

HAWAIIAN ELECTRIC COMPANY NOTES

1. LOCATION OF HECO FACILITIES
The location of HECO overhead and underground facilities shown on the plans are existing records with varying degrees of accuracy 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 PERMIT
The Contractor shall obtain an excavation permit from HECO's Technical Division (543-5654) located at 820 Ward Avenue, 4th floor, two weeks prior to starting construction. Please refer to our request number at that time.
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 laws requires that a worker and the longest object he or she may use 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 1KV above 50KV, an additional 0.4 inch shall be added to the 10-foot clearance requirement. The preceding information on line clearance 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. re-location, de-energize, or blanket HECO lines) can be put in place. HECO's cost of safeguarding its line will be charged to the contractor.
- Contact HECO's Customer Installation Department at 543-7846 for assistance in identifying and safeguarding overhead powerlines.
- Refer to Section X of HECO's Electric Service installation Manual for additional guidelines when working around HECO's facilities. A copy may be obtained from HECO's Customer Installations Department.
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 associated costs to brace, repair, or straighten poles. All means of structural support for poles proposed by the Contractors shall first be reviewed by HECO before implementation. For pole bracing instructions, the Contractor shall call the HECO Construction and Maintenance Dept., Customer & System Superintendent at 543-4223 a minimum of two (2) weeks in advance.

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. Special precautions are required when excavating near HECO's 138 KV underground lines (see HECO instructions to Consultant/Contractors on "Excavating Near HECO's Underground 138KV Lines" for detailed requirements).
- For verification of underground lines, the Contractor shall call HECO's Underground Division at 548-7049 a minimum of 72 hours in advance.
- For assistance in providing proper support and protection of these lines, the Contractor shall call HECO's Construction and Maintenance Dept., Customer & System Superintendent, at 543-4223, a minimum of two (2) weeks in advance.
8. EXCAVATIONS
When trench excavation is adjacent to or beneath HECO's existing structures or facilities, the Contractor is responsible for:
- a) Sheet piling and bracing the excavation and stabilizing the existing ground to render it safe and secure and to prevent possible slides, cave-ins, and settlements.
 - b) Properly supporting existing structures or facilities with beams, struts, or under-pinnings to fully protect it from damage.
 - c) Backfilling with proper backfill material including special thermal backfill where existing (refer to Engineering Department for thermal backfill specifications).
9. 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 to be limited to, excavation and backfill, permits and traffic control, barricading, and restoration of pavement, sidewalk 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 born by the Contractor.
10. CONFLICTS
Any design 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.
11. 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 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 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 532-2102 (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.

12. 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 the HECO Construction and Maintenance Dept., Customer & System Superintendent at 543-4223 a minimum of 5 working days in advance to arrange for HECO stand-by personnel.
13. CLEARANCES
The following clearances shall be maintained between HECO's ductline and all adjacent structures (charted and uncharted) in the trench:
- | STRUCTURE TYPE | MINIMUM CLEARANCE (INCHES) |
|------------------------------------|----------------------------|
| Water Lines, parallel | 36 |
| Water Lines, crossing | 12 (A) |
| Sewer Lines, parallel | 36 (B) |
| Sewer Lines, crossing | 24 (C) |
| Drain Lines, parallel | 12 |
| Drain Lines, crossing | 6 (D) |
| Electrical and Gas Lines, parallel | 12 |
| Electrical and Gas Lines, crossing | 12 |
| Telephone Lines, parallel | 6 (D) |
| Telephone Lines, crossing | 6 (D) |
| Chevron Oil Lines, parallel | 36 |
| Chevron Oil Lines, crossing | 48 below oil line (E) |
- A. The minimum vertical clearances to water lines crossing electrical ductlines can be reduced to 6 inches if the electrical ductline structure is smaller than 16 inches, is concrete encased, and is below the water line.
- B. A minimum horizontal clearance of 36 inches is required between new handholes and existing sewer laterals.
- C. The minimum horizontal clearances to sewer pipes crossing electrical ductlines can be reduced to 12 inches if the sewer pipe is jacketed in concrete.
- D. The minimum clearances shall be increased to 12 inches if the electrical ductline is direct buried.
- E. The minimum vertical clearances to oil lines crossing electrical ductlines can be reduced to 24 inches below oil lines if the crossings are encased in 6 inches of concrete.
- F. The Contractor shall notify the Construction Manager & HECO of any heat sources (power cable duct bank, steamline, etc.) encountered that are not properly identified on the drawing
14. 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 the Contractor or anyone acting under its direction or control or on behalf; provided Contractor's indemnity shall not be applicable to any liability based upon the sole negligence of HECO.

