

GENERAL NOTES:

1. The scope of work for this project includes removal of loose and overhanging soil; removal of trees; chipping of boulders; clearing of vegetation; adding compacted fill and top soil; installation of erosion control mats; installation, maintenance, and removal of silt fences; installation of hydraulically-applied erosion control blankets and hydro-mulch; application of grass seeds; providing temporary irrigation; maintaining the vegetation during the plant maintenance period; and providing traffic control.
2. The Contractor's attention is directed to the following Sections of the Special Provisions: Subsection 107.13 - Contractor 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 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 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 concrete structures, such as manholes, culverts, channels, etc., which are designated to be removed or are in conflict with proposed construction shall be removed to a depth of not less than 3 feet below finish grade in roadway and not less than 1.5 feet below finish grade in other areas.
9. 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.
10. 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.
11. All regraded areas and all grassed areas damaged by construction activities shall be planted in accordance with Specifications Section 618 - Grassed Surfaces. Contractor shall restore to its original condition at no cost to the State.

12. 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.
13. The Contractor shall verify the locations and elevations of all existing utility lines and notify respective owners before commencing any excavation work.
14. 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.
15. Contractor shall dispose or deliver any removed material at no cost to the State.
16. The Contractor shall be held liable for any damages incurred to the existing landscaping as a result of his operations.
17. 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.
18. 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.
19. 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.

ABBREVIATIONS:

AC, ac	Asphalt Concrete
#	Baseline
Bot.	Bottom
CL	Chain Link
Conc.	Concrete
Elev	Elevation
es	Existing Edge of Shoulder
etw	Existing Edge of Travel Way
EB	Eastbound
ES	Edge of Shoulder
ETW	Edge of Travel Way
G.W.	Guy Wire
M.L.	Matchline
ST. MON.	Street Monument
NTS	Not to Scale
a.c.	On Center
O/H	Overhead
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
sl	Street Light
SLB	Street Light Box
STA	Station along #
t	Telephone
UG	Underground
U.P.	Utility Pole
UTPB	Untreated Permeable Base
w	Water

LEGEND:

Existing

Proposed

	Chain Link Fence
	Contour
	Denotes No Access Permitted, Right-of-Way
	Drain Pipe
	Grated Drop Inlet
	Guardrail, Type 3
	Silt Fence
	Slope
	Street Light
	Trees
	Utility

ORIGINAL PLAN	DATE
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Wendy M. Higashimura

exp. 4/30/08

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GENERAL NOTES, LEGEND,
AND ABBREVIATIONS**

**SLOPE MAINTENANCE FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU**

Project No. HWY-0-10-06M

Scale: None Date: April 2006

SHEET No. N-1 OF 8 SHEETS

WATER POLLUTION AND EROSION CONTROL NOTES:

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-10-06M	2006	3	57

A. GENERAL:

- The Contractor is reminded of the requirements of Section 209 - Temporary Water Pollution, Dust, and Erosion Control, in the Special Provisions. 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 assess 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 of the outstanding cost incurred by the State.
- For projects that require 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.

B. WASTE DISPOSAL:

1. Waste Materials

All waste materials shall be collected and stored in a securely lidded metal dumpster. The dumpster shall meet all local and State solid 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 waste disposal. Notices stating these practices shall be posted in the office trailer and the Contractor shall be responsible for seeing that these procedures are followed.

2. 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.

3. 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 hour period.
- All measures shall be maintained in good working order. If repair is necessary, it shall be initiated within 24 hours after the inspection.
- Built-up sediment shall be removed from silt fence when it has reached one-third the height of the fence.
- Silt screen or fence shall be inspected for depth of sediment, tears, to verify that the fabric is securely attached to the fence posts or concrete slab and to verify that the fence posts are firmly in the ground. The bottom of the silt screen shall be inspected and verified that it is buried a minimum of 6 inches below the existing ground.

- Temporary and permanent seeding and planting shall be inspected for bare 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.
- Provide a stabilized construction entrance to reduce vehicle tracking of sediments. Include stabilized construction entrance in the Water Pollution, Dust, and Erosion Control submittals. Minimum length should be 50 feet. Minimum width should be 30 feet. Minimum depth should be 6 inches and underlain with geo-textile fabric. The paved street adjacent to the site entrance shall be cleaned daily or as required to remove any excess mud, cold planed materials, dirt or rock tracked from the site. Dump trucks hauling material from the construction site shall be covered with a tarpaulin.
- Include designated Concrete Washout Area(s) in the Water Pollution, Dust, and Erosion Control submittals.
- 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.
- 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.
- The Contractor shall contain, remove, and dispose slurry generated from saw cutting of pavement in accordance with approved 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 expected to be present onsite during construction. Other materials and substances not listed below shall be added to the inventory.

