JOSH GREEN, M.D.
GOVERNOR
KE KIA'ĀINA

DESIGN BRANCH, ROOM 688A
BRIDGE DESIGN SECTION, ROOM 611
CADASTRAL DESIGN SECTION, ROOM 600
ENVIRONMENTAL DESIGN SECTION, ROOM 688A
HIGHWAY DESIGN SECTION, ROOM 636
HYDRAULIC DESIGN SECTION, ROOM 636
TECHNICAL DESIGN SECTION, ROOM 688

EDWIN H. SNIFFEN
DIRECTOR
KA LUNA HO'OKELE

Deputy Directors
Nā Hope Luna Ho'okele
DREANALEE K. KALILI
TAMMY L. LEE
CURT T. OTAGURO
ROBIN K. SHISHIDO

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF TRANSPORTATION | KA 'OIHANA ALAKAU
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

IN REPLY REFER TO:

HWY-DH 25-2.20442

April 25, 2025

TO: DAWN N. S. CHANG, CHAIRPERSON
DEPARTMENT OF LAND AND NATURAL RESOURCES

ATTENTION: CIARA W. K. KAHAHANE, DEPUTY DIRECTOR
COMMISSION ON WATER RESOURCE MANAGEMENT

FROM: HENRY KENNEDY Henry Kennedy
ENGINEERING PROGRAM MANAGER
DESIGN BRANCH

SUBJECT: STREAM CHANNEL ALTERATION PERMIT (SCAP) APPLICATION FOR LULUKU CULVERT REPAIR
VICINITY OF INTERSTATE ROUTE H-3 AND LIKELIKE HIGHWAY, DISTRICT OF KOOLAUPOKO, ISLAND OF OAHU, HAWAII
FEDERAL-AID PROJECT NO. IM-H3-1(082)
RIGHT-OF-WAY (ROW) ADJACENT TO TAX MAP KEY NO. (1) 4-5-041:017

The State of Hawaii Department of Transportation (HDOT) Highways Division has prepared the enclosed SCAP application for the subject project. The proposed action is a maintenance project to restore the subject culvert. The 108-inch diameter corrugated metal pipe culvert under the Interstate H-3 connector/service road was substantially damaged. The precise timing and cause of culvert failure is not known, but similar corrugated metal pipe culvert failures have occurred due to degradation/erosion of the corrugated metal at the bottom of the culvert, which results in the culvert losing structural integrity. That appears to be the likely cause of the subject culvert's failure. The proposal is to replace the culvert in a manner that does not alter the extent of Luluku Stream that is hardened and does not substantially alter the capacity or materials present in the stream channel.

The proposed repair and replacement are an agency action as defined by Hawaii Revised Statutes (HRS) § 343-5(b), and Hawaii Administrative Rules § 11-200.1-8. HDOT has considered the proposed action's effect on the environment and determined that it is exempt

from the preparation of Environmental Assessment per Exemption Type 1, Item A.6.e of its exemption list concurred to by the Environmental Council on February 1, 2022.

The repair and replacement project does not require a Conservation District Use Permit because it is within the HDOT's ROW, in which, per HRS § 264-1, is a State highway and within HDOT jurisdiction.

Should you have any questions, please contact our HDOT Project Manager, Mr. Ramon Acob, at (808) 692-7562, of our Design Branch, Hydraulic Design Section, or by email at ramon.acob@hawaii.gov. If responding to this letter in writing, please respond to the attention of Mr. Ramon Acob, Design Branch, Hydraulic Design Section, 601 Kamokila Boulevard, Room 636, Kapolei, Hawaii 96707 and reference HWY-DH 25-2.20442 as noted above.

Enclosures

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STREAM CHANNEL ALTERATION PERMIT APPLICATION

For Official Use Only:

Instructions: Please print in ink or type and send one (1) completed hardcopy and one (1) digital copy of the application with attachments to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. Applications must be accompanied by a non-refundable filing fee of **$25.00** payable to the Department of Land and Natural Resources. The Commission may not accept incomplete applications without the required signatures. For assistance, call the Stream Protection and Management Branch at **587-0234**. For further information and updates to this application form, visit http://dlnr.hawaii.gov/cwrm.

☒ Check here to allow Commission staff to communicate primarily via e-mail.
Legally required and other key correspondence will still be transmitted via postal mail.

PERMIT TYPE:

1. Permit Applying For: ☒ New ☐ After-The-Fact

2. Type of Construction: ☐ Installation ☒ Modification ☐ Removal

APPLICANT INFORMATION

3. APPLICANT'S NAME / COMPANY	Applicant's Contact Person	Applicant's Phone
State Dept. of Transportation	Lawrence J. Dill	808-587-2220
Applicant's Mailing Address 869 Punchbowl Street, Honolulu, HI 96813	Applicant's E-mail Address lawrence.j.dill@hawaii.gov	

☐ **Check here if project will impact multiple landowners.** *If project impacts multiple landowners, skip **Item 4** below, then complete and attach **Form LND-APP** to identify and verify landowner's approval of proposed stream channel alteration work.*

4. LANDOWNER'S NAME / COMPANY	Landowner's Contact Person	Landowner's Phone
State Dept. of Transportation	Lawrence J. Dill	808-587-2220
Landowner's Mailing Address 869 Punchbowl Street, Honolulu, HI 96813	Landowner's E-mail Address lawrence.j.dill@hawaii.gov	

5. CONSULTANT'S NAME / COMPANY	Consultant's Contact Person	Consultant's Phone
Jim Hayes / Planning Solutions, Inc.	Jim Hayes	808-550-4559
Consultant's Mailing Address 711 Kapi'olani Blvd., Suite 950, Honolulu, HI 96813	Consultant's E-mail Address jim@psi-hi.com	

6. CONTRACTOR'S NAME / COMPANY	Contractor's Contact Person	Contractor's Phone
TBD via HDOT bidding process		
Contractor's Mailing Address	Contractor's E-mail Address	

STREAM INFORMATION

7. Island: *(Check only one)* ☐ Kauai ☒ Oahu ☐ Molokai ☐ Lanai ☐ Maui ☐ Hawaii

8. Tax Map Key(s) *List all affected tax map key parcels.*
HDOT right-of-way, neighboring TMK is (1) 4-5-041:017

9. Stream / Gulch Name(s) *List all affected streams and/or gulches.*
Luluku

FOR OFFICIAL USE ONLY:	SWHU ID:	FILE ID:
LAT:	GWHU ID:	DOC ID:
LON:	REACH ID:	

GENERAL PROJECT INFORMATION

10. Project Type: *Check all that apply.*

☐ Bank Stabilization ☐ Bridge ☐ Channel Alignment ☐ Channel Lining ☒ Culvert ☐ Dam / Dike / Weir
☐ Desilting Area ☐ Drainage Outlet ☐ Dredging ☐ Ford Crossing ☐ Grading ☐ Levee / Flood Wall
☐ Restoration ☐ Retaining Wall ☐ Retention Basin ☐ Stream Gage ☐ Sewer Line ☐ Water Line
☐ Other - Describe:

11. Project Site Location(s): *Provide site coordinates of downstream-most point of project in degrees, minutes, seconds (NAD83).*

Latitude: 21° 23' 30" Longitude: -157° 48' 46" Elevation: 280 ft. above mean sea level

12. Structure Dimensions: *(feet)*

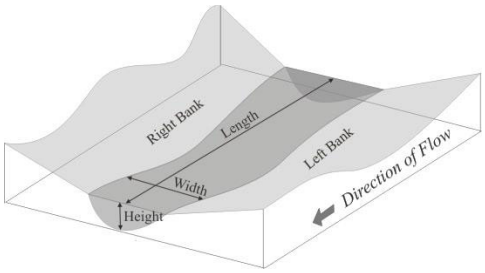
Provide generalized dimensions for the entire project / structure area. If the project includes a pipe (e.g., culvert, drain, etc.), provide the pipe diameter.

Width:	108 inches
Height:	108 inches
Length:	101 feet
Diameter:	108 inches

13. Structure Location:

Provide the general location of the stream channel alteration structure in relation to the streambank.

☐ Left bank *(downstream view)*
☐ Right bank *(downstream view)*
☒ Across entire stream channel



14. State Land Use Classification: *(Check all that apply)* ☐ Agriculture ☒ Conservation ☐ Rural ☐ Urban

LEGAL REQUIREMENTS

If required, the permits or approvals below must be obtained before the Commission on Water Resource Management can legally issue a permit. Visit the Commission's Applications & Forms webpage (http://dlnr.hawaii.gov/cwrm/info/forms/) for links to agency websites/contact information.

15. Conservation District Use Permit (CDUP): *To find out if your stream channel alteration project is located in a Conservation District (CD), you may visit to the Land Use Commission (LUC) website at http://luc.hawaii.gov/maps to view Land Use District Boundary maps. If the stream channel alteration will be located in a CD, contact the Department of Land and Natural Resources' Office of Conservation and Coastal Lands (OCCL) at (808) 587-0377 to determine is a CDUP is required.*

Because the project site is within HDOT right-of-way, per HRS §26 4-1, it does not require a CDUP.

☒ Stream channel alteration is in a Conservation District.
- ☐ Required. CDUP #: _____ Date CDUP approved: _____
- ☒ Not Required. *Attach documentation from Office of Conservation and Coastal Lands (OCCL), Department of Land and Natural Resources.*
- ☐ I have not checked with the OCCL about whether or not a CDUP is required.

☐ Stream channel alteration is not in a Conservation District.

16. Special Management Area Permit (SMAP): *To determine if an SMAP is necessary, contact your County Planning Department.*

- ☐ Required. SMAP #: _____ Date SMAP approved: _____
- ☒ Not Required. *Attach documentation from applicable County agency.*
- ☐ I have not checked with the County about whether or not an SMA Permit is required.

