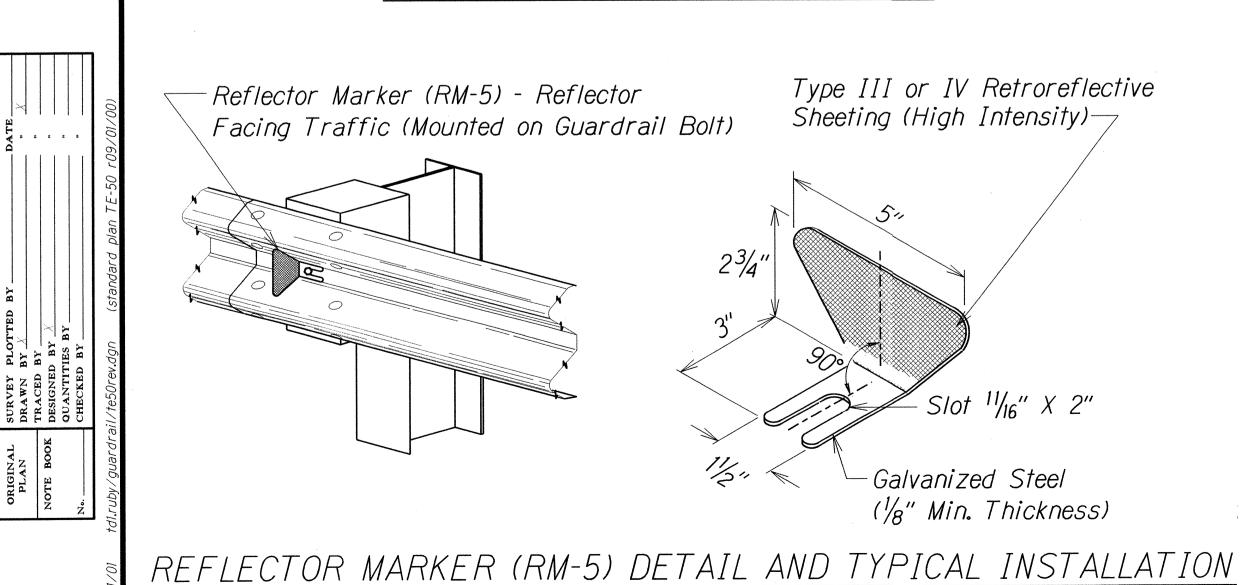
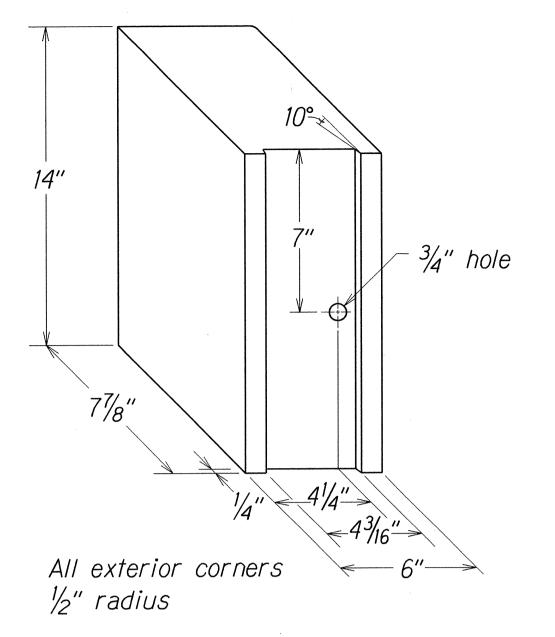


