

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360A-02-05M	2005	ADD.18	27

GENERAL NOTES

- All hardware, posts and fasteners shall be hot-dip zinc coated galvanized after fabrication. No punching, drilling or cutting will be permitted after galvanizing.
- Where conditions require, special post lengths in increments of 6 inches may be specified.
- All fasteners, posts, and rail elements (i.e. FBB03, PWE01, RWM02b, etc.) 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-AGC-ARTBA Joint Cooperative Committee, Subcommittee On New Highway Materials, Task Force 13 Report. Dimensions of fastners, posts and rail elements have been converted from metric units into their present form.
- The Recycled Plastic Block or Offset Block shall be approved by the State.
- All new guardrail systems (system consists of total length of guardrail including both end treatments) shall include the Additional Paved Area.
- After the guardrail posts are installed in the paved area, the Contractor shall fill/seal around each guardrail post and all cracks in the paved area caused during the guardrail post installation. If required by the inspector/engineer, the Contractor shall tamper the paved area around the guardrail post prior to filling/sealing. All costs associated with this work shall not be paid for separately, but shall be considered incidental to the various guardrail items.
- When standards for the fill slope area cannot be met, a site specific, engineer approved design may be used.
- New A.C. pavement at guardrails shall extend 6 feet longitudinally beyond terminal ends.
- Reflector Markers (RM-5) mounted on guardrails shall be spaced every 25 feet. Spacing of RM-5's on Horizontal Curves shall comply with Table III-1 of the MUTCD. RM-5's shall not be installed on Terminal Sections. RM-5 on new guardrail shall be incidental to guardrail pay item.
- Type G end terminals shall be paid for under Strong Post W-Beam Guardrail.

GUARDRAIL TYPE	DIMENSION	
	H	A
Strong Post W-Beam	1'-9 ⁵ / ₈ "	1'-6"
Strong Post Rubrail (W-Beam)	2'-0"	1'-6"
Modified or Strong Post Thrie Beam	2'-0"	2'-0"

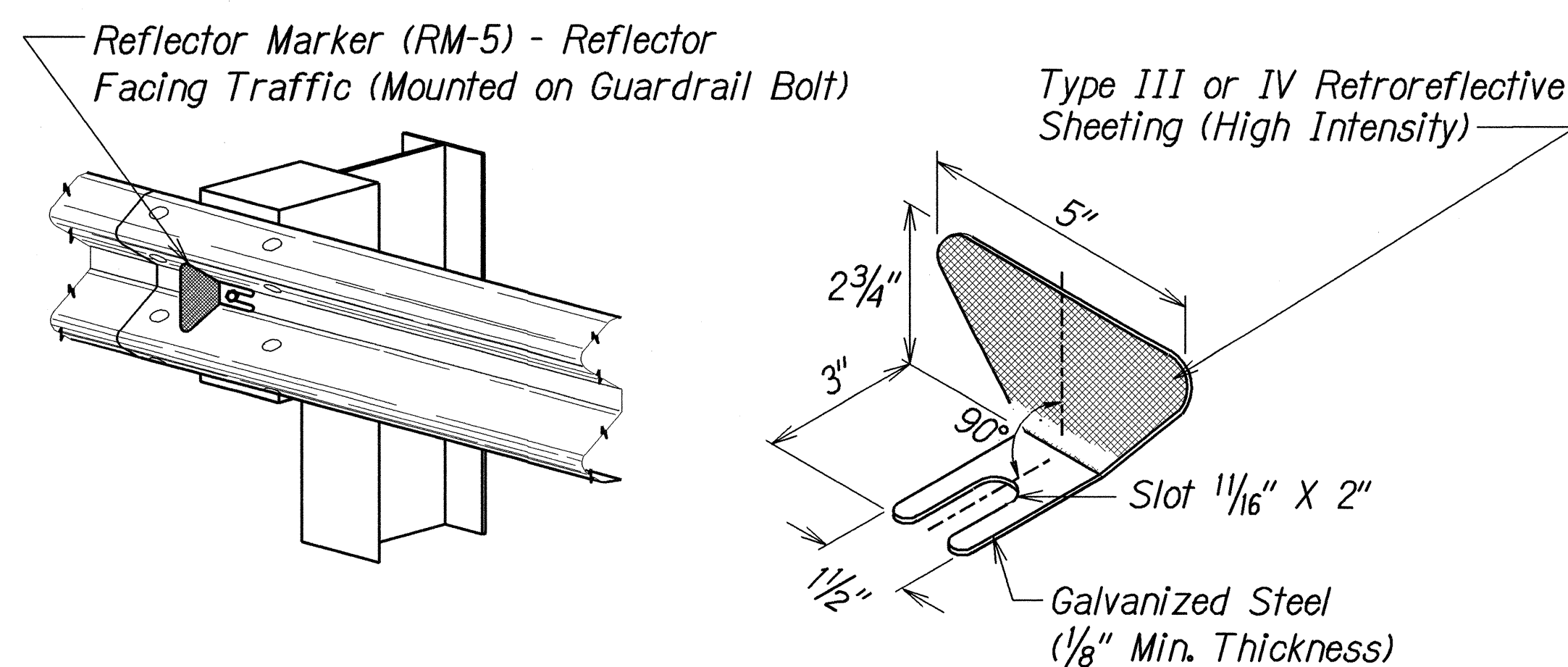
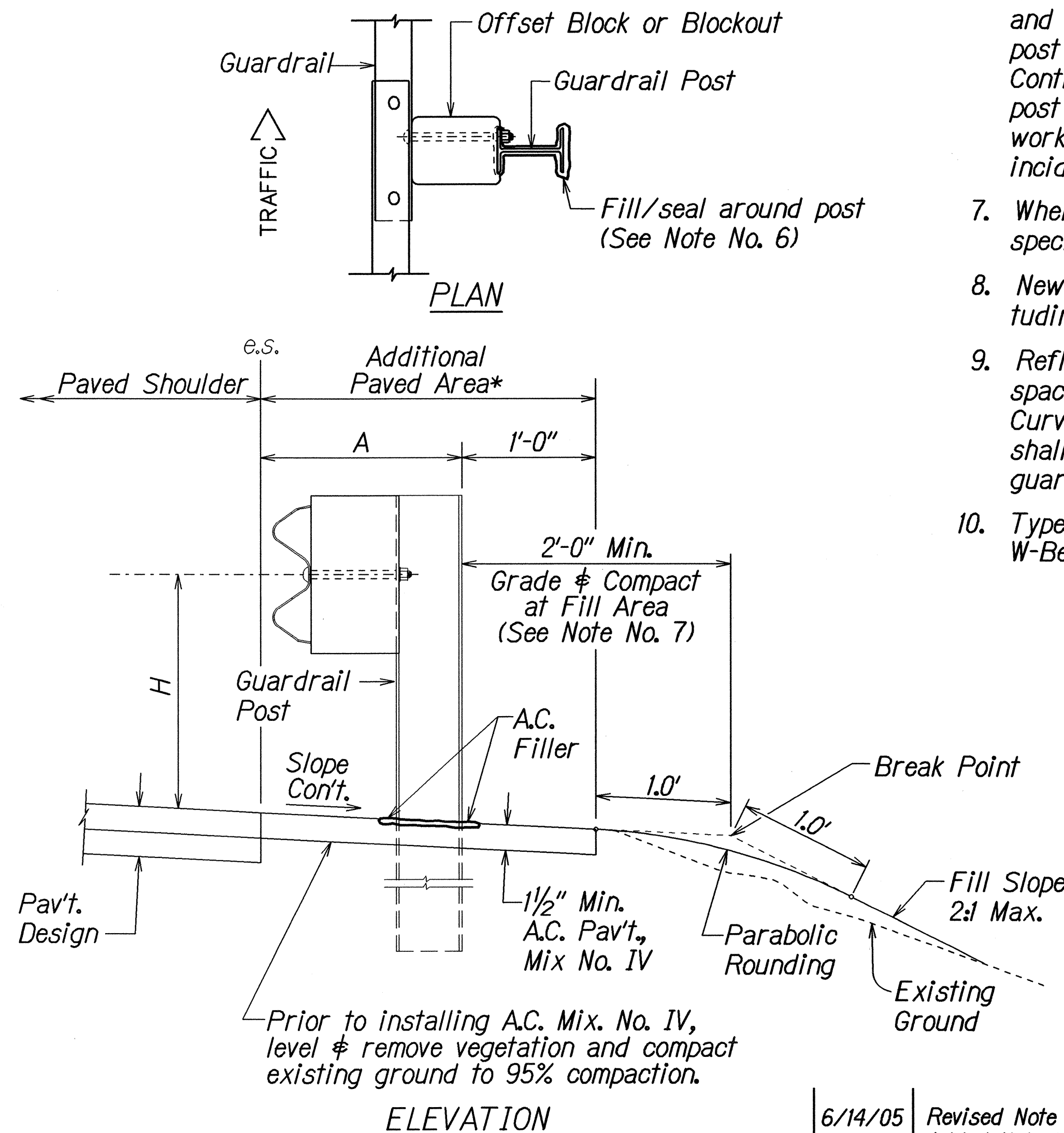
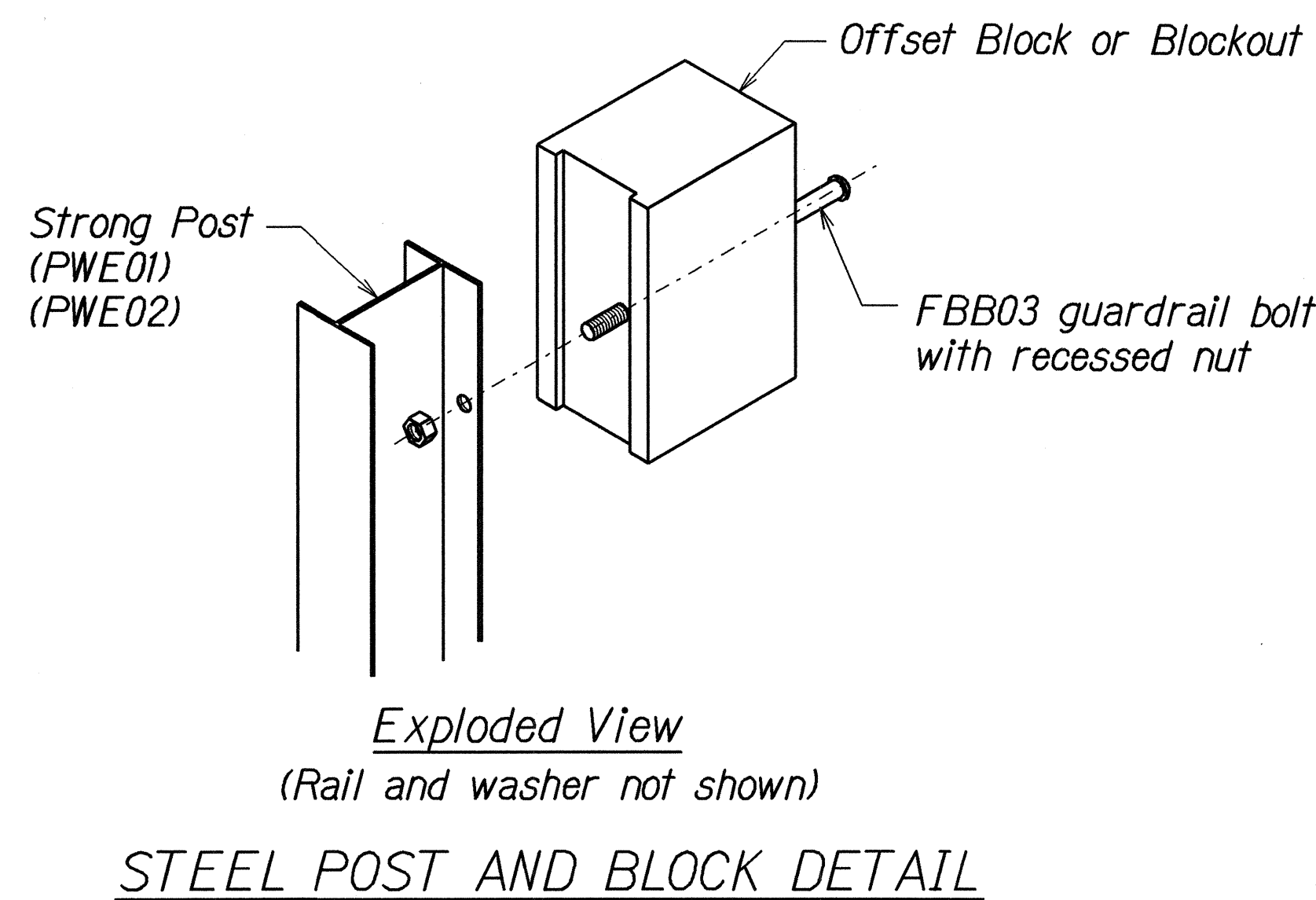
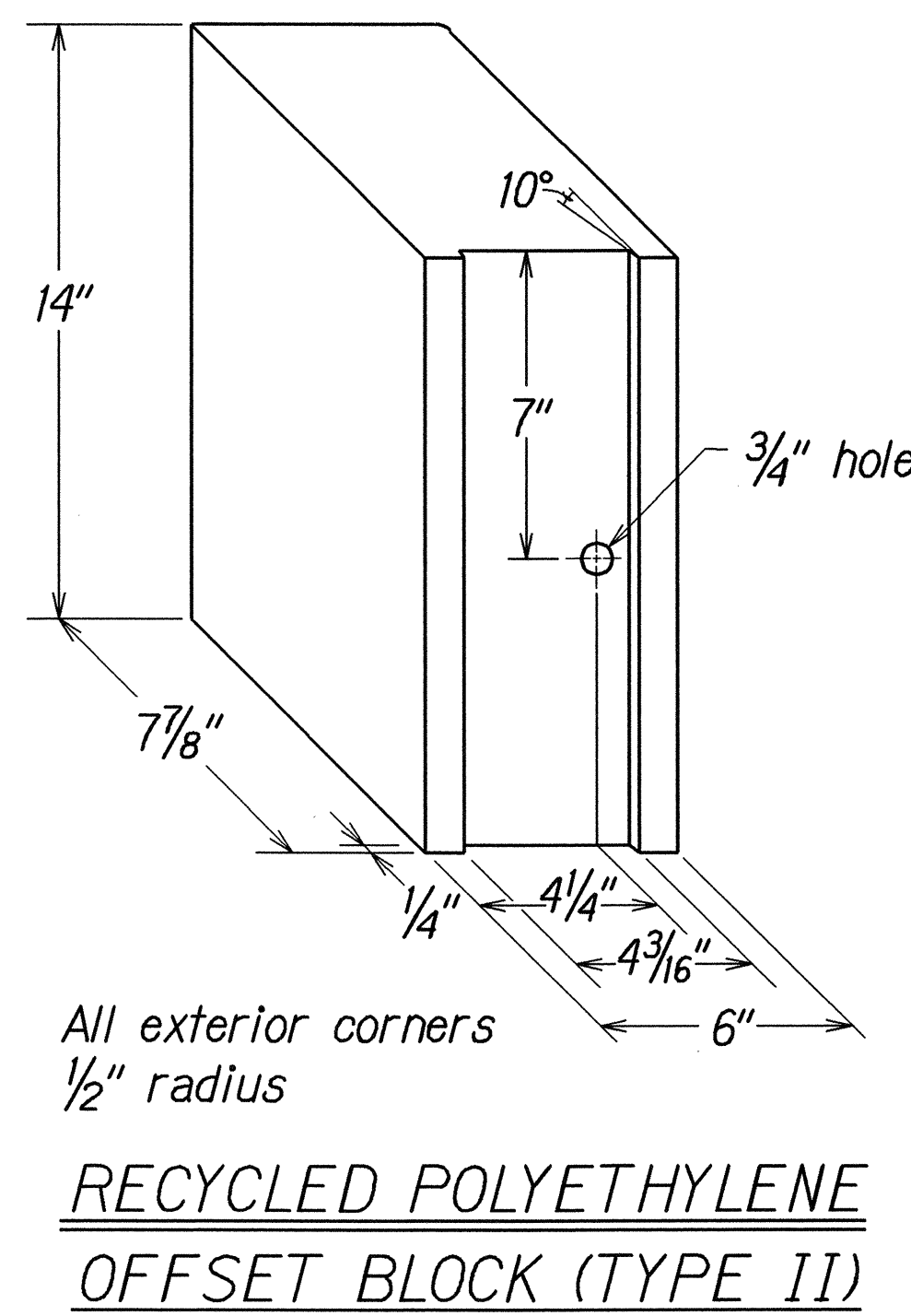
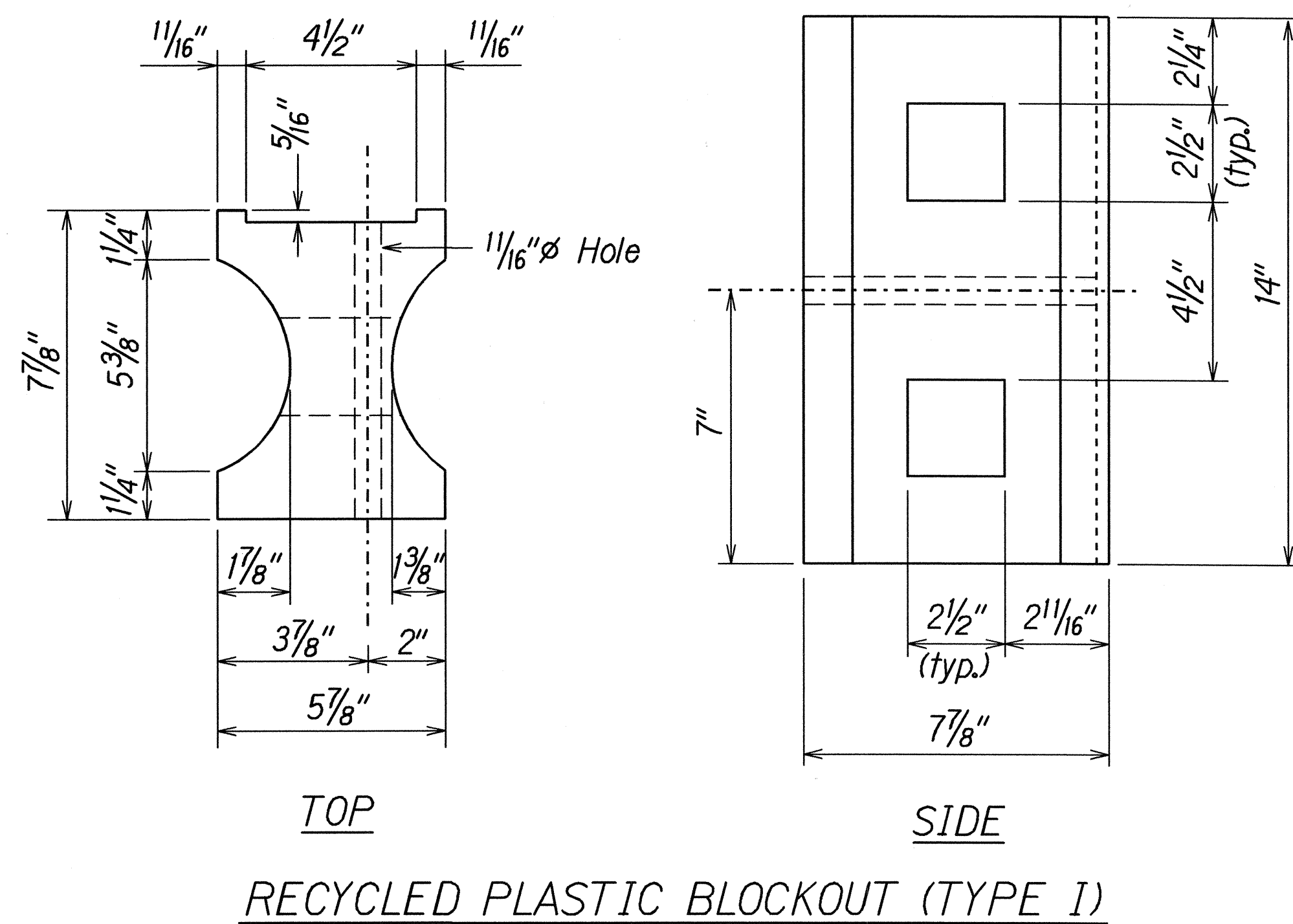
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS & NOTES

