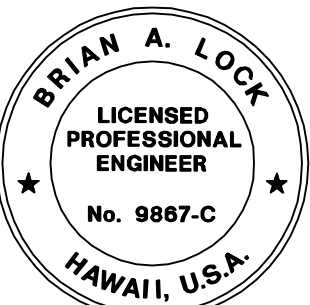


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	NH-056-1(50)	2019	ADD.93	244

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"



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

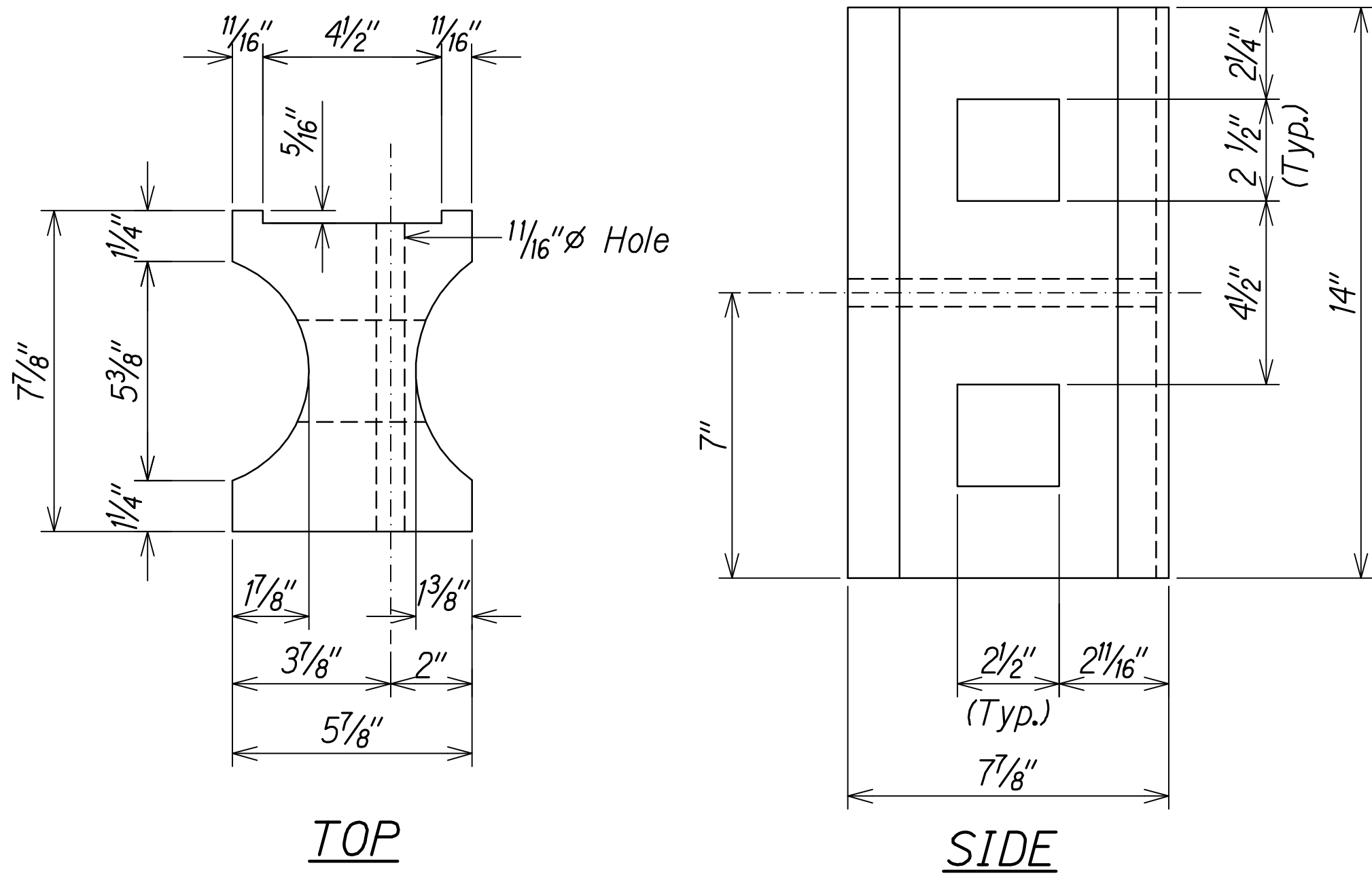
*[Signature]*

WILSON OKAMOTO CORPORATION LIC. EXP. DATE APRIL 30, 2020

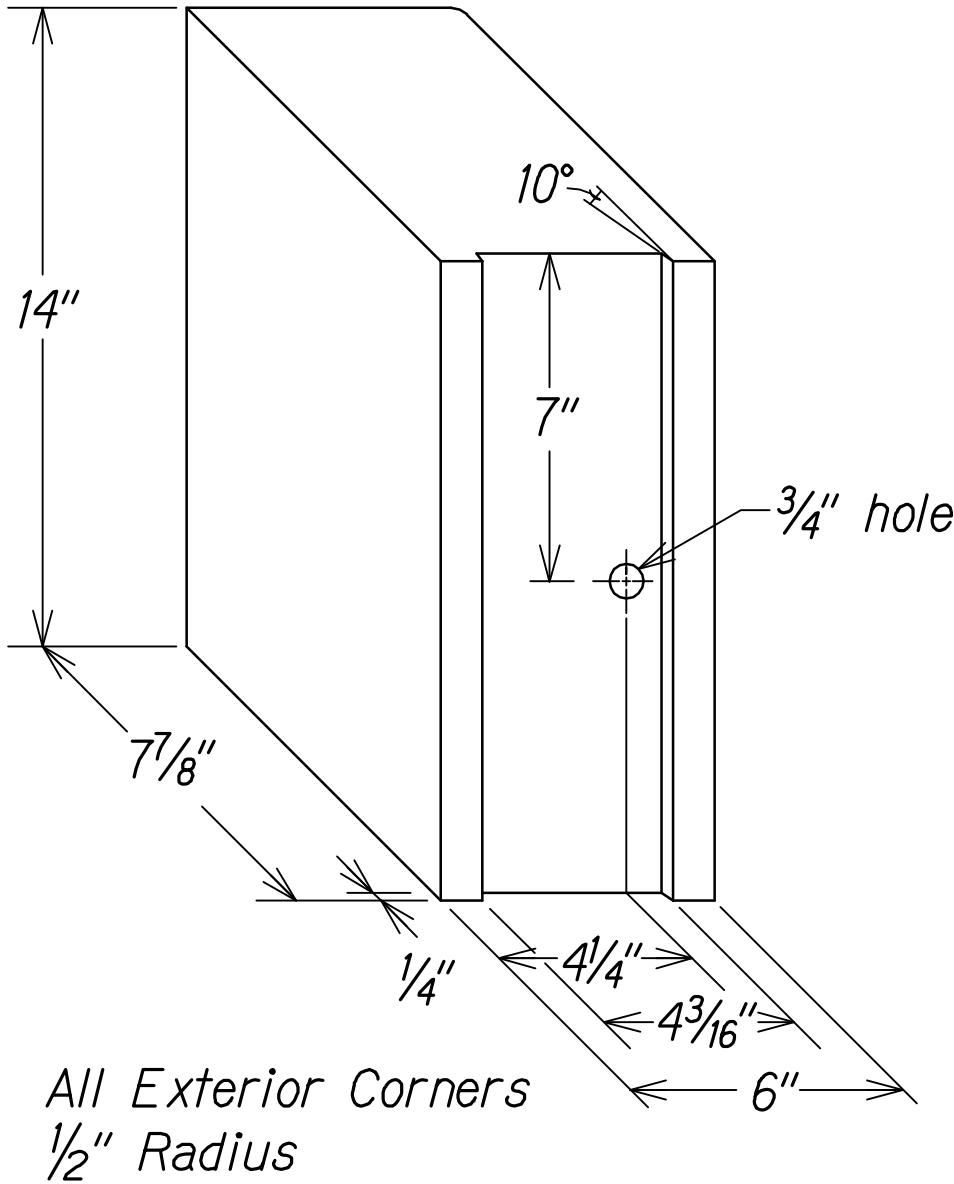
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**GUARDRAIL DETAILS AND NOTES**

**KUHIO HIGHWAY SHORT-TERM IMPROVEMENTS KUAMOO ROAD TO TEMPORARY KAPAA BYPASS ROAD**  
Fed. Aid Proj. No. NH-056-1(50)  
Scale: As Noted Date: July 2019

