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NOTE BOOK	No.	QUANTIFIED BY	
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GENERAL NOTES

- The scope of work for this project includes modifications to the existing traffic signal systems which include, but not limited to, new mast arms, new CCTV cameras, new cable conduit systems, replacing pedestrian signal heads, new loop detectors, and interconnecting adjacent traffic signals.
- The Contractor shall complete the construction at the Kamehameha Highway and Kaahumanu Street intersection within 100 working days from Notice to Proceed date.
- The Contractor shall reference the "Hawaii Standard Specifications for Road and Bridge Construction, 2005" as amended.
- The Contractor's attention is directed to the following Sections of the Standard Specifications: Subsection 104.11 - Utilities and Services; Subsection 107.12 - Protection of Persons and Property; and Section 645 - Work Zone Traffic Control.
- At the end of each day's work, the Contractor shall remove all equipment and other obstruction to permit free and safe passage of public traffic.
- The existence and location of underground utilities, manholes, monuments and structures as shown on the plans are from the latest available data but the accuracy is not guaranteed. The encountering of other obstacles during the course of work is possible. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations.
- The Contractor shall verify the presence of existing aerial and underground utilities which may conflict with construction activities and shall coordinate with the utility company for temporary relocation, as necessary. All costs associated with temporary relocation shall be borne by the Contractor.
- The Contractor shall provide for vehicle and pedestrian access to and from all existing driveways and side streets at all times.
- Existing drainage system shall be kept functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to maintain flow. This work shall be considered incidental to various contract items.
- Existing facilities and/or pavement to remain which has been damaged by the Contractor shall be restored to its original condition or better at no cost to the State.
- All grassed areas damaged by construction activities shall be planted in accordance with Specifications Section 619 - Planting. Contractor shall restore to its original condition at no cost to the State.
- When excavating in close proximity to walls, fences, and other improvements, the Contractor shall protect, support, secure, and take all precautions to prevent damaging these facilities and improvements.
- The Contractor shall verify the locations and elevations of all existing utility lines and notify respective owners before commencing any excavation work.
- No material or equipment shall be stockpiled or otherwise stored within highway right-of-way except at locations designated in writing and approved by the Engineer.
- Contractor shall dispose or deliver any removed material at no cost to the State.
- The Contractor shall be held liable for any damages incurred to the existing landscaping as a result of his operations.

- After the project is completed, the Contractor shall restore grades and groundcover within the project limits to a condition equal or better than existing condition prior to construction.
- All existing utilities, whether or not shown on the plans, shall be protected at all times by the Contractor during construction unless specified on the plans to be abandoned. The Contractor shall be held liable for any damages incurred to the existing utilities as a result of his operations. All damaged portions shall be replaced in accordance with the standards and specifications of the affected utility company at no cost to the State.
- All work specified in the contract but not listed separately in the proposal schedule shall be considered incidental to other various contract items and shall not be paid for separately.

WATER POLLUTION AND EROSION CONTROL NOTES

A. GENERAL

- The Contractor is reminded of the requirements of Section 209 - Temporary Water Pollution Dust, and Erosion Control, in the Standard Specification. Section 209 describes but is not limited to: submittal requirements; scheduling of a water pollution and erosion control conference with the Engineer; construction requirements; method of measurement; and basis of payment.
- The Contractor shall follow the guidelines in the "Best Management Practices Manual for Construction Sites in Honolulu", dated May 1999 in developing, installing and maintaining the Best Management Practices (BMP) for the project.
- The Contractor shall follow the guidelines in the Honolulu's City & County "Rules Relating to Soil Erosion Standards and Guidelines" along with applicable Soil Erosion Guidelines for projects on Maui, Molokai, Kauai, and Hawaii.
- The Engineer may access liquidated damages of up to \$27,500 per day for non-compliance of each NPDES permit condition. There is no maximum limit on the amount assessed per day.
- The Engineer will deduct the cost from the progress payment for all citations received by the Department for non-compliance, or the Contractor shall reimburse the State for the full amount for the outstanding cost incurred by the State.
- For projects that required an NPDES Permit from the Department of Health, install a rain gage prior to any field work including the installation of any site-specific best management practices. The rain gage shall have a tolerance of at least 0.05 inches of rainfall, and have an opening of at least one-inch in diameter. Install the rain gage on the project site in an area that will not deter rainfall from entering the gage opening. The rain gage installation shall be stable and plumbed. Do not begin field work until the rain gage is installed and site-specific best management practices are in-place.
- The Contractor shall obtain permits and/or licenses for the location of the equipment staging/storage area and provide a copy to the Engineer.

