

GENERAL NOTES:

1. The project includes construction of rockfall and landslide mitigation measures for Kailua Road. The work shall consist of clearing and grubbing, excavation; creating a rockfall catchment ditch and a drainage ditch; installing a rockfall catchment fence and a slope stabilization mesh; and securing boulders with netting or bolts; transplanting; maintenance of landscaping; and traffic control.
2. The Contractor's Attention Is Directed To The Following Sections Of The Special Provisions: Subsection 104.11 – Utilities and Services; Subsection 107.6 – Contractor's Duty Regarding Public Convenience; Subsection 107.21 – Utilities and Services; and Section 645 – Work Zone Traffic Control.
3. 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.
4. 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.
5. The Contractor shall verify the presence of existing 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 relocations shall be borne by the Contractor.
6. The Contractor shall provide for vehicle and pedestrian access to and from all existing side streets at all times.
7. 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.
8. Existing pavement within 6 inches of the finish grade in areas to be grassed shall be removed. All other existing pavement which will not be overlaid with new A.C. pavement shall be rooted, plowed, pulverized, or scarified to a minimum depth of 6 inches.
9. Existing facilities and/or pavement to remain which has been damaged by the Contractor shall be restored to its original condition at no cost to the State.
10. All regraded areas and all grassed areas damaged by construction activities shall be planted in accordance with Specifications Section 641 – Hydro-Mulch Seeding.
11. Sawcut pavement at limits of reconstruction before removal. Cold plane an additional 1'-0" of existing pavement beyond pavement reconstruction prior to paving final lift of A.C. Cold planing will not be measured or paid for separately but shall be incidental to the various contract items.
12. All saw cutting work will not be measured or paid for separately, but shall be incidental to the various contract items.

13. 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.
14. The Contractor shall verify the locations and elevations of all existing utility lines and notify respective owners before commencing any excavation work.
15. Steel plates for covering trenches shall have a skid resistant surface
16. Where necessary, existing A.C. pavement shall be cold-planed up to 2" inches below finish grade to permit installation of A.C. overlay of not less than 2 inches thick.
17. The Contractor shall notify the Engineer in writing, one (1) day prior to starting paving operations.
18. Smooth riding connections shall be constructed at all limits of construction according to the Contract. This work will not be measured or paid for separately, but shall be considered incidental to the various contract items.
19. The Contractor shall notify in writing, the Oahu Transit Services, Inc. Roads Supervision Office, 811 Middle St.,Hon., HI 96819 (Ph.# 848-4571) two (2) days prior to any paving operations.
20. 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.
21. Contractor shall dispose or deliver any removed material to a location designated by the engineer at no additional cost to the State.
22. Tack Coat shall be incidental to the various Asphalt Concrete Pavement items.
23. The Contractor shall be held liable for any damages incurred to the existing landscaping to remain as a result of his operations.
24. After the project is completed, except for the grading required in constructing the drainage and catchment ditches, the Contractor shall restore grades and groundcover within the project limits to a condition equal or better than the existing condition prior to construction.
25. 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.
26. The Contractor is reminded of the requirements of Subsection 105.16 – Subcontracts which requires him to perform work amounting to not less than 30 percent of the total contract cost less deductible items. Non-compliance with this Subsection may be grounds for rejection of bids.


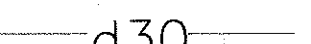




27. Irrigation lines in conflict with the Construction shall be cut and capped. The irrigation sprinkler heads in the project limits shall be turned off. Payment for this work shall be considered incidental to the various contract items.
28. All existing utility/light poles overhead utilities and guy poles/wires shall remain in place and operational. The Contractor shall protect these utilities at all times during construction and 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 and no delays or extensions of contract time will be allowed as a result of these required repairs.
29. Contractor shall provide temporary rock protection fencing below all work areas to ensure public safety.
30. The Contractor shall notify the Engineer in writing two (2) weeks prior to starting paving operations.
31. The exact locations and limits of areas to be filled with leveling course shall be determined in the field by the Engineer.