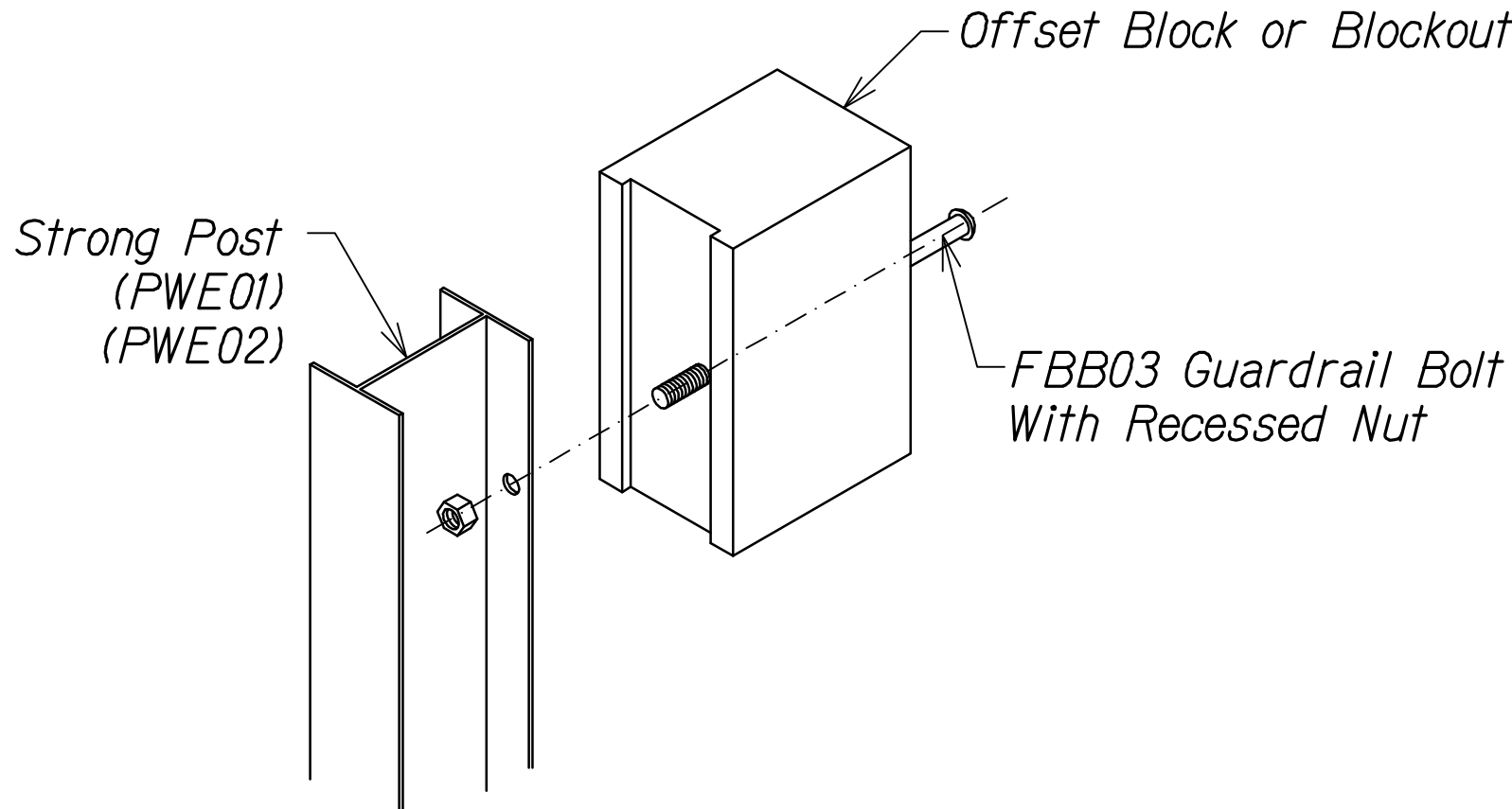
SHEET No. GRDI OF 6 SHEETS



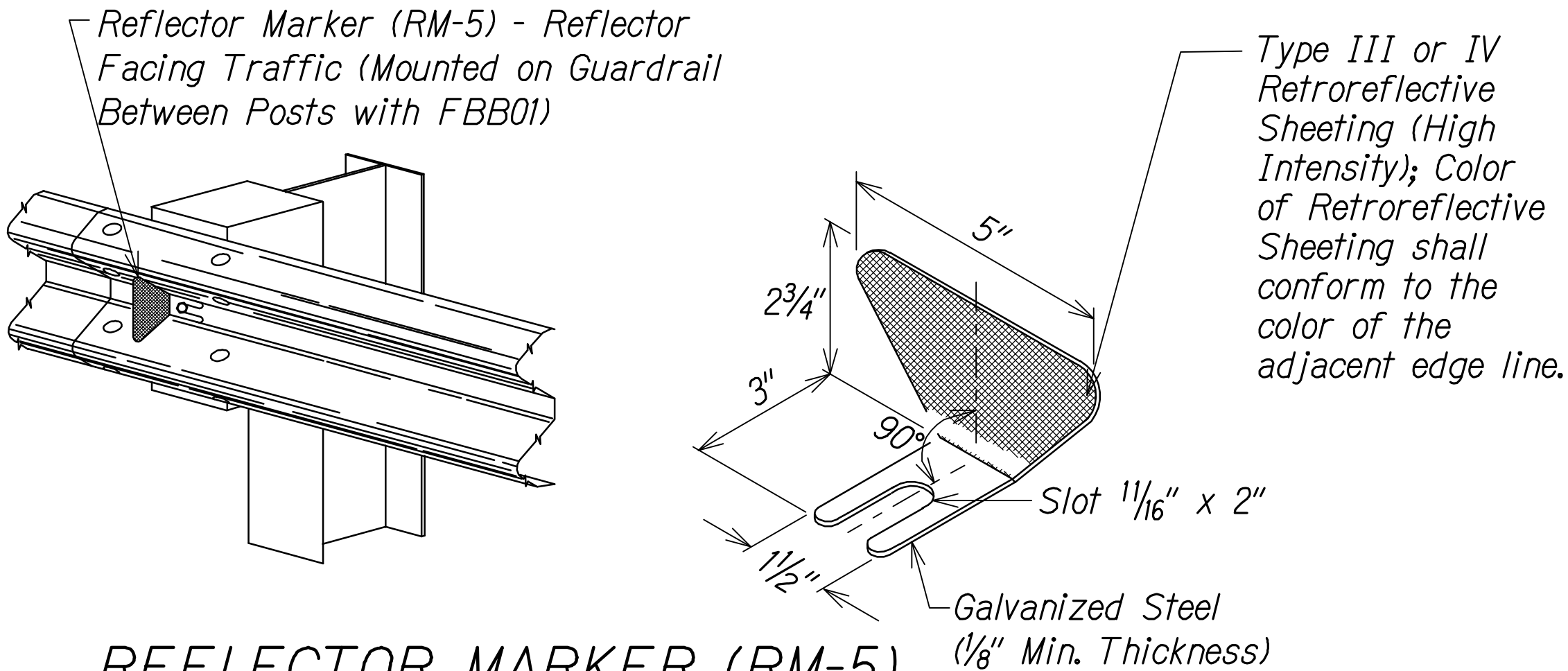
**TOP**  
**RECYCLED PLASTIC BLOCKOUT (TYPE I)**



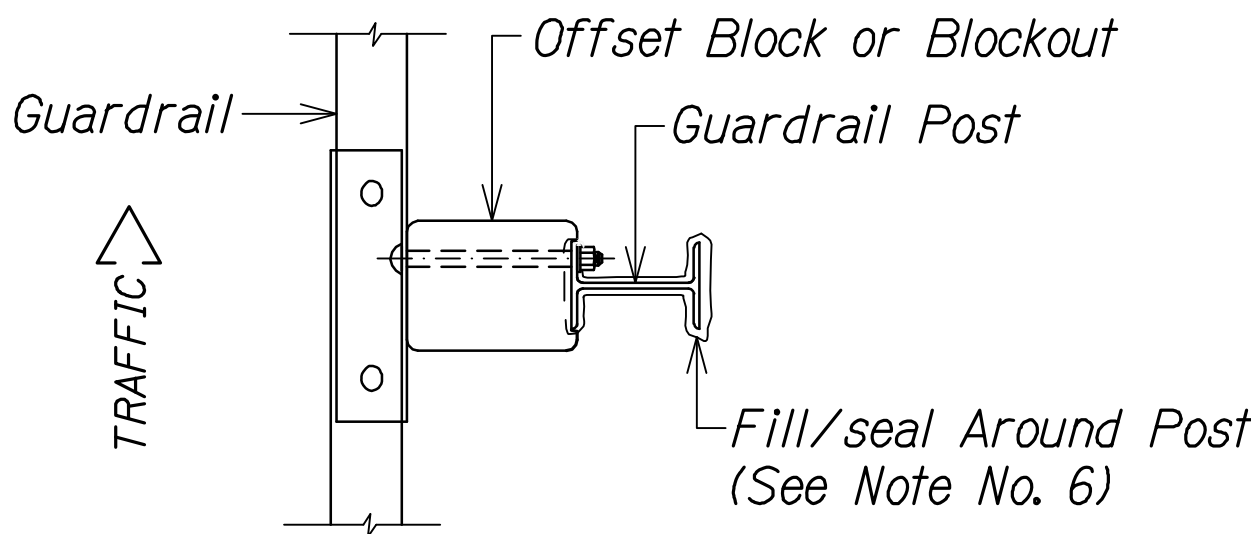
**RECYCLED POLYETHYLENE**  
**OFFSET BLOCK (TYPE II)**



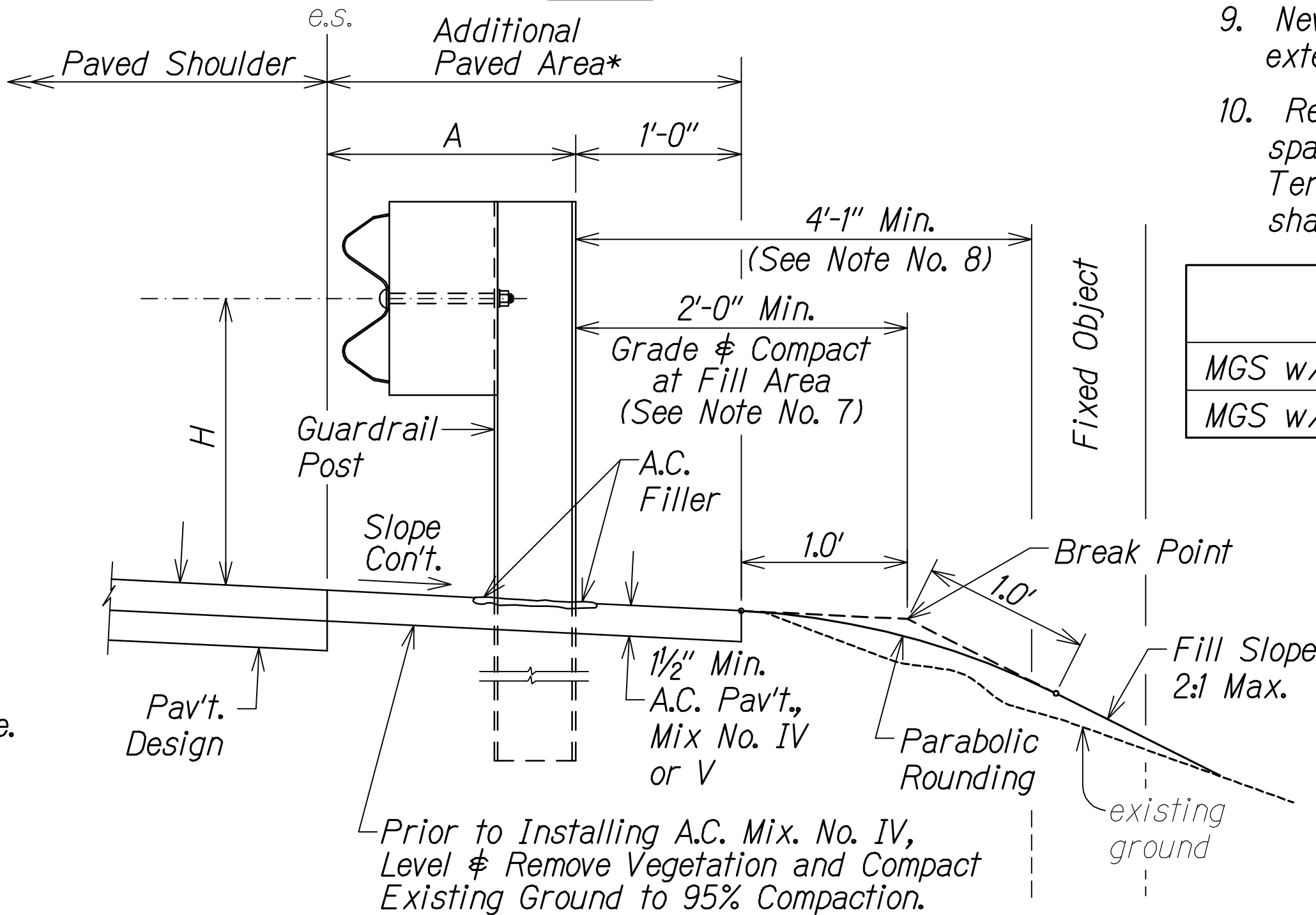
**Exploded View**  
(Rail and Washer Not Shown)  
**STEEL POST AND BLOCK DETAIL**



**REFLECTOR MARKER (RM-5)**  
**DETAIL AND TYPICAL INSTALLATION**



PLAN

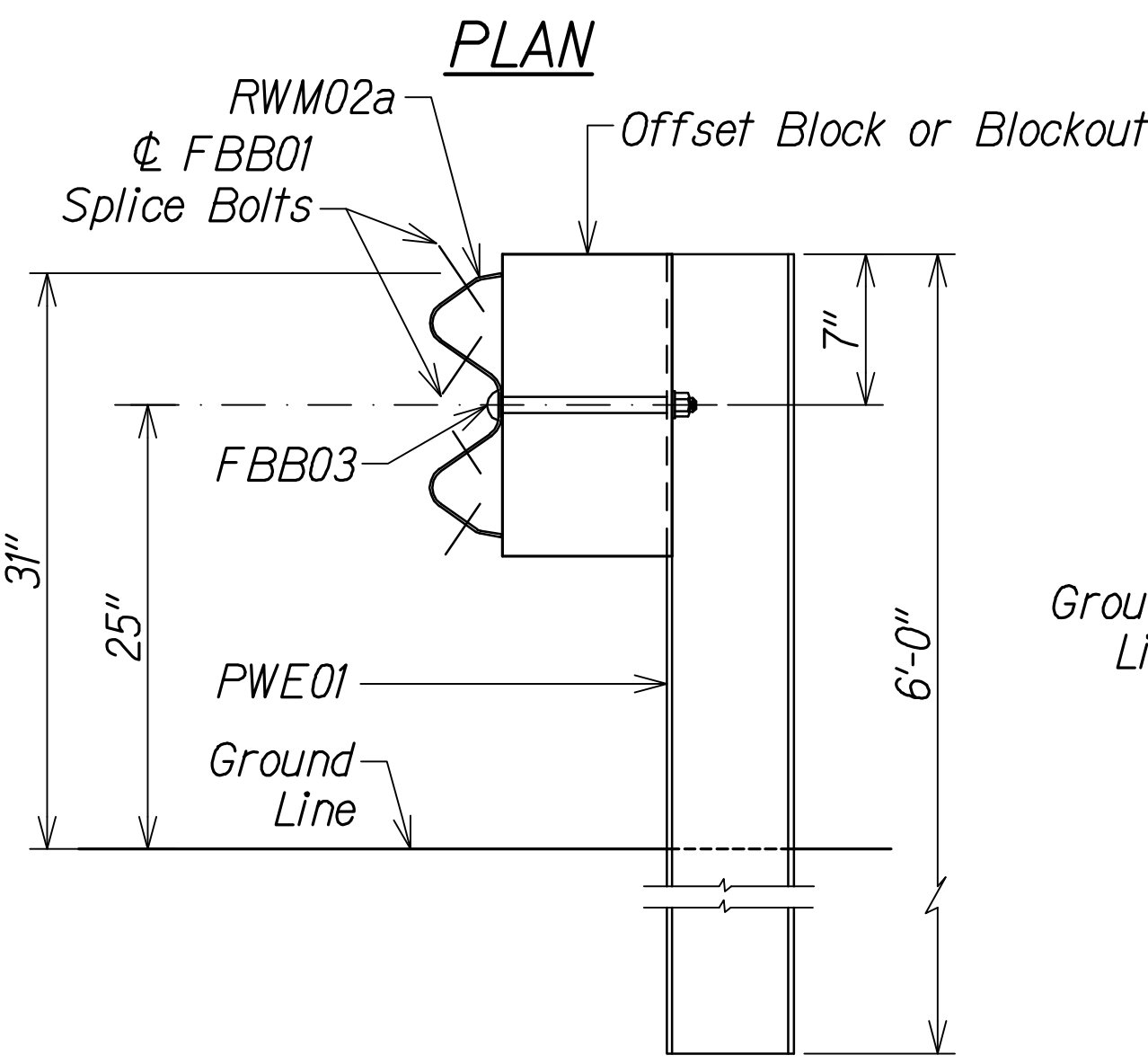
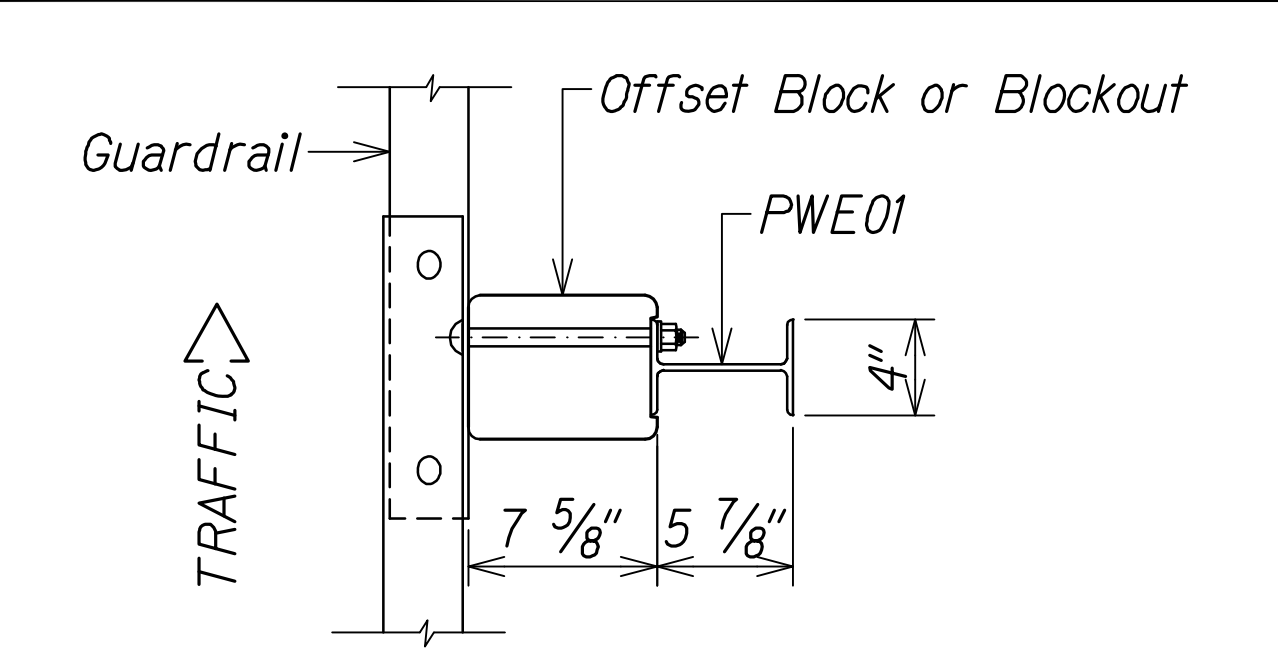


