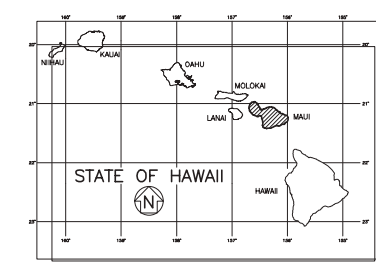


INDEX TO DRAWINGS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2 - 3	STANDARD PLANS SUMMARY
4	GENERAL NOTES FOR CONSTRUCTION
5	NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY
6 - 8	WATER POLLUTION AND EROSION CONTROL NOTES
9	LEGEND & ABBREVIATIONS
10	TYPICAL PAVEMENT SECTION
11	GENERAL SITE PLAN
12	DEMOLITION AND EROSION CONTROL PLAN
13-15	GUARDRAIL DETAIL AND NOTES
16	ROADWAY PLAN
17	GRADING PLAN
18	SIGNING AND STRIPING PLAN
19	DRAINAGE DETAILS
20	DRAINAGE CHUTE PROFILE
21	SLOPE PROTECTION DETAIL
22	WORK ZONE SIGNING PLAN, NOTE & DETAILS

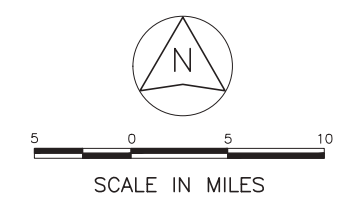
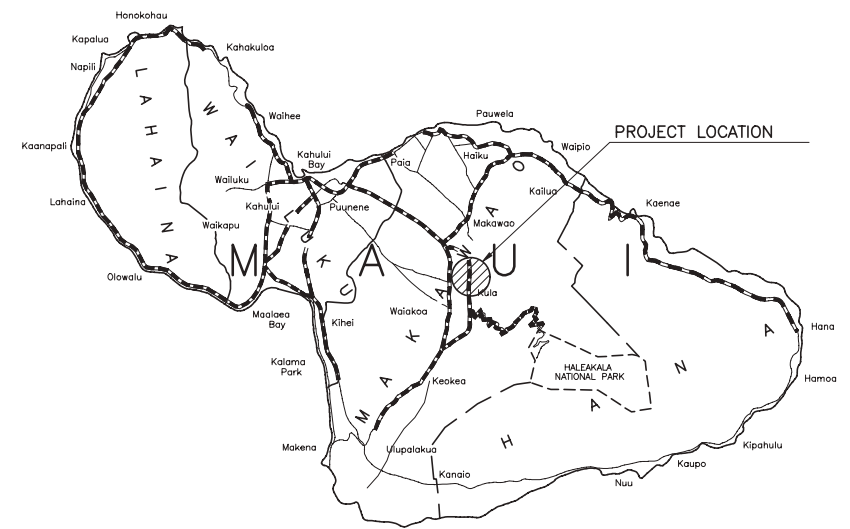
DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MAUI	HAW.	377A-01-22M	2024	ADD.1	22



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAUI DISTRICT

PLANS FOR
HALEAKALA HIGHWAY
SLOPE AND SHOULDER REPAIR
VICINITY OF AINAKULA ROAD TO KULALANI DRIVE
PROJ. NO. 377A-01-22M

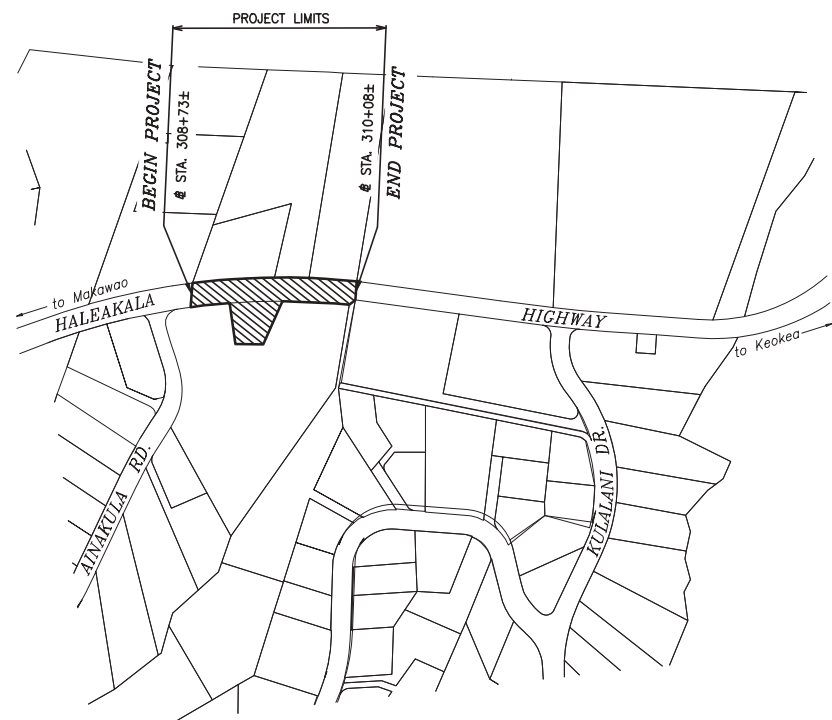
DISTRICT OF MAKAWAO
ISLAND OF MAUI



----- FEDERAL AID PROJECTS PREVIOUSLY CONSTRUCTED OR UNDER CONSTRUCTION

MILE POST 5.40 TO MILE POST 5.58 (RTE. 377)

True North
Scale: NTS



LAYOUT PLAN
NOT TO SCALE

GROSS LENGTH OF PROJECT 0.18 MILES
NET LENGTH OF PROJECT 0.03 MILES

Austin Tsutsumi and Associates, Inc. DESIGNED BY
X MANAGED BY
244-8044 PHONE
MAR., 2024 DATE

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

APPROVED: *[Signature]* Sep 3, 2024
HIGHWAYS ADMINISTRATOR DATE

DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MAUI	HAW.	377A-01-22M	2024	ADD.4	22

GENERAL NOTES:

