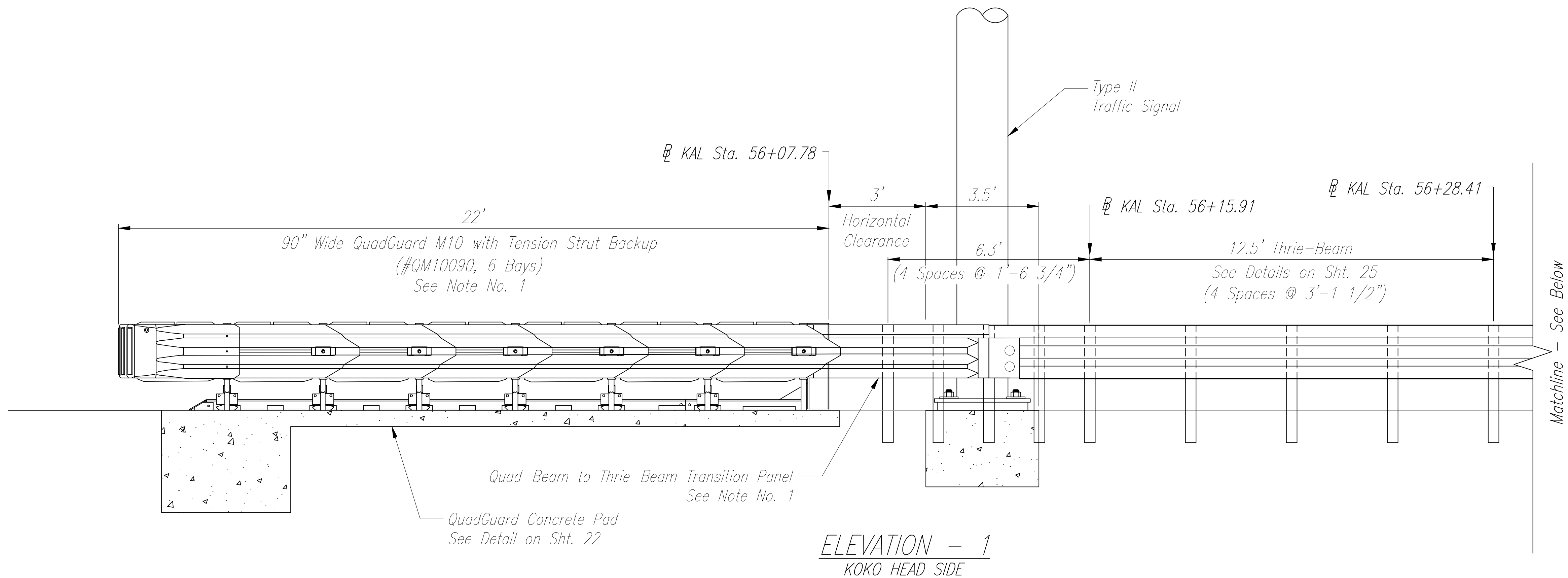
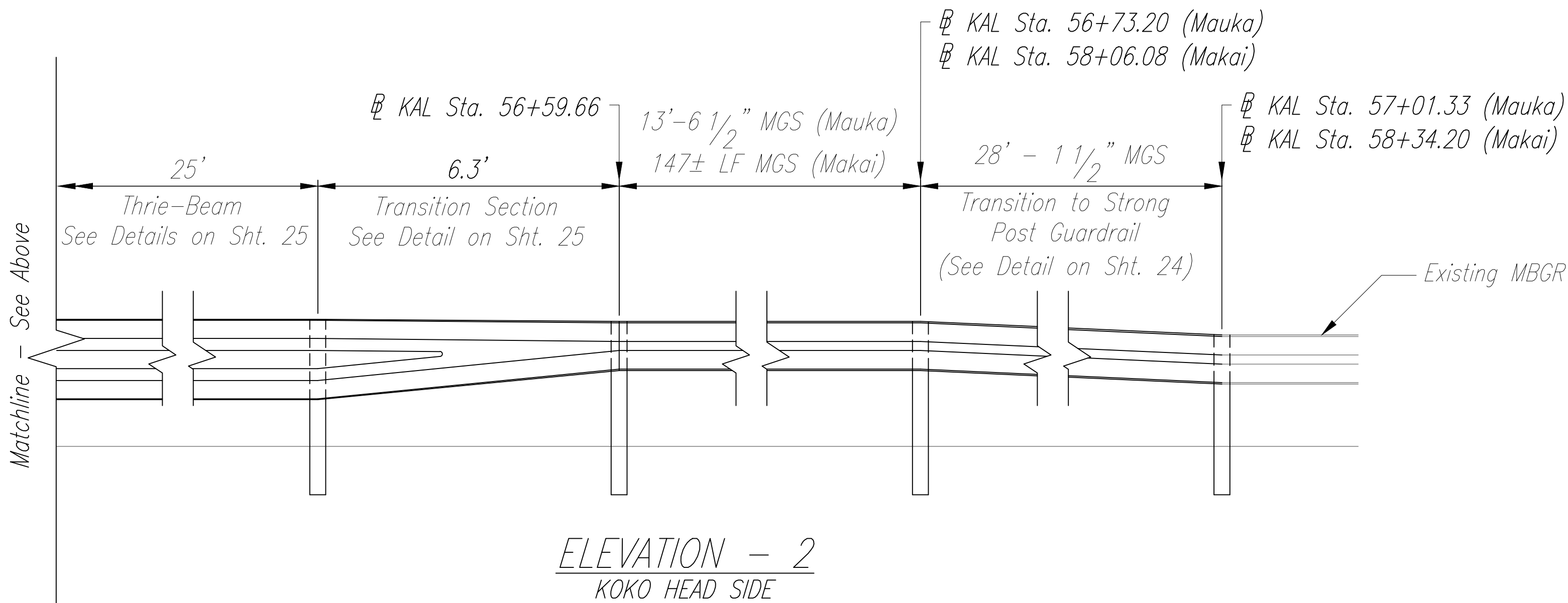


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72C-01-19	2019	20	48



NOTES:

1. See Manufacturer's Product Description Instruction Manual for QuadGuard limitations, details, and installation.
2. See Traffic Signal Foundation Plans on Sht. 29
3. Cross slope of pad shall not exceed 8%, and not vary more than 2% from front to back.
4. Information on this sheet is as provided and manufactured by Trinity Highway.



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS - 2
KALANIANA'OLE HIGHWAY
TRAFFIC SIGNAL INSTALLATION AT WAA ST.
Project No. 72C-01-19

