

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 (dosh).
- C. When Trench Excavation Is Adjacent To Existing Structures Or Facilities, The Contractor Is Responsible For Properly Sheeting And Laterals (do Not Straddle). 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 6. Contractor Shall Verify Sewer Lateral Locations With Civil Sheets. From Damage
- D. As Required By The City And County Of Honolulu, The Contractor Shall Provide Off-duty Police Officers To Control The Flow Of Traffic.
- 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.
- 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.
- H. Adhere To "Hawaiian Telcom Standard Specification For Placing Telephone Systems", Dated January 2007.

Notes For Bedding Beneath Underground Structures:

- 1. Boxes And Structures Without Bottom Slabs (Open Base): 4" Minimum Thickness Of No. 3 Fine Gravel: ASTM C-33-03, #67.
- 2. Boxes And Structures With Bottom Slabs (Closed Base): 4" Minimum Thickness Of Clean, Well-Graded Granular Material With A Maximum Particle Size Of Three (3) Inches. And Less Than Three (3) Percent Passing The No. 200 Sieve Or Select Borrow.
- 3. Provide Select Granular Bedding Beneath Handholes Shall Be Placed In Relatively Uniform Lifts No Greater Than Eight (8) Inches In Loose Thickness, Moisture Conditioned To Optimum Moisture Content, And Uniformly Compacted To At Least Ninety (90) Percent Of The Maximum Dry Density (ASTM D1557-02). Contractor To Schedule With Owner's Geotechnical Inspector For Compaction And Bedding Installation. Pullbox/Handholes To Be Installed Flush With Walkway.

- 1. 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.
- 2. Provide 5' Minimum Clear Between Street Light Poles & Sewer
- 3. Provide 3' Minimum Clear Between Pullboxes & Sewer Laterals.
- 4. Provide 6' Minimum Clear Between Transformer Pads & Sewer
- 5. Provide 3' Minimum Clear Between Ductlines & Sewer Lines.
- 7. Provide 3' Minimum Horizontal Clear & 6" Vertical Clear Between Water Lines & All Electrical Systems.
- 8. Provide 6" Minimum Vertical Clearance Between Ductlines & Drainlines
- 9. Provide 12" Minimum Clearance Between Ductlines & Drainlines/drainage Structures.
- 10. Contractor Shall Contact Jon Okimoto At 768-8416 Prior To Start Of Work.

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7.		SYMBOL		DESCRIPTION	HAWAII	HAW.	
	<u>EXST</u>	DEMO	<u>NEW</u>		Abbrevio		
		-*		Underground Conduit, 3/4" Min. Conduit. Min. 3"	Α		١n
				Conc Encasement.	Brk	_	
	e-e-	- *-0-8	 +	Electrical Underground Ductline. "A" Denotes Duct	Ckt	-	
	رنے	نا		Section A, "2—3E" Denotes (2) 3" H.E. Ducts. See	Comm		
	K-3E,	¥-35	(A X2-3E)	Sht E-06 For Duct Sections.	Conn		
	1	- ×- -×-	—ı—	Street Light Conduit/Cables	Ctrl		
				Sawcut Existing A.C. Pavement & Concrete	Det		
				Sidewalk Prior To Trench Excavation, Restore	Disc		
				Subbase, Base Course, Pavement, & Concrete	E.A.		
	======	-*-*-		Sidewalk Per HDOT Requirements. Thickness Shall	Exst Fut		
				Match Exst. See Civil Sheets For Restoration	Fut Fxt		
				Details.	GFCI		
				H.E. 2' X 4' X 2'-8"d Precast Concrete Pullbox,	Gnd		
	CE3	K. X 5		W/ Precast Conc. Cover, Per H.E. Std Dwg No.	J-box		
	5-2	×-2		103782.	Loc		
				Free-Standing H.E. Metering Pedestal 3'-0" X	Lt		
	r	r	r	1'-3". Dashed Line Indicates Clear	Mech	A	1e
ic,			i I i i i	Space/easement (5'-3" X 8'-0"). See Sheet	Mtd	٨	10
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	0(1)	×-×-(\frac{1}{4})	$ \circ $	Aluminum Pole, Base & Bracket Arm Model	Recep		
			<u> </u>	CL 1 - CL L 1 - L 100W 7000L 1 - L 1	Req		
		_		State Street Light, 120W, 3000k, Led Luminaire,	Schd		
	~ €€€	×- })</td <td> </td> <td>Aluminum Pole, Base & Bracket Arm Model ERS1-0-16-E1-30-A-GRAY-R U.I.O. See Detail</td> <td>Sht Sa</td> <td>-</td> <td></td>		Aluminum Pole, Base & Bracket Arm Model ERS1-0-16-E1-30-A-GRAY-R U.I.O. See Detail	Sht Sa	-	
		**		F-08 / F-09.	Surf		
		0 1 1 1		L-V0 / L-V3.	Sw		
	Fallinment	Schedule.			O.,	-	

