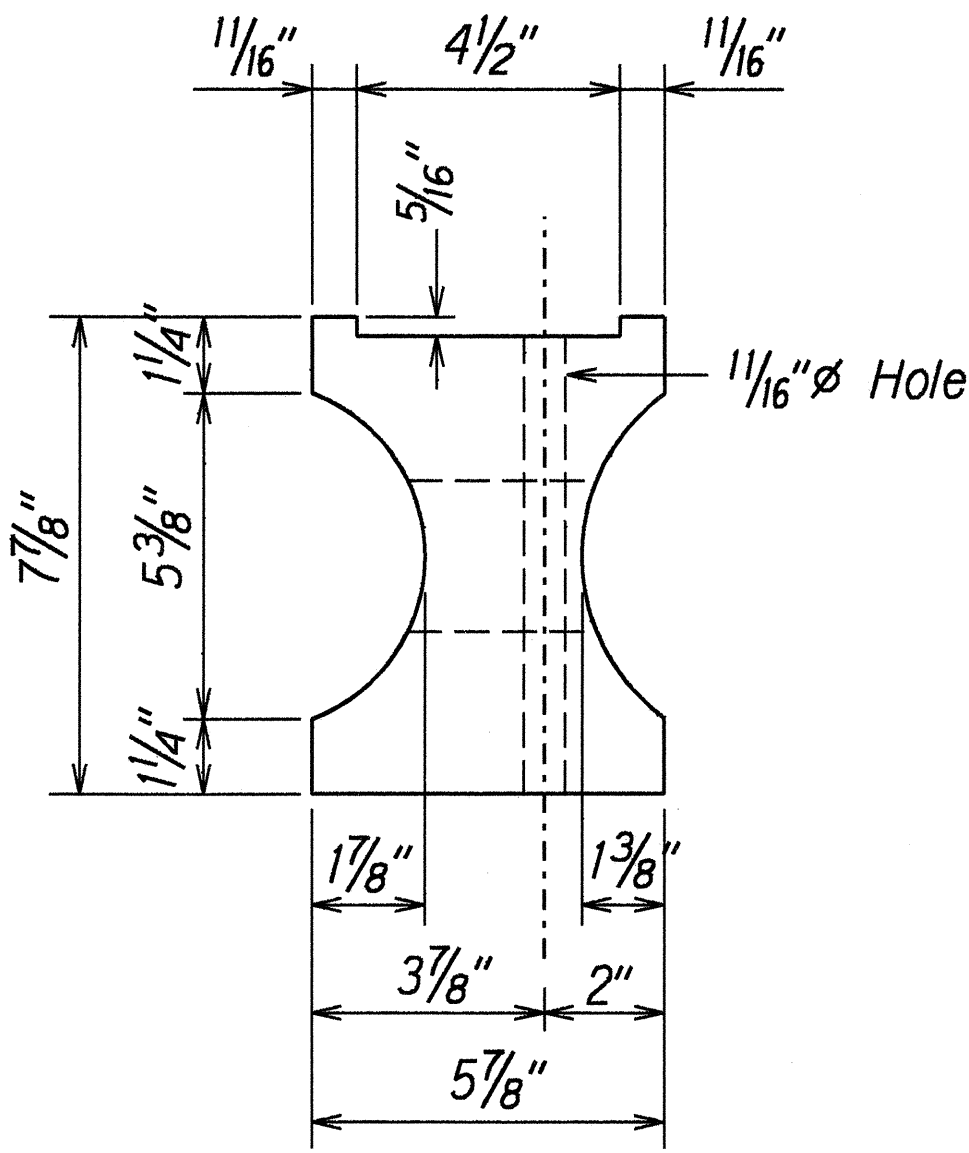


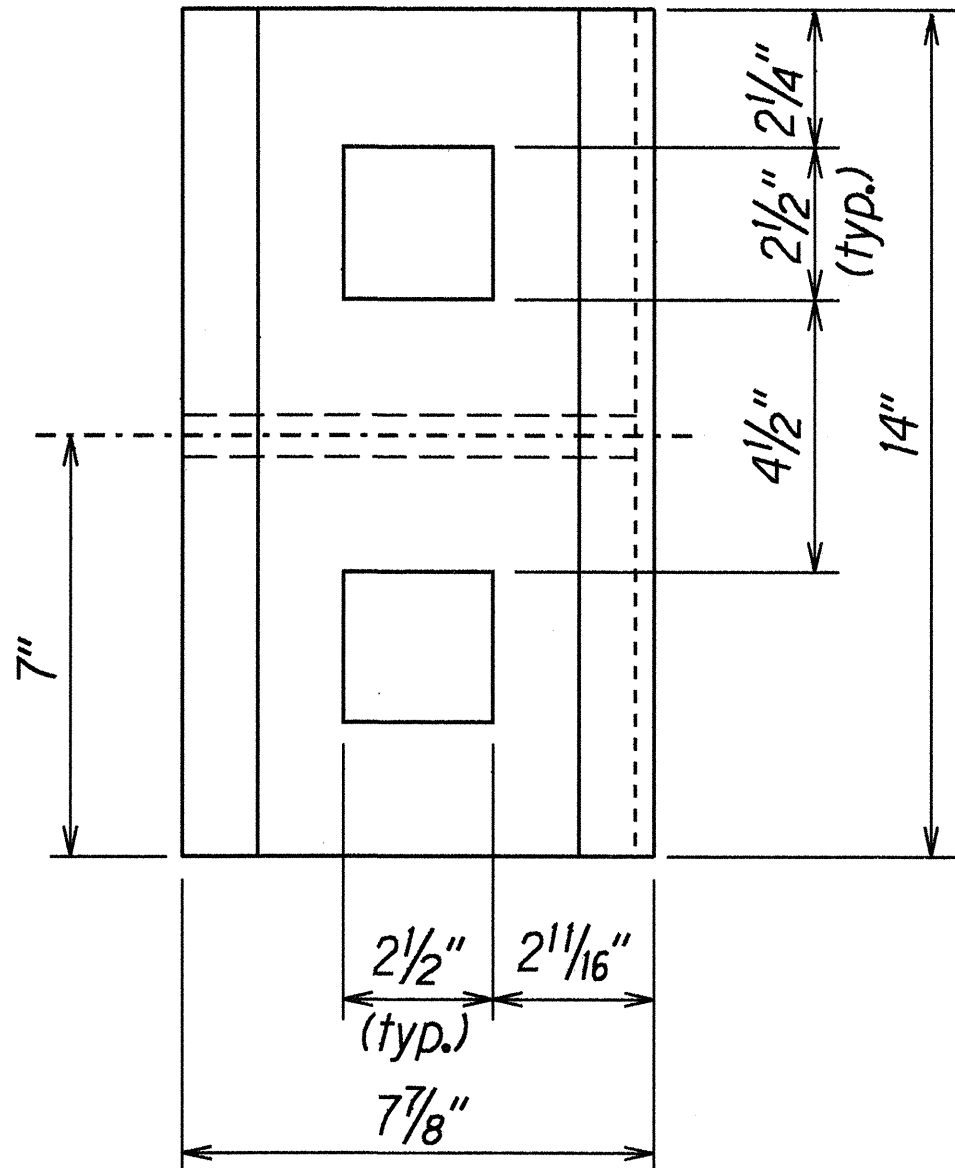
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-STP-056-1(35)	2000	10	70