Scale: Not to Scale Date: November 2019

SHEET No. 2 OF 6 SHEETS

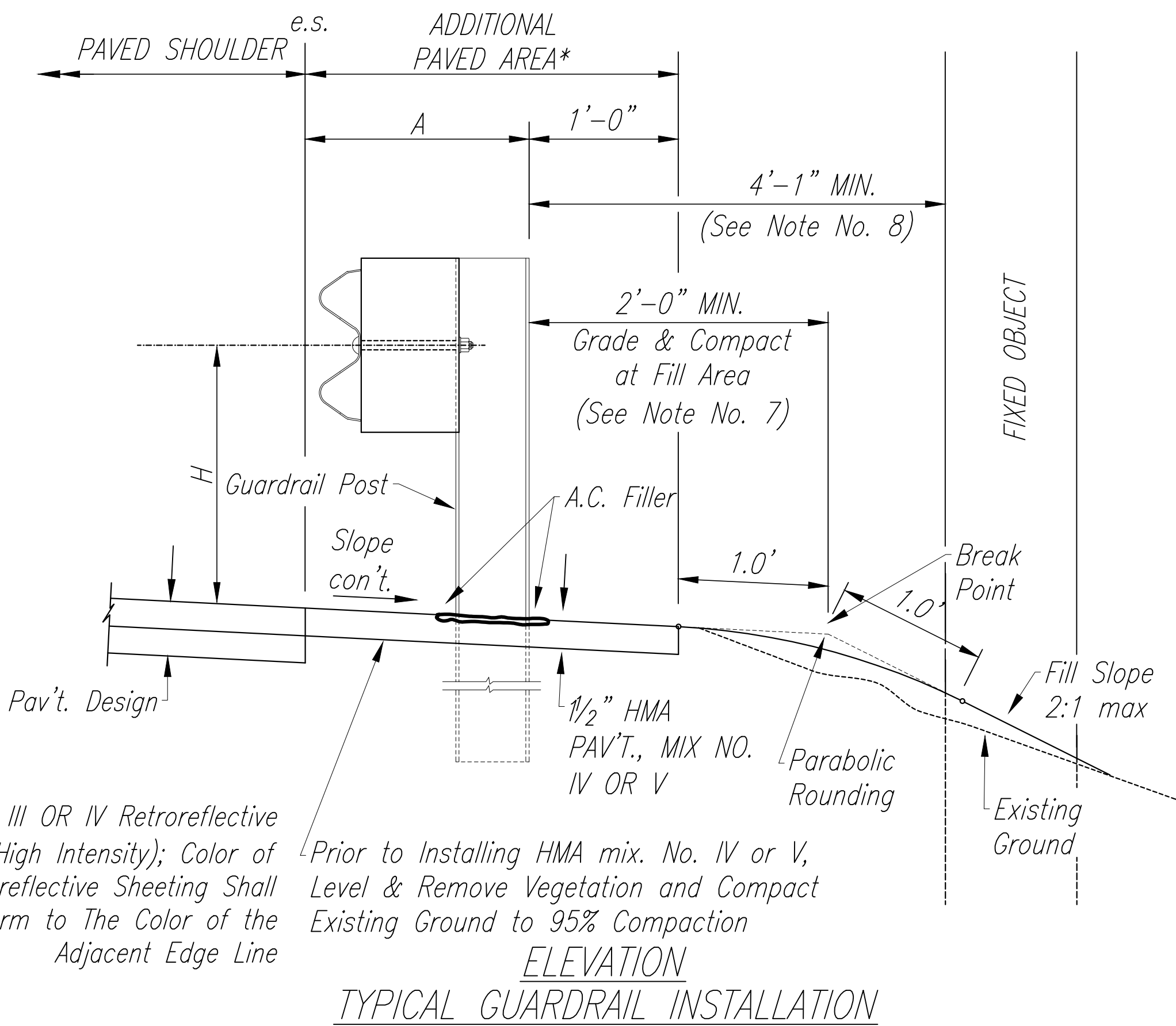
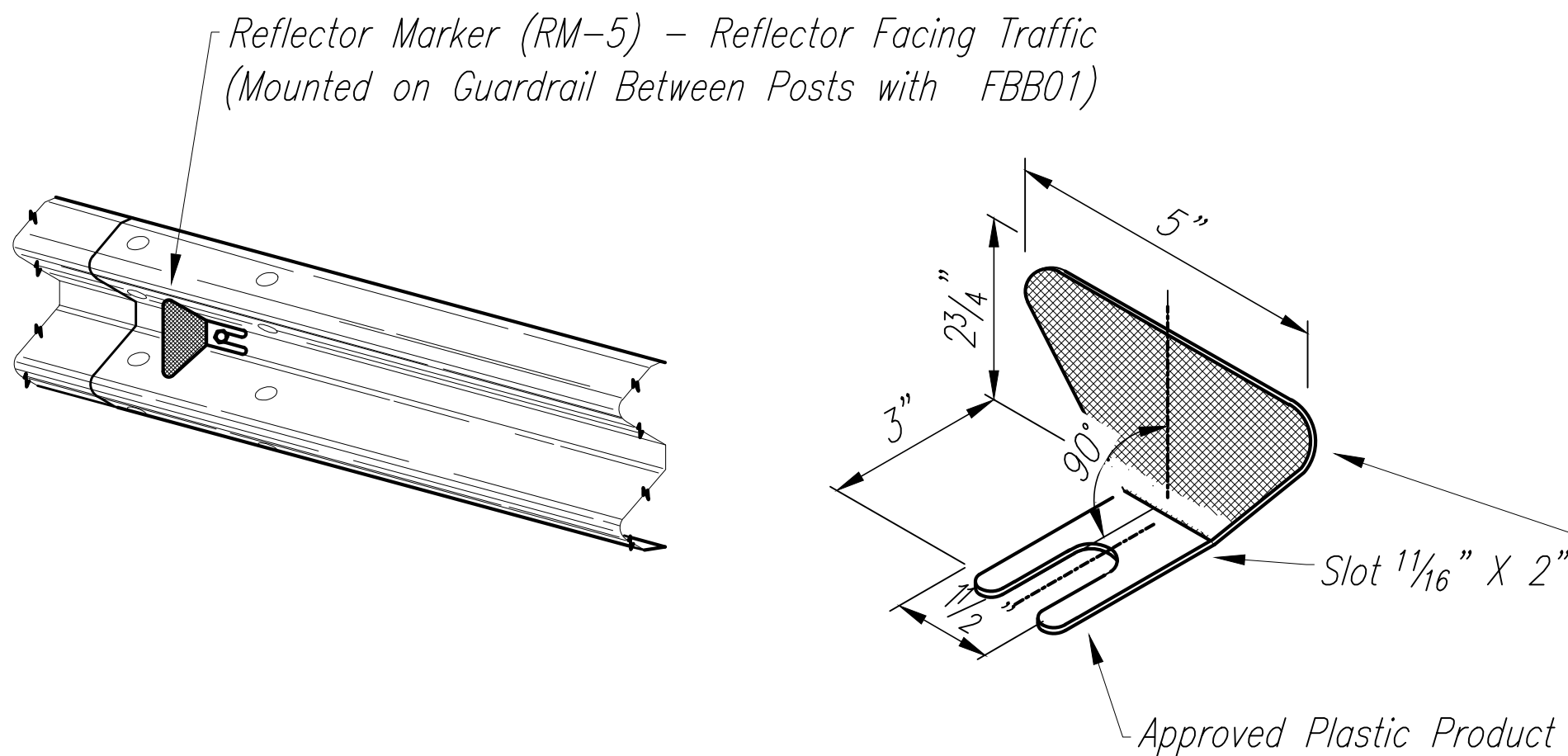
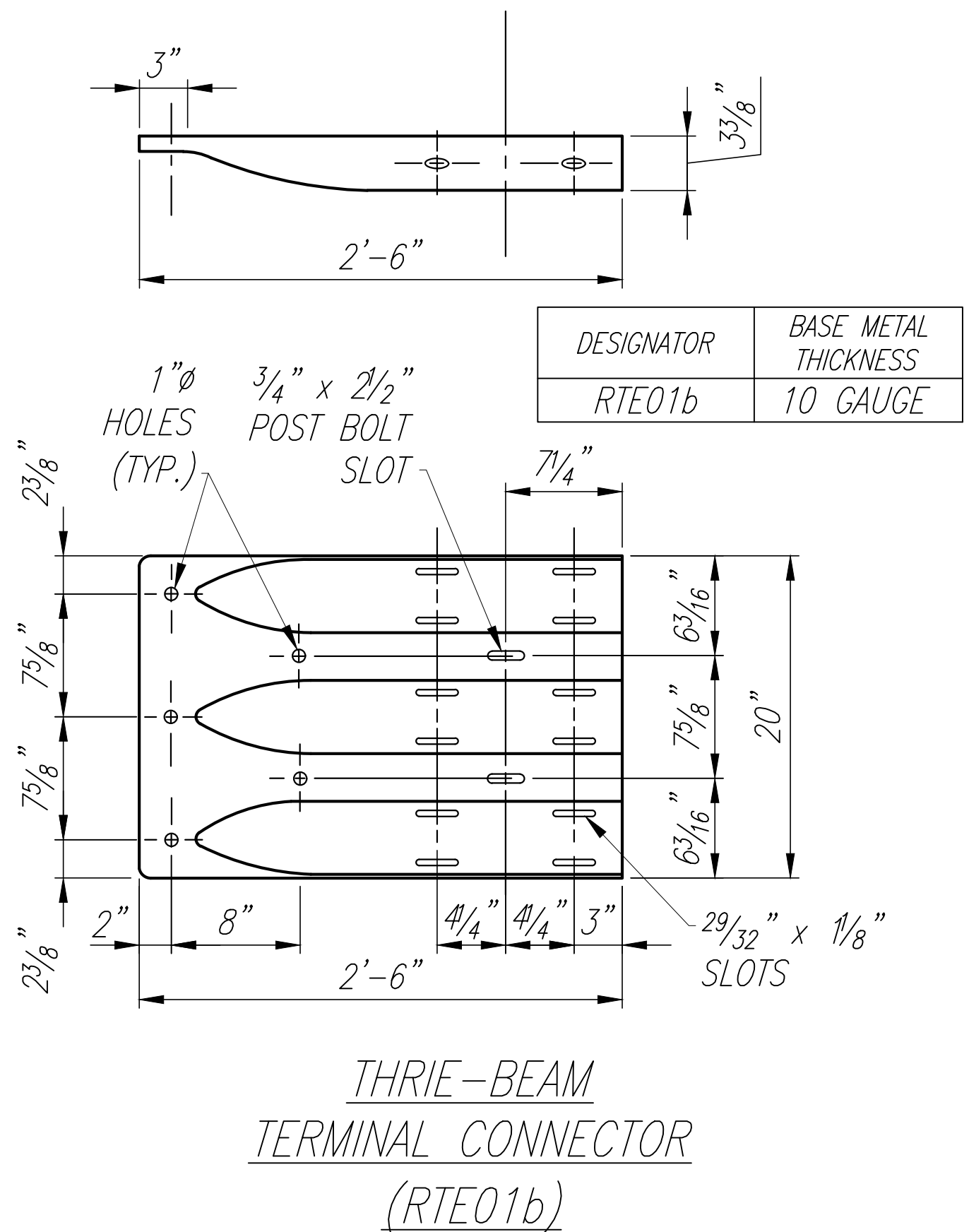
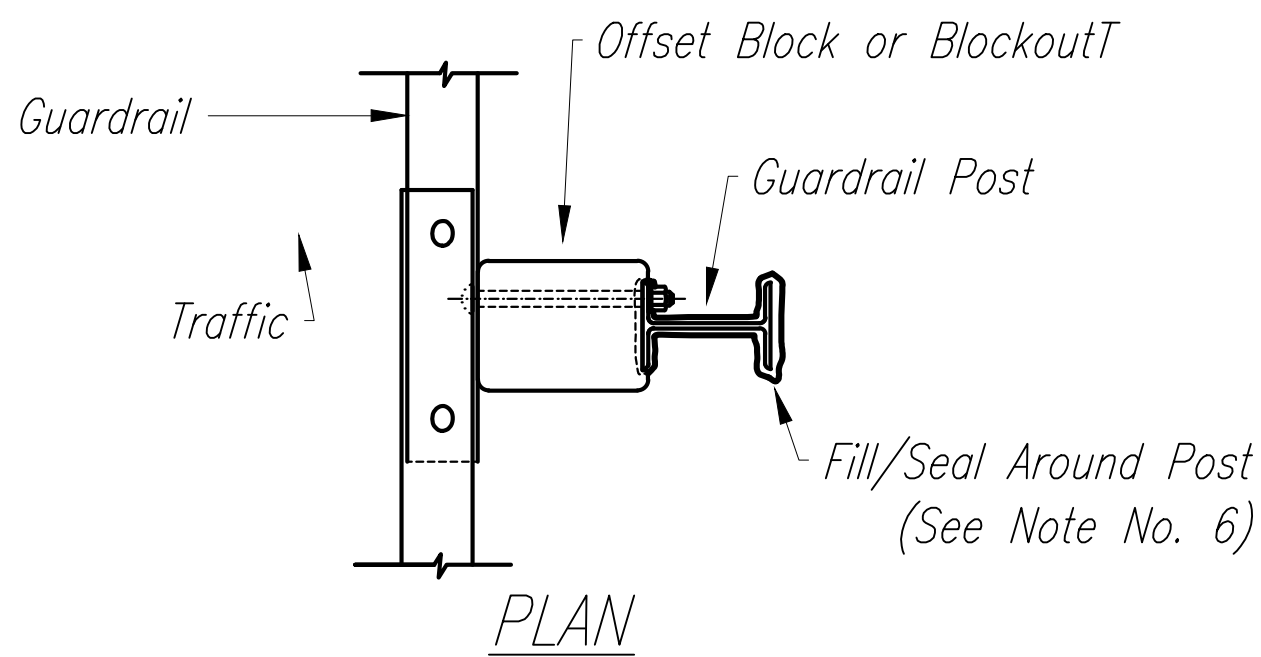
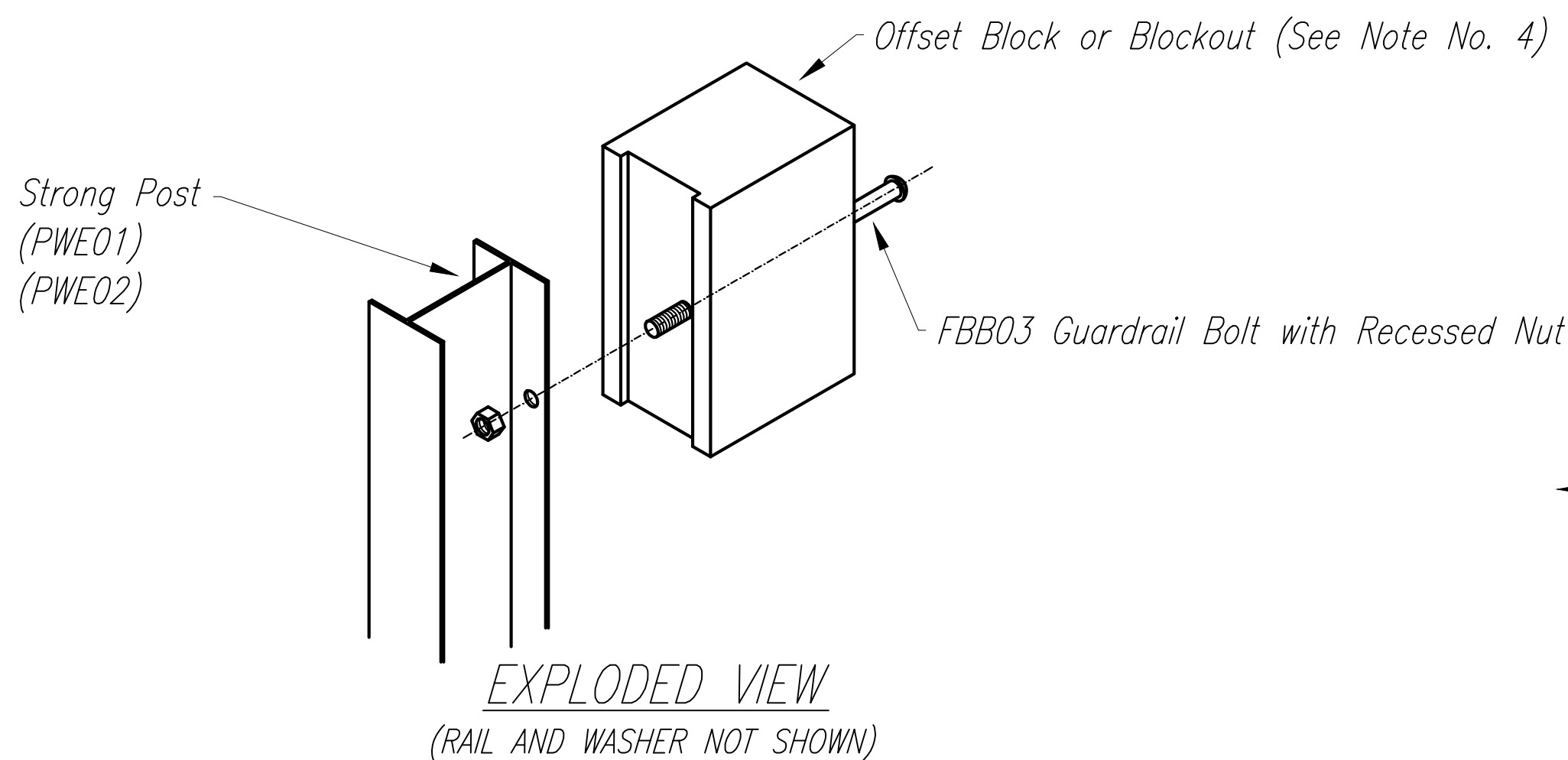
NOTES:

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 fasteners, posts and rail elements have been converted from metric units into their present form.
4. The blockout of offset block shall be approved by the state.

