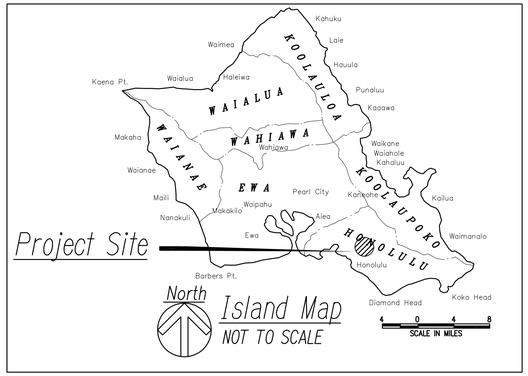
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	114	466



General Notes:

1. *Provide 5' Minimum Clear Between Street Light Poles & Sewer Laterals.*
2. *Provide 3' Minimum Clear Between Pullboxes & Sewer Laterals.*
3. *Provide 6' Minimum Clear Between Transformer Pads & Sewer Laterals (Do Not Straddle).*
4. *Provide 3' Minimum Clear Between Ductlines & Sewer Lines.*
5. *Contractor Shall Verify Sewer Lateral Locations with Civil Sheets.*
6. *Provide 3' Minimum Horizontal Clear & 6" Vertical Clear Between Water Lines & All Electrical Systems. Provide 12" Minimum Vertical Clear Between BWS Water Lines & All Electrical Systems.*
7. *Contractor Shall Be Responsible to Arrange with the General Contractor to Identify the Locations of Civil Site Utilities, Driveways, Etc. Prior to Electrical Contractors Layout of Electric, Telephone, Street Light, Traffic Signal, And CATV Systems.*

Notes for Construction:

A. *The Location of 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 Exercise Extreme Caution Whenever Construction Crosses Or is In Proximity of Underground Lines and Shall Maintain Adequate Clearance When Operating Equipment Under Any Overhead Lines.*

B. *The Contractor is to Comply With the Directions of the State of Hawaii Occupational Safety and Health Law (HIOSH).*

C. *When Trench Excavation is Adjacent to Existing Structures Or Facilities, the Contractor is Responsible For Properly Sheeting and Bracing the Excavation and Stabilizing the Existing Ground to Render it Safe and Secure From Possible Slides, Cave-ins and Settlement, and For Properly Supporting Existing Structures and Facilities With Beams, Struts Or Underpinning to Fully Protect it From Damage.*

D. *As Required by Section 645, the Contractor Shall Provide Two Off-duty Police Officers to Control the Flow of Traffic at Each Location.*

E. *Where Pedestrian Walkways Exist, Such Walkways Shall Be Maintained In Passable Condition Or Other Facilities For Pedestrians Shall Be Provided. Passage Between Walkways At Intersections Shall Likewise Be Provided, All Shall Be ADA Compliant.*

F. *Driveways Shall Be Kept Open Unless the Owners of the Property Using These Right-of-ways are Otherwise Provided For Satisfactorily.*

G. *The Underground Pipes, Cables Or Ductlines Known by the Engineer to Exist From His Search of Records are Indicated on the Plans. the Contractor Shall Verify the Location and Depth of the Facilities and Exercise Proper Care In Excavating 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.*

Department of Transportation Services Traffic Signals And Technology Notes:

1. *The Contractor Shall Notify The Traffic Signals And Technology Division, Department Of Transportation Services, Three (3) Working Days Prior To Commencing Work On The Traffic Signal System (Phone: 768-8388).*
2. *The Traffic Signal System Shall Be Kept Operational During Construction. Any Relocation Required Shall Be Approved By The Traffic Signals And Technology Division, Department Of Transportation Services, And Paid For By The Contractor.*
3. *The Contractor Shall Be Responsible For Any Damages To The Existing Traffic Signal Facilities, Including But Not Limited To The Traffic Signal Fiber Optic Cable System, And Interconnect System. Any And All Damages To The Facilities Shall Be Repaired By The Contractor At Their Cost In Accordance With The Requirements Of The Traffic Signal And Technology Division, Department Of Transportation Services.*
4. *Coordinate All Speciality Work to be Performed by Traffic Signal System (TS) Contractor and Closed Circuit Television (ITS) Contractor.*
5. *Work Included are New and Relocation of HECo Services, Including HECo Metering and Underground Feeders to Equipment.*

Department of Design & Construction Mechanical/Electrical Division Notes:

1. *The Contractor Shall Notify the Mechanical/Electrical Division, Department of Design and Construction Two (2) Weeks in Advance of Any Relocation of Utility Pole(s) that May Be Necessary. (1-808-768-8431).*
2. *The Contractor Shall Notify the Mechanical/Electrical Division, Department of Design and Construction, Three (3) Working Days Prior to Commencing Work on the Street Light System. (1-808-768-8431).*
3. *The Street Lighting System Shall Be Kept Operational During Construction. Any Relocation Required Shall Be Approved by the Mechanical/Electrical Division and Paid for by the Contractor.*
4. *The Locations of the Existing Underground Street Light Facilities Shown On the Plans are from Existing Plans and are Approximate Only. The Contractor Shall Exercise Caution when Construction Crosses or Is In Close Proximity to the Existing Street Light Facilities. The Contractor Shall Be Responsible for Any Damages to the Existing Street Light Facilities. Any and All Damages to these Facilities Shall Be Repaired by the Contractor at His Cost in Accordance with the Requirements of the City and County of Honolulu.*
5. *The Contractor Shall Be Responsible for Any Damages to the City's Existing Communications Fiber Optic Cable System. Any and All Damages to these Facilities Shall be Repaired by the Contractor at His Cost in Accordance with the Requirements of the City and County of Honolulu.*
6. *Salvage and Deliver Existing Standards for steel poles, Luminaries & Control Nodes, Mass Arms from Wood Poles (HECO Joint Wood Poles) to Department of Facility Maintenance Pearl City Corp Yard at Pearl City (952 Third Street) as Directed by the Street Light Inspector. Contractor is to contact 1-808-768-5300 a Minimum of Two Days prior to Delivery of Salvage Items. Contractor is to Meet with Department of Facility Maintenance Personnel at Pearl City Corp Baseyard on the Day of Delivery to show where to Unload the Items (i.e. Steel Poles).*

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

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APPROVED BY

PROGRAM ADMINISTRATOR, MECHANICAL/ELECTRICAL DIVISION DATE
DEPT. OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

CHIEF, TRAFFIC REVIEW BRANCH DATE
DEPT. OF PLANNING AND PERMITTING
CITY & COUNTY OF HONOLULU

CHIEF, TRANSPORTATION TECHNOLOGY DIVISION DATE
DEPT. OF TRANSPORTATION SERVICES
CITY & COUNTY OF HONOLULU

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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

April 30, 2024
SIGNATURE — EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted — Date: December 2022

SHEET No. EA-01 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 115	466

Electrical Symbols

Symbol	Description	Symbol	Description	Symbol	Description
	Exst. Street Light		Type "A" Metric State Highway Traffic Signal Pullbox	T	Traffic Signal Controller, See Detail A/EE07
1	Note Symbol, See Plan For Notes		Type "B" Metric State Highway Traffic Signal Pullbox	C	CCTV Controller, See Detail A/EE07
	Breakline To Begin & End Duct Section Type		Type "C" Metric State Highway Traffic Signal Pullbox	B 25'	Type II Traffic Signal Standard With Traffic Signal Heads Mounted On Mast Arm Standard; Pole "B" with 25' Mast Arm Indicated, Standard; Pole "B" With 25' Mast Arm Indicated, See Detail A/EE03
2-2E A	Electric/Signal Ductline With Designators; Indicates Type "A" Duct Section With "2-2E" Ducts. See Sheet EF-02 & EF-03 For Duct Sections And EF-01 For The Conduit Schedule		Exst. Street Light Pullbox		
		---e-oh---	Exst. Overhead HECo Line		Pedestrian Push Button, See Detail B/EE04
	Saw Cut Exst. A.C. Pavement, Conc. Sidewalk, Curb & Gutter Prior To Trench Excavation. Restore Subbase, Basecourse, Pavement, Conc. Sidewalk, Curb & Gutter Per Hdot Requirements, Thickness Shall Match Exst. Road Design See Civil Sheets For Restoration Details.	---t-oh---	Exst. Overhead HTCo Line		Vehicle Loop Detector, See Sht EE06
		---v-oh---	Exst. Overhead CATV Line		
		---g-oh---	Exst. Overhead Span Guy	A	Signal Standard, 10' Height, Unless Indicated Otherwise With Designator; Pole "A" Indicated, See Detail C/EE04
		---sl-oh---	Exst. Overhead Street Light Line		
	Stub, Cap & Mark Conduit(s) With Concrete Stub Out Marker	E-OH	Overhead HECo Line		12" RYG Traffic Signal Head, See Mounting Details A/EE04
		T-OH	Overhead HTCo Line		12" RYGA Traffic Signal Head (Straight Arrow), See Mounting Details A/EE04
		V-OH	Overhead CATV Line		
		G-OH	Overhead Span Guy		12" RYGA Traffic Signal Head (Left Turn Arrow Indicated), See Mounting Details A/EE04
	Exst. HECo 2' X 4' Handhole	SL-OH	Overhead Street Light Line		
	Exst. HECo 3' X 3.5' Handhole	e	Exst. Underground HECo Line		12" RYGA Programmed Visibility Traffic Signal Head (Left Turn Arrow Indicated), See Mounting Details A/EE04
	Exst. HECo 4' X 5' Handhole	t	Exst. Underground HTCo Line		
	HECo 6' X 11' Handhole	v	Exst. Underground CATV Line		Pedestrian Signal Head, See Mounting Detail C/EE05
	HECo 6' X 14' Manhole				Optical Pre-emption Detector, See Mounting Details A & B/EE05
			Highway Light Standard	C	CCTV Camera, See Mounting Detail B/EE08
			Remove Exst. Highway Light Standard, Demolish Exst. Conc. Base	T	Thermal Imaging Camera
	Exst. HTCo 2' X 4' Handhole		3 Ft. Below Finish Grade & Backfill Pit To 95% Compaction		HECO Meter Pedestal, See Detail A/EE09
	HTCo 4' X 6' Handhole		Unless Indicated Otherwise. Repair Pavement To Match Exst.		Type "A" Metric State Highway Traffic Signal Pullbox
	HTCo 4' X 6' Manhole	---ts---	Exst. Highway Traffic Signal Ductline & Wiring		Type "B" Metric State Highway Traffic Signal Pullbox
S	Exst. HTCO 5' X 10' Manhole	---sl---	Exst. Highway Lighting Ductline & Wiring		Type "C" Metric State Highway Traffic Signal Pullbox
		SL	State Highway Lighting Underground Ductline	T	18"Sq x 6"D Cast Iron NEMA 4 Junction Box With Traffic Signal Label
	CATV 2' X 4' Handhole	CP	State Communications (Power) Underground Ductline	L	18"Sq x 6"D Cast Iron NEMA 4 Junction Box With Street Light Label
	CATV 2' X 6' Handhole	CS	State Communications (Signal) Underground Ductline		
	CATV 4' X 6' Manhole	--CP/CS-EX--	State Communications (Power/Signal) Exposed Conduit		
		C	City Communications (Signal) Underground Ductline		
	Utility Pole By Utility Company Unless Otherwise Stated				
	Anchor & Guy Wire By Utility Company Unless Otherwise Stated	S	Concrete Stub Out Marker, See Sheet EF-01		
	HECo Overhead Transformer (1-Ph)	E	Elec Connection, WP		
	HECo Overhead Transformer Bank (3-Ph)				
			Metering Equipment, See Sheet EE-09		
			Exst. Metering Equipment		

Notes:

1. "X" Thru System Denotes Item to be Removed, Unless Otherwise Noted.
2. Dashed Symbol Indicates Existing Item, Unless Otherwise Noted.
3. Dashed and Screened Symbol Indicates Future Item, Unless Otherwise Noted.
4. "Top Of Wall" Indicates Pole Base Mounted On Top Of Retaining Wall.
   "In Cut Slope" Indicates Pole Base Located In Cut Slope Area.
   "In Fill Slope" Indicates Pole Base Located In Fill Slope Area.
   "Behind Guardrail" Indicates Pole Base Located Behind Guardrail.
   "Breakaway" Indicates Breakaway Transformer Base.

See Detail C/EG-8 For State Highway Light I.D. Tag Indicator Legend.

2

DATE	REVISION
4/7/23	2 Add. 2 – Update Legend

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL SYMBOLS

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EA-02 OF 8 SHEETS

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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

April 30, 2024
SIGNATURE EXPIRATION DATE OF THE LICENSE

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

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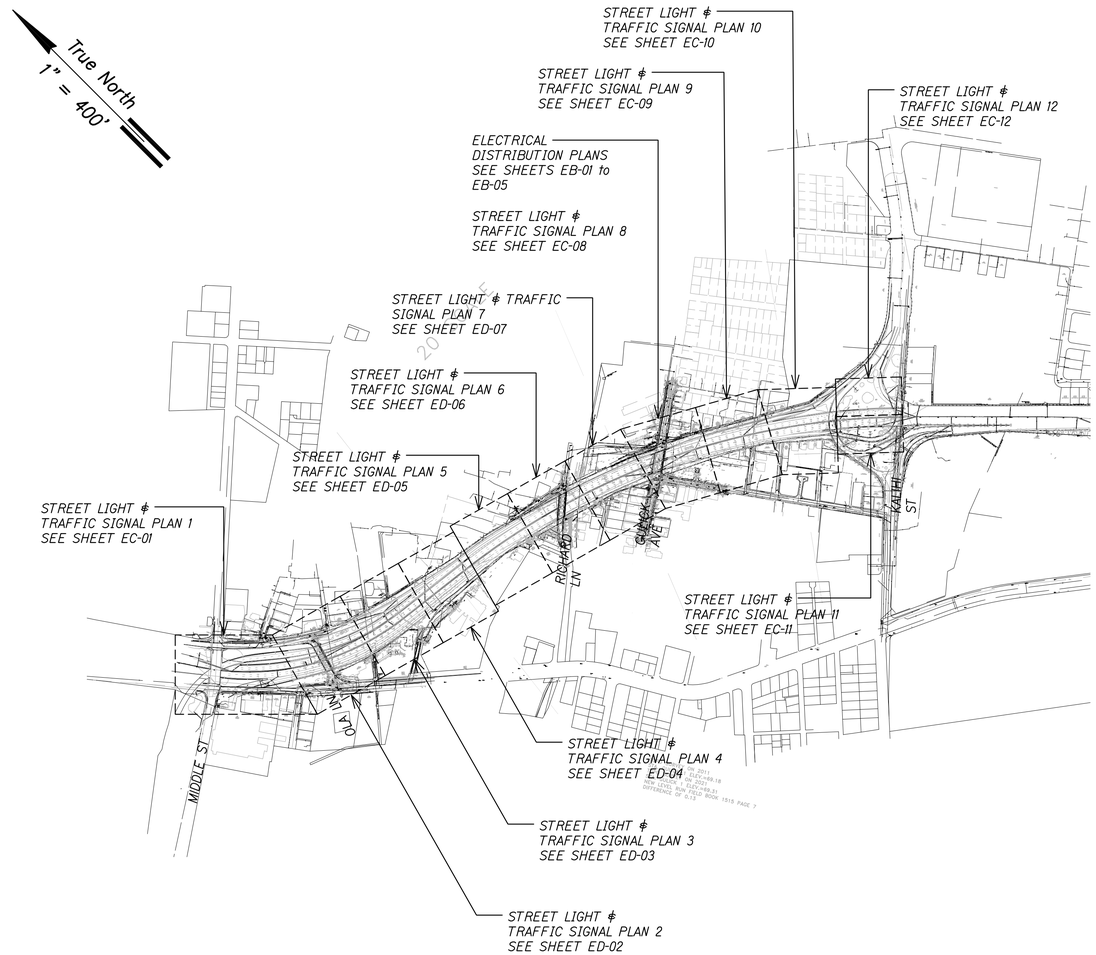
ADD. 115

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	116	466



Overall Electrical Site

Scale: 1" = 400'

Equipment Schedule

The Hawaiian Electric Co (HECo), Hawaiian Telcom (HTCo) & Spectrum Oceanic Cable (CATV) Pullboxes, Handholes and Manholes Shall Be Constructed By the Contract As Shown In These Drawings & In Accordance With the Following Standard Drawings:

Type	Description
6' X 11' HECo Handhole	6' X 11' Precast Concrete Handhole With Precast Concrete Covers, Provided In Accordance with HECo Standard Drawing No. 734374.
6' X 14' HECo Manhole	6' X 14' Reinforced Concrete Manhole With Traffic Rated Cover, Provided In Accordance with HECo Standard Drawing No. 734373.
2' X 4' CATV Handhole	2' X 4' Type 435TB Precast Pullbox with 2-piece Steel "Slip-Not" Grip or Polymer "Non-Skid" Covers, Similar to HT Standard Drawing No. 34056. Except With "CATV" Inscribed On Cover. A Minimum of 2 Pre-Cast Concrete Pullbox Sections Shall Be Required At Each Pullbox.
2' X 6' CATV Handhole	2' X 6' Reinforced Concrete Handhole With "Slip-Not" Grip Covers, Similar to HTCo Type 435TB6 (Standard Drawing No. 34078), Except With "CATV" Inscribed On Cover. 3 Pre-Cast Concrete Pullbox Sections Shall Be Required At Each Pullbox.
4' X 6' CATV Manhole	4' X 6' Reinforced Concrete Manhole With Traffic Rated Frame & Cover, Similar to HTCo Standard Drawing No. 180014, except with "CATV" Inscribed On Cover.

Type	Description
4' X 6' HTCo Handhole	4' X 6' type 435TB Precast Concrete Pullbox With 3-Piece Steel "Slip-Not" Grip or Polymer "Non-Skid" Covers And Ground Rod, Per HTCo Standard Drawing No. 34029.
4' X 6' HTCo Manhole	4' X 6' Reinforced Concrete Manhole With Traffic Rated Frame & Cover, Similar to HTCo Standard Drawing No. 180014.
5' X 10'-6" HTCo Manhole	5' X 10'-6" X 6'-6" Precast Reinforced Concrete Manhole With Traffic Rated Frame and Cover, Cable Racks and Ground rod, Provided In Accordance With HTCo Standard Drawing No. 180016.

Notes:

If Ducts Enter Handhole/Manhole Outside Of The Approved Handhole/Manhole Window, Submit the Handhole/Manhole Shop Drawing & Structural Calculations To The Respective Utility Company For Approval.

HECo Handholes & Manholes Sized 3'x5' And Larger Shall Be Reviewed By HECo Prior To Ordering And Fabrication.

Graphic Scale:

1" = 400' 400' 200' 0 400' 800'

Scale in Feet

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
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, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Overall Electrical Site & Equipment Schedule

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EA-03 OF 8 SHEETS

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

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	117	466

Hawaiian Electric Company (HECo) Notes:
Rev. 8/4/21

1. Location of Hawaiian Electric Facilities

The Location of Hawaiian Electric's Overhead and Underground Facilities Shown on the Plans are from Existing Records with Varying Degrees of Accuracy and are Not Guaranteed as Shown. The Contractor Shall Verify in the Field the Locations of the Facilities and Shall Exercise Proper Care in Excavating and Working in the Area. Wherever Connections of New Utilities to Existing Utilities and Utility Crossings are Shown, the Contractor Shall Expose the Existing Lines at the Proposed Connections and Crossings to Verify the Depths Prior to Excavation for the New Lines. The Contractor Shall Be Responsible for Any Damages to Hawaiian Electric's Facilities Whether Shown or Not Shown on the Plans.

2. Compliance with Hawaii Occupational Safety and Health Laws

The Contractor Shall Comply with the State of Hawaii's Occupational Safety and Health Laws and Regulations, Including Without Limitation, Those Related to Working on or Near Exposed or Energized Electrical Lines and Equipment.

3. Excavation Clearance

The Contractor Shall Obtain an Excavation Clearance from Hawaiian Electric's Planning and Design Section of the Transmission & Distribution Engineering Department (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 Relations at 543-7070 for Assistance in Identifying and Safeguarding Overhead Power Lines.

6. Pole Bracing

a) Contractor Shall Not Excavate within 10 Feet of Hawaiian Electric's Utility Poles or Any Anchor System Supporting the Utility Pole. If Contractor Must Excavate an Area More that 12 Inches Deep by 12 Inches Wide, and Closer Than 10 Feet From a Utility Pole or its Anchor System, Except When Excavating For Risers in a Single Trench Not Wider Than 12 Inches and Not Deeper Than 3 Feet, 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 Notify Hawaiian Electric Which May Lead to Implementing Pole Bracing Requirements. Hawaiian Electric Requires A Minimum of Ten (10) Working Days to Conduct the Review of Contractor's Submittal. Contractor Shall Submit Its Bracing Calculations and Drawings, Prepared and Stamped By A Licensed Structural Engineer, to Hawaiian Electric's Customer Relations (543-7070) For Review. 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 Receipt of Pole Bracing Calculation or Drawing Submittals of Any Contractor, Including Work Procedure, Shall Not Relieve Contractor From Any Liability Resulting From Contractor's Excavation Near or Around Hawaiian Electric's Utility Poles.

b) Hawaiian Electric May Provide to the Customer Information Related to Pole Bracing, Including Calculations and Other Basic Engineering. However, Hawaiian Electric Provides this Information for Informational Purposes Only and Does Not Warrant Any of the Information Provided to Customer. Hawaiian Electric Hereby Disclaims Any Liability Associated with the Customer's Use of Information Provided to the Customer from Hawaiian Electric. It is the Customer's Duty to Obtain Engineering from Its Own Engineer or Contractor In Order to Brace Poles and the Use of Hawaiian Electric's Information Does Not Excuse the Customer From Performing Its Own Evaluation of the Bracing Needs. Should the Customer Install Bracing at Any Pole Location, Customer Shall Defend, Indemnify and Hold Harmless Hawaiian Electric from Any Third Party Claims Associated with the Customer's Bracing of a Pole. Should the Work Customer Perform at or Near the Pole Location Compromise the Pole or Its Surroundings in Any Way, Customer Shall Restore or Replace the Pole so that it is No Longer Compromised.

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 Relations at 543-7070 a Minimum of Ten (10) Working Days in Advance.

Special Precautions are Required When Excavating Near Hawaiian Electric's 138kV or 46kV Underground Lines (See Hawaiian Electric Instructions to Consultants/Contractors on "Excavation Near Hawaiian Electric's Underground 138kV and/or 46kV Lines" for Detailed Requirements).

For Verification of Underground Lines, the Contractor Shall Call the Hawaii One Call Center at 866-423-7287 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 Hawaiian Electric Facilities

Any Work Required to Relocate or Modify Hawaiian Electric Facilities Shall Be Done by Hawaiian Electric, or by the Contractor Under Hawaiian Electric's Supervision. The Contractor Shall Be Responsible for All Coordination, and Shall Provide Necessary Support for Hawaiian Electric's Work, Which May Include, but not be Limited to, Staking of Pole/Anchor Locations, Identifying Right of Way and Property Lines, Excavation and Backfill, Permits and Traffic Control, Barricading, and Restoration of Pavement, Sidewalks, and Other Facilities.

All Costs Associated with Any Relocation or Modification (Either Temporary or Permanent) for the Convenience of the Contractor, or to Enable the Contractor to Perform His Work in a Safe and Expeditious Manner in Fulfilling His Contract Obligations Shall Be Borne by the Contractor.

11. Conflicts

Any Redesign or Relocation of Hawaiian Electric's Facilities Not Shown on the Plans May Be Cause for Lengthy Delays. The Contractor Acknowledges that Hawaiian Electric is Not Responsible for Any Delay or Damage that May Arise as a Result of Any Conflicts Discovered or Identified with Respect to the Location or Construction of Hawaiian Electric's Electrical Facilities in the Field, Regardless of Whether the Contractor has Met the Requested Minimum Advance Notices.

In Order to Minimize Any Delay or Impact Arising from Such Conflicts, Hawaiian Electric Should Be Notified Immediately Upon Discovery or Identification of Such Conflict.

12. Damage to Hawaiian Electric Facilities

The Contractor Shall Be Responsible for the Protection of All Hawaiian Electric Surface and Subsurface Utilities and Shall Be Responsible for Any Damages to Hawaiian Electric's Facilities as a Result of His Operations. The Contractor Shall Immediately Report Such Damages or Any Hazardous

Conditions Related to Hawaiian Electric's Lines to Hawaiian Electric's Trouble Dispatcher at 548-7961. Repair Work Shall Be Done by Hawaiian Electric or by the Contractor Under Hawaiian Electric's Supervision. Costs for Damages to Hawaiian Electric's Facilities Shall Be Borne by the Contractor.

In Case of Damage or Suspected Damage to Hawaiian Electric's Fuel Pipeline, The Contractor Shall Immediately Notify Hawaiian Electric's Security Command Center at 543-7685 (a 24-Hour Number) so Hawaiian Electric Personnel Can Secure the Damaged Section and Report any Oil Spills to the Proper Authorities. All Costs Associated with the Damage, Repair, and Oil Spill Cleanup Shall Be Borne by the Contractor.

13. Hawaiian Electric Stand-By Personnel

The Contractor May Request Hawaiian Electric to Provide an Inspector to Stand-By During Construction near Hawaiian Electric's Facilities. The Cost of Such Inspection Will Be Charged to the Contractor.

The Contractor Shall Call Hawaiian Electric's Customer Relations at 543-7070 a Minimum of Three (3) Months in Advance to Arrange for Hawaiian Electric Stand-By Personnel.

14. Clearances

The Following Clearances Shall Be Maintained Between Hawaiian Electric's Ductline and All Adjacent Structures (Charted and Uncharted) in the Trench: (See Table)

The Contractor Shall Notify the Construction Manager & Hawaiian Electric of Any Heat Sources (Power Cable Duct Bank, Steamline, Etc.) Encountered that are Not Properly Identified on the Drawing.

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
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, 2024
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAIIAN ELECTRIC (HECo) NOTES

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EA-04 OF 8 SHEETS

ORIGINAL PLAN
NOTE BOOK
No. _____

SURVEY PLOTTED BY _____ DATE
DRAWN BY _____ . . . . .
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QUANTITIES BY _____
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	118	466

Hawaiian Electric Company (HECo) Notes: (Continued)
Rev. 8/4/21

15. Indemnity

The Contractor Shall Indemnify, Defend and Hold Harmless Hawaiian Electric from and Against All Losses, Damages, Claims, and Actions, Including But Not Limited to Reasonable Attorney's Fees and Costs Based Upon or Arising Out of Damage to Property or Injuries to Persons, or Other Tortious Acts Caused or Contributed to by Contractor or Anyone Acting Under its Direction or Control or on its Behalf; Provided Contractor's Indemnity Shall Not Be Applicable to Any Liability Based Upon the Sole Negligence of Hawaiian Electric.

Additional Notes when Work Involves Construction of Hawaiian Electric Facilities

16. Schedule

Contractor Shall Furnish his Construction Schedule Six (6) Months Prior to Starting Work on Hawaiian Electric Facilities. Contractor Shall Give Hawaiian Electric, in Writing, Three (3) Months Notice to Proceed with Hawaiian Electric's Portion of Work.

17. Authority

All Construction, Restoration Work, and Inspection Shall Be Subject to Whichever Governmental Agency Has Authority Over the Work.

18. Specifications

Construction of Hawaiian Electric's Underground Facilities Shall Be Constructed in Accordance with the Latest Revisions of Hawaiian Electric Specifications CS7001, CS7003, CS7202, CS9301, and CS9401 and Applicable Hawaiian Electric Standards.

19. Construction

Contractor Shall Furnish All Labor, Materials, Equipment, and Services to Properly Perform and Fully Complete All Work Shown on the Contract, Drawings, and Specifications. All Materials Shall Be New and Manufactured in the United States of America. All Manhole, Handhole, and Ductline Installations Shall Be Inspected and Approved By Hawaiian Electric Prior to Excavation and Prior to Placing Concrete. Contractor Shall Notify Hawaiian Electric's Inspection Group at 543-2567 at Least Five (5) Working Days Prior to Installing Facilities or Placing Concrete.

Contractor to Coordinate Work to Break into Hawaiian Electric's Existing Electrical Facilities with Hawaiian Electric's Inspection Group at 543-2567 at Least Ten (10) Working Days in Advance.

20. Stakeout

The Contractor Shall Arrange for Toneouts of All Underground Facilities and Shall Stakeout All Proposed Hawaiian Electric Facilities within the Project Area so as to Not Conflict with Any Utility (Existing or Proposed) and Any Proposed Construction or Improvement Work for Verification by Hawaiian Electric Before Proceeding with Hawaiian Electric Work.

21. Ductlines

All Ductline Installations Shall Be PVC Schedule 40 Encased in Concrete, Unless Otherwise Noted. All Completed Ductlines Shall Be Mandrel Tested by the Contractor in the Presence of Hawaiian Electric's Inspector Using Hawaiian Electric's Standard Practice. The Contractor Shall Install 1800# Tensile Strength Muletape Pull Line in All Completed Ductlines After Mandrel Testing is Complete.

Guidelines for Minimum Horizontal (parallel) Clearances Between Hawaiian Electric and Other Underground Utilities

Underground Utility	Hawaiian Electric Direct Buried Cable	Hawaiian Electric Direct Buried in Conduit (No Concrete Encasement)	Hawaiian Electric 3" (Minimum) Concrete Encasement	Applicable Notes:
Hawaiian Electric DB Conduits	12"	3"	0"	
Hawaiian Electric 3" Encasement	0"	0"	0"	
Telephone/CATV DB	12"	12"	6"	
Telephone/CATV DB Ducts	12"	12"	6"	
Telephone/CATV 3" Encasement	0"	0"	0"	5
Traffic Signal	12"	12"	12"	
Water DB (BWS Owned)	36"	36"	36"	1, 4
Customer Owned Water Service Laterals	12"	12"	12"	
Water (Concrete Jacketed) (BWS Owned)	36"	36"	36"	1, 4
Gas DB	12"	12"	12"	1
Gas (Concrete Jacketed)	12"	12"	12"	1
Sewer DB	36"	36"	36"	1, 2
Sewer (Concrete Jacketed)	36"	36"	36"	1, 2
Drain	12"	12"	12"	1
Fuel Pipelines				3

Notes:

1. *Where Space is Available, Parallel Clearance to Other Utilities, or Foreign Structures Other Than Communication or Traffic Signal Shall Be 36"*
2. *If 36" Clearance Cannot Be Met:*
   - *If Clearance is Less Than 12", Jacket Sewer Line with Reinforced Concrete (Per HECO's Std. 30-1030) for a Distance of 5' Plus Pipe Diameter.*
   - *If Clearance is Between 12" and 36", Jacket Sewer Line with Plain Concrete.*
3. *All Fuel Pipeline Crossings Shall Be Reviewed and Approved by the Company That Owns and Maintains it.*
4. *5 Feet Clear to Water Mains 16" or 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.*

Guidelines for Minimum Vertical (Crossing) Clearances Hawaiian Electric and Other Underground Utilities

Underground Utility	Hawaiian Electric Direct Buried Cable	Hawaiian Electric Direct Buried In Conduit (No Concrete Encasement)	Hawaiian Electric 3" (Minimum) Concrete Encasement	Applicable Notes:
Hawaiian Electric DB Conduits	6"	3"	0"	
Hawaiian Electric 3" Encasement	0"	0"	0"	
Telephone/CATV DB	12"	12"	6"	
Telephone/CATV DB Ducts	12"	12"	6"	
Telephone/CATV 3" Encasement	0"	0"	0"	3
Traffic Signal	12"	12"	6"	
Water DB (BWS Owned)	12"	12"	12"	5
Customer Owned Water Service Laterals	6"	6"	6"	
Water (Concrete Jacketed) (BWS Owned)	12"	12"	12"	5
Gas DB	12"	12"	12"	
Gas (Concrete Jacketed)	12"	12"	12"	
Sewer DB	24"	24"	24"	1
Sewer (Concrete Jacketed)	24"	24"	24"	1
Drain	12"	12"	6"	
Fuel Pipelines				2

Notes:

1. *If Clearance Cannot be Met:*
   - *If Clearance is Less Than 12", Jacket Sewer Line with Reinforced Concrete (Per HECO's Std. 30-1030) for a Distance of 5' Plus Pipe Diameter.*
   - *If Clearance is Between 12" and 24", Jacket Sewer Line with Plain Concrete.*
2. *All Fuel Pipeline Crossings Shall Be Reviewed and Approved by the Company That Owns and Maintains it.*
3. *For Situations with 0" Minimum Separation, a 6" Separation is Recommended.*
4. *Clearances Measured from Outer Edges or Diameters of Utilities. Whenever Concrete Jackets are Involved, Clearances Shall Be Total Clear Distance Between the Concrete Jacket and Utility Concerned.*
5. *36" Clearance is Required for Trenchless Installation Work.*

22. Joint Pole Removal

The Last Joint Pole Occupant of the Poles Shall Remove the Poles.

23. As-Built Plans

The Contractor Shall Provide Hawaiian Electric with a Set of Electronic and Hard Copy Plans of Each Sheet Showing the Offsets, Stationing, and Vertical Elevation of the Duct Line(s) Constructed.

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
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, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAIIAN ELECTRIC (HECo) NOTES

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EA-05 OF 8 SHEETS

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

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	119	466

Hawaiian Telcom (HTCO) Notes:

1. The Contractor Shall Procure and Pay for All Licenses and Permits and Shall Give All Notices Necessary and Incident to the Due and Lawful Prosecution of the Work.

2. The Contractor Shall Obtain an Excavation Permit and Toning Request from Hawaiian Telcom's Excavation Permit Section, Located at 1177 Bishop Street, Two Weeks Prior to the Start of Construction. Hours of Business are 8:00 A.M. to 11:00 A.M. and 12:00 P.M. to 3:00 P.M. Monday Through Friday, Except Holidays.

3. Prior to the Excavation of the Ductline, the Contractor Shall Request Hawaiian Telcom to Locate Existing Ductline Wherever Required. For Underground Cable Locating and Marking, Five (5) Working Days Advance Notice is Required. Three (3) Working Days Advance Notice is Required for Any Inspection by a Designated Representative.

4. The Locations of Existing Utilities are Approximate Only. The Contractor Shall Exercise Extreme Caution and Shall Maintain Proper Clearances Whenever Construction Crosses or is in Close Proximity of Hawaiian Telcom Facilities. The Contractor Shall Verify Their Locations and Shall Be Liable for Any Damages to Hawaiian Telcom Facilities. Any Damages Shall Be Reported Immediately to Hawaiian Telcom's Repair Section at #611 (24 Hours) or to the Excavation Permit Section at 546-7746 (Normal Working Hours, Monday through Friday, Except Holidays). As a Result of His Operations, Adjustments to the New Ductline Alignment, if Required, Shall Be Made to Provide the Required Clearances.

5. The Contractor Shall Take Necessary Precaution Not to Damage Existing Cables or Ducts. A Hawaiian Telcom Inspector or Designated Representative is Required to Be at Any Job Site Whenever There Will Be a Breakage into or Entry into Any Structure that Contain Hawaiian Telcom Facilities. Temporary Cable and Duct Supports Shall Be Provided Wherever Necessary.

6. the Contractor Shall Notify Hawaiian Telcom's Inspector or Designated Representative a Minimum of 72 Hours Prior to Excavation, Bracing, or Backfilling of Hawaiian Telcom's Structures or Facilities.

7. all Applicable Construction Work Shall Be Done in Accordance with the "Hawaiian Telcom Standard Specifications for Placing Telephone Systems" Dated January 2007, All Subsequent Amendments and Additions, and All Other Pertinent Standards for Telephone Construction. Contractor Shall Familiarize His Personnel by Obtaining Applicable Specifications.

8. When Excavation is Adjacent to or Beneath Hawaiian Telcom's Existing Structures $or Facilities, The Contractor Shall:

   A. Sheet and/or Brace the Excavation to Prevent Slides, Cave-Ins, or Settlements to Ensure No Movement to Hawaiian Telcom's Structures or Facilities.

   B. Protect Existing Structures and/or Facilities with Beams, Struts, or Underpinning While Excavating Beneath them to Ensure No Movement to Hawaiian Telcom's Structures or Facilities.

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

10. The Contractor Shall Saw-Cut AC. Pavement and Concrete Gutter Wherever New Manholes, Handholes, or Ductlines are to be Placed and Shall Restore to Existing Condition or Better.

11. The Contractor Shall Comply with the Policy Adopted by the Department of Planning and Permitting, City and County of Honolulu, Concerning the Replacement of Concrete Sidewalks After Excavation Work.

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

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

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

15. The Contractor Shall Pump All Manholes Dry During Final Inspection.

16. The Contractor Shall Notify Hawaiian Telcom Inspector 24 Hours Prior to the Pouring of Concrete or Backfilling.

17. when Connecting to Manhole Walls, All Existing Reinforcing Bars Shall Be Left Intact. Ducts Shall Be Adjusted in the Field in Order to Clear Reinforcing

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

19. Minimum Concrete Strength Shall Be:
    -for Ductline 2500 PSI at 28 Days
    -for Manhole 3000 PSI at 28 Days or as Specified in Design Notes

20. Bends in the Duct Alignment, Due to Changes in Grade Shall Have a Minimum Radius of 25 Feet. All 90 Degree C-Bends at a Pole or at the Building Floor Slab Penetration, Shall Have a Bend Radius of Ten Times the Diameter of the Duct or Greater.

21. After Ductline has been Completed, a Mandrel with a Square Front Not Less Than 12" Long and Having a Diameter of 1/4" Less Than the Inside Diameter of the Duct, Shall Be Pulled Through Each Duct After Which a Brush with Stiff Bristles Shall Be Pulled Through to Make Certain that No Particles of Earth, Sand, or Gravel Have Been Left Inside. Ducts Shall Be Completely Dry and Clean.

22. All Ducts and Conduits Shall Have an 1800# Polyester Mule-Tape (Neptco, WP1800P, Hawaiian Telcom Material Code No. 5711154) Installed Throughout its Entire Length. All Ducts Shall Be Capped to Prevent Entry of Foreign Material During Construction and at the Completion of Installation.

ORIGINAL PLANS
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APPROVED BY

HAWAIIAN TELCOM DATE

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
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, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAIIAN TELCOM (HTCo) NOTES

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EA-06 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	120	466

Spectrum Oceanic (CATV) Notes:

1. *The Contractor Shall Procure and Pay for All Licenses and Permits and Shall Give All Notices Necessary and Incident to the Due and Lawful Prosecution of the Work.*

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

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

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

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

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

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

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

9. *The Contractor Shall Notify the Spectrum Oceanic Inspector 72 Hours Prior to the Start of Work nn CATV Infrastructure, Pouring Concrete, or Backfilling. Spectrum Oceanic's Inspector(s): Perry Samuelu at 387-2496 or Paul Caspillo at 479-1637.*

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

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

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

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

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

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

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

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

18. *Any Damage To Spectrum Oceanic's Facilities Shall Be Reported to Spectrum Oceanic's TOC Department at 625-8169.*

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

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

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

22. *Coordinate All Penetration of Telephone Pullboxes with Hawaiian Telcom Inspector.*

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

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

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

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

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

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

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

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

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

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	CHECKED BY	

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APPROVED BY

SPECTRUM OCEANIC DATE

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
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, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPECTRUM OCEANIC (CATV) NOTES

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EA-07 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	121	466

Spectrum Oceanic (CATV) Notes: (continued)

32. All New Construction Shall Utilize Concrete Precast Base Unless Otherwise Approved or Specified by Spectrum Oceanic's Inspector(s).

33. When Three (3) Or More 4" Conduits Enter One End Wall of Any Pullbox, Only Brick Bases will be Allowed Unless Otherwise Instructed/Approved by Spectrum Oceanic's Inspector(s).

34. Two Minimum Layers of Bricks to be Used Lower than the Lowest Duct Entering the Pullbox. Top Layer of Brick to be Flush with Top of Conduit or Higher.

35. For Upgrade/Repairs to Existing Pullboxes, Bricks May Be Used and Shall Always be at Least Two Layers Lower than the Lowest Duct Entering the Pullbox.

36. At No Time Shall Cement Mortar, Wood or Any Other Material be Used Between Precast Sections.

37. Leveling or Raising of Boxes to Grade Must Be Done:
    A. Pre-Cast Base(s) - Using Gravel Layer Under Base (Type 3B or Equivalent Approved by Spectrum Oceanic's Inspector
    B. Brick Base(s) - Adjustments to Brickwork Section. the Permanent Installation of Wooden Wedges to Accomplish this Purpose Will Not Be Accepted.

38. 5/8" Copper Ground Rods Shall Be Placed in All Pullboxes Unless Otherwise Directed by Spectrum Oceanic. Ground Rods Will Be Placed in the Corner 3" to 4" from the Wall and Away from Any Conduit with No More than 8" Sticking Up Above Ground.

39. Trenching to be by Hand Digging Near and Across Existing Utility Lines.

40. Minimum Clearance Between Street Light Stand and Fire Hydrants Shall Be Three Feet.

41. Underground Utilities Shown Hereon is for Information Only. No Guarantee is made on the Accuracy or Completeness of said Installation.

42. For Underground Cable Locating and Marking, Five Working Days Advance Notice is Required. Three Working Days Advance Notice is Required for Any Inspection by a Designated Representative. Contractor Shall Take Necessary Precaution Not to Damage Any Existing Cables or Ducts. Spectrum Oceanic's Inspector or Designated Representative is Required to be at Any Job Site Wherever there Will Be a Breakage into or Entry into Any Structure that Contain Spectrum Oceanic's Facilities.

43. Concrete Strength Shall Be 3000 PSI in 28 Days.

44. Curing and Backfilling. Maintain Concrete in a Moist Condition for 24 Hours Minimum for 3,000 PSI and 48 Hours Minimum for 2,500 PSI Before Compacted Backfilling; 72 Hours Minimum Before Permitting Motor Traffic Load on Ductline Curing Method Shall Meet Spectrum Oceanic's Inspector's Approval.

45. Install 4-mil. Thick Orange Color Warning Tape 3-Inch Wide, Entire Length of Trench when Placing CATV Conduits. Tape Should Read "Caution Buried Cable Line Below". Manufactured by Harris Industries, Inc., Catalog Number UT-43 or Equivalent Tape. Tape to be Installed 12-Inches Below Grade.

46. After Ductline has been Completed, a Mandrel with a Square Front Not Less Than 12-Inch Long and Having a Diameter or 1/4-Inch Less Than the Inside Diameter of Duct, Shall Be Pulled Through Each Duct after which a Brush with Stiff Bristles Shall Be Pulled Through to Make Certain that No Particles of Earth, Sand, or Gravel Have Been Left Inside. Ducts Shall Be Completely Dry and Clean.

47. Metallic Entrance Conduits Shall Be Grounded.

48. All Conduits Within a Building Shall:
    A. Be Installed in the Shortest And Straightest Possible Run.
    B. Have No Section Longer Than 100-feet Nor Contain More Than Two 90-Degree Bends. An Approved Sized Junction Box rr Gutter Box Shall Be Placed if this is Exceeded.
    C. All Bends Shall Be Long Sweep-Radius Bends But the Inside Radius of the Bend Must Never Be Less Than Ten Times the Diameter of the Conduit.

49. All Construction Must Be Inspected and Approved by Spectrum Oceanic Prior to the Installation of Any of its Facilities and the Energizing of its System.

50. Contractor and/or Customer Shall Provide Spectrum Oceanic with Sufficient Installation Time in Their Occupancy Time Table.

51. For Pullbox Locations Where Vehicular Intrusion Possible, Concrete Collar Required per Spectrum Standard and Specifications Manual. Examples Include But Not Limited To, Rolled Curbs, Curb/Headers Less Than 5" in Height, Vehicular Travelways With No Defined Curb/Header, etc.

    A. Non-Sidewalk Area, See Figure 18.1c, 19.1c and 20.1b in the Spectrum Specifications Manual.

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

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APPROVED BY

SPECTRUM OCEANIC DATE

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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SPECTRUM OCEANIC (CATV) NOTES

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

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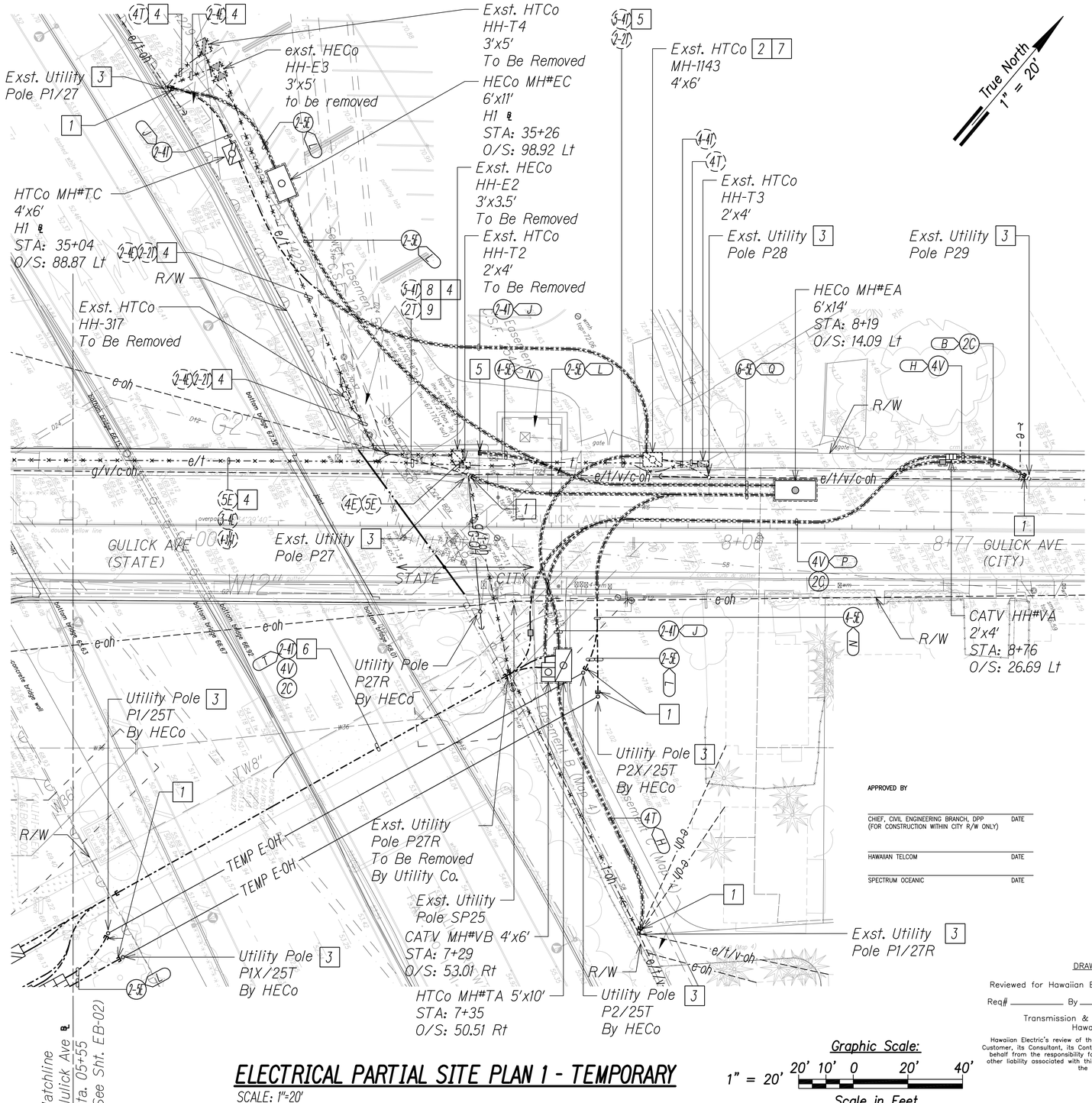
SHEET No. EA-08 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	122	466



ELECTRICAL PARTIAL SITE PLAN 1 - TEMPORARY

SCALE: 1"=20'

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

HAWAIIAN TELCOM DATE

SPECTRUM OCEANIC DATE

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

DUSTIN Y. NAKAMOTO LICENSED PROFESSIONAL ENGINEER No. 14287-E HAWAII, U.S.A.

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

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

FILE: Z:\Acad\projects\220050\EB01_220050_SITE-PLAN-01.dwg saved December 21, 2022

General Electrical Notes:

1. Caution!!! Electrical Hazard!!! Existing HECo Overhead And Underground Lines, Are Energized And Will Remain Energized During Construction Unless Prior Special Arrangements Have Been Made With HECo. Only HECo 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 HECo Facilities Which Can Result In Electrocution.
2. Construct New Utility Structures & Coordinate Relocation Of Respective Utility Facilities, Prior To Removal Of Existing, Respectively.
3. See Street Lighting & Traffic Signal Plans For Street Lighting & Traffic Signal Work.
4. HECo, HTCo & CATV To Remove Their Respective Overhead Facilities.
5. Sawcut Where Required. See Civil Plans For Restoration Details.

