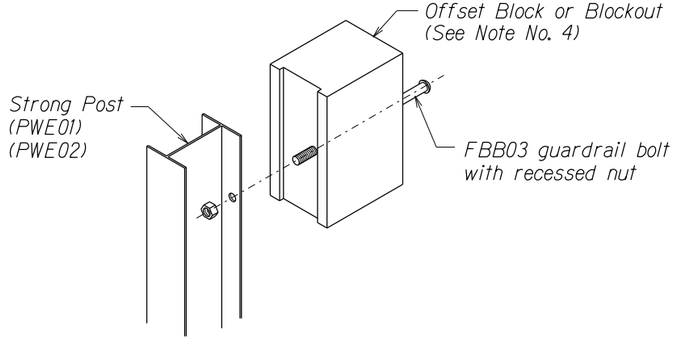
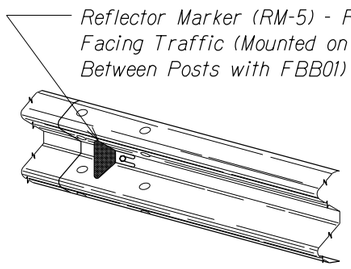
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0340(005)	2020	10	44

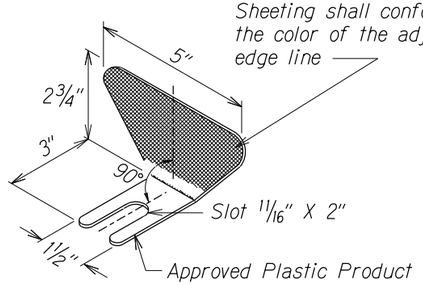
GUARDRAIL TYPE	DIMENSION	
	H	A
MGS w/ Standard 8" Offset Block	2'-1"	1'-6"
MGS w/ No Blockout	2'-7/8"	9 1/4"



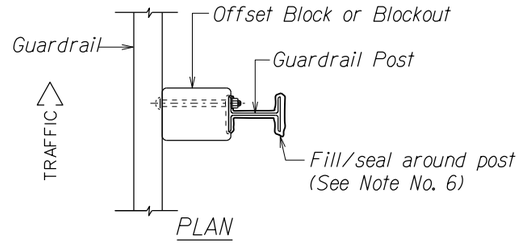
Exploded View
(Rail and washer not shown)

STEEL POST AND BLOCK DETAIL

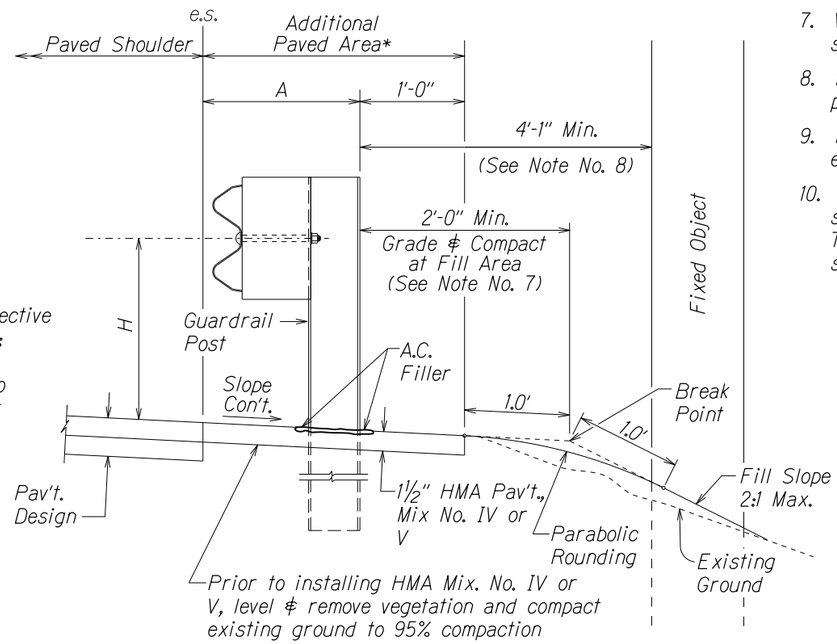




REFLECTOR MARKER (RM-5) DETAIL AND TYPICAL INSTALLATION



PLAN



ELEVATION

TYPICAL GUARDRAIL INSTALLATION

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, RWM04b, 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 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 Additional 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.

