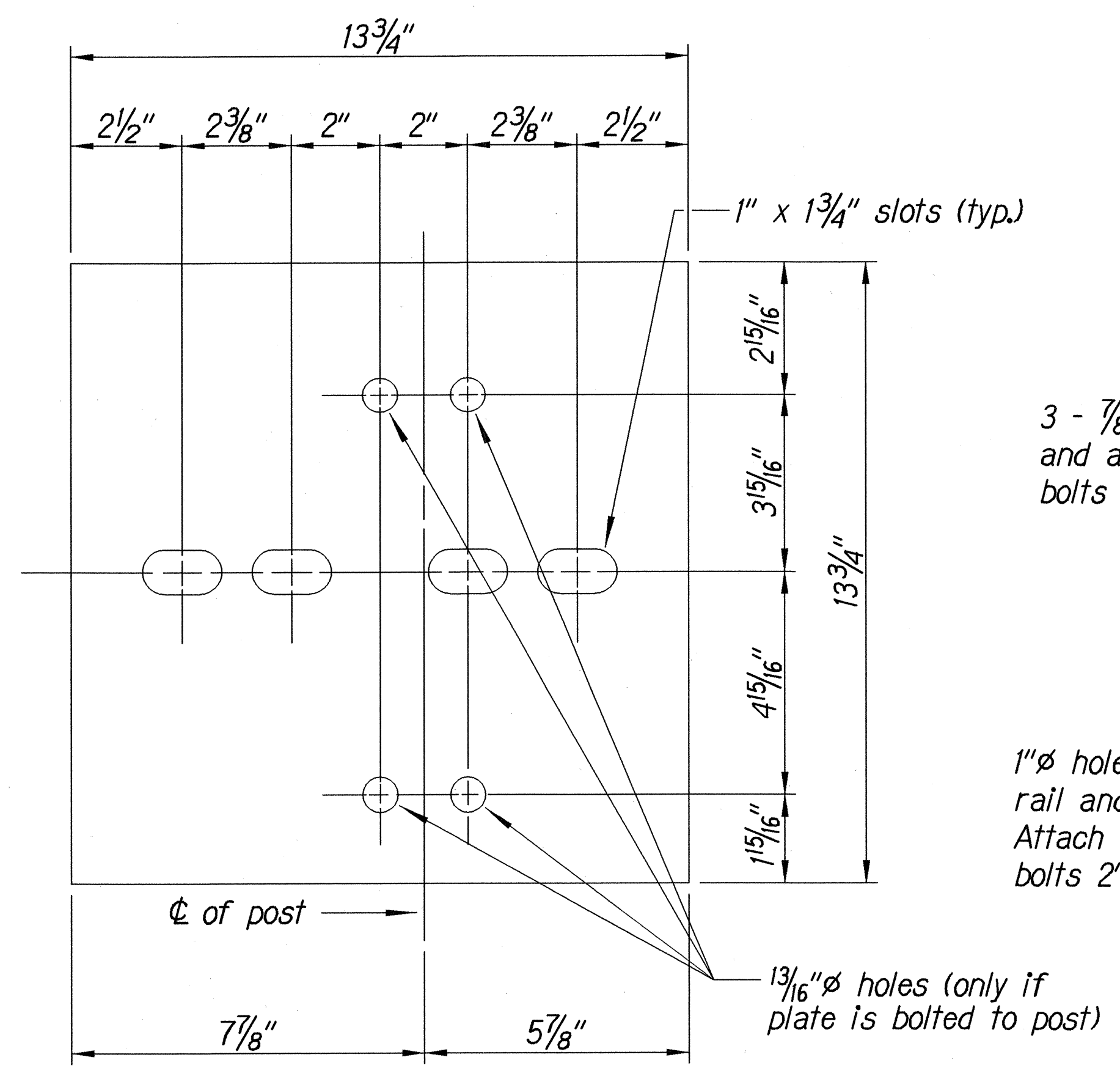
All fasteners, posts, blocks and rail elements shall conform to the latest edition and amendments of "A Guide to Standardized Highway Barrier Rail Hardware," a report prepared and approved by the AASHTO-AGCARTBA Joint Cooperative Committee and HDOT's Statewide Guideline for Permanent Highway Safety Hardware.

