

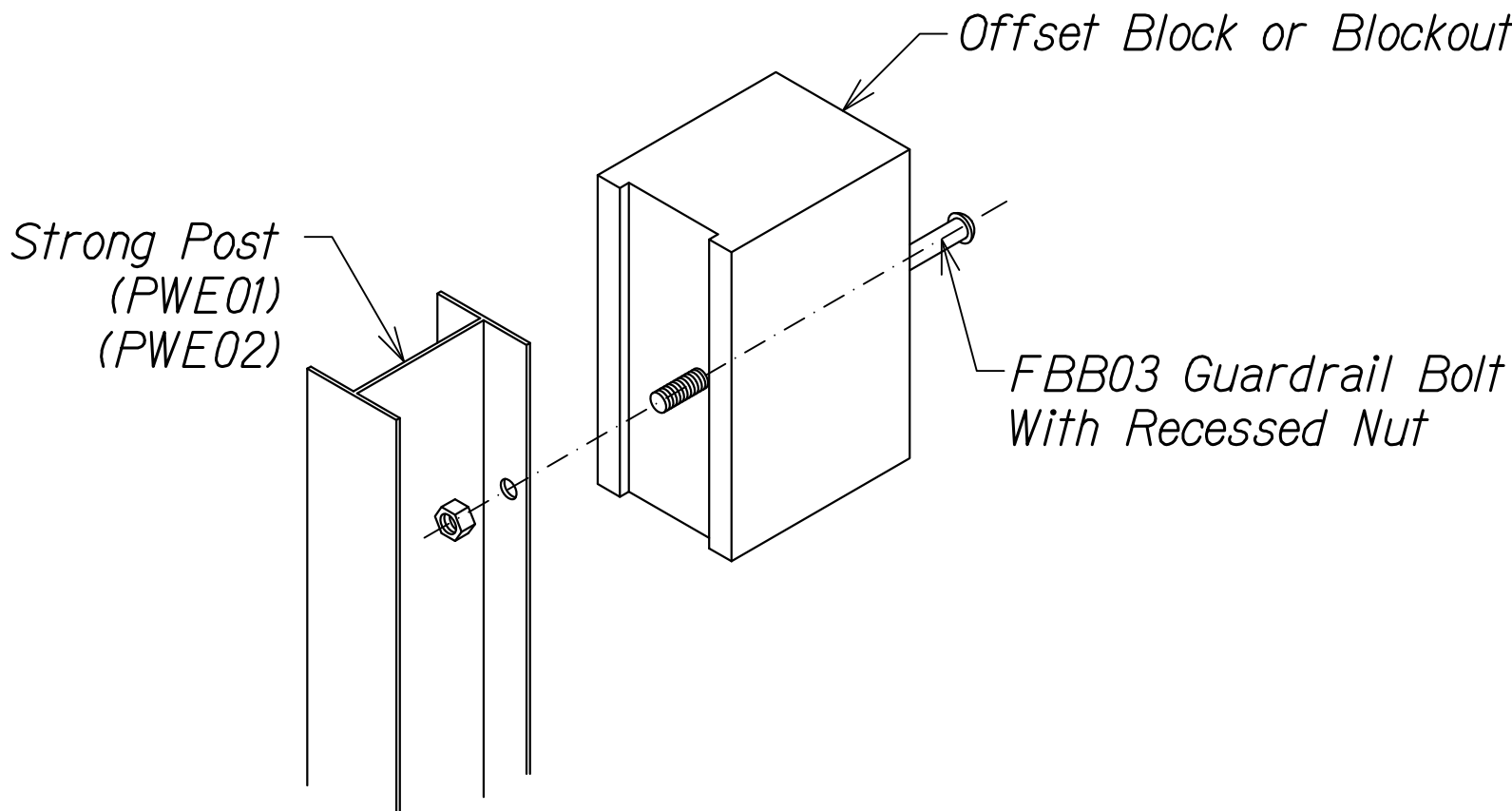
DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUA	HAW.	STP-0550(005)	2022	ADD. 73	127

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.
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.

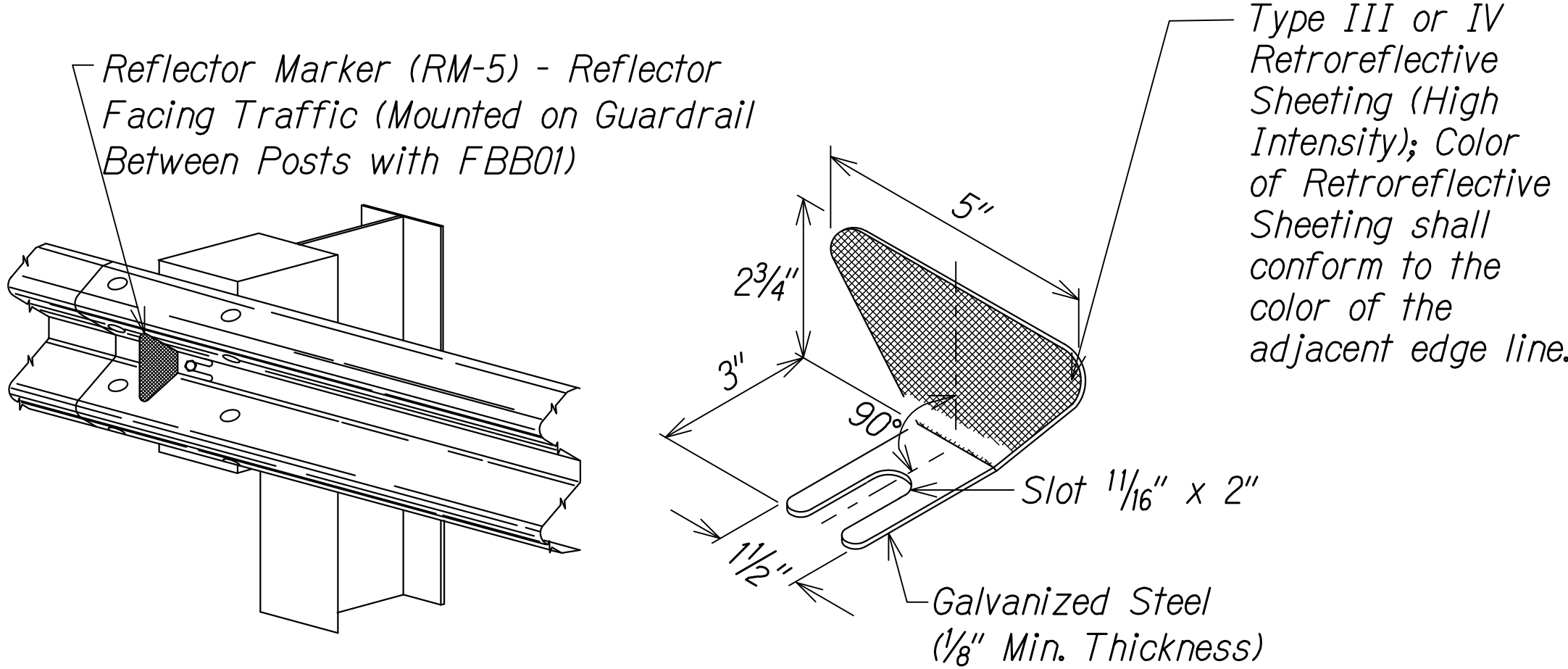
GUARDRAIL TYPE	DIMENSION	
	H	A
MGS w/ Standard 8" Offset Block	2'-1"	1'-6"
MGS w/ No Blockout	2'-7/8"	9 1/4"

11. Install White Reflector Markers (RM-3) behind guardrails at spacing identified on Table 3F-1 in MUTCD or 200' on tangents (from end to end).

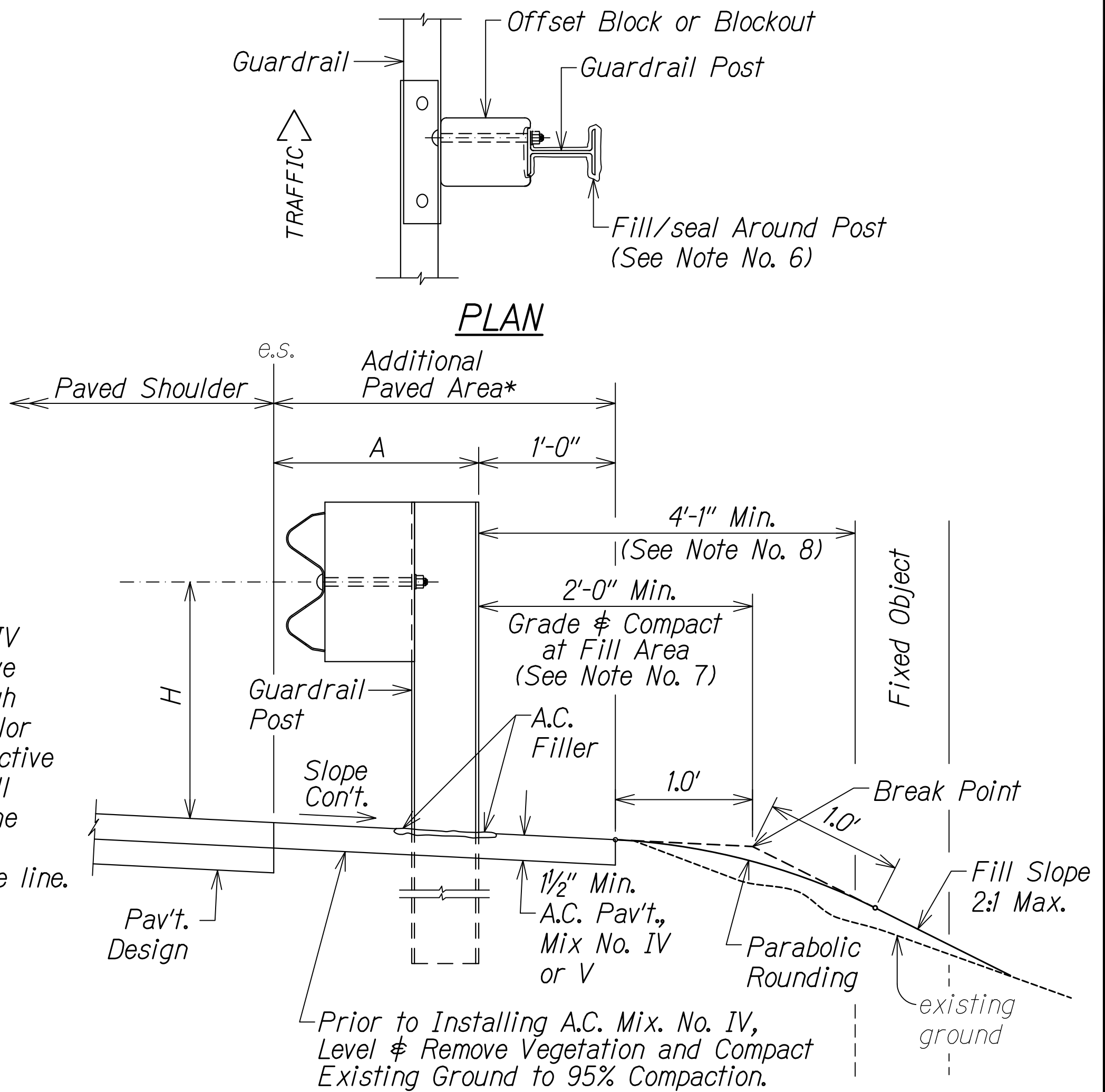


Exploded View
(Rail and Washer Not Shown)

