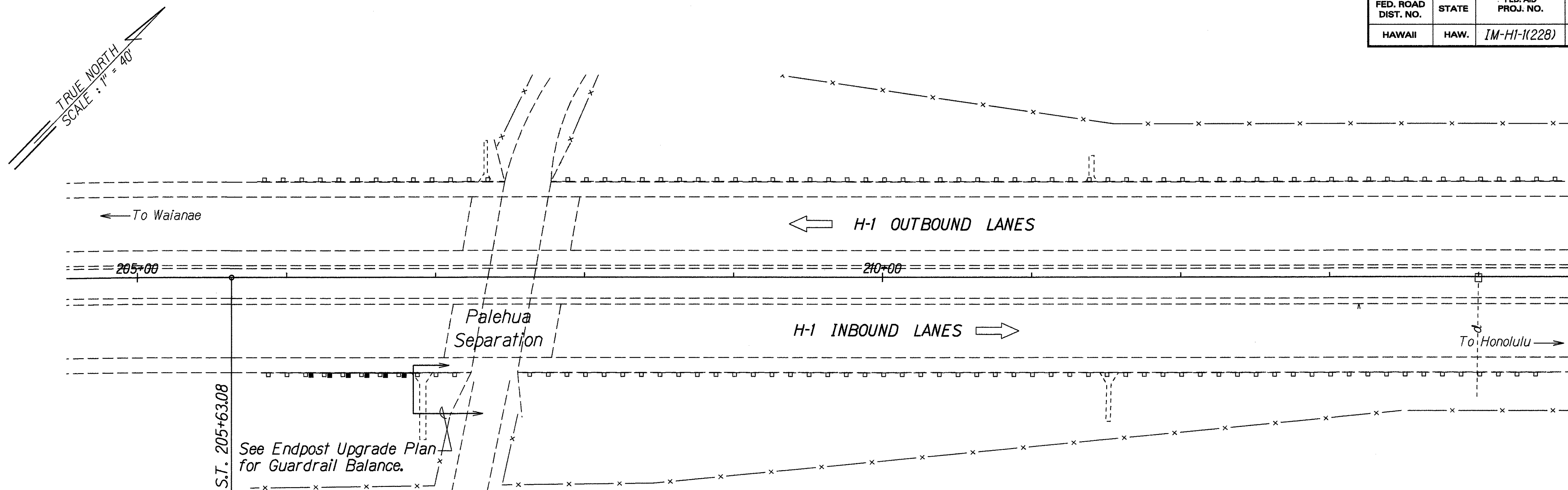
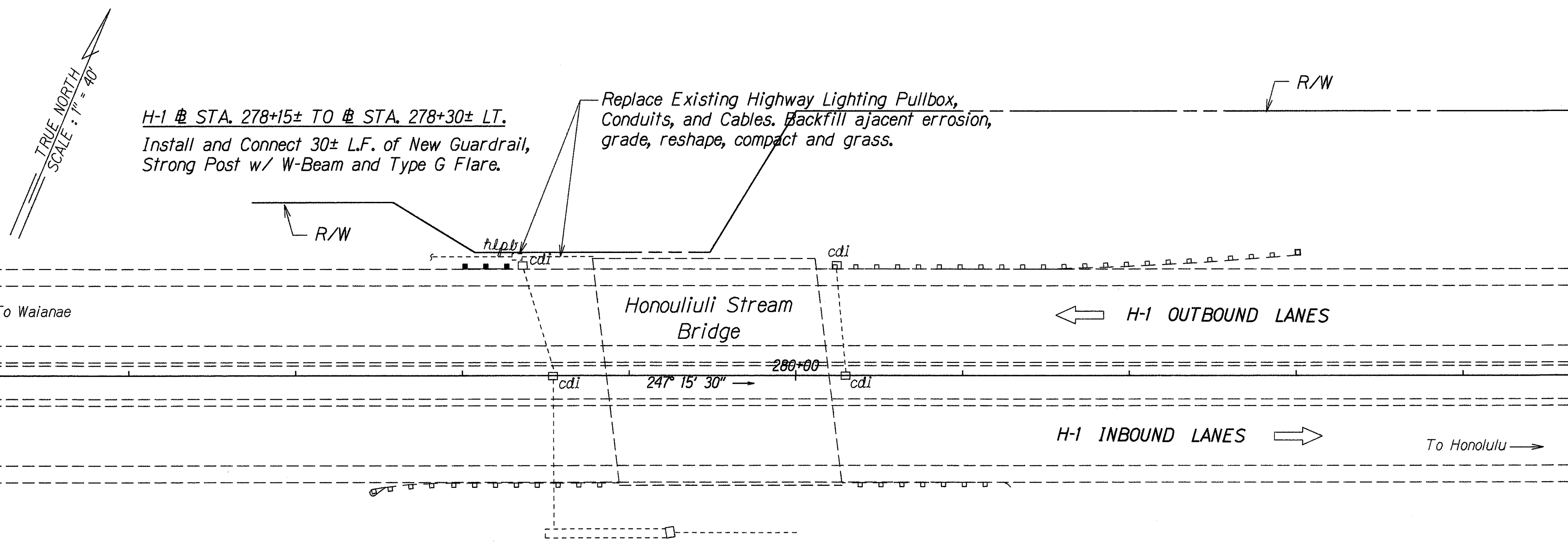


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(228)	1999	33	82



H-1 @ STA. 206+15 TO @ STA. 206+85± RT.
 Remove 70' L.F. of Existing Damaged Metal Guardrail.
 Install and Connect 70± L.F. of New Guardrail,
 Strong Post w/ W-Beam



H-1 @ STA. 278+15± TO @ STA. 278+30± LT.
 Install and Connect 30± L.F. of New Guardrail,
 Strong Post w/ W-Beam and Type G Flare.

Replace Existing Highway Lighting Pullbox,
 Conduits, and Cables. Backfill adjacent erosion,
 grade, reshape, compact and grass.

Note: Replacement of Pullbox, Jacketing Existing
 Conduits, Backfilling, Filling, Grading, Reshaping,
 Compacting, and Grassing shall be Paid on a
 Force Account under Contract Item No. 622.9000.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	10/28/98
INSTRUMENT	DESIGNED BY	
NO. 001011	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

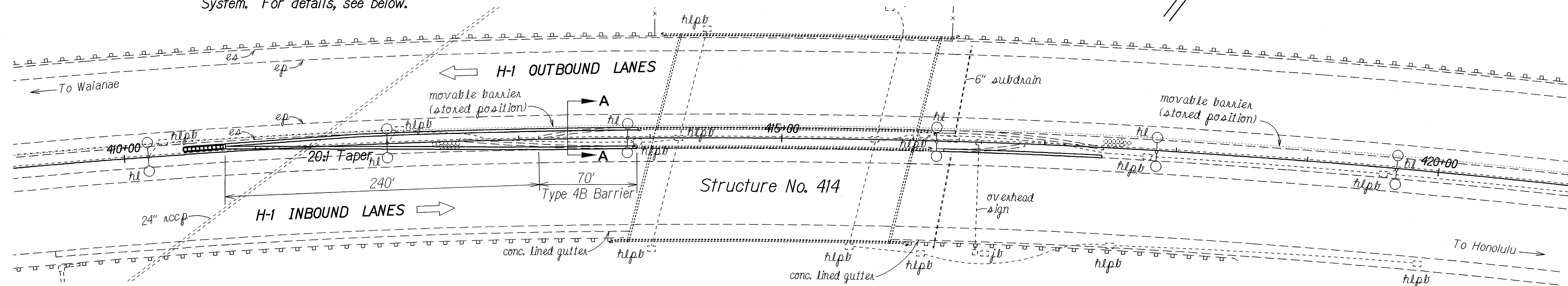
GUARDRAIL UPGRADE & DETAILS

INTERSTATE ROUTE H-1
Guardrail & Shoulder Improvements
Palehua Separation to Waiekele Bridge
Federal Aid Project No. IM-HI-1(228)
Scale: 1"=40' Date: Oct., 1998
SHEET No. 1 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(228)	1999	34	82

H-1 @ STA. 410+45 TO @ STA. 413+90

Remove 200± L.F. of Existing Concrete Barrier and Inertial Barrels. Install and Connect 540 L.F. of New Median Barrier 4E, 70 L.F. of New Median Barrier 4F and REACT 350-9 System or GuardGuard System. For details, see below.

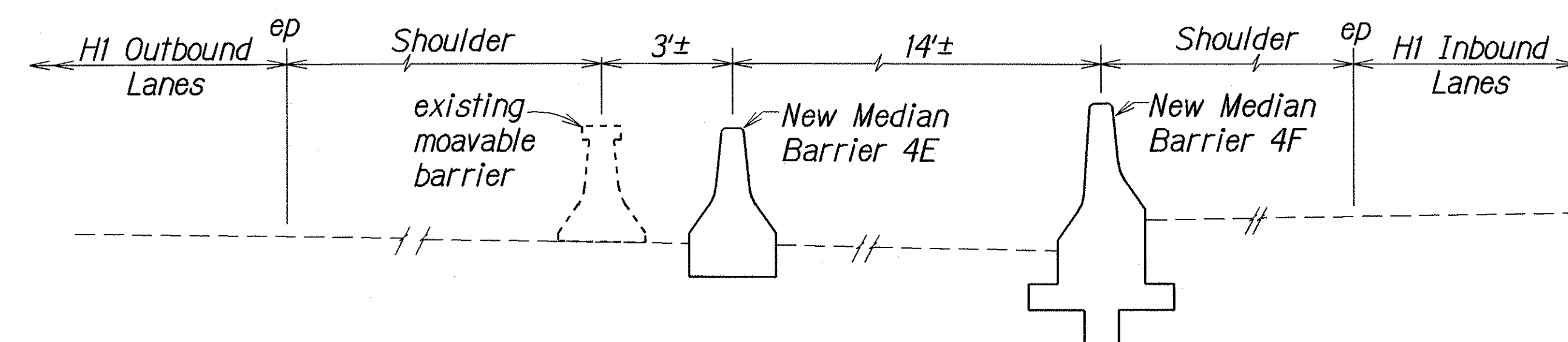


NOTES

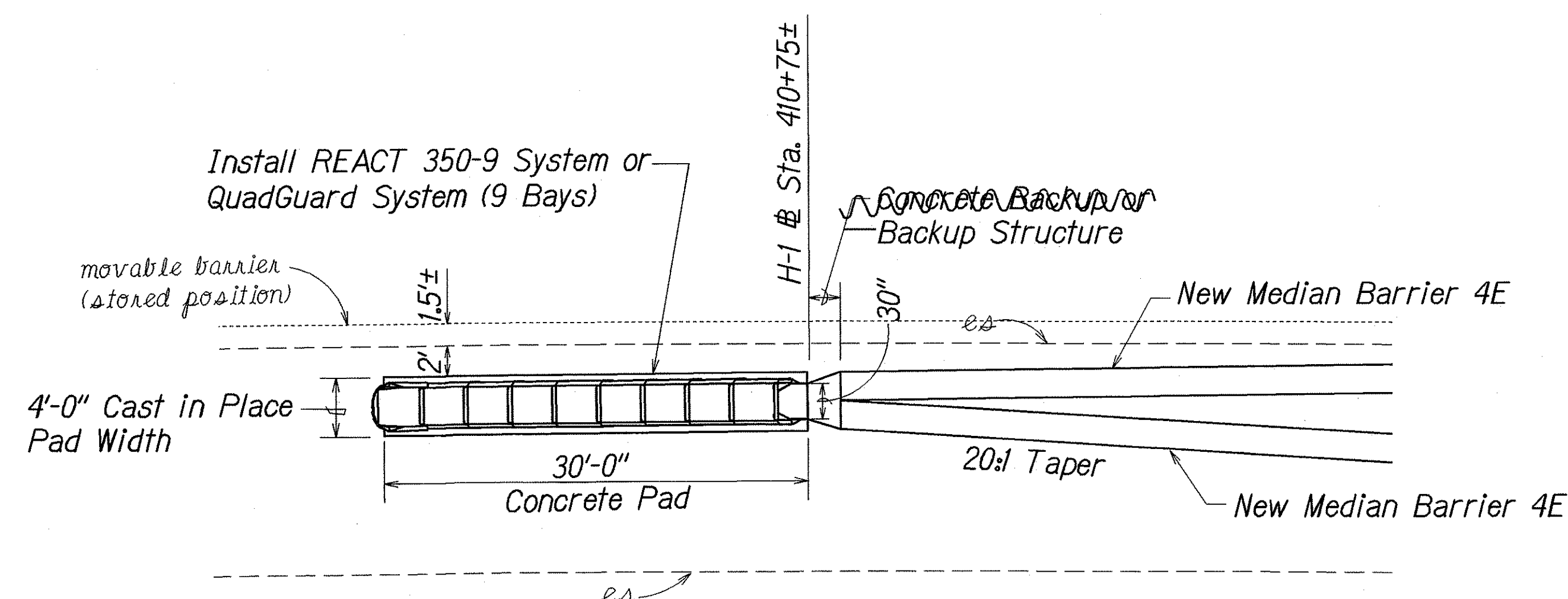
1. The removal and disposal of existing concrete barrier, inertail barrels, and landscaping within the work area shall be considered incidental to various contract items.
2. The relocation of existing highway light conduits, cables and/or pullboxes will be done on a force account basis under Contract Item No. 622.9000.

