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5 – 7	WATER POLLUTION AND EROSION CONTROL NOTES
8 – 12	TYPICAL SECTIONS
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15 – 20	ROADWAY PLANS
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STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

HONOLULU, HAWAII

PLANS FOR

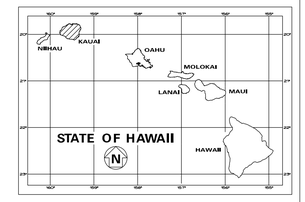
KUHIO HIGHWAY RESURFACING
WAIKAEA BRIDGE TO MAILIHUNA ROAD
FEDERAL–AID PROJECT NO. NH–056–1(063)

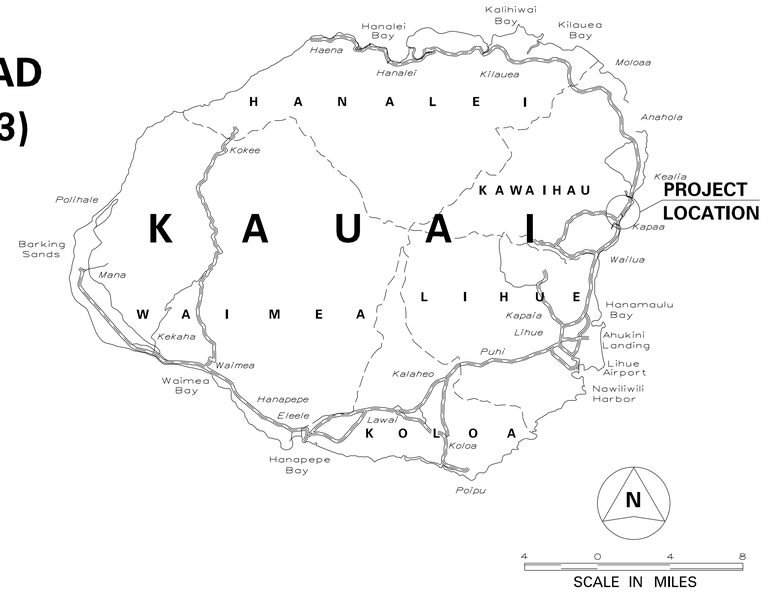
DISTRICT OF KAWAIHAU

ISLAND OF KAUAI

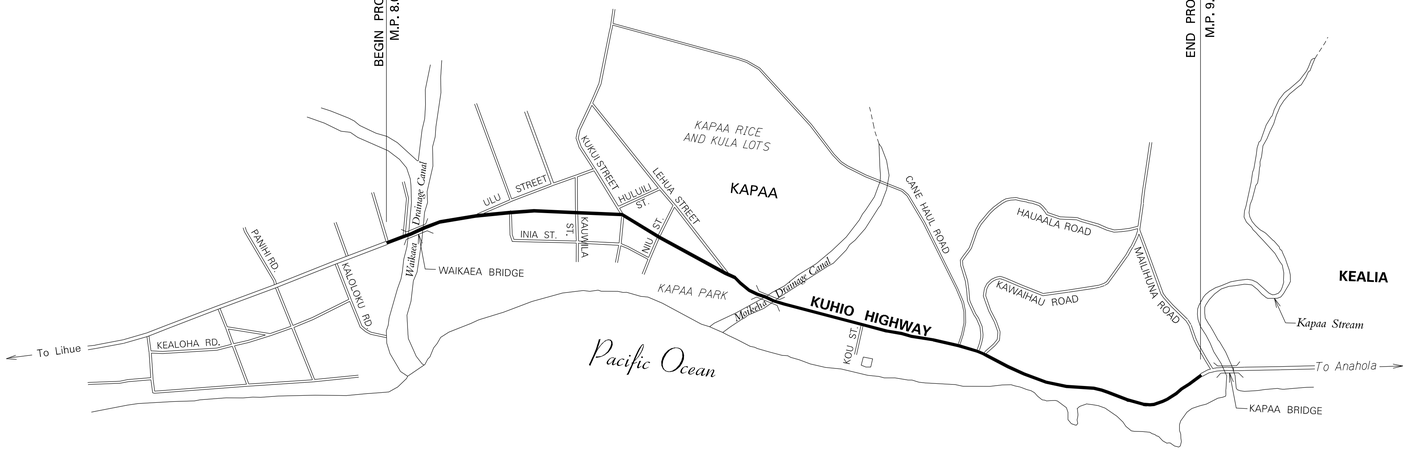
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH–056–1(063)	2023	1	43

56





LIMITS OF PROJECT



HWY–K DESIGNED BY

HWY–KE MANAGED BY

241–3000 PHONE

Mar. 2023 DATE

LAYOUT PLAN

GROSS LENGTH OF PROJECT..... 1.76 MILE
NET LENGTH OF PROJECT..... 1.76 MILE

2 0 2 4 6
SCALE IN THOUSAND FEET

KUHIO HIGHWAY (Rte 56)	
	MP 6.60 to 8.20 Kapaa Bypass Rd. to Ulu St.
2021 ADT	35,600
2031 ADT	43,300
2031 DHV	3,460
Design K	8.0
Design D	55/45
Design T	3.5
T24	3.5

KUHIO HIGHWAY (Rte 56)	
	MP 8.20 to 9.01 Ulu St. to Kawaihau Rd.
2021 ADT	27,700
2031 ADT	33,800
2031 DHV	2,700
Design K	8.0
Design D	55/45
Design T	4.0
T24	3.5

FEDERAL AID PROJECTS PREVIOUSLY CONSTRUCTED OR UNDER CONSTRUCTION

MILE POST 8.04 TO MILE POST 9.80

KUHIO HIGHWAY (Rte 56)	
	MP 9.01 to 9.86 Kawaihau Rd. to Mailihuna Rd.
2021 ADT	19,200
2031 ADT	23,300
2031 DHV	1,980
Design K	8.5
Design D	55/45
Design T	3.0
T24	3.0

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

APPROVED:

FOR DIR. OF TRANSPORTATION — Feb 27, 2023 DATE

STANDARD PLANS SUMMARY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	2	43

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	
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

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 ●)

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD PLANS SUMMARY

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Date: Mar. 2023

SHEET No. 1 OF 1 SHEETS

ORIGINAL PLAN

SURVEY PLOTTED BY
DRAWN BY K
TRACED BY
DESIGNED BY K
QUANTITIES BY
CHECKED BY

NOTE BOOK
No. 4thHighAdge

DATE K

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	3	43

GENERAL NOTES

1. The scope of work for this project includes reconstructing weakened pavement areas; cold planing; resurfacing; removing and disposing of existing pavement markers, object markers and, traffic signs; installing new pavement markers, object markers, traffic signs and milled rumble strip; curb extensions.
2. The Contractor is reminded of the requirements of Subsection 105.16 - Subcontracts.
3. The Contractor's attention is directed to the following Sections of the Standard Specifications: Subsection 107.06 - Contractor Duty Regarding Public Convenience; Subsection 104.11 - Utilities and Services; 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 be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations.
6. The exact locations and limits or areas to be excavated, reconstructed and cold planed shall be determined in the field by the Engineer.
7. The Contractor shall notify the Engineer in writing, two (2) weeks prior to starting paving operations.
8. All lanes shall be open to traffic during the hours from 5:00 AM to 9:00 PM. Only one lane of highway shall be closed at any other time. Night working hours are specified in Section 107 of the Special Provisions. Failure of the contractor to open all lanes of traffic during the times specified above shall result in assessment of liquidated damages as specified in Section 108.09 of the Special Provisions.
9. The Contractor shall remove and dispose of all existing raised pavement markers and traffic tapes prior to the overlaying of Asphalt Concrete. This work shall be considered incidental to Item No. 401.0410 - PMA Pavement, Mix No. IV and will not be paid separately.
10. Smooth riding connections shall be constructed at all limits of resurfacing, including the beginning and end of project, connecting approaches, side streets and driveways as shown on the plans.
11. Trimming and dressing of shoulder, sidewalk and bus turnout shall consist of clearing, grubbing, grading, reshaping and compacting the unpaved shoulders with suitable material as shown on the plans and/or as directed by the Engineer. Suitable materials shall include materials from roadway excavation, including topsoil and base material therefrom, and if necessary, additional materials from borrow outside the limits of the right of way. Asphalt concrete removed from cold planing, reconstruction and roadway excavation shall not be used for dressing of shoulder, sidewalk or bus turnout. All graded and dressed shoulders shall be considered incidental to various contract items and will not be paid separately.
13. 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 various contract items.
14. The Contractor shall provide 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 the various contract items, and will not be paid for separately.
15. All saw cutting work shall be considered incidental to Item No. 401.0410 - PMA Pavement, Mix No. IV and will not be paid for separately.
16. Removal and disposal of existing raised pavement markers as directed by the Engineer or shown on the plans, shall be considered incidental to various contract items.
17. Prior to his resurfacing operations, the Contractor shall be responsible for locating, preserving and marking all utility & 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.
18. After completion of resurfacing, the Contractor and the Engineer will test for, and determine ponding areas (i.e. low spots within the resurfaced area). It shall be the responsibility of the Contractor to correct and resurface and/or repair all such ponding areas.
19. Contractor shall exercise extreme caution to preserve BENCHMARKS (Survey Monuments). Whenever the center of a Survey Monument is less than three (3) feet from the edge of construction, the Contractor shall retain a Licensed Land Surveyor to reference the location of said Survey Monument.

    Benchmarks that are disturbed or destroyed shall be restored under a Licensed Land Surveyor's direction. Copies of field notes, descriptions and new values of the new benchmark shall be sent to the Department of Transportation, Highways Division, Cadastral Engineering Section, for review and approval prior to construction.
20. Any work specified in the contract but not listed separately in the proposal schedule shall be considered incidental to other various contract items and shall not be paid for separately.
21. All asphalt concrete materials from cold planing, reconstruction and roadway excavation operations shall become the property of the State. The Contractor shall deliver these materials to the Lihue Airport's baseyard stockpile area. The Contractor shall separate the clean cold-planed material from the cold-planed material mixed with base course. This work shall be considered incidental to the various contract items.
22. 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 State Highways Division at telephone no. 241-3000.
23. Prior to commencing his operations, the Contractor shall contact the County of Kauai, Department of Water Operations Division (Phone No. 245-5444) and make arrangements for the Department to locate and mark the existing water facilities within the project limits, such as waterlines, valve boxes and manhole frame/covers (including ones that may have been inadvertently paved over on previous resurfacing projects). The tops of the existing valve boxes, manhole frame/covers, etc., shall be adjusted to match the new finished grades noted on the construction plans.
24. All workers within the State right-of-way who are exposed to either vehicles using the roadway or to construction equipment shall wear high-visibility safety apparel that meets the Performance Class 2 or 3 requirements of ANSI/ISEA 107-2004. "Workers" is defined as people on foot whose duties place them with the State right-of-way, such as, but not limited to construction and maintenance forces, equipment operators, survey crews, utility crews, responders to incidents (e.g., EMT and firemen), and law enforcement personnel directing traffic, investigating accidents, handling lane closures and obstructed roadways.
25. Should historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately in the immediate vicinity of the find. The Contractor shall immediately notify the Planning Department at (808) 241-4050 and State Historic Preservation Division at (808) 692-8015, which will assess the significance of the find and recommend the appropriate mitigation measures, if necessary.
26. Prior to construction, the contractor shall contact the various utility agencies for location of existing utilities within the project limits. The Contractor shall locate and protect all existing utilities whether or not shown on the plans, Any costs incurred by damages to existing utilities will be borne by the Contractor. Contractor shall request from One-Call Center, Ph: 1-866-423-7287. The Contractor shall also call the County of Kauai, Department of Water, Ph: 245-5444 and the Wastewater Division, Ph: 241-6642 for toning waterlines and sewerlines respectively.
27. In order to avoid impacts to Hawaiian geese, a biologist familiar with the nesting behavior of the Hawaiian goose survey the area prior to the initiation of any work, or after any subsequent delay in work of three or more days (during which birds may attempt nesting). If a nest is discovered, work should cease immediately and the Contractor shall immediataly notify the office of the U.S. Fish and Wildlife Service at (808) 792-9423 for further guidance. Furthermore, all on-site project personnel should be apprised that Hawaiian geese may be in the vicinity of the project at any time of the yrear. If a Hawaiian goose (or geese) apeears within 100 feet of ongoing work, all activities should be temporarily suspended until Hawaiian goose (or geese) leaves the area of its own accord. This work shall be cosidered incidental to Force Account Item No. 671.1000 - Protection of Seabirds and will not be paid separately.

LEGEND

Symbol	Description	Symbol	Description
(hatched box)	Reconstruction Areas		Existing Metal Guardrail
(bracket)	Cold Planing Areas & Resurfacing Limits		New Metal Guardrail
			Adjusted and/or Relocated Metal Guardrail
pp	Existing Power Pole	fh	Existing Fire Hydrant
emh	Existing Electric Manhole	—s—12—	Existing Sewer Line
EMH	Adjusted Elec. MH Frame/Cover	—S—12—	New 12" Sewer Line
tspb	Existing Traffic Signal Pullbox	smh	Existing Sewer Manhole
tmh	Existing Telephone Manhole	SMH	Adjusted Sewer Manhole
TMH	Adjusted Tel. MH Frame/Cover	SMH	New Sewer Manhole
tpb	Existing Telephone Pullbox	mon.	Existing Monument
—w—12—	Existing 12" Water Line	MON.	Adjusted Monument
wmh	Existing Water Manhole	MON.	New Monument
WMH	Adjusted Water MH Frame/Cover	---d--24---	Existing 24" Drain Line
av	Existing Water Air Valve	sdmh	Existing Storm Drain Manhole
AV	Adjusted Water Air Valve	SDMH	Adjusted Storm Drain Manhole
wv	Existing Water Valve Box	gdi	Existing Grated Drop Inlet
WV	Adjusted Water Valve Box	GDI	New Grated Drop Inlet
wm	Existing Water Meter Box	GDI	Adjusted/Reconstructed Drain Inlet or Replaced Steel Grate
WM	Adjusted Water Meter Box		
WM	New Type "X" Water Meter Box		
	Existing Traffic Sign		
	New Traffic Sign		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES AND LEGEND

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Date: Mar. 2023

SHEET No. 1 OF 1 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(062)	2023	4	43

HISTORICAL PRESERVATION NOTES

1. If cultural materials such as artifacts, burials, concentrations of shell or charcoal be discovered during construction, all earth-moving activity within and around the immediate discovery area shall cease immediately and the find shall be protected from further damage. The Contractor shall immediately notify the Planning Department and the State Historic Preservation Division at (808) 241-3690, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

2. If previously unidentified non-burial historic properties, or unanticipated effects are discovered, the Contractor shall follow the Hawaii Administrative Rules (HAR) Chapter 13-280 "Rules Governing General Procedures for Inadvertent Discoveries of Historic Properties During a Project Covered by the Historic Preservation Review Process".

3. If human remains are discovered, HAR Title 13, Subtitle 13, Chapter 300 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains and the State Historic Preservation Division and the Police Department will be contacted. The appropriate process would then proceed in conformance with HAR Section 13-300, Subchapter 4, "Procedures for Proper Treatment of Burial Sites and Human Skeletal Remains".

MAMMALIAN PROTECTION NOTES

1. The Contractor shall incorporate the following measures to avoid and minimize project-related adverse effects to the Hawaiian hoary bat:

    a. There shall be no disturbance, removal, or trimming of woody plants greater than 15 feet (4.6 meters) tall during the Hawaiian Hoary bat birthing and pup rearing season (June 1 through September 15).
    b. Barbed wire shall not be used for fencing.

AVIAN PROTECTION NOTES

1. The Contractor shall incorporate the following measures to avoid and minimize project-related adverse effects to Hawaiian seabirds (Hawaiian petrel, Newell's shearwater and Hawaii DPS of the band-rumped storm-petrel):

    a. Before beginning any work at the project site, the Contractor shall:
        i. Collect information regarding the protection of seabirds and seabird fallout.
        ii. Submit to the Engineer for acceptance a protection of seabirds training plan including a detailed description of information and materials the Contractor intends to use in the training classes. The training plan shall be submitted to the Engineer for acceptance at least 15 days in advance of the class. If the Engineer rejects the training plan, the Contractor shall revise and promptly propose another training plan.
        iii. Disseminate information regarding the protection of seabirds and seabird fallout by conducting training classes for all employees, subcontractors, suppliers and other personnel working on the project, including HDOT personnel, on such topics as the Save Our Shearwater (SOS) program, proper use of temporary lighting, procedures to store and report downed seabirds, and the consequences of non-compliance with the laws regarding threatened and endangered seabirds. The Engineer may request for additional topics related to seabirds to be included in the training classes.
        Training classes shall be taught by authorized representatives of the U.S. Fish and Wildlife Service (USFWS), the Department of Land and Natural Resources, the SOS program or other qualified personnel accepted by the Engineer.

AVIAN PROTECTION NOTES (CONT.)

        iv. Furnish the Engineer with evidence that the Contractor has held training classes, including the dates of the classes, identify who conducted the training, and the content and nature of the training.
    b. The Contractor shall comply to the following construction requirements:
        i. Conduct additional training classes during the project to update all employees, subcontractors, suppliers, HDOT personnel and other personnel on new and/or updated information regarding the protection of seabirds and seabird fallout.
        ii. No permanent streetlights shall be installed as part of the project.
        iii. All temporary lights used for night work (between sunset and sunrise) shall contain less than 2% wavelengths less than 550 nm, and shall be downward-facing and shielded so the bulb can only be seen from below. Temporary lights shall include but are not limited to flood lights, light towers, lights for construction equipment and other lights as determined by the Engineer. All traffic control devices, including warning lights, arrow boards, portable changeable message signs and other lighting device as determined by the Engineer shall be shielded.
        iv. Nighttime construction and the use of all temporary lights shall cease during the peak seabird fledgling period (September 15 through December 15).
        v. Furnish and maintain a small (approximately 10" x 12" x 19"), portable cat kennel on site to temporarily hold a downed seabird. The Contractor shall obtain acceptance of the cat kennel from the Engineer prior to use.
        vi. If a downed dead seabird is found, the Contractor shall contact the USFWS (Ms. Megan Laut at 808-792-9400) within 24 hours.
        vii. If the downed seabird is alive, the Contractor shall:
            I. Pick up the seabird from behind as soon as possible using a clean towel, t-shirt or cloth by gently wrapping it around its back and wings.
            II. Place the seabird in the cat kennel and immediately contact the SOS Program Coordinator at 808-635-5117 for further instructions on where to deliver the seabird.
            III. Deliver the seabird to the location determined by the coordinator of the SOS program and as directed by the Engineer.
            IV. Keep the seabird in a cool, quiet location and out of direct sunlight with adequate ventilation
            V. The Contractor and any personnel on-site shall not feed, provide water, handle or release the seabird

    The Contractor shall maintain records of all downed seabirds for the duration of the project. The records shall include the date, time, location and condition (dead or alive) the seabird was found and delivered. Submit a copy of the records to the Engineer after finding each and every downed seabird.

2. The Contractor shall incorporate these measures to avoid and minimize project-related adverse effects to the Hawaiian stilt:

    a. A biological monitor is required during Hawaiian stilt nesting season from February 15 through August 31.
        i. A biological monitor that is familiar with the species biology and approved by the Federal Highways Administration will conduct Hawaiian stilt nest surveys where appropriate habitat occurs within the proposed maintenance site prior to cleaning culverts and drainage structures.
        ii. Surveys will take place within three days of project initiation and after any subsequent delay of work of three or more days (during which the birds may attempt to nest).

3. The Contractor shall incorporate these measures to avoid and minimize project-related adverse effects to Hawaiian goose or nene:

    a. Nene in or near the project area shall not be approached, fed, or disturbed in any way.
    b. If nene are observed loafing, foraging, or otherwise present within the project area during the breeding season (September 1 through April 30), a trained biologist familiar with nene nesting behavior will survey the area in and around the project area for nests prior to work each day. Surveys will be repeated after any subsequent delay of work of three or more days (during which the birds may attempt to nest).
    c. If a nest is identified within a radius of 150 feet of the project area, or a previously undiscovered nest is found within the 150-foot radius after work begins, all work shall cease and the USFWS will be contacted immediately for further guidance.
    d. Reduced speed limits shall be posted and implemented in areas where nene are known to be present, and project personnel and Contractors will be informed of the presence of endangered species on-site.
    e. There shall be no feeding of birds or dogs on the project site.

BIOLOGICAL RESOURCE PROTECTION NOTES

1. The Contractor shall take measures to reduce the spread of invasive species (e.g. Rapid Ohia Death):

    a. Minimize the movement of plant or soil material between work sites.
    b. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species. Gear that may contain soil, such as work boots and vehicles, should be thoroughly cleaned with water and sprayed with 70 1/4 alcohol solution to prevent the spread of Rapid Ohia Death and other harmful fungal pathogens.

2. The information and guidance at https://cms.ctahr.hawaii.edu/rod shall be reviewed and followed if ohia trees are present and will be removed.

ORIGINAL PLAN

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

NOTE BOOK dated 4thrthrough N.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HISTORIC PRESERVATION AND ENVIRONMENTAL PROTECTION NOTES

KUHIO HIGHWAY RESURFACING
WAIKAEA BRIDGE TO MAILIHUNA ROAD
Federal-Aid Project No. NH-056-1(063)
Date: Mar. 2023

SHEET No. 1 OF 1 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	5	43

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 30 calendar days of contract execution. 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 30 calendar days of contract execution. 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.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 2/10/14
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	TRACED BY	
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	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER POLLUTION & EROSION CONTROL NOTES

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Date: Mar. 2023

SHEET No. 1 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	6	43

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.

ORIGINAL PLAN

SURVEY PLOTTED BY
DRAWN BY J
TRACED BY
DESIGNED BY Y
QUANTITIES BY
CHECKED BY
DATE 2/10/14

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER POLLUTION & EROSION CONTROL NOTES

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Date: Mar. 2023

SHEET No. 2 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	7	43

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 outside the project limits or State Right-of-Way, the Contractor shall be responsible for obtaining the required NPDES Construction Activities Permit using HDOT's latest Stormwater Pollution Prevention Plan (SWPPP) template to cover this additional disturbed area. See Hawaii Administrative Rules Chapter 11-55, Appendix C for the definition of land disturbance.

   The Contractor shall be responsible for complying with the requirements of HAR 11-55 including, but not limited to:

   a. Deadlines for initiating and completing initial stabilization
   b. Increased inspection frequency and installation of rain gage if applicable
   c. Deadlines to initiate and complete repairs to BMPs
   d. Reporting requirements and corrective action reports

2. 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

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://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-2).

2. Contain on-site runoff using Perimeter Sediment Controls
   a. SC-1 Silt Fence
   b. SC-5 Vegetated Filter Strips and Buffers
   c. SC-8 Compost Filter Berm
   d. SC-13 Sandbag Barrier
   e. SC-14 Brush or Rock Filter

3. Control offsite runoff from entering construction area
   a. EC-8 Run-On Diversion
   b. SC-6 Earth Dike
   c. SC-7 Temporary Drains and Swales

4. Incorporate applicable Site Management BMP
   a. SM-1 Employee Training
   b. SM-2 Material Delivery and Storage
   c. SM-3 Material Use
   d. SM-4 Protection of Stockpiles
   e. SM-6 Solid Waste Management
   f. SM-7 Sanitary/Septic Waste Management
   g. SM-9 Hazardous Waste Management
   h. SM-10 Spill Prevention and Control
   i. SM-11 Vehicle and Equipment Cleaning
   j. SM-12 Vehicle and Equipment Maintenance
   k. SM-13 Vehicle and Equipment Refueling
   l. SM-14 Scheduling
   m. SM-15 Location of Potential Sources of Sediment
   n. SM-16 Preservation of Existing Vegetation
   o. SM-18 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 (EC-2) 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-5) 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
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DATE 2/10/14
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

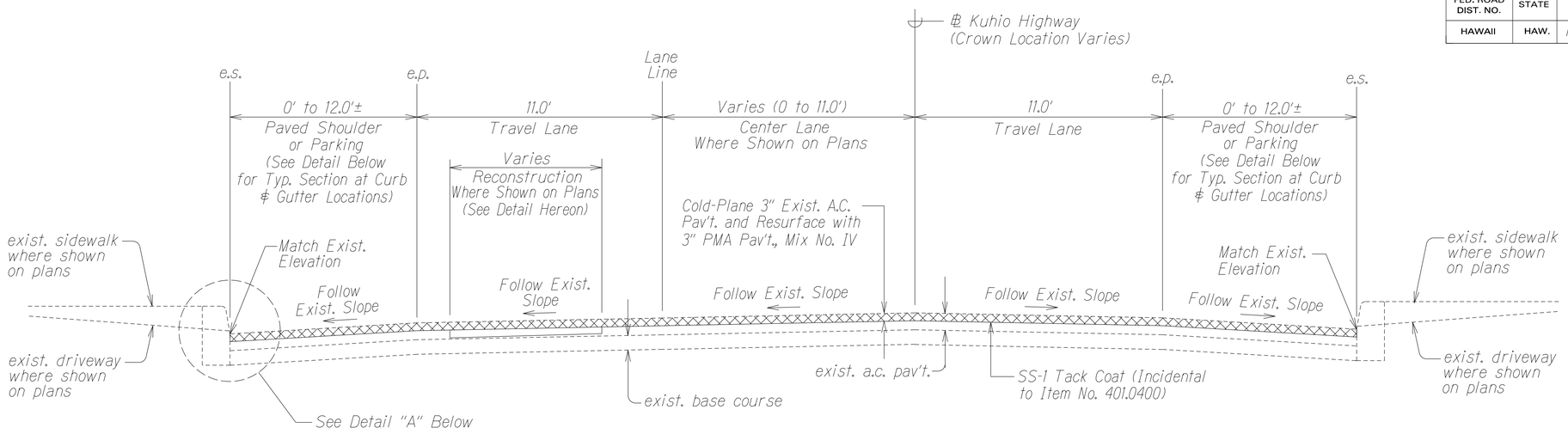
WATER POLLUTION & EROSION CONTROL NOTES

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Date: Mar. 2023

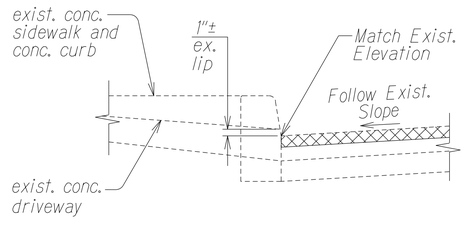
SHEET No. 3 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	8	43



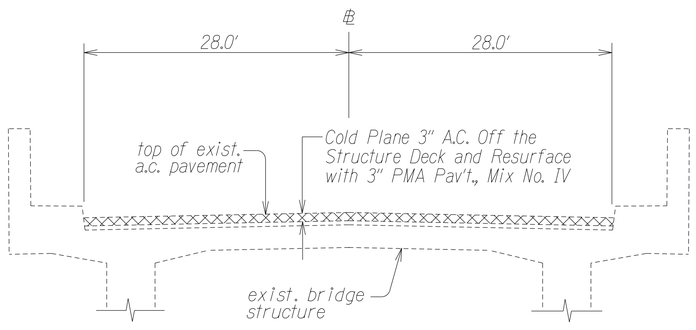
℄ Sta. 517+85 to ℄ Sta. 550+80
TYPICAL SECTION
Not to Scale

NOTE: See Plan Sht. No. 8 for Typical Section from ℄ Sta. 550+80 to ℄ Sta. 568+25.

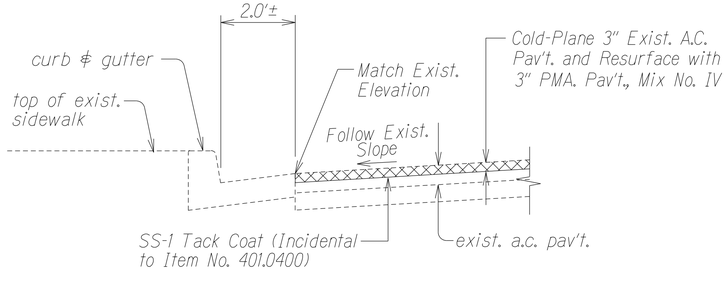


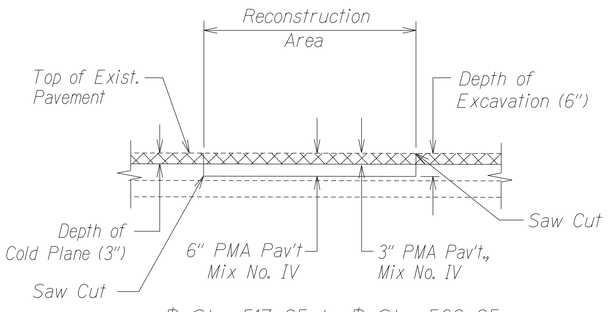
DETAIL "A"
Not to Scale

NOTE: Detail typical for all concrete driveways and/or sidewalks located between ℄ Sta. 517+85 and ℄ Sta. 550+80.



TYPICAL SECTION ON WAIKAEA BRIDGE
Not to Scale



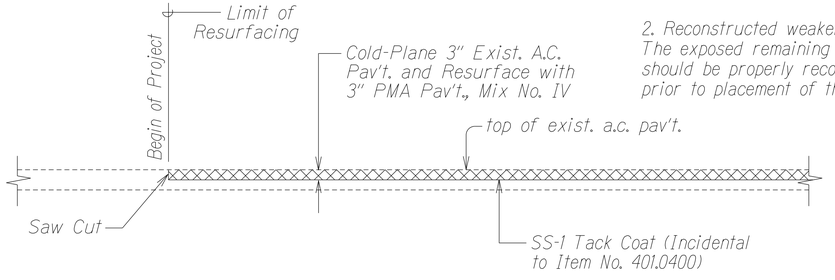


℄ Sta. 517+85 to ℄ Sta. 568+25
TYPICAL DETAIL
RECONSTRUCTION OF WEAKENED PAVEMENT AREAS
Not to Scale

NOTES:

1. See Plan Sht. No. 10 for reconstruction of weakened pavement areas from ℄ Sta. 568+25 to ℄ Sta. 605+38.

2. Reconstructed weakened pavement areas prior to cold plane. The exposed remaining base course or subbase materials should be properly recompacted to dense and unyielding conditions prior to placement of the asphalt concrete base layer.



