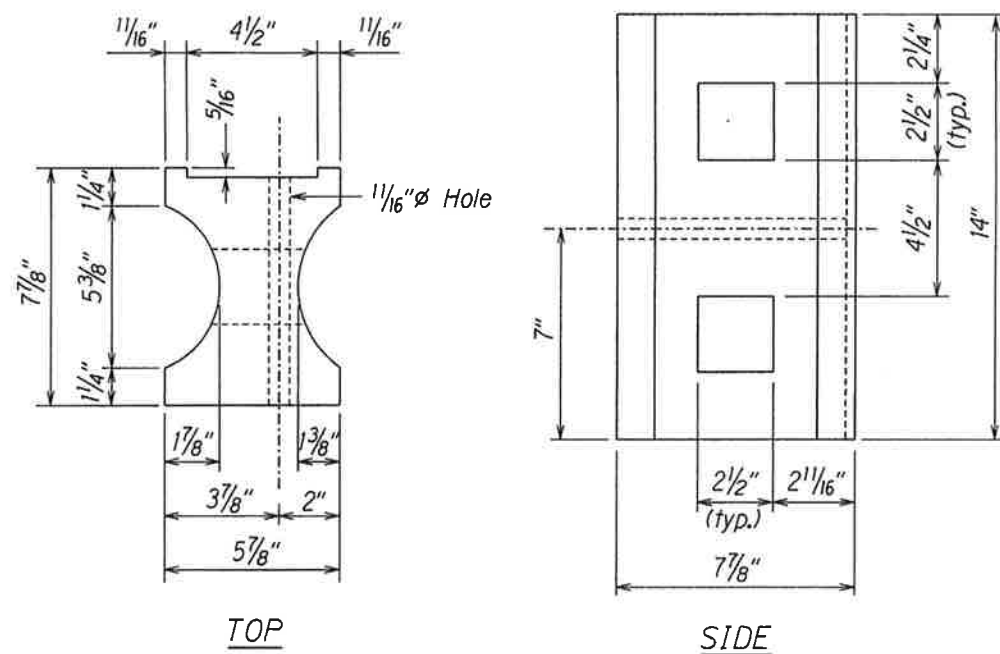
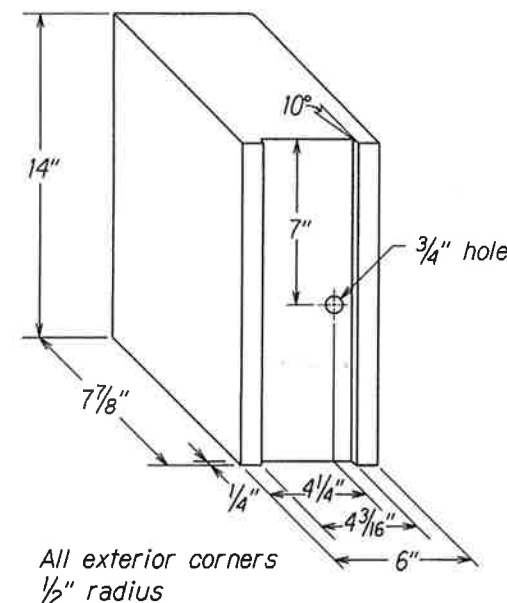