REDUCED PLAN
(HALF SIZE)
0 1 2 3
3 INCHES OF ORIGINAL PLAN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS & NOTES

KAHEKILI HIGHWAY RESURFACING
Waiehu Beach Road to Camp Maluhia
Federal-Aid Project No. STP-0340(005)

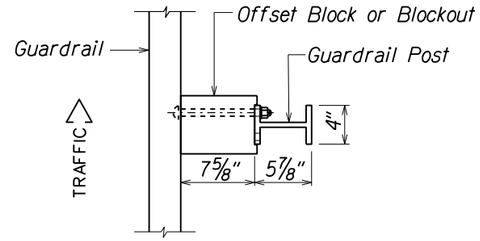
Scale: NTS Date: May, 2020

SHEET No. 1 OF 5 SHEETS

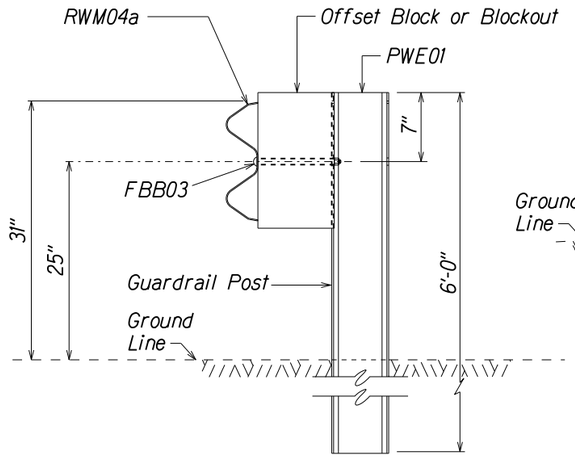
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY X	
	TRACED BY X	
NOTE BOOK	DESIGNED BY X	
	QUANTITIES BY	
N.	CHECKED BY	

r05/03/18 Dust2/Ernest/standards/Traffic Guardrail Standards/archive/mt_1e50rev.dgn

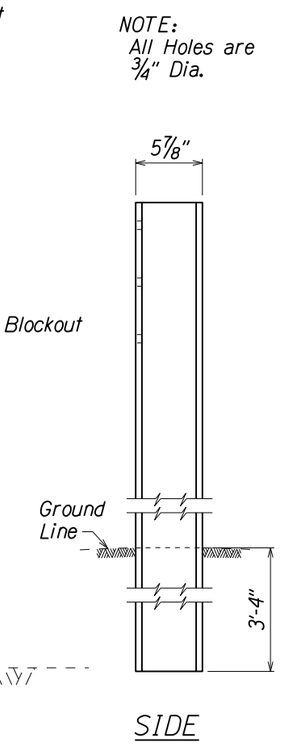
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0340(005)	2020	11	44