H-1 @ STA. 416+24 TO @ STA. 417+40

Remove 60± L.F. of Existing Concrete Barrier and Inertial Barrels. Install and Connect 120 L.F. of New Median Barrier 4E.



SECTION A-A
Not to Scale



TYPICAL DETAIL - QUADGUARD SYSTEM

H-1 @ STA. 410+75±

Scale: 1/8" = 1'-0"

NOTE:

Transition Panel was not installed on the left side face of the Quadguard System.

LEGEND FOR AS-BUILT POSTINGS

	Squiggly line for as-built deletion
	Double line for as-built deletion
	Text for as-built posting

6/8/01	Revise New Type 4A and 4B (Rigid Barrier) to New Median Barrier 4E and 4F, respectively.
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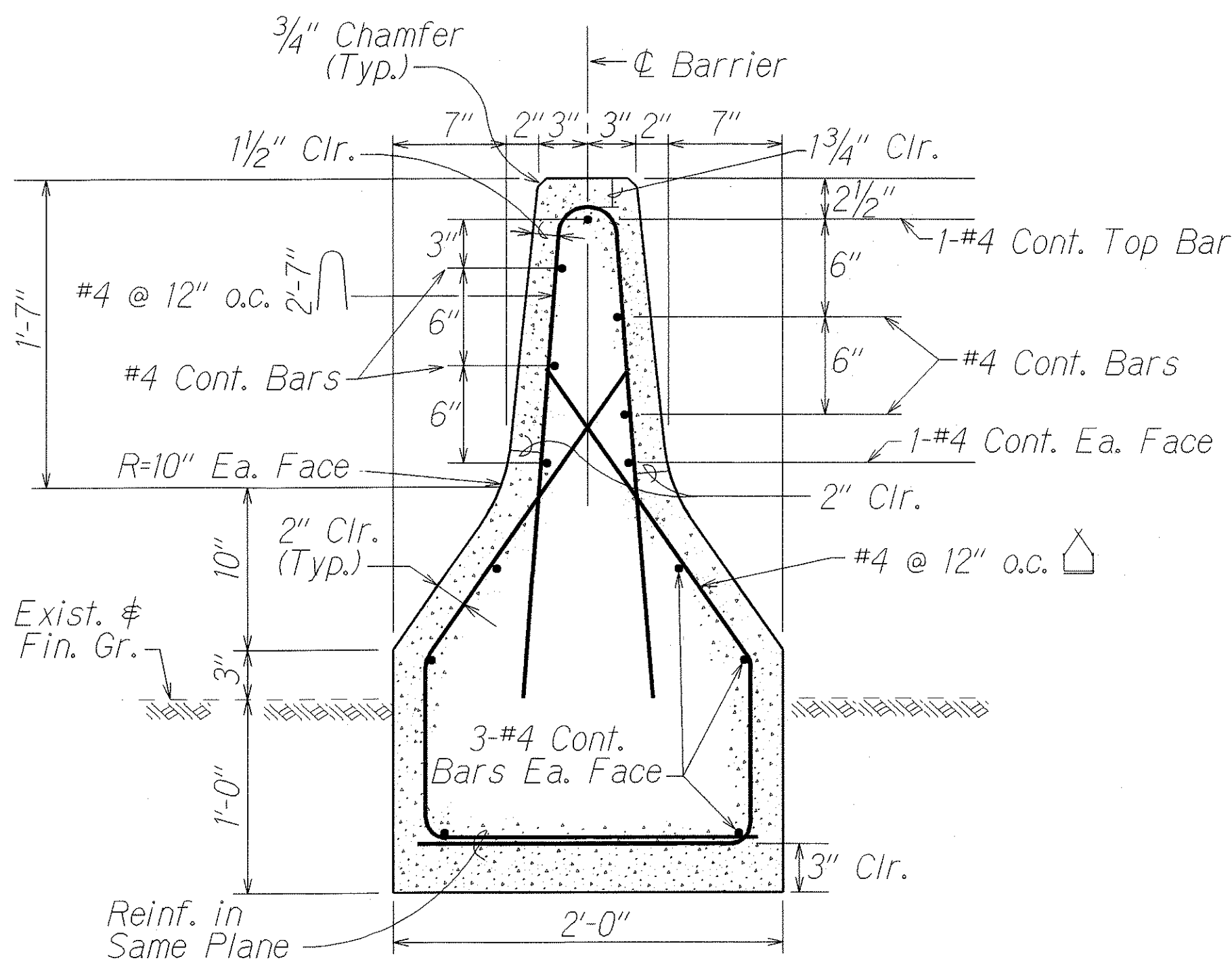
DATE	REVISION
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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
GUARDRAIL UPGRADE & DETAILS	
INTERSTATE ROUTE H-1	
Guardrail & Shoulder Improvements	
Palehua Separation to Waikale Bridge	
Federal Aid Project No. IM-HI-1(228)	
Scale as Noted	Date: Oct., 1998
SHEET No. 2 OF 7 SHEETS	

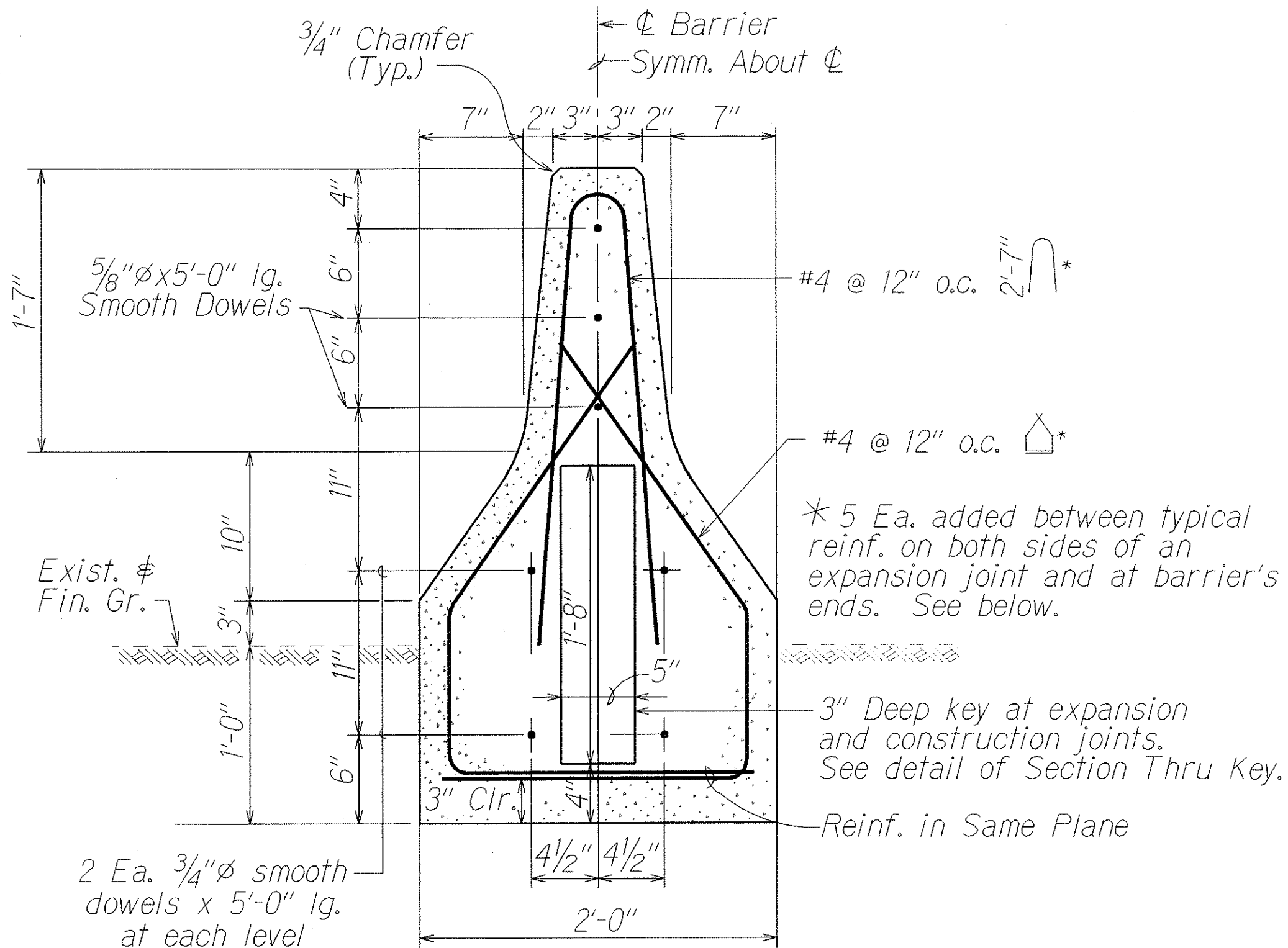
"AS-BUILT"

C.O. 34

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-K(228)	1999	C.O. 34S-1	82



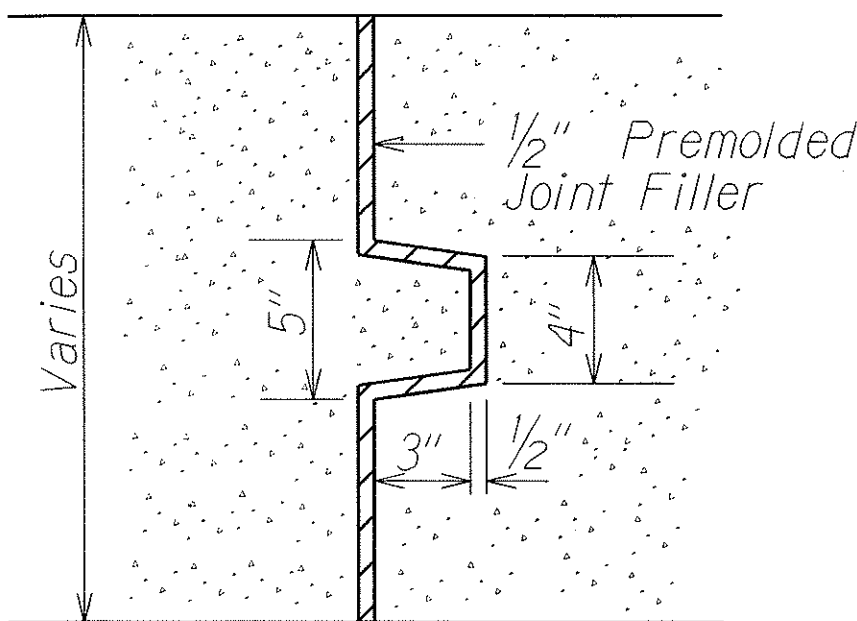
TYPICAL SECTION TYPE 4E
Scale: 1 1/2"=1'-0"



SECTION A
Scale: 1 1/2"=1'-0"

