# GENERAL NOTES:

- Obtain All Standards and Drawings Related to this Project From the Utility Companies. Verify that the Utility Company's Project Drawings are the Same as the Contract Drawings. Notify the Engineer of any Differences Between Them. If Differences Exist, Obtain a Resolution Prior to Proceeding with the Work Which is Affected.
- 2. Prior to Starting Work, Notify the Utility Companies in Writing When Work Will Start, and Provide Them with a Construction Schedule.
- MECo Maui Electric Company HECo - Hawaiian Electric Company

Finished Grade —

Concrete Jacket, 3000

Strength in 28 Days.—

PSI Compressive

PVC 40-

# SITE ELECTRICAL SYMBOLS

Wood Pole Guy Anchor Meter/Main, See

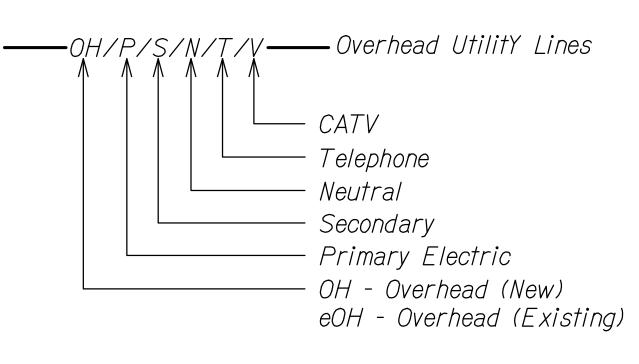
Street Light

Equipment Connection

— - — Underground Ductline Conduit \$\phi\$ Wiring Concealed Within Concrete Structure

---- Exposed Conduit PVC 40 or PVC 80 as Indicated \$\psi\$ Wiring

— Juctline, Stub-out



—> Note Indicator



DIST. NO.

ONE-LINE SYMBOLS

Transformer

Watt-Hour Meter

Ground Connection

STATE

HAW.

PROJ. NO.

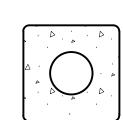
3400A-01-20

— Duct Section "A" See Duct Section Details — Conduit Size — System "S" Secondary Electric - Number of Ducts

FISCAL YEAR

2024

25



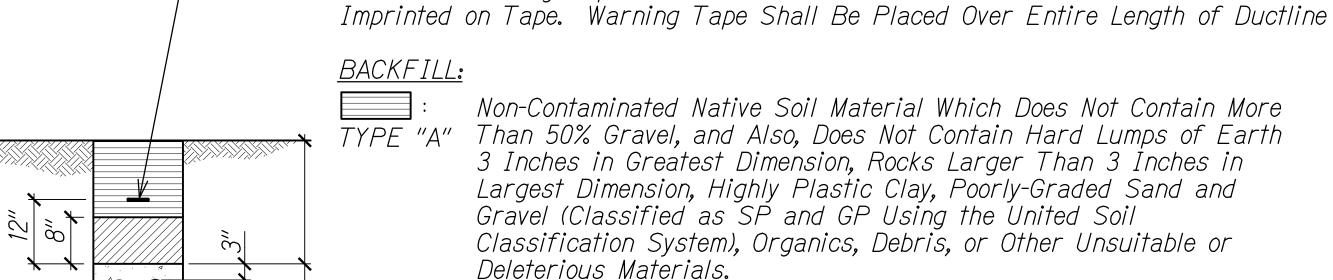
DUCT SECTION (

DUCT SECTION DETAIL

NOTES:

1. For Dimensions, See





Select Granular Material Passing a One (1) Inch Sieve Such as Three-Quarter (3/4) Inch Aggregate Base Course Gravel, S4C or Material That is Free of Organics, Debris or Highly-Plastic Clay and Meets the Following Gradation:

Traceable Warning Tape With "Caution-Electric/Communications Cable Below"

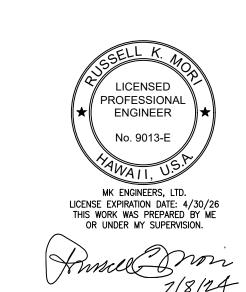
SIEVE SIZE	PERCENT PASSING BY WEIGHT
1''	100
3/4"	90 - 100
No. 4	35 - 100
No. 40	10 - 30
No. 200	3 - 15

See Note 2 —

# TYPICAL DUCT SECTION (DIRECT BURIED)

NOTES:

1. Provide 3" Separation Between Ducts of Same System and 12" Separation Between Electrical Ducts and Ducts of Different Systems.