Notes:

[1] Provide Conduit Riser(s) Up Pole Per Utility Company Requirements.

[2] Excavate & Expose Exst. Manhole Wall(s). Coordinate And Schedule Work With Respective Utility Company Prior to Excavation. Provide Duct Entry Per Utility Co. Requirements. Provide Couplings As Required & Extend Duct(s). Repair To Match Existing.

[3] Provide Proper Bracing/Support For Exst. Utility Pole During Construction; Submit Details To Respective Utility Company(s) For Approval.

[4] Transite Duct(s). Removal After Respective Utility Company Removes Cables. Coordinate & Schedule Cable Removal With Respective Utility Company.

[5] Stub & Cap Conduit(s) For Permanent Installation. A Minimum Of 50 feet Between Horizontal to Vertical Configuration Shall Be Required.

[6] Contractor To Provide Ducts As Part Of Temporary Pedestrian Bridge. See Structural Drawings For Details.

[7] Excavate & Expose Exst. Manhole Wall(s) For Duct Removal. Coordinate And Schedule Work With Respective Utility Company Prior To Excavation. Repair To Match Existing.

[8] Coordinate Removal Of Duct(s) Within Catch Basin With Civil Contractor. Coordinate and Schedule Work With Respective Utility Company Prior To Excavation. Repair To Match Existing.

[9] Verify, Size, Destination & Utility.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

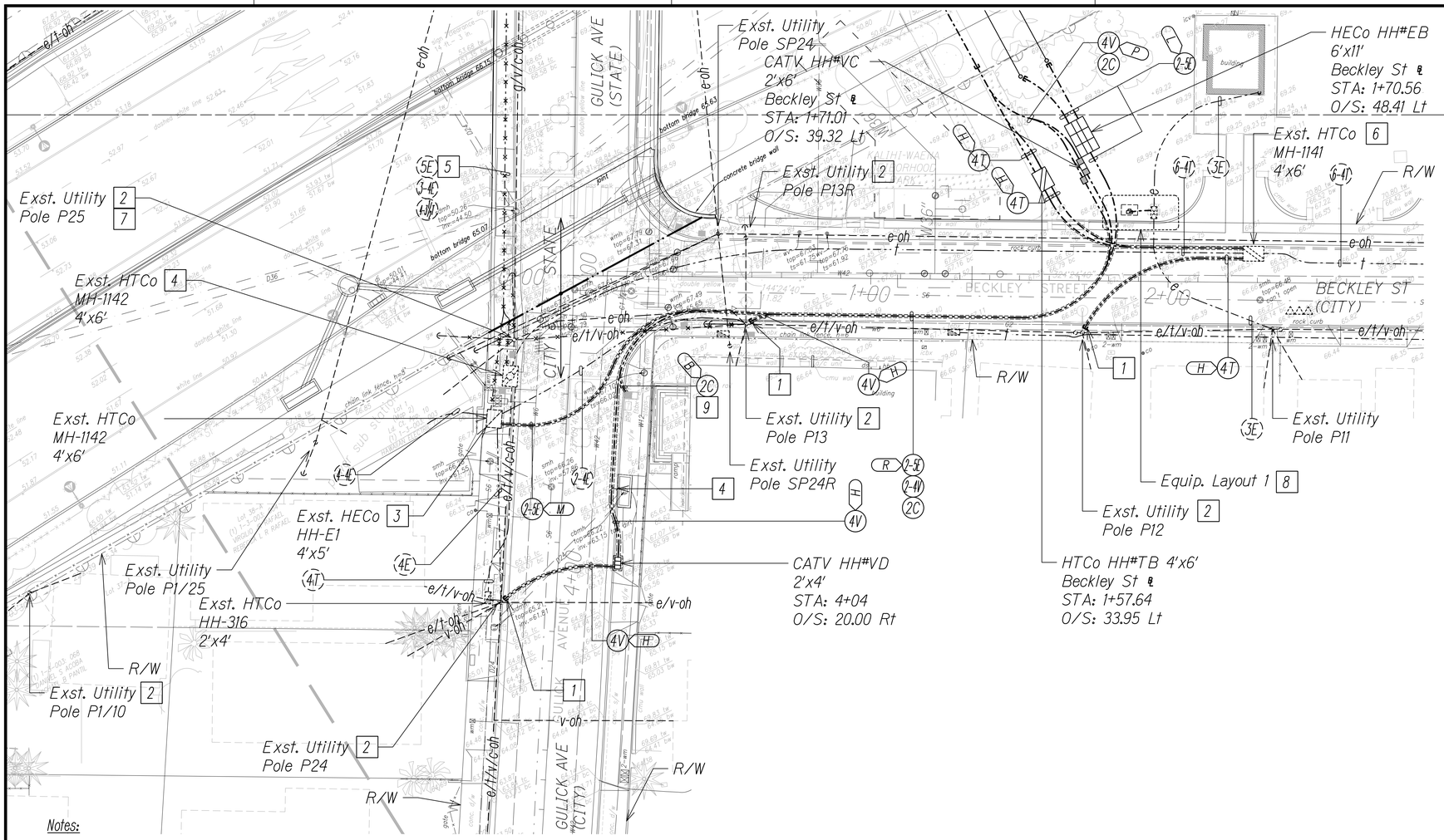
ELECTRICAL PARTIAL SITE PLAN 1 (TEMP)

INTERSTATE ROUTE HI (EB) IMPROVEMENTS Ola Lane Overpass to Likelike Hwy Off-Ramp Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EB-01 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	123	466



General Electrical Notes:

1. Caution!!! Electrical Hazard!!! Existing HECo Overhead And Underground Lines, Are Energized And Will Remain Energized During Construction Unless Prior Special Arrangements Have Been Made With HECo. Only HECo 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 HECo Facilities Which Can Result In Electrocution.
2. Construct New Utility Structures & Coordinate Relocation Of Respective Utility Facilities, Prior To Removal Of Existing, Respectively.
3. See Street Lighting & Traffic Signal Plans For Street Lighting & Traffic Signal Work.
4. HECo, HTCo & CATV To Remove Their Respective Overhead Facilities.
5. Sawcut Where Required. See Civil Plans For Restoration Details.

Notes:

1. Provide Conduit Riser(s) Up Pole Per Utility Company Requirements.
2. Provide Proper Bracing/Support For Exst. Utility Pole During Construction; Submit Details To Respective Utility Company(s) For Approval.
3. Excavate & Expose Exst. Handhole Wall(s). Coordinate & Schedule Work With HECo Prior To Commencing With Excavation. Caution!!! Electrical Hazard!!! Only HECo Personnel Shall Break & Remove Existing Conduits, Shift Cables, & Construct Duct Entry(s). Coordinate & Schedule Cable Installation With HECo. Provide Couplings As Required, & Extend Exst. Duct(s) From HECo Manhole. The Cost Of HECo's Assistance In Providing Proper Support & Protection will Be Charged To The Contractor.
4. Provide Minimum 12" Clear Between Drainage Structure And Electrical System.
5. Transite Duct(s). Removal After Respective Utility Company Removes Cables. Coordinate & Schedule Cable Removal With Respective Utility Company.
6. Excavate & Expose Exst. Manhole Wall(s). Coordinate And Schedule Work With Respective Utility Company Prior to Excavation. Provide Duct Entry Per Utility Co. Requirements. Provide Couplings As Required & Extend Duct(s). Repair To Match Existing.
7. HECo To Replace Exst. Wood Pole With Steel Pole. Coordinate Replacement With Traffic Signal & Street Light.
8. See Sht. EF-10 for Enlarged Equipment Layout 1.
9. See Traffic Signal Plans.

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

HAWAIIAN TELCOM DATE

SPECTRUM OCEANIC DATE

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

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Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
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, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PARTIAL SITE PLAN 2 (TEMP)

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EB-02 OF 5 SHEETS

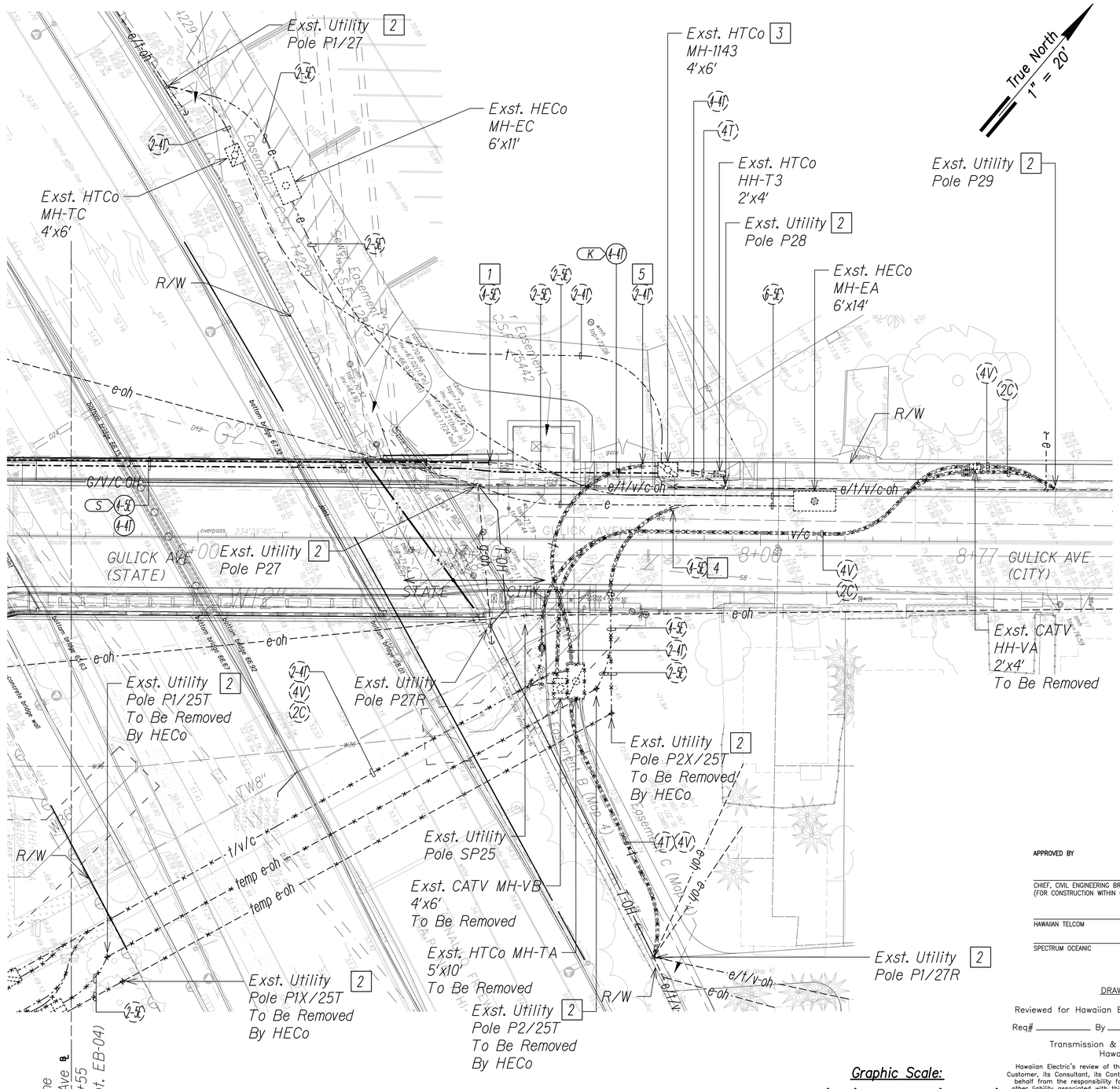
ELECTRICAL PARTIAL SITE PLAN 2 - TEMPORARY

SCALE: 1"=20'

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

FILE: Z:\Acad\projects\200050\EB02_200050_SITE-PLAN-02.dwg saved February 21, 2023

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	124	466



ELECTRICAL PARTIAL SITE PLAN 3 - PERMANENT

SCALE: 1"=20'

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

General Electrical Notes:

1. *Caution!!! Electrical Hazard!!! Existing HECo Overhead And Underground Lines, Are Energized And Will Remain Energized During Construction Unless Prior Special Arrangements Have Been Made With HECo. Only HECo 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 HECo Facilities Which Can Result In Electrocution.*
2. *Construct New Utility Structures & Coordinate Relocation Of Respective Utility Facilities, Prior To Removal Of Existing, Respectively.*
3. *See Street Lighting & Traffic Signal Plans For Street Lighting & Traffic Signal Work.*
4. *HECo, HTCo & CATV To Remove Their Respective Overhead Facilities.*
5. *Sawcut Where Required. See Civil Plans For Restoration Details.*
6. *Coordinate Manhole/Handhole Adjustments With Respective Utility(s).*

Notes:

1 *Excavate & Expose Exst. Duct(s), Provide coupling(s) as required & extend duct(s). Coordinate And Schedule Work With Respective Utility Company Prior To Excavation. Repair To Match Existing.*

2 *Coordinate Removal Of Bracing/Support For Utility Pole With Respective Utility Company(s).*

3 *Excavate & Expose Exst. Manhole Wall(s). Coordinate And Schedule Work With Respective Utility Company Prior to Excavation. Provide Duct Entry Per Utility Co. Requirements. Provide Couplings As Required & Extend Duct(s). Repair To Match Existing.*

4 *Excavate & Expose Exst. Duct(s) For Removal. Coordinate & Schedule Work With HECo Prior To Commencing With Excavation. Caution!!! Electrical Hazard!!! Only HECo Personnel Shall Break & Remove Existing Conduits, Shift Cables, & Construct Duct Entry(s). Coordinate & Schedule Cable Removal with HECo. Stub & Cap Conduit(s) From HECo manhole. Repair To Match Existing. The Cost Of HECo's Assistance In Providing Proper Support & Protection Will Be Charged To The Contractor.*

5 *Excavate & Expose Exst. Duct(s) For Removal. Coordinate & Schedule Work With Respective Utility Company Prior To Excavation. Stub & Cap Conduit(s) From Manhole. Repair To Match Existing.*

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) — DATE

HAWAIIAN TELCOM — DATE

SPECTRUM OCEANIC — DATE

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

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DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PARTIAL SITE PLAN 3 (PERM)

INTERSTATE ROUTE HI (EB) IMPROVEMENTS Ola Lane Overpass to Likelike Hwy Off-Ramp Project No. NH-H1-1(280)

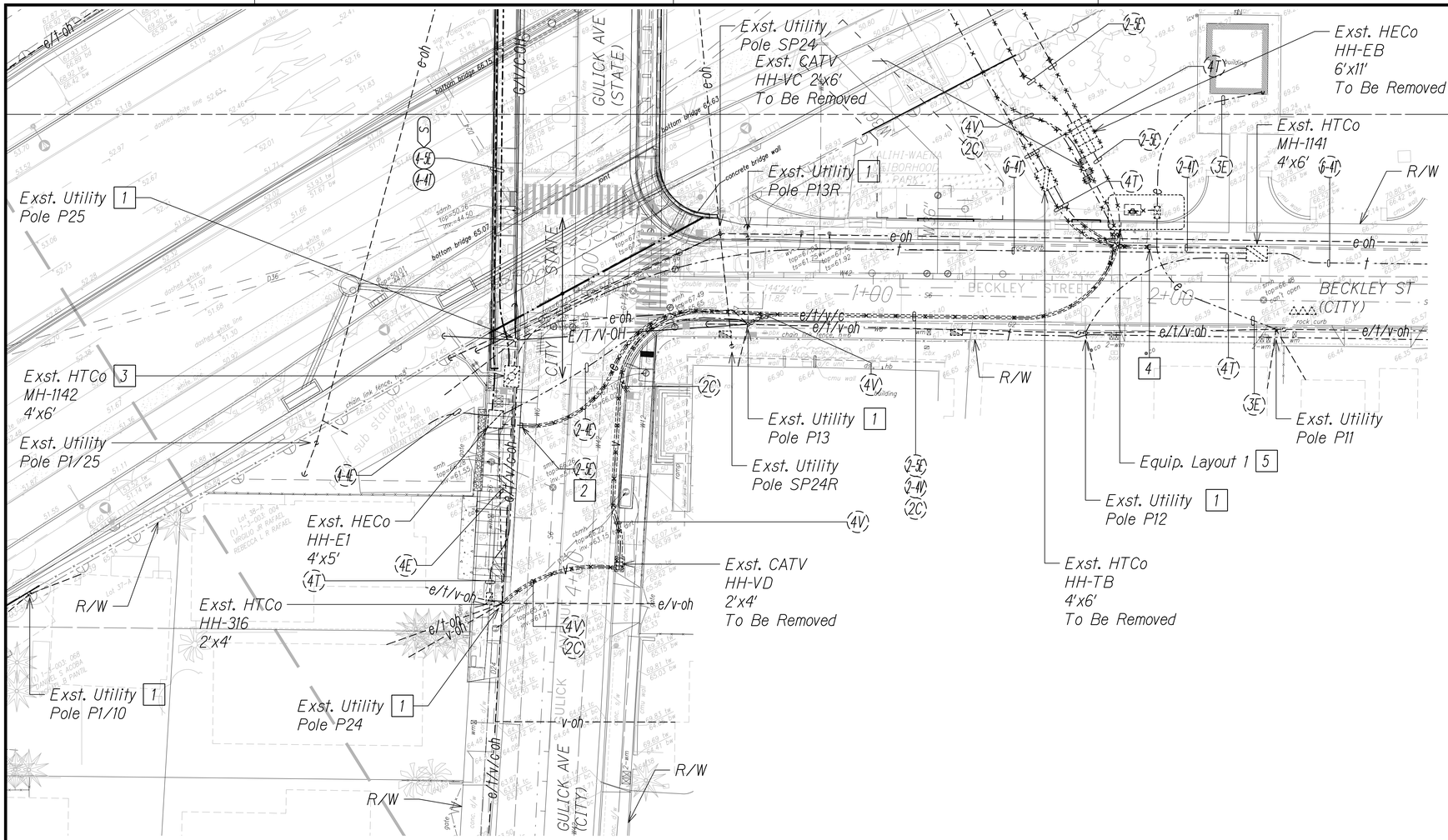
Scale: As Noted — Date: December 2022

SHEET No. EB-03 OF 5 SHEETS

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

FILE: Z:\Acad\projects\220050\EB03_220050_SITE-PLAN-03.dwg saved December 21, 2022

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	125	466



Matchline Gulick Ave & Sta. 05+55 (See Sht. EB-03)

True North 1" = 20'

General Electrical Notes:

1. Caution!!! Electrical Hazard!!! Existing HECo Overhead And Underground Lines, Are Energized And Will Remain Energized During Construction Unless Prior Special Arrangements Have Been Made With HECo. Only HECo 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 HECo Facilities Which Can Result In Electrocution.
2. Construct New Utility Structures & Coordinate Relocation Of Respective Utility Facilities, Prior To Removal Of Existing, Respectively.
3. See Street Lighting & Traffic Signal Plans For Street Lighting & Traffic Signal Work.
4. HECo, HTCo & CATV To Remove Their Respective Overhead Facilities.
5. Sawcut Where Required. See Civil Plans For Restoration Details.
6. Coordinate Manhole/Handhole Adjustments With Respective Utility(s).

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

HAWAIIAN TELCOM DATE

SPECTRUM OCEANIC DATE

Notes:

1. Coordinate Removal Of Bracing/Support For Utility Pole With Respective Utility Company(s).
2. Excavate & Expose Exst. Duct(s) For Removal. Coordinate & Schedule Work With HECo Prior To Commencing With Excavation. Caution!!! Electrical Hazard!!! Only HECo Personnel Shall Break & Remove Existing Conduits, Shift Cables, & Construct Duct Entry(s). Coordinate & Schedule Cable Removal With HECo. Stub & Cap Conduit(s) From HECo handhole. Repair To Match Existing. The Cost of HECo's Assistance in Providing Proper Support & Protection Will Be Charged To The Contractor.
3. Excavate & Expose Exst. Handhole Wall(s). Coordinate And Schedule Work With Respective Utility Company Prior To Excavation. Provide Duct Entry Per Utility Co. Requirements. Provide Couplings As Required & Extend Duct(s). Repair To Match Existing.
4. Excavate & Expose Exst. Duct(s) For Removal. Coordinate & Schedule Work With Respective Utility Company Prior To Excavation. Stub & Cap Conduit(s) From Manhole. Repair To Match Existing.
5. See Sht. EF-10 for Enlarged Equipment Layout 1.

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

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DUSTIN Y. NAKAMOTO LICENSED PROFESSIONAL ENGINEER No. 14287-E HAWAII, U.S.A.

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SIGNATURE April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PARTIAL SITE PLAN 4 (PERM)

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EB-04 OF 5 SHEETS

ELECTRICAL PARTIAL SITE PLAN 4 - PERMANENT

SCALE: 1"=20'

Graphic Scale:

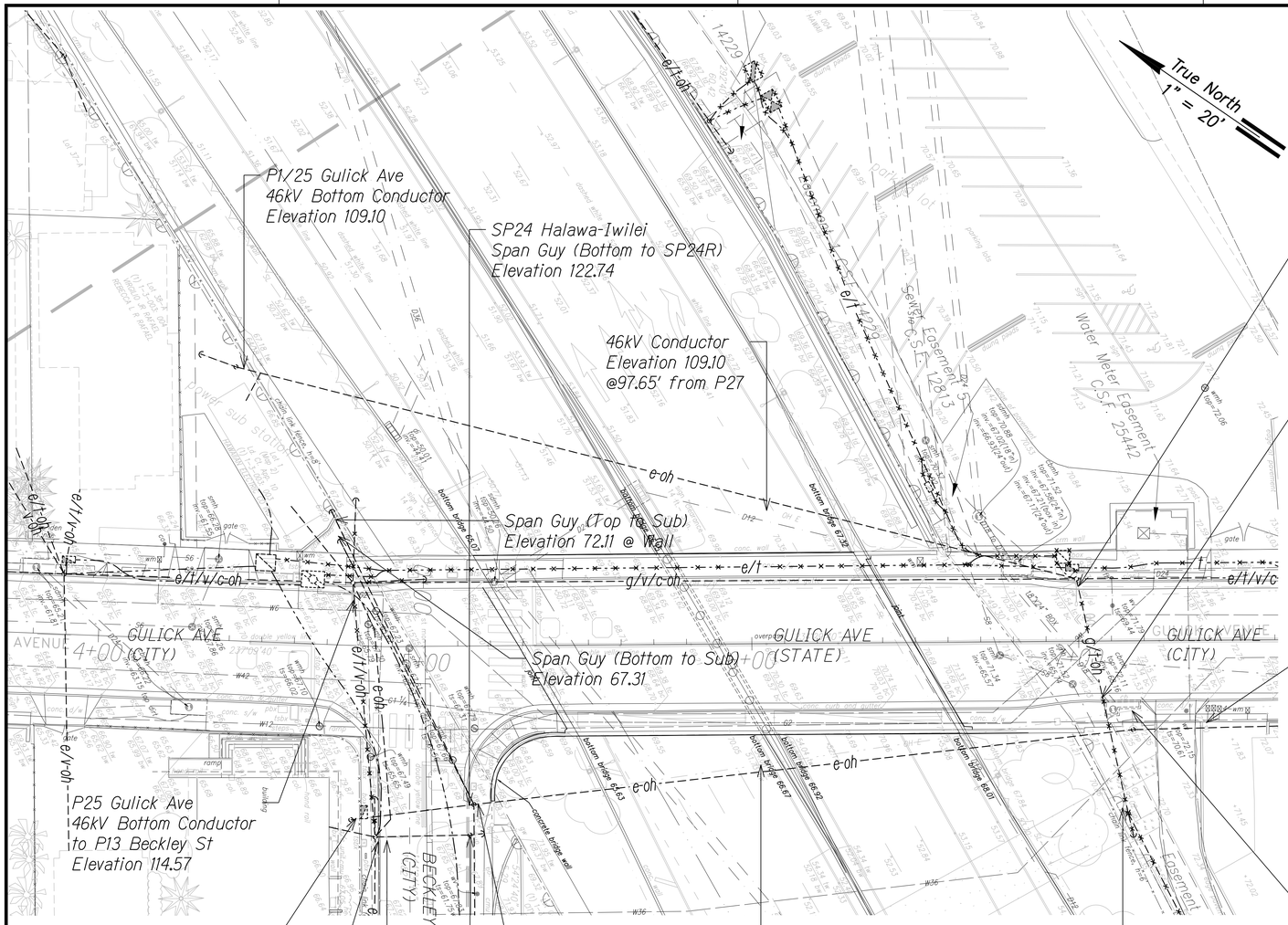
1" = 20' 20' 10' 0 20' 40'

Scale in Feet

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

FILE: Z:\Acad\projects\200050\EB04_200050_SITE-PLAN-04.dwg saved December 21, 2022

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	126	466



General Electrical Notes:

1. Caution!!! Electrical Hazard!!! Existing HECo Overhead And Underground Lines, Are Energized And Will Remain Energized During Construction Unless Prior Special Arrangements Have Been Made With HECo. Only HECo 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 HECo facilities which can result in electrocution.

2. Elevations Are Provided For Contractor Convenience Based Off Best Information Available. Existing HECo 138kV And 46kV overhead Lines May Require A 1-Year Advance Notice to De-Energize And Ground. Other Construction Projects May Impact The Availability To De-Energize And Ground the 138kV And 46kV Overhead Lines. The Cost of HECo's Assistance In Providing Proper Support & Protection will be Changed To The Contractor.

3. Refer To OSHA 29 CFR 1910.269 & 29 CFR 1926, Subpart CC for Required Clearances When Working Around Overhead Utility Lines. These OSHA Rules Are Provided For Contractor Convenience. Follow All OSHA Rules That May Apply.

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

FILE: Z:\Acad\projects\220050\EB05_220050_SITE-PLAN-05.dwg saved December 21, 2022

ELECTRICAL PARTIAL SITE PLAN 5 - ELEVATIONS AT GULICK OVERPASS

SCALE: 1"=20'

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

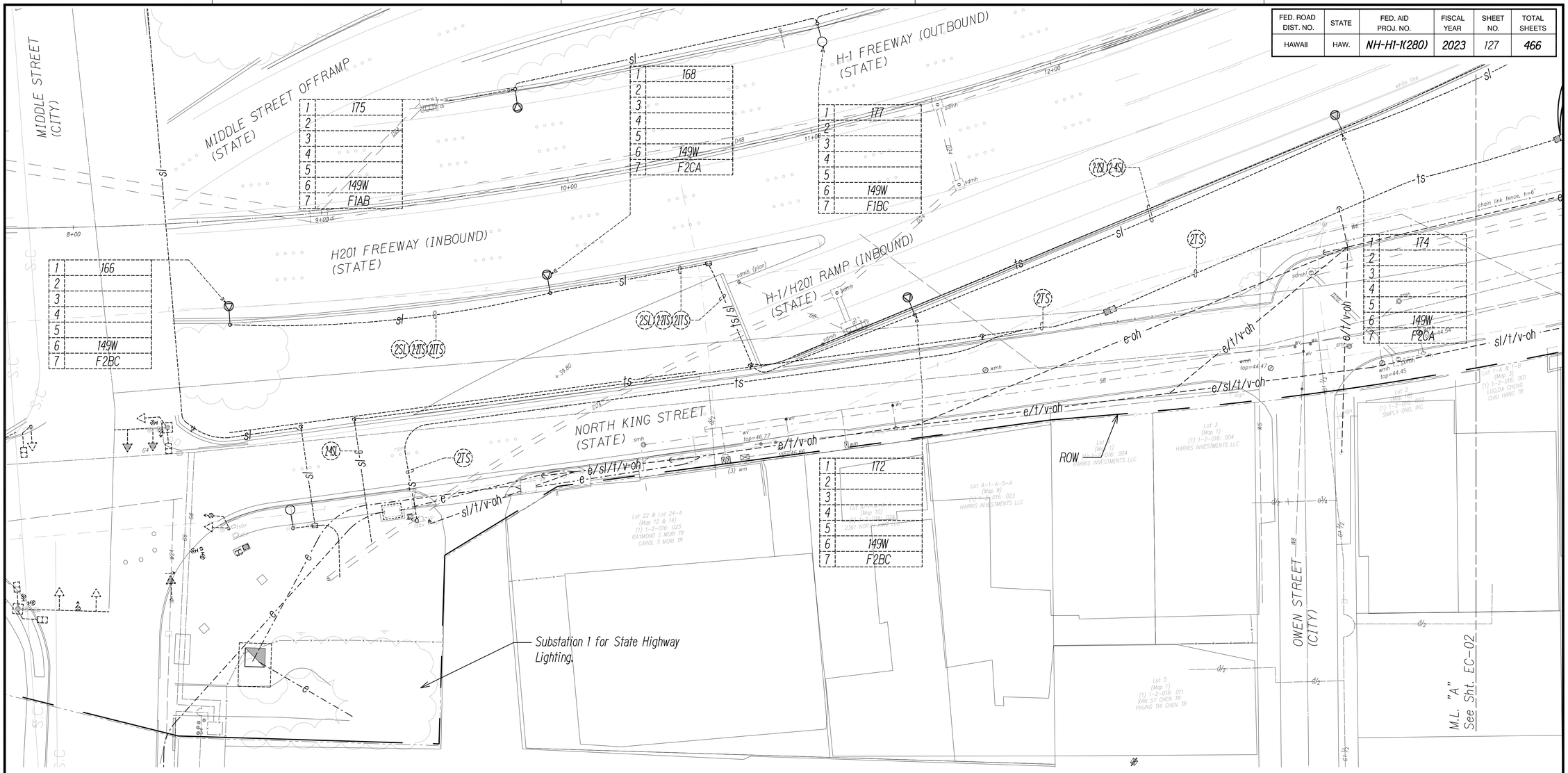
ELECTRICAL PARTIAL SITE PLAN 5 - ELEVATIONS

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EB-05 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	127	466



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

FILE: Z:\Accel\projects\220050\EC01_220050_ST LT PLAN-01.dwg saved December 22, 2022

True North
1" = 20'

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 1

SCALE: 1"=20'

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
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, 2024
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

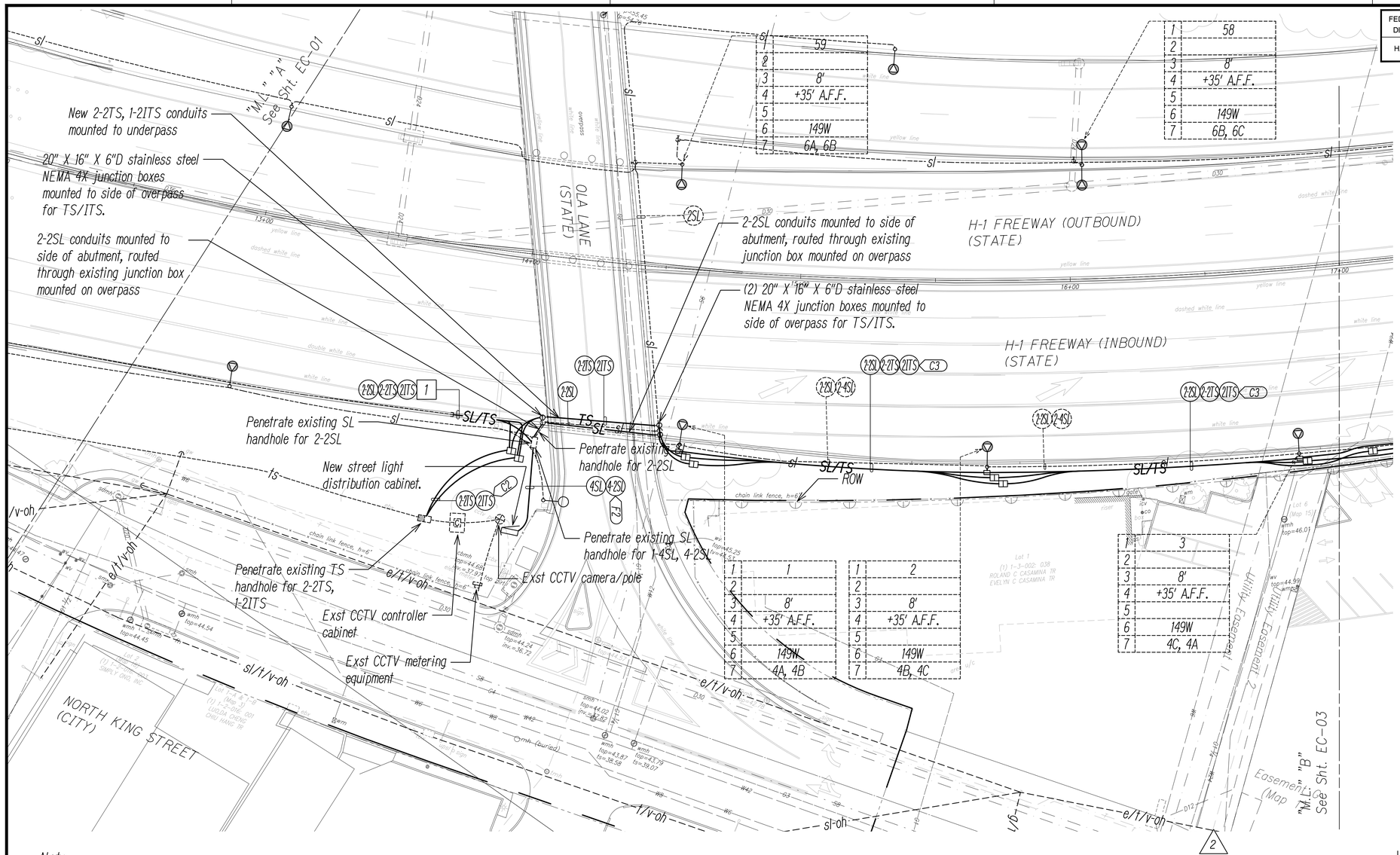
HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 1

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EC-01 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 128	466



Note:

1 Conduits and boxes to be installed in wall. See structural plans for mounting/installation details.

True North
1" = 20'

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 2

SCALE: 1"=20'

Graphic Scale:
1" = 20' 20' 10' 0 20' 40'
Scale in Feet

STEVEN H. SAKAI LICENSED PROFESSIONAL ENGINEER No. 7637-E HAWAII, U.S.A.

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SIGNATURE

Sep 30, 2024
EXPIRATION DATE OF THE LICENSE

DATE	REVISION
4/7/23	2 Add. 2 – Modified Plan Scale & Relocated HH/Conduit out of Wall

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 2

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EC-02 OF 12 SHEETS

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

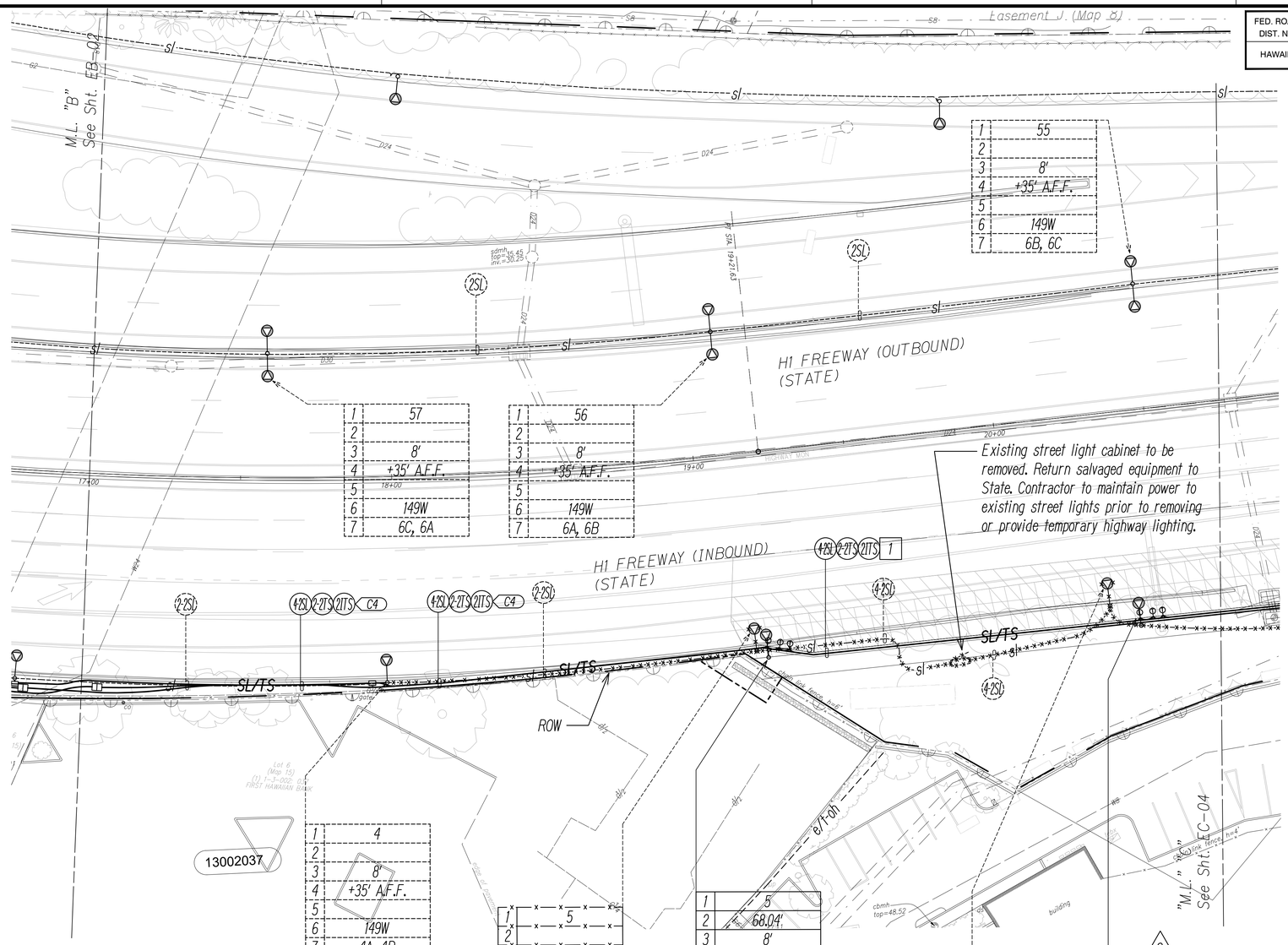
FILE: Z:\Acad\projects\220050\EC02_220050_ST LT PLAN-02.dwg saved April 14, 2023

ADD. 128

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 129	466

Note:

1 *Conduits and boxes to be installed in wall. See structural plans for mounting/installation details.*



DATE	REVISION
4/7/23	2 Add. 2 – Modified Plan Scale & Relocated HH/Conduit out of Wall

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

FILE: Z:\Acad\projects\220050\EC03_220050_ST LT PLAN-03.dwg saved April 10, 2023

True North
1" = 20'

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 3

SCALE: 1"=20'

Graphic Scale:
1" = 20' 20' 10' 0 20' 40'
Scale in Feet

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SIGNATURE

4-30-2024
EXPIRATION DATE OF THE LICENSE

STEVEN H. SAKAI LICENSED PROFESSIONAL ENGINEER No. 7637-E HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 3

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

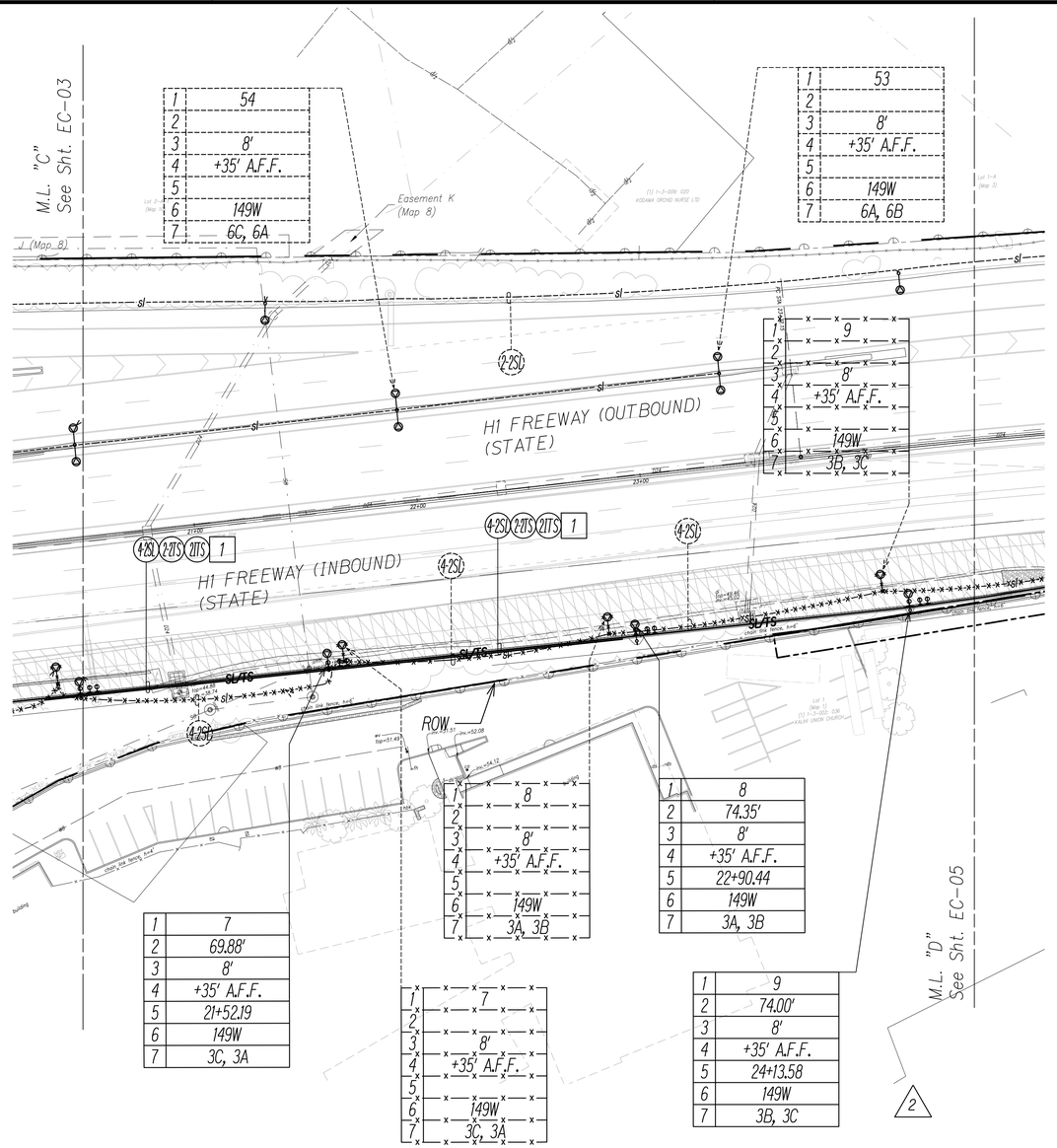
SHEET No. EC-03 OF 12 SHEETS

ADD. 129

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 130	466

Note:

1 *Conduits and boxes to be installed in wall. See structural plans for mounting/installation details.*



4/7/23	2 Add. 2 – Modified Plan Scale
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 4

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EC-04 OF 12 SHEETS

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 4

SCALE: 1"=20'

True North
1" = 20'

Graphic Scale:
1" = 20' 20' 10' 0 20' 40'
Scale in Feet

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
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 EXPIRATION DATE OF THE LICENSE

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

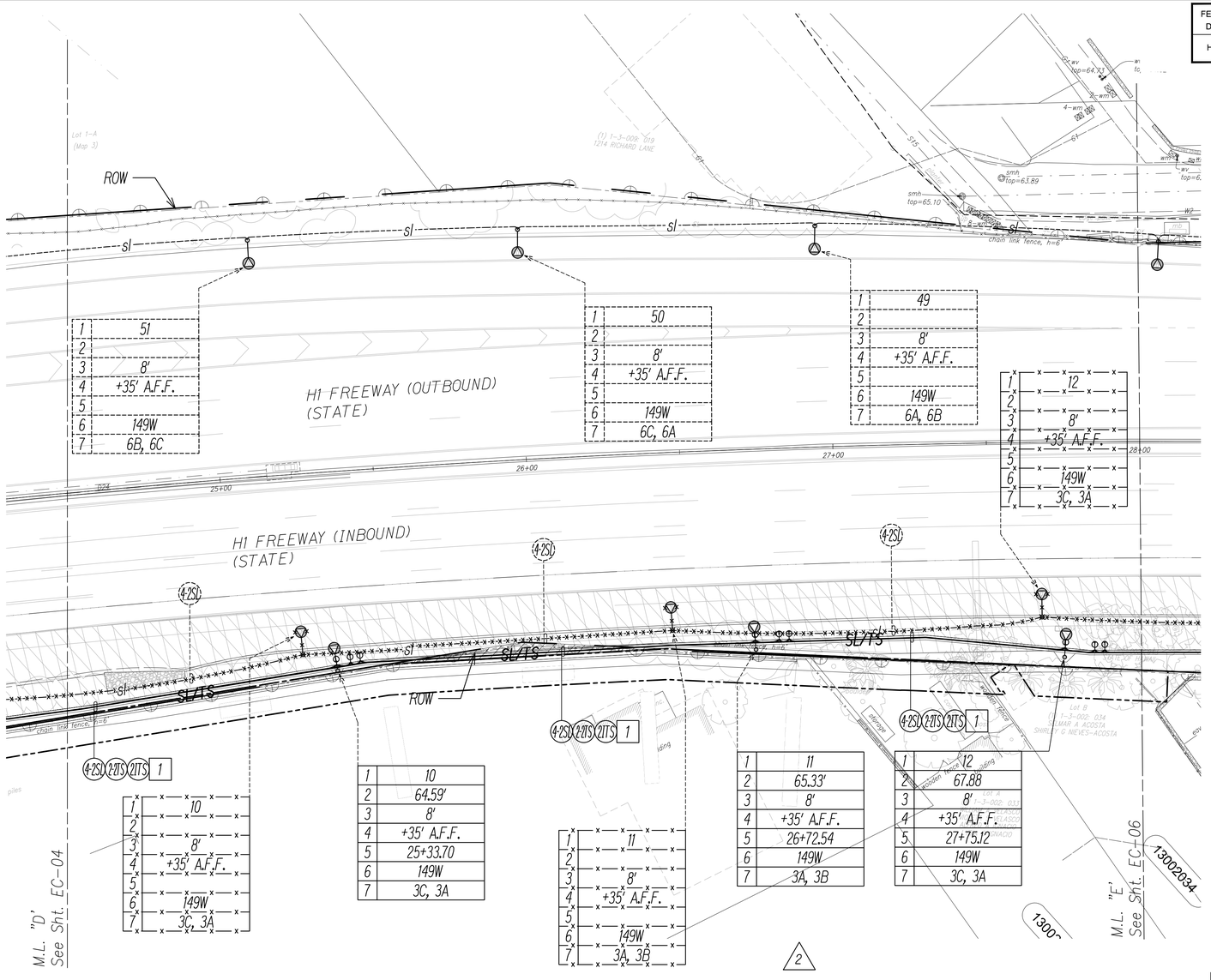
FILE: Z:\Acad\projects\220050\EC04_220050_ST LT PLAN-04.dwg saved April 10, 2023

ADD. 130

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 131	466

Note:

1 *Conduits and boxes to be installed in wall. See structural plans for mounting/installation details.*



1	51
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	6B, 6C

1	50
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	6C, 6A

1	49
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	6A, 6B

1	12
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3C, 3A

1	10
2	64.59'
3	8'
4	+35' A.F.F.
5	25+33.70
6	149W
7	3C, 3A

1	11
2	65.33'
3	8'
4	+35' A.F.F.
5	26+72.54
6	149W
7	3A, 3B

1	12
2	67.88
3	8'
4	+35' A.F.F.
5	27+75.12
6	149W
7	3C, 3A

1	10
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3C, 3A

1	11
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3A, 3B

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

FILE: Z:\Acad\projects\220050\EC05_220050_ST LT PLAN-05.dwg saved April 10, 2023

True North
1" = 20'

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 5

SCALE: 1"=20'

Graphic Scale:
1" = 20' 20' 10' 0 20' 40'
Scale in Feet

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
HAWAII, U.S.A.