COLD PLANED TRANSITION TO EXISTING A.C. PAVEMENT AT BEGINNING OF PROJECT
Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
N/A	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

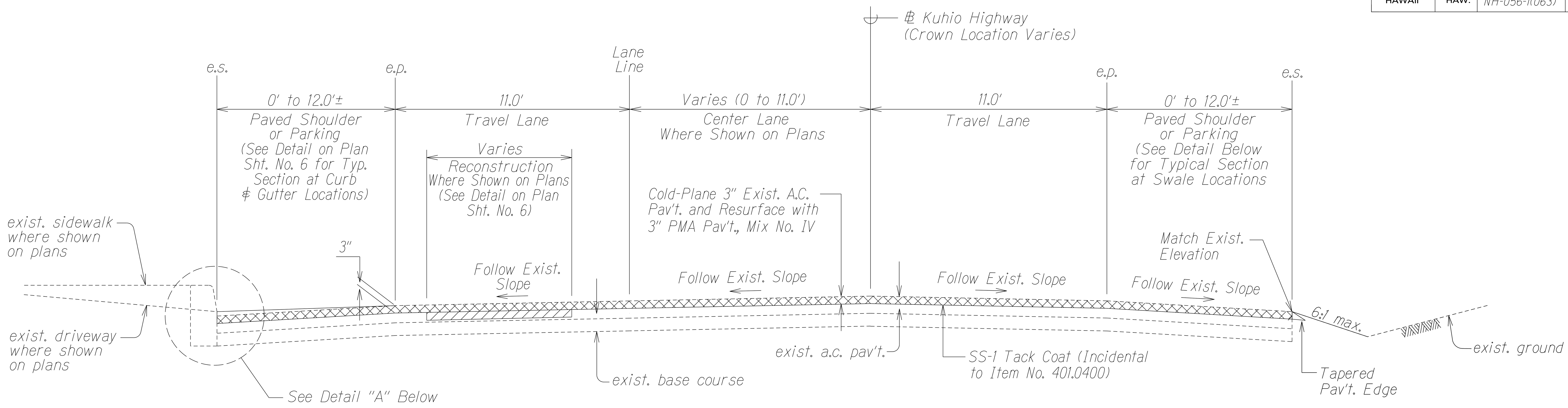
TYPICAL SECTIONS

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Noted Date: Mar. 2023

SHEET No. 1 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	9	43

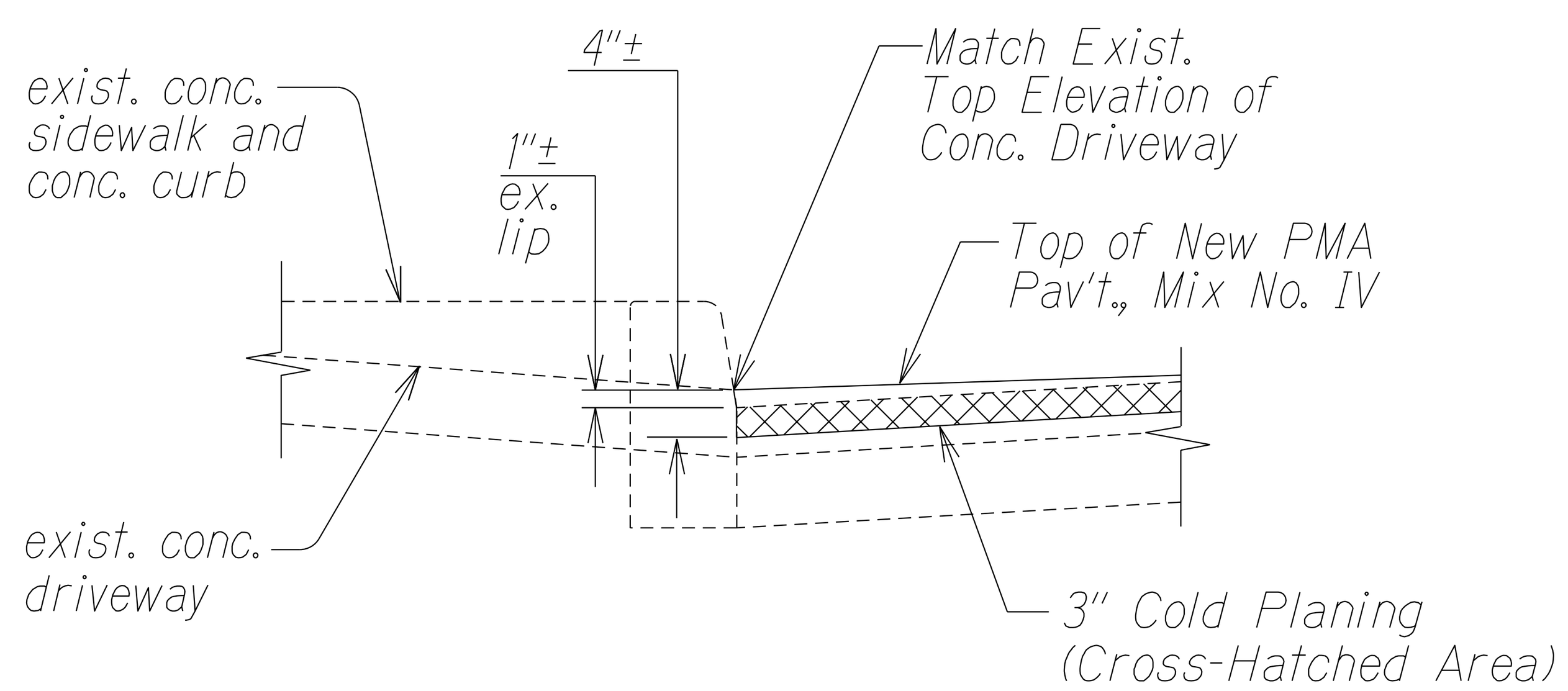


℄ Sta. 550+80 to ℄ Sta. 568+25

TYPICAL SECTION

Not to Scale

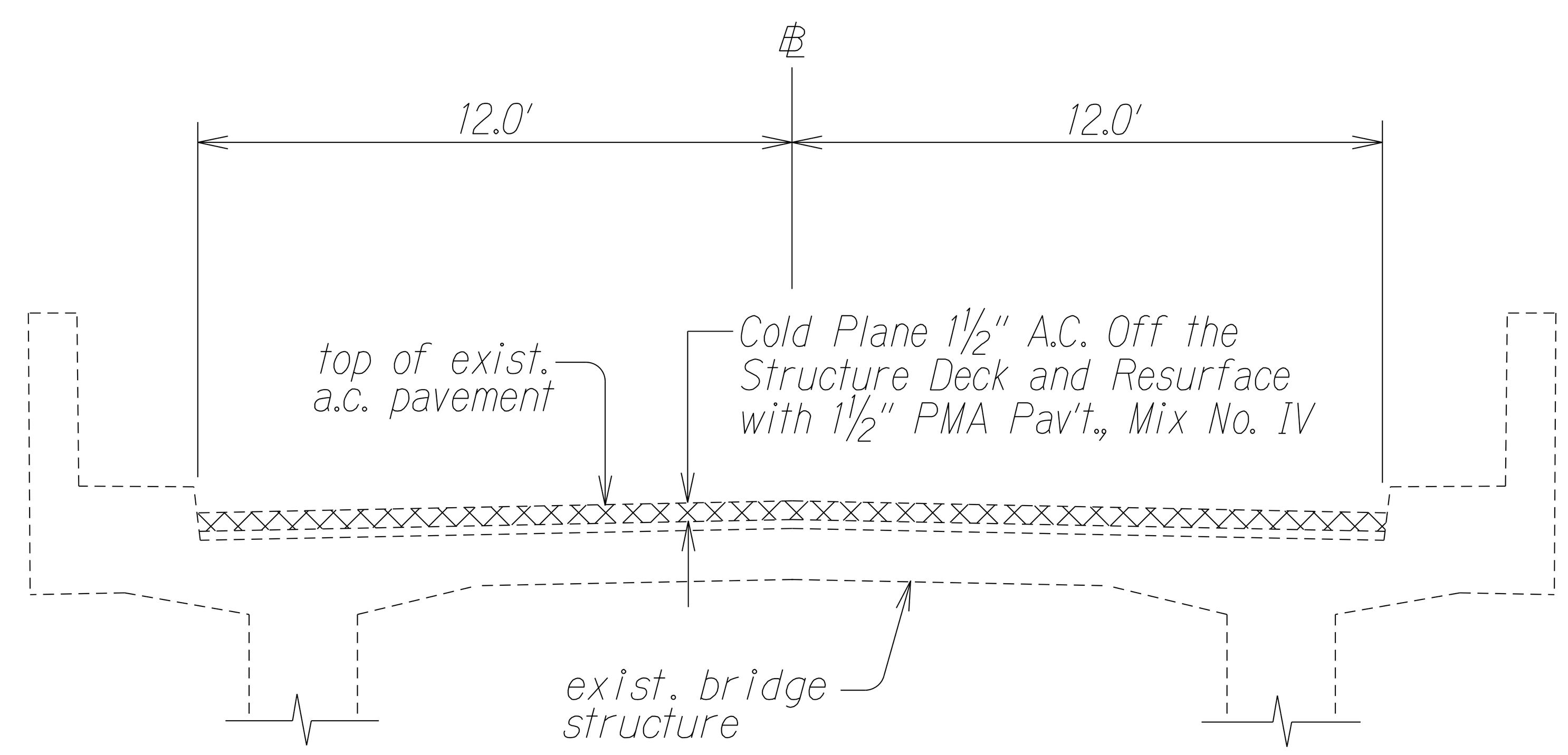
NOTE: See Plan Sht. No. 9 for for typical section from ℄ 568+25 to ℄ 605+38



DETAIL "A"

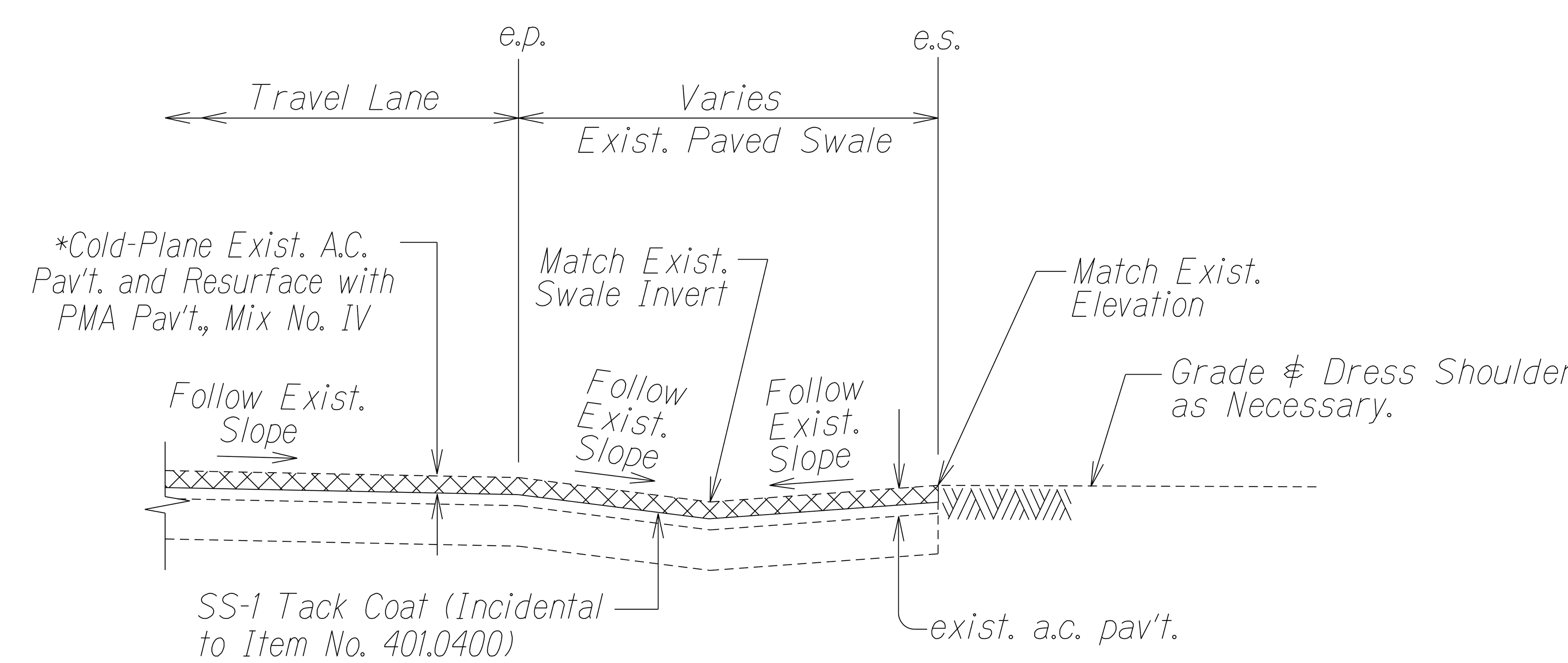
Not to Scale

NOTE: Detail typical for all concrete driveways and/or sidewalks located between ℄ Sta. 550+80 and ℄ Sta. 568+25.



TYPICAL SECTION ON MOIKEHA BRIDGE

Not to Scale



TYPICAL SECTION AT SWALE LOCATIONS

Not to Scale

*Depths for Cold-Plane and Resurfacing vary depending on the Stationing:
℄ Sta. 517+85 to ℄ Sta. 568+25 shall be 3".
℄ Sta. 568+25 to ℄ Sta. 605+38 shall be 2".

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK No. 4kht502.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

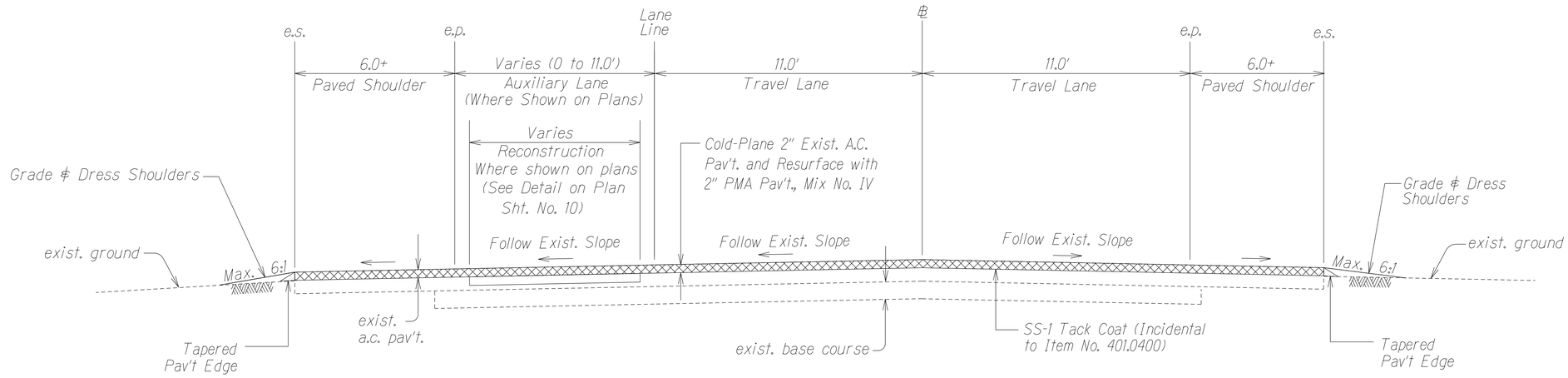
TYPICAL SECTIONS

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Noted   Date: Mar. 2023

SHEET No. 2 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	10	43

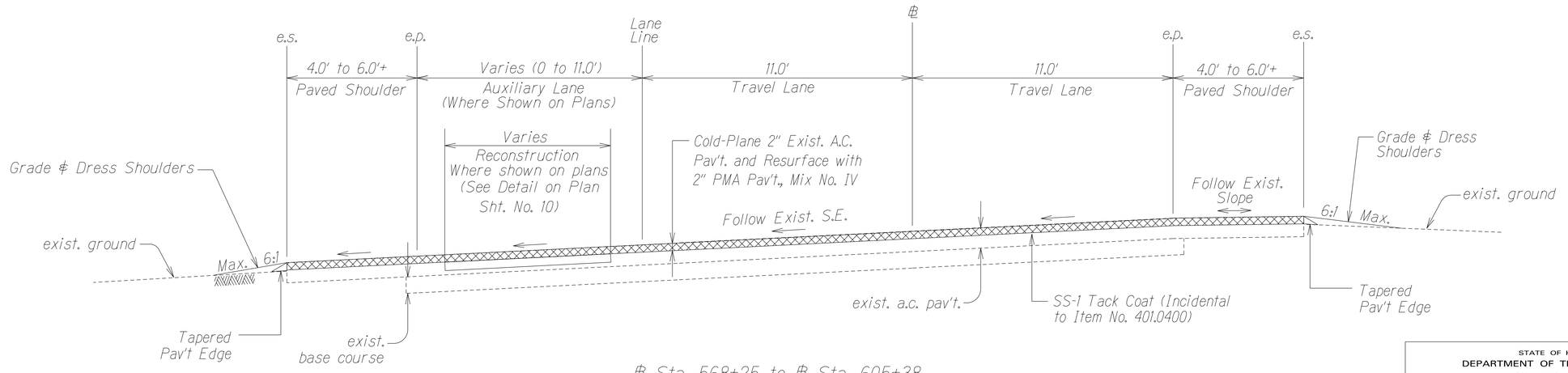


℄ Sta. 568+25 to ℄ Sta. 605+38

TYPICAL TANGENT SECTION

Not to Scale

NOTE: See Plan Sht. No. 10 for resurfacing at guardrail locations.



℄ Sta. 568+25 to ℄ Sta. 605+38

TYPICAL SECTION ON SUPERELEVATION

Not to Scale

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

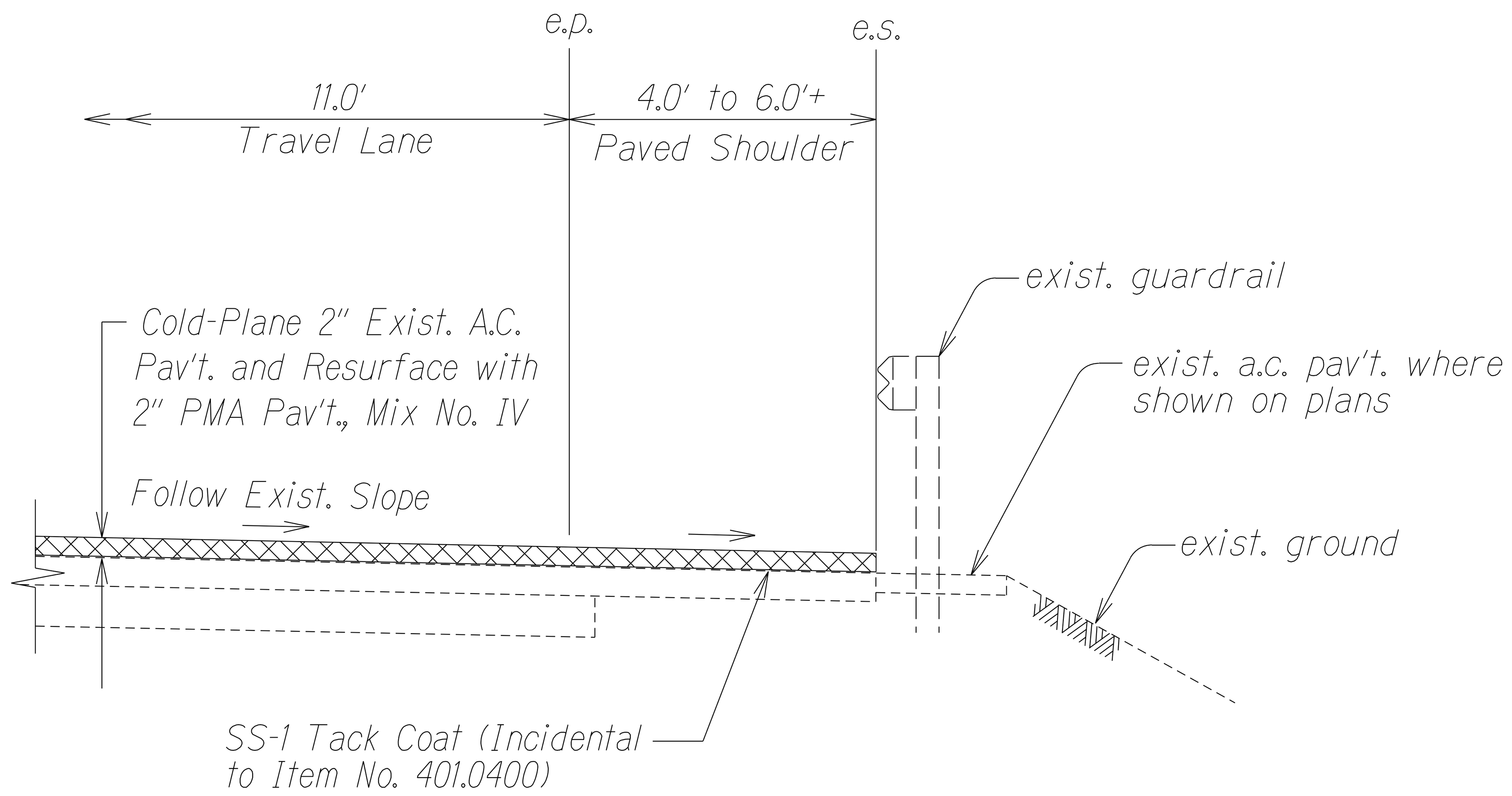
TYPICAL SECTIONS

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Noted Date: Mar. 2023

SHEET No. 3 OF 5 SHEETS

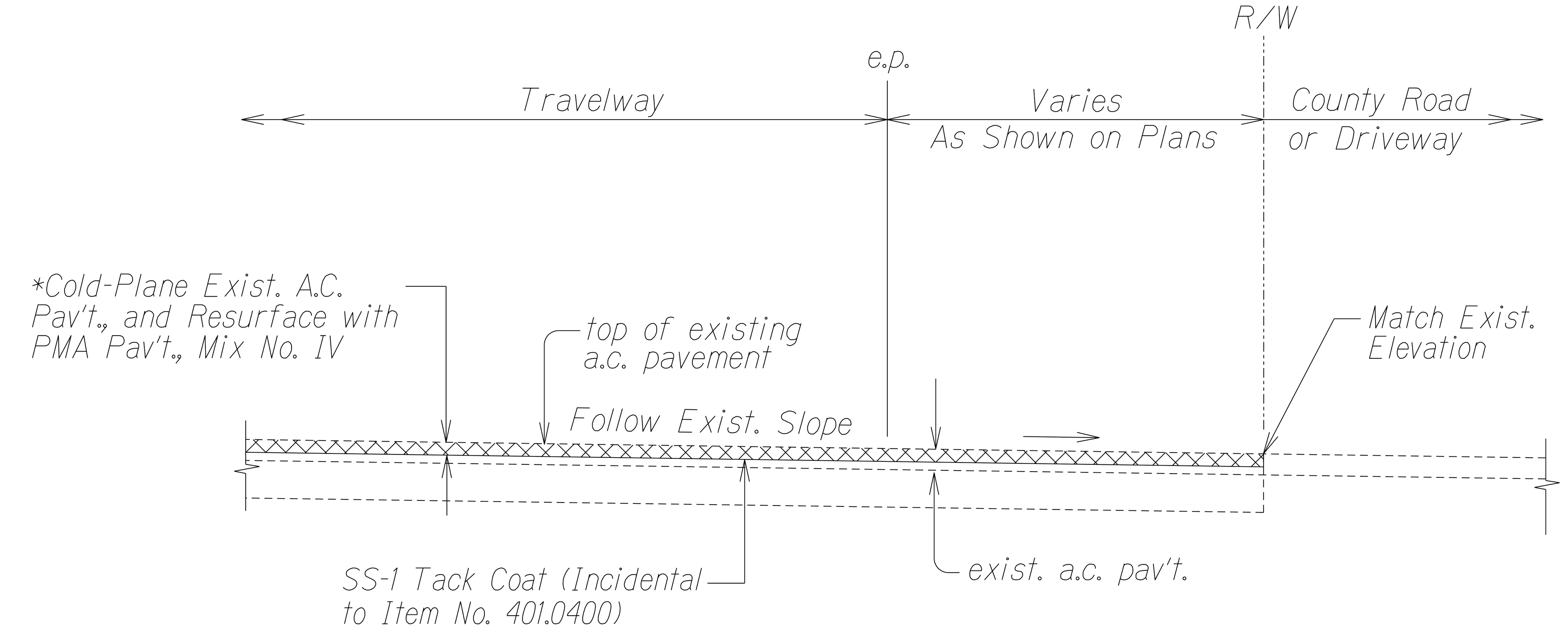
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	11	43



RESURFACING AT GUARDRAIL LOCATIONS

Not to Scale

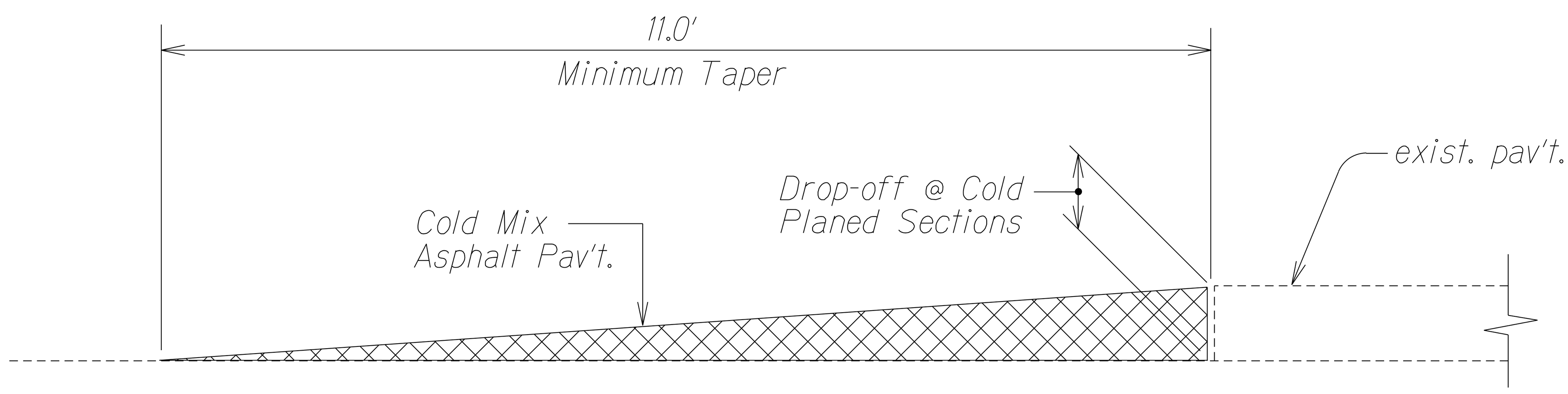
*NOTE: At concrete driveway locations, cold-planing terminates at the beginning of the concrete driveway.



A. C. RESURFACING AT PAVED SIDEROAD OR PAVED DRIVEWAY DETAIL

Not to Scale

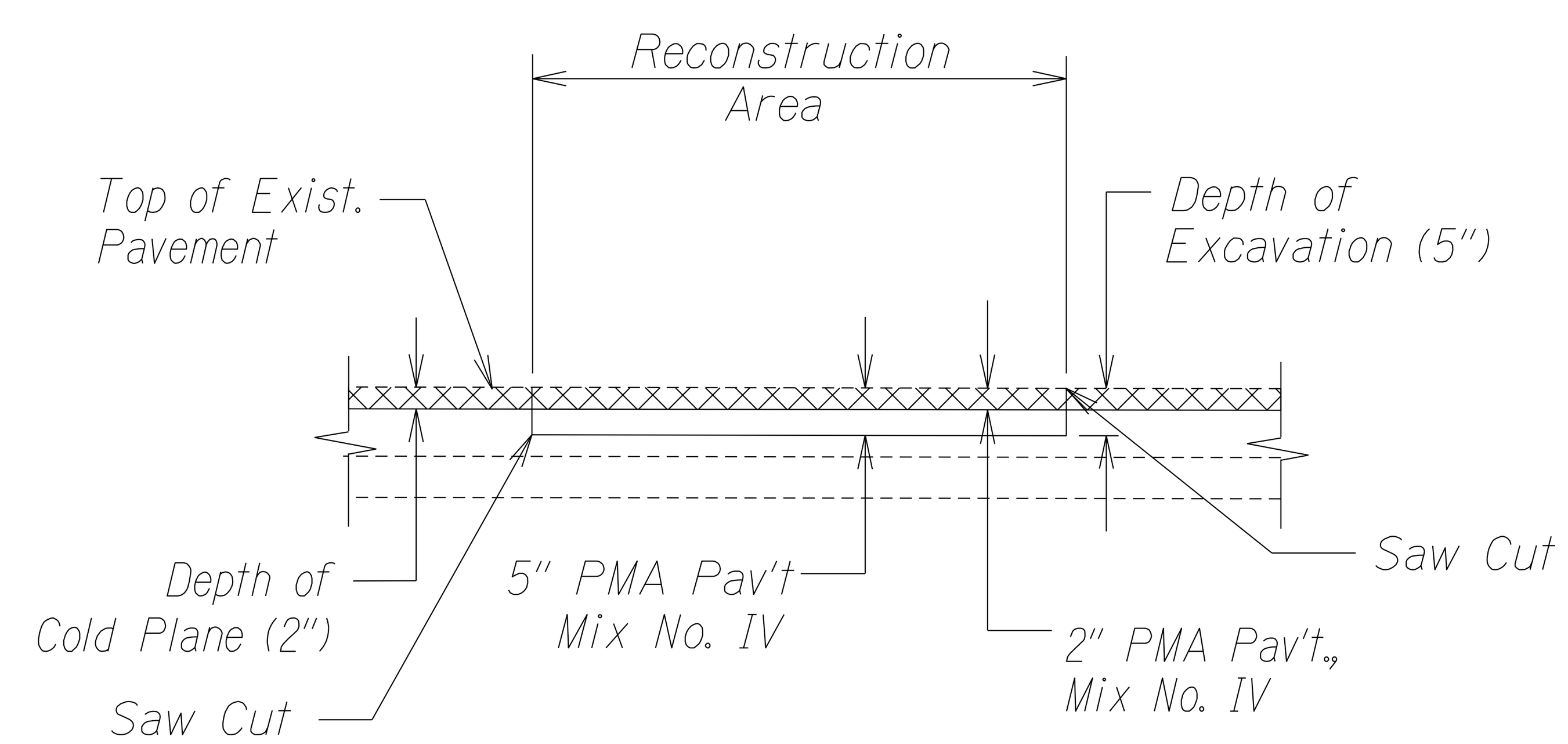
*Depths for Cold-Plane and Resurfacing vary depending on the Stationing:
B Sta. 517+85 to B Sta. 568+25 shall be 3".
B Sta. 568+25 to B Sta. 605+38 shall be 2".



TEMPORARY TRANSITION AT COLD PLANED AREAS

Not to Scale

Note: Contractor shall construct temporary pavement taper to prevent sharp pavement drop-offs at all cold planed sections. Prior to final Hot Mix Asphalt Pavement, Mix No. IV placement, temporary pavement taper shall be removed.



B Sta. 568+25 to B Sta. 605+38

TYPICAL DETAIL

RECONSTRUCTION OF WEAKENED PAVEMENT AREAS

Not to Scale

NOTES:

1. See Plan Sht. No. 7 for reconstruction of weakened pavement areas from B Sta. 517+85 to B Sta. 568+25.

2. Reconstructed weakened pavement areas prior to cold plane. The exposed remaining base course or subbase materials should be properly recompacted to dense and unyielding conditions prior to placement of the asphalt concrete base layer.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SECTIONS

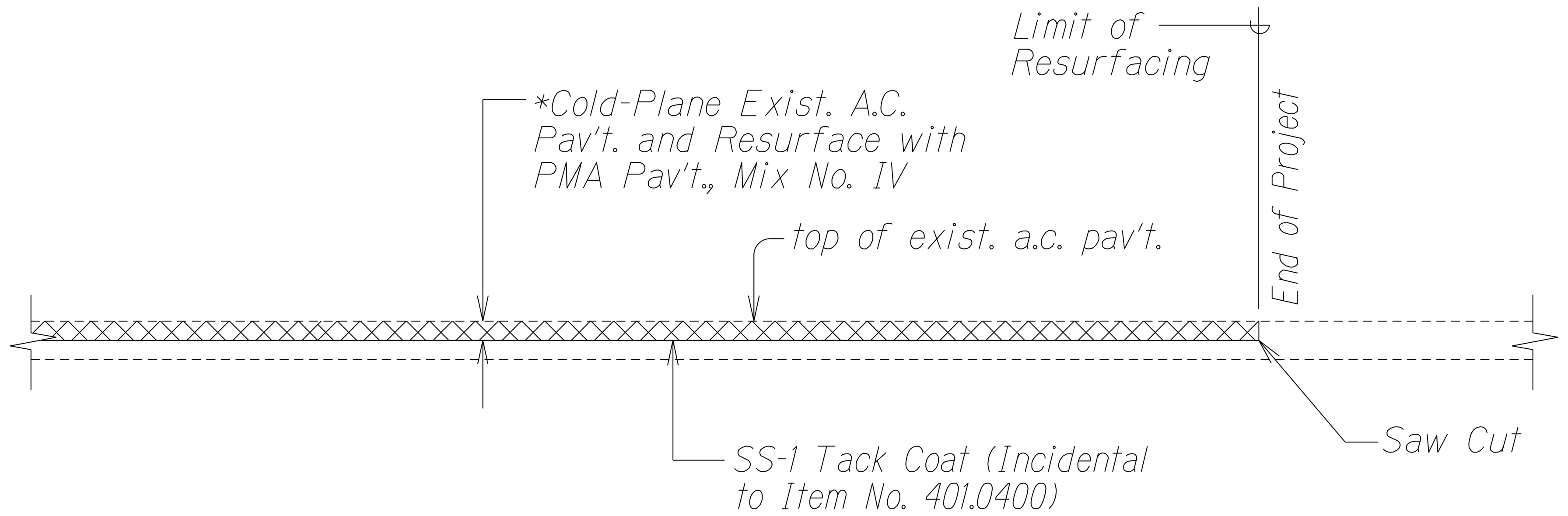
KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Noted   Date: Mar. 2023

SHEET No. 4 OF 5 SHEETS

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK ke3deft 4ehlt5t4gn No.

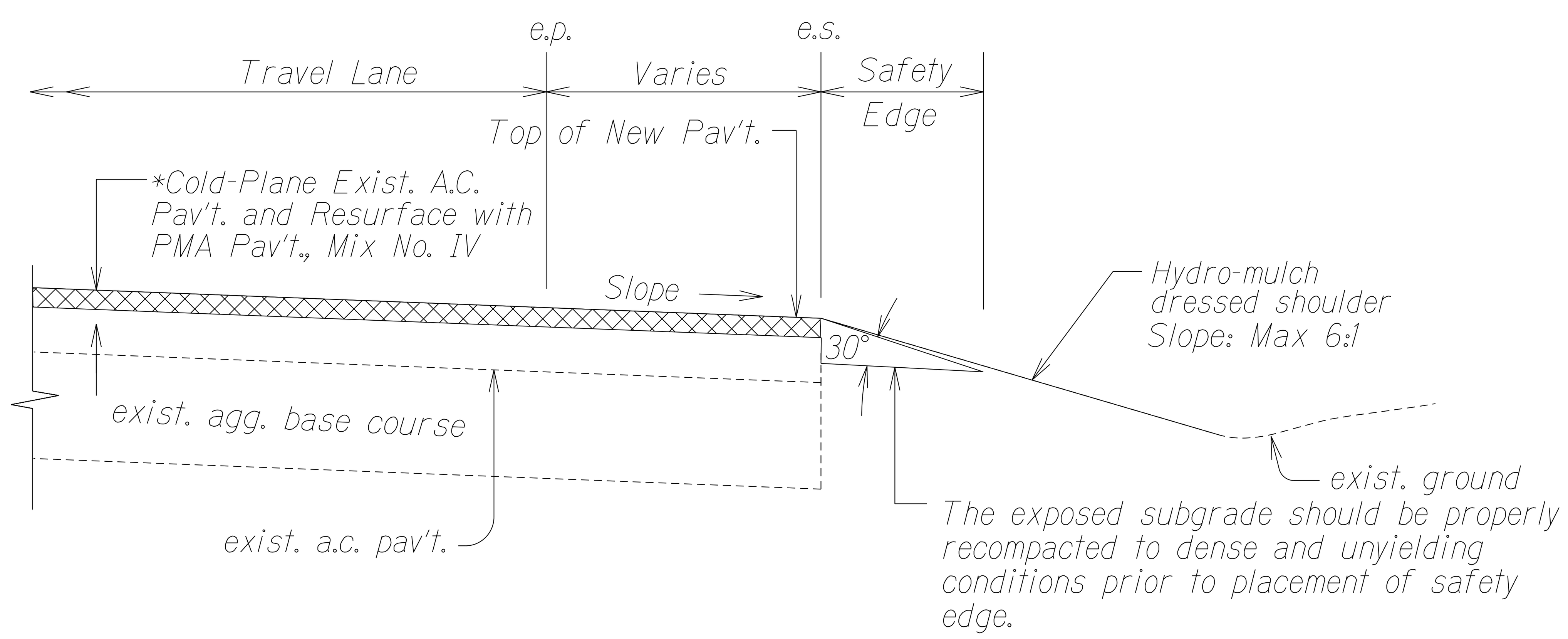
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	12	43



COLD PLANED TRANSITION TO EXISTING A.C. PAVEMENT AT BEGINNING AND END OF PROJECT

Not to Scale

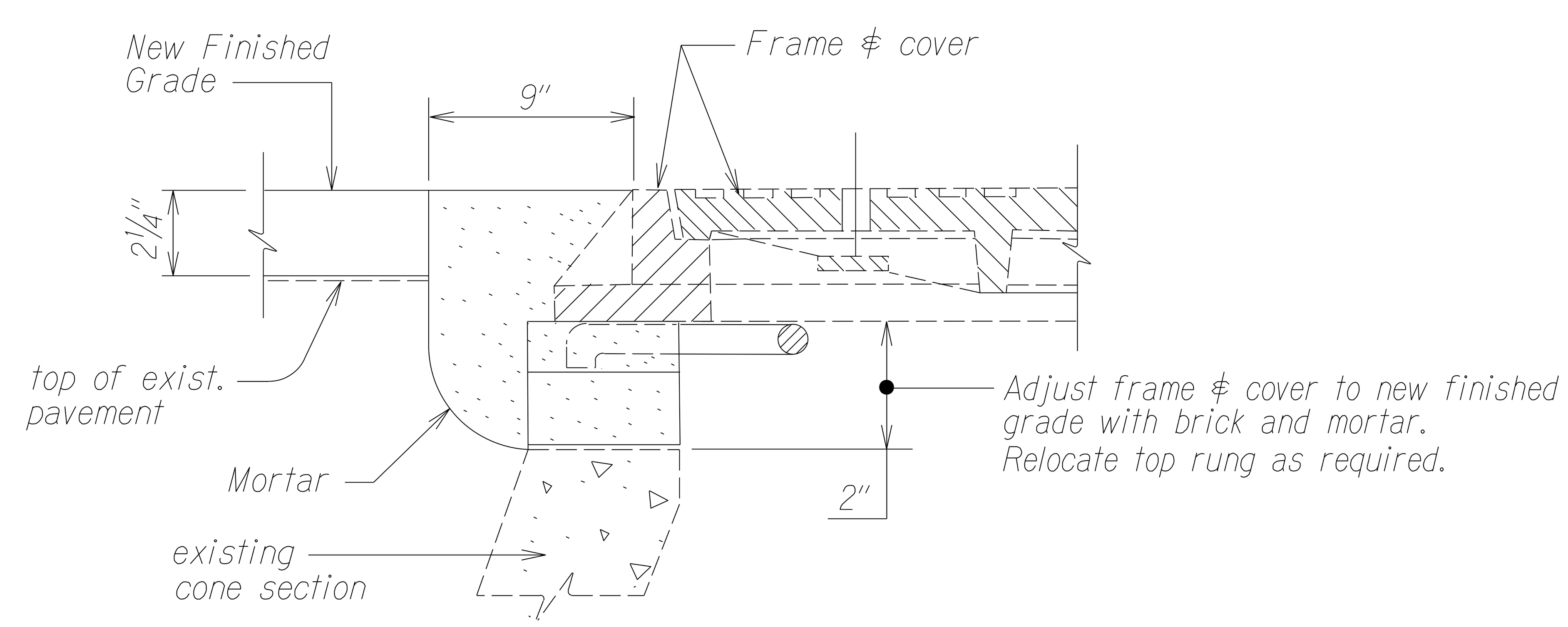
*Depths for Cold-Plane and Resurfacing vary depending on the Stationing:
℄ Sta. 550+80 to ℄ Sta. 568+25 shall be 3".
℄ Sta. 568+25 to ℄ Sta. 605+38 shall be 2".



