

HECO NOTES: (12/27/01)

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.

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 pipeline (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 settlement.
- 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).

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.

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. 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 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.

14. 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 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.

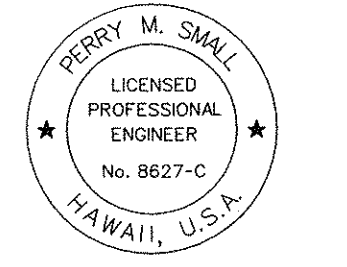
15. Indemnity

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.

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-K(246)	2004	4	105

ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
CHECKED BY	
DRAWN BY	
PLOTTED BY	

16-ZIPPER EXTENSION/MISC/NOTES2.dgn



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Perry M. Small

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES

**INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION
RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE**

FEDERAL AID PROJECT NO. NH-H1-K(246)

Scale: None Date: Mar. 2, 2004

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-K(246)	2004	5	105

DTS NOTE:

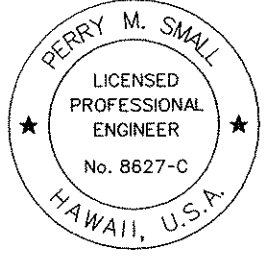
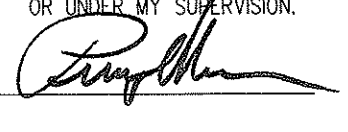
The Contractor shall notify Oahu Transit Services, Inc. (OTS), Ed Sniffen (848-4571) or Lowell Tom (848-4578), two weeks prior to construction, informing them of location, scope of work, proposed closure of any street or traffic lanes, and the need to relocate any bus stop.

PUBLIC HEALTH, SAFETY, AND CONVENIENCE:

1. The Contractor shall observe and comply with all federal, state and local laws required for the protection of public health and safety and environmental quality.
2. The Contractor at his own expense, shall keep the project and its surrounding areas free from dust nuisance. The work shall be in conformance with the Air Pollution Standards and Regulations of the State Department of Health. The City shall require supplementary measures as necessary.
3. Contractor shall provide, install and maintain all necessary signs, lights, flares, barricades, markers, cones, and other protective facilities and shall take all necessary precautions for the protection, convenience, and safety of the public.

ORIGINAL PLAN	DATE
NOTED BY	DATE
DESIGNED BY	DATE
CHECKED BY	DATE

\\ZIPPER\EXTENSION\MISC\notes4.dgn

 <p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.</p> 	<p>STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION</p> <p><u>UTILITY NOTES</u></p> <p>INTERSTATE ROUTE H-1 ZIPPER LANE EXTENSION RADFORD DRIVE OVERPASS TO KEEHI INTERCHANGE FEDERAL AID PROJECT NO. NH-H1-K(246)</p> <p>Scale: None Date: Mar. 2, 2004</p> <p>SHEET No. 65 OF 8 SHEETS</p>
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BOARD OF WATER SUPPLY NOTES:

1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with 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.
2. The Contractor shall notify the Board of Water Supply in writing one week prior to commencing work on the water system.
3. All plans approved by the Board of Water Supply are based solely on the adequacy of the water supply. All other features of the water system, such as lines, grades, fittings, etc., and drainage and other features of improvements shall not be the responsibility of the Board of Water Supply.
4. The Contractor shall be responsible for the protection of all water lines during construction. The Contractor shall be especially careful when excavating behind water line tees and bends wherever there is a possibility of water line movement due to removal of the supporting earth beyond the existing reaction blocks. The Contractor shall take whatever measure necessary to protect the water lines, such as constructing special reaction blocks (with BWS approval) and/or modifying their construction methods.
5. The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy or the encountering of other obstacles during the course of the work. The Contractor shall be responsible and shall pay for all damages to existing utilities. The Contractor shall not assume that where no utilities are shown, that none exist.
6. Reapproval shall be required if this project is not under construction within a period of two years.
7. The Contractor shall verify all existing service lateral locations, whether or not shown on the plans, prior to commencing with any of the work and shall not assume that, where no services are shown, none exists.
8. Prior to any excavation, the Contractor shall verify in the field the location of existing water mains and appurtenances. The Contractor shall have existing mains toned before construction of work in the vicinity of water mains, call the Investigation Section at 527-5296 for toning services. The Contractor shall pay for all toning services.
9. Maintain 3'-0" minimum cover for all existing waterlines (18" minimum for service laterals) from new finish grade. The Contractor shall probe the waterline and service laterals and submit the probing data to BWS Construction Section. Any adjustments to the existing water system to meet the minimum cover and the requirements of the BWS standards, whether shown on plans or not, shall be done by the Contractor at no cost to BWS and the State.
10. The Contractor shall adjust all manhole frames/valve boxes within the resurfaced area prior to resurfacing. The Contractor shall be responsible for "referencing" these manholes/valve boxes to facilitate the adjustments.
11. Contractor shall cut and plug all existing unused laterals at the main whether or not shown on the plans. Meter and valve boxes to be or already abandoned shall be demolished or removed and properly disposed of. The damaged area shall be repaired to an equal or better condition than the immediate area. All work shall be done at the expense of the Contractor and at no cost to BWS and the State.
12. Board of Water Supply approval of these plans does not constitute a water commitment. Availability of water will be determined when building permit is presented to the Department. Water commitment will depend upon the status of the water system at that time. Should water service be made available, the water commitment will be effective when the project receives an approved building permit from the building department. All water commitments will be canceled in the event the building permit is canceled.