5. All new guardrail systems (systems 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 posts and all cracks in the paved area caused during the guardrail posts 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 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 objects 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.
11. Details shown on this sheet reference the HDOT Statewide Guidance for Permanent Highway Safety Hardware, Memorandum HWY-TD 17-2.0314, and is intended only for the contractor's information. Guardrails including all hardware, posts, spacing, height, etc. shall be installed per manufacturer's guidelines and details.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72C-01-19	2019	21	48



GUARDRAIL TYPE	DIMENSION	
	H	A
MGS W/ STANDARD 8" OFFSET BLOCK	2'-1"	1'-6"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

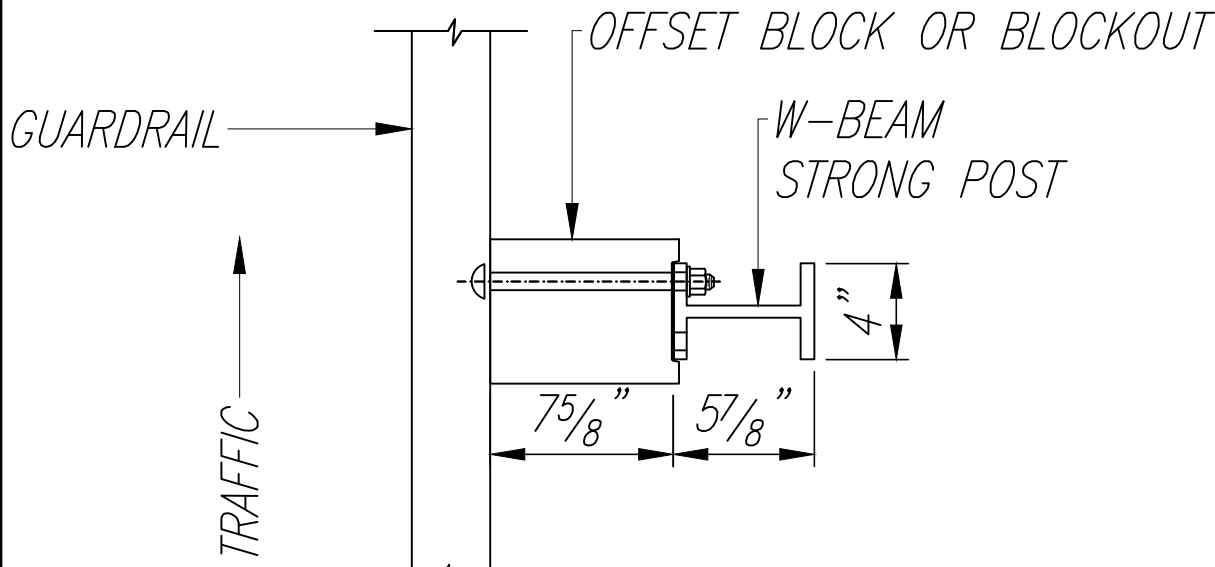
GUARDRAIL DETAILS - 3
KALANIANA'OLE HIGHWAY
TRAFFIC SIGNAL INSTALLATION AT WAA ST.
Project No. 72C-01-19

Scale: Not to Scale Date: November 2019

SHEET No. 3 OF 6 SHEETS

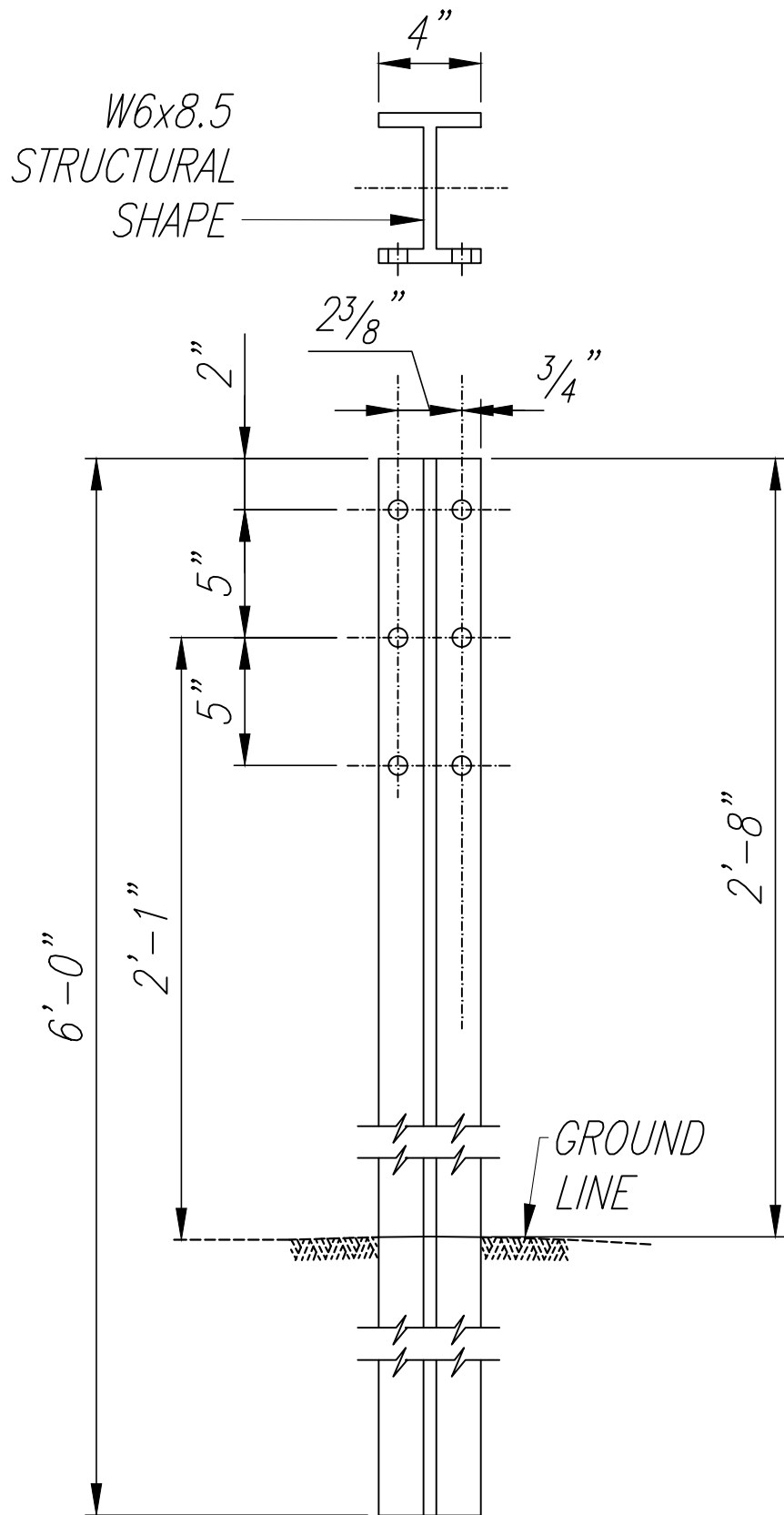
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72C-01-19	2019	22	48



PLAN

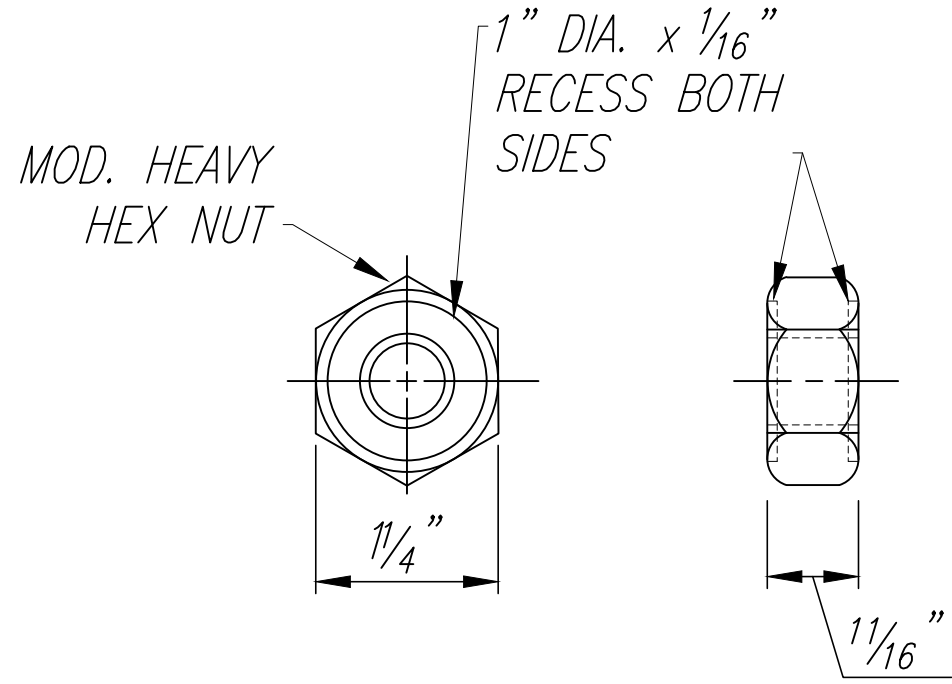
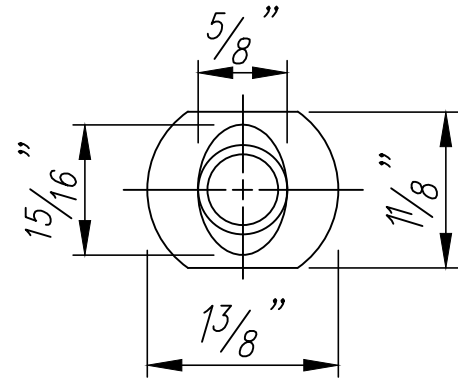
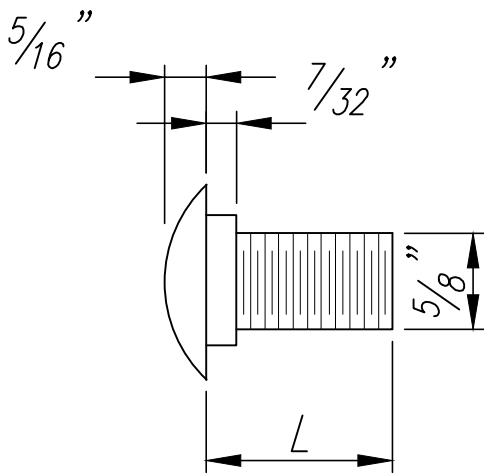
NOTE:
ALL HOLES ARE
3/4" DIA.