HANA HIGHWAY RESURFACING
Vicinity of Waikamoi Bridge to Honomanu Bridge
Project No. 360A-02-05M

Scale: NTS Date: February, 2005

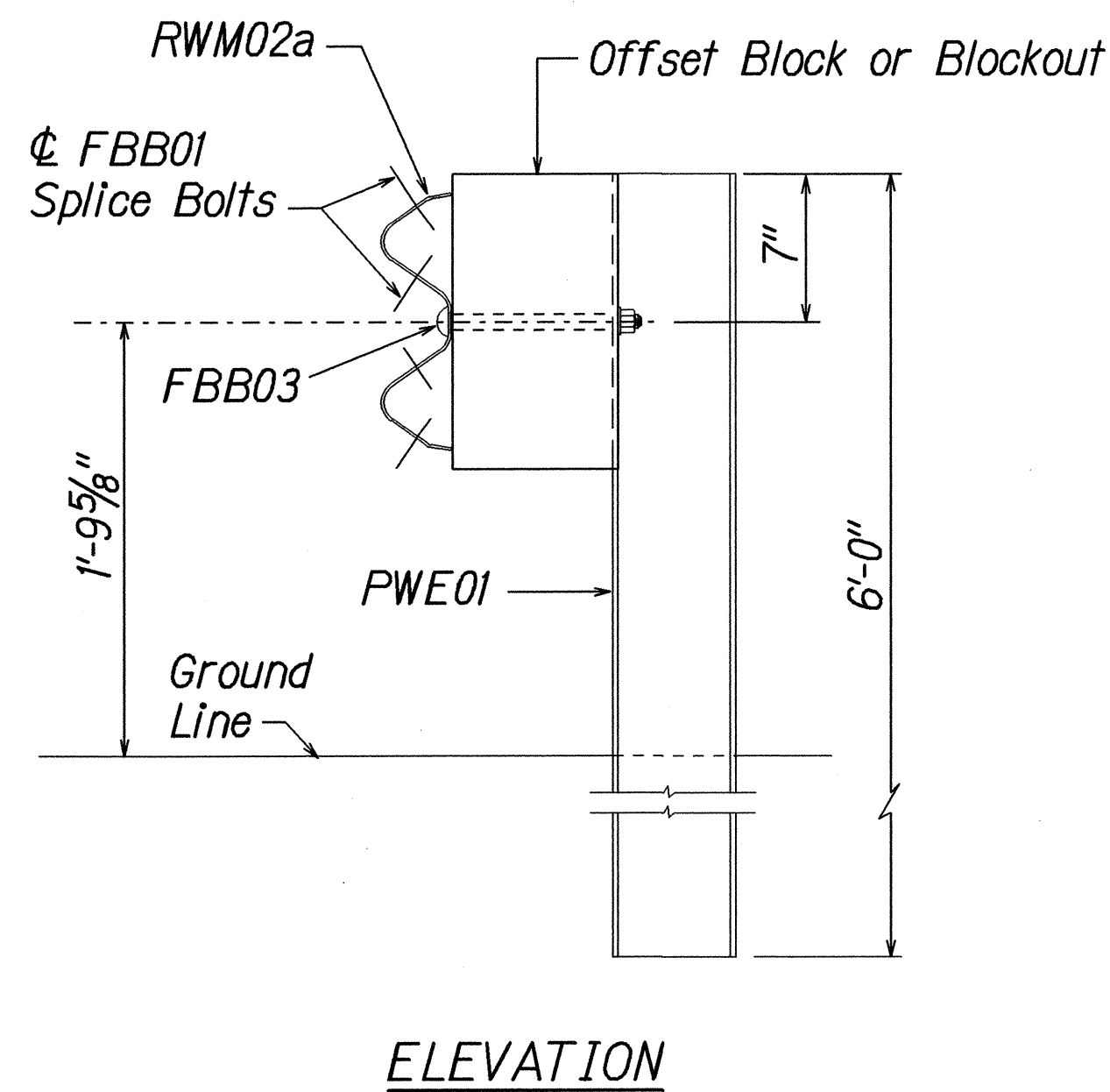
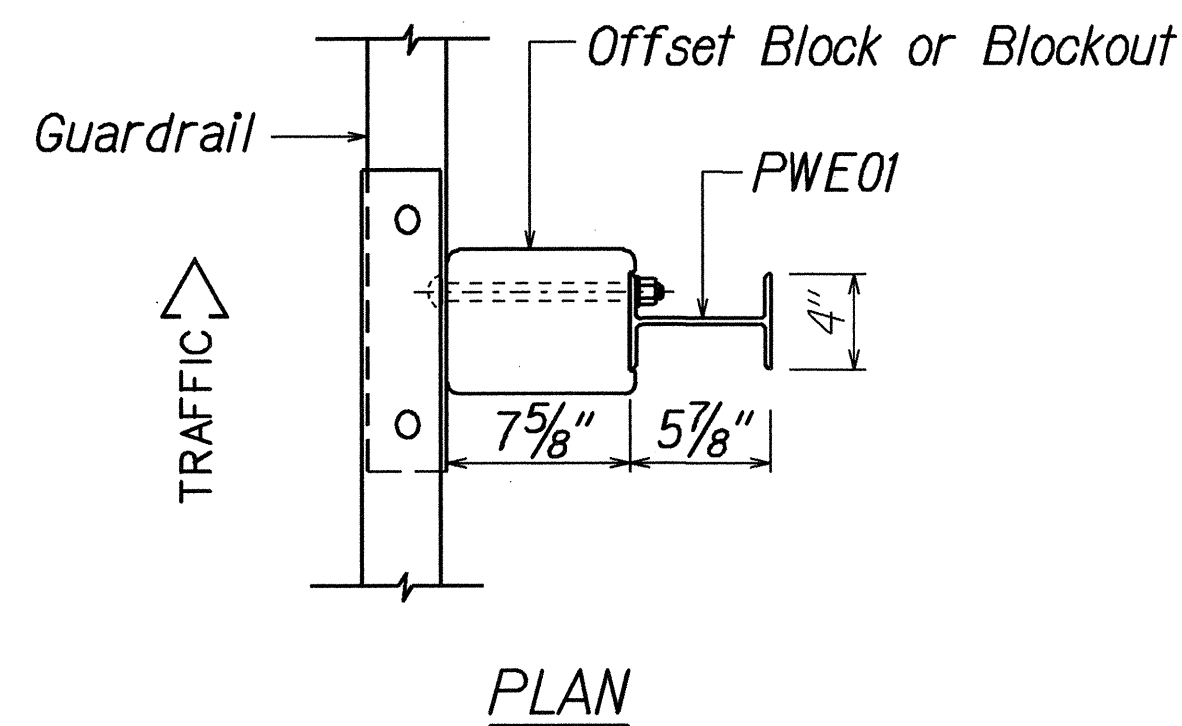
SHEET No. 1 OF 1 SHEETS