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4-30-2024
EXPIRATION DATE OF THE LICENSE

DATE	REVISION
4/7/23	2 Add. 2 – Modified Plan Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 5

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

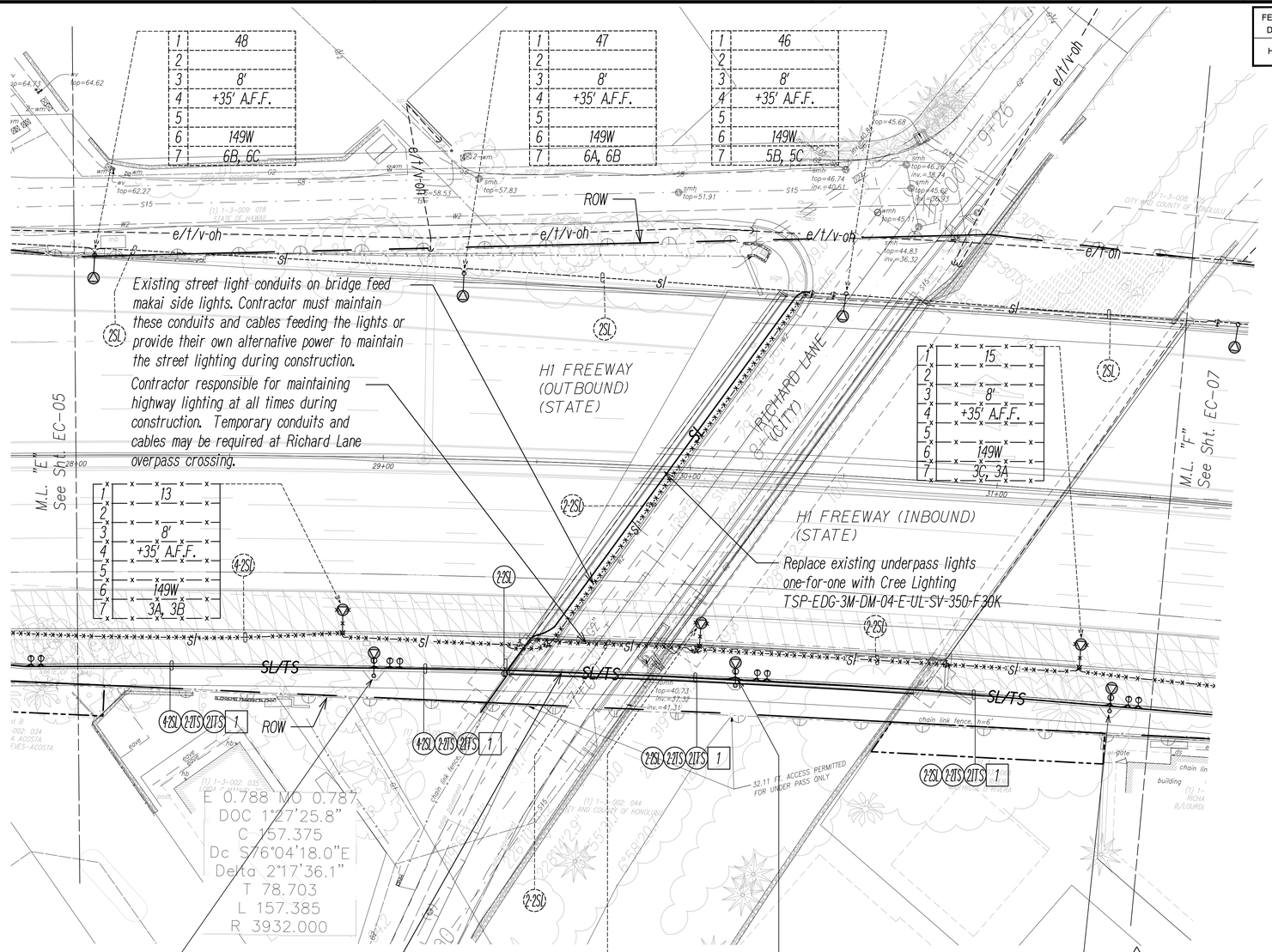
SHEET No. EC-05 OF 12 SHEETS

ADD. 131

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 132	466

Note:

1 *Conduits and boxes to be installed in wall. See structural plans for mounting/installation details.*



1	13
2	71.16'
3	8'
4	+35' A.F.F.
5	29+98.05
6	149W
7	3A, 3B

1	14
2	64.45'
3	8'
4	+35' A.F.F.
5	30+18.14
6	149W
7	3B, 3C

1	14
2	71.16'
3	8'
4	+35' A.F.F.
5	29+98.05
6	149W
7	3A, 3B

1	15
2	70.50'
3	8'
4	+35' A.F.F.
5	31+42.39
6	149W
7	3C, 3A

True North
1" = 20'

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 6

SCALE: 1"=20'

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

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

FILE: Z:\Acad\projects\220050\EC06_220050_ST LT PLAN-06.dwg saved April 14, 2023

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SIGNATURE

EXPIRATION DATE OF THE LICENSE

DATE	REVISION
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 6

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

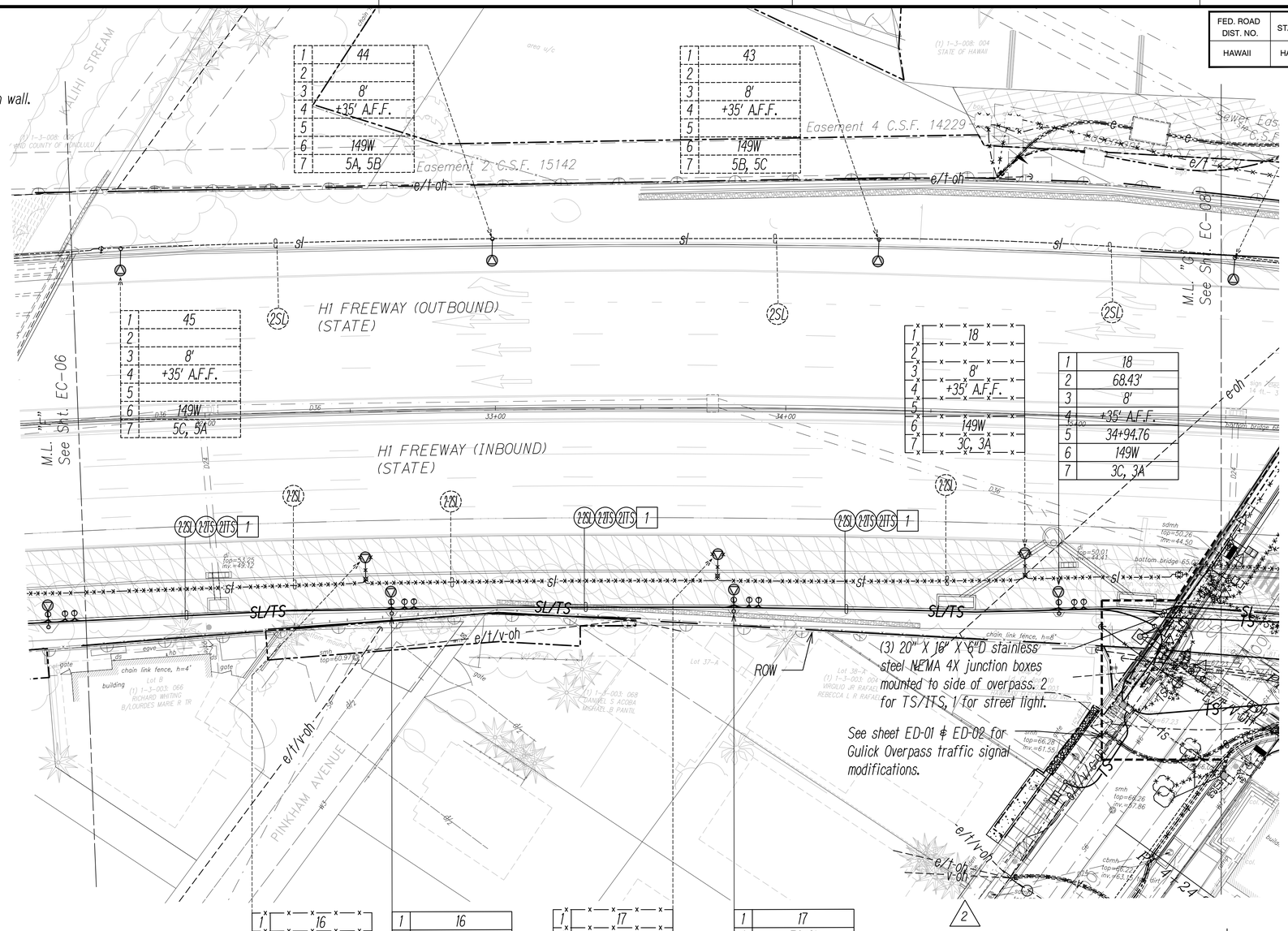
SHEET No. EC-06 OF 12 SHEETS

ADD. 132

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 133	466

Note:

1 *Conduits and boxes to be installed in wall. See structural plans for mounting/installation details.*



1	44
2	
3	8'
4	±35' A.F.F.
5	
6	149W
7	5A, 5B

1	43
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	5B, 5C

1	45
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	5C, 5A

1	18
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3C, 3A

1	18
2	68.43'
3	8'
4	+35' A.F.F.
5	34+94.76
6	149W
7	3C, 3A

1	16
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3A, 3B

1	16
2	70.12'
3	8'
4	+35' A.F.F.
5	32+62.78
6	149W
7	3A, 3B

1	17
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3B, 3C

1	17
2	70.12'
3	8'
4	+35' A.F.F.
5	33+82.64
6	149W
7	3B, 3C

True North
1" = 20'

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 7

SCALE: 1"=20'

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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FILE: Z:\Acad\projects\220050\EC07_220050_ST LT PLAN-07.dwg saved April 10, 2023

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DATE	REVISION
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 7

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

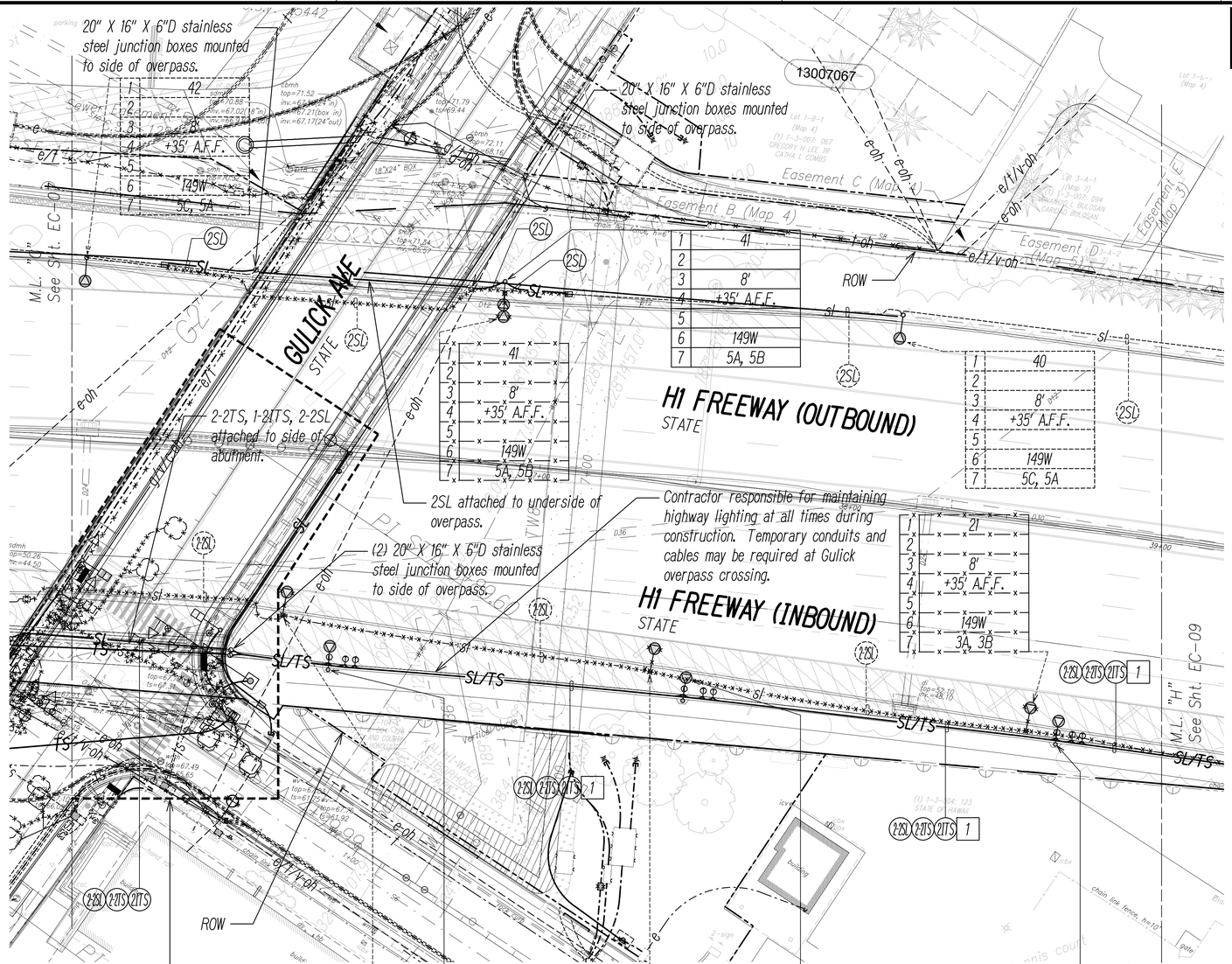
SHEET No. EC-07 OF 12 SHEETS

ADD. 133

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 134	466

Note:

1 *Conduits and boxes to be installed in wall. See structural plans for mounting/installation details.*



1	42
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	5C, 5A

1	41
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	5A, 5B

1	41
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	5A, 5B

1	40
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	5C, 5A

1	21
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3A, 3B

1	19
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3B, 3C

1	19
2	70.13'
3	8'
4	+35' A.F.F.
5	36+37.11
6	149W
7	3B, 3C

1	20
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3C, 3A

1	20
2	70.00'
3	8'
4	+35' A.F.F.
5	37+52.91
6	149W
7	3C, 3A

1	21
2	70.05'
3	8'
4	+35' A.F.F.
5	38+74.68
6	149W
7	3A, 3B

True North
1" = 20'

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 8

SCALE: 1"=20'

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

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

FILE: Z:\Acad\projects\220050\EC08_220050_ST LT PLAN-08.dwg saved April 10, 2023

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~~12-31-2024~~
EXPIRATION DATE OF THE LICENSE

DATE	REVISION
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 8

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

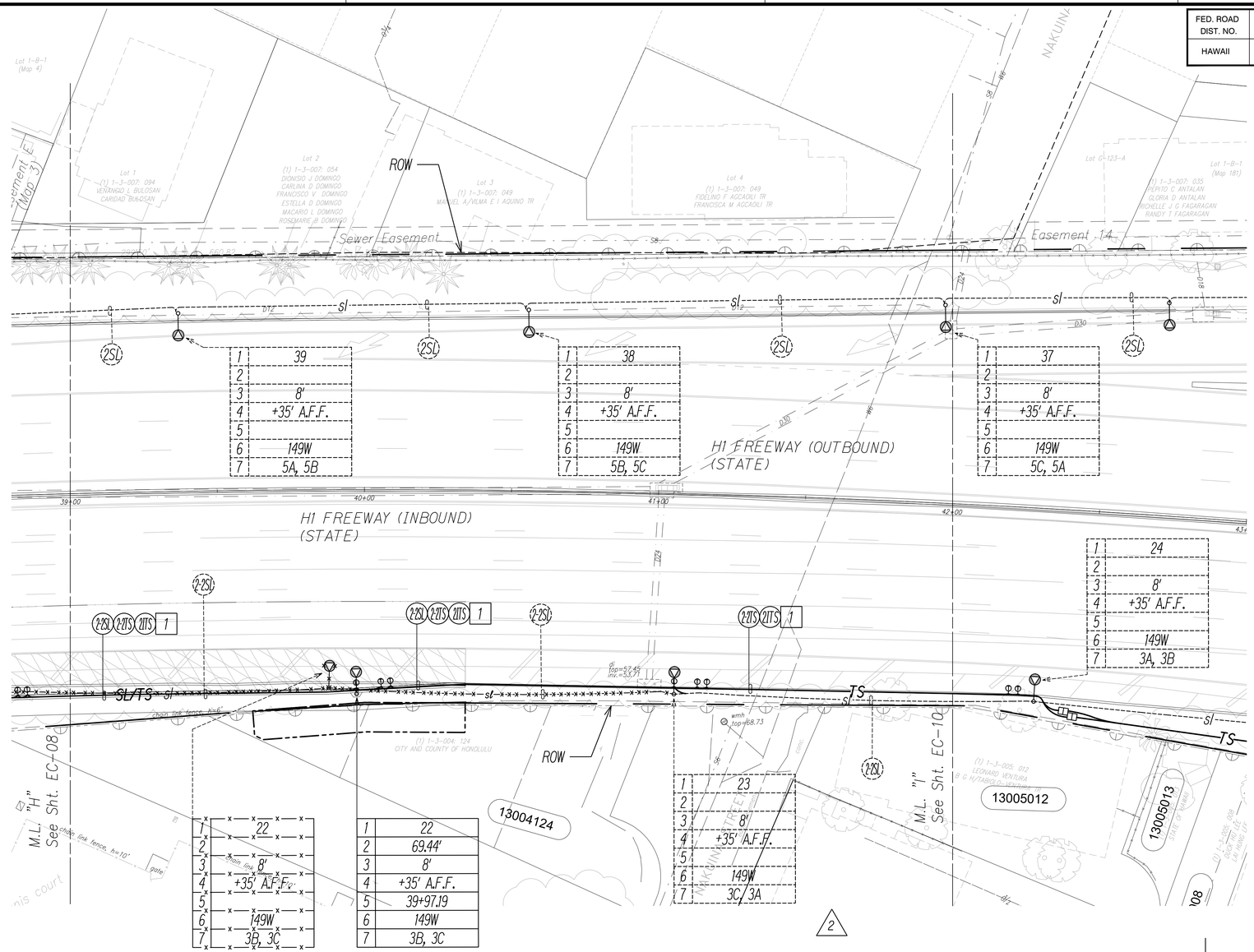
SHEET No. EC-08 OF 12 SHEETS

ADD. 134

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 135	466

Note:

1 Conduits and boxes to be installed in wall. See structural plans for mounting/installation details.



4/7/23	2 Add. 2 – Modified Plan Scale
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 9

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EC-09 OF 12 SHEETS

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 9

SCALE: 1"=20'

True North
1" = 20'

Graphic Scale:
1" = 20' 20' 10' 0 20' 40'
Scale in Feet

STEVEN H. SAKAI LICENSED PROFESSIONAL ENGINEER No. 7637-E HAWAII, U.S.A.

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SIGNATURE

EXPIRATION DATE OF THE LICENSE

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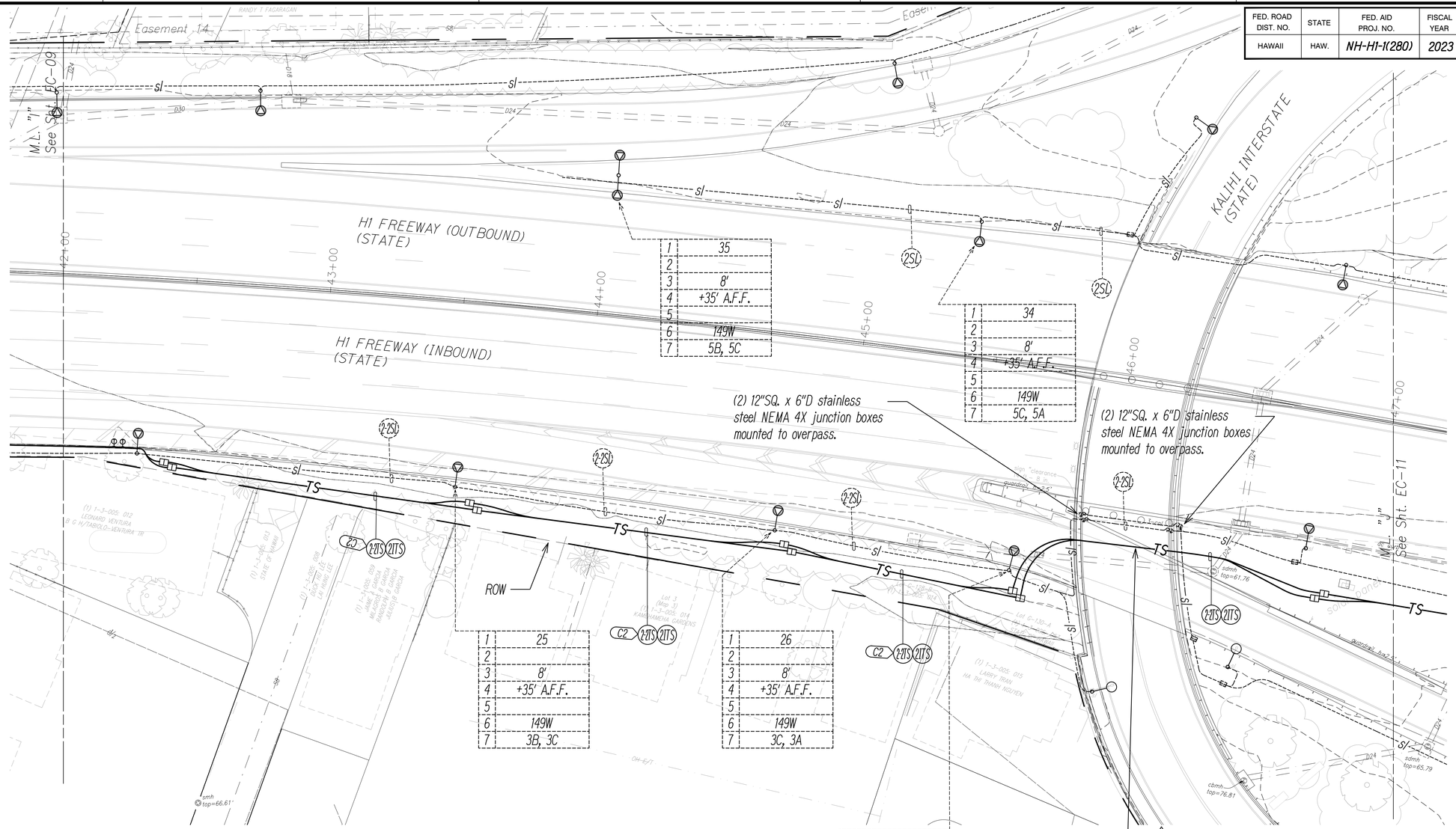
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

FILE: Z:\Acad\projects\220050\IC09_220050_ST LT PLAN-09.dwg saved April 10, 2023

ADD. 135

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 136	466



1	35
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	5B, 5C

1	34
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	5C, 5A

1	25
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3B, 3C

1	26
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3C, 3A

1	27
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	3A, 3B

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

FILE: Z:\Acad\projects\220050\EC10_220050_ST LT PLAN-10.dwg saved April 10, 2023

True North
1" = 20'

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 10

SCALE: 1"=20'

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
HAWAII, U.S.A.

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SIGNATURE

EXPIRATION DATE OF THE LICENSE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 10

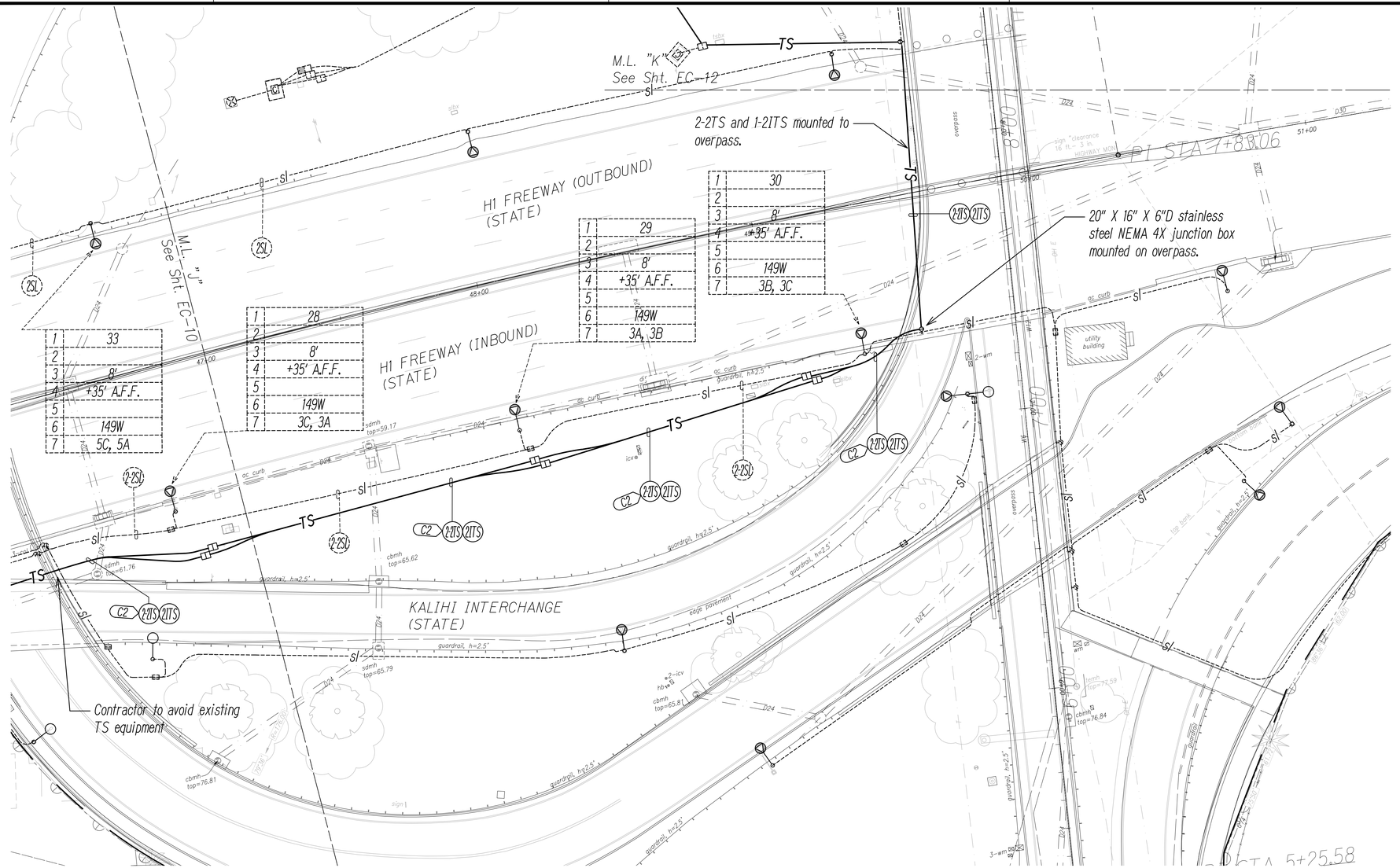
INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EC-10 OF 12 SHEETS

ADD. 136

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 137	466



2

DATE	REVISION
4/7/23	2 Add. 2 – Modified Plan Scale

ORIGINAL PLAN

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

FILE: Z:\Acad\projects\220050\EC11_220050_ST PLAN-11.dwg saved April 10, 2023

True North
1" = 20'

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 11

SCALE: 1"=20'

Graphic Scale:
1" = 20' 20' 10' 0 20' 40'
Scale in Feet

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
HAWAII, U.S.A.

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SIGNATURE _____ 20__ 2024
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 11

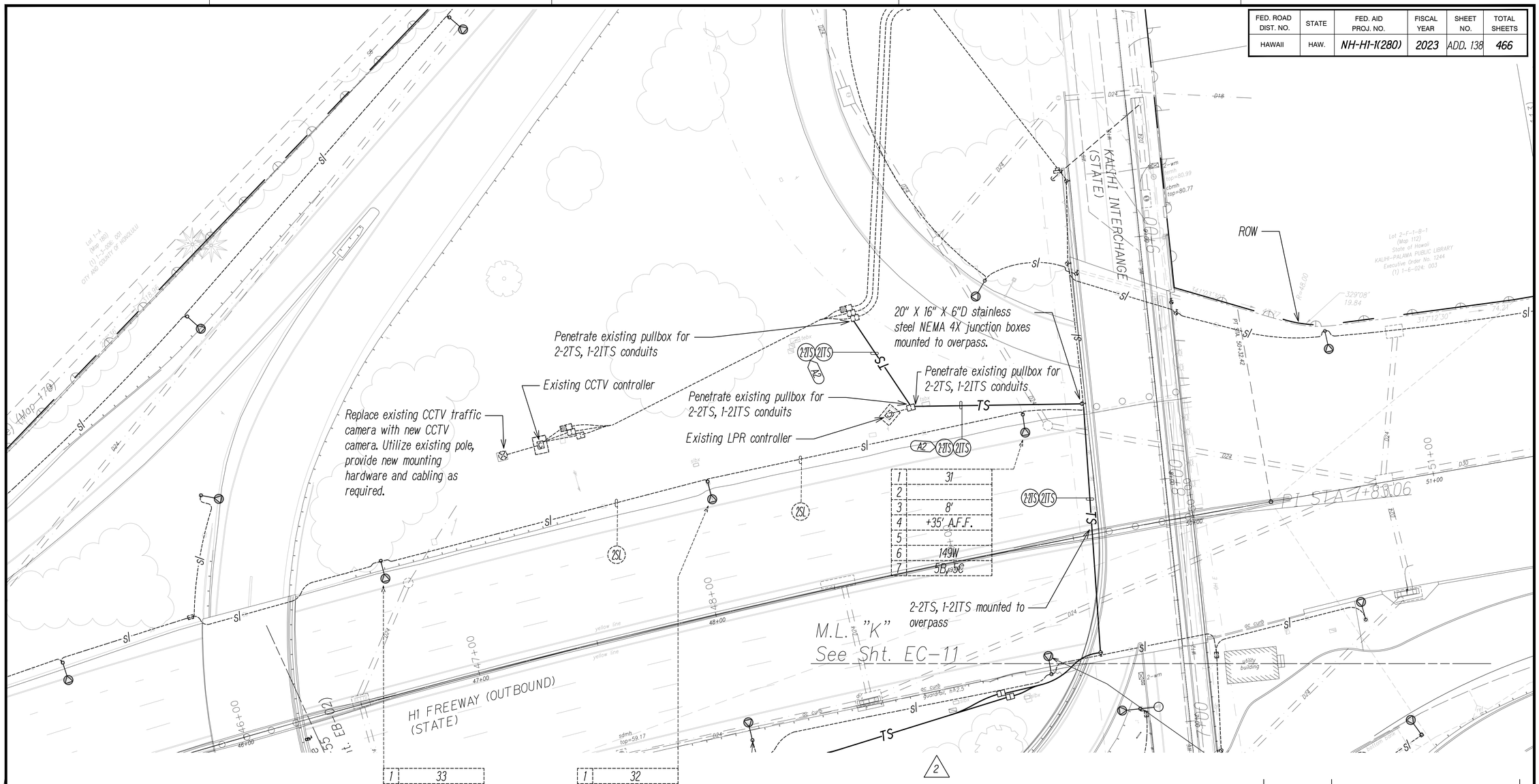
INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EC-11 OF 12 SHEETS

ADD. 137

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 138	466



1	31
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	5B, 5C

1	33
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	5C, 5A

1	32
2	
3	8'
4	+35' A.F.F.
5	
6	149W
7	5A, 5B

True North
1" = 20'

HIGHWAY LIGHTING/TRAFFIC SIGNAL PLAN 12

SCALE: 1"=20'

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

ORIGINAL PLANS	SURVEY PLOTTED BY	DATE
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	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
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FILE: Z:\Acad\projects\220050\ET12_220050_ST LT PLAN-12.dwg saved April 10, 2023

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LICENSED PROFESSIONAL ENGINEER
No. 7637-E
HAWAII, U.S.A.

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EXPIRATION DATE OF THE LICENSE

DATE	REVISION
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING & TRAFFIC SIGNAL PLAN 12

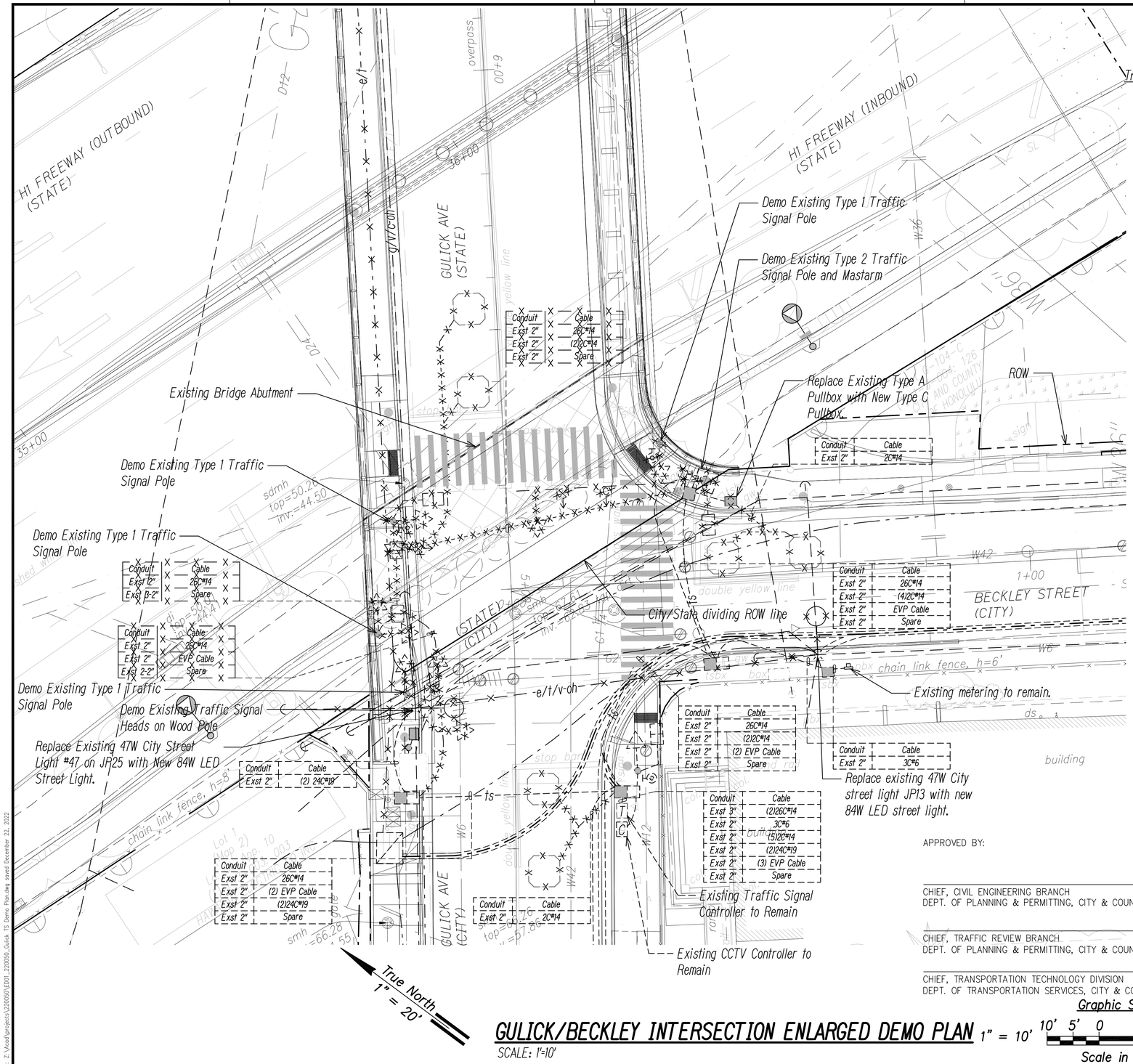
INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EC-12 OF 12 SHEETS

ADD. 138

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	139	466



Traffic Signal Construction Sequencing Notes

1. *Except During the Permitted Closure of the Gulick Ave. Overpass, Or When Special Duty Police Officers are Controlling Traffic, Signalized Control of the Gulick Ave. – Beckley St. Intersection is to be Maintained At All times.*
2. *Demolition of the Gulick Ave. – Beckley St. Traffic Signal, As Indicated on the Dwgs. Must Occur Prior to Start of Overpass Construction. Construction of the New Traffic Signal Conduits, Handholes and Cabling Must Also Occur Prior to Start of Overpass Construction.*
3. *Contractor Shall Provide Temporary Traffic Signal and Pedestrian Heads and Ped. Pushbuttons for Maintenance of Signalized Control During All Phases of the Approved Traffic Control Plans.*
4. *Quantity of Temporary Traffic Signal and Ped. Signal Heads Shall conform to 2009 MUTCD Requirements (During All Phases of the Traffic Control Plan), Requirements of the City and County of Honolulu, Department of Transportation Services (DTS) and the State Department of Transportation (HDOT).*
5. *Temporary Ped. Pushbuttons Shall be Provided for all Temporary ADA Accessible Crosswalks.*
6. *Contractor Shall Coordinate Adjustment of Temporary Traffic Signal Equipment with the Traffic Barriers Being Provided during Overpass Construction and Shall Coordinate with both the City DTS Inspector and HDOT's Inspector.*
7. *New Permanent Traffic Signal Equipment Shall be Tested and Approved by DTS and HDOT Before Removal of the Temporary Traffic Signal System.*
8. *Final Splicing of Temporary Traffic Signal Cables to the Traffic Signal Cables in the Handholes Shall be by DTS.*
9. *Above Grade Temporary Traffic Signal Cables Shall be Protected within Liquid–Tight Flexible Metallic Conduit and Shall Further be Protected by Rubber Construction Cable Protectors.*
10. *Temporary CCTV Cameras Installed by HART to be Maintained by Contractor During Entire Construction Period until New Permanent CCTV Cameras are Installed.*
11. *Contractor to Contact HART Construction Director Below Prior to Start of Construction:*

Matt J. Scanlan, P.E., Director of Construction
Office: 808–768–6204, Mobile: 808–371–1864
Email: mscanlon@honolulu.gov

APPROVED BY:

CHIEF, CIVIL ENGINEERING BRANCH DATE
DEPT. OF PLANNING & PERMITTING, CITY & COUNTY OF HONOLULU

CHIEF, TRAFFIC REVIEW BRANCH DATE
DEPT. OF PLANNING & PERMITTING, CITY & COUNTY OF HONOLULU

CHIEF, TRANSPORTATION TECHNOLOGY DIVISION DATE
DEPT. OF TRANSPORTATION SERVICES, CITY & COUNTY OF HONOLULU

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

FILE: Z:\Aces\projects\220050\ED01_220050_Gulick TS Demo Plan.dwg saved December 22, 2022

GULICK/BECKLEY INTERSECTION ENLARGED DEMO PLAN 1" = 10'
SCALE: 1'=10'

Graphic Scale: 10' 5' 0 10' 20'
Scale in Feet

STEVEN H. SAKAI LICENSED PROFESSIONAL ENGINEER No. 7637-E HAWAII, U.S.A.

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SIGNATURE — EXPIRATION DATE OF THE LICENSE: 04-30-2024

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

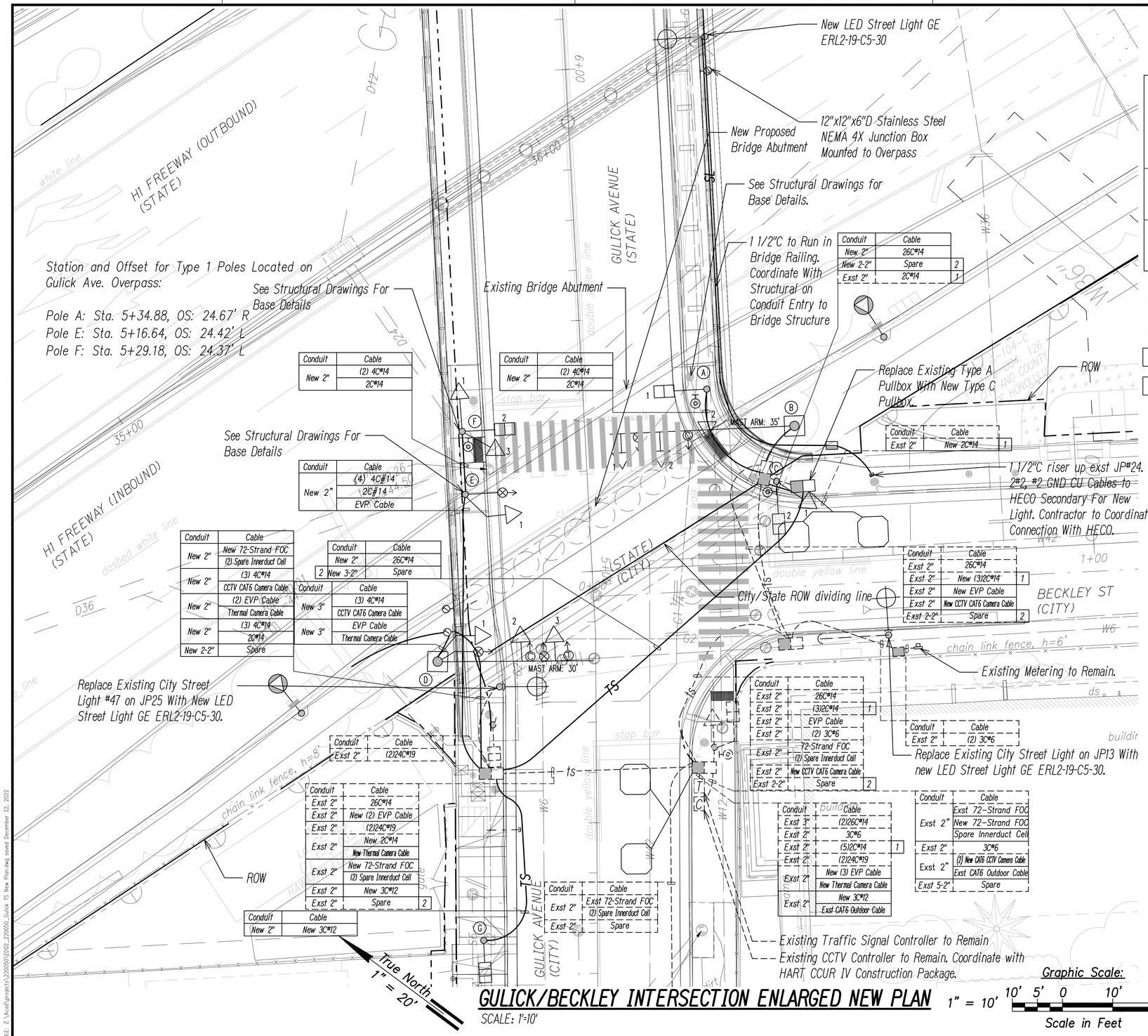
GULICK/BECKLEY INTERSECTION ENLARGED DEMO PLAN

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. ED-01 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	140	466



Conduit	Cable
New 2"	(2) 4C#14
	2C#14

Conduit	Cable
New 2"	(2) 4C#14
	2C#14

Conduit	Cable
New 2"	(4) 4C#14
	2C#14
	EVP Cable

Conduit	Cable
New 2"	New 72-Strand FOC
	(2) Spare Innerduct Coil
New 2"	(3) 4C#14
New 2"	CCTV CAT6 Camera Cable
	(2) EVP Cable
New 2"	Thermal Camera Cable
	(3) 4C#14
New 2"	2C#14
New 2-2"	Spare

Conduit	Cable
New 2"	26C#14
New 3-2"	Spare
2	

Conduit	Cable
New 3"	(3) 4C#14
	CCTV CAT6 Camera Cable
New 3"	EVP Cable
	Thermal Camera Cable

Conduit	Cable
Exst 2"	(2)24C#19

Conduit	Cable
Exst 2"	26C#14
Exst 2"	New (2) EVP Cable
Exst 2"	(2)24C#19
	New 2C#14
Exst 2"	New Thermal Camera Cable
	New 72-Strand FOC
Exst 2"	(2) Spare Innerduct Coil
Exst 2"	New 3C#12
Exst 2"	Spare 2

Conduit	Cable
New 2"	New 3C#12

Conduit	Cable
Exst 2"	Exst 72-Strand FOC
	(2) Spare Innerduct Coil
Exst 2"	Spare

Conduit	Cable
New 2"	26C#14
New 2-2"	Spare 2
Exst 2"	2C#14 1

Conduit	Cable
Exst 2"	26C#14
Exst 2"	(3)2C#14 1
Exst 2"	EVP Cable
Exst 2"	(2) 3C#6
Exst 2"	72-Strand FOC
	(2) Spare Innerduct Coil
Exst 2"	New CCTV CAT6 Camera Cable
Exst 2-2"	Spare 2

Conduit	Cable
Exst 2"	26C#14
Exst 2"	New (3)2C#14 1
Exst 2"	New EVP Cable
Exst 2"	New CCTV CAT6 Camera Cable
Exst 2-2"	Spare 2

Conduit	Cable
Exst 2"	(2) 3C#6

Conduit	Cable
Exst 3"	(2)26C#14
Exst 2"	3C#6
Exst 2"	(5)2C#14 1
Exst 2"	(2)24C#19
Exst 2"	New (3) EVP Cable
	New Thermal Camera Cable
Exst 2"	New 3C#12
	Exst CAT6 Outdoor Cable

Conduit	Cable
Exst 2"	Exst 72-Strand FOC
	New 72-Strand FOC
	Spare Innerduct Coil
Exst 2"	3C#6
Exst 2"	(2) New CAT6 CCTV Camera Cable
	Exst CAT6 Outdoor Cable
Exst 5-2"	Spare

Conduit	Cable
Exst 2"	26C#14
Exst 2"	New 2C#14 1

Signal Indication	R Y G (LED)	(LED)
Description	12" RYG Traffic Signal Head	Pedestrian Signal Head
Pole Letter–Signal Head Number	A–2 D–1 F–1 B–1 D–2 F–3 B–2 D–3 C–1 E–1	A–1 C–2 F–2

Pole G, Signal Head 1 Is A Flashing School Zone Speed Sign.

Note:

1. Repull 2C#14 for Pedestrian Push Button(s) Loop Detectors.
2. Utilize Spare Conduits to Repull Cables as Needed.
3. Contractor to Contact HART Director of Construction Below Prior to Start of Construction to Coordinate Work to be Done at the Gulick/Beckley Intersection With HART's CCUR IV Construction Package.

   Matt J. Scanlon, P.E., Director of Construction
   Office: 808–768–6204, Mobile: 808–371–1864
   Email: mscanlon@honolulu.gov
4. Contractor to Supply Details for Poles A, E and F Bases Prior to Roughing in.

APPROVED BY:

CHIEF, CIVIL ENGINEERING BRANCH DATE
DEPT. OF PLANNING & PERMITTING, CITY & COUNTY OF HONOLULU

CHIEF, TRAFFIC REVIEW BRANCH DATE
DEPT. OF PLANNING & PERMITTING, CITY & COUNTY OF HONOLULU

CHIEF, TRANSPORTATION TECHNOLOGY DIVISION DATE
DEPT. OF TRANSPORTATION SERVICES, CITY & COUNTY OF HONOLULU

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

FILE: Z:\Acad\projects\220050\ED02_220050_Gulick TS New Plan.dwg saved December 22, 2022

GULICK/BECKLEY INTERSECTION ENLARGED NEW PLAN

SCALE: 1"=10'

Graphic Scale: 1" = 10' — 10' 5' 0 10' 20' — Scale in Feet

STEVEN H. SAKAI LICENSED PROFESSIONAL ENGINEER No. 7637-E HAWAII, U.S.A.