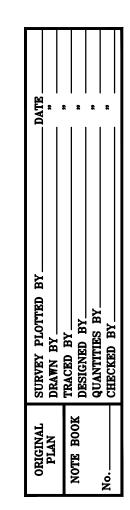


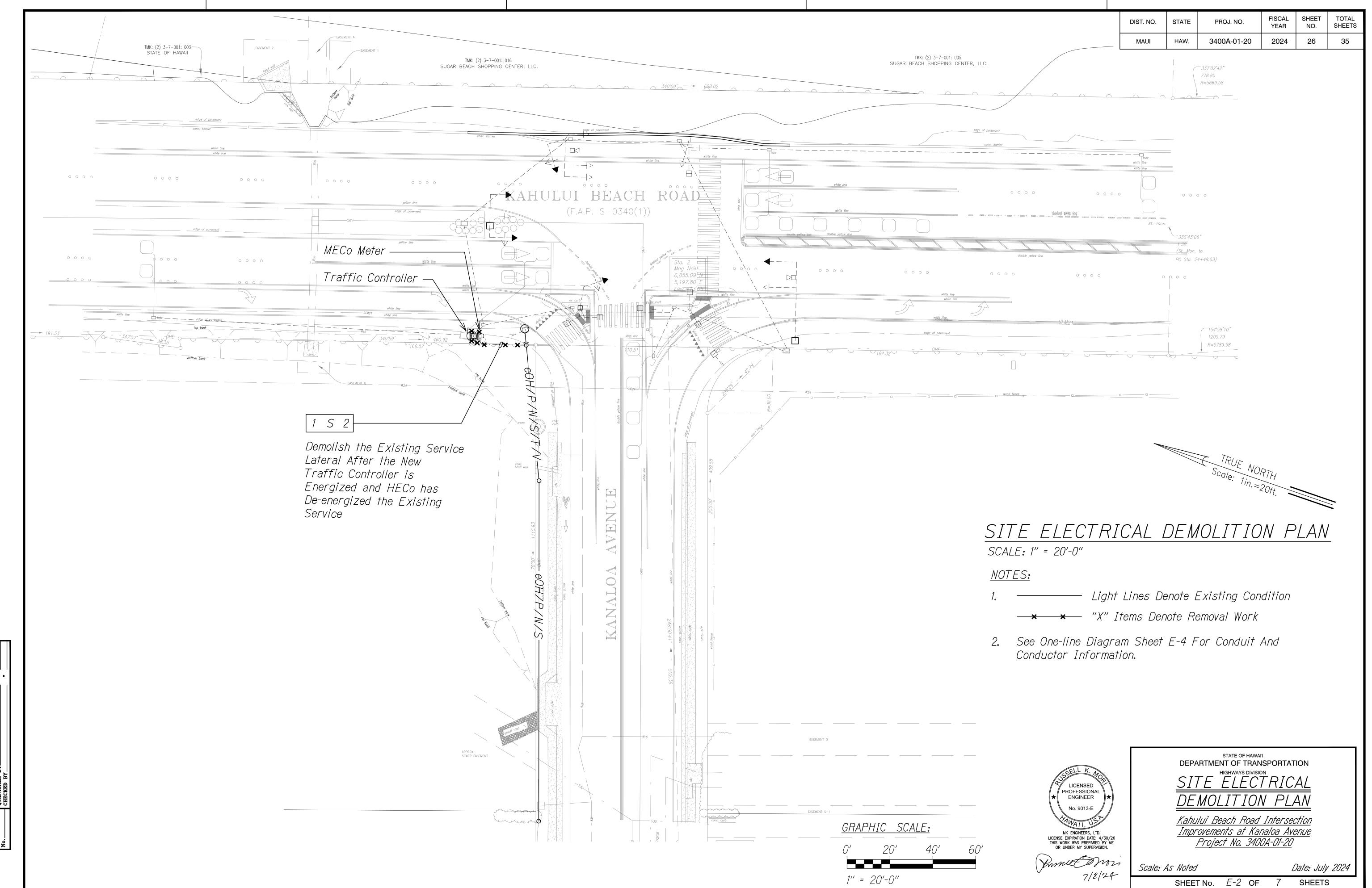
#### STATE OF HAWAI'I **DEPARTMENT OF TRANSPORTATION** SITE ELECTRICAL SYMBOLS NOTES AND DETAILS

