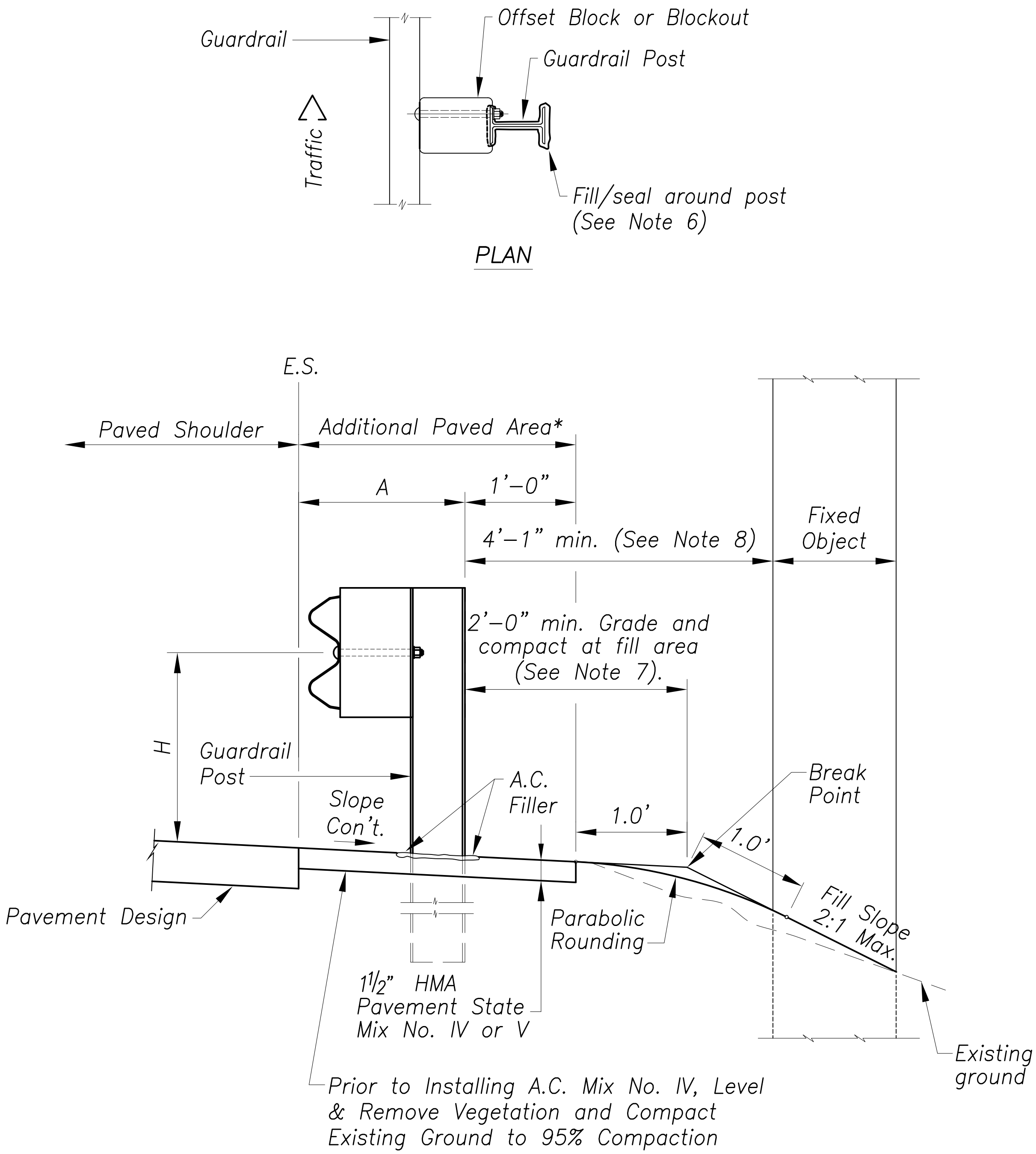


General Notes:

