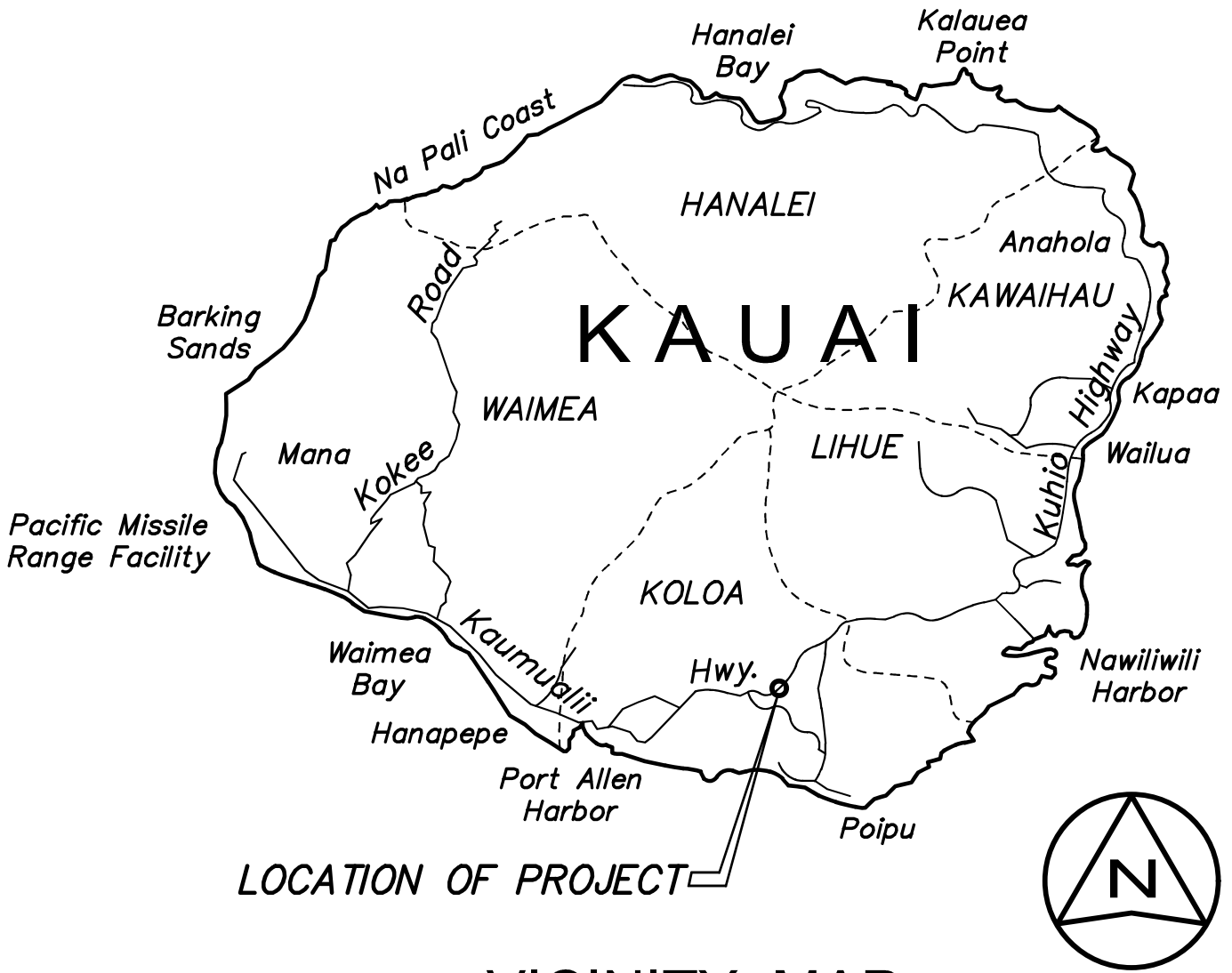
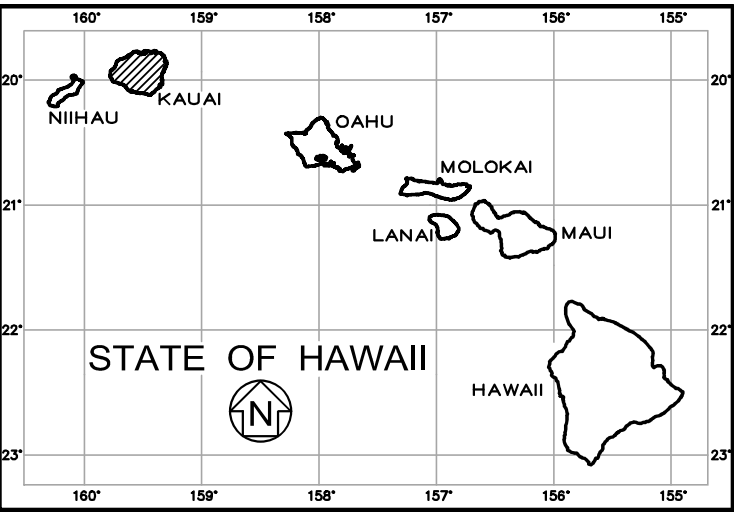


INDEX TO DRAWINGS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STANDARD PLANS SUMMARY
3-4	GENERAL NOTES
5	ENVIRONMENTAL PROTECTION NOTES
6	KIUC NOTES
7-8	HAWAIIAN TELCOM NOTES
9-10	DEPARTMENT OF WATER NOTES
11	LEGEND & ABBREVIATIONS
12-13	WATER POLLUTION AND EROSION CONTROL NOTES
14-16	BMP NOTES AND DETAILS
17	EROSION CONTROL MATTING DETAILS
18	GENERAL PLAN
19-20	EROSION CONTROL PLANS
21-22	DEMOLITION PLANS
23	SITE PLAN
24	GRADING PLAN
25-27	DRAINAGE PLAN AND PROFILES
28-35	DRAINAGE DETAILS
36-37	DRIVEWAY RESTORATION PLAN AND DETAILS
38	UTILITY PLAN
39-43	CROSS SECTIONS
44	TRAFFIC CONTROL PLAN
45	WORK ZONE SIGNING PLAN, NOTES & DETAILS
46-47	STRIPING PLAN AND DETAILS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HONOLULU, HAWAII
PLANS FOR
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
FEDERAL-AID PROJECT NO. ER-27(008)
DISTRICT OF KOLOA
ISLAND OF KAUAI

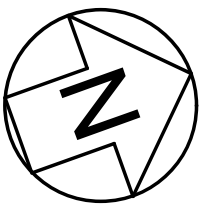
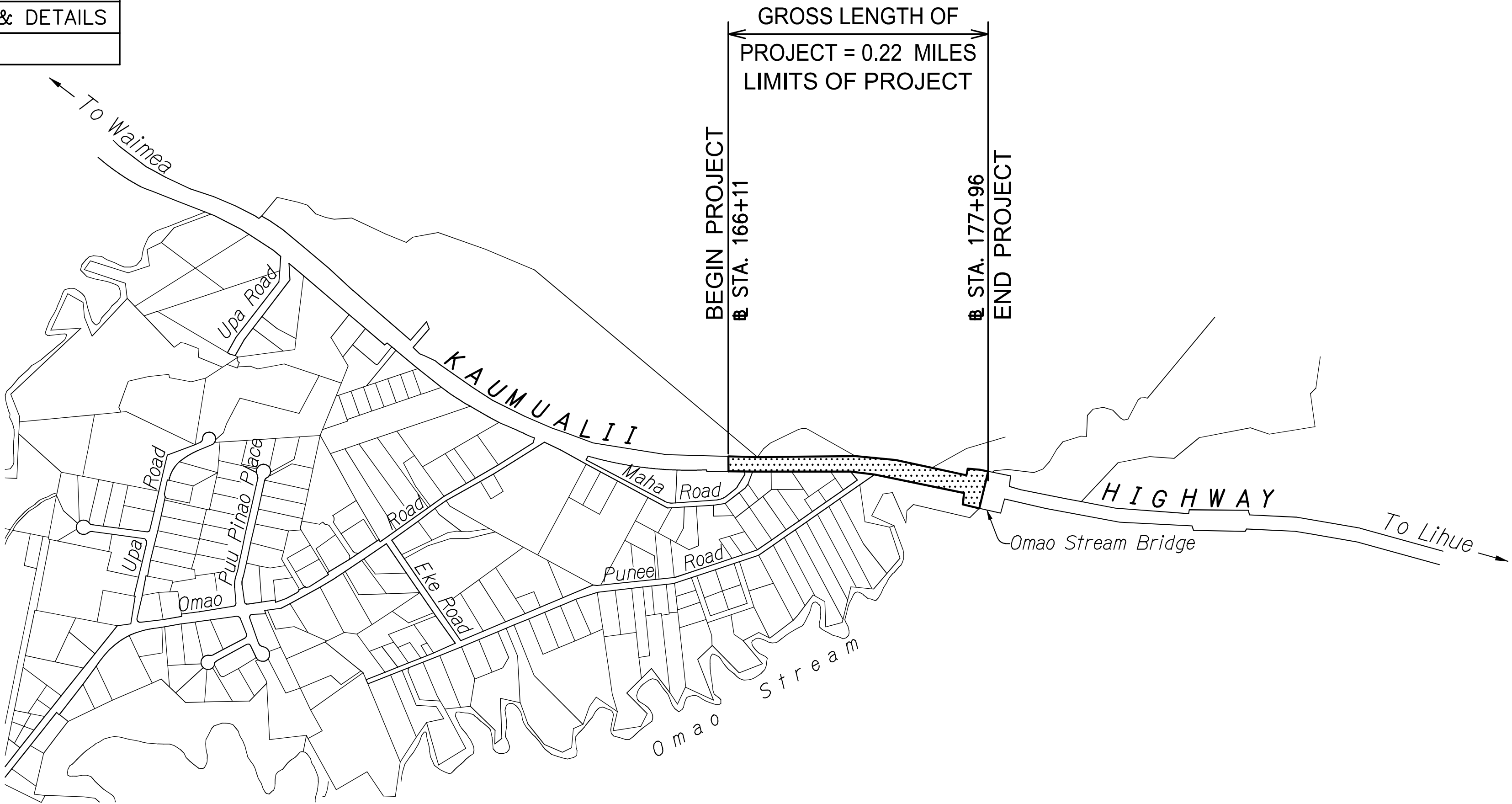
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	1	47



VICINITY MAP
NOT TO SCALE



MILE POST 8.28 to MILE POST 8.50 (KAUMUALI'I HIGHWAY)



LOCATION PLAN

Design Designation	Kaumuali'i Highway (MP 8.28 to 8.50)
ADT (2026)	17,800
ADT (2036)	20,100
ADT (2046)	22,300
DHV (2036)	1,610
DHV (2046)	1,780
D	60/40
T	4.0
T24	4.5
K	8.0

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

APPROVED:

FOR DIR. OF TRANSPORTATION DATE 08/10/2026

DESIGNED BY PAREN, INC.
MANAGED BY HWY-K
PHONE (808)241-3000
DATE SEPTEMBER 2026

STANDARD PLANS SUMMARY

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	2	47

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	CENTILEVER SIGN FRAME DETAIL AND SECTION	05/31/07
TE-17C	CANTILEVER SIGN FRAME DETAIL	05/31/07
TE-17D	CENTILEVER SIGN FRAME SECTION	05/31/07
TE-17E	CENTILEVER SIGN FRAME DETAILS	05/31/07
TE-18A	TWO POST OVERHEAD SIGN FRAME ELEVATIONS	05/31/07
TE-18B	TWO POST SIGN FRAMING PLAN SECTION	05/31/07
TE-18C	TWO POST SIGN FRAMING SECTIONS AND DETAILS	05/31/07
TE-18D	TWO POST SIGN FRAME DETAILS	05/31/07
TE-18E	TWO POST SIGN FRAME DETAILS	05/31/07
TE-19A	OVERHEAD SIGN FRAMING SCHEDULE	05/31/07
TE-19B	SIGN POST DRILLED SHAFT FOUNDATION	05/31/07
TE-19C	SPREAD FOOTING	05/31/07
TE-19D	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.1	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.2	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.3	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.4	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19D.5	SIGN FRAME FOUNDATION SCHEDULE	05/31/07
TE-19E	ANCHORAGE DETAILS	05/31/07
TE-19F	ANCHORAGE DETAILS	05/31/07
TE-19G	MISCELLANEOUS SIGN FRAME DETAILS	05/31/07
TE-19H	LUMINAIRE WALKWAY SUPPORT	05/31/07
TE-19J	FIXED MESSAGE LUMINAIRE SUPPORT	05/31/07
TE-19K	MISCELLANEOUS SIGN DETAILS	05/31/07
TE-19L	MISCELLANEOUS SIGN DETAILS	05/31/07
TE-19M	MISCELLANEOUS SIGN FRAME DETAILS	05/31/07
TE-20	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20A	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20B	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-20C	SUPPORTS FOR GROUND MOUNTED GUIDE SIGN	05/31/07
TE-21A	SIGN BREAKAWAY MOUNTS	05/31/07
TE-21B	SIGN BREAKAWAY MOUNTS	05/31/07
TE-22	LAMINATED ALUMINUM SIGN PANELS (OVERHEAD)	07/11/08
TE-23	LAMINATED ALUMINUM SIGN PANELS (GROUND MOUNTED)	05/31/07
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	05/31/07
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 PLAN APPLICABLE TO THIS PROJECT ARE INDICATED BY A "●" NEXT TO THE STANDARD PLAN NO. (B-01 ●)



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Russell M. Araki
P.E., Inc.
dba PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD PLANS SUMMARY
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)
Scale: None
Date: September 2026
SHEET No. 1 OF 1 SHEETS

DATE: _____

ORIGINAL PLAN: _____

NOTE BOOK No.: _____

SURVEY PLOTTED BY: _____

DRAWN BY: _____

DESIGNED BY: _____

QUANTITIES BY: _____

CHECKED BY: _____

GENERAL NOTES:

GENERAL:

1. The scope of work for this project includes but is not limited to: demolition and removal of existing grated drain inlet, concrete apron, asphalt concrete pavement and chain link fencing; fill the existing 24" RCP drain pipe crossing Kaumuali'i Highway with controlled low-strength material (CLSM) and abandon in place; installation of 42" concrete drain line, drain manhole, grated drain inlets, concrete outlet structure, grouted rubble paving, concrete apron, asphalt concrete pavement, chain link fencing and erosion control matting; clearing and grubbing; excavation; backfilling; grading; and grassing.
2. The contractor is reminded to comply with the requirements of Hawaii Standard Specifications for Road and Bridge Construction, 2005, Subsection 105.16 - Subcontracts.
3. Construction and restoration of all existing highway facilities within State highway right-of-way shall be done in accordance with all applicable sections of the current "Standard Specifications For Road and Bridge Construction" and "Specification for Installation of Miscellaneous Improvements Within State Highways" of the State Highways Division, and the Project Plans and Special Provisions.
4. 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 the work is possible. The Contractor shall make an independent check on the ground by probing and/or checking with the various utility companies or government agencies to verify the exact locations and depths of the existing utilities and obstructions. The Contractor shall exercise proper care in excavating in the area. Whenever connections of new utilities are shown on the plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavating. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations unless they are determined to be a differing site condition by the Engineer. The Engineer will solely determine if the damage is due to a differing site condition. All damaged portions shall be replaced or repaired and shall include all upgrades and betterments to the standards of the utility or agency.
5. The Contractor's attention is directed to the following Sections of the Special Provisions: Subsection 107.06 - Contractor Duty Regarding Public Convenience; Subsection 104.11 - Utilities and Services; and Section 645 - Work Zone Traffic Control.
6. Smooth riding connections shall be constructed at the limits of roadway resurfacing, including the beginning and end of project, connecting approaches, side streets and driveways as shown on the plans and/or as directed by the Engineer.
7. All saw cutting work shall be considered incidental to the various contract items. The Contractor shall clean up any cuttings and shall not wash down material into the storm drain or sewer systems.
8. All 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.
9. All work to remove temporary facilities by the Contractor shall be considered incidental to the various contract items in the proposal.
10. Removal and disposal of existing coconut trees shall be considered incidental to the various contract items and will not be paid separately.

11. In accordance with Hawaii Standard Specifications for Road and Bridge Construction, 2005, Subsection 107.02 - Permits and Licenses, the Contractor shall obtain all permits and licenses required to perform the work and the Contractor assumes exclusive responsibility for identifying, acquiring and paying for all permits and licenses required to perform the work.
12. All works of toning, probing, hand digging, and all other means of utility verifications shall not be paid for separately, but shall be considered incidental to the various contract items.
13. The Permit to Perform Work Upon State Highways may be revoked because of default in any of the following, but not limited to, conditions:
- a. Work performed before or after permitted hours.
 - b. Failure to maintain roadway surfaces in a smooth and safe condition.
 - c. Failure to clean up construction debris generated from project work.
 - d. Failure to provide proper traffic control, e.g., traffic congestion, failure to coordinate with other contractors working in the area, refusal to adjust traffic control when requested by the Engineer.
 - e. Failure to replace damaged pavement markings and signs.
 - f. For reasons determined by the Engineer to be of benefit to the State or Public or both.
- Any revocation of the permit shall be at the Contractor's expense and no additional cost to the State and no additional contract time will be added.
14. All materials including but not limited to guardrail, rebar, and drainage assembly shall be brand new and free of defects, e.g., rust, damage, or corrosion. The contractor shall promptly replace any material exhibiting any of these characteristics at no additional cost or time to HDOT. No drainage assembly, or guardrail removed shall be reused.
15. The contractor shall allow HDOT personnel unlimited and unimpeded access to materials that will be used in the project at all times for inspection and/or testing (this includes but is not limited to access to contractor or subcontractor's base yards, manufacturer yard, production plant, separate storage areas). The Engineer reserves the right to reject any material from being used in the project that the contractor refuses to provide access to.

NOTIFICATION:

16. The Contractor shall notify the Engineer, through the e-construction platform, two (2) weeks prior to starting paving operations.
17. 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 cost incurred by damages to existing utilities will be borne by the Contractor. Contractor shall request from One-Call Center, Ph./866-423-7278. The Contractor shall also call the County of Kauai, Department of Water, PH (808) 245-5400 and the Wastewater Division, Ph. (808) 241-6642 for toning waterlines and sewerlines respectively. The Contractor shall document this effort in the e-construction platform.
18. In the event any artifacts or human remains are uncovered during construction operations, the Contractor shall immediately suspend work and notify the Kauai Police Department, the State Department of Land and Natural Resources-Historic Preservation Division (808-692-8015), and the State's Engineer.
19. The Contractor shall place an advertisement in the newspaper for the temporary road closure. The "Notice to Motorist" shall be placed in the The Garden Island for three consecutive days within one week before the temporary lane closures. The "Notice to Motorist" shall be in accordance with the current Hawaii Standard Specifications for Road and Bridge Construction, 2005, Subsection 107.06 - Contractor Duty Regarding Public Convenience and Subsection 645.03(H) - Advertisement.

20. All public notices and advertisements shall be incidental to lump sum traffic control item 645.1000 - Traffic Control and shall not be paid for separately.

PRECAUTION:

21. The Contractor shall take proper precautions in accordance with the current Hawaii Standard Specifications for Road and Bridge Construction, 2005, Subsection 107.12 Protection of Persons and Property. The Contractor shall exercise care when performing work in or adjacent to the State highway right-of-way. Damages to the existing facilities shall be immediately reported to the respective utility company, private owner, and/or County/City/State agency. The repair work shall be done at the Contractor's expense.
22. The Contractor shall comply with utility coordination requirements per Hawaii Standard Specifications for Road and Bridge Construction, 2005, Subsection 104.11. As part of coordination requirements, the Contractor shall include the Engineer in all email correspondences with utilities.
23. Contractor shall take proper precautions when working near overhead lines.
24. The Contractor shall exercise extreme caution to preserve all existing right-of-way, centerline, as-built, construction, and NGS (horizontal and vertical in the NGS database) monuments located within the State of Hawaii right of way. If monuments are disturbed or destroyed, the Engineer shall be notified. Reconciliation to the Right-of-Way Baseline and/or a boundary study and determination may be required prior to re-installation of the disturbed or destroyed monuments. The Engineer shall be contacted for guidelines and procedures prior to construction.

A State of Hawaii Licensed Surveyor shall perform the location and staking of the reset monument. The DOT Standard Plans & Specifications, with the exception of NGS monuments which shall have a NGS approved "brass disk" marker, shall be referenced for the monument type and materials.

Any NGS vertical monuments that are deemed necessary for relocation due to construction shall follow the NGS benchmark reset procedures written by Curtis Smith dated September 2010 or newer. All work must be done by an electronic digital level that is acceptable by NGS for second-order class one or higher work. The surveyor must use two one-piece invar barcode rods with current certifications with struts with 15 lbs. turning plate or turtles; and/or turning pin with driving cap and temperature readings. Contact NGS prior to any work to ensure all equipment meets reset specifications. A State of Hawaii Licensed Surveyor shall perform the relocation. All work must be submitted both in electronic and hard copy formats to NGS and the Engineer.

All monument work shall be considered incidental to this project, unless noted otherwise.

WORK EXECUTION:

25. All lanes shall be open to traffic during peak hours of 6:30 a.m. to 8:30 a.m., during afternoon peak hours from 3:30 p.m. to 6:30 p.m., and during off work hours. The Engineer may authorize only one lane of the highway to be closed at night during the allowable lane closure hours. Failure of the Contractor to open all lanes of traffic during the times specified above shall result in assessment of rental fees as specified in Section 108.09 - Rental Fees for Unauthorized Lane Closure or Occupancy.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	3	47

26. The allowable lane closure hours shall be at night on the following days and times, except holidays: Sunday thru Thursday, 9:00 p.m. to 12:00 midnight Monday thru Friday, 12:00 midnight to 5:00 a.m.
27. 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 ANS/I/SEA 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 enforcements personnel directing traffic, investigating accidents, handling lane closures and obstructed roadways.
28. 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. Prior to start of work, the contractor shall obtain a permit to use the property within the highway right-of-way from the State of Highways Division at telephone no. (808) 241-3000 or dot.hwyk.permits@hawaii.gov.
29. The contractor, at his own expense, shall keep the project area and surrounding area free from dust nuisance.
30. The Contractor shall reference, to the satisfaction of the Engineer, all existing traffic signs, posts & pavement markings prior to the commencement of construction. The Contractor shall replace or repair all traffic signs, posts & pavement markings disturbed by his activities, at his expense, unless directed otherwise by the Engineer or his representative.
31. All regulatory, guide and construction signs and barricades shall have a high intensity reflective background. Portable concrete barriers shall be reflectorized in accordance with the "Standard Plans", State of Hawaii, Department of Transportation with the following exceptions: In addition to the steady burn amber lights, an amber RM-3 shall be placed on the barrier equal distant from the steady burn amber lights. A 4-inch retroreflective strip shall be placed on the barricade facing traffic for the entire length of the barrier. All end treatments shall be MASH TL-3 compliant not NCHRP 350 TL-3.

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



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Russell M. Araki
Professional Engineer
Lic. Exp. Date: APRIL 30, 2028
P&E, Inc.
dba PARK ENGINEERING

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
GENERAL NOTES	
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS VICINITY OF OMAO STREAM BRIDGE Federal-Aid Project No. ER-27(008)	
Scale: As Shown	Date: September 2026
SHEET No. NI OF N8 SHEETS	

GENERAL NOTES (CONTINUED):

32. The Contractor shall submit 10 sets of FHWA approval letters certifying compliance with AASHTO Manual for Assessing Safety Hardware (MASH) for signs, sign supports, barricades, delineators and other traffic control devices. Use of signs, sign supports, barricades, delineators, cones, vertical panels, and other traffic control devices that are not certified to be MASH compliant will not be allowed.
33. No sections where guardrail has been removed shall be left unattended at the end of each work day. Open sections shall be shielded by Portable Concrete Barrier, unless otherwise approved by the Engineer. For Portable Concrete Barrier details, refer to Standard Plans TE-42 and TE-43, Furnishing, installing, and maintaining of these devices shall be considered incidental to the various contract items and will not be paid separately.
34. All traffic control devices including signs, barricades, delineators and markers, shall conform to the American Traffic Safety Services Association (ATSSA) Quality Standard for Work Zone Traffic Control Devices, and the MUTCD. Compliance with these requirements shall be as described in Section 645 - Work Zone Traffic Control.
35. All construction signs shall be left in place until all construction items have been completed unless they are occupying a lane or shoulder that is not permitting free and safe passage of traffic during non-working hours or otherwise directed by the Engineer. The Contractor shall obtain prior approval from the Engineer to remove construction signs.
36. In accordance with Hawaii Standard Specifications for Road and Bridge Construction, 2005, Subsection 105.10 - Construction Stakes, Lines and Grades, after the project is completed, the Contractor shall restore grades and ground cover within the project limits and surrounding areas affected by the project to a condition equal or better than the existing condition prior to construction.
37. Contractor shall submit requests for detours and lane closures in accordance with Hawaii Standard Specifications for Road and Bridge Construction, 2005, Subsection 645.03(F) - Lane Closures shall follow the minimum time frames required for implementation. Once the request has been approved by HDOT, the Contractor shall provide a written Weekly Lane Closure Request to the HDOT Construction Field Office at least 1-week ahead of all upcoming work.
38. The Contractor shall furnish two (2) police officers or flaggers for each location that requires work zone traffic control in accordance with Hawaii Standard Specifications for Road and Bridge Construction, 2005, Subsection 645.03 - Construction.
39. The Contractor shall submit a Daily Inspection Report signed by the Contractor's authorized representative daily to the Engineer and Inspector. Submittal frequency may be changed upon written request and approval from the Engineer.
40. The Contractor shall obtain a Community Noise Permit for all construction activities from the State Department of Health, Indoor and Radiological Health Branch, Noise Section.

ACCESS:

41. Driveways shall be kept open unless the owners of the properties using these rights-of-way are otherwise provided for satisfactorily.
42. The minimum clearance around fire hydrants, utility poles, light standard, or any other obstruction shall be 3'-0".
43. The Contractor shall provide for access to and from all existing driveways, sidewalk and ADA access routes, and side streets and cross streets at all time. This work shall be considered incidental to the various contract items.
44. The Contractor shall take proper safety precautions and responsibility for damage to any property during the course of the work in accordance with Hawaii Standard Specifications for Road and Bridge Construction, 2005, Subsection 107.12 -Protection of Persons and Property.

TRENCHING:

45. Unless otherwise noted, no trench shall be opened more than 300 feet in advance of installed and tested pipeline and/or ductline.
46. The Contractor shall provide an adequate and safe non-skid bridging material, including shoring, over trenches in pavement areas. The bridging shall be able to support all types of vehicular traffic.
47. The Contractor will make every effort to minimize the use and the duration of use of steel plates. All steel plates shall have a non-skid surface that shall be maintained throughout the steel plate's use. The State may require the backfilling of patches of trenches due to the excessive usage of steel plates. Steel plates shall not be used in lane or shoulders where the existing posted speed is 35 MPH or greater.
48. Temporary cold mix trench patches will be permitted in any given area for a maximum duration of two weeks, and shall be a minimum of 2-inches thick. All temporary patches shall be placed over properly placed and compacted backfill and base course layers. The Contractor shall be responsible for maintaining all temporary patches and to make repairs to unsatisfactory patches within 24 hours.
49. At the end of each day's work, the Contractor shall remove all equipment and other obstructions to permit free and safe passage of traffic and pedestrians.
50. When excavation is adjacent to or beneath existing utility structures or facilities, the Contractor shall protect existing structures and/or facilities with beams, struts, or underpinning while excavating beneath them to ensure no movement to utility structures or facilities.
51. The Contractor shall verify the presence of existing utilities which may conflict with activities and shall coordinate with the utility company for temporary relocation, as necessary. All costs associated with the temporary relocation shall be borne by the Contractor.

DRAINAGE:

52. The Contractor shall verify the locations of all existing culverts and utilities in the field. Any existing culverts and utilities damaged during construction shall be repaired or replaced by the Contractor at his own expense.
53. The existing drainage system will be maintained and 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 the various contract items.
54. The Contractor shall remove all silt and debris deposited in drainage facilities, on roadways and in other areas resulting from his work. The costs incurred for any necessary remedial action by the Engineer shall be payable by the Contractor.

TRAFFIC CONTROL:

55. The Contractor is reminded to comply with the maintenance of traffic requirements of Section 645 of the specification. The Contractor should note that if a Traffic Control Plan (TCP) is included in the contract, these are minimum requirements and may not constitute a complete traffic control plan. The Contractor shall incorporate additional traffic control plans needed based on contractor's means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable Manual Uniform Traffic Control Devices (MUTCD) requirements. All lane closures and traffic pattern changes (detours) not shown on the plans shall be submitted to the Engineer for approval in accordance with Specification Section 645 - Work Zone Traffic Control. For restrictions on lane closures, detours, construction work during peak hours, and other requirements regarding maintaining vehicular and pedestrian traffic, see Section 107.06 - Contractor Duty Regarding Public Convenience, and Section 645 - Work Zone Traffic Control.
- All traffic control related costs shall be included in lump sum Pay Item No. 645.1000 and shall not be paid for separately.

GRADING:

56. Slope protection should be established as soon as cut or fill slope is completed to reduce erosion potential.
57. No Contractor shall perform any grading work operations to cause rocks, soil, or debris in any form to fall, slide or flow onto adjoining properties, streets, or natural watercourse.
58. No Grading work shall be done on Saturdays, Sundays and Holidays, unless otherwise approved by the Engineer.
59. Temporary measures to control erosion and other pollutants shall be placed before any earth moving phase of the grading is initiated. Temporary erosion control shall not be removed before permanent erosion controls are in place and established. Temporary erosion control procedures shall be submitted to the Engineer for review and approval. This work shall be considered incidental to the various contract items and will not be paid separately.
60. A Grading Permit is required from the County "Department of Public Works" for the disposal of wasted excavated materials. Disposal site shall comply with the County's Sediment and Erosion Control Ordinances No. 808. This work shall be considered incidental to the various contract items and will not be paid separately.
61. No material or equipment shall be stored within County right-of-way, unless otherwise approved by the County and Engineer.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	4	47

ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
CHECKED BY	
DATE	



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Russell M. Araki
April 30, 2028
Lic. Exp. Date

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
GENERAL NOTES	
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS	
VICINITY OF OMAO STREAM BRIDGE	
Federal-Aid Project No. ER-27(008)	
Scale: As Shown	Date: September 2026
SHEET No. N2 OF N8 SHEETS	

MAMMALIAN RESOURCES 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 RESOURCES 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.
 - 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.
 - viii. 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 Hawaiian waterbirds (Hawaiian stilt, Hawaiian coot, Hawaiian common gallinule, and the Hawaiian duck):
- a. In areas where known presence of Hawaiian waterbirds occurs, post, implement and enforce reduced speed limits, and inform project personnel and Contractors of the presence of these endangered species on-site.
 - b. Because water resources occur in the project site, employ U.S. Fish and Wildlife Service (USFWS) Best Management Practices for Work in Aquatic Environments.
 - c. Where appropriate habitat occurs within the vicinity of the project area, survey for Hawaiian waterbirds and nests prior to initiation of project work using survey biologists familiar with the species' biology. Survey biologists should be trained and capable of identifying adults and juveniles of each species, nesting behaviors, and nests. Repeat surveys again within 3 days of project initiation.
 - i. Surveys for species and nests should be repeated when a delay of work occurs that is three days or more (during which the birds may attempt to nest).

- ii. If a nest or active brood is found, contact USFWS within 24 hours for further guidance. Establish and maintain a 100-ft buffer around all active nests and/or broods until the chicks/ducklings have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer. A biological monitor that is familiar with the species' biology shall be present on the project site during all construction or earth moving activities until the chicks/ducklings fledge to ensure that Hawaiian waterbirds and nests are not adversely affected.
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:

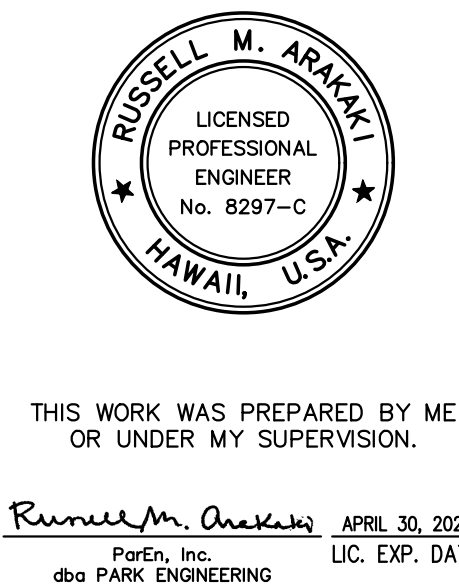
1. The Contractor shall take measures to reduce the spread of invasive species (e.g. Rapid Ohia Death):
- a. Minimize the movement of plant or soil material between work sites.
 - b. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading 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.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	5	47

HISTORICAL PRESERVATION NOTES:

1. In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 692-8015.
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."
4. If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a state furnished qualified archaeologist can assess the nature and significance of the find.
5. Photographs of the protection measures for Omao Stream Bridge shall be submitted to the Engineer immediately after implementation of the protection measures and prior to proceeding with any construction activities adjacent to the bridge.

DATE	____
SURVEY PLOTTED BY	____
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NOTE BOOK	____
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ENVIRONMENTAL PROTECTION #
HISTORICAL PRESERVATION NOTES
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026

SHEET No. N3 OF N8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	6	47

KAUAI ISLAND UTILITY COOPERATIVE (KIUC) CONSTRUCTION NOTES:

1. The location of existing Kauai Island Utilities Cooperative Facilities are approximate only. The Contractor shall verify the exact locations in the field.
2. The Contractor shall call Call Before You Dig number at 811 or email digsafelyhawaii.com for underground utility locates ten days before start of construction.
3. A pre-construction meeting with KIUC shall be held prior to the start of construction to coordinate KIUC coordination work.
4. Maintain a minimum 5'-0" horizontal clearance between waterlines and KIUC poles.
5. The Contractor shall notify KIUC's construction coordinator at 808-246-2323 (westside) or 808-246-4343 (eastside) at least five (5) days in advance, if KIUC facilities may be affected during construction.
6. The Contractor shall be responsible for all cost to adjust or relocate KIUC's facilities and for temporarily relocating facilities.
7. The Contractor shall be responsible for any damages to KIUC facilities. Any damages shall be reported immediately to KIUC trouble call line at 808-246-8200.
8. A minimum of 15 feet radial clearance is required when working within the vicinity of energized overhead electrical lines.

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

APPROVED:

[Signature]

5/29/26

KAUAI ISLAND UTILITY COOPERATIVE

DATE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Russell M. Araki APRIL 30, 2028
Lic. Exp. Date
ParEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KIUC NOTES

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown

Date: September 2026

SHEET No. *N4* OF *N8* SHEETS

HAWAIIAN TELCOM GENERAL CONSTRUCTION/DESIGN NOTES

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	7	47

1. The Contractor shall procure and pay for all licenses and permits from the City or State, and shall give all notices necessary and incident to the due and lawful prosecution of the work.
2. The Contractor shall provide all telecom drawings to HT-PlanReviews@hawaiiantel.com for review & approval at least 3 months ahead of the start of construction.
3. The Contractor shall submit an excavation permit and toning request to Hawaiian Telcom's Excavation Permit team at HT-Excavations@hawaiiantel.com or at <http://www.hawaiiantel.com/excavation>.
4. Prior to the excavation of the duct line, the contractor shall request Hawaiian Telcom to locate existing duct line wherever required. Call One-Call at *811 for underground cable locating and marking, five (5) calendar days advance notice is required. The locations of existing utilities are approximate only.
5. Contractor shall exercise extreme caution and shall maintain proper clearances whenever construction crosses or is in close proximity of Hawaiian Telcom facilities. The Contractor shall verify their locations and shall be liable for any damages to Hawaiian Telcom facilities. Any damages shall be reported immediately to Hawaiian Telcom's repair section at 808-643-3456. As a result of their operations, adjustments to the new duct line alignment, if required, shall be made to provide the required clearances.
6. The Contractor shall take necessary precaution not to damage existing cables or ducts. A Hawaiian Telcom inspector or designated representative is required to be at any job site whenever there will be a breakage into or entry into any structure that contain Hawaiian Telcom facilities. Temporary cable and duct supports shall be provided wherever necessary.
7. The Contractor shall notify Hawaiian Telcom's inspector or designated representative a minimum of five (5) calendar days prior to excavation, bracing, or backfilling of Hawaiian Telcom's structures or facilities. Email HT-Inspectors@hawaiiantel.com to find an inspector in your area.
8. All applicable construction work shall be done in accordance with the HAWAIIAN TELCOM STANDARD SPECIFICATIONS FOR PLACING COMMUNICATIONS SYSTEMS. All subsequent amendments and additions, and all other pertinent standards for telecommunication construction. Contractor shall familiarize their personnel by obtaining applicable specifications.

9. When excavation is adjacent to or beneath Hawaiian Telcom's existing structures or facilities, the contractor shall:
- a. Sheet and/or brace the excavation to prevent slides, cave-ins, or settlements to ensure no movement to Hawaiian Telcom's structures or facilities.
- b. Protect existing structures and/or facilities with beams, struts, or underpinning while excavating beneath them to ensure no movement to Hawaiian Telcom's structures or facilities.
10. The Contractor shall brace all poles or light standards near the new duct line, maintenance hole, or handhole during their operations.
11. The Contractor shall saw-cut A.C. pavement and concrete gutter wherever new maintenance holes, handholes, or duct lines are to be placed and shall restore to existing condition or better.
12. The Contractor shall comply with the policy adopted by the Department of Public Works, City and County, concerning the replacement of concrete sidewalks after excavation work.
13. The underground pipes, cables, or duct lines known to exist by the engineer from their search of records are indicated on the plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the area. Wherever connections of new utilities to existing utilities are shown on the plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines.
14. Wherever connections to existing utilities are shown on the plans, the contractor shall expose the existing lines prior to excavation of the main trenches to verify their locations and depths.
15. Trench shall have a flat surface and shall be deep enough to obtain minimum cover (see trench detail drawing 34028 in Section 12).
- a. 12" backfill above concrete encased or direct buried conduits must be soft earth or sand and free of rocks. Fill must be able to pass through a 1/2" screen.
16. The Contractor, at their own expense, shall keep the project and surrounding area free from dust nuisance. The cost for supplementary measures, which will be required by the Federal, State, or County, shall be borne by the Contractor.
17. The Contractor shall pump all maintenance holes dry during final inspection.