ELEVATION

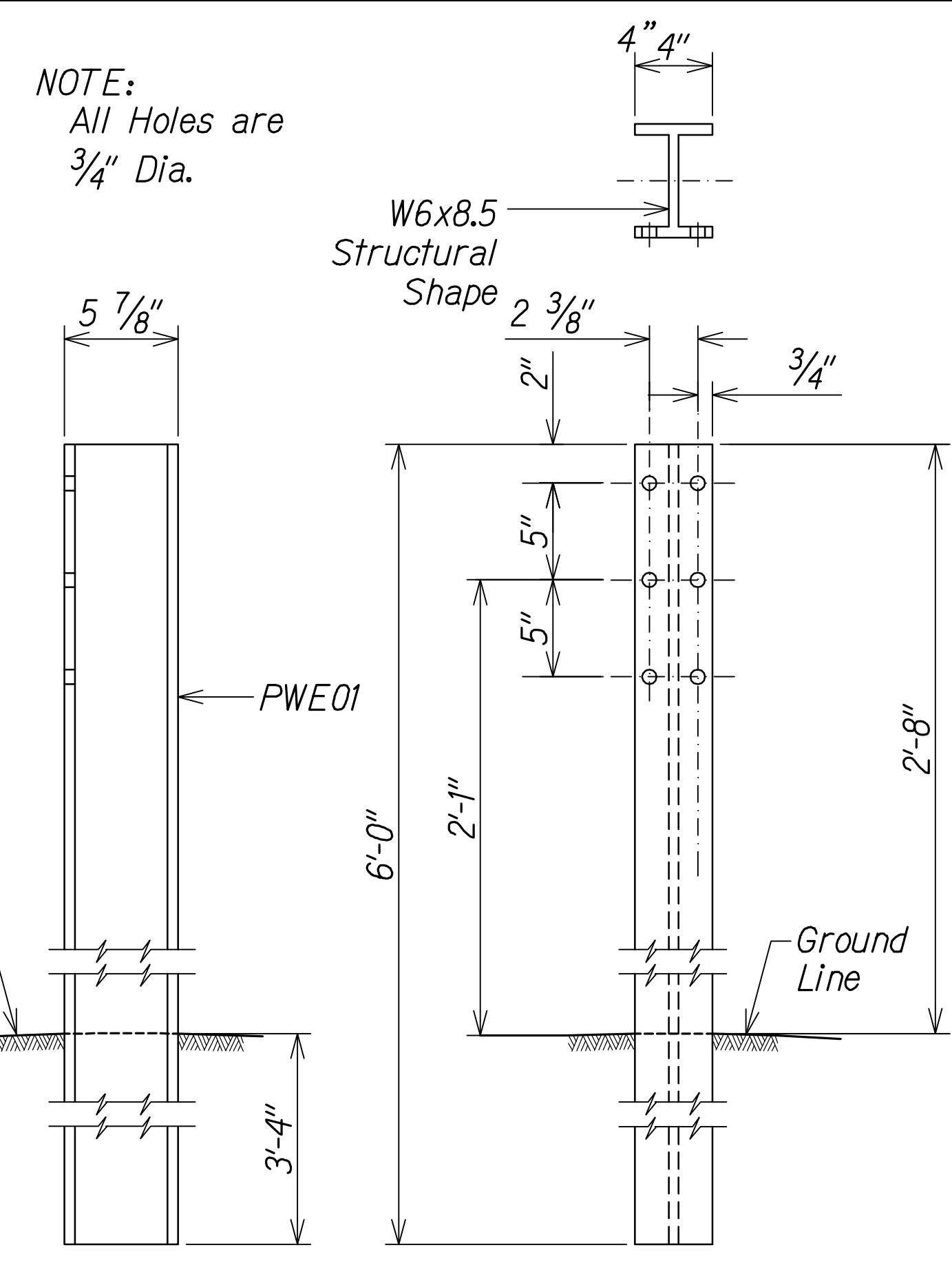
TYPICAL GUARDRAIL INSTALLATION

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

DATE	REVISION
11/12/19	△ Reissuing plan for legibility only. No design changes have been made.
9/20/19	△ Reissuing plan for legibility only. No design changes have been made.

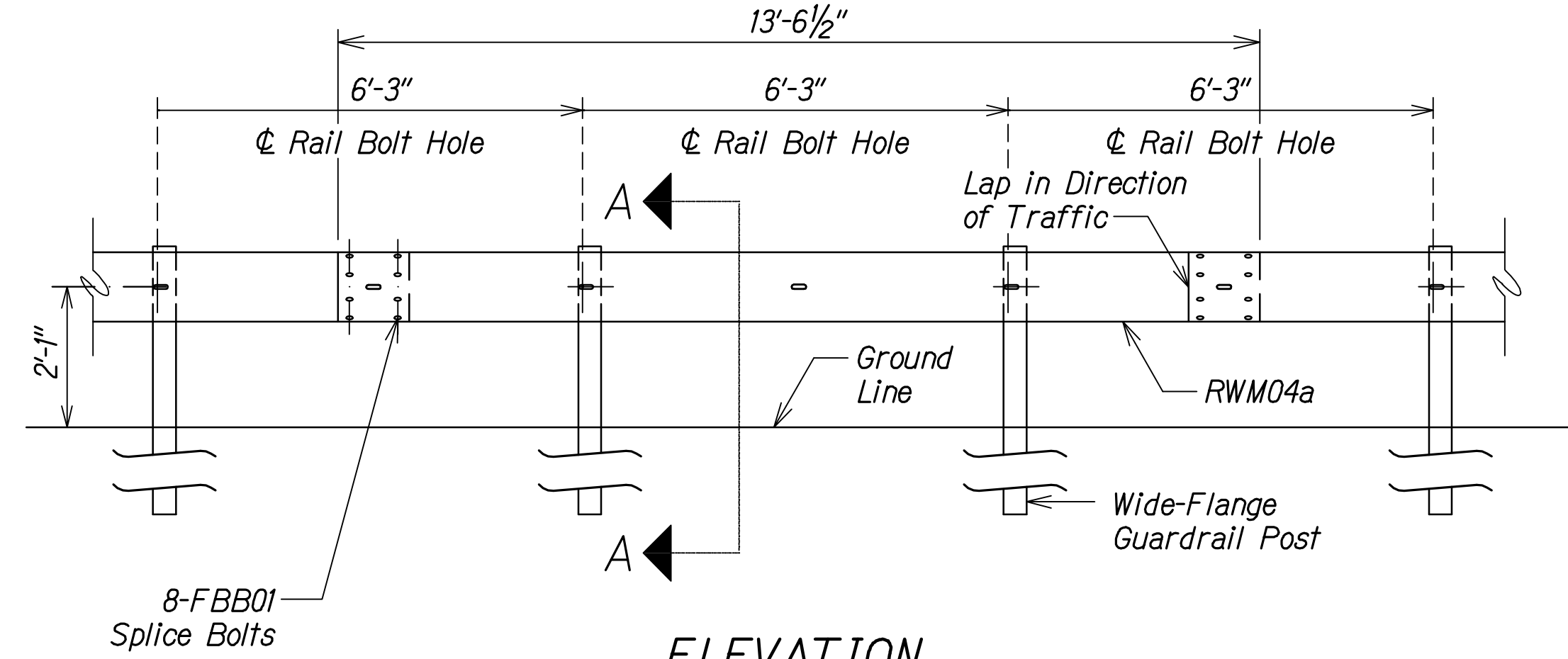


SECTION A-A



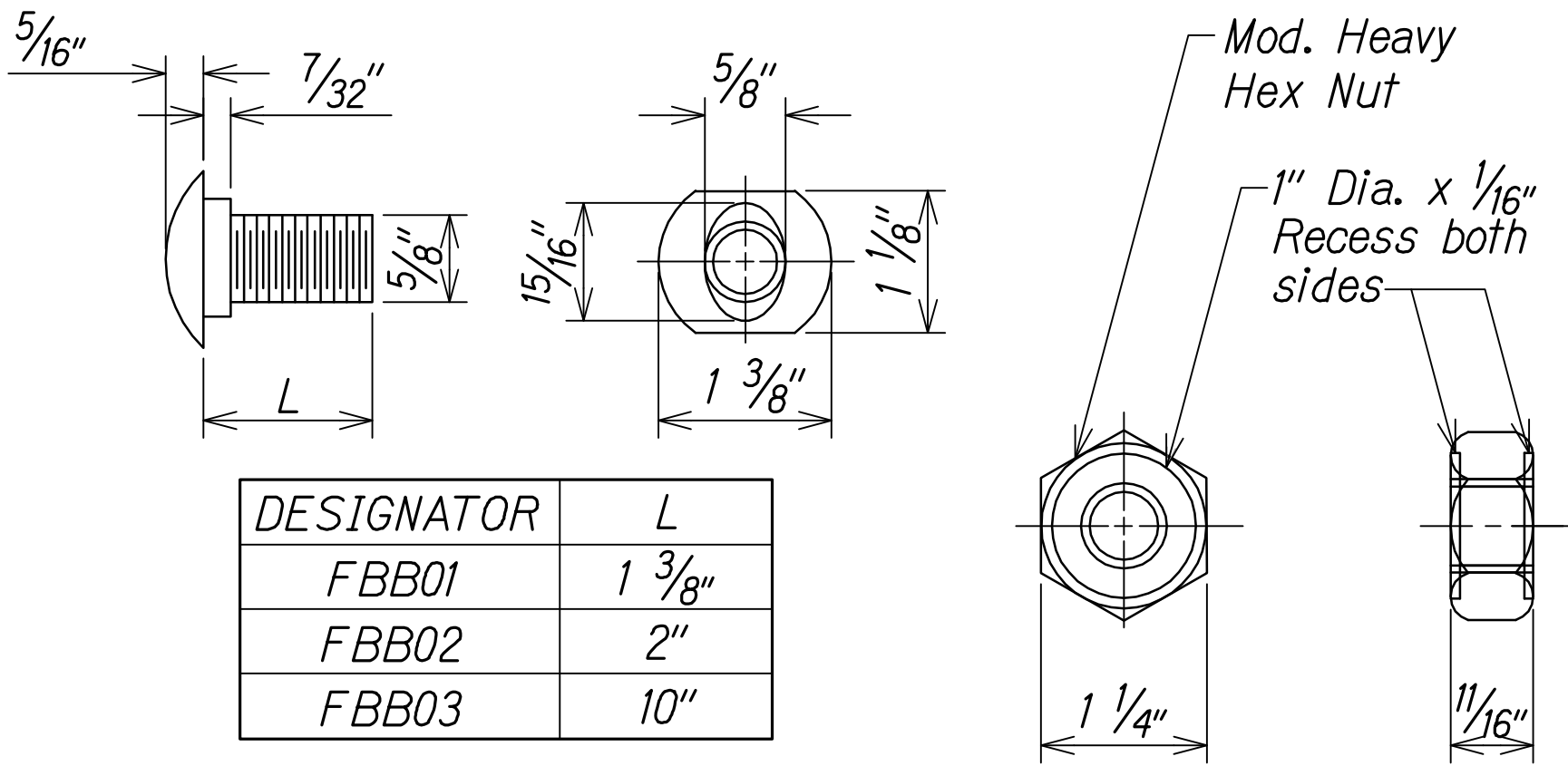
W-BEAM STRONG POST (PWE01)