GENERAL NOTES

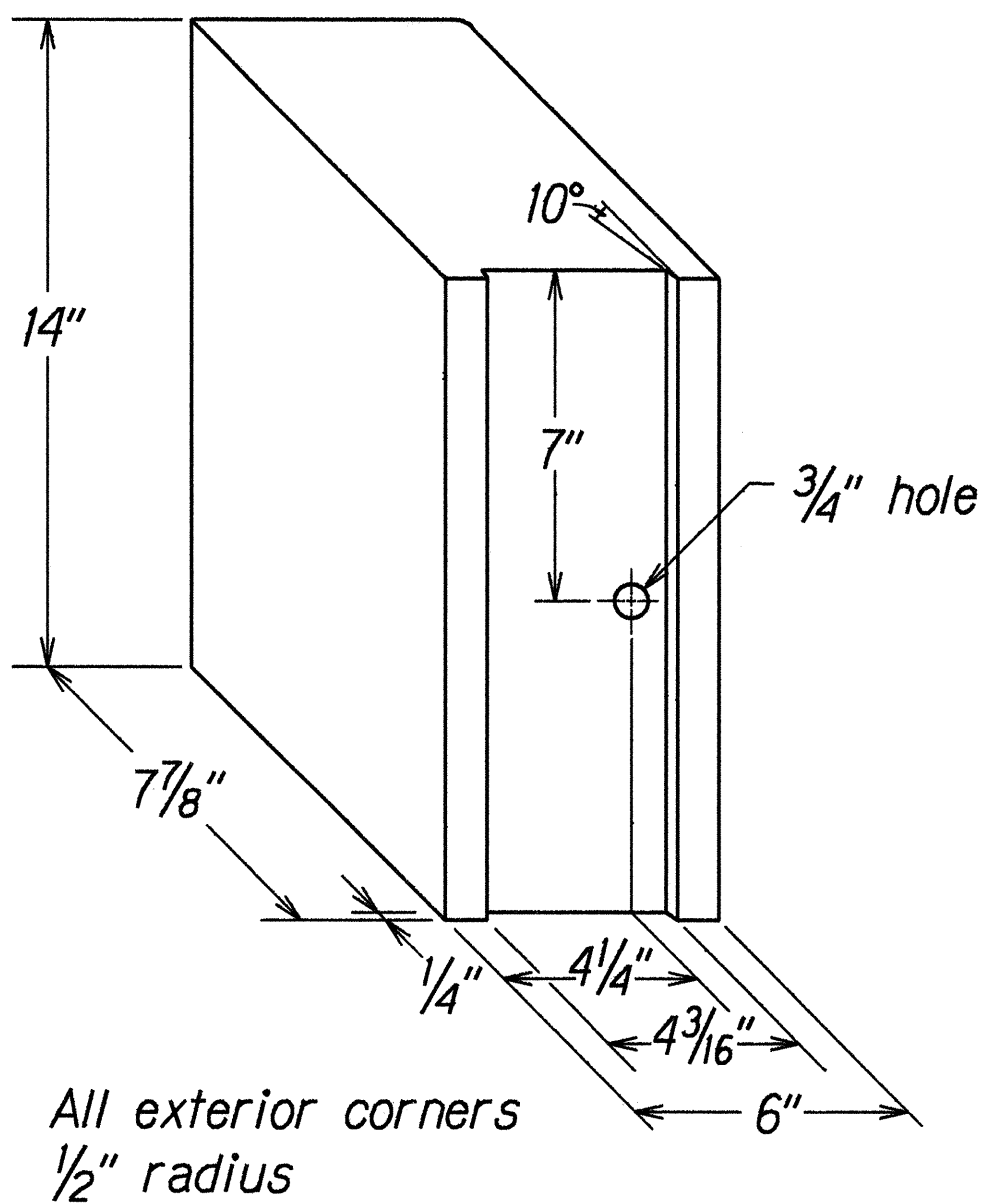
- All hardware, posts and fasteners shall be hot-dip zinc coated galvanized after fabrication. No punching, drilling or cutting will be permitted after galvanizing.
- Where conditions require, special post lengths in increments of 6 inches may be specified.
- All fasteners, posts, and rail elements (i.e. 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 fasteners, 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.
- After the guardrail posts are installed in the paved area, the Contractor shall grout around the guardrail post and seal all cracks in the paved area that was caused during the guardrail post installation. If required by the inspector/engineer, the Contractor shall tamp the paved area around the guardrail post prior to grouting. The cost for 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.



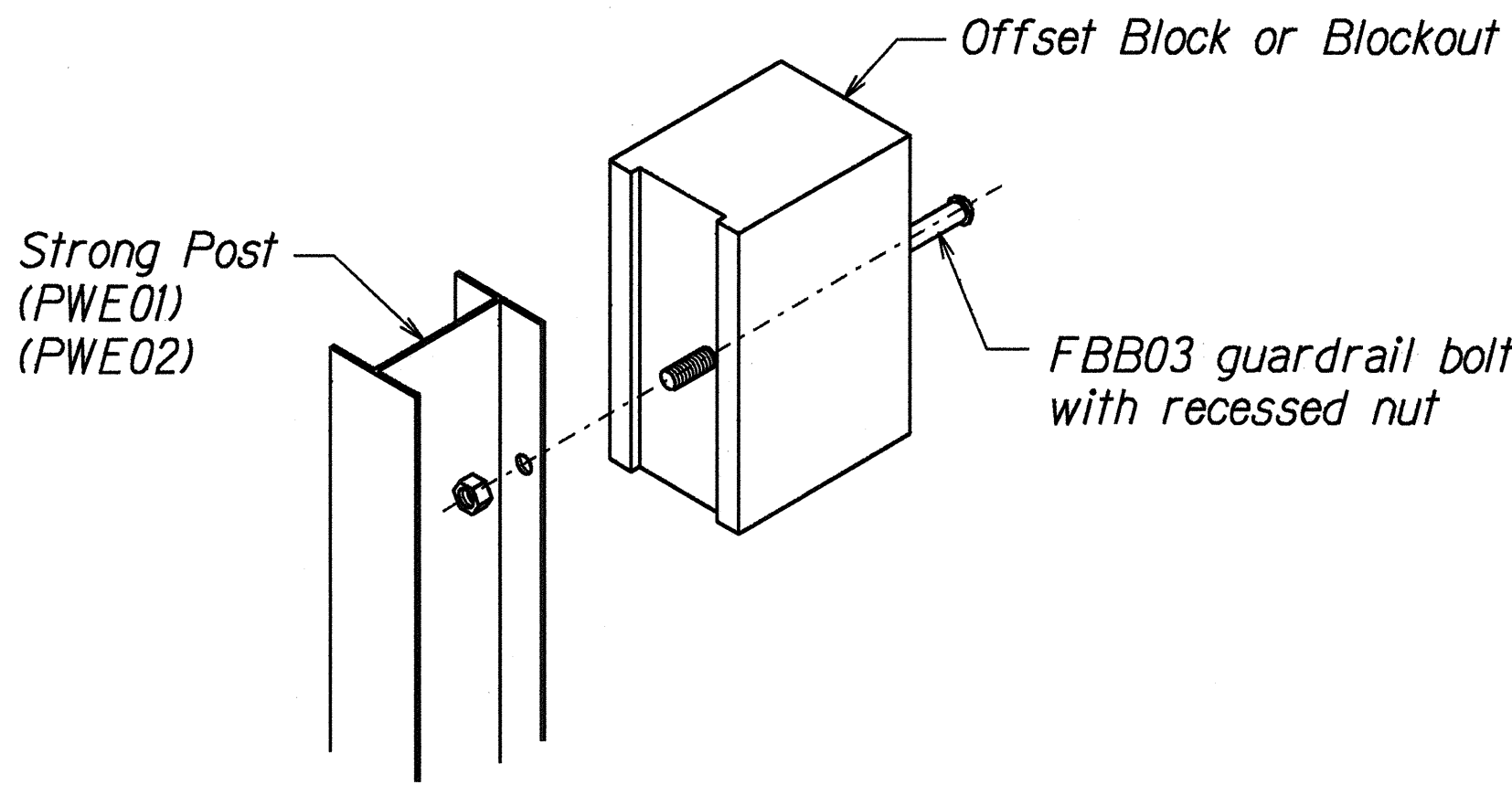
TOP
RECYCLED PLASTIC BLOCKOUT (TYPE I)