18. The Contractor shall notify Hawaiian Telcom inspector 5 calendar days prior to the pouring of concrete or backfilling.
19. When connecting to maintenance holes walls, all existing reinforcing bars shall be left intact. Ducts shall be adjusted in the field in order to clear reinforcing bars.
20. In joint trench applications, HT ducts should not be covered by other ducts in parallel. HT ducts cannot cross under power facilities.
21. The Contractor shall be responsible for laying out all required lines and grades and shall preserve all bench marks and working points necessary to lay out the work correctly. The new duct line shall be adjusted by the Contractor to suit the existing conditions and the details as described in the plans.
22. Minimum concrete strength (per BICSI OSPDRM6 C-3) shall be:
- For duct line & concrete pads 3000 psi at 28 days
- For maintenance hole 4000 - 4500 psi at 28 days or as specified in approved drawing
23. Bends in the duct alignment, shall have a minimum radius of 25 feet for a change of direction of more than 5 degrees, either horizontally or vertically, but the maximum vertical curve shall be 30 degrees. The maximum number of 30 degree bends should not add up to over 180 degrees.
- a. All 90 degree C-bends at a pole or at the building floor slab penetration, shall have a bend radius of ten times the diameter of the duct or greater. Manufactured 90 degree duct bends may be used only for service pole, equipment risers, or building entry, unless specifically indicated as acceptable.
- b. Limit runs to (2) 90 degree bends, and U-bends not allowed.

24. Conduit riser on service pole shall terminate at least 6" above grade with riser ends capped with weather head or plugged with duct seal.
- a. When telephone and electric service conduits terminate on the same service pole, preferably, the two conduits should be placed opposite each other on the service pole. However, it is permissible to place conduits with less separation but not less than 1/4 of the circumference of the pole (climbing space must be maintained).
- b. Riser conduit shall be properly strapped.
- c. Muletape or approved equivalent shall be installed in all conduits.
25. Suggested maximum lengths between maintenance holes are 450', 350' between 3x5 or 4x6 handholes, 250' between 2x4 pullboxes, and 150' between meter boxes; subject to engineering approval.
26. Recommend 18" under sidewalk but not less than 12" on private property, and 36" minimum in the right of way or under paved areas.

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
ORIGINAL PLAN	_____
NO.	_____

APPROVED:

Jon Lwi-Kwan

7/6/2026

HAWAIIAN TELCOM

DATE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Russell M. Araki APRIL 30, 2028
Lic. Exp. Date
P&E, Inc.
dba PARK ENGINEERING

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
HAWAIIAN TELCOM NOTES	
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS VICINITY OF OMAO STREAM BRIDGE Federal-Aid Project No. ER-27(008)	
Scale: As Shown	Date: September 2026
SHEET No. N5 OF N8 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	8	47

HAWAIIAN TELCOM GENERAL CONSTRUCTION/DESIGN NOTES (CONTINUED):

27. Clearance from power or foreign conduit - 3" when encased in concrete; 4" when separated with brick or mason; or 12" of well tamped earth. 6" when crossing or 12" when parallel to foreign objects, i.e., power, water or sewer pipe, etc.
- a. 6" when concrete encased from local power company.
 - b. Telecom should be above electrical when underground.
 - c. BWS requires a 3' minimum clearance to water mains (or 5' minimum to water mains 16" and larger) on Oahu only.
 - d. Check with local utilities for any changes to their spacing requirements as well.
28. Minimum Protection Requirements for facilities subjected to vehicular traffic:
- a. Conduit Size: 2" or 4"
 - b. Type: PVC Schedule 40
 - c. Method of Construction: Concrete Encased preferred OR required if less than 36" below grade or other applicable requirements (whichever is smaller)
29. Strongly recommend that trees with aggressive root systems are not planted near conduit system.
30. After duct line has been completed, a mandrel with a square front not less than 12" long and having a diameter of 1/4" less than the inside diameter of the duct, shall be pulled through each duct after which a brush with stiff bristles shall be pulled through to make certain that no particles of earth, sand, or gravel have been left inside. Ducts shall be completely dry and clean.
31. All ducts and conduits shall have an 1800# polyester mule-tape (NEPTCO, WPI800P, Hawaiian Telcom Material Code No. 571154) installed throughout its entire length. All ducts shall be capped to prevent entry of foreign material during construction and at the completion of installation.

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

APPROVED:

Jon Lui-Kuan
HAWAIIAN TELCOM

7/6/2026
DATE



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

Russell M. Araki APRIL 30, 2028
Lic. Exp. Date
ParEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAIIAN TELCOM NOTES
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026

SHEET No. N6 OF N8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	9	47

DEPARTMENT OF WATER CONSTRUCTION NOTES:

1. Unless otherwise specified, all materials and construction of water facilities and appurtenances shall be in accordance with the "Water System Standards, 2002" as adopted by the Department of Water, County of Kauai, including all subsequent amendments and additions.

2. All required project submittals (materials, shop drawings, etc.) shall be approved by the dow's project management section before a pre-construction conference can be scheduled. Once all project submittals have been approved by DOW construction engineer, the DOW construction engineer will notify the Contractor that a preconstruction conference can be arranged. The Contractor shall arrange a pre-construction conference at least ten (10) calendar days before construction and shall notify the Department of Water at least three (3) working days prior to start of construction.

3. The Contractor shall submit the names and telephone numbers of its authorized job superintendent and at least three (3) additional persons to contact in case of an emergency during non-working hours.

4. The Contractor shall notify the Department of Water at least 24 hours prior to any trenching, pipe laying, backfilling, testing or disinfection activities to ensure that inspection services will be available.

5. All materials (pipe, lubricants, paints, sealants, form oil, concrete admixtures, etc.) in direct contact with the potable water shall have National Sanitation Foundation (NSF) certifications. The Contractor shall submit these certifications to the Department of Water for review and approval prior to its application.

6. The location of existing water mains and appurtenances shown on the plans are approximate only. The Contractor shall verify the exact locations in the field. Excavation around any existing water main shall be done by hand.

7. The Contractor shall provide unobstructed access to existing hydrants, valves and water meters at all times.

8. The Contractor shall secure all excavations in accordance with OSHA regulations.

9. There shall be no physical connection between a public or private potable water system and a non-potable water system, sewer, or appurtenance thereto which could permit the passage of any sewage or polluted water into the potable water supply.

10. Trench excavation, backfilling in lifts, and repaving shall conform to the "Hawai'i Standard Specifications for Road and Bridge Construction, 2005" as amended.

11. Warning tape shall be in accordance with Division 200, Section 212.08 of the "Water System Standards." The warning tape shall be four mil thick, non-metallic, acid and alkali resistant polyethylene and 6-inches wide with minimum strength of 1750 psi lengthwise and 1500 psi crosswise. Tape color shall be "safety precaution blue" and shall bear a continuous printed inscription "CAUTION WATER LINE BURIED BELOW". Inscription shall be 2-inches high, black text.

12. All hydrants shall receive a minimum SSPC SP3 surface preparation and coated in accordance with Division 200, Section 206.01 of the "Water System Standards."

13. Unless otherwise directed, prior to the connection of any pipelines to the existing main, the pipelines installed shall be cleaned, pressure tested, chlorinated, flushed, and sampled in accordance with Division 300, Sections 302.27 to 302.29 of the "Water System Standards." Water samples shall be tested for total coliforms by a laboratory certified by the State of Hawaii to perform coliform analysis presence of coliform bacteria is unacceptable. In addition to the test for coliforms, a separate test for heterotrophic plate count (HPC) shall be conducted. The HPC count shall be less than 300 cfu/ml. Prior to chlorination, a water chlorination and sanitation contractor with a C-37D license shall submit a chlorination plan with water source, injection points, sampling points and procedure clearly defined for approval by the DOW thirty (30) calendar days prior to starting anticipated chlorination operations. The chlorination plan must be approved by the DOW's project management section prior to starting chlorination operations. All chlorination plans will be approved based on the current DOW requirements at the time of chlorination plan submittal. The tested pipelines must be connected to the existing DOW system within 14 calendar days of pulling the first disinfection sample tested by a certified laboratory. The Department of Water will require the contractor to redo the cleaning, pressure testing, and/or disinfection of the pipelines and/or laterals at the contractor's expense if the connection is not completed within these 14 calendar days. For disinfection of water laterals (service and fire) that are to be connected directly to existing DOW water lines, service and fire laterals shall be disinfected with a 1% (minimum) free chlorine (liquid sodium hypochlorite) solution by swabbing and/or soaking, unless otherwise approved by the Engineer.

14. Polyurethane foam "pigs" shall be "pushed" through the length of the installed pipeline using pressurized water.

15. All connections shall be scheduled in coordination with the Department of Water.

a. An advance deposit is required for operating valves, flushing lines and notifying consumers affected by a water shutdown during connections. the contractor will be charged the actual cost.

b. The contractor shall place the deposit prior to scheduling the connection date.

c. Shutdown connections shall be scheduled on Tuesdays through Thursdays. no connections shall be scheduled on Mondays, Fridays, weekends, and holidays, or from December 18 - January 8 of each year.

d. All materials shall be on hand and approved by the Engineer prior to scheduling the connection date.

e. Pumps used to de-water the connection area shall be operated in the presence of the engineer prior to scheduling the connection date.

f. All connections shall be performed in the presence of the Engineer.

g. No live taps shall be scheduled from December 24 - December 31 of each year.

16. In order to prevent damage to the polyethylene encasement from excessive handling, the polyethylene encasement shall be installed around the barrel of the ductile iron pipe at its final location along the trenchline. The polyethylene encased pipe shall be lifted using a fabric type sling or a suitably padded cable or chain to prevent damage to the polyethylene.

17. The Contractor shall take all necessary compaction tests while the waterline trench is being backfilled and while the subbase/ basecourse is being placed. If the test results indicate that additional compaction is required, the corrective work shall be completed before any additional trench excavation or placing of subbase/ basecourse is allowed. The Contractor shall retain the services of a registered geotechnical engineer for quality control. The compaction test results shall be certified by the geotechnical engineer and submitted to the Department of Water, State Highways Division (for work done within state r/w) and the Department of Public Works (for work done within county r/w). The geotechnical engineer shall certify that the compaction results meet the requirements of the current Standard Specifications for Road and Bridge Construction.

18. The Contractor shall connect all existing consumer piping to the new service laterals. The Department of Water will transfer the existing water meters only.

19. All fittings shall be mechanical joint (MJ) at each end unless otherwise noted. "Megalug" retainer glands shall be used with all mechanical joint fittings and valves used in connecting new water mains to existing water mains unless otherwise noted.

20. All water valves that will be abandoned in place shall be placed in the "closed" position. Remove top section of valve box and concrete settlement slab. Fill remainder of valve box with concrete. place backfill and repair pavement section to applicable state or county standards. backfill to finish grade in road shoulder area.

21. The Contractor shall obtain all applicable Department of Health permits prior to the start of construction. Permits include, but are not limited to, National Pollution Discharge Elimination System (NPDES) permits for storm water, hydrostatic test, dewatering, and for construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The Contractor shall be responsible for the proper disposal of storm water discharges and effluent associated with construction activities including hydrotesting and disinfection operations, to safeguard public health and safety in accordance with applicable Department of Health requirements. All permits and licenses for storm water and construction water disposal, including all application, charges, fees, and taxes, are the responsibility of the Contractor.

22. The Contractor is responsible for dewatering trench as necessary where groundwater is encountered. All associated costs for dewatering shall be borne by the Contractor.

23. The use of known sewer pump trucks is prohibited for DOW projects for any use, including but not limited to dewatering and testing of new facilities.

24. The Contractor shall verify outside diameter of all existing asbestos-cement (AC) waterlines to be connected. Contractor shall verify use of proper gaskets prior to connection. AC pipe and gasket information shall be submitted to engineer for approval.

25. All removal, disposal and connection work that involves asbestos pipe/material shall be done in the presence of or by a licensed asbestos Contractor. The licensed asbestos contractor shall submit their plan for all associated removal, disposal and connection work for the project to DOW for review and approval prior to conducting the work.

26. All connections to existing AC pipe shall be at the nearest AC pipe joint. AC pipe shall be removed by entire length(s) to facilitate the connection. Cutting of AC pipe is prohibited.

APPROVED:

Jason Kagimoto 07/06/26
FOR MANAGER AND CHIEF ENGINEER DATE
DEPT. OF WATER
COUNTY OF KAUAI



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.
Russell M. Araki APRIL 30, 2028
Lic. Exp. Date
P&E, Inc.
dba PARK ENGINEERING

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DEPARTMENT OF WATER NOTES	
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS VICINITY OF OMAO STREAM BRIDGE Federal-Aid Project No. ER-27(008)	
Scale: As Shown	Date: September 2026
SHEET No. N7 OF N8 SHEETS	

ORIGINAL PLAN	DATE
NO. _____	_____
NOTED BY _____	_____
DESIGNED BY _____	_____
DRAWN BY _____	_____
SURVEY PLOTTED BY _____	_____

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	10	47

DEPARTMENT OF WATER CONSTRUCTION NOTES (CONTINUED):

27. The Contractor shall follow all applicable OSHA, HIOSH and federal regulations in handling and disposal of asbestos-cement pipe. Disposal of the pipe shall be at an approved asbestos material disposal site.
28. All waterworks brass fittings shall be in compliance with the amended Section 1417 of Safe Drinking Water Act (SDWA) which takes effect on January 4, 2014. The amendment includes a change to the definition of "lead-free" by reducing lead content from 8% to a weighted average of not more than 0.25% in the wetted surface material. All waterworks brass fittings installed for potable water service on January 4, 2014 and beyond shall conform to the amended definition of "lead-free". As indicated in Section 211 of Water System Standards - brass products, all brass fittings shall conform to NSF standard 61 and section 1417 of the SDWA, in addition, all brass fittings shall conform to NSF standard 372.
29. Contractor shall install water facilities only after reaching final subgrade or higher. The Department of Water will not allow installation of any water facilities until the final subgrade layer at minimum has been achieved.
30. The right of way, easement and relevant property corners or easements at the proposed appurtenance and/or facility location(s) shall be surveyed and staked out by a licensed surveyor prior to construction. The surveyed points shall be preserved throughout the project's construction. The Contractor shall expose, verify, and backfill all existing underground utilities and structures in close proximity to crossings and connections prior to excavation of pipeline trench. Contractor shall provide the licensed surveyor cut sheet and the probing information to the DOW construction engineer for review and approval before moving forward with installation via the submittal review process.
31. The Department shall be provided twenty (20) working days for all submittal reviews from the time of submission by the contractor.
32. Unless otherwise specified, all ductile iron pipes, valves, and fittings, shall be encased in one layer of 8 mil minimum thickness polyethylene material in accordance with ANSI A-21.5 and AWWA C105. The polyethylene encasement film shall be manufactured from virgin polyethylene and shall consist of three layers of co-extruded linear low density polyethylene (LLDPE), fused into a single thickness of not less than 8 mils. The inside surface of the polyethylene wrap to be in contact with the pipe exterior shall be infused with a blend of an antimicrobial to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic corrosion. Polyethylene material shall have permanent markings per AWWA C105. Copper service laterals shall be encased with polyethylene wrap from the connection to the water main to the angle ball valve located in the water meter box.

ORIGINAL PLAN	DATE
NOTED	
DESIGNED BY	
CHECKED BY	
DATE	

APPROVED:

FOR MANAGER AND CHIEF ENGINEER
DEPT. OF WATER
COUNTY OF KAUAI

DATE



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OR UNDER MY SUPERVISION.

APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DEPARTMENT OF WATER NOTES

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026

SHEET No. 10 OF 47 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	11	47

LEGEND

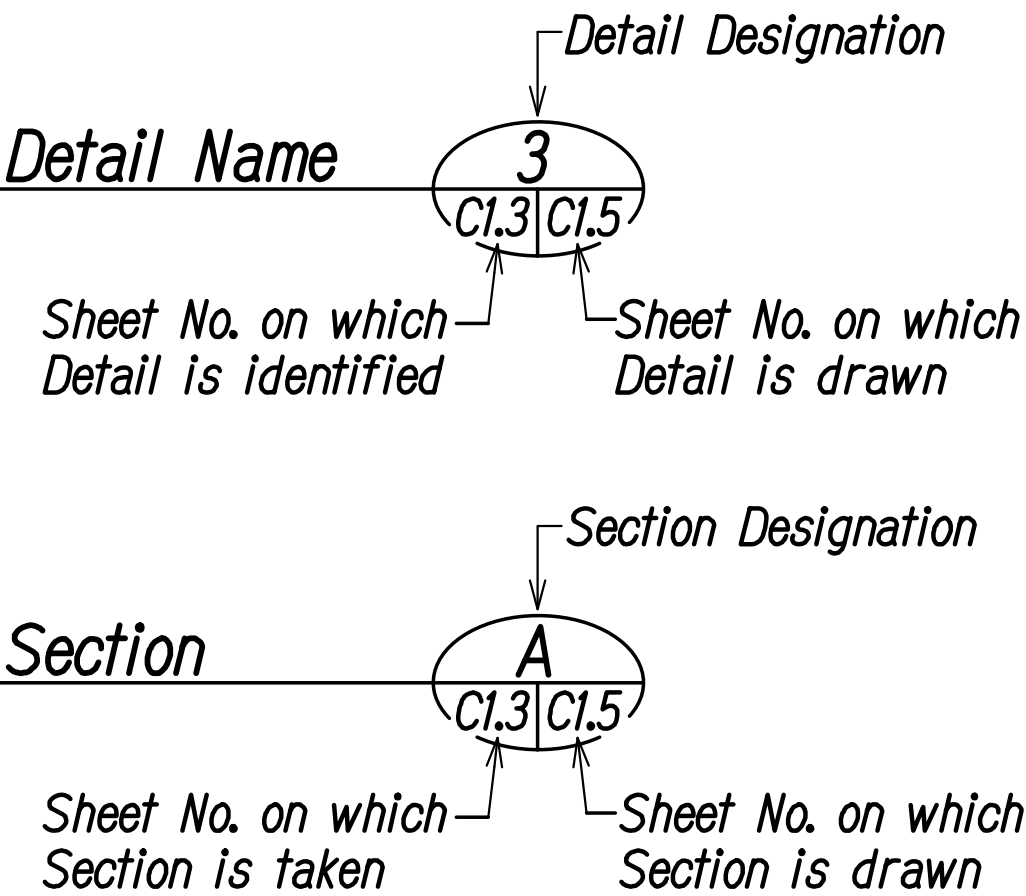
	Existing Overhead Electric Line
	Existing Power Pole
	Existing Drain Line
	Existing Traffic Sign
	Existing Tree
	Existing Bank
	Existing Contour, Elev. = 20 ft.
	New Contour, Elev. = 25 ft.
	Existing Grouted Rubble Paving
	New A.C. Pavement
	Existing Drainage Structure
	Existing Flow Arrow
	New 10"Ø Compost Filter Berm
	New Stabilized Construction Entrance/Exit
	Temporary Construction Sign
	Temporary Portable Concrete Barrier
	Work Area

ABBREVIATIONS:

A.C.	Asphalt Concrete	GP	Guy Pole
APPROX.	Approximately	G.C.	Grade Control
℄, B.L.	Baseline	GDI	Grated Drop Inlet
BB	Bottom of Bank	GRD	Ground
BW	Bottom of Wall	GRP	Grouted Rubble Paving
CATV	Cable Television	HGL	Hydraulic Grade Line
℄, C.L.	Centerline	HDPE	High Density Polyethylene
CLF	Chain Link Fence	HDWL	Headwall
CMP	Corrugated Metal Pipe	HMA	Hot Mix Asphalt
CONC.	Concrete	HTEL	Hawaiian Telcom
CRM	Cement Rubble Masonry	HWY	Highway
CULV	Culvert	I.D.	Inside Diameter
D/W	Driveway	INV.	Invert
DET.	Detail	L.F.	Linear Feet
D.L.	Drain Line	LT.	Left
DIA.	Diameter	MAINT.	Maintenance
DMH	Drain Manhole	MAX.	Maximum
DSYL	Double Solid Yellow Pavement Stripe	MIL	Millimeter
DWL	Dashed White Pavement Stripe	MIN.	Minimum
ECM	Erosion Control Matting	N.T.S.	Not To Scale
ELEV	Elevation	O.D.	Outside Diameter
EP	Edge of Pavement	OHWM	Ordinary High Water Mark
ES	Edge of Shoulder	O/S	Offset
ESMT	Easement	PAVT	Pavement
EXIST, E	Existing	PP	Power Pole
FH	Fire Hydrant	RCP	Reinforced Concrete Pipe
FT.	Foot, Feet	RCJP	Reinforced Concrete Jacking Pipe
GA	Guy Anchor	RPM	Raised Pavement Marker
GALV.	Galvanized		

RT.	Right
R/W	Right-Of-Way
S	Slope
SHLDR.	Shoulder
SHT.	Sheet
S.L.	Street Light
SLB	Street Light Box
SLP	Street Light Pole
SRAP	Spiral Rib Aluminum Pipe
STA.	Station
STD.	Standard
S/W	Sidewalk
SWL	Solid White Pavement Stripe
S.Y.	Square Yards
SYL	Solid Yellow Pavement Stripe
T	Thickness
TB	Top of Bank
T.C.	Temporary Connector Road
TEMP.	Temporary
TRAV.	Traverse
TW	Top of Wall
TYP.	Typical
WSEL	Water Surface Elevation

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QUANTITIES BY	
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NOTE BOOK	
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TYPICAL DETAIL CALL-OFF:
"See Detail 2/C1.3" means
to refer to Detail No. 2,
found on Sheet C1.3



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Russell M. Araki
PacEn, Inc.
dba PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LEGEND & ABBREVIATIONS

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: None Date: September 2026

SHEET No. 1 OF 1 SHEETS

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

WATER POLLUTION AND EROSION CONTROL NOTES:

A. GENERAL:

- 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.
- 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.
- Follow the guidelines in the Honolulu's City & County "Rules Relating to Water Quality" along with applicable Soil Erosion Guidelines for projects on Maui, Molokai, Kauai, and Hawaii.
- 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.
- 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.
- 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.
- Submit Site-Specific BMP Plan to the Engineer along with a completed Site-Specific BMP Review Checklist within 21 calendar days of date of award. The Site-Specific BMP Review Checklist may be obtained from <http://www.stormwaterhawaii.com>.

B. WASTE DISPOSAL:

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

- 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.
- For projects without an NPDES Permit for Construction Activities, inspect all control measures weekly.
- 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.

- 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.
- 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.
- Inspect temporary and permanent seeding and planting for bare spots, washouts and healthy growth.
- Complete and submit to the Engineer a maintenance inspection report within 24 hours after each inspection.
- 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 geotextile 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.
- Include designated Concrete Washout Area(s) in the Water Pollution, Dust, and Erosion Control submittals.
- Submit the name of a specific individual designated responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.
- 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.
- 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.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	12	47

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

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

- Materials Pollution Prevention Plan
 - 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	



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Russell M. Araki
For En, Inc.
dba PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
WATER POLLUTION AND EROSION CONTROL NOTES	
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS VICINITY OF OMAO STREAM BRIDGE Federal-Aid Project No. ER-27(008)	
Scale: None	Date: September 2026
SHEET No. EC1 OF EC6 SHEETS	

WATER POLLUTION AND EROSION CONTROL NOTES (CONT.):

- 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.

E. PERMIT REQUIREMENTS:

1. A National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activities of one acre or more of disturbed area is required for this project. If the Contractor requires extra land disturbance, including staging and storage areas, that is not covered by the NPDES Permit obtained by the State, the Contractor shall be responsible for obtaining the required NPDES Construction Activities Permit to cover this additional disturbed area. See Hawaii Administrative Rules Chapter 11-55, Appendix C for definition of land disturbance. The Contractor's attention is directed to the applicable NPDES Permit documents on the bid package compact disc.
2. Comply with all applicable State and Federal Permit conditions. Permits may include, but not limited to the following:
- a. NPDES Permit for Construction Activities
- b. NPDES Permit for Construction Dewatering
- c. Water Quality Certification
- d. Section 404 Army Corps of Engineer Permit

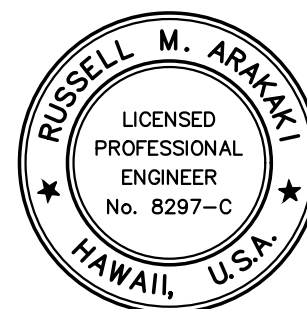
F. SITE-SPECIFIC BMP REQUIREMENTS:

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

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

Follow the requirements below:

1. Protect all Drainage Inlets receiving runoff from disturbed areas (SC-1).
2. Contain on-site runoff using Perimeter Sediment Controls
- a. SC-7 Silt Fence
- b. SC-2 Vegetated Filter Strips and Buffers
- c. SC-6 Compost Filter Berm/Sock
- d. SC-8 Sandbag Barrier
- e. SC-9 Brush or Rock
3. Control offsite runoff from entering construction area
- a. EC-3 Run-On Diversion
- b. EC-5 Earth Dikes, Swales, and Ditches



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P.E., Inc.
dba PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	13	47

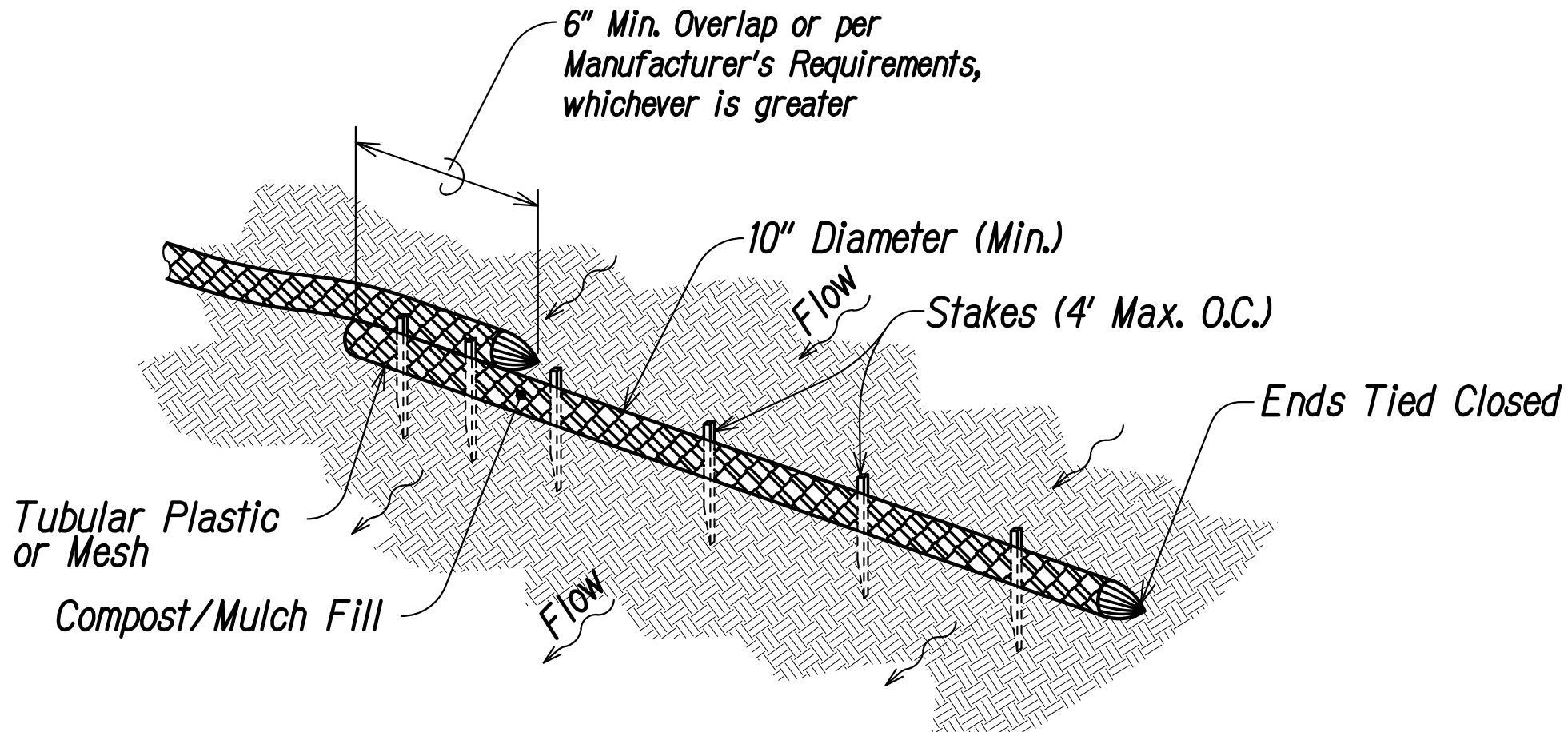
4. Incorporate applicable Site Management BMP
- a. SM-1 Construction BMP Training
- b. SM-2 Material Storage and Handling
- c. SM-3 Stockpile Management
- d. SM-4 Concrete Wash and Waste Management
- e. SM-5 Asphalt Cement Waste Management
- f. SM-6 Solid Waste Management
- g. SM-7 Sanitary Waste Management
- h. SM-9 Hazardous Materials and Waste Management
- i. SM-10 Spill Prevention and Control
- j. SM-11 Vehicle and Equipment Cleaning
- k. SM-12 Vehicle and Equipment Maintenance
- l. SM-13 Vehicle and Equipment Refueling
- m. SM-14 Scheduling
- n. SM-15 Location of Potential Sources of Sediment
- o. SM-16 Staging Area
- p. SM-17 Preservation of Existing Vegetation
- q. SM-19 Dust Control
- r. SM-20 Paving Operations
- s. SM-22 Topsoil Management
5. Contain pollutants within the Construction Staging/Storage Area BMP with applicable Perimeter Sediment Controls and Site Management BMP. Include a Stabilized Construction Entrance/Exit (SC-11) for all areas which exit onto a paved street. Restrict vehicle access to these points.
6. Manage Concrete Waste including installing a Concrete Washout Area (SM-4) and properly disposing of Concrete Curing Water (California Stormwater BMP Handbook NS-12 Concrete Curing).
7. Remove saw cut slurry and hydrodemolition water from the site by vacuuming. Provide storm drain protection and/or perimeter sediment controls during saw cutting and hydrodemolition work.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
WATER POLLUTION AND EROSION CONTROL NOTES	
KAUAMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS VICINITY OF OMAO STREAM BRIDGE Federal-Aid Project No. ER-27(008)	
Scale: None	Date: September 2026
SHEET No. EC2 OF EC6 SHEETS	

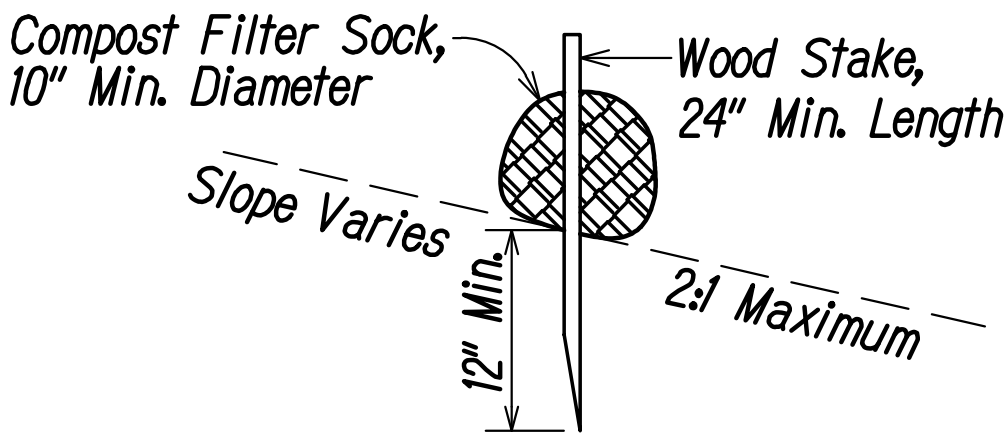
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	14	47

BEST MANAGEMENT PRACTICES (BMP's) NOTES:

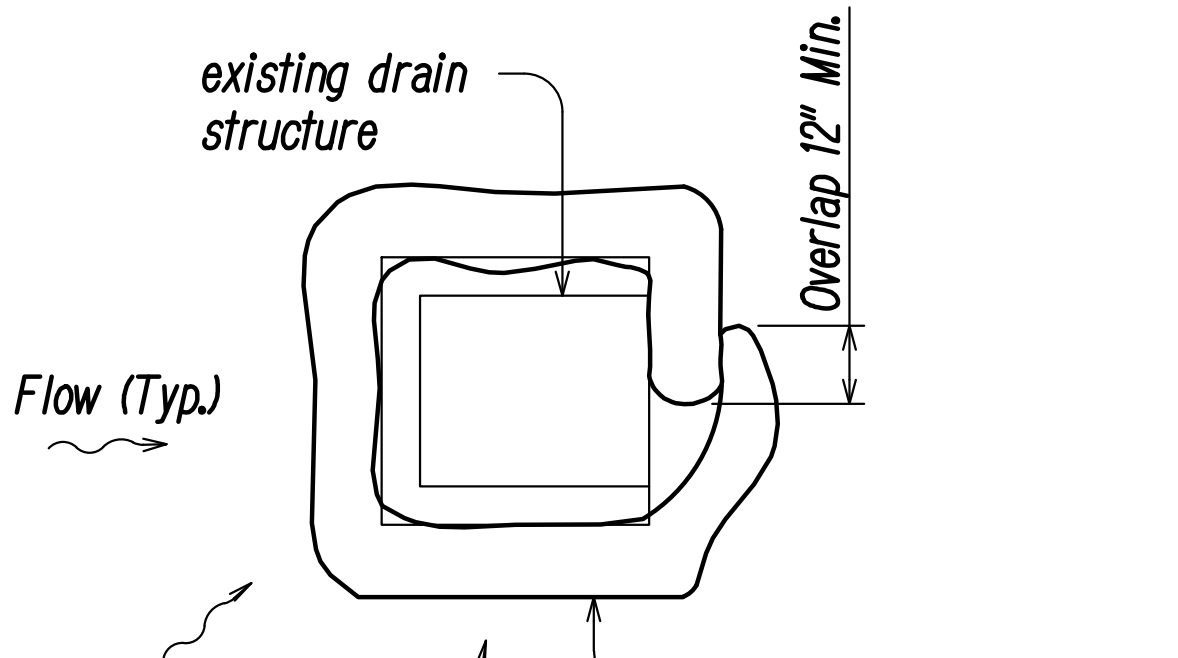
- The Contractor shall install the erosion control measures at the locations shown, or as directed by the Engineer, as soon as practicable.
- Slopes and exposed areas shall be sodded or planted as soon as final grades have been established. Planting shall not be delayed until all grading has been completed. Grading to final grade shall be continuous and any area within which work has been interrupted or delayed shall be planted.
- All Best Management Practices (BMP's) shall not be removed until all permanent erosion control controls are in place and established.
- The Contractor shall cover the openings to all existing and proposed storm drain inlets with a filter system until permanent ground cover is established. Maintenance of inlet filters by the Contractor shall be included for the duration of the project.
- At the ending of grading operations, existing storm drain inlets and manholes surrounding the project site shall be inspected and any accumulated sediment and debris found in the drain structures shall be removed. Flushing into the inlets and manholes is prohibited.