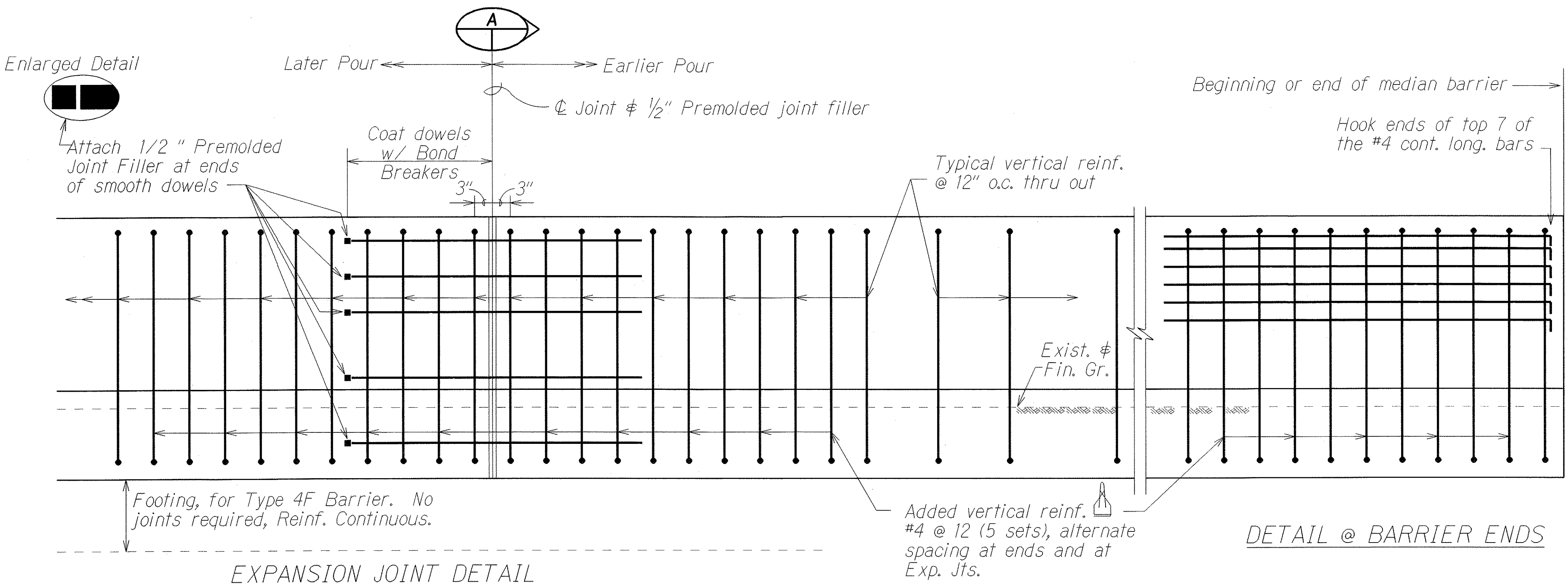
Barrier Notes:

1. Reinf. = Gr. 60
2. Conc. = Class A
3. Long. Reinf. Splice = Lap 18"
4. Dowels shall be plain Gr. 60 Bars
5. Exp. joint at 96' max. intervals.
6. Control joints shall be placed at 32' max. intervals between exp. joint.
7. 1/2" premolded joint filler shall be incidental to Type 4 Rigid Barrier Guardrail.
8. The exterior surface and vertical alignment of the Type 4 Rigid Barrier Guardrails shall not have variations of more than 1/4" in 20' and 1/2" in 40'.
9. Where PVC conduits are required, see Sheet C-17 for details.



NOTE: 1/2" Premolded joint filler is not used at construction joints.

SECTION THRU KEY AT EXPANSION AND CONSTRUCTION JOINT



EXPANSION JOINT DETAIL

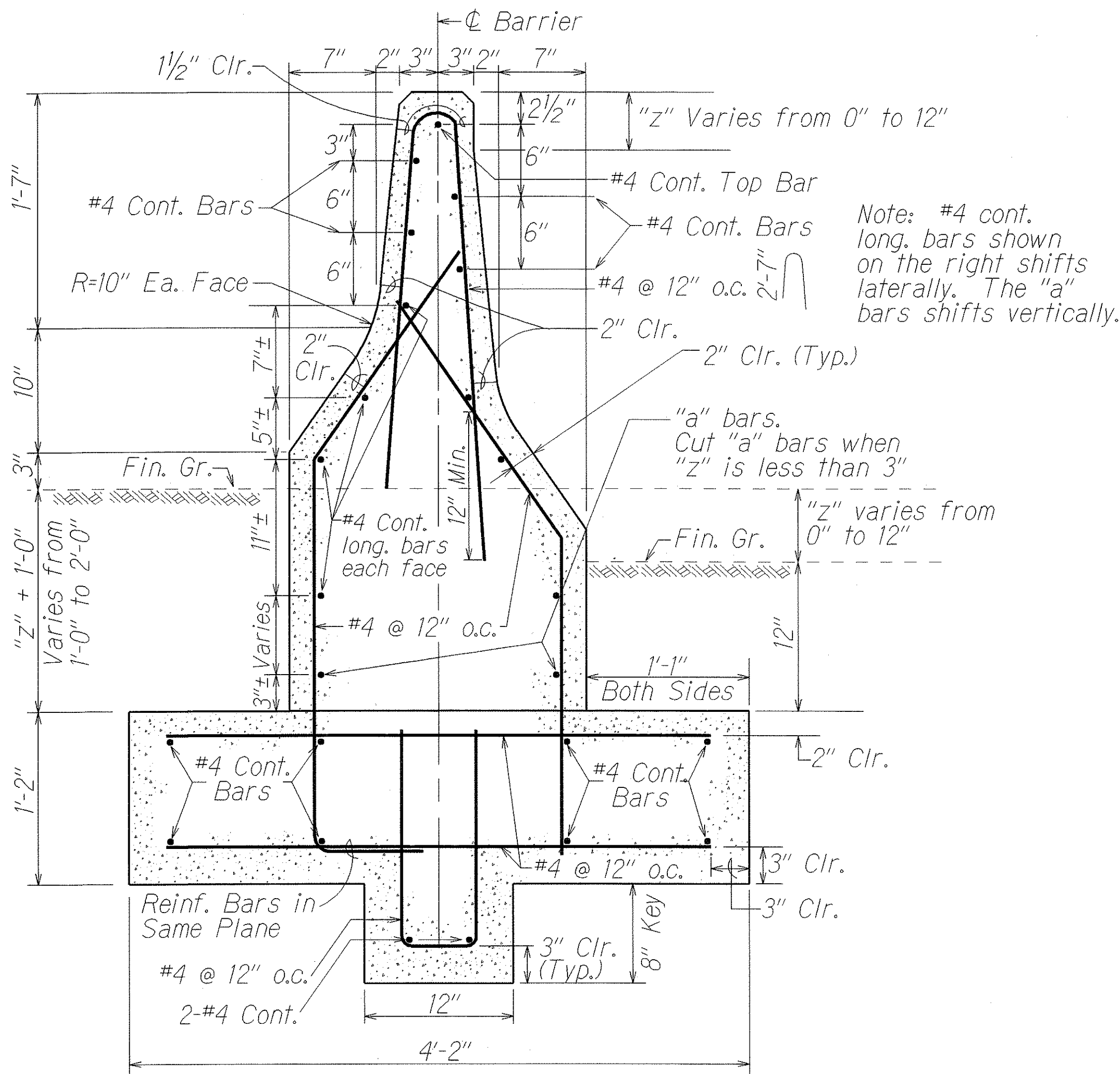
PART ELEVATION - MEDIAN BARRIER
Not to Scale

DETAIL @ BARRIER ENDS

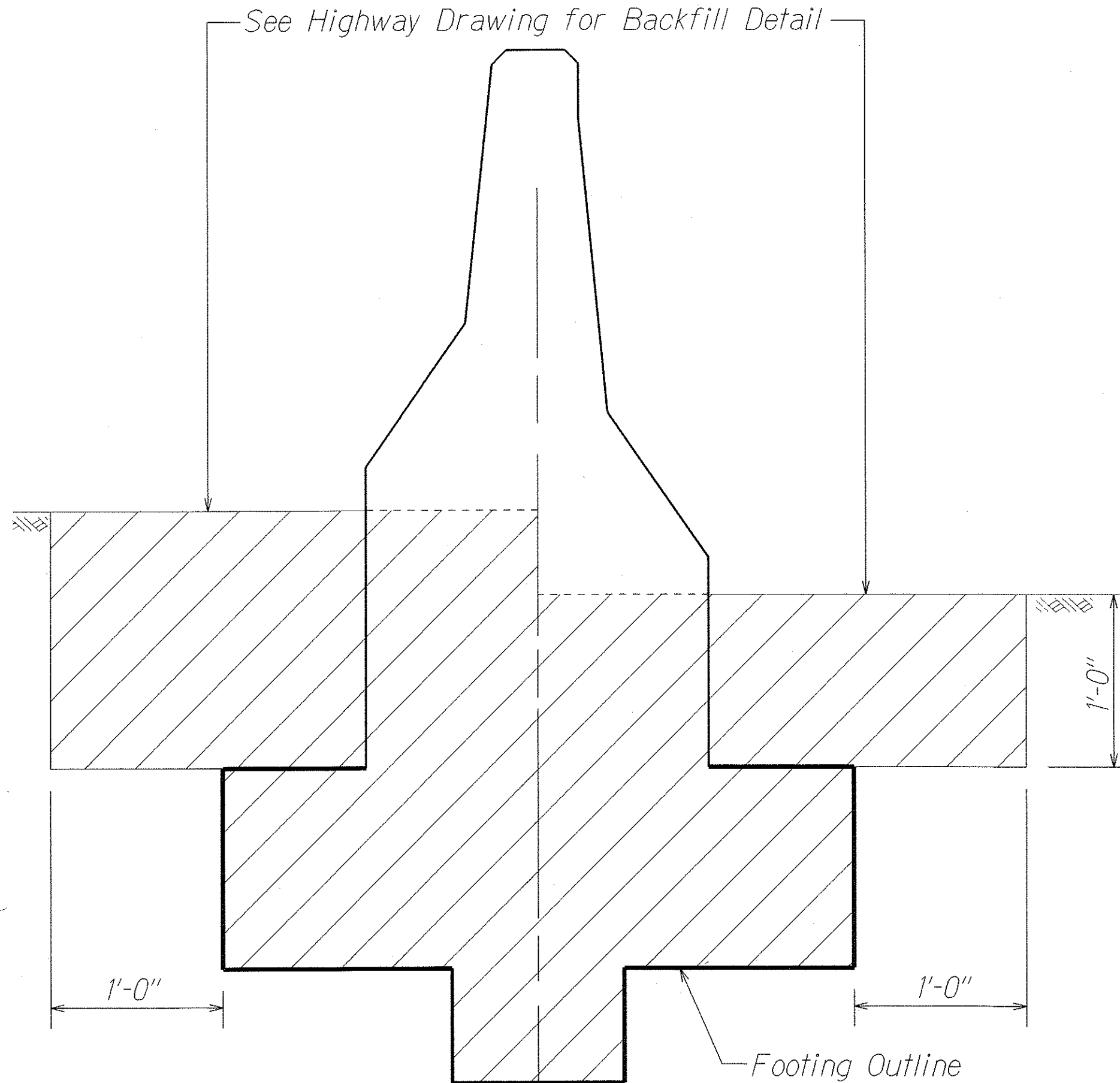
ORIGINAL PLAN	DATE
NOTED BY	DATE
DESIGNED BY	DATE
CHECKED BY	DATE

6/8/01	New Median Barrier 4E Typical Section & Part Elevation
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION MEDIAN BARRIER 4E TYPICAL SECTION & PART ELEVATION INTERSTATE ROUTE H-1 Guardrail & Shoulder Improvements Palehua Separation to Waialeale Bridge Federal Aid Project No. IM-HI-K(228) Scale: As Shown Date:	
SHEET No. S-1 OF 2 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(228)	1999	C.O. 34S-2	82