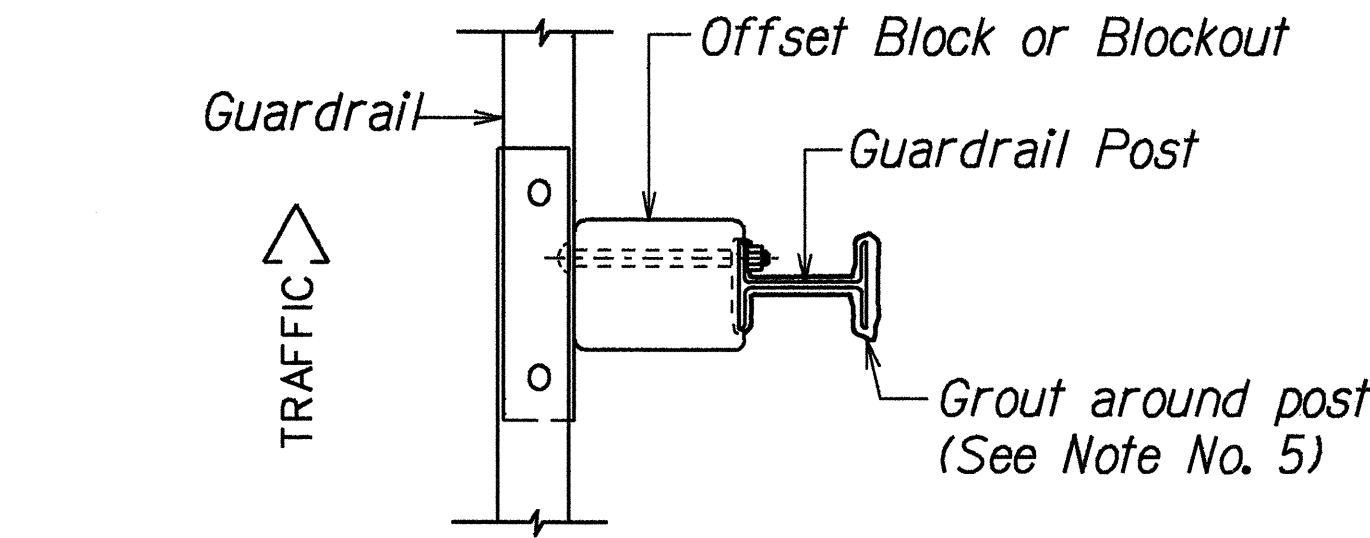
SIDE



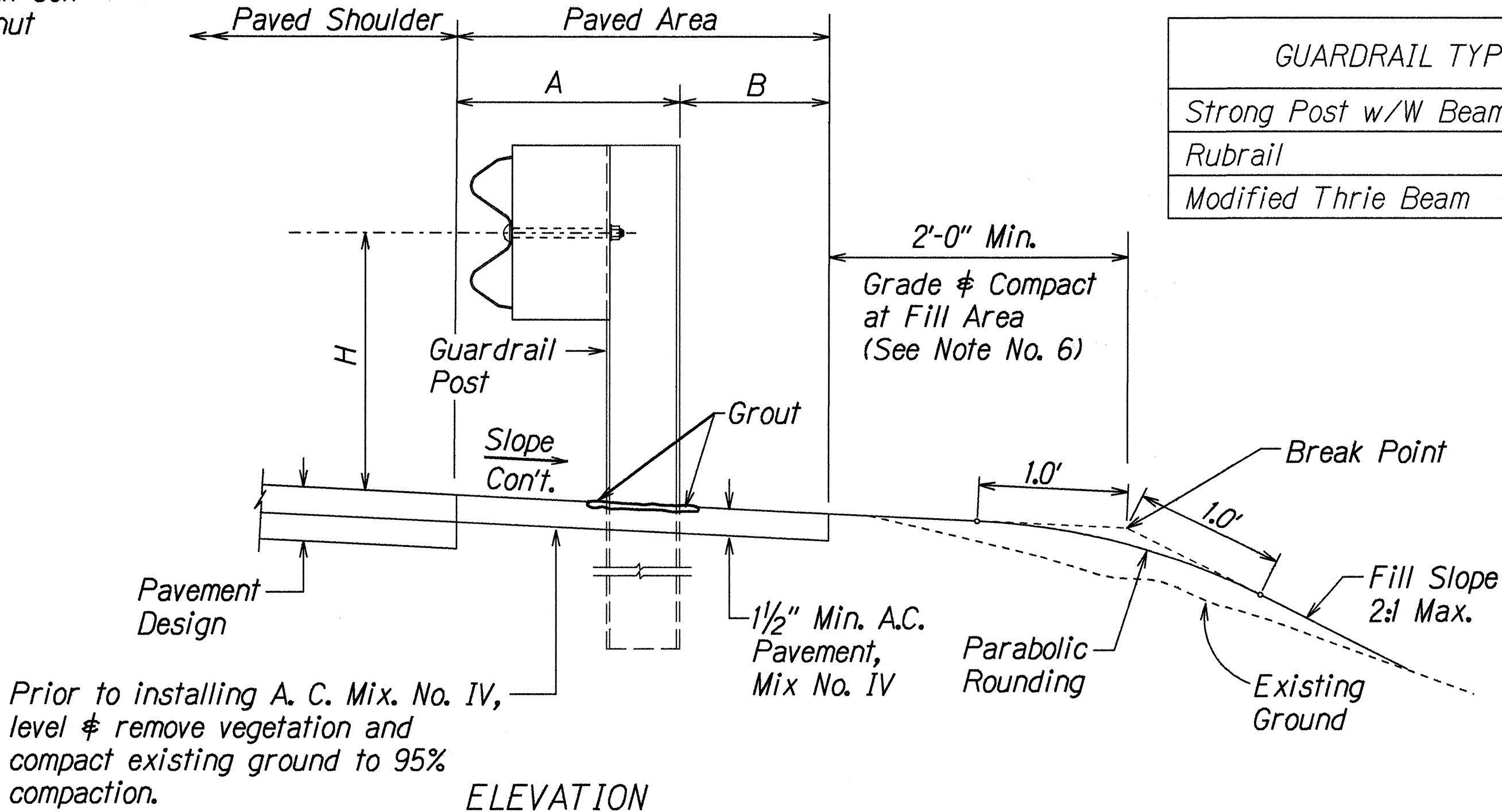
RECYCLED POLYETHYLENE
OFFSET BLOCK (TYPE II)



Exploded View
(Rail and washer not shown)
STEEL POST AND BLOCK DETAIL



PLAN



ELEVATION

TYPICAL GUARDRAIL INSTALLATION

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS & NOTES

KUHIO HIGHWAY
Waikaea Bridge Widening
Fed. Aid Proj. No. BR-STP-056-1(35)

Not to Scale

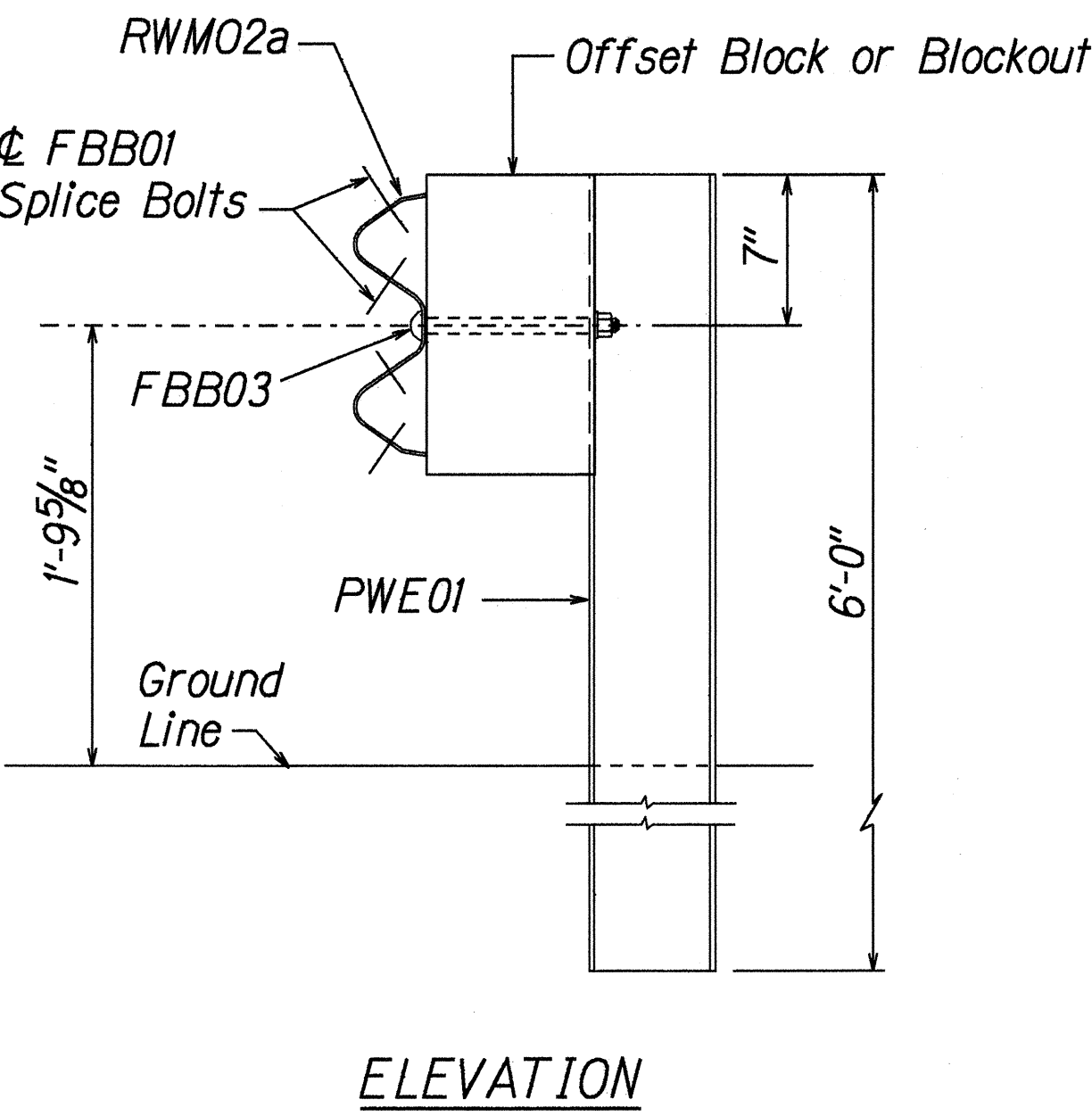
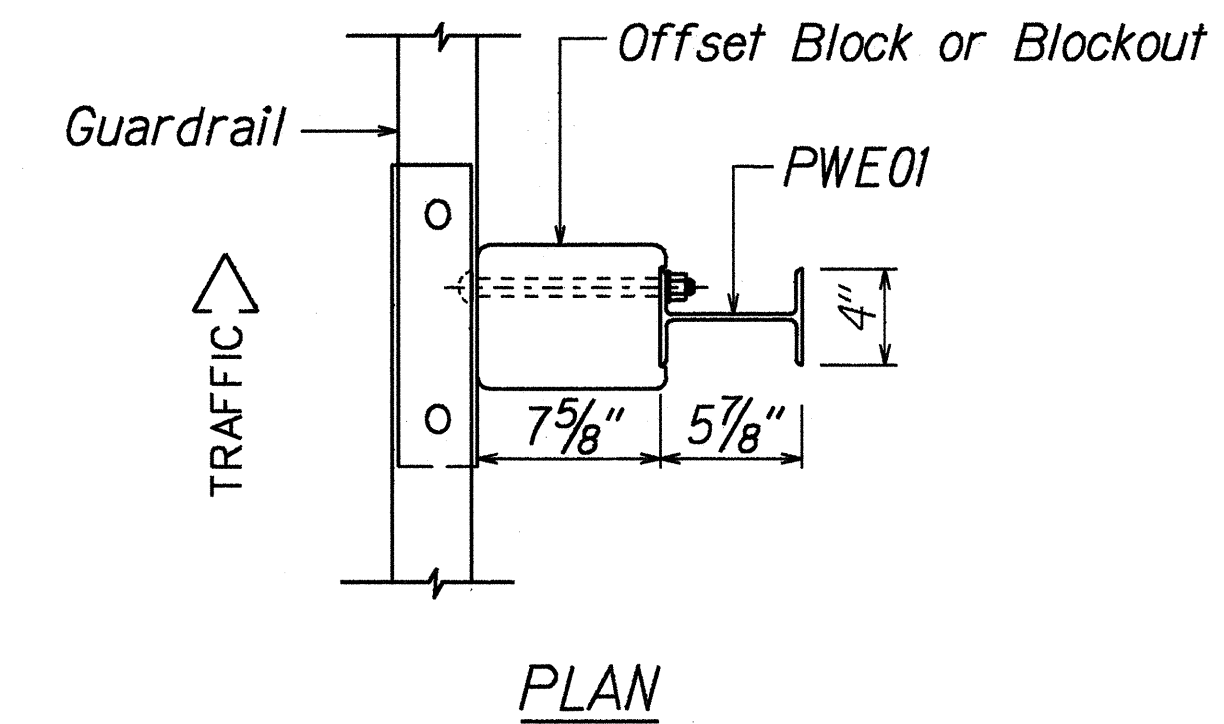
Date: Aug., 1999