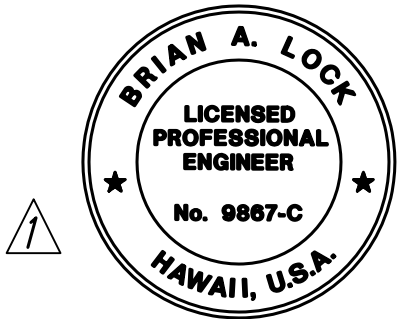
STEEL POST AND BLOCK DETAIL



REFLECTOR MARKER (RM-5)
DETAIL AND TYPICAL INSTALLATION



ELEVATION
TYPICAL GUARDRAIL INSTALLATION



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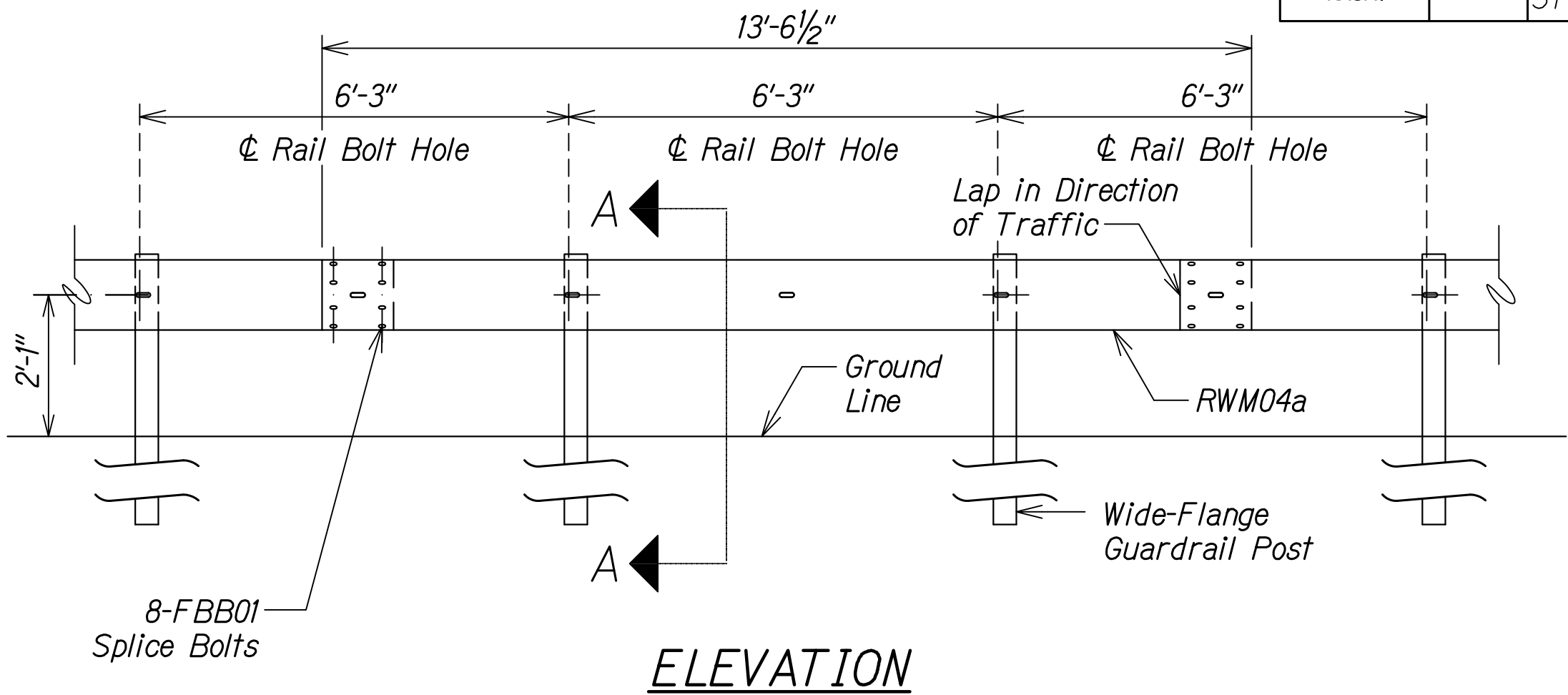
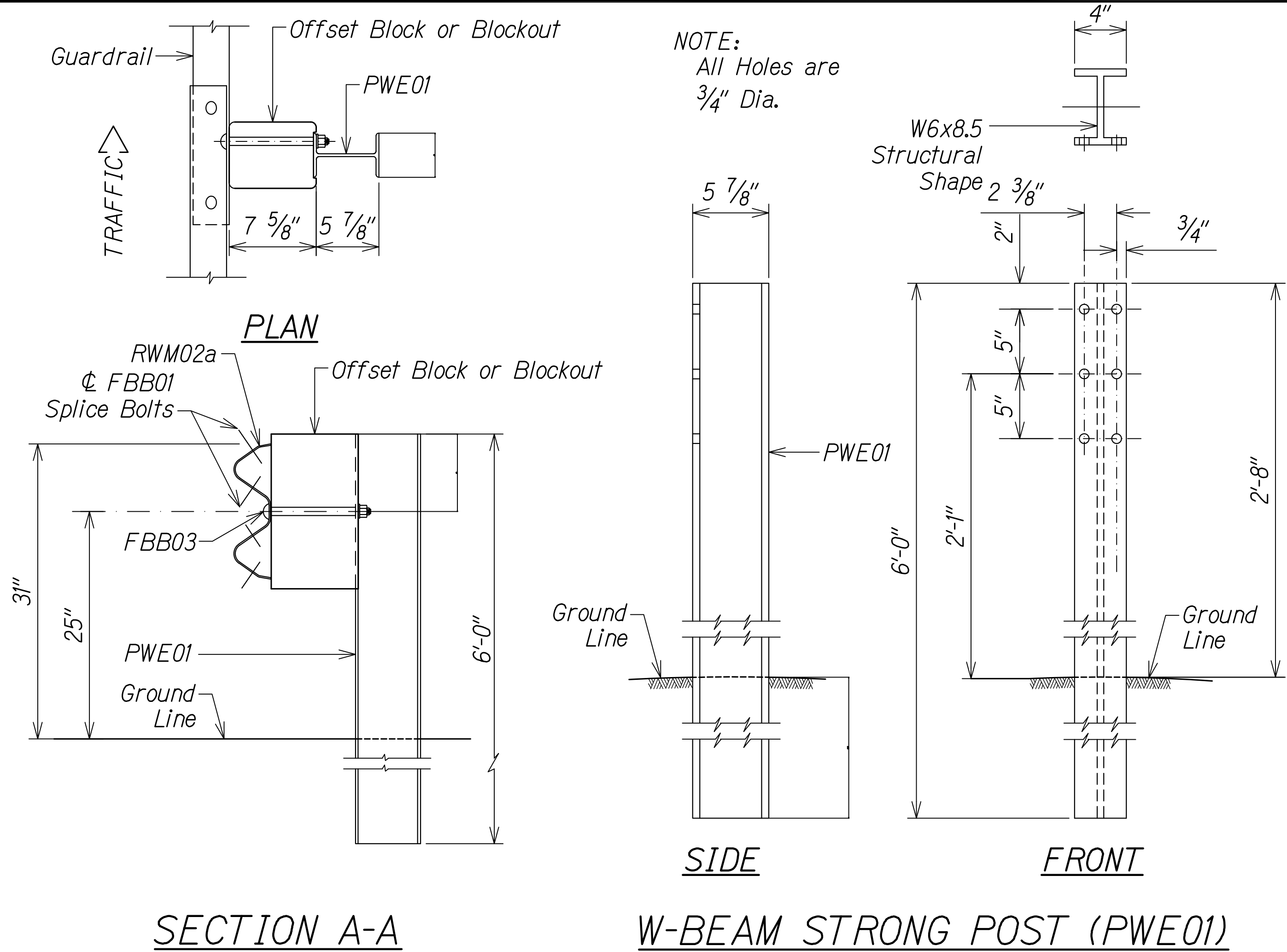
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
GUARDRAIL DETAILS AND NOTES
WAIMEA CANYON DRIVE /
KOKEE ROAD IMPROVEMENTS, PHASE 2A
MILE POST 11.5 TO MILE POST 14.0
Federal-Aid Project No. STP-0550(005)
Scale: None Date: August 2022

11/07/22	Revised Engineer's Stamp
DATE	REVISION

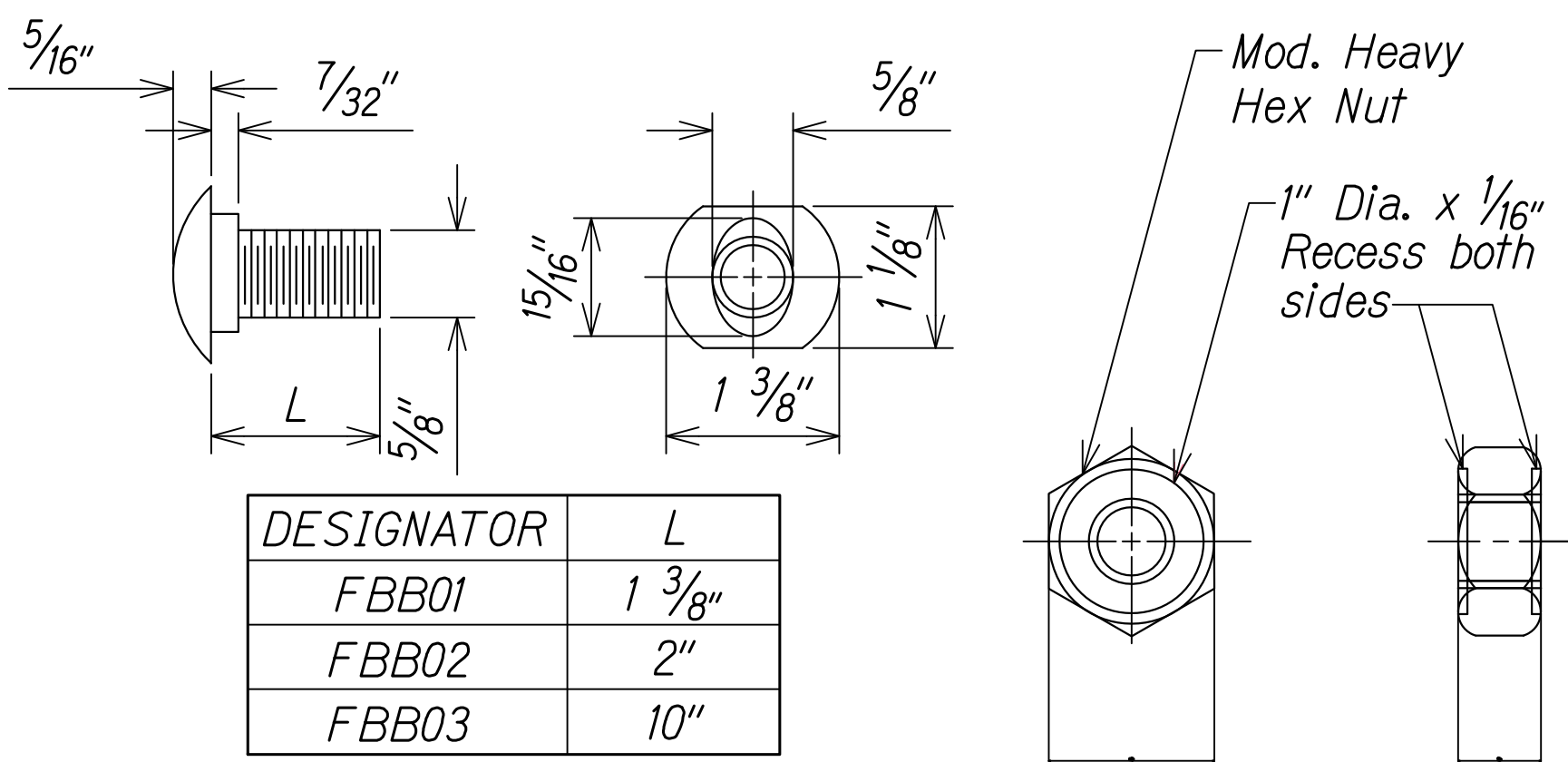
SHEET No. 1 OF 6 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	
	NOTED BY	
	CHECKED BY	
No.		