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 by the Engineer.
3. All fasteners, posts, and rail elements (i.e. FBB03, PWE01, RWM04a, 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.
4. The Blockout or Offset block shall be approved by the State.
5. All new guardrail systems (system consists of total length of guardrail including both end treatments) shall include the Addition Paved Area.
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. Minimum working width (clear distance) between back of MGS post to any fixed object is 4'-1" (49").
9. New Hot Mix Asphalt (HMA) pavement at guardrails shall extend 6 feet longitudinally beyond terminal ends.
10. Reflector markers (RM-5) mounted on guardrails shall be spaced every 25 feet. RM-5's shall not be installed on terminal sections. Furnishing and installing of each RM-5 shall be considered incidental to the guardrail system.

Guardrail Type	Dimension	
	H	A
MGS with Standard 8" Offset Block	2'-1"	1'-6"
MGS with No Blockout	2'-7/8"	1'-6"



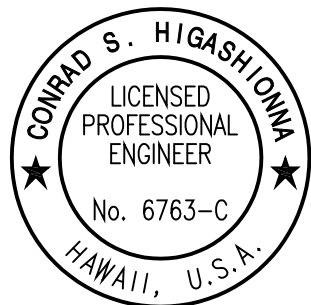
ELEVATION

TYPICAL GUARDRAIL INSTALLATION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(163)	2020	81	284

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
No.	

Aug 28, 2020-6:13pm
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Conrad Higashinoma

