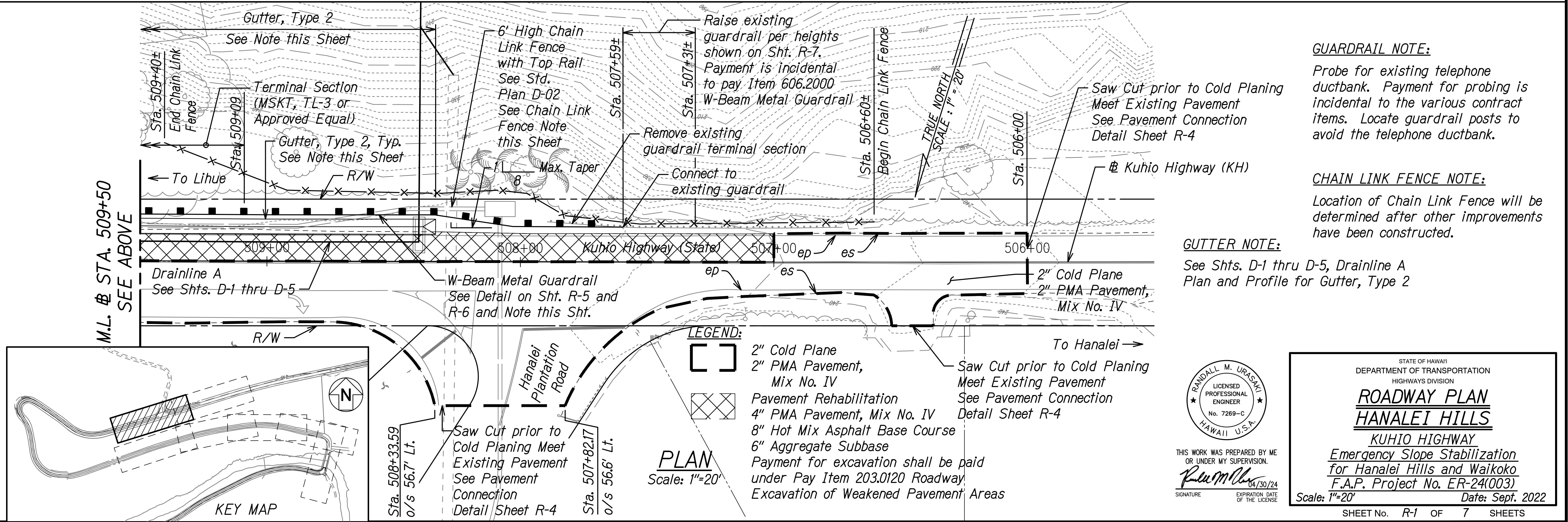
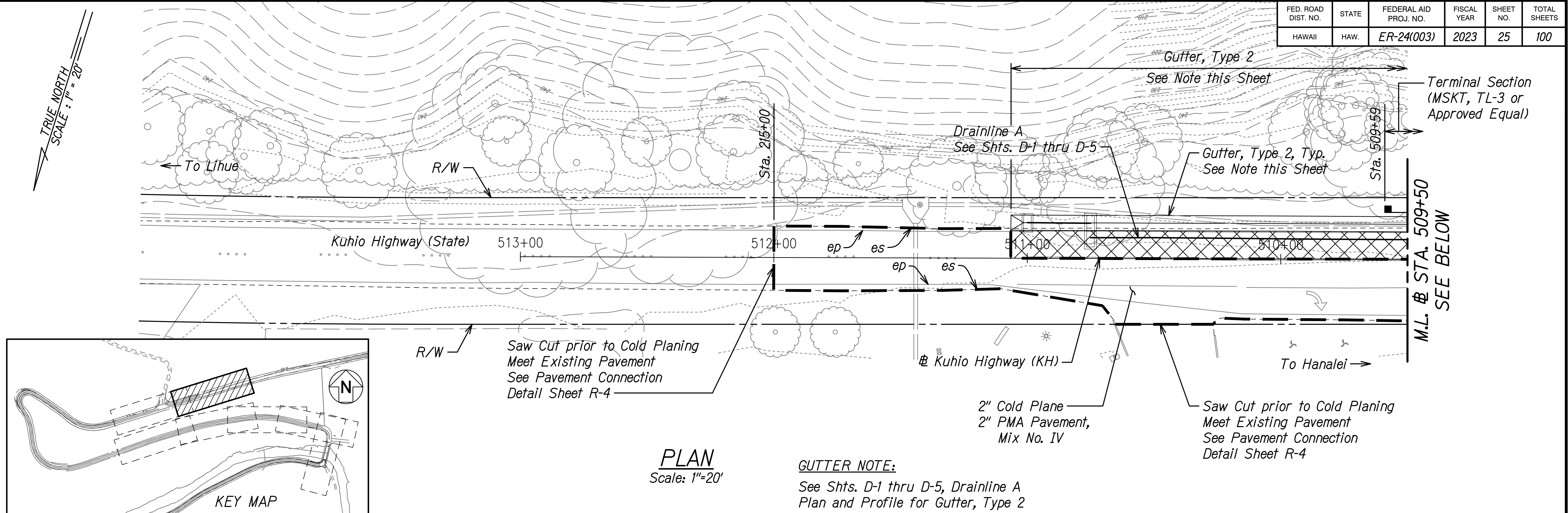


FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-24(003)	2023	25	100



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**ROADWAY PLAN
HANAIEI HILLS**

KUHIO HIGHWAY
Emergency Slope Stabilization
for Hanalei Hills and Waikoko
F.A.P. Project No. ER-24(003)

Scale: 1"=20' Date: Sept. 2022

SHEET No. R-1 OF 7 SHEETS

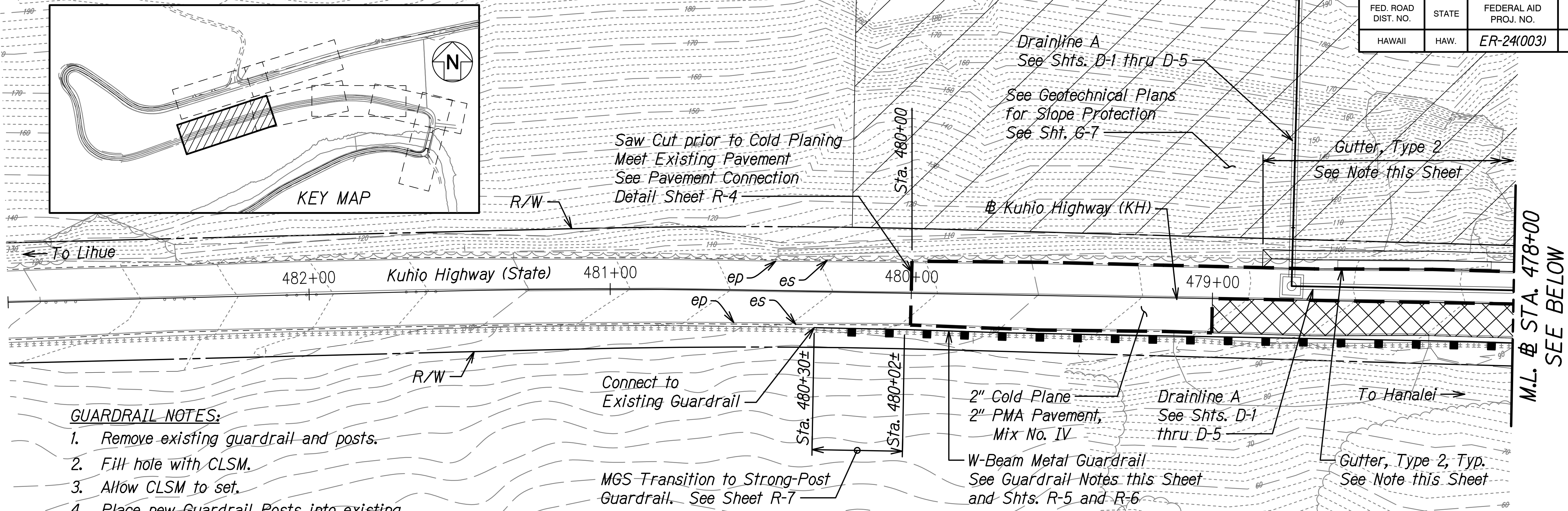
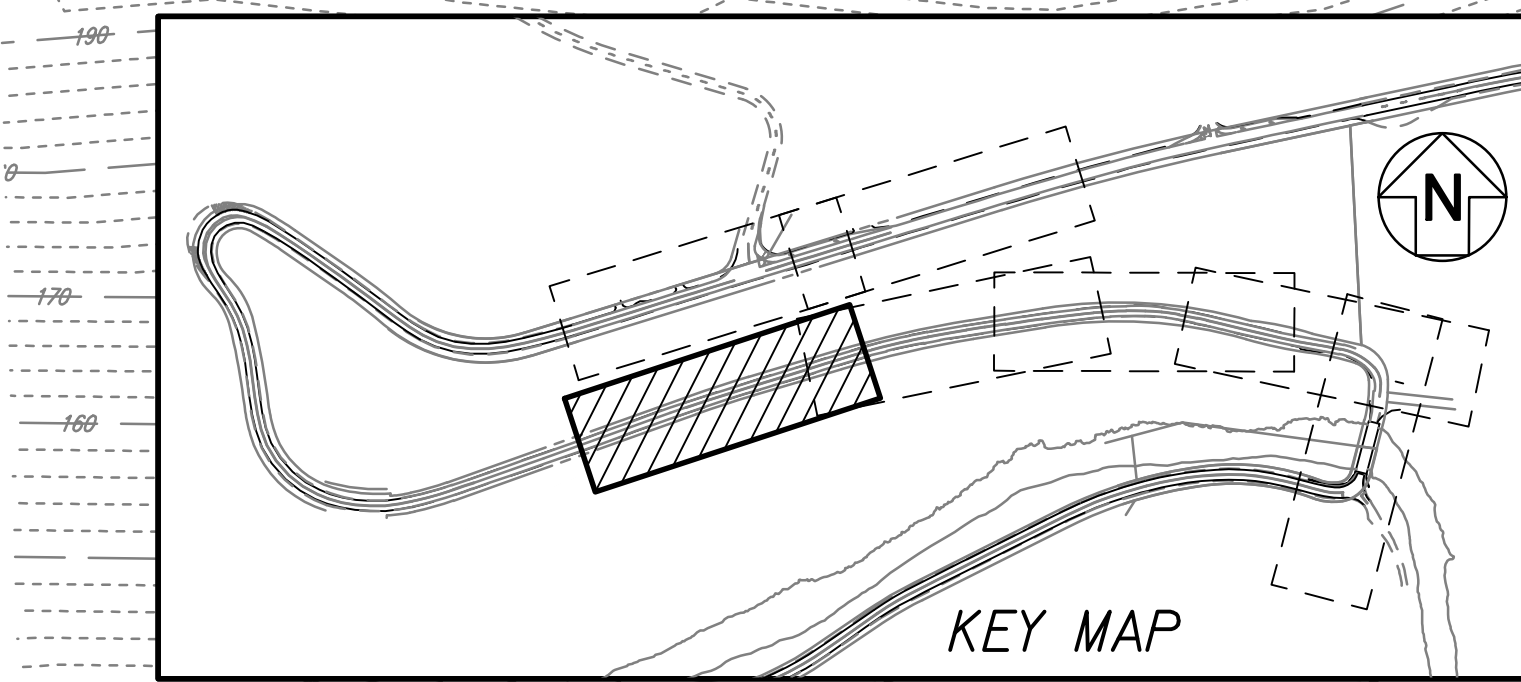
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Randall M. Urasaki
SIGNATURE