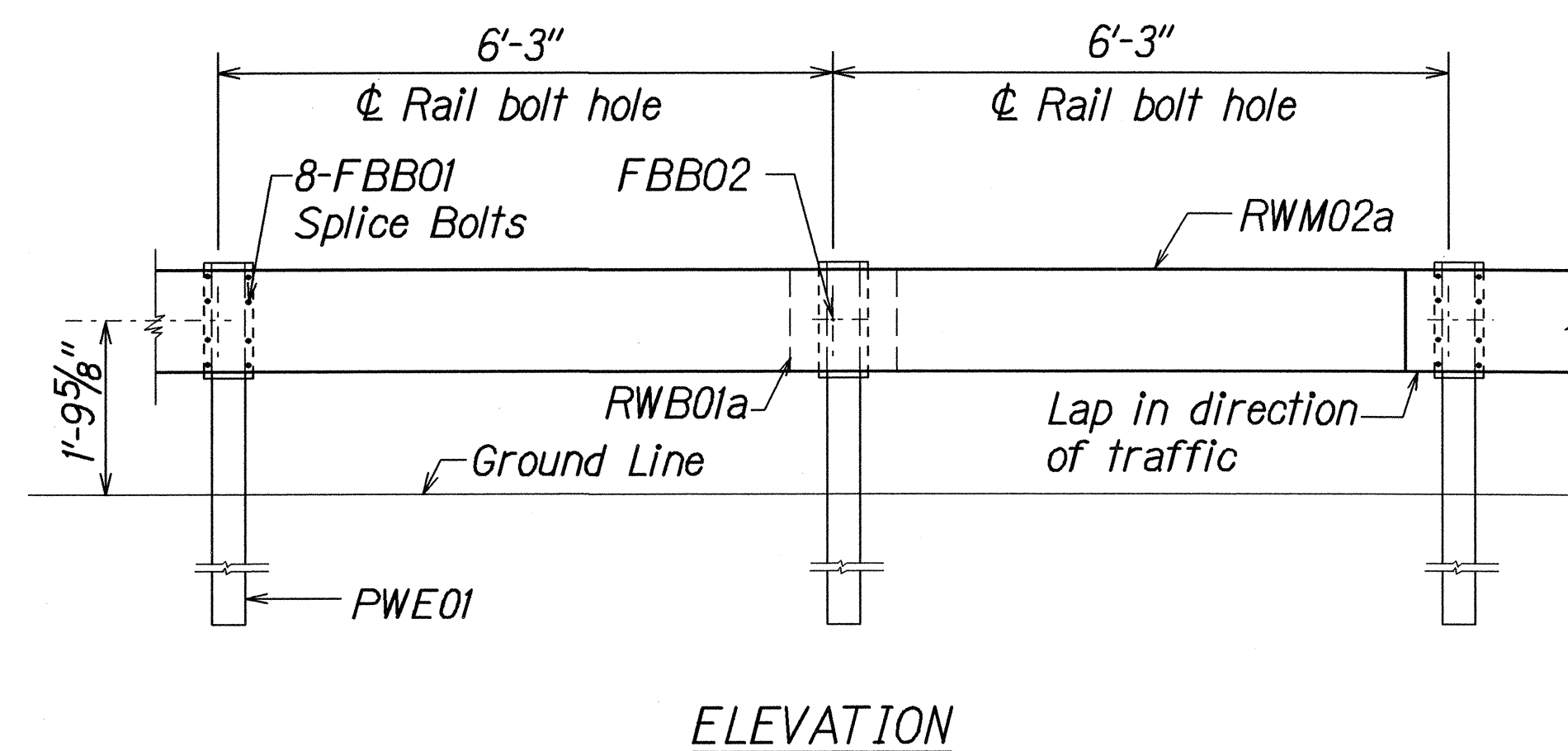
6/14/05 Revised Note 9.
Added Note 10.

DATE REVISION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360A-02-05M	2005	ADDJ9	27

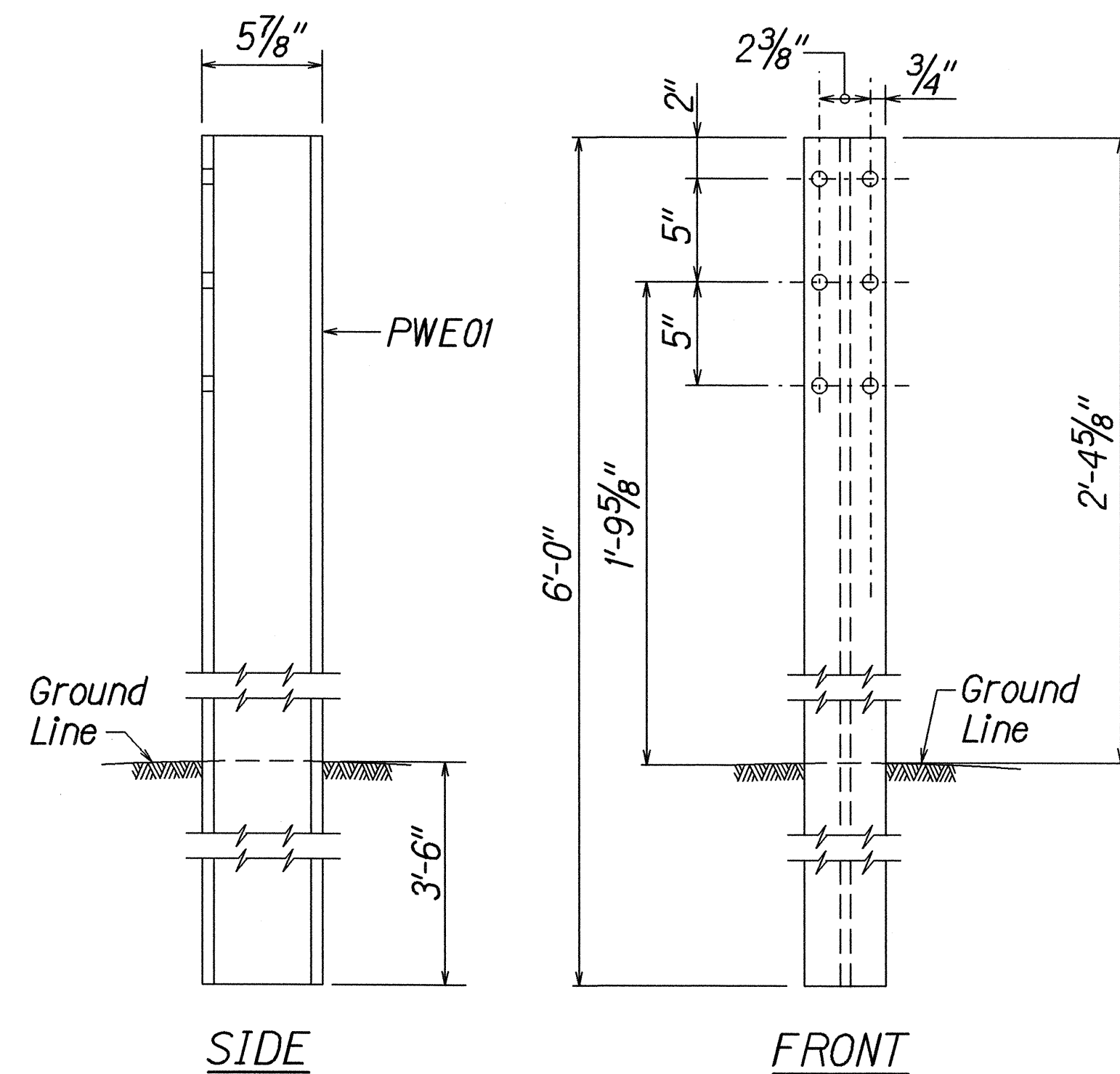


STRONG POST W-BEAM GUARDRAIL
(SGR04a)