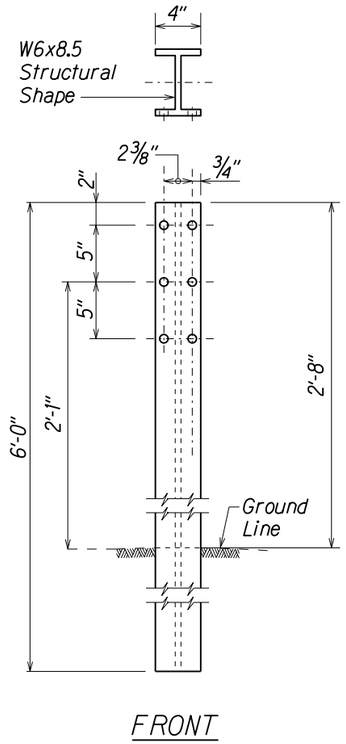
PLAN



SECTION A-A

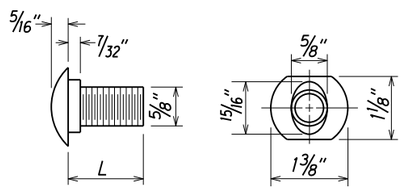


SIDE

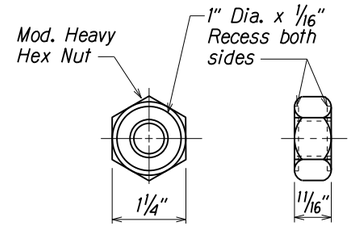


FRONT

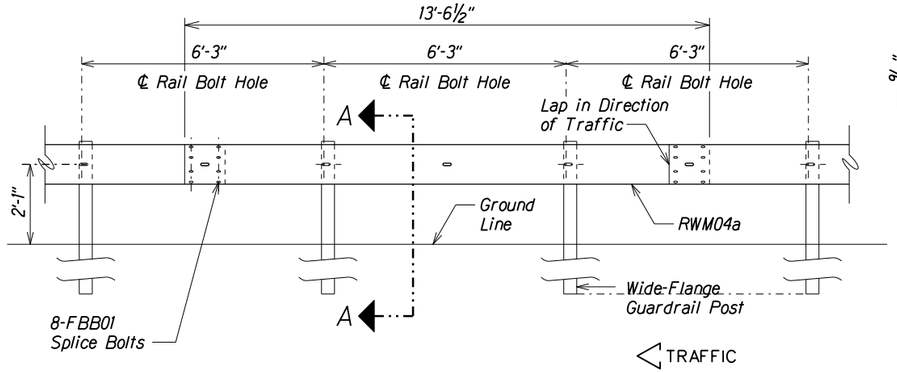
WIDE-FLANGED GUARDRAIL POST (PWE01)



DESIGNATOR	L
FBB01	1⅜"
FBB02	2"
FBB03	10"

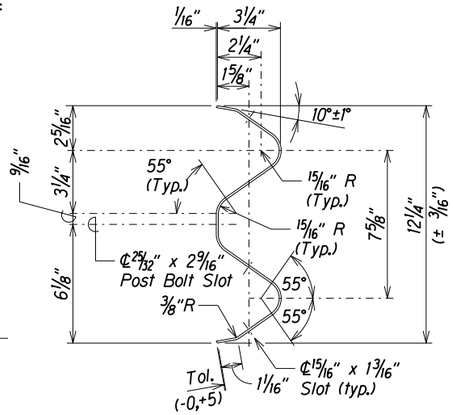


GUARDRAIL BOLTS AND RECESSED NUT

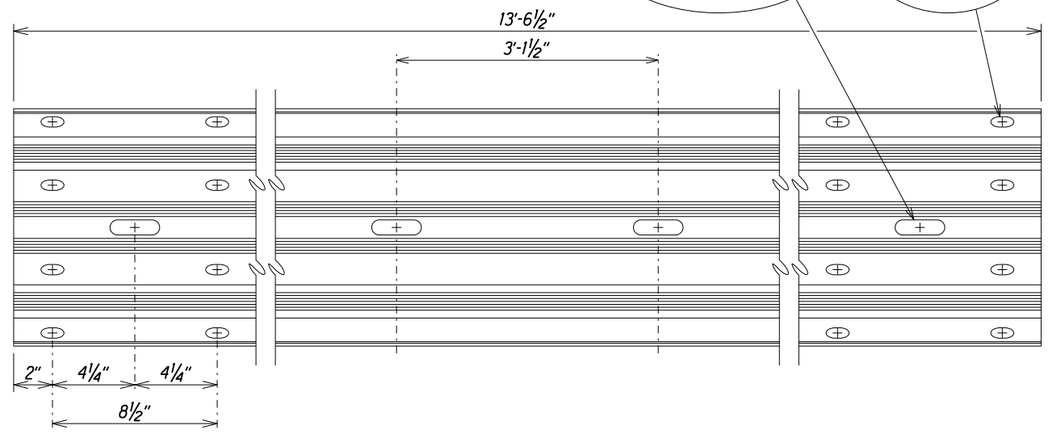


ELEVATION

MIDWEST GUARDRAIL SYSTEM WITH STANDARD 8" OFFSET BLOCK (SGR47)



