

SWPPP Attachments

Attachment A – Contractor/Sub-Contractor Control Maps, Property Boundary Maps, State Waters and BMP Maps, and BMP Details (SWPPP Sections 7.2.4, 7.2.6.1, 7.2.6.2 to 7.2.6.8 & 7.2.10)

MAPS SHOWING LOCATIONS OF CONTRACTOR/SUB-CONTRACTOR CONTROL, PROJECT SITE MAPS, CONSTRUCTION PLANS/DRAWINGS, BMP LOCATION MAPS, AND BMP DETAILS

Project and State Waters Map (Outfall Locations) for Areas Outside HDOT provided NOI/NPDES Permit

Property Boundary Maps for Areas Outside HDOT Provided NOI/NPDES Permit

Drainage Maps for Areas Outside of HDOT provided NOI/NPDES Permit

Site-Specific Best Management Plan and Phasing Plans

Staging Area Plans

Contractor/Sub-Contractor Control Map

Catalog Pages and Information on Storm Water Control Materials

O'ahu

Pacific Ocean



Project
Location

Legend

	Project Location		91017097		91018018
	TMK Boundaries		91017099		91081006
			91017172		91081022
			91018006		
			91018007		
			91018008		
			91018009		
			91018012		
			91018013		
			91018014		
			91018015		
			91018016		

Project Location

Farrington Highway Widening
Kapolei Golf Course Road to
Fort Weaver Road

'Ewa, O'ahu, Hawai'i



R. M. TOWILL CORPORATION



N

0 1,500 3,000

Feet

1 inch = 3,000 feet



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Discharge Points to State Waters:

Palehua Stream:

1. 21.3504 N & 158.0634 W
 2. 21.3515 N & 158.0630 W
 3. 21.3517 N & 158.0629 W
 4. 21.3541 N & 158.0619 W
- ##### Hunehune Gulch:
5. 21.3561 N & 158.0609 W
 6. 21.3568 N & 158.0604 W
 7. 21.3575 N & 158.0600 W

Kalo'i Gulch:

8. 21.3624 N & 158.0543 W
9. 21.3640 N & 158.0538 W
10. 21.3638 N & 158.0533 W
11. 21.3658 N & 158.0524 W
12. 21.3657 N & 158.0506 W
13. 21.3689 N & 158.0484 W
14. 21.3703 N & 158.0460 W

Honouliuli Stream:

15. 21.3746 N & 158.0375 W
16. 21.3744 N & 158.0369 W
17. 21.3743 N & 158.0367 W
18. 21.3739 N & 158.0316 W

O'ahu

Pacific Ocean

Project
Location

Legend

Project Location

State Waters

Perennial Streams

Nonperennial Streams

Discharge Flow Arrows

Discharge Points to State Waters

Discharge to State Waters

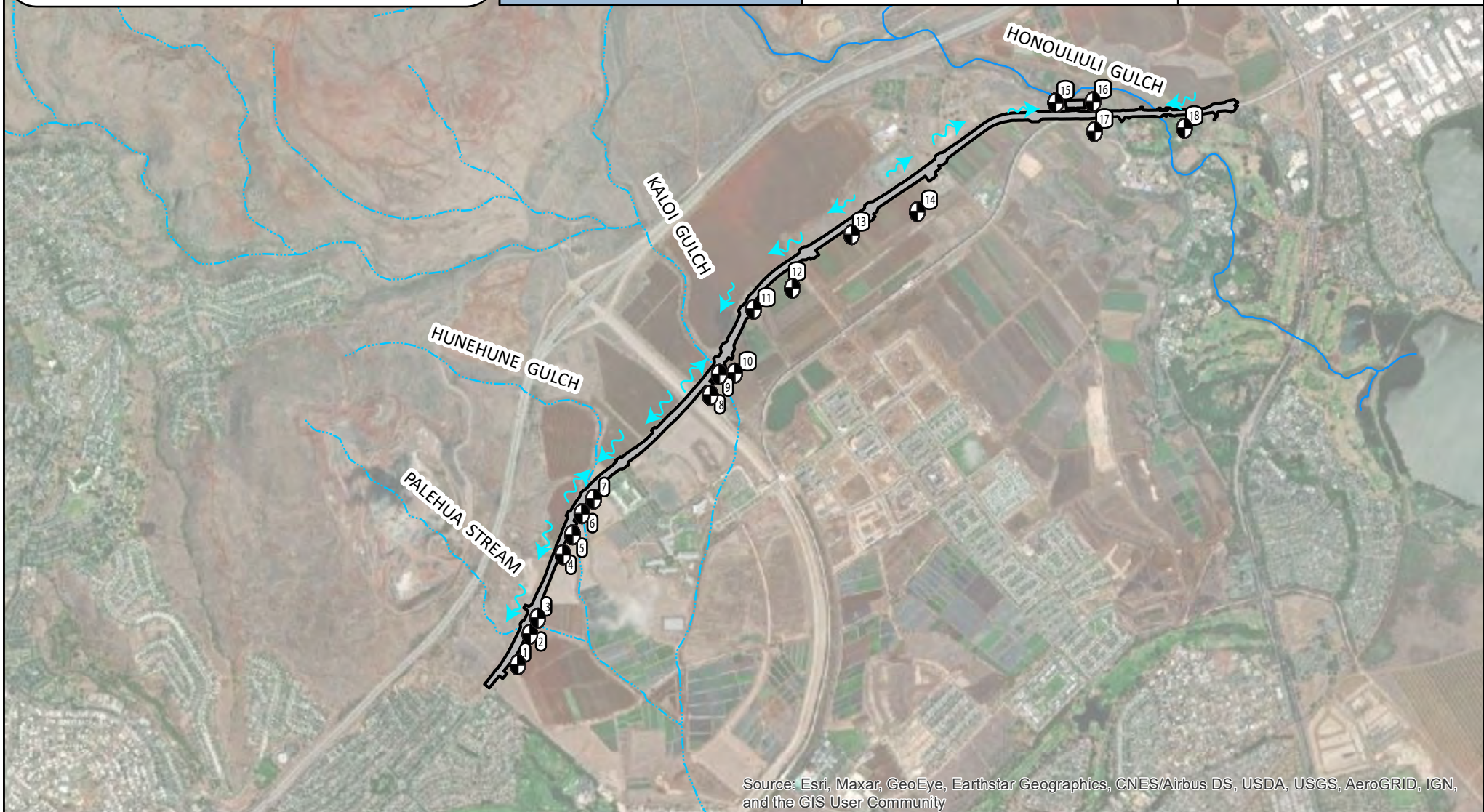
Farrington Highway Widening
Kapolei Golf Course Road to
Fort Weaver Road

'Ewa, O'ahu, Hawaii'



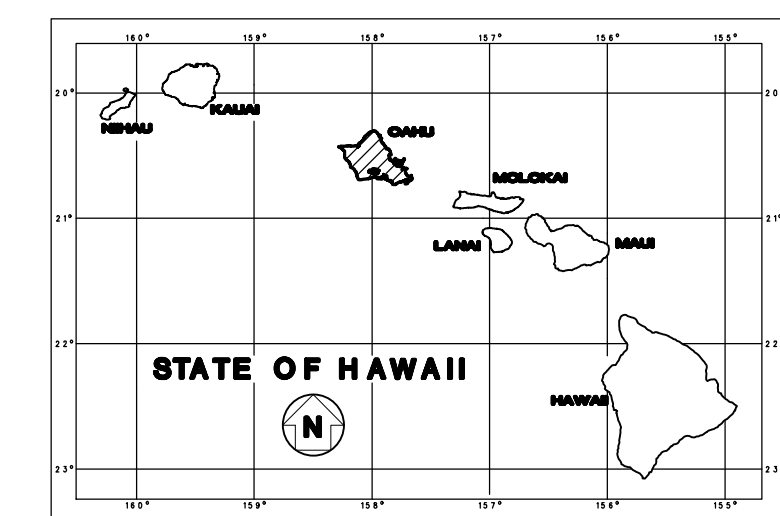
R. M. TOWILL CORPORATION

N 0 1,200 2,400
Feet
1 inch = 2,400 feet



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	1	



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HONOLULU, HAWAII

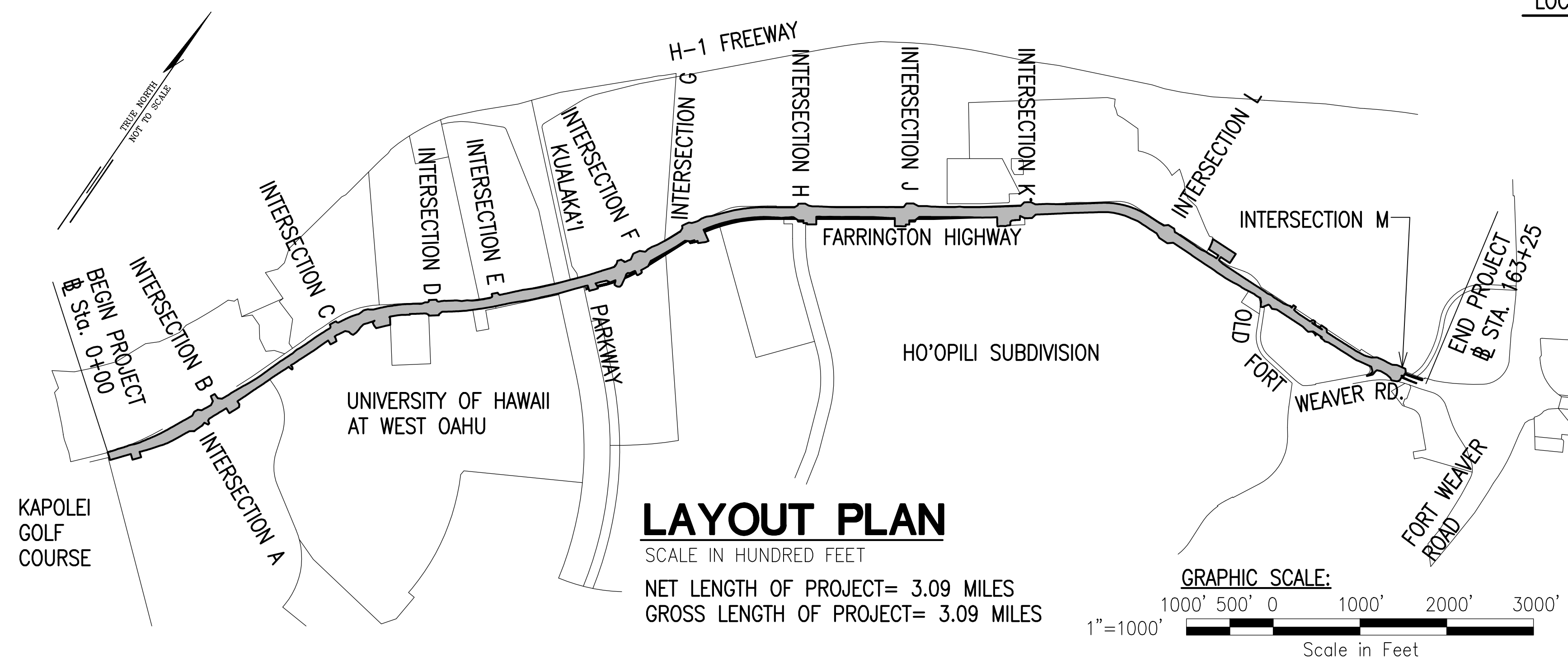
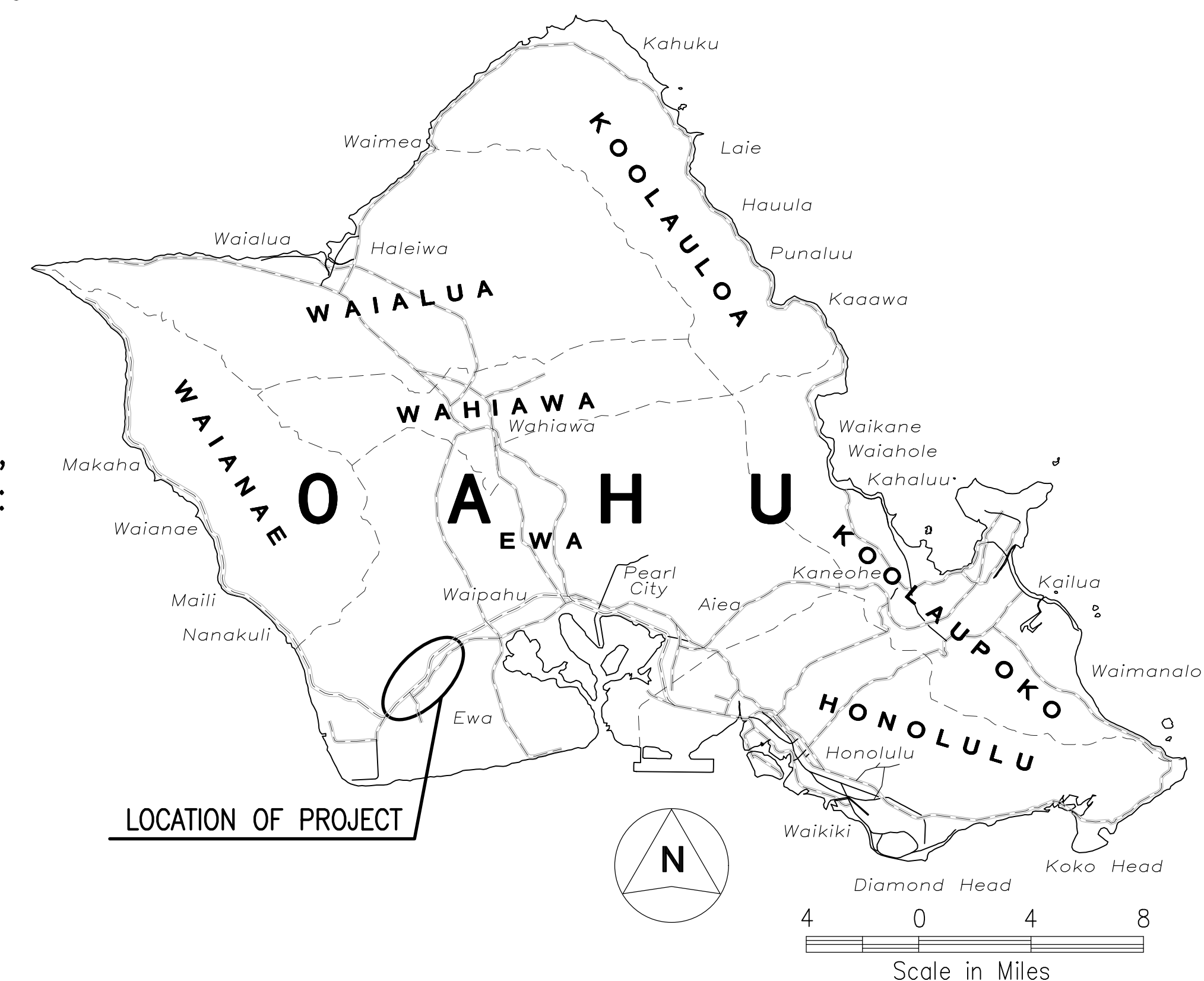
CONCEPTUAL PLANS FOR FARRINGTON HIGHWAY WIDENING KAPOLEI GOLF COURSE ROAD TO FORT WEAVER ROAD

PROJECT NO. 7101A-01-20

**DISTRICT OF EWA
ISLAND OF OAHU**

TMK: 9-1-016: 004, 007, 008, 179, 182, 183, 220,
221; 9-1-017: 043, 070, 097, 099, 172; 9-1-018:
006, 007, 008, 009, 012, 013, 014, 015, 016, 018;
9-1-081: 006, 022

JANUARY 18, 2022



FEDERAL AID PROJECTS PREVIOUSLY CONSTRUCTED
OR UNDER CONSTRUCTION

<u>DESIGN DESIGNATION</u>	
DESIGN ADT (2040)	17,100
DHV	1,710
K	10.0
D (DESIGN)	75/25
T (DESIGN)	5.5%
T 24	5.0%
V	40 MPH (WEST OF KUALAKAI PKWY.)
	30 MPH (EAST OF KUALAKAI PKWY.)

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

APPROVED:

DIR. OF TRANSPORTATION

DATE _____

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

R.M. TOWILL CORP.	HWY-DD	692-8431	OCTOBER 2021
DESIGNED BY	MANAGED BY	PHONE	DATE

Construction Notes

GENERAL

1. The Project Scope of Work includes the widening of the Farrington Highway; Construction of drainage structures and culverts, asphalt and concrete pavements, concrete curbs, gutters and sidewalks, gas lines, water system and sewer system, street lighting, traffic signals, and landscaping; relocation of water mains; relocation of overhead and underground electrical and telecommunications infrastructure; reconstruction of the Kaloi Stream Bridge and Honouliuli Stream Bridge; demolition and removal of structures, clearing, grading; and pavement marking and sign installation.
2. Construction and restoration of all existing highway facilities within State Highway Right-of-Way shall be done in accordance with all applicable sections of "Hawaii Standard Specifications For Road and Bridge Construction, 2005" and "Specification for Installation of Miscellaneous Improvements Within State Highways" of the State Highways Division, and the Project Plans and Special Provisions.
3. All Contractor operations shall be confined to be within existing Right-of-Ways, easements, and Right-of-Entry areas.
4. In the event that a conflict occurs between State and City and County of Honolulu Standards, Specifications, and/or Notes, the more stringent requirement shall govern.
5. The Contractor shall only take direction from the State Department of Transportation Engineer and shall not perform any work at the direction of the City and County of Honolulu or City Engineer, without the approval of the State Department of Transportation Engineer.
6. The existence and location of underground utilities, manholes, monuments and structures as shown on the plans are from the latest available data but the accuracy is not guaranteed. The encountering of other obstacles during the course of work is possible. The Contractor shall tone for all utility lines before starting any work. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations.
7. Smooth riding connections shall be constructed at the limits of new road construction, 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.
8. All saw cutting work shall be considered incidental to Roadway Excavation. The Contractor shall clean up any cuttings and shall not wash down material into the storm drain or sewer systems.
9. 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.
10. All work to remove temporary facilities by the Contractor shall be considered incidental to the various contract items in the proposal.
11. For geologic inspection refer to report titled, "Geotechnical Engineering Exploration – Farrington Highway Improvements", dated November 23, 2020 prepared by Geolabs, Inc.
12. The Contractor shall adjust all Utility (water, sewer, power, gas, fuel, communication) structures (manholes, handholes, etc.) to match the finish grade.
13. Topographic and boundary survey information shown herein was provided by ControlPoint Surveying Inc. The topographic survey was done _____.
14. The Contractor shall comply with utility coordination requirements per Standard Specification Section 104.11. As part of coordination requirements, the Contractor shall include carbon copy the Engineer in all correspondences with utilities.
15. All materials shall be new and free of defects, such as rust, damage, or corrosion. The Engineer will determine acceptability. No payment will be made for material that is not accepted by the Engineer.

16. The Contractor shall allow access to all materials that will be used in the project 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 or work for which access or inspection is not allowed.
17. The Contractor shall inform the Engineer of all scheduled work. See schedule requirements in Specification Section 108.06 and 108.07. If the Engineer is not informed of work and unable to inspect the work, the Engineer reserves the right to reject the work.
18. 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.
19. Traffic control plans shown in the Contract Documents are minimum requirements and do not constitute a complete traffic control plan. The Contractor shall provide any traffic control plan (not shown in the plans) that is needed to accomplish the work 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 or traffic pattern changes (detours) not shown on the plan shall be submitted to the Engineer for approval in accordance with Specifications 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 the lump sum traffic control pay item and shall not be paid for separately.
20. All material generated by the project and taken off-site shall be considered solid waste. The Contractor shall dispose of material at an approved Department of Health waste management facility as an incidental cost to the work. Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer by the last day of the month. Provide documentation from any intermediary facility where solid waste is handled or processed, haul tags, or any documentation as requested by the Engineer. If the Contractor elects to reclassify material as inert fill, DOH HEER testing guidance shall be followed. No material generated from this project shall be classified as inert fill material for reuse without testing, obtaining required approvals/permits, providing disposal locations/quantities, and obtaining prior written approval from the Engineer. The Contractor shall indemnify the State of all violations of solid waste handling and disposal. Failure to comply with these requirements may result in fines/liquidated damages in accordance with Special Provisions Section 209 and HDOT's Enforcement Response Plan.
21. If the traffic control plan or any traffic control device is not installed per manufacturer's recommendation, plan, specification, or is deemed unsafe, the Engineer reserves the right to shut down the work at no additional cost and time or to withhold payment from Contractor. Lane closures that are unauthorized or not approved will not be allowed and shall be subject to rental fees in accordance with Specification Section 108.09.

22. The Contractor shall provide oversight for quality control of work. The Contractor shall submit copies of all measurements, test results, and reports to the Engineer on a weekly basis. This includes compaction, density, smoothness testing, and pavement core thickness results.
23. 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.
24. The exact locations and limits of areas to be excavated or cleared shall be located in the field by the Contractor and accepted by the Engineer. The Contractor shall not begin any work until the Engineer verifies and accepts the location and limits of the area.
25. 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.
26. 30 days prior to excavation. Provide written notice of scheduled toning and specific locations to the Engineer at least one week ahead of toning. If there is a potential conflict, contractor shall inform DOT within 24 hours of discovery. Contractor shall probe around area and take precautions to not damage utilities. This work shall be incidental to various contract items and shall not be paid for separately.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	3	XXX

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



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

Craig W. Luke
SIGNATURE

April 30, 2022
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Construction Notes – 1

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-2 OF XXX SHEETS

Construction Notes

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	4	XXX

NOTIFICATION

- All necessary permits for work within the jurisdiction of the City and County of Honolulu shall be obtained by the Contractor at his own cost.
- The Contractor shall obtain a Permit to Perform Work Upon State Highways from the Oahu District Engineer, State Highways, at 831-6700, prior to commencement of work within the State's Highway Right-of-Way.
- The Contractor shall notify the Engineer in writing, three (3) weeks prior to starting Construction.
- The Contractor shall notify the Engineer and City and County of Honolulu, including Utilities, Bus Transportation, Hospitals, Police Department, Fire Department, Emergency Medical Services, and Department of Health in writing at least three (3) weeks before start of construction.
- The Permit to Perform Work Upon State Highways may be revoked because of default in any of the following, but not limited to, conditions:
 - Work performed before or after permitted hours.
 - Failure to maintain roadway surfaces in a smooth and safe condition.
 - Failure to clean up construction debris generated from project work.
 - Failure to provide and maintain proper traffic control.
 - Failure to replace damaged pavement markings and signs.
 - Failure to provide and maintain erosion control devices in proper condition.
 - Failure to comply with noise permit and law requirements.
- The Contractor shall inform the Oahu District Engineer 831-6700 at least three (3) weeks prior to closing any lanes or performing any trench restoration work. This work shall include any backfilling and compacting of trench material; placing and compacting of base course material; and any paving operations. Any trench restoration work performed by the Contractor that is not witnessed by State Representative or not constructed in compliance with the requirements of the contract documents will be required to be removed. It shall be removed with a State Representative present and in compliance with the requirements of the contract documents. All restoration work will be at the Contractor's expense.
- All workers within the State Right-of-Way who are exposed either to vehicles using the roadway or to construction equipment within the work area, shall wear high-visibility safety apparel that meets the Performance Class 3 requirements of ANSI/ISEA 107-2004 publication entitled "American National Standards for High-Visibility Safety Apparel and Headwear". "Workers" means people on foot whose duties place them within the State Right-of-Way, such as but not limited to, Contractor construction and maintenance forces, equipment operators, survey crews, utility crews and law enforcement personnel when directing traffic, investigating incidents, handling lane closures or obstructed roadways within the State Right-of-Way.

PRECAUTION:

- 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 Enginer and respective utility company, or City and County or State agency. The repair work shall be done at the Contractor's expense.
- Contractor shall take proper precautions when working near overhead lines.

WORK EXECUTION

- No material and/or equipment shall be stockpiled or otherwise stored within the Highway Right-of-Way except at locations designated in writing and accepted by the Engineer. If use of location is approved by the Engineer, the Contractor shall obtain a Use & Occupancy Permit to use the property within the Highway Right-of-Way from the State Highways District Office (831-6700).
- Lane closures are allowed only from 8:30 a.m. to 3:00 p.m. Monday through Friday except on Holidays. Exceptions to lane closure hours specified require written acceptance and must be coordinated in advance with the Engineer.
- All work zone regulatory, guide and construction signs and barricades shall be of high intensity Type IV retroreflective sheeting. Portable concrete barriers shall be reflectorized in accordance to the "Standard Plans", State of Hawaii, Department of Transportation. On the back of each sign install a sticker with 1-inch high letters stating Project Number, Contractor Name and Date Installed. Date installed may be hand written.
- All construction signs shall be left in place until all construction items have been completed unless otherwise directed by the Engineer. The Contractor shall obtain prior approval from the Engineer to remove construction signs.
- After the project is completed, all areas disturbed by the Contractor, but not incorporated into the final grades or work plan, shall be restored to a condition equal to or better than the existing condition prior to disturbance. This work will be considered incidental to the various pay items under Section 209.
- Normal working hours shall be from 7:00 a.m. to 3:30 p.m., Monday through Friday, excluding holidays. Work performed between 3:30 p.m. and 7:00 a.m. of the following day is "night work".
- Failure of the Contractor to open all lanes of traffic during the times specified above shall result in the assessment of liquidated damages as specified in Section 108.08 of the Special Provisions.

TRENCHING

- Prior to commencing trench excavation work, the Contractor shall take a pavement profile along the centerline of the proposed utility trench. This information shall be used in the verification of restoring the roadway to its original or better condition. A copy of the pavement profile taken before trenching and after restoration shall be submitted to the Engineer for acceptance.
- The Contractor shall provide and maintain an adequate, safe and non-skid bridging material, including shoring over trenches in pavement areas.
- 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. The State may require the backfilling of patches of trenches due to the excessive usage of steel plates at no additional cost.
- Temporary cold mix trench patches will be permitted in any given area for a maximum duration of two (2) weeks, and shall be a minimum of 2-inches thick. All temporary patches shall be placed over properly placed and compacted backfill and base course layers. The Contractor shall be responsible for maintaining all temporary patches and to make repairs to unsatisfactory patches within 24 hours. If a pothole develops that in the opinion of the Engineer will become a hazard to the public, the repairs shall be made immediately, no later than four (4) hours after notification.
- At the end of each day's work, the Contractor shall remove all work zone signs and barricades not in use, equipment and other obstruction from the roadway to permit free and safe passage of traffic.

ACCESS TO FARM LOTS

(Cost shall be considered incidental to various items of work)

- The Contractor shall provide continuous access to the farm lots along the mountain and ocean sides of the project.
- Temporary access provided to farm lots shall be coordinated with farmers.
- Upon removal of earth berm, the contractor shall provide a physical barrier to farm lots to prevent unauthorized vehicles from accessing the farm lots.
- The Contractor shall relocate all farmer access gates impacted by construction and provide roadway transition to existing access roadways.
- The Contractor shall relocate all irrigation lines impacted by construction and ensure farmers continuous irrigation.

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

CRAIG W. L. LUKE

LICENSED PROFESSIONAL ENGINEER

No. 6935-C

HAWAII, U.S.A.

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

Signature

April 30, 2022

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

Construction Notes – 2

FARRINGTON HIGHWAY WIDENING

Kapolei Golf Course Road to Fort Weaver Road

Project No. 7101A-01-20

Scale: As Shown

Date: January 2022

SHEET No. C-3 OF XXX SHEETS

FILE: K:\civil\23146 Farrington Hwy Widening\Draw\Construction\Draw\14 Construction Notes - 13.dwg saved March 16, 2022

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

Construction Notes (Cont'd)

ACCESS:

- Where pedestrian walkways exist, they shall be maintained in a safe and passable ADA condition, or other facilities for pedestrians shall be provided. Passages between walkways at intersections shall likewise be provided.
- A minimum of 36-inches clear width and 80-inches headroom clearance height shall be maintained along existing and potential sidewalk and walkways.
- The Contractor shall provide for access to and from all existing side streets, driveways and adjacent properties at all times.

DRAINAGE:

- Existing drainage systems will be functional at all times during construction of proposed drainage structures and bridges. The Contractor shall be responsible for any storm runoff damage caused by their operation. The Contractor shall furnish materials, equipment, labor, tools and incidentals necessary to accomplish maintenance of flow. The cost shall be incidental to the various Contract Items.
- 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.
- The Contractor shall remove all silt and debris deposited in drainage facilities, on roadways and in other areas during the duration of the project. This work shall be incidental to various contract items. The costs incurred for any necessary remedial action by the Engineer due to the Contractor's non-compliant work shall be payable by the Contractor.

American With Disabilities Act Note

- All new sidewalk and walkway running slopes shall be defined as the direction parallel to the prevalent pedestrian flow of travel.
- All new sidewalk and walkway cross slopes shall be defined as the direction perpendicular to the prevalent pedestrian flow of travel.
- The running slope of an accessible route shall not exceed 1:20 and the cross slope of an accessible route shall not exceed 1:48.
- If the running slope of an accessible route exceeds 1:20, it shall be considered a ramp, and shall meet the requirements of ADAAG 405.
- Curb ramps shall have a running slope not steeper than 1:12 and cross slope not steeper than 1:48.
- The clear width of a ramp run shall be 36 inches minimum.
- Landings subject to wet conditions shall be designed to prevent the accumulation of water.
- Curb ramp flares shall not be steeper than 1:10.
- Landings shall be provided at the tops of curb ramps. The landing clear length shall be 36 inches minimum. The landing clear width shall be at least as wide as the curb ramp, excluding flared sides, leading to the landing.
- Curb ramps and the flared sides of curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.
- Temporary pedestrian access shall comply with the requirements of ADAAG 201.3 and 206.1.

American With Disabilities Act Note (Cont'd)

- Curb ramp run surfaces shall be stable, firm, and slip resistant. Changes in level other than the running slope and cross slope are not permitted on ramp runs.

General Notes For Traffic Control Plan

- Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. The others shall then be placed progressively toward the work area.
- Regulatory and warning signs within the construction zone that are in conflict with the traffic control plans shall be removed or covered. All signs shall be restored upon completion of the work.
- When required by the issuing office, the permittee shall install a flashing arrow signal as shown on the traffic control plans.
- All traffic lanes shall be a minimum of ten (10) feet wide.
- All construction warning signs shall be promptly removed or covered whenever the message is not applicable or not in use.
- The backs of all signs used for traffic control shall be appropriately covered to preclude the display of inapplicable sign messages (i.e., when signs have messages on both faces).
- At the end of each day's work or as soon as the work is completed, the permittee shall remove all traffic control devices no longer needed to permit free and safe passage of public traffic. Removal shall be in the reverse order of installation.
- Sign spacing (D), taper lengths (T) and spacing of cones or delineators shall be as shown in Table 645-1, unless otherwise noted on the Traffic Control Plans.

Table 645-1 For Traffic Control Plan							
Posted Speed Limit (M.P.H.)	Sign Spacing (D) (Feet)	Taper Length (T) (Feet)		Longitudinal Buffer Space (B) (Feet)	Spacing of Cones or Delineators (Feet)		
		W = 12' Or Less	W > 12'		Taper	Tangent	Work Area
35	250	200	W X 17	55	25	25	10

W = Width of Lane, Shoulder, or Offset

- Contractor to provide access and/or directional signs to reroute pedestrian traffic.
 - An advertisement shall be placed in the newspaper by the Contractor for any lane closures. The advertisement shall be made one (1) week before any lane closure and shall contain the following information:
 - Map of the Traffic Change Limits;
 - Notice of starting and ending dates, times and duration;
 - Map to show Lane Closure;
 - Explanation of the Lane Closure, "NOTICE TO MOTORIST".
 - Newspaper advertisement shall be a minimum size of 5-inches by 8-inches.
- Proof or copy of newspaper ad needs to be submitted to both the City and County of Honolulu, and State engineer for acceptance before being printed. The Contractor shall be required to have any lane closures announced daily over the radio two (2) days before the starting date until the work is completed. Both advertisements in the newspaper and over the radio shall be paid for by the Contractor. The Contractor shall also notify the Hospital, Ambulatory Services, Police Department and Fire Department of lane closures.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	5	XXX

General Notes For Traffic Control Plan (Cont'd)

- All workers who are exposed to either vehicles using the roadway or to construction equipment shall wear high visibility safety apparel that meets the performance class 2 or 3 requirements of "ANSI/ISEA 107-2004". "Workers" is defined as people on foot whose duties place them within the project limits, e.g., State Right-of-Way, City and County Right-of-Way, adjacent properties. Workers as such are but not limited to construction and maintenance forces, equipment operators, survey crew, utility crews, responders to incidents e.g., EMT and firemen, and law enforcement personnel. Use of high visibility safety apparel that complies with ANSI/ISEA-207-2015 and are of comparable ANSI/SEA 107-2004 class will be acceptable.
- Flaggers and/or police officers shall be insight of each other or in direct communications at all times.
- The permittee shall make minor adjustments at intersections, driveways, structures, etc., to fit field conditions.
- Cones or delineators shall be extended to a point where they are visible to approaching traffic.

Public Health, Safety And Convenience

Notes (State)

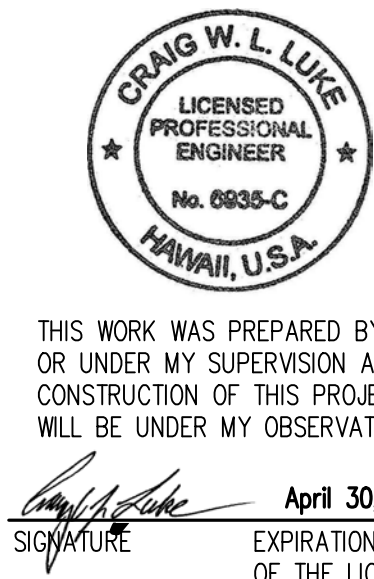
- The Contractor shall observe and comply with all Federal, State and local laws required for the protection of public health and safety and environmental quality.
- The Contractor, at his own expense, shall keep the project and its surrounding areas free from dust nuisance. The work shall be in conformance with the Air Pollution Standards of the State Department of Health. The State may require supplementary measures as necessary.

Historical Preservation Notes

- Should historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately in the immediate vicinity of the find and the find protected from further damage. The Contractor shall immediately cordon off the area and notify the Planning Department at (808) 241-4050 and the State Historic Preservation Division at (808) 692-8015, which will access the significance of the find and recommend the appropriate mitigation measures, if necessary.

Hawaii One Call Center

Prior to excavation, contractor is required by HRS 269E to contact the Hawaii One Call Center at phone number (866) 423-7287.



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
Construction Notes - 3	
FARRINGTON HIGHWAY WIDENING Kapolei Golf Course Road to Fort Weaver Road Project No. 7101A-01-20	
Scale: As Shown	Date: January 2022
SHEET No. C-4 OF XXX SHEETS	

FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction Notes - 13.dwg saved March 16, 2022

Project Bench Mark

The project bench mark is referenced to the City traverse station "Street Monument A" located in the vicinity of Farrington Highway, near the intersection of Kapolei Golf Course Road. The elevation of "Street Monument A" is 112.95-feet mean sea level (msl). Benchmark provided by ControlPoint Surveying Inc.

Notes for Construction

- The Contractor shall provide, install, maintain all necessary signs, lights, flares, barricades, markers, cones and other protective facilities and shall take all necessary precautions for the protection and for the convenience and safety of the public traffic. All such protective facilities and precautions to be taken shall conform with rules and regulations governing the use of traffic control devices at work sites on or adjacent to public streets and highways adopted by the Highway Safety Coordinator and U.S. Federal Highway Administration "Manual on Uniform Traffic Control Devices for Streets and Highways", dated 2009 and its amendments.
- The Contractor shall, whenever necessary, properly sheet and brace all excavations to render it secure and shall remove all such sheeting and bracing before completion of the backfill for storm drains. The minimum cover requirements (from top of pipe to finished grade over pipe) is three (3) feet.
 - A permit shall be obtained by the Contractor from the Department of Planning and Permitting, at the Contractor's expense.
 - Driveways shall be kept open at all times.
 - Damaged shoulders shall be restored to a condition equal to or better than existing condition.
 - Work on a public street area may be performed only between the hours of 8:00 A.M. to 3:30 P.M. Monday through Friday, except on holidays recognized by the State of Hawaii, unless otherwise permitted by the Department of Planning and Permitting, City and County of Honolulu.
 - During non-working hours, all trenches shall be covered with a safe non-skid bridging material and all lanes shall be opened to public vehicular and pedestrian traffic.
 - No material and/or equipment shall be stockpiled or otherwise stored within Right-of-Way except at locations designated in writing and approved by the County Engineer.
 - The Contractor shall conduct his operations so as to offer the least possible obstructions and inconvenience to the public and he shall have under construction no greater length or amount of work that he can execute properly with due regard to the rights of the public.
 - All existing drainage flow conditions shall be maintained at all times. Any drainage resulted from blockage of drainages shall be at the responsibility of the contractor.
- The Contractor shall retain the services of Hawaii licensed professional Engineer(s) for quality control. All sample control and testing shall be done by a person certified in the material test method. Utilize multiple engineers if the area of expertise for an engineer does not cover the type of work being done. Certification of the work done from the Hawaii licensed Engineer(s) shall be submitted to the Department of Public Works at the completion of the construction work Hawaii registered Engineer(s) shall certify that the construction work meets "Standard Specifications". The Hawaii licensed Engineer(s) shall also submit stamped and signed test results as requested by the Department of Public Works.

- All pavement shall be restored to its original or better condition in accordance with City and County of Honolulu, Hawaii Standard Specifications for Road and Bridge Construction, (2005)", and its amendments with a minimum of 3-inches A.C. and 6-inches base course or match the existing pavement structure whichever is greater.
- Benchmarks that are disturbed or destroyed shall be restored under a Hawaii Licensed Land Surveyor's direction. Copies of field notes, descriptions and new values of the benchmark shall be sent to the Engineer survey section for review and approval prior to construction.
- Contractor shall be responsible for all overtime night work payments for City and County's, and State's staff and inspection personnel including consultants when the contract requires overtime or night work to be performed, or directs the Contractor to work additional shifts or overtime for City and County's or State's convenience or Contractor's request to work overtime.
- When required by the City and County of Honolulu or State, an advertisement shall be placed in the newspaper by the Contractor for any lane closures. The advertisement shall be made one (1) week before any lane closure and shall contain the following information:
 - Map of the Traffic Change Limits;
 - Notice of starting and ending dates, times and duration;
 - Map to show Lane Closure;
 - Explanation of the Lane Closure, "NOTICE TO MOTORIST".
 - Newspaper advertisement shall be a minimum size of 5-inches by 8-inches.

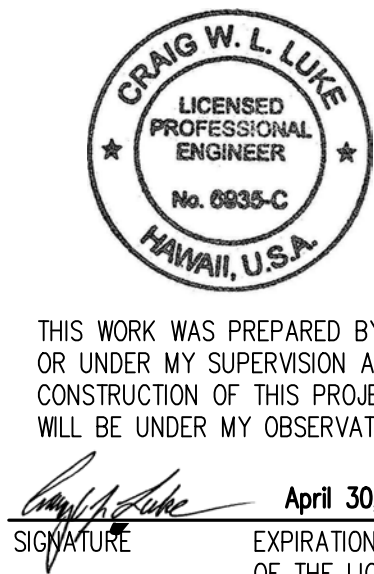
Proof copy of newspaper ad needs to be submitted to both the City and County of Honolulu, and State engineer for acceptance before being printed. The Contractor shall be required to have any lane closures announced daily over the radio two (2) days before the starting date until the work is completed. Both advertisements in the newspaper and over the radio shall be paid for by the Contractor. The Contractor shall also notify the Hospital, Ambulatory Services, Police Department and Fire Department of lane closures.
- All workers who are exposed to either vehicles using the roadway or to construction equipment shall wear high visibility safety apparel that meets the performance class 3 requirements of ANSI/ISEA 107-2004. "Workers" is defined as people on foot whose duties place them within the project limits, e.g., State Right-of-Way, City and County Right-of-Way, adjacent properties. Workers are such as but not limited to construction and maintenance forces, equipment operators, survey crew, utility crews, responders to incidents e.g., EMT and firemen, and law enforcement personnel. Use of high visibility safety apparel that complies with ANSI/ISEA-207-2015 and are of comparable ANSI/ISEA 107-2004 class will be acceptable.
- The Contractor shall make every effort to minimize the use and duration of steel plates. All steel plates shall have a non-skid surfacing which shall be maintained during the steel plates use. In locations where more than one steel plate is used, all the plates shall be welded together to minimize the movement of the plate. If this proves insufficient to prevent movement, other methods shall be used, e.g., anchors or pinning. The County or State may require the backfilling and patching of trenching due to the excess use of steel plates or they in the sole opinion of the engineer are a safety hazard. Steel plates shall not be used where the original posted speed limit exceeds 35 mph.

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Notes for Construction (Cont'd)

- The Contractor shall exercise extreme caution to preserve benchmarks (survey monuments) whenever the center of a survey monument is less than three (3) feet from the edge of construction. The Contractor shall retain a Hawaii Licensed Surveyor to reference the location of said survey monument.
- The Contractor shall provide an adequate non-slip bridging material, including shoring over trenches in pavement areas. The bridging shall be able to support all types of vehicular and pedestrian traffic.
- Where pedestrian walkways exist, they shall be maintained in a safe and ADA compliant and passable condition or other facilities for pedestrian shall be provided. Passages between walkways at intersections shall likewise be provided.
- All construction work shall be done in accordance with the Standard Plans and Specifications of the State Department of Transportation as amended, unless otherwise specified by the contract plans and specifications.
- Confined Space
For entry by HDOT, Department of Water Supply and Contractor personnel, including inspectors, into a permit required confined space as defined in 29 CFR part 1910.146(b), the Contractor shall be responsible for providing:
 - All safety equipment required by the confined space regulations applicable to all parties other than the construction industry, to include, but not limited to, the following:
 - Full body harnesses for up to two (2) personnel.
 - Lifeline and associated clips.
 - Ingress/egress and full protection equipment.
 - Two-way radios (walkie-talkies) if out of line-of-sight.
 - Emergency (escape) respirator (10 minute duration).
 - Cellular telephone to call for emergency assistance.
 - Continuous gas detector (calibrated) to measure oxygen, hydrogen sulfide, carbon monoxide and flammable (capable of monitoring at a distance at least 20-feet away).
 - Personal multi-gas detector to be carried by the HDOT and Contractor Personnel.
 - Continuous forced air ventilation adequate to provide safe entry conditions.
 - Qualified attendant/rescue personnel at each entry/exit point.

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QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
Construction Notes – 4	
FARRINGTON HIGHWAY WIDENING Kapolei Golf Course Road to Fort Weaver Road Project No. 7101A-01-20	
Scale: As Shown	Date: January 2022
SHEET No. C-5 OF XXX SHEETS	

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	TRACED BY _____	
	INSTRUMENTED BY _____	
NOTE BOOK	QUANTITIES BY _____	
	CHECKED BY _____	
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Notes for Construction Work

- D. Training for all personnel including HDOT personnel in use of equipment and working in a confined space.
- E. Sanitized equipment so that it shall not spread COVID-19 or other contagious disease.

Environmental Control Notes For Grading

- In accordance with Chapter 11-60.1, AIR POLLUTION CONTROL, Title 11, Hawaii Administrative Rules, the Property Owner/Developer shall be responsible for ensuring that effective control measures are provided to minimize or prevent any visible dust emission caused by the construction work from impacting the surrounding areas; including the off-site roadways used to enter/exit the project. These measures include but are not limited to the use of water wagons, sprinkler systems, dust fences, etc.
- In accordance with Chapter 11-55, WATER POLLUTION CONTROL and Chapter 11-54, WATER QUALITY STANDARDS, Title 11, Hawaii Administrative Rules, the Property Owner/Developer shall be responsible for ensuring that the Best Management Practice (BMP) to minimize or prevent the discharge of sediments, debris and other water pollutant into State waters are provided at all times.
- In accordance with Chapter 11-56, SOLID WASTE MANAGEMENT CONTROL, Title 11, Hawaii Administrative Rules, the Property Owner/Developer shall be responsible for ensuring that grub material, demolition waste and construction waste generated by the project are disposed of in a manner or at a site approved by the State Department of Health. Disposal of any of these wastes by burning or burying is prohibited.
- The Contractor shall be responsible for compliance with all applicable permits from the Department of Health including but not limited to (NPDES), Notice of Intent and General Permit for storm water, hydrostatic test and dewatering discharges.
- The Contractor shall remove daily all silt and debris resulting from this work and deposited in drainage facilities, roadways and other areas. The cost incurred for any necessary remedial action by the Engineer shall be payable by the Contractor.
- Best Management Practices (BMP's) shall be employed at all times to the maximum extent practicable to prevent damage by sedimentation, erosion or dust to streams, watercourses, natural areas and the property of others.
- In accordance with Chapter 11-46, COMMUNITY NOISE, Hawaii Administrative Rules, the Contractor and the Property Owner/Developer shall be responsible for providing effective control measures to minimize or prevent construction related noise from impacting the residents in the immediate area. If required, noise reduction measures shall be implemented by the Contractor during the construction work.
- The property may harbor rodents which will be dispersed to the surrounding areas when the site is cleared. In accordance with Chapter 11-26, VECTOR CONTROL, Title 11, HAR, the applicant shall ascertain the presence or absence of rodents on the property. Should the presence of rodents be determined, the applicant shall eradicate the rodents prior to clearing the site.

Environmental Control Notes For Grading
(Continued)

- A copy of the plans, construction schedule and/or written measures that is required to be submitted by the Contractor (Dust Control Measures/Plans) should also be sent to the Department of Health for monitoring purposes.

Notes for Grading

Temporary Dust Control Measures for Grading

- The graded or project site that is cleared of vegetation shall be kept damp with water continuously for seven (7) days a week. At the end of each day, the site shall be sufficiently dampened with water on a continual basis so that the site will remain moistened during the night.
- The Contractor shall conduct his operations so that excavation, embankment, and imported material shall be dampened with water on a continual basis to prevent dust problems.
- In applying for a grading permit, the Contractor shall submit plans, schedules and/or written measures which provides for dust control. The dust control measures shall contain statements which require actions or work that prevent dust problems. No permits will be issued unless the Engineer is assured that dust and erosion problems will be minimized.

Temporary Erosion Control Measures for Grading

- Temporary vegetative cover shall be planted within a period of 30 calendar days after the site has been graded or bored of vegetation or if the site will be suspended for more than 30 calendar days.
- Temporary vegetative cover shall consist of 40 lbs. common rye grass seed per acre, 400 lbs. per acre 10-10-10 or equivalent fertilizer worked into the seed bed before planting. Temporary sprinkler system is to be installed concurrently with all plantings. Planting and maintenance of grass shall conform to the "Hawaii Standard Specifications for Road and Bridge Construction, 2005" and its amendments.

Permanent Erosion Control Measures for Grading

- The Contractor shall grass the entire project site, except paved areas with Bermuda grass sprigs. The grass shall be planted, fertilized, and maintained in accordance with the "Hawaii Standard Specifications for Road and Bridge Construction, 2005" and its amendments.
- The Contractor shall grass all exposed areas that have been constructed to final grades within a period of 30 calendar days.
- In lieu of grass sprigs (Note 1), the Contractor may use hydromulch seedings and irrigation sprinkler system.

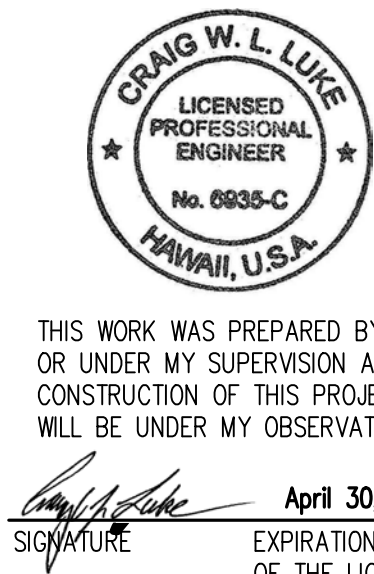
Notes for Grading

- All grading work shall be done in accordance with chapter 14, articles 13, 14, 15 and 16, as related to grading, soil erosion and sediment control of the Revised Ordinances of Honolulu, 1990, as amended.
- The underground pipes, cables or ductlines known to exist by the engineer from his search of records are indicated on the plans. The contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the area. Wherever connections of new utilities to existing utilities are shown on the plans, the contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines.

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Notes for Grading (Continued)

- The Department of Planning and Permitting shall be informed of the location of the borrow/disposal site for the project when the application for a grading permit is made. The borrow/disposal site must also fulfill the requirements of the grading ordinance.
- No grading work shall be done on Saturdays, Sundays and holidays at any time without prior notice to the director, D.P.P., provided such grading work is also in conformance with the community noise control standards contained in the Hawaii administrative rules, title 11, chapter 46, "community noise control".
- The limits of the area to be graded shall be flagged before the commencement of the grading work.
- Where applicable and feasible the measures to control erosion and other pollutants shall be in place before any earth moving phase of the grading is initiated.
- Temporary erosion controls shall not be removed before permanent erosion controls are in-place and established.
- Temporary erosion control procedures shall be submitted for approval prior to application for grading permit.
- For non-city projects, the contractor shall notify the civil engineering branch, D.P.P. At 768-8084 to arrange for inspectional services and submit two (2) sets of approved construction plans seven (7) days prior to commencement of construction work. For city projects, the contractor shall coordinate inspectional services with the responsible city agency.
- The contractor shall not start construction until a notice of general permit coverage (NGPC) is received from the department of health, state of Hawaii, and has satisfied any other applicable requirements of the NPDES permit program. The contractor should provide a written copy of the NGPC to the appropriate city department or governmental agency per their requirements.
- All grading and construction work shall implement measures to ensure that the discharge of pollutants from the construction site will be reduced to the maximum extent practicable and will not cause or contribute to an exceedance of water quality standards.
- Non-compliance to any of the above requirements shall mean immediate suspension of all work, and remedial work should commence immediately. All costs incurred shall be billed to the violator. Furthermore, violators shall be subjected to administrative, civil and/or criminal penalties.



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Water Pollution And Erosion Control Notes

A. GENERAL:

1. See Special Provisions Section 209 – Water Pollution and Erosion Control. Section 209 describes but is not limited to: submittal requirements; scheduling of a water pollution and erosion control conference with the Engineer; construction requirements; method of measurement; and basis of payment. In addition, Appendix A lists potential pollutant sources and corresponding BMPs used to mitigate pollutants.
2. Follow the guidelines in the current HDOT Construction Best Management Practices Field Manual in developing, installing, and maintaining the Best Management Practices (BMP) for the project. For any conflicting requirements between the Manual and applicable bid documents, the applicable bid documents will govern. Should a requirement not be clearly described within the applicable bid documents, the Contractor shall notify the Engineer immediately for interpretation. For the purposes of clarification under Note A.2, "applicable bid documents" include the construction plans, standard specifications, Special Provisions, Permits, and the Storm Water Pollution Prevention Plan (SWPPP) when applicable.
3. Follow the guidelines in the Honolulu's City & County "Rules Relating to Soil Erosion Standards and Guidelines" along with applicable Soil Erosion Guidelines for projects on Oahu.
4. The Engineer may assess liquidated damages of up to \$27,500 for non-compliance of each BMP requirement and each requirement stated in Section 209, for every day of non-compliance. There is no maximum limit on the amount assessed per day.
5. The Engineer will deduct the cost from the progress payment for all citations received by the Department for non-compliance, or the Contractor shall reimburse the State for the full amount of the outstanding cost incurred by the State.
6. If necessary, install a rain gage prior to any field work including the installation of any site-specific best management practices. The rain gage shall have a tolerance of at least 0.05 inches of rainfall. Install the rain gage on the project site in an area that will not deter rainfall from entering the gage opening. Do not install in a location where rain water may splash into rain gage. The rain gage installation shall be stable and plumbed. Do not begin field work until the rain gage is installed and site-specific best management practices are in-place.
7. Submit Site-Specific BMP Plan to the Engineer along with a completed Site-Specific BMP Review Checklist within 30 calendar days of contract execution. The Site-Specific BMP Review Checklist may be obtained from <http://www.stormwaterhawaii.com>.

B. WASTE DISPOSAL:

1. Waste Materials
Collect and store all waste materials in a securely lidded metal dumpster or roll off container with cover to keep rain out or loss of waste during windy conditions. The dumpster shall meet all local and State solid waste management regulations. Deposit all trash and construction debris from the site in the dumpster. Empty the dumpster weekly or when the container is two-thirds full, whichever is sooner. Do not bury construction waste materials onsite. The Contractor's supervisory personnel shall be instructed regarding the correct procedure for waste disposal. Post notices stating these practices in the office trailer, on a weatherproof bulletin board, or other accessible location acceptable to the Engineer. The Contractor shall be responsible for seeing that these procedures are followed. Submit the Solid Waste Disclosure Form for Construction Sites to the Engineer within 40 calendar days of contract execution. Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer monthly. This should also include documentation from any intermediary facility where solid waste is handled or processed.
2. Hazardous Waste
Dispose all hazardous waste materials in the manner specified by local or State regulations and by the manufacturer. The Contractor's site personnel shall be instructed in these practices and shall be responsible for seeing that these practices are followed.

3. Sanitary Waste

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

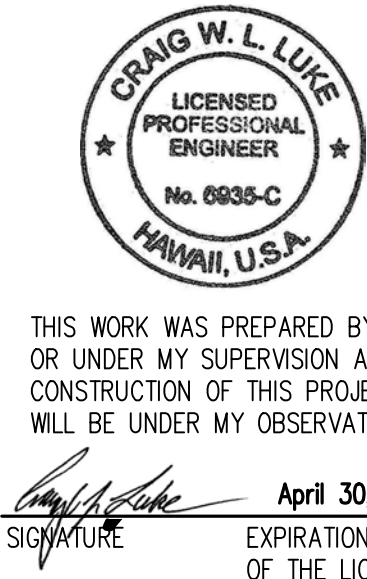
C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

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

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10. Submit the name of a specific individual designated responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.
11. Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. They shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.
12. Contain, remove, and dispose slurry generated from saw cutting of pavement in accordance with approved BMP practices. Do not allow discharge into the drainage system or State waters.
13. For projects with an NPDES Permit for Construction Activities, immediately initiate stabilizing exposed soil areas upon completion of earth-disturbing activities for areas where earth-disturbing activities have permanently or temporarily ceased. Earth-disturbing activities have permanently ceased when clearing and excavation within any area of the construction site that will not include permanent structures has been completed. Earth-disturbing activities have temporarily ceased when clearing, grading, and excavation within any area of the site that will not include permanent structures will not resume (i.e., the land will be idle) for a period of 14 or more calendar days, but such activities will resume in the future. For construction areas discharging into waters not impaired for nutrients sediments, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities. For construction areas discharging into nutrient or sediment impaired waters, complete initial stabilization within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities. Classification of water at the discharge point may be found in the SWPPP.

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

Craig W. Luke
SIGNATURE

April 30, 2022
EXPIRATION DATE OF THE LICENSE

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Water Pollution And Erosion Control
Notes (Continued)

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D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

1. Materials Pollution Prevention Plan

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

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

- 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 Hydrotesting Waters

F. SITE-SPECIFIC BMP REQUIREMENTS:

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

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



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

SIGNATURE _____ EXPIRATION DATE
April 30, 2022
OF THE LICENSE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
Construction Notes – 7	
FARRINGTON HIGHWAY WIDENING Kapolei Golf Course Road to Fort Weaver Road Project No. 7101A-01-20	
Scale: As Shown	Date: January 2022
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Water Pollution And Erosion Control
Notes (Cont'd)

F. (Continued)
Follow the requirements below:

- Protect all Drainage Inlets receiving runoff from disturbed areas (SC-2).
- Contain on-site runoff using Perimeter Sediment Controls
 - SC-1 Silt Fence
 - SC-5 Vegetated Filter Strips and Buffers
 - SC-8 Compost Filter Berm
 - SC-13 Sandbag Barrier
 - SC-14 Brush or Rock Filter
- Control offsite runoff from entering construction area
 - EC-8 Run-On Diversion
 - SC-6 Earth Dike
 - SC-7 Temporary Drains and Swales
- Incorporate applicable Site Management BMP
 - SM-1 Employee Training
 - SM-2 Material Delivery and Storage
 - SM-3 Material Use
 - SM-4 Protection of Stockpiles
 - SM-6 Solid Waste Management
 - SM-7 Sanitary/Septic Waste Management
 - SM-9 Hazardous Waste Management
 - SM-10 Spill Prevention and Control
 - SM-11 Vehicle and Equipment Cleaning
 - SM-12 Vehicle and Equipment Maintenance
 - SM-13 Vehicle and Equipment Refueling
 - SM-14 Scheduling
 - SM-15 Location of Potential Sources of Sediment
 - SM-16 Preservation of Existing Vegetation
 - SM-18 Dust Control
- Contain pollutants within the Construction Staging/Storage Area BMP with applicable Perimeter Sediment Controls and Site Management BMP. Include a Stabilized Construction Entrance/Exit (EC-2) for all areas which exit onto a paved street. Restrict vehicle access to these points.
- Manage Concrete Waste including installing a Concrete Washout Area (SM-5) and properly disposing of Concrete Curing Water (California Stormwater BMP Handbook NS-12 Concrete Curing).
- 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.
- Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100, Installation, Maintenance, Monitoring, and Removal of BMP.

Sewer Notes

- All sewer construction shall be performed in accordance with the city's "Standard Specifications," Sept. 1986, the Department of Environmental Services "Wastewater System Design Standards," July 2017, and "Wastewater System Standard Details," July 2017, Current City Practices and Revised Ordinances of Honolulu, 1990 as amended.

Sewer Notes (Cont'd)

- In the event that any change in alignment or grade for the proposed sewers are required due to unforeseen conflicts with other facilities, the engineer in charge or the maker of the plans shall be responsible for the required changes which are to be presented to the Department of Planning and Permitting (DPP) for approval.
- The contractor shall notify the Civil Engineering Branch, DPP at phone no. 768-8084 to arrange for inspectional services and submit four (4) sets of approved construction plans seven (7) days prior to commencement of construction work. The contractor shall pay for all inspection costs.
- Crushed rock cradle is permitted where soil is stable. In areas of unstable soil, the maker of the plans and the construction engineer will determine the pipe support required.
- The underground pipes, cables or ductlines known to exist by the engineer from his research of records are indicated on the plans. the contractor shall verify the location and depth of the facilities, including and affecting sewer lines, in the presence of the DPP inspector and exercise proper care in excavating the area. The contractor shall be responsible and shall pay for all damaged utilities.
- Sewer laterals shall be clear of and not conflicting with any other utility. Minimum horizontal and vertical clearances shall be strictly observed and followed.
- Slope for sewer laterals shall be a minimum of 2.00% unless otherwise noted.
- Building plumbing facilities shall be controlled by sewer lateral inverts.
- The contractor shall be responsible for maintaining continuous sewer service to all affected areas during construction.
- The consulting engineer shall submit to the Wastewater Branch, DPP "As-Built" tracings and electronic files of the construction plans as actually constructed, showing all changes from the original plans.
- The contractor shall be responsible for any sewage spills caused during construction. The contractor shall notify the State Department of Health and utilize appropriate sampling and analyzing procedures. The contractor shall be responsible for all public notifications and press releases.
- The contractor shall install "Rainstopper" manhole inserts in all sewer manholes with type "SA" frame and cover.
- The contractor shall obtain approval for advance sewer riser agreement at the DPP and obtain building permit for plumbing work before any advance riser is made.
- S4C pipe cradle seals shall be installed 10 feet from all sewer manholes to prevent soil migration.
- Confined Space

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

- All safety equipment required by the confined space regulations applicable to all parties other than the construction industry, to include, but not limited to, the following:
 - Full body harnesses for up to two personnel.
 - Lifeline and associated clips.
 - Ingress/egress and fall protection equipment.
 - Two-way radios (walkie-talkies) if out of line-of-sight.
 - Emergency (escape) respirator (10 minute duration).
 - Cellular telephone to call for emergency assistance.

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Sewer Notes (Cont'd)

- Continuous gas detector (calibrated) to measure oxygen, hydrogen sulfide, carbon monoxide and flammables (capable of monitoring at a distance at least 20-feet away).
 - Personal multi-gas detector to be carried by inspector.
- Continuous forced air ventilation adequate to provide safe entry conditions.
 - One attendant/rescue personnel topside (two, if conditions warrant it).
- When connecting to a live sewer line, the contractor shall abide by all conditions that the department of health sets forth to mitigate any wastewater spill that may occur. The contractor shall inform the city inspector five (5) working days prior to the actual connection. The contractor shall be responsible for any fines and penalties due to any spills resulting from the connection.
 - No rungs shall be installed inside new sewer manholes.
 - For sewer manhole adjustments upward less than 3", see Std. Detail S-28. for SMH adjustments upward greater than 3" or for any adjustments downward, reconstruct SMH top from below the cone section.
 - If contractor encounters flow monitoring devices, such as special sewer manhole cover embedded with solar panels, contact Collection System Maintenance (CSM) at 768-7272 to coordinate temporary removal.
 - Contractor shall maintain visibility and maintenance access to live sewer manhole locations at all times, including during non-work hours and paving operations.
 - Contractor shall use manhole debris catching device when performing manhole height adjustment work and remove any construction debris that has fallen into the manhole. Disposal of construction debris in the sewer system is strictly prohibited.
 - For precast sewer manholes, the consulting engineer shall submit four (4) sets of shop drawings to the Wastewater Branch, DPP for approval. After the shop drawings are approved, the manufacturer shall notify the Construction Management Branch, Wastewater Engineering and Construction Division, Env, at 768-8785, 768-8769, or 765-8755 to arrange for inspection services for concrete pours made at its plant seven (7) days prior to pour.