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**31" W-BEAM GUARDRAIL WITH
STANDARD 8" OFFSET BLOCK**

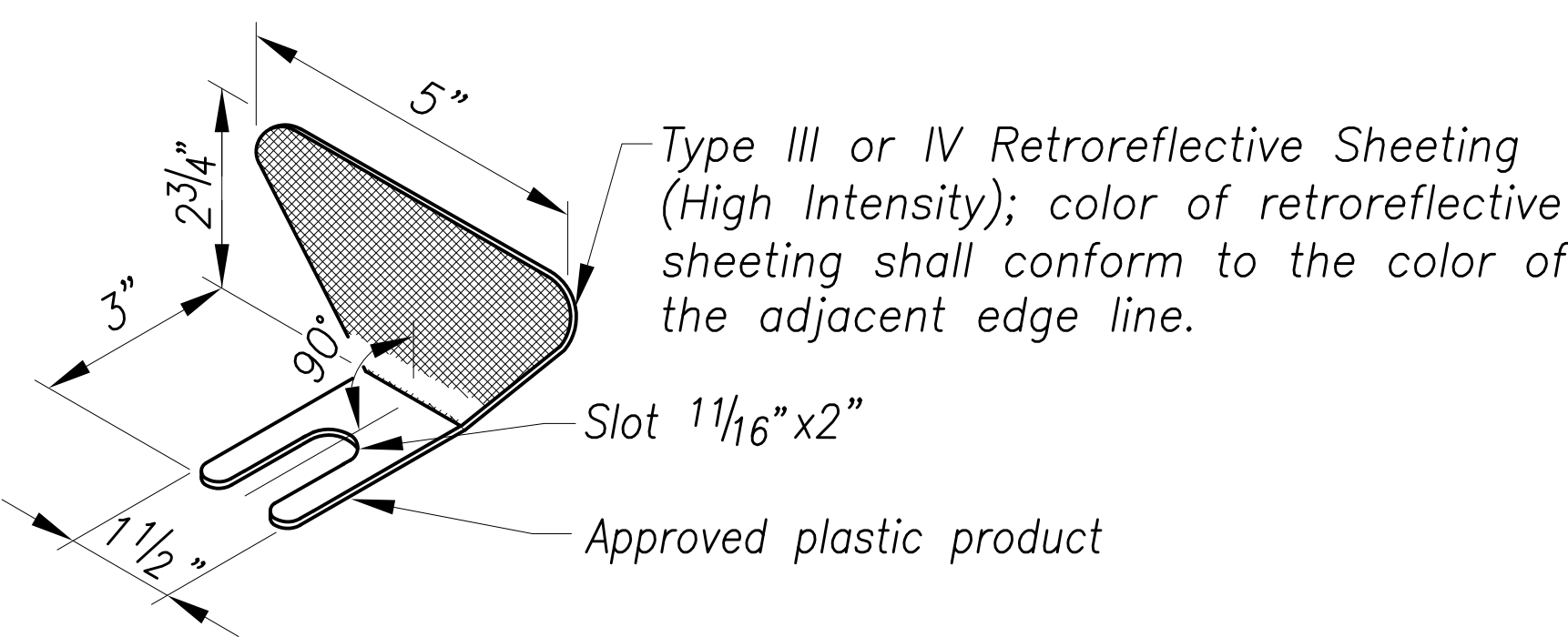
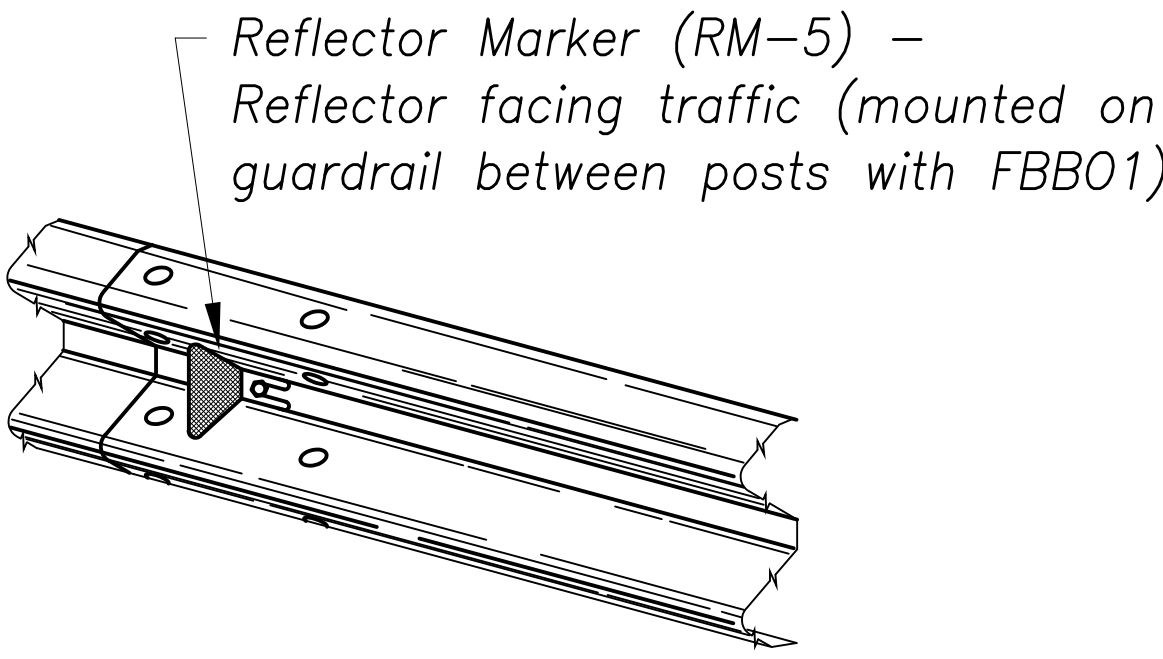
*Traffic Signal Modernization,
Oahu, Phase 1*

Federal-Aid Project No. STP-0300(163)