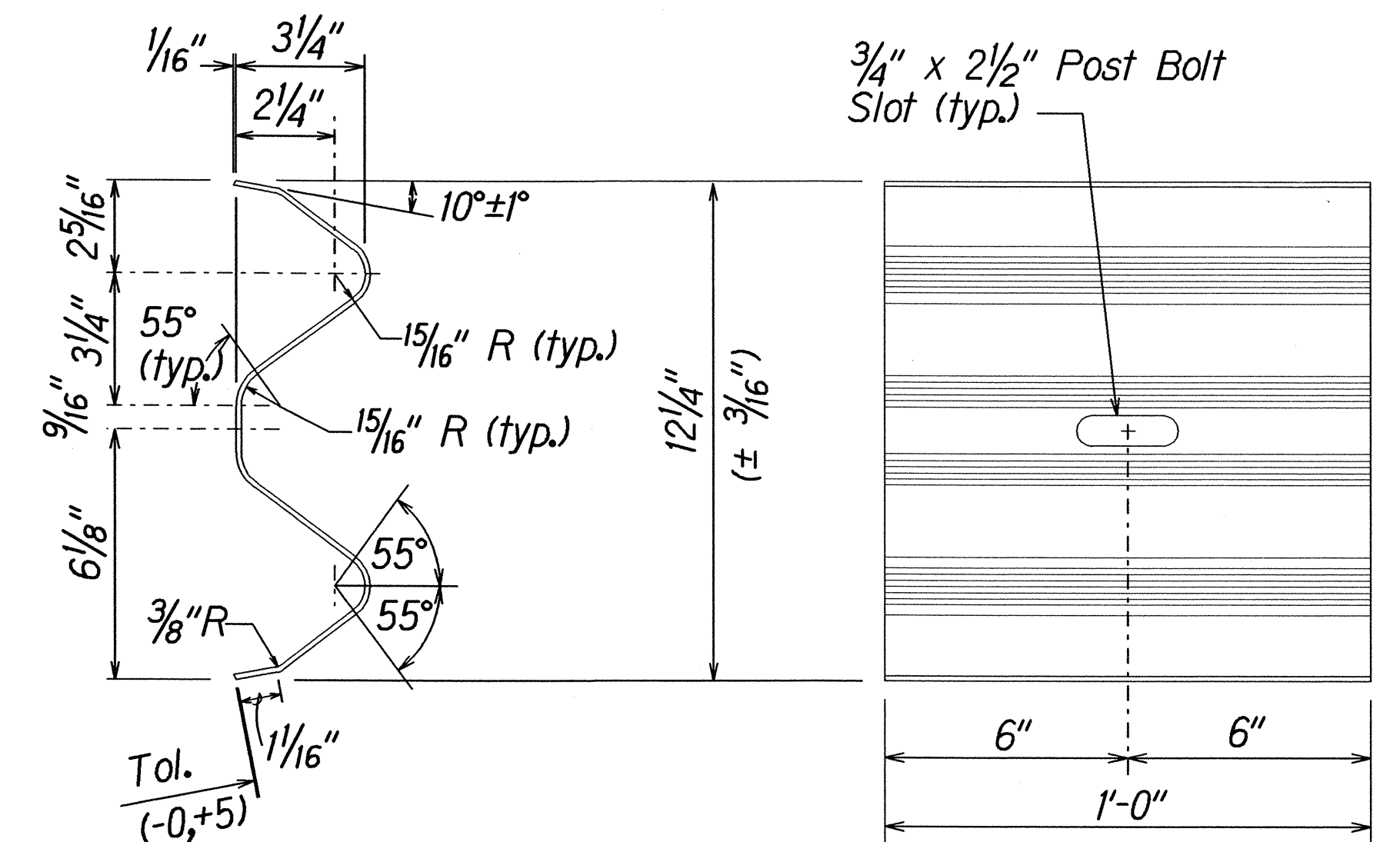
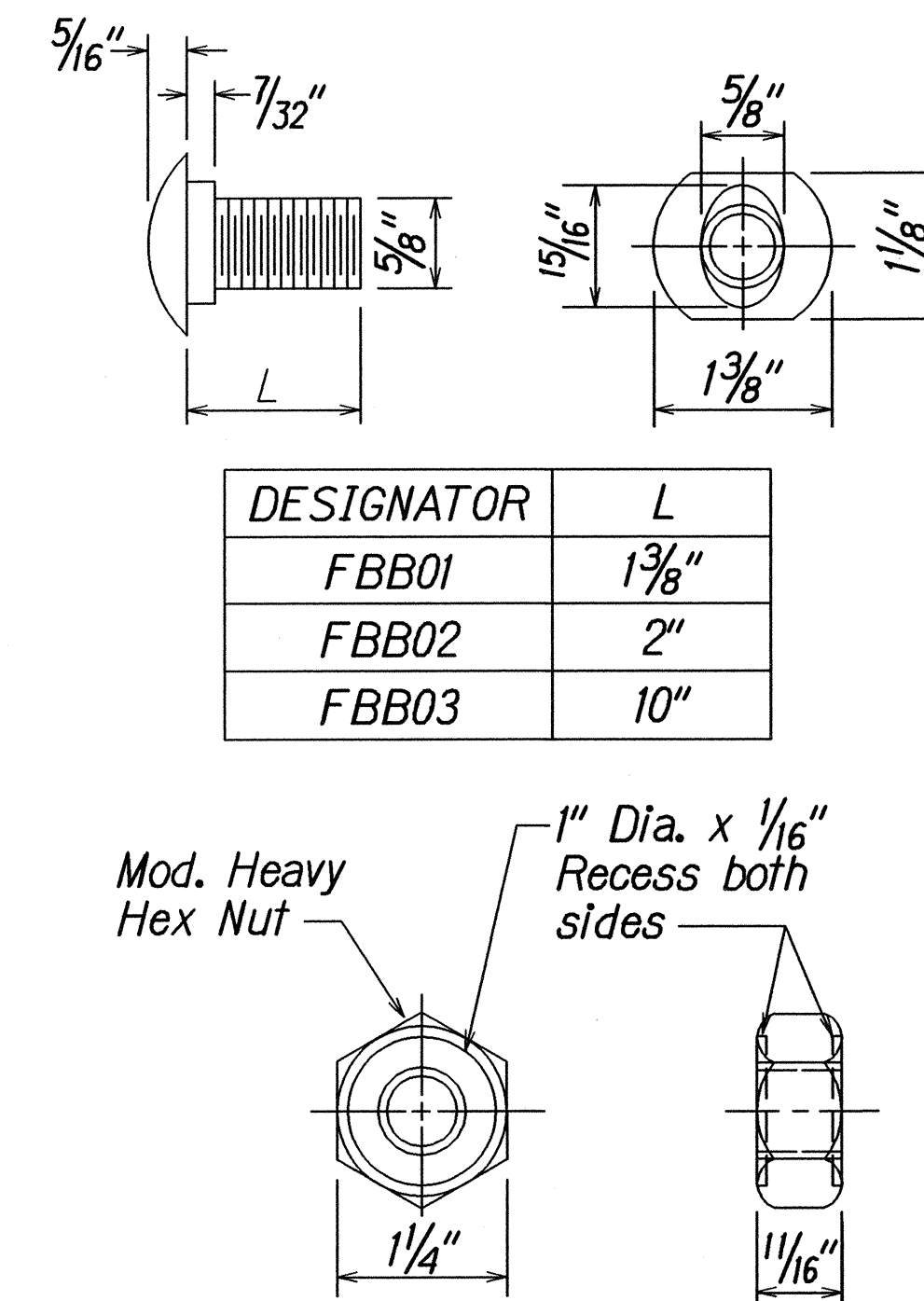


STRONG POST W-BEAM GUARDRAIL WITH
RECYCLED OFFSET BLOCK OR PLASTIC BLOCKOUT

NOTE:
All Holes are
3/4" Dia.

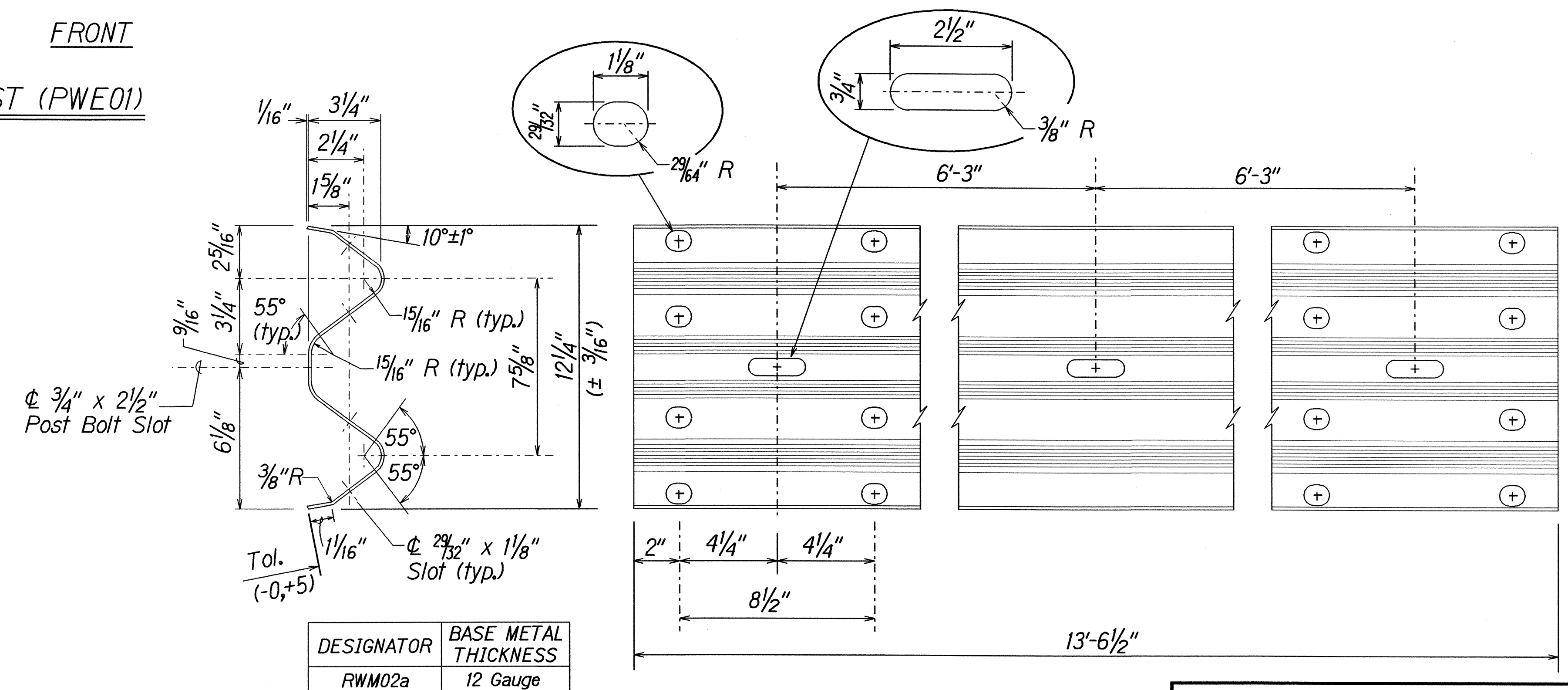


W-BEAM STRONG POST (PWE01)



DESIGNATOR	BASE METAL THICKNESS
RWB01a	12 Gauge

W-BEAM BACK-UP-PLATE (RWB01a)



2 SPACE W-BEAM GUARDRAIL (RWM02a)

6/14/05 Replaced Sht. 19 in its entirety with ADDJ9.

DATE REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRONG POST W-BEAM GUARDRAIL

HANA HIGHWAY RESURFACING
Vicinity of Waikamoi Bridge to Honomanu Bridge
Project No. 360A-02-05M

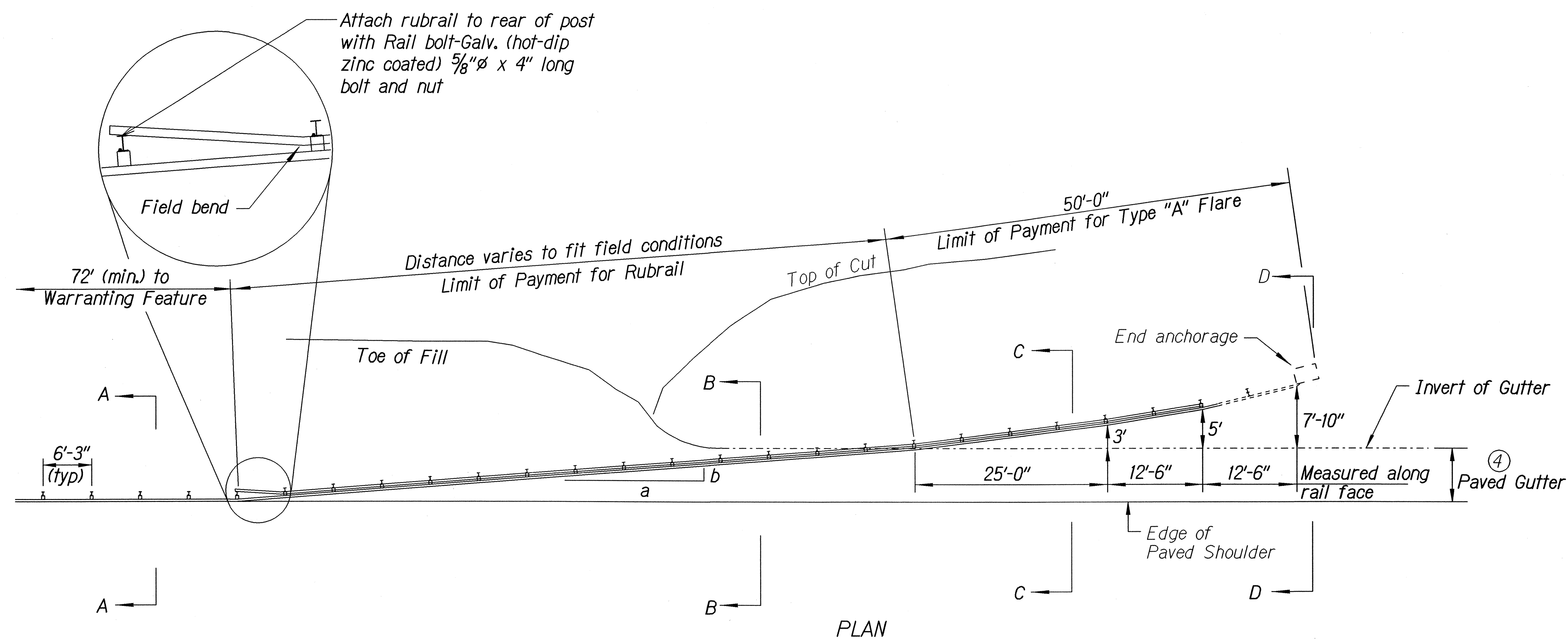
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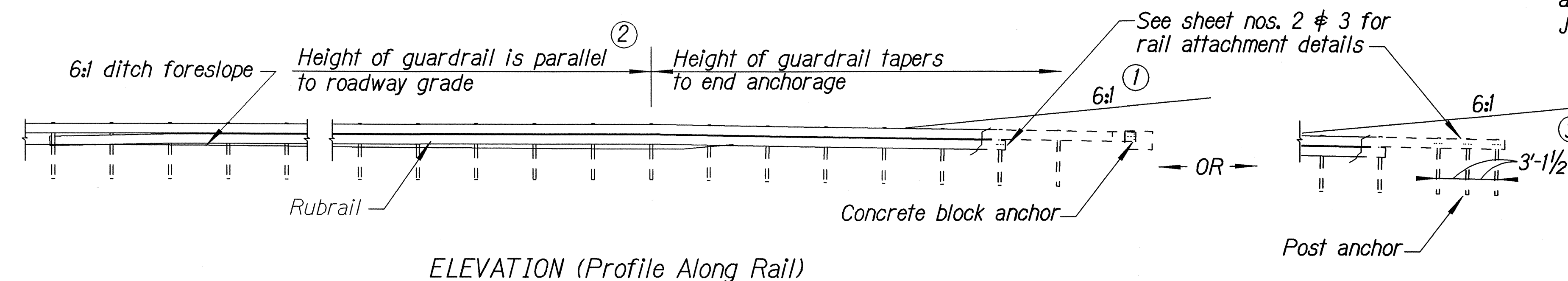
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HAWAII	HAW.	360A-02-05M	2005	20	27