APPROVED:	
Chief Wastewater Branch, WWB	DATE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Signature: *Craig W. Luke*
April 30, 2022
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
Construction Notes - 8	
FARRINGTON HIGHWAY WIDENING Kapolei Golf Course Road to Fort Weaver Road Project No. 7101A-01-20	
Scale: As Shown	Date: January 2022
SHEET No. C-9 OF XXX SHEETS	

FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction Notes - 13.dwg saved March 16, 2022

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	DRAWN BY _____	
	TRACED BY _____	
	QUANTITIES BY _____	
NOTE BOOK	CHECKED BY _____	
	No. _____	

Construction Notes For Gas Facilities

- Hawaii Gas’ pipelines in the project area are plastic coated and cathodically protected. The contractor shall be extremely careful when working near these gas pipelines.
- Written clearances must be obtained from Hawaii Gas, maps and records department, 515 Kamakee street, at least five (5) working days prior to starting excavation near these gas pipelines.
- Since gas lines locations on field map are approximate, the contractor, after obtaining written clearance, shall call Hawaii One Call Center a minimum of five (5) working days before starting excavation to arrange for field location of the existing gas pipelines. The telephone number is 811 or 1-866-423-7287.
- The contractor shall excavate and backfill around gas pipelines in the presence of a representative of Hawaii Gas. All backfill within six inches of any gas pipeline shall be select cushion material approved by Hawaii Gas.
- For relocation of any gas pipeline, the contractor shall notify Hawaii Gas one month (30) calendar days before starting work. The telephone number is 594-5574. The contractor shall provide the necessary excavation and backfill, obtain traffic permits, and restore pavement, sidewalks, and other facilities. Any relocation of gas facilities shall be done by Hawaii Gas and paid for by the contractor.
- The contractor shall notify Hawaii Gas immediately after any damage has been caused to existing gas pipelines, coatings, or its cathodic protection devices. The telephone number is 535-5933, 24 hours a day. The contractor shall be liable for any damage to Hawaii Gas’ facilities. Repair work on such damage shall be done by Hawaii Gas with payments for this work to be borne by the contractor.
- Minimum vertical and horizontal clearance between the gas pipelines and other pipelines, conduits, ductlines, or other facilities shall be 12 inches. Adequate support and protection for gas pipeline exposed in the trench shall be provided by the contractor and approved by Hawaii Gas.
- The contractor shall work in an expeditious manner in order to keep the uncovered gas pipelines exposed for as short a period of time as possible.

HECO Underground Fuel Oil Pipelines Within Energy Corridor

- Excavation Near HECO Fuel Oil Pipelines

The contractor shall exercise extreme caution whenever construction crosses or is in close proximity to HECO’s underground fuel oil pipelines. If any excavation work will be performed within 10-feet of the fuel pipelines, the contractor shall notify HECO’s Fuels Department at least two weeks prior to start of the excavation work. If the excavation is adjacent to or beneath the fuel pipeline, HECO may require a stand-by person to monitor the work of the contractor. The cost of the stand-by person shall be borne by the contractor.

Whenever the integrity of the pipeline, its coating, test stations, or cathodic protection system is affected by the excavation work, the pipeline and/or its appurtenances shall be repaired by HECO personnel or a contractor with HECO operator qualification certification, according to US DOT PHMSA regulations. The cost of any repairs shall be borne by the contractor.

The contractor shall notify the Hawaii One Call Center (HOCC) at least five working days prior to the start of excavation work, as required by Hawaii revised statute 269e-7.

The US DOT PHMSA requires that the pipeline be inspected any time that it is exposed. The contractor shall make the area with the exposed pipeline available to HECO, and provide safe access to the excavated area, for inspection.

The contractor may also be required to provide assistance, under the direct supervision of HECO, to further expose the pipeline circumferentially and longitudinally beyond the initial exposed area to facilitate the pipeline examination.

Any exposed pipeline shall be provided adequate protection and support during construction activities and after work hours to prevent damage to the fuel pipeline.

Trenches across the pipeline shall be limited to a maximum width of fifteen (15) feet unless the lines are supported utilizing a method approved by HECO.

All backfill within 12 inches around the pipeline or fiber-optic cable shall be S4C. A pipeline warning tape shall be placed above any exposed pipeline. A fiber-optic cable warning tape shall be placed above any exposed fiber optic cable at the same level as the pipeline warning tape.

Compaction of backfill material above the fuel pipeline shall be performed by vibratory plate, tampers (“jumping jacks”), or walk-behind or remote controlled mini-compactors. Spiked rollers are only allowed once there is a minimum of 30” of backfill material compacted above the S4C layer.

- Clearance Requirements

Any new installation near HECO’s fuel oil pipelines shall adhere to the following clearance requirements:

parallel to HECO fuel pipeline: 24-inches
crossing below HECO fuel pipeline: 24-inches below
crossing above HECO fuel pipeline: crossing above not permitted

- Notification

Prior to beginning any excavation work, the contractor shall notify the HECO Fuels Department Mr. Derek Sato at 543-4108.

In the event of an emergency, or damage to any pipeline facilities, notify HECO Security Command Center at 543-7685 so HECO personnel can secure the damaged section and report any oil spills to the proper authorities. All costs associated with the damage, repair, and oil spill cleanup shall be borne by the contractor. This phone is manned 24-hours a day.

Free Service For Locating Underground Utilities:

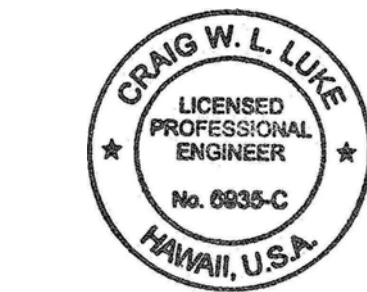
Prior to excavation, the contractor is required by section 269e, Hawaii Revised Statutes, to contact the Hawaii One Call Center at 866-669-4001.

Guidelines For Work Near At&t Utility Lines

- The location of the existing AT&T line (t18) shown is based on as-built plans. The contractor shall accurately determine the location and depth of the existing AT&T line prior to installation of the waterline crossing by potholing or other methods. Coordinate any necessary plan revisions with the engineer. Notify at&t at least seven (7) days prior to commencement of construction work at the crossing. (contact: Alex Viray, 455-1010).

Highway Lighting, Hawaiian Telcom, Oceanic Time Warner Cable – Notes

- The Contractor shall notify Highway Lighting, Hawaiian Telcom and Oceanic Time Warner Cable three (3) weeks prior to the start of construction.
- See electrical drawings.



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CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
SIGNATURE _____ April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
Construction Notes – 9	
FARRINGTON HIGHWAY WIDENING Kapolei Golf Course Road to Fort Weaver Road Project No. 7101A-01-20	
Scale: As Shown	Date: January 2022
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	TRACED BY _____	
	CHECKED BY _____	
NOTE BOOK	NO. _____	
	CHECKED BY _____	

Par Hawaii Refining Construction Notes And Guidelines

1.

All work shall be in accordance with "Design and construction guidelines for projects near Par Hawaii refining pipelines and fuel storage facilities." These guidelines can be obtained from:

Louie Tamoria, Senior Project Engineer
LTamoria@parpacific.com
PAR Hawaii Refining
2.

Par Hawaii refining will be provided access to the pipelines and facilities at all times, twenty four (24) hours a day, 7 days a week. If the easement area is to be fenced or walled in, Par Hawaii refining will be provided with a gate key unless the area is attended on a twenty four hour basis.
3.

Storage of material or equipment on the easement should be avoided. This includes parking lots for long term storage of materials and vehicles.
4.

A minimum overhead clearance of fifteen (15) feet must be maintained within the easement.
5.

Extensive landscaping (trees, shrubs, sprinklers, etc.) should be kept off of the easement.
6.

Large structures and obstructions (buildings, walls, equipment pads, etc.) should be kept off of the easement.
7.

Top to bottom obstructions (power poles, sewer manholes, sewer cleanouts, bridge abutments, etc.) will not be permitted on the easement.
8.

Light landscaping and structures (grass, paving, curb crossings, etc.) are considered reasonable. Grassed areas must be suitable for all weather vehicular traffic.
9.

A Par Hawaii refining representative will stake the pipelines at contractor's request. The Par Hawaii inspector shall be notified at least five (5) working days prior to excavations in order that the representative can locate the Par Hawaii pipeline. Note: excavations include grading and grubbing of the project area above the Par Hawaii pipeline or in the vicinity of the Par Hawaii surface structures such as valve vaults, valve cages, and control devices. Determination of the pipeline elevations and locations shall be the contractor's responsibility and at the contractor's expense. All maps and drawings provided by Par Hawaii refining of its pipelines and pipeline facilities are approximations and the contractor shall be responsible to verify precise location all underground facilities prior to start of construction.
10.

The pipeline easement access road must be kept open at all times. Authorization to block access roads at any time during contractor's construction period must be obtained from Par Hawaii refining pipeline operations manager.
11.

Avoid installing sewers, fences, sprinkler lines, pipelines, cables, curbs, etc. In the easement in a parallel or near parallel orientation to the easement centerline. Crossings are permitted but must be held to a minimum of forty five degrees (45) to easement centerline.
12.

Sewer and electrical conduits crossings should be held to a minimum clearance of two feet below Par Hawaii refining pipelines for the full easement width. If this condition cannot be met, the crossings should be encased in six (6) inches of concrete.
13.

Except for item 12 above, all crossings should be at least twenty four inches clear below pipelines for the full easement width. Crossings above the pipelines are generally not accepted.

Par Hawaii Refining Construction Notes And Guidelines (Cont'd)

14.

Removal of fill from the easement shall be limited to not less than 3 feet minimum cover over the lines. If residential or business buildings are within fifty (50) feet of the pipeline, four (4) feet of cover is required.
15.

Trenches across the pipelines shall be limited to a maximum width of ten (10) feet unless the lines are supported in a manner acceptable to par hawaii refining.
16.

If the pipeline is to be exposed during construction, adequate protection and support shall be provided during construction activities and after hours to prevent damage to or destruction of the fuel pipeline.
17.

All excavation and backfilling operations within 15 feet of the pipeline in par hawaii refining easement must be witnessed by a par hawaii representative. All backfill within twelve (12) inches of pipelines shall be finely sifted man made sand (grade c-33). All excavation within 3 feet of pipelines must be accomplished by hand digging. Work shall be handled in an expeditious manner in order to keep pipelines uncovered as briefly as possible.
18.

Grading of abutting property should not adversely affect drainage of the easement area or pose a hazard to the easement such as slides or erosion.
19.

The slope of the final grade must be kept reasonably level across the easement. Maximum should be 5:1 to provide for backhoe operation and repair vehicles.
20.

All crossing metallic facilities with potentials that could interfere with par hawaii refining cathodic protection current shall place a neoprene dielectric blanket between the crossing facility and the par hawaii refining facility for the full length of the easement. In addition, a cathodic protection survey report shall be submitted and approved by par hawaii refining stating the proposed crossing facility will not, in any way, adversely affect par hawaii refining facilities.
21.

All costs pertaining to damage of the pipelines, their cathodic protection devices, or damage of property and injury to persons caused directly or indirectly by this work, shall be charged to the contractor. Any repair work on the pipelines resulting from the contractor's project shall be performed by the contractor with authorization or par hawaii refining or par hawaii refining personnel and billed to the contractor.
22.

The contractor shall be responsible for traffic conditions over any par hawaii refining pipeline or pipeline facility relating to construction activities. The contractor shall provide steel plates or non-compacted soil berms in areas of equipment traffic and limit traffic to these access ways.

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CRAIG W. L. LUKE

LICENSED PROFESSIONAL ENGINEER

No. 6935-C

HAWAII, U.S.A.

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

Signature

April 30, 2022

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

Construction Notes – 10

FARRINGTON HIGHWAY WIDENING

Kapolei Golf Course Road to Fort Weaver Road

Project No. 7101A-01-20

Scale: As Shown Date: January 2022

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	TRACED BY _____	
	NOTED BY _____	
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	CHECKED BY _____	
	No. _____	

Water Notes (Board of Water Supply)

- Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, dated 2005, as amended, of the Hawaii Highways Division, Department of Transportation, and the City and County of Honolulu Board of Water Supply's "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 2021, and all subsequent amendment and additions.
- No deviation to the Board of Water Supply 2002 Water System Standards shall be allowed without the manager and Chief Engineer's approval.
- All plans approved by the Board of Water Supply are based solely on the adequacy of the water supply.
- Test pressure shall be 200 psi. During the 30-minute pressure test, the pressure shall not drop more than 10 psi.
- The Contractor shall notify Board of Water Supply Capital Projects Division, Construction Section in writing or call (808) 748-5730, and submit six (6) sets of 24" x 36" approved construction drawings, one week prior to commencing construction activities.
- The contractor shall chlorinate the entire inside surface of each pipe and fitting with disinfection solution of 5 ounces of sodium hypochlorite mixed with 10 gallons of water. (for connection only).
- The contractor shall be responsible for the protection of all water lines during construction. The contractor shall be especially careful when excavating behind water lines, tees, and bends wherever there is a possibility of water line movement due to the removal of the supporting earth beyond the existing reaction blocks. The contractor shall take whatever measures necessary to protect the water lines, such as constructing special reaction blocks (with BWS approval) and/or modifying his construction method.
- The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy or the encountering of other obstacles during the course of the work. The contractor shall be responsible and shall pay for all damages to existing utilities. The contractor shall not assume that where no utilities are shown, that none exist.
- Prior to installation, the contractor shall submit for approval by Board of Water Supply, the manufacturer's certification that all cast iron (gray or ductile) fittings for the project conform in all respects to the Water System Standards, dated 2002.
- Polygon shape for mechanical joint glands as described in AWWA Standard C111 shall be "straight-sided" or an approved equal on a job to job basis.
- Re-approval shall be required if this project is not under construction within a period of two (2) years.
- Contractor shall cut and plug all existing unused laterals at the main whether or not shown on the plans. The damaged area shall be repaired to an equal or better condition than the immediate area. All work shall be done at the expense of the contractor.
- The contractor/developer shall obtain a NPDES permit prior to chlorination and/or dewatering. A copy of the permit shall be submitted to the Board of Water Supply, Capital Projects Division, Construction Section.

Water Notes (Board of Water Supply) (Continued)

- Soil resistivity for the site has a corrosion rating of Moderately to Severely Corrosive as reported by Geolabs, Inc. in their report entitled "Geotechnical Engineering Exploration, Farrington Highway Improvements, Kapolei Golf Course Road to Fort Weaver Road, Ewa, Oahu, Hawaii, Dated August 4, 2021. All required electrical isolation procedures and corrosion control requirements shall apply.
- Pipe cushion shall be of high resistivity material. The contractor shall submit a soil certification that high resistant cushion material has a resistivity greater than 5,000 ohm-cm. Remainder of the backfill material shall be as specified in volume 1 of the Water System Standards. Pipe cushion and backfill material shall contain no hazardous substances above regulatory action levels including but not limited to lead, asbestos, mercury, chromium, cadmium, zinc, strontium, and polychlorinated biphenyls (PCB).
- Upon completion of the project, the developer shall provide the BWS with a certificate from a registered soils engineer certifying that the road prism has been constructed in accordance to City and County road standards.
- Two-way blue reflective hydrant markers type DB shall be installed at all new fire hydrant installations. Contractor shall verify the exact locations of hydrant markers with the nearest Honolulu Fire Department battalion chief.
- Cleaning shall be by the use of "pigs" introduced into the pipeline and run completely through all installed pipelines and all branch lines for fire hydrants. "Pigging" of service laterals is not required. Bare foam "pigs" shall be used to swab piping clean as each length of the pipeline is installed. The type, density, size, diameter and length of the pig shall be submitted for review and approval by the Manager prior to pigging work. "Pig" shall be used per manufacturer's specifications. Prior to use, the "pig" shall be submerged in a chlorine solution of 1 oz. of 5% chlorine bleach in 5 gallons of water. "Pigging" of the pipeline shall be considered incidental to the installation of the new pipeline. Manual sweeping, hand cleaning or swabbing may be allowed in lieu of "pigging" as approved by the Board of Water Supply Manager.
- All ductile iron pipe and fittings, including sections requiring reinforced concrete jacketing shall be ductile iron pipe class 53, with a bonded dielectric coating per the Board of Water Supply 2002 System Standards as amended.
- The contractor shall install electronic markers to all mains and test the electronic markers prior to installations to verify proper operation. BWS personnel shall verify the number and locations of placed electronic markers before final paving of the project.
- The Board of Water Supply will not send a completion notice to the Department of Planning and Permitting until easement documents are submitted to the Board of Water Supply and recorded.
- Prior to any excavating, the Contractor shall verify in the field, the location of existing waterlines and appurtenances.
- Any adjustments to the existing water system required during construction, to meet the requirements of the BWS Standards, whether shown on the plans or not, shall be done by the Contractor at no cost to the Board of Water Supply.
- After installation of tapping sleeve and tapping valve and prior to tapping the existing water main, the assembly shall be pressure tested at 200 psi on both sides of the valve and in accordance with the Water System Standards, dated 2002.

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Water Notes (Board of Water Supply) (Continued)

- Maintain 3'-0" minimum cover for all existing waterlines from new finish grade. The contractor shall probe the waterline and service laterals and submit the probing data to BWS Capital Projects Division, Construction Section.
- The contractor shall furnish and install an insulating corporation stop and petrolatum wax tape at all taps (for DI pipe and copper lateral combination only).
- All ductile iron pipe, fittings and valves shall be coated with a banded dielectric coating and wrapped with petrolatum wax tape.
- At the electrical/cable/signal ductline and water crossings, adjust all electrical/cable/signal ductline elevations to maintain the required vertical clear separation from all water mains. Conformance to the Board of Water Supply 2002 Water System Standards as amended shall be at no cost and adhered to.
- Maintain the required minimum horizontal clear separation between electrical/cable/signal appurtenances, (including any modular units) and the nearest water mains or water appurtenance. Contractor shall field verify for any conflicts at each electrical/cable/signal appurtenance location. Where conflicts occur, the contractor shall coordinate with the project engineer to revise the electrical/cable/signal appurtenance to provide the required clearances. Conformance to the Board of Water Supply, Water System Standards, dated 2002, as amended, shall be at no cost and adhered to.

APPROVED:

Manager and Chief Engineer, BWS
(for work affecting BWS facilities
State R/W & BWS easements only)

DATE



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
SIGNATURE: *Craig W. Luke* EXPIRATION DATE: April 30, 2022
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Construction Notes - 11

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown

Date: January 2022

SHEET No. C-12 OF XXX SHEETS

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	NOTED BY _____	_____
NOTE BOOK	QUANTITIES BY _____	
	CHECKED BY _____	
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Water Notes (Board of Water Supply) (Continued)

30. Install 4 mil thick, non-metallic, blue colored, 6 inches wide warning tape over centerline of the pipe and below the base course along the entire length of trench. Tape should be marked with "caution water line buried below".
31. Board of Water Supply approval of these plans does not constitute a water commitment. Availability of water will be determined when building permit is presented to the department. Water commitment will depend upon the status of the water system at that time. Should water service be made available, the water commitment will be effective when the project receives an approved building permit from the building department. All water commitments will be canceled in the event the building permit is canceled.
32. When a utility (gas, sewer, electrical duct line, fiber optic, drainage, etc.) crosses below a Board of Water Supply water main, the designer of record and their construction engineer shall be responsible for determining the adequate water main structural support and submit the construction method and shop drawing, stamped by a licensed engineer and reviewed and accepted by the designer of record, to the Board of Water Supply for review and approval. All work shall be at no cost to the Board of Water Supply.

Chlorination and Hydrotesting Effluent Note

1. The contractor shall only use dechlorinated hydrotesting effluent for dust control, irrigation and/or other purposes that do not involve discharges to waters of the State of Hawaii.

Trenchless Installation Work

1. For trenchless utility work (micro-tunneling, directional drilling, pipe ramming/jacking of new utilities such as electrical duct lines, sewer lines or drain lines) crossing or paralleling existing waterlines, provide the required minimum horizontal and vertical clearance to existing waterlines. No deviation shall be allowed without the Manager and Chief Engineer's approval. The utility owner or contractor shall make adjustments to meet the minimum clearances should the utility line be installed closer to the existing waterlines, at no cost to the Board of Water Supply. The contractor shall submit as-built plans of the new utility lines after inspection of the project.

Waterline Chlorination and Testing Procedures

1. The contractor shall follow the following revised chlorination and water sampling procedures:

The following chlorination and water sample collection procedure shall apply to all water pipeline projects (all work to be coordinated through BWS inspector):

Chlorination of Water Systems

- A. The contractor shall provide a 4-week advance notice, in writing, to the Officer-In-Charge for proposed flushing filling and bacterial testing of the new pipeline.
- B. The Contractor shall hire a State of Hawaii – Department of Health certified laboratory to provide water sampling services and to deliver water samples to the Micro Lab for analysis. Water samples for bacterial testing shall be delivered no later than 2:30 p.m. on the day the samples are taken to the Board of Water Supply Microlab located at 630 S. Beretania St., Honolulu, HI 96843. The Micro Lab shall perofrm analysis and provide their results ot the Officer-In-Charge by 4:30 p.m. on the following day (in some cases, final results notification may take up to 48 hours).

Waterline Chlorination and Testing Procedures (Continued)

- C. Water mains shall be disinfected in accordance with the Board of Water Supply Water System Standards (2002), as amended, Section 302.29.

Step 1 – Preliminary Flushing (Prior to Chlorination):

The mains shall be flushed with maximum available pressure and velocity. Adequacy of turnover shall be determined by the absence of particles. Turbidity shall be less than 1.0 NTU before chlorination. During all flushing operations, the Manager or the Manager's authorized representative shall determine the rate of water use.

Step 2 – Chlorination:

The Contractor shall submit to the Manager, for approval, a sketch showing locations of sampling points and a plan or schedule delineating the method or steps the Contractor proposes to use to accomplish the work. The following methods for chlorination shall be used:

1. The following chlorination and water sample collection procedure shall apply to all water pipeline projects:
- a. Step 1: Chlorinate main by filling with water and introducing chlorine in sufficient quantity to obtain a minimum chlorine concentration of 50 parts per million. Leave chlorinated water in main overnight.
- b. Step 2: Flush main with fresh water until all chlorine has been flushed out as evidenced by the N, N-diethyl-p-phenylenediamine (DPD) test, then collect a water sample while continuing to flush the main.
- c. Step 3: Repeat Steps 1 and 2. After collecting the second water sample, stop flushing and allow the water to stand in the main overnight.
- d. Step 4: Thoroughly flush the main with fresh water until all water that had been standing in the main overnight has been flushed out. Stop flushing and let the water stand in the main for one hour. Collect a water sample.
2. The main is deemed acceptable and certified when (I) the three consecutive water samples, collected 24 hours apart under Steps 1 and 2, show no TC (Total Coliform bacteria), no E. Coli, less than 200 CFU/ml (Colony Forming Units per ml) of HPC (Heterotrophic Plate Count bacteria) or less than 202 HPC using the MPN (Most Probable Number) method and Turbidity <1.0 NTU and (II) the sample of water held in the main for one hour, collected under Step 4, also shows no TC, no E. coli, less than 200 CFU/ml of HPC or less than 202 HPC using the MPN method and Turbidity <1.0 NTU.

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Waterline Chlorination and Testing Procedures (Continued)

3. Chlorination, flushing, sampling and testing will be extended should unsatisfactory results be encountered. Any sample that shows positive TC, E. coli, HPC>200 CFU/ml, HPC>202 MPN or Turbidity > 1.0 NTU is unsatisfactory.
4. Steps 1 and 2 may be repeated before collecting the one hour hold sample specified in Step 4. Repeating Steps 1 and 2 is recommended in the event samples show the presence of TC and/or E. coli and/or increasing total bacterial results from one sample to the next.
5. Water samples that show the presence of atypical results, debris, high turbidity or results inconsistent with existing water are subject to reconfirmation. The Manager reserves the right to request and test additional water samples in the interest of safeguarding public health and safety at no additional cost to the Department.
6. Liquid chlorine, chlorine based liquid disinfectants or calcium hypochlorite that has been tested and certified as meeting the specifications of the ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects, shall be used for the chlorination of the water mains.

APPROVED:

Manager and Chief Engineer, BWS DATE
(for work affecting BWS facilities
State R/W & BWS easements only)



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
SIGNATURE: *Craig W. L. Luke* April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
Construction Notes – 12	
FARRINGTON HIGHWAY WIDENING Kapolei Golf Course Road to Fort Weaver Road Project No. 7101A-01-20	
Scale: As Shown	Date: January 2022
SHEET No. C-13 OF XXX SHEETS	

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

No. _____		

Waterline Chlorination and Testing Procedures (Continued)

- D. Prior to chlorination, the water mains shall be thoroughly flushed.
- E. The interior surfaces of the water mains shall be exposed to the chlorinating solution by completely filling the main remove air pockets, for a minimum of 24-hours and the free chlorine residual shall not be less than 10 ppm after such time.
- F. Should the calcium hypochlorite be used, no solid and/or undissolved portion of the compound shall be introduced into any section of the water mains to be chlorinated.
- G. At the end of the 24-hour disinfection period, representative samples shall be taken and analyzed to assure a free chlorine residual of at least 10 ppm.
- H. Should the free chlorine residual results indicate adequate chlorination, the water mains shall be thoroughly flushed and filled with water from the existing system and again tested for free chlorine residual. The flushing shall be considered adequate if the free chlorine residual test result indicate that the water in the water mains has a comparable chlorine residual as the water in the existing system.
- I. The Contractor shall be responsible for the proper disposal of chlorinated water to safeguard public health and the environment in accordance with applicable State of Hawaii Department of Health requirements. A neutralizing chemical shall be applied to the water to be disposed to thoroughly neutralize the chlorine residual remaining in the water in accordance with Board of Water Supply Water System Standards (2002), as amended.
- J. The Contractor shall be responsible for obtaining a National Pollutant Discharge Elimination System (NPDES) Permit from the Department of Health, Clean Water Branch prior to the start of construction, for the disposal of water used for hydro testing and chlorination, as required by the contract documents.
- K. Following the acceptable flushing of the water mains, three (3) consecutive days of acceptable samples, taken at least 24-hours apart, from representative points shall be taken and subjected to microbiological tests. For water lines, at least one set of samples shall be collected from every 1,200 feet of the new water main, plus one from the end of the line and at least one set from each branch. Positive or invalid test results will not be acceptable, and the process will be repeated.
- L. All measurements for chlorine residual shall be analyzed using E.P.A. approved methods for drinking water.
- M. All microbiological tests shall be performed by a laboratory approved by the Department of Health, State of Hawaii and the Water Quality Division of the Board of Water Supply.
- N. The Contractor shall be responsible for all costs associated with all of the foregoing.
- O. Cleaning and Swabbing procedures shall be in accordance with Board of Water Supply Water System Standards (2002), as amended.
- P. All materials in direct contact with the potable water shall have National Sanitation Foundations (NSF) approvals. The Contractor shall submit these approvals to the Board of Water Supply for information only prior to its application.

Water Meter Installations (For Meters 3-In. and Larger)

1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the City and County of Honolulu Board of Water Supply's "WATER SYSTEM STANDARDS", Dated 2002, the "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", Volume 3, Dated 2021, and all subsequent amendments and additions.
2. No deviation to the Board of Water Supply's 2002 Water System Standards shall be allowed without the Manager and Chief Engineer's approval.
3. All plans approved by the Board of Water Supply are based solely on the adequacy of the water supply.
4. The existence and location of underground utilities and structures as shown on the plans are from the latest available data, but are not guaranteed as to their accuracy or the encountering of other obstacles during the course of the work. The Contractor shall be responsible and pay for all damages to the existing utilities. The Contractor shall not assume that where no utilities are shown, that none exist.
5. The Contractor shall be responsible for the protection of all waterlines during construction. The Contractor shall be especially careful when excavating behind waterlines, tees, and bends wherever there is a possibility of waterline movement due to the removal of the supporting earth beyond the existing reaction blocks. The Contractor shall take whatever measures necessary to protect the waterlines, such as constructing special reaction blocks (with Board of Water Supply approval) and/or modifying his construction method.
6. The Contract shall notify BWS Capital Projects Division, Construction Section, in writing or call (808) 748-5730 and submit six (6) sets of 24" x 36" approved construction drawings, one week prior to commencing construction activities.
7. Re-approval shall be required if this project is not under construction within a period of two (2) years.
8. Prior to any excavation, the Contractor shall verify in the field, the location of existing waterlines and appurtenances.
9. Any adjustments to the existing water system required during construction, to meet the requirements of the Board of Water Supply Water System Standards, whether shown on the plans or not, shall be done by the Contractor at no cost to the Board of Water Supply.
10. When a utility (gas, sewer, electrical duct line, fiber optic, drainage, etc.) crosses below a Board of Water Supply water main, the designer of record and their construction engineer shall be responsible for determining the adequate water main structural support and submit the construction method and shop drawing, stamped by a licensed engineer and reviewed and accepted by the design of record, to the Board of Water Supply for review and approval. All work shall be at no cost to the Board of Water Supply.
11. Nuts and bolts for flange connections within meter boxes shall be bronze or stainless steel except coupling adapters where "COR-TEN" (U.S. Steel) or "MAYARI" (Bethlehem Steel) may be used. Flange connections outside of meter box may use "COR-TEN" or "MAYARI" type nuts and bolts.
12. All water mains and appurtenances shall be subject to hydrostatic test pressure of 200 psi by the Contractor in accordance with Division 300 - Construction, Section 302.28, "PIPE PRESSURE TEST" of the "WATER SYSTEM STANDARDS", dated 2002. During the 30-minute pressure test, the pressure shall not drop more than 10 psi.

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APPROVED:

Manager and Chief Engineer, BWS DATE
(for work affecting BWS facilities
State R/W & BWS easements only)



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
Craig W. Luke
SIGNATURE April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Construction Notes - 13

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-14 OF XXX SHEETS

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ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY _____	_____
	TRACED BY _____	_____
	NOTED BY _____	_____
NOTE BOOK	QUANTITIES BY _____	_____
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Water Meter Installations (For Meters 3-In. and Larger) (Continued)

13. The Contractor shall chlorinate the entire inside surface of each pipe and fitting with disinfection solution of 5 ounces of sodium hypochlorite mixed with 10 gallons of water. (For connection only).
14. All ductile iron pipe, fittings, and valves shall be coated with a bonded dielectric coating and wrapped with petrolatum wax tape.
15. All ductile iron pipe and fittings, including sections requiring reinforced concrete jacketing, shall be ductile iron Class 53, and bonded dielectric coated as per the Board of Water Supply 2002 Water System Standards, as amended.
16. The project shall pay the applicable water system facilities and/or one-time service charge and for the meter which will be furnished by Board of Water Supply and installed by the Contractor when the lateral is installed.
17. Contractor shall cut and plug and remove all existing unused laterals at the main whether or not shown on the plans. Meter and valve boxes to be or already abandoned shall be demolished or removed and properly disposed of. The damaged area shall be repaired to an equal or better condition than the immediate area. All work shall be done at the expense of the Contractor.
18. After installation of tapping sleeve and tapping valve and prior to tapping the existing water main, the assemble shall be pressure tested at 200 psi on both sides of the valve and in accordance with the WATER SYSTEM STANDARDS, dated 2002.
19. For meters 3 inches and larger (Compound, F.M., and Detector Check), Contractor shall notify Customer Care Division – Service Engineering Section in writing after the plan is approved, no later than 120 days, prior to withdrawing meter from Board of Water Supply storeyard. Such notice shall indicate number, size, and type of meter (Compound, F.M., or Detector Check) and approximate month and year meter is anticipated to be drawn out. If the approved plan is allowed to lapse, the 120-day notice will be voided.
20. Board of Water Supply approval of these plans does not constitute a water commitment. Availability of water will be determined when building permit is presented to the Department. Water commitment will depend upon the status of the water system at that time. Should water service be made available, the water commitment will be effective when the project receives an approved building permit from the Building Department. All water commitments will be canceled in the event the building permit is canceled.
21. The project shall be subject to the Board of Water Supply's Cross-Connection Control requirements prior to issuance of the Building Permit.
22. Easement documents must be submitted to Board of Water Supply and recorded before meter is issued.
23. The installation, chlorination, and testing of the water main and facilities after the property line shall not be the responsibility of the Board of Water Supply.
24. Prior to installation, the Contractor shall submit for approval by the Board of Water Supply, the manufacturer's certification that all cast iron (gray or ductile) fittings for the project conform in all respects to the Board of Water Supply Water System Standards, dated 2002 and addendums.
25. Polygon shape for mechanical joint glands as described in AWWA Standard C111 shall be "straight-sided" or an approved equal on a job-to-job basis.
26. The backflow preventer device must be installed before meter is issued.
27. Pipe cushion shall be of high resistivity material. The Contractor shall submit a soil certification that high resistant cushion material has a resistivity greater than 5,000 OHM-CM. Remainder of the backfill material shall be as specified in the Water System Standards. Pipe cushion and backfill material shall contain no hazardous substances above regulatory action levels including but not limited to lead, asbestos, mercury, chromium, cadmium, zinc, strontium, and polychlorinated biphenyls (PCB).

Water Meter Installations
(For Meters 3-In. and Larger) (Continued)

28. The Contractor shall install electronic markers to all mains and test the electronic markers prior to installations to verify proper operation. Board of Water Supply personnel shall verify the number and locations of placed electronic markers before final paving of the project.
29. The Contractor shall furnish and install an insulting corporation stop and petrolatum wax tape at all taps (for D.I. pipe and copper lateral combination only).
30. Install 4 mil thick, non-metallic, blue colored, 6 inches wide warning tape over centerline of the pipe and below the base course along the entire length of trench. Tape should be marked with "CAUTION WATER LINE BURIED BELOW".

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APPROVED:

Manager and Chief Engineer, BWS DATE
(for work affecting BWS facilities
State R/W & BWS easements only)



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

SIGNATURE EXPIRATION DATE
OF THE LICENSE

April 30, 2022

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
Construction Notes – 13A	
FARRINGTON HIGHWAY WIDENING Kapolei Golf Course Road to Fort Weaver Road Project No. 7101A-01-20	
Scale: As Shown	Date: January 2022
SHEET No. C-14A OF XXX SHEETS	

Hawaiian Electric Company Notes

1. Location of HECO Facilities

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

2. Compliance with Hawaii Occupational Safety and Health Laws

The Contractor shall comply with the State of Hawaii’s Occupational Safety and Health Laws and Regulations, including without limitation, those related to working on or near exposed or energized electrical lines and equipment.

3. Excavation Clearance

The Contractor shall obtain an Excavation Clearance from Hawaiian Electric’s Planning and Design section of the customer installations department 1–808–543–5654 located at 820 Ward Avenue, 4th floor, a minimum of ten (10) working days prior to starting construction.

4. Caution!!! Electrical Hazard!!!

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

5. Overhead Lines

State law (OSHA) requires that a worker and the longest object he or she may contact cannot come closer than a specified minimum radial clearance when working close to or under any overhead lines. It is the Contractor’s responsibility to be informed of and comply with the law.

At any time should the Contractor anticipate that his work will result in the need to encroach within the minimum required clearance as stated in the law, the Contractor shall notify Hawaiian Electric at least three (3) months prior to the planned encroachment so that, if feasible, the necessary protections (e.g. relocate or de–energize Hawaiian Electric lines) can be investigated. Hawaiian Electric may also be able to blanket its distribution (12kv and below) lines to provide a visual aid in preventing accidental contact. Hawaiian Electric’s cost of safeguarding or identifying its lines will be charged to the Contractor.

Contact Hawaiian Electric’s Customer Installations Division at 1–808–543–7070 for assistance in identifying and safeguarding overhead power lines.

6. Pole Bracing

Contractor shall not excavate within 10 feet from Hawaiian Electric’s utility poles or any anchor system supporting the utility pole. If Contractor must excavate closer than 10 feet from a utility pole or its anchor system, Contractor will be responsible for protecting, supporting, securing and taking all precautions to prevent damage to or leaning of existing poles. Before commencing such excavation, Contractor must submit its bracing calculations and drawings, prepared and stamped by a licensed structural engineer, to Hawaiian Electric’s Customer Installations Division (1–808–543–7070) for review. Hawaiian Electric requires a minimum of ten (10) working days to conduct the review of Contractor’s submittal. Contractor shall be responsible for the design, installation, and removal of the temporary pole bracing system, as well as all costs incurred by Hawaiian Electric to review Contractor’s drawings and to repair or straighten poles impacted by Contractor’s activities, including response and restoration costs incurred by Hawaiian Electric arising out of or related to outages caused by Contractor’s failure to meet the foregoing requirements. Hawaiian Electric’s review and approval of any Contractor submittals including its work procedure shall not relieve Contractor from any liability resulting from Contractor’s excavation near or around Hawaiian Electric’s utility poles.

7. Underground Lines

The Contractor shall exercise extreme caution whenever construction crosses or is in close proximity of underground lines. Hawaiian Electric’s existing electrical cables are energized and will remain energized during construction. Only Hawaiian Electric personnel are to break into existing Hawaiian Electric facilities, handle these cables, and erect temporary guards to protect these cables from damage. The cost of Hawaiian Electric’s assistance in providing proper support and protection of its underground lines will be charged to the Contractor. For assistance/coordination in providing proper support and protection of these lines, the Contractor shall call Hawaiian Electric’s Customer Installations Division at 1–808–543–7070 a minimum of ten (10) working days in advance.

Special precautions are required when excavating near Hawaiian Electric’s 138kv or 46kv underground lines (see Hawaiian Electric Instructions to Consultants/Contractors on “Excavation near Hawaiian Electric’s underground 138kv and/or 46kv lines” for detailed requirements).

For verification of underground lines, the Contractor shall call the Hawaii One Call Center at 1–866–423–7287 a minimum of five (5) working days in advance.

8. Underground Fuel Pipelines

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

9. Excavations

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

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

10. Relocation of HECO Facilities

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

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

11. Conflicts

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

12. Damage to HECO Facilities

The Contractor shall be responsible for the protection of all Hawaiian Electric surface and subsurface utilities and shall be responsible for any damages to Hawaiian Electric’s facilities as a result of his operations. The Contractor shall immediately report such damages or any hazardous conditions related to Hawaiian Electric’s lines to Hawaiian Electric’s Trouble Dispatcher at 1–808–548–7961. Repair work shall be done by Hawaiian Electric or by the Contractor under Hawaiian Electric’s supervision. Costs for damages to Hawaiian Electric’s facilities shall be borne by the Contractor.

In case of damage or suspected damage to Hawaiian Electric’s fuel pipeline, the Contractor shall immediately notify Hawaiian Electric’s Security Command Center at 1–808–543–7685 (a 24–hour number) so Hawaiian Electric personnel can secure the damaged section and report any oil spills to the proper authorities. All costs associated with the damage, repair, and oil spill cleanup shall be borne by the Contractor.

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	TRACED BY _____	_____
	QUANTITIES BY _____	_____
NOTE BOOK	CHECKED BY _____	_____
No. _____		



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

Craig W. Luke
SIGNATURE

April 30, 2022
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Construction Notes – 14

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A–01–20

Scale: As Shown Date: January 2022

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Hawaiian Electric Company Notes (Cont'd)

13. HECo Stand–By Personnel

The contractor may request Hawaiian Electric to provide an inspector to stand–by during construction near Hawaiian Electric’s facilities. The cost of such inspection will be charged to the Contractor.

The Contractor shall call Hawaiian Electric’s Customer Installations Division at 1–808–543–7070 a minimum of three (3) months in advance to arrange for Hawaiian electric stand–by personnel.

14. Clearances

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

Guidelines For Minimum Horizontal (Parallel) Clearances Between Hawaiian Electric (HECo) and Other Underground Utilities				
Underground Utility	HECO Direct Buried Cable	HECO Direct Buried in Conduit (no concrete encasement)	HECO 3” (Minimum) Concrete Encasement	Applicable notes:
HECO DB Conduits	12”	3”	0”	
HECO 3” encasement	0”	0”	0”	
Telephone/CATV DB	12”	12”	6”	
Telephone/CATV DB ducts	12”	12”	6”	
Telephone/CATV 3” Encasement	0”	0”	0”	5
Traffic signal	12”	12”	12”	
Water DB (BWS Owned)	36”	36”	36”	1, 4
Customer Owned Water Service Laterals	12”	12”	12”	
Water (Concrete Jacketed) BWS Owned)	36”	36”	36”	1, 4
Gas DB	12”	12”	12”	1
Gas (Concrete Jacketed)	12”	12”	12”	1
Sewer DB	36”	36”	36”	1, 2
Sewer (Concrete Jacketed)	36”	36”	36”	1, 2
Drain	12”	12”	12”	1
Fuel pipelines				3

1. Where space is available, parallel clearance to other utilities, or foreign structures other than communication or traffic signal shall be 36”.

2. If 36” clearance cannot be met:

If clearance is less than 12”, jacket sewer line with reinforced concrete (per HECO’s standard 30–1030) for a distance of 5’–0” plus pipe diameter.

If clearance is between 12” and 36”, jacket sewer line with plain concrete.

3. All Fuel Pipeline crossings shall be reviewed and approved by the company that owns and maintains it.

4. 5 feet clear to water mains 16” and larger.
5. For situations with 0” minimum separation, a 6” separation is recommended.
6. Clearances measured from outer edges or diameters of utilities. Whenever concrete jackets are involved, clearances shall be total clear distance between the concrete jacket and utility concerned.

Department of Transportation Services (DTS)
Transportation Mobility Division (TMD)

1. Construction of this project shall not affect transit operations. Bus routes and bus stops shall remain open and accessible at all times. Any work affecting bus operations, routes, or stops must be submitted to DTS–TMD for review no less than 30 days prior to the start date.

Point of Contact Information (Notification is required to all phone numbers and emails):

DTS–TMD
(808) 768–8371
thebusstop@honolulu.gov
handivan@honolulu.gov

Oahu Transit Services – Bus Operations
(808) 768–9520
(808) 768–9534
John.donovan@thebus.org
Sean–bennett.paio@thebus.org
Field–ops–mgr@thebus.org

Oahu Transit Services – Paratransit Operations
(808)456–5021
Tracie.coelho@thebus.org

Construction Coordination Notes

1. Relocation of removal of Hawaiian Electric signs and posts shall be done by Hawaiian Electric. The Contractor shall notify Hawaiian Electric by phone to schedule the relocation or removal of Hawaiian Electric signs and posts. The Contractor shall be responsible for all coordination and scheduling efforts.
2. The Contractor shall contact the adjacent landowners, by phone, a minimum of 30 days prior to the start of construction to inform them of the commencement of the construction work. The Contractor shall provide construction updates, by phone, to the adjacent landowners on a monthly basis, unless requested otherwise by the adjacent landowners.
3. The Contractor shall be responsible for contacting the adjacent landowners if the construction work will require the removal of trees that are located within the adjacent landowners’ properties. If requested by the adjacent landowners, the Contractor shall be responsible for relocating any affected trees to a location designated by the adjacent landowners, within their property. Trees that are not requested to be relocated by the adjacent landowners shall become the property of the Contractor. The Contractor shall be responsible for all coordination, removal, relocation, and disposal work.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	17	XXX

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

CRAIG W. L. LUKE

LICENSED PROFESSIONAL ENGINEER

No. 6635-C

HAWAII, U.S.A.

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

Signature

April 30, 2022

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

Construction Notes – 15

FARRINGTON HIGHWAY WIDENING

Kapolei Golf Course Road to Fort Weaver Road

Project No. 7101A–01–20

Scale: As Shown

Date: January 2022

SHEET No. C-16 OF XXX SHEETS

17

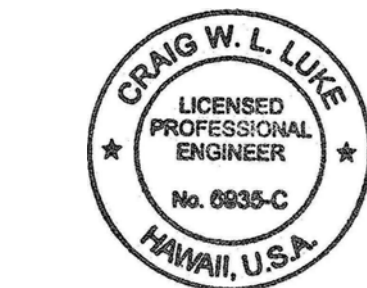
FILE: K:\Civil\23146 Farrington Hwy Widening\Drawings\Construction Notes - 13.dwg saved March 16, 2022

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

Construction Notes for Gas Transmission Line

- Hawaii Gas' High Pressure Gas Transmission Line is Plastic Coated and Cathodically Protected. The Contractor Shall be Extremely Careful When Working Near the Gas Pipeline.
- Prior Written Clearance Must be Obtained from Hawaii Gas, Maps and Records Department, 515 Kamakee Street, At Least Five (5) Working Days Before Starting Excavation Near any of Hawaii Gas' Pipelines.
- Prior Written Clearance Must be Obtained from State of Hawaii DOT Harbors Division, Engineering Branch Before Starting Excavation Within the Energy Corridor. For More Information, Contact State of Hawaii DOT Harbors Division, Engineering Branch.
- Since Pipeline Locations on Field Maps are Approximate, the Contractor, After Obtaining Written Clearance, Shall Call Hawaii One Call Center, a Minimum of Five (5) Working Days Before Starting Excavation to Arrange for Field Location of Existing Gas Lines. The Telephone number is 811 or 1-866-423-7287.
- The Contractor Shall Notify Hawaii Gas, Transmission & Distribution Department 24 Hours Prior to Excavating and Backfilling Any Pipeline. The Telephone Number is 594-5548.
- The Contractor Shall Have the Sole Responsibility to Perform Field Verification, Including Hand Digging Methods.
- The Contractor Shall Excavate and Backfill Around the Pipeline in the Presence of a Representative of Hawaii Gas. All Backfill Within 12 Inches of the Pipeline Shall Be Sand, Mansand or Select CushionMaterial Approved by Hawaii Gas.
- Exploratory Potholing to Verify the Exact Location of the Gas Transmission Line is Required if the Contractor Plans on Boring and/or Drilling Within 5' of the Transmission Line. Exploratory Potholing Shall be Performed in the Presence of a Representative of Hawaii Gas.
- Minimum Vertical and Horizontal Clearance Between Gas Pipeline and Other Pipelines, Conduits, or Other Structures Shall be 24 Inches. Adequate Support and Protection for Gas Pipelines Exposed in the Trench Shall be Provided by the Contractor and Approved by Hawaii Gas.
- The Contractor Shall Work in an Expeditious Manner in Order to Keep Uncovered Gas Line Exposure to a Minimum.
- The Contractor Shall Notify Hawaii Gas Immediately After Any Damage Has Been Caused to the Existing Gas Pipelines, Their Coatings or Their Cathodic Protection Devices. The Telephone Number is 535-5933, 24 Hours a Day. The Contractor Shall be Liable for Any Damage to Hawaii Gas' Facilities. Repair Work on Such Damage Shall be Performed by Hawaii Gas with Payment for This Work to be Borne by the Contractor.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	18	XXX

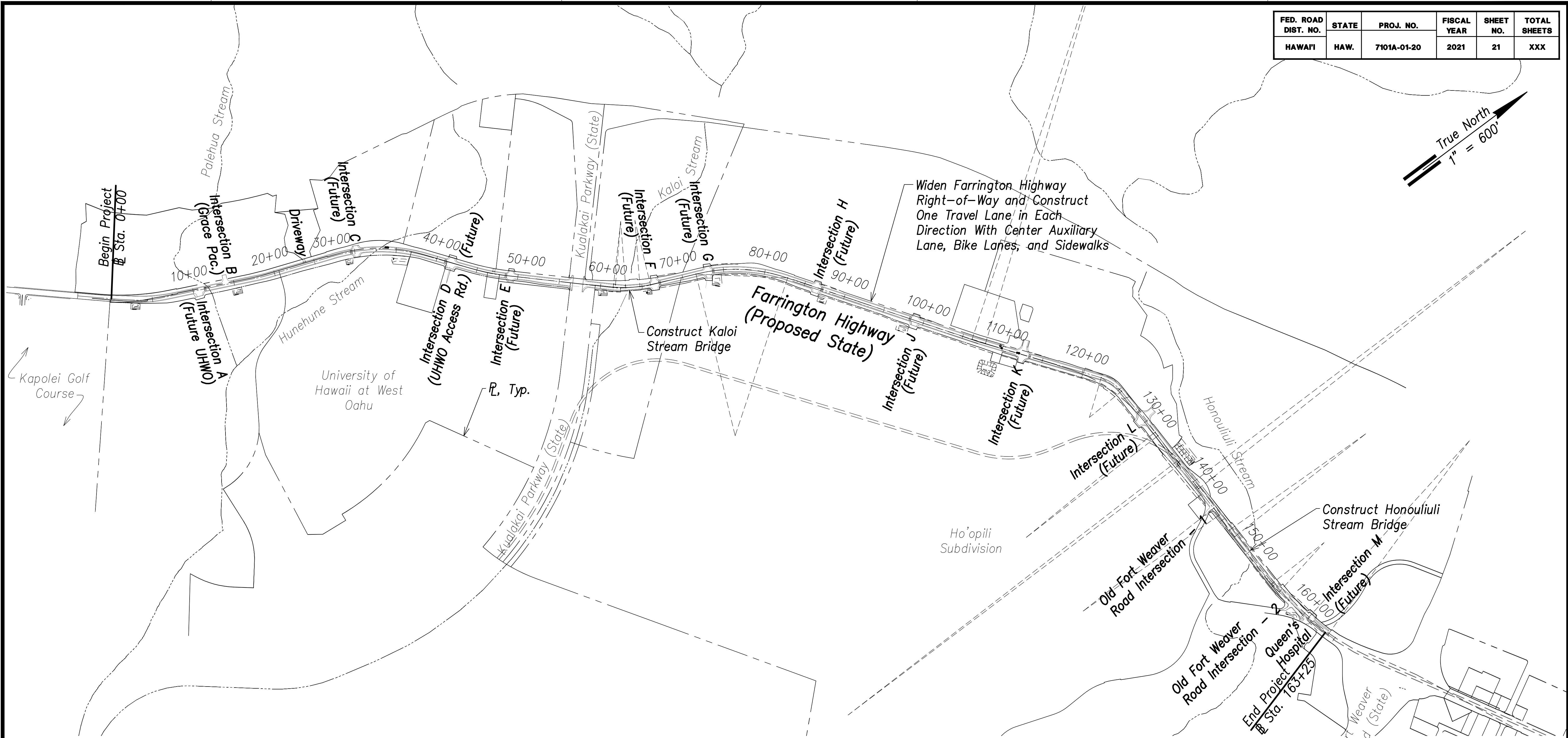


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WILL BE UNDER MY OBSERVATION.

SIGNATURE: *Craig W. Luke* EXPIRATION DATE: April 30, 2022
OF THE LICENSE

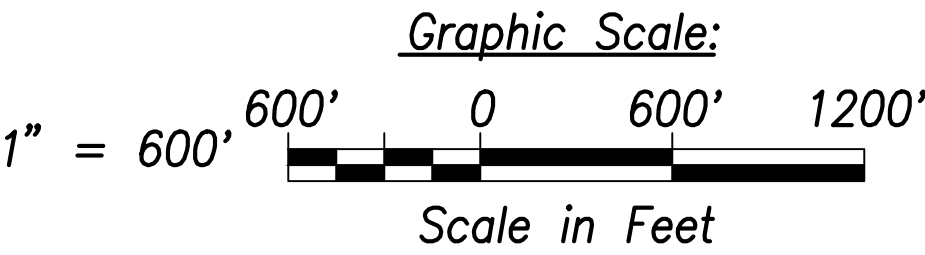
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
Construction Notes - 16	
FARRINGTON HIGHWAY WIDENING Kapolei Golf Course Road to Fort Weaver Road Project No. 7101A-01-20	
Scale: As Shown	Date: January 2022
SHEET No. C-17 OF XXX SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	21	XXX



Overall General Plan
Scale: 1" = 600'

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



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SIGNATURE: *[Signature]* EXPIRATION DATE OF THE LICENSE: April 30, 2022

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

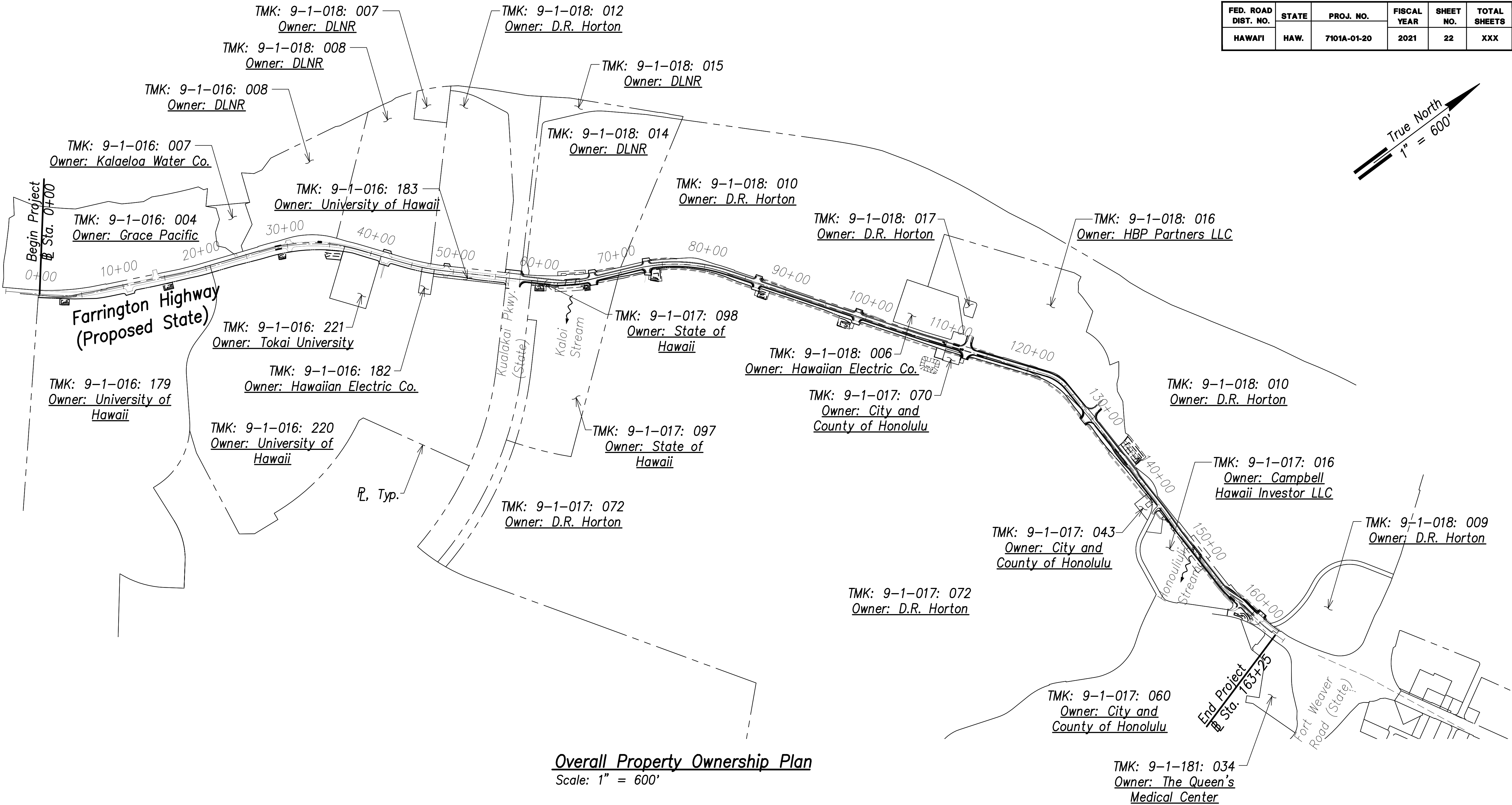
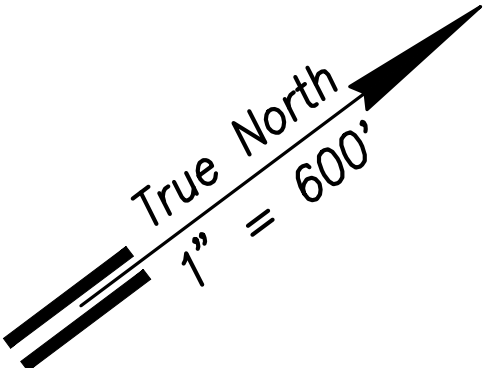
Overall General Plan

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

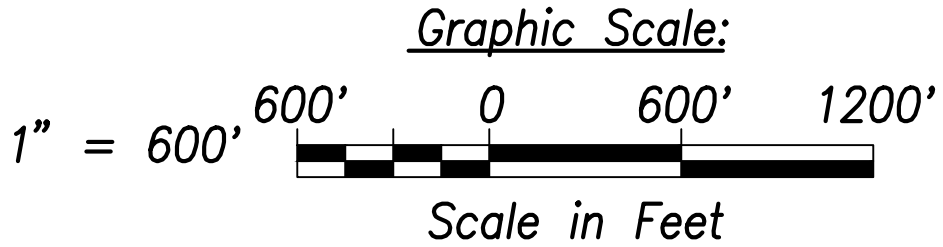
SHEET No. C-20 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	22	XXX



Overall Property Ownership Plan
Scale: 1" = 600'

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



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Signature: *Craig W. L. Luke*
April 30, 2022
EXPIRATION DATE OF THE LICENSE

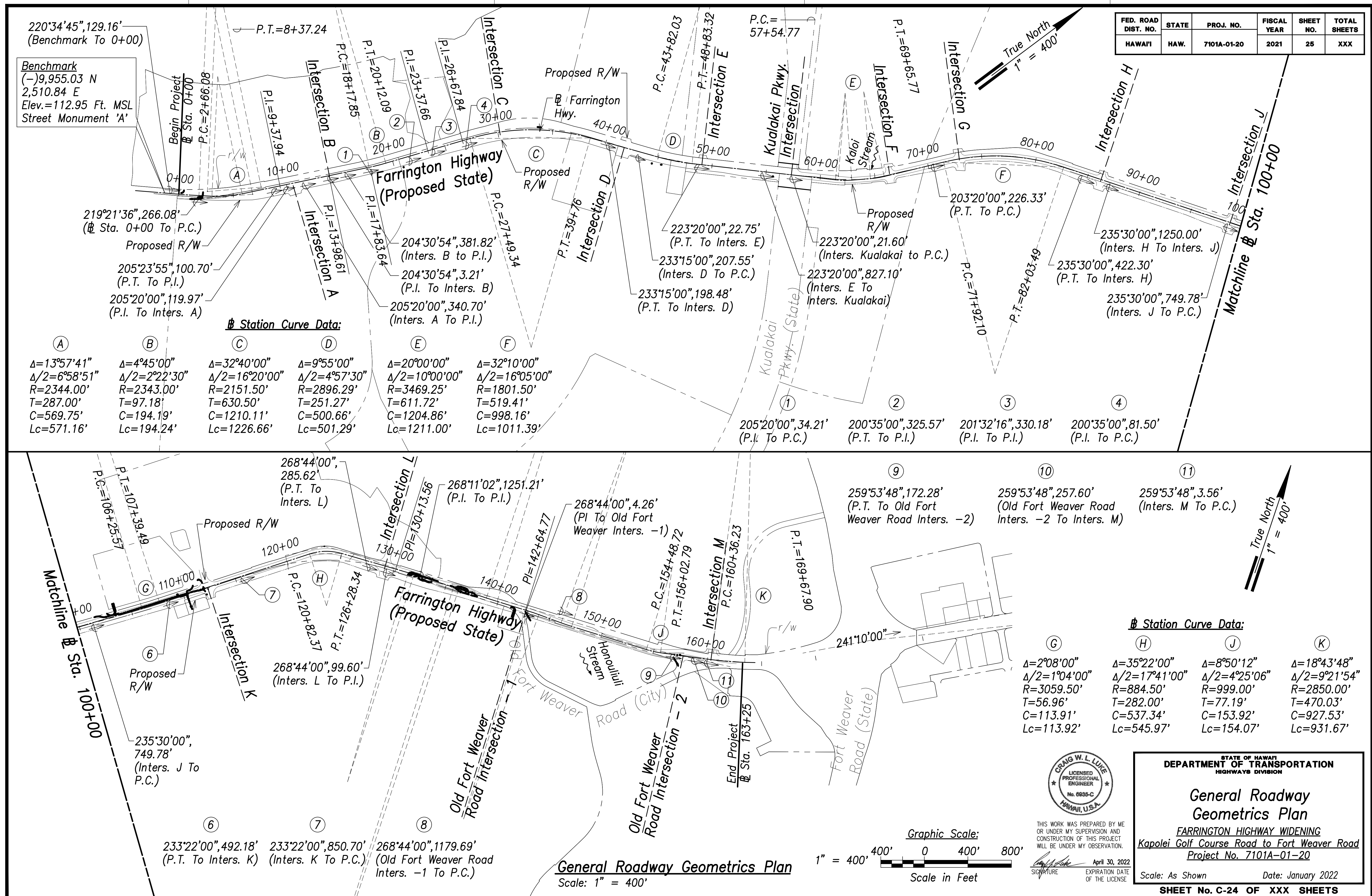
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Overall Property
Ownership Plan

