

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-07-16	2020	5	22

HAWAII ONE CALL CENTER:

1. Before conducting any excavation in the public right of way or on private property, call the Hawaii One Call Center at least five (5) working days before planning to dig. Be sure to give them the address and location of the nearest cross street(s) near where digging is planned.

Call 811 toll-free 24 hours a day.
For more information, go to www.callbeforeyoudig.org

2. The Hawaii One Call Center will contact all utility companies to tone, mark or identify the location of their underground utilities for free. Mark the area where Contractor plans to excavate in white and label all of the other utilities as listed below.

RED	Electric power lines, cables, or conduits, and lighting cables.
YELLOW	Gas, oil, steam, petroleum or other hazardous liquid or gaseous materials.
ORANGE	Communications, cable TV, alarm or signal lines, cables, or conduits.
BLUE	Water, irrigation, and slurry lines
GREEN	Sewers, storm sewer facilities or other drain lines
WHITE	Proposed excavation.
PINK	Temporary survey markings.
PURPLE	Reclaimed water, irrigation and slurry lines.

3. In accordance with Hawaii State Law Section 269E-7, the Hawaii One Call Center (HOCC) shall provide an inquiry identification number for each location request provided by the Contractor. The inquiry identification number and utility marks shall remain valid for not more than twenty-eight (28) calendar days from the date of issuance and after that date shall require the Contractor to submit a new request for HOCC revalidation. The Contractor shall provide all inquiry identification numbers for each location request to the Engineer.

HAWAIIAN ELECTRIC COMPANY (HECO) NOTES:

1. Location of HECO Facilities: The location of HECO'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 HECO'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 HECO's Planning and Design Section of the Customer Installations 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 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.

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 HECO at least four (4) weeks prior to the planned encroachment so that, if feasible, the necessary protections (e.g. relocate or de-energize HECO lines) can be investigated. HECO may also be able to blanket its distribution (12kv and below) lines to provide a visual aid in preventing accidental contact. HECO's cost of safeguarding or identifying its lines will be charged to the Contractor.

Contact HECO's Customer Installations Department at 543-7846 for assistance in identifying and safeguarding overhead power lines.

6. Pole Bracing: A minimum clearance of 10 feet must be maintained when excavating around utility poles and/or their anchor system to prevent weakening or pole support failure. Should work require excavating within 10 feet of a pole and/or its anchor system, the Contractor shall protect, support, secure, and take all other precautions to prevent damage to or leaning of these poles. The Contractor is responsible for all pole bracing designs and structural calculations, as well as the associated costs to brace, repair, or straighten poles. All means of structural support for the pole and/or anchor system proposed by the Contractor shall be submitted to HECO's Customer Installations Department (543-7846) for review a minimum of ten (10) working days prior to implementation. The cost of HECO's review/assistance in providing proper support and protection of its poles will be charged to the Contractor.

7. Underground Lines: The Contractor shall exercise extreme caution whenever construction crosses or is in close proximity of underground lines. HECO's existing electrical cables are energized and will remain energized during construction. Only HECO personnel are to break into existing HECO facilities, handle these cables, and erect temporary guards to protect these cables from damage. The cost of HECO'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 HECO's Customer Installations Department at 543-7846 a minimum of ten (10) working days in advance.

Special precautions are required when excavating near HECO's 138kv underground lines (see HECO instructions to Consultants/Contractors on "excavation near HECO's underground 138kv lines" for detailed requirements).

For verification of underground lines, the Contractor shall call the Hawaii one call center at 811 minimum of five (5) working days in advance.

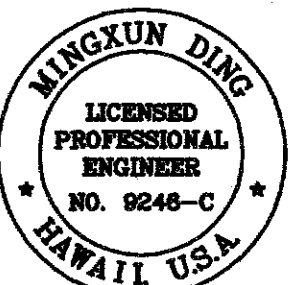
8. Underground Fuel Pipelines: The Contractor shall exercise extreme caution whenever construction crosses or is in close proximity of HECO's underground fuel oil pipelines. Special precautions are required when excavating near HECO's underground fuel oil pipelines (see HECO's specific fuel pipeline "guidelines" to Consultants/Contractors on excavation near HECO's underground fuel pipelines for detailed requirements).

9. Excavations: When trench excavation is adjacent to or beneath HECO's existing structures or facilities, the Contractor is responsible for:
- a) Arranging for HECO standby personnel to observe work at Contractor's cost.
 - b) Sheet piling, 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, underpinnings, 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 department for thermal backfill specifications).

10. Relocation of HECO Facilities: Any work required to relocate or modify HECO facilities shall be done by HECO, or by the Contractor under HECO's supervision. The Contractor shall be responsible for all coordination, and shall provide necessary support for HECO'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 HECO's facilities not shown on the plans may be cause for lengthy delays. The Contractor acknowledges that HECO 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 HECO'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, HECO should be notified immediately upon discovery or identification of such conflict.



