

HECO NOTES

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| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | HWY-O-02-18M | 2018 | 5 | 33 |

1. 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 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. 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. The Contractor shall obtain an excavation clearance from HECO's the 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. 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. State law (OSHA 1910.269(k)(2b)) requires that a worker and the longest object he or she may contact cannot come closer than a minimum radial clearance of 10 feet when working close to or under any overhead lines rated 50kV and below. For each additional 10kV above 50kV, an additional 4 inches shall be added to the 10-foot clearance requirement. The preceding information on line clearance requirements is provided as a convenience and it is the Contractor's responsibility to be informed of and comply with any revisions or amendments to the law.

Should the Contractor anticipate that his work will result in the need to encroach within the minimum required clearance at any time, 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. 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 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. 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 detail requirements.)

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

8. 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 Instructions to Consultants/Contractors on "Excavation near HECO's Underground Fuel Pipelines" for detailed requirements.)
9. When trench excavation is adjacent to or beneath HECO's existing structures or facilities, the Contractor is responsible for:
- Arranging for HECO 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 Department for thermal backfill specifications).

10. 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 work in a safe and expeditious manner in fulfilling his contract obligations shall be borne by the Contractor.

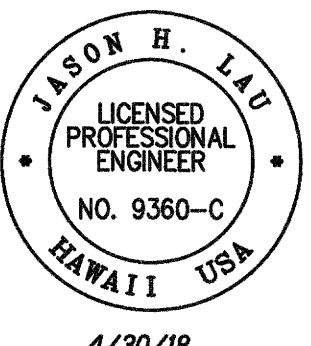
11. Any redesign or relocation of HECO's facilities not shown on the plans may be cause for lengthy delays. The Contractor acknowledges that HECO is not responsible for any delay or damage that may arise as a result of any conflicts discovered or identified with respect to the location or construction 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.

12. 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 Honolulu Power Plant shift supervisor at 533-2102 (a 24-hour number) so HECO personnel can secure the damaged section and report any oil spills to the proper authorities. In case of damage or suspected damage to the Wai'au or Kahe fuel pipelines, the Contractor shall also notify Island Energy Services at 682-2227. All costs associated with the damage, repair, and oil spill cleanup shall be borne by the Contractor.

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|  <p>4/30/18 This work was prepared by me or under my supervision.</p> | <p>STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION</p> <p>UTILITY NOTES</p> <p>STORM WATER BEST MANAGEMENT PRACTICES IMPROVEMENTS AT MAINTENANCE BASEYARDS ON OAHU Project No. HWY-O-02-18M Scale: None Date: March 2018</p> |
| SHEET No. N-03 OF 8 SHEETS | |

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | HWY-O-02-18M | 2018 | 6 | 33 |

HECO NOTES (CON'T.)

13. 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 the 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. 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 tortuous 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.

15. 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" | E |
| Traffic Signal | 12" | 12" | 12" | |
| Water DB | 36" | 36" | 36" | A, D |
| Water Service Laterals | 12" | 12" | 12" | |
| Water (Concrete Jacketed) | 36" | 36" | 36" | A, D |
| Gas DB | 12" | 12" | 12" | A |
| Gas (Concrete Jacketed) | 12" | 12" | 12" | A |
| Sewer DB | 36" | 36" | 36" | A, B |
| Sewer (Concrete Jacketed) | 36" | 36" | 36" | A, B |
| Drain | 12" | 12" | 12" | A |
| Fuel Pipelines | 48" | 48" | 48" | C |

15. (Continued)

Notes for Horizontal (Parallel) Clearance Table:

- A. Where space is available, parallel clearance to other utilities, or foreign structures other than communication or traffic signal shall be 36".
- B. 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.
- C. Electrical conduit crossings of fuel lines should be kept to a minimum of 48" clear below fuel line for the full easement width. If the 48" clearance cannot be met but there is a minimum of 24", the fuel line must be encased with 6" of concrete.
- D. 5 feet clear to water mains 16" and larger.
- E. For situations with 0" minimum separation, a 6" separation is recommended.
- F. Clearances measured from outer edges or diameters of utilities.

| 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" | | 6" | |
| Telephone/CATV DB Ducts | 12" | 12" | 6" | |
| Telephone/CATV 3" Encasement | 0" | 0" | 0" | E |
| Traffic Signal | 12" | 12" | 6" | |
| Water DB | 6" | 6" | 6" | B |
| Water Service Laterals | 6" | 6" | 6" | |
| Water (Concrete Jacketed) | 6" | 6" | 6" | B |
| Gas DB | 12" | 12" | 12" | |
| Gas (Concrete Jacketed) | 12" | 12" | 12" | |
| Sewer DB | 24" | 24" | 24" | A |
| Sewer (Concrete Jacketed) | 24" | 24" | 24" | A |
| Drain | 12" | 12" | 12" | |
| Fuel Pipelines | 48" | 48" | 48" | C |

15. (Continued)

Notes for Vertical (Crossing) Clearance Table:

- A. 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.
- B. 12" vertical clearance for pipe diameters greater than 16".
- C. Electrical conduit crossings of fuel lines should be kept to a minimum of 48" clear below fuel line for the full easement width. If the 48" clearance cannot be met but there is a minimum of 24", the fuel line must be encased with 6" of concrete.
- D. 5 feet clear to water mains 16" and larger.
- E. For situations with 0" minimum separation, a 6" separation is recommended.
- F. Clearances measured from outer edges or diameters of utilities.

The Contractor shall notify the Construction Manager & HECO of any heat sources (power cable duct bank, streamline, etc.) encountered that are not properly identified on the drawing.

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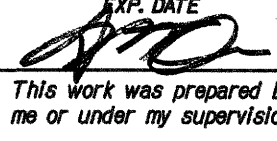
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NO. 9360-C

HAWAII USA

4/30/18

EXP. DATE



This work was prepared by me or under my supervision.

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

UTILITY NOTES

STORM WATER BEST MANAGEMENT PRACTICES

IMPROVEMENTS AT MAINTENANCE BASEYARDS ON OAHU

Project No. HWY-O-02-18M

Scale: None

Date: March 2018

SHEET No. N-04 OF 8 SHEETS