1. The Scope of Work for this project includes: pavement resurfacing of Haleakala Hwy; replacement of guardrails; installation of a drainage chute, permanent curbing, and slope protection. All roadway and other work required to complete the project shall meet current Federal, State, and County Standards.
2. The Contractor shall perform all applicable construction work in accordance with the "Department of Transportation, Highways Division, Standard Plans", as amended and "Hawaii Standard Specifications for Road and Bridge Construction, 2005", as amended for the State of Hawaii.
3. The Contractor shall verify the location of all existing utilities, whether shown on the plans or not, and shall be responsible for the repair or replacement of the same in the event of damages due to his construction practices, at no cost to the State.
4. All dimensions and details shown on the drawings shall be checked and verified prior to the start of construction, and any discrepancies shall be immediately brought to the attention of the Engineer for clarification.
5. The Contractor's Attention Is Directed To The Following Sections Special Provisions: Section 107 - Legal Relations and Responsibility to Public; and Section 645 - Work Zone Traffic Control.
6. The Contractor is reminded of the requirements of Subsection 105.16 - Subcontracts, which requires him to perform work to not less than 30 percent of the total contract cost less deductible items. Non-compliance with the Subsection may be grounds for rejection of bid.
7. At the end of each day's work, the Contractor shall remove all equipment and other obstructions to permit free and safe passage of public traffic.
8. The existence and location of underground utilities, manholes, monuments and structures as shown on the plans are from the latest available data, but the accuracy is not guaranteed. The encountering of other obstacles during the course of work is possible. The Contractor shall tone for the exact locations and depths of all underground facilities, either shown on or omitted from the plans, in areas where work, such as the placement of sign posts, traffic signal conduits, etc. may affect these properties. Toning shall be considered incidental to the various contract items and will not be paid for separately. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations.
9. When excavating near utility poles, the Contractor shall protect, support, secure and take all other precautions to prevent damage to or leaning of these poles. The Contractor is responsible for all costs associated to repair and/or straighten pole.
10. The Contractor shall indemnify and be solely responsible for the protection of adjacent properties, utilities and existing structures from damages due to construction. Repairing any damage shall be at the Contractor's own expense and to the satisfaction of the Engineer.
11. Existing drainage system will be functional at all times during construction. The Contractor shall furnish materials, equipment, labor, tools and incidentals necessary to maintain flow. This work shall be considered incidental to any culvert work or the various contract items and will not be paid for separately.
12. Smooth riding connections shall be constructed at all limits of project, including the beginning and end of project, connecting approaches, side streets, walkways and driveways as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to asphalt concrete and will not be paid for separately.
13. The Contractor shall clean and remove any accumulation of aggregates along the roadside within 10 feet of the edge of pavement. This work shall be considered incidental to bulk of work or the various contract items and will not be paid for separately.
14. Removal and disposal of existing asphalt concrete pavement, and any debris shall be considered incidental to their respective bid items.
15. All saw cutting work shall be considered incidental to Roadway Excavation or Asphalt Concrete or various contract items or their respective bid items.
16. The Contractor shall remove and dispose of all existing raised pavement markers, thermoplastic line markings, traffic tape, and epoxy adhesives prior to the overlaying of Asphalt Concrete. This work shall be considered incidental to Asphalt Concrete Pavement, Mix No. V and will not be paid for separately.
17. The Contractor shall make his own arrangements for, and pay for all temporary utilities required for his work.
18. The Contractor shall remove and dispose of all existing guardrail and guardrail posts. This work shall be considered incidental to Guardrail Type MGS W-Beam and Type MGS Transition, and will not be paid for separately.
19. The Contractor shall remove and dispose all silt and debris deposited in drainage facilities, roadways and other areas resulting from his work. The cost incurred for any necessary remedial action ordered by the Engineer shall be paid for by the Contractor.
20. The Contractor shall submit for approval a detailed traffic control plan (TCP) and schedule at least 15 working days before the start of work. All construction signs shall be left in place until all construction items have been completed. Contractor shall obtain prior approval from the Engineer to remove construction signs. △

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

△ 07-30-24	ADD 1: New Note Added
DATE	REVISION

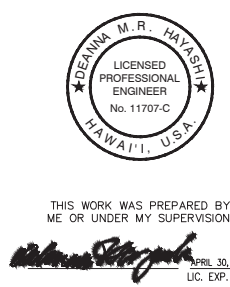
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GENERAL NOTES FOR
CONSTRUCTION**

*Haleakala Hwy. Slope and Shoulder Repair
Vicinity of Ainakula Road to Kulalani Drive
Project No. 377A-01-22M*