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GULICK/BECKLEY INTERSECTION ENLARGED NEW PLAN

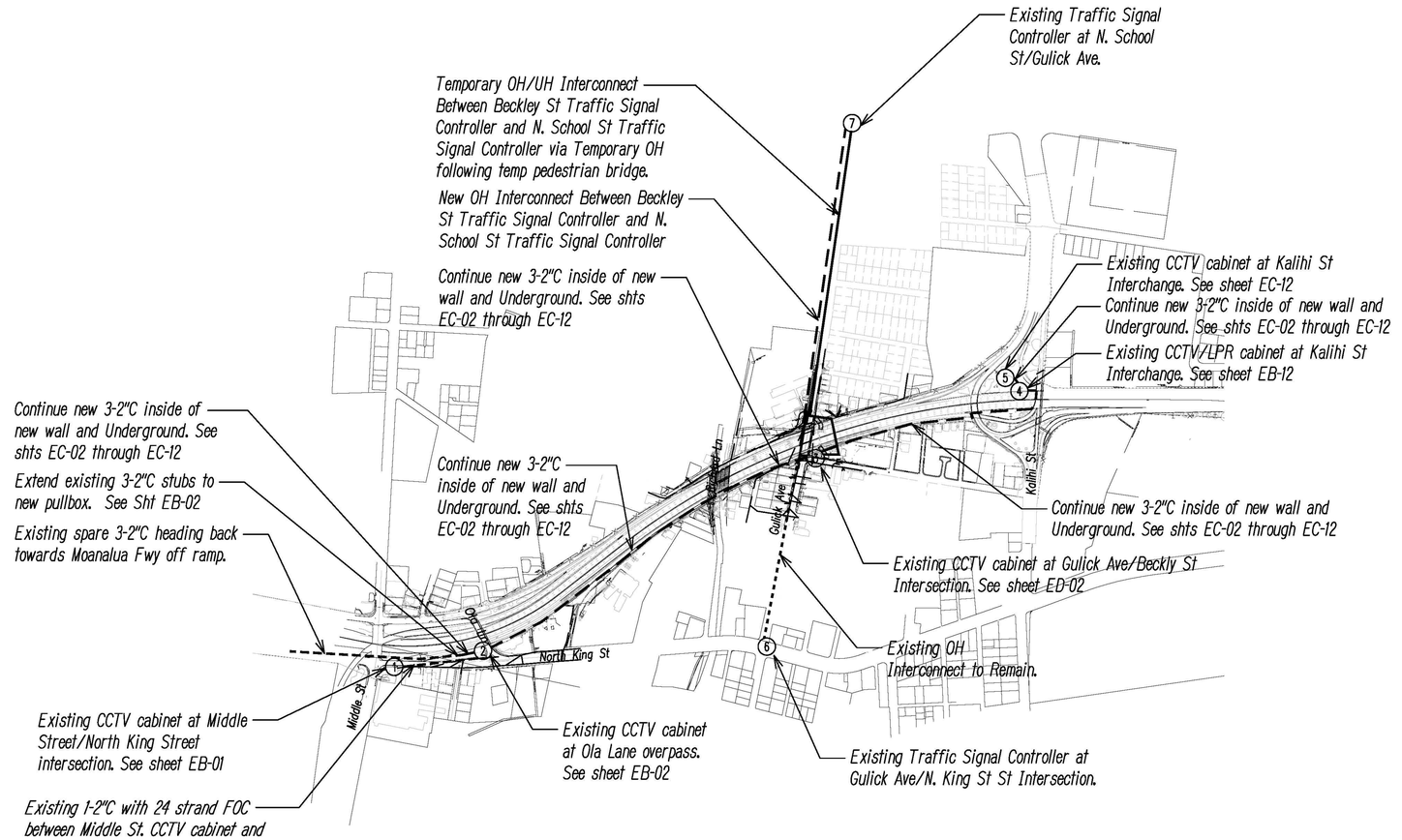
INTERSTATE ROUTE HI (EB) IMPROVEMENTS

Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

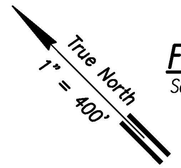
SHEET No. ED-02 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 141	466



Notes:

1. Provide 72-strand single mode fiber optic cable. Terminate, test, and certify all strands.
2. Should any strands of the pulled fiber fail the OTDR testing, the entire run shall be re-pulled at contractor's expense. All strands of the Replacement cable shall be terminated, tested, and certified.
3. Provide 3-lobe fabric innerduct in all ITS conduits prior to installing cables.
4. Minimize outage on the existing fiber optic cables and CCTV equipment. 8hr Maximum Outage Allowed.
5. Traffic Signal interconnect cables to be installed and/or replaced utilizing the same method as CCTV cables.



Fiber Optic Connection Plan

Scale: 1" = 400'

Suggested Sequence of Work:

1. Install temporary OH/UG Interconnect between ③ and ⑦.
2. Remove existing OH Interconnect between ③ and ⑦.
3. Pick up existing stubs near ② and install conduits, boxes, and innerduct in new wall to Gulick Ave overpass.
4. (3) Pull new 72 strand single mode F.O. cable from ① to ③.
5. Terminate, test, and certify new cable connection between ① and ③.
6. Continue new conduits, boxes, and innerduct from ③ to ④.
7. Continue new conduits and innderduct between existing handholes between ④ and ⑤.
8. Replace CCTV camera at ⑤.
9. Replace OH/UG Interconnect between ③ and ⑦.

Graphic Scale:

1" = 400' 400' 200' 0 400' 800'

Scale in Feet

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

FILE: Z:\Aces\projects\220050\1203_220050_OVERALL FIBER PLAN.dwg saved April 24, 2023

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STEVEN H. SAKAI LICENSED PROFESSIONAL ENGINEER No. 7637-E HAWAII, U.S.A.

SIGNATURE — EXPIRATION DATE OF THE LICENSE

DATE	REVISION
4/24/23	(3) Add. 3 – Modified FOC Type

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

Fiber Optic Connection Plan

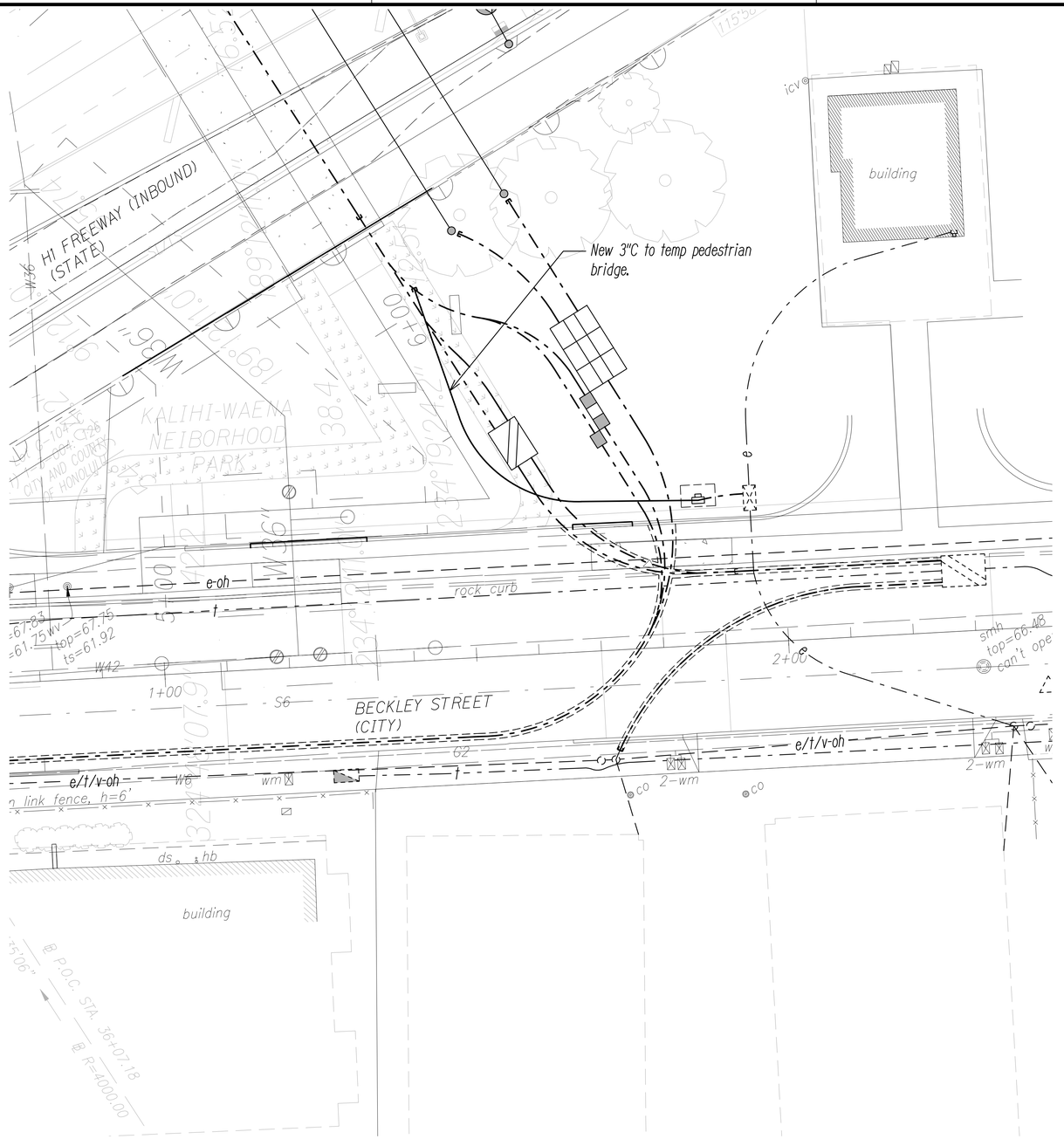
INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. ED-03 OF 4 SHEETS

ADD. 141

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD 142	466



Note: 2

1. Contractor to provide lighting on temporary pedestrian bridge. Lighting to meet the following minimum criteria:

   * LED
   * DarkSky Compliant
   * AASHTO Roadway Design Guide Compliant
   * Photocell Controlled
   * HRS 0201-0008 Compliant

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

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

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True North
1" = 10'

TEMPORARY PEDESTRIAN BRIDGE TEMP SERVICE

SCALE: 1"=10'

Graphic Scale:

1" = 10' 10' 5' 0 10' 20'

Scale in Feet

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
HAWAII, U.S.A.

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SIGNATURE

April 30, 2024
EXPIRATION DATE OF THE LICENSE

DATE	REVISION
4/7/23	2 Add. 2 – Add Ped Bridge Ltg Note

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TEMPORARY PEDESTRIAN BRIDGE
TEMP ELECTRICAL SERVICE

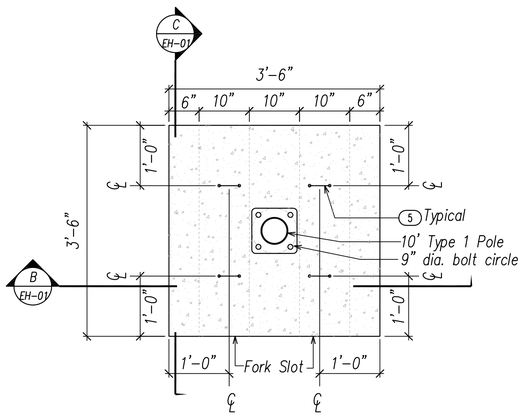
INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. ED-04 OF 4 SHEETS

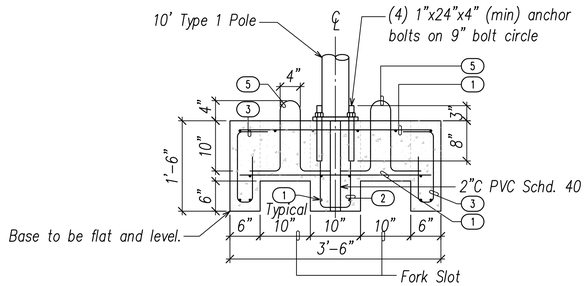
ADD 142

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	143	466



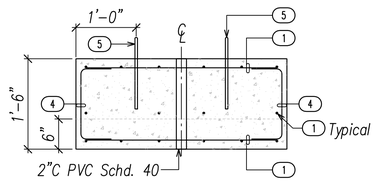
A EH-01 TYPE 1 TEMPORARY POLE

SCALE: 1" = 1'-0"



B EH-01 SECTION B

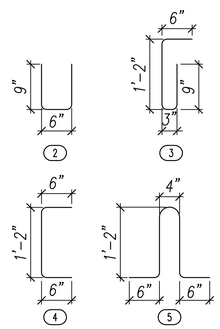
SCALE: 1" = 1'-0"

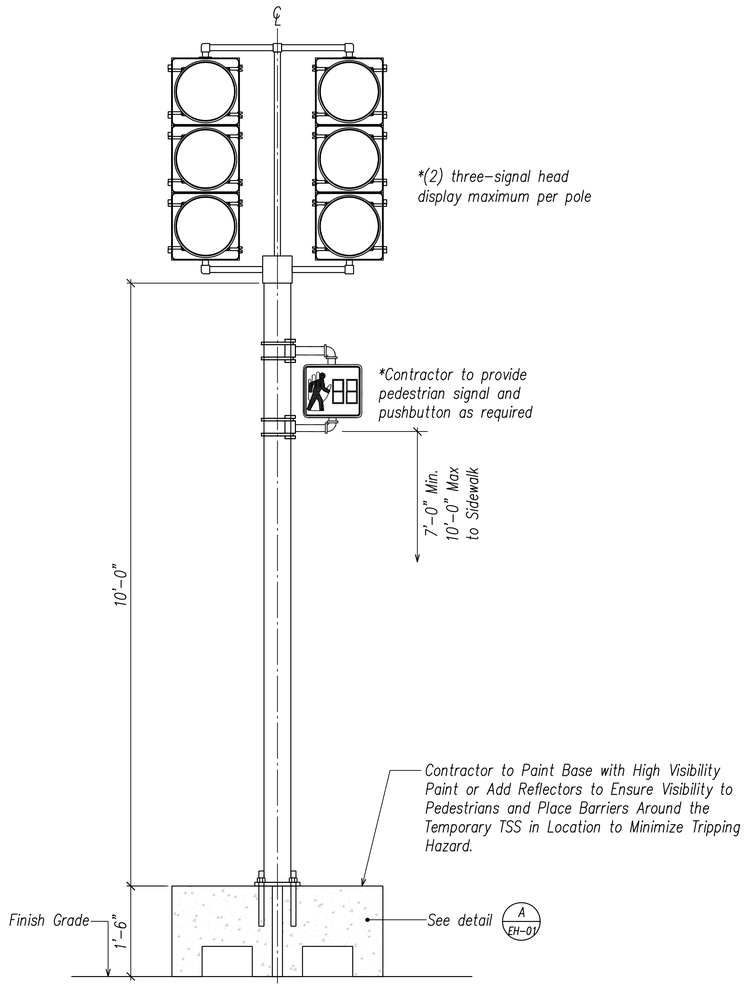


C EH-01 SECTION C

SCALE: 1" = 1'-0"

Rebar Details			
Bend No.	Size	Quantity	Length
1	#3	28	3'-2"
2	#3	6	
3	#3	12	
4	#3	12	
5	#4	4	





D EH-01 TEMPORARY TYPE 1 TRAFFIC SIGNAL STANDARD ELEVATION

SCALE: 1" = 1'-0"

Notes:

1. Loading per AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2009.
2. Concrete f'c = 4000psi and reinforcing steel grade 60.
3. Bolts are ASTM A307 Grade A with hex heads and nuts.
4. Place on compact level ground.
5. Signal pole shall be detached from concrete base prior to lifting, moving or repositioning the concrete base.
6. Contractor responsible for maintaining MUTCD required signals during construction.

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

FILE: Z:\Accel\projects\220050\EE01_220050-Temp TS Pole Det.dwg saved December 22, 2022

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TEMPORARY TYPE 1 TRAFFIC SIGNAL STANDARD DETAIL

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EE-01 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	144	466

New Design Requirements for Traffic Signal Standards
(January 8, 2018)

(Highway Lighting Luminaires, Pole Standards, Bracket Arms and Traffic Signal Standards and Mast Arms Being Furnished for this Project Shall Conform with the New Design Requirements Noted Below)

1. *Equipment Manufacturers Providing Structural Supports for Luminaires and Traffic Signals, the Following Design Parameters to be Included in the Design of the Project Materials.*

2. *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 1st Edition, (2015) Including Subsequent Interim Revisions, Published by the American Association of State Highway and Transportation Officials, as Modified Herein.*

3. *Basic Wind Speed [Article 3.8.2] to Determine the Design Wind Pressure Shall be 145 Mph. for Unusual or Differing Exposure Conditions, the Basic Wind Speed Should be Increased Using Rational Procedures and Sound Engineering Judgment. Alternatively, the Design Wind Pressure May be Increased by Using a Higher Wind Importance Factor [Table 3.8.3-1] Corresponding to a Recurrence Interval of At Least One Level Greater Than Recommended. the Wind Maps for Effective Wind Speed, Topographic Effects and Exposure Category Included in the State Building Code (Hawaii Administrative Rules, Chapter 3-180) Should be Used for Guidance.*

4. *Wind Importance Factors [Article 3.8.3-1] and Velocity Conversion Factors [Table 3.8.3-3] Used to Determine the Design Wind Pressure Shall be Based on the Following Recurrence Intervals:*

   A. *For Overhead Sign Structures: 1700 Years*
   B. *For Traffic Signal Structures: 1700 Years*
   C. *For Luminaire Support Structures Less Than 50 Feet in Height: 25 Years*
   D. *For Other Support Structures Including Luminaire Support Structures 50 Feet or More in Height, and When Luminaire is Mounted on a Traffic Signal Structure: 50 Years*
   E. *For Roadside Sign Structures and Temporary Support Structures: 10 Years*

5. *Height and Exposure Factor [Article 3.8.4]. for Support Structures on Bridges, the Height and Exposure Factor Shall be Determined Based on the Maximum Height They Are Above the Surrounding Ground. for Severe Exposure Conditions Such as Along the Coastline, the Factor Shall be Increased Based on the Latest Asce Standard ASCE/SEI 7, Minimum Design Loads for Buildings and Other Structures. the Wind Maps for Effective Wind Speed, Topographic Effects and Exposure Category Included in the State Building Code (Hawaii Administrative Rules, Chapter 3-180) Should Also be Used for Guidance.*

6. *Minimum Anchor Bolts [Article 5.16]. Cantilevered Traffic Signal Structures with Mast Arms Greater Than 40 Feet and Other Cantilevered Support Structures with Design Life of 50 Years or More Shall Have Base Plate Connections with a Minimum of Six (6) Anchor Bolts. A Minimum of Four (4) Anchor Bolts Shall be Provided for All Other Base Plate Connections.*

7. *Use of Grout [Article 5.16]. Grout Shall Not be Used Under Base Plates for All Support Structures Except for Ordinary Street Light Poles Unless Approved by the Bridge Design Engineer. Anchor Bolts with Leveling Nuts Shall be Designed to Transfer All Loads From the Structure to Its Base Support. a Wire Cloth Screen Shall Specified to be Placed Vertically Between the Base Plate and the Top of the Foundation and Wrapped Horizontally Around the Base Plate with a 3 Inches Minimum Lap. the Wire Cloth Shall be Galvanized Steel Standard Grade Plain Weave 2x2 Mesh 0.063 inch Diameter Wires. Secure the Wire Cloth At the Lapped Ends with Stainless Steel Wire Ties (Min 2). Loop the Wire Ties and Twist Tie Them Securely. Also, Alternate Means of Protecting the Underside of the Base Plate From Debris, Birds, Bees and Other Nesting Animals May be Proposed for Consideration.*

8. *Plumbness of Anchor Bolts [Article 5.16]. Anchor Bolts Shall be Installed with Misalignments of Less Than 1:40 From Vertical. After Installation, Firm Contact Shall Exist Between the Anchor Bolt Nuts, Washers, and Base Plate on Any Anchor Bolt Installed in a Misaligned Position.*

9. *Fatigue Importance Factors [Article 11.6] Noted in Table 11.6-1 for Overhead Sign and Traffic Signal Structures Shall be Based on Fatigue Category I. support Structures Other Than That Noted in Table 11.6-1 with Round Cross Sections Under 50 Feet, Roadside Sign Structures, and Temporary Structures Do Not Need to be Designed for Fatigue. Support Structures 50 Feet or More in Height Shall be Designed for Fatigue and be Based on Fatigue Category I.*

10. *Galloping [Article 11.7.1.1]. Provisions Shall be Made to Install Effective Vibration Mitigation Devices on Overhead Cantilevered Sign and Traffic Signal Support Structures Unless They Are Designed for Galloping-Induced Cyclic Loads. With Approval from HDOT, Mitigation Devices May be Installed after Construction If Vibration Due to Galloping is Identified.*

11. *Natural Wind Gust [Article 11.7.1.2]. Overhead Sign, Traffic Signal, and High-Level Support Structures Shall be Designed to Resist An Equivalent Static Natural Wind Gust Pressure.*

12. *Truck-Induced Gust [Article 11.7.1.3]. Overhead Sign and Traffic Signal Support Structures Shall be Designed to Resist An Equivalent Static Truck Gust Pressure Range Based on a Truck Speed of 20 MPH Over the Posted Speed.*

13. *Equipment Manufacturers Providing Structural Supports for Luminaires and Traffic Signals, is Responsible to Provide the Engineer with Any Information That Will Impact the Current Foundation Design.*

14. *Square or Rectangular Steel Post Sections [Sections 5 and 11]. Square or Rectangular Steel Sections Are Not Recommended to be Used for Overhead Sign and Traffic Signal Supports Because They Are More Prone to Poor Fatigue Performance. However, the Post Sections Contained in the Highways Division Standard Plans (2008) for Overhead Sign Structures (Standard Plans TE-17A Through TE-19M) Shall be Considered Acceptable and May Still be Used. Any Special Designs or Deviations from the Standard Plans Shall be Considered with the Bridge Design Engineer.*

15. *Traffic Signs on Light Poles and Traffic Signals. All Light Poles of Highway Light Standards Shall be Designed for a Traffic Sign of Nine (9) SF with its Resulting Wind Force Applied 10 Feet Above the Finish Grade. See Standard Plan TE-47 (5/21/07).*

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

FILE: Z:\Acad\projects\220050\EE02_220050_TrafSigNotEli.dwg saved December 22, 2022

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
HAWAII, U.S.A.

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SIGNATURE — EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

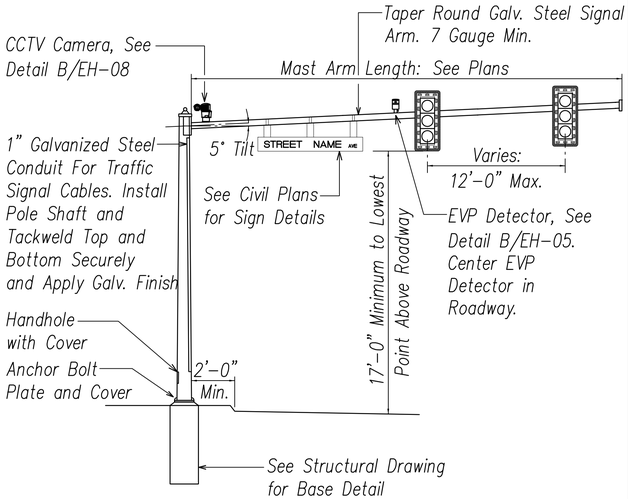
TRAFFIC SIGNAL NOTES

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EE-02 OF 9 SHEETS

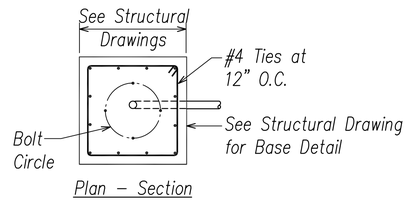
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	145	466



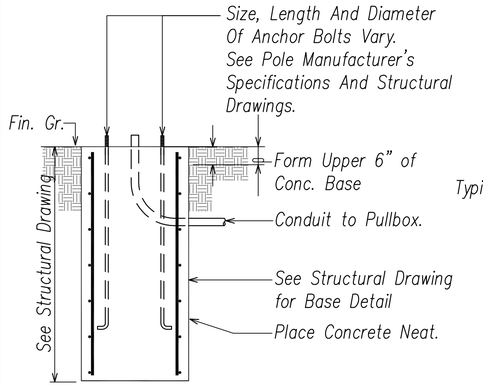
Notes:

1. Standard and Mast Arm Shall be Designed in Accordance with Latest Edition of "Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals", with Revisions Noted on Sheet EH-02.
2. Mounting: Signals At Intermediate Points of Mast Arm Shall be of The Adjustable Type.
3. Signals Shall be Centered Over Lane Lines.
4. Submit Shop Drawings for Approval.
5. Back Plate to be Installed on All Traffic Signal Heads Attached to Mast Arms. See Detail D/EH-04.

A EE-03 **TYPE II TRAFFIC SIGNAL STANDARD**
NOT TO SCALE



Plan – Section

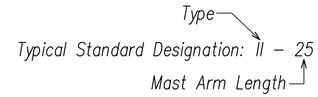


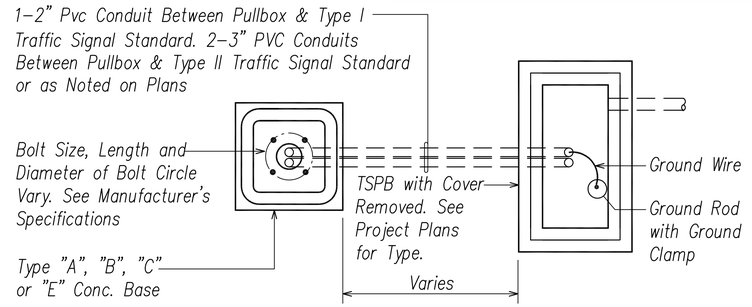
Vertical Section

Notes:

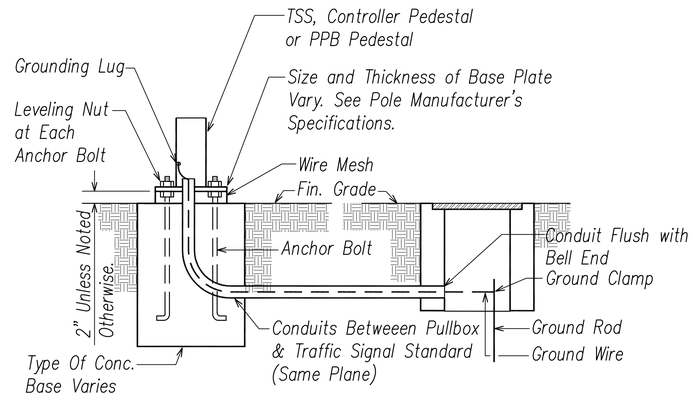
1. Design Lateral Pressure: 1,500 PSF.
2. Conduit Bend is Incidental to Concrete Base.

B EE-03 **TYPE II TRAFFIC SIGNAL STANDARD BASE DETAIL**
NOT TO SCALE





Plan



Section

C EE-03 **TYPICAL STANDARD & PEDESTAL DETAIL**
NOT TO SCALE

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

FILE: Z:\Kodi\projects\220050\EE03_220050_TrafSigDet02.dwg saved December 22, 2022

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

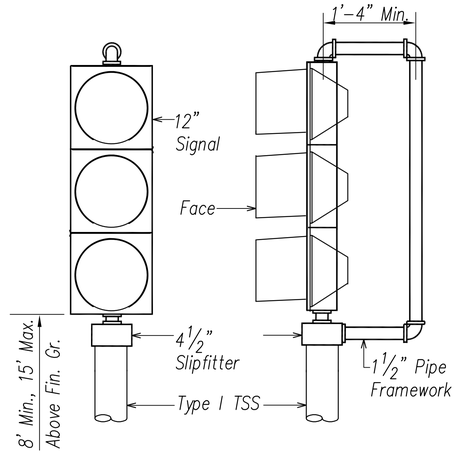
TRAFFIC SIGNAL DETAIL 2

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

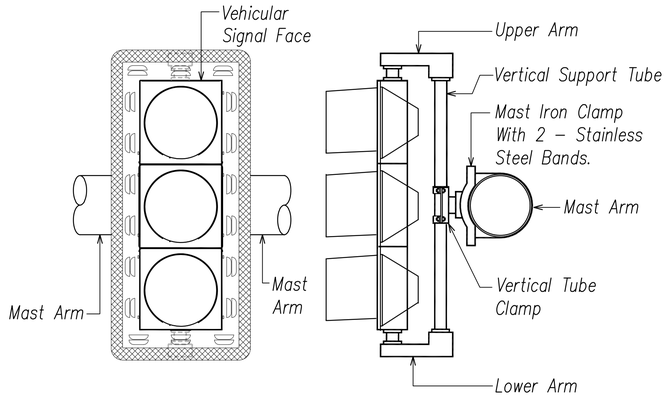
Scale: As Noted Date: December 2022

SHEET No. EE-03 OF 9 SHEETS

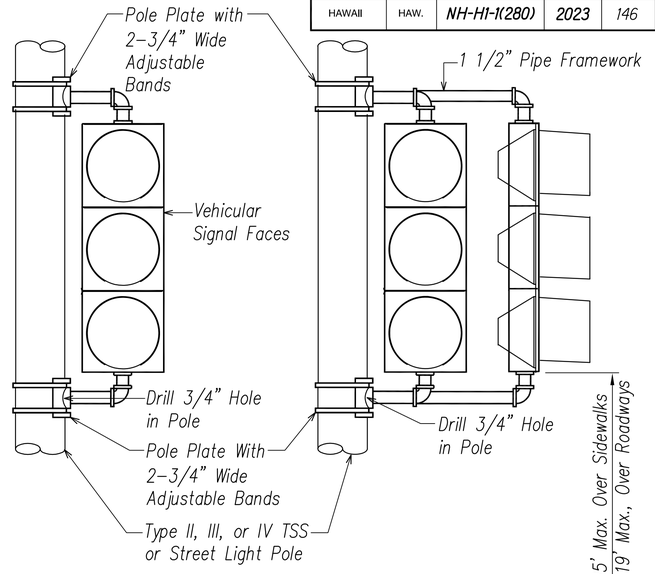
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	146	466



Top of Pole – One Way Mounting



Adjustable
Mast Arm One Way Mounting at Intermediate Point



Bracket Mount – One Way (B–1W)

Bracket Mount – Two Way (B–2W)

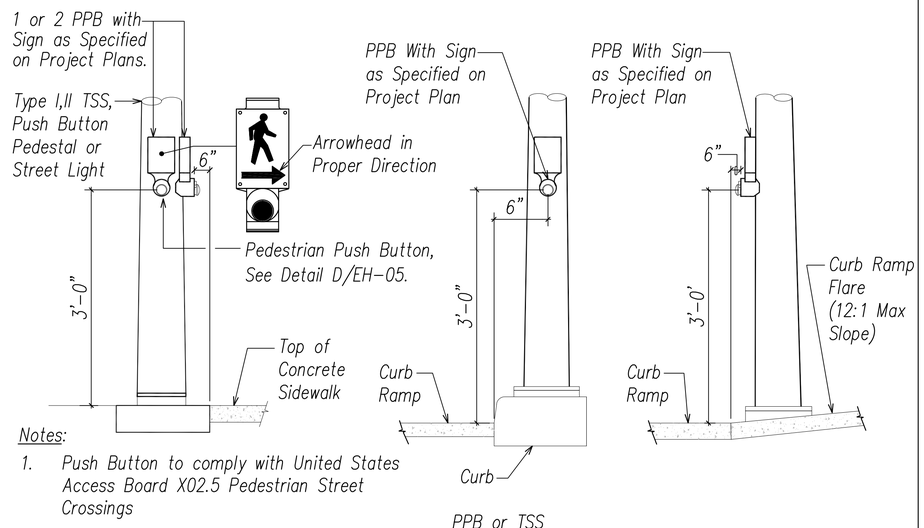
Notes:

1. Stainless Steel Bands Shall be 1/2" Wide X .050" Thick, Minimum. Tensile Strength Shall be 100,000 PSI Minimum.
2. Upper Arm, Lower Arm and Vertical Support Tube Shall be of 356 Cast Aluminum.
3. All Wiring Shall be Concealed.
4. Vertical Tube Clamp Shall be of Malleable Iron, Grade 32510.
5. All Aluminum Parts Shall Have an Alodine 1200 Finish.
6. Signal as Noted on Plans.
7. Back Plates to be Installed on All Mast Arm Signal Heads. See Detail D on This Sheet.

A
EE-04

VEHICULAR SIGNAL MOUNTING DETAILS

NOT TO SCALE



PPB or TSS

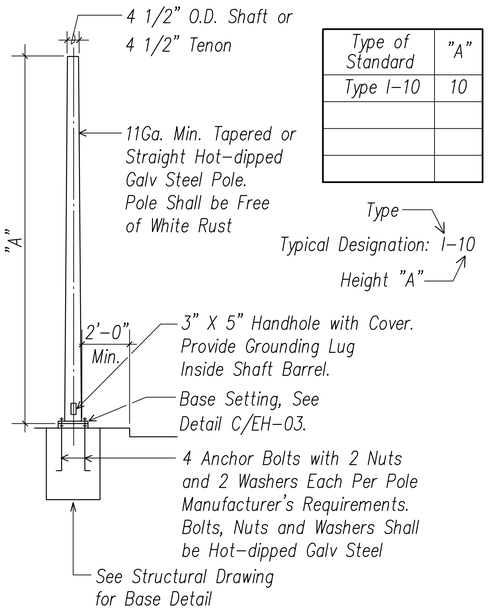
Notes:

1. Push Button to comply with United States Access Board X02.5 Pedestrian Street Crossings

B
EE-04

PEDESTRIAN PUSH BUTTON MOUNTING DETAILS

NOT TO SCALE



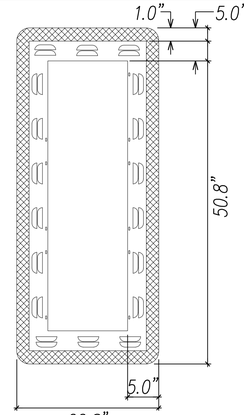
Type of Standard	"A"
Type I–10	10

Type
Typical Designation: I–10
Height "A"

C
EE-04

TYPE I STANDARD ϕ PEDESTAL DETAIL

NOT TO SCALE



Notes:

1. 5" Border
2. Louvered
3. Aluminum
4. 1" Reflective Border. 2" Reflective Border by Special Request.
5. Backplates to be Installed Only on Signal Heads Attached to Mast Arms.

D
EE-04

BACKPLATE DETAIL

NOT TO SCALE

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

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HAWAII, U.S.A.

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EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

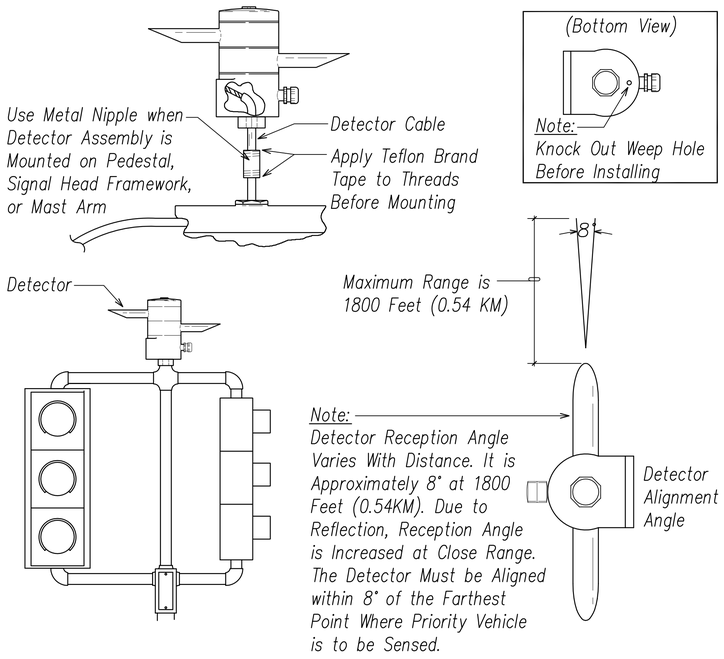
TRAFFIC SIGNAL DETAIL 3

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

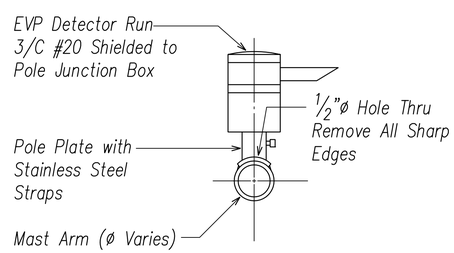
Scale: As Noted Date: December 2022

SHEET No. EE-04 OF 9 SHEETS

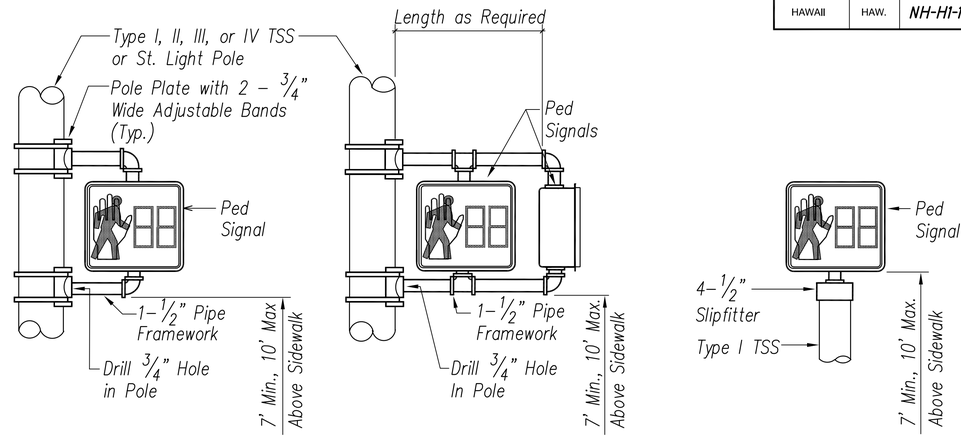
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	147	466



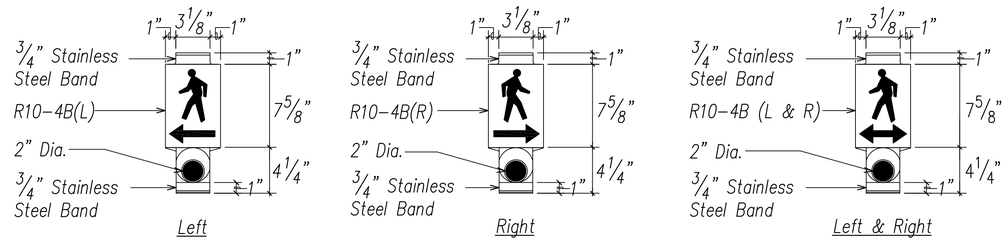
A EE-05 **TYPICAL PEDESTAL/MAST ARM INSTALLATION OF EVP DETECTOR**
NOT TO SCALE



B EE-05 **TYPICAL HORIZONTAL MOUNT OF EVP DETECTOR**
NOT TO SCALE



C EE-05 **PEDESTRIAN SIGNAL MOUNTING DETAILS**
NOT TO SCALE



The Color Scheme Shall be:
White–Man, Arrow and Push Button
Black–Background

Notes:

1. On Plan Sheet, Use Applicable Detail
2. ADA Approved

D EE-05 **PEDESTRIAN PUSH BUTTON DETAIL**
NOT TO SCALE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL DETAILS 4

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

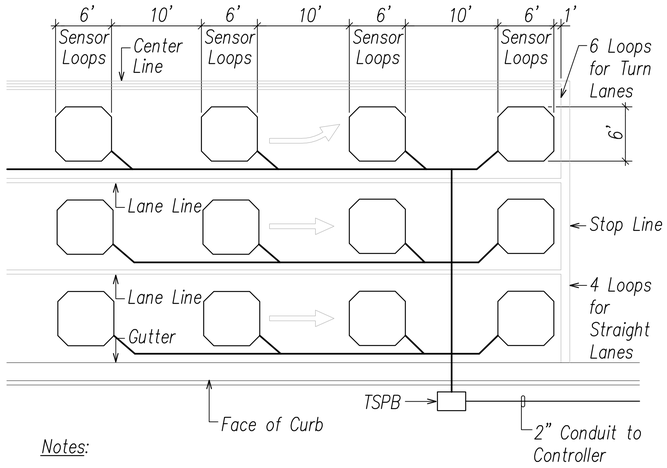
Scale: As Noted Date: December 2022

SHEET No. EE-05 OF 9 SHEETS

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

FILE: Z:\Acad\projects\220050\EE05_220050_TrafSigDet04.dwg saved December 22, 2022

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	148	466



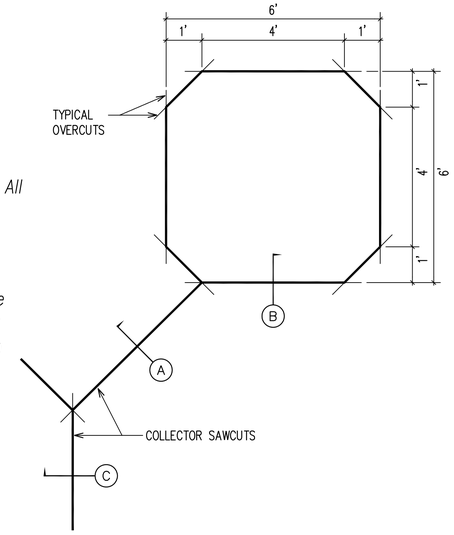
Notes:

1. Center Sensor Loops in Lanes.
2. Collector Cables Shall be Twisted 2 Turns Per Foot.
3. Number of Loops and Locations Vary. See Project Plans.
4. Number and Locations of Collector Sawcuts May be Varied in the Field to Suit.

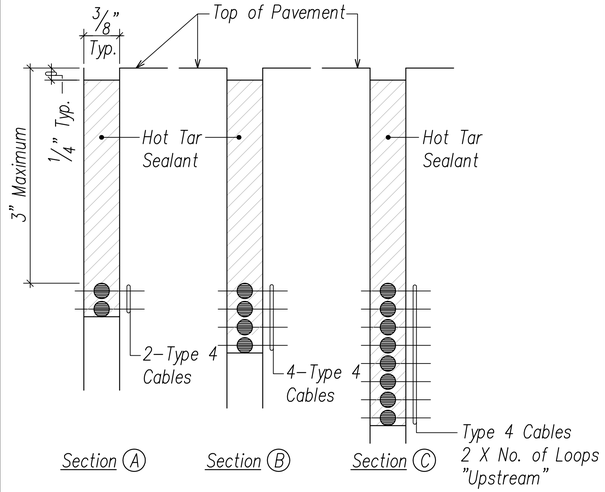
A EE-06 **TYPICAL SENSOR LOOP LAYOUT**
NOT TO SCALE

Notes:

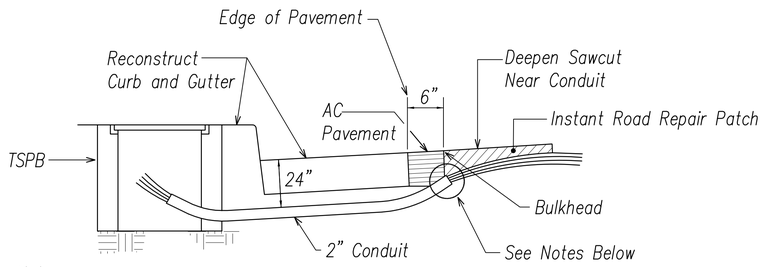
1. Length of Overcuts Shall be Kept to a Minimum. All Overcuts Shall be Backfilled with Loop Cable Sealant.
2. All Saw-Cutting Slurry Shall be Wet Vacuumed, Either Simultaneous with or Immediately After the Saw-Cutting Operations, and the Collected Slurry Disposed of Appropriately (I.E., Either Placed in a Filter Fabric Lined Filtration Box or In a Filter Fabric Lined Dug Up Retention/Percolation Basin, and After Filtration/Percolation, the Filter Fabric and the Retained Sediments, Disposed of Appropriately).
3. Type 4 Cable – Loop Sensor Cable: Solid No. 12, Single Conductor to IMSA Spec 51-5.



B EE-06 **TYPICAL SENSOR LOOP WIRING DIAGRAM**
NOT TO SCALE



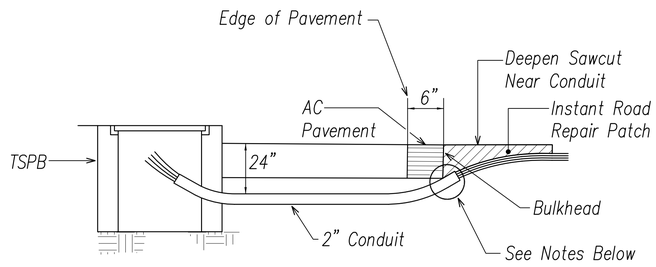
C EE-06 **TYPICAL SENSOR LOOP SAWCUT DETAIL**
NOT TO SCALE



Notes:

1. Seal Roadway End of Conduit After Installation of Conductors.
2. Install Bulkhead Across Conduit Trench.
3. Place Loop Cable Sealant in Loop Cable Sawcut.
4. Backfill Over Conduit with Instant Road Repair Patch.
5. Reconstruct Curb and Gutter as Required.

D EE-06 **DETAIL OF SENSOR LOOP INSTALLATION AT CURB & GUTTER**
NOT TO SCALE



Notes:

1. Seal Roadway End of Conduit After Installation of Conductors.
2. Install Bulkhead Across Conduit Trench.
3. Place Loop Cable Sealant In Loop Cable Sawcut.
4. Backfill Over Conduit with Instant Road Repair Patch.

E EE-06 **DETAIL OF SENSOR LOOP INSTALLATION AT EDGE OF ROADWAY**
NOT TO SCALE

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

FILE: Z:\Acad\projects\220050\EE06_220050_Loop Det Detail.dwg saved December 22, 2022

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

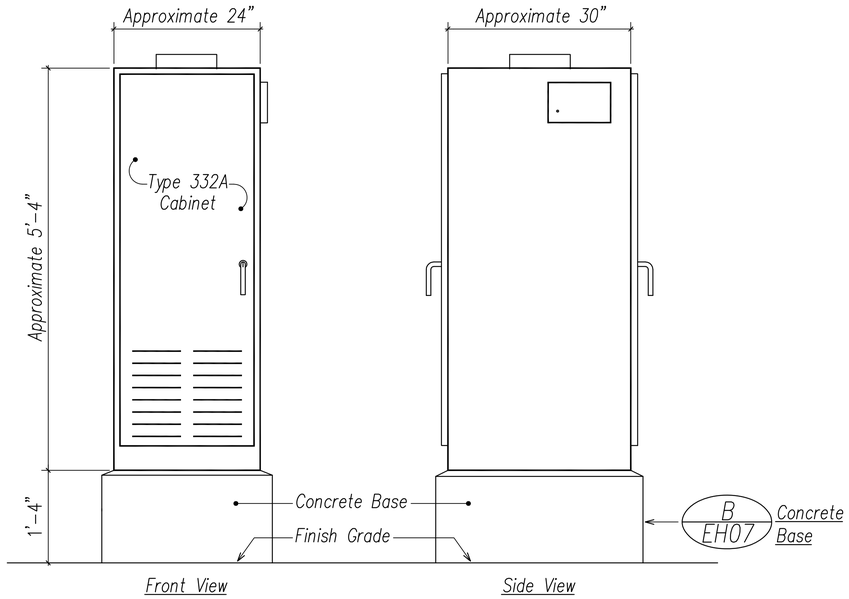
LOOP DETECTOR DETAIL

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

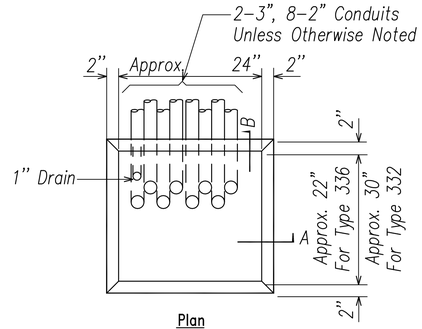
SHEET No. EE-06 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	149	466



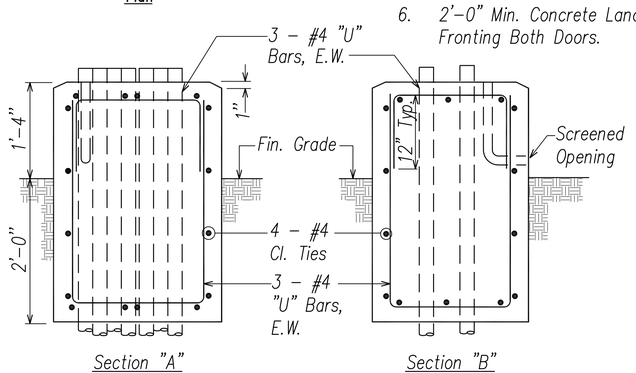
A EE-07 **TYPE 332A CABINET DETAIL**

NOT TO SCALE



NOTES:

1. Concrete Shall Be Class "B".
2. Dimensions Shall Be Altered To Suit Controller Cabinet Actually Furnished.
3. Conduit Bends And Drain Are Incidental To Concrete Base.
4. Refer To Cabinet Manufacturer's Specifications For Details Of Anchor Bolts And Base Setting.
5. All Exposed Surfaces Of Concrete Base Shall Be Given A Class 2, Rubbed Finish.
6. 2'-0" Min. Concrete Landing Area To Be Provided In Area Fronting Both Doors.