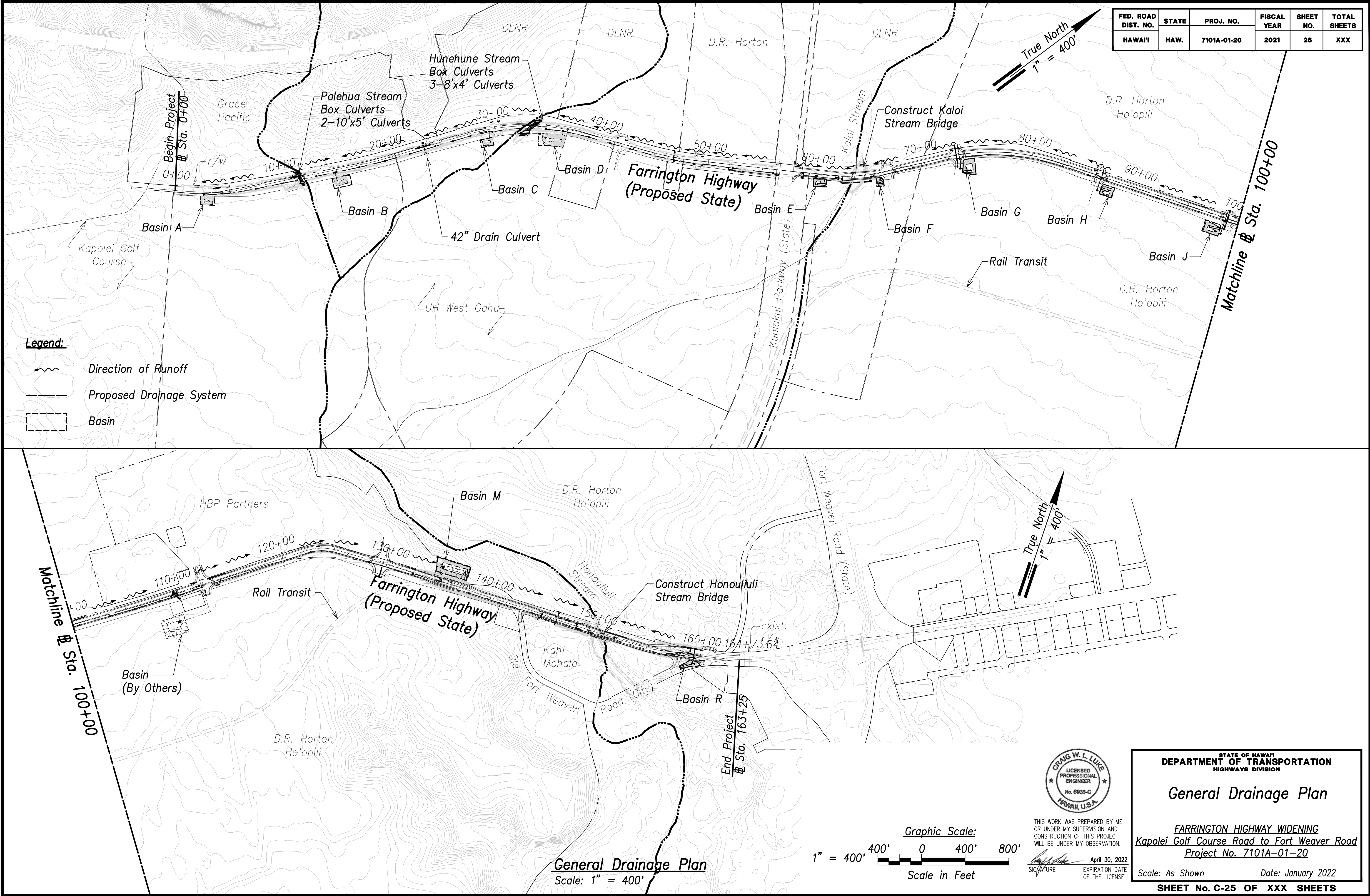
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

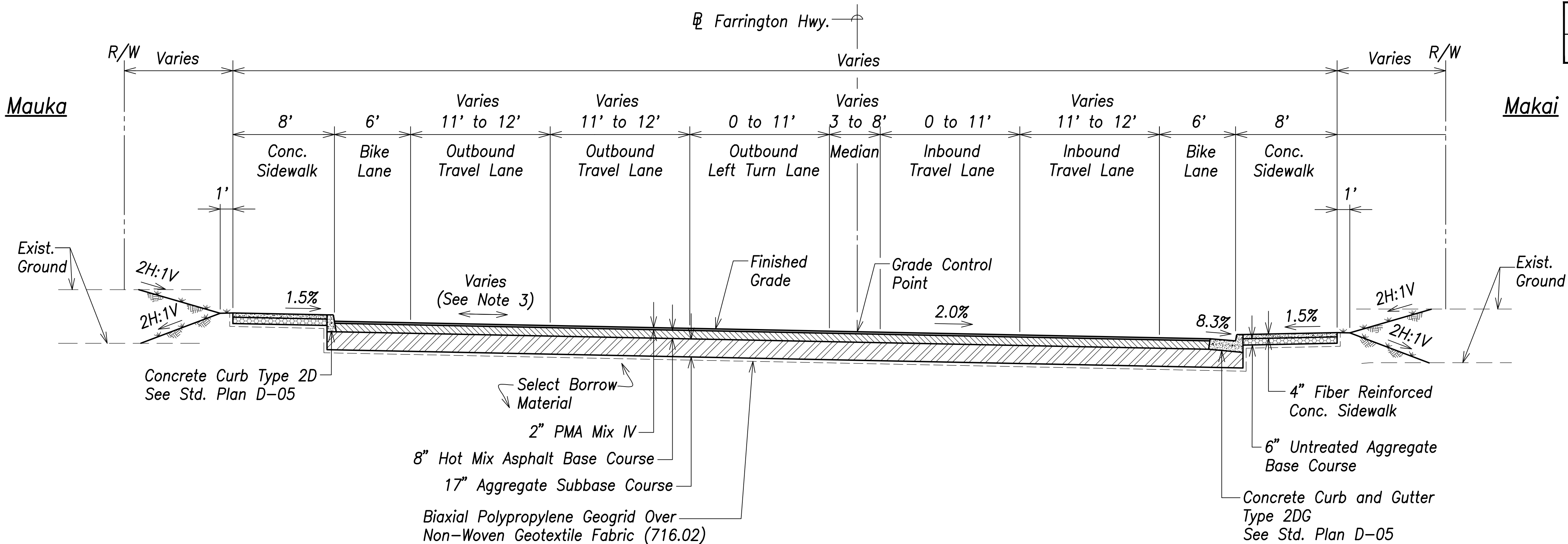
SHEET No. C-21 OF XXX SHEETS



FILE: K:\civil\23146 Farrington Hwy Widening\Draw\Construction\Draw\G-25 General Drainage Plan.dwg saved November 11, 2021



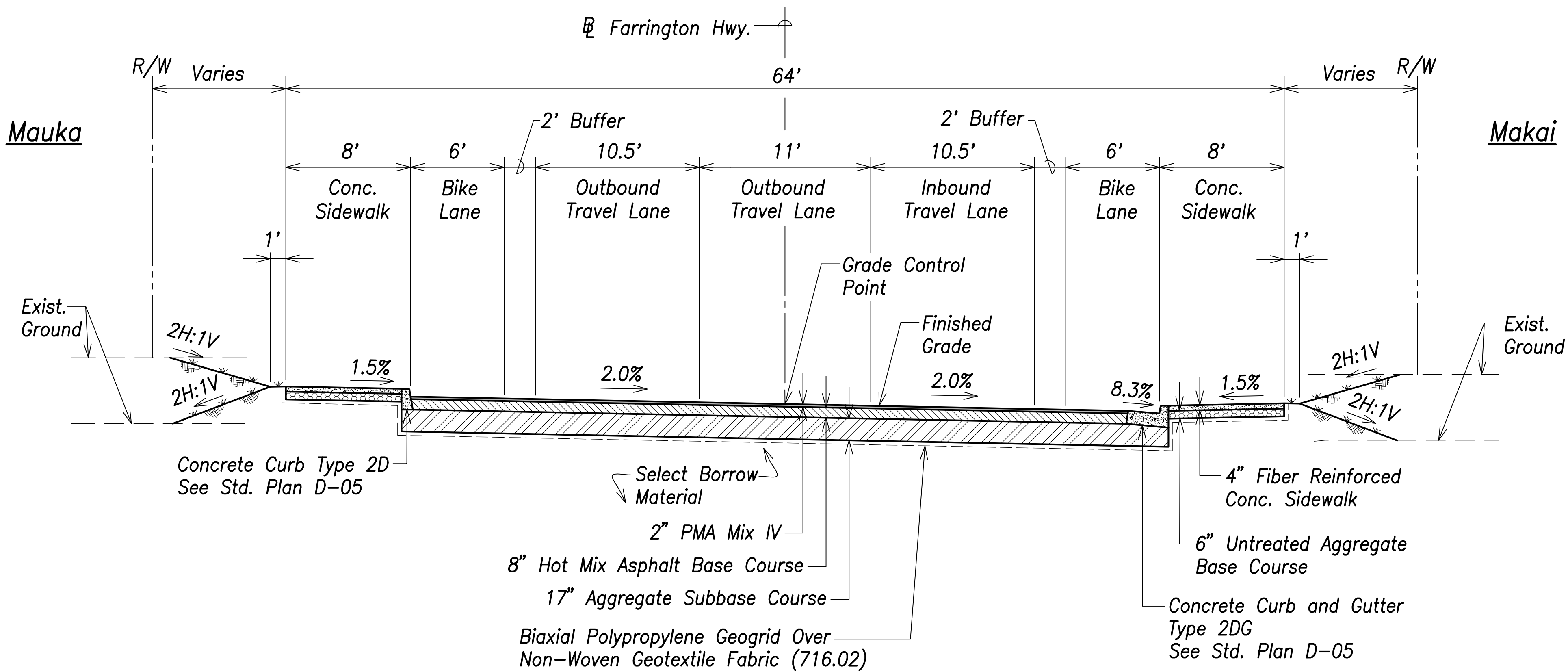
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	28	XXX



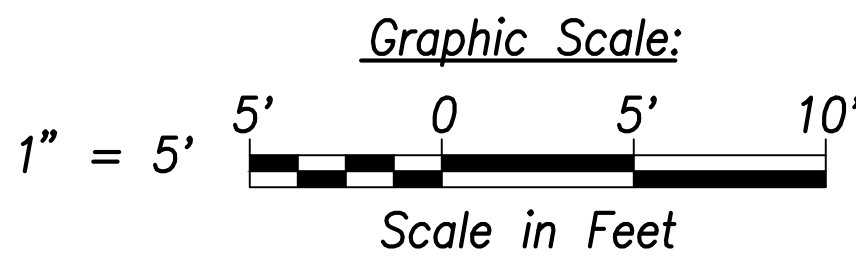
Typical Section – Farrington Highway (# Sta. 0+00 to # Sta. 7+67.47)
Scale: 1" = 5'

Notes:

- Farrington Highway is a low speed facility with a design speed of 30 MPH and Posted speed of 25 MPH.
- All exposed surfaces shall be seeded with Buffel Grass (*Cenchrus Ciliaris 'Laredo'*). Seed at 2 lbs./1,000 SF w/Hydromulch at 30 lbs./1,000 SF.
- Farrington Highway PMA pavement travel way transitions from 2% normal crown at the connection to the existing road to 2% superelevated at # Sta. 3+00. The axis of rotation is the # Farrington Highway.



Typical Section – Farrington Highway (# Sta. 7+67.47 to Intersection A)
Scale: 1" = 5'



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Signature: *Craig W. L. Luke*
April 30, 2022
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Typical Sections

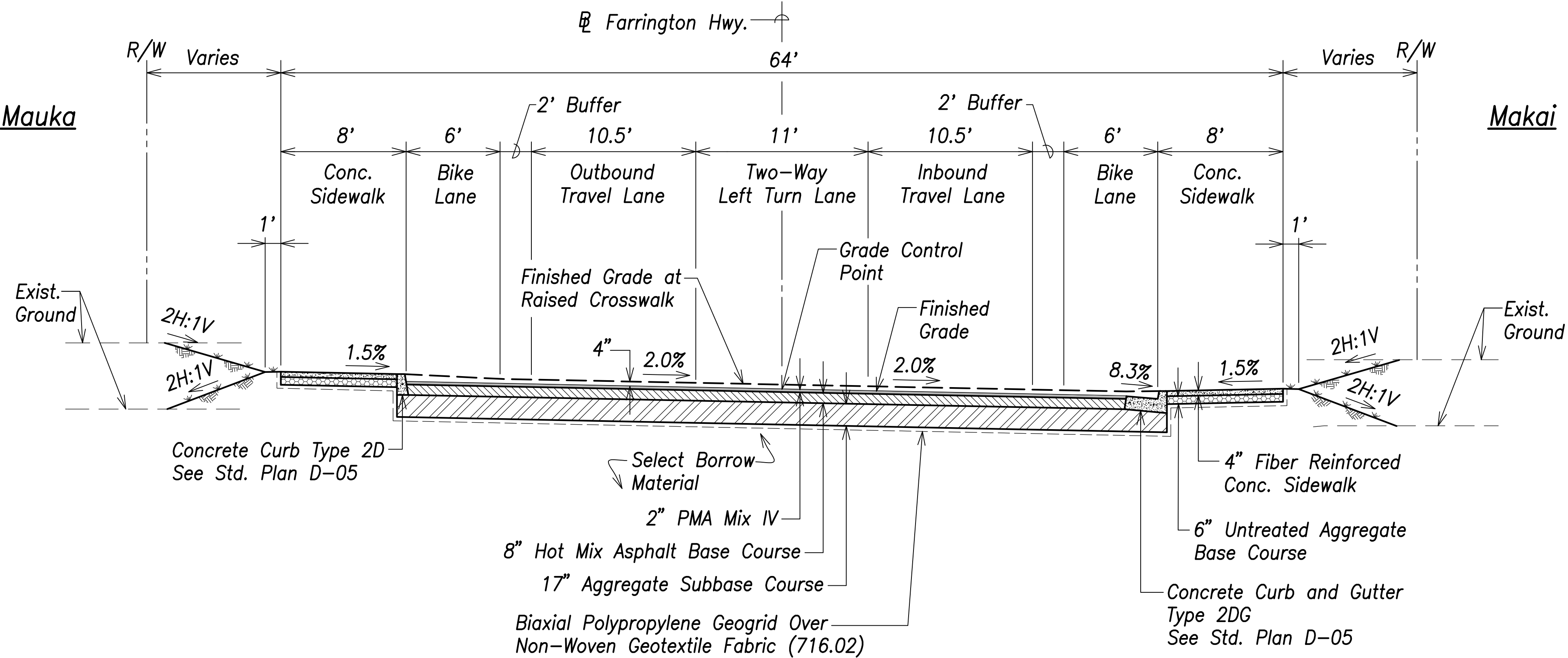
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

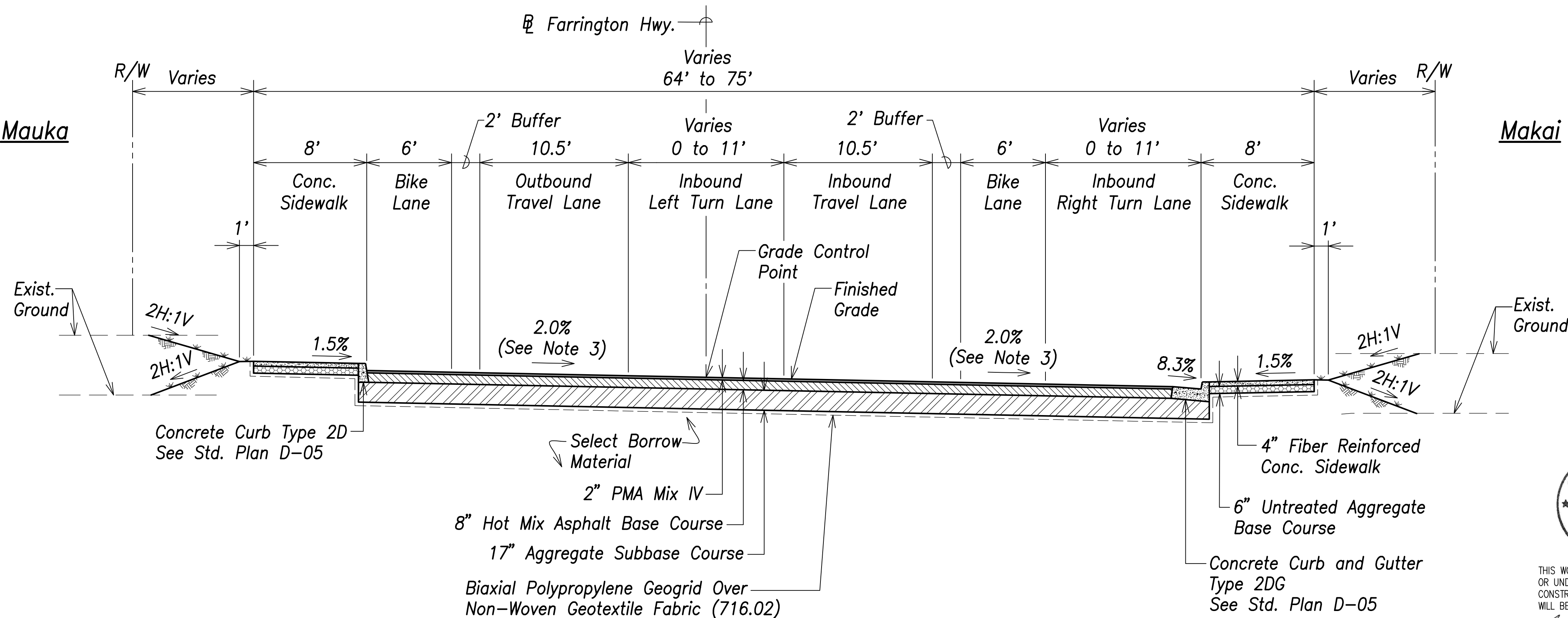
SHEET No. C-27 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	29	XXX

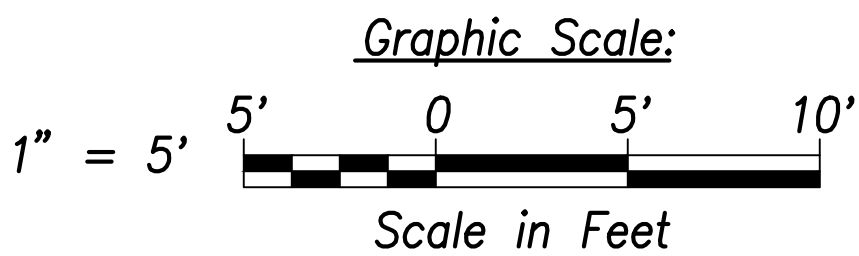
- Notes:
- Farrington Highway is a low speed facility with a design speed of 30 MPH and Posted speed of 25 MPH.
 - All exposed surfaces shall be seeded with Buffel Grass (*Cenchrus Ciliaris 'Laredo'*). Seed at 2 lbs./1,000 SF w/Hydromulch at 30 lbs./1,000 SF.
 - Farrington Highway PMA pavement travel way transitions from 2% superelevated to matching the existing pavement at the connection to Kualakai Parkway.



Typical Section – Farrington Highway
(Intersection A to Sta. 51+24.16)
(Sta. 62+93.64 to Sta. 133+77.55)
(Sta. 138+70.68 to Sta. 154+50)
Scale: 1" = 5'



Typical Section – Farrington Highway (Sta. 51+24.16 to Kualakai Parkway)
Scale: 1" = 5'



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Signature: [Signature]
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Typical Sections – 2

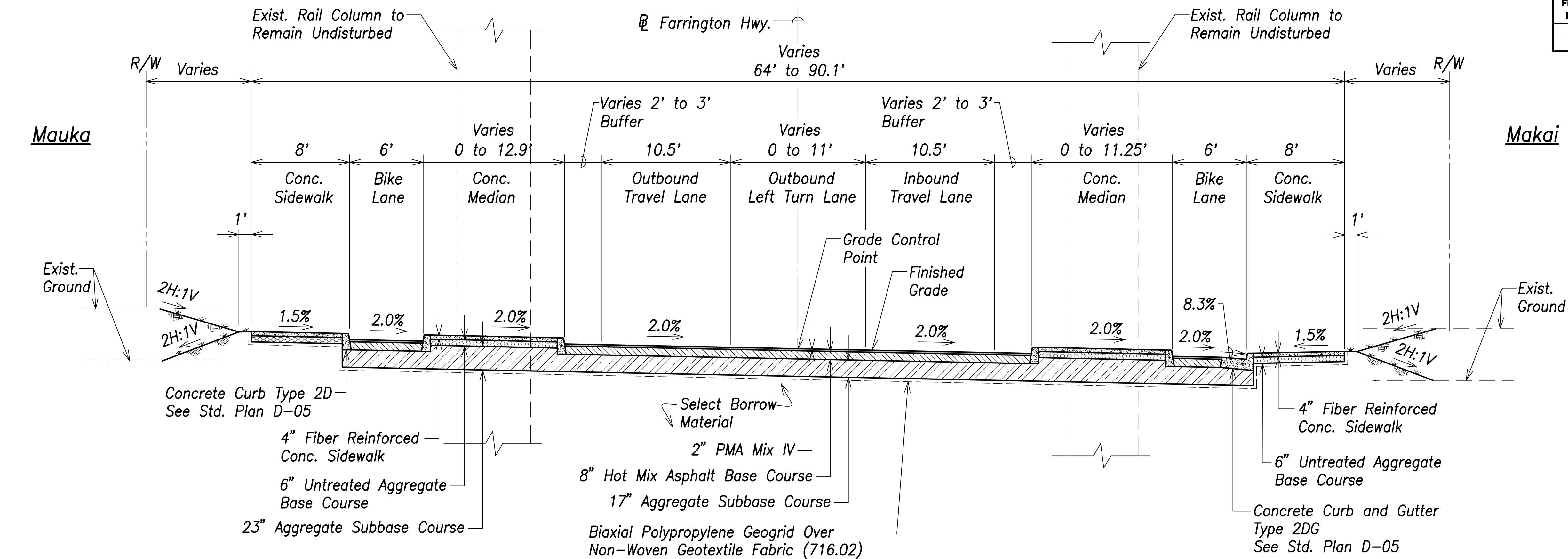
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-28 OF XXX SHEETS

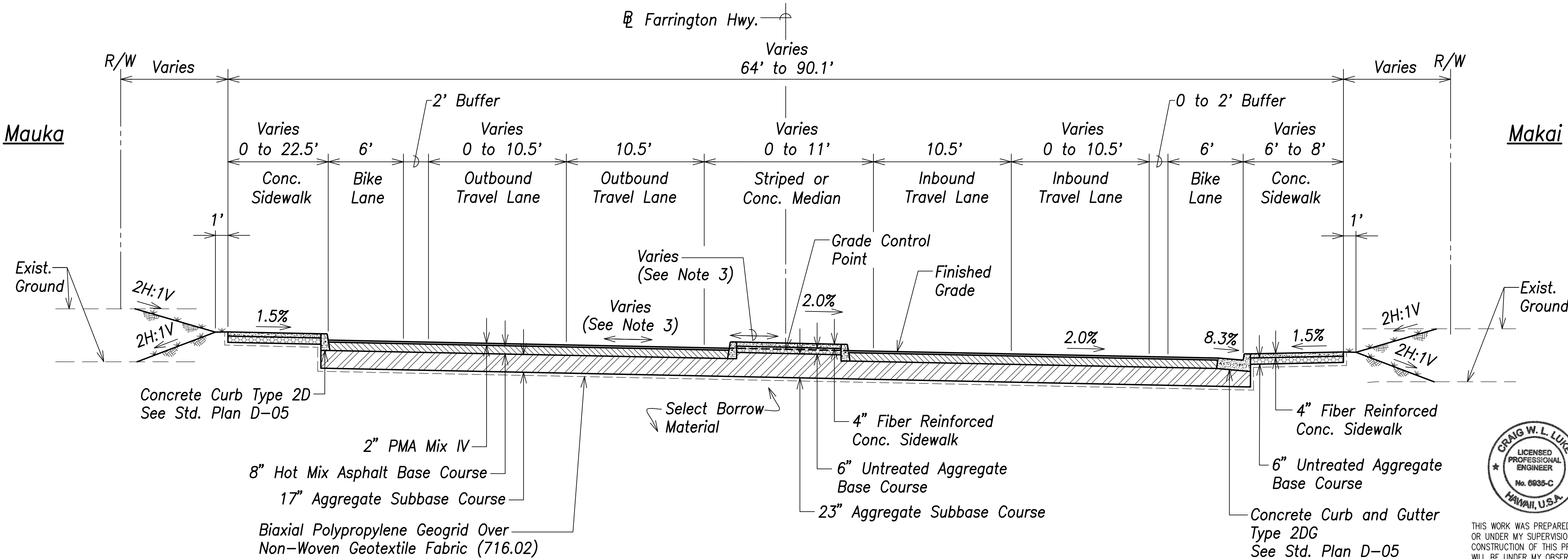
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	30	XXX

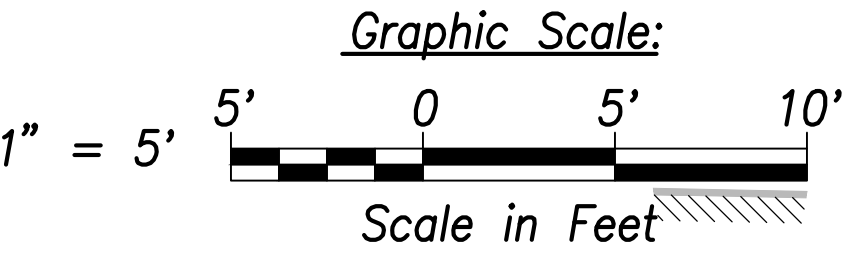


Typical Section – Farrington Highway (Sta. 133+77.55 to Sta. 138+70.68)
Scale: 1" = 5'

- Notes:
- Farrington Highway is a low speed facility with a design speed of 30 MPH and Posted speed of 25 MPH.
 - All exposed surfaces shall be seeded with Buffel Grass (*Cenchrus Ciliaris* 'Laredo'). Seed at 2 lbs./1,000 SF w/Hydromulch at 30 lbs./1,000 SF.
 - Farrington Highway PMA pavement travel way transitions from 2% superelevated at Sta. 154+50 to 2% normal crown at Sta. 157+50. The axis of rotation is the Farrington Highway.



Typical Section – Farrington Highway (Sta. 154+50 to Sta. 157+82.15)
Scale: 1" = 5'



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



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Signature: [Signature]
April 30, 2022
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

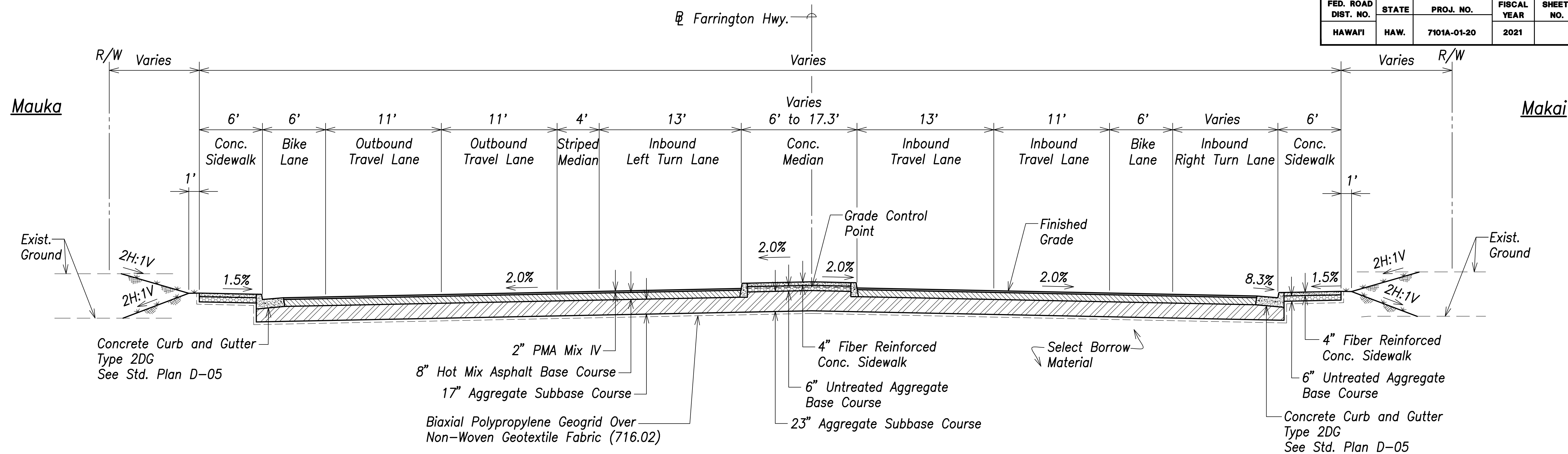
Typical Sections – 3

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

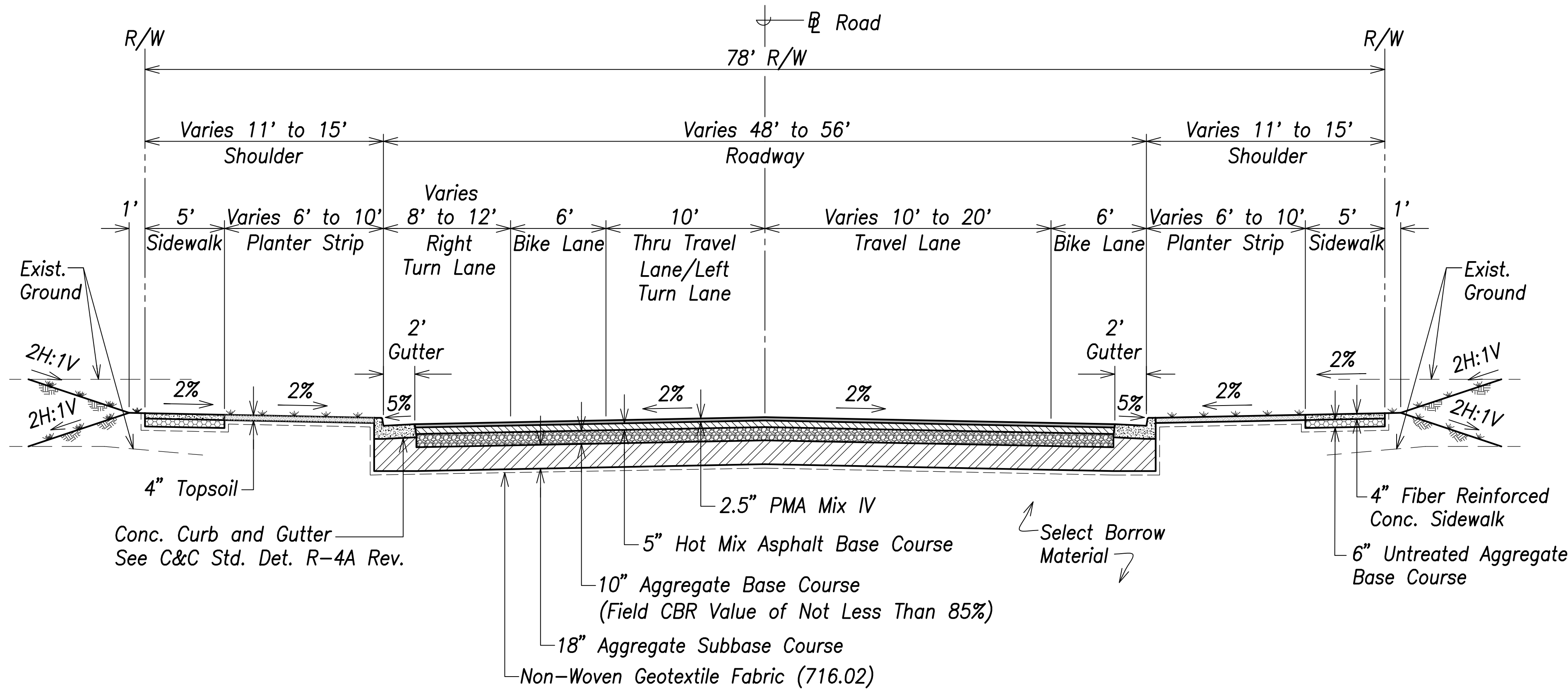
SHEET No. C-29 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	XXX	XXX

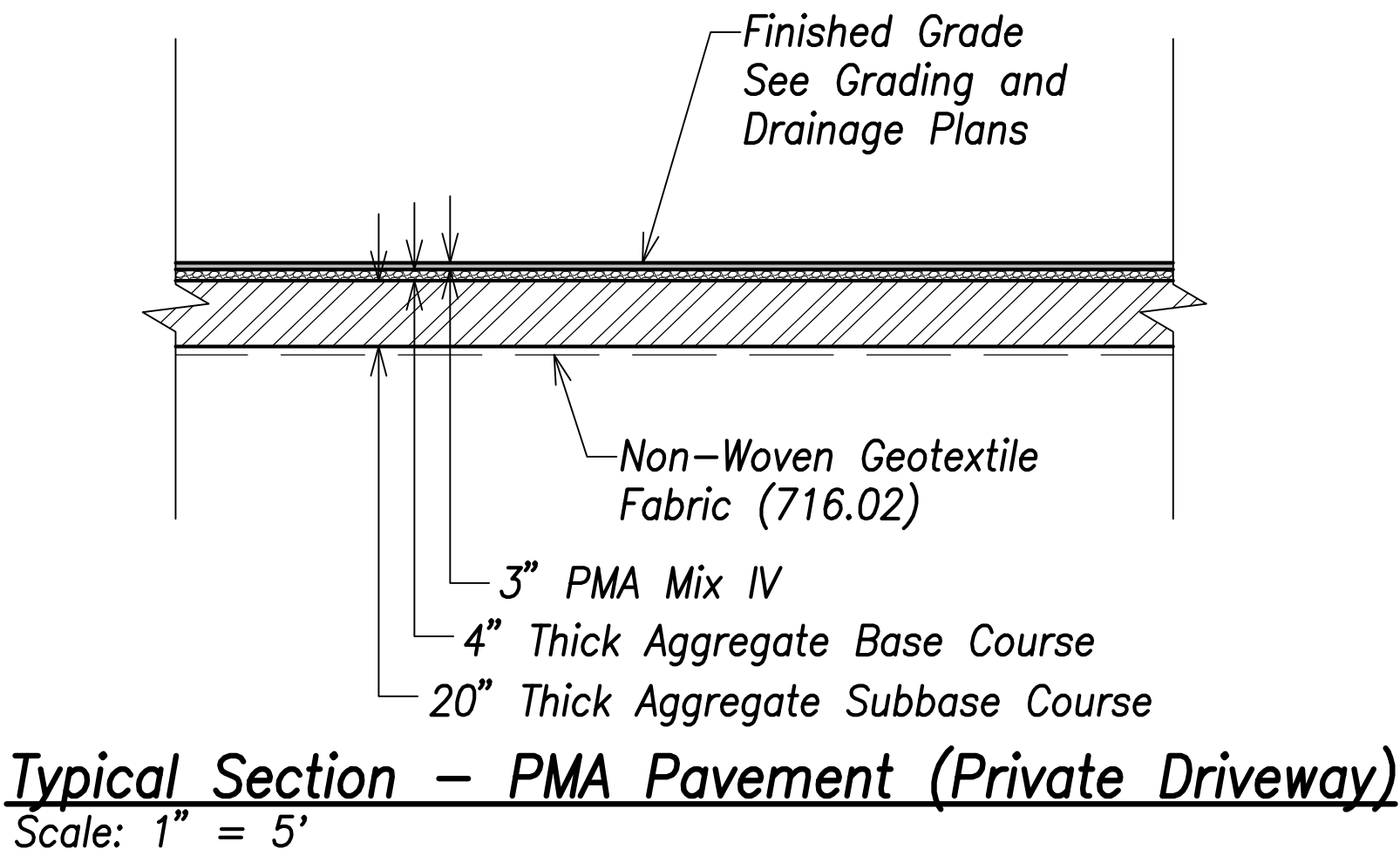


Typical Section - Farrington Highway (# Sta. 158+51.86 to # Sta. 159+94.12)
Scale: 1" = 5'

- Notes:**
- Farrington Highway is a low speed facility with a design speed of 30 MPH and Posted speed of 25 MPH.
 - All exposed surfaces shall be seeded with Buffel Grass (*Cenchrus Ciliaris* 'Laredo'). Seed at 2 lbs./1,000 SF w/Hydromulch at 30 lbs./1,000 SF.



Typical Section - Road 'K' and Road 'L'
Scale: 1" = 5'



Typical Section - PMA Pavement (Private Driveway)
Scale: 1" = 5'

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



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SIGNATURE
April 30, 2022
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Typical Sections - 4

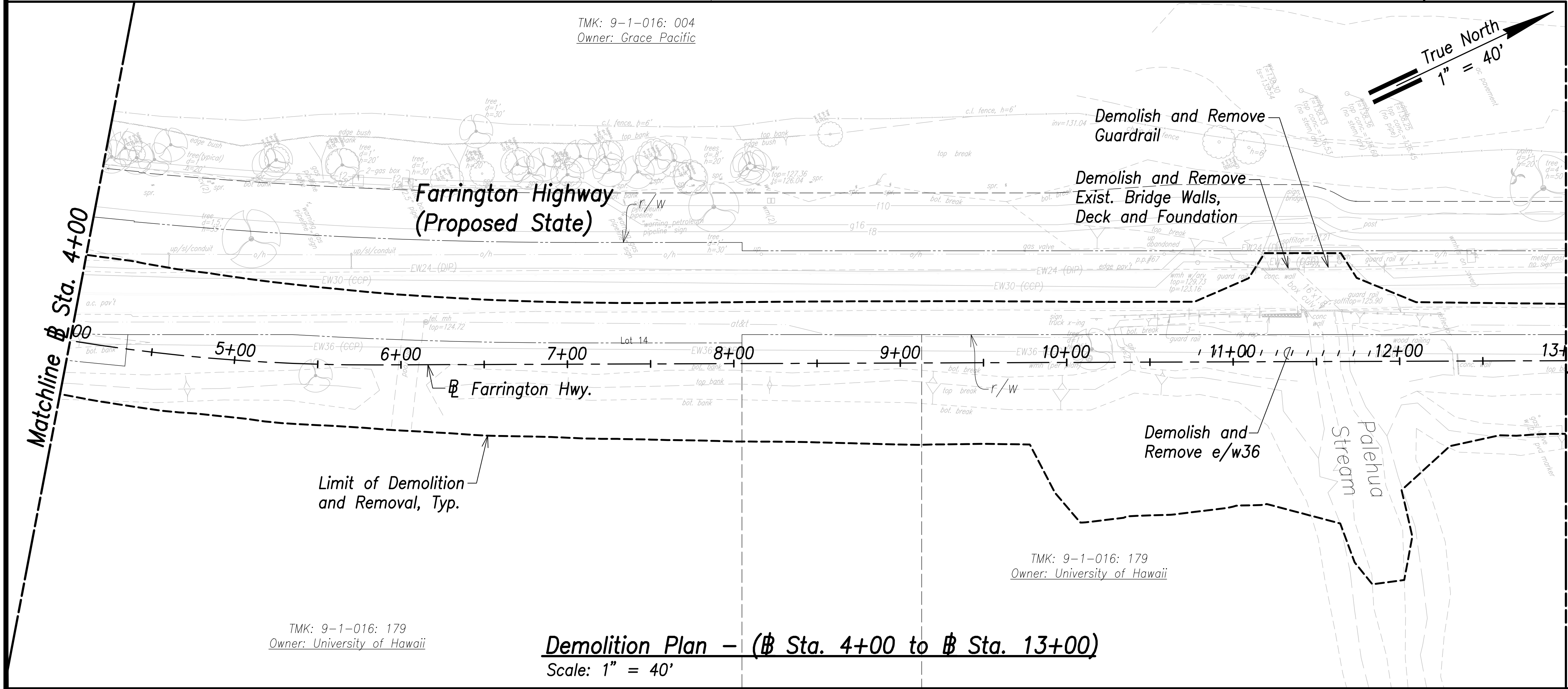
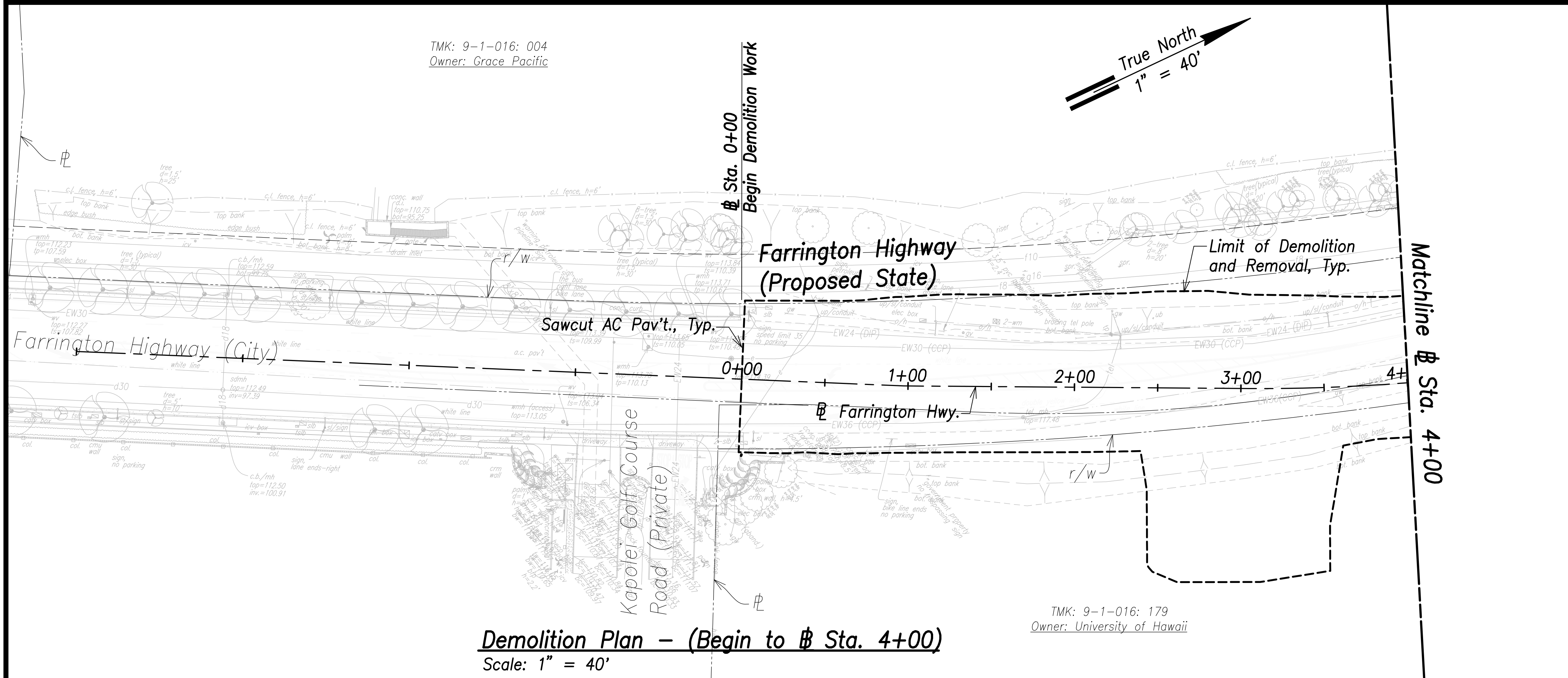
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-30 OF XXX SHEETS

FILE: K:\civil\23146 Farrington Hwy Widening\Draw\Construction\Draw\G-C-33 Demo Plan - Sta. 0+00 to 13+00.dwg saved March 23, 2022

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



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	34	XXX

Notes:

- All drainage structures, curbs, gutters, sidewalks, pavement, guardrails, striping, vegetation, posts, and signing shall be removed within the limit of demolition and removal.
- See Structural Drawings for Demolition and Removal of Bridge Deck and Structural Members.
- Remove by grinding pavement striping, to avoid conflicts with existing striping. See Signing and Marking Plans.
- For Demolition of Electrical and Telecommunication Utilities and Structures, Refer to Electrical Site Demolition Plans. The Contractor is Responsible for Coordinating all Electrical Work with Respective Utility Companies.
- The Contractor Shall Ensure Demolition and Removal Work of Contaminated Materials is Done in Compliance with the State Department of Health and Federal Environmental Protection Agency Guidelines.
- The Contractor shall coordinate all work with impacted utility owners.
- Service shall be maintained at all times to impacted utilities. No interruption in service will be allowed. The contractor shall phase work to allow for continuous utility service.
- All Water, Sewer, Fuel, and Gas Systems Shall Remain Undisturbed Unless Called Out For Demolition.
- The Contractor shall reconstruct tops of all existing utility manholes, valve boxes, meter boxes and structures that are remaining in service and contained within the project area flush with the finished grade.
- The Contractor Shall Comply With Traffic Notes on Sht. C-18.

APPROVED:

Manager and Chief Engineer, BWS
(for work affecting BWS facilities
State R/W & BWS easements only)

DATE

Graphic Scale:

1" = 40' 40' 20' 0 40' 80'
Scale in Feet



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SIGNATURE
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Demolition Plan
@ Sta. 0+00 to @ Sta. 13+00

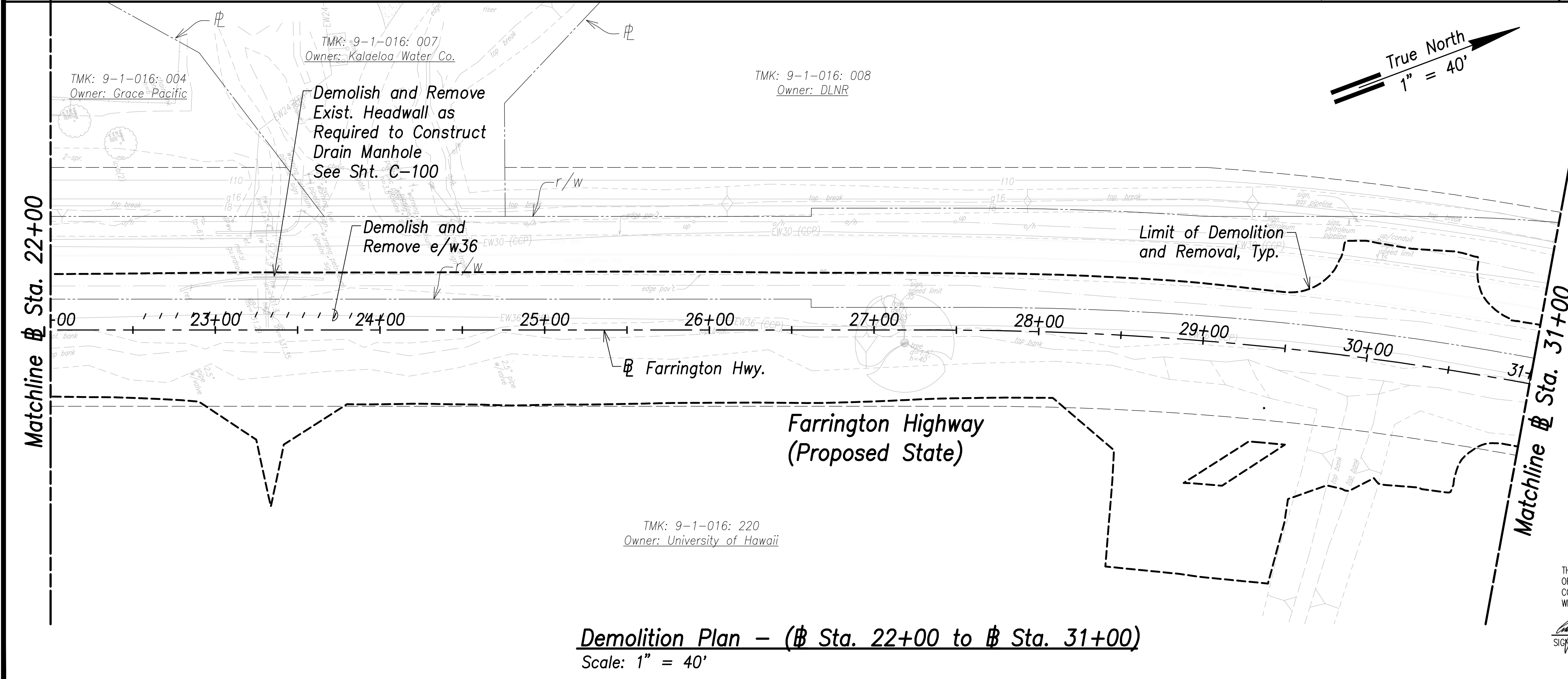
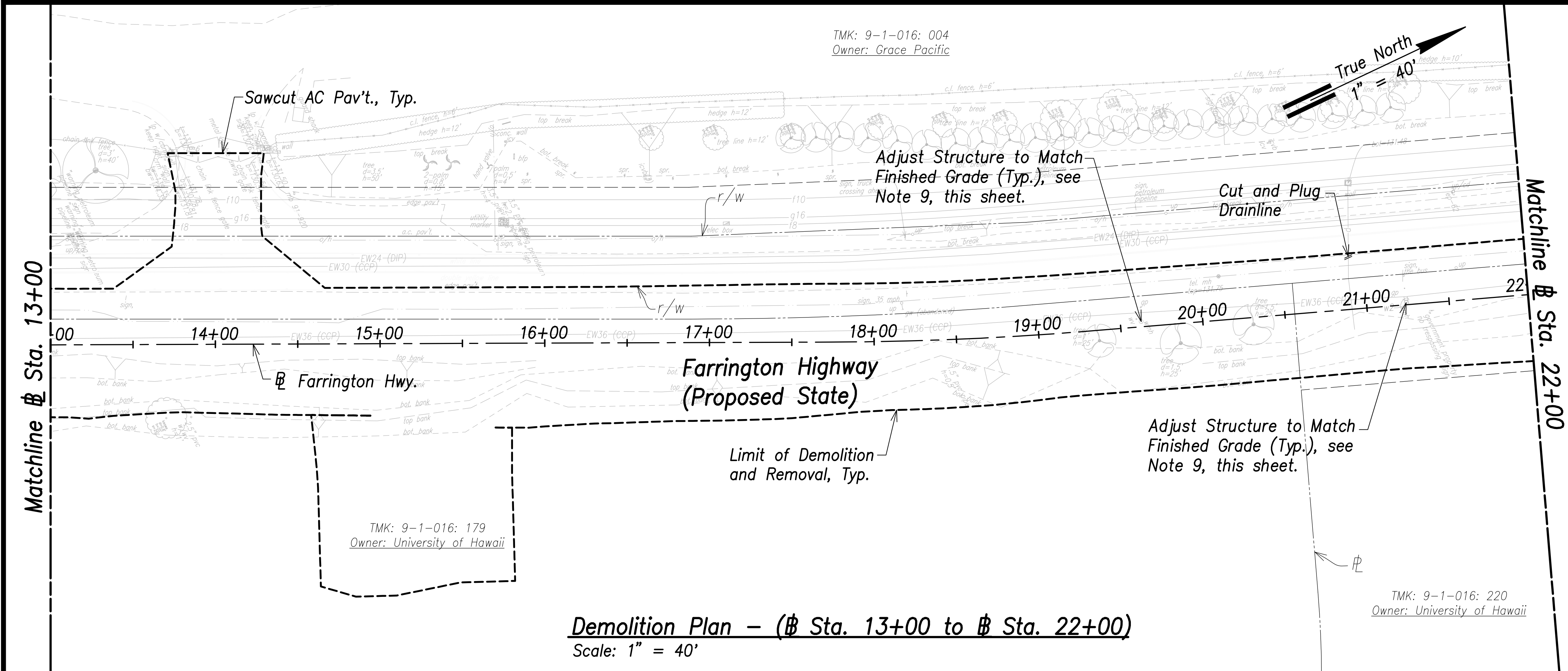
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-33 OF XXX SHEETS

FILE: K:\civil\23146 Farrington Hwy Widening\Draw\Construction\Draw\Dem Plan - Sta. 13+00 to 31+00.dwg saved March 23, 2022

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



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	35	XXX

Notes:

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- The Contractor Shall Comply With Traffic Notes on Sht. C-18.

APPROVED:

Manager and Chief Engineer, BWS
(for work affecting BWS facilities
State R/W & BWS easements only)

DATE

Graphic Scale:

1" = 40' 40' 20' 0 40' 80'
Scale in Feet



THIS WORK WAS PREPARED BY ME
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WILL BE UNDER MY OBSERVATION.

SIGNATURE
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Demolition Plan
Sta. 13+00 to # Sta. 31+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-34 OF XXX SHEETS

TMK: 9-1-016: 008
Owner: DLNR

TMK: 9-1-018: 008
Owner: DLNR

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	36	XXX

Notes:

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10. The Contractor Shall Comply With Traffic Notes on Sht. C-18.

APPROVED:

Manager and Chief Engineer, BWS
(for work affecting BWS facilities
State R/W & BWS easements only)

DATE

Graphic Scale:

1" = 40' 40' 20' 0 40' 80'
Scale in Feet



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WILL BE UNDER MY OBSERVATION.

Signature: [Signature]
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

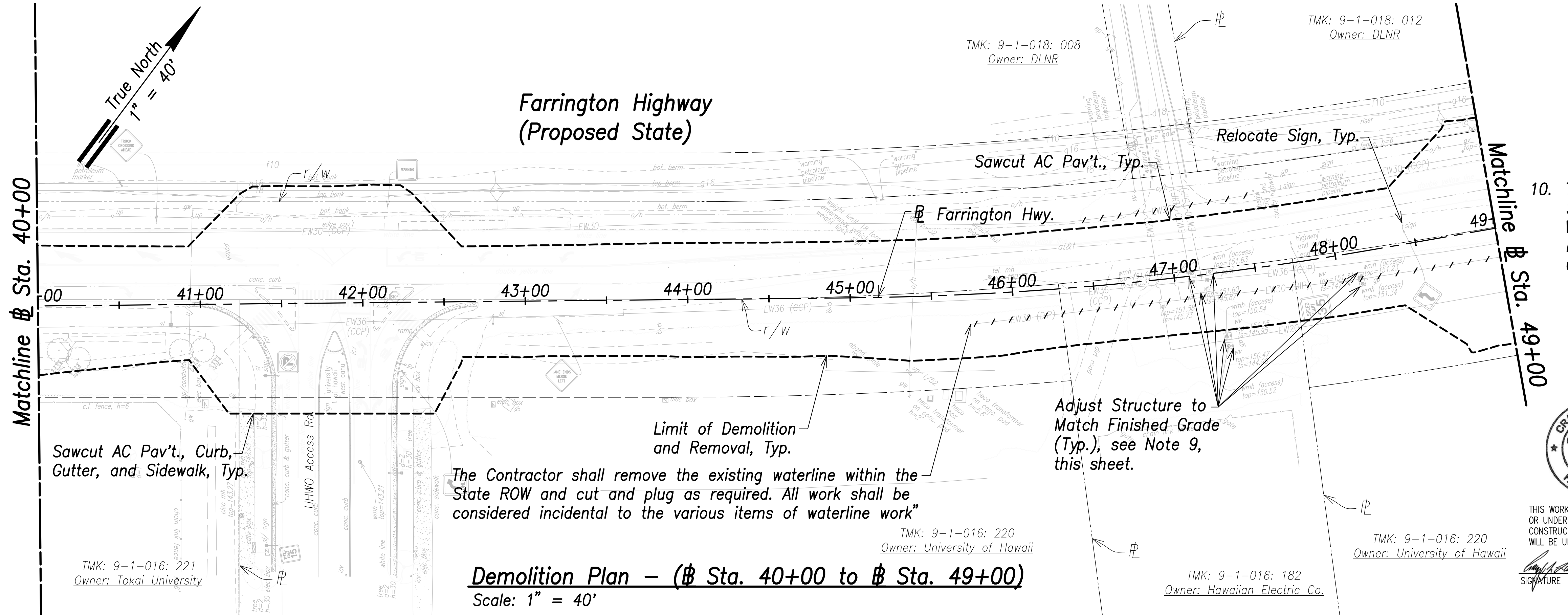
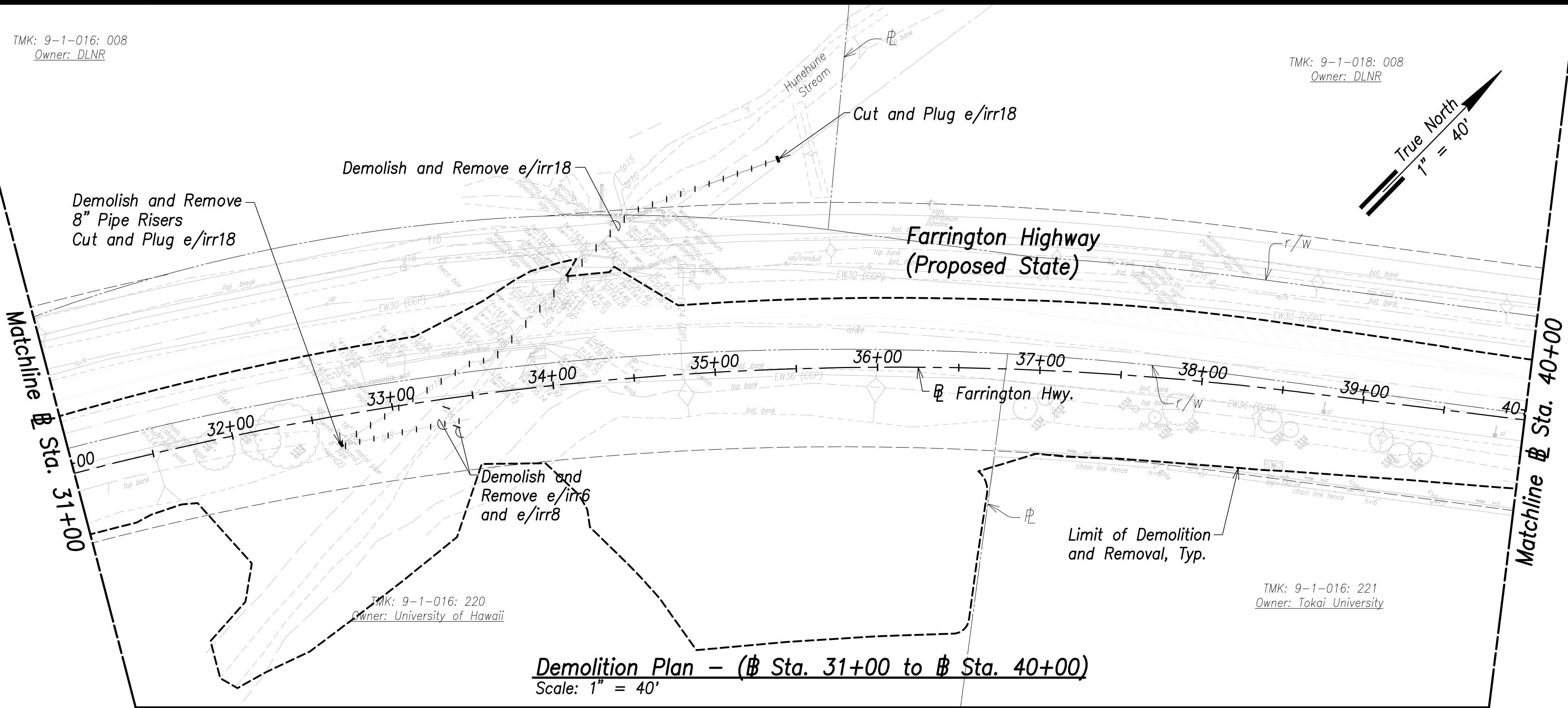
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Demolition Plan
Sta. 31+00 to # Sta. 49+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

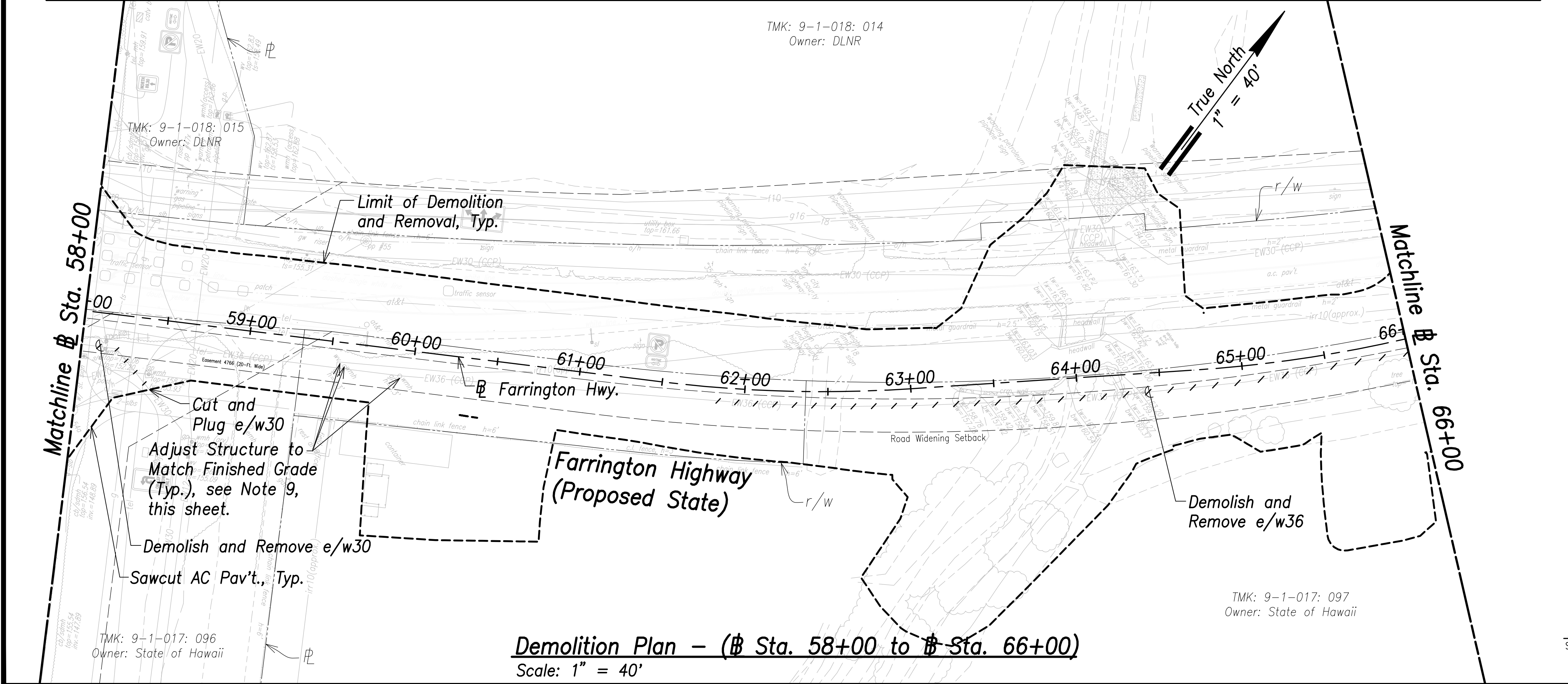
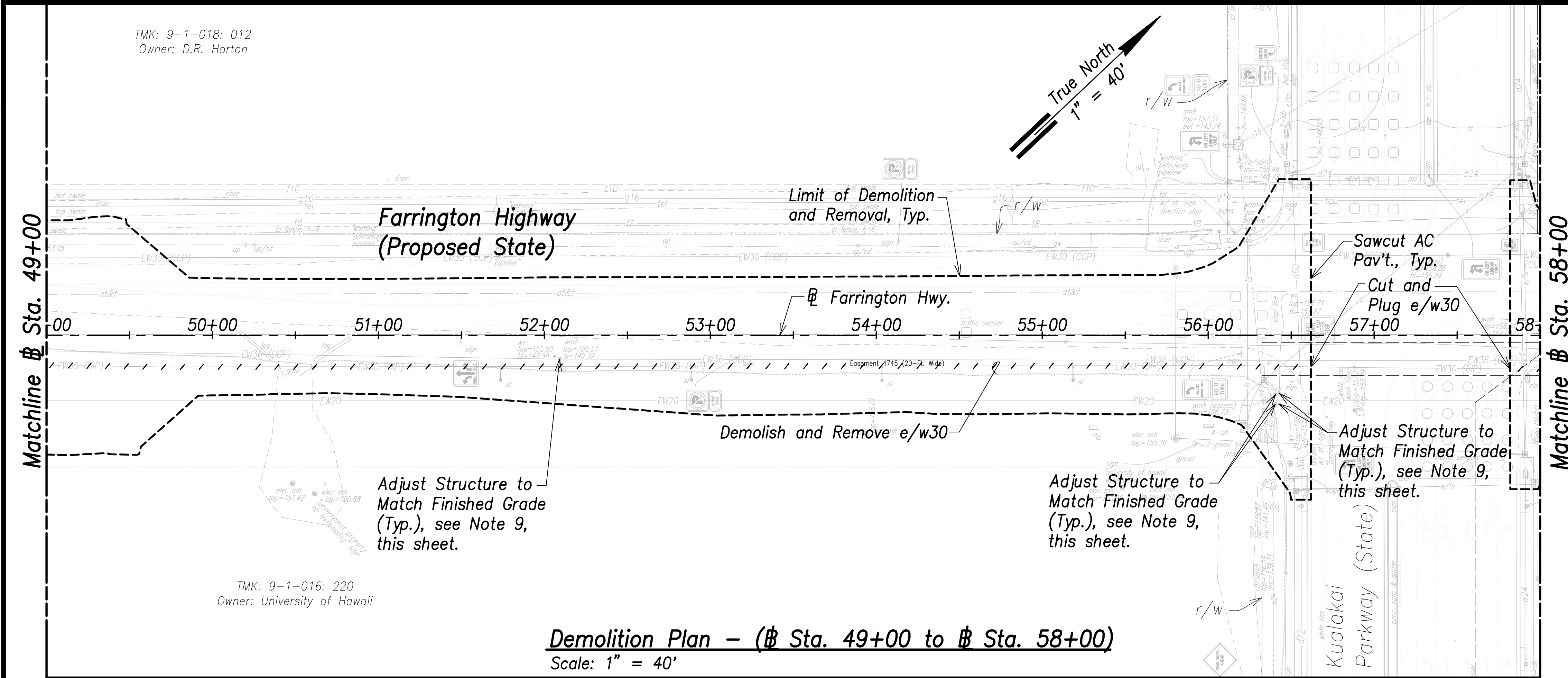
SHEET No. C-35 OF XXX SHEETS



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

FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-36 Demo Plan - Sta. 49+00 to 66+00.dwg saved March 24, 2022

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



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	37	XXX

Notes:

- All drainage structures, curbs, gutters, sidewalks, pavement, guardrails, striping, vegetation, posts, and signing shall be removed within the limit of demolition and removal.
- See Structural Drawings for Demolition and Removal of Bridge Deck and Structural Members.
- Remove by grinding pavement striping, to avoid conflicts with existing striping. See Signing and Marking Plans.
- For Demolition of Electrical and Telecommunication Utilities and Structures, Refer to Electrical Site Demolition Plans. The Contractor is Responsible for Coordinating all Electrical Work with Respective Utility Companies.
- The Contractor Shall Ensure Demolition and Removal Work of Contaminated Materials is Done in Compliance with the State Department of Health and Federal Environmental Protection Agency Guidelines.
- The Contractor shall coordinate all work with impacted utility owners.
- Service shall be maintained at all times to impacted utilities. No interruption in service will be allowed. The contractor shall phase work to allow for continuous utility service.
- All Water, Sewer, Fuel, and Gas Systems Shall Remain Undisturbed Unless Called Out For Demolition.
- The Contractor shall reconstruct tops of all existing utility manholes, valve boxes, meter boxes and structures that are remaining in service and contained within the project area flush with the finished grade.
- The Contractor Shall Comply With Traffic Notes on Sht. C-18.