Scale: As Noted Date: March 2024

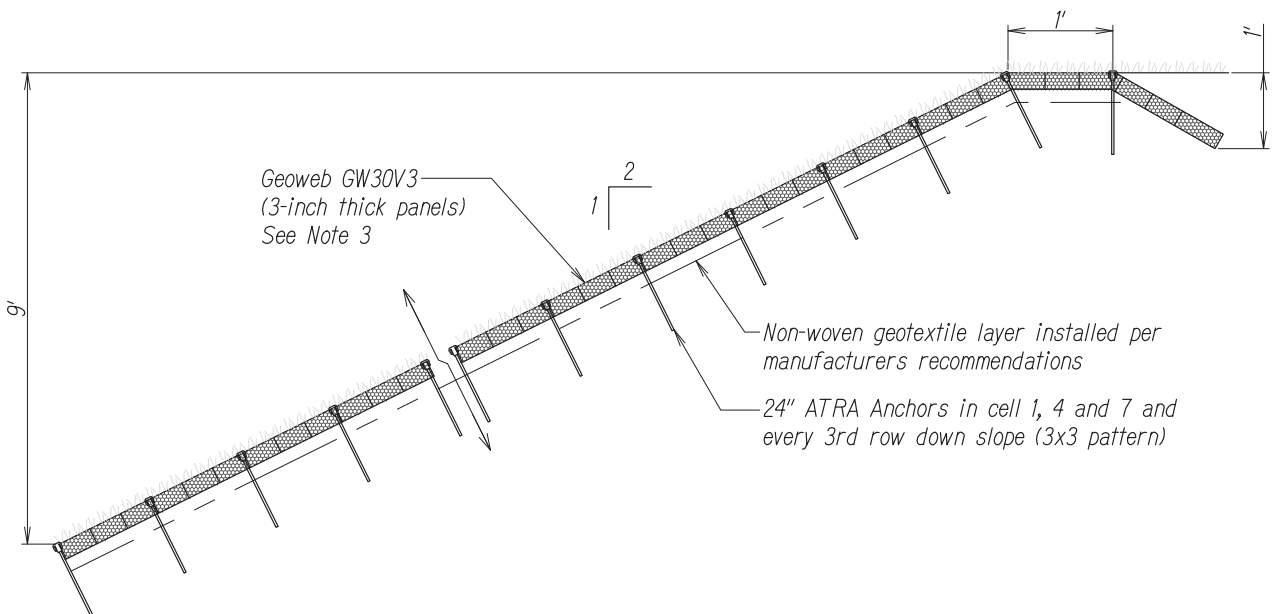
SHEET No. / OF / SHEETS



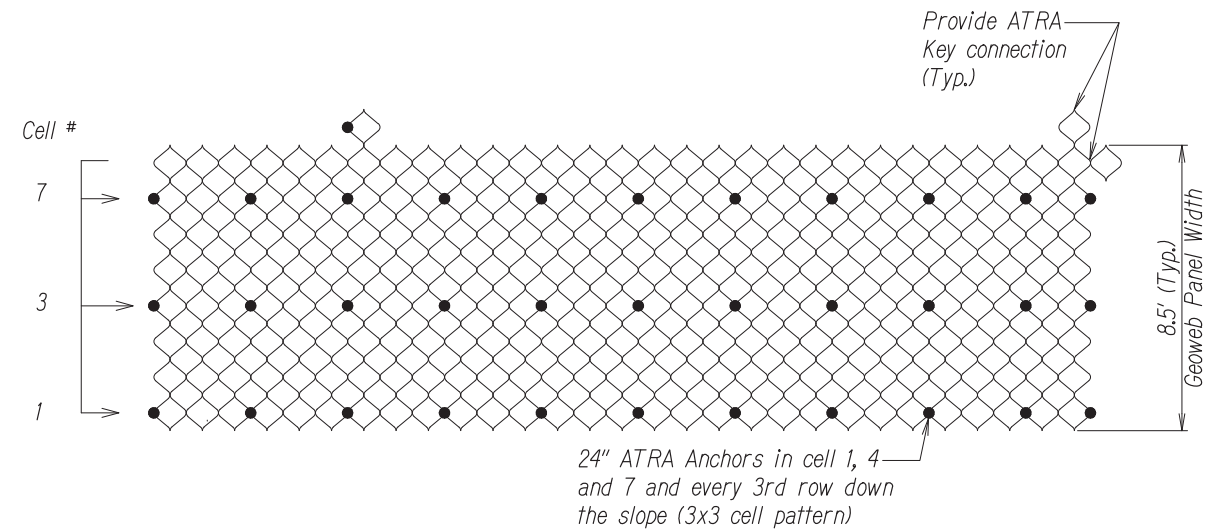
DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MAUI	HAW.	377A-01-22M	2024	ADD.21	22

Notes:

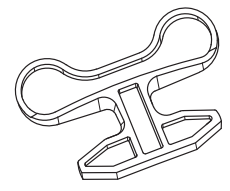
1. Geoweb, ATRA Keys, and ATRA Anchor to be manufactured by Presto Geosystems.
2. The Geoweb panels shall be connected with ATRA Keys at each interleaf and end to end connection.
3. Geoweb infill shall be nutrient rich, pulverized topsoil. Limit the drop of the infill into the Geoweb panels to prevent distortion.



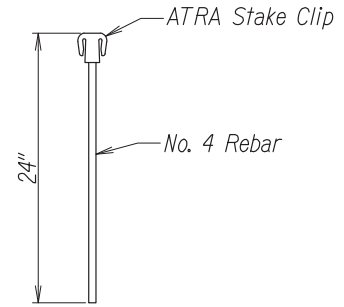
TYPICAL SECTION - GEOWEB SLOPE PROTECTION
Scale: Not To Scale



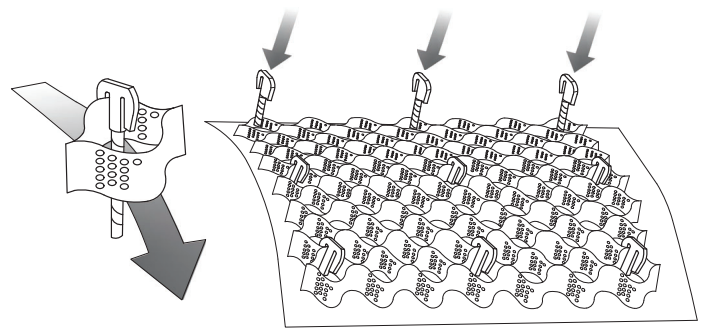
ANCHORING DETAILS
Scale: Not To Scale



ATRA KEY



ATRA ANCHOR

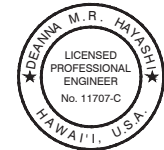


ANCHOR INSTALLATION

SLOPE PROTECTION DETAIL
Scale: Not To Scale

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

DATE	REVISION
08-06-24	ADD 1: Revised Geoweb Details



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Deanna M.R. Hayashi
APRIL 30, 2024
LIC. EXP. DATE

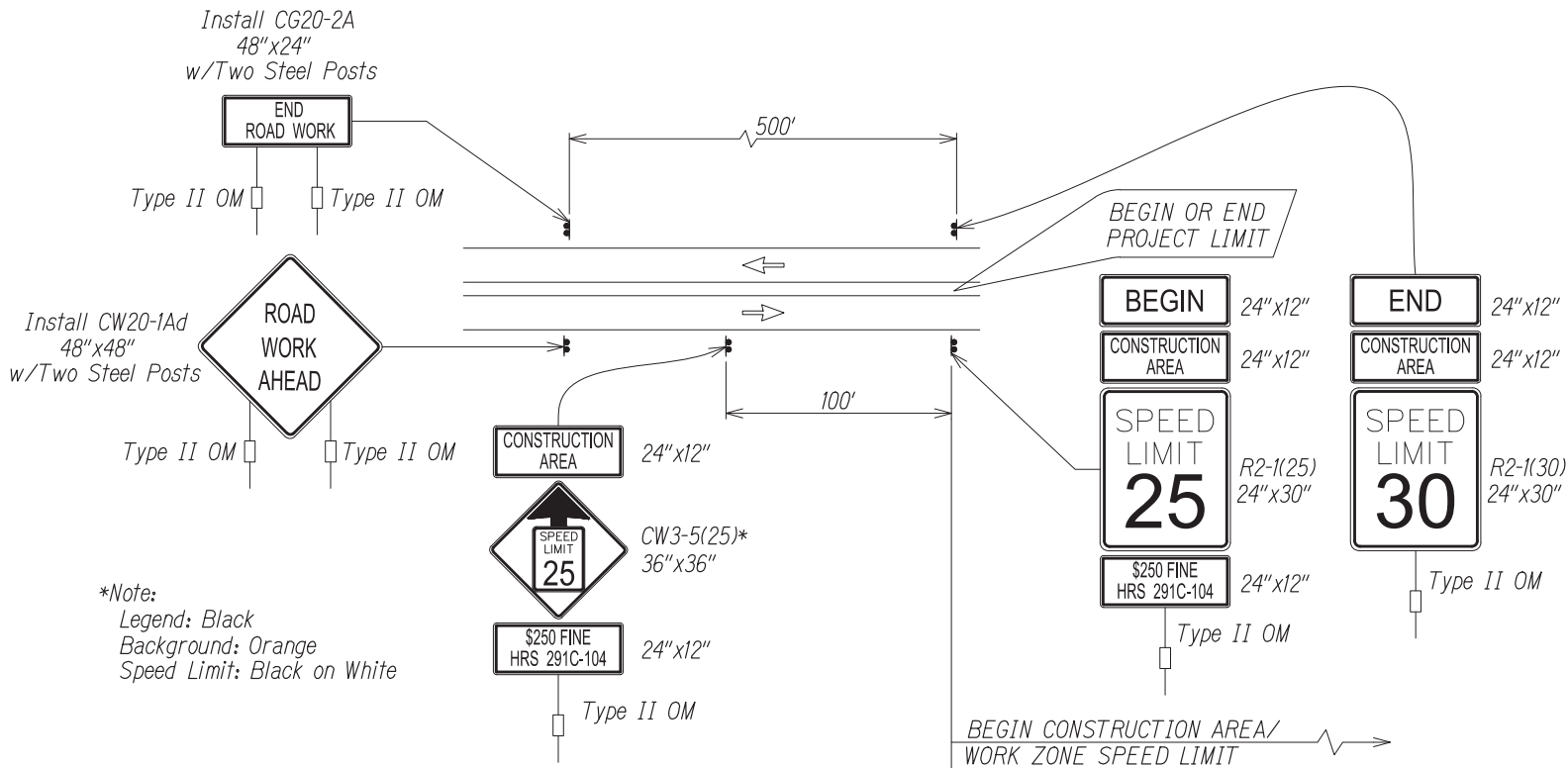
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SLOPE PROTECTION DETAIL