ORIGINAL PLAN	DATE	
SURVEY PLOTTED BY		
DESIGNED BY		
DESIGNED BY		
QUANTITIES BY		
CHECKED BY		

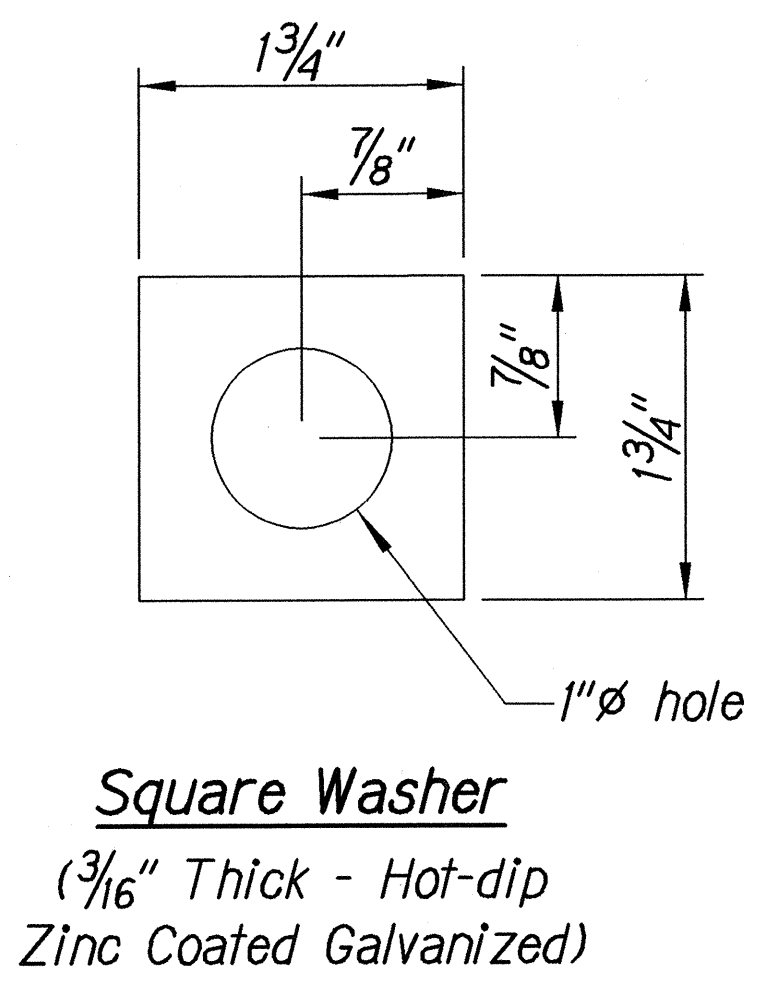
05/12/01 Muluhy/guardrail/finca.al.2409
 (standard plan TE-58 07/01/86, TE-59 01/03/89 & TE-60 07/01/86)

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
MODIFIED TYPE "A-1" FLARE
 KAUMUALII HIGHWAY
 Guardrail and Shoulder Improvements
 O'ahu To Hanalei
 Fed. Aid Project No. STP-050-1(24)
 Scale: Not To Scale Date: July 2001
 SHEET No. 2 OF 3 SHEETS