B. WASTE DISPOSAL

- Waste Materials

All waste materials shall be collected and stored in a securely lidded metal dumpster. The dumpster shall meet all local and State soil waste management regulations. All trash and construction debris from the site shall be deposited in the dumpster. The dumpster shall be emptied a minimum of twice per week or as often as is deemed necessary. No construction waste materials shall be buried onsite. The Contractor's supervisory personnel shall be instructed regarding the correct procedure for the office trailer and the Contractor shall be responsible for seeing that these procedures are followed.

- Hazardous Waste

All hazardous waste materials shall be disposed of in the manner specified by local or State regulations or by the manufacturer. The Contractor's site personnel shall be instructed in these practices and shall be responsible for seeing that these practices are followed.

- Petroleum-Contaminated Soil

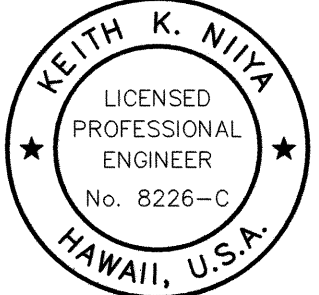
If petroleum-contaminated soil is encountered during construction it shall be stockpiled separately from other materials. Soil contaminated with oil, diesel, or gasoline from sources such as underground storage tanks and underground pipelines is not hazardous waste and shall be managed by the Contractor in compliance with all local and State requirements regarding the handling (stockpiling, transportation, and disposal) of petroleum-contaminated soil. The stockpiled soil shall be characterized by the Contractor for acceptance at an on-island petroleum-contaminated soil remediation/disposal facility.

- Sanitary Waste

All sanitary waste shall be collected from the portable units a minimum of once per week, or as required.

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES

- All control measures shall be inspected at least once each week and within 24 hours of any rainfall event of 0.5 inches or greater within a 24 hours period.
- All measures shall be maintained in good working order. If repair is necessary, it shall be initiated within 24 hours after the inspection.
- Existing catch basins shall be protected by a high-visibility geotextile sleeve filter.
- Temporary and permanent seeding and planting shall be inspected for base spots, washouts and healthy growth.
- A maintenance inspection report shall be made promptly after each inspection by the Contractor and a copy shall be submitted to the Engineer no later than one week from the date of the inspection.

 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION SIGNATURE: <i>Keith K. Niya</i> 4/30/10 EXPIRATION DATE OF THE LICENSE	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION CONSTRUCTION NOTES 1 KAMEHAMEHA HIGHWAY TRAFFIC OPERATIONAL IMPROVEMENTS VICINITY OF ACACIA ROAD TO CENTER DRIVE PROJECT NO. 99D/G-01-08 Scale: As Shown Date: April 2008
	SHEET No. T-03 OF 9 SHEETS

WATER POLLUTION AND EROSION CONTROL NOTES (CONT'D)

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99D/G-01-08	2008	5	89

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES (CONT'D)

7. Include designated Concrete Washout Area(s) in the Water Pollution, Dust, and Erosion Control Submittals.
8. The Contractor shall submit the name of a specific individual designated responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.
9. Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. They shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.
10. The Contractor shall contains, remove, and dispose slurry generated from saw cutting of pavement in accordance with approves BMP practices. Payment for confinement, removal, and disposal of slurry shall be considered incidental to the various contract items.

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES

1. Materials Pollution Prevention Plan
- a. Applicable materials or substances listed below are excepted to be present onsite during construction. Other materials and substances not listed below shall be added to the inventory.

Concrete	Fertilizers	Chain Link Fence Fabric
Detergents	Petroleum Based Products	Fence Posts
Paints (enamel and latex)	Cleaning Solvents	Fabric Panels
Metal Studs	Wood	
Tar	Masonry Block	

- b. Material Management Practices shall be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff. An effort shall be made to store only enough product as is required to do the job.
- c. All materials stored onsite shall be stored in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.
- d. Products shall be kept in their original containers with the original manufacturer's label.
- e. Substances shall not be mixed with one another unless recommended by the manufacturer.
- f. Whenever possible, a product shall be used up completely before disposing of the container.
- g. Manufacturer's recommendations for proper use and disposal shall be followed.
- h. The Contractor shall conduct a daily inspection to ensure proper use and disposal of materials onsite.
2. Hazardous Material Pollution Prevention Plan
- a. Products shall be kept in original containers unless they are cont reusable.
- b. Original labels and material safety data sheets (MSDS) shall be retained.
- c. Surplus products shall be disposed of according to manufacturer's instructions or local and State recommended methods.