SHEET No. 1 OF 1 SHEETS

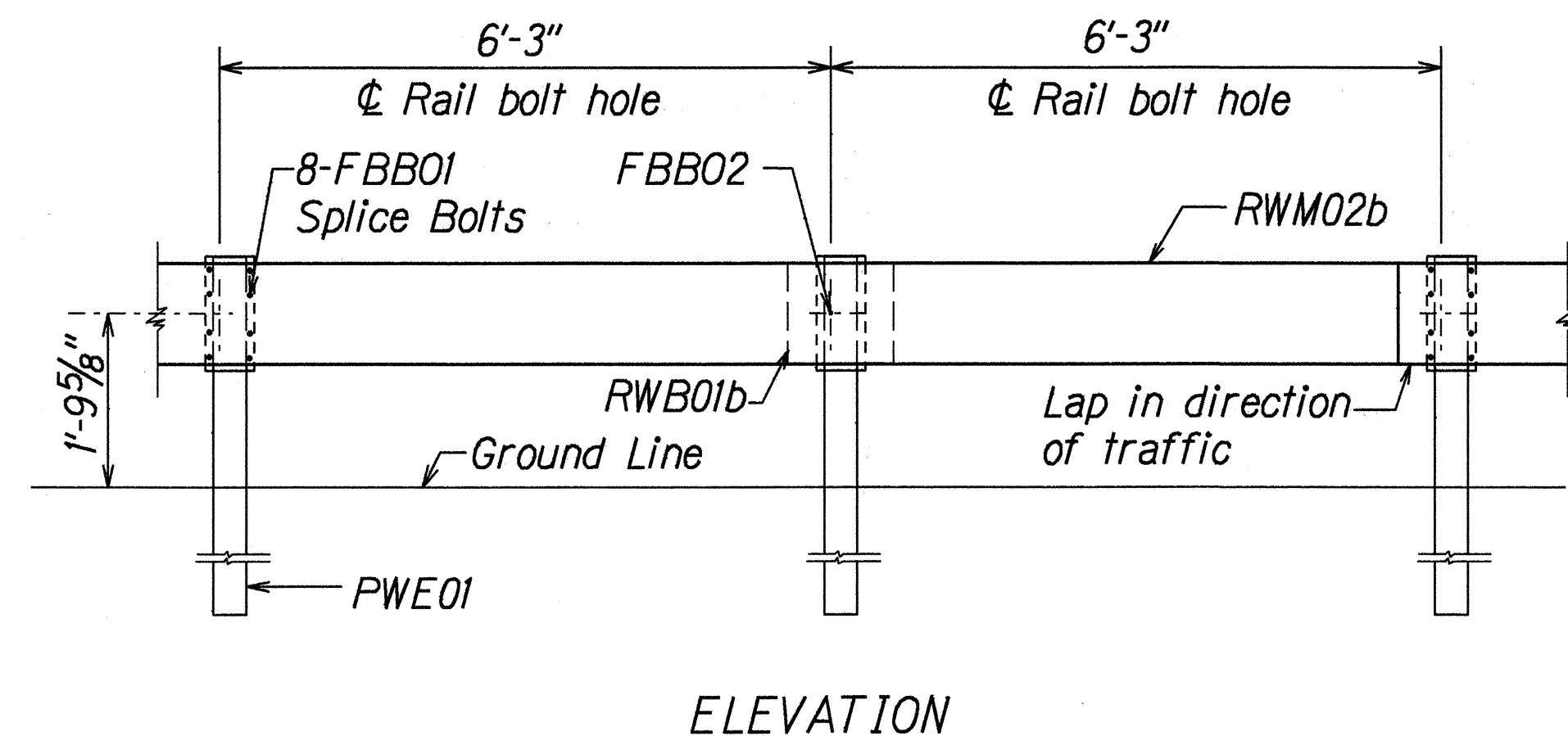
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SURVEY PLOTTED BY	TE
DRAWN BY	TE
DESIGNED BY	TE
CHECKED BY	TE
ORIGINAL PLAN	TE
NOTE BOOK	TE
NO.	TE

r3/01/99 rdTruby/guardrail/te50rev.dgn (standard plan TE-50 r03/06/97)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-STP-056-1(35)	2000	11	70