APPROVED:

Manager and Chief Engineer, BWS
(for work affecting BWS facilities
State R/W & BWS easements only)

Graphic Scale:

1" = 40' 40' 20' 0 40' 80'
Scale in Feet



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
Signature: [Signature]
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Demolition Plan
Sta. 49+00 to Sta. 66+00

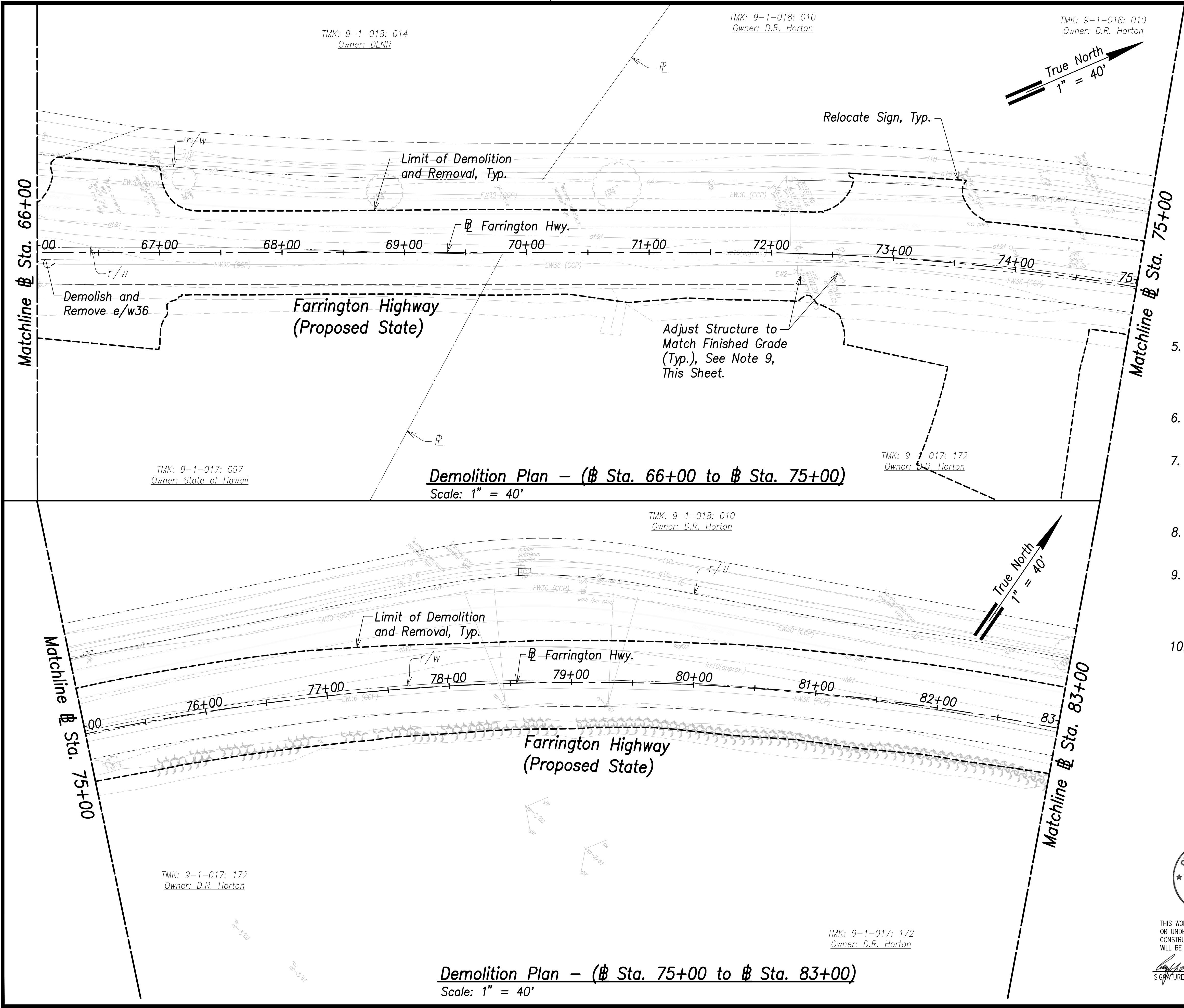
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-36 OF XXX SHEETS

FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-37 Demo Plan - Sta. 66+00 to 83+00.dwg saved March 23, 2022

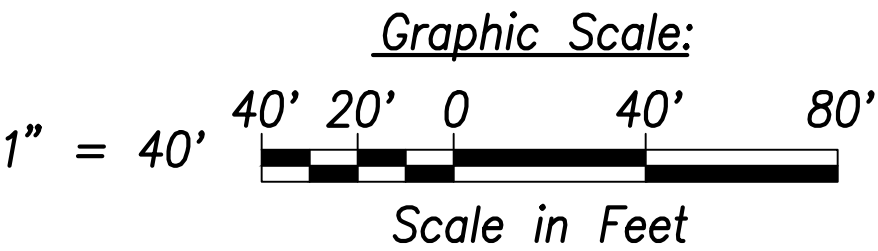
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	38	XXX

- Notes:
1. All drainage structures, curbs, gutters, sidewalks, pavement, guardrails, striping, vegetation, posts, and signing shall be removed within the limit of demolition and removal.
 2. See Structural Drawings for Demolition and Removal of Bridge Deck and Structural Members.
 3. Remove by grinding pavement striping, to avoid conflicts with existing striping. See Signing and Marking Plans.
 4. For Demolition of Electrical and Telecommunication Utilities and Structures, Refer to Electrical Site Demolition Plans. The Contractor is Responsible for Coordinating all Electrical Work with Respective Utility Companies.
 5. The Contractor Shall Ensure Demolition and Removal Work of Contaminated Materials is Done in Compliance with the State Department of Health and Federal Environmental Protection Agency Guidelines.
 6. The Contractor shall coordinate all work with impacted utility owners.
 7. Service shall be maintained at all times to impacted utilities. No interruption in service will be allowed. The contractor shall phase work to allow for continuous utility service.
 8. All Water, Sewer, Fuel, and Gas Systems Shall Remain Undisturbed Unless Called Out For Demolition.
 9. The Contractor shall reconstruct tops of all existing utility manholes, valve boxes, meter boxes and structures that are remaining in service and contained within the project area flush with the finished grade.
 10. The Contractor Shall Comply With Traffic Notes on Sht. C-18.

APPROVED:	
Manager and Chief Engineer, BWS	DATE
(for work affecting BWS facilities	
State R/W & BWS easements only)	



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

Signature: *Craig W. L. Luke*
EXPIRATION DATE OF THE LICENSE: April 30, 2022

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Demolition Plan
Sta. 66+00 to Sta. 83+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-37 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	40	XXX

Notes:

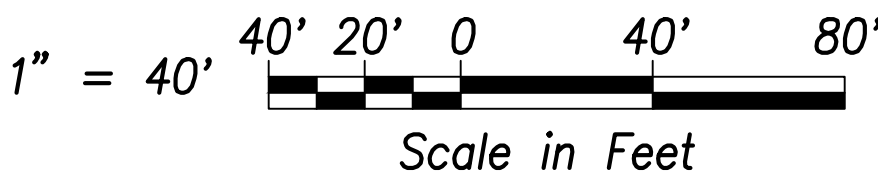
- All drainage structures, curbs, gutters, sidewalks, pavement, guardrails, striping, vegetation, posts, and signing shall be removed within the limit of demolition and removal.
- See Structural Drawings for Demolition and Removal of Bridge Deck and Structural Members.
- Remove by grinding pavement striping, to avoid conflicts with existing striping. See Signing and Marking Plans.
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- The Contractor Shall Comply With Traffic Notes on Sht. C-18.

APPROVED:

Manager and Chief Engineer, BWS
(for work affecting BWS facilities
State R/W & BWS easements only)

DATE

Graphic Scale:



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OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.

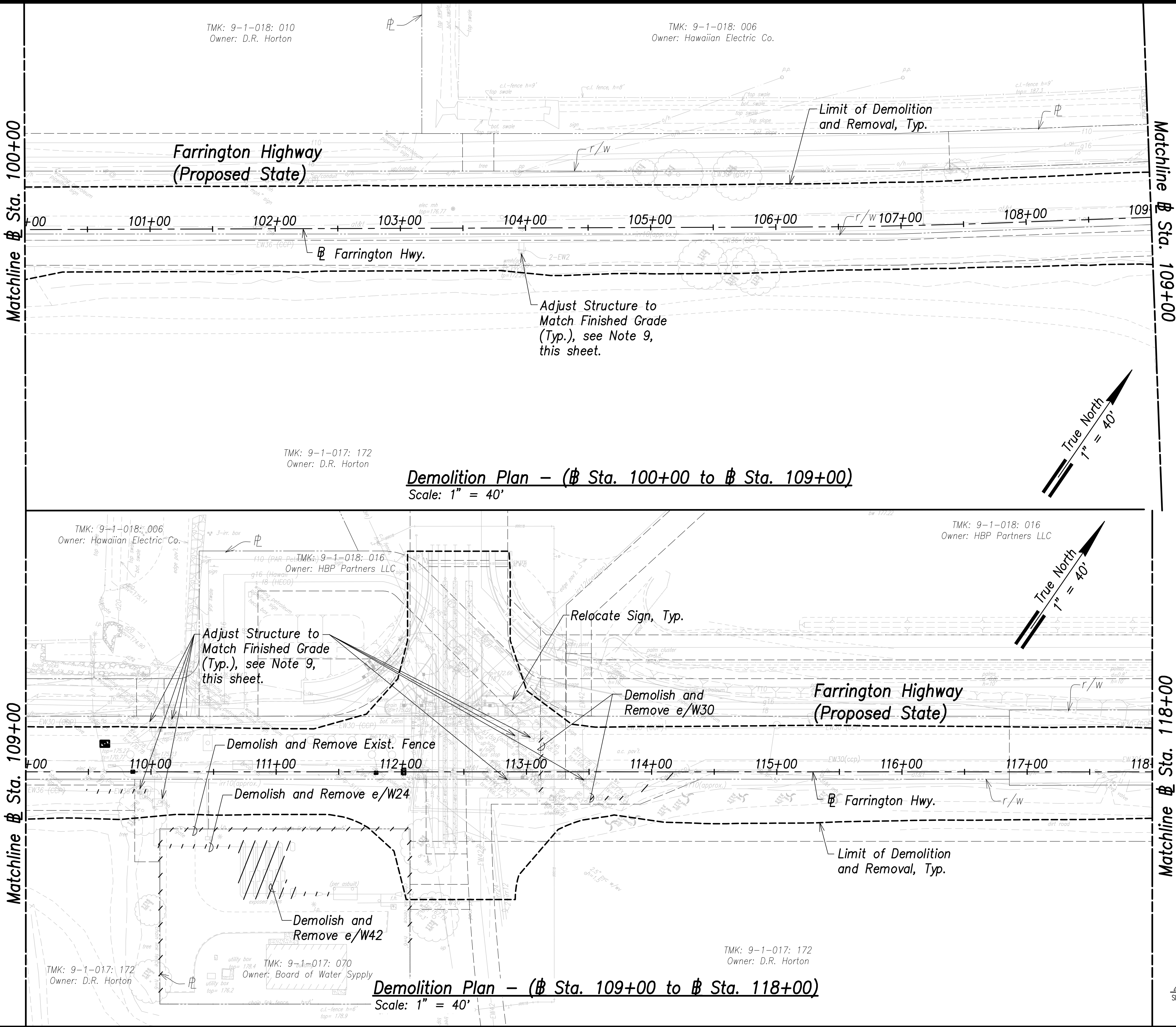
SIGNATURE
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Demolition Plan
Sta. 100+00 to # Sta. 118+00
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-39 OF XXX SHEETS



Demolition Plan - (# Sta. 100+00 to # Sta. 109+00)

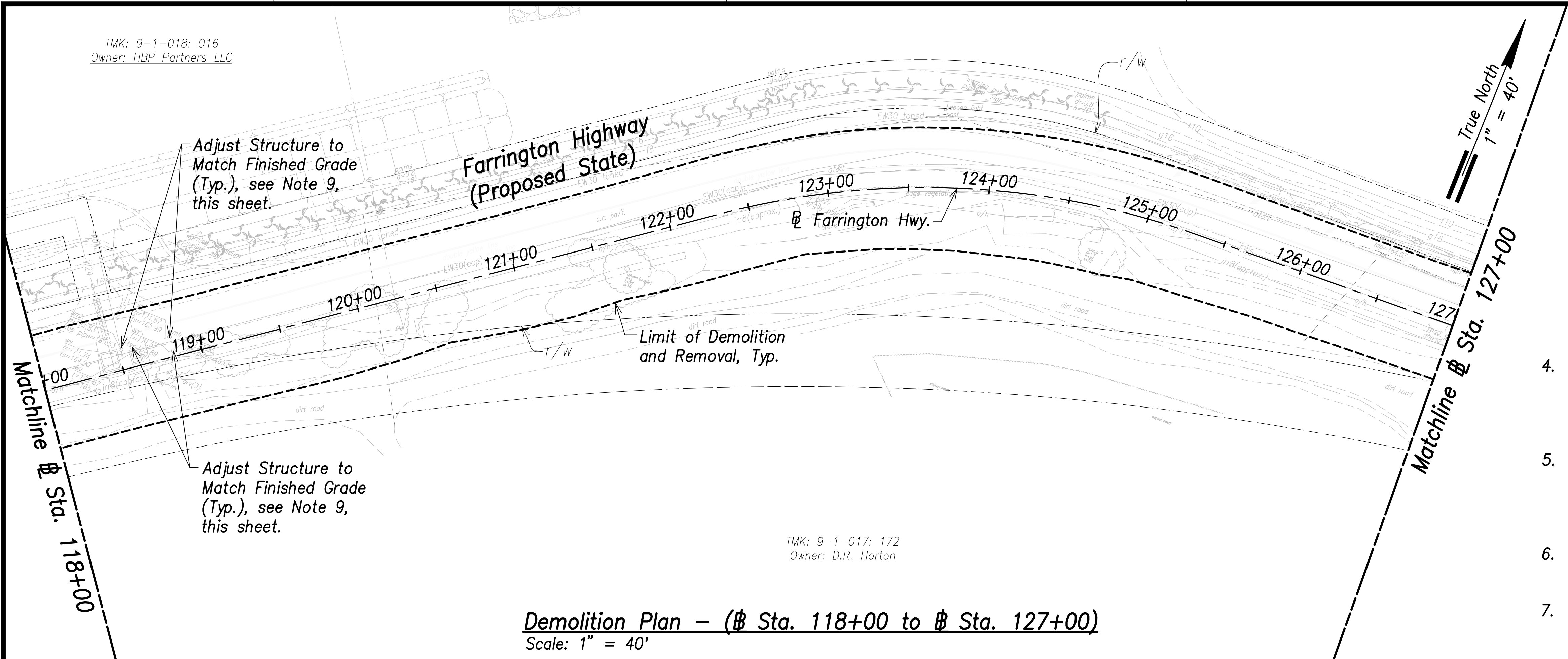
Scale: 1" = 40'

Demolition Plan - (# Sta. 109+00 to # Sta. 118+00)

Scale: 1" = 40'

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

FILE: K:\Civil\23146 Farrington Hwy Widening\Draw\Construction\Draw\Sheet\118+00 to 136+00.dwg saved March 23, 2022

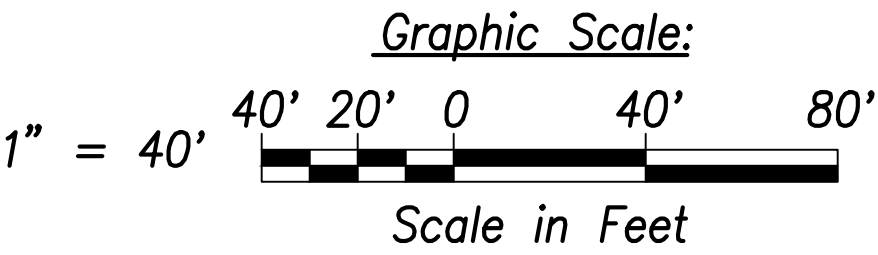


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	41	XXX

- Notes:
- All drainage structures, curbs, gutters, sidewalks, pavement, guardrails, striping, vegetation, posts, and signing shall be removed within the limit of demolition and removal.
 - See Structural Drawings for Demolition and Removal of Bridge Deck and Structural Members.
 - Remove by grinding pavement striping, to avoid conflicts with existing striping. See Signing and Marking Plans.
 - For Demolition of Electrical and Telecommunication Utilities and Structures, Refer to Electrical Site Demolition Plans. The Contractor is Responsible for Coordinating all Electrical Work with Respective Utility Companies.
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 - The Contractor shall reconstruct tops of all existing utility manholes, valve boxes, meter boxes and structures that are remaining in service and contained within the project area flush with the finished grade.
 - The Contractor Shall Comply With Traffic Notes on Sht. C-18.

APPROVED:

Manager and Chief Engineer, BWS DATE
(for work affecting BWS facilities
State R/W & BWS easements only)



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

Signature: [Signature]
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

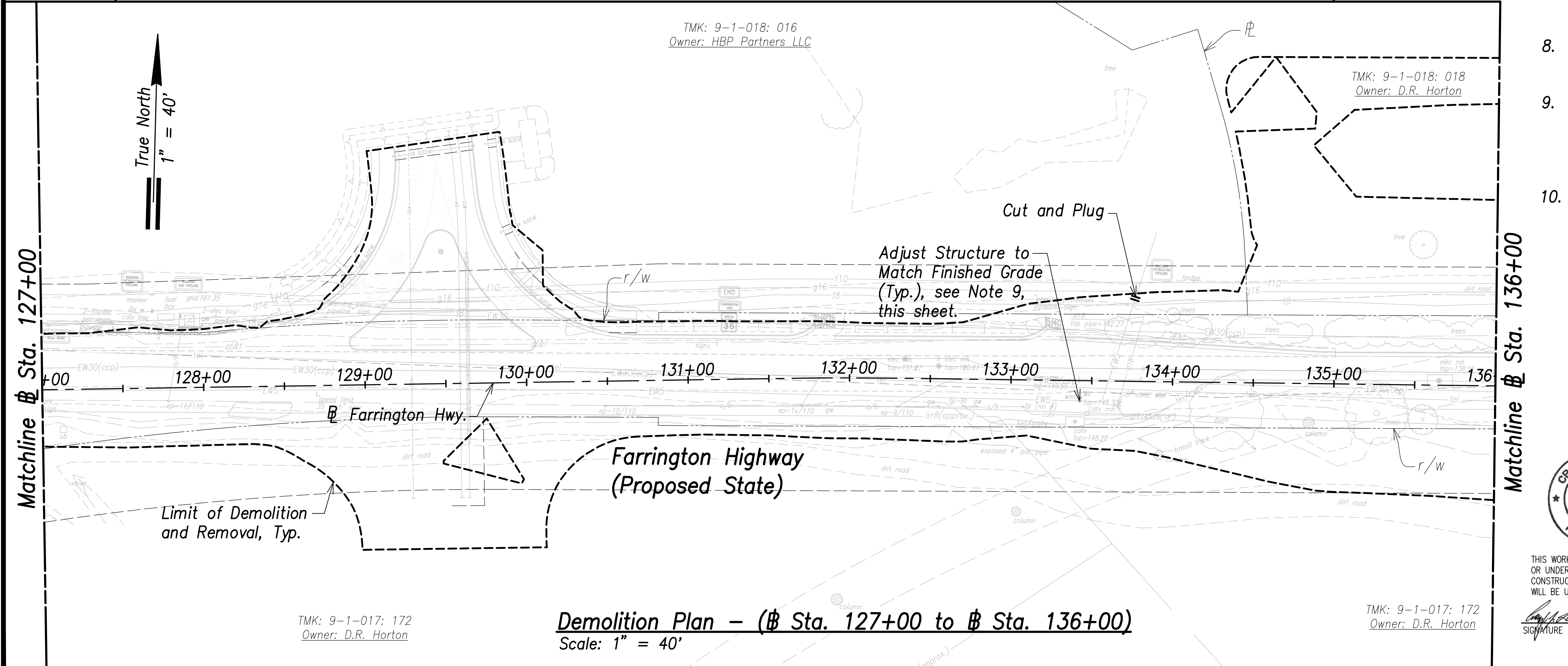
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Demolition Plan
Sta. 118+00 to Sta. 136+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

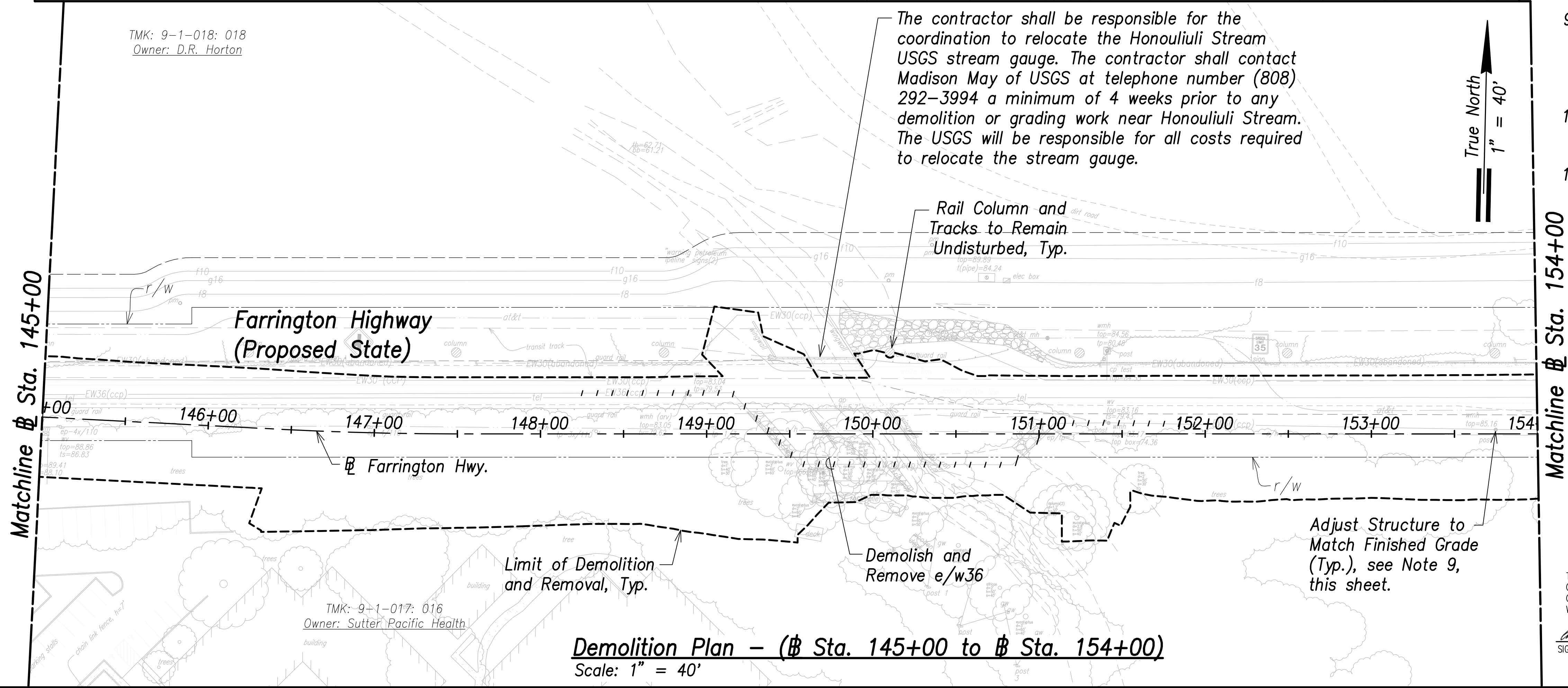
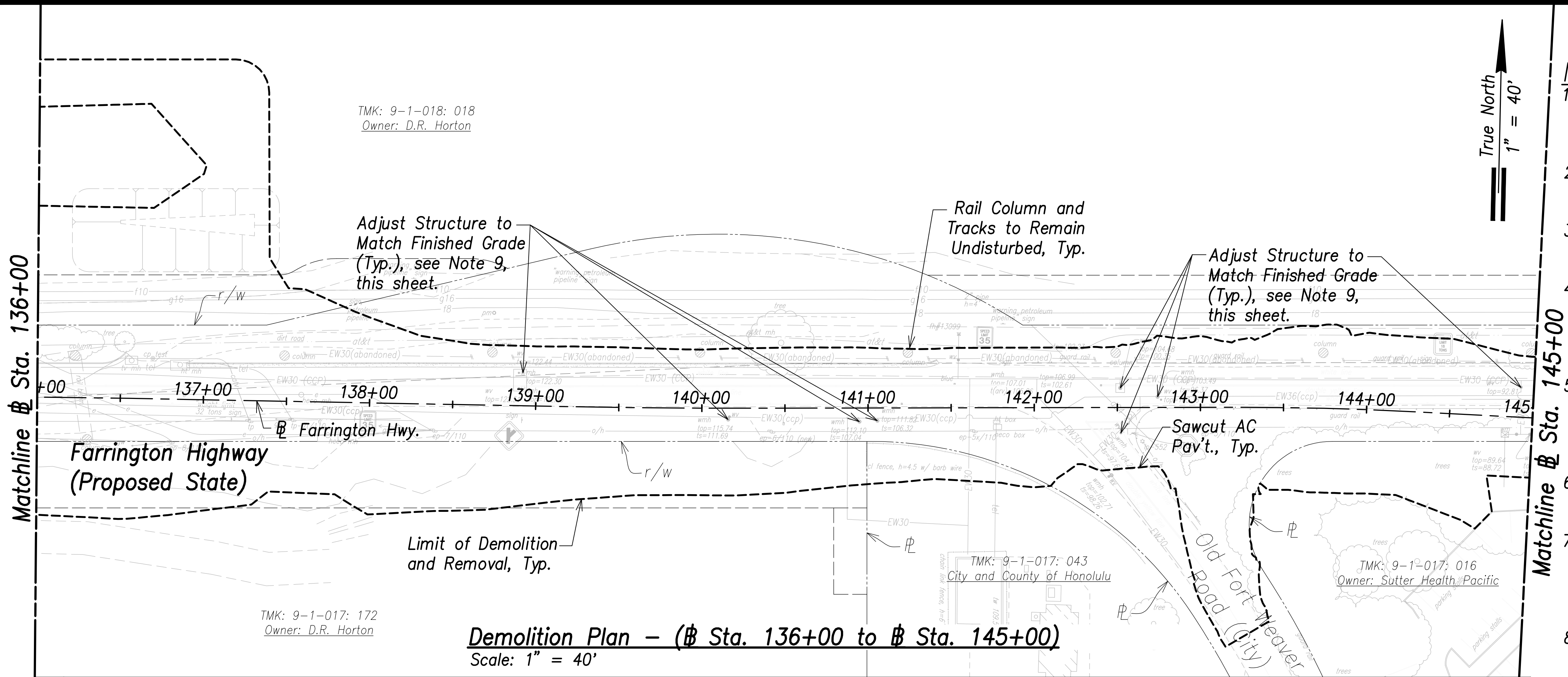
SHEET No. C-40 OF XXX SHEETS



SURVEY PLOTTED BY	DATE
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CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
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FILE: K:\Civil\23146 Farrington Hwy Widening\Draw\Construction\Draw\Sheet\Sheet C-41 Demo Plan - Sta. 136+00 to 154+00.dwg saved March 23, 2022

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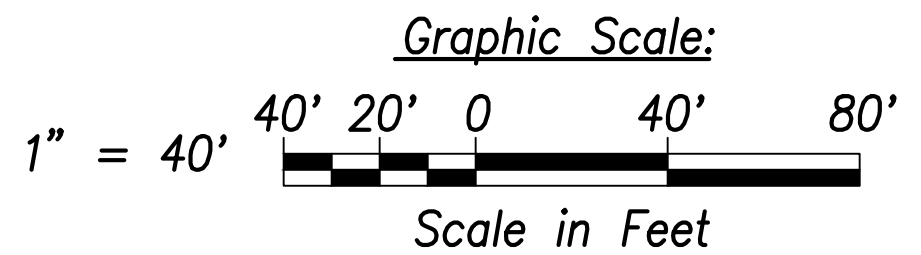


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	42	XXX

Notes:

- All drainage structures, curbs, gutters, sidewalks, pavement, guardrails, striping, vegetation, posts, and signing shall be removed within the limit of demolition and removal.
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- Service shall be maintained at all times to impacted utilities. No interruption in service will be allowed. The contractor shall phase work to allow for continuous utility service.
- All Water, Sewer, Fuel, and Gas Systems Shall Remain Undisturbed Unless Called Out For Demolition.
- The Contractor shall reconstruct tops of all existing utility manholes, valve boxes, meter boxes and structures that are remaining in service and contained within the project area flush with the finished grade.
- The Contractor Shall Comply With Traffic Notes on Sht. C-18.
- The Contractor Shall Ensure No Debris Shall Be Allowed To Fall Within Stream Banks High Water Marks During Demolition and Construction of the Honouliuli Stream Bridge.

APPROVED:	
Manager and Chief Engineer, BWS (for work affecting BWS facilities State R/W & BWS easements only)	DATE



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

SIGNATURE: *Craig W. L. Luke* EXPIRATION DATE OF THE LICENSE: April 30, 2022

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

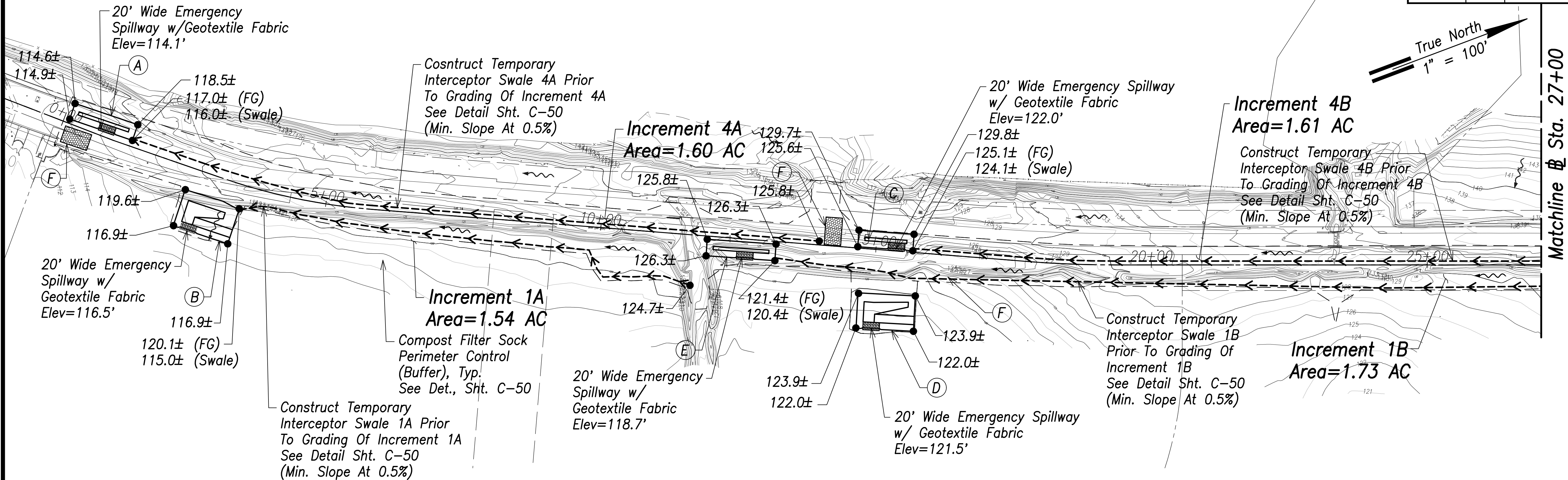
Demolition Plan
Sta. 136+00 to Sta. 154+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-41 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	44	XXX



Erosion and Sediment Control Plan – (Sta. 0+00 to Sta. 27+00)
Scale: 1" = 100'

Note:
The Contractor shall install two catch basin inlet protection devices on existing catch basins located at approximate road station (-)3+11.

Pre-Construction BMP

- Stabilized Compost Filter Sock
- Temporary Sediment Basins
- Temporary Swales

During Construction BMP

- Temporary Stabilization
- Inlet Protection for New CB

Post Construction BMP

- Permanent Stabilization BMP

Legend:

LOG and Disturbance	---
Filter Sock	—□—
Grading Increment Boundary	■ ■ ■ ■
Existing Ground Contour	~~~~~
Direction of Flow	→
Top Bank	—
Bottom Bank	- - -
Fill Slope	Y Y Y
Cut Slope	Y Y Y
Swale	—<—>—
Spot Elevation	● 126.4±

(A)
Temporary Sediment Basin 4A
To Be Constructed Prior To Grading Of
Increment 4A And Backfilled Upon
Completion of Increment 4A
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(120' x 30' Storage Area)
Bot. Basin = 110.6 Ft.
Min. Depth = 4 Ft.
Contributing Area = 1.60 AC. (Inc. 4A)
Required Volume = 213 CY. (Inc. 4A)
Available Volume = 320 CY.

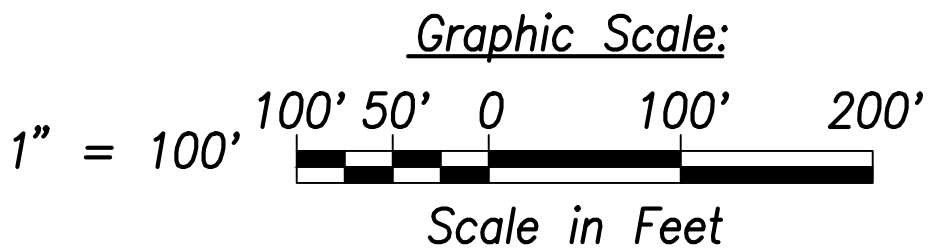
(B)
Sediment Basin A
To Be Constructed Prior To Grading Of
Increment 1A
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-116
Bot. Basin = 108.4 Ft.
Contributing Area = 1.54 AC. (Inc. 1A)
Required Volume = 205 CY. (Inc. 1A)
Available Volume = 880 CY.

(C)
Temporary Sediment Basin 4B
To Be Constructed Prior To Grading Of
Increment 4B And Backfilled Upon
Completion of Increment 4B
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(100' x 30' Storage Area)
Bot. Basin = 119.5 Ft.
Min. Depth = 4 Ft.
Contributing Area = 1.11 AC. (Inc. 4B)
Required Volume = 148 CY. (Inc. 4B)
Available Volume 413 CY.

(D)
Sediment Basin B (Self Mitigating)
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-117
Bot. Basin = 116.6 Ft.
Contributing Area = xx AC.
Required Volume = xx CY.
Available Volume = 600 CY.

(E)
Temporary Sediment Basin 1B
To Be Constructed Prior To Grading Of
Increment 1B And Backfilled Upon
Completion of Increment 1B
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(125' x 30' Storage Area)
Bot. Basin = 115.2 Ft.
Min. Depth = 4 Ft.
Contributing Area = 1.73 AC. (Inc. 1B)
Required Volume = 231 CY. (Inc. 4B)
Available Volume 333 CY.

(F)
Stabilized Construction
Entrance (50'x30'x12" Min.)
See Det., Sht. C-50



THIS WORK WAS PREPARED BY ME
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CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
Signature: [Signature]
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

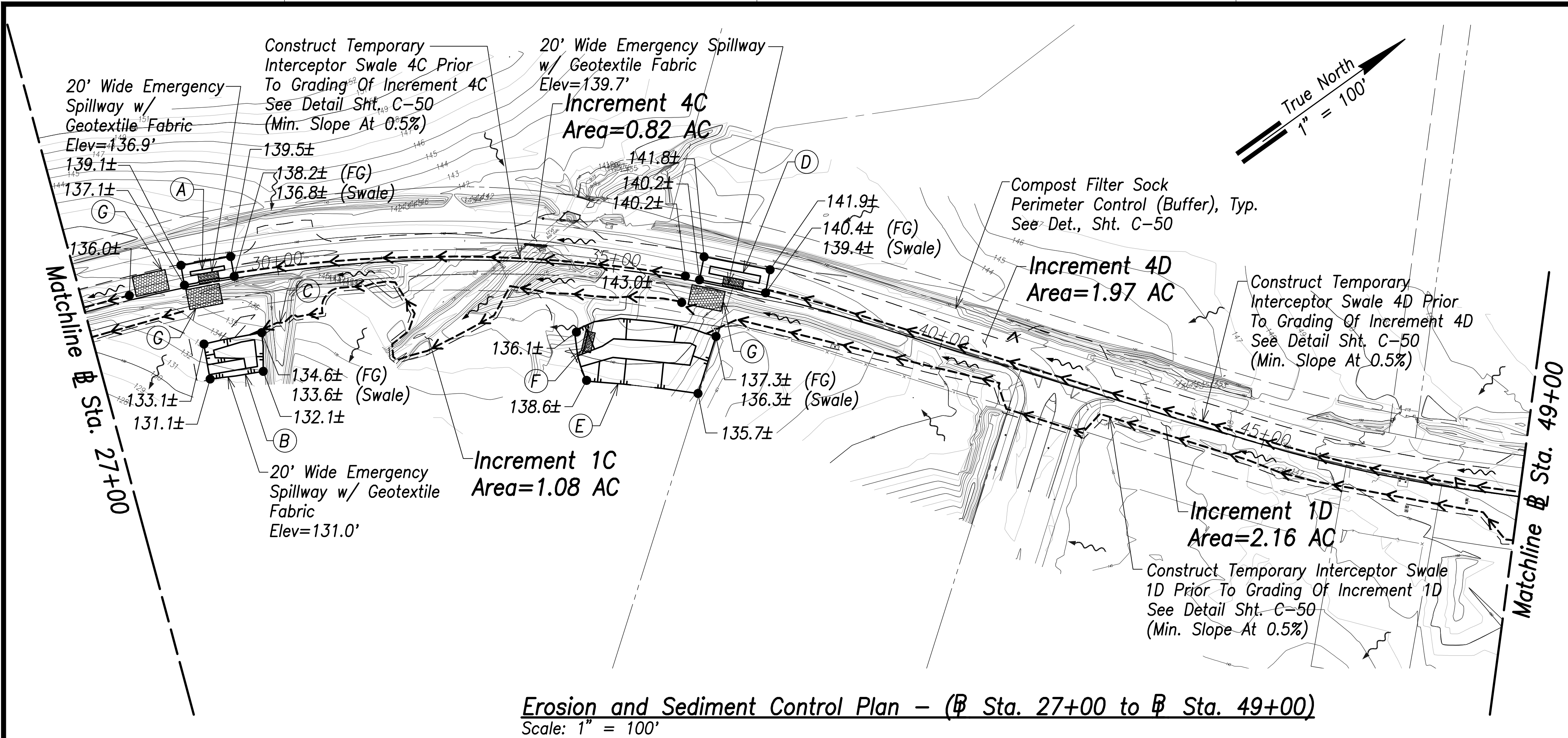
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Erosion and Sediment
Control Plan – 1
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-43 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	45	XXX



Erosion and Sediment Control Plan – (Sta. 27+00 to Sta. 49+00)
Scale: 1" = 100'

Pre-Construction BMP

- Stabilized Compost Filter Sock
- Temporary Sediment Basins
- Temporary Swales

During Construction BMP

- Temporary Stabilization
- Inlet Protection for New CB

Post Construction BMP

- Permanent Stabilization BMP

Legend:

LOG and Disturbance	---
Filter Sock	—□—
Grading Increment Boundary	■ ■ ■ ■
Existing Ground Contour	~~~~~
Direction of Flow	→
Top Bank	—
Bottom Bank	—
Fill Slope	Y Y Y
Cut Slope	Y Y Y
Swale	—<—>—
Spot Elevation	● 126.4±

(A)
Temporary Sediment Basin 4C
To Be Constructed Prior To Grading Of
Increment 4C And Backfilled Upon
Completion of Increment 4C
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(200' X 30' Storage Area)
Bot. Basin = 132.8 Ft.
Min. Depth = 4 Ft.
Contributing Area = 1.22 AC. (Inc. 4C)
Required Volume = 163 CY. (Inv. 4C)
Available Volume = 385 CY.

(B)
Sediment Basin C
To Be Constructed Prior To Grading Of
Increment 1C
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-118
Bot. Basin = 128 Ft.
Contributing Area = 1.08 AC. (Inc. 1C)
Required Volume = 144 CY. (Inc. 1C)
Available Volume = 180 CY.

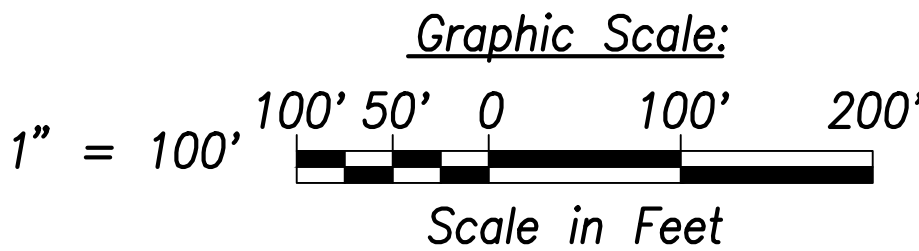
(C)
Construct Temporary Interceptor Swale
1C Prior To Grading Of Increment 1C
See Detail Sht. C-50
(Min. Slope At 0.5%)

(D)
Temporary Sediment Basin 4D
To Be Constructed Prior To Grading Of
Increment 4D And Backfilled Upon
Completion of Increment 4D
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(100' x 35' Storage Area)
Bot. Basin = 135.1 Ft.
Min. Depth = 4 Ft.
Contributing Area = 1.97 AC. (Inc. 4D)
Required Volume = 263 CY. (Inc. 4D)
Available Volume = 341 CY.

(E)
Sediment Basin D
To Be Constructed Prior To Grading Of
Increment 1D
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-119
Bot. Basin = 125 Ft.
Contributing Area = 2.16 AC. (Inc. 1D)
Required Volume = 288 CY. (Inc. 1D)
Available Volume = 850 CY.

(F)
20' Wide Emergency Spillway
w/ Geotextile Fabric
Elev=135.5'

(G)
Stabilized Construction
Entrance (50'x30'x12" Min.)
See Det., Sht. C-50



THIS WORK WAS PREPARED BY ME
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CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
Signature: [Signature]
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

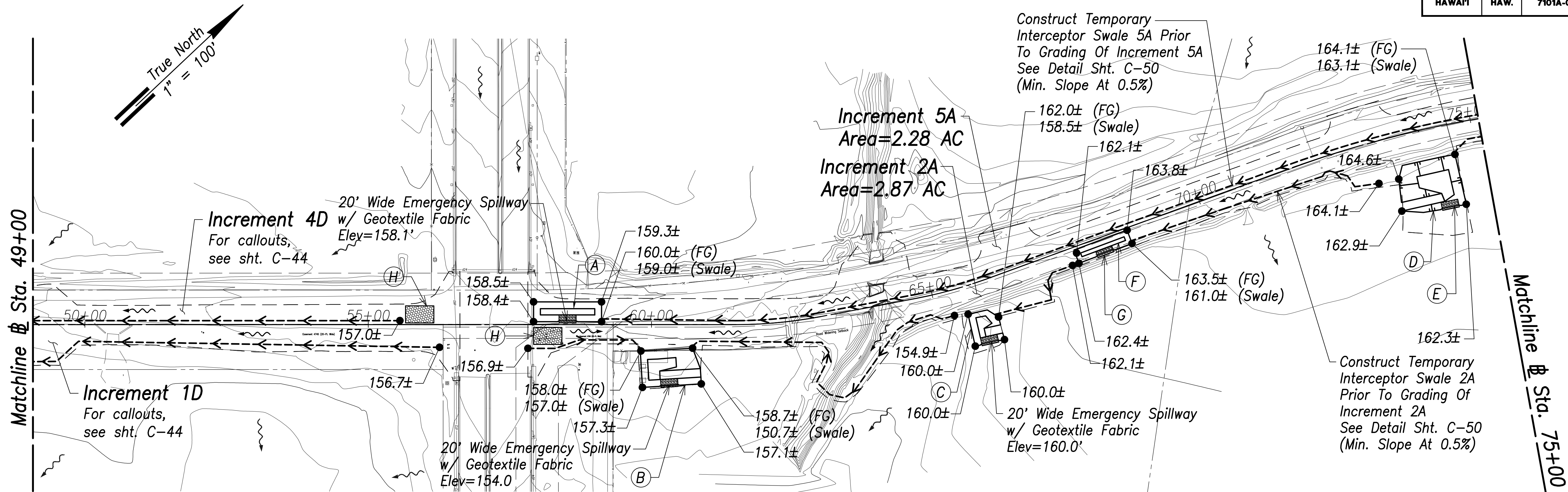
**Erosion and Sediment
Control Plan – 2**

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-44 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	46	XXX



Erosion and Sediment Control Plan – (Sta. 49+00 to Sta. 75+00)
Scale: 1" = 100'

- Pre-Construction BMP**
- Stabilized Compost Filter Sock
 - Temporary Sediment Basins
 - Temporary Swales
- During Construction BMP**
- Temporary Stabilization
 - Inlet Protection for New CB
- Post Construction BMP**
- Permanent Stabilization BMP

Legend:

LOG and Disturbance	---
Filter Sock	—□—
Grading Increment Boundary	■ ■ ■ ■
Existing Ground Contour	~~~~~
Direction of Flow	→
Top Bank	—
Bottom Bank	- - -
Fill Slope	Y Y Y
Cut Slope	Y Y Y
Swale	—<—>—
Spot Elevation	● 126.4±

Temporary Sediment Basin 5A
To Be Constructed Prior To Grading Of
Increment 5A And Backfilled Upon
Completion of Increment 5A
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(120' x 35' Storage Area)
Bot. Basin = 154.6 Ft.
Min. Depth = 4 Ft.
Contributing Area = 2.28 AC. (Inc. 5A)
Required Volume = 304 CY. (Inc. 5A)
Available Volume = 409 CY.

Sediment Basin E
To Be Constructed Prior To Grading
Of Increment 2A
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-120
Bot. Basin = 147.4 Ft.
Contributing Area = 2.87 AC. (Inc. 2A)
Required Volume = 383 CY. (Inc. 2A)
Available Volume = 345 CY.
Total Available Volume = 2,033 (Inc. 2A)

Sediment Basin F
To Be Constructed Prior To Grading
Of Increment 2A
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-121
Bot. Basin = 155.5 Ft.
Contributing Area = 2.87 AC. (Inc. 2A)
Required Volume = 383 CY. (Inc. 2A)
Available Volume = 195 CY.
Total Available Volume = 2,033 (Inc. 2A)

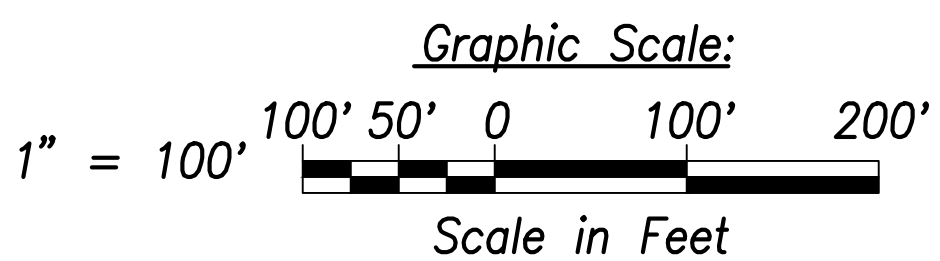
Sediment Basin G
To Be Constructed Prior To Grading
Of Increment 2A
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-122
Bot. Basin = 151.0 Ft.
Contributing Area = 2.87 AC. (Inc. 2A)
Required Volume = 383 CY. (Inc. 2A)
Available Volume = 1,315 CY.
Total Available Volume = 2,033 (Inc. 2A)

20' Wide Emergency Spillway
w/ Geotextile Fabric
Elev=162.0'

Temporary Sediment Basin 2A
To Be Constructed Prior To Grading Of
Increment 5A And Backfilled Upon
Completion of Increment 2A
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(100' x 25' Storage Area)
Bot. Basin = 157.5 Ft.
Min. Depth = 3 Ft.
Contributing Area = 2.87 AC. (Inc. 2A)
Required Volume = 383 CY. (Inc. 2A)
Available Volume = 178 CY.
Total Available Volume = 2,033 (Inc. 2A)

20' Wide Emergency Spillway
w/ Geotextile Fabric
Elev=162.2

Stabilized Construction
Entrance (50'x30'x12" Min.)
See Det., Sht. C-50



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WILL BE UNDER MY OBSERVATION.
SIGNATURE: *Craig W. L. Luke* EXPIRATION DATE: April 30, 2022
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

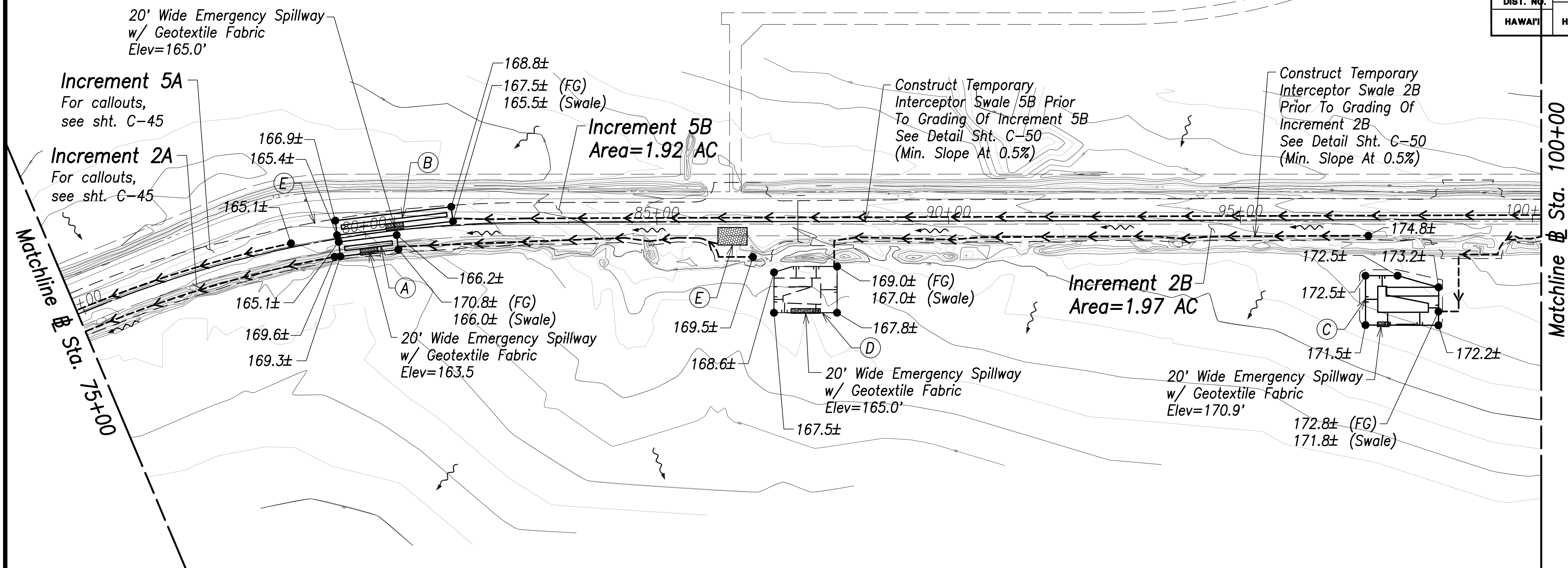
Erosion and Sediment Control Plan – 3

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-45 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	47	XXX



Erosion and Sediment Control Plan – (Sta. 75+00 to Sta. 100+00)
Scale: 1" = 100'

Pre-Construction BMP

- Stabilized Compost Filter Sock
- Temporary Sediment Basins
- Temporary Swales

During Construction BMP

- Temporary Stabilization
- Inlet Protection for New CB

Post Construction BMP

- Permanent Stabilization BMP

Legend:

LOG and Disturbance	---
Filter Sock	—□—
Grading Increment Boundary	■ ■ ■ ■
Existing Ground Contour	~~~~~
Direction of Flow	→
Top Bank	—
Bottom Bank	- - -
Fill Slope	Y Y Y
Cut Slope	Y Y Y
Swale	—<—>—
Spot Elevation	● 126.4±

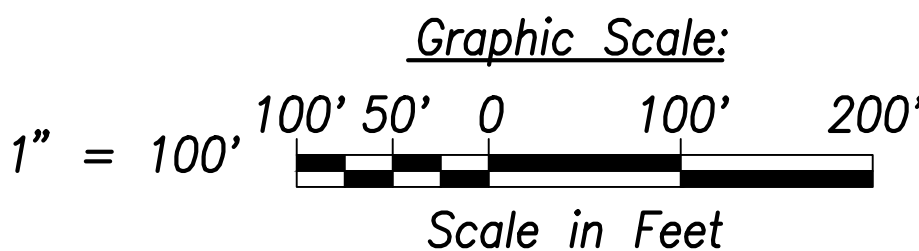
(A)
Temporary Sediment Basin 2B
To Be Constructed Prior To Grading Of
Increment 2B And Backfilled Upon Completion of
Increment 2B
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(100' x 25' Storage Area)
Bot. Basin = 162.0 Ft.
Min. Depth = 3 Ft.
Contributing Area = 1.97 AC. (Inc. 2B)
Required Volume = 263 CY. (Inc. 2B)
Available Volume = 178 CY.
Total Available Volume = 2,563 CY. (Inc. 2B)

(B)
Temporary Sediment Basin 5B
To Be Constructed Prior To Grading Of
Increment 5B And Backfilled Upon
Completion of Increment 5B
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(204' x 35' Storage Area)
Bot. Basin = 160.5 Ft.
Min. Depth = 4 Ft.
Contributing Area = 1.92 AC. (Inc. 5B)
Required Volume = 256 CY. (Inc. 5B)
Available Volume = 560 CY.