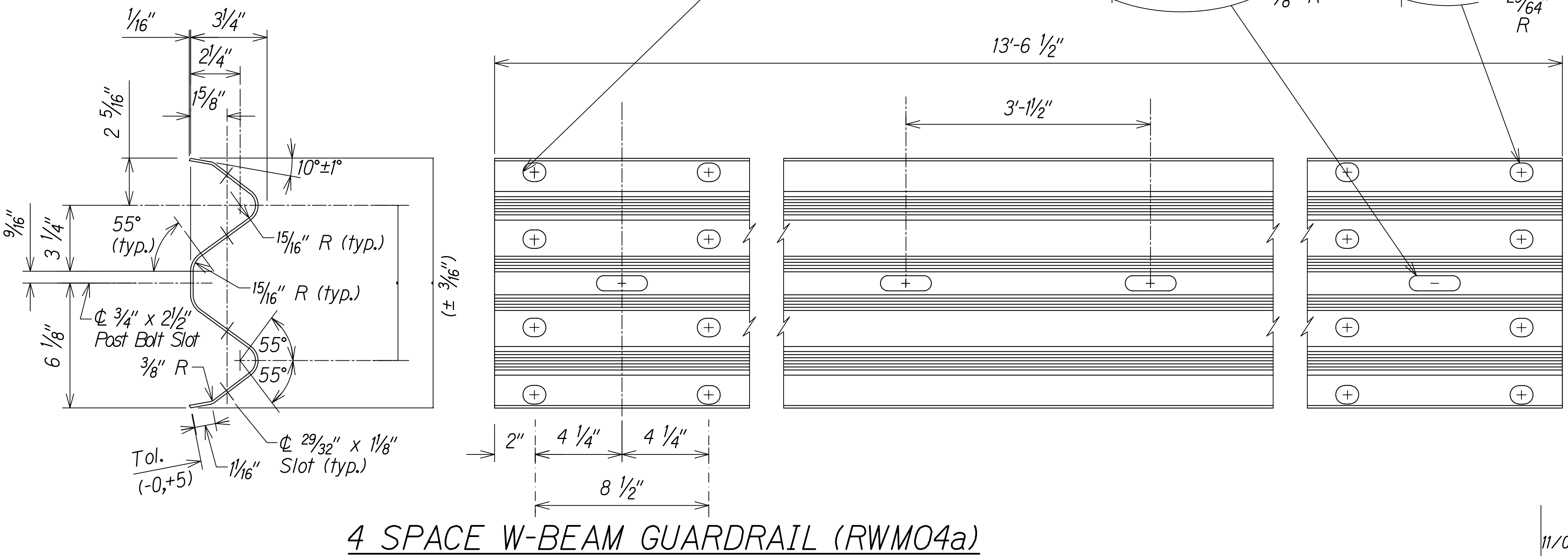
DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	STP-0550(005)	2022	ADD. 74	127



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



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



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

11/07/22	Revised Engineer's Stamp
DATE	REVISION

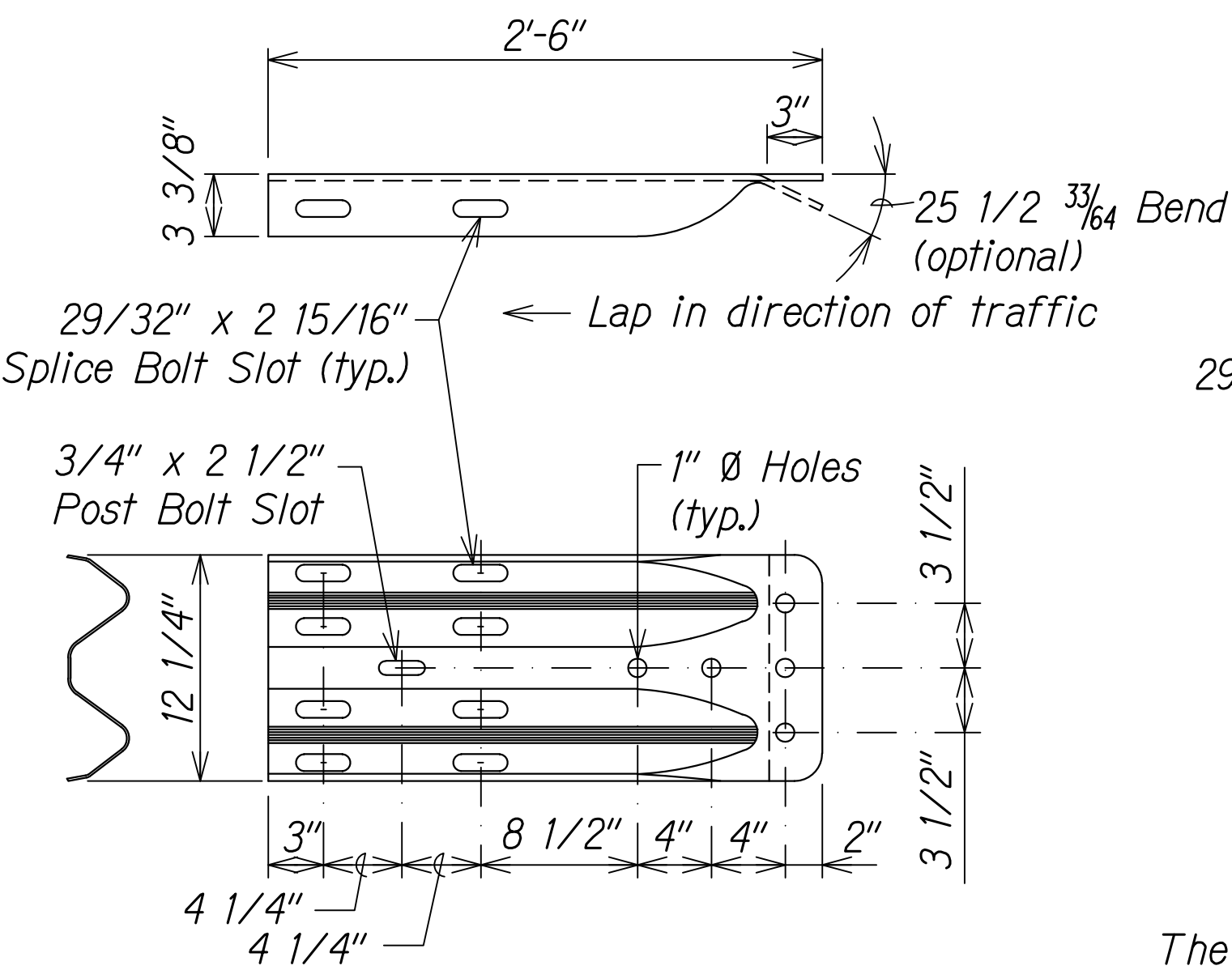
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

WAIMEA CANYON DRIVE /
KOKEE ROAD IMPROVEMENTS, PHASE 2A
MILE POST 11.5 TO MILE POST 14.0
Federal-Aid Project No. STP-0550(005)
Scale: None Date: August 2022

SHEET No. 2 OF 6 SHEETS

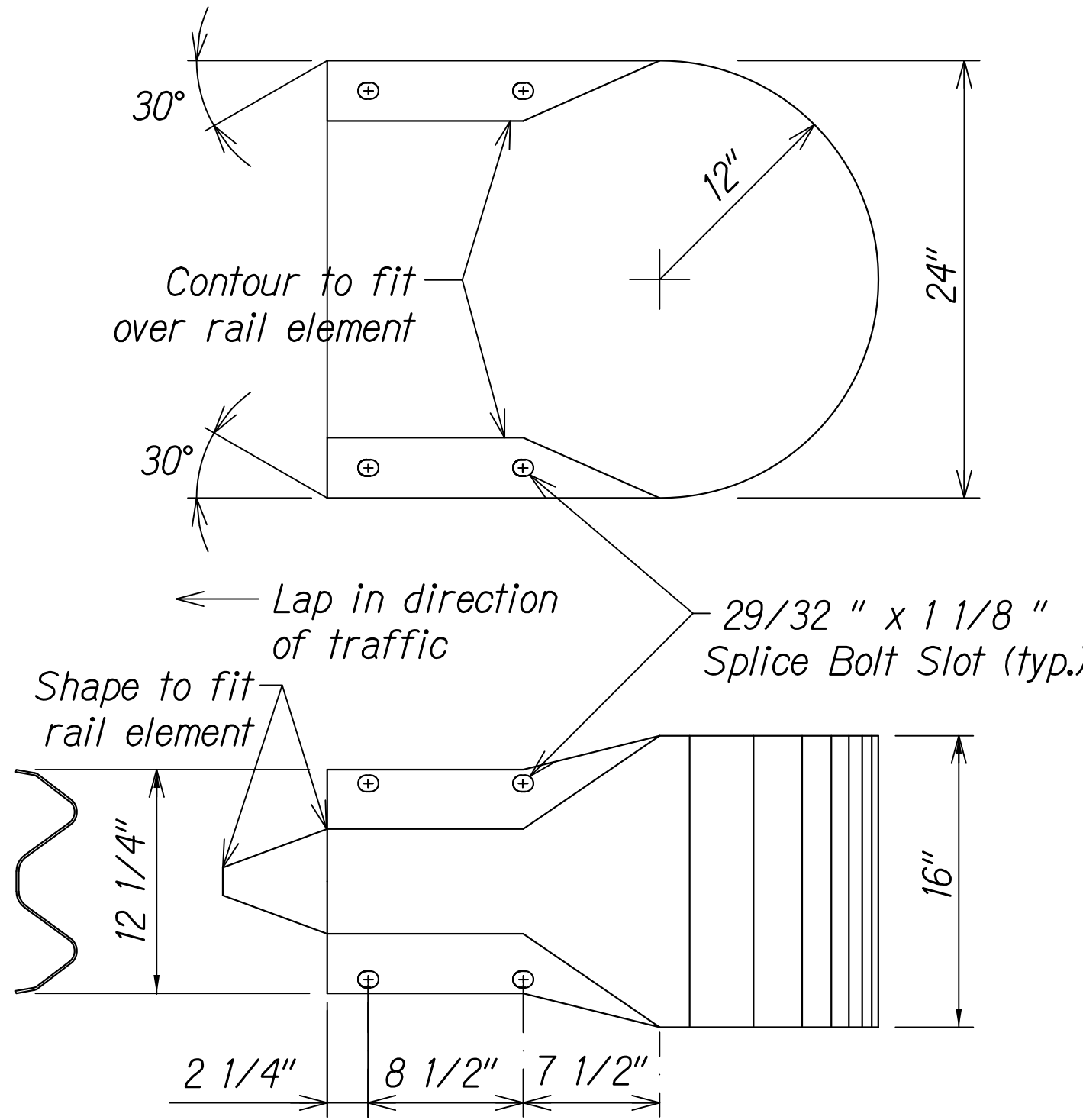
DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	STP-0550(005)	2022	ADD. 75	127