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[Signature]

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
UTILITY NOTES
DRAINAGE IMPROVEMENTS AT VARIOUS LOCATIONS Interstate Route H-201, Vicinity of Fort Shafter Off-Ramp and Ala Napunani Street, Vicinity of Ala Aolani Street Project No. HWY-0-07-16
Date: June 2019
SHEET No. 1 OF 3 SHEETS

HAWAIIAN ELECTRIC COMPANY (HECO) NOTES (CONTINUED):

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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12. **Damage to HECO Facilities:** The Contractor shall be responsible for the protection of all HECO surface and subsurface utilities and shall be responsible for any damages to HECO's facilities as a result of his operations. The Contractor shall immediately report such damages or any hazardous conditions related to HECO's lines to HECO's trouble dispatcher at 548-7961. Repair work shall be done by HECO or by the Contractor under HECO's supervision. Costs for damages to HECO's facilities shall be borne by the Contractor.

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

13. **HECO Stand-By Personnel:** The Contractor may request HECO to provide an inspector to stand-by during construction near HECO's facilities. The cost of such inspection will be charged to the Contractor. The Contractor shall call HECO's Customer Installations Department at 543-7846 a minimum of five (5) working days in advance to arrange for HECO stand-by personnel.

14. **Clearances:** The following clearances shall be maintained between HECO's ductline and all adjacent structures (charted and uncharted) in the trench:

Minimum Separation Clearances to Existing Underground Ductlines - Horizontal (Parallel)

Utility Being Installed	Existing Direct Buried Cable	Existing Direct Buried in Conduit (no concrete encasement)	Existing 3" Concrete Encasement	Applicable Notes:
HECO DB Conduits	12"	3"	0"	
HECO 3" Encasement	0"	0"	0"	
Telephone/CATV DB	12"	12"	6"	
Telephone/CATV DB Ducts	12"	12"	6"	
Telephone/CATV 3" Encasement	0"	0"	0"	5
Traffic Signal	12"	12"	12"	
Water DB	36"	36"	36"	1,4
Water Service Laterals	12"	12"	12"	
Water (Concrete Jacketed)	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:

- Where space is available, parallel clearance to other utilities, for foreign structures other than communication or traffic signal shall be 36 inches.
- If 36-inch clearance cannot be met:
 - If clearance is less than 12 inch, jacket sewer line with reinforced concrete (per HECO's Std. 30-1030) for a distance of 5 feet plus pipe diameter.
 - If clearance is between 12 inches and 36 inches, jacket sewer line with plain concrete.
- All fuel pipeline crossings shall be reviewed and approved by the company that owns and maintains it.
- 5 feet clear to water mains 16-inch and larger.
- For situations with 0-inch minimum separation, a 6-inch separation is recommended.
- Clearances measured from outer edges of diameters of utilities.

Clearances measured from outer edges or diameters of utilities. The Contractor shall notify the Construction Manager and HECO of any heat sources (power cable duct bank, steamline, etc.) encountered that are not properly identified on the drawing.

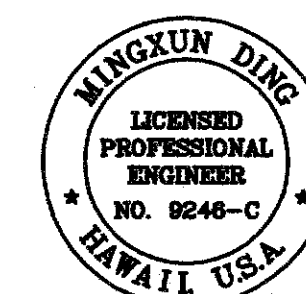
15. **Indemnity:** The Contractor shall indemnify, defend and hold harmless HECO from and against all losses, damages, claims, and actions, including but not limited to reasonable attorney's fees and costs based upon or arising out of damage to property or injuries to persons, or other tortious acts 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 HECO.

Minimum Separation Clearances to Existing Underground Ductlines - Vertical (Crossing)

Utility Being Installed	Existing Direct Buried Cable	Existing Direct Buried in Conduit (no concrete encasement)	Existing 3" Concrete Encasement	Applicable Notes:
HECO DB Conduits	6"	3"	0"	
HECO 3" Encasement	0"	0"	0"	
Telephone/CATV DB	12"	12"	6"	
Telephone/CATV DB Ducts	12"	12"	6"	
Telephone/CATV 3" Encasement	0"	0"	0"	5
Traffic Signal	12"	12"	6"	
Water DB	6"	6"	6"	
Water Service Laterals	6"	6"	6"	2
Water (Concrete Jacketed)	6"	6"	6"	2
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				3

Notes:

- If clearance cannot be met:
 - If clearance is less than 12 inch, jacket sewer line with reinforced concrete (per HECO's Std. 30-1030) for a distance of 5 feet plus pipe diameter.
 - If clearance is between 12 inches and 24 inches, jacket sewer line with plain concrete.
- 12-inch vertical clearance for pipe diameters greater than 16-inch.
- All fuel pipeline crossings shall be reviewed and approved by the company that owns and maintains it.
- 5 feet clear to water mains 16-inch and larger.
- For situations with 0-inch minimum separation, a 6-inch separation is recommended.
- Clearances measured from outer edges of diameters of utilities.



