

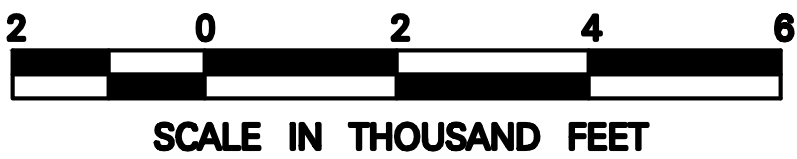
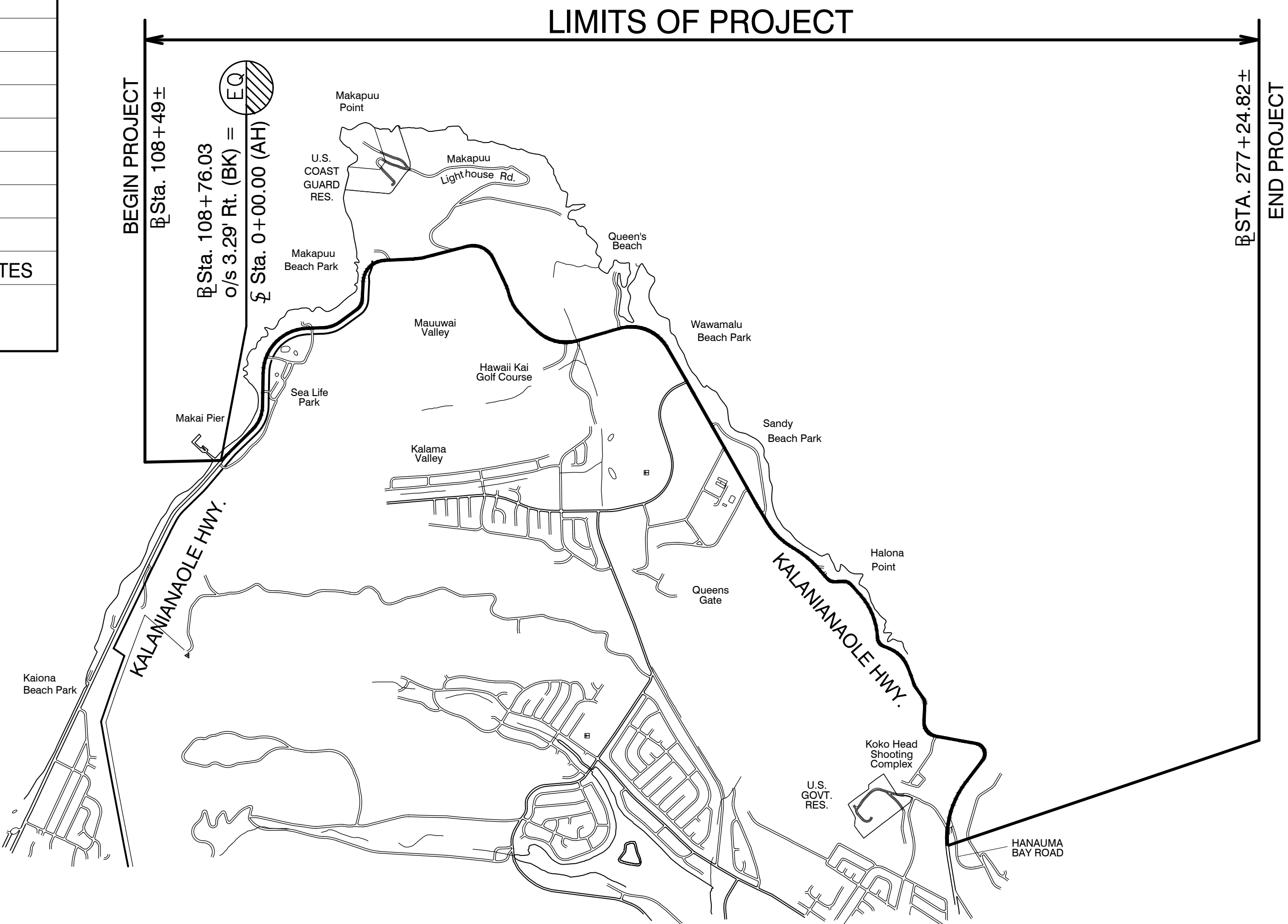
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HONOLULU, HAWAII

PLANS FOR
KALANIANA'OLE HIGHWAY RESURFACING

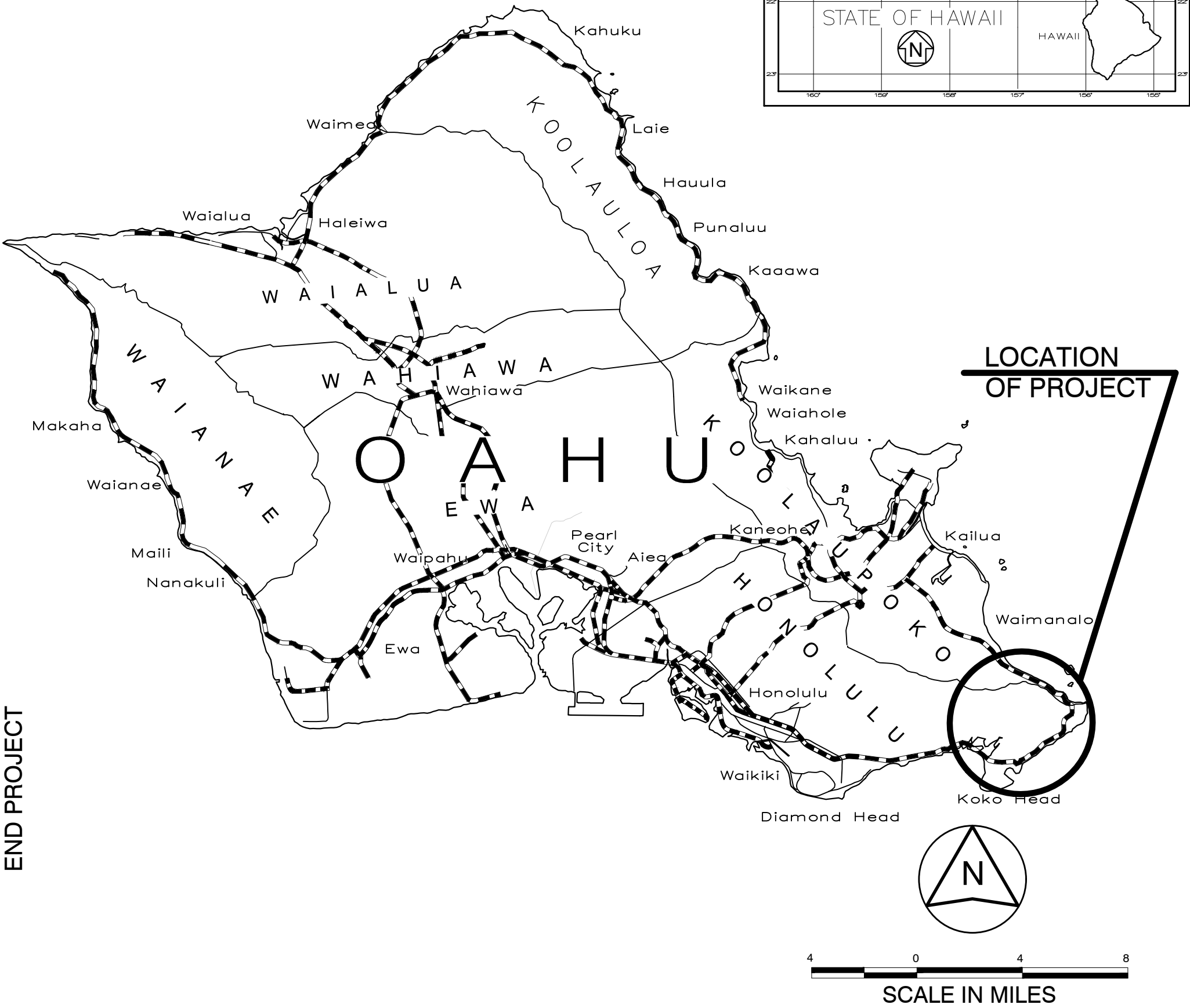
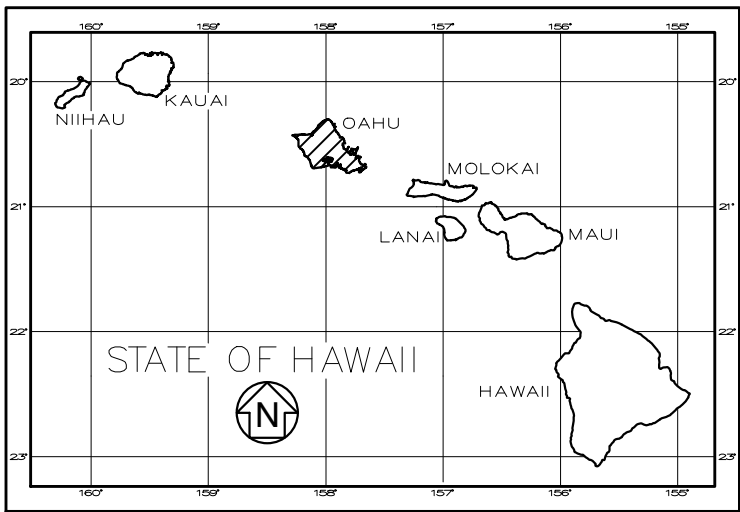
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
FEDERAL AID PROJECT NO. NH-072-1(057)

DISTRICT OF KOOLAUPOKO, HONOLULU
ISLAND OF OAHU



LAYOUT PLAN
GROSS LENGTH OF PROJECT. 5.28 MILES
NET LENGTH OF PROJECT. 5.28 MILES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	1	102



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

MILE POST 7.32 TO MILE POST 12.6

DESIGN DESIGNATION			
Makai Pier to Kealahou St		Kealahou St to Hanauma Bay Lookout Entr	
ADT (2024)	12,800	ADT (2024)	13,400
ADT (2044)	15,500	ADT (2044)	15,700
DHV	1,320	DHV	1,330
D	55/45	D	55/45
T	5.5 %	T	5.5 %

DEPARTMENT OF TRANSPORTATION STATE OF HAWAII	
APPROVED:	
	Jul 22, 2026
HIGHWAYS ADMINISTRATOR	DATE

PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

ORIGINAL
PLAN
NOTE BOOK
Re. _____

<NAME>
<Name>
<Name>
<Name>
<Name>

DATE
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STANDARD PLANS SUMMARY

STANDARD PLAN NO.	TITLE	DATE
B-01	NOTES & MISCELLANEOUS DETAILS	05/31/07
B-03	BACKFILL DETAILS AT EARTH RETAINING STRUCTURES	05/31/07
B-12	PRESTRESSED CONCRETE PILES & COMPRESSION SPLICE	05/31/07
	CAN DETAILS	
B-12A	PRESTRESSED CONCRETE PILES, PILE & COMPRESSION	05/31/07
	SPLICE CAN DETAILS & NOTES	
B-12B	PILE INTERACTION DIAGRAM	05/31/07
B-13	PRESTRESSED CONCRETE PILE BUILD-UP DETAILS	05/31/07

D-01	CATTLE GATE	05/31/07
D-02	CHAIN LINK FENCE WITH TOPRAIL	05/31/07
D-03	CHAIN LINK FENCE WITHOUT TOPRAIL	05/31/07
D-04	WIRE FENCE WITH METAL POSTS	05/31/07
D-05	TYPICAL DETAILS OF CURBS AND/OR GUTTERS	05/31/07
D-06	TYPICAL DETAIL OF REINFORCED CONCRETE DROP DRIVEWAY	05/31/07
D-07	CENTERLINE AND REFERENCE SURVEY MONUMENTS	05/31/07
D-08	STREET SURVEY MONUMENT	05/31/07
D-15	CONCRETE SIDEWALK	05/31/07
D-16	P.C.C. BUS PAD	05/31/07
D-17	P.C.C. BUS PAD	05/31/07
D-18	P.C.C. PAVEMENT LAYOUT	05/31/07
D-19	P.C.C. PAVEMENT W/ PERMEABLE BASE JOINT DETAILS	05/31/07
D-20	P.C.C. PAVEMENT W/ PERMEABLE BASE JOINT DETAILS	05/31/07
D-21	P.C.C. LONGITUDINAL JOINT DETAILS	05/31/07
D-22	P.C.C. CONNECTION TO CURBS AND GUTTERS	05/31/07
D-23	JOINTS	05/31/07

L-01	TREE PLANTING	08/16/06
L-02	TREE PLANTING	08/16/06
L-03	TREE TRANSPLANTING	08/16/06
L-04	PALM PLANTING	08/16/06
L-05	SHRUB PLANTING	08/16/06
L-06	LANDSCAPE DETAILS	08/16/06
L-07	LANDSCAPE DETAILS	08/16/06
L-08	LANDSCAPE DETAILS	08/16/06
L-09	LANDSCAPE DETAILS	08/16/06
L-10	LANDSCAPE DETAILS	08/16/06
L-11	PLANTING NOTES	08/16/06
L-12	IRRIGATION DETAILS	08/16/06
L-13	IRRIGATION DETAILS	08/16/06
L-14	IRRIGATION DETAILS	08/16/06
L-15	IRRIGATION DETAILS	08/16/06
L-16	IRRIGATION DETAILS	08/16/06
L-17	IRRIGATION DETAILS	08/16/06
L-18	IRRIGATION DETAILS	08/16/06
L-19	IRRIGATION DETAILS	08/16/06
L-20	IRRIGATION DETAILS	08/16/06
L-21	IRRIGATION DETAILS	08/16/06
L-22	IRRIGATION DETAILS	08/16/06
L-23	IRRIGATION DETAILS	08/16/06
L-24	IRRIGATION NOTES	08/16/06

STANDARD PLAN NO.	TITLE	DATE
H-01A	TYPE A CATCH BASIN	05/31/07
H-01B	TYPE B CATCH BASIN	05/31/07
H-01C	TYPE C CATCH BASIN	05/31/07
H-01D	TYPE D CATCH BASIN	05/31/07
H-01E	CATCH BASIN SECTIONS	05/31/07
H-02A	TYPE A1 CATCH BASIN	05/31/07
H-02B	TYPE B2 CATCH BASIN	05/31/07
H-02C	TYPE C1 CATCH BASIN	05/31/07
H-02D	TYPE D1 CATCH BASIN	05/31/07
H-02E	CATCH BASIN SECTION	05/31/07
H-03	TYPE A,B, AND C STORM DRAIN MANHOLE	05/31/07
H-04	TYPE D STORM DRAIN MANHOLE	05/31/07
H-05	TYPICAL REINFORCING DETAILS FOR DRAINAGE STRUCTURES	05/31/07
H-06	TYPICAL REINFORCING DETAILS FOR DRAINAGE STRUCTURES	05/31/07
H-07	CATCH BASIN AND MANHOLE CASTINGS	05/31/07
H-08	TYPE 1A-9 AND 1A-9P GRATED DROP INLET	05/31/07
H-09	TYPE 2A-9 AND 2A-9P GRATED DROP INLET	05/31/07
H-10	TYPE A-9 OR A-9P STEEL FRAMES	05/31/07
H-11	TYPE A-9 AND A-9P STEEL GRATES	05/31/07
H-12	TYPE 61614P AND 1211214P GRATED DROP INLET	05/31/07
H-13	TYPE 61616P AND 1211216P GRATED DROP INLET	05/31/07
H-14	TYPE 61214P GRATED DROP INLET	05/31/07
H-15	TYPE 1211214, 1211214P, 1211216, 1211216P STEEL	05/31/07
	FRAME AND GRATES	
H-16	TYPE 61614, 61614P, 61616, 61616P STEEL FRAME	05/31/07
	AND GRATES	
H-17	TYPE 61214 STEEL FRAMES AND GRATES	05/31/07
H-18	TYPE 61214P STEEL GRATES	05/31/07
H-19	TYPE 61614B STEEL FRAME AND GRATES	05/31/07
H-20	CEMENT RUBBLE MASONRY STRUCTURES	05/31/07
H-21	CONCRETE AND CEMENT RUBBLE MASONRY STRUCTURES	05/31/07
H-22	INLET/OUTLET STRUCTURE	05/31/07
H-23	INLET/OUTLET STRUCTURE	05/31/07
H-24	FLARED END SECTION FOR CULVERTS	05/31/07
H-25	FLARED END SECTION FOR CULVERTS	05/31/07
H-26	CONCRETE SPILLWAY INLET	05/31/07
H-27	CAP COUPLING DETAILS STANDARD JOINT	05/31/07
H-28	REINFORCED CONCRETE COLLAR & JACKET	05/31/07
H-29	UNDERDRAIN CLEANOUT STEEL FRAME AND COVER	05/31/07
H-30	UNDERDRAIN CONNECTION TO DRAINAGE STRUCTURE	05/31/07

TE-01	SIGN HEIGHT AND LOCATION	07/11/08
TE-1A	SIGN INSTALLATION	07/11/08
TE-02A	GALVANIZED FLANGED CHANNEL SIGN POST MOUNTING	05/31/07
TE-02B	GALVANIZED FLANGED CHANNEL SIGN POST MOUNTING	05/31/07
TE-02C	GALVANIZED FLANGED CHANNEL SIGN POST MOUNTING	05/31/07
TE-03A	GALVANIZED SQUARE TUBE SIGN POST MOUNTING	05/31/07
TE-03B	GALVANIZED SQUARE TUBE SIGN POST MOUNTING	05/31/07
TE-04	REGULATORY SIGNS	07/11/08
TE-05	WARNING SIGNS	07/11/08
TE-06	MISCELLANEOUS SIGNS	07/11/08
TE-07	CONSTRUCTION SIGNS	07/11/08
TE-08	MISCELLANEOUS INTERSECTION SIGNS	07/11/08

STANDARD PLAN NO.	TITLE	DATE
TE-09	BIKE ROUTE SIGN & SUPPLEMENTARY PLATES	07/11/08
TE-10	INTERSTATE ROUTE MARKER	07/11/08
TE-11	STATE ROUTE MARKER AND AUXILIARY MARKERS	07/11/08
TE-12	STATE ROUTE MARKER AND BORDER DETAIL FOR	07/11/08
	GUIDE SIGNS	
TE-12A	ROUTE SIGN ASSEMBLIES	07/11/08
TE-13	STREET NAME SIGN ON MAST ARM	07/11/08
TE-14	MISCELLANEOUS REFLECTOR MARKERS	07/11/08
TE-15	OBJECT MARKERS	07/11/08
TE-16	MILE POSTS	07/11/08
TE-17A	CANTILEVER OVERHEAD SIGN ELEVATION & DETAILS	05/31/07
TE-17B	CANTILEVER SIGN FRAME DETAIL AND SECTION	05/31/07
TE-17C	CANTILEVER SIGN FRAME DETAIL	05/31/07
TE-17D	CANTILEVER SIGN FRAME SECTION	05/31/07
TE-17E	CANTILEVER SIGN FRAME DETAILS	05/31/07
TE-18A	TWO POST OVERHEAD SIGN FRAME ELEVATIONS	05/31/07
TE-18B	TWO POST SIGN FRAMING PLAN SECTION	05/31/07
TE-18C	TWO POST SIGN FRAMING SECTIONS AND DETAILS	05/31/07
TE-18D	TWO POST SIGN FRAME DETAILS	05/31/07
TE-18E	TWO POST SIGN FRAME DETAILS	05/31/07
TE-19A	OVERHEAD SIGN FRAMING SCHEDULE	05/31/07
TE-19B	SIGN POST DRILLED SHAFT FOUNDATION	05/31/07
TE-19C	SPREAD FOOTING	05/31/07
TE-19D	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.1	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.2	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.3	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.4	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.5	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19E	ANCHORAGE DETAILS	05/31/07
TE-19F	ANCHORAGE DETAILS	05/31/07
TE-19G	MISCELLANEOUS SIGN FRAME DETAILS	05/31/07
TE-19H	LUMINAIRE WALKWAY SUPPORT	05/31/07
TE-19J	FIXED MESSAGE LUMINAIRE SUPPORT	05/31/07
TE-19K	MISCELLANEOUS SIGN DETAILS	05/31/07
TE-19L	MISCELLANEOUS SIGN DETAILS	05/31/07
TE-19M	MISCELLANEOUS SIGN FRAME DETAILS	05/31/07
TE-20	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20A	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20B	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20C	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-21A	SIGN BREAKAWAY MOUNTS	05/31/07
TE-21B	SIGN BREAKAWAY MOUNTS	05/31/07
TE-22	LAMINATED ALUMINUM SIGN PANELS (OVERHEAD)	05/31/07
TE-23	LAMINATED ALUMINUM SIGN PANELS (GROUND MOUNTED)	07/11/08
TE-24	SOLID ALUMINUM EXTRUDED SIGN PANEL AND	05/31/07
	ACCESSORY DETAILS	
TE-25	GUIDE SIGNS LUMINAIRE MOUNTINGS	05/31/07
TE-26	RAISED PAVEMENT MARKERS AND STRIPING	07/11/08
TE-27	RAISED PAVEMENT MARKERS AND STRIPING	07/11/08
TE-28	ENTRANCE AND EXIT PAVEMENT MARKINGS	07/11/08
TE-28A	MISCELLANEOUS PAVEMENT MARKINGS	07/11/08
TE-29	PAVEMENT ARROWS AND SYMBOLS	07/11/08
TE-30	PAVEMENT ALPHABETS, NUMBERS & SYMBOLS	07/11/08
TE-31	PAVEMENT ALPHABETS, NUMBERS & SYMBOLS	07/11/08

STANDARD PLAN NO.	TITLE	DATE
TE-32	TYPE I & II TRAFFIC SIGNAL SYSTEM MISC. DETAILS	05/31/07
TE-33	TYPE II TRAFFIC SIGNAL SYSTEM	08/16/06
TE-33A.1	TYPE II TRAFFIC SIGNAL STANDARD	05/31/07
TE-33A.2	TYPE II TRAFFIC SIGNAL STANDARD	05/31/07
TE-34	LOOP DETECTOR DETAILS	07/11/08
TE-35	LOOP DETECTORS & DUCT DETAILS	07/11/08
TE-36	TRAFFIC SIGNAL DETAILS	07/11/08
TE-37	PULLBOX & COVER DETAILS	07/11/08
TE-37A	TYPE "A" TRAFFIC PULLBOX	05/31/07
TE-37B	TYPE "A" TRAFFIC PULLBOX REINFORCING	05/31/07
TE-37C	TYPE "B" TRAFFIC PULLBOX	05/31/07
TE-37D	TYPE "B" TRAFFIC PULLBOX REINFORCING	05/31/07
TE-37E	TYPE "B" TRAFFIC PULLBOX FOUNDATION	05/31/07
TE-37F	TYPE "C" TRAFFIC PULLBOX	05/31/07
TE-37G	TYPE "C" TRAFFIC PULLBOX REINFORCING	05/31/07
TE-37H	TYPE "C" TRAFFIC PULLBOX FOUNDATION	05/31/07
TE-37J	TRAFFIC PULLBOX COVER AND DETAILS	05/31/07
TE-38	TYPE III TRAFFIC SIGNAL STANDARD	05/31/07
TE-38A.1	TYPE III TRAFFIC SIGNAL STANDARD	05/31/07
TE-38A.2	TYPE III TRAFFIC SIGNAL STANDARD	05/31/07
TE-39	METAL GUARDRAIL CONNECTION TO CONCRETE BARRIER	07/11/08
TE-40	CONCRETE BARRIER TRANSITION	05/31/07
TE-40A	CONCRETE BARRIER TRANSITION SECTIONS	05/31/07
TE-41	GUARDRAIL TYPE 4 (RIGID BARRIER)	05/31/07
TE-42	PORTABLE CONCRETE BARRIER	05/31/07
TE-43	PORTABLE CONCRETE BARRIER	05/31/07
TE-44	GUARDRAIL TYPE 4 MISCELLANEOUS DETAILS	07/11/08
TE-45	BARRICADES	07/11/08
TE-46	DELINEATION & PAVEMENT MARKINGS AT NARROW BRIDGES	07/11/08
TE-47	HIGHWAY LIGHT STANDARD	05/31/07

NOTE:
STANDARD PLANS APPLICABLE TO THIS PROJECT ARE INDICATED BY A " " NEXT TO THE STANDARD PLAN NO. (FOR EXAMPLE: D-07)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD PLANS SUMMARY

KALANIANA'OLE HIGHWAY RESURFACING

VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

Fed-aid Proj.No. NH-072-1(057)

Scale: Not To Scale Date: June, 2025

GENERAL NOTES

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	3	102

- ORIGINAL
PLAN

NOTED BY

Re.

PLOTTED BY

DRAWN BY

DESIGNED BY

QUANTITIES BY

<NAME>

<Name>

<Name>

<Name>

DATE

-

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1. The scope of work consists of cold planing, resurfacing, reconstruction of the weakened pavement areas, widening paved shoulders, upgrading grated inlets, upgrading and repairing existing culverts and headwalls, upgrading existing guardrails and end treatments, installation of new crosswalk, centerline and reference survey monuments, milled centerline and rumble strips, pavement markings and signage, and adjusting utility manholes.

2. The location and existence of underground utilities, manholes, monuments and other 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 make an independent check on the ground by probing and/or checking with the various utility companies and government agencies to verify the exact locations and depths of the existing utilities and obstructions. The Contractor shall exercise proper care excavating and cold planing in the area. Whenever connections of new utilities are shown on the plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavating new lines. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations. All damaged portions shall be replaced or repaired in accordance with the standards and specifications of the affected utility company at the Contractor's expense. Refer to Hawaii Standard Specification Subsection 104.11 Utilities and Services.

3. The Contractor shall not perform any construction work during periods of heavy rainfall.

4. 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, to the satisfaction of the Engineer. Refer to Hawaii Standard Specification Subsection 107.12 Protection of Persons and Property.

5. Prior to resurfacing operations, the Contractor shall be responsible for locating, preserving and marking all utility and highway facilities that will require adjustments to the new finished pavement grade. Additionally, the Contractor shall submit to the Engineer a list of all items, including water, drainage, sewer, electrical, telephone, and cable utilities to be adjusted to the new finished grade.

6. The exact locations and limits of areas to be reconstructed and cold planed shall be determined in the field by the Contractor. The Contractor shall not begin work until the limits of work are verified and accepted by the Engineer. The Contractor shall provide drawings showing locations including the outlines of the proposed repair areas. The total area of repairs shall be calculated and provided to the Engineer with the drawings. The Contractor shall not begin any repair until the Engineer verifies and accepts the location and size of the area to be repaired.

7. The Contractor shall notify the Department of Transportation Services Transportation Mobility Division (DTS-TMB) no less than 30 days prior to the start date of work, DTS-TMD shall review and approve the scope of work, location, and duration of any work that affects bus operations, routes or stops. Notification is required to all following phone numbers and emails: DTS-TMD - (808) 768-8396, TheBusStop@honolulu.gov, handivan@honolulu.gov; Oahu Transit Services Bus Operations - (808) 768-9520, (808) 848-4565, John.Donovan@thebus.org, Spaio@thebus.org, FIELD-OPS-MGR@thebus.org; Oahu Transit Services Para-transit Operations - (808) 454-5006

8. The Contractor shall obtain all permits and licenses required to perform the work prior to start of work. The Contractor assumes exclusive responsibility for identifying, acquiring and paying for all permits and licenses required to perform the work. Refer to Hawaii Standard Specifications Subsection 107.02 Permits and Licenses.
9. The Contractor shall obtain a Permit to Perform Work Upon State Highways from the Oahu District Engineer, State Highways, at 727 Kakoi Street, prior to commencement of work within the State's highway right-of-way.

The Permit to Perform Work Upon State Highways may be revoked because of default in any of the following, but not limited to, conditions:

a. Work performed before or after permitted hours.

b. Failure to maintain roadway surfaces in a smooth and safe condition.

c. Failure to clean up construction debris generated from project work.

d. Failure to provide proper traffic control.

e. Failure to replace damaged pavement markings and signs.

Any revocation of the permit shall be at the Contractor's expense and no additional cost to the State and no additional contract time will be added.

10. 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.

11. The Contractor shall remove and dispose of all existing raised pavement markers and traffic tapes prior to the overlaying of Asphalt Concrete.

12. All holes, depressions and wheel ruts shall be filled and compacted with Hot Mix Asphalt Pavement, Mix No. V prior to resurfacing.

13. The existing drainage system shall be kept functional at all times during construction. The Contractor shall furnish materials, equipment, labor, tools and incidentals necessary to maintain flow.

14. Smooth riding connections shall be constructed at all limits of resurfacing 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.

15. The Contractor shall clean and remove any accumulation of aggregates along the roadside within 10 feet of the edge of pavement.

16. Existing facilities and/or pavement to remain which has been damaged by the Contractor shall be restored to its original condition at no cost to the State.

17. The Contractor shall be held liable for any damages incurred to the existing landscaping as a result of his operations.

18. Contractor shall dispose or deliver any removed material at no cost to the State.

19. After completion of resurfacing, the Contractor and the Engineer will test for and determine ponding areas (i.e. low spots within resurfaced area). It shall be the responsibility of the Contractor to correct and resurface and/or repair all such ponding areas. Corrective measures shall be approved by the Engineer.

20. The Contractor is to take special measures to reduce dust from cold planing operations including but not limited to use of water misters on cold planing equipment and vacuum sweepers. Use of power brooms to sweep road is not allowed if a dust nuisance is created.

21. The Contractor shall obtain a Community Noise Permit for all construction activities.

22. The vertical riding surface drop-off between adjacent surfaces shall not exceed 3-inches. This shall include differences in height between adjacent pavement surfaces, cold planed surfaces, bridge decks and new concrete slabs. If a vertical riding surface drop-off exists at the end of each day's work, the Contractor shall provide temporary transition tapers with maximum slopes of 48:1 for travel in the longitudinal direction and 6:1 for transverse movements.

23. The Contractor shall submit Site-Specific Traffic Control Plans, in accordance with Hawaii Standard Specification Section 645 to the Engineer for review and approval, prior to implementation.
24. The Contractor shall coordinate with the Honolulu Police Department Special Duty Section to hire police officers for traffic control operations and transporting of project equipment to ensure minimal delay due to lane closures. The Contractor shall furnish a minimum of two (2) police officers for each location that requires work zone traffic control, in accordance with Special Provisions Subsection 645.03 Construction.

25. Any Survey Monuments that are disturbed shall be restored under the supervision of a licensed land surveyor registered in the State of Hawaii at no cost to the State. All survey data shall be certified by the surveyor and submitted to the Engineer.

26. The Contractor shall submit requests for detours and lane closures in accordance with Hawaii Standard Specification Subsection 645.03(F) and refer to minimum timeframes required for implementation. Once the request has been approved by the Engineer, the Contractor is required to provide a written Weekly Lane Closure Request to the Engineer at least 1-week ahead of all upcoming work.

27. The Contractor shall inform residents of ramp closure details and detours at least 2 weeks in advance.

28. The Contractor shall provide and maintain for access to and from all existing driveways, sidewalks, ADA access routes complying with 2010 ADAAG Section 206.1, side streets, and cross streets at all times. This work shall be considered incidental to various contract items and will not be paid for separately.

29. The Contractor shall verify the presence of existing aerial and underground utilities which may conflict with construction activities and shall coordinate with the utility company for temporary relocations, as necessary. All costs associated with temporary relocations shall be borne by the Contractor.

30. Refer to Special Provisions Subsection 645.03(F) for Lane Closures.

31. All work called for in the contract documents but not itemized in the proposal and all work not called for but required for the construction in the project shall be considered incidental to the various contract items.

32. Contractor shall submit a Daily Inspection Report signed by the Contractor's authorized representative daily to the Engineer and Inspector. Submittal frequency may be changed upon written request and approval from the Engineer.

33. The Contractor shall follow Hawaii Standard Specifications Subsection 105.10 -Construction Stakes, Lines and Grades.

34. The Contractor shall verify and check all dimensions and details shown in the drawing prior to the start of construction. Any discrepancy shall be immediately brought to the attention of the engineer for clarification.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES AND LEGEND

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
FED-AID PROJ. No.NH-072-1(057)
Scale: Not To Scale Date: June, 2025

GENERAL NOTES (CONT.)

35. The Contractor shall provide quality control of work. The Contractor shall submit copies of all measurements and test results to the Engineer.
36. Dressing of shoulder, sidewalk, bus turnout and backfilling on fill slopes shall consist of clearing and grubbing, grading, reshaping and compacting the unpaved shoulders and fill slopes with suitable material as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to the various contract items.
37. Drilling of holes shall be considered incidental to the various Guardrail items and will not be paid for separately.
38. The exact location and limits of guardrail improvements shall be determined in the field by the Engineer.
39. Any unfinished shoulder widening, metal railings, guardrails, and median drainage work shall not be left unshielded at the end of the work day. Refer to State Standard Plans for more information. The contractor shall develop a Traffic Control Plan to include all necessary Traffic Control devices and shall be approved by the Engineer. All work mentioned above including furnishing, installing, and maintaining traffic control device shall be considered incidental to Contract Item No. 645.0100 -Traffic Control and shall not be paid for separately.
40. No section where guardrails have been removed shall be left unshielded and exposed to traffic. Open sections shall be shielded with portable physical barriers. Furnishing, installing, and maintaining physical barriers shall be considered incidental to the various contract items.

Sea Life Park:

The Contractor shall coordinate with Sea Life Park when nightly events would be hosted at the site to accommodate event traffic traveling to and from the site. The Contractor shall provide the following staff with emergency access to Sea Life Park:

Nicholas Yim	AGM	808-286-4414
Amber Ramos	Curator	818-370-1828
Dr. Annie Clift	Vet	970-227-9744
Rene Featheran	Operations	808-798-4890
Joseph LeDoux	Maint Sup	808-630-3108
William Dozier	Maint	808-351-8112
Ted Kim	Night Security Officer	

HISTORICAL & ARCHAEOLOGICAL (SECTION 106) NOTES

1. The Wawamalu Stream Bridge and the Ihiihilaukaea Stream Bridge are historic properties within the project limits.
2. Work on the Wawamalu Stream Bridge shall be limited to resurfacing the top layer AC overlay, widening the AC paved shoulder up to the concrete curb and replacing existing guardrail.
3. Work on the Ihiihilauakea Stream Bridge shall be limited to resurfacing the top layer AC overlay, installing curb under the thrie beam, and replacing existing guardrail.
4. No alterations shall be done to the existing historic bridges or railings.

ENDANGERED SPECIES (SECTION 7) NOTES

Refer to Special Provisions Section 671 - Protection of Endangered Species

TRAVERSE CONTROL

1. All utility boxes, (regardless if they are not identified on the plan) including any valve height adjustments, shall be adjusted or replaced by the contractor, to the satisfaction of the appropriate utility agency or company.
2. The Contractor, at their own expense, shall keep the project and its surrounding areas free from dust nuisance. The work shall be in conformance with the air pollution standards and regulations of the State Department of Health. The City & County may require supplementary measures as necessary.
3. Prior to the start of construction work, the contractor shall hire a licensed professional land surveyor, to reference all street monuments that may be affected by the contractor's operations. This surveyor will be responsible for the re-establishment and certification of the street monuments at the end of construction.
4. The contractor shall locate and preserve the control points, any points that are affected by the improvements shall be properly referenced and then re-established at the contractor's expense, to the satisfaction of the state.
5. The contractor shall use care to preserve any boundary pins, any boundary pins that are disturbed or damaged by the contractor's activities shall be replaced and/or re-established at the contractor's expense, to the satisfaction of the state.
6. Referencing and re-establishing of control points and boundary markers shall be done by a licensed professional land surveyor.

HAWAII ONE CALL CENTER:

1. Before conduction any excavation in the public right of way or on private property, call the Hawaii One Call Center at least five (5) working days before planning to dig. Be sure to give them the address and location of the nearest cross street(s) near where digging is planned.

Call 811 toll-free 24 hours a day.
For more information, go to www.callbeforeyoudig.org

2. The Hawaii One Call Center will contact all utility companies to tone, mark or identify the location of their underground utilities for free. Mark the area where the Contractor plans to excavate in white and label all of the other utilites as listed below.

RED	Electric power lines, cables, or conduits, and lighting cables.
YELLOW	Gas, oil, steam, petroleum or other hazardous liquid or gaseous materials.
ORANGE	Communications, cable TV, alarm or signal lines, cables, or conduits.
BLUE	Water, irrigation, and slurry lines.
GREEN	Sewers, storm sewer facilities or other drain lines.
WHITE	Proposed excavation.
PINK	Temporary survey markings.
PURPLE	Reclaimed water, irrigation and slurry lines.

3. In accordance with Hawaii State Law Section 269E-7, the Hawaii One Call Center (HOCC) shall provide an inquiry identification number and utility marks shall remain valid for not more than twenty-eight (28) calendar days from the date of issuance and after that date shall require the Contractor to submit a new request for HOCC revalidation. The Contractor shall provide all inquiry identification numbers for each location request to the Engineer.

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LEGEND

	Resurfacing Limits		<i>mon.</i> Existing Monument
	Resurfacing Limits		<i>MON.</i> New Monument
	Reconstruction Area		— <i>d-60</i> — Existing 60" Drain Line
— <i>e</i> —	Existing Electrical Line	— <i>d-36</i> —	Existing 36" Drain Line
<i>jp</i>	Existing Joint Pole	— <i>d-30</i> —	Existing 30" Drain Line
<i>pp</i>	Existing Power Pole	— <i>d-24</i> —	Existing 24" Drain Line
<i>emh</i>	Existing Electric Manhole	<i>sdmth</i>	Existing Storm Drain Manhole
— <i>t</i> —	Existing Telephone Line	<i>gdi</i>	Existing Grated Drop Inlet
— <i>data</i> —	Existing DATS Line	<i>cb</i>	Existing Catch Basin
<i>tp</i>	Existing Telephone Pole	<i>sl</i>	Existing Highway Lighting Standard
<i>tmh</i>	Existing Telephone Manhole	<i>slpb</i>	Existing Highway Lighting Standard Pullbox
— <i>w-42</i> —	Existing 42" Water Line	<i>tspb</i>	Existing Traffic Signal Pullbox
— <i>w-12</i> —	Existing 12" Water Line	— —	Existing Metal Guardrail
— <i>w-6</i> —	Existing 6" Water Line	<i>es</i>	Existing edge of shoulder
— <i>w-3</i> —	Existing 3" Water Line	<i>ep</i>	Existing edge of pavement
<i>wmth</i>	Existing Water Manhole	<i>ES</i>	New Edge of Shoulder
<i>wrv</i>	Existing Water Valve Box	<i>EP</i>	New Edge of Pavement
<i>wrm</i>	Existing Water Meter	<i>utbox</i>	Existing Utility Pullbox
<i>irr</i>	Existing Irrigation Box	<i>ltbox</i>	Existing Lighting Pullbox
<i>fh</i>	Existing Fire Hydrant	<i>ps</i>	Existing Traffic Sign
— - 8 - —	Existing 8" Sewer Line	<i>r</i>	Existing Reflector
<i>smth</i>	Existing Sewer Manhole		
— - 8 - —	Existing 8" Gas Line		
— - 6 - —	Existing 6" Gas Line		
— - 4 - —	Existing 4" Gas Line		
— - 2 - —	Existing 2" Gas Line		
<i>gv</i>	Existing Gas Valve Box		
<i>gmth</i>	Existing Gas Manhole		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES AND LEGEND

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

FED-AID PROJ. No.NH-072-1(057)

Scale: Not To Scale Date: June, 2025

DESIGNED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
Re.	

WATER NOTES

1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, dated 2005, as amended, of the Hawaii Highways Division, Department of Transportation, and the City and County of Honolulu Board of Water Supply's "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 2021, and all subsequent amendments and additions.
2. No deviation to the Board of Water Supply 2002 Water System Standards shall be allowed without the Manager and Chief Engineer's approval.
3. All plans approved by the Board of Water Supply are based solely on the adequacy of the water supply and/or if work is to be done on/or near the water system.
4. The Contractor shall notify BWS Capital Projects Division, Construction Section in writing one week prior to commencing construction activities.
5. The existence and location of underground utilities and structures as shown on the plans are from the latest available data, but are not guaranteed as to their accuracy or the encountering of other obstacles during the course of the work. The Contractor shall be responsible and pay for all damages to existing utilities. The Contractor shall not assume that where no utilities are shown, that none exist.
6. The contractor shall be responsible for the protection of all waterlines during construction. The contractor shall be especially careful when excavating behind waterlines, tees, and bends wherever there is a possibility of waterline movement due to the removal of the supporting earth beyond the existing reaction blocks. The Contractor shall take whatever measures necessary to protect the waterlines, such as constructing special reaction blocks (with BWS approval) and/or modifying his construction method.
7. When a utility (gas, sewer, electrical duct line, fiber optic, drainage, etc.) crosses below a Board of Water Supply water main, the designer of record and their construction engineer shall be responsible for determining the adequate water main structural support and submit the construction method and shop drawing, stamped by a licensed engineer and reviewed and accepted by the designer of record, to the Board of Water Supply for review and approval. All work shall be at no cost to the Board of Water Supply.
8. Re-approval shall be required if this project is not under construction within a period of two (2) years.
9. Prior to any excavation, the Contractor shall verify in the field, the location of existing waterlines and appurtenances.
10. Any adjustments to the existing water system required during construction, to meet the requirements of the Board of Water Supply Standards, whether shown on the plans or not, shall be done by the Contractor at no cost to the Board of Water Supply.
11. The contractor shall adjust all manhole frames/valve boxes/meter boxes within the reconstructed/resurfaced areas. The Contractor shall be responsible for referencing these manholes/valve boxes/meter boxes to facilitate the adjustments.
12. The Contractor shall maintain 3'-0" minimum cover for all existing waterlines from new finish grade.
13. Two-way blue reflective hydrant markers Type DB shall be installed at all fire hydrant locations.

ORIGINAL PLAN	PLOTTED BY	<NAME>	DATE	
	DRAWN BY	<Name>	"	
	TRACED BY	<Name>	"	
	DESIGNED BY	<Name>	"	
NOTE BOOK	QUANTITIES BY	<Name>		
	CHECKED BY	<Name>		
Re. _____				

HAWAIIAN TELCOM NOTES

1. The Contractor shall procure and pay for all licenses and permits and shall give all notices necessary and incident to the due and lawful prosecution of the work.
2. The Contractor shall obtain an excavation permit and toning request from Hawaiian Telcom's Excavation Permit Section, located at 1177 Bishop Street, two weeks prior to the start of construction. Hours of business are 8:00 a.m. to 11:00 a.m. and 12:00 p.m. to 3:00 p.m. Monday through Friday, except holidays.
3. Prior to the excavation of the ductline, the contractor shall request Hawaiian Telcom to locate existing ductline wherever required. For underground cable locating and marking, five (5) working days advance notice is required. Three (3) working days advance notice is required for any inspection by a designated representative.
4. The locations of existing utilities are approximate only. The Contractor shall exercise extreme caution and shall maintain proper clearances whenever construction crosses or is in close proximity of Hawaiian Telcom facilities. The Contractor shall verify their locations and shall be liable for any damages to Hawaiian Telcom facilities. Any damages shall be reported immediately to Hawaiian Telcom's repair section at #611 (24 hours) or to the excavation permit section at 546-7746 (normal working hours, Monday through Friday, except holidays). As a result of his operations, adjustments to the new ductline alignment, if required, shall be made to provide the required clearances.
5. The Contractor shall take necessary precaution not to damage existing cables or ducts. A Hawaiian Telcom inspector or designated representative is required to be at any job site whenever there will be a breakage into or entry into any structure that contain Hawaiian Telcom facilities. Temporary cable and duct supports shall be provided wherever necessary.
6. The Contractor shall notify Hawaiian Telcom's inspector or designated representative a minimum of 72 hours prior to excavation, bracing, or backfilling of Hawaiian Telcom's structures or facilities.
7. All applicable construction work shall be done in accordance with the "Hawaiian Telcom Standard Specifications for Placing Telephone Systems" dated January 2007, all subsequent amendments and additions, and all other pertinent standards for telephone construction. Contractor shall familiarize his personnel by obtaining applicable specifications.
8. When excavation is adjacent to or beneath Hawaiian Telcom's existing structures or facilities, the contractor shall:
- a) Sheet and/or brace the excavation to prevent slides, cave-ins, or settlements to ensure no movement to Hawaiian Telcom's structures or facilities.
- b) Protect existing structures and/or facilities with beams, struts, or underpinning while excavating beneath them to ensure no movement to Hawaiian Telcom's structures or facilities.
9. The Contractor shall brace all poles or light standards near the new ductline, manhole, or handhole during his operations.
10. The Contractor shall saw-cut A.C. pavement and concrete gutter wherever new manholes, handholes, or ductlines are to be placed and shall restore to existing condition or better.
11. The Contractor shall comply with the policy adopted by the Department of Planning and Permitting, City and County of Honolulu, concerning the replacement of concrete sidewalks after excavation work.

12. The underground pipes, cables, or ductlines known to exist by the engineer from his search of records are indicated on the plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the area. Wherever connections of new utilities to existing utilities are shown on the plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines.
13. Wherever connections to existing utilities are shown on the plans, the contractor shall expose the existing lines prior to excavation of the main trenches to verify their locations and depths.
14. The Contractor, at his own expense, shall keep the project and surrounding area free from dust nuisance. The cost for supplementary measures, which will be required by the City and County, shall be borne by the Contractor.
15. The Contractor shall pump all manholes dry during final inspection.
16. The Contractor shall notify Hawaiian Telcom inspector 24 hours prior to the pouring of concrete or backfilling.
17. When connecting to manhole walls, all existing reinforcing bars shall be left intact. Ducts shall be adjusted in the field in order to clear reinforcing.
18. The Contractor shall be responsible for laying out all required lines and grades and shall preserve all bench marks and working points necessary to lay out the work correctly. The new ductline shall be adjusted by the Contractor to suit the existing conditions and the details as described in the plans.
19. Minimum concrete strength shall be:
- For ductline 2500 psi at 28 days
- For manhole 3000 psi at 28 days or as specified in design notes
20. Bends in the duct alignment, due to changes in grade shall have a minimum radius of 25 feet. All 90 degree C-bends at a pole or at the building floor slab penetration, shall have a bend radius of ten times the diameter of the duct or greater.
21. After ductline has been completed, a mandrel with a square front not less than 12" long and having a diameter of 1/4" less than the inside diameter of the duct, shall be pulled through each duct after which a brush with stiff bristles shall be pulled through to make certain that no particles of earth, sand, or gravel have been left inside. Ducts shall be completely dry and clean.
22. All ducts and conduits shall have an 1800# polyester mule-tape (NEPTCO, WP1800P, Hawaiian Telcom Material Code No. 571154) installed throughout its entire length. All ducts shall be capped to prevent entry of foreign material during construction and at the completion of installation.

APPROVED:



MANAGER AND CHIEF ENGINEER, BWS

8/2/2024

DATE

(For work affecting BWS facilities in City/State R/W and BWS easements only)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES

KALANIANA'OLE HIGHWAY RESURFACING

VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

FED-AID PROJ. No.NH-072-1(057)

Scale: Not To ScaleDate: June, 2025

Spectrum Oceanic (CATV) Notes

1.

The contractor shall procure and pay for all licenses and permits and shall give all notices necessary and incident to the due and lawful prosecution of the work.
2.

The Locations of Existing Utilities are Approximate Only. The Contractor Shall Verify their Locations and Shall Be Responsible for Any Damages to these Utilities as a Result of His Operations. Adjustments to the New Ductline Alignment, If Required, Shall Be Made to Provide the Required Clearances.
3.

The Contractor Shall Brace All Poles or Light Standards Near the New Ductline, Manhole or Handhole During its Operations.
4.

the Contractor Shall Saw-Cut A.C. Pavement, Concrete Gutter, and Concrete Sidewalk Wherever New Manholes, Handholes, Pullboxes or Ductlines are to Be Placed and Shall Restore to Existing Condition or Better.
5.

The Underground Pipes, Cables, or Ductlines Known to Exist by the Engineer from His Search of Records are Indicated on the Plans. The Contractor Shall Verify the Locations and Depths of the Facilities and Exercise Proper Care in Excavating in the Areas. Wherever Connections of New Utilities to Existing Utilities are Shown On the Plans, the Contractor Shall Expose the Existing Lines at the Proposed Connections to Verify Their Locations and Depths Prior to Excavation for the New Lines.
6.

The Contractor, at His Own Expense, Shall Keep the Project and Surrounding Area Free from Dust Nuisance. The Cost for Supplementary Measures, Which Will Be Required by the City And County, Shall Be Borne by the Contractor.
7.

Prior to the Excavation of the Ductline, the Contractor Shall Request Spectrum Oceanic to Locate Existing Ductline Wherever Required.
8.

The Contractor Shall Take Necessary Precaution Not to Damage Existing Cables or Ducts. Any Work Involving Existing Cables or Ducts Shall Be Done in the Presence of the Spectrum Oceanic's Inspector or His Representative. Temporary Cable and Duct Support Shall Be Provided Wherever Necessary.
9.

The Contractor Shall Notify the Spectrum Oceanic Inspector 72 Hours Prior to the Start of Work nn CATV Infrastructure, Pouring Concrete, or Backfilling. Spectrum Oceanic's Inspector(sJ: Perry Samue/u at 387-2496 or Paul Caspi/lo at 479-1637.
10.

Wherever Connections to Existing Utilities are Shown On the Plans, the Contractor Shall Expose the Existing Lines Prior to Excavation of the Main Trenches to Verify Their Locations and Depths.
11.

Contractor Shall Provide All Materials and Furnish All Labor and Equipment Necessary to Install the Ductline In Place Complete.
12.

The Contractor Shall Be Responsible for Laying Out All Required Lines and Grades and Shall Preserve All Bench Marks and Working Points Necessary to Lay Out the Work Correctly. The New Ductline Shall Be Adjusted By the Contractor to Suit the Existing Conditions and the Details as Described in the Plans.

13.

The Contractor, At His Own Expenses, Shall Keep the Project Area Free from Dust Nuisance. The Work Shall Be in Conformance with the Air Pollution Control Standards and Regulations of the State Of Hawaii, Department of Health.
14.

The Location of CATV Facilities Shown On Plans are from Existing Records with Varying Degrees of Accuracy as to its Actual Fixed Location. The Contractor Shall Use Extreme Caution When Working in Close Proximity of CATV Facilities.
15.

The Contractor Shall Obtain Excavation Permit Clearance from Spectrum Oceanic's Engineering Section Located at 200 Akamainui St., Mililani Tech Park.
16.

For Any Field Assistance or Verification of CATV Facilities, the Contractor Shall Call Spectrum Oceanic at 625-2100 and Ask for the OSP Engineering Department.
17.

Any Work Required to Relocate CATV Facilities Shall Be Done by Spectrum Oceanic and the Contractor Shall Be Responsible for All Coordination Requirements and Associated Costs.
18.

Any Damage To Spectrum Oceanic's Facilities Shall Be Reported to Spectrum Oceanic's TDC Department at 625-8169.
19.

The Contractor Shall Tunnel Under Existing Concrete Curb and Gutter as Necessary to Extend Conduit into Existing CATV Pullbox and into the Proposed Power Supply Pullbox.
20.

All Existing Improvements that are Disturbed During the Construction Phase Shall Be Restored to its Original or Better Condition at No Cost to the City And County In Accordance with City's Standards.
21.

At Locations Where Existing Catv Pullbox Replacement is Proposed, the Contractor Shall Take All Necessary Precaution Not to Damage the Existing Cables in the Pullbox. All Damages to Existing Cables Shall Be Repaired by Spectrum Oceanic and Paid for by the Contractor.
22.

Coordinate All Penetration of Telephone Pullboxes with Hawaiian Telcom Inspector.
23.

Smooth Finish Inside Wall of Existing Pullboxes and Handholes to its Original Condition or Better.
24.

All New Concrete Encased Conduit Shall Be PVC Pipe-Schedule 40. All New Direct-Buried Conduit Shall Be PVC Pipe-Schedule 80. Use of Any Other Material Type (GTS, EtcJ Shall Be Limited to Matching Existing Facilities. Connection of Dissimilar Materials to Require Approval from Spectrum Oceanic's Inspector and Engineering Dept.
25.

The Contractor Shall Place Poly Cord Throughout Project, and Secure in Manholes, Handholes and Pullboxes.
26.

For 3" Conduits or Larger, the Contractor Shall Install Neptco WP1800 Muletape or Approved Equal in All Ductlines, Leave Muletape in Place for Future Use as a Pull or Fish Line, Unless Otherwise Noted. Reference GTE Material Code No. 571154. All Ducts Shall Be Capped to Prevent Entry of Foreign Material During Construction and at Completion of Installation. Endbells are Required for Conduits 2" and Larger.
27.

Penetration into Pullboxes if Necessary to be from Factory Installed Opening or from Bricks Position. Penetration from Pullbox Walls is Not Acceptable.

28.

Bends in the Duct Alignment, Due to Changes in Grade Shall Have a Minimum Radius ff 20-feet. All 90-Degree C-Bends at a Pole or at the Building Floor Slab Penetration, Shall Have A Bend Radius Of 10 Times the Diameter of the Duct or Greater.
29.

Minimum Length of Conduit Used Shall Not Be Less than 5-feet in Length. Use of Partial Conduit Sections Allowable is at Spectrum Oceanic's Inspector(sJ Discretion.
30.

All Conduits Shall Enter Through the End "Short Wall" of The Pullbox. Entry Shall Be at 90 Degrees (Perpendicular) to Wall Face with Bends No Less than 12" from Exterior Wall.
31.

A Minimum of (2) Precast Riser Sections Must Be Used on All 2x4 or 2x6 Pullboxes.

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DESIGNED BY	DATE
DRAWN BY	"
TRACED BY	"
DESIGNED BY	"
QUANTITIES BY	"
CHECKED BY	"
Re. _____	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES

KALANIANA'OLE HIGHWAY RESURFACING

VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

FED-AID PROJ. No.NH-072-1(057)

Scale: Not To ScaleDate: June, 2025

Spectrum Oceanic (CATV) Notes (Cont.)

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32. All New Construction Shall Utilize Concrete Precast Base Unless Otherwise Approved or Specified by Spectrum Oceanic's Inspector(s).
33. When Three (3) Or More 4" Conduits Enter One End Wall of Any Pullbox, Only Brick Bases will be Allowed Unless Otherwise Instructed/Approved by Spectrum Oceanic's Inspector(s).
34. Two Minimum Layers of Bricks to be Used Lower than the Lowest Duct Entering the Pullbox. Top Layer of Brick to be Flush with Top of Conduit or Higher.
35. For Upgrade/Repairs to Existing Pullboxes, Bricks May Be Used and Shall Always be at Least Two Layers Lower than the Lowest Duct Entering the Pullbox.
36. At No Time Shall Cement Mortar, Wood or Any Other Material be Used Between Precast Sections.
37. Leveling or Raising of Boxes to Grade Must Be Done:
- A. Pre-Cast Base(s) - Using Gravel Layer Under Base (Type 3B or Equivalent Approved by Spectrum Oceanic's Inspector
- B. Brick Base(s) - Adjustments to Brickwork Section. the Permanent Installation of Wooden Wedges to Accomplish this Purpose Will Not Be Accepted.
38. 5/8" Copper Ground Rods Shall Be Placed in All Pullboxes Unless Otherwise Directed by Spectrum Oceanic. Ground Rods Will Be Placed in the Corner 3" to 4" from the Wall and Away from Any Conduit with No More than 8" Sticking Up Above Ground.
39. Trenching to be by Hand Digging Near and Across Existing Utility Lines.
40. Minimum Clearance Between Street Light Stand and Fire Hydrants Shall Be Three Feet.
41. Underground Utilities Shown Hereon is for Information Only. No Guarantee is made on the Accuracy or Completeness of said Installation.
42. For Underground Cable Locating and Marking, Five Working Days Advance Notice is Required. Three Working Days Advance Notice is required for Any Inspection by a Designated Representative. Contractor Shall Take Necessary Precaution Not to Damage Any Existing Cables or Ducts. Spectrum Oceanic's Inspector or Designated Representative is Required to be at Any Job Site Wherever there Will Be a Breakage into or Entry into Any Structure that Contain Spectrum Oceanic's Facilities.
43. Concrete Strength Shall Be 3000 PSI in 28 Days.
44. Curing and Backfilling. Maintain Concrete in a Moist Condition for 24 Hours Minimum for 3,000 PSI and 48 Hours Minimum for 2,500 PSI Before Compacted Backfilling; 72 Hours Minimum Before Permitting Motor Traffic Load on Ductline Curing Method Shall Meet Spectrum Oceanic's Inspector's Approval.
45. Install 4-mil. Thick Orange Color Warning Tape 3-Inch Wide, Entire Length of Trench when Placing CATV Conduits. Tape Should Read "Caution Buried Cable Line Below". Manufactured by Harris Industries, Inc., Catalog Number UT-43 or Equivalent Tape. Tape to be Installed 12-Inches Below Grade.

46. After Ductline has been Completed, a Mandrel with a Square Front Not Less Than 12-Inch Long and Having a Diameter or 1/4-Inch Less Than the Inside Diameter of Duct, Shall Be Pulled Through Each Duct after which a Brush with Stiff Bristles Shall Be Pulled Through to Make Certain that No Particles of Earth, Sand, or Gravel Have Been Left Inside. Ducts Shall Be Completely Dry and Clean.
47. Metallic Entrance Conduits Shall Be Grounded.
48. All Conduits Within a Building Shall:
- A. Be Installed in the Shortest And Straightest Possible Run.
- B. Have No Section Longer Than 100-feet Nor Contain More Than Two 90-Degree Bends. An Approved Sized Junction Box rr Gutter Box Shall Be Placed if this is Exceeded.
- C. All Bends Shall Be Long Sweep-Radius Bends But the Inside Radius of the Bend Must Never Be Less Than Ten Times the Diameter of the Conduit.
49. All Construction Must Be Inspected and Approved by Spectrum Oceanic Prior to the Installation of Any of its Facilities and the Energizing of its System.
50. Contractor and/or Customer Shall Provide Spectrum Oceanic with Sufficient Installation Time in Their Occupancy Time Table.
51. For put/box locations were vehicular intrusion possible, concrete collar required per spectrum standard and specifications manual. examples include but not limited to, rolled curbs, curb/headers less than 5" in height, vehicular travelways with no defined curb/header, etc.
- A. Non sidewalk area, see figure 18.Jc, 19.Jc and 20.Jb in the Spectrum specifications manual.

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DRAWN BY	"
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CHECKED BY	"
Revised	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES

KALANIANA'OLE HIGHWAY RESURFACING

VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

FED-AID PROJ. No.NH-072-1(057)

Scale: Not To ScaleDate: June, 2025

US Army Signal Corps – Network Enterprise Center–Hawaii Joint
Trunking System/Outside Cable Plant General Construction Notes

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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1. All Work Impacting US Army Signal Corps (SC) Telecommunications Facilities and Infrastructure Shall Be Completed in Accordance with:

- a. Military Standards and US Army Regulations (Current Version)
- b. US Army Technical Criteria for the Installation Information Infrastructure Architecture (I3A) Dated February 2010 (or Most Current). Copy of the I3A Technical Critierai Can Be Found at:

http://
lwww.lrl.usace.army.mil/ed2/article.asp?id=1416&MyCategory=212
- c. National Electric Code (NEC) and National Electric Safety Code (NESC) (Most Current Version)
- d. ANSI/TIAIEIA Telecommunication Standards
- e. National Electrical Manufacturers Association (NEMA) Bulletin No. TCB 2-2000

2. The Contractor Shall Be Responsible for Acquisition of All Applicable Guidance and Directives.

Excavation Permit.

- a. US Army Excavation Permit. The Contractor Shall Obtain, Process and have an Approved Excavation Permit from the US Army, Directorate of Public Works Located in Building 682, Located at 451 Brannon Road, Wheeler Army Air Field, Hawaii. The Excavation Permit Form Shall Be Completed and Approved a Minimum of Two Weeks Prior to Beginning Construction; or
- b. One Call Center Form. The One Call Center Form May Be Utilized in Lieu of the U.S. Army Excavation Permit Form. The Submission Shall Include a Map of the Areas Affected by Excavations. The One Call Center Form Shall Be Completed and Approved a Minimum of Two Weeks Prior to Beginning Any Construction. Submission of this Form Shall Be Submitted to:

Network Enterprise Center – Hawaii, Infrastructure Management Group
148 Curtis Loop, Wheeler Army Airfield

Building 600, Room 157

Schofield Barracks, Hawaii 96857-5020

3. The Contractor Shall Ensure the Following for OSP Placements:

- a. All Duct Joints Shall Be Reamed to Avoid Burrs, Obstructions or Areas where the Mandrel Will Not Flow Freely or Smoothly. Contractors Shall Utilize the NEMA Bulletin No. TCB 2-2000 for the General Guidelines on the Selection and Installation of Underground Non-Metallic Duct. An Electronic Copy of this File is Available at:

http:// www.nema.org/stds/tcb2.cfm.
- b. All Protruding Surfaces in the Communication Ducts at the Joints or Connections Points Shall Be Repaired or Replaced by the Contractor Until Accepted by the Government and the Government Service Provider.
- c. All New Communication Ducts Shall Be Swabbed (Cleaned), Bi-Directional Mandrel Tested by the Contractor. Bi-Directional Testing Shall Be Witnessed by a Government Representative for Acceptance by the Government and Government Service Provider. Ducts Shall Be Completely Dry and Clean (Free of Dirt, Rocks and Debris).

- d. Mandrels Shall Flow Through Freely and Smoothly with No Noticeable Obstructions or Hang-Ups.
- e. All Equipment and Personnel for Mandrel Testing Shall Be Provided by the Contractor.
- f. Mandrels Used for Communication Duct Testing Shall Be 12 Inches in Length, Solid, Non-Tapered, a Diameter of .25 Inch Less than the Inner Diameter of the Ducts being Tested.
- g. Contractor Shall Provide Details of the Mandrel Test Equipment to be Used for Government Approval 30 Days Prior to Testing.
- h. Contractor Shall Provide Schedule of Mandrel Testing for Government Approval 15 Days Prior to Any Testing.
4. The Contractor Shall Ensure the Casting of the All "New" Maintenance Holes Covers Shall Bear the Imprinting of the Words "USA Signal Corps." Inside the Neck of the Maintenance Hole Shall Be Permanently Labeled with the Maintenance Hole Identifier Provided by the Government.
5. The Contractor Shall Obtain and Fund for All Required Permits, Notices, Licenses and Authorizations for the Intended Work for Federal and US Military Facilities and Infrastructure.
6. The Contractor Shall Be Responsible to Validate Military and Defense Cables Identified and Shall Ensure Other Utilities/Facilities Both Aerial and Underground are Secured and Not Impacted During Operation. Outages and Damages to Other Utilities Shall Be the Responsibility of the Contractor.
7. The Contractor Shall Contact the Network Enterprise Center, Hawaii's Point of Contact, 72-Hours Prior to Any Physical Work to be Performed on US Army Infrastructure and Facilities.
8. The Network Enterprise Center, Hawaii's Points of Contact: Mr. James "JB" Benton (808) 787-3514, Mr. Walter Selders (808) 787-5357, Mr. Bart Wynn (808) 787-1799.
9. The following contractors are vendors who may perform work on the NETCOM cables: Choy Enterprises Incorporated (808) 479-4607, Henkels and McCoy (808) 455-1310, Verizon Federal (808) 484-7990.
10. Prior to the start of work, contractor is to forward the One Call Center form to:

Department of the Army

30th Signal Battalion/Network Enterprise Technology Command

148 Curtis Loop, Wheeler Army Airfield

Building 600, Room 157

Schofield Barracks, Hawaii 96857-5020

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TRACED BY	"
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QUANTITIES BY	"
CHECKED BY	"
Re. _____	

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
<u>UTILITY NOTES</u>
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
FED-AID PROJ. No.NH-072-1(057)
Scale: Not To ScaleDate: June, 2025

HAWAIIAN ELECTRIC COMPANY NOTES

1. Location of Hawaiian Electric Facilities.

The location of Hawaiian Electric's overhead and underground facilities shown on The plans are from existing records with varying degrees of accuracy and are not Guaranteed as shown. The Contractor shall verify in the field the locations of the Facilities and shall exercise proper care in excavating and working in the area. Wherever connections of new utilities to existing utilities and utility crossings are Shown, the Contractor shall expose the existing lines at the proposed connections And crossings to verify the depths prior to excavation for the new lines. The Contractor shall be responsible for any damages to Hawaiian Electric's facilities Whether shown or not shown on the plans.

2. Compliance With Hawaii Occupational Safety and Health Laws.

The Contractor shall comply with the state of Hawaii's occupational safety and Health laws and regulations, including without limitation, those related to working on or near exposed or energized electrical lines and equipment.

3. Excavation Clearance.

The Contractor shall obtain an excavation clearance from Hawaiian Electric's Planning and Design Section of the Customer Installations division (543-5654) located At 820 Ward Avenue, 4Th floor, a minimum of ten (10) working days prior to starting construction.

4. Caution!!! Electrical Hazard!!!

Existing Hawaiian Electric overhead and underground lines are energized and will remain energized during construction unless prior special arrangements have been made with Hawaiian Electric. Only Hawaiian Electric personnel are to handle these energized lines and erect temporary guards to protect these lines from damage. The Contractor shall work cautiously at all times to avoid accidents and damage to existing Hawaiian Electric facilities, which can result in electrocution.

5. Overhead Lines.

State law (OSHA) requires that a worker and the longest object he or she may contact cannot come closer than a specified minimum radial clearance when working close to or under any overhead lines. It is the Contractor's responsibility To be informed of and comply with the law. At any time should the Contractor anticipate that his work will result in the need to encroach within the minimum required clearance as stated in the law, the Contractor shall notify Hawaiian Electric at least three (3) months prior to the planned encroachment so that, if feasible, the necessary protections (e.g. relocate Or de-energize Hawaiian Electric lines) can be investigated. Hawaiian Electric may also be able to blanket its distribution (12kv and below) lines to provide a visual aid in preventing accidental contact. Hawaiian Electric's cost of safeguarding or identifying its lines will be charged to the Contractor. Contact Hawaiian Electric's customer installations division at 543-7070 for assistance in identifying and safeguarding overhead power lines.

6. Pole Bracing.

The Contractor shall not excavate within 10 feet from Hawaiian Electric's utility poles Or any anchor system supporting the utility pole. If the Contractor must excavate Closer than 10 feet from a utility pole or its anchor system, the Contractor will be responsible for protecting, supporting, securing and taking all precautions to prevent damage to or leaning of existing poles. Before commencing such excavation, the Contractor must submit its bracing calculations and drawings, prepared and stamped by a licensed structural engineer, to Hawaiian Electric's Customer Installations Division (543-7070) for review. Hawaiian Electric requires a minimum of ten (10) working days to conduct the review of the Contractor's submittal. The Contractor shall be responsible for the design, installation, and removal of the temporary pole bracing system, as well as all costs incurred by Hawaiian Electric to review the Contractor's drawings and to repair or straighten poles impacted by the Contractor's activities, including response and restoration costs incurred by Hawaiian Electric arising out of or related to outages caused by the Contractor's failure to meet the foregoing requirements. Hawaiian Electric's review and approval of any Contractor submittals including its work procedure shall not relieve the Contractor from any liability resulting from the Contractor's excavation near or around Hawaiian Electric's utility poles.

7. Underground Lines.

The Contractor shall exercise extreme caution whenever construction crosses or is in close proximity of underground lines. Hawaiian Electric's existing electrical cables are energized and will remain energized during construction. Only Hawaiian Electric personnel are to break into existing Hawaiian Electric facilities, handle these cables, and erect temporary guards to protect these cables from damage. The cost of Hawaiian Electric's assistance in providing proper support and protection of its underground lines will be charged to the Contractor. For assistance/coordination in providing proper support and protection of these lines, the Contractor shall call Hawaiian Electric's customer installations division at 543-7070 a minimum of ten (10) working days in advance.

Special precautions are required when excavating near Hawaiian Electric's 138kv or 46kv underground lines (see Hawaiian Electric instructions to Consultants/Contractors on "Excavation Near Hawaiian Electric's Underground 138kv and/or 46kv Lines" for detailed requirements).

For verification of underground lines, the Contractor shall call the Hawaii One Call Center at 866-423-7287 a minimum of five (5) working days in advance.

8. Underground Fuel Pipelines.

The Contractor shall exercise extreme caution whenever construction crosses or is in close proximity of Hawaiian Electric's underground fuel oil pipelines. Special precautions are required when excavating near Hawaiian Electric's underground fuel oil pipelines (see Hawaiian Electric's specific fuel pipeline "Guidelines" to Consultants/Contractors on excavation near Hawaiian Electric's underground fuel pipelines for detailed requirements).

9. Excavations. When trench excavation is adjacent to or beneath Hawaiian Electric's existing structures or facilities, the Contractor is responsible for:

- a) Arranging for Hawaiian Electric standby personnel to observe work at Contractor's cost.
- b) Sheetting, bracing, or otherwise supporting the excavation and stabilizing the existing ground to render it safe and secure and to prevent possible slides, Cave-ins, and settlements.
- c) Properly supporting existing structures or facilities with beams, struts, under-pinnings, or other necessary methods to fully protect it from damage.
- d) Backfilling with proper backfill material including special thermal backfill where existing (refer to engineering division for thermal backfill specifications).

10. Relocation of Hawaiian Electric Facilities.

Any work required to relocate or modify Hawaiian Electric facilities shall be done by Hawaiian Electric, or by the Contractor under Hawaiian Electric's supervision. The Contractor shall be responsible for all coordination, and shall provide necessary support for Hawaiian Electric's work, which may include, but not be limited to, staking of pole/anchor locations, identifying right of way and property lines, excavation and backfill, permits and traffic control, barricading, and restoration of pavement, sidewalks, and other facilities.

All costs associated with any relocation or modification (either temporary or permanent) for the convenience of the Contractor, or to enable the Contractor to perform his work in a safe and expeditious manner in fulfilling his contract obligations shall be borne by the Contractor.

11. Conflicts. Any redesign or relocation of Hawaiian Electric's facilities not shown on the plans May be cause for lengthy delays. The Contractor acknowledges that Hawaiian Electric is not responsible for any delay or damage that may arise as a result of any conflicts discovered or identified with respect to the location or construction of Hawaiian Electric's electrical facilities in the field, regardless of whether the Contractor has met the requested minimum advance notices. In order to minimize any delay or impact arising from such conflicts, Hawaiian Electric should be notified immediately upon discovery or identification of such conflict.

ORIGINAL PLAN	PLOTTED BY	<NAME>	DATE	_____
	DRAWN BY	<Name>	"	_____
NOTE BOOK	TRACED BY	<Name>	"	_____
	DESIGNED BY	<Name>	"	_____
	QUANTITIES BY	<Name>	"	_____
Re. _____	CHECKED BY	<Name>	"	_____
			"	_____

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES

KALANIANA'OLE HIGHWAY RESURFACING

VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

FED-AID PROJ. No.NH-072-1(057)

Scale: Not To ScaleDate: June, 2025

HAWAIIAN ELECTRIC COMPANY NOTES (Cont.)

12. Damage To Hawaiian Electric Facilities.

The Contractor shall be responsible for the protection of all Hawaiian Electric surface and subsurface utilities and shall be responsible for any damages to Hawaiian Electric's facilities as a result of his operations. The Contractor shall immediately report such damages or any hazardous conditions related to Hawaiian Electric's lines to Hawaiian Electric's trouble dispatcher at 548-7961. Repair work shall be done by Hawaiian Electric or by the Contractor under Hawaiian Electric's Supervision. Costs for damages to Hawaiian Electric's facilities shall be borne by the Contractor.

In case of damage or suspected damage to Hawaiian Electric's fuel pipeline, the Contractor shall immediately notify Hawaiian Electric's security command center at 543-7685 (a 24-hour number) so Hawaiian Electric personnel can secure the damaged section and report any oil spills to the proper authorities. All costs associated with the damage, repair, and oil spill cleanup shall be borne by the Contractor.

13. Hawaiian Electric Stand-by Personnel.

The Contractor may request Hawaiian Electric to provide an inspector to stand-by during construction near Hawaiian Electric's facilities. The cost of such inspection Will be charged to the Contractor. The Contractor shall call Hawaiian Electric's customer installations division at 543-7070 a minimum of three (3) months in advance to arrange for Hawaiian Electric stand-by personnel.

14. Clearances.

The following clearances shall be maintained between Hawaiian Electric's ductline and all adjacent structures (charted and uncharted) in the trench:

GUIDELINES FOR MINIMUM HORIZONTAL (PARALLEL) CLEARANCES BETWEEN HAWAIIAN ELECTRIC AND OTHER UNDERGROUND UTILITIES				
UNDERGROUND UTILITY	HAWAIIAN ELECTRIC DIRECT BURIED CABLE	HAWAIIAN ELECTRIC DIRECT BURIED IN CONDUIT (no conc. encasement)	HAWAIIAN ELECTRIC 3" (MIN.) CONCRETE ENCASEMENT	APPLICABLE NOTES:
Hawaiian Electric DB Conduits	12"	3"	0"	
Hawaiian Electric 3" Encasement	0"	0"	0"	
Telephone / CATV DB	12"	12"	6"	
Telephone / CATV DB Ducts	12"	12"	6"	
Telephone / CATV 3" Encasement	0"	0"	0"	5
Traffic Signal	12"	12"	12"	
Water DB (BWS Owned)	36"	36"	36"	1, 4
Customer Owned Water Service Laterals	12"	12"	12"	
Water (Concrete Jacketed) (BWS Owned)	36"	36"	36"	1, 4
Gas DB	12"	12"	12"	1
Gas (Concrete Jacketed)	12"	12"	12"	1
Sewer DB	36"	36"	36"	1, 2
Sewer (Concrete Jacketed)	36"	36"	36"	1, 2
Drain	12"	12"	12"	1
Fuel Pipelines				3
Notes: 1. Where space is available, parallel clearance to other utilities, or foreign structures other than communication or traffic signal shall be 36". 2. If 36" clearance cannot be met: - If clearance is less than 12", jacket sewer line with reinforced concrete (per Hawaiian Electric's std. 30-1030) for a distance of 5' plus pipe diameter. - If clearance is between 12" and 36", jacket sewer line with plain concrete. 3. All Fuel Pipeline crossings shall be reviewed and approved by the company that owns and maintains it. 4. 5 feet clear to water mains 16" and larger. 5. For situations with 0" minimum separation, a 6" separation is recommended. 6. Clearances measured from outer edges or diameters of utilities. Whenever concrete jackets are involved, clearances shall be total clear distance between the concrete jacket and utility concerned.				

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GUIDELINES FOR MINIMUM VERTICAL (CROSSINGS) CLEARANCES BETWEEN HAWAIIAN ELECTRIC AND OTHER UNDERGROUND UTILITIES				
UNDERGROUND UTILITY	HAWAIIAN ELECTRIC DIRECT BURIED CABLE	HAWAIIAN ELECTRIC DIRECT BURIED IN CONDUIT (no conc. encasement)	HAWAIIAN ELECTRIC 3" (MIN.) CONCRETE ENCASEMENT	APPLICABLE NOTES:
Hawaiian Electric DB Conduits	6"	3"	0"	
Hawaiian Electric 3" Encasement	0"	0"	0"	
Telephone / CATV DB	12"	12"	6"	
Telephone / CATV DB Ducts	12"	12"	6"	
Telephone / CATV 3" Encasement	0"	0"	0"	3
Traffic Signal	12"	12"	6"	
Water DB (BWS Owned)	12"	12"	12"	5
Customer Owned Water Service Laterals	6"	6"	6"	
Water (Concrete Jacketed) (BWS Owned)	12"	12"	12"	5
Gas DB	12"	12"	12"	
Gas (Concrete Jacketed)	12"	12"	12"	
Sewer DB	24"	24"	24"	1
Sewer (Concrete Jacketed)	24"	24"	24"	1
Drain	12"	12"	6"	
Fuel Pipelines				2
Notes: 1. If clearance cannot be met: - If clearance is less than 12", jacket sewer line with reinforced concrete (per Hawaiian Electric's std. 30-1030) for a distance of 5' plus pipe diameter. - If clearance is between 12" and 24", jacket sewer line with plain concrete. 2. All Fuel Pipeline crossings shall be reviewed and approved by the company that owns and maintains it. 3. For situations with 0" minimum separation, a 6" separation is recommended. 4. Clearances measured from outer edges or diameters of utilities. Whenever concrete jackets are involved, clearances shall be total clear distance between the concrete jacket and utility concerned. 5. 36" clearance is required for trenchless installation work.				

The Contractor shall notify the construction manager & Hawaiian Electric of any heat sources (power cable duct bank, steamline, etc.) encountered that are not properly identified on the drawing

15. Indemnity.

The Contractor shall indemnify, defend and hold harmless Hawaiian Electric from and against all losses, damages, claims, and actions, including but not limited to reasonable attorney's fees and costs based upon or arising out of damage to property or injuries to persons, or other tortious acts caused or contributed to by contractor or anyone acting under its direction or control or on its behalf; provided contractor's indemnity shall not be applicable to any liability based upon the sole negligence of Hawaiian Electric.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
UTILITY NOTES
KALANIANA'OLE HIGHWAY RESURFACING VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD FED-AID PROJ. No.NH-072-1(057) Scale: Not To ScaleDate: June, 2025

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HAWAIIAN ELECTRIC COMPANY NOTES (Cont.)

ADDITIONAL NOTES WHEN WORK INVOLVES CONSTRUCTION OF HAWAIIAN ELECTRIC FACILITIES

16. Schedule.

The Contractor shall furnish his construction schedule six (6) months prior to starting work on Hawaiian Electric Facilities. The Contractor shall give Hawaiian Electric, in writing, three (3) months notice to proceed with Hawaiian Electric's portion of work.

17. Authority.

All construction, restoration work, and inspection shall be subject to whichever governmental agency has authority over the work.

18. Specifications.

Construction of Hawaiian Electric's underground facilities shall be constructed in accordance with the latest revisions of Hawaiian Electric Specifications CS7001, CS7003, CS7202, CS9301 and CS9401 and applicable Hawaiian Electric Standards.

19. Construction.

The Contractor shall furnish all labor, materials, equipment, and services to properly perform and fully complete all work shown on the contract, drawings, and specifications. All materials shall be new and manufactured in the United States of America. All manhole, handhole, and ductline installations shall be inspected and approved by Hawaiian Electric prior to excavation and prior to placing concrete. The Contractor shall notify Hawaiian Electric's Inspection Group at 543-4399 at least five (5) working days prior to installing facilities or placing concrete.

The Contractor to coordinate work to break into Hawaiian Electric's existing electrical facilities with Hawaiian Electric's Inspection Group at 543-4399 at least ten (10) working days in advance.

20. Stakeout.

The Contractor shall arrange for toneouts of all underground facilities and shall stakeout all proposed Hawaiian Electric facilities within the project area so as to not conflict with any utility (existing or proposed) and any proposed construction or improvement work for verification by Hawaiian Electric before proceeding with Hawaiian Electric work.

21. Ductlines.

All ductline installations shall be PVC Schedule 40 encased in concrete, unless otherwise noted. All completed ductlines shall be mandrel tested by the Contractor in the presence of Hawaiian Electric's Inspector using Hawaiian Electric's Standard Practice. The Contractor shall install 1800# tensile strength muletape pull line in all completed ductlines after mandrel testing is complete.

22. Joint Pole Removal.

The last joint pole occupant off the poles shall remove the poles.

23. As-Built Plans.

The Contractor shall provide Hawaiian Electric with a set of electronic and hard copy plans of each sheet showing the offsets, stationing, and vertical elevation of the ductline(s) constructed.

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NOTE BOOK	
Re. _____	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
FED-AID PROJ. No.NH-072-1(057)
Scale: Not To ScaleDate: June, 2025

WATER POLLUTION AND EROSION CONTROL NOTES:

A. GENERAL:

1. See Special Provisions Section 209 – Water Pollution and Erosion Control. Section 209 describes but is not limited to: submittal requirements; scheduling of a water pollution and erosion control conference with the Engineer; construction requirements; method of measurement; and basis of payment. In addition, Appendix A lists potential pollutant sources and corresponding BMPs used to mitigate the pollutants.
2. Follow the guidelines in the current HDOT Construction Best Management Practices Field Manual in developing, installing and maintaining the Best Management Practices (BMP) for the project. For any conflicting requirements between the Manual and applicable bid documents, the applicable bid documents will govern. Should a requirement not be clearly described within the applicable bid documents, the Contractor shall notify the Engineer immediately for interpretation. For the purposes of clarification under
- Note A.2, "applicable bid documents" include the construction plans, standard specifications, Special Provisions, Permits, and the Storm Water Pollution Prevention Plan (SWPPP) when applicable.
3. Follow the guidelines in the Honolulu's City & County "Rules Relating to Soil Erosion Standards and Guidelines" along with applicable Soil Erosion Guidelines for projects on Maui, Molokai, Kauai, and Hawaii.
4. The Engineer may assess liquidated damages of up to \$27,500 for non-compliance of each BMP requirement and each requirement stated in Section 209 and special provisions, for every day of non-compliance. There is no maximum limit on the amount assessed per day.

5. The Engineer will deduct the cost from the progress payment for all citations received by the Department for non-compliance, or the Contractor shall reimburse the State for the full amount of the outstanding cost incurred by the State.
6. If necessary, install a rain gage prior to any field work including the installation of any site-specific best management practices. The rain gage shall have a tolerance of at least 0.05 inches of rainfall. Install the rain gage on the project site in an area that will not deter rainfall from entering the gage opening. Do not install in a location where rain water may splash into rain gage. The rain gage installation shall be stable and plumbed. Do not begin field work until the rain gage is installed and site-specific best management practices are in-place.
7. Submit Site-Specific BMP Plan to the Engineer along with a completed Site-Specific BMP Review Checklist within 21 calendar days of date of award. The Site-Specific BMP Review Checklist may be obtained from <http://www.stormwaterhawaii.com>.

B. WASTE DISPOSAL:

1. Waste Materials
Collect and store all waste materials in a securely lidded metal dumpster or roll off container with cover to keep rain out or loss of waste during windy conditions. The dumpster shall meet all local and State solid waste management regulations. Deposit all trash and construction debris from the site in the dumpster. Empty the dumpster weekly or when the container is two-thirds full, whichever is sooner. Do not bury construction waste materials onsite. The Contractor's supervisory personnel shall be instructed regarding the correct procedure for waste disposal. Post notices stating these practices in the office trailer, on a weatherproof bulletin board, or other accessible location acceptable to the Engineer. The Contractor shall be responsible for seeing that these procedures are followed. Submit the Solid Waste Disclosure Form for Construction Sites to the Engineer within 21 calendar days of date of award. Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer monthly. This should also include documentation from any intermediary facility where solid waste is handled or processed.
2. Hazardous Waste
Dispose all hazardous waste materials in the manner specified by local or State regulations and by the manufacturer. The Contractor's site personnel shall be instructed in these practices and shall be responsible for seeing that these practices are followed.

3. Sanitary Waste
Collect all sanitary waste from the portable units a minimum of once per week, or as required.
Position sanitary facilities where they are secure and will not be tipped over or knocked down.

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

1. For projects with an NPDES Permit for Construction Activities, inspect at the following intervals. For construction areas discharging to nutrient or sediment impaired waters, inspect all control measures at least once each week and within 24 hours of any rainfall event of 0.25 inches or greater within a 24 hour period. For construction areas discharging to waters not impaired for nutrient or sediments, inspect all control measures weekly. Inspections are only required during the project's normal working hours. The discharge point water classification may be found in the SWPPP.
2. For projects without an NPDES Permit for Construction Activities, inspect all control measures weekly.
3. Maintain all erosion and sediment control measures in good working order. If repair is necessary, initiate repair immediately and complete by the close of the next work day if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance. When installation of a new erosion or sediment control or a significant repair is needed, install the new or modified control or complete the repair no later than 7 calendar days from the time of discovery. "Immediately" means the Contractor shall take all reasonable measures to minimize or prevent discharge of pollutants until a permanent solution is installed and made operational. If a problem is identified at a time in the day in which it is too late to initiate repair, initiation of repair shall begin on the following work day.
4. Remove built-up sediment from silt fence when it has reached one-third the height of the fence. Remove sediment from other perimeter sediment control devices when it has reached one-half the height of the device.
5. Inspect silt screen or fence for depth of sediment, tears, to verify that the fabric is securely attached to the fence posts or concrete slab and to verify that the fence posts are firmly in the ground. Inspect and verify the bottom of the silt screen is buried a minimum of 6 inches below the existing ground.
6. Inspect temporary and permanent seeding and planting for bare spots, washouts and healthy growth.
7. Complete and submit to the Engineer a maintenance inspection report within 24 hours after each inspection.
8. Provide a stabilized construction entrance at all points of exit onto paved roads to reduce vehicle tracking of sediments. Include stabilized construction entrance in the Water Pollution, Dust, and Erosion Control submittals. Minimum length should be 50 feet. Minimum width should be 30 feet. Minimum depth should be 12 inches or as recommended by the soils engineer and underlain with geo-textile fabric. If minimum dimensions cannot be met, provide other stabilization techniques that remove sediment prior to exit. Clean the paved street adjacent to the site entrance daily or as required to remove any excess mud, cold-planed materials, dirt or rock tracked from the site. Do not hose down the street without containing or vacuuming wash water. Cover dump trucks hauling material from the construction site with a tarpaulin. Remove sediment tracked onto the street, sidewalk, or other paved area by the end of the day in which the track-out occurs.
9. Include designated Concrete Washout Area(s) in the Water Pollution, Dust, and Erosion Control submittals.
10. Submit the name of a specific individual designated responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.
11. Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. They shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.

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Re. JAW/MS/02/01	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**WATER POLLUTION & EROSION
CONTROL NOTES**
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
FED-AID PROJ. No.NH-072-1(057)
Scale: Not To ScaleDate: June, 2025

ORIGINAL PLAN	NOTED BY	PLOTTED BY	DATE
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NOTE BOOK	CHECKED BY	DESIGNED BY	
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No. 10/20/2025			

WATER POLLUTION AND EROSION CONTROL NOTES (Cont.):

12. Contain, remove, and dispose slurry generated from saw cutting of pavement in accordance with approved BMP practices. Do not allow discharge into the drainage system or State waters.
13. For projects with an NPDES Permit for Construction Activities, immediately initiate stabilizing exposed soil areas upon completion of earth-disturbing activities for areas where earth-disturbing activities have permanently or temporarily ceased. Earth-disturbing activities have permanently ceased when clearing and excavation within any area of the construction site that will not include permanent structures has been completed. Earth-disturbing activities have temporarily ceased when clearing, grading, and excavation within any area of the site that will not include permanent structures will not resume (i.e., the land will be idle) for a period of 14 or more calendar days, but such activities will resume in the future. For construction areas discharging into waters not impaired for nutrients sediments, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities. For construction areas discharging into nutrient or sediment impaired waters, complete initial stabilization within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities. Classification of water at the discharge point may be found in the SWPPP.
14. For projects without an NPDES Permit for Construction Activities, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities.

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

1. Materials Pollution Prevention Plan

- a. Applicable materials or substances listed below are expected to be present onsite during construction. Other materials and substances not listed below shall be added to the inventory.

Concrete	Cleaning Solvents
Detergents	Wood
Paints (enamel and latex)	Masonry Block
Metal Studs	Herbicides and Pesticides
Tar	Curing Compounds
Fertilizers	Adhesives
Petroleum Based Products	

- b. Use Material Management Practices to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff. Make an effort to store only enough product as is required to do the job.
- c. Store all materials stored onsite in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.
- d. Keep products in their original containers with the original manufacturer's label.
- e. Do not mix substances with one another unless recommended by the manufacturer.
- f. Whenever possible, use a product up completely before disposing of the container.
- g. Follow manufacturer's recommendations for proper use and disposal.
- h. Conduct a daily inspection to ensure proper use and disposal of materials onsite.

2. Hazardous Material Pollution Prevention Plan

- a. Keep products in original containers unless they are not resealable.
- b. Retain original labels and Safety Data Sheets (SDS), formerly Material Safety Data Sheets (MSDS).
- c. Dispose of surplus products according to manufacturers' instructions and local and State regulations.

3. Onsite and Offsite Product Specific Plan

The following product specific practices shall be followed onsite:

a. Petroleum Based Products:

Monitor all onsite vehicles for leaks and perform regular preventive maintenance to reduce the chance of leakage. Store petroleum products in tightly sealed containers which are clearly labeled. Apply asphalt substances used onsite according to the manufacturer's recommendation.

b. Fertilizers:

Apply fertilizers used only in the minimum amounts recommended by the manufacturer and federal, state, and local requirements. Avoid applying just before a heavy rain event. Apply at the appropriate time of year for the location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth. Once applied, work fertilizer into the soil to limit exposure to storm water. Do not apply to storm conveyance channels with flowing water. Storage shall be in a covered shed or in an area where fertilizer will not come into contact with precipitation or stormwater. Transfer the contents of any partially used bags of fertilizer to a sealable plastic bin to avoid spills.

c. Paints:

Seal and store all containers when not required for use. Do not discharge excess paint to the drainage system, sanitary sewer system, or State waters. Dispose properly according to manufacturers' instructions and State and local regulations.

d. Concrete Trucks:

Washout or discharge concrete truck drum wash water only at a designated site as far as practicable from storm drain inlets or State waters. Do not discharge water in the drainage system or State waters. Disposal by percolation is prohibited. Clean disposal site as required or as requested by the Engineer.

4. Spill Control Plan

- a. Post a spill prevention plan to include measures to prevent and clean up each spill.
- b. The Contractor shall be the spill prevention and cleanup coordinator. Designate at least three site personnel who shall receive spill prevention and cleanup training. These individuals shall each become responsible for a particular phase of prevention and cleanup. Post the names of responsible spill personnel in the material storage area on a weatherproof bulletin board or other accessible location acceptable to the Engineer and in the office trailer onsite.
- c. Clearly post manufacturers' recommended methods for spill cleanup. Make site personnel aware of the procedures and the location of the information and cleanup supplies.
- d. Keep ample materials and equipment necessary for spill cleanup in the material storage area onsite.
- e. Clean up all spills immediately after discovery.
- f. Keep the spill area well ventilated. Personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- g. Report spills of toxic hazardous material to the appropriate State or local government agency, regardless of the size. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, the Contractor shall notify the Engineer as soon as the Contractor has knowledge of the discharge. The Engineer will notify the National Response Center (NRC) at (800) 424-8802, the Clean Water Branch during regular business hours at 586-4309, and the Hawaii State Hospital Operator at 247-2191 and the Clean Water Branch (DOH-CWB) via email at cleanwaterbranch@doh.hawaii.gov during non-business hours immediately. The Contractor shall also provide to the Engineer, within 7 calendar days of knowledge of the release, a description of the release, the circumstances leading to the release, and the date of the release. The Engineer will provide this information to the DOH-CWB. The Engineer will provide information to the NRC if requested.