(C)
Sediment Basin J
To Be Constructed Prior To Grading Of
Increment 2B
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-124
Bot. Basin = 160.5 Ft.
Contributing Area = 1.97 AC. (Inc. 2B)
Required Volume = 263 CY. (Inc. 2B)
Available Volume = 1,835 CY.
Total Available Volume = 2,563 CY. (Inc. 2B)

(D)
Sediment Basin H
To Be Constructed Prior To Grading Of
Increment 2B
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-123
Bot. Basin = 159.3 Ft.
Contributing Area = 1.97 AC. (Inc. 2B)
Required Volume = 263 CY. (Inc. 2B)
Available Volume = 550 CY.
Total Available Volume = 2,563 CY. (Inc. 2B)

(E)
Stabilized Construction
Entrance (50'x30'x12" Min.)
See Det., Sht. C-50



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Signature: *Craig W. L. Luke*
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

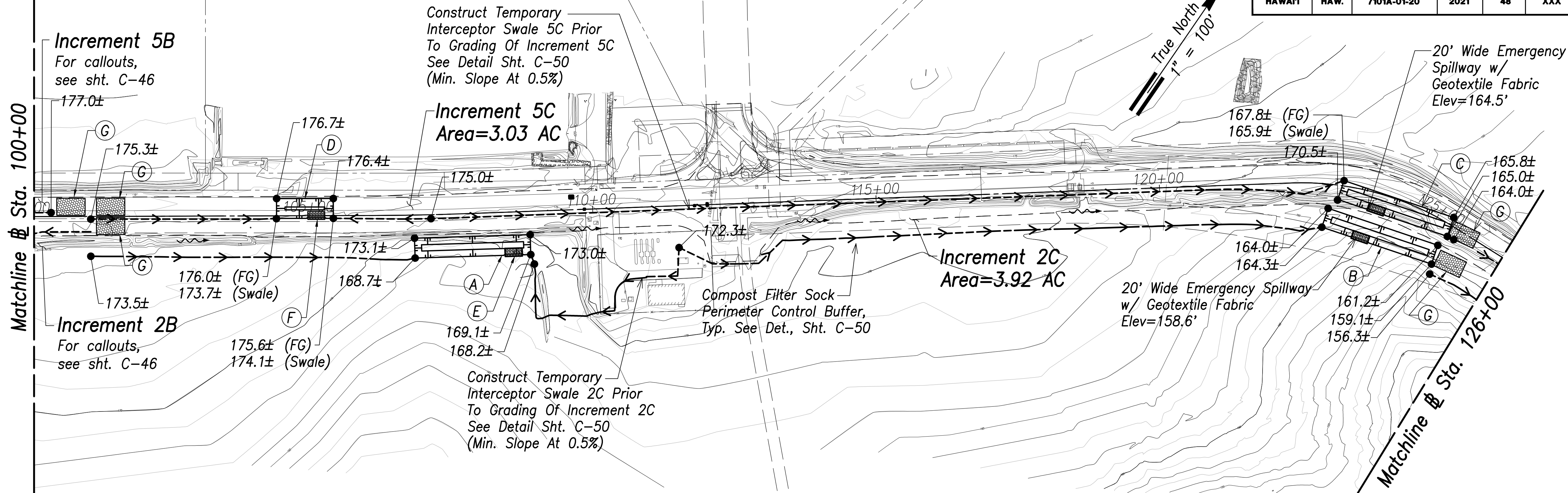
**Erosion and Sediment
Control Plan – 4**

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-46 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	48	XXX



Erosion and Sediment Control Plan – (Sta. 100+00 to Sta. 126+00)
Scale: 1" = 100'

Pre-Construction BMP

- Stabilized Compost Filter Sock
- Temporary Sediment Basins
- Temporary Swales

During Construction BMP

- Temporary Stabilization
- Inlet Protection for New CB

Post Construction BMP

- Permanent Stabilization BMP

Legend:

LOG and Disturbance	---
Filter Sock	—□—
Grading Increment Boundary	■ ■ ■ ■
Existing Ground Contour	~~~~~
Direction of Flow	→
Top Bank	—
Bottom Bank	- - -
Fill Slope	Y Y Y
Cut Slope	Y Y Y
Swale	—<—>—
Spot Elevation	● 126.4±

(A)
Temporary Sediment Basin 2C-1
To Be Constructed Prior To Grading Of Increment 2C
And Backfilled Upon Completion of Increment 2C
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(100' x 35' Storage Area)
Bot. Basin = 164.7 Ft.
Min. Depth = 4 Ft.
Contributing Area = 3.92 AC. (Inc. 2C)
Required Volume = 523 CY. (Inc. 2C)
Available Volume = 560 CY.
Total Available Volume = 1,120 CY (Inc. 2C)

(B)
Temporary Sediment Basin 2C-2
To Be Constructed Prior To Grading Of Increment 2C
And Backfilled Upon Completion of Increment 2C
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(204' x 35' Storage Area)
Bot. Basin = 155.1 Ft.
Min. Depth = 4 Ft.
Contributing Area = 3.92 AC. (Inc. 2C)
Required Volume = 523 CY. (Inc. 2C)
Available Volume = 560 CY.
Total Available Volume = 1,120 CY (Inc. 2C)

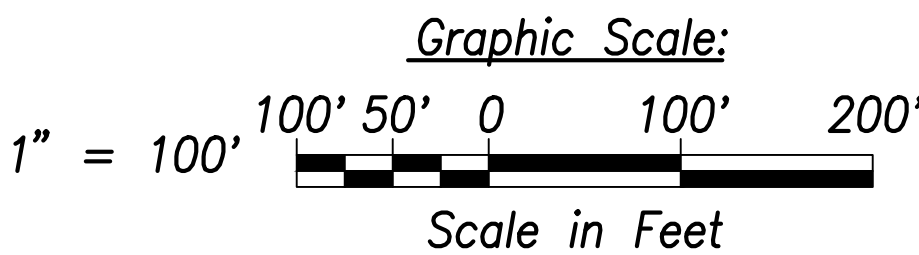
(C)
Temporary Sediment Basin 5C-1
To Be Constructed Prior To Grading Of
Increment 5C And Backfilled Upon
Completion of Increment 5C
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(204' x 35' Storage Area)
Bot. Basin = 161.0 Ft.
Min. Depth = 4 Ft.
Contributing Area = 3.03 AC. (Inc. 5C)
Required Volume = 404 CY. (Inc. 5C)
Available Volume = 560 CY.
Total Available Volume = 710 CY (Inc. 5C)

(D)
Temporary Sediment Basin 5C-2
To Be Constructed Prior To Grading Of
Increment 5C And Backfilled Upon
Completion of Increment 5C
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(100' x 35' Storage Area)
Bot. Basin = 170.6 Ft.
Min. Depth = 5 Ft.
Contributing Area = 2.28 AC. (Inc. 5C)
Required Volume = 304 CY. (Inc. 5C)
Available Volume = xxx CY.
Total Available Volume = xxx CY (Inc. 5C)

(E)
20' Wide Emergency Spillway
w/ Geotextile Fabric
Elev=168.3'

(F)
20' Wide Emergency Spillway
w/ Geotextile Fabric
Elev=175.1'

(G)
Stabilized Construction
Entrance (50'x30'x12" Min.)
See Det., Sht. C-50



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WILL BE UNDER MY OBSERVATION.
Signature: [Signature]
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

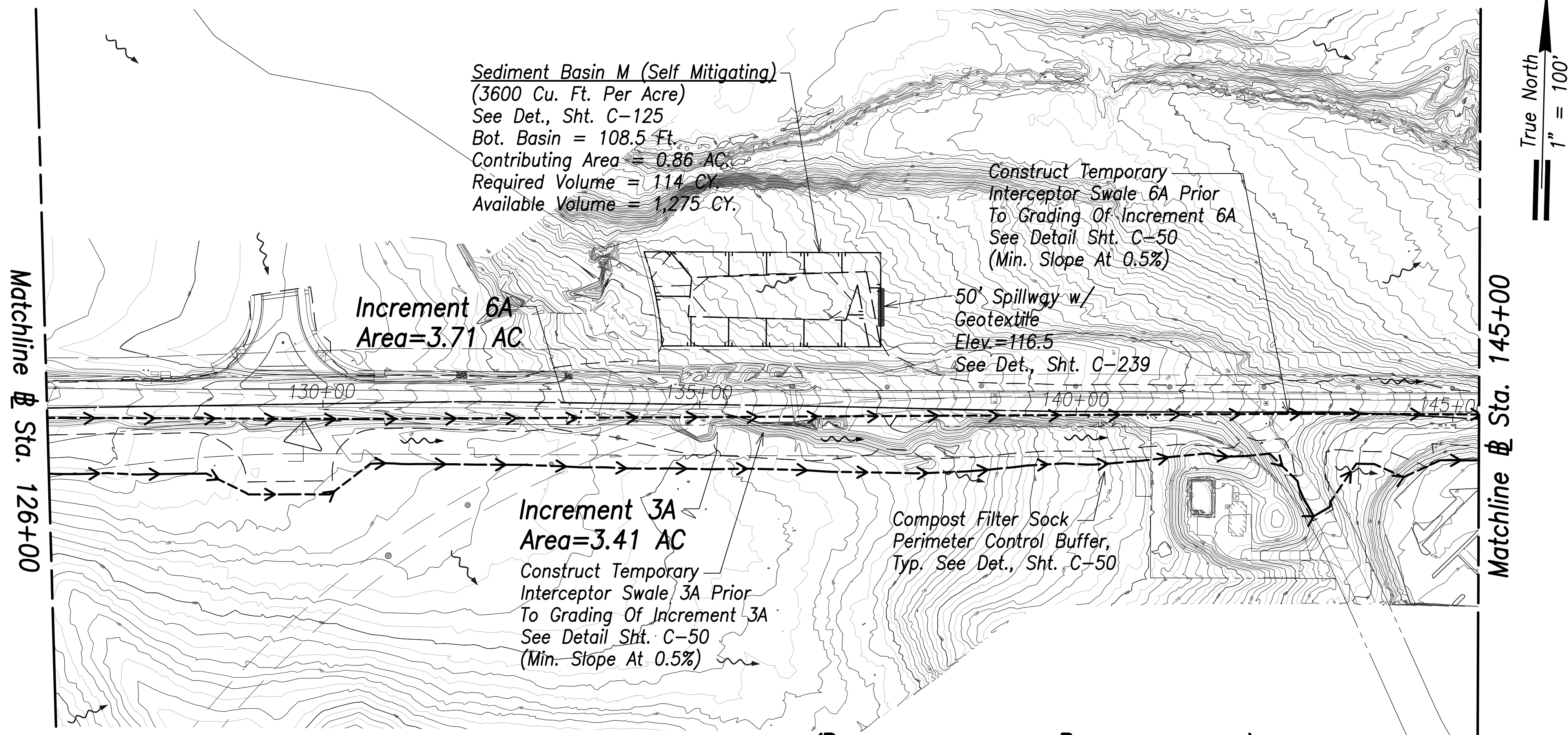
**Erosion and Sediment
Control Plan – 5**

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-47 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	49	XXX



Erosion and Sediment Control Plan - (Sta. 125+00 to Sta. 145+00)
Scale: 1" = 100'

Pre-Construction BMP

- Stabilized Compost Filter Sock
- Temporary Sediment Basins
- Temporary Swales

During Construction BMP

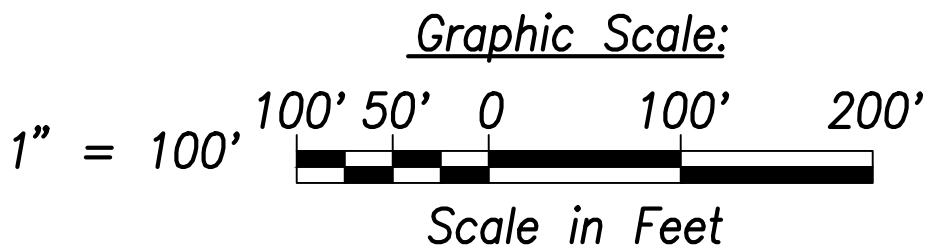
- Temporary Stabilization
- Inlet Protection for New CB

Post Construction BMP

- Permanent Stabilization BMP

Legend:

LOG and Disturbance	---
Filter Sock	—□—
Grading Increment Boundary	■ ■ ■ ■
Existing Ground Contour	~~~~~
Direction of Flow	→
Top Bank	—
Bottom Bank	—
Fill Slope	Y Y Y
Cut Slope	Y Y Y
Swale	—<—<—
Spot Elevation	● 126.4±



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OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
Signature: *Craig W. L. Luke*
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

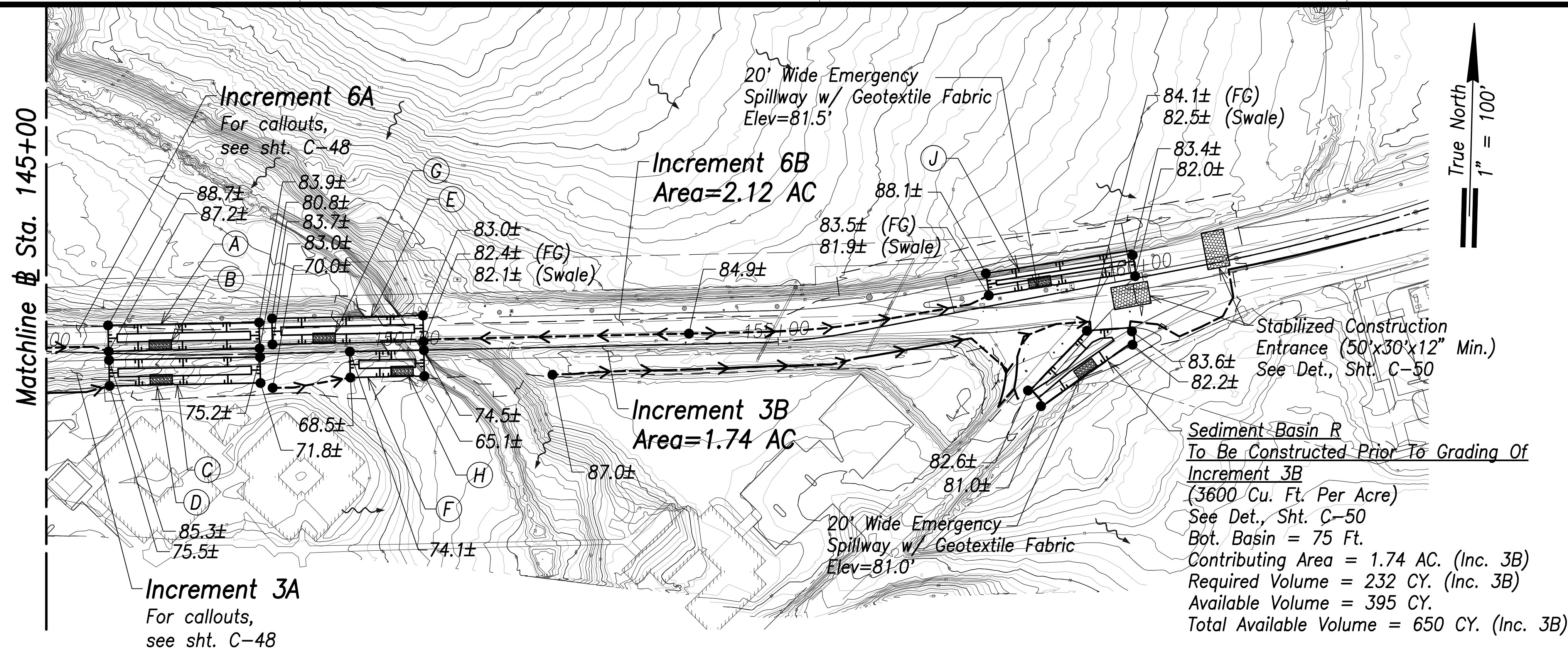
**Erosion and Sediment
Control Plan - 6**

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-48 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	50	XXX



Erosion and Sediment Control Plan – (Sta. 145+00 to Sta. 163+25)
Scale: 1" = 100'

- Pre-Construction BMP**
- Stabilized Compost Filter Sock
 - Temporary Sediment Basins
 - Temporary Swales

- During Construction BMP**
- Temporary Stabilization
 - Inlet Protection for New CB

- Post Construction BMP**
- Permanent Stabilization BMP

Legend:

LOG and Disturbance	---
Filter Sock	—□—
Grading Increment Boundary	■ ■ ■ ■
Existing Ground Contour	~~~~~
Direction of Flow	→
Top Bank	—
Bottom Bank	- - -
Fill Slope	Y Y Y
Cut Slope	Y Y Y
Swale	—<—>—
Spot Elevation	● 126.4±

(A)
Temporary Sediment Basin 6A
To Be Constructed Prior To Grading Of
Increment 6A And Backfilled Upon
Completion of Increment 6A
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(204' x 35' Storage Area)
Bot. Basin = 76.8 Ft.
Min. Depth = 4 Ft.
Contributing Area = 3.71 AC. (Inc. 6A)
Required Volume = 495 CY. (Inc. 6A)
Available Volume = 560 CY.

(B)
20' Wide Emergency
Spillway w/ Geotextile Fabric
Elev=80.3'

(C)
Temporary Sediment Basin 3A
To Be Constructed Prior To Grading Of
Increment 3A And Backfilled Upon
Completion of Increment 3A
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(204' x 35' Storage Area)
Bot. Basin = 67.8 Ft.
Min. Depth = 4 Ft.
Contributing Area = 3.41 AC. (Inc. 3A)
Required Volume = 455 CY. (Inc. 3A)
Available Volume = 560 CY.

(D)
20' Wide Emergency
Spillway w/ Geotextile Fabric
Elev=71.3'

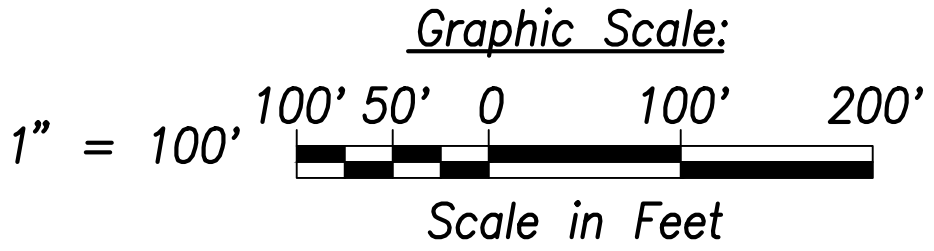
(E)
Temporary Sediment Basin 6B-1
To Be Constructed Prior To Grading Of
Increment 6B And Backfilled Upon Completion
of Increment 6B
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(204' x 35' Storage Area)
Bot. Basin = 78.4 Ft.
Min. Depth = 4 Ft.
Contributing Area = 2.12 AC. (Inc. 6B)
Required Volume = 283 CY. (Inc. 6B)
Available Volume = 560 CY.
Total Available Volume = 1,120 CY (Inc. 6B)

(F)
Temporary Sediment Basin 3B
To Be Constructed Prior To Grading Of
Increment 6B And Backfilled Upon
Completion of Increment 6B
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(100' x 35' Storage Area)
Bot. Basin = 61.1 Ft.
Min. Depth = 4 Ft.
Contributing Area = 1.74 AC. (Inc. 3B)
Required Volume = 232 CY. (Inc. 3B)
Available Volume = 255 CY.
Total Available Volume = 650 CY. (Inc. 3B)

(G)
20' Wide Emergency
Spillway w/ Geotextile Fabric
Elev=71.9'

(H)
20' Wide Emergency
Spillway w/ Geotextile Fabric
Elev=64.6'

(J)
Temporary Sediment Basin 6B-2
To Be Constructed Prior To Grading Of
Increment 6B And Backfilled Upon
Completion of Increment 6B
(3600 Cu. Ft. Per Acre)
See Det., Sht. C-50
(204' x 35' Storage Area)
Bot. Basin = 79.6 Ft.
Min. Depth = 4 Ft.
Contributing Area = 2.12 AC. (Inc. 6B)
Required Volume = 283 CY. (Inc. 6B)
Available Volume = 560 CY.
Total Available Volume = 1,120 CY. (Inc. 6B)



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SIGNATURE: *Craig W. Luke* EXPIRATION DATE: April 30, 2022
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

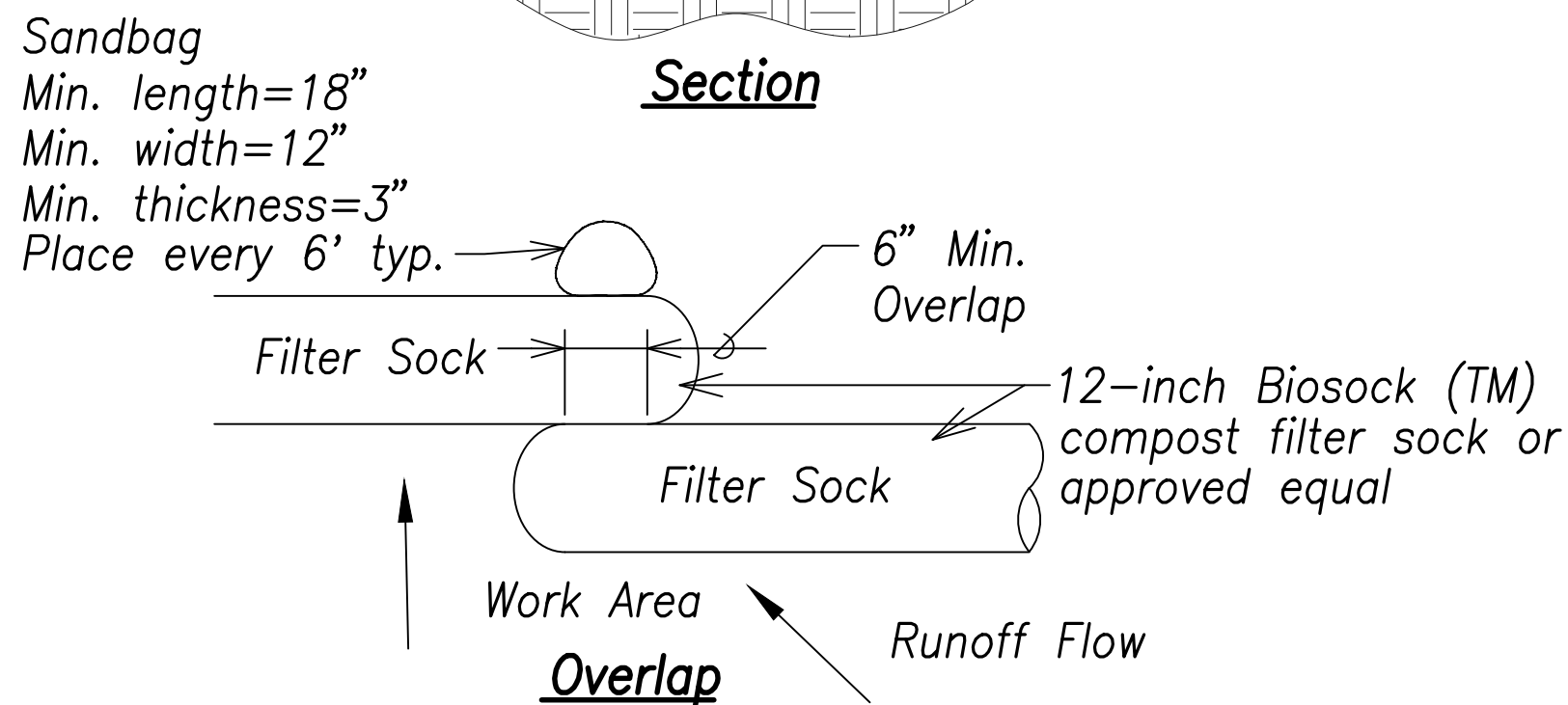
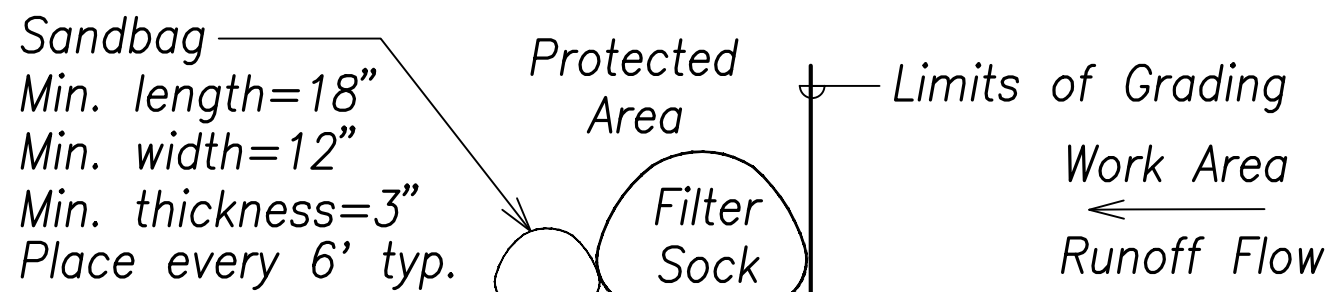
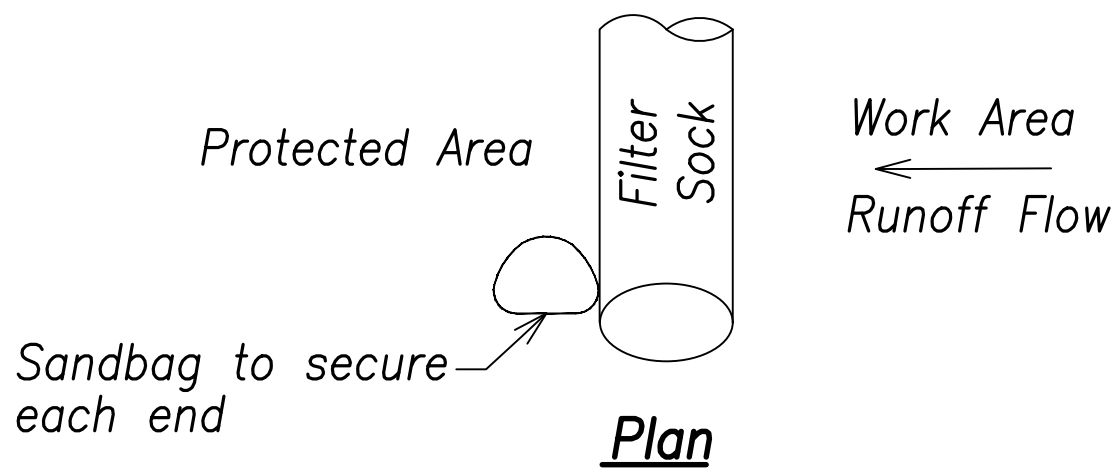
**Erosion and Sediment
Control Plan – 7**

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

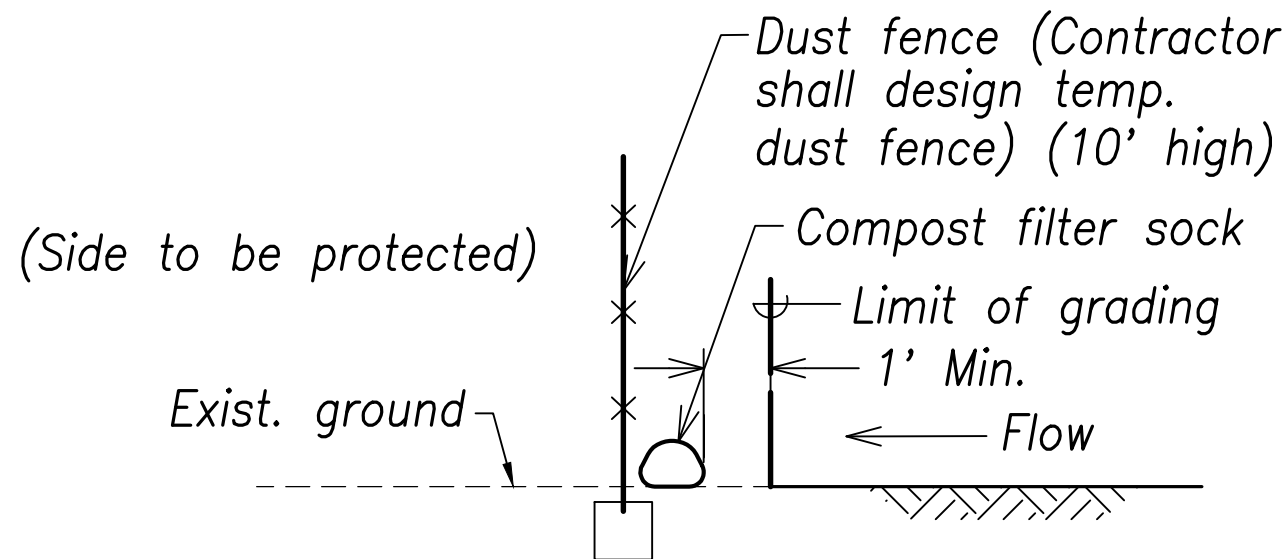
SHEET No. C-49 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	51	XXX



12" Compost Filter Sock Detail

Not to Scale

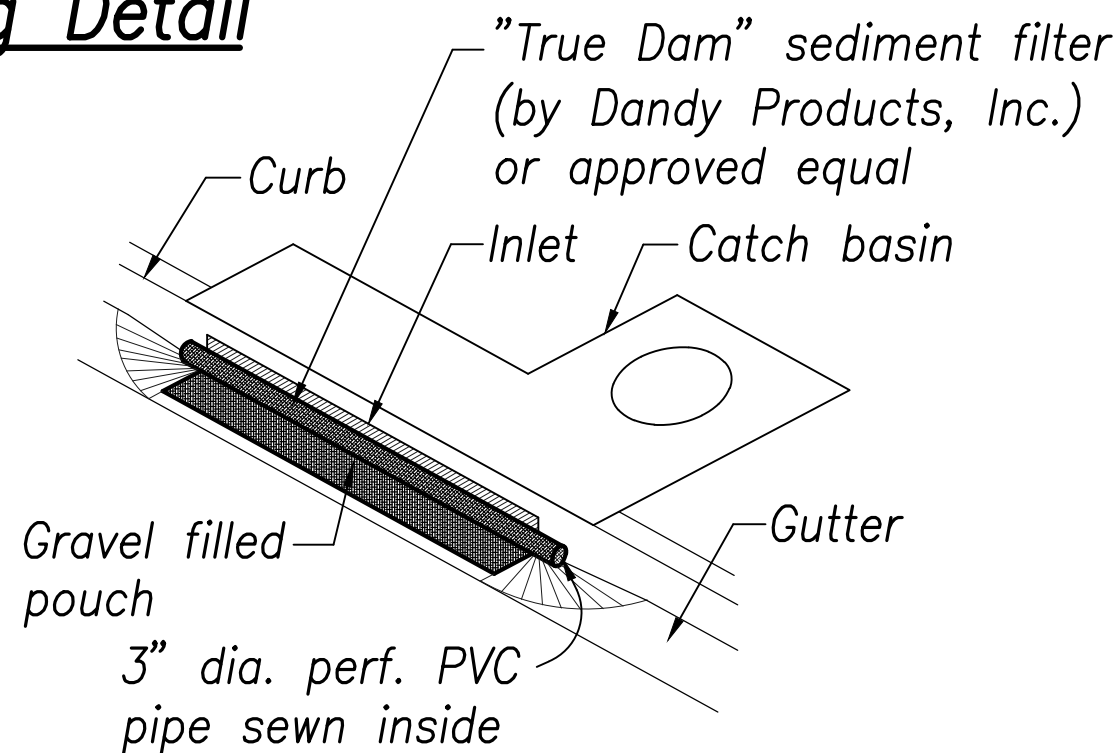


Limit of Grading Detail

Not to Scale

Notes:

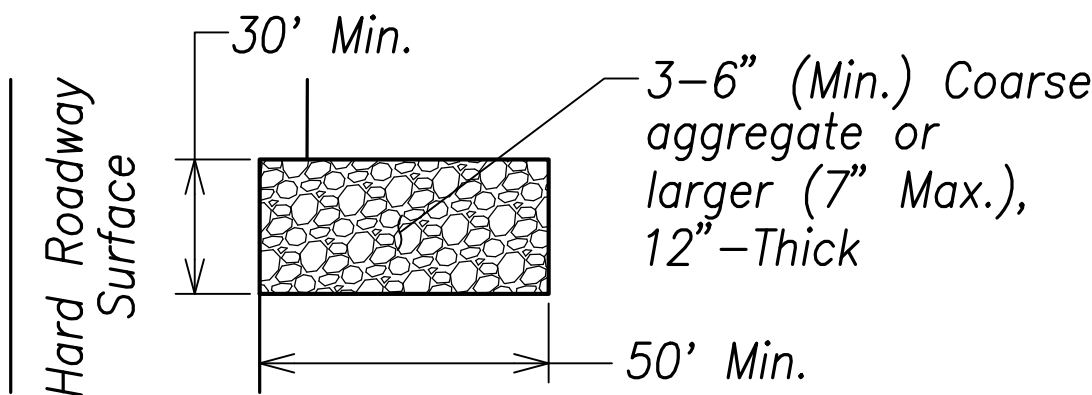
- Construct catch basin inlet protection on all new catch basin inlets.
- The Contractor shall clean catch basins and sediment filters weekly.
- The Contractor shall remove the sediment filters during above normal rainfall events, then replace after the event.



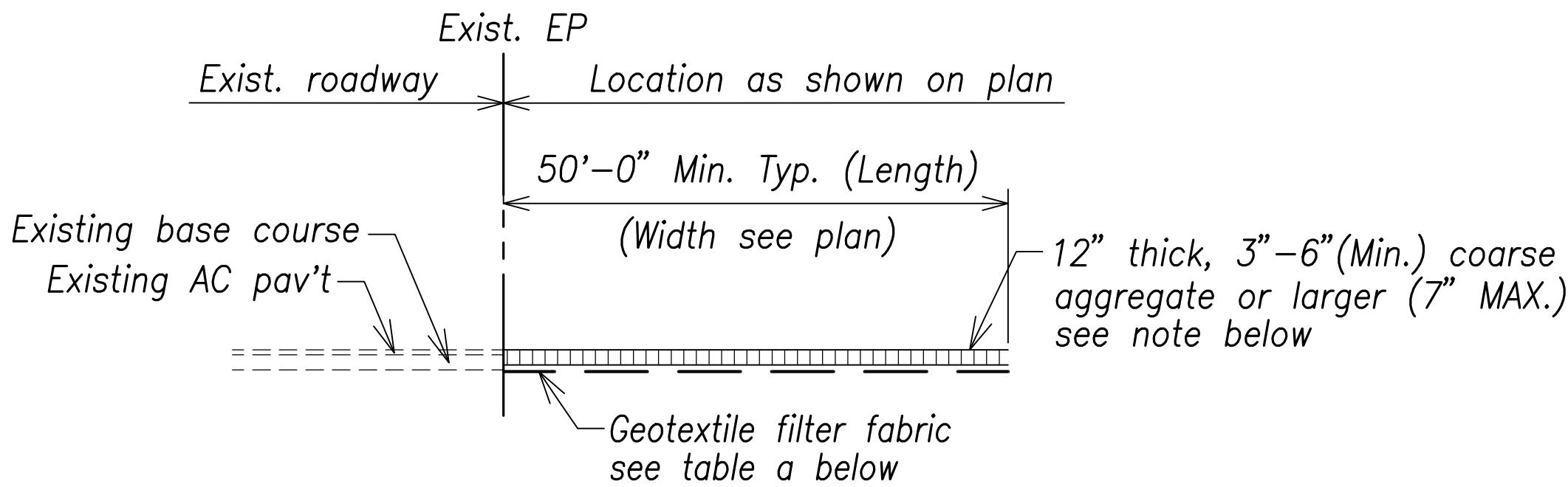
Catch Basin Protection

Inlet Protection (Sediment Control Filter)

Not to Scale



Plan



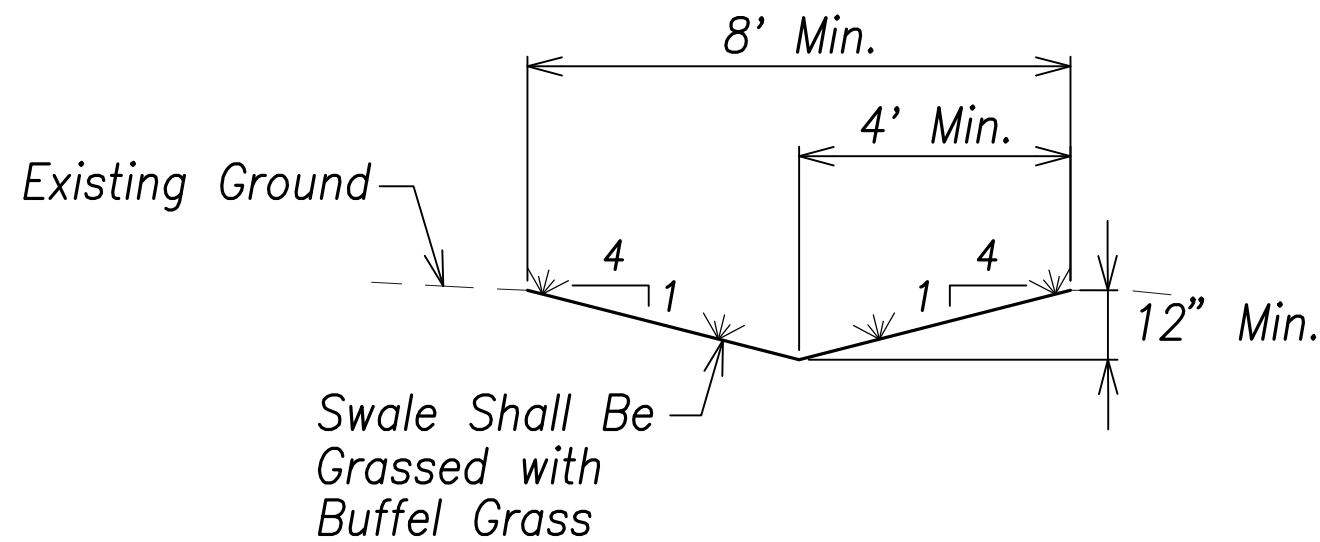
Section

Table A – Geotextile Requirements	
Physical Property	Requirements
Grab Strength	315 MARV (ASTM D4632)
Sewn Seam Strength	285 MARV (ASTM D4884)
Trapezoid Tear Strength	115 MARV (ASTM D4533)
Puncture Resistance	115 MARV (ASTM D4833)
Permittivity	0.05' (ASTM D4491)
Apparent Opening Size (U.S. Standard Sieve)	40 MARV (ASTM D4751)
Ultraviolet Degradation, 500 hours	50 MARV (ASTM D4355)

Note:
12" Coarse aggregate layer shall be removed immediately prior to installation of roadway base course.

Stabilized Construction Entrance

Not to Scale

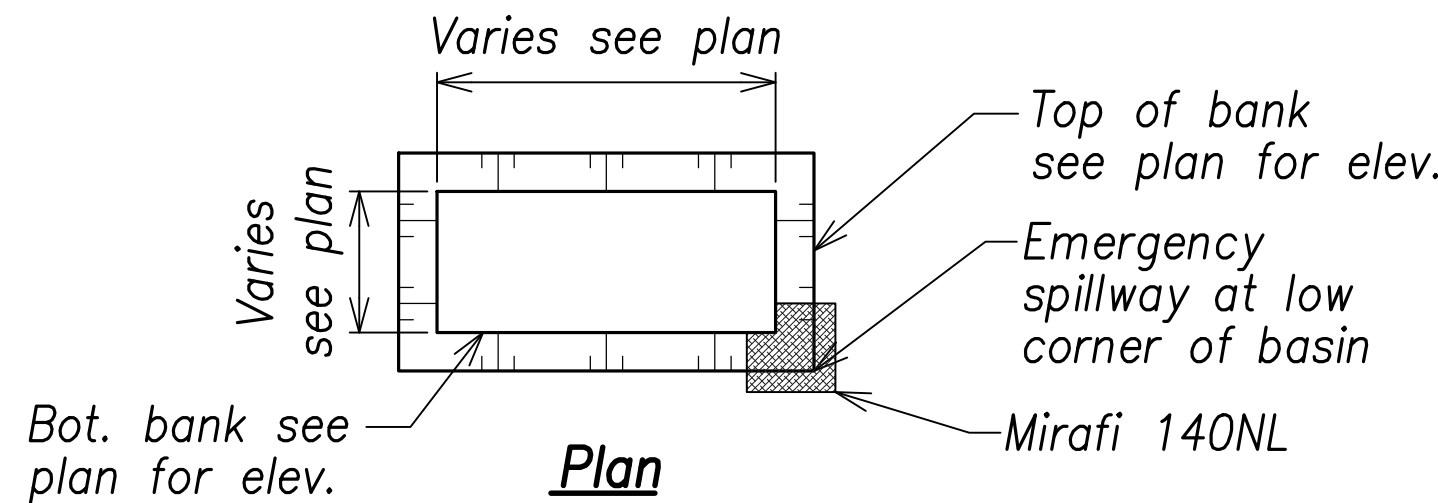


Notes:

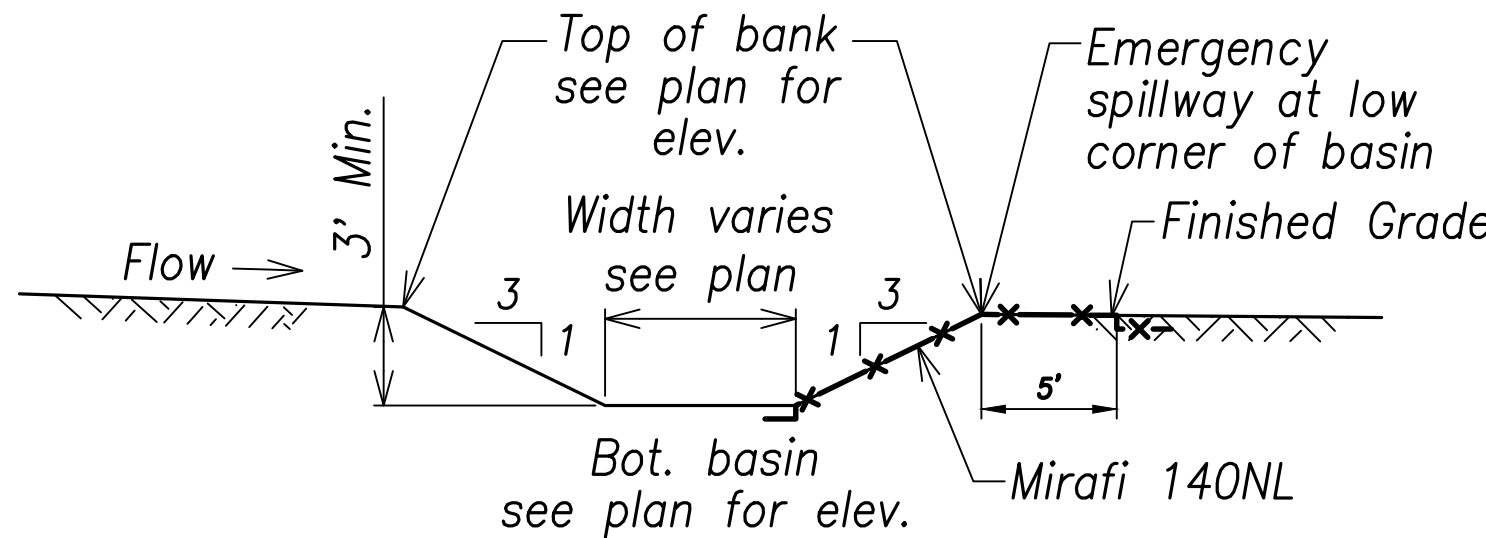
- temporary interceptor swale shall be removed and graded last upon completion of grading increments.
- Temporary interceptor swale shall be stabilized immediately with hydroseed.

Temporary Interceptor Swale

Not to Scale



Plan



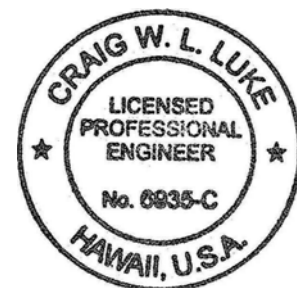
Section

Notes:

- In lieu of providing outlet structures, contractor shall maintain the sediment basin in effective operating condition and provide pumping if any water has been standing for 72 hours. the contractor shall pump out standing water in the sediment basins and dispose of it at the temporary discharge area.
- Double compost filter sock (perimeter control) shall be placed at the downstream side of the temporary discharge area. if the temporary discharge area does not have adequate vegetation, the contractor shall grass the temporary discharge area prior to disposing the water. Double compost filter sock (perimeter control) and grassing shall be maintained during grading operations and use of the discharge area.
- Sediment that accumulates within the temporary sediment basins shall be periodically removed. Sediment shall be removed when sediment accumulation reaches one-half of the designated storage volume.

Temporary Sediment Basin

Not to Scale



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Erosion and Sediment
Control Details

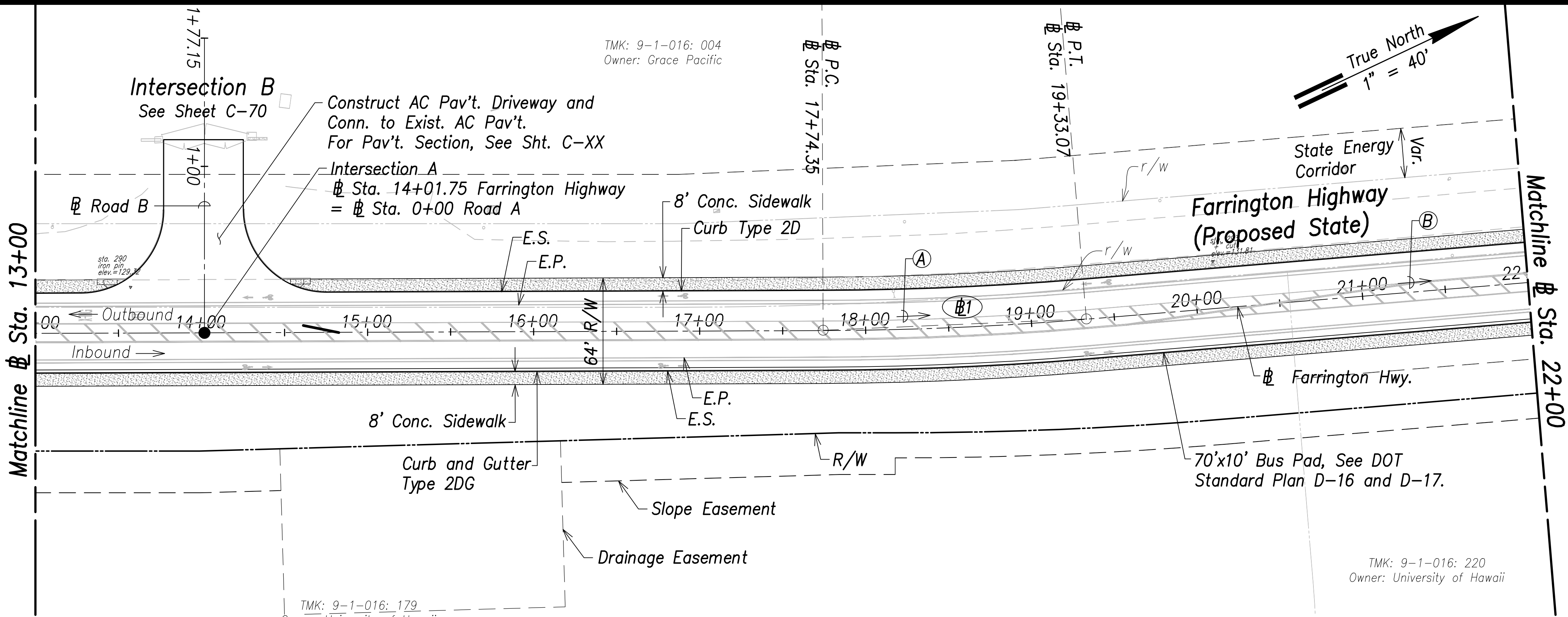
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-50 OF XXX SHEETS

FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\Roadway Plan - Sta. 13+00 to 22+00 - PLAN.dwg saved March 25, 2022

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



Farrington Highway Plan - (@ Sta. 13+00 to @ Sta. 22+00)

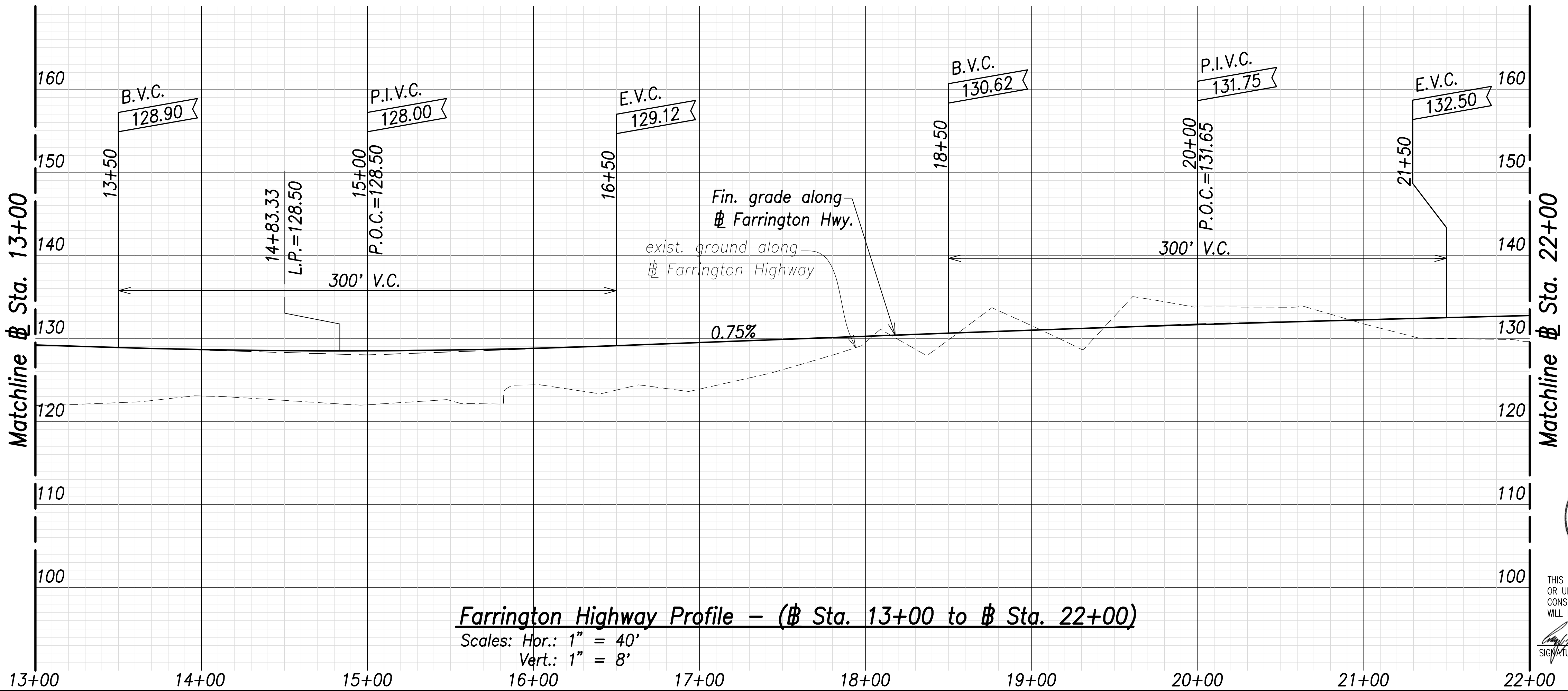
Scale: 1" = 40'

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	54	XXX

@ Curve Data:

- Ⓐ
202°51'24", 158.67'
(@ P.C. to @ P.T.)
- Ⓑ
200°35'00", 805.46'
(@ P.T. to @ P.C.)

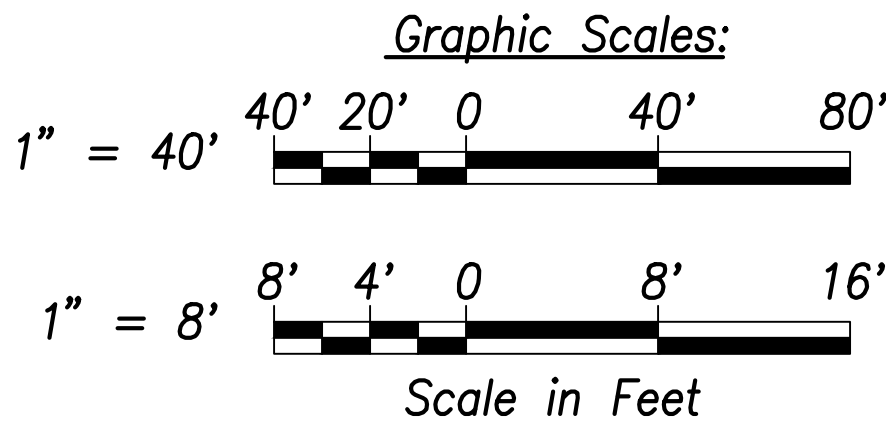
- Ⓐ
Δ=4°32'49"
Δ/2=2°16'25"
R=2000.00'
T=79.40'
C=158.67'
Lc=158.72'



Farrington Highway Profile - (@ Sta. 13+00 to @ Sta. 22+00)

Scales: Hor.: 1" = 40'
Vert.: 1" = 8'

Note:
The Contractor Shall Phase Construction to Ensure 1 Lane in Each Direction Remains Operational



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Signature: *Craig W. L. Luke*

EXPIRATION DATE OF THE LICENSE: April 30, 2022

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
@ Sta. 13+00 to @ Sta. 22+00

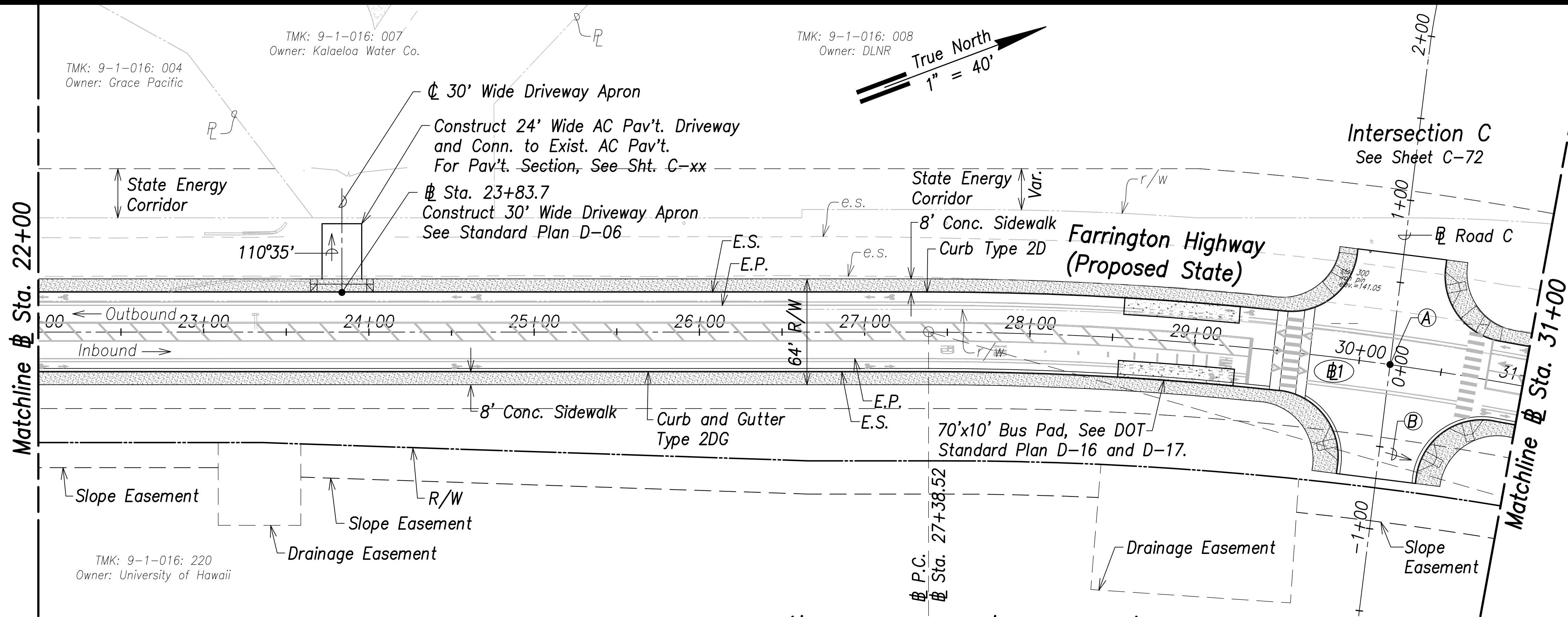
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-53 OF XXX SHEETS

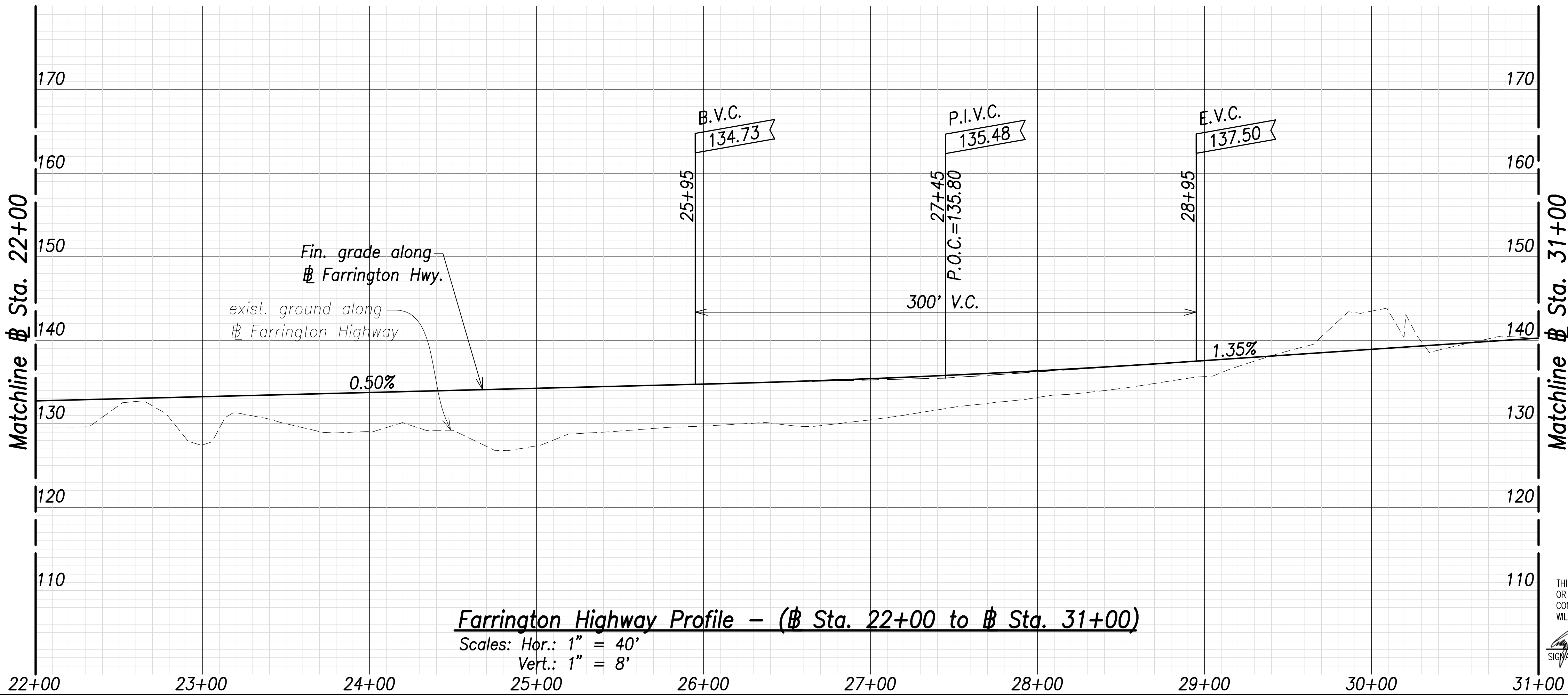
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ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY _____	_____
	TRACED BY _____	_____
	CHECKED BY _____	_____
NOTE BOOK	QUANTITIES BY _____	_____
	CHECKED BY _____	_____
No. _____		



Farrington Highway Plan - (Sta. 22+00 to Sta. 31+00)

Scale: 1" = 40'



Farrington Highway Profile - (Sta. 22+00 to Sta. 31+00)

Scales: Hor.: 1" = 40'
Vert.: 1" = 8'

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	55	XXX

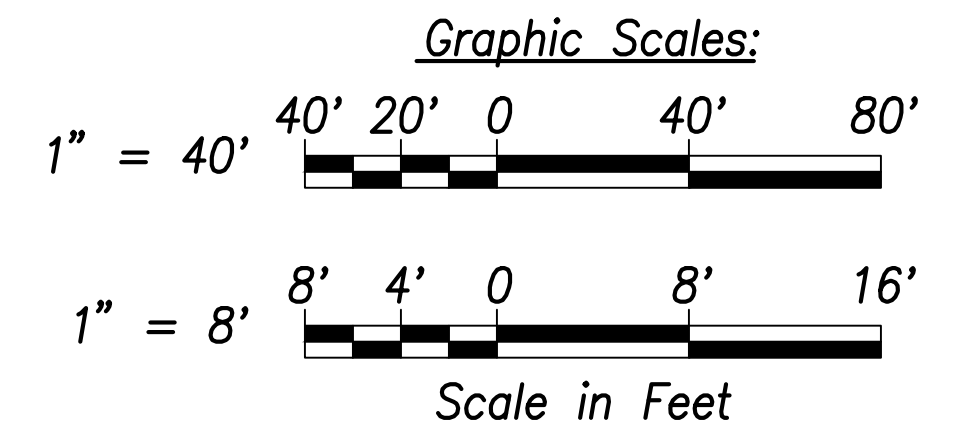
Ⓐ
Intersection C
Sta. 30+18.81 Farrington Highway
= Sta. 0+00 Road C
Install Street Survey Monument
See Std. Plan D-08

Ⓑ
216°37'51", 1105.73'
(P.C. to P.T.)