THE GAS COMPANY NOTES: (6/29/99)

1. The Gas Company high pressure gas transmission line is plastic coated and cathodically protected. The Contractor shall be extremely careful when working near the gas pipeline.
2. Prior written clearance must be obtained from The Gas Company, Maps and Records Department, 515 Kamakee Street, at least five (5) working days before starting excavation near any of The Gas Company pipelines.
3. Since pipeline 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 lines. The telephone number is 1-800-227-2600.
4. The Contractor shall notify The Gas Company, Distribution Department 24 hours prior to excavating and backfilling any pipeline. The telephone number is 594-5556.
5. The Contractor shall have the sole responsibility to perform field verification, including hand digging methods.
6. The Contractor shall excavate and backfill around the pipeline in the presence of a representative of The Gas Company. All backfill within 12 inches of the pipeline shall be sand, mansand or select cushion material approved by The Gas Company.
7. Minimum vertical and horizontal clearance between the gas pipeline and other pipelines, conduits, or other structures shall be 24 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 uncovered gas line exposure to a minimum.
9. The Contractor shall notify The Gas Company immediately after any damage has been caused to existing gas pipelines, their coatings, or their 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 performed by The Gas Company with payment for this work to be borne by the Contractor.

VERIZON COMPANY NOTES:

1. All applicable construction work shall be done in accordance with the Verizon Hawaii "Standard Specifications for Placing Underground Telecommunications System", dated March 1999, and all subsequent amendments and additions.
2. 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.
3. The locations of existing utilities are approximate only. The Contractor shall verify their locations and exercise proper care in excavating in the area. The Contractor shall be responsible for any damages to these utilities as a result of their operations. Adjustments to the new ductline alignment, if required, shall be made to provide the required clearances.
4. The Contractor shall saw-cut A.C. pavement, concrete curb and gutter, and concrete sidewalk wherever new pullboxes or ductlines are to be placed.
5. Prior to the excavation of the ductline, the Contractor may request that Verizon Hawaii locate existing ductlines wherever required.
The location of telephone facilities are approximate only. Arrange to have telephone facilities toned prior to commencing excavation activities in the vicinity of underground telephone facilities. Excavation permit and toning request information can be obtained at the Excavation Desk on the 3rd flr. at 3239 Ualea Street.
6. The Contractor shall take necessary precaution not to damage existing cables or ducts. Any work involving existing cables or ducts shall be done in the presence of the Verizon Hawaii inspector or their representative.

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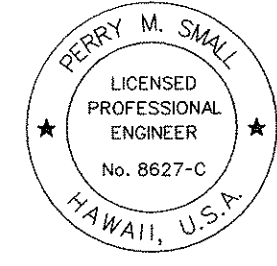

7. The Contractor shall pump all manholes dry during final inspection.
8. The Contractor shall notify the Verizon Hawaii inspector 48 hours prior to the pouring of concrete or backfilling.
9. The Contractor shall furnish all materials, labor and equipment necessary to install the ductlines in place complete.

MECHANICAL/ELECTRICAL DESIGN AND ENGINEERING DIVISION NOTES:

1. The Contractor shall notify the Joint Pole Committee two (2) weeks in advance of any relocation of utility pole(s) that may be necessary.
2. The Contractor shall notify the Mechanical/Electrical Design and Engineering Division, Department of Design and Construction, three (3) working days prior to commencing work on the street lighting system (Phone: 527-5002).
3. The street lighting system shall be kept operational during construction. Any relocation required shall be approved by the Mechanical/Electrical Design and Engineering Division, Department of Design and Construction and paid for by the Contractor.
4. The Contractor shall be responsible for any damages to existing street lighting, traffic signal, and fiber optic facilities, including the traffic signal interconnect system, and any and all damages to these facilities shall be repaired by the Contractor at his cost in accordance with the requirements of the City and County of Honolulu.

TRAFFIC SIGNALS & TECHNOLOGY DIVISION:

1. The Contractor shall notify the Traffic Signals & Technology Division, Department of Transportation Services, three (3) working days prior to commencing work on the traffic signal system (phone: 523-4589).
2. The traffic signal system shall be kept operational during construction. Any relocation required shall be approved by the Traffic Signals & Technology Division, Department of Transportation Services, and paid for by the Contractor.
3. The Contractor shall be responsible for any damages to the existing traffic signal facilities, including the traffic signal interconnect system. Any and all damages to these facilities shall be repaired by the Contractor at his cost in accordance with the requirements of the City and County of Honolulu.
4. The Contractor shall be responsible for any damages to the existing traffic signal fiber optic cable system. Any and all damages to these facilities shall be repaired by the Contractor at his cost in accordance with the requirements of the City and County of Honolulu.

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