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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
WATER POLLUTION & EROSION CONTROL NOTES	
KALANIANA'OLE HIGHWAY RESURFACING	
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD	
FED-AID PROJ. No. NH-072-1(057)	
Scale: Not To Scale Date: June, 2025	

WATER POLLUTION AND EROSION CONTROL NOTES (Cont.):

E. PERMIT REQUIREMENTS:

1. A National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activities of one acre or more of disturbed area is required for this project. If the Contractor requires extra land disturbance, including staging and storage areas, that is not covered by the NPDES Permit obtained by the State, the Contractor shall be responsible for obtaining the required NPDES Construction Activities Permit to cover this additional disturbed area. See Hawaii Administrative Rules Chapter 11-55, Appendix C for definition of land disturbance. The Contractor's attention is directed to the applicable NPDES Permit documents on the bid package compact disc.
2. Comply with all applicable State and Federal Permit conditions. Permits may include, but not limited to the following:

a. NPDES Permit for Construction Activities

F. SITE-SPECIFIC BMP REQUIREMENTS:
Each BMP below is referenced to the corresponding section of the current HDOT Construction Best Management Practices Field Manual and appropriate Supplemental Sheets.

The Manual may be obtained from the HDOT Statewide Stormwater Management Program Website at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/> under Construction Best Management Practices Field Manual.

Supplemental BMP sheets are located at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/> under Concrete Curing and Irrigation Water.

The requirements for Water Pollution, Dust, and Erosion Control submittals are included in Section 209 of the Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and applicable Special Provisions. A list of pollutant sources and corresponding BMP used to mitigate the pollutants are included in Section 209 of the Special Provisions under Appendix A.

Follow the requirements below:

1. Protect all Drainage Inlets receiving runoff from disturbed areas (SC-1).
2. Contain on-site runoff using Perimeter Sediment Controls

a. SC-7 Silt Fence or Filter Fabric Fence

b. SC-2 Vegetated Filter Strips and Buffers

c. SC-6 Compost Filter Berm/Sock

d. SC-8 Sandbag Barrier

e. SC-9 Brush or Rock Filter
3. Control offsite runoff from entering construction area

a. EC-3 Run-On Diversion

b. EC-6 Earth Dike, Swales, and Ditches
4. Incorporate applicable Site Management BMP

a. SM-1 Employee Training

b. SM-2 Material Storage and Handling

c. SM-3 Stockpile Management

d. SM-6 Solid Waste Management

e. SM-7 Sanitary Waste Management

f. SM-9 Hazardous Materials and Waste Management

g. SM-10 Spill Prevention and Control

h. SM-11 Vehicle and Equipment Cleaning

i. SM-12 Vehicle and Equipment Maintenance

j. SM-13 Vehicle and Equipment Refueling

k. SM-14 Scheduling

l. SM-15 Location of Potential Sources of Sediment

m. SM-16 Staging Area

n. SM-17 Preservation of Existing Vegetation

o. SM-19 Dust Control
5. Contain pollutants within the Construction Staging/Storage Area BMP with applicable Perimeter Sediment Controls and Site Management BMP. Include a Stabilized Construction Entrance/Exit (SC-11) for all areas which exit onto a paved street. Restrict vehicle access to these points.
6. Manage Concrete Waste including installing a Concrete Washout Area (SM-4) and properly disposing of Concrete Curing Water (California Stormwater BMP Handbook NS-12 Concrete Curing).
7. Remove saw cut slurry and hydrodemolition water from the site by vacuuming. Provide storm drain protection and/or perimeter sediment controls during saw cutting and hydrodemolition work.

ORIGINAL PLAN	PLOTTED BY	<NAME>	BMP	-
	DRAWN BY	<Name>	"	-
	TRACED BY	<Name>	-	-
	DESIGNED BY	<Name>	-	-
NOTE BOOK	QUANTITIES BY	<Name>	-	-
	CHECKED BY	<Name>	-	-
Re. JUL20050201				

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

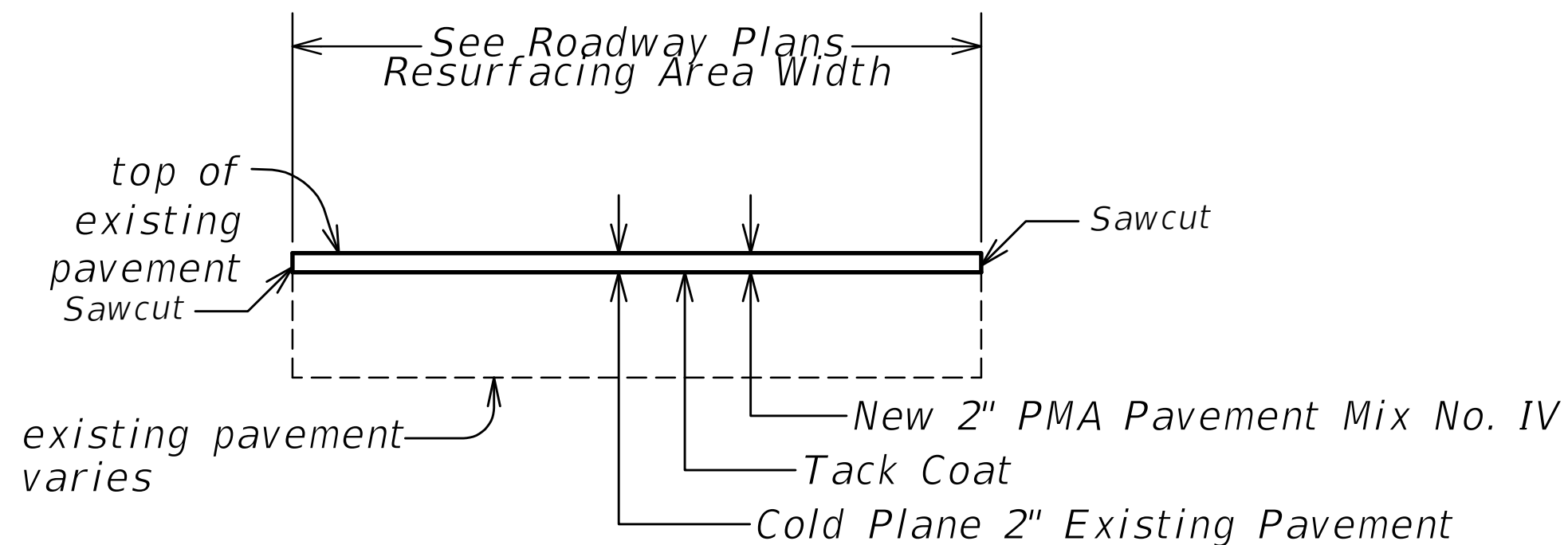
WATER POLLUTION & EROSION
CONTROL NOTES

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

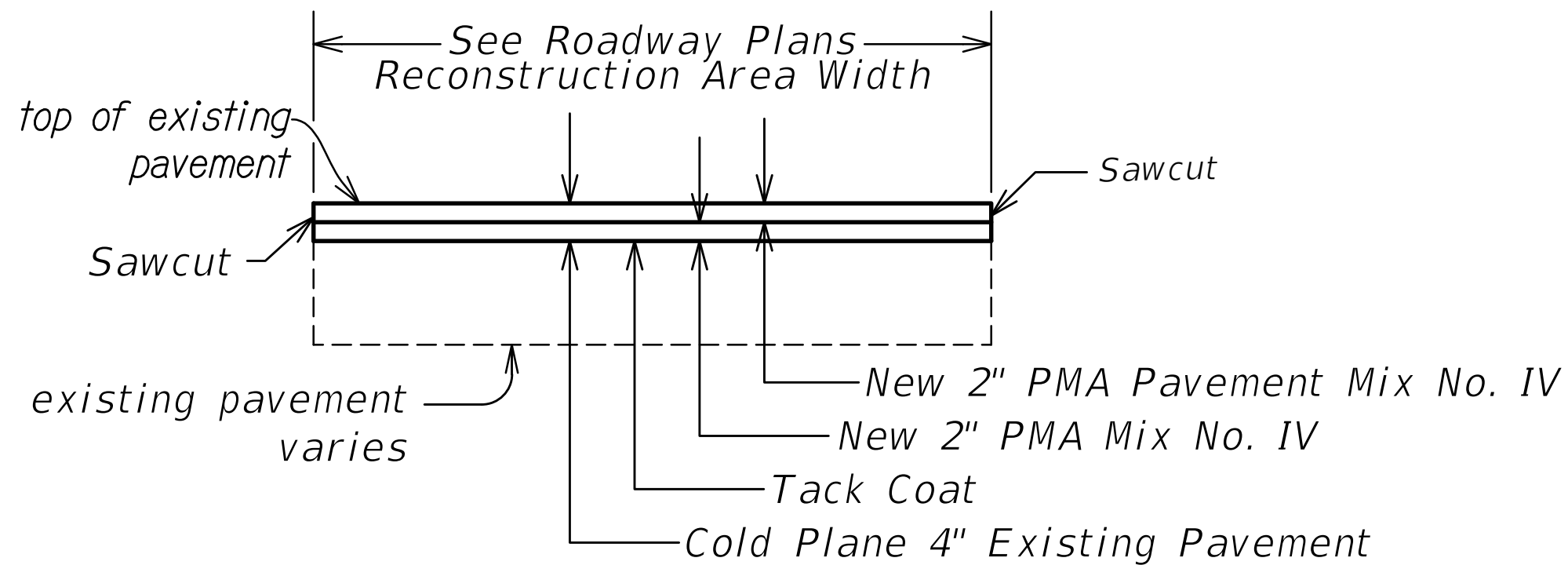
FED-AID PROJ. No.NH-072-1(057)

Scale: Not To ScaleDate: June, 2025

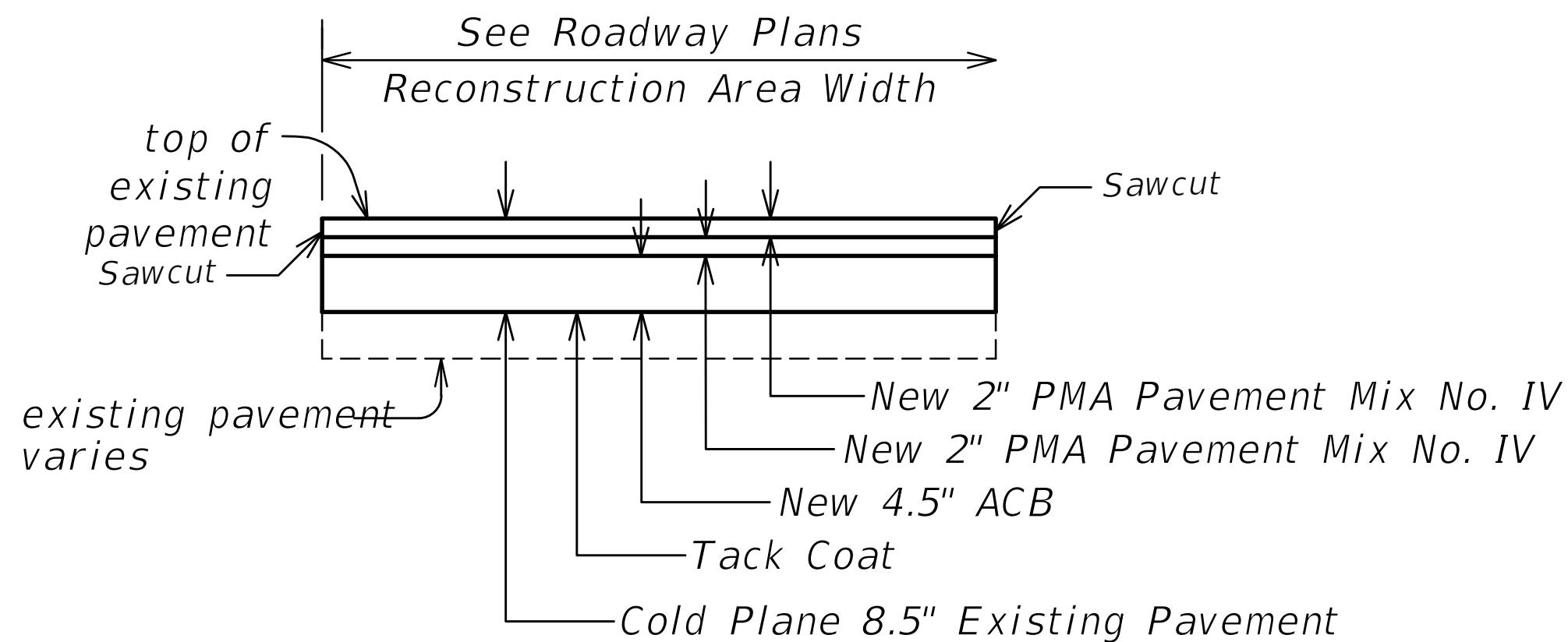
FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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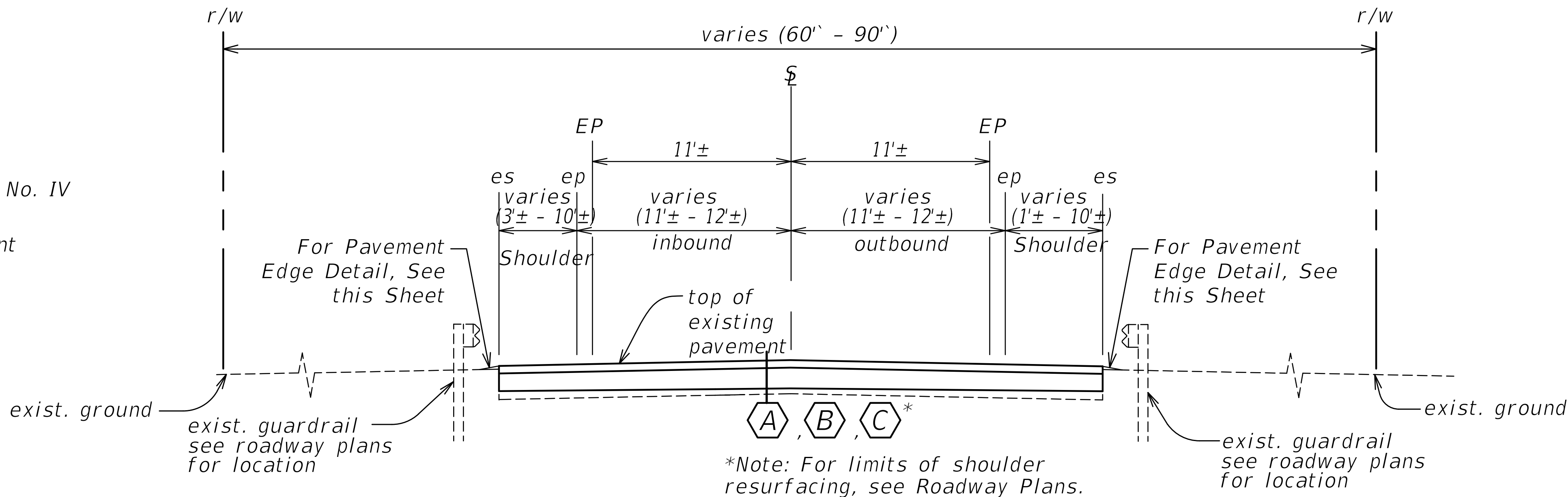
RESURFACING TYPE A DETAIL
Scale: N.T.S.



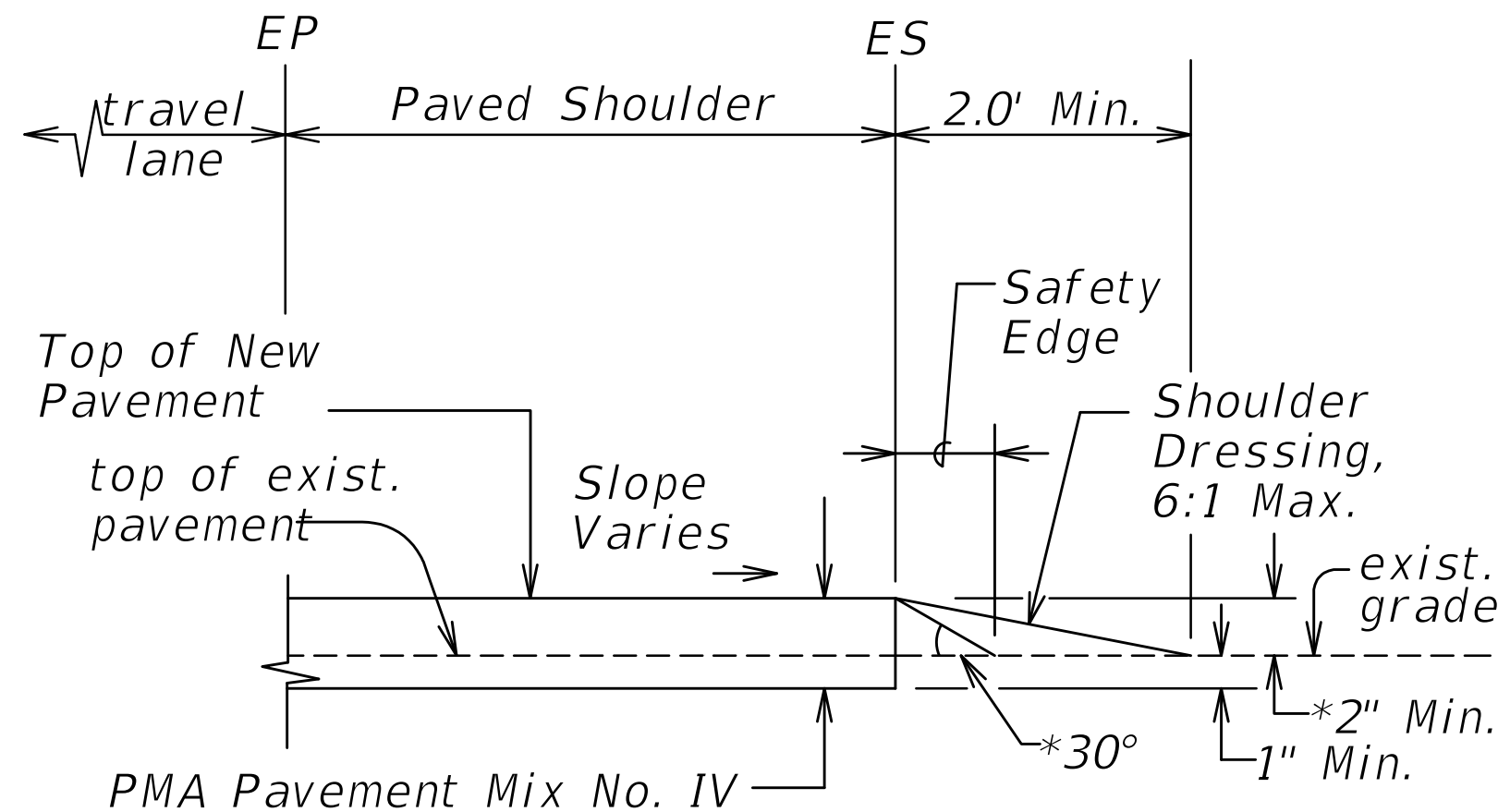
RESURFACING TYPE B DETAIL
Scale: N.T.S.



RECONSTRUCTION TYPE C DETAIL
Scale: N.T.S.



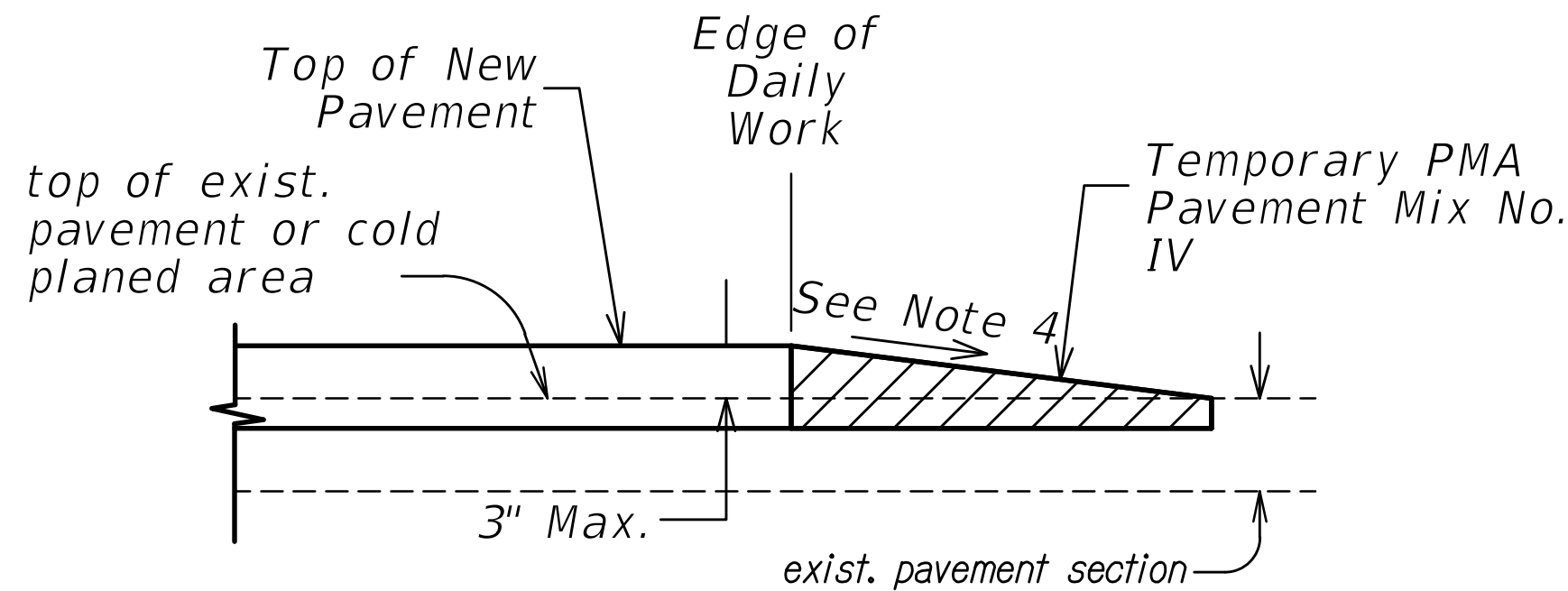
TYPICAL SECTION
Scale: N.T.S.



*Notes:

- Contractor shall mount a device directly on the paver screed extension to provide a 30° beveled shoulder "safety edge."
- For shoulder edge grade differences of less than 2", Safety Edge is not required, but shoulder shall be dressed according to detail.
- The ground under the safety edge shall be compacted.

TYPICAL PAVEMENT EDGE DETAIL
Scale: N.T.S.



Notes:

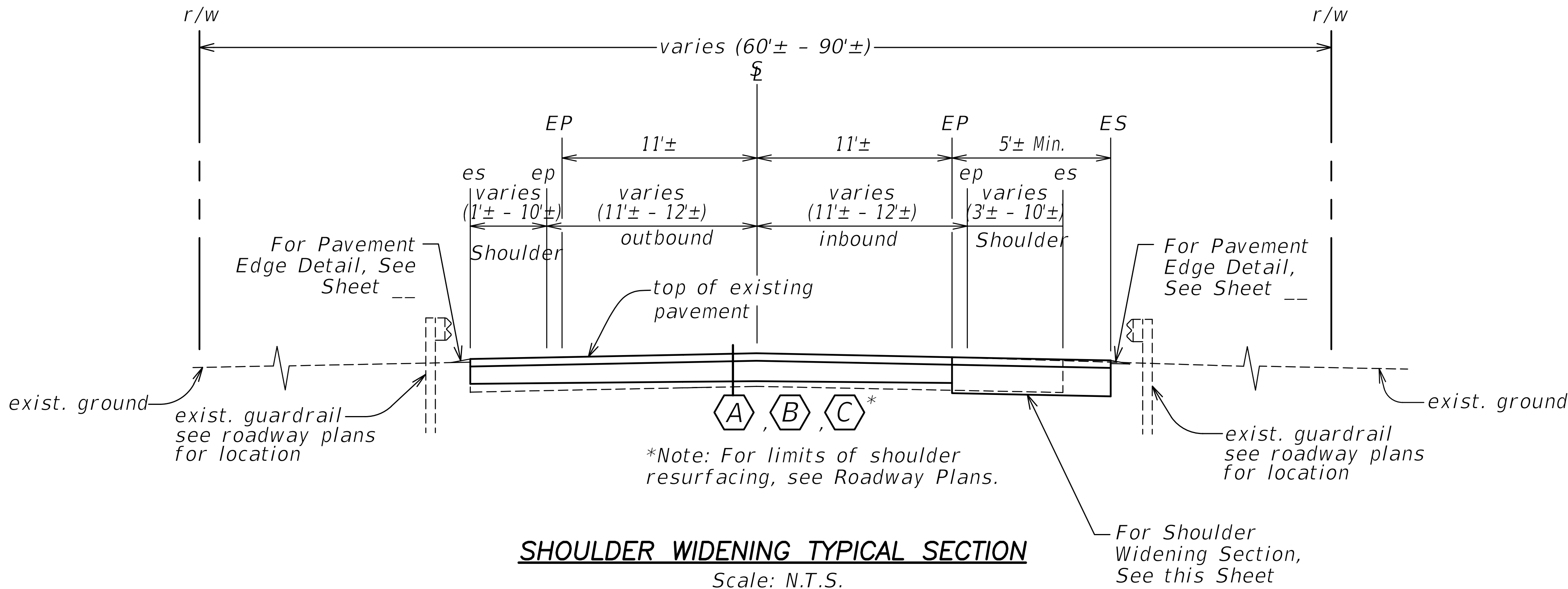
- Temporary PMA Pavement shall be removed prior to placement of new pavement.
- Placement of Temporary PMA Pavement shall be incidental to PMA Pavement, Mix No. IV.
- Removal of Temporary PMA Pavement shall be incidental to Cold Planing.
- Slope of temporary PMA Pavement shall be 48:1 or flatter for longitudinal transitions and 6:1 or flatter for transverse transitions.

TEMPORARY TREATMENT OF GRADE DIFFERENCES DURING NON WORK HOURS
Scale: N.T.S.

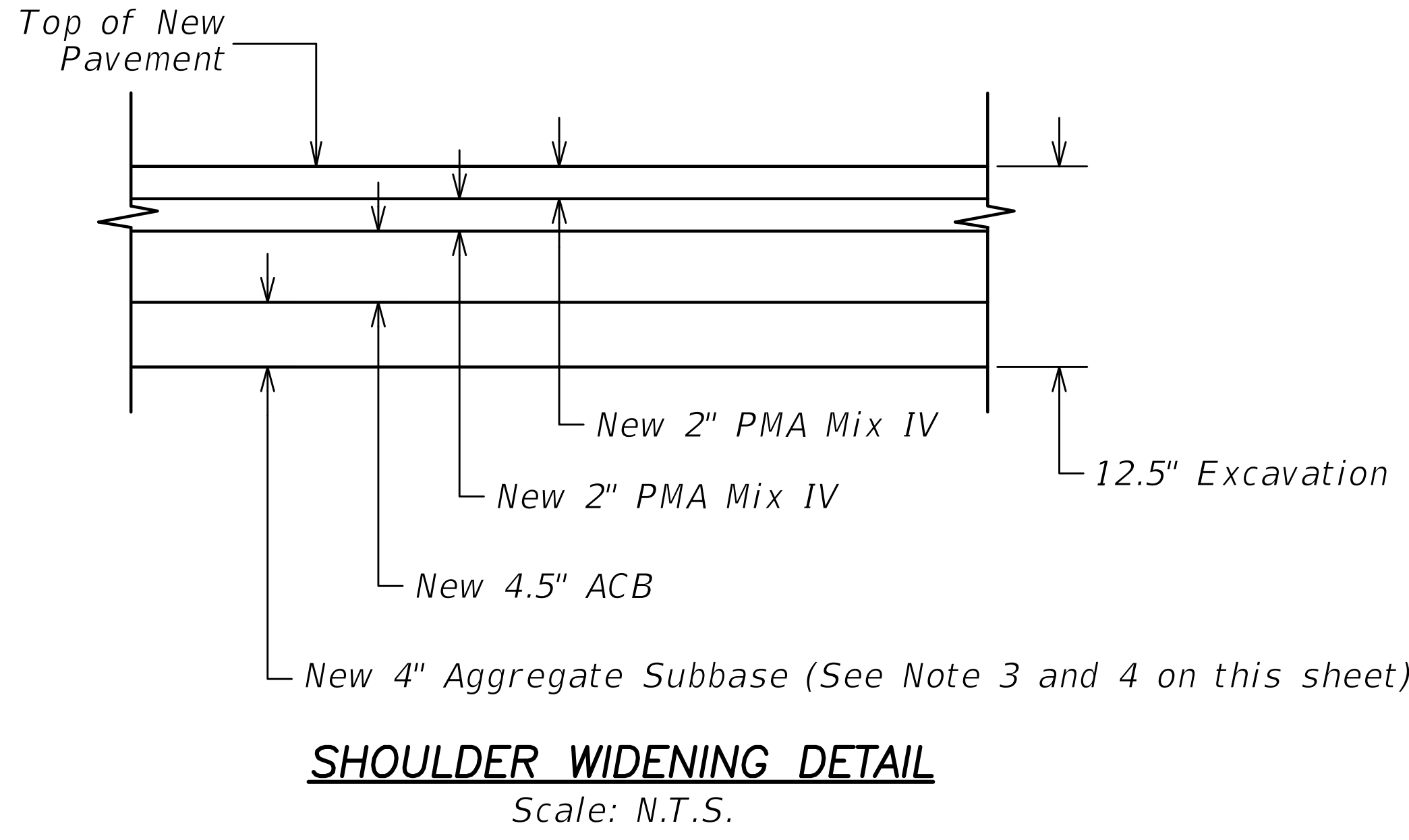
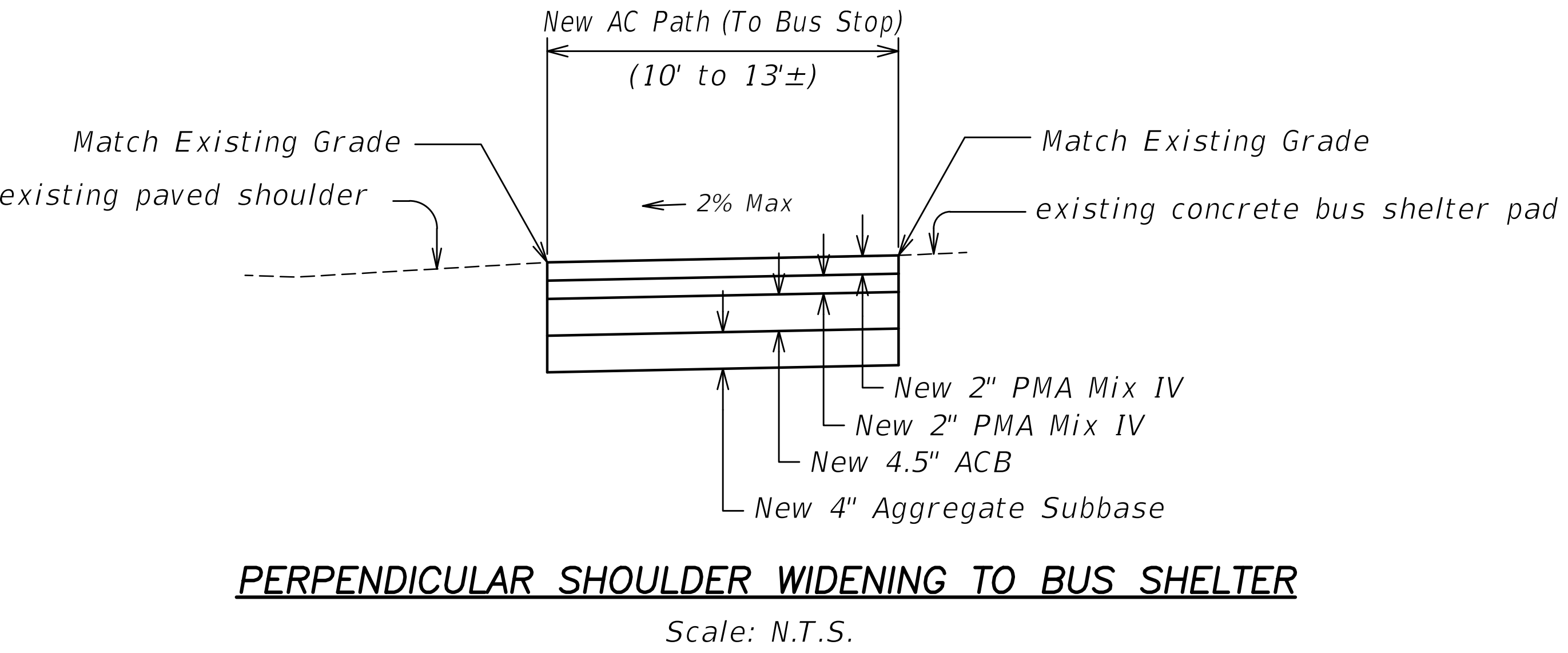
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TYPICAL SECTIONS & DETAILS	
KALANIANA'OLE HIGHWAY RESURFACING VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD	
FED-AID PROJ. No. NH-072-1(057)	
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SHEET No. 1 OF 2 SHEETS

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- Notes:
1. Safety Edge/Shoulder Dressing. See Typical Pavement Edge Detail on Sht. No. 15.
 2. For limits of Midwest Guardrail, see Roadway Plans. For details, see Guardrail Details sheets.
 3. Subgrade and general fill material shall be moisture-conditioned to at least optimum moisture content and maintained at that moisture content until the next layer is placed over it.
 4. All fill shall be keyed-and-benched.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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TYPICAL SECTIONS & DETAILS

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
FED-AID PROJ. No. NH-072-1(057)
Scale: As Noted Date: June, 2025

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
REVISIONS	

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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Reconstruction Area Schedule (es to es Both Directions)				
Station		Length (Linear Feet)	Width (Linear Feet)	Approximate Area (Square Feet)
From	To			
9+74.54	22+37.34	1262.8	39	49249
66+56.93	75+6.92	850	55	46750
94+29.25	107+79.25	1350	36	48600
118+29.25	125+00	750	36	27000
167+79.25	180+79.25	1300	45	58500

*Shoulder Widening Schedule (Mauka Side Only)				
Station		Length (Linear Feet)	Approximate Width (widen to 5' min.) (Linear Feet)	Approximate Area (Square Feet)
From	To			
0+00`	18+18.6`	1,818.6	2.5	4,546.5
143+49.21`	174+61.56`	3,112.35	2	6,224.7

*Note: For Shoulder Widening Locations and Widths, See Roadway Plan Sheets.

ORIGINAL PLAN	PLOTTED BY	<NAME>	DATE	
	DRAWN BY	<Name>	"	
	TRACED BY	<Name>	"	
	DESIGNED BY	<Name>	"	
NOTE BOOK	QUANTITIES BY	<Name>		
	CHECKED BY	<Name>		
Re. _____				

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RECONSTRUCTION & SHOULDER
WIDENING SCHEDULE

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

FED-AID PROJ. No.NH-072-1(057)

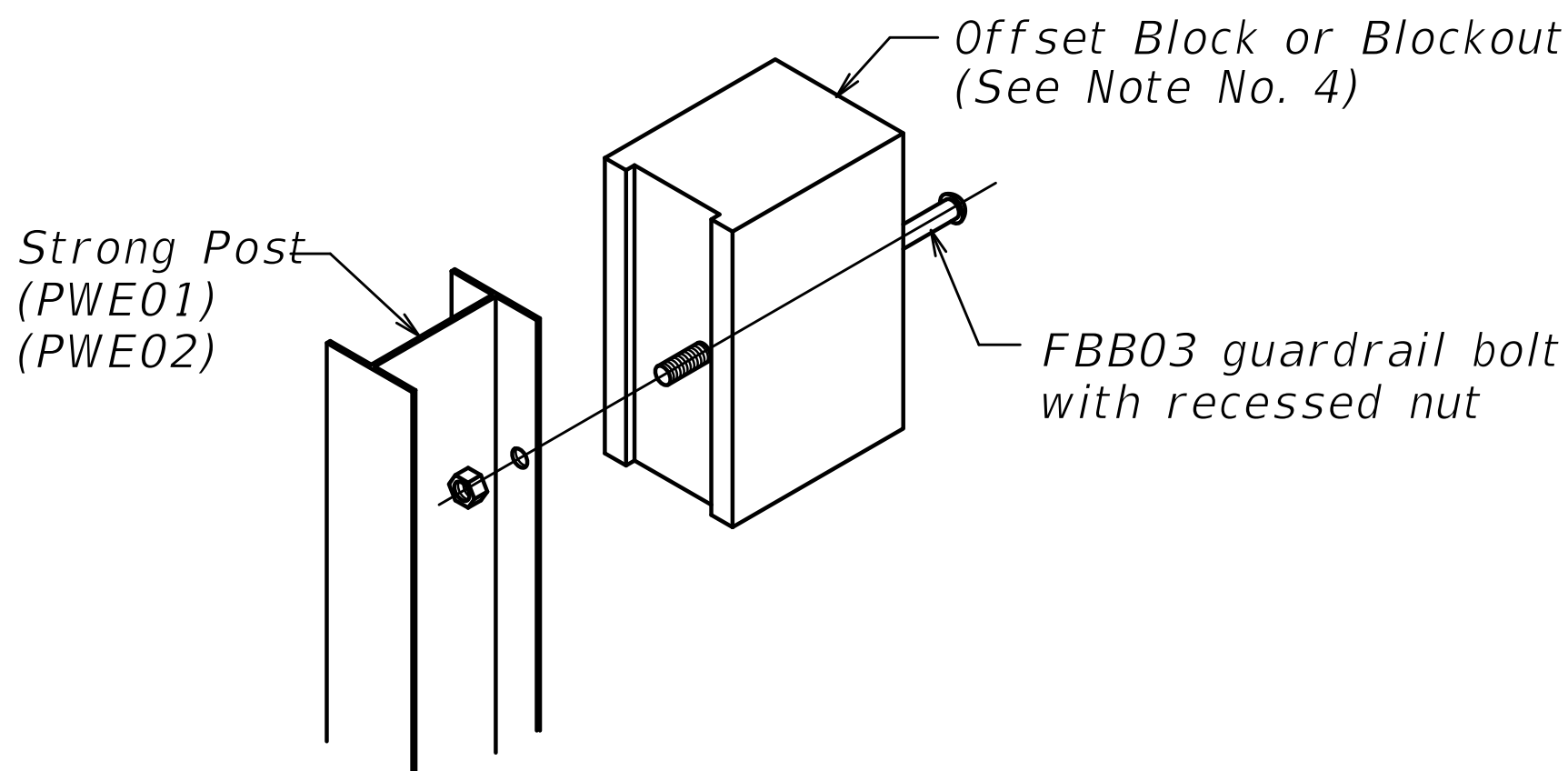
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FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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GENERAL NOTES

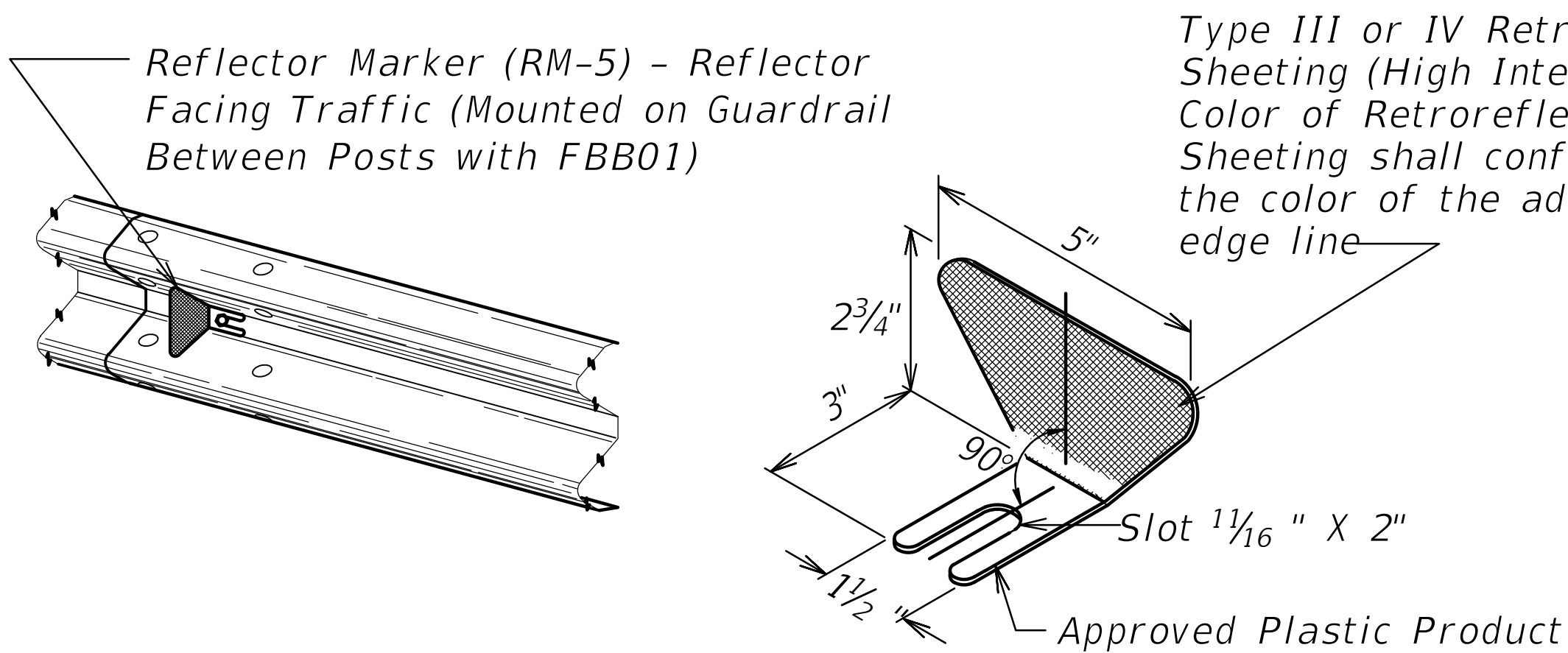
1. All hardware, posts and fasteners shall be hot-dip zinc coated galvanized after fabrication. No punching, drilling or cutting will be permitted after galvanizing.
2. Where conditions require, special post lengths in increments of 6 inches may be specified by the Engineer.
3. All fasteners, posts, 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 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. 8' long post length shall be used for guardrail posts if less than 2' min. soil support behind the post.
8. 9' long post length shall be used for guardrail posts located at or beyond the fill slope break point.
9. When standards for the fill slope area cannot be met, a site specific, engineer approved design may be used.
10. Minimum working width (clear distance) between back of MG post to any fixed object is 4'-1" (49").
11. New Hot Mix Asphalt (HMA) pavement at guardrails shall extend 6 feet longitudinally beyond terminal ends.
12. 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"

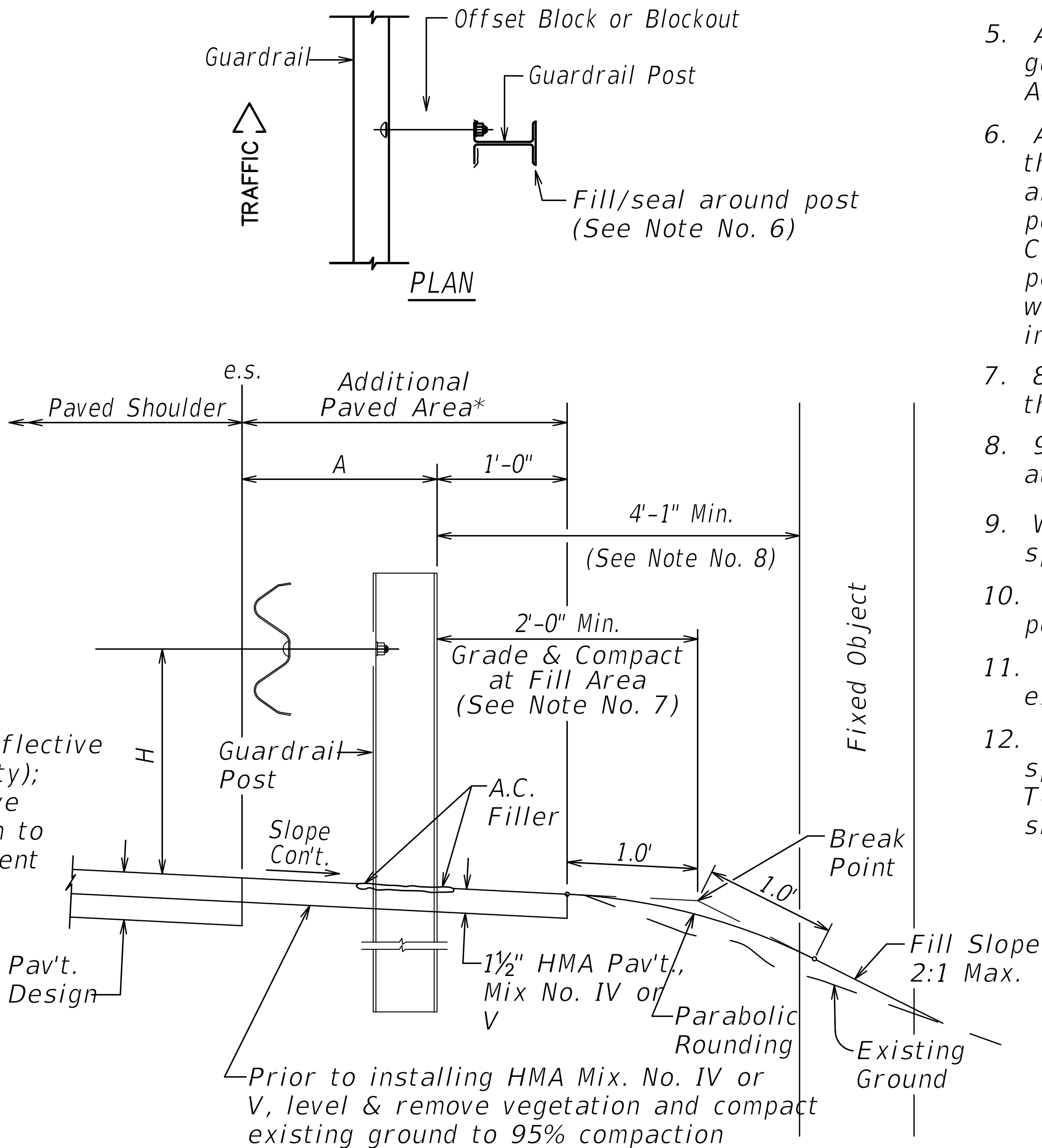


Exploded View
(Rail and washer not shown)

STEEL POST AND BLOCK DETAIL



REFLECTOR MARKER (RM-5) DETAIL AND TYPICAL INSTALLATION



ELEVATION

TYPICAL GUARDRAIL INSTALLATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

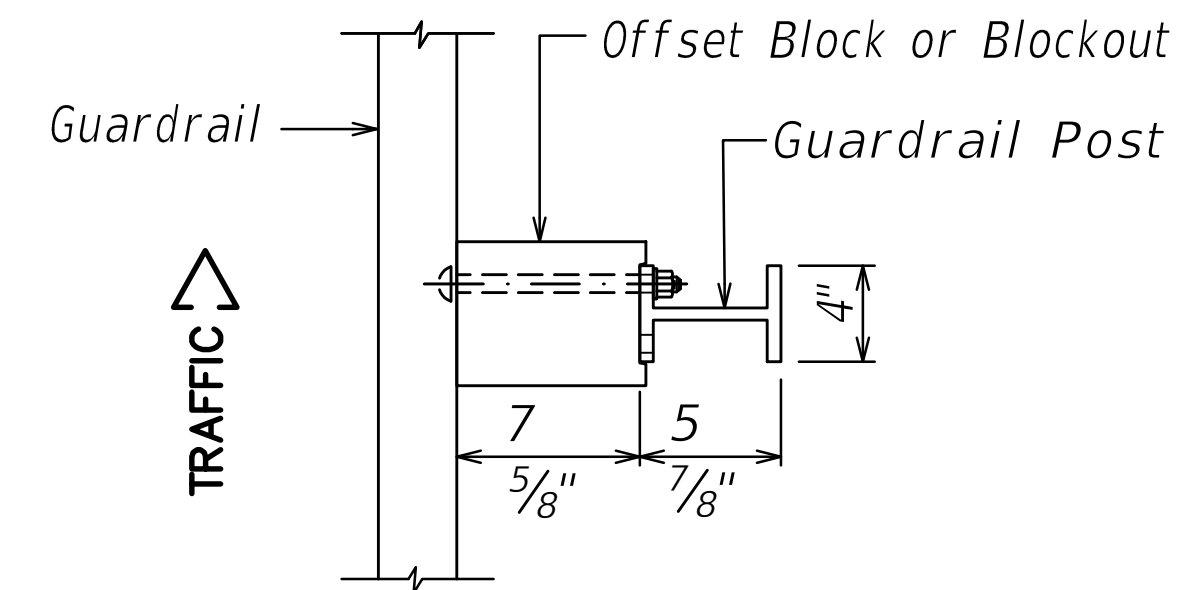
GUARDRAIL DETAILS & NOTES

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

Fed-aid Proj.No. NH-072-1(057)

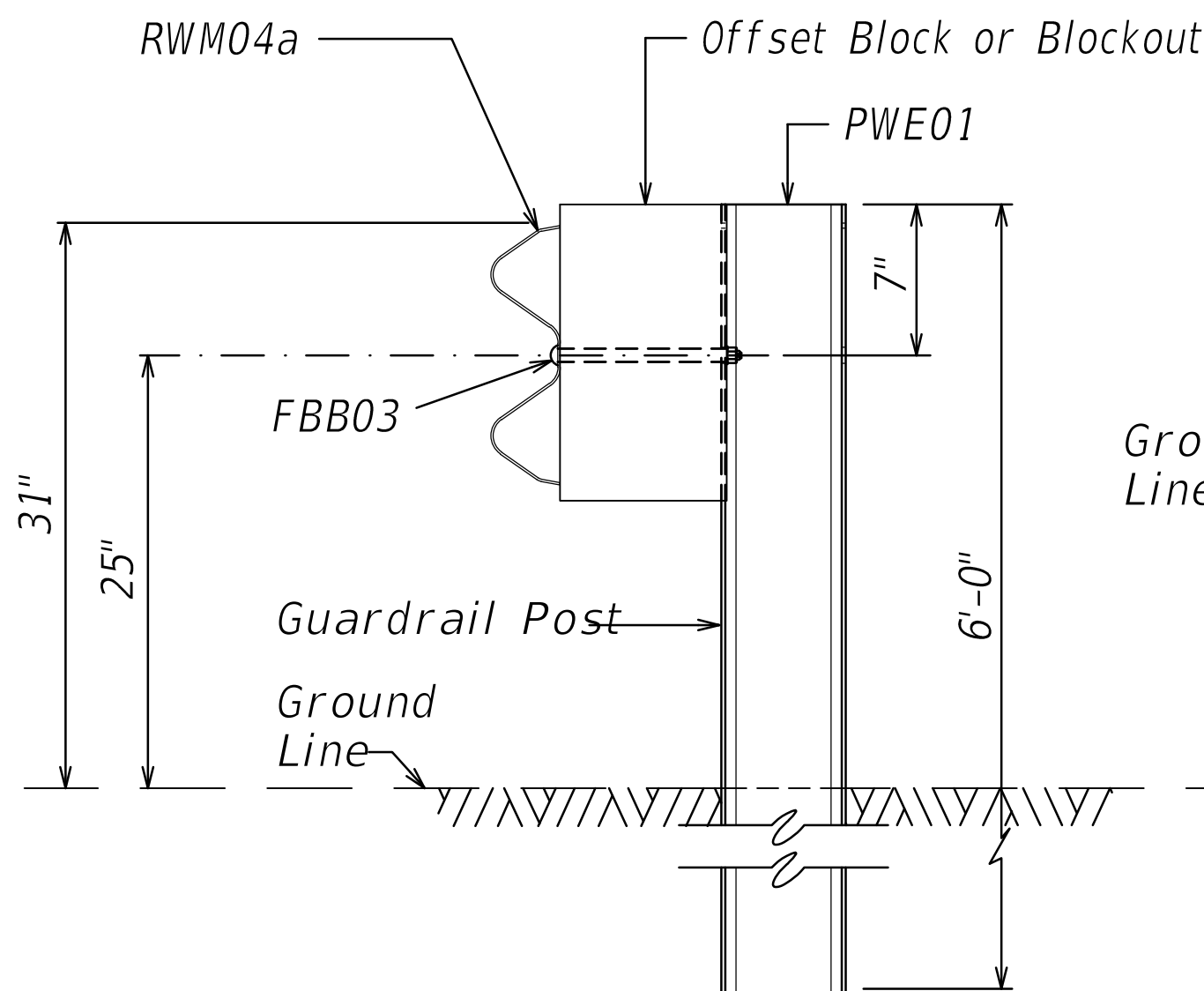
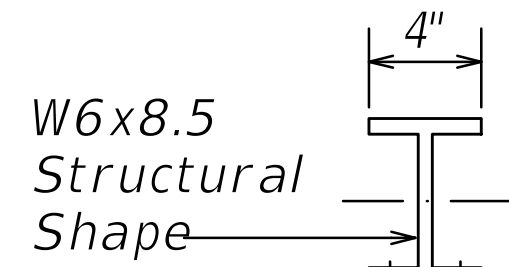
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FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	19	102

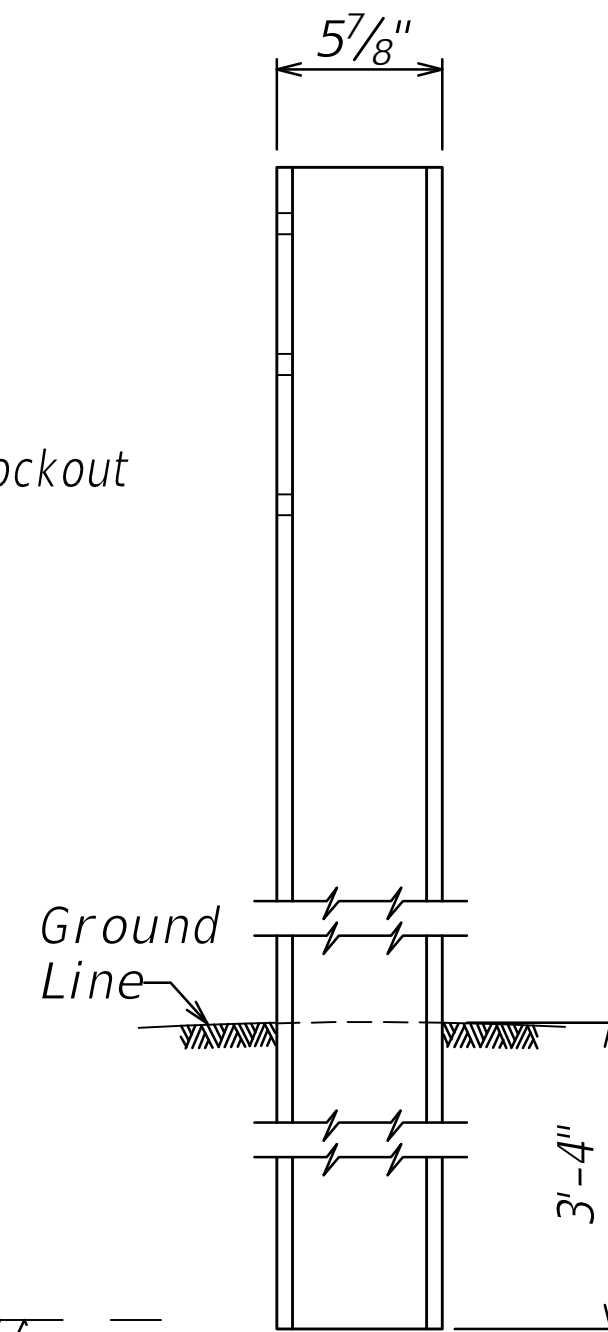


PLAN

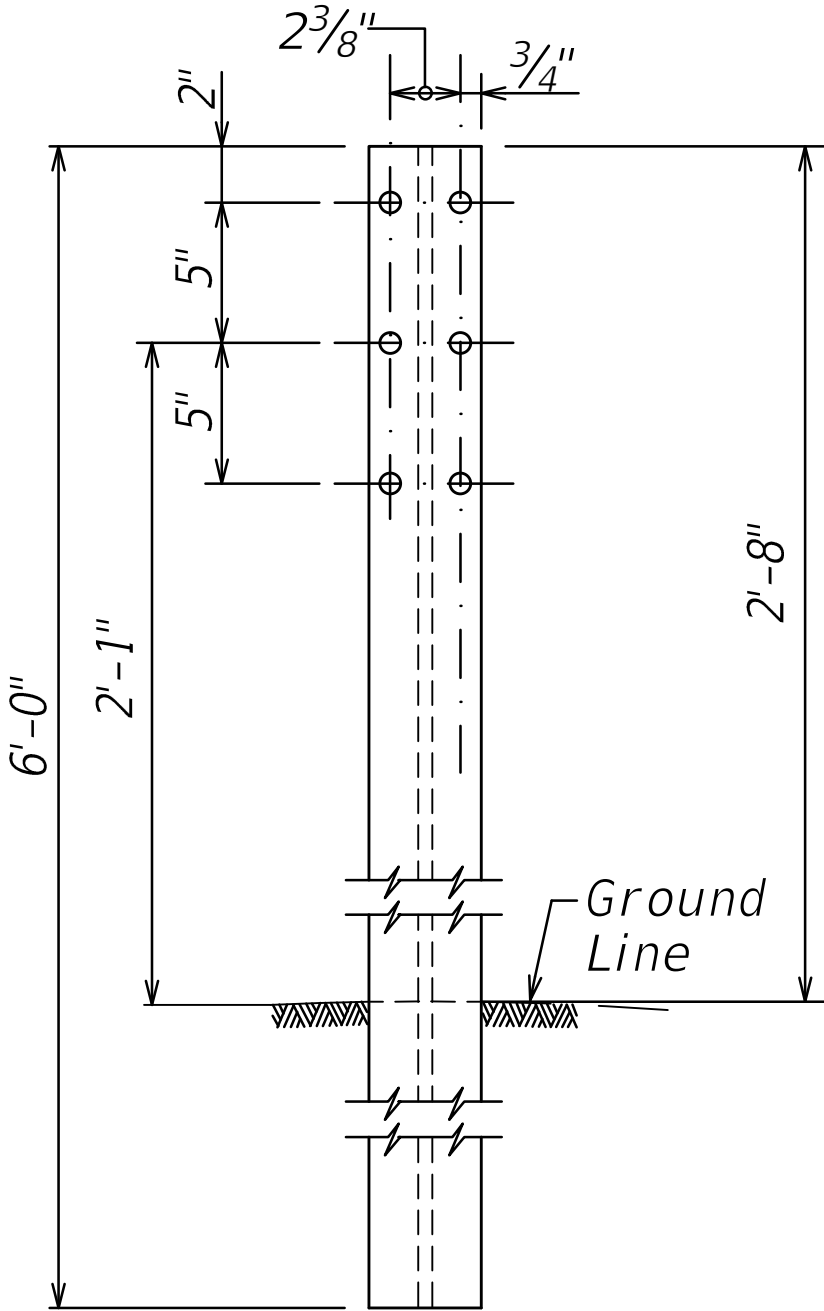
NOTE:
All Holes are
3/4" Dia.



SECTION A-A

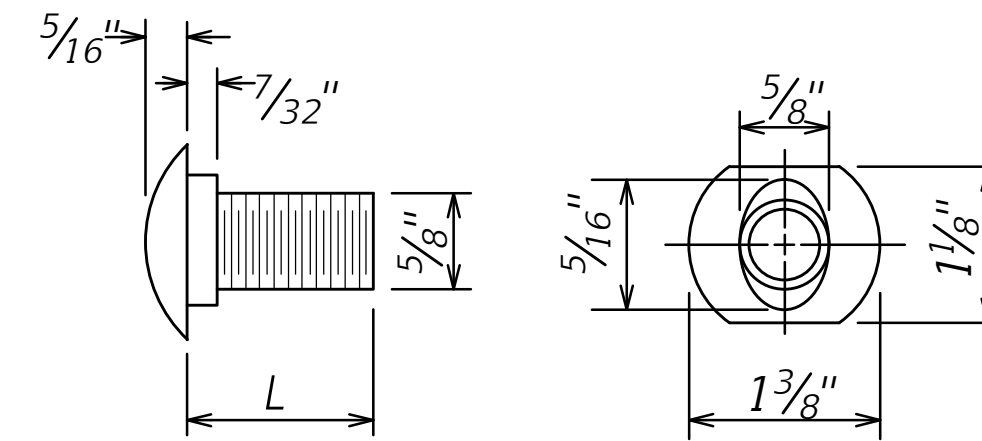


SIDE

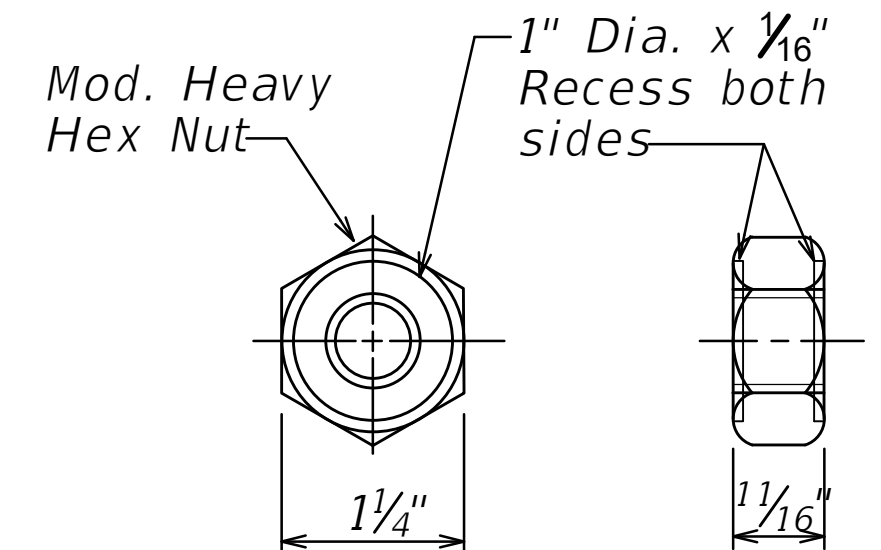


FRONT

WIDE-FLANGED GUARDRAIL POST
(PWE01)

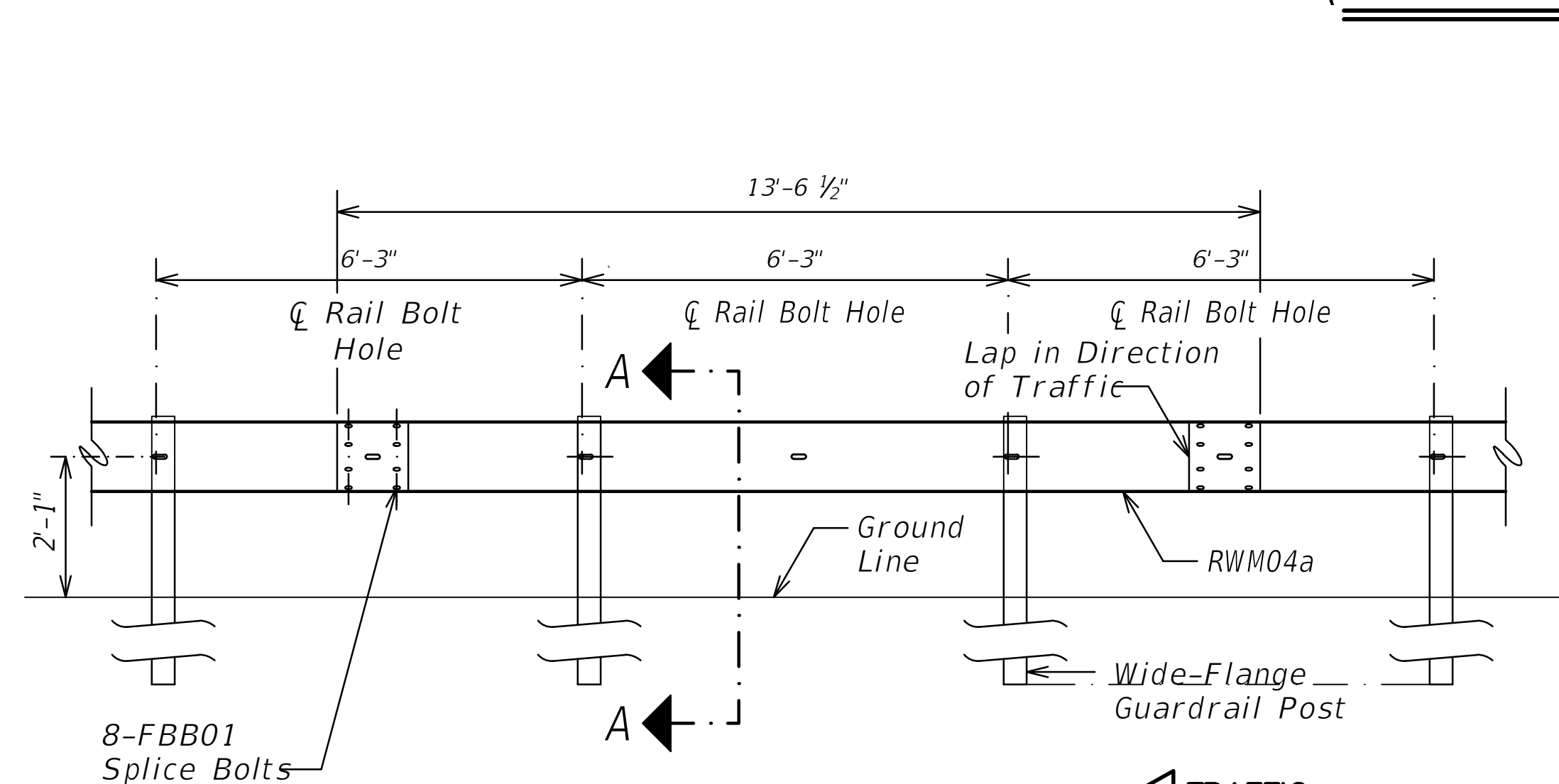
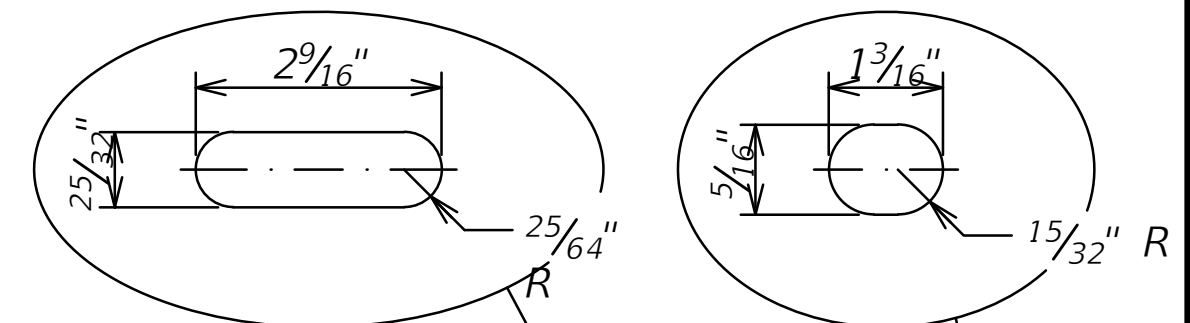


DESIGNATOR	L
FBB01	1 3/8"
FBB02	2"
FBB03	10"



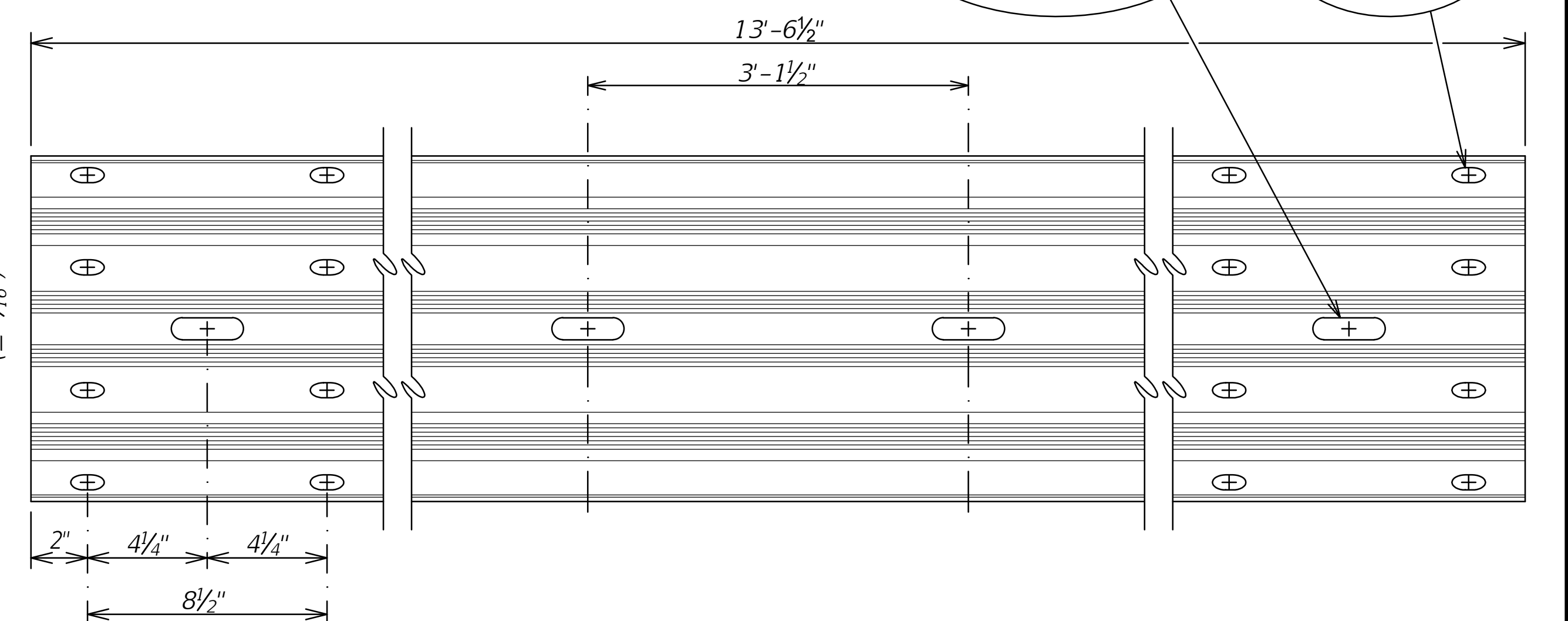
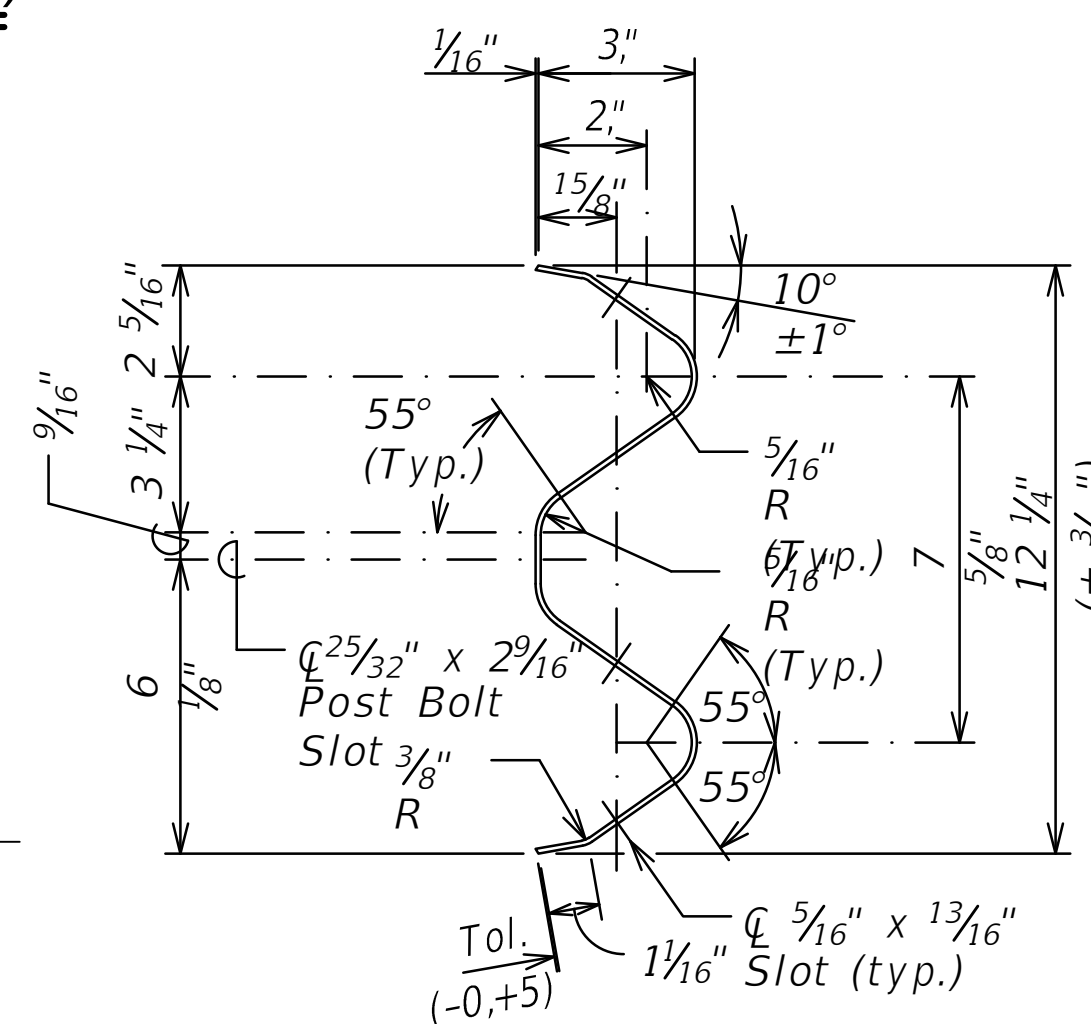
GUARDRAIL BOLTS AND RECESSED NUT

DESIGNATOR	BASE METAL THICKNESS
RWM04a	12 Gauge



ELEVATION

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

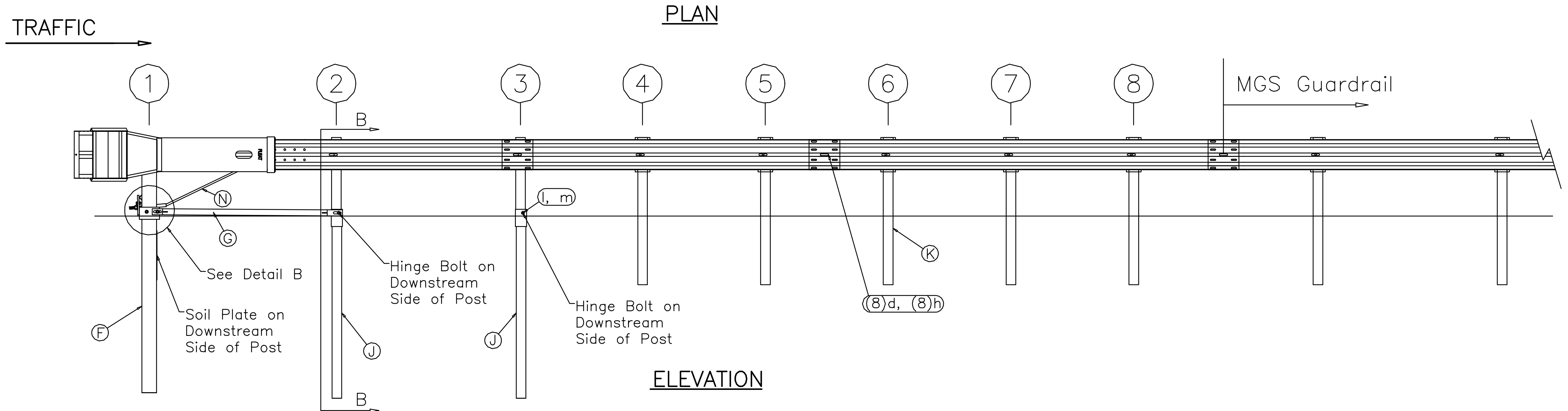
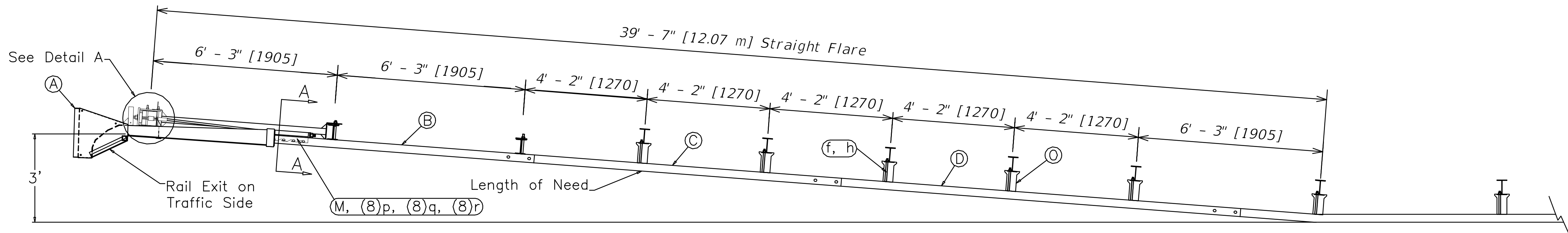


4 SPACE W-BEAM GUARDRAIL (RWM04a)

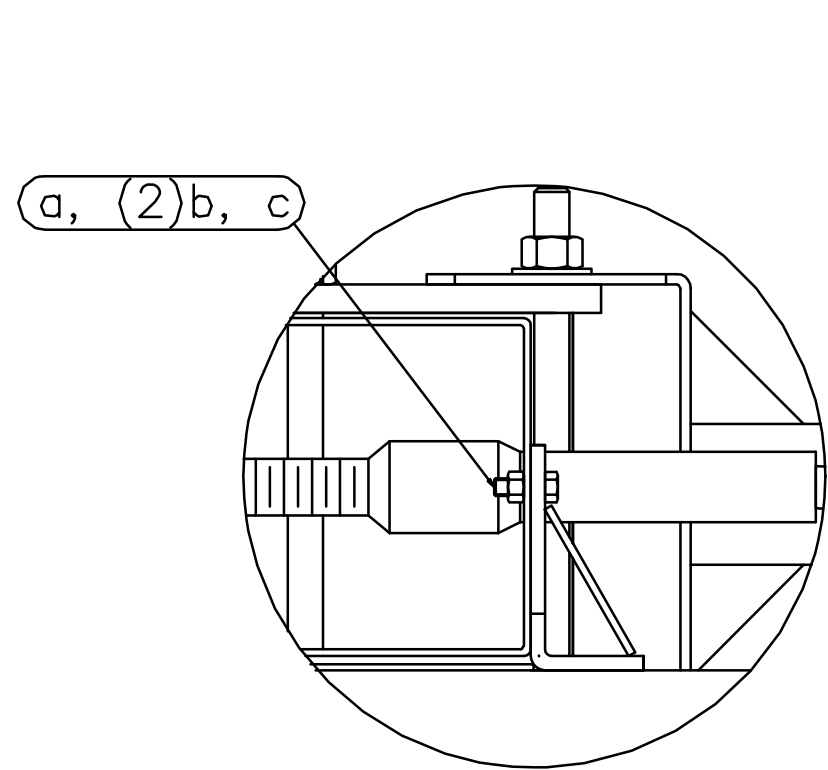
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**31" W-BEAM GUARDRAIL WITH
STANDARD 8" OFFSET BLOCK**
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
Scale: As Noted Date: June, 2025

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
REVISIONS	

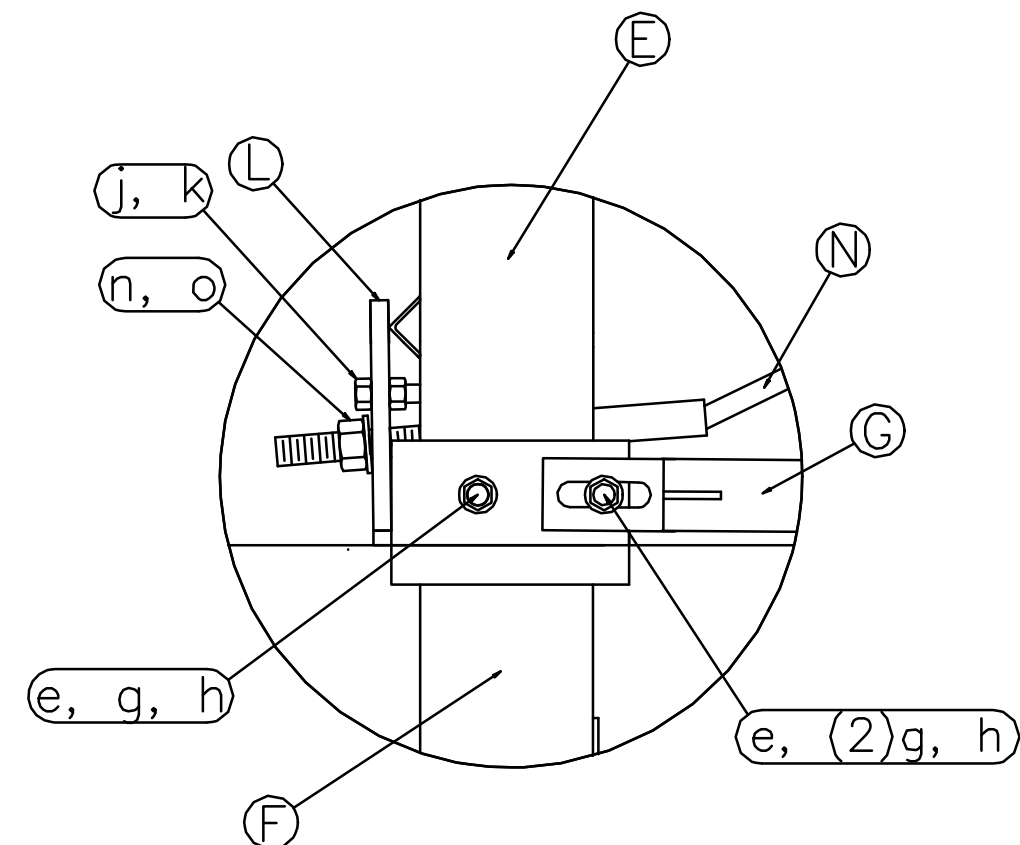
FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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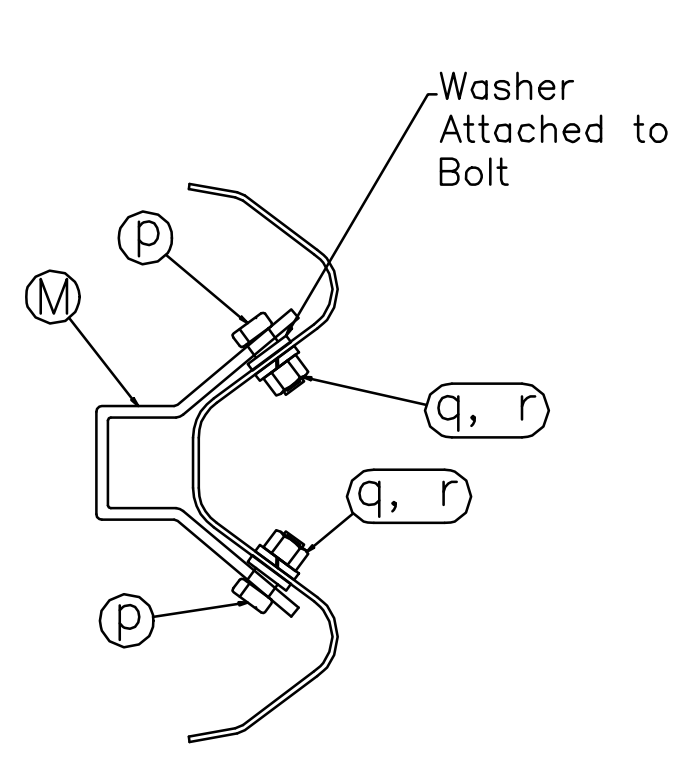
ITEM	QTY	BILL OF MATERIALS	ITEM NO.
A	1	FLEAT IMPACT HEAD	MF3000
B	1	FLEAT ANCHOR RAIL 12'-6"	SF1303
C	1	FLEAT SECOND RAIL 10'-5"	F1324
D	1	FLEAT THIRD RAIL 13'-6 1/2"	F1334
E	1	FIRST POST TOP (6X6X1/4" Tube)	MP1A
F	1	FIRST POST BOTTOM (6' W6X15)	MP1B
G	1	GROUND STRUT	MS785
H	2	HINGE POST UPPER	MHP2A
J	2	HINGED POST LOWER	HP2B
K	5	STEEL LINE POST 6'	P621
L	1	MASH BEARING PLATE	ME750
M	1	CABLE ANCHOR BOX	S760
N	1	BCT CABLE ANCHOR ASSEMBLY	E770
O	5	RECYCLED PLASTIC BLOCK OR EQUIV.	CBSP-14
HARDWARE (ALL DIMENSIONS IN INCHES)			
a	2	5/16 x 1 HEX BOLT GRD 5	B5160104A
b	4	5/16 WASHER	W0516
c	2	5/16 HEX NUT	N0516
d	18	5/8 x 1 1/4 SPLICE BOLT	B580122
e	2	5/8 x 9 HEX BOLT GRD 5	B580904A
f	5	5/8 x 10 H.G.R. BOLT	B581002
g	3	5/8 WASHER	W050
h	25	5/8 H.G.R. NUT	N050
j	1	5/8 x 5" BOLT FULL THREAD GRD A449	B580504A
k	1	5/8 HEX NUT	N055
l	2	3/4 x 8 1/2 HEX BOLT GRD A449	B340854A
m	2	3/4 HEX NUT	N030
n	2	1 ANCHOR CABLE HEX NUT	N100
o	2	1 ANCHOR CABLE WASHER	W100
p	8	1/2 RSI SHOULDER BOLT W/WASHER	SB12A
q	8	1/2 STRUCTURAL NUT	N012A
r	8	1/2 STRUCTURAL WASHER	W012A



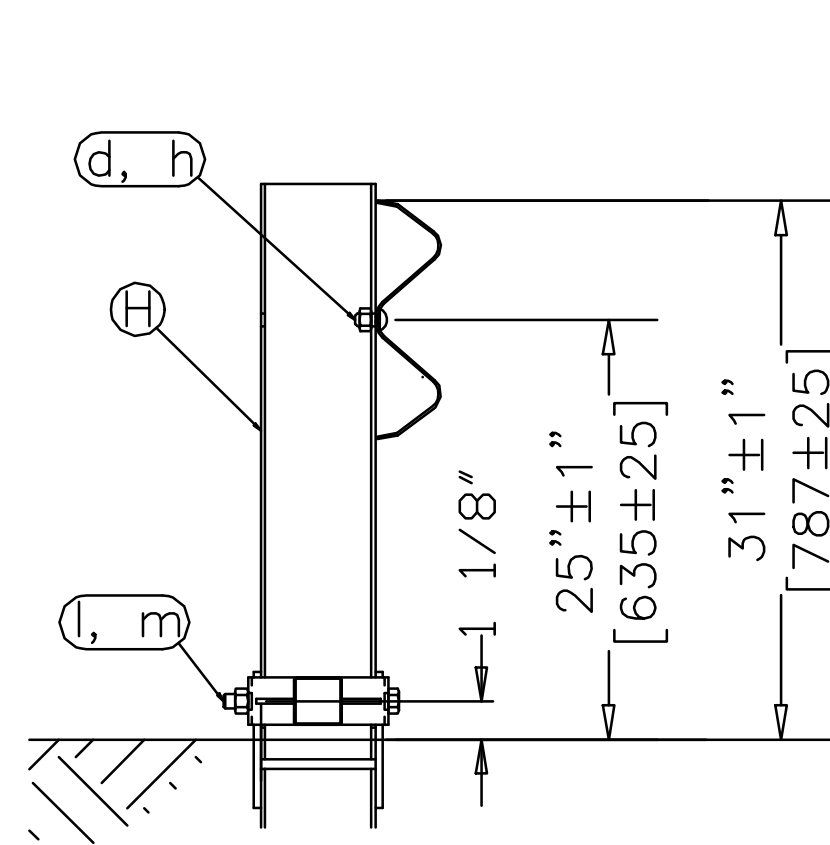
Detail A
Impact Head Connection



Detail B
Post #1 Connection



SECTION A-A
Anchor Bracket



SECTION B-B
Post #2

General Notes:

1. All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
2. The lower sections of the Posts 1,2 & 3 shall not protrude more than 4 in above the ground(measured along a 5' cord). site grading may be necessary to meet this requirements.
3. The lower section of the hinged posts should not be driven with the upper post attached. If the post is placed in a drilled hole, the backfill material must be satisfactorily compacted to prevent settlement.
4. when competent rock is encountered, a 12" Ø post hole, 20 in. deep cored into the rock surface may be used if approved by the engineer for Posts 1 and/or 2. Granular material will be placed in the bottom of the hole, approximately 2.5" deep to provide drainage. The first and/or second post can be field cut to length, placed in the hole and backfilled with suitable backfill. The soil plate may be trimmed if required.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MASH FLEAT TERMINAL TL-3
STANDARD POST SYSTEM
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
Scale: As Noted Date: June, 2025

GENERAL NOTES FOR STANDARD BRIDGE
RAILINGS AND TRANSITIONS

DESIGN SPECIFICATIONS:

- A. AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 including all interim revisions.
- B. State of Hawaii, Department of Transportation, Highways Division, Design Criteria for Bridges and Structures, August 8, 2014 as amended by HWY-DB 2.5098, Changes to Design Criteria for Bridges and Structures, January 8, 2018.
- C. AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 1st Edition, 2016 including all interim revisions.
- D. AASHTO Manual for Assessing Safety Hardware, 2nd Edition, 2016
- E. AASHTO Manual for Bridge Evaluation, 3rd Edition, 2018 including all interim revisions and requirements for emergency vehicle ratings as per FHWA's Memorandum, Load Rating for the FAST Act's Emergency Vehicles, November 3, 2016 as modified by "Draft Modifications to the "Design Criteria for Bridges and Structures, August 8, 2014." for the Manual for Bridge Evaluation 2nd Edition".