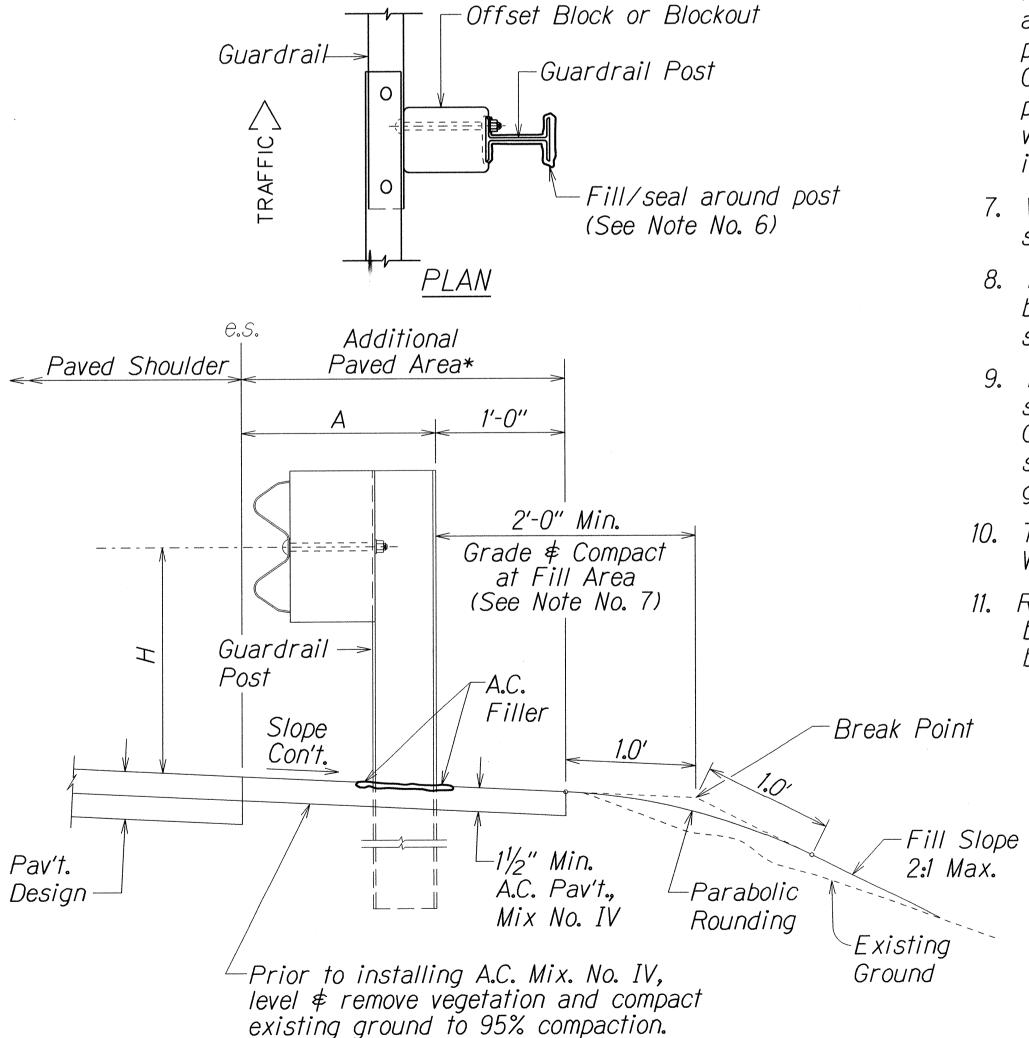
(Rail and washer not shown)

STEEL POST AND BLOCK DETAIL





RECYCLED POLYETHYLENE OFFSET BLOCK (TYPE II)



ELEVATION

TYPICAL GUARDRAIL INSTALLATION

GENERAL NOTES

FED. ROAD DIST. NO. STATE PROJ. NO. FISCAL SHEET NO. SHEETS

HAWAII HAW. 30A-01-16M 2016 9 38

- 1. All hardware, posts and fasteners shall be hot-dip zinc coated galvanized after fabrication. No punching, drilling or cutting will be permitted after galvanizing.
- 2. Where conditions require, special post lengths in increments of 6 inches may be specified.
- 3. 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.
- 4. The Recycled Plastic Block or Offset Block shall be approved by the State.
- 5. All new guardrail areas, shoulder shall be grubbed, graded and paved as shown on the plan. Paved shoulder width shall be determined in the field and approved by the Engineer. This work will not be paid separately but shall be made under Item 401.0100 A.C. Pavement, Mix IV.
- 6. 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.
- 7. When standards for the fill slope area cannot be met, a site specific, engineer approved design may be used.
- 8. New A.C. pavement at guardrails shall extend 6 feet longitudinally beyond terminal ends. This work will not be paid separately but shall be made under Item No. 401.0100 A.C. Pavement, Mix IV.
- 9. 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.
- 10. Type G end terminals shall be paid for under Strong Post W-Beam Guardrail.
- 11. Removed guardrails and post shall be delivered to State Highways baseyard, Kahului. This work shall not be paid separately but shall be considered incidental to guardrail pay items.