DESIGNATOR	BASE METAL THICKNESS
RWM02a	12 Gauge



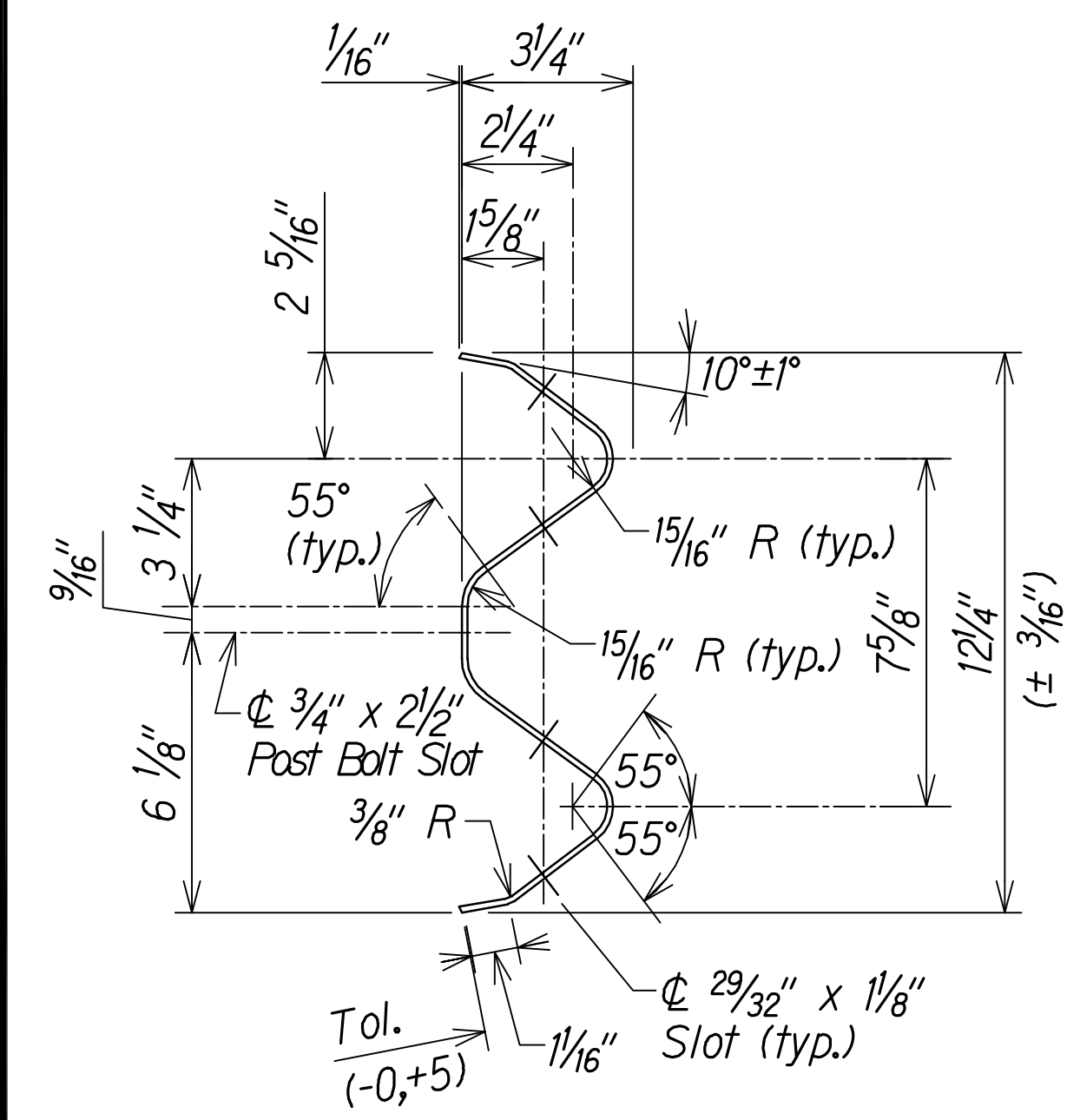
ELEVATION

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

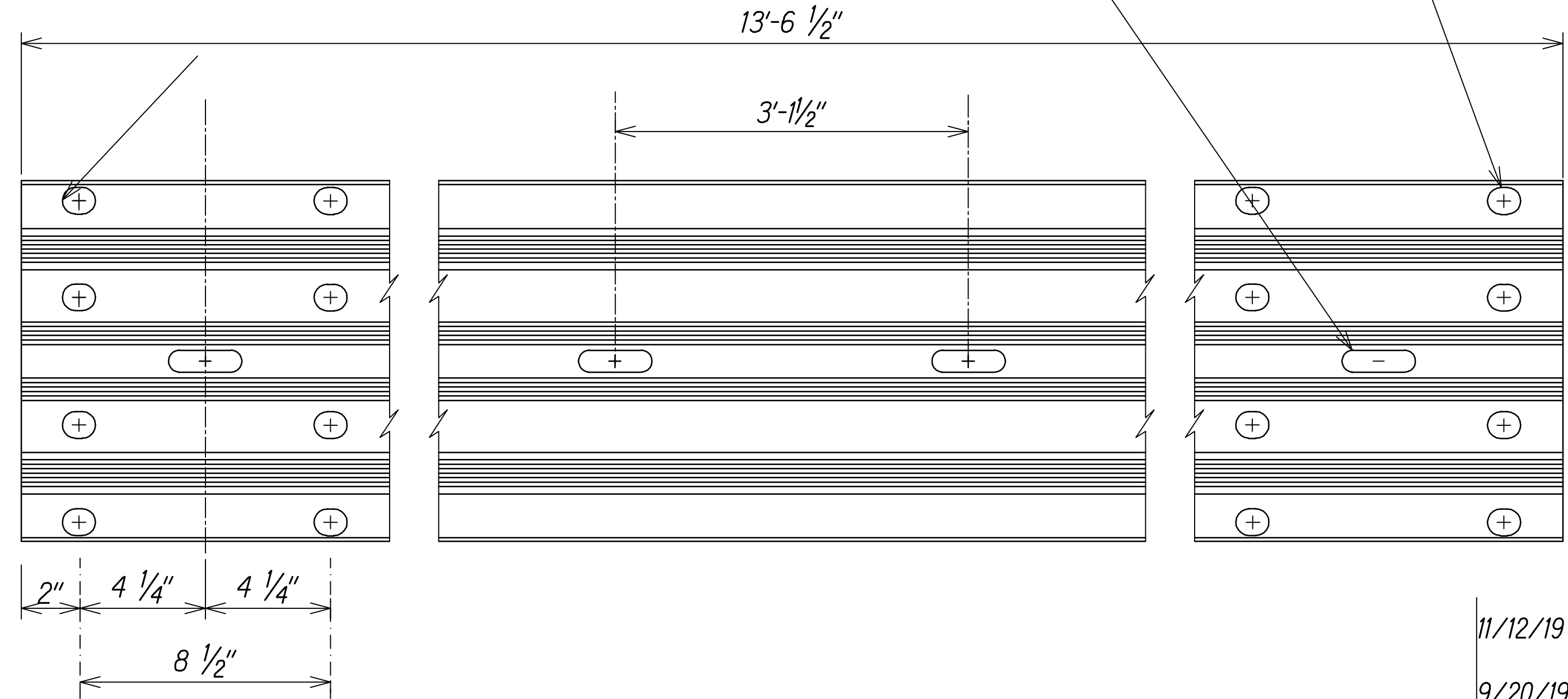


DESIGNATOR	L
FBB01	1 3/8"
FBB02	2"
FBB03	10"

GUARDRAIL BOLTS AND RECESSED NUT



4 SPACE W-BEAM GUARDRAIL (RWM04a)



11/12/19	△ Reissuing plan for legibility only. No design changes have been made.
9/20/19	△ Reissuing plan for legibility only. No design changes have been made.

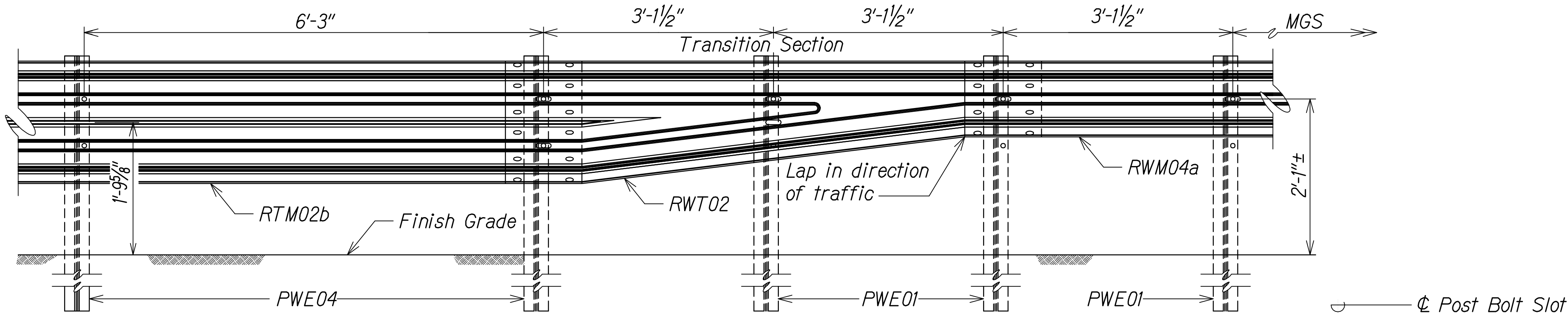
DATE	REVISION
------	----------



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
WILSON OKAMOTO CORPORATION LIC. EXP. DATE

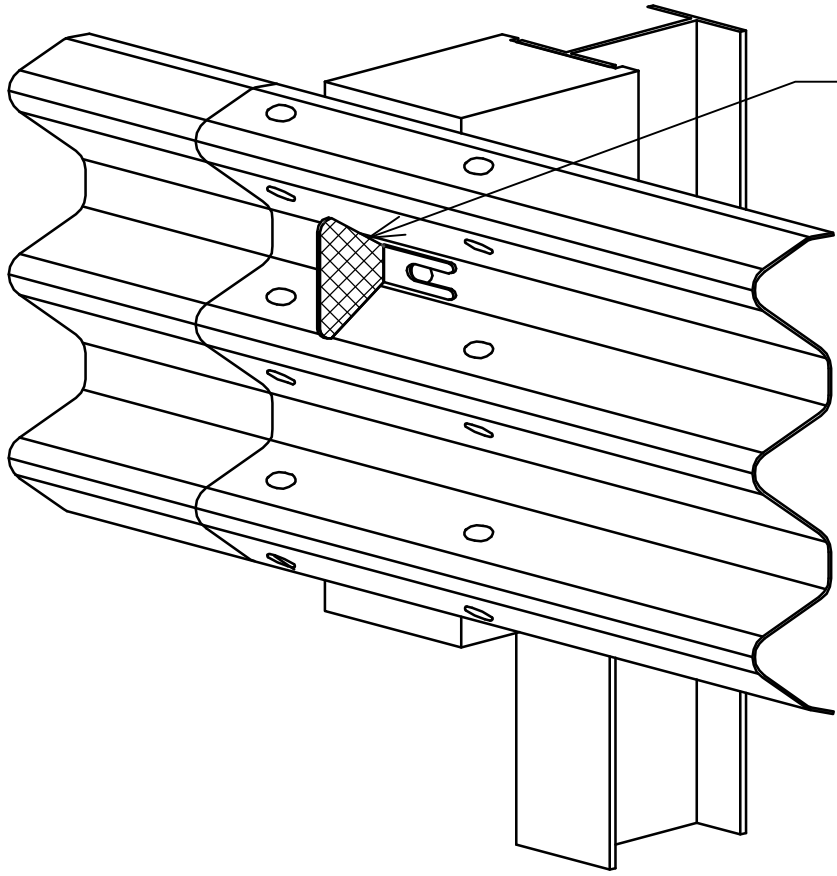
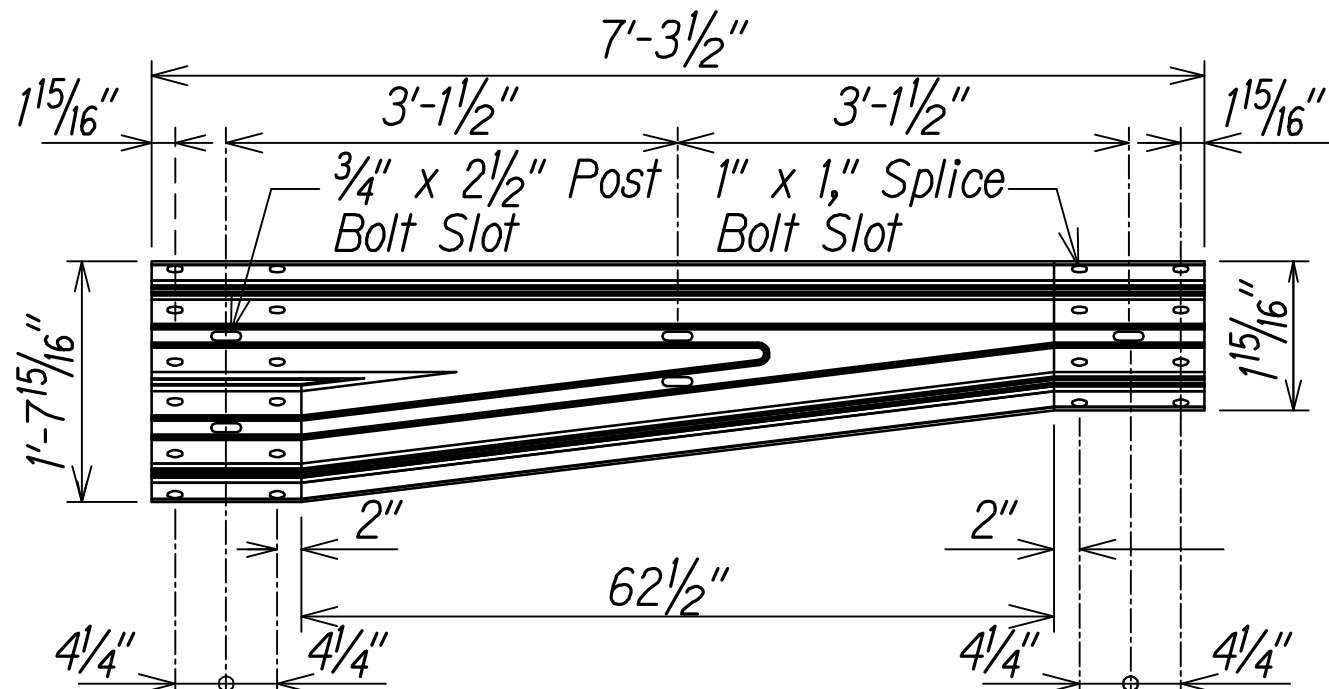
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**31" W-BEAM GUARDRAIL WITH STANDARD 8" OFFSET BLOCK**  
KUHIU HIGHWAY SHORT-TERM IMPROVEMENTS KUAMOO ROAD  
TO TEMPORARY KAPAA BYPASS ROAD  
Fed. Aid Proj. No. NH-056-1(50)  
Scale: As Noted Date: July 2019  
SHEET No. GRD2 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	NH-056-1(50)	2019	ADD.95	244