MATERIALS:

- A. Concrete:
1. Concrete: 4,000 psi minimum unless otherwise specified.
2. Concrete Admixtures: See Special Provisions.
3. Concrete for Bridges, Bridge Rails, Concrete Barriers, Retaining Walls and Transitions shall meet the requirements of Section 601 Structural Concrete.
4. A shrinkage reducing admixture (SRA), Tetraguard AS20 by BASF or Eclipse by W.R. Grace & Co., or approved equal shall be added to the concrete. The minimum dosage requirement shall be 128 ozs per cubic yard of concrete. The concrete shall have a maximum shrinkage strain of .00006 at 28 days and .000145 at 56 days according to ASTM C512.
- B. Steel Reinforcing Bars:
1. Deformed and Plain Carbon Steel Bars for Concrete Reinforcement shall meet the requirements of AASHTO M31M/M31-19, Grade 60 (ASTM A615/A615M-16, Grade 60).
2. Deformed and Plain Carbon Steel Bars for Concrete Reinforcement to be spliced by welding or otherwise welded or for seismic reinforcing shall meet the requirements of AASHTO M31M/M31-19, Grade 60 (ASTM A615/A615M-16, Grade 60) and meet the requirements of ASTM A706/A706M-16.
- C. Structural Steel:
1. All structural steel in this section shall be hot-dip galvanized.
2. Zinc (Hot-Dip Galvanizing) Coatings for structural iron and steel products made from rolled, pressed and forged shapes, castings, bars and plates including unfabricated and fabricated products shall conform to ASTM A123/A123M-17.
3. W-Beam Structural Steel Shapes shall conform to ASTM A992/A992M-11(2015).
4. Structural Steel Plates and Bars shall conform to ASTM A36/A36M-14.
5. HSS Shapes shall conform to ASTM A500/A500M-13, Grade B.
6. Thrie Beam Sections, W-Beam Sections and Thrie Beam to W-Beam Asymmetric Transition Sections shall conform to AASHTO M180-18.
7. The Thrie Beam Terminal Connections shall be 10 gauge and conform to AASHTO M180-18 and have a minimum yield strength of 50 ksi and a minimum ultimate strength of 70 ksi.
- D. Fasteners:
1. Bolts (Hex or Heavy Hex Bolts) shall conform to ASTM A307-14e1, Grade A unless otherwise specified and hot-dip galvanized in accordance with ASTM F2329/F2329M-15.
- Nuts for ASTM A307-14e1 (Hex) bolts shall conform to ASTM A563-15, Hex Grade A and hot-dip galvanized in accordance with ASTM F2329/F2329M-15.
- Nuts for ASTM A307-14e1 (Heavy Hex) bolts shall conform to ASTM A563-15, Heavy Hex Grade DH and hot-dip galvanized in accordance with ASTM F2329/F2329M-15.
- Washers for ASTM A307 bolts shall conform to ASTM F844 and hot-dip galvanized in accordance with ASTM F2329/F2329M-15.
2. High Strength Bolts (Heavy Hex Structural Bolts) shall conform to ASTM F3125-18, Type 1 unless otherwise specified and hot-dip galvanized in accordance with ASTM F2329/F2329M-15.
- Nuts for ASTM F3125-18 bolts shall conform to ASTM A563-15, Grade DH and hot-dip galvanized in accordance with ASTM F2329/F2329M-15.
- Washers for ASTM F3125-18 bolts shall conform to ASTM F436-18a, Type 1 and hot-dip galvanized in accordance with ASTM F2329/F2329M-15.
3. Threaded Rods shall conform to ASTM A449-14, Type 1 and hot-dip galvanized in accordance to ASTM F2329/F2329M-15. Nuts for ASTM A449-14 threaded rods shall conform to ASTM A563-15, Grade DH and hot-dip galvanized in accordance to ASTM F2329/F2329M-15. Washers for ASTM A449-14 threaded rods shall conform to ASTM F436-18a, Type 1 and hot-dip galvanized in accordance to ASTM F2329/F2329M-15.
4. Anchor Bolts shall conform to ASTM F1554-18, Grade (36, 55, 105) and hot-dip galvanized in accordance to ASTM F2329/F2329M-15. Nuts for anchor bolts shall conform to ASTM F1554-15, Section 6.7.1 and hot-dip galvanized in accordance to ASTM F2329/F2329M-15. Washers for anchor bolts shall conform to ASTM F436-11, Type 1 and hot-dip galvanized in accordance to ASTM F2329/F2329M-15.
5. The material for the 3" x 3" x 3/4" or 3 1/2" x 3 1/2" x 1/4" square washers shall conform to ASTM A572-18, Grade 60.
- E. Miscellaneous Materials:
1. Preformed Expansion Joint Filler for Concrete (Bituminous Type) shall conform to AASHTO M33-99 (2012), ASTM D994-11 (2016).
2. Timber Blockouts shall be Southern Yellow Pine (SYP), Grade No. 1 or better.
3. 14 7/16" x 12" x 5 1/8" Composite Recycled Polymer Blockouts shall be Mondo Polymer MGS14SH or MASH (2016) approved equivalent.
4. 14 7/16" x 8" x 5 1/8" Composite Recycled Polymer Blockouts shall be Mondo Polymer GB14SH2 or MASH (2016) approved equivalent.

SYMBOLS AND ABBREVIATIONS

Detail or Section designation
Sheet No. Section is cut or Detail Location

- ⊗ - Bearing Abutment Seat Line
- ⊙ - Boring No. & Designation

Abut. Abutment
AC Asphaltic Concrete
Adj. Adjacent
Alt. Alternate
Approx. Approximate
Az. Azimuth

ℬ Baseline
Bal. Balance
Bet., Btwn. Between
B.F. Both faces
B.F.E. Bottom Footing Elevation
Bk. Back
Blt. Bolt
Bm. Beam
B, Bot., Bott. Bottom
Br. Bridge
Brng., Brgs. Bearing, Bearings
B.V.C. Beginning of Vertical Curve

℄ Center Line
Cant. Cantilever
C.F. Cubic Feet
CiP Cast in Place
C.I.P. Cast Iron Pipe
Cl., Clr. Clear
Col. Column
Conc. Concrete
Conn. Connection
Const. Construction
Cont. Continuous
CRM Cement Rubble Masonry
C.Y., Cu. Yd. Cubic Yards

Det. Diameter
Dia., Ø
Dim. Dimension
Dwg., Dwgs. Drawing, Drawings

EA, Ea., ea. Each
E.F. Each Face
Elec. Electrical
El., Elev. Elevation
Emb. Embankment
E.P. Edge of Pavement
Eq. Equal
Est. Estimated
E.W. Each Way
Exc. Excavation
Exist. Existing
Exp., (E) Expansion
Ext. Exterior

(F) Fixed
F'c Specified Strength of Concrete
F'ci Strength of Concrete at Time of Initial Prestress
F.F. Front Face
Fig. Figure
Fin. Finish
Fin. Gr. Finish Grade
Ftg. Footing

Ga. Gage, Gauge
Galv. Galvanized
Gir., G Girder
G.R.P. Grouted Rubble Paving
Gr. Grade
Grd. Ground

(H) Hinge
Horiz. Horizontal
HS High Strength
Ht. Height
Hwy. Highway

I.B. Inbound
I.F. Inside Face
In. Inch
Int. Interior
Inv. Invert

Jt. Joint

L Length
LBS., lb., lbs. Pound, Pounds
L.F., Lin. Ft. Linear Feet
Lg. Long
Longit. Longitudinal
L.S. Lump Sum
Lt. Left
Ltg. Std. Lighting Standard

Max. Maximum
Mech. Mechanical
Min. Minimum
Misc. Miscellaneous
N North
N.B. Northbound
N.F. Near Face
No., # Number
N.T.S. Not To Scale

O.B. Outbound
o.c. On Center
O.G. Outside Girder
Opn'g Opening
o/s, O/S Offset

P.B. Pull Box
P.C. Point of Curvature
P.C.C. Portland Cement Concrete
Perf. Perforated
PG-() Prestressed Girder-(Type)
PL Plate
P/S Prestressed Strands
Pvmt. Pavement

R Radius
Rdwy Roadway
Ref. Reference
Reinf. Reinforcement
Ret. Retaining
Req'd Required
R.F. Rear Face
Rt. Right
R/W Right Of Way

S South
S.B. Southbound
Sect. Section
SF Square Feet
Shldr. Shoulder
Sht. Sheet
Spc. Space
Spcd. Spaced
Spcg. Spacing
Spec. Specification
Sprd. Spread
Sta. Station
Std. Standard
Stirr. Stirrup
Str. Straight
Struct. Structural
Symm. Symmetrical

T Top
Temp. Temporary
Thk. Thick, Thickness
T.O.D. Top Of Deck
Tot. Total
Transv. Transverse
Typ. Typical

Var. Varies
V.C. Vertical Curve
Vert. Vertical
W West
w/ With
W.W. Wingwall

CONSTRUCTION REQUIREMENTS:

- A. Refer to Hawaii Standard Specifications for Road and Bridge Construction, 2005 edition and Special Provisions.
- B. Except as noted otherwise, all vertical dimensions are measured plumb.
- C. For steel reinforcing, stagger all splices where possible.
- D. Steel reinforcing shall be supported, bent and placed as per AASHTO LRFD Bridge Design Specifications, 7th Edition, 2014 including all interim revisions.
- E. For cast-in-place concrete minimum reinforcement cover shall be as follows:
- Concrete cast against earth: 3"
- Walls: 2"
- Curbs and Railings: 2"
- Slab tops: 2"
- Measured to the closest part of the bars.
- F. At the time concrete is placed, reinforcing shall be free from mud, oil, laitance or other coatings which may adversely affect bond strength.
- G. All reinforcement, dowels and other embedded items shall be positively secured before pouring.
- H. Minimum clear spacing between parallel bars shall be one and one-half (1 1/2") times the diameter of the larger bar (for non-bundled bars), but in no case shall the clear distance between the bars be less than one and one-half (1") times the maximum coarse aggregate size.
- I. All dimensions relating to reinforcing bars (e.g. spacing of bars etc.) are to centers of bars unless noted otherwise.
- J. All footings shall bear on firm undisturbed natural soils or properly compacted structural fill.
- K. The welding of reinforcing steel shall be in accordance with the Structural Welding Code-Reinforcing Steel AWS D1.4/D1.4M 2018.
- L. The welding of structural steel shall be in accordance with the Structural Welding Code AWS D1.1/D1.1M 2015.
- M. The Contractor shall conduct his work in such a manner and provide such temporary shoring or other measures as may be necessary to insure the safety of all concerned and to protect existing structures.
- N. In the event of over excavation, the space between the footing or footing key and the ground shall be filled with a minimum of class D concrete at the Contractor's expense at no cost to the State.
- O. Unless noted otherwise chamfer all exposed concrete edges three-quarters (3/4) of an inch.
- P. Refer to Standard Plans for additional details and notes not covered by details and typical drawings.
- Q. Anchor bolts shall have sufficient length when installed to ensure that the bolt projects at least 1/8" beyond the top of the nut but should not project more than 1/4". Anchor bolts shall not be out of plumb more than 1:40 Horizontal: Vertical.
- R. Bolts and high strength bolts shall have sufficient length when installed to ensure that the bolt projects at least 1/8" beyond the nut but should not project more than 1/2".

ORIGINAL PLANS	PLOTTED BY	DRAWN BY	DATE						
NOTE BOOK	TRACED BY	<Name>							
Re. _____	QUANTITIES BY	<Name>							
	CHECKED BY	<Name>							

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD BRIDGE RAILINGS &
TRANSITIONS

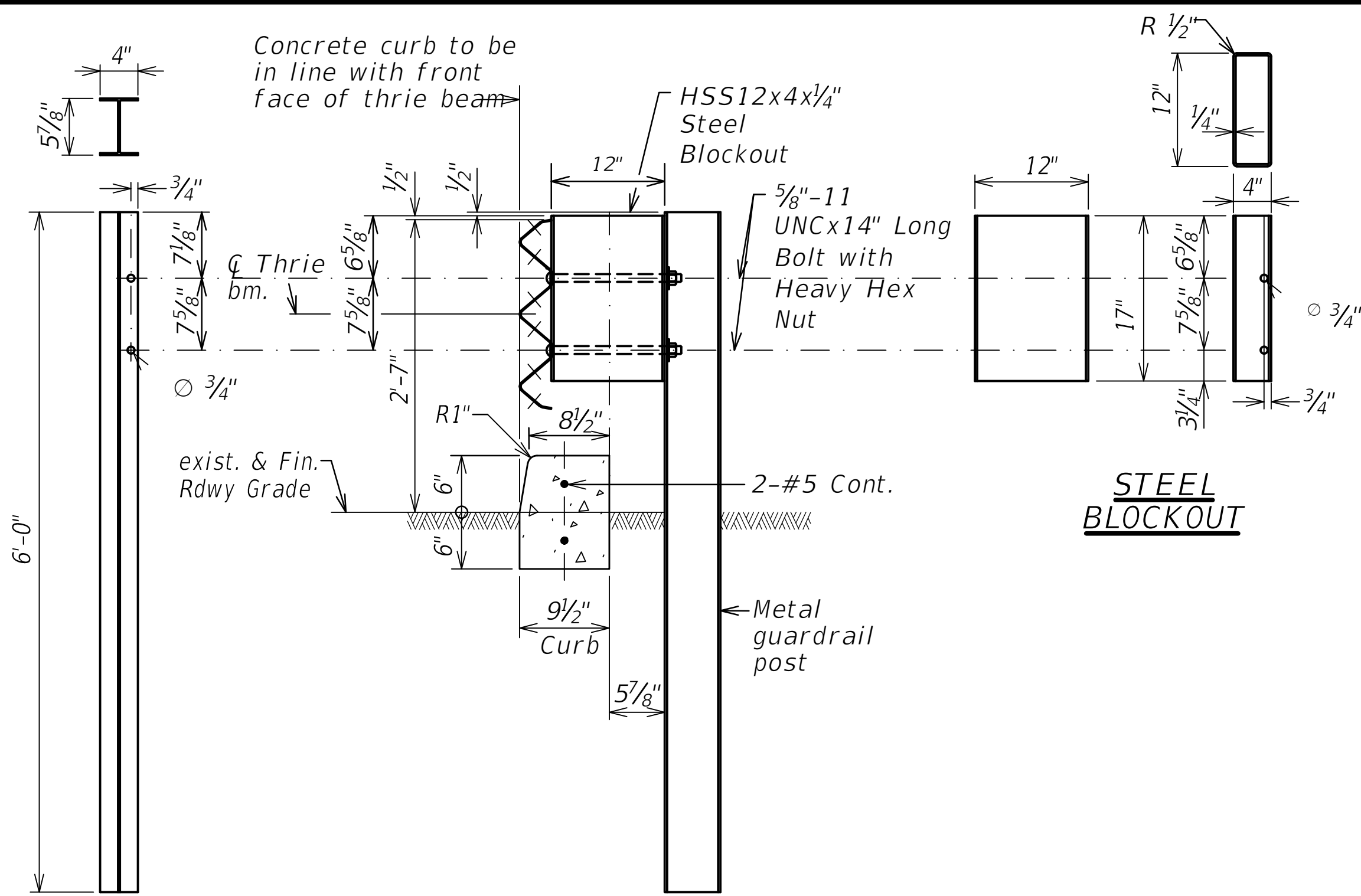
KALANIANA'OLE HIGHWAY RESURFACING

VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

Fed-aid Proj.No. NH-072-1(057)

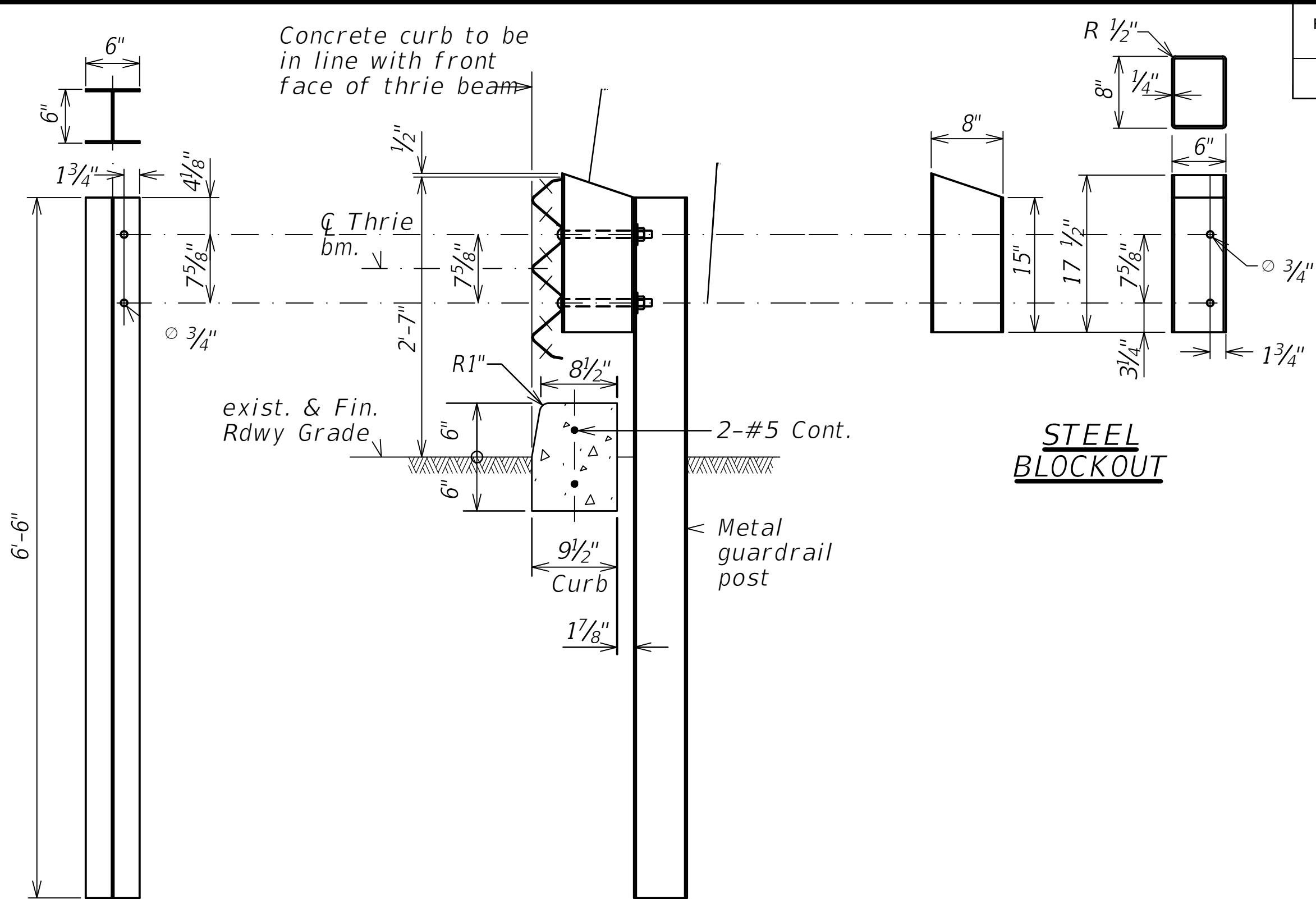
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HAWAII	HAW.	NH-072-1(057)	2026	24	102



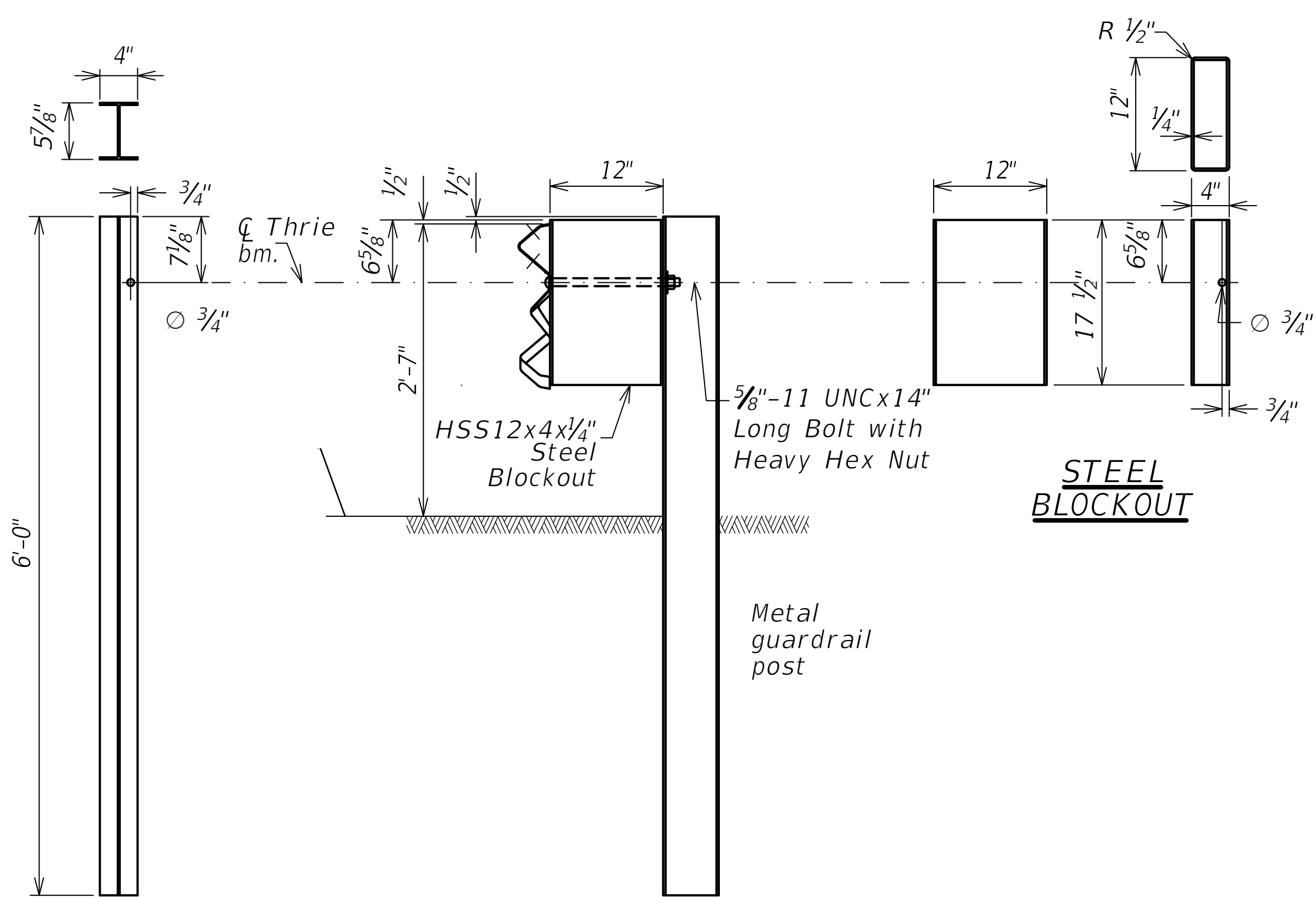
W6x9 POST

SECTION G
Scale : 1" = 1'-0"



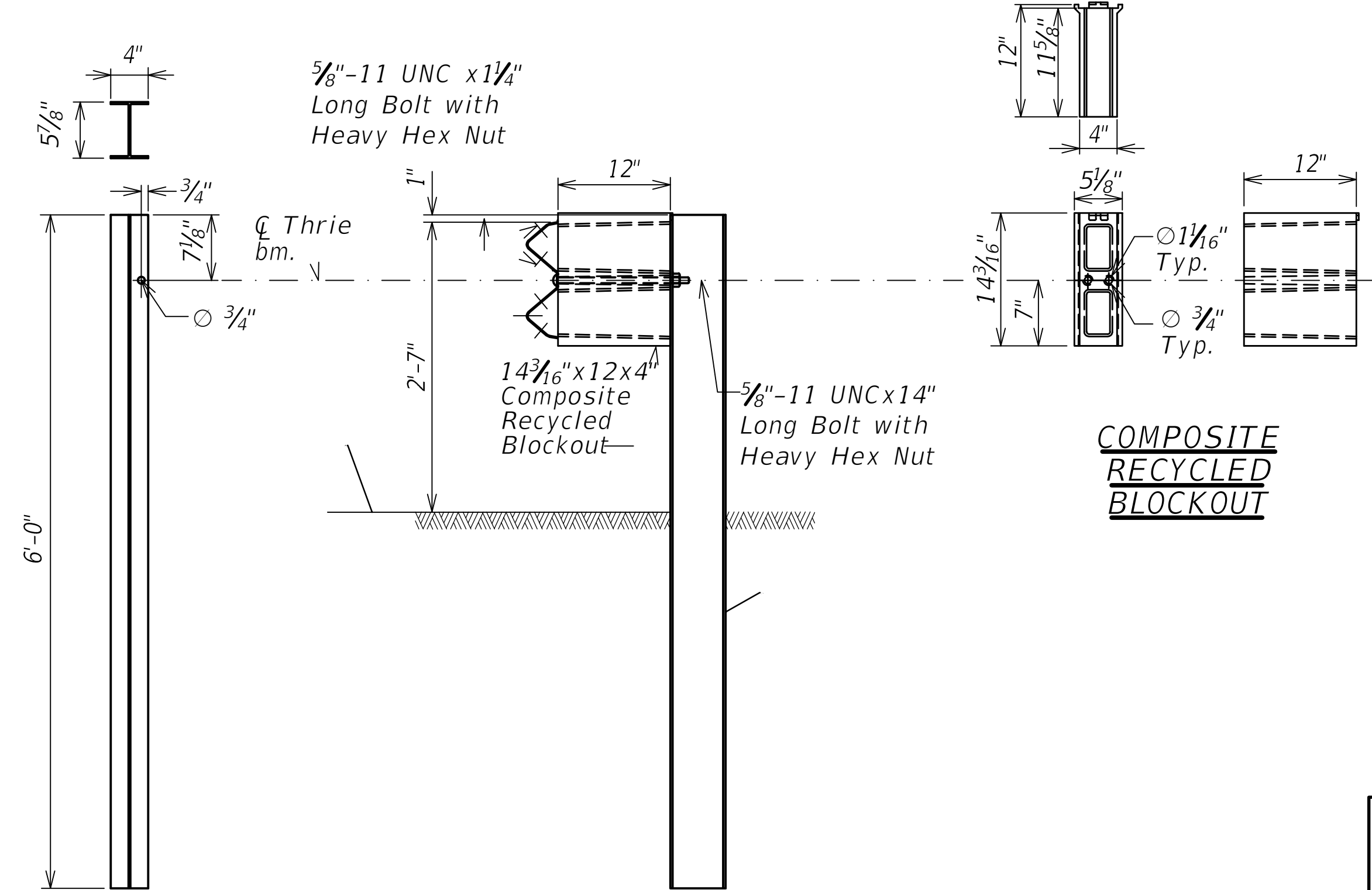
W6x15 POST

SECTION F
Scale : 1" = 1'-0"



W6x9 POST

SECTION H
Scale : 1" = 1'-0"



W6x9 POST

SECTION J
Scale : 1" = 1'-0"

METAL GUARDRAIL TYPE 3 THRIE BEAM SECTIONS and DETAILS

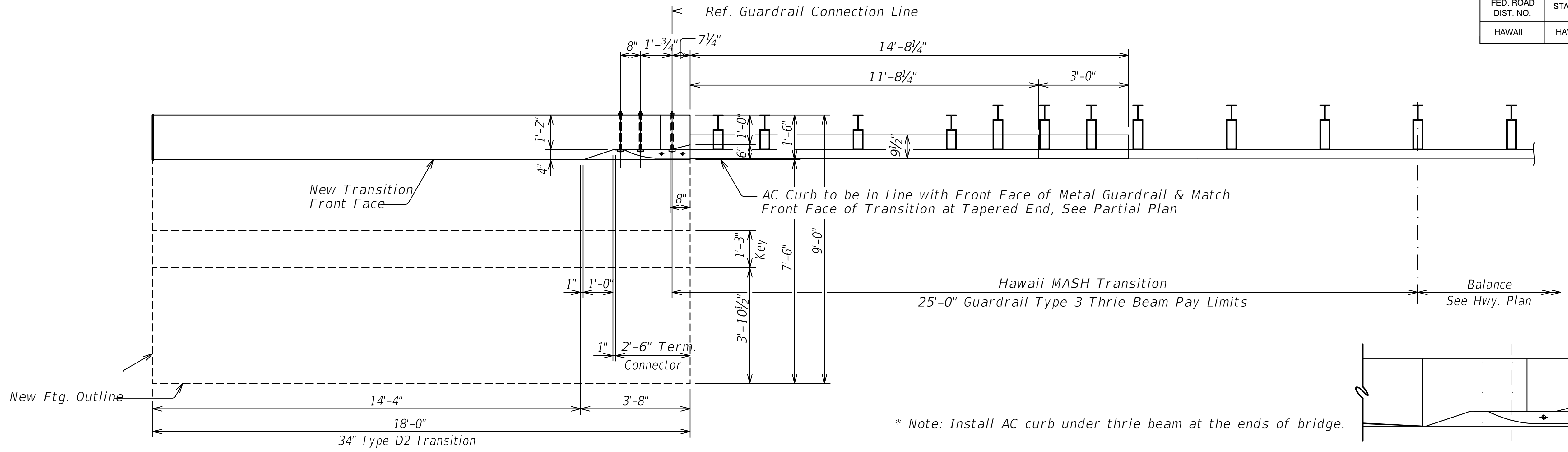
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD BRIDGE RAILINGS & TRANSITIONS

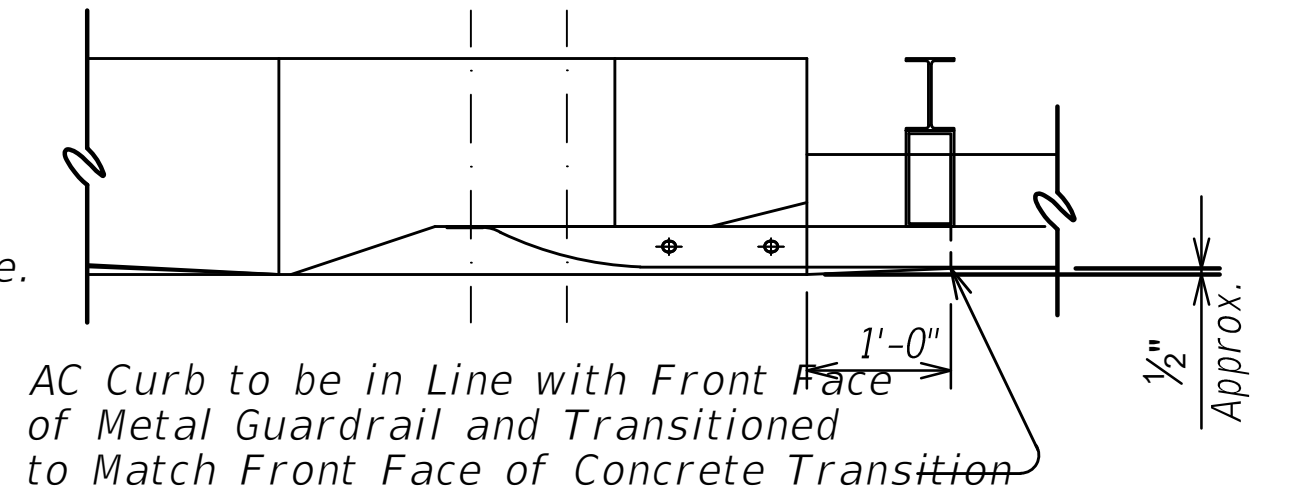
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
Scale: As Noted Date: June, 2025

SHEET No. KS-3 OF 12 SHEETS

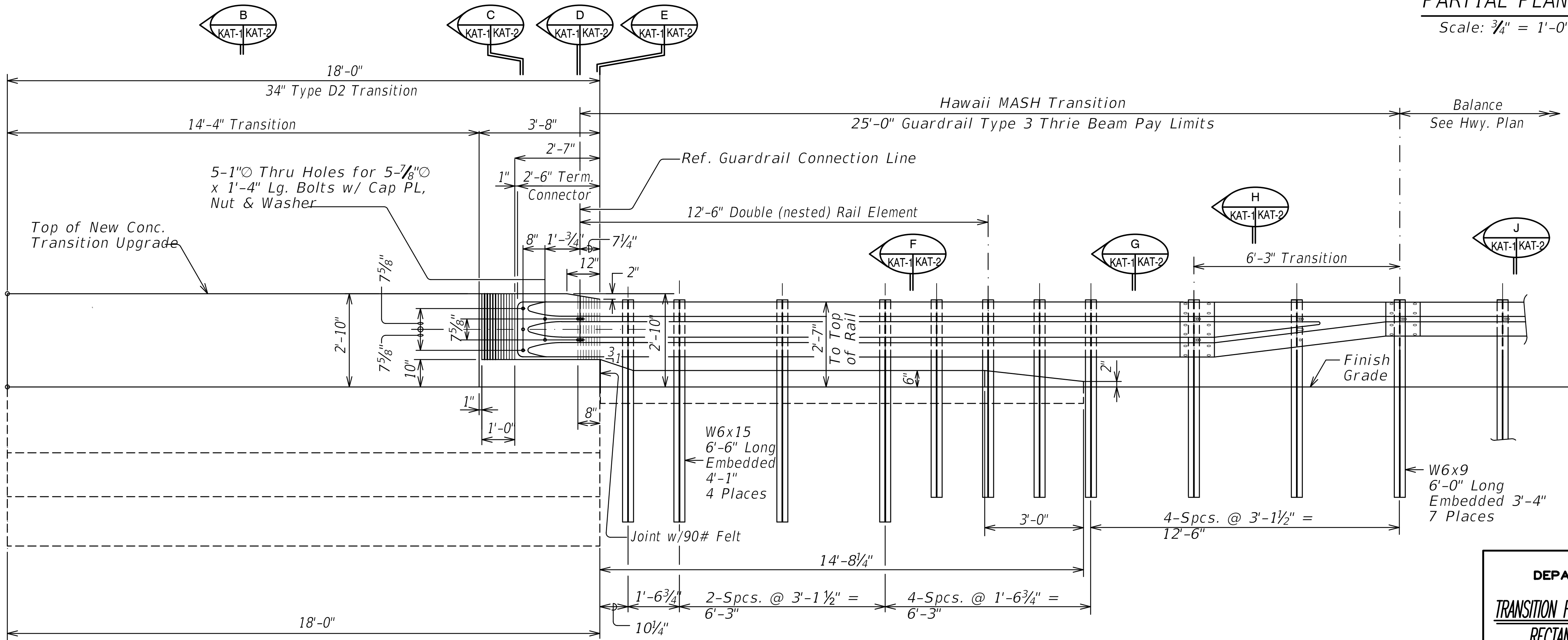
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HAWAII	HAW.	NH-072-1(057)	2026	25	102



PLAN
Scale: " = 1'-0"



PARTIAL PLAN
Scale: 3/4" = 1'-0"

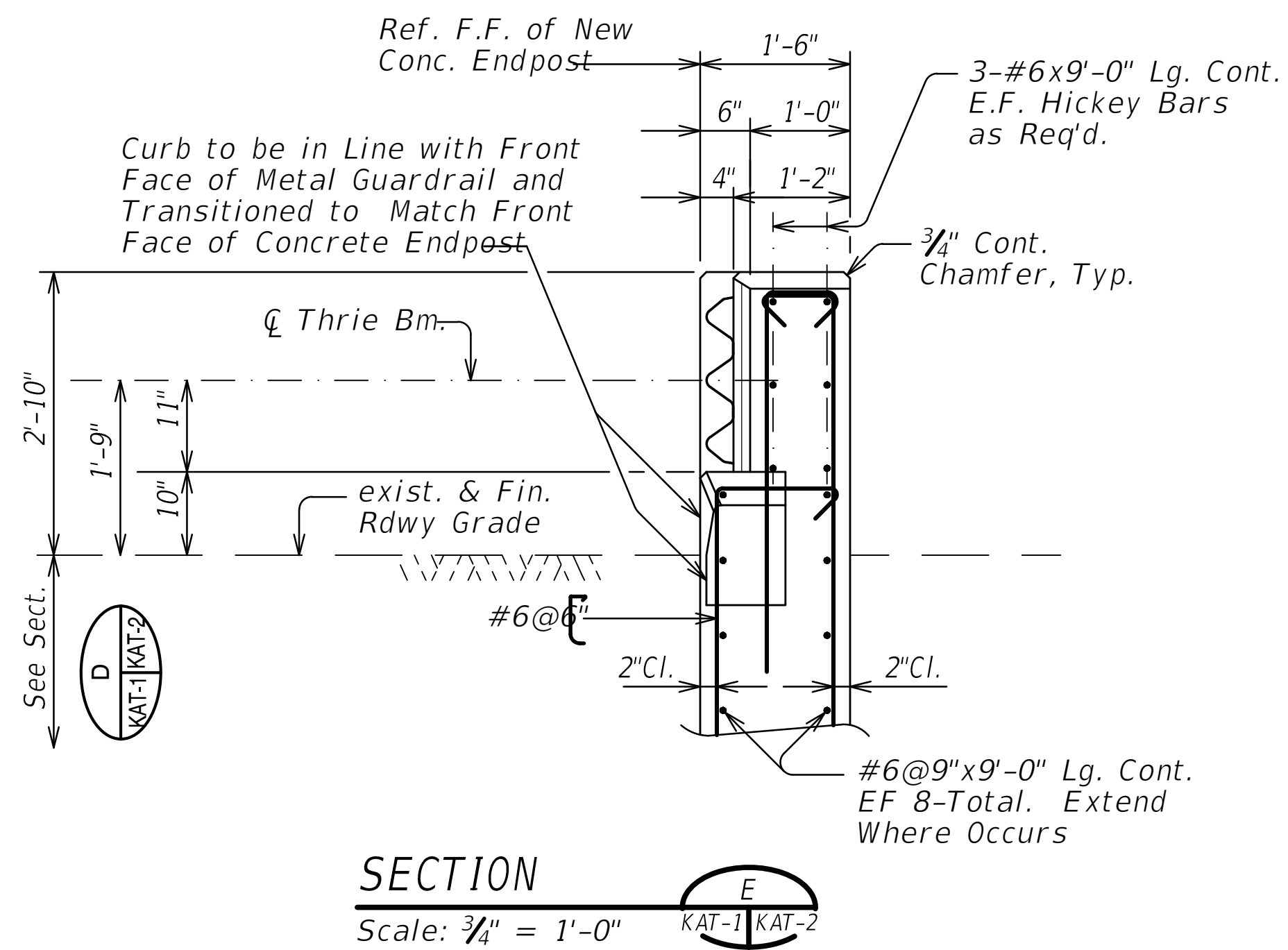
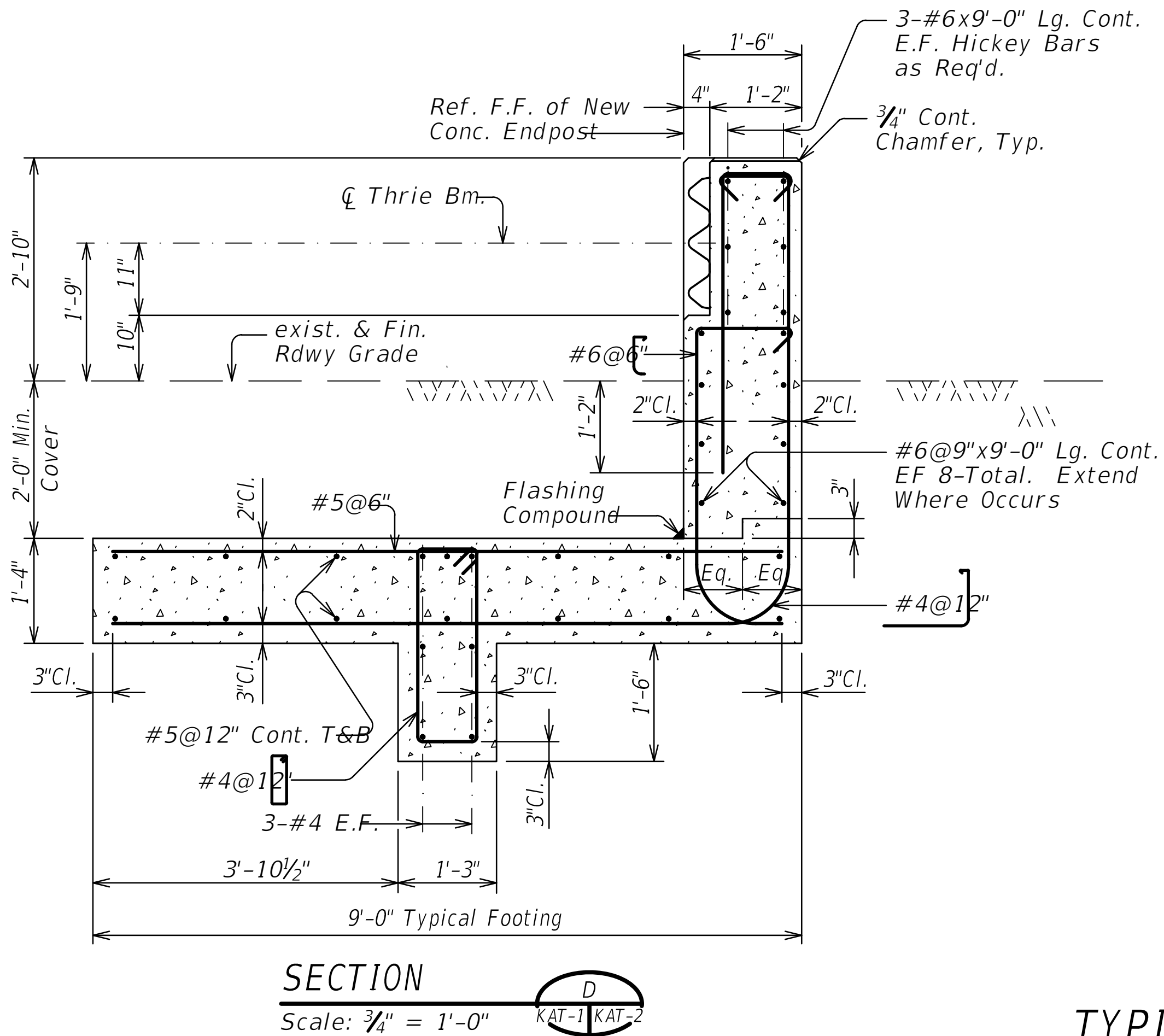
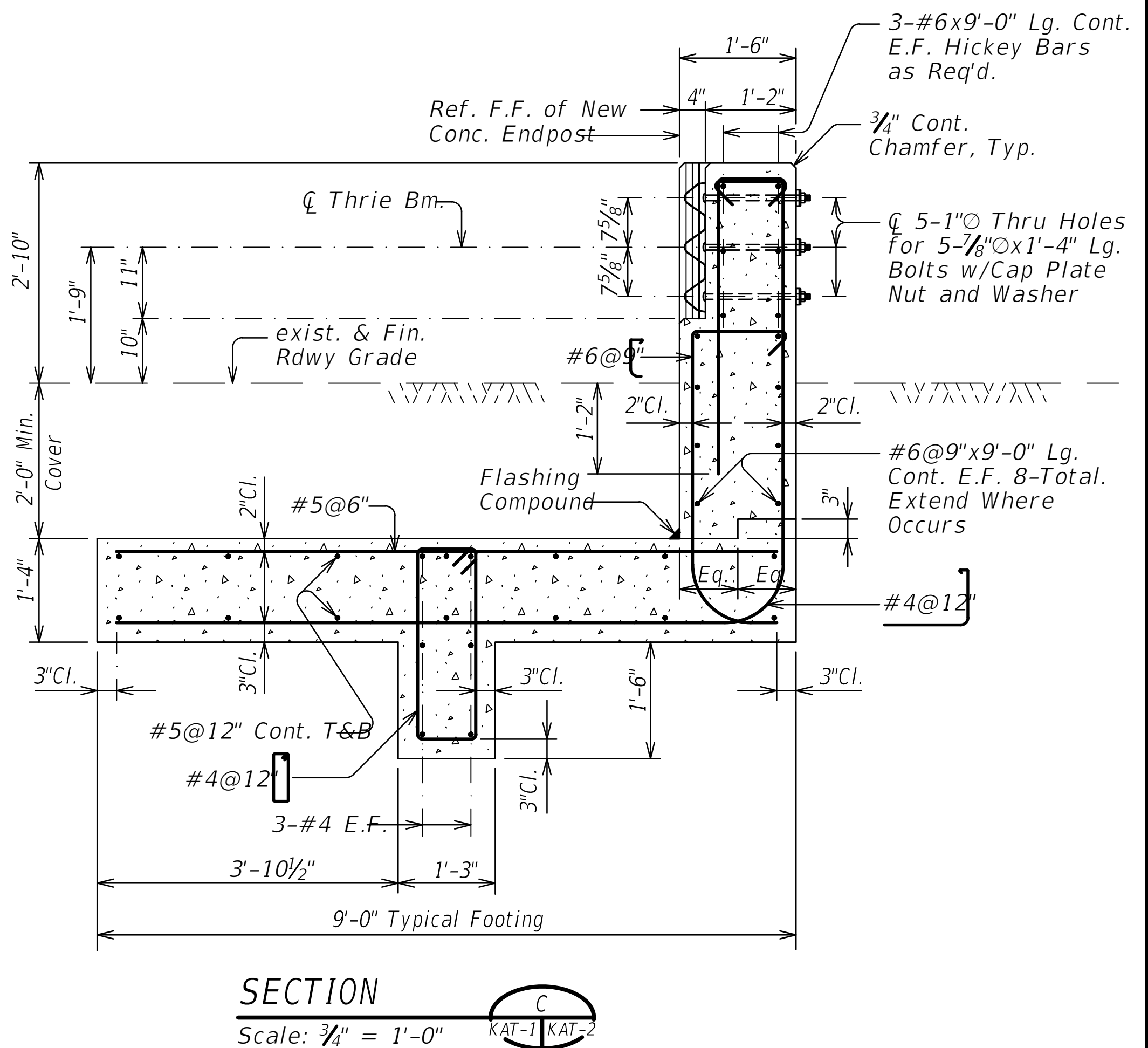
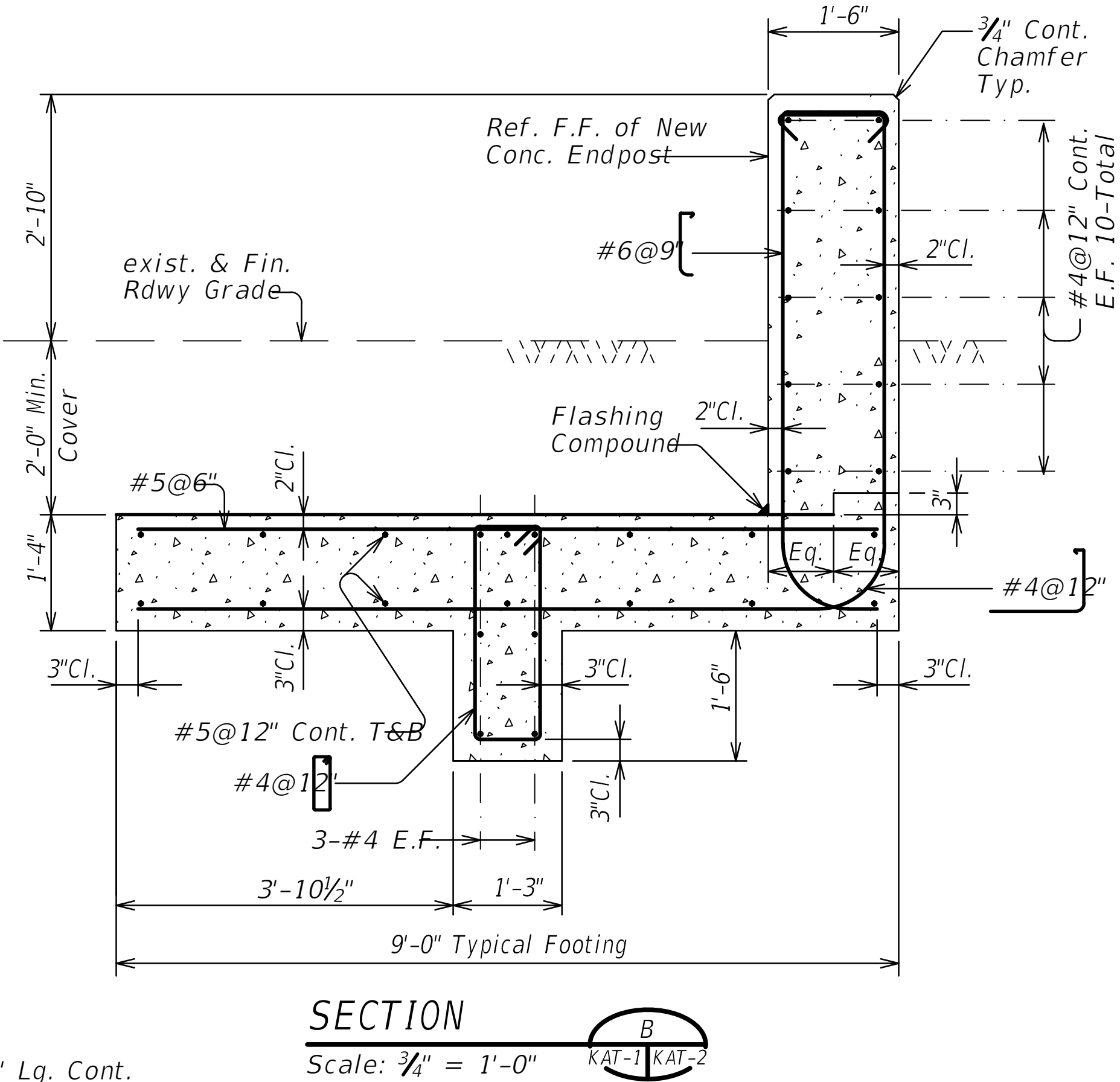
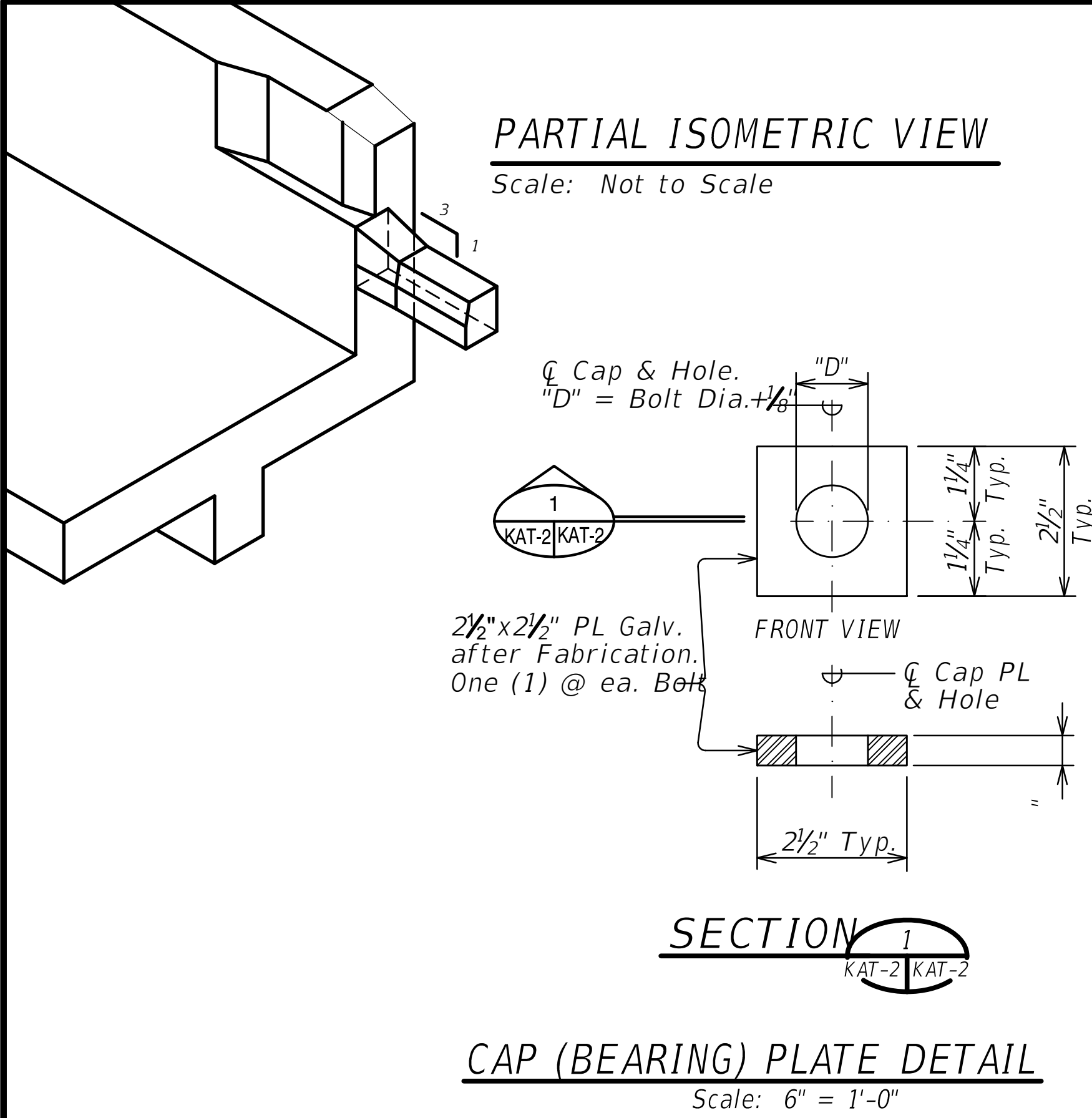


ELEVATION
Scale: " = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**TRANSITION FOR SOLID BRIDGE RAILING WITH RECESSED
RECTANGULAR PANELS PLAN and ELEVATION**
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
Scale: As Noted Date: June, 2025

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
REVISIONS	

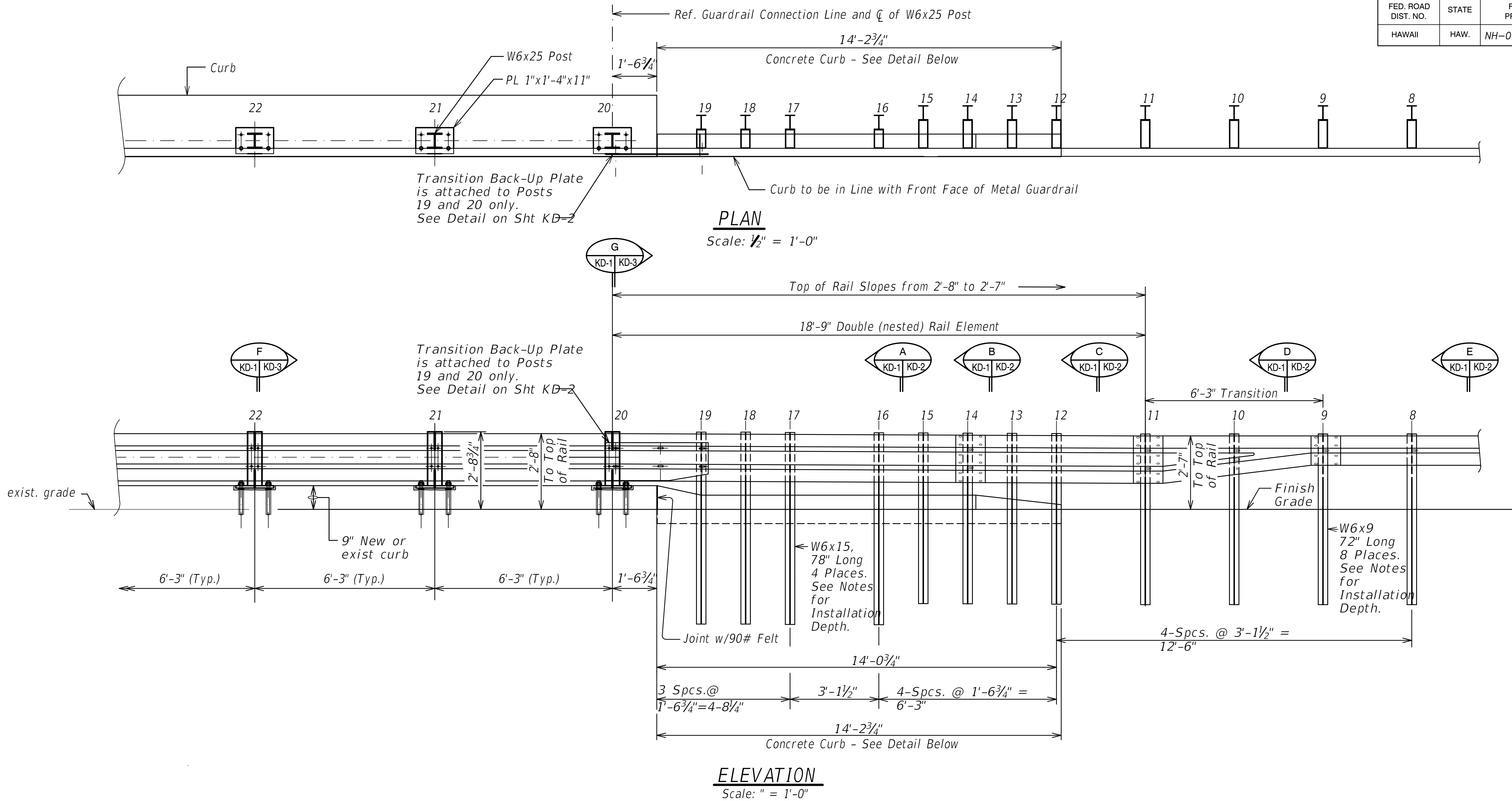
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HAWAII	HAW.	NH-072-1(057)	2026	26	102



TYPICAL 34" TYPE D2 TRANSITION SECTIONS & DETAIL

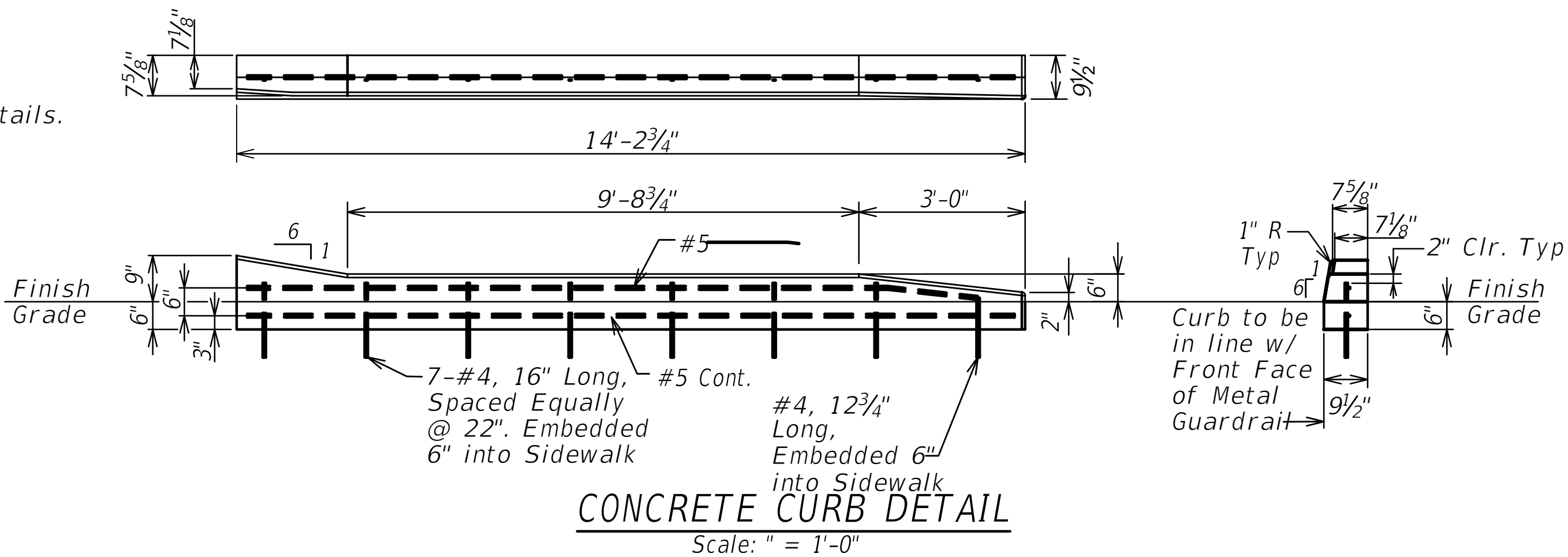
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRANSITION FOR SOLID BRIDGE RAILING WITH RECESSED RECTANGULAR
PANELS-TYPICAL 34" D2 TRANSITION SECTIONS & DETAIL
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
Scale: As Noted Date: June, 2025

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	27	102



NOTES:

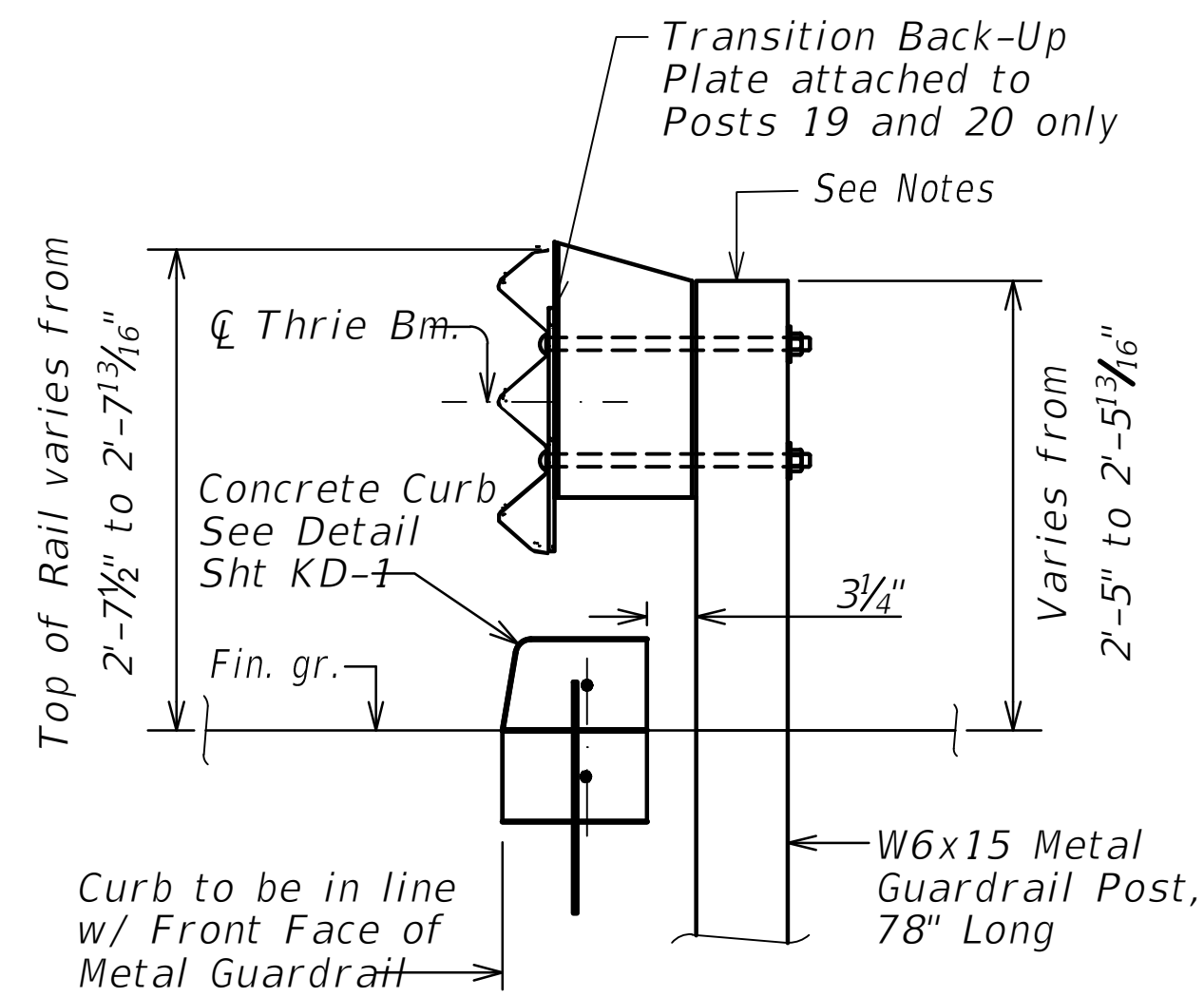
1. See Sht. #KS-2 for Metal Guardrail Type 3 Thrie Beam and Appurtenances details.
2. The height of Post Nos. 8-11 Above Finish Grade should be 2'-8".
3. The height of Post No. 12 Above Finish Grade should be 2'-8 $\frac{1}{8}"$.
4. The height of Post No. 13 Above Finish Grade should be 2'-8 $\frac{1}{4}"$.
5. The height of Post No. 14 Above Finish Grade should be 2'-8 $\frac{5}{16}"$.
6. The height of Post No. 15 Above Finish Grade should be 2'-8 $\frac{1}{2}"$.
7. The height of Post No. 16 Above Finish Grade should be 2'-5 $\frac{1}{2}"$.
8. The height of Post No. 17 Above Finish Grade should be 2'-5 $\frac{5}{8}"$.
9. The height of Post No. 18 Above Finish Grade should be 2'-5 $\frac{1}{4}"$.
10. The height of Post No. 19 Above Finish Grade should be 2'-5 $\frac{1}{16}"$.



HAWAII MODIFIED DELAWARE RETROFIT ENDPOST PLAN, & ELEVATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**HAWAII MODIFIED DELAWARE
RETROFIT PLAN AND ELEVATION**
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
Scale: As Noted Date: June, 2025

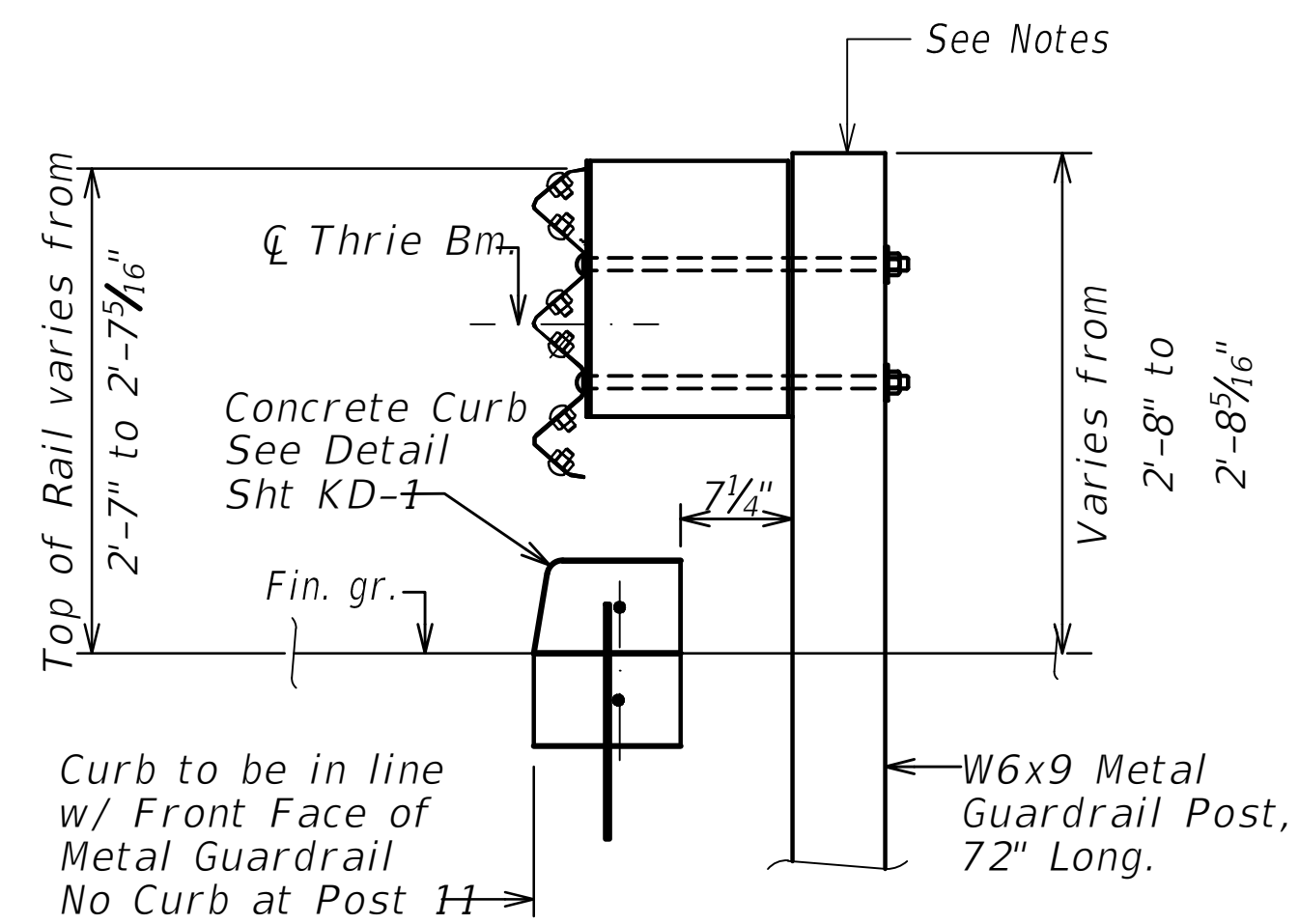
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HAWAII	HAW.	NH-072-1(057)	2026	28	102



SECTION

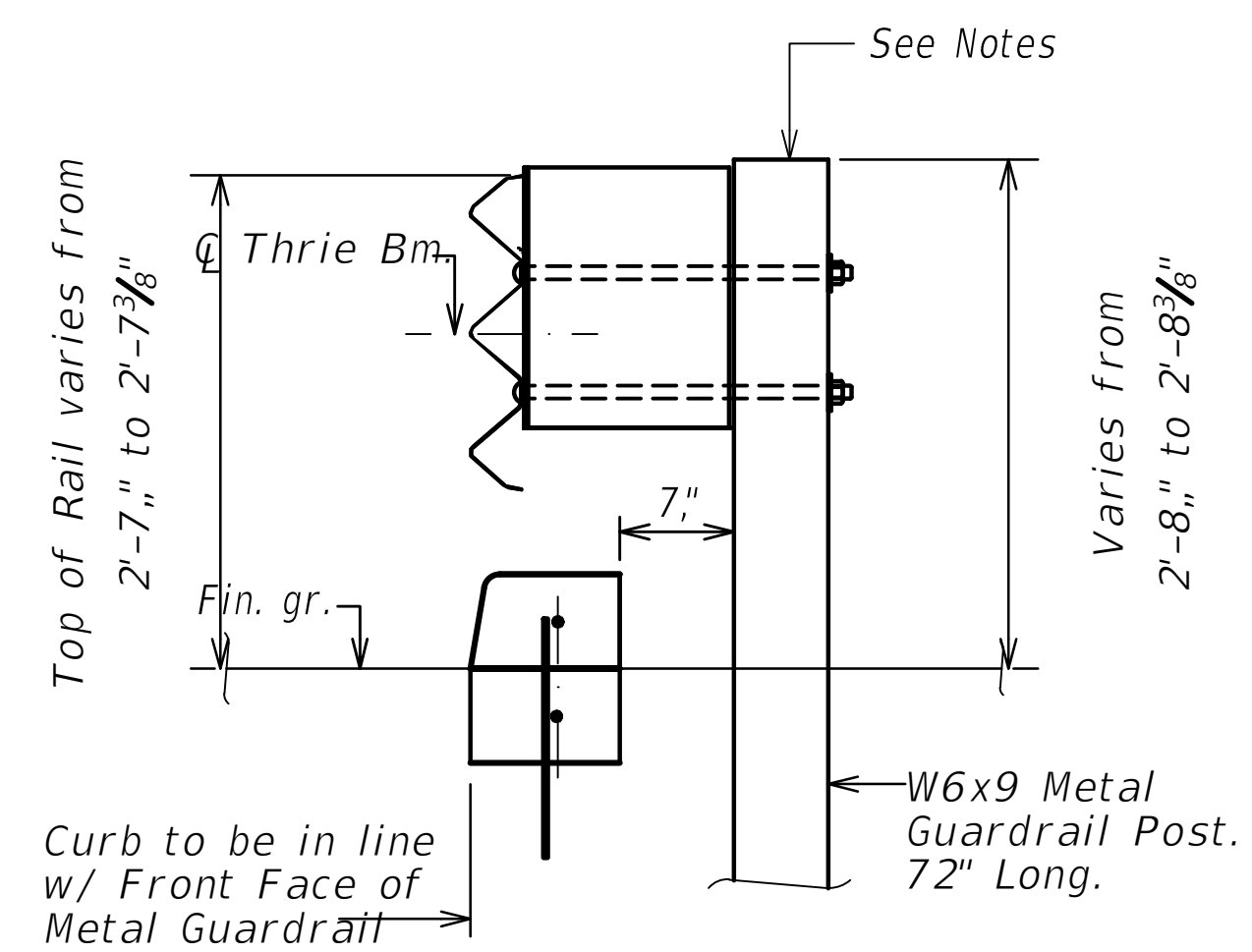
Posts 16-19

Scale: 1" = 1'-0"

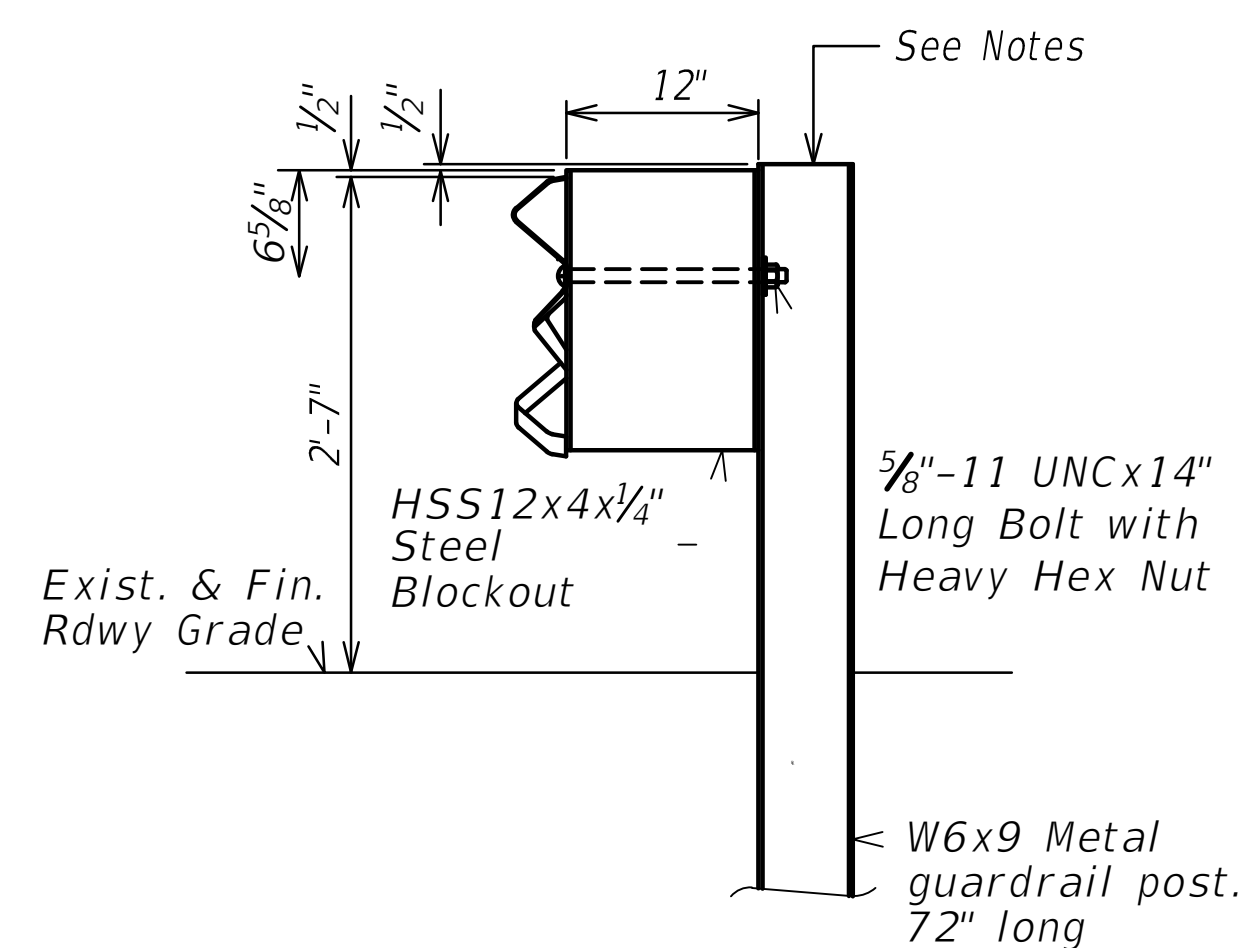


SECTION

Posts 11 and 14
Scale: 1" = 1'-0"



SECTION
Posts 12-13, 15
Scale: 1" = 1'-0"



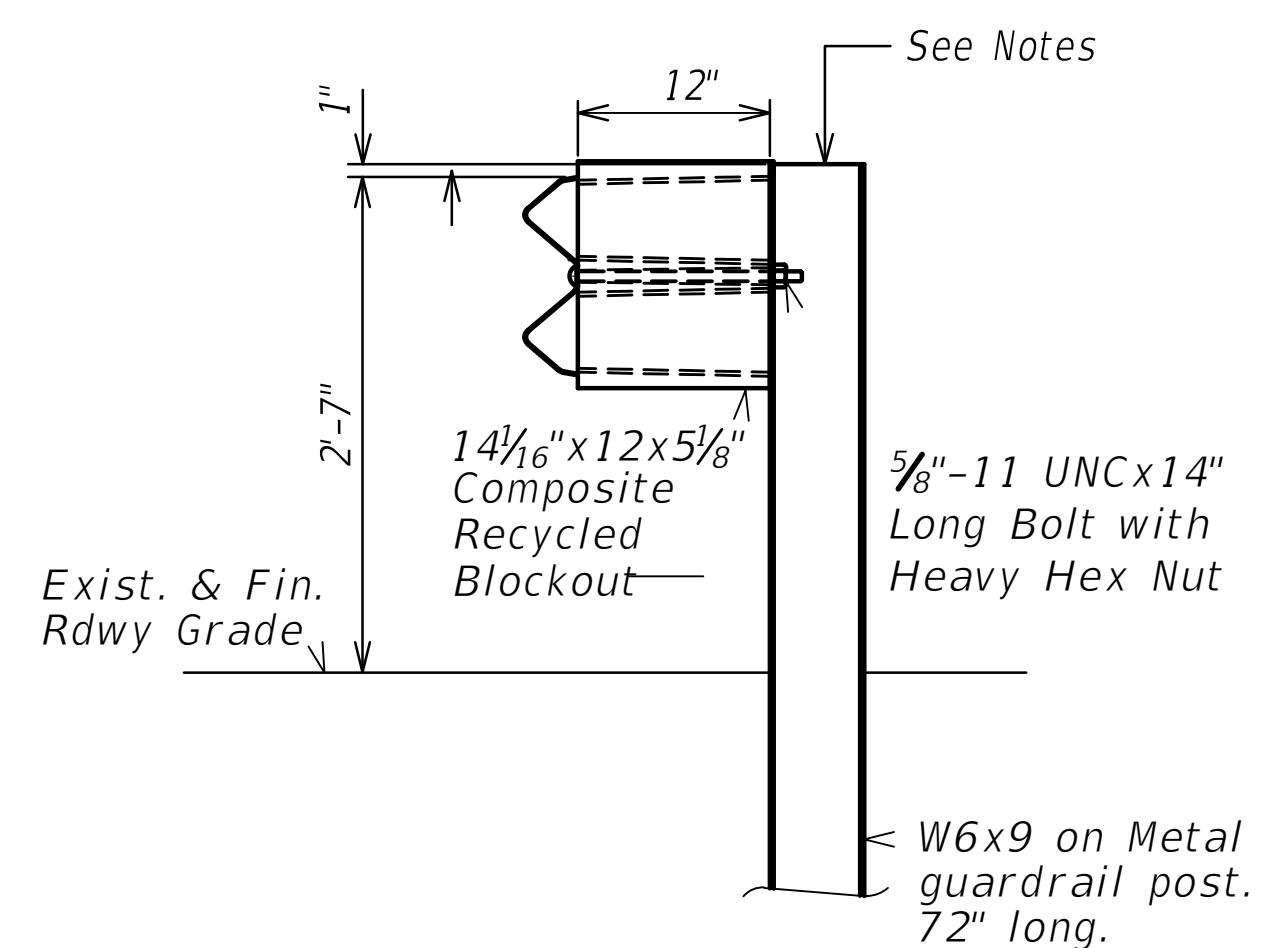
SECTION

Post 10

Scale: 1" = 1'-0"



The diagram shows a circle divided into two equal halves by a vertical line. A horizontal line is drawn across the top of the circle, intersecting the vertical line. The left half of the circle is labeled 'KD-1' and the right half is labeled 'KD-2'. The letter 'D' is written above the horizontal line, centered between the two halves.

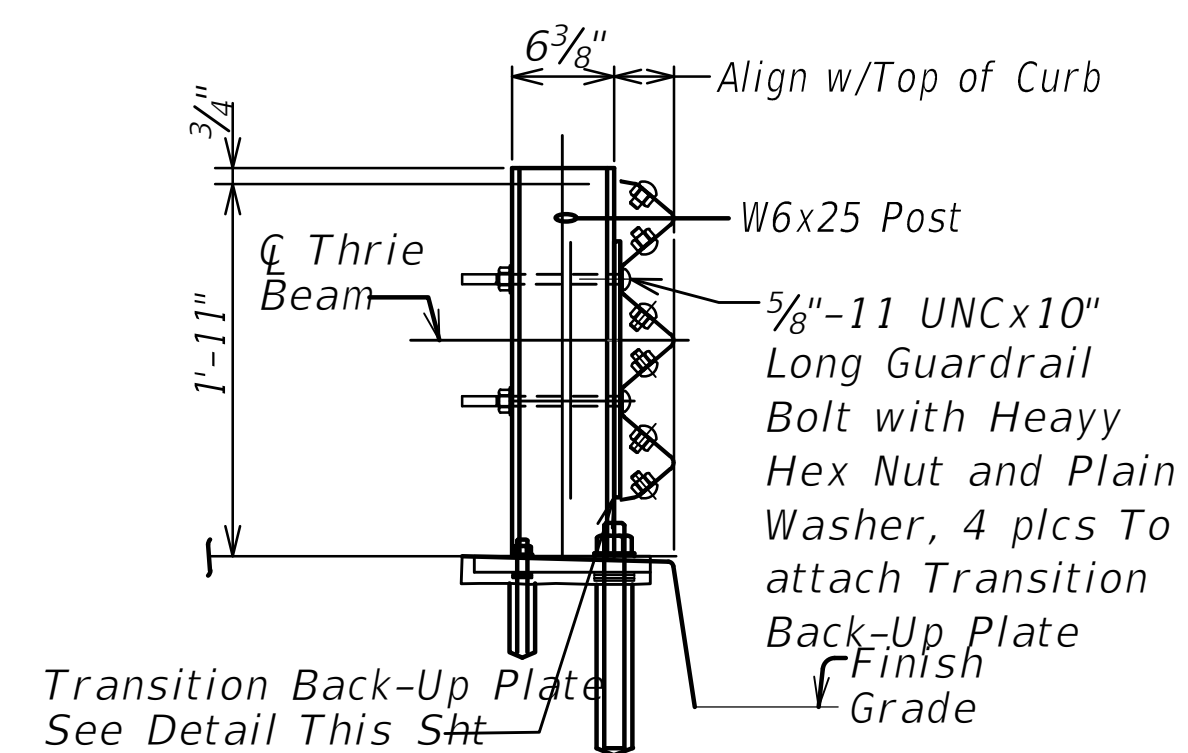


SECTION

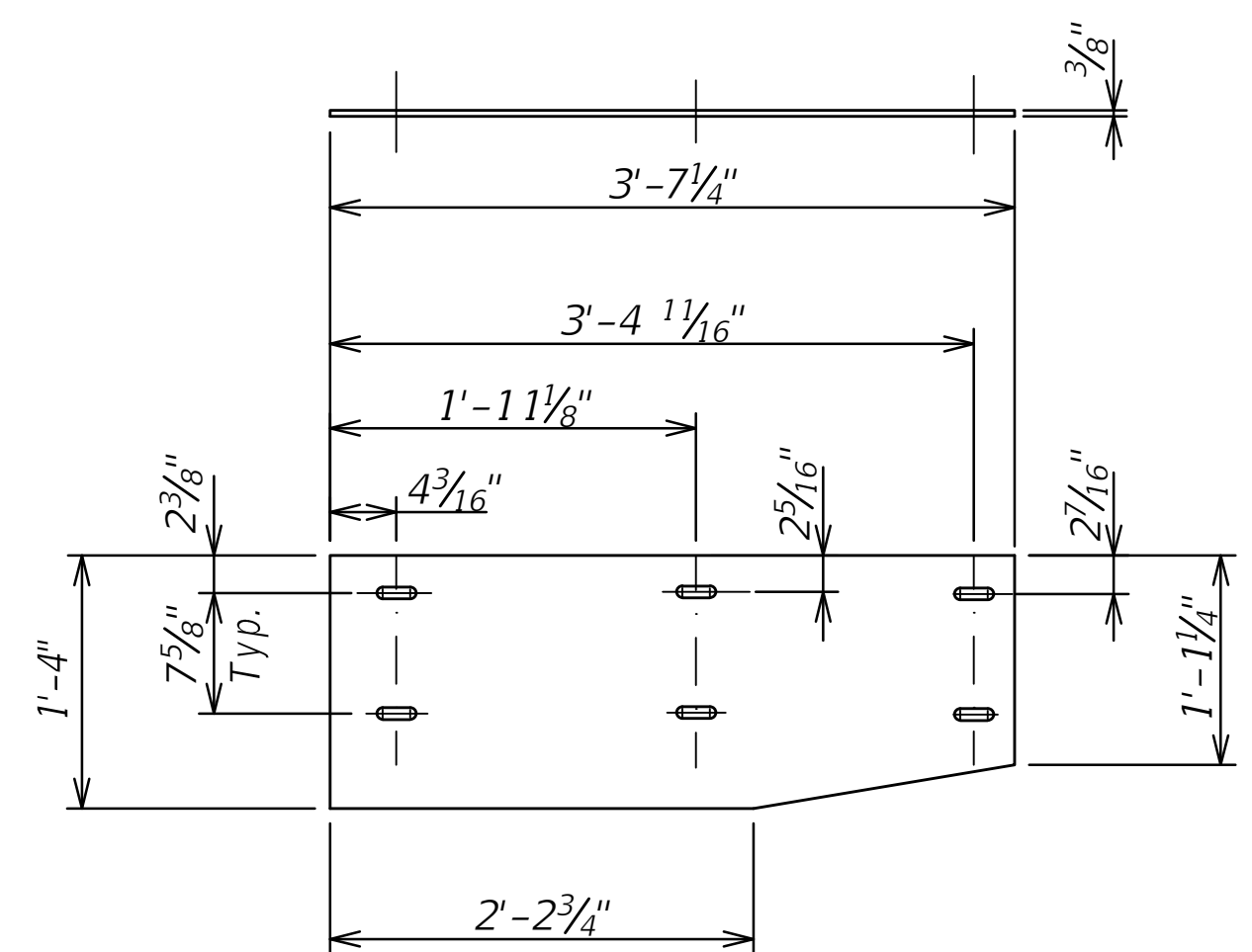
Posts 8-9

Scale: 1" = 1'-0"





SECTION
Post 20
Scale: 1" = 1'-0"



TRANSITION BACK-UP PLATE DETAIL
Scale: 1" = 1'-0"

NOTES:

1. See Sht. #KS-2 for Metal Guardrail Type 3 Thrie Beam and Appurtenances details.
2. The height of Post Nos. 8-11 Above Finish Grade should be 2'-8".
3. The height of Post No. 12 Above Finish Grade should be 2'-8¹/₈".
4. The height of Post No. 13 Above Finish Grade should be 2'-8¹/₄".
5. The height of Post No. 14 Above Finish Grade should be 2'-8⁵/₁₆".

NOTES (Cont.):

6. The height of Post No. 15 Above Finish Grade should be 2'-8 $\frac{3}{4}$ ".
7. The height of Post No. 16 Above Finish Grade should be 2'-5 $\frac{1}{2}$ ".
8. The height of Post Nos. 17 Above Finish Grade should be 2'-5 $\frac{1}{2}$ ".
9. The height of Post No. 18 Above Finish Grade should be 2'-5 $\frac{1}{16}$ ".
10. The height of Post No. 19 Above Finish Grade should be 2'-5 $\frac{3}{16}$ ".