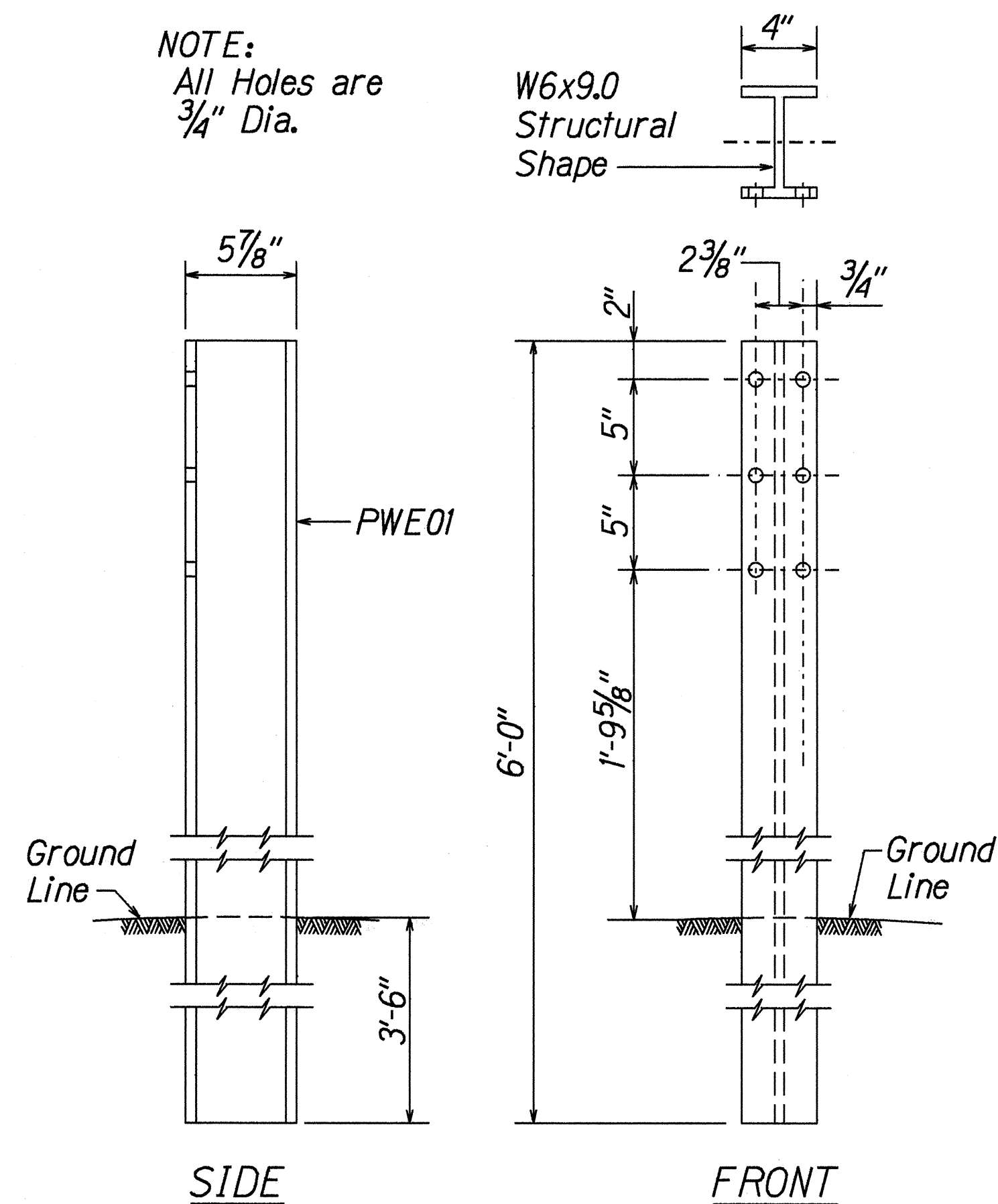


STRONG POST W-BEAM GUARDRAIL (SGR04a)

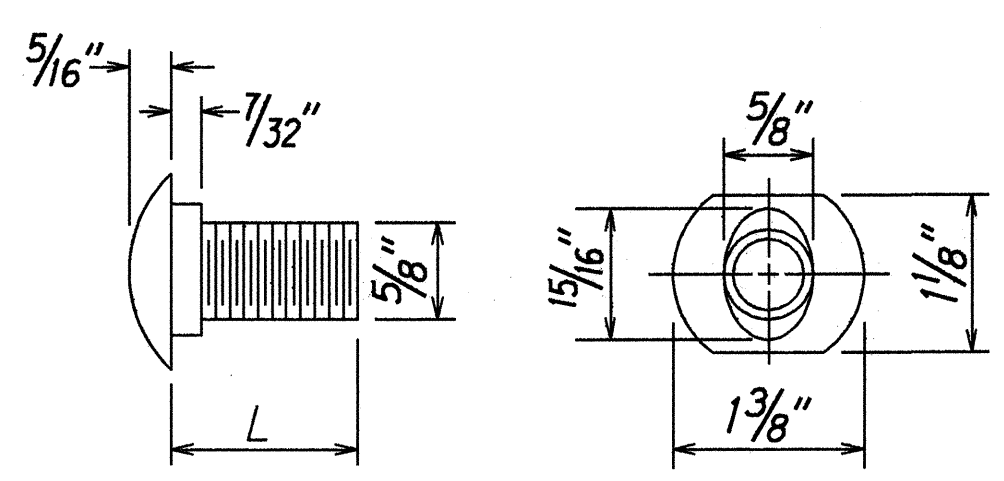


STRONG POST W-BEAM GUARDRAIL WITH RECYCLED OFFSET BLOCK OR PLASTIC BLOCKOUT

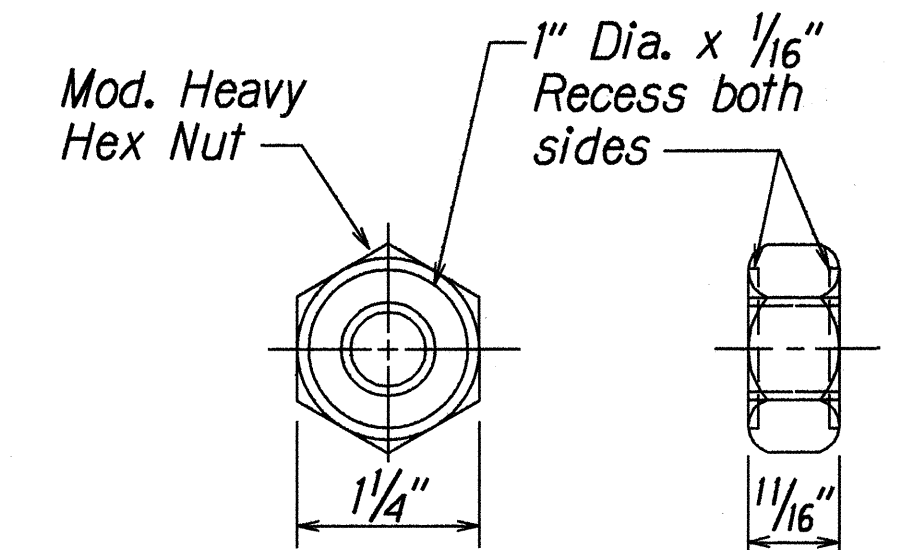
NOTE:
All Holes are 3/4" Dia.



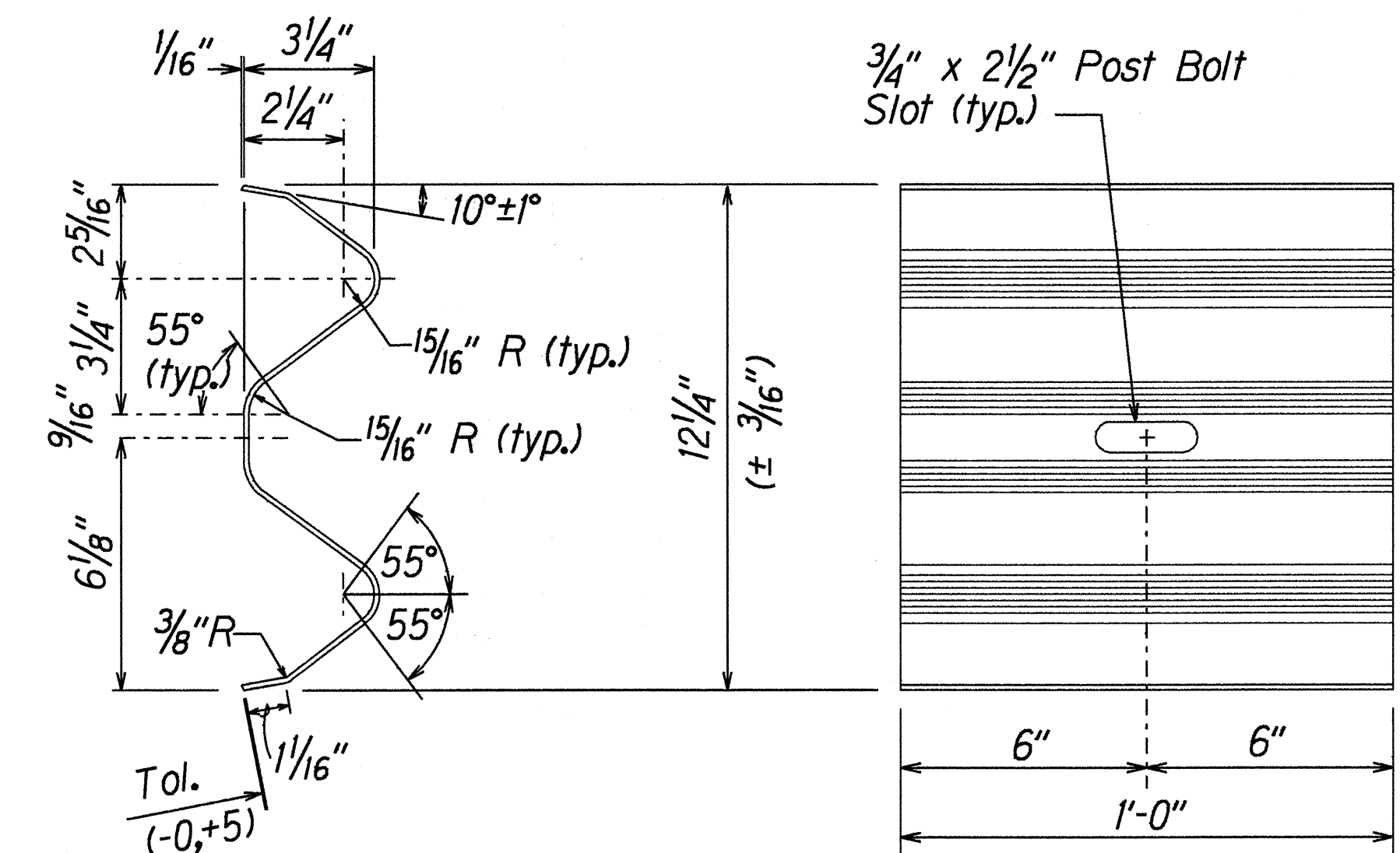
W-BEAM STRONG POST (PWE01)