General Notes

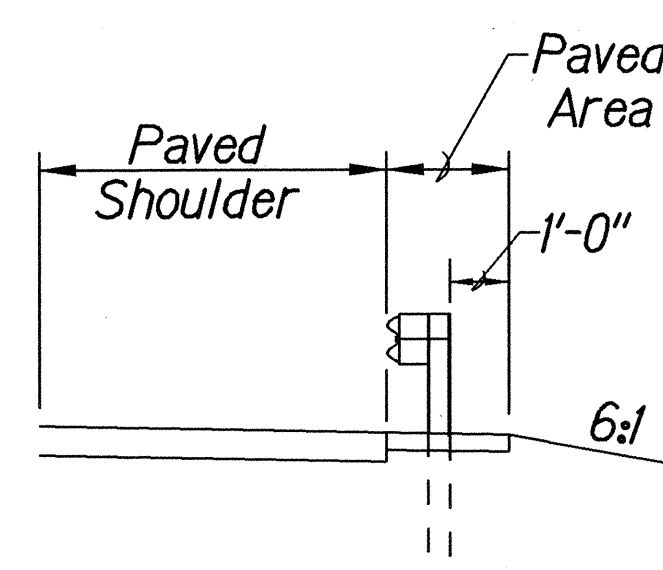
1. A 6% or flatter slope is desirable. However, a steeper or flatter existing slope may be used.
2. Height of guardrail may be tapered down in elevation to maintain 3'-8" maximum height.
3. All posts are 8'-0" in length from where the guardrail flares away from the shoulder back to the post anchor. Posts 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.



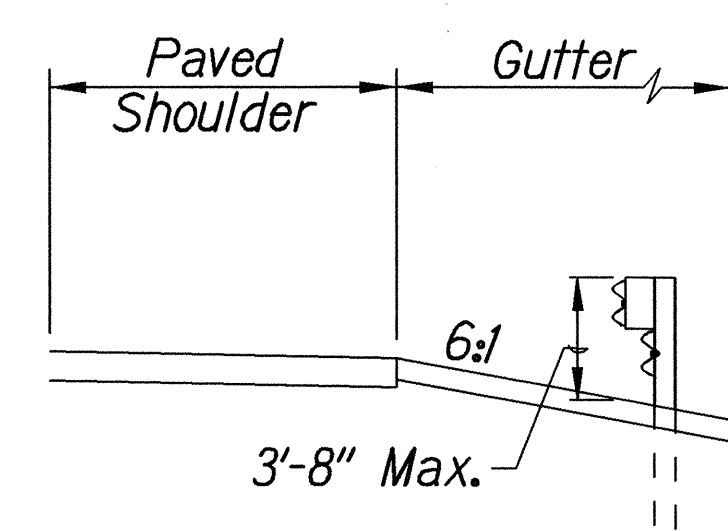
<i>Design speed mph</i>	<i>a:b</i>
68	15:1
62	13:1
56	12:1
50	11:1
43	10:1
37	9:1
31	7:1



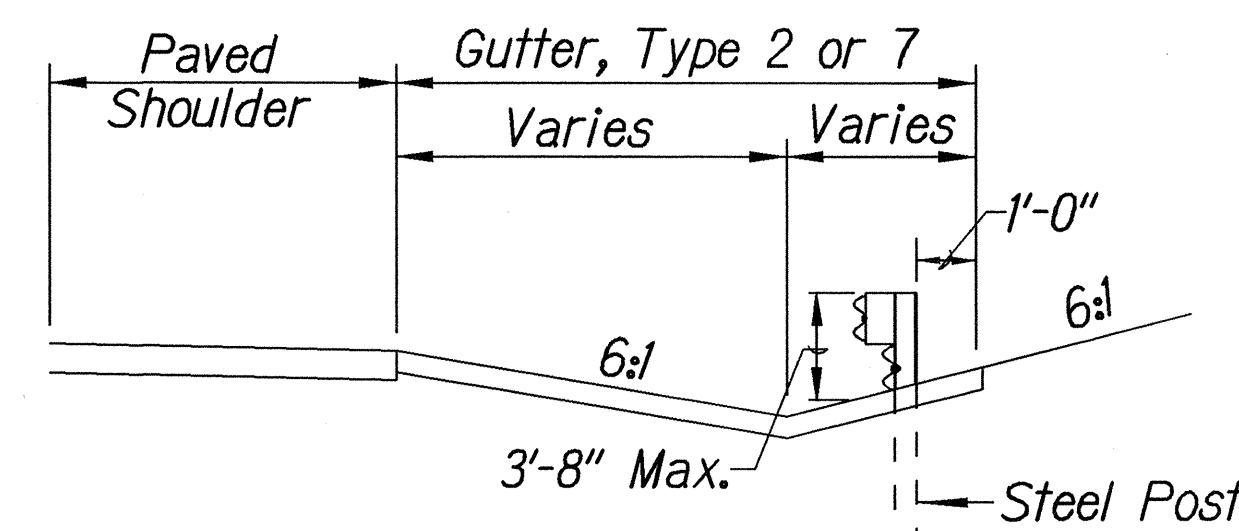
ELEVATION (Profile Along Rail)



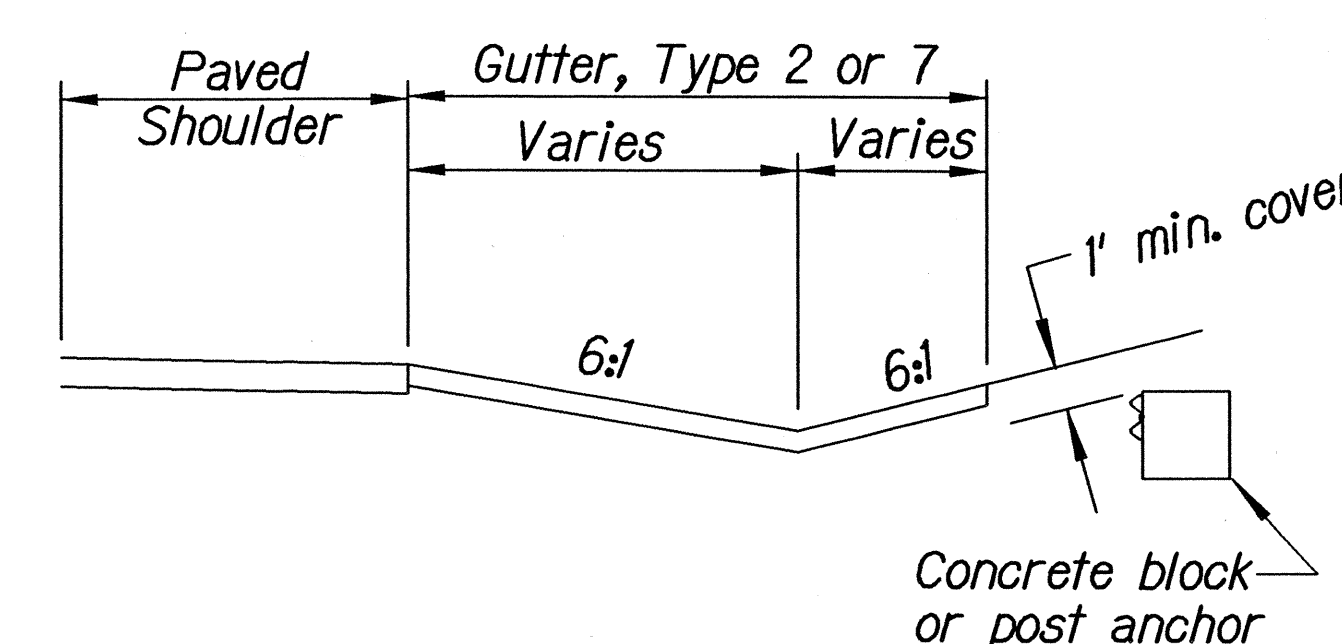
Section A-A



Section B-B
(With Rubrail)



Section C-C
(With Rubrail)



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPE "A" FLARE

HANA HIGHWAY RESURFACING

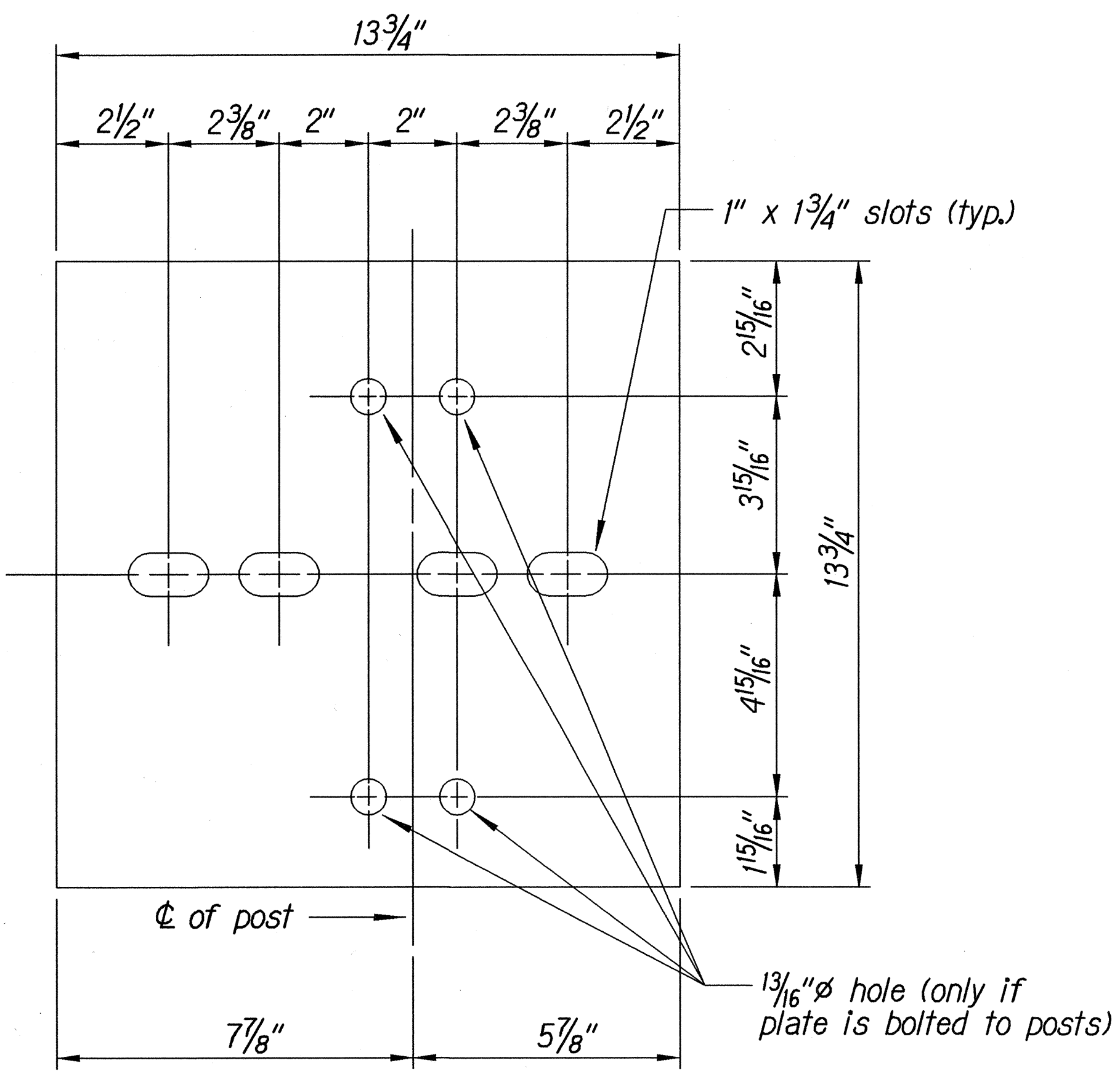
Vicinity of Waikamoi Bridge to Honomanu Bridge