ORIGINAL PLAN	PLOTTED BY	<NAME>	DATE	_____
	DRAWN BY	<Name>	"	_____
NOTE BOOK	TRACED BY	<Name>	"	_____
	DESIGNED BY	<Name>	"	_____
	QUANTITIES BY	<Name>	"	_____
	CHECKED BY	<Name>	"	_____
No. _____				

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

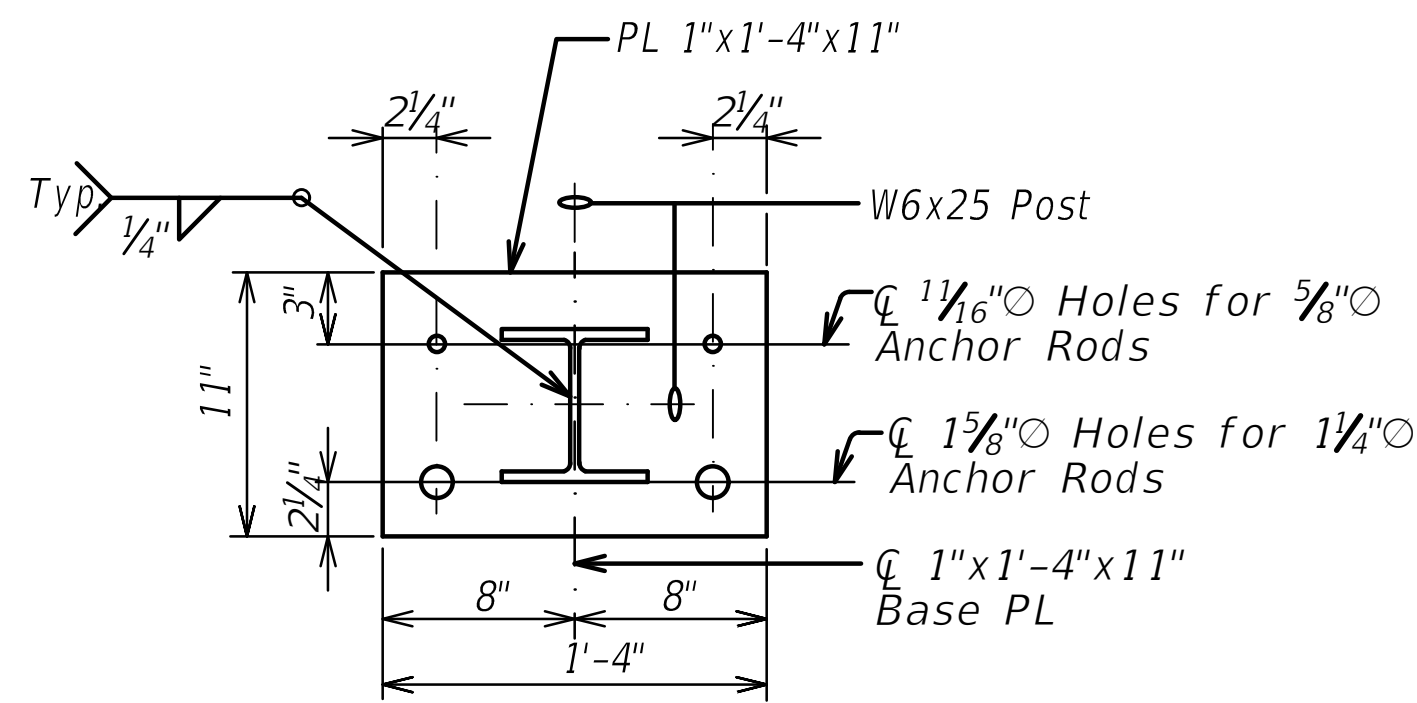
HAWAII MODIFIED DELAWARE
RETROFIT SECTIONS

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

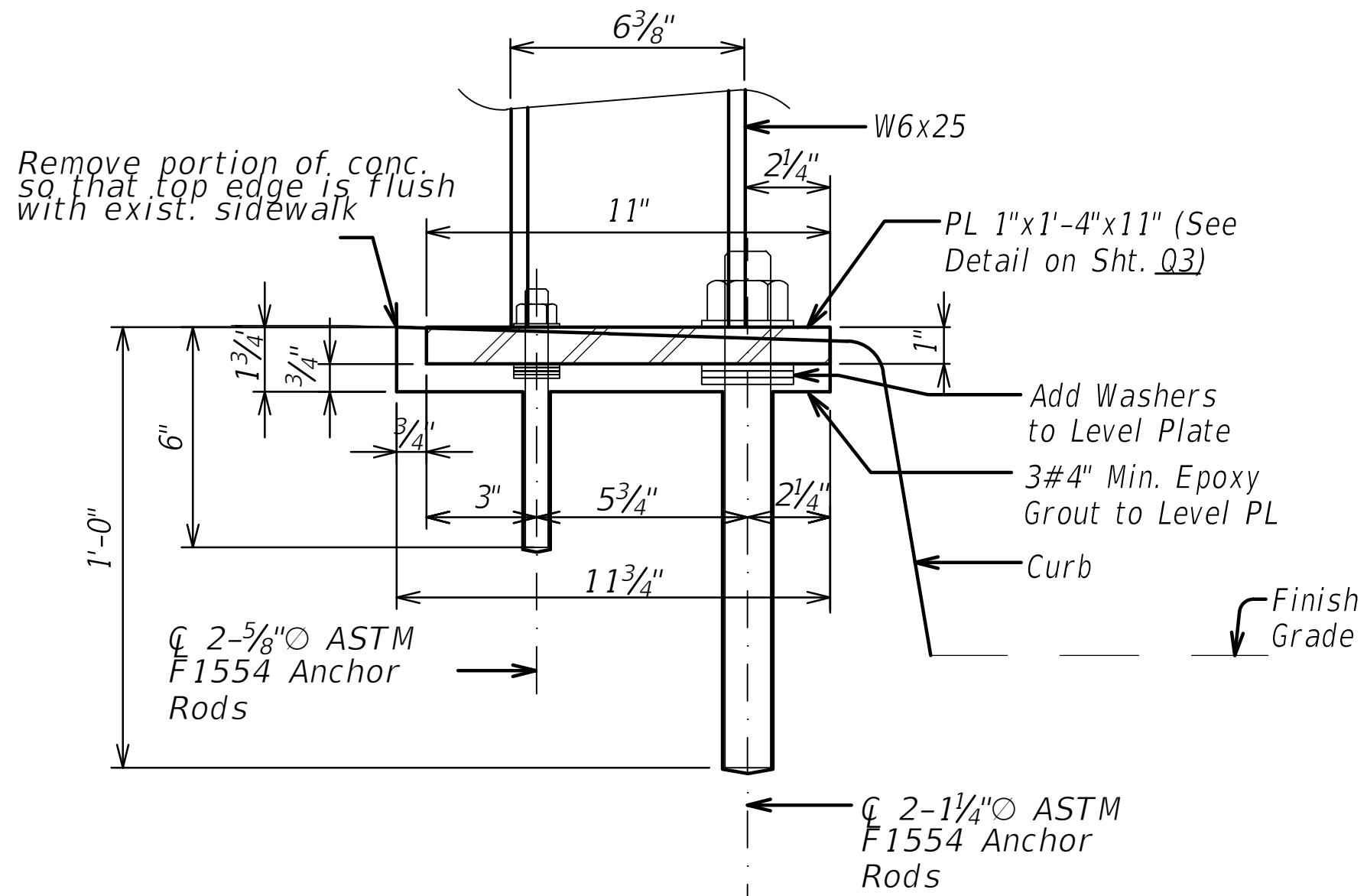
Fed-aid Proj.No. NH-072-1(057)

Scale: As Noted Date: June, 2025

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	29	102

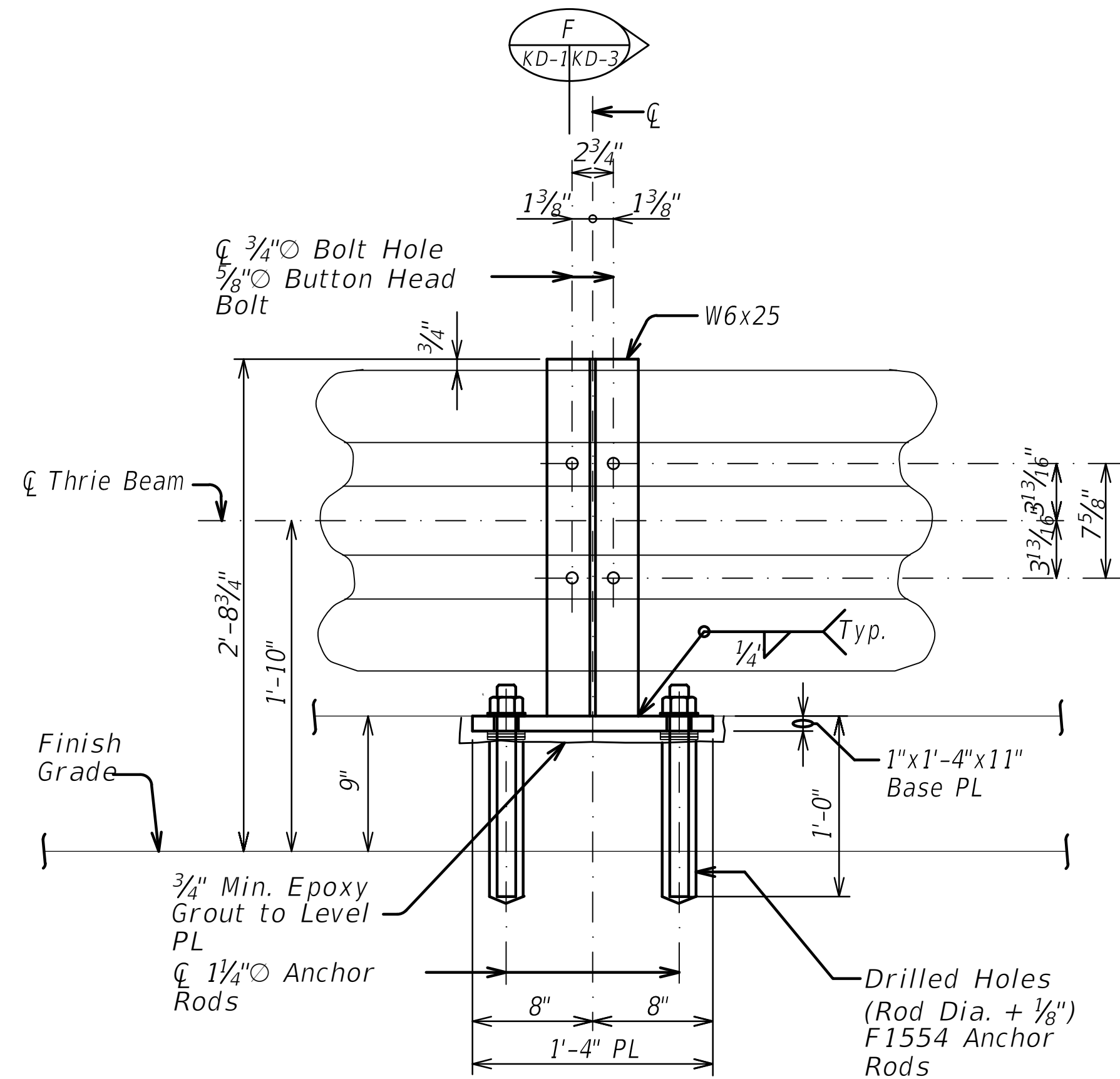


PLAN

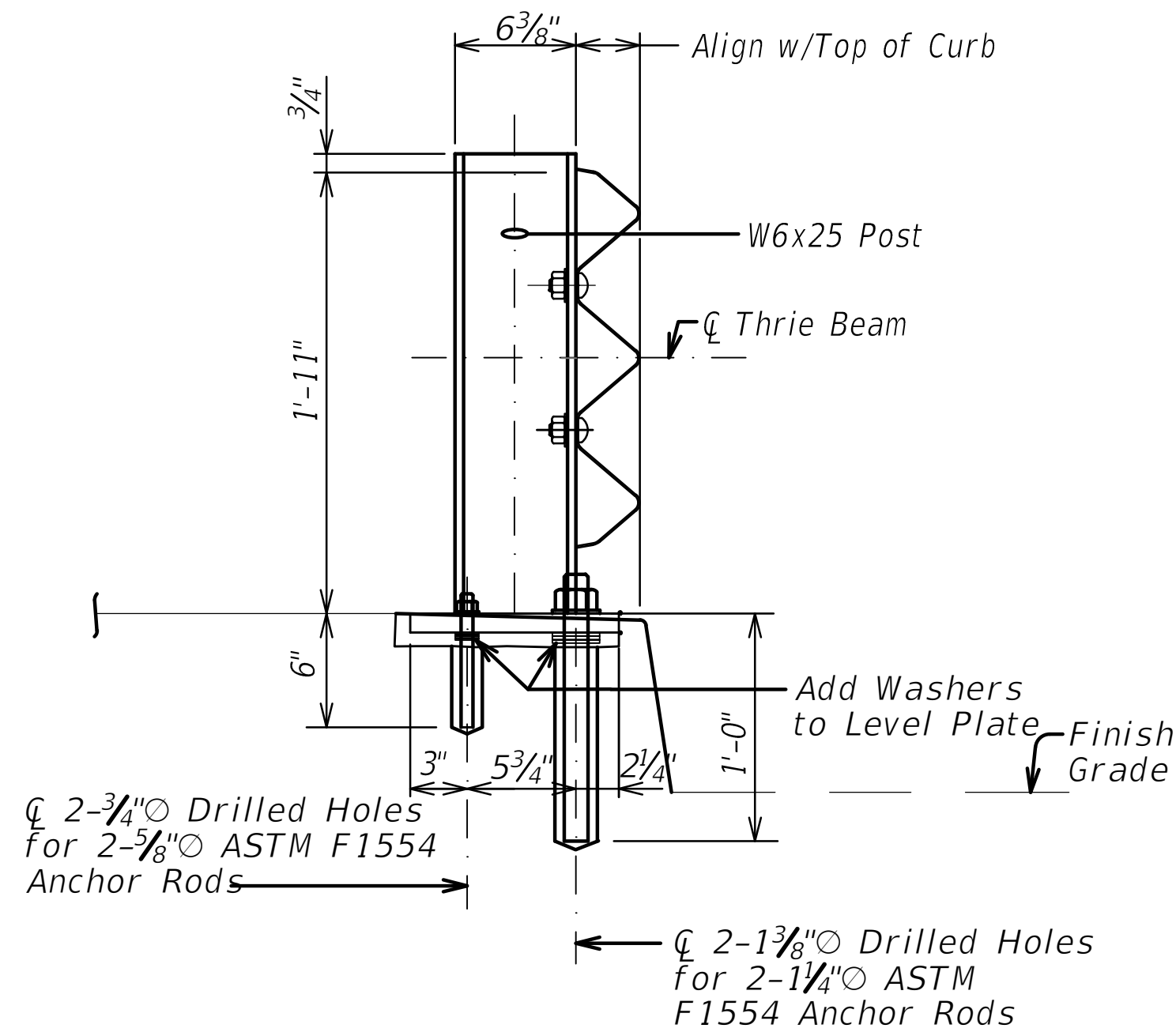


TYPICAL THRIE BEAM POST DETAIL

Scale: 3"=1'-0"



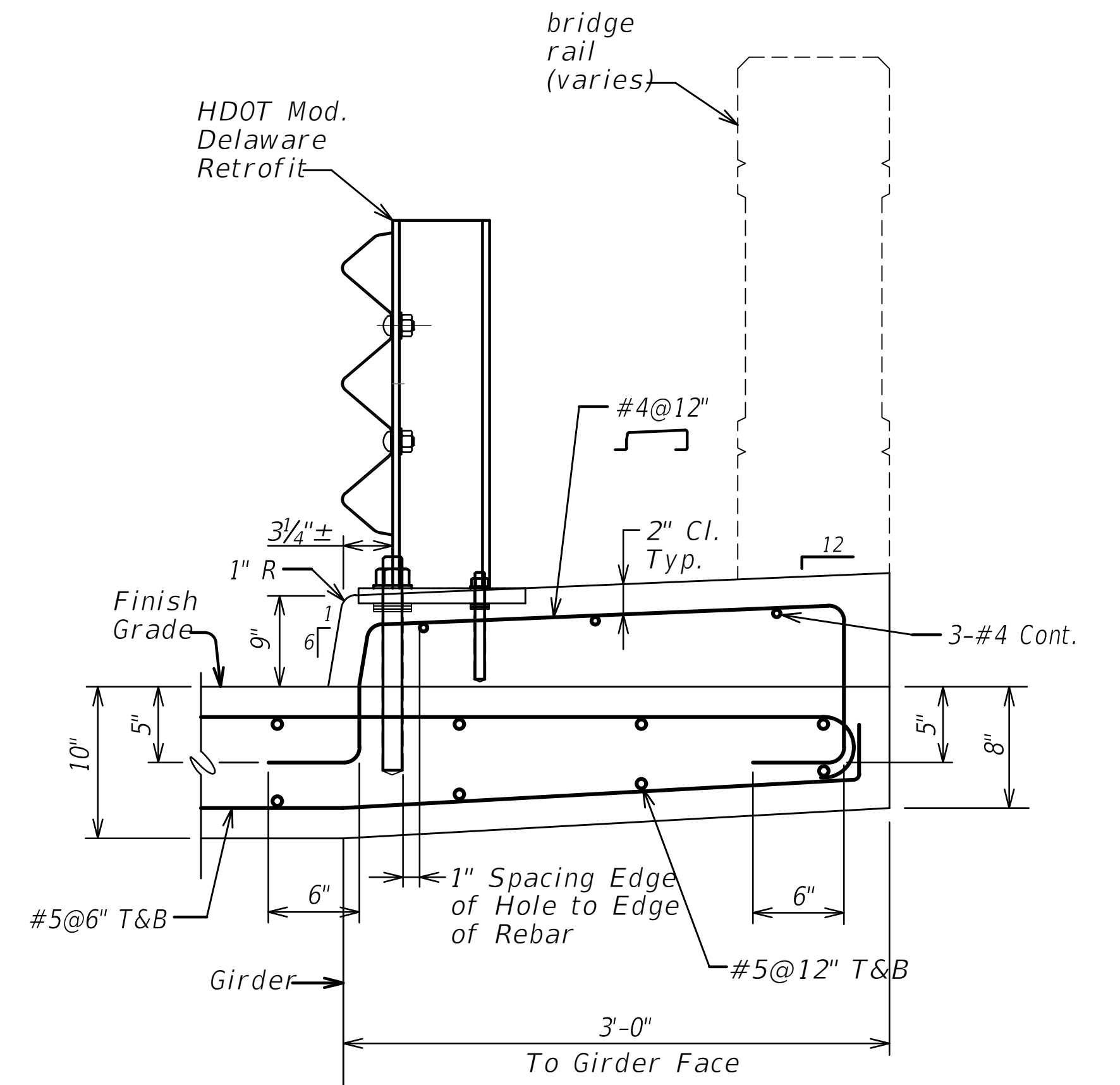
ELEVATION



SECTION

BASE PL DETAIL

Scale: 1"=1'-0"



TYPICAL DECK SECTION BEYOND POST 20

Scale: 1"=1'-0"

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
HAWAII MODIFIED DELAWARE RETROFIT
DETAILS & TYPICAL SECTIONS
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
Scale: As Noted Date: June, 2025

SHEET No. KD-3 OF 12 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	30	102

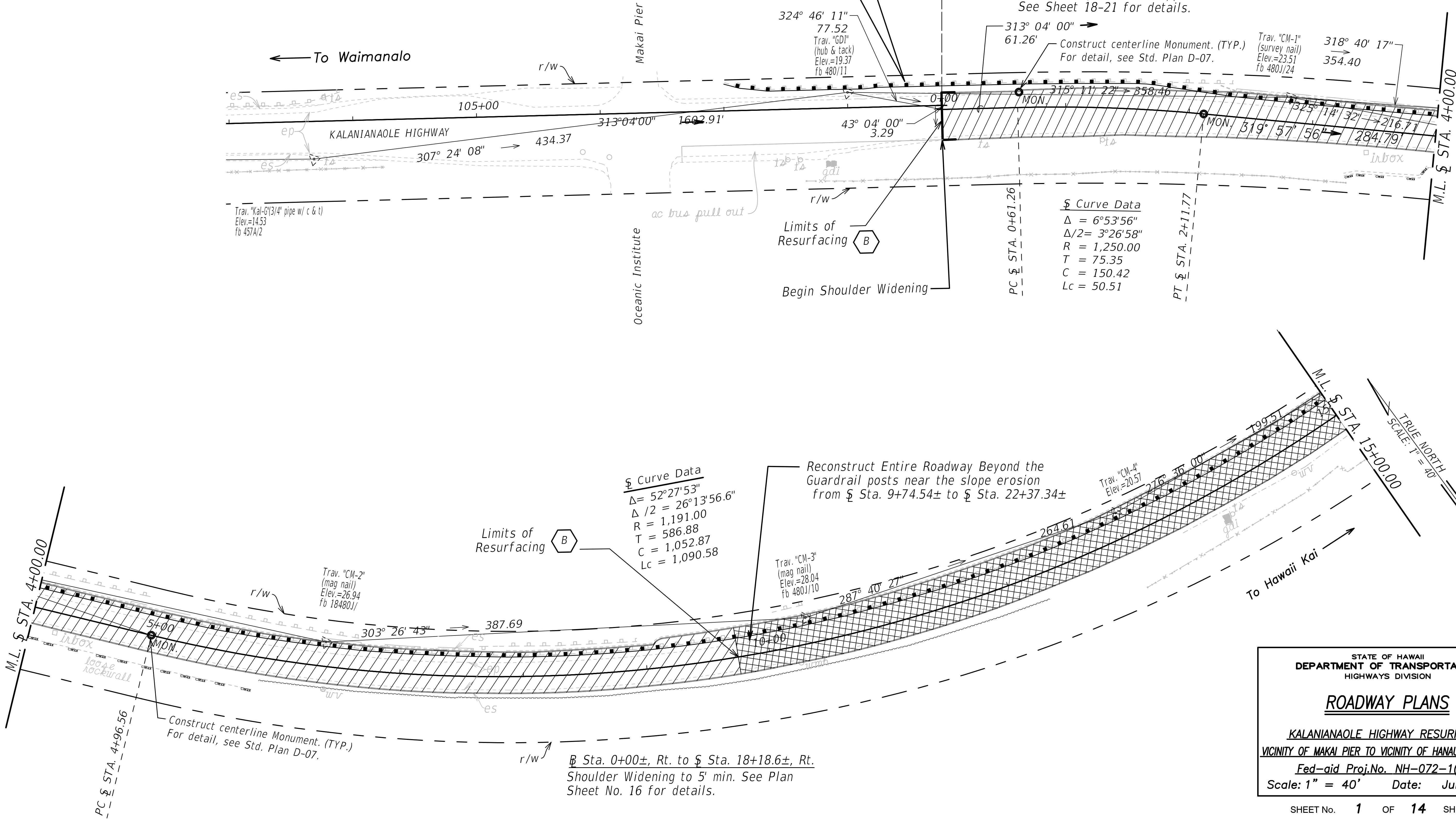
LEGEND

- Resurfacing Limits A Cold Plane 2"
Pave 2" PMA Mix No. IV
- Resurfacing Limits B Cold Plane 4"
Pave 2" PMA Mix No. IV
Pave 2" PMA Mix No. IV
- Reconstruction Area C Cold Plane 8.5"
Pave 4.5" ACB
Pave 2" PMA Mix No. IV
Pave 2" PMA Mix No. IV

BEGIN PROJECT
Project No. NH-072-1(057)
Sta. 108+49

Sta. 108+76.03 o/s 3.29' Rt. (BK) = EQ
Sta. 0+00.00 (AH)

Sta. 108+49± 0/S 16' Lt. to Sta. 16+45± 0/S 17' Lt.
Remove existing guardrail
Install 1,638 L.F. MGS guardrail. Match existing location.
Install MASH FLEAT Terminal TL-3 Standard Post System or
approved equivalent at approach end.
See Sheet 18-21 for details.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
Scale: 1" = 40' Date: June, 2025

SHEET No. 1 OF 14 SHEETS

B Sta. 17+36± 0/S 15' Lt. to S Sta. 22+84.7± 0/S 26' Lt.
Remove existing guardrail
Install 475 L.F. MGS guardrail.
Install MASH FLEAT Terminal TL-3 Standard Post System
or approved equivalent at approach and trailing end.
See Sheet 18-21 for details.

Trav. "CM-5" (mag nail)
Elev.=14.53
fb 4801/2

To Waimanalo

268° 57' 10"
396.73

223.65

26° 30' 03"

34" pipe

conc. open culvert

admh

MON

260° 10' 24"
95.08

End of Shoulder widening

Construct centerline Monument. (TYP.)
For detail, see Std. Plan D-07.

PC STA. 18+10.79

PT STA. 15+87.14

M.L. STA. 15+00.00

See Plan Sheet 41-64.
Elev.=13.37
fb 4801/63

See Sheet 18-21 for details.

20+00

284° 29' 18"

507.94

es ep

rockwall

Makapuu Beach Park

Limits of Resurfacing A

Trav. "CM-7" (mag nail)
Elev.=28.73
fb 4801/51

25+00

Sea Life Park Hawaii

Limits of Resurfacing A

left

cm headroll

pi4

26+00.00

M.L. STA. 26+00.00

TRUE NORTH
SCALE: 1" = 40'

Curve Data
 $\Delta = 64^\circ 35' 42''$
 $\Delta/2 = 32^\circ 17' 51.2''$
 $R = 1,151.00$
 $T = 727.56$
 $C = 1,230.00$
 $L_c = 1,297.63$

Notes:
 B Sta. 0+00±, Rt. to S Sta. 18+18.6±, Rt.
 Shoulder Widening to 5' min. See
 Plan Sheet No. 16 for details.
 B Sta. 16+95± 0/S 18.5' Rt. to S Sta. 18+14± 0/S 15' Rt.
 Install 50 L.F. MGS guardrail.
 Install MASH FLEAT Terminal TL-3 Standard Post System
 at approach and trailing end.
 See Sheet 18-21 for details.

§ Sta. 16+95± 0/S 18.5' Rt. to § Sta. 18+14± 0/S 15' Rt.
Install 50 L.F. MGS guardrail.
Install MASH FLEAT Terminal TL-3 Standard Post System
at approach and trailing end.
See Sheet 18-21 for details.

\$ Curve Data
 $\Delta = 64^{\circ}35'42''$
 $\Delta/2 = 32^{\circ}17'51.2''$
 $R = 1,151.00$
 $T = 727.56$
 $C = 1,230.00$
 $Lc = 1,297.63$

Construct centerline Monument.
For detail, see Std. Plan D-07.

Construct new crosswalk
See Plan Sheet 44-47.

To Hawaii Kai →

TRUE NORTH
SCALE: 1" = 40'

	Resurfacing Limits		Cold Plane 2" Pave 2" PMA Mix No. IV
	Resurfacing Limits		Cold Plane 4" Pave 2" PMA Mix No. IV Pave 2" PMA Mix No. IV
	Reconstruction Area		Cold Plane 8.5" Pave 4.5" ACB Pave 2" PMA Mix No. IV Pave 2" PMA Mix No. IV

ROADWAY PLANS

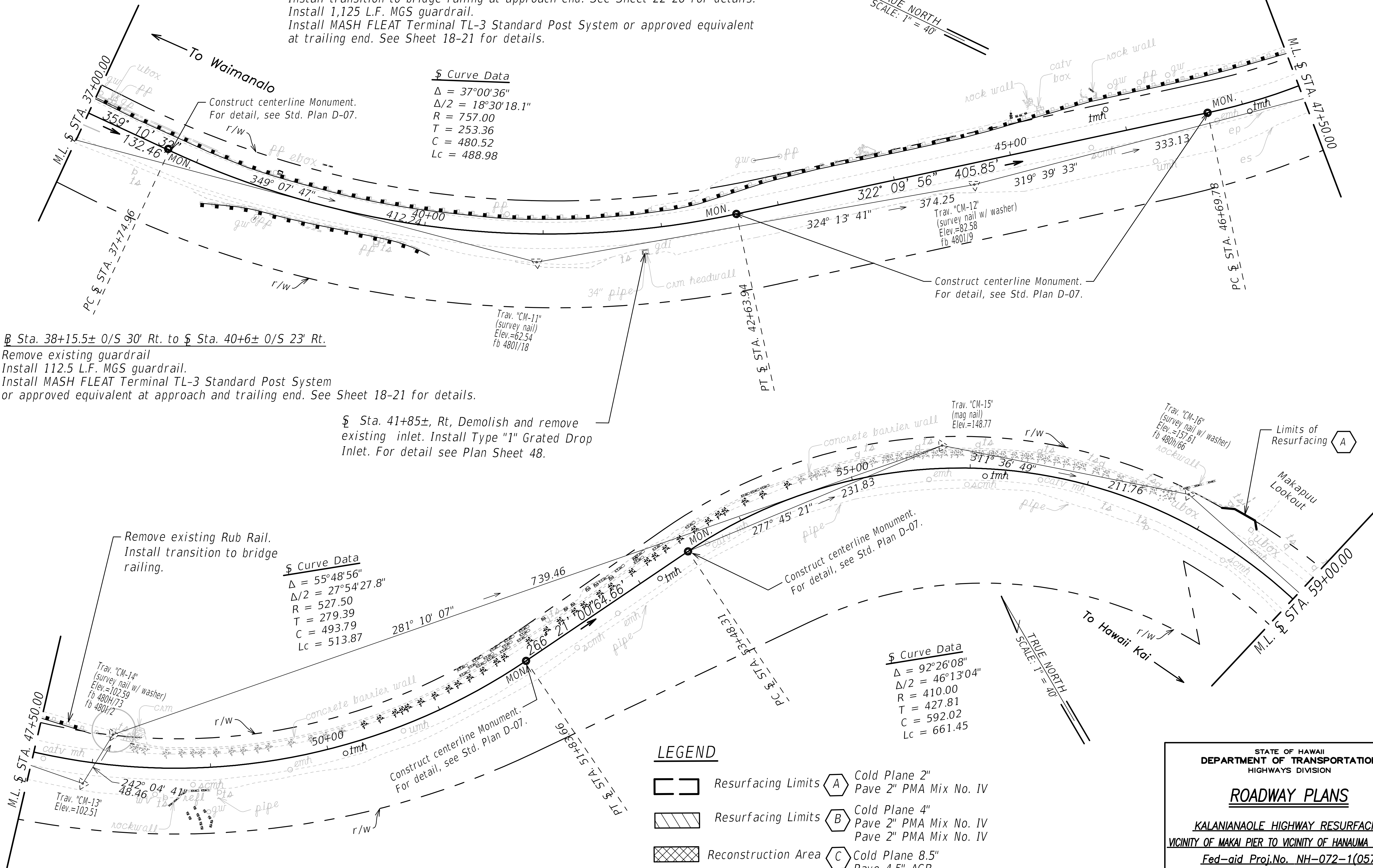
Fed-aid Proj.No. NH-072-1(057)
Scale: 1" = 40' Date: June, 2025

SHEET No. **2** OF **14** SHEETS

ORIGINAL PLAN	PLOTTED BY	DATE
	DRAWN BY _____	_____
	TRACED BY _____	_____
	DESIGNED BY _____	_____
	QUANTITIES BY _____	_____
	CHECKED BY _____	_____
No. _____	CLASSIFIED BY _____	_____

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	32	102

Sta. 36+36± 0/S 17.8' Lt. to Sta. 48+28± 0/S 20' Lt.
Remove existing guardrail
Install transition to bridge railing at approach end. See Sheet 22-26 for details.
Install 1,125 L.F. MGS guardrail.
Install MASH FLEAT Terminal TL-3 Standard Post System or approved equivalent at trailing end. See Sheet 18-21 for details.

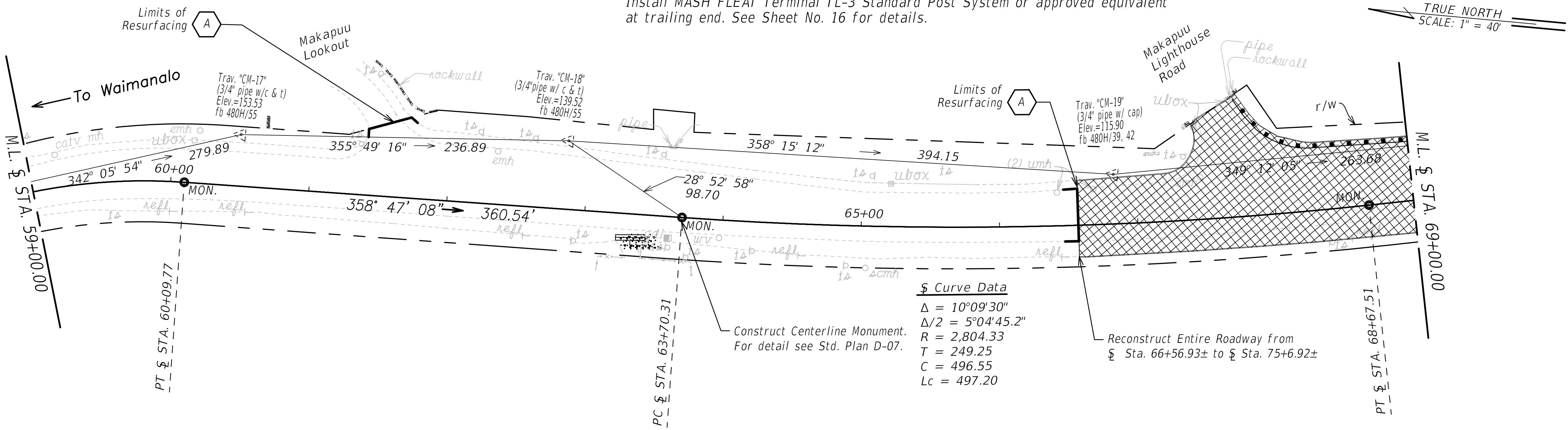


PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

ORIGINAL PLAN	DATE
NOTE BOOK	
Revised	

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	33	102

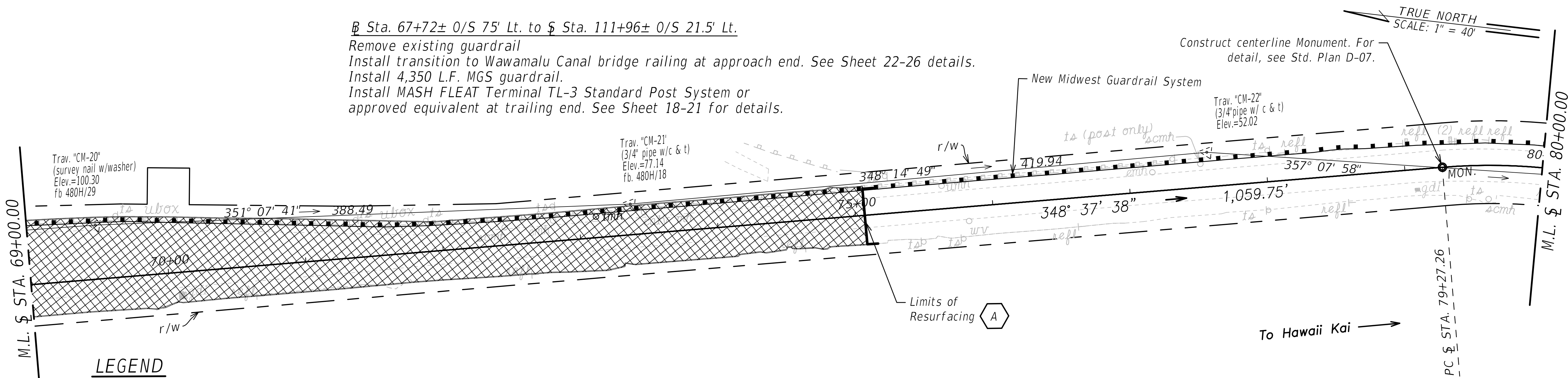
Sta. 67+72± 0/S 75' Lt. to Sta. 111+96± 0/S 21.5' Lt.
Remove existing guardrail
Install transition to Wawamalu Canal bridge railing at approach end. See Sheet 17-21 details.
Install 4,350 L.F. MGS guardrail.
Install MASH FLEAT Terminal TL-3 Standard Post System or approved equivalent at trailing end. See Sheet No. 16 for details.



Curve Data

$\Delta = 10^{\circ}09'30''$
 $\Delta/2 = 5^{\circ}04'45.2''$
 $R = 2,804.33$
 $T = 249.25$
 $C = 496.55$
 $L_c = 497.20$

Sta. 67+72± 0/S 75' Lt. to Sta. 111+96± 0/S 21.5' Lt.
Remove existing guardrail
Install transition to Wawamalu Canal bridge railing at approach end. See Sheet 22-26 details.
Install 4,350 L.F. MGS guardrail.
Install MASH FLEAT Terminal TL-3 Standard Post System or approved equivalent at trailing end. See Sheet 18-21 for details.



LEGEND

- Resurfacing Limits A Cold Plane 2" Pave 2" PMA Mix No. IV
- Resurfacing Limits B Cold Plane 4" Pave 2" PMA Mix No. IV Pave 2" PMA Mix No. IV
- Reconstruction Area C Cold Plane 8.5" Pave 4.5" ACB Pave 2" PMA Mix No. IV Pave 2" PMA Mix No. IV

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
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FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	34	102

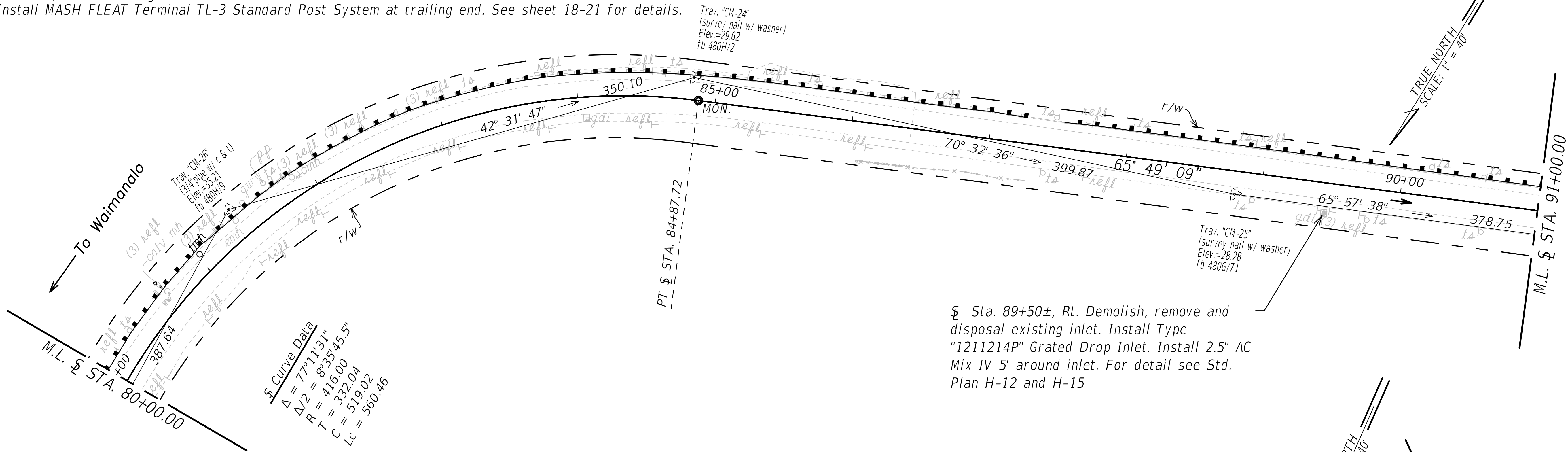
§ Sta. 67+75± 0/S 75' Lt. to § Sta. 111+96± 0/S 21.5' Lt.

Remove existing guardrail

Install transition to Wawamalu Canel bridge railing at approach end. See sheet 22-26 for details.

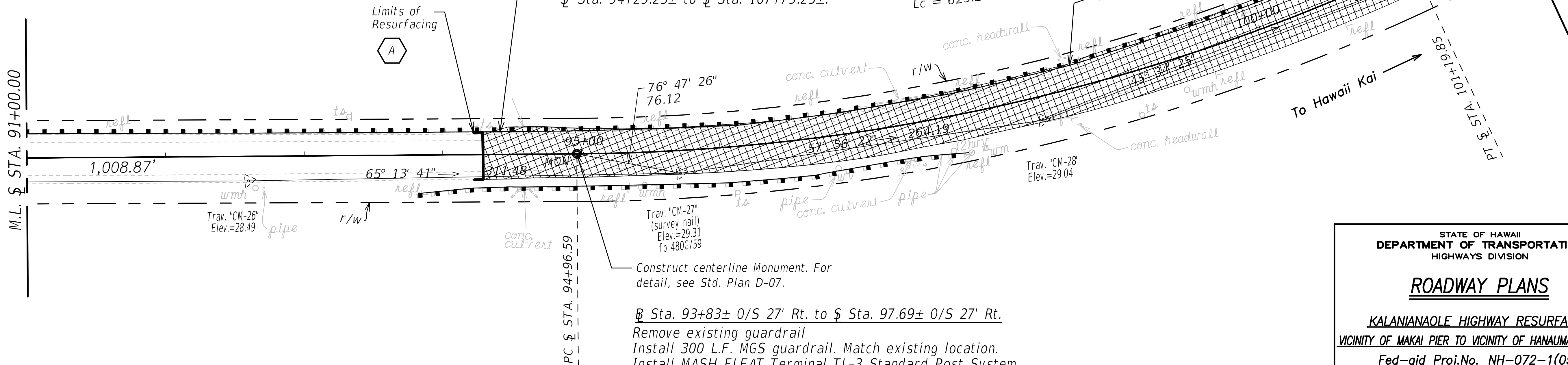
Install 4,350 L.F. MGS guardrail.

Install MASH FLEAT Terminal TL-3 Standard Post System at trailing end. See sheet 18-21 for details.



LEGEND

- Resurfacing Limits (A) Cold Plane 2\"
Pave 2\" PMA Mix No. IV
- Resurfacing Limits (B) Cold Plane 4\"
Pave 2\" PMA Mix No. IV
Pave 2\" PMA Mix No. IV
- Reconstruction Area (C) Cold Plane 8.5\"
Pave 4.5\" ACB
Pave 2\" PMA Mix No. IV
Pave 2\" PMA Mix No. IV



STATE OF HAWAII
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ROADWAY PLANS

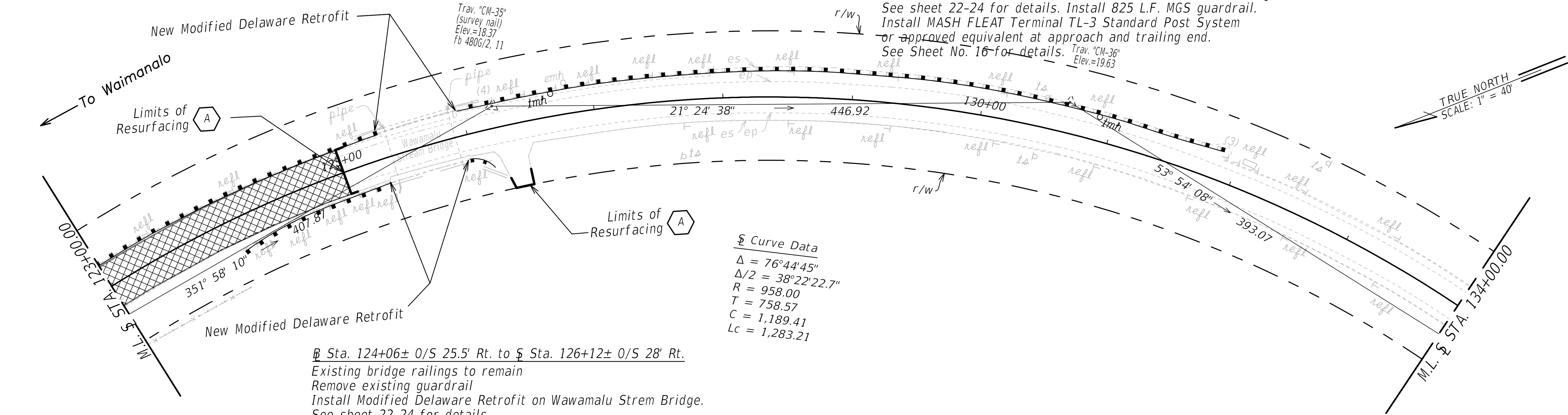
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

Fed-aid Proj.No. NH-072-1(057)
Scale: 1" = 40' Date: June, 2025

SHEET No. 5 OF 14 SHEETS

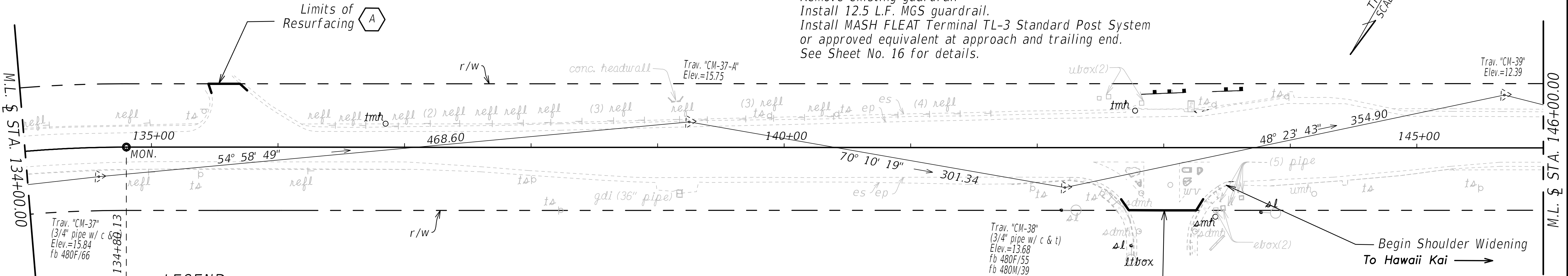
FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	36	102

Sta. 122+16± 0/S 22' Lt. to Sta. 131+86± 0/S 22' Lt.
Existing bridge railings to remain
Remove existing guardrail
Install Modified Delaware Retrofit on Wawamalu Stream Bridge.
See sheet 22-24 for details. Install 825 L.F. MGS guardrail.
Install MASH FLEAT Terminal TL-3 Standard Post System
or approved equivalent at approach and trailing end.
See Sheet No. 16 for details.



Sta. 124+06± 0/S 25.5' Rt. to Sta. 126+12± 0/S 28' Rt.
Existing bridge railings to remain
Remove existing guardrail
Install Modified Delaware Retrofit on Wawamalu Strem Bridge.
See sheet 22-24 for details.
Install 62.5 L.F. MGS guardrail.
Install MASH FLEAT Terminal TL-3 Standard Post System
or approved equivalent at approach and trailing end. See Sheet No. 16 for details.

Sta. 142+82± 0/S 42' Lt. to Sta. 1143+32± 0/S 44.9' Lt.
Remove existing guardrail
Install 12.5 L.F. MGS guardrail.
Install MASH FLEAT Terminal TL-3 Standard Post System
or approved equivalent at approach and trailing end.
See Sheet No. 16 for details.



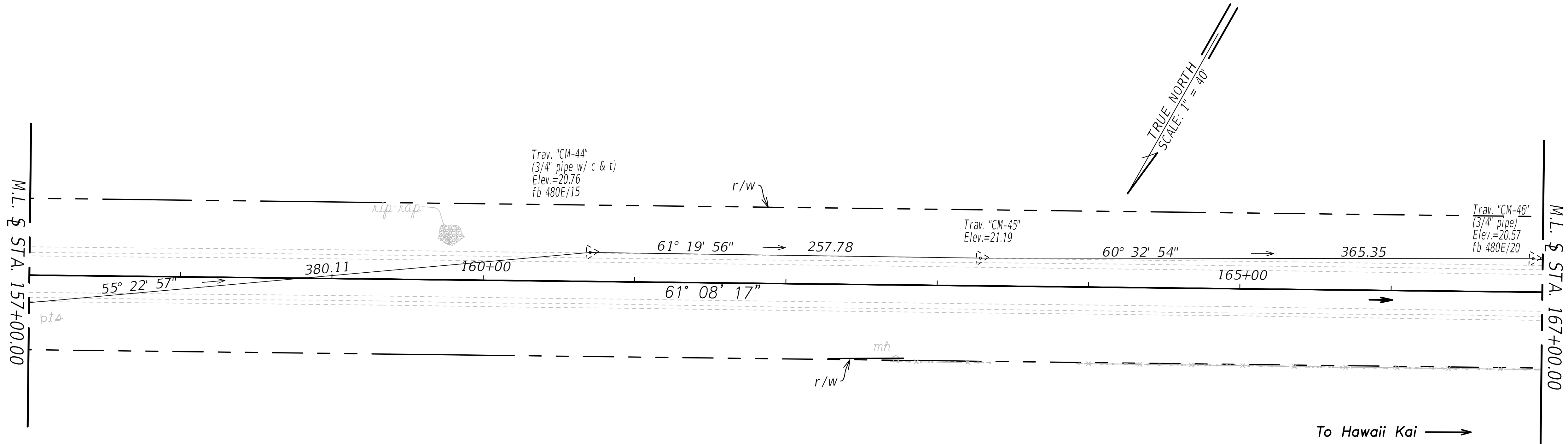
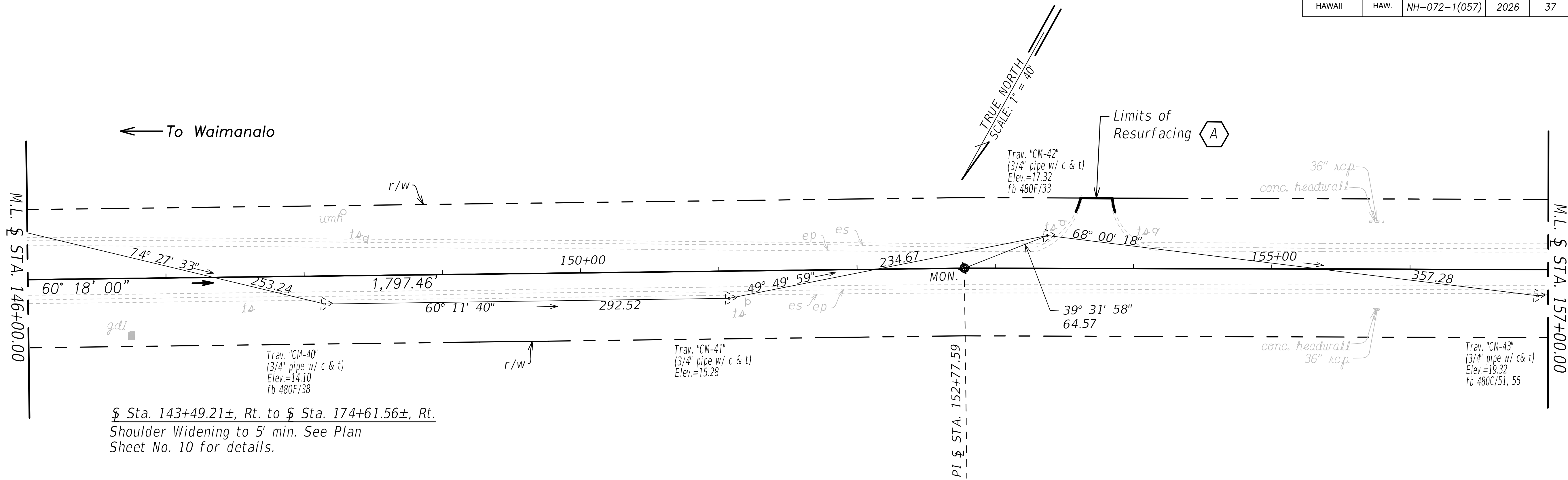
- LEGEND**
- Resurfacing Limits **A** Cold Plane 2" Pave 2" PMA Mix No. IV
 - Resurfacing Limits **B** Cold Plane 4" Pave 2" PMA Mix No. IV
 - Reconstruction Area **C** Cold Plane 8.5" Pave 4.5" ACB Pave 2" PMA Mix No. IV

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
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HAWAII	HAW.	NH-072-1(057)	2026	37	102



LEGEND

- Resurfacing Limits **A** Cold Plane 2"
Pave 2" PMA Mix No. IV
- Resurfacing Limits **B** Cold Plane 4"
Pave 2" PMA Mix No. IV
Pave 2" PMA Mix No. IV
- Reconstruction Area **C** Cold Plane 8.5"
Pave 4.5" ACB
Pave 2" PMA Mix No. IV
Pave 2" PMA Mix No. IV

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

Fed-aid Proj.No. NH-072-1(057)
Scale: 1" = 40' Date: June, 2025

SHEET No. 8 OF 14 SHEETS

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
REVISIONS	

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	39	102

B Sta. 176+37± 0/S 23.3' Lt. to § Sta. 192+18± 0/S 21' Lt.

Remove existing guardrail

Install epoxy coated transition to bridge or approved equivalent at approach end. See sheet 22-26 for details.

Install 1,512.5 L.F. epoxy coated MGS guardrail with 8' or 9' long posts. See Note Nos. 7 and 8 on Sheet 18.

Install epoxy coated MASH FLEAT Terminal TL-3 Standard Post System or approved equivalent at trailing end. See Sheet 18-21 for details.

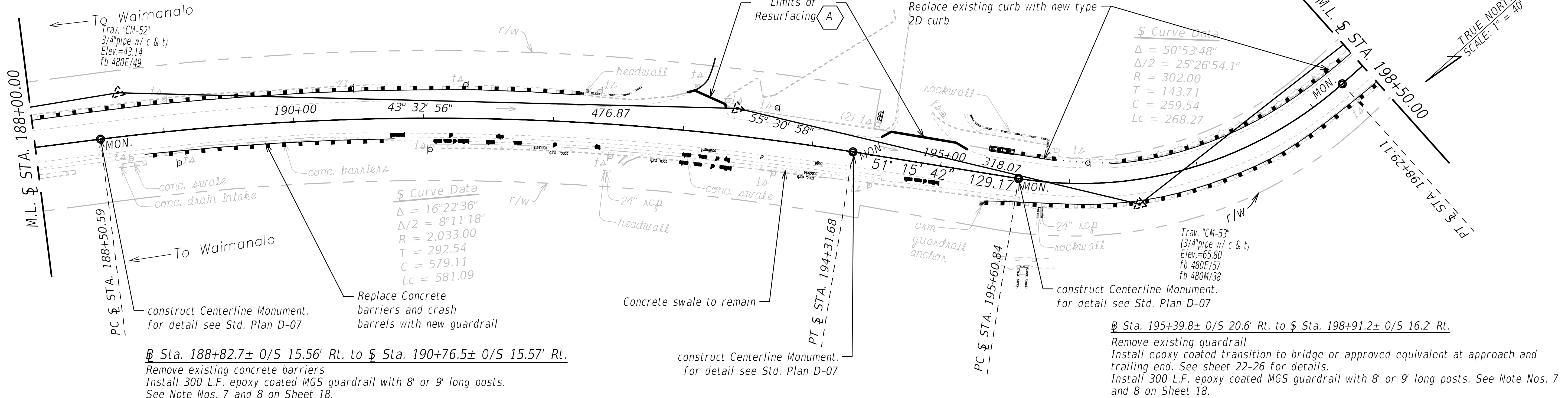
B Sta. 195+39± 0/S 18' Lt. to § Sta. 200+30.8± 0/S 27.5' Lt.

Remove existing guardrail

Install epoxy coated transition to bridge or approved equivalent at approach end. See sheet 22-26 for details.

Install 425 L.F. epoxy coated MGS guardrail with 8' or 9' long posts. See Note Nos. 7 and 8 on Sheet 18.

Install epoxy coated attenuator at trailing end.



B Sta. 188+82.7± 0/S 15.56' Rt. to § Sta. 190+76.5± 0/S 15.57' Rt.

Remove existing concrete barriers

Install 300 L.F. epoxy coated MGS guardrail with 8' or 9' long posts.

See Note Nos. 7 and 8 on Sheet 18.

Install epoxy coated MASH FLEAT Terminal TL-3 Standard Post System or approved equivalent at approach and trailing end. See Sheet 18-21 for details.

B Sta. 195+39± 0/S 18' Lt. to § Sta. 200+30.8± 0/S 27.5' Lt.

Remove existing guardrail

Install epoxy coated transition to bridge railing or approved equivalent at approach end.

Install 425 L.F. epoxy coated MGS guardrail with 8' or 9' long posts.

See Note Nos. 7 and 8 on Sheet 18.

Install epoxy coated attenuator at trailing end.

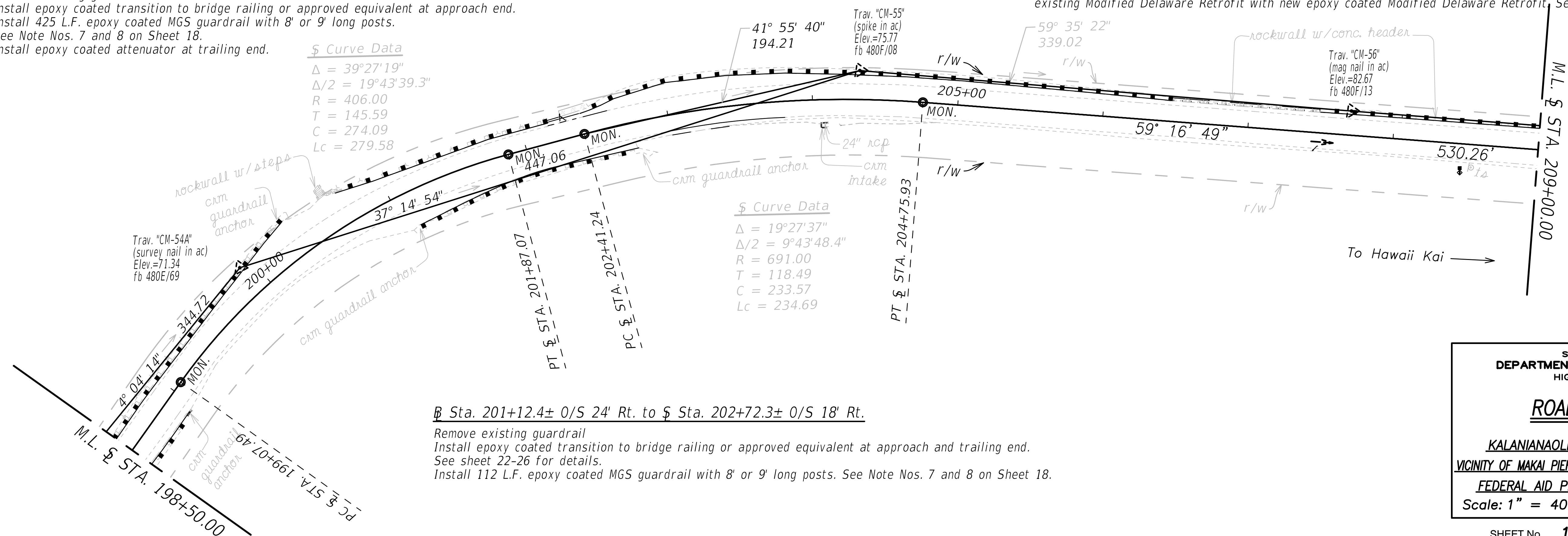
B Sta. 200+72± 0/S 22.6' Lt. to § Sta. 231+72.2± 0/S 19.5' Lt.

Remove existing guardrail.

Install epoxy coated transition to bridge railing or approved equivalent at approach and trailing end.

See sheet 22-26 for details.

Install 3,000 L.F. epoxy coated MGS guardrail with 8' or 9' long posts. See Note Nos. 7 and 8 on Sheet 18. Replace existing Modified Delaware Retrofit with new epoxy coated Modified Delaware Retrofit. See Sheet 27-29 for details.



B Sta. 201+12.4± 0/S 24' Rt. to § Sta. 202+72.3± 0/S 18' Rt.

Remove existing guardrail

Install epoxy coated transition to bridge railing or approved equivalent at approach and trailing end.

See sheet 22-26 for details.

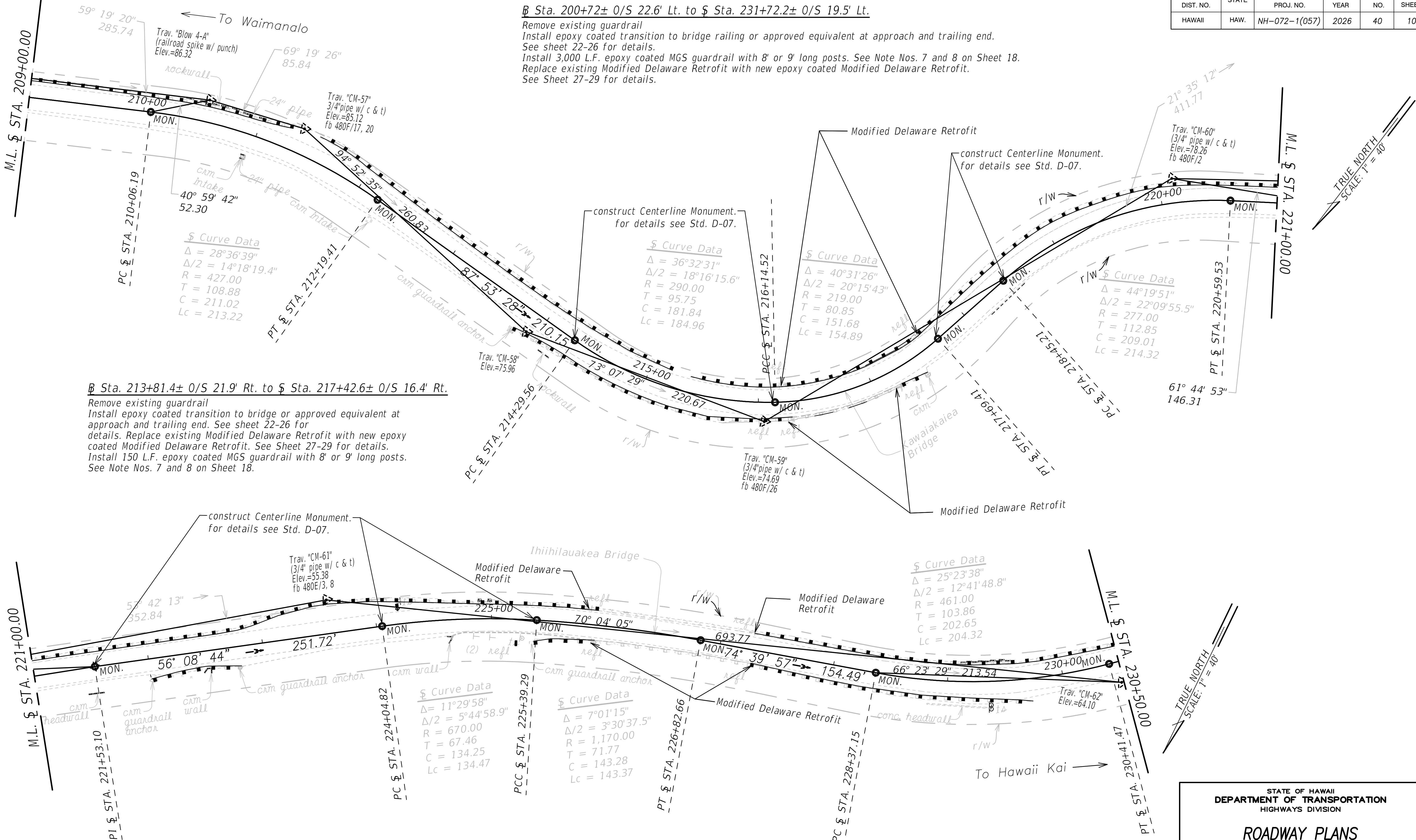
Install 112 L.F. epoxy coated MGS guardrail with 8' or 9' long posts. See Note Nos. 7 and 8 on Sheet 18.

STATE OF HAWAII
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HIGHWAYS DIVISION

ROADWAY PLANS

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
FEDERAL AID PROJECT NO. NH-072-1(057)
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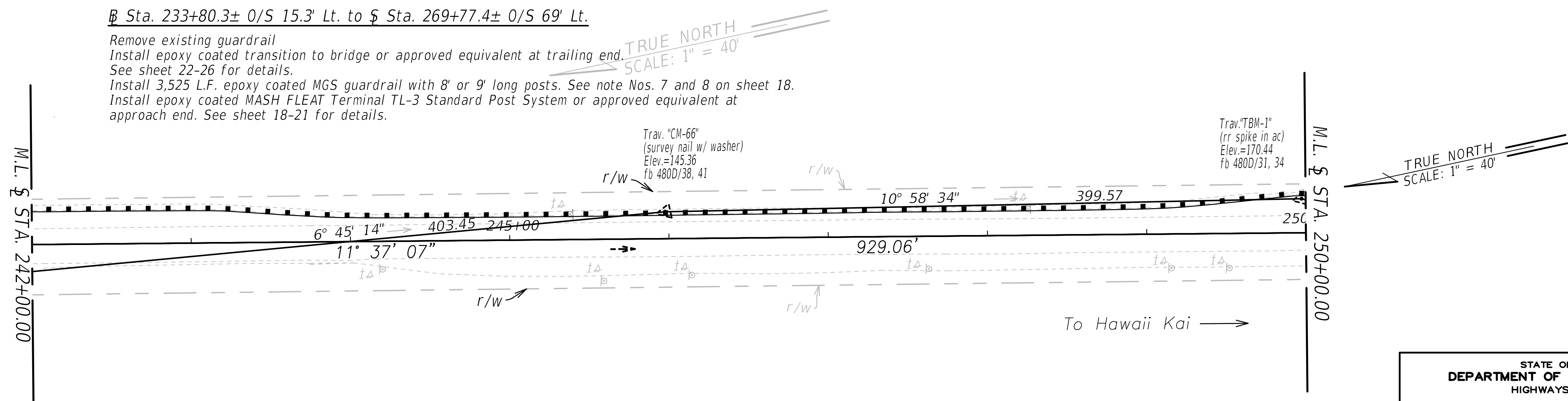
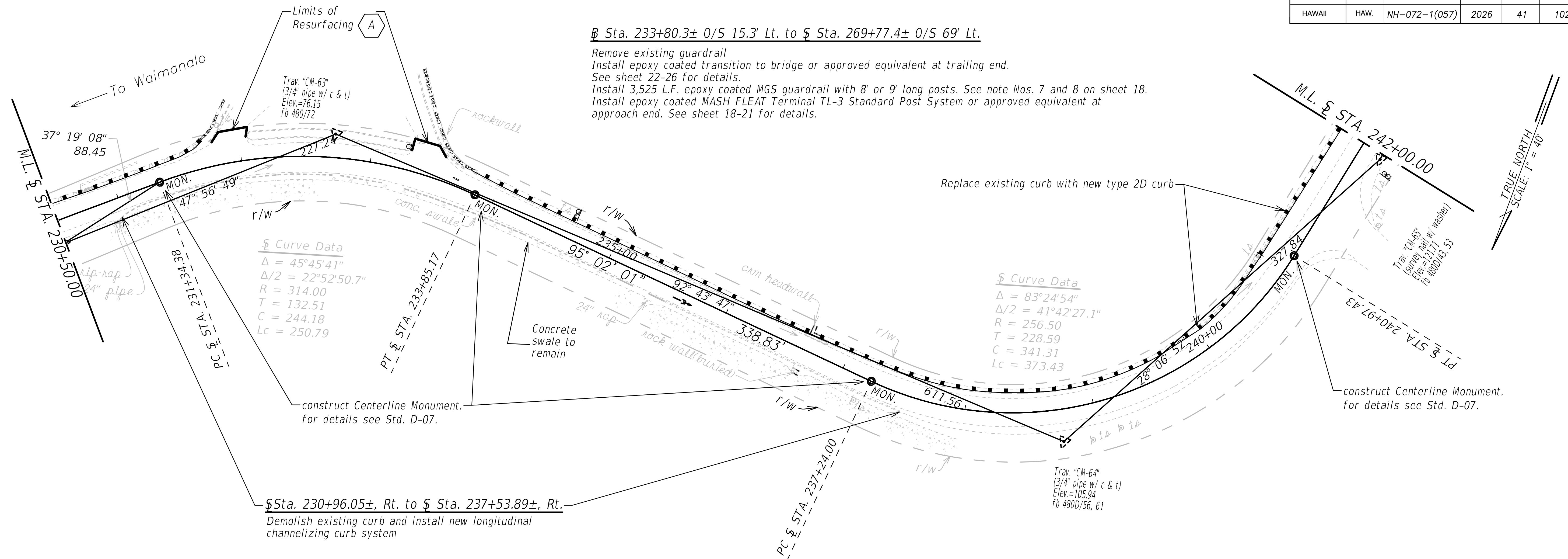


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
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HAWAII	HAW.	NH-072-1(057)	2026	41	102



ORIGINAL PLAN	PLOTTED BY	<NAME>	DATE
	DRAWN BY	<NAME>	
NOTE BOOK	TRACED BY	<NAME>	-
	DESIGNED BY	<NAME>	-
	QUANTITIES BY	<NAME>	-
	CHECKED BY	<NAME>	-
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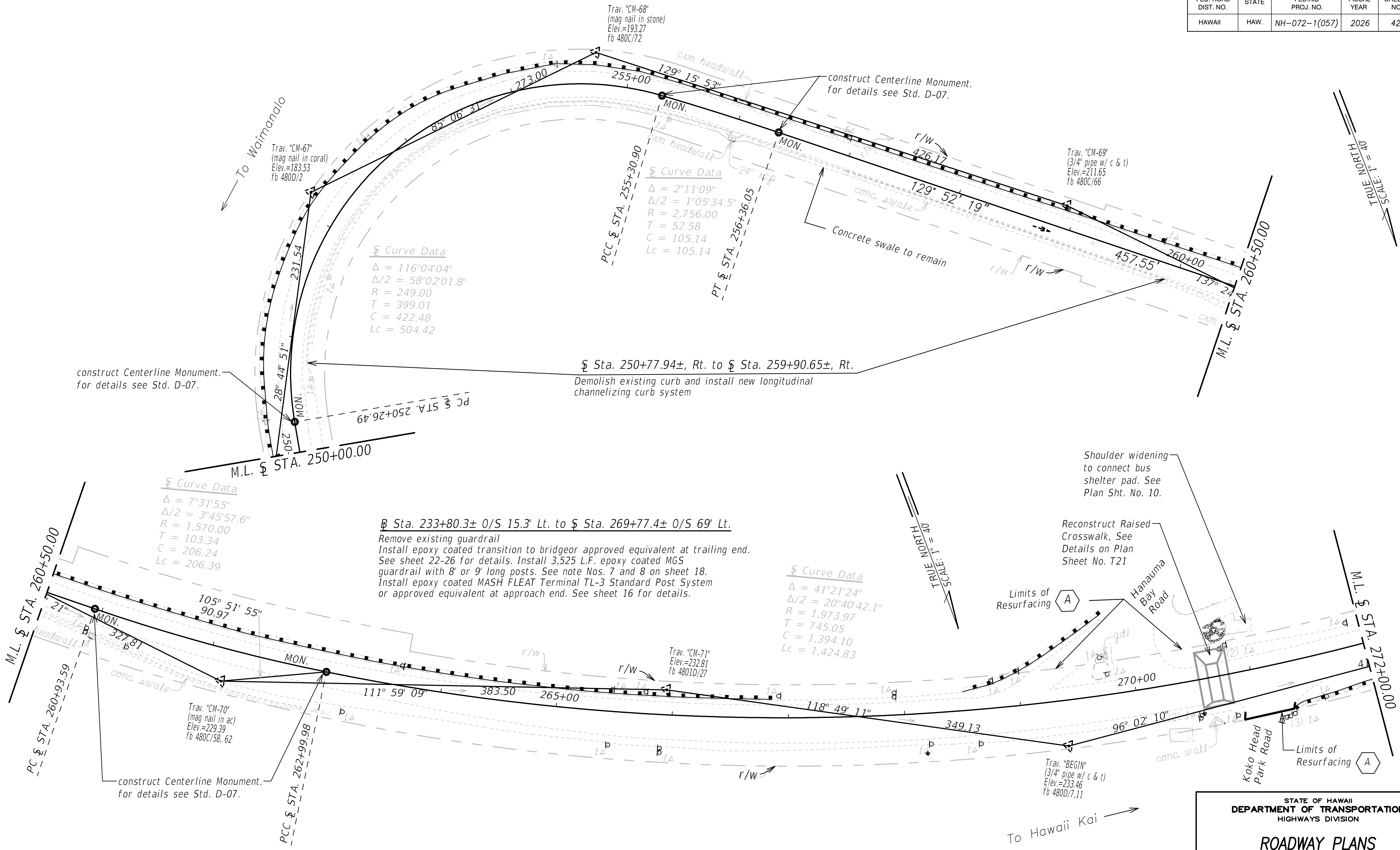
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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ROADWAY PLANS

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
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HAWAII	HAW.	NH-072-1(057)	2026	42	102



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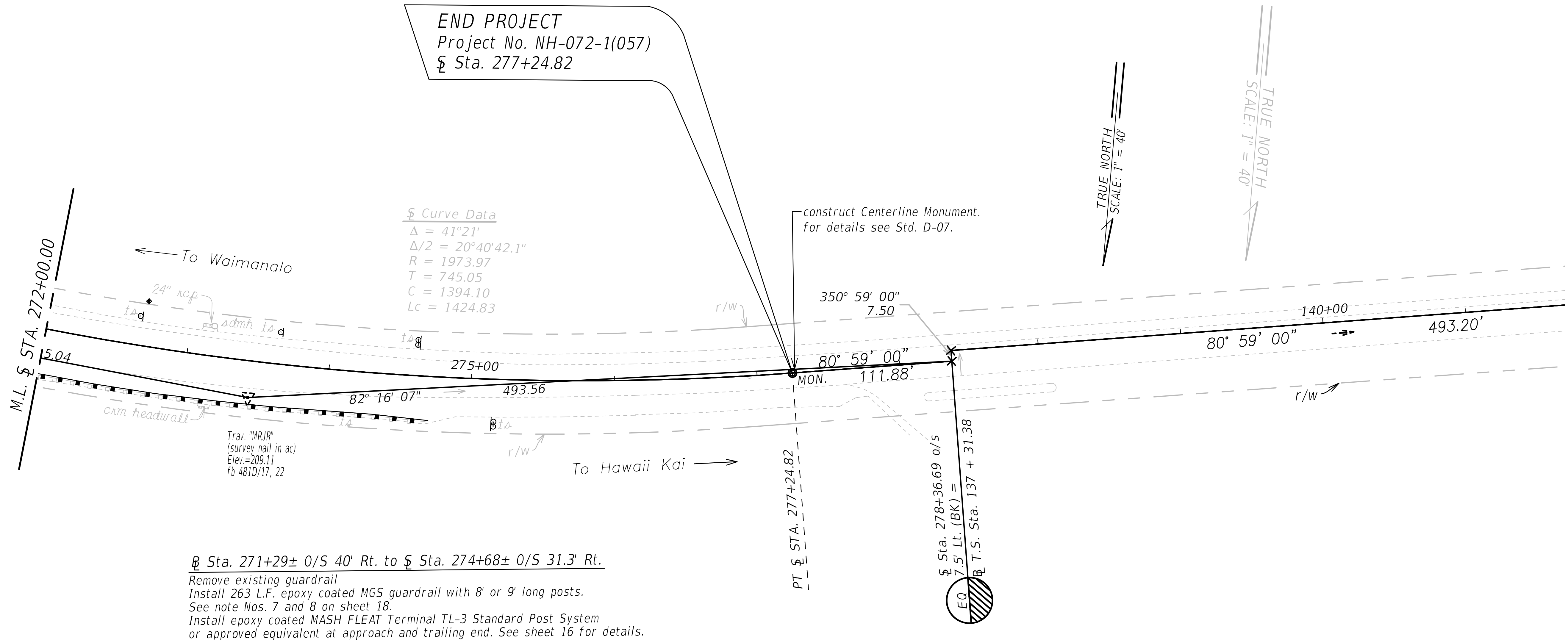
ORIGINAL PLAN	NO. 1
NOTE BOOK	
Revised	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
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Sta. 271+29± 0/S 40' Rt. to Sta. 274+68± 0/S 31.3' Rt.
Remove existing guardrail
Install 263 L.F. epoxy coated MGS guardrail with 8' or 9' long posts.
See note Nos. 7 and 8 on sheet 18.
Install epoxy coated MASH FLEAT Terminal TL-3 Standard Post System
or approved equivalent at approach and trailing end. See sheet 16 for details.

ORIGINAL PLAN	DATE
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DRAWN BY	<Name>
TRACED BY	<Name>
DESIGNED BY	<Name>
QUANTITIES BY	<Name>
CHECKED BY	<Name>

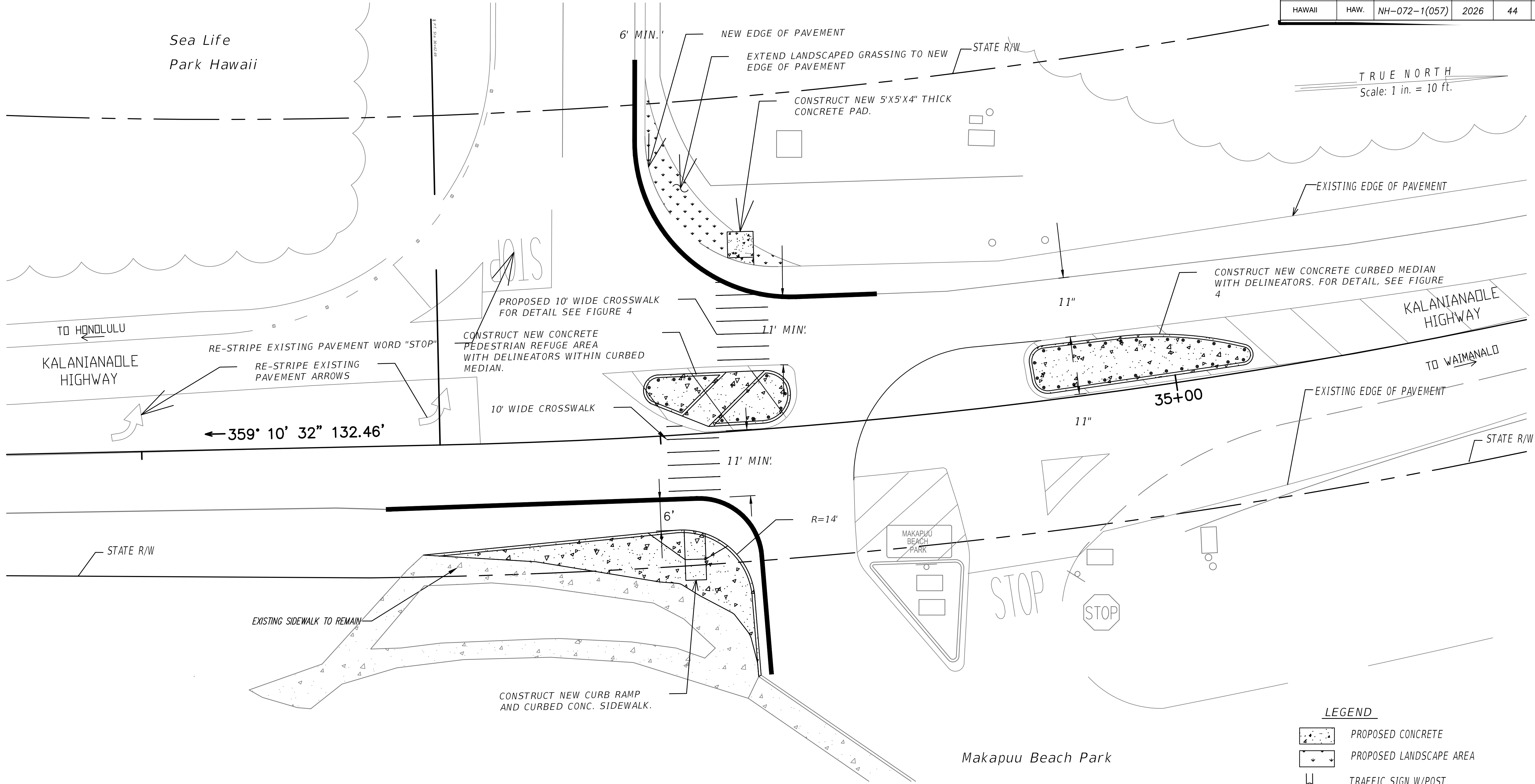
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD

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HAWAII	HAW.	NH-072-1(057)	2026	44	102



GENERAL SITE PLAN
SCALE: 1"=10'

GENERAL SITE PLAN
MAKAPUU CROSSWALK IMPROVEMENT

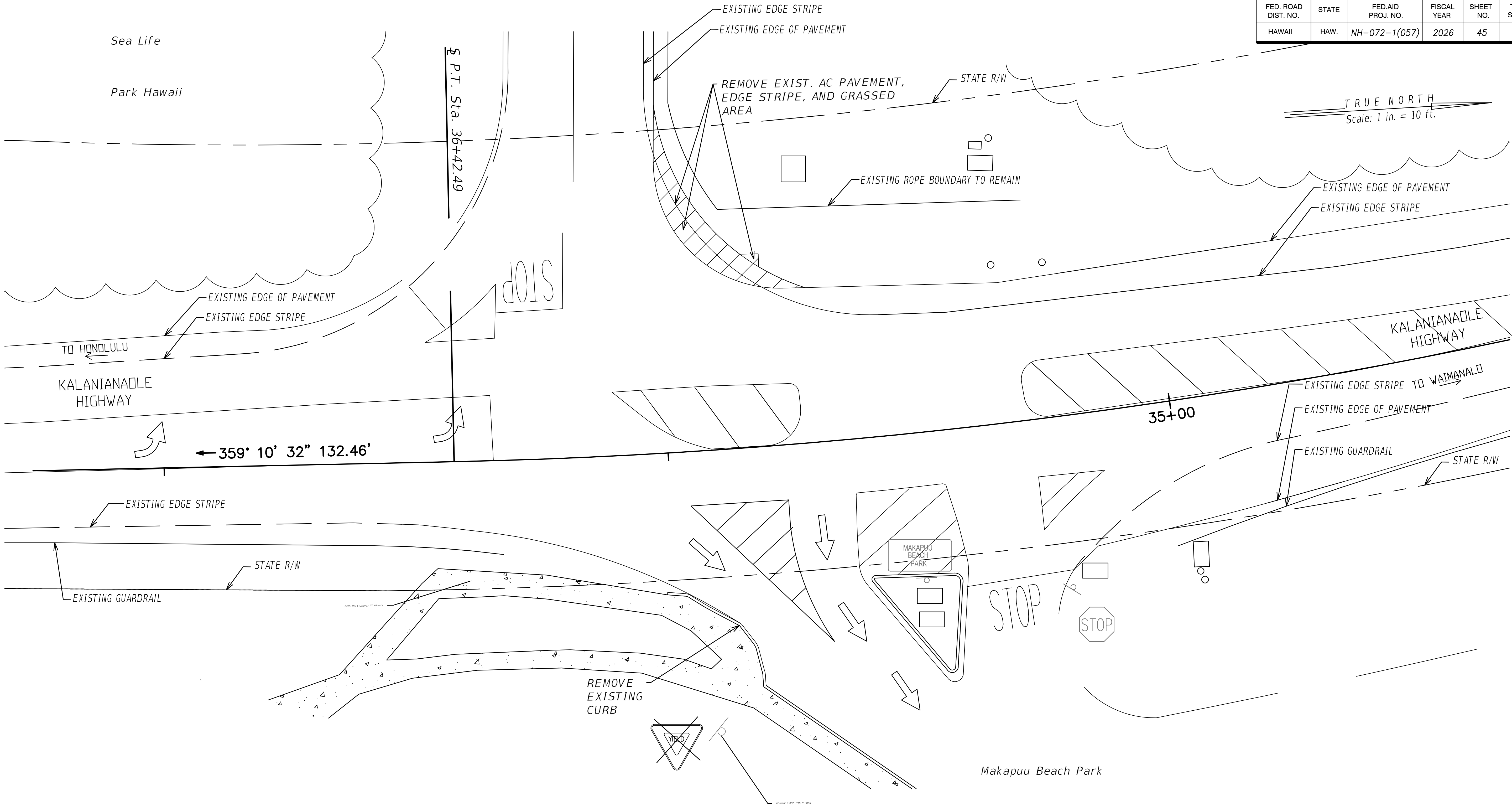
- NOTES:
- ALL AREAS REQUIRING NEW CONCRETE CURB SHOULD BE PRE-CAST TYPE 2D. FOR DETAIL, SEE DOT STANDARD PLAN D-05.

- LEGEND
- PROPOSED CONCRETE
 - PROPOSED LANDSCAPE AREA
 - TRAFFIC SIGN W/POST
 - DELINEATOR (YELLOW)
 - IN-STREET PEDESTRIAN CROSSING SIGN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**MAKAPUU CROSSWALK
IMPROVEMENT PLANS**
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
Scale: As Noted Date: June, 2025

DESIGNED BY	DATE
DRAWN BY	
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NOTED BY	
QUANTITIES BY	
PLOTTED BY	

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	45	102



DEMOLITION PLAN
SCALE: 1"=10'

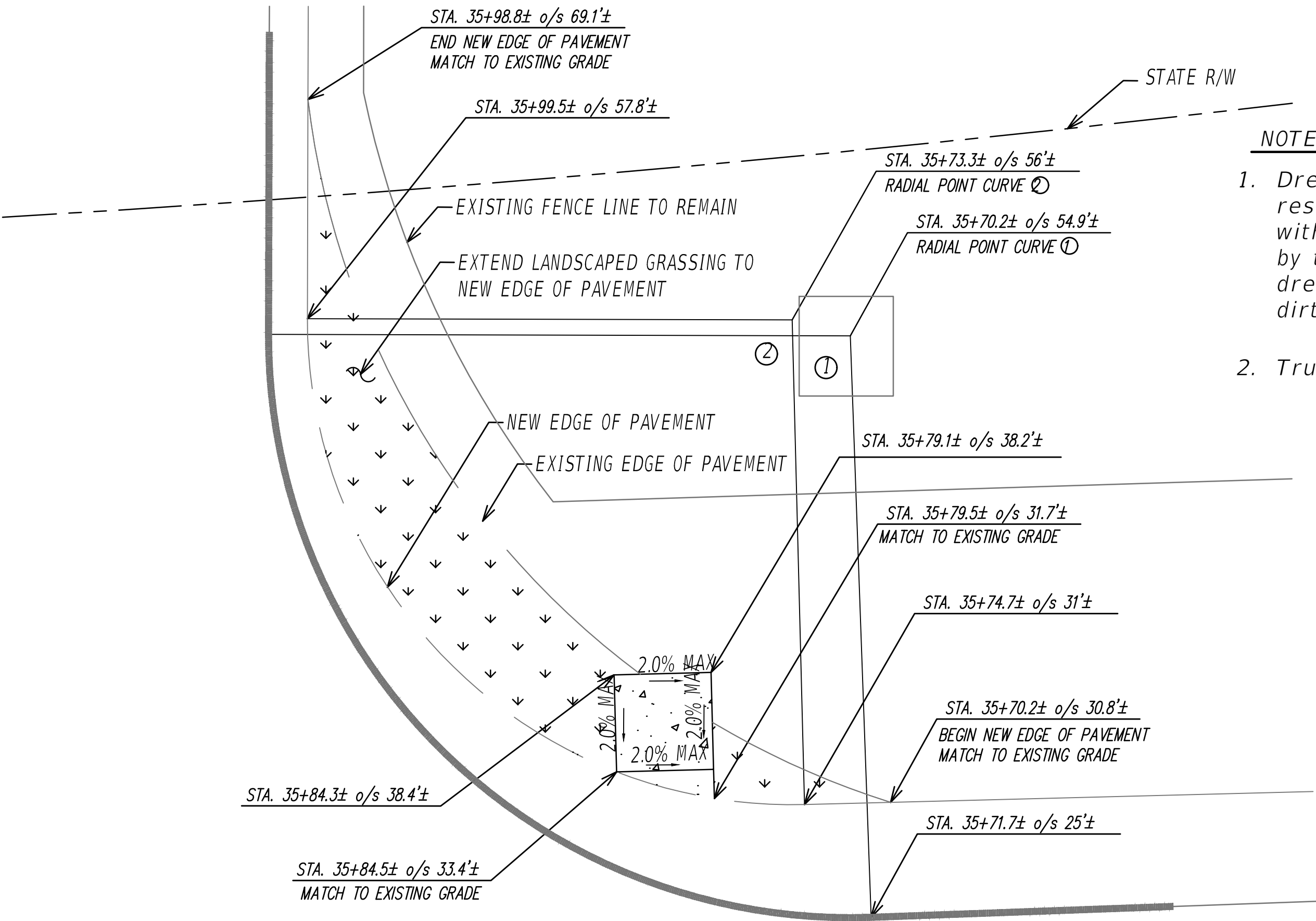
LEGEND

- PROPOSED CONCRETE
- PROPOSED LANDSCAPE AREA
- TRAFFIC SIGN W/POST

DESIGNED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

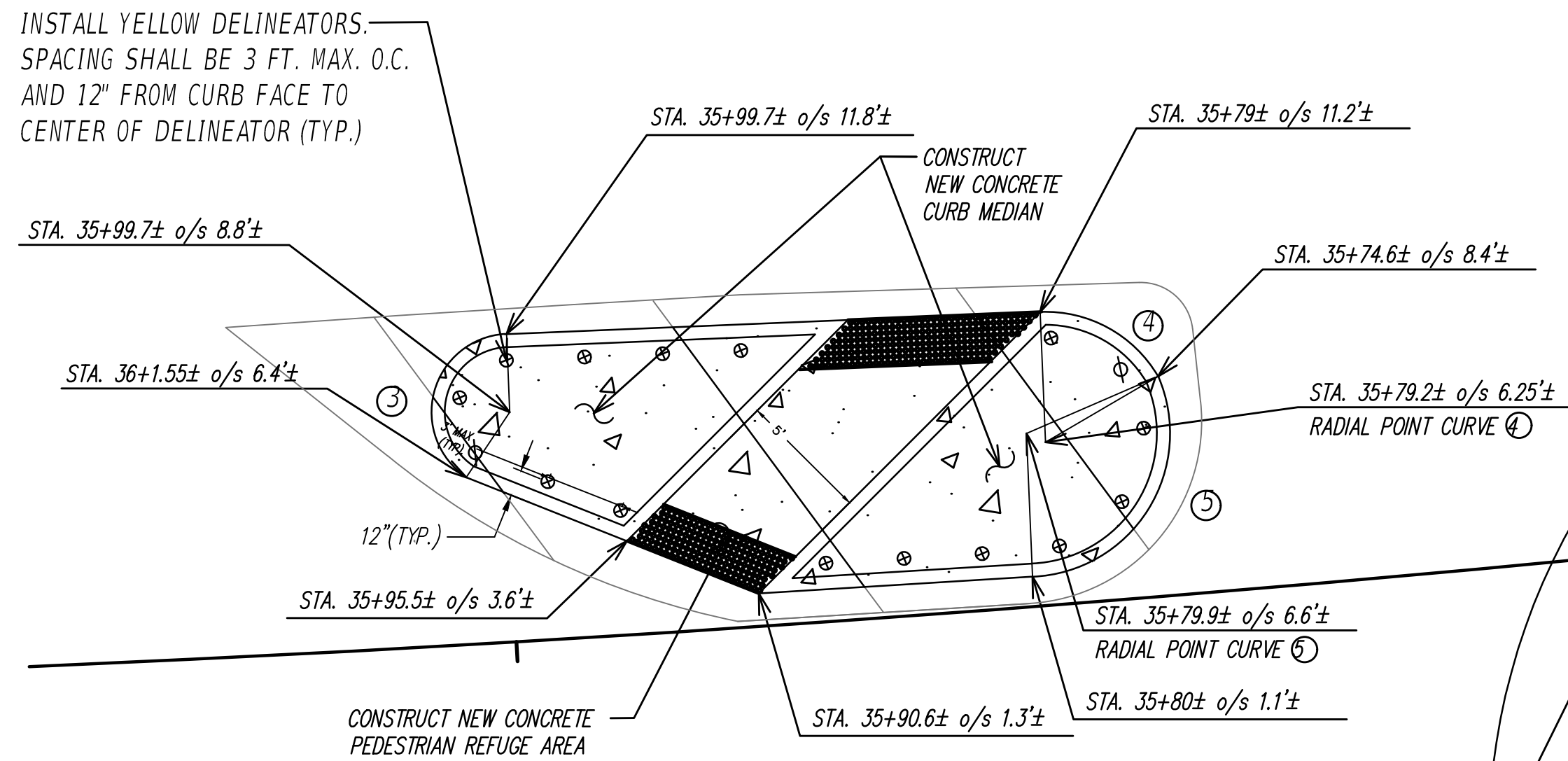
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**MAKAPUU CROSSWALK
IMPROVEMENT PLANS**
KALANIANAʻOLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
Scale: As Noted Date: June, 2025

FED. ROAD DIST. NO.	STATE	FED.AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	47	102



NOTES:

- Dressing of sidewalk shall consist of clearing, grubbing, grading, reshaping and compacting the area adjacent to the improvement with suitable material as shown on the plans and/or as directed by the Engineer. If existing ground is asphalt or concrete surface, dress sidewalk with A.C. pavement, Mix No. V. If existing ground is dirt or grass, dress sidewalk with hydro-mulch.
- Truncated domes shall be considered incidental to the new crosswalk.