TYPICAL PAVEMENT EDGE DETAIL

Not to Scale

*Depths for Cold-Plane and Resurfacing vary depending on the Stationing:
℄ Sta. 550+80 to ℄ Sta. 568+25 shall be 3".
℄ Sta. 568+25 to ℄ Sta. 605+38 shall be 2".



TYPICAL MANHOLE FRAME & COVER ADJUSTMENT

(WATER, SEWER, STORM DRAIN & UTILITY MANHOLES)

Not to Scale

NOTE: As an option, the Contractor may use an Adjus-to-Grade four-section extension ring with Safe-Tite seal, as manufactured by the National Utility Products Co. (NUPCO), or approved equal.

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | NOTE BOOK | DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

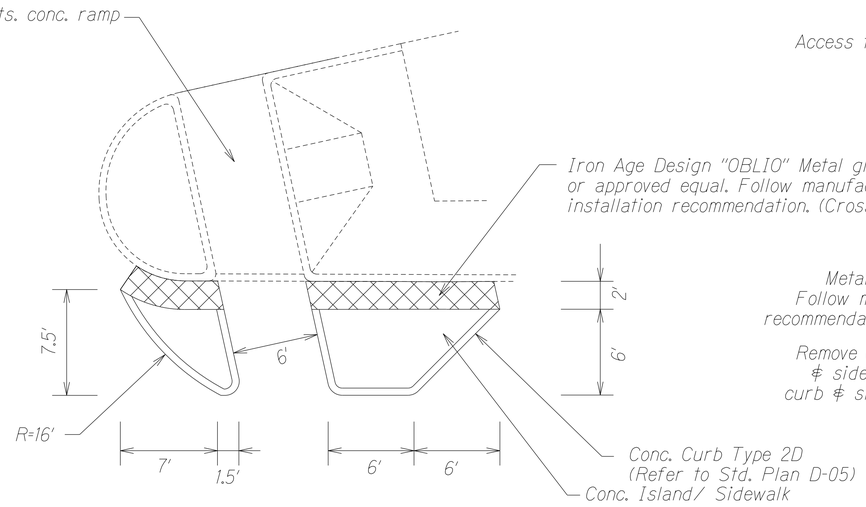
TYPICAL SECTIONS

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

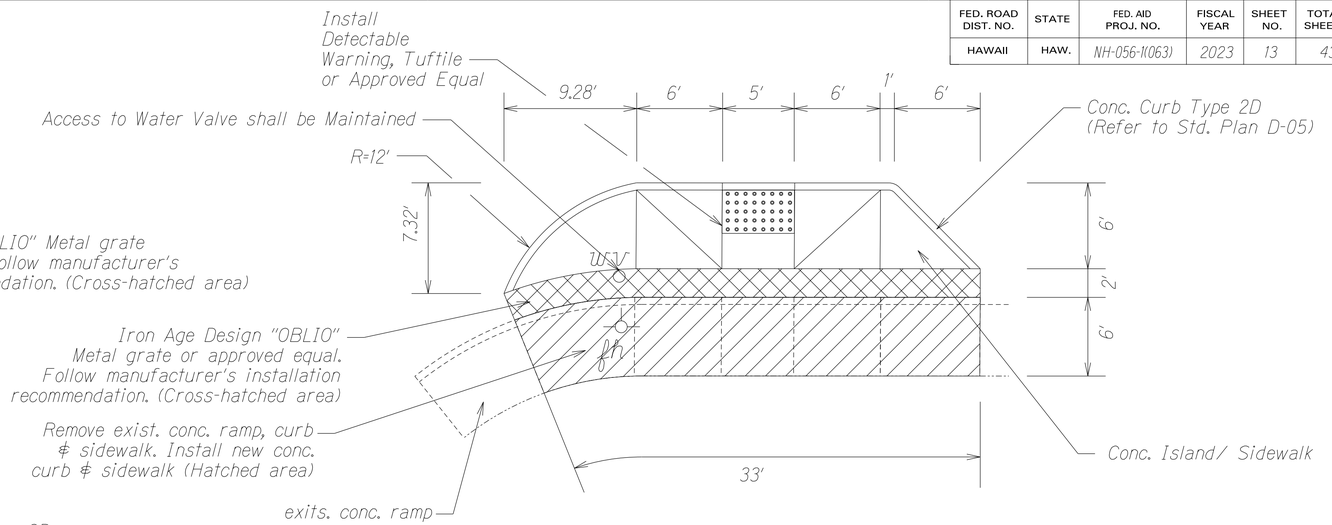
Scale: As Noted   Date: Mar. 2023

SHEET No. 5 OF 5 SHEETS

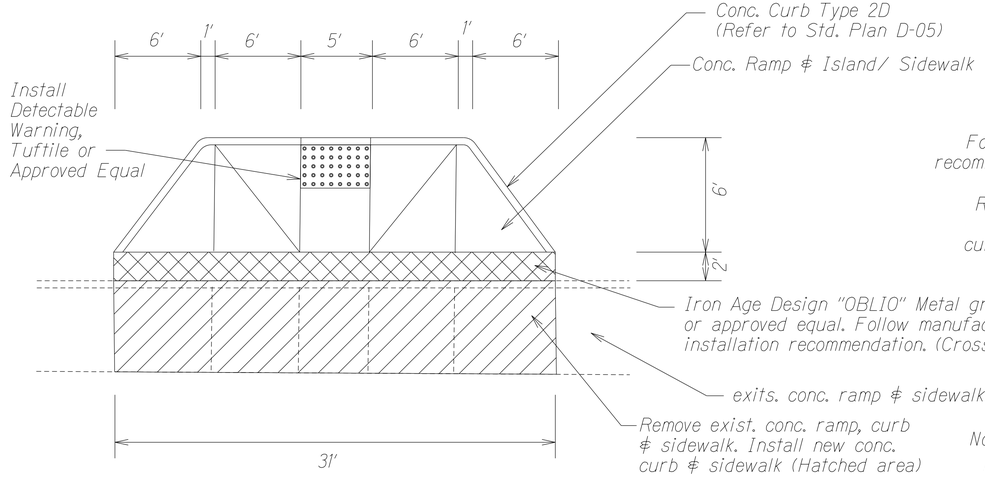
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	13	43



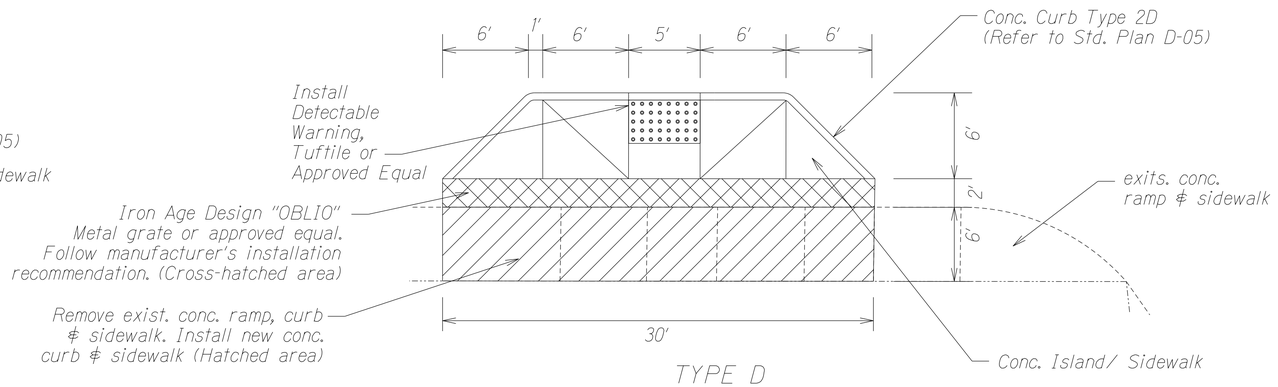
TYPE A
Not to Scale



TYPE C
Not to Scale



TYPE B
Not to Scale



TYPE D
Not to Scale

Notes:

1. Additional details and notes on concrete island/sidewalk, refer to Std. Plan D-15.
2. Removal and disposal of existing concrete sidewalk curb and ramp shall be considered incidental to various contract items and will not be paid separately.
3. Metal Grate shall be cast grey iron, 100% recycled material, with a natural raw finish.
4. Finish grade at both ends of metal grate to flush with new or existing concrete.
5. Fabricate grates to comply with the ADA for maximum open size, offset of surfaces, and slip resistancet. Grates shall have a minimum slip resistance (Pendulum Test Value) of 5.5 or better, per ASTM E303.
   A. Maximum Space Between Adjacent Section: 1/4-inch
   B. Maximum Variation from Top Surface Plane of Adjacent Sections: 1/8-inch

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

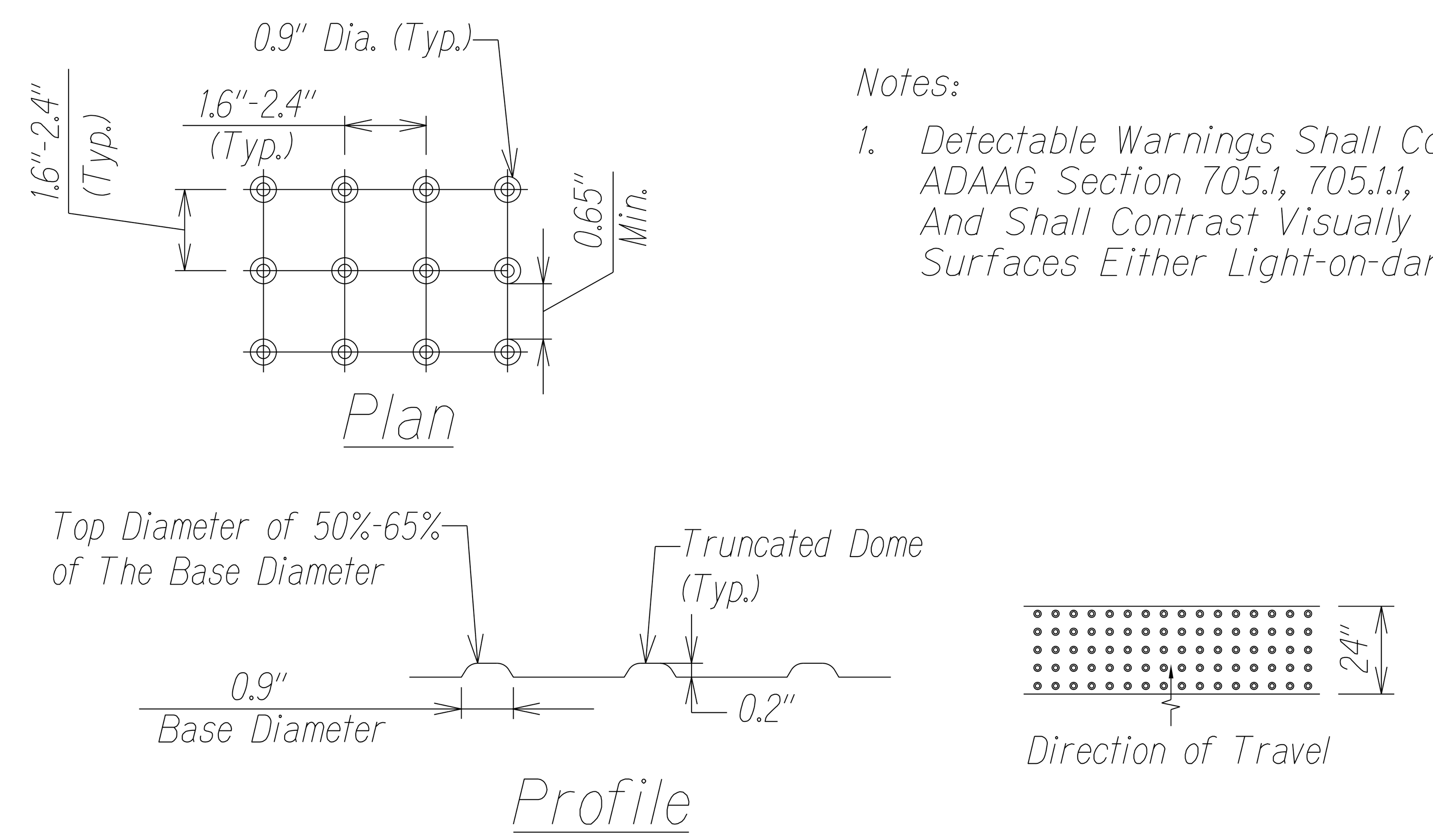
MISCELLANEOUS DETAIL

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Shown Date: Mar. 2023

SHEET No. 1 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	14	43



Notes:

1. Detectable Warnings Shall Comply To ADAAG Section 705.1, 705.1.1, 705.1.2 and 705.1.3; And Shall Contrast Visually With Adjacent Walking Surfaces Either Light-on-dark, or dark-on-light.

DETECTABLE WARNING DETAIL

Not to Scale

ORIGINAL PLAN | NOTE BOOK | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

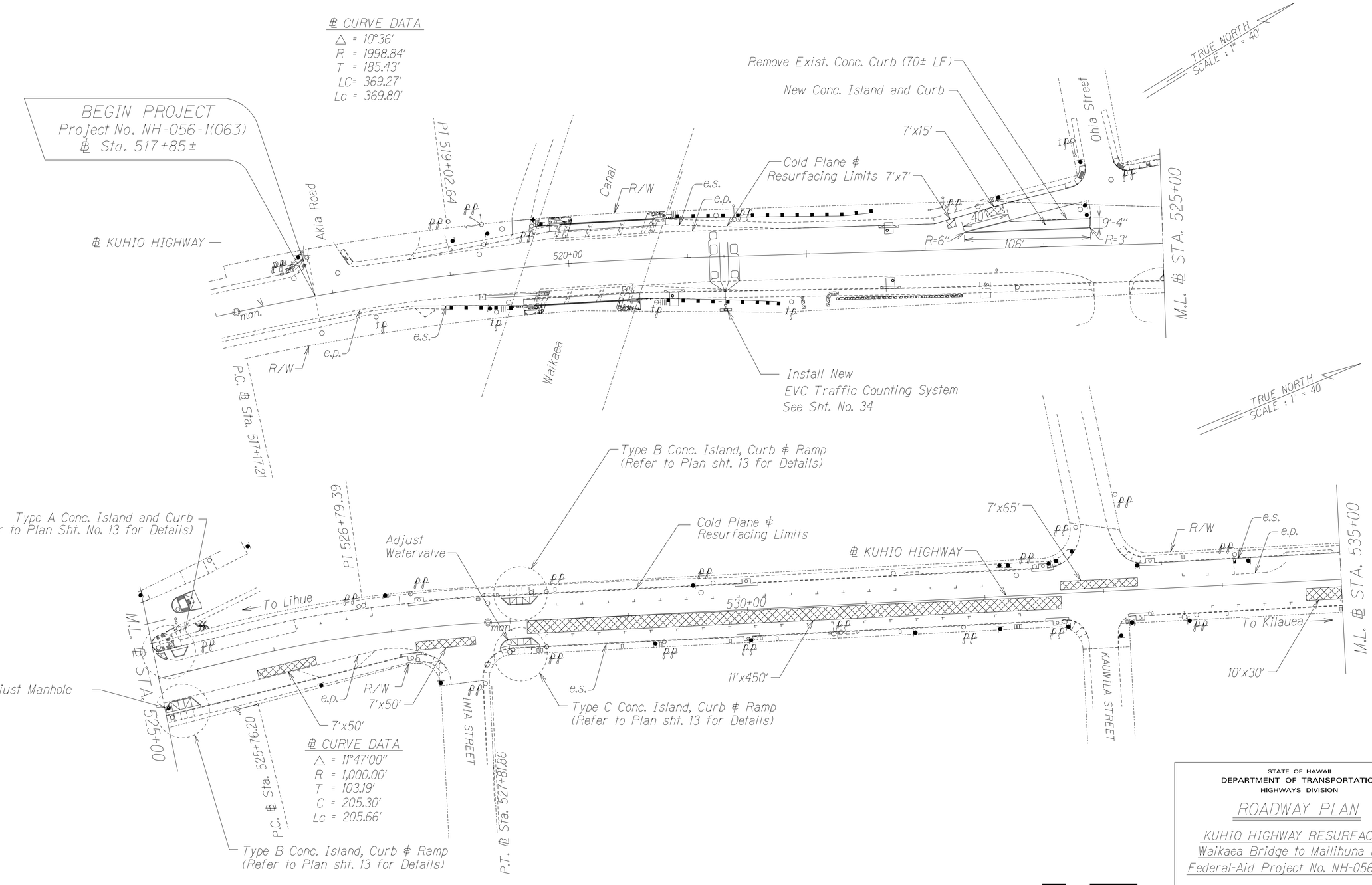
MISCELLANEOUS DETAIL

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Shown Date: Mar. 2023

SHEET No. 2 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	15	43



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QUANTITIES BY	
CHECKED BY	
NOTE BOOK	ks3.def
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

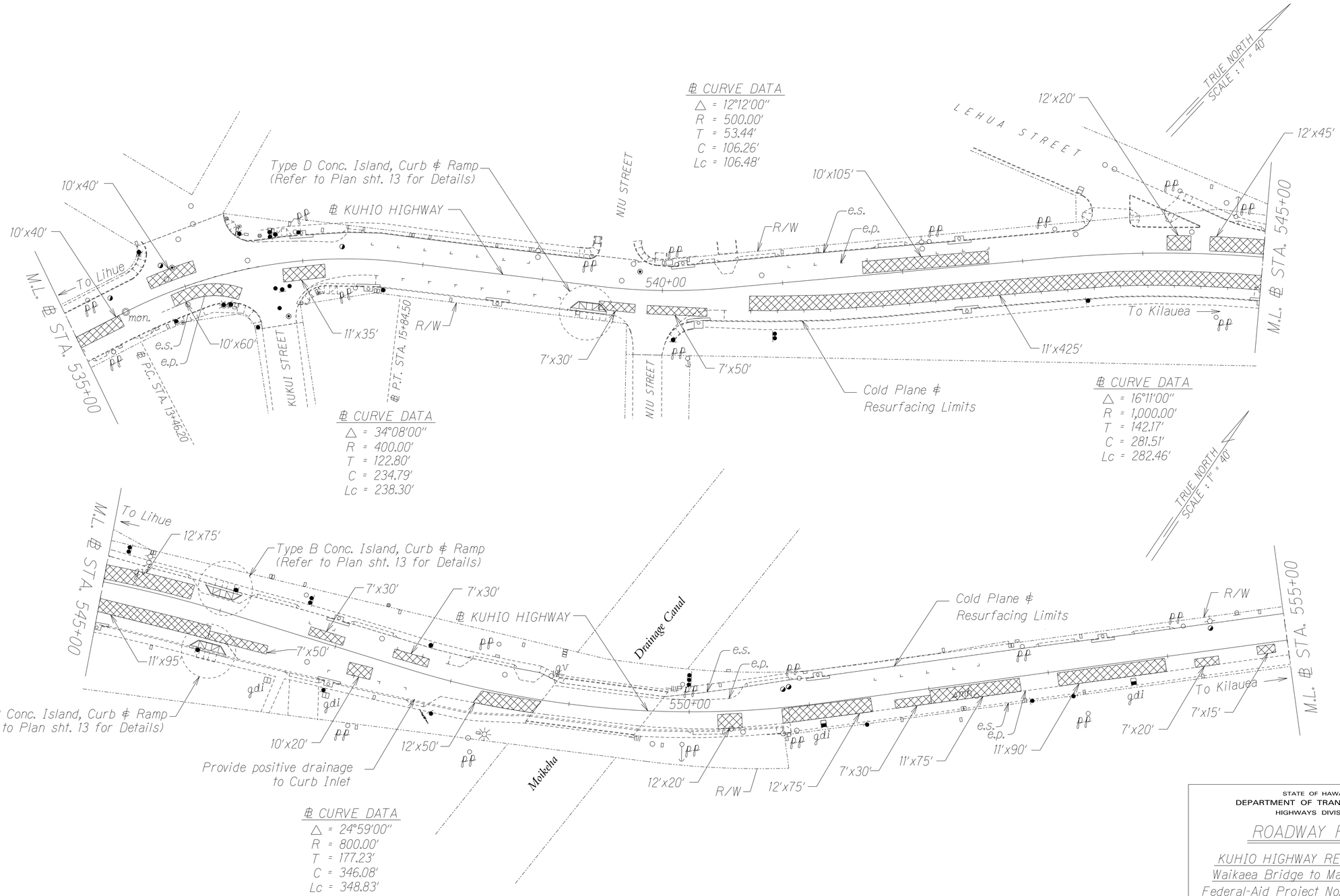
ROADWAY PLAN

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 40' Date: Mar. 2023

SHEET No. 1 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	15	43



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
ALL	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

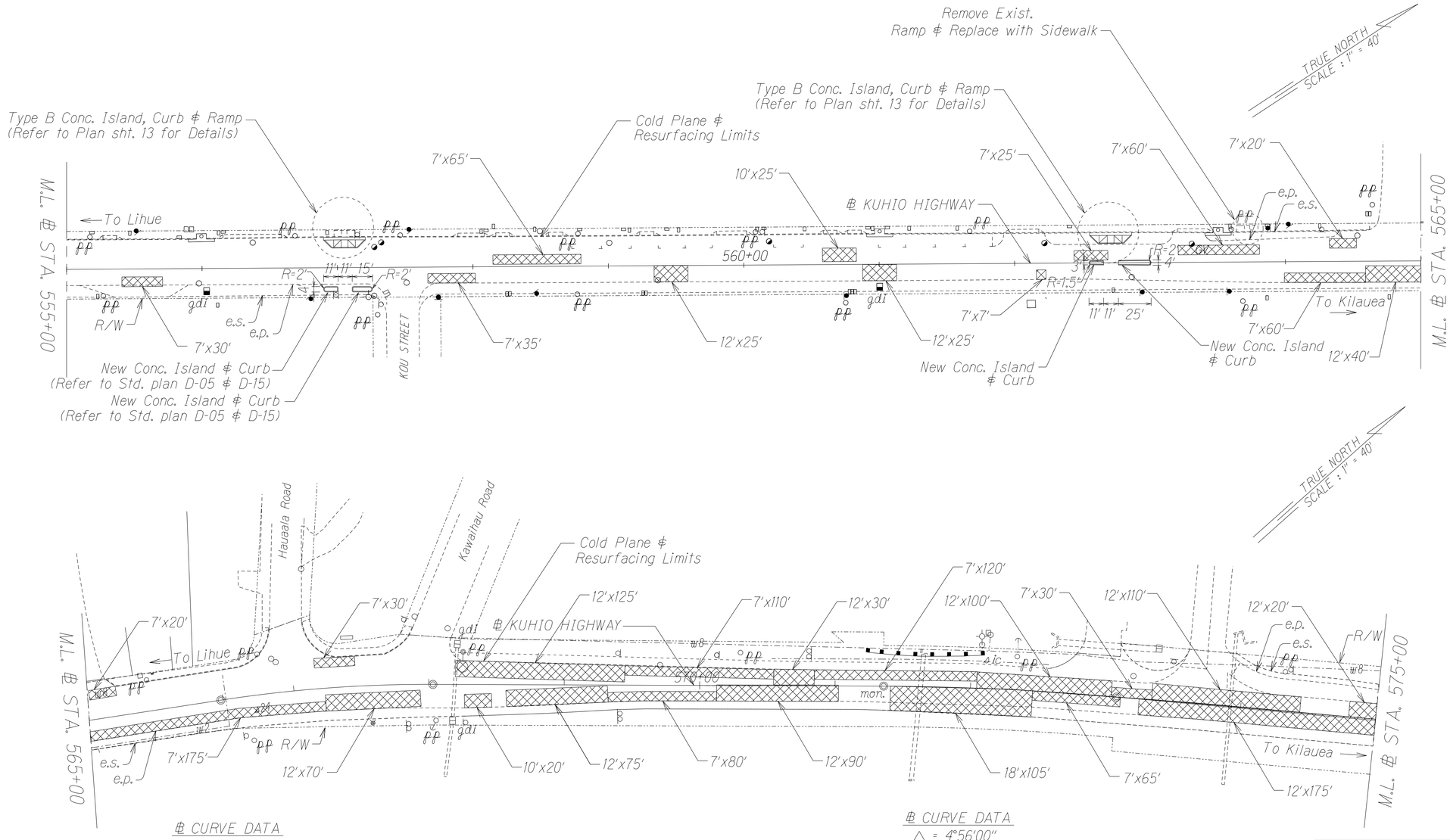
ROADWAY PLAN

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 40' Date: Mar. 2023

SHEET No. 2 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	17	43



℄ CURVE DATA
△ = 8°59'00"
R = 1,000.00'
T = 78.56'
C = 156.63'
Lc = 156.78'

℄ CURVE DATA
△ = 4°56'00"
R = 2,000.00
T = 86.16
C = 172.15
Lc = 172.21

0 20 40 80

ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
NOTE BOOK
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mik603.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

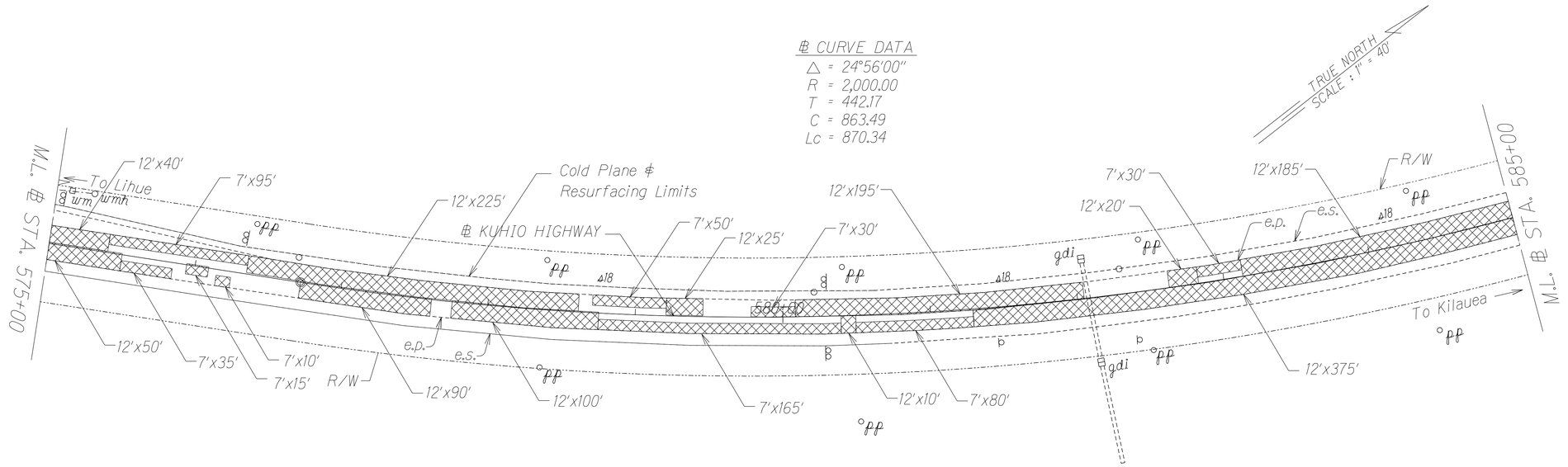
ROADWAY PLAN

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 40' Date: Mar. 2023

SHEET No. 3 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	18	43



ORIGINAL PLAN

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

NOTE BOOK
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 40' Date: Mar. 2023

SHEET No. 4 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	19	43

TRUE NORTH
SCALE : 1" = 40'

END PROJECT
Project No. NH-056-1(063)
℄ Sta. 606+00±

℄ CURVE DATA
△ = 59°43'00"
R = 700.00
T = 401.90
C = 697.00
Lc = 729.70

Cold Plane & Resurfacing Limits

To Lihue

To Kilauea

℄ KUHIO HIGHWAY

12'x35'

12'x335'

7'x25'

7'x65'

12'x540'

12'x715'

e.p.

e.s.