3. Onsite and Offsite Product Specific Plan
- The following product specific practices shall be followed onsite

- a. Petroleum Based Products
- All onsite vehicles shall be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products shall be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used onsite shall be applied according to the manufacturer's recommendation.

- b. Fertilizers
- Fertilizers used shall be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer shall be worked into the soil to limit exposure to storm water. Storage shall be in a covered shed. The contents of any partially used bags of fertilizer shall be transferred to a sealable plastic bin to avoid spills.

- c. Paints
- All containers shall be tightly sealed and stored when not required for use. Excess paint shall not be discharged to the highway drainage system but shall be properly disposed of according to manufacturer's instructions or State and local regulations.


- d. Concrete Trucks
- Concrete trucks shall be allowed to wash out or discharge drum wash water only at a designated site. Water shall not be discharged in the highway drainage system or water of the United States. The Contractor shall contact Safe Drinking Water Branch, Department of Health at 586-4258 to receive permission to designate a disposal site. The Contractor shall clean disposal site as required or as requested by the Engineer.

4. Spill Control Plan
- a. A spill prevention plan shall be posted to include measures to prevent and clean up each spill.
- b. The Contractor shall be the spill prevention and clean up coordinator. The Contractor shall designate at least three site personnel who shall receive spill prevention and cleanup training. These individuals shall each become responsible for a particular phase of prevention and cleanup. The name of responsible spill personnel shall be posted in the material storage area and in the office trailer onsite.
- c. Manufacturer's recommended methods for spill cleanup shall be clearly posted and site personnel shall be made aware of the procedures and the location of the information and cleanup supplies.
- d. Materials and equipment necessary for spill cleanup shall be kept in the material storage area onsite.
- e. All spills shall be cleaned up immediately after discovery.
- f. The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- g. Spill of toxic hazardous material shall be reported to the appropriate State or local government agency, regardless of the size.

E. PERMIT REQUIREMENTS

1. A National Pollutant Discharge Elimination System (NPDES) Permit is required for Construction Activities of one acre or more. The Contractor shall submit to the Engineer six sets of the Water Pollution, Dust, and Erosion Control Submittals as detailed in Subsection 209.03 of the Standard Specifications.
2. The Contractor shall comply with all applicable State and Federal Permit conditions. Permits may include but are not limited to the following:
- a. NPDES Permit for Construction Activities.

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ORIGINAL PLAN	
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ABBREVIATIONS

ABUT	Abutment	IRR	Irrigation
Ø	Approximate		
¢	And	LAT	Lateral
@	At	LP	Light pole
AC	Asphalt concrete		
B	Baseline	MCBH	Marine core base Hawaii
		MH	Manhole
		MON	Monument
CATV	Cable television	MIN	Minimum
CB	Catch basin		
CCTV	Closed circuit television	PAV'T	Pavement
CL	Centerline	P.H.	Pearl harbor
CLR.	Clear	PL	Place
CONC	Concrete	P	Property line
CONT	Continuation or continuous	PP	Power pole
DET.	Detail	RD.	Road
D.I.	Drain inlet	ROW	Right-of-way
D/L	Drain line		
DMH	Drain manhole	SDMH	Storm drain manhole
DWY. OR D/W	Driveway	SHT.	Sheet
		ST.	Street
		STA.	Station
EA	Each	STD	Standard
EHH	Electric handhole	S/W	Sidewalk
ELEC.	Electric		
ELEV. OR EL	Elevation	TBOX	Telephone box
EXIST.	Existing	TMH	Telephone manhole
EP	Edge of pavement	TRANS	Transformer
ETW	Edge travel way	TYP.	Typical
FH	Fire hydrant	UP	Utility pole
FT	Feet		
		WM	Water meter
GA	Guy anchor	WV	Water valve
GV	Gate valve		
HT/HTCO	Hawaiian telcom		
HECO	Hawaiian electric co.		
HELCO	Hawaiian electric light co.		
HSTA	Hawaii state teachers assoc.		