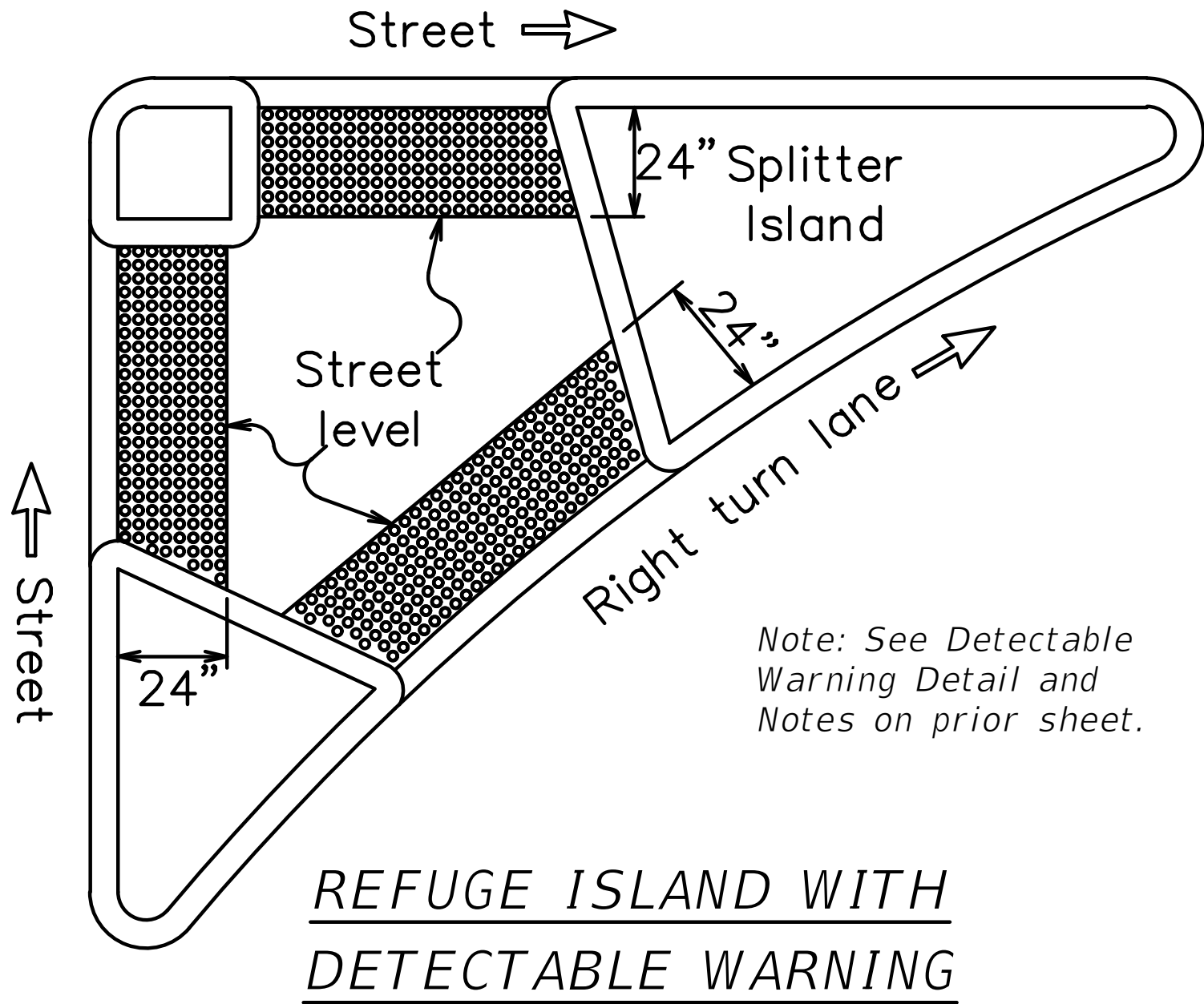
LEGEND

- PROPOSED CONCRETE
- PROPOSED LANDSCAPE AREA
- DELINEATOR (YELLOW)

CURVE DATA											
CURVE	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	CURVE
Δ	92°12'47"	91°37'01"	142°39'53"	62°01'35"	111°02'54"	93°40'44"	88°22'35"	20°39'00"	157°56'59"	86°16'26"	Δ
Δ/2	46°06'23.5"	45°48'30.5"	71°19'57"	31°00'47"	55°31'26.5"	46°50'22"	44°11'17"	10°19'50.00"	78°58'30"	43°08'13"	Δ/2
R	30.00'	25.00'	3.00'	5.00'	5.50'	3.00'	3.00'	70.00'	2.00'	25.00'	R
T	30.18	25.72	8.88'	3.01'	8.01'	3.20'	2.92'	12.75'	10.27'	23.42'	T
C	43.24'	35.85'	5.68'	5.15'	9.07'	4.38'	4.18'	25.09'	3.93'	34.19'	C
L	48.28'	39.98'	7.47'	5.41'	10.66'	4.91'	4.63'	25.23'	5.51'	37.64'	L

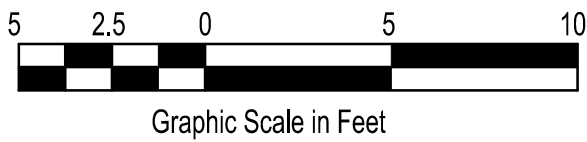
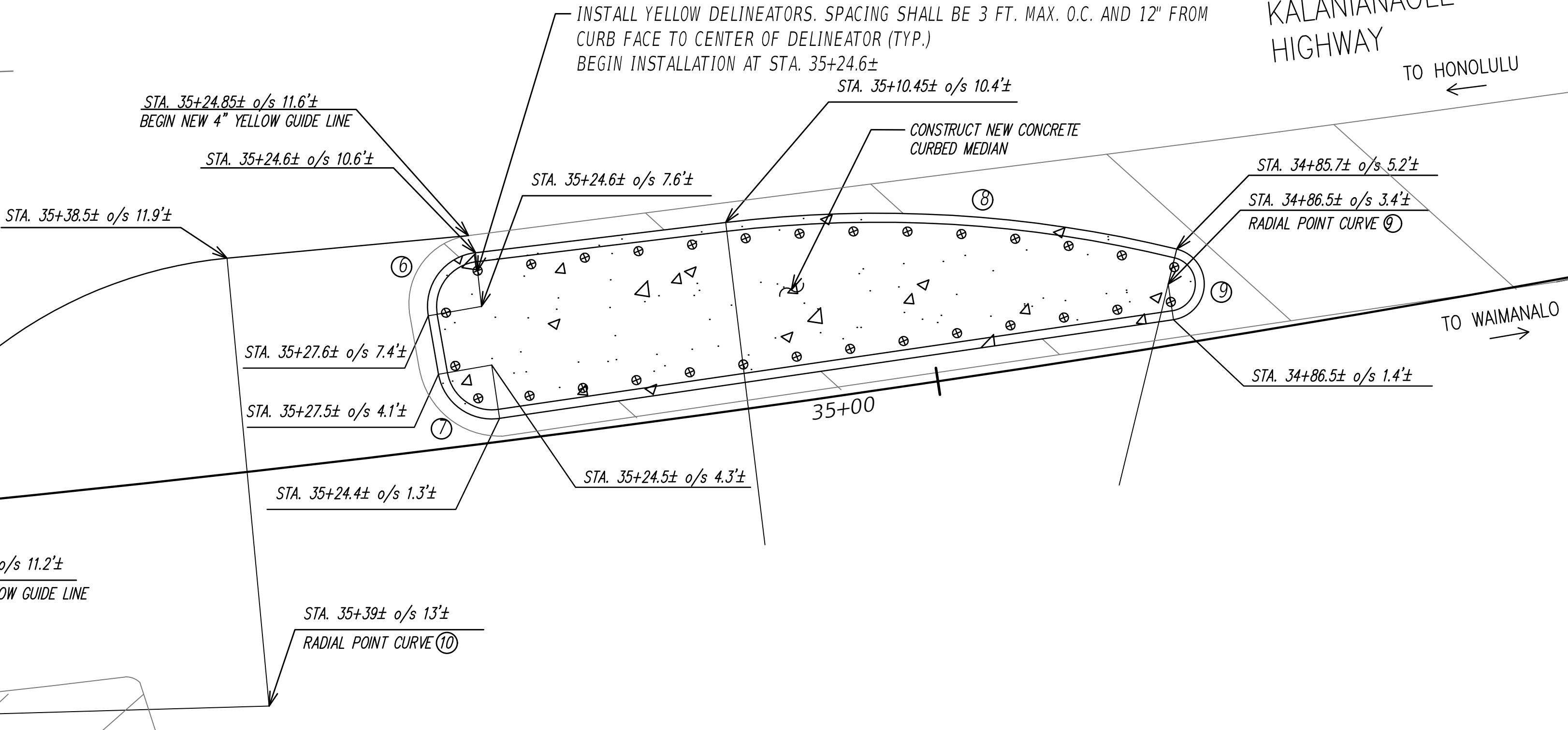
CONCRETE PAD AND MEDIAN PLAN

SCALE: 1"=5'



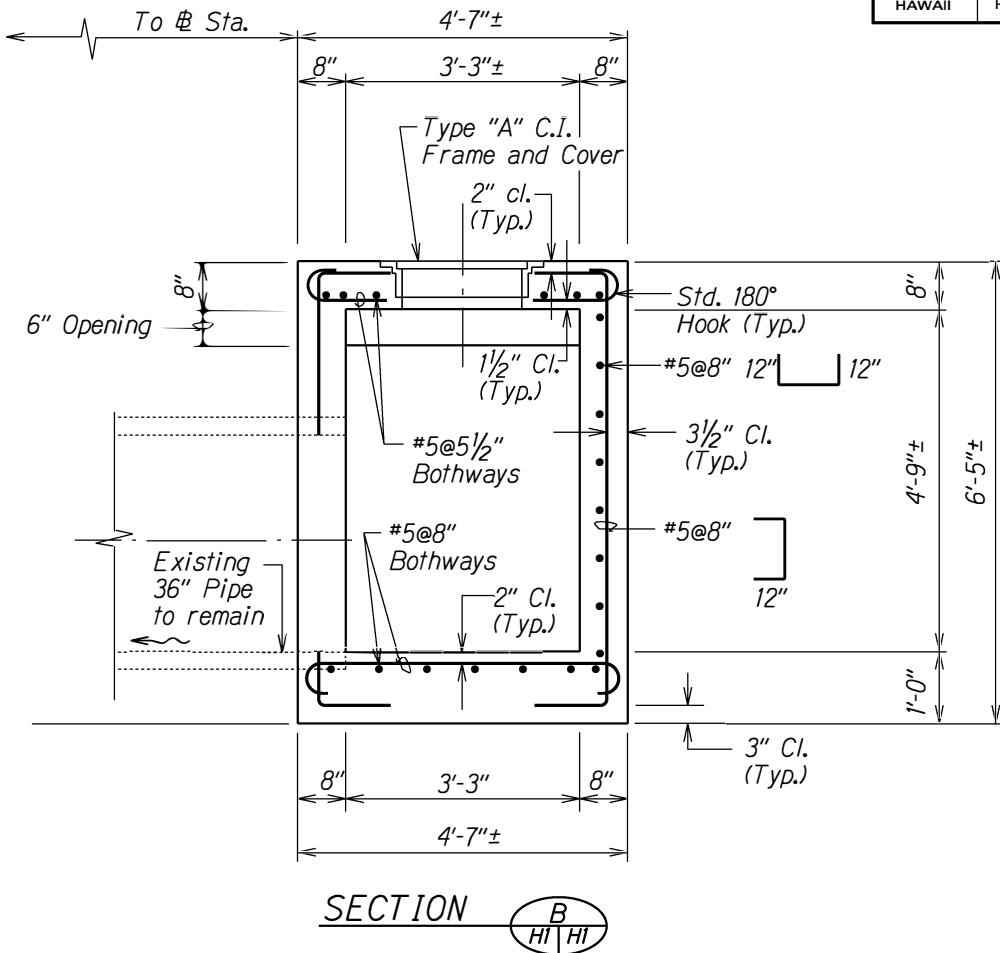
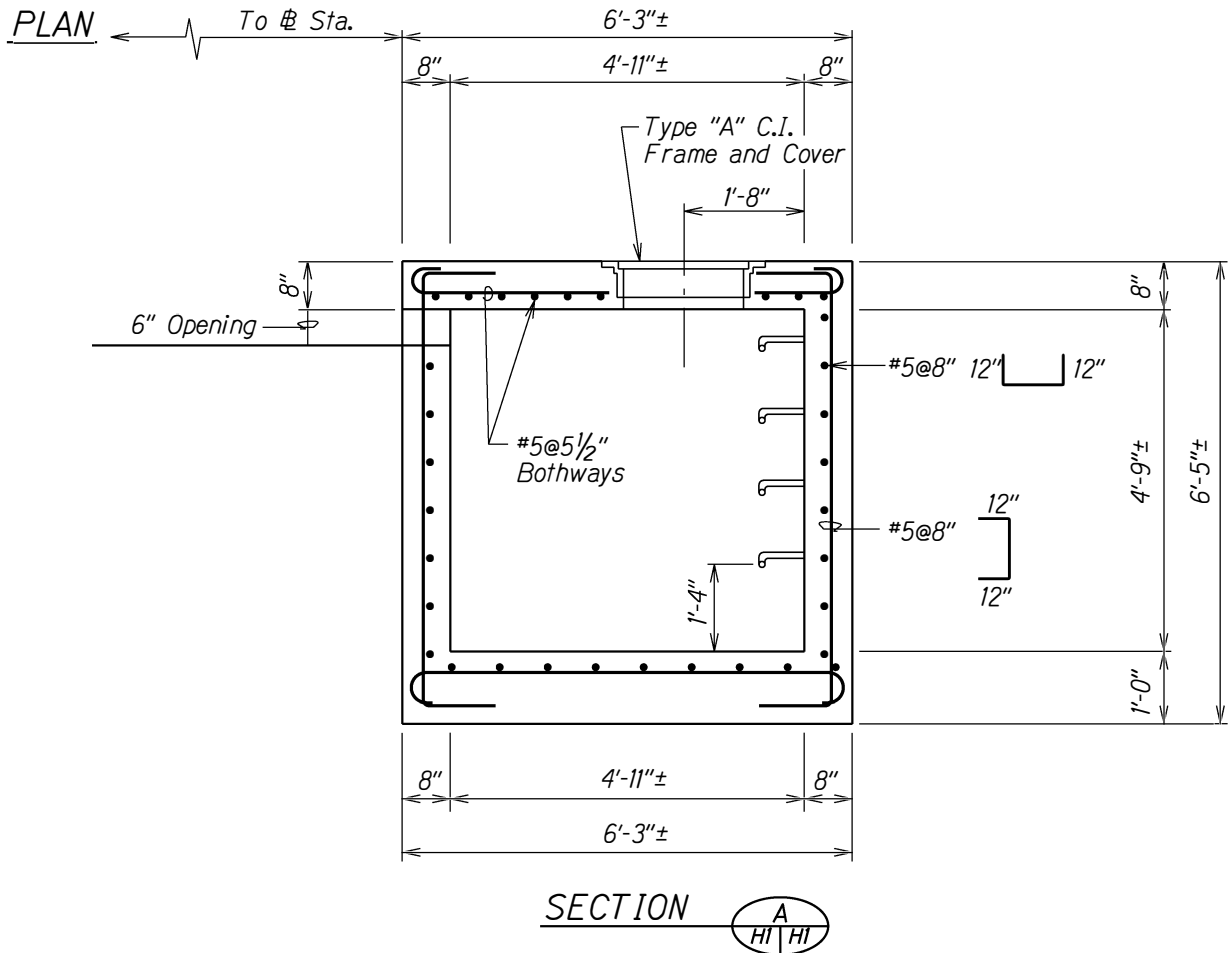
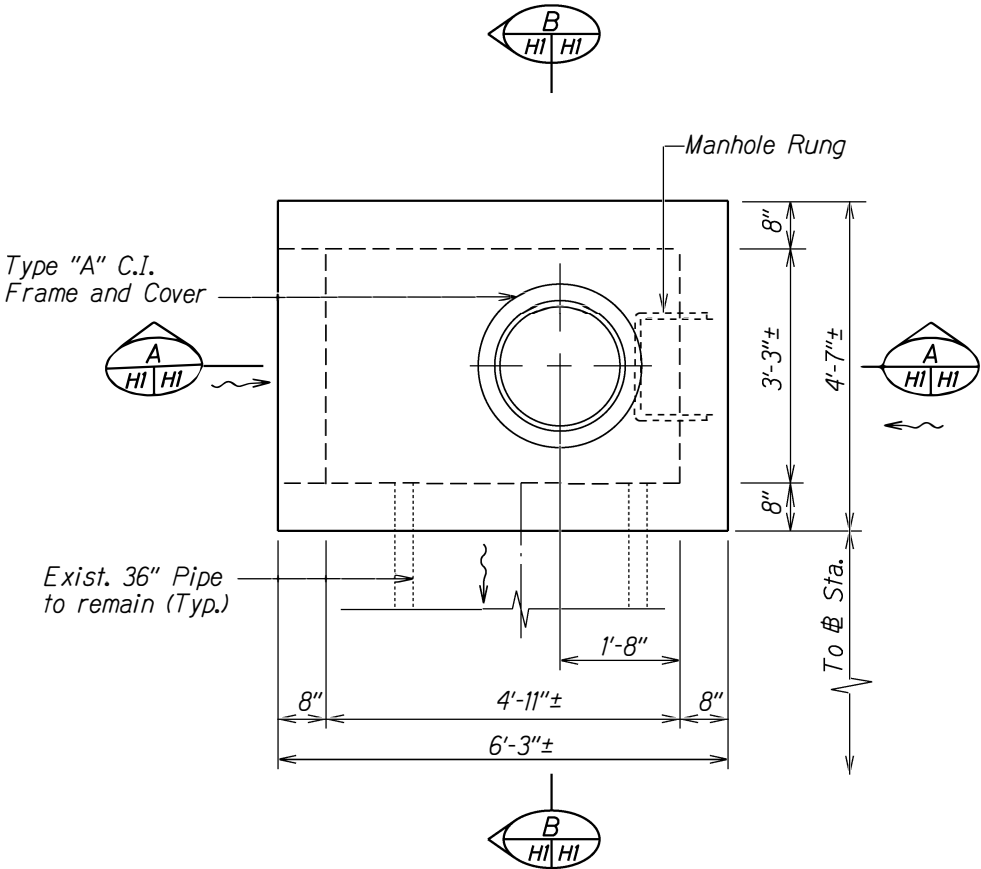
Note: See Detectable Warning Detail and Notes on prior sheet.

REFUGE ISLAND WITH DETECTABLE WARNING



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**MAKAPUU CROSSWALK
IMPROVEMENT PLANS**
KALANIANA'OLE HIGHWAY RESURFACING
VICINITY OF MAKAI PIER TO VICINITY OF HANAUMA BAY ROAD
Fed-aid Proj.No. NH-072-1(057)
Scale: As Noted Date: June, 2025

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(K057)	2026	48	102



DETAILS OF TYPE "1" INLET AT STA. 41+85± RT.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAIL

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to
Hanauma Bay Road
Federal Aid Proj. No. NH-072-1(K057)

Scale: 3/4"=1'-0" Date: August 2024

SHEET No. *HI* OF *1* SHEETS

STANDARD PLANS SUMMARY

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2026	49	102

STANDARD PLAN NO.	TITLE	DATE
B-01 ●	NOTES & MISCELLANEOUS DETAILS	05/31/07
B-03	BACKFILL DETAILS AT EARTH RETAINING STRUCTURES	05/31/07
B-12	PRESTRESSED CONCRETE PILES & COMPRESSION SPLICE	05/31/07
	CAN DETAILS	
B-12A	PRESTRESSED CONCRETE PILES, PILE & COMPRESSION	05/31/07
	SPLICE CAN DETAILS & NOTES	
B-12B	PILE INTERACTION DIAGRAM	05/31/07
B-13	PRESTRESSED CONCRETE PILE BUILD-UP DETAILS	05/31/07

D-01	CATTLE GATE	05/31/07
D-02	CHAIN LINK FENCE WITH TOPRAIL	05/31/07
D-03	CHAIN LINK FENCE WITHOUT TOPRAIL	05/31/07
D-04	WIRE FENCE WITH METAL POSTS	05/31/07
D-05	TYPICAL DETAILS OF CURBS AND/OR GUTTERS	05/31/07
D-06	TYPICAL DETAIL OF REINFORCED CONCRETE DROP DRIVEWAY	05/31/07
D-07	CENTERLINE AND REFERENCE SURVEY MONUMENTS	05/31/07
D-08	STREET SURVEY MONUMENT	05/31/07
D-15	CONCRETE SIDEWALK	05/31/07
D-16	P.C.C. BUS PAD	05/31/07
D-17	P.C.C. BUS PAD	05/31/07
D-18	P.C.C. PAVEMENT LAYOUT	05/31/07
D-19	P.C.C. PAVEMENT W/ PERMEABLE BASE JOINT DETAILS	05/31/07
D-20	P.C.C. PAVEMENT W/ PERMEABLE BASE JOINT DETAILS	05/31/07
D-21	P.C.C. LONGTUDINAL JOINT DETAILS	05/31/07
D-22	P.C.C. CONNECTION TO CURBS AND GUTTERS	05/31/07
D-23	JOINTS	05/31/07

L-01	TREE PLANTING	08/16/06
L-02	TREE PLANTING	08/16/06
L-03	TREE TRANSPLANTING	08/16/06
L-04	PALM PLANTING	08/16/06
L-05	SHRUB PLANTING	08/16/06
L-06	LANDSCAPE DETAILS	08/16/06
L-07	LANDSCAPE DETAILS	08/16/06
L-08	LANDSCAPE DETAILS	08/16/06
L-09	LANDSCAPE DETAILS	08/16/06
L-10	LANDSCAPE DETAILS	08/16/06
L-11	PLANTING NOTES	08/16/06
L-12	IRRIGATION DETAILS	08/16/06
L-13	IRRIGATION DETAILS	08/16/06
L-14	IRRIGATION DETAILS	08/16/06
L-15	IRRIGATION DETAILS	08/16/06
L-16	IRRIGATION DETAILS	08/16/06
L-17	IRRIGATION DETAILS	08/16/06
L-18	IRRIGATION DETAILS	08/16/06
L-19	IRRIGATION DETAILS	08/16/06
L-20	IRRIGATION DETAILS	08/16/06
L-21	IRRIGATION DETAILS	08/16/06
L-22	IRRIGATION DETAILS	08/16/06
L-23	IRRIGATION DETAILS	08/16/06
L-24	IRRIGATION NOTES	08/16/06

STANDARD PLAN NO.	TITLE	DATE
H-01A	TYPE A CATCH BASIN	05/31/07
H-01B	TYPE B CATCH BASIN	05/31/07
H-01C	TYPE C CATCH BASIN	05/31/07
H-01D	TYPE D CATCH BASIN	05/31/07
H-01E	CATCH BASIN SECTIONS	05/31/07
H-02A	TYPE A1 CATCH BASIN	05/31/07
H-02B	TYPE B2 CATCH BASIN	05/31/07
H-02C	TYPE C1 CATCH BASIN	05/31/07
H-02D	TYPE D1 CATCH BASIN	05/31/07
H-02E	CATCH BASIN SECTION	05/31/07
H-03	TYPE A,B, AND C STORM DRAIN MANHOLE	05/31/07
H-04	TYPE D STORM DRAIN MANHOLE	05/31/07
H-05	TYPICAL REINFORCING DETAILS FOR DRAINAGE STRUCTURES	05/31/07
H-06	TYPICAL REINFORCING DETAILS FOR DRAINAGE STRUCTURES	05/31/07
H-07	CATCH BASIN AND MANHOLE CASTINGS	05/31/07
H-08	TYPE 1A-9 AND 1A-9P GRATED DROP INLET	05/31/07
H-09	TYPE 2A-9 AND 2A-9P GRATED DROP INLET	05/31/07
H-10	TYPE A-9 OR A-9P STEEL FRAMES	05/31/07
H-11	TYPE A-9 AND A-9P STEEL GRATES	05/31/07
H-12	TYPE 61614P AND 1211214P GRATED DROP INLET	05/31/07
H-13	TYPE 61616P AND 1211216P GRATED DROP INLET	05/31/07
H-14	TYPE 61214P GRATED DROP INLET	05/31/07
H-15	TYPE 1211214, 1211214P, 1211216, 1211216P STEEL	05/31/07
	FRAME AND GRATES	
H-16	TYPE 61614, 61614P, 61616, 61616P STEEL FRAME	05/31/07
	AND GRATES	
H-17	TYPE 61214 STEEL FRAMES AND GRATES	05/31/07
H-18	TYPE 61214P STEEL GRATES	05/31/07
H-19	TYPE 61614B STEEL FRAME AND GRATES	05/31/07
H-20 ●	CEMENT RUBBLE MASONRY STRUCTURES	05/31/07
H-21	CONCRETE AND CEMENT RUBBLE MASONRY STRUCTURES	05/31/07
H-22	INLET/OUTLET STRUCTURE	05/31/07
H-23	INLET/OUTLET STRUCTURE	05/31/07
H-24	FLARED END SECTION FOR CULVERTS	05/31/07
H-25	FLARED END SECTION FOR CULVERTS	05/31/07
H-26	CONCRETE SPILLWAY INLET	05/31/07
H-27	CAP COUPLING DETAILS STANDARD JOINT	05/31/07
H-28	REINFORCED CONCRETE COLLAR & JACKET	05/31/07
H-29	UNDERDRAIN CLEANOUT STEEL FRAME AND COVER	05/31/07
H-30	UNDERDRAIN CONNECTION TO DRAINAGE STRUCTURE	05/31/07

TE-01 ●	SIGN HEIGHT AND LOCATION	07/11/08
TE-1A ●	SIGN INSTALLATION	07/11/08
TE-02A	GALVANIZED FLANGED CHANNEL SIGN POST MOUNTING	05/31/07
TE-02B	GALVANIZED FLANGED CHANNEL SIGN POST MOUNTING	05/31/07
TE-02C	GALVANIZED FLANGED CHANNEL SIGN POST MOUNTING	05/31/07
TE-03A ●	GALVANIZED SQUARE TUBE SIGN POST MOUNTING	05/31/07
TE-03B ●	GALVANIZED SQUARE TUBE SIGN POST MOUNTING	05/31/07
TE-04	REGULATORY SIGNS	07/11/08
TE-05	WARNING SIGNS	07/11/08
TE-06 ●	MISCELLANEOUS SIGNS	07/11/08
TE-07 ●	CONSTRUCTION SIGNS	07/11/08
TE-08	MISCELLANEOUS INTERSECTION SIGNS	07/11/08

STANDARD PLAN NO.	TITLE	DATE
TE-09	BIKE ROUTE SIGN & SUPPLEMENTARY PLATES	07/11/08
TE-10	INTERSTATE ROUTE MARKER	07/11/08
TE-11	STATE ROUTE MARKER AND AUXILIARY MARKERS	07/11/08
TE-12	STATE ROUTE MARKER AND BORDER DETAIL FOR	07/11/08
	GUIDE SIGNS	
TE-12A	ROUTE SIGN ASSEMBLIES	07/11/08
TE-13	STREET NAME SIGN ON MAST ARM	07/11/08
TE-14 ●	MISCELLANEOUS REFLECTOR MARKERS	07/11/08
TE-15 ●	OBJECT MARKERS	07/11/08
TE-16	MILE POSTS	07/11/08
TE-17A	CANTILEVER OVERHEAD SIGN ELEVATION & DETAILS	05/31/07
TE-17B	CANTILEVER SIGN FRAME DETAIL AND SECTION	05/31/07
TE-17C	CANTILEVER SIGN FRAME DETAIL	05/31/07
TE-17D	CANTILEVER SIGN FRAME SECTION	05/31/07
TE-17E	CANTILEVER SIGN FRAME DETAILS	05/31/07
TE-18A	TWO POST OVERHEAD SIGN FRAME ELEVATIONS	05/31/07
TE-18B	TWO POST SIGN FRAMING PLAN SECTION	05/31/07
TE-18C	TWO POST SIGN FRAMING SECTIONS AND DETAILS	05/31/07
TE-18D	TWO POST SIGN FRAME DETAILS	05/31/07
TE-18E	TWO POST SIGN FRAME DETAILS	05/31/07
TE-19A	OVERHEAD SIGN FRAMING SCHEDULE	05/31/07
TE-19B	SIGN POST DRILLED SHAFT FOUNDATION	05/31/07
TE-19C	SPREAD FOOTING	05/31/07
TE-19D	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.1	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.2	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.3	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.4	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.5	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19E	ANCHORAGE DETAILS	05/31/07
TE-19F	ANCHORAGE DETAILS	05/31/07
TE-19G	MISCELLANEOUS SIGN FRAME DETAILS	05/31/07
TE-19H	LUMINAIRE WALKWAY SUPPORT	05/31/07
TE-19J	FIXED MESSAGE LUMINAIRE SUPPORT	05/31/07
TE-19K	MISCELLANEOUS SIGN DETAILS	05/31/07
TE-19L	MISCELLANEOUS SIGN DETAILS	05/31/07
TE-19M	MISCELLANEOUS SIGN FRAME DETAILS	05/31/07
TE-20	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20A	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20B	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20C	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-21A	SIGN BREAKAWAY MOUNTS	05/31/07
TE-21B	SIGN BREAKAWAY MOUNTS	05/31/07
TE-22	LAMINATED ALUMINUM SIGN PANELS (OVERHEAD)	05/31/07
TE-23	LAMINATED ALUMINUM SIGN PANELS (GROUND MOUNTED)	07/11/08
TE-24	SOLID ALUMINUM EXTRUDED SIGN PANEL AND	05/31/07
	ACCESSORY DETAILS	
TE-25	GUIDE SIGNS LUMINAIRE MOUNTINGS	05/31/07
TE-26 ●	RAISED PAVEMENT MARKERS AND STRIPING	07/11/08
TE-27 ●	RAISED PAVEMENT MARKERS AND STRIPING	07/11/08
TE-28	ENTRANCE AND EXIT PAVEMENT MARKINGS	07/11/08
TE-28A	ENTRANCE AND EXIT PAVEMENT MARKINGS	07/11/08
TE-28A ●	MISCELLANEOUS PAVEMENT MARKINGS	07/11/08
TE-29	PAVEMENT ARROWS AND SYMBOLS	07/11/08
TE-30	PAVEMENT ALPHABETS, NUMBERS & SYMBOLS	07/11/08

STANDARD PLAN NO.	TITLE	DATE
TE-31	PAVEMENT ALPHABETS, NUMBERS & SYMBOLS	07/11/08
TE-32	TYPE I & II TRAFFIC SIGNAL SYSTEM MISC. DETAILS	05/31/07
TE-33	TYPE II TRAFFIC SIGNAL SYSTEM	08/16/06
TE-33A.1	TYPE II TRAFFIC SIGNAL STANDARD	05/31/07
TE-33A.2	TYPE II TRAFFIC SIGNAL STANDARD	05/31/07
TE-34	LOOP DETECTOR DETAILS	07/11/08
TE-35	LOOP DETECTORS & DUCT DETAILS	07/11/08
TE-36	TRAFFIC SIGNAL DETAILS	07/11/08
TE-37	PULLBOX & COVER DETAILS	07/11/08
TE-37A	TYPE "A" TRAFFIC PULLBOX	05/31/07
TE-37B	TYPE "A" TRAFFIC PULLBOX REINFORCING	05/31/07
TE-37C	TYPE "B" TRAFFIC PULLBOX	05/31/07
TE-37D	TYPE "B" TRAFFIC PULLBOX REINFORCING	05/31/07
TE-37E	TYPE "B" TRAFFIC PULLBOX FOUNDATION	05/31/07
TE-37F	TYPE "C" TRAFFIC PULLBOX	05/31/07
TE-37G	TYPE "C" TRAFFIC PULLBOX REINFORCING	05/31/07
TE-37H	TYPE "C" TRAFFIC PULLBOX FOUNDATION	05/31/07
TE-37J	TRAFFIC PULLBOX COVER AND DETAILS	05/31/07
TE-38	TYPE III TRAFFIC SIGNAL STANDARD	05/31/07
TE-38A.1	TYPE III TRAFFIC SIGNAL STANDARD	05/31/07
TE-38A.2	TYPE III TRAFFIC SIGNAL STANDARD	05/31/07
TE-39	METAL GUARDRAIL CONNECTION TO CONCRETE BARRIER	07/11/08
TE-40	CONCRETE BARRIER TRANSITION	05/31/07
TE-40A	CONCRETE BARRIER TRANSITION SECTIONS	05/31/07
TE-41	GUARDRAIL TYPE 4 (RIGID BARRIER)	05/31/07
TE-42 ●	PORTABLE CONCRETE BARRIER	05/31/07
TE-43 ●	PORTABLE CONCRETE BARRIER	05/31/07
TE-44	GUARDRAIL TYPE 4 MISCELLANEOUS DETAILS	07/11/08
TE-45 ●	BARRICADES	07/11/08
TE-46	DELINEATION & PAVEMENT MARKINGS AT NARROW BRIDGES	07/11/08
TE-47	HIGHWAY LIGHT STANDARD	05/31/07

NOTE:
STANDARD PLANS APPLICABLE TO THIS
PROJECT ARE INDICATED BY A " " ●
NEXT TO THE STANDARD PLAN NO.
(FOR EXAMPLE: D-07 ●)

ORIGINAL
PLAN

NO.

SURVEY PLOTTED BY

DATE

DESIGNED BY

QUANTITIES BY

CHECKED BY

KYLE T.G. NISHIOKA

LICENSED
PROFESSIONAL
ENGINEER

No. 10631-C

HAWAII, U.S.A.

This work was prepared by me or under
my supervision and construction of this
project will be under my observation.
(Observation of construction as defined
in Chapter 16-115, Subchapter 1,
Definitions of the Hawaii Administrative
Rules, Professional Engineers, Architects,
Surveyors, and Landscape Architects.)

Kyle Nishiooka

4/30/2026

MITSUNAGA & ASSOCIATES, INC.

EXP. DATE

NOTE: Contractor to check and verify
dimensions at job before proceeding with work.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD PLANS SUMMARY

Kalanianaʻole Hwy Culvert Improvements
Oahu, Hawaii

Project No. NH-072-1(057)

Scale: As Noted Date: July 2025

SHEET No. T02 OF 24 SHEETS

49

GENERAL NOTES

1. This project includes the restoration of an existing culvert along Kalanianaʻole Highway. This project also includes, but not limited to, the removal of existing asphalt concrete pavement, guardrails, vegetation; construction of retaining walls; installation of headwalls, new guardrails, new asphalt concrete pavement, pavement markings, and signage; and, all incidental construction as indicated on the drawings and specifications.
2. 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 this Subsection may be grounds for rejection of bid.
3. The Contractor's attention is directed to the 2005 Hawaii Standard Specifications for Road and Bridge Construction and the following Sections of the Special Provisions: Subsection 104.09 - Maintenance of Traffic; Subsection 104.11 - Utilities and Services; Subsection 107.06 - Contractor Duty Regarding Public Convenience; and, Section 645 - Work Zone Traffic Control.
4. 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.
5. 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 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.
6. Construction of this project shall not affect transit operations. Bus routes and bus stops shall remain open and accessible at all times. Any work affecting bus operations, routes, or stops must be submitted to DTS-TMD for review no less than 30 days prior to start date.

Point of Contact Information (Notification is required to all phone numbers and emails):
DTS-TMD: (808)768-8371; thebusstop@honolulu.gov;
handivan@honolulu.gov

Oahu Transit Services - Bus Operations:
(808)768-9520; (808)768-9534
Sean.bennet.paio@thebus.org
Joshua.vaoalii@thebus.org
Walter.oba@thebus.org

Oahu Transit Services - Paratransit Operations:
(808)768-9802; (808)768-9851; (808)454-5021
Tracie.coelho@thebus.org; Richard.mole@thebus.org

7. The Contractor shall notify the Engineer in writing, two (2) weeks prior to starting construction operations.

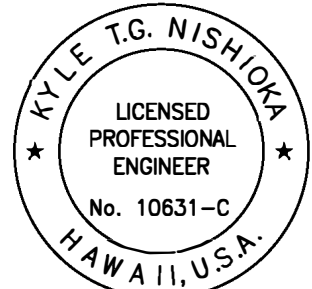
8. The Contractor shall obtain a Community Noise permit from the State Department of Health, Indoor and Radiological Health Branch, 99-945 Halawa Valley Street, Aiea, HI 96701; Telephone No. (808)586-4700. This shall be considered incidental to the various contract items and will not be paid for separately.
9. 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, to the satisfaction of the Engineer.
10. 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.
11. Earth swales shall be graded to drain. This work shall be considered incidental to various contract items.
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 curb and gutter, curb, sidewalk and asphalt concrete pavement, curb, sidewalk 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. Prior to placement of new aggregate subbase course, the existing subbase shall be compacted to a relative compaction greater than or equal to 95%.
17. The top of the Hot Mix Asphalt Base Course prior to placement of the new A.C. Pavement, Mix No. IV shall comply with the ten-foot straight edge requirement. The variation of the surface from a straight edge with two contacts with the surface, shall not exceed 3/16".
18. The Contractor shall provide and maintain for access to and from all existing driveways, sidewalks and ADA access routes, and side streets and cross streets at all times. This work shall be considered incidental to curb ramps, or sidewalk, or the various contract items and will not be paid for separately.

19. The Contractor shall provide and maintain a temporary pedestrian-safe and easily accessible route or detour with barricades in or near the work zone. This temporary route or detour shall be paved at least an inch of Asphalt Concrete Pavement, Mix No. V or steel and/or wood planks and shall be American With Disabilities Act (ADA) compliant. This work shall be incidental to curb ramps, or sidewalks, or the various contract items and will not be paid for separately.
20. The Contractor shall remove and dispose of all existing raised pavement markers, thermoplastic line markings, traffic tapes, and epoxy adhesives prior to the overlaying of Asphalt Concrete. This work shall be considered incidental to Asphalt Concrete Pavement, Mix No. IV and will not be paid for separately.
21. No material and/or equipment shall be stockpiled or otherwise stored within the highway right-of-way except at locations designated in writing and approved by the Engineer. If use of location is approved by the Engineer, the Contractor shall obtain a permit to use the property within the highway right-of-way from the Oahu District Office at telephone number (808)831-6712.
22. The Contractor shall restore to their original condition all improvements damaged as a result of the construction, including pavements, embankments, curbs, signs, landscaping, structures, utilities, walls, fences, etc. unless provided for specifically in the proposal. Grass seeds and plant species shall be approved by the Engineer prior to ordering, purchasing and installation.
23. If nighttime construction activity and/or equipment maintenance is proposed during the construction phases of the project, all associated lights should be shielded and when large flood/work lights are used, they shall be placed on poles that are high enough to allow the lights to be pointed directly at the ground.
24. If the streetlights or exterior facility lighting are installed in conjunction with the project, it is recommended that the lights be shielded to reduce the potential for interactions between nocturnally flying seabirds and external lights and/or man-made structures.
25. The Contractor shall contact Hawaii One Call Center to have respective utility companies and agencies mark where their underground utilities are located. The Contractor shall comply with all requirements of Hawaii One Call Law. The contractor shall be liable for any damages if Hawaii One Call requirements are not strictly adhered to. In accordance with Hawaii State Law Section 269E-7, the Hawaii One Call Center (HOCC) shall provide an inquiry identification number for each location request provided by the Contractor. The inquiry identification number and utility marks shall remain valid for not more than twenty-eight (28) calendar days from the date of issuance and after that date shall require the Contractor to submit a new request for HOCC revalidation. The Contractor shall provide all inquiry identification numbers for each location request to the Engineer and provide written notice of scheduled toning at least one week ahead of toning. If there is a potential conflict, contractor shall inform DOT within 24 hours of discovery. Contractor shall probe around area with hand tools and take precautions to not damage utilities. The Contractor shall independently verify the toned areas of excavation prior to excavation. This work shall be incidental to various contract items and shall not be paid for separately.

ABBREVIATIONS

A.C.	Asphaltic Concrete	Max.	Maximum
Approx.	Approximate,	MGS	Midwest Guardrail System
	Approximately	MSL	Mean Sea Level
@	at	MP	Mile post
B	Baseline	MPH	Miles per Hour
Blvd.	Boulevard	Min.	Minimum
BVC	Begin of	Misc.	Miscellaneous
	Vertical Curve	N	North
BC	Bottom of curb,	NTS	Not to Scale
	Begin Curve	NO	Number
C#C	City and County	O/S	Offset
CIG	Change in Grade	OC	On Center
CL	Centerline	OD	Outside diameter
Conc.	Concrete	OH	Overhead
Conn.	Connect,	Pav't	Pavement
	Connection	PC	Point of
Cont.	Continue,		Curvature
	Continuous	PCC	Portland Cement
CY	Cubic Yard		Concrete
Def.	Detail	PCC	Point of Compound Curve
DI	Ductile Iron	PI	Point of Intersection
DIA, Ø	Diameter	PIVC	Point Intersection
DWG	Drawing		Vertical Curve
DBL	Double	PL	Property Line
EA	Each	POC	Point of Curve
E	East	PT	Point of Tangent
EB	East Bound	R	Radius
EC	End Curve	RCB	Reinforced Concrete Box
EP	Edge of Pavement	RPM	Raised Pavement Markers
ES	Edge of	Req'd	Required
	Shoulder	Rev	Revision/Revised
Elev, EL	Elevation	RT, R	Right
EMB	Embankment	r/w	Right-of-Way
EVC	End of	SE	Superelevation
	Vertical Curve	Sht.	Sheet
EXC	Excavate	SIGMH	Signal Manhole
Exist.	Existing	S	South, Slope, Sewer
EQ	Equal	SF	Square Foot
EXT	Extension	SY	Square Yard
FT	Foot, Feet	Std.	Standard
GM	Ground Mounted	Sta.	Station
GRP	Grouted Rubble	Struct.	Structural
	Pavement	TI	Technical Infeasibility
HAW	Hawaii	Typ.	Typical
HWY	Highway	UP	Utility Pole
Horiz.	Horizontal	Vert	Vertical
IN	Inch	VC	Vertical Curve
INV	Invert	W/	With
LT	Left	WB	West Bound
LF	Linear Foot		

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



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1 Definitions of the Hawaii Administrative Rules: Professional Engineers, Architects, Surveyors, and Landscape Architects.)
4/30/2026
MITSUNAGA & ASSOCIATES, INC. EXP. DATE
NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES
Kalanianaʻole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)
Scale: As Noted Date: July 2025

SHEET No. C01 OF 24 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2026	51	102

GENERAL NOTES (CONT.)

26. Before conducting any excavation in the public right of way or on private property, the Contractor shall call the Hawaii One Call Center at least five (5) working days before beginning excavation operations. Be sure to give them the address and location of the nearest cross street(s) near the planned excavation site. Call 811 toll-free 24 hours a day. For more information, go to www.callbeforeyoudig.org. The Hawaii One Call Center will contract all utility companies to tone, mark, or identify the location of their underground utilities for free. Mark the area where you plan to excavate in White and label all of the other utilities as listed below.
5. Lane closures shall conform to the traffic control plan incorporated into these construction plans and must be approved by the Division prior to the issuance of the permit.
6. The distance from the paved surface to the testing edge of a ten-foot long straight edge between two points shall not exceed 3/16 inch.
7. Compaction tests shall be taken in accordance with the specifications for installation of miscellaneous improvements within State Highways at the Contractor's expense, as follows:
16. For projects abutting State Highway's Right-of-Way, the Owner or his Authorized Representative shall notify the State Department of Transportation, Highways Division, Oahu District, Drainage Discharge Unit at (808)831-6793 for an assessment of State Highways Permit Requirements.
17. Highway lights shall be kept operational during construction. Should work be necessary, the contractor shall notify the State Highways' Highway Lighting Supervisor at (808)837-8056, three (3) working days prior to commencing work.

22. *Plastic marking tape. Provide plastic marking tape that is acid and alkali resistant polyethylene film 6 inches wide with minimum thickness of 0.004 inch. Provide tape with minimum strength of 1750 psi lengthwise and 1500 psi crosswise. Manufacture tape with integral wires, foil backing or other means to enable detection by a metal detector when the tape is buried up to 3 feet deep. Manufacture tape specifically for marking and locating underground utilities. Provide the metallic core of the tape encased in a protective jacket or provided with other means to protect it from corrosion. Conform to the following tape color and bear a continuous printed inscription describing the specific utility.*

- RED: Electric power lines, cables or conduits, and lighting cables.
- YELLOW: Gas, oil steam, petroleum or other hazardous liquid or gaseous materials
- ORANGE: Communications, cable TV, alarm or signal lines, cables, or conduits
- BLUE: Water, irrigation, and slurry lines.
- GREEN: Sewers, storm sewer facilities or other drain lines.
- WHITE: Proposed excavation.
- PINK: Temporary survey markings.
- PURPLE: Reclaimed water, irrigation and slurry lines.

- A. Sub base: one (1) compaction test per lift per 200 lineal feet of roadway.
- B. Base course: one (1) compaction test per lift per 200 lineal feet of roadway.
- C. One (1) compaction test per lift per 300 lineal feet of trench.
- D. A copy of the test results shall be submitted to the district engineer.

9. The Contractor shall provide an adequate and safe non-skid bridging material, including shoring, over trenches in pavement areas. The bridging shall be able to support all types of vehicular traffic. Bridging materials shall not be used on high speed roadways, which are roads with a design speed of 50 mph or higher. Smooth riding connection between roadway surfaces and bridging material shall be provided. Should complaints be received due to noise generated from this work, the contractor shall immediately address those complaints.

10. The Contractor shall make every effort to minimize the use and the duration of use of bridging materials. The State may require the backfilling and patches of trenches due to the excessive usage of steel plates.

11. Unless otherwise noted, no trench shall be opened more than 300 feet in advance of installed and tested pipeline and/or ductline.

12. Approval of permit construction plans shall be valid for a period of one (1) year from the date of notification of approval to the applicant. In the event construction does not commence within this one-year period, the applicant will be required to resubmit the construction plans for the Division's review and re-approval.

13. All regulatory, guide, and construction signs and barricades shall have a high-intensity type III or IV retroreflective background.

14. *The Contractor shall reference, to the satisfaction of the Engineer, all existing traffic signs, posts, and pavement markings prior to the commencement of construction. The Contractor shall replace or repair all traffic signs, posts, and pavement markings disturbed by his activities, at his expense, unless directed by the Engineer or his representative.*

15. The Contractor shall exercise care when performing work in or adjacent to the State Highway Right-Of-Way damages to the existing facilities shall be immediately reported to the respective utility companies, and/or City or State agencies. The repair work shall be done at the Contractor's expense.

19. The permit to perform work upon state highway may be revoked because of default in any of the following, but not limited to, conditions:
- A. Work performed before or after permitted hours.
 - B. Failure to maintain roadway surfaces in a smooth and safe condition.
 - C. Failure to clean up construction debris generated from project work.
 - D. Failure to provide proper traffic control.
 - E. Failure to replace damaged pavement markings and signs.
 - F. Failure to maintain highway lights and/or traffic signal systems.
 - G. Failure to address public complaints to the satisfaction of the district engineer.

20. The Contractor shall notify the State Highways Permit Office at (808)831-6712 at least two (2) days prior to performing any trench restoration work. This work shall include any backfilling and compacting of trench material; any placing and compacting of

base course material; and any paving operations. Any trench restoration work performed by the Contractor that is not witnessed by a state representative will be required to be removed and restored with a State Representative present. All restoration work will be at the Contractor's expense.

21. Temporary cold mix trench patches will be permitted in any given area for a maximum duration of two (2) weeks, and shall be a minimum of 2 inches thick. All temporary patches shall be placed over properly placed and compacted backfill and base course layers. Contractor shall be responsible for maintaining all temporary patches and to make repairs to unsatisfactory patches within 24 hours.

- ### 23. Confined space

For entry by State personnel, including inspectors, into a permit-required confined space as defined in 29 CFR part 1910.146(b), the Contractor shall be responsible for providing:

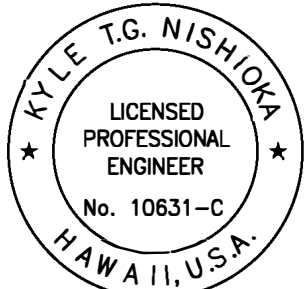
A. All safety equipment required by the confined space regulations applicable to all parties other than the construction industry, to include, but not limited to, the following:

- A.1. Full body harnesses for up to two personnel.
- A.2. Lifeline and associated clips.
- A.3. Ingress/egress and fall protection equipment.
- A.4. Two-way radios (walkie-talkies) if out of line-of-sight
- Emergency (escape) respirator (10 minute duration)
- A.6. Cellular telephone to call for emergency assistance.
- Continuous gas detector (calibrated) to measure oxygen, hydrogen sulfide, carbon monoxide and flammables (capable of monitoring at a distance of at least 20-feet away).
- A.7. Personal multi-gas detector to be carried by inspector.

- B. Continuous forced air ventilation adequate to provide safe entry conditions.
- C. One attendant/rescue personnel topside (two, if conditions warrant it).

23. The Contractor shall provide the Engineer with as-built plans upon completion of the work done in the State Right-Of-Way. This shall be done prior to the Department's release of the performance bond.

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



This work was prepared by me or under my supervision and construction of this project will be under my observation. Observation of construction as defined in Chapter 16-115, Subchapter 1 Definitions of the Hawaii Administrative Rules, "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

Kyle Nielson 4/30/2026
MITSUNAGA & ASSOCIATES INC EXP DATE

NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONSTRUCTION NOTES

Kalanianaʻole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)

Scale: As Noted Date: July 2025

GRADING NOTES

- ORIGINAL PLAN

NO.

SURVEY PLATTED BY

DATE

DESIGNED BY

NOTED BY

QUANTITIES BY

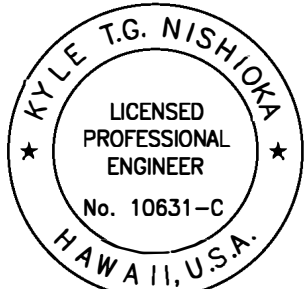
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- All grading work shall be done in accordance with Chapter 14, Articles 13, 14, 15 and 16, as related to Grading, Soil Erosion and Sediment Control of the Revised Ordinances of Honolulu, 1990, as amended, and soils report entitled, "Preliminary Recommendations Kaaawa Culverts Repair", dated August 2023.
 - Cost for overexcavation for substantial shrinkage cracks shall be incidental to bid item 205.0100 CLSM Backfill for Box Culvert and Extension.
 - No Contractor shall perform any grading operation so as to cause falling rocks, soil or debris in any form to fall, slide or flow onto adjoining properties, streets or natural watercourses. Should such violations occur, the Contractor may be cited and the Contractor shall immediately make all remedial actions necessary.
 - The Contractor, at his own expense, shall keep the project area and surrounding area free from dust nuisance. The work shall be in conformance with the air pollution control standards contained in the Hawaii Administrative Rules, Title 11, Chapter 60.1, "Air Pollution Control".
 - The underground pipes, cables or ductlines known to exist by the engineer from his search of records are indicated on the plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the area. Wherever connections of new utilities are shown on the plans, the contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines.
 - Adequate provisions shall be made to prevent surface waters from damaging the cut face of an excavation or the sloped surfaces of a fill. Furthermore, adequate provisions shall be made to prevent sediment-laden runoff from leaving the site.
 - All slopes and exposed areas shall be sodded or planted as soon as final grades have been established. Planting shall not be delayed until all grading work has been completed. Grading to final grade shall be continuous, and any area within which work has been interrupted or delayed shall be planted.
 - Fills on slopes steeper than 5:1 shall be keyed.
 - No grading work shall be done on Saturdays, Sundays and holidays at any time without prior notice to the District Manager, provided such grading work is also in conformance with the community noise control standards contained in the Hawaii Administrative Rules, Title 11, Chapter 46, "Community Noise Control".
 - The limits of the area to be graded shall be flagged before the commencement of the grading work.
 - All grading operations shall be performed in conformance with the applicable provisions of the water quality and water pollution control standards contained in Hawaii Administrative Rules, Title 11, Chapter 54, "Water Quality Standards", and Title 11, Chapter 55, "Water Pollution Control", and if applicable, the NPDES permit for the project.
 - Where applicable and feasible the measures to control erosion and other pollutants shall be in place before any earth moving phase of the grading is initiated.
 - Temporary erosion controls shall not be removed before permanent erosion controls are in-place, project acceptance and/or Engineer's approval.

- Temporary erosion control procedures shall be submitted for approval to the Engineer prior to commencement of grading work on site.
 - If the grading work involves contaminated soil, then all grading work shall be done in conformance with applicable State and Federal requirements.
 - Pursuant to Chapter 6e, HRS, in the event any artifacts or human remains are uncovered during construction operations, the Contractor shall immediately suspend work and notify the Honolulu Police Department, the State Department of Land and Natural Resources-Historic Preservation Division (808)692-8015.
 - For all projects, which will disturb one (1) acre or more of land, the Contractor shall not start construction until a Notice of General Permit Coverage (NGPC) is received from the Department of Health, State of Hawaii, and has satisfied any other applicable requirements of the NPDES permit program. The Contractor shall provide a written copy of the NGPC to the appropriate department or governmental agency per their requirements.
 - All grading and construction work shall implement measures to ensure that the discharge of pollutants from the construction site will be reduced to the maximum extent practicable and will not cause or contribute to an exceedance of water quality standards.
 - Non-compliance to any of the above requirements shall mean immediate suspension of all work, and remedial work shall commence immediately. All costs incurred shall be billed to the violator. Furthermore, violators shall be subjected to administrative, civil and/or criminal penalties.
- PUBLIC HEALTH SAFETY & CONVENIENCE AND DUST NOTES
- The Contractor shall observe and comply with all Federal, State and Local laws required for the protection of public health, safety and environmental quality.
 - The Contractor, at his own expense, shall keep the project and its surrounding areas free from dust nuisance. The work shall be in conformance with the Air Pollution Standards and Regulations of the State Department of Health.
 - The Contractor shall provide, install and maintain all necessary signs, lights, flares, barricades, markers, cones, and other protective facilities and shall take all necessary precautions for the protection, convenience and safety of the public.
 - The Contractor's attention is directed to Title 11, Department of Health, Chapter 46, "Community Noise Control," in which maximum allowable noise levels have been set. If the construction will be required to obtain a permit from the Director of the Department of Health, the Contractor shall obtain a copy of Chapter 46 and become familiar with the noise level restrictions and the procedures for obtaining a permit for construction activities. Application and information on variances from the Environmental Health Services Division, 591 Ala Moana Blvd., Rm. 125, Honolulu, Hawaii or by telephone (808)586-4576.
 - Where pedestrian walkways exist, they shall be maintained in passable condition or other facilities for pedestrians shall be provided. Temporary passage ways shall be accessible per ADAAG 206.1 & 402.1.

- The graded area or project site that is cleared of vegetation shall be kept damp seven (7) days a week through the use of misters and/or water wagons as necessary. At the end of each day, the site shall be sufficiently dampened so that it will remain moistened during the night. If the use of water causes problems with mud or soil erosion or water pollution or if there is a Notice by the Board of Water Supply, to conserve water in the area, the Contractor shall utilize dust control agents accepted by the Engineer.
- The Contractor shall conduct operations so that excavation, embankment, and imported materials are dampened to prevent dust problems.
- The Contractor shall designate a contact person to whom the State can direct public inquires and/or complaints regarding fugitive dust. The person shall have the authority to resolve all inquires and complaints in regards to fugitive dust.
- The Contractor shall hire an independent monitoring laboratory to monitor the amount of dust in the air daily or as directed by the Engineer. The monitoring shall begin before the project starts and end 90 days after the final acceptance. Adjustments to the Contractor's dust control means and methods shall be based on the Report made by the independent monitoring laboratory. A copy of all Reports shall be submitted to the Engineer. This monitoring work shall be incidental to the Section 209.0100 - Temporary Water Pollution, Dust, and Erosion Control. Cost of the dust monitoring shall be incidental to 209.0100 - Temporary Water Pollution, Dust, and Erosion Control.

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

- The permittee shall make minor adjustments at intersections, driveways, structures, etc., to fit field conditions.
- Cones or delineators shall be extended to a point where they are visible to approaching traffic.
- Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. The others shall then be placed progressively toward the work area.
- Regulatory and warning signs within the construction zone that are in conflict with the traffic control plans shall be removed or covered. All signs shall be restored upon completion of the work.
- Flaggers and/or police officers shall be in sight of each other or in direct communication at all times. When required by the issuing office, the permittee shall install a flashing arrow signal as shown on the traffic control plans.
- Sign spacings (d), taper lengths (t) and spacings of cones or delineators shall be as shown in Table 645-1, Section 645-Work Zone Traffic Control of the specifications, unless otherwise noted on the Traffic Control Plans.
- All traffic lanes shall be a minimum of 10 feet wide.
- All construction warning signs shall be promptly removed or covered whenever the message is not applicable or not in use.
- The backs of all signs used for traffic control shall be appropriately covered to preclude the display of inapplicable sign messages (i.e., when signs have messages on both faces).



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4/30/2026
MITSUNAGA & ASSOCIATES, INC. EXP. DATE
NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GRADING NOTES

Kalaniana'ole Hwy Culvert Improvements

Oahu, Hawaii

Project No. NH-072-1(057)

Scale: As Noted Date: July 2025

WATER POLLUTION AND EROSION CONTROL NOTES

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2026	53	102

A. GENERAL:

B. WASTE DISPOSAL:

1. See Special Provisions Section 209 - Water Pollution and Erosion Control. Section 209 describes but is not limited to: submittal requirements; scheduling of a water pollution and erosion control conference with the Engineer; construction requirements; method of measurement; and basis of payment. In addition, Appendix A lists potential pollutant sources and corresponding BMPs used to mitigate the pollutants.
2. Follow the guidelines in the current HDOT Construction Best Management Practices Field Manual in developing, installing and maintaining the Best Management Practices (BMP) for the project. For any conflicting requirements between the Manual and applicable bid documents, the applicable bid documents will govern. Should a requirement not be clearly described within the applicable bid documents, the Contractor shall notify the Engineer immediately for interpretation. For the purposes of clarification under Note A.2, "applicable bid documents" include the construction plans, standard specifications, Special Provisions, Permits, and the Storm Water Pollution Prevention Plan (SWPPP) when applicable.
3. Follow the guidelines in the Honolulu's City & County "Rules Relating to Soil Erosion Standards and Guidelines" along with applicable Soil Erosion Guidelines for projects on Maui, Molokai, Kauai, and Hawaii.
4. The Engineer may assess liquidated damages of up to \$27,500 for non-compliance of each BMP requirement and each requirement stated in Section 209 and special provisions, for every day of non-compliance. There is no maximum limit on the amount assessed per day.
5. The Engineer will deduct the cost from the progress payment for all citations received by the Department for non-compliance, or the Contractor shall reimburse the State for the full amount of the outstanding cost incurred by the State.
6. If necessary, install a rain gage prior to any field work including the installation of any site-specific best management practices. The rain gage shall have a tolerance of at least 0.05 inches of rainfall. Install the rain gage on the project site in an area that will not deter rainfall from entering the gage opening. Do not install in a location where rain water may splash into rain gage. The rain gage installation shall be stable and plumbed. Do not begin field work until the rain gage is installed and site-specific best management practices are in-place.
7. Submit Site-Specific BMP Plan to the Engineer along with a completed Site-Specific BMP Review Checklist within 21 calendar days of date of award. The Site-Specific BMP Review Checklist may be obtained from <http://www.stormwaterhawaii.com>.

1. **Waste Materials**
Collect and store all waste materials in a securely lidded metal dumpster or roll off container with cover to keep rain out or loss of waste during windy conditions. The dumpster shall meet all local and State solid waste management regulations. Deposit all trash and construction debris from the site in the dumpster. Empty the dumpster weekly or when the container is two-thirds full, whichever is sooner. Do not bury construction waste materials onsite. The Contractor's supervisory personnel shall be instructed regarding the correct procedure for waste disposal. Post notices stating these practices in the office trailer, on a weatherproof bulletin board, or other accessible location acceptable to the Engineer. The Contractor shall be responsible for seeing that these procedures are followed. Submit the Solid Waste Disclosure Form for Construction Sites to the Engineer within 21 calendar days of date of award. Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer monthly. This should also include documentation from any intermediary facility where solid waste is handled or processed.
 2. **Hazardous Waste**
Dispose all hazardous waste materials in the manner specified by local or State regulations and by the manufacturer. The Contractor's site personnel shall be instructed in these practices and shall be responsible for seeing that these practices are followed
 3. **Sanitary Waste**
Collect all sanitary waste from the portable units a minimum of once per week, or as required. Position sanitary facilities where they are secure and will not be tipped over or knocked down.
- c. **EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:**
1. For projects with an NPDES Permit for Construction Activities, inspect at the following intervals. For construction areas discharging to nutrient or sediment impaired waters, inspect all control measures at least once each week and within 24 hours of any rainfall event of 0.25 inches or greater within a 24 hour period. For construction areas discharging to waters not impaired for nutrient or sediments, inspect all control measures weekly. Inspections are only required during the project's normal working hours. The discharge point water classification may be found in the SWPPP.
 2. For projects without an NPDES Permit for Construction Activities, inspect all control measures weekly.
 3. Maintain all erosion and sediment control measures in good

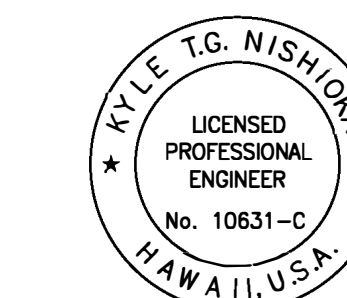
1. Remove built-up sediment from silt fence when it has reached one-third the height of the fence. Remove sediment from other perimeter sediment control devices when it has reached one-half the height of the device.
2. Inspect silt screen or fence for depth of sediment, tears, to verify that the fabric is securely attached to the fence posts or concrete slab and to verify that the fence posts are firmly in the ground. Inspect and verify the bottom of the silt screen is buried a minimum of 6 inches below the existing ground.
3. Inspect temporary and permanent seeding and planting for bare spots, washouts and healthy growth.
4. Complete and submit to the Engineer a maintenance inspection report within 24 hours after each inspection.
5. Provide a stabilized construction entrance at all points of exit onto paved roads to reduce vehicle tracking of sediments. Include stabilized construction entrance in the Water Pollution, Dust, and Erosion Control submittals. Minimum length should be 50 feet. Minimum width should be 30 feet. Minimum depth should be 12 inches or as recommended by the soils engineer and underlain with geo-textile fabric. If minimum dimensions cannot be met, provide other stabilization techniques that remove sediment prior to exit. Clean the paved street adjacent to the site entrance daily or as required to remove any excess mud, cold-planned materials, dirt or rock tracked from the site. Do not hose down the street without containing or vacuuming wash water. Cover dump trucks hauling material from the construction site with a tarpaulin. Remove sediment tracked onto the street, sidewalk, or other paved area by the end of the day in which the track-out occurs.
6. Include designated Concrete Washout Area(s) in the Water Pollution, Dust, and Erosion Control submittals.
7. Submit the name of a specific individual designated responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.
8. Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. They shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.
9. Contain, remove, and dispose slurry generated from saw cutting of pavement in accordance with approved BMP practices. Do not allow discharge into the drainage system or State waters.
10. For projects with an NPDES Permit for Construction Activities, immediately initiate stabilizing exposed soil areas upon completion of earth-disturbing activities for areas where earth-disturbing activities have permanently or temporarily ceased.

Earth-disturbing activities have permanently ceased when clearing and excavation within any area of the construction site that will not include permanent structures has been completed.

Earth-disturbing activities have temporarily ceased when clearing, grading, and excavation within any area of the site that will not include permanent structures will not resume (i.e., the land will be idle) for a period of 14 or more calendar days, but such activities will resume in the future. For construction areas discharging into waters not impaired for nutrients sediments, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities. For construction areas discharging into nutrient or sediment impaired waters, complete initial stabilization within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities. Classification of water at the discharge point may be found in the SWPPP.

For projects without an NPDES Permit for Construction Activities, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities.

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



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1 Definitions of the Hawaii Administrative Rules, "Professional Engineers, Architects, Surveyors, and Landscape Architects.")

Kyle Nielson 4/30/202

NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**WATER POLLUTION AND
EROSION CONTROL NOTES**

Kalaniana'ole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)

Scale: As Noted Date: July 2025

WATER POLLUTION AND EROSION CONTROL NOTES CONT.

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

1. Materials Pollution Prevention Plan

- a. Applicable materials or substances listed below are expected to be present onsite during construction. Other materials and substances not listed below shall be added to the inventory.

Concrete	Cleaning Solvents
Detergents	Wood
Herbicides and Pesticides	Tar
Curing Compounds	Petroleum Based Products
Fertilizers	Adhesives

- b. Use Material Management Practices to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff. Make an effort to store only enough product as is required to do the job.
- c. Store all materials stored onsite in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.
- d. Keep products in their original containers with the original manufacturer's label.
- e. Do not mix substances with one another unless recommended by the manufacturer.
- f. Whenever possible, use a product up completely before disposing of the container.
- g. Follow manufacturer's recommendations for proper use and disposal.
- h. Conduct a daily inspection to ensure proper use and disposal of materials onsite.

2. Hazardous Material Pollution Prevention Plan

- a. Keep products in original containers unless they are not resealable.
- b. Retain original labels and Safety Data Sheets (SDS), formerly Material Safety Data Sheets (MSDS).
- c. Dispose of surplus products according to manufacturers' instructions and local and State regulations.

3. Onsite and Offsite Product Specific Plan

The following product specific practices shall be followed onsite:

- a. **Petroleum Based Products:**
Monitor all onsite vehicles for leaks and perform regular preventive maintenance to reduce the chance of leakage. Store petroleum products in tightly sealed containers which are clearly labeled. Apply asphalt substances used onsite according to the manufacturer's recommendation.
- b. **Fertilizers:**
Apply fertilizers used only in the minimum amounts recommended by the manufacturer and federal, state, and local requirements. Avoid applying just before a heavy rain event. Apply at the appropriate time of year for the location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth. Once applied, work fertilizer into the soil to limit exposure to storm water. Do not apply to storm conveyance channels with flowing water. Storage shall be in a covered shed or in an area where fertilizer will not come into contact with precipitation or stormwater. Transfer the contents of any partially used bags of fertilizer to a sealable plastic bin to avoid spills.

- c. **Paints:**
Seal and store all containers when not required for use. Do not discharge excess paint to the drainage system, sanitary sewer system, or State waters. Dispose properly according to manufacturers' instructions and State and local regulations.

- d. **Concrete Trucks:**
Washout or discharge concrete truck drum wash water only at a designated site as far as practicable from storm drain inlets or State waters. Do not discharge water in the drainage system or State waters. Disposal by percolation is prohibited. Clean disposal site as required or as requested by the Engineer.

4. Spill Control Plan

- a. Post a spill prevention plan to include measures to prevent and clean up each spill.
- b. The Contractor shall be the spill prevention and cleanup coordinator. Designate at least three site personnel who shall receive spill prevention and cleanup training. These individuals shall each become responsible for a particular phase of prevention and cleanup. Post the names of responsible spill personnel in the material storage area on a weatherproof bulletin board or other accessible location acceptable to the Engineer and in the office trailer onsite.

- c. Clearly post manufacturers' recommended methods for spill cleanup. Make site personnel aware of the procedures and the location of the information and cleanup supplies.

- d. Keep ample materials and equipment necessary for spill cleanup in the material storage area onsite.

- e. Clean up all spills immediately after discovery.

- f. Keep the spill area well ventilated. Personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

- g. Report spills of toxic hazardous material to the appropriate State or local government agency, regardless of the size. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, the Contractor shall notify the Engineer as soon as the Contractor has knowledge of the discharge. The Engineer will notify the National Response Center (NRC) at (800)424-8802, the Clean Water Branch during regular business hours at (808)586-4309, and the Hawaii State Hospital Operator at (808)247-2191 and the Clean Water Branch (DOH-CWB) via email at cleanwaterbranch@doh.hawaii.gov during non-business hours immediately. The Contractor shall also provide to the Engineer, within 7 calendar days of knowledge of the release, a description of the release, the circumstances leading to the release, and the date of the release. The Engineer will provide this information to the DOH-CWB. The Engineer will provide information to the NRC if requested.

E. PERMIT REQUIREMENTS:

1. A National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activities of one acre or more of disturbed area is required for this project. If the Contractor requires extra land disturbance, including staging and storage areas, that is not covered by the NPDES Permit obtained by the State, the Contractor shall be responsible for obtaining the required NPDES Construction Activities Permit to cover this additional disturbed area. See Hawaii Administrative Rules Chapter 11-55, Appendix C for definition of land disturbance. The Contractor's attention is directed to the applicable NPDES Permit documents on the bid package compact disc.

3. Comply with all applicable State and Federal Permit conditions. Permits may include, but not limited to the following:

- a. NPDES Permit for Construction Activities
- b. NPDES Permit for Construction Dewatering
- c. NPDES Permit for Hydrotesting Waters
- d. Water Quality Certification
- e. Stream Channel Alteration Permit
- f. Section 404 Army Corps of Engineer Permit

F. SITE-SPECIFIC BMP REQUIREMENTS:

Each BMP below is referenced to the corresponding section of the current HDOT Construction Best Management Practices Field Manual and appropriate Supplemental Sheets. The Manual may be obtained from the HDOT Statewide Stormwater Management Program Website at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/> under Construction Best Management Practices Field Manual. Supplemental BMP sheets are located at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/> under Concrete Curing and Irrigation Water.

The requirements for Water Pollution, Dust, and Erosion Control submittals are included in Section 209 of the Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and applicable Special Provisions. A list of pollutant sources and corresponding BMP used to mitigate the pollutants are included in Section 209 of the Special Provisions under Appendix A.

Follow the requirements below:

1. Protect all Drainage Inlets receiving runoff from disturbed areas (SC-1).
2. Contain on-site runoff using Perimeter Sediment Controls
- a. SC-7 Silt Fence or Filter Fabric Fence
- b. SC-2 Vegetated Filter Strips and Buffers
- c. SC-6 Compost Filter Berm/Sock
- d. SC-8 Sandbag Barrier
- e. SC-9 Brush or Rock Filter

3. Control offsite runoff from entering construction area
- a. EC-3 Run-On Diversion
- b. EC-5 Earth Dike, Swales, and Ditches

4. Incorporate applicable Site Management BMP

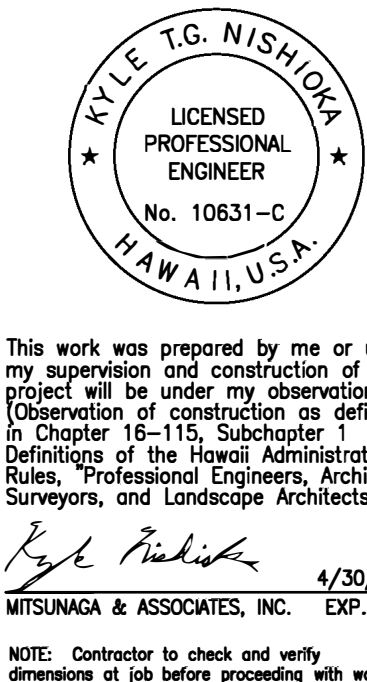
- a. SM-1 Construction BMP Training
- b. SM-2 Material Storage and Handling
- c. SM-3 Stockpile Management
- d. SM-6 Solid Waste Management
- e. SM-7 Sanitary Waste Management
- f. SM-9 Hazardous Materials and Waste Management
- g. SM-10 Spill Prevention and Control
- h. SM-11 Vehicle and Equipment Cleaning
- i. SM-12 Vehicle and Equipment Maintenance
- j. SM-13 Vehicle and Equipment Refueling
- k. SM-14 Scheduling
- l. SM-15 Location of Potential Sources of Sediment
- m. SM-16 Staging Area
- n. SM-17 Preservation of Existing Vegetation
- o. SM-19 Dust Control

5. Contain pollutants within the Construction Staging/Storage Area BMP with applicable Perimeter Sediment Controls and Site Management BMP. Include a Stabilized Construction Entrance/Exit (SC-11) for all areas which exit onto a paved street. Restrict vehicle access to these points.

6. Manage Concrete Waste including installing a Concrete Washout Area (SM-4) and properly disposing of Concrete Curing Water (California Stormwater BMP Handbook NS-12 Concrete Curing).

7. Remove saw cut slurry and hydrodemolition water from the site by vacuuming. Provide storm drain protection and/or perimeter sediment controls during saw cutting and hydrodemolition work.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
WATER POLLUTION AND EROSION CONTROL NOTES	
Kalaniana'ole Hwy Culvert Improvements	
Oahu, Hawaii	
Project No. NH-072-1(057)	
Scale: As Noted	Date: July 2025

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2026	55	102

EROSION AND SEDIMENT CONTROL NOTES

- The Contractor shall remove all silt and debris resulting from his work and deposited in drainage facilities, roadways and other areas. The costs incurred for any necessary remedial action by the Engineer shall be payable by the Contractor.
- Soil stabilization:
 - Pre-construction vegetative ground cover shall not be destroyed, removed, or disturbed more than twenty calendar days prior to site disturbance.
 - Disturbed areas left unworked or unfinished for more than 14 calendar days will be stabilized as necessary according to soil conditions.
 - In disturbed areas where surface conditions consist of erodible soils, the surface will be stabilized with grassing.
 - In disturbed areas where surface conditions are bare rock, or Non-erodible soils, no additional stabilization will be applied.
- Erosion control measures shall remain in place until all disturbed areas are reestablished with ground vegetation or other means of ground stabilization.
- Contractor shall stop all construction activities in the work area when storm runoff is present except to prevent and control soil erosion. All cost to repair the erosion control measures due to storm runoff and/or regular maintenance shall be done at no cost to the State.

TEMPORARY SILT FENCE NOTES

- Filter fabric shall be approved by the Engineer, and shall be installed with a support net of polyester netting or approved equal. The filter fabric shall be a minimum of 36" wide and the support net a minimum of 30".
- If silt fence is obtained from a manufacturer as a package (i.e., fabric attached to posts), the manufacturer's installation instructions shall be adhered to.
- Posts shall be metal, cross section of posts shall be substantial enough to support a loaded silt fence without bending.
- Temporary silt fence shall be installed prior to beginning of grading work, and shall not be removed until exposed areas are stabilized.
- Location of silt fence is provided as general guideline only. Provide breaks in fence as necessary to ensure clear access into and out of existing road. Adjust limits of fence to conform to existing features as necessary to ensure protection from sediment and erosion damage.

STREAM PROTECTION NOTES

- Contractor to submit dewatering shop drawings for each area that requires dewatering to engineer.
- Stream flow shall not be pumped.
- Equipment to be used in-stream shall be cleaned prior to work below ordinary high water.
- Equipment fueling, maintenance and staging will occur at least 100 feet from the stream.
- Contractor shall submit a spill prevention plan. Contractor shall have on site absorbent pads and certified personnel during equipment operation.

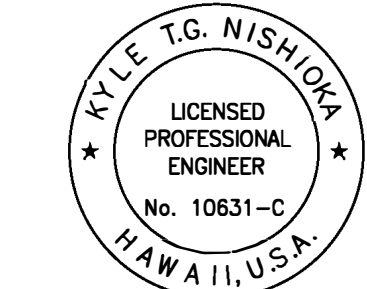
CONSTRUCTION ACCESS NOTES

- The entrance will be maintained in a condition that will prevent tracking or flowing of sediment onto public rights-of-way. This may require top dressing, repair and/or cleanout of any measures used to trap sediment.
- When necessary, wheels shall be cleaned prior to entrance onto public right-of-way.
- When washing is required, it shall be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.

CONSTRUCTION PHASING NOTES

- Any requests for adjustments in sequence of construction phasing shall be submitted in writing and approved by the engineer. The contractor's attention is directed to Subsection 108.08 - Failure to Complete on Time and Liquidated Damages of the Special Provisions.
- Relocation and/or removal of Construction signs, posts and portable concrete barriers used for Construction Phasing shall be considered incidental to their respective contract items.
- All Construction signs and delineators for the purposes of Construction Phasing shall become the property of the Contractor at the completion of the project.
- The Contractor shall delete the use of the ground anchorage steel pin for State Furnished Portable Concrete Barrier.
- Portable Steel Barriers not in use during construction work shall not be stockpiled or otherwise stored within the highway rights-of-way except at locations approved by the Engineer.
- The Contractor shall periodically wash down signs, delineators and portable concrete barriers called for in the Construction Phasing Plans as deemed necessary by the Engineer.
- The location of pavement markings and signs, delineators and portable concrete guardrail panels used used in the Construction Phasing shall be as shown on the plans and/or as determined in the field by the Engineer.
- Work required in the State's Construction Phase Plans will be paid under applicable contract items or as otherwise specified herein. All other traffic control work shall be in accordance with Section 645 - Traffic Control. Work required for lane closures during the working day will not be paid for but shall be considered incidental as required under Section 645 of the Special Provisions shall be installed on all approaches to construction areas. This work shall be considered incidental to the various contract items.
- Install Steady Burn Amber Lamps on portable concrete barrier @ 20'0 o.c. Installing, maintaining and changing batteries of the Portable Mounted Steady Burn Amber Lamps shall be considered incidental to Item No. 606.4230 - State Furnished Portable Concrete Barrier (Intermediate Panel).
- The Type II Barricades with steady burn amber lamp during Construction Phase shall be considered incidental to the various contract items.
- Sediment and erosion control BMP measures shown in the contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete sediment and erosion control plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the contract documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0110, Installation, Maintenance, Monitoring, and removal of BMP.

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



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Kyle T.G. Nishio 4/30/2026
MITSUNAGA & ASSOCIATES, INC. EXP. DATE

NOTE: Contractor to check and verify dimensions at job before proceeding with work.

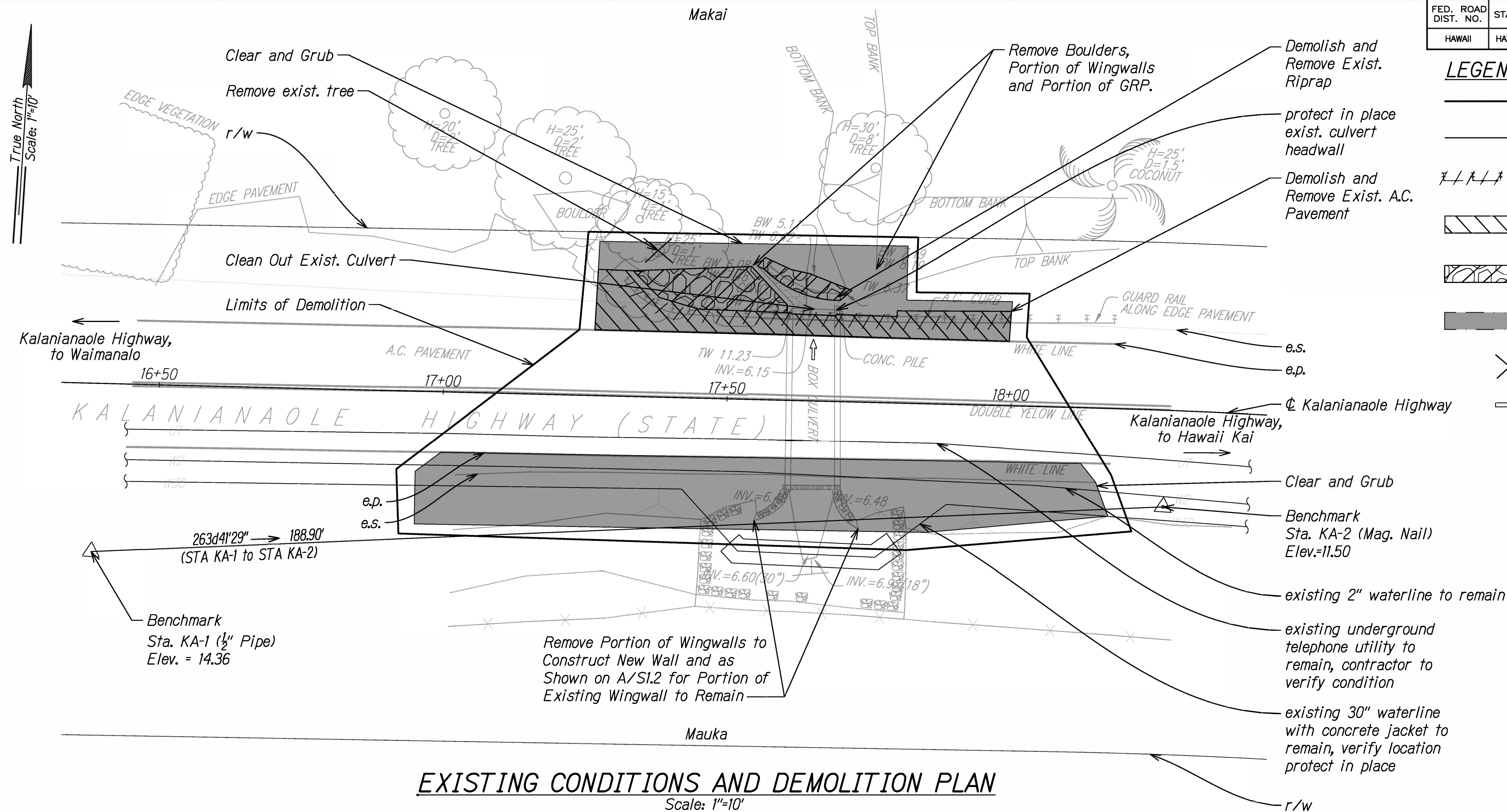
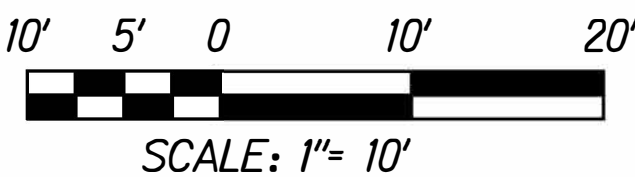
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
EROSION PREVENTION AND SEDIMENT CONTROL NOTES	
Kalaniana'ole Hwy Culvert Improvements Oahu, Hawaii	
Project No. NH-072-1(057)	
Scale: As Noted	Date: July 2025

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2026	56	102

LEGEND

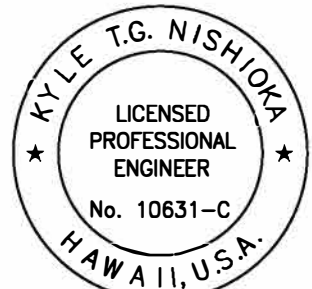
- Limits of Demolition
- Property Line
- Demolish and Remove Exist. Guardrail
- Demolish and Remove Exist. A.C. Pavement
- Demolish and Remove Exist. Riprap
- Clear and Grub
- Remove Exist. Tree
- Direction of Flow

GRAPHIC SCALE:



Demolition Notes

- All structures, pavement markings and vegetation within the limit of demolition shall be demolished and disposed of at an approved landfill unless stated otherwise on the plan.
- Any Contractor related activities that may disturb or damage in place asbestos containing transite pipe shall be conducted in accordance with applicable federal, state and local regulations.
- The Contractor shall provide and maintain continuous utility service to all existing occupied buildings/facilities affected by the project.
- All erosion control measures shall be in place prior to and properly maintained during the demolition work.
- All existing manholes and utility boxes within the demolished pavement or sidewalk areas which are to remain in place shall be adjusted to match the finish grade.
- Existing utilities to be removed shall be removed, and the resulting excavation should be properly backfilled with select granular fill material moisture-conditioned to above optimum moisture content, placed in 6 to 8-inch level loose lifts and compacted to a minimum of 90 percent relative compaction. Utilities to be abandoned in-place under the proposed structure shall be filled with lean concrete, pumped under low pressure.
- In general, all existing structures, hardscapes, utilities or landscaping within the proposed work shall be inclusive in the demolition and removal work as required for proposed work and bid as such. Any questions regarding the demolition and removal, shall be clarified with the owner's representative prior to proceeding with that work.
- Existing features (i.e. pavement, curbs, walkways, etc.) which are to remain, but affected by demolition or construction operations, shall be restored to equal or better conditions as approved by the state.
- All salvageable items shall be considered state property. The Contractor shall coordinate with Engineer to determine the salvageable items.