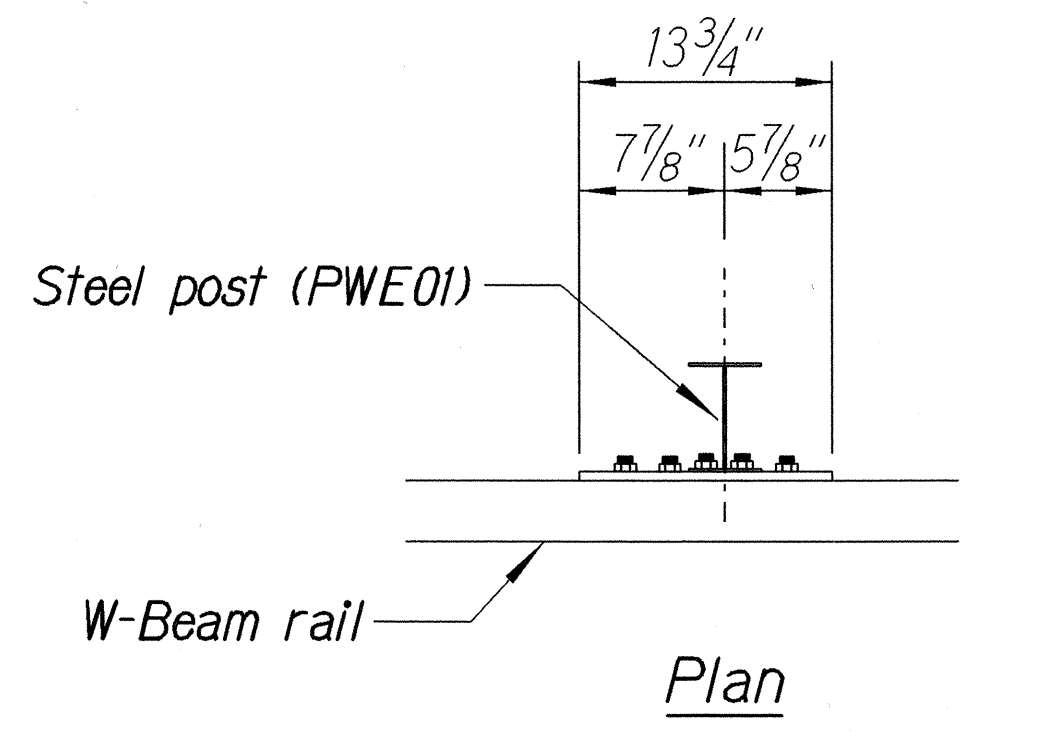
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-050-1(24)	2002	31	40



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

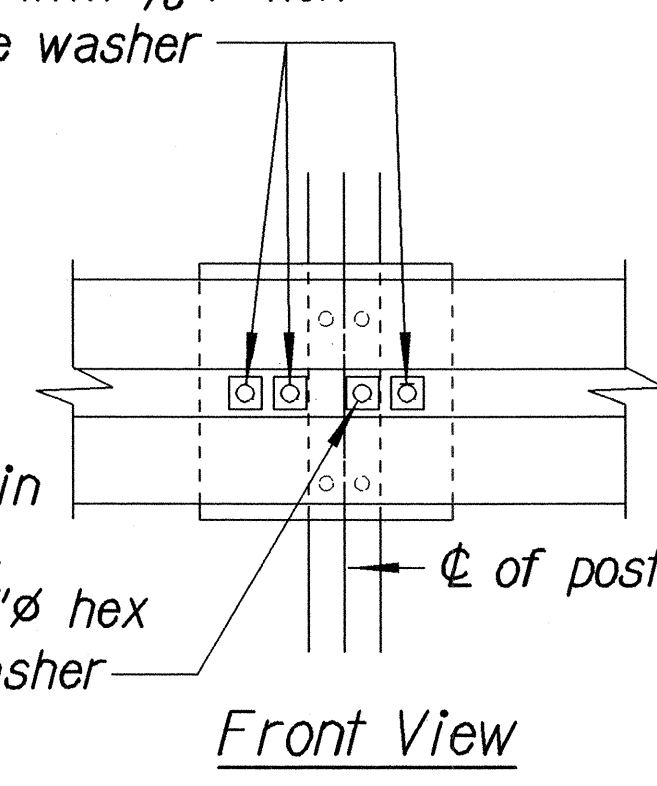


Square Washer
(3/16" Thick - Hot-dip
Zinc Coated Galvanized)