B EE-07 **TYPE "D" CONCRETE BASE DETAIL**

NOT TO SCALE

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

FILE: Z:\Acad\projects\220050\EE07_220050_Controller.dwg saved December 22, 2022

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

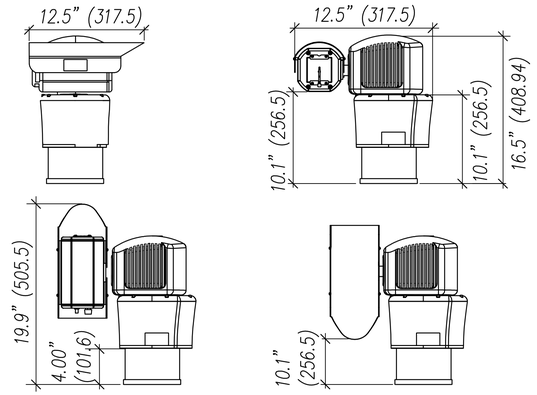
TRAFFIC SIGNAL CONTROLLER DETAIL

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

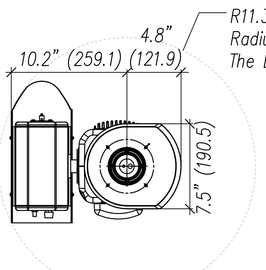
Scale: As Noted | Date: December 2022

SHEET No. EE-07 OF 9 SHEETS

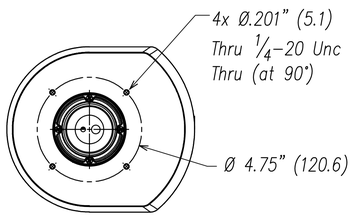
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	150	466



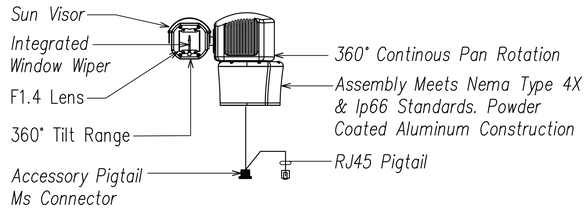
Dimensions



Clearance



Mounting Bolt Pattern

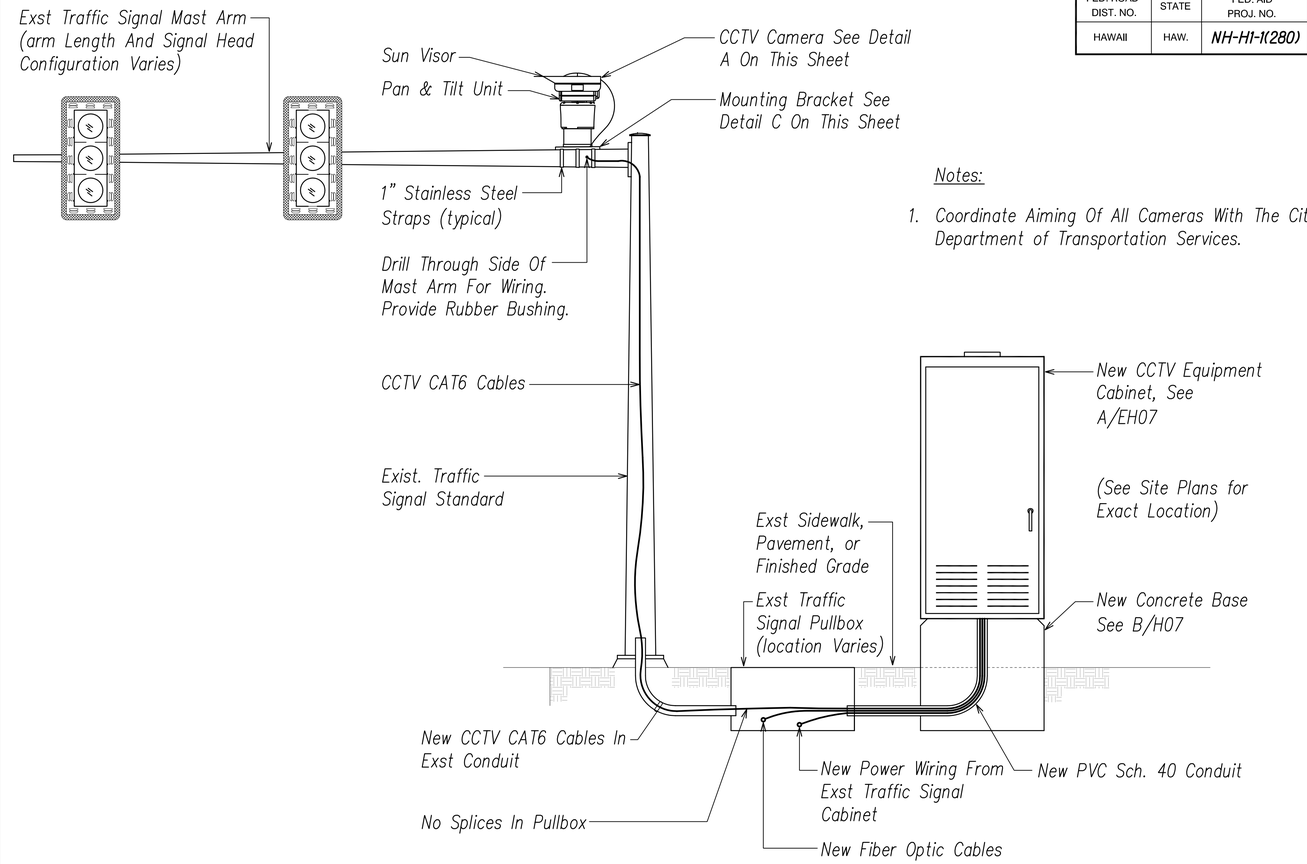


Camera Model: Cohu Rise 4268–1100 or Approved Equal

Notes:

1. Camera Options: 120VAC Power, MS Connector Pigtail, RJ45 Whip, I–series Pinout
   HD 1080P 30X Camera Module
   Faceplate Wiper
2. Each Camera Must Be Provided With ER6099B Cable Assembly/Harness
3. Each Camera Must Be Provided With Horizontal Leveling Plate For Installation On Traffic Pole Mast Arm

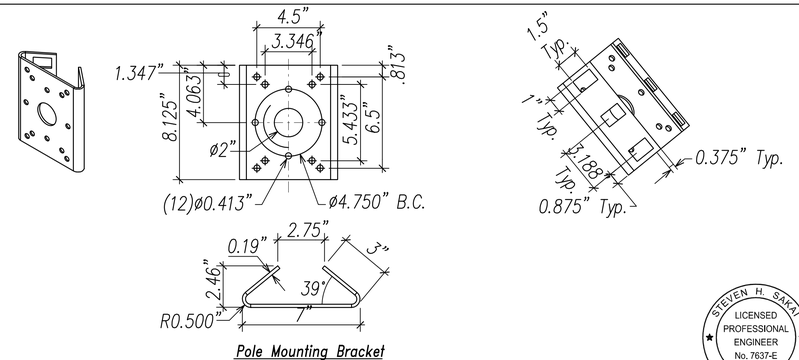
A EE-08 **TYPICAL CCTV CAMERA DETAIL**
NOT TO SCALE



Notes:

1. Coordinate Aiming Of All Cameras With The City Department of Transportation Services.

B EE-08 **TYPICAL CCTV CAMERA MOUNTING DETAIL**
NOT TO SCALE



Pole Mounting Bracket

Notes:

1. Powder Coated Aluminum Construction

C EE-08 **TYPICAL CCTV CAMERA MOUNTING BRACKET**
NOT TO SCALE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV CAMERA DETAIL

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

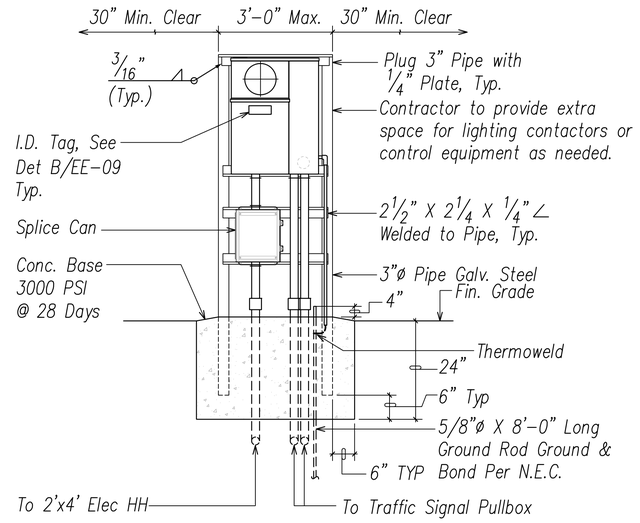
Scale: As Noted Date: December 2022

SHEET No. EE-08 OF 9 SHEETS

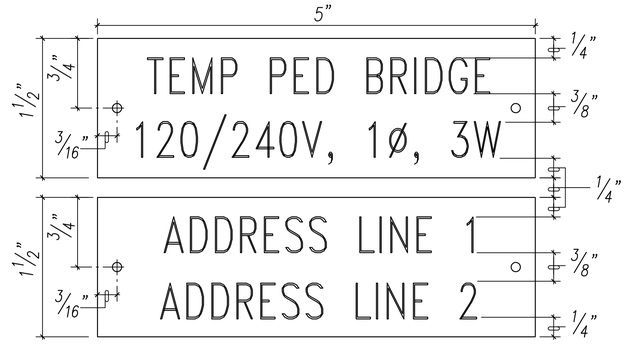
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
No.	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

FILE: Z:\Acad\projects\220050\IE08_220050_CCTV Detail.dwg saved December 22, 2022

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	151	466



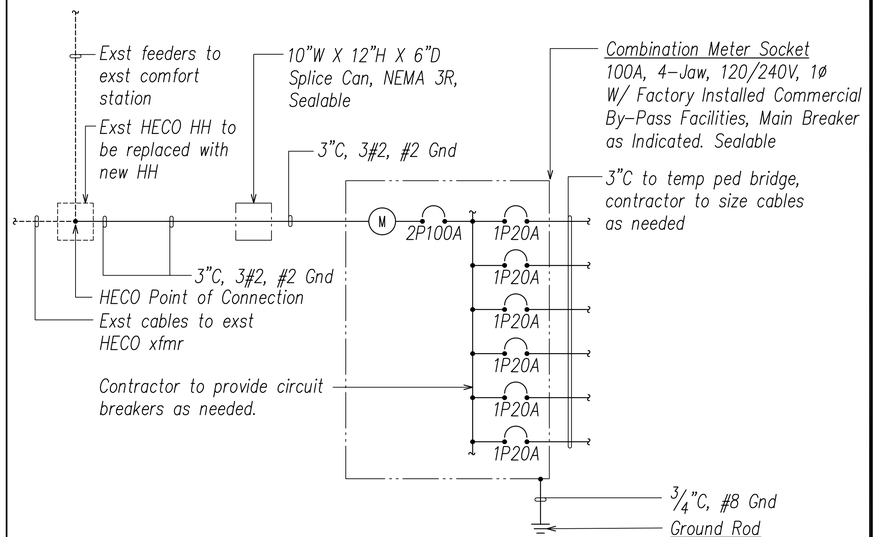
Front Elevation



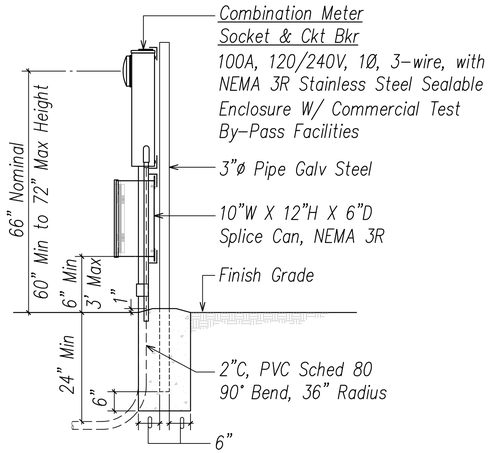
Notes:

1. Use (2) 2 Ply Plastic – Black, White.
2. Traffic Signal Letters Shall be 3/8" High, 1/16" Stroke, (White in Color).
3. 120/240V, 1ø, 3W Letters and Numbers Shall Be 1/4" High and Engraved 1/32" Wide (White in Color).
4. Attach to Meter Enclosure with No. 7 Stainless Steel Drive Screws.
5. Verify Address with HECO

B EE-09 **METER SOCKET I.D. TAG DETAIL**
NOT TO SCALE



C EE-09 **TRAFFIC SIGNAL ONE-LINE DIAGRAM**
NOT TO SCALE



See One-Line Diagram on This Sheet

Side Elevation

Notes:

1. Contractor Shall Make All Electrical Connection to Controller, Provide 2–1P20A Breakers, Ground and 3" Conduit.
2. All Conduits to Contain a Polyolefin Pull Line. (Jet Line Cat. #232 or Equiv)
3. Individual Pedestal Metal Parts Shall be Hot-dipped Galvanized After Fabrication or Stainless Steel.
4. All Fastening Bolts, Nuts & Washers Shall be Stainless Steel. Provide One Coat Shop Primer & Two Coats of Acrylic Enamel Finish, Color to Match Controller Cabinet.
5. Provide 48" Clearance in Front of Meter.
6. Provide Glass Meter Socket Cover and Bands for Blank Meter Sockets. Identify Covers for Return.

A EE-09 **TRAFFIC SIGNAL METERING EQUIPMENT ELEVATION**
NOT TO SCALE

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
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

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

METER PEDESTAL DETAILS

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EE-09 OF 9 SHEETS

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

FILE: Z:\AcadProjects\220050\EE09_220050_Meter Detail.dwg saved December 22, 2022

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	152	466

GENERAL DUCT SECTION NOTES:

1. For Trench Restoration Detail Requirements, See Civil Sheets.

2. The Metal Detectable Red Plastic Warning Tape shall be a Minimum 5 mils Thick and 4" Wide with a Continuous Metallic Backing and Corrosion Resistant 1' min Thick Foil Core. For the State DOT Highway Lighting Ducts, the Message on the Tape shall Read, "CAUTION - STATE HIGHWAY CABLES BURIED BELOW," Utilizing 1 1/2 Inches Series "C" Block Lettering. The Message will be Repeated with a 4 1/4" Spacing Between Top Line of Message and Start of Next Repeat. For the Private Street Lighting Ducts, the Message on the Tape Shall Read, "CAUTION - STREET LIGHTING CABLES BURIED BELOW," Utilizing 1 1/2 Inches Series "C" Block Lettering. The message will be Repeated with a 4 1/4" Spacing Between Top Line of Message and Start of Next Repeat.

   A. For the Respective Utility Company Ducts, Provide Metal Detectable Warning Tape Over Respective Utility Company Ducts per Respective Utility Company Requirements and Approval.

   B. For HECo, Provide Warning Tape per HECo Specification M0302-0.

   C. For HTCo:

      1) Contractor shall Place Muletape (SP 1800P) in each Duct Throughout its Entire Length with Protrusions of 2 Feet in Manholes and Handholes at each End, and 1 Foot in Pullboxes. Muletape is Rated for 1800 lb Pull and has Footage Markings for Measuring Duct Lengths.
      2) Contractor Shall Place 8-mil Orange Colored Plastic Warning Tape, Not Less than 4" Wide, Entire Length of Trench for All Underground Installations. Tape should Read "WARNING-STOP DIGGING-CALL HTCo, COMMUNICATIONS ABLE BURIED BELOW, FAILURE TO COMPLY COULD RESULT IN LEGAL ACTION".

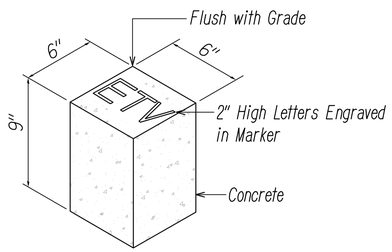
3. The Contractor may begin Backfilling the Conduit Trench when the Concrete Reaches 2800 PSI Compressive Strength or After 3 Days, Whichever is Later.

4. Clearances: Refer to HECo Note No. 14 for Clearance Requirements Between All Ductlines and All Adjacent Structures (Charted and Uncharted) Near the Trench.

CONDUIT SCHEDULE

Item	Description	Item	Description
(3E)	HECo 1-3"C	(2TS)	Traffic Signal 1-2"C, PVC Sched. 40
(2-4E)	HECo 2-4"C	(2-2TS)	Traffic Signal 2-2"C, PVC Sched. 40
(3-4E)	HECo 3-4"C		
(4-4E)	HECo 4-4"C	(2SL)	Street Light 1-2"C, PVC Sched. 40
(5E)	HECo 1-5"C	(3SL)	Street Light 1-3"C, PVC Sched. 40
(2-5E)	HECo 2-5"C		
(3-5E)	HECo 3-5"C	(2C)	Comm 1-2"C, PVC Sched. 40
(4-5E)	HECo 4-5"C	(2-2C)	Comm 2-2"C, PVC Sched. 40
(4V)	CATV 1-4"C	(2-2T)	HTCo 2-2"C
(2-4V)	CATV 2-4"C	(4T)	HTCo 1-4"C
		(2-4T)	HTCo 2-4"C
		(3-4T)	HTCo 3-4"C
		(4-3½T)	HTCo 4-3½"C
		(4-4T)	HTCo 4-4"C
		(5-4T)	HTCo 5-3½"C
		(6-4T)	HTCo 6-3½"C

Note: Dashed Indicates Existing



"E" = Electric
"T" = Telephone
"V" = Catv
"L" = Street Lighting
"S" = Traffic Signal

CONCRETE CONDUIT STUB-OUT MARKER
NOT TO SCALE

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

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DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL DUCT SECTION NOTES & CONDUIT SCHEDULE

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

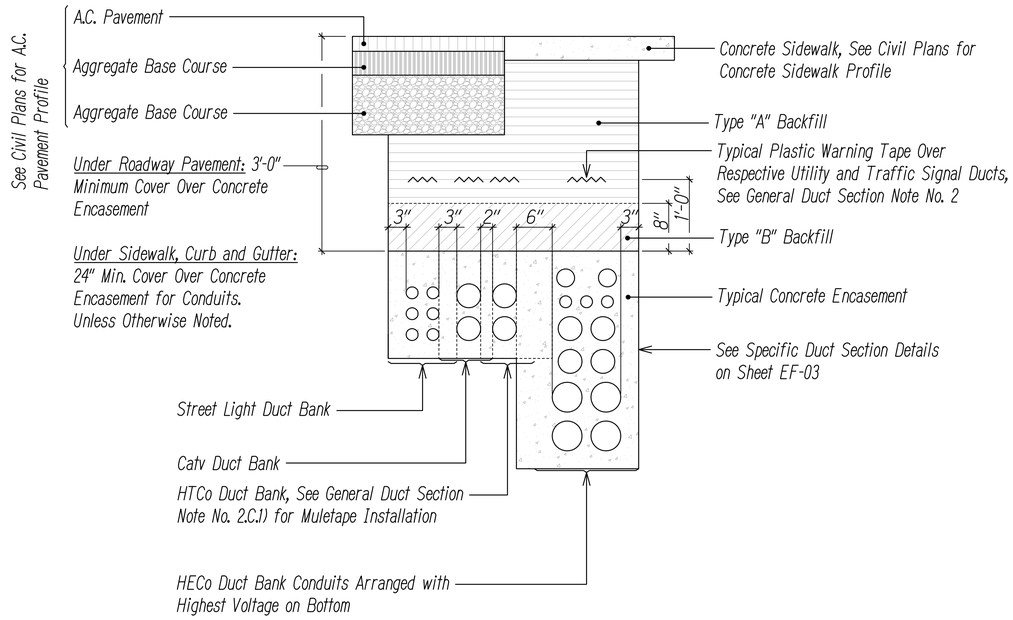
Scale: As Noted Date: December 2022

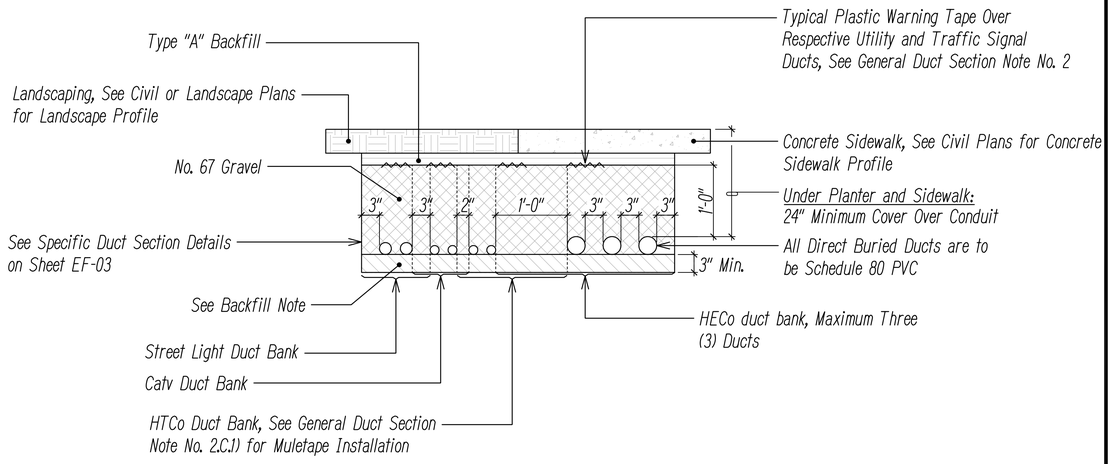
SHEET No. EF-01 OF 10 SHEETS

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

FILE: Z:\Acad\projects\220050\EF01_220050_DUCT-NOTES-SCHEDULE-01.dwg saved December 21, 2022

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	153	466





Minimum Duct Separation Dimension Between Duct Systems (Concrete Encased):

Elec - Elec:	1.5"
Elec - Other Systems:	6"
Tel - Tel:	1.5"
Tel - Elec:	6"
Tel - Catv:	2"
Catv - Catv:	1.5"
Catv - Elec:	6"
Catv - Tel:	2"

Minimum of 3" Concrete Encasement shall be Provided Around Ductbank

TYPICAL CONCRETE ENCASED DUCT SECTION DETAILS

NOT TO SCALE

BACKFILL NOTES:

- *Type "A" Backfill - Earth & Gravel. Rock Size to be 1" Max & The Mixture to Contain Not More Than 50% by Volume of Rock Particles. The Material shall be Nonexpansive. 95% Compaction.*
- *Type "B" Backfill - Earth & Gravel. Mixture Must Pass a 1/2" Mesh Screen & Contain Not More Than 20% by Volume of Rock Particles. 95% Compaction.*
- *No. 67 Gravel - Open-Graded Gravel. AASHTO M43, No. 67 gradation materials. 95% Compaction.*
- *Note - If Normal Material at Bottom of Trench is Not Type "B", an Additional 3" shall be Excavated & Type "B" Backfill Provided.*
- *Concrete - 3" Encasement, 2500 PSI Compressive Strength @ 28 Days. with a Maximum Aggregate Size of 3/4".*

Minimum Duct Separation Dimension Between Duct Systems (Direct Buried):

Elec - Elec:	3"
Elec - Other Systems:	12"
Tel - Tel:	1.5"
Tel - Elec:	12"
Tel - Catv:	2"
Catv - Catv:	1.5"
Catv - Elec:	12"
Catv - Tel:	2"

Minimum of 3" No. 67 Gravel shall be Provided Around Ductbank

TYPICAL DIRECT BURIED DUCT SECTION DETAILS

NOT TO SCALE

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

DRAWING REVIEW

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Hawaiian Electric

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SIGNATURE April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DUCT SECTION BACKFILL DETAILS

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

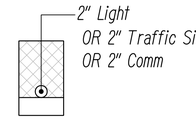
Scale: As Noted Date: December 2022

SHEET No. EF-02 OF 10 SHEETS

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

FILE: Z:\Acad\projects\220050\EF02_220050_DUCT-BACKFILL-DETAIL-01.dwg saved December 21, 2022

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 154	466



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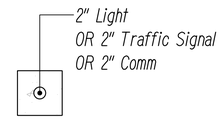

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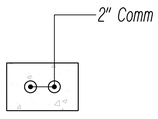

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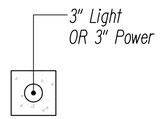

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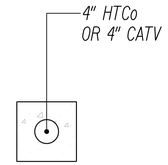

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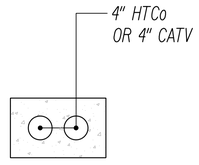

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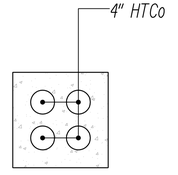

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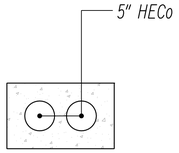

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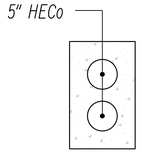

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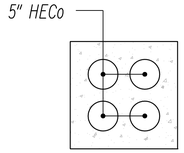

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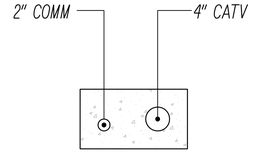

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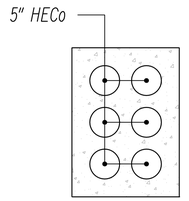

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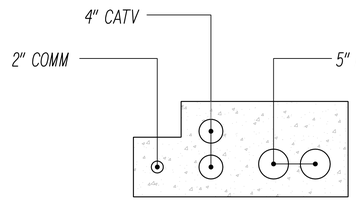

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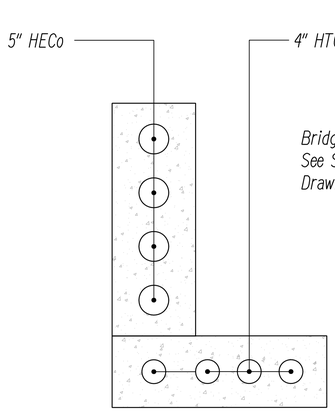

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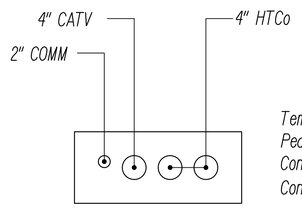

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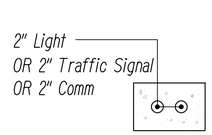

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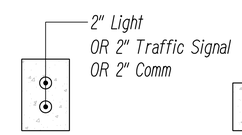

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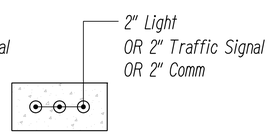

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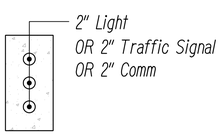

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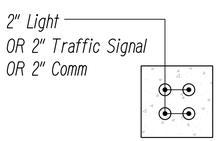

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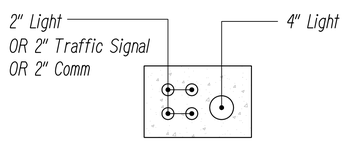

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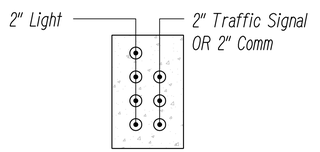

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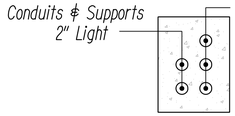

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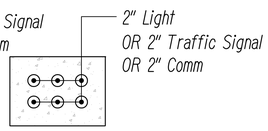

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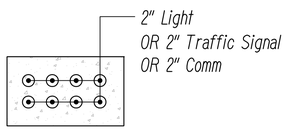

SECTION (C4)

TYPICAL DUCT SECTION DETAILS

NOT TO SCALE

4/7/23	2 Add. 2 – Add Duct Section
DATE	REVISION

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DUCT SECTION DETAILS

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

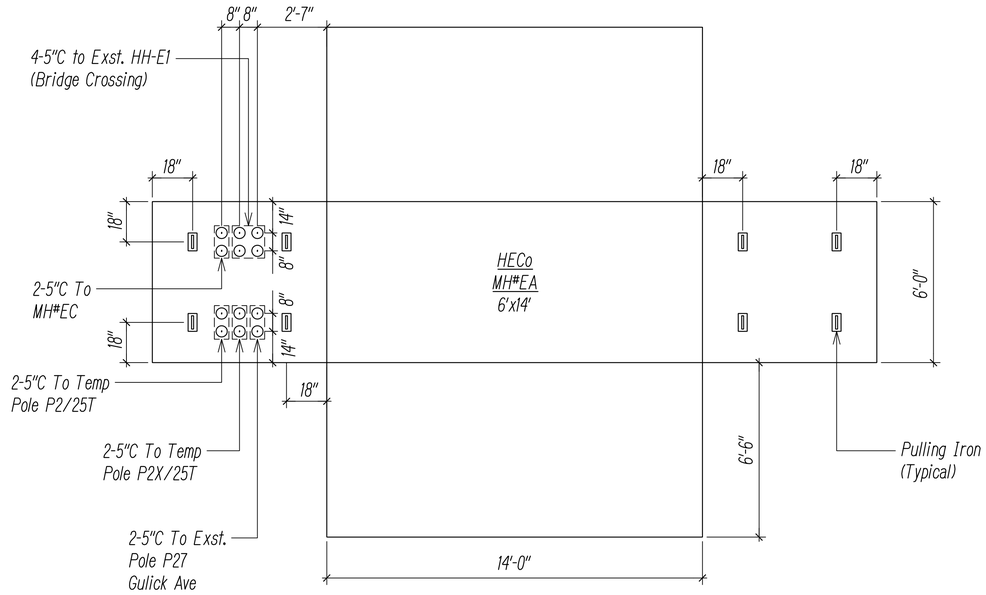
SHEET No. EF-03 OF 10 SHEETS

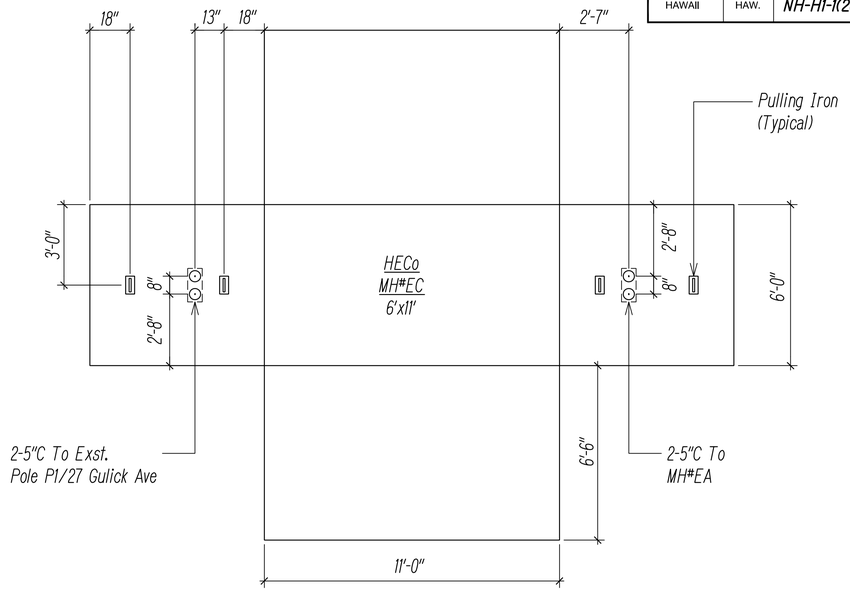
ORIGINAL PLANS	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

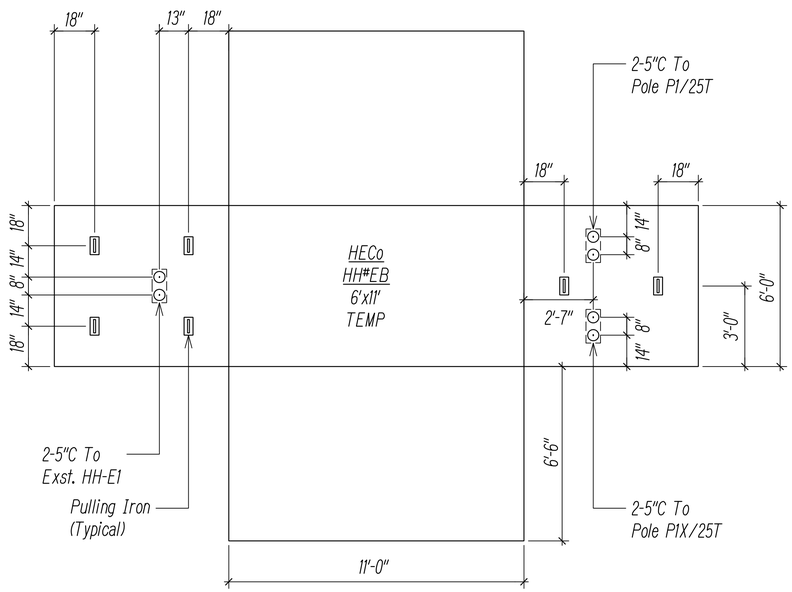
FILE: Z:\Acad\projects\220050\EF03_220050_DUCT-DETAIL-01.dwg saved April 10, 2023

ADD. 154

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	155	466







HECo MANHOLE DIAGRAMS I

NOT TO SCALE

Handhole/Manhole Notes:

1. Handhole/Manhole Shop Drawings And Structural Calculations Shall Be Submitted to Utility Company(s) For Review And Approval Prior To Fabrication And/Or Construction.

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

FILE: Z:\Acad\projects\220050\EF04_220050_HECO-MH-DETAIL-01.dwg saved December 21, 2022

DRAWING REVIEW

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Req# _____ By _____ Date _____

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Hawaiian Electric

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SIGNATURE

April 30, 2024
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

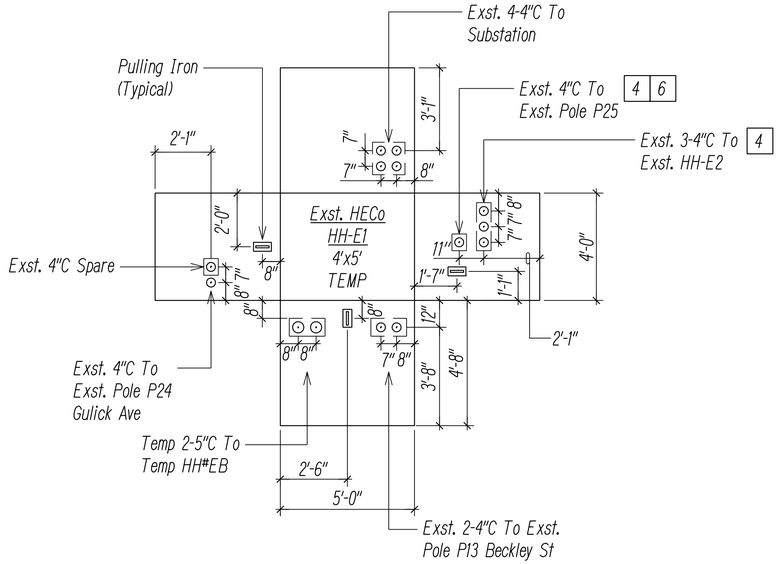
HAWAIIAN ELECTRIC (HECo) MANHOLE DIAGRAMS I

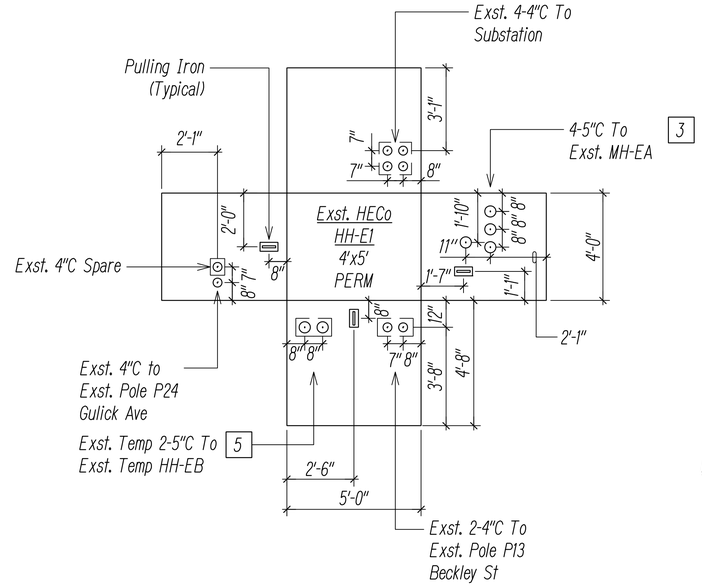
INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EF-04 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	156	466





Handhole/Manhole Notes:

1. Handhole/Manhole Shop Drawings And Structural Calculations Shall Be Submitted To Utility Company(s) For Review And Approval Prior To Fabrication And/Or Construction.
2. Verify All Dimensions On Existing Handholes & Manholes.

3 Utilize Exst. Knockout And Duct Entry For New Permanent Duct(s).

4 Exst. Transite Duct(s).

5 Duct(s) To Be Capped After Permanent Installation & Cable Removal.

6 Verify Destination And Size.

HECo MANHOLE DIAGRAMS II

NOT TO SCALE

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
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FILE: Z:\Acad\projects\220050\EF05_220050_HECO-MH-DETAIL-02.dwg saved December 21, 2022

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Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

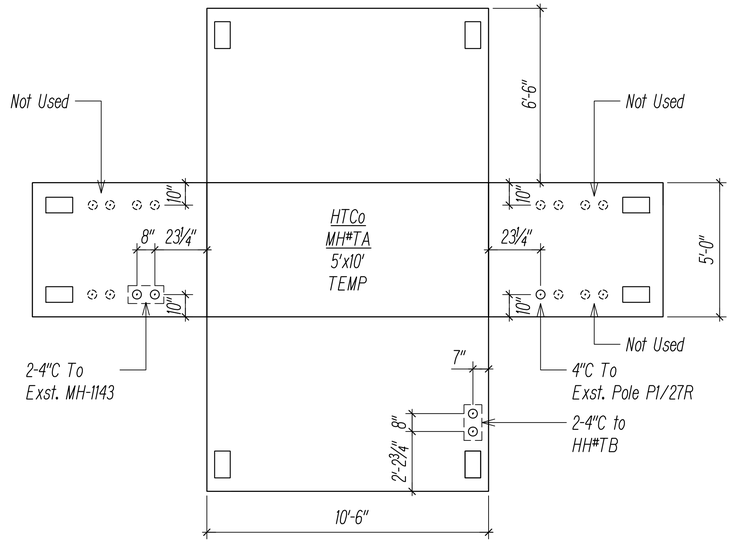
HAWAIIAN ELECTRIC (HECo) MANHOLE DIAGRAMS II

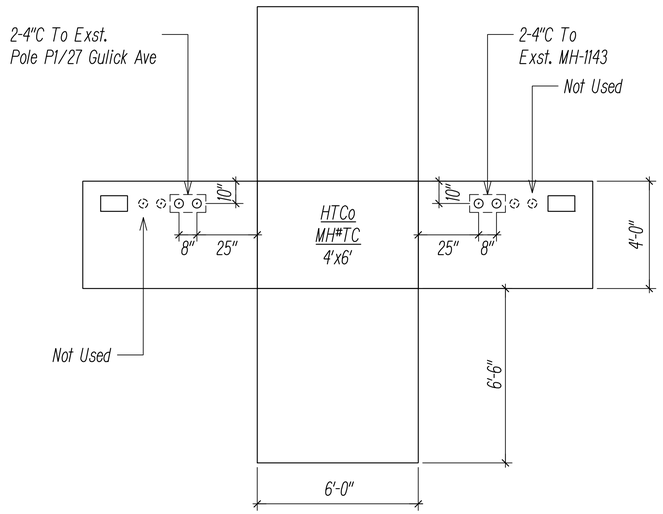
INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

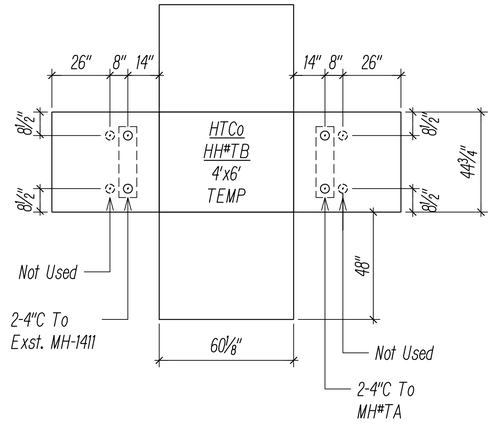
Scale: As Noted Date: December 2022

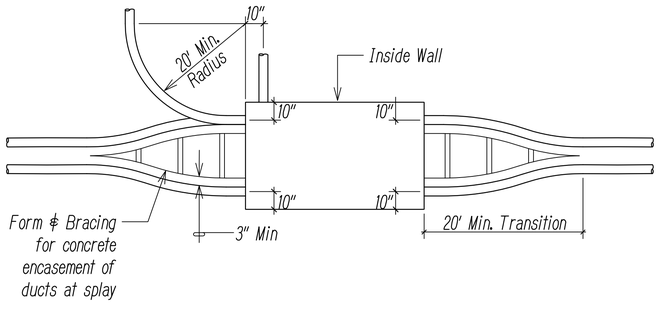
SHEET No. EF-05 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	157	466

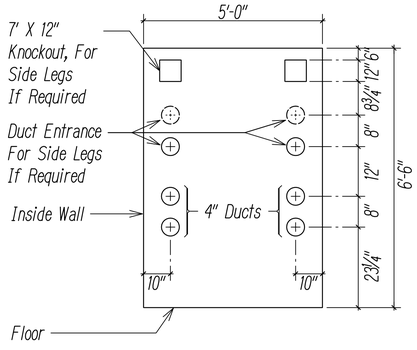








Typical Duct Transition to Splay Ducts at Manhole/Handhole



Typical Wall End Section For 5'x10' MH

TYPICAL MANHOLE/HANDHOLE DETAILS - HTCo MANHOLE DIAGRAMS I

NOT TO SCALE

HTCo MANHOLE DIAGRAMS I

NOT TO SCALE

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

FILE: Z:\Acad\projects\220050\EF06_220050_HTCo-MH-DETAIL-01.dwg saved December 21, 2022

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HAWAIIAN TELCOM DATE

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

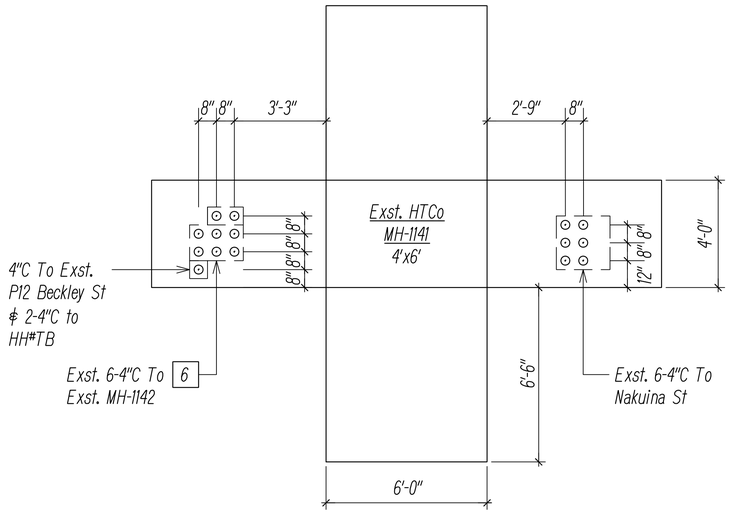
HAWAIIAN TELCOM (HTCo)
MANHOLE DIAGRAMS I

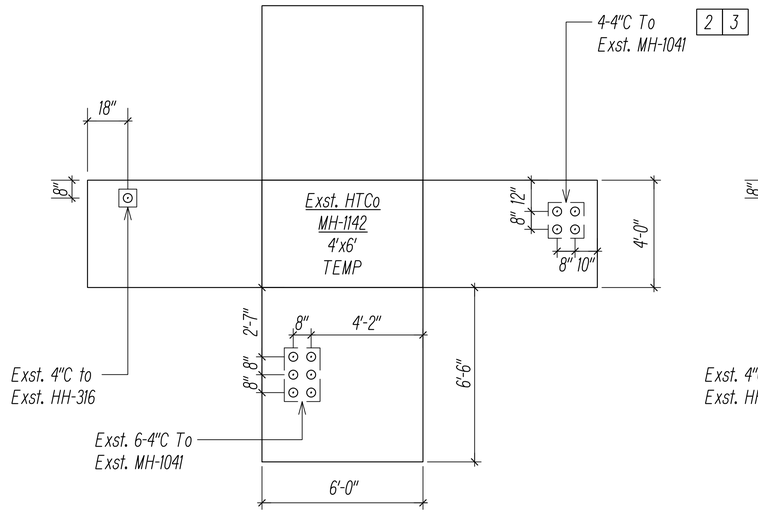
INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

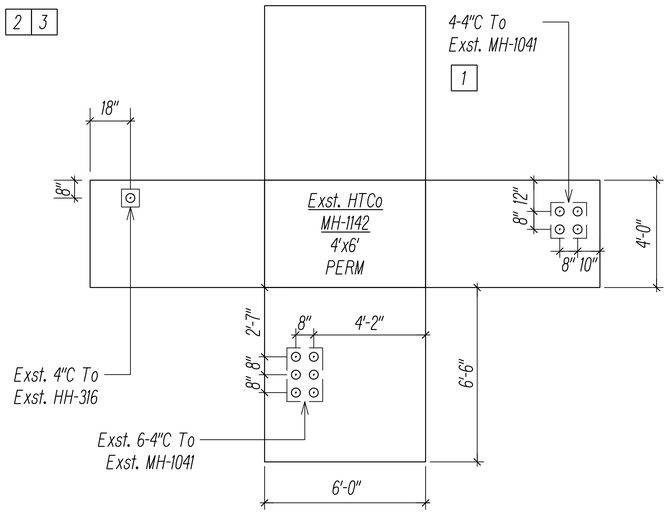
Scale: As Noted Date: December 2022

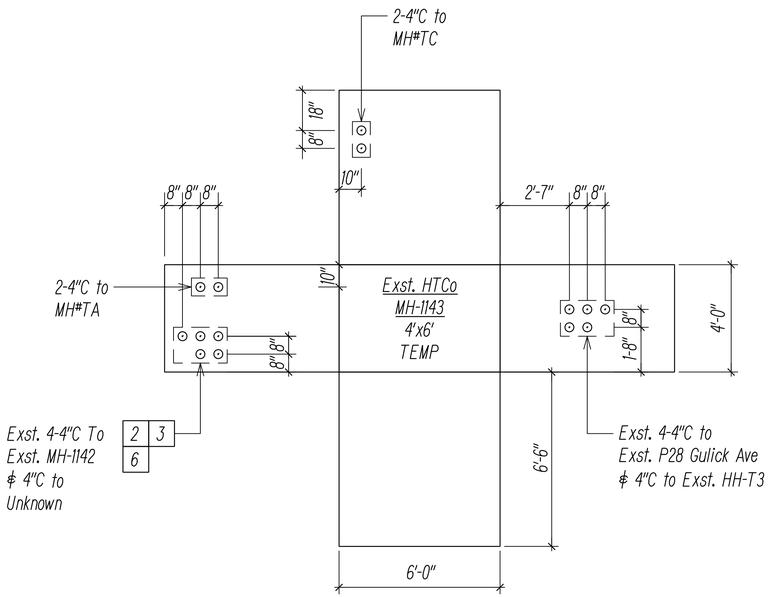
SHEET No. EF-06 OF 10 SHEETS

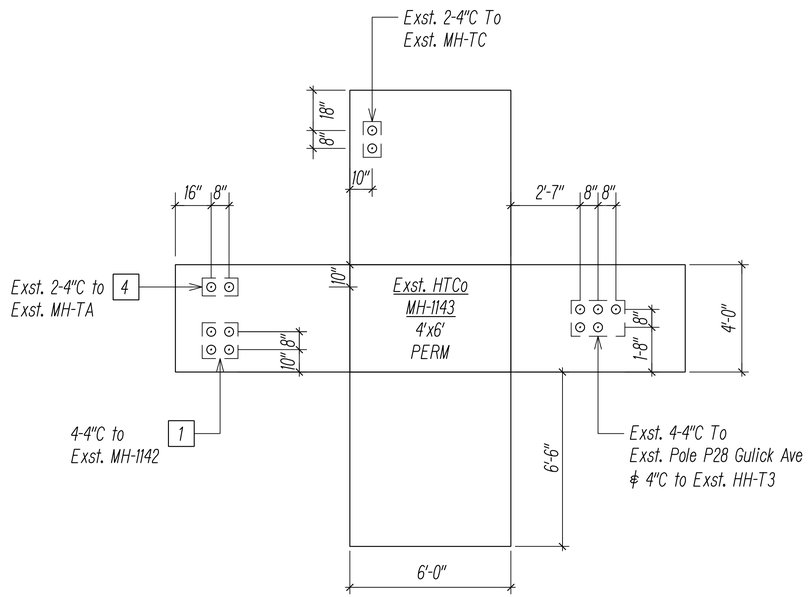
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	158	466











HTCo MANHOLE DIAGRAMS II

NOT TO SCALE

Handhole/Manhole Notes:

1. Utilize Existing Knockout And Duct Entry For New Permanent Duct(s).
2. Exst. Transite Ducts.
3. Duct(s) To Be Removed. Repair To Match Existing.
4. Duct(s) To Be Capped After Permanent Installation & Cable Removal.
5. Verify All Dimensions On Existing Handholes & Manholes.
6. Verify Destination And Size.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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HAWAIIAN TELCOM DATE

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

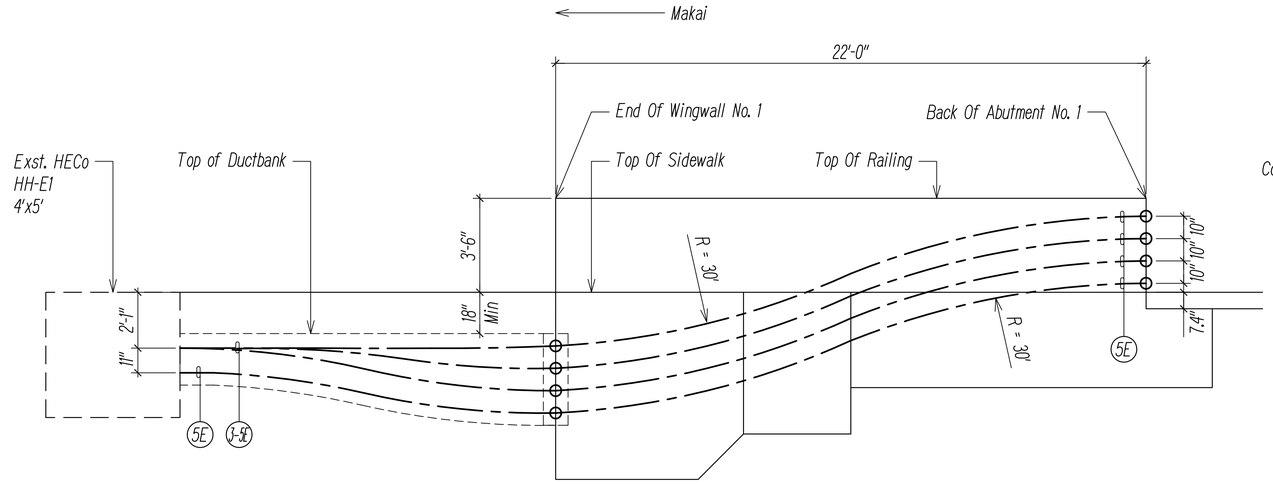
HAWAIIAN TELCOM (HTCo)
MANHOLE DIAGRAMS II

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EF-07 OF 10 SHEETS

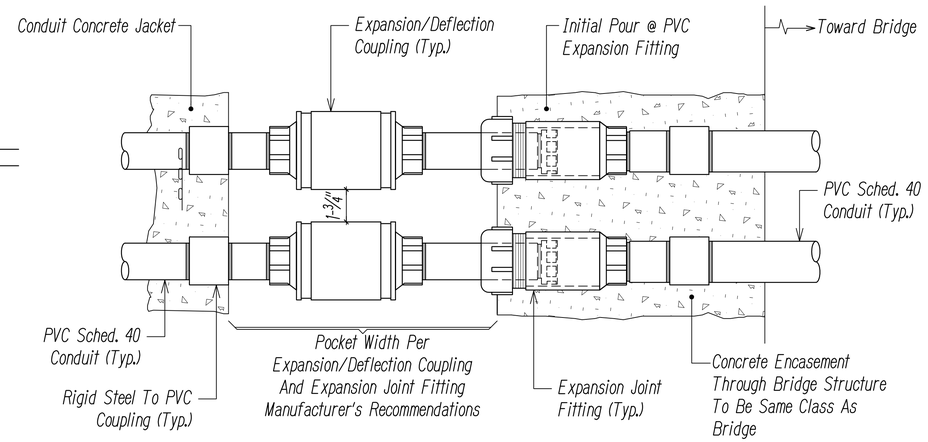
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	159	466



WINGWALL NO. 1 ELEVATION FACING EWA - HECo GULICK MAKAI DUCTS

A EF-08

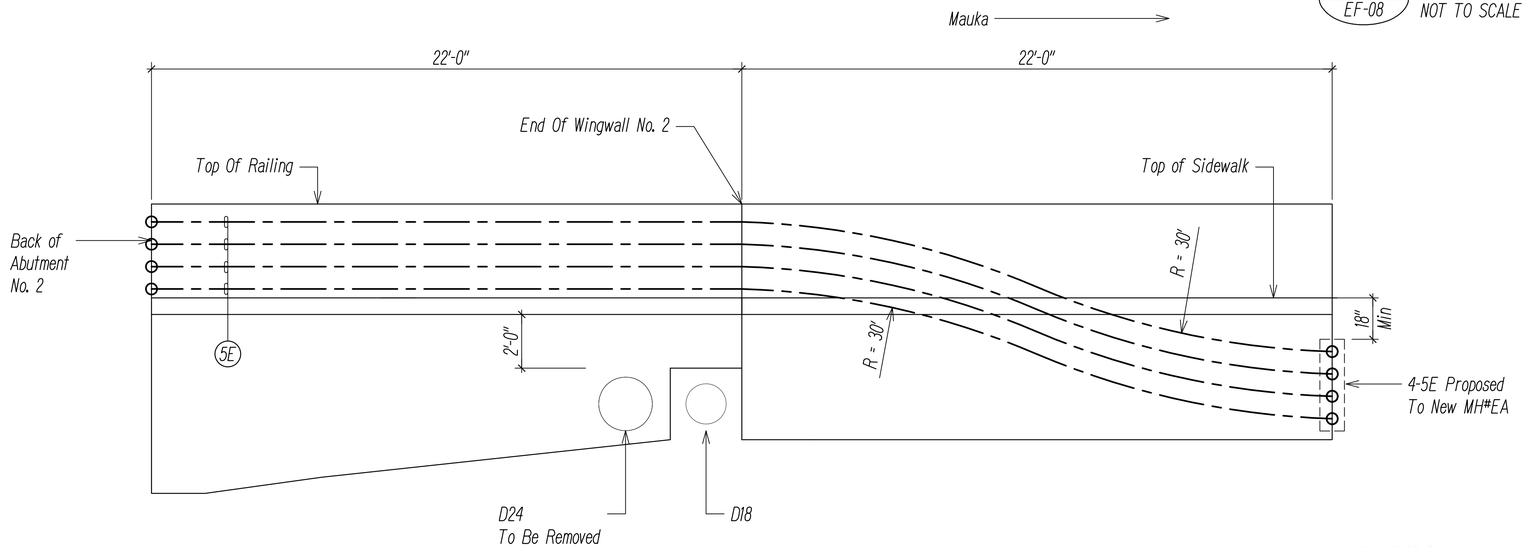
NOT TO SCALE



TYPICAL DUCTLINE EXPANSION/DEFLECTION FITTING DETAIL

C EF-08

NOT TO SCALE



WINGWALL NO. 2 ELEVATIONS FACING EWA - HECo GULICK MAUKA DUCTS

B EF-08

NOT TO SCALE

Notes:

1. Details For Reference Only. See Structural Drawings For Placement, Spacing And Size Limitations.
2. Submit Shop Drawings For Expansion Joint And Expansion/Deflection Couplings For Approval.
3. HTCo Ducts Not Shown For Clarity.