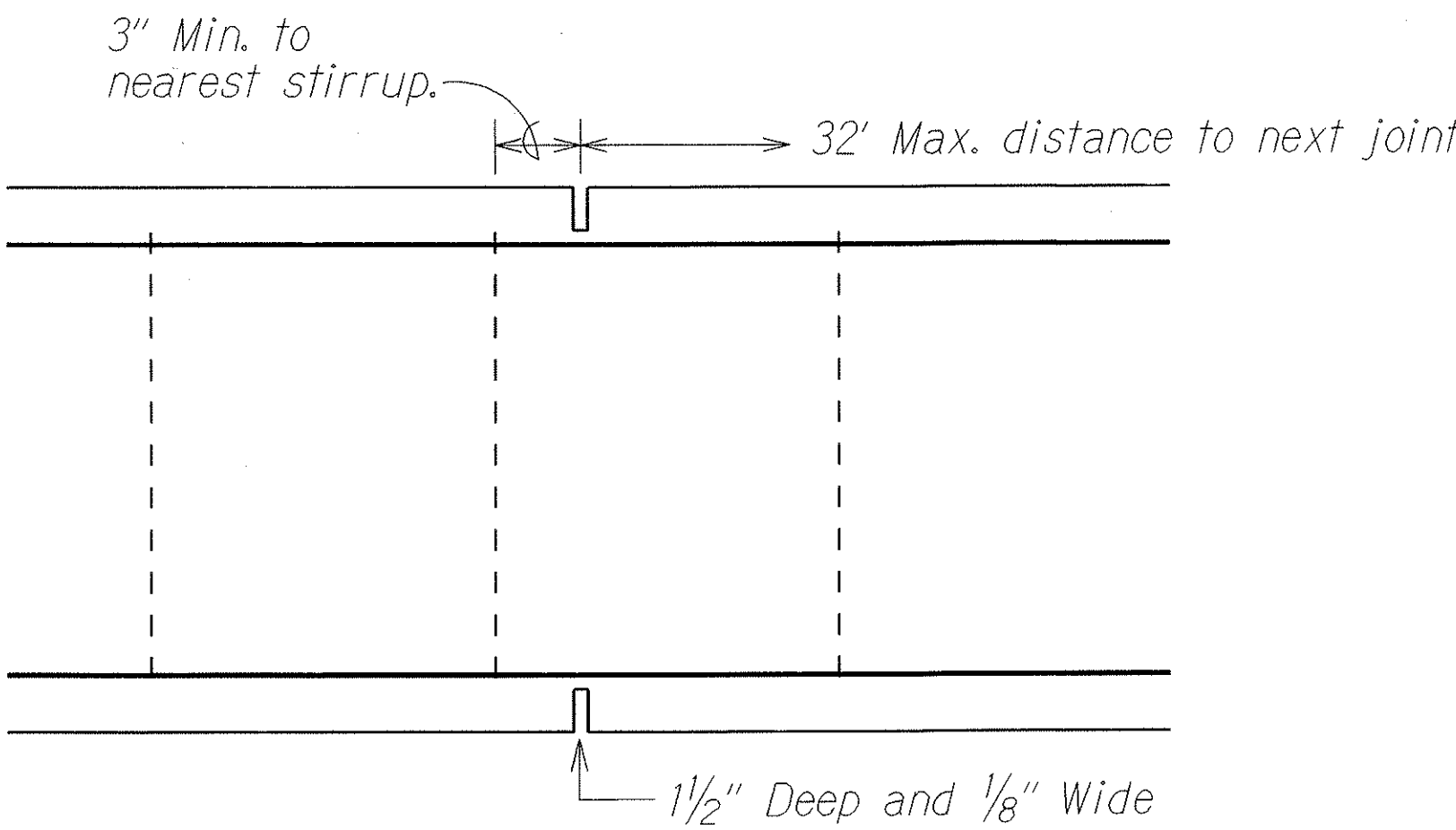


TYPICAL SECTION TYPE 4F
Scale: 1 1/2"=1'-0"

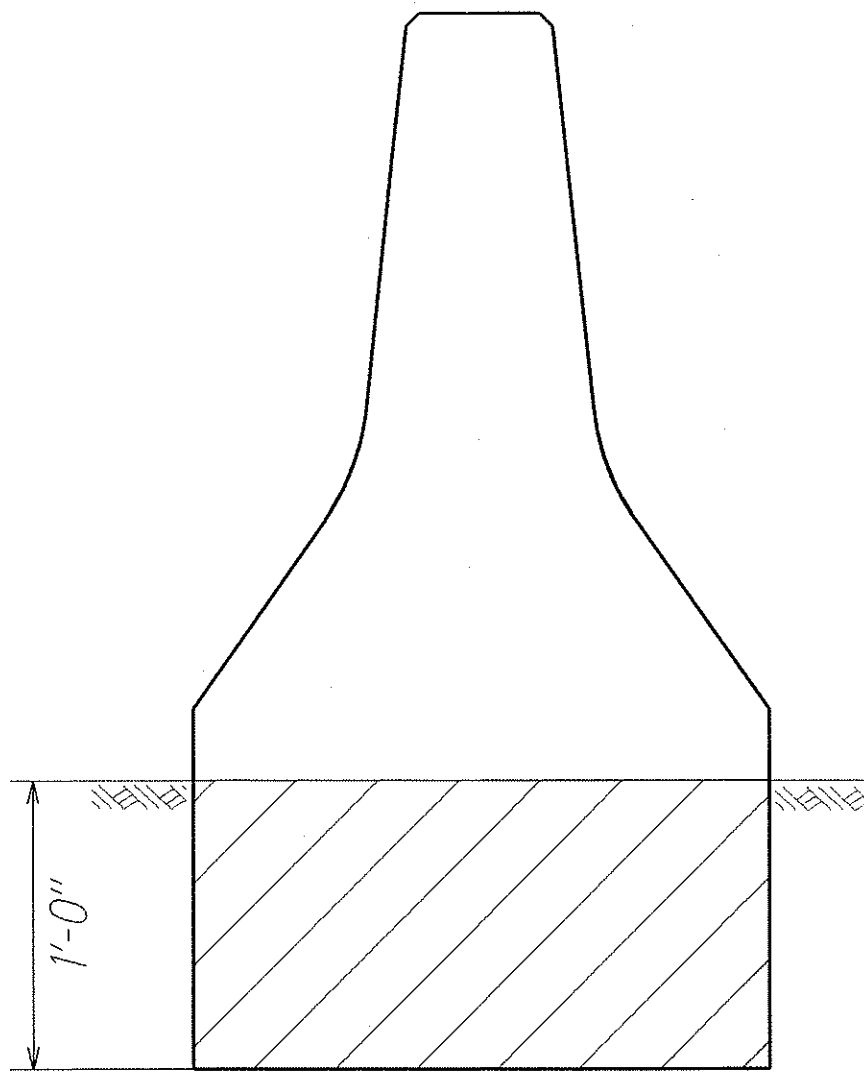


TYPE 4F
Scale: 1 1/2"=1'-0"

Pay limits for Structural Excavation



CONTROL JOINT DETAIL
(Plan View Section)



TYPE 4E

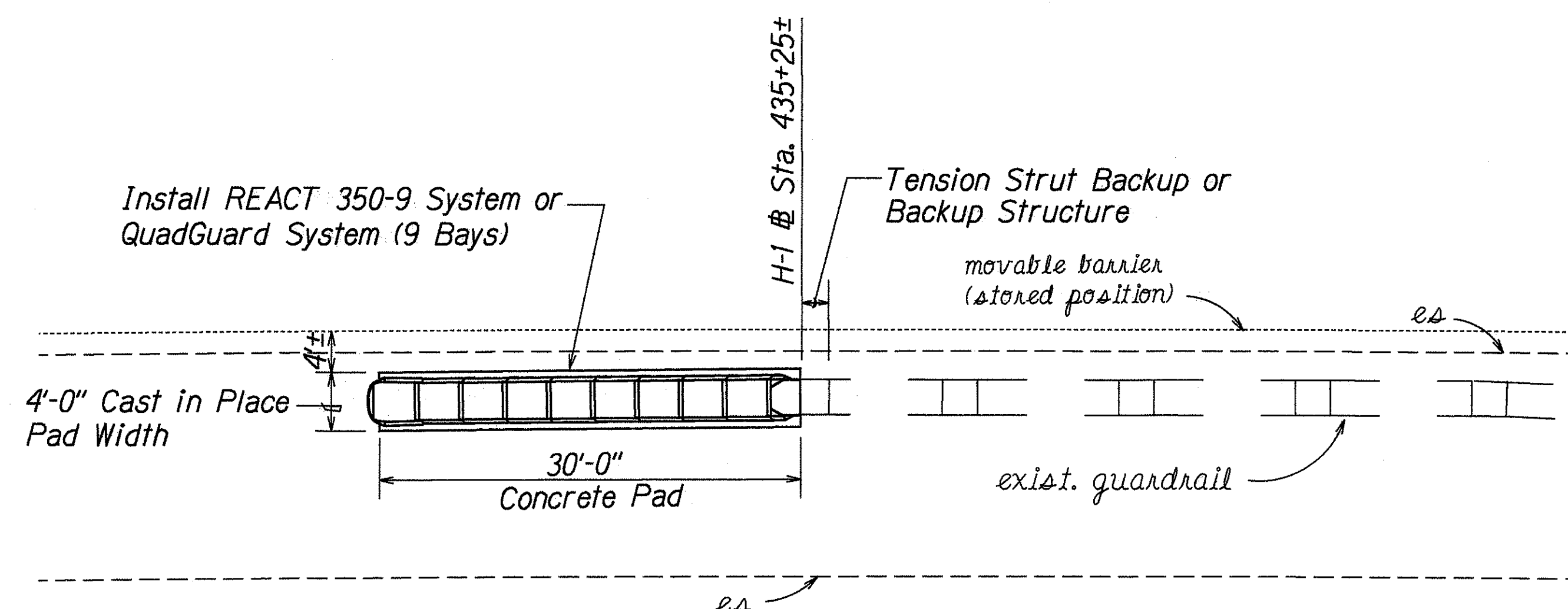
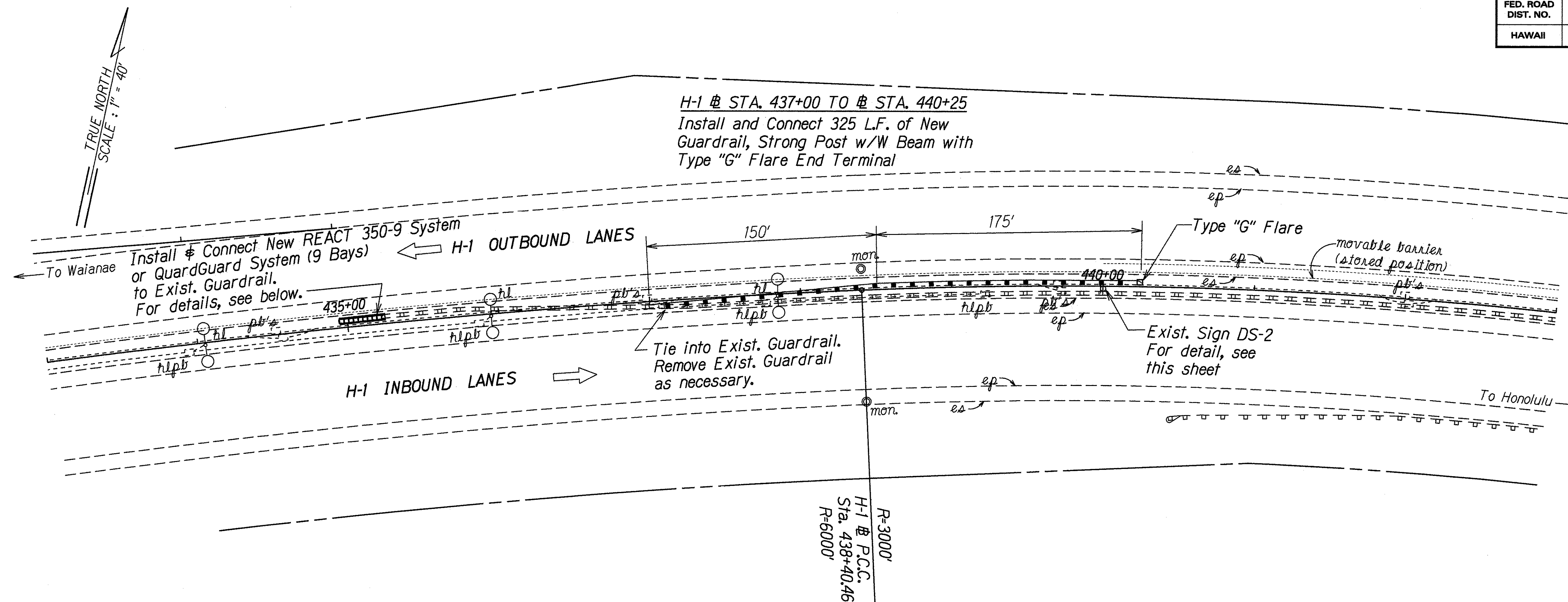
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTED	DRAWN BY	6/8/01
DESIGNED BY	CHECKED BY	
APPROVED BY		