R/W

pp

ic

d

b

600+00

*See Sheet 20 for Roadway Plan

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
ks3.pdf	QUANTITIES BY	
Kuhio05.dgn	CHECKED BY	

0 20 40 80

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

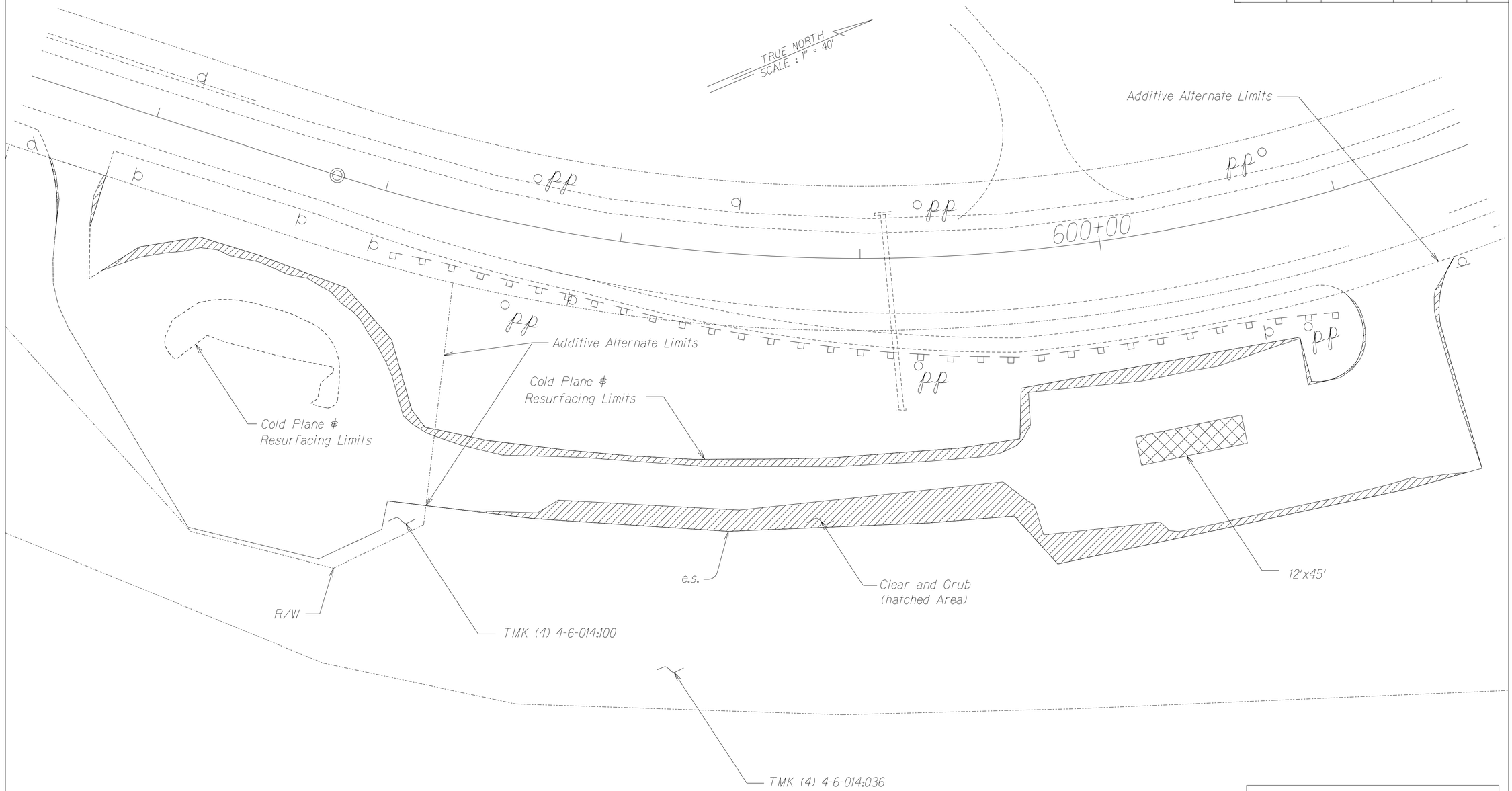
ROADWAY PLAN

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 40' Date: Mar. 2023

SHEET No. 5 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	20	43



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

0 20 40 80

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 20' Date: Mar. 2023

SHEET No. 6 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	21	43

LEGEND

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

10' Yellow Profiled Thermoplastic Stripe
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)

4" Double Solid Yellow Stripes with Type D Raised Pavement Markers On Both Outside Edges Of 4" Yellow Stripe @ 10'-0" o.c. (Tape, Type I Or Thermoplastic Extrusion)

4" Double Solid Yellow Stripes with Type H Raised Pavement Markers On Both Outside Edges Of 4" Yellow Stripe @ 10'-0" o.c. (Tape, Type II Or Thermoplastic Extrusion)

6" Yellow Edge Stripe with Type H Raised Pavement Markers @ 10'-0" o.c. (Tape, Type II or Thermoplastic Extrusion)

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

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

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

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

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

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

②
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)

STOP
Pavement Word (Tape, Type III or Thermoplastic Extrusion)

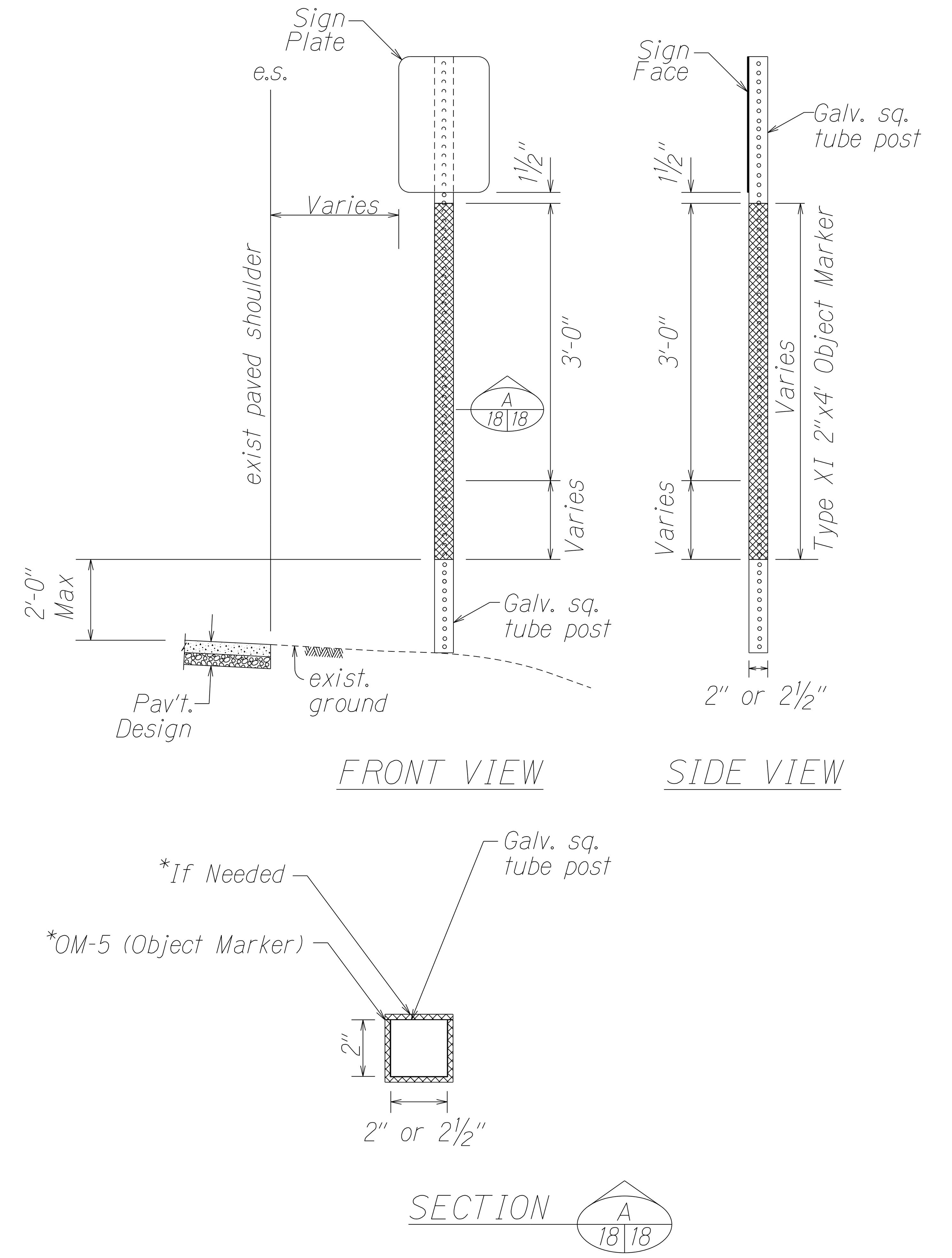
10' Yellow Profiled Thermoplastic Stripe @ 40'-0" o.c.
Type D Raised Pavement Markers on Outside Edge and Midway Between Yellow Profiled Thermoplastic Stripe @ 40'-0" o.c. (Passing Direction)
Type D Raised Pavement Markers on Outside Edge of 4" Single Solid Yellow Stripe @ 10'-0" o.c. (No-Passing Direction)
4" Single Solid Yellow Stripe (Tape, Type I or Thermoplastic Extrusion)

10' 10' 10' 10'
Extension of Edge Line, 4" 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)

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

NOTES

1. Layout of pavement markings and striping shall be done by the Contractor and approved by the Engineer prior to any installation work.
2. 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.
3. Raised pavement markers shall not be installed within crosswalks.
4. Final locations of all signs shall be approved by the Engineer prior to any installation work.
5. 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.
6. Final locations of all stop lines shall be approved by the Engineer prior to installation.
7. All pavement striping shall be as noted on the legend or plans.
8. Pavement marking (Tape or Thermoplastic Extrusion) over existing and new pavement shall be applied with an approved primer as recommended by the manufacturer and as approved by the Engineer. The primer shall be allowed to dry to the tacky stage prior to tape application.
9. The Contractor shall erect at the beginning of the project and at the end of the project advance construction warning signs as indicated on the plans or as directed by the Engineer. The signs shall be kept in place for the duration of the project and shall be maintained by the Contractor. These signs shall be placed in addition to the required traffic controlsigns called for in Section 645 - Work Zone Traffic Control. The advance construction warning signs shall be new and become the property of the Contractor.
10. 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.
11. Backing for all new regulatory and warning signs shall not be spliced.
12. All sign panels shall conform to Section 630 of 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"
13. State Route Marker Symbols, borders, messages, arrows, symbols and shields shall conform to details as shown on the plans and as specified in the MUTCD.
14. All new and relocated signs and markers installed on pipe posts, light standard or expressway sign post are to be mounted with band brackets and steel braces.
15. Removal and disposal of existing signs and posts shall be considered incidental to various contract items.
16. Object markers (OM-5) shall be installed on all existing and proposed regulatory and warning sign posts within the project limits.
17. If a strip of retroflective material is used on the sign support, it shall be at least 2 inches in width, it shall be placed for the full length of the support from the sign to within 2 feet above the edge of roadway, and its color shall match the background color of the sign, except that the color of the strip for the "YIELD" and "DO NOT ENTER" signs shall be red.
18. All red OM-5 object markers shall cover 4 sides of the sign post. All other OM-5 object marker colors shall cover 3 sides of the sign post, facing all directions of traffic.
19. Background of object marker shall be retroreflectorized with Type XI retroreflective sheeting.



*NOTE: All red OM-5 object markers shall be 4-sided.

OBJECT MARKER (OM-5) DETAIL @ TRAFFIC SIGN POST

Not to Scale

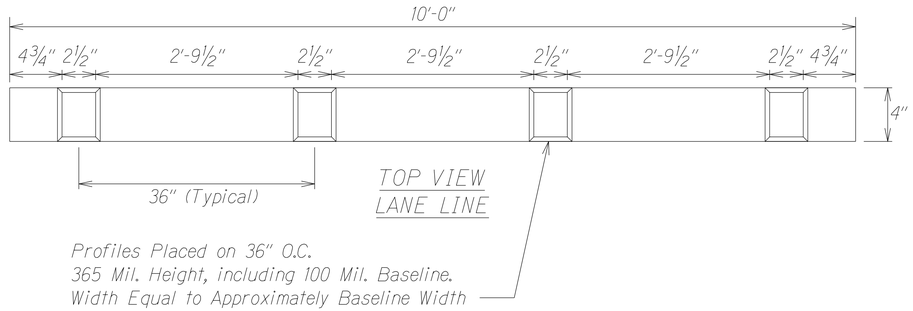
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

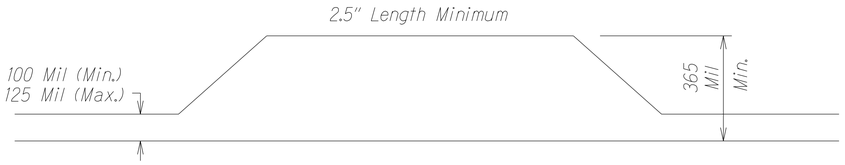
PAVEMENT MARKING LEGEND, DETAILS, NOTES & SUMMARY

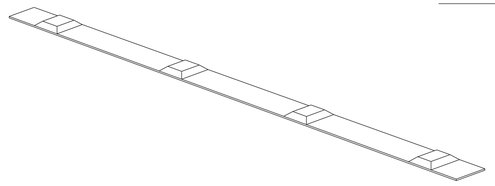
KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)
Date: Mar. 2023

SHEET No. 1 OF 4 SHEETS

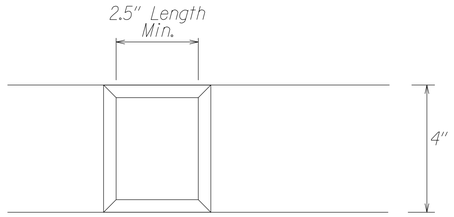
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	22	43







PERSPECTIVE VIEW



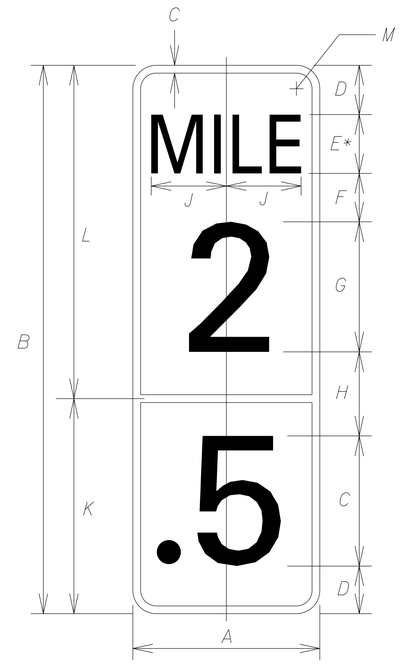
TOP VIEW

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. Install white profiled thermoplastic stripes as lane line.
3. Install yellow profiled thermoplastic stripes for centerline passing zone.
4. In areas with centerline milled rumble strips, install standard yellow thermoplastic stripes without raised profiles



LEGEND (IN.)					
A	B	C	D	E	F
10	27	0.5	3	4B	2
12	36	0.5	3	4B	3

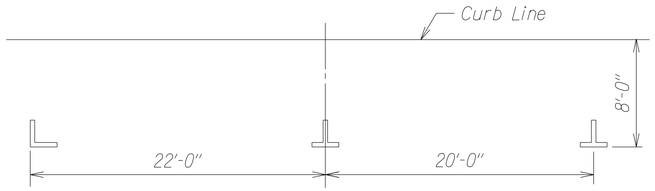
G	H	J	K	L	M
6D	3	3.922	10.5	16.5	1.5
10D	3	3.922	14.5	21.5	1.5

D10-1A MILEPOST SIGN

Not to Scale

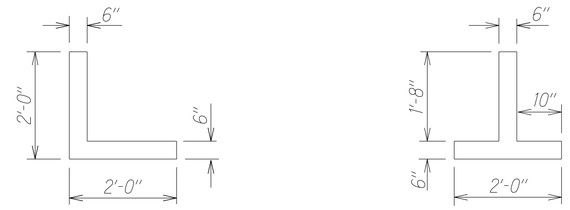
*NOTES

1. Series 2000 Standard Alphabets. Optically Locate Numerals about Centerline.
2. All reference location signa at the integer mile point shall display a decimal point and a zero numeral.



PARKING SPACE LIMITS

Not to Scale



PARKING SPACE DETAIL

Not to Scale

TYPICAL PARKING SPACE MARKINGS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY X	
NOTE BOOK	TRACED BY	
	DESIGNED BY X	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

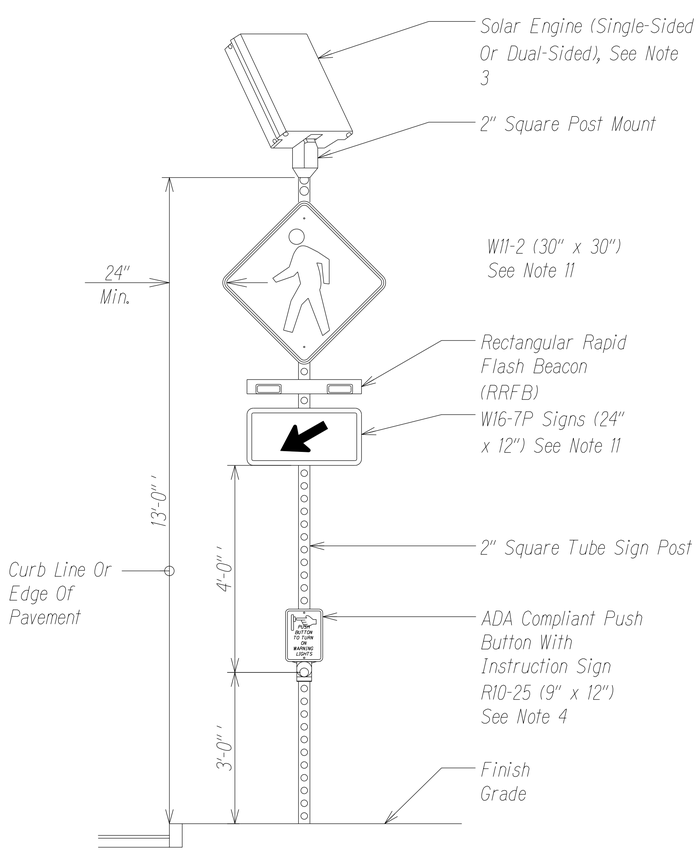
PAVEMENT MARKING LEGEND, DETAILS, NOTES & SUMMARY

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Date: Mar. 2023

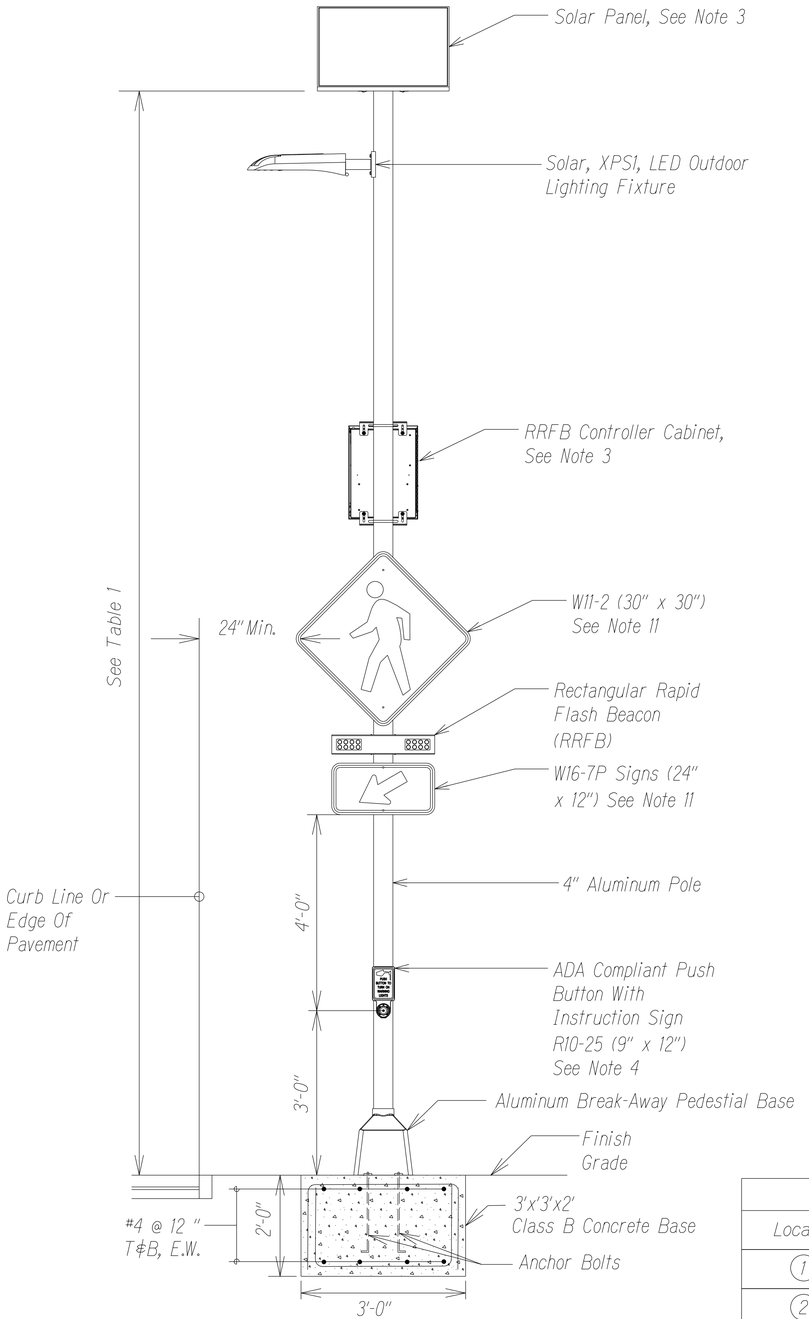
SHEET No. 2 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	23	43



RECTANGULAR RAPID FLASHING BEACON

Not To Scale



RECTANGULAR RAPID FLASHING BEACON WITH OVERHEAD LIGHT

Not To Scale

NOTES:

1. The Locations Of The New Traffic Signal Standards With Rectangular Rapid Flashing Beacons (RRFB) And Pedestrian Push Buttons Shall Be Staked Out In The Filed By The Contractor And Approval Of The Locations Shall Be Obtained From The Engineer Prior To Construction And Installation.
2. RRFB System Shall Conform To The Requirements Of The 2009 Edition Of The "Manual On Uniform Traffic Control Devicies," Federal Highway Administration. The System Shall Conform To All Provisions Of The MUTCD, Interim Approval IA-21.
3. RRFB System Shall Be Solar-Powered With Spread Spectrum Wireless Communication. Solar Engine Shall Be Sized With Minimal Dimensions To Provide Sufficient Power Output To Operate the RRFB System.
4. Each Pushbutton Shall Be Installed With An Instruction Sign R10-25 (9" 12") That Reads, "Push Button To Turn On Warning Lights". See Sht. TS-4 For More Details.
5. RRFB Controller Equipment Shall Be Completely Self-Contained With No Connection To External Power Necessary.
6. The W16-7P Plaque And The Rapid-Flash LED Enclosure Shall Not Extend More Than 4" Horizontally Over Any Pedestrian Facility.
7. Contractor Shall Install Signs And Posts And Rectangular Rapid Flash Beacon And Push Button, Per The Manufacturer's Specifications.
8. Contractor Shall Submit Product Data For Review And Approval By The Engineer Prior To Purchasing And Installation.
9. The RRFB Installation Shall Comply With The Technical Conditions As Provided In The FHWA Technical Memorandum Regarding The Interim Approval For Optional Use Of Rectangular Rapid Flash Beacon.
10. Each Crossing Where There Is No Median Shall Have A Minimum Of Two Poles Each With Push Button Detection. Each Pole Shall Have Signs And Beacons Facing Both Sides (Double-Sided). At Locations With A Median, Provide Two Poles With Single-Sided Sign And Beacon And Provide A Third Pole In The Median With Double -Sided Signs And Beacons.
11. W11-2 Warning Signs And Supplemental Plaques W16-7P Shall Have A Fluorescent Yellow-Green Background With A Black Legend And Border. The Mixing Of Standard Yellow And Fluorescent Yellow-Green Backgrounds Is Not Allowed.
12. Contractor Shall Provide An On-Board User Interface (OBUI) To Locally Troubleshoot Or Reprogram the RRFB System.
13. All existing RRFB Assemblies to be replaced shall be returned to the State.

Table 1	
Location	Height
(1)	20'-0"
(2)	20'-0"
(3)	20'-0"
(4)	15'-0"

ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
NOTE BOOK dated/hwy03.dgn

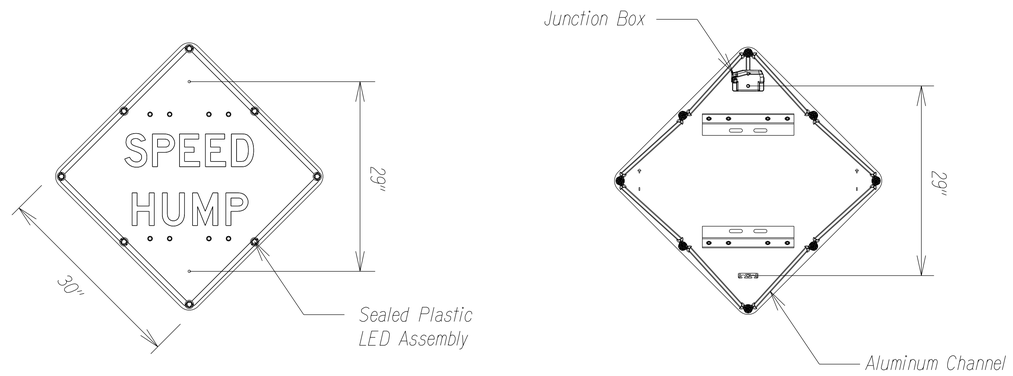
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

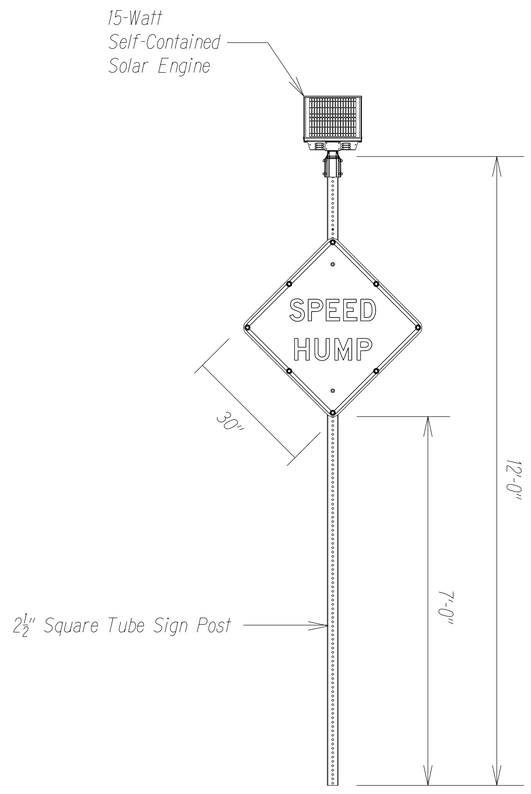
PAVEMENT MARKING LEGEND, DETAILS, NOTES & SUMMARY

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Date: Mar. 2023

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	24	43





LED-ENHANCED WARNING SIGN

Not To Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY X	
NOTE BOOK	TRACED BY	
	DESIGNED BY X	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

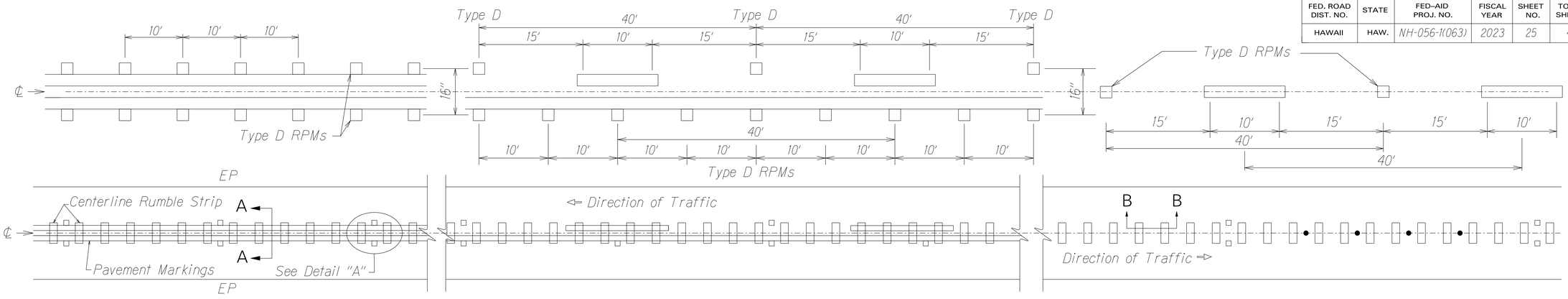
PAVEMENT MARKING LEGEND, DETAILS, NOTES & SUMMARY

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Date: Mar. 2023

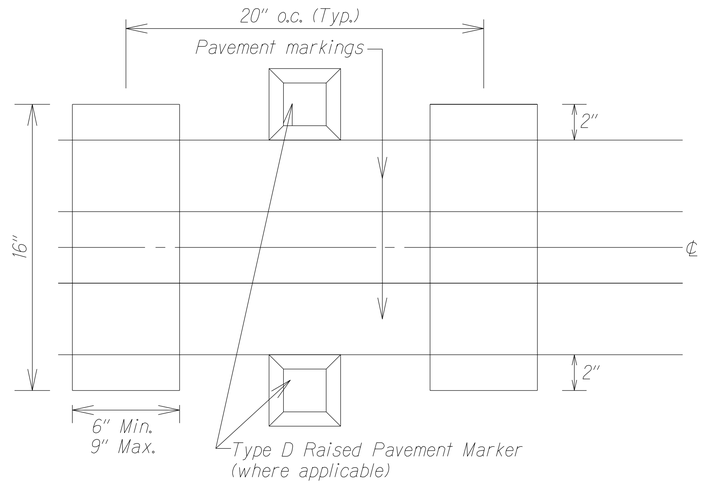
SHEET No. 4 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	25	43



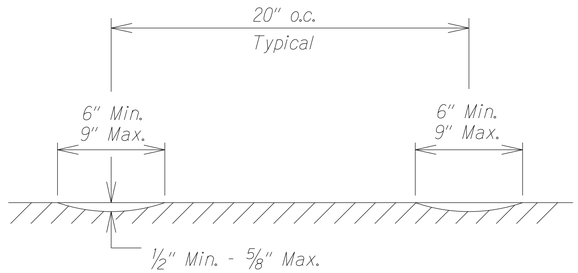
PLAN - CENTERLINE MILLED RUMBLE STRIP

Not to Scale



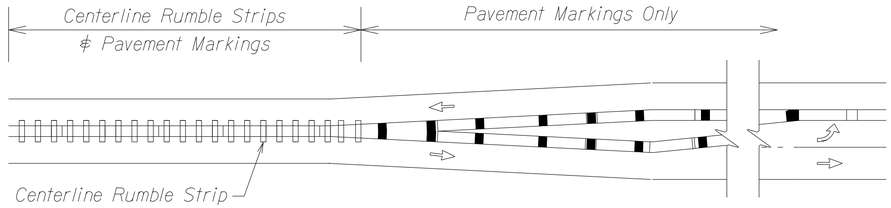
DETAIL "A"

Not to Scale



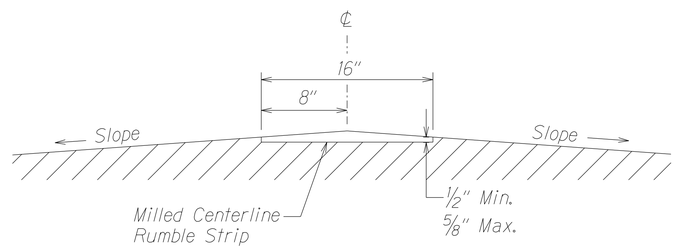
SECTION B-B - CENTERLINE MILLED RUMBLE STRIP

Not to Scale



CENTERLINE MILLED RUMBLE STRIP AT TRANSVERSE MEDIAN MARKING

Not to Scale

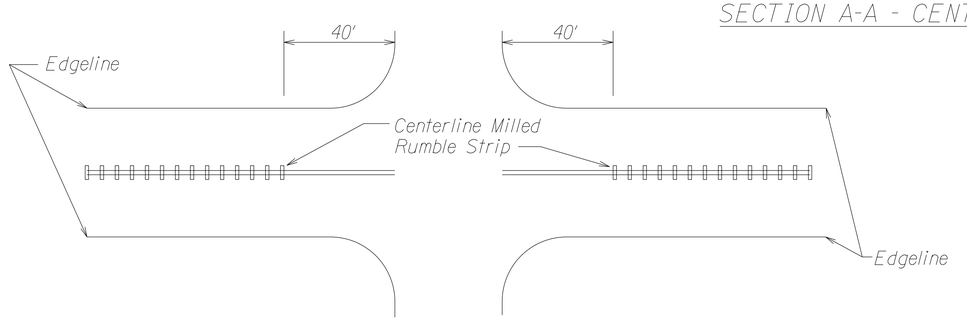


SECTION A-A - CENTERLINE MILLED RUMBLE STRIP

Not to Scale

NOTES:

1. The method of constructing the centerline milled rumble strip shall be submitted to the Engineer for acceptance prior to the actual work.
2. Dimensions shown are approximate. Adjust rumble strip spacing to coordinate with pavement markings prior to installation.
3. Raised pavement markers shall be installed on level surface between the rumble strips. Do not install raised pavement markers inside the milled area.
4. The construction of the centerline milled rumble strip shall be paid for under Item No. 615.0100 - 16-Inch Milled Rumble Strip, Centerline.
5. 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.
6. Do not install centerline rumble strips on bridge decks.
7. Where at-grade bridges are present, rumble strips shall end/begin 20 L.F. beyond the existing bridge deck joints/concrete approach slab.
8. 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

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY X	
	TRACED BY	
NOTE BOOK 163.dgn 4thTreg04.dgn	DESIGNED BY X	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

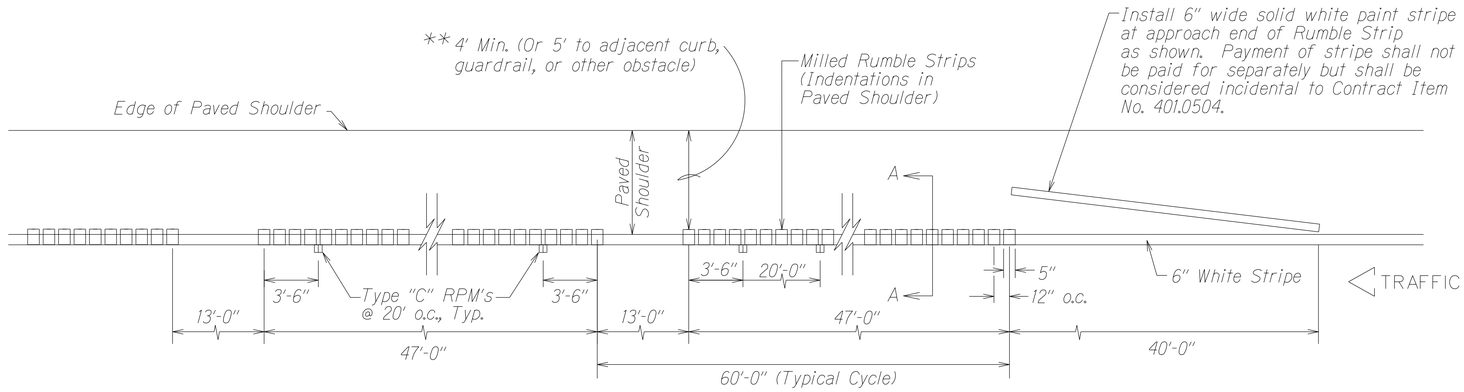
MILLED RUMBLE STRIP DETAIL & NOTES

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

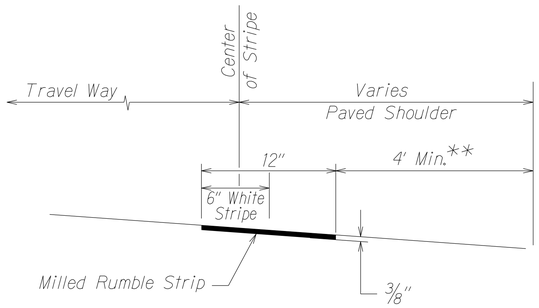
Scale: As Noted Date: Mar. 2023

SHEET No. 1 OF 2 SHEETS

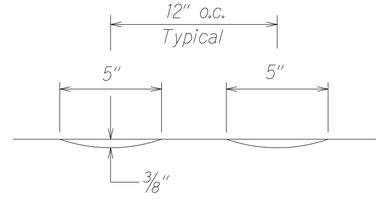
FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	26	43



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.