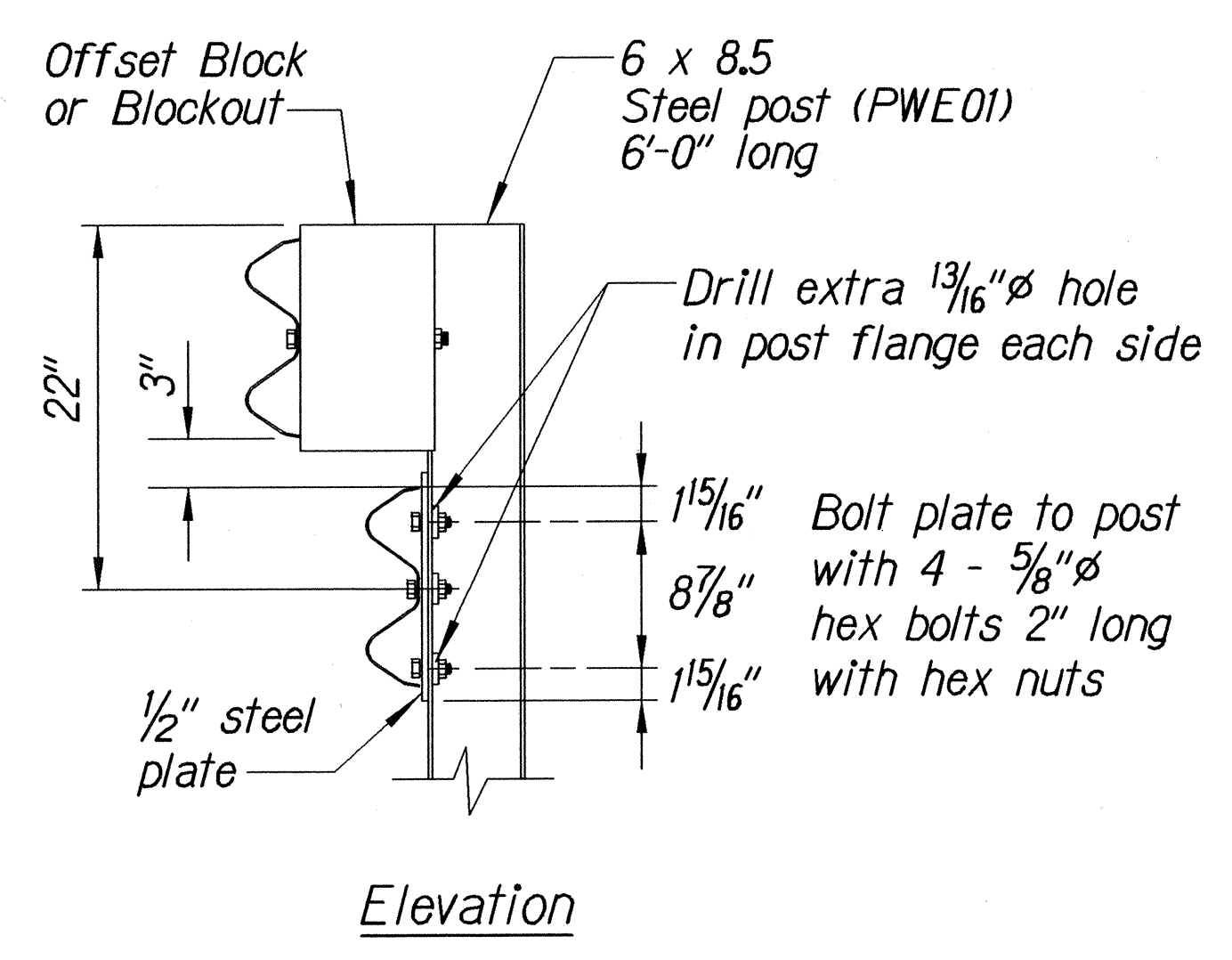


3 - 7/8" ϕ holes to be field drilled in rail and attached to steel plate with 7/8" ϕ hex bolts 1 5/16" long with square washer