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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
UTILITY NOTES
DRAINAGE IMPROVEMENTS AT VARIOUS LOCATIONS Interstate Route H-201, Vicinity of Fort Shafter Off-Ramp and Ala Napunani Street, Vicinity of Ala Aolani Street Project No. HWY-0-07-16
Date: June 2019

SHEET No. 2 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-07-16	2020	7	22

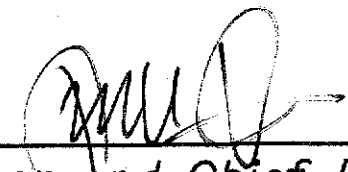
CONSTRUCTION NOTES FOR GAS FACILITIES:

- Hawaii Gas' pipelines in the project area are plastic coated and cathodically protected. The Contractor shall be extremely careful when working near these gas pipelines.
- Written clearances must be obtained from Hawaii Gas, Maps and Records Department, 515 Kamakee Street, at least five (5) working days prior to starting excavation near these gas pipelines.
- Since gas line locations on field maps are approximate, the Contractor, after obtaining written clearance, shall call Hawaii One Call Center a minimum of five (5) working days before starting excavation to arrange for field location of the existing gas pipelines. The telephone number is 811.
- The Contractor shall excavate and backfill around gas pipelines in the presence of a representative of Hawaii Gas. All backfill within six inches of any gas pipeline shall be S4C, sand, man sand, or a select cushion material approved by Hawaii Gas.
- For relocation of any gas pipeline, the Contractor shall notify Hawaii Gas five (5) working days before starting work. The telephone number is 594-5574. The Contractor shall provide the necessary excavation and backfill, obtain traffic permits, and restore pavement, sidewalks, and other facilities. Any relocation of gas facilities shall be done by Hawaii Gas and paid for by the Contractor.
- The Contractor shall notify Hawaii Gas immediately after any damage has been caused to existing gas pipelines, coatings, or its cathodic protection devices. The telephone number is 535-5933, 24 hours a day. The Contractor shall be liable for any damage to Hawaii Gas' facilities. Repair work on such damage shall be done by Hawaii Gas with payment for this work to be borne by the Contractor.
- Minimum vertical and horizontal clearance between the gas pipelines and other pipelines, conduits, ductlines, or other facilities shall be 12 inches. Adequate support and protection for gas pipelines exposed in the trench shall be provided by the Contractor and approved by Hawaii Gas.
- The Contractor shall work in an expeditious manner in order to keep the uncovered gas pipelines exposed for as short a period of time as possible.
- The existence and location of underground utilities and structures as shown on the plans are from the latest available data, but are not guaranteed as to their accuracy or the encountering of other obstacles during the course of the work. The Contractor shall be responsible and pay for all damages to existing utilities. The Contractor shall not assume that where no utilities are shown, that none exist.
- The Contractor shall be responsible for the protection of all waterlines during construction. The Contractor shall be especially careful when excavating behind waterlines, tees, and bends wherever there is a possibility of waterline movement due to the removal of the supporting earth beyond the existing reaction blocks. The Contractor shall take whatever measures necessary to protect the waterlines, such as constructing special reaction blocks (with BWS approval) and/or modifying his construction method.
- The Contractor shall notify BWS Capital Projects Division, Construction Section in writing one week prior to commencing construction activities. The telephone number is 748-5730.
- Re-approval shall be required if this project is not under construction within a period of two (2) years.
- Prior to any excavating, the Contractor shall verify in the field, the location of existing waterlines and appurtenances.
- Any adjustments to the existing water system required during construction, to meet the requirements of the BWS Standards, whether shown on the plans or not, shall be done by the Contractor at no cost to the Board.

WATER NOTES FOR STATE PROJECTS:

- Unless otherwise specified, all construction activities affecting Board of Water Supply (BWS) facilities in this project shall be in accordance with the HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, dated 2005, as amended, of the Hawaii Highways Division, Department of Transportation, and the City and County of Honolulu Board of Water Supply's "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, and all subsequent amendments and additions.
- All plans approved by the Board of Water Supply are based solely on the adequacy of the water supply.

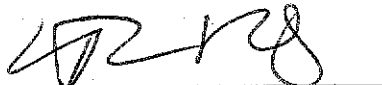
ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
No.	

FOR  Date 6-21-2019
Manager and Chief Engineer, BWS *
(for work affecting BWS facilities in
City/State R/W and BWS easements only)



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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
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SHEET No. 3 OF 3 SHEETS