

VERIZON HAWAII NOTES:

1. The Contractor shall procure and pay for all licenses and permits and shall give all notices necessary and incident to the due and lawful prosecution of the work.
2. The Contractor shall obtain an excavation permit and toning request from Verizon Hawaii's Excavation Permit Section, located at 3239 Ualena Street, third floor, two weeks prior to the start of construction. Hours of business are 8:00 a.m. to 11:00 a.m. and 12:00 a.m. to 3:30 p.m. Monday through Friday, except holidays.
3. Prior to the excavation of the ductline, the Contractor shall request Verizon Hawaii to locate existing ductline wherever required. For underground cable locating and marking, five (5) working days advance notice is required. Three (3) working days advance notice is required for any inspection by a designated representative.
4. The locations of existing utilities are approximate only. The Contractor shall exercise extreme caution and shall maintain proper clearances whenever construction crosses or is in close proximity of Verizon Hawaii facilities. The Contractor shall verify their locations and shall be liable for any damages to Verizon Hawaii facilities. Any damages shall be reported immediately to Verizon Hawaii's Repair Section at #611 (24 hours) or to the Excavation Permit Section at 840-1444 (normal working hours, Monday through Friday, except holidays). As a result of his operations, adjustments to the new ductline alignment, if required, shall be made to provide the required clearances.
5. The Contractor shall take necessary precaution not to damage existing cables or ducts. A Verizon Hawaii inspector or designated representative is required to be at any job site whenever there will be a breakage into or entry into any structure that contain Verizon Hawaii facilities. Temporary cable and duct supports shall be provided wherever necessary.
6. The Contractor shall notify Verizon Hawaii's inspector or designated representative a minimum of 72 hours prior to excavation, bracing, or backfilling of Verizon Hawaii's structures or facilities. Verizon Hawaii's Inspectors as follows:
West Oahu – Colman Nyuha, 840-2995
East Oahu – Joe Correia, 840-2994
7. All applicable construction work shall be done in accordance with the "Verizon Hawaii Standard Specifications for Placing Underground Telephone Systems" dated March 1999. All subsequent amendments and additions, and all other pertinent standards for telephone construction. Contractor shall familiarize his personnel by obtaining applicable specifications.
8. When excavation is adjacent to or beneath Verizon Hawaii's existing structures or facilities, the Contractor shall:
- a) Sheet and/or brace the excavation to prevent slides, cave-ins, or settlements to ensure no movement to Verizon Hawaii's structures or facilities.
- b) Protect existing structures and/or facilities with beams, struts, or underpinning while excavating beneath them to ensure no movement to Verizon Hawaii's structures or facilities.
9. The Contractor shall brace all poles or light standards near the new ductline, manhole, or handhole during his operations.

VERIZON HAWAII NOTES (CONT.):

10. The Contractor shall saw-cut A.C. pavement and concrete gutter wherever new manholes, handholes, or ductlines are to be placed and shall restore to existing condition or better.
11. The Contractor shall comply with the policy adopted by the Department of Public Works, City and County of Honolulu, concerning the replacement of concrete sidewalks after excavation work.
12. The underground pipes, cables, or ductlines known to exist by the Engineer from his search of records are indicated on the plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in 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.
13. Wherever connections to existing utilities are shown on the plans, the Contractor shall expose the existing lines prior to excavation of the main trenches to verify their locations and depths.
14. The Contractor, at his own expense, shall keep the project and surrounding area free from dust nuisance. The cost for supplementary measures, which will be required by the City and County, shall be borne by the Contractor.
15. The Contractor shall pump all manholes dry during final inspection.
16. The Contractor shall notify Verizon Hawaii inspector 24 hours prior to the pouring of concrete or backfilling.
17. When connecting to manhole walls, all existing reinforcing bars shall be left intact. Ducts shall be adjusted in the field in order to clear reinforcing.
18. The Contractor shall be responsible for laying out all required lines and grades and shall preserve all benchmarks and working points necessary to lay out the work correctly. The new ductline shall be adjusted by the Contractor to suit the existing conditions and the details as described in the plans.
19. Minimum concrete strength shall be:
For ductline 2500 psi at 28 days
For manhole 3000 psi at 28 days or as specified in design notes
20. Bends in the duct alignment due to changes in grade shall have a minimum radius of 25 feet. All 90 degree C-bends at a pole or at the building floor slab penetration shall have a bend radius of ten times the diameter of the duct or greater.
21. After ductline has been completed, a mandrel with a square front not less than 12" long and having a diameter of 1/4" less than the inside diameter of the duct, shall be pulled through each duct after which a brush with stiff bristles shall be pulled through to make certain that no particles of earth, sand, or gravel have been left inside. Ducts shall be completely dry and clean.
22. All ducts and conduits shall have an 1800# polyester mule-tape (NEPTCO, WP1800P, Verizon Hawaii Material Code No. 571154) installed throughout its entire length. All ducts shall be capped to prevent entry of foreign material during construction and at the completion of installation.