DESIGNATOR	L
FBB01	1 3/8"
FBB02	2"
FBB03	10"

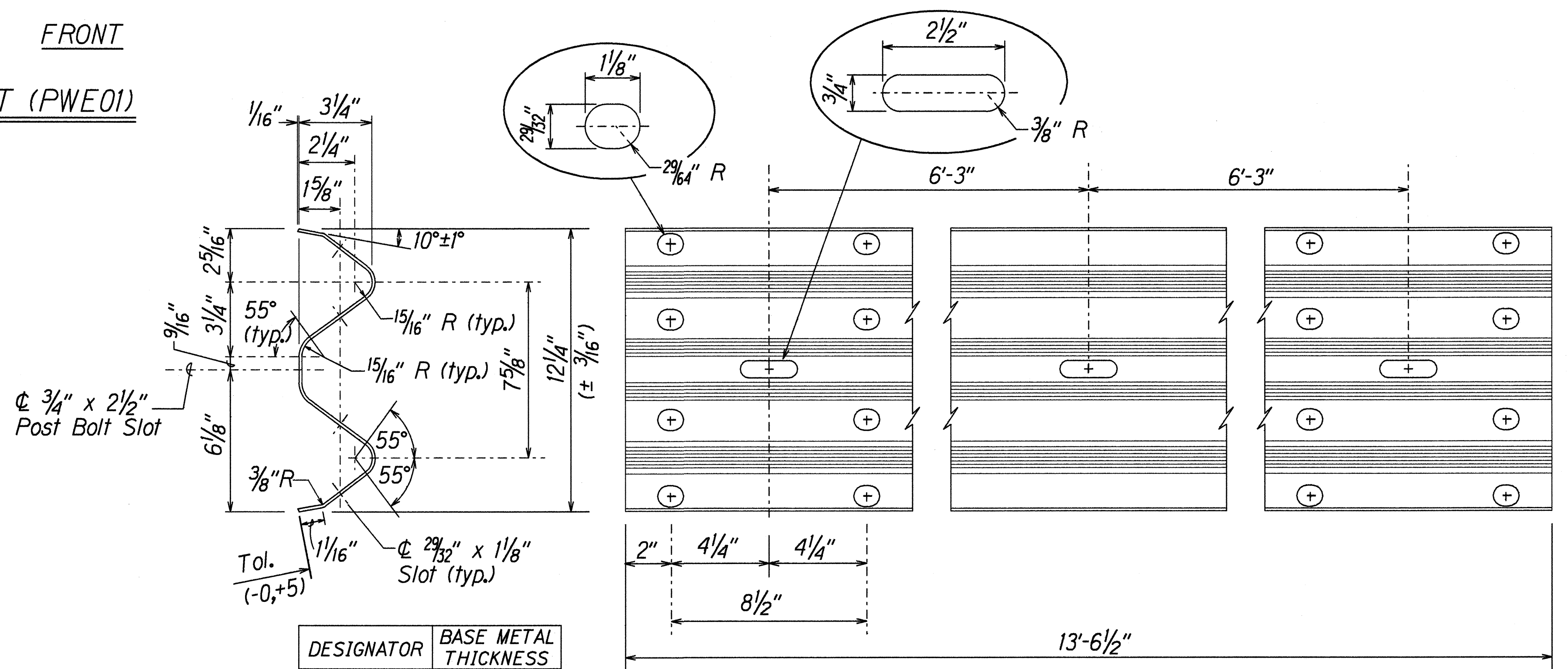


GUARDRAIL BOLTS AND RECESSED NUT



DESIGNATOR	BASE METAL THICKNESS
RWB01b	17/128"

W-BEAM BACK-UP-PLATE (RWB01b)



DESIGNATOR	BASE METAL THICKNESS
RWM02b	17/128"

2 SPACE W-BEAM GUARDRAIL (RWM02b)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRONG POST W-BEAM GUARDRAIL

KUHIO HIGHWAY
Waikae Bridge Widening
Fed. Aid Proj. No. BR-STP-056-1(35)