FRONT

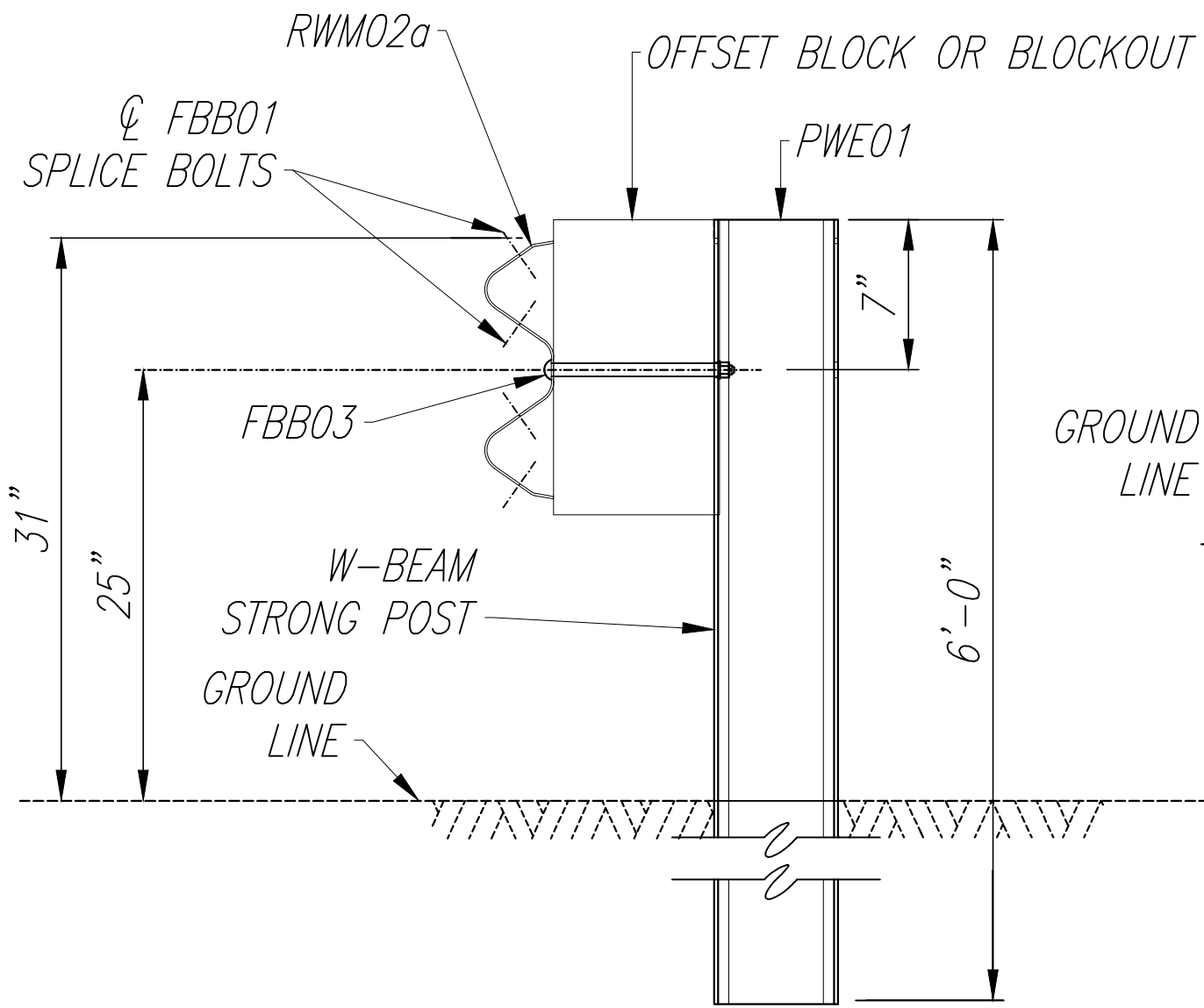
NOTE:

Details shown on this sheet reference the HDOT Statewide Guidance for Permanent Highway Safety Hardware, Memorandum HWY-TD 17-2.0314, and is intended only for the contractor's information. Guardrails including all hardware, posts, spacing, height, etc. shall be installed per manufacturer's guidelines and details.

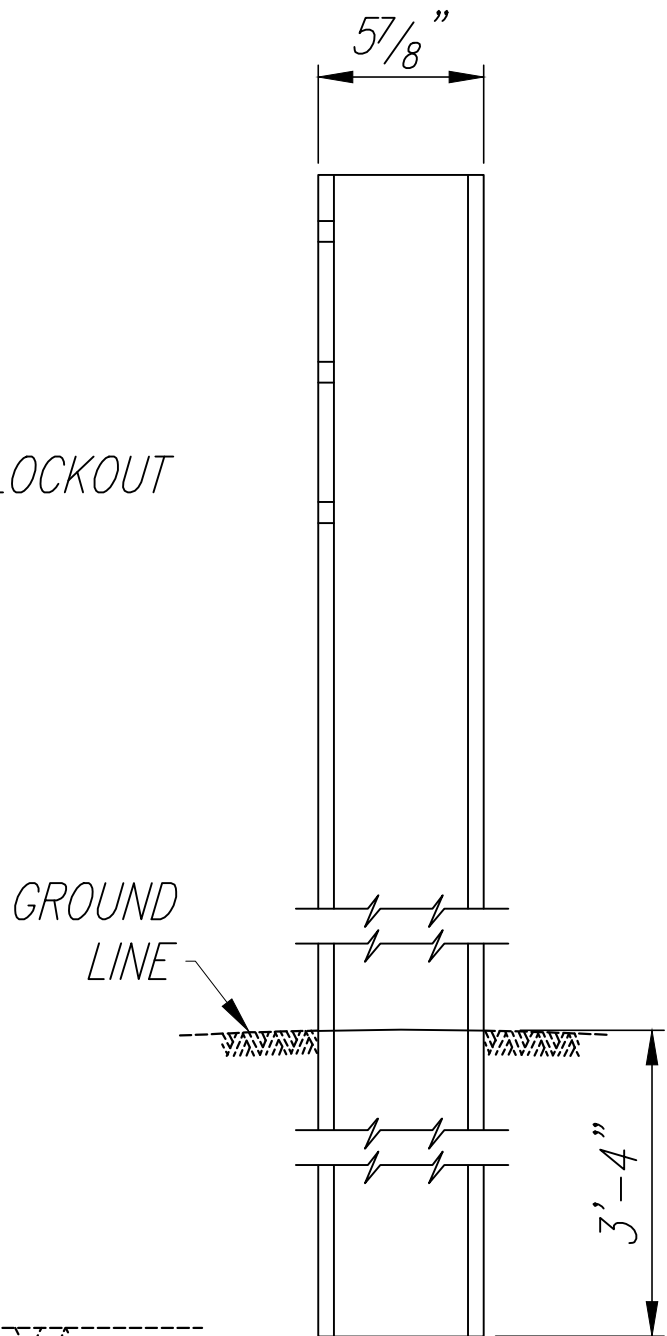


DESIGNATOR	L
FBB01	1 3/8"
FBB02	2"
FBB03	10"

GUARDRAIL BOLTS AND RECESSED NUT



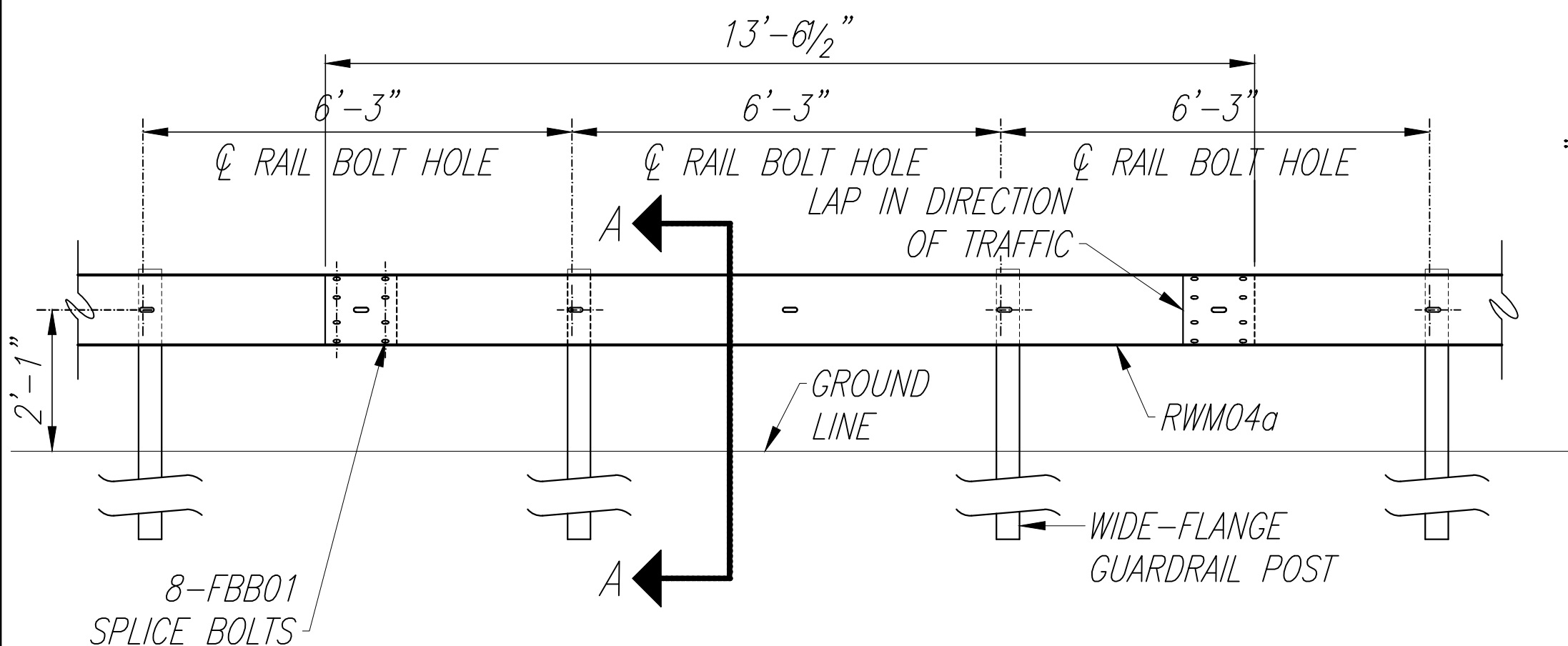
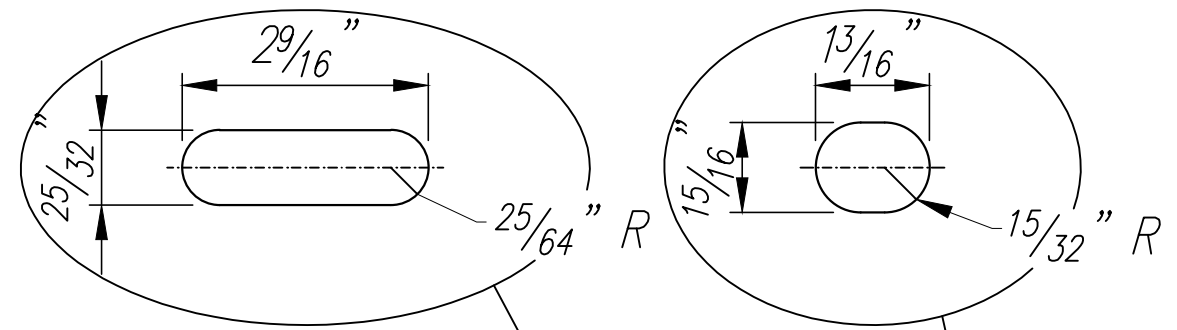
SECTION A-A