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 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 law 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 1kv above 50kv, an additional 0.4 inch 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, de-energize, or blanket HECO lines) can be put in place. HECO's cost of safeguarding 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.

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.

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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
UTILITY NOTES	
FORT WEAVER ROAD WIDENING VICINITY OF AAWA DRIVE TO GEIGER ROAD	
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HECO NOTES (CONT.):

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 the pole proposed by the Contractor 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 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 HECO's underground division at 543-7049 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 & Maintenance Dept., Customer & System Superintendent, at 543-4223, a minimum of two (2) weeks 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 instructions 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. 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).

HECO NOTES (CONT.):

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, 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.

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 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.

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 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.

HECO NOTES (CONT.):

14. Clearances:

The following clearances shall be maintained between HECO's ductline and all adjacent structures (Charted and Uncharted) in the trench:

Structural Type	Minimum Clearances (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 vertical 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.

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.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES

FORT WEAVER ROAD WIDENING
VICINITY OF AAWA DRIVE TO GEIGER ROAD

FEDERAL AID PROJECT NO. CMAQ-076-1(9)

SCALE: AS NOTED DATE: April 1, 2005

SHEET No. 2 OF 4 SHEETS

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HECO NOTES (CONT.):
ADDITIONAL NOTES WHEN WORK INVOLVES CONSTR. OF
HECO FACILITIES:

16. Schedule:
Contractor shall furnish his construction schedule_____ working dyas prior to starting work on HECO facilities. Contractor shall give HECO, in writing,_____ working days notice to proceed with HECO'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 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.
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 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.
20. 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.
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 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.
22. Joint pole removal:
The last joint pole occupant off the poles shall remove the poles.
23. As-built plans:
The Contractor shall provide HECO with two sets of As-Built reproducible tracings showing the offsets, stationing, and vertical elevation of the duct lines(s) constructed.

- CONSTRUCTION NOTES FOR GAS FACILITIES:
1. The Gas Company gas pipelines in the project area are plastic coated and cathodically protected. The Contractor shall be extremely careful when working near these gas pipelines.
2. Written clearances must be obtained from The Gas Company, Maps and Records Department, 515 Kamakee Street, at least five (5) working days prior to starting excavation near these gas pipelines.
3. Since gas line locations on field maps are approximate, the Contractor, after obtaining written clearance, shall call USA North a minimum of two (2) working days before starting excavation to arrange for field location of the existing gas pipelines. The telephone number is 1-800-227-2600.
4. The Contractor shall excavate and backfill around gas pipelines in the presence of a representative of The Gas Company. All backfill within six inches of any gas pipeline shall be select cushion material approved by the gas company.
5. For relocation of any gas pipeline, the Contractor shall notify The Gas Company 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 the gas company and paid for by the Contractor.
6. The Contractor shall notify The Gas Company 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 The Gas Company facilities. Repair work on such damage shall be done by The Gas Company with payment for this work to be borne by the Contractor.
7. 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 The Gas Company.
8. 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.