04/30/24
EXPIRATION DATE OF THE LICENSE

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-24(003)	2023	ADD. 26	100

TRUE NORTH
SCALE: 1"=20'



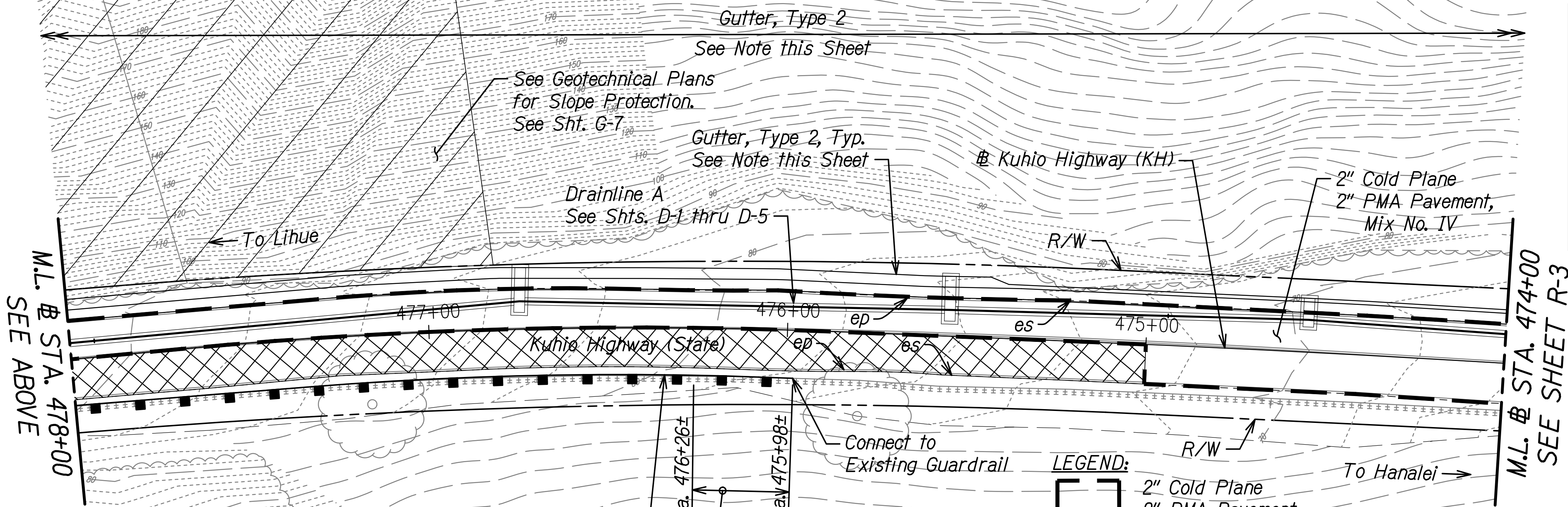
- GUARDRAIL NOTES:**
1. Remove existing guardrail and posts.
 2. Fill hole with CLSM.
 3. Allow CLSM to set.
 4. Place new Guardrail Posts into existing hole to avoid existing Soil Nails.
 5. Begin and End of Guardrail Limits shall be verified by the Engineer.

PLAN
Scale: 1"=20'

GUTTER NOTE:
See Shts. D-1 thru D-5, Drainline A Plan and Profile for Gutter, Type 2

DRAINLINE NOTE:
For pavement restoration over drainline trench, see Typical Trench Restoration Detail on Sheet R-7.

TRUE NORTH
SCALE: 1"=20'



DRAINLINE NOTE:
For pavement restoration over drainline trench, see Typical Trench Restoration Detail on Sheet R-7.

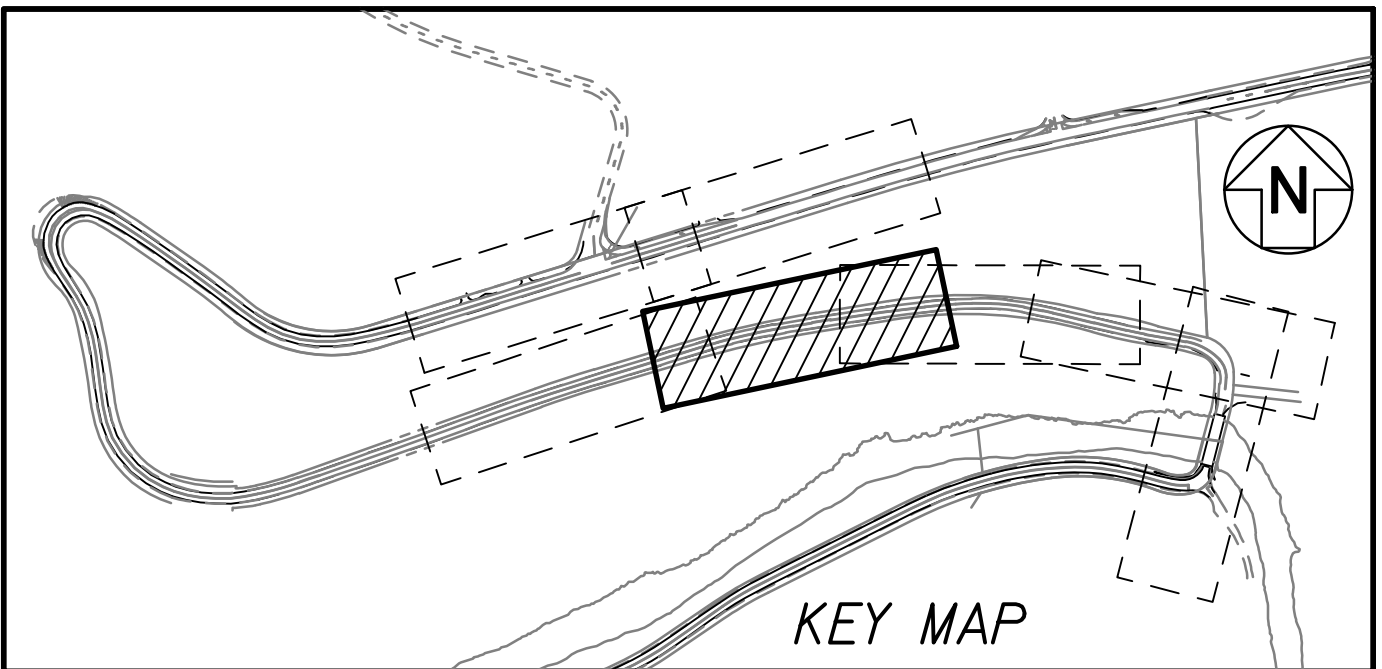
GUTTER NOTE:
See Shts. D-1 thru D-5, Drainline A Plan and Profile for Gutter, Type 2

W-Beam Metal Guardrail
See Guardrail Notes this Sheet and Shts. R-5 and R-6

MGS Transition to Strong Post
Guardrail. See Sht. R-7

PLAN
Scale: 1"=20'

- LEGEND:**
- 2" Cold Plane
 - 2" PMA Pavement, Mix No. IV
 - Pavement Rehabilitation
 - 4" PMA Pavement, Mix No. IV
 - 8" Hot Mix Asphalt Base Course
 - 6" Aggregate Subbase
 - Payment for excavation shall be paid under Pay Item 203.0120 Roadway Excavation of Weakened Pavement Areas



DATE	_____
SURVEY PLOTTED BY	_____
DESIGNED BY	_____
TRACED BY	_____
NOTE BOOK	_____
DESIGNED BY	_____
CHECKED BY	_____
No.	_____