GUARDRAIL TYPE	DIMENSION	
	Н	Α
Strong Post W-Beam	1'-95/8"	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

<u>GUARDRAIL DETAILS & NOTES</u>

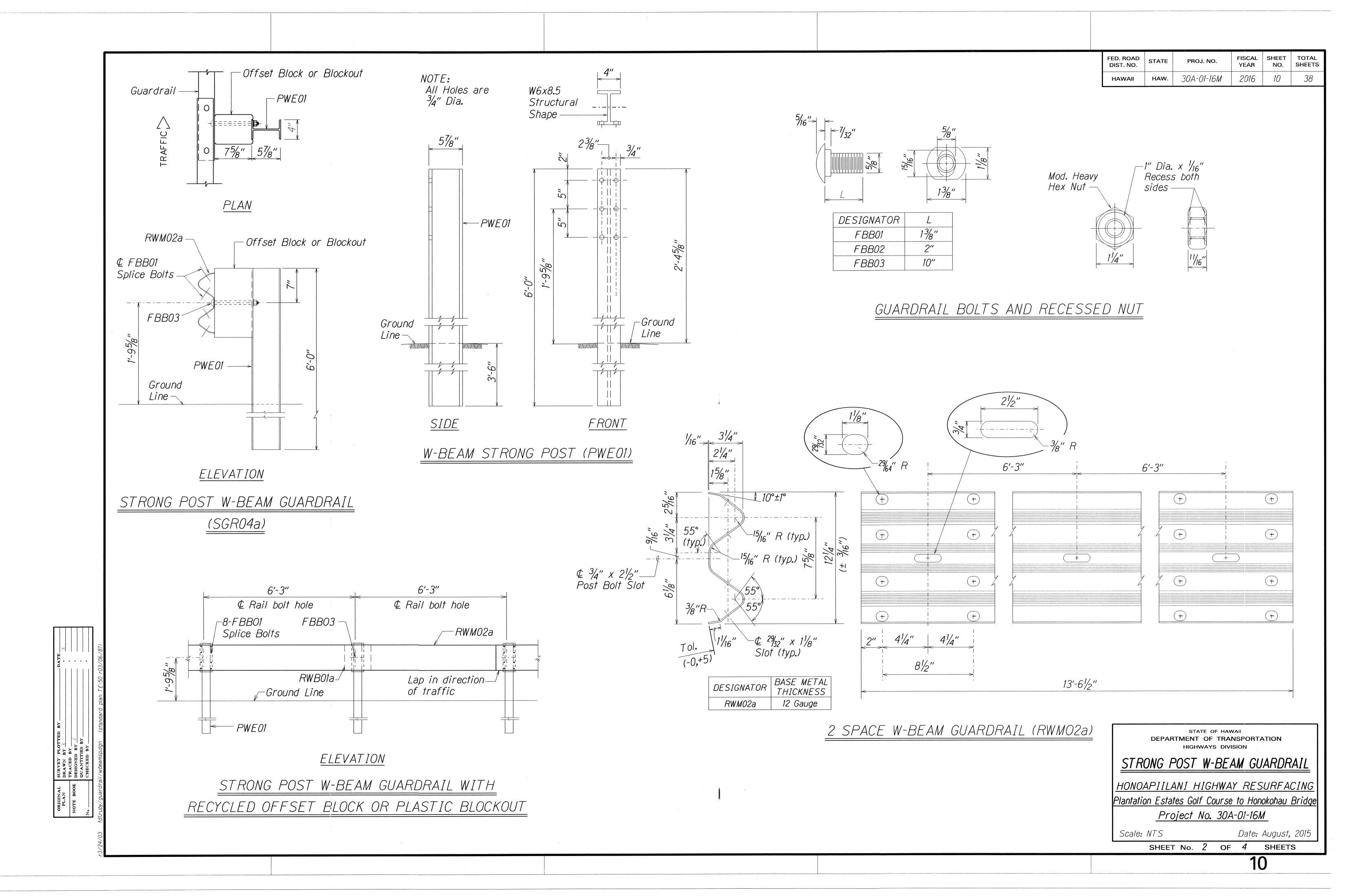
HONOAPIILANI HIGHWAY RESURFACING
Plantation Estates Golf Course to Honokohau Bridge