Project No. 360A-02-05M

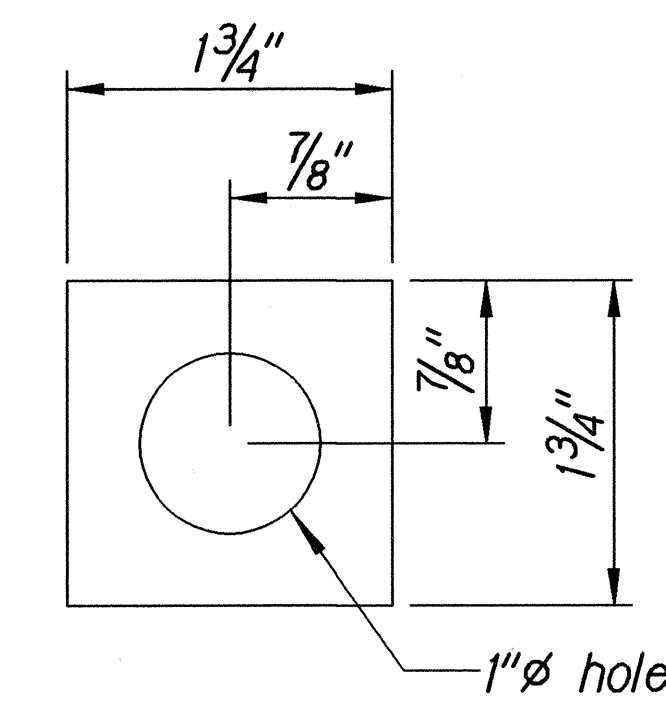
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SHEET No. 1 OF 3 SHEETS

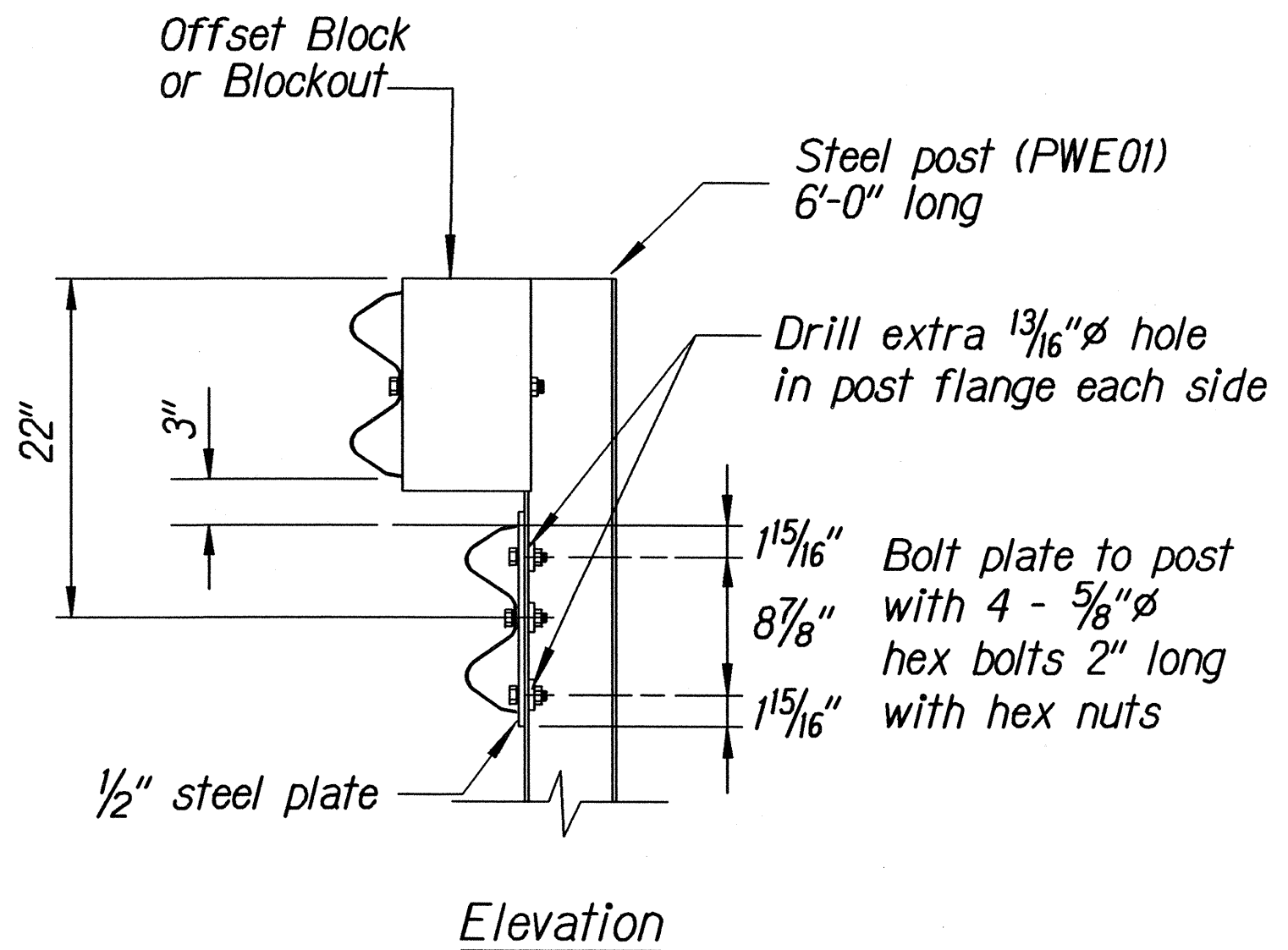
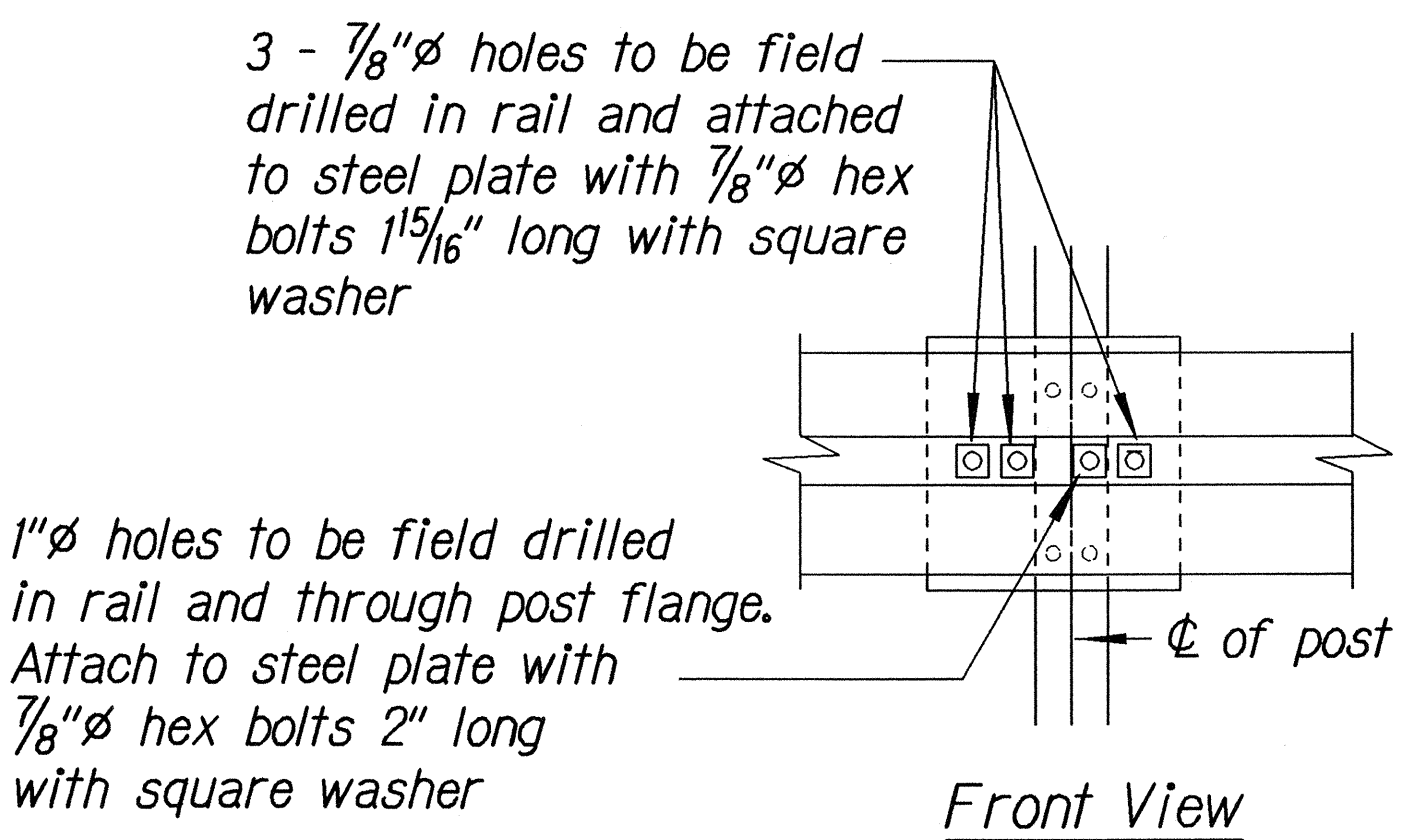
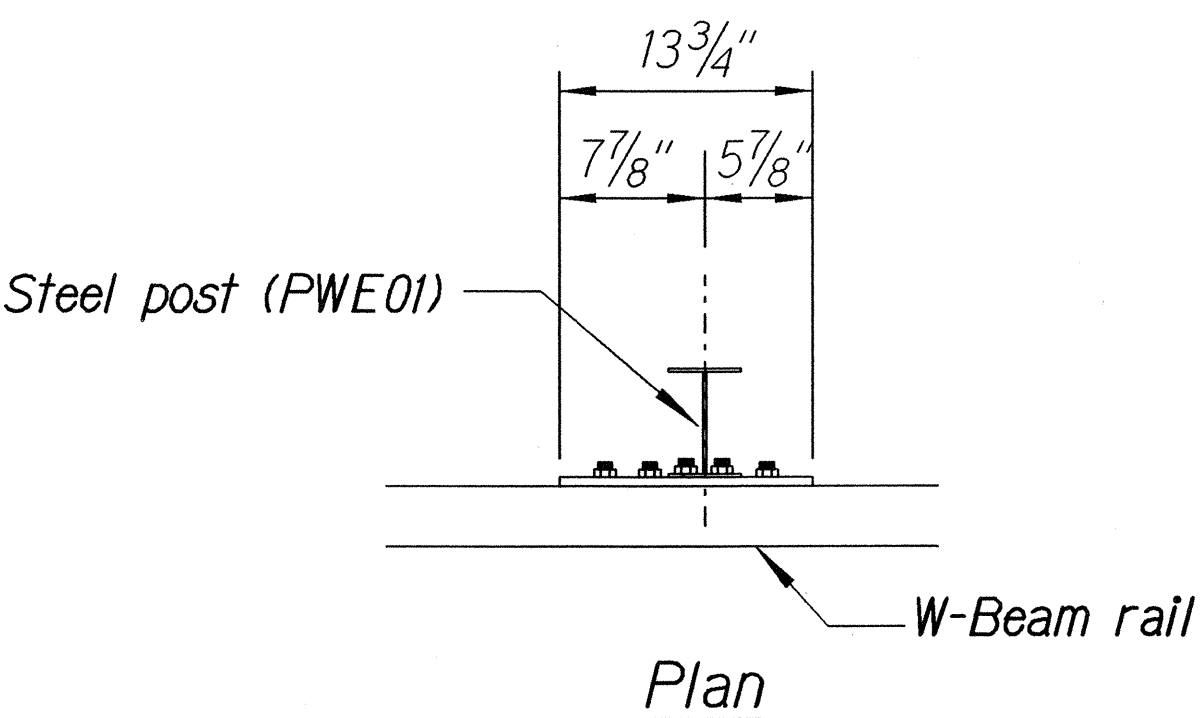
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HAWAII	HAW.	360A-02-05M	2005	21	27