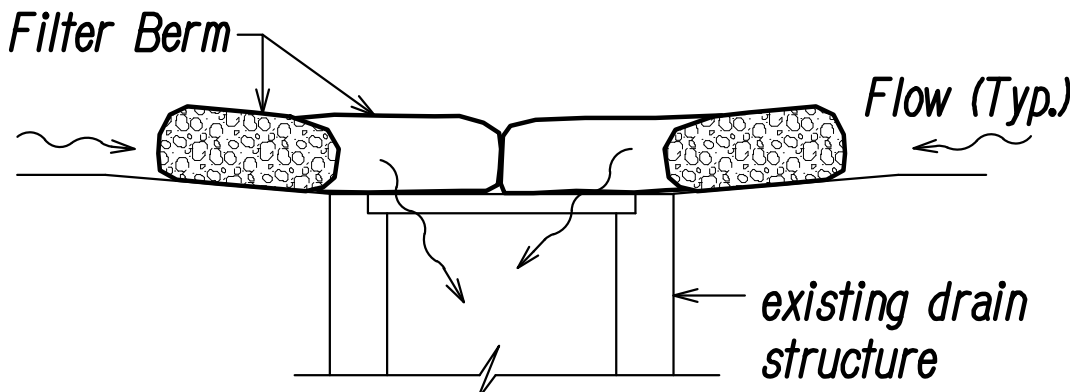
PLAN



SECTION



PLAN



SECTION

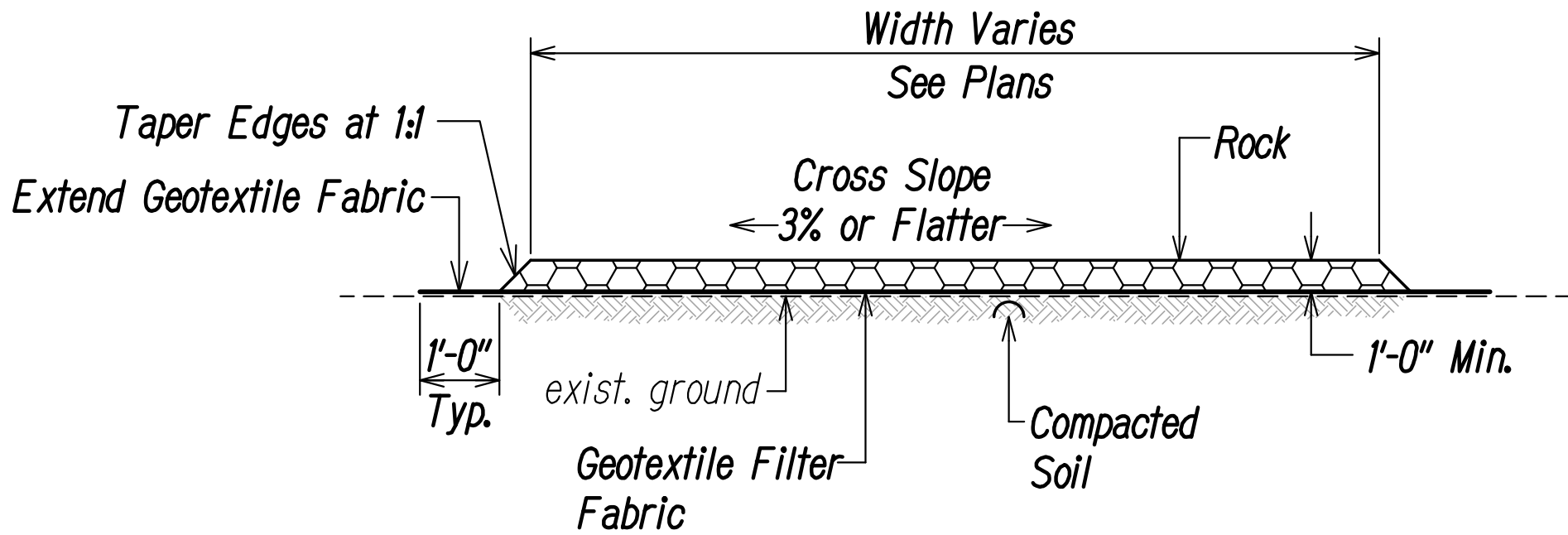
FILTER BERM AT EXIST. DRAIN STRUCTURE

NOTES:

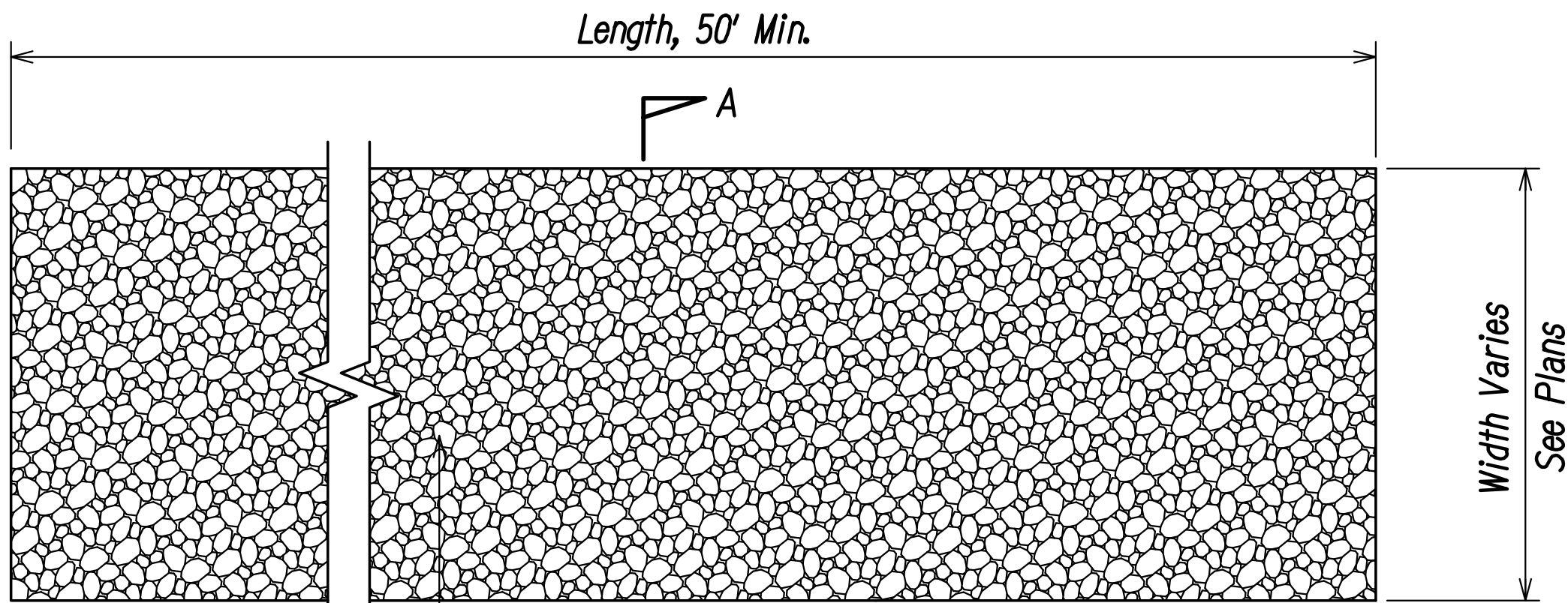
- See SC-6 of the "Construction Best Management Practices Field Manual" dated October 2021.
- Stake/Secure Filter Sock per Manufacturer's Requirements.

COMPOST FILTER BERM (FILTER SOCK)
NOT TO SCALE

1
C1.2/EC3



SECTION A-A



3" to 6" Course Aggregate
(12" Min. Thick) placed over
Geotextile Filter Fabric

PLAN

STABILIZED CONSTRUCTION ENTRANCE/EXIT
Not to Scale

Table A: Geotextile Fabric Requirements	
Physical Property	Requirements
Grab Tensile Strength	220 Lb. (ASTM D1682)
Elongation Failure	60% (ASTM D1682)
Mullen Burst Strength	430 Lb. (ASTM D3768)
Puncture Strength	125 Lb. (ASTM D751, Modified)
Equivalent Opening	Size 40-80 (U.S. Std. Sieve, CW-02215)

NOTES:

- Geotextile filter fabric must be installed beneath the 12" deep layer of aggregate.
- See Table A Geotextile Fabric Requirements on this sheet.

3
C1.2/EC3



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P.E., Inc.
dba PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

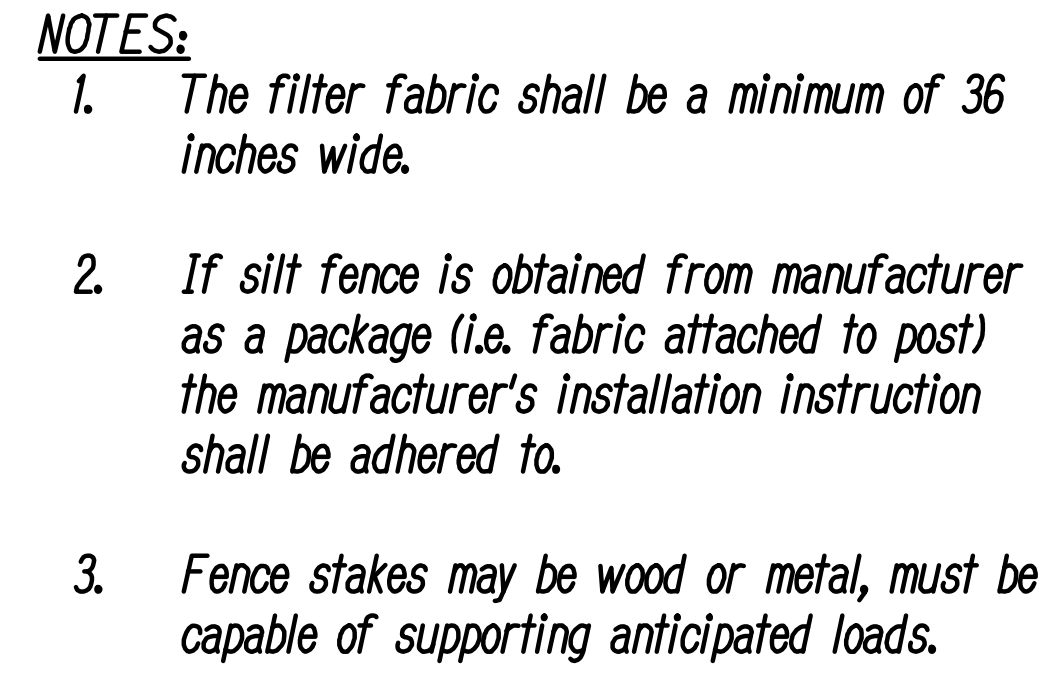
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
BMP NOTES AND DETAILS
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)
Scale: As Shown Date: September 2026
SHEET No. EC3 OF EC6 SHEETS

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

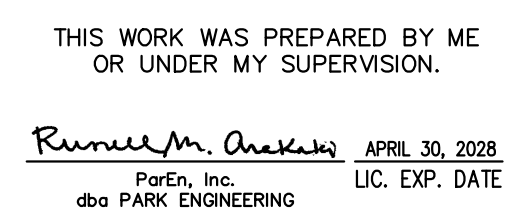
NOTES:

1. *The filter fabric shall be a minimum of 36 inches wide.*
2. *If silt fence is obtained from manufacturer as a package (i.e. fabric attached to post) the manufacturer's installation instruction shall be adhered to.*
3. *Fence stakes may be wood or metal, must be capable of supporting anticipated loads.*

1. *Install a geotextile filter fabric under the grate.*
2. *Allow 6 inches, minimum, of excess fabric to extend past the grate on all sides.*

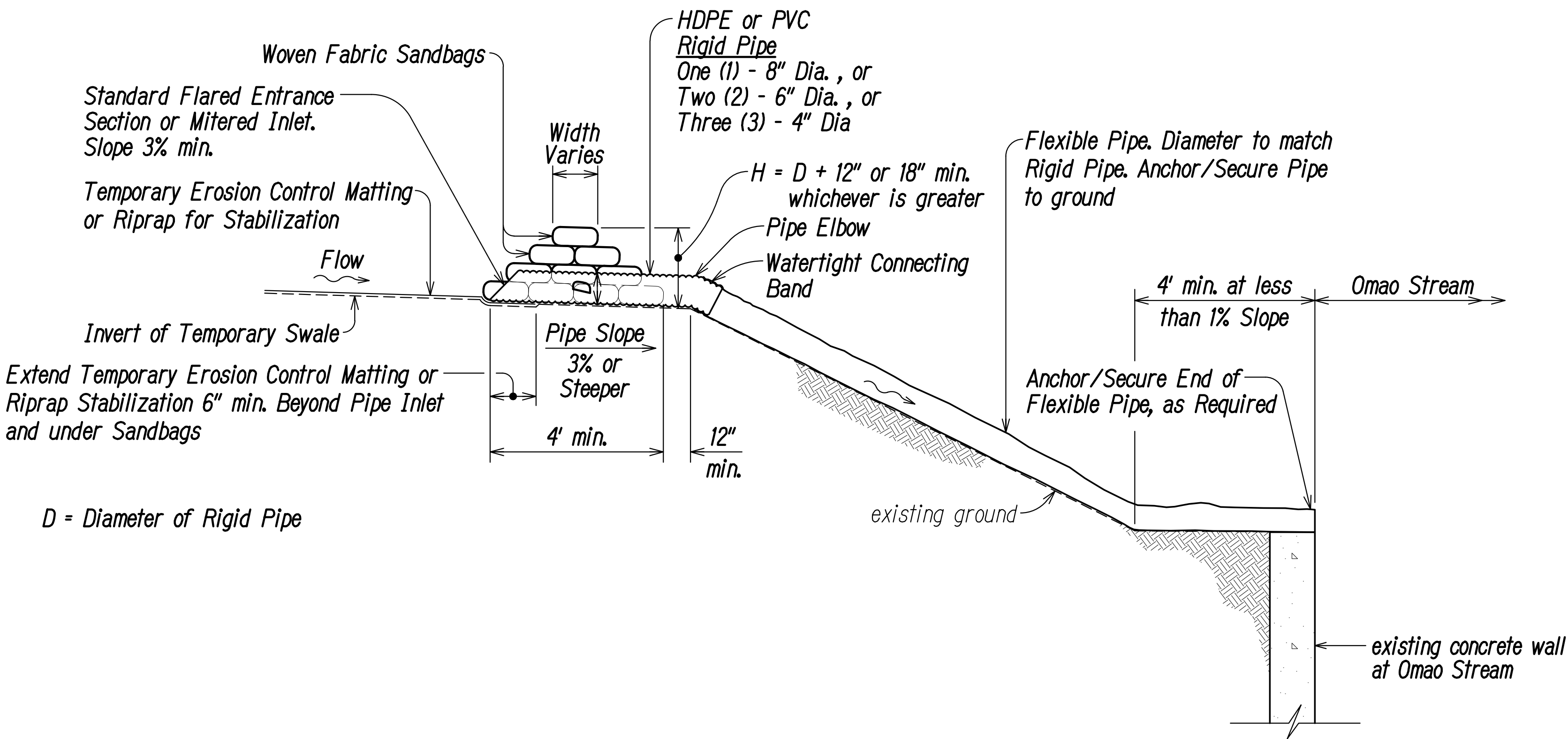


1. *Place sandbags tightly.*
2. *Sandbag barrier shall be a minimum of 3 bags high unless unless otherwise indicated on plans.*
3. *The end of the barrier shall be turned and placed up slope.*
4. *Sandbag material must conform to ASTM D3786 and ASTM D4355.*
5. *Typical sandbag dimensions:
Length 18" min.
Width 12" min.
Thickness 6" min.*
6. *Double bag each sand bag.*
7. *Sandbags shall be filled with clean quarry sand.*
8. *Sandbags shall be filled one-half to two-thirds full.*
9. *Stack and stagger sandbags.*



15

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	16	47



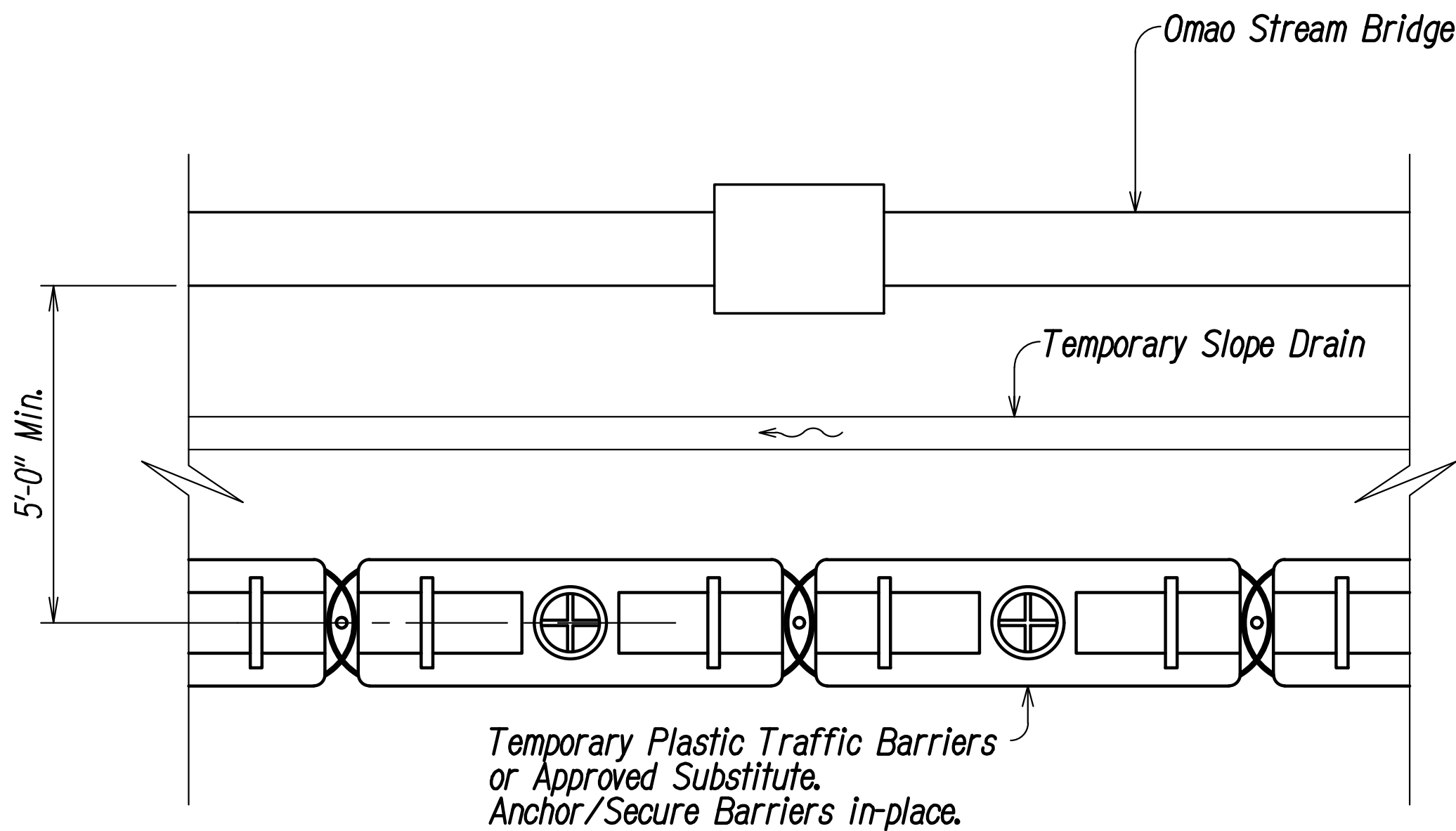
PROFILE - TEMPORARY SLOPE DRAIN 1
NOT TO SCALE C1.3|EC5

HYDROLOGIC DATA FOR TEMPORARY SLOPE DRAIN:

A = 0.13 acs.
Q₅ = 0.58 cfs

NOTES:

- See EC-7 and SC-8 of the "Construction Best Management Practices Field Manual" dated October 2021 for applicable details and notes not shown.
- The Contractor shall modify the temporary slope drain to accommodate the site condition, additional stormwater runoff beyond the capacity of the slope drain shown above and as directed by the Engineer.
- The cost for modifications to the temporary slope drain as directed by the Engineer will not be paid for separately but shall be incidental to Item No. 209.0100 Installation, Maintenance, Monitoring, and Removal of BMP.



PLAN - TEMP. PLASTIC TRAFFIC BARRIER 2
NOT TO SCALE C1.3|EC5

NOTES:

- The Contractor shall install Temporary Plastic Traffic Barriers to protect Omao Stream Bridge.
- The Contractor shall modify the Temporary Plastic Traffic Barriers or approved substitute to accommodate the site condition as directed by the Engineer.
- The cost for modifications to the Temporary Plastic Traffic Barriers or approved substitute will not be paid for separately but shall be incidental to Item No. 209.0100 Installation, Maintenance, Monitoring, and Removal of BMP.
- See Sheet No. C1.3 for location of Omao Stream Bridge piers and abutments not shown on this plan.



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dba PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BMP NOTES AND DETAILS

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026

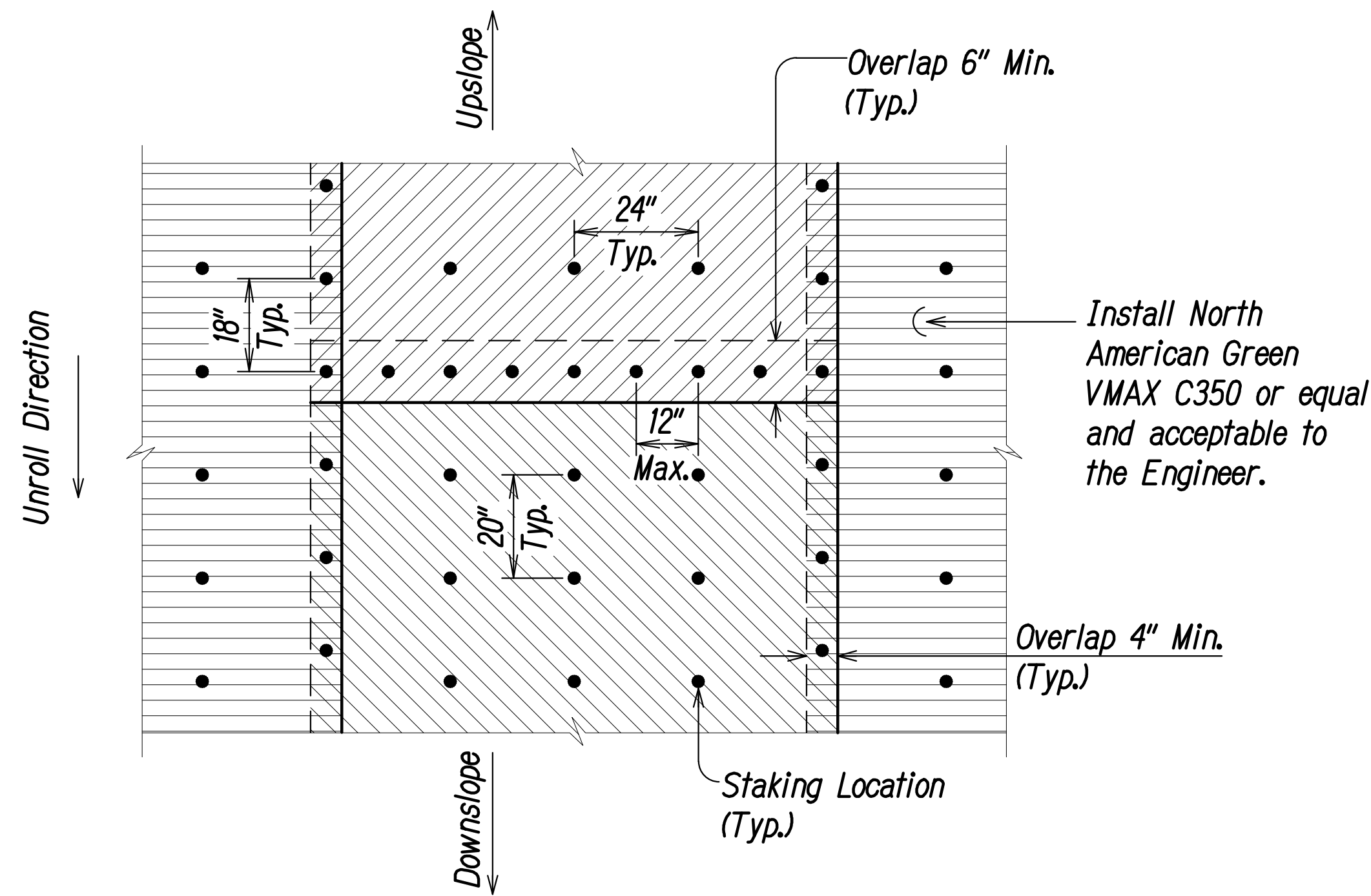
SHEET No. EC5 OF EC6 SHEETS

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DESIGNED BY	
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ORIGINAL PLAN	No.
NOTE BOOK	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	17	47

EROSION CONTROL MATTING (ECM) NOTES:

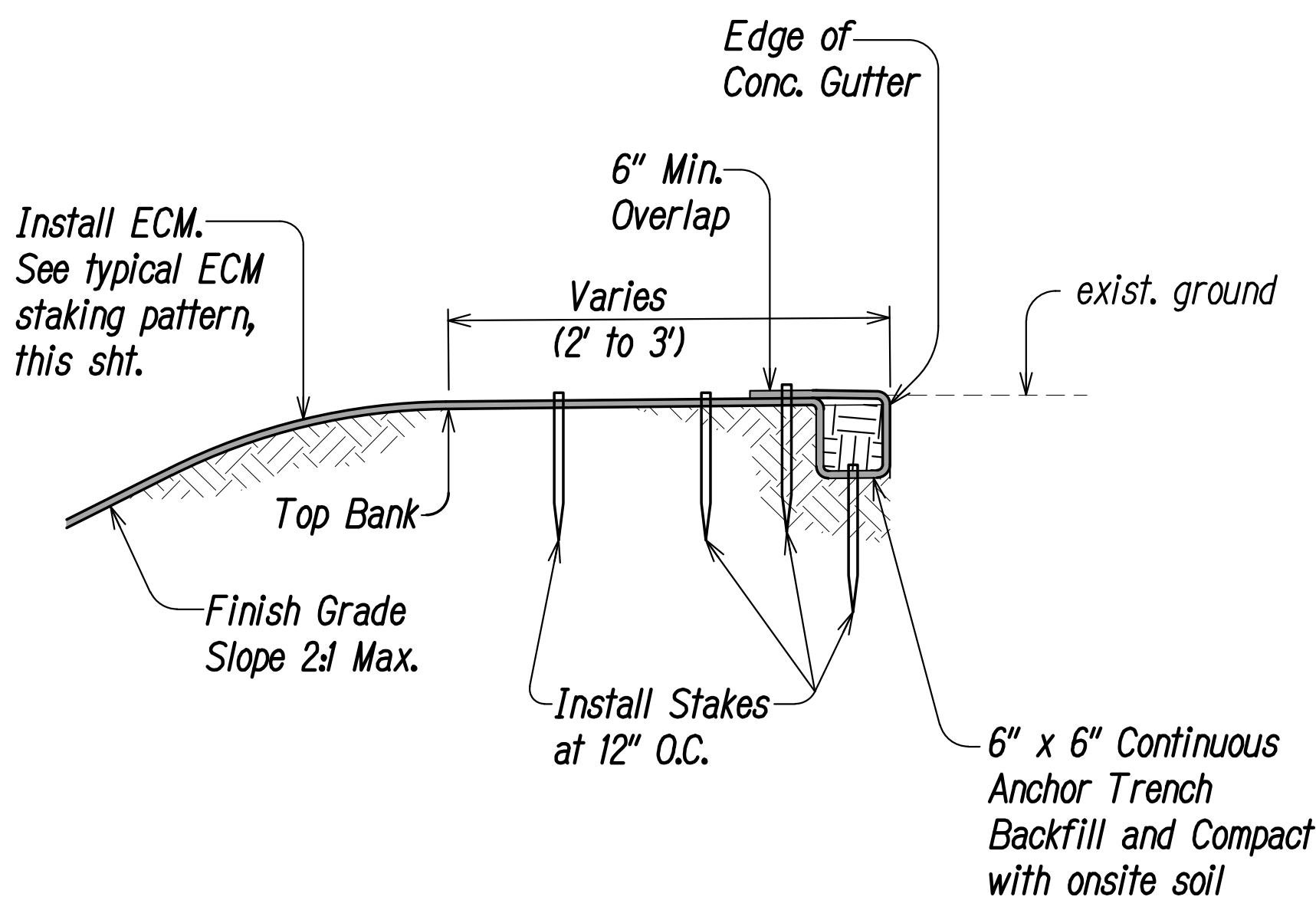
1. Remove existing vegetation, install topsoil as required, fine grade, hydromulch, seed and install Erosion Control Matting.
2. The Contractor shall obtain acceptance of the prepared surface from the Engineer after fine grading is completed and prior to hydromulching.
3. The Erosion Control Matting shall be installed in accordance with the manufacturer's recommendations unless otherwise indicated in the plans or authorized by the Engineer.
4. All stakes shall be made of wood or plastic to the length and shape as recommended by the manufacturer of the Erosion Control Matting and accepted by the Engineer. Use anchoring pattern as recommended by the manufacturer of the Erosion Control Matting.
5. When directed by the Engineer, wood or plastic stakes with lengths 12-inches or greater shall be used in loose soil conditions to properly secure the Erosion Control Matting. Contractor shall pound stakes flush with finished grade. The Engineer may also change the anchoring pattern. Changes to the anchoring of Erosion Control Matting shall be at no additional cost to the State.



Notes:

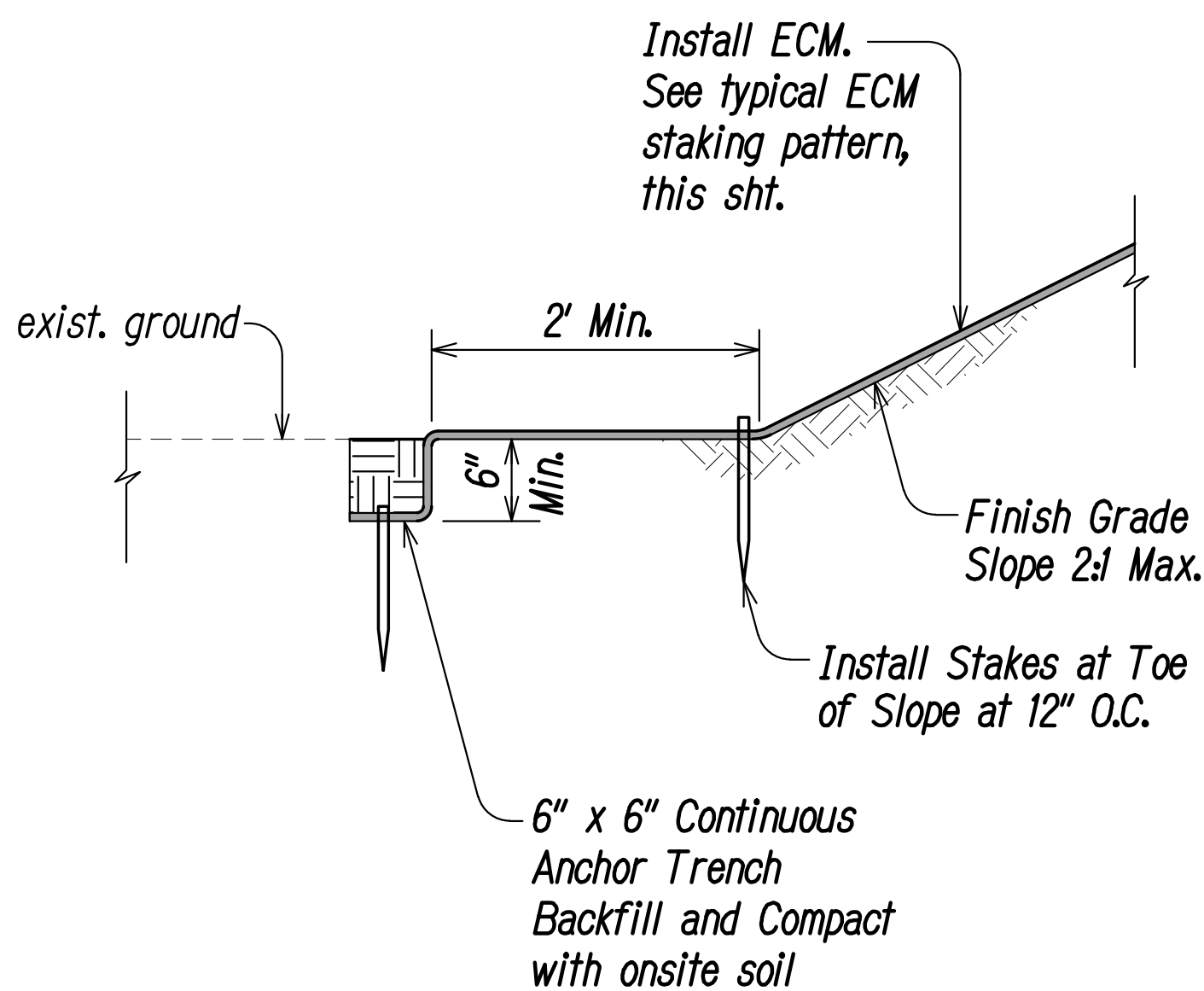
1. Install 3.0 stakes (min.) per square yard
2. See Typical Section (At Top of Bank) for anchor trench at top of matting and sides.
3. See Typical Section (At Terminal End on Slope) for anchor trench at bottom of matting.

TYPICAL EROSION CONTROL MATTING STAKING PATTERN



Note: Edges of Erosion Control Matting shall be buried and anchored similar to top bank.

TYPICAL SECTION (AT TOP OF BANK)



TYPICAL SECTION (AT TERMINAL END ON SLOPE)

EROSION CONTROL MATTING DETAILS
NOT TO SCALE

1
D1, D2, EC6



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APRIL 30, 2028
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**EROSION CONTROL
MATTING DETAILS**
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

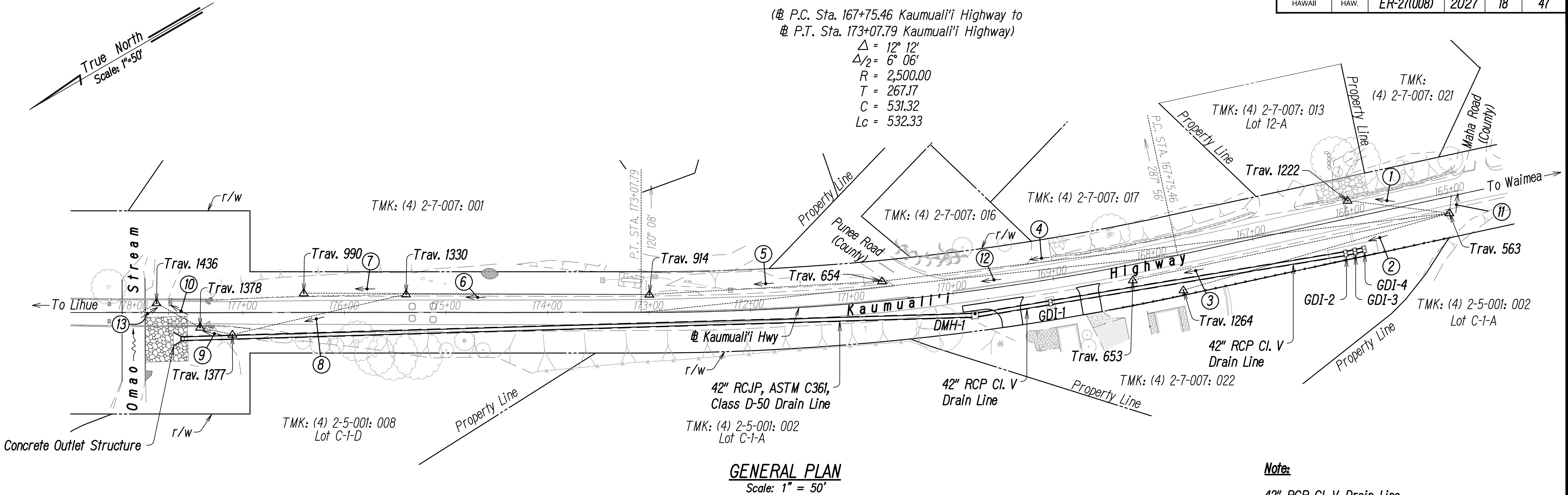
Scale: As Shown Date: September 2026

SHEET No. EC6 OF EC6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	18	47

⌘ CURVE DATA

⌘ P.C. Sta. 167+75.46 Kaumuali'i Highway to
⌘ P.T. Sta. 173+07.79 Kaumuali'i Highway)
 $\Delta = 12^\circ 12'$
 $\Delta/2 = 6^\circ 06'$
 $R = 2,500.00$
 $T = 267.17$
 $C = 531.32$
 $L_c = 532.33$



Note:
42" RCP Cl. V Drain Line
between GDI-2, GDI-3 and GDI-4.

KAUMUALI'I HIGHWAY BASELINE INFORMATION		
⌘ STATION	⌘ HORIZONTAL LAYOUT	
	AZIMUTH	DISTANCE
STA. 165+00		
P.C. STA. 167+75.46	197° 56' 00"	275.46
P.T. STA. 173+07.79	SEE CURVE DATA AND ⑫	
STA. 178+00	210° 08' 00"	492.21

SURVEY TRAVERSE INFORMATION				
TRAVERSE	DESCRIPTION	COORDINATES		ELEVATION (MSL)
		NORTHING	EASTING	
563	MAG NAIL	2545.88	-8698.27	557.42
1222	MAG NAIL	2465.31	-8638.38	557.34
1264	HUB	2281.24	-8632.44	557.70
653	MAG NAIL	2243.11	-8598.92	558.05
654	MAG NAIL	2028.98	-8475.88	558.72
914	MAG NAIL	1824.38	-8372.17	558.10
1330	HUB	1617.34	-8251.67	559.34
990	PIPE W/ CAP	1530.75	-8200.16	560.25
1377	HUB	1449.50	-8200.17	561.36
1378	HUB	1425.47	-8178.22	554.29
1436	HUB	1400.41	-8135.81	537.32

- ① 217° 04' 47" 101.00 TRAV. 563 To TRAV. 1222
- ② 193° 58' 14" 272.71 TRAV. 563 To TRAV. 1264
- ③ 198° 10' 04" 318.66 TRAV. 563 To TRAV. 635
- ④ 203° 16' 47" 562.72 TRAV. 563 To TRAV. 654
- ⑤ 206° 52' 49" 229.38 TRAV. 654 To TRAV. 914
- ⑥ 210° 11' 59" 239.55 TRAV. 914 To TRAV. 1330
- ⑦ 210° 21' 39" 340.30 TRAV. 914 To TRAV. 990
- ⑧ 197° 03' 29" 175.57 TRAV. 1330 To TRAV. 1377
- ⑨ 222° 25' 09" 32.54 TRAV. 1377 To TRAV. 1378
- ⑩ 239° 24' 49" 49.26 TRAV. 1378 To TRAV. 1436
- ⑪ 306° 13' 51" 16.79 TRAV. 563 To ⌘ Sta. 165+00
- ⑫ 204° 02' 00" 531.32 ⌘ Kaumuali'i Hwy Chord
- ⑬ 358° 00' 32" 17.65 ⌘ Sta. 178+00 To TRAV. 1436

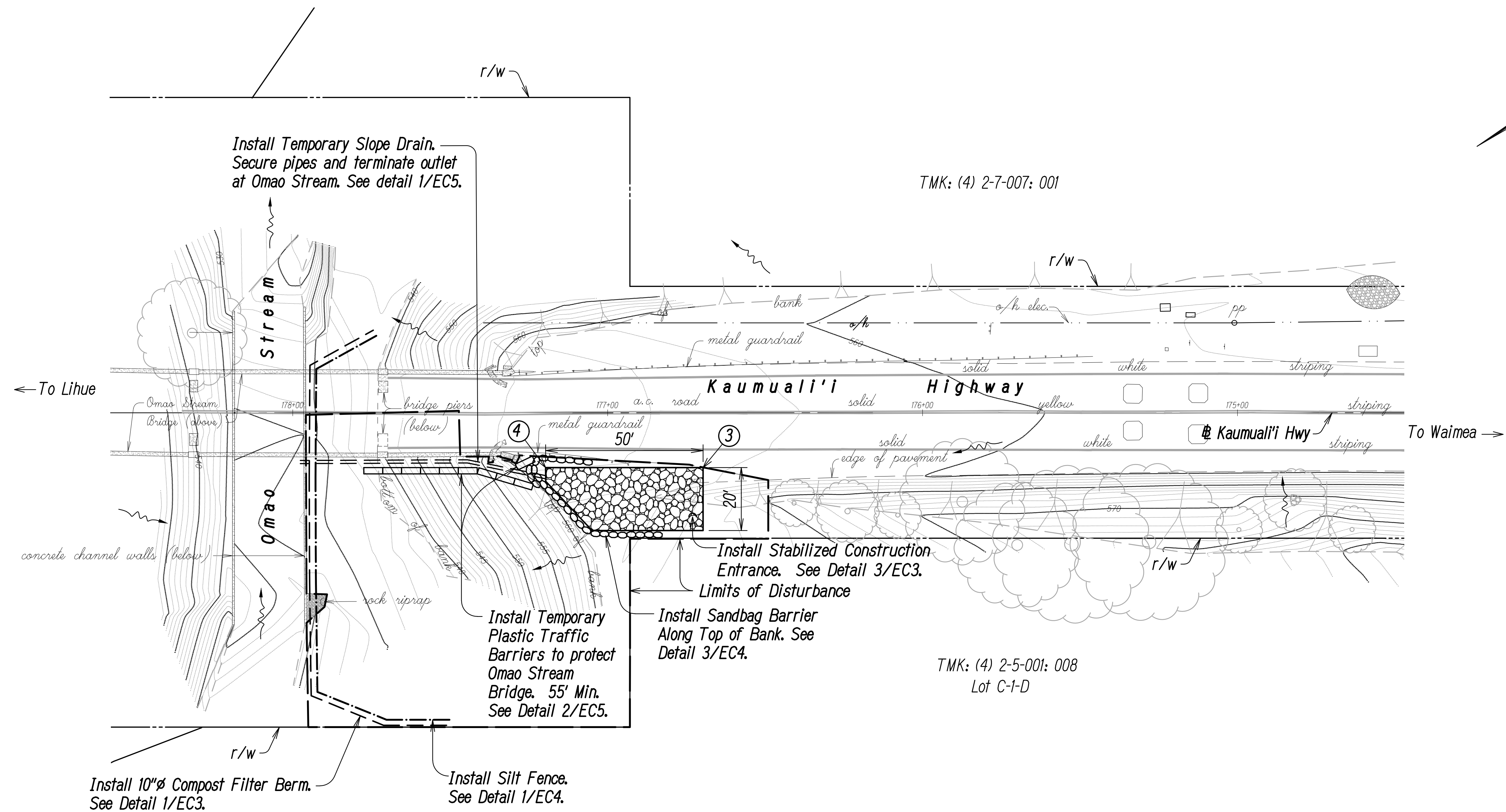
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Russell M. Arakawa
P.E., Inc.
dbs PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
GENERAL PLAN
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)
Scale: As Shown
Date: September 2026
SHEET No. 18 OF 47 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	20	47



EROSION CONTROL PLAN - 2
Scale: 1" = 20'

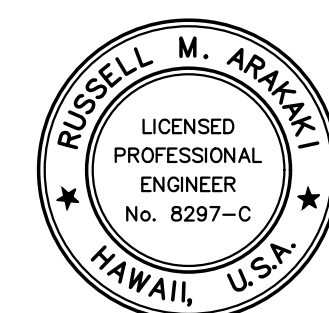
LEGEND:

- Right-of-Way, Property Line
- - - Approximate Exist. 1-ft Contour
- - - 560 - - - Approximate Exist. 5-ft Contour
- - - Approximate Limits of Disturbance
- - - Compost Filter Berm
- - - Silt Fence
- Flow Arrow

Note:

- See Notes 2, 3 and 4 on Sheet C1.2 for Erosion and Sediment Control BMP Requirements.