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

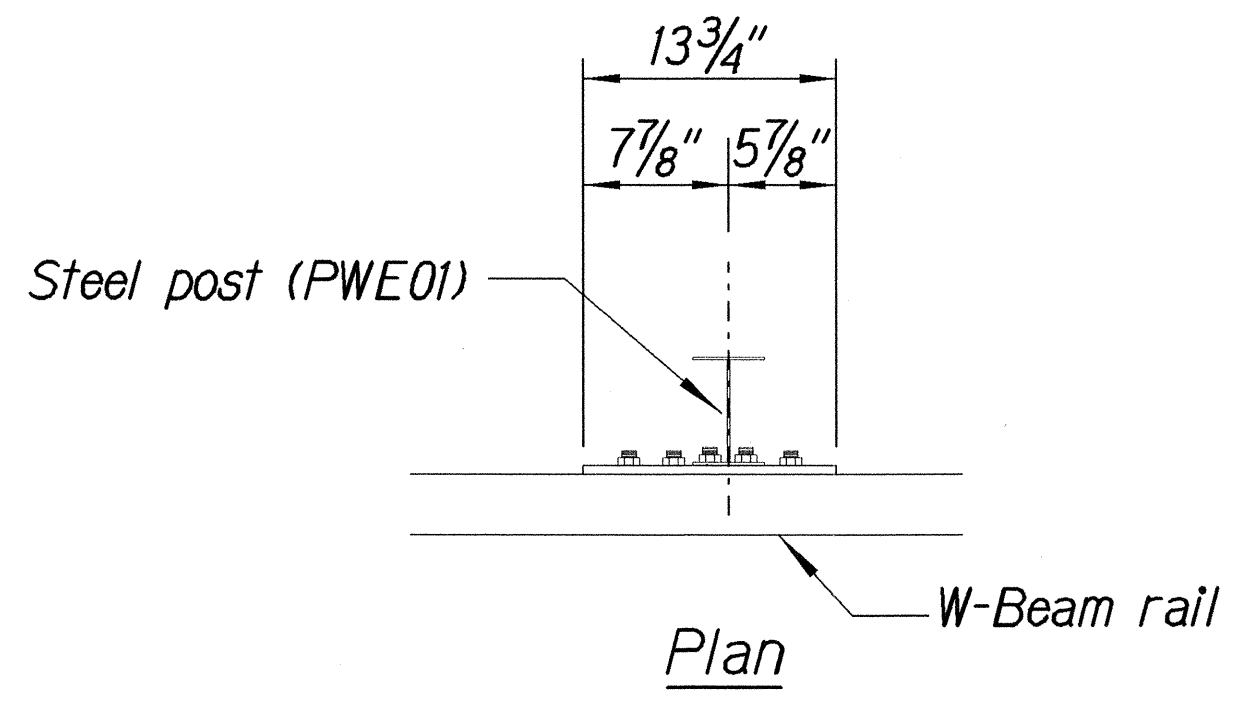


Front View



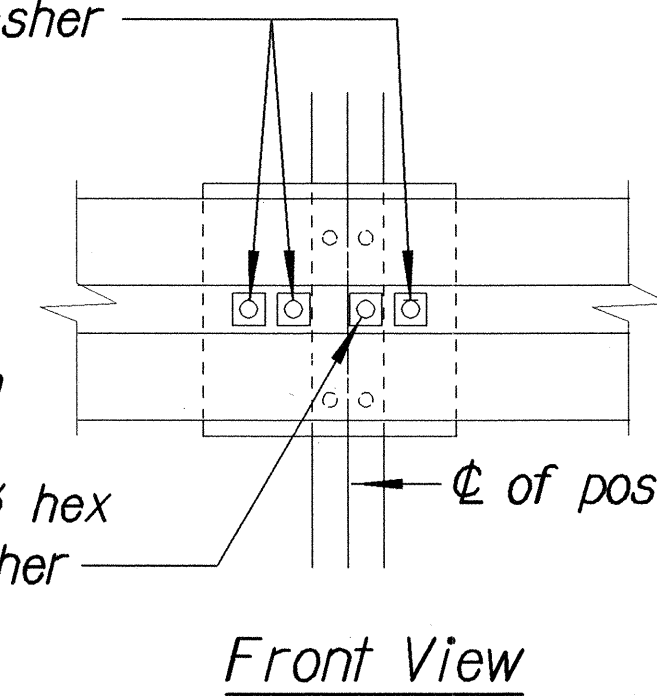
Elevation

RUBRAIL ANCHOR DETAILS