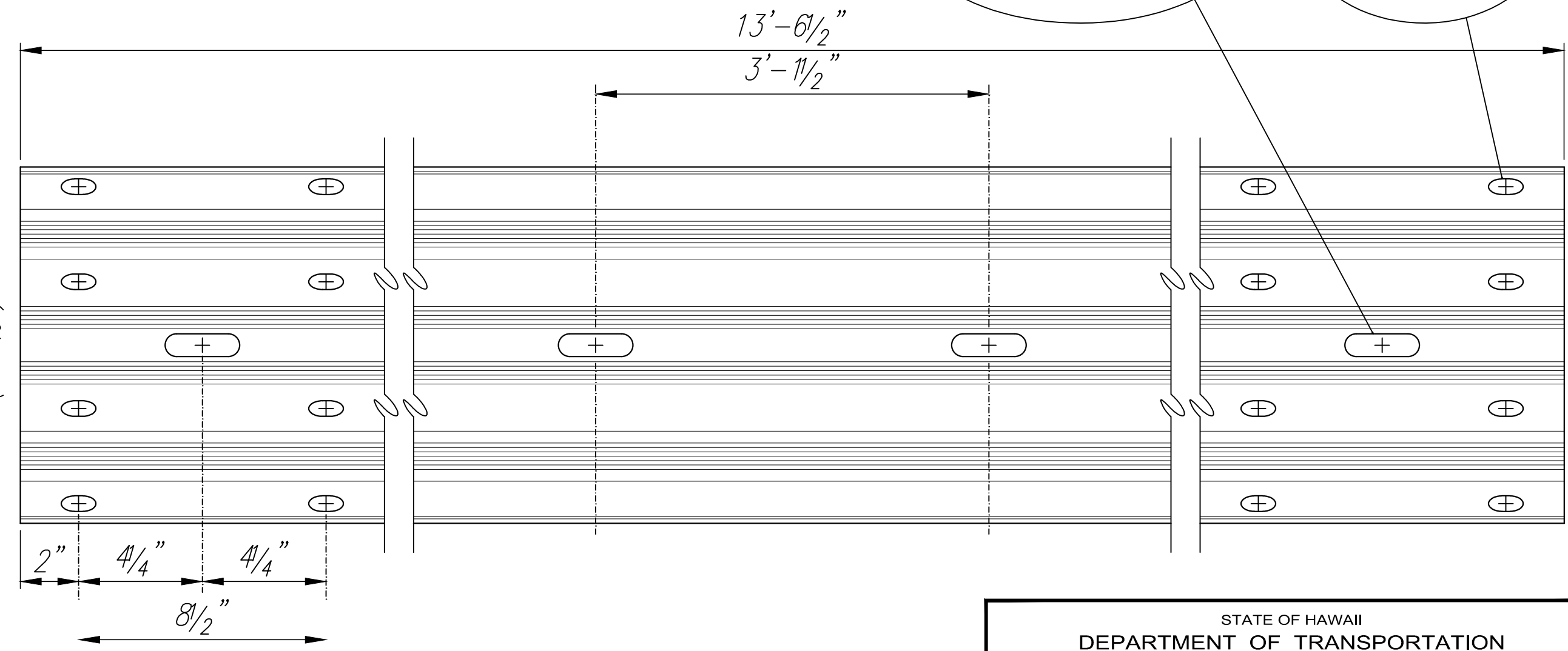
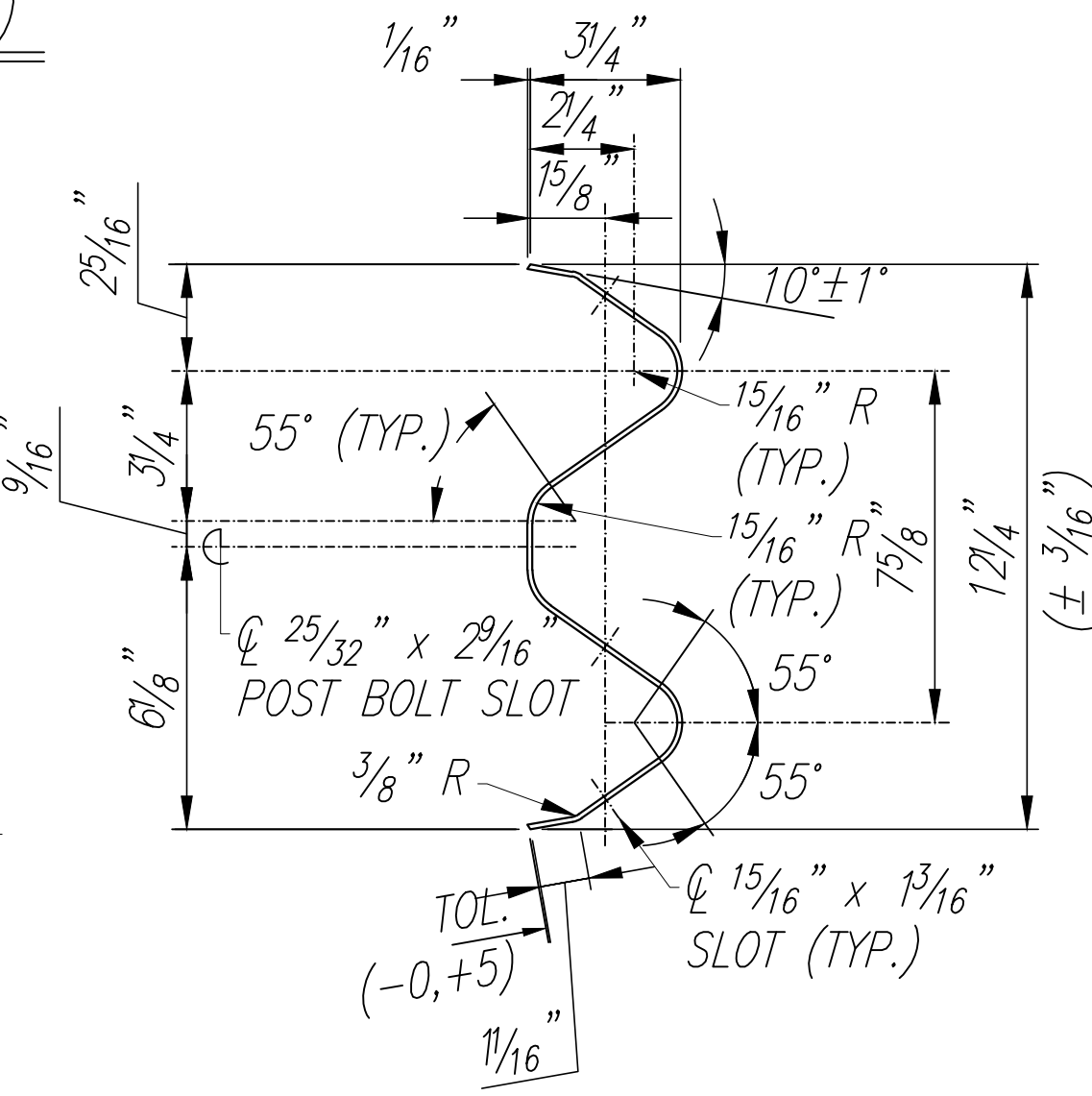
SIDE

W-BEAM STRONG POST
(PWE01)

DESIGNATOR	BASE METAL THICKNESS
RWM04a	12 GAUGE



ELEVATION



4 SPACE W-BEAM GUARDRAIL (RWM04a)

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

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

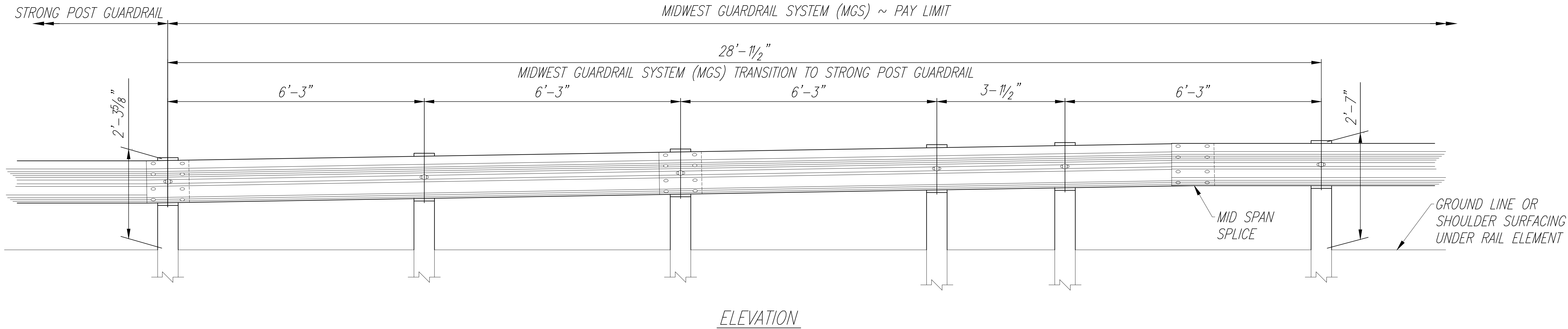
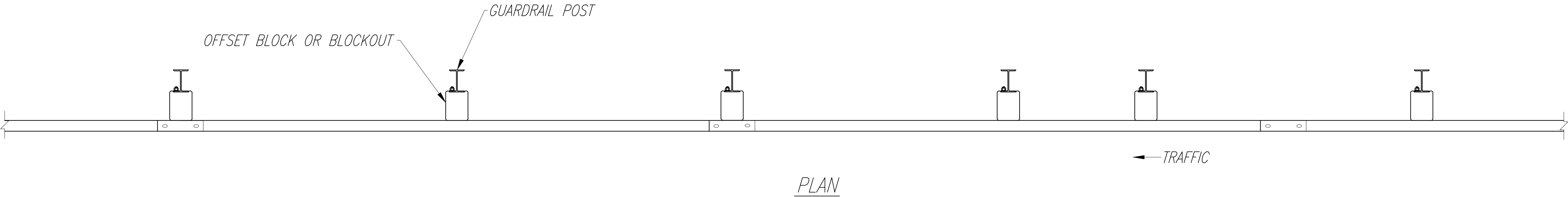
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS - 4
KALANIANA'OLE HIGHWAY
TRAFFIC SIGNAL INSTALLATION AT WAA ST.
Project No. 72C-01-19

Scale: Not to Scale Date: November 2019

SHEET No. 4 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72C-01-19	2019	23	48



MGS TRANSITION TO STRONG POST GUARDRAIL
Not to Scale

NOTE:
Details shown on this sheet reference the HDOT Statewide Guidance for Permanent Highway Safety Hardware, Memorandum HWY-TD 17-2.0314, and is intended only for the contractor's information. Guardrails including all hardware, posts, spacing, height, etc. shall be installed per manufacturer's guidelines and details.