- ③ @ 176+69.68 Kaumuali'i Hwy (o/s 17.41 Lt.)
- ④ @ 177+19.68 Kaumuali'i Hwy (o/s 17.41 Lt.)



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APRIL 30, 2028
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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

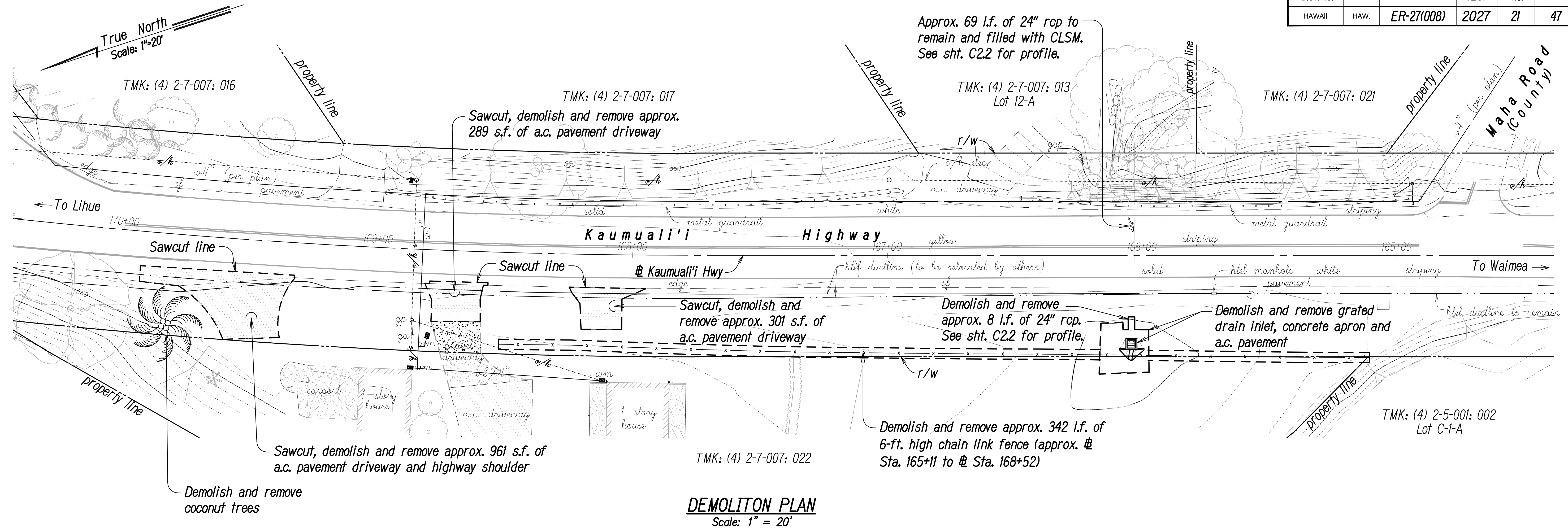
EROSION CONTROL PLAN - 2

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026

SHEET No. C1.3 OF C1.3 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	21	47

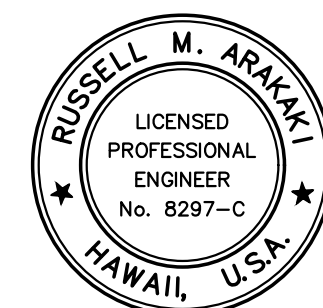


General Demolition Notes:

1. The Contractor shall verify existing conditions prior to bidding. Any discrepancies shall be brought to the attention of the Engineer for clarification.
2. The exact locations and limits of areas to be excavated, reconstructed, and paved shall be located in the field by the Contractor and accepted by the Engineer. The Contractor shall provide drawings showing the location and outlines of the restoration areas. The total area and volume calculations of paving and restoration shall be calculated and provided to the Engineer. The Contractor shall not begin any work until the Engineer verifies and accepts the location and size of the restoration area.
3. The Contractor shall bring any conflicts and/or questions to the attention of the Engineer prior to the start of demolition. Any remedial work resulting from the Contractor's failure to do so shall be paid by the Contractor at no cost to the State. All restoration work shall be paid for by the Contractor.
4. All existing improvements and utilities that are to remain within the demolition and construction areas shall be protected and maintained by the Contractor during his operations, unless otherwise noted. Any remedial work resulting from the Contractor's failure to do so shall be paid for by the Contractor at no cost to the State.
5. Backfill and compact all voids and depressions caused by demolition operations.
6. The Contractor shall properly remove and dispose offsite of all demolition materials at no additional cost to the State.
7. After completion of the demolition work, the Contractor shall clean the project limits of all demolished materials, rubbish and all other debris which shall then be transported to a legal offsite disposal site.
8. All temporary erosion control measures shall be installed prior to demolition work as shown on the erosion control plans.
9. Existing utilities shown are based on best available as-built drawings on file with the State.
10. Prior to excavation near or around the existing utilities, the Contractor shall restrain all existing pipes, water valves, concrete block, concrete jackets, etc., as required to ensure the existing utilities are not disturbed.

LEGEND:

- Approximate exist. 1-ft contour
- Approximate exist. 5-ft contour
- Right-of-Way, Property Line
- Exist. Hawaiian Telcom Ductline (to be relocated by others)
- Exist. Overhead Electric Line
- Exist. Water Line
- Limits of Removal and Disposal



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Russell M. Arakawa
Professional Engineer
No. 8297-C
APRIL 30, 2028
LIC. EXP. DATE
dbs PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DEMOLITION PLAN

**KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)**

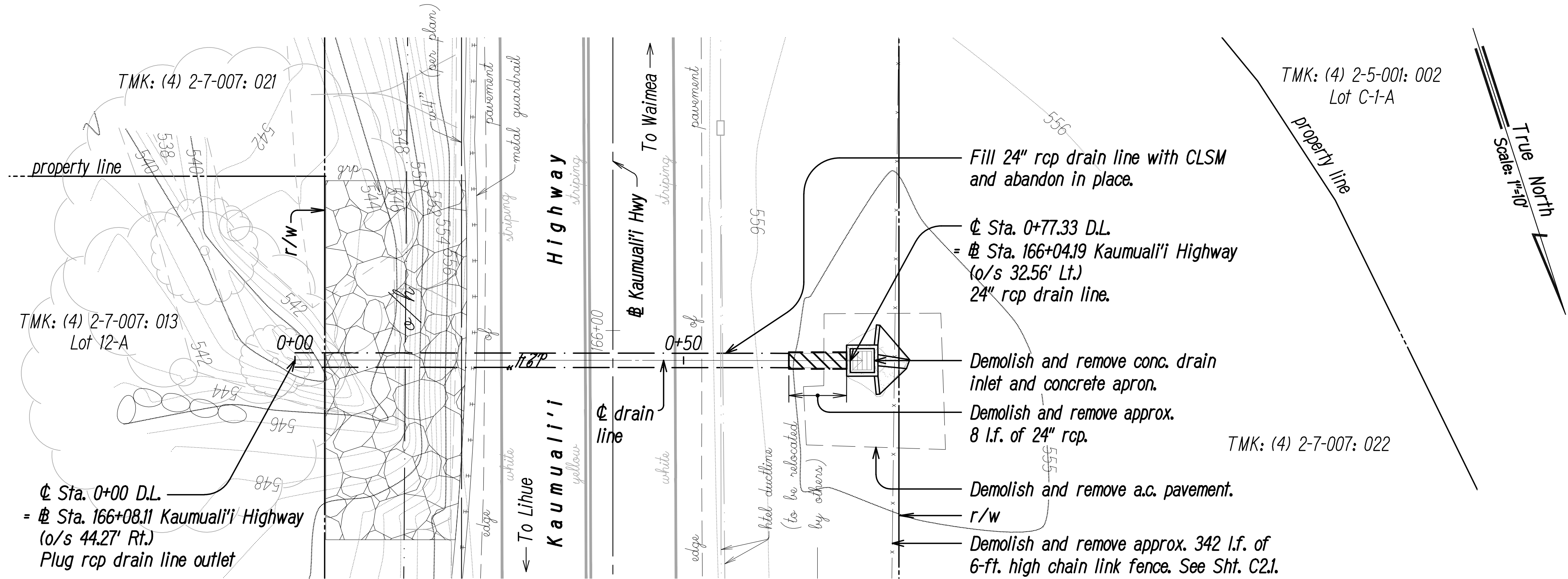
Scale: As Shown Date: September 2026

SHEET No. C21 OF C22 SHEETS

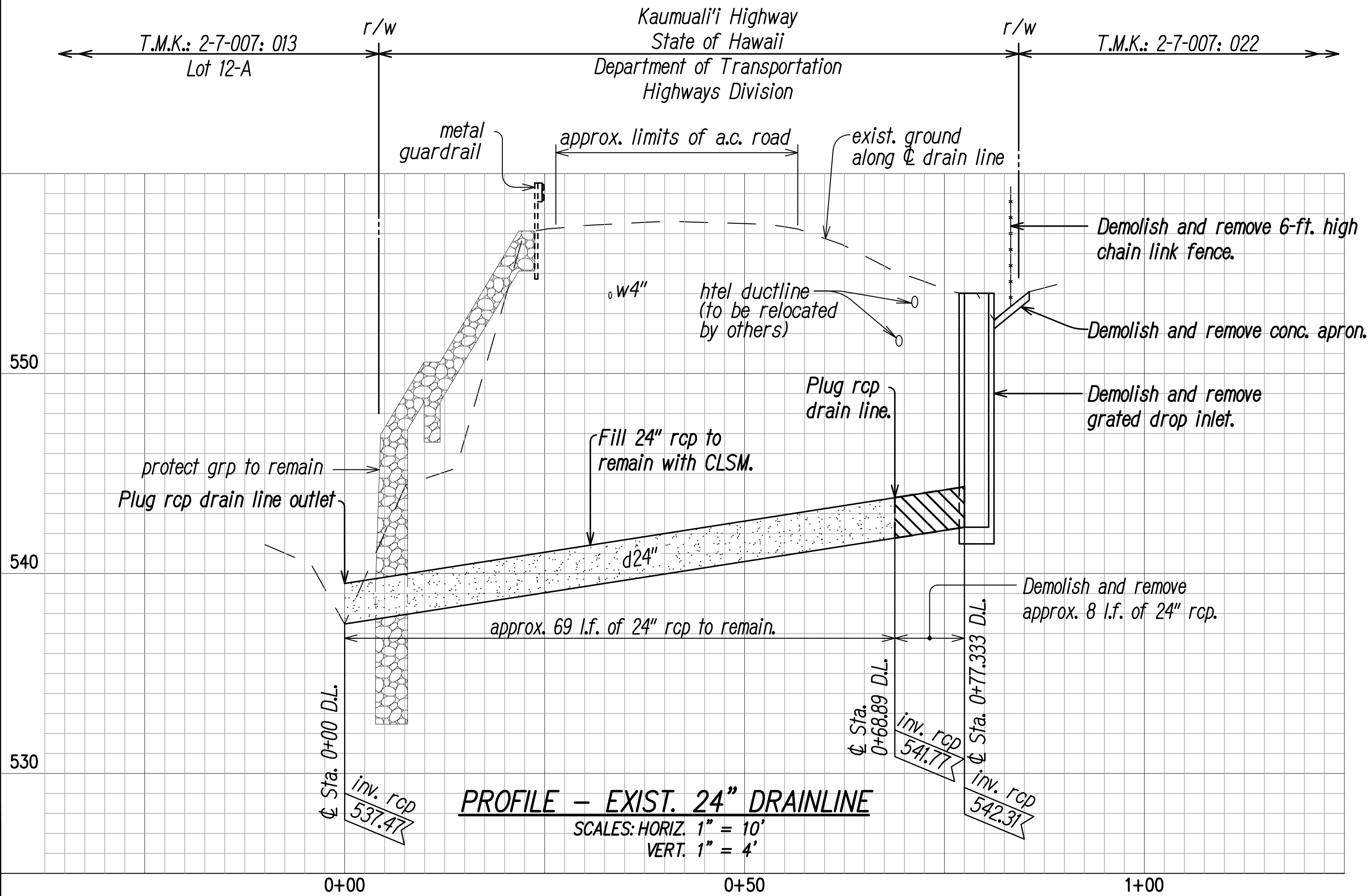
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	22	47

Notes:

- The Contractor shall verify existing conditions prior to bidding. Any discrepancies shall be brought to the attention of the Engineer for clarification.
- The Contractor shall bring any conflicts and/or questions to the attention of the Engineer prior to the start of demolition. Any remedial work resulting from the Contractor's failure to do so shall be paid by the Contractor at no cost to the State. All restoration work shall be paid for by the Contractor.
- All existing improvements and utilities that are to remain within the demolition and construction areas shall be protected and maintained by the Contractor during his operations, unless otherwise noted. Any remedial work resulting from the Contractor's failure to do so shall be paid for by the Contractor at no cost to the State.
- Backfill and compact all voids and depressions caused by demolition operations.
- The Contractor shall properly remove and dispose offsite of all demolition materials at no additional cost to the State.
- After completion of the demolition work, the Contractor shall clean the project limits of all demolished materials, rubbish and all other debris which shall then be transported to a legal offsite disposal site.
- Work to plug existing 24-Inch RCP Drain Pipe will not be paid for separately but shall be considered incidental to Item No. 314.0100 CLSM for Fill of Exist. 24-Inch RCP Drain Pipe.
- Existing utilites shown are based on best available as-built drawings on file with the State.



PLAN - EXIST. 24" DRAINLINE
SCALE: 1" = 10'



PROFILE - EXIST. 24" DRAINLINE
SCALE: HORIZ. 1" = 10'
VERT. 1" = 4'

LEGEND:

- Right-of-Way, Property Line
- Exist. Hawaiian Telcom Ductline (to be relocated by others)
- Approximate exist. 1-ft contour
- Approximate exist. 5-ft contour
- Exist. 24" rcp to be demolished and removed
- Controlled Low Strength Material (CLSM)
- Exist. grp to remain

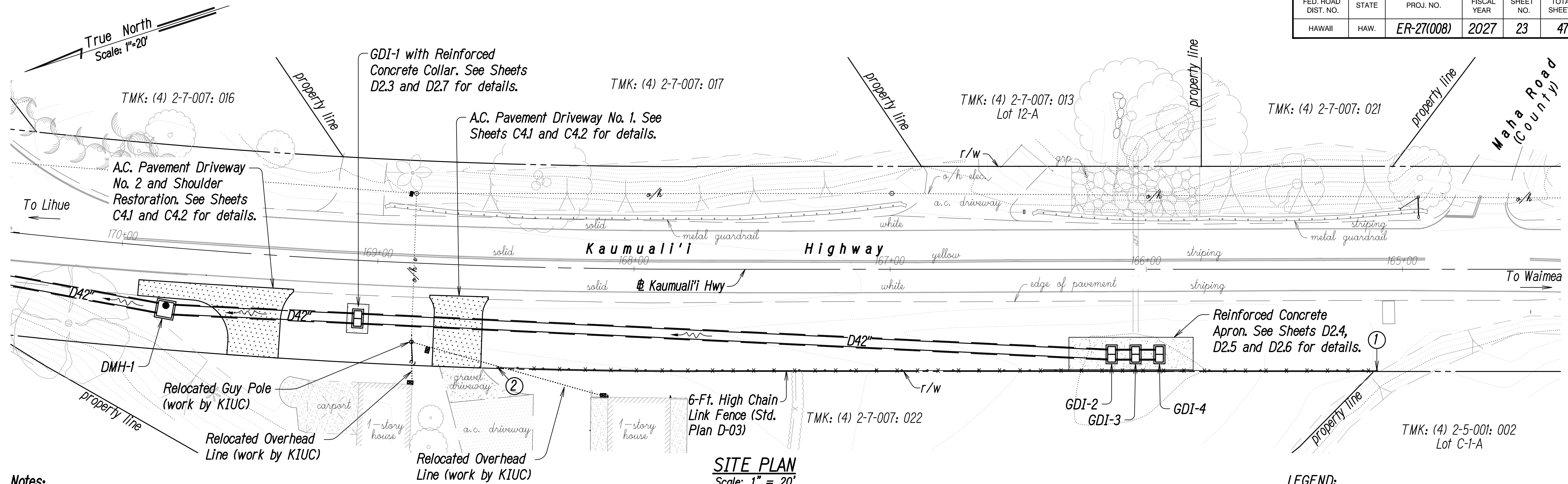


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Russell M. Arakawa
P.E., Inc.
dbs PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DEMOLITION PLAN
EXIST. 24" DRAIN PIPE
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026
SHEET No. C22 OF C22 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	23	47



Notes:

1. The Contractor shall provide safeguards and exercise caution against damage and/or defacement of all existing improvements to remain. Existing improvements shall include but are not limited to GRP lining, roadways, pavements, utilities, guardrails, and structures. Any damaged and/or defaced existing improvements resulting from the contractor's activities, as determined by the Engineer, shall be repaired and restored to its original condition or better to the satisfaction of the Engineer. The Contractor shall be responsible to pay for all costs to repair and restore existing improvements.
2. The Contractor shall restore all disturbed areas including but not limited to grassed and other landscaped areas to their original condition or better to the satisfaction of the Engineer in accordance with Section 619 - Planting of the Hawaii Standard Specifications for Road and Bridge Construction dated 2005. The Contractor shall be responsible to pay for all costs to restore disturbed areas.
3. The Contractor shall provide the proper equipment and utilize the necessary means and methods to meet the pavement smoothness requirements noted in the paving specifications. The Contractor shall provide all necessary surveying and engineering services necessary to meet the requirements. Payment for this work shall be included in the various paving pay items and shall not be paid for separately.
4. Contractor shall perform all work in accordance with Hawaii Standard Specifications for Road and Bridge Construction, 2005, Subsection 105.10 - Construction Stakes, Lines and Grades.
5. The Contractor shall be responsible for preserving all survey monuments on State property. All survey monuments disturbed or destroyed by the Contractor shall be reinstalled at no cost to the State. Only licensed State of Hawaii Land Surveyors shall reference, locate, adjust or reinstall monuments. The Contractor shall coordinate with the State Construction Surveyor prior to construction to locate and verify all monuments. Adjusted or reset monuments shall comply with Standard Plan D-07 or D-08 where applicable. Following the completion of the monuments, their locations shall be checked. The monuments must check within a tolerance of the smaller of and error ratio of 0.03 feet. Failure to meet the tolerance will require the Contractor to reset the monuments. All costs associated with coordination, referencing, preserving, adjusting, installation, and verification of survey monuments is included in the various contract pay items related to survey monuments.
6. The exact locations and limits of areas to be excavated, reconstructed, and paved shall be located in the field by the Contractor and accepted by the Engineer. The Contractor shall provide drawings showing the location and outlines of the repair areas. The total area and volume calculations of paving, and repairs shall be calculated and provided to the Engineer. The Contractor shall not begin any work until the Engineer verifies and accepts the location and size of the repair area.
7. Prior to paving operations, the Contractor shall be responsible for locating, preserving, and marking all utility and highway facilities that will require adjustments to the new finished grade. The Contractor shall coordinate with the Engineer for site verification and subsequently submit a list of all items to be adjusted to the new finished grade. Coordination with State Construction Surveyor shall be done separately.
8. After completion of paving, the Contractor shall 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 at no cost to the State.
9. The final asphalt paved surface shall not have any trench lines on the final roadway surface, unless approved by Engineer.

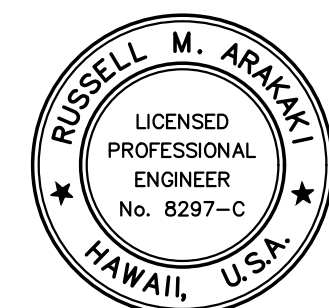
SITE PLAN

Scale: 1" = 20'

LEGEND:

- ① Sta. 165+10 Kaumuali'i Highway (o/s 39.52' Lt.)
Begin 6-Ft. High Chain Link Fence (Std. Plan D-03)
 - ② Sta. 168+52 Kaumuali'i Highway (o/s 39.52' Lt.)
End 6-Ft. High Chain Link Fence (Std. Plan D-03)
- Right-of-Way, Property Line
 - Approximate Exist. 1-ft Contour
 --555-..... Approximate Exist. 5-ft Contour
 - Approximate Finish 1-ft Contour
 - 555 — Approximate Finish 5-ft Contour
 - [Pattern] New A.C. Pavement
 - [Pattern] New Concrete Collar or Apron

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



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Russell M. Arakawa
P.Eng., Inc.
dbs PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

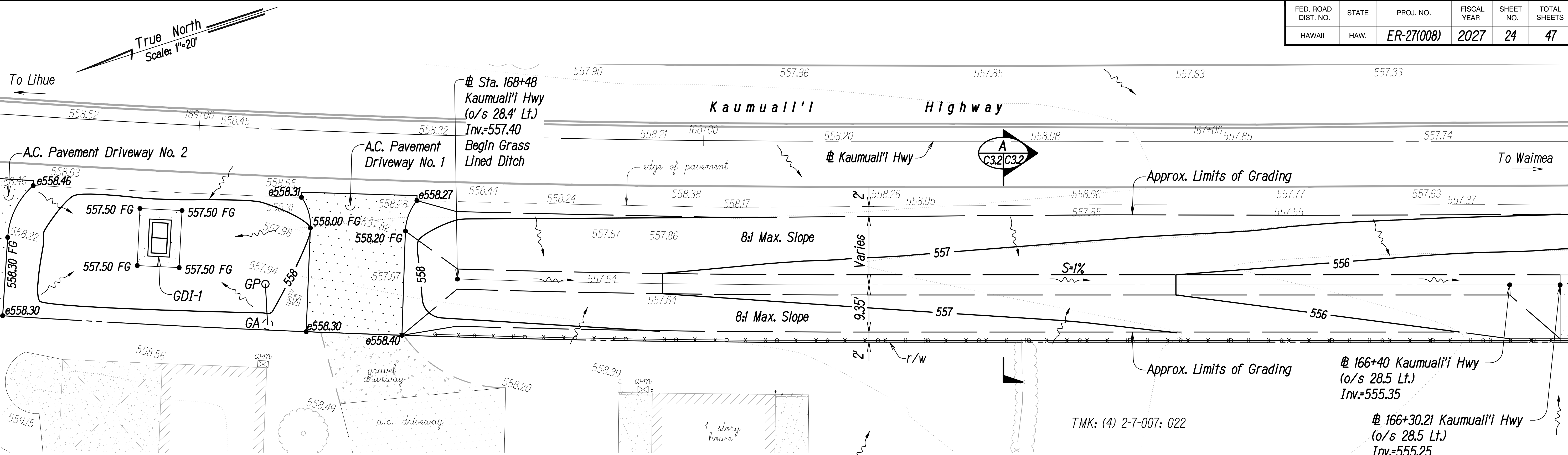
SITE PLAN

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026

SHEET No. C31 OF C32 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	24	47



Estimated Earthwork Quantities

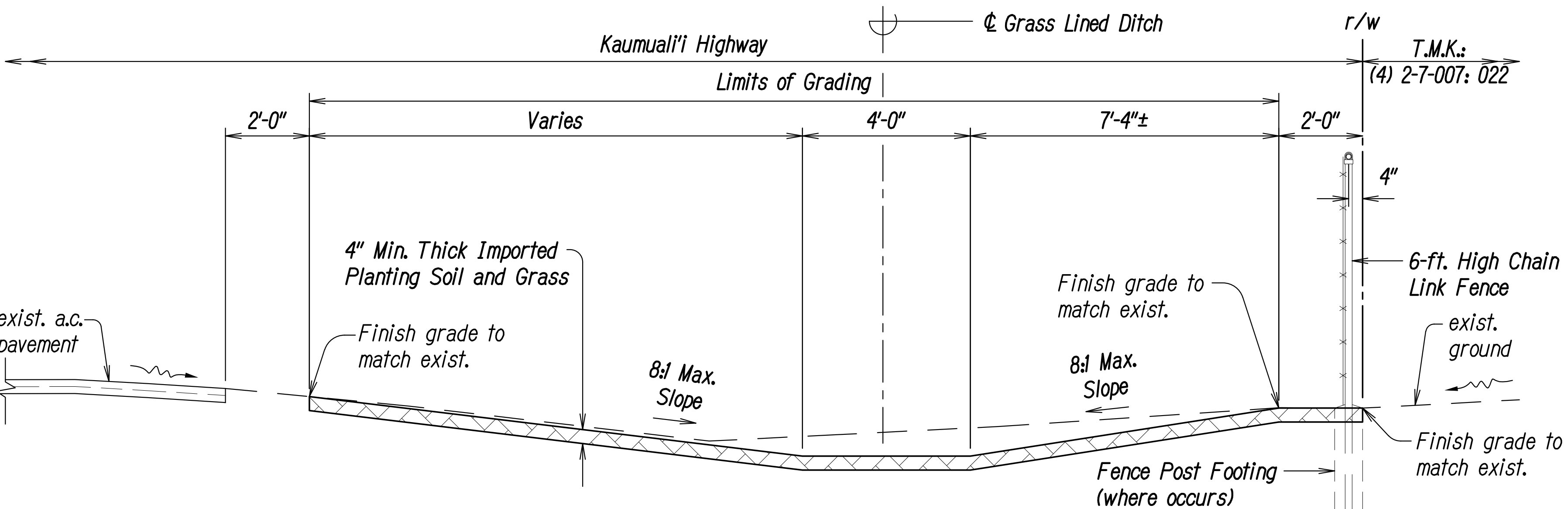
Excavation: 57 cubic yards
Embankment: 4 cubic yards
Total area to be graded: 7,239 sf (0.17 acres)

The quantities shown above are for permit purposes only for grading of the left landscaped shoulder from Sta. 165+81.71 to Sta. 169+36.50 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.

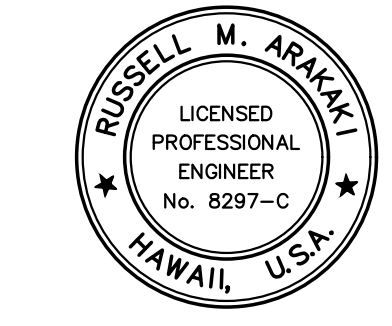
GRADING PLAN
Scale: 1" = 10'

- Notes:**
- Excavation for Grass Lined Ditch to be paid for under Item No. 207.0100 Ditch and Channel Excavation.
 - Topsoil to be paid under Item No. 617.0100 Imported Planting Soil (4" Layer). Grass to be paid under Item No. 641.0100 Hydro-mulch Seeding.

- LEGEND:**
- Right-of-Way, Property Line
 - Approximate Exist. 1-ft Contour
 --555-..... Approximate Exist. 5-ft Contour
 - Approximate Finish 1-ft Contour
 - 555--- Approximate Finish 5-ft Contour
 - Approximate Limits of Grading
 - 558.20 Exist. Ground Elevation
 - e275.0 Match to Exist. Grade
 - 275.0 FG Finish Grade Elevation
 - ~ Flow Arrow



SECTION A
Scale: 1/2" = 1'-0" C3.2/C3.2



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Russell M. Arakawa, APRIL 30, 2028
Lic. Exp. Date
dbs PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GRADING PLAN

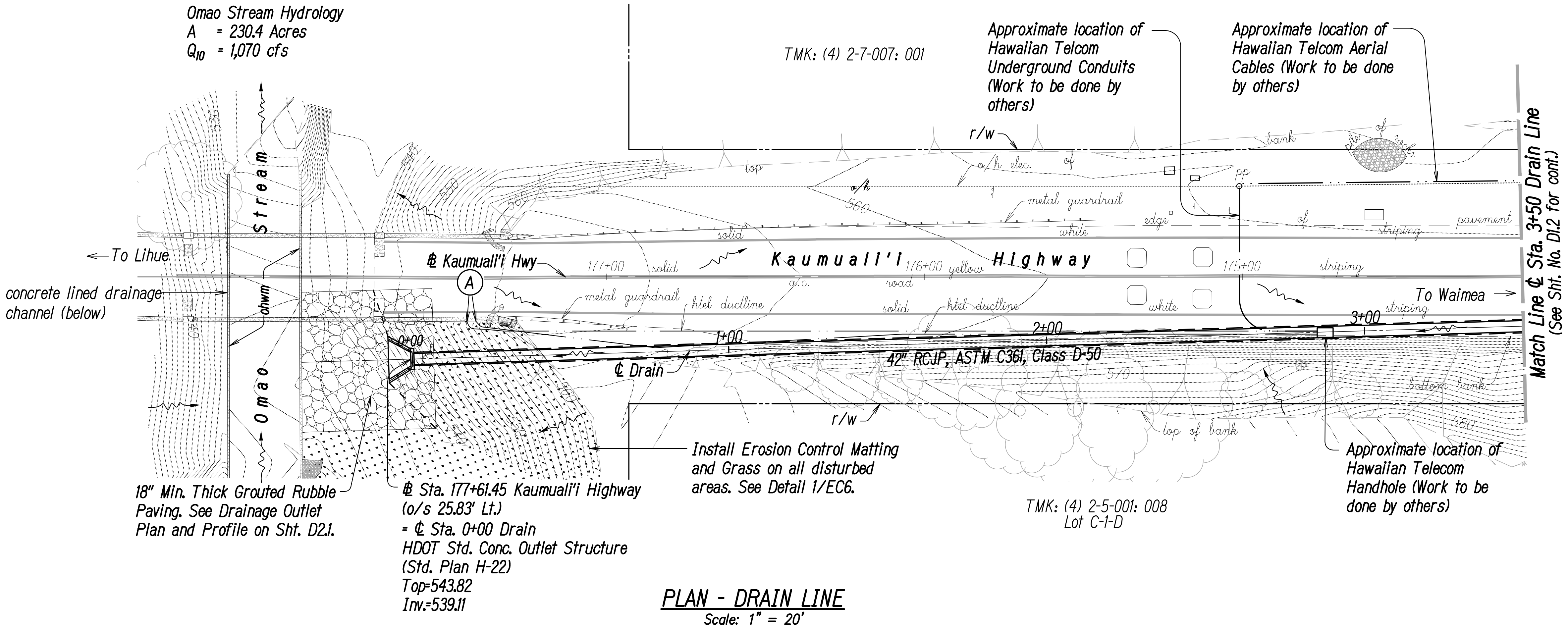
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026

SHEET No. C32 OF C32 SHEETS

SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
NOTED BY	
CHECKED BY	

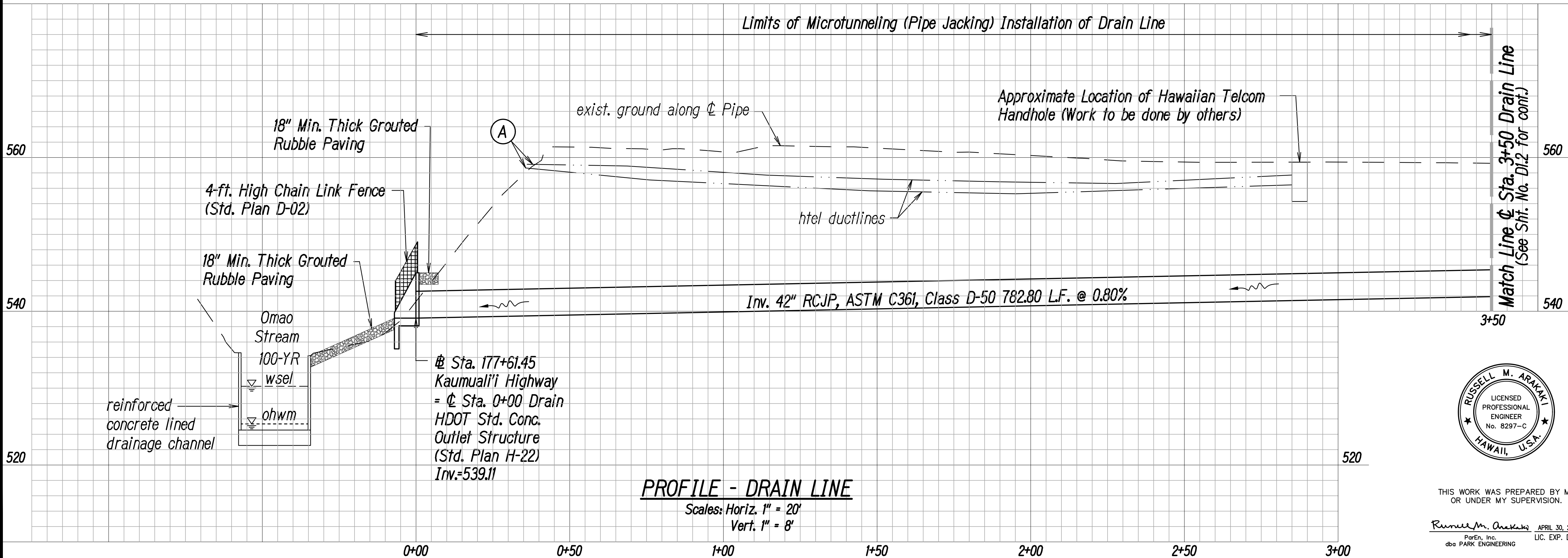
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	25	47



LEGEND:

-----	Right-of-Way, Property Line
-----	Approx. Exist. 1-ft Contour
-----	Approx. Exist. 5-ft Contour
-----	Exist. Hawaiian Telcom Ductline
-----	Exist. Overhead Electric Line
-----	Relocated Hawaiian Telcom Aerial Cables
-----	Ordinary High Water Mark
-----	100-YR Storm Water Surface Elevation
-----	18" Min. Thick Grouted Rubble Paving
-----	Erosion Control Matting

(A) The existing Hawaiian Telcom ductlines suspended along Omao Stream Bridge are not shown.



RUSSELL M. ARMAK
LICENSED PROFESSIONAL ENGINEER
No. 8297-C
HAWAII, U.S.A.