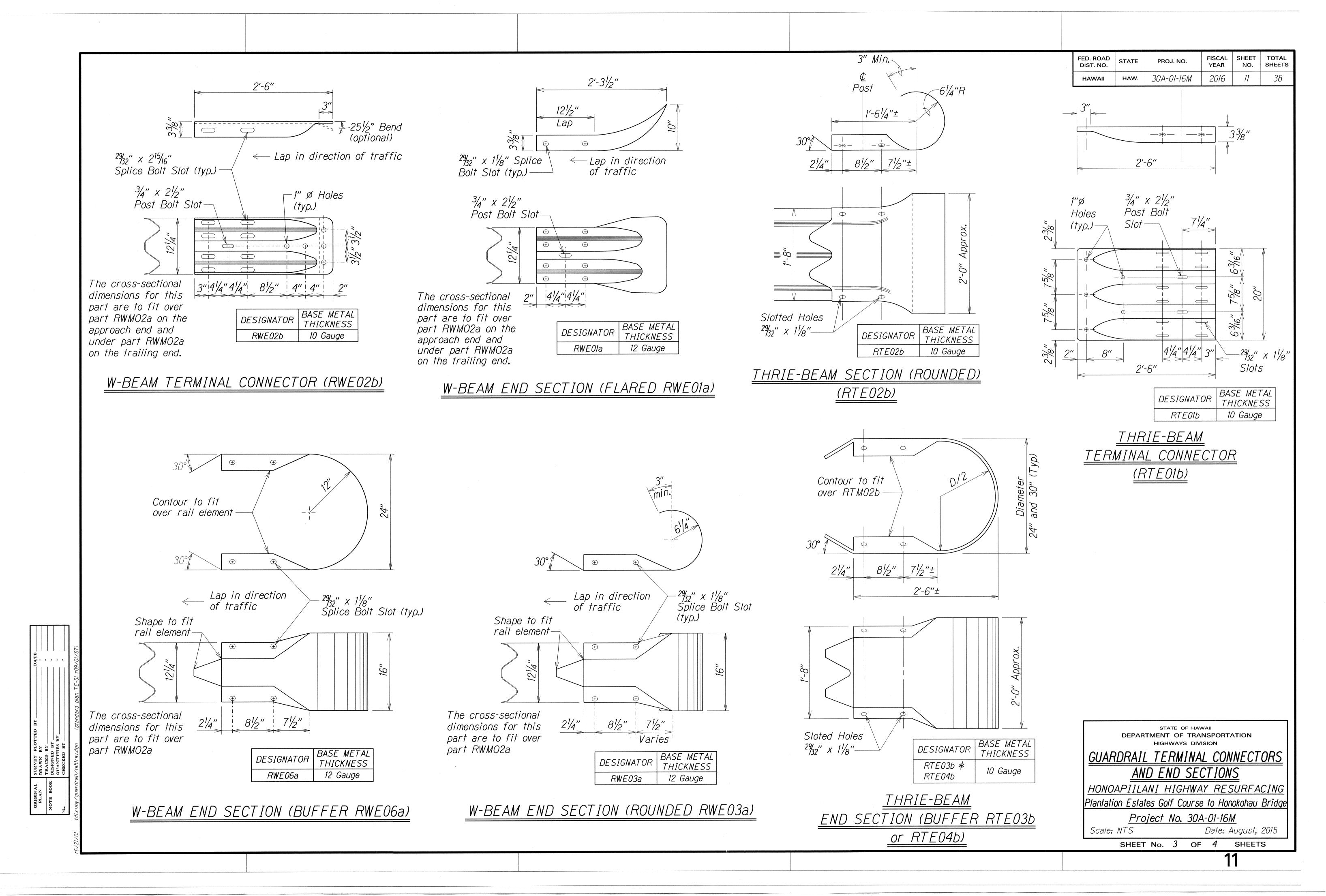
Project No. 30A-01-16M

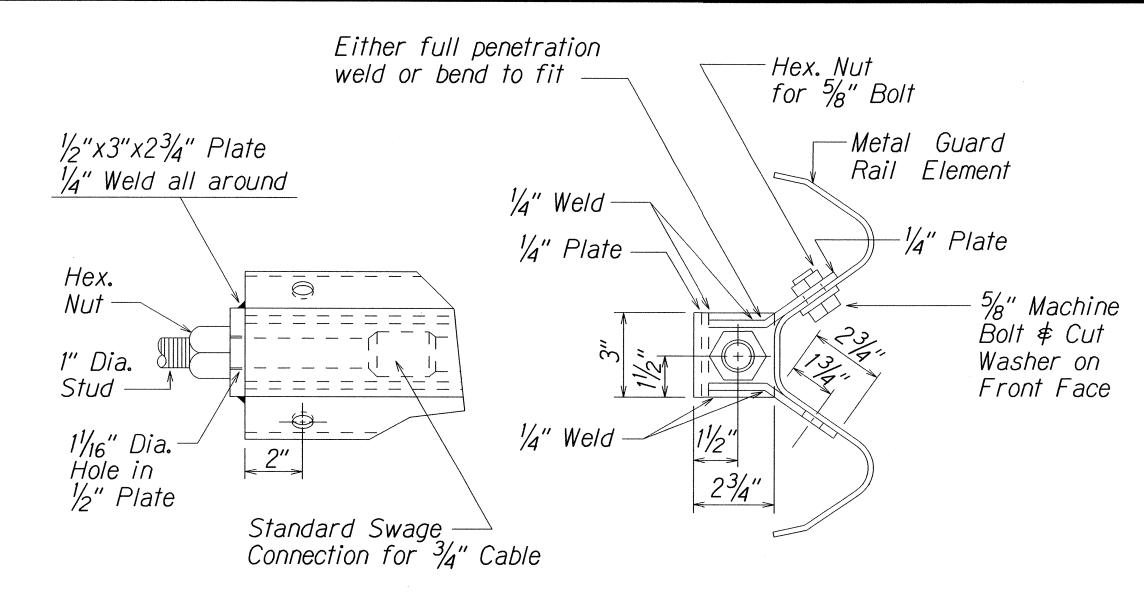
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SHEET No. 1 OF 4 SHEETS