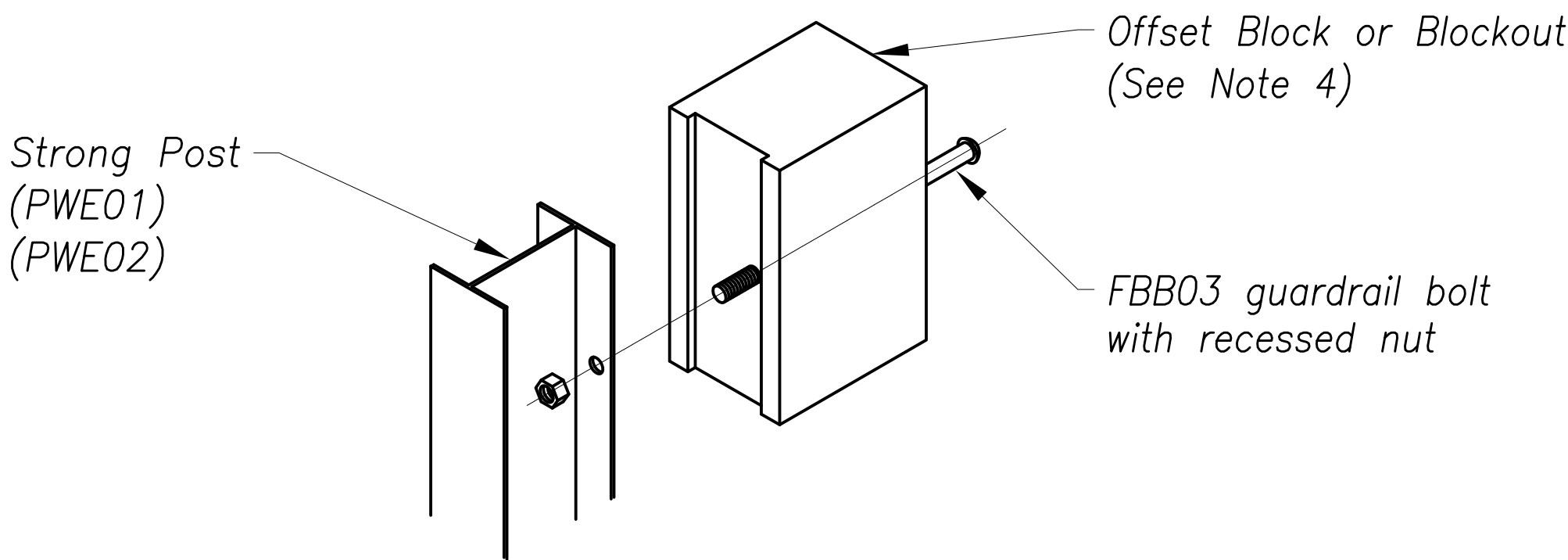
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SHEET No. R-51 OF 65 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(163)	2020	82	284



REFLECTOR MARKER (RM-5) DETAIL AND TYPICAL INSTALLATION

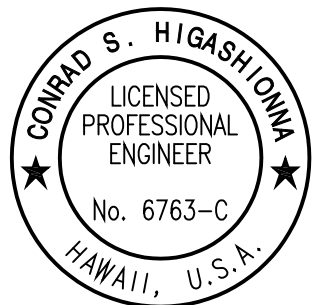


EXPLODED VIEW
(Rail and Washer not Shown)