*Haleakala Hwy. Slope and Shoulder Repair
Vicinity of Ainakula Road to Kulalani Drive
Project No. 377A-01-22M*

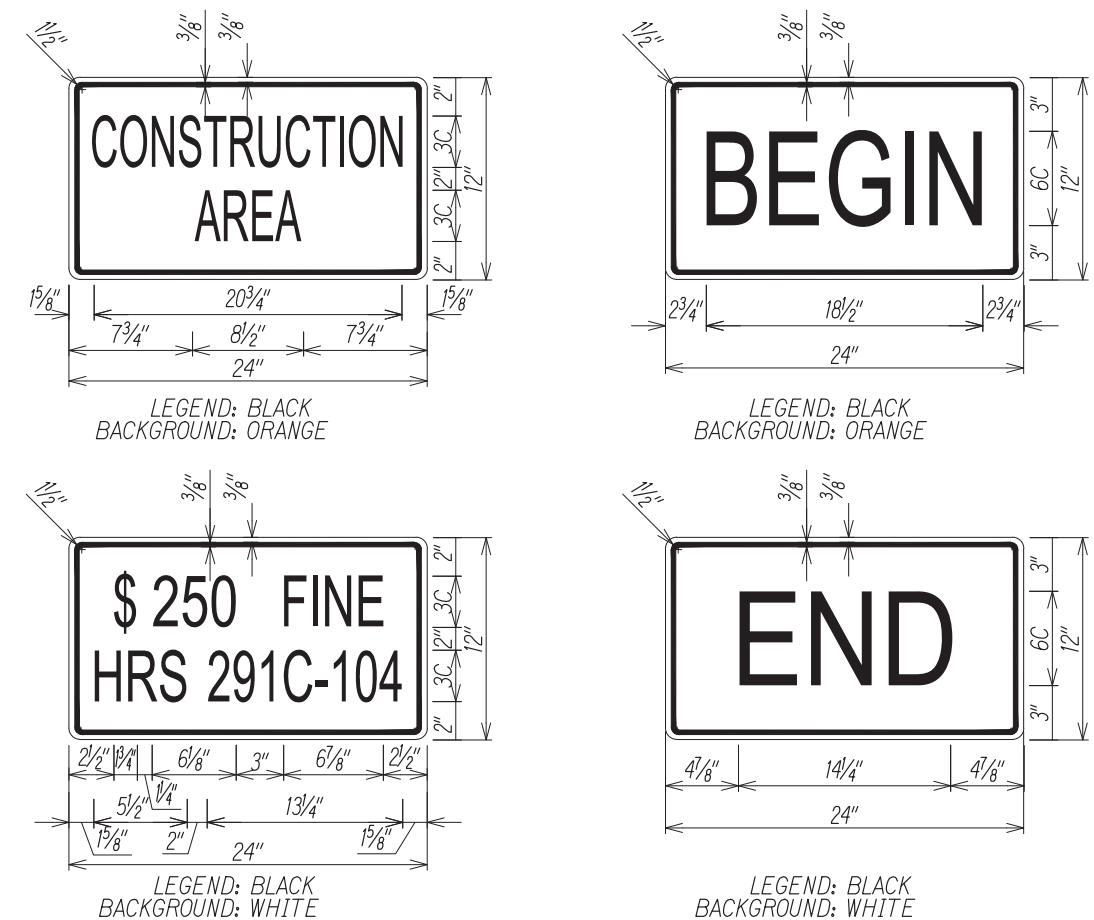
Scale: As Noted Date: March 2024

DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MAUI	HAW.	377A-01-22M	2024	ADD.22	22



*Note:
Legend: Black
Background: Orange
Speed Limit: Black on White

**TYPICAL DETAIL FOR CONSTRUCTION SIGNS
ON TWO LANE OR MULTILANE UNDIVIDED LOW SPEED HIGHWAY**



Work Zone Note:

- Contractor shall submit a Traffic control plan (TCP) at least 15 working days before the start of work per Section 645 of the Standard Specifications.
- This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Standard Specifications.
- All existing regulatory speed limit signs with posts within the work zone/project limits shall be removed and replaced with work zone speed limit sign assemblies (R2-1(25) and R2-5b(25) with "CONSTRUCTION AREA" and "\$250 FINE HRS 291C-104" Supplemental Signs).
- Construction sign assemblies shall be installed on both the approaching and trailing ends of each work zone as shown on this plan.
- Each construction warning sign shall have a minimum of two (2) Type II OM. Each work zone speed limit assembly shall have a minimum of one (1) Type II OM. Installation of each Type II OM shall be considered incidental to Item No. 631.3000, Construction Sign with Post.
- Upon the completion of all physical work or as directed by the Engineer, all construction signs and work zone speed limit assemblies shall be removed. All speed limit signs and posts that were existing at the start of the project within the work zone/project limits shall be restored back to their original locations and configurations.
- Placement of construction signs shall not obstruct the path of pedestrians and bicyclists.
- The removal and restoration of existing regulatory speed limit signs shall be considered incidental to Item No. 631.3000, Construction Sign with Post.
- The installation, maintenance and removal of work zone speed limit sign assemblies shall be paid for under Item No. 631.3000, Construction Sign with Post.
- The work zone speed limit signs shall be new and become the property of the Contractor.