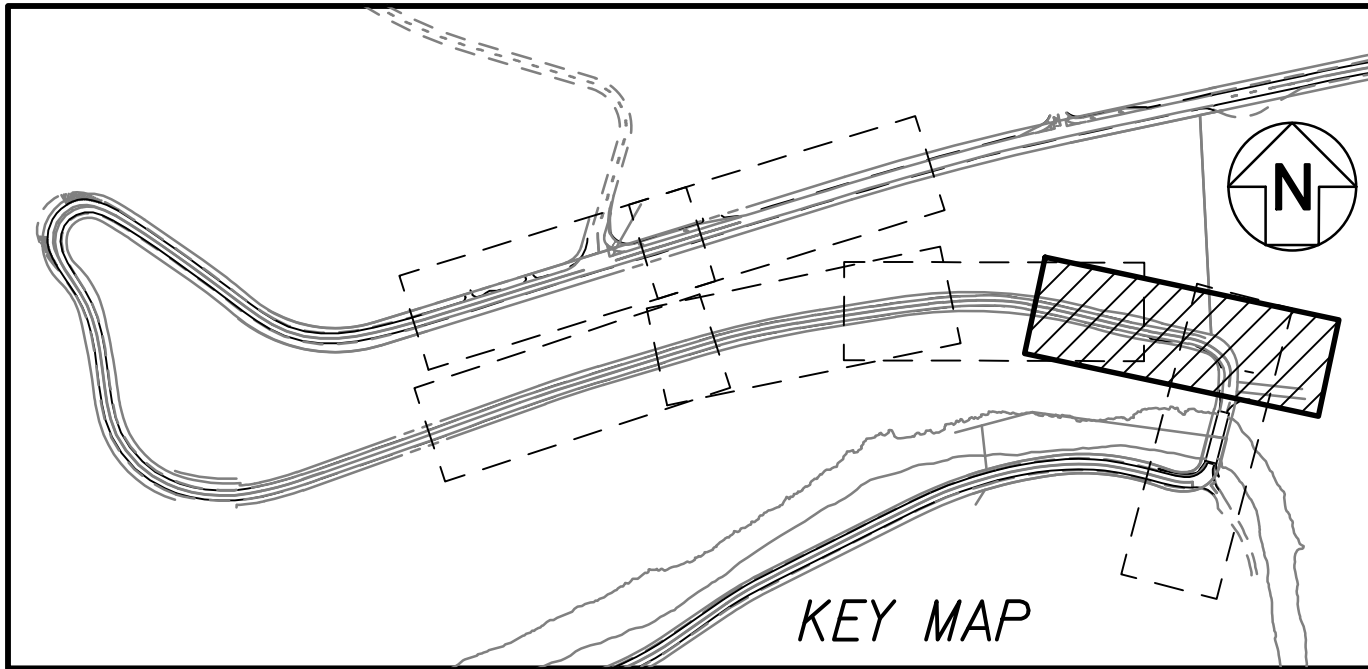
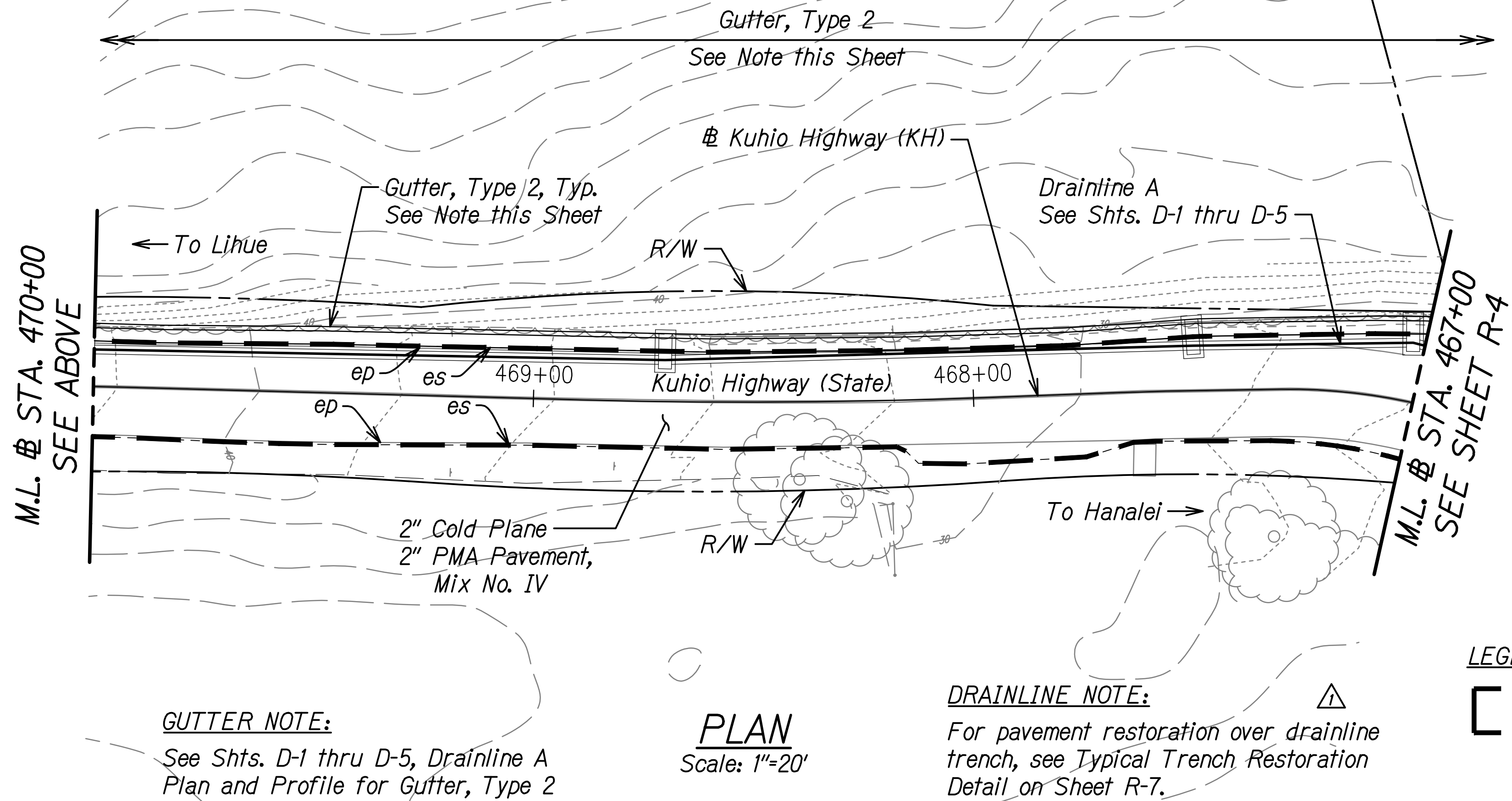
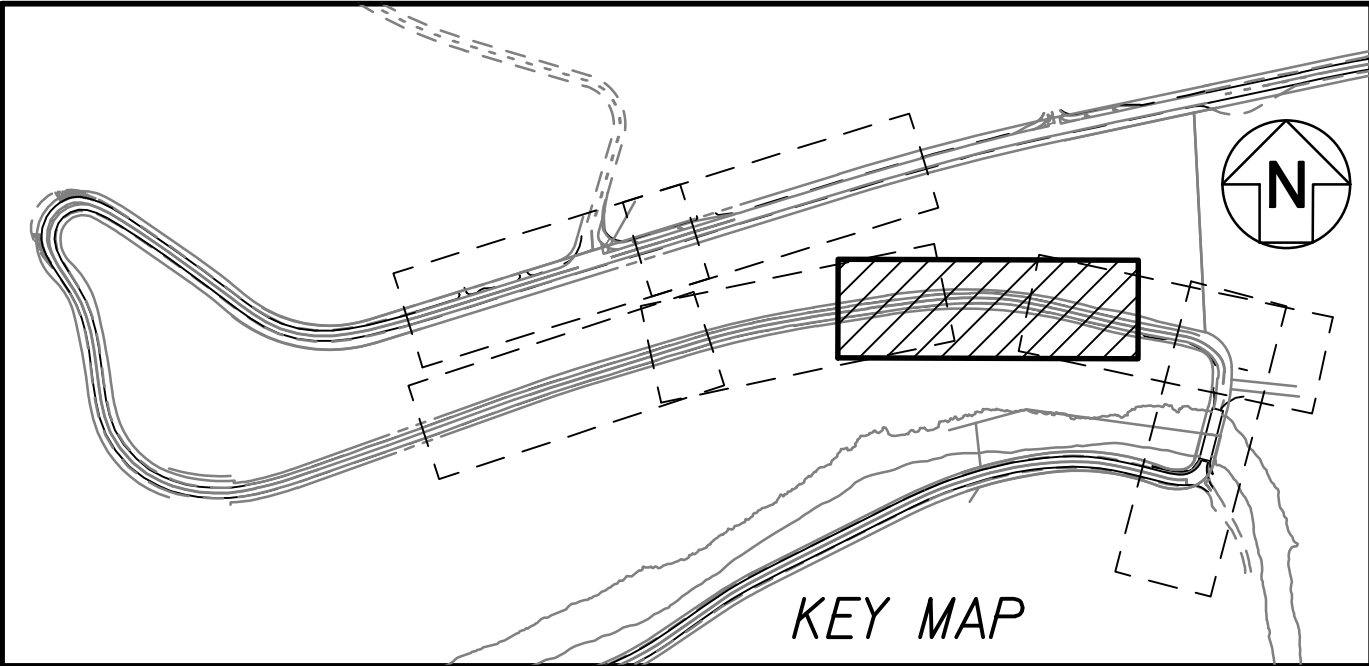
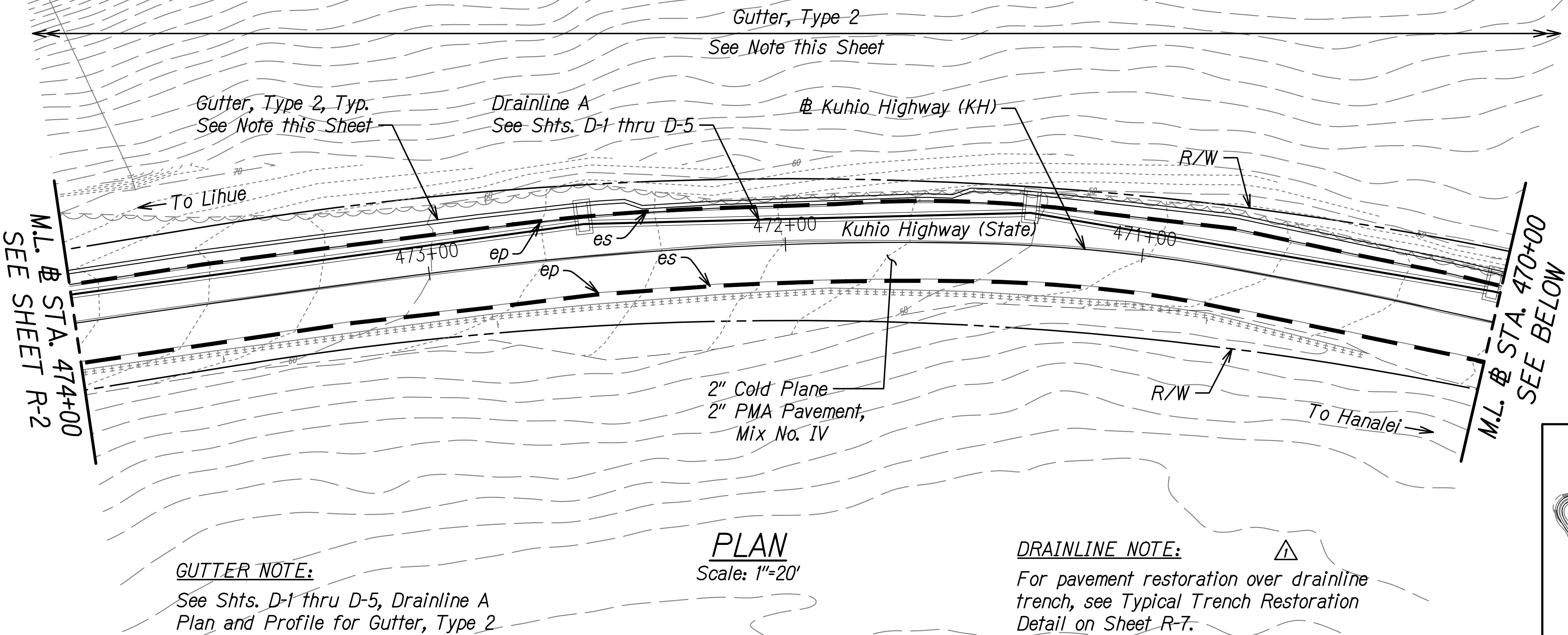
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