GENERAL NOTES

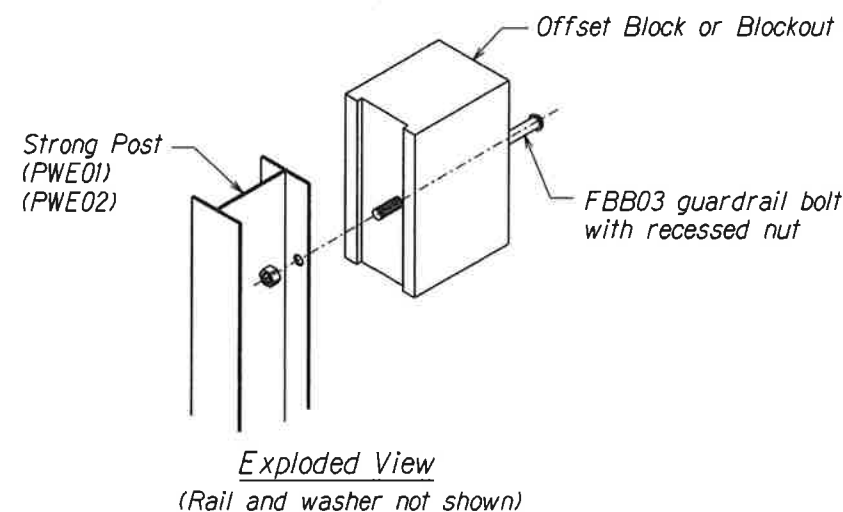
- All hardware, posts and fasteners shall be hot-dip zinc coated galvanized after fabrication. No punching, drilling or cutting will be permitted after galvanizing.
- Where conditions require, special post lengths in increments of 6 inches may be specified.
- All fasteners, posts, and rail elements (i.e. 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.
- 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 tamper 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.
- 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 200 feet. RM-5's shall not be installed on Fleet-350 or Thrie Beam guardrail.



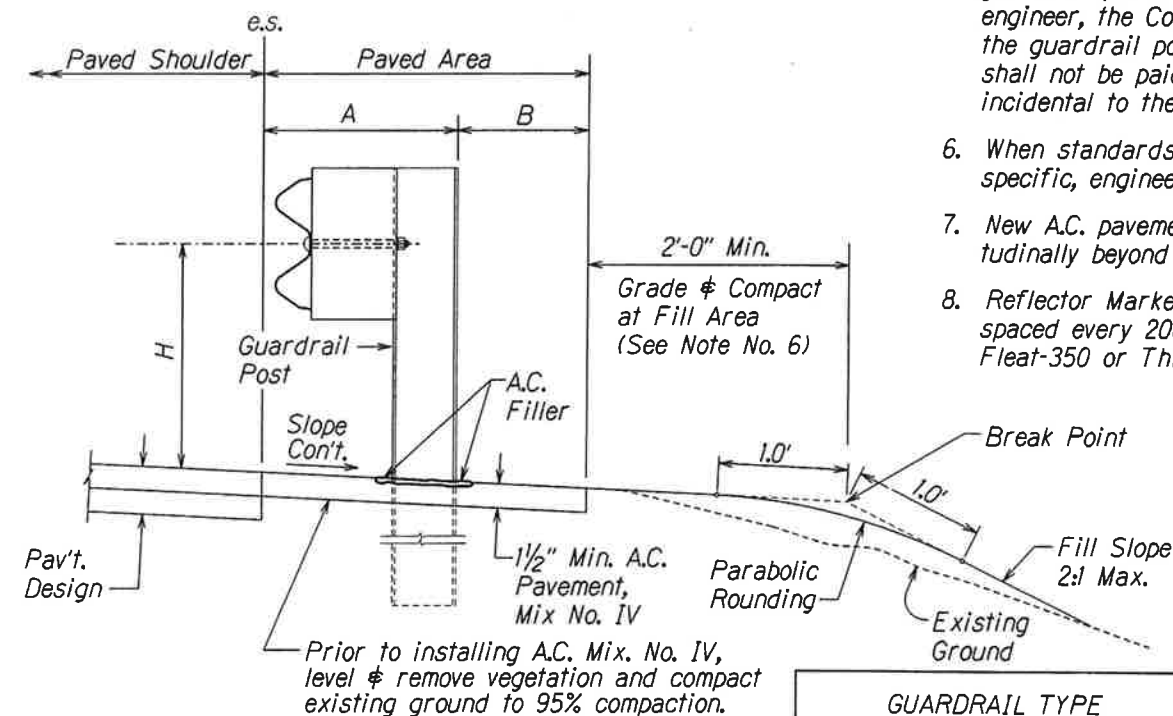
TOP
RECYCLED PLASTIC BLOCKOUT (TYPE I)