TABLE 1
GUIDELINE FOR ADVANCE PLACEMENT OF SPEED REDUCTION SIGN CW3-5(XX), CONSTRUCTION AREA SPEED LIMIT

EXISTING POSTED SPEED LIMIT (MPH)	XX-NEW CONSTRUCTION AREA SPEED LIMIT (MPH)	D-REDUCED SPEED LIMIT SIGN SPACING TO FIRST CONSTRUCTION AREA SPEED LIMIT SIGN (FEET)
≤ 25		EXIST. SPEED LIMIT TO REMAIN
30	25	100
35	25	175
40	30	175

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

DATE	REVISION
08-06-24	ADD 1: Replaced Traffic Control Plan

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**LOW SPEED UNDIVIDED HIGHWAY
WORK ZONE SIGNING PLAN, NOTE & DETAILS**

Haleakala Hwy. Slope and Shoulder Repair
Vicinity of Ainakula Road to Kulalani Drive
Project No. 377A-01-22M

Scale: As Noted Date: March 2024

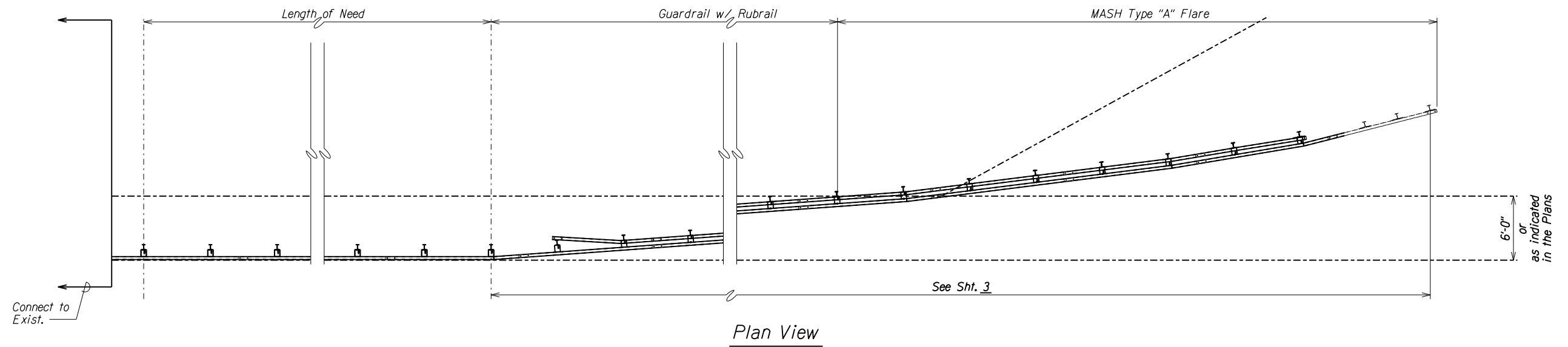
SHEET No. 1 OF 1 SHEETS

DEANNA M.R. HAYASHI
LICENSED PROFESSIONAL ENGINEER
No. 11707-C
HAWAII, U.S.A.

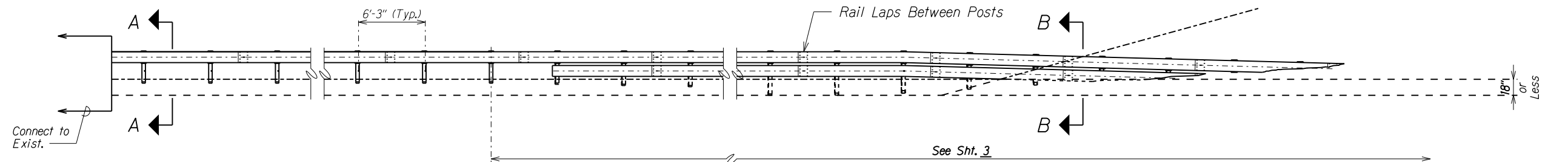
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

APR 30 2024
LIC. EXP. DATE

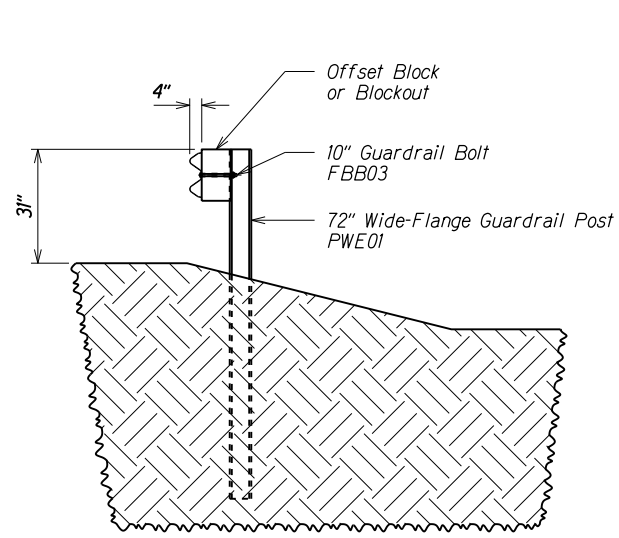
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	X	20XX	0	0



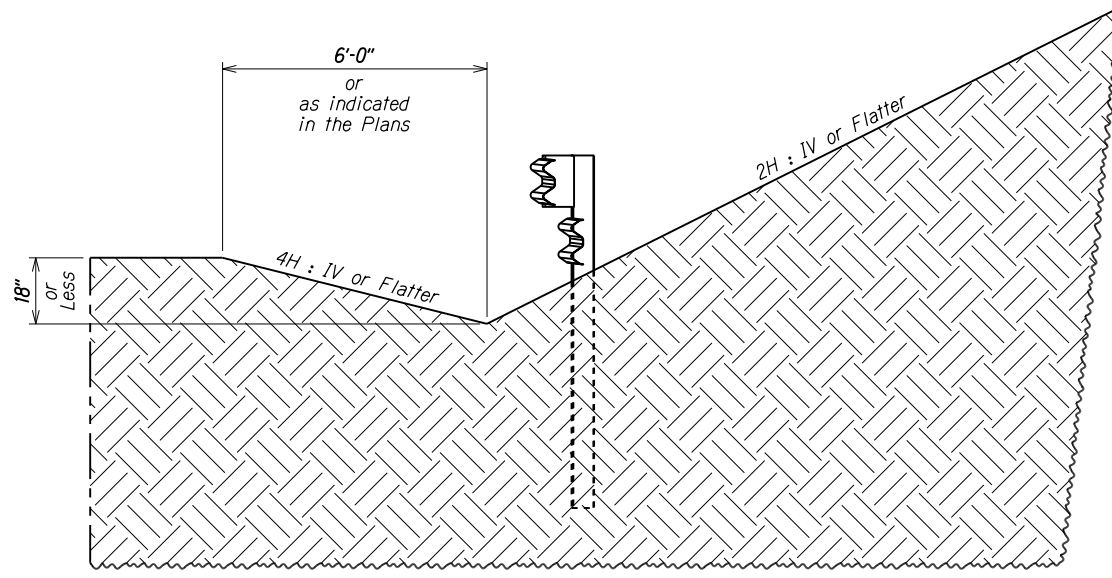
Plan View



Elevation View



Section A-A



Section B-B

TERMINAL PLAN & ELEVATION VIEW AND SECTIONS
(BURIED IN BACKSLOPE)

Notes:

1. Backfill Post holes with AASHTO M147-65(2004), Grade B crushed limestone road base, compacted to MASH standard.
2. 75" Post spacing typical for LoN and Terminal unless otherwise indicated.