17. State Historic Preservation Division (SHPD), Department of Land and Natural Resources: *If the parcel(s) affected by the stream alteration has been reviewed by the State Department of Land and Natural Resources Historic Preservation Division (SHPD or through an OEQC Environmental Review, Special Management Area Permit, etc.), check "yes" and attach any relevant documentation from SHDP. If the affected parcel(s) has not undergone SHDP review, attach a photograph of the affected area, a schematic diagram (showing the location, access road and infrastructure for the alteration), and a short description of the prior use(s) of the land on which the alteration resides.*

Please note: You are **strongly advised to contact the SHPD to obtain a pre-review of your project. In the event that you do not get an HP pre-review and if during the course of either review or the permit itself it is determined that you need SHPD's concurrence, your application or permit may be held in abeyance or denied until issues with HP are resolved. To contact SHPD, please call (808) 692-8015.*

☒ I have consulted the SHPD regarding potential impacts of stream channel alteration activities on historic sites. I have attached applicable documentation from the SHPD.

☐ I have not consulted with the SHPD regarding potential impacts of stream channel alteration activities on historic sites.

18. Chapter 343, Hawaii Revised Statutes, Hawaii Environmental Policy Act:

HDOT has issued an exemption notice pursuant to HRS Chapter 343, see attached.

☐ An Environmental Assessment was completed, and

☐ An Environmental Impact Statement was required and has been accepted (attach letter of acceptance).

Publication date in The Environmental Notice: _____

☐ A Finding of No Significant Impact has been determined (attach letter).

Publication date in The Environmental Notice: _____

This project proposes:

☒ Use of state or county lands, or use of state or county funds
☒ Use within a state conservation district
☐ Use within a shoreline setback area
☐ Use within a national or Hawaii registered historic site
☐ Use within the Waikiki Special District
☐ The construction, expansion or modification of helicopter facility
☐ A wastewater treatment unit
☐ Waste-to-energy facility
☐ Landfill
☐ Oil refinery
☐ Power-generating facility
☐ None of the above 11 items

OTHER REGULATORY REQUIREMENTS

If the proposed stream channel alteration is subject to the following permits or approvals, indicate by checking the appropriate box below and submit either the approval letter from the appropriate agency or attach a copy of the application form. If the proposed stream channel alteration is not subject to the following permits or approvals, indicate by checking the "N/A" (Not Applicable) field.

	Attached	N/A
19. U.S. Army Corps of Engineers (Harbors and Rivers Act, Section 404, Clean Water Act)	☒	☐
20. State Department of Health, Clean Water Branch (Section 401, Clean Water Act, Water Quality Certification, Best Management Practices Plan)	☐	☒
21. Right-of-Entry or Right-of-Way Permit if the proposed stream channel alteration includes State lands. (Chapter 171, Hawaii Revised Statutes)	☐	☒
22. Hawaii Environmental Policy Act (Chapter 343, Hawaii Revised Statutes; Title 11, Chapter 200, Hawaii Administrative Rules)	☒	☐
23. Soil and Water Conservation District — Section 401 Water Quality Certification is covered by blanket permit WQC1092.	☐	☒
24. County Certification of "No-Rise"	☐	☒
25. County Grading Permit	☐	☒
26. County Discretionary Permit(s)	☐	☒

CULTURAL IMPACTS

Articles IX and XII of the State Constitution, other state laws, and the courts of the State, require government agencies to promote and preserve cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups. If there is not enough space available, please make a note in the field (e.g., "See attached") and attach all information with this application as requested.

27. Please provide the identity and scope of cultural, historical, and natural resources in which traditional and customary native Hawaiian rights are exercised in the area.

The subject 108-inch diameter culvert was installed as part of Interstate Route H-3, for which a NEPA EIS and NHPA Section 106 agreement was completed. Nearby areas are used for traditional and customary Native Hawaiian agricultural practices, included loi wetland agriculture. Native Hawaiian organizations are also working to restore some agricultural terraces in the region.
No tradition and customary native Hawaiian practices are known to occur on or depend on the resources found within the area to be affected by the proposed culvert repair project.
HDOT has consulted with Native Hawaiian organizations (NHOs) and SHPD regarding the project; documentation of the Section 106 and HRS Chapter 6E consultation are attached to the proposed project's PCN application, which is in turn attached to this application.

28. Identify the extent to which those resources, including traditional and customary Native Hawaiian rights, will be affected or impaired by the proposed action.

The proposed repair of the culvert will not change the context or intensity of the culvert's impact on traditional and customary Native Hawaiian rights exercised in the area. No long-term impacts are anticipated. In the short term, access to certain areas mauka of the H-3 viaducts may be temporarily restricted or be re-routed for safety and security purposes during construction.

29. What feasible action, if any, could be taken by the Commission on Water Resource Management in regards to your application to reasonably protect Native Hawaiian rights?

HDOT will continue to coordinate with Native Hawaiian organizations in the area to keep them informed and minimize the potential for adverse short-term impacts. HDOT will require that contractor personnel be informed of (a) the cultural practices exercised in the area, (b) the potential to encounter undocumented cultural resources during ground disturbing activities, and (c) what to do should a cultural practice be observed nearby or on the project site.

PROJECT DESCRIPTION

Please complete the following sections by providing detailed information on the project components identified below. If there is not enough space available, please make a note in the field (e.g., "See attached") and attach all information with this application as requested.

30. Describe the overall project scope and objectives.

The project name is: Interstate Route H-3 Luluku Culvert Repair Vicinity of Interstate Route H-3 (Mile Post 8.67) and Likelike Highway

The subject culvert is located in HDOT right-of-way associated with Interstate Route H-3 near the Likelike Highway interchange. The overall project scope is to repair and restore the culvert with the objective of providing stream flow under the connector/service road in a manner that reduces the potential for future culvert collapses or the entrainment of sediment.

The repair work will involve the following general steps:

1. Install and maintain BMPs.
2. Establish temporary access roads to the work area.
3. Utilize a water transfer to provide a dry work area.
4. Excavate and remove the damaged portion of the culvert.
5. Install new bedding (3B fine aggregate and concrete mud slab) and culvert.
6. Install a concrete lining at the invert and partially up the circumfrerence of the 108-inch-diameter corrugated metal pipe (CMP) to protect it from further degredation.
7. Restore and stabilize the site.
8. Remove BMPs.

No portion of the stream not previously hardened will be affected by the project. The repair is an in-kind repair, except for the addition of the concrete lining, which is being added to reduce the likelihood of a similar failure from occuring in the future.

31. Describe existing stream channel and streamflow conditions at the site of the proposed stream channel alteration.

The existing stream channel is a partially collapsed 108-inch-diameter CMP. Up and down stream from the culvert, the stream channel is hardened for short distances (not more than 50 feet) by inlet and outlet structures and then has well defined natural bed and banks, except for a concrete and grouted rubble paving bank extending roughly 100 feet further downstream on the north side (left bank) of the stream.

Luluku Stream is a perennial stream. It has well defined channels with continuous flow that discharges into Kaneohe Stream and out into Kaneohe Bay and the Pacific Ocean.

Due to the substantial and year around rainfall in the project area, the area is heavily vegetated. The following endangered or threatened species may be present in the project region: blackline Hawaiian damselfly, Hawaiian Duck, Hawaiian Coot, Hawaiian subspecies of Common Gallinule, Hawaiian subspecies of Black-necked Stilt, Hawaiian Petrel, Newell's Shearwater, and Hawaiian Hoary Bat. None of these species have been observed at the project site. Luluku Stream may provide good habitat for three endemic oopu species but none of those species have been observed at the project site either.

32. Identify and describe the project components outlined below

A. Materials

Bedding: concrete mud slab, non-woven geotextile fabric, and 3B fine basalt aggregate.
Replacement Culvert: 108-inch diameter CMP with sheet thickness of 0.138 inch.
Concrete lining: fiber-reinforced concrete.

B. Quantities

Concete mud slab: 44 linear feet, 15 cubic yards.
3b fine basalt aggregate: 44 linear feet, 52 yards.
108-inch diameter CMP: 40 linear feet, 0.3 cubic yards.
Fiber reinforced concrete: 101 linear feet, 23 cubic yards

C. Excavation

The existing bedding and backfill around the portion of the culvert to be replaced will be excavated so that the existing, collapsed portion of the CMP culvert can be removed.

D. Fill

After the CMP culvert has been replaced, the excavation will be backfilled.

E. Disposal

The collapsed portion of the culvert that is removed will be disposed of properly off site by the contractor. Soil handled as part of the project will be reused on-site if it is determined to be suitable for on-site use by the Engineer. Unsuitable soil material will be disposed of properly off-site by the selected contractor.

F. Construction methods

The project can be completed using standard construction methods. Equipment utilized will likely include trucks, excavators, bulldozers, concrete trucks, and cranes. The in-water work area will be kept dry by implementing a water transfer (described below).

G. Temporary facilities

Temporary facilities will include a sandbag cofferdam near the culvert inlet, a stream diversion pump within the cofferdam basin, and a hose from the pump, over the access road embankment, to the existing culvert outlet structure. A sandbag cofferdam will also be placed within the culvert outlet structure so that the transferred stream flow collects in the area and a portion of the flow can enter an existing pipe that irrigates a nearby, downstream taro loi complex.

H Expected period of time required for construction

1 year.

I. Liability during construction

The contractor will be traversing through private property to gain access to the outlet and damaged portion of the culvert. The contractor will be required to indemnify the private property owner(s) against any liability related to the contractor's work on private property. The contractor will also be required to comply with the insurance requirements established by the private property owner and HDOT. See attached Special Provision Section 107 Legal Relations and Responsibility to Public of the construction contract documents.

33. Describe the project's consistency with county zoning and development plans.

The project is a repair project within existing HDOT right-of-way for Interstate Route H-3. State transportation facilities are an allowable use in all county zoning districts. Furthermore, HDOT development within the Conservation District does not require the approval a CDUP.

The interstate was developed per reviewed and approved plans and approvals that included detailed considerations of the highway's consistency with development plans. Interstate Route H-3 remains an important transportation facility and identified as such in development plans.