RECYCLED POLYETHYLENE
OFFSET BLOCK (TYPE II)



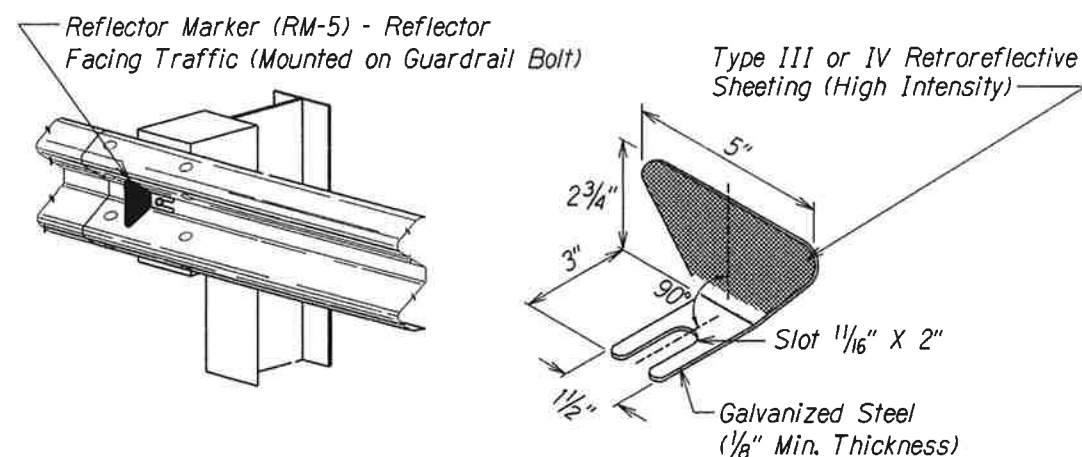
STEEL POST AND BLOCK DETAIL



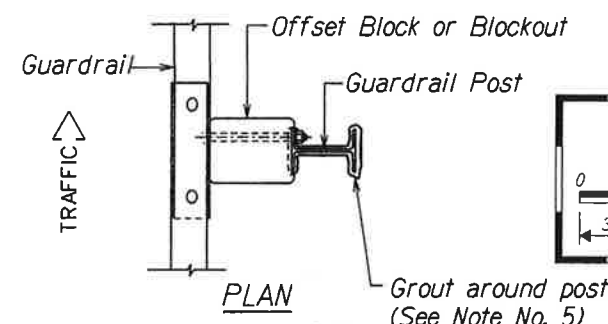
ELEVATION

GUARDRAIL TYPE	DIMENSION		
	H*	A	B
Strong Post w/W Beam	1'-9 5/8"	1'-6"	1'-0"
Modified Thrie Beam	1'-10"	2'-0"	1'-0"

* Or As Directed By Engineer



REFLECTOR MARKER (RM-5) DETAIL AND TYPICAL INSTALLATION



PLAN



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Exp. 04-30-10
Wesley R. Sogawa & Associates, Inc.