ORIGINAL PLAN	DATE
DESIGNED BY	
DESIGNED BY	
QUANTITIES BY	
CHK. X	
CHK. X	
CHK. X	

6/29/22 \\dr\enest\guardrail\109\MASH-A_Flare\109A.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

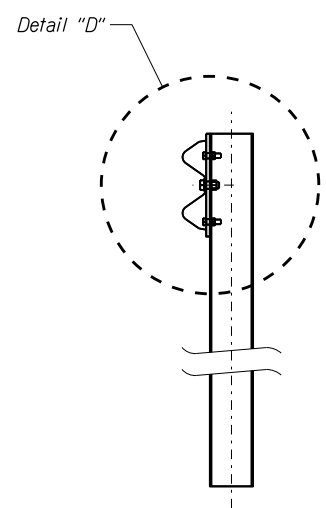
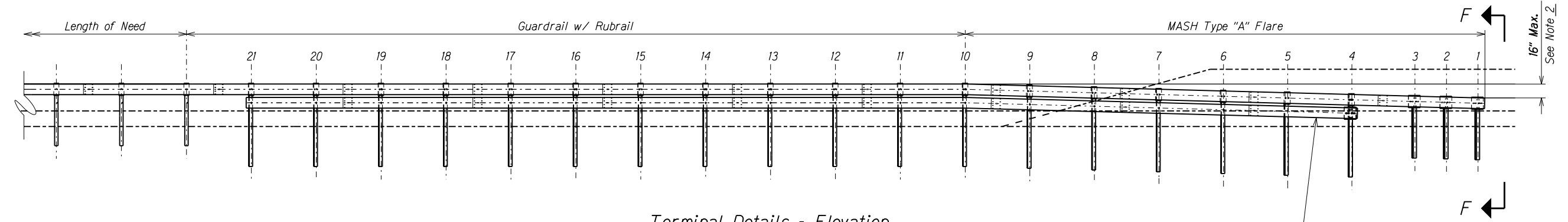
MASH TYPE "A" FLARE

XX
XX
XX

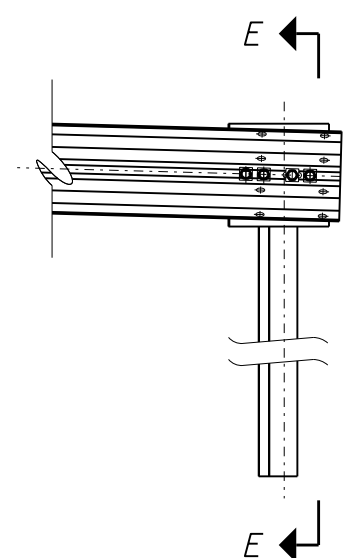
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SHEET No. 1 OF 3 SHEETS

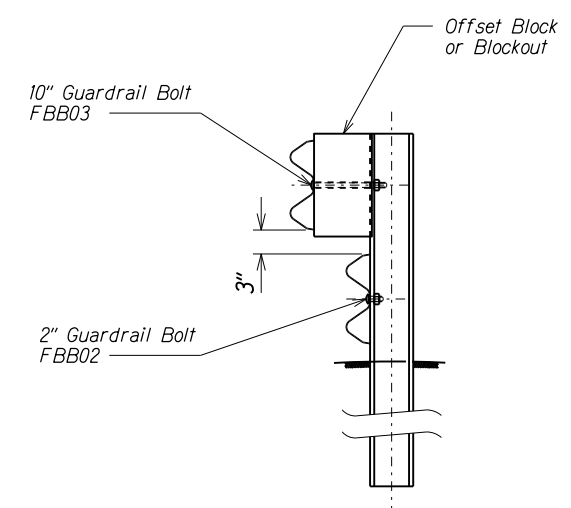
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	X	20XX	0	0