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

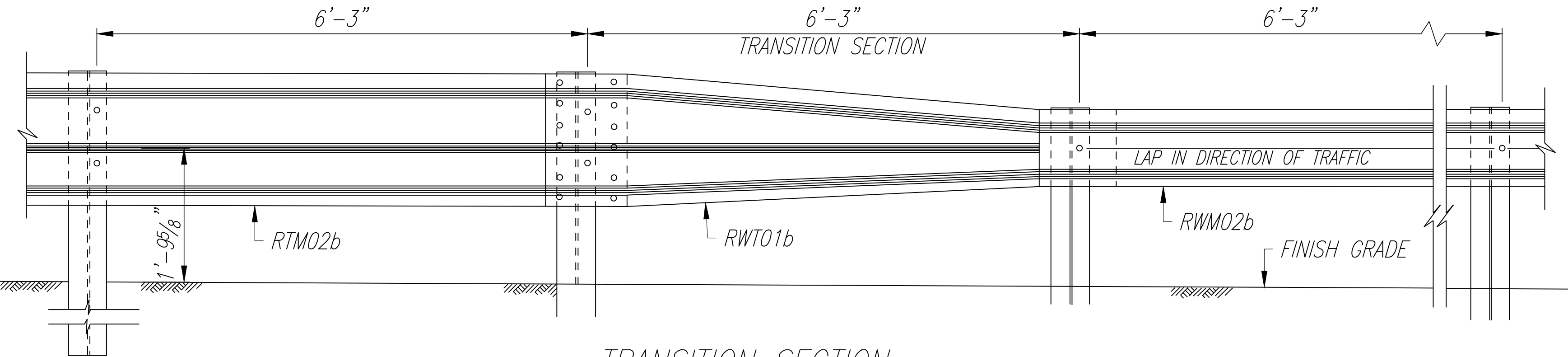
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS - 5
KALANIANA'OLE HIGHWAY
TRAFFIC SIGNAL INSTALLATION AT WAA ST.
Project No. 72C-01-19

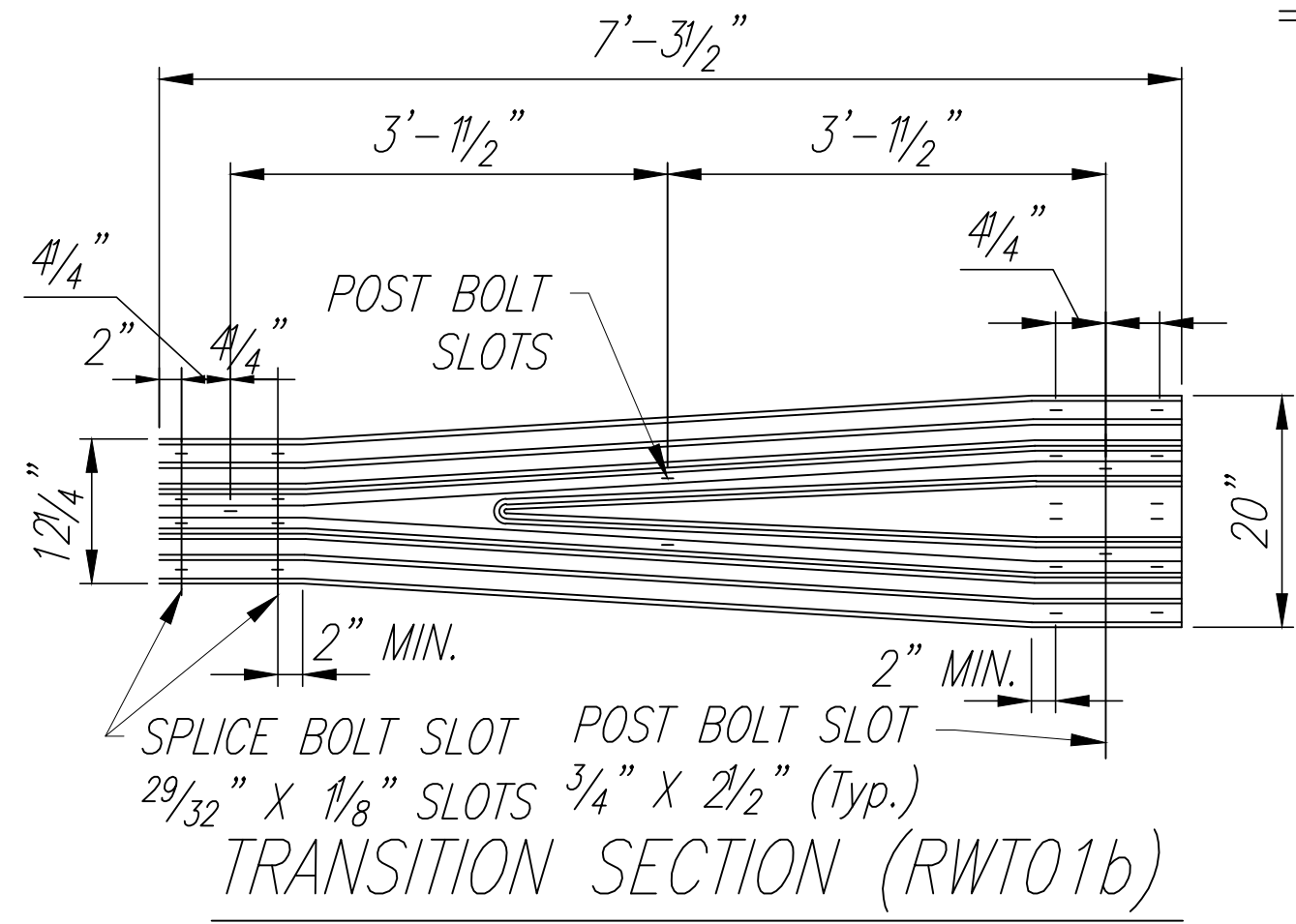
Scale: Not to Scale Date: November 2019

SHEET No. 5 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72C-01-19	2019	24	48

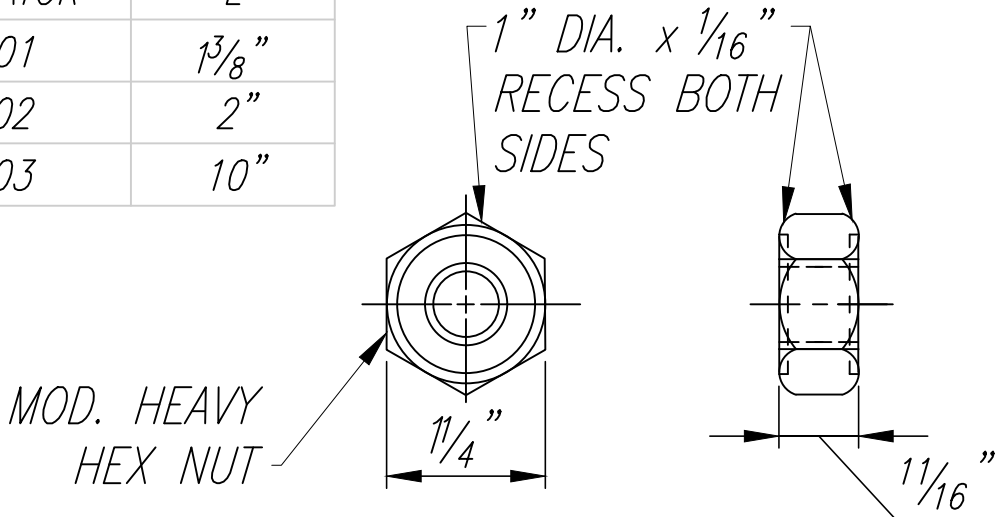


TRANSITION SECTION

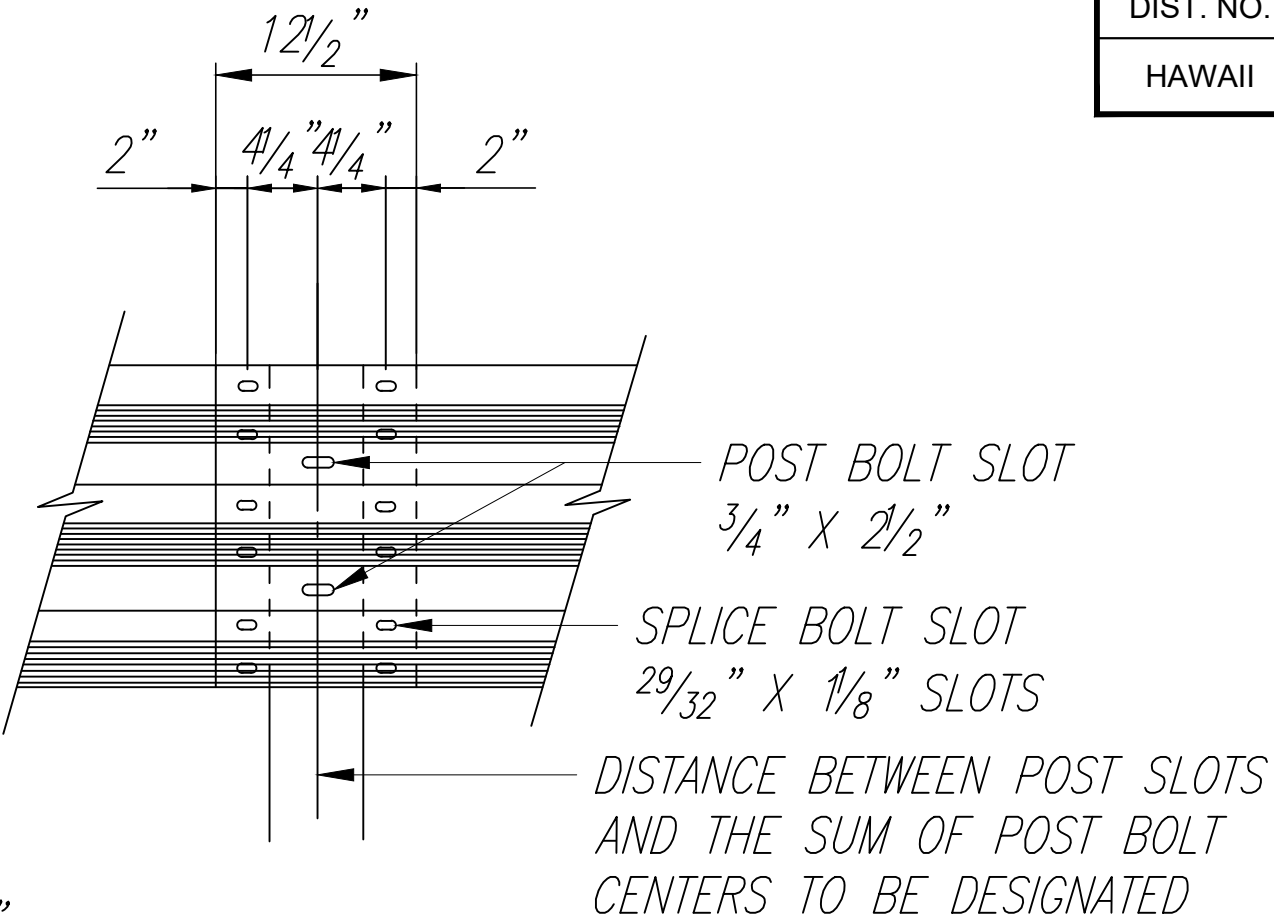


TRANSITION SECTION (RWT01b)