Concrete	Fertilizers
Detergents	Petroleum Based Products
Paints (enamel and latex)	Cleaning Solvents
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.

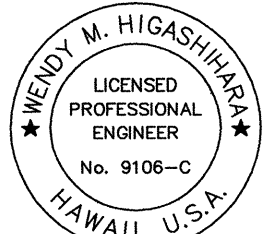
h. The Contractor shall conduct a daily inspection to ensure proper use and disposal of materials onsite.

2. Hazardous Material Pollution Prevention Plan

- Products shall be kept in original containers unless they are not resealable.
- Original labels and material safety data sheets (MSDS) shall be retained.
- Surplus products shall be disposed of according to manufacturers' instructions or local and State recommended methods.

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QUANTITIES BY	
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WATER POLLUTION AND EROSION CONTROL NOTES: -Cont.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-10-06M	2006	4	57

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES: -Cont.

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 manufacturers' 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 waters of the United States. The Contractor shall contact 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 Owner's representative.

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 cleanup 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 names of responsible spill personnel shall be posted in the material storage area and in the office trailer onsite.

c. Manufacturers' 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. Spills of toxic hazardous material shall be reported to the appropriate State or local government agency, regardless of the size.

E. PERMIT REQUIREMENTS:

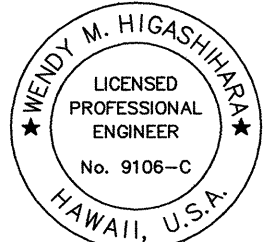
1. A National Pollutant Discharge Elimination System (NPDES) Permit is required for Construction Activities of one acre or more. The Contractor shall submit to the Engineer six sets of the Water Pollution and Erosion Control Submittals as detailed in Subsection 209.03 of the specifications.