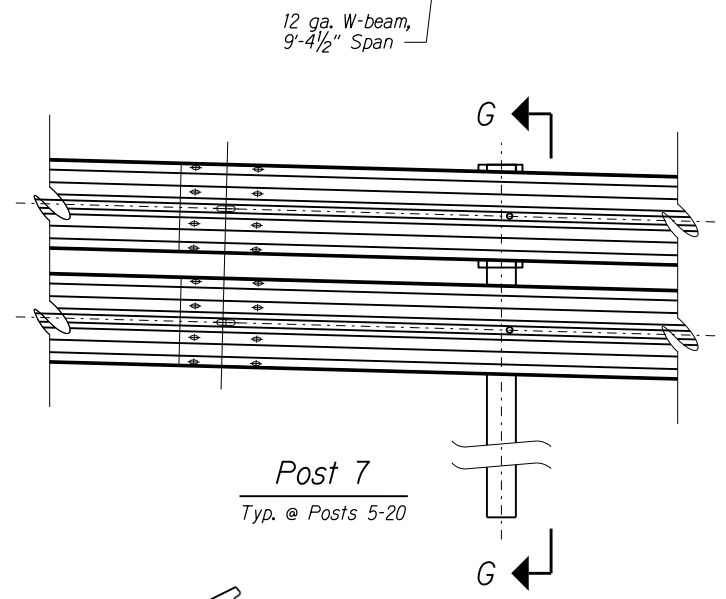
Secton E-E



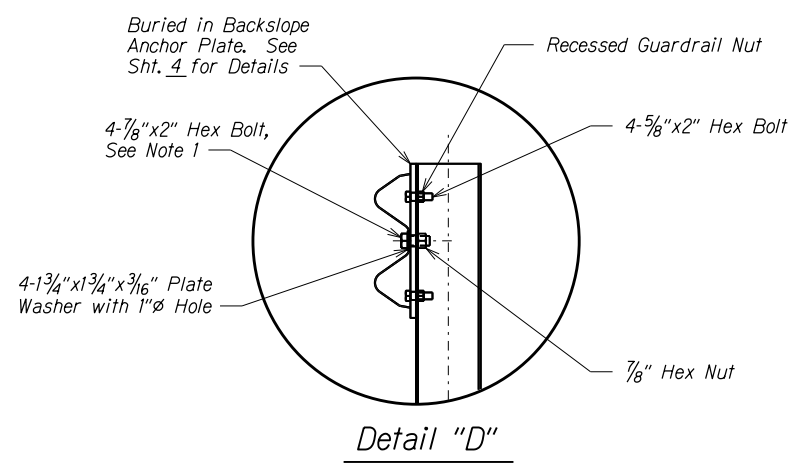
Post 1



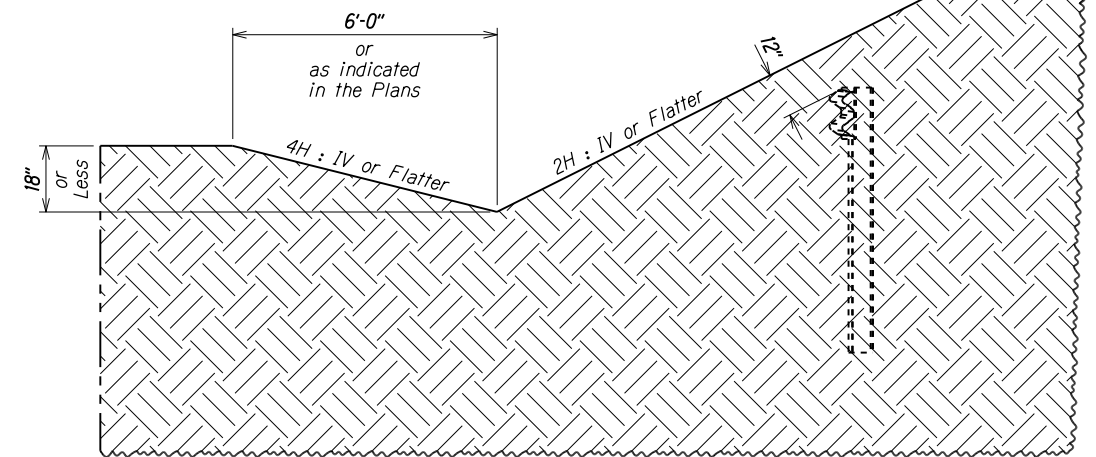
Section G-G



Post 7
Typ. @ Posts 5-20



Detail "D"



Section F-F

TERMINAL ELEVATION & DETAILS
(BURIED IN BACKSLOPE)

- Notes:
1. Recessed Guardrail Nuts typical on all 5/8" Bolts. Anchor Plate and hardware are typical on top rail at Posts 1-3, and rub rail at Post 4. Field drill 1" holes in Guardrail as needed for 7/8" Bolts at Posts 1-4. Hex head bolts are ASTM A307.
 2. Rail height changes 16" Maximum from Post 10 to 1 to achieve 12" of soil coverage at Post 1.