BICYCLE FRIENDLY MILLED EDGELINE RUMBLE STRIPS

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

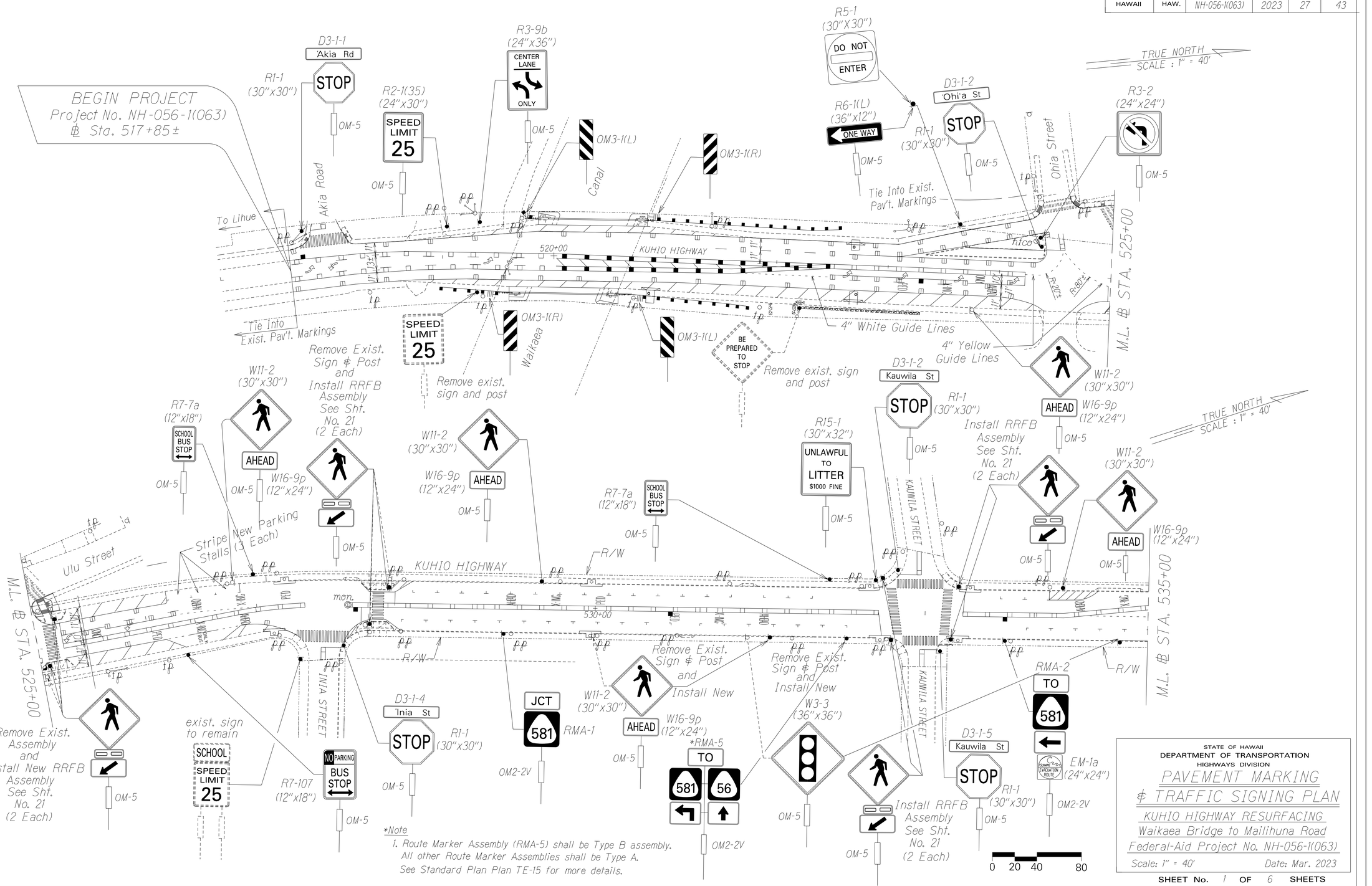
MILLED RUMBLE STRIP
DETAIL $ NOTES

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Noted Date: Mar. 2023

SHEET No. 2 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	27	43



ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
NOTE BOOK
AUTHENTICATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

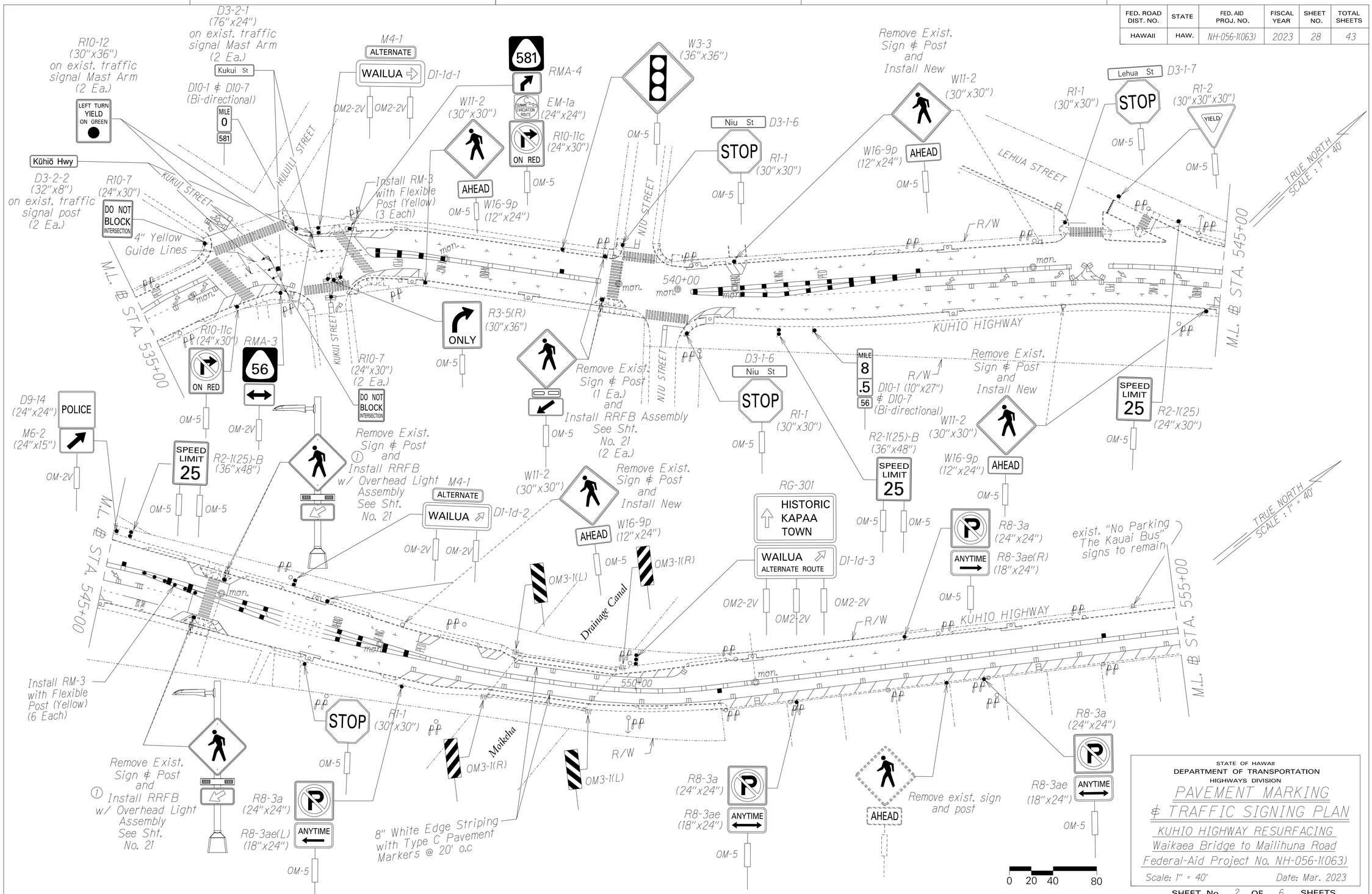
PAVEMENT MARKING & TRAFFIC SIGNING PLAN

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 40' Date: Mar. 2023

SHEET No. 1 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	28	43



ORIGINAL PLAN

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

NOTE BOOK
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & TRAFFIC SIGNING PLAN

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 40' Date: Mar. 2023

SHEET No. 2 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	29	43

TRUE NORTH
SCALE : 1" = 40'

R8-3a (24"x24")
R8-3ae (18"x24")
ANYTIME
OM-5
Remove Exist. Sign & Post and Install New
② Install RRFB w/ Overhead Light Assembly See Sht. No. 21
To Lihue
To Kilauea
M.L. @ STA. 555+00
M.L. @ STA. 565+00
M.L. @ STA. 575+00
KUHIO HIGHWAY
CANE HAUL ROAD
KOU STREET
HAUAALA ROAD
KAWAIHAU ROAD
560+00
570+00
W11-2 (30"x30")
W16-9p (12"x24")
AHEAD
exist. signs to remain
8" White Edge Striping
BIKE ROUTE
D3-1-8
Kou St
STOP
R1-1 (30"x30")
R8-3ae(R) (18"x24")
R8-3ae (L) (18"x24")
W16-9p (12"x24")
R8-3ae (R) (18"x24")
R3-40(L) (30"x30")
ONLY
③ Install RRFB w/ Overhead Light Assembly See Sht. No. 21 (2 Each)
R2-1(25) (24"x30")
SPEED LIMIT 25
R6-1(R) (36"x12")
ONE WAY
WAILUA
ALTERNATE
M4-1
D1-1d-4
OM-2V
Remove Exist. Sign & Post (2 Each)
D3-1-9
Hauaala Rd
D3-1-10
Kawaihau Rd
D1-1d-1
OM2-2V
RG-301
HISTORIC KAPA'A TOWN
WAILUA ALTERNATE ROUTE AHEAD
D1-1d-5
W17-1 (30"x30")
(LED-Enhanced)
SPEED HUMP
EMERGENCY MEDICAL CARE
M6-1 (24"x15")
D9-13cP (24"x18")
Remove Exist. "Be Prepared to Stop" Sign & Post
Remove Exist. "State Law Yield for Pedestrian" Sign & Post
Remove Exist. "Pedestrian Ahead" Sign & Post
Remove Exist. "State Law Yield for Pedestrian" Sign & Post
Remove Exist. & Install "Mahelona Memorial Hospital" Sign & Posts (D1-1d-6) and "Emergency Medical Care" Sign Above M6-1 (24"x15")
Install "Kapaa Schools" Sign & Posts (D1-2a)
④ Install RRFB w/ Overhead Light Assembly See Sht. No. 21 (2 Each)
ADOPT A HIGHWAY LITTER CONTROL NEXT 2 MILES
D2-1 (48"X24")
W2-8 (36"x36")
Kawaihau Rd
Hauaala Rd
W16-8-1
R1-2 30"x30"x30"
YIELD
MILE 9 .0 56
D10-1 (10"x27") & D10-7 (Bi-directional)
Remove Exist. exist. roundabout
@ P.C. Sta. 571+35.89
@ P.T. Sta. 573+08.10
e.s.
e.p.
R/W
gdi
mon
0 20 40 80

ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
NOTE BOOK
kx3.def
N:\hi\p03.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

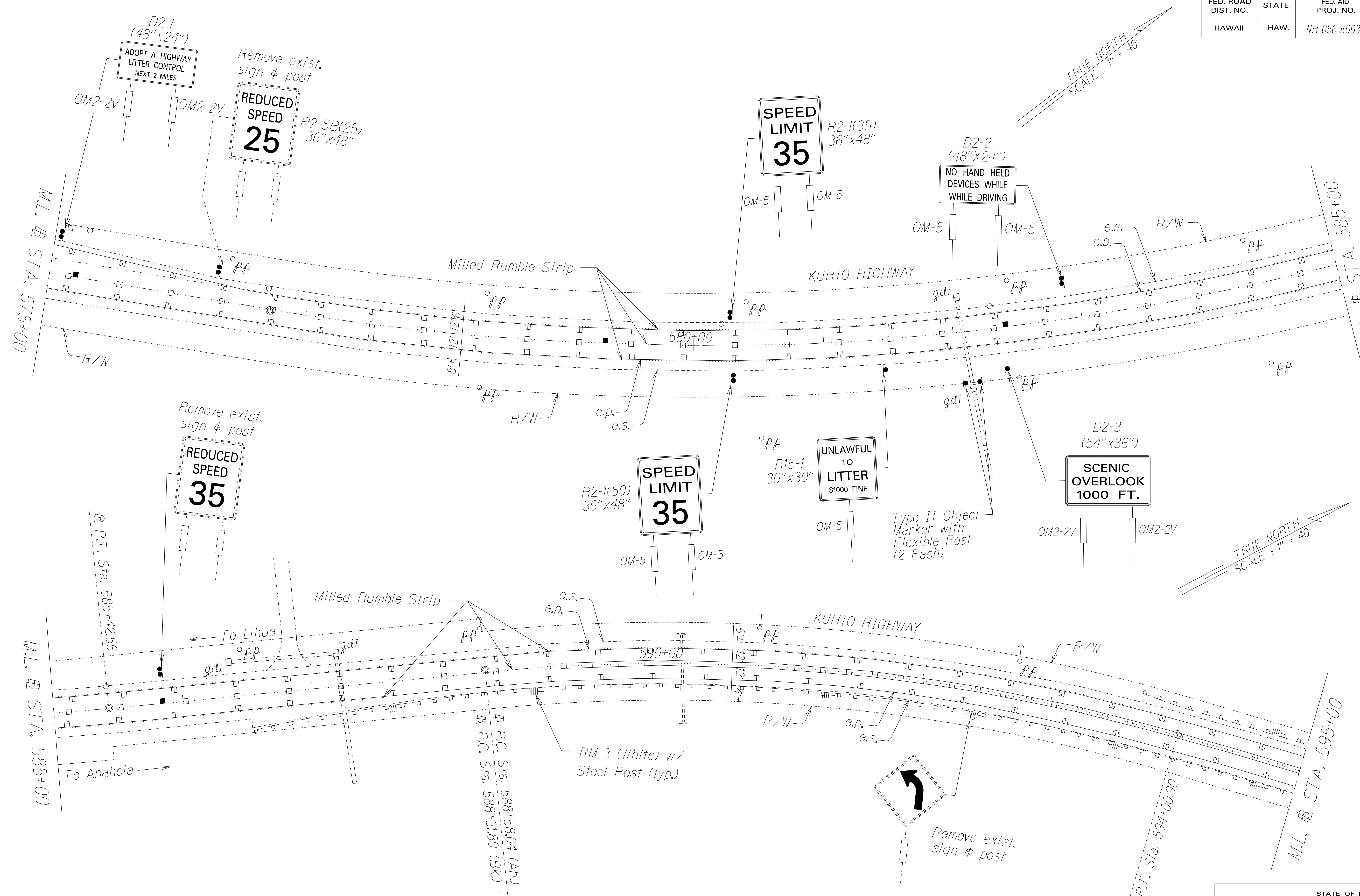
PAVEMENT MARKING & TRAFFIC SIGNING PLAN

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 40' Date: Mar. 2023

SHEET No. 3 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	30	43



0 20 40 80

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & TRAFFIC SIGNING PLAN

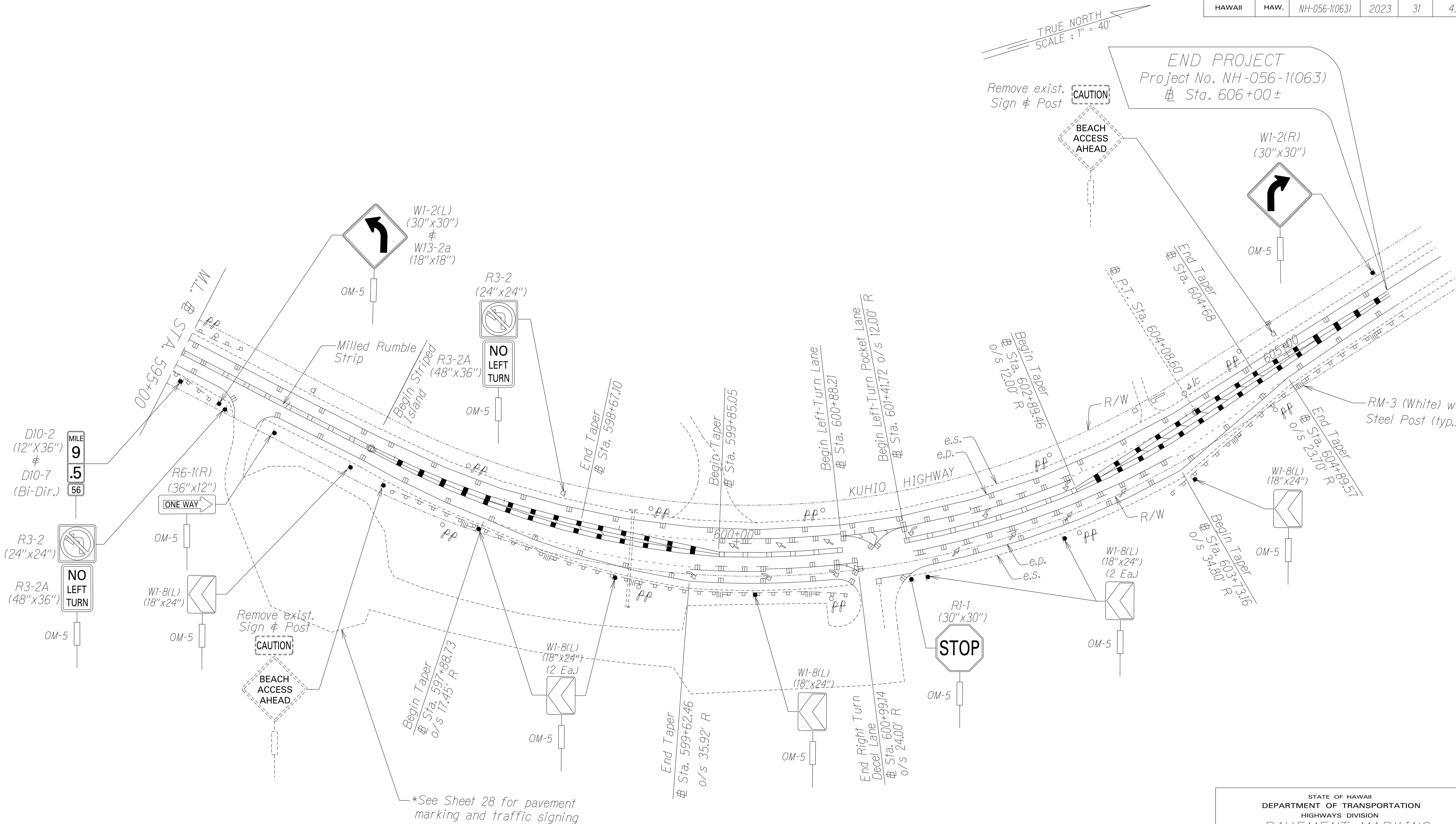
KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 40'   Date: Mar. 2023

SHEET No. 4 OF 6 SHEETS

ORIGINAL PLAN | NOTE BOOK | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	31	43



ORIGINAL PLAN	SURVEY PLOTTED BY / DRAWN BY / TRACED BY / DESIGNED BY / QUANTITIES BY / CHECKED BY	DATE
NOTE BOOK		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

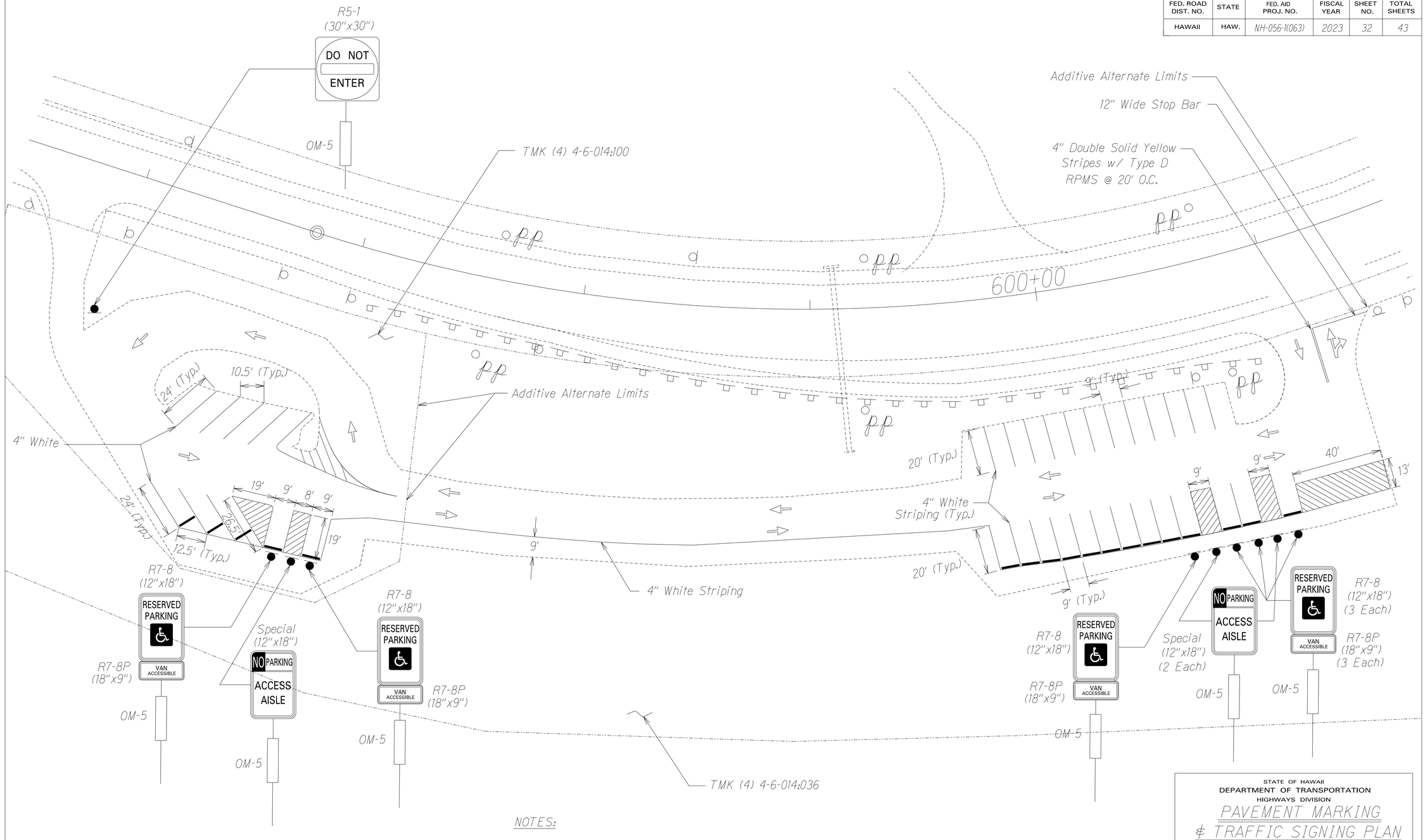
PAVEMENT MARKING & TRAFFIC SIGNING PLAN

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 40' Date: Mar. 2023

SHEET No. 5 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	32	43



NOTES:

1. Access aisles shall be at the same level as the parking spaces they serve.
2. Access aisle grades shall not exceed 2% slope in all directions.

0 20 40 80

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
4e3.pdf	DESIGNED BY	
khi06dgn	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

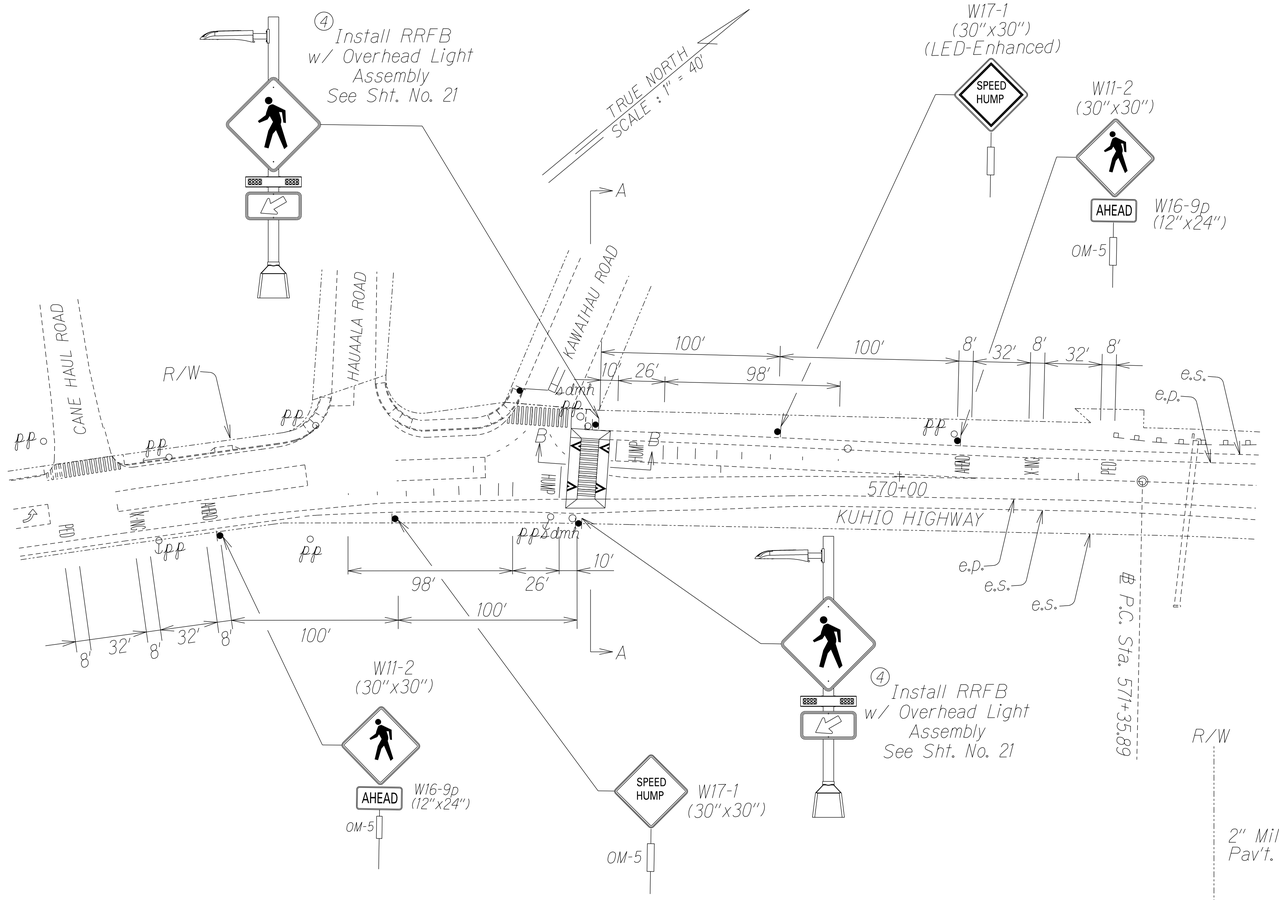
PAVEMENT MARKING & TRAFFIC SIGNING PLAN

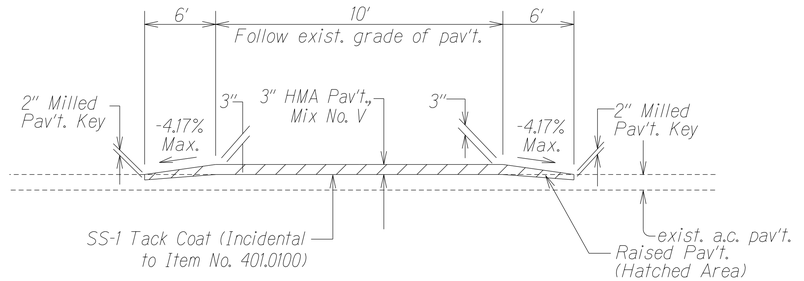
KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: 1" = 20' Date: Mar. 2023

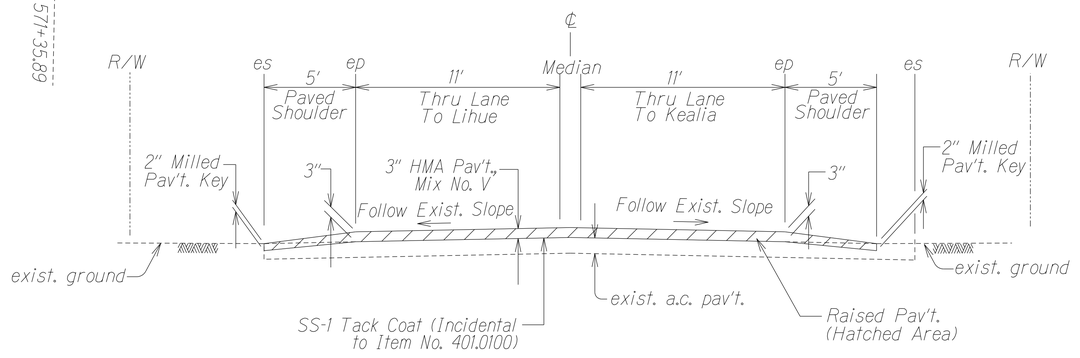
SHEET No. 6 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	33	43

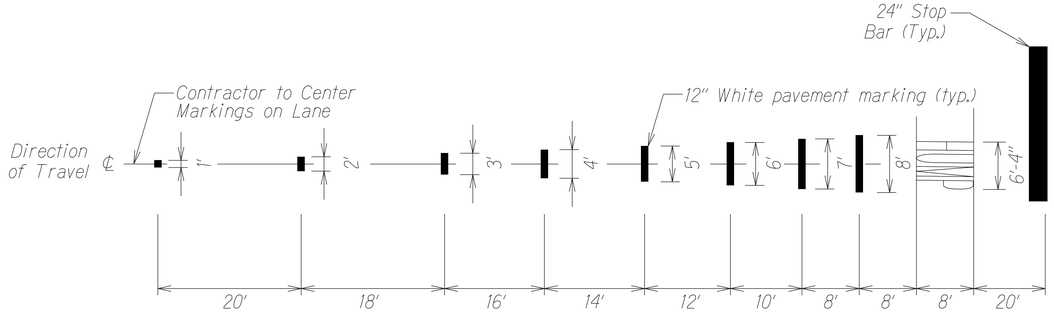




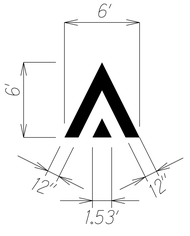
SECTION "B-B"
Not to Scale



SECTION "A-A"
Not to Scale



SPEED HUMP ADVANCE WARNING DETAIL
Not to Scale



RAISED CROSSWALK MARKINGS
Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK ks3.pdf	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
N:\Hwy\dgn	CHECKED BY	

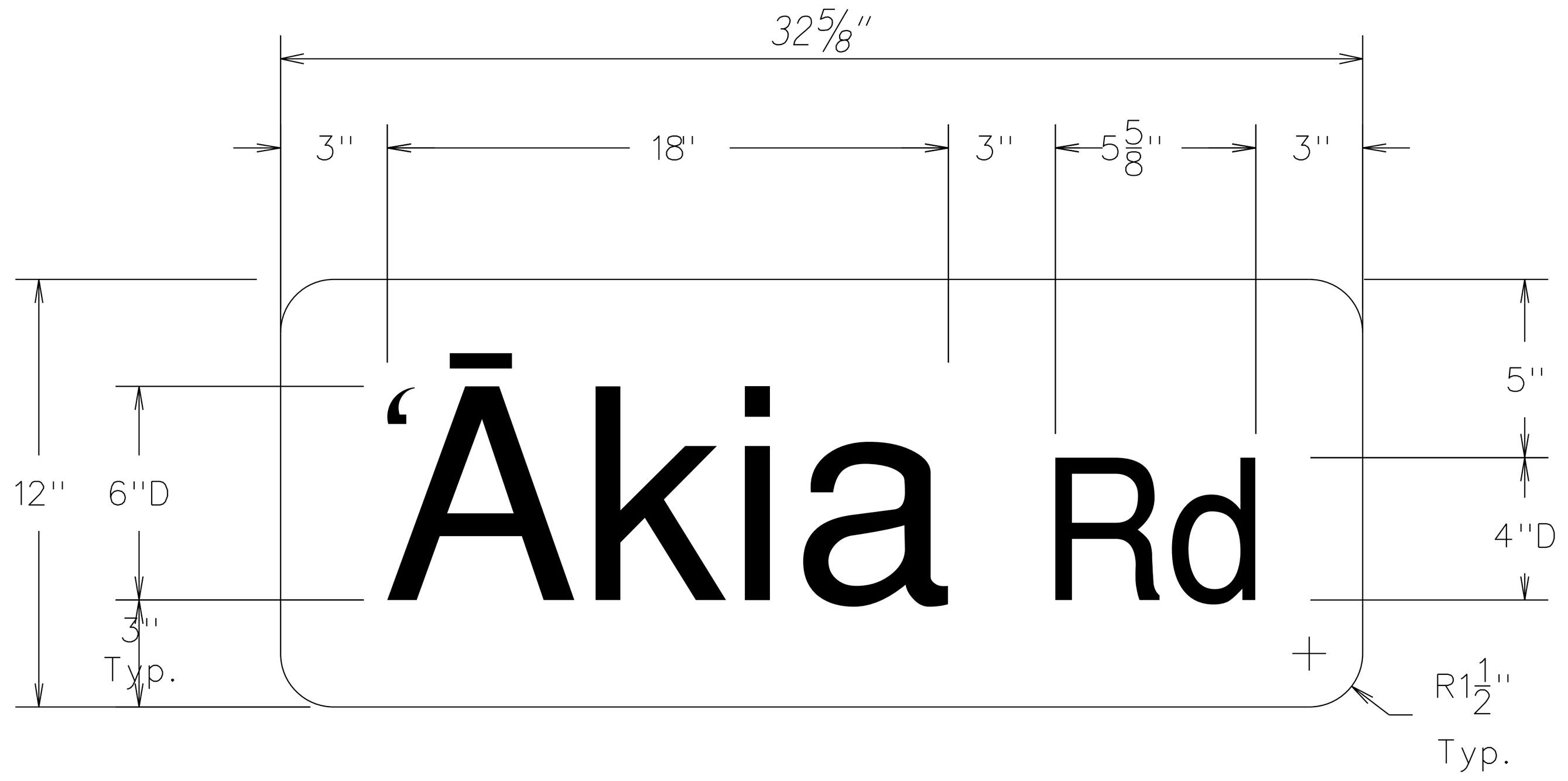
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RAISED CROSSWALK PAVEMENT MARKING AND TRAFFIC SIGN
KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