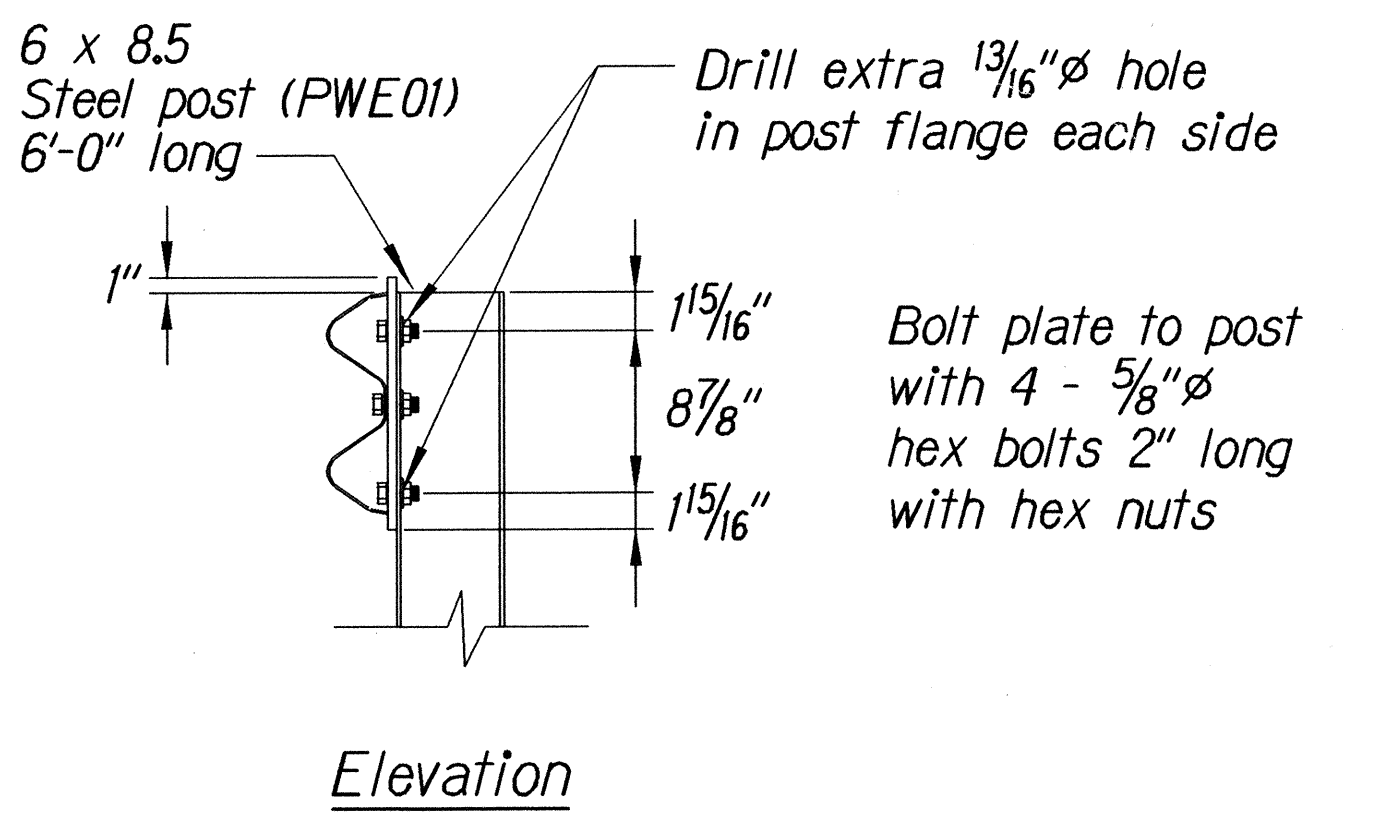


3 - 7/8" ϕ holes to be field drilled in rail and attached to steel plate with 7/8" ϕ hex bolts 1 5/16" long with square washer