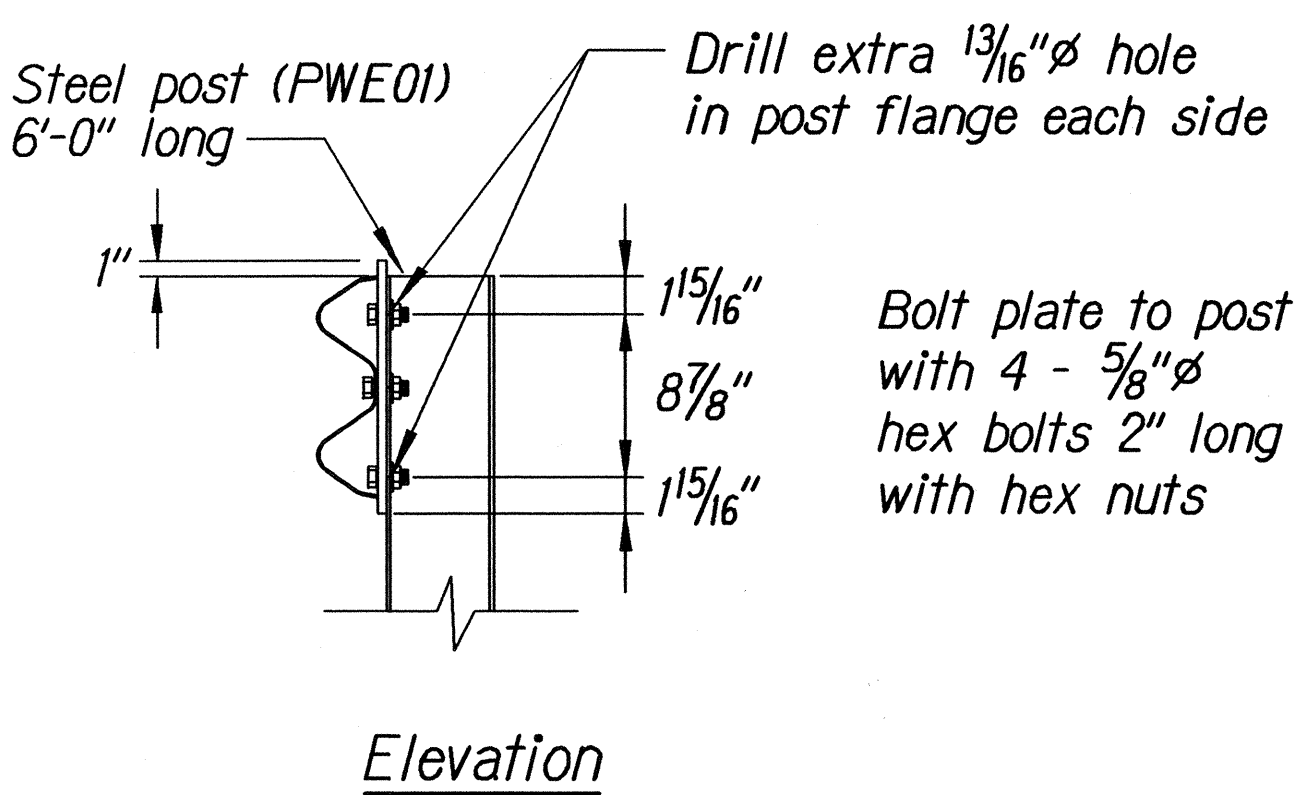
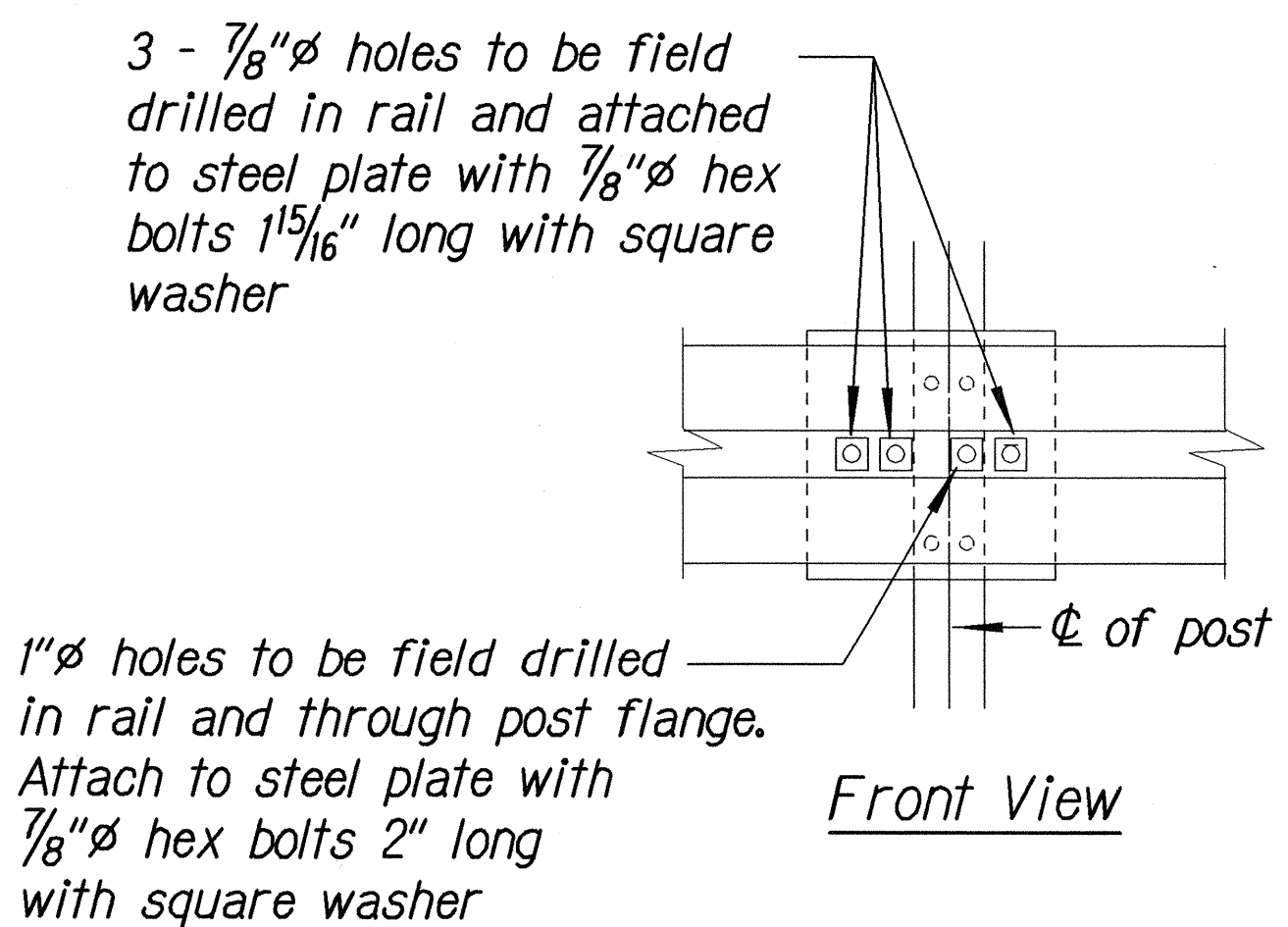
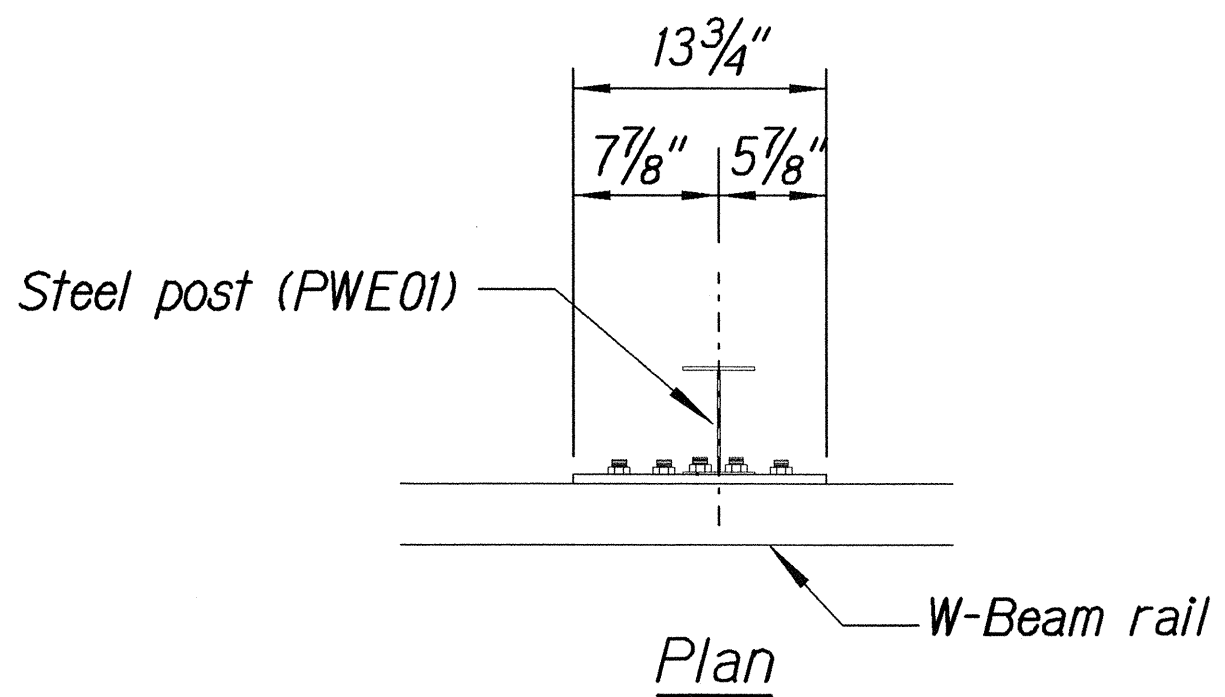
Steel Plate - 1/2"
(Hot-dip Zinc Coated Galvanized
Welded or Bolted to Post)



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



RUBRAIL ANCHOR DETAILS



POST ANCHOR DETAILS

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

Note:
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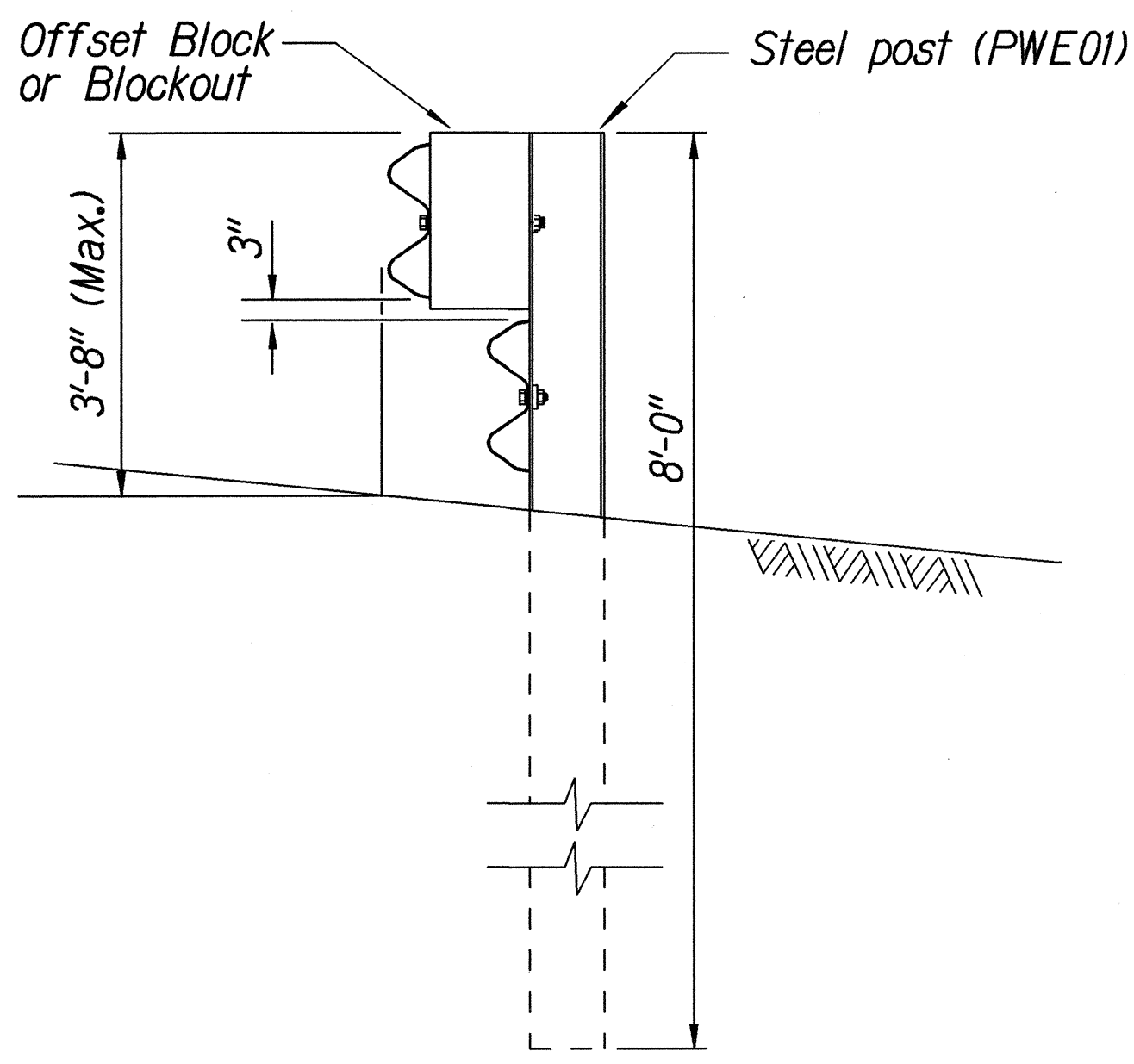
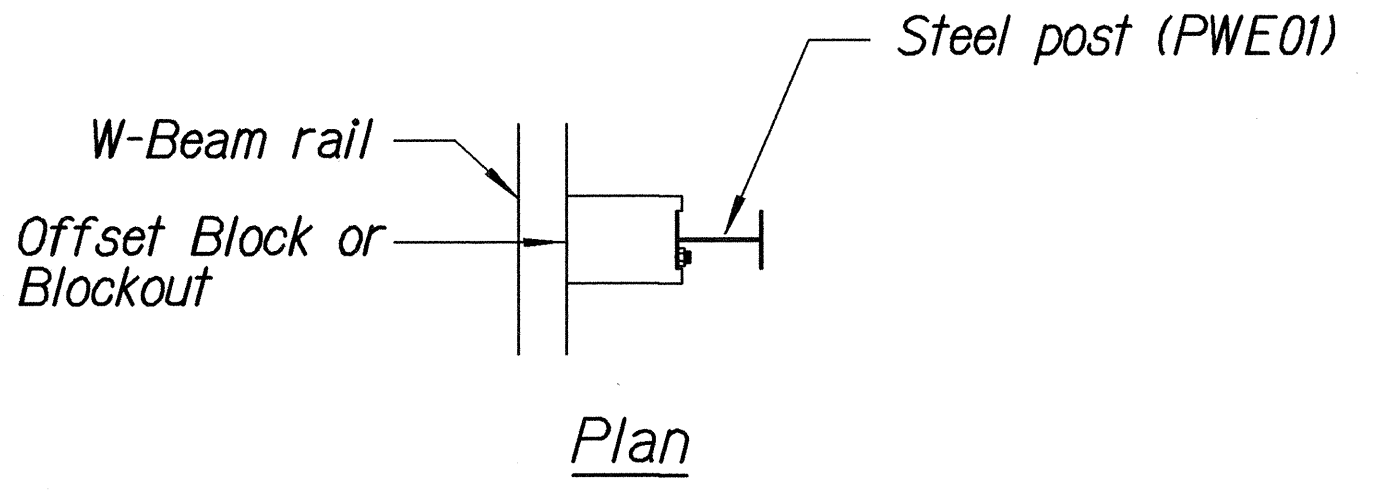
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPE "A" FLARE
HANA HIGHWAY RESURFACING
Vicinity of Waikamoi Bridge to Honomanu Bridge
Project No. 360A-02-05M
Scale: NTS Date: February, 2005
SHEET No. 2 OF 3 SHEETS

