FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1E-01-11M	2012	8	49

HECO NOTES: (Rev. 01/09/09)

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 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. 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 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 866-423-7287 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 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) Arranging for HECO standby personnel to observe work at Contractor's cost.
   b) 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.
   c) Properly supporting existing structures or facilities with beams, struts, under-pinnings, 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 location, 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.

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 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 Waiau or Kahe fuel pipelines, the Contractor shall also notify Chevron at 682-2227. 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.

JAIME M. SAAVEDRA
LICENSED PROFESSIONAL ENGINEER
No. 7309-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 04/30/12 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES

INTERSTATE ROUTE H-1
AIEA STREAM EROSION CONTROL
Project No. H1E-01-11M

Scale: None Date: September 2011

SHEET No. N-6 OF 8 SHEETS

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

J:/SSWMP-Aiea Stream Erosion Control/Cadd/Sheets/N-6.dgn

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1E-01-11M	2012	9	49

HECO NOTES: - Cont. (Rev. 01/09/09)

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 Pipeline	48"	48"	48"	3

Notes:

1. Where space is available, parallel clearance to other utilities, of foreign structures other than communications or traffic signal shall be 36".
2. 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.
3. Electrical conduit crossings of fuel lines should be kept 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.
4. 5 feet clear to water mains 16" and larger.
5. For situations with 0" minimum separation, a 6" separation is recommended
6. Clearances measured from outer edges of 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"	5
Traffic Signal	12"	12"	6"	
Water Service Laterals	6"	6"	6"	
Water DB	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"	12"	
Fuel Pipeline	48"	48"	48"	3

Notes:

1. 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.
2. 12" vertical clearance for pipe diameters greater than 16"
3. Electrical conduit crossings of fuel lines should be kept 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.
4. 5 feet clear to water mains 16" and larger.
5. For situations with 0" minimum separation, a 6" separation is recommended
6. Clearances measured from outer edges of diameters of utilities.

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 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.

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 drawings.

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

J:/SSWP-Aiea Stream Erosion Control/Cadd/Sheets/N-1.dgn

JAIME M. SAAVEDRA
LICENSED PROFESSIONAL ENGINEER
No. 7309-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 04/30/12 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES

INTERSTATE ROUTE H-1
AIEA STREAM EROSION CONTROL
Project No. H1E-01-11M

Scale: None Date: September 2011

SHEET No. N-7 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1E-01-11M	2012	10	49

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 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND PUBLIC WORKS 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.
2. 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, drainage, etc., and other features of improvements shall not be the responsibility of the Board of Water Supply.
3. The Contractor shall notify BWS Maintenance Unit - Engineering, Construction Section in writing and submit five (5) sets of approved construction plans one week prior to commencing work on the water system.
4. 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 pay for all damages to existing utilities. The Contractor shall not assume that where no utilities are shown, that none exist.
5. Re-approval shall be required if this project is not under construction within a period of two years.
6. The Contractor shall be responsible for the protection of all water lines during construction. The Contractor shall be especially careful when excavating behind water lines, tees, and bends wherever there is a possibility of water line movement due to the 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.
7. Prior to any excavating, the Contractor shall verify in the field the location of existing water mains and appurtenances.
8. The project shall pay the applicable water system facilities and/or one-time service charge and for the meter which will be furnished by BWS and installed by the Contractor when the lateral is installed.
9. 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.
10. 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.
11. The project shall be subject to the Board of Water Supply's Cross-Connection Control requirements prior to issuance of the Building Permit.
12. The installation, chlorination and testing of the water main facilities after the meter shall not be the responsibility of the Board of Water Supply.
13. Install 4 mil thick, non-metallic, blue colored, 6 inches wide warning tape over centerline of the pipe and below the base course along the entire length of trench. Tape should be marked "CAUTION WATER LINE BURIED BELOW".
14. The Contractor shall furnish and install polyethylene wrap, 3 feet minimum at all taps (for DI pipe and copper lateral combination only) and plastic pipe (PE tubing) 3 feet long after meters for all service lateral connections.

HAWAIIAN TELCOM NOTES:

1. All applicable construction work shall be done in accordance with the Hawaiian Telcom "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.
4. 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 Ualena Street.
5. 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 Hawaiian Telecom inspector or their representative.

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: 768-8431).
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.

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 may 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
NOTE BOOK No. .....
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
SURVEY PLOTTED BY
DATE .....

J:/SSWMP-Aiea Stream Erosion Control/Cadd/Sheets/N-8.dgn

JAIME M. SAAVEDRA
LICENSED PROFESSIONAL ENGINEER
No. 7309-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 04/30/12 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES

INTERSTATE ROUTE H-1
AIEA STREAM EROSION CONTROL
Project No. H1E-01-11M

Scale: None Date: September 2011

SHEET No. N-8 OF 8 SHEETS