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Russell M. Armark
Parks, Inc.
dbs PARK ENGINEERING

APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAIN LINE
PLAN AND PROFILE
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown
Date: September 2026

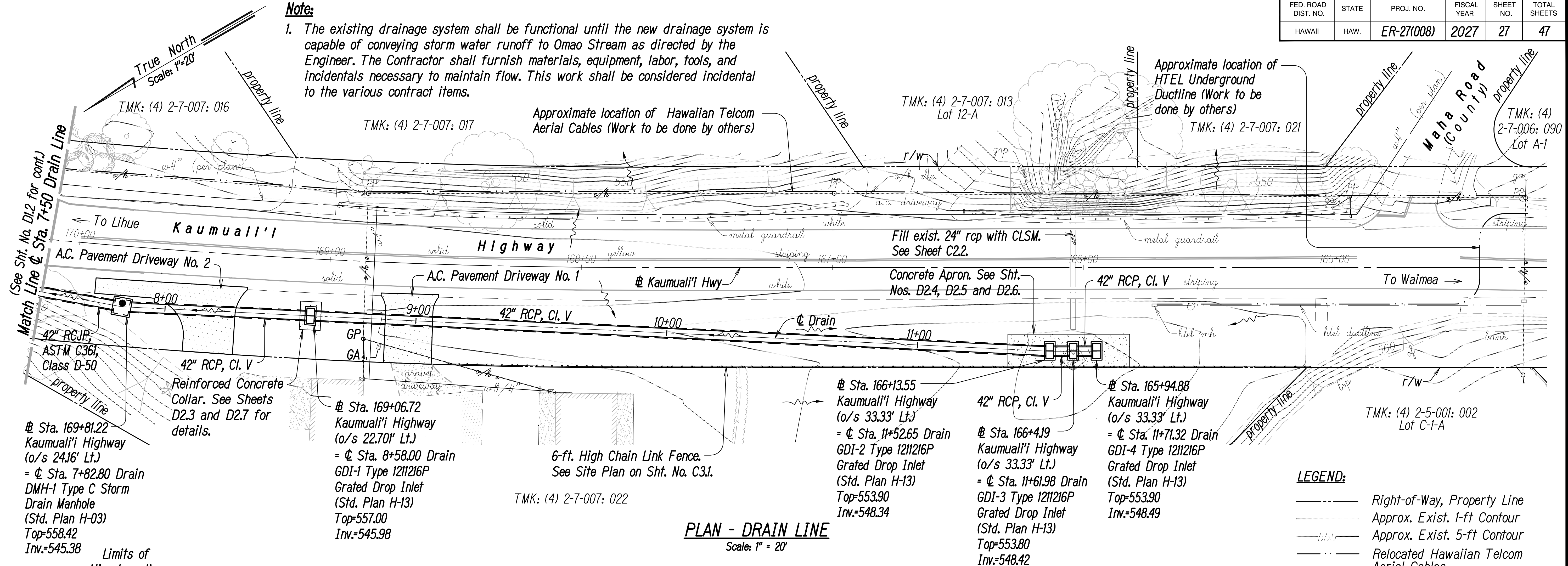
SHEET No. D1.1 OF D1.3 SHEETS

DATE	DESIGNED BY	CHECKED BY
NO.	DESIGNED BY	CHECKED BY
NOTE BOOK	DESIGNED BY	CHECKED BY
ORIGINAL PLAN	DESIGNED BY	CHECKED BY

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	27	47

Note:

1. The existing drainage system shall be functional until the new drainage system is capable of conveying storm water runoff to Omao Stream as directed by the Engineer. The Contractor shall furnish materials, equipment, labor, tools, and incidentals necessary to maintain flow. This work shall be considered incidental to the various contract items.

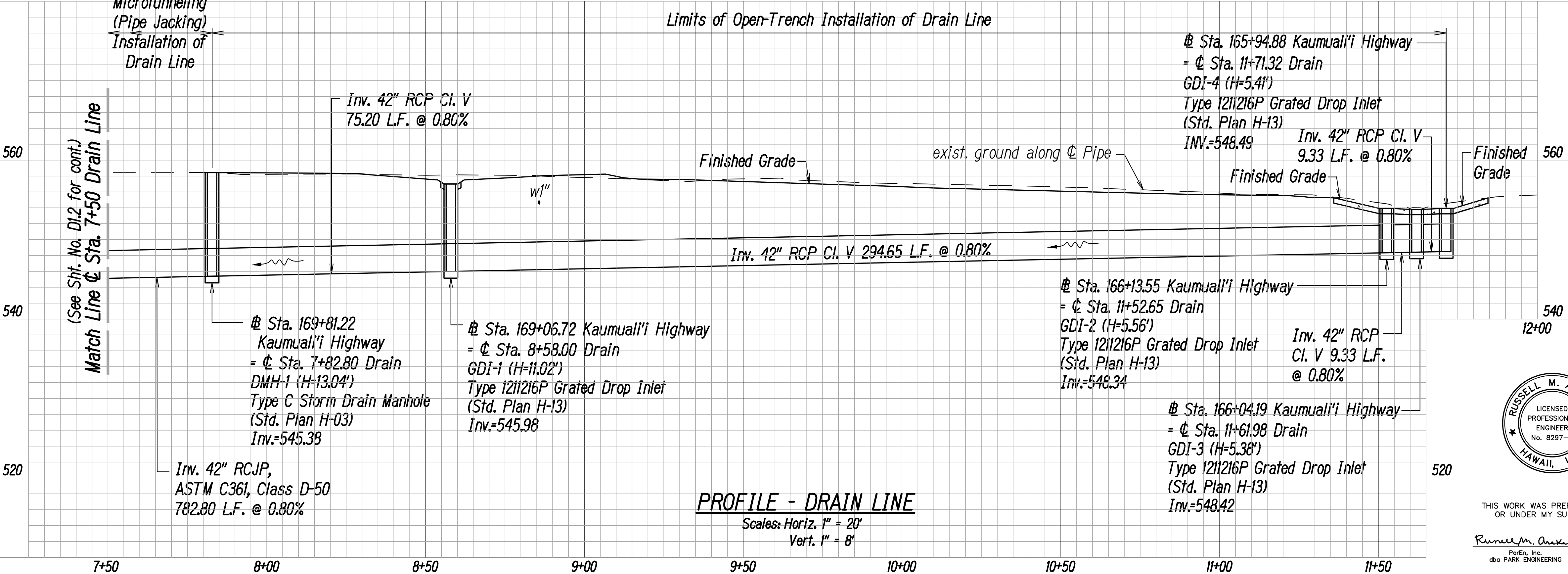


LEGEND:

- Right-of-Way, Property Line
- Approx. Exist. 1-ft Contour
- Approx. Exist. 5-ft Contour
- Relocated Hawaiian Telcom Aerial Cables
- Exist. Hawaiian Telcom Ductline
- Exist. Overhead Electric Line

APPROVED:

Jason Kagimoto 07/06/26
FOR MANAGER AND CHIEF ENGINEER DATE
DEPT. OF WATER
COUNTY OF KAUAI

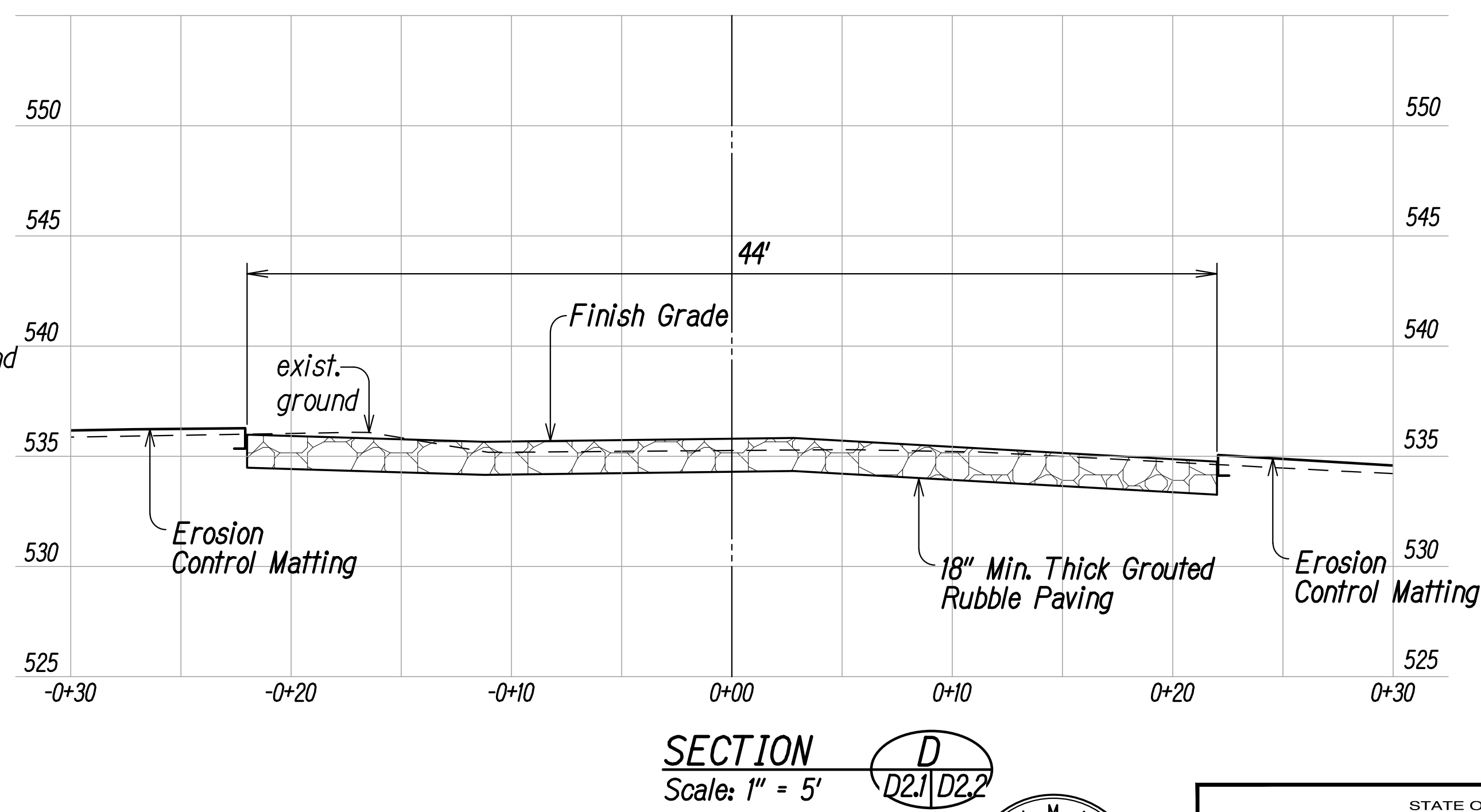
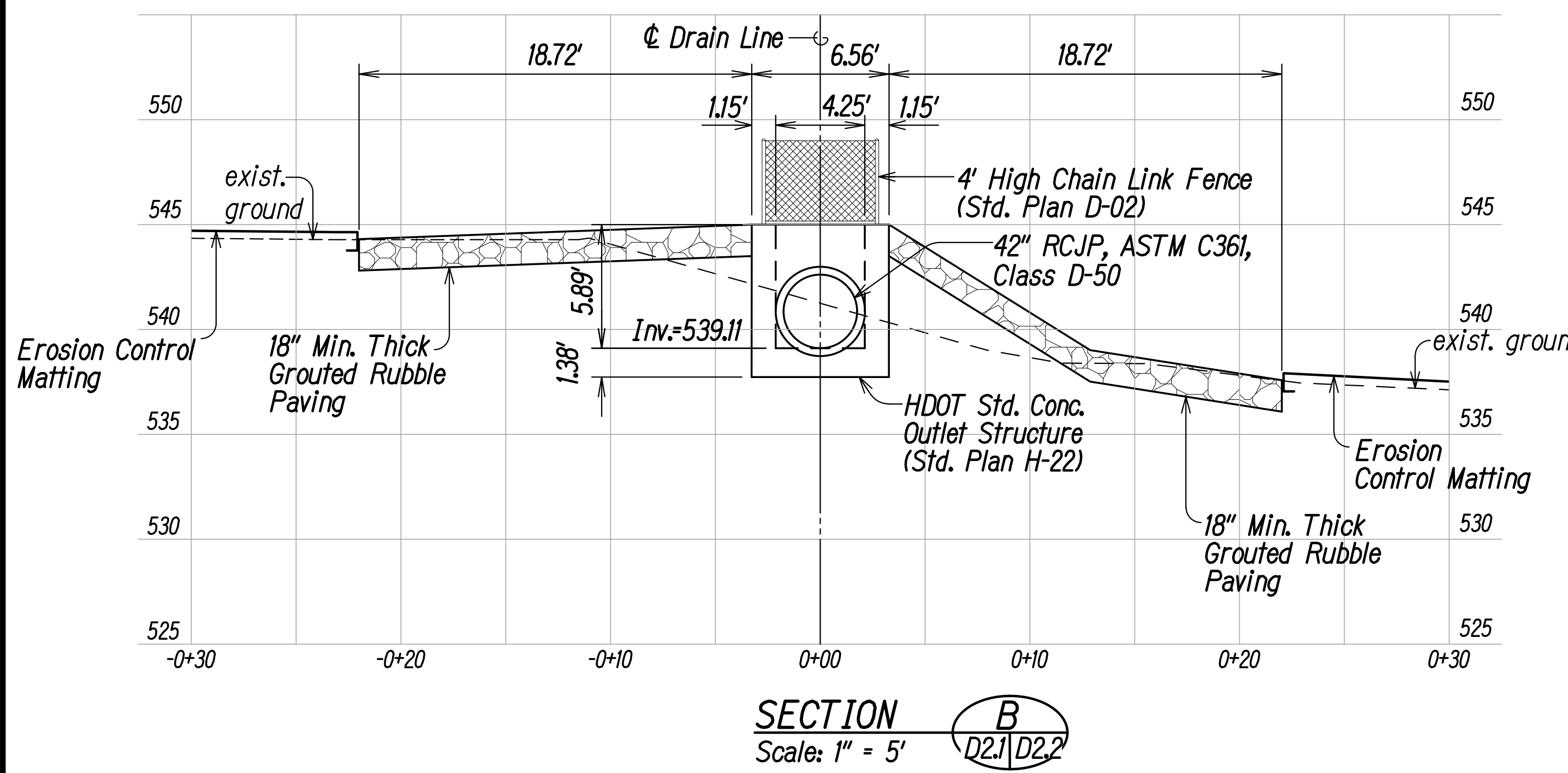
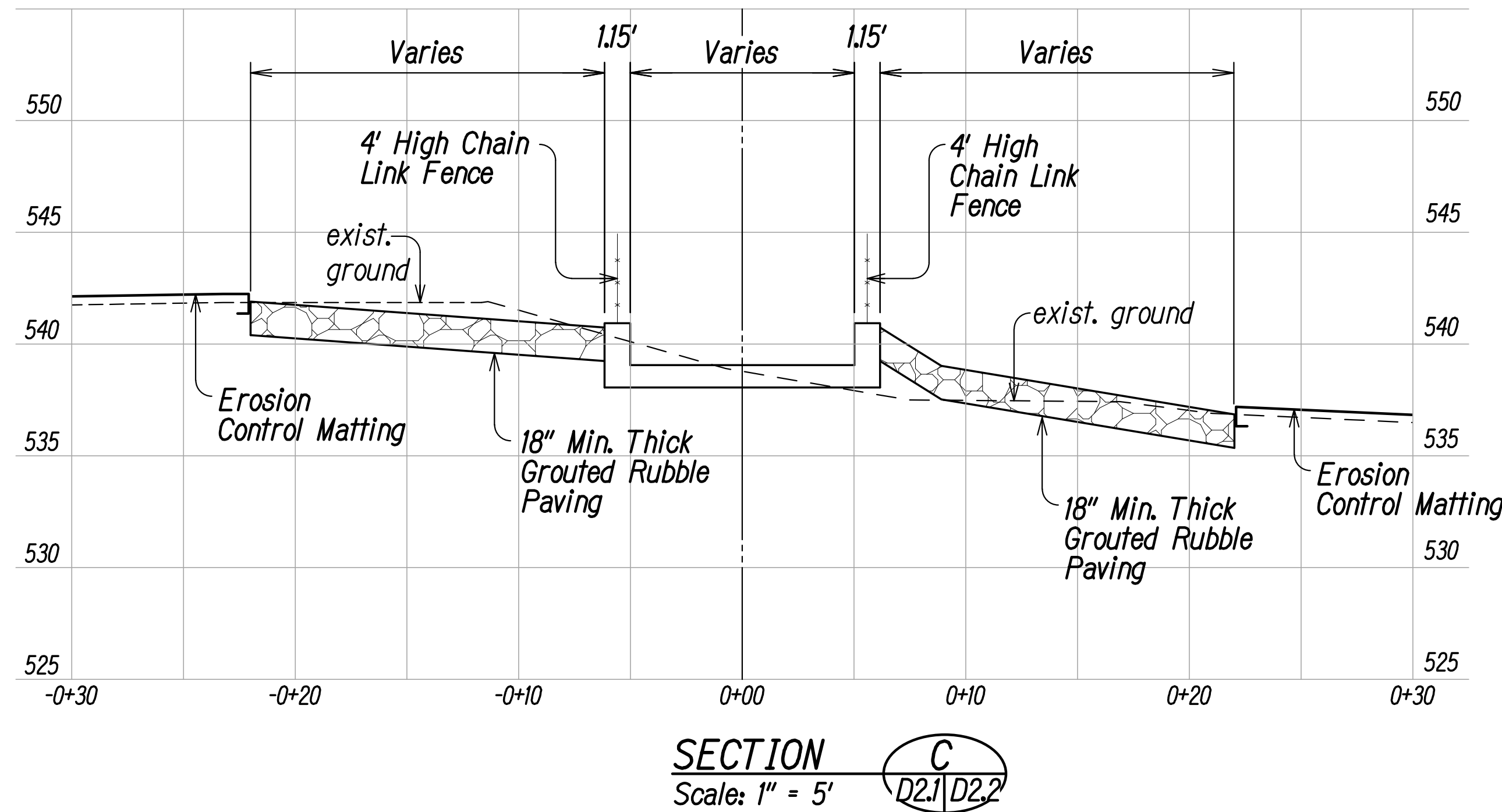
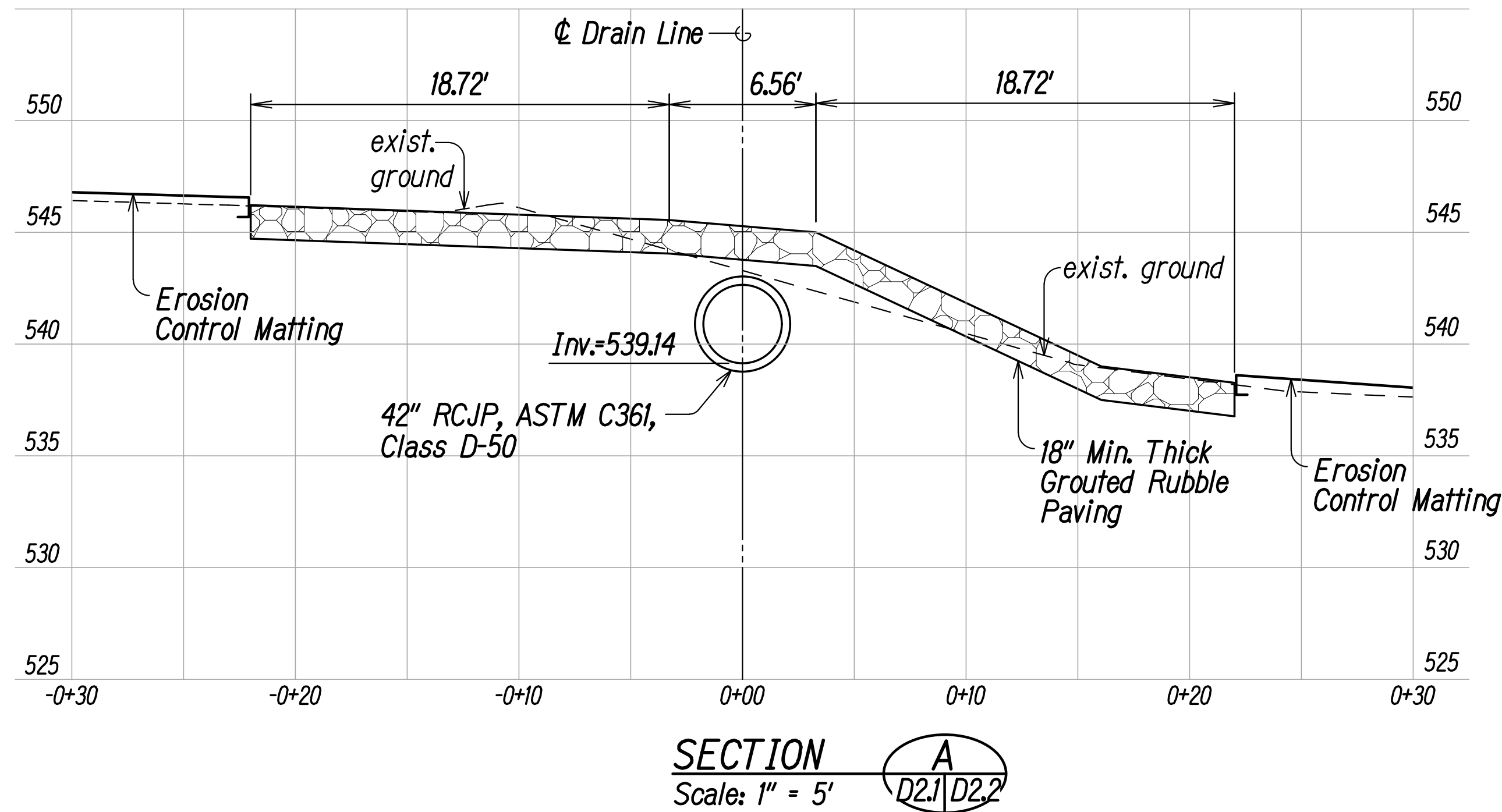


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Russell M. Arakaki APRIL 30, 2028
dbs PARK ENGINEERING LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAIN LINE
PLAN AND PROFILE
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)
Scale: As Shown Date: September 2026
SHEET No. D1.3 OF D1.3 SHEETS

DATE	DESIGNED BY	CHECKED BY
ORIGINAL PLAN	NOTE BOOK	No.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	29	47



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

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Lic. Exp. Date
ParEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

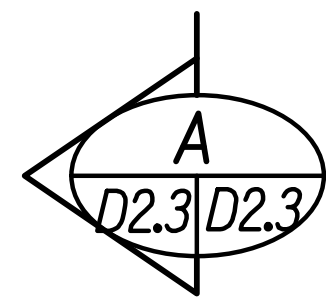
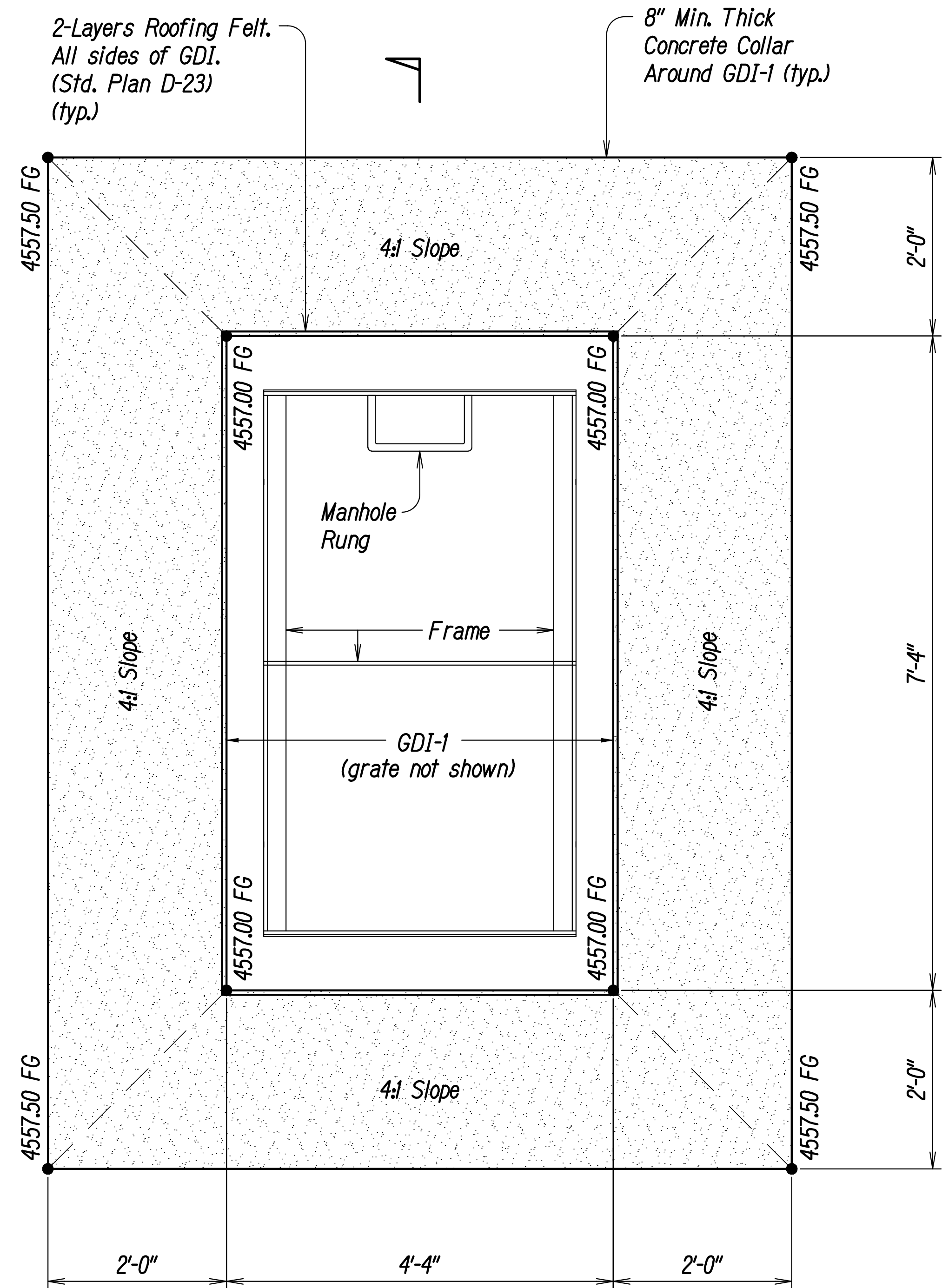
DRAINAGE SECTIONS
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: None

Date: September 2026

SHEET No. D22 OF D28 SHEETS

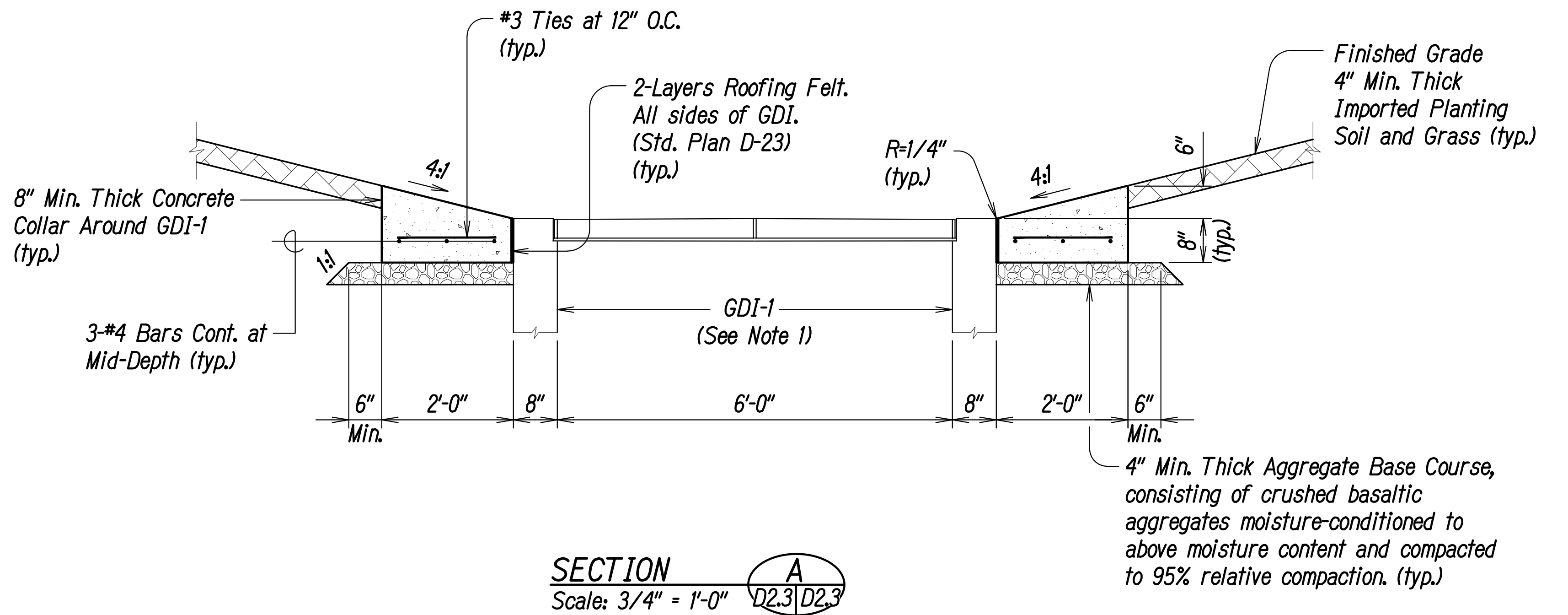
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	30	47



PLAN
Scale: 1" = 1'-0"

Notes:

1. Modify Type 1211216P Grated Drop Inlets (Std. Plan H-13) frame and grate to provide a flat frame and grate.
2. Concrete Collar, including aggregate base course, shall not be paid for separately but will be considered incidental to Item No. 604.0300 Type 1211216P Grated Drop Inlet, 11.00 feet to 11.99 feet.
3. See sheet D2.7 for Typical Trench Section for Grated Drop Inlets.



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



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Russell M. Arakawa
P.E., Inc.
dba PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

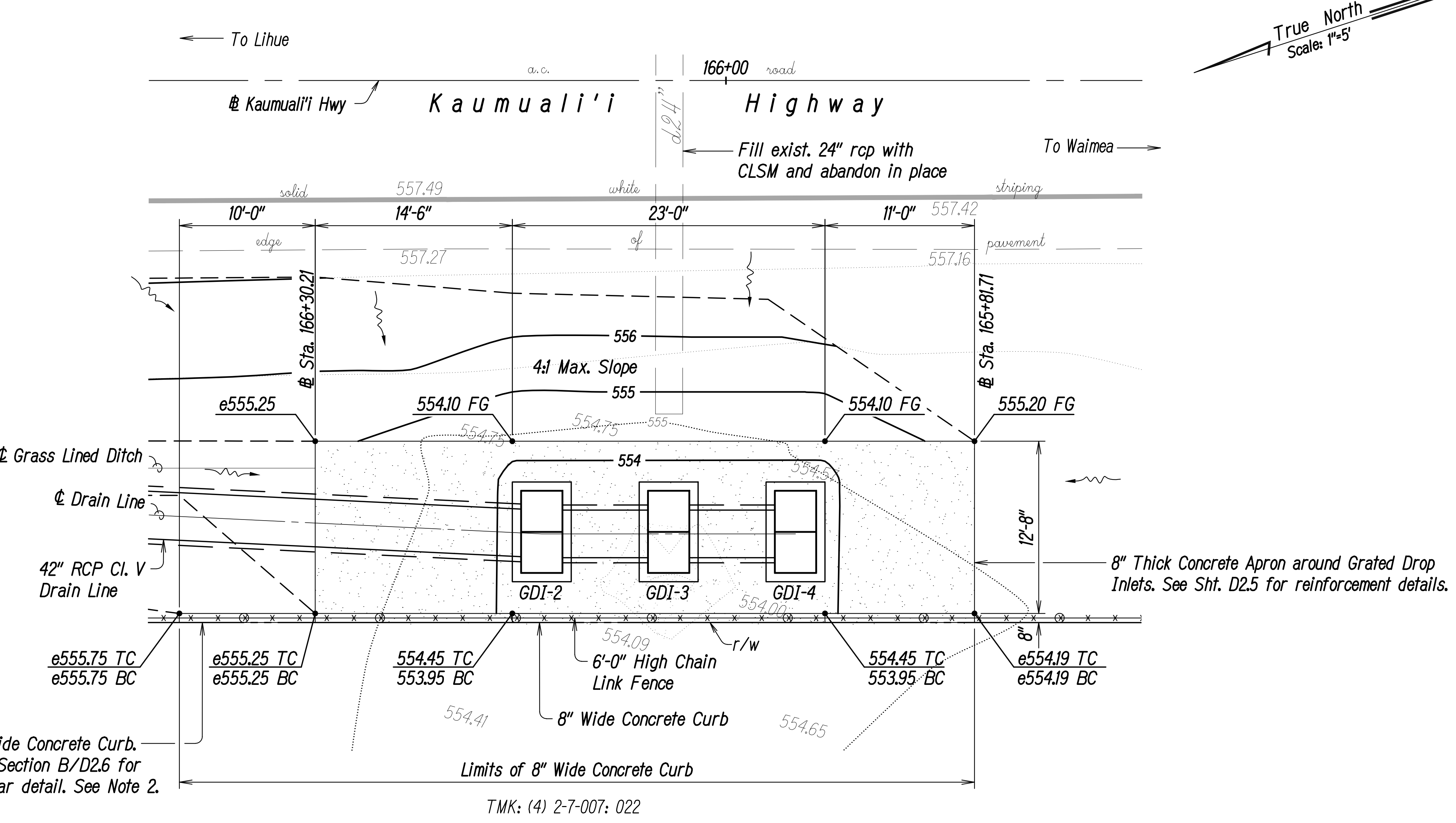
DRAINAGE DETAILS

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026

SHEET No. D2.3 OF D2.8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	31	47

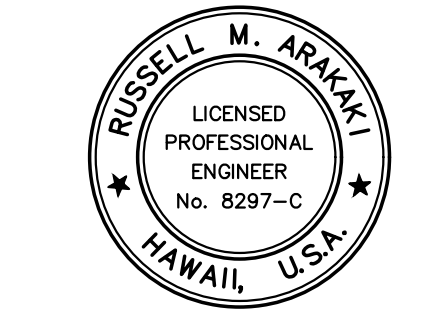


- Notes:**
- See Sheet D2.5 for reinforcing details.
 - 8" Wide Concrete Curb beyond the Concrete Apron will not be paid for separately but shall be considered incidental to Item No. 503.0100 Concrete for Concrete Apron.