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
RWE02b	10 Gauge

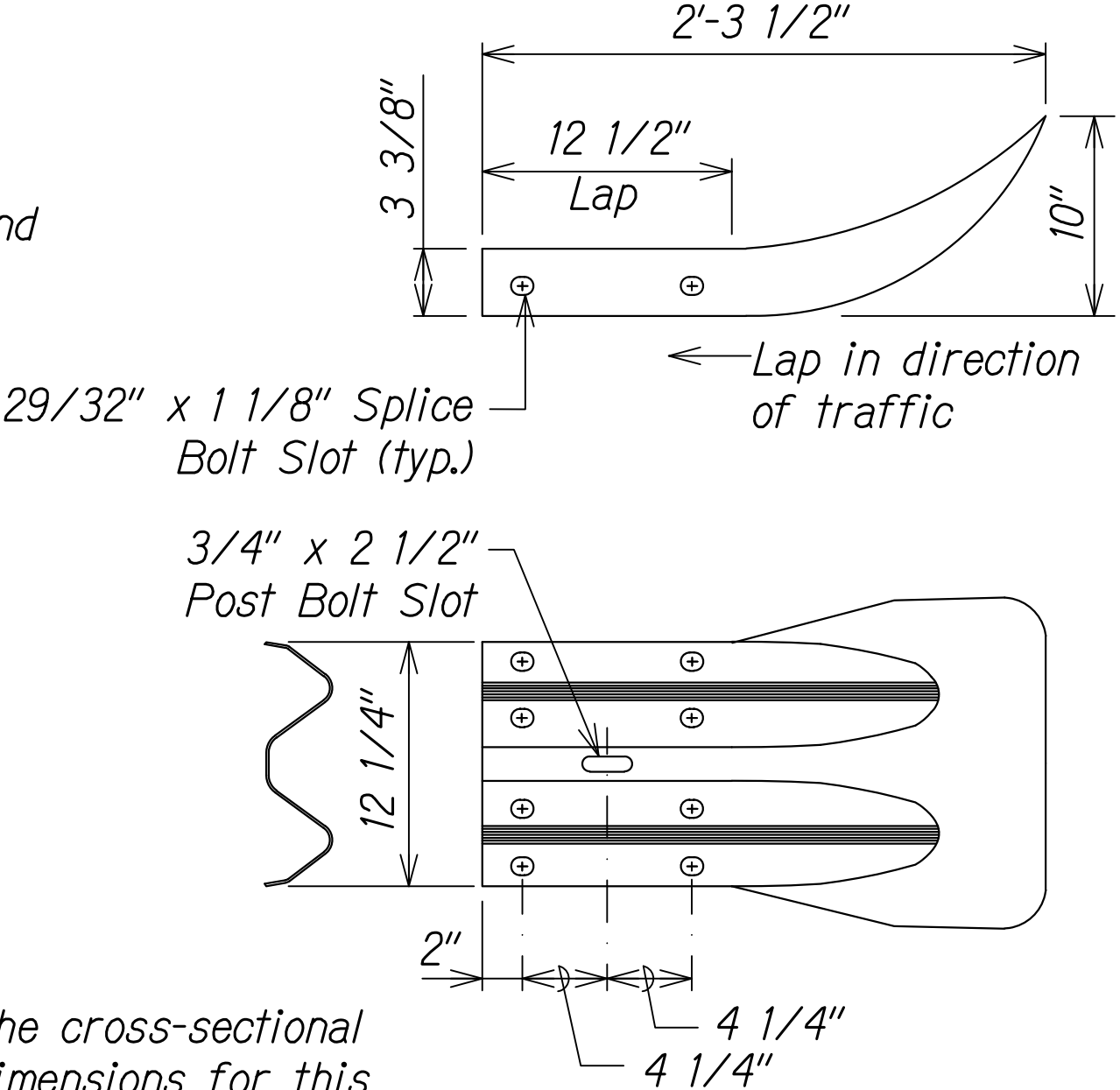
W-BEAM END SECTION (RWE02b)



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

DESIGNATOR	BASE METAL THICKNESS
RWE06a	12 Gauge

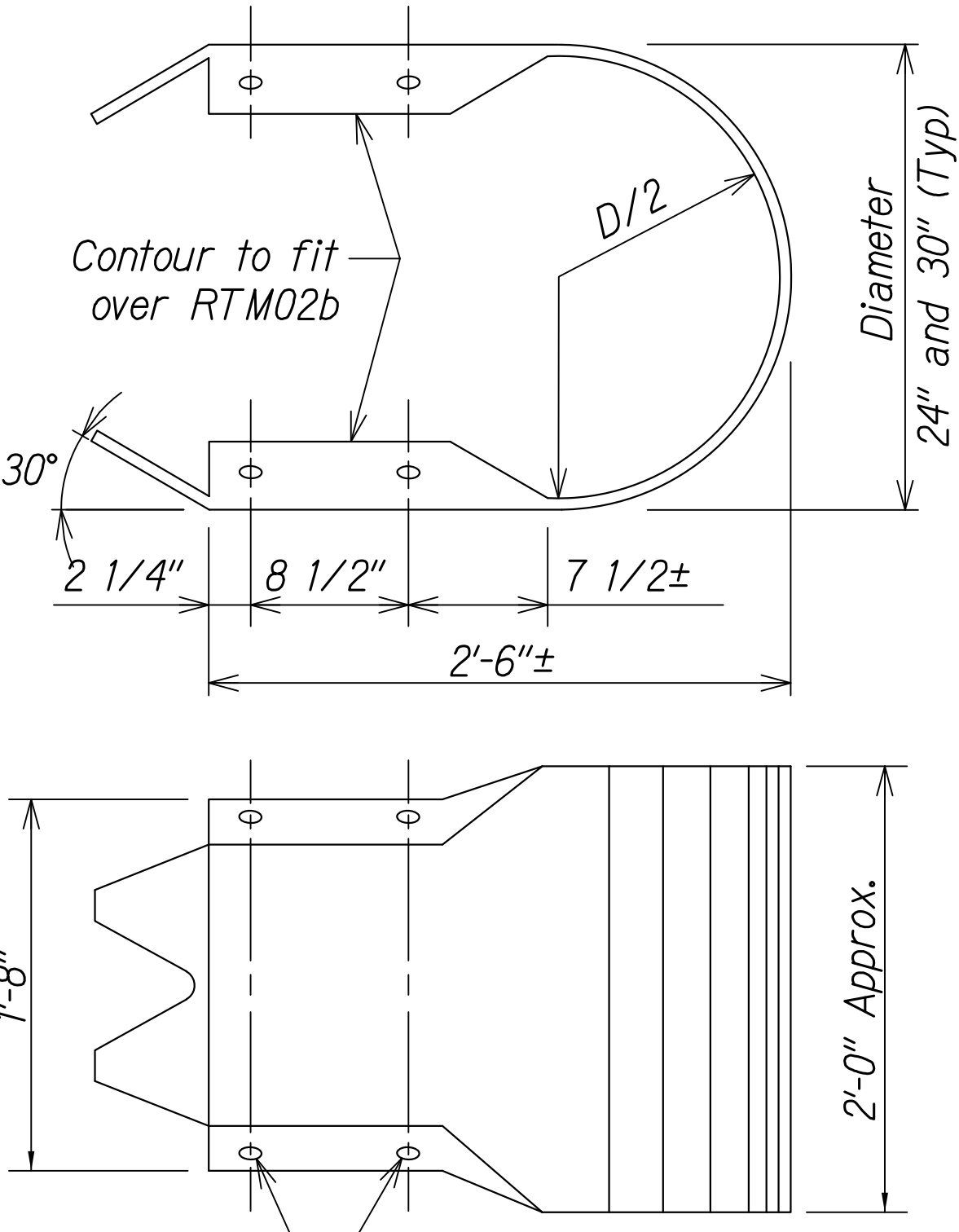
W-BEAM END SECTION (BUFFER RWE06a)



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

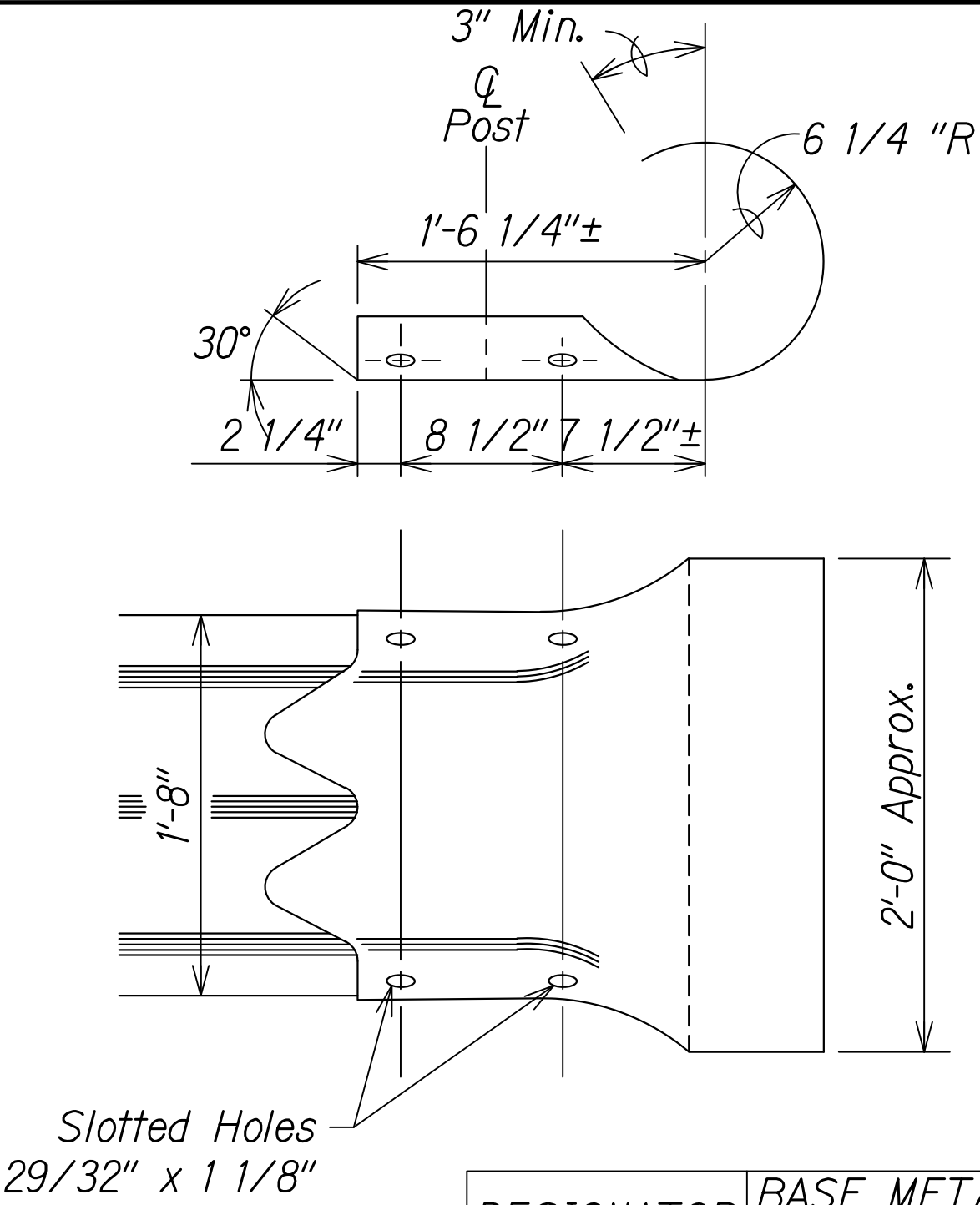
DESIGNATOR	BASE METAL THICKNESS
RWE01a	12 Gauge