STEEL POST AND BLOCK DETAIL

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	QUANTITIES BY	" "
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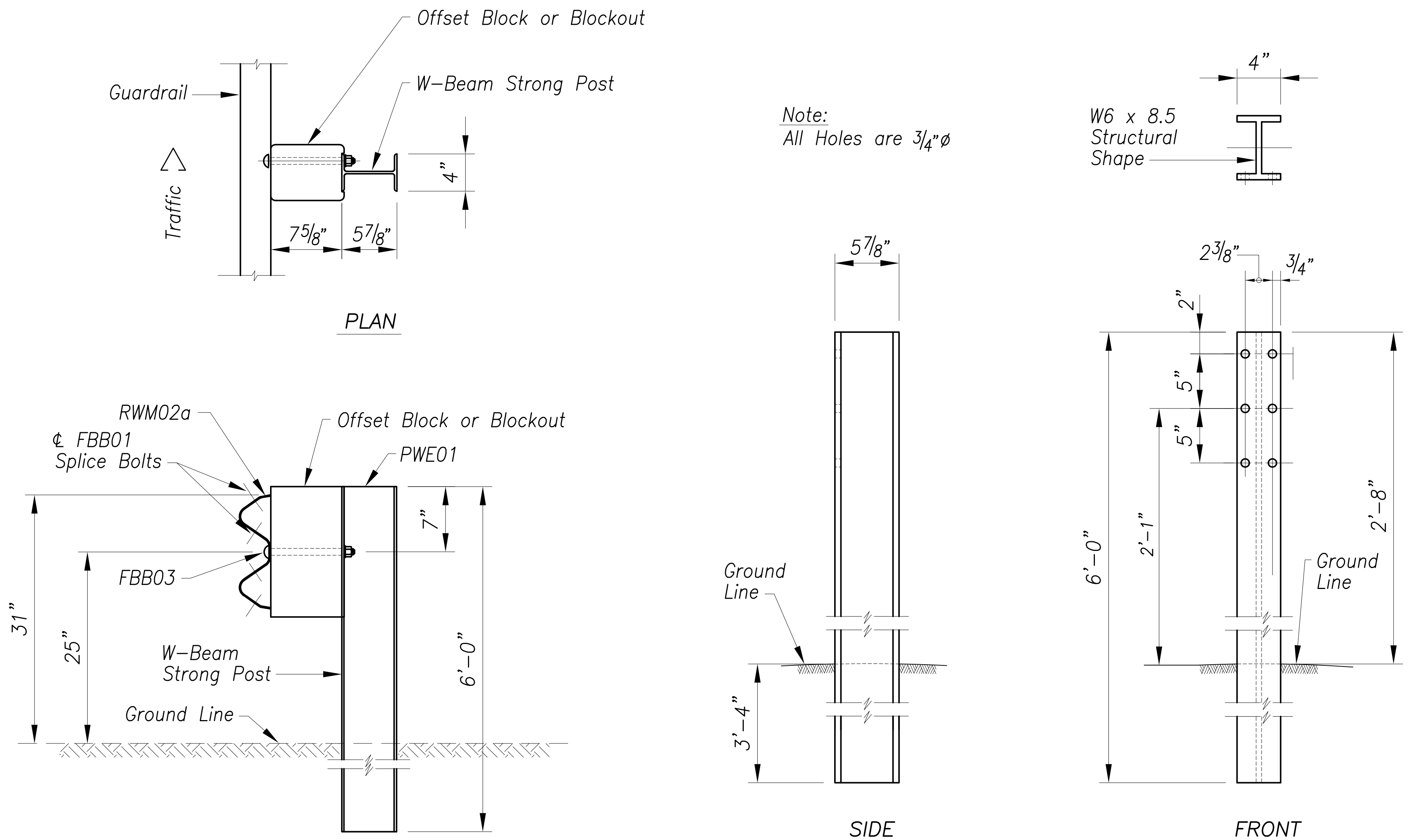
**31" W-BEAM GUARDRAIL WITH
STANDARD 8" OFFSET BLOCK**

Traffic Signal Modernization,
Oahu, Phase 1
Federal-Aid Project No. STP-0300(163)