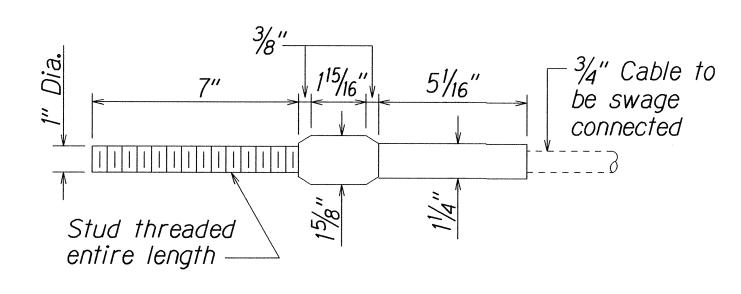
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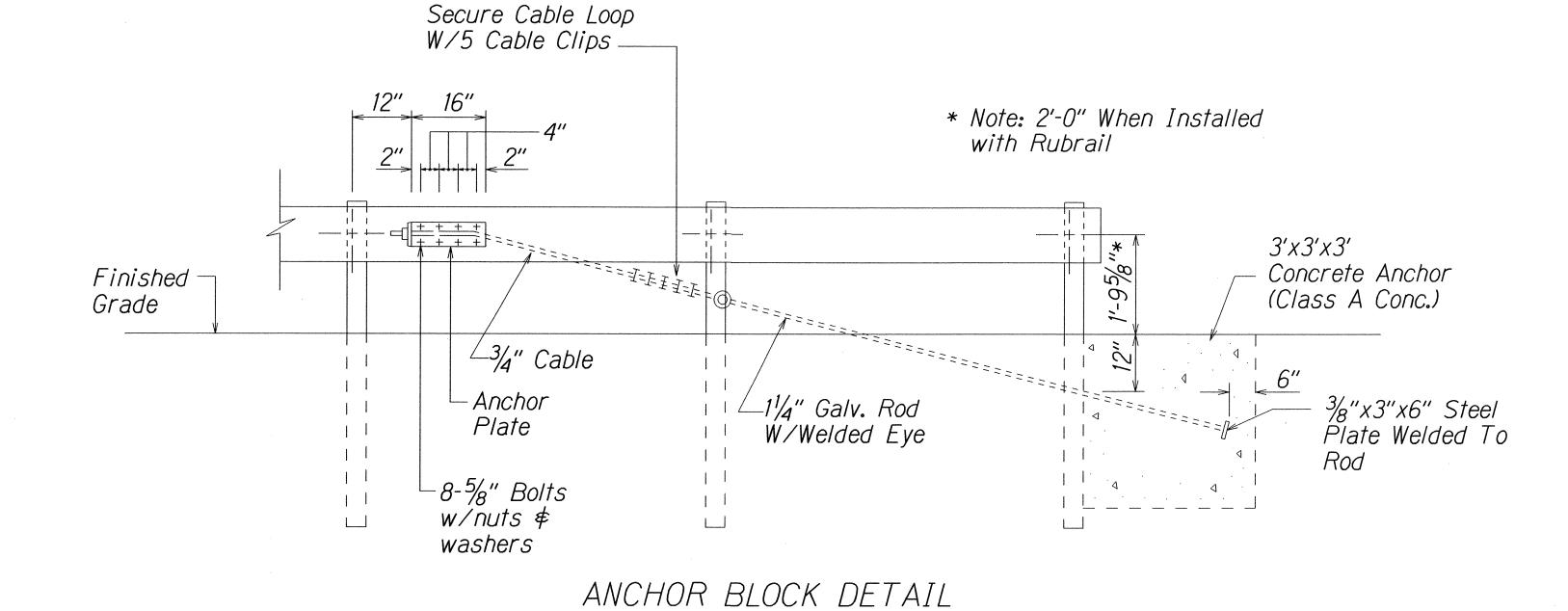