W-BEAM END SECTION (FLARED RWE01a)



DESIGNATOR	BASE METAL THICKNESS
RTE03b & RTE04b	10 Gauge

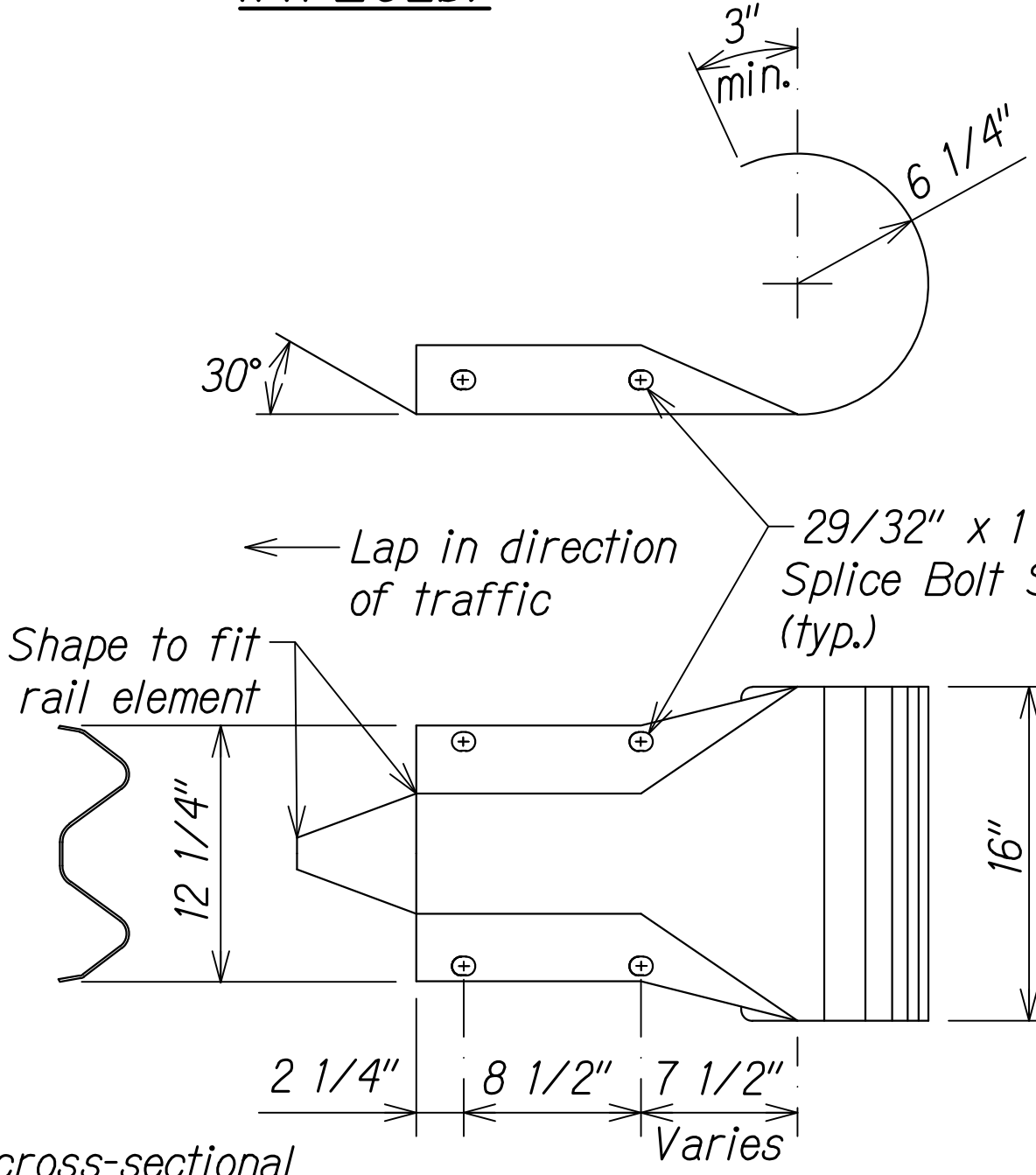
THRIE-BEAM END SECTION (BUFFER RTE03b or RTE04b)



Slotted Holes 29/32" x 1 1/8"

DESIGNATOR	BASE METAL THICKNESS
RWE02b	10 Gauge

THRIE-BEAM SECTION (ROUNDED) (RTE02b)

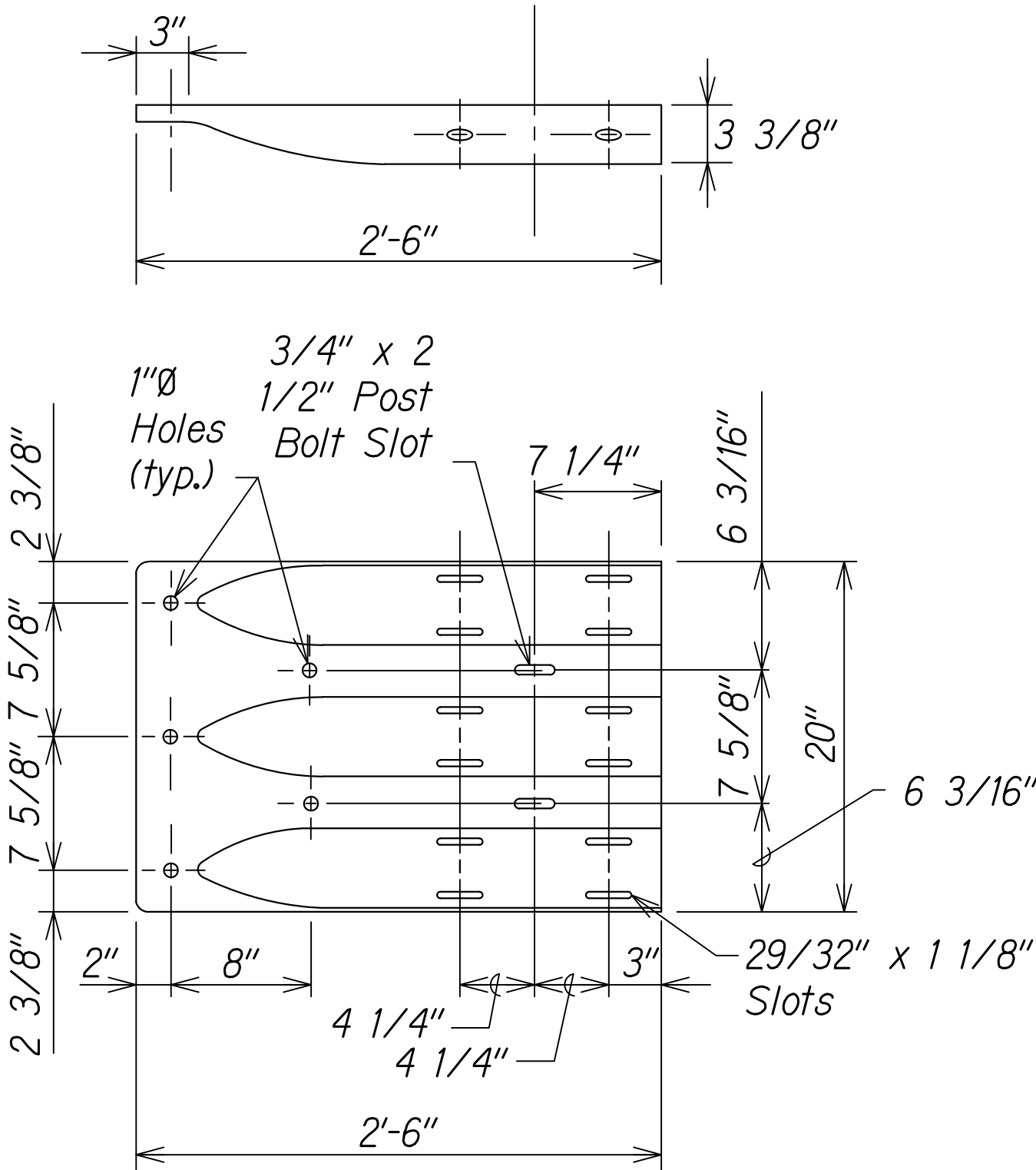


The cross-sectional dimensions for this part are to fit over part RWM02a

DESIGNATOR	BASE METAL THICKNESS
RWE03a	12 Gauge

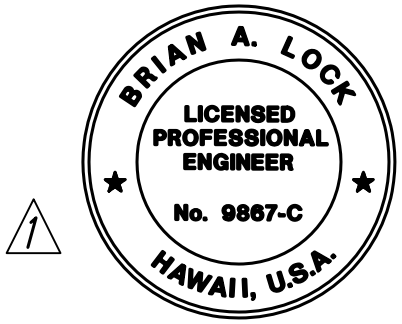
W-BEAM END SECTION (ROUNDED RWE03a)

11/07/22	Revised Engineer's Stamp
DATE	REVISION



DESIGNATOR	BASE METAL THICKNESS
RTE01b	10 Gauge

THRIE-BEAM TERMINAL CONNECTOR (RTE01b)