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4/30/2026
MITSUNAGA & ASSOCIATES, INC. EXP. DATE
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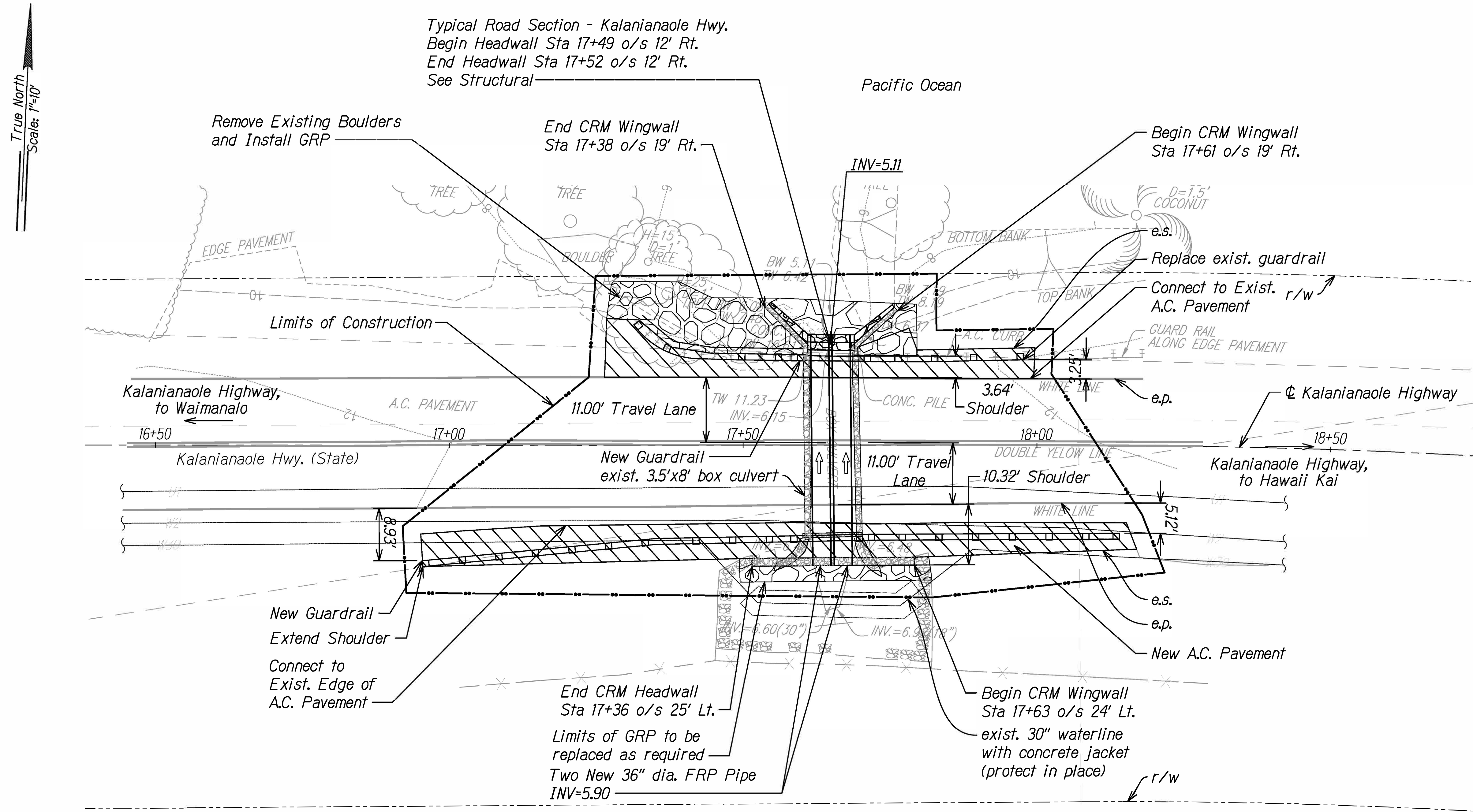
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**EXISTING CONDITIONS
AND DEMOLITION PLAN**
Kalaniana'ole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)
Scale: As Noted Date: July 2025
SHEET No. **C07** OF **24** SHEETS

SURVEY PLATTED BY	DATE
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2026	57	102

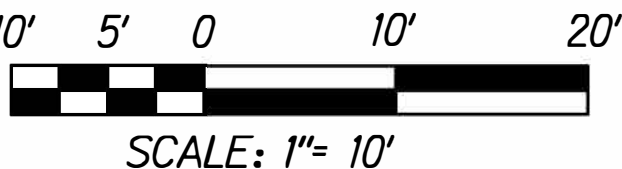
LEGEND

- Limits of Construction
- Property Line
- □ □ □ New Guardrail
- ▨ New A.C. Pavement
- ▩ New CRM Wingwall
- ▩ New GRP
- Direction of Flow



GENERAL SITE PLAN
Scale: 1"=10'

GRAPHIC SCALE:



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Kyle Nishida 4/30/2026
MITSUNAGA & ASSOCIATES, INC. EXP. DATE
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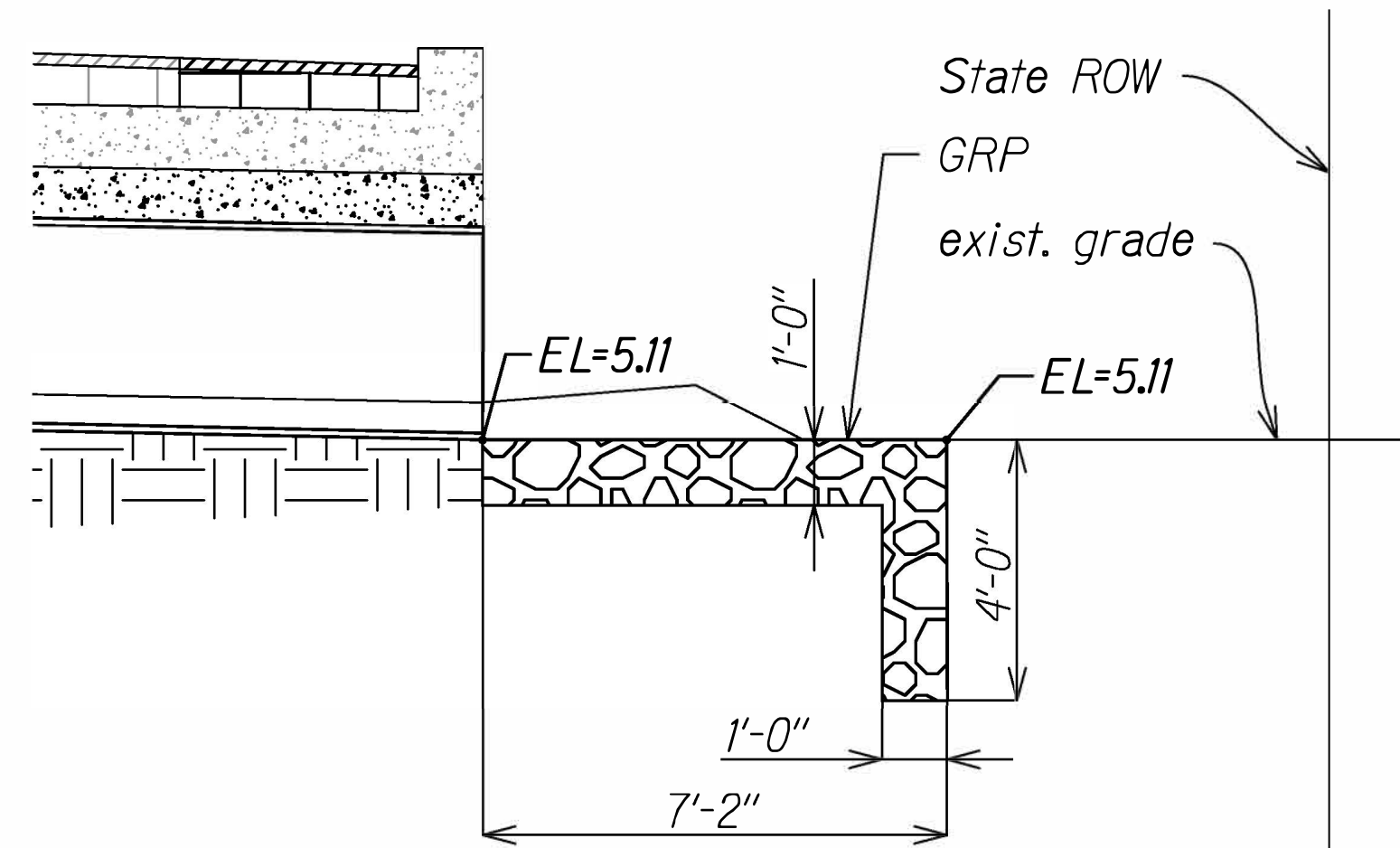
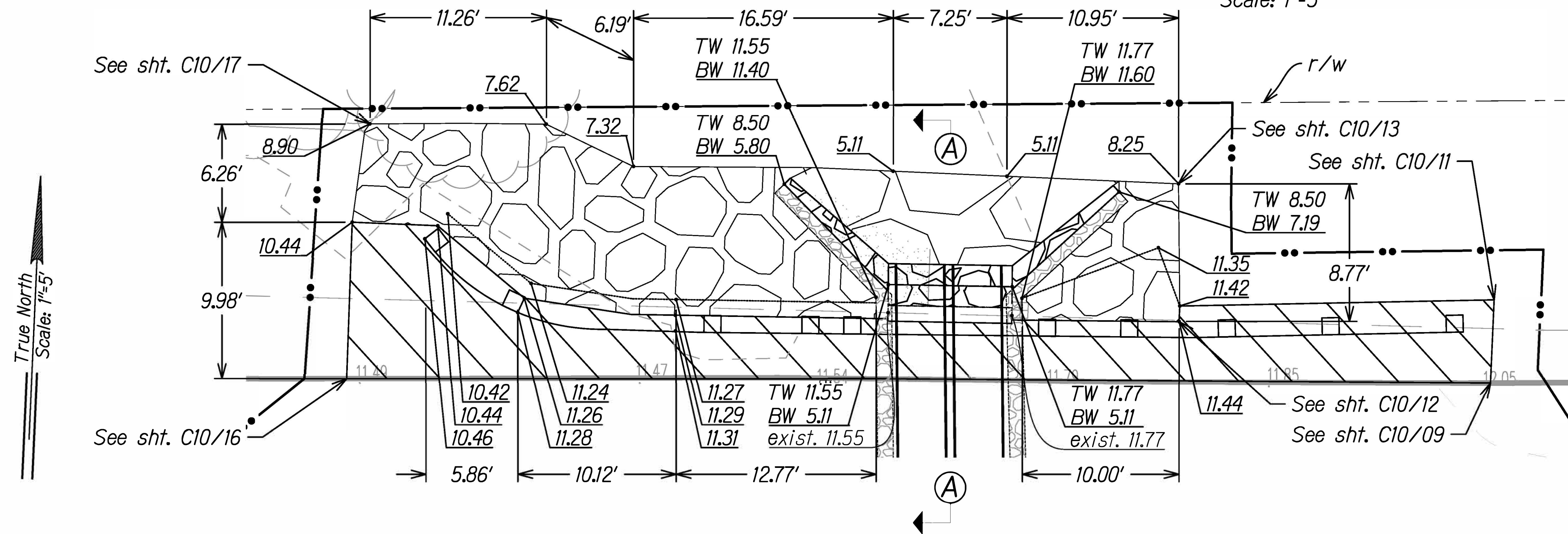
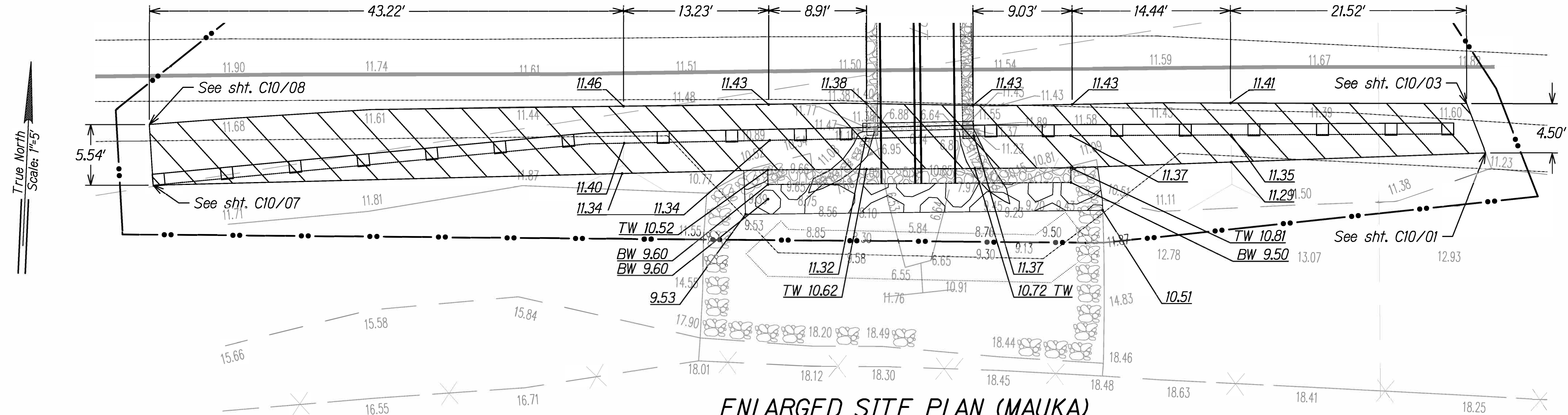
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL SITE PLANS
Kalanianaʻole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)
Scale: As Noted Date: July 2025

SHEET No. **C08** OF **24** SHEETS

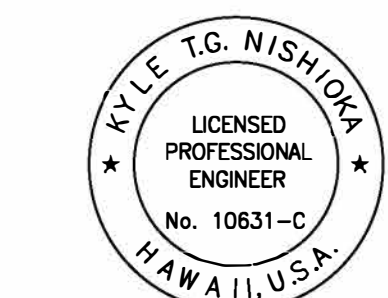
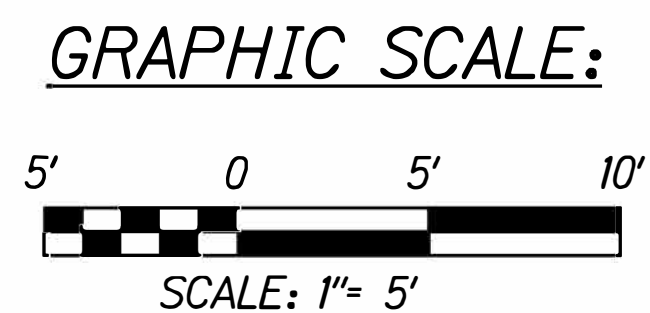
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ORIGINAL PLAN	
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-(1057)	2026	58	102



- LEGEND**
- Limits of Construction
 - Right-of-Way
 - Guardrail
 - A.C. Pavement
 - GRP
 - Direction of Flow

ENLARGED SITE PLAN (MAKAI)
Scale: 1"=5'



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1, Definitions of the Hawaii Administrative Rules, Professional Engineers, Architects, Surveyors, and Landscape Architects.)
4/30/2026
MITSUNAGA & ASSOCIATES, INC. EXP. DATE
NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ENLARGED SITE PLANS
Kalaniana'ole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-(1057)
Scale: As Noted Date: July 2025

SHEET No. **C09** OF **24** SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2026	59	102

- Construction Sequence:
1. Install erosion control measures as shown on sht. C11.
 2. Clear and grub work area within right of way, see sht. C07.
 3. Clean debris from box culvert and adjacent to inlet and outlet.
 4. Demolish and remove portion of Mauka and Makai wingwalls, see sht. C07.
 5. Install two 36" diameter FRP pipe.
 6. Extend Mauka shoulder area and install new culvert headwall, see structural plans.
 7. Install new Makai headwall, see structural plans.
 8. Fill voids between FRP pipe and box culvert with CLSM.
 9. Demolish and remove existing Makai guardrail and a.c. pavement, see sht. C07.
 10. Install new Makai guardrail and a.c. pavement section.
 11. Demolish and remove existing Mauka guardrail and a.c. pavement, see sht. C07.
 12. Install new Mauka guardrail and a.c. pavement section.

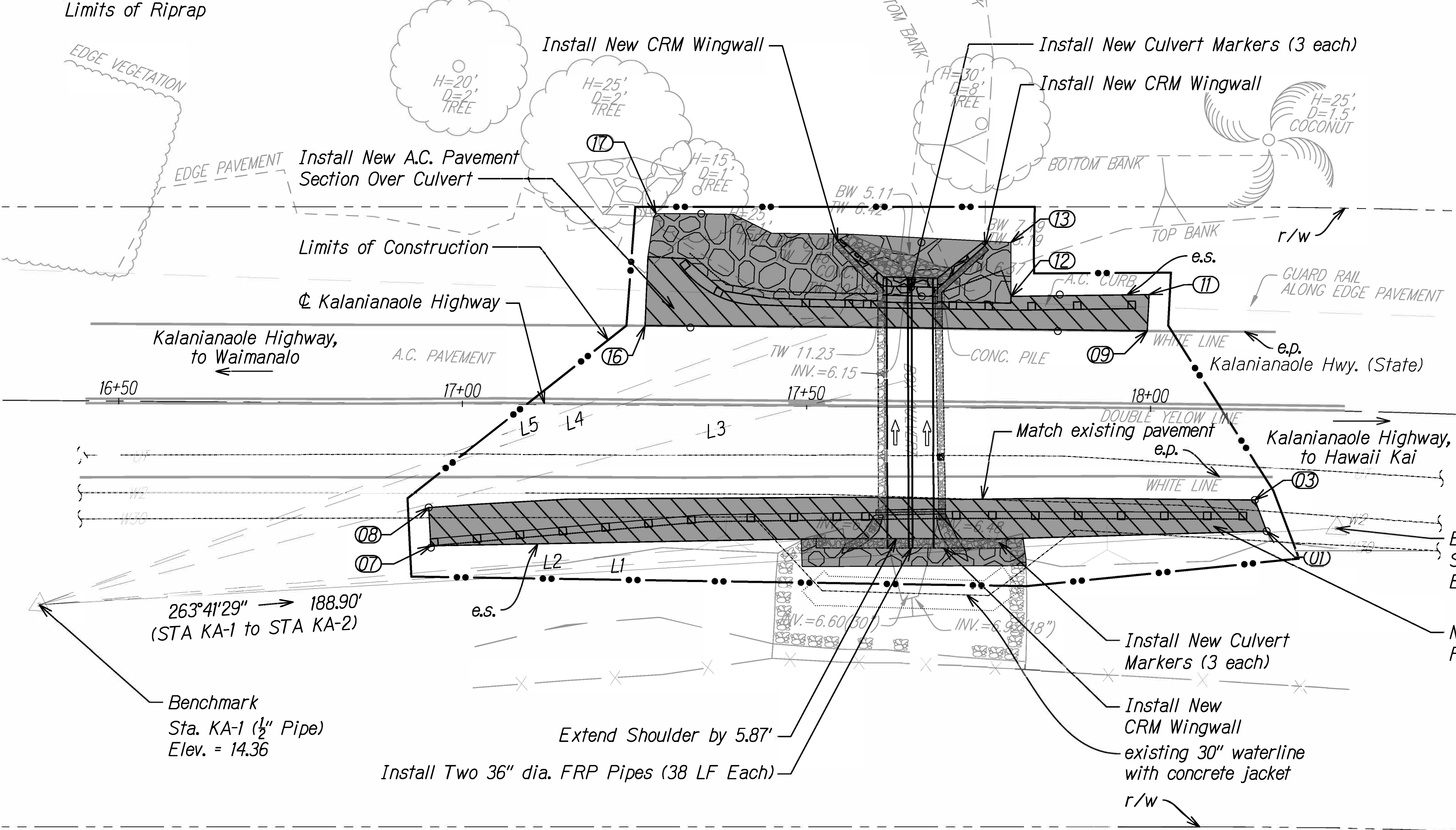


- ⑨ ☒ Kalanianaʻole Highway Sta. 17+86.43 o/s 11.24' Rt.
Limits of New Pavement
- ⑪ ☒ Kalanianaʻole Highway Sta. 17+86.66 o/s 16.54' Rt.
Limits of New Pavement
- ⑫ ☒ Kalanianaʻole Highway Sta. 17+66.59 o/s 16.13' Rt.
Limits of New Pavement
- ⑬ ☒ Kalanianaʻole Highway Sta. 17+66.50 o/s 23.92' Rt.
Limits of Riprap

Pacific Ocean

- ⑯ ☒ Kalanianaʻole Highway Sta. 17+33.01 o/s 11.33' Rt.
Limits of New Pavement
- ⑰ ☒ Kalanianaʻole Highway Sta. 17+34.47 o/s 27.85' Rt.
Limits of Riprap

Azimuth and Distance		
Line #	Length	Direction
L1	140.860	263°9'16.73"
L2	113.320	262°12'12.07"
L3	130.802	252°33'16.21"
L4	137.979	248°07'15.32"
L5	130.604	246°55'13.00"



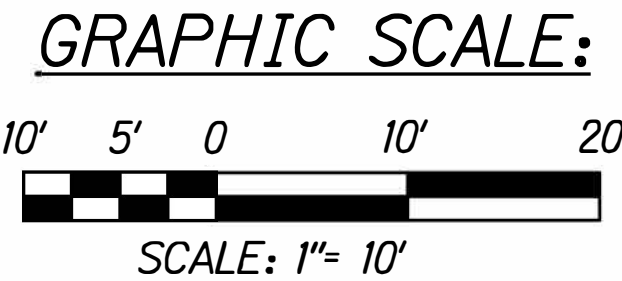
LEGEND

- • — Limits of Construction
- - - Property Line
- □ □ Guardrail
- Work Area
- ▨ New Pavement
- ▨ New GRP
- ➡ Direction of Flow

- ① ☒ Kalanianaʻole Highway Sta. 18+17.05 o/s 17.58' Lt.
Limits of New Pavement
- ③ ☒ Kalanianaʻole Highway Sta. 18+15.26 o/s 13.09' Lt.
Limits of New Pavement

- ⑦ ☒ Kalanianaʻole Highway Sta. 16+95.53 o/s 20.91' Lt.
Limits of New Pavement
- ⑧ ☒ Kalanianaʻole Highway Sta. 16+95.16 o/s 15.10' Lt.
Limits of New Pavement

ROADWAY PLAN
Scale: 1"=10'



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Kyle T.G. Nishiyama 4/30/2026
MITSUNAGA & ASSOCIATES, INC. EXP. DATE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

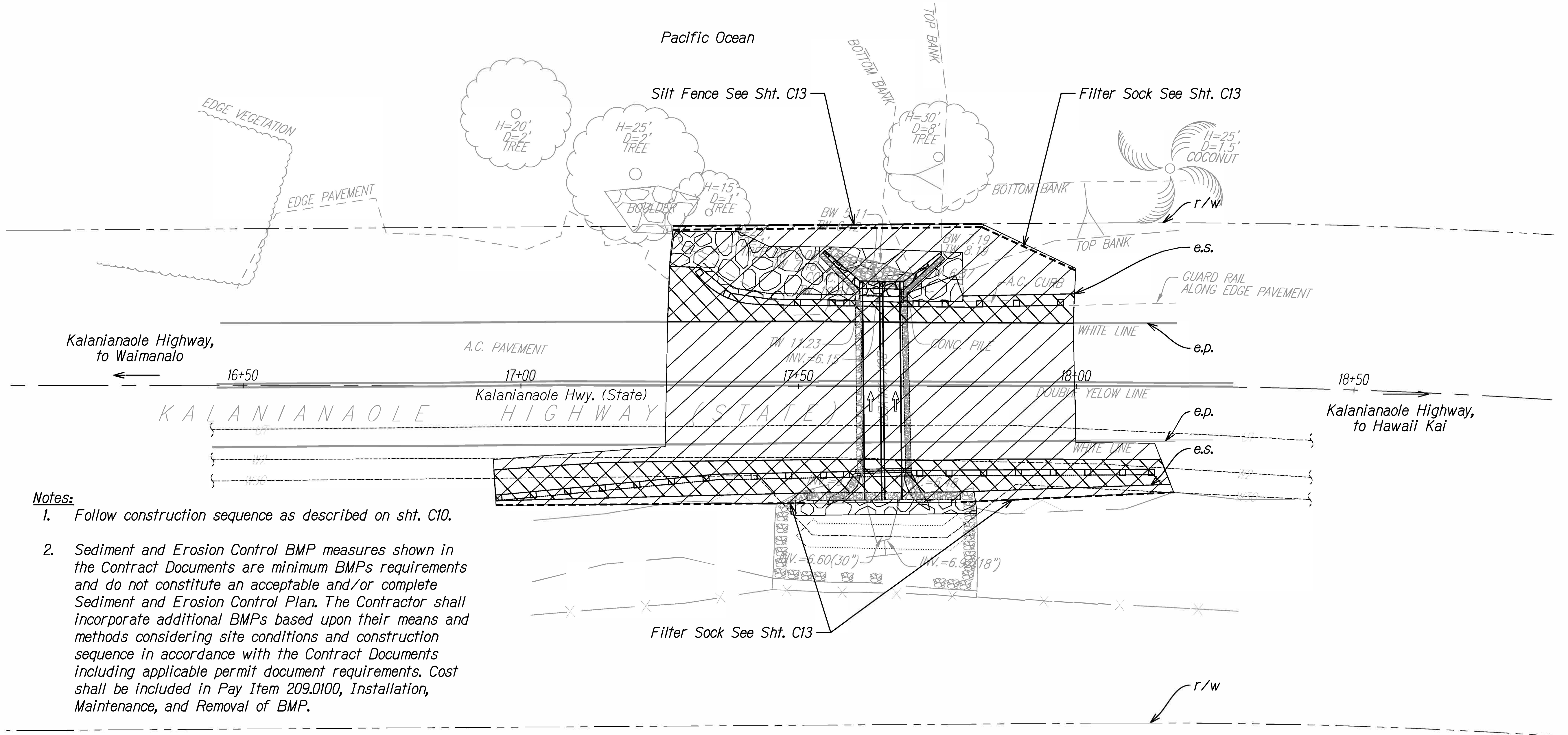
ROADWAY PLAN
Kalanianaʻole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)
Scale: As Noted Date: July 2025

SHEET No. **C10** OF **24** SHEETS

DESIGNED BY	DATE
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	HAWAII	NH-072-1(057)	2026	60	102

True North
Scale: 1"=10'



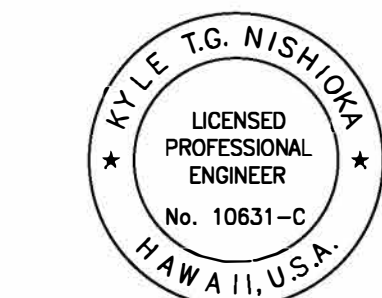
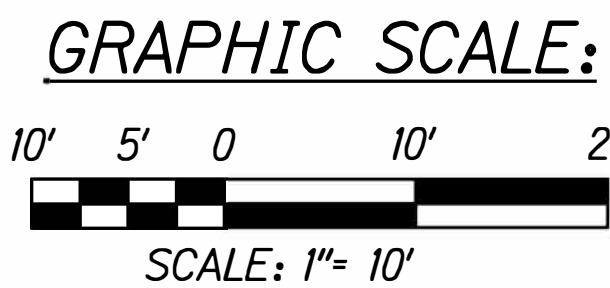
Notes:

1. Follow construction sequence as described on sht. C10.
2. Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100, Installation, Maintenance, and Removal of BMP.

LEGEND

- Work Area
- Property Line
- Filter Sock See Sht. C13
- Silt Fence See Sht. C13
- Direction of Flow

EROSION AND SEDIMENT CONTROL PLAN
Scale: 1"=10'



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1, Definitions of the Hawaii Administrative Rules, Professional Engineers, Architects, Surveyors, and Landscape Architects.)
Kyle T.G. Nishio 4/30/2026
MITSUNAGA & ASSOCIATES, INC. EXP. DATE
NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

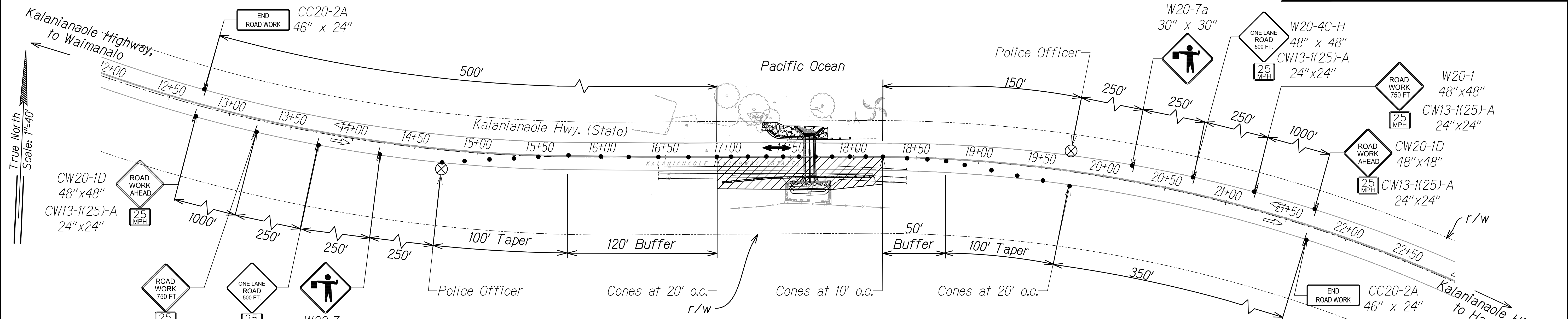
EROSION AND SEDIMENT CONTROL PLAN

Kalanianaʻole Hwy Culvert Improvements
Oahu, Hawaii

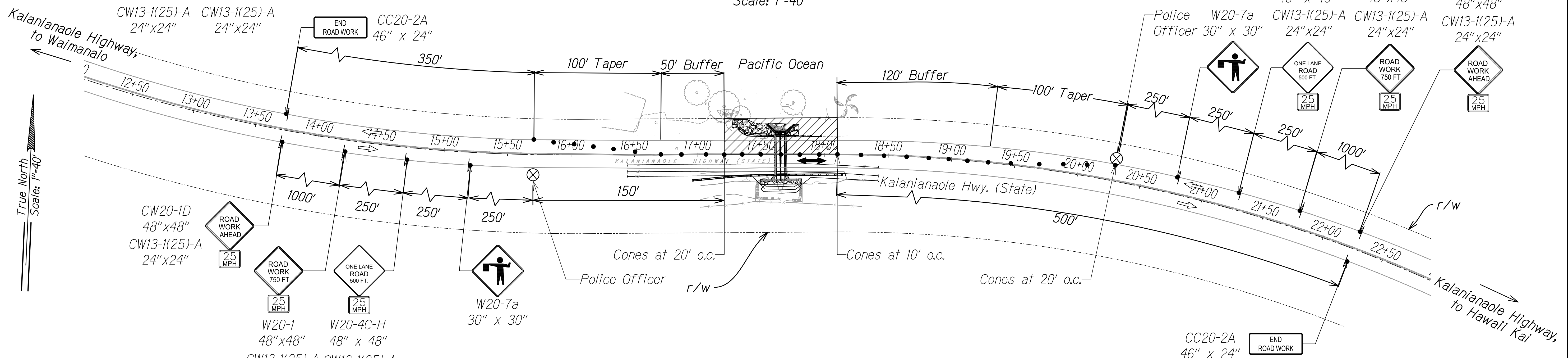
Project No. NH-072-1(057)
Scale: As Noted Date: July 2025

SHEET No. C11 OF 24 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2025	61	102



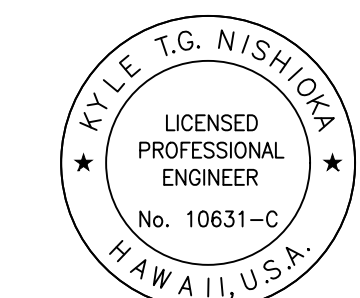
KALANIANA'OLE HIGHWAY TRAFFIC CONTROL PLAN - TYPICAL MAUKA
Scale: 1"=40'



KALANIANA'OLE HIGHWAY TRAFFIC CONTROL PLAN - TYPICAL MAKAI
Scale: 1"=40'

- LEGEND**
- Work Area
 - Traffic Cone
 - Sign
 - Existing Direction of Traffic
 - Proposed Direction of Traffic
 - Police Officer

SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	



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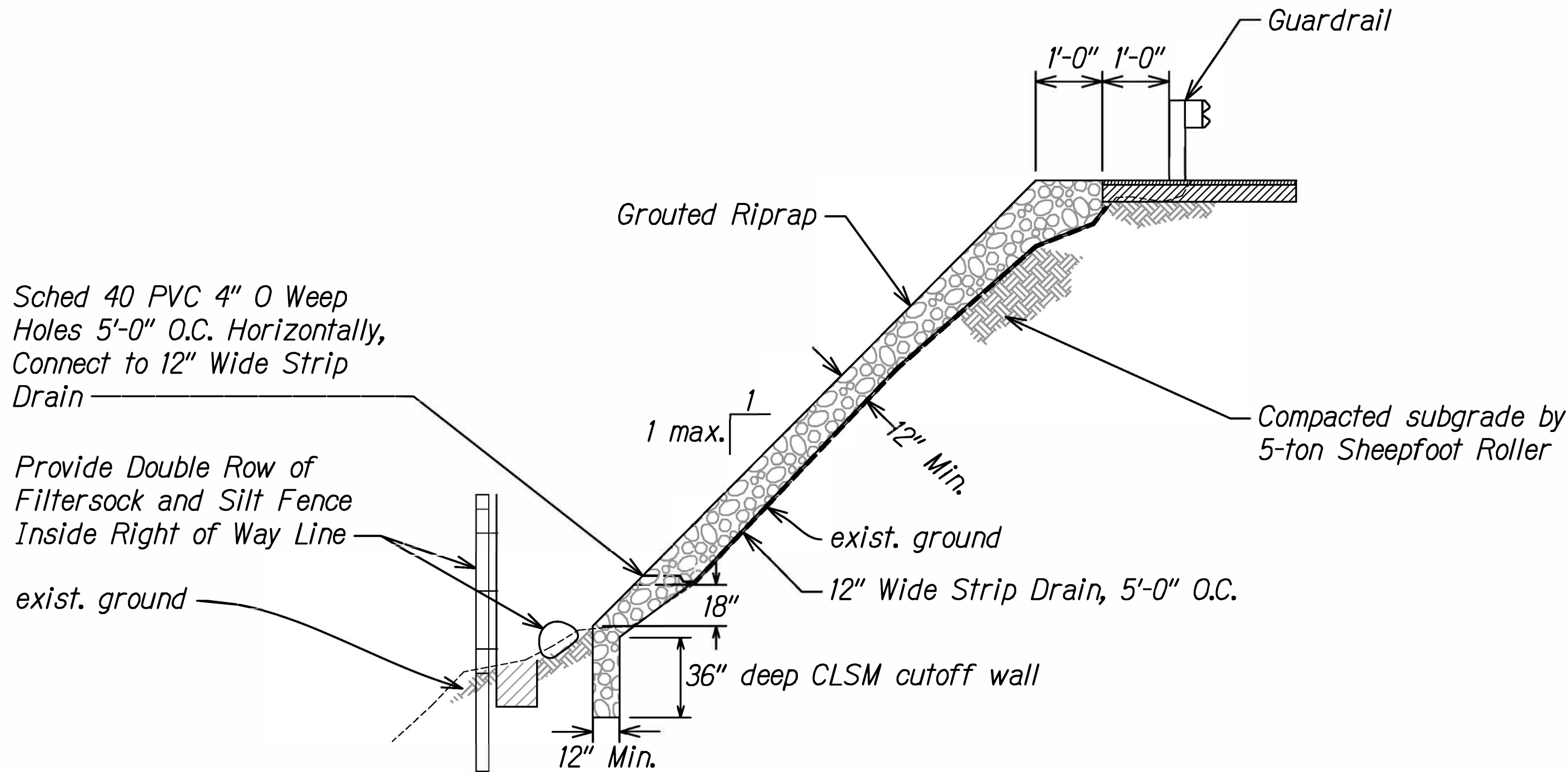
Kyle T.G. Nishio 4/30/2026
MITSUNAGA & ASSOCIATES, INC. EXP. DATE

NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC CONTROL PLAN
Kalaniana'ole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)
Scale: As Noted Date: July 2025

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2026	62	102



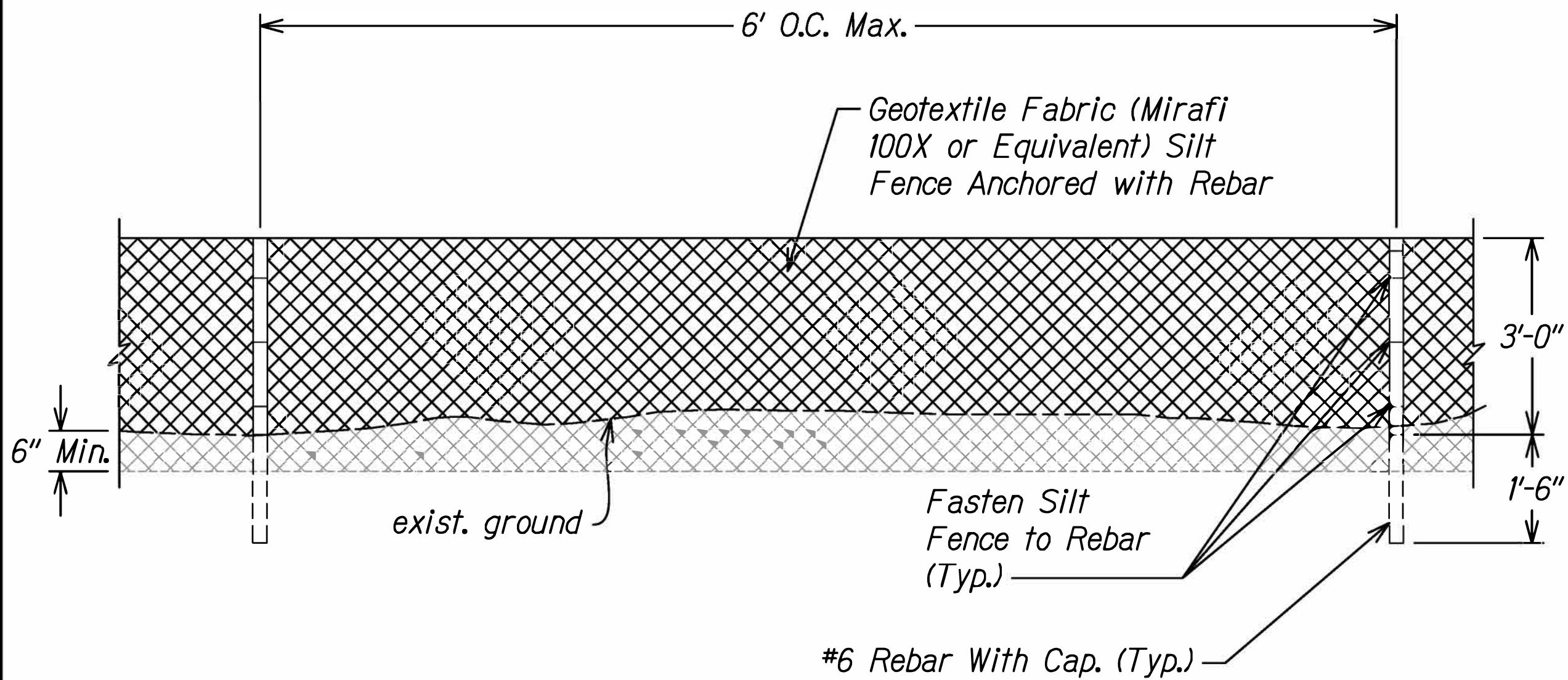
Sched 40 PVC 4" O Weep Holes 5'-0" O.C. Horizontally, Connect to 12" Wide Strip Drain

Provide Double Row of Filtersock and Silt Fence Inside Right of Way Line

exist. ground

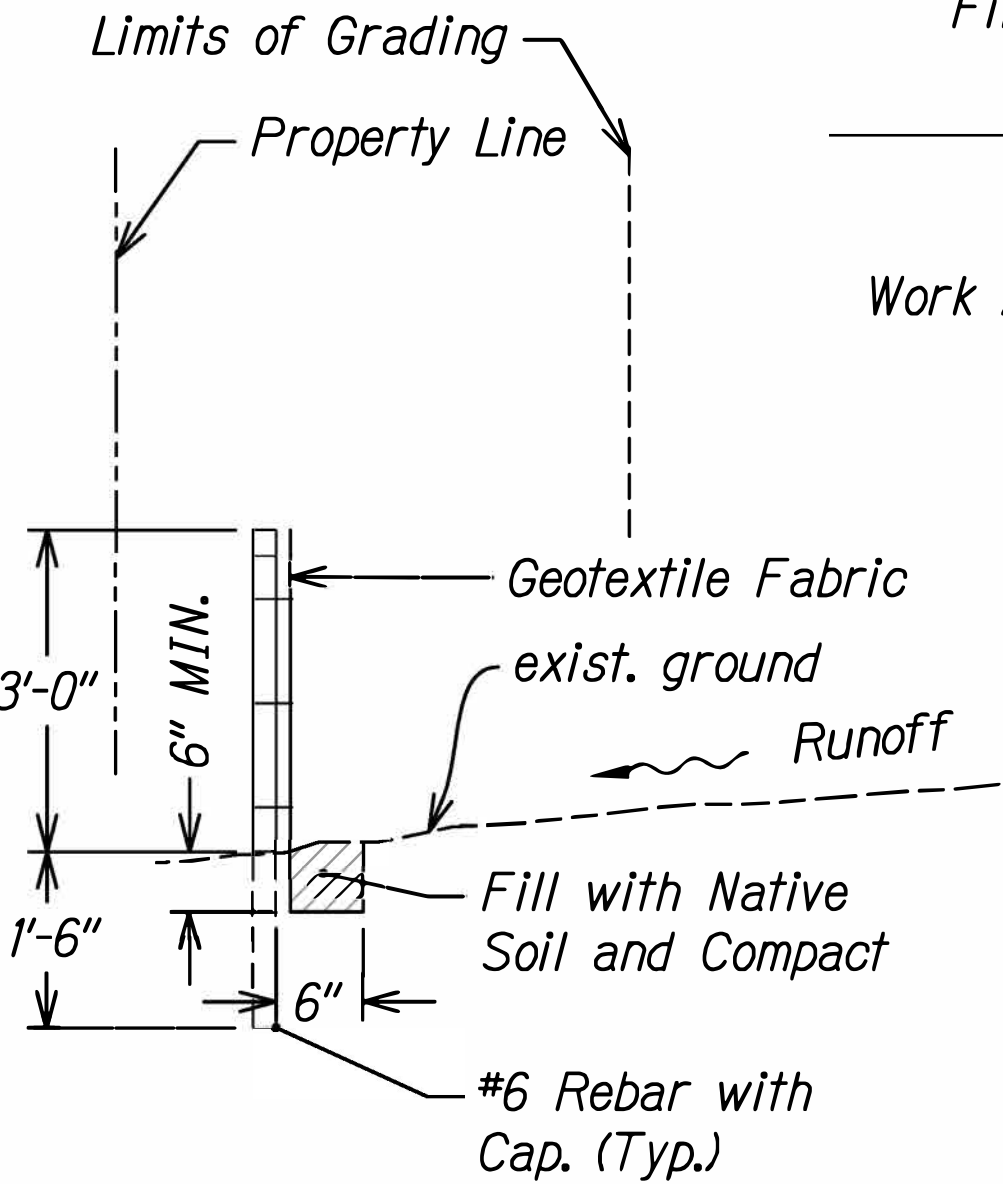
- Notes:
1. Grout f'c (at 28 days) shall be: 3,000 psi. min.
 2. Riprap size shall be:
0-5% greater than 200-lb
50-100% greater than 80-lb
95-100% greater than 20-lb
 3. Cut 4" Weep Holes at 45 degree angle with slant facing downstream.

SLOPE EROSION REPAIR DETAIL
Scale: NTS

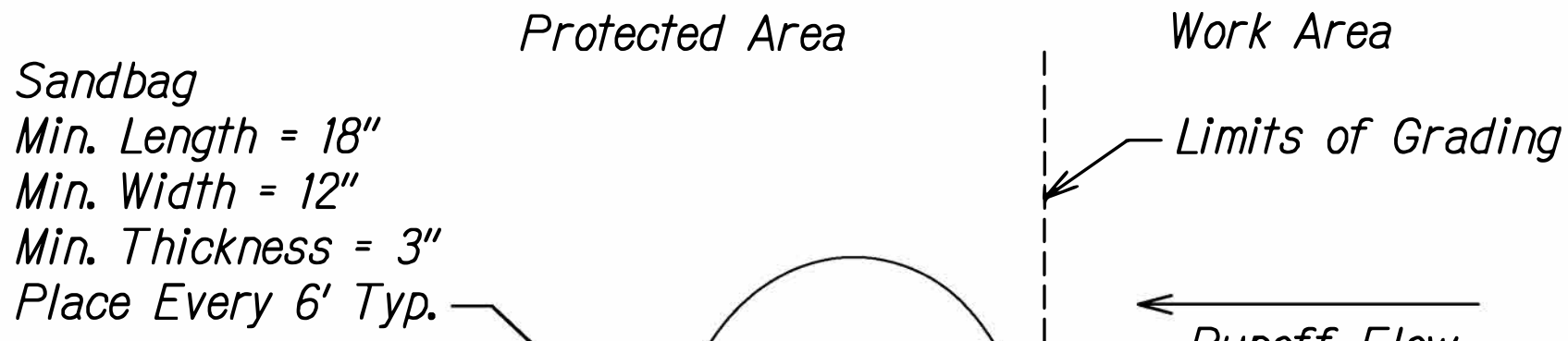


ELEVATION

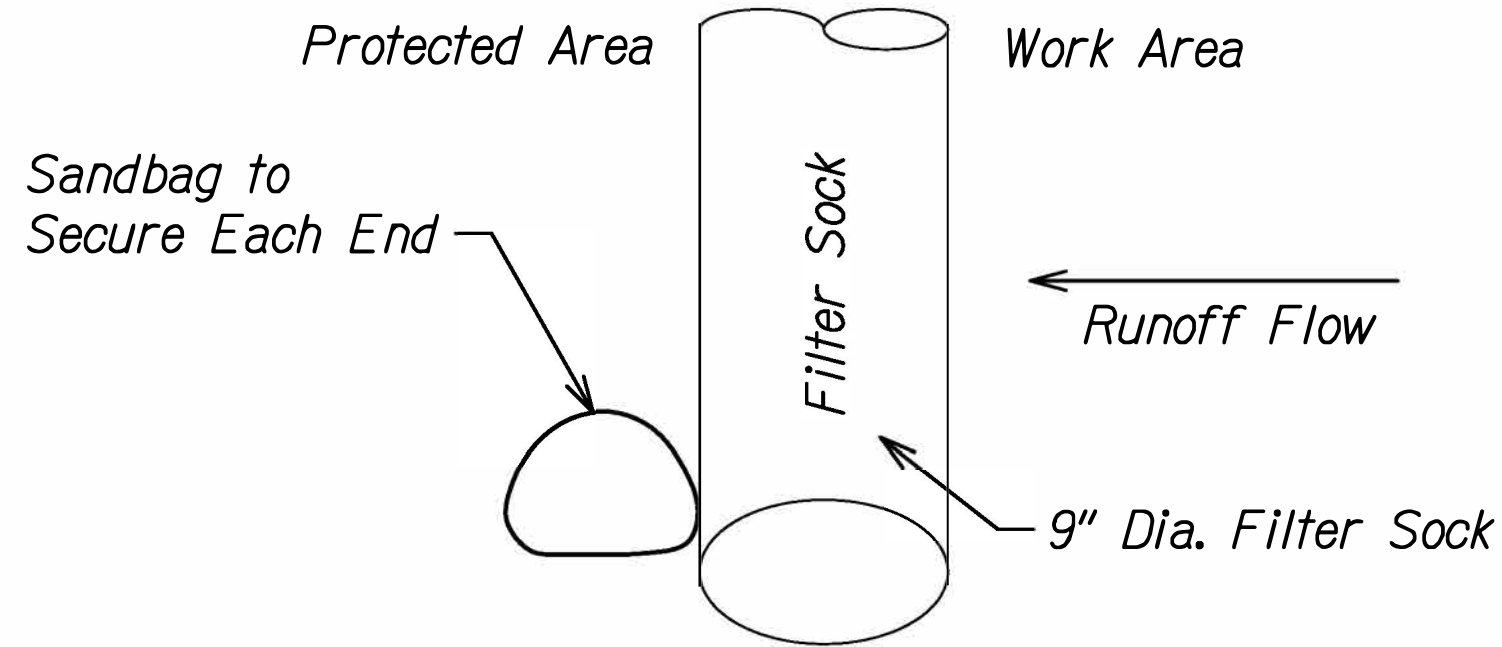
SILT FENCE DETAIL
Scale: NTS



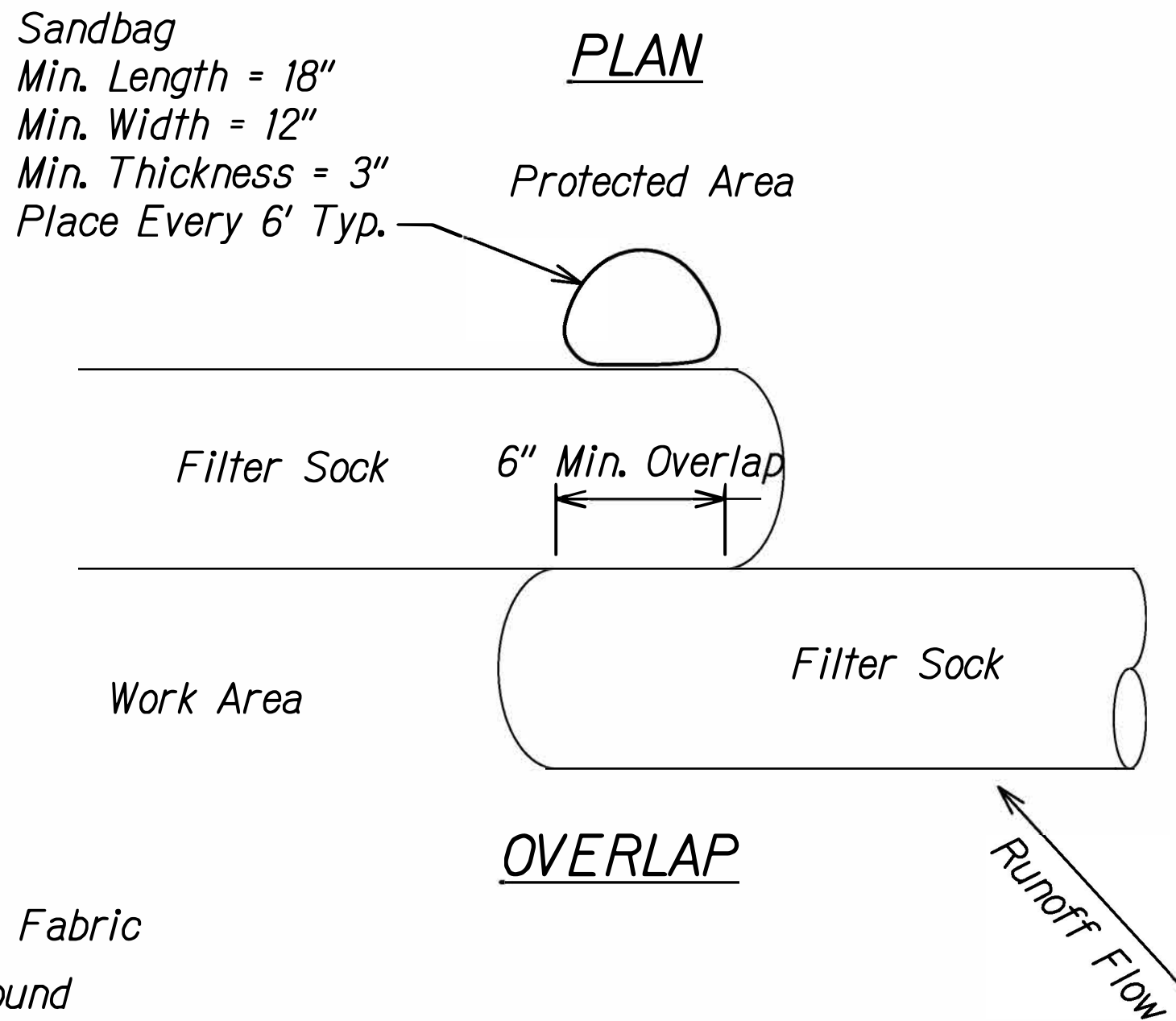
SECTION



SECTION

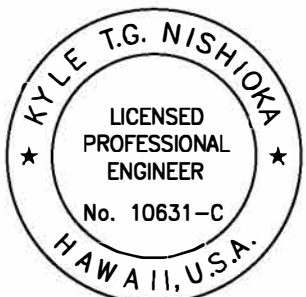


PLAN



OVERLAP

FILTER SOCK DETAIL
Scale: NTS



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115, Subchapter 1, Definitions of the Hawaii Administrative Rules, Professional Engineers, Architects, Surveyors, and Landscape Architects.)
4/30/2026
MITSUNAGA & ASSOCIATES, INC. EXP. DATE
NOTE: Contractor to check and verify dimensions at job before proceeding with work.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SITE DETAILS
Kalaniana'ole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)
Scale: As Noted Date: July 2025

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2025	64	102

STRUCTURAL GENERAL NOTES:

1. General Specifications:

- A. Hawaii Department of Transportation (HDOT) 2005 "Standard Specifications for Road and Bridge Construction", together with Special Provisions prepared for this project.

2. Design Specifications:

- A. American Association of State Highway and Transportation Officials (AASHTO) 2020 "LRFD Bridge Design Specifications", 9th Edition as amended by HDOT document dated August 8, 2014 with subject title "Design Criteria for Bridges and Structures".
- B. HDOT Document dated August 8, 2014 with subject title "Design Criteria for Bridges and Structures" and HDOT memorandum dated January 8, 2018 with subject title "Changes to Design Criteria for Bridges and Structures".

3. Design Loads:

- A. Dead Load: A weight of 25 psf for future wearing surface from curb to curb has been provided for in the design.
- B. Live Load: AASHTO HL-93 Vehicular Live Loading

4. Controlled Low Strength Material (CLSM):

- A. CLSM shall include a mixture of Portland Cement, aggregate, and water proportioned to produce a uniform, flowable mixture that is self-leveling when placed.
- B. CLSM shall be placed by pumps without interruption to the fill line indicated in the drawings without vibration or other means of compaction.
- C. Application of curing compounds or curing methods to CLSM will not be required.
- D. CLSM shall be certified by the manufacturer and include an unconfined 28-day compressive strength test data for each mixture used. Test data shall be obtained within one year of proposed use.

5. Foundation Notes:

- A. The Foundation Design is based upon recommendations contained in the Geotechnical Engineering Exploration report entitled "Geotechnical Engineering Exploration Kalaniana'ole Highway Box Culvert Mauka Extension, Makapuu, Oahu, Hawaii" dated August 12, 2024 and "Geotechnical Engineering Exploration Kalaniana'ole Highway Box Culvert - Makai Improvements, Makapuu, Oahu, Hawaii" dated August 12, 2024.

5. Foundation Notes (Continued):

Mauka Wingwalls and Headwalls

I. Bearing capacity

- A. Extreme event limit state = 7.1 ksf
B. Strength limit state = 3.1 ksf
C. Service limit state = 2.3 ksf

II. Passive resistance

- A. Extreme event limit state = 300 pcf
B. Strength limit state = 150 pcf

III. Coefficient of friction

- A. Extreme event limit state = 0.40
B. Strength limit state = 0.34

IV. Static lateral earth pressure

- A. Active condition, level backfill = 40 pcf
B. Active condition, maximum 2H:1V sloping backfill = 58 pcf (Horizontal)
= 28 pcf (Vertical)
C. At-rest condition, level backfill = 60 pcf
D. At-rest condition, maximum 2H:1V sloping backfill = 75 pcf (Horizontal)
= 38 pcf (Vertical)

V. Dynamic lateral earth pressure = $4.7H^2$ plf

Makai Wingwalls and Headwalls

I. Bearing capacity

- A. Extreme event limit state = 5.1 ksf
B. Strength limit state = 2.2 ksf
C. Service limit state = 1.7 ksf

II. Passive resistance

- A. Extreme event limit state = 300 pcf
B. Strength limit state = 150 pcf

III. Coefficient of friction

- A. Extreme event limit state = 0.40
B. Strength limit state = 0.34

IV. Static lateral earth pressure

- A. Active condition, level backfill = 24 pcf
B. At-rest condition, level backfill = 40 pcf

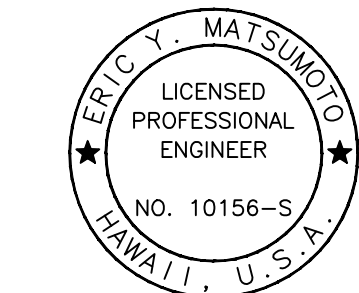
V. Dynamic lateral earth pressure = $6.5H^2$ plf

6. General:

- A. Structural general notes apply to the structural plans unless otherwise noted.
- B. The Contractor shall be responsible for obtaining As-Builts of the existing structures. As-built plans of the existing City and County structures are available for review from the City & County of Honolulu, Department of Design and Construction, Civil Division, Bridge & Structures Section, 650 S. King Street, Honolulu, HI 96813. As-Built plan of the existing HDOT structures are available for review from the Highways Design Branch located at the State Department of Transportation, Highway Division, Kakuhiihewa Building, Room 809, 601 Kamokila Boulevard, Kapolei, HI 96707. The Contractor shall verify all dimensions and site conditions and shall report any discrepancies in writing to the Engineer before commencing work or ordering materials.
- C. The contract documents are complementary. Any requirement occurring in one document is as binding as though occurring in all. A stricter requirement prevails over any less strict requirements. The stricter requirement will be the requirement that provides the greater product life, durability, strength, and function.
- D. The Contractor shall be responsible for protecting the sides of the excavations, including areas behind existing wingwalls and GRP to be removed, from cave-ins. The Contractor shall submit shop drawings and calculations for any bracing or shoring to be installed. The shop drawings and calculations shall be stamped by a registered Hawaii Structural Engineer and a registered Civil Engineer specializing in Geotechnical Engineering in the State of Hawaii. If the Contractor decides not to brace the cut slope, the Contractor shall submit when requested by the Engineer, calculations, showing the stability of the slope, stamped by a registered Civil Engineer specializing in Geotechnical Engineer in the State of Hawaii. The shop drawings and calculations shall be reviewed and accepted by the Engineer before proceeding with the construction.
- E. Contractor shall submit overweight vehicular and machinery details for approval prior to their use. Entire existing structure, including foundation, must be verified and stamped by a Structural Engineer and Geotechnical Engineer licensed in the State of Hawaii.

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

DRAWING NAME: Z:\00 ONGOING\23-010-KALANIANA'OLE HWY RESURFACING-MAK\01 CAD\07-30-25\RSN GEO\YHR-S0002 GENNOTES.DWG PLOT TIME: 07-30-25, 9:53 AM



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: Eric Y. Matsuno
EXPIRATION DATE OF THE LICENSE: 7-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRUCTURAL GENERAL NOTES

Kalaniana'ole Hwy Culvert Improvements
Oahu, Hawaii

Project No. NH-072-1(057)

Scale: As Noted Date: July 2025

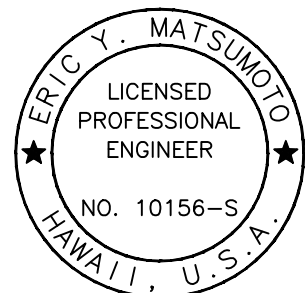
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ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	DATE
	DESIGNED BY	DATE
	CHECKED BY	DATE
NOTE BOOK	QUANTITIES BY	
	NO.	

SYMBOLS AND ABBREVIATIONS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2025	65	102

⌘	And	Demol.	Demolition	GFRP	Glass Fiber Reinforced Polymer Rebar	Opn'g	Opening		
@	At	Det.	Detail			O/S	Offset		
∅	Diameter	DI	Drain Inlet, Ductile Iron	Gr.	Grade	OHWM	Ordinary High Water Mark	Struct.	Structure
≥	Greater Than or Equal to	Dia.	Diameter	Grd.	Ground			SY	Square Yard
≤	Less Than or Equal to	Diaph.	Diaphragm	GRP	Grouted Rubble Pavement	PB	Pull Box	Symm.	Symmetrical
#	Number	Dim.	Dimension			PL	Plate		
		Dist.	Distance	(H)	Hinge	PCCP	Portland Cement Concrete Pavement	T	Top
AB	Anchor Bolt	Dn.	Down	HDPE	High Density Polyethylene			T#B	Top and Bottom
Abut.	Abutment	DO	Ditto	HDOT	State of Hawaii Department of Transportation	PC	Point of Curvature	Tan.	Tangent
Abbr.	Abbreviation	DS	Drilled Shaft			PCF	Pounds per Cubic Foot	TCE	Top of Column
AC	Asphaltic Concrete	Dwg., Dwgs.	Drawing, Drawings	HECO	Hawaiian Electric Company	P(e)	Effective Prestress Force After All Losses	Temp.	Temporary
Add.	Additional	Dwls.	Dowels	Horiz., H	Horizontal	Perf.	Perforated	Term.	Terminal
Alt.	Alternate			Ht.	Height	PI	Point of Intersection of Tangents	TFE	Top of Footing Elevation
Approx.	Approximate	e	Existing	HS	High strength			Thk.	Thick
Az.	Azimuth	E	East			PIVC	Point of Intersection of Vertical Curve	TOD	Top of Deck
		EA, Ea., ea.	Each	IB	Inbound			TOP	Top of Pier
Bal.	Balance	EF	Each Face	ID	Inside Diameter	PLF, plf	Pounds per Linear Foot	Tot.	Total
⌘	Baseline	EFH	Each Face Horizontal	IF	Inside Face	PPM	Parts Per Million	Transv.	Transverse
Bet.	Between	EFV	Each Face Vertical	In.	Inch	PRC	Point of Reverse Curvature	TS	Structural Tubing
BF	Both Faces	EJ	Expansion Joint	Int.	Interior	PVC	Polyvinyl Chloride	TSS	Tendon For Girder in Simply Supported Condition
BFE	Bottom of Footing Elevation	EI., Elev.	Elevation	Inv.	Invert	Prestr.	Prestressed	Typ.	Typical
Bk.	Back	Elec.	Electrical			P/S	Prestressed Strands		
Blt.	Bolt	Emb.	Embankment	Jt.	Joint	PSF, psf	Pounds per Square Foot	Undergrd.	Underground
Bm.	Beam	EMH	Electrical Manhole			PSI, psi	Pounds per Square Inch	UNO	Unless Noted Otherwise
BOF	Bottom of Footing	EPE	Existing Edge of Pavement	K	Kips				
Bot., Bott., B	Bottom	EPS	Expanded Polystyrene	KF	Kip Foot	PT	Point of Tangency	Var.	Varies
Br.	Bridge	Eq.	Equal	KLF	Kips Per Linear Foot	Pt., Pts.	Point, Points	VC	Vertical Curve
Brg., Brgs.	Bearing, Bearings	ES	Edge of Shoulder	KSF	Kips Per Square Foot	R, Rad.	Radius	VESLMC	Very Early Strength Latex Modified Concrete
BVC	Beginning of Vertical Curve	Est.	Estimated	KSI, ksi	Kips Per Square Inch	Rebar	Reinforcing Bar	Vert., V	Vertical
BW	Both Ways	EVC	End of Vertical Curve			Ref.	Reference		
		EW	Each Way	L	Length	Reinf.	Reinforced, Reinforcing, Reinforcement		
Cant.	Cantilever	Exc.	Excavation	lb., lbs., LBS.	Pound, Pounds	Req'd.	Required	W	West
CBW	Concrete Barrier Wall	Excl.	Excluding	LF, Lin. Ft.	Linear Feet/Foot	Ret.	Retaining	w/	With
cc	Center to Center	Exist., Ex.	Existing	Longit.	Longitudinal	RF	Rear Face	W/C	Water/Cementitious
CF	Cubic Feet	Exp., (E)	Expansion	LS	Lump Sum	ROW	Right of Way	WP	Work Point, Working Point
CFCW	Continuous Flashing Compound Waterproofing	Ext.	Exterior	Ltg. Std.	Lighting Standard	Rdwy.	Roadway	WS	Water Surface
								WW	Wingwall
CG	Center of Gravity	(F)	Fixed	M	Modified			WWF	Welded Wire Fabric
CIP	Cast Iron Pipe, Cast in Place	FA	Force account	Max.	Maximum	S	South		
CJ	Construction Joint	FB	Flat Bar	Mech.	Mechanical	SBD	Special Bridge Deck Mix		
⌘	Center line	FC	Compression Stresses	MH	Manhole	SE	Super Elevation	Yr.	Year
Cl.	Class	f'c	Specified Compressive Strength of Concrete at 28 days	Min.	Minimum	Sect.	Section		
Clr.	Clearance			Misc.	Miscellaneous	SF, sq. ft.	Square Feet		
CLSM	Controlled Low Strength Material	f'ci	Specified Compressive Strength of Concrete at Time of Initial Prestress	M.L.	Matchline	Sht.	Sheet		
				MPH	Miles Per Hour	Sim.	Similar		
CMU	Concrete Masonry Unit			MSL	Mean Sea Level	Sl.	Slope		
Cntl. Jt.	Control Joint	FF	Far Face, Front Face			Spcs., Spg.	Spaces, Spacing		
CO	Clean Out	Fig.	Figure	N	North	Spec.	Specification		
Col.	Column	Fin. Gr.	Finish Grade	NF	Near Face	Sprd.	Spread		
Conc.	Concrete	FRP	Fiberglass Reinforced Polymer	NIC	Not in Contract	SS	Stainless Steel		
Conn.	Connection	FT	Tensile Stresses	No.	Number	Std.	Standard		
Const.	Construction	Ft.	Feet, Foot	NTS	Not to Scale	Sta.	Station		
Cont.	Continuous	Ftg.	Footing			Stiff.	Stiffener		
CSL	Crosshole Sonic Logging			OB	Outbound	Stirr.	Stirrup		
CRM	Cement Rubble Masonry	G, Gir.	Girder	oc, o.c.	On Center	Stl.	Steel		
CY, Cu. Yd.	Cubic Yard	Ga.	Gage, Gauge	OD	Outside Diameter	Str.	Straight, Stream		
		Galv.	Galvanized	OG	Outside Girder, Outbound Girder				
Dbl.	Double	GDI	Grated Drain Inlet						

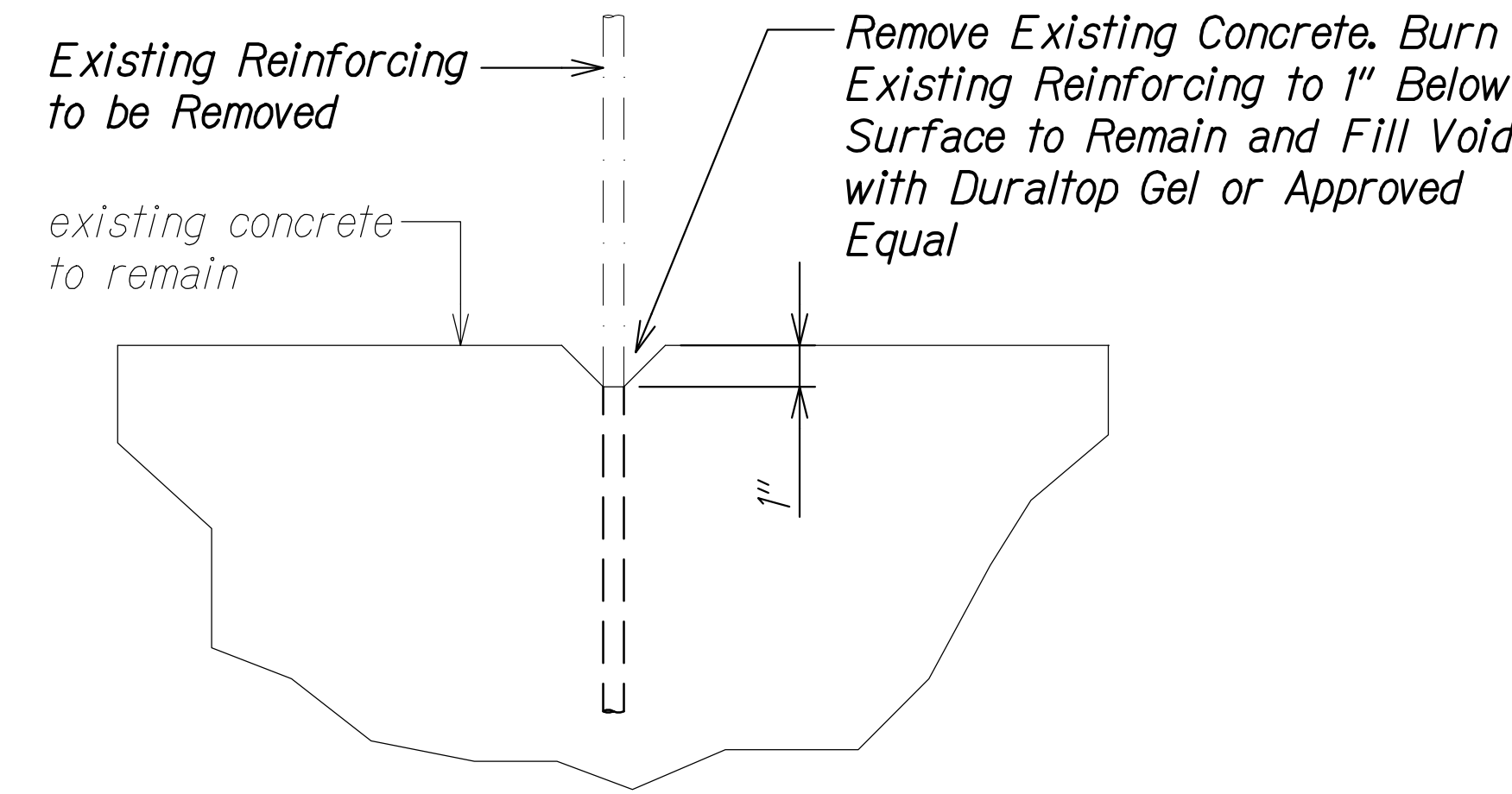
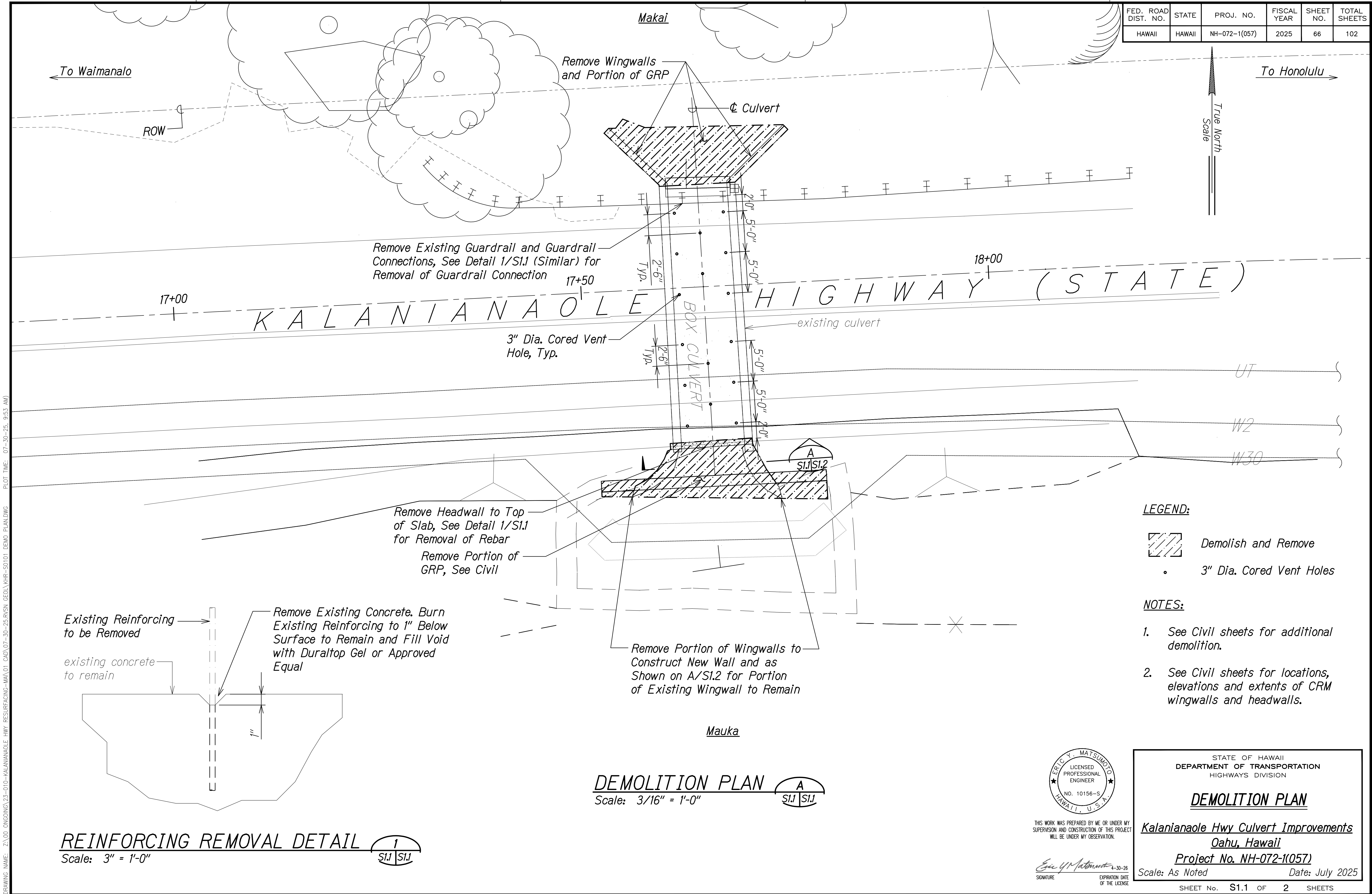


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: Eric Y. Matsuno
EXPIRATION DATE OF THE LICENSE: 2-30-26

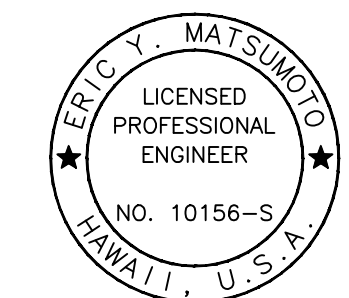
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SYMBOLS AND ABBREVIATIONS	
<u>Kalaniana'ole Hwy Culvert Improvements</u> <u>Oahu, Hawaii</u>	
<u>Project No. NH-072-1(057)</u>	
Scale: As Noted	Date: July 2025
SHEET No. S0.3 OF 3 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2025	66	102



REINFORCING REMOVAL DETAIL
Scale: 3" = 1'-0"

DEMOLITION PLAN
Scale: 3/16" = 1'-0"

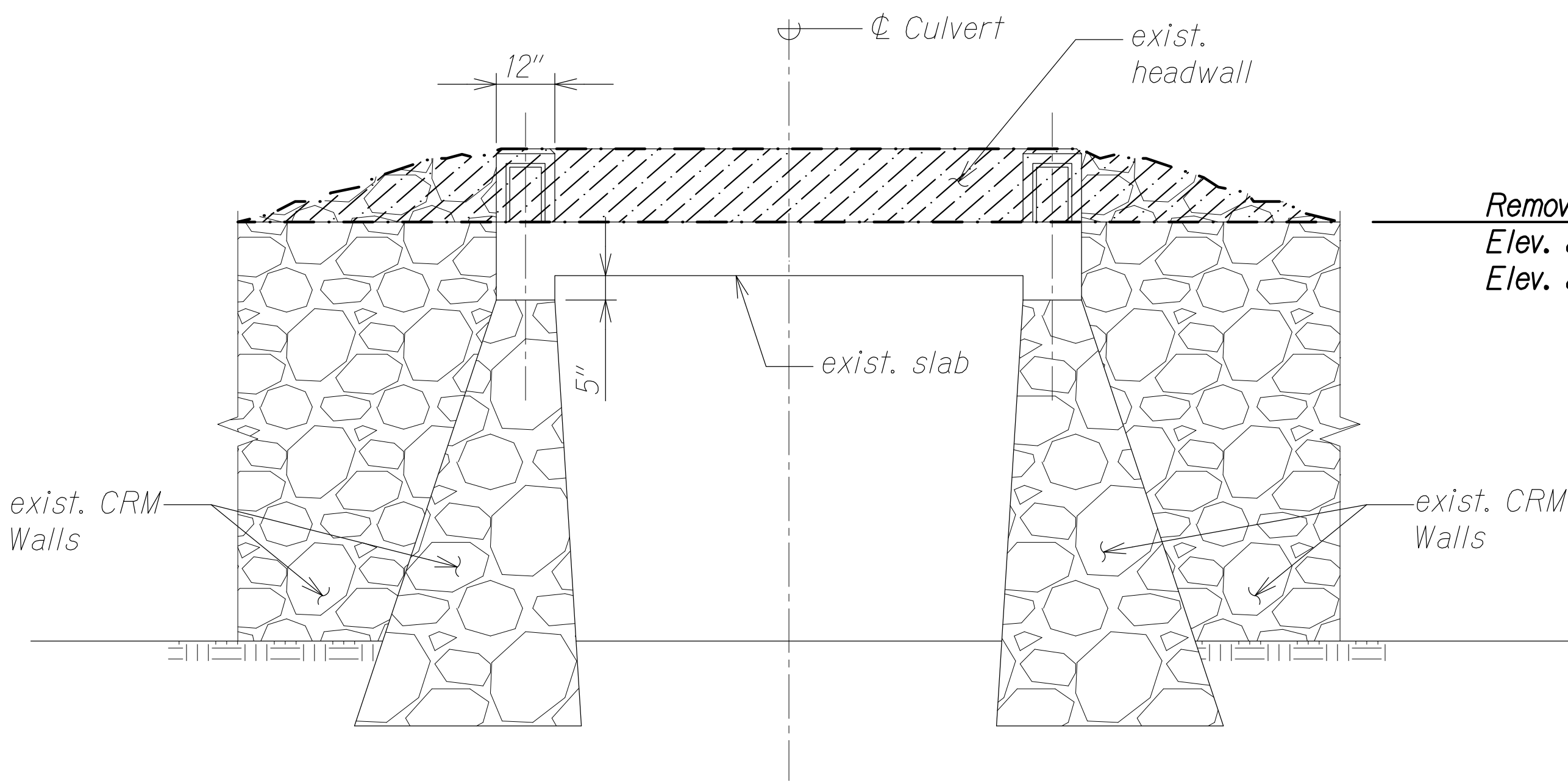


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *Eric Y. Matsuno*
Expiration Date of License: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DEMOLITION PLAN
Kalaniana'ole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)
Scale: As Noted
Date: July 2025

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2025	67	102



LEGEND:



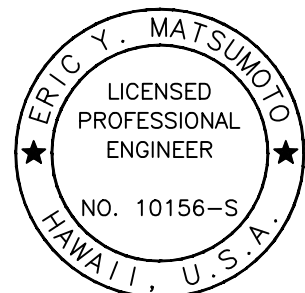
Demolish and Remove

Remove Portion of Exist. CRM Wall
Elev. at Top of Wall to Remain Shall Match
Elev. at Top of Exist. Slab

SECTION
Scale: 1/2" = 1'-0" A
Sl.1 Sl.2

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

DRAWING NAME: Z:\00 ONGOING\23-010-KALANIANA'OLE HWY RESURFACING-MAIN\01 CAD\07-30-25\RVSN GEO\YHR-S0102 CULV SEC.DWG PLOT TIME: 07-30-25, 9:52 AM)



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: Eric Y. Matsuno
EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DEMOLITION SECTION

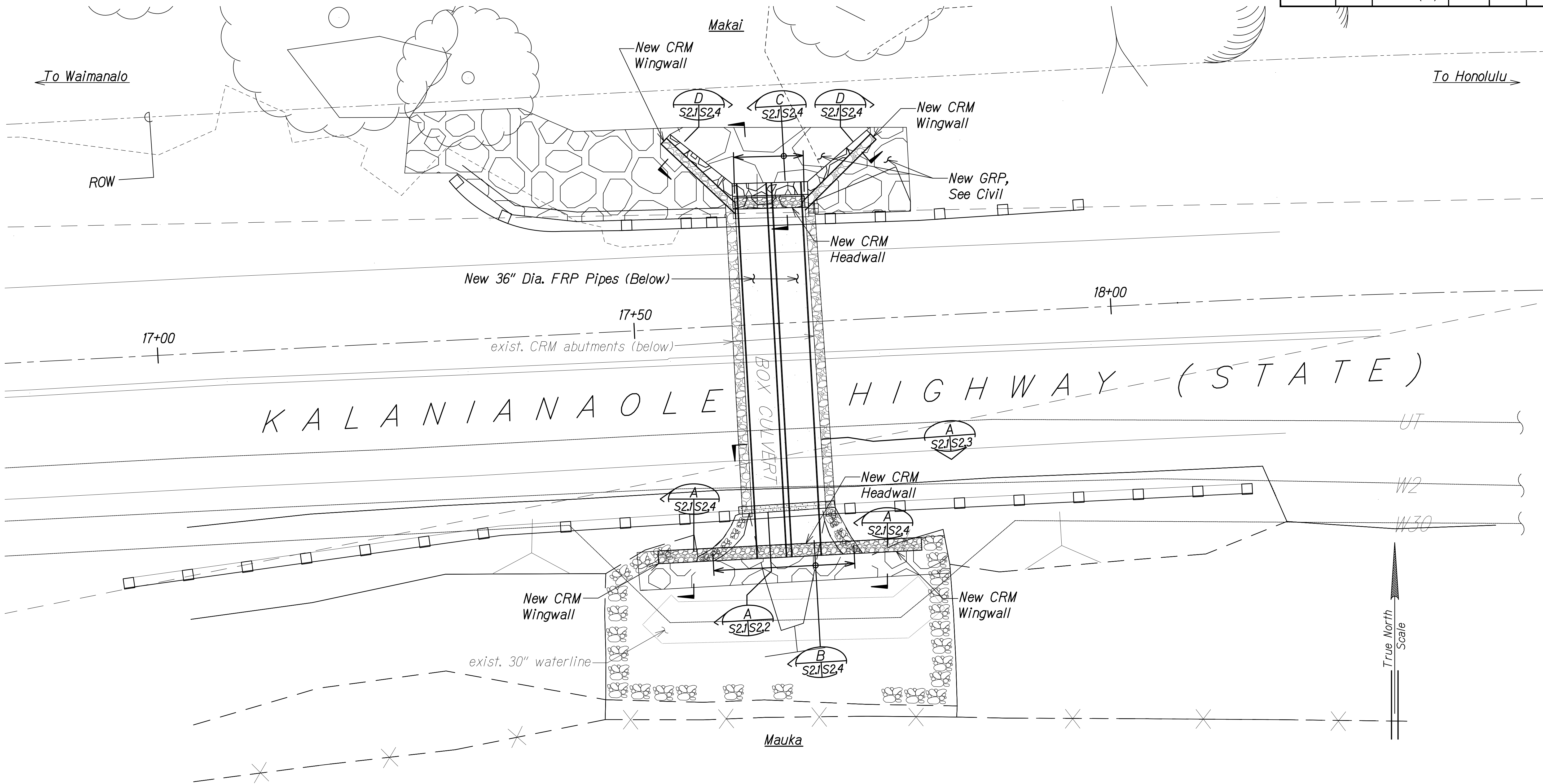
Kalaniana'ole Hwy Culvert Improvements
Oahu, Hawaii

Project No. NH-072-1(057)

Scale: As Noted Date: July 2025

SHEET No. S1.2 OF 2 SHEETS

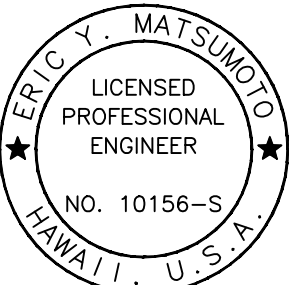
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2025	68	102



NOTES:

- See Civil sheets for locations, elevations and extents of CRM wingwalls and headwalls.
- See Civil sheets for GRP and finish grade elevations.
- See Civil sheets for new 36" dia. FRP pipes.

CULVERT PLAN A
 Scale: 3/16" = 1'-0" S2.1 S2.1



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Eric Y. Matsuno
 SIGNATURE
 EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

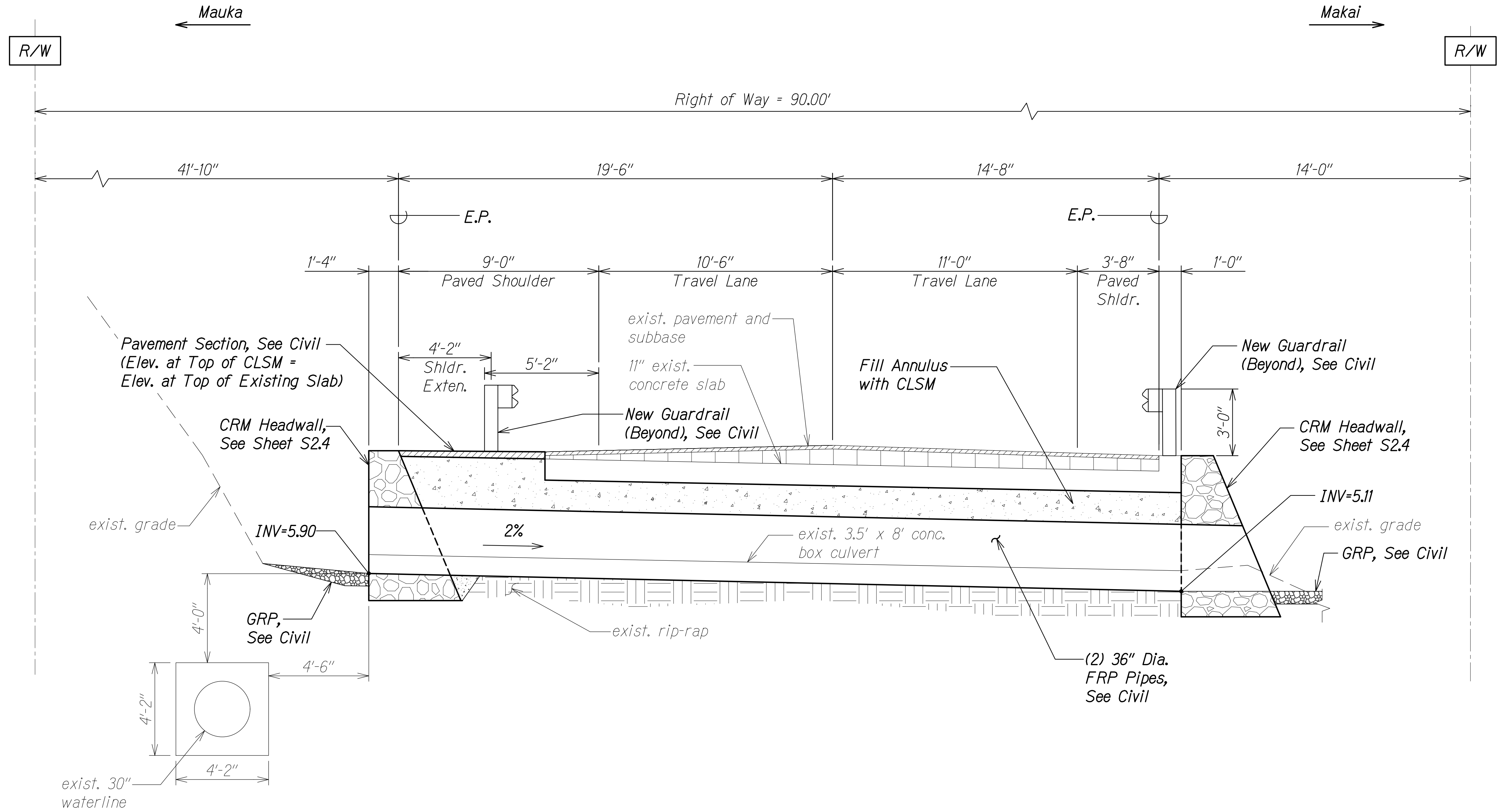
CULVERT PLAN
Kalanianaʻole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)
 Scale: As Noted Date: July 2025

SHEET NO. **S2.1** OF **5** SHEETS

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

DRAWING NAME: Z:\00 ONGOING\23-010-KALANIANAʻOLE HWY RESURFACING-MAV\01 CAD\07-30-25\KSN GEO\YHR-S0201 CULV PLAN.DWG PLOT TIME: 07-30-25, 9:51 AM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2025	69	102



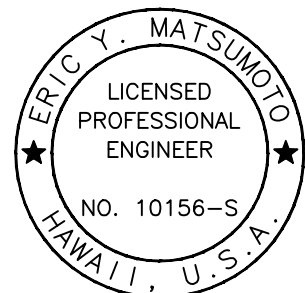
TYPICAL LONGITUDINAL CULVERT SECTION
Scale: 3/8" = 1'-0"
A
S2.1 | S2.2

NOTE:

Vent holes are not shown on this sheet.
See Sheet S1.1 for Vent Hole Locations.

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

DRAWING NAME: Z:\00 ONGOING\23-010-KALANIANA'OLE HWY RESURFACING-MAIN\01 CAD\07-30-25\RYSH GEOL\YHR-S0202 LONG SECT.DWG PLOT TIME: 07-30-25, 9:50 AM

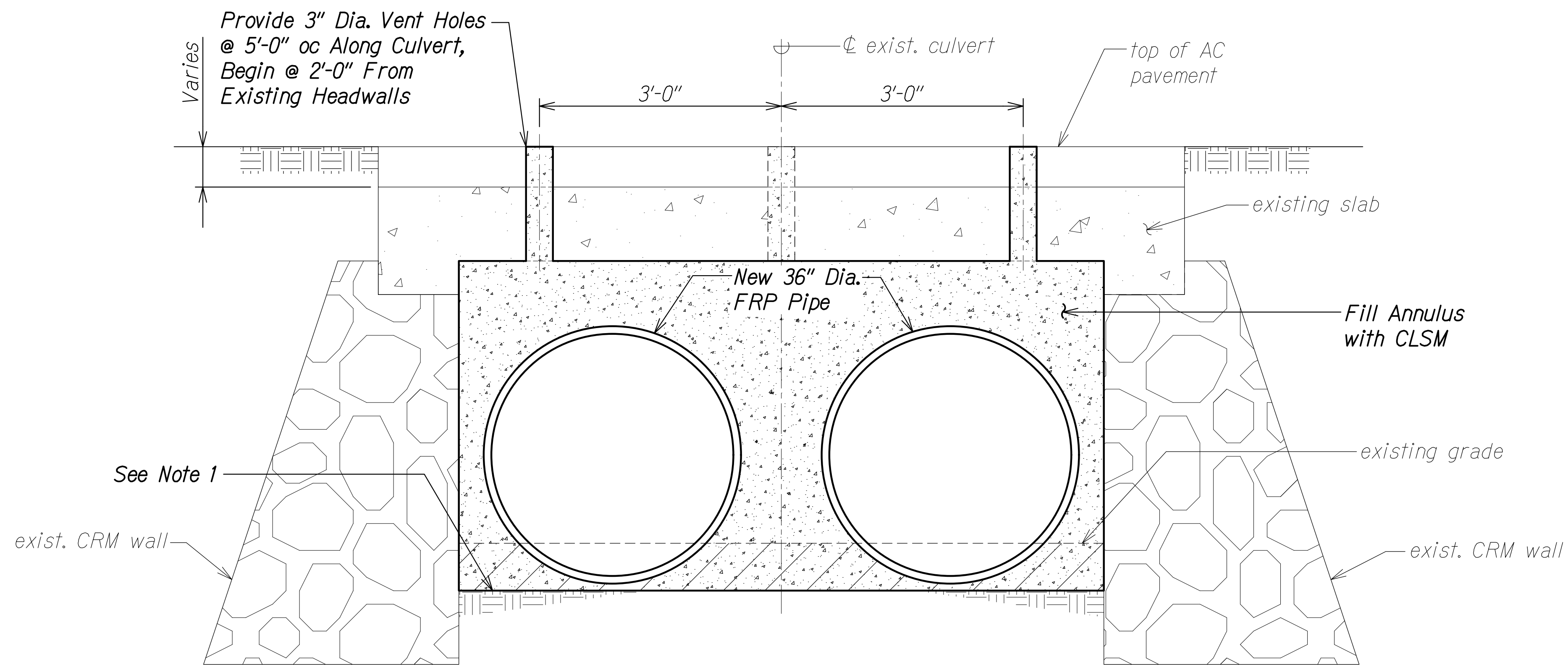


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: Eric Y. Matsuno
Expiration Date of License: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPICAL LONGITUDINAL CULVERT SECTION
Kalaniana'ole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)
Scale: As Noted Date: July 2025

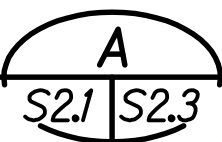
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2025	70	102



- NOTES:**
1. Remove material as needed to install pipes. Do not excavate below the bottom of exist. CRM wall elevation. In addition, remove all loose rocks and sediment.
 2. See sheet S1.1 for 3" dia. vent hole locations.
 3. See Civil sheets for new 36" dia. FRP pipes.

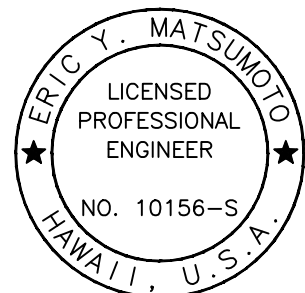
TYPICAL TRANSVERSE CULVERT SECTION (ALONG KALANIANA'OLE HWY.)