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Customer Installations Department
Hawaiian Electric

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DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U. S. A.

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAIIAN ELECTRIC (HECo) GULICK WALL ELEVATION

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EF-08 OF 10 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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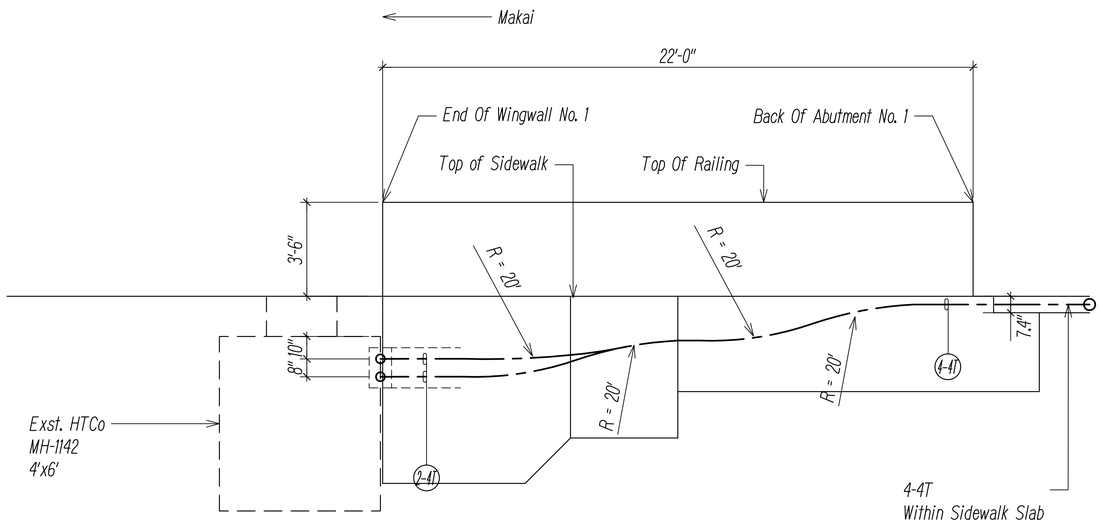
	CHECKED BY	

FILE: Z:\Acad\projects\220050\EF08_220050_HECO-GULICK-WALLS.dwg saved December 21, 2022

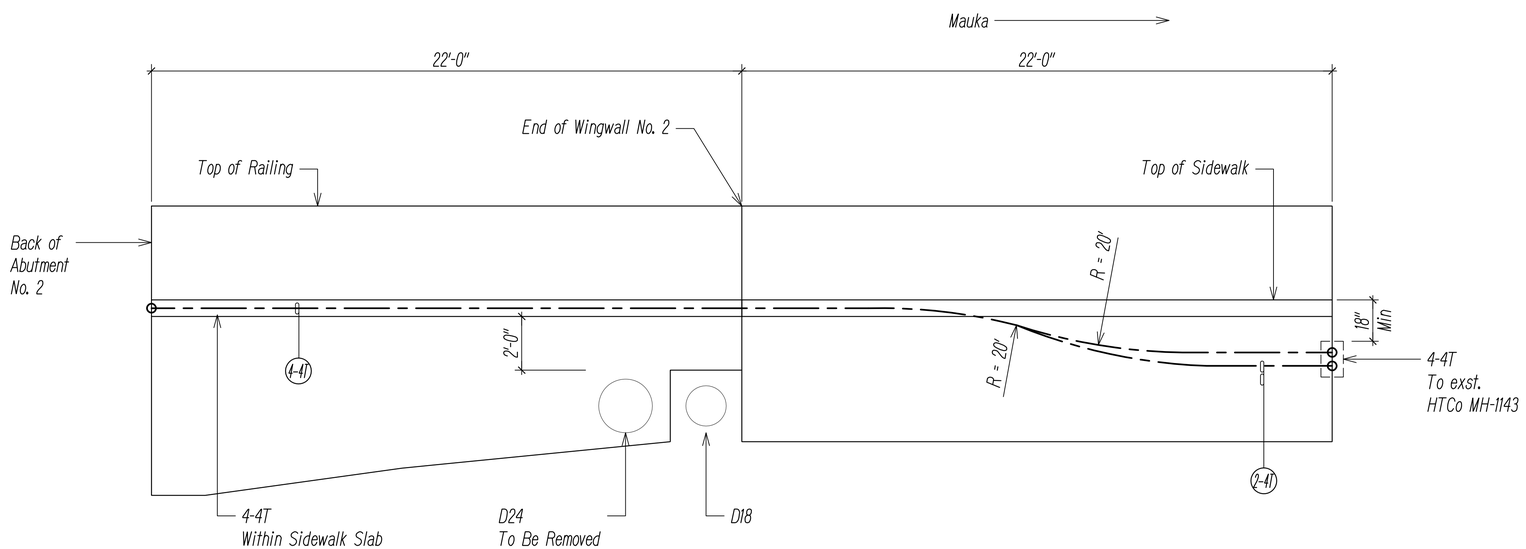
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	160	466



WINGWALL NO. 1 ELEVATION FACING EWA - HTCo GULICK MAKAI DUCTS

A / EF-09

NOT TO SCALE



WINGWALL NO. 2 ELEVATION FACING EWA - HTCo GULICK MAUKA DUCTS

B / EF-09

NOT TO SCALE

Notes:

1. *See Detail C/EF-08 for Reference Ductline Expansion/Deflection Fitting Detail. See Structural Drawings For Placement, Spacing And Size Limitations.*
2. *Submit Shop Drawings For Expansion Joint And Expansion/Deflection Couplings For Approval.*
3. *HECo Ducts Not Shown For Clarity.*

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

FILE: Z:\Acad\projects\220050\EF09_220050_HTCO-GULICK-WALLS.dwg saved December 21, 2022

APPROVED BY

HAWAIIAN TELCOM — DATE

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

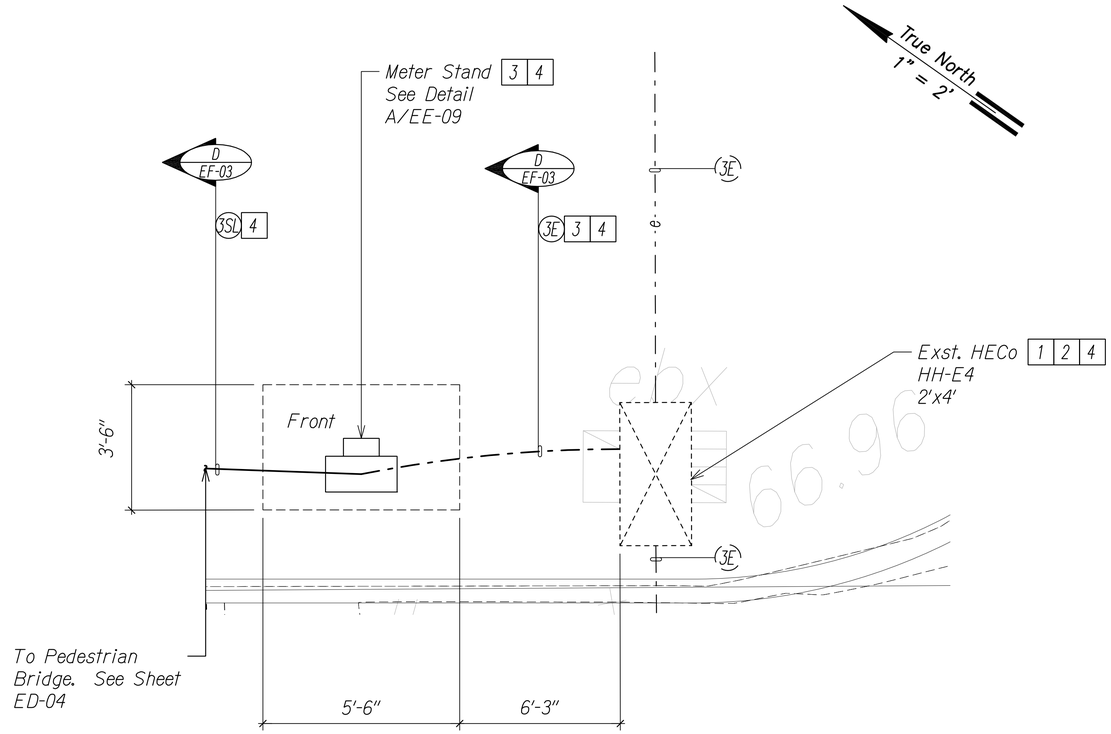
HAWAIIAN TELCOM (HTCo)
GULICK WALL ELEVATION

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted — Date: December 2022

SHEET No. EF-09 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	161	466



A
EF-10

BECKLEY ST / KALIHI-WAENA NEIGHBORHOOD PARK
ENLARGED EQUIPMENT PLAN 1

SCALE: 1" = 2'

General Electrical Notes:

1. *Caution!!! Electrical Hazard!!! Existing HECo Overhead And Underground Lines, Are Energized And Will Remain Energized During Construction Unless Prior Special Arrangements Have Been Made With HECo. Only HECo 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 HECo Facilities Which Can Result In Electrocution.*
2. *Construct New Utility Structures & Coordinate Relocation Of Respective Utility Facilities, Prior To Removal Of Existing, Respectively.*
3. *See Street Lighting & Traffic Signal Plans For Street Lighting & Traffic Signal Work.*
4. *HECo, HTCo & CATV To Remove Their Respective Overhead Facilities.*
5. *Sawcut Where Required. See Civil Plans For Restoration Details.*
6. *Coordinate Manhole/Handhole Adjustments With Respective Utility(s).*
7. *Construction Parcel Easement In Favor Of HECo And The State Department Of Transportation For Temporary Power Facilities.*

Notes:

1 *Excavate & Expose Exst. Handhole Wall(s). Coordinate & Schedule Work With HECo Prior To Commencing With Excavation. Caution!!! Electrical Hazard!!! Only HECo Personnel Shall Break & Remove Existing Conduits, Shift Cables, & Construct Duct Entry(s). Coordinate & Schedule Cable Installation With HECo. Provide Couplings As Required and Extend Duct(s). Repair To Match Existing. The Cost of HECo's Assistance in Providing Proper Support & Protection Will Be Charged To The Contractor.*

2 *Replace Exst. Handhole Or Covers If Required.*

3 *Temporary HECo Service For Pedestrian Bridge Lights.*

4 *Remove Meter Socket & Conduit(s), When Pedestrian Bridge No Longer Required. Caution!!! Electrical Hazard!!! Only HECo Personnel Shall Break & Remove Existing Conduits, Shift Cables, & Construct Duct Entry(s). Coordinate & Schedule Meter And Cable Removal With HECo. Repair To Match Existing. The Cost of HECo's Assistance in Providing Proper Support & Protection Will Be Charged To The Contractor.*

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY DATE
DRAWN BY
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QUANTITIES BY
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FILE: Z:\Acad\projects\220050\EF10_220050_ELEC_ENLARGED EQUIP PLAN 01.dwg saved December 21, 2022

Graphic Scale:
1" = 2' 2' 1' 0 2' 4'
Scale in Feet

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Reviewed for Hawaiian Electric Company Facilities Only
Req# _____ By _____ Date _____
Transmission & Distribution Engineering
Hawaiian Electric
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No. 14287-E
HAWAII, U.S.A.
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SIGNATURE
April 30, 2024
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

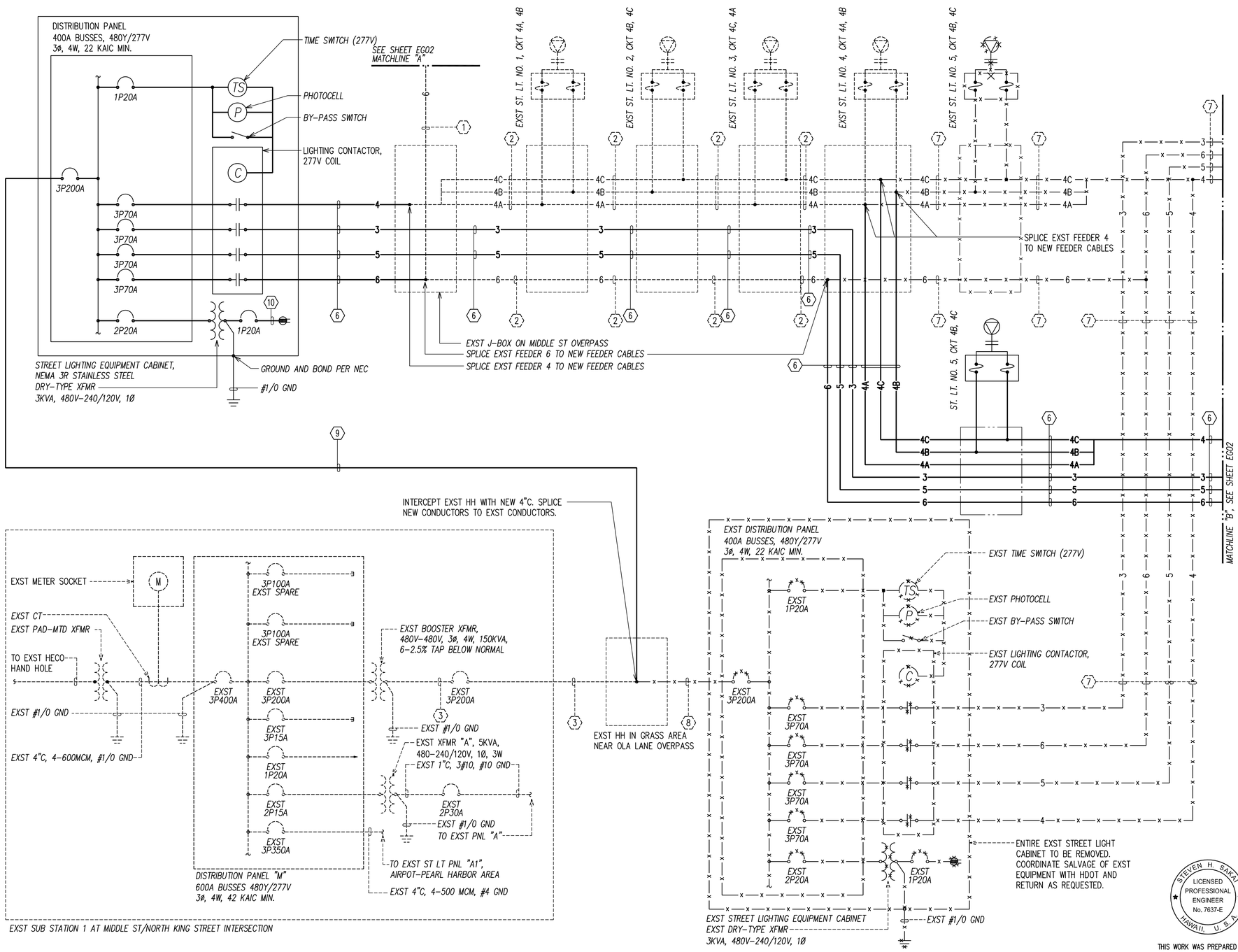
ENLARGED EQUIPMENT PLAN 1

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EF-10 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	162	466



ONELINE DIAGRAM LEGEND

- 149W LED LUMINAIRE
- JOHNSON CONTROLS SMART RECEPTACLE, 277V
- 2#8 RHW-USE, 600V
- FUSE CABLE CONNECTOR KIT WITH 6A FUSE
- POLE BASE
- $1\frac{1}{4}$"C, 2#8 RHW-USE, 600V
- PULLBOX
- INSULATED SPLIT BOLT CONNECTION, WEATHER PROOF
- PROVIDE 24" SLACK CABLE, NEATLY COILED WITH ENDS TAPED

CONDUIT AND WIRING

ITEM	DESCRIPTION
1	EXST 2"C, 3#1/0, #2 GND
2	EXST 2"C, 3#4/0, #1/0 GND
3	EXST 4"C, 4-600MCM, #1/0 GND, EXST 4"C SPARE
4	EXST 4"C SPARE
5	EXST 2"C IN CONCRETE BARRIER, 3#1/0, #2 GND
6	2"C, 3#4/0, #1/0 GND
7	EXST 2"C, 3#4/0, #1/0 GND TO BE REMOVED
8	EXST 4"C, 4-600MCM, #1/0 GND TO BE REMOVED, EXST 4"C SPARE
9	4"C WITH NEW 4-600MCM, #1/0 GND
10	$\frac{3}{4}$"C, 2#12, #12 GND
11	
12	
13	
14	
15	
16	

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

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STREET LIGHT ONE-LINE DIAGRAM - 2

NOT TO SCALE

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
HAWAII, U.S.A.

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SIGNATURE | EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

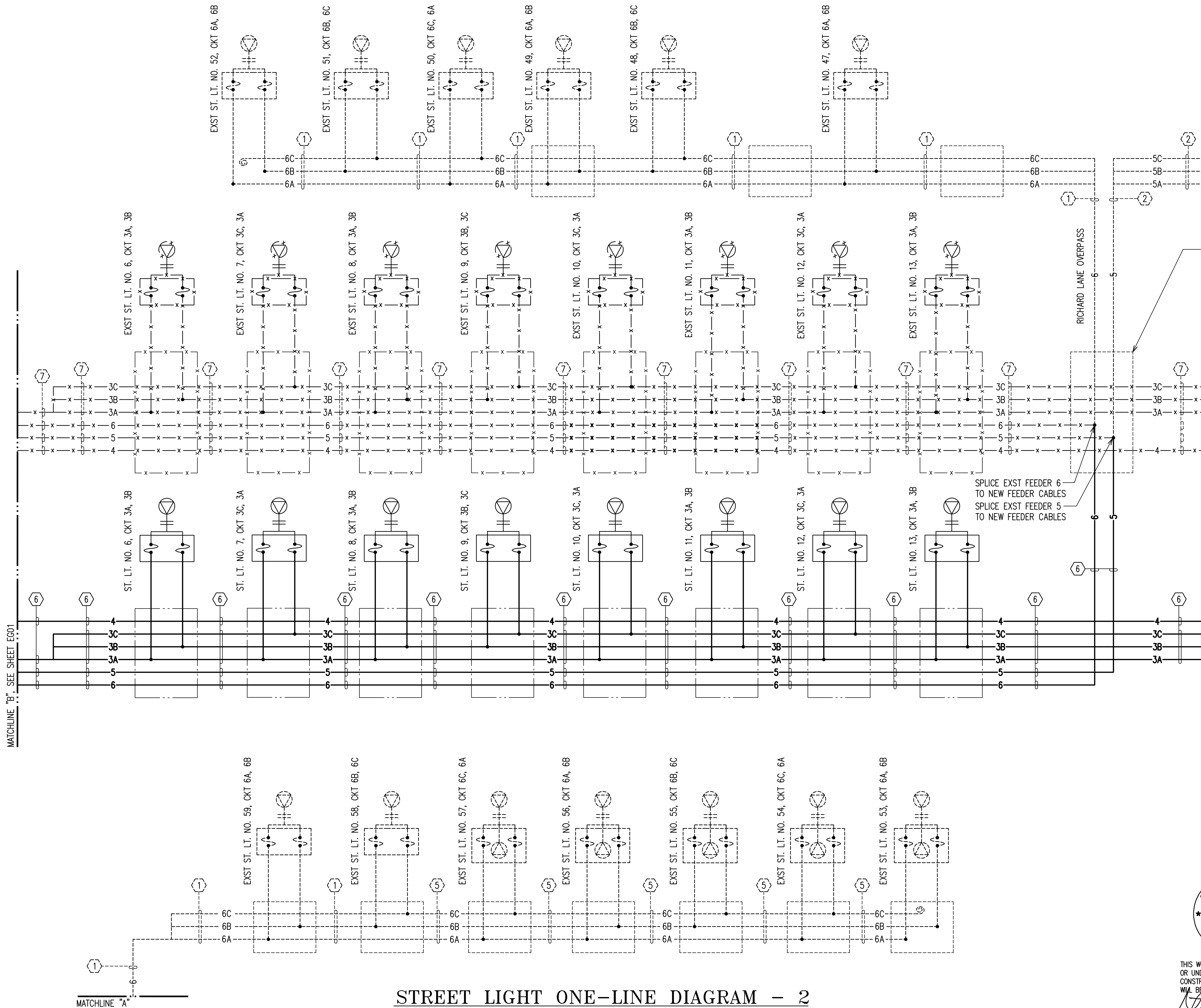
STREET LIGHT ONE-LINE DIAGRAM 1

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted | Date: December 2022

SHEET No. EG-01 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(280)	2023	163	466



ONELINE DIAGRAM LEGEND

- LUMINAIRE, SEE LUMINAIRE SCHEDULE
- JOHNSON CONTROLS SMART RECEPTACLE, 277V
- 2#8 RHW-USE, 600V
- FUSE CABLE CONNECTOR KIT WITH 6A FUSE
- POLE BASE
- 1 1/4"C, 2#8 RHW-USE, 600V
- PULLBOX
- INSULATED SPLIT BOLT CONNECTION, WEATHER PROOF
- PROVIDE 24" SLACK CABLE, NEATLY COILED WITH ENDS TAPED

CONDUIT AND WIRING

ITEM	DESCRIPTION
1	EXST 2"C, 3#1/0, #2 GND
2	EXST 2"C, 3#4/0, #1/0 GND
3	EXST 4"C, 4-600MCM, #1/0 GND, EXST 4"C SPARE
4	EXST 4"C SPARE
5	EXST 2"C IN CONCRETE BARRIER, 3#1/0, #2 GND
6	2"C, 3#4/0, #1/0 GND
7	EXST 2"C, 3#4/0, #1/0 GND TO BE REMOVED
8	EXST 4"C, 4-600MCM, #1/0 GND TO BE REMOVED, EXST 4"C SPARE
9	4"C WITH NEW 4-600MCM, #1/0 GND
10	3/4"C, 2#12, #12 GND
11	
12	
13	
14	
15	
16	

STREET LIGHT ONE-LINE DIAGRAM - 2

NOT TO SCALE

STEVEN H. SAKAI LICENSED PROFESSIONAL ENGINEER No. 7637-E HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STREET LIGHT ONE-LINE DIAGRAM 2

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted — Date: December 2022

SHEET No. EG-02 OF 8 SHEETS

ORIGINAL PLAN	
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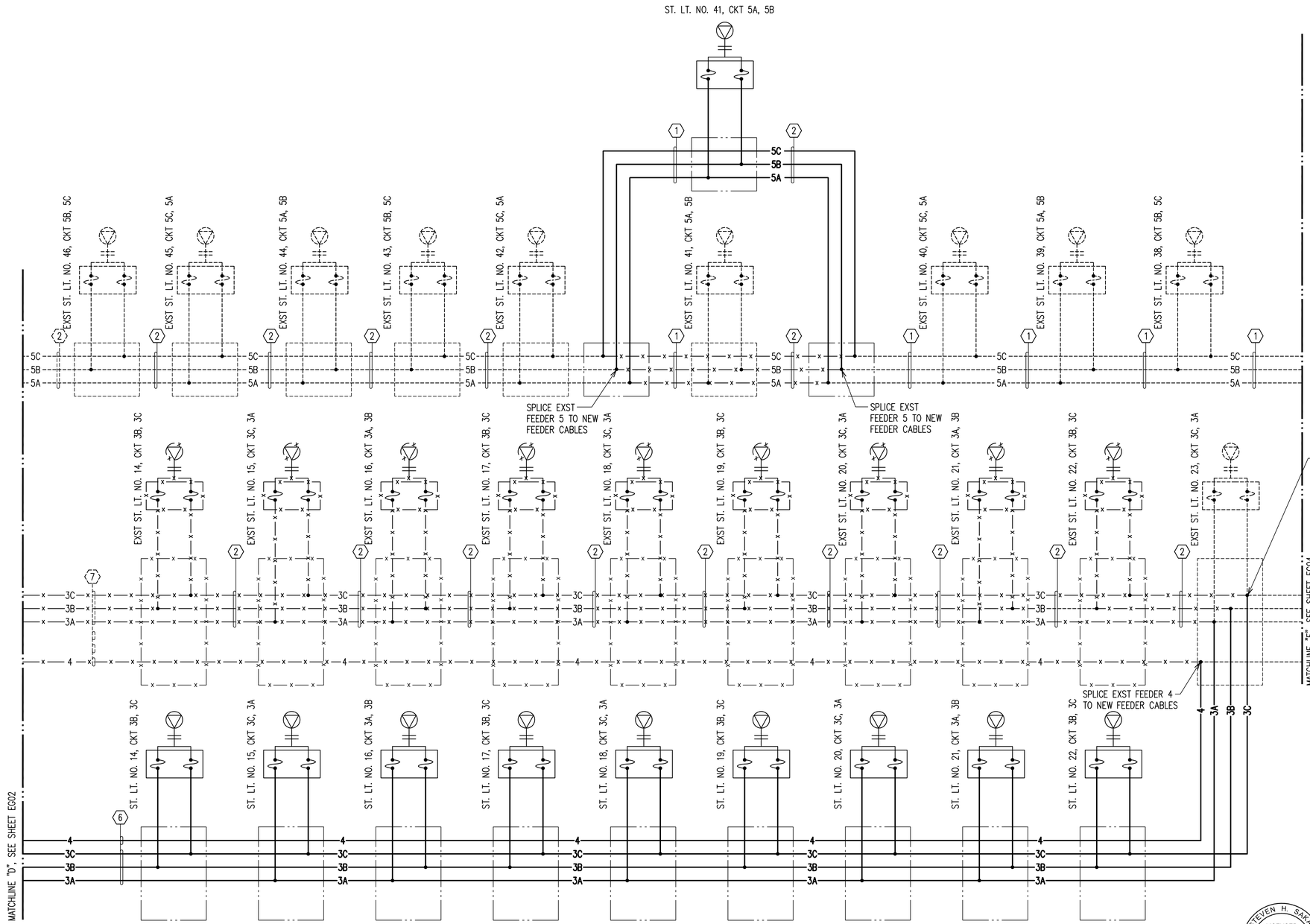
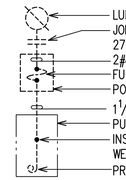
FILE: Z:\Acad\projects\220050\E002_220050_SL_OneLine 2.dwg saved December 22, 2022

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	164	466



ONELINE DIAGRAM LEGEND



CONDUIT AND WIRING

ITEM	DESCRIPTION
1	EXST 2"C, 3#1/0, #2 GND
2	EXST 2"C, 3#4/0, #1/0 GND
3	EXST 4"C, 4-600MCM, #1/0 GND, EXST 4"C SPARE
4	EXST 4"C SPARE
5	EXST 2"C IN CONCRETE BARRIER, 3#1/0, #2 GND
6	2"C, 3#4/0, #1/0 GND
7	EXST 2"C, 3#4/0, #1/0 GND TO BE REMOVED
8	EXST 4"C, 4-600MCM, #1/0 GND TO BE REMOVED, EXST 4"C SPARE
9	4"C WITH NEW 4-600MCM, #1/0 GND
10	3/4"C, 2#12, #12 GND
11	
12	
13	
14	
15	
16	

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

FILE: Z:\Acad\projects\220050\EG03_220050_SL_OneLine 3.dwg saved December 22, 2022

STREET LIGHT ONE-LINE DIAGRAM - 3
NOT TO SCALE

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
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

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

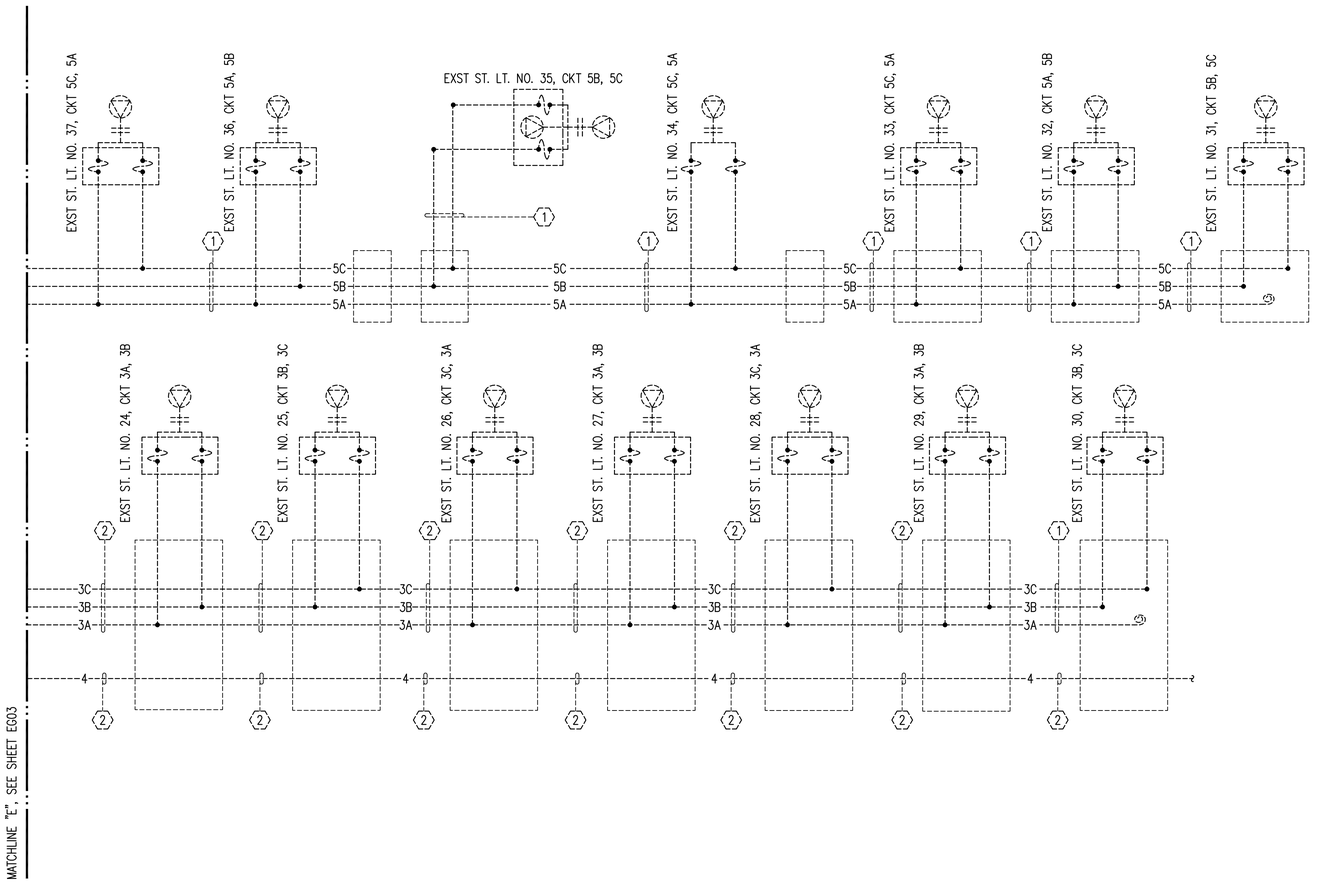
STREET LIGHT ONE-LINE DIAGRAM 3

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

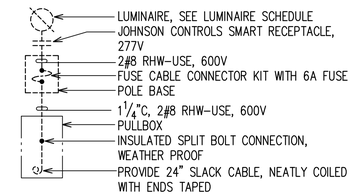
Scale: As Noted Date: December 2022

SHEET No. EG-03 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	165	466



ONELINE DIAGRAM LEGEND



CONDUIT AND WIRING

ITEM	DESCRIPTION
1	EXST 2"C, 3#1/0, #2 GND
2	EXST 2"C, 3#4/0, #1/0 GND
3	EXST 4"C, 4-600MCM, #1/0 GND, EXST 4"C SPARE
4	EXST 4"C SPARE
5	EXST 2"C IN CONCRETE BARRIER, 3#1/0, #2 GND
6	2"C, 3#4/0, #1/0 GND
7	EXST 2"C, 3#4/0, #1/0 GND TO BE REMOVED
8	EXST 4"C, 4-600MCM, #1/0 GND TO BE REMOVED, EXST 4"C SPARE
9	4"C WITH NEW 4-600MCM, #1/0 GND
10	¾"C, 2#12, #12 GND
11	
12	
13	
14	
15	
16	

STREET LIGHT ONE-LINE DIAGRAM - 4

NOT TO SCALE

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

FILE: Z:\Acad\projects\220050\EG04_220050_SL_OneLine 4.dwg saved December 22, 2022

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
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 — EXPIRATION DATE OF THE LICENSE: April 30, 2024

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

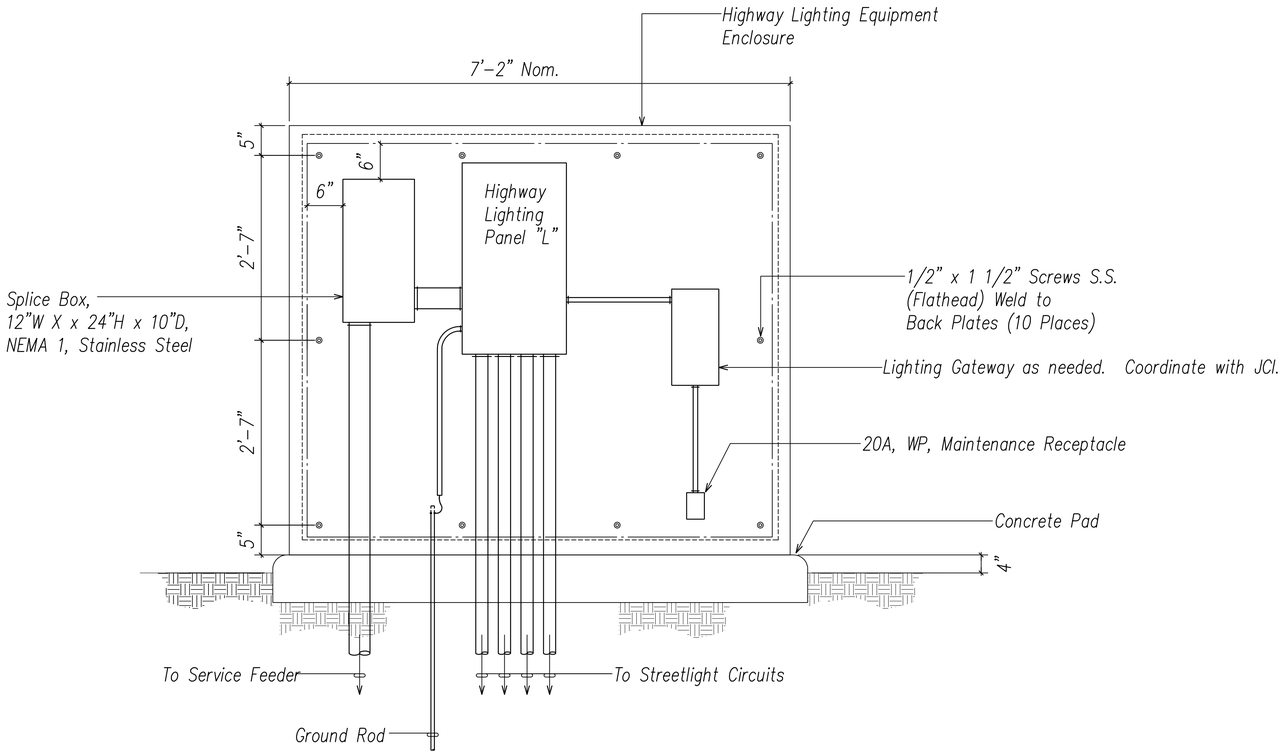
STREET LIGHT ONE-LINE DIAGRAM 4

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted — Date: December 2022

SHEET No. EG-04 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	166	466



NOTES:

1. "*" Indicates Provisions for HECo Seals.
2. All Equipment Enclosure in Service Equipment Cabinet Shall be NEMA Type 1.
3. Contractor Shall Verify Equipment Enclosure Size to Ensure All Required Equipment Being Provided can fit Within Enclosure as Required.
4. Minimum 4'-0" Clear Space in Front of Metering Equipment Enclosure Required.

A / EG-05 **HIGHWAY LIGHTING EQUIPMENT ELEVATION**

NOT TO SCALE

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

FILE: Z:\Acad\projects\220050\EG05_220050_hwy_light_details_1.dwg saved December 22, 2022

STEVEN H. SAKAI LICENSED PROFESSIONAL ENGINEER No. 7637-E HAWAII, U.S.A.

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SIGNATURE

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

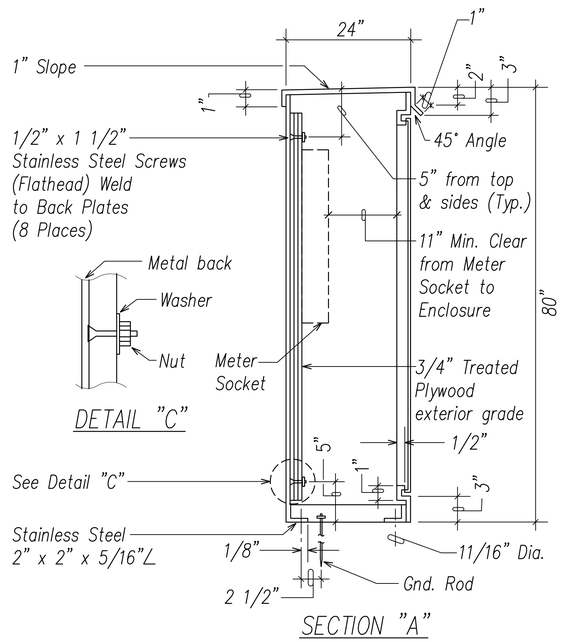
STREET LIGHT
DETAIL 1

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

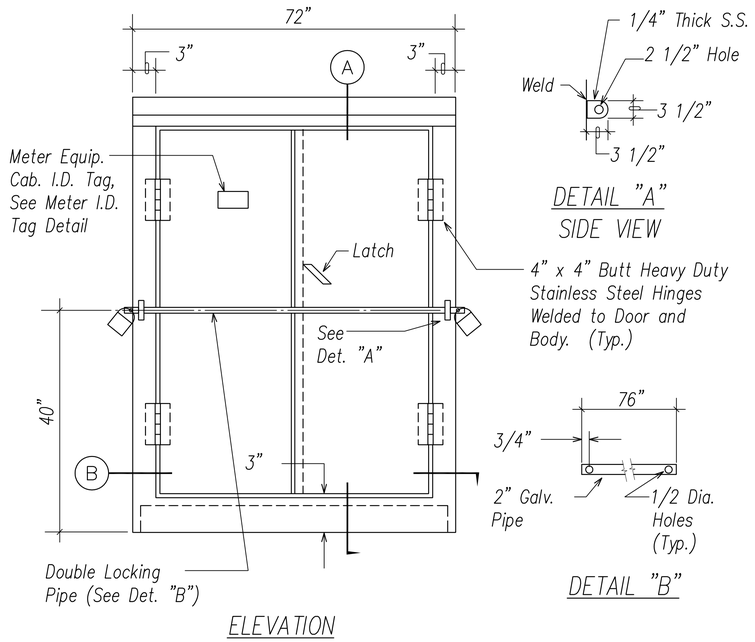
SHEET No. EG-05 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	167	466



DETAIL "C"

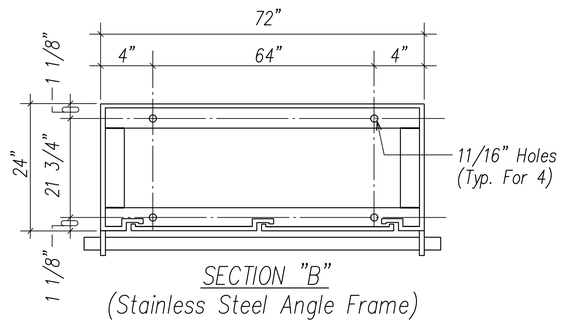
SECTION "A"



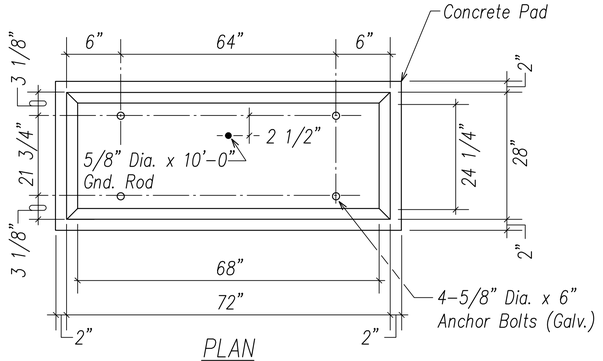
ELEVATION

DETAIL "A"
SIDE VIEW

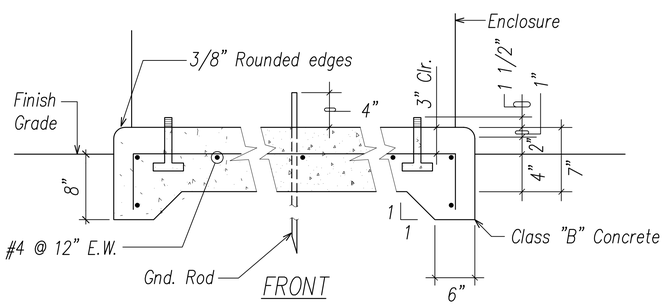
DETAIL "B"



SECTION "B"
(Stainless Steel Angle Frame)



PLAN



FRONT

CONCRETE PAD

A
EG-06

HIGHWAY LIGHTING EQUIPMENT ENCLOSURE

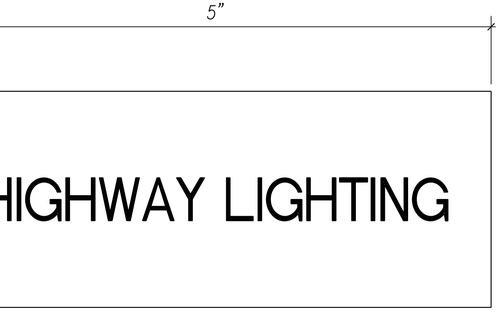
NOT TO SCALE

Notes:

1. Cabinet to be primed with one coat shop primer.
2. Made from 10 gauge Type 316 Stainless Steel.
3. Provide epoxy enamel finish, color shall be Munsell 7GY3.29/1.5 Green (two coats). The Munsell color notation is specified in ASTM D 1535.
4. Enclosure shall be NEMA 3R with neoprene gasketing.
5. Padlocks:
   1 – HECo furnished
   1 – Contractor furnished
6. Shop fabrication drawings shall be submitted for approval.
7. Add additional Gnd Rod as required if gnd resistance exceeds 25 ohms (max allowed).
8. Maintain 4'–0" min. clearance fronting cabinet door, unless indicated otherwise.