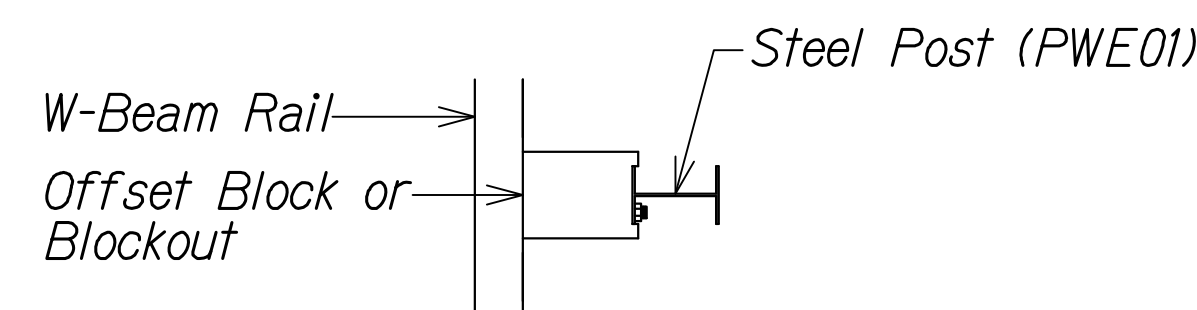
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APRIL 30, 2024
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STATE OF HAWAII
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GUARDRAIL TERMINAL CONNECTORS AND END SECTIONS
WAIMEA CANYON DRIVE /
KOKEE ROAD IMPROVEMENTS, PHASE 2A
MILE POST 11.5 TO MILE POST 14.0
Federal-Aid Project No. STP-0550(005)
Scale: None Date: August 2022

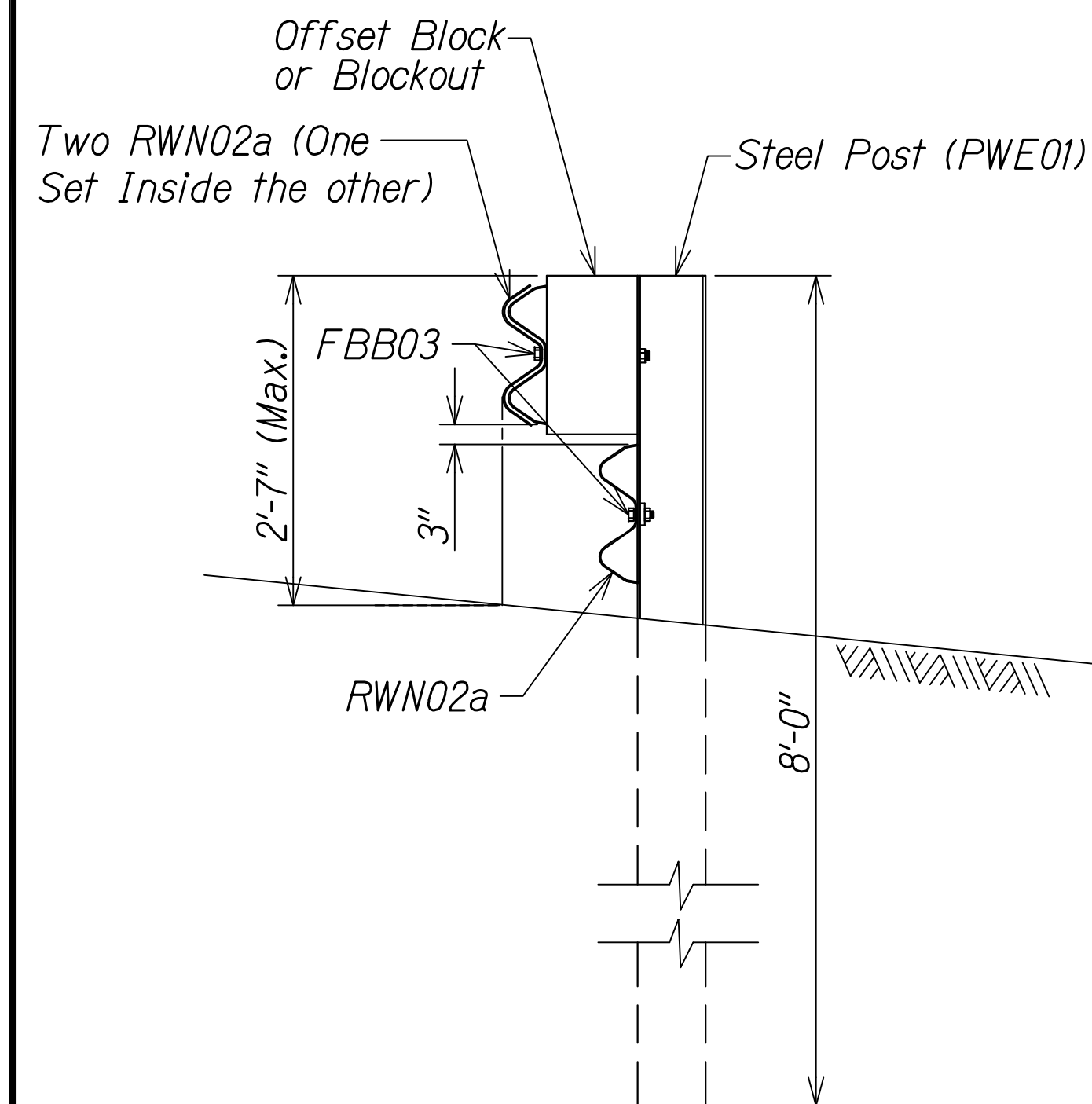
SHEET No. 3 OF 6 SHEETS

SURVEY PLOTTED BY	DATE
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NOTED BY	
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ORIGINAL PLAN	
NOTE BOOK	
No.	

DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUA'I	HAW.	STP-0550(005)	2022	ADD. 76	127