R. M. Urasak

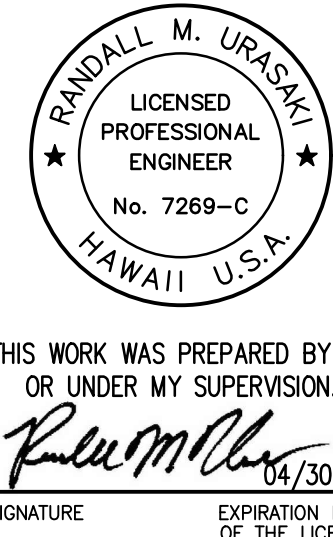
EXPIRATION DATE OF THE LICENSE: 04/30/24

12/8/22	Added Drainline Note
Date	Revision
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY PLAN HANAIEI HILLS KUHIO HIGHWAY <i>Emergency Slope Stabilization</i> <i>for Hanalei Hills and Waikoko</i> F.A.P. Project No. ER-24(003) Scale: 1"=20' Date: Sept. 2022	
SHEET No. R-2 OF 7 SHEETS	

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-24(003)	2023	ADD. 27	100

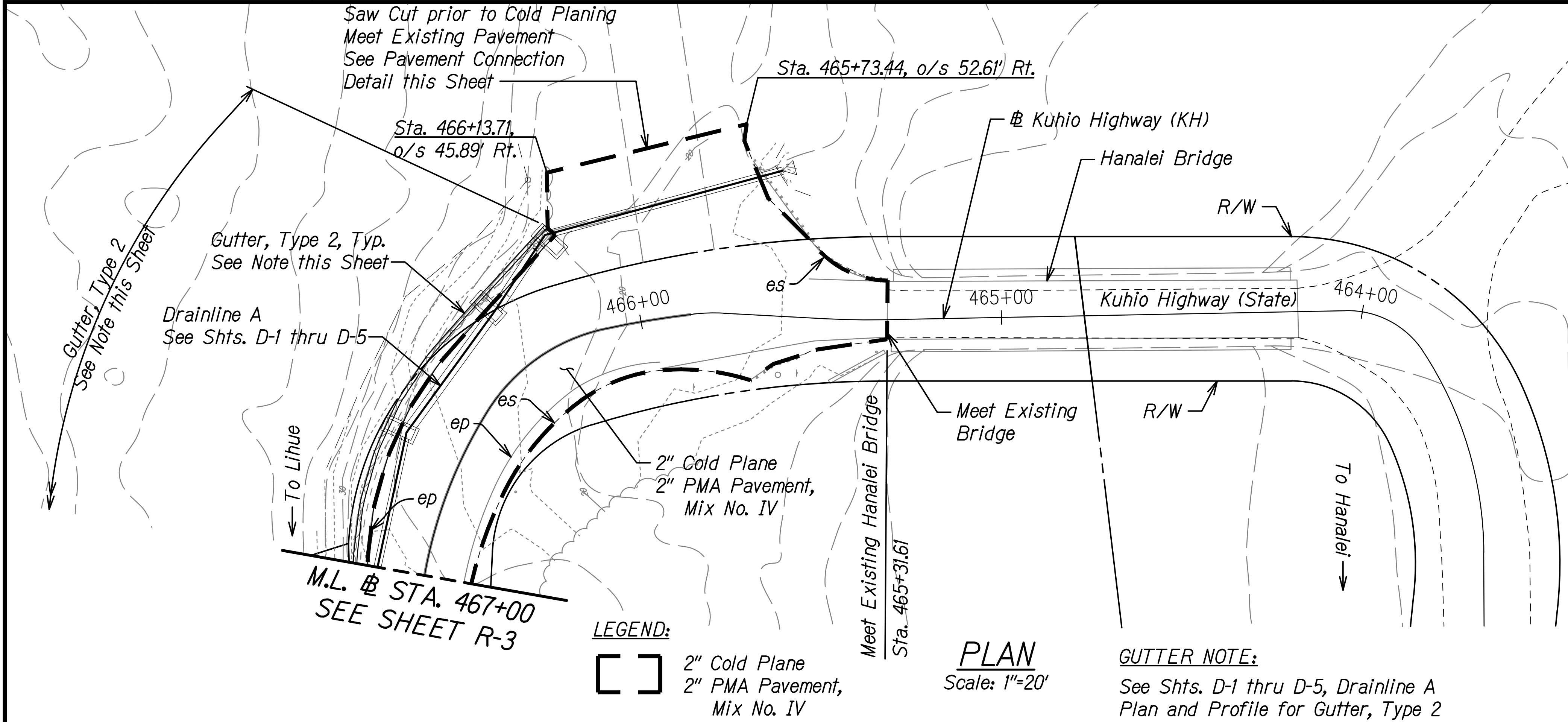


DATE	12/8/22
SURVEY PLOTTED BY	RAJENDRA M. URASAKI
DESIGNED BY	RAJENDRA M. URASAKI
TRACED BY	RAJENDRA M. URASAKI
NOTE BOOK	NO. 7269-C
DESIGNED BY	RAJENDRA M. URASAKI
QUANTITIES BY	RAJENDRA M. URASAKI
CHECKED BY	RAJENDRA M. URASAKI

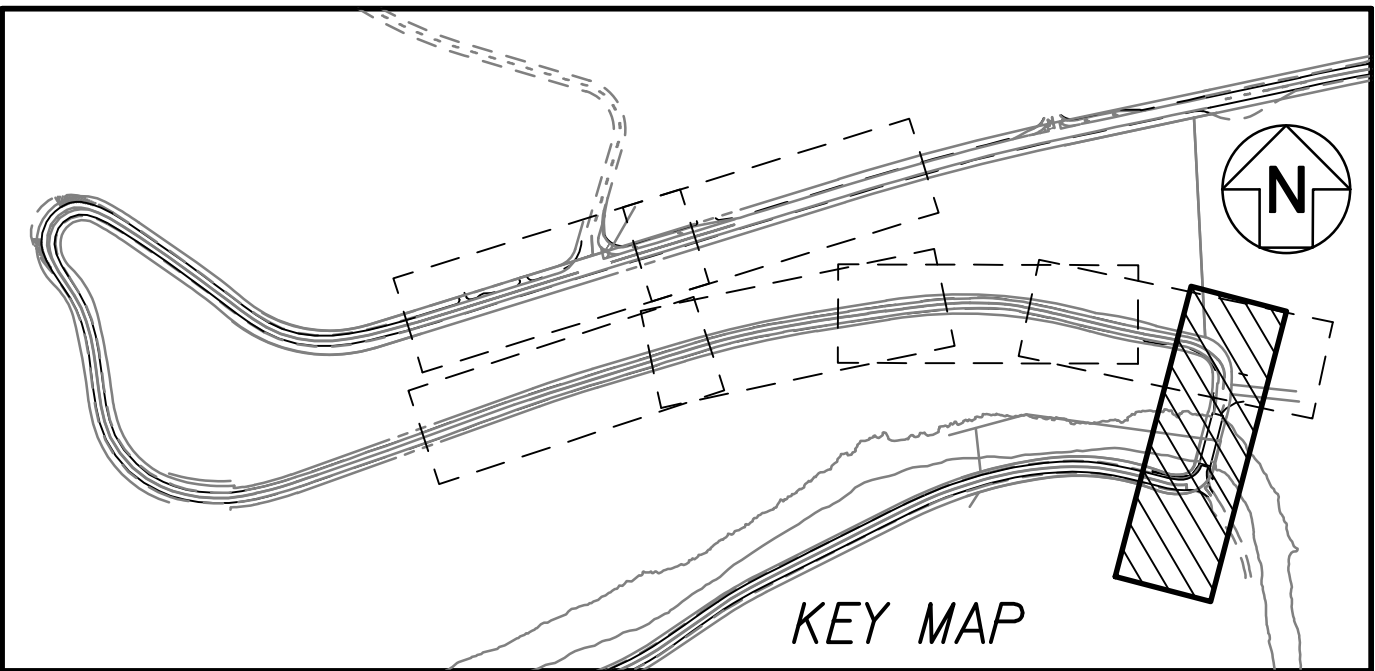


12/8/22	Added Drainline Note
Date	Revision
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY PLAN HANAIEI HILLS KUHIO HIGHWAY Emergency Slope Stabilization for Hanalei Hills and Waikoko F.A.P. Project No. ER-24(003) Scale: 1"=20' Date: Sept. 2022	
SHEET No. R-3 OF 7 SHEETS	