DESIGNATOR	BASE METAL THICKNESS
RWM04a	12 Gauge



4 SPACE W-BEAM GUARDRAIL (RWM04a)

REDUCED PLAN
(HALF SIZE)
0 1 2 3
3 INCHES OF ORIGINAL PLAN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

KAHEKILI HIGHWAY RESURFACING
Waiehu Beach Road to Camp Maluhia
Federal-Aid Project No. STP-0340(005)

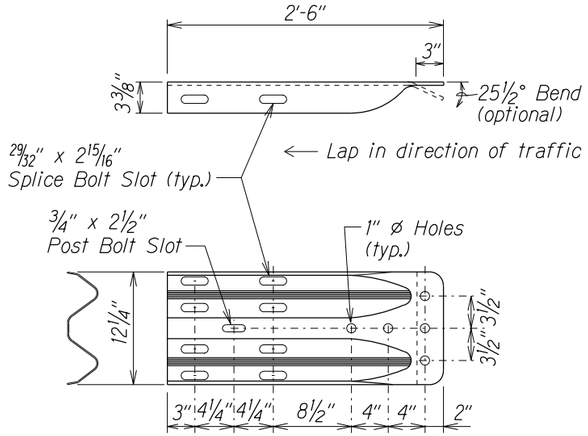
Scale: NTS Date: May, 2020

SHEET No. 2 OF 5 SHEETS

ORIGINAL PLAN
NOTE BOOK
No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

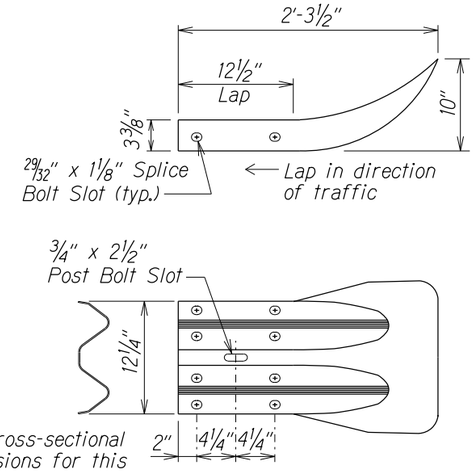
r02/05/20 Dust2/Ernest/standards/Traffic Guardrail Standards/archive/hi2_wbeamsgpdgn

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0340(005)	2020	12	44



DESIGNATOR	BASE METAL THICKNESS
RWE02b	10 Gauge

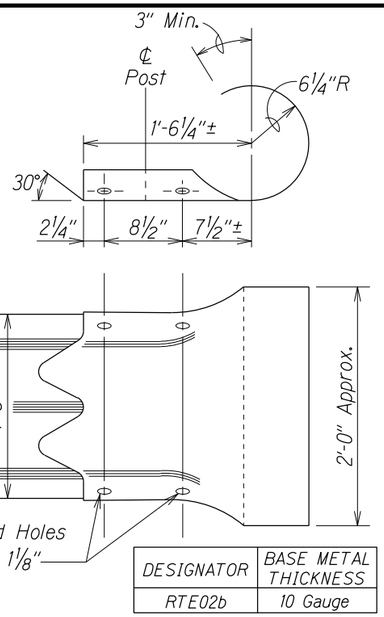
W-BEAM TERMINAL CONNECTOR (RWE02b)



The cross-sectional dimensions for this part are to fit over part RWM02a on the approach end and under part RWM02a on the trailing end.