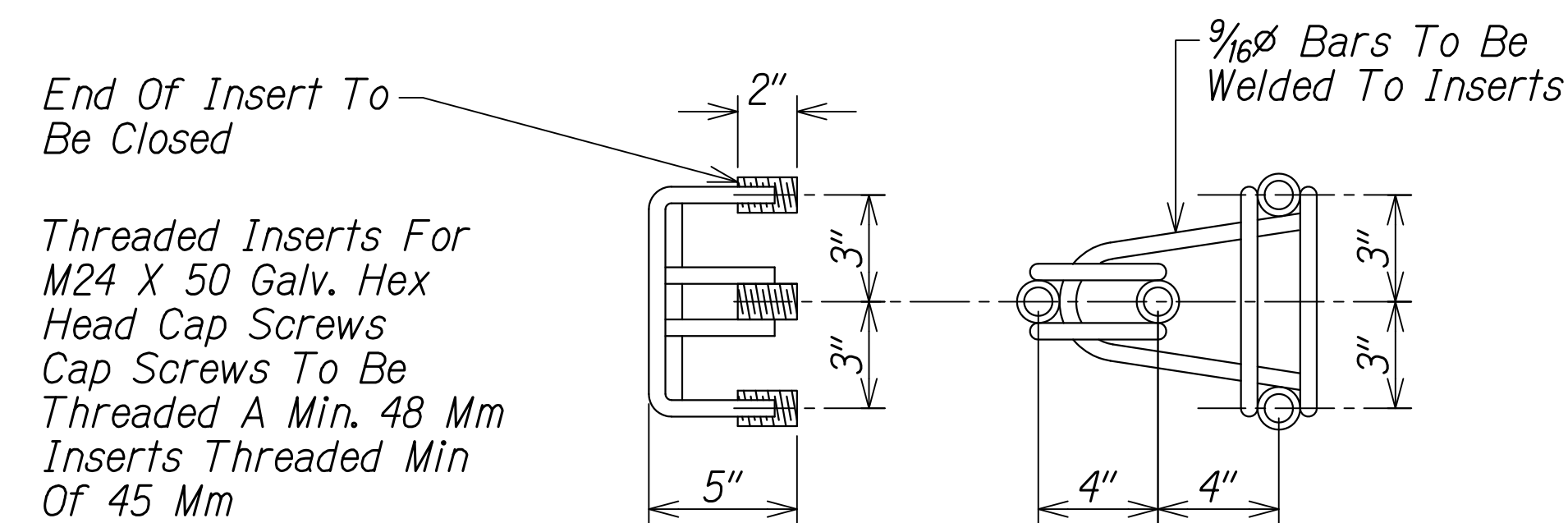


Plan



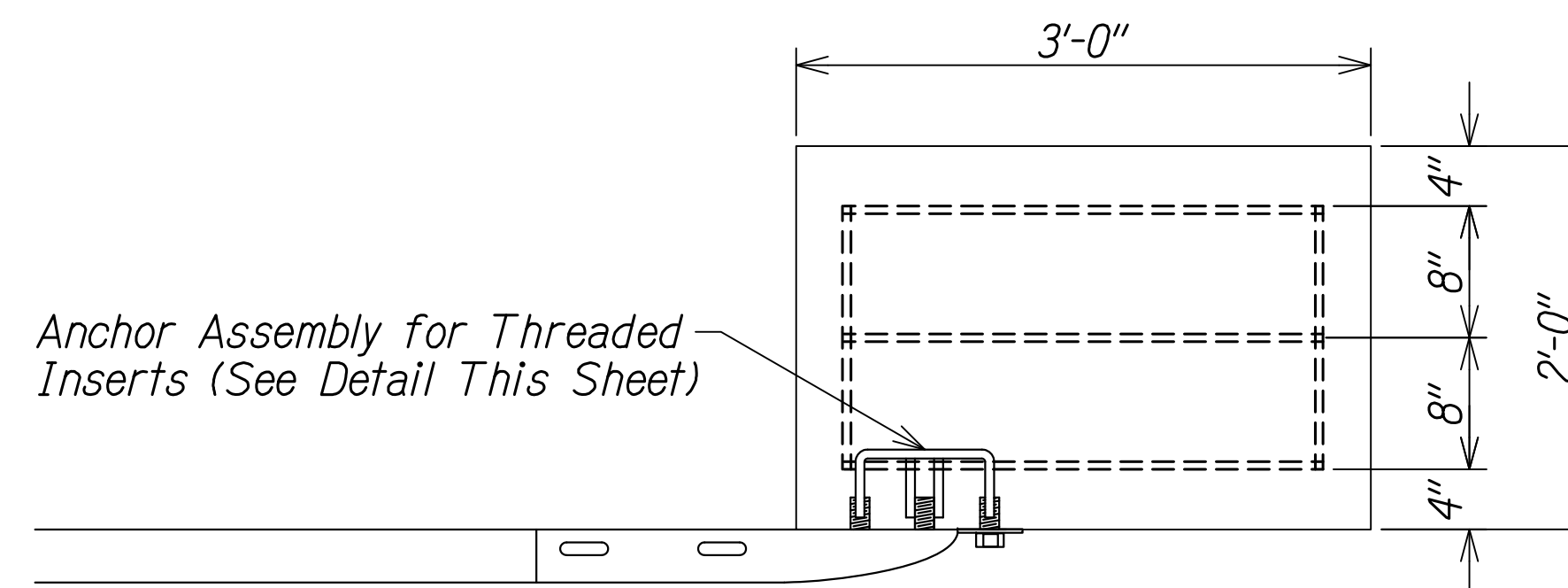
Elevation

DOUBLE NESTED
STEEL POST GUARDRAIL
WITH RUBRAIL

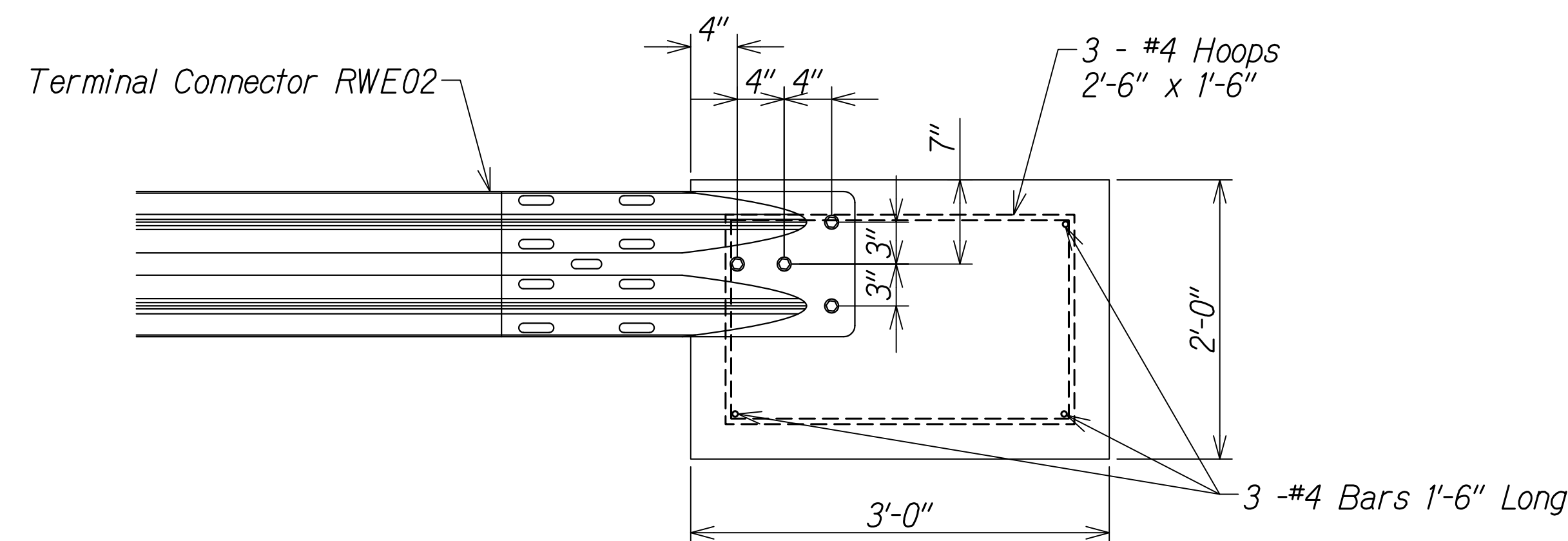


Threaded Inserts For
M24 X 50 Galv. Hex
Head Cap Screws
Cap Screws To Be
Threaded A Min. 48 Mm
Inserts Threaded Min
Of 45 Mm

ANCHOR ASSEMBLY
CONCRETE BLOCK ANCHOR



Plan



Elevation

CONCRETE BLOCK ANCHOR
(2' X 2' X 3')

BACKSLOPE ANCHOR TERMINAL END ANCHORAGE DETAILS
TYPE "A" FLARE)

Note:

All fasteners, posts, blocks and rail elements 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-AGCARTBA Joint Cooperative Committee.



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS

WAIMEA CANYON DRIVE /
KOKEE ROAD IMPROVEMENTS, PHASE 2A
MILE POST 11.5 TO MILE POST 14.0
Federal-Aid Project No. STP-0550(005)
Scale: 1" = 20' Date: August 2022

SHEET No. 4 OF 6 SHEETS

11/07/22	Revised Engineer's Stamp
DATE	REVISION

COPY OF ORIGINAL TRACING

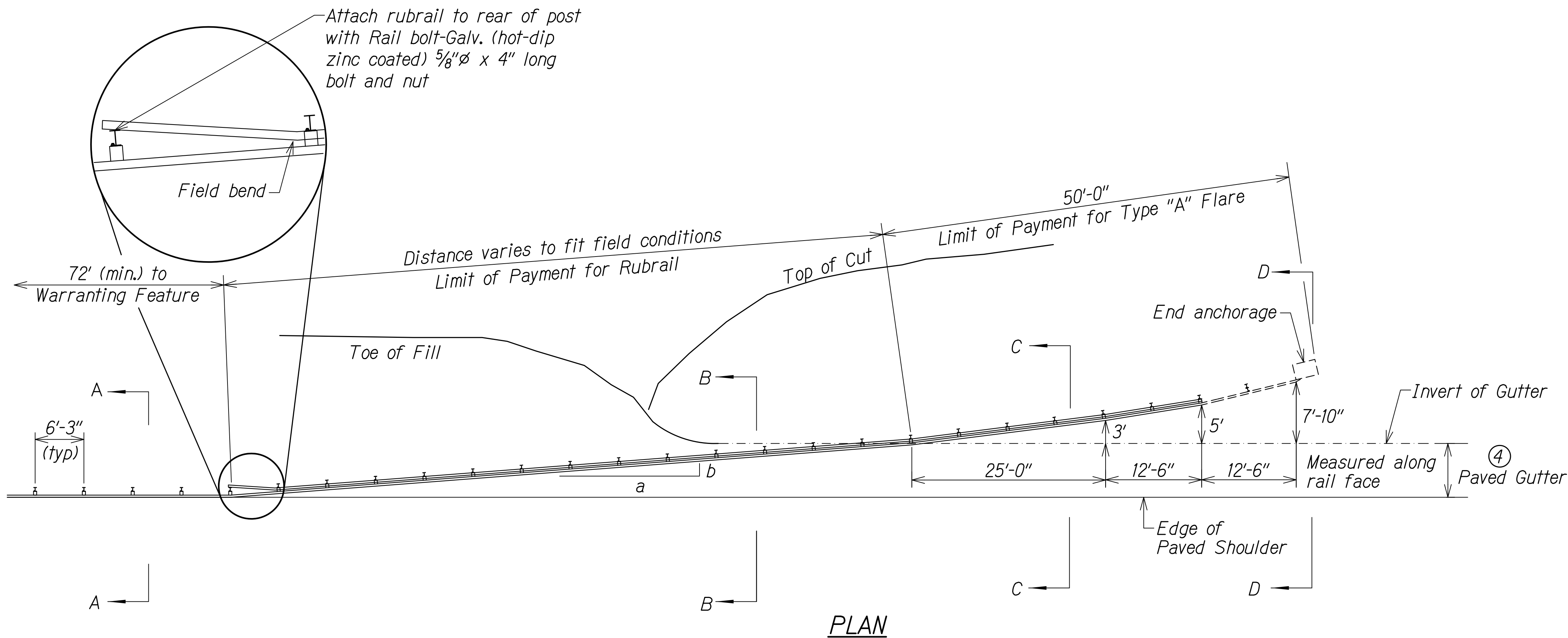
ADD 76

ORIGINAL PLAN	DATE
NOTE BOOK	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
No.	

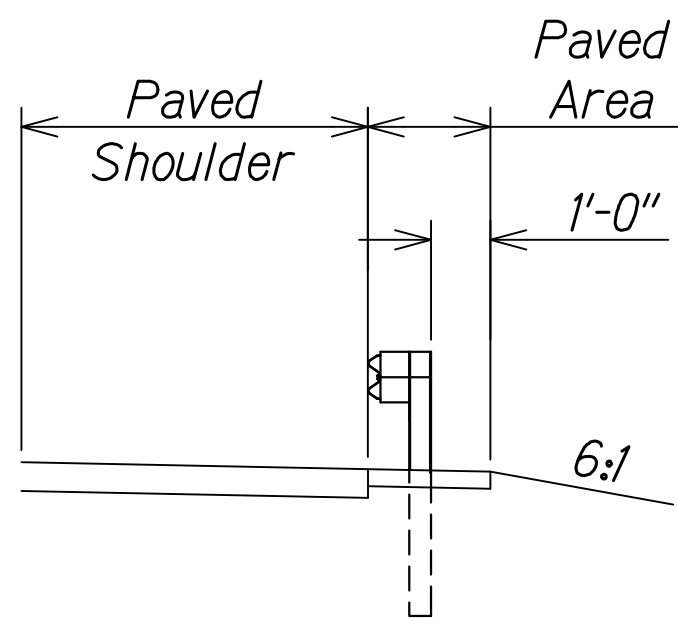
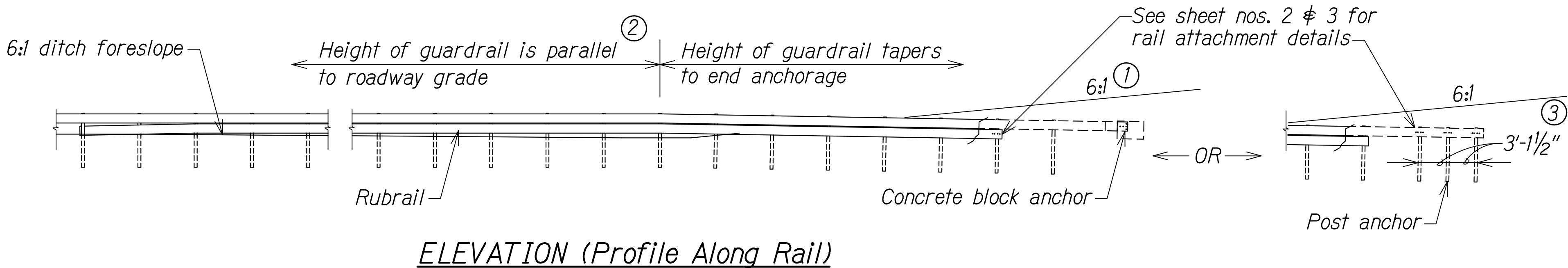
DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	STP-0550(005)	2022	ADD. 78	127

General Notes

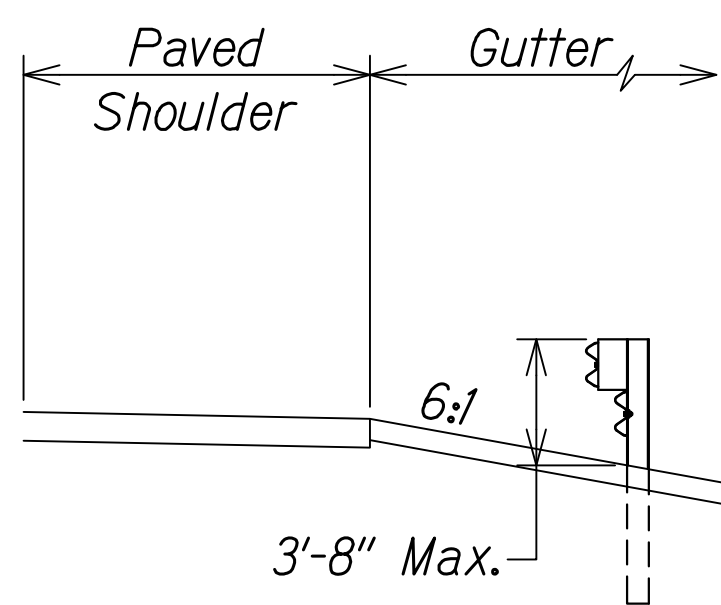
1. A 6:1 or flatter slope is desirable. However, a steeper or flatter existing slope may be used.
2. Height of guardrail may be tapered down in elevation to maintain 3'-8" maximum height.
3. All posts are 8'-0" in length from where the guardrail flares away from the shoulder back to the post anchor. Posts for the post anchor are 6'-0" long.
4. Variable Paved Gutter offsets may be used to fit field conditions.
5. The Guardrail Posts shall be located away from the gutter/swale invert.
6. All fasteners, posts, blocks and rail elements 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-AGCARTBA Joint Cooperative Committee.