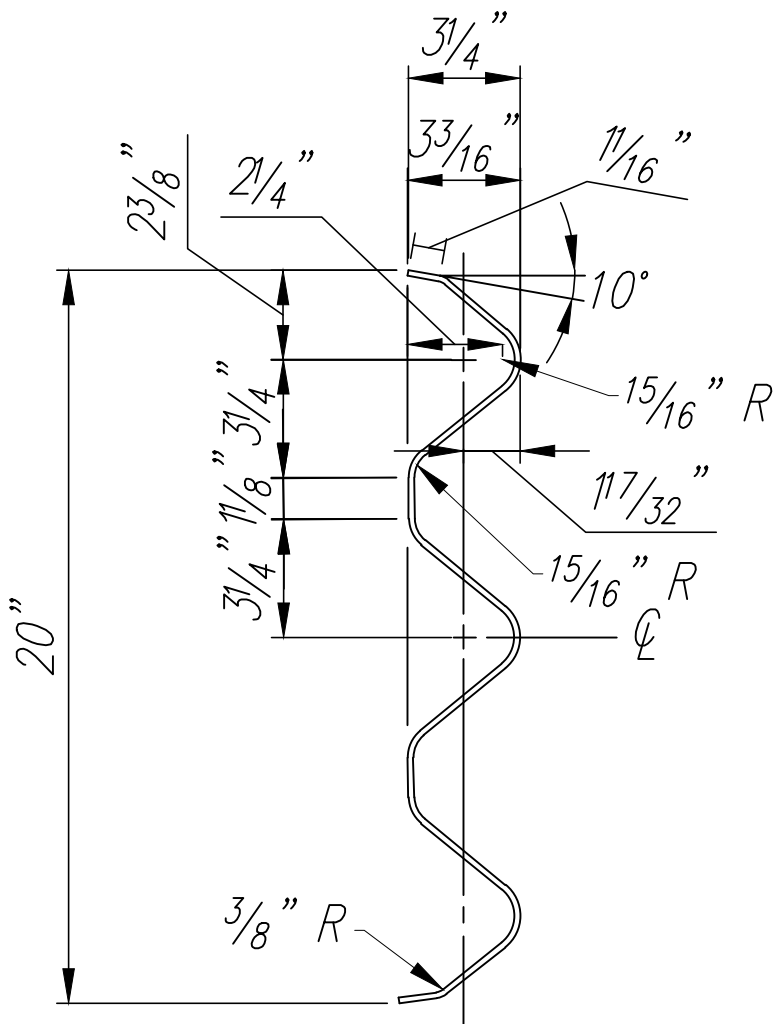
DESIGNATOR	L
FBB01	13/8"
FBB02	2"
FBB03	10"



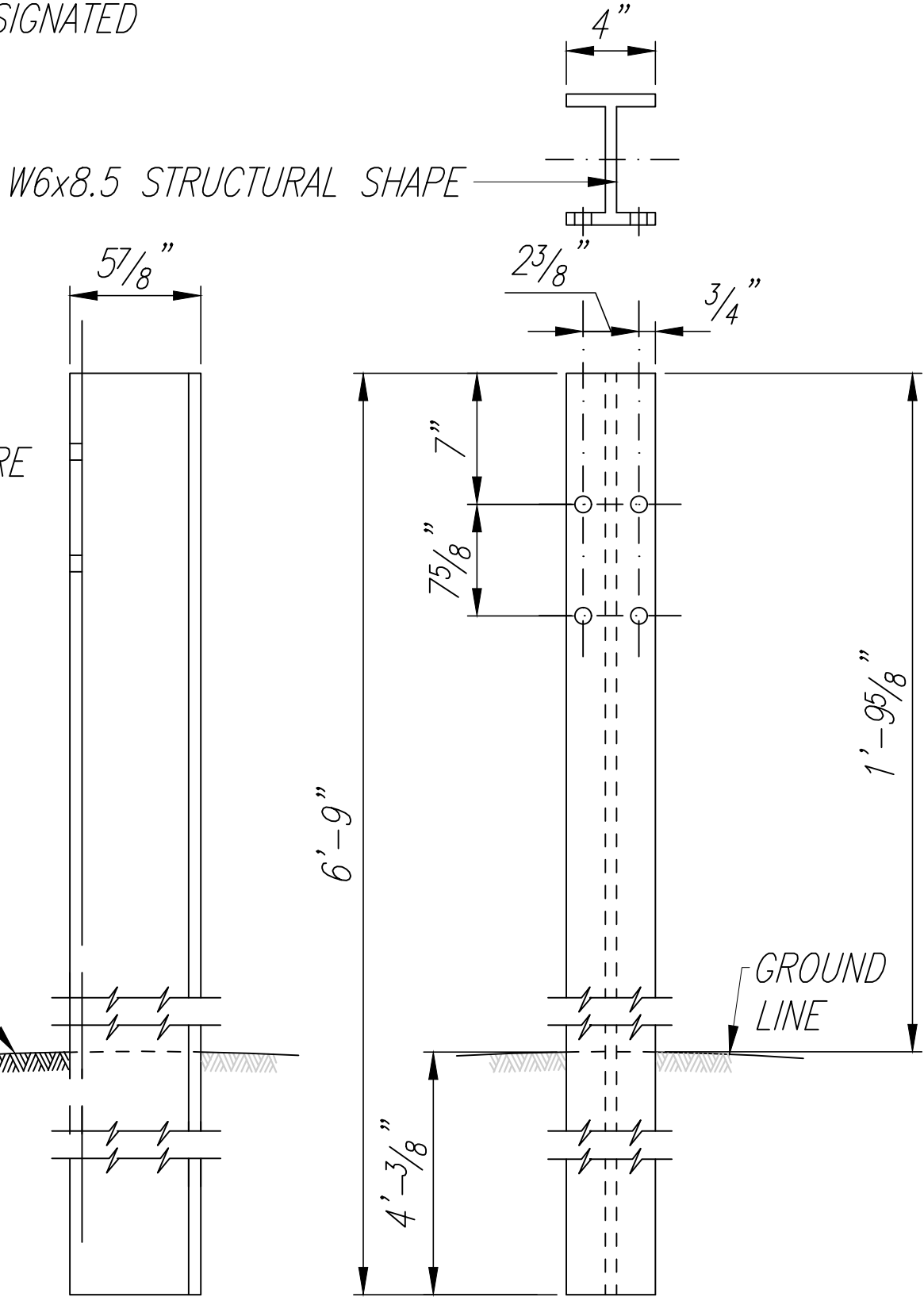
GUARDRAIL BOLTS AND RECESSED NUT



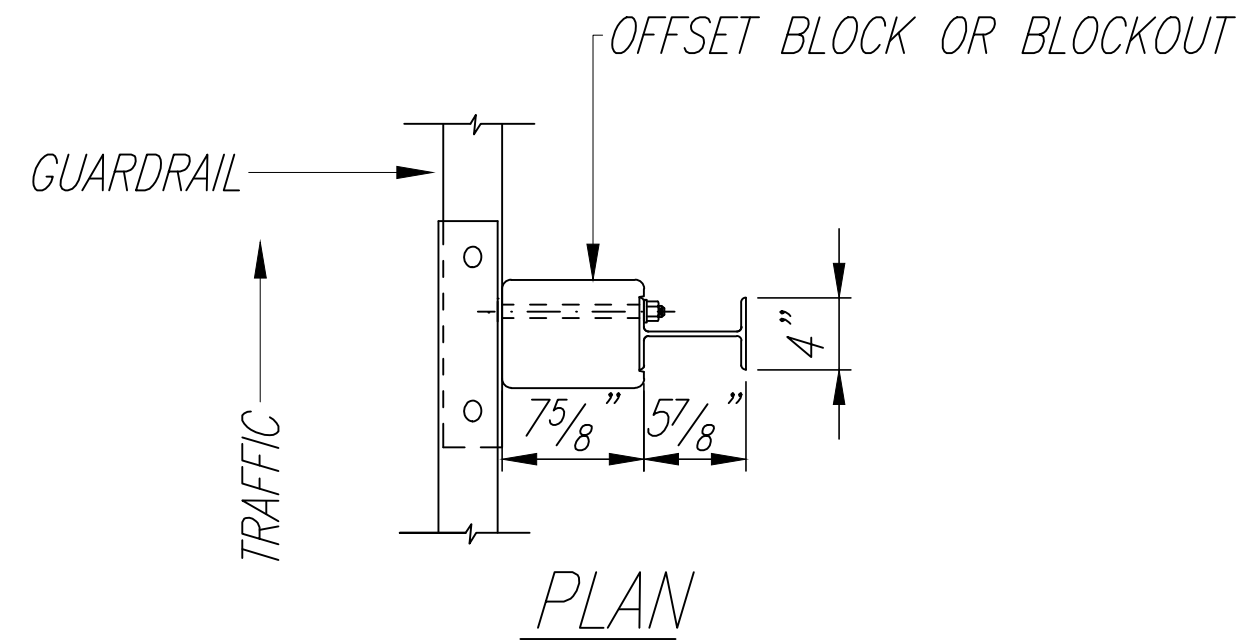
RAIL SPLICE



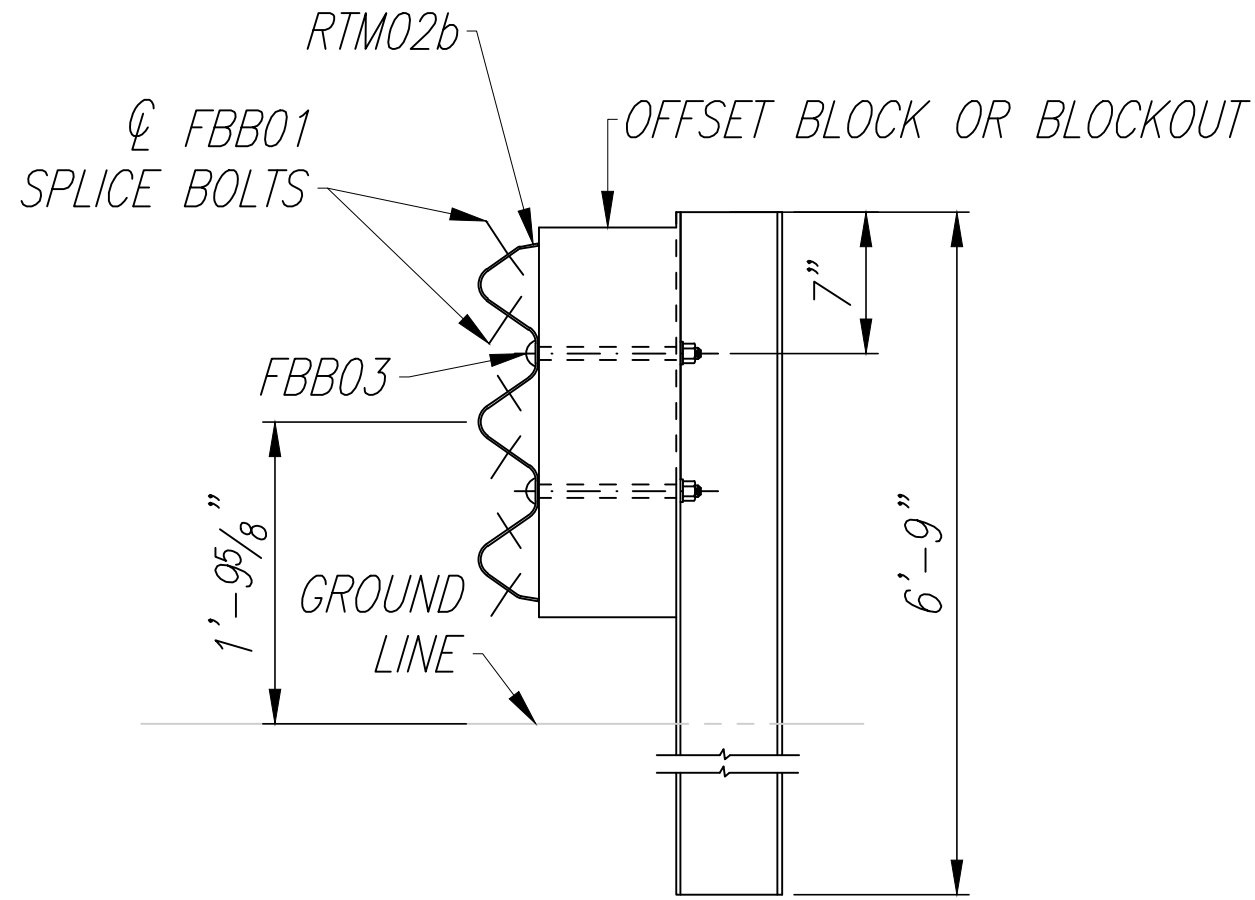
SECTION THRU RAIL ELEMENT (RTM02b)