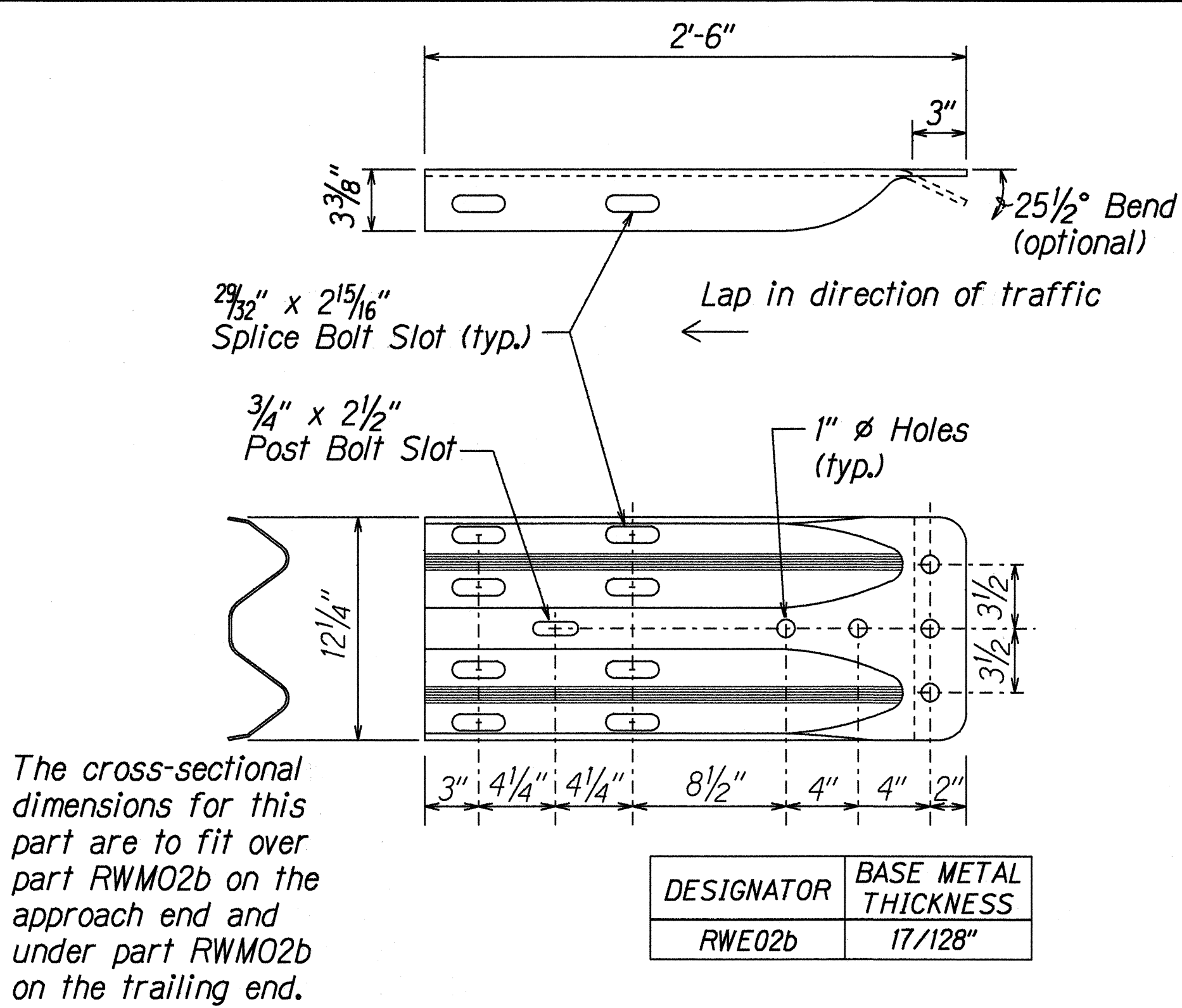
Not to Scale
Date: Aug, 1999

SHEET No. 1 OF 1 SHEETS

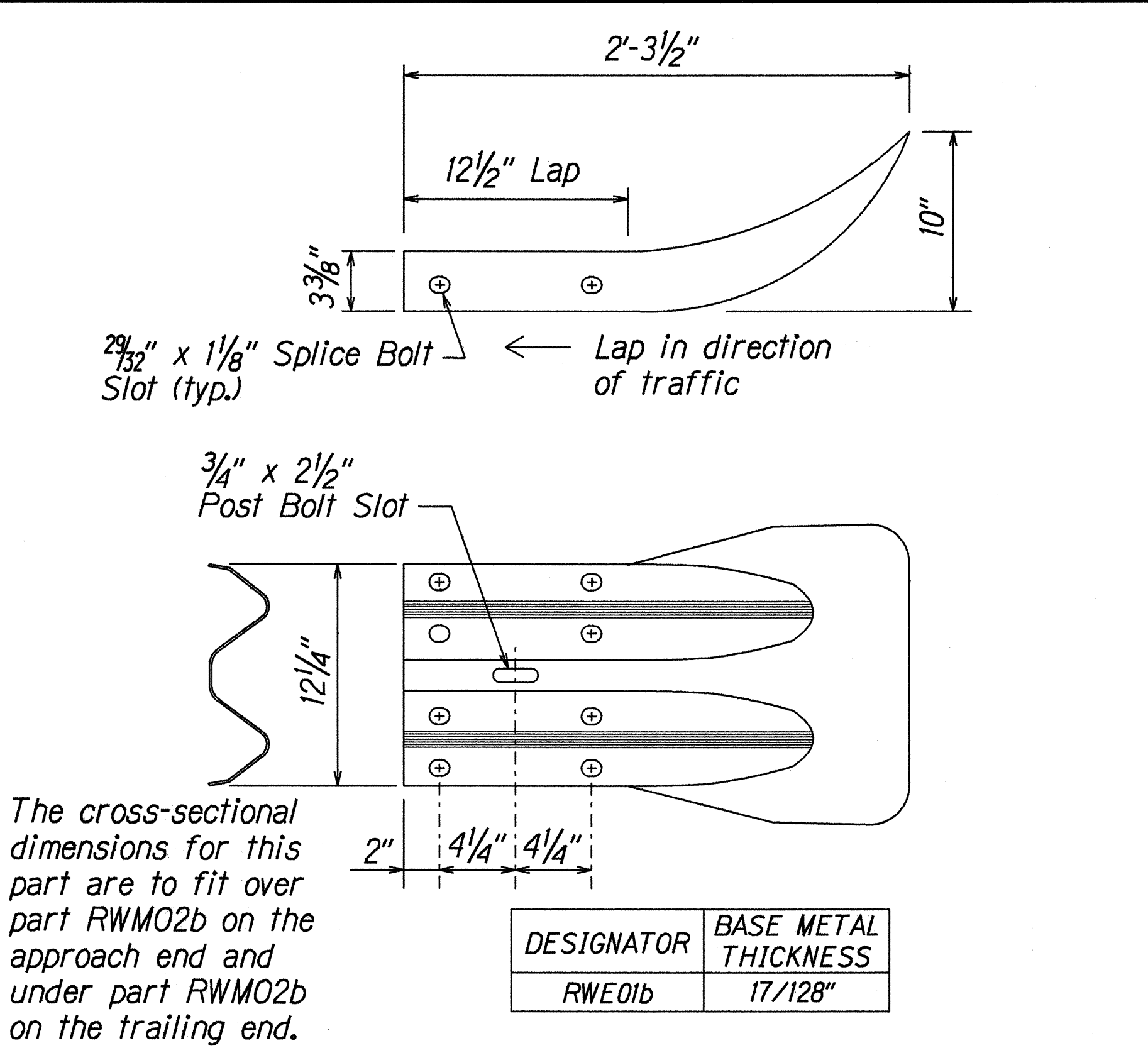
ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTED BY	

3/01/99 tdruby/guardrail/wbeamsadgn (standard plan TE-50 r03/06/07)

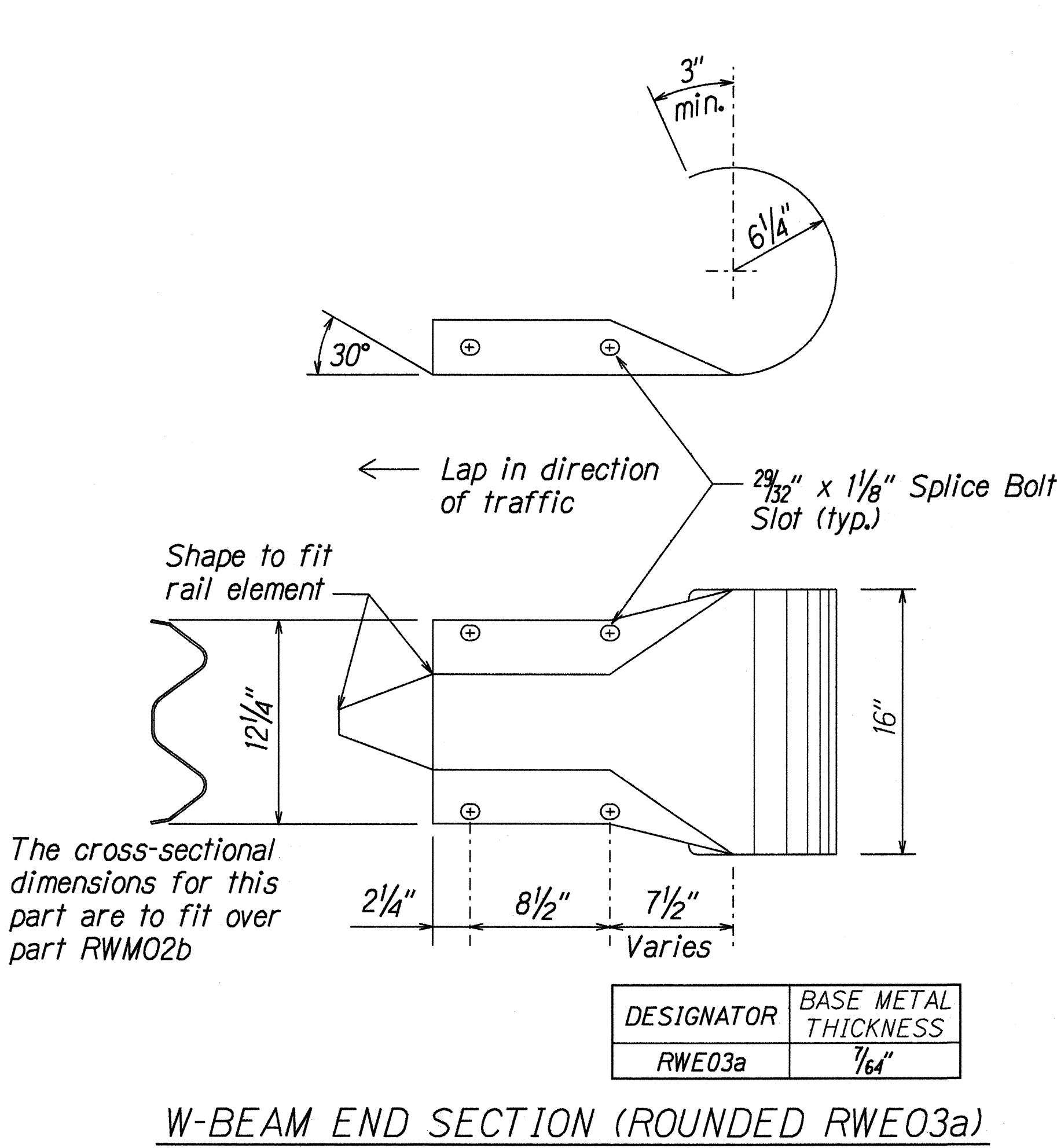
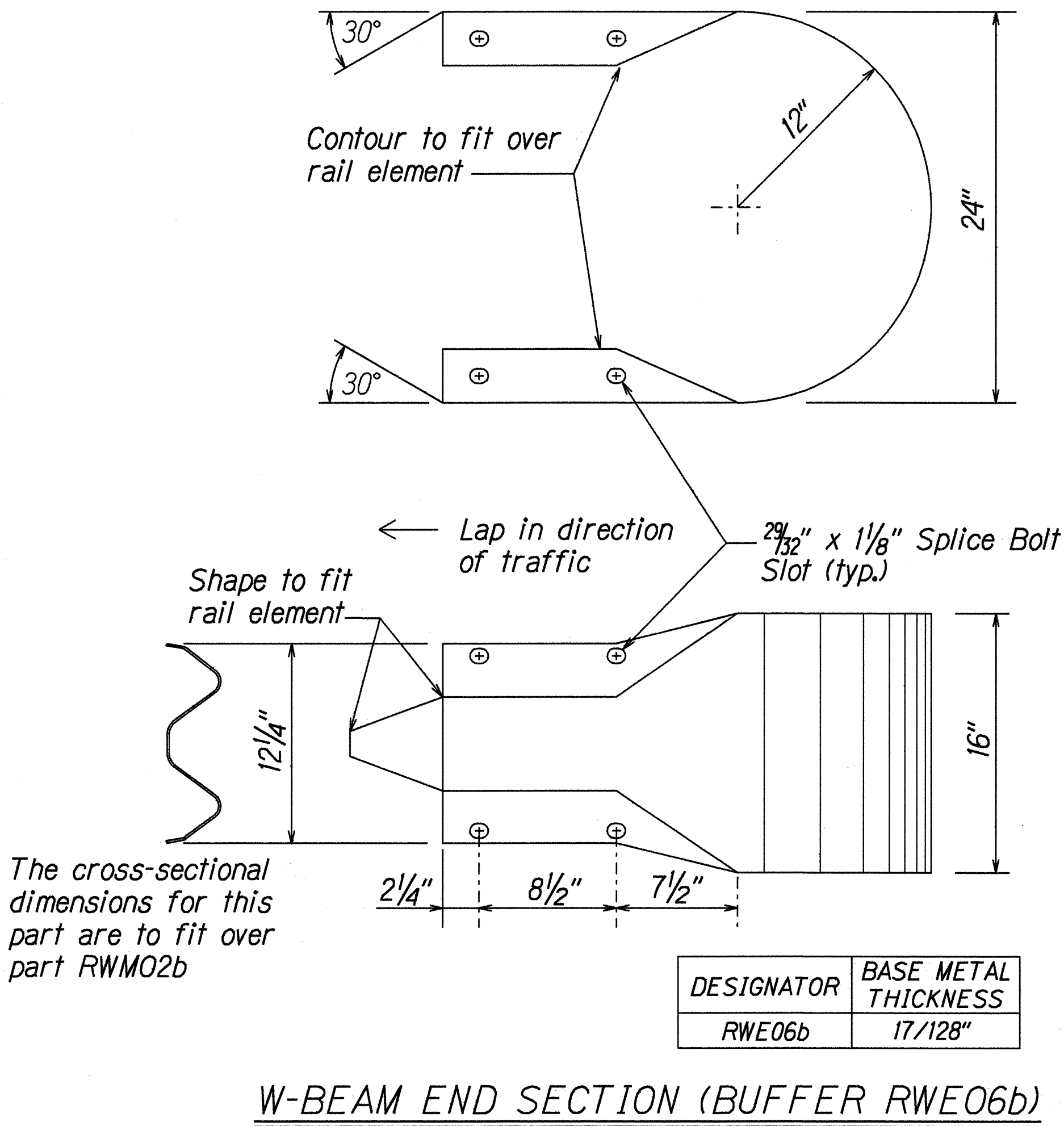
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-STP-056-1(35)	2000	12	70