34. Identify potential alternatives to the project and describe the relative costs and benefits of each alternative.

The service road is a required facility to provide access to highway and utility infrastructure and needs to be maintained. Therefore, there is no alternative location for the repair project. Different approaches to the repair were considered but would have resulted in higher cost and, potentially, longer construction periods.

SUBMITTALS

Please submit the following plans, maps, or drawings in legible form, preferably on 8.5" by 11" sheets.

35. Location Map: Provide a location map of the proposed project relative to major roadways.

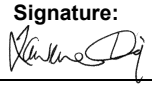
36. Plans / Elevations / Sections: Provide a plan view of the proposed stream channel alteration structure in relation to the stream channel and property boundaries. Elevation and section views of the structure in relation to the stream channel should also be provided if available.

SIGNATURES

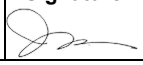
Signing below indicates that the signatories understand and swear that the information provided is accurate and true to the best of their knowledge. Further, the signatories understand that if the permit requested is granted by the Commission on Water Resource Management (Commission), the permit shall be subject to the following conditions:

1) The proposed work is to be completed within two (2) years from the date of permit approval.
2) The permittee shall notify the Commission, by letter, of the actual dates of project initiation and completion.
3) The permittee shall submit a set of as-built plans and photographs to the Commission upon completion of the project.
4) The permit may be revoked if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months.
5) If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.

37. APPLICANT

Print Name:	Signature:	Date:
Lawrence J. Dill		Apr 28, 2025

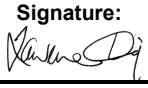
38. CONSULTANT

Print Name:	Signature:	Date:
James T. Hayes		Apr 28, 2025

39. CONTRACTOR

Print Name:	Signature:	Date:
Not yet known		

40. LANDOWNER *(If multiple landowners, skip **Section 53**, then complete and attach **Form SCAP-LND** with appropriate landowner signatures.)*

Print Name:	Signature:	Date:
Lawrence J. Dill		Apr 28, 2025

CHECKLIST FOR A COMPLETE APPLICATION and ITEM DESCRIPTIONS (ITEMS 1 - 14)

- □ Fill in the most recent application form (check **http://dlnr.hawaii.gov/cwrm** or call 587-0234 for updates).
- □ Fill in every line which includes Items 1-40, as indicated (total 8 pages).
- □ Enclose a check for $25 payable to the Department of Land and Natural Resources.
- □ Mark the proposed stream channel alteration location on: the appropriate USGS quad map, TMK map, photo and schematic, and attach to the application.
- □ Attach Form LND-APP to identify and obtain authorizations for the project if multiple landowners will be impacted.
- □ Attach a grading plan and cross section profiles showing existing and finish grades, if available.
- □ Attach documentation from CDUP, SMAP, SHPD when applicable regarding Items 15-17.
- □ Attach letters from U.S. Army Corps of Engineers, Hawaii Department of Health, Office of Conservation and Coastal Lands, and appropriate county agencies regarding Items 18-26.
- □ Provide digital copies on CD-ROM or via e-mail, if available.
- □ Obtain the necessary signatures for the application form.

Send the application and maps, copies, and the filing fee to:
Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809

PERMIT TYPE

1. **Permit Status:** Indicate whether this application is for a new stream channel alteration project (including medication or abandonment) or if the project has already been completed and an after-the-fact permit is being applied for.
2. **Type of Construction:** Is the permit application for the installation of a new stream channel alteration, or modification or removal of an existing stream channel structure.

APPLICANT INFORMATION

3. **Applicant's Information:** Fill in the information for the applicant. This should be the entity that will be responsible for the maintenance of the stream channel alteration when the project is completed.
4. **Landowner's Information:** Fill in the information for the landowner of the property where the stream channel alteration will be located.
5. **Consultant's Information:** Fill in the information for the consultant who will assist with plan and design preparation for the subject project.
6. **Contractor's information:** Fill in the information for the contractor who will perform the work on the subject stream channel alteration project.

STREAM INFORMATION

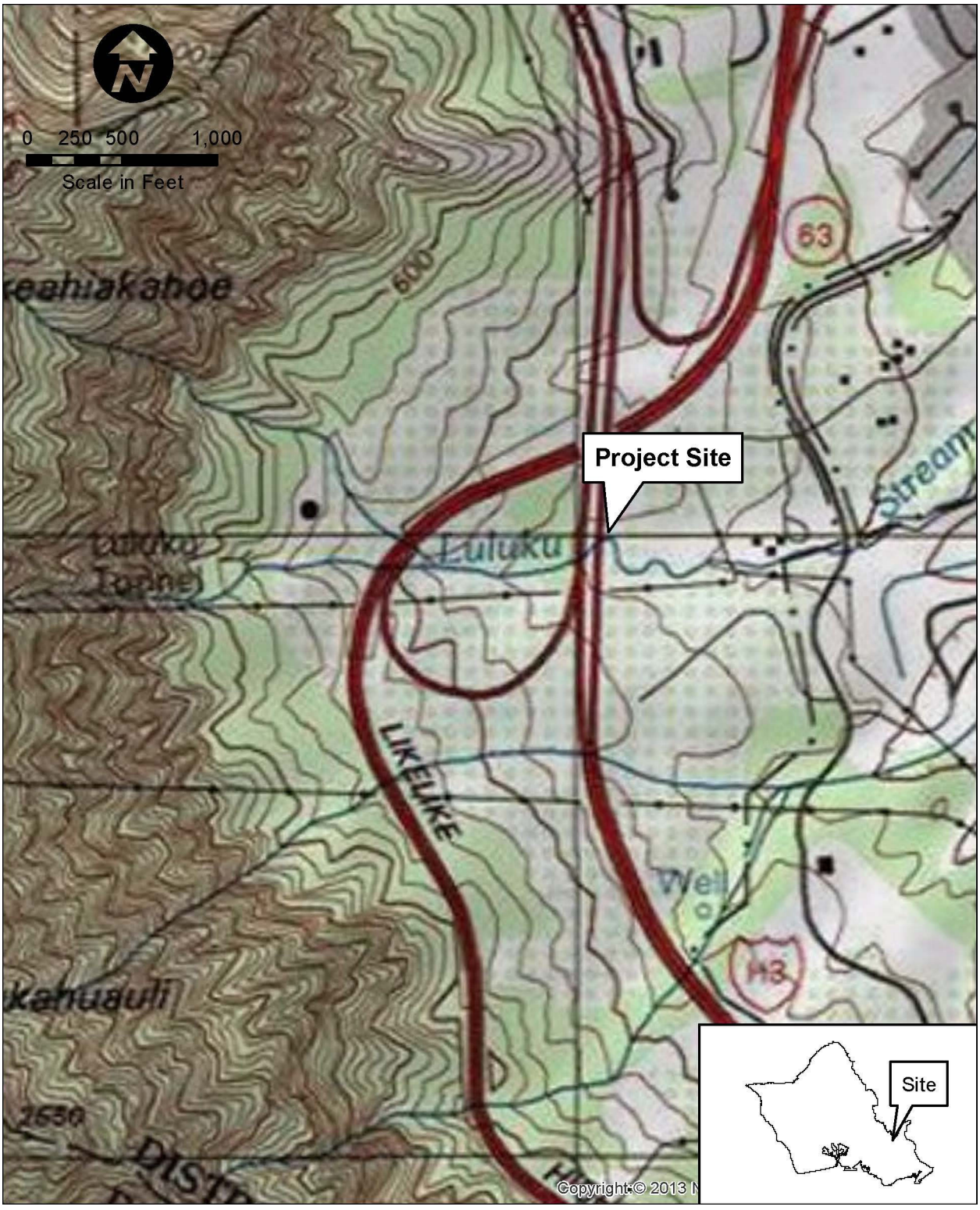
7. **Island:** The island name where the stream channel alteration will be located.
8. **TMK:** Tax Map Key number (generally there is no lot number, but where a parcel is divided into two lots, fill in the lot number)
9. **Stream / Gulch Name:** Name of the stream or gulch where the stream channel alteration will be located.