Curve Data:

Ⓐ
Δ=32°05'42"
Δ/2=16°02'51"
R=2000.00'
T=575.28'
C=1105.73'
Lc=1120.32'

Note:
The Contractor Shall Phase Construction to Ensure 1 Lane in Each Direction Remains Operational



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Signature: _____
April 30, 2022
EXPIRATION DATE OF THE LICENSE

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

Roadway Plan and Profile
Sta. 22+00 to Sta. 31+00

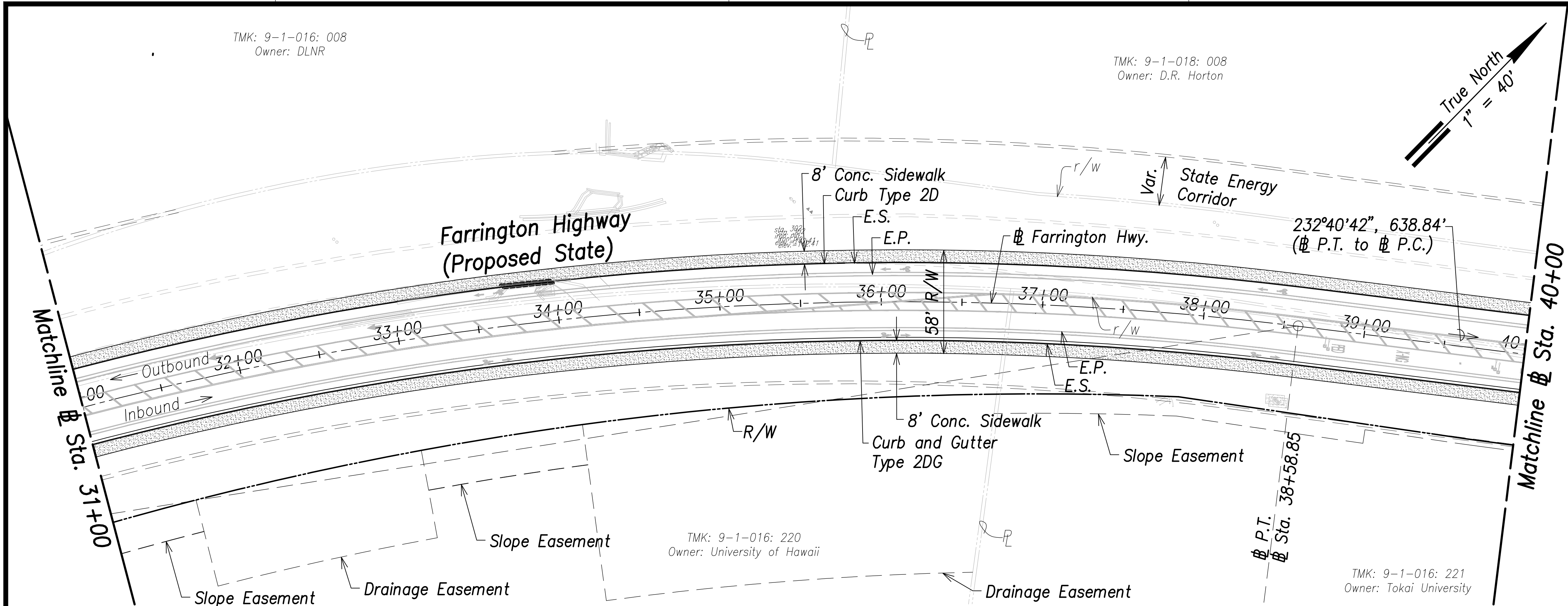
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-54 OF XXX SHEETS

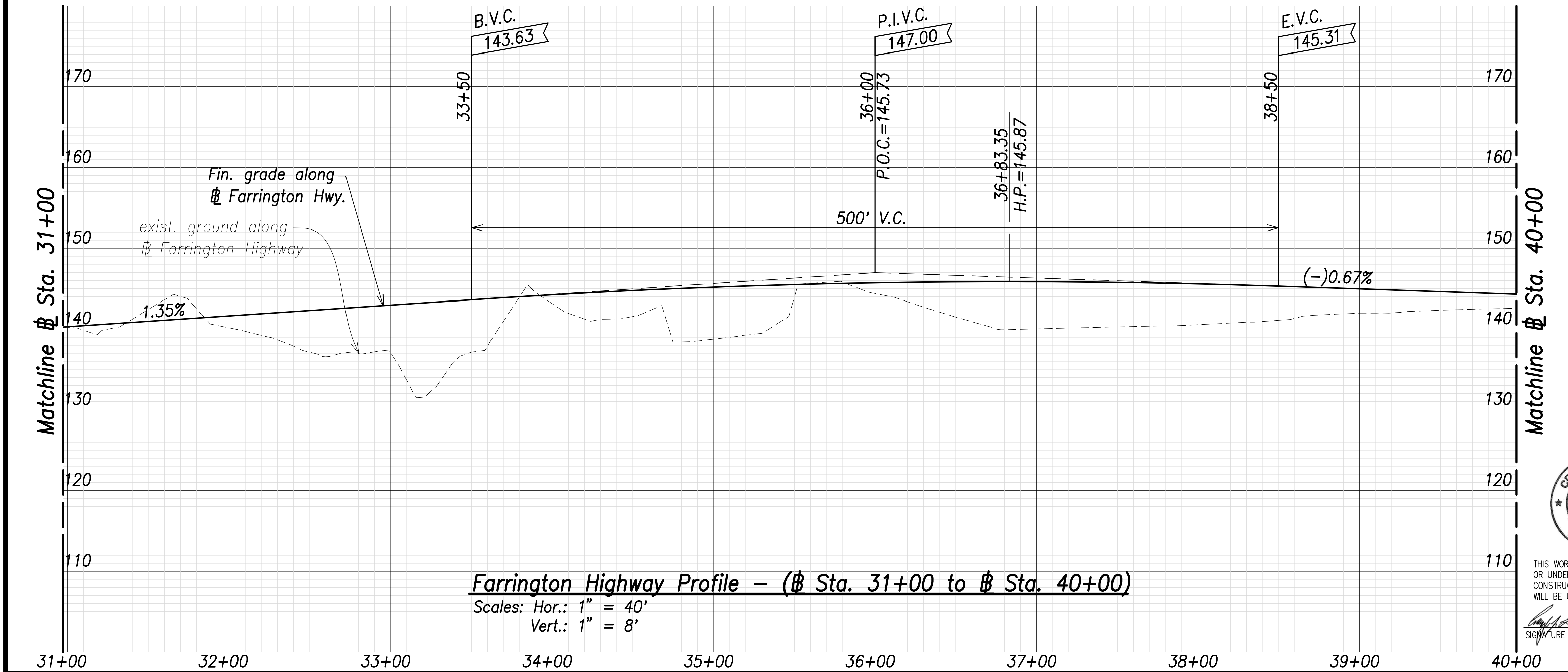
FILE: K:\Civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-55 Roadway Plan - Sta. 31+00 to 40+00 - PLAN.dwg saved March 15, 2022

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



Farrington Highway Plan - (@ Sta. 31+00 to @ Sta. 40+00)

Scale: 1" = 40'



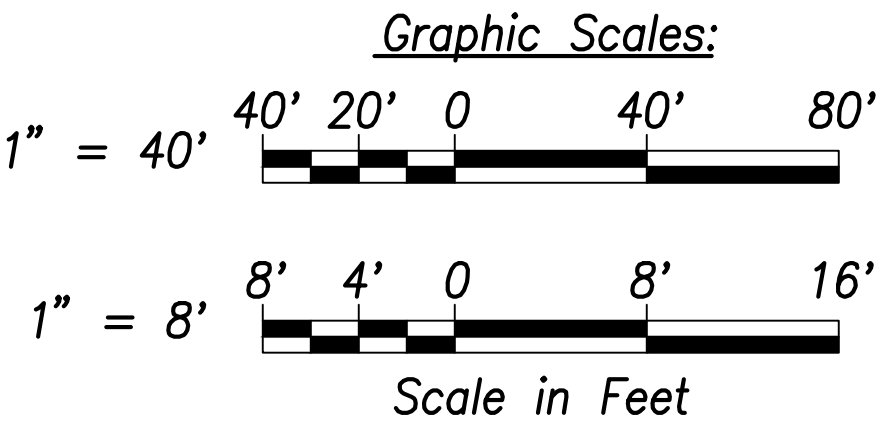
Farrington Highway Profile - (@ Sta. 31+00 to @ Sta. 40+00)

Scales: Hor.: 1" = 40'

Vert.: 1" = 8'

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	56	XXX

Note:
The Contractor Shall Phase Construction
to Ensure 1 Lane in Each Direction
Remains Operational



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OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.

Signature: *Craig W. L. Luke*
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

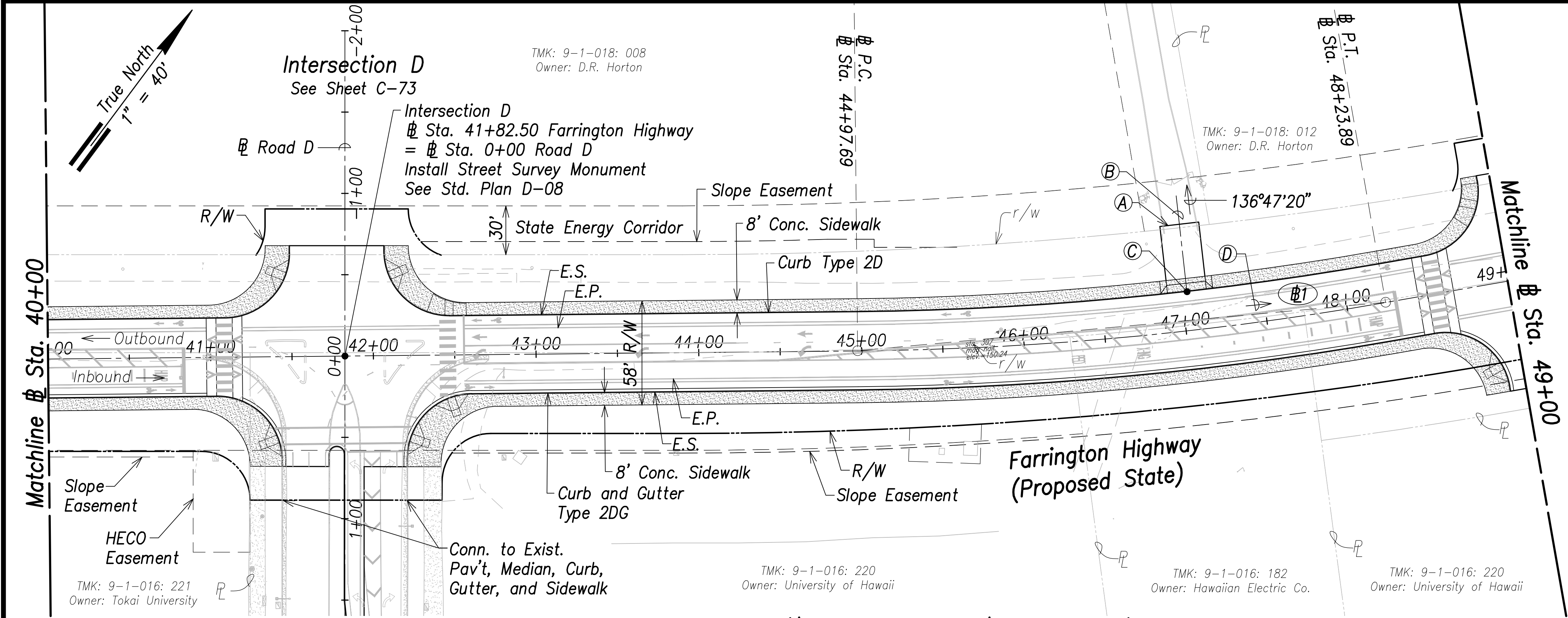
Roadway Plan and Profile
@ Sta. 31+00 to @ Sta. 40+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-55 OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	57	XXX



①
Construct 24' Wide AC Pav't. Driveway and Conn. to Exist. AC Pav't. For Pav't. Section, See Sht. C-XX

②
@ 30' Wide Driveway Apron

③
@ Sta. 47+03.3
Construct 24' Wide Driveway Apron
See Standard Plan D-06

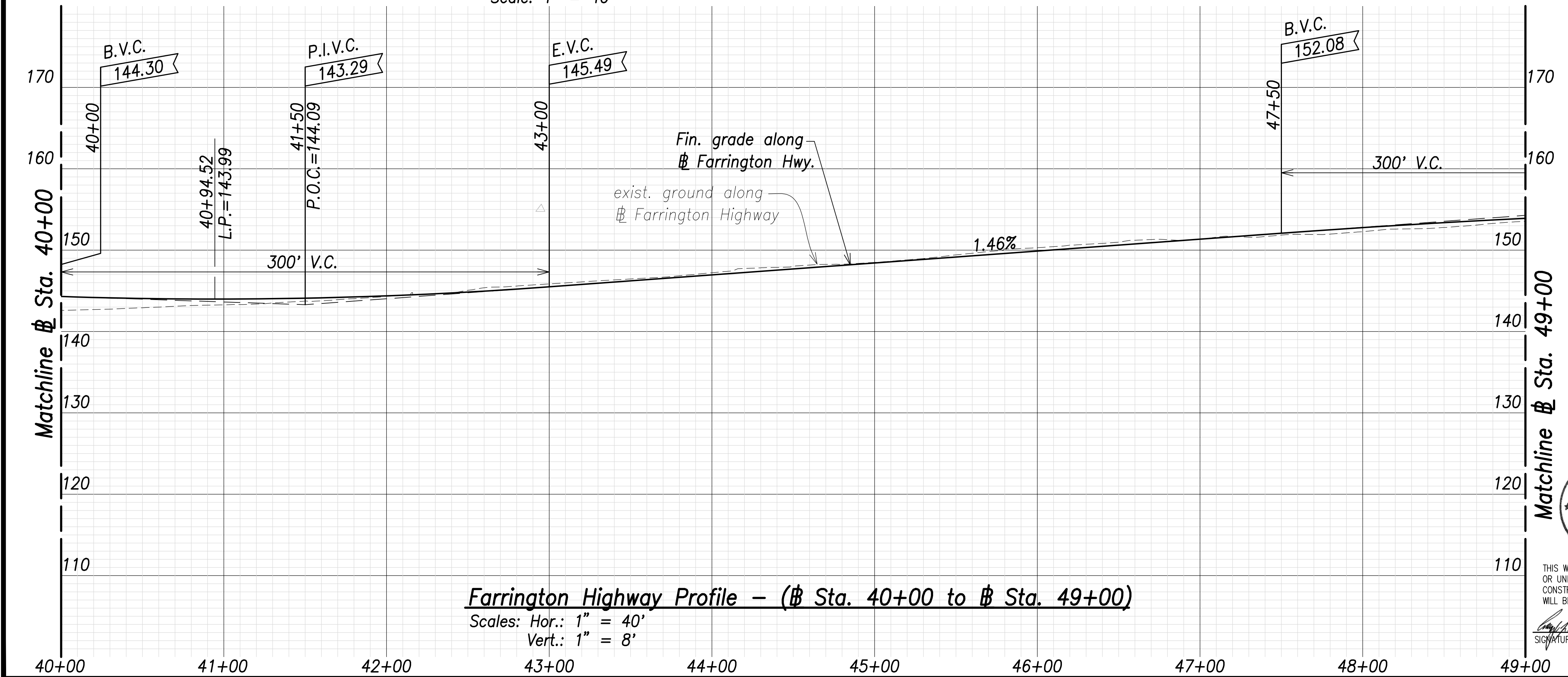
④
228°00'21", 325.84'
(@ P.C. to @ P.T.)

@ Curve Data:

①
 $\Delta=9^{\circ}20'42''$
 $\Delta/2=4^{\circ}40'21''$
 $R=2000.00'$
 $T=163.46'$
 $C=325.84'$
 $L_c=326.20'$

Farrington Highway Plan - (@ Sta. 40+00 to @ Sta. 49+00)

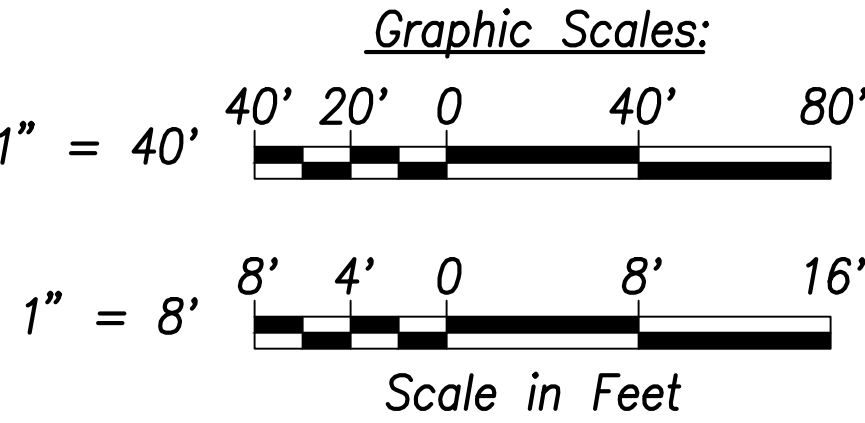
Scale: 1" = 40'



Farrington Highway Profile - (@ Sta. 40+00 to @ Sta. 49+00)

Scales: Hor.: 1" = 40'
Vert.: 1" = 8'

Note:
The Contractor Shall Phase Construction to Ensure 1 Lane in Each Direction Remains Operational



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Signature: *Craig W. L. Luke*

April 30, 2022
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
@ Sta. 40+00 to @ Sta. 49+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-56 OF XXX SHEETS

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

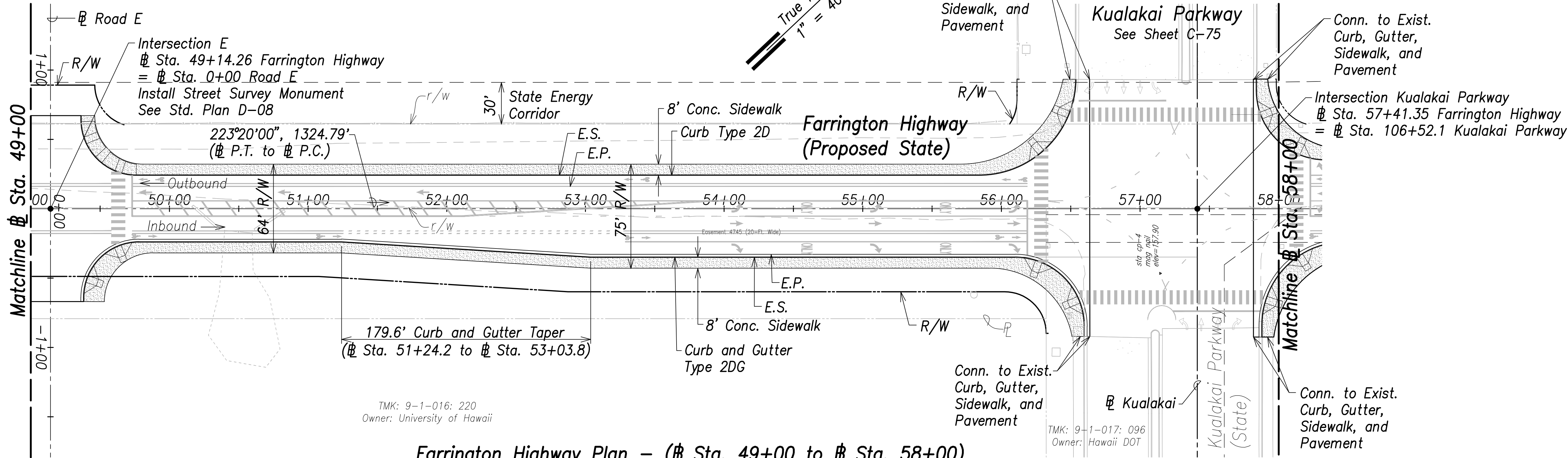
FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-57 Roadway Plan - Sta. 49+00 to 58+00 - PLAN.dwg saved March 16, 2022

Intersection E
See Sheet C-74

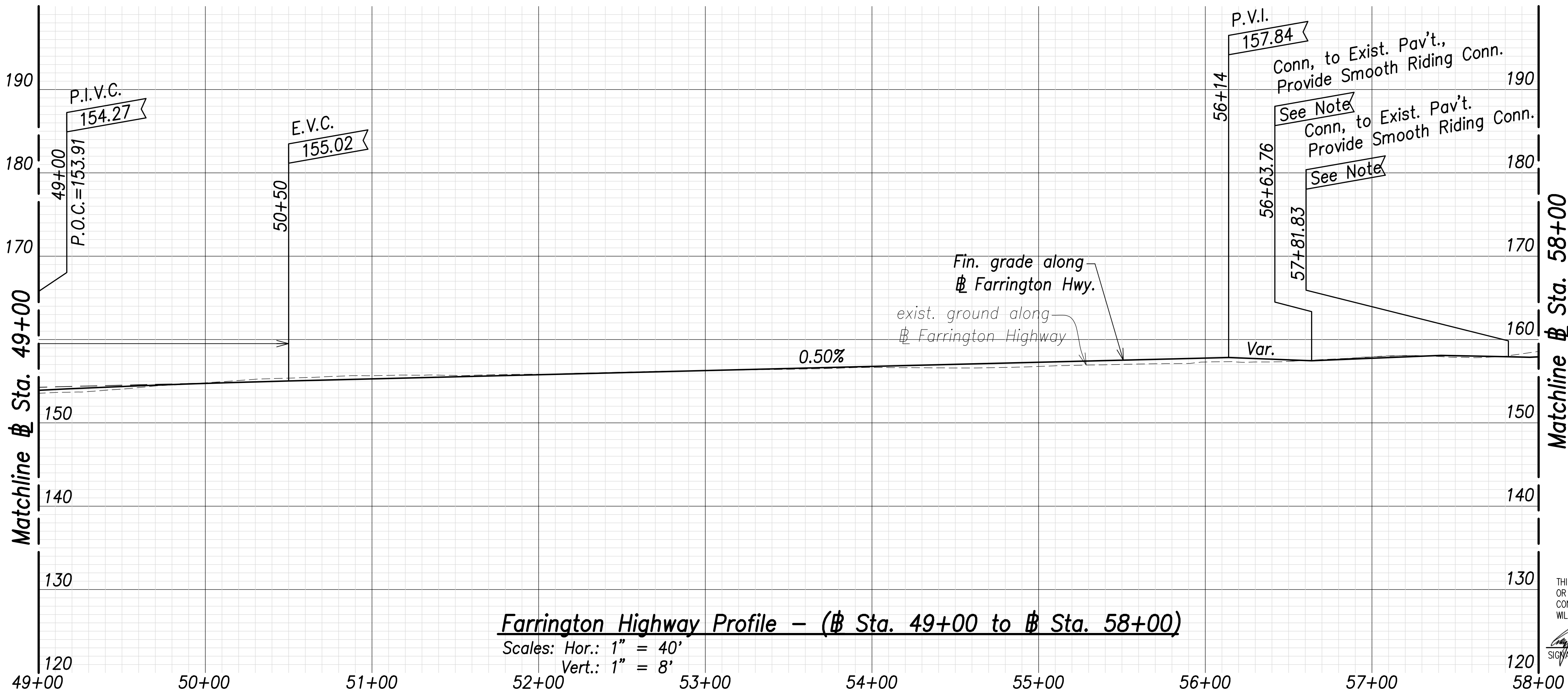
TMK: 9-1-018: 012
Owner: D.R. Horton

TMK: 9-1-018: 013
Owner: D.R. Horton

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	58	XXX

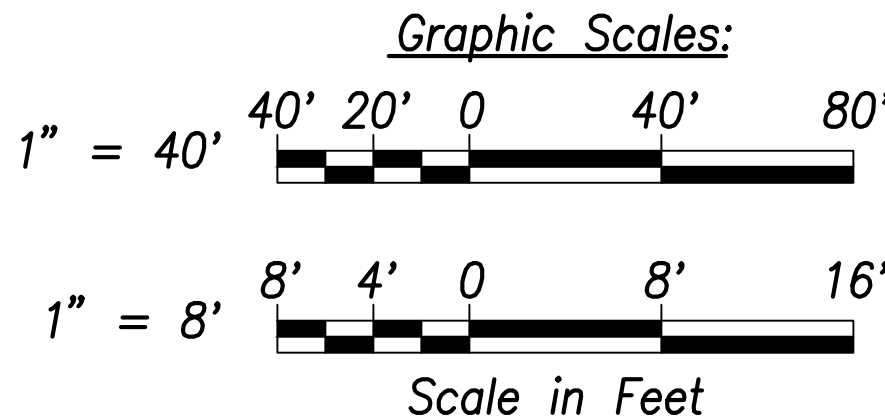


Farrington Highway Plan - (Sta. 49+00 to Sta. 58+00)
Scale: 1" = 40'



Farrington Highway Profile - (Sta. 49+00 to Sta. 58+00)
Scales: Hor.: 1" = 40'
Vert.: 1" = 8'

Note:
The Contractor Shall Phase Construction to Ensure 1 Lane in Each Direction Remains Operational



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Signature: [Signature]
April 30, 2022
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
Sta. 49+00 to Sta. 58+00

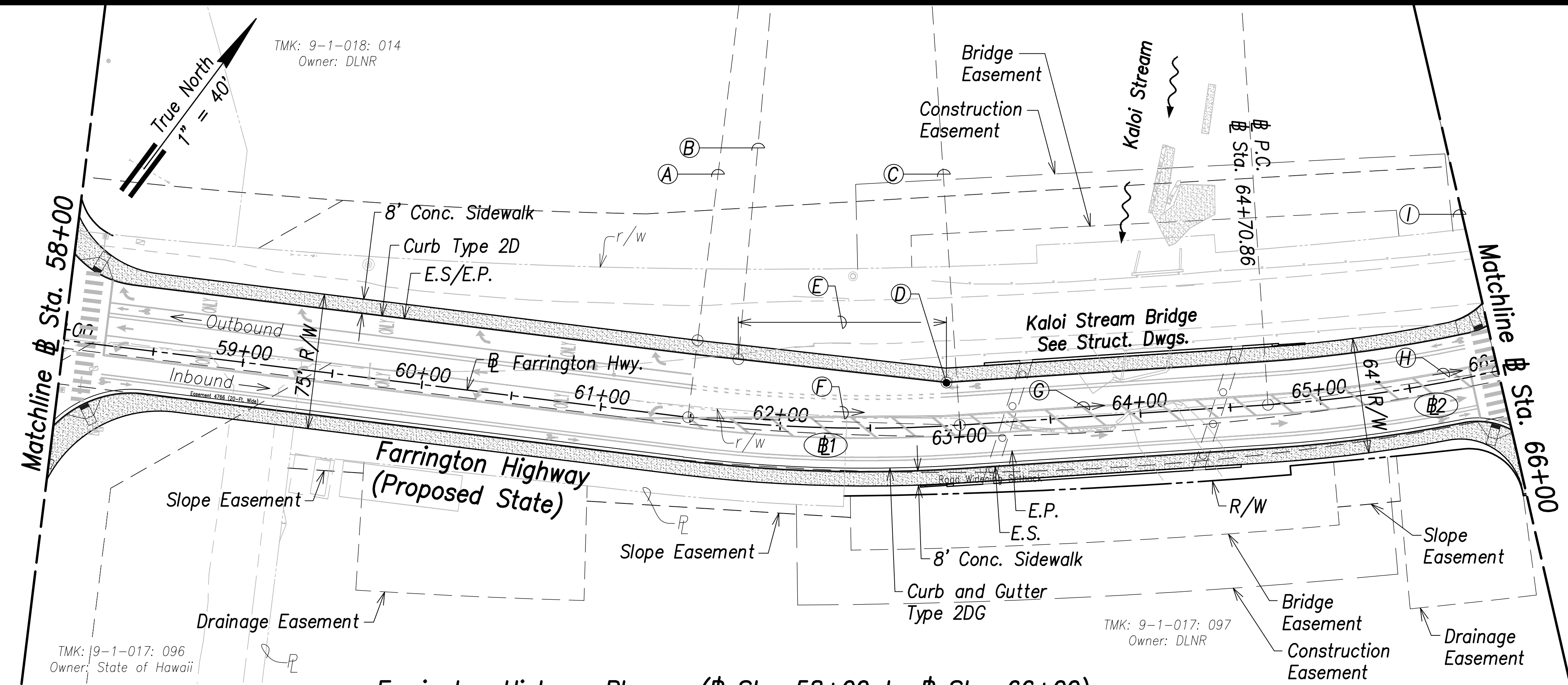
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

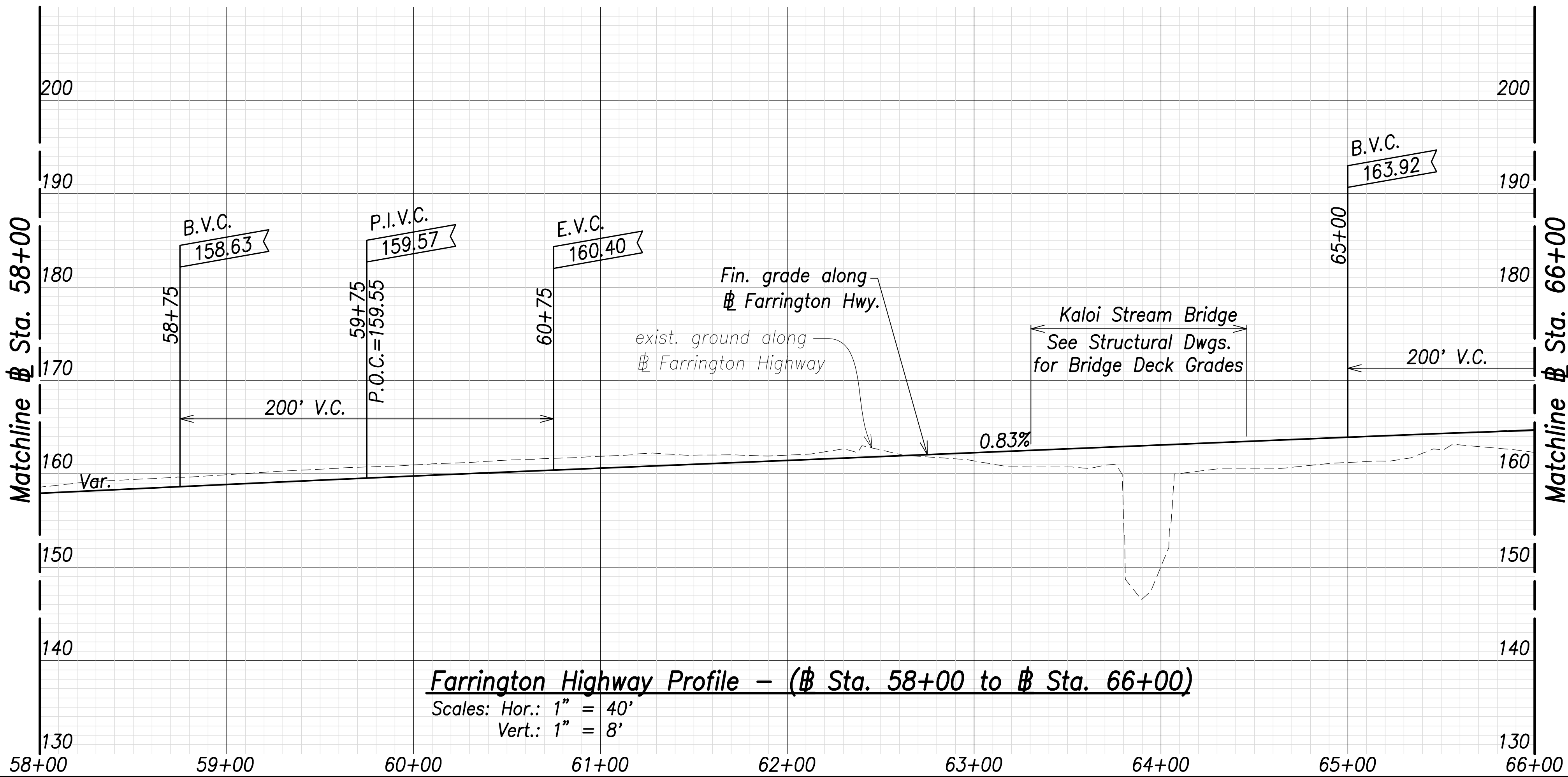
SHEET No. C-57 OF XXX SHEETS

FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-58 Roadway Plan - Sta. 58+00 to 66+00 - PLAN.dwg saved March 21, 2022

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



Farrington Highway Plan - (Sta. 58+00 to Sta. 66+00)
Scale: 1" = 40'



Farrington Highway Profile - (Sta. 58+00 to Sta. 66+00)
Scales: Hor.: 1" = 40'
Vert.: 1" = 8'

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	59	XXX

(A) P.C.
Sta. 61+48.68

(B) Curb P.T.
Sta. 61+73.50,
o/s 35' Lt.

(C) P.T.
Sta. 62+99.63

(D) Curb P.I.
Sta. 62+93.64,
o/s 24' Lt.

(E) 115.4' Curb and Gutter Taper
(Sta. 61+73.5 to
Sta. 62+93.6)

(F) 217°55'41", 150.72'
(P.C. to P.T.)

(G) 212°31'21", 171.23'
(P.T. to P.C.)

(H) 207°54'38", 128.65'
(P.C. to P.T.)

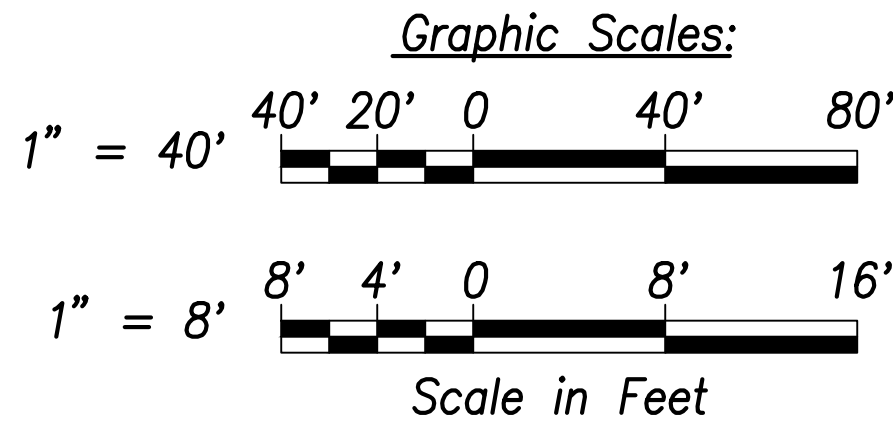
(I) P.T.
Sta. 65+99.65

Curve Data:

(B1)
 $\Delta=10^{\circ}48'39''$
 $\Delta/2=5^{\circ}24'19''$
 $R=800.00'$
 $T=75.70'$
 $C=150.72'$
 $Lc=150.95'$

(B2)
 $\Delta=9^{\circ}13'27''$
 $\Delta/2=4^{\circ}36'44''$
 $R=800.00'$
 $T=64.54'$
 $C=128.65'$
 $Lc=128.79'$

Note:
The Contractor Shall Phase Construction to Ensure 1 Lane in Each Direction Remains Operational



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Signature: *Craig W. L. Luke*
April 30, 2022
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
Sta. 58+00 to Sta. 66+00

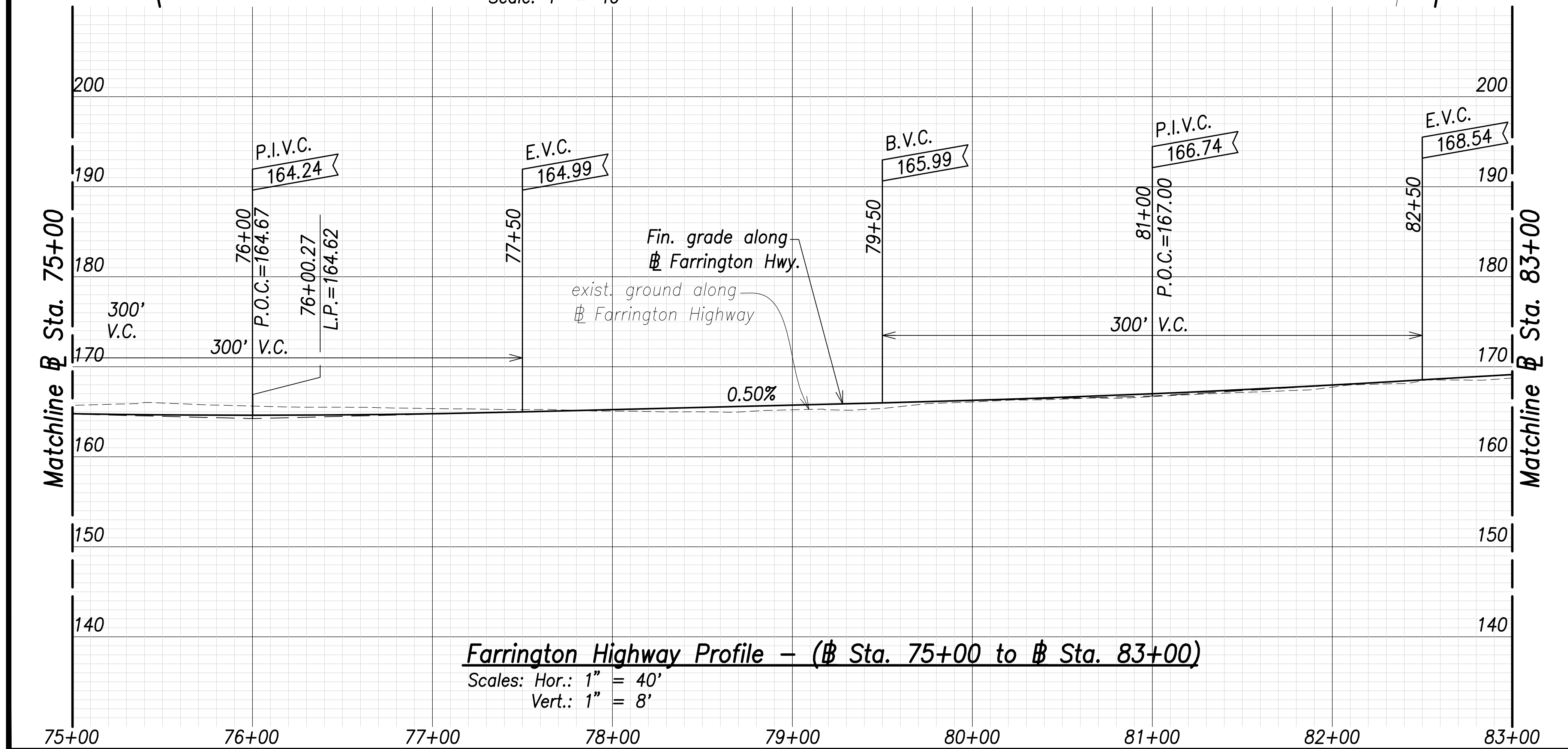
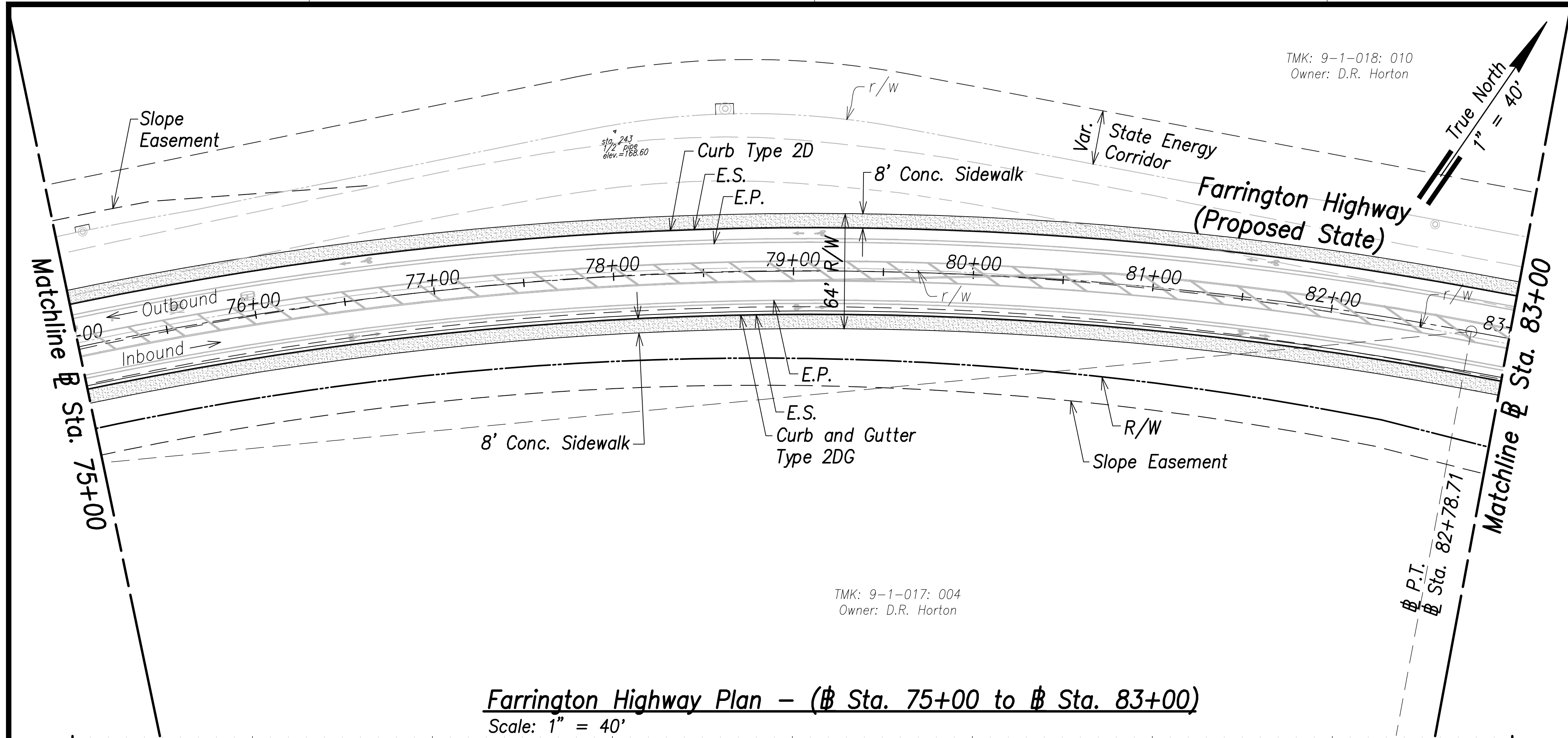
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-58 OF XXX SHEETS

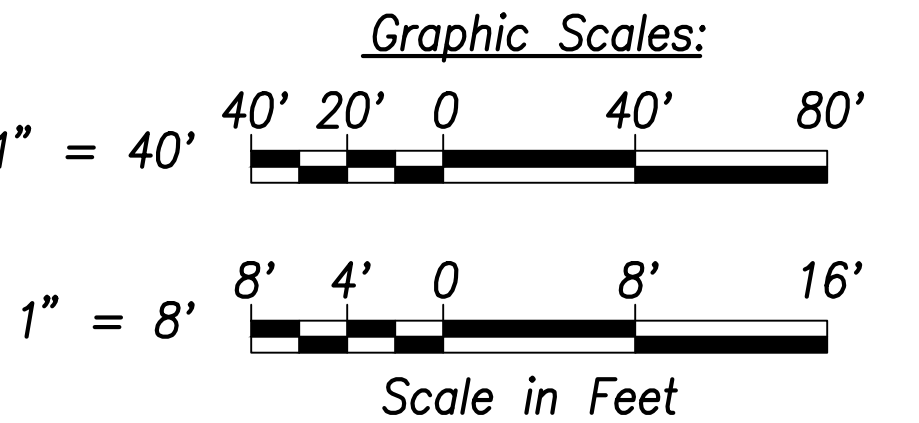
FILE: K:\Civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-60 Roadway Plan - Sta. 75+00 to 83+00 - PLAN.dwg saved March 21, 2022

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



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	61	XXX

Note:
The Contractor Shall Phase Construction
to Ensure 1 Lane in Each Direction
Remains Operational



THIS WORK WAS PREPARED BY ME
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WILL BE UNDER MY OBSERVATION.

SIGNATURE _____

EXPIRATION DATE
OF THE LICENSE April 30, 2022

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
Sta. 75+00 to Sta. 83+00

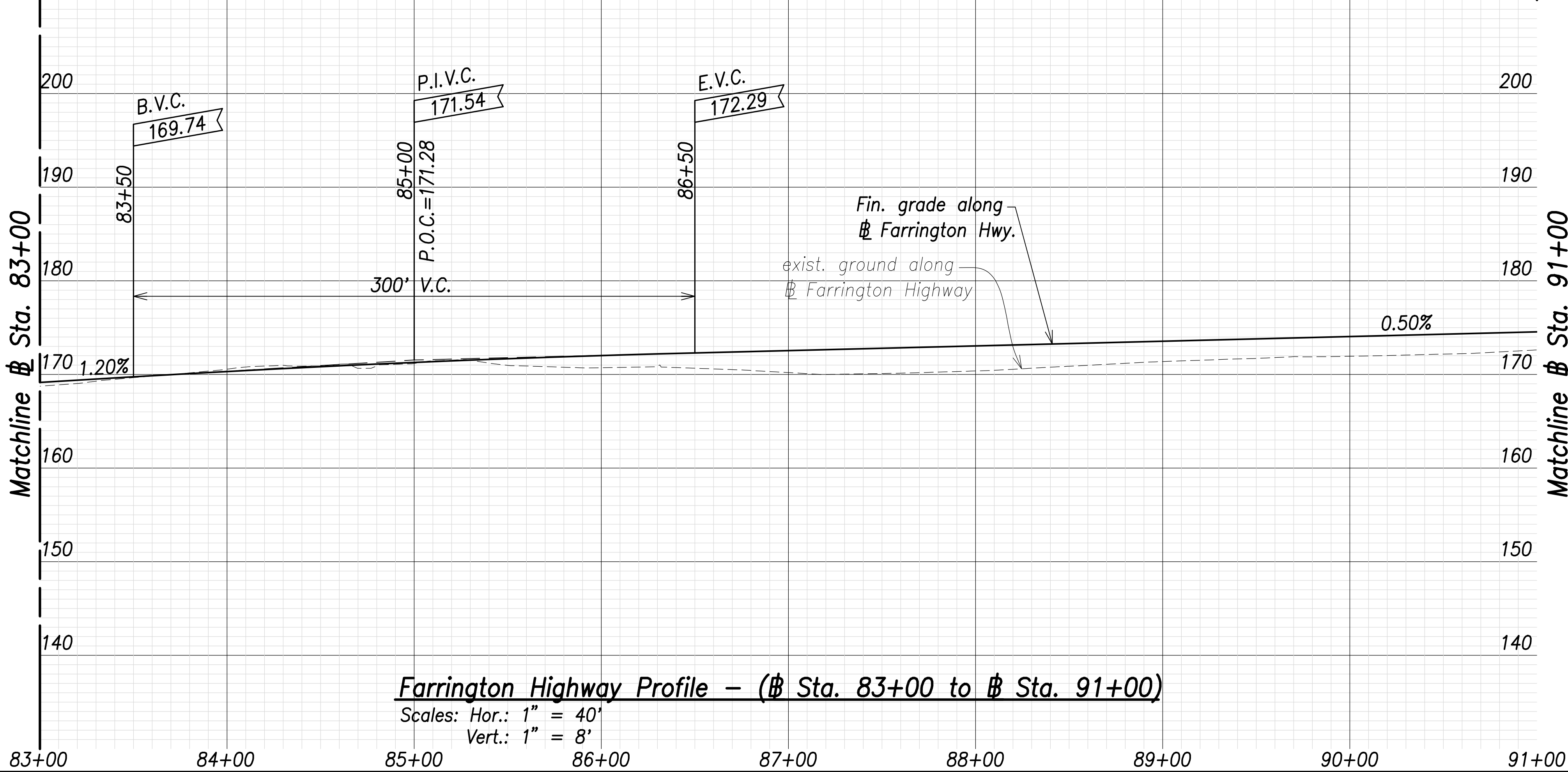
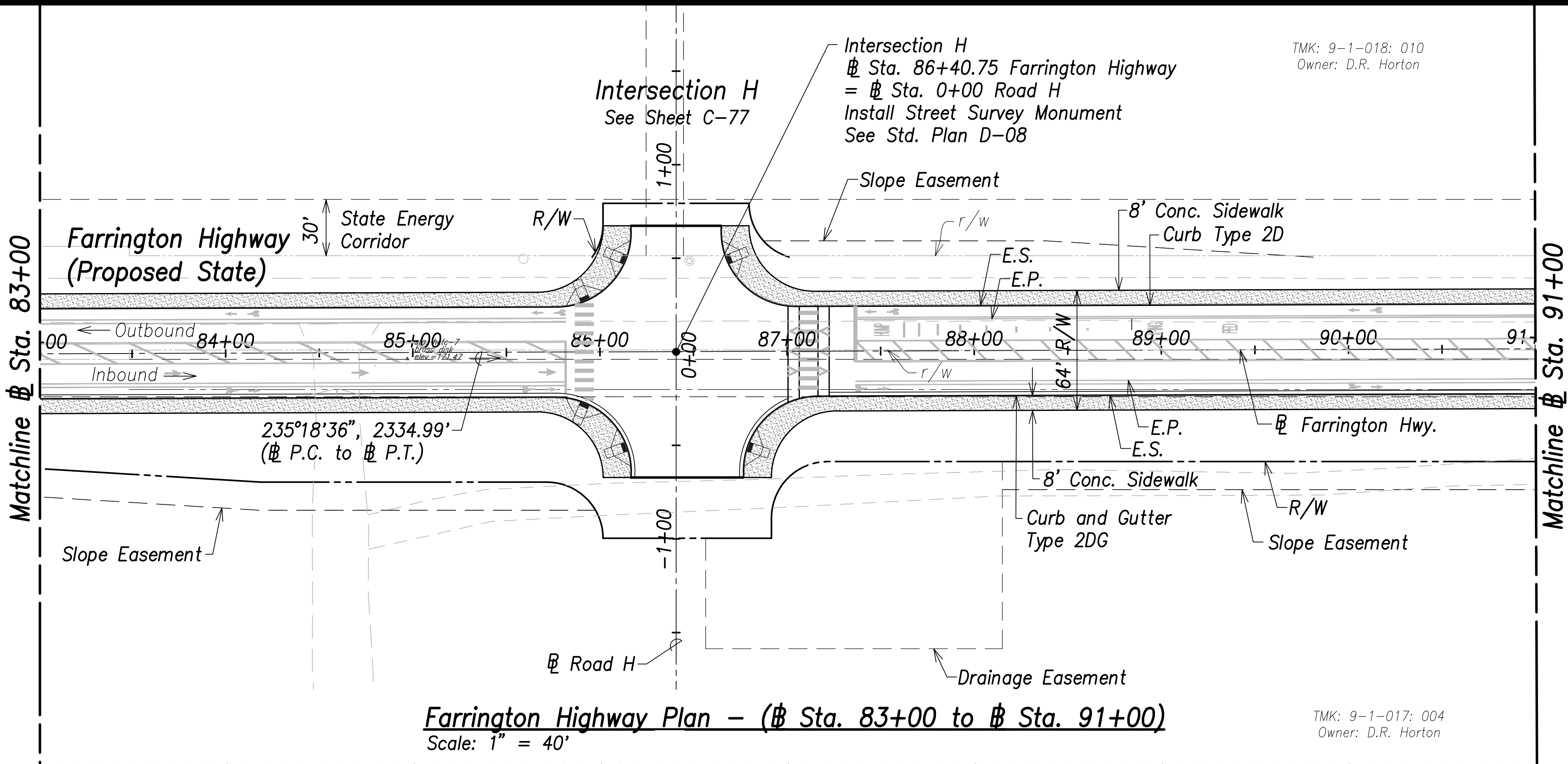
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-60 OF XXX SHEETS

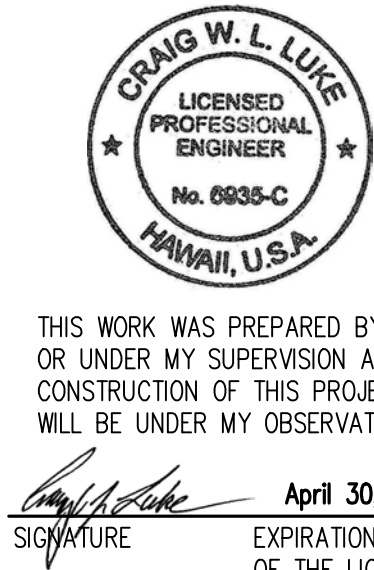
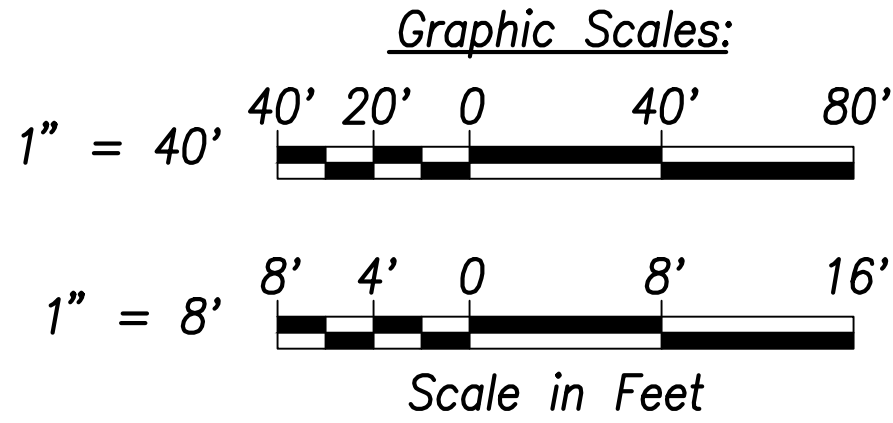
FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-61 Roadway Plan - Sta. 83+00 to 91+00 - PLAN.dwg saved March 21, 2022

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



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	62	XXX

Note:
The Contractor Shall Phase Construction
to Ensure 1 Lane in Each Direction
Remains Operational



THIS WORK WAS PREPARED BY ME
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WILL BE UNDER MY OBSERVATION.

Signature: *Craig W. L. Luke*
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
Sta. 83+00 to # Sta. 91+00

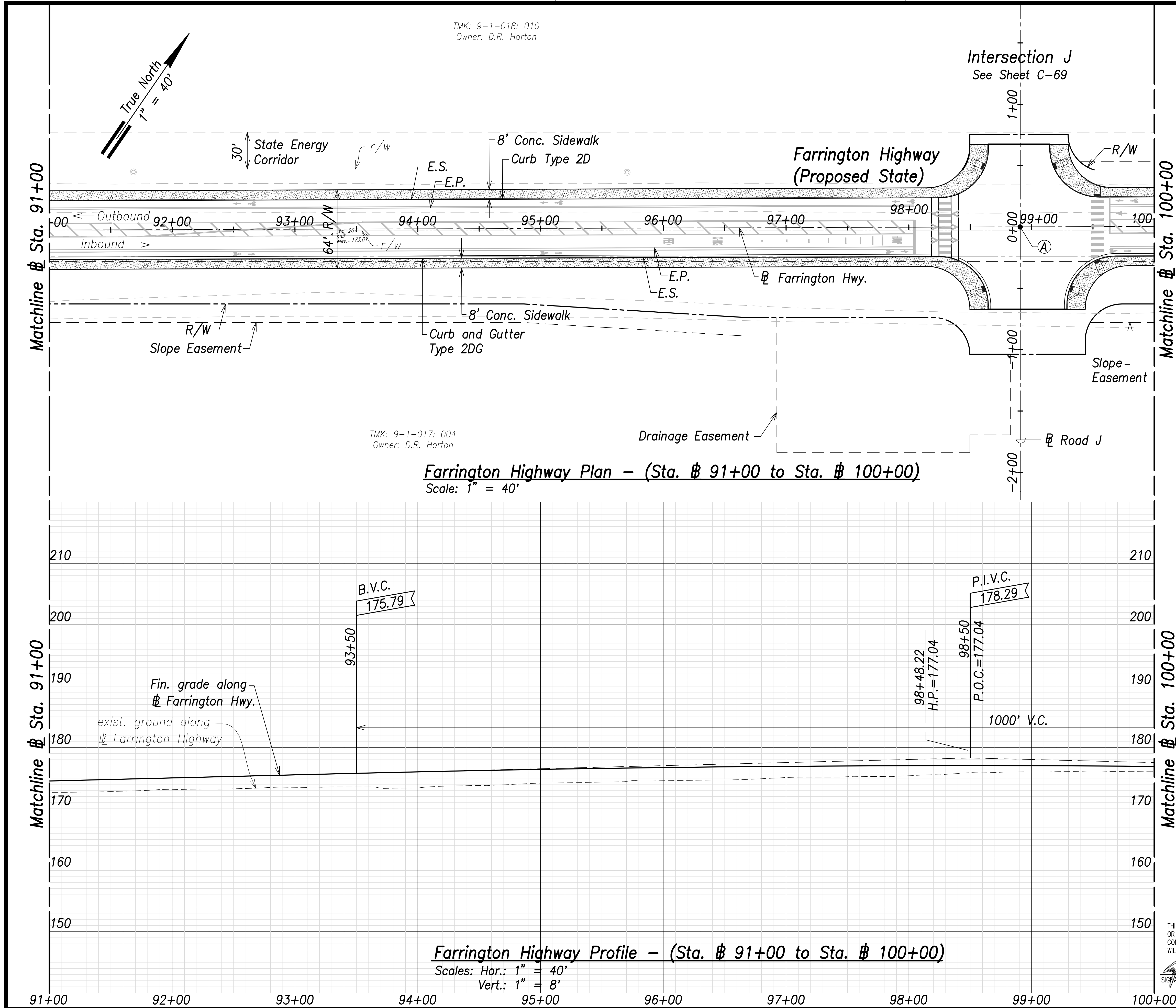
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-61 OF XXX SHEETS

FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-62 Roadway Plan - Sta. 91+00 to 100+00 - PLAN.dwg saved March 21, 2022

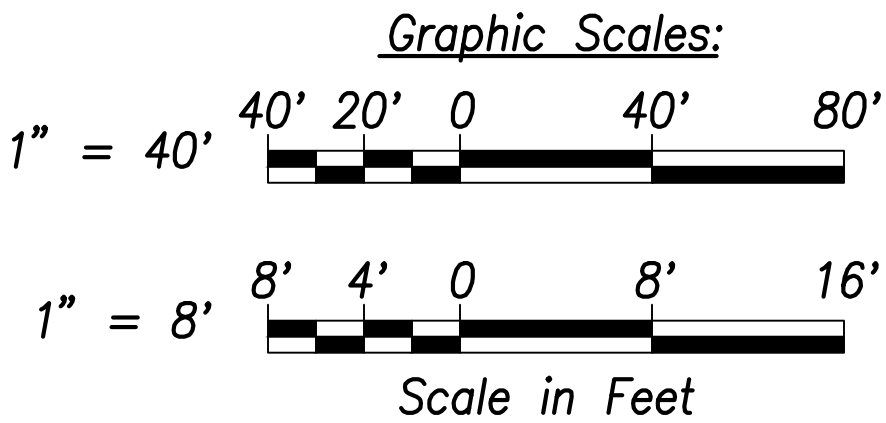
ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY _____	_____
	TRACED BY _____	_____
	CHECKED BY _____	_____
NOTE BOOK	QUANTITIES BY _____	_____
	CHECKED BY _____	_____
No. _____		



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	63	XXX

Ⓐ
Intersection J
@ Sta. 98+90.76 Farrington Highway
= @ Sta. 0+00 Road J
Install Street Survey Monument
See Std. Plan D-08

Note:
The Contractor Shall Phase Construction
to Ensure 1 Lane in Each Direction
Remains Operational



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Signature: _____
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
@ Sta. 91+00 to @ Sta. 100+00

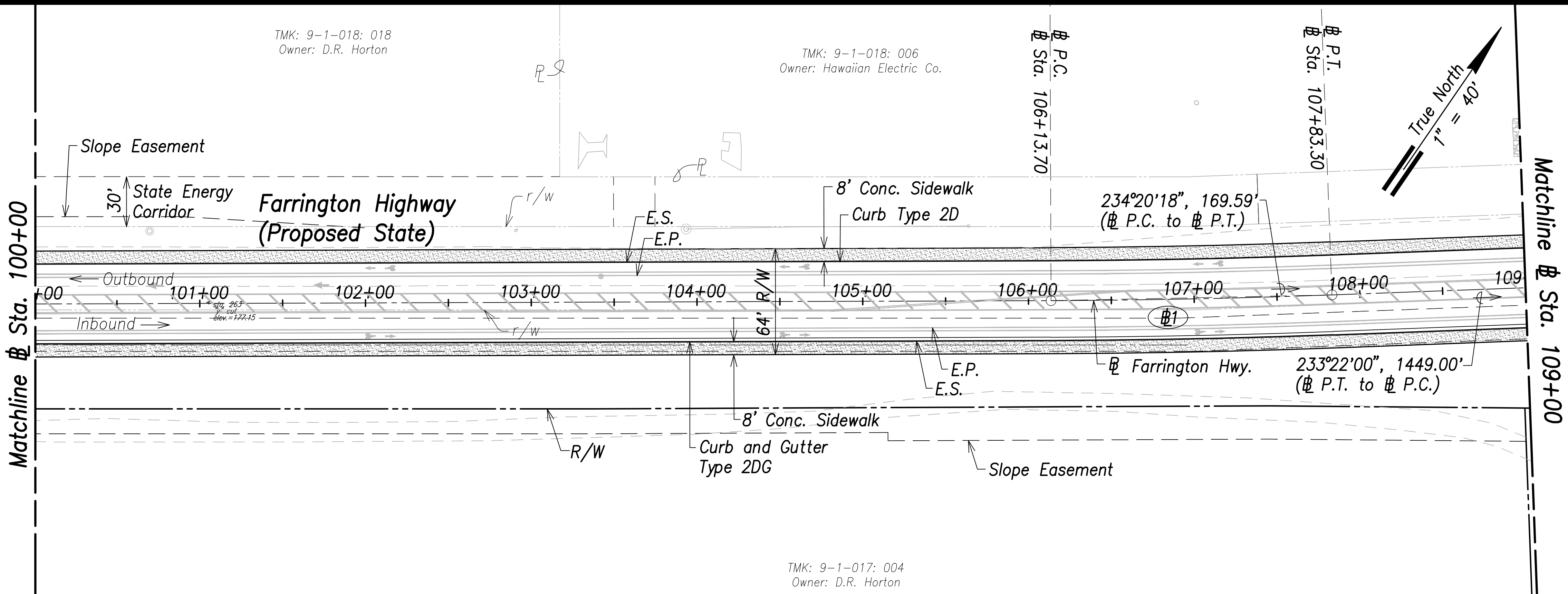
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

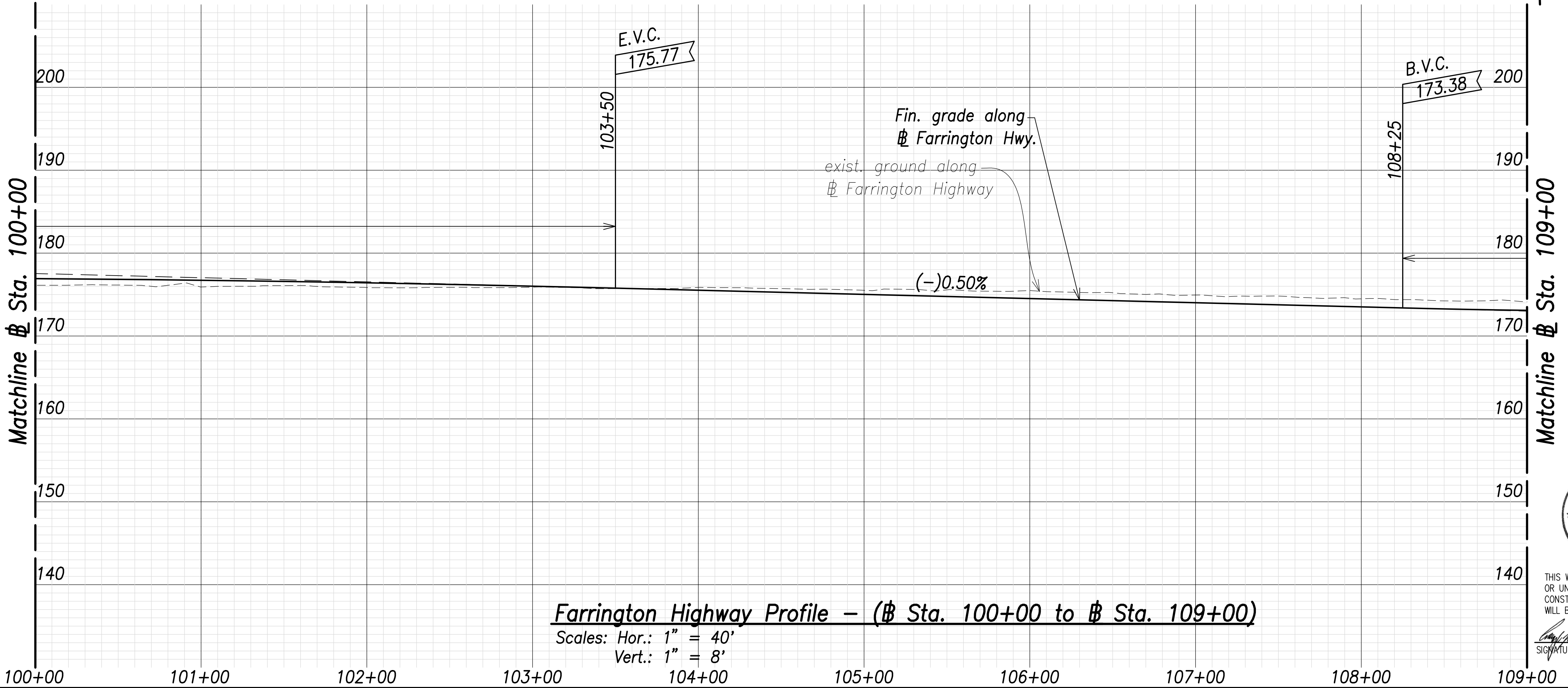
SHEET No. C-62 OF XXX SHEETS

FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-63 Roadway Plan - Sta. 100+00 to 109+00 - PLAN.dwg saved March 28, 2022

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



Farrington Highway Plan - (@ Sta. 100+00 to @ Sta. 109+00)
Scale: 1" = 40'



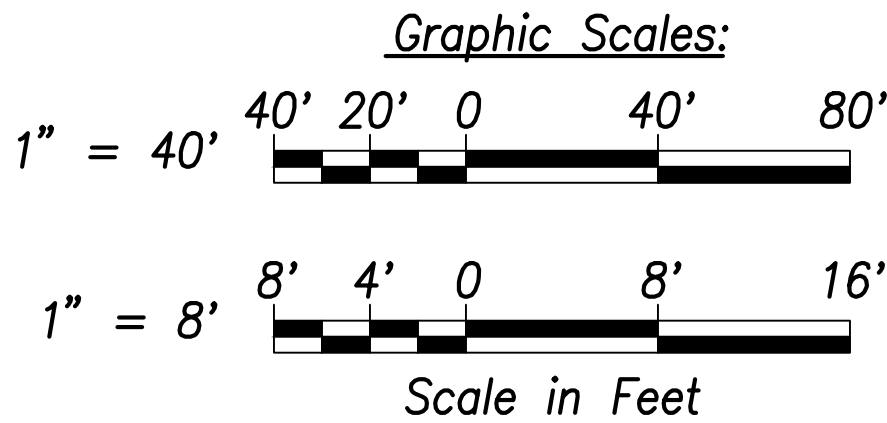
Farrington Highway Profile - (@ Sta. 100+00 to @ Sta. 109+00)

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	xxx	xxx

@ Curve Data:

@1
 $\Delta = 1^\circ 56' 36''$
 $\Delta/2 = 0^\circ 58' 18''$
 $R = 5000.00'$
 $T = 84.81'$
 $C = 169.59'$
 $Lc = 169.60'$

Note:
The Contractor Shall Phase Construction
to Ensure 1 Lane in Each Direction
Remains Operational



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WILL BE UNDER MY OBSERVATION.