PUBLIC HEALTH, SAFETY AND CONVENIENCE

- 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.
- 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 contractor shall be responsible for the cleaning and removal of all silt and debris generated by his work and deposited and accumulated within downstream waterways, ditches and drain pipes and on public and private roadways. The contractor agrees to reimburse the State or City and County of Honolulu, the costs expended in performance of the above work if required for public health and safety, or made necessary by non-performance by the contractor.
- The contractor shall submit a noise pollution control plan when applying for a construction permit.

SOLID WASTE CONSTRUCTION NOTES

- Unless otherwise specified, the contractor is responsible for the proper handling, storage and/or disposal of all waste generated by the construction including grubbing and excess excavated material. Any material brought to the city and county landfills will be subjected to the instituted tipping fee system, with no exceptions or exemptions.

WATER NOTES

- 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.
- All plans approved by the Board of Water Supply's are based solely on the adequacy of the water supply. All other features on 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.
- The contractor shall notify the City and County of Honolulu Board of Water Supply Capital Projects Division, Construction Section in writing, one week prior to commencing work on the water system.
- The existence and location of underground utilities and structures as shown on the plans are from the latest available data but are not guaranteed as to the accuracy of 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.
- Re-approval shall be required if this project is not under construction within a period of two years.
- 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 measures necessary to protect the water lines, such as constructing special reaction blocks (with the Board/ Department of Water Supply approval) and/or modifying his construction method.
- Prior to any excavating, the contractor shall verify in the field the location of existing water mains and appurtenances.
- The contractor shall adjust all manhole frames/valve boxes/meter boxes within the project limits. The contractor shall be responsible for "referencing" these manholes/valve boxes/meter boxes to facilitate the adjustments.
- At the electrical/signal ductline water crossings, adjust all electrical/signal ductline elevations to maintain 6" vertical clear separation from all waterlines (12" clear for all electrical/signal ductline structures larger than 16") at no cost to the Board of Water Supply.
- Maintain 3'-0" min. Horizontal clear separation between all waterline systems and nearest electrical/signal ductlines paralleling the water system at no cost of to the Board of Water Supply.

WATER NOTES (CONT'D)

- Maintain a 3'-0" horizontal clear separation between street light/traffic signal, standards (including any modular units) and the nearest water system. Contractor shall field verify for any conflicts at each street/traffic signal standard location. Where conflicts occur, the contractor shall coordinate with the project engineer to revise the street light/traffic signal standard to provide the required clearances at no cost to the Board of Water Supply.
- The contractor shall verify all existing service lateral locations whether shown or not shown on plans prior to commencing with any of the work and shall not assume that where no services are shown none exist.

Approved:

for Robert Chun 4/25/08
Chief, Capital Projects Division ^{ML} Date
Board of Water Supply

<div><div>KEITH K. NIYA</div><div>LICENSED PROFESSIONAL ENGINEER</div><div>No. 8226-C</div><div>HAWAII, U.S.A.</div></div> <div><div>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION</div><div><div><div>Signature</div><div>4/30/10</div><div>EXPIRATION DATE OF THE LICENSE</div></div></div></div>	<div>STATE OF HAWAII</div> <div>DEPARTMENT OF TRANSPORTATION</div> <div>HIGHWAYS DIVISION</div> <div>CONSTRUCTION NOTES 2</div> <div>KAMEHAMEHA HIGHWAY TRAFFIC OPERATIONAL IMPROVEMENTS</div> <div>WAIHONA STREET TO CENTER DRIVE</div> <div>PROJECT NO. 99D/G-01-08</div> <div>Scale: As Shown Date: March 2008</div>
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NOTE BOOK	

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NOTE BOOK		QUANTITY BY	
		CHECKED BY	
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HAWAIIAN ELECTRIC COMPANY (HECO) NOTES

- 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 excavating for the new lines. The contractor shall be responsible for any damages to HECO's facilities whether shown or not shown on the plans.
- 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.
- Excavation permit: The contractor shall obtain an excavation permit from HECO's Technical Division (543-5654) at 820 Ward Avenue, 4th Flr, two weeks prior to starting construction. Please refer to our request number at that time.
- 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.
- 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 10ft 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 10ft 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 & 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 put in place. 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.
- 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 Department, Customer & System Superintendent at 543-4223 a minimum of two (2) weeks in advance.