6/8/01	New Median Barrier 4F Typical Section and Details
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION MEDIAN BARRIER 4F TYPICAL SECTION & DETAILS INTERSTATE ROUTE H-1 Guardrail & Shoulder Improvements Palehua Separation to Waialeale Bridge Federal Aid Project No. IM-HI-1(228) Scale: As Shown Date:	

SHEET No. S-2 OF 2 SHEETS

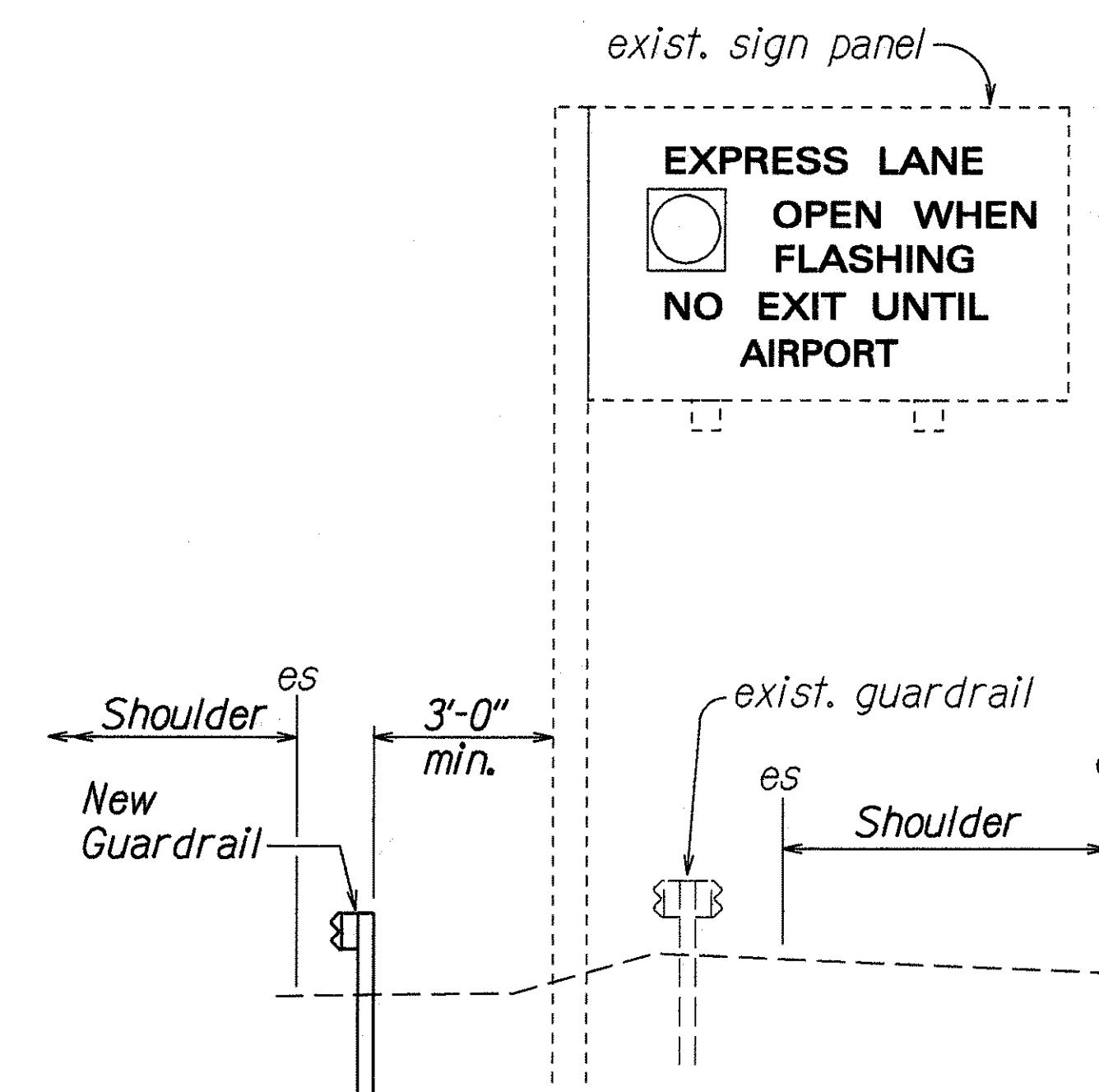
C.O. 34S-2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(228)	1999	35	82



TYPICAL DETAIL - QUADGUARD SYSTEM

H-1 @ 435+25±
Scale: 1/8" = 1'-0"



EXISTING SIGN PANEL DS-2

H-1 @ STA. 440+00 (Inbound)
Not to Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

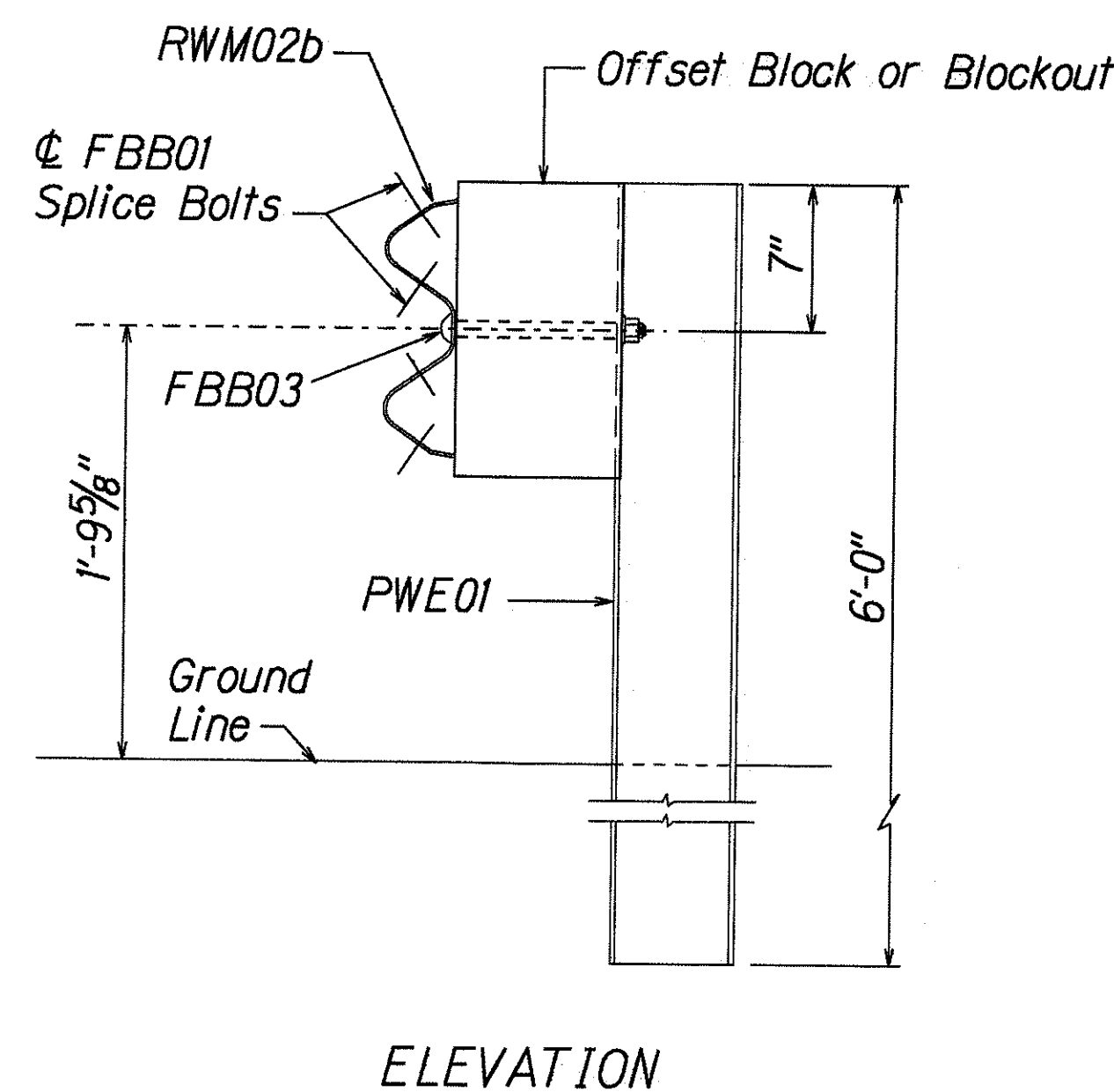
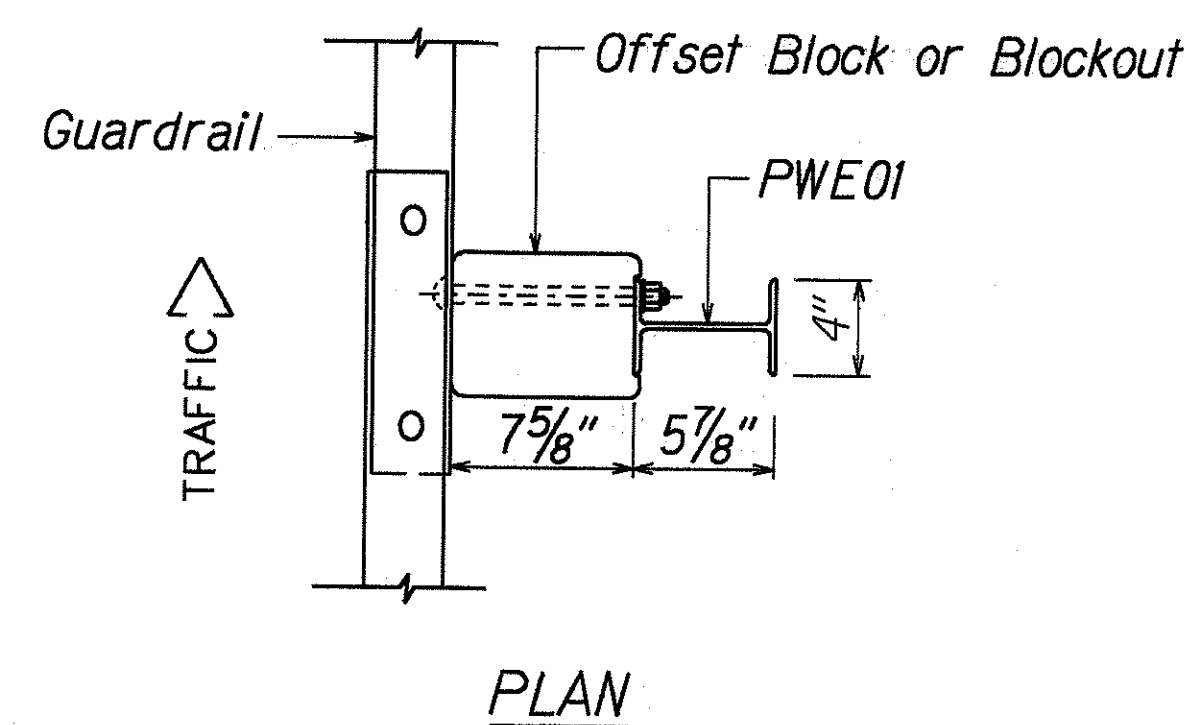
GUARDRAIL UPGRADE & DETAILS