SIDE THRIE-BEAM STRONG POST FOR PLASTIC SPACER BLOCKS

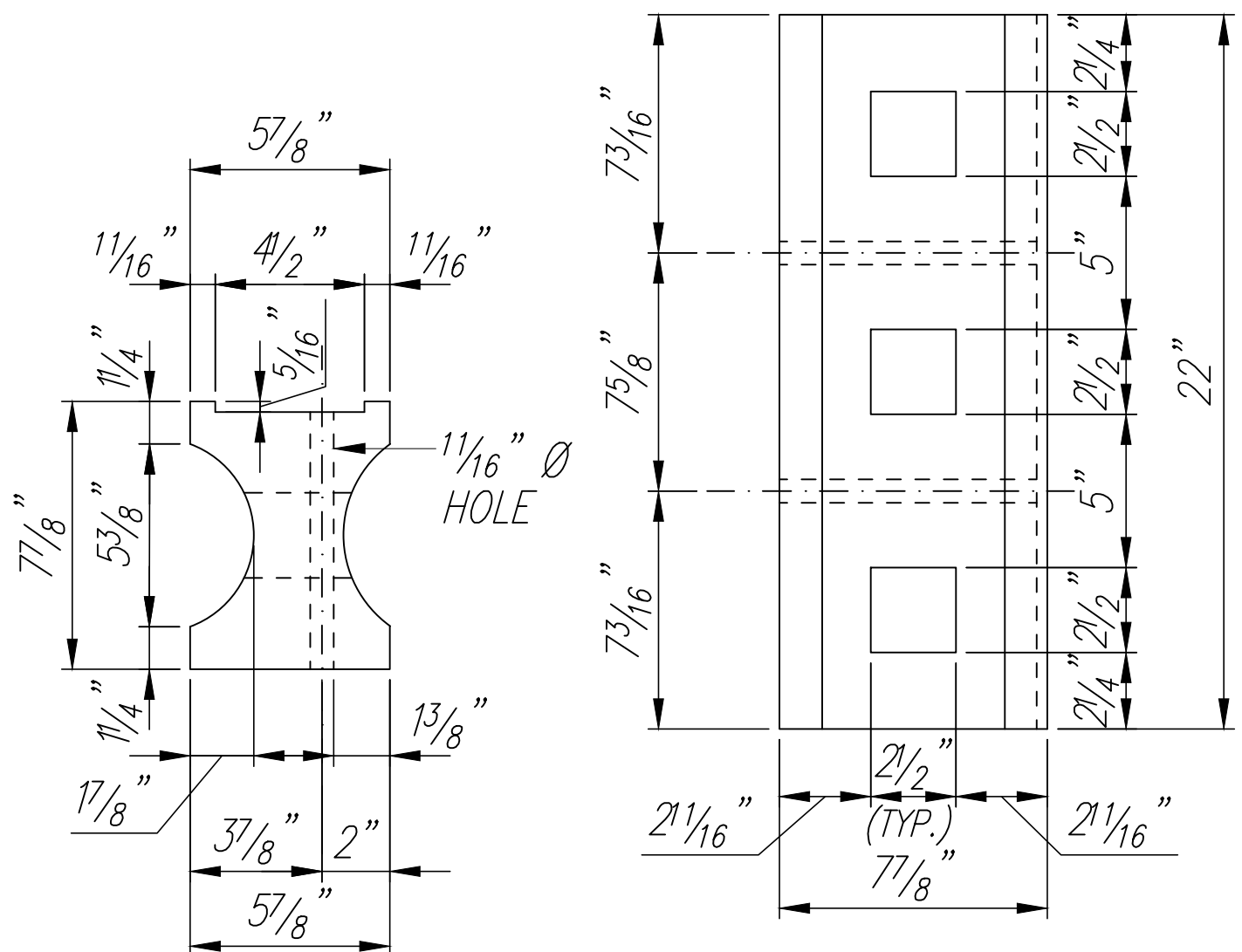


PLAN



ELEVATION

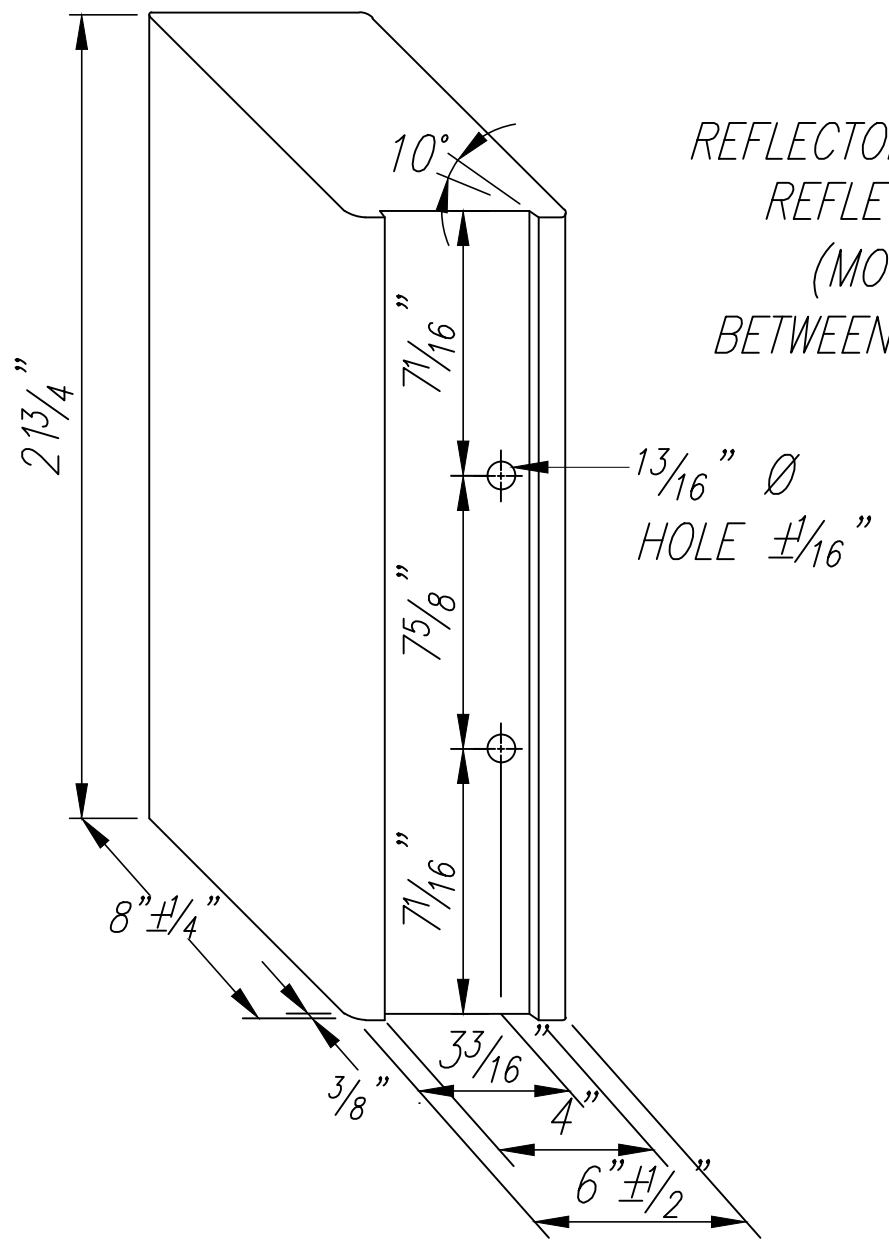
STRONG POST THRIE-BEAM GUARDRAIL (SGR09a)



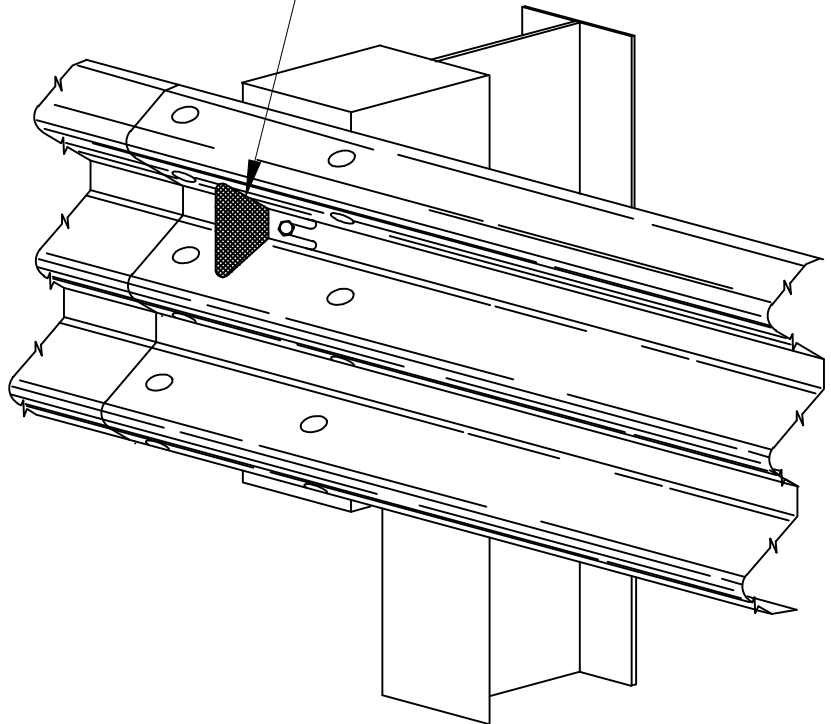
TOP

SIDE

MODIFIED 6X8X22 PLASTIC BLOCKOUT (TYPE I-THRIE)



RECYCLED POLYETHYLENE THRIE-BEAM OFFSET BLOCK (TYPE II - THRIE)



TYPICAL INSTALLATION OF REFLECTOR MARKER (RM-5)

NOTE:
Details shown on this sheet reference the HDOT Statewide Policy for Permanent Highway Safety Hardware, Memorandum HWY-TD 2.2822, and is intended only for the contractor's information. Guardrails including all hardware, posts, spacing, height, etc. shall be installed per manufacturer's guidelines and details.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS - 6
KALANIANA'OLE HIGHWAY
TRAFFIC SIGNAL INSTALLATION AT WAA ST.
Project No. 72C-01-19

Scale: Not to Scale Date: November 2019

SHEET No. 6 OF 6 SHEETS