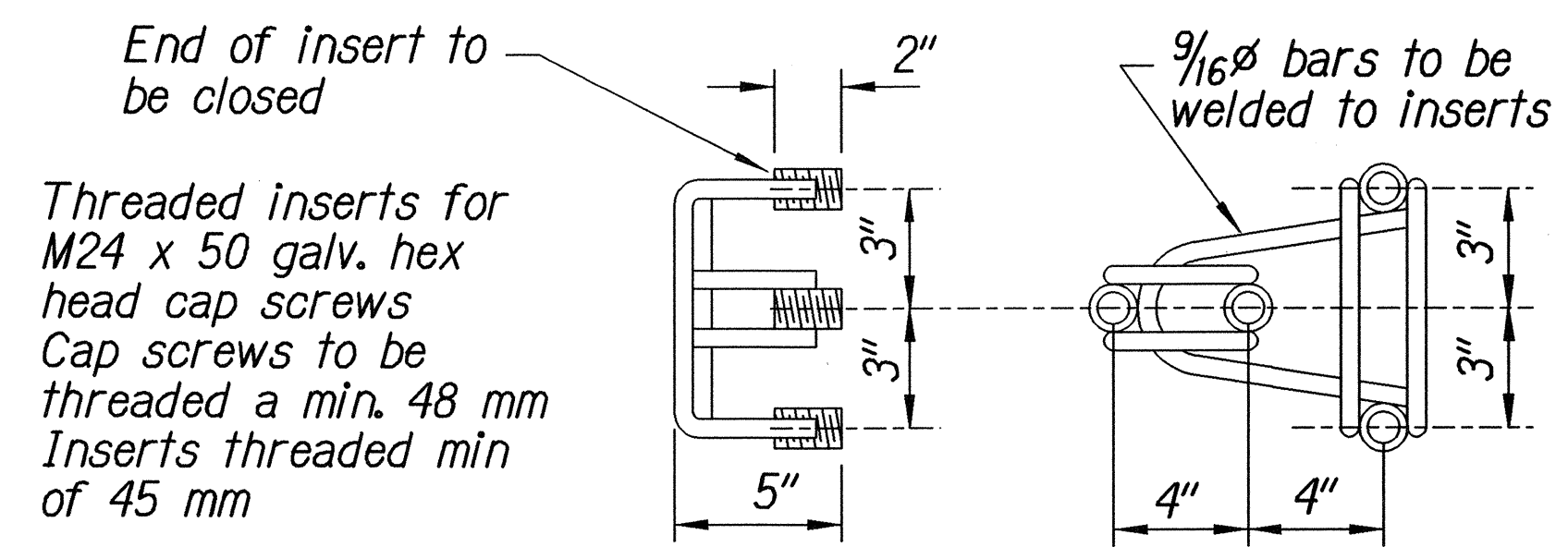
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

73-01/99 idrudy/quadrant/494el2dgn (standard plan TE-58 07/01/86, TE-59 01/03/89 & TE-60 07/01/89)

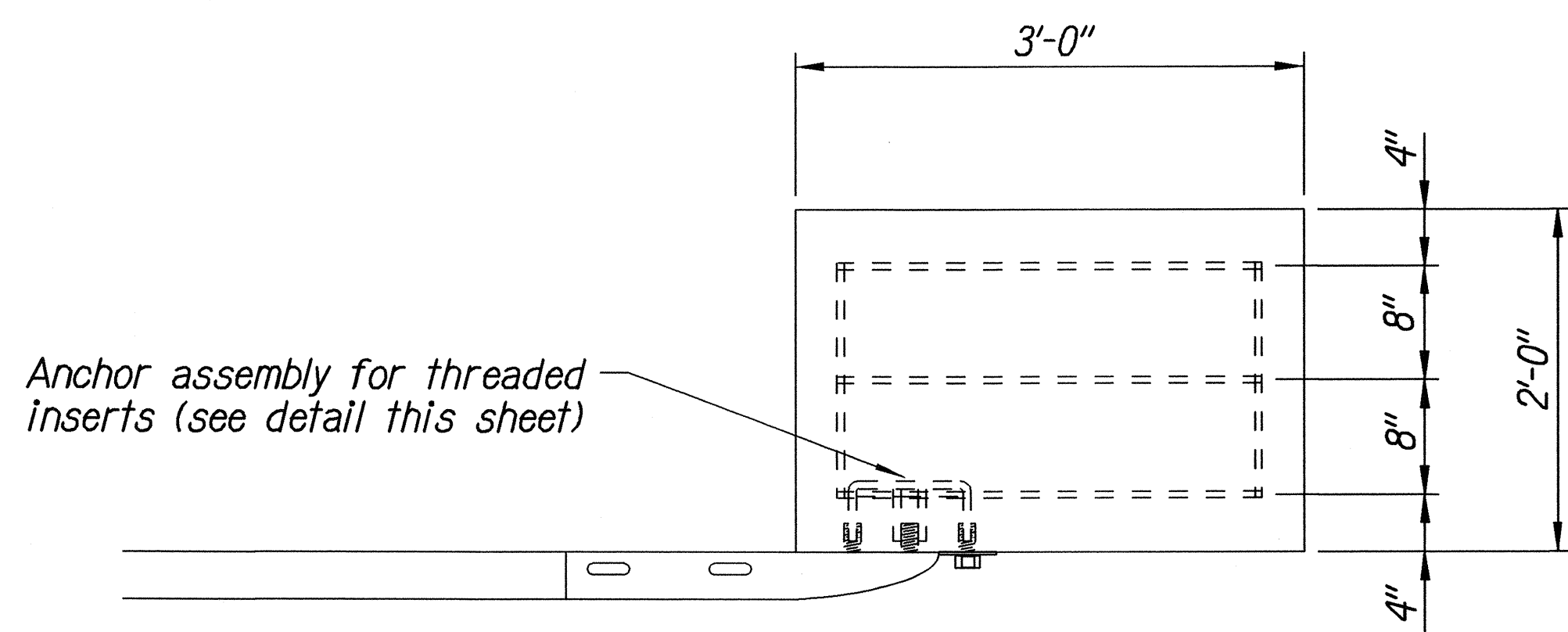
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HAWAII	HAW.	360A-02-05M	2005	22	27



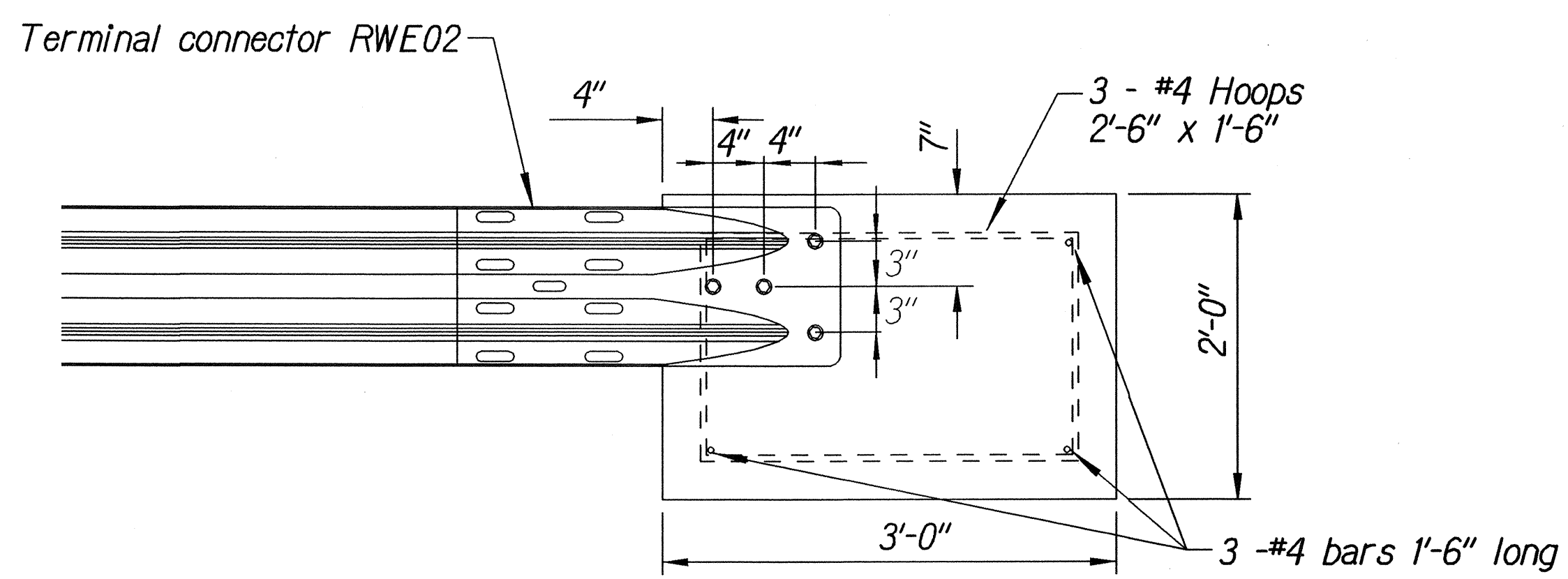
STEEL POST GUARDRAIL
WITH RUBRAIL



ANCHOR ASSEMBLY
CONCRETE BLOCK ANCHOR



Plan



Elevation

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

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

Note:

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

Standard plan TE-58 07/01/85, TE-59 11/03/89 & TE-60 07/01/85

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPE "A" FLARE

HANA HIGHWAY RESURFACING

Vicinity of Waikamoi Bridge to Honomanu Bridge

Project No. 360A-02-05M

Scale: NTS Date: February, 2005

SHEET No. 3 OF 3 SHEETS