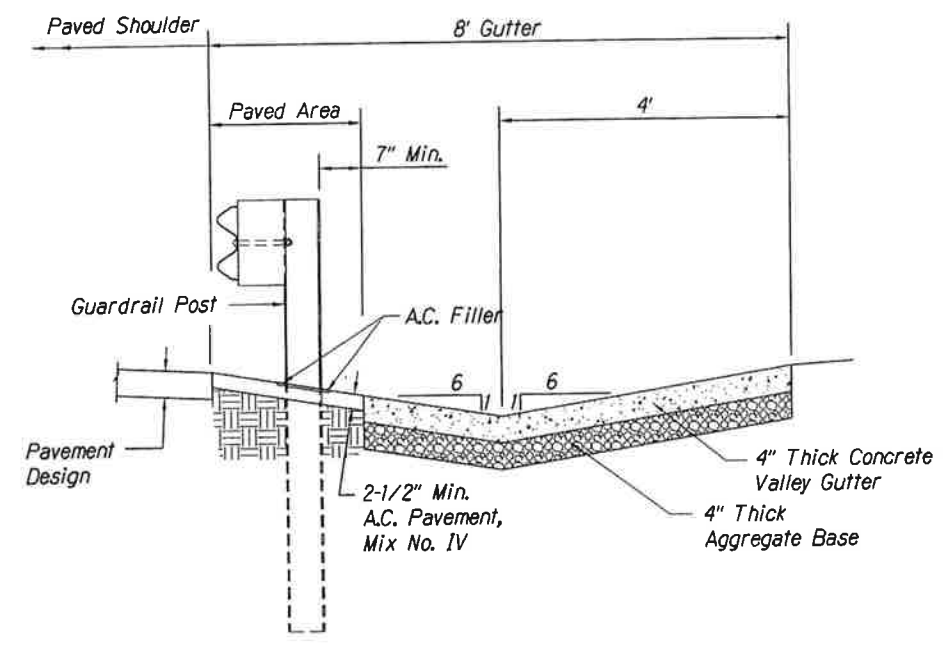
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS & NOTES

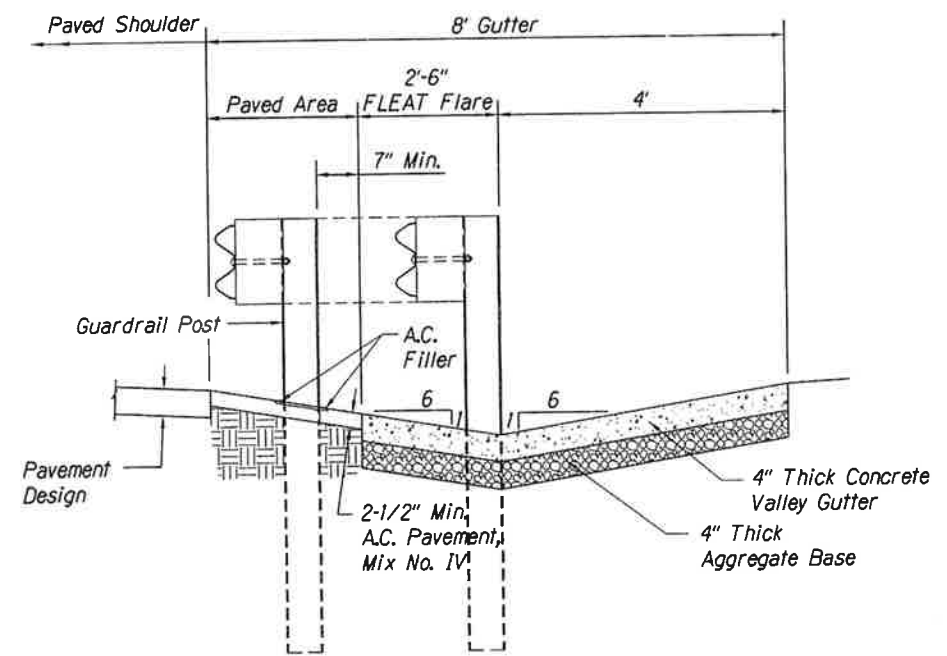
QUEEN KAAHUMANU HIGHWAY WIDENING
HENRY ST. to KEALAKEHE PKWY - PHASE I
Federal Aid Project No. NH-019-K20
Scale: NTS Date: November 2009

SHEET No. 1 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(20)	2005	148	315