- LEGEND:**
- 554.41 Exist. Ground Elevation
 - Approximate Exist. 1-ft Contour
 --555-..... Approximate Exist. 5-ft Contour
 - Approximate Finish 1-ft Contour
 - 555 — Approximate Finish 5-ft Contour
 - Approximate Limits of Grading
 - 555.00 FG Finish Grade Elevation
 - e555.32 Match to Exist. Grade
 - 554.45 TC Top Curb Elevation
 - 553.95 BC Bottom Curb Elevation
 - ~~~~~ Flow Arrow

PLAN - GRATED DRAIN INLET NOS. 2, 3 AND 4
Scale: 1" = 5'

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



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APRIL 30, 2028
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PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

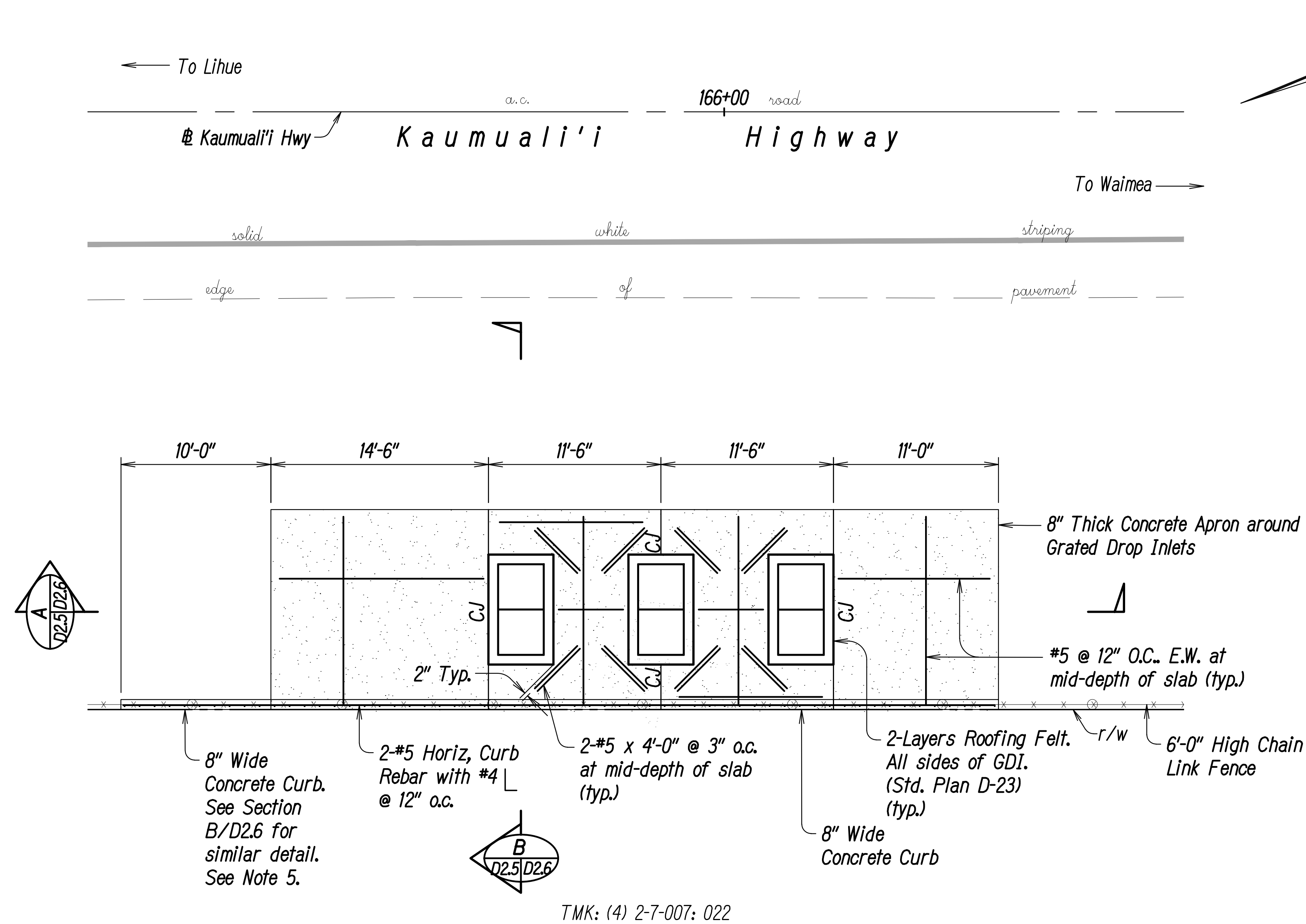
DRAINAGE DETAILS

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026

SHEET No. D2.4 OF D2.8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	32	47



Notes:

1. All concrete shall be cured for a minimum of seven consecutive days immediately after pouring by the use of wet Burlap, Fog Spraying, Curing Compound, or other approved methods.
2. A 1 1/2" long macro synthetic fiber such as Forta Ferro, Strux 90/40, MasterFiber Mac Matrix or approved equal shall be added at a dosage of 7.5 lbs. per cubic yard of concrete.
3. All reinforcing shall be ASTM A615, Grade 60 unless otherwise noted.
4. The clear cover measured from the surface of the concrete to the face of any reinforcing bars.
5. 8" Wide Concrete Curb beyond the Concrete Apron will not be paid for separately but shall be considered incidental to Item No. 503.0100 Concrete for Concrete Apron.

LEGEND:

CJ Transverse Construction Joint (Std. Plan D-19)

PLAN - GRATED DRAIN INLET NOS. 2, 3 AND 4
Scale: 1" = 5'

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



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APRIL 30, 2028
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONCRETE APRON DETAILS

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

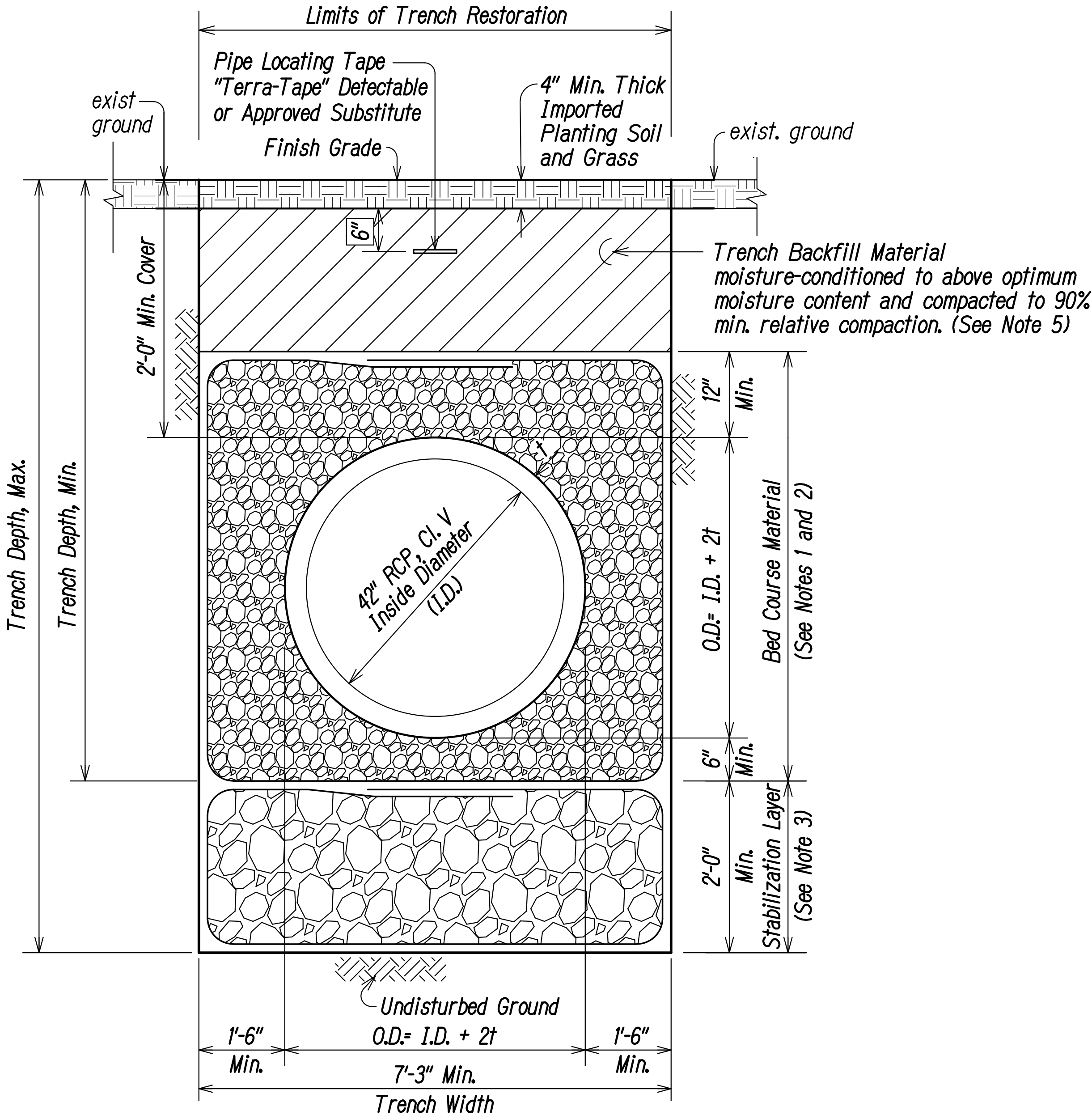
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SHEET No. D25 OF D28 SHEETS

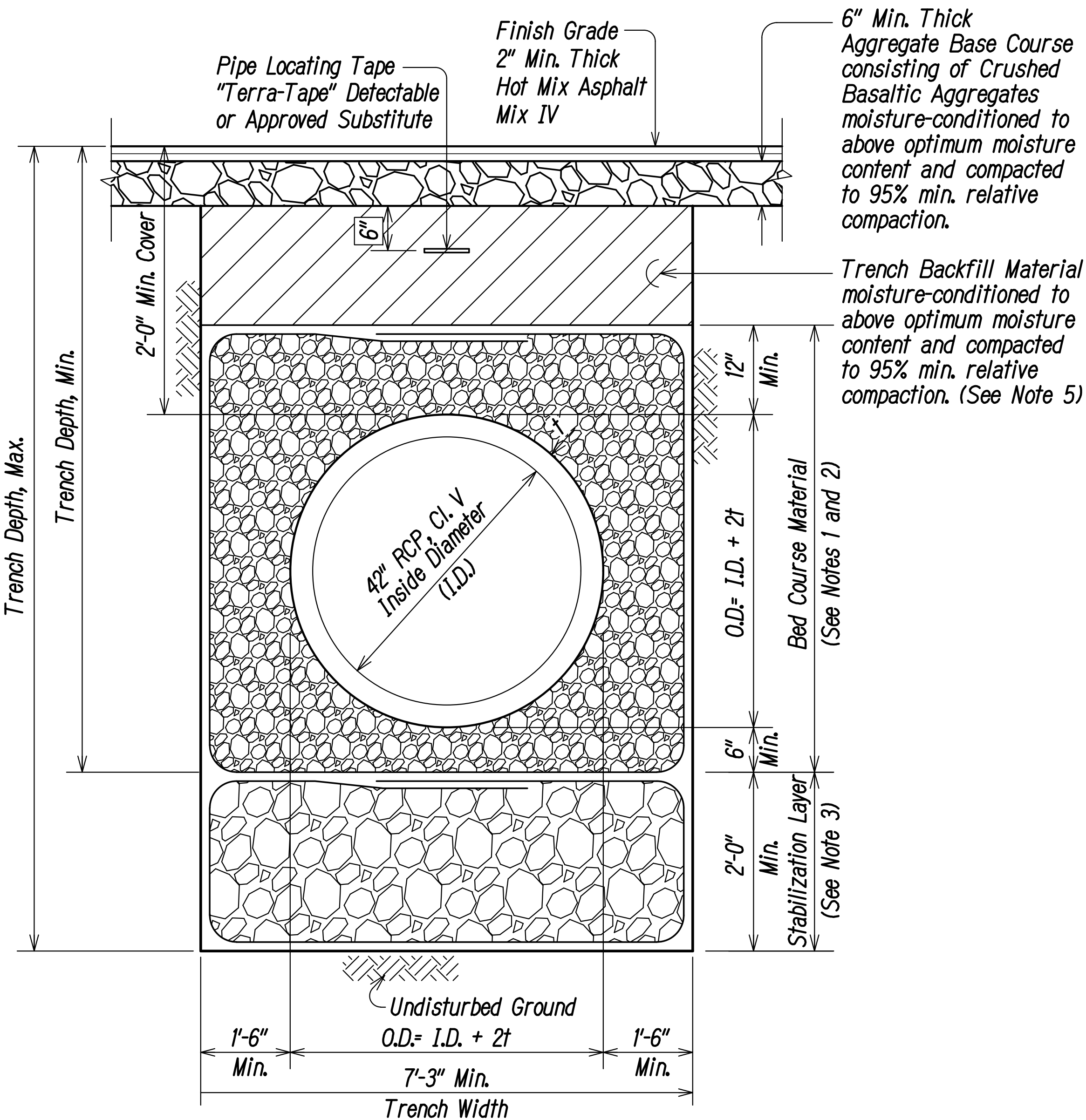
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	35	47

Notes:

- 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).
- Bed Course Material shall be paid for under Item No. 603.0100 Bed Course Material for 42-Inch RCP Drain Pipe.
- Contractor shall over-excavate to a depth of 2 feet min. if soft and/or loose soil is encountered as determined by the Engineer. Install 2 feet min. thick Stabilization Layer consisting of No. 2 (ASTM C33, No. 4 Gradation) Basalt Aggregate wrapped in Non-woven Filter Fabric (Mirafi 180N or Approved Substitute).
- Excavation for the stabilization layer below, as required by the Engineer, will be paid for under item No. 206.0200 Excavation for Stabilization Layer.
- 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 42-Inch RCP Drain Pipe.



**TYPICAL TRENCH DETAIL
FOR DRAIN PIPE (NON-PAVED AREAS)**
Scale: 1" = 1'-0"



**TYPICAL TRENCH DETAIL
FOR DRAIN PIPE (PAVED AREAS)**
Scale: 1" = 1'-0"

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



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dba PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

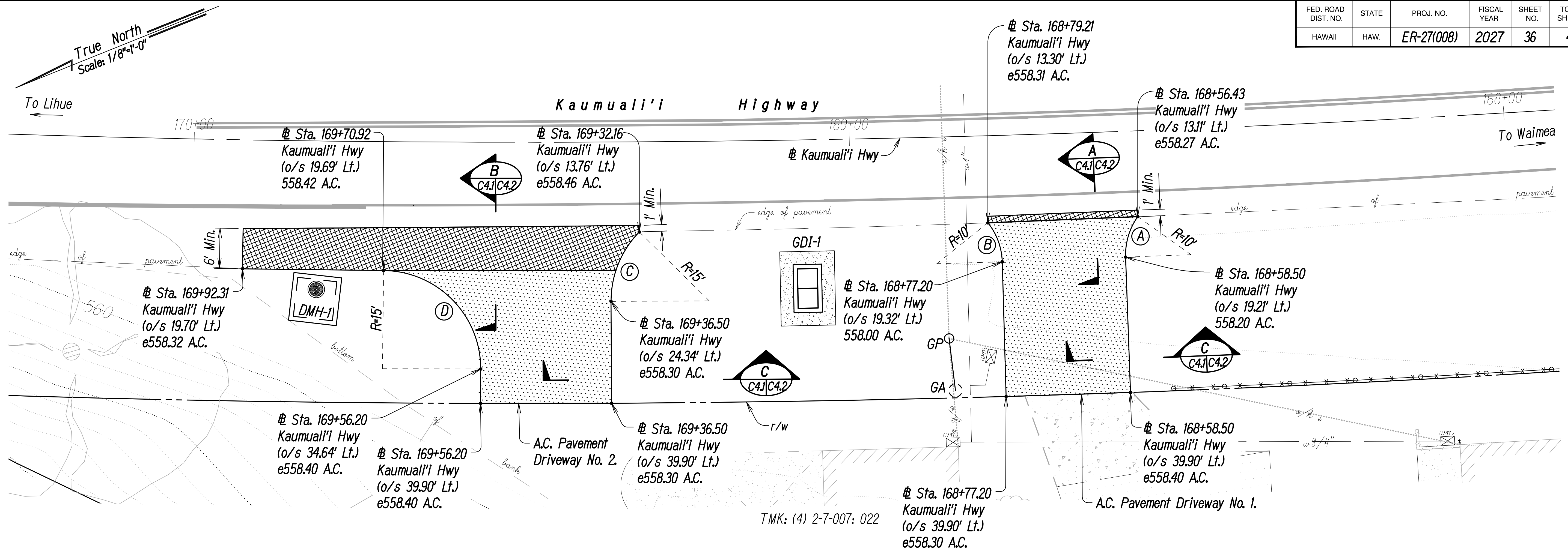
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: None
Date: September 2026

SHEET No. D2.8 OF D2.8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	36	47



DRIVEWAY RESTORATION PLAN
Scale: 1/8" = 1'-0"

- LEGEND:**
- Right-of-Way, Property Line
 - Limits of Shoulder
 - Limits of Driveway
 - Overhead Electrical Line
 - Exist. Water Lateral

CURVE DATA

(A)	(B)
$\Delta = 37^\circ 37' 25''$	$\Delta = 37^\circ 02' 47''$
$\Delta/2 = 18^\circ 48' 43''$	$\Delta/2 = 18^\circ 31' 24''$
$R = 10.00$	$R = 10.00$
$T = 3.41$	$T = 3.35$
$C = 6.45$	$C = 6.35$
$Lc = 6.57$	$Lc = 6.47$
(C)	(D)
$\Delta = 44^\circ 51' 59''$	$\Delta = 89^\circ 27' 22''$
$\Delta/2 = 22^\circ 25' 60''$	$\Delta/2 = 44^\circ 43' 41''$
$R = 15.00$	$R = 15.00$
$T = 6.19$	$T = 14.86$
$C = 11.45$	$C = 21.11$