INTERSTATE ROUTE H-1
Guardrail & Shoulder Improvements
Pahua Separation to Waikale Bridge
Federal Aid Project No. IM-HI-1(228)

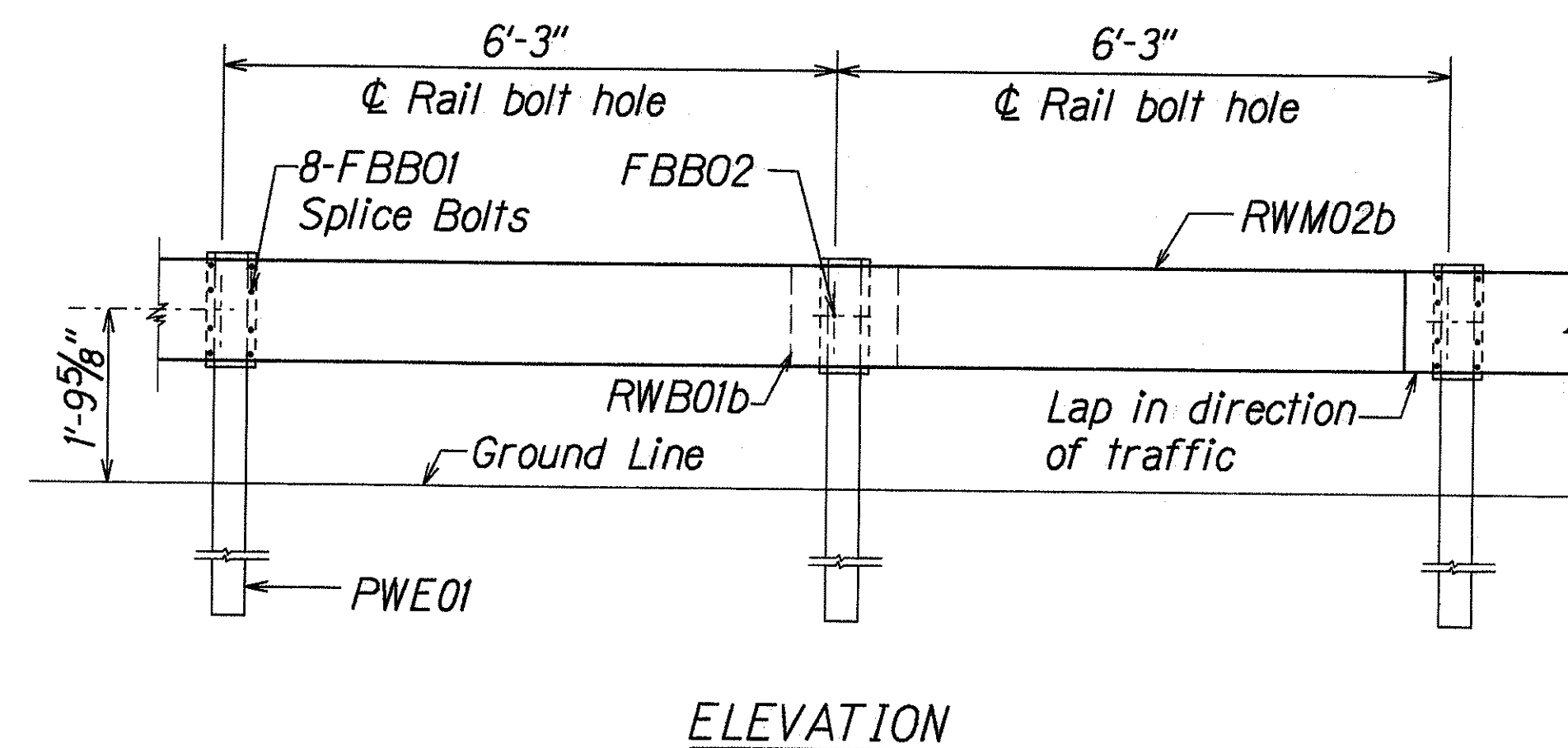
Scale: 1"=40' Date: Oct., 1998

SHEET No. 3 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(228)	1999	37	82

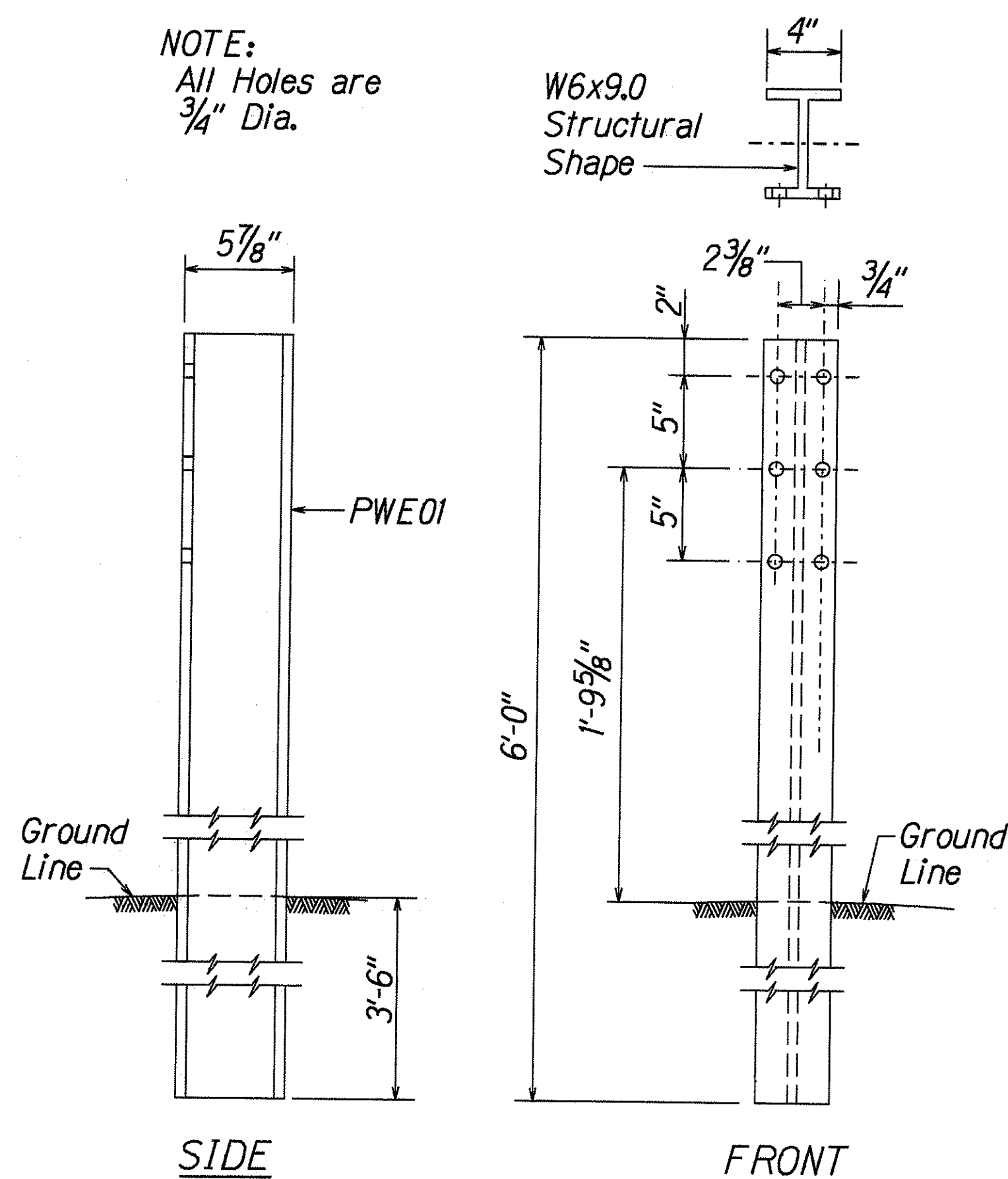


STRONG POST W-BEAM GUARDRAIL (SGR04a)