Scale: 1" = 1'-0"



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

DRAWING NAME: Z:\00 ONGOING\23-010-KALANIANA'OLE HWY RESURFACING-MAIN\01 CAD\07-30-25\RVSN GEO\YHR-S0203 TRANS SECT.DWG PLOT TIME: 07-30-25 9:49 AM



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE: *Eric Y. Matsuno* EXPIRATION DATE OF THE LICENSE: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

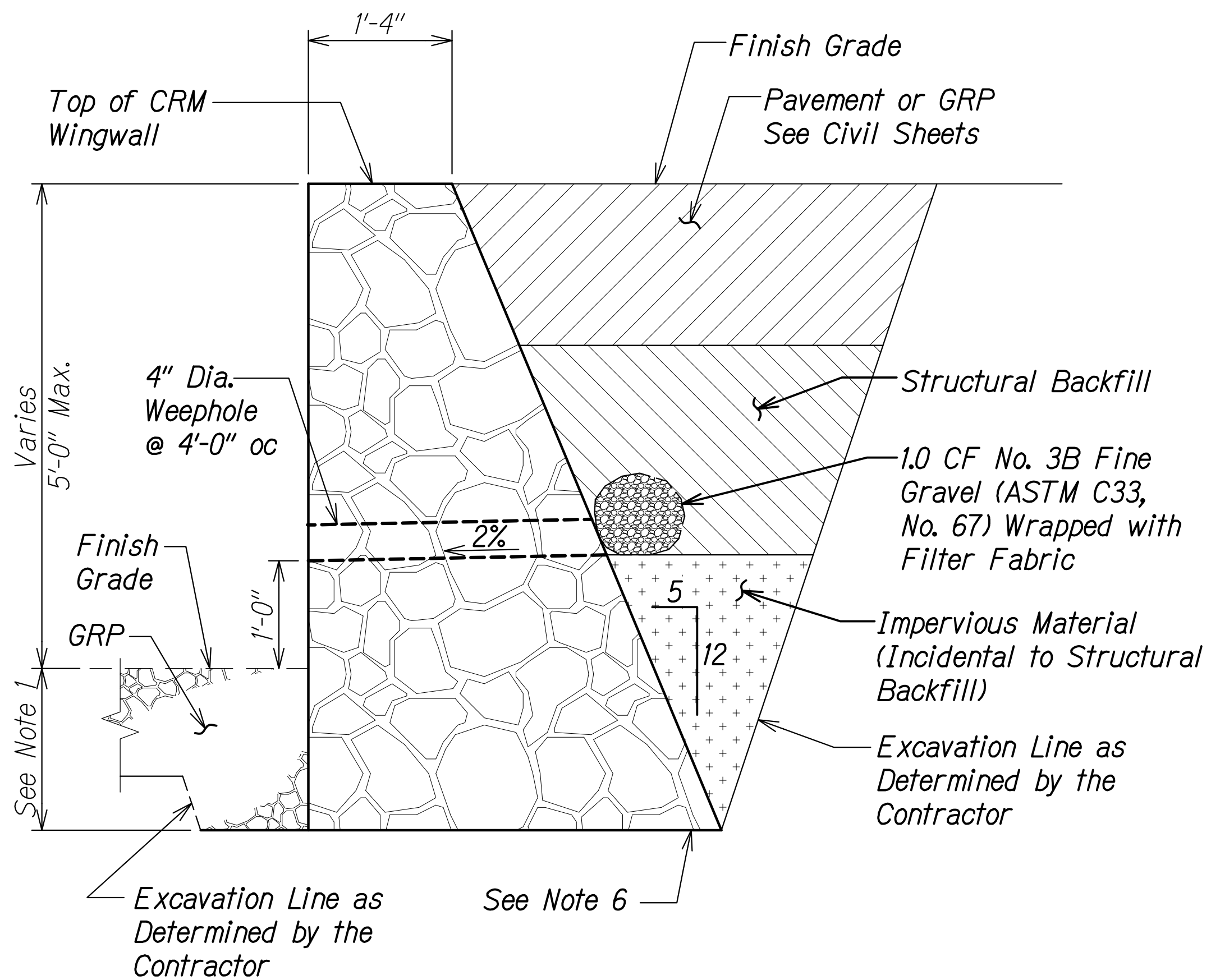
**TYPICAL TRANSVERSE
CULVERT SECTION**

*Kalaniana'ole Hwy Culvert Improvements
Oahu, Hawaii*

Project No. NH-072-1(057)

Scale: As Noted Date: July 2025

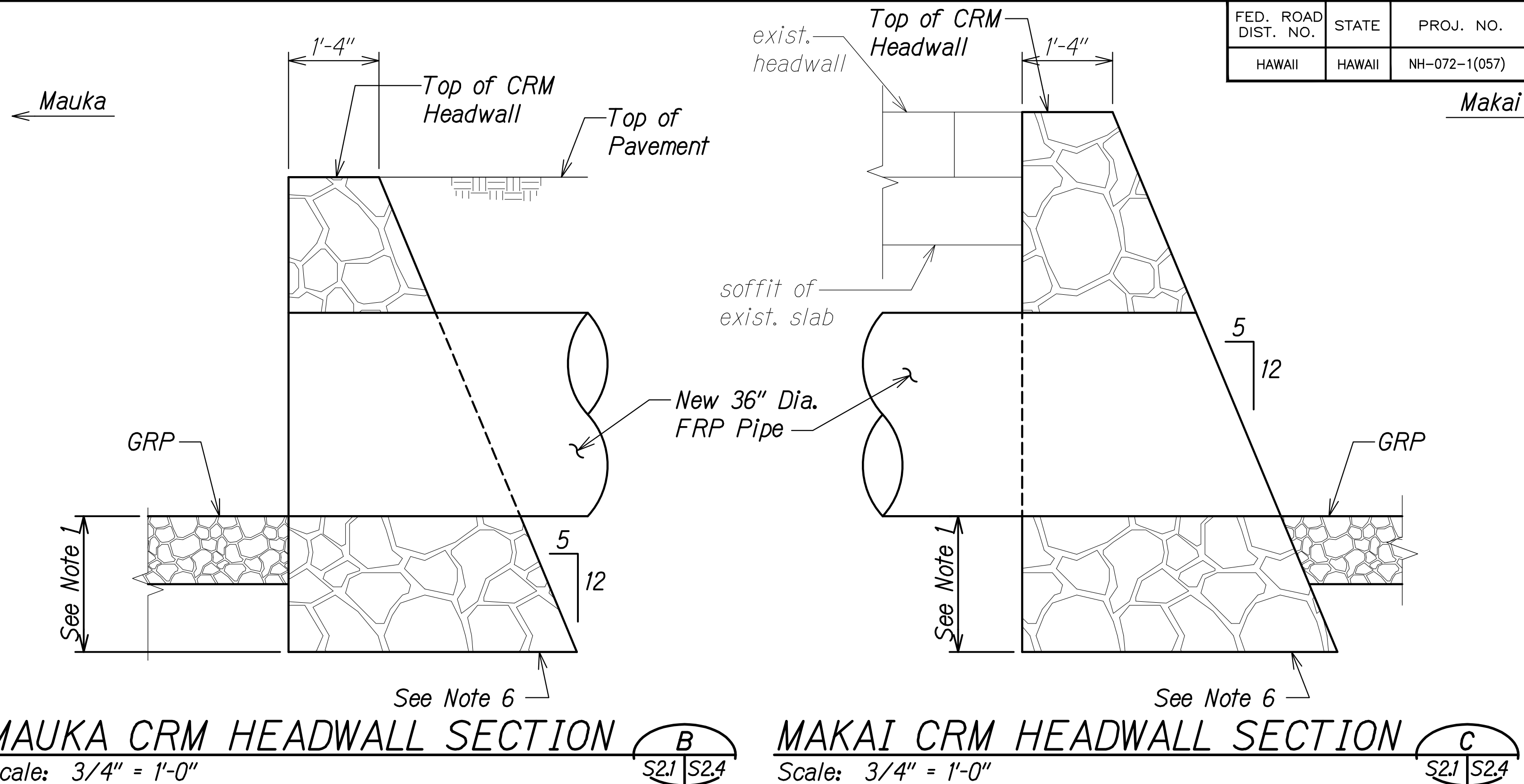
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2025	71	102



TYPICAL MAUKA CRM WINGWALL SECTION (A)
Scale: 1" = 1'-0"

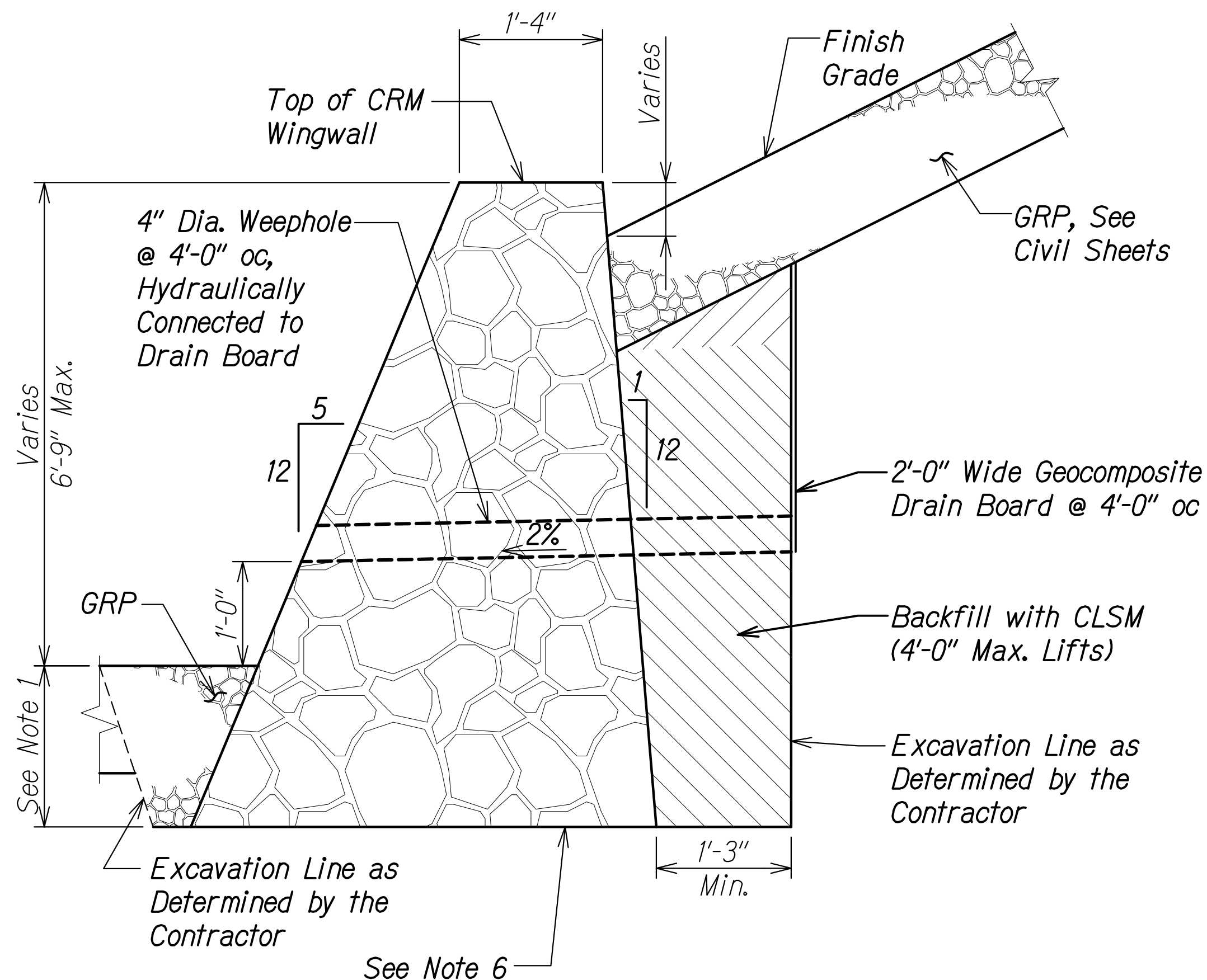
NOTES:

1. Embedment of CRM retaining wall shall be a minimum of 24" below the lowest adjacent grade or shall match the bottom of existing CRM wall, whichever has a higher elevation.
2. Stone to construct the wall shall be clean, hard, sound and durable. The individual stones shall have a minimum thickness not less than 6 inches and minimum width not less than 1 1/2 times the thickness and not less than 12 inches. With the exception of header stones, the minimum length shall be 1 1/2 times the stone's width. The largest stones shall be used on the bottom course, after which the stones shall be graded to decrease in width from bottom to top of the wall. The fascia stones shall be uniformly distributed by size. The wall shall be finished with a 2-inch mortar cap. The stones shall be fully embedded in mortar. The mortar mix shall contain 1 part cement and 2 parts sand and/or fine aggregate by volume. The mortar shall be placed within 30 minutes of water being added. A minimum overlap of 6 inches shall be used where the stones overlapped.
3. See Civil Sheets for GRP, pavement, and FRP pipes.
4. Contractor must ensure there is no seepage of CLSM. There shall be no gap between the CRM headwalls and existing culvert and wingwalls and between the CRM headwalls and 36" dia. FRP pipes.
5. Weepholes and geocomposite drain boards shall be incidental to concrete rubble masonry.
6. Subgrade to be scarified at least 8 inches deep and recompact to no less than 90 percent of relative compaction.

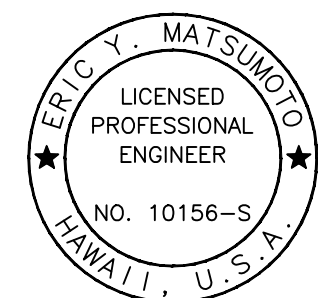


MAUKA CRM HEADWALL SECTION (B)
Scale: 3/4" = 1'-0"

MAKAI CRM HEADWALL SECTION (C)
Scale: 3/4" = 1'-0"



TYPICAL MAKAI CRM WINGWALL SECTION (D)
Scale: 1" = 1'-0"



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Signature: Eric Y. Matsuno
Expiration Date of License: 4-30-26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**CRM HEADWALLS
AND CRM WINGWALLS SECTIONS**

*Kalanianaʻole Hwy Culvert Improvements
Oahu, Hawaii*

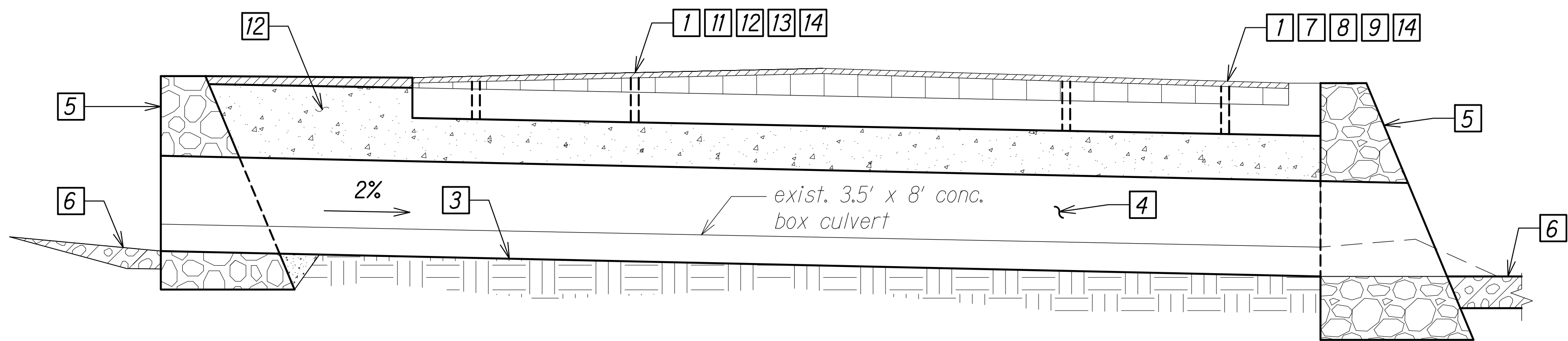
Project No. NH-072-1(057)
Scale: As Noted Date: July 2025

SHEET No. S2.4 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	NH-072-1(057)	2025	72	102

Mauka

Makai



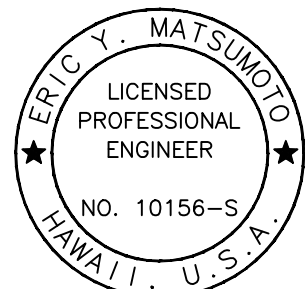
TYPICAL LONGITUDINAL CULVERT SECTION
Scale: 3/8" = 1'-0"

CONSTRUCTION SEQUENCE:

- 1 Core 3" dia. vent holes through top of existing culvert. Install plugs for vent holes to provide a continuous roadway surface. Contractor shall ensure plugs remain in place until removal of plugs is required. Cost of coring and installation and removal of plugs for vent holes shall be incidental to CLSM backfill for box culvert and extension.
- 2 Remove existing headwall, wingwalls, and GRP as shown on the Civil and Structural Demolition Plans.
- 3 Remove material within culvert as needed to install pipes. Do not excavate below the bottom of existing CRM wall elevation. In addition, remove all loose rocks and sediment.
- 4 Install 36" dia. FRP pipes. Contractor shall verify pipe location and slope. Contractor shall restrict pipe movement during CLSM installation.
- 5 Construct CRM headwalls and wingwalls.
- 6 Construct GRP.
- 7 Remove plugs in the Makai lane.
- 8 Pump CLSM through 3" diameter holes in Makai lane.
- 9 Install plugs for vent holes in the Makai lane.
- 10 Adjust traffic control such that construction can occur in the Mauka lanes.
- 11 Remove plugs in the Mauka lane.
- 12 Pump CLSM through 3" diameter holes in Mauka lane and as needed at Mauka end of culvert behind the CRM headwall.
- 13 Install plugs for vent holes in the Mauka lane.
- 14 After CLSM reaches final set, remove plugs and fill the remaining portion of vent holes in existing top slab with non-shrink grout and the portion of vent holes above the existing top slab with asphalt concrete. Cost of installing non-shrink grout and asphalt concrete, complete in place, shall be incidental to CLSM backfill for box culvert and extension.

NOTES:

1. Order of construction sequence shall not be changed unless otherwise approved by the Engineer.
2. Each stage shall be completely finished before proceeding to the next stage unless otherwise noted. The Engineer will be the sole judge of whether the stage is complete and may direct the Contractor to stop work on a stage to complete work on the preceeding stage.
3. See Civil sheets for traffic control.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: Eric Y. Matsuno
Expiration Date: 4-30-26
Of the License

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONSTRUCTION SEQUENCE
Kalaniana'ole Hwy Culvert Improvements
Oahu, Hawaii
Project No. NH-072-1(057)
Scale: As Noted Date: July 2025

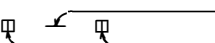
SHEET No. S2.5 OF 5 SHEETS

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

DRAWING NAME: Z:\00 ONGOING\23-010-KALANANA'OLE HWY RESURFACING-MA\01 CAD\07-30-25\RYSH GEOL\YHR-S0205 CONST SEQ.DWG PLOT TIME: 07-30-25, 10:32 AM

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(K057)	2026	73	102

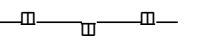
LEGEND



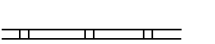
10' White Profiled Thermoplastic Stripe (6" wide)
Type C Raised Pavement Markers @ 40'-0" o.c.



10' Yellow Profiled Thermoplastic Stripe (6" wide)
Type D Raised Pavement Markers @ 40'-0" o.c.



8" White Stripe with Type C Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)



6" Double Solid Yellow Stripes (with 4" space)
with Type D Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)



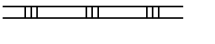
6" Double Solid Yellow Stripes (with 4" space)
with Type H Raised Pavement Markers @ 20'-0" o.c. (Tape, Type II or Thermoplastic Extrusion)



6" Yellow Edge Stripe with Type H Raised Pavement Markers @ 40'-0" o.c. (Tape, Type II or Thermoplastic Extrusion)



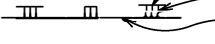
6" Double Solid White Stripes (with 4" space)
with Type C Raised Pavement Markers @ 20'-0" o.c. (Tape, Type I or Thermoplastic Extrusion)



Lane Change Restriction Marking



10' White Profiled Thermoplastic Stripe (6" wide)
Type C Raised Pavement Markers @ 20'-0" o.c.
6" White Stripe (Tape, Type I or Thermoplastic Extrusion)



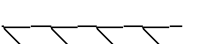
6" or 8" White Edge Stripe with Type C Raised Pavement Markers @ 40'-0" o.c. (Tape, Type II or Thermoplastic Extrusion)



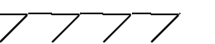
6" White Guide Line (Tape, Type III or Thermoplastic Extrusion except for bus bays)



12" Transverse Median Marking (Tape, Type II or Thermoplastic Extrusion)



12" Transverse Shoulder Marking (Tape, Type II or Thermoplastic Extrusion)



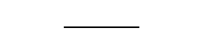
8" Channelizing Island or Deceleration Lane Gore (Tape, Type II or Thermoplastic Extrusion)



Crosswalk and Stop Line. All Stop Lines shall be 10'-0" from Crosswalk unless otherwise noted. The circled number indicates the number of lanes for payment (Tape, Type III or Thermoplastic Extrusion)



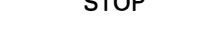
Pavement Arrow (Tape, Type III or Thermoplastic Extrusion)



Pavement Word (Tape, Type III or Thermoplastic Extrusion)



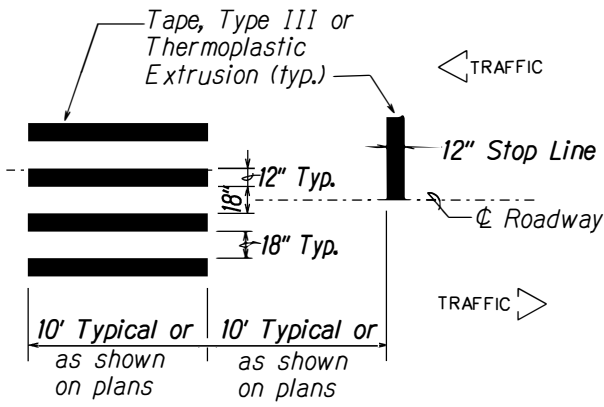
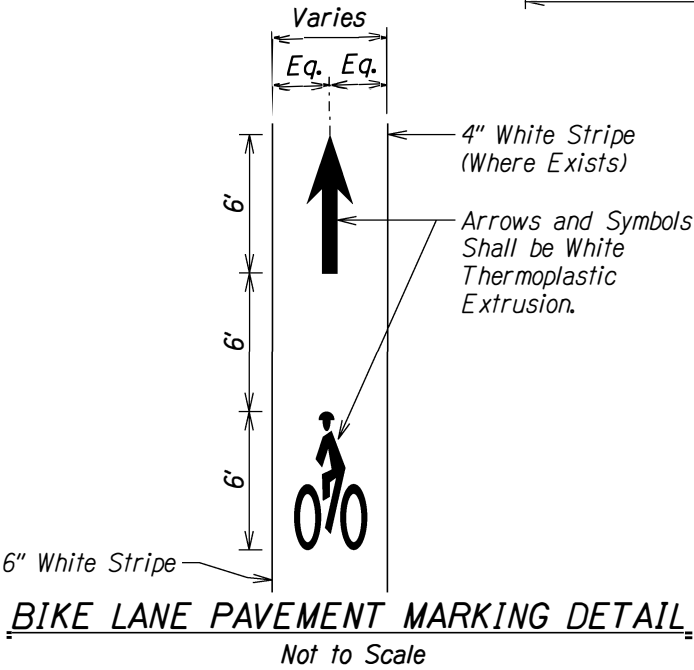
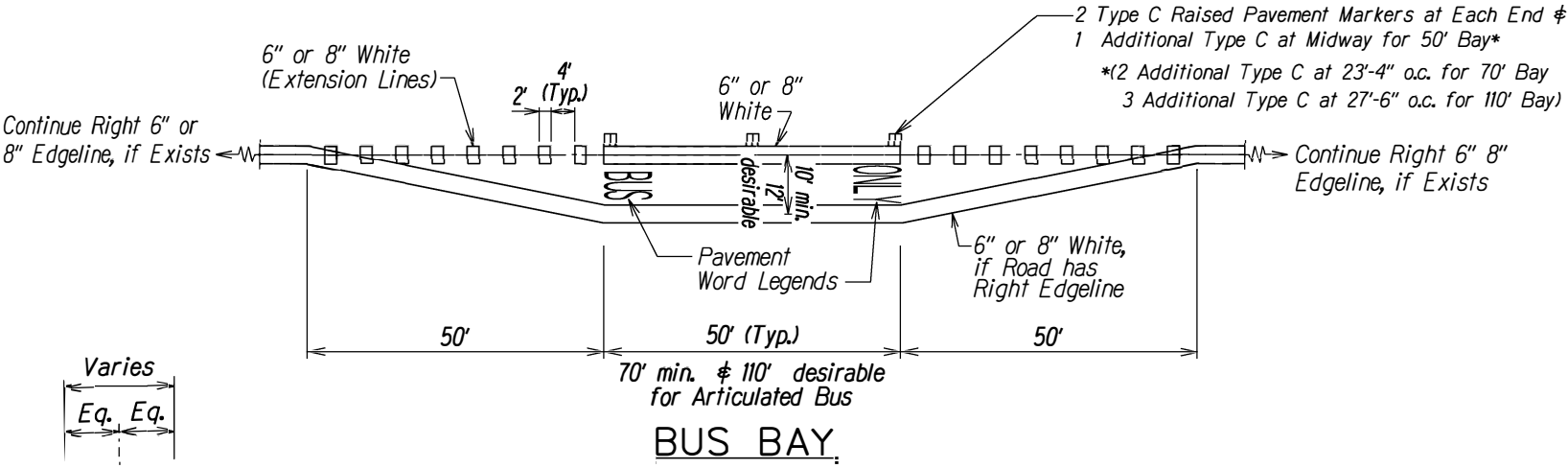
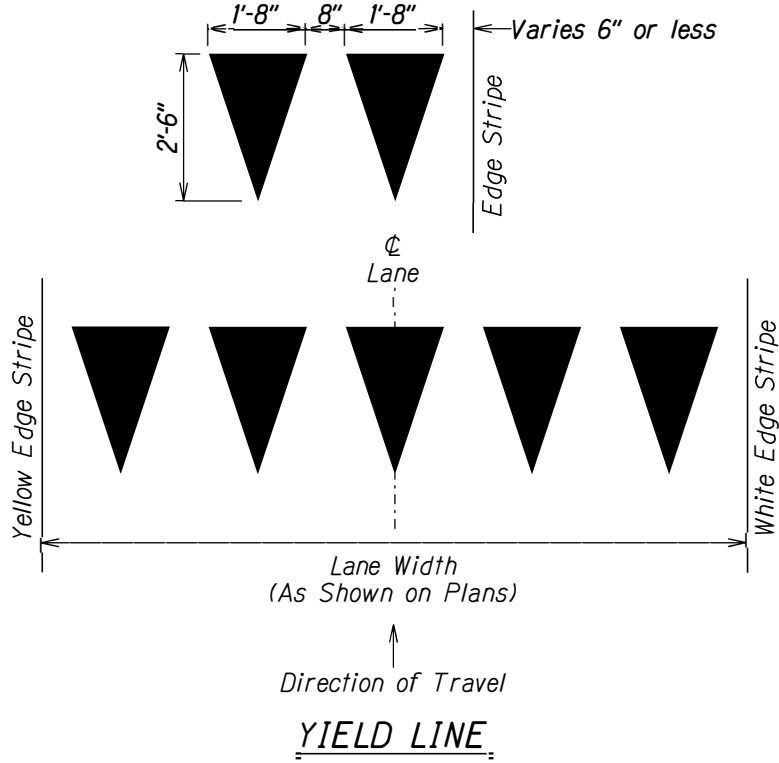
10' Yellow Profiled Thermoplastic Stripe (6" wide)
Type D Raised Pavement Markers @ 40'-0" o.c.
Type H Raised Pavement Markers (Reflective Surface facing no-passing direction)
6" Single Solid Yellow Stripe (Tape, Type I or Thermoplastic Extrusion)



Extension of Edge Line, 6" Wide x 2'-0" Long White Stripe @ 10'-0" o.c. w/Type C Markers @ 40'-0" o.c. (Tape, Type III or Thermoplastic Extrusion)

NOTES

- Layout of pavement markings and striping shall be done by the Contractor and approved by the Engineer prior to any installation work.
- Existing pavement markings not incorporated in the final traffic pattern shall be removed as directed by the Engineer. Costs shall be incidental to the various pavement marking items.
- Raised pavement markers shall not be installed within crosswalks.
- Final locations of all signs shall be approved by the Engineer prior to any installation work.
- Existing signs not shown on these plans shall remain as posted unless otherwise directed by the Engineer. Removal and disposal of existing signs and/or posts as designated on these plans shall be incidental to the various signing items.
- Final locations of all Stop Lines shall be approved by the Engineer prior to installation.
- All pavement striping shall be as noted on the legend or plans.
- All preformed pavement marking tapes over existing pavement shall be applied with an approved primer as recommended by the tape manufacturer and as approved by the Engineer. The primer shall be allowed to dry to the tacky stage prior to tape application.
- All pedestrian warning signs with supplemental sign shall be on a fluorescent yellow-green retroreflective background with a black legend and border.



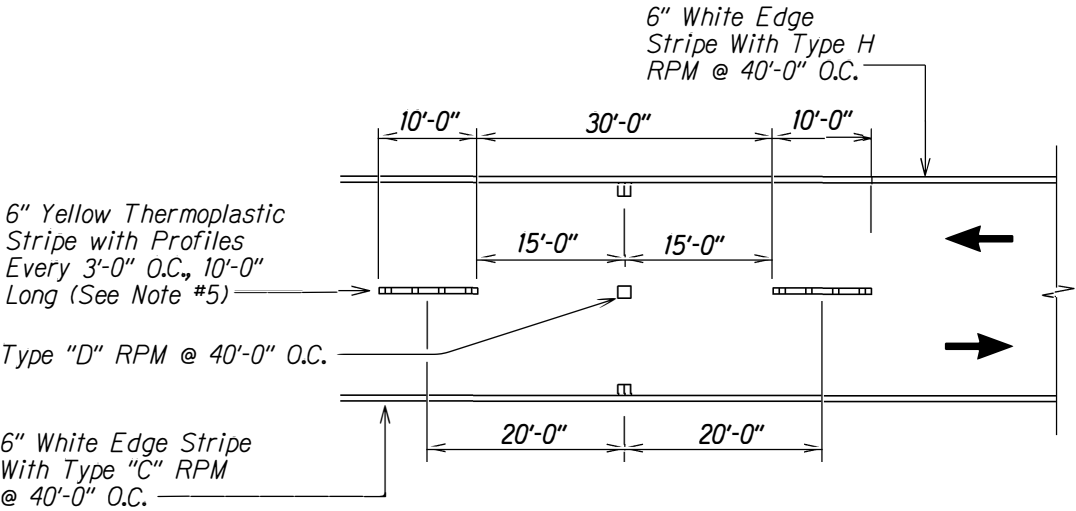
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING
LEGEND, DETAILS & NOTES

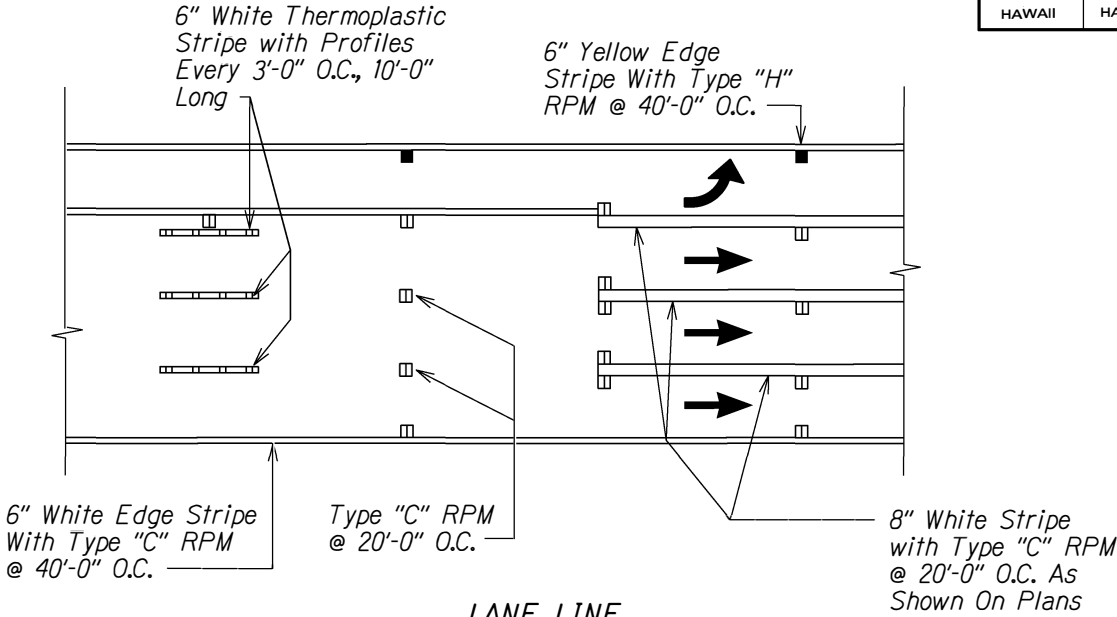
KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal Aid Project No. NH-072-1(K057)
Scale: As Noted Date: July 2024

SHEET No. 71 OF 30 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-K057	2026	74	102

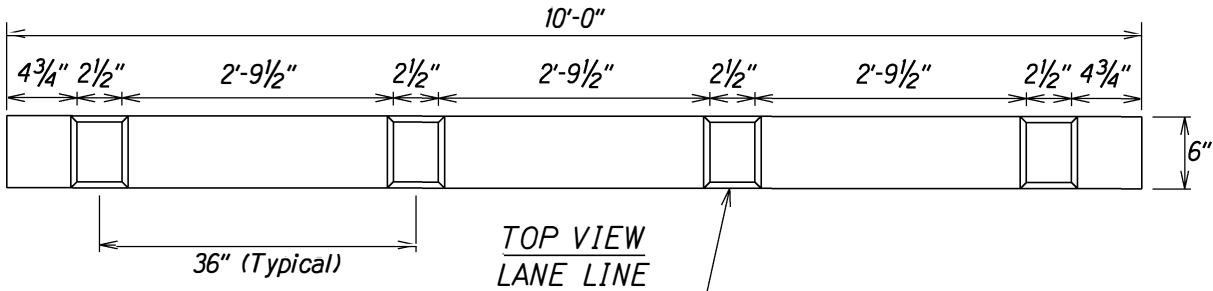


PASSING ZONE

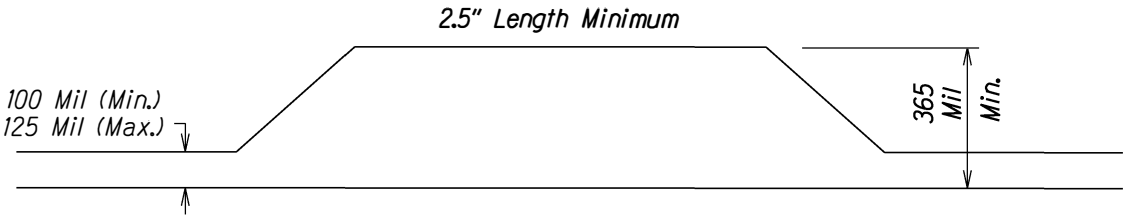


LANE LINE

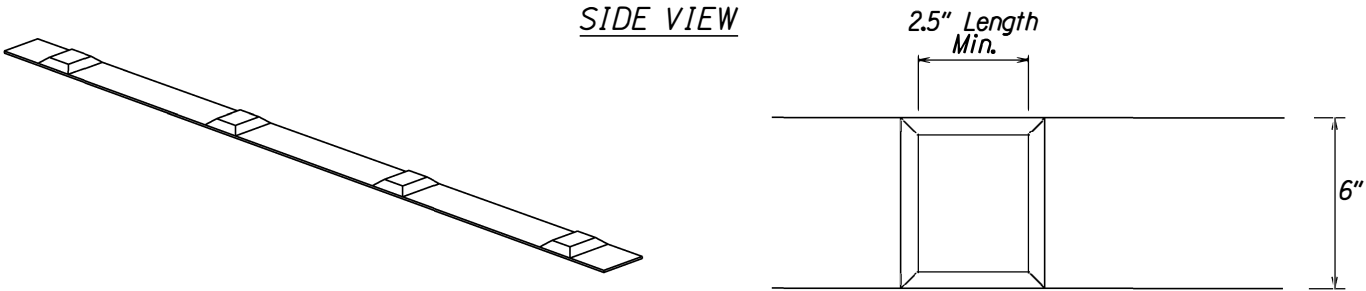
DETAIL
Not To Scale



Profiles Placed on 36" O.C.
365 Mil. Height, including 100 Mil. Baseline.
Width Equal to Approximately Baseline Width



SIDE VIEW



PERSPECTIVE VIEW

TOP VIEW

PROFILED THERMOPLASTIC STRIPING

Not to Scale

NOTES:

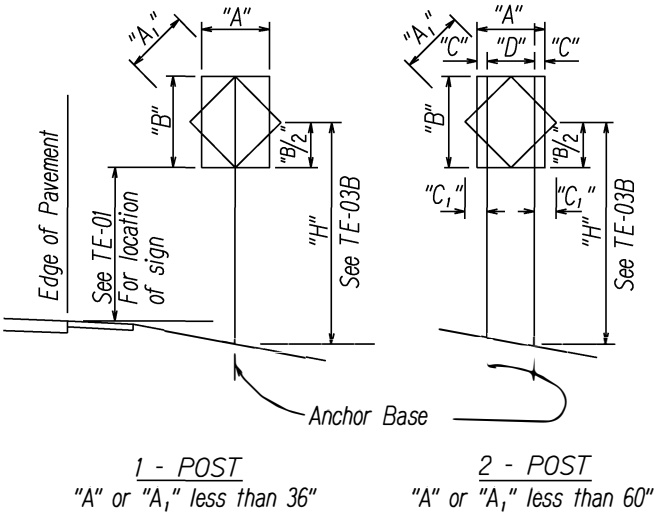
1. The thermoplastic material shall be a alkyd-based compound formulated for profiled pavement marking. See specs subsection 629.03 for additional requirements
2. The Engineer will include the longitudinal gaps for skip striping, up to thirty (30) feet long, in the measurement for payment.
3. Install white profiled thermoplastic stripes as lane line.
4. Install yellow profiled thermoplastic stripes for centerline passing zone.
5. In areas with centerline milled rumble strips, install standard yellow thermoplastic stripes without raised profiles

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING
DETAILS

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal Aid Project No. NH-072-K057
Scale: As Noted Date: July 2024

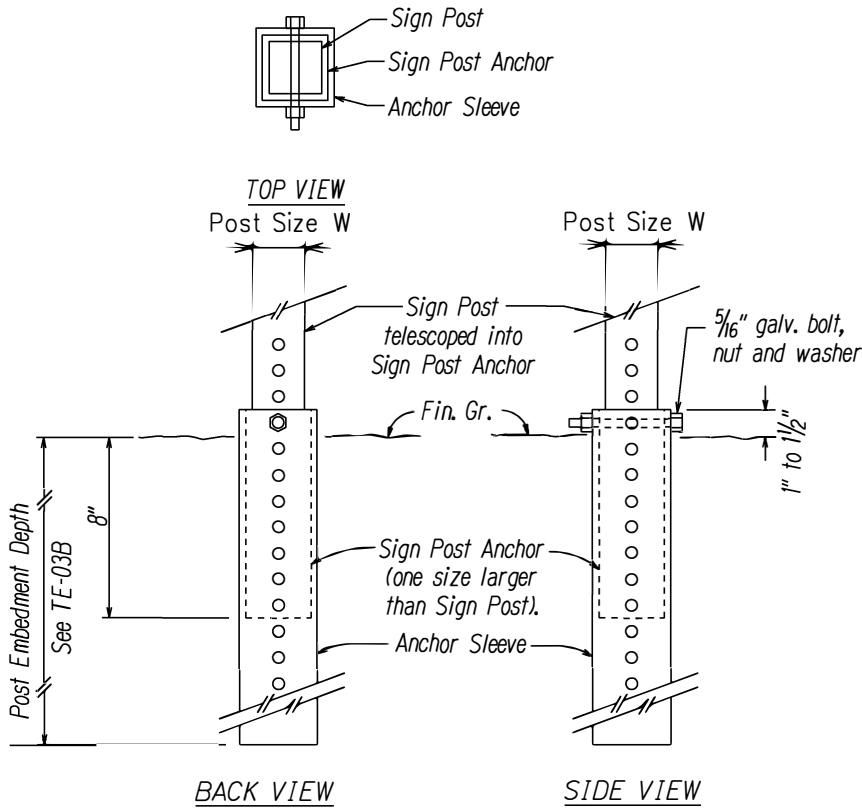
SHEET No. T2 OF 29 SHEETS



"A" or "A ₁ "	"C"	"C ₁ "
Less than 36"	6"	-
Greater than 36" and less than 48"	9"	19"
Greater than 48"	12"	24"

NOTE: Frame stiffeners are required when D is greater than 24" See General Notes.

TYPICAL INSTALLATION



BACK VIEW

SIDE VIEW

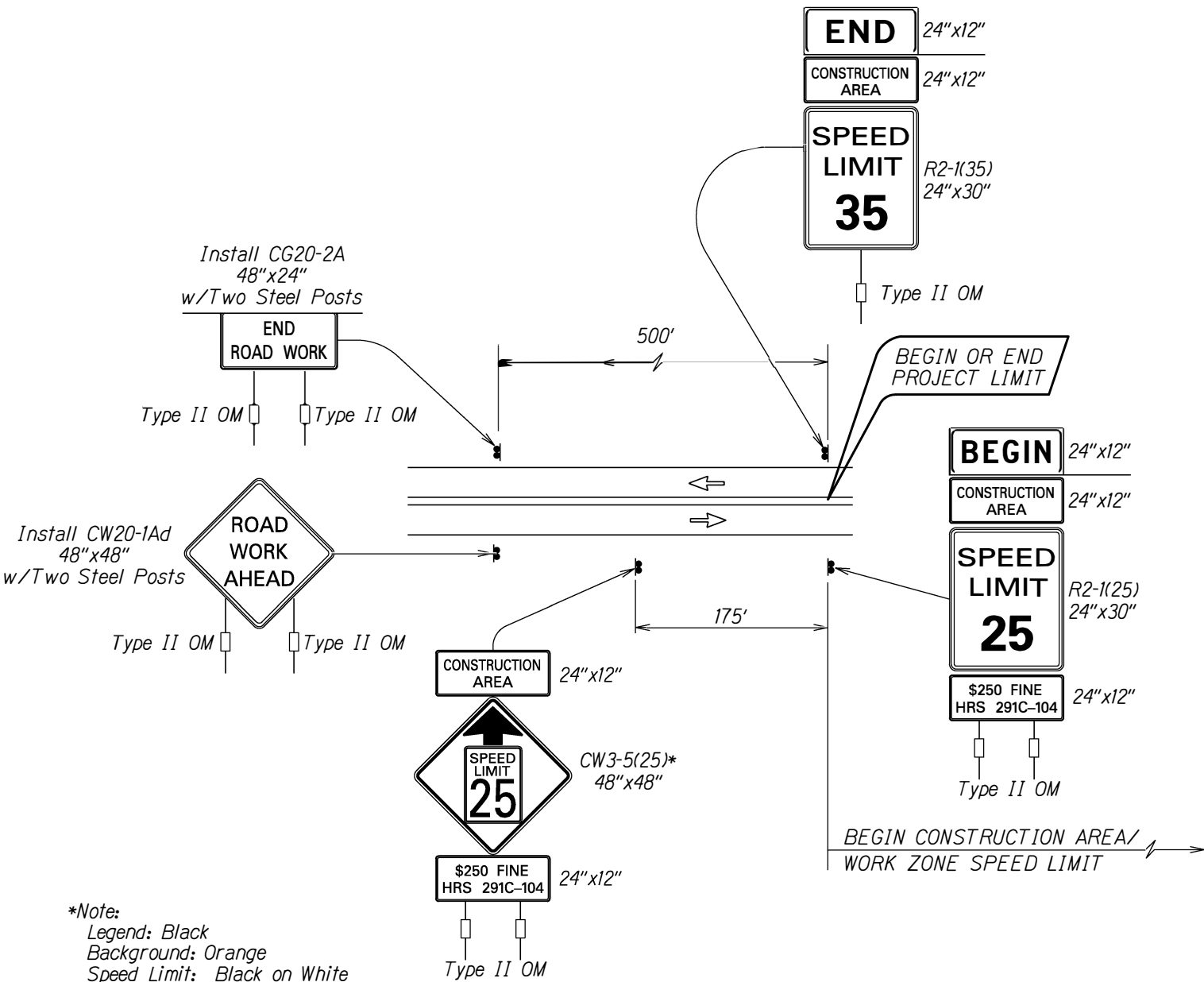
SIGN POST INSTALLATION

ANCHOR BASE DETAIL

GENERAL NOTES

- Design Specifications:
 - Design shall conform w/ the latest AASHTO Standard Specifications for the Structural Supports for Highway Signs, Luminaires & Traffic Signals and its interim supplements and modifications by the Highways Division, Department of Transportation State of Hawaii.
 - Latest HDOT Memorandum with subject title "Design Criteria for Bridges and Structures."
- Loads:
 - Basic Wind Speed: 105 mph.
 - Recurrence Interval of 10 years.
- Materials:
 - Post shall conform to the Standard Specifications.
 - All connection bolts shall be AASHTO M164 bolts and anchor bolts shall be AASHTO M314-105 bolt.
 - Lap splice nuts and bolts shall be M180, with an ultimate tensile strength of 180 ksi, min.
 - Aluminum members and surfaces in contact with structural steel shall be isolated with neoprene material as approved by the Engineer.
- General:
 - See General Notes on B-01, TE-01, and TE-03B for additional information.
 - All posts shall be 12 gage unless otherwise specified or shown on the plans.
 - Square tube posts shall be perforated with $\frac{7}{16}$ " ϕ holes, 1" o.c., 4 sides, along entire length of post.
 - All accessories, fittings and stiffener details (as required) shall be submitted to the Engineer for approval 20 days prior to installation.
 - Alternate designs in accordance with the plans and specifications shall use the Service Load Design Method and shall be stamped by a registered structural engineer of the State of Hawaii and submitted to the Engineer for approval.
 - All sign support posts shall be outside of the clear zone or shielded by an appropriate traffic barrier system. The traffic barrier system shall be submitted to the Engineer for his approval.
 - The Contractor shall use templates while installing the anchor bolts. Anchor bolts shall be vertical.
 - Excavation and backfill shall be considered incidental to the cost of the sign foundation.

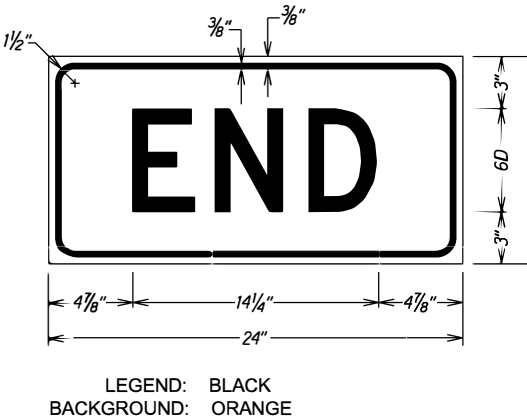
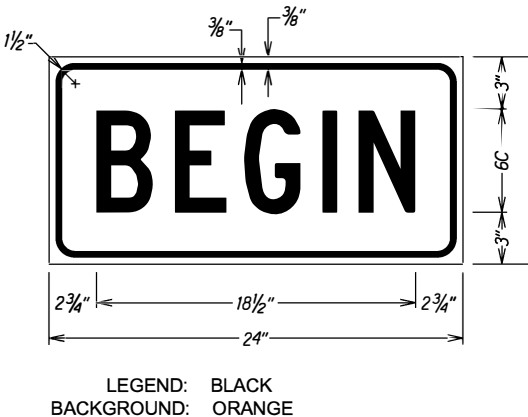
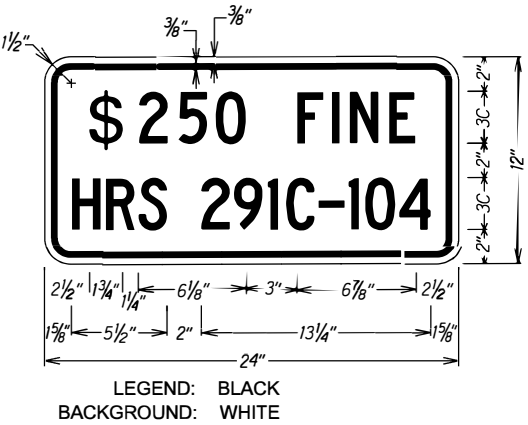
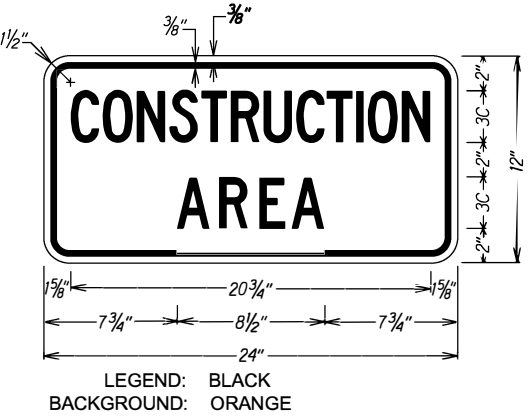
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-K057	2026	76	102



Work Zone Notes:

1. 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 and/or Special Provisions.
2. 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 CW3-5(25) with "CONSTRUCTION AREA" and "\$250 FINE HRS 291C-104" Supplemental Signs).
3. Construction sign assemblies shall be installed on both the approaching and trailing ends of each work zone as shown on this plan.
4. 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. 645.0100 - Traffic Control.
5. 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.
6. Placement of construction signs shall not obstruct the path of pedestrians and bicyclists.
7. The removal and restoration of existing regulatory speed limit signs with new posts along with the installation, maintenance and removal of work zone speed limit sign assemblies shall be considered incidental to Item No. 645.0100 - Traffic Control.

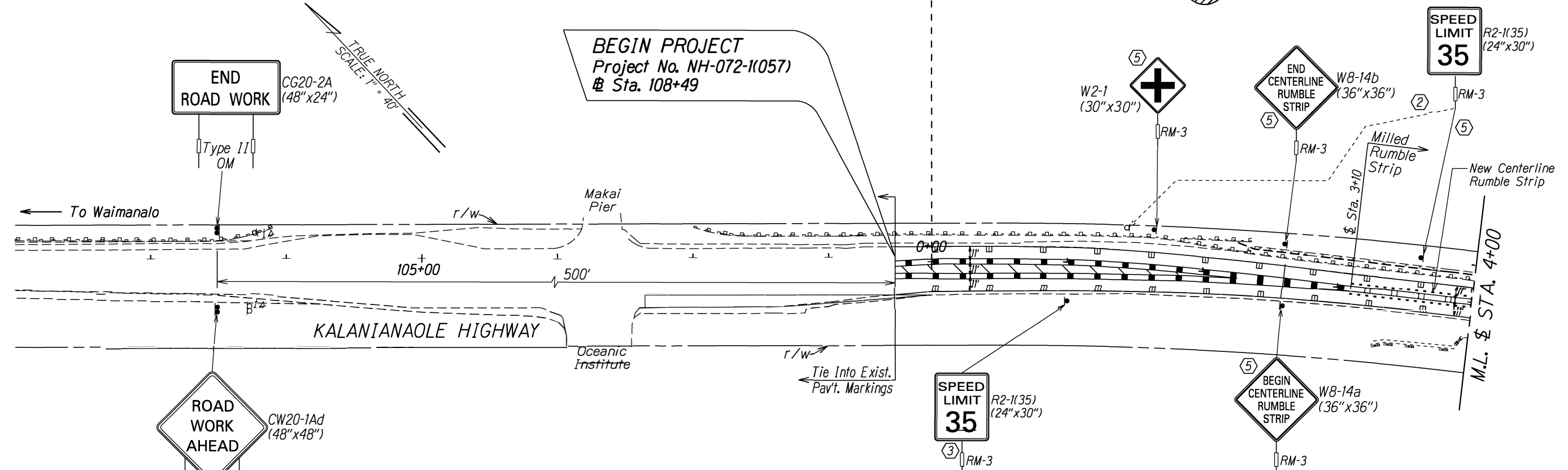
TYPICAL DETAIL FOR CONSTRUCTION SIGNS
ON TWO LANE OR MULTILANE UNDIVIDED LOW SPEED HIGHWAY



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
LOW SPEED UNDIVIDED HIGHWAY
WORK ZONE SIGNING PLAN, NOTES&DETAILS
KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal Aid Project No. NH-072-K057
Scale: As Noted Date: July 2024
SHEET No. 74 OF 30 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	77	102

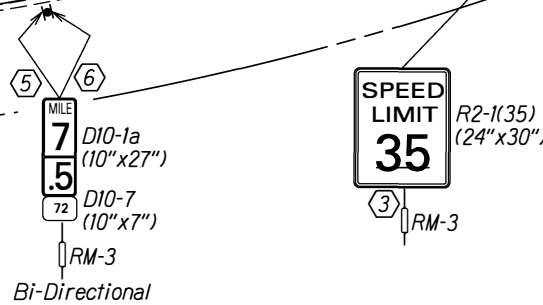
Sta. 108+76.03 o/s 3.29' Rt. (BK) = EQ.
\$ Sta. 0+00.00 (AH)



\$ Sta. 3+10 to \$ Sta. 22+66.
Install Centerline Milled Rumble Strip;
See Detail on Plan Sheet No. T28.

- KEY:
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) & Post(s)
 - ③ Remove Exist. Sign(s) with Post(s) & Install New Sign(s) with Post(s)
 - ④ Remove Exist. Sign(s) & Install New Sign(s)
 - ⑤ Install New Sign(s) with Post(s)
 - ⑥ Install New Sign(s)
 - ⑦ Remove Exist. Sign(s)
 - ⑧ Remove Existing Sign(s) & Install New Sign(s) on Traffic Signal Mast Arm
 - ⑨ Install New In-Street Sign(s) With Surface Mount Base

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**PAVEMENT MARKING
& SIGNING PLANS**

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-1(057)

Scale: 1" = 40' Date: July 2024

SHEET No. T5 OF 30 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	78	102

\$ Sta. 24+70 to \$ Sta. 33+10
Install Centerline Milled Rumble Strip,
See Detail on Plan Sheet No. T28.

\$ Sta. 33+10 to \$ Sta. 34+83
Install RPM Centerline Rumble Strip
For Divided Highway; See Detail "B"
on Plan Sheet No. T18.

\$ Sta. 36+74 to \$ Sta. 37+18.
Install RPM Centerline Rumble
Strip For Undivided Highway; See
Detail "A" on Plan Sheet No. T18.

- KEY:
- 1 Exist. Sign(s) & Post(s) to Remain
 - 2 Remove Exist. Sign(s) & Post(s)
 - 3 Remove Exist. Sign(s) with Post(s) & Install New Sign(s) with Post(s)
 - 4 Remove Exist. Sign(s) & Install New Sign(s)
 - 5 Install New Sign(s) with Post(s)
 - 6 Install New Sign(s)
 - 7 Remove Exist. Sign(s)
 - 8 Remove Existing Sign(s) & Install New Sign(s) on Traffic Signal Mast Arm
 - 9 Install New In-Street Sign(s) With Surface Mount Base

Install 2 Sets Each of Seven (7) Yellow 36" Ht. Delineators 3' Maximum O.C. & 12" From Curb Face to Center of Delineator (Typ.)

Install Thirty (30) Yellow 36" Ht. Delineators 3' Maximum O.C. & 12" From Curb Face to Center of Delineator (Typ.)

RI-6a Sign

INSET A
Not to Scale

(In-Street Pedestrian Crosswalk Sign With Surface Mount Base)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLANS

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-1(057)

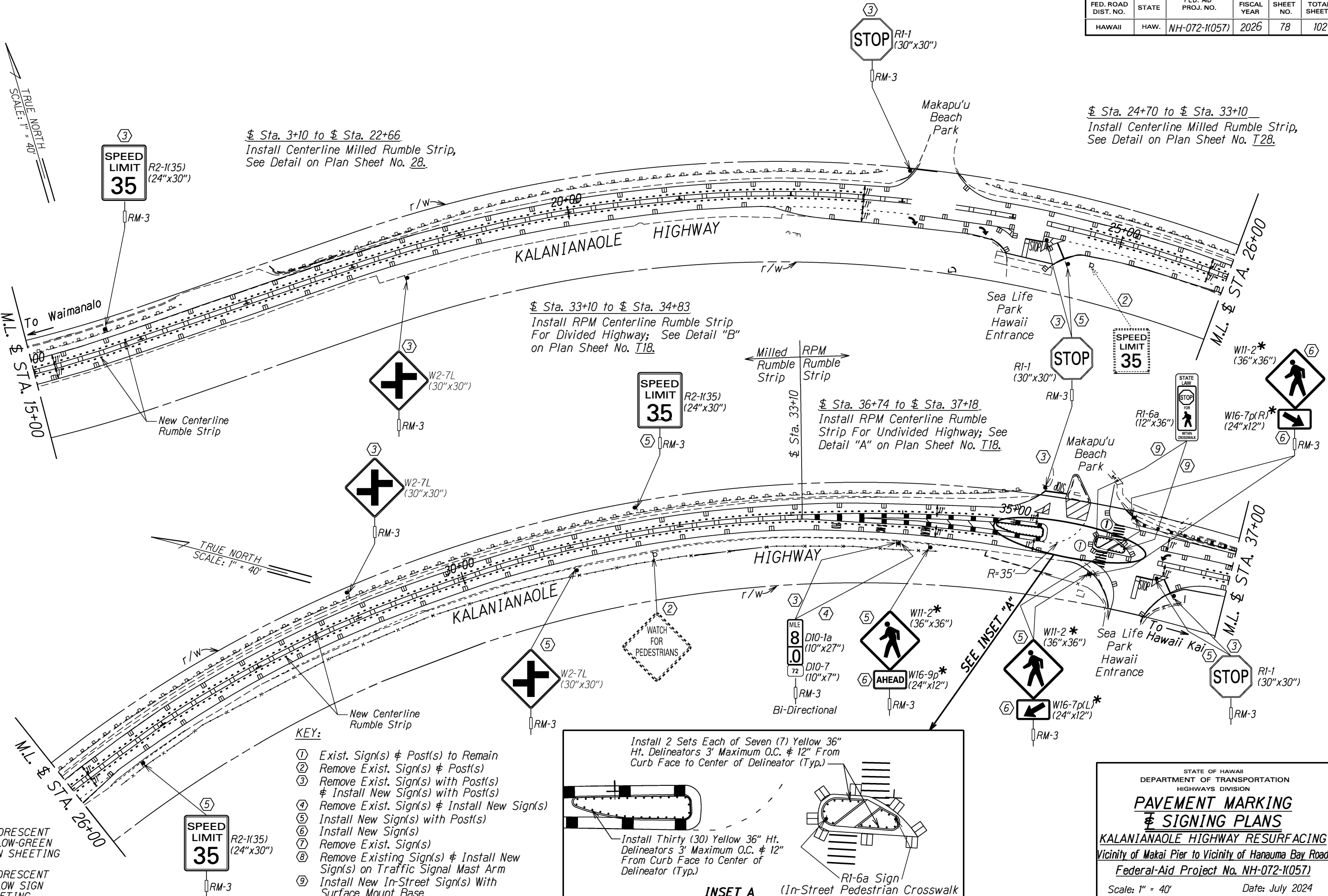
Scale: 1" = 40' Date: July 2024

SHEET No. T6 OF 30 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
Idem/aj	
okallp02	

* FLUORESCENT YELLOW-GREEN SIGN SHEETING

** FLUORESCENT YELLOW SIGN SHEETING



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-K(057)	2026	79	102

Sta. 36+74 to Sta. 37+18

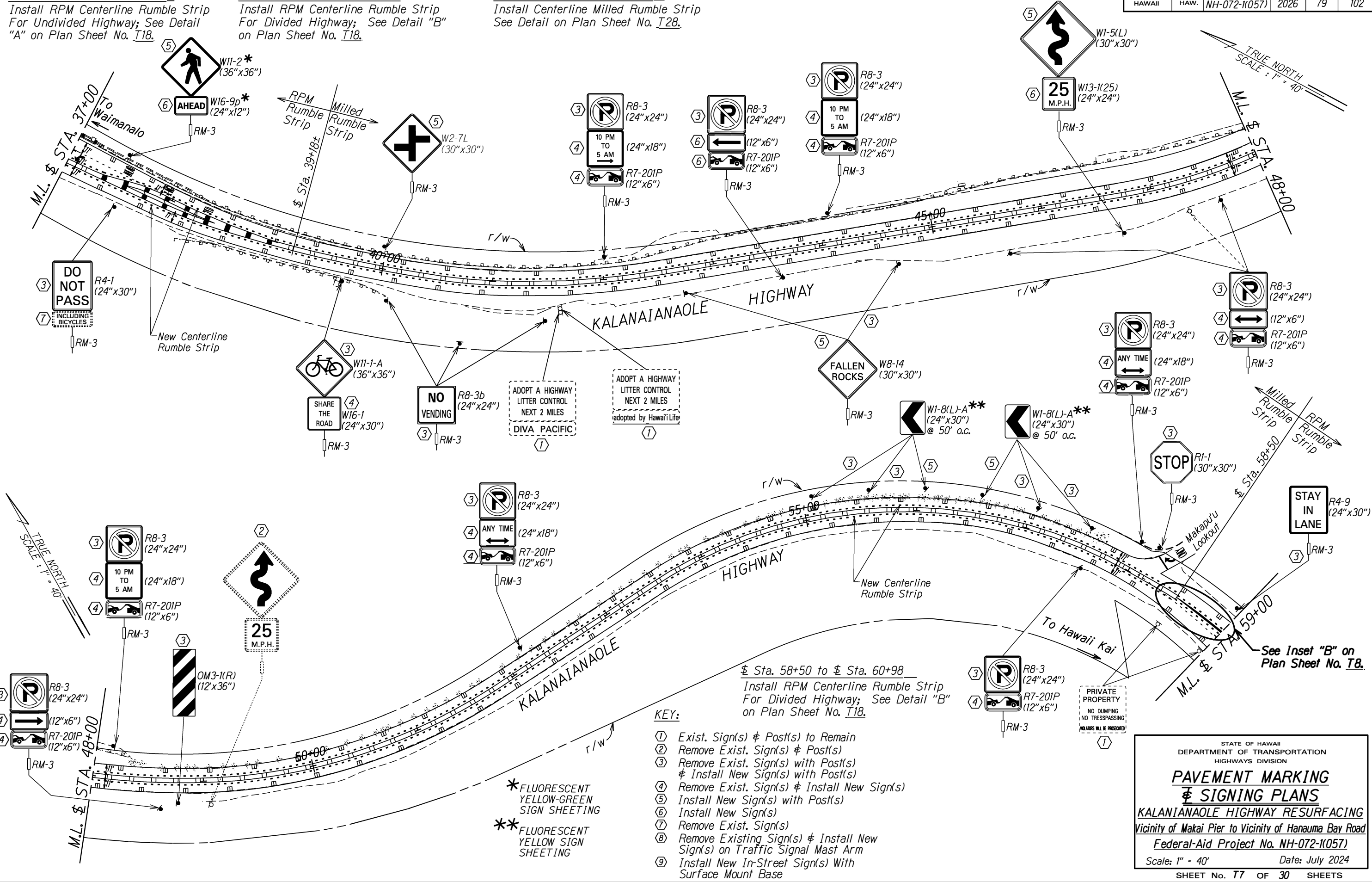
Install RPM Centerline Rumble Strip
For Undivided Highway; See Detail
"A" on Plan Sheet No. T18.

Sta. 37+18± to Sta. 39+18

Install RPM Centerline Rumble Strip
For Divided Highway; See Detail "B"
on Plan Sheet No. T18.

Sta. 39+18 to Sta. 58+50

Install Centerline Milled Rumble Strip
See Detail on Plan Sheet No. T28.



Sta. 58+50 to Sta. 60+98
Install RPM Centerline Rumble Strip
For Divided Highway; See Detail "B"
on Plan Sheet No. T18.

- KEY:
- 1 Exist. Sign(s) & Post(s) to Remain
 - 2 Remove Exist. Sign(s) & Post(s)
 - 3 Remove Exist. Sign(s) with Post(s) & Install New Sign(s) with Post(s)
 - 4 Remove Exist. Sign(s) & Install New Sign(s)
 - 5 Install New Sign(s) with Post(s)
 - 6 Install New Sign(s)
 - 7 Remove Exist. Sign(s)
 - 8 Remove Existing Sign(s) & Install New Sign(s) on Traffic Signal Mast Arm
 - 9 Install New In-Street Sign(s) With Surface Mount Base
- * FLUORESCENT YELLOW-GREEN SIGN SHEETING
- ** FLUORESCENT YELLOW SIGN SHEETING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**PAVEMENT MARKING
& SIGNING PLANS**

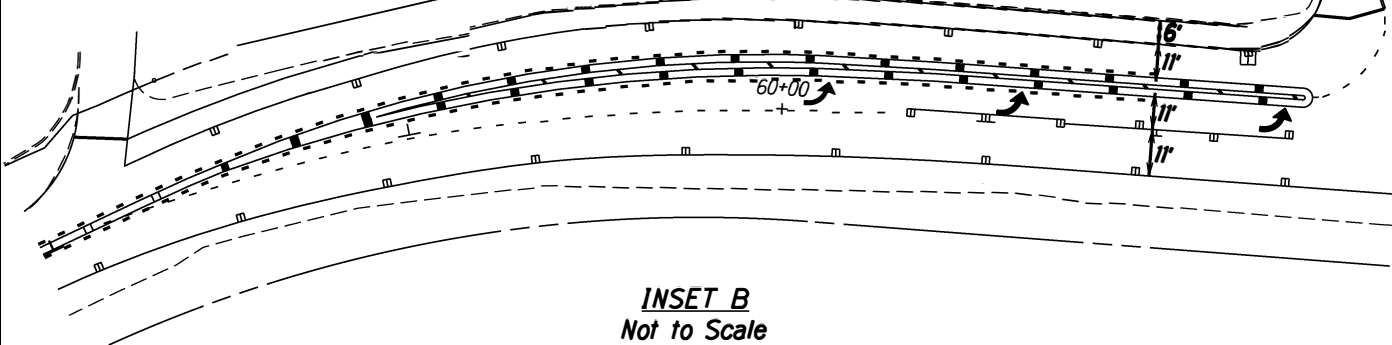
KALANIANAʻOLÉ HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-K(057)

Scale: 1" = 40' Date: July 2024

SHEET No. T7 OF 30 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
Idem/oi	
N. 04/11/03	

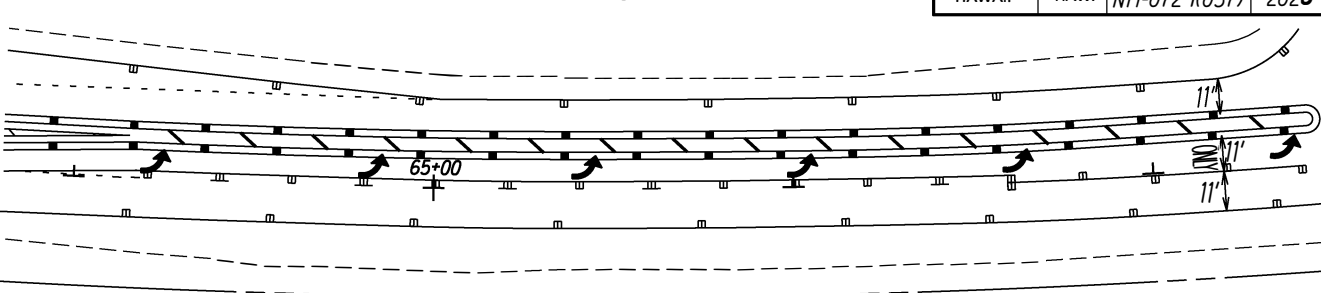
Enlarged detail of Centerline Striping
Sta. 58+77 to Sta. 61+60



INSET B
Not to Scale

INSET C
Not to Scale

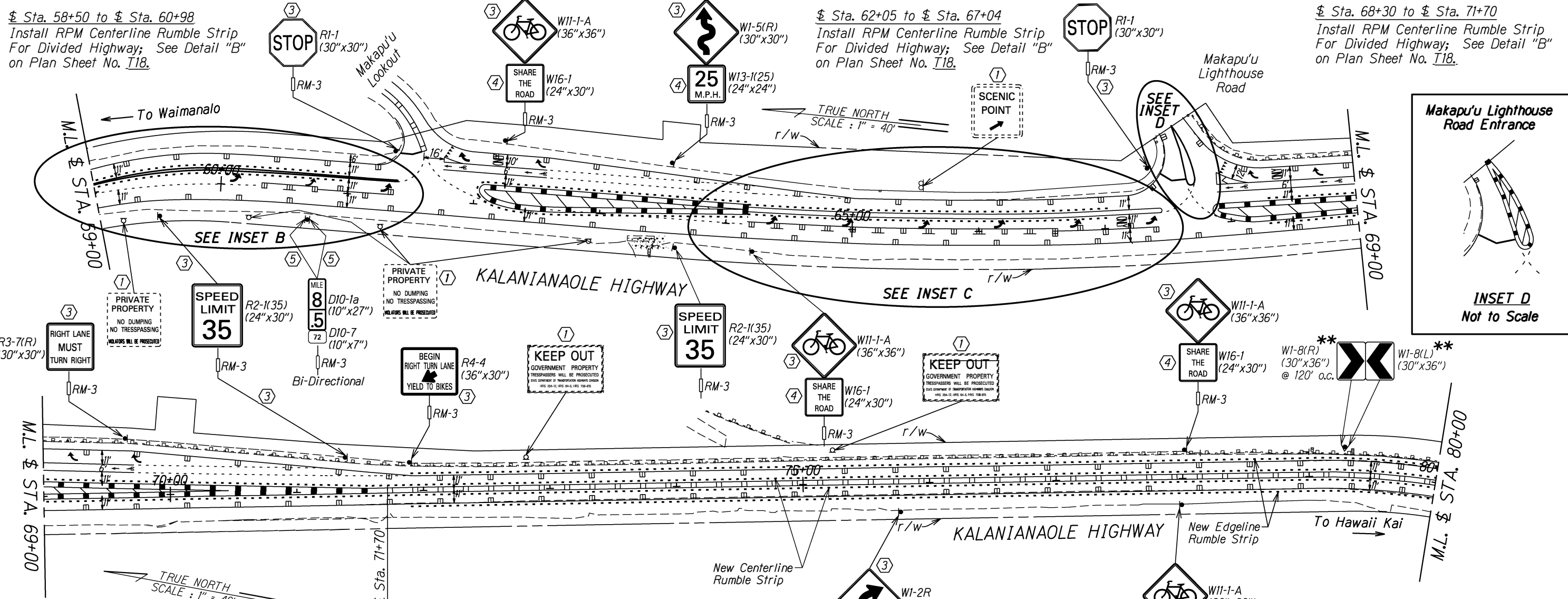
Enlarged detail of Centerline Striping
Sta. 63+80 to Sta. 67+50



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-K(057)	2026	80	102

Sta. 58+50 to Sta. 60+98

Install RPM Centerline Rumble Strip For Divided Highway; See Detail "B" on Plan Sheet No. T18.



Makapu'u Lighthouse Road Entrance

INSET D
Not to Scale

- KEY:
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) & Post(s)
 - ③ Remove Exist. Sign(s) with Post(s) & Install New Sign(s) with Post(s)
 - ④ Remove Exist. Sign(s) & Install New Sign(s)
 - ⑤ Install New Sign(s) with Post(s)
 - ⑥ Install New Sign(s)
 - ⑦ Remove Exist. Sign(s)
 - ⑧ Remove Existing Sign(s) & Install New Sign(s) on Traffic Signal Mast Arm
 - ⑨ Install New In-Street Sign(s) With Surface Mount Base
- * FLUORESCENT YELLOW-GREEN SIGN SHEETING
- ** FLUORESCENT YELLOW SIGN SHEETING

- Sta. 71+70 to Sta. 109+90
Install Centerline Milled Rumble Strip; See Detail on Plan Sheet No. T28.
- Sta. 71+90 Lt. to Sta. 110+48 Lt.
Install Bicycle Friendly Edgeline Rumble Strip; See Detail on Plan Sheet No. T30.
- Sta. 71+90 Rt. to Sta. 109+75 Rt.
Install Bicycle Friendly Edgeline Rumble Strip; See Detail on Plan Sheet No. T30.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

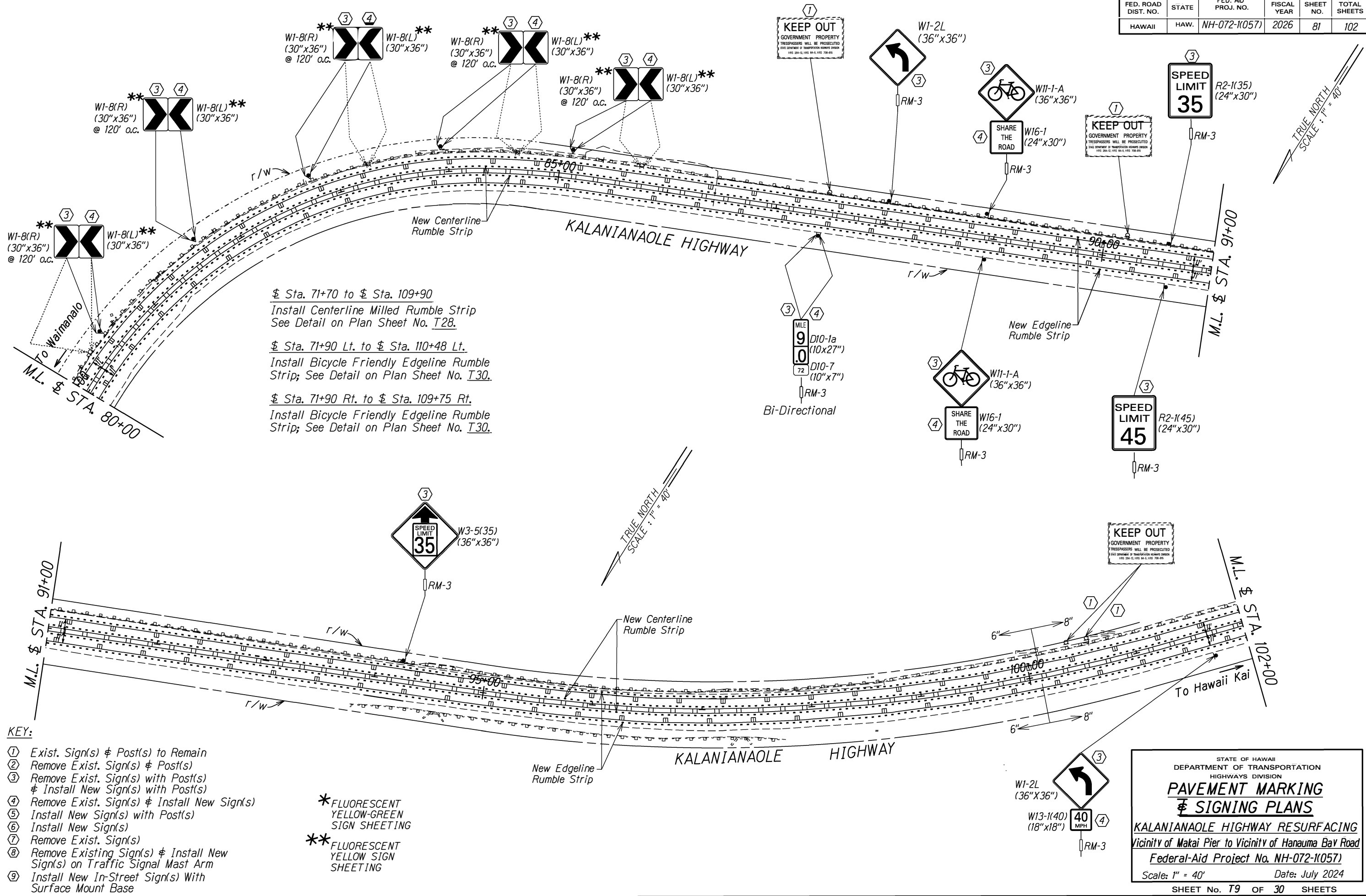
PAVEMENT MARKING & SIGNING PLANS

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-K(057)

Scale: 1" = 40' Date: July 2024

SHEET No. T8 OF 29 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	81	102



§ Sta. 71+70 to § Sta. 109+90
Install Centerline Milled Rumble Strip
See Detail on Plan Sheet No. T28.

§ Sta. 71+90 Lt. to § Sta. 110+48 Lt.
Install Bicycle Friendly Edgeline Rumble Strip; See Detail on Plan Sheet No. T30.

§ Sta. 71+90 Rt. to § Sta. 109+75 Rt.
Install Bicycle Friendly Edgeline Rumble Strip; See Detail on Plan Sheet No. T30.

- KEY:
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) & Post(s)
 - ③ Remove Exist. Sign(s) with Post(s) & Install New Sign(s) with Post(s)
 - ④ Remove Exist. Sign(s) & Install New Sign(s)
 - ⑤ Install New Sign(s) with Post(s)
 - ⑥ Install New Sign(s)
 - ⑦ Remove Exist. Sign(s)
 - ⑧ Remove Existing Sign(s) & Install New Sign(s) on Traffic Signal Mast Arm
 - ⑨ Install New In-Street Sign(s) With Surface Mount Base

* FLUORESCENT YELLOW-GREEN SIGN SHEETING

** FLUORESCENT YELLOW SIGN SHEETING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING
& SIGNING PLANS

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-1(057)

Scale: 1" = 40' Date: July 2024

SHEET No. T9 OF 30 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
102.m/01	
N. okallp05	

Sta. 71+70 to Sta. 109+75
Install Centerline Milled Rumble Strip;
See Detail on Plan Sheet No. T28.

Sta. 110+99 to Sta. 111+74
Install Centerline Milled Rumble Strip;
See Detail on Plan Sheet No. T28.

Sta. 71+90 Lt. to Sta. 110+48 Lt.
Install Bicycle Friendly Edgeline Rumble
Strip; See Detail on Plan Sheet No. T30.

Sta. 71+90 Rt. to Sta. 109+75 Rt.
Install Bicycle Friendly Edgeline Rumble
Strip; See Detail on Plan Sheet No. T30.

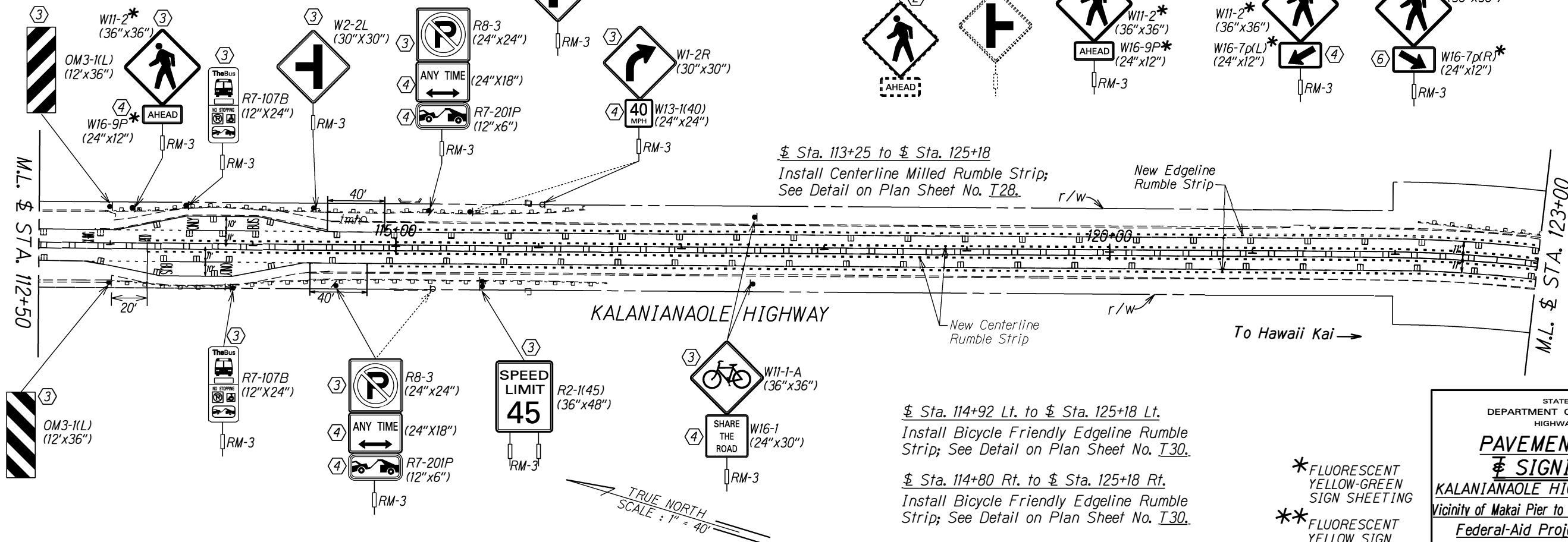
Sta. 110+98 Lt. to Sta. 111+74 Lt.
Install Bicycle Friendly Edgeline Rumble
Strip; See Detail on Plan Sheet No. T30.

Sta. 110+98 Rt. to Sta. 111+74 Rt.
Install Bicycle Friendly Edgeline Rumble
Strip; See Detail on Plan Sheet No. T30.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-K(057)	2026	82	102

KEY:

- Exist. Sign(s) & Post(s) to Remain
- Remove Exist. Sign(s) & Post(s)
- Remove Exist. Sign(s) with Post(s) & Install New Sign(s) with Post(s)
- Remove Exist. Sign(s) & Install New Sign(s)
- Install New Sign(s) with Post(s)
- Install New Sign(s)
- Remove Exist. Sign(s)
- Remove Existing Sign(s) & Install New Sign(s) on Traffic Signal Mast Arm
- Install New In-Street Sign(s) With Surface Mount Base



Sta. 114+92 Lt. to Sta. 125+18 Lt.
Install Bicycle Friendly Edgeline Rumble
Strip; See Detail on Plan Sheet No. T30.

Sta. 114+80 Rt. to Sta. 125+18 Rt.
Install Bicycle Friendly Edgeline Rumble
Strip; See Detail on Plan Sheet No. T30.

* FLUORESCENT
YELLOW-GREEN
SIGN SHEETING
** FLUORESCENT
YELLOW SIGN
SHEETING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**PAVEMENT MARKING
& SIGNING PLANS**

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-K(057)

Scale: 1" = 40' Date: July 2024

SHEET No. T10 OF 30 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	83	102

Sta. 113+20 to Sta. 125+18
Install Centerline Milled Rumble Strip;
See Detail on Plan Sheet No. T28.

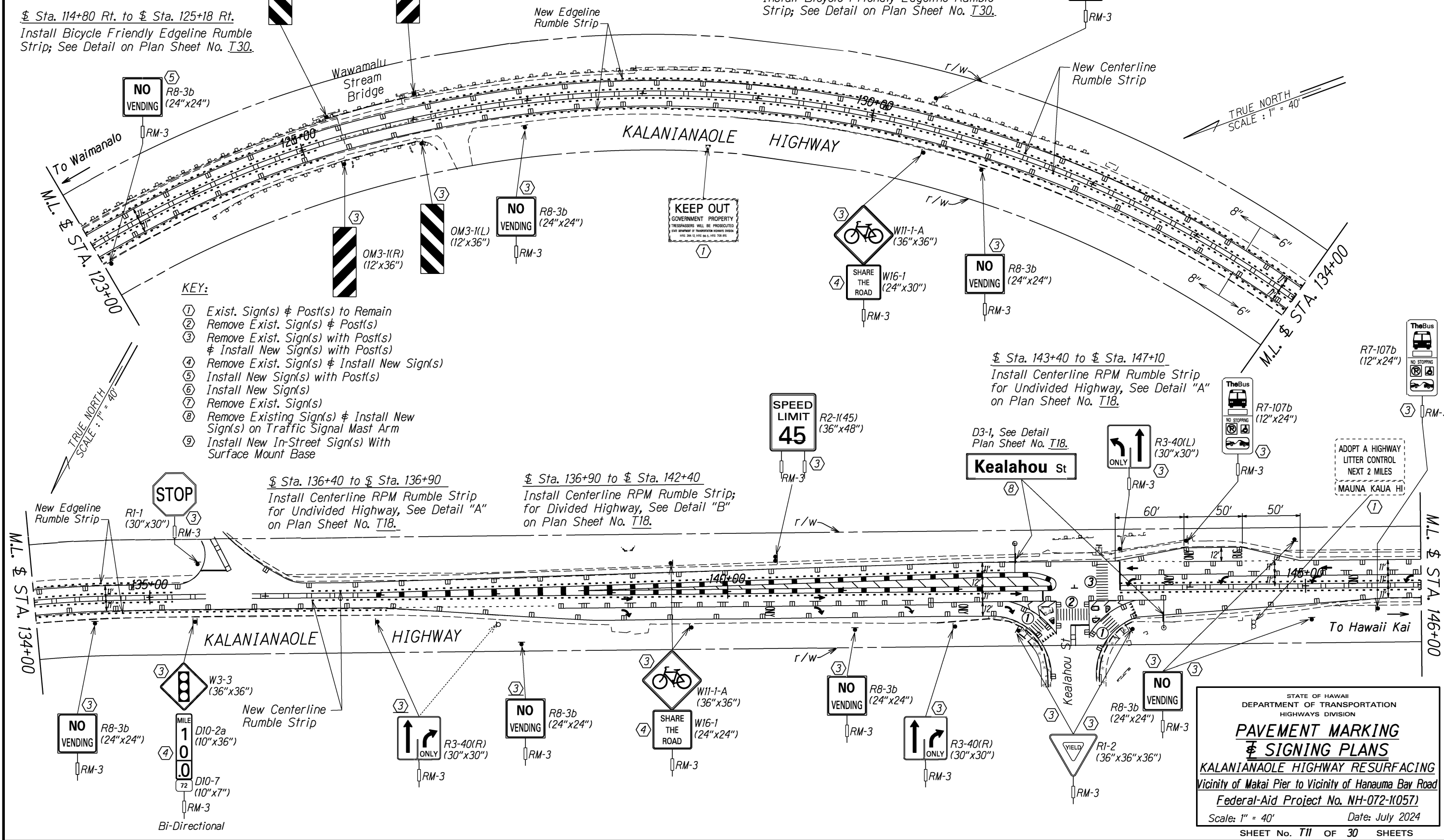
Sta. 114+92 Lt. to Sta. 125+18 Lt.
Install Bicycle Friendly Edgeline Rumble Strip;
See Detail on Plan Sheet No. T30.

Sta. 114+80 Rt. to Sta. 125+18 Rt.
Install Bicycle Friendly Edgeline Rumble Strip;
See Detail on Plan Sheet No. T30.

Sta. 126+10 to Sta. 135+20
Install Centerline Milled Rumble Strip;
See Detail on Plan Sheet No. T28.

Sta. 126+10 Lt. to Sta. 135+00 Lt.
Install Bicycle Friendly Edgeline Rumble Strip;
See Detail on Plan Sheet No. T30.

Sta. 126+85 Rt. to Sta. 137+05 Rt.
Install Bicycle Friendly Edgeline Rumble Strip;
See Detail on Plan Sheet No. T30.



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
102m/01	
N. 01/10/01	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING
& SIGNING PLANS

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-1(057)

Scale: 1" = 40' Date: July 2024

SHEET No. T11 OF 30 SHEETS

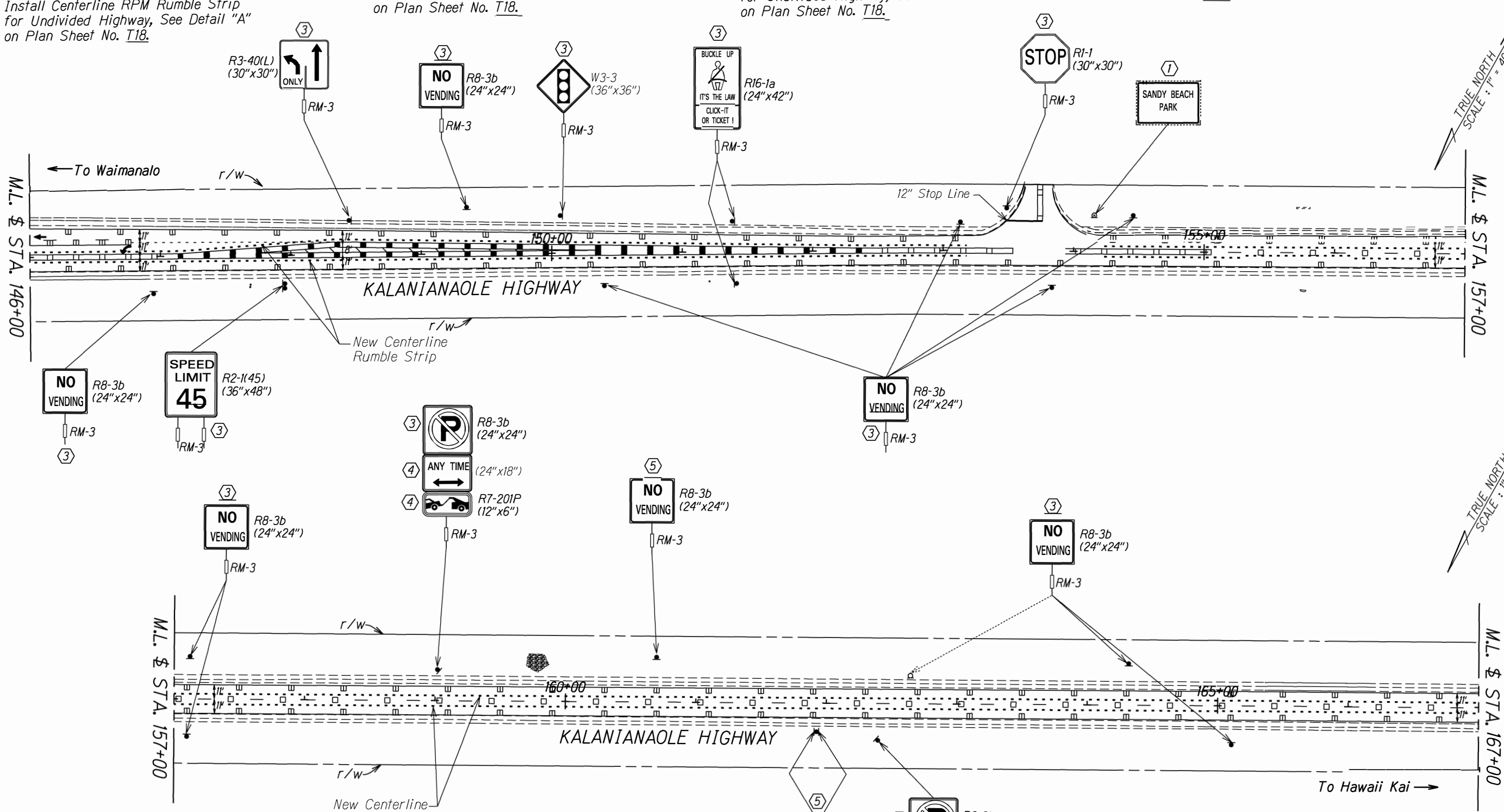
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-K(057)	2025	84	102

Sta. 143+40 to Sta. 147+10
 Install Centerline RPM Rumble Strip
 for Undivided Highway, See Detail "A"
 on Plan Sheet No. T18.