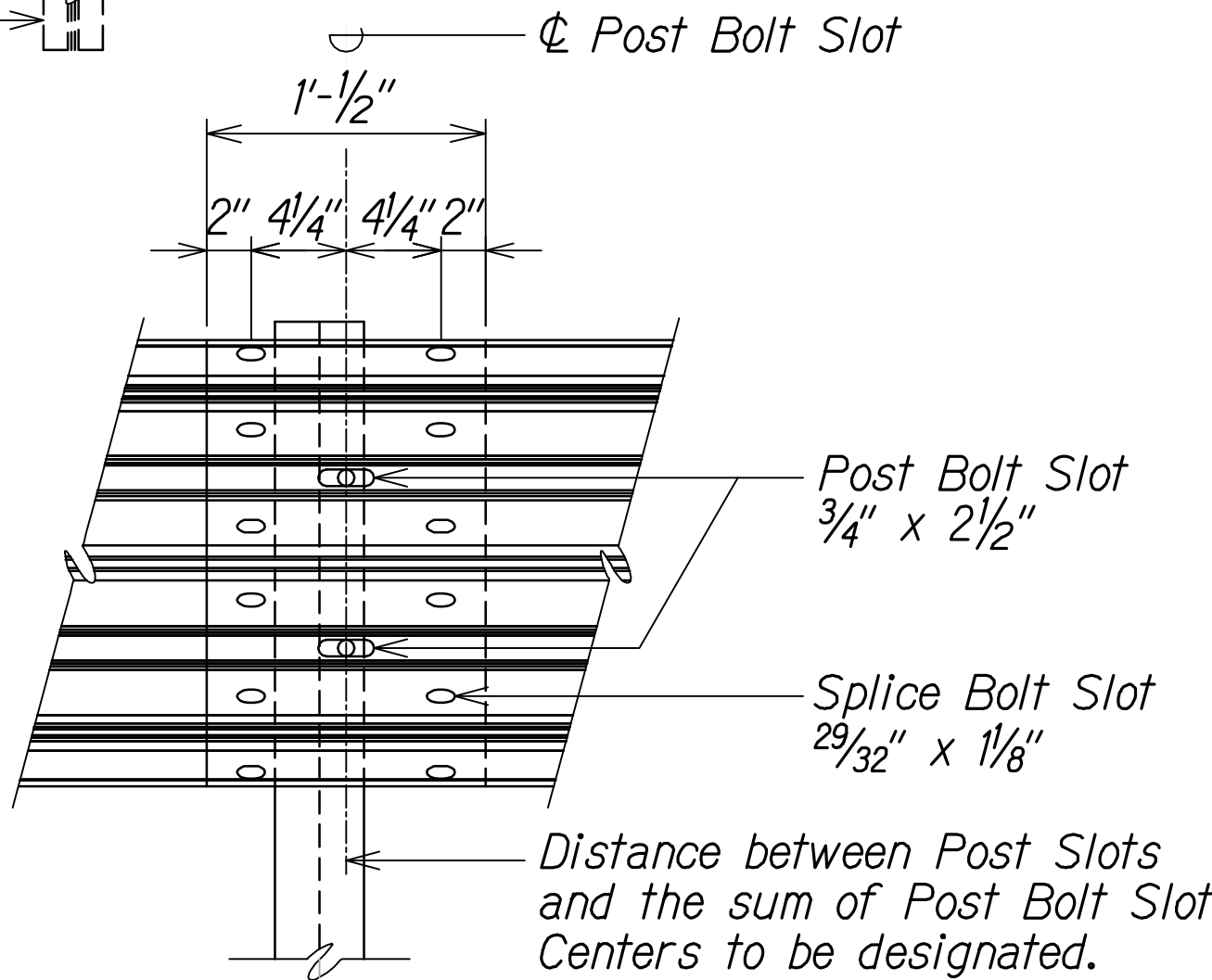
\* Not to be used for Thrie Beam connection to structures.

**TRANSITION SECTION \***

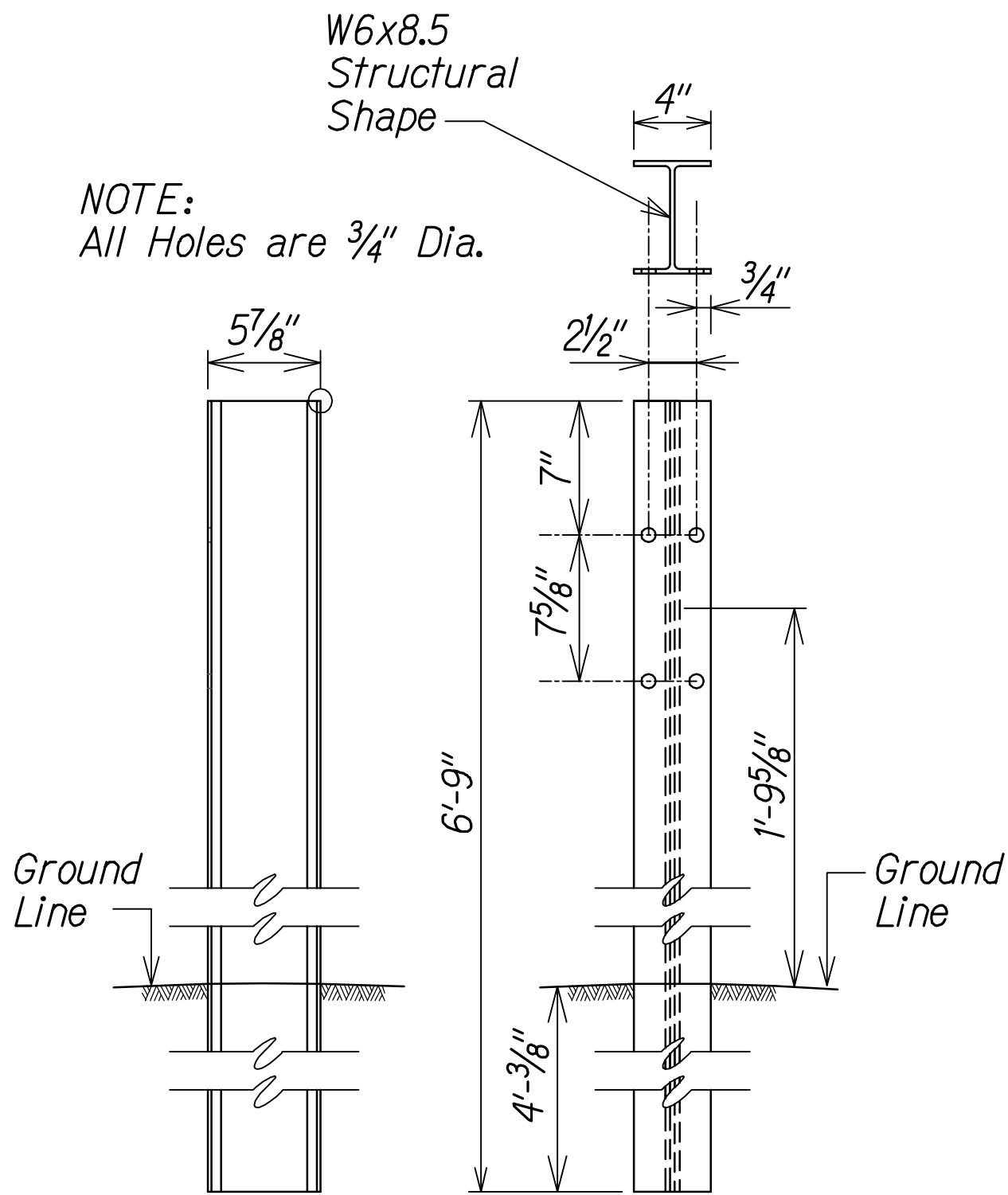


Reflector Marker (RM-5) - Reflector Facing Traffic (Mounted on Guardrail Bolt). For details and notes, see Guardrail Details & Notes sheet.