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CHEVRON PRODUCTS COMPANY NOTES:

Guidelines for Work Near Chevron Products Co. Pipelines

Chevron Hawaiian Refinery has one or more petroleum product pipelines in an easement that runs through or immediately adjacent to Contractor's proposed project. These pipelines are used for the transmission of petroleum products at high temperatures and pressures. The pipelines are coated and cathodically protected. They require frequent inspection and maintenance.

It is absolutely necessary that Chevron be provided access to these buried pipelines at all times, 24 hours a day, seven days a week. Therefore, Contractor's proposed project must adhere to the following guidelines:

- 1. If the easement area is fenced or walled in, Chevron must have a gate key unless the area is attended on a 24-hour basis.
- 2. Storage of material on the easement shall be avoided. This includes parking lots.
- 3. A minimum overhead clearance of 15 feet must be maintained within the easement.
- 4. Heavy landscaping (trees, shrubs, sprinklers, etc.) should be kept off the easement.
- 5. Heavy obstructions should be kept off the easement (e.g. buildings, walls, equipment pads, etc.).
- 6. No top-to-bottom obstructions will be permitted in the easement (e.g. power poles, sewer manholes, sewer clean-outs, bridge abutments, etc.).
- 7. Light obstructions (e.g. grass, paving (asphaltic concrete), curb crossings, etc.) are considered reasonable. grassed areas must be suitable for all-weather vehicular travel.
- 8. Chevron's Company Representative will stake the pipelines at Contractor's request. Determination of pipeline elevations shall be Contractor's responsibility and at Contractor's expense.
- 9. The pipeline easement access road must be kept open at all times. Authorization to block access roads at any time during your construction period must be obtained from Chevron Products Company.
- 10. Avoid running any sewers, fences, sprinkler lines, pipelines, cables, curbs, etc., within the easement in a parallel orientation to the easement centerline. Crossings are permitted but must be held to a minimum of 45 degrees to easement centerline.
- 11. Sewer and electrical conduit crossings should be kept a minimum of four feet clear below Chevron's pipelines for the full easement width. If this condition cannot be met, the crossings should be encased in six inches of concrete, with a minimum two feet clear below Chevron's pipelines.
- 12. Except for Item 11 above, all crossing facilities should be at least 24 inches clear below Chevron's pipelines for the full easement width. Crossings above Chevron's pipelines are not permitted.
- 13. Removal of fill from the easement should not result in there being less than three feet minimum cover over the lines.
- 14. Trenches across the pipelines shall be limited to a maximum width of five feet less unless the lines are supported in a manner accepted in advance by Chevron Products Company.

CHEVRON PRODUCTS COMPANY NOTES (CONT.):

- 15. All excavations and backfilling operations in Chevron's easement must be witnessed by a Chevron Company Representative. Contractor shall provide Chevron with 48 hours notice prior to beginning work within Chevron's easement. All backfill material within six inches of our pipelines must be of finely graded dirt or sand. All excavations within two feet of our pipelines must be accomplished by hand digging. Work shall be handled in an expeditious manner in order to keep Chevron's pipelines uncovered for as short a period as possible.
- 16. Fill Chevron's easement should be limited to four feet maximum cover over Chevron's pipelines. Chevron will stake the pipelines upon request so that Contractor can excavate to determine the depth of the pipelines.
- 17. Regrading of adjacent property should not adversely affect drainage of the easement area or pose a hazard to the easement such as land slides or erosion.
- 18. The slope must be kept reasonably level across the easement. Maximum should be 5:1 to provide for backhoe operation.
- 19. All costs pertaining to damage of Chevron's pipelines, their coatings, or the cathodic protection devices, or damage of property and injury to persons caused directly or indirectly by this work, will be to Contractor's account. Any repair work on the lines resulting from Contractor's project shall be performed by Chevron Products Company and billed to Contractor.
- 20. The Contractor shall contact Chevron @ 682-2259 to coordinate location of pipelines.

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