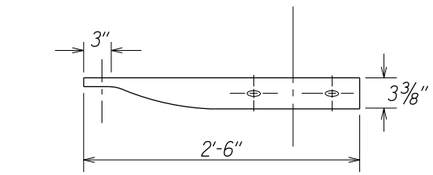
DESIGNATOR	BASE METAL THICKNESS
RWE01a	12 Gauge

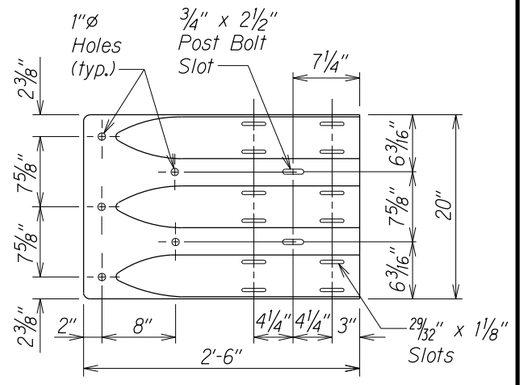
W-BEAM END SECTION (FLARED RWE01a)



DESIGNATOR	BASE METAL THICKNESS
RTE02b	10 Gauge

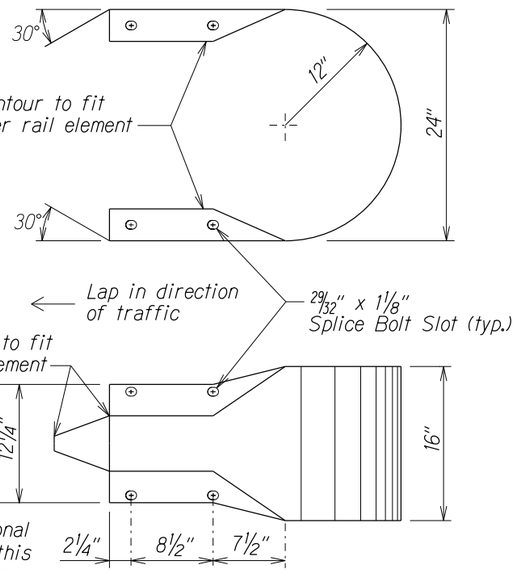
THRIE-BEAM SECTION (ROUNDED) (RTE02b)





DESIGNATOR	BASE METAL THICKNESS
RTE01b	10 Gauge

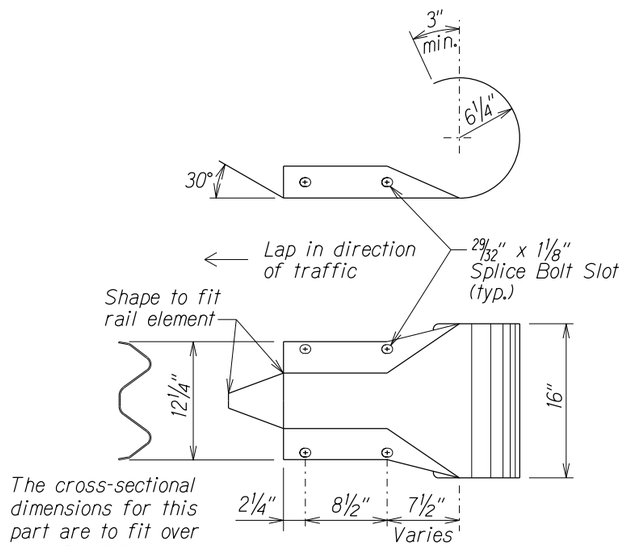
THRIE-BEAM TERMINAL CONNECTOR (RTE01b)



The cross-sectional dimensions for this part are to fit over part RWM02a

DESIGNATOR	BASE METAL THICKNESS
RWE06a	12 Gauge

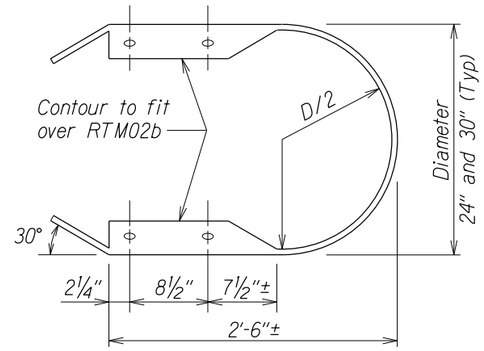
W-BEAM END SECTION (BUFFER RWE06a)