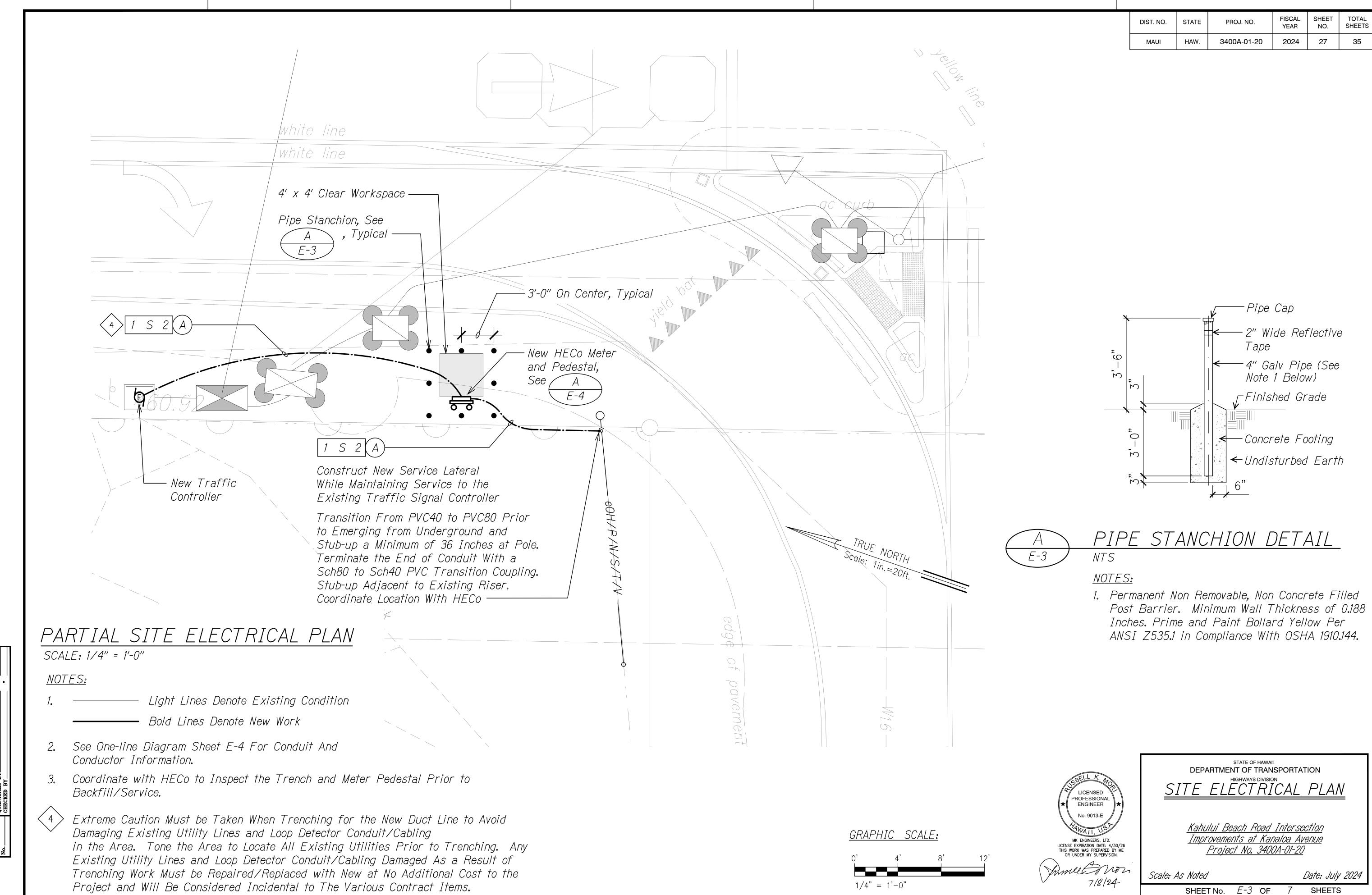
Kahului Beach Road Intersection Improvements at Kanaloa Avenue Project No. 3400A-01-20