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-24(003)	2023	ADD. 28	100



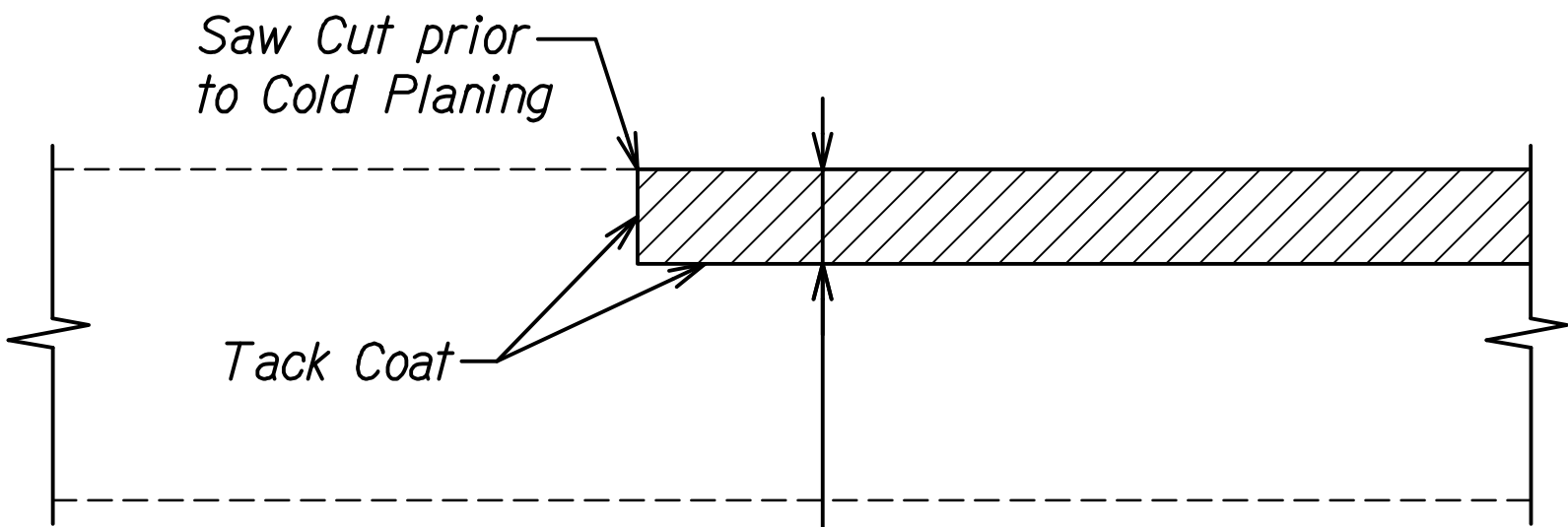
DRAINLINE NOTE: 
For pavement restoration over drainline trench, see Typical Trench Restoration Detail on Sheet R-7.



LEGEND:
 2" Cold Plane
2" PMA Pavement, Mix No. IV

PLAN
Scale: 1"=20'

GUTTER NOTE:
See Shts. D-1 thru D-5, Drainline A Plan and Profile for Gutter, Type 2

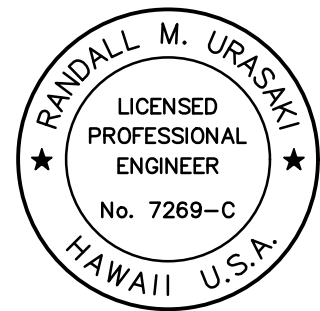


NOTE:
Payment for saw cutting and tack coat shall be considered incidental to the various pay items.

PAVEMENT CONNECTION DETAIL

Not to Scale

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



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Randall M. Urasaki
SIGNATURE EXPIRATION DATE OF THE LICENSE 04/30/24

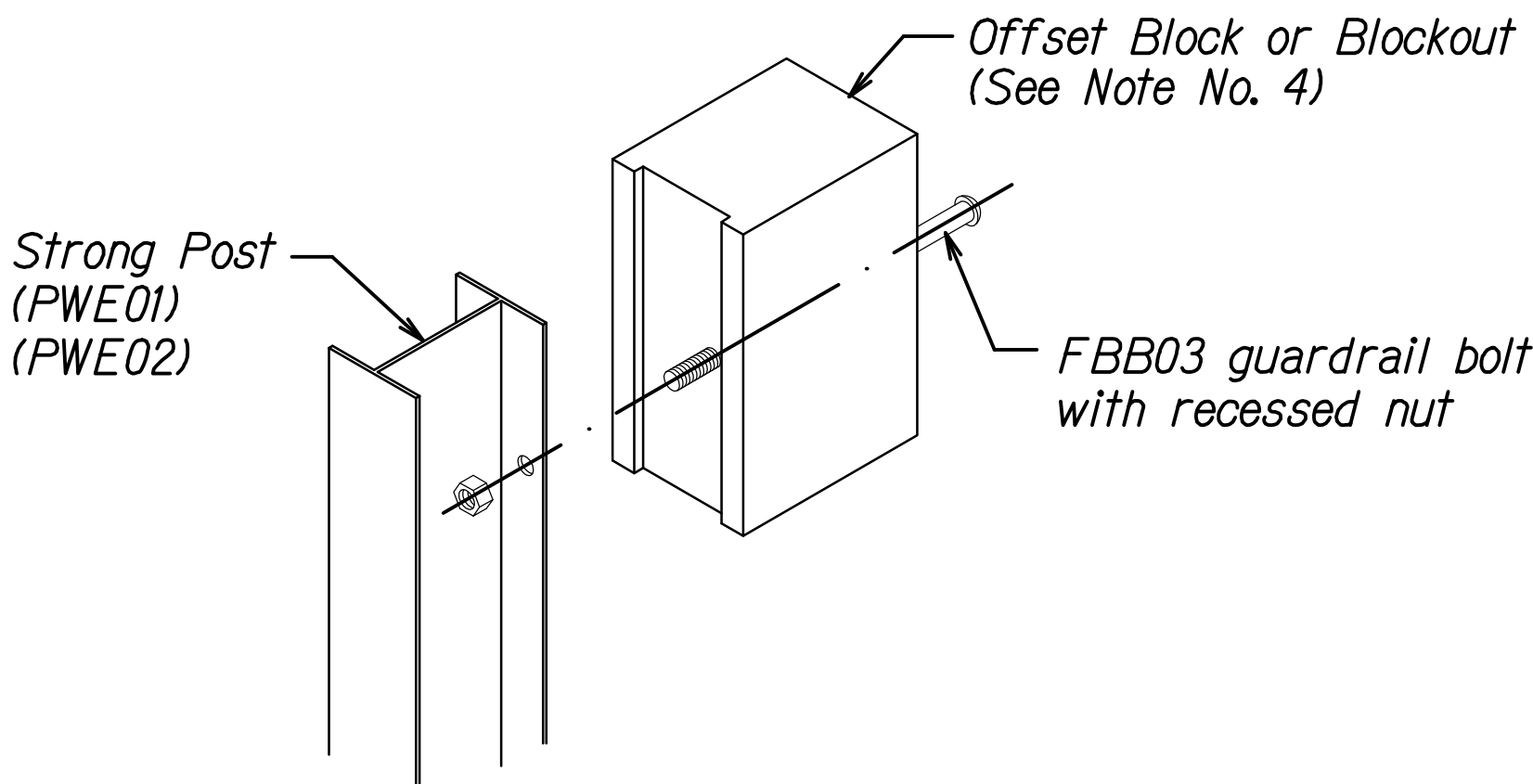
12/8/22	 Added Drainline Note
Date	Revision
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY PLAN AND DETAIL HANAIEI HILLS KUHIO HIGHWAY <i>Emergency Slope Stabilization</i> <i>for Hanalei Hills and Waikoko</i> <i>F.A.P. Project No. ER-24(003)</i> Scale: 1"=20' Date: Sept. 2022	
SHEET No. R-4 OF 7 SHEETS	