GENERAL PROJECT INFORMATION

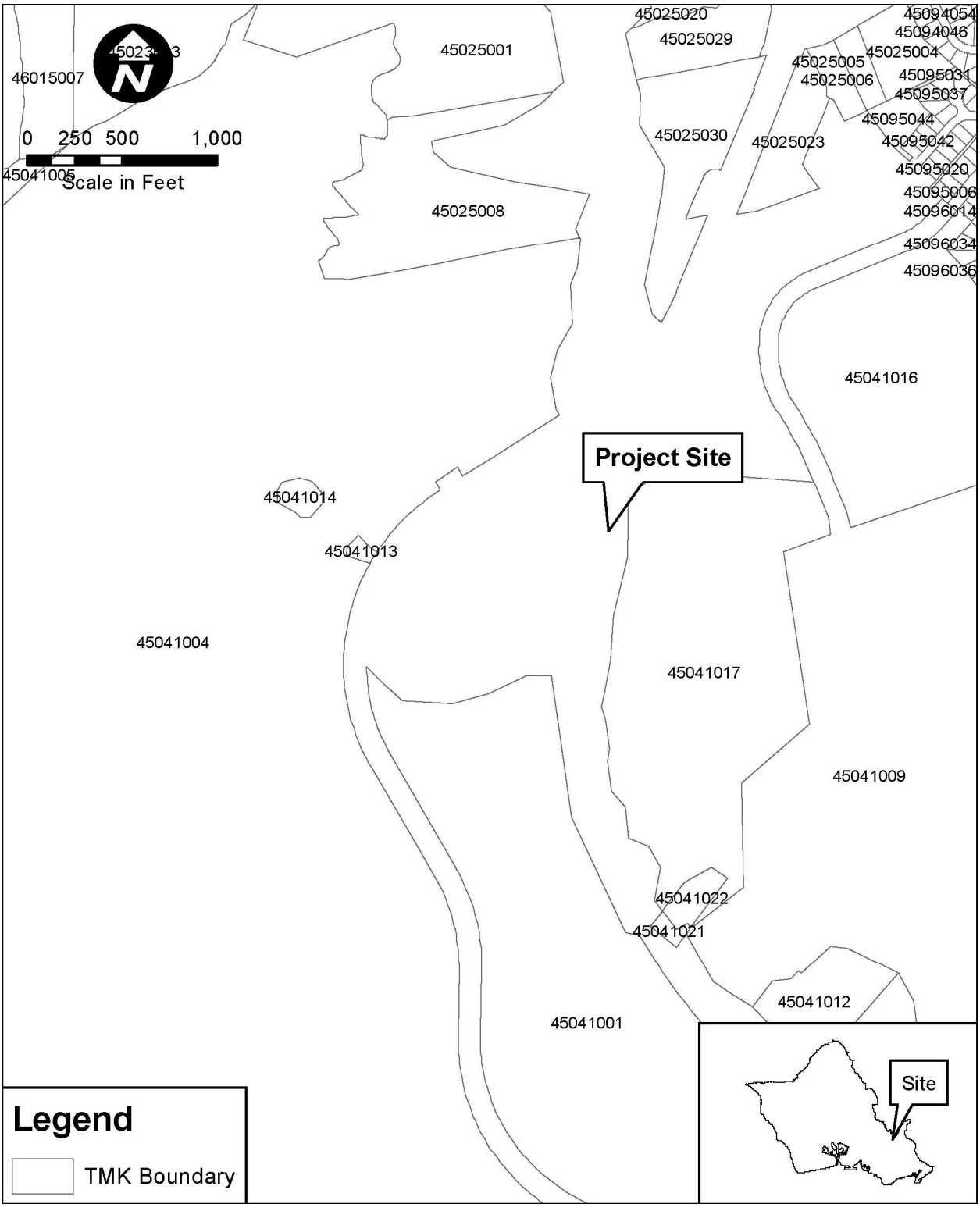
10. **Project Type:** Identify the type of work being performed, and select all that apply to the project.
11. **Project Site Location(s):** Fill in stream channel alteration location coordinates taken from a GPS unit at the project site. Units are Degrees, Minutes and Seconds (seconds should be filled out to at least one decimal place; e.g. 19°59'32.8"N, 155°14'51.5"W). If more than one site, attach separate sheet. Elevations should be provided in feet above mean sea level.
12. **Structure Dimensions:** What are the physical dimensions of the stream channel alteration structure that will be located in or adjacent to the stream channel?
13. **Structure Location:** Will the structure be located on the right or left bank (facing downstream) or across the entire stream channel?
14. **State Land Use Classification:** Identify the current State Land Use Classification.

Please see header descriptions for remaining Sections in completing Items 15 to 40.

Project Location on USGS Quad Map



Project Location on TMK Map



Project Location on Aerial Photograph

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H3-1(082)	2024	1	41

INDEX TO DRAWINGS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STANDARD PLANS SUMMARY
3–7	GENERAL NOTES
8	LEGEND & ABBREVIATIONS
9–10	WATER POLLUTION AND EROSION CONTROL NOTES
11–13	BMP NOTES AND DETAILS
14	GENERAL PLAN
15	TEMPORARY CONSTRUCTION ACCESS PLAN
16	EXISTING CONDITIONS
17–19	EROSION CONTROL PLAN
20	TEMPORARY STREAM DIVERSION AND CULVERT REPAIR PLAN
21	DEMOLITION PLAN
22	GRADING PLAN
23	DRAINAGE PLAN AND PROFILE 108" CULVERT
24	DRAINAGE PLAN AND PROFILE 24" DRAIN LINE
25	ROADWAY RESTORATION PLAN
26	TYPICAL CONNECTOR ROAD SECTIONS AND DETAILS
27–28	DRAINAGE DETAILS
29–33	GUARDRAIL PLAN, DETAILS AND NOTES
34	CROSS SECTIONS
35–36	TRAFFIC CONTROL PLAN
37	LANDSCAPE PLAN
38–41	STRUCTURAL PLANS

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

HONOLULU, HAWAII

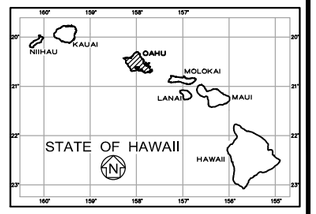
PLANS FOR

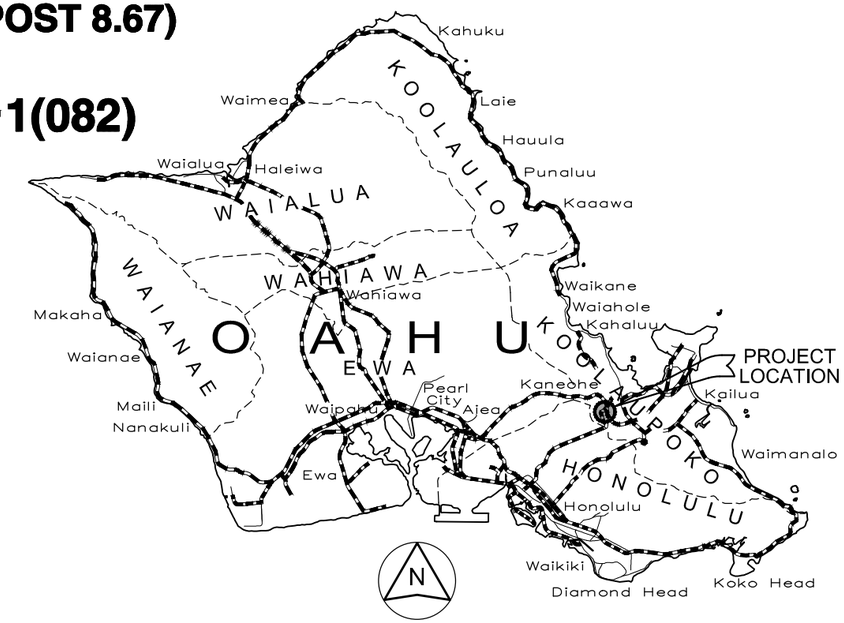
INTERSTATE ROUTE H-3
LULUKU CULVERT REPAIR

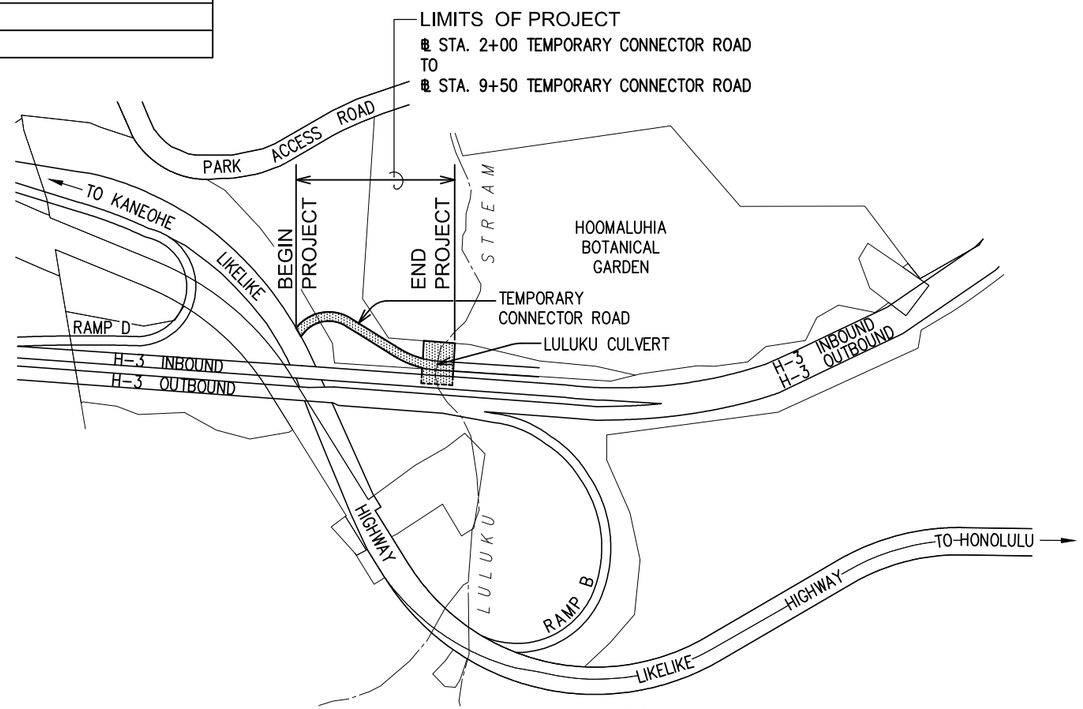
VICINITY OF INTERSTATE ROUTE H-3 (MILE POST 8.67) AND LIKELIKE HIGHWAY

FEDERAL-AID PROJECT NO. IM-H3-1(082)

DISTRICT OF KOOLAUPOKO
ISLAND OF OAHU







LAYOUT PLAN

NOT TO SCALE

FEDERAL AID INTERSTATE PROJECTS PREVIOUSLY CONSTRUCTED OR UNDER CONSTRUCTION

MILE POST 8.67 (INTERSTATE ROUTE H-3)
MILE POST 7.50 (LIKELIKE HIGHWAY)

Design Designation	Likelike Hwy. (NB-Northbound), On-Ramp from H-3 Fwy. (NB) to Off-Ramp to Kahekili Hwy. (NB) Route 63 (MP 7.236 to 7.825)
ADT (2023)	28,000
ADT (2033)	30,200
ADT (2043)	32,400
DHV (2033)	3,170
DHV (2043)	3,400
D	100/0
T	6.0%
T24	6.0%
K	10.5%