Scale: As Noted

Date: July 2024 SHEET No. E-1 OF 7 SHEETS

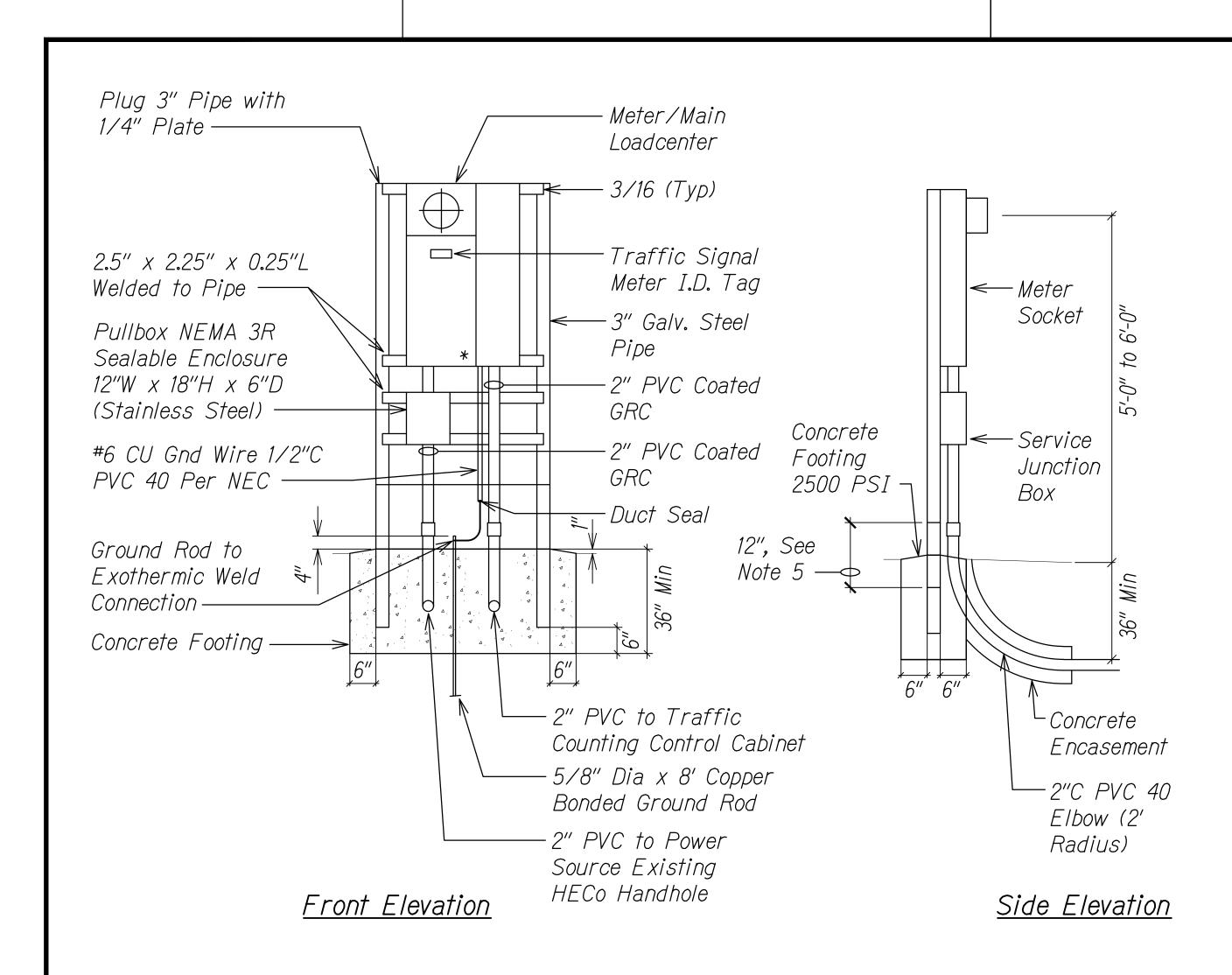






27

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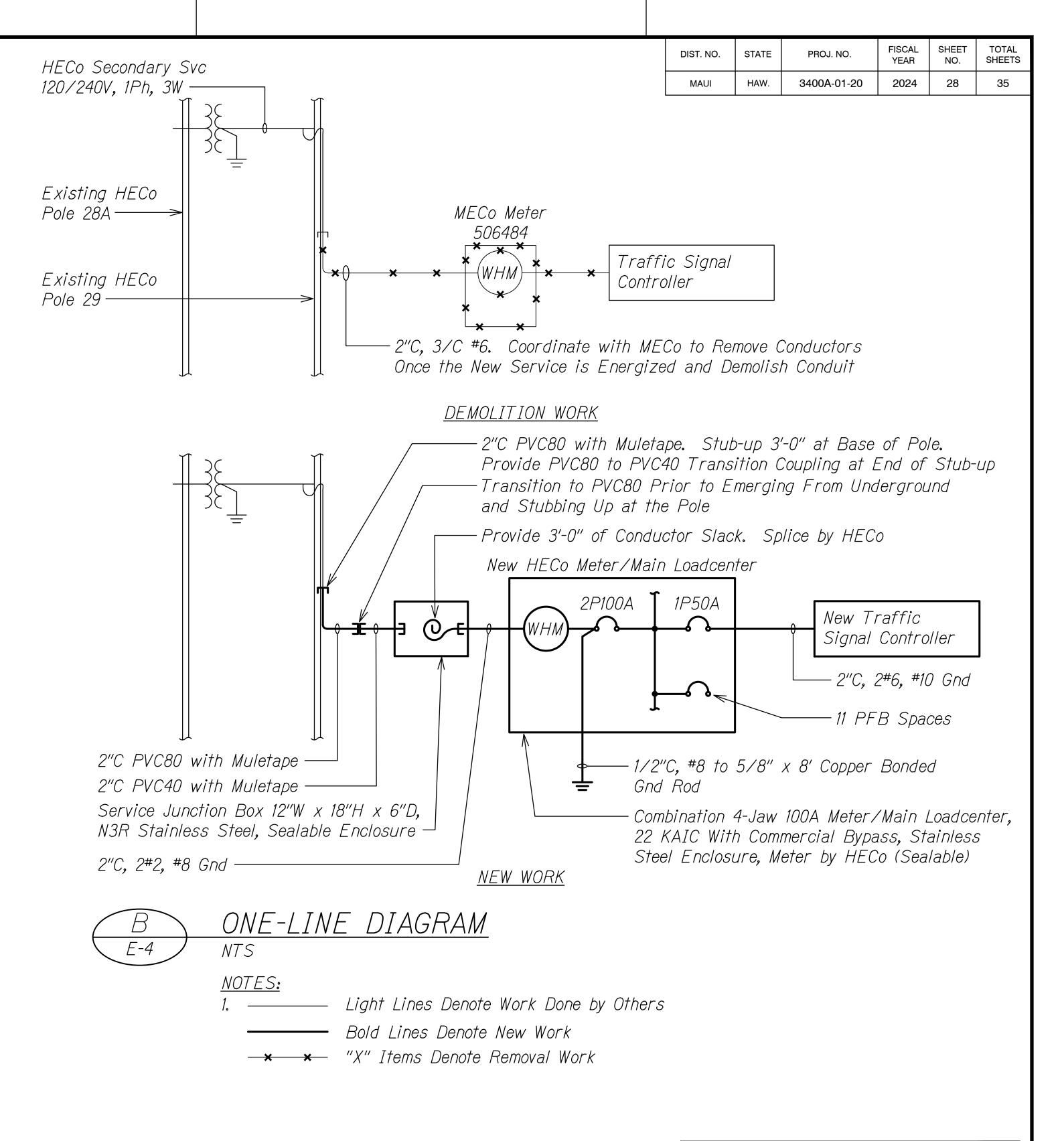


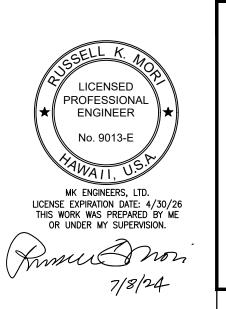
# TYPICAL METER PEDESTAL FOR UNDERGROUND SERVICE ELECTRICAL SERVICE DETAIL

E-4

## NOTES:

- 1. Pedestal Shall be Hot Dipped Galvanized After Fabrication.
- 2. All Fastening Bolts, Nuts, and Washers Shall be Stainless Steel.
- 3. Provide 4 Feet Clearance in Front of Meter.
- 4. \* Denotes Sealable, NEMA 3R.
- 5. Coat Portion of Post 6" Above \$ Below Conc Foundation with Two Coats Asphaltic Based Paint or Tape with Electrical Tape, Half Lapped.
- 6. Meter Shall be Provided by HECo.
- 7. Meter Pedestal Shall be Installed Within State Right-of-Way.





# DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TYPICAL METER PEDESTAL DETAIL & ONE-LINE DIAG

Kahului Beach Road Intersection Improvements at Kanaloa Avenue Project No. 3400A-01-20

Scale: As Noted

SHEET No. E-4 OF 7 SHEETS

## HAWAIIAN ELECTRIC COMPANY NOTES:

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 Customer Installations Division (543-5654) Located at 820 Ward Avenue, 4th Floor, a Minimum of Ten (10) Working Days Prior to Starting Construction.

4. Caution!!! Electrical Hazard!!!

Existing Hawaiian Electric Overhead and Underground Lines are Energized and Will Remain Energized During Construction Unless Prior Special Arrangements Have Been Made with Hawaiian Electric. Only Hawaiian Electric Personnel are to Handle These Energized Lines and Erect Temporary Guards to Protect These Lines from Damage. The Contractor Shall Work Cautiously at all Times to Avoid Accidents and Damage to Existing Hawaiian Electric Facilities, Which Can Result in Electrocution.

5. Overhead Lines

State Law (OSHA) Requires that a Worker and the Longest Object He or She May Contact Cannot Come Closer than a Specified Minimum Radial Clearance When Working Close to or Under Any Overhead Lines. It is the Contractor's Responsibility to be Informed of and Comply with the Law.

At Any Time Should the Contractor Anticipate that His Work Will Result in the Need to Encroach Within the Minimum Required Clearance as Stated in the Law, the Contractor Shall Notify Hawaiian Electric at Least Three (3) Months Prior to the Planned Encroachment so that, if Feasible, the Necessary Protections (e.g. Relocate or De-Energize Hawaiian Electric Lines) can be Investigated. Hawaiian Electric May also be Able to Blanket its Distribution (12Kv and Below) Lines to Provide a Visual Aid in Preventing Accidental Contact. Hawaiian Electric's Cost of Safeguarding or Identifying its Lines will be Charged to the Contractor.

Contact Hawaiian Electric's Customer Installations Division at 543-7070 for Assistance in Identifying and Safeguarding Overhead Power Lines.

6. Pole Bracing

Contractor Shall not Excavate Within 10 Feet From Hawaiian Electric's Utility Poles or Any Anchor System Supporting the Utility Pole. If Contractor Must Excavate Closer than 10 Feet From a Utility Pole or its Anchor System, Contractor will be Responsible for Protecting, Supporting, Securing and Taking all Precautions to Prevent Damage to or Leaning of Existing Poles. Before Commencing such Excavation, Contractor Must Submit its Bracing Calculations and Drawings, Prepared and Stamped by a Licensed Structural Engineer, to Hawaiian Electric's Customer Installations Division (543-7070) for Review. Hawaiian Electric Requires a Minimum of Ten (10) Working Days to Conduct the Review of Contractor's Submittal. Contractor Shall be Responsible for the Design, Installation, and Removal of the Temporary Pole Bracing System, As Well As All Costs Incurred By Hawaiian Electric to Review Contractor's Drawings and to Repair or Straighten Poles Impacted by Contractor's Activities, Including Response and Restoration Costs Incurred by Hawaiian Electric Arising Out of or Related to Outages Caused by Contractor's Failure to Meet the Foregoing Requirements. Hawaiian Electric's Review and Approval of Any Contractor Submittals Including its Work Procedure Shall Not Relieve Contractor From Any Liability Resulting From Contractor's Excavation Near or Around Hawaiian Electric's Utility Poles.

#### 7. Underground Lines

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The Contractor Shall Exercise Extreme Caution Whenever Construction Crosses or is in Close Proximity of Underground Lines. Hawaiian Electric's Existing Electrical Cables are Energized and will Remain Energized During Construction. Only Hawaiian Electric Personnel are to Break into Existing Hawaiian Electric Facilities, Handle These Cables, and Erect Temporary Guards to Protect These Cables from Damage. The Cost of Hawaiian Electric's Assistance in Providing Proper Support and Protection of its Underground Lines will be Charged to the Contractor. For Assistance/Coordination in Providing Proper Support and Protection of These Lines, the Contractor Shall Call Hawaiian Electric's Customer Installations Division at 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 Detail 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

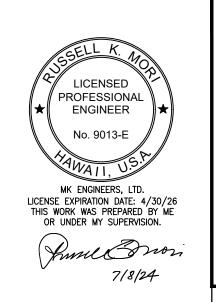
When Trench Excavations is Adjacent to or Beneath Hawaiian Electric's Existing Structures or Facilities, the Contractor is Responsible for:

- 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 Electrics Work, Which May Include, but Not be Limited to, Staking of Pole/Anchor Locations, Identifying Right of Way and Property Lines, Excavations 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.



STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

<u>HECo NOTES</u>

Kahului Beach Road Intersection Improvements at Kanaloa Avenue Project No. 3400A-01-20

Scale: As Noted

Date: July 2024

SHEET No. E-5 OF 7

### HAWAIIAN ELECTRIC COMPANY NOTES (CONT'D):

#### 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 Installations Division 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:

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

DIST. NO. STATE PROJ. NO. FISCAL SHEET NO. SHEETS

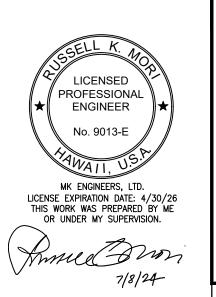
MAUI HAW. 3400A-01-20 2024 30 35

- 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 Hawaiian Electric'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" and Larger.
- 5. For Situations with 0" Minimum Separation, a 6" Separation is Recommended.
- 6. Clearances Measured from Outer Edges or Diameters of Utilities. Whenever Concrete Jackets are Involved, Clearances Shall be Total Clear Distance Between the Concrete Jacket and Utility Concerned.

Guideli		al (Crossing) Clearances Hawaiian Underground Utilities	Electric	
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 Hawaiian Electric'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.



STATE OF HAWAI'I

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

# <u>HECo NOTES</u>

Kahului Beach Road Intersection Improvements at Kanaloa Avenue Project No. 3400A-01-20

Scale: As Noted

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#### HAWAIIAN ELECTRIC COMPANY NOTES (CONT'D):

The Contractor Shall Notify The Construction Manager \$\phi\$ Hawaiian Electric Of Any Heat Sources (power Cable Duct Bank, Steamline, Etc.) Encountered That Are Not Properly Identified On The Drawing.

#### 15. Idemnity

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 Facilites

#### 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 Hawaii Electric's Inspection Group at 543-4325 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 543-4325 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.

#### 22. Joint Pole Removal

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

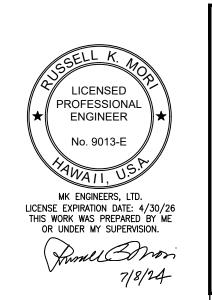
#### 23. As-Built Plans

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MAUI	HAW.	3400A-01-20	2024	31	35

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.

### GENERAL CONSTRUCTION NOTES

- A. Trenching to be by Hand Digging Near Across Existing Utility Lines.
- B. Unless Otherwise Requested by the Board of Water Supply, Minimum Clearance Between Water Lines and Conduits Shall be: Horizontal = 3 Feet Vertical = 6 Inches
- C. Adjust New Conduit Alignment, if Required to Provide Clearances. If Conduit Cannot be Realigned, Adjustments to Existing Water System Shall be Performed in Accordance with Standards of the Board of Water Supply.
- D. Minimum Clearance Between Highway Light Standards and Fire Hydrants Shall be 3 Feet.
- E. Underground Utilities Shown Heron are for Information Only. No Guarantee is Made on the Accuracy or Completeness of Said Information.
- F. All New and Existing Concrete Pullbox and Handhole Covers Which are Located in New Finished Sidewalks Shall be Provided with New Exposed Aggregate Concrete Covers to Match New Exposed Aggregate Concrete Sidewalk Finish.
- G. Where Necessary, Reconstruction of Sidewalk, Gutter and Driveway Areas Shall Conform to the Standard Details of the Governmental Agency Having Jurisdiction Over the Work.
- H. The Contractor Shall be Responsible for Removal of a Silt and Debris Resulting from His Work and Deposited in Drainage Facilities, Roadways and Other Areas. The Cost for any Necessary Remedial Action by the Chief Engineer Shall be Payable by the Contractor.
- I. The Contractor, at His Own Expense, 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 Department of Health.



STATE OF HAWAI'I **DEPARTMENT OF TRANSPORTATION** 

HECo NOTES

Kahului Beach Road Intersection Improvements at Kanaloa Avenue Project No. 3400A-01-20

Scale: As Noted

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SHEET No. E-7 OF 7