**TYPICAL INSTALLATION OF REFLECTOR MARKER (RM-5)**

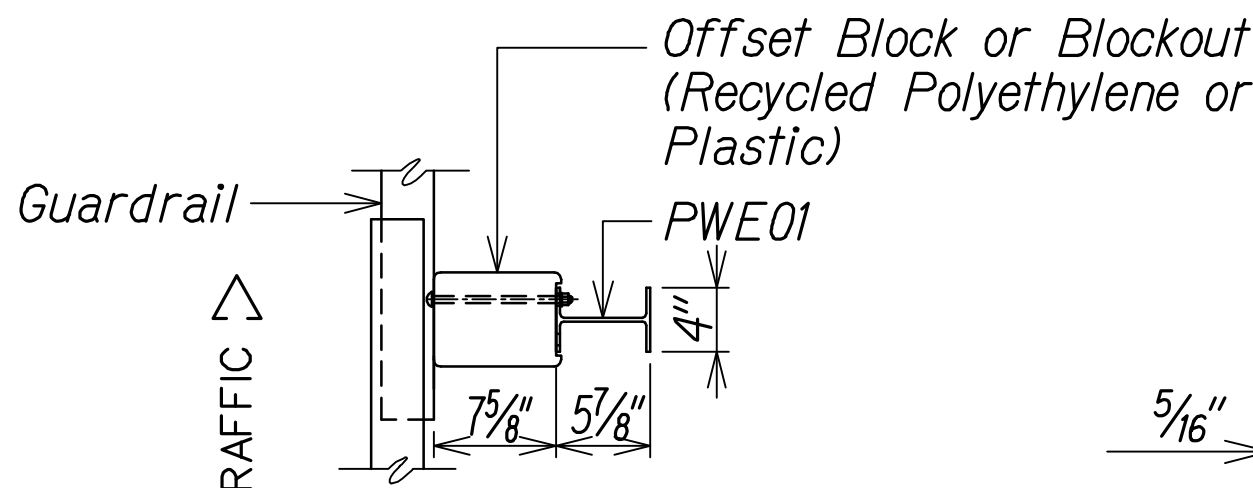


**RAIL SPLICE**

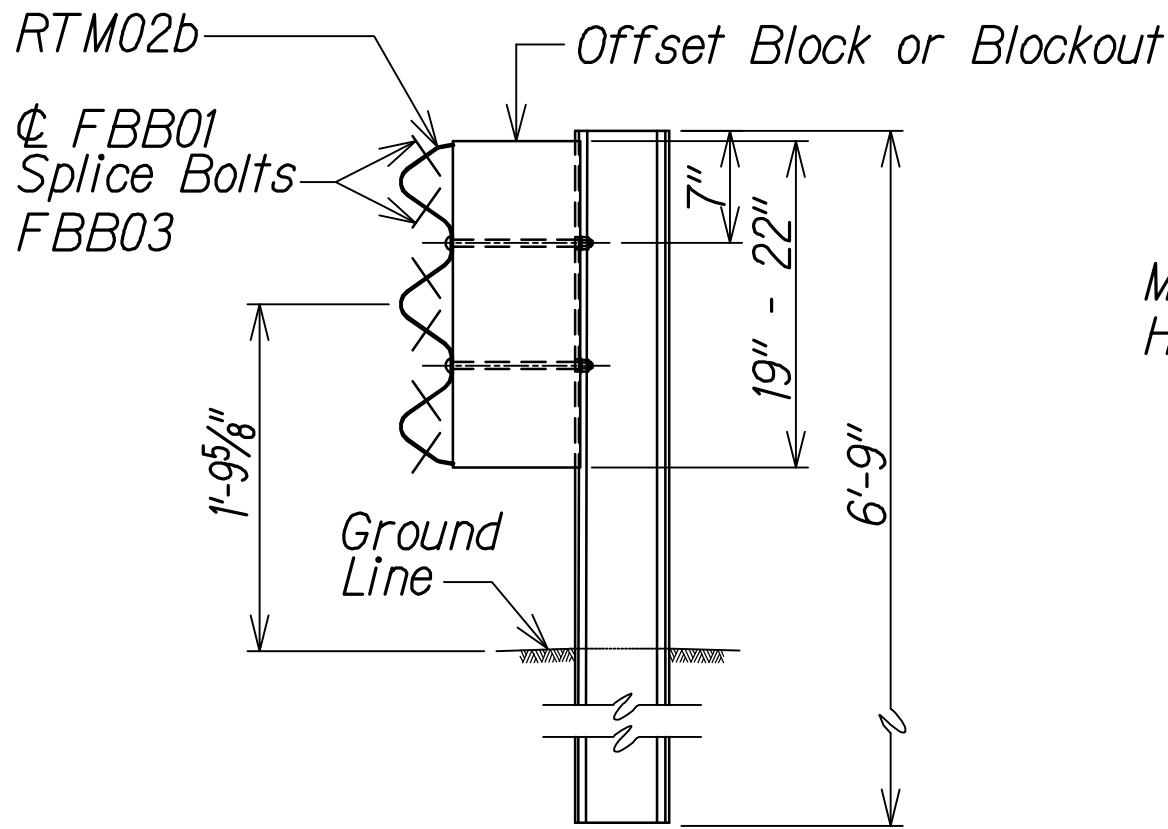


**SIDE FRONT**

**THRIE-BEAM STRONG POST FOR PLASTIC SPACER BLOCKS PWE04**



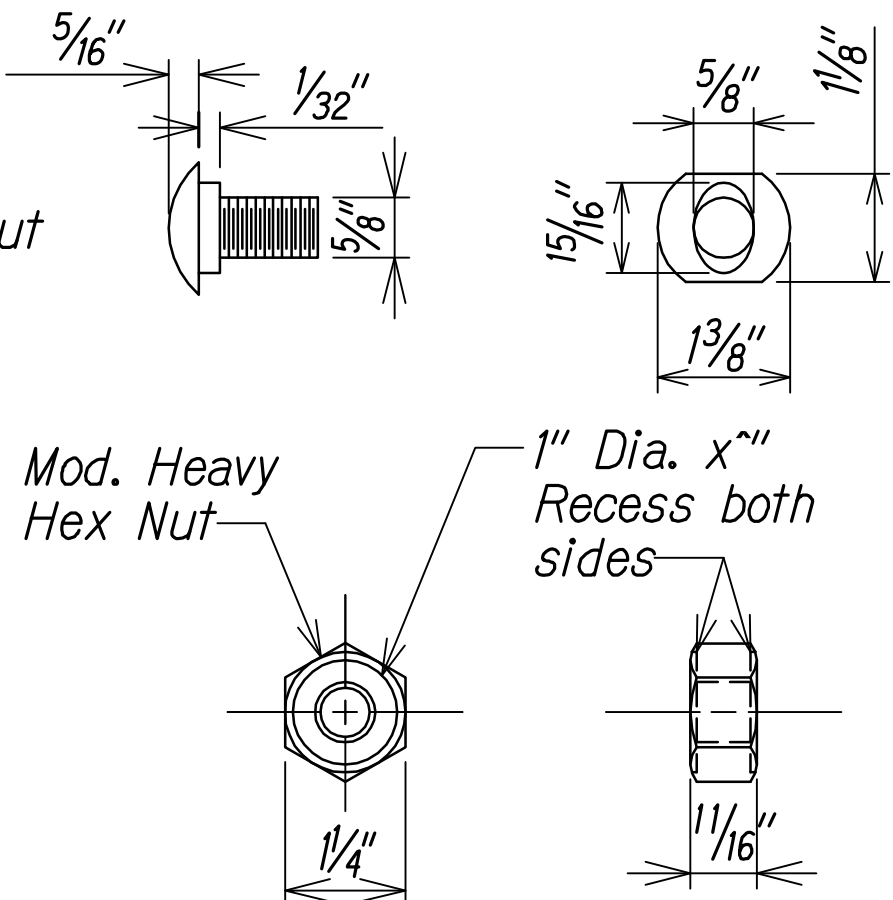
**PLAN**



**ELEVATION**

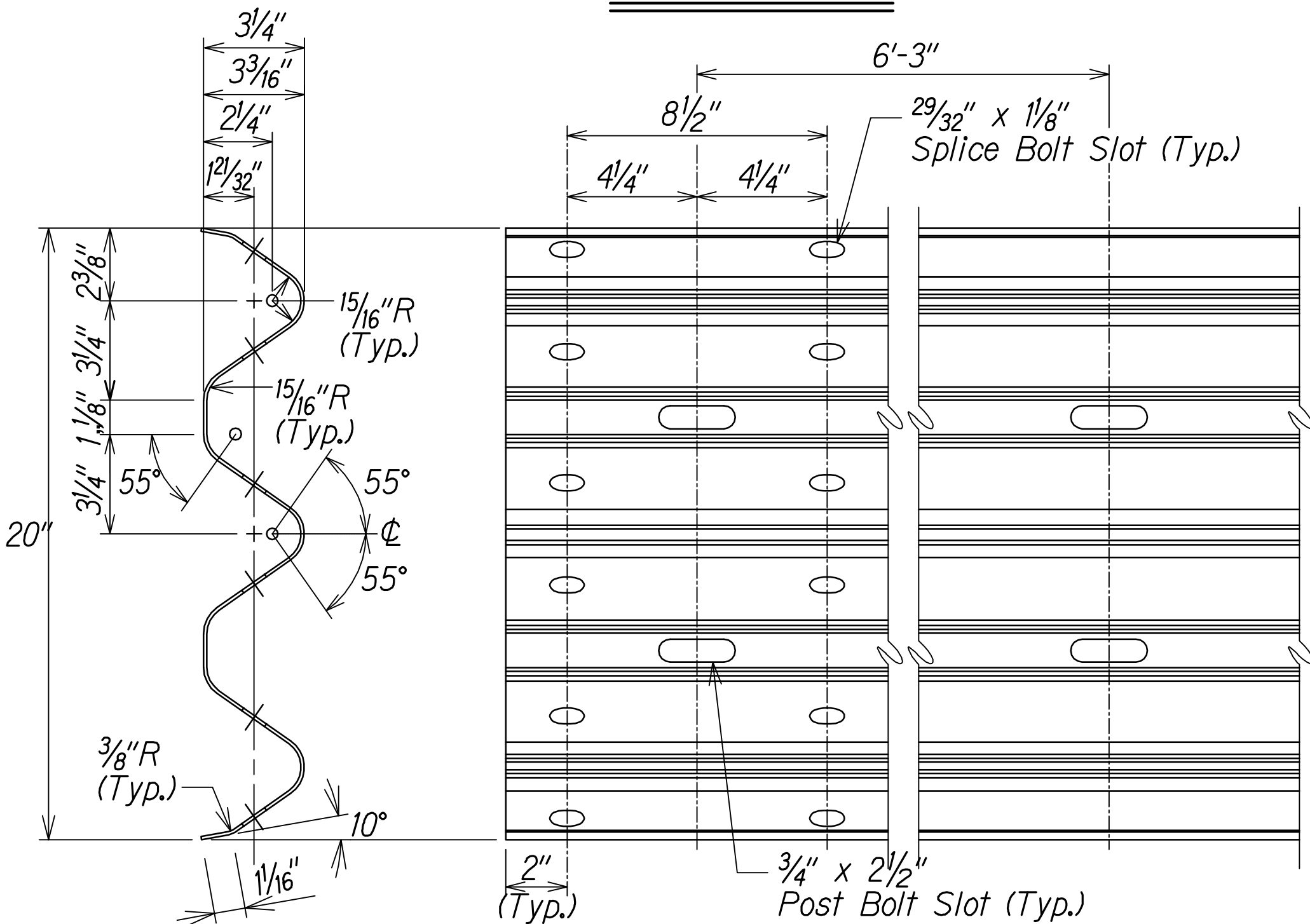
**STRONG POST**

**THRIE-BEAM GUARDRAIL (SGR09a)**



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

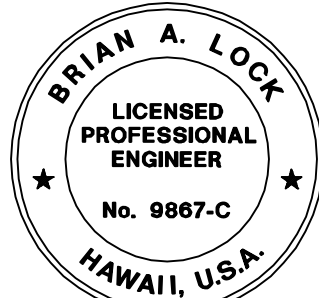
**GUARDRAIL BOLTS AND RECESSED NUT**



**1 & 2 SPACE THRIE-BEAM GUARDRAIL (RTM02b)**

11/12/19	Δ Reissuing plan for legibility; replaced sheet with new details
9/20/19	Δ Reissuing plan for legibility only. No design changes have been made.

DATE	REVISION
------	----------



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

*Brian A. Look*

APRIL 30, 2020  
WILSON OKAMOTO CORPORATION LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

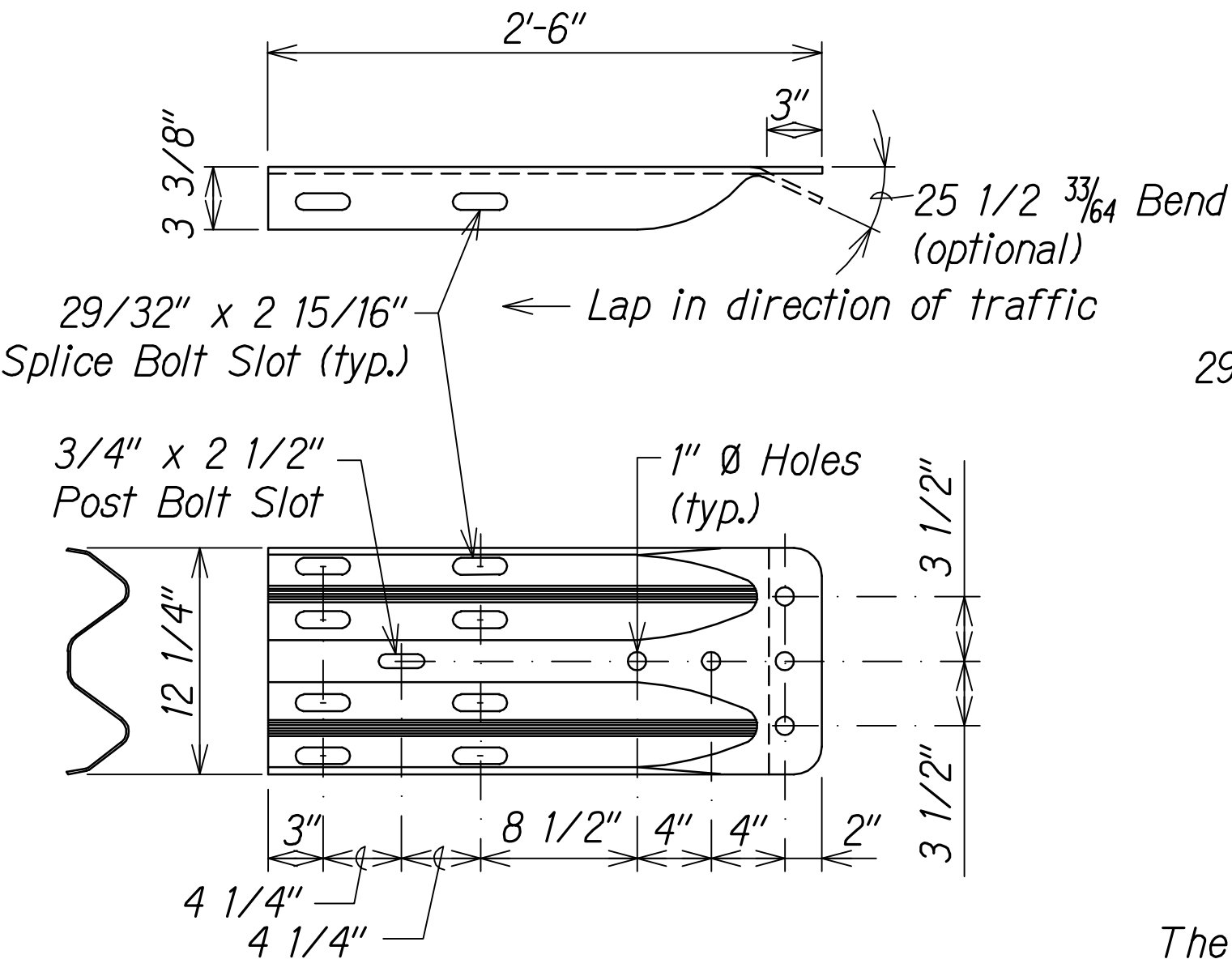
STRONG POST  
THRIE-BEAM GUARDRAIL  
KUHIU HIGHWAY SHORT-TERM  
IMPROVEMENTS KUAMOO ROAD  
TO TEMPORARY KAPAA BYPASS ROAD  
Fed. Aid Proj. No. NH-056-1(50)  
Scale: As Noted Date: July 2019