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

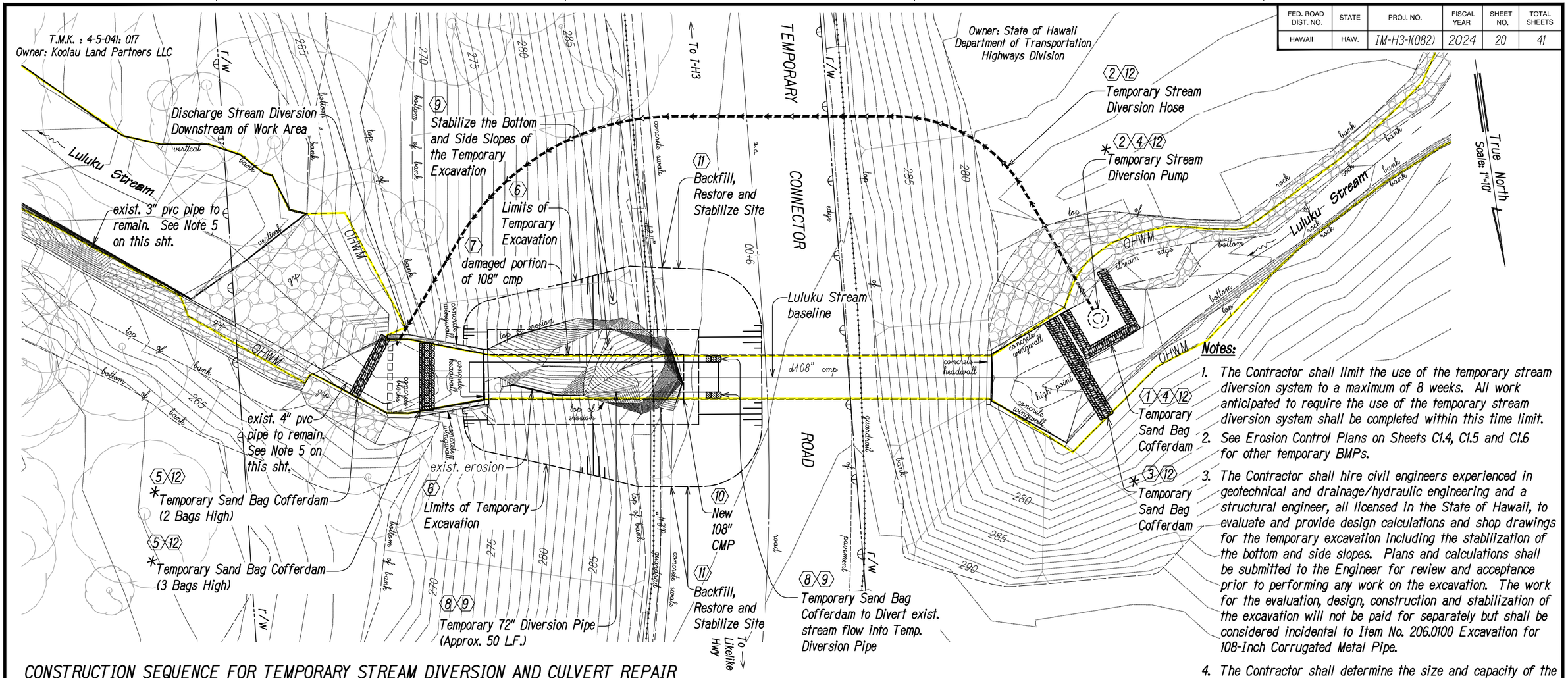
APPROVED:

DIR. OF TRANSPORTATION DATE

PAREN, INC. — DESIGNED BY
HWY-DH — MANAGED BY
692-7563 — PHONE
JUNE 2024 — DATE

UB2: STATE\DOT\LULUKU CULVERT REPAIR\DESIGN-PART 1\PLANS\01-LULUKU-TITLE.DWG 1/12/24

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H3-1(082)	2024	20	41



Notes:

1. The Contractor shall limit the use of the temporary stream diversion system to a maximum of 8 weeks. All work anticipated to require the use of the temporary stream diversion system shall be completed within this time limit.
2. See Erosion Control Plans on Sheets C1.4, C1.5 and C1.6 for other temporary BMPs.
3. The Contractor shall hire civil engineers experienced in geotechnical and drainage/hydraulic engineering and a structural engineer, all licensed in the State of Hawaii, to evaluate and provide design calculations and shop drawings for the temporary excavation including the stabilization of the bottom and side slopes. Plans and calculations shall be submitted to the Engineer for review and acceptance prior to performing any work on the excavation. The work for the evaluation, design, construction and stabilization of the excavation will not be paid for separately but shall be considered incidental to Item No. 206.0100 Excavation for 108-Inch Corrugated Metal Pipe.
4. The Contractor shall determine the size and capacity of the temporary stream diversion pump and hose based on the estimated stream flow.
5. Maintain stream flow through the exist. 3" and 4" pvc pipes at all times.
6. The work for the temporary stream diversion system shall be included in the lump sum Pay Item No. 209.0100, Installation, Maintenance, Monitoring, and Removal of BMP and shall not be paid for separately.

CONSTRUCTION SEQUENCE FOR TEMPORARY STREAM DIVERSION AND CULVERT REPAIR

1. Install sand bag cofferdam around the location of the temporary stream diversion pump.
2. Install the temporary stream diversion pump within Luluku Stream. Install hose on the surface. Secure hose as necessary.
3. Install temporary sand bag cofferdam at the inlet.
4. Remove sand bag cofferdam around the temporary stream diversion pump. Operate the temporary stream diversion pump as necessary to bypass stream flow around the work area.
5. Install temporary sand bag cofferdams at the outlet to collect water from the temporary hose and allow a portion of the stream flow to enter into the existing 4" pvc pipe.
6. Excavate for the temporary work area. Demolish and remove a portion of the existing roadway, gutter, guardrail, and 24" srap as needed for the excavation and stabilization of the work area.
7. Demolish and remove the damaged portion of existing 108" cmp. Prevent sediment and debris from entering into the stream during demolition and removal of the pipe.
8. Install the temporary 72" diversion pipe to accommodate stream flow exceeding the capacity of the temporary stream diversion system (pump and hose). Install temporary sandbag cofferdam at the temporary diversion pipe entrance and secure the pipe with sandbags or other means. The temporary 72" diversion pipe shall remain while the bottom and sides of the temporary excavation are exposed and subject to erosion.
9. Stabilize the bottom and side slopes of the temporary excavation to prevent erosion from high stream flows. Remove the temporary 72" diversion pipe after bottom and side slopes are stabilized.
10. Install the New 108" CMP and concrete lining at invert of exist. and new 108" cmp.
11. Remove the temporary stream diversion system and all sand bag cofferdams.
12. Backfill and restore the roadway embankment, install new 24" SRAP, gutter, guardrail, and restore road. Install hydromulch, grass and erosion control matting to stabilize the disturbed areas as soon as practicable. See Grading and Road Restoration Plans, Sheets C3.2 and C5.1.

*Contractor shall remove when heavy rains, tropical storm or hurricane is imminent or forecasted in the next 48 hours. Reinstall after the approaching rain/storm/hurricane events.

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THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Russell M. Arakaki — APRIL 30, 2026
ParEn, Inc. dba PARK ENGINEERING — LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TEMPORARY STREAM DIVERSION AND CULVERT REPAIR PLAN

LULUKU CULVERT REPAIR
Vicinity of Interstate Route H-3 (Mile Post 8.67) and Likelike Highway
Federal-Aid Project No. IM-H3-1(082)

Scale: As Shown Date: June 2024

SHEET No. C2.1 OF C2.1 SHEETS

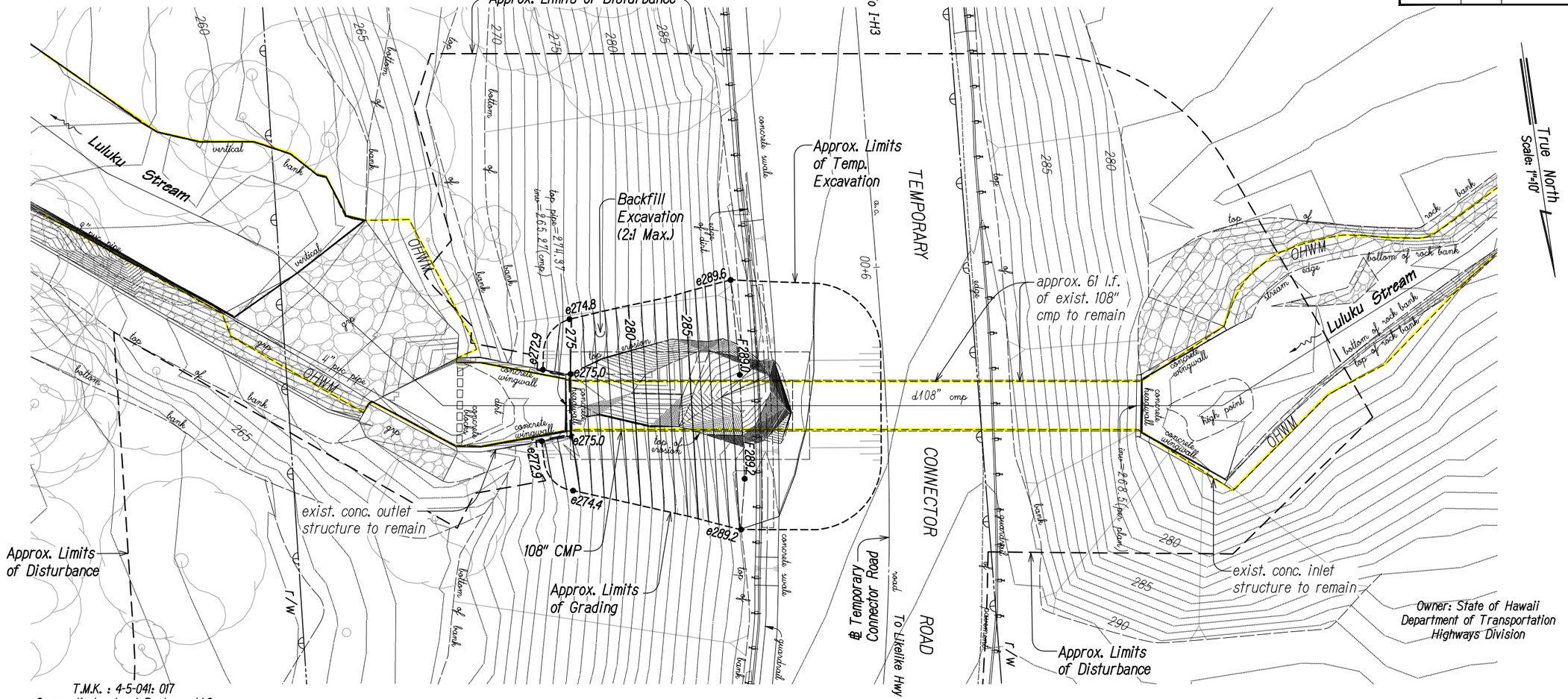
TEMPORARY STREAM DIVERSION AND CULVERT REPAIR PLAN

Scale: 1" = 10'

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

U82: STATE\DOT\LULUKU CULVERT REPAIR\DESIGN-PART 1\PLANS\20-LULUKU-STREAM DIVERSION PP.DWG 12/15/23

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H3-1(082)	2024	22	41



GRADING PLAN
Scale: 1" = 10'

Estimated In-Place Earthwork Quantities

Excavation:	945 cubic yards
Embankment:	1,124 cubic yards
Total area to be graded:	2215 sf (0.05 acres)

The quantities shown above are for permit purposes only and shall not be used by the contractor for bidding purposes. The contractor shall determine his own quantities for the work and base his bid accordingly. Contractor shall complete the grading work to the grades and dimensions shown on the grading plans.