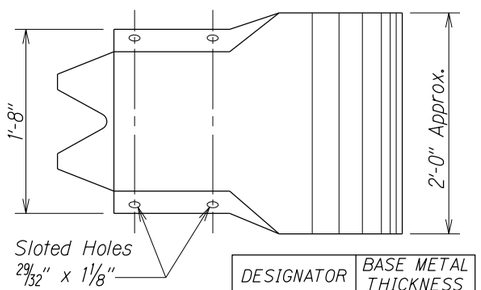


The cross-sectional dimensions for this part are to fit over part RWM02a

DESIGNATOR	BASE METAL THICKNESS
RWE03a	12 Gauge

W-BEAM END SECTION (ROUNDED RWE03a)





DESIGNATOR	BASE METAL THICKNESS
RTE03b & RTE04b	10 Gauge

THRIE-BEAM END SECTION (BUFFER RTE03b or RTE04b)

REDUCED PLAN
(HALF SIZE)
0 1 2 3
3 INCHES OF ORIGINAL PLAN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL TERMINAL CONNECTORS AND END SECTIONS

KAHEKILI HIGHWAY RESURFACING
Waiehu Beach Road to Camp Maluhia
Federal-Aid Project No. STP-0340(005)

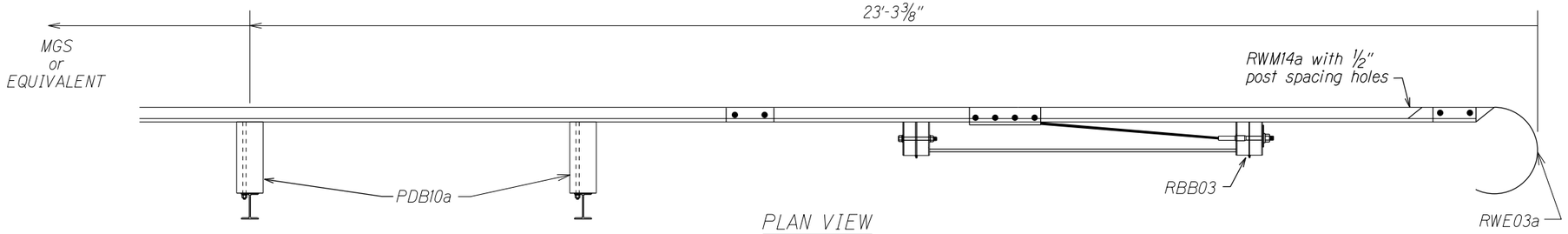
Scale: NTS Date: May, 2020

SHEET No. 3 OF 5 SHEETS

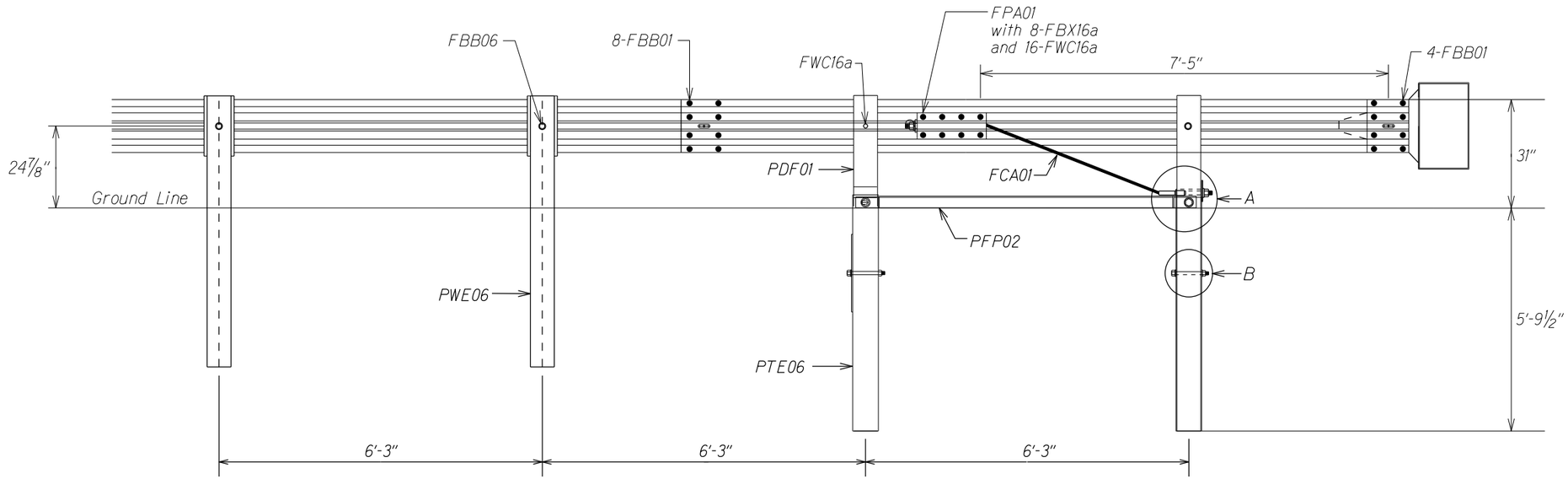
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