SHEET No. GRD3 OF 6 SHEETS

DATE	_____
SURVEY PLATTED BY	_____
DRAWN BY	_____
TRACED BY	_____
CHECKED BY	_____
NOTE BOOK	_____
No.	_____



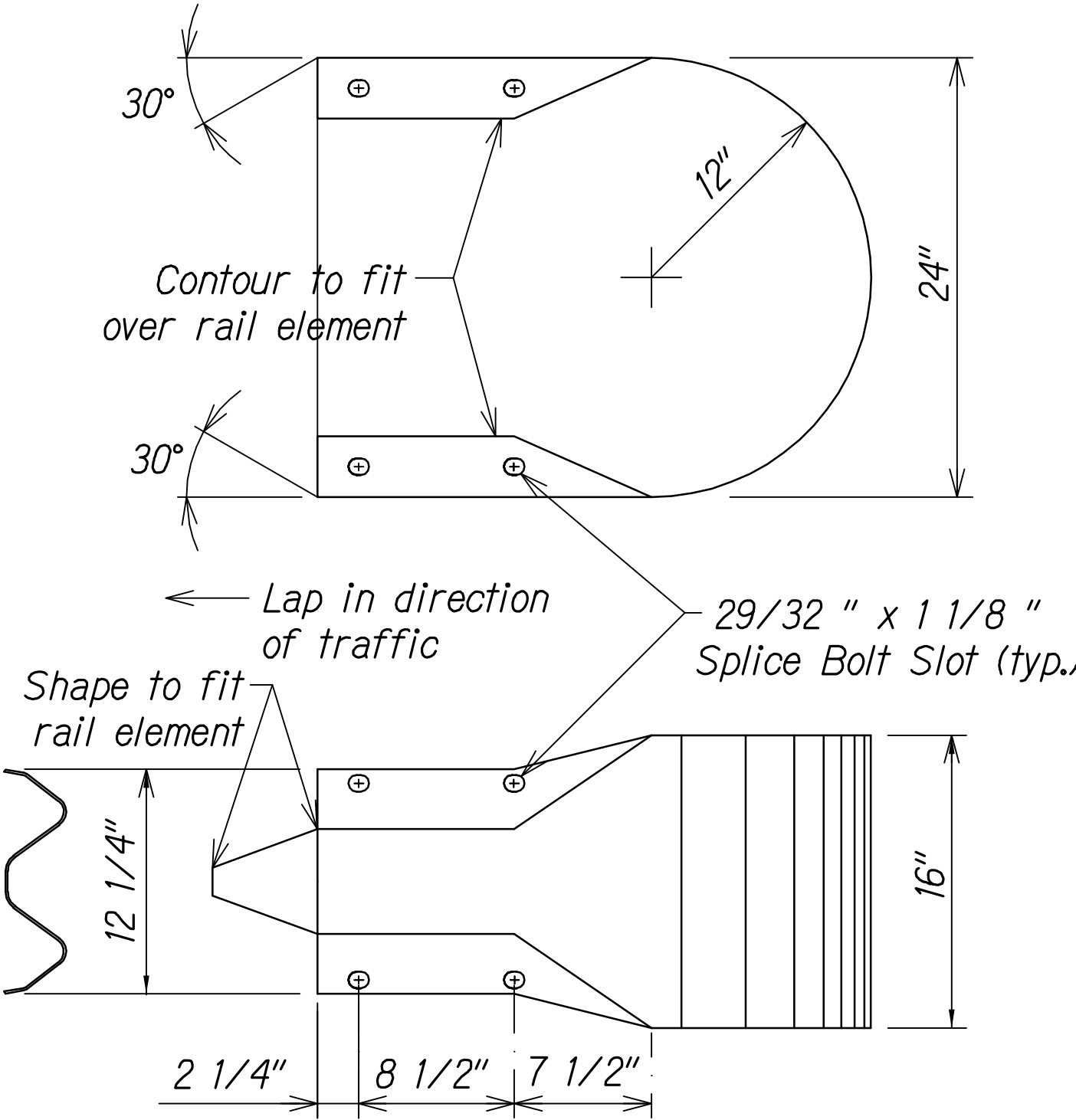
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	NH-056-1(50)	2019	ADD.96	244



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

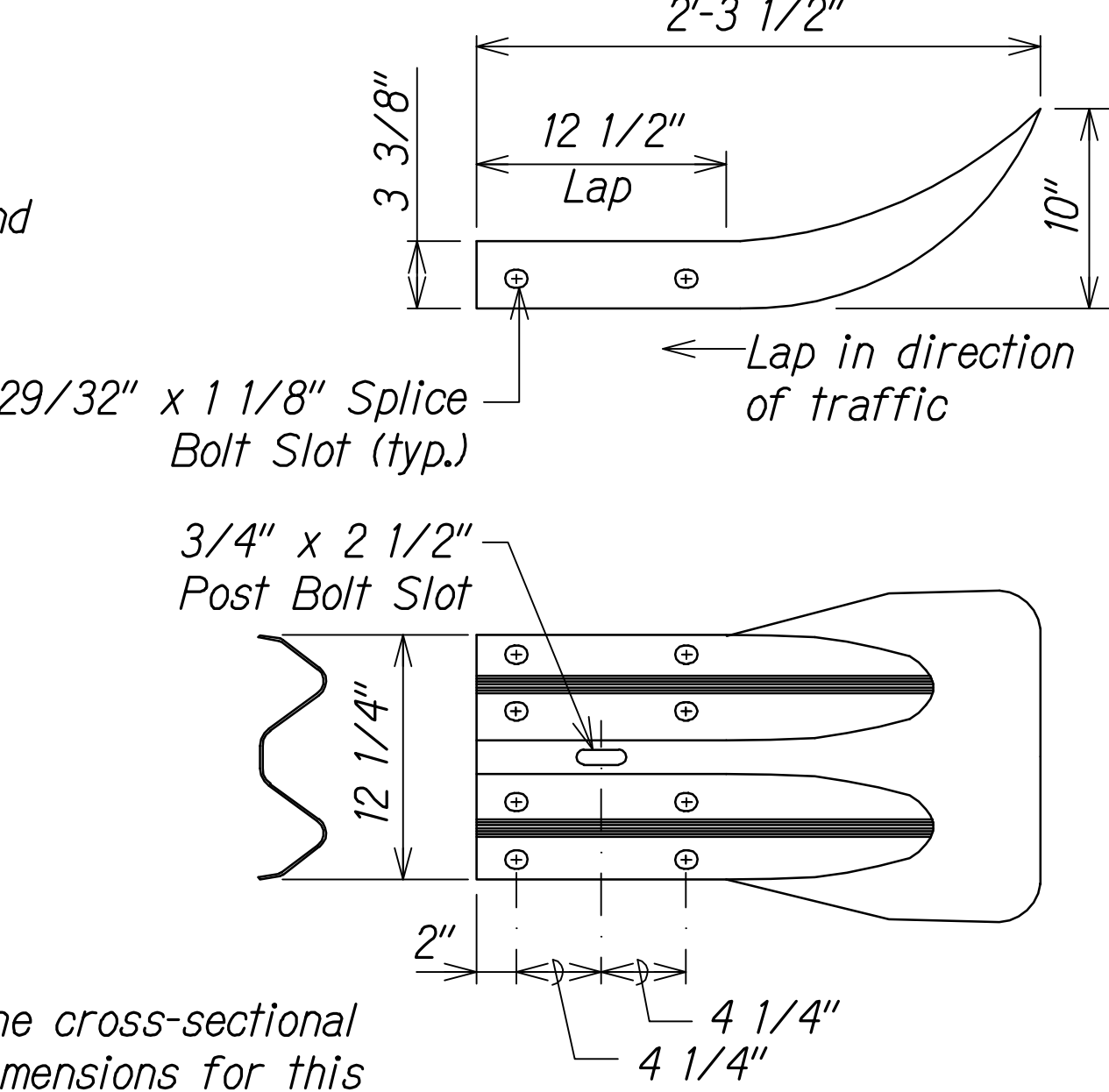
W-BEAM TERMINAL CONNECTOR (RWE02b)



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

DESIGNATOR	BASE METAL THICKNESS
RWE06a	12 Gauge

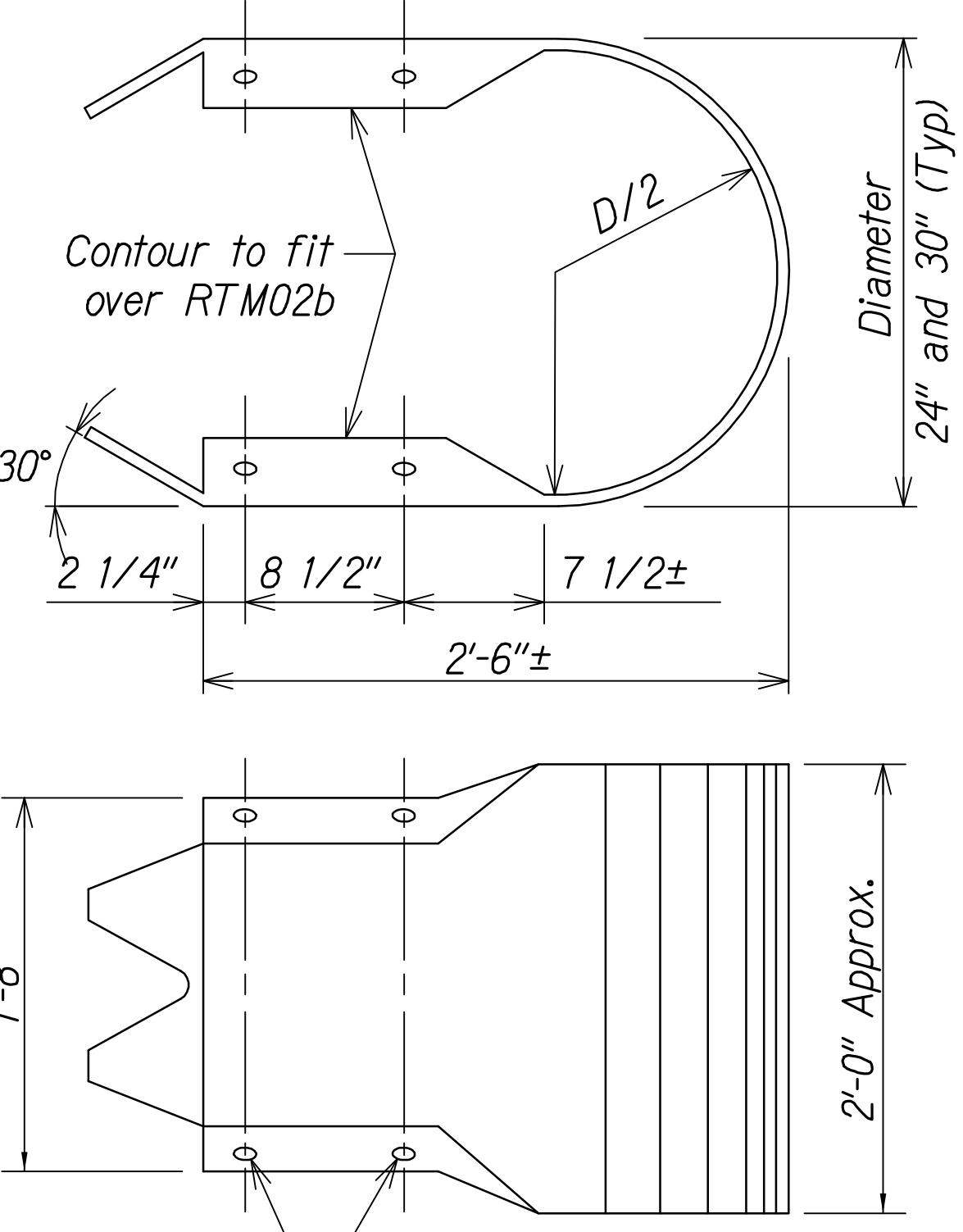
W-BEAM END SECTION (BUFFER RWE06a)



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

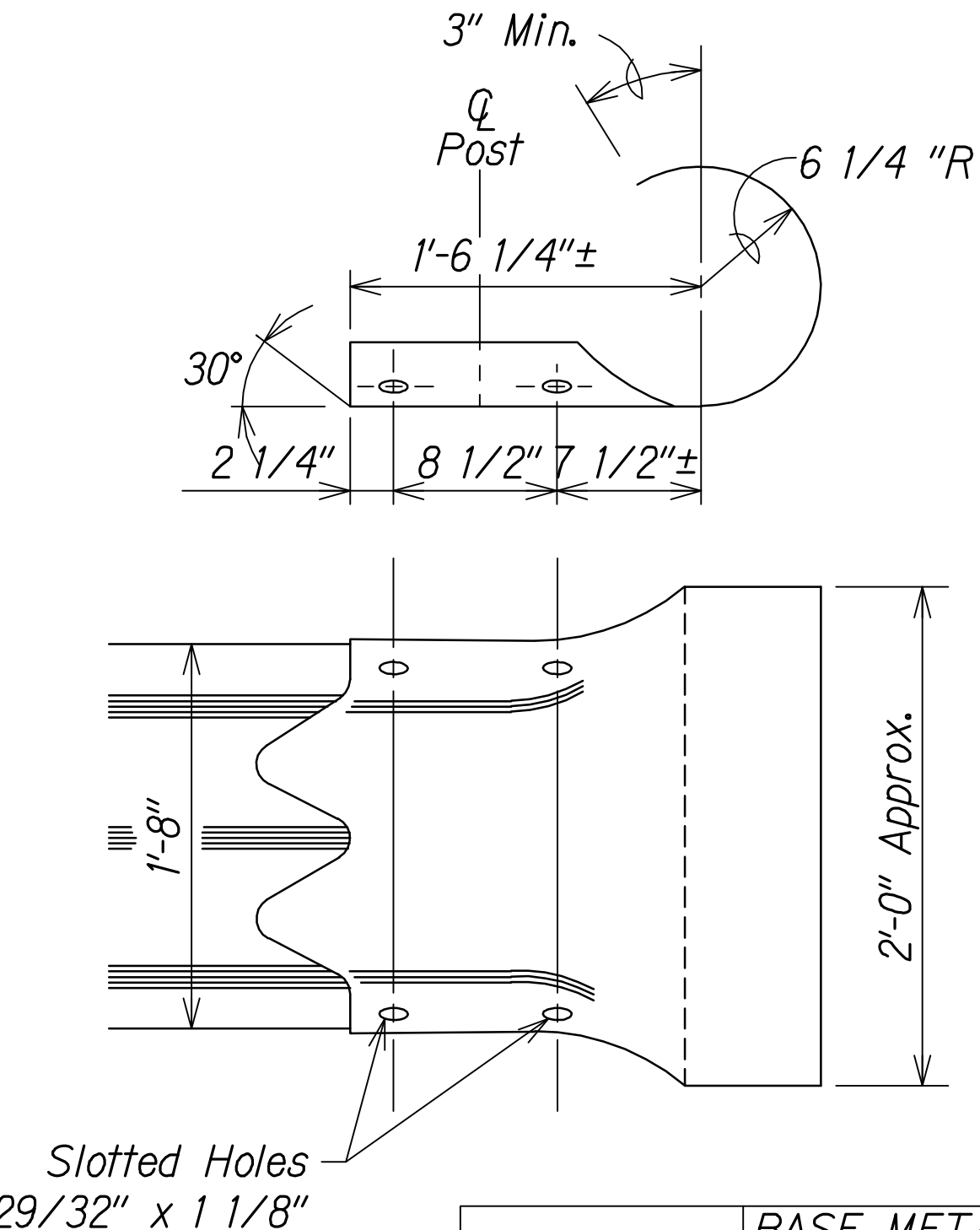
W-BEAM END SECTION (FLARED RWE01a)