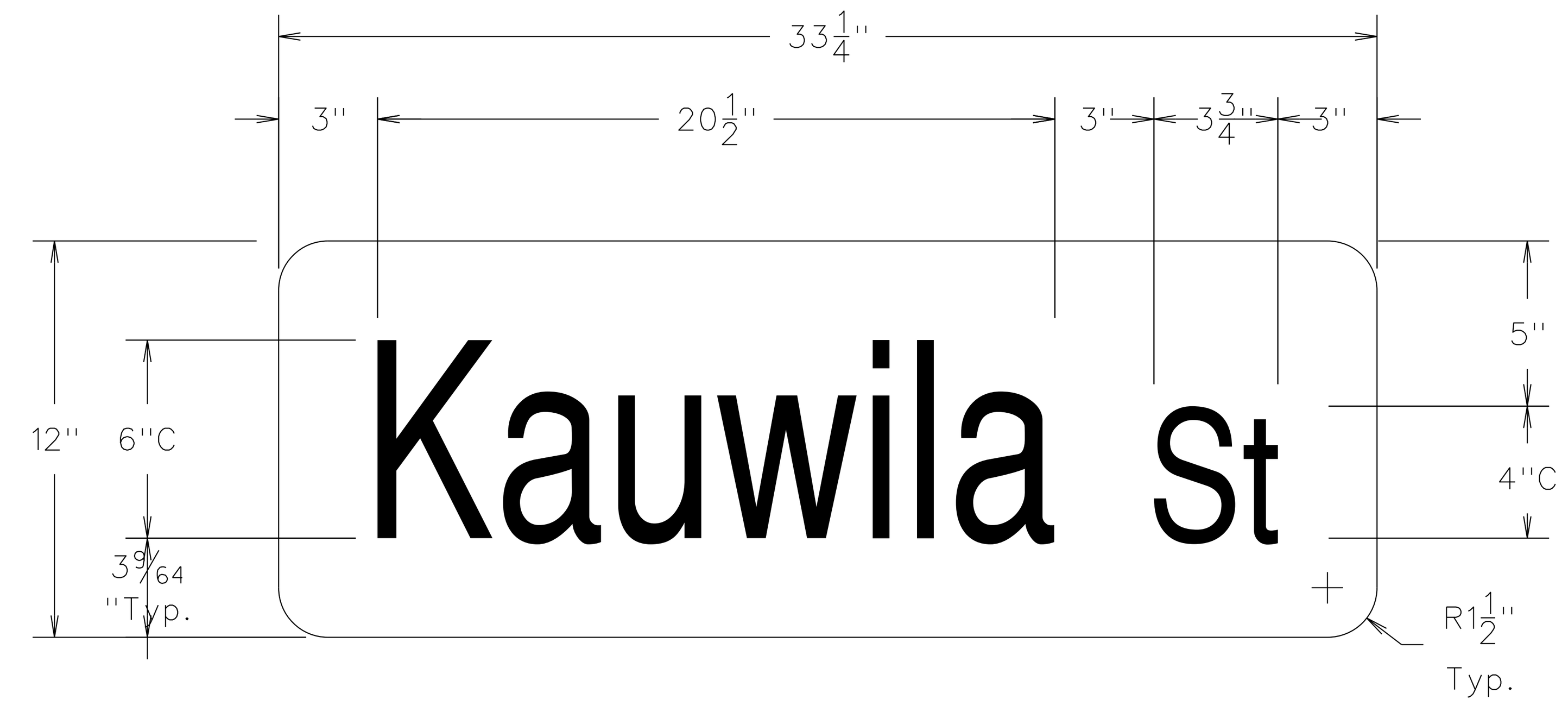
Scale: As Shown Date: Mar. 2023

SHEET No. 1 OF 1 SHEETS

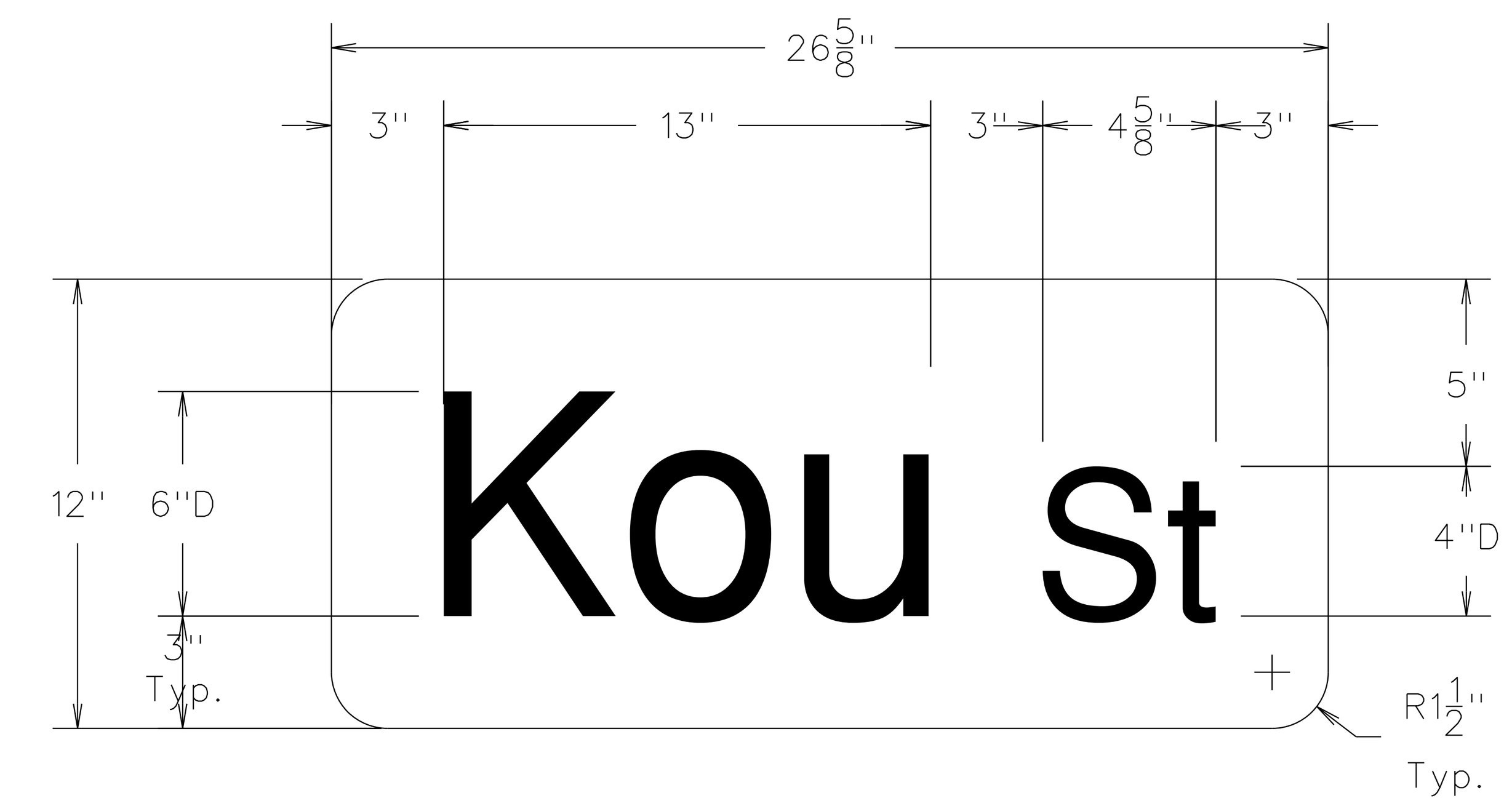
FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	34	43



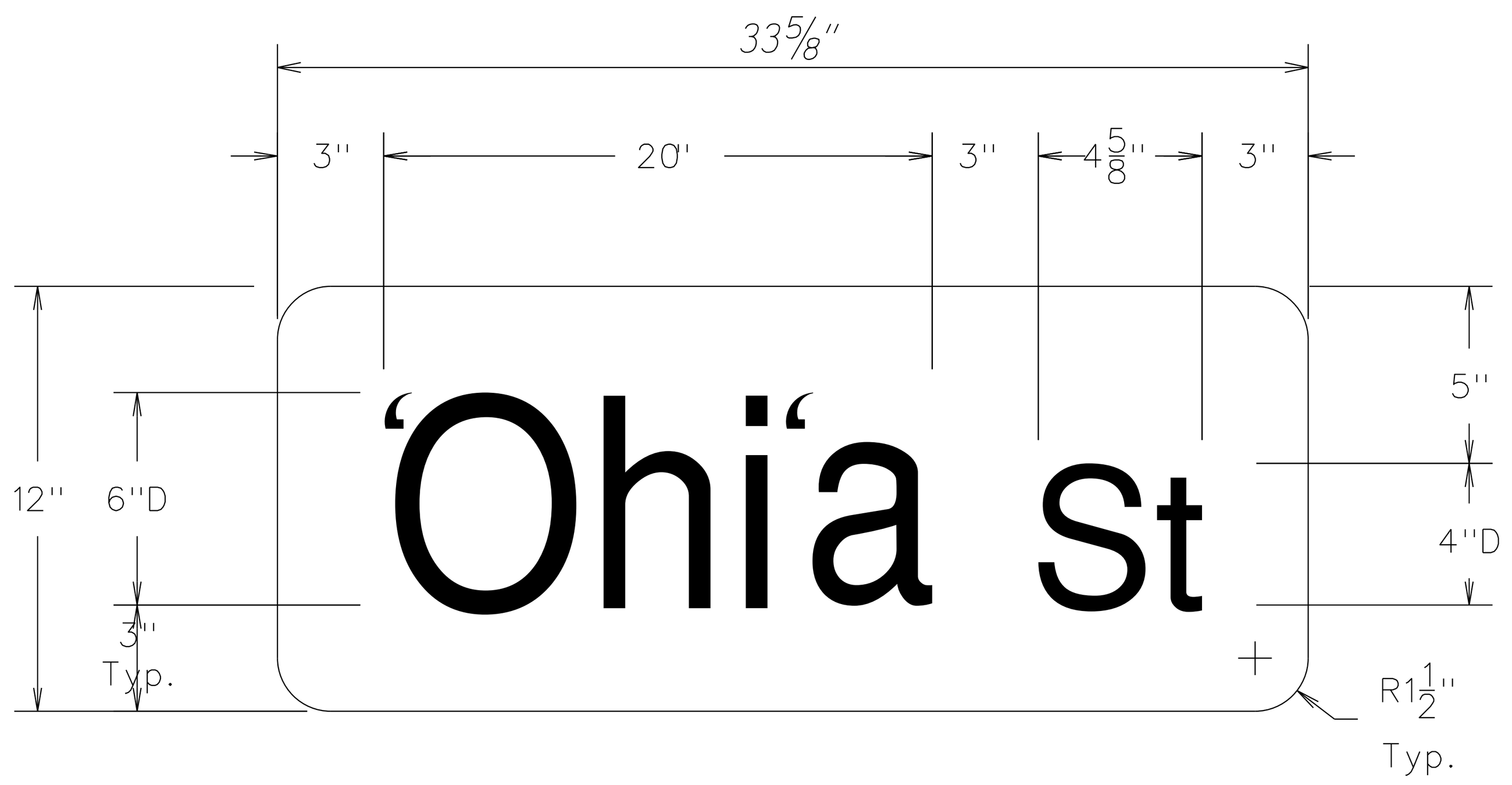
D3-1-1
Not to Scale



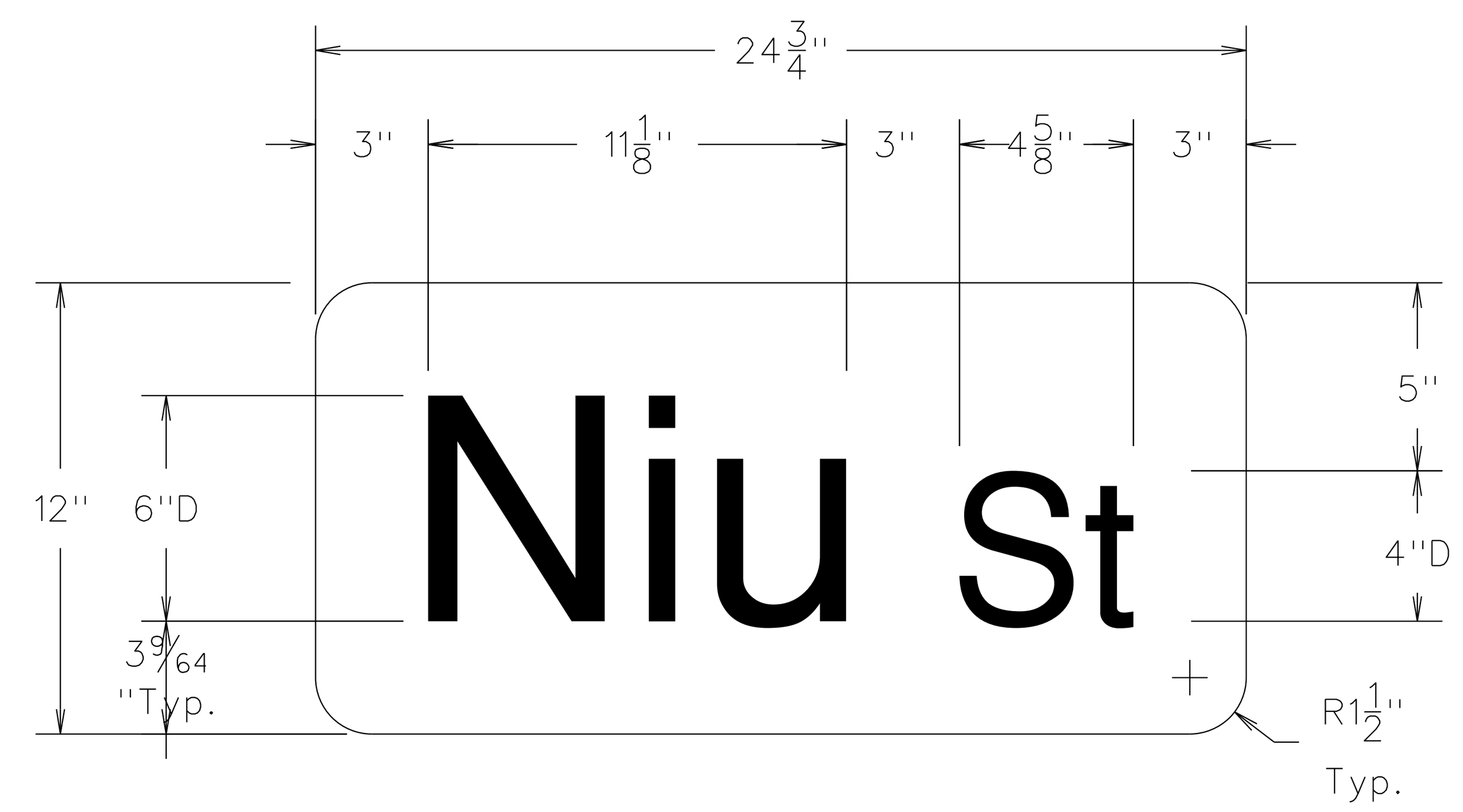
D3-1-5
Not to Scale



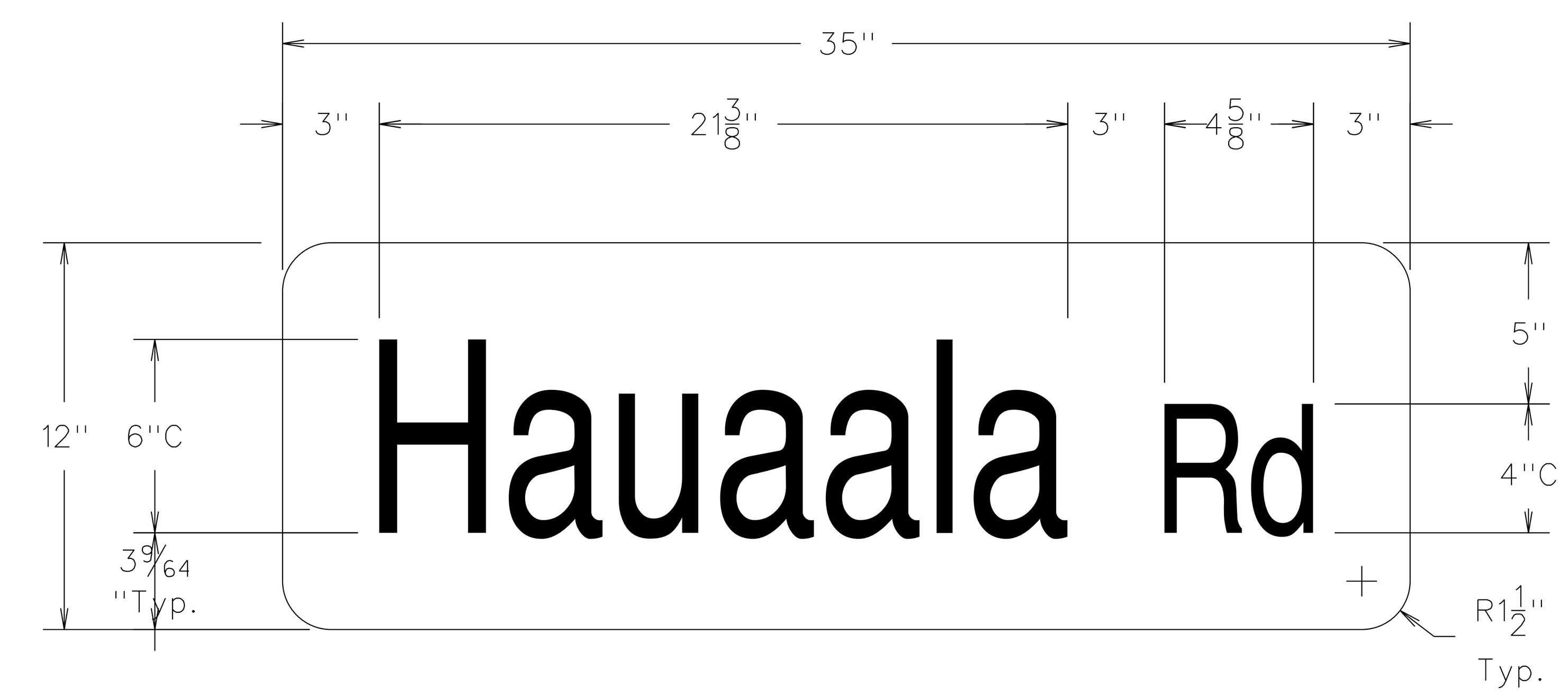
D3-1-8
Not to Scale



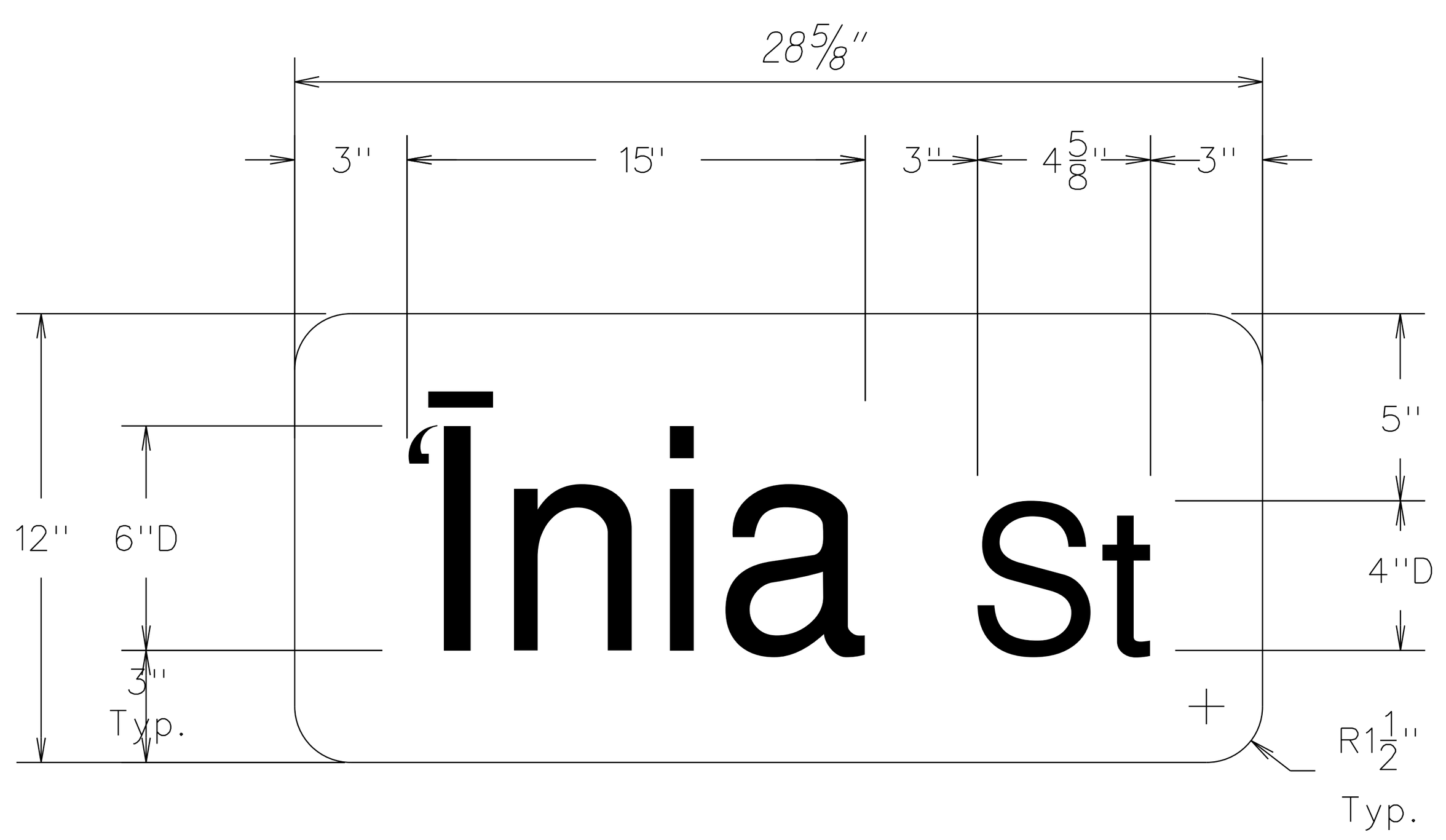
D3-1-2
Not to Scale



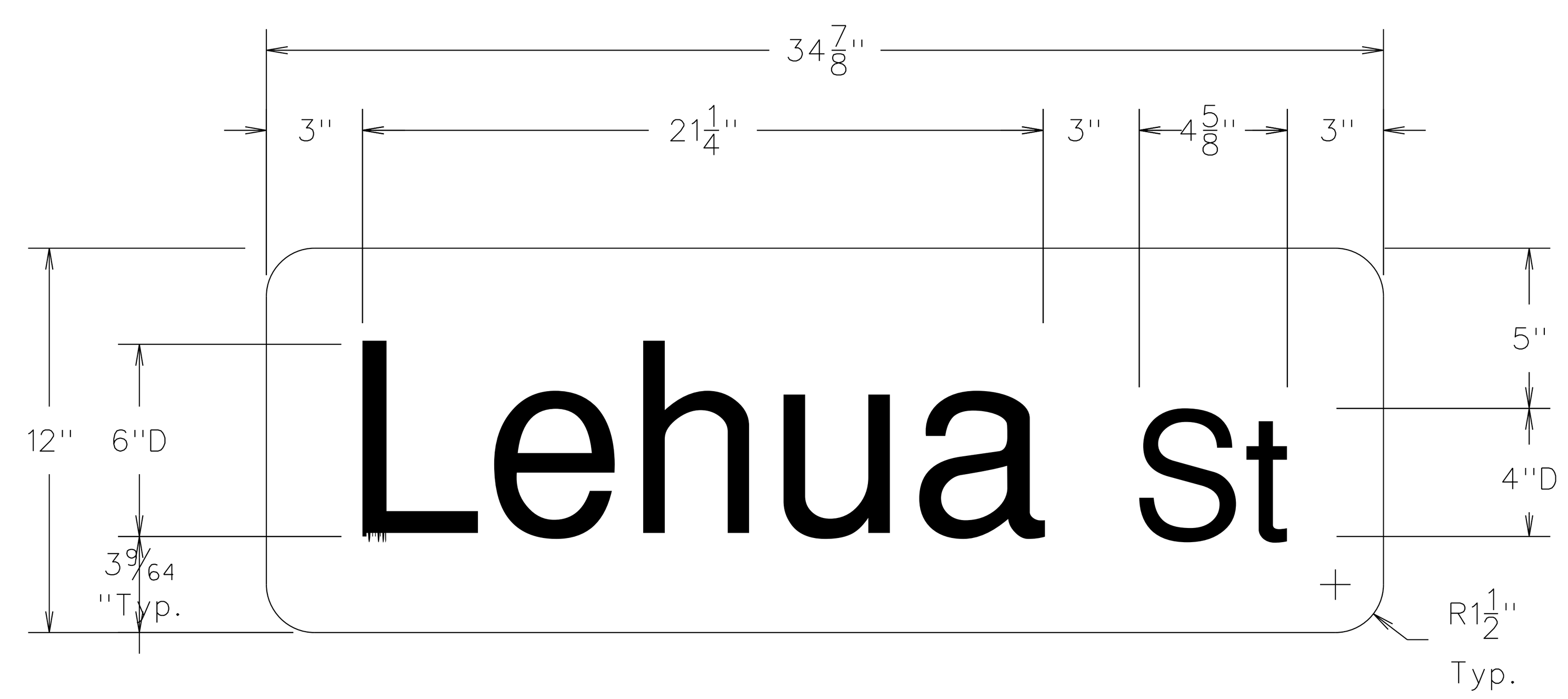
D3-1-6
Not to Scale



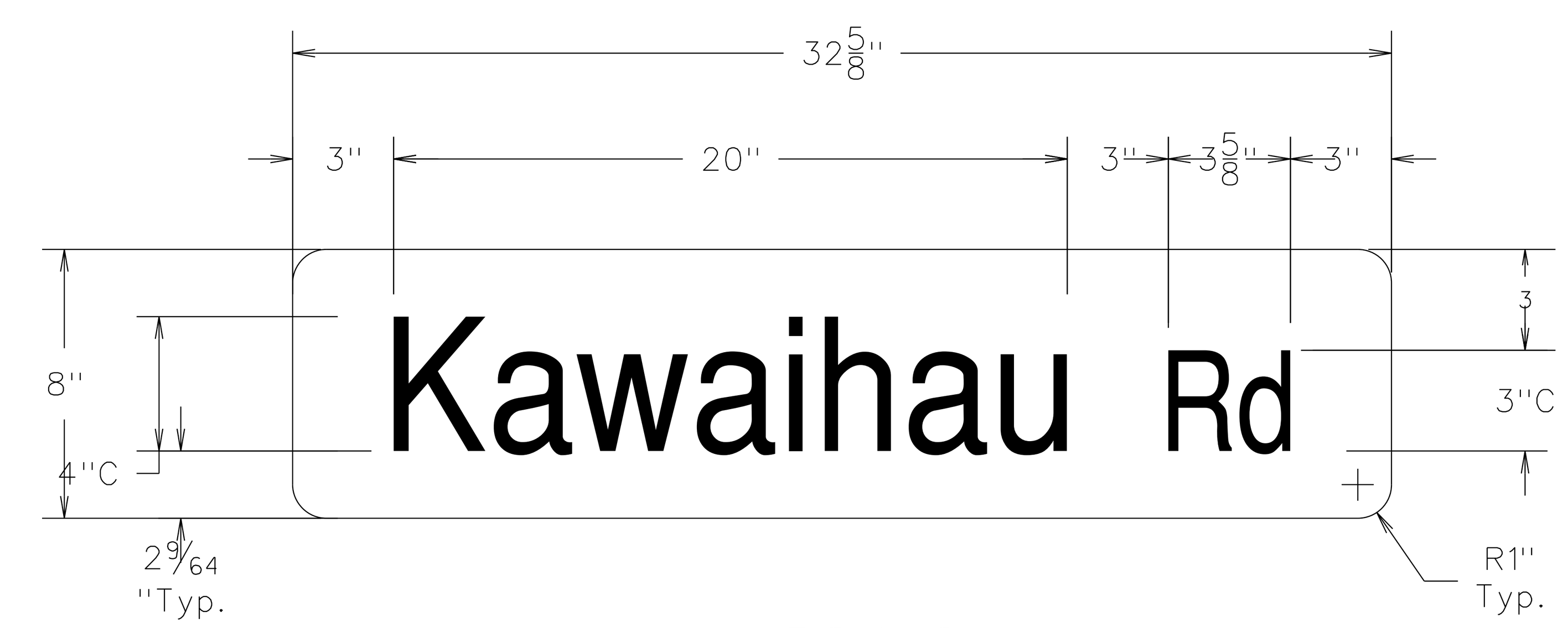
D3-1-9
Not to Scale



D3-1-4
Not to Scale



D3-1-7
Not to Scale



D3-1-10
Not to Scale

STREET NAME SIGN
Not to Scale

Lettering — White
Background — Green

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN DETAIL

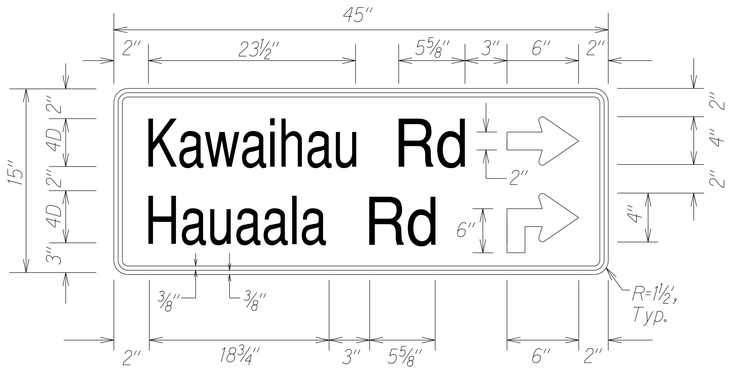
KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Noted Date: Mar. 2023

SHEET No. 1 OF 4 SHEETS

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

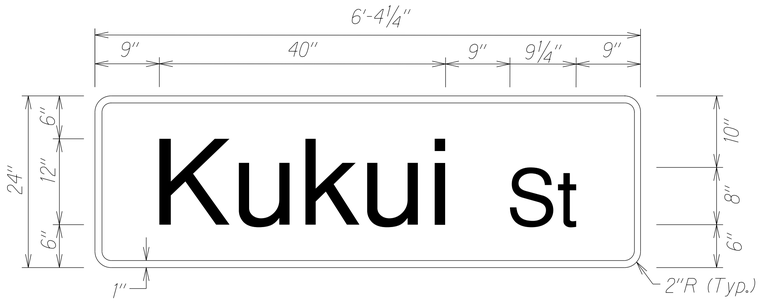
FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	35	43



W16-8-1
Not to Scale

ADVANCE STREET NAME SIGN
Not to Scale

Border —— Black
Lettering —— Black
Background — Yellow



D3-2-1
Not to Scale

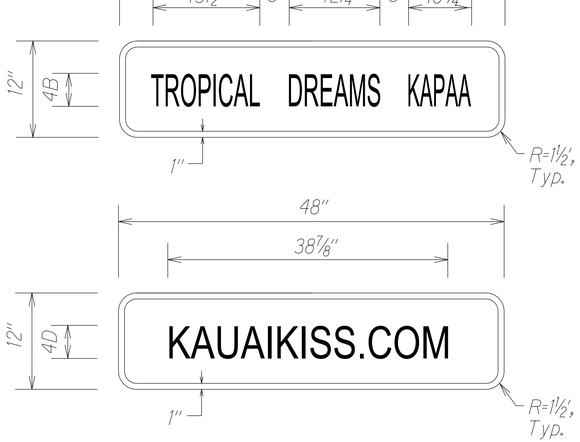
STREET NAME SIGN ON TRAFFIC SIGNAL MAST ARM
Not to Scale

Lettering —— White
Background — Green
Border —— White

Advance Street Name and Acknowledge sign shall be paid under Item No. 631.0400 - Supplemental Plaque and will not be paid separately.

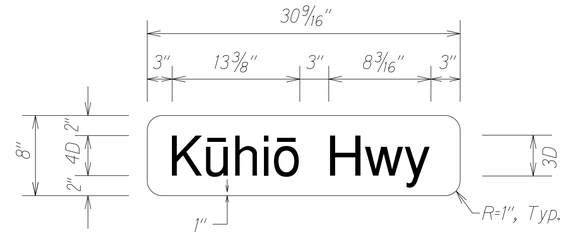
Sign Support: 2-2" Square Tube

D2-1
Not to Scale



Flat Panel:
Legend: Blue (Retroreflective)
Background: White (Retroreflective)

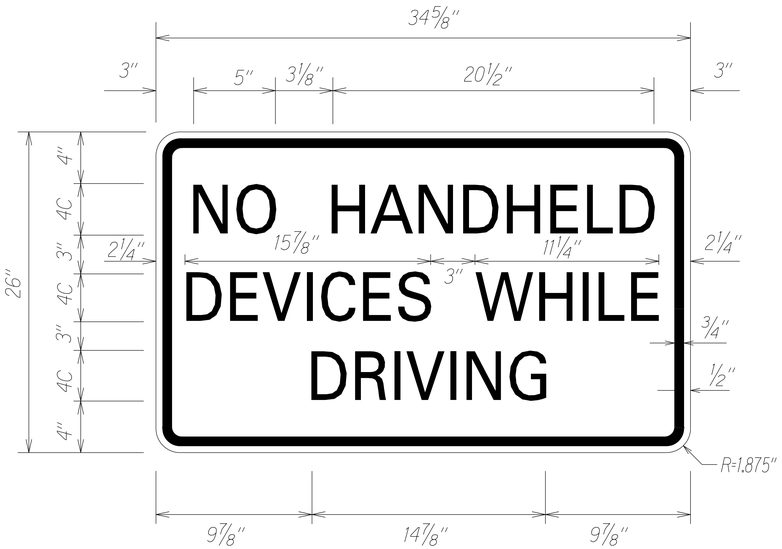
ACKNOWLEDGEMENT NAME SIGN
Not to Scale



D3-2-2
Not to Scale

STREET NAME SIGN ON TRAFFIC SIGNAL POST
Not to Scale

Lettering —— White
Background — Green



Border —— Black
Lettering —— Black
Background — White

D2-2
Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY A	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

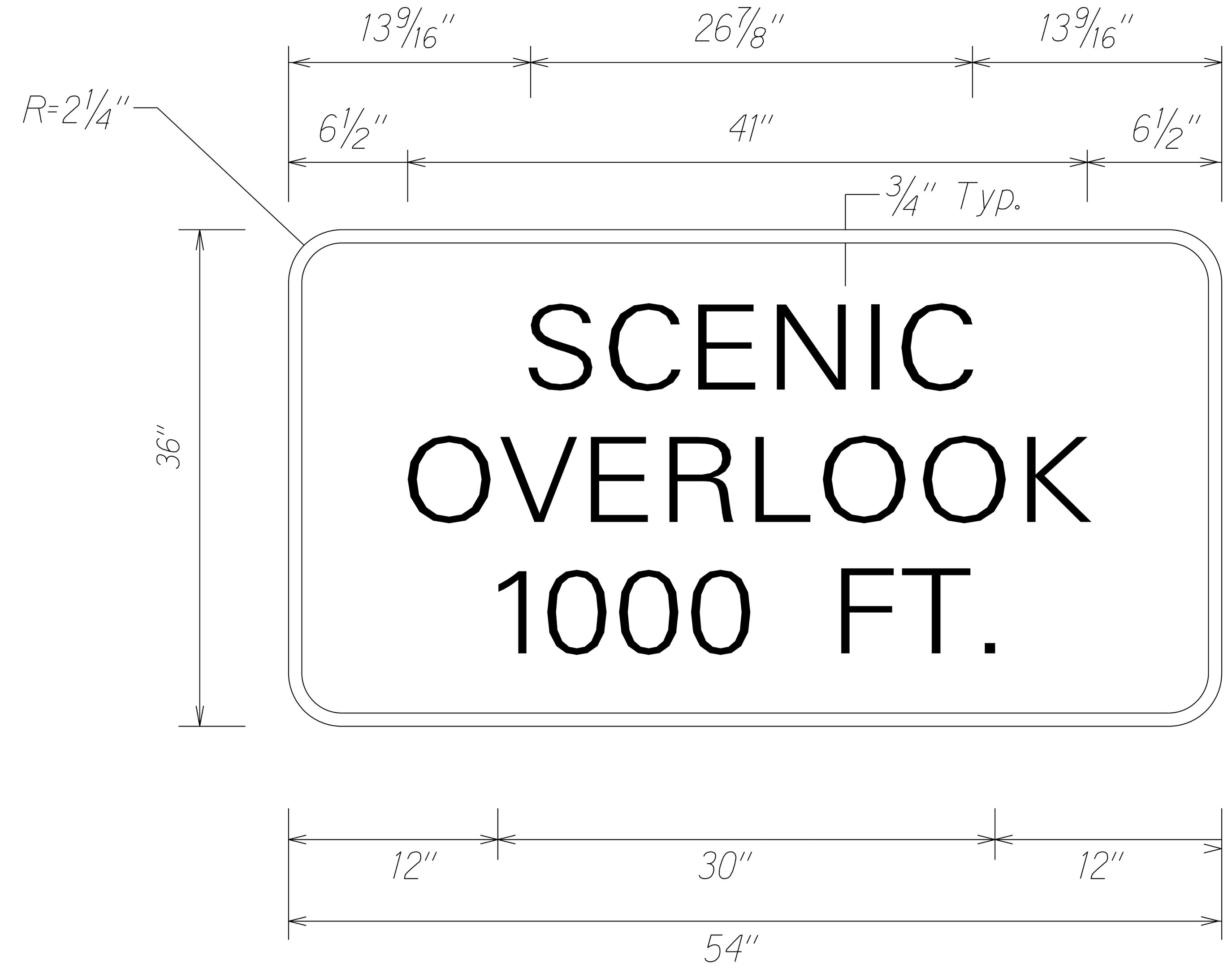
SIGN DETAIL

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Noted Date: Mar. 2023

SHEET No. 2 OF 4 SHEETS

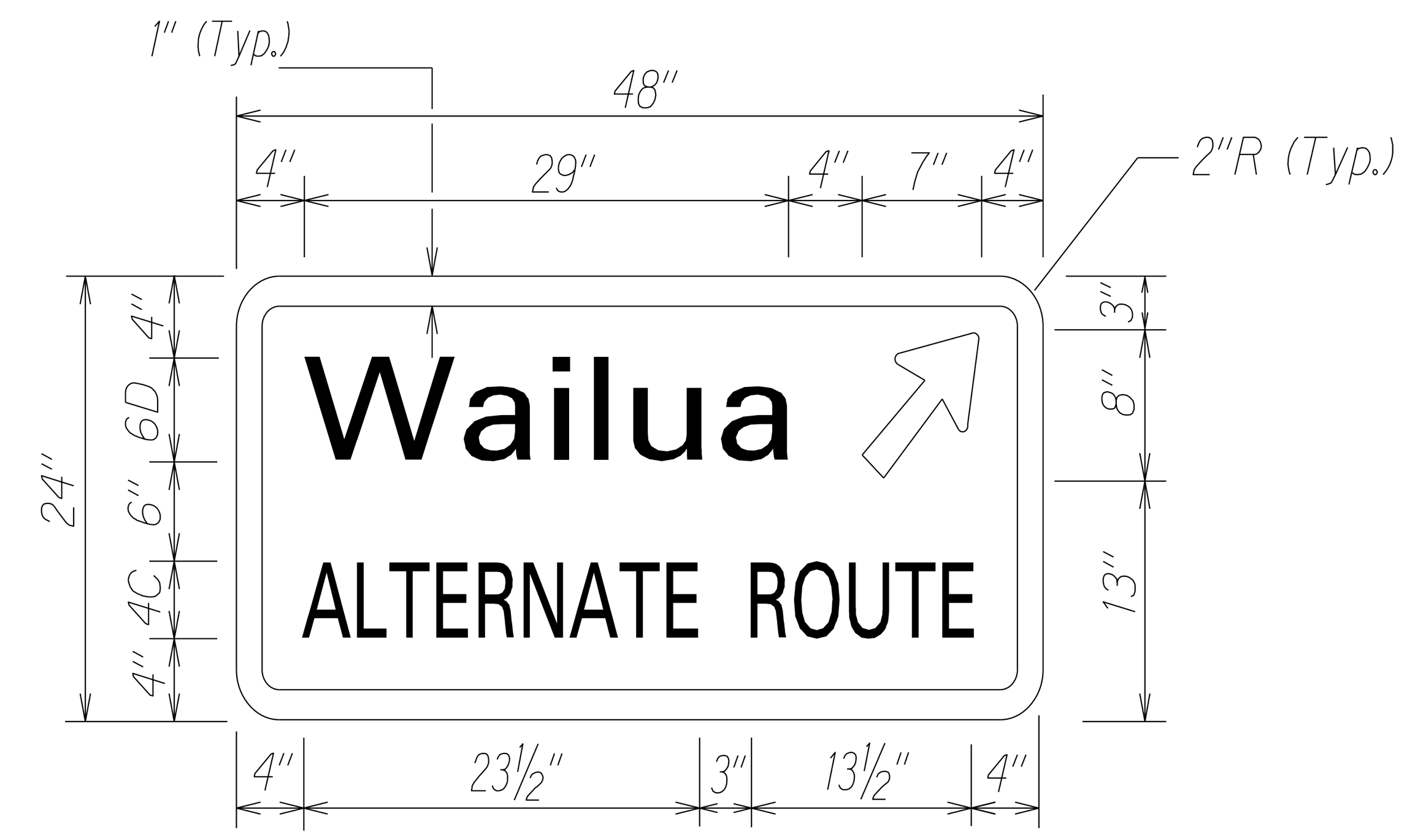
FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	36	43



Sign Support: 2-Flanged Channel (4.00 lbs/ft.)