W-BEAM TERMINAL CONNECTOR (RWE02b)



W-BEAM END SECTION (FLARED RWE01b)



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRONG POST W-BEAM GUARDRAIL

KUHIO HIGHWAY
Waikaea Bridge Widening
Fed. Aid Proj. No. BR-STP-056-1(35)

Not to Scale
Date: Aug., 1999

SHEET No. 1 OF 1 SHEETS

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
IN CHARGE	

r3/01/99 1d1rubby/guardrail/hedirew.dgn (standard plan TE-51 r09/01/87)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-STP-056-1(35)	2000	13	70

ELEVATION

TYPE "G" FLARE END TERMINAL

AT #STA. 519 + 70± LT.
To #STA. 519 + 90± LT.

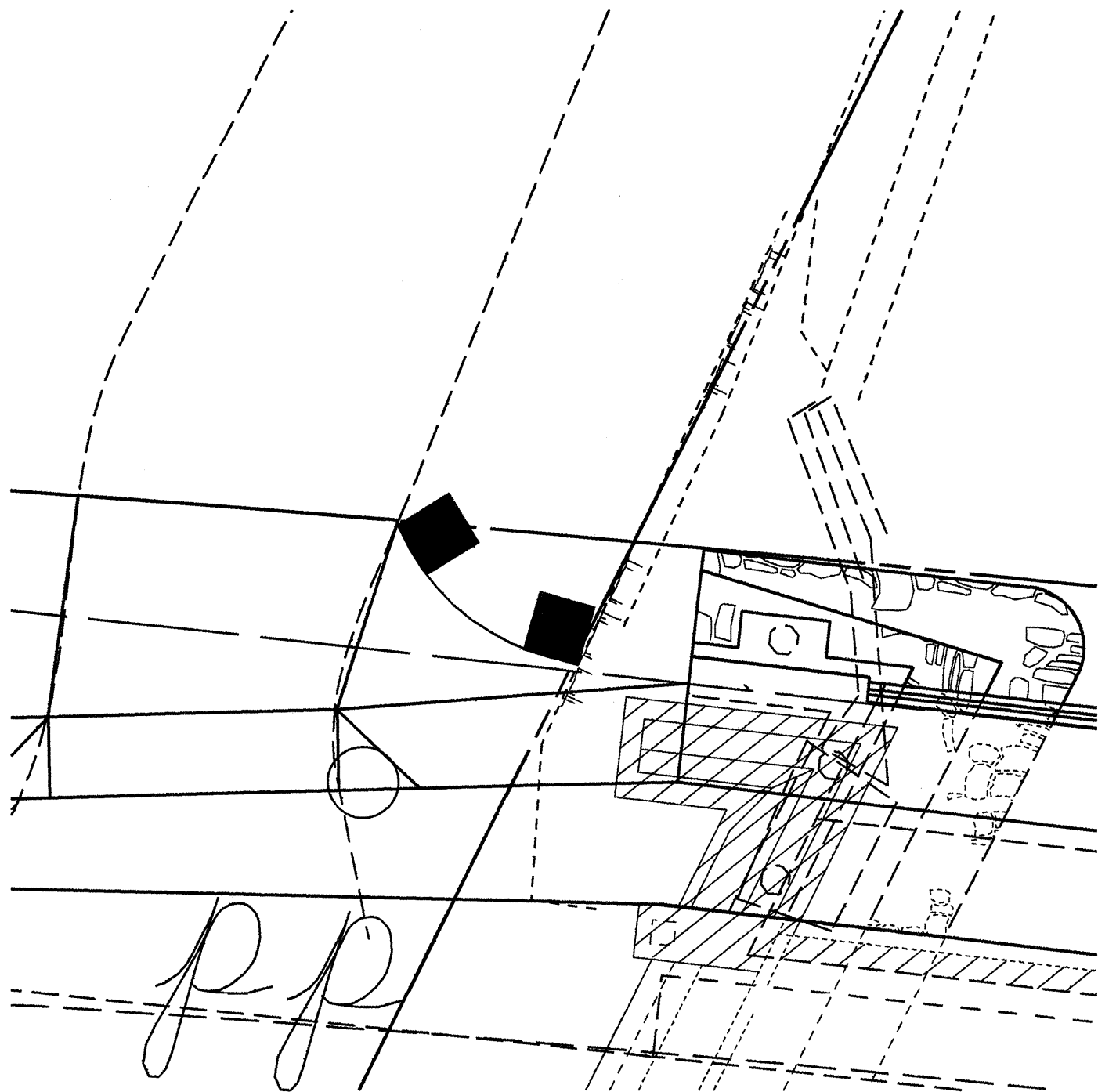
NOTE:

Type "G" Modified End Terminal is a site specific end terminal with a taper and radial termini. A site specific detailed drawing is required for all Type "G" Modified End Terminal and must receive Engineer's approval.

The taper (flare rate) of the guardrail shall follow the latest edition of AASHTO'S Roadside Design Guide (currently, Table 5.6 - Suggested Flare Rate for Barrier Design, page 5-21, Jan. 1996 edition).

The radius of the radial termini is an Engineer's judgement based on the site evaluation. The Engineer shall consider safety (minimize the spearing & blunt end situation); degree and potential seriousness of the hazard; bicycle and pedestrian accessibility; maintenance equipment accessibility; Right-of-Way availability; the smallest radii the metal w-beam/thrie-beam railing can be constructed (check with supplier/contractor); posted speed limit; angle of vehicle impact; and aesthetics when designing the Type "G" Modified End Terminal.

During construction, the Contractor shall layout the proposed Type "G" Modified End Terminal and receive approval from the Construction Engineer prior to installation.



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	X
	TRACED BY	
	QUANTITIES BY	
	CHECKED BY	

r3/01/99 rdt/ruby/guardrail/tes9revdgn (standard plan TE-59 rlt/03/89)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS

KUHIO HIGHWAY

Wiakaea Bridge Widening

Fed. Aid Proj. No. BR-STP-056-1(35)

Scale: NTS
Date: July, 1999

SHEET No. 1 OF 1 SHEETS