Note:

See Roadway Restoration Plan on Sheet C5.1 for the finished grades of the asphalt concrete pavement and concrete gutter.

LEGEND:

•e275.0	Match to Exist. Grade
•F275.0	Finish Grade Elevation
	Approximate Exist. 1-ft Contour
280	Approximate Exist. 5-ft Contour
	Grade Bank (For Temporary Work Area)
	Approximate Finish 1-ft Contour
280	Approximate Finish 5-ft Contour
	Approximate Limits of Grading
	Approximate Limits of Disturbance
OHWM	Ordinary High Water Mark

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

UB2: STATE\DOT\LULUKU CULVERT REPAIR\DESIGN-PART 1\PLANS\22-LULUKU-GRADING PLAN.DWG 11/24/23

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Russell M. Arakaki — APRIL 30, 2026
ParEn, Inc. dba PARK ENGINEERING — LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

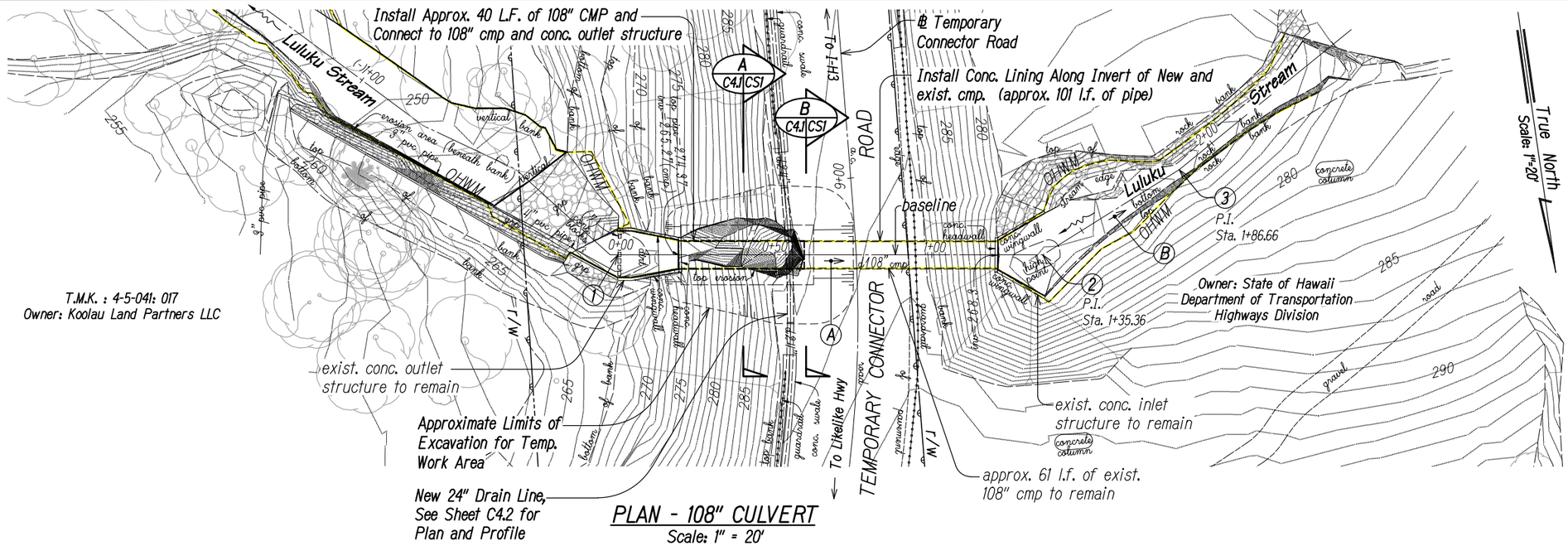
GRADING PLAN

LULUKU CULVERT REPAIR
Vicinity of Interstate Route H-3 (Mile Post 8.67) and Likelike Highway
Federal-Aid Project No. IM-H3-1(082)

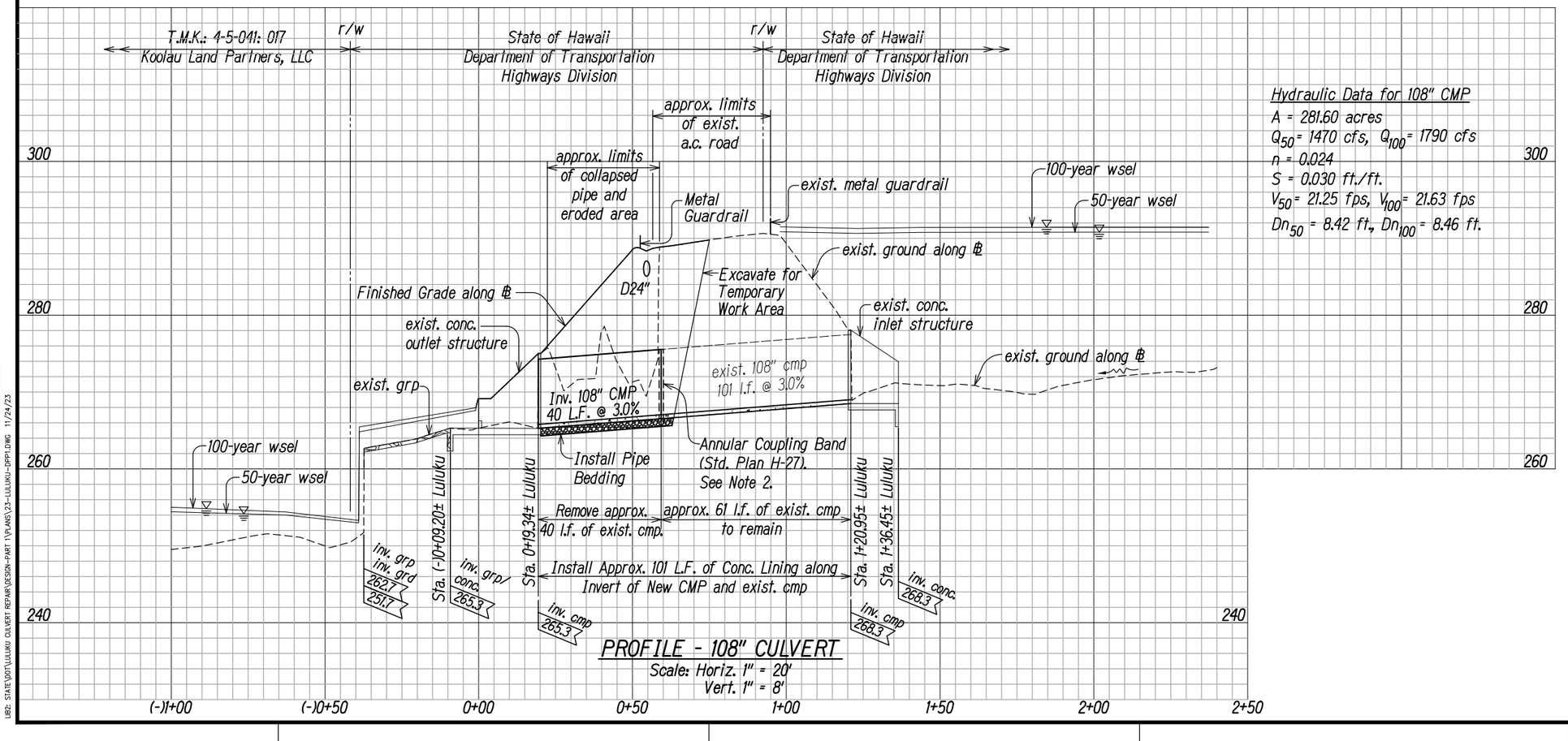
Scale: As Shown Date: June 2024

SHEET No. C3.2 OF C3.2 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H3-1(082)	2024	23	41



PLAN - 108" CULVERT
Scale: 1" = 20'



PROFILE - 108" CULVERT
Scale: Horiz. 1" = 20'
Vert. 1" = 8'

Hydraulic Data for 108" CMP
A = 281.60 acres
Q_{50} = 1470 cfs, Q_{100} = 1790 cfs
n = 0.024
S = 0.030 ft./ft.
V_{50} = 21.25 fps, V_{100} = 21.63 fps
Dn_{50} = 8.42 ft., Dn_{100} = 8.46 ft.

(1) ℄ Sta. 0+00 Luluku Stream
=℄ Sta. 8+80.29 Temporary Connector Road
(o/s 75.8' Lt.)

(2) ℄ Sta. 1+35.36 Luluku Stream
=℄ Sta. 8+72.81 Temporary Connector Road
(o/s 59.35' Rt.)