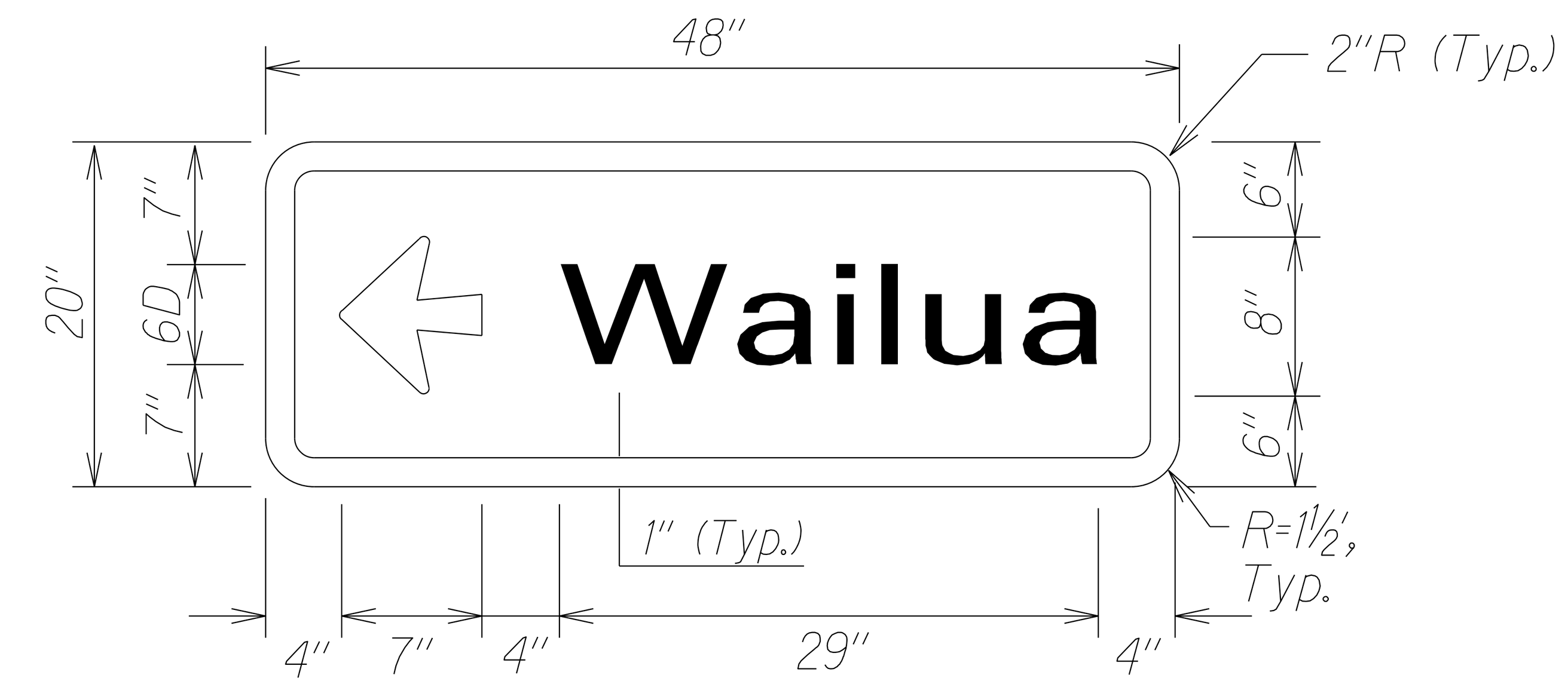
D2-3
Not to Scale

Flat Panel:
Legend: White Retroreflective
Background: Blue (Retroreflective)



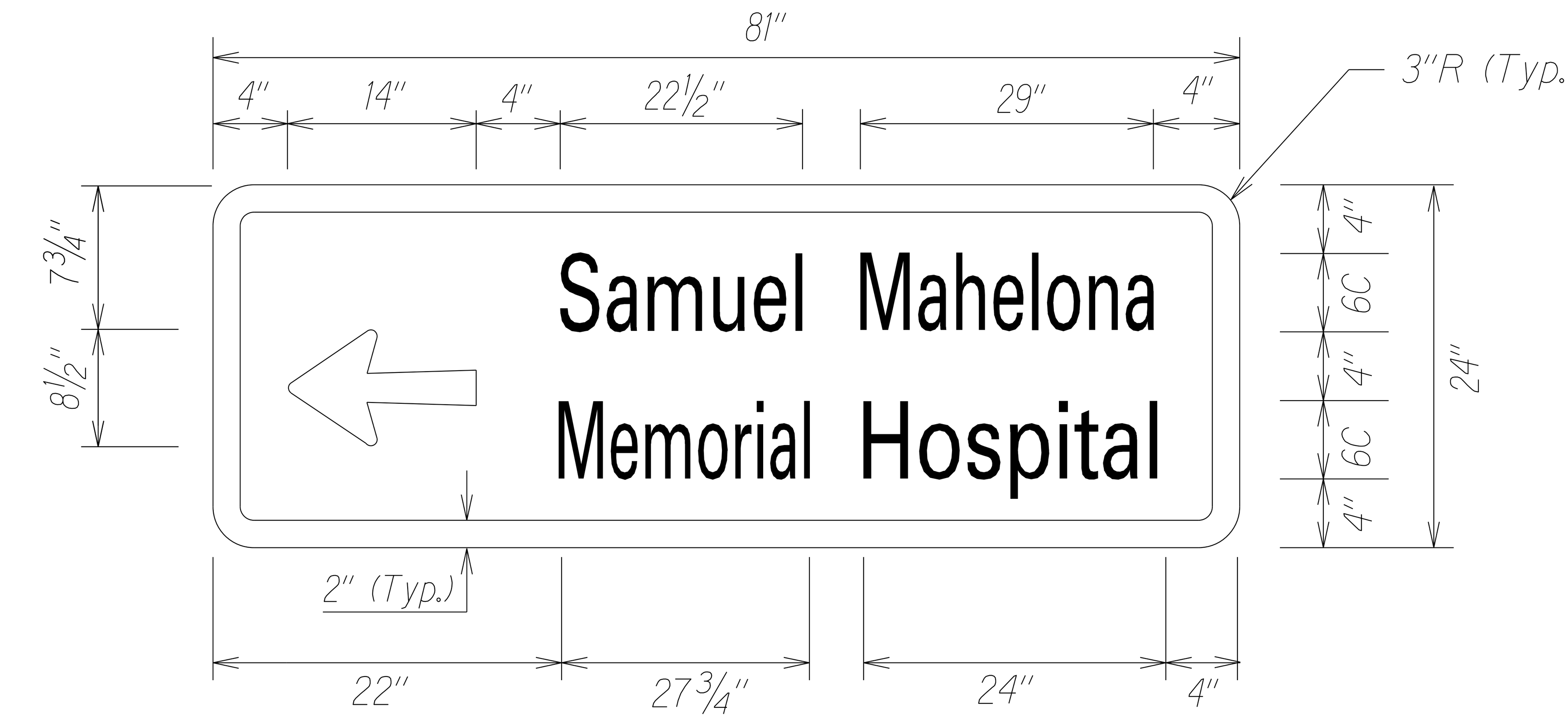
Border — White
Lettering — White
Background — Green

D1-1d-3
Not to Scale



Border — White
Lettering — White
Background — Green

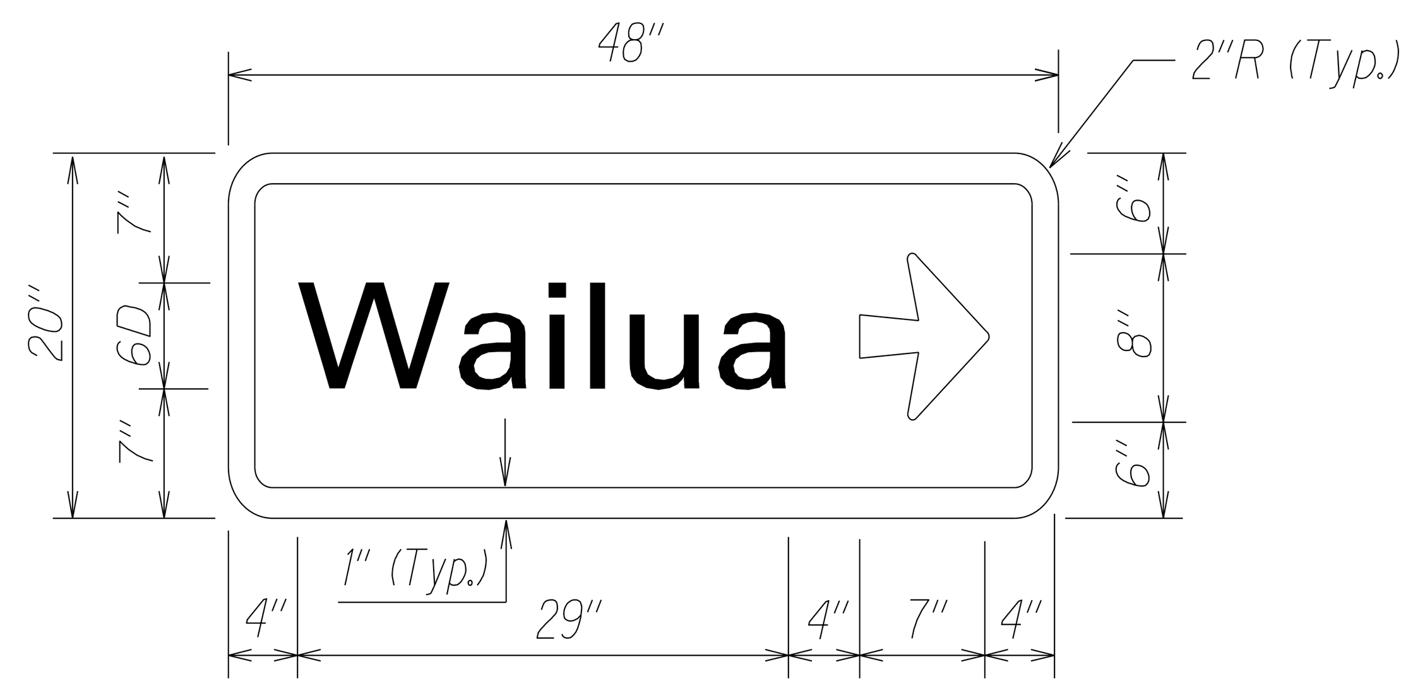
D1-1d-4
Not to Scale



Sign Support: 3-Flanged Channel (4.00 lbs/ft.)

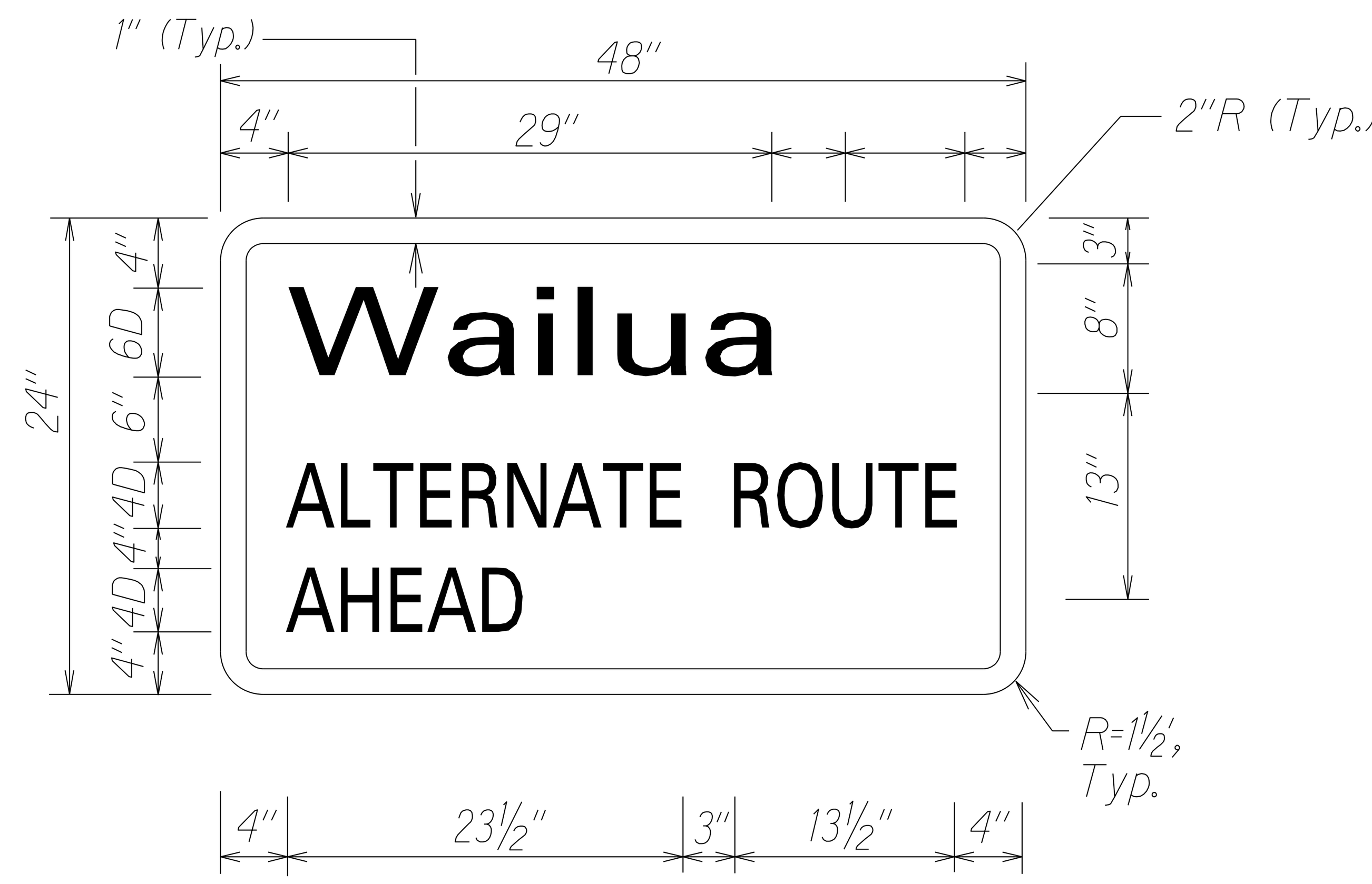
D1-1d-6
Not to Scale

Border — White
Lettering — White
Background — Green



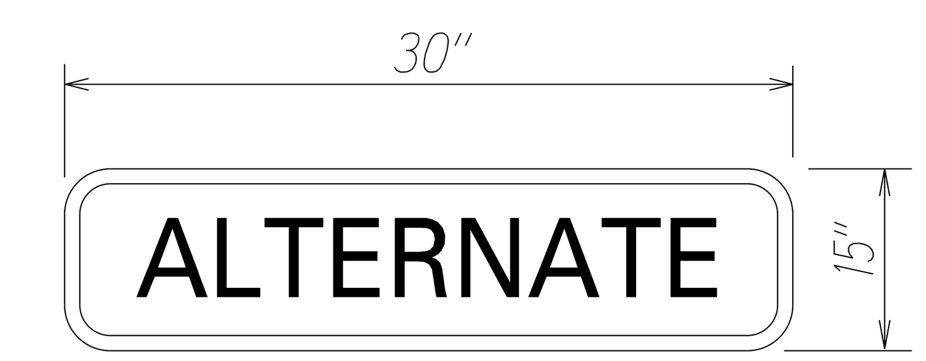
Border — White
Lettering — White
Background — Green

D1-1d-1
Not to Scale



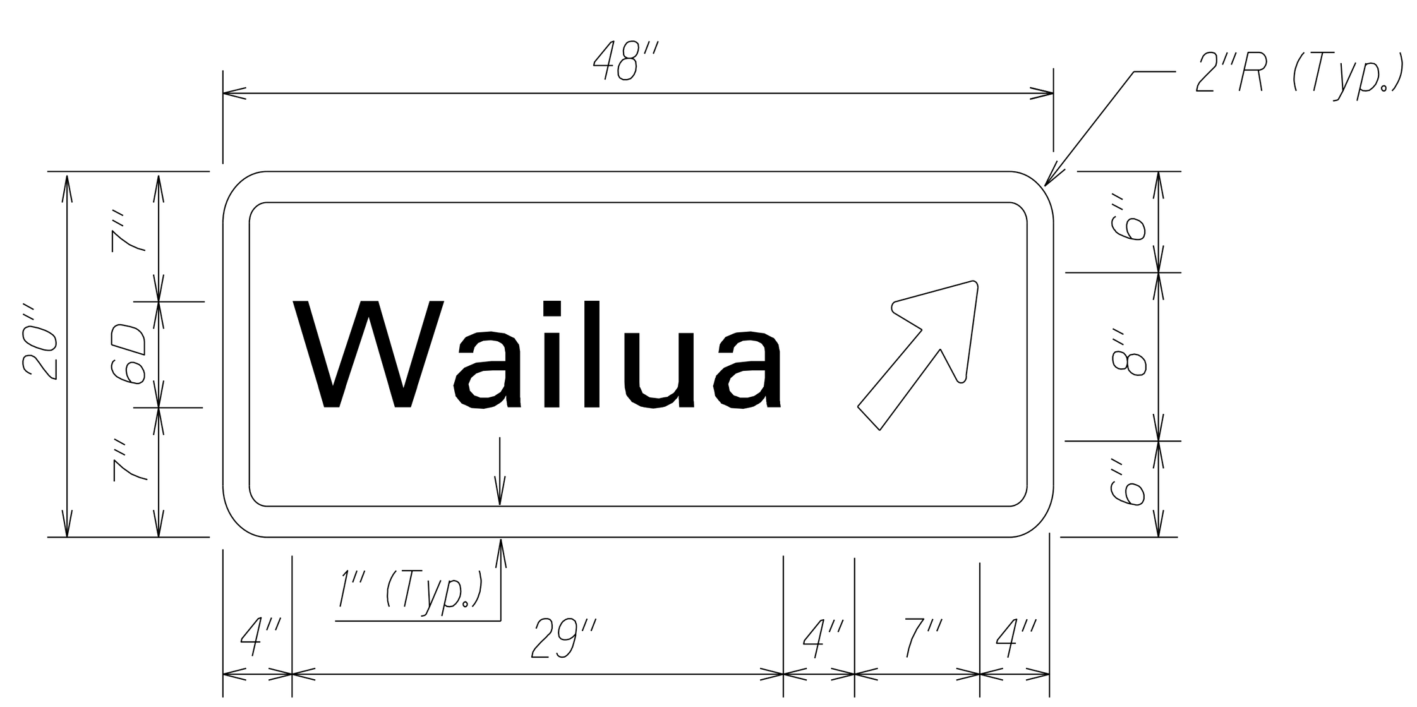
D1-1d-5
Not to Scale

Border — White
Lettering — White
Background — Green



M4-1
Not to Scale

See Page 3-15 of the Standard Highway Signs 2002 Edition for M4-1 Sign details.



Border — White
Lettering — White
Background — Green

D1-1d-2
Not to Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN DETAIL

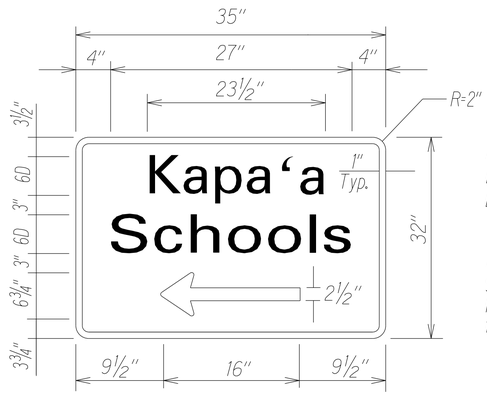
KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Noted   Date: Mar. 2023

SHEET No. 3 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	37	43

A



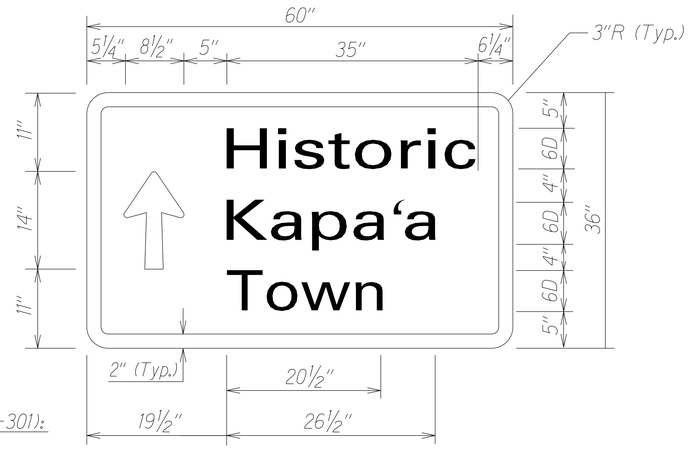
R=2"

LEGEND (For D1-2a):

Arrow	-	White
Border	-	White
Lettering	-	White
Background	-	Green

Note:
See Page 6-2 of the Standard Highway Signs 2002 Edition for arrow details.

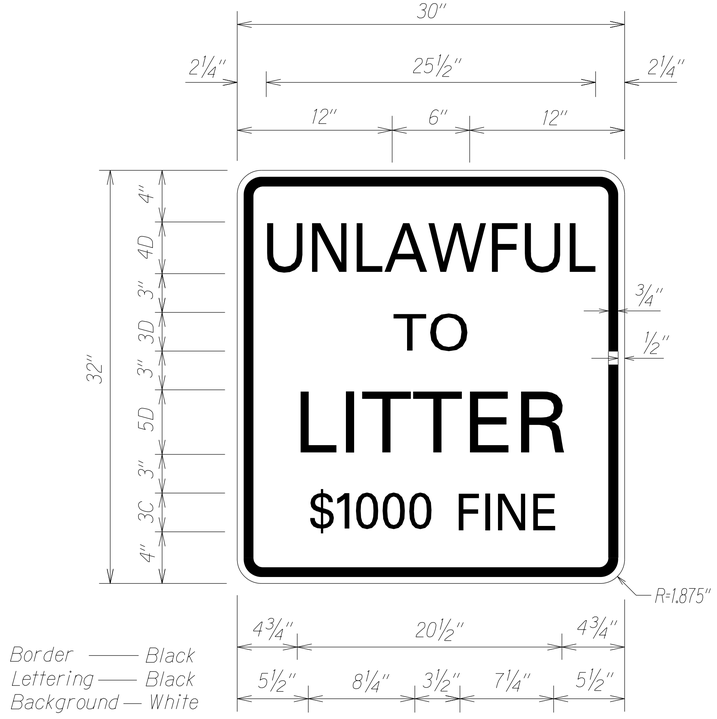
D1-2a
Not to Scale



LEGEND (For RG-301):

Background	-	Brown
Lettering	-	White
Border	-	White
Arrow	-	White

RG-301
(with 3 - 4.0 Lbs./Ft. Flanged Channel Posts)
Not to Scale



R=1.875"

Border —— Black
Lettering —— Black
Background — White

R15-1
Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY X	
NOTE BOOK	TRACED BY	
	DESIGNED BY X	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN DETAIL

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Noted Date: Mar. 2023

SHEET No. 4 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	38	43

ENHANCED VEHICLE CLASSIFICATION (EVC) SYSTEM NOTES

1. The location of new sensors shall be staked out in the field by the Contractor based on the location of permanent striping and markings, and approved by the Engineer prior to installation.
2. The Contractor shall inform the Engineer at least three days prior to saw cutting pavement and installing sensors.
3. Highway crossing conduits shall be provided with a minimum of 36" cover and shall be concrete encased, per Standard Plan TE-36.
4. The Contractor shall verify the location of existing utilities and underground structures whether or not shown on the plans.
5. The Contractor shall assume that underground utilities not shown on the plans may exist. The Contractor shall be responsible for contacting the different utility companies for information and toning.
6. The Contractor shall be held liable for any damages incurred to existing utilities and underground structures as a result of operations. All damaged portions shall be replaced in accordance with the standards and specifications of the affected utility company at no cost to the State.
7. Changes to the contract plans and specifications will not be permitted, unless approved by the Engineer in writing.
8. Saw cuts shall be made by wet cutting only.
9. After saw cutting is done, the saw cuts shall be cleaned of dust, dirt, and refuse with water applied by pressure washer. Residual water within the saw cuts shall be vacuumed using a wet/dry vacuum. The saw cuts shall then be dried using an air compressor.
10. After saw cuts are dried, any remaining debris stuck within the cuts shall be removed. The saw cuts must be completely clean and dry before inserting the sensors and filling cuts and any voids surrounding the sensors or their lead cables with sealant.
11. The collected slurry shall be disposed of appropriately (i.e., either placed in a filter fabric-lined filtration box or a filter fabric-lined dug up retention/percolation basin). After filtration/percolation, the filter fabric and the retained sediments and any excavated pavement material shall be disposed of appropriately.
12. Sensor lead cables shall be pulled into conduits where indicated. Cables shall be tested for acceptance before and after installation into conduits.
13. Piezo sensor lead cables shall be continuous with no splices.
14. Sensor lead cables shall be terminated in the controller cabinet and shall have a minimum of 12" additional slack.
15. The Contractor shall restore all affected areas to their original condition or better. This item of work shall not be paid for separately, but shall be considered incidental to work of other paid items.
16. Poles for solar panel assemblies and excavation warning signs shall be located no more than 20 feet from controller cabinets.

LOOP SENSOR LAYOUT NOTES

1. Loop sensors shall consist of four turns of 1C #14 cable (meeting IMSA Spec. 51-3 or equivalent) embedded in a 3/8" wide by 4" deep saw cut, except as noted. Loop sensors shall be provided a minimum of 2" cover.
2. Loop sensors shall be staggered on roadways with lanes that are less than 12 feet in width, and centered in lanes relative to permanent striping and markings, as shown on contract plans or by direction of the Engineer.
3. After laying the loop sensor cable in four (4) turns within the 4" deep cut, 1" long pieces of backer rod shall be pressed in each foot of the loop and the loop lead saw cut, to anchor the wire in the bottom of the cut before applying the loop sealant. Backer rod shall be embedded at least 2" below the top of pavement. The backer rod shall be pressed into the saw cut with a blunt object such as a wooden paint stir stick. No sharp object (such as a screw driver) shall be used to press the backer rod into the saw cuts.
4. Loop sensor and lead cable shall be one continuous wire. Lead wires from the same loop shall be twisted in pairs, five twists per foot, from the end of the saw cut at the roadway edge to the pull box. Do not twist one loop pair with another loop pair.
5. Continuity of loop sensors and lead cables shall be tested and warrantied for one year from the date of acceptance by the Engineer.
6. Loop sensor lead cables shall be spliced to home-run cables (meeting IMSA Spec. 50-2 or equivalent) only at the closest pull box to the loop. Splices shall be made using a splice kit. Splice points of cables shall be suspended near the top of the pull box with a j-hook.
7. The Contractor shall label the loop and piezo sensor leads clearly to identify traffic direction, lane number, and sequence of loop and piezo sensors in each lane in each direction.
8. The left-most lane in the direction of traffic flow is designated as Lane 1, and the next lane to its right as Lane 2, and so on, as indicated on plans.

ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
NOTE BOOK
No. 4thmidday

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EVC TRAFFIC COUNTING SYSTEM NOTES

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Date: Mar. 2023

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	39	43

BOUNDARY LABEL LEGEND

ep = edge of pavement
etw = edge of travelway

LOOP LABEL LEGEND

N = North
S = South
A = Approaching
T = Trailing

N 1 T
- T — Indicates approaching or trailing loop
- 1 — Indicates lane number
- N — Indicates direction

NOTES:

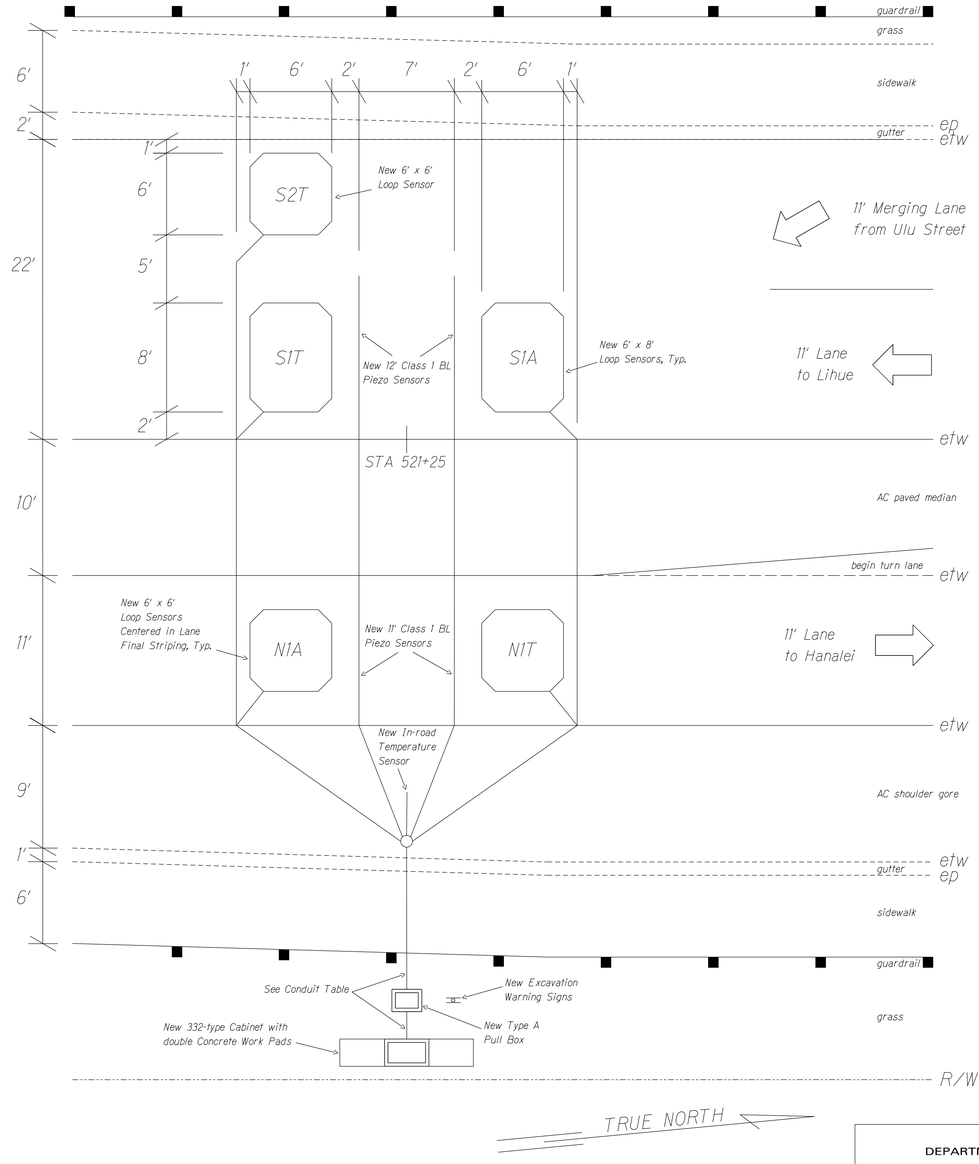
1. All dimensions and callouts are typical unless otherwise noted on plan.
2. Mount 200 Watt solar panel on top of cabinet (refer to Cabinet plan).
3. Place Excavation Warning Signs no more than 20' from Cabinet (refer to Warning Sign plan).
4. Refer to Sensor Details sheet for installation of Loop and Piezo Sensors.