Sta. 147+10 to Sta. 152+40
 Install Centerline RPM Rumble Strip
 for Divided Highway, See Detail "B"
 on Plan Sheet No. T18.

Sta. 152+40 to Sta. 153+18
 Install Centerline RPM Rumble Strip
 for Undivided Highway, See Detail "A"
 on Plan Sheet No. T18.

Sta. 154+21 to Sta. 175+28
 Install Centerline Milled Rumble Strip
 See Detail on Plan Sheet No. T28.



- KEY:
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) & Post(s)
 - ③ Remove Exist. Sign(s) with Post(s) & Install New Sign(s) with Post(s)
 - ④ Remove Exist. Sign(s) & Install New Sign(s)
 - ⑤ Install New Sign(s) with Post(s)
 - ⑥ Install New Sign(s)
 - ⑦ Remove Exist. Sign(s)
 - ⑧ Remove Existing Sign(s) & Install New Sign(s) on Traffic Signal Mast Arm
 - ⑨ Install New In-Street Sign(s) With Surface Mount Base

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

**PAVEMENT MARKING
& SIGNING PLANS**
 KALANIANA'OLE HIGHWAY RESURFACING
 Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
 Federal-Aid Project No. NH-072-K(057)
 Scale: 1" = 40'
 Date: July 2024

SHEET No. 112 OF 30 SHEETS

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
IN CHARGE	
NOTED BY	
DATE	

KEY:

- ① Exist. Sign(s) & Post(s) to Remain
- ② Remove Exist. Sign(s) & Post(s)
- ③ Remove Exist. Sign(s) with Post(s) & Install New Sign(s) with Post(s)
- ④ Remove Exist. Sign(s) & Install New Sign(s)
- ⑤ Install New Sign(s) with Post(s)
- ⑥ Install New Sign(s)
- ⑦ Remove Exist. Sign(s)
- ⑧ Remove Existing Sign(s) & Install New Sign(s) on Traffic Signal Mast Arm
- ⑨ Install New In-Street Sign(s) With Surface Mount Base

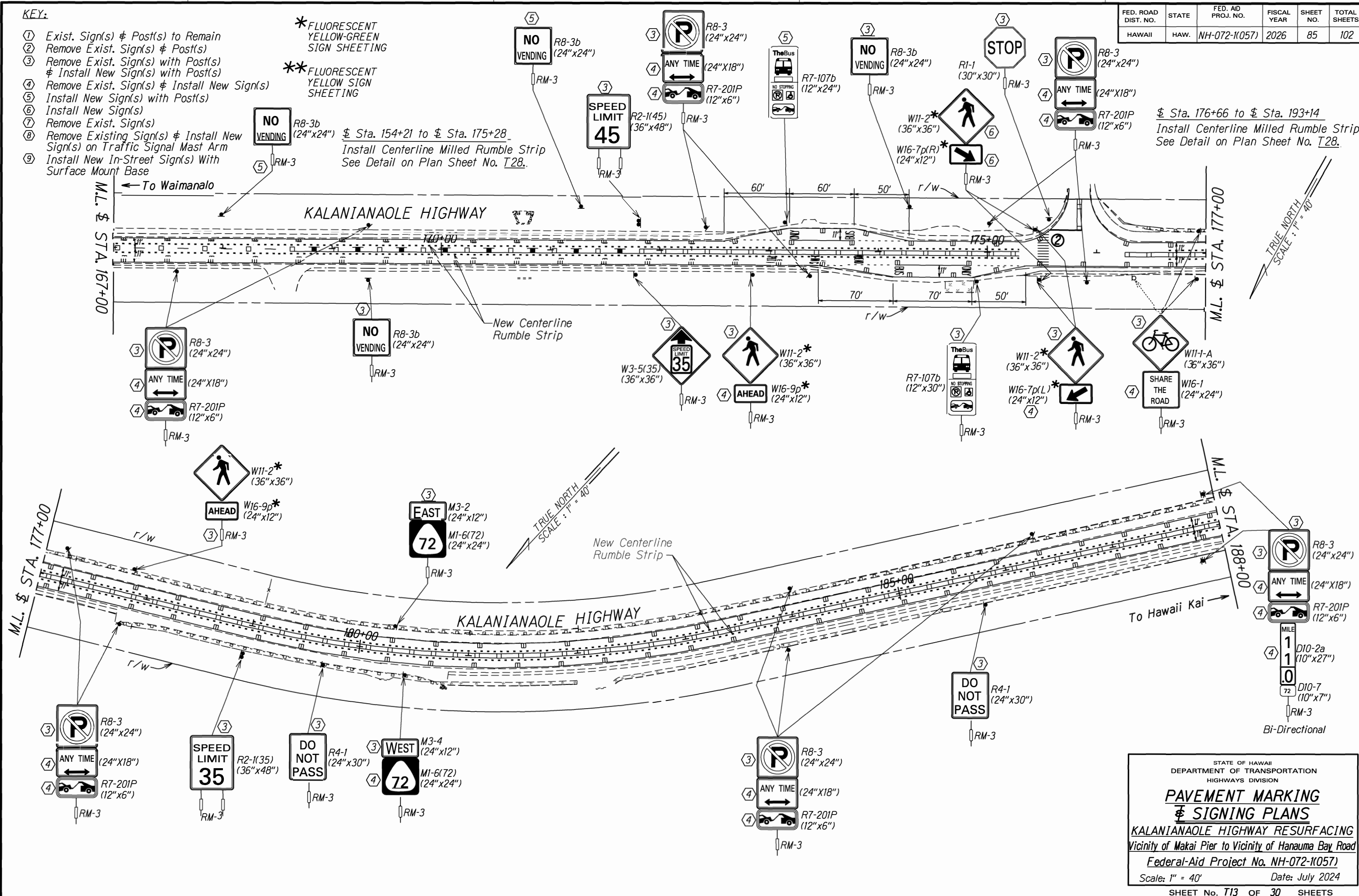
*FLUORESCENT
YELLOW-GREEN
SIGN SHEETING

**FLUORESCENT
YELLOW SIGN
SHEETING

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-K(057)	2026	85	102

Sta. 154+21 to Sta. 175+28
Install Centerline Milled Rumble Strip
See Detail on Plan Sheet No. T28.

Sta. 176+66 to Sta. 193+14
Install Centerline Milled Rumble Strip
See Detail on Plan Sheet No. T28.



TRUE NORTH
SCALE: 1" = 40'

TRUE NORTH
SCALE: 1" = 40'

To Hawaii Kai

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**PAVEMENT MARKING
& SIGNING PLANS**

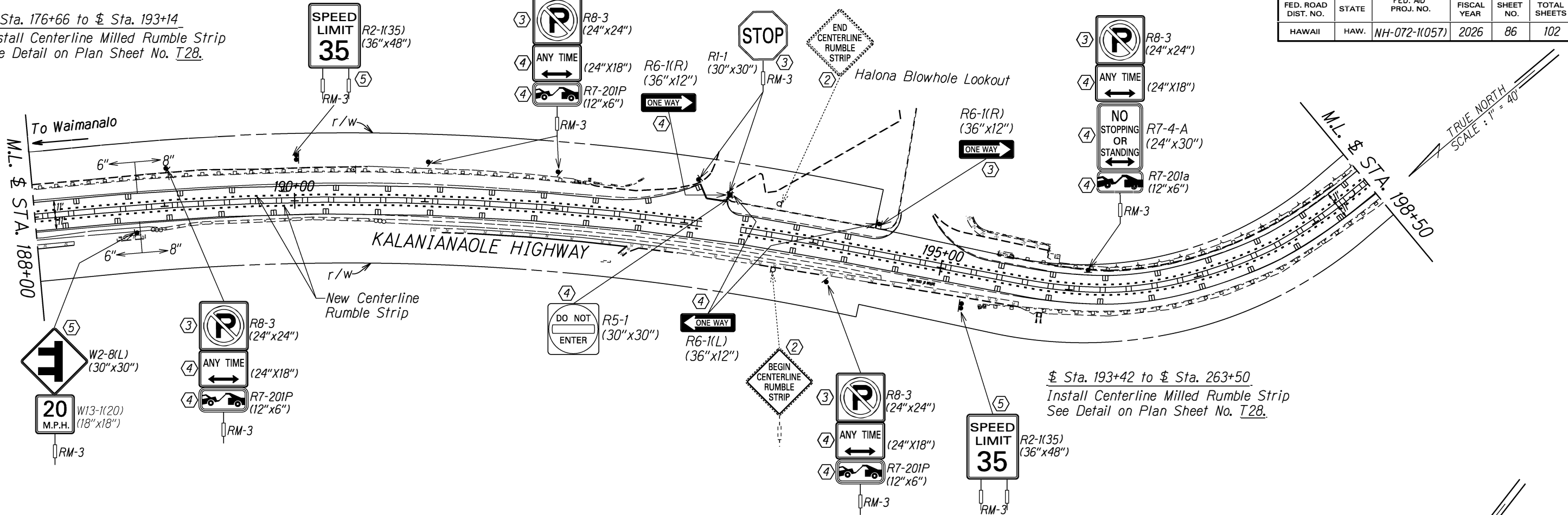
KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-K(057)

Scale: 1" = 40' Date: July 2024

SHEET No. T13 OF 30 SHEETS

Sta. 176+66 to Sta. 193+14
Install Centerline Milled Rumble Strip
See Detail on Plan Sheet No. T28.

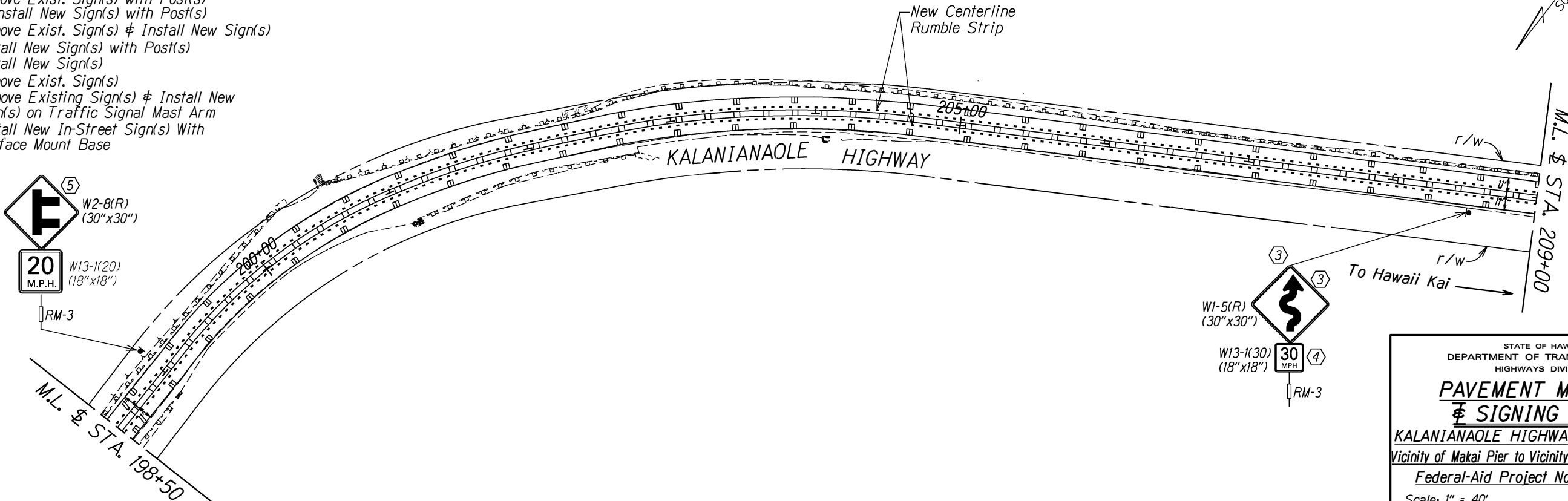
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	86	102



Sta. 193+42 to Sta. 263+50
Install Centerline Milled Rumble Strip
See Detail on Plan Sheet No. T28.

KEY:

- 1 Exist. Sign(s) & Post(s) to Remain
- 2 Remove Exist. Sign(s) & Post(s)
- 3 Remove Exist. Sign(s) with Post(s) & Install New Sign(s) with Post(s)
- 4 Remove Exist. Sign(s) & Install New Sign(s)
- 5 Install New Sign(s) with Post(s)
- 6 Install New Sign(s)
- 7 Remove Exist. Sign(s)
- 8 Remove Existing Sign(s) & Install New Sign(s) on Traffic Signal Mast Arm
- 9 Install New In-Street Sign(s) With Surface Mount Base



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

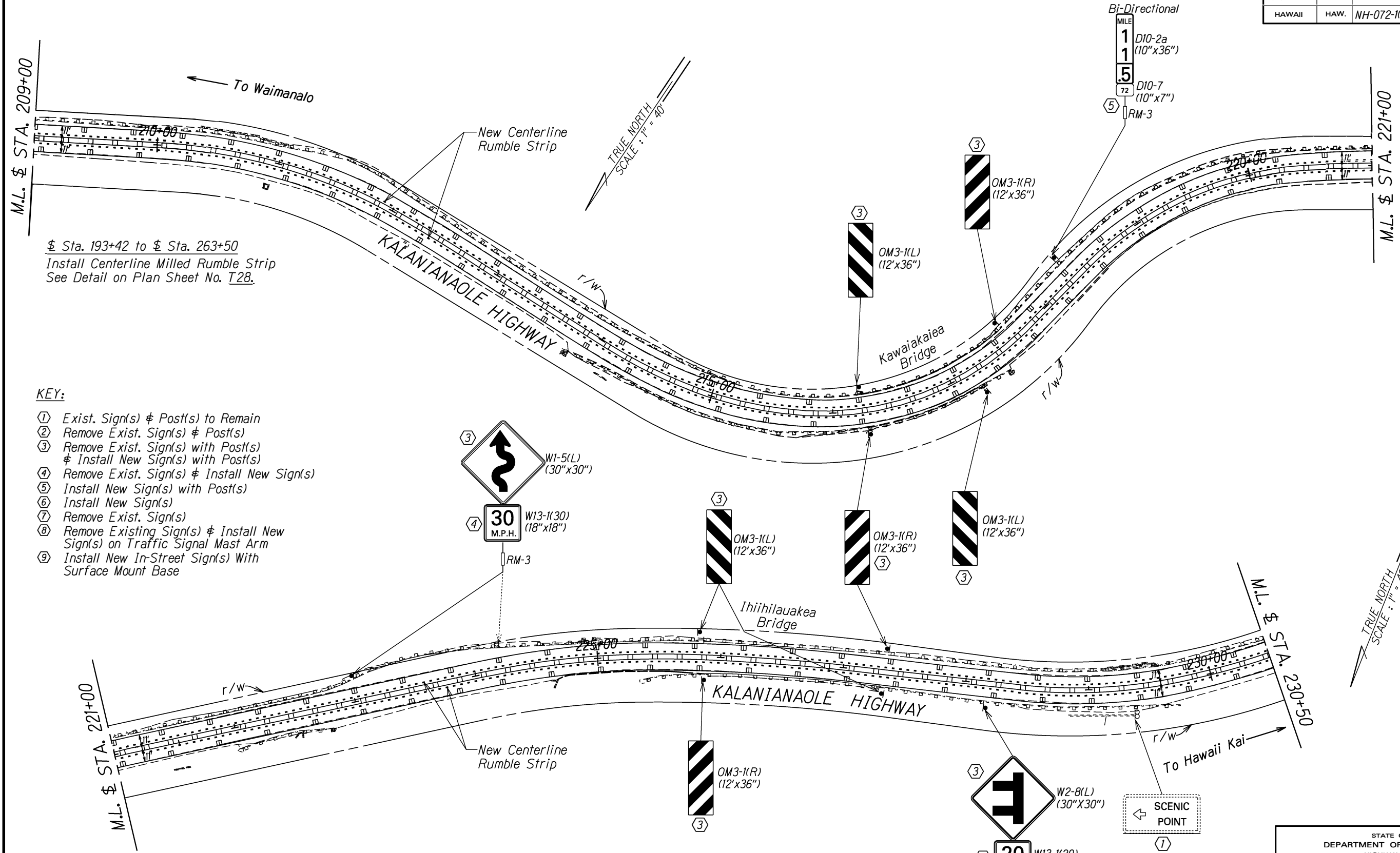
PAVEMENT MARKING
& SIGNING PLANS

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-1(057)

Scale: 1" = 40' Date: July 2024

SHEET No. T14 OF 30 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-K057	2026	87	102



Sta. 193+42 to Sta. 263+50
Install Centerline Milled Rumble Strip
See Detail on Plan Sheet No. T28.

- KEY:
- ① Exist. Sign(s) & Post(s) to Remain
 - ② Remove Exist. Sign(s) & Post(s)
 - ③ Remove Exist. Sign(s) with Post(s) & Install New Sign(s) with Post(s)
 - ④ Remove Exist. Sign(s) & Install New Sign(s)
 - ⑤ Install New Sign(s) with Post(s)
 - ⑥ Install New Sign(s)
 - ⑦ Remove Exist. Sign(s)
 - ⑧ Remove Existing Sign(s) & Install New Sign(s) on Traffic Signal Mast Arm
 - ⑨ Install New In-Street Sign(s) With Surface Mount Base

SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
102m/01	
N. okallip	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

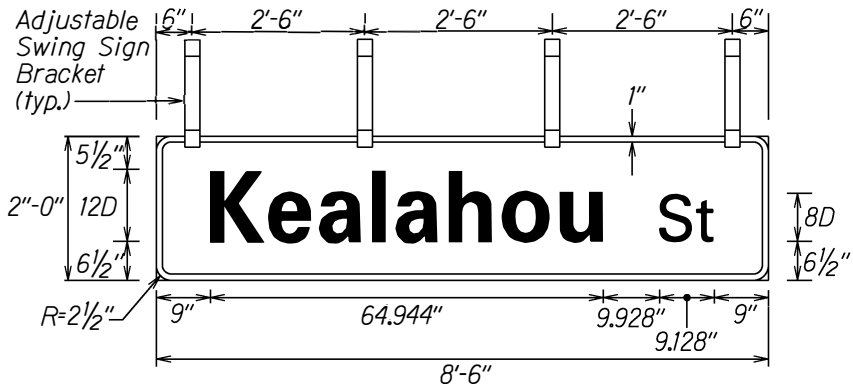
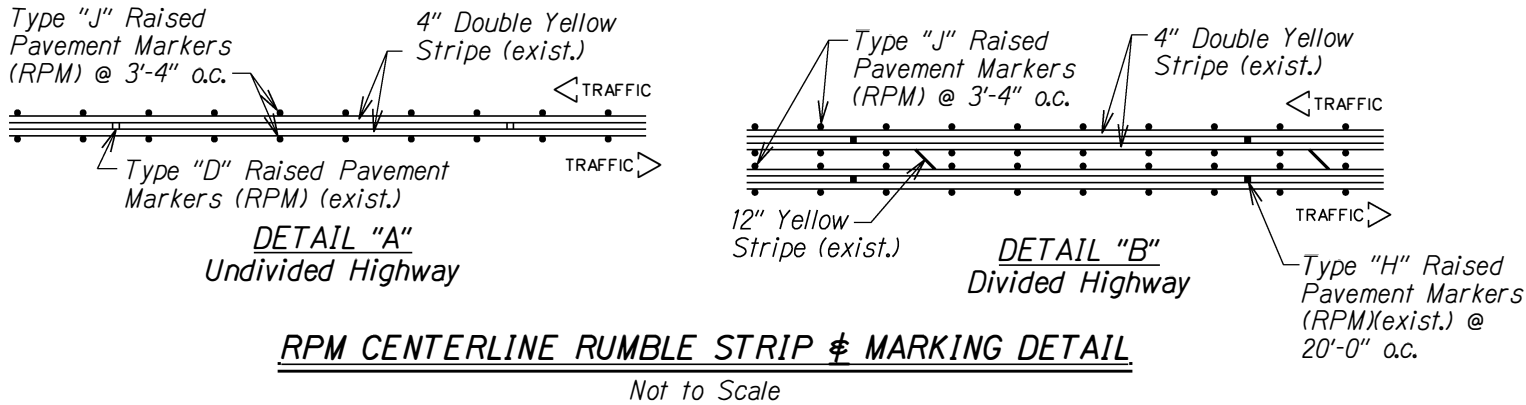
PAVEMENT MARKING
& SIGNING PLANS

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-K057

Scale: 1" = 40' Date: July 2024

SHEET No. T15 OF 30 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	90	102

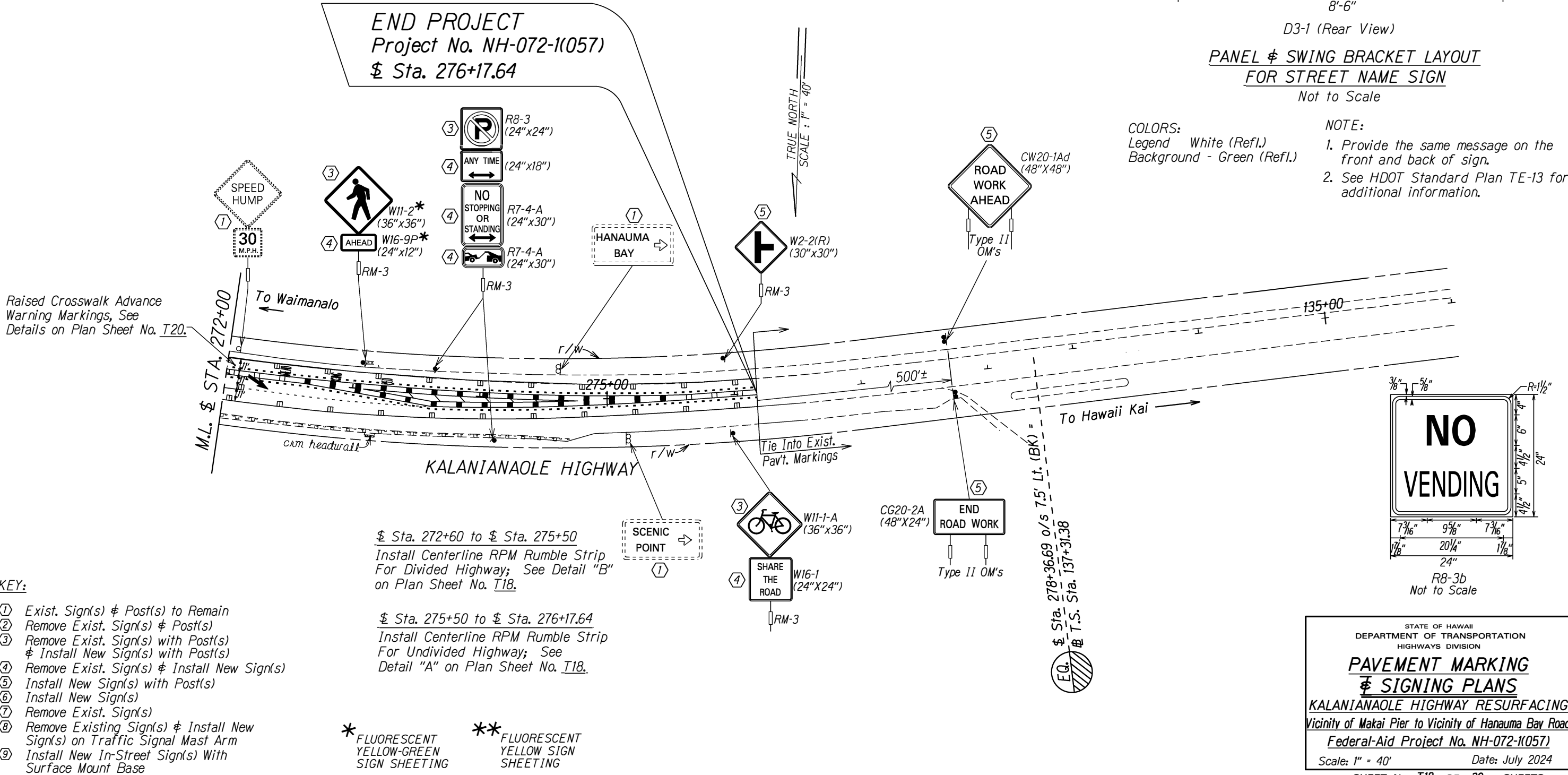


PANEL & SWING BRACKET LAYOUT FOR STREET NAME SIGN

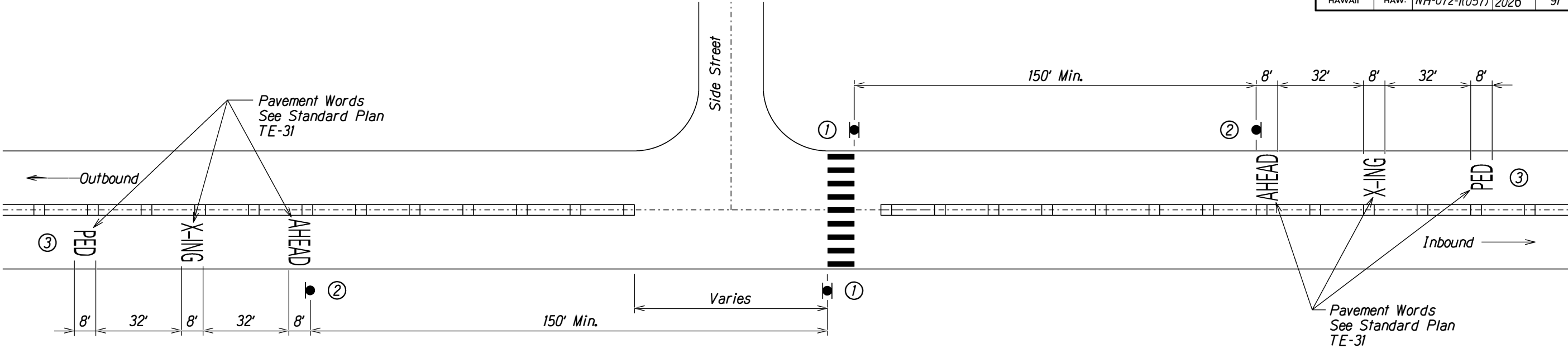
Not to Scale

COLORS:
Legend White (Refl.)
Background - Green (Refl.)

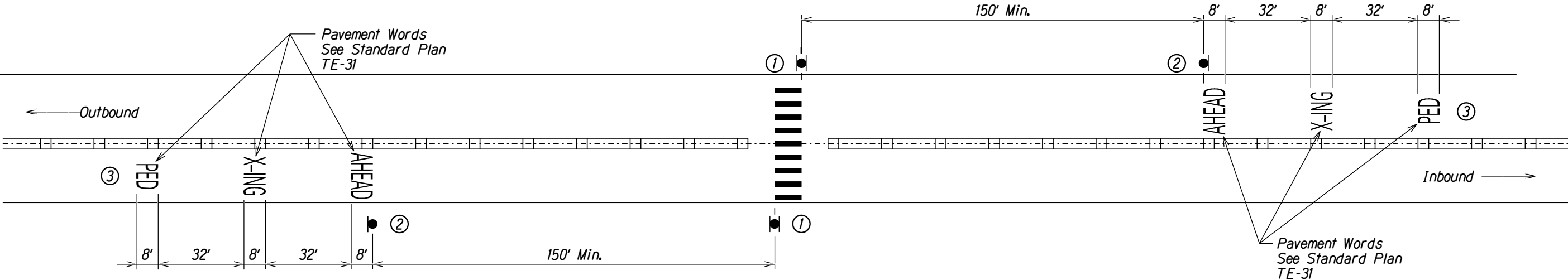
- NOTE:
1. Provide the same message on the front and back of sign.
 2. See HDOT Standard Plan TE-13 for additional information.



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TYPICAL UNSIGNALIZED INTERSECTION MARKINGS
(NO LEFT TURN STORAGE LANES)
Not to Scale



TYPICAL MIDBLOCK INTERSECTION MARKINGS
Not to Scale

①

W16-7p(L) 24"x12"

OR

W16-7p(L) 24"x12"

Black legend on flourescent yellow green background
(Bi-Directional)

②

W16-9p 24"x12"

OR

W16-9p 24"x12"

Black legend on flourescent yellow green background

③

NOTE:
When school crosswalk warning assembly used install "SCHOOL" pavement word. See Standard Plan TE-31 for detail.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**MID BLOCK CROSSWALK
MARKING AND SIGNING**

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal Aid Project No. NH-072-K(057)

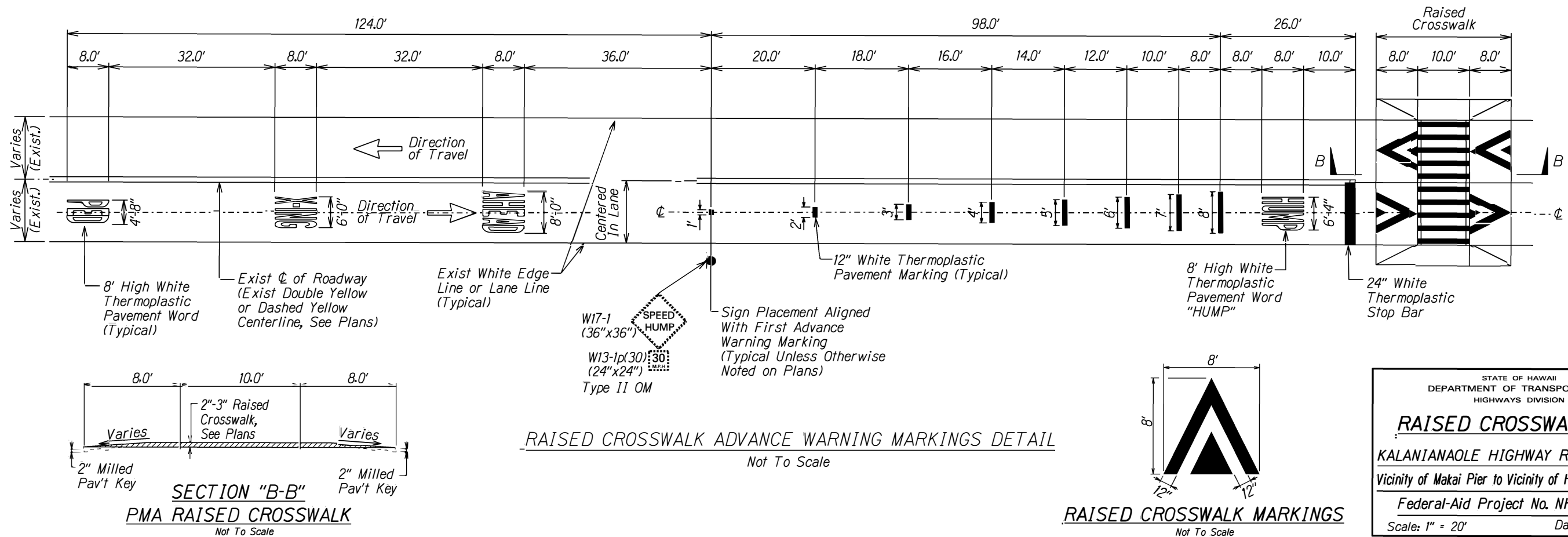
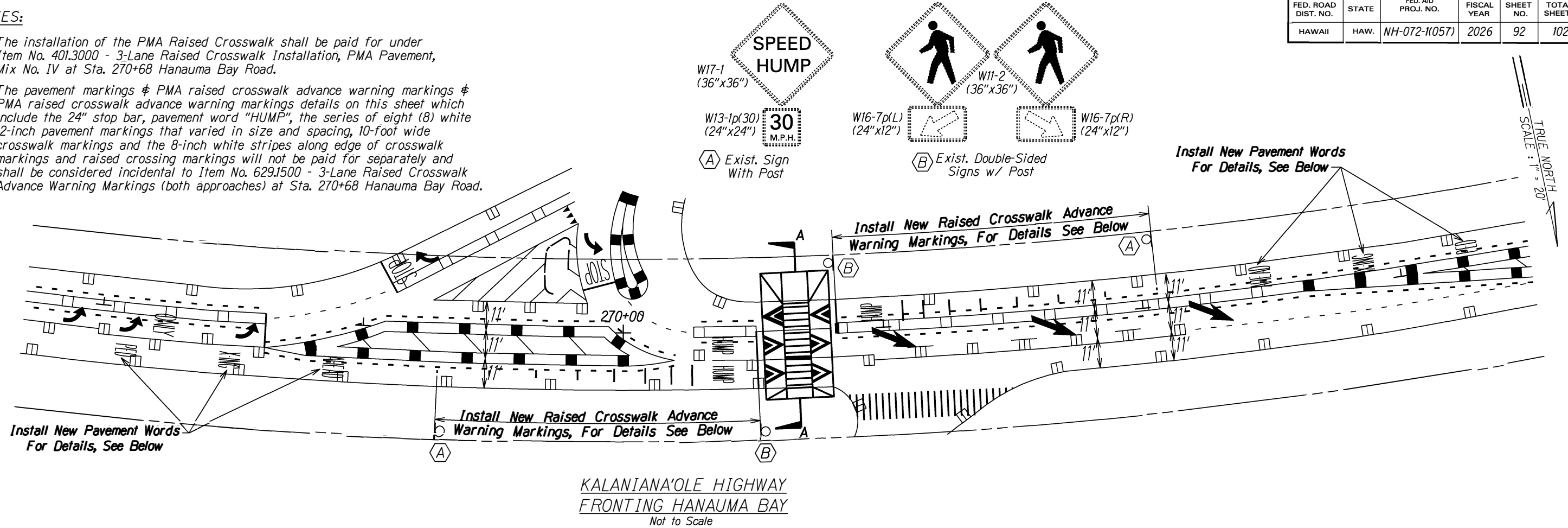
Scale: As Noted Date: July 2024

SHEET No. T19 OF 30 SHEETS

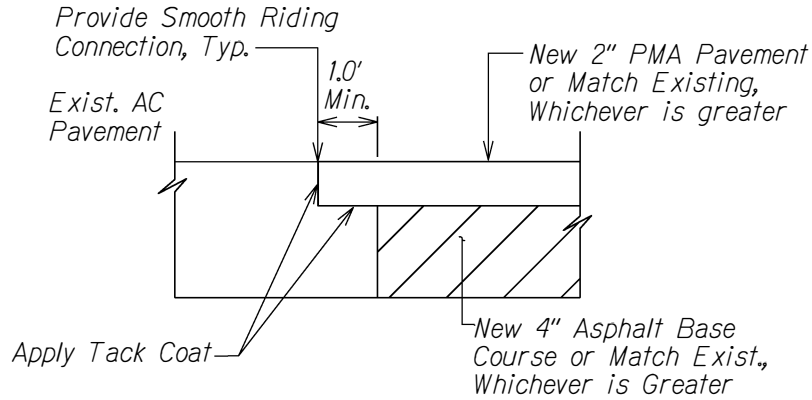
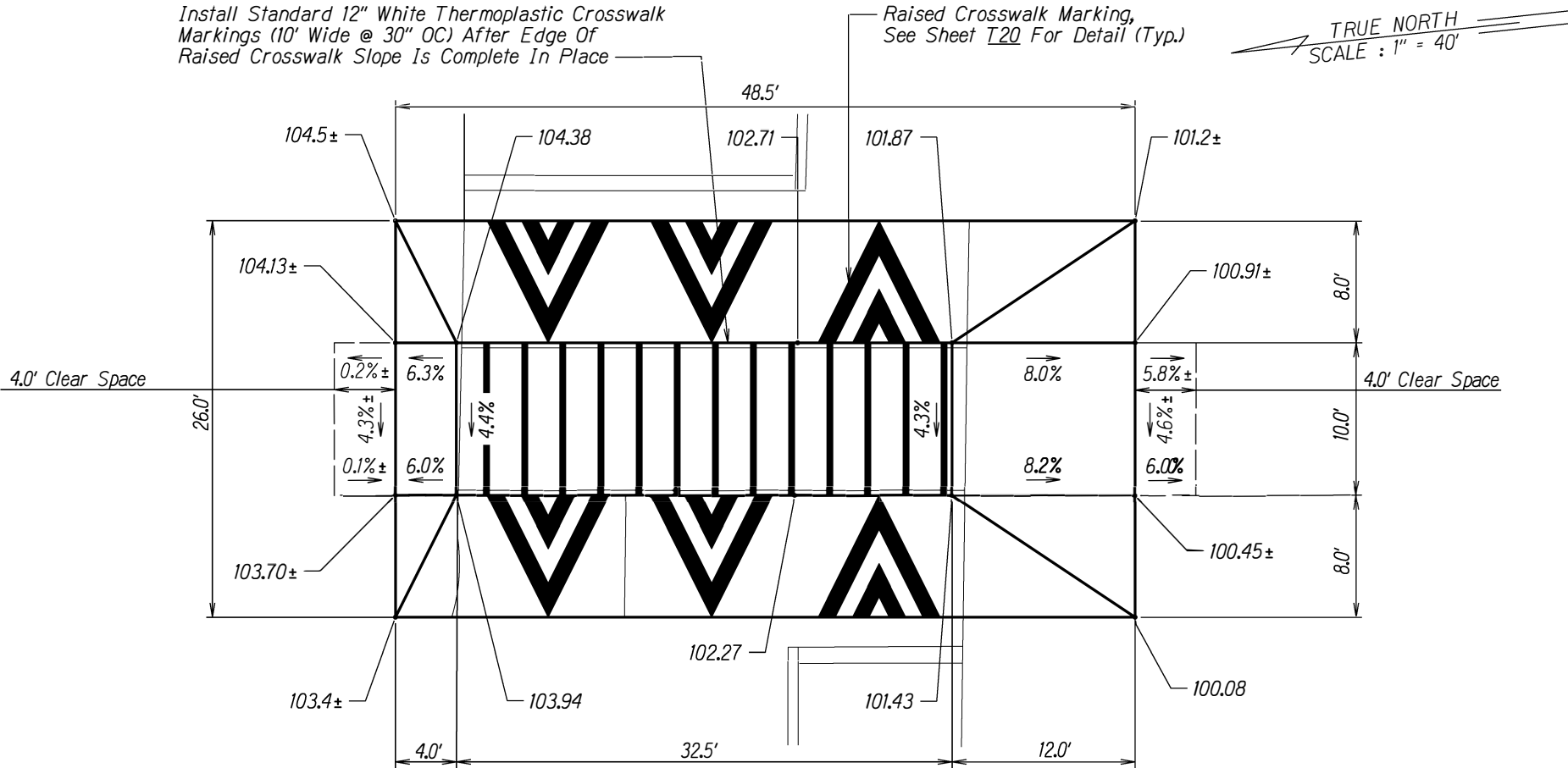
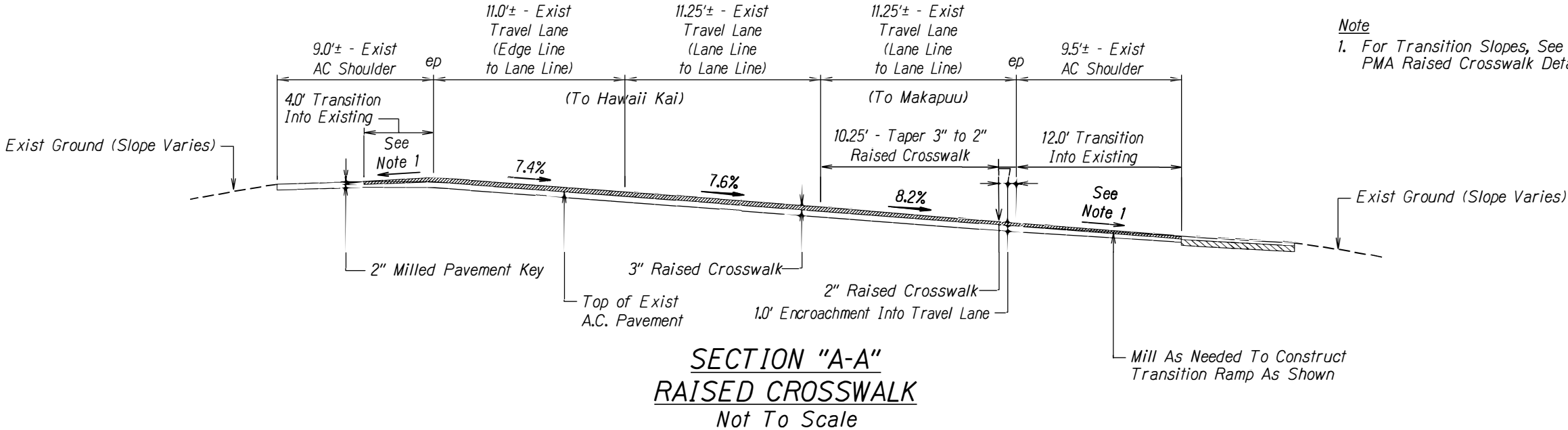
NOTES:

1. The installation of the PMA Raised Crosswalk shall be paid for under Item No. 401.3000 - 3-Lane Raised Crosswalk Installation, PMA Pavement, Mix No. IV at Sta. 270+68 Hanauma Bay Road.
2. The pavement markings & PMA raised crosswalk advance warning markings & PMA raised crosswalk advance warning markings details on this sheet which include the 24" stop bar, pavement word "HUMP", the series of eight (8) white 12-inch pavement markings that varied in size and spacing, 10-foot wide crosswalk markings and the 8-inch white stripes along edge of crosswalk markings and raised crossing markings will not be paid for separately and shall be considered incidental to Item No. 629.1500 - 3-Lane Raised Crosswalk Advance Warning Markings (both approaches) at Sta. 270+68 Hanauma Bay Road.

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1K0571	2026	93	102



PAVEMENT SECTION
Not to Scale

PMA Raised Crosswalk Detail
Scale: 1"=10'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RAISED CROSSWALK DETAIL

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road

Federal-Aid Project No. NH-072-1K0571

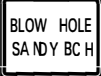
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SHEET No. T21 OF 30 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	94	102

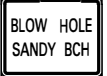


CW20-2d
(48"x48")



CM4-6 Supplement
(BLOW HOLE
SANDY BEACH)
(30"x24")

1

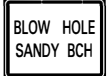


CM4-6 Supplement
(BLOW HOLE
SANDY BEACH)
(30"x24")



CM4-9(S)
(30"x30")

2

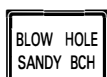


CM4-6 Supplement
(BLOW HOLE
SANDY BEACH)
(30"x24")



CM4-9(D)
(30"x30")

3

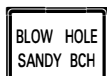


CM4-6 Supplement
(BLOW HOLE
SANDY BEACH)
(30"x24")



CM4-9(R)
(30"x24")

4

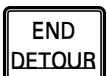


CM4-6 Supplement
(BLOW HOLE
SANDY BEACH)
(30"x24")

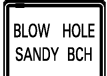


CM4-9(L)
(30"x24")

5



CM4-8a
(30"x24")

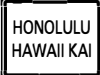


CM4-6 Supplement
(BLOW HOLE
SANDY BEACH)
(30"x24")

6

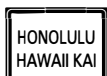


CW20-2d
(48"x48")



CM4-7 Supplement
(HONOLULU
HAWAII KAI)
(30"x24")

7



CM4-7 Supplement
(HONOLULU
HAWAII KAI)
(30"x24")



CM4-9(S)
(30"x30")

8

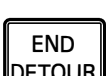


CM4-7 Supplement
(HONOLULU
HAWAII KAI)
(30"x24")



CM4-9(L)
(30"x24")

10



CM4-8a
(30"x24")



CM4-7 Supplement
(HONOLULU
HAWAII KAI)
(30"x24")

11

LEGEND:

- Temporary Construction Sign w/Post
- EMS Electronic Message Sign
- Direction of Travel
- Signalized Intersection, Kalaniana'ole Highway
- Police Officer

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

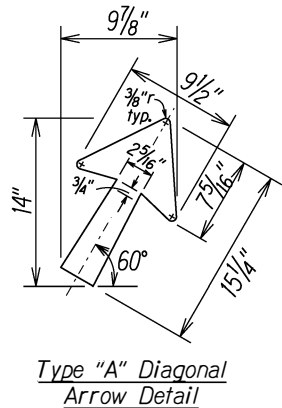
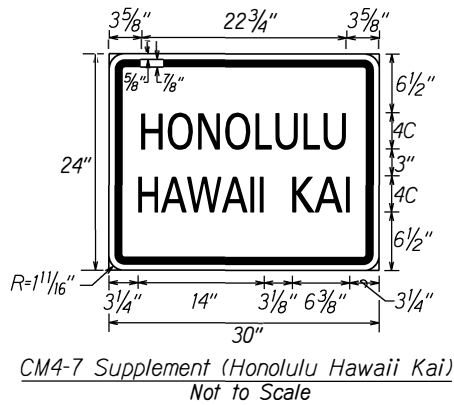
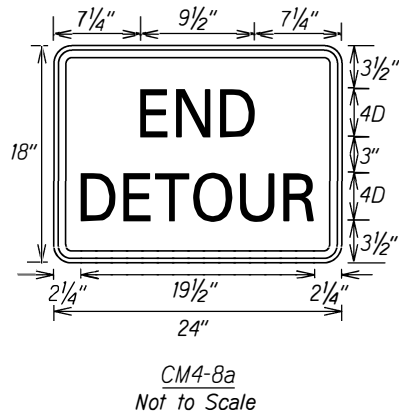
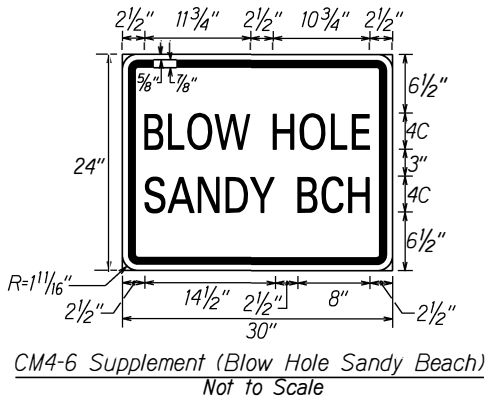
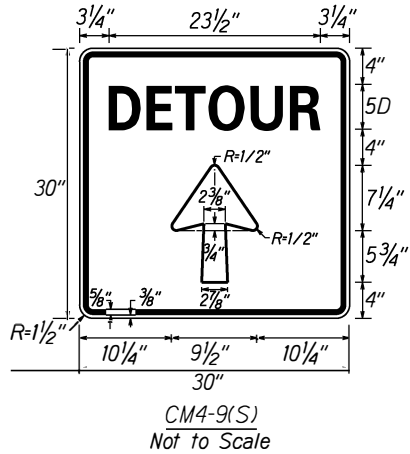
DETOUR PLAN

KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-1(057)

Not to Scale Date: July 2024

SHEET No. T22 OF 30 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-K(057)	2026	95	102



DETOUR NOTES:

1. Cones or delineators shall be installed at 10' o.c. max. in work area.
2. Cones or delineators shall be installed at 20' o.c. max. along tapers and tangents.
3. Minimum width of traffic lane through work area is 10'.
4. Relocation and/or removal of temporary signs and posts used for Traffic Control shall be considered incidental to various contract items.
5. Damage to signs, temporary pavement markers, delineators, barricades and lamps caused by the public shall be repaired or replaced by the Contractor as soon as possible, or as directed by the Engineer. This work shall be paid for under Item. No. 645.0200 - Police Officers, Additional Traffic Control Devices, and Advertisement. Damage caused by the Contractor's negligence shall be repaired or replaced at the Contractor's expense.
6. All signs within the City and County right-of-way shall be installed on existing street light posts or temporary non-marring sign supports. This work shall be considered incidental to various contract items.
7. The Type II and Type III Barricades with lamps used during construction shall be considered incidental to various contract items.
8. Work required in the Detour/Traffic Control Plans will be paid under applicable contract items or otherwise specified herein. All other traffic control work shall be in accordance with Section 645 - Work Zone Traffic Control. Work required for lane closures during the working day will not be paid for but shall be considered incidental to various contract items. Advance Construction Warning Signs as required under Section 645 of the Special Provisions shall be installed on all approaches to construction areas. This work shall be considered incidental to various contract items.
9. The Flashing Arrow Signal used during construction shall be considered incidental to various contract items.
10. The Contractor shall publish "Notice to Motorists" 1 week prior to the start of construction. Public notice shall be coordinated with the Department of Transportation, Highways Division.
11. The Contractor shall notify Lowell Tom (848-4578) at Oahu Transit Authority (The Bus) 4 weeks prior to start of construction.

NOTES:

1. The Contractor shall phase construction to maintain traffic access to residential areas and Hanauma Bay; and to minimize any long-term roadway closure to access the Koko Head Shooting Complex.
2. Hanauma Bay shall be accessible during all hours and days open to the public, Construction shall be scheduled only during hours and the designated day, Tuesday, Hanauma Bay is closed to the public. The Contractor shall notify Alan Hong, Hanauma Bay Nature Preserve, Manager, at 395-2211 two weeks before construction begins.
3. The Contractor shall maintain access to the Blow Hole Lookout. The Blow Hole Lookout shall be open to the public daily from 6:30 am to 7:30 pm.
4. Markers prefixed with "IM" shall have a white legend on a blue background except the Interstate shield which shall be a red, white and blue design.
5. Markers prefixed with "C" shall have a black legend on orange background.
6. Contractor to provide up to 2 changeable message boards per each road/ramp closure as part of the traffic control lump sum item. Message boards shall be set up one week prior to any road/ramp closure at the location specified by the Resident Engineer. Message boards will not be paid for separately, but shall be considered incidental to Contract Item No. 645.0100 - Traffic Control.
7. In addition to the detour signs shown on this plan, Contractor shall install appropriate traffic controls for each road/ramp closure. All traffic control work will not be paid for separately, but shall be considered incidental to Contract Item No. 645.0100 - Traffic Control.
8. Contractor shall furnish a minimum of one (1) uniformed police officer with vehicle equipped with blue strobe light at each roadway approach to the road/ramp closure area. The furnishing of a police officer with vehicle will not be paid for separately, but shall be considered incidental to Contract Item No. 645.0100 - Traffic Control.
9. All signs shown within the City right-of-way shall be installed on existing street light posts or temporary non-marring sign supports. This work shall be considered incidental to various contract items.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DETOUR PLAN
KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal-Aid Project No. NH-072-K(057)
Not to Scale Date: July 2024
SHEET No. T23 OF 30 SHEETS

TRAFFIC SIGNAL NOTES

1. The locations of the Loop Detectors shall be staked out in the field by the Contractor and approval of the locations shall be obtained from the Engineer prior to construction and installation.
2. All splicing shall be done in the pullboxes.
3. Furnishing and installing the conduit stubouts (pullboxes to edge of pavement) will not be paid for separately but shall be considered incidental to the various contract items.
4. A solid #8 bare copper wire shall be pulled with the traffic signal control cable for equipment ground. Cost shall be incidental to the installation of the control cable.
5. All Traffic signal controller equipment shall be completely wired in the cabinet and shall control the traffic signals as called for in the plans.
6. The loop amplifier units furnished for this project shall be capable of operating the loop detector configurations shown on the plans. Cost for the loop amplifier shall be incidental to the installation of the loop detector.
7. Should any defect be encountered during the warranty period, the manufacturer will be notified and he shall promptly correct such defect. Service call (by factory qualified representative) during the warranty period for repairs or other maintenance shall be answered within 24 hours and shall be done at no expense to the State. All repairs shall be done as soon as possible.
8. All traffic signal work shall conform to the requirements of the "Manual On Uniform Traffic Control Devices For Streets And Highways", Federal Highway Administration and Amendments.
9. Locations of traffic markings and markers (lane lines, Stop lines, crosswalk, etc.) shown on the plans shall be verified with the Engineer prior to the installation of the traffic signal system.
10. All Conduits between pullboxes and Traffic Signal/Highway Lighting Standards shall not be paid for separately but shall be considered incidental to the various contract items.
11. All Signal-Drop Cables (Type 5 Cables) from the various Types of Traffic Signal Head on the traffic signal standards and mast arms to the pullboxes shall not be paid for separately but considered incidental to the Traffic Signal Head.
12. After installing all the traffic signal cables, the Contractor shall duct seal all conduits in the pullboxes, traffic signal standards and traffic signal controller cabinet concrete base. The duct seal material shall be approved by the Traffic Signal Inspector/Engineer and shall not be paid for separately but considered incidental to the direct buried and/or concrete encased conduits.
13. After installing the Traffic Signal System, the Contractor shall apply grease to all parts of the Traffic Signal System (i.e. fittings, brackets, nipples, elbows, screws, signal head assemblies, bolts, hinges, etc.) as directed by the Traffic Signal Inspector, to prevent rust and corrosion. The grease material shall be approved by the Signal Inspector.
14. Connecting into existing traffic signal system and making all necessary adjustments shall not be paid for separately, but considered incidental to the various traffic signal contract items.
15. The Contractor shall notify the Traffic Control Branch, Department of Transportation Services, City & County of Honolulu, (Phone No. 768-8388) two weeks prior to commencing any work on the traffic signal system.

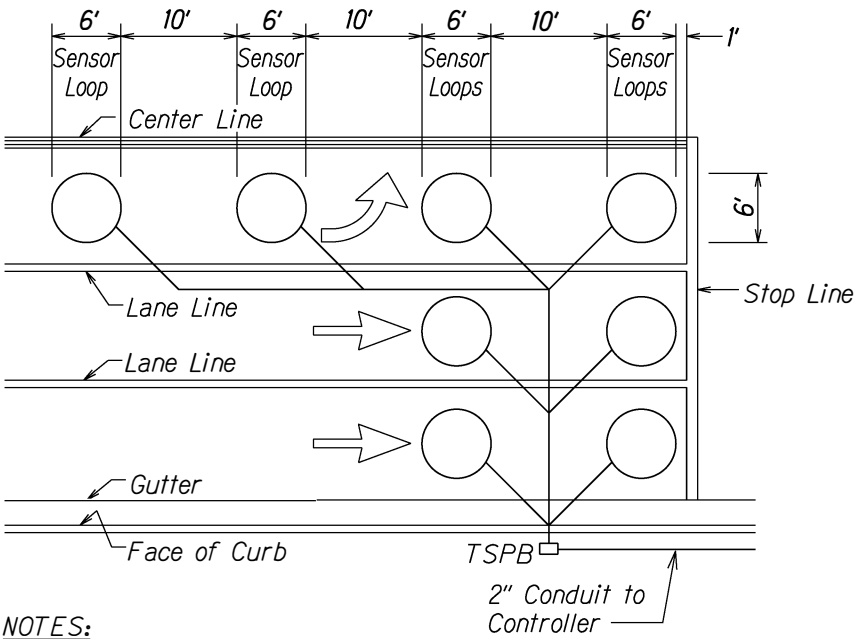
TRAFFIC SIGNAL LEGEND

NEW	EXISTING	
		Traffic Signal Conduit
		Conduit Run Numbers
		Equipment description, installation or item no.
		Traffic Signal Master Controller Door Indicates Front of Cabinet
		Traffic Signal Controller Door Indicates Front of Cabinet
		Meter Pedestal
		12" RYG Traffic Signal Head
		12" ↑ R↑Y↑G Traffic Signal Head
		12" ← R←Y←G Traffic Signal Head
		12" ← R←Y←G Traffic Signal Head (Programmed Visibility)
		12" RYG ←G/Y Fiber Optic Traffic Signal Head
		Type I Standard and Attached Signals
		Type II Standard with Signal Mast Arm and Attached Signals (Nos. indicates mast arm length & distance between signal heads as specified on plans)
		Type III Standard with Luminaire and Signal Mast Arm and Attached Signals (Nos. indicates mast arm lengths & distance between signal heads as specified on plans)
		Flashing Beacon, One Signal Section, "Y" indicates 12" Yellow Lens
		Opticom Receiver (Arrow indicates direction detector faces)
		Pipe Guard
		Pedestrian Signal Head
		Type A Pullbox
		Type B Pullbox
		Type C Pullbox
		Loop Detectors

HIGHWAY LIGHTING LEGEND

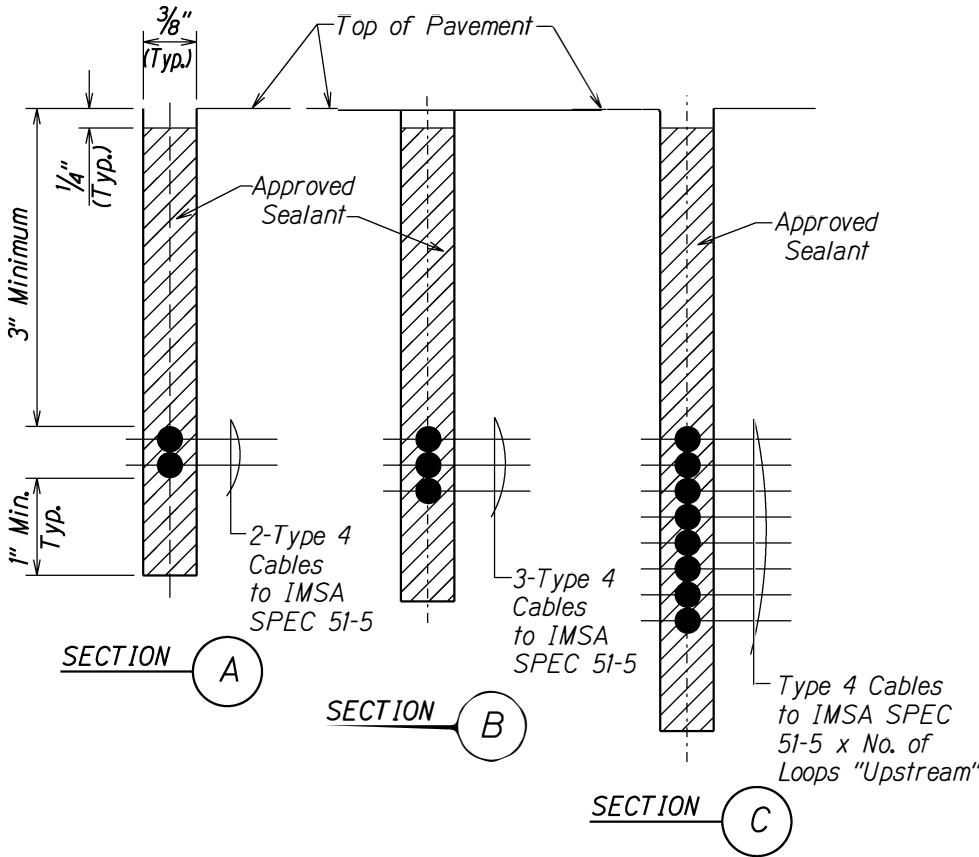
NEW	EXISTING	
		Highway Lighting Conduit
		Type A Pullbox (Hwy. Ltg.)
		Highway Lighting Standard

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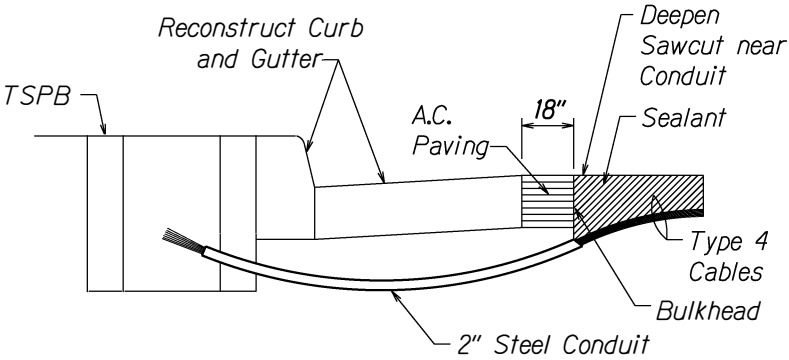


- NOTES:**
1. Center sensor loops in lanes.
 2. Collector cables shall be twisted 2 turns per foot.
 3. Number of loops and locations vary. See project plans.
 4. Number and locations of collector sawcuts may be varied in the field to suit.

TYPICAL SENSOR LOOP LAYOUT
Not To Scale

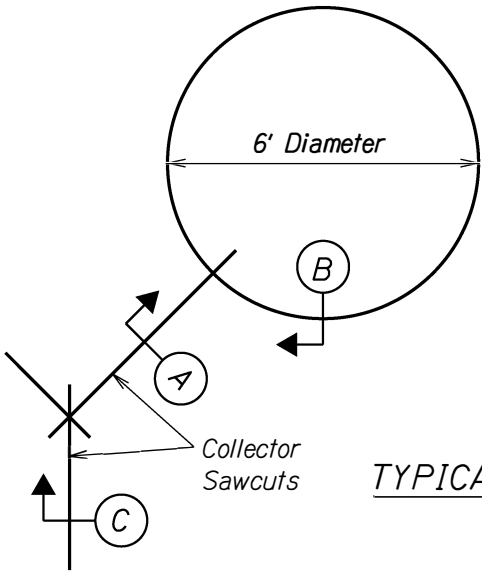


TYPICAL SENSOR LOOP SECTION (HMA PAVEMENT)
Not to Scale



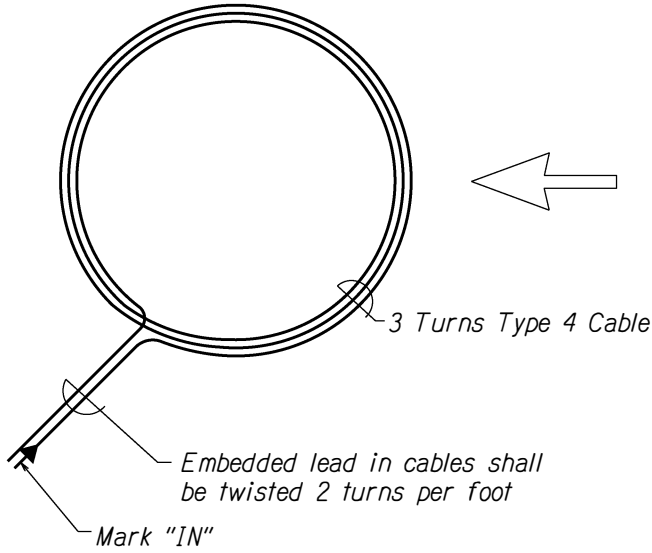
- NOTES ON CONSTRUCTION AT END OF SAWCUT**
1. Seal roadway end of conduit after installation of conductors.
 2. Install bulkhead across conduit trench.
 3. Place hot tar in sawcut.
 4. Backfill over conduit with new A.C.
 5. Reconstruct curb and gutter as required.

DETAIL OF SENSOR LOOP INSTALLATION AT EDGE OF ROADWAY
Not To Scale



- NOTES:**
1. Round corners of acute angle saw cuts to prevent damage to loop sensor cables
 2. Length of overcuts shall be kept to a minimum. All overcuts shall be back filled with hot tar.

TYPICAL SENSOR LOOP SAWCUT DETAIL
Not To Scale



TYPICAL SENSOR LOOP WIRING DIAGRAM
Not To Scale

- NOTES:**
1. All saw-cutting slurry shall be wet vacuumed, either simultaneously with or immediately after the saw-cutting operations, and the collected slurry disposed of appropriately (e.g. either placed in a filter fabric lined filtration box or in a filter fabric lined dug up retention/percolation basin) After filtration/percolation the filter fabric and the retained sediments shall be disposed of appropriately.
 2. Type 4 loop sensor cable 12 AWG stranded THHN conductor in polyethylene tube, IMSA SPEC 51-5 certified

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LOOP DETECTOR DETAILS

KALANIANA'OLE HIGHWAY RESURFACING

Vicinity of Makai Pier to Vicinity of Hanauma Bay Road

Federal Aid Project No. NH-072-1(057)

Scale: As Noted Date: July 2024

SHEET No. T26 OF 30 SHEETS

TRAFFIC SIGNAL HEAD SCHEDULE		
Traffic Signal Head Type and Description	Ⓡ Ⓨ ↑ 12" RY↑ Traffic Signal Head	Ⓡ Ⓨ ← 12" RY← Traffic Signal Head
Pole Letter Signal Head Number	B-2* E-1* E-2*	B-1*

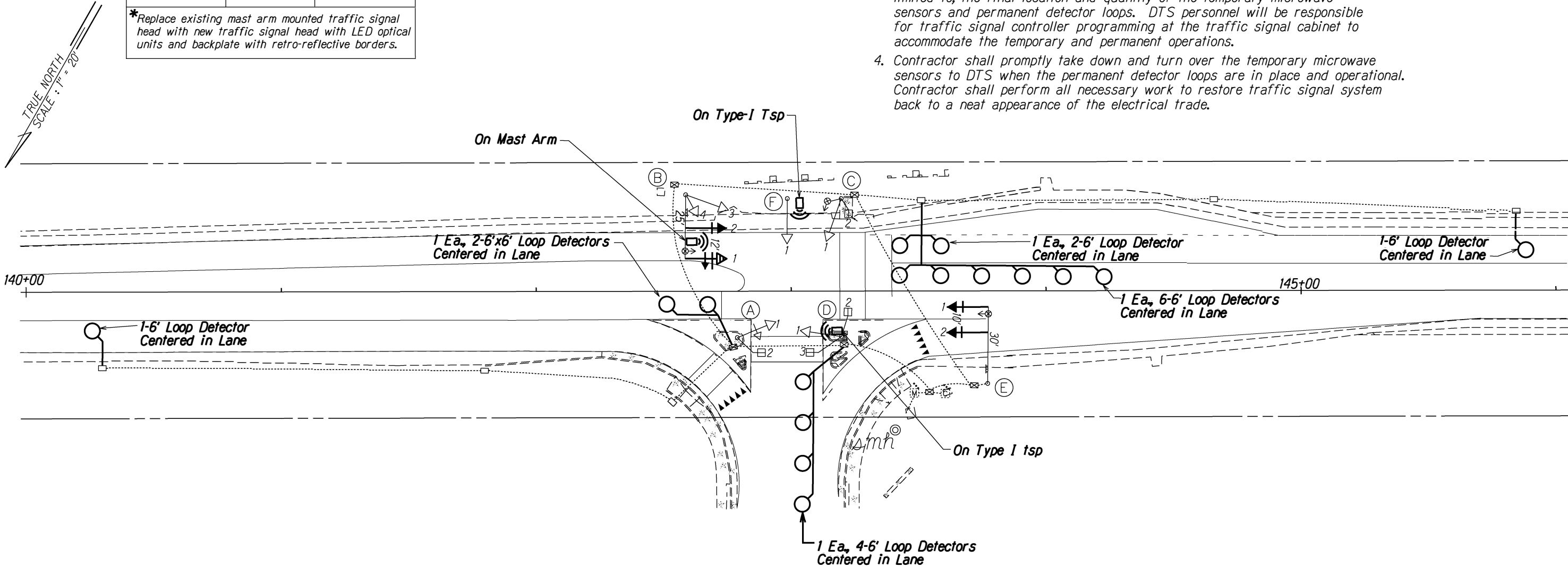
*Replace existing mast arm mounted traffic signal head with new traffic signal head with LED optical units and backplate with retro-reflective borders.

TRAFFIC SIGNAL LEGEND:

- t.s.p Existing Traffic Signal Pole
- Ⓛ Temporary Microwave Detector
- Ⓛ New Loop Detectors
- t.s.p Existing Traffic Signal Pullbox

NOTES:

1. Install Temporary Microwave Detectors on existing traffic signal pole. Install No. 16, 4 Conductor Cable in existing conduits from detector to controller. The cost of the cable shall be incidental to the cost of the microwave detector.
2. Loop detector location and quantity shown on this plan are only approximate. Contractor shall coordinate with C&C DTS for all traffic signal-related work. Schedule with C&C DTS at least two weeks in advance of the actual work, including pavement cold planing and removing the existing loop detector.
3. Contractor shall perform all traffic signal-related work following field instructions from DTS. Such field instructions shall include, but not limited to, the final location and quantity of the temporary microwave sensors and permanent detector loops. DTS personnel will be responsible for traffic signal controller programming at the traffic signal cabinet to accommodate the temporary and permanent operations.
4. Contractor shall promptly take down and turn over the temporary microwave sensors to DTS when the permanent detector loops are in place and operational. Contractor shall perform all necessary work to restore traffic signal system back to a neat appearance of the electrical trade.



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

ORIGINAL PLAN	NOTE BOOK
Idm/o	okallap

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LOOP DETECTOR PLAN

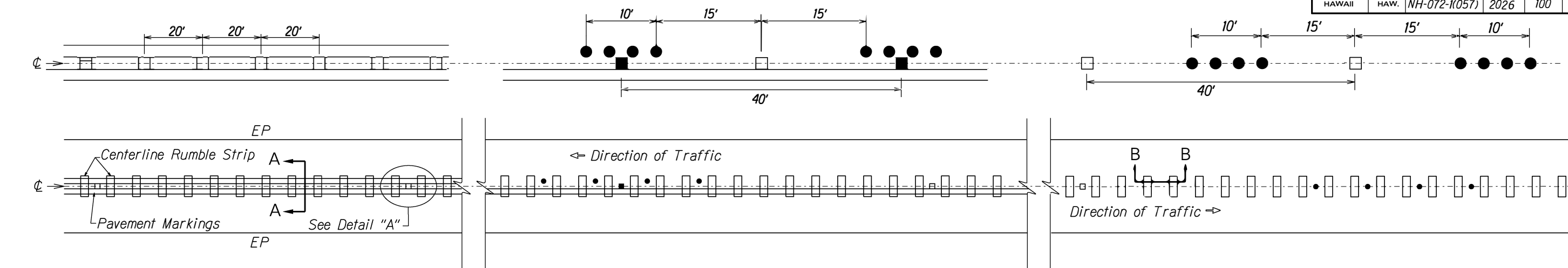
KALANIANAʻOLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road

Federal-Aid Project No. NH-072-1(057)

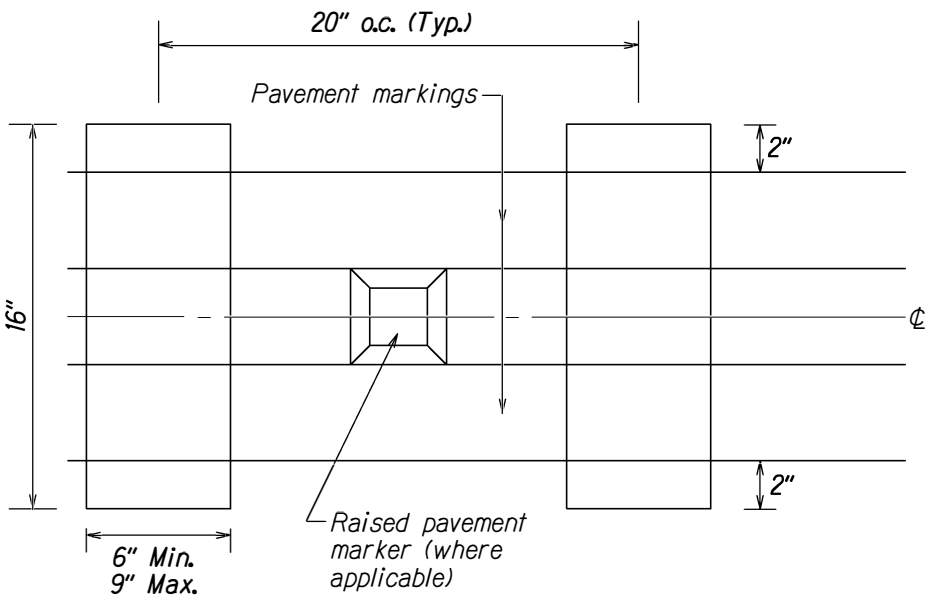
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SHEET No. T27 OF 30 SHEETS

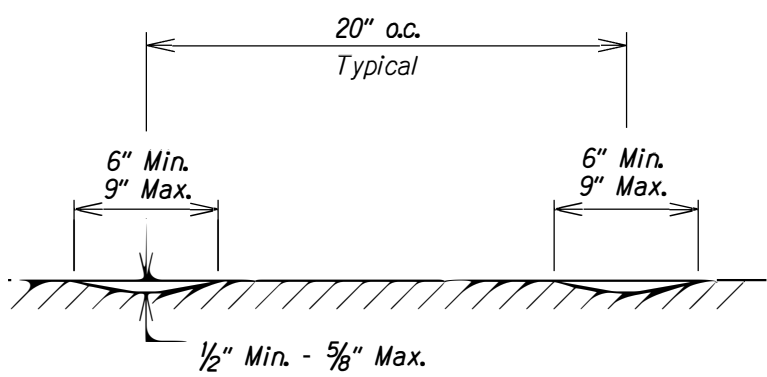
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-K057	2026	100	102



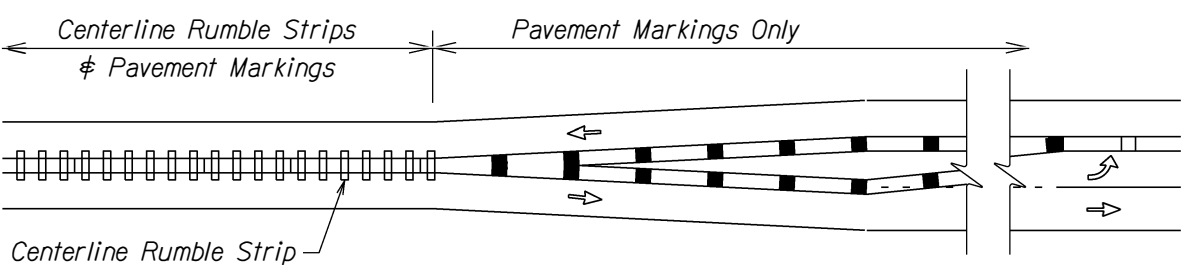
PLAN - CENTERLINE MILLED RUMBLE STRIP
Not to Scale



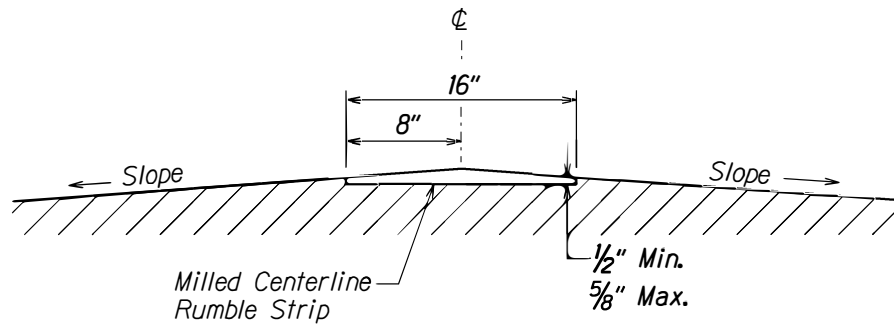
DETAIL "A"
Not to Scale



SECTION B-B - CENTERLINE MILLED RUMBLE STRIP
Not to Scale



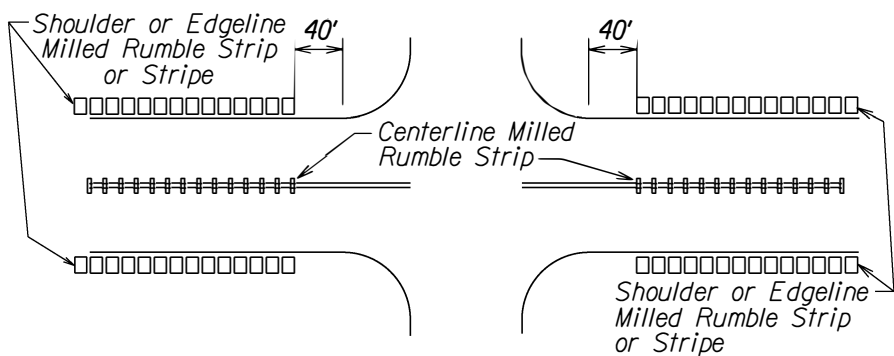
CENTERLINE MILLED RUMBLE STRIP INSTALLATION LIMIT
Not to Scale



SECTION A-A - CENTERLINE MILLED RUMBLE STRIP
Not to Scale

NOTES:

- The method of constructing the centerline milled rumble strip shall be submitted to the Engineer for acceptance prior to the actual work.
- Dimensions shown are approximate. Adjust rumble strip spacing to coordinate with pavement markings prior to installation.
- Raised pavement markers shall be installed on level surface between the rumble strips. Do not install raised pavement markers inside the milled area.
- The construction of the centerline milled rumble strip shall be paid for under Item No. 615.0100 - 16-inch Milled Rumble Strip, Centerline.
- The milling apparatus and removal of existing pavement markings will not be paid for separately and shall be considered incidental to Item 615.0100 - 16-Inch Milled Rumble Strip, Centerline.
- Do not install centerline rumble strips on bridge decks.
- Where at-grade bridges are present, rumble strips shall end/begin 20 L.F. beyond the existing bridge deck joints/concrete approach slab.
- Contractor shall install temporary striping after milling rumble strip by end of work day.
- Hot spray thermoplastic shall be used for solid line markings within the milled centerline rumble strip area.



MILLED RUMBLE STRIP INSTALLATION LIMITS
Not to Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CENTERLINE MILLED RUMBLE STRIP DETAIL

KALANIANA'OLE HIGHWAY RESURFACING

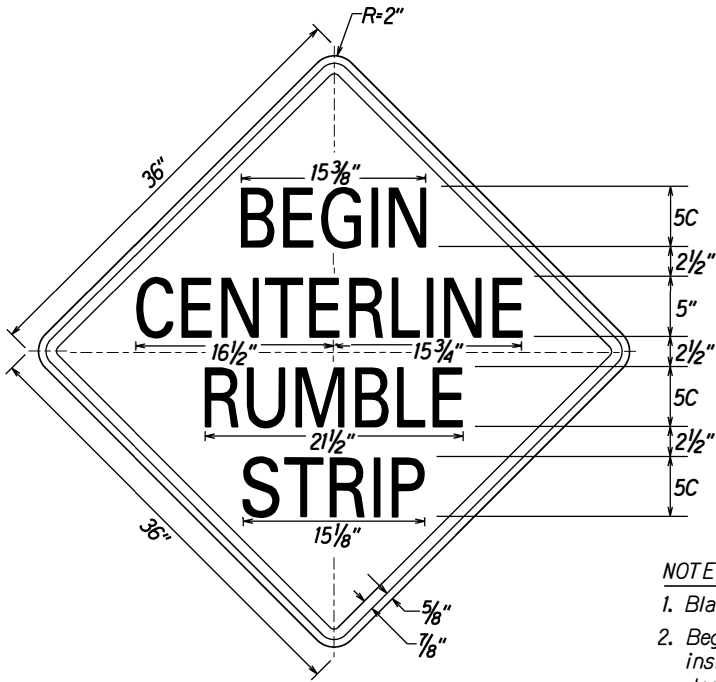
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road

Federal Aid Project No. NH-072-K057

Scale: As Noted Date: July 2024

SHEET No. T28 OF 30 SHEETS

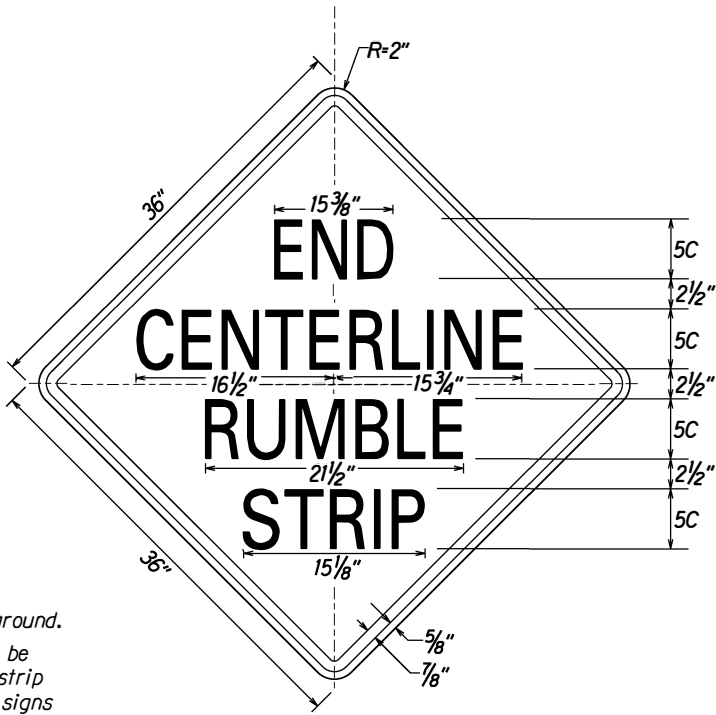
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	



W8-14a

NOTE:

1. Black legend on reflectorized yellow background.
2. Begin Centerline Rumble Strip signs shall be installed 50 feet before the first rumble strip depression. End Centerline Rumble Strip signs shall be installed 50 feet beyond the last rumble strip depression.



W8-14b

SIGN NOTES

1. All signs shall conform to Section 621 of the Special Provisions and the latest editions and amendments of the following FHWA publications:
 - a. "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD)
 - b. "Standard Highway Signs"
 - c. "Standard Alphabets for Highway Signs"
2. Borders, messages, arrows, symbols and shield shall conform to details as shown on the plans and as specified in the MUTCD.
3. Sign messages shall be as indicated on the plan, or as directed by the Engineer.
4. Backing for all new Regulatory and Warning Signs shall not be spliced.
5. Final locations of all signs shall be accepted by the Engineer prior to any installation work.
6. Existing signs that are to be replaced, shall not be removed until new signs are installed as replacements, or the messages are no longer necessary.
7. Existing signs not shown on these plans shall remain as posted unless otherwise directed by the Engineer. Removal and disposal of existing signs and/or posts as designated on these plans shall be incidental to the various signing items.
8. All signs shall be installed on square tube posts, unless otherwise noted.
9. For centerline rumble strip sign (Shown on this sheet) each sign post shall have a Type II OM. Installation of Type II OM shall be considered incidental to sign items.
10. For all other new sign installations with post(s), each sign post shall have an RM-3 reflector marker. Installation of RM-3 shall be considered incidental to Sign Items.
11. Contractor shall mark the back of all signs using labels. Payment to be incidental to various contract items.

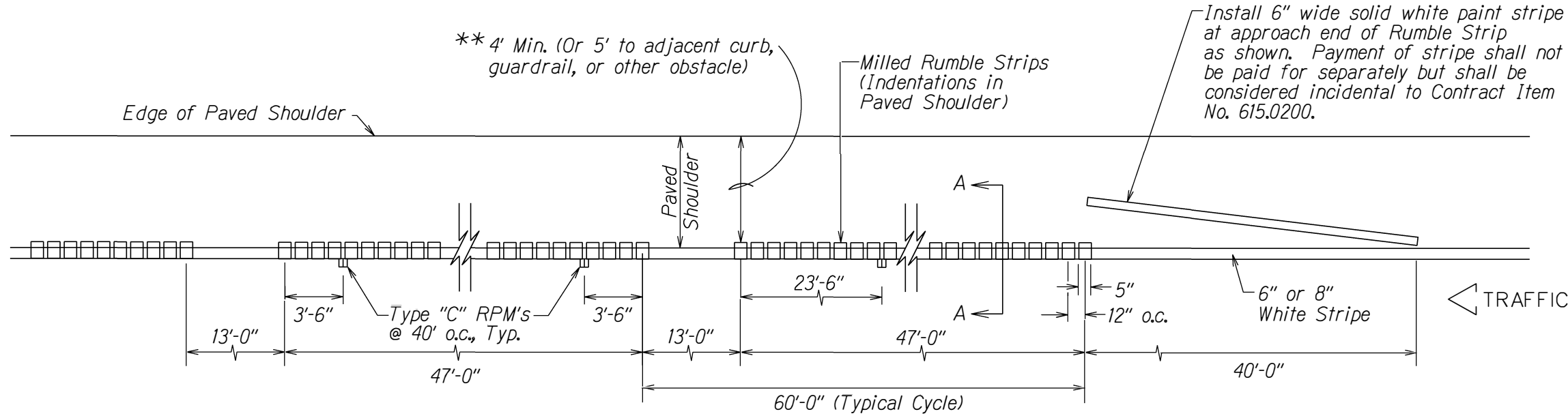
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CENTERLINE RUMBLE STRIP
SIGN DETAILS AND NOTES

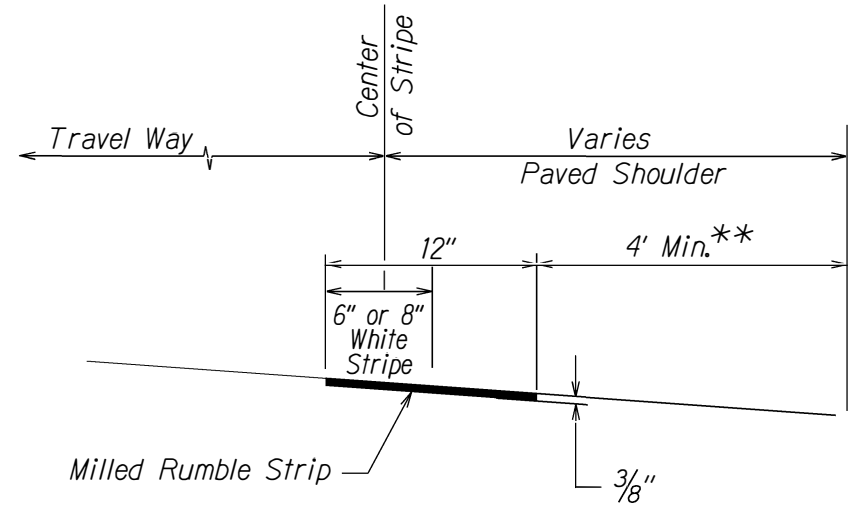
KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal Aid Project No. NH-072-K057
Scale: As Noted Date: July 2024

SHEET No. T29 OF 30 SHEETS

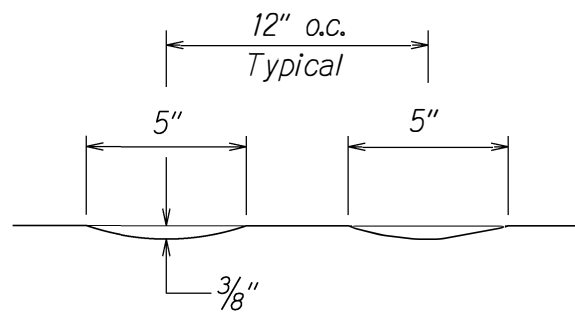
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(057)	2026	102	102



PLAN
Not to Scale



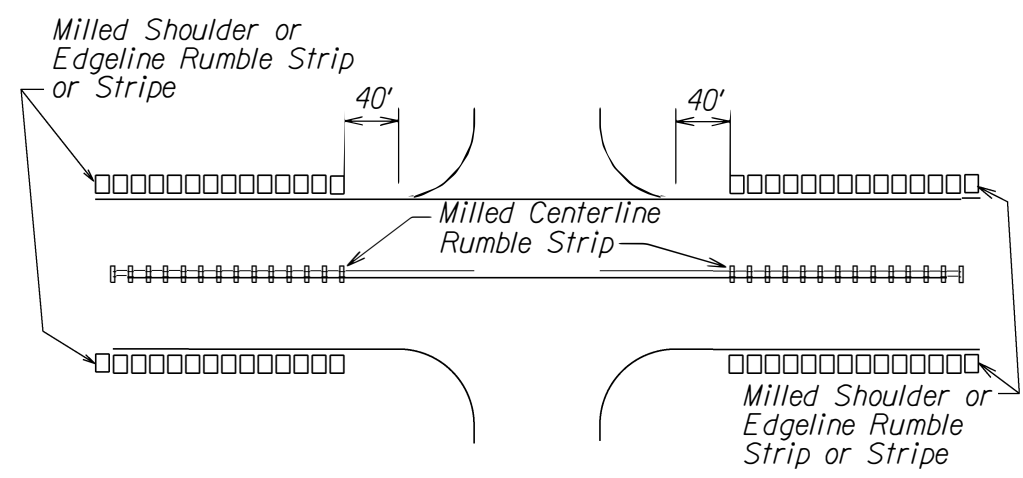
SECTION A-A
Not to Scale



CROSS SECTION
Not to Scale

NOTES:

1. Bicycle Friendly milled edgeline rumble strip shall not be installed where shoulder serves as a part time shoulder lane.
- ** 2. Bicycle Friendly milled edgeline rumble strip should not be used unless 4 feet of clear shoulder width for bicycle use is available between the rumble strips and the outer edge of the paved shoulder.
3. Do not place Type "C" markers within 2 feet of the 13 feet rumble strip opening.
4. Where at-grade bridges are present, rumble strip shall end/begin 20 L.F. beyond the existing bridge deck joints/concrete approach slab.
5. The construction of the Shoulder Rumble Strip shall be paid for under Item No. 615.0200 - 12-inch Milled Rumble Strip, Bicycle Friendly Edgeline.
6. The milling apparatus will not be paid for separately and shall be considered incidental to the various Milled Rumble Strip items.
7. Hot spray thermoplastic shall be used for solid line markings within the milled edgeline rumble strip area.



INSTALLATION LIMITS
Not to Scale

BICYCLE FRIENDLY MILLED EDGELINE RUMBLE STRIPS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**BICYCLE FRIENDLY MILLED
EDGELINE RUMBLE STRIP DETAILS**
KALANIANA'OLE HIGHWAY RESURFACING
Vicinity of Makai Pier to Vicinity of Hanauma Bay Road
Federal Aid Project No. NH-072-1(057)
Scale: As Noted 102

SHEET No. T30 OF 30 SHEETS