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

FILE: Z:\Acad\projects\220050\E06_220050_Hwy_Light_details_2.dwg saved December 22, 2022



NOTES:

1. Use 3–ply laminated flexible plastic, black–white–black thickness: black cap sheet – 0.010", white base sheet – 0.052", black base sheet – 0.010".
2. Attach to meter enclosure using Scotch 3 brand very high bond (VHB) double coated acrylic foam tape or equivalent.
3. Letters/numbers shall be 3/8" high, 1/16" stroke (white in color).
4. Letters/numbers area inscribed by cutting through "black cap sheet" to expose white letters/numbers.

B
EG-06

METER I.D. TAG DETAIL

NOT TO SCALE

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
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

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

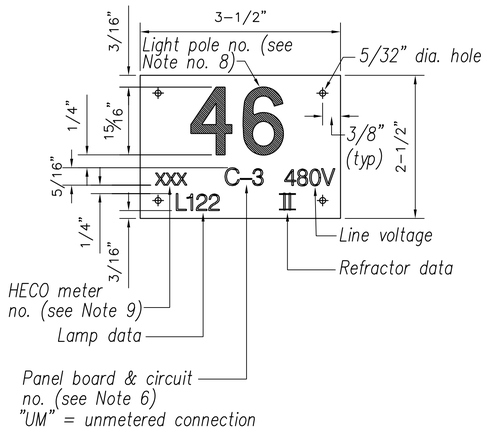
STREET LIGHT DETAIL 2

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

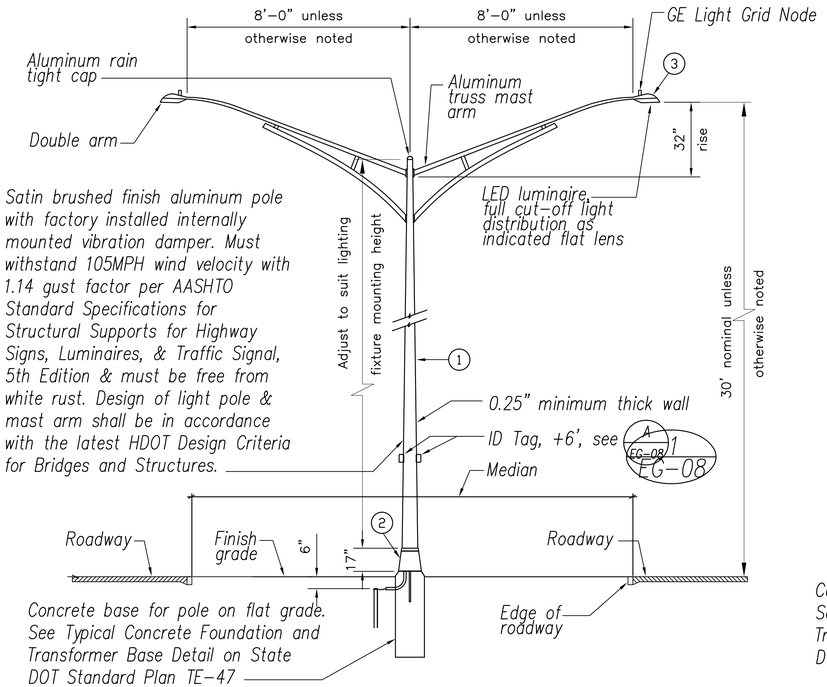
SHEET No. EG-06 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	168	466



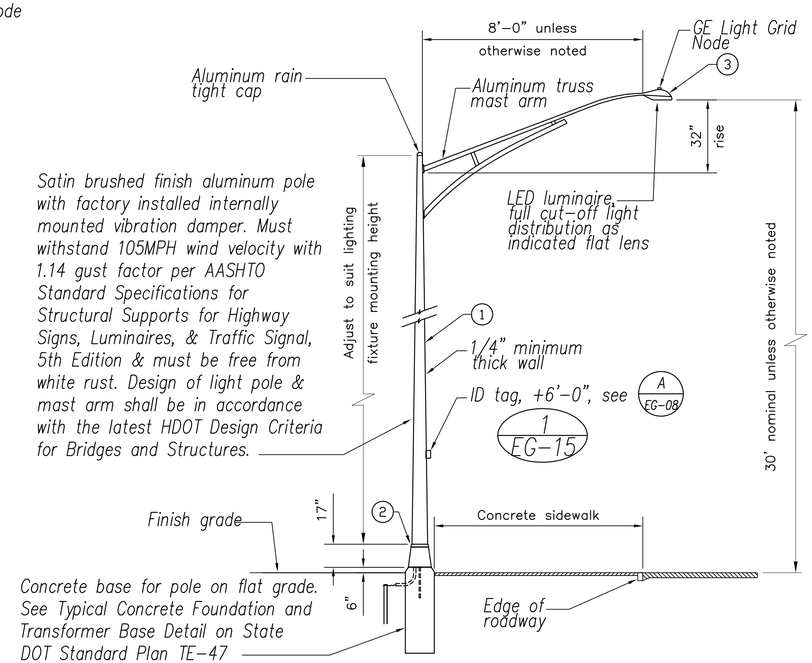
A EG-07 **STREET LIGHT POLE TAG DETAIL**

NOT TO SCALE



B EG-07 **STREET LIGHT STANDARD DETAIL**

NOT TO SCALE



C EG-07 **STREET LIGHT STANDARD DETAIL**

NOT TO SCALE

NOTES:

1. Use 3 ply laminated flexible plastic black-white-black thickness black cap sheet-0.010", white base sheet-0.052", black base sheet-0.010".
2. Light pole number size shall be 1" high and engraved 1/8" wide, white in color (number as required).
3. Nomenclature size shall be 5/16" high and engraved 1/32" wide, white in color (HECO meter number panel board and circuit number, line voltage, lamp data and refractor data as required).
4. Attach to aluminum and steel post with no. 8 stainless steel, 1/2" long drive screws in 1/8" drill hole. Attach to wood poles with 4D aluminum nail.
5. Numbers are inscribed by cutting through "Black Cap Sheet" to expose "White Letters."
6. Nomenclature required for systems with two or more circuits (letter indicates panel board, number indicates circuit).
7. For light poles installed on ramp, assign numbers to include ramp I.D. and light number. Legend may be less than one (1) inch in height.
8. Light numbers shall be obtained from the State. Use an alphabet suffix to designate lights mounted on the same pole (e.g. 123A & 123B).
9. For non-metered system, call out the Contract Number.

MATERIAL LIST		
Item	Description	Manufacturer
1	Light Pole, Alum	
2	Transformer Base (Alum) (type as indicated)	
3	Luminaire, LED, unless otherwise noted	

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

FILE: Z:\Acad\projects\220050\EG07_220050_hwy_light_details_3.dwg saved December 22, 2022

STEVEN H. SAKAI LICENSED PROFESSIONAL ENGINEER No. 7637-E HAWAII, U.S.A.

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SIGNATURE — EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

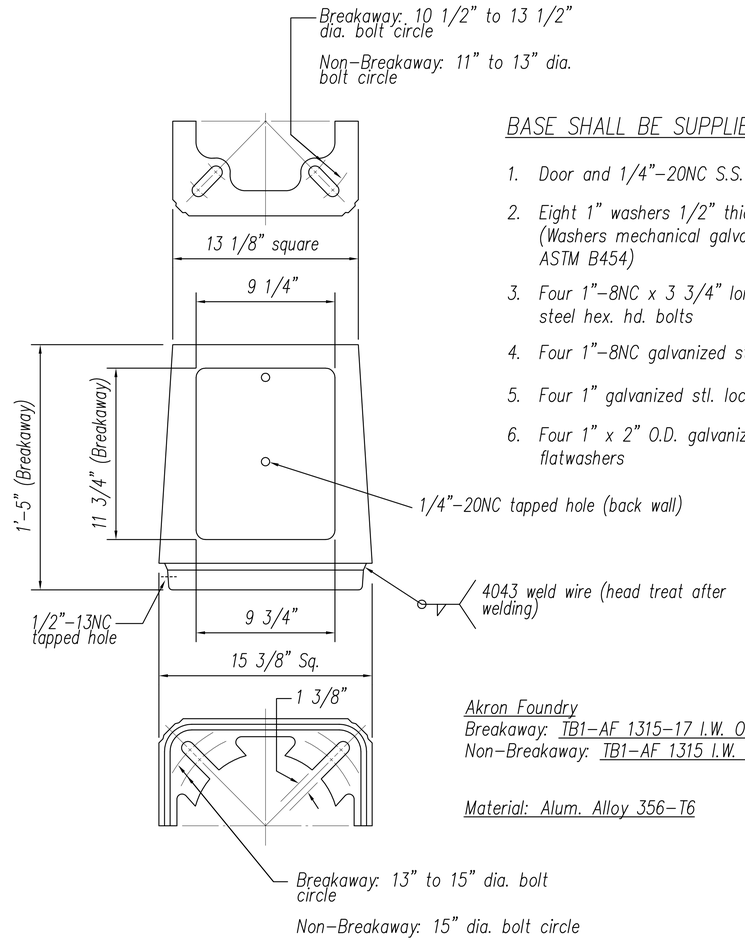
STREET LIGHT DETAIL 3

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EG-07 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	169	466



BASE SHALL BE SUPPLIED WITH:

1. Door and 1/4"-20NC S.S. screw
2. Eight 1" washers 1/2" thick x 2 3/4" O.D. (Washers mechanical galvanized per ASTM A153 or ASTM B454)
3. Four 1"-8NC x 3 3/4" long galvanized steel hex. hd. bolts
4. Four 1"-8NC galvanized steel hex. nuts
5. Four 1" galvanized stl. lock washers
6. Four 1" x 2" O.D. galvanized stl. flatwashers

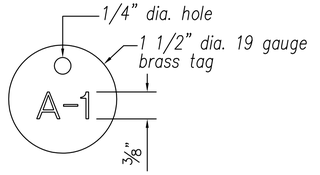
Akron Foundry
Breakaway: TB1-AF 1315-17 I.W. OR Equal (Plus Hardware)
Non-Breakaway: TB1-AF 1315 I.W. OR Equal (Plus Hardware)

Material: Alum. Alloy 356-T6

A
EG-08

BREAKAWAY AND NON-BREAKAWAY TRANSFORMER BASE DETAIL

NOT TO SCALE



NOTES:

1. Number size shall be 3/8" high and punched on brass tag.
2. Attached to circuit cables with nylon weather resistant locking cables ties, 3/16" wide.

B
EG-08

HIGHWAY LIGHT CIRCUIT CABLE I.D. TAG DETAIL

NOT TO SCALE

1		= Highway Light & Pole Number
2		= Pole Location, Offset In Feet from Baseline
3		= Bracket Arm Span, In Feet
4		= Pole Height, In Feet
5		= Pole Location, Station Number
6		= Wattage
7		= Light Circuit Number & Phase To Phase Connection, When Applicable

C
EG-08

STATE HIGHWAY LIGHT I.D. TAG INDICATOR LEGEND

NOT TO SCALE

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

FILE: Z:\Acad\projects\220050\EG08_220050_hwy_light_details_4.dwg saved December 22, 2022

STEVEN H. SAKAI
LICENSED PROFESSIONAL ENGINEER
No. 7637-E
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 — EXPIRATION DATE OF THE LICENSE: April 30, 2024

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

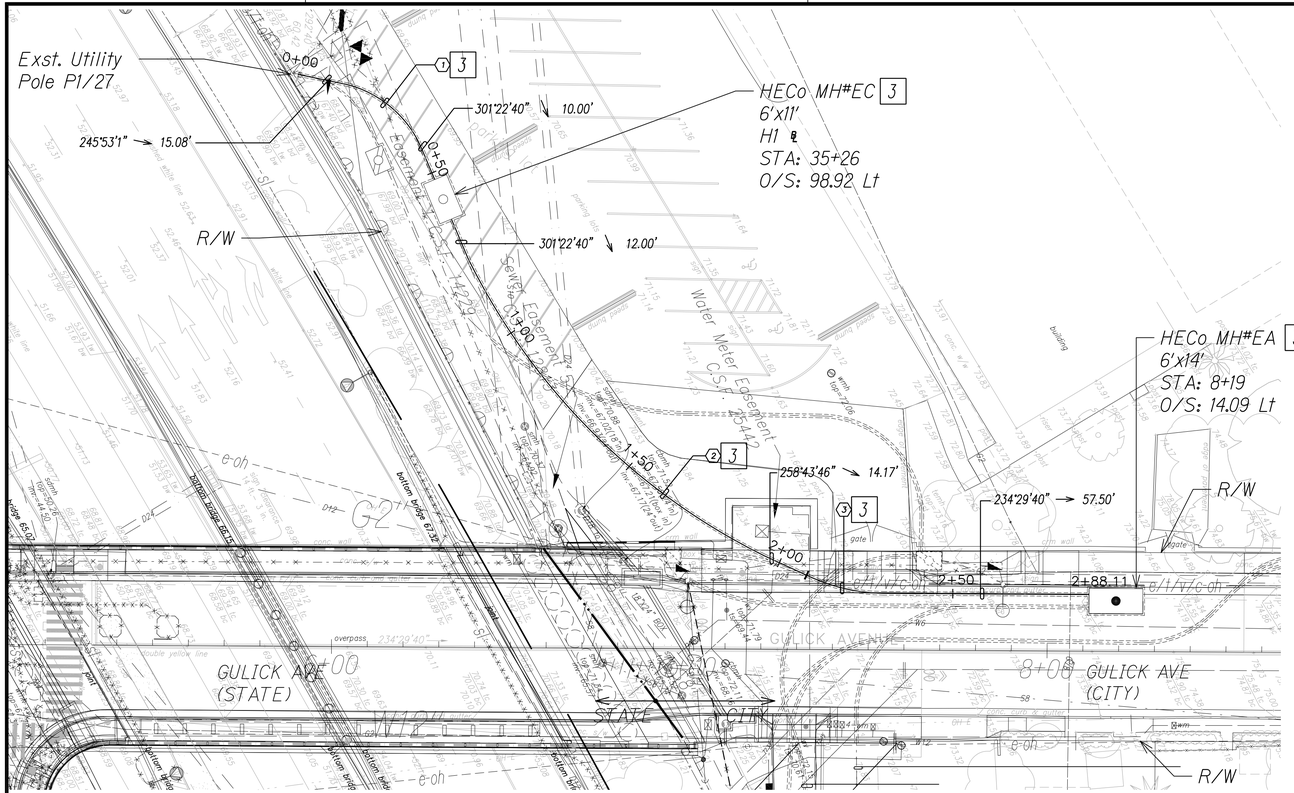
STREET LIGHT DETAIL 4

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted — Date: December 2022

SHEET No. EG-08 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	170	466



HECO DUCTLINE "EA1" PLAN - TEMPORARY

SCALE: 1"=20'

True North
1" = 20'

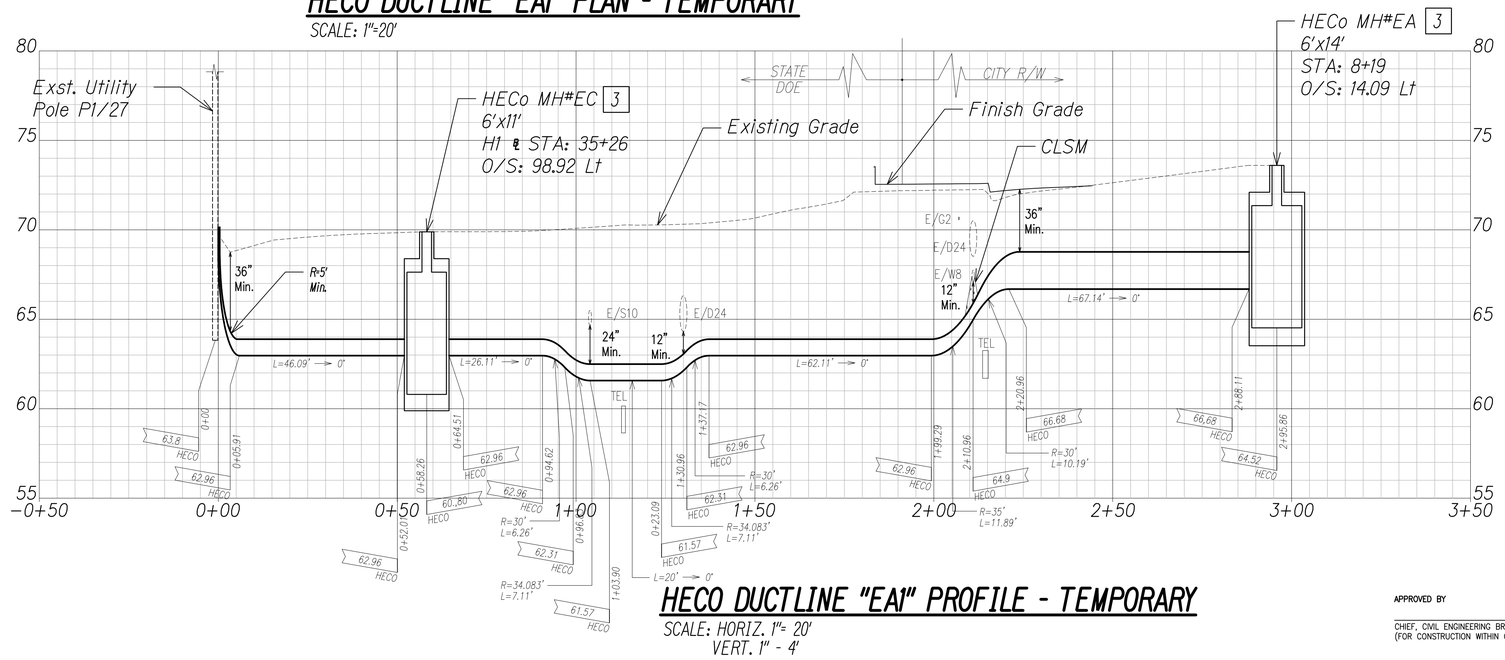
HECO DUCTLINE "EA1" TEMPORARY

CURVE DATA						
ID	Δ	Δ/ 2	RADIUS	T	C	Lc
1	50°58'11"	25°29'5.7"	31.07'	14.81'	26.74'	27.64'
2	37°31'52"	18°45'55.8"	182.18'	61.90'	117.21'	119.34'
3	23°51'0"	11°55'30.1"	50.68'	10.70'	20.94'	21.10'

Notes:

1. *See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.*
2. *At Utility Crossings Where Proper Compaction Under A Water Main Is Difficult To Achieve, Provide CLSM In Place Of Backfill Material And Pipe Cushion Material.*

3 *Manhole & Ducts To Be Constructed In Temporary Phase, But To Remain As Permanent.*



HECO DUCTLINE "EA1" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

Graphic Scales:

Horiz. 1" = 20' 20' 10' 0 20' 40'

Vert. 1" = 4' 4' 2' 0 4' 8'

Scale in Feet

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

FILE: Z:\Acad\projects\220050\EJ01_220050_HECO-HP-EA1.dwg saved December 21, 2022

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP DATE
(FOR CONSTRUCTION WITHIN CITY R/W ONLY)

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
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, 2024 EXPIRATION DATE OF THE LICENSE

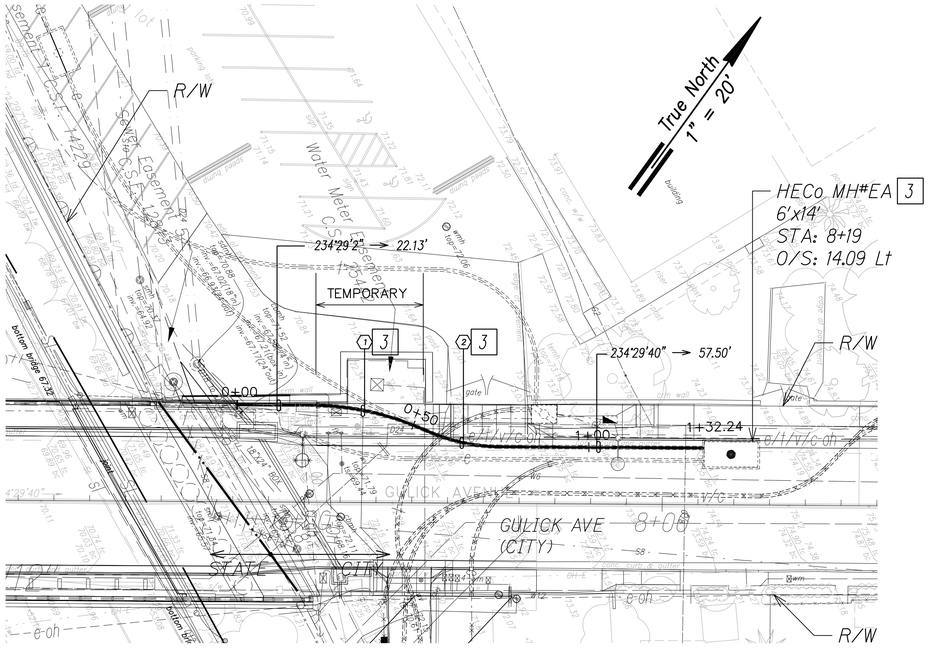
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HECO DUCTLINE "EA1"
PLAN & PROFILE (TEMP)
INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EJ-01 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	171	466

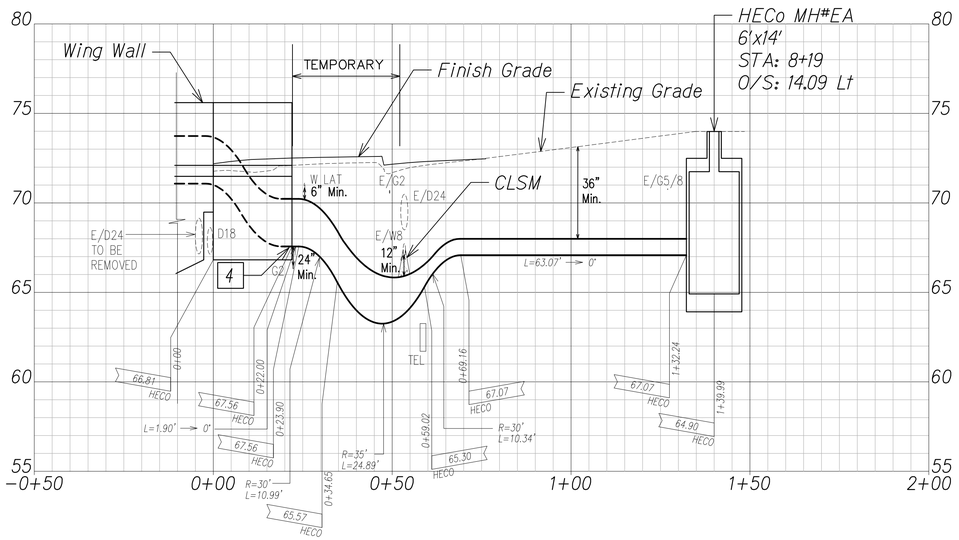


HECO DUCTLINE "EA2" & "EA3" TEMPORARY & PERMANENT

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	23°25'15"	11°42'37.4"	77.09'	15.98'	31.29'	31.51'
2	23°51'0"	11°55'30.1"	50.68'	10.70'	20.94'	21.10'

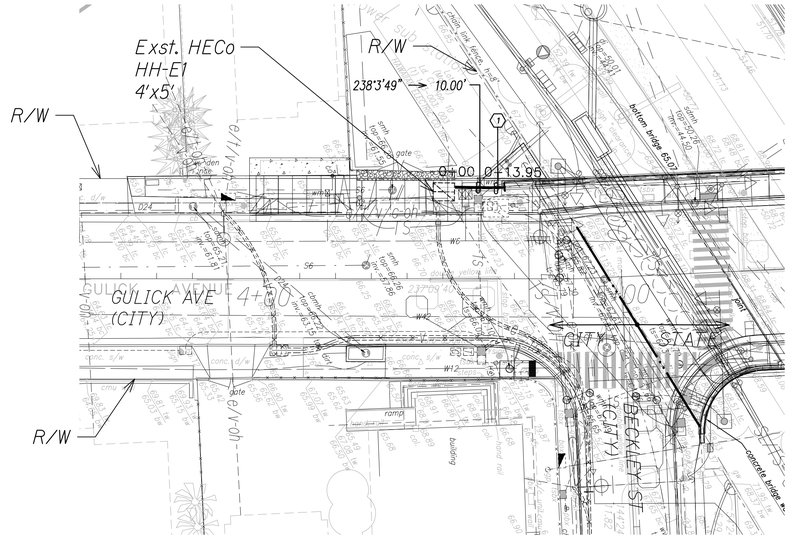
HECO DUCTLINE "EA2" & "EA3" PLAN - TEMPORARY & PERMANENT

SCALE: 1"=20'



HECO DUCTLINE "EA2" & "EA3" PROFILE - TEMPORARY & PERMANENT

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

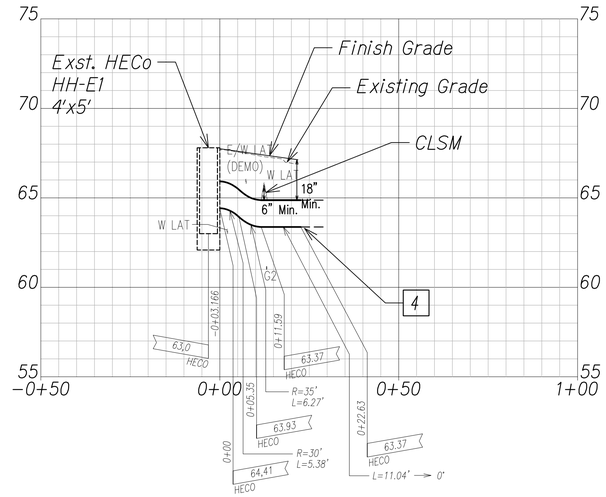


HECO DUCTLINE "EA4" PERMANENT

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	7°50'7"	3°55'3.5"	28.94'	1.98'	3.95'	3.96'

HECO DUCTLINE "EA4" PLAN - PERMANENT

SCALE: 1"=20'



HECO DUCTLINE "EA4" PROFILE - PERMANENT

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

Notes:

1. See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.
2. At Utility Crossings Where Proper Compaction Under A Water Main Is Difficult To Achieve, Provide CLSM In Place Of Backfill Material And Pipe Cushion Material.

[3] Manhole & Ducts To Be Constructed In Temporary Phase, But To Remain As Permanent.

[4] See Structural Plans For Bridge Crossing.

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

Graphic Scales:

Horiz. 1" = 20' 20' 10' 0 20' 40'

Vert. 1" = 4' 4' 2' 0 4' 8'

Scale in Feet

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

FILE: Z:\Acad\projects\220050\E-02_220050_HECO-PP-EA2-EA4.dwg saved December 21, 2022

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
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, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

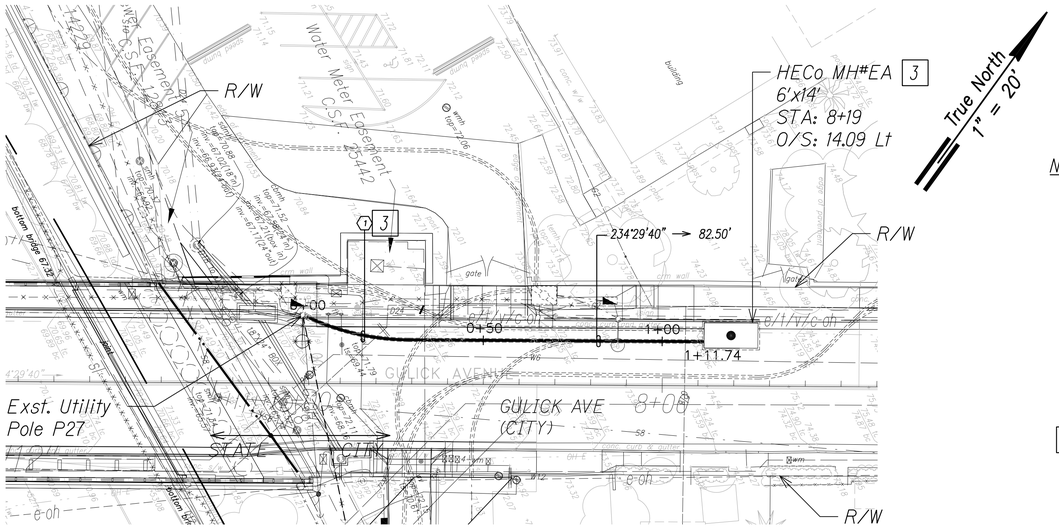
HECO DUCTLINE "EA2","EA3" & "EA4"
PLAN & PROFILE (TEMP & PERM)

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EJ-02 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	172	466



HECO DUCTLINE "EB1" TEMPORARY

CURVE DATA						
ID	Δ	Δ/ 2	RADIUS	T	C	Lc
1	24°51'56"	12°25'57.8"	67.38'	14.85'	29.01'	29.24'

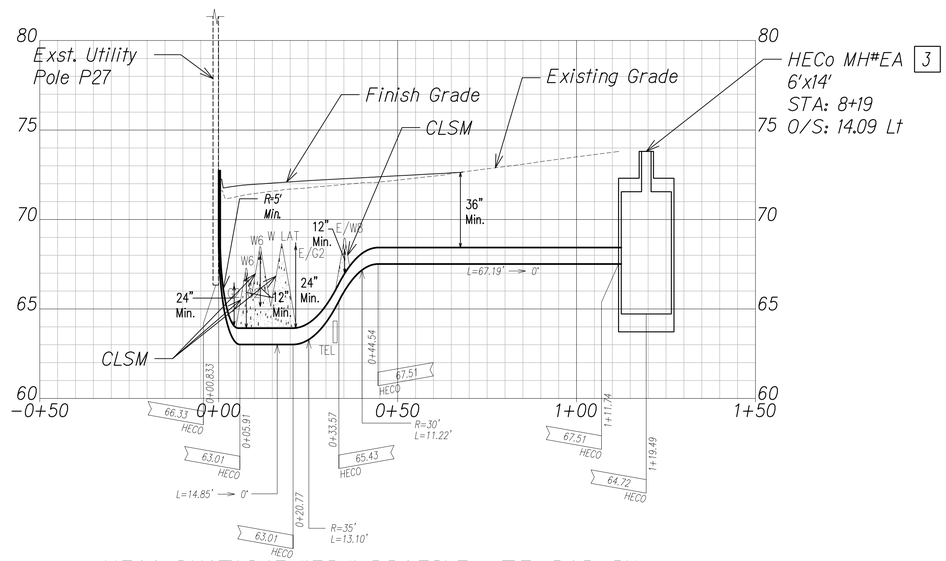
HECO DUCTLINE "EB1" PLAN - TEMPORARY

SCALE: 1"=20'

Notes:

1. *See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.*
2. *At Utility Crossings Where Proper Compaction Under A Water Main Is Difficult To Achieve, Provide CLSM In Place Of Backfill Material And Pipe Cushion Material.*

3 *Manhole & Ducts To Be Constructed In Temporary Phase, But To Remain As Permanent.*



HECO DUCTLINE "EB1" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

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Graphic Scales:

Horiz. 1" = 20' 20' 10' 0 20' 40'

Vert. 1" = 4' 4' 2' 0 4' 8'

Scale in Feet

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

FILE: Z:\Acad\projects\220050\E-03_220050_HECO-PP-EB1.dwg saved December 21, 2022

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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SIGNATURE April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

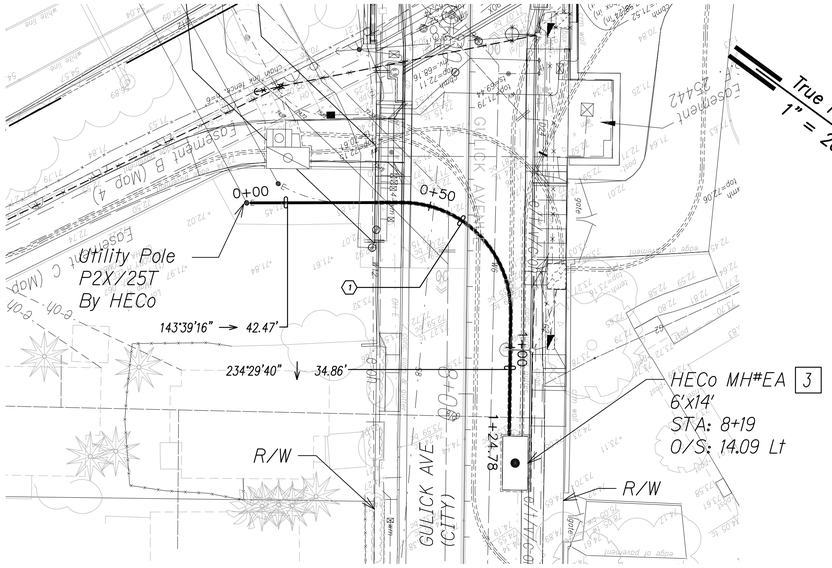
HECO DUCTLINE "EB1"
PLAN & PROFILE (TEMP)

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EJ-03 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	173	466

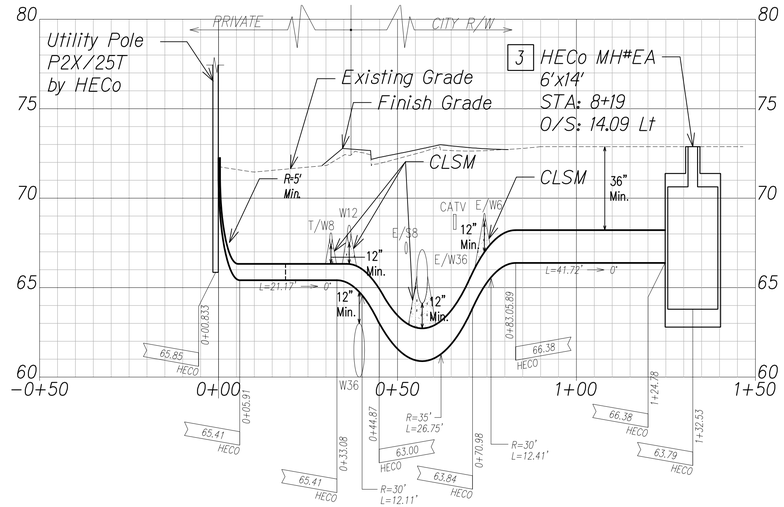


HECO DUCTLINE "ET1" TEMPORARY

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
⟨1⟩	89°37'51"	44°48'55.6"	30.54'	30.34'	43.04'	47.77'

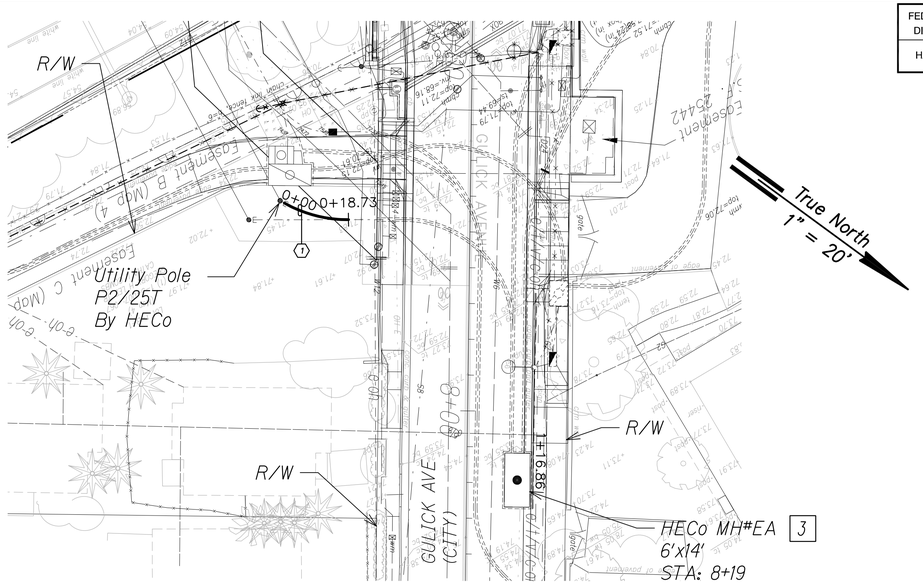
HECO DUCTLINE "ET1" PLAN - TEMPORARY

SCALE: 1"=20'



HECO DUCTLINE "ET1" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

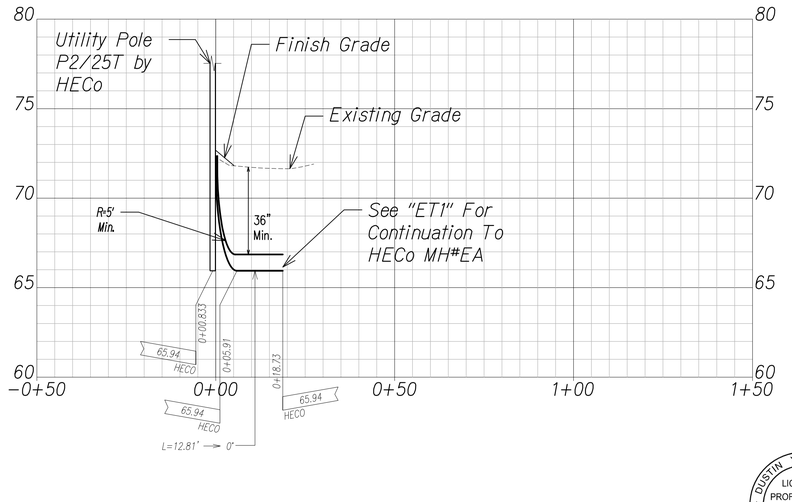


HECO DUCTLINE "ET2" TEMPORARY

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
⟨1⟩	30°17'51"	15°8'55.7"	36.21'	9.80'	18.93'	19.15'

HECO DUCTLINE "ET2" PLAN - TEMPORARY

SCALE: 1"=20'



HECO DUCTLINE "ET2" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

Notes:

1. See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.
2. At Utility Crossings Where Proper Compaction Under A Water Main Is Difficult To Achieve, Provide CLSM In Place Of Backfill Material And Pipe Cushion Material.

3 Manhole & Ducts To Be Constructed In Temporary Phase, But To Remain As Permanent.

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

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Graphic Scales:

Horiz. 1" = 20' 20' 10' 0 20' 40'

Vert. 1" = 4' 4' 2' 0 4' 8'

Scale in Feet

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

FILE: Z:\Acad\projects\220050\EJ04_220050_HECO-PP-ET1-ET2.dwg saved December 21, 2022

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
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, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

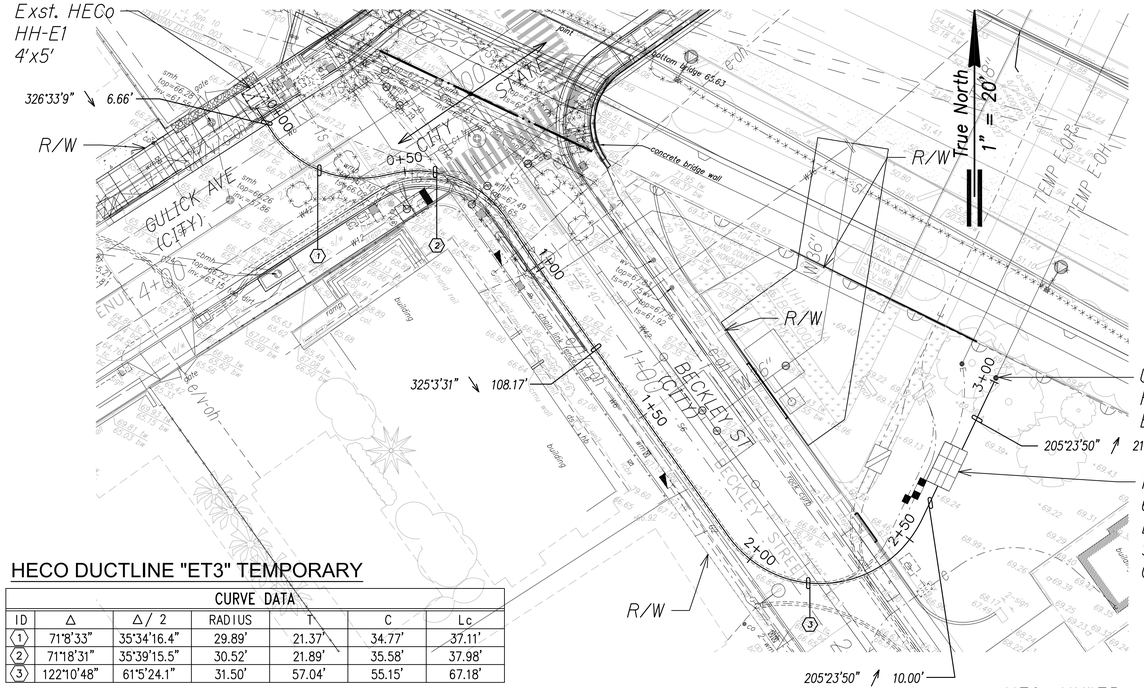
HECO DUCTLINE "ET1" & "ET2" PLAN & PROFILE (TEMP)

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

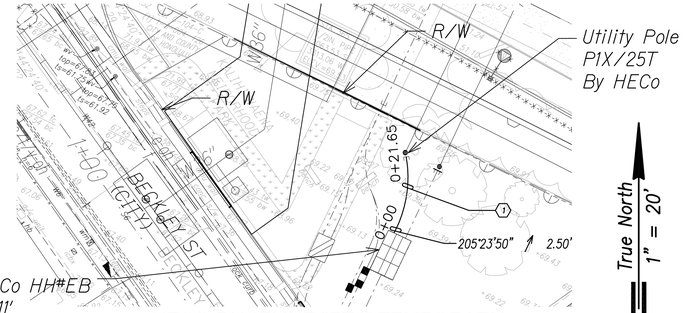
SHEET No. EJ-04 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	174	466



Notes:

1. See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.
2. At Utility Crossings Where Proper Compaction Under A Water Main Is Difficult To Achieve, Provide CLSM In Place Of Backfill Material And Pipe Cushion Material.