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-24(003)	2023	29	100

GENERAL NOTES

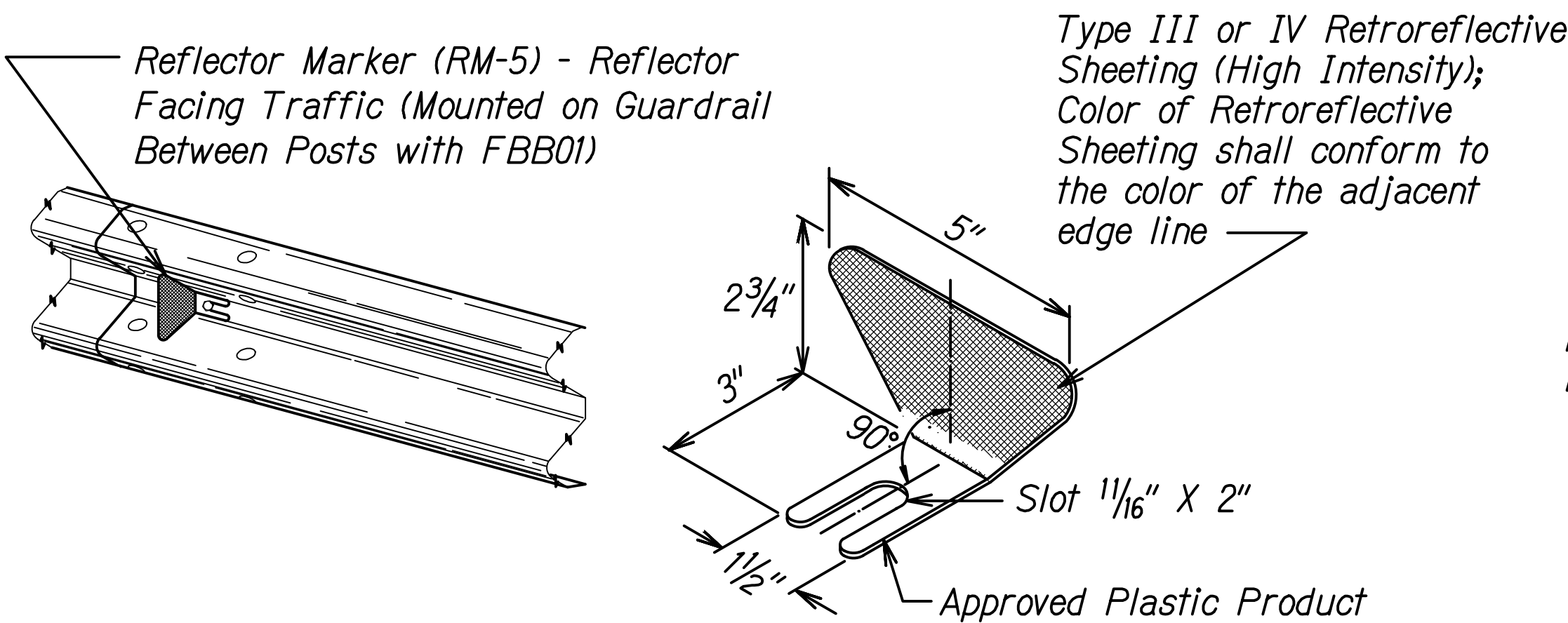
- All hardware, posts and fasteners shall be hot-dip zinc coated galvanized after fabrication. No punching, drilling or cutting will be permitted after galvanizing.
- Where conditions require, special post lengths in increments of 6 inches may be specified by the Engineer.
- All fasteners, posts, and 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.
- The Blockout or Offset Block shall be approved by the State.
- All new guardrail systems (system consists of total length of guardrail including both end treatments) shall include the Additional Paved Area.
- 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.
- When standards for the fill slope area cannot be met, a site specific, engineer approved design may be used.
- Minimum working width (clear distance) between back of MGS post to any fixed object is 4'-1" (49").
- New Hot Mix Asphalt (HMA) pavement at guardrails shall extend 6 feet longitudinally beyond terminal ends.
- 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.
- Polymer-Modified Asphalt (PMA) pavement shall be used in place of HMA when the adjacent roadway is paved with PMA.
- All guardrail, guardrail posts and appurtenances shall be painted in accordance to Note 13 - Guardrail Paint on Sheet N-2. Payment for painting shall be considered incidental to the Guardrail Pay items.

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

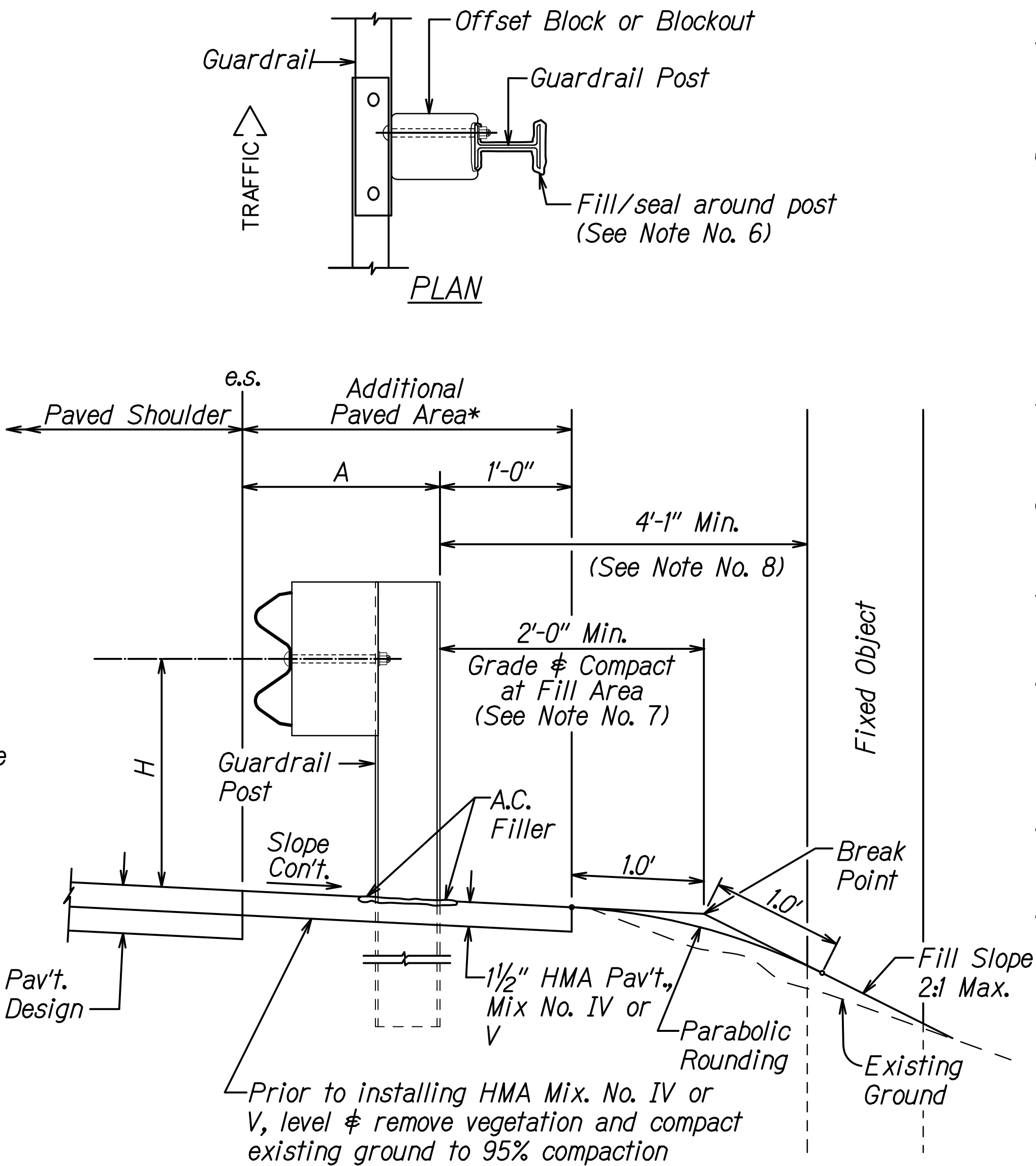


Exploded View
(Rail and washer not shown)

STEEL POST AND BLOCK DETAIL



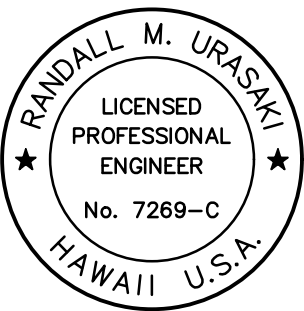
REFLECTOR MARKER (RM-5) DETAIL AND TYPICAL INSTALLATION



ELEVATION

TYPICAL GUARDRAIL INSTALLATION

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



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R. M. Urasaki
SIGNATURE
EXPIRATION DATE OF THE LICENSE 04/30/24