ORIGINAL PLAN	DATE
DESIGNED BY	
DESIGNED BY	
QUANTITIES BY	
CHK. BY	
CHECKED BY	

6/29/22 d:\E:\nest\guardrail\109\MASH-A_Flare\109.dwg

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

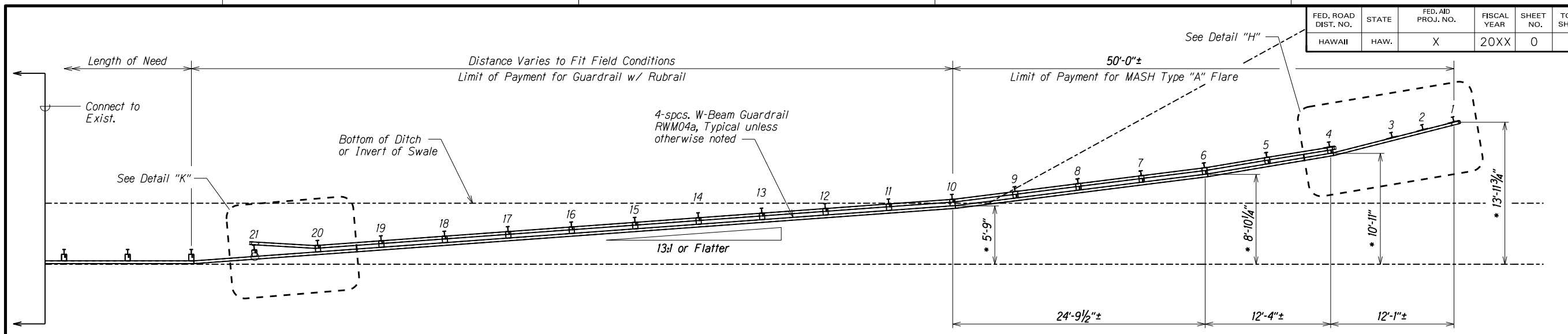
MASH TYPE "A" FLARE

XX
XX
XX

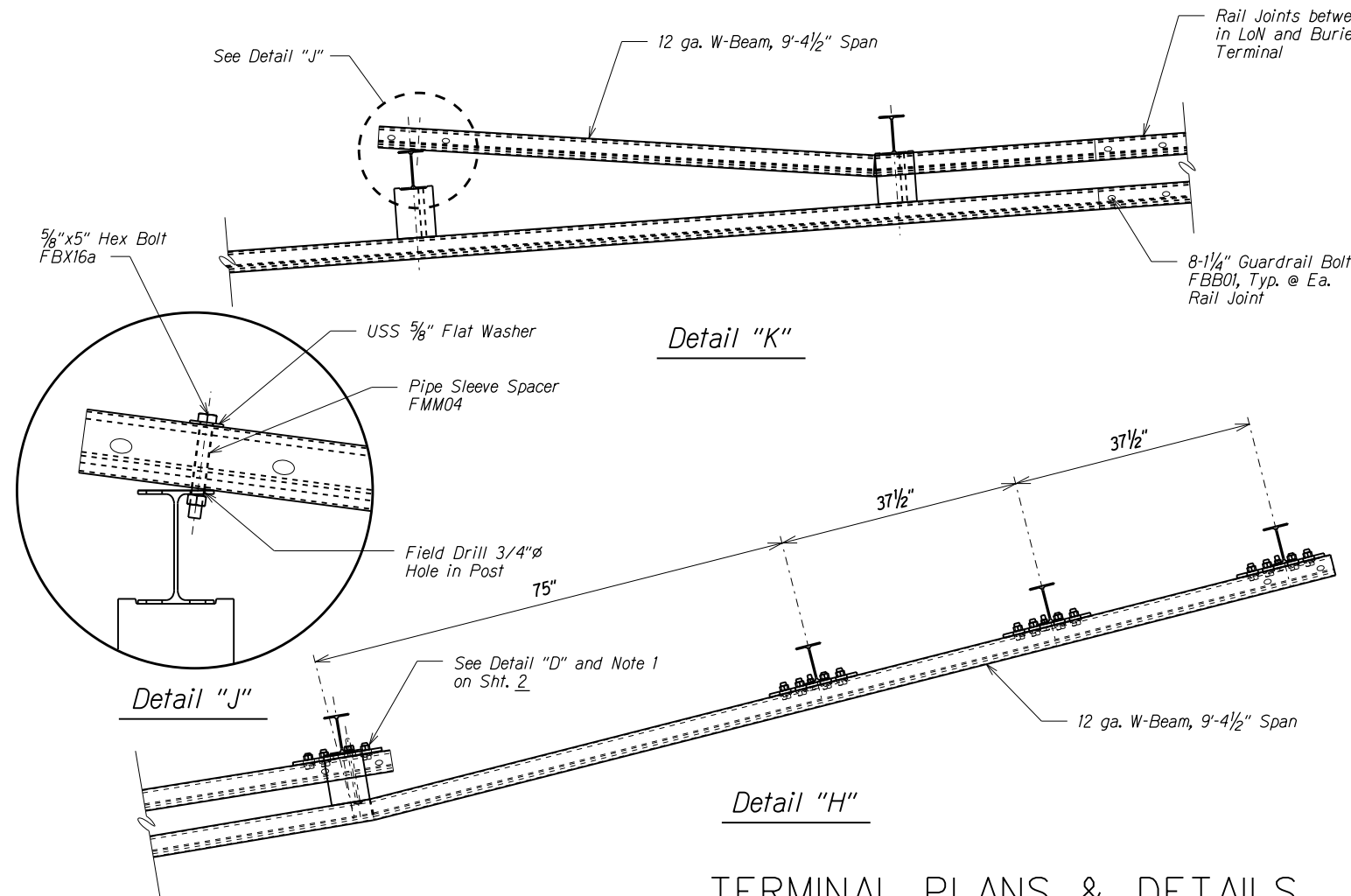
Scale: NTS Date: XX, 202X

SHEET No. 2 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	X	20XX	0	0



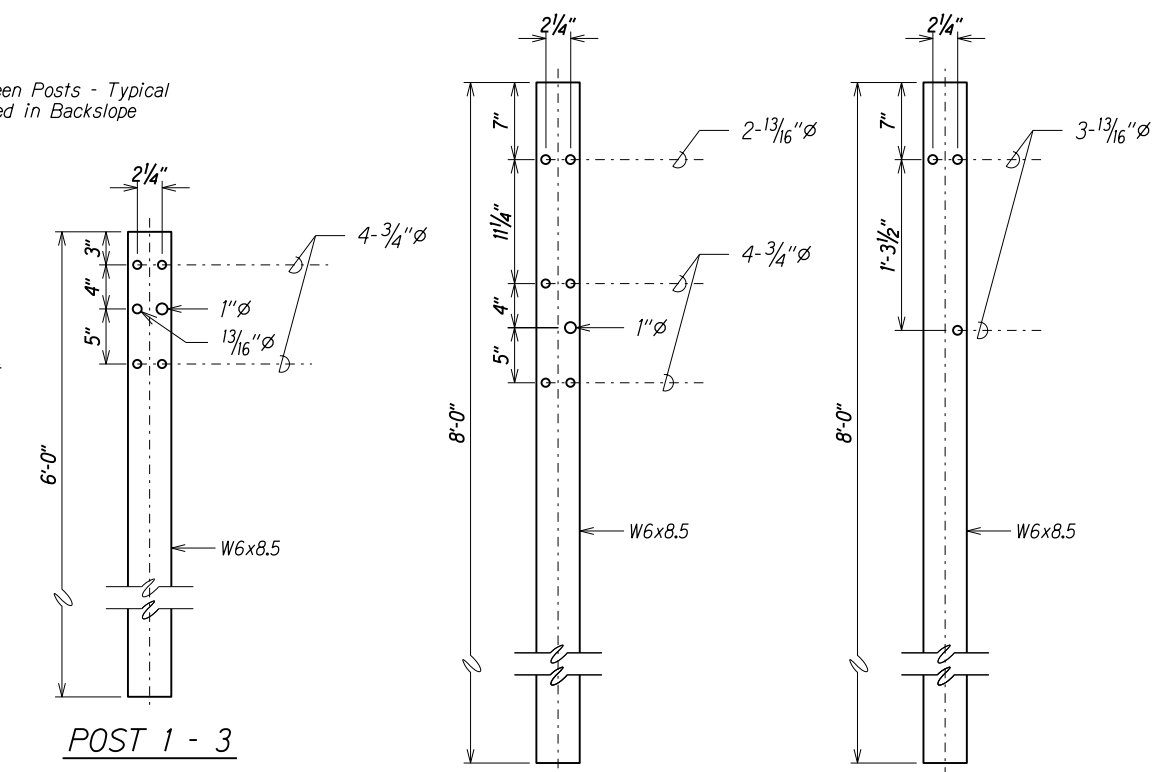
Terminal Details - Plan



Detail "K"

Detail "H"

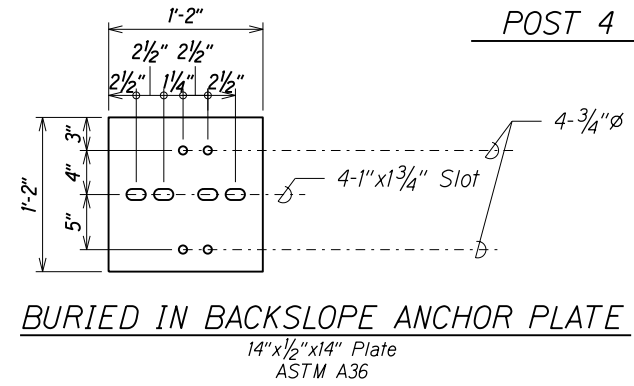
TERMINAL PLANS & DETAILS
(BURIED IN BACKSLOPE)



POST 1 - 3

POST 4

POST 5 - 21



BURIED IN BACKSLOPE ANCHOR PLATE

14" x 1/2" x 14" Plate
ASTM A36

Note:
1. * These dimensions indicate the offset to the back of the Rail at Posts 1, 4, 6 and 10, based on a 6'-0" Wide Ditch or Swale foreslope.

SURVEY PLOTTED BY	DATE
DESIGNED BY	
DESIGNED BY	
QUANTITIES BY	
CHK. X	
CHK. X	
CHK. X	

6/29/22 d:\Ernest\guardrail\109\MASH_A flare\109.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MASH TYPE "A" FLARE

XX
XX
XX

Scale: NTS Date: XX, 202X

SHEET No. 3 OF 3 SHEETS