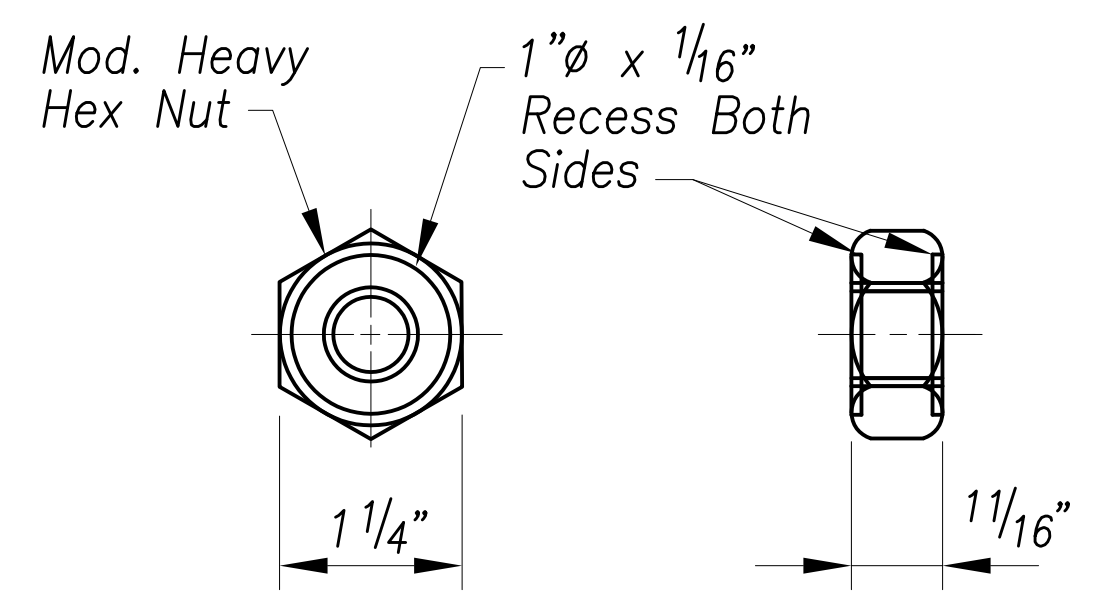
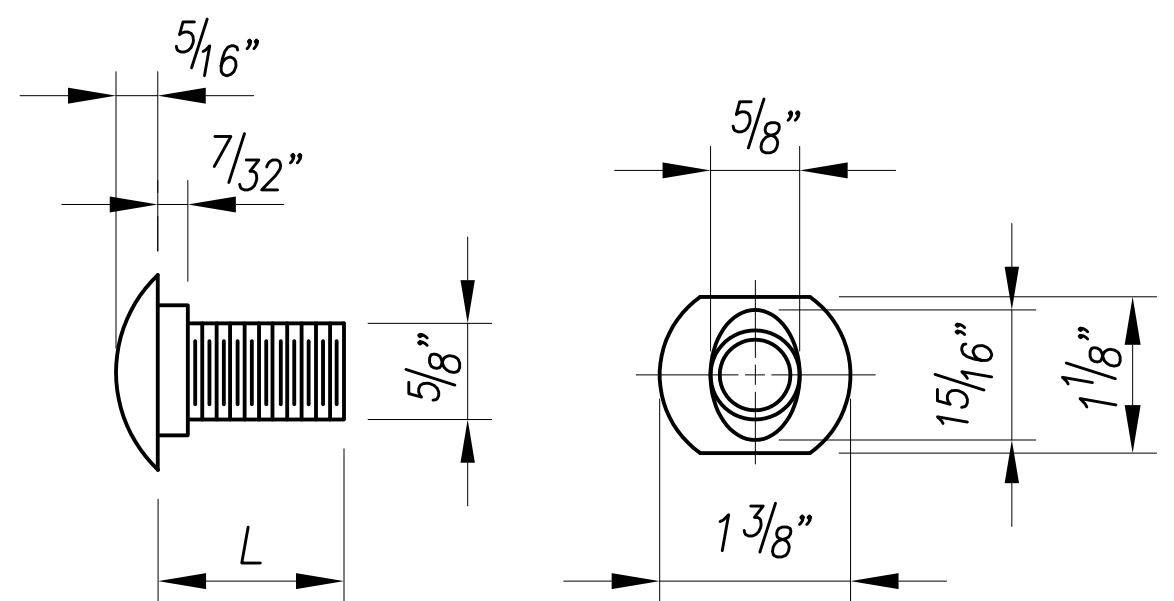
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SHEET No. R-52 OF 65 SHEETS