SIGNATURE _____

April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
@ Sta. 100+00 to @ Sta. 109+00

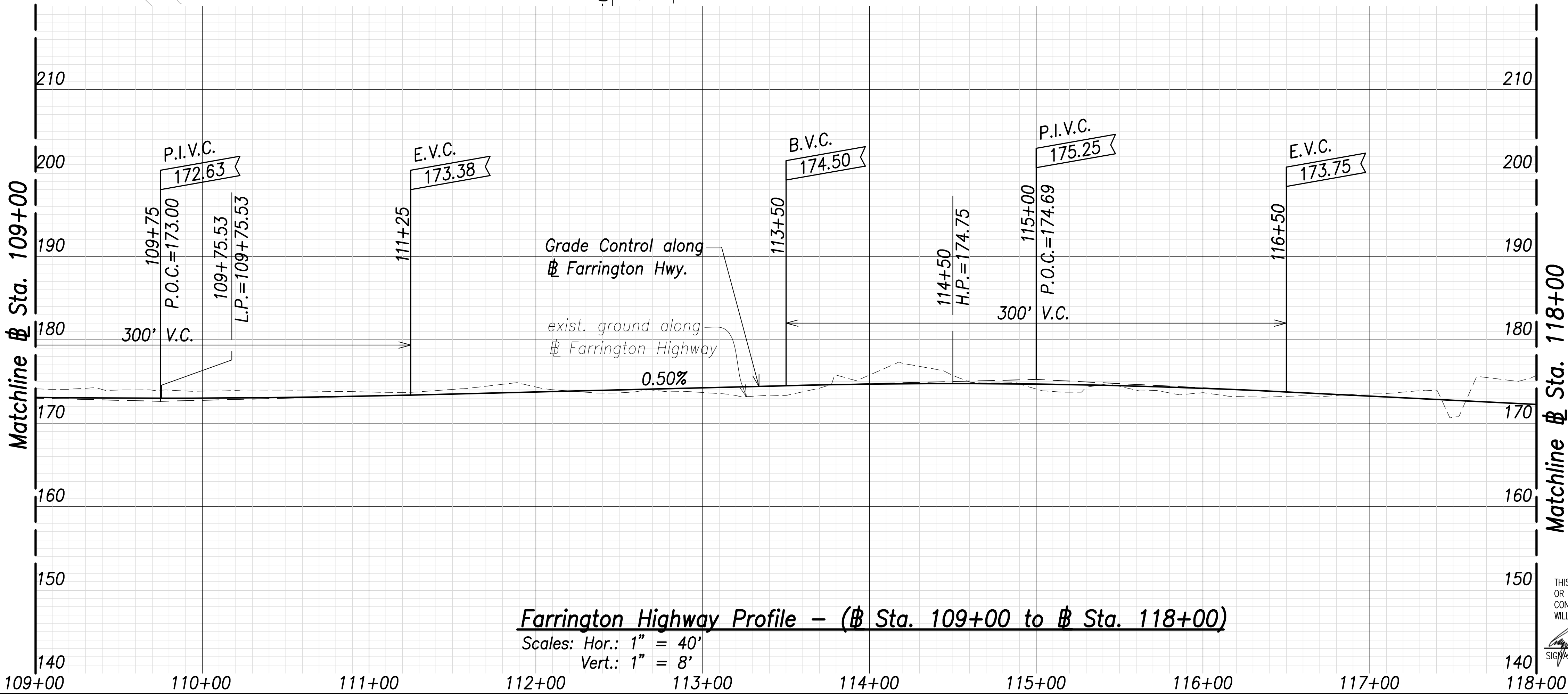
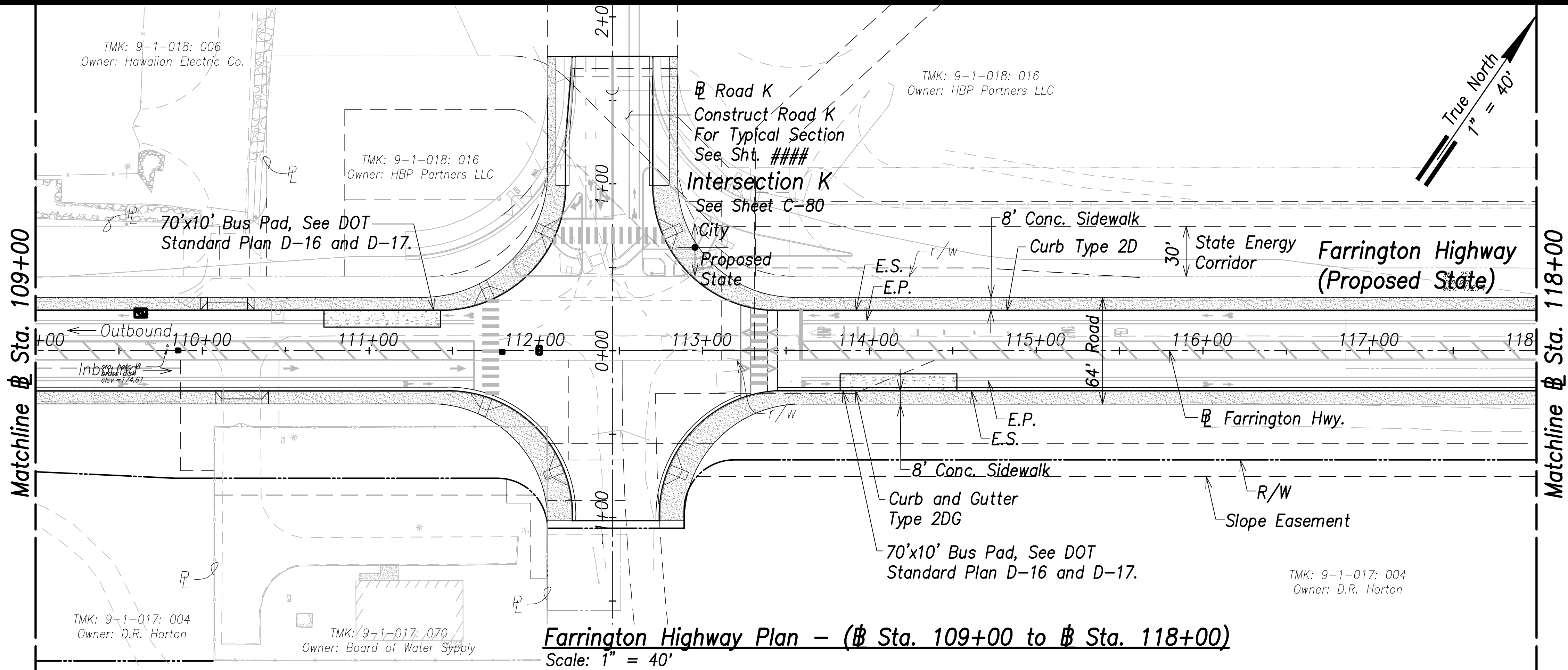
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

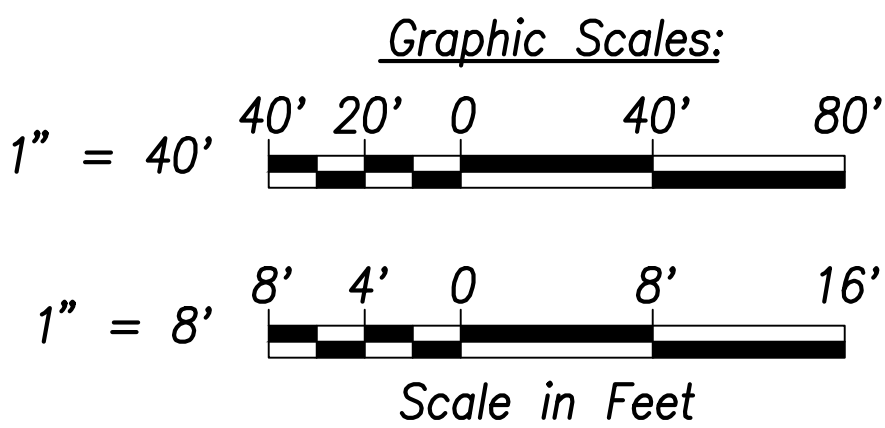
SHEET No. C-63 OF xxx SHEETS

FILE: K:\Civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-64 Roadway Plan - Sta. 109+00 to 118+00 - R.A.M.dwg saved March 28, 2022

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



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	65	XXX



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OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.

SIGNATURE _____

EXPIRATION DATE
OF THE LICENSE April 30, 2022

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
Sta. 109+00 to Sta. 118+00

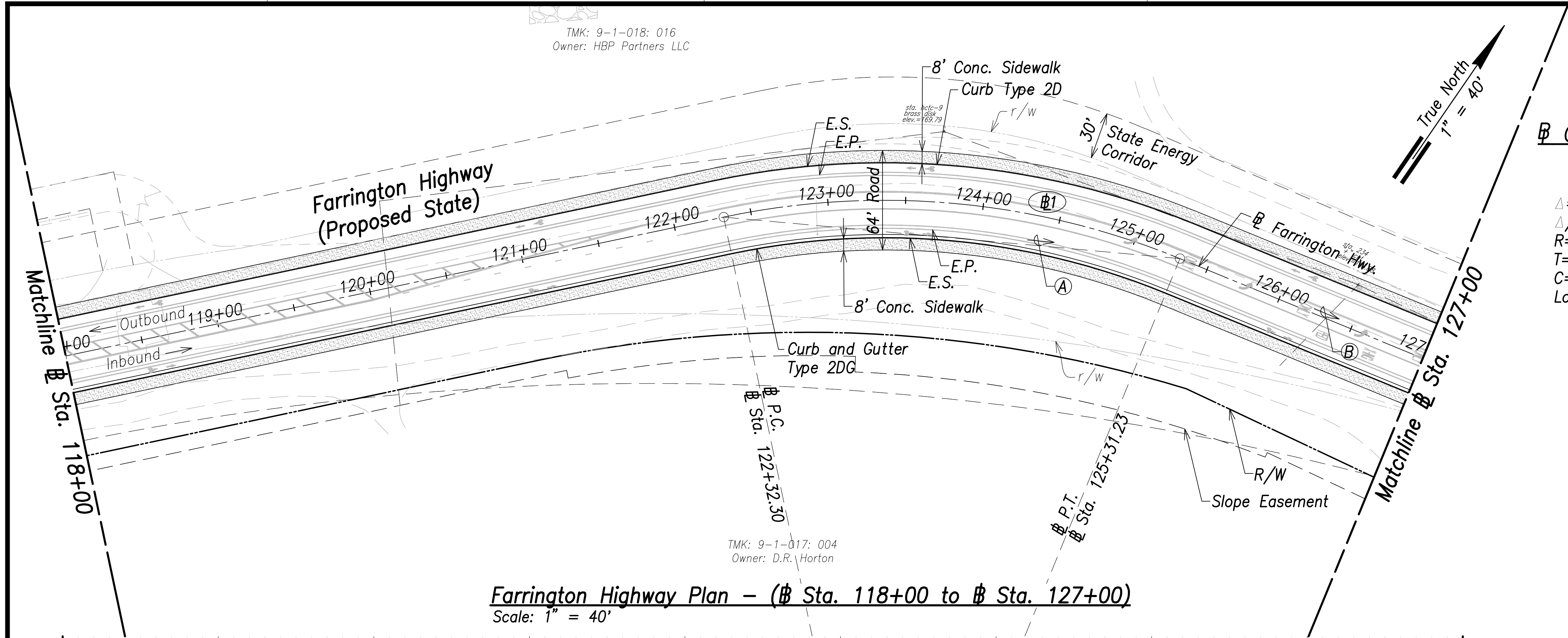
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-64 OF XXX SHEETS

FILE: K:\Civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-65 Roadway Plan - Sta. 118+00 to 127+00 - HAWAII.dwg saved March 28, 2022

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

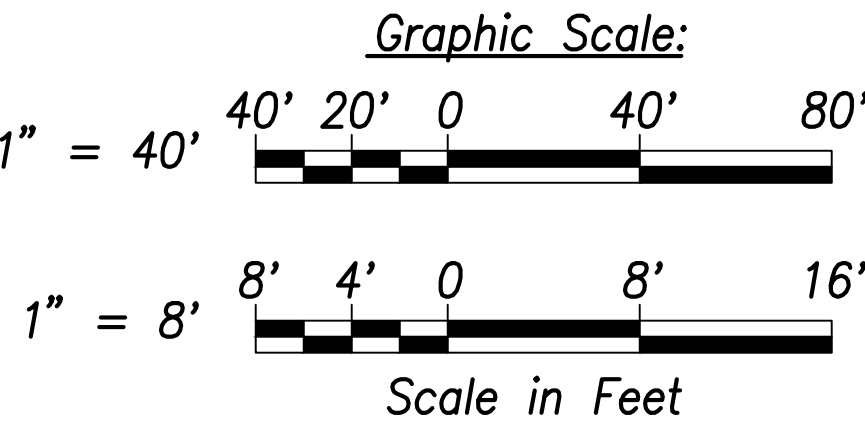
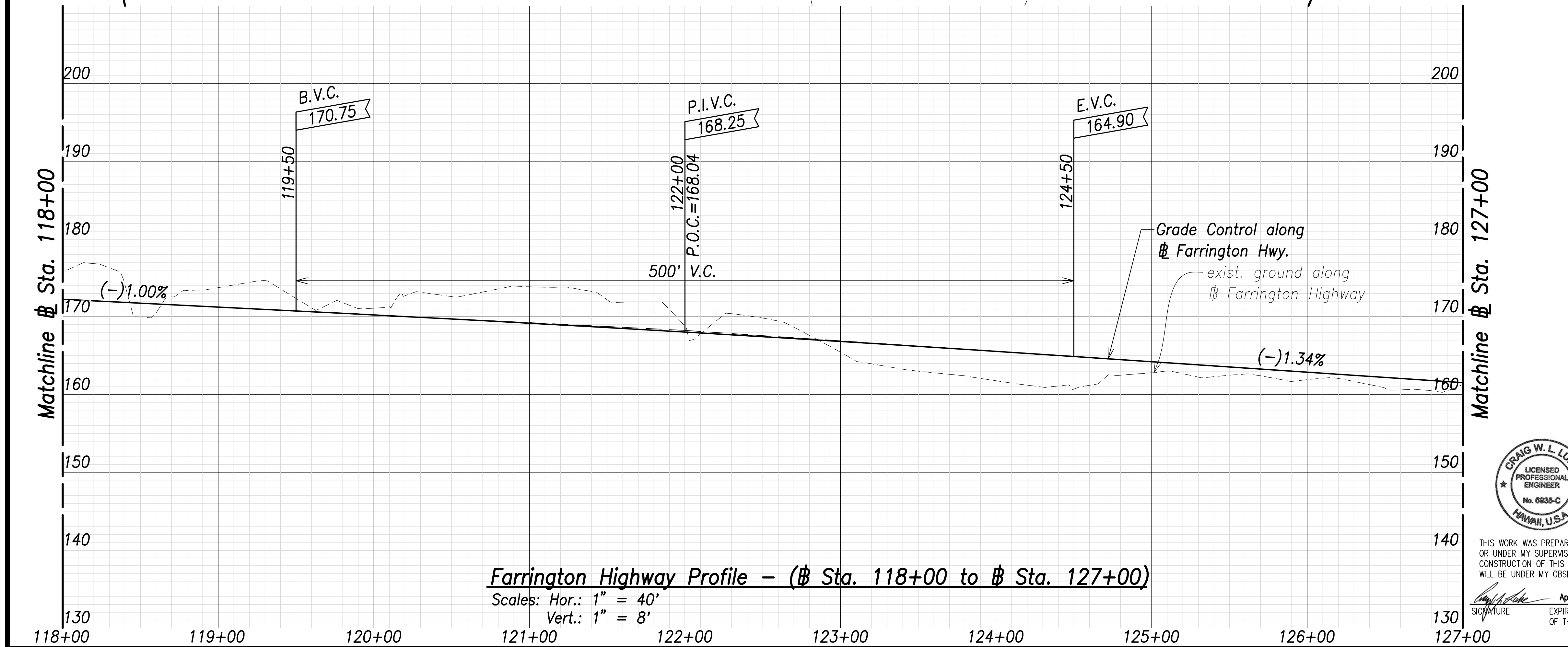


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	66	XXX

Curve Data:

Δ1
Δ=34°15'18"
Δ/2=???
R=500.00'
T=154.08'
C=294.50'
Lc=298.93'

Δ
250°29'39", 294.50'
(P.C. to P.T.)
B
267°37'18", 635.53'
(P.T. to P.C.)



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

Signature: *Craig W. L. Luke*
April 30, 2022
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
Sta. 118+00 to Sta. 127+00

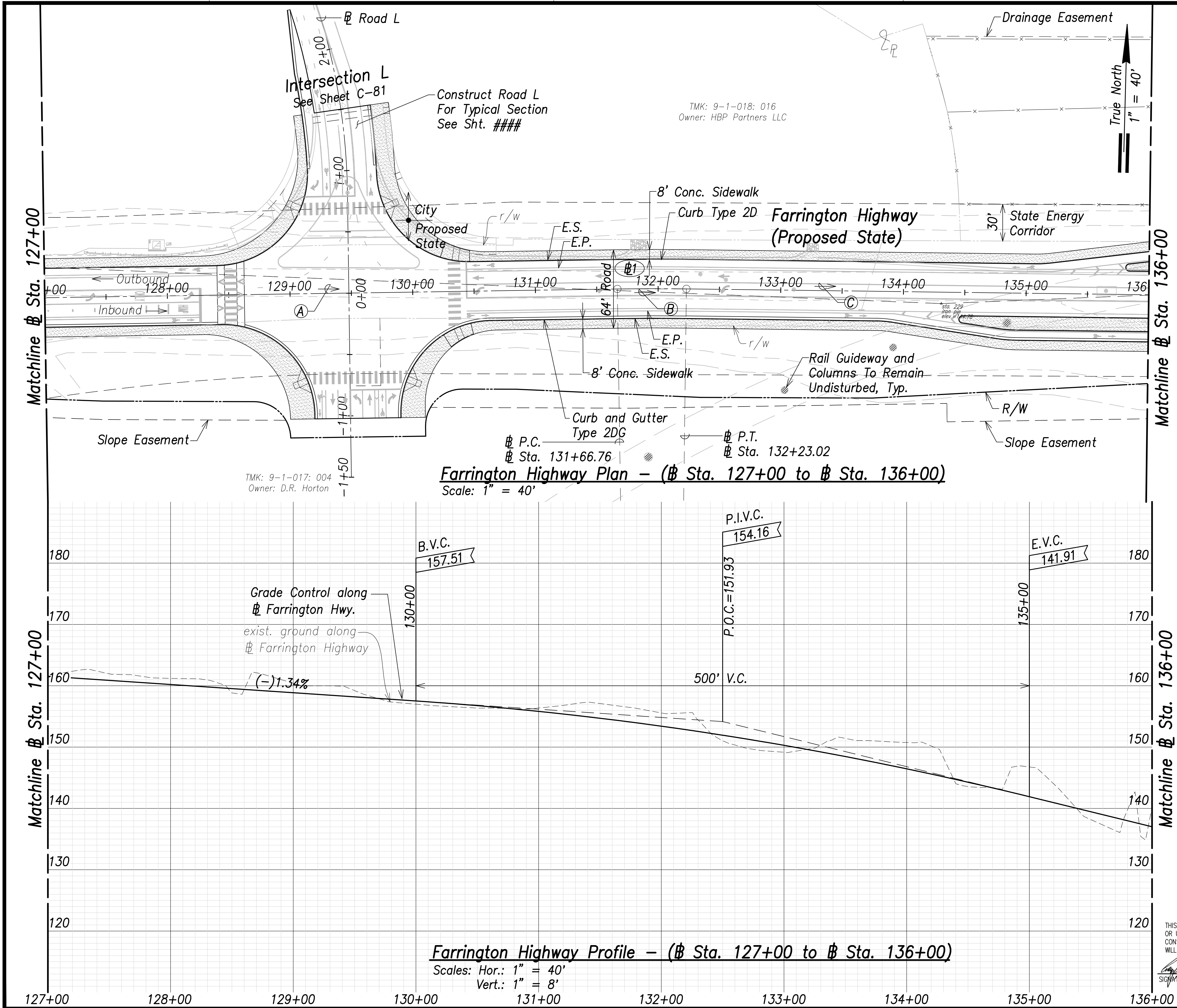
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-65 OF XXX SHEETS

FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-66 Roadway Plan - Sta. 127+00 to 136+00 - HAWAII.dwg saved March 25, 2022

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



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	67	XXX

@ Curve Data:

@1

$\Delta = 1^{\circ}36'42''$
 $\Delta/2 = 0^{\circ}48'21''$
 $R = 2000.00'$
 $T = 28.13'$
 $C = 56.26'$
 $L_c = 56.26'$

A

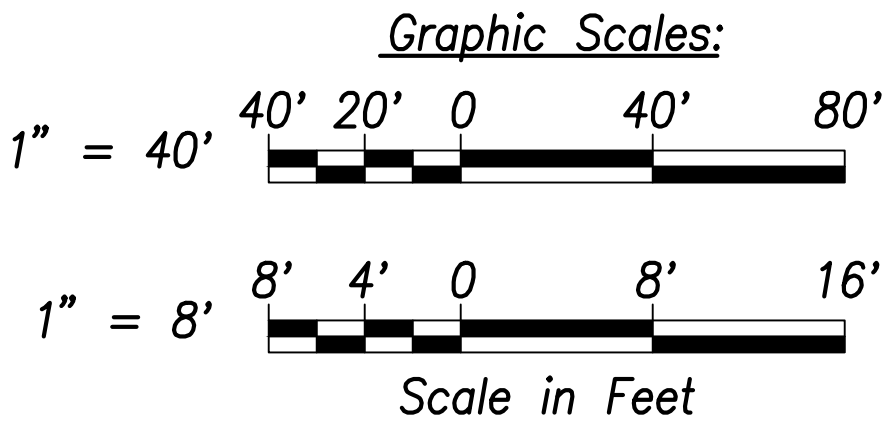
$267^{\circ}37'18''$, 635.53'
(@ P.T. to @ P.C.)

B

$267^{\circ}37'18''$, 56.26'
(@ P.C. to @ P.T.)

C

$269^{\circ}14'00''$, 381.64'
(@ P.T. to @ P.C.)



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

SIGNATURE: *Craig W. L. Luke* EXPIRATION DATE OF THE LICENSE: April 30, 2022

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
@ Sta. 127+00 to @ Sta. 136+00

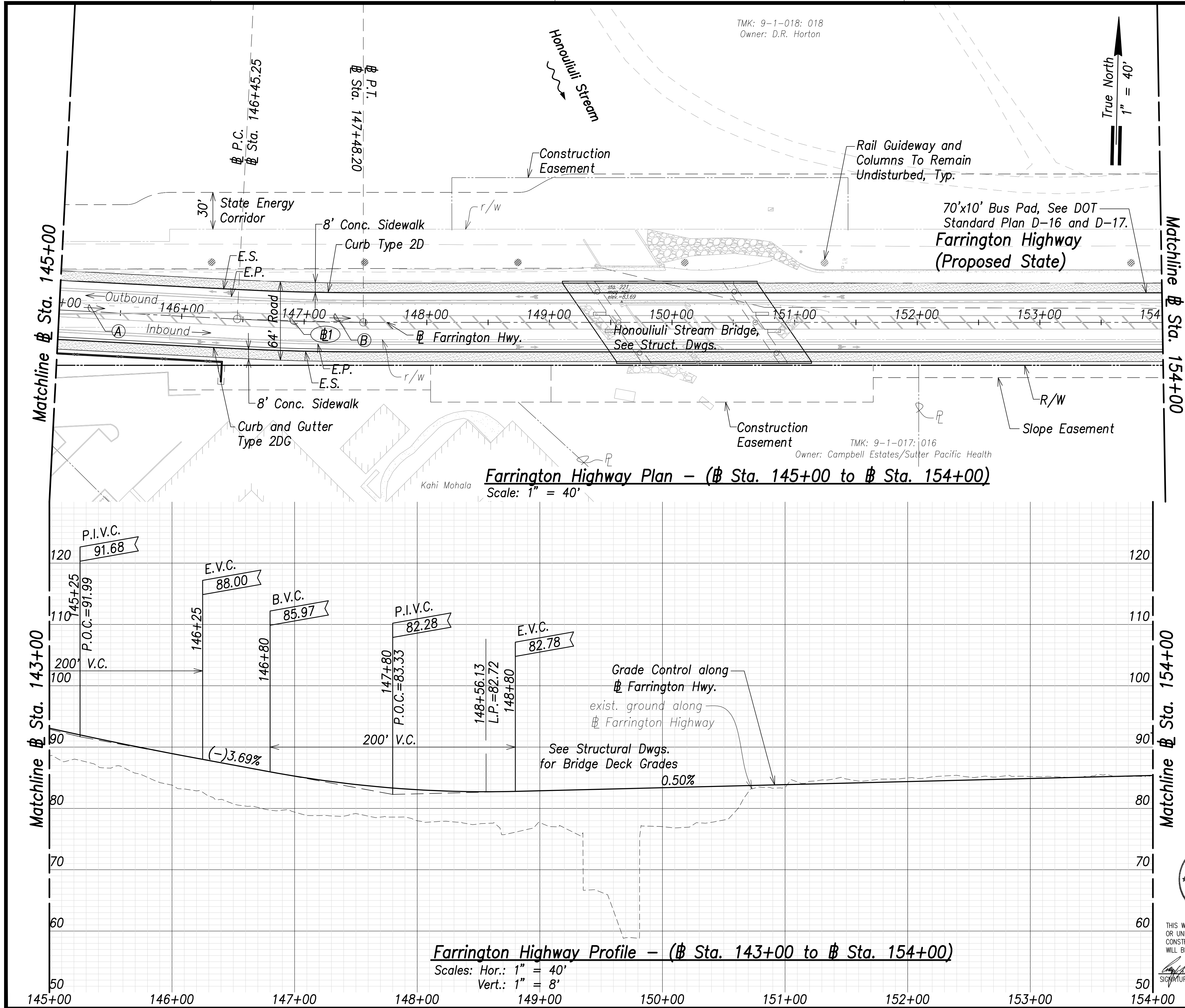
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-66 OF XXX SHEETS

FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-68 Roadway Plan - Sta. 145+00 to 154+00 - R146.dwg saved March 25, 2022

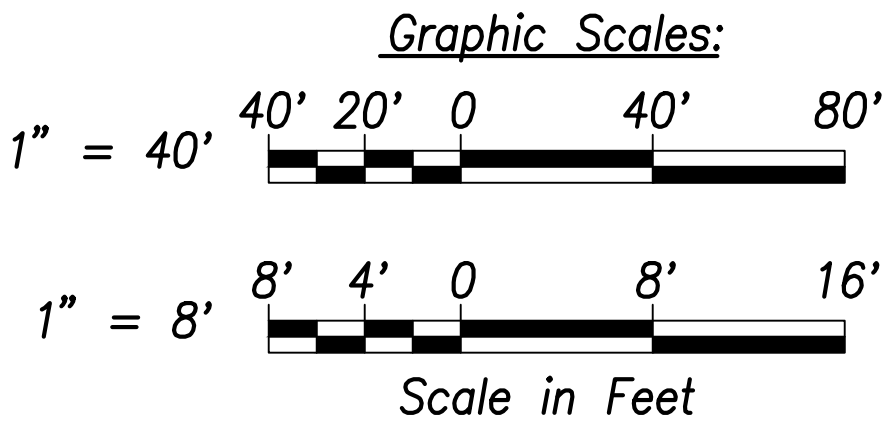
ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY _____	_____
	TRACED BY _____	_____
	CHECKED BY _____	_____
NOTE BOOK	QUANTITIES BY _____	_____
	CHECKED BY _____	_____
No. _____		



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	69	XXX

@ Curve Data:

A	B	C
271°40'057", 217.74' (@ P.T. to @ P.C.)	270°12'29", 102.94' (@ P.C. to @ P.T.)	268°44'00", 718.74' (@ P.T. to @ P.C.)
@1	@1	
$\Delta=2^{\circ}56'57"$	$\Delta/2=1^{\circ}28'28.5"$	
$R=2000.00'$	$T=51.49'$	
$C=102.94'$	$Lc=102.95'$	



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

SIGNATURE _____ EXPIRATION DATE OF THE LICENSE April 30, 2022

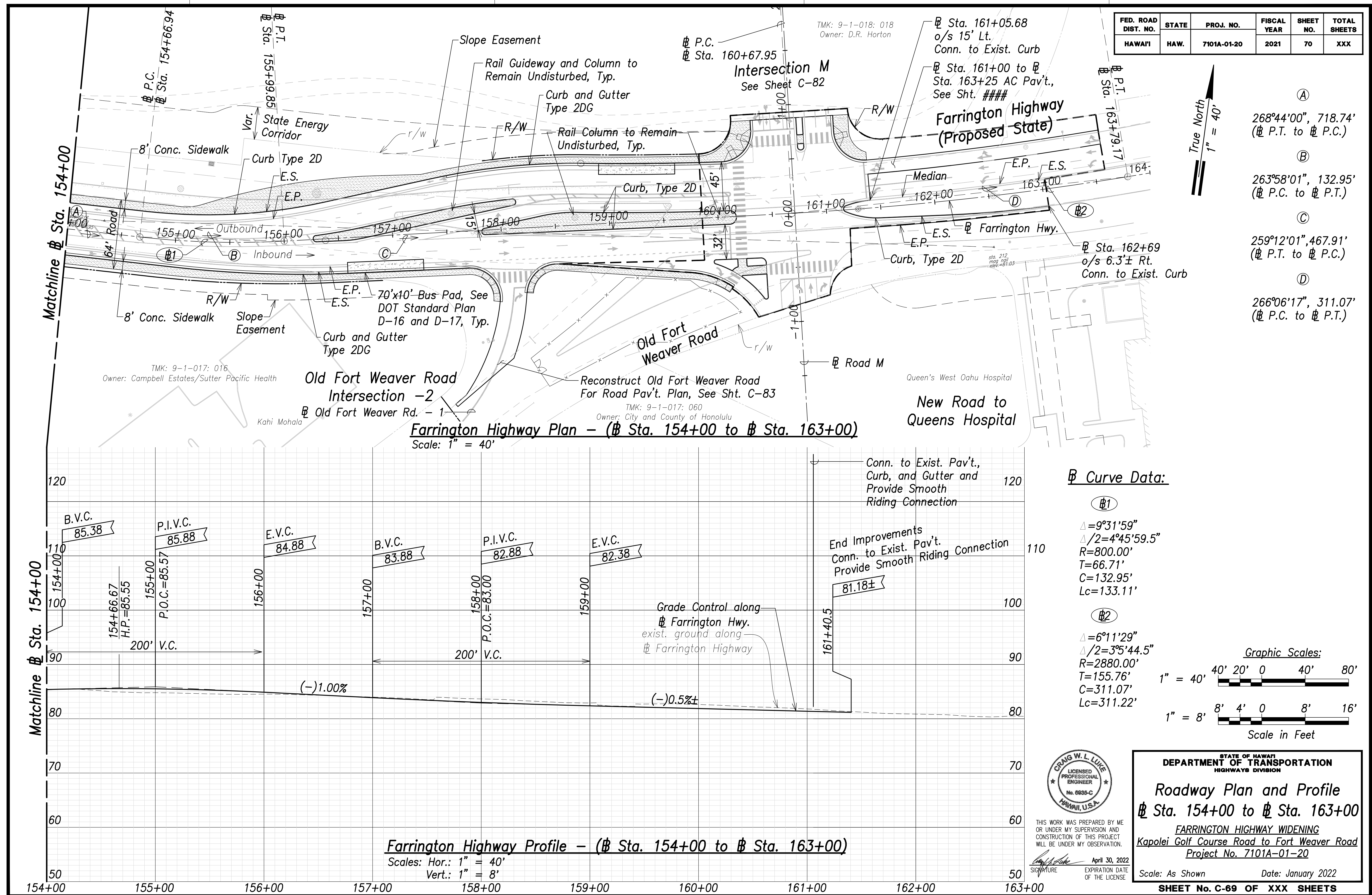
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Roadway Plan and Profile
@ Sta. 145+00 to @ Sta. 154+00

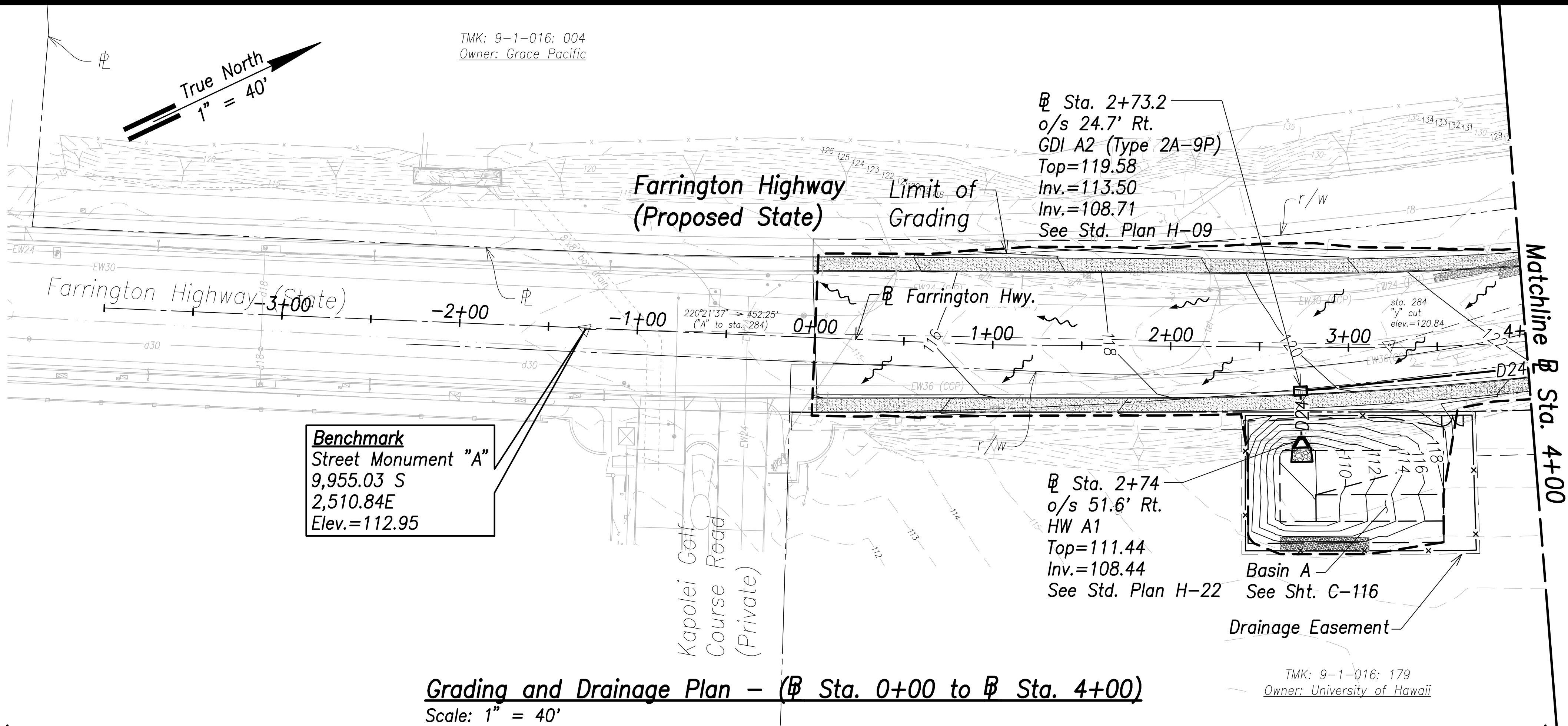
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. C-68 OF XXX SHEETS



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	99	XXX

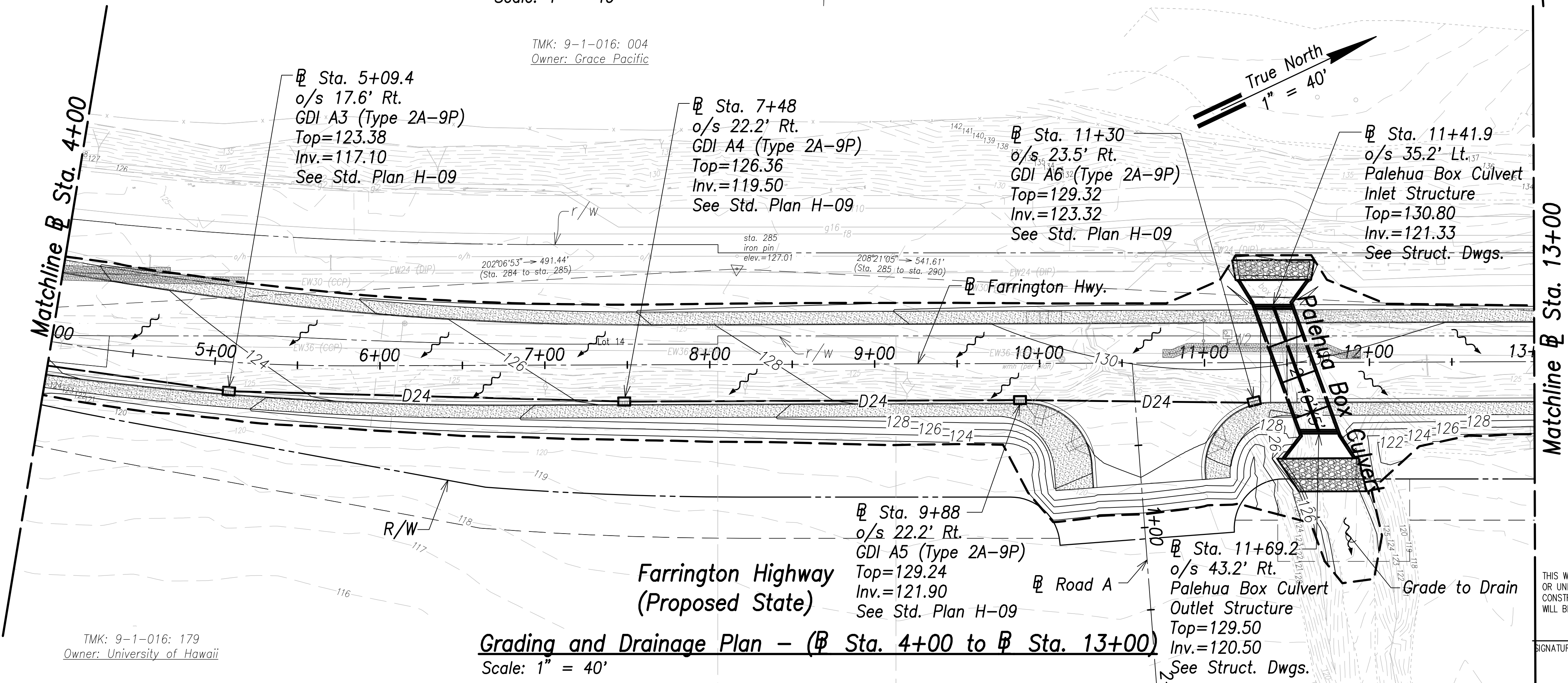
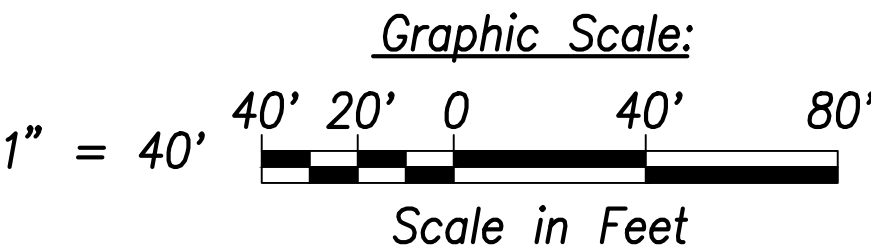


Legend:

- Existing Grade Contour
- Finished Grade Contour
- Limit of Grading
- Drainage Flow Direction

Notes:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- See Access to Farm Lots notes on sheet C-3



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
Sta. 0+00 to Sta. 13+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

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

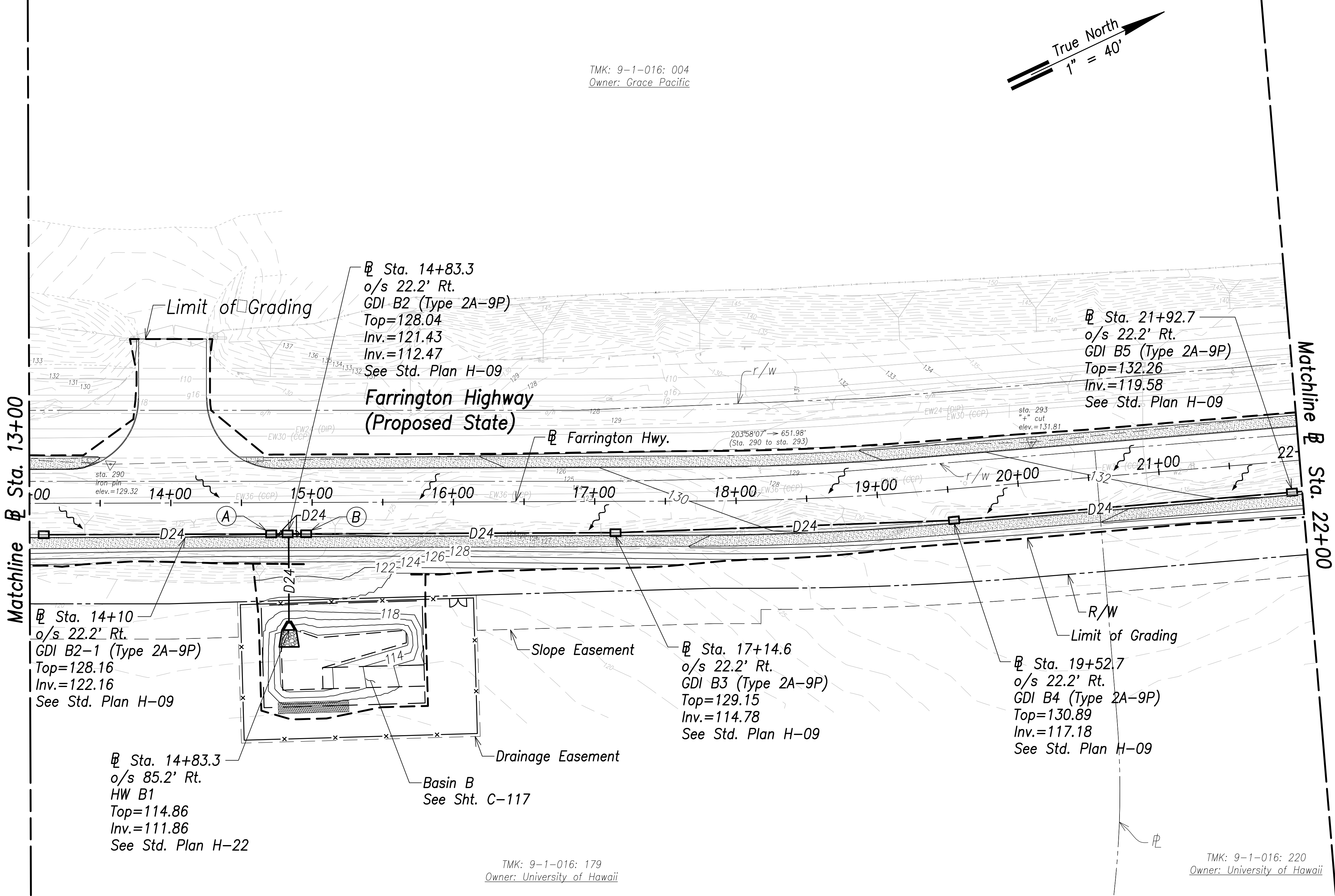
APR 30, 2022
EXPIRATION DATE
OF THE LICENSE

SIGNATURE

Scale: As Shown Date: January 2022

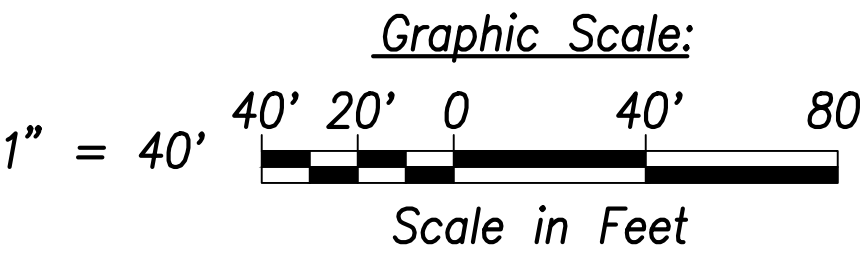
SHEET No. OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	100	XXX



- Legend:
- Existing Grade Contour
 - Finished Grade Contour
 - Limit of Grading
 - Drainage Flow Direction

- Notes:
- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
 - See Access to Farm Lots notes on sheet C-3



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
@ Sta. 13+00 to @ Sta. 22+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. OF XXX SHEETS

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

April 30, 2022
EXPIRATION DATE
OF THE LICENSE

SIGNATURE

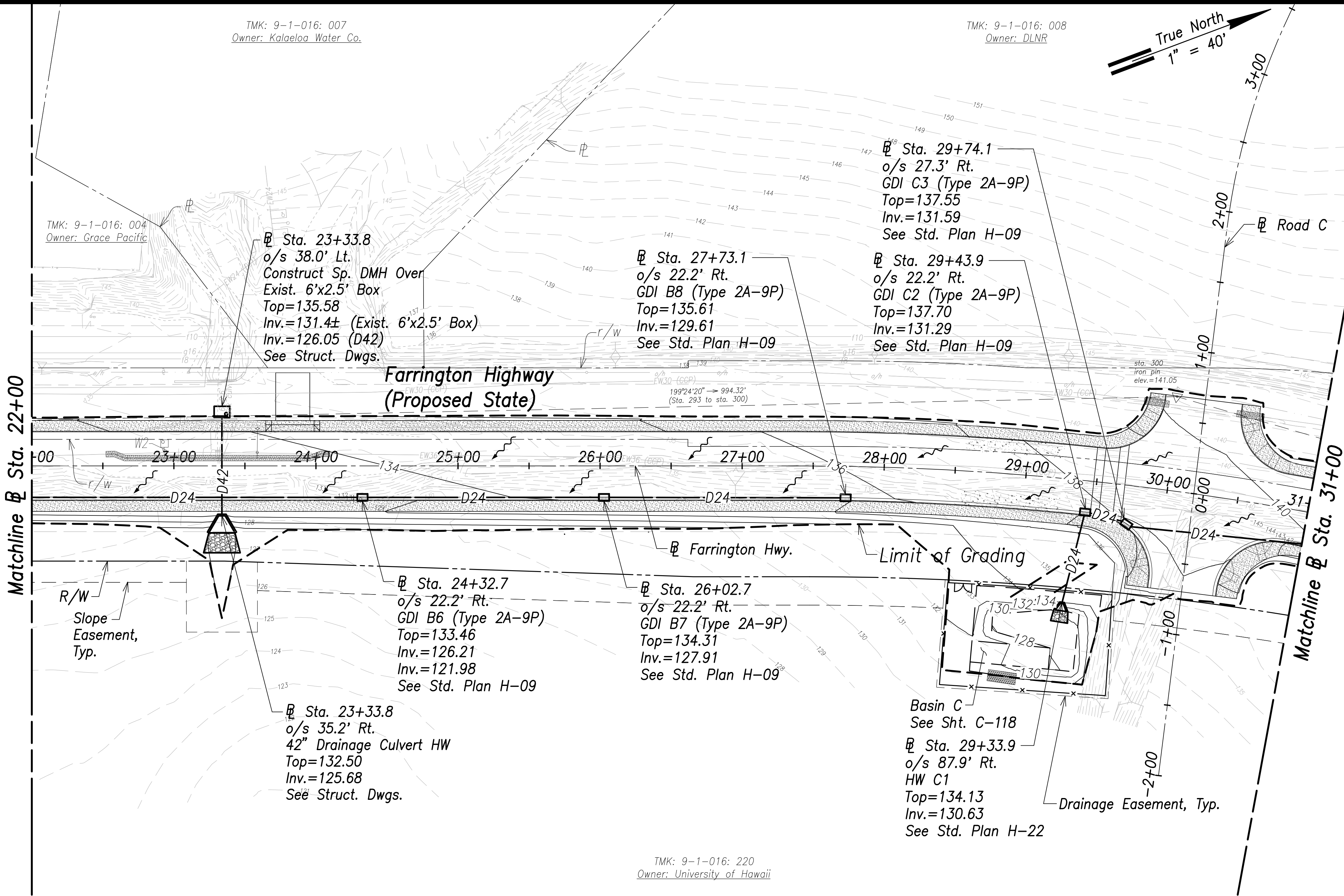
- (A) Sta. 14+71
o/s 22.2' Rt.
GDI B2-A (Type 2A-9P)
Top=128.05
Inv.=121.07
See Std. Plan H-09
- (B) Sta. 14+95.7
o/s 22.2' Rt.
GDI B2-B (Type 2A-9P)
Top=128.05
Inv.=112.59
See Std. Plan H-09

Grading and Drainage Plan - (@ Sta. 13+00 to @ Sta. 22+00)
Scale: 1" = 40'

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

FILE: K:\Civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\C-100 Grading and Drainage Plan - Sta. 22+00 to 31+00.dwg saved March 24, 2022

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



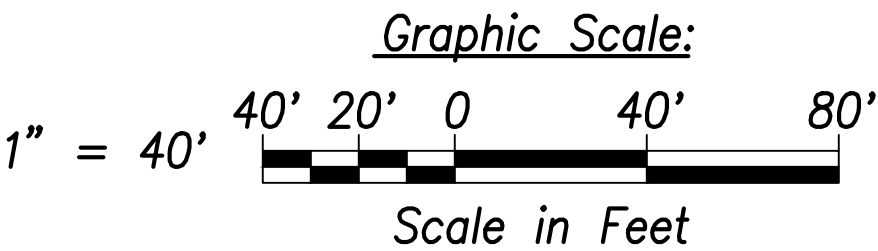
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	101	XXX

Notes:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- See Access to Farm Lots notes on sheet C-3

Legend:

- Existing Grade Contour
- Finished Grade Contour
- Limit of Grading
- Drainage Flow Direction



Grading and Drainage Plan - (Sta. 22+00 to Sta. 31+00)
Scale: 1" = 40'

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CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.