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



Front View

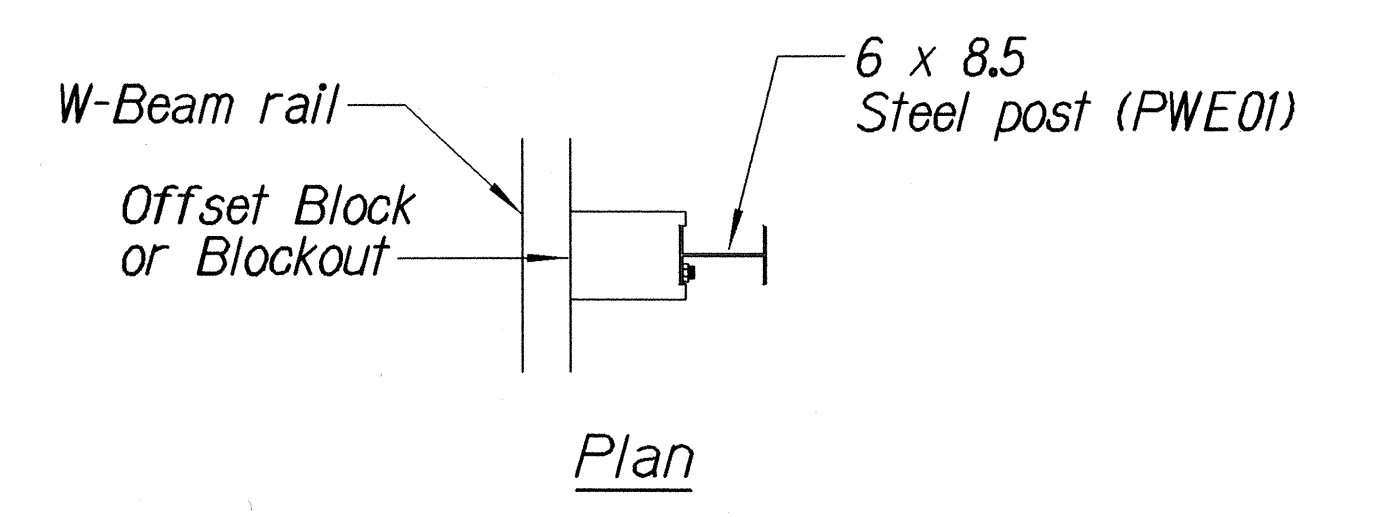


Elevation

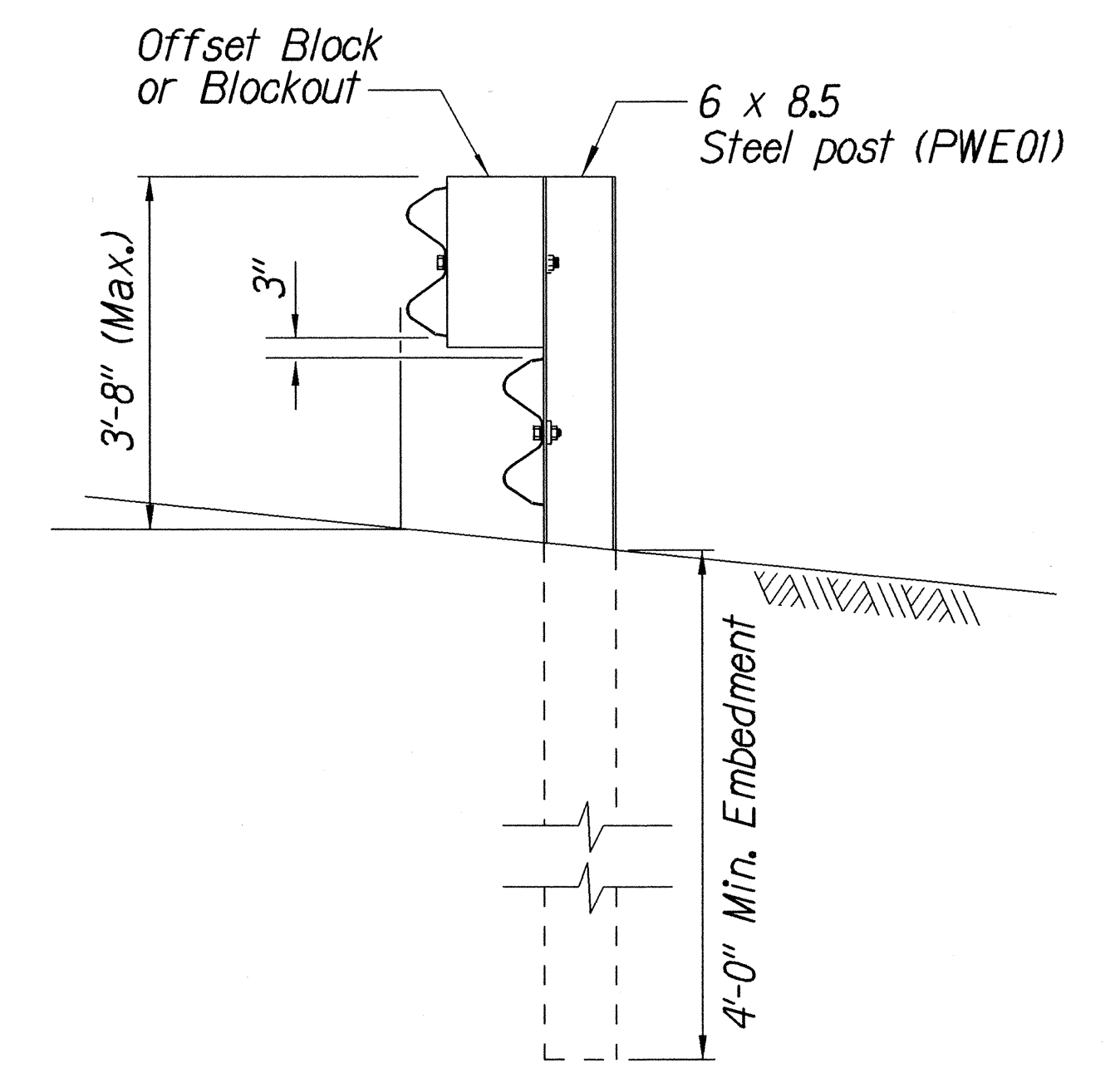
POST ANCHOR DETAILS

**RUBRAIL DETAIL FOR MODIFIED TYPE "A-1" FLARE
(WHEN CALLED FOR IN PLANS)**

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.



Plan



Elevation

STEEL POST GUARDRAIL WITH RUBRAIL

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**MODIFIED TYPE "A-1" FLARE
RUBRAIL DETAILS**
KAUMUALII HIGHWAY
Guardrail and Shoulder Improvements
Omao To Hanapepe
Fed. Aid Project No. STP-050-1(24)
Scale: As Noted Date: July 2001
SHEET No. 3 OF 3 SHEETS