r07/28/17 Dust2/Ernest/standards/Traffic Guardrail Standards/rm4_te5rewdgn

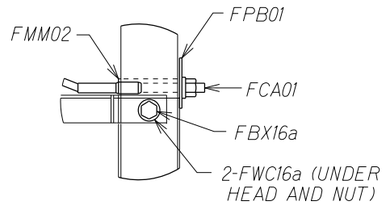
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0340(005)	2020	13	44



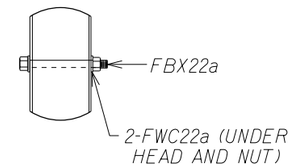
PLAN VIEW



ELEVATION VIEW
NON TRAFFIC SIDE

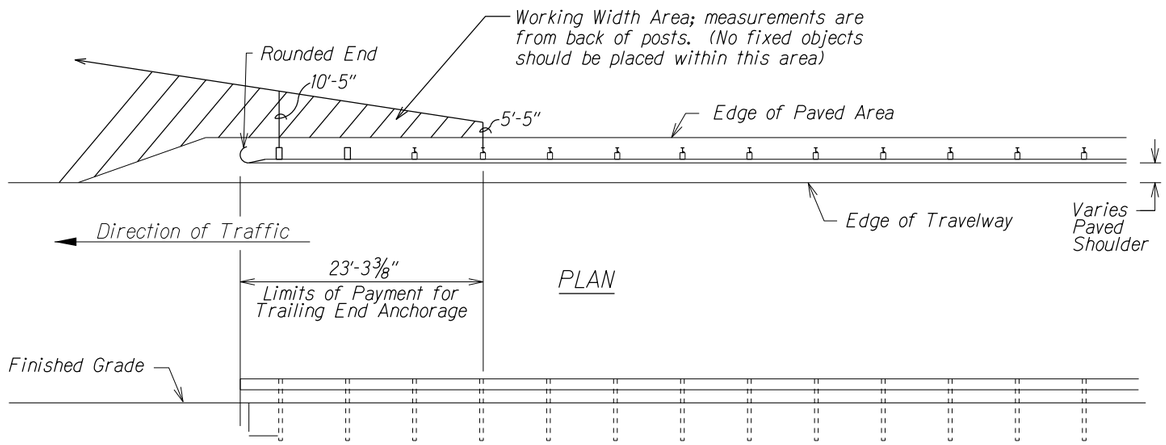


DETAIL A



DETAIL B

ITEM NO.	QTY	COMPONENTS
FBB01	12	Guardrail Bolt and Nut
FBB03	2	Guardrail Bolt and Nut
FBB06	1	Guardrail Bolt and Nut
FBX16a	2	Hex Head Bolt (10") and Nut
FBX16a	8	Hex Head Bolt (1 1/2") and Nut
FBX22a	2	Hex Head Bolt (7 1/2") and Nut
FCA01	1	BCT Anchor Cable Assembly
PDB10a	2	MGS Timber Blockout
PFP02	1	Strut and Yoke Assembly
PWE06	1	Wide-Flange Guardrail Post
FMM02	1	BCT Post Sleeve
FPA01	1	Anchor Bracket Assembly
FPB01	1	BCT Bearing Plate
FWC16a	22	Circular Washer
FWC22a	4	Circular Washer
PDF01	2	BCT Timber Post
PTE06	2	Foundation Tube
RWE03a	1	W-Beam Rounded End Section
RWM14a	1	W-Beam MGS End Section