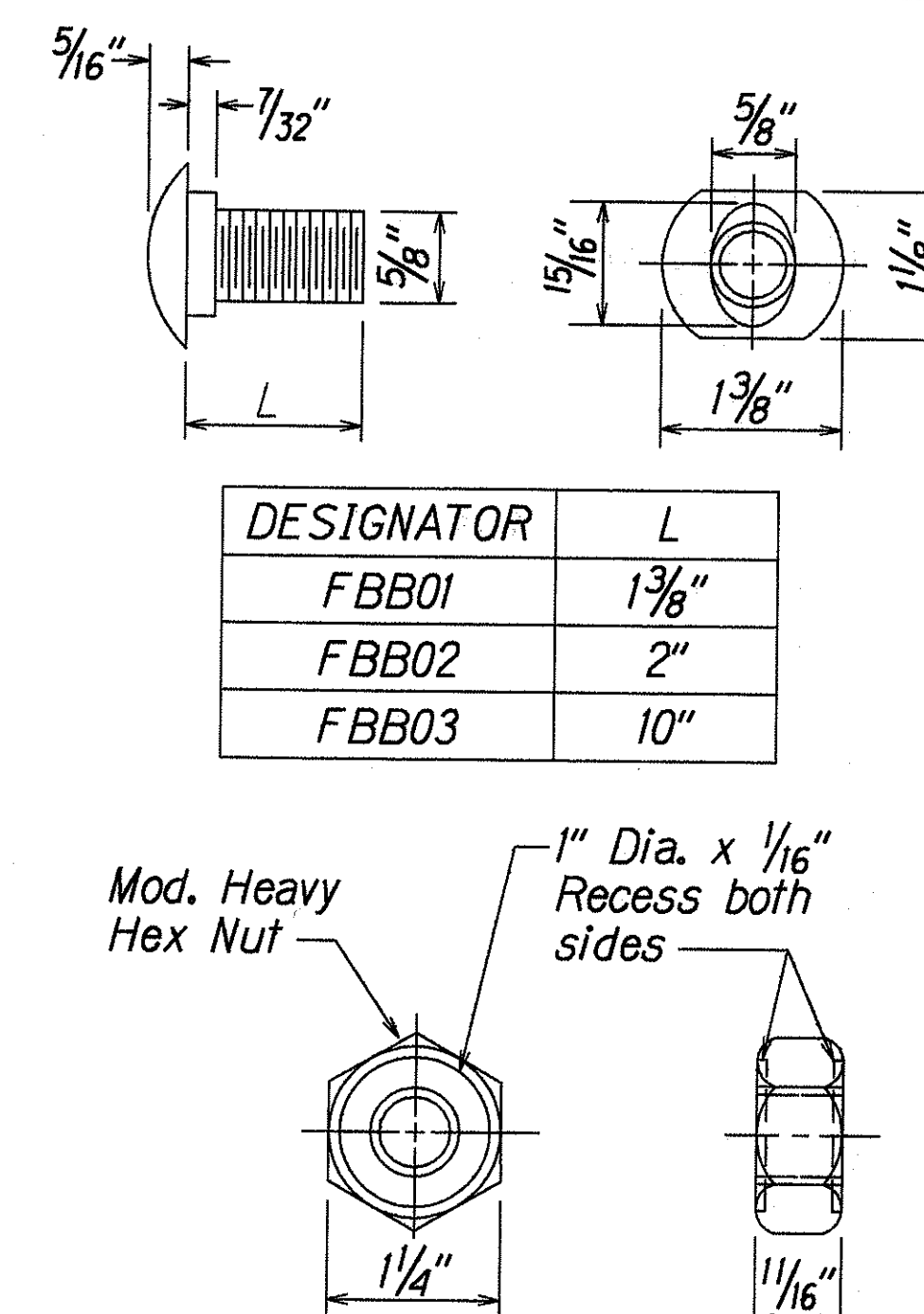


STRONG POST W-BEAM GUARDRAIL WITH RECYCLED OFFSET BLOCK OR PLASTIC BLOCKOUT

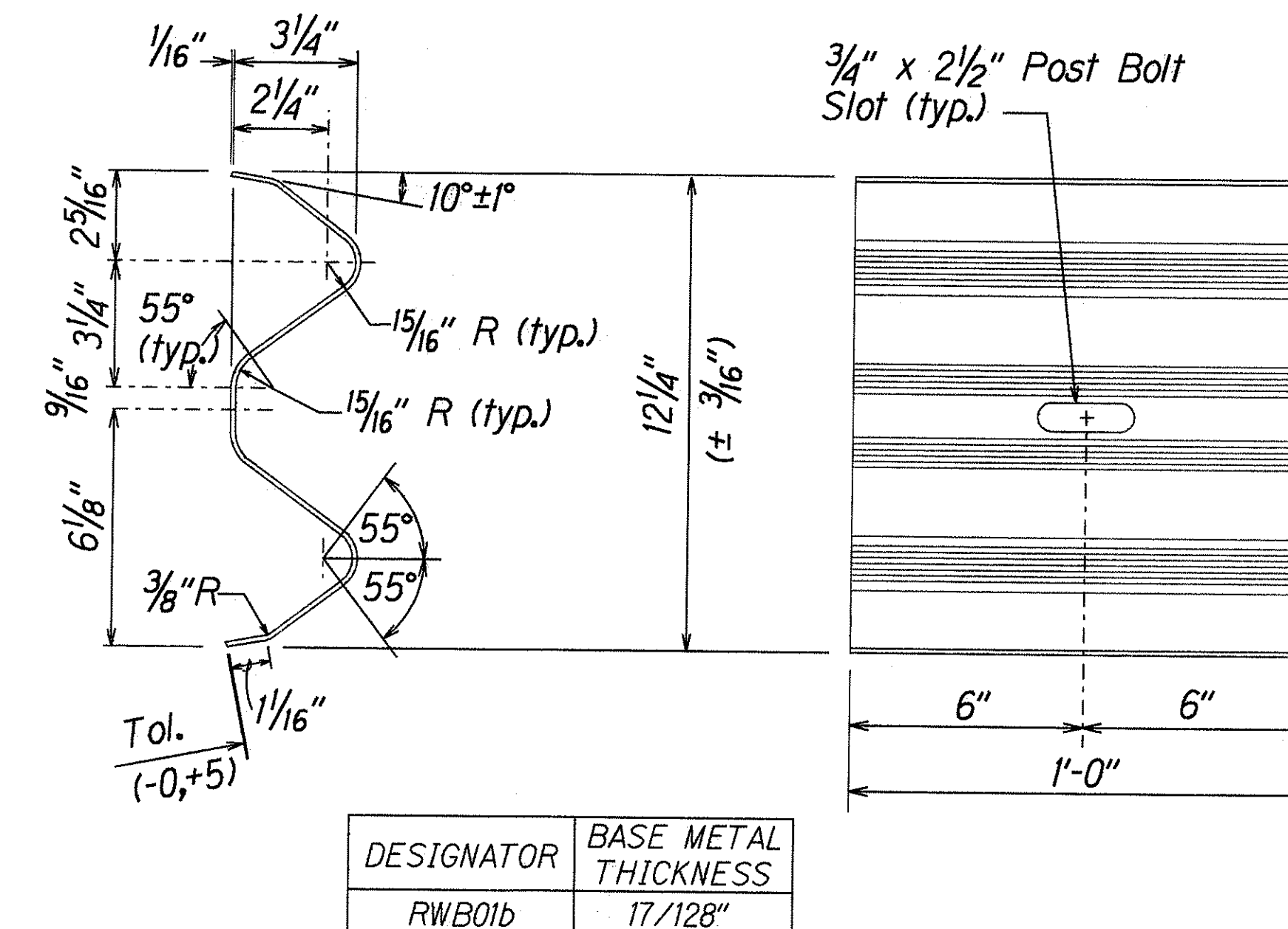
NOTE:
All Holes are
3/4" Dia.



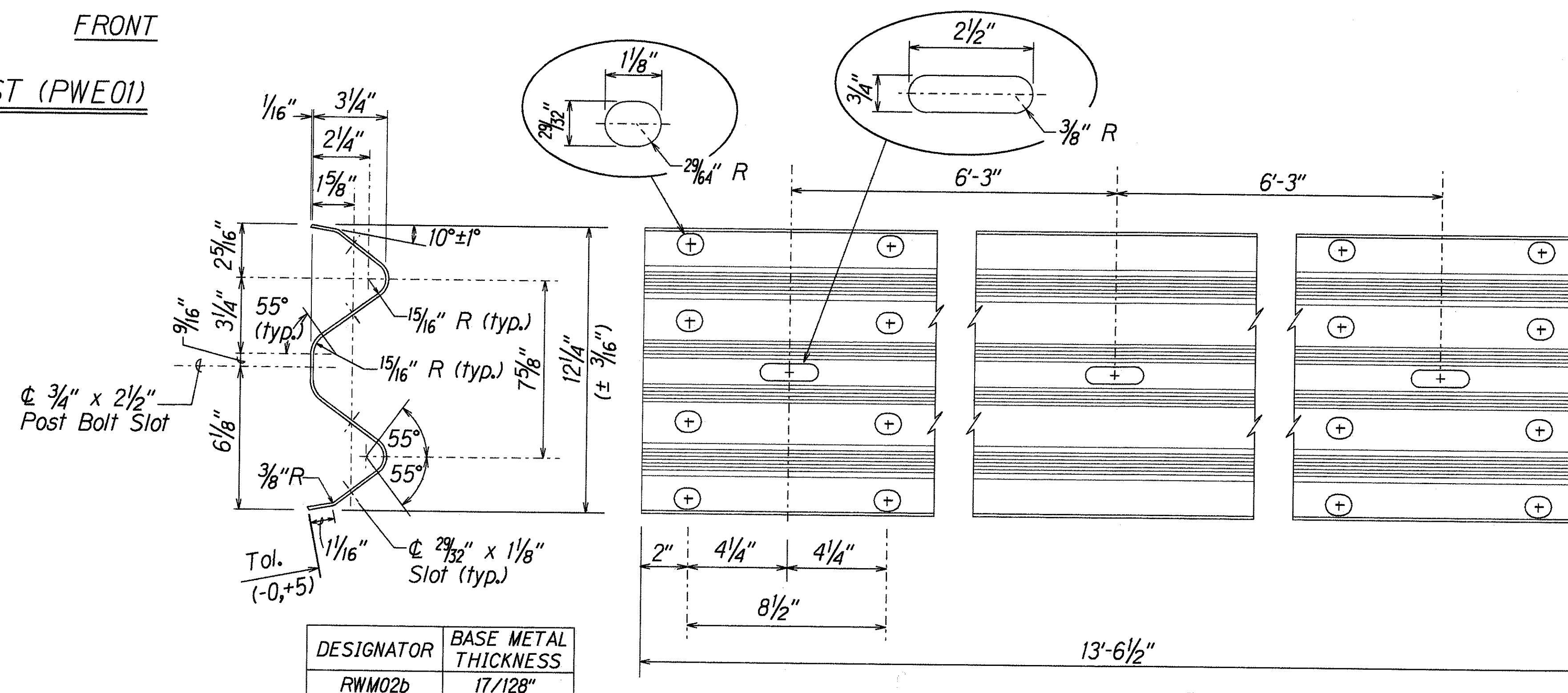
W-BEAM STRONG POST (PWE01)



GUARDRAIL BOLTS AND RECESSED NUT



W-BEAM BACK-UP-PLATE (RWB01b)



2 SPACE W-BEAM GUARDRAIL (RWM02b)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL UPGRADE & DETAILS

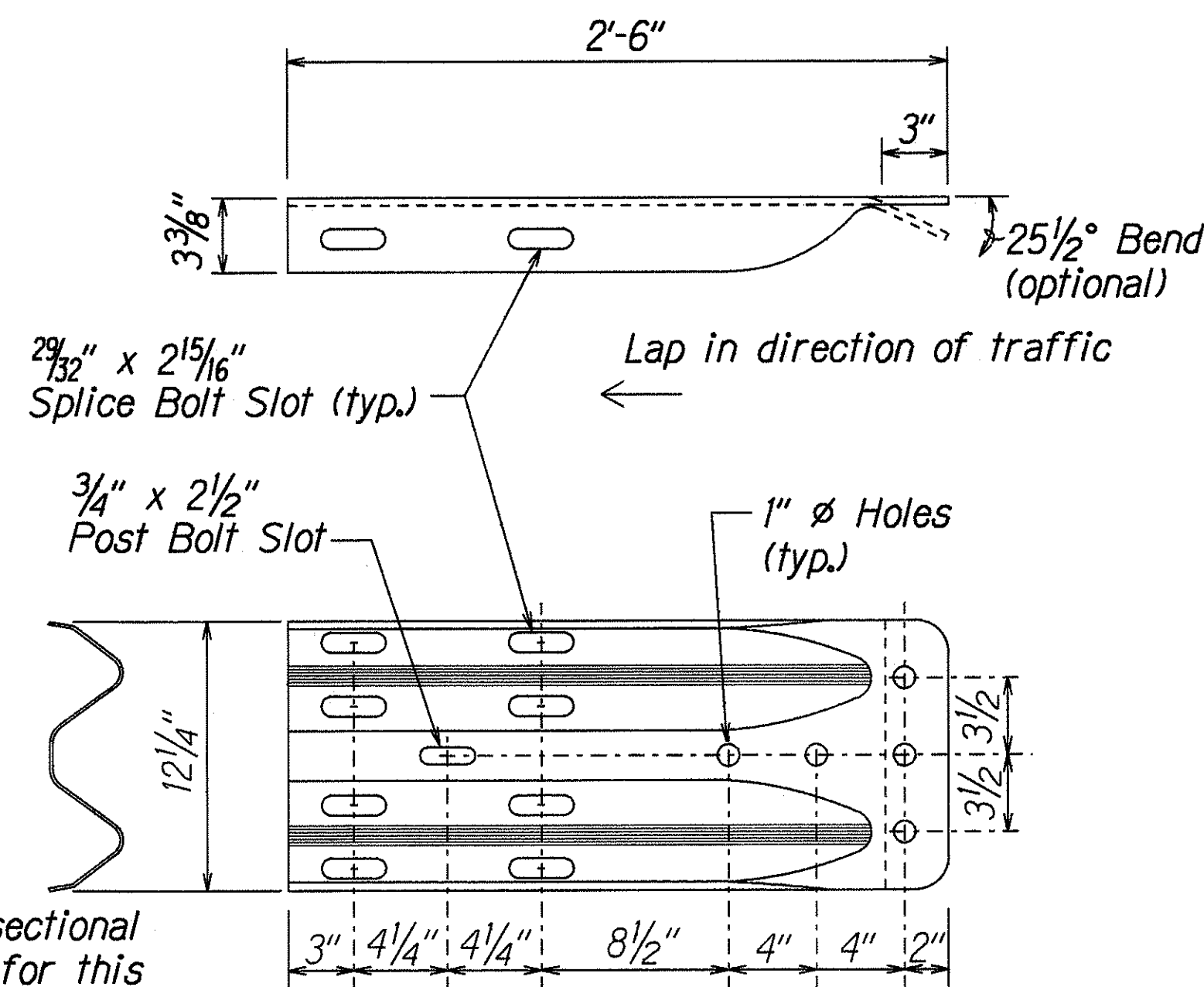
INTERSTATE ROUTE H-1
Guardrail & Shoulder Improvements
Pahoa Separation to Waialeale Bridge
Federal Aid Project No. IM-HI-1(228)
Scale: NTS
Date: April, 1999