(3) ℄ Sta. 1+86.66 Luluku Stream
=℄ Sta. 8+94.44 Temporary Connector Road
(o/s 104.61' Rt.)

(A) 98° 15' 32" 135.36

(B) 66° 17' 30" 51.30

Note:

1. New 108" CMP shall be 10 ga. (t=0.138") galvanized with 3"x1" corrugations.
2. Annular coupling band shall be considered incidental to Pay Item No. 603.0300 108-Inch Corrugated Steel Pipe, Sheet Thickness, 0.138-Inch and shall not be paid for separately.

LEGEND:

- Approximate Exist. 1-ft Contour
- 280 Approximate Exist. 5-ft Contour
- Grade Bank (For Temporary Work Area)
- Approximate Limits of Excavation (For Temporary Work Area)
- New CMP
- OHWM Ordinary High Water Mark

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THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PorEn, Inc. dba PARK ENGINEERING — APRIL 30, 2026 LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN AND PROFILE
108" CULVERT

LULUKU CULVERT REPAIR
Vicinity of Interstate Route H-3 (Mile Post 8.67) and Likelike Highway
Federal-Aid Project No. IM-H3-1(082)

Scale: As Shown Date: June 2024

SHEET No. C4.1 OF C4.2 SHEETS

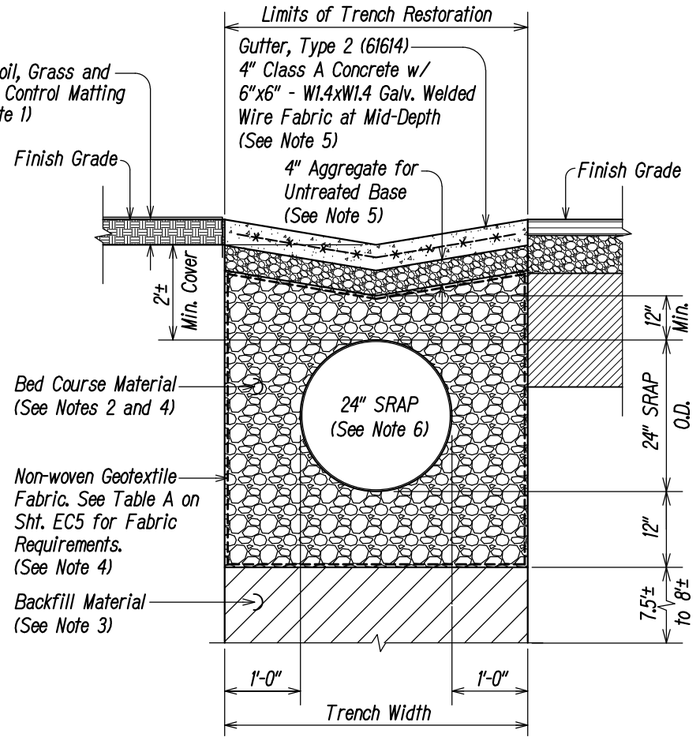
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | NOTE BOOK | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | No.

U82: STATE\DOT\LULUKU CULVERT REPAIR\DESIGN-PART 1\PLANS\23-LULUKU-DPP1.DWG 11/24/23

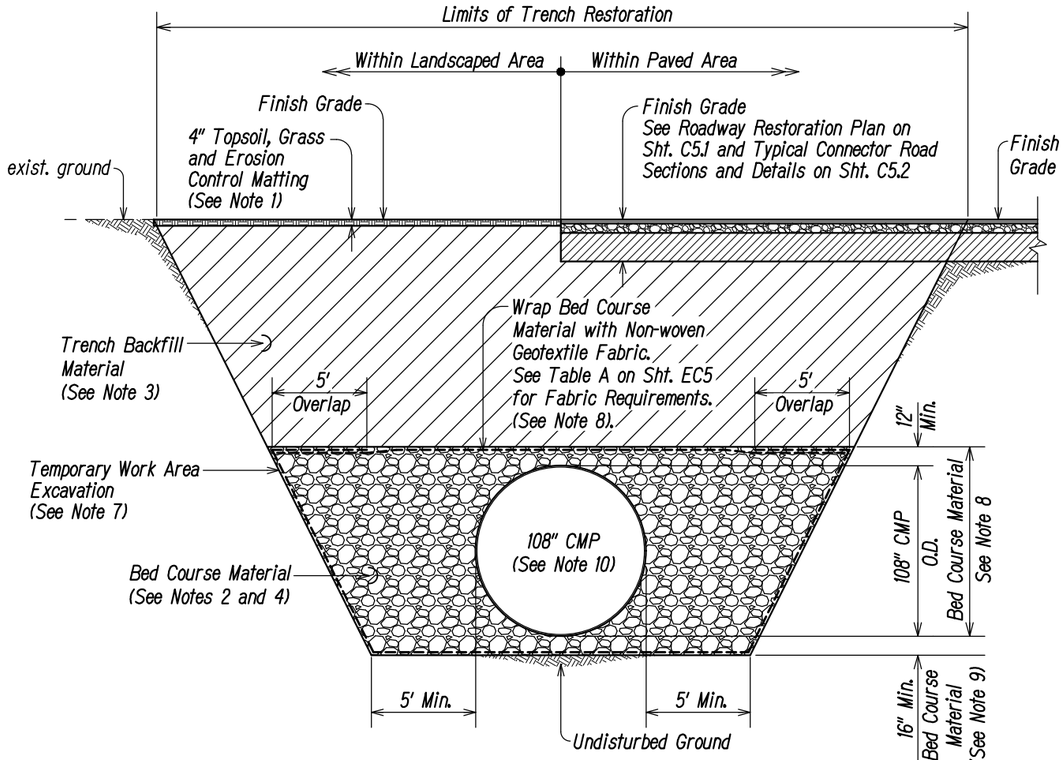
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H3-1(082)	2024	27	41

Notes:

1. The Contractor shall install Erosion Control Matting over all excavated, graded and disturbed area to be grassed. Additional Erosion Control Matting installed over disturbed area not identified on the plans will not be paid for separately but shall be considered incidental to Item No. 663.0100 Erosion Control Matting. Topsoil to be paid for under Item No. 617.0100 Imported Planting Soil. Grass to be paid for under Item No. 641.0100 Hydro-mulch Seeding.
2. Bed Course Material shall consist of No. 3B Fine (ASTM C33 No. 67 Gradation) Basalt Aggregate wrapped in non-woven filter fabric (Mirafi 180N or approved substitute).
3. Backfill material shall be in accordance with the Special Provisions Section 206 - Excavation and Backfill for Drainage Facilities and shall be paid for under Item No. 206.0100 Excavation for 108-Inch Corrugated Metal Pipe.
4. Work to be paid for under Item No. 206.0200 Excavation for 24-Inch Spiral Rib Aluminum Pipe.
5. Aggregate for Untreated Base and Concrete Gutter to be paid for under Item No. 638.0100 Gutter, Type 2 (61614).
6. 24-Inch SRAP to be paid for under Item No. 603.0200 24-Inch Spiral Rib Aluminum Pipe, Sheet Thickness, 0.105-Inch.
7. The Contractor shall hire civil engineers experienced in geotechnical and drainage/hydraulic engineering and a structural engineer, all licensed in the State of Hawaii, to evaluate and provide design calculations and shop drawings for the temporary excavation including the stabilization of the bottom and side slopes. Plans and calculations shall be submitted to the Engineer for review and acceptance prior to performing any work on the excavation. The work for the evaluation, design, construction and stabilization of the excavation will not be paid for separately but shall be considered incidental to Item No. 206.0100 Excavation for 108-Inch Corrugated Metal Pipe.
8. Work to be paid for under Item No. 206.0100 Excavation for 108-Inch Corrugated Metal Pipe.
9. Work to be paid for under Item No. 603.0100 Bed Course Material for Culvert.
10. 108-Inch CMP to be paid for under Item No. 603.0300 108-Inch Corrugated Steel Pipe, Sheet Thickness, 0.138-Inch.



TYPICAL TRENCH DETAIL
FOR 24" SRAP DRAIN LINE
Scale: 1" = 1'-0"



TYPICAL TRENCH DETAIL
FOR 108" CMP CULVERT
Scale: 1/4" = 1'-0"

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Russell M. Arakaki — APRIL 30, 2026
PorEn, Inc. dba PARK ENGINEERING — LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

LULUKU CULVERT REPAIR
Vicinity of Interstate Route H-3 (Mile Post 8.67)
and Likelike Highway
Federal-Aid Project No. IM-H3-1(082)

Scale: As Shown Date: June 2024

SHEET No. C6.1 OF C6.2 SHEETS

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

UB2: STATE\DOT\LULUKU CULVERT REPAIR\DESIGN-PART 1\PLANS\27-LULUKU-DRAINAGE DET1.DWG 11/24/23

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H3-1(082)	2024	28	41

Notes:

1. The Contractor shall protect the existing 108 inch corrugated metal pipe (cmp) to remain.

2. The Contractor shall install adequate temporary supports and bracing within the existing pipe. The Contractor shall consult with a Geotechnical and/or Structural Engineer to determine the required amount of supports and bracing based on his construction means and methods.

   The Contractor shall consider the potential impacts the temporary supports and bracing may have on stream flow. The temporary supports and bracing should minimize flow obstructions and shall not be a source of pollutants. The Contractor shall develop and implement a contingency plan to:

   a. Restore the flow capacity of the drain line, including but not limited to removing the temporary supports and bracing, in the event of a severe storm and/or a natural disaster. A severe storm is any event that exceeds the capacity of the temporary bmps or the 2-year 24-hour rainfall event, whichever is less.

   b. Prevent and respond to any unauthorized discharge of pollutants resulting from a severe storm event or from improperly designed, maintained or implemented bmp measures.

3. The Contractor shall remove and clean all dirt, rust, scales and other foreign matter from the surface of the CMP to be in contact with epoxy and asphalt waterproofing as directed by the Engineer.