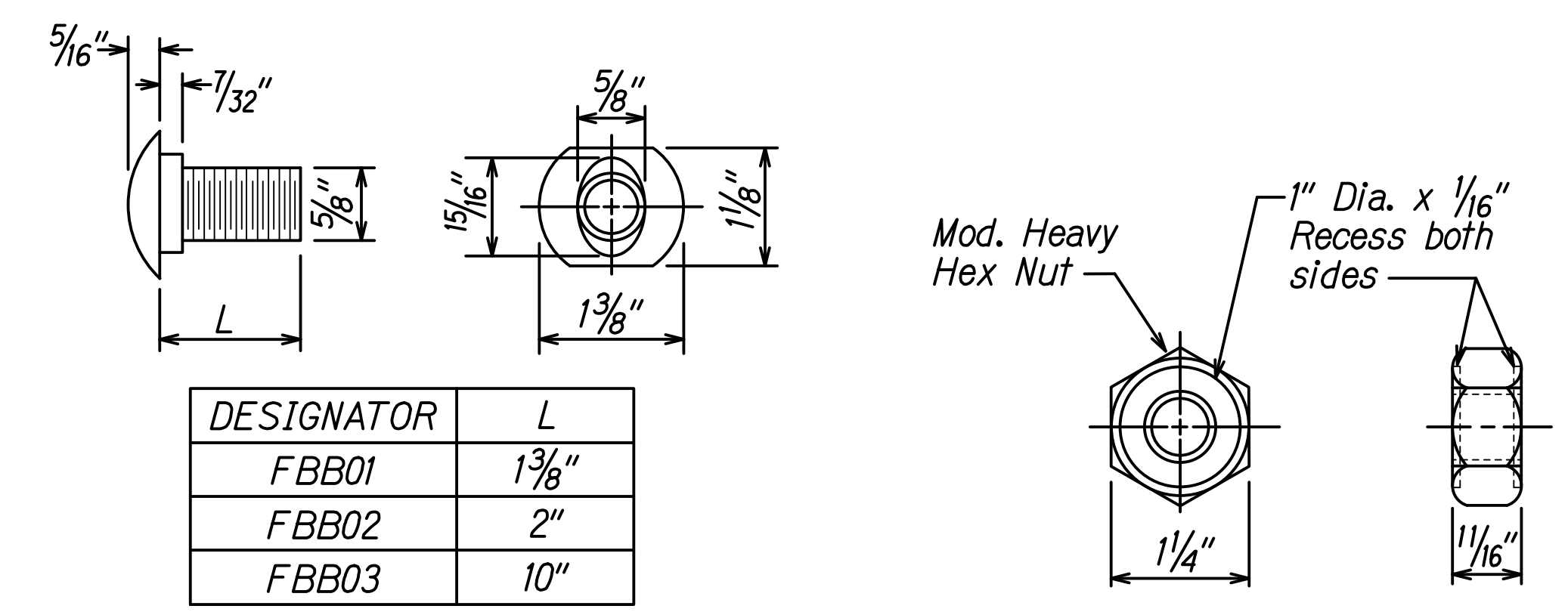
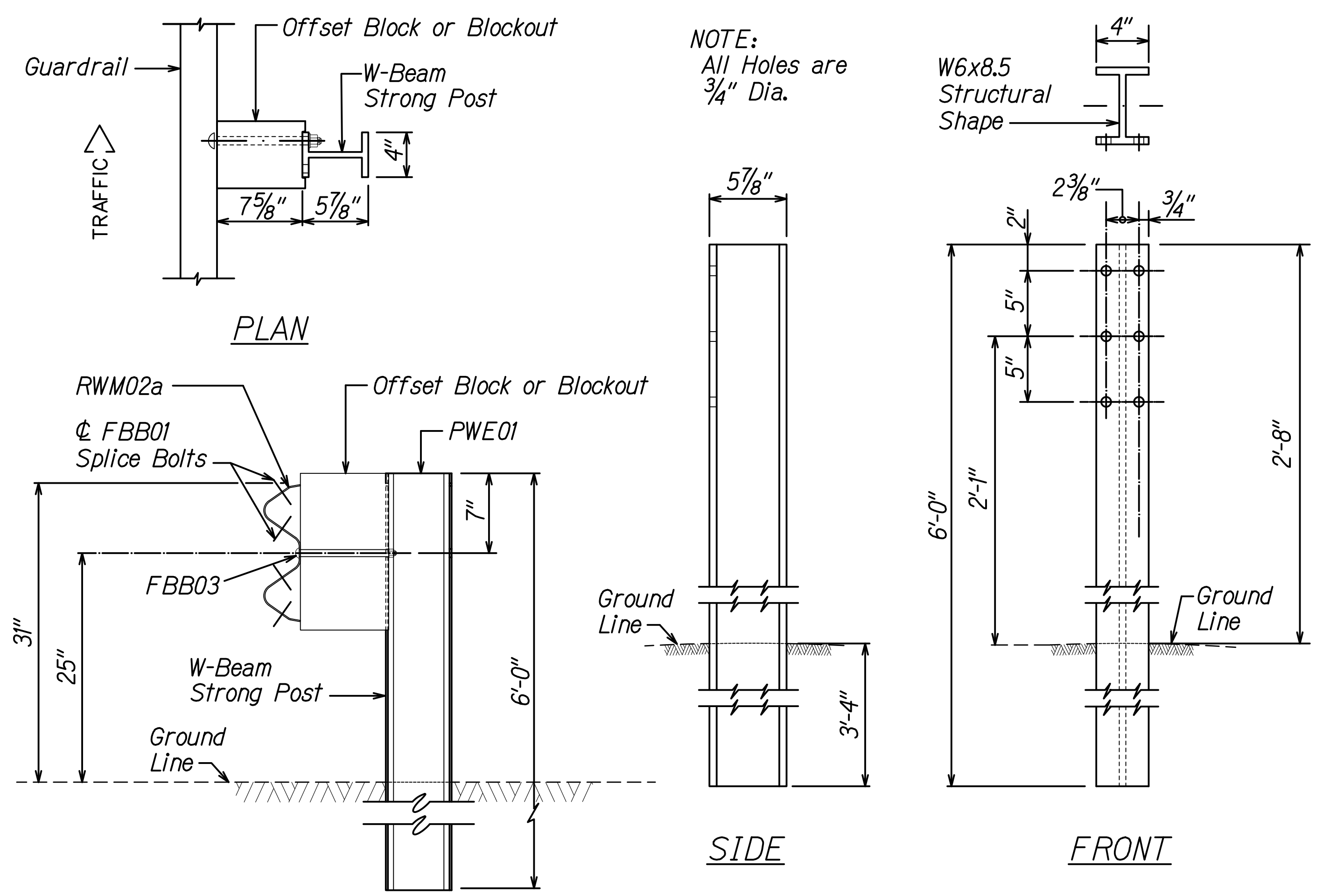
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAILS & NOTES

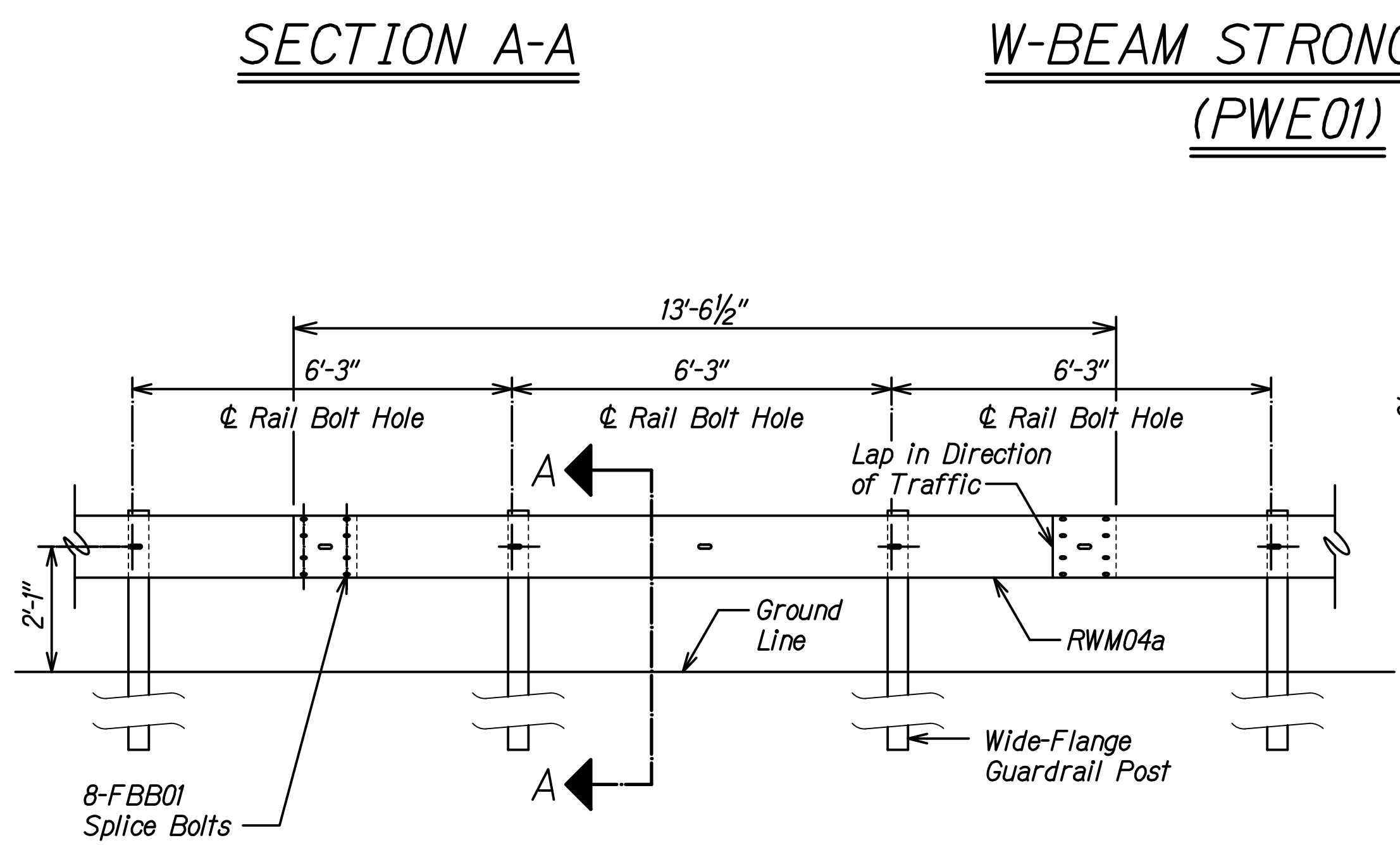
KUHIO HIGHWAY
Emergency Slope Stabilization
for Hanalei Hills and Waikoko
F.A.P. Project No. ER-24(003)
Scale: *Not to Scale* Date: *Sept. 2022*