$Lc = 11.75$	$Lc = 23.42$



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OR UNDER MY SUPERVISION.
Russell M. Arakawa
Parks, Inc.
dba PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRIVEWAY RESTORATION PLAN

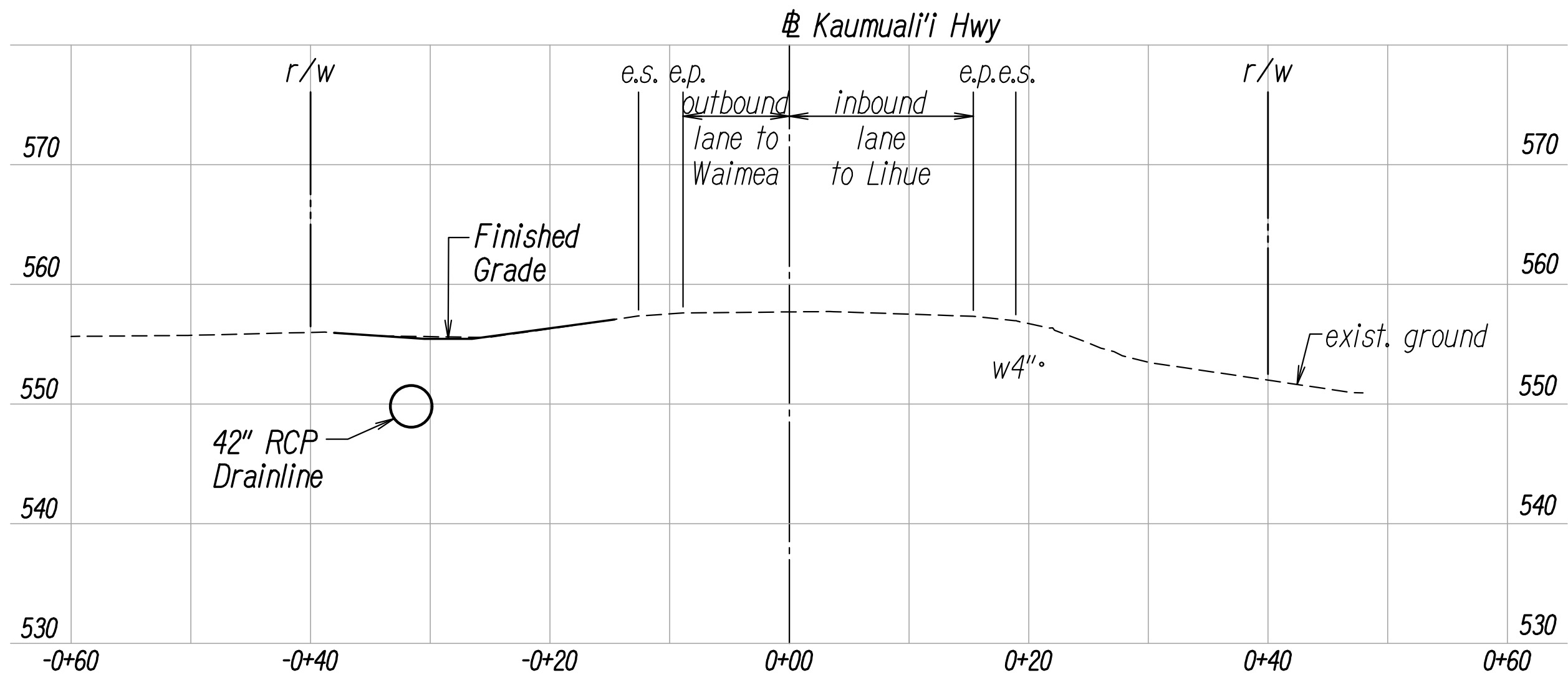
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026

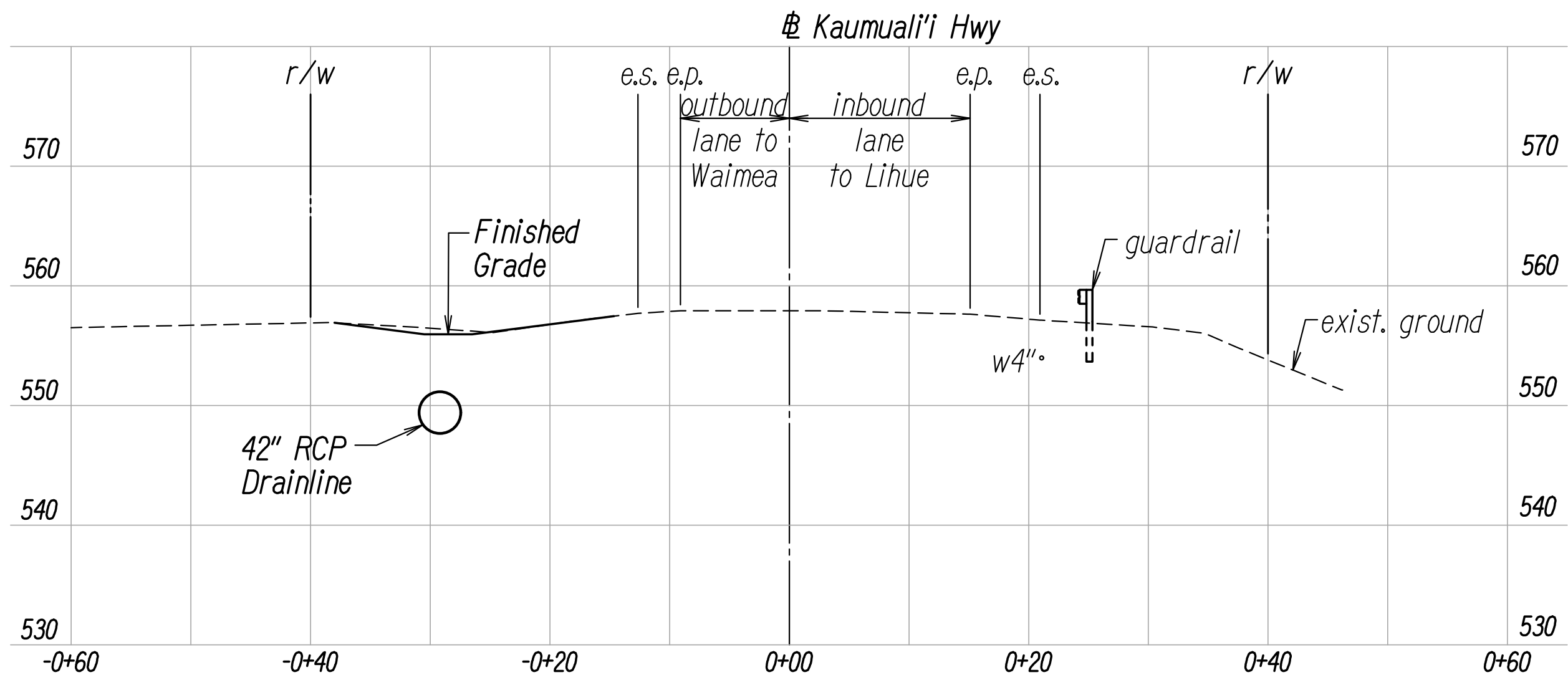
SHEET No. C41 OF C42 SHEETS

SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
No.	

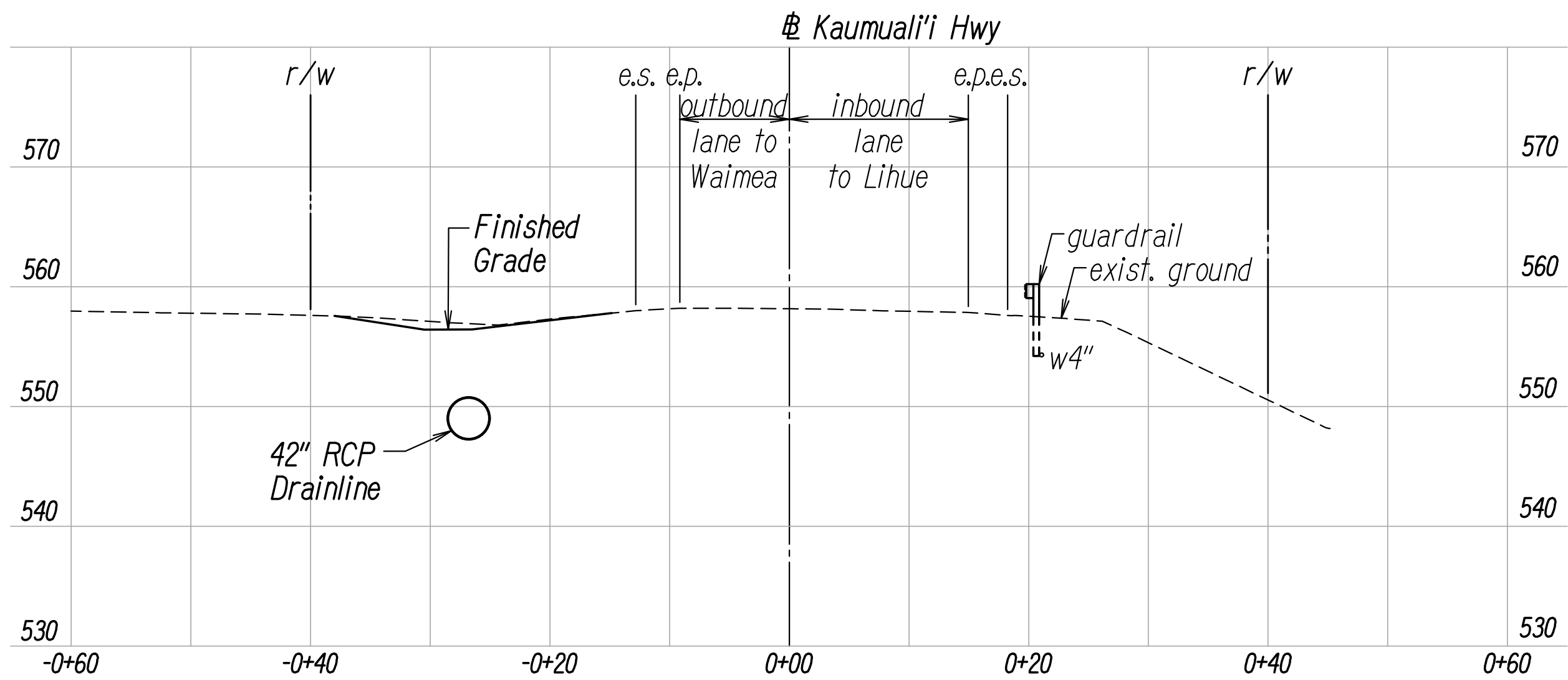
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	39	47



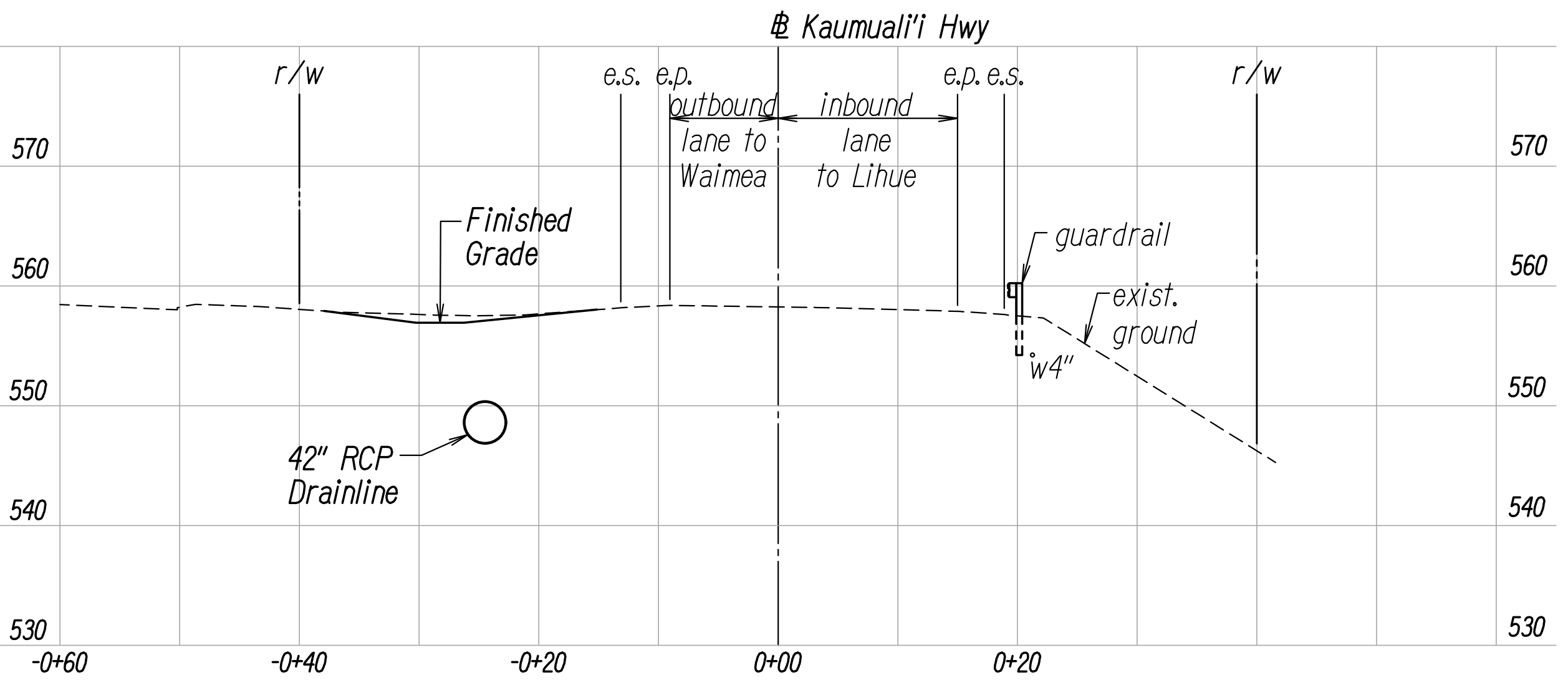
Station 166+50



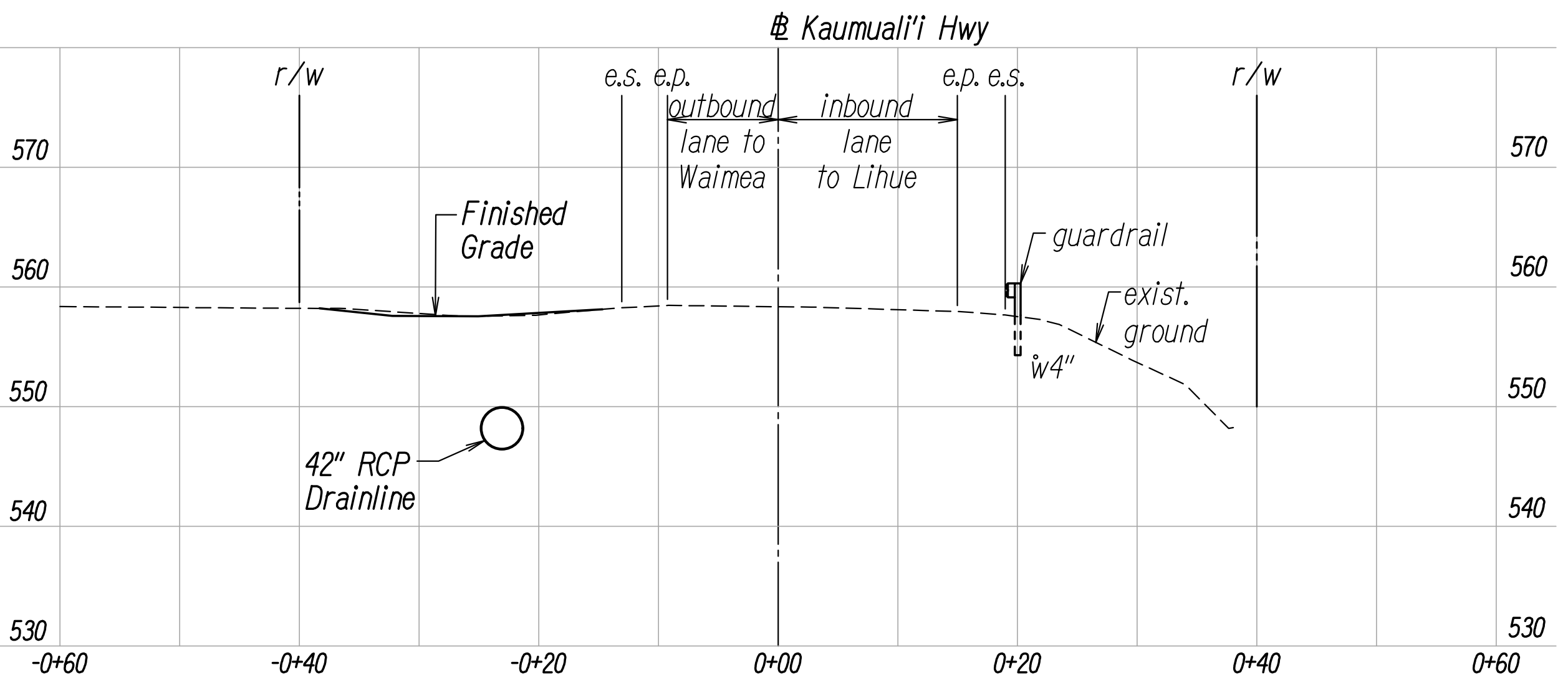
Station 167+00



Station 167+50



Station 168+00



Station 168+50

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

CROSS SECTIONS
Scale: 1" = 10'

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

Russell M. Arakawa APRIL 30, 2028
Lic. Exp. Date
Poreh, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

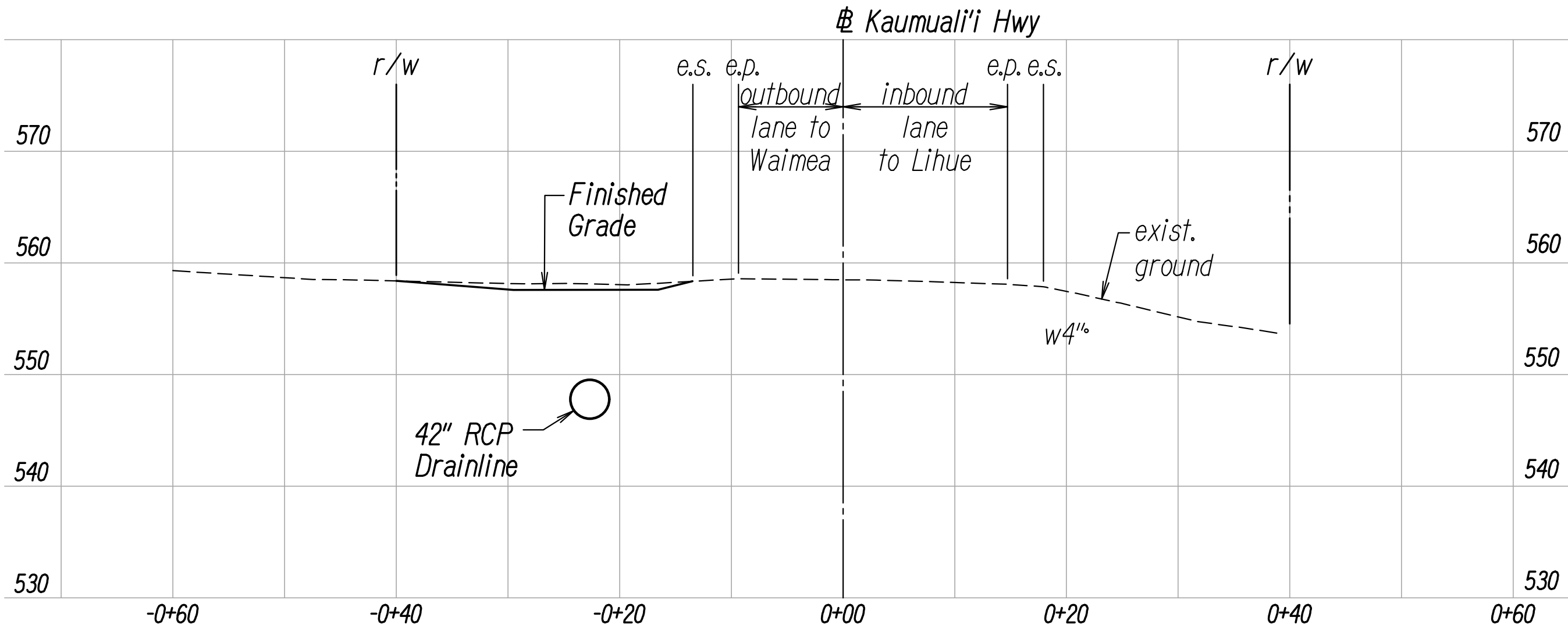
CROSS SECTIONS

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

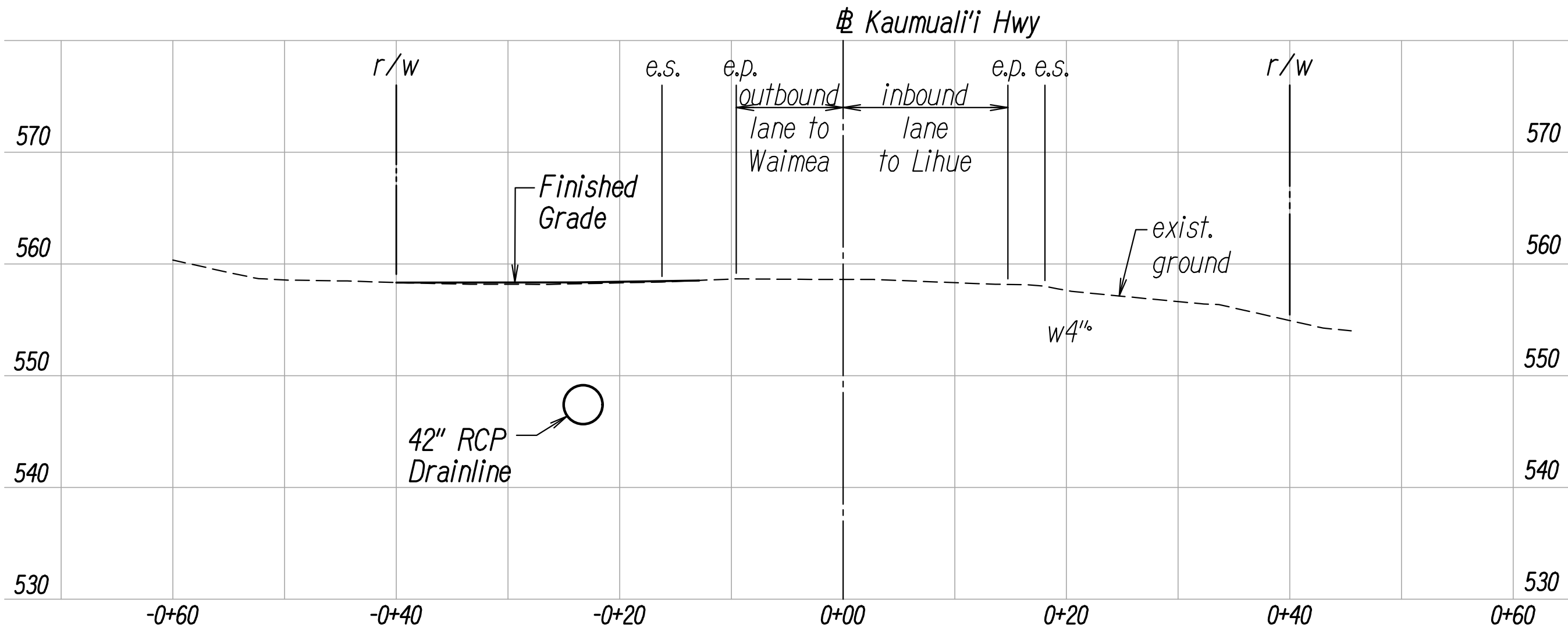
Scale: As Shown Date: September 2026

SHEET No. CS1 OF CS5 SHEETS

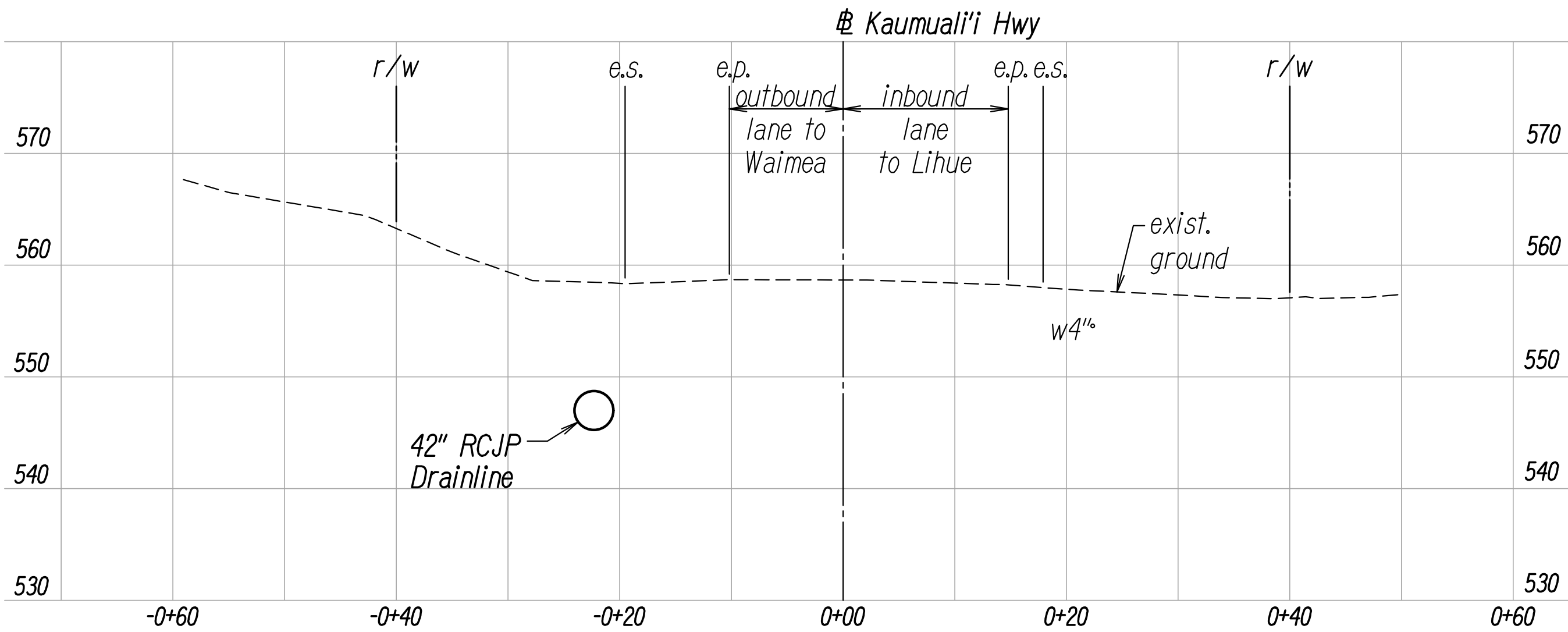
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	40	47



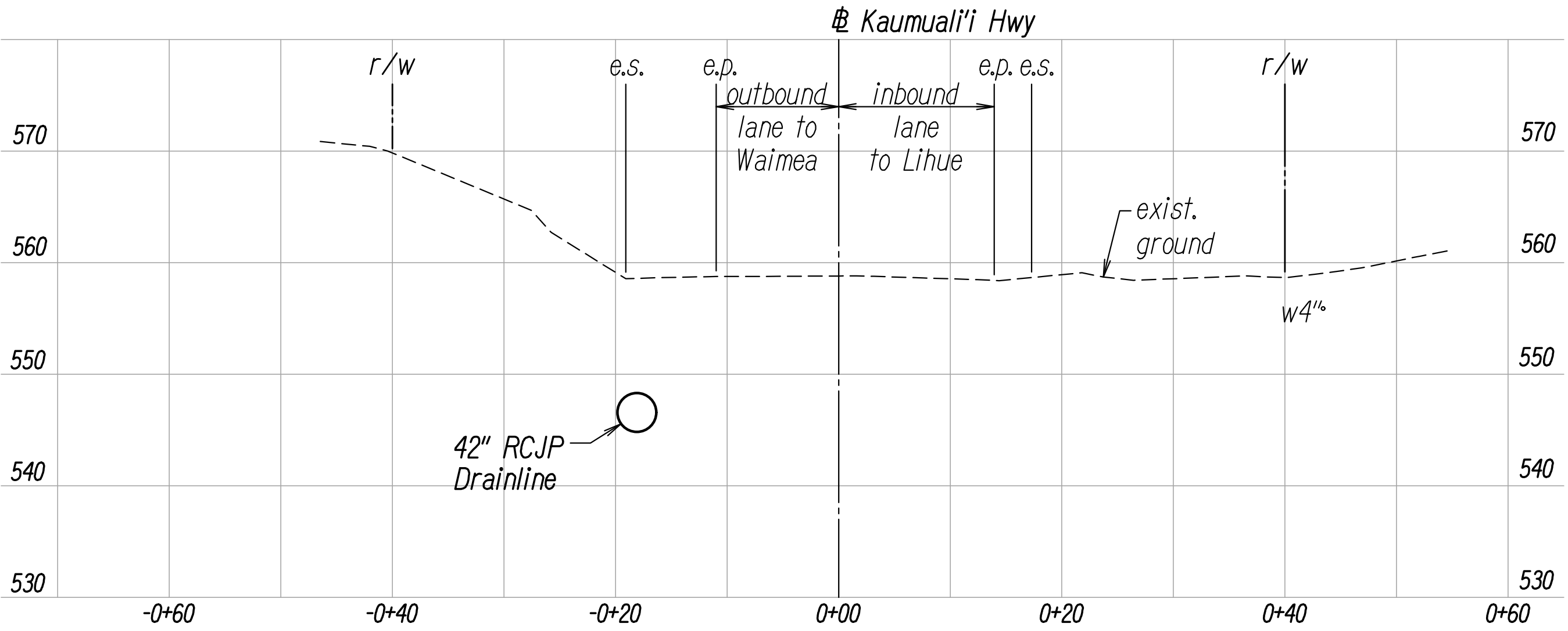
Station 169+00



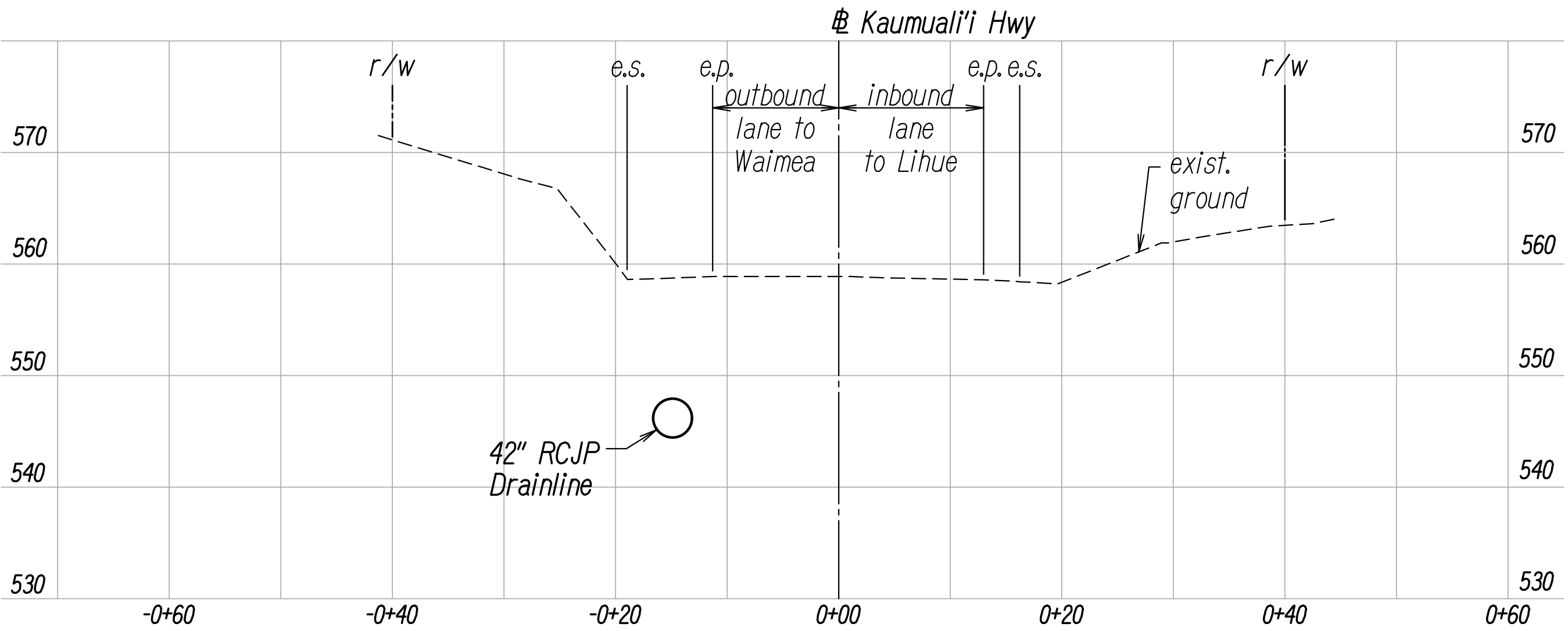
Station 169+50



Station 170+00



Station 170+50



Station 171+00

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

CROSS SECTIONS
Scale: 1" = 10'



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OR UNDER MY SUPERVISION.

Russell M. Arakawa
P.E., Inc.
dba PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

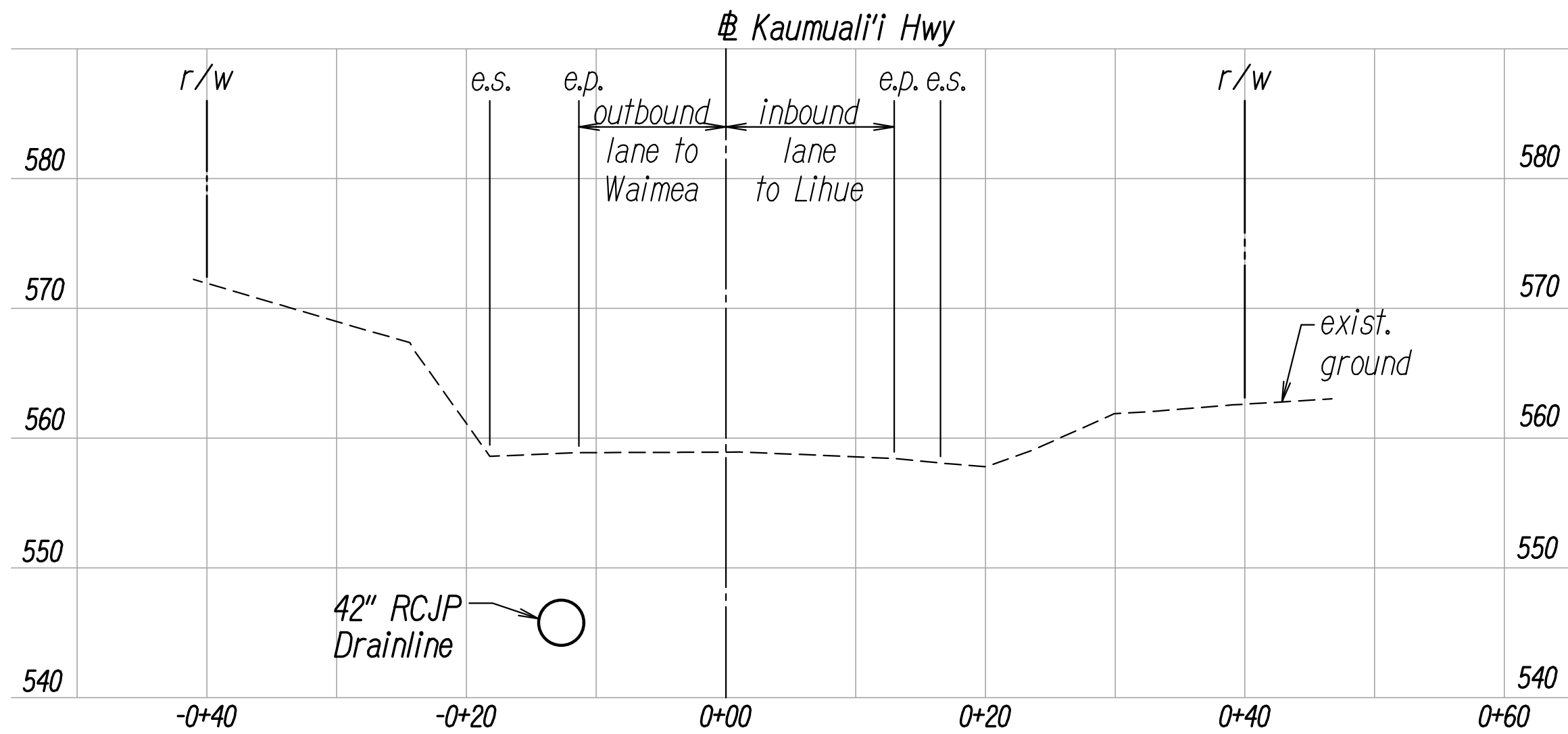
CROSS SECTIONS

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

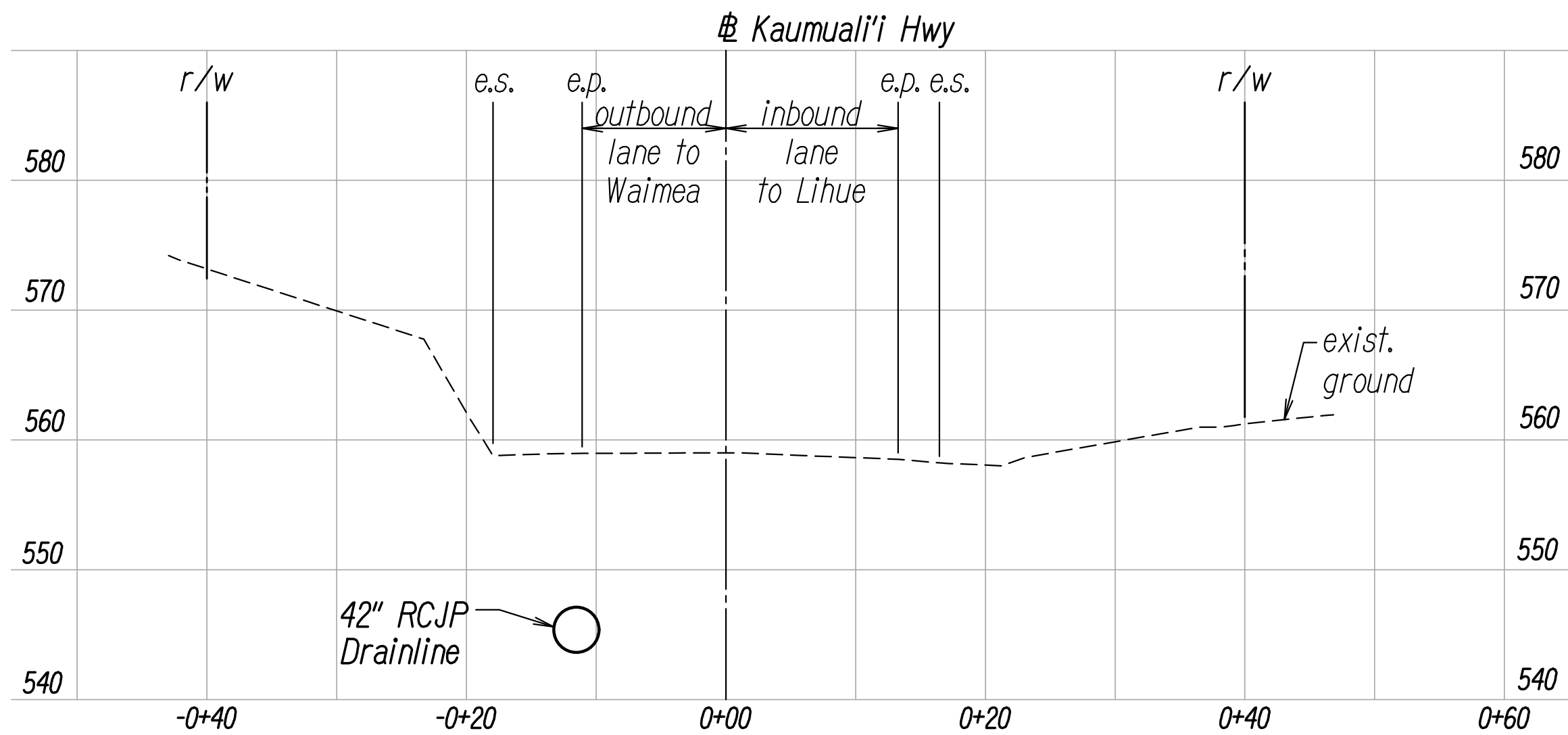
Scale: As Shown Date: September 2026

SHEET No. CS2 OF CS5 SHEETS

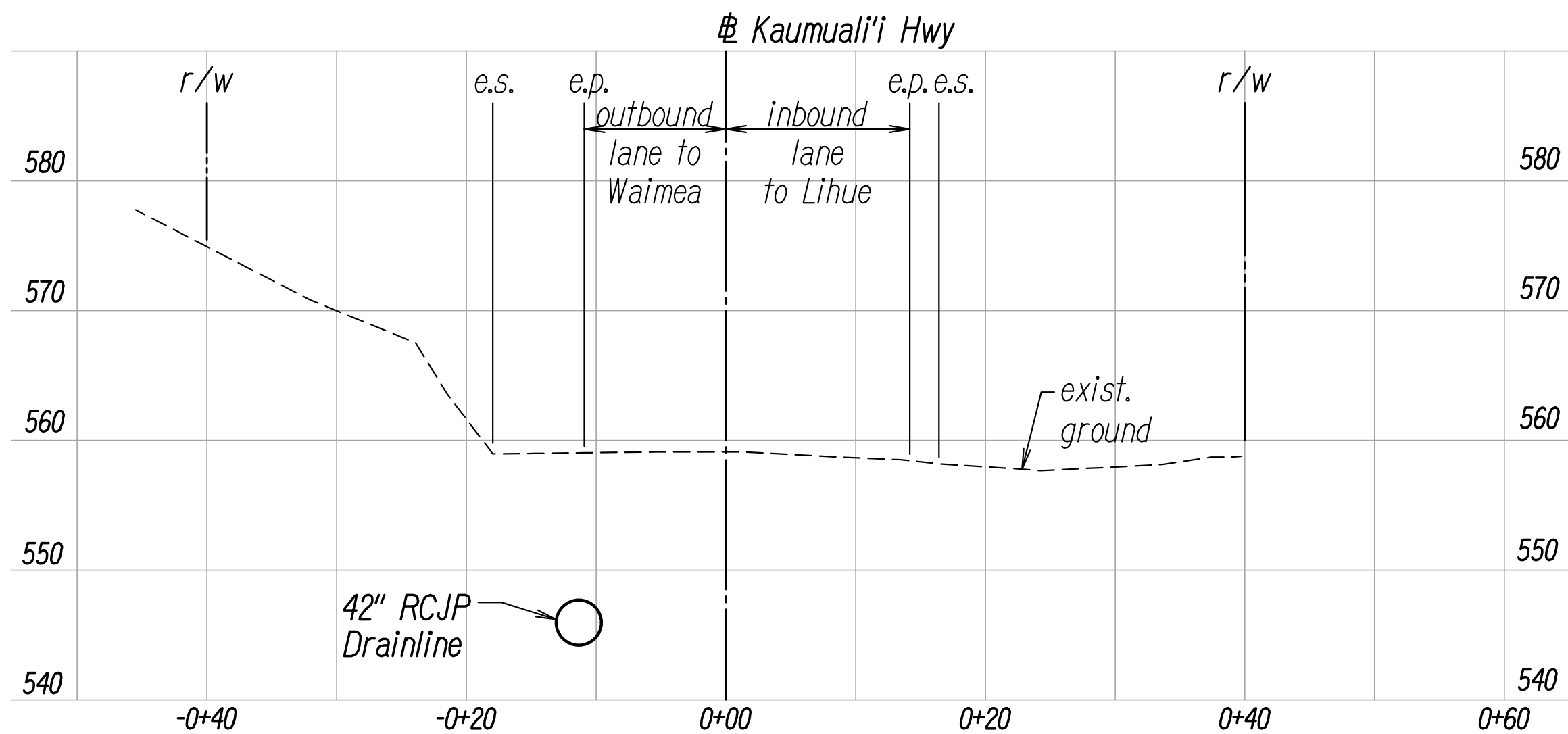
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	41	47



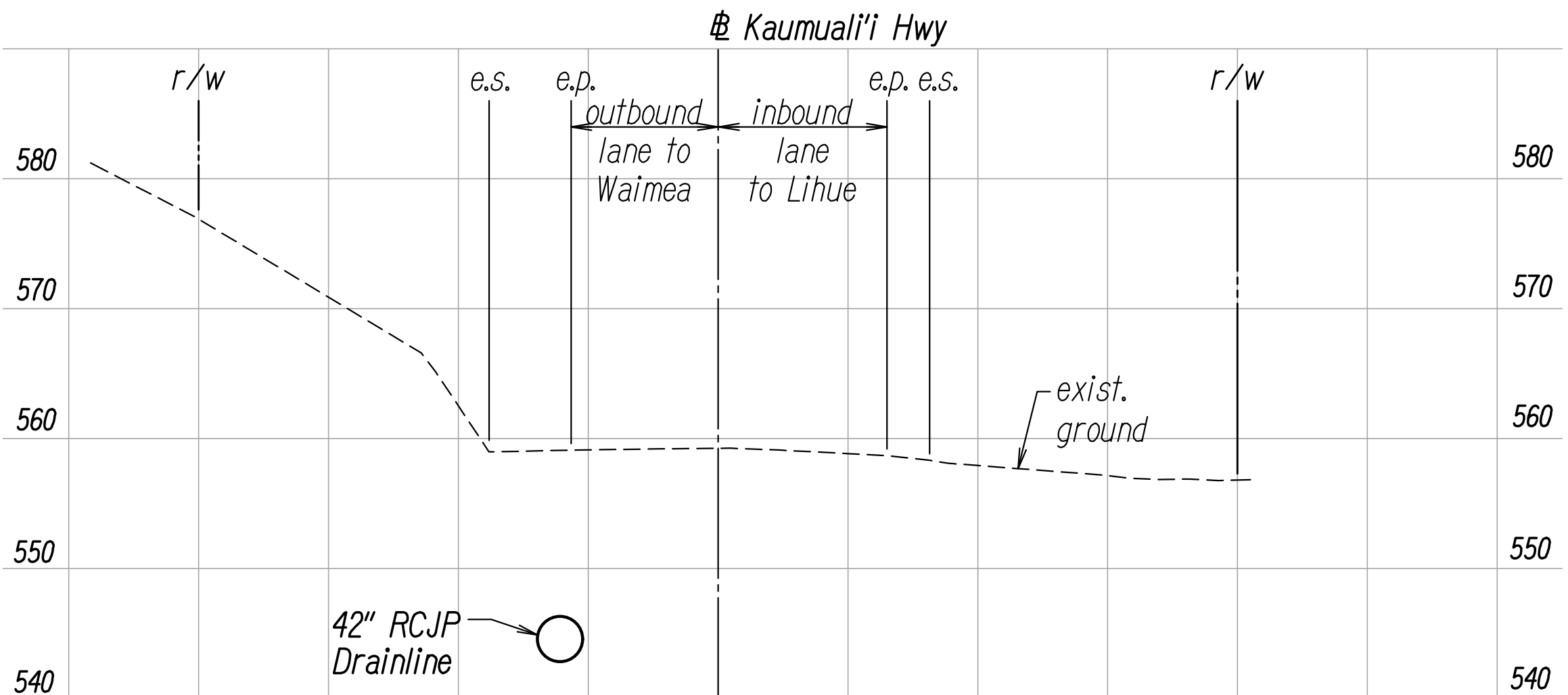
Station 171+50



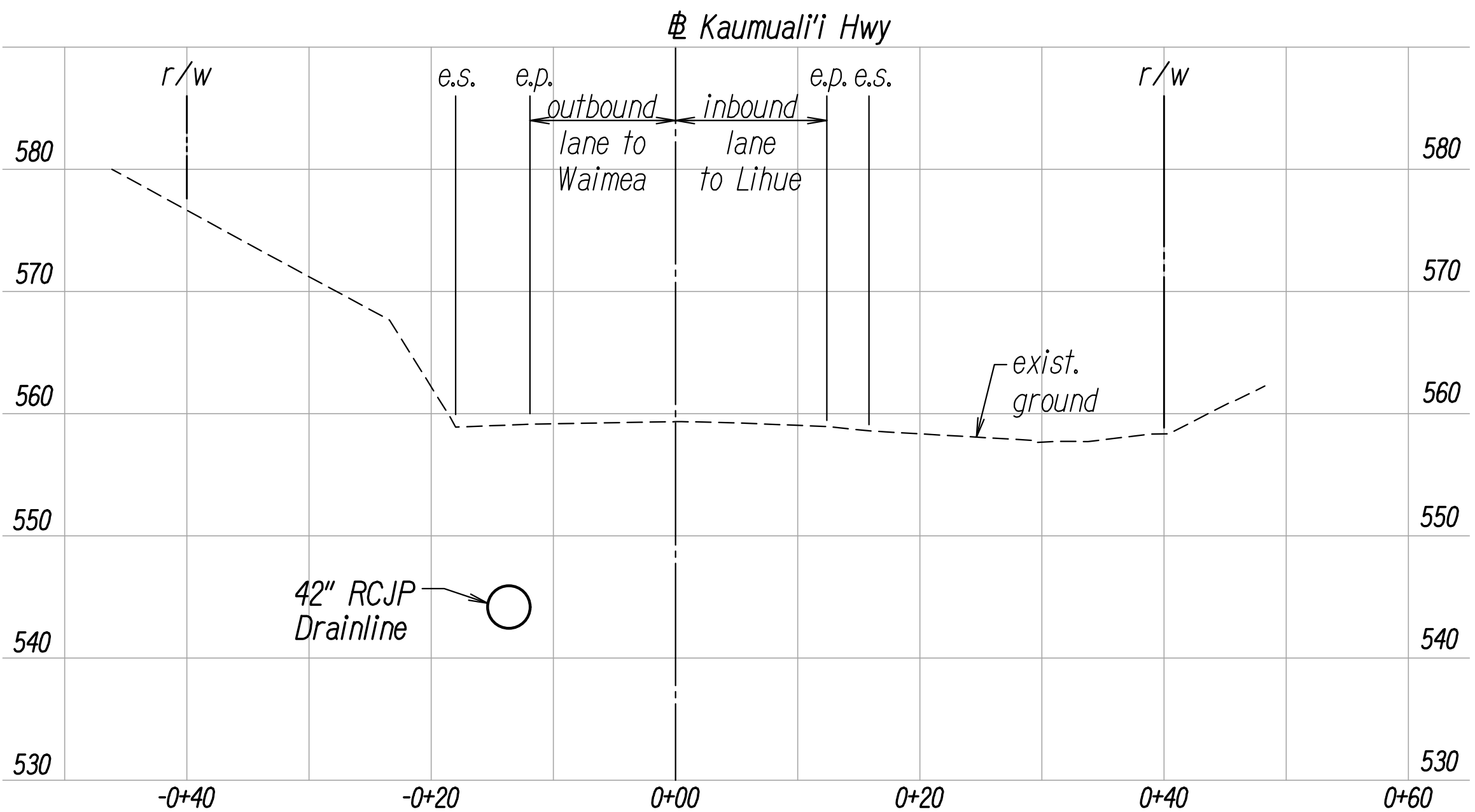
Station 172+00



Station 172+50



Station 173+00



Station 173+50

ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

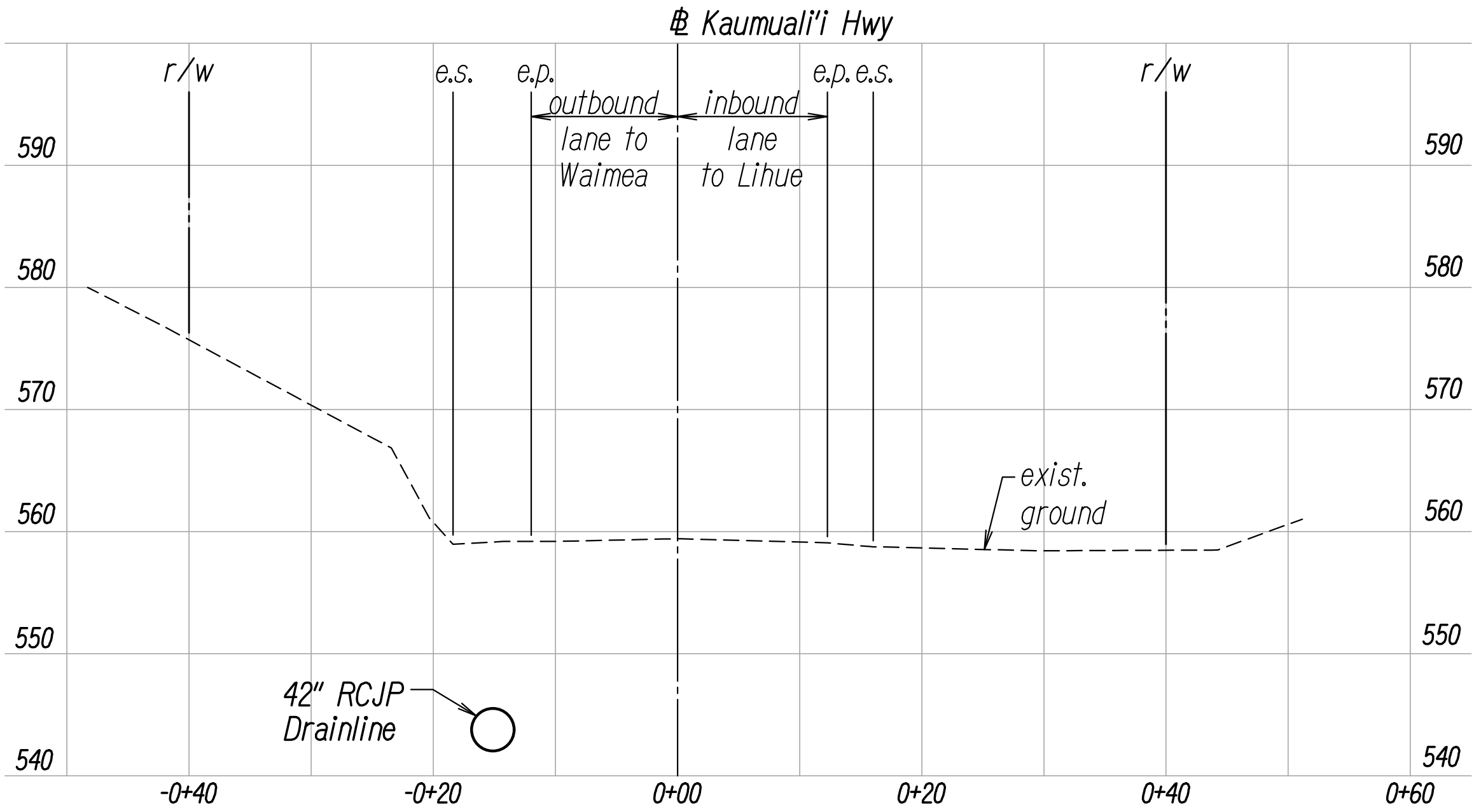
CROSS SECTIONS
Scale: 1" = 10'



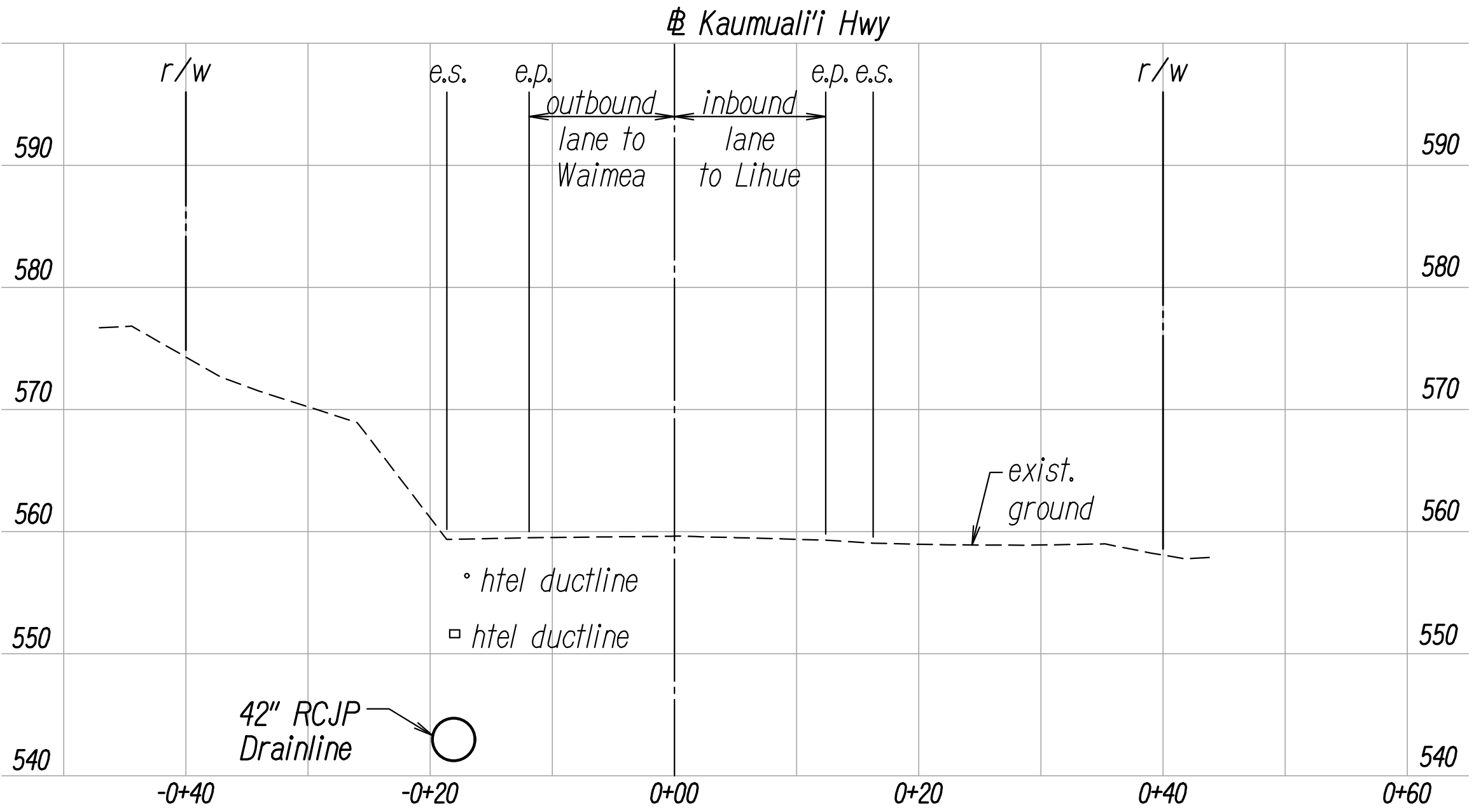
THIS WORK WAS PREPARED BY ME
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Russell M. Arakawa
P.E., Inc.
dbs PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
CROSS SECTIONS
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)
Scale: As Shown Date: September 2026
SHEET No. CS3 OF CS5 SHEETS

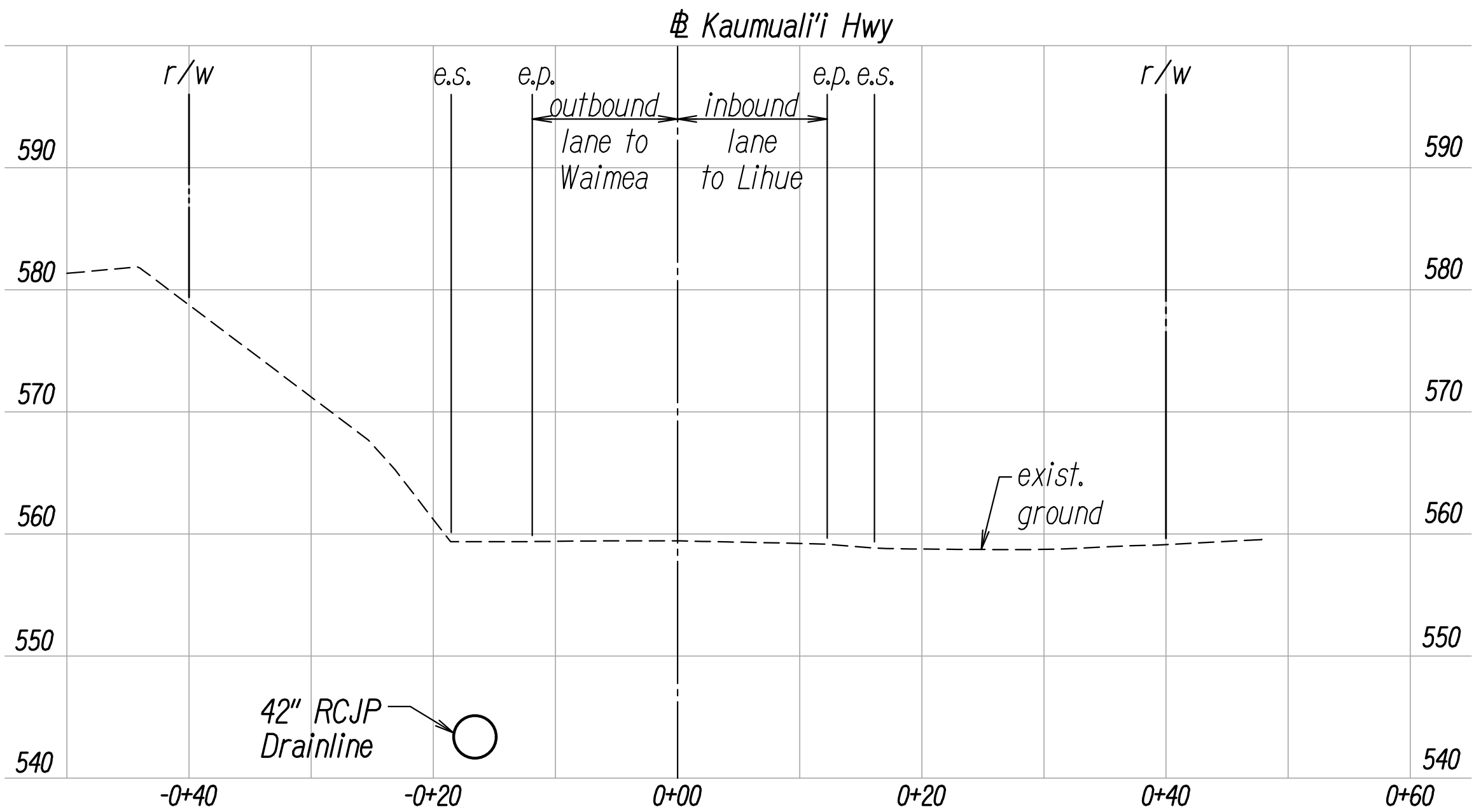
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	42	47



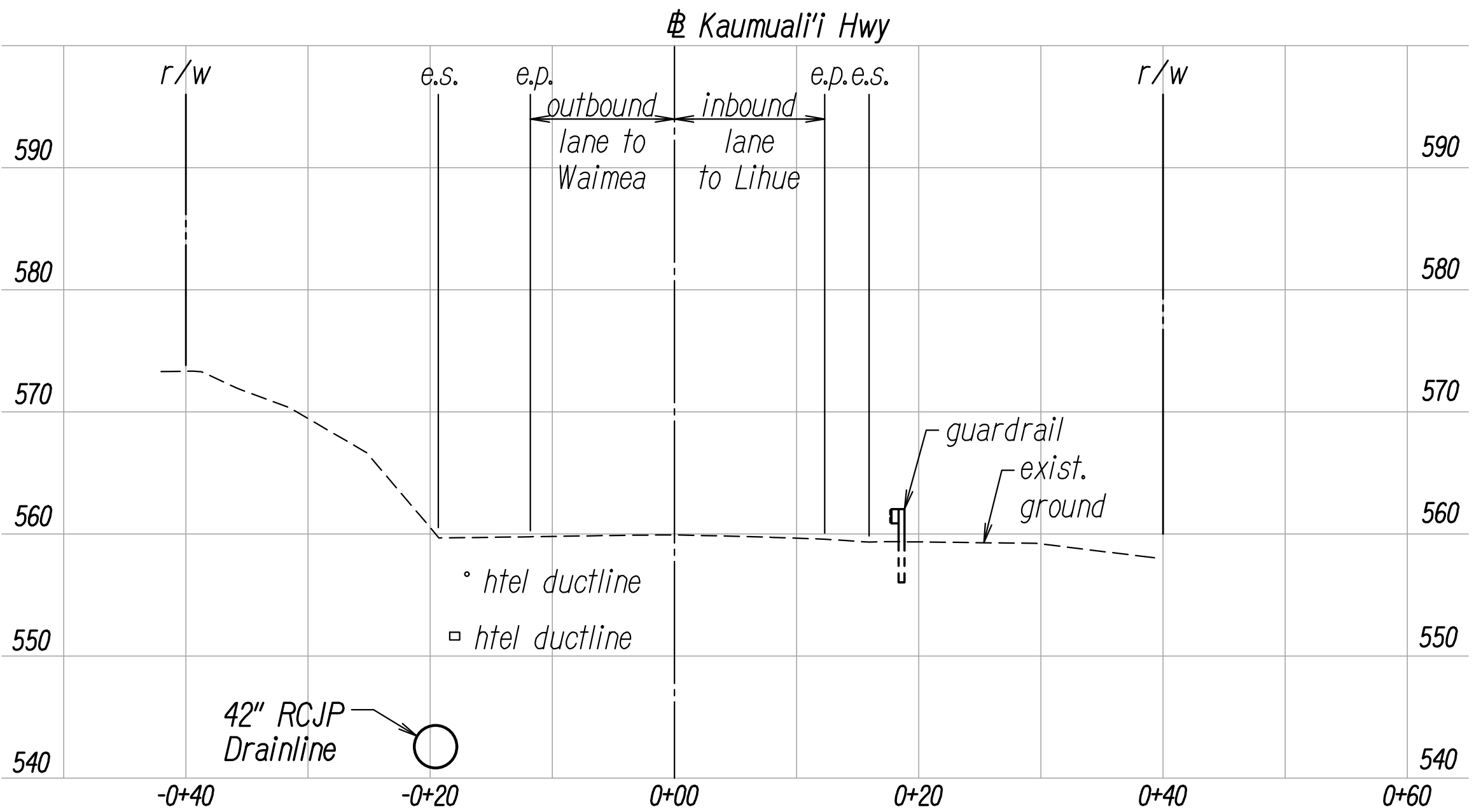
Station 174+00



Station 175+00



Station 174+50



Station 175+50

CROSS SECTIONS
Scale: 1" = 10'

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



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Russell M. Arakawa APRIL 30, 2028
Lic. Exp. Date
dbs PARK ENGINEERING

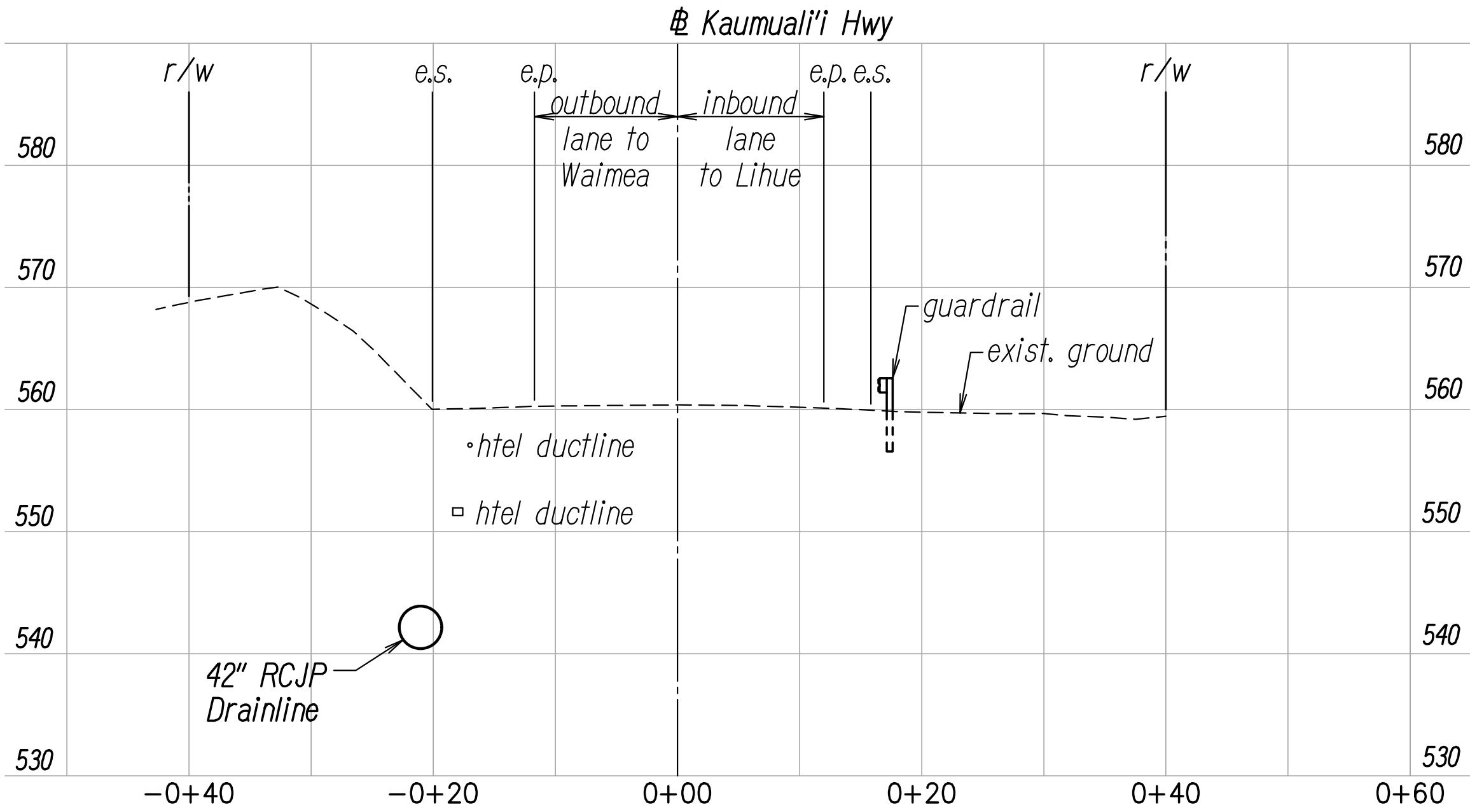
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSS SECTIONS
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

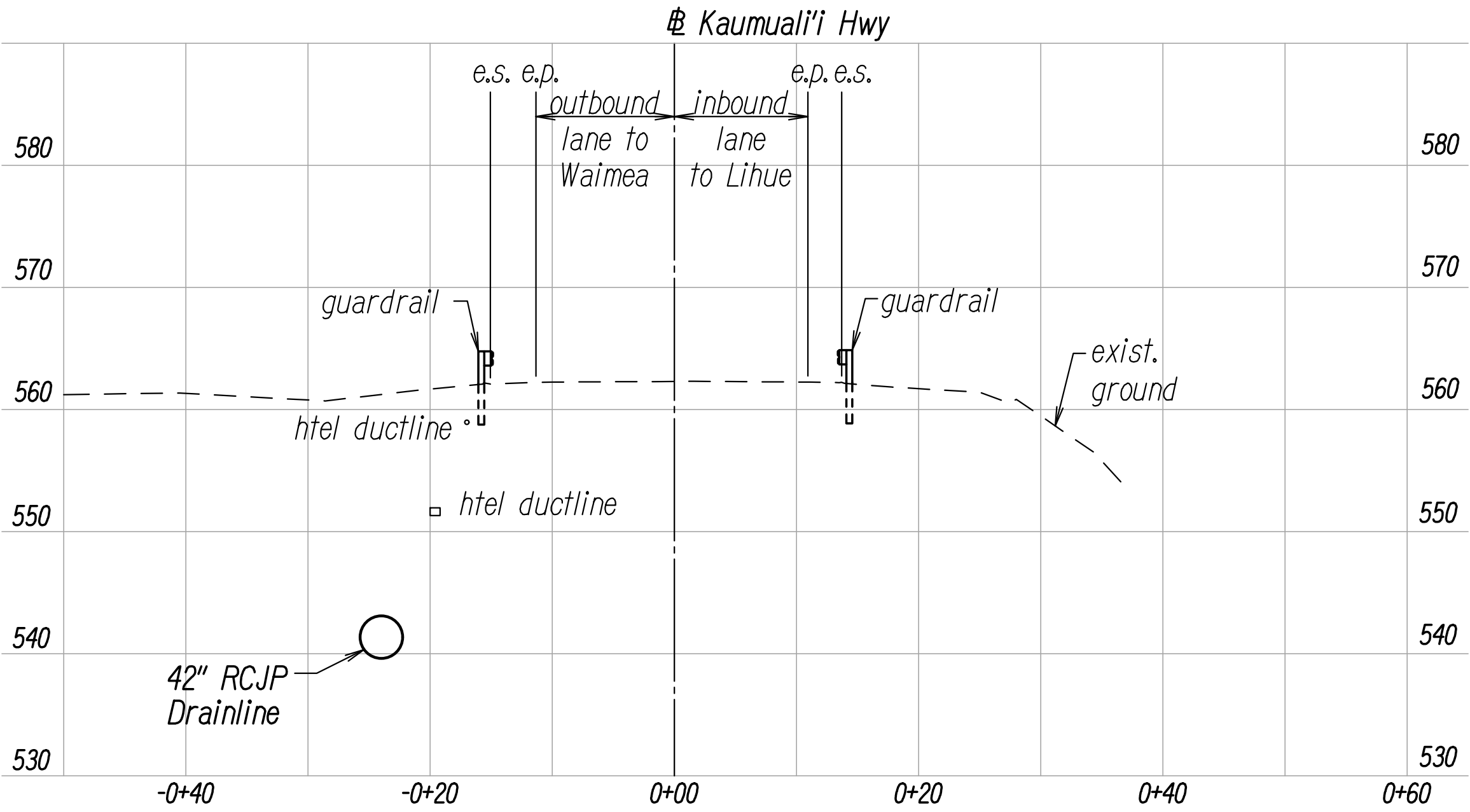
Scale: As Shown Date: September 2026

SHEET No. CS4 OF CS5 SHEETS

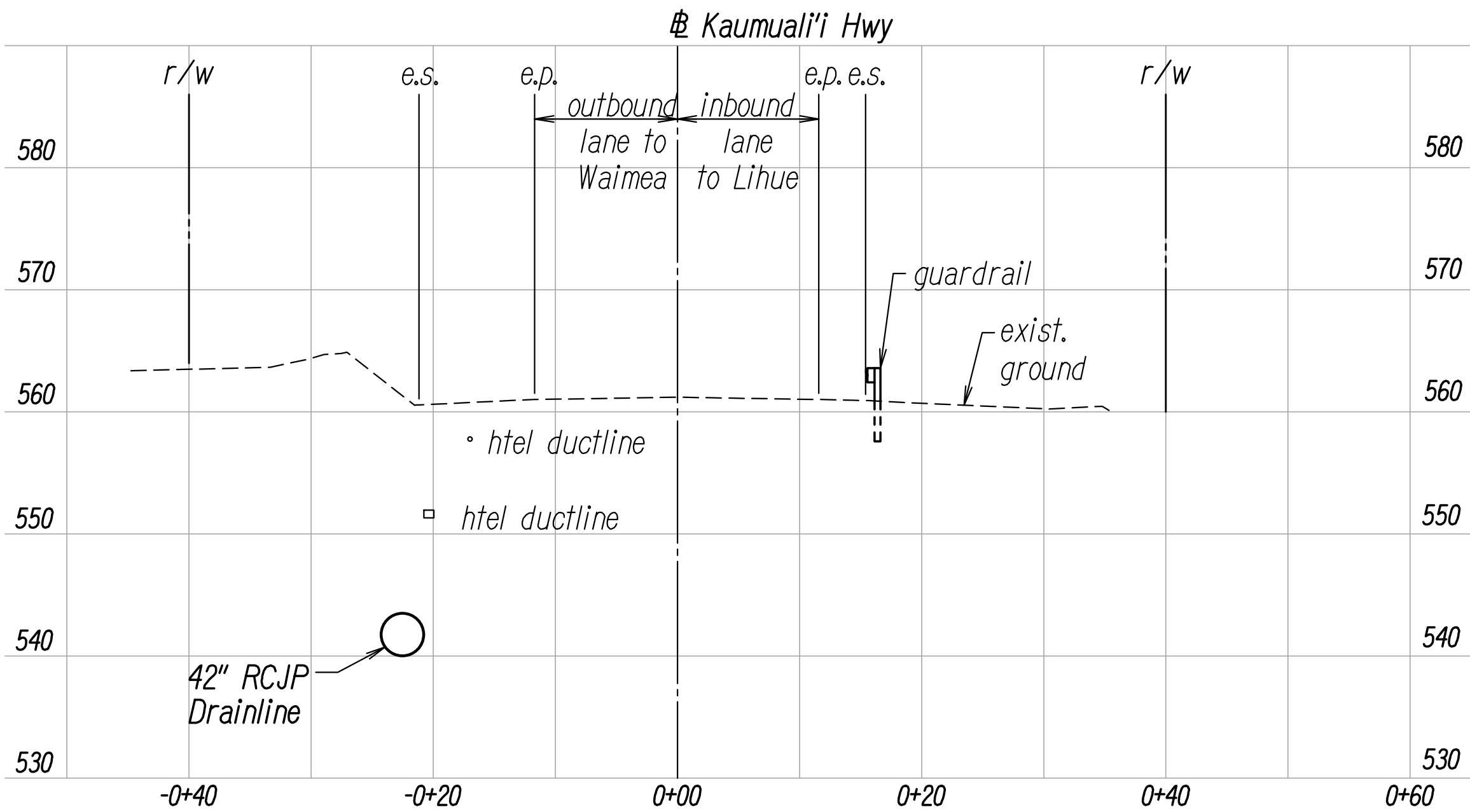
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	43	47



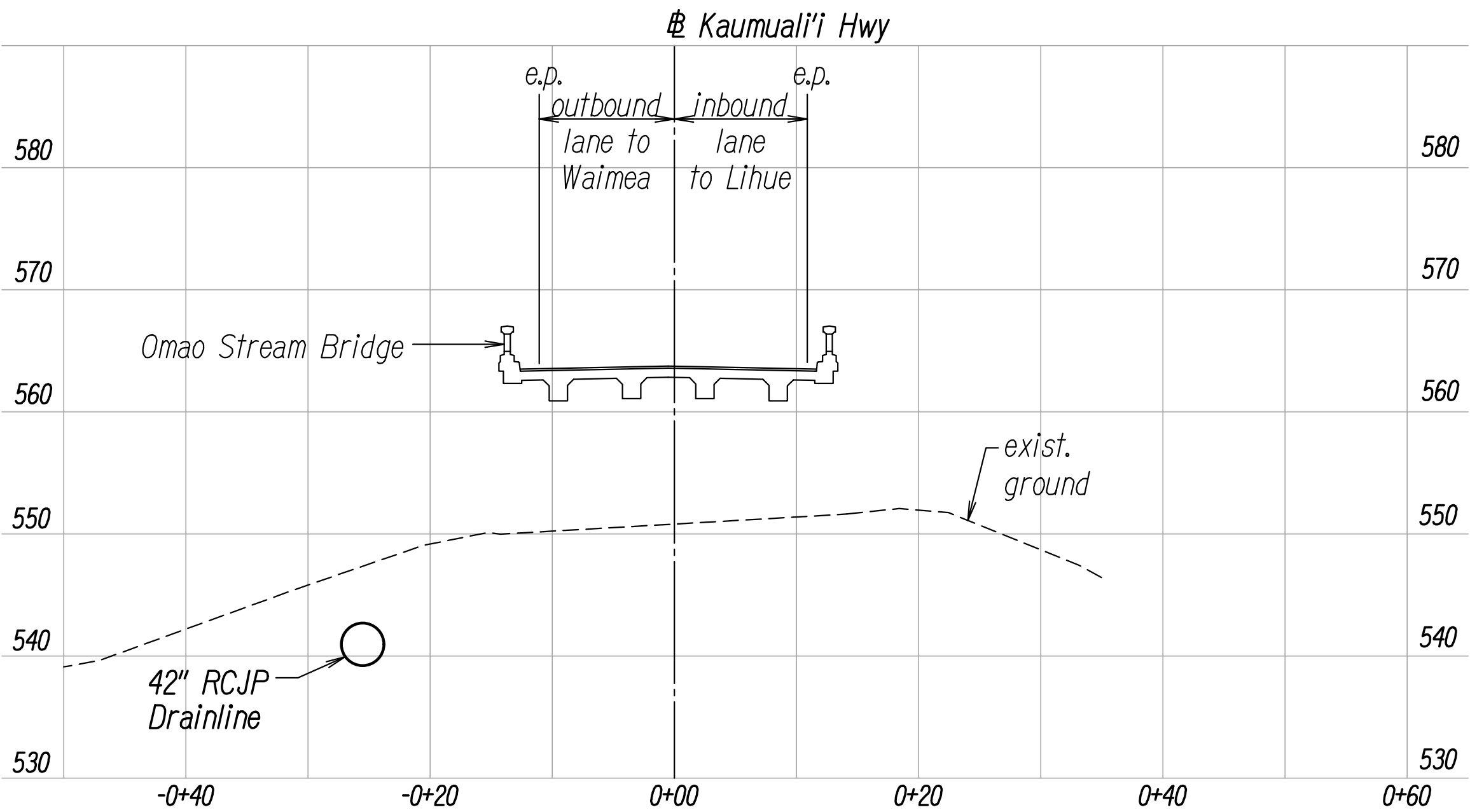
Station 176+00



Station 177+00



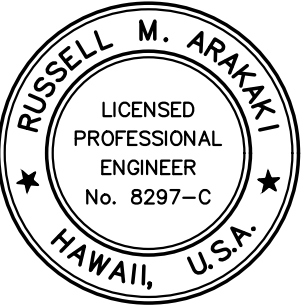
Station 176+50



Station 177+50

CROSS SECTIONS
Scale: 1" = 10'

DATE	SURVEY PLOTTED BY
	DESIGNED BY
	TRACED BY
	DESIGNED BY
	QUANTITIES BY
	CHECKED BY
No.	



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Russell M. Arakawa
APRIL 30, 2028
LIC. EXP. DATE
PARK ENGINEERING

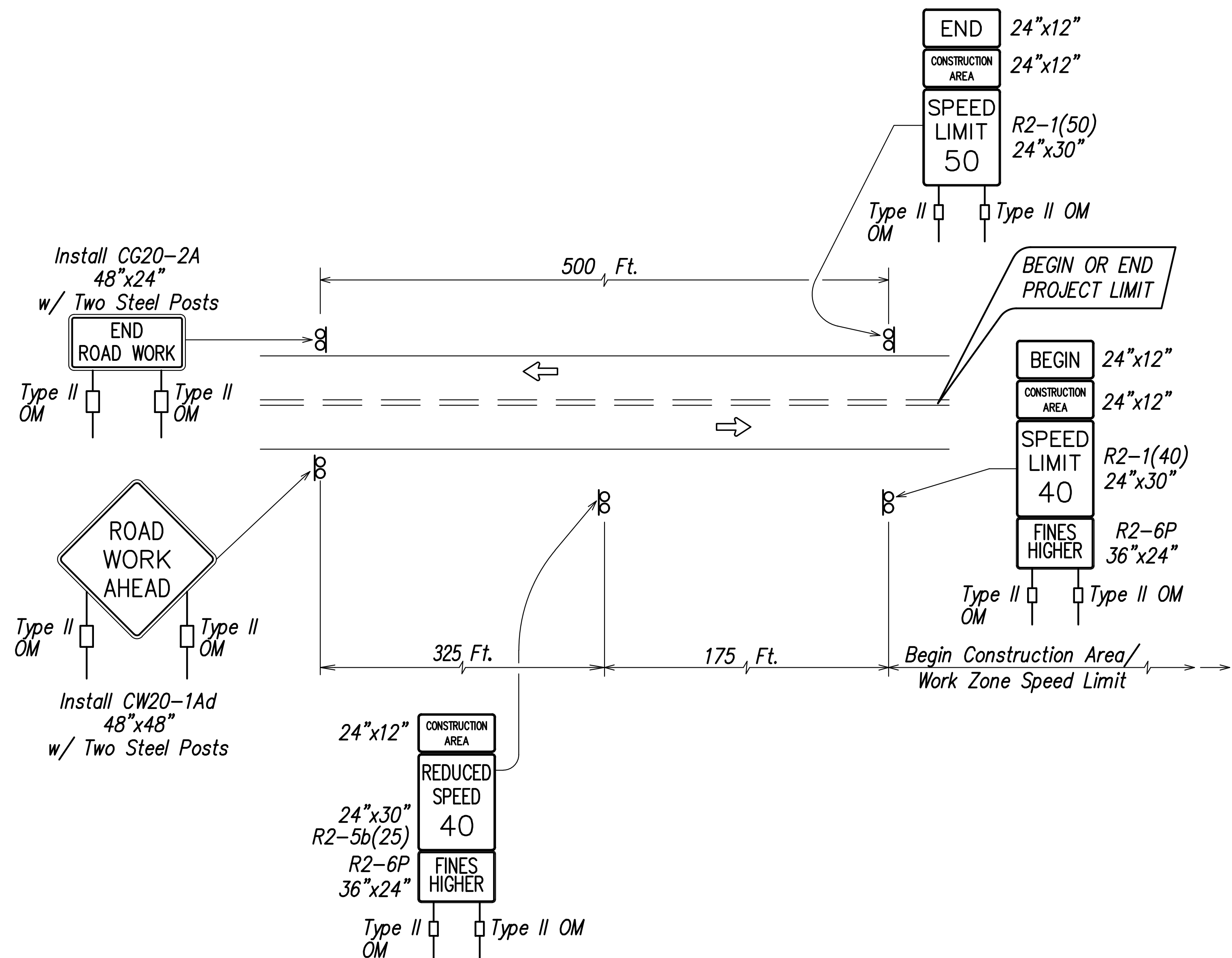
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSS SECTIONS
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown
Date: September 2026