4. The culvert surface to be in contact with epoxy shall be clean and dry. The contractor shall apply one (1) coat of epoxy bonding agent to the contact area between the existing/prepared concrete and the newly placed concrete according to the epoxy manufacturer's specifications. The epoxy bonding agent shall be applied just before placement of the concrete. Any excess epoxy bonding agent that collects in pockets shall be removed.

5. The fiber reinforced concrete shall have a minimum 28 day compressive strength (f'c) of 4,000 psi. A shrink reducing admixture, Tetraguard AS20, Eclipse Plus or approved equal shall be incorporated into the concrete at a minimum dosage of 96 ounces per cubic yard of concrete mixture. The total free water shall not exceed 94 pounds per cubic yard of concrete and the water to cement ratio shall not exceed 0.45. The slump of the concrete shall be 4 to 7 inches. Use water-reducing, water-retarding, or high range water reducing admixtures as needed to achieve the desired slump and workability. The Contractor shall proportion the concrete lining mixture to provide a workable mix of uniform composition and consistency. No water shall be added at the jobsite.

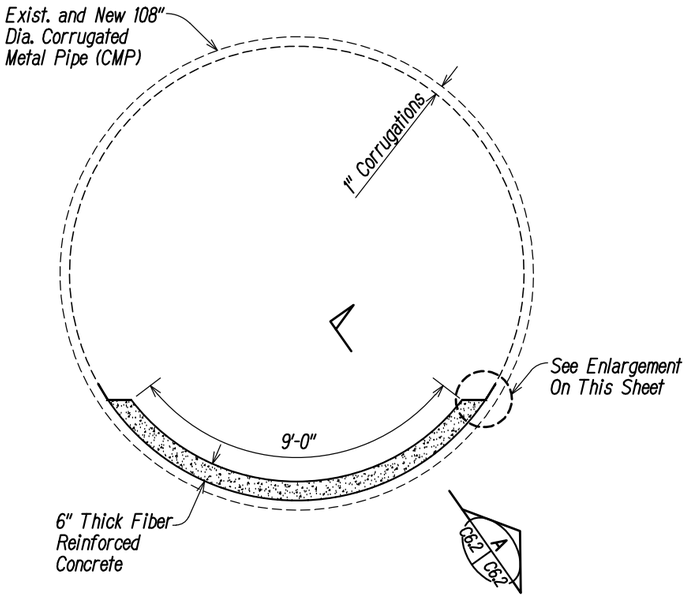
6. The Contractor shall score or saw cut 1/8 inch wide x 1 inch deep contraction joints in the concrete lining along the crest of the corrugations and at joints in the pipe at 10-feet maximum on center.

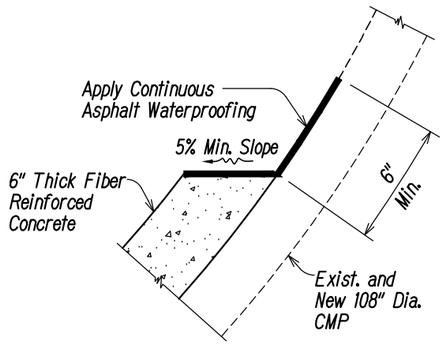
7. The Contractor shall apply two (2) coats of asphalt waterproofing on each side of the concrete lining and at scored or saw cut joints after the concrete has cured. The asphalt waterproofing at scored or saw cut joints shall be 12 inches minimum wide centered about each joint. The finished asphalt waterproofing coating shall be a continuous film, free of voids, gaps and/or pin holes.

8. All construction joints for the concrete lining shall be perpendicular to the surface and extend to the full depth of the concrete lining.

9. The Contractor shall install the concrete lining during dry weather conditions only. The Contractor shall allow a minimum curing period of 48 hours before allowing flow on the completed concrete lining.

10. The work and materials, as described on this sheet and in the Special Provisions, to install the fiber reinforced concrete lining shall be paid for under Item No. 653.0100 Fiber Reinforced Concrete Lining for 108-Inch Culvert.





ENLARGEMENT
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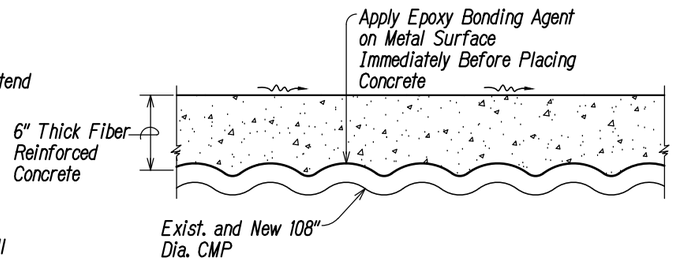

SECTION
Not To Scale

A
C6.2 | C6.2

TYPICAL SECTION
CONCRETE LINING FOR EXIST. AND NEW 108" DIA. CMP
Not To Scale

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dba PARK ENGINEERING

APRIL 30, 2026
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

LULUKU CULVERT REPAIR
Vicinity of Interstate Route H-3 (Mile Post 8.67) and Likelike Highway
Federal-Aid Project No. IM-H3-1(082)

Scale: As Shown Date: June 2024

SHEET No. C6.2 OF C6.2 SHEETS

ORIGINAL PLAN
NOTE BOOK
No.
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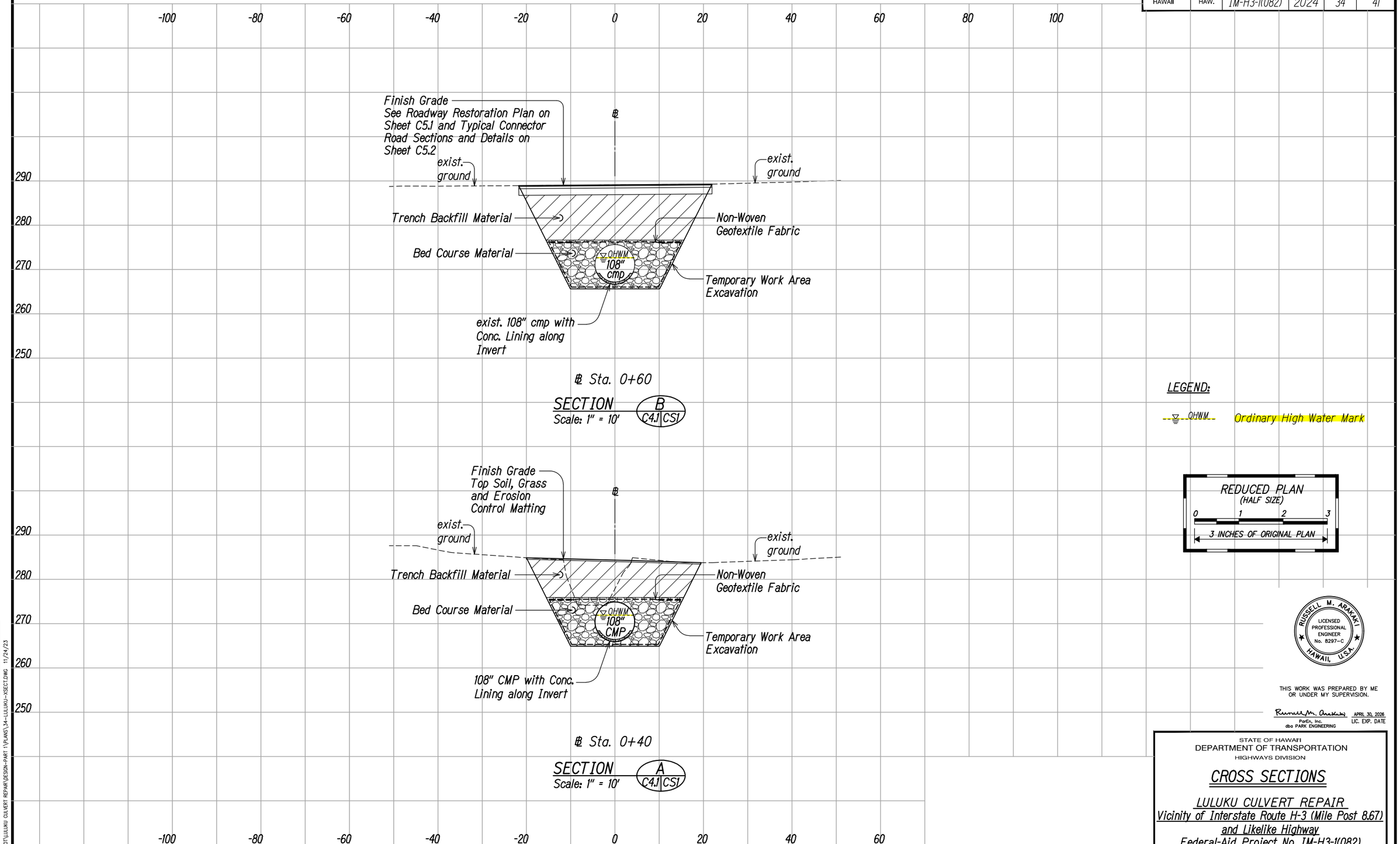
UB2: STATE\DOT\LULUKU CULVERT REPAIR\DESIGN-PART 1\PLANS\28-LULUKU-DRAINAGE DET2-CONC LINING.DWG 11/24/23

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H3-1(082)	2024	34	41



LEGEND:

OHWM Ordinary High Water Mark

REDUCED PLAN
(HALF SIZE)
0 1 2 3
3 INCHES OF ORIGINAL PLAN

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ParEn, Inc.
dba PARK ENGINEERING

APRIL 30, 2026
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSS SECTIONS

LULUKU CULVERT REPAIR
Vicinity of Interstate Route H-3 (Mile Post 8.67) and Likelike Highway
Federal-Aid Project No. IM-H3-1(082)

Scale: As Shown Date: June 2024

SHEET No. CSI OF CSI SHEETS

ORIGINAL PLAN
NOTE BOOK
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U82: STATE\DOT\LULUKU CULVERT REPAIR\DESIGN-PART 1\PLANS\34-LULUKU-XSECT.DWG 11/24/23