Equipment Schedule:

2' x 4' HE Handhole - 2' x 4' Precast Concrete Handhole with Precast Concrete Cover, Provided in Accordance with HE Standard Drawing

Communication `omm Connection/connected Control/controlled trl Detail et) Disconnect Each Existina Future ut Fixture FCI Ground Fault Current Interrupting nd Ground -box Junction Box Location Mechanical lech Mounted/Mounting ltd Nominal lom Panel 'nl Photovoltaic Receptacle Required Schedule ht Sheet sauare ìq urf Surface Switch Unless Indicated Otherwise U.I.O. Weatherproof Xfmr Transformer

FED. ROAD STATE

FISCAL YEAR BHEET NO.

61D-01-23

Amps

Circuit

Breaker(s)

2024 78

	CONDUIT SCHEDULE
3E)	H.E. 1—3"C, Pvc Schd. 40, Concrete Encased
	Secondary Power 1-2"C, Schd.

40 Concrete Encased ight 1-1 1/2"C, Schd.40,

Concrete Encased



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION

SLAND MAP, NOTES, AND SYMBOL LIST

KAILUA ROAD INTERSECTION IMPROVEMENTS Vicinity of Uluoa Street and Ulumanu Drive Project No. 61D-01-23 Scale: As Noted

Date: DEC, 2023

SHEET No. E-01 OF 10 SHEETS

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Hawaiian Electric Company (HECo) Notes: Rev. 08/04/21

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.

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

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.

CautionIII Flectrical HazardIII

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.

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 Flectric 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.

Pole Bracina

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 It's 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 Flectric 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.

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).

Excavations

When Trench Excavation is Adjacent to or Beneath Hawaiian Electric's Existing Structures or Facilities, the Contractor is Responsible for:

- Arranging for Hawaiian Electric Standby Personnel to Observe Work at Contractor's Cost.
- 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.
- Properly Supporting Existing Structures or Facilities with Beams, Struts, Under-Pinnings, or Other Necessary Methods to Fully Protect it from Damage.
- Backfilling with Proper Backfill Material Including Special Thermal Backfill where Existing (Refer to Engineering Division for Thermal Backfill Specifications).

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 Flectric'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.

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.

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TOTAL SHEET

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.

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 \$\psi\$ Hawaiian Electric of Any Heat Sources (Power Cable Duct Bank, Steamline, Etc.) Encountered that are Not Properly Identified on the Drawing.

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.



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

HE NOTES 1

KAILUA ROAD INTERSECTION IMPROVEMENTS Vicinity of Uluoa Street and Ulumanu Drive Project No. 61D-01-23

SHEET No. E-02 OF 10

Scale: As Noted

Date: DEC, 2023 SHEETS

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Hawaiian Electric Company (HECo) Notes: (Continued) Rev. 10/21/20

Additional Notes when Work Involves Construction of Hawaiian Electric Facilities

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.

Authority

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

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.

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 Flectric 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.

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.

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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

Guidelines for Minimum Horizontal (parallel) Clearances Between Hawaiian Electric

- 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	tor	Minimum	Vertica	i (Crossing)	Clearances	Hawaiian	Electric
		and	Other :	Underground	d 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.
- 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.



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

HE NOTES 2

KAILUA ROAD INTERSECTION IMPROVEMENTS Vicinity of Uluoa Street and Ulumanu Drive Project No. 61D-01-23

SHEET No. E-03 OF 10

Date: DEC, 2023

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