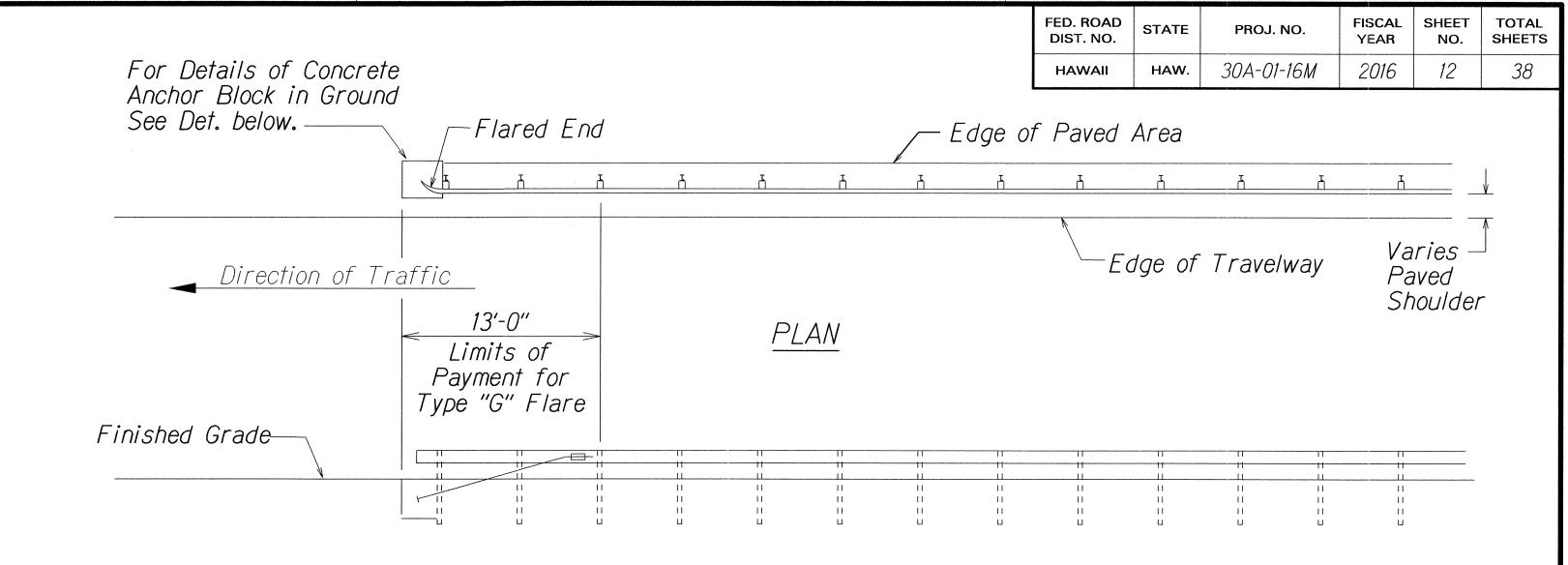


ANCHOR PLATE DETAILS



STANDARD SWAGED FITTING AND STUD





ELEVATION

TYPE "G" FLARE END TERMINAL

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 \$\psi\$ 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.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATIO
HIGHWAYS DIVISION

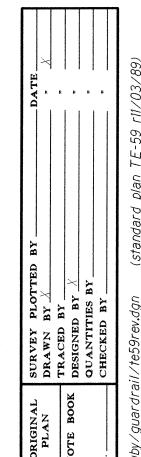
GUARDRAIL DETAILS

HONOAPIILANI HIGHWAY RESURFACING
Plantation Estates Golf Course to Honokohau Bridge
Project No. 30A-01-16M

Scale: NTS

Date: August, 2015

SHEET No. 4 OF 4 SHEETS



1. Concrete, G.R.P., excavation, anchor rod and miscellaneous appurtenances necessary to anchor the guardrail ends shall be incidental to metal guardrail.