Conduit Table:

Conduit* # - Size	Class 1 BL Sensor Lead Cables	2C #14 Loop Sensor Cable	In-Road Temperature Sensor Cable
1 - 2"	4	0	1
1 - 2"	0	4	0

*Conduits under pavement and at utility crossings shall be concrete encased per Standard Plan TE-36.

*Conduits in unpaved areas of the Right of Way shall be constructed per DUCT DETAILS on Standard Plan TE-35.



EVC TRAFFIC COUNTING SYSTEM LAYOUT AND LABELING
NEW EVC STATION - KUHIO HIGHWAY SR 56 MP 8.13

Scale in feet 0 5 10 20

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

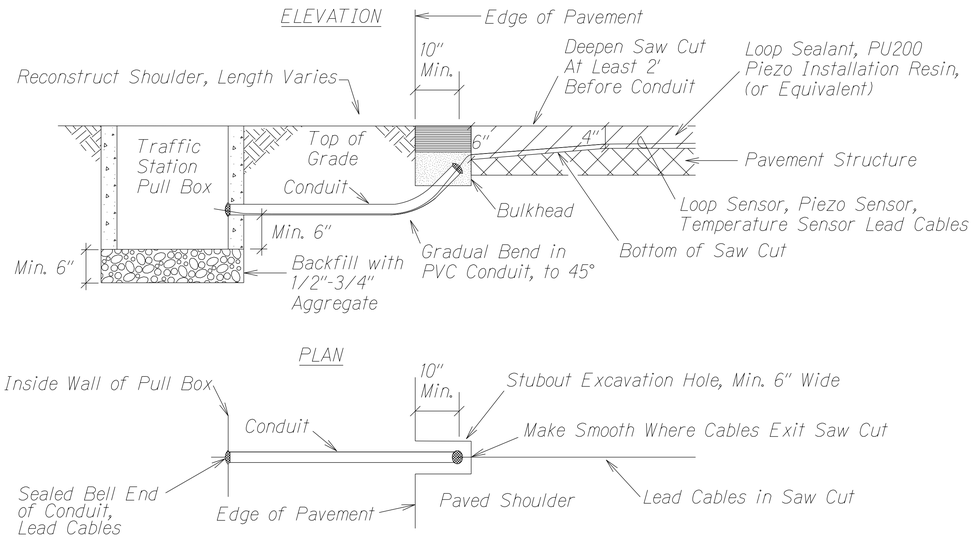
EVC TRAFFIC COUNTING SYSTEM LAYOUT

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

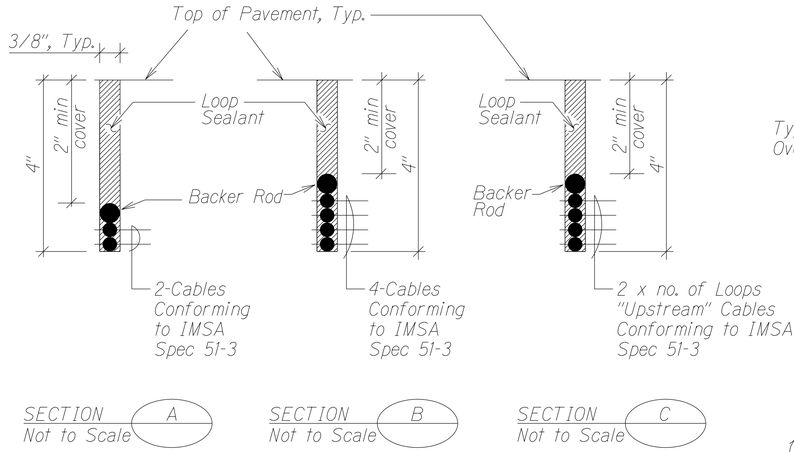
Scale: As Shown Date: Mar. 2023

SHEET No. 2 OF 5 SHEETS

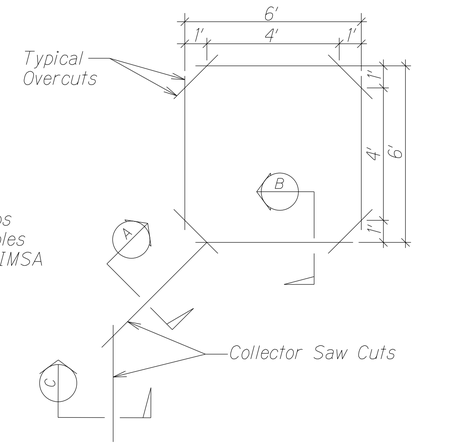
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	40	42



EDGE OF ROADWAY DETAILS
Not to Scale



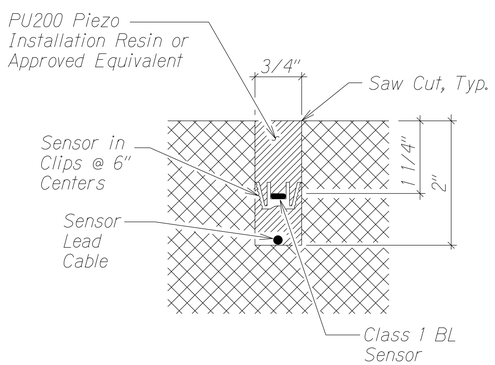
TYPICAL SECTIONS LOOP SENSORS
Not to Scale



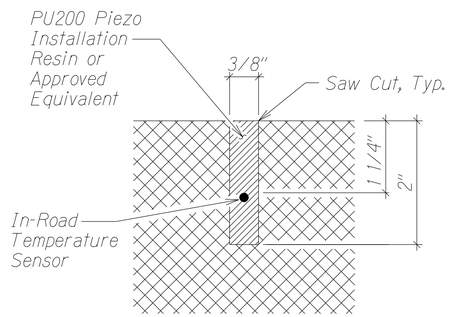
TYPICAL LOOP SENSOR SAW CUT DETAIL
Not to Scale

NOTES ON CONSTRUCTION AT END OF SAW CUT:

1. Conduit stubout should be installed at least 10 inches in from the edge of pavement. If the depth of pavement is 4 inches or less at the edge, conduit stubout should be installed at least 12 inches in from the edge of pavement.
2. Install bell ends on conduit and seal with duct seal compound after installation of lead cables.
3. Install temporary bulkhead/dam across saw cut to keep sealant in saw cut as it is placed..
4. Place loop sealant, PU200 piezo installation resin (or equivalent) in saw cut.
5. Place sand to cover exposed lead cables and protect and separate them from backfill.
6. Backfill over sand with new A.C. cold mix in stubout excavation hole.
7. Reconstruct shoulder, curb, and gutter as required.

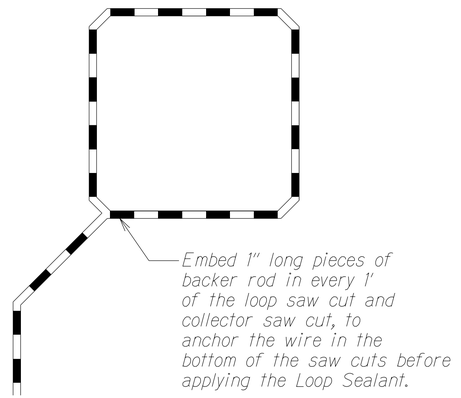


PIEZO SENSOR SAW CUT SECTION DETAIL
Not to Scale

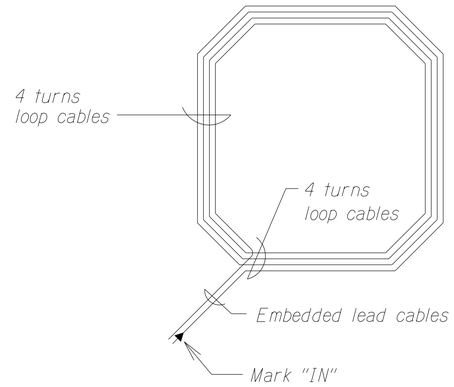


TEMPERATURE SENSOR SAW CUT SECTION DETAIL
Not to Scale

LOOP SENSOR SAW CUT NOTES:
Length of overcuts shall be kept to a minimum. All overcuts shall be backfilled with Loop Sealant.



TYPICAL LOOP SENSOR BACKER ROD PLACEMENT DIAGRAM
Not to Scale



PLAN

TYPICAL LOOP SENSOR WIRING DIAGRAM
Not to Scale

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EVC TRAFFIC COUNTING SYSTEM SENSOR DETAILS

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

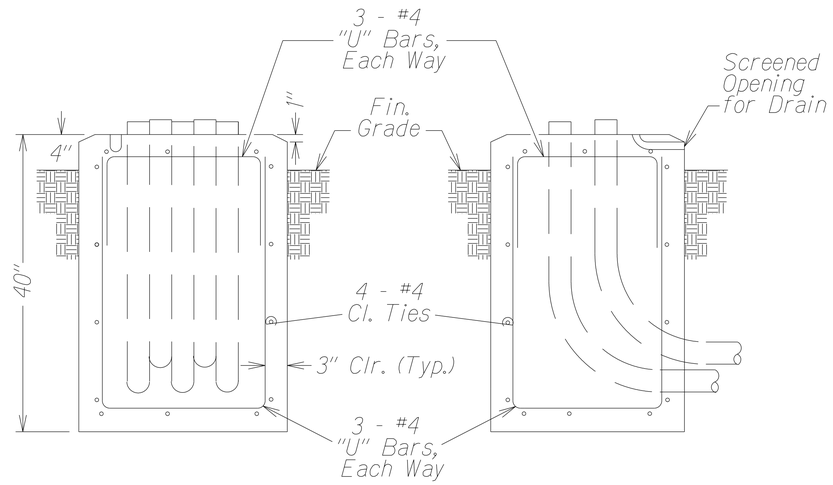
Scale As Noted — Date: Mar. 2023

SHEET No. 3 OF 5 SHEETS

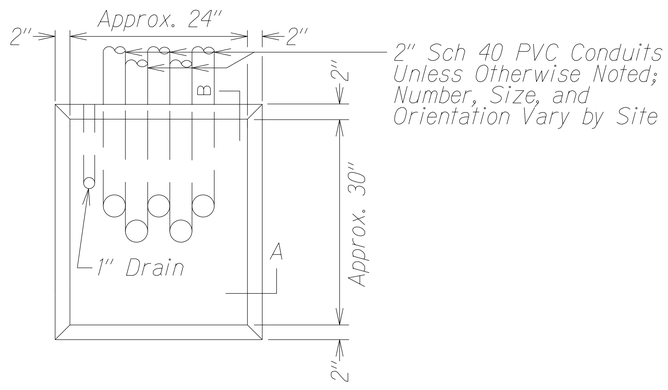
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	41	43

CONCRETE BASE NOTES:

1. Concrete shall be Class "B".
2. Conduit orientation and details are shown on Layout Plan.
3. Conduits shall have belled ends extending no more than 2" above the Base.
4. Conduit bends and drain are incidental to the Concrete Base.
5. All exposed surfaces of the Concrete Base shall have a Class 2, rubbed finish.



SECTION "A" SECTION "B"



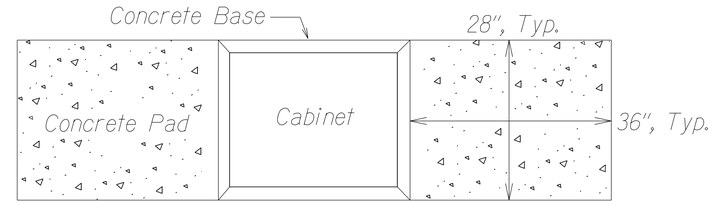
PLAN VIEW

TYPE "D" CONCRETE BASE

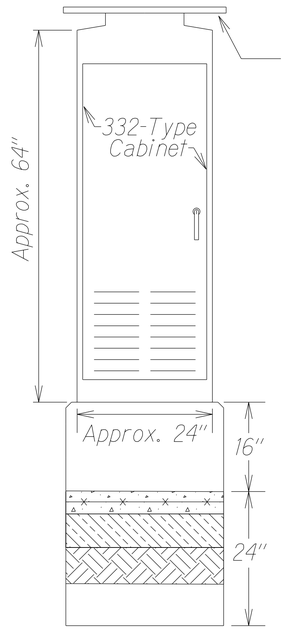
Not to Scale

CABINET NOTES:

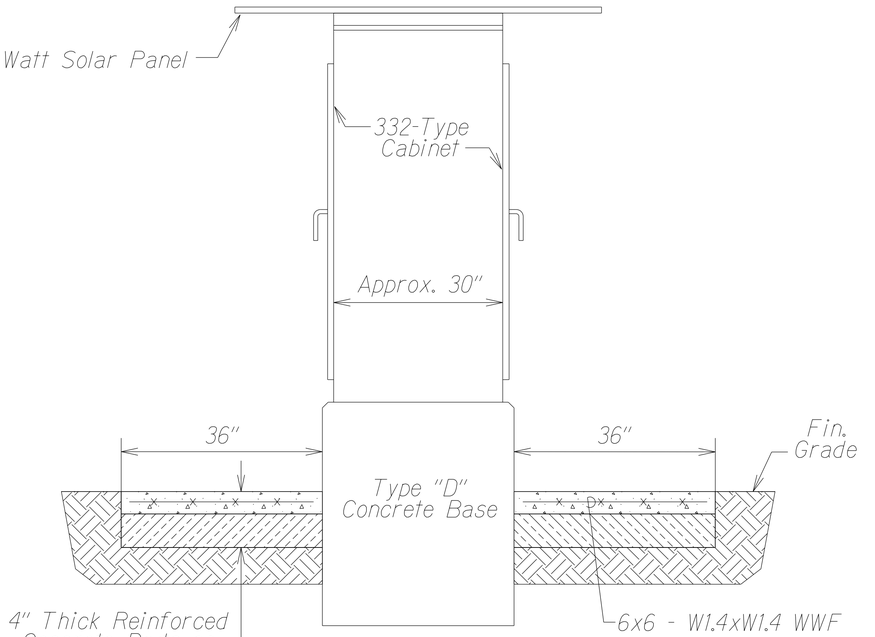
1. Cabinet shall be oriented so that closed doors are perpendicular to the road.
2. Work pads shall be Class "B" concrete and shall allow view of traffic with doors open.
3. Conduits shall have belled ends installed on their ends inside the Cabinet.
4. With belled ends installed, conduits shall extend no more than 2" above the Base.
5. Unused, spare conduits shall be provided with a pull line and be capped or sealed.
6. Stainless steel wedge anchors (1/2" X 4-1/2") shall be used to attach Cabinet to Base.
7. Grounding and bonding shall be provided that meets or exceeds the latest NEC requirements.
8. Solar power shall be connected to the DC power supply for the Cabinet electronics.
9. Surge protection and a power interrupt capability shall be provided for the Cabinet.
10. Silicone caulking compound shall be used to seal the Cabinet to the Base.
11. Key(s) to the Cabinet shall be provided to the State.



PLAN VIEW (Solar Panel not shown)



FRONT VIEW



SIDE VIEW

332-TYPE CABINET

Not to Scale

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

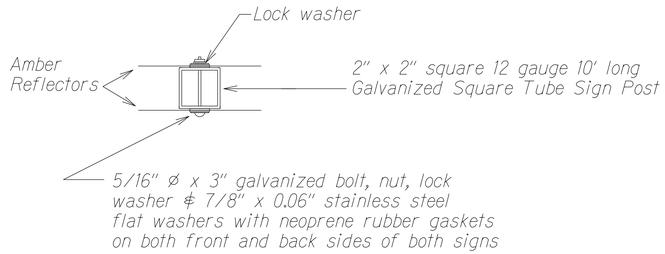
TRAFFIC COUNTING SYSTEM CABINET AND FOUNDATION

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

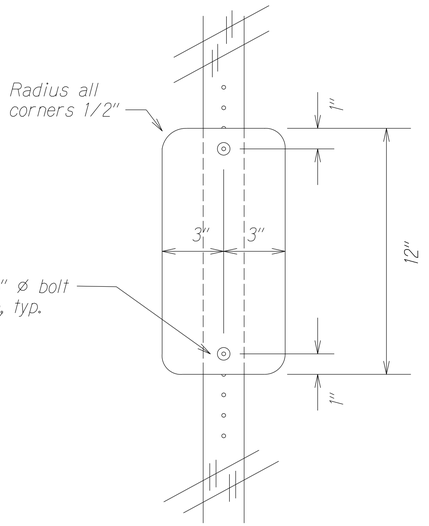
Scale: As Noted Date: Mar. 2023

SHEET No. 4 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	42	43



PLAN



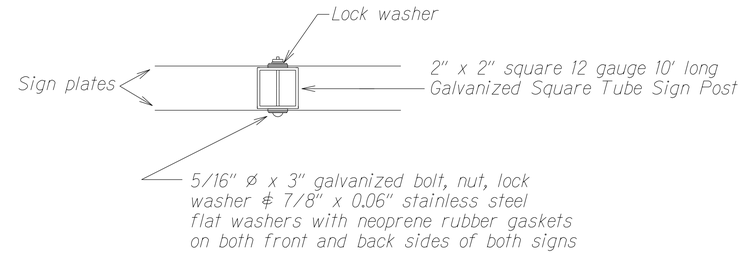
ELEVATION

NOTES:

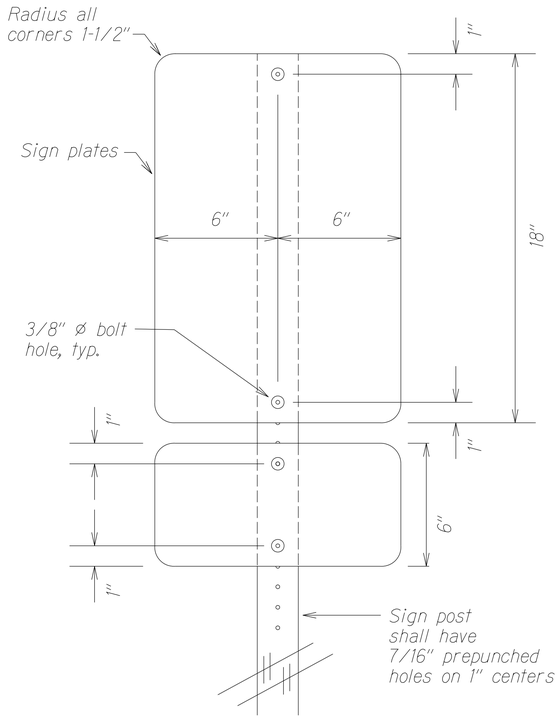
1. Two (2) reflectors shall be mounted on either side of the post and below the Warning and Station ID signs on the same post.
2. Bottom of reflectors shall be 4' above finished grade.
3. Reflector plates shall be oriented perpendicular to the roadway and to the Warning and Station ID signs higher on the post.

TYPE II OBJECT MARKER (REFLECTOR) MOUNTING

Not to Scale



PLAN



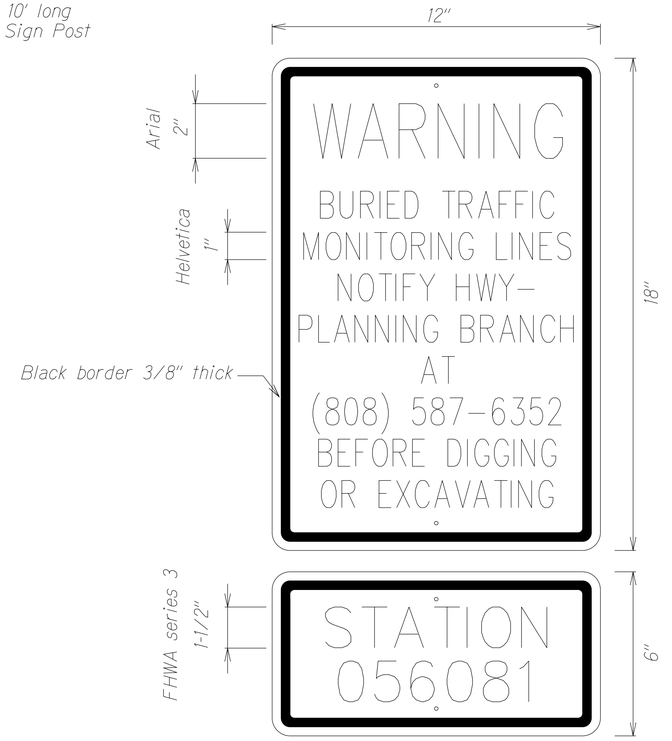
ELEVATION

NOTES:

1. Two (2) warning sign plates and two (2) station ID plates shall be mounted back to back, parallel to the roadway.
2. Bottom of Station ID signs shall be 7' above finished grade.

SIGN MOUNTING

Not to Scale



SIGN DETAIL

Not to Scale

NOTES:

1. Text on signs shall be centered both ways and shall be black text on yellow non-retro reflective background.
2. Existing station name shall be used on ID plates added as a retrofit. For new stations, use new HWY-PH station ID.
3. Station ID signs shall be placed directly below Warning signs.
4. Sign plates shall be 0.063 thick aluminum, single sided.

ORIGINAL PLAN
SURVEY PLOTTED BY — DATE
DRAWN BY
TRACED BY
NOTE BOOK — DESIGNED BY
QUANTITIES BY
CHECKED BY
No. Alteration/Design

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

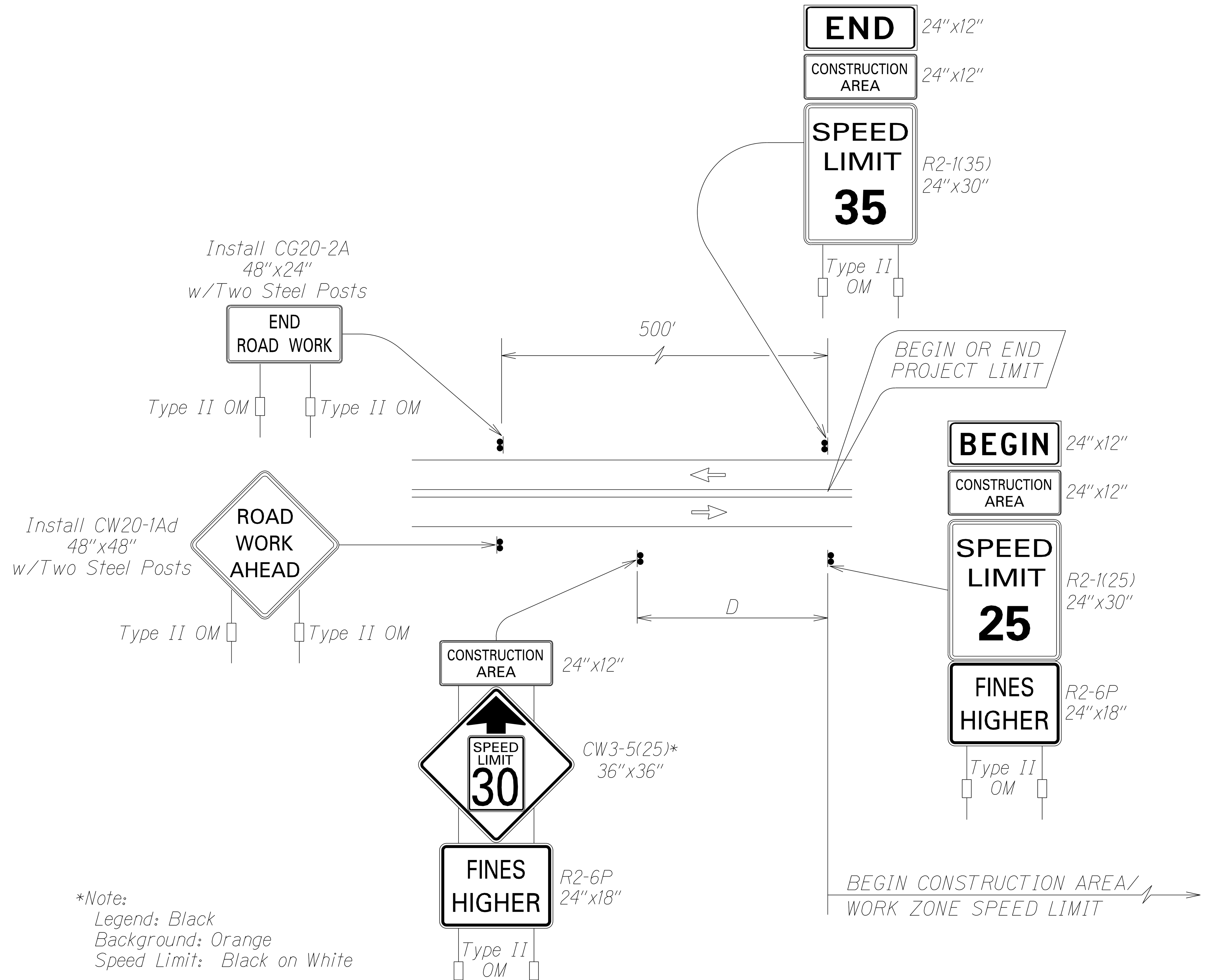
EVC TRAFFIC COUNTING SYSTEM SIGNS

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Scale: As Noted — Date: Mar. 2023

SHEET No. 5 OF 5 SHEETS

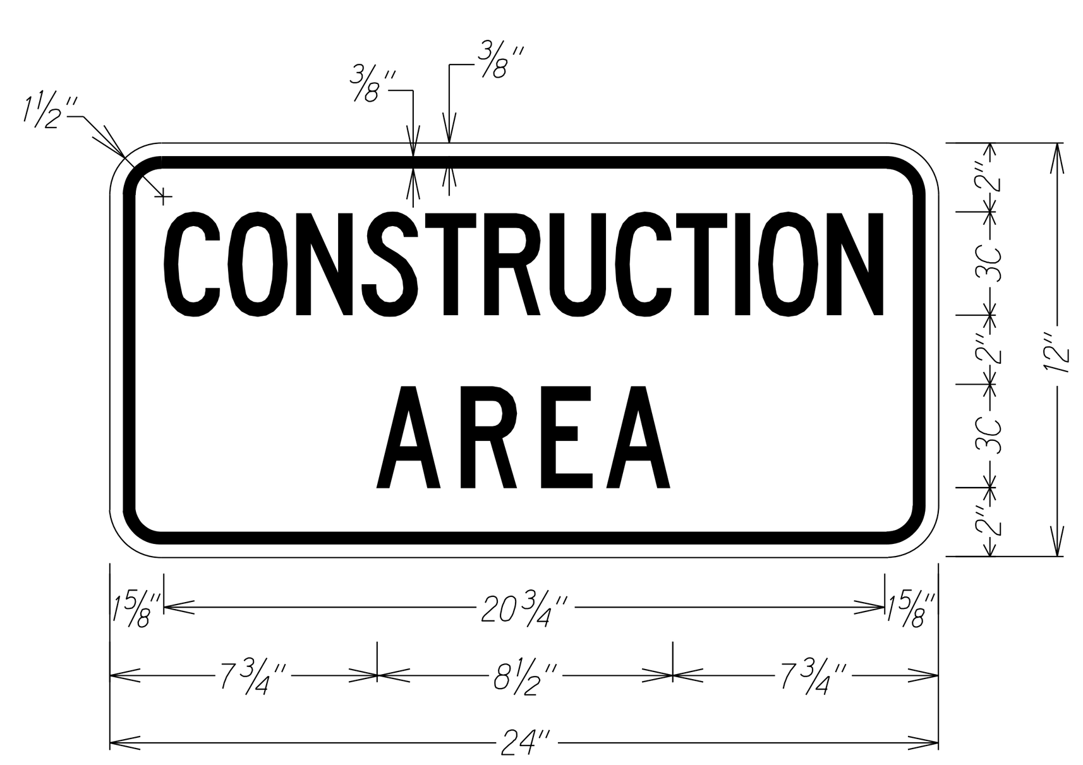
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-056-1(063)	2023	43	43



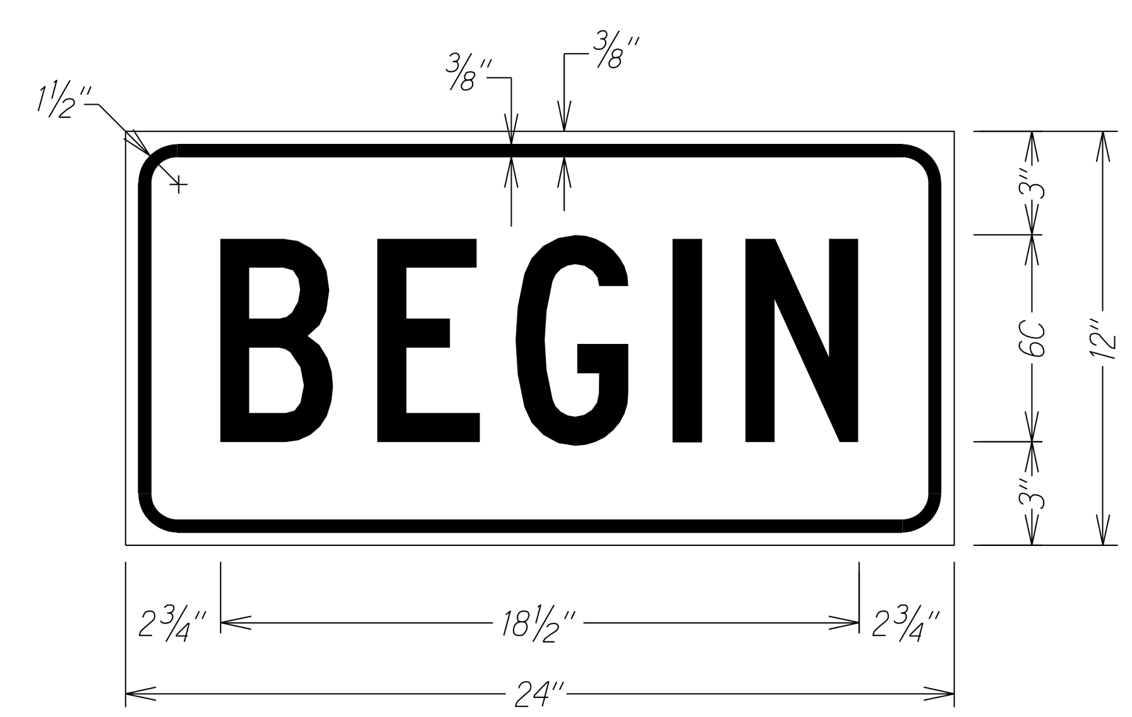
TYPICAL DETAIL FOR CONSTRUCTION SIGNS
ON TWO LANE OR MULTILANE UNDIVIDED LOW SPEED HIGHWAY

Work Zone Notes:

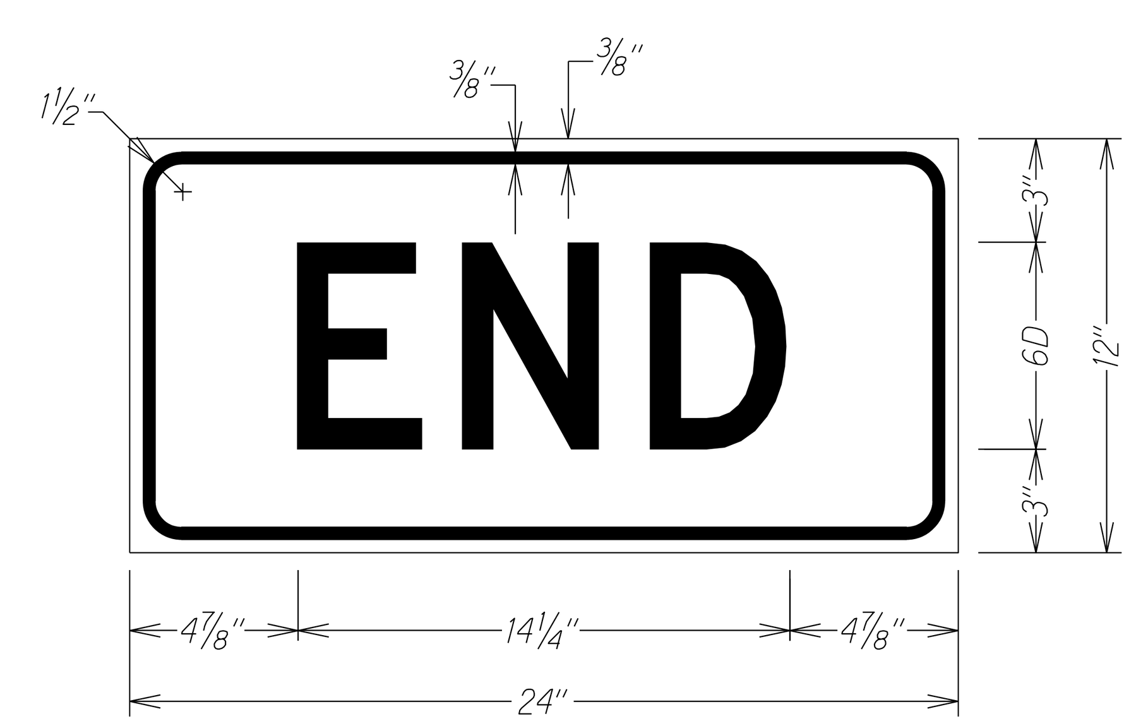
1. This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Special Provisions.
2. All existing regulatory speed limit 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 R2-6P "FINES HIGHER" 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 and work zone speed limit assembly shall have a minimum of two (2) Type II OM. Installation of each Type II OM shall be considered incidental to various pay items and shall not be paid for separately.
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. Dates, times, locations and description of work for each sign location shall be provided to the engineer in writing.
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 various pay items and shall not be paid for separately.



LEGEND: BLACK
BACKGROUND: ORANGE



LEGEND: BLACK
BACKGROUND: ORANGE



LEGEND: BLACK
BACKGROUND: ORANGE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LOW SPEED UNDIVIDED HIHGWAY
WORK ZONE SIGNING PLAN, NOTES & DETAILS

KUHIO HIGHWAY RESURFACING
Waikaea Bridge to Mailihuna Road
Federal-Aid Project No. NH-056-1(063)

Not To Scale — Date: Mar. 2023

SHEET No. 1 OF 1 SHEETS