DRAWING REVIEW	
Reviewed for HECO's Facilities Only	
APPROVED:	Date 5/16/02 By J.K.H.
Engineering Department Hawaiian Electric Company, Inc.	
HAWAIIAN ELECTRIC COMPANY	DATE
HECO'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.	
4/30/02	Added HECO Signature Block and Edit Notes for correct spelling per Addendum No.2.
DATE	REVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
UTILITY NOTES	
KAMEHAMEHA HIGHWAY	
DRAINAGE IMPROVEMENTS	
Vicinity of Kahuku Hospital and Replacement of Kii Bridge	
Federal Aid Project No. NH-083-1(46)	
Date: April 2002	
SHEET No. 1 OF 1 SHEETS	

REVISIONS	
ORIGINAL	DATE 12-16-01
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
DATE	

HAWAIIAN ELECTRIC COMPANY NOTES-CONT.

15. SCHEDULE

Contractor shall furnish his construction schedule at least 60 working days prior to starting work on HECO facilities. Contractor shall give HECO, in writing, forty (40) working days notice to proceed with HECO's portion of work.
16. AUTHORITY

All construction, restoration work and inspection shall be subject to whichever governmental agency has authority over the work.
17. SPECIFICATION

Construction of HECO's underground facilities shall be constructed in accordance with the latest revisions of HECO Specifications CS7001, CS7003, CS7202, CS9301, and CS9401 and applicable HECO standards.
18. 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 HECO prior to excavation and prior to placing concrete. Contractor shall notify HECO's Inspection Division at 543-4356 at least 48 hours prior to placing concrete.
19. STAKEOUT

The Contractor shall stakeout all proposed HECO 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 HECO before proceeding with HECO work.
20. DUCTLINES

All ductlines 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 HECO's inspector using HECO's standard practice. The Contractor shall install a 1/8" polyolefin pull line in all completed ductlines after mandrel testing is complete.
21. JOINT POLE REMOVAL

The last joint pole occupant off the poles shall remove the poles.

GENERAL DETOUR NOTES

1.

The Contractor shall consider the temporary nature of the detour road pavement structure in the design.
2.

Portable barriers shall be set a minimum of 2-feet from the edge stripe. Terminals of portable barriers shall be specified by the latest edition of the AASHTO Roadside Design Guide.
3.

Inertial barrels will be allowed as end treatments for temporary barriers.
4.

Fill slopes or the diversion road shall be 2:1 (H:V) maximum. The engineer may accept steeper slopes if plans and calculations are submitted for approval by the Contractor.
5.

All fill slopes that do not meet the clear zone requirements set forth by the latest edition of the AASHTO Roadside Design guide shall be shielded by NCHRP Report 350 and HDOT approved devices.
6.

Design speed shall be 15 mph to 25 mph for the temporary detour road. Appropriate warning and regulatory signage shall be used.

HIGHWAY LIGHTING NOTES

1.

The Contractor shall notify Electrical Maintenance Section Department of Transportation, State Highway Division 72 hours in advance before comencing installation of temporary highway lighting system. Phone: 548-4077
2.

All luminaires shall be high presure sodium type with wattage and I.E.S. type light distribution as shown on the approved plans.
3.

The Contractor shall have one set of approved plans at job site at all times during the construction work and record all changes occur on construction of Highway Lighting System.
4.

The Contractor to stencil date of installation at the bottom of photocell. One photocell only is required as indicated on plan.
5.

Final acceptance and inspection will be undertaken only after all work has been completed.
6.

The Contractor shall measure and record ground resistance at each standard and submit recorded ground resistance to Traffic Section, and Oahu District Maintenance Section, Department of Transportation, State Highway. The Contractor's electrical engineer shall certify all electrical tests, including but not limited to: Continuity Test and the Ground Rod Resistant Test prior to submission to the District Engineer.
7.

Construction work shall be scheduled in such a manner that street lighting is provided during all hours of darkness either with new or existing luminaires or a combination thereof temporary connections shall be made to accomplish this end. The continuity of series street lighting circuits shall be maintained until the existing series street lighting fixtures are ready for removal.
8.

The Contractor shall at his expense keep the project and surrounding area free from dust nuisance and shall be responsible for cleaning and removal of all silt and debris generated by the excavation work and deposited and accumulated within downstream waterways, ditches, drain pipes and on public roadways. Any citations (fines) received by the State for the Contractor's non-compliance of any Department of Health regulations shall be deducted from the progress payment.

ORIGINAL PLAN	SURVEY PLOTTED BY _____		DATE _____
	DRAWN BY _____		_____
	DESIGNED BY _____		_____
	CHECKED BY _____		_____
NOTE BOOK	QUANTITIES BY _____		_____
	_____		_____
	_____		_____
	_____		_____
N. 0015	_____		_____
	_____		_____
	_____		_____
	_____		_____

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 5/16/02 By J.K.L.

Engineering Department
Hawaiian Electric Company, Inc.

HECO'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.

APPROVED:

HAWAIIAN ELECTRIC COMPANY

DATE

4/30/02	Added HECO Signature Block per Addendum No.2.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION UTILITY NOTES KAMEHAMEHA HIGHWAY DRAINAGE IMPROVEMENTS Vicinity of Kahuku Hospital and Replacement of Kii Bridge Federal Aid Project No. NH-083-1(46) Date: April 2002	
SHEET No. 1 OF 1 SHEETS	