SHEET No. CS5 OF CS5 SHEETS

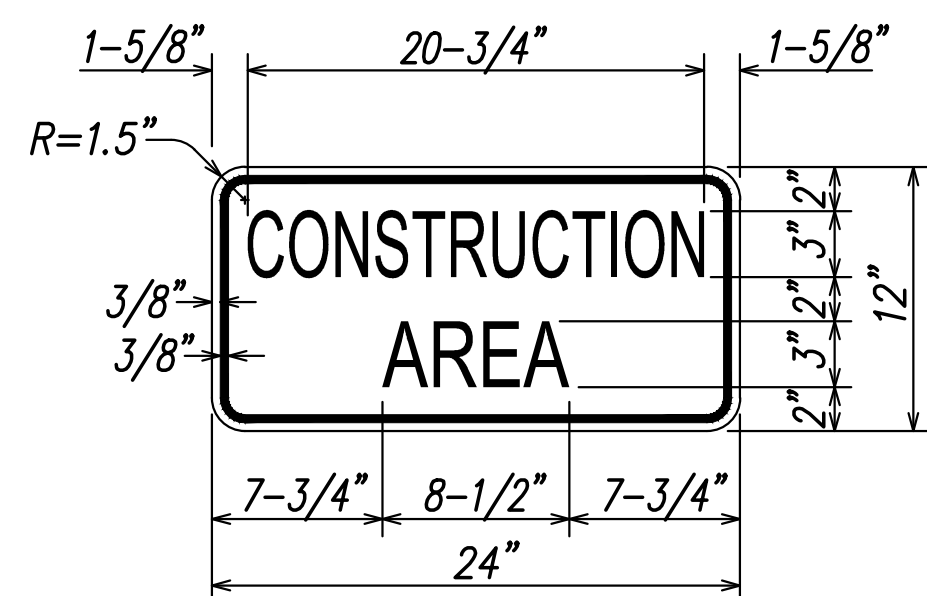
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	45	47



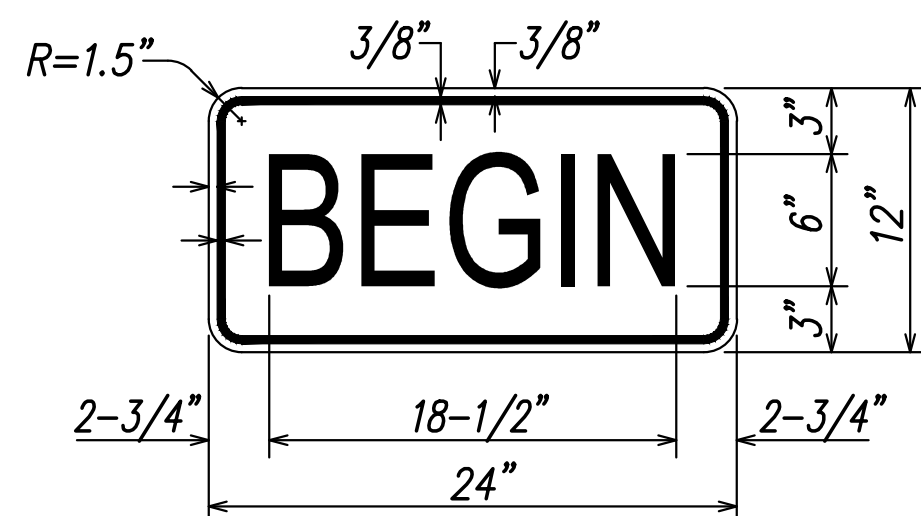
**TYPICAL DETAIL FOR CONSTRUCTION SIGNS
ON TWO LANE UNDIVIDED HIGH SPEED HIGHWAY**
NOT TO SCALE

Work Zone Notes:

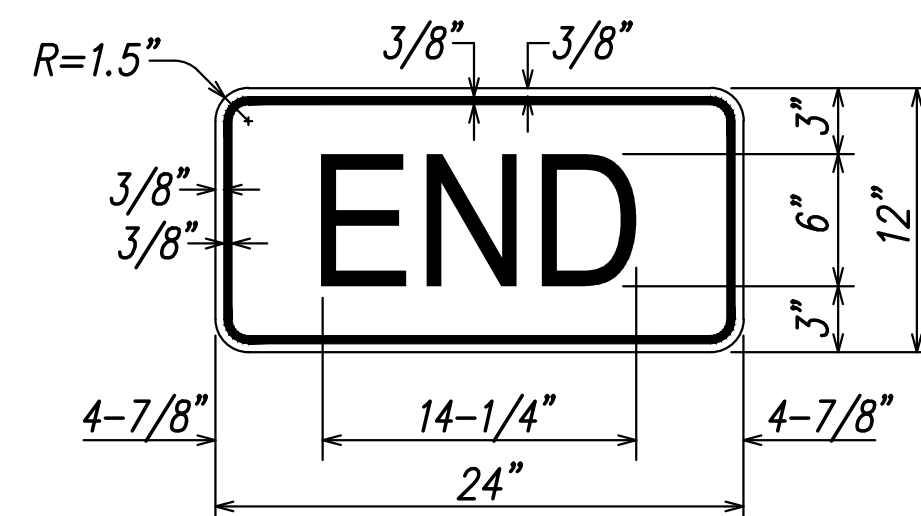
1. This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Special Provisions.
2. All existing regulatory speed limit signs with posts within the work zone/project limits shall be removed and replaced with work zone speed limit sign assemblies (R2-1(40) and CW3-5(40) 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 shall have a minimum of four (4) Type II Object Markers (OM), 2 facing each direction of traffic. Each work zone speed limit assembly shall have a minimum of two (2) Type II OM, 1 facing each direction of traffic. Installation of each Type II OM shall be considered incidental to Item No. 645.1000, Traffic Control.
5. Upon the completion of all physical work or as directed by the Engineer, all construction signs and work zone speed limit assemblies shall be removed. All speed limit signs and posts that were existing at the start of the project within the work zone/project limits shall be restored back to their original locations and configurations.
6. Placement of construction signs shall not obstruct the path of pedestrians and bicyclists.
7. The removal and restoration of existing regulatory speed limit signs with new posts along with the installation, maintenance and removal of work zone speed limit sign assemblies shall be considered incidental to Item No. 645.1000, Traffic Control.



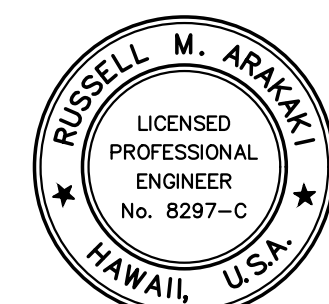
Legend: Black
Background: Orange



Legend: Black
Background: Orange



Legend: Black
Background: Orange



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OR UNDER MY SUPERVISION.

Russell M. Araki
Professional Engineer
No. 8297-C
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WORK ZONE SIGNING PLAN.
NOTES AND DETAILS
KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

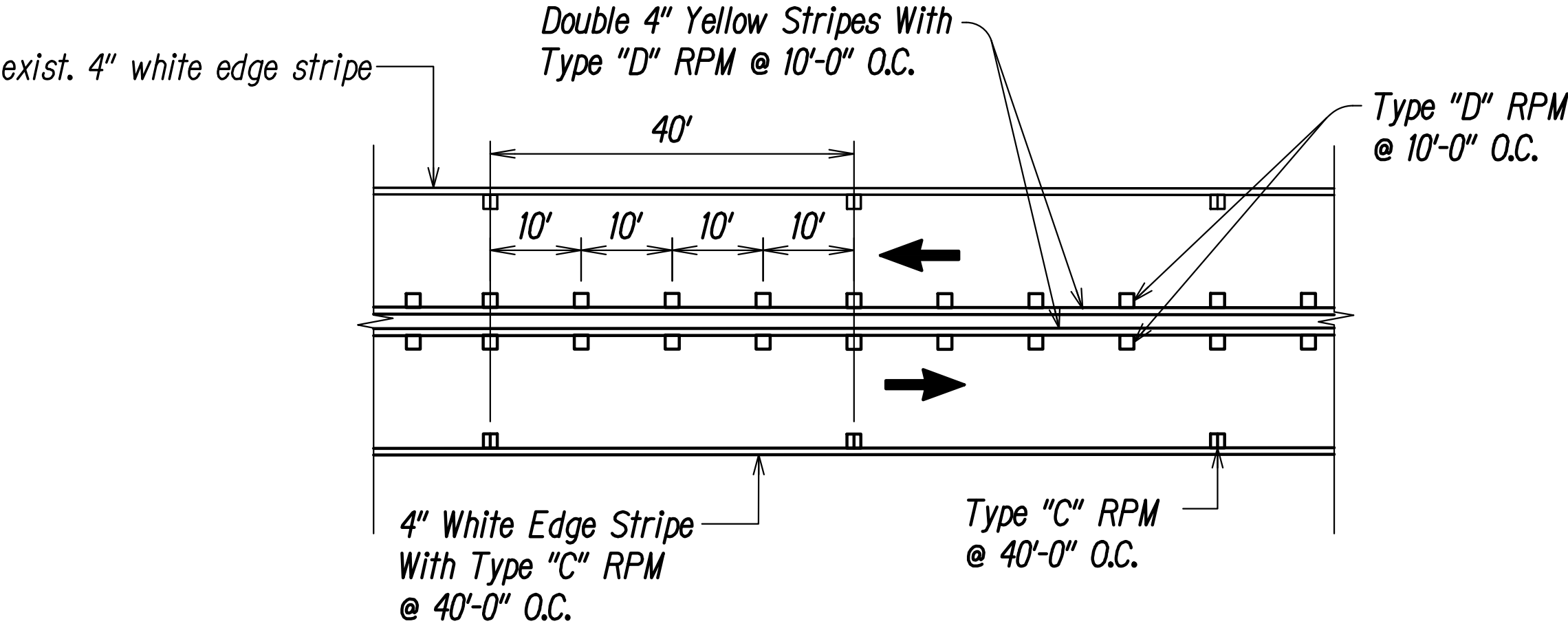
Scale: As Shown Date: September 2026

SHEET No. TC2 OF TC2 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-27(008)	2027	47	47

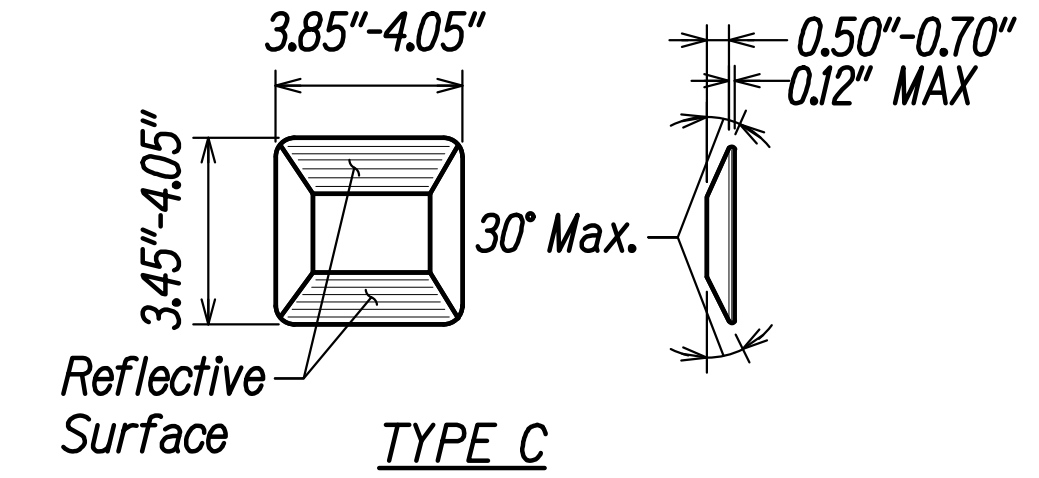
General Notes:

- Pavement marking and striping shall conform to the latest "Manual on Uniform Traffic Control Devices for Streets and Highways" and as amended.
- Layout of pavement markings and striping shall be done by the Contractor and approved by the Engineer prior to installation work.
- Existing pavement markings not incorporated in the final traffic pattern shall be removed as directed by the Engineer. Costs shall be incidental to the various pavement marking items.
- Edge lines shall not be continued through intersections and shall not be broken for driveways unless otherwise shown or directed.
- All pavement striping shall be as noted on the legend or plans.
- All preformed pavement marking tapes over existing pavement shall be applied with an approved primer as recommended by the tape manufacturer and as approved by the Engineer. The primer shall be allowed to dry to the tacky stage prior to tape application.
- Thermoplastic material shall be an alkyd-based compound formulated for profiled pavement marking. See specs subsection 629.03 for additional requirements.

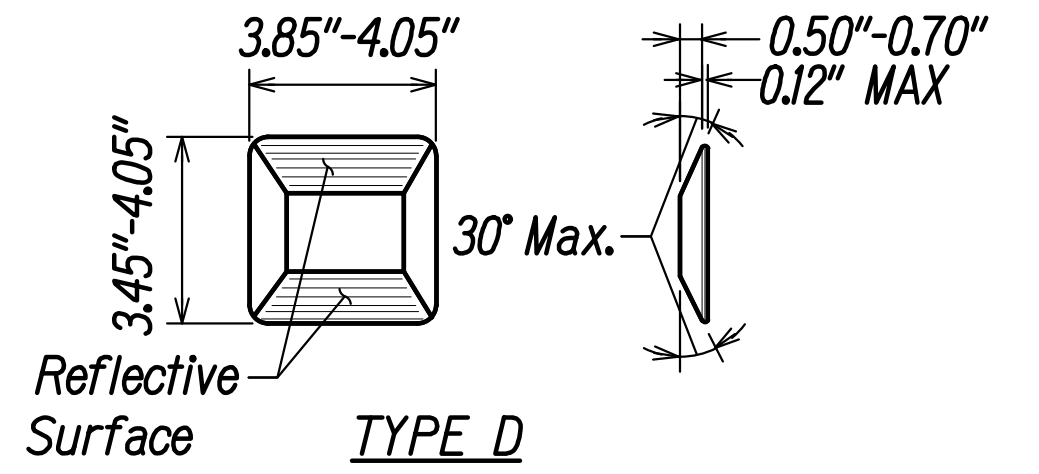


LANE LINE
NOT TO SCALE

1
SP1/SP2



REFLECTIVE SURFACE TYPE C
RED-CLEAR REFLECTIVE MARKER



REFLECTIVE SURFACE TYPE D
TWO-WAY YELLOW REFLECTIVE MARKER

STANDARD RAISED PAVEMENT MARKERS
NOT TO SCALE

2
SP1/SP2

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



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Russell M. Araki
ParEn, Inc.
dba PARK ENGINEERING
APRIL 30, 2028
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRIPING NOTES AND DETAILS

KAUMUALI'I HIGHWAY DRAINAGE IMPROVEMENTS
VICINITY OF OMAO STREAM BRIDGE
Federal-Aid Project No. ER-27(008)

Scale: As Shown Date: September 2026

SHEET No. SP2 OF SP2 SHEETS