HAWAIIAN ELECTRIC COMPANY (HECO) NOTES
(CONT'D)

- 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 and Maintenance Department, Customer and System Superintendent at 543-4223, a minimum of two (2) weeks in advance.
- 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).
- Excavations: when trench excavation is adjacent to or beneath HECO's existing structures or facilities, the contractor is responsible for:
 - Sheeting and bracing the excavation and stabilizing the existing ground to render it safe and secure and to prevent possible slides, caveins and settlements.
 - Properly supporting existing structures or facilities with beams, struts, or under-pinnings 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).
- 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.
- Conflicts: Any redesign or relocation of HECO's facilities not shown on the plans may be cause for lengthy delays. 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.

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99D/G-01-08	2008	7	89

HAWAIIAN ELECTRIC COMPANY (HECO) NOTES
(CONT'D)

- 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.
- 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 Construction & Maintenance Department, Customer and System Superintendent at 543-4223 a minimum of five (5) working days in advance to arrange for HECO stand-by personnel.

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	SHEET No. T-06 OF 9 SHEETS

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HAWAIIAN ELECTRIC COMPANY (HECO) NOTES (CONT'D)

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 (A) |
| Water lines, crossing | 12 (B) |
| Sewer lines, parallel | 36 (C) |
| Sewer lines, crossing | 24 (D) |
| Drain lines, parallel | 12 |
| Drain lines, crossing | 6 (E) |
| Electrical ϕ gas lines, parallel | 12 |
| Electrical ϕ gas lines, crossing | 12 |
| Telephone lines, parallel | 6 (E) |
| Telephone lines, crossing | 6 (E) |
| Chevron oil lines, parallel | 36 |
| Chevron oil lines, crossing | 48" below oil line (F) |
- A. The minimum horizontal clearances to water lines parallel to electrical ductlines should be increased to 60 in. If the water line is greater than or equal to 16 in. in diameter.
- B. The minimum vertical clearances to water lines crossing electrical ductlines can be reduced to 6 inches if the electrical ductline structure is concr. encased and is below the water line and the water line is less than 16 inches in diameter.
- C. A minimum horizontal clearance of 36 inches is required between new handholes and existing sewer laterals.
- D. The minimum vertical clearances to sewer pipes crossing electrical ductlines can be reduced to 12 inches if the sewer pipe is jacketed in concrete.
- E. The minimum clearances shall be increased to 12 inches if the electrical ductline is direct buried.
- F. 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.
- G. The contractor shall notify the Construction Manager ϕ HECO of any heat sources (power cable duct bank, steamline, etc.) encountered that are not properly identified on the plans. The following clearance shall be maintained between HECO's fuel oil pipelines and all adjacent structures: 24-inches, parallel or crossing. The minimum clearance can be reduced to 12 inches (parallel and below only) if the structure is jacketed in concrete.
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.
16. Schedule: Contractor shall furnish his construction schedule ___ working days prior to starting work on HECO facilities. Contractor shall give HECO, in writing, _ working days notice to proceed with HECO's portion of work.


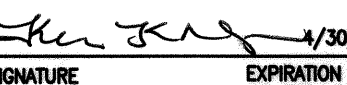
HAWAIIAN ELECTRIC COMPANY (HECO) NOTES (CONT'D)

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, handholde, 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. Contractor to coordinate work to break into HECO's existing electrical facilities with HECO's Underground Division at 543-7871 at least 10 working days in advance.
21. Stakeout: The contractor shall arrange for toneouts of all underground facilities and 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.
22. 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.
- CATV 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 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 Oceanic Cable Company inspector or his representative.
- 3.The contractor shall notify the Oceanic Cable Company inspector 48 hours prior to the start of pullbox adjustments.
4. Contractor shall provide all materials and furnish all labor and equipment necessary to re-adjust the pullbox height.
5. The location of CATV facilities shown on plans are from existing records with varying degrees of accuracy as to its actual fixed location. The contractor shall use extreme caution when working in close proximity of CATV facilities.
6. The contractor shall obtain excavation permit clearance from Oceanic's Engineering Section located at 200 Akamainui St., Mililani Tech Park
7. Any work required to relocate CATV facilities shall be done by Oceanic Cable and the contractor shall be responsible for all coordination requirements and associated costs.
8. Any damage to Oceanic's facilities shall be reported to OCI's Repair Dispatch Department at 625-8282 or 625-8666.

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99D/G-01-08	2008	8	89

CATV NOTES (CONT'D)

9. At no time shall cement mortar, wood, or any other material be used between precast sections. leveling or raising of boxes to grade must be done by brickwork section using cement mortar. The permanent installation of wooden wedges to accomplish this purpose will not be accepted.
10. Trenching to be by hand digging near and across existing utility lines.
11. For underground cable locating and parking, five working days advance notice is required. Three working days advance notice is required for any inspection by a designated representative. Contractor shall take necessary precaution not to damage any existing cables or ducts. Oceanic's 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 Oceanic's facilities.