SHEET No. 5 OF 7 SHEETS

ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
CHECKED BY	
APPROVED BY	

Standard plan TE-501 R03.06/87

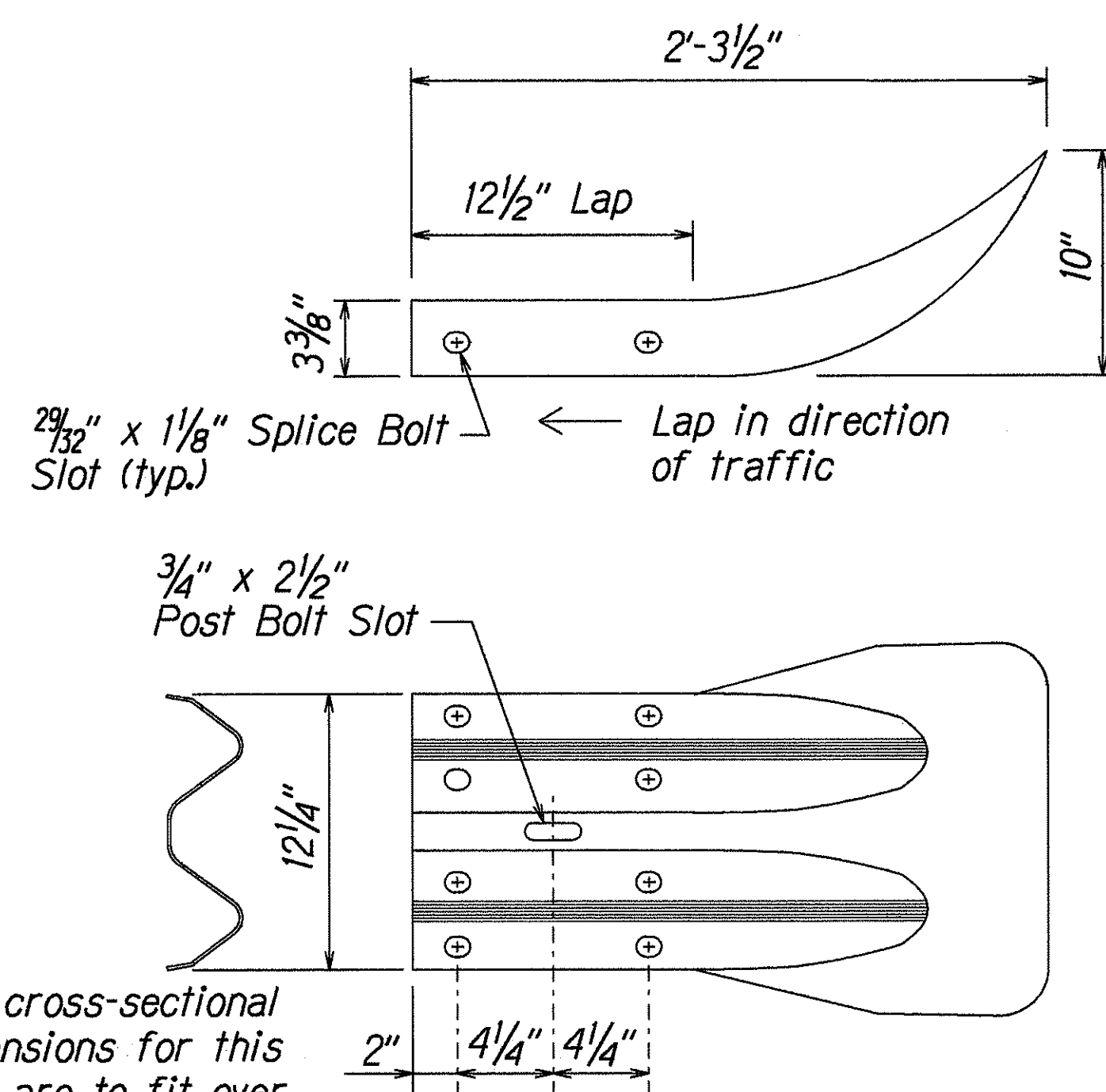
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(228)	1999	38	82



The cross-sectional dimensions for this part are to fit over part RWM02b on the approach end and under part RWM02b on the trailing end.

DESIGNATOR	BASE METAL THICKNESS
RWE02b	17/128"

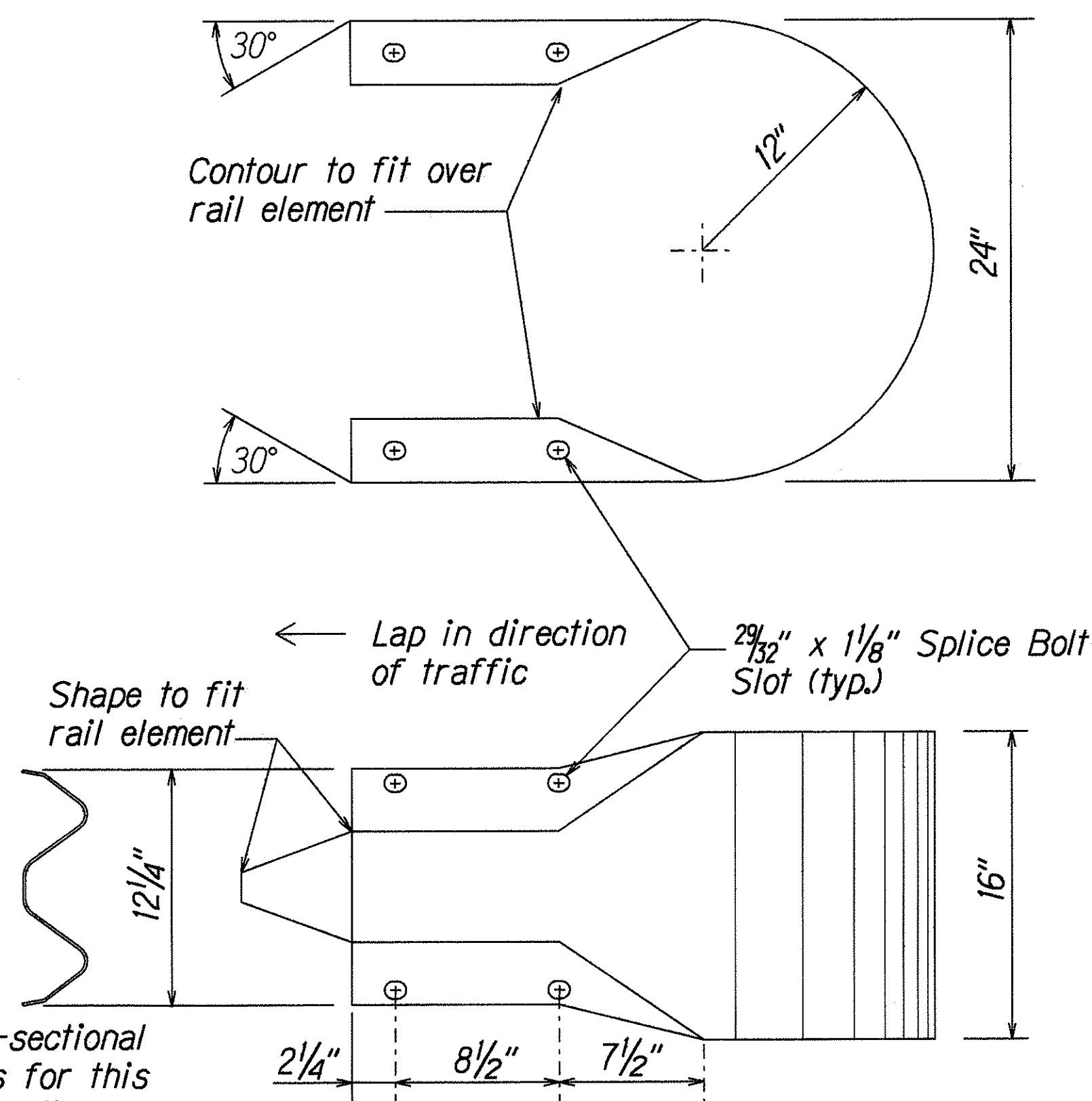
W-BEAM TERMINAL CONNECTOR (RWE02b)



The cross-sectional dimensions for this part are to fit over part RWM02b on the approach end and under part RWM02b on the trailing end.

DESIGNATOR	BASE METAL THICKNESS
RWE01b	17/128"

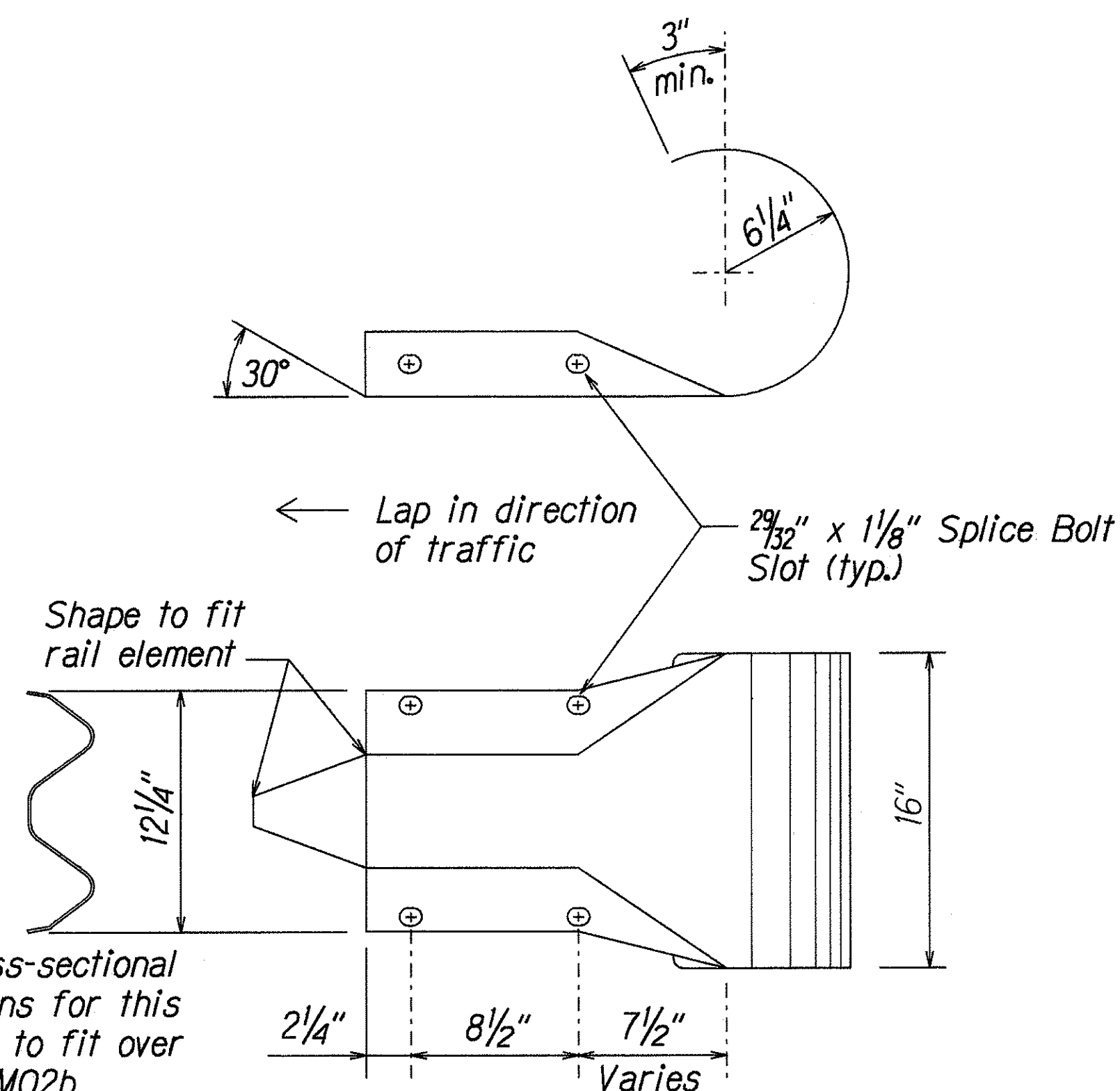
W-BEAM END SECTION (FLARED RWE01b)



The cross-sectional dimensions for this part are to fit over part RWM02b

DESIGNATOR	BASE METAL THICKNESS
RWE06b	17/128"

W-BEAM END SECTION (BUFFER RWE06b)



The cross-sectional dimensions for this part are to fit over part RWM02b

DESIGNATOR	BASE METAL THICKNESS
RWE03a	1/64"

W-BEAM END SECTION (ROUNDED RWE03a)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL UPGRADE & DETAILS

INTERSTATE ROUTE H-1
Guardrail & Shoulder Improvements
Palehua Separation to Waikale Bridge
Federal Aid Project No. IM-HI-1(228)

Scale: NTS Date: Oct., 1998

SHEET No. 6 OF 7 SHEETS