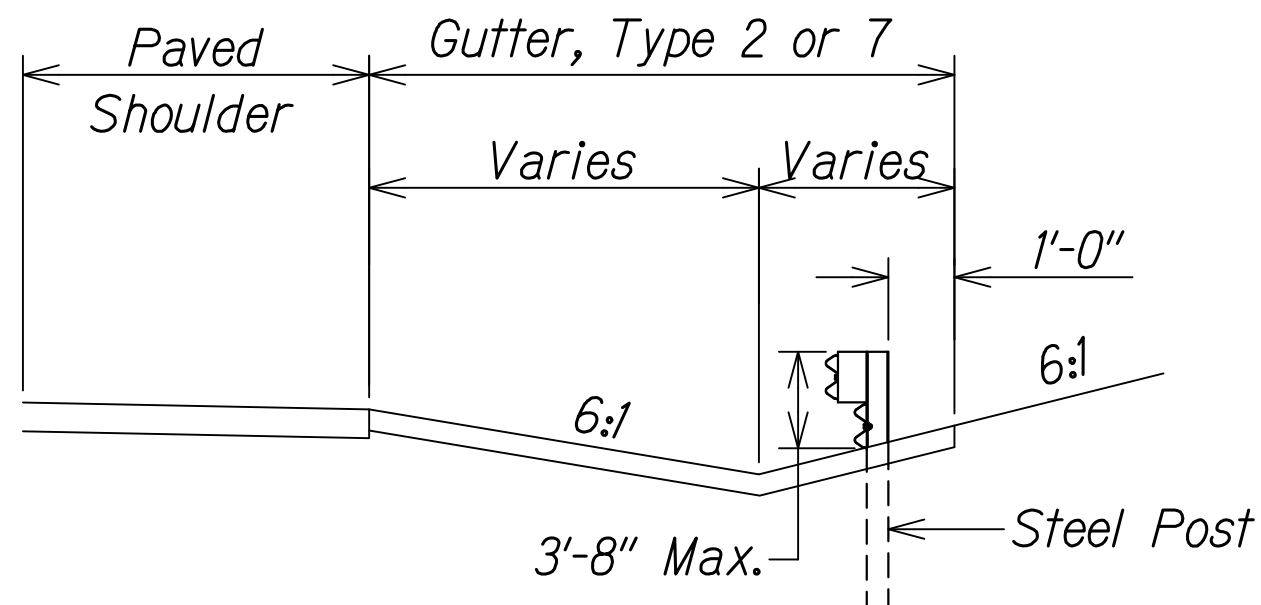
Design speed mph	a:b
68	15:1
62	13:1
56	12:1
50	11:1
43	10:1
37	9:1
31	7:1



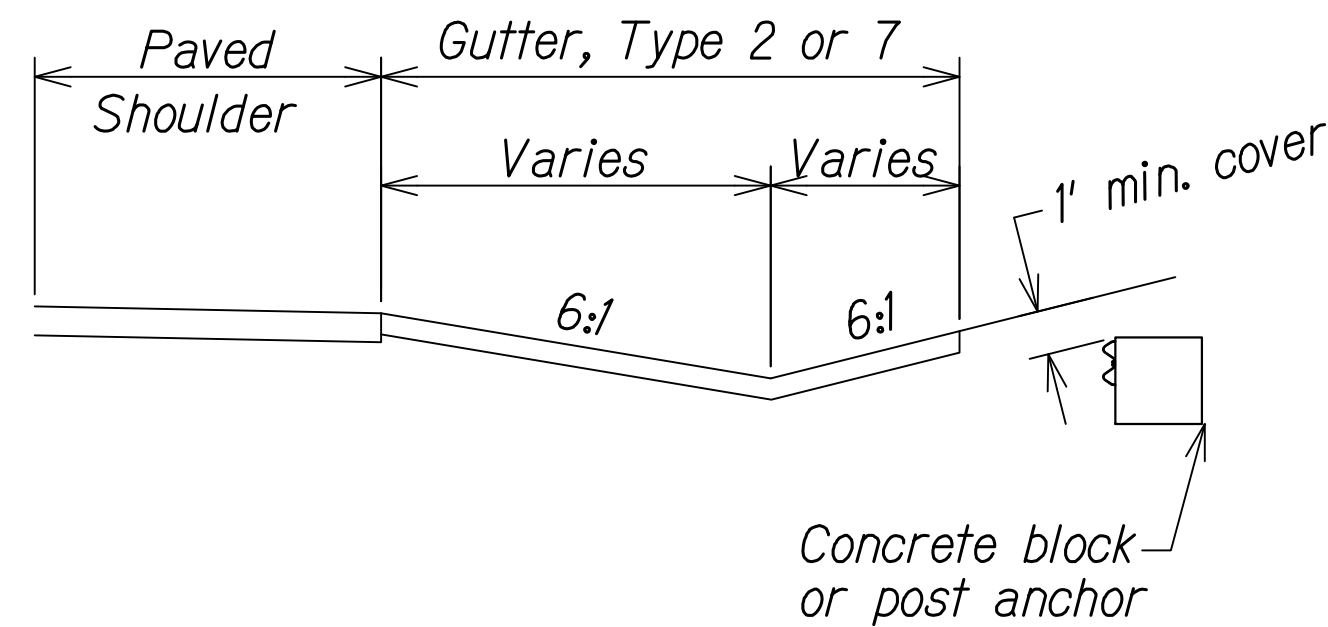
Section A-A



Section B-B
(With Rubrail)



Section C-C
(With Rubrail)



BACKSLOPE ANCHOR TERMINAL (WITH 6:1 PAVED GUTTER AND TYPE "A" FLARE)

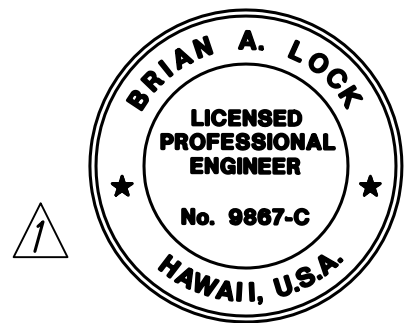
DATE	REVISION
11/07/22	1 Revised Engineer's Stamp

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS

WAIMEA CANYON DRIVE /
KOKEE ROAD IMPROVEMENTS, PHASE 2A
MILE POST 11.5 TO MILE POST 14.0
Federal-Aid Project No. STP-0550(005)
Scale: None Date: August 2022

SHEET No. 6 OF 6 SHEETS

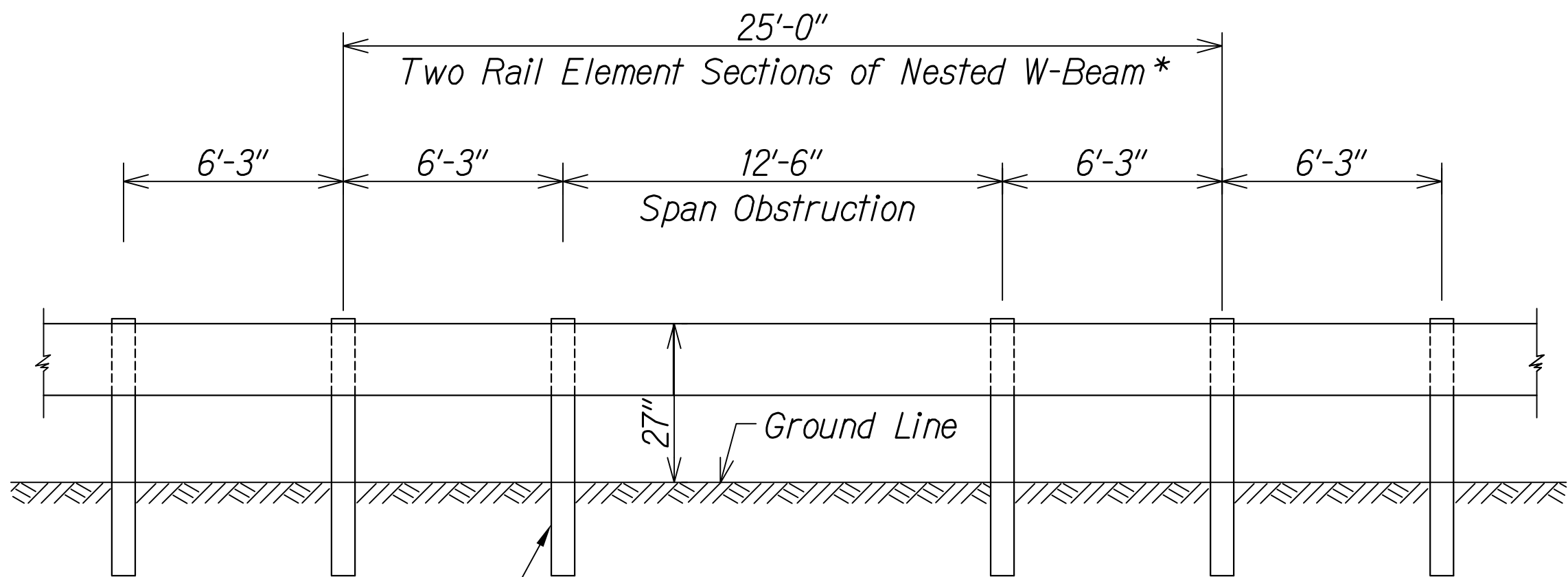


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DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUA1	HAW.	STP-0550(005)	2022	ADD.78S-1	127

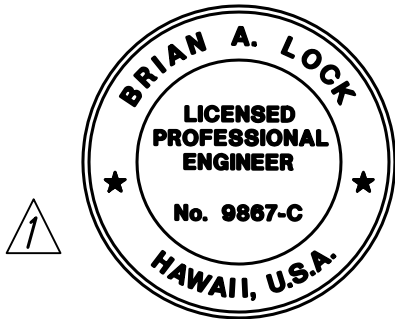
*Note: All nested W-Beam splices points shall be staggered.



See Double Nested Steel Post
Guardrail with Rubrail detail
on ADD. 76, Typ.

(SPLICE IN CENTER OF 12'-6" SPACING)
DOUBLE NESTED LONG SPAN STRONG POST
W-BEAM GUARDRAIL OVER 12'-6" SPAN
(MAXIMUM DYNAMIC DEFLECTION OF 3.1 FT.)

ORIGINAL PLAN No.	SURVEY PLOTTED BY	DATE
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	QUANTITIES BY	
	CHECKED BY	



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HIGHWAYS DIVISION
GUARDRAIL DETAILS
WAIMEA CANYON DRIVE /
KOKEE ROAD IMPROVEMENTS, PHASE 2A
MILE POST 11.5 TO MILE POST 14.0
Federal-Aid Project No. STP-0550(005)
Scale: None Date: August 2022

11/10/22	New Sheet
DATE	REVISION

SHEET No. 6A OF 6 SHEETS

COPY OF ORIGINAL TRACING

ADD 78 S-1