SIGNATURE
EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
Sta. 22+00 to Sta. 31+00

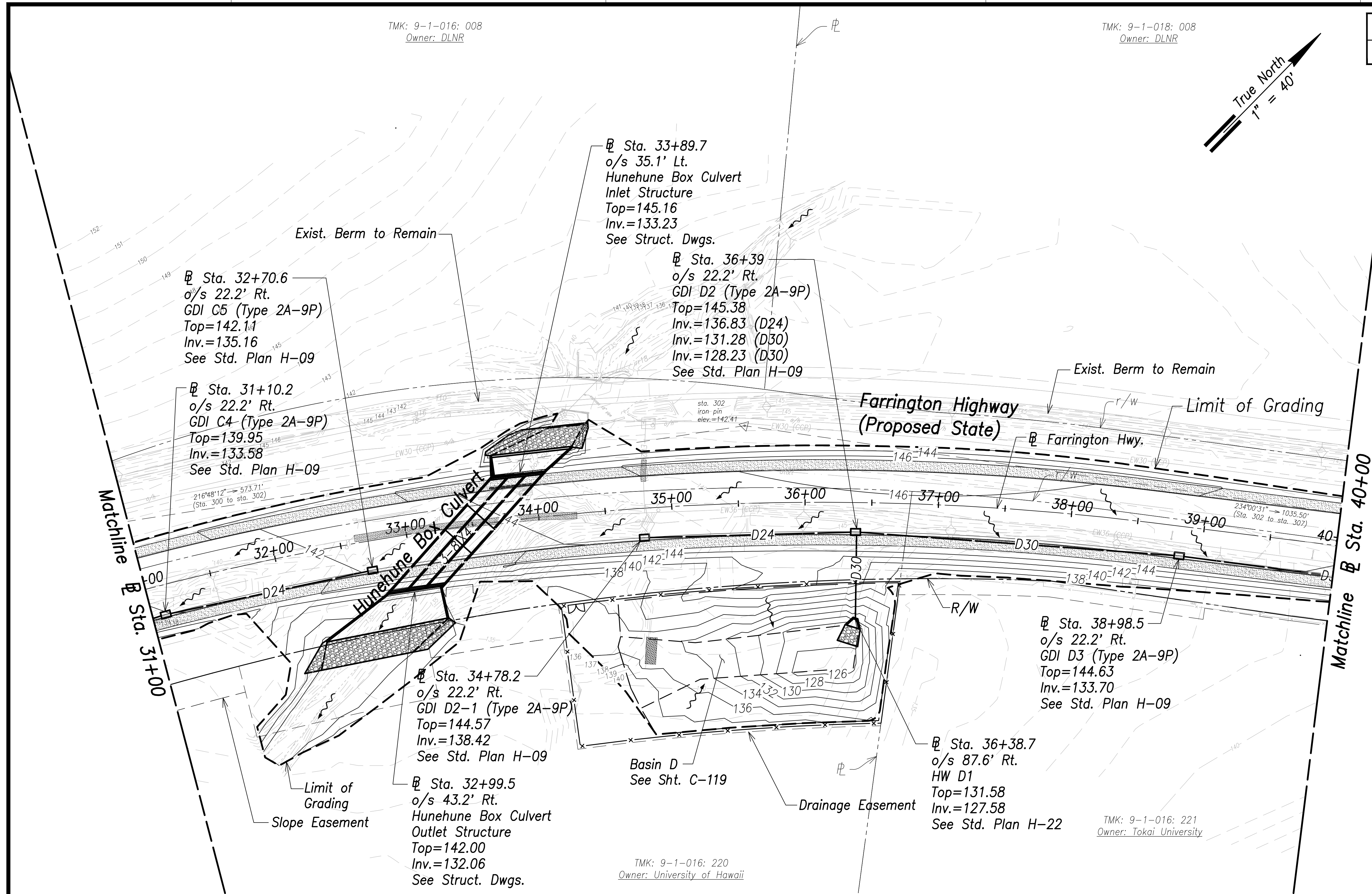
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. OF XXX SHEETS

FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Grading and Drainage Plan - Sta. 31+00 to 40+00.dwg saved March 25, 2022

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



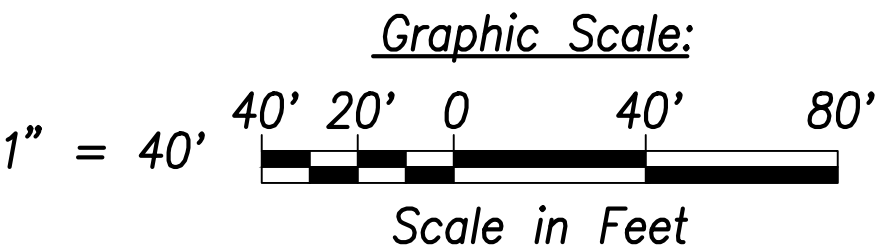
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	102	XXX

Legend:

- Existing Grade Contour
- Finished Grade Contour
- Limit of Grading
- Drainage Flow Direction

Notes:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- See Access to Farm Lots notes on sheet C-3



Grading and Drainage Plan - (Sta. 31+00 to Sta. 40+00)
Scale: 1" = 40'

THIS WORK WAS PREPARED BY ME
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CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
April 30, 2022
SIGNATURE EXPIRATION DATE
OF THE LICENSE

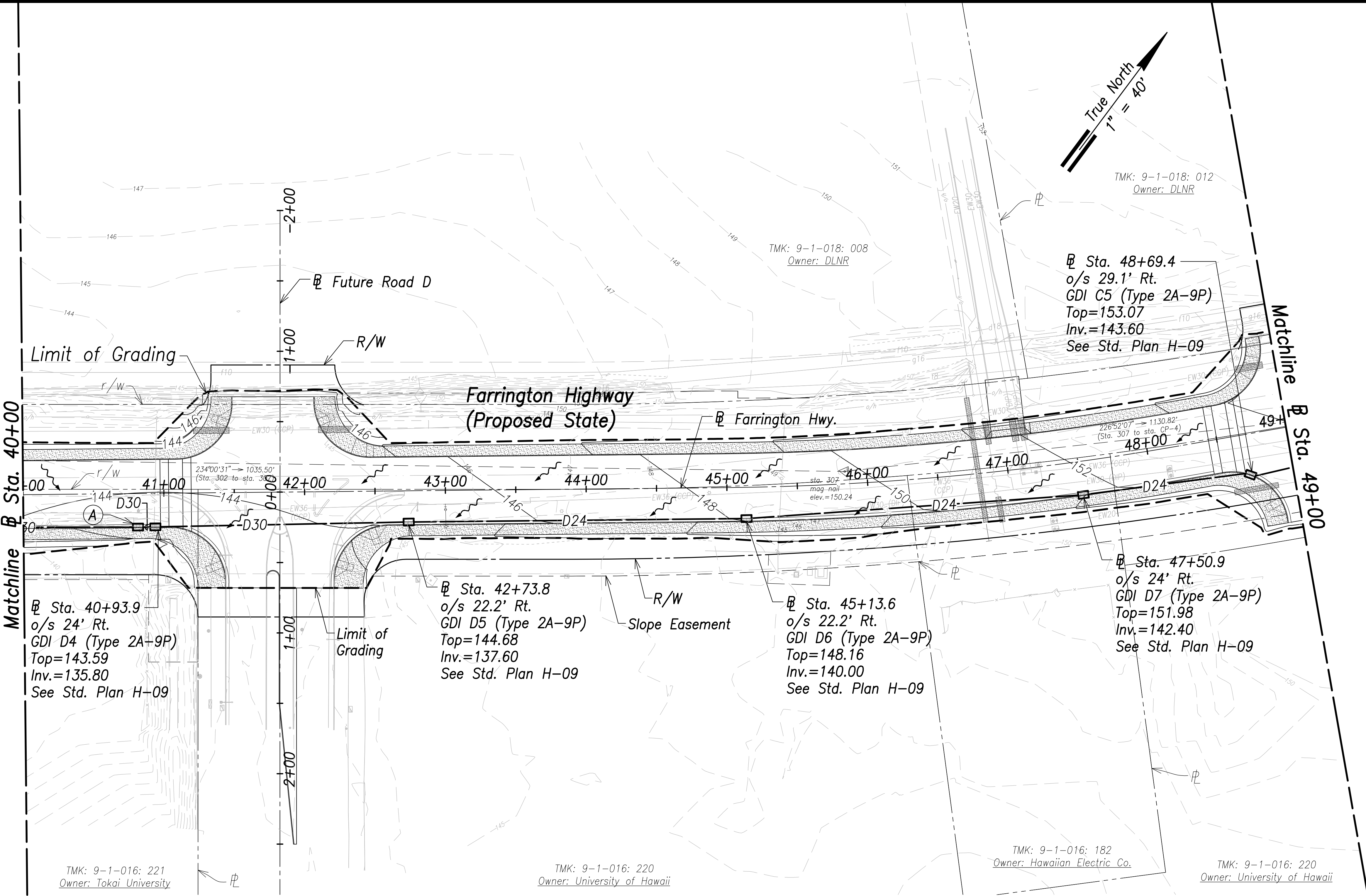
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
Sta. 31+00 to Sta. 40+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022
SHEET No. OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	103	XXX

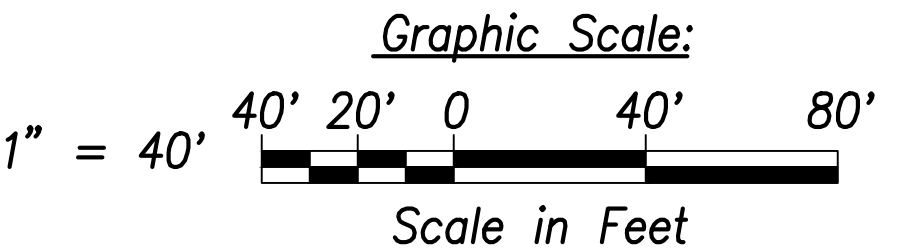


Notes:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- See Access to Farm Lots notes on sheet C-3

Legend:

- Existing Grade Contour
- Finished Grade Contour
- Limit of Grading
- Drainage Flow Direction



Grading and Drainage Plan - (Sta. 40+00 to Sta. 49+00)
Scale: 1" = 40'

(A)
Sta. 40+81.5
o/s 23.8' Rt.
GDI D4-A (Type 2A-9P)
Top=143.40
Inv.=136.68
See Std. Plan H-09

THIS WORK WAS PREPARED BY ME
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April 30, 2022
EXPIRATION DATE
OF THE LICENSE

SIGNATURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

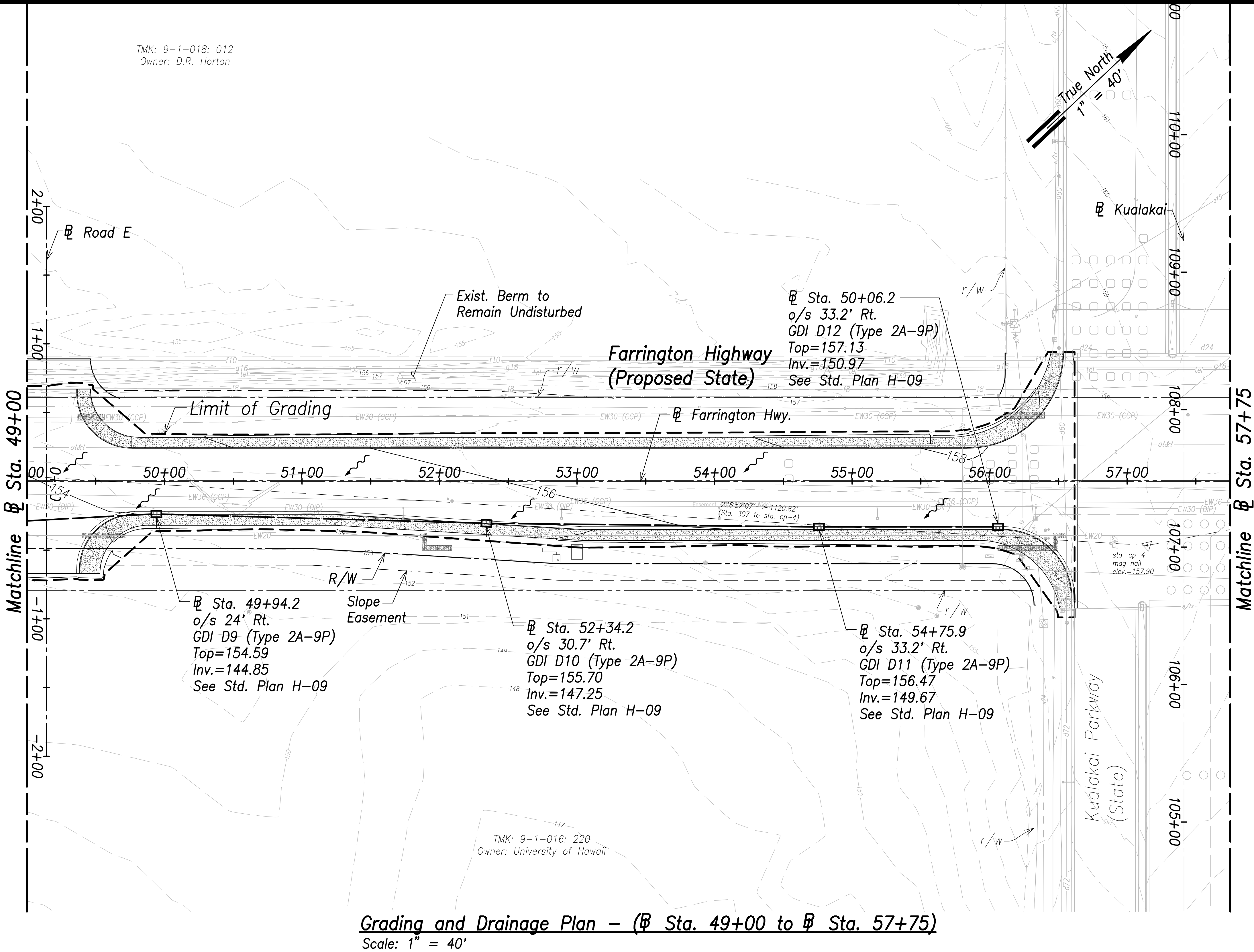
Grading and Drainage Plan
Sta. 40+00 to Sta. 49+00
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. OF XXX SHEETS

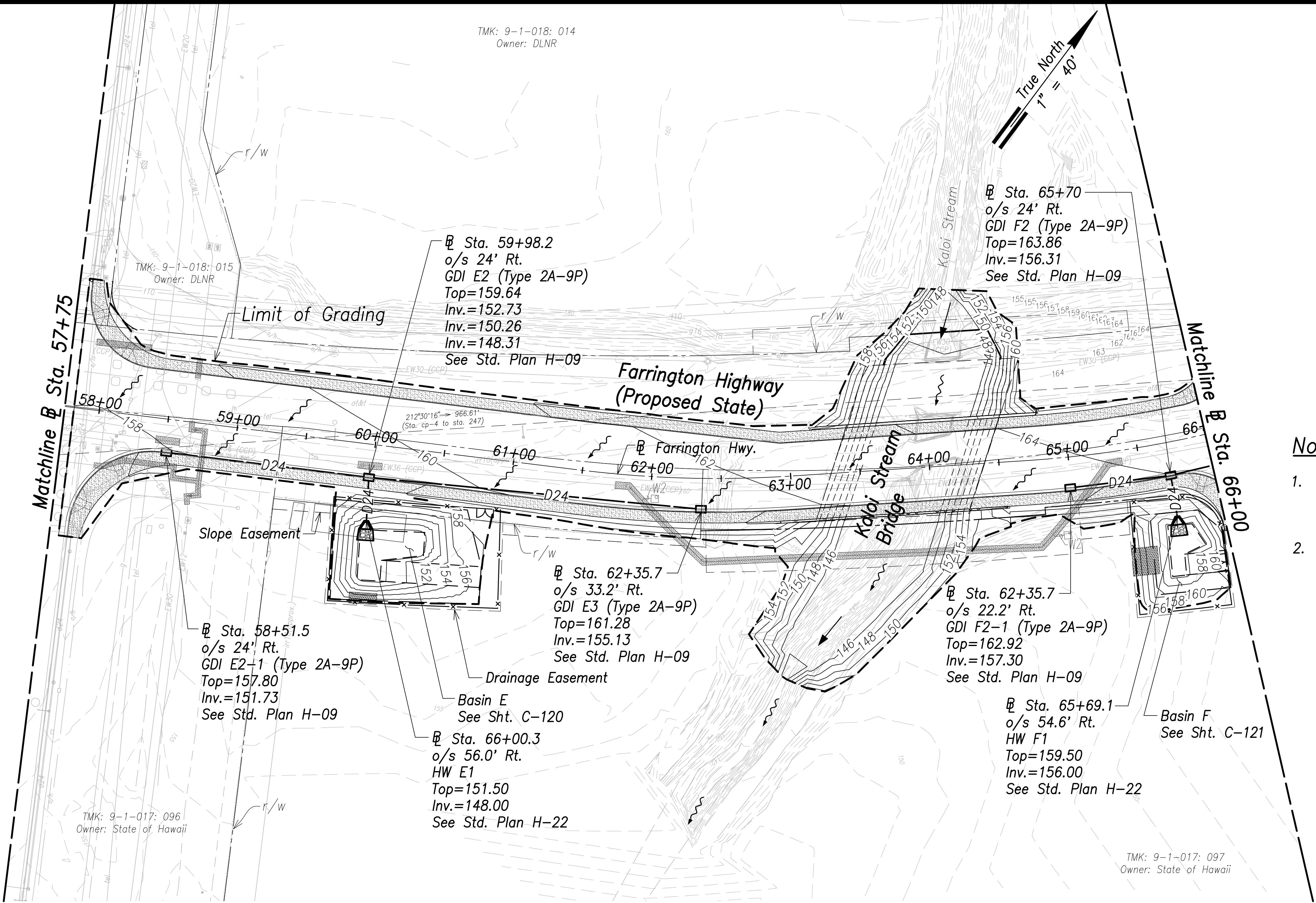
FILE: K:\civil\23146 Farrington Hwy Widening\Drawings\Construction\Drawings\Grading and Drainage Plan - Sta. 49+00 to 57+75.dwg saved March 24, 2022

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



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	104	XXX

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	105	XXX

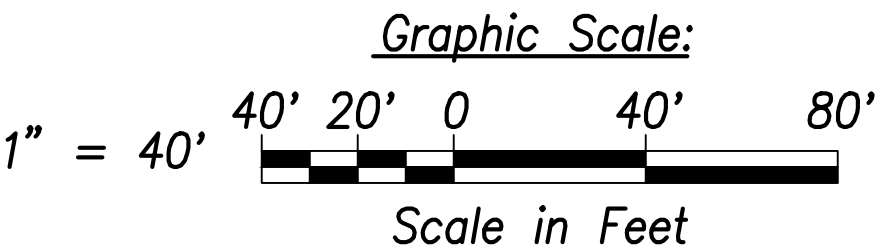


Notes:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- See Access to Farm Lots notes on sheet C-3

Legend:

- Ground Contour
- Finished Grade Contour
- Finished Grade Contour (Under Bridge)
- Limit of Grading
- Existing Flow
- Proposed Flow



Grading and Drainage Plan - (Sta. 57+75 to Sta. 66+00)
Scale: 1" = 40'

DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
TRACED BY	_____
NOTED BY	_____
CHECKED BY	_____

THIS WORK WAS PREPARED BY ME
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April 30, 2022
SIGNATURE _____
EXPIRATION DATE
OF THE LICENSE

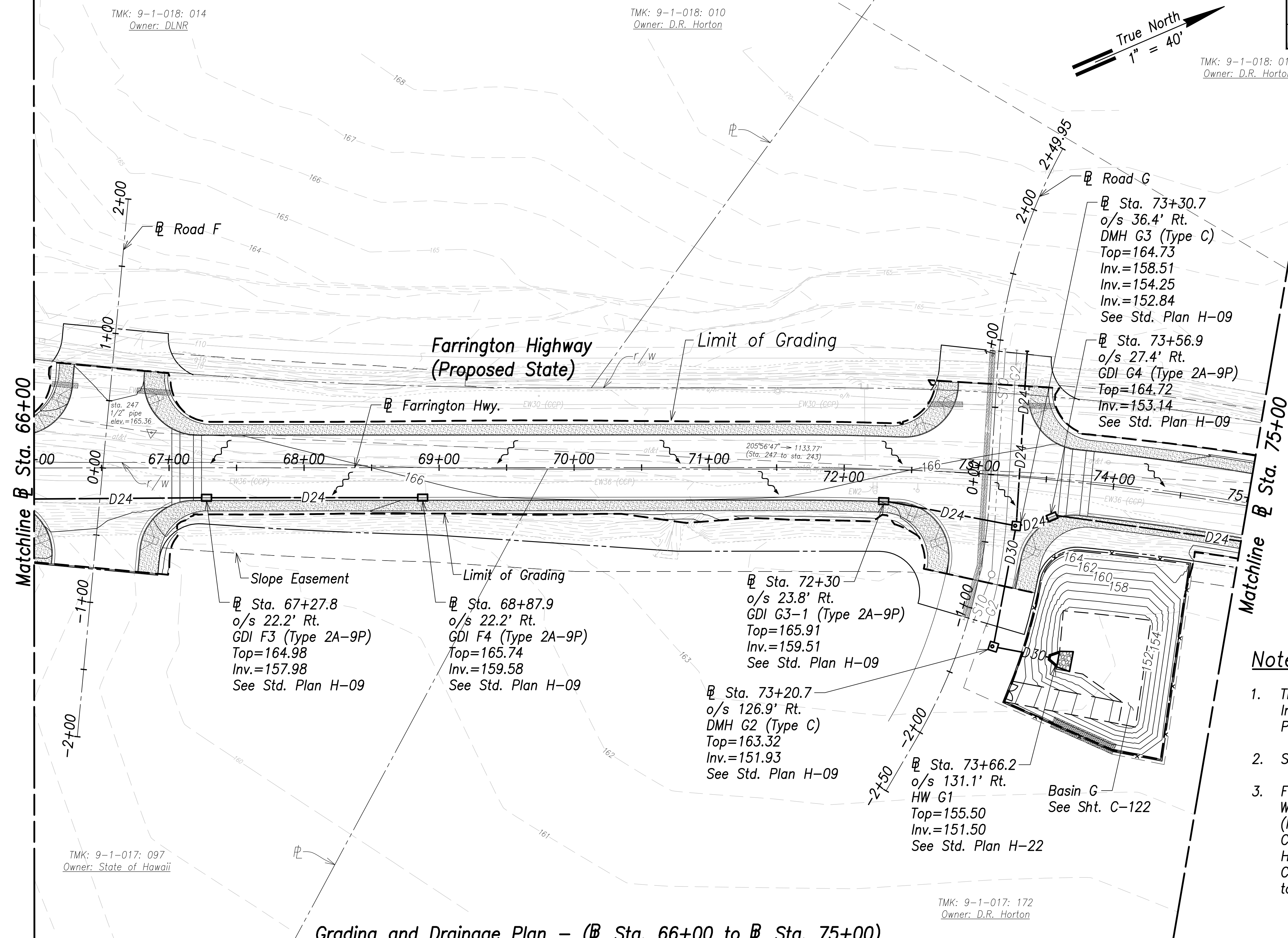
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
Sta. 57+75 to Sta. 66+00
FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

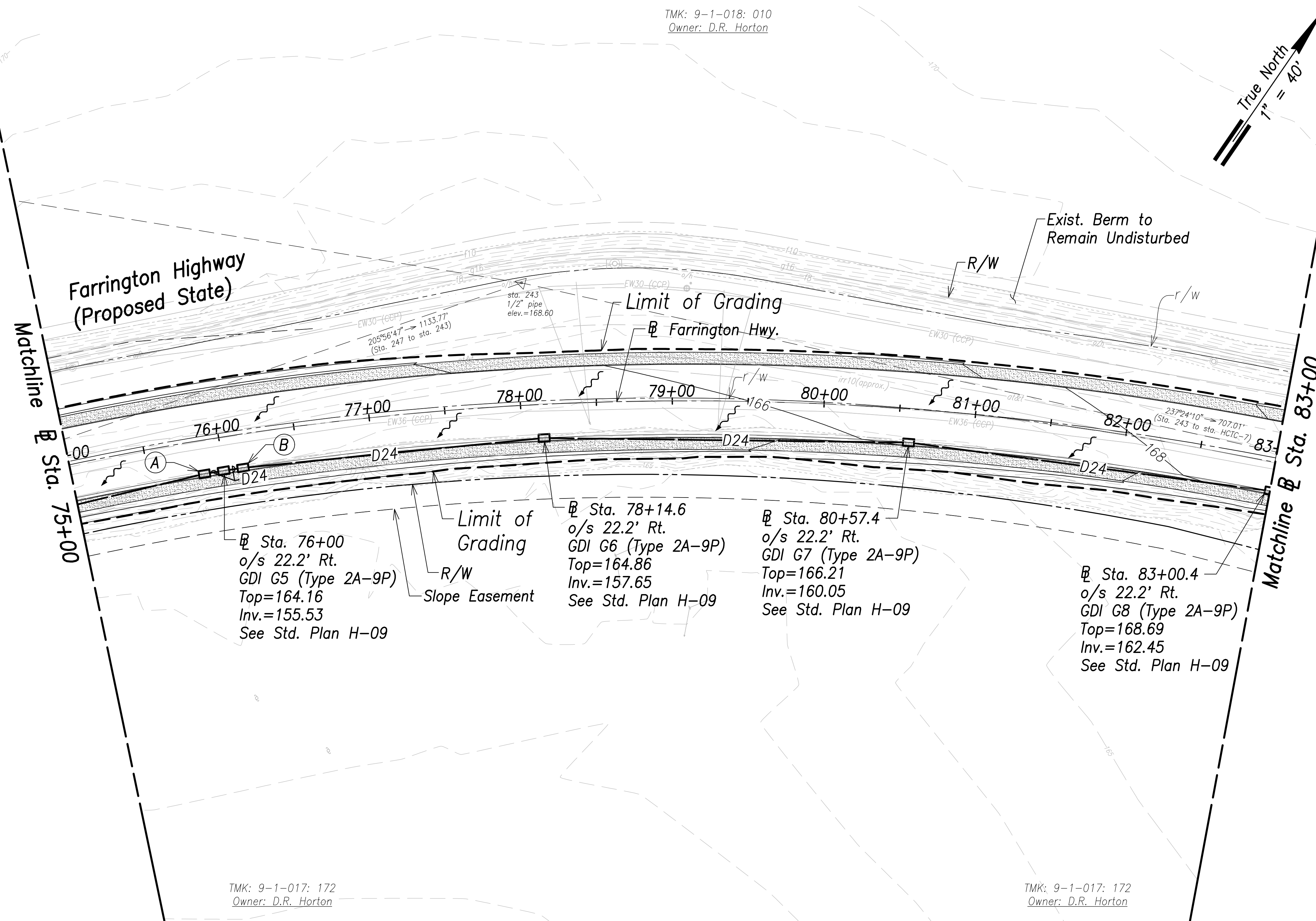
Scale: As Shown Date: January 2022

SHEET No. OF XXX SHEETS

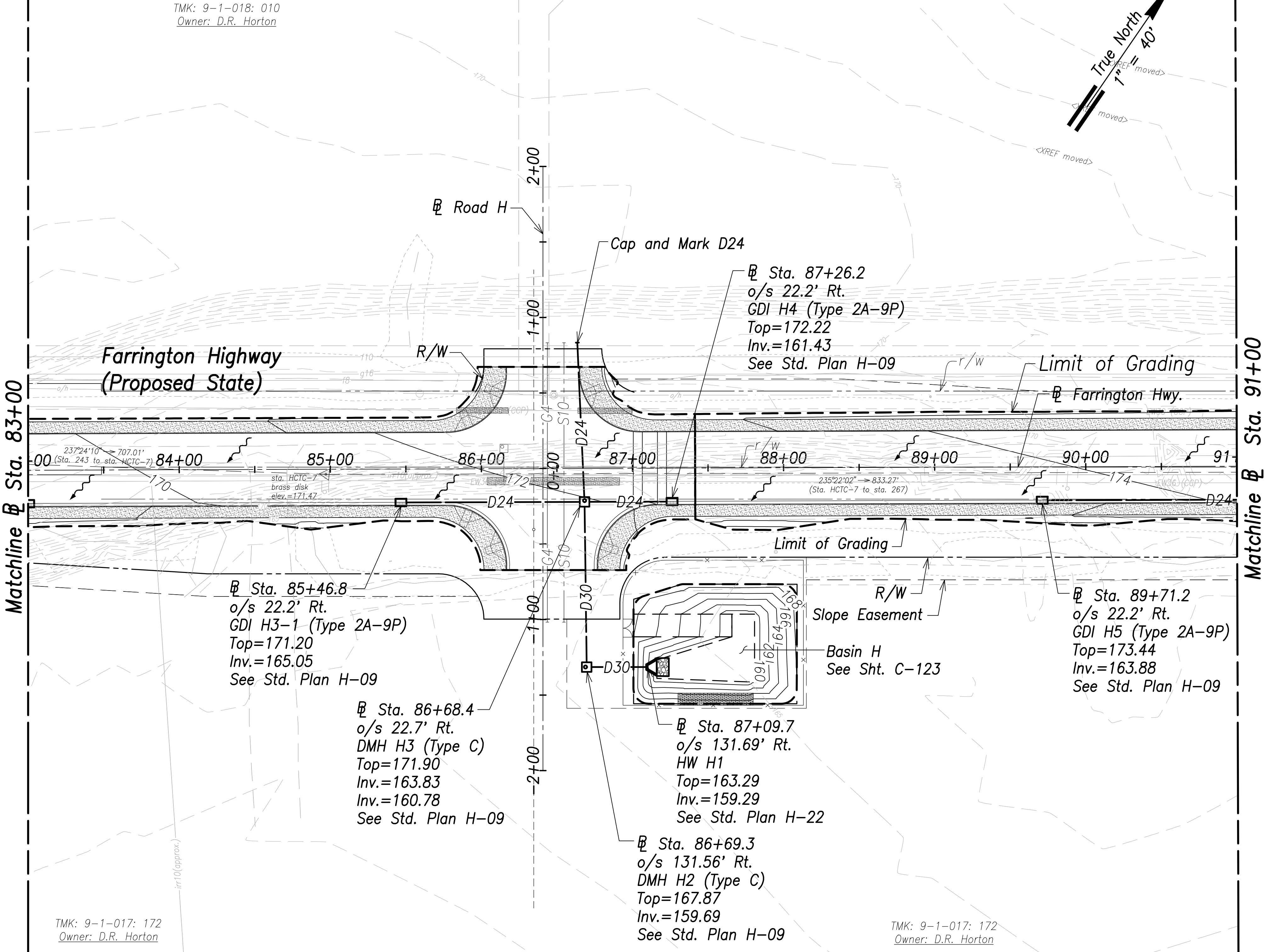
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	106	XXX



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	107	XXX



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	108	XXX



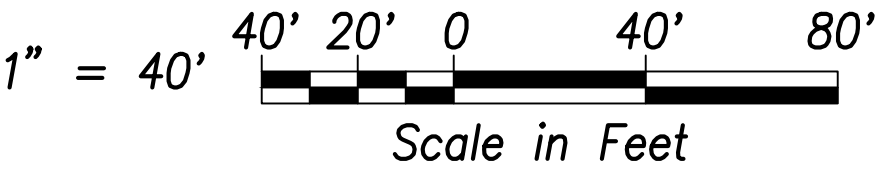
Legend:

- 70 --- Existing Grade Contour
- 100 --- Finished Grade Contour
- Limit of Grading
- Drainage Flow Direction

Notes:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- See Access to Farm Lots notes on sheet C-3.
- Future HECO Electrical System, Construction Will Occur at the Same as this Project (Farrington Highway Improvements). The Contractor Shall Fully Coordinate Work with HECO and their Contractor. The Cost to Coordinate Work Will be Considered Incidental to the Various Items of Work.

Graphic Scale:



Grading and Drainage Plan - (Sta. 83+00 to Sta. 91+00)

Scale: 1" = 40'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
Sta. 83+00 to Sta. 91+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

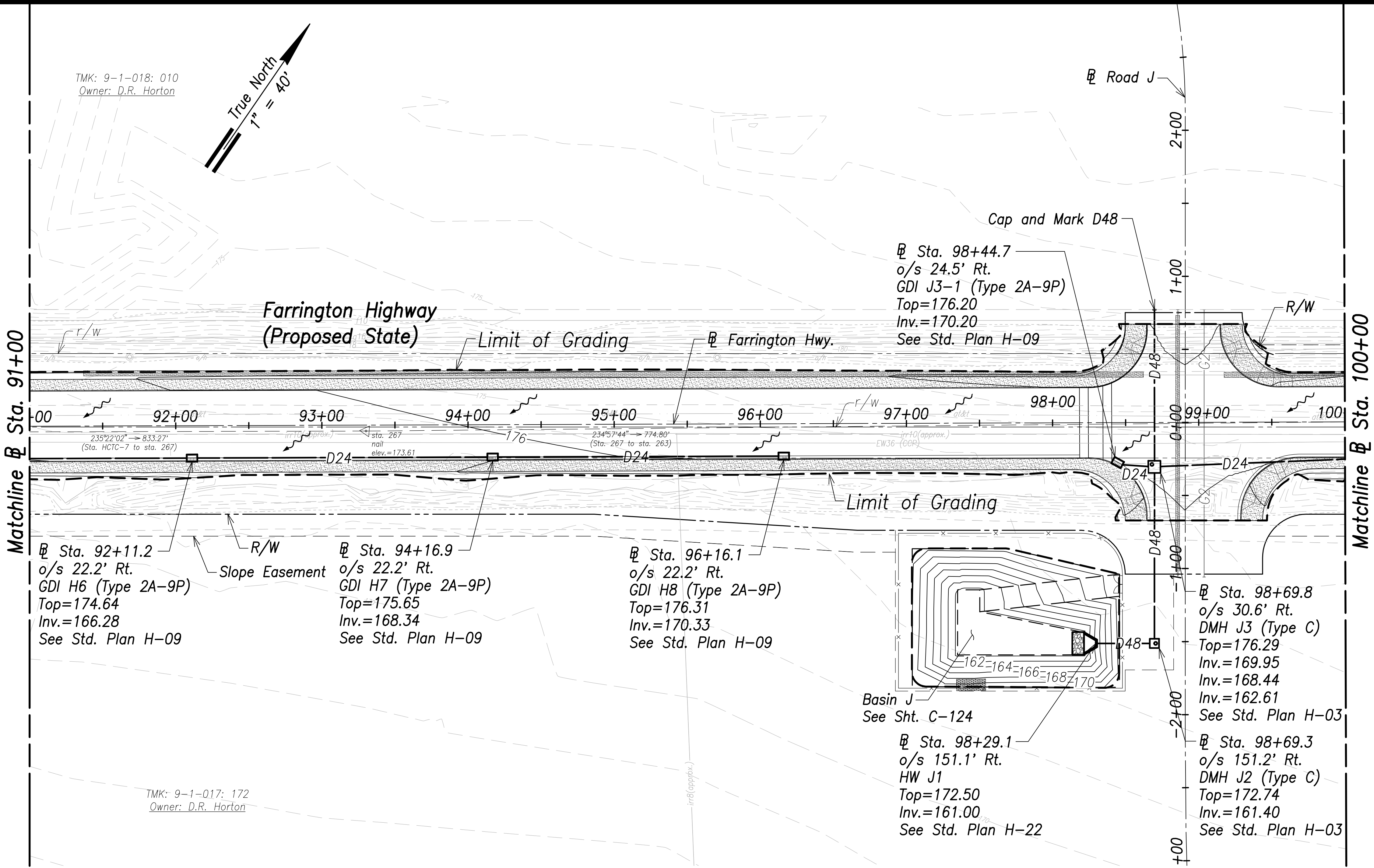
Scale: As Shown Date: January 2022

SHEET No. OF XXX SHEETS

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
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April 30, 2022
SIGNATURE EXPIRATION DATE
OF THE LICENSE

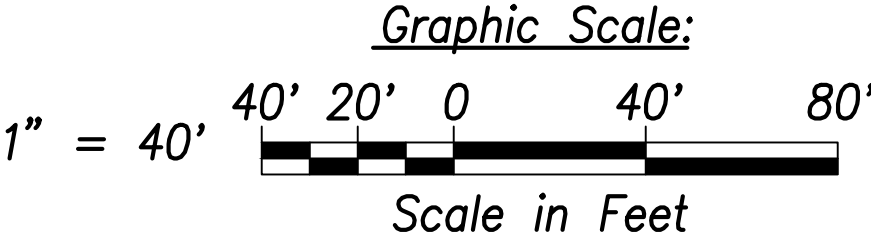
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	109	XXX



- Notes:**
- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
 - See Access to Farm Lots notes on sheet C-3.
 - Future HECO Electrical System, Construction Will Occur at the Same as this Project (Farrington Highway Improvements). The Contractor Shall Fully Coordinate Work with HECO and their Contractor. The Cost to Coordinate Work Will be Considered Incidental to the Various Items of Work.

- Legend:**
- 66 Ground Contour
 - 68 Finished Grade Contour
 - Limit of Grading
 - ~ Flow Direction

Grading and Drainage Plan – (Sta. 91+00 to Sta. 100+00)
Scale: 1" = 40'



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

THIS WORK WAS PREPARED BY ME
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April 30, 2022
SIGNATURE EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

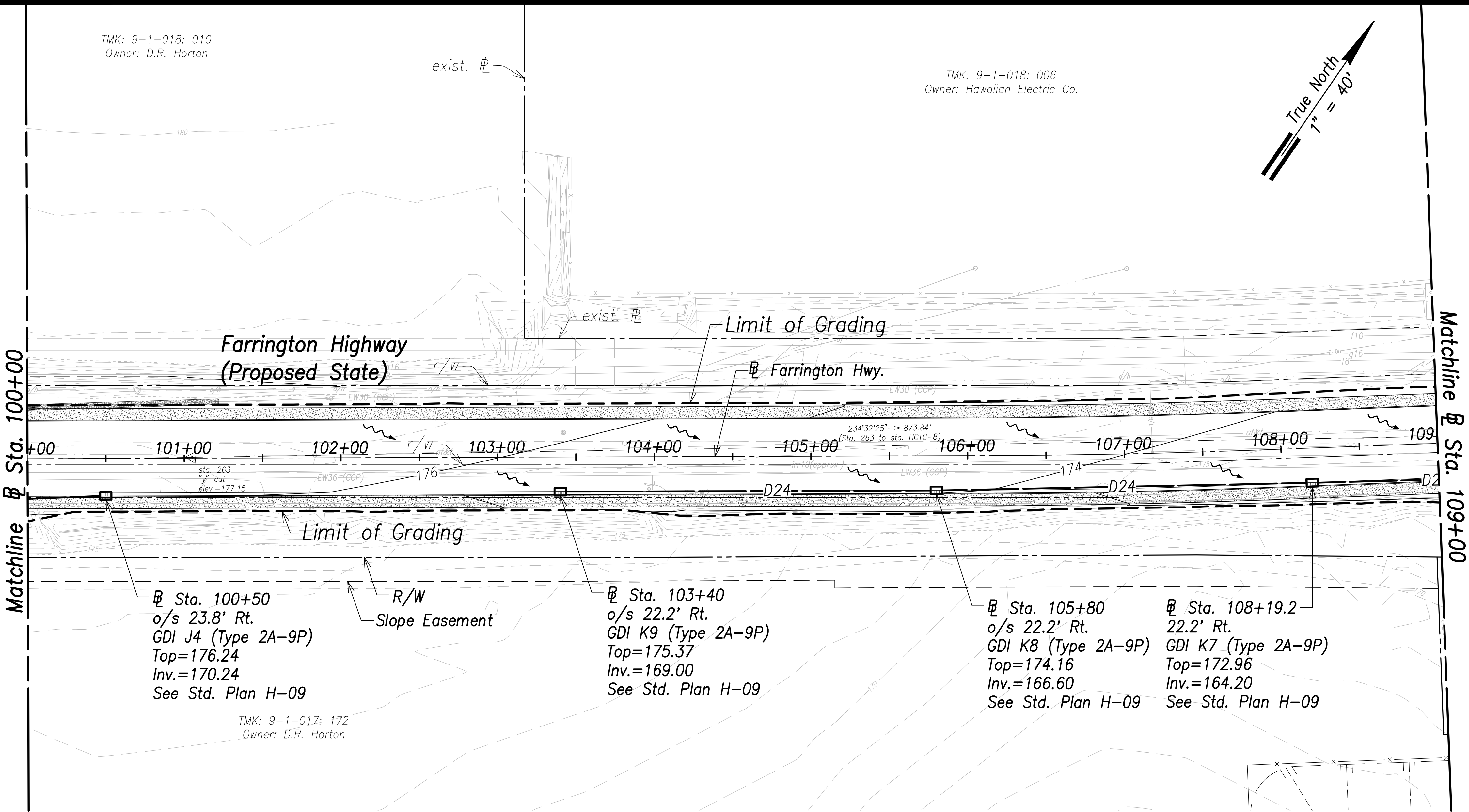
Grading and Drainage Plan
Sta. 91+00 to Sta. 100+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. OF XXX SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	110	XXX



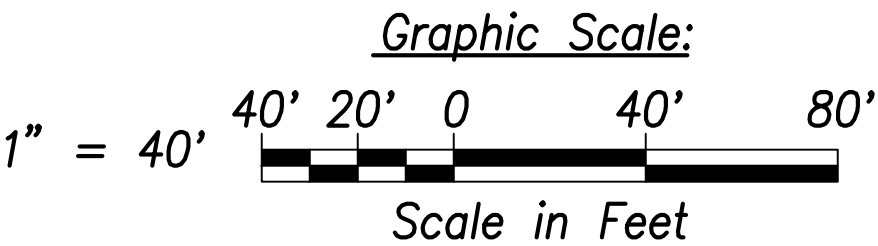
Legend:

---	Existing Grade Contour
---	Finished Grade Contour
---	Limit of Grading
---	Drainage Flow Direction

Grading and Drainage Plan - (⊕ Sta. 100+00 to ⊕ Sta. 109+00)
Scale: 1" = 40'

Notes:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- See Access to Farm Lots notes on sheet C-3.
- Future HECO Electrical System, Construction Will Occur at the Same as this Project (Farrington Highway Improvements). The Contractor Shall Fully Coordinate Work with HECO and their Contractor. The Cost to Coordinate Work Will be Considered Incidental to the Various Items of Work.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
⊕ Sta. 100+00 to ⊕ Sta. 109+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

THIS WORK WAS PREPARED BY ME
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April 30, 2022
SIGNATURE EXPIRATION DATE
OF THE LICENSE

Scale: As Shown Date: January 2022

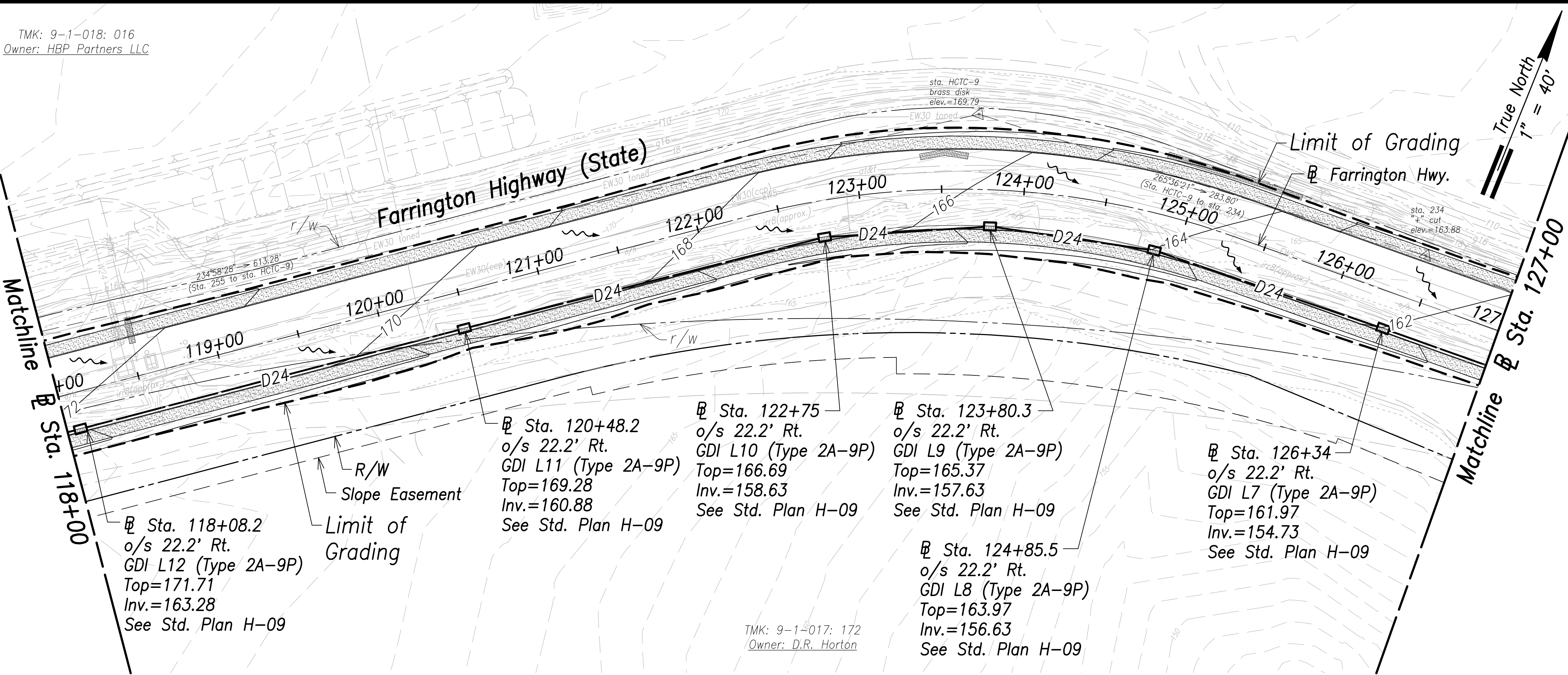
SHEET No. OF XXX SHEETS

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

FILE: K:\Civil\23146 Farrington Hwy Widening\Draw\Construction\Draw\Grading and Drainage Plan - Sta. 100+00 to 109+00.dwg saved March 25, 2022

TMK: 9-1-018: 016
Owner: HBP Partners LLC

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	112	XXX



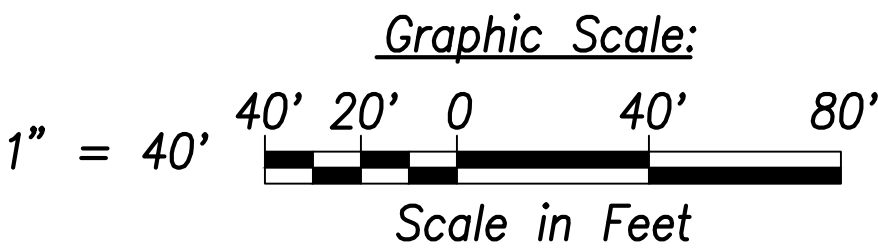
Grading and Drainage Plan – (Sta. 118+00 to Sta. 127+00)
Scale: 1" = 40'

Notes:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- See Access to Farm Lots notes on sheet C-3

Legend:

- Existing Grade Contour
- Finished Grade Contour
- Limit of Grading
- Drainage Flow Direction



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
Sta. 118+00 to Sta. 127+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. OF XXX SHEETS

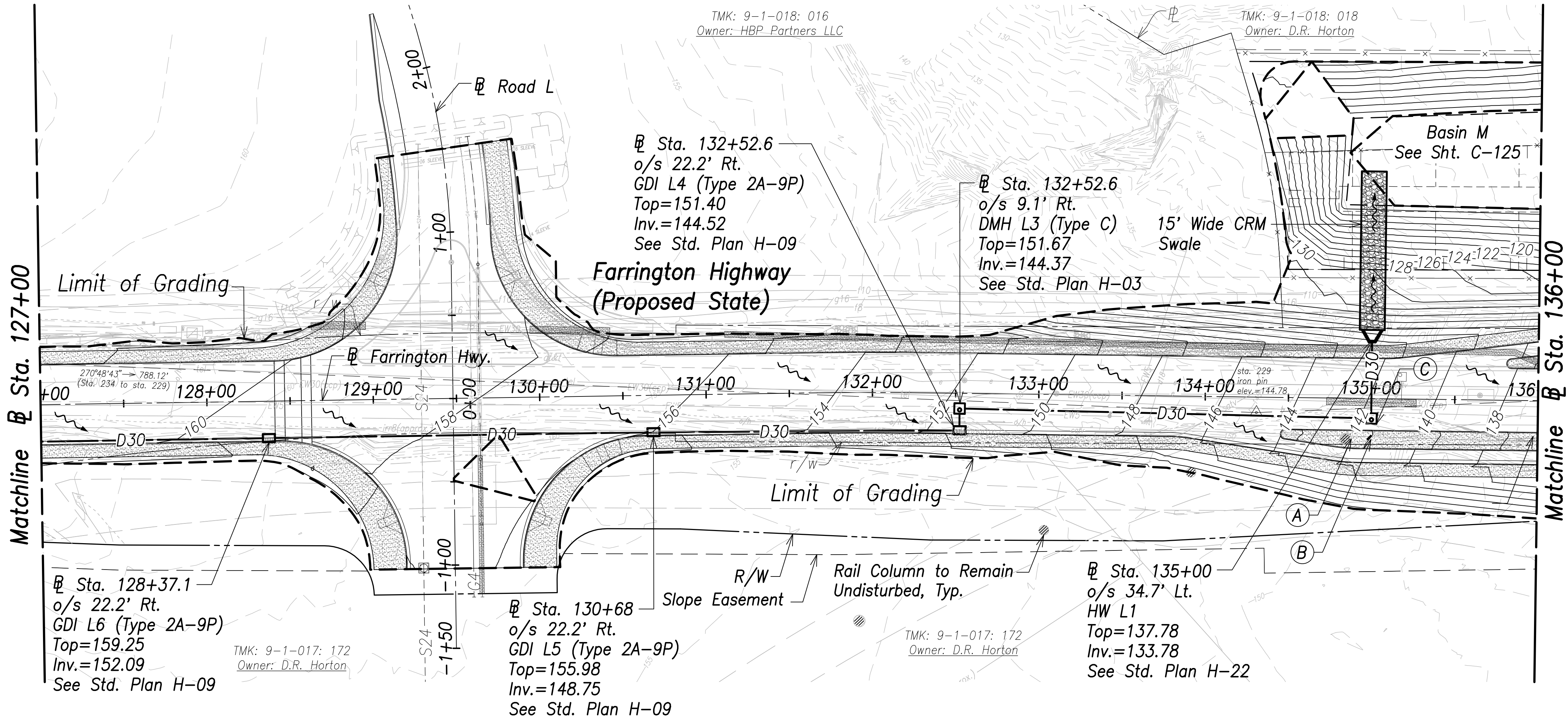
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.

April 30, 2022
SIGNATURE EXPIRATION DATE
OF THE LICENSE

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

ORIGINAL PLAN	NOTE BOOK
No.	No.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	113	XXX



Grading and Drainage Plan - (Sta. 127+00 to Sta. 136+00)
Scale: 1" = 40'

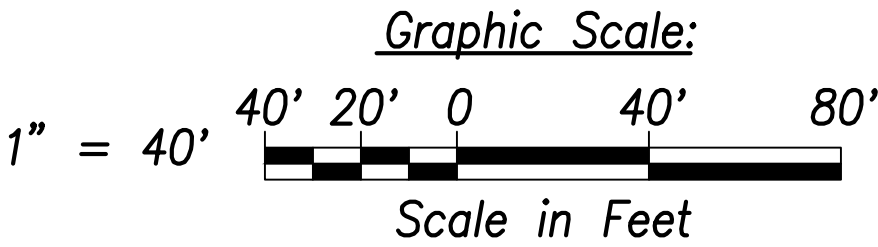
- (A) Conn. to Exist. Downspout
See Det., Sht. C-238
- (B) Sta. 134+99.9
o/s 24.4' Lt.
1-8" Wye
1-C.O.T.G.
Inv.=XX.XX
See Det., Sht. C-238
- (C) Sta. 135+00
o/s 11.1' Rt.
DMH L2 (Type C)
Top=141.69
Inv.=134.23
See Std. Plan H-03

Note:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- Contractor Shall Locate Guardrail Posts to Provide 2' Min. Clear From Drain Utilities and Cleanout.

Legend:

- 70 --- Existing Grade Contour
- 100 — Finished Grade Contour
- - - - - Limit of Grading
- ~ ~ ~ ~ ~ Drainage Flow Direction



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

April 30, 2022

SIGNATURE EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
Sta. 127+00 to Sta. 136+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

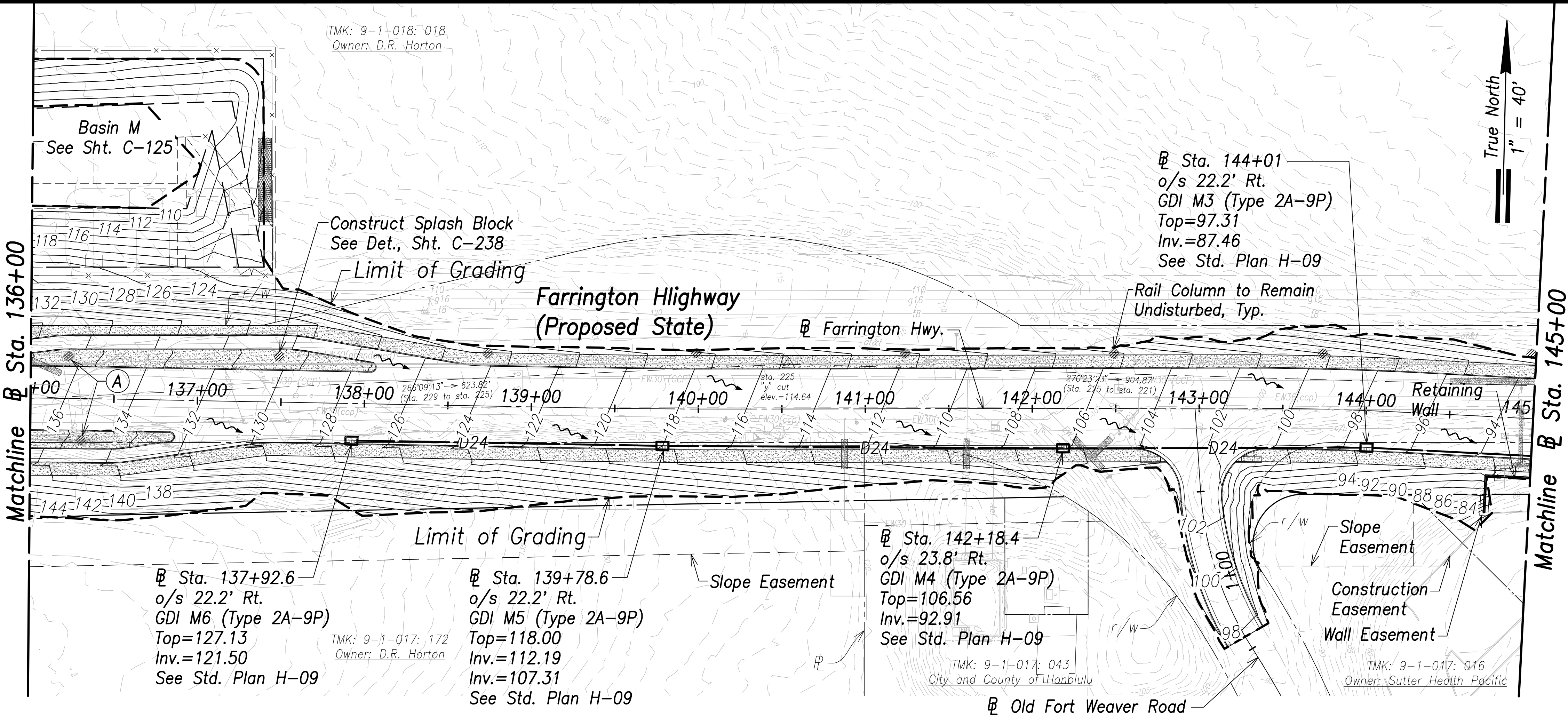
Scale: As Shown Date: January 2022

SHEET No. OF XXX SHEETS

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

FILE: K:\civil\23146 Farrington Hwy Widening\Draw\Construction\Draw\Grading and Drainage Plan - Sta. 127+00 to 136+00.dwg saved March 25, 2022

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	114	XXX



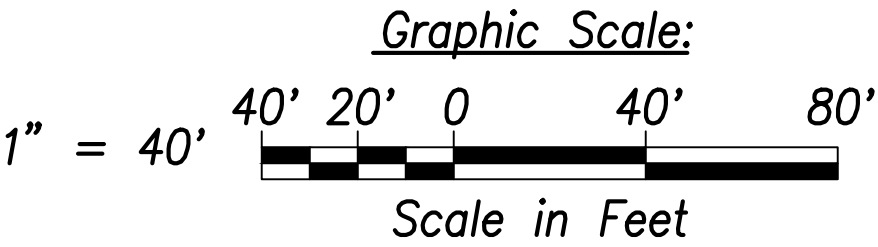
Grading and Drainage Plan – (Sta. 136+00 to Sta. 145+00)
Scale: 1" = 40'

Note:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- Contractor Shall Locate Guardrail Posts to Provide 2' Min. Clear From Drain Utilities.

Legend:

- Existing Grade Contour
- Finished Grade Contour
- Limit of Grading
- Drainage Flow Direction



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
Sta. 136+00 to Sta. 145+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

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

April 30, 2022
EXPIRATION DATE
OF THE LICENSE

SIGNATURE

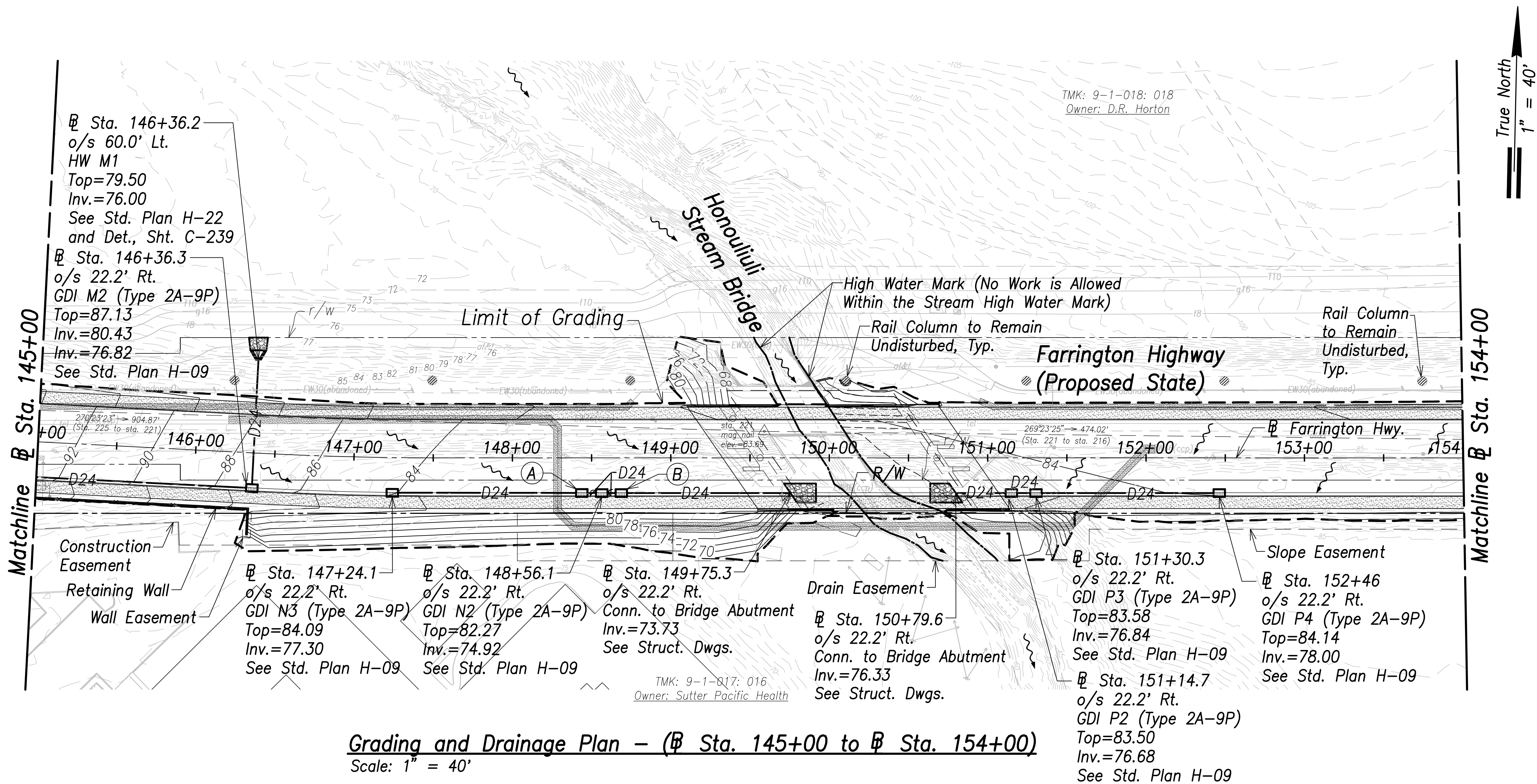
Scale: As Shown Date: January 2022

SHEET No. OF XXX SHEETS

(A)
Construct Splash Block
See Det., Sht. C-238

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021	115	XXX

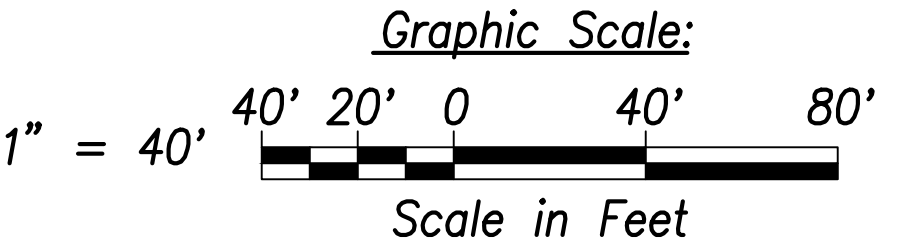


Notes:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- See Access to Farm Lots notes on sheet C-3

Legend:

- Ground Contour
- Finished Grade Contour
- Finished Grade Contour (Under Bridge)
- Limit of Grading
- Existing Flow



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
@ Sta. 145+00 to @ Sta. 154+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022

SHEET No. OF XXX SHEETS

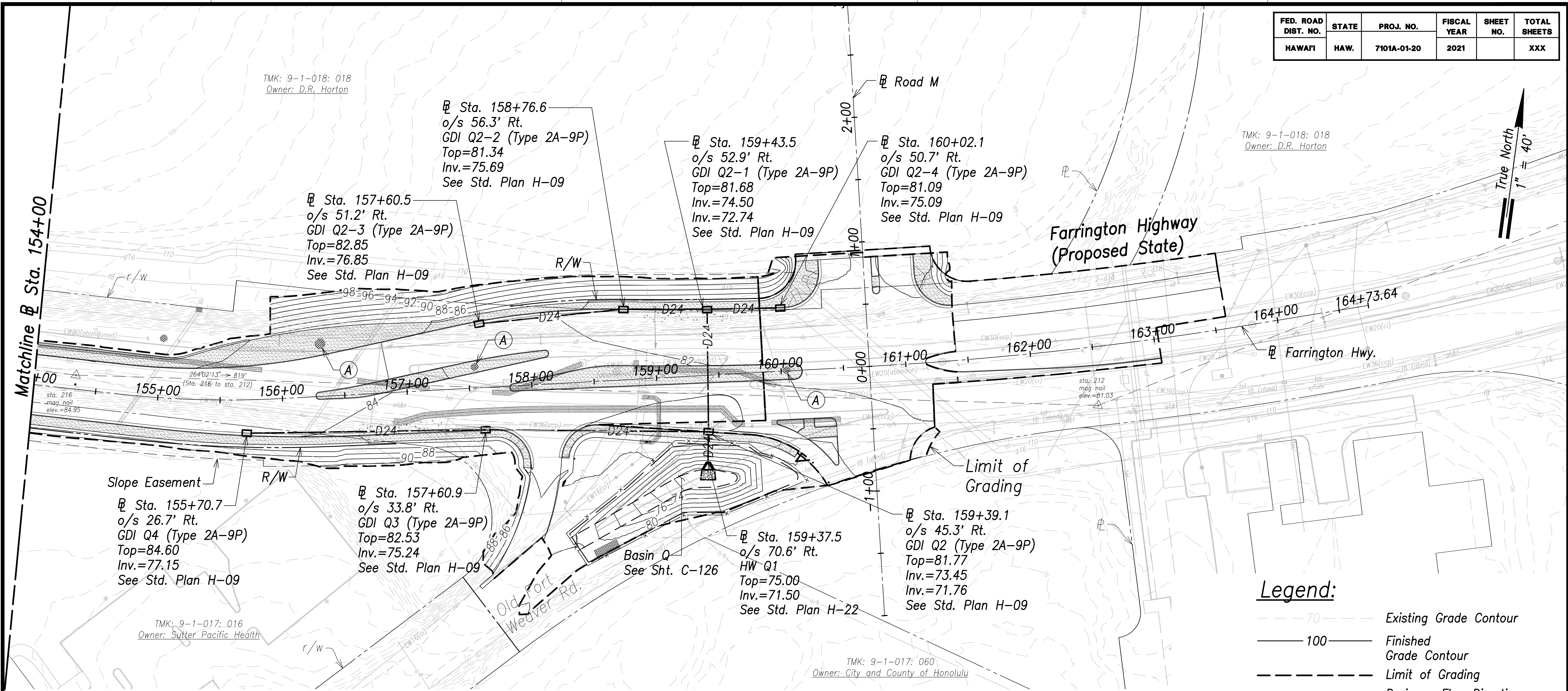
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April 30, 2022
EXPIRATION DATE
OF THE LICENSE

SIGNATURE

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7101A-01-20	2021		XXX



Legend:

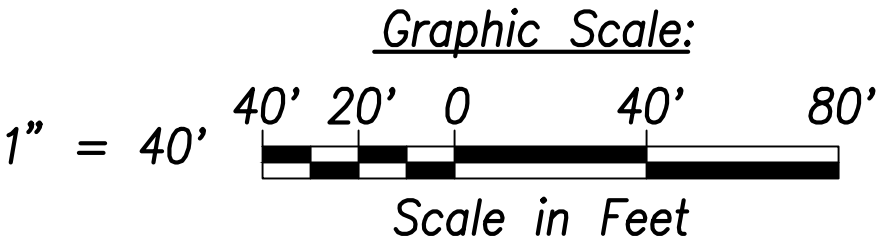
- 70 Existing Grade Contour
- 100 Finished Grade Contour
- Limit of Grading
- Drainage Flow Direction

(A)
Construct Splash Block
See Det., Sht. C-238

Grading and Drainage Plan – (Sta. 154+00 to Sta. 165+00)
Scale: 1" = 40'

Notes:

- The Contractor Shall Construct/Phase Drainage Improvements to Avoid Flooding Adjacent Properties and Washout of Roadway.
- Contractor Shall Locate Guardrail Posts to Provide 2' Min. Clear From Drain Utilities and Cleanout.
- See Access to Farm Lots notes on sheet C-3



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April 30, 2022
SIGNATURE EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Grading and Drainage Plan
Sta. 154+00 to Sta. 165+00

FARRINGTON HIGHWAY WIDENING
Kapolei Golf Course Road to Fort Weaver Road
Project No. 7101A-01-20

Scale: As Shown Date: January 2022
SHEET No. OF XXX SHEETS

Farrington Highway Widening

Location: Ewa, Oahu, Hawaii
Description: NPDES Drainage calculations

Date: 4/6/22
Prepared By: CN
Checked By: CWL

Prepared for: State of Hawaii Department of Transportation
Consultant: R. M. Towill Corporation

PURPOSE: To calculate the quantity of storm water runoff generated from the project site in the event of a 10-year, one-hour storm.

REFERENCE: 1) Design Criteria for Highway Drainage, State of Hawaii Department of Transportation, Highways Division, June 15, 2019.
2) Point Precipitation Frequency Estimates, NOAA Atlas 14, Volume 4, Version 3.

CALCULATIONS:**1) Rational Method Equation**

Use rational method, $Q = ciFA$, where:

Q= flow rate, cfs
c= runoff coefficient
i = rainfall intensity, in/hr, for a duration equal to the time of concentration
F= correction factor to convert 1-hr. rainfall to Tc duration
A= drainage area, acre

2) Runoff Quantity

Runoff coefficient, C	0.85
Rainfall intensity, i (in/hr, 10 year)	2.14 (Ref. 2)
Correction factor, F	2.20
Drain Area, A (acres)	37.37
Q (cfs)	149.56