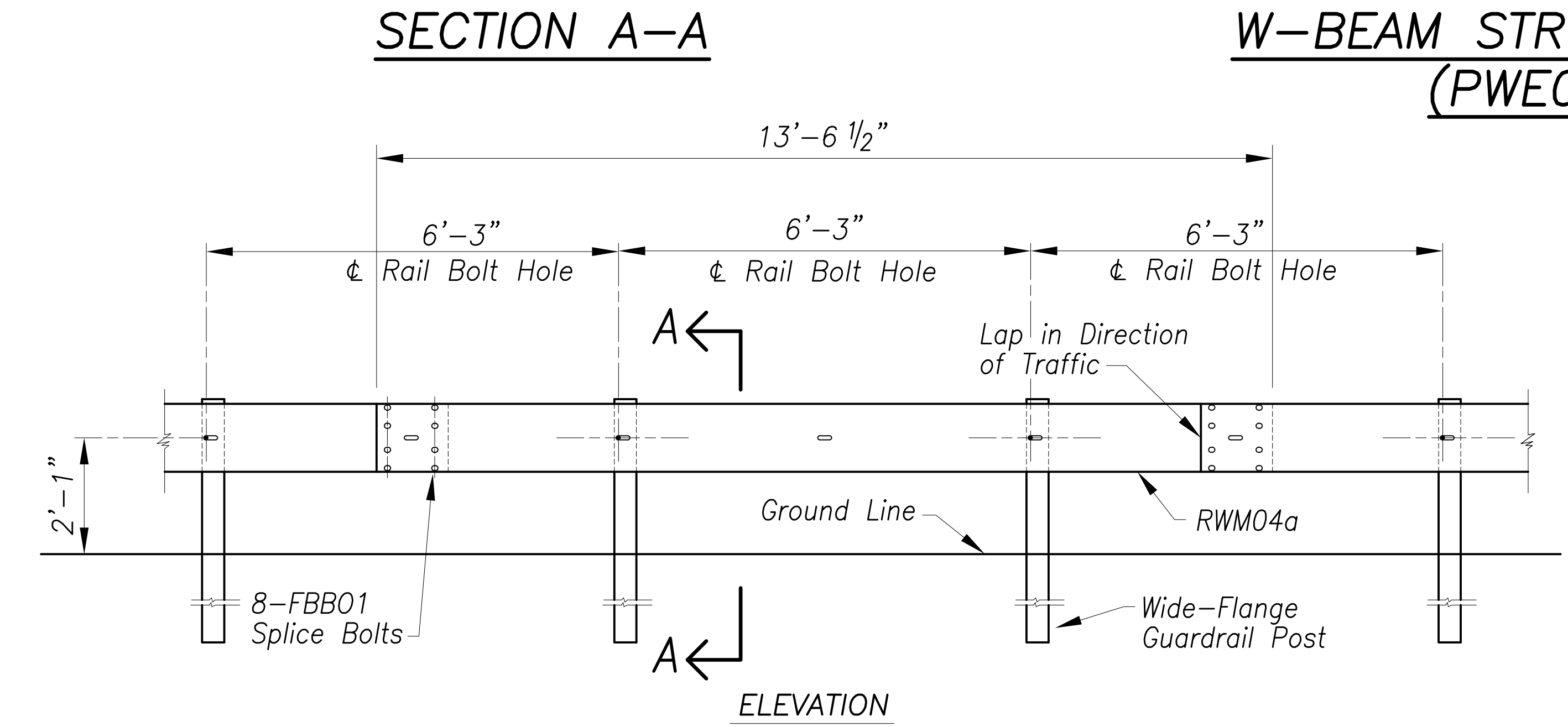
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(163)	2020	83	284