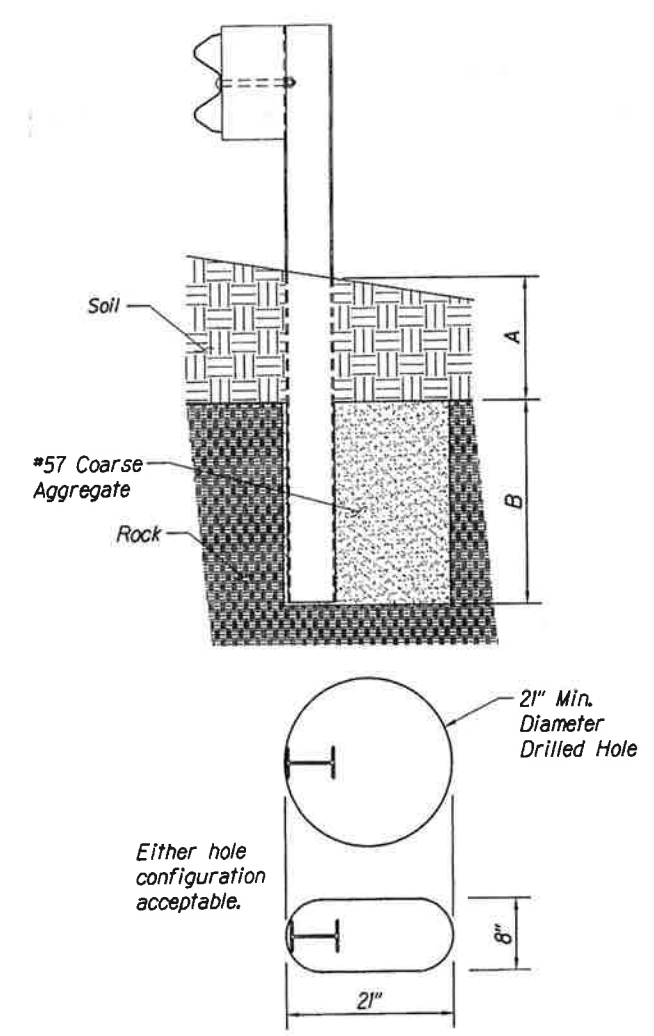


GUARDRAIL INSTALLATION AT GUTTER



FLEAT INSTALLATION AT GUTTER

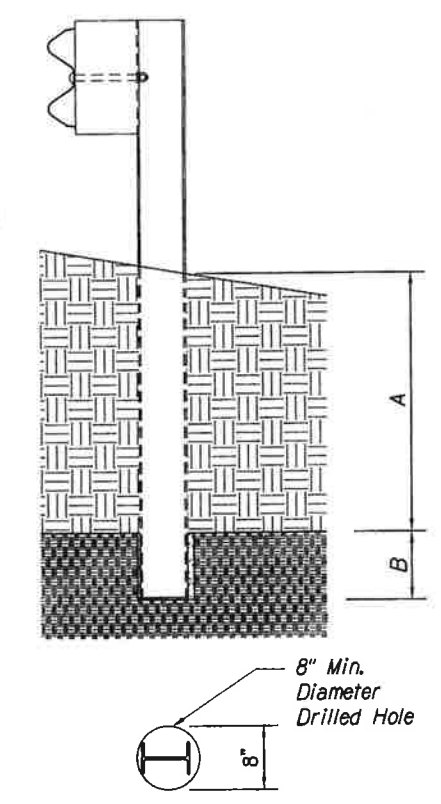
CASE 1



NOTE:

For overlying soil depths (A) ranging from 0" to 18", the depth of required drilling (B) is equal to 24".

CASE 2



NOTE:

For overlying soil depths (A) ranging from 18" to the embedment depth of the post, the depth of required drilling (B) is equal to either 12" or the desired embedment depth minus the depth of soil, whichever is less.

GUARDRAIL INSTALLATION IN ROCK

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
DATE	_____



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Exp. 04-30-10

Neal S. Fukumoto
Wesley R. Gephart & Associates, Inc.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS & NOTES
QUEEN KAAHUMANU HIGHWAY WIDENING
HENRY ST. to KEALAKEHE PKWY - PHASE I
Federal Aid Project No. NH-019-1(20)
Scale: Not to Scale Date: November 2009

SHEET No. 2 OF 2 SHEETS