 <small>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION</small>  <small>SIGNATURE</small>	<p>STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION</p> <p>CONSTRUCTION NOTES 5</p> <p>KAMEHAMEHA HIGHWAY TRAFFIC OPERATIONAL IMPROVEMENTS VICINITY OF ACACIA ROAD TO CENTER DRIVE PROJECT NO. 99D/G-01-08</p> <p>Scale: As Shown Date: April 2008</p>
	<p>SHEET No. T-07 OF 9 SHEETS</p>

ORIGINAL PLAN

NOTE BOOK

No.

SURVEY PLOTTED BY

DRAWN BY

TRACED BY

DESIGNED BY

QUANTIFIED BY

CHECKED BY

DATE

dwg-09 T-08 NOTES-6.DWG

HAWAIIAN TELCOM NOTES

- 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.
- The contractor shall obtain an excavation permit and toning request from Hawaiian Telcom's excavation permit station, 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.
- Prior to the excavation of the ductline, the contractor shall request Hawaiian Telcom 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.
- 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 Hawaiian Telcom facilities. The contractor shall verify their locations and shall be liable for any damages to Hawaiian Telcom facilities. Any damages shall be reported immediately to Hawaiian Telcom'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.
- The contractor shall take necessary precaution not to damage existing cables or ducts. A Hawaiian Telcom 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 contains Hawaiian Telcom facilities. Temporary cable and duct supports shall be provided wherever necessary.
- The contractor shall notify Hawaiian Telcom's inspector or designated representative a minimum of 72 hours prior to excavation, bracing, or backfilling of Hawaiian Telcom's structures or facilities.
- All applicable construction work shall be done in accordance with the "Hawaiian Telcom Standard Specifications for Placing Underground Telephone Systems" dated March 1999 and all subsequent amendments and additions, and all other pertinent standards for telephone construction. Contractor shall familiarize his personnel by obtaining applicable specifications.
- When excavation is adjacent to or beneath Hawaiian Telcom'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 Hawaiian Telcom'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 Hawaiian Telcom's structures or facilities.
- The contractor shall brace all poles or light standards near the new ductline, manhole, or handhole during his operations.
- 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.

HAWAIIAN TELCOM NOTES, (CONT'D)

- The contractor shall comply with the policy adopted by the Department of Design and Construction, City and County of Honolulu, concerning the replacement of concrete sidewalks after excavation work.
- 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.
- The contractor shall pump all manholes dry during final inspection.
- The contractor shall notify Hawaiian Telcom inspector 72 hours prior to the pouring of concrete or backfilling.
- 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.
- The contractor shall be responsible for laying out all required lines and grades and shall preserve all bench marks 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.
- 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.
- 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 slab penetration, shall have a bend radius of ten times the diameter of the duct or greater.
- After ductline has been completed, a mandrel with a square front not less than 12" long and having a diameter of $5\frac{1}{4}$ " 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.
- All ducts and conduits shall have an 1800# polyester mule-tape (Neptco, wpl800p, 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.

CONSTRUCTION NOTES FOR GAS FACILITIES

- The Gas Company gas pipelines in the project area are plastic coated and catholically protected. The contractor shall be extremely careful when working near these gas pipelines.
- 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.
- Since gas line locations on field maps are approximate, the contractor, after obtaining written clearance, shall call one call concepts a minimum of five (5) working days before starting excavation to arrange for field location of the existing gas pipelines. The telephone number is 1-866-423-7287.

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99D/G-01-08	2008	9	89

CONSTRUCTION NOTES FOR GAS FACILITIES (CONT'D)

- 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.
- 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.
- 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.
- 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.
- 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.

KEITH K. NIWA

LICENSED PROFESSIONAL ENGINEER

No. 8226-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE

EXPIRATION DATE OF THE LICENSE

3/30/10

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

CONSTRUCTION NOTES 6

KAMEHAMEHA HIGHWAY

TRAFFIC OPERATIONAL IMPROVEMENTS

VICINITY OF ACACIA ROAD TO CENTER DRIVE

PROJECT NO. 99D/G-01-08

Scale: As Shown

Date: April 2008

SHEET No. T-08 OF 9 SHEETS

9