HECO DUCTLINE "ET4" TEMPORARY

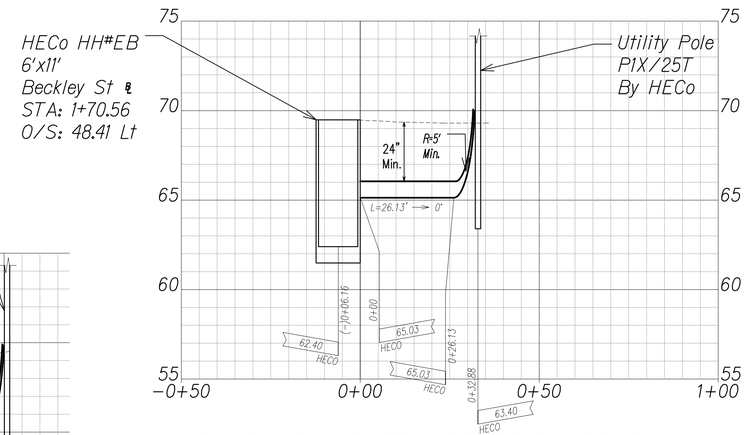
CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	33°50'44"	16°55'22.1"	32.94'	10.02'	19.17'	19.46'

HECO DUCTLINE "ET3" TEMPORARY

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	71°8'33"	35°34'16.4"	29.89'	21.37'	34.77'	37.11'
2	71°18'31"	35°39'15.5"	30.52'	21.89'	35.58'	37.98'
3	122°10'48"	61°5'24.1"	31.50'	57.04'	55.15'	67.18'

HECO DUCTLINE "ET4" PLAN - TEMPORARY

SCALE: 1"=20'

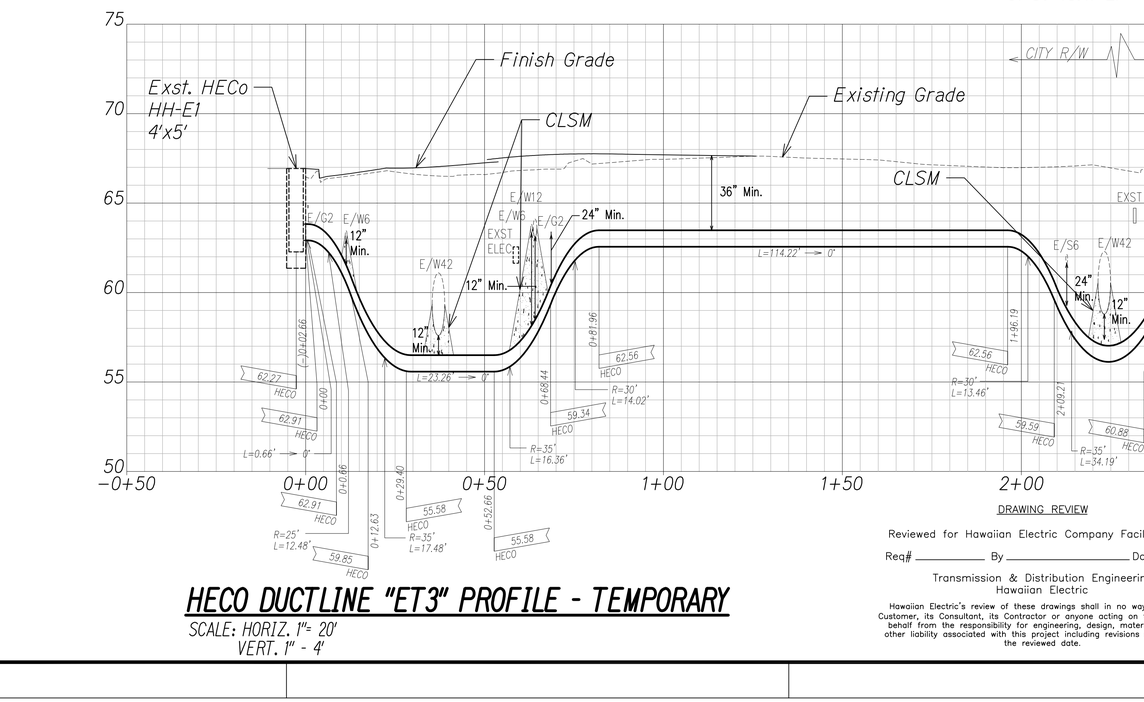


HECO DUCTLINE "ET4" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

HECO DUCTLINE "ET3" PLAN - TEMPORARY

SCALE: 1"=20'



HECO DUCTLINE "ET3" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

DRAWING REVIEW

Reviewed for Hawaiian Electric Company Facilities Only

Req# _____ By _____ Date _____

Transmission & Distribution Engineering
Hawaiian Electric

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Graphic Scales:

Horiz. 1" = 20' 20' 10' 0 20' 40'

Vert. 1" = 4' 4' 2' 0 4' 8'

Scale in Feet

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

DUSTIN Y. NAKAMOTO LICENSED PROFESSIONAL ENGINEER No. 14287-E 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, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HECO DUCTLINE "ET3" & "ET4" PLAN & PROFILE (TEMP)

INTERSTATE ROUTE HI (EB) IMPROVEMENTS Ola Lane Overpass to Likelike Hwy Off-Ramp Project No. NH-H1-1(280)

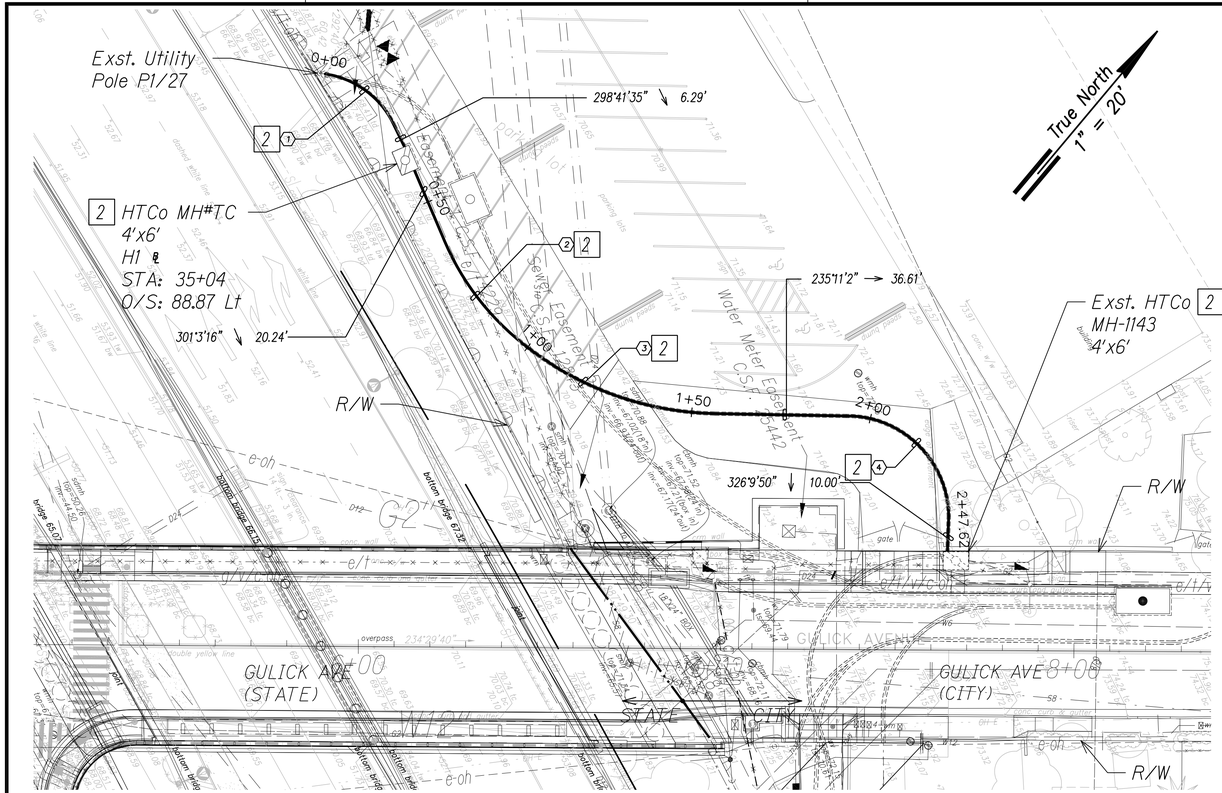
Scale: As Noted Date: December 2022

SHEET No. EJ-05 OF 5 SHEETS

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

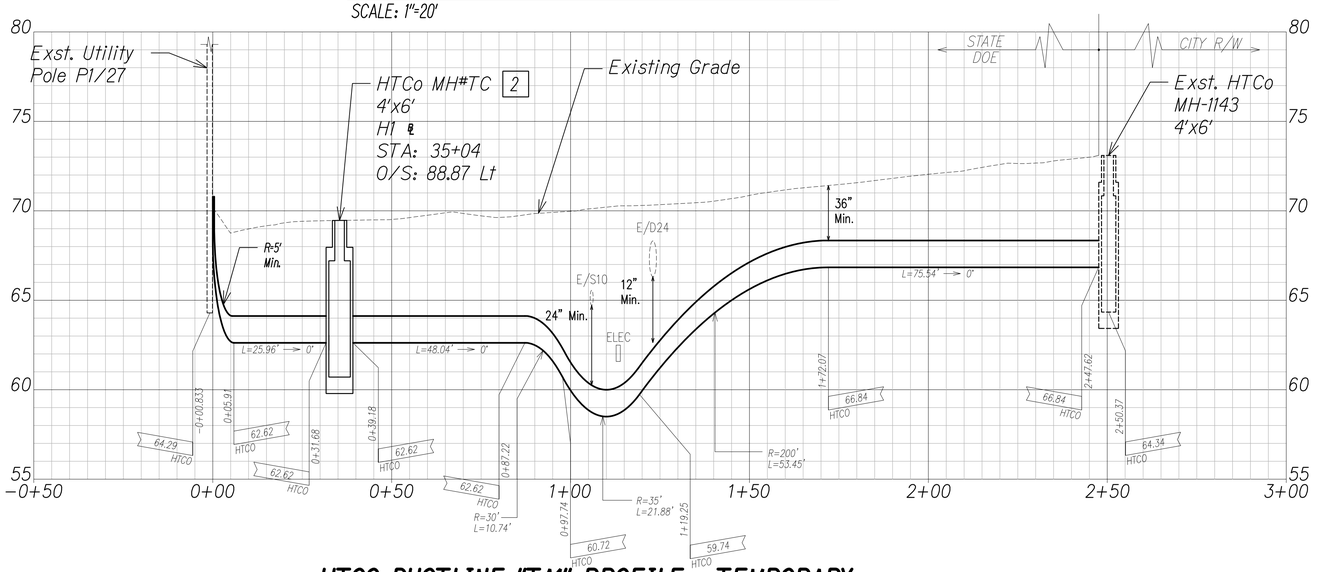
FILE: Z:\Acad\projects\120050\EJ05_120050_HECO-PP-ET3-ET4.dwg saved December 21, 2022

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 175	466



HTCO DUCTLINE "TA1" PLAN - TEMPORARY

SCALE: 1"=20'



HTCO DUCTLINE "TA1" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

HTCO DUCTLINE "TA1" TEMPORARY

CURVE DATA

ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	57°24'57"	28°42'28.4"	25.34'	13.88'	24.34'	25.39'
2	22°17'16"	11°8'37.9"	73.93'	14.56'	28.58'	28.76'
3	43°50'31"	21°55'15.7"	87.95'	35.39'	65.67'	67.30'
4	89°30'19"	44°45'9.6"	28.43'	28.18'	40.03'	44.41'

Notes:

1. See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.

2 Manhole & Ducts To Be Constructed In Temporary Phase, But To Remain As Permanent.

Graphic Scales:

Horiz. 1" = 20' 20' 10' 0 20' 40'

Vert. 1" = 4' 4' 2' 0 4' 8'

Scale in Feet

DATE	REVISION
4/7/23	2 Add. 2 – Removed CEB Approval

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HTCO DUCTLINE "TA1" PLAN & PROFILE (TEMP)

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EK-01 OF 4 SHEETS

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
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 — EXPIRATION DATE OF THE LICENSE: April 30, 2024

APPROVED BY

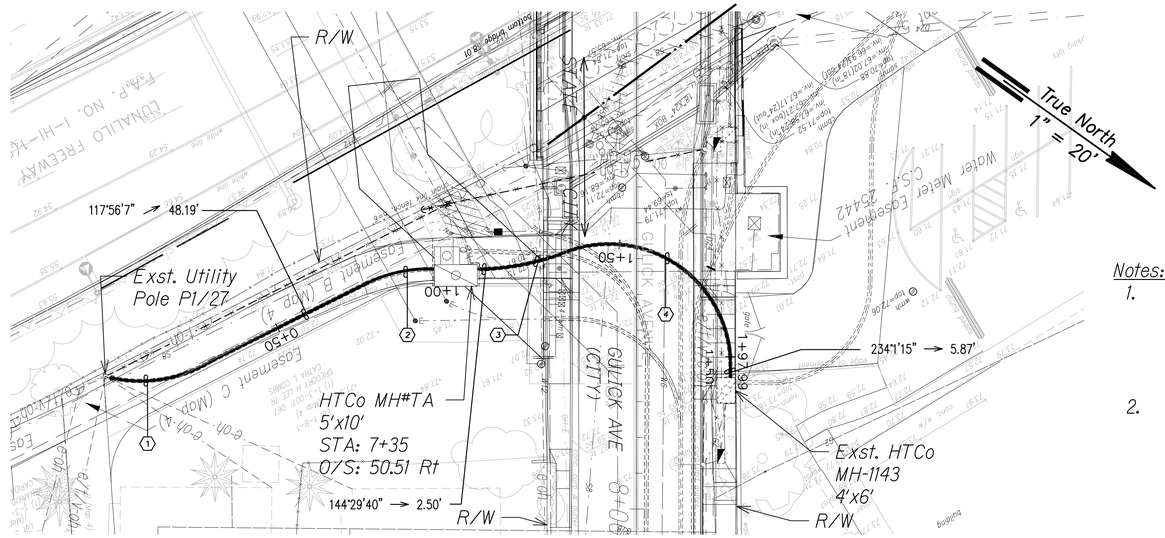
HAWAIIAN TELCOM — DATE

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

FILE: Z:\Acad\projects\1200050\EK01_1200050_HTCO-PP-TA1.dwg saved April 10, 2023

ADD. 175

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	176	466

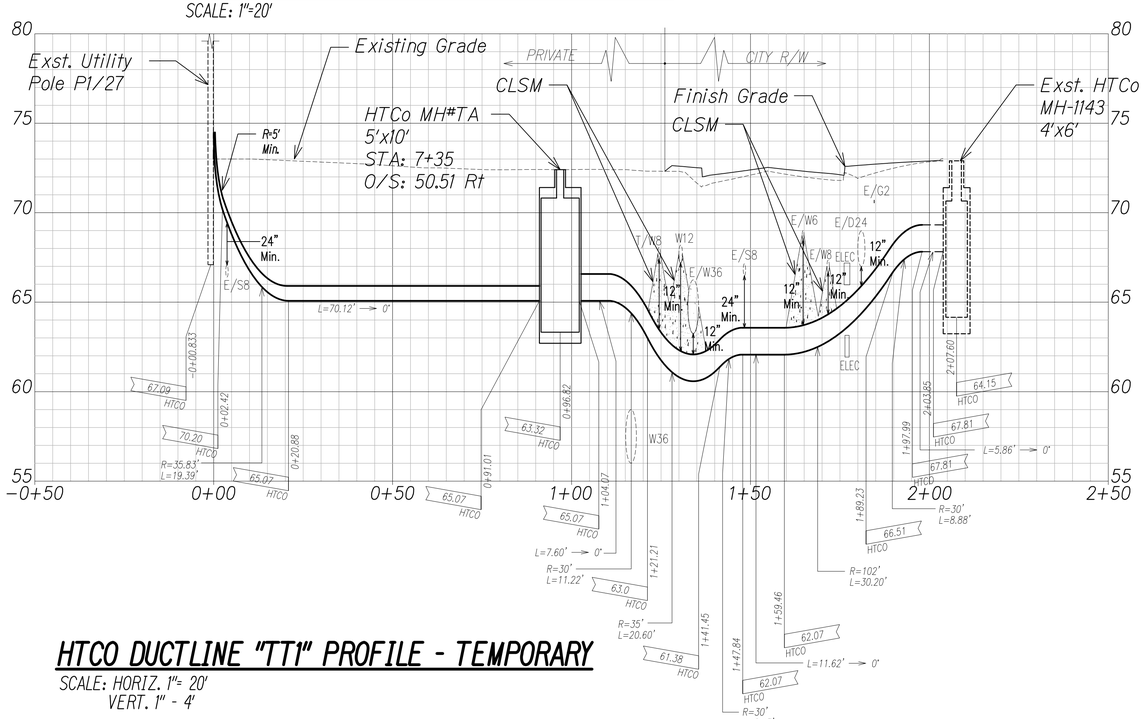


HTCO DUCTLINE "TT1" TEMPORARY

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	44°40'13"	22°20'6.7"	37.90'	15.57'	28.80'	29.55'
2	29°15'38"	14°37'49.1"	38.44'	10.03'	19.42'	19.63'
3	16°34'6"	8°17'2.9"	73.44'	10.69'	21.16'	21.24'

HTCO DUCTLINE "TT1" PLAN - TEMPORARY

SCALE: 1"=20'



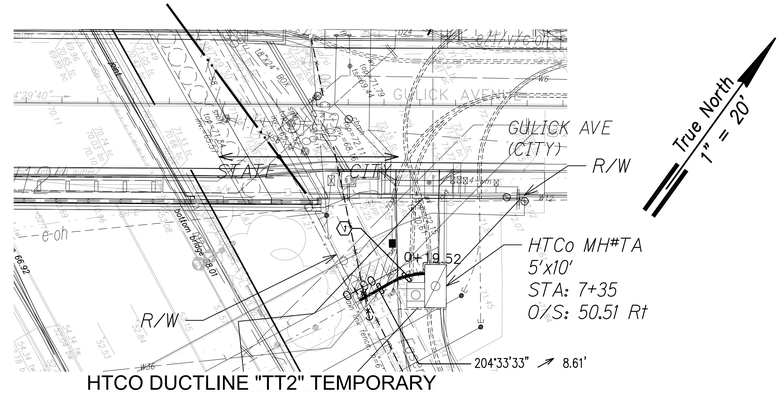
HTCO DUCTLINE "TT1" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

Notes:

1. *See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.*
2. *At Utility Crossings Where Proper Compaction Under A Water Main Is Difficult To Achieve, Provide CLSM In Place Of Backfill Material And Pipe Cushion Material.*

3 *Temporary Pedestrian Bridge. Contractor To Provide Conduit & Supports.*

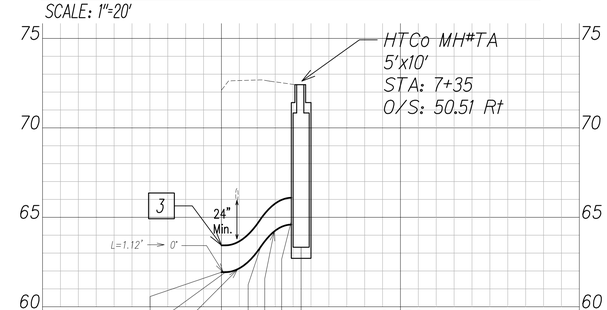


HTCO DUCTLINE "TT2" TEMPORARY

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	29°27'47"	14°43'53.4"	21.23'	5.58'	10.80'	10.92'

HTCO DUCTLINE "TT2" PLAN - TEMPORARY

SCALE: 1"=20'



HTCO DUCTLINE "TT2" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

HAWAIIAN TELCOM DATE

Graphic Scales:

Horiz. 1" = 20' 20' 10' 0 20' 40'

Vert. 1" = 4' 4' 2' 0 4' 8'

Scale in Feet

DUSTIN Y. NAKAMOTO LICENSED PROFESSIONAL ENGINEER No. 14287-E HAWAII, U.S.A.

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SIGNATURE April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HTCO DUCTLINE "TT1" & "TT2" PLAN & PROFILE (TEMP)

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

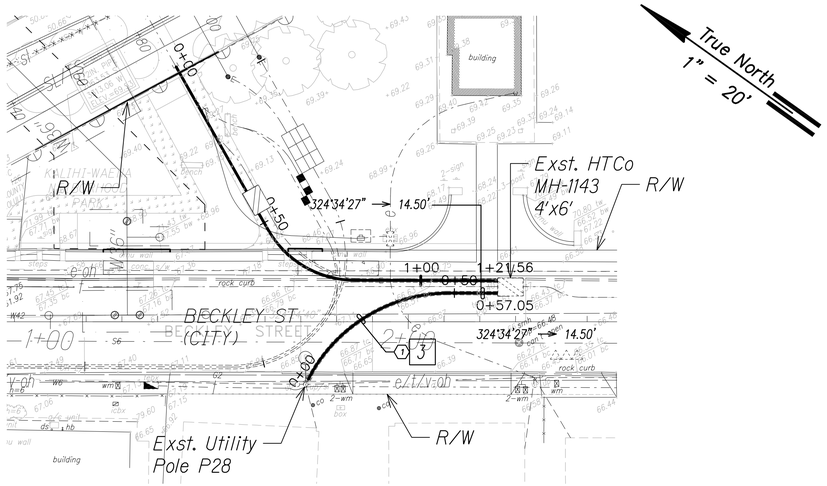
Scale: As Noted Date: December 2022

SHEET No. EK-02 OF 4 SHEETS

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

FILE: Z:\Acad\projects\Y2020\EK02_220050_HTCO-PP-TT1-TT2.dwg saved February 8, 2023

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	177	466

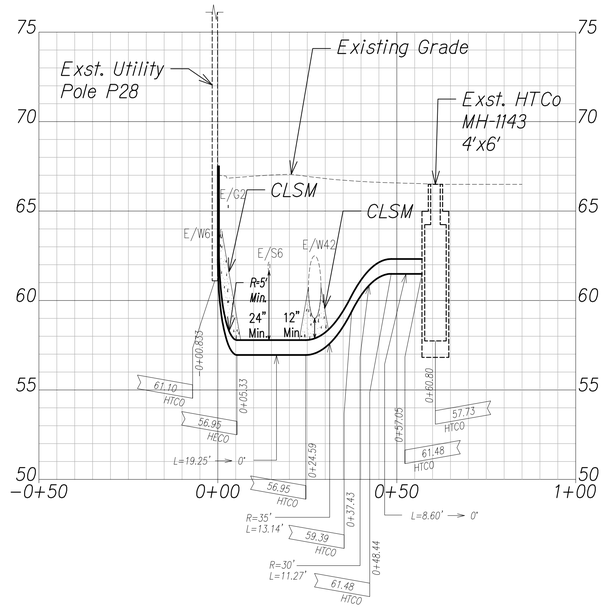


HTCO DUCTLINE "TB1" PERMANENT

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	61°31'41"	30°45'50.4"	44.39'	26.42'	45.41'	47.67'

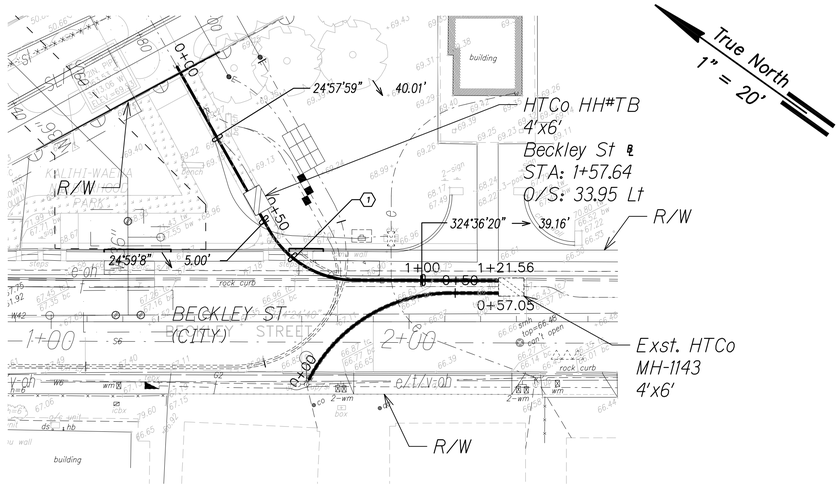
HTCO DUCTLINE "TB1" PLAN - PERMANENT

SCALE: 1"=20'



HTCO DUCTLINE "TB1" PROFILE - PERMANENT

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

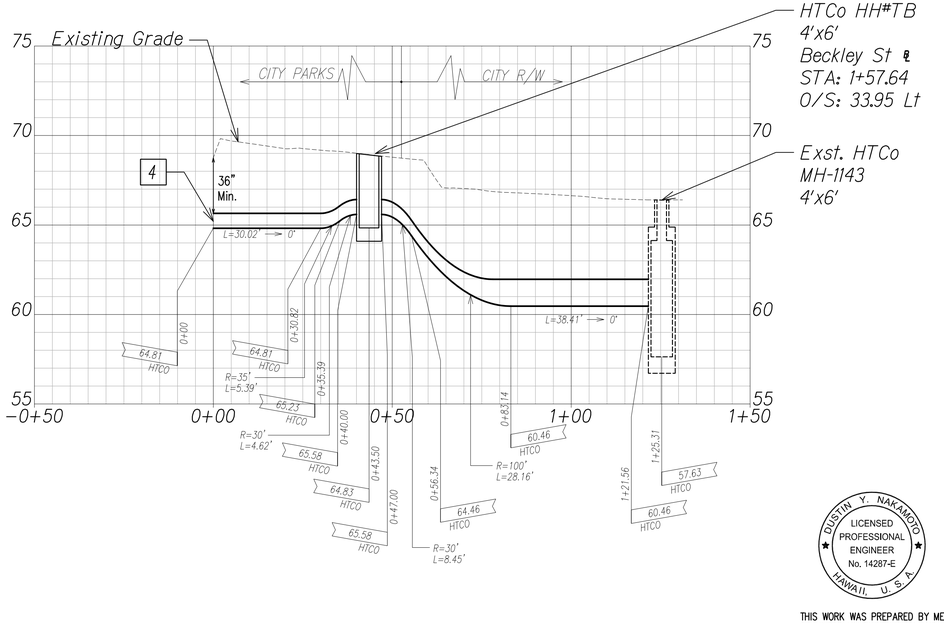


HTCO DUCTLINE "TT3" TEMPORARY

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	61°55'26"	30°57'43.2"	28.16'	16.90'	28.98'	30.44'

HTCO DUCTLINE "TT3" PLAN - TEMPORARY

SCALE: 1"=20'



HTCO DUCTLINE "TT3" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

Notes:

1. See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.
2. At Utility Crossings Where Proper Compaction Under A Water Main Is Difficult To Achieve, Provide CLSM In Place Of Backfill Material And Pipe Cushion Material.
3. Manhole & Ducts To Be Constructed In Temporary Phase, But To Remain As Permanent.
4. Temporary Pedestrian Bridge. Contractor To Provide Conduit & Supports.

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

HAWAIIAN TELCOM DATE

Graphic Scales:

Horiz. 1" = 20' 20' 10' 0 20' 40'

Vert. 1" = 4' 4' 2' 0 4' 8'

Scale in Feet

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

NOTE BOOK | No.

FILE: Z:\Acad\projects\220050\EK03_220050_HTCO-PP-TB1-TT3.dwg saved December 21, 2022

DUSTIN Y. NAKAMOTO LICENSED PROFESSIONAL ENGINEER No. 14287-E 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, 2024 EXPIRATION DATE OF THE LICENSE

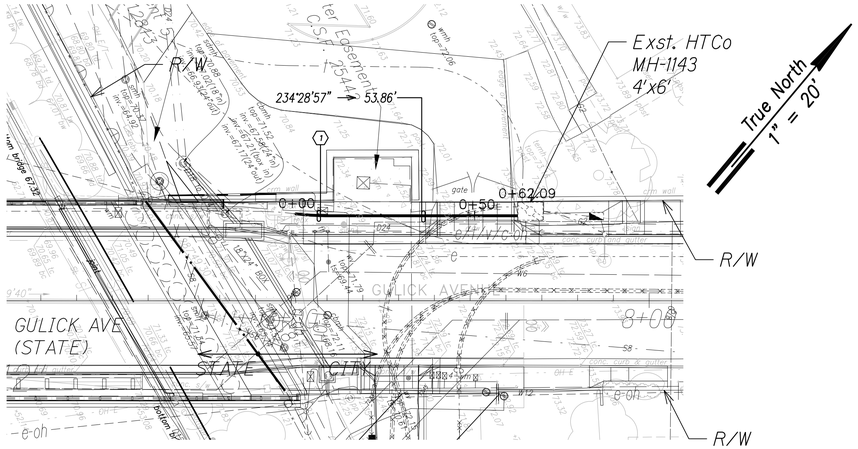
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HTCO DUCTLINE "TB1" & "TT3"
PLAN & PROFILE (Perm & TEMP)
INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

SHEET No. EK-03 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	178	466

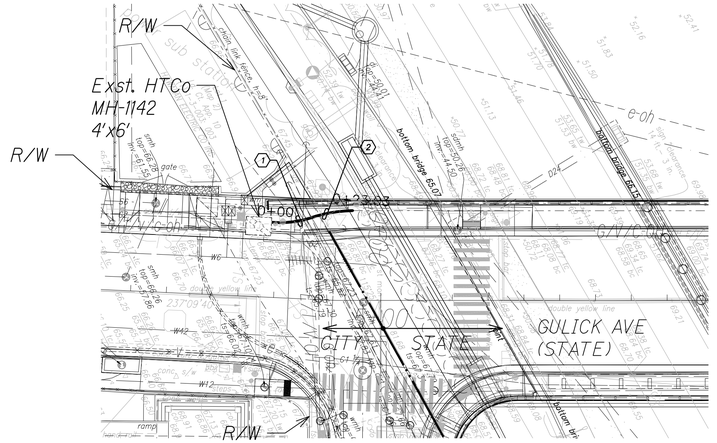


HTCO DUCTLINE "TC1" PERMANENT

CURVE DATA						
ID	Δ	Δ/ 2	RADIUS	T	C	Lc
1	5°10'16"	2°35'7.9"	91.15'	4.12'	8.22'	8.23'

HTCO DUCTLINE "TC1" PLAN - PERMANENT

SCALE: 1"=20'



HTCO DUCTLINE "TC2" PERMANENT

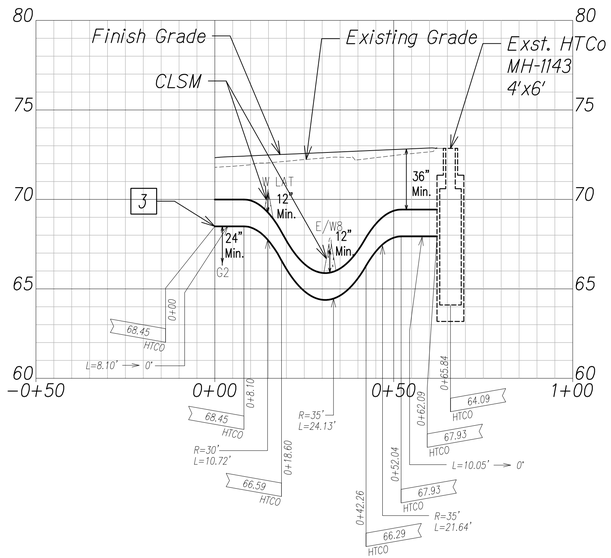
CURVE DATA						
ID	Δ	Δ/ 2	RADIUS	T	C	Lc
1	25°19'27"	12°39'43.4"	28.79'	6.47'	12.62'	12.73'
2	14°34'50"	7°17'25.0"	40.52'	5.18'	10.28'	10.31'

HTCO DUCTLINE "TC2" PLAN - PERMANENT

SCALE: 1"=20'

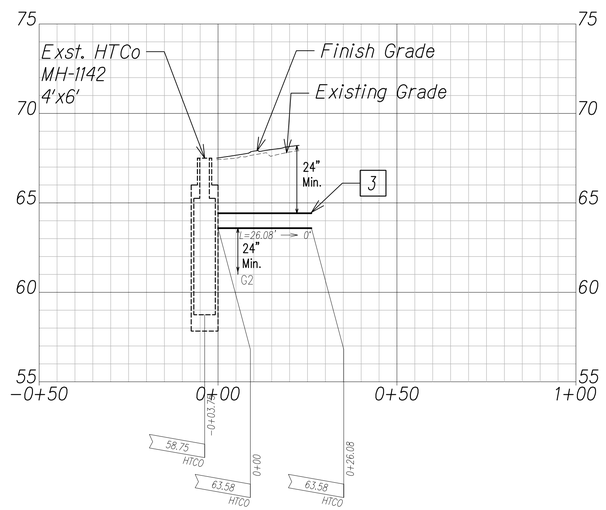
Notes:

1. See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.
2. At Utility Crossings Where Proper Compaction Under A Water Main Is Difficult To Achieve, Provide CLSM In Place Of Backfill Material And Pipe Cushion Material.
3. See Structural Plans for Bridge Crossing.



HTCO DUCTLINE "TC1" PROFILE - PERMANENT

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'



HTCO DUCTLINE "TC2" PROFILE - PERMANENT

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

Graphic Scales:

Horiz. 1" = 20' 20' 10' 0 20' 40'

Vert. 1" = 4' 4' 2' 0 4' 8'

Scale in Feet

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

HAWAIIAN TELCOM DATE

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
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, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HTCO DUCTLINE "TC1" & "TC2" PLAN & PROFILE (PERM)

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

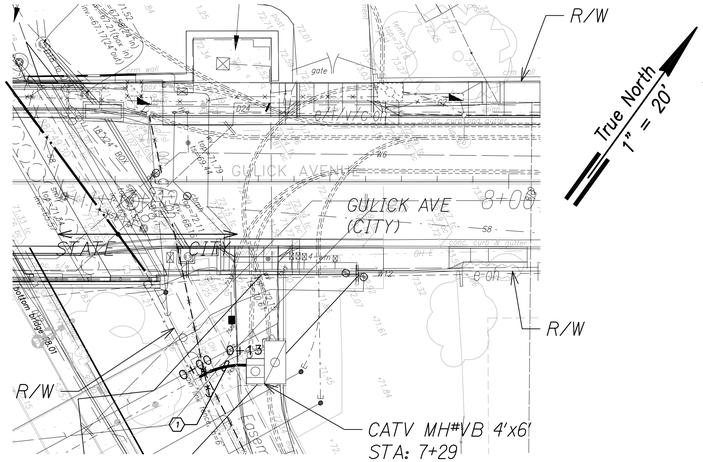
Scale: As Noted Date: December 2022

SHEET No. EK-04 OF 4 SHEETS

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

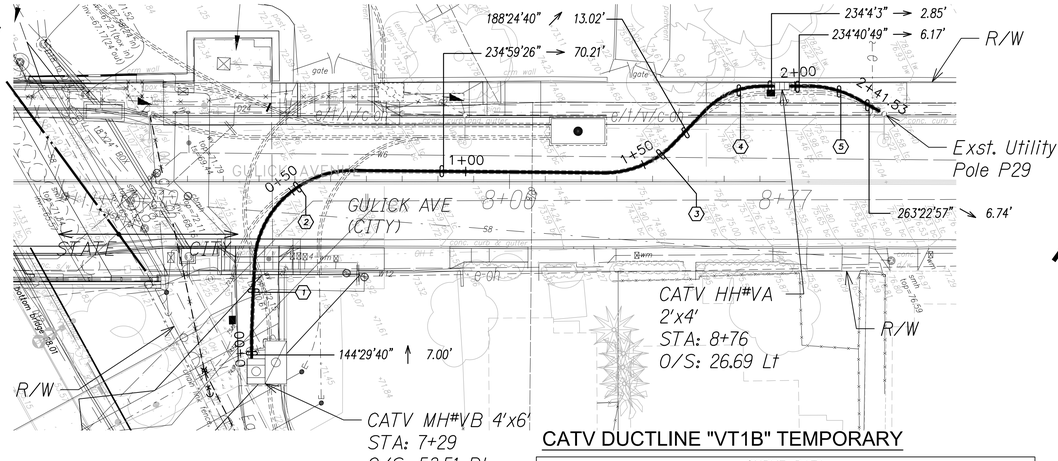
FILE: Z:\Acad\projects\220050\EK04_220050_HTCO-PP-TC1-TC2.dwg saved December 21, 2022

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	179	466



CATV DUCTLINE "VT1A" TEMPORARY

CURVE DATA						
ID	Δ	Δ/2	RADIUS	T	C	Lc
1	33°51'27"	16°55'43.5"	22.63'	6.89'	13.18'	13.37'



CATV DUCTLINE "VT1B" TEMPORARY

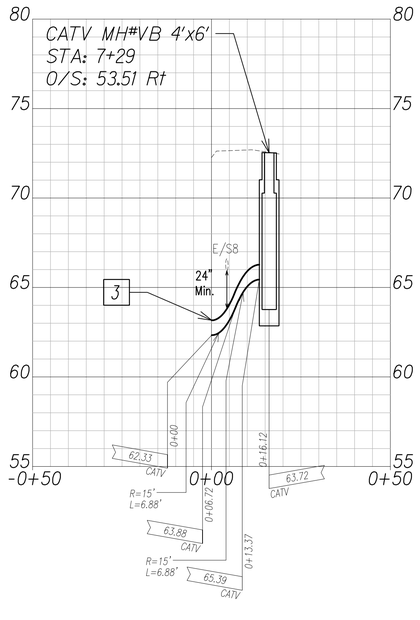
CURVE DATA						
ID	Δ	Δ/2	RADIUS	T	C	Lc
1	0°55'33"	0°27'46.6"	1331.91'	10.76'	21.52'	21.52'
2	84°40'26"	42°20'12.8"	27.40'	24.97'	36.91'	40.50'
3	44°25'50"	22°12'54.8"	26.87'	10.97'	20.32'	20.84'
4	48°39'4"	24°19'31.8"	21.80'	9.85'	17.96'	18.51'
5	27°35'42"	13°47'50.9"	28.51'	7.00'	13.60'	13.73'

Notes:

1. See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.
2. At Utility Crossings Where Proper Compaction Under A Water Main Is Difficult To Achieve, Provide CLSM In Place Of Backfill Material And Pipe Cushion Material.
3. Temporary Pedestrian Bridge. Contractor To Provide Conduit & Supports

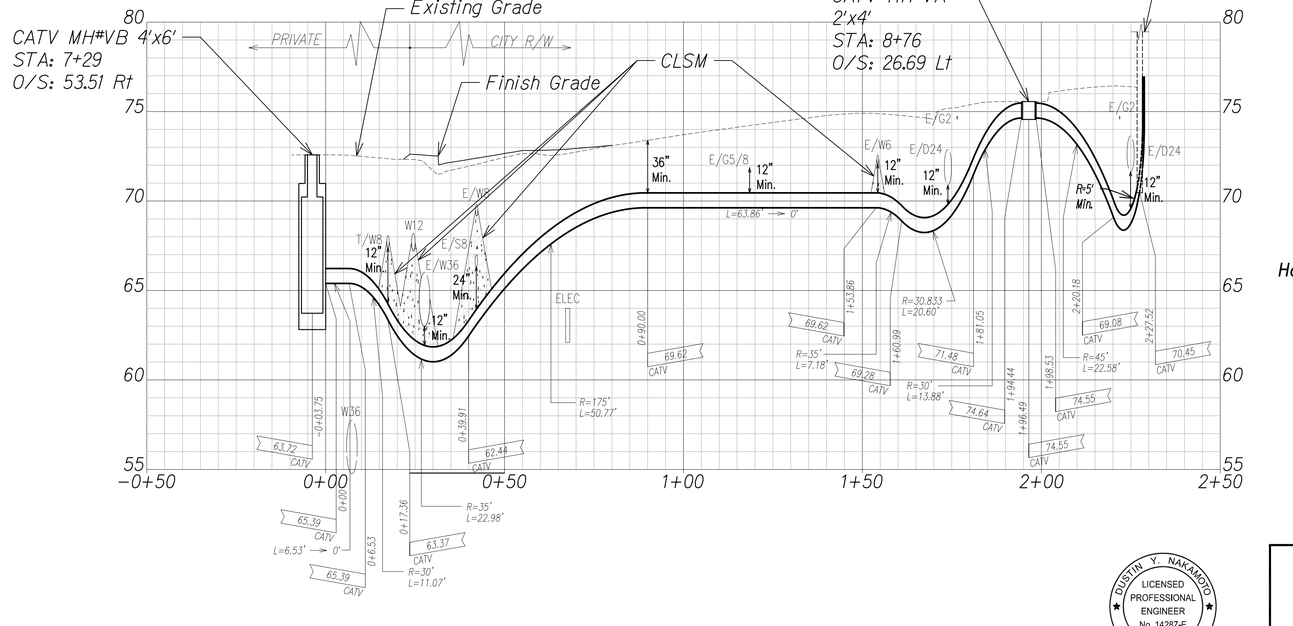
CATV DUCTLINE "VT1A" PLAN - TEMPORARY

SCALE: 1"=20'



CATV DUCTLINE "VT1B" PLAN - TEMPORARY

SCALE: 1"=20'



APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP — DATE
(FOR CONSTRUCTION WITHIN CITY R/W ONLY

SPECTRUM OCEANIC — DATE

Graphic Scales:

Horiz. 1" = 20' 20' 10' 0 20' 40'

Vert. 1" = 4' 4' 2' 0 4' 8'

Scale in Feet

CATV DUCTLINE "VT1A" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

CATV DUCTLINE "VT1B" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

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

FILE: Z:\Acad\projects\220050\EL01_220050_CATV-PP-VTA-VTB.dwg saved December 21, 2022

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

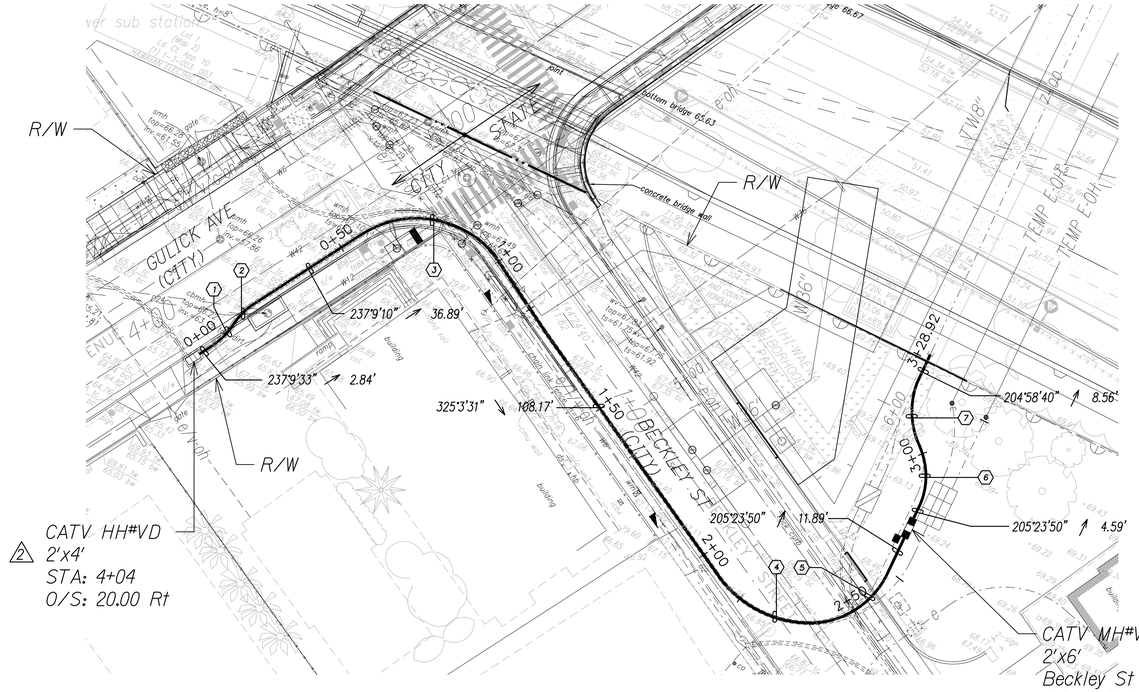
CATV DUCTLINE "VT1A" & "VT1B"
PLAN & PROFILE (TEMP)

INTERSTATE ROUTE HI (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-HI-1(280)

Scale: As Noted Date: December 2022

SHEET No. EL-01 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	ADD. 180	466



CATV DUCTLINE "VT2" PLAN - TEMPORARY

SCALE: 1"=20'

True North
1" = 20'

CATV DUCTLINE "VT2" TEMPORARY

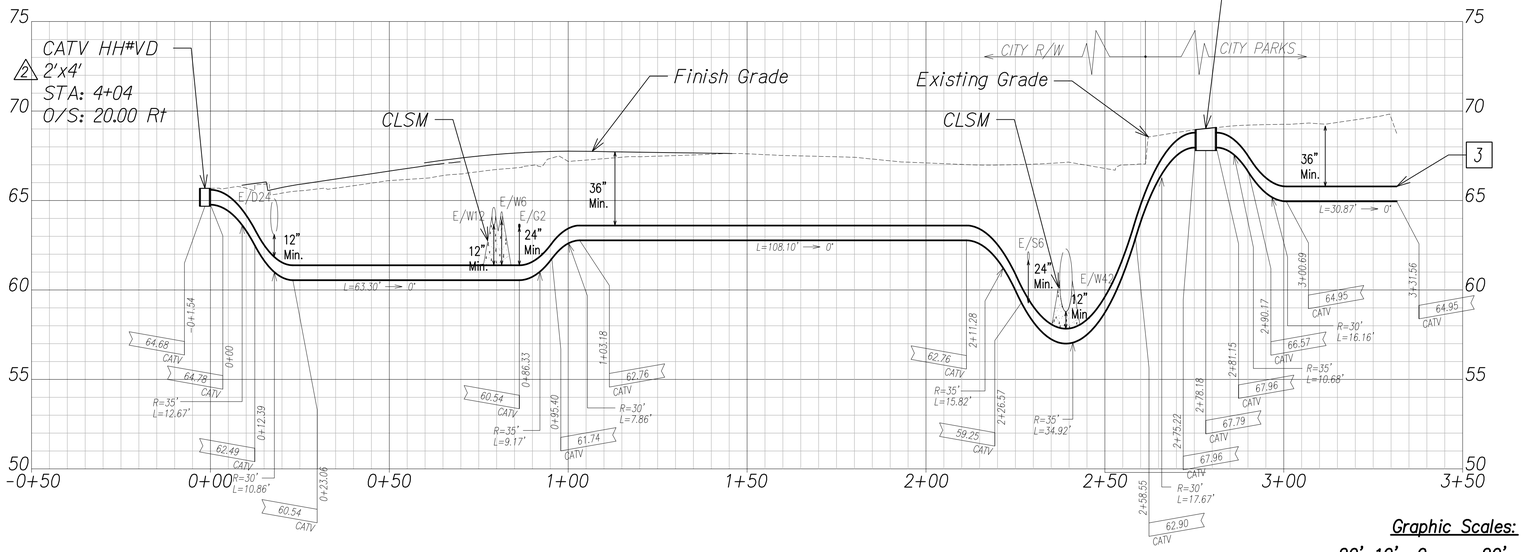
CURVE DATA

ID	Δ	Δ / 2	RADIUS	T	C	Lc
1	22°11'23"	11°5'41.6"	23.29'	4.57'	8.96'	9.02'
2	23°3'48"	11°31'54.0"	20.28'	4.14'	8.11'	8.16'
3	82°35'59"	41°17'59.6"	28.28'	24.84'	37.33'	40.77'
4	61°5'24"	30°32'42.1"	31.50'	18.59'	32.02'	33.59'
5	56°17'2"	28°8'31.1"	24.35'	13.03'	22.97'	23.92'
6	46°10'32"	23°5'16.2"	20.65'	8.80'	16.20'	16.64'
7	44°53'39"	22°26'49.7"	22.85'	9.44'	17.45'	17.90'

Notes:

1. See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.
2. At Utility Crossings Where Proper Compaction Under A Water Main Is Difficult To Achieve, Provide CLSM In Place Of Backfill Material And Pipe Cushion Material.

[3] Temporary Pedestrian Bridge. Contractor To Provide Conduit & Supports



CATV DUCTLINE "VT2" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

Graphic Scales:

Horiz. 1" = 20' — 20' 10' 0 20' 40'

Vert. 1" = 4' — 4' 2' 0 4' 8'

Scale in Feet

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) DATE

SPECTRUM OCEANIC DATE

DUSTIN Y. NAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 14287-E
HAWAII, U.S.A.

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

DATE	REVISION
4/7/23	[2] Add. 2 – Revised HH

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CATV DUCTLINE "VT2"
PLAN & PROFILE (TEMP)

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted Date: December 2022

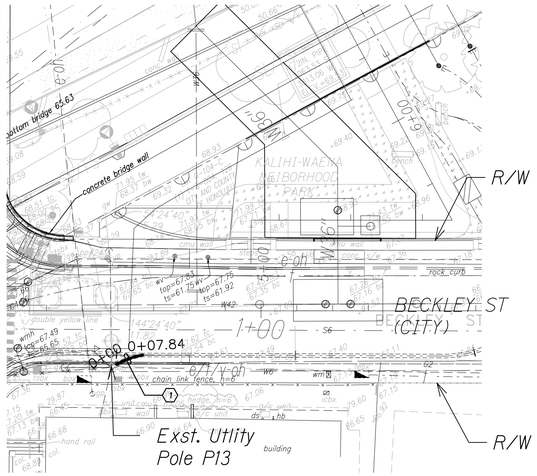
SHEET No. EL-02 OF 3 SHEETS

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

FILE: Z:\Acad\projects\220050\EL02_220050_CATV-PP-VT2.dwg saved April 13, 2023

ADD. 180

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-HI-1(280)	2023	181	466

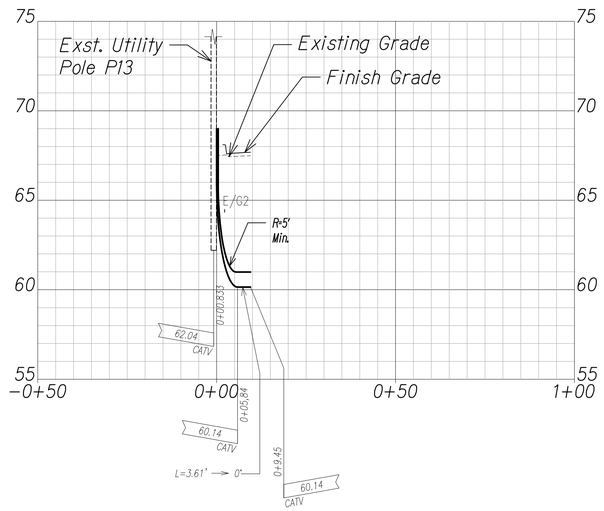


CATV DUCTLINE "VT3" TEMPORARY

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
①	43°14'19"	21°37'9.7"	45.93'	18.20'	33.85'	34.66'

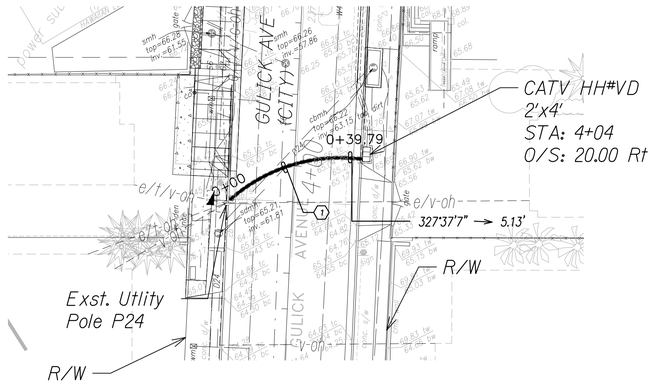
CATV DUCTLINE "VT3" PLAN - TEMPORARY

SCALE: 1"=20'



CATV DUCTLINE "VT3" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

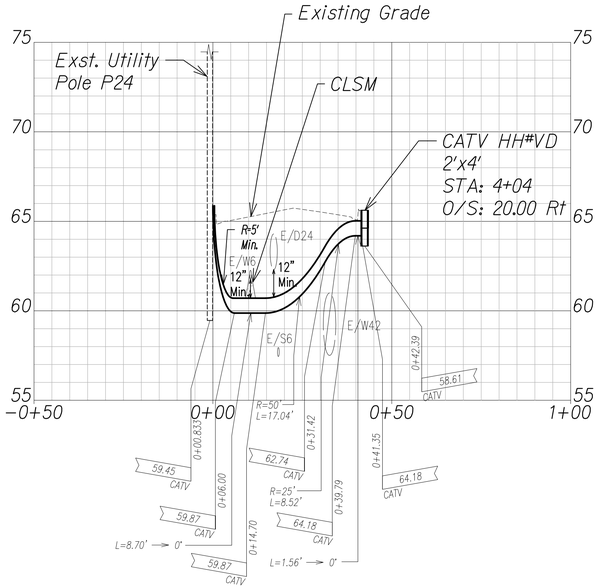


CATV DUCTLINE "VT4" TEMPORARY

CURVE DATA						
ID	Δ	Δ / 2	RADIUS	T	C	Lc
①	20°24'58"	10°12'29.2"	22.03'	3.97'	7.81'	7.85'

CATV DUCTLINE "VT4" PLAN - TEMPORARY

SCALE: 1"=20'



CATV DUCTLINE "VT4" PROFILE - TEMPORARY

SCALE: HORIZ. 1"= 20'
VERT. 1" - 4'

Notes:

1. See Civil Drawings For All Concrete Jacketing, CLSM Installation, Removal & Capping of Wet Utilities.
2. At Utility Crossings Where Proper Compaction Under A Water Main Is Difficult To Achieve, Provide CLSM In Place Of Backfill Material And Pipe Cushion Material.

APPROVED BY

CHIEF, CIVIL ENGINEERING BRANCH, DPP (FOR CONSTRUCTION WITHIN CITY R/W ONLY) — DATE

SEPCTRUM OCEANIC — DATE

Graphic Scales:

Horiz. 1" = 20' 20' 10' 0 20' 40'

Vert. 1" = 4' 4' 2' 0 4' 8'

Scale in Feet

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

FILE: Z:\Acad\projects\220050\EL03_220050_CATV-PP-VT3-VT4.dwg saved December 21, 2022

DUSTIN Y. NAKAMOTO LICENSED PROFESSIONAL ENGINEER No. 14287-E HAWAII, U.S.A.

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SIGNATURE — April 30, 2024 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CATV DUCTLINE "TB1" & "TT3"
PLAN & PROFILE (TEMP)

INTERSTATE ROUTE H1 (EB) IMPROVEMENTS
Ola Lane Overpass to Likelike Hwy Off-Ramp
Project No. NH-H1-1(280)

Scale: As Noted — Date: December 2022

SHEET No. EL-03 OF 3 SHEETS