PLAN

ELEVATION

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

r11/6/17 td2:/m/guardrail/M-8

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

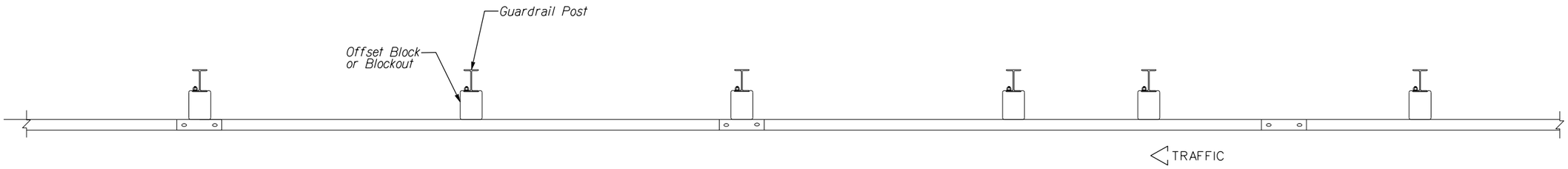
TRAILING-END ANCHORAGE SYSTEM

KAHEKILI HIGHWAY RESURFACING
Waiehu Beach Road to Camp Maluhia
Federal-Aid Project No. STP-0340(005)

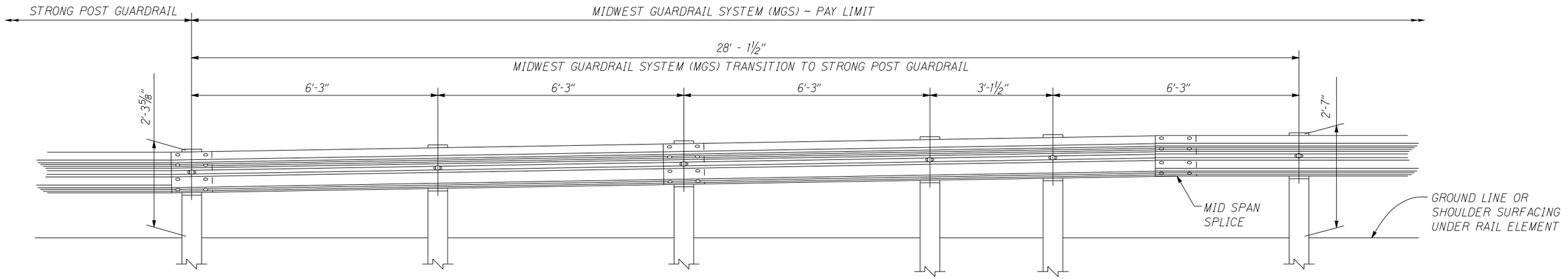
Scale: NTS Date: May, 2020

SHEET No. 4 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0340(005)	2020	14	44



PLAN



ELEVATION

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE X
	DRAWN BY X	
	TRACED BY	
NOTE BOOK dd.x	DESIGNED BY X	
No. .dgn	QUANTITIES BY	
	CHECKED BY	

r09/05/16 D:\set2\Ernest\standards\Traffic Guardrail Standards\mt7_midwest.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MGS TRANSITION TO STRONG POST GUARDRAIL

KAHEKILI HIGHWAY RESURFACING
Waiehu Beach Road to Camp Maluhia
Federal-Aid Project No. STP-0340(005)

Scale: NTS Date: May, 2020

SHEET No. 5 OF 5 SHEETS