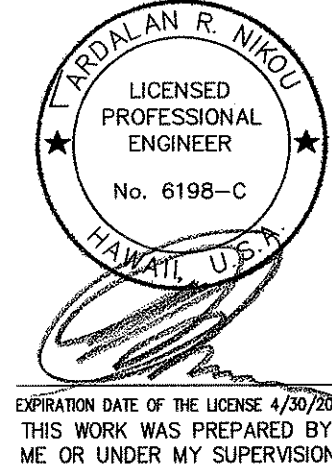
ABBREVIATIONS:

AC, ac	Asphalt Concrete
AB	Aggregate Base
BL	Baseline
E.G.	Existing Ground
es	Existing Edge of Shoulder
ep	Existing Edge of Travel Way
EB	Eastbound
ES	Edge of Shoulder
EP	Edge of Travel Way
Lt.	Left of $\mathbb{R}$
M.L.	Matchline
ST. MON.	Street Monument
NTS	Not to Scale
o.c.	On Center
PC	Point of Curvature
PCC	Point of Compound Curve (for Alignment)
PI	Point on Intersection
POC	Point on Curvature
POT	Point on Tangent
PT	Point of Tangency
R	Radius
R/W	Right-of-Way
Rt.	Right of $\mathbb{R}$

S.E., s.e.	Superelevation
sl	Street Light
STA	Station along B
t	Exist. Telephone
w	Exist. Water

LEGEND

	Right-of-Way
	Drain Pipe
	Guardrail, Type 3
	Silt Fence
	Street Light
	Landscaping
	Utility
	Adjusted Water Manhole
	Adjusted Water Valve
	Adjusted Monument



9/04/06	Revised Note 2, Legend; Added Notes 30 & 31
Date	Revision

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

GENERAL NOTES

KAILUA ROAD PERMANENT  
ROCKFALL AND LANDSLIDE MITIGATION  
PROJECT NO. 61D-02-06

Scale: As Noted      Date: Aug 2006

SHEET No. 1 OF 3 SHEETS



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
OAHU	HAWAII	61D-02-06	2006	4	57

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:

- Sheeting and bracing the excavation and stabilizing the existing ground to render it safe and secure and to prevent possible slides, cave-ins, and settlement.
- 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).

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.

DATE	____
DESIGNED BY	____
CHECKED BY	____
NOTED BY	____
NO.	____

EarthTech  
A tyco International Ltd. Company



EXPIRATION DATE OF THE LICENSE 4/30/2008  
THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
UTILITY NOTES	
KAILUA ROAD PERMANENT ROCKFALL AND LANDSLIDE MITIGATION PROJECT NO. 61D-02-06	
Scale: As Noted	Date: Aug 2006
SHEET No. 2 OF 3 SHEETS	



HECO NOTES: (12/27/01) CONT

13. 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.
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.

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, except those specifically called for removal. 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 active 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 Contractor shall pay for 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.

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.
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 Verizon Hawaii inspector or their representative.

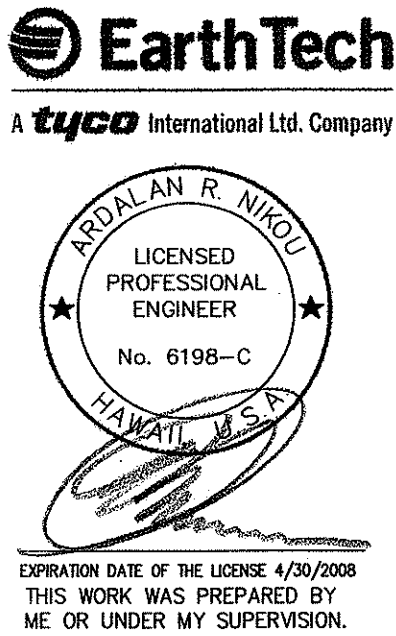
DTS NOTE:

1. The Contractor shall notify Oahu Transit Services, Inc. (OTS), Ed Sniffen (848-4571) or Lowell Tom (848-4578), two (2) days 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	DATE
NOTED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
No.	



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
UTILITY NOTES	
KAILUA ROAD PERMANENT ROCKFALL AND LANDSLIDE MITIGATION PROJECT NO. 61D-02-06	
Scale: As Noted	Date: Aug 2006
SHEET No. 3 OF 3 SHEETS	