SHEET No. **R-5** OF **7** SHEETS

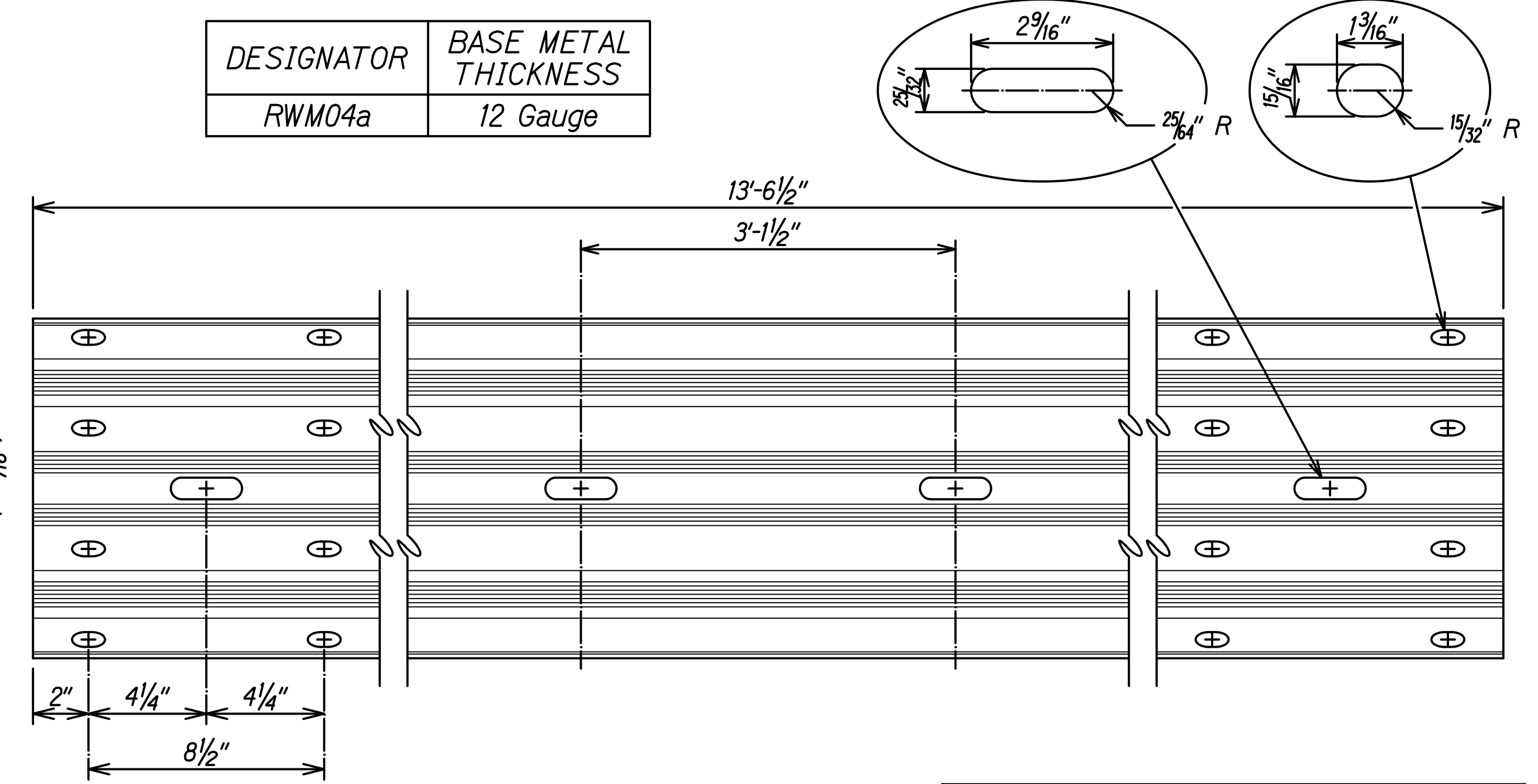
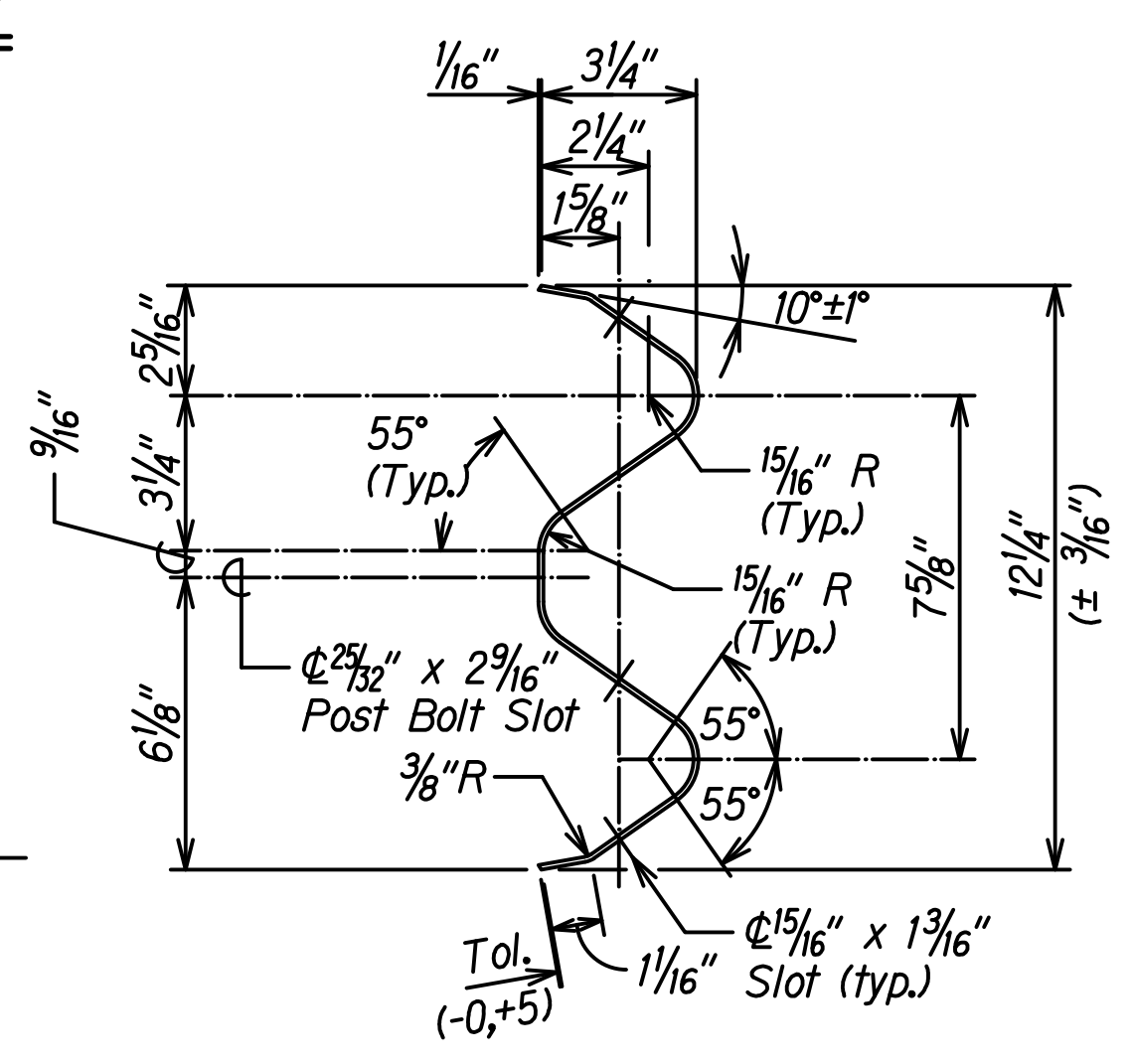
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-24(003)	2023	30	100



GUARDRAIL BOLTS AND RECESSED NUT



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



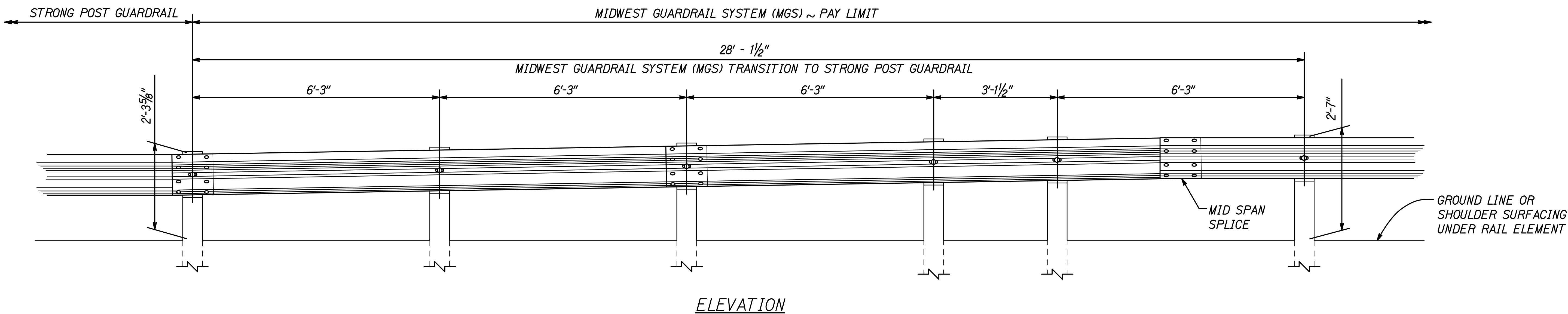
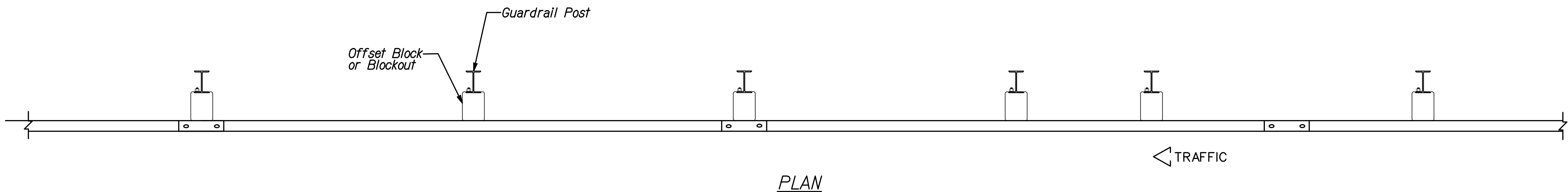
4 SPACE W-BEAM GUARDRAIL (RWM04a)

DATE	_____
DESIGNED BY	_____
TRACED BY	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____

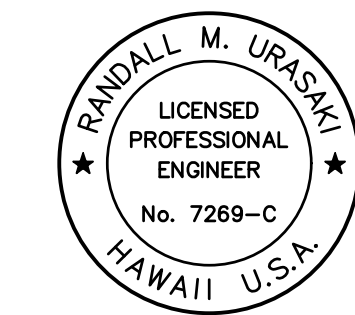
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
31" W-BEAM GUARDRAIL WITH
STANDARD 8" OFFSET BLOCK
KUHIO HIGHWAY
Emergency Slope Stabilization
for Hanalei Hills and Waikoko
F.A.P. Project No. ER-24(003)
Scale: Not to Scale
Date: Sept. 2022

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SIGNATURE: *Randall M. Urasaki*
EXPIRATION DATE OF THE LICENSE: 04/30/24

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-24(003)	2023	31	100



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



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R. M. Urasaki
SIGNATURE
EXPIRATION DATE OF THE LICENSE 04/30/24

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**MGS TRANSITION TO
STRONG POST GUARDRAIL**
KUHIO HIGHWAY
*Emergency Slope Stabilization
for Hanalei Hills and Waikoko*
F.A.P. Project No. ER-24(003)
Scale: Not to Scale Date: Sept. 2022

SHEET No. R-7 OF 7 SHEETS