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

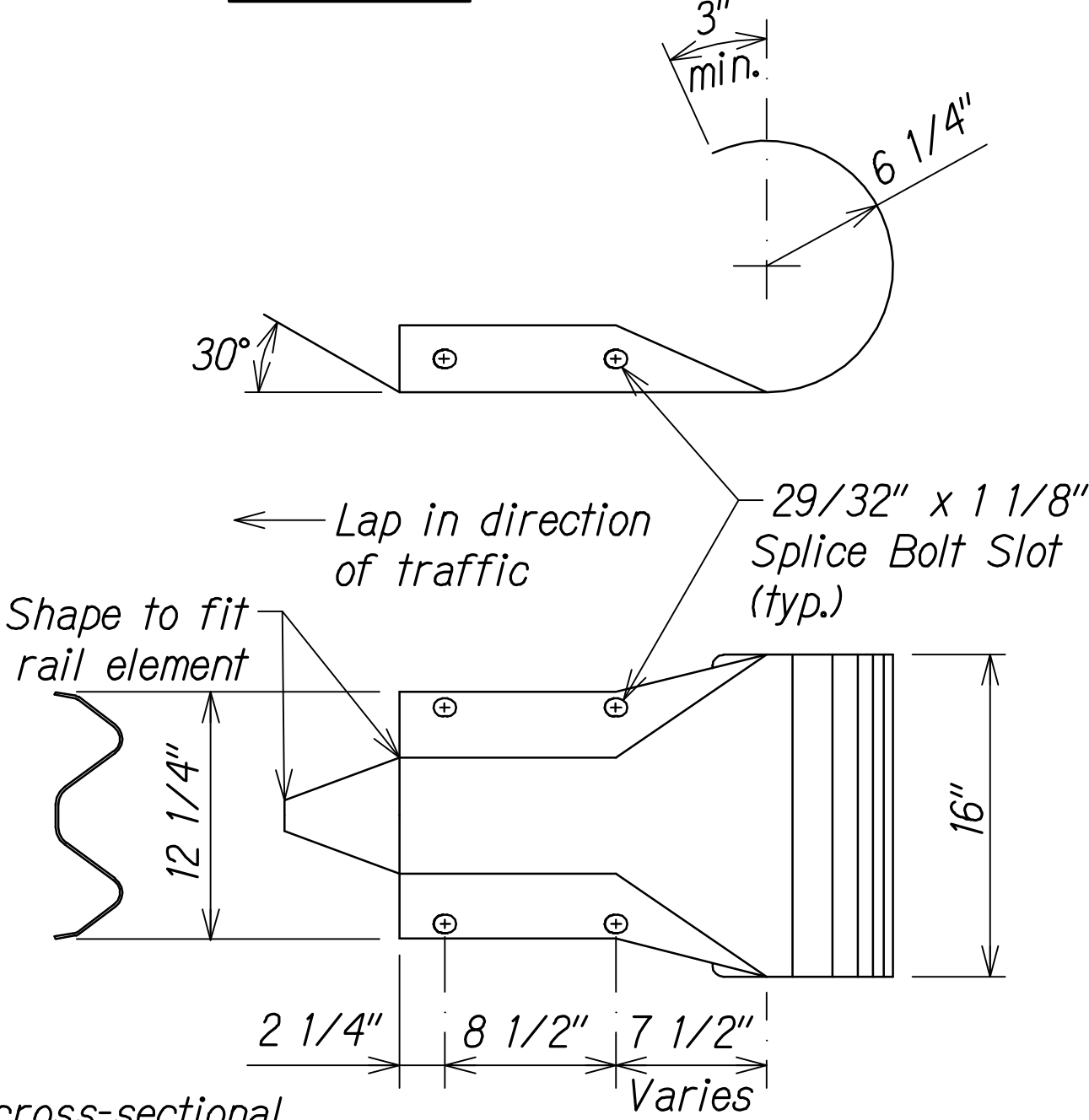
DESIGNATOR	BASE METAL THICKNESS
RTE03b & RTE04b	10 Gauge

THRIE-BEAM END SECTION (BUFFER RTE03b or RTE04b)



DESIGNATOR	BASE METAL THICKNESS
RWE02b	10 Gauge

THRIE-BEAM SECTION (ROUNDED RTE02b)



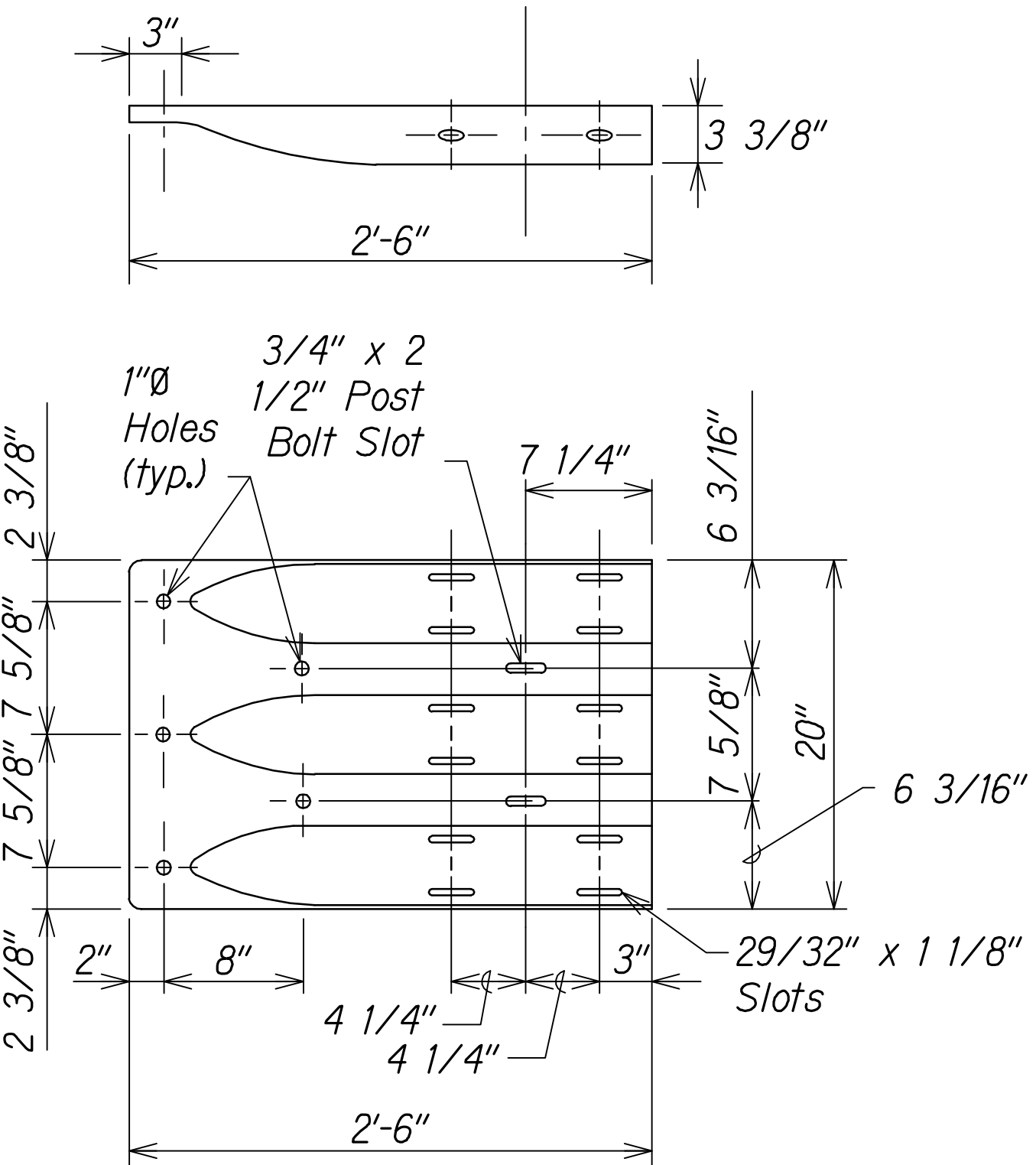
The cross-sectional dimensions for this part are to fit over part RWM02a

DESIGNATOR	BASE METAL THICKNESS
RWE03a	12 Gauge

W-BEAM END SECTION (ROUNDED RWE03a)

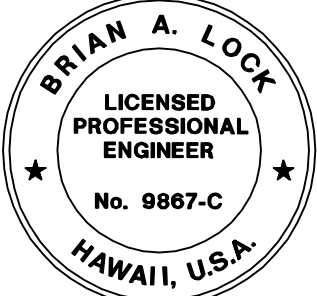
11/12/19	△ Reissuing plan for legibility only. No design changes have been made.
9/20/19	△ Reissuing plan for legibility only. No design changes have been made.

DATE	REVISION
------	----------



DESIGNATOR	BASE METAL THICKNESS
RTE01b	10 Gauge

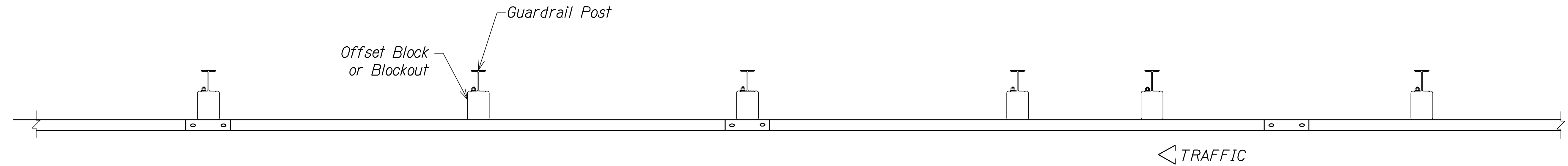
THRIE-BEAM TERMINAL CONNECTOR (RTE01b)



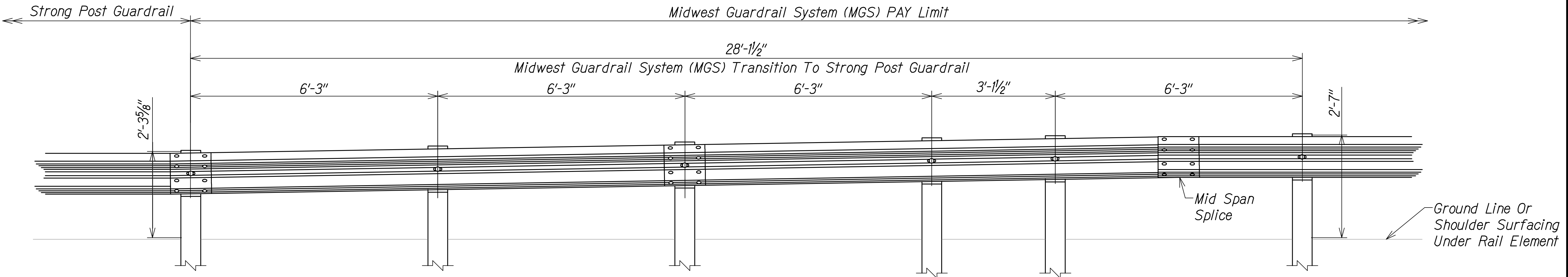
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
WILSON OKAMOTO CORPORATION LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**GUARDRAIL TERMINAL CONNECTORS AND END SECTIONS**  
**KUHIO HIGHWAY SHORT-TERM IMPROVEMENTS KUAMOO ROAD TO TEMPORARY KAPAA BYPASS ROAD**  
Fed. Aid Proj. No. NH-056-1(50)  
Scale: As Noted Date: July 2019  
SHEET No. GRD4 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUAI	HAW.	NH-056-1(50)	2019	ADD.97	244

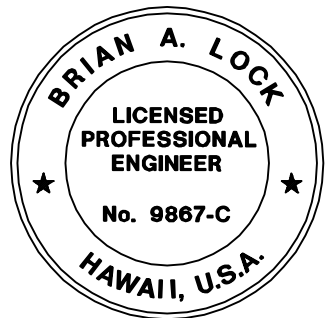


PLAN



ELEVATION

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



THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.  
*[Signature]*  
WILSON OKAMOTO CORPORATION APRIL 30, 2020  
LIC. EXP. DATE

11/12/19	△ Reissuing plan for legibility only. No design changes have been made.
9/20/19	△ Reissuing plan for legibility only. No design changes have been made.
DATE	REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**MGS TRANSITION TO  
STRONG POST GUARDRAIL**  
KUHIU HIGHWAY SHORT-TERM  
IMPROVEMENTS KUAMOO ROAD  
TO TEMPORARY KAPAA BYPASS ROAD  
Fed. Aid Proj. No. NH-056-1(50)  
Scale: As Noted Date: July 2019

SHEET No. GRD5 OF 6 SHEETS