**W-BEAM STRONG POST
(PWE01)**



GUARDRAIL BOLTS AND RECESSED NUT



**MIDWEST GUARDRAIL SYSTEM WITH
STANDARD 8" OFFSET LOCK (SGR47)**

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QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

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CONRAD S. HIGASHIMURA
 LICENSED PROFESSIONAL ENGINEER
 No. 6763-C
 HAWAII, U.S.A.
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Conrad Higashimura

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**31" W-BEAM GUARDRAIL WITH
STANDARD 8" OFFSET BLOCK**

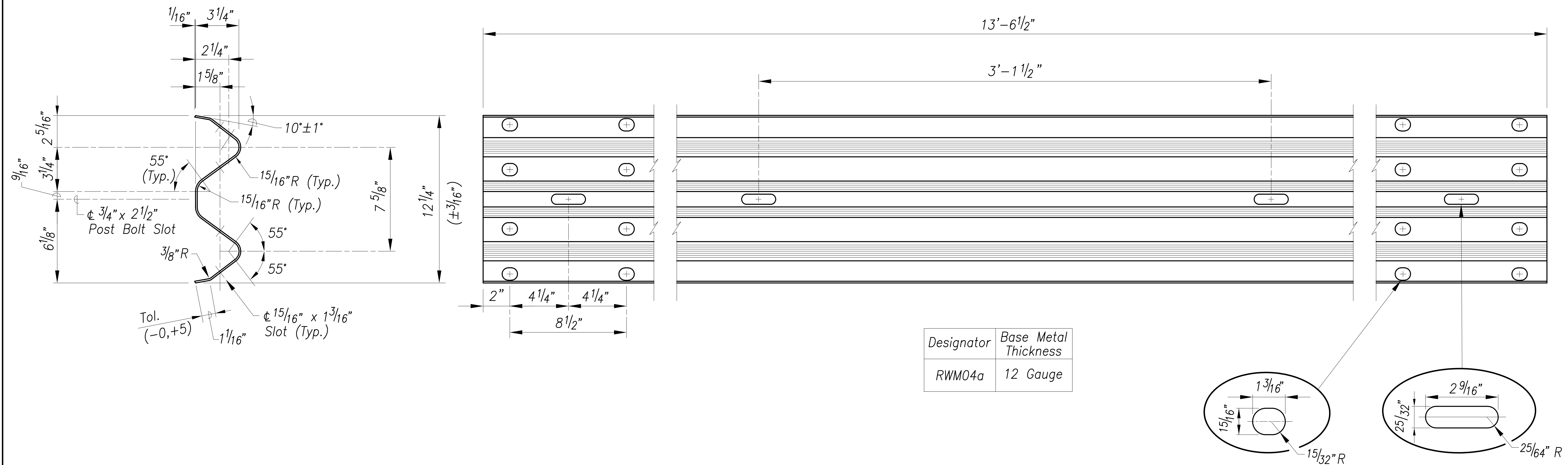
*Traffic Signal Modernization,
Oahu, Phase 1*

Federal-Aid Project No. STP-0300(163)

Scale: Not to Scale Date: July 2020

SHEET No. R-53 OF 65 SHEETS

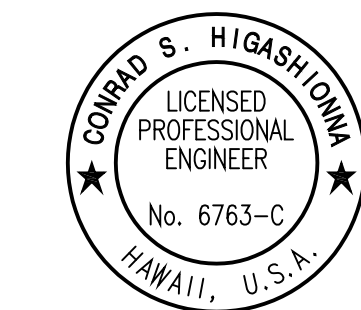
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(163)	2020	84	284



4 SPACE W-BEAM GUARDRAIL (RWM04a)

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	CHECKED BY	

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Conrad Higashimura

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**31" W-BEAM GUARDRAIL WITH
STANDARD 8" OFFSET BLOCK**

Traffic Signal Modernization,
Oahu, Phase 1

Federal-Aid Project No. STP-0300(163)

Scale: Not to Scale Date: July 2020

SHEET No. R-54 OF 65 SHEETS