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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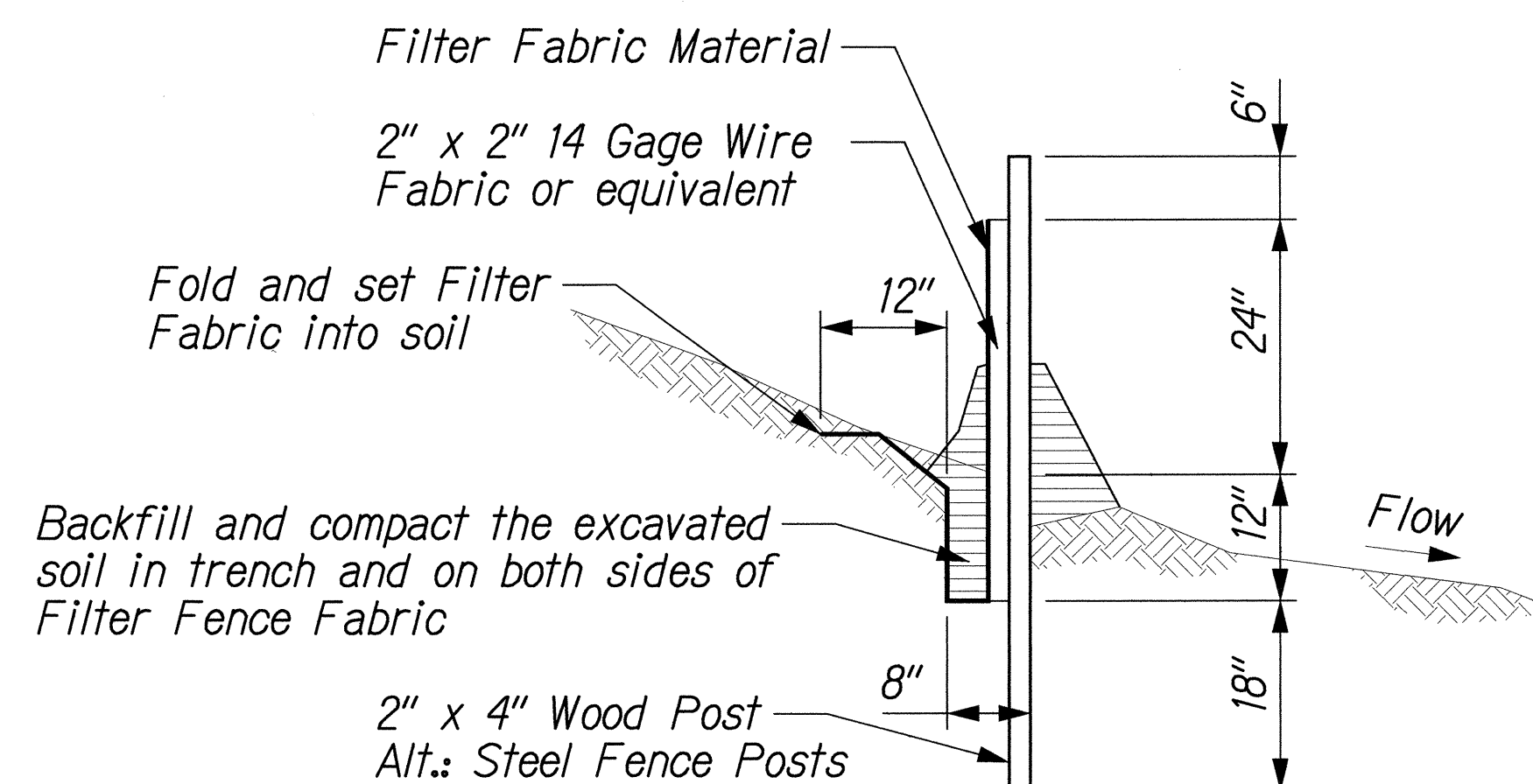
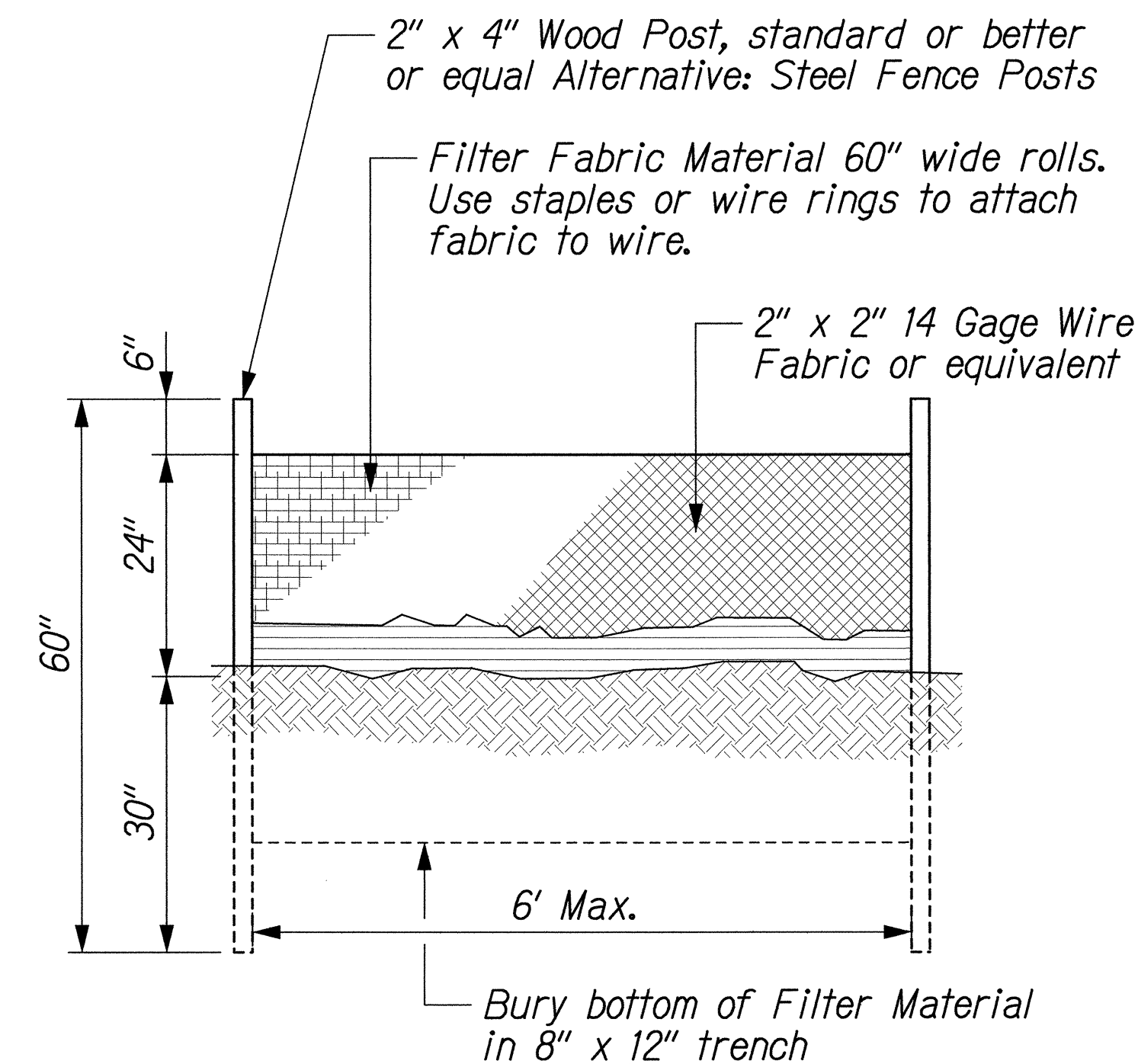
BEST MANAGEMENT PRACTICE NOTES:

The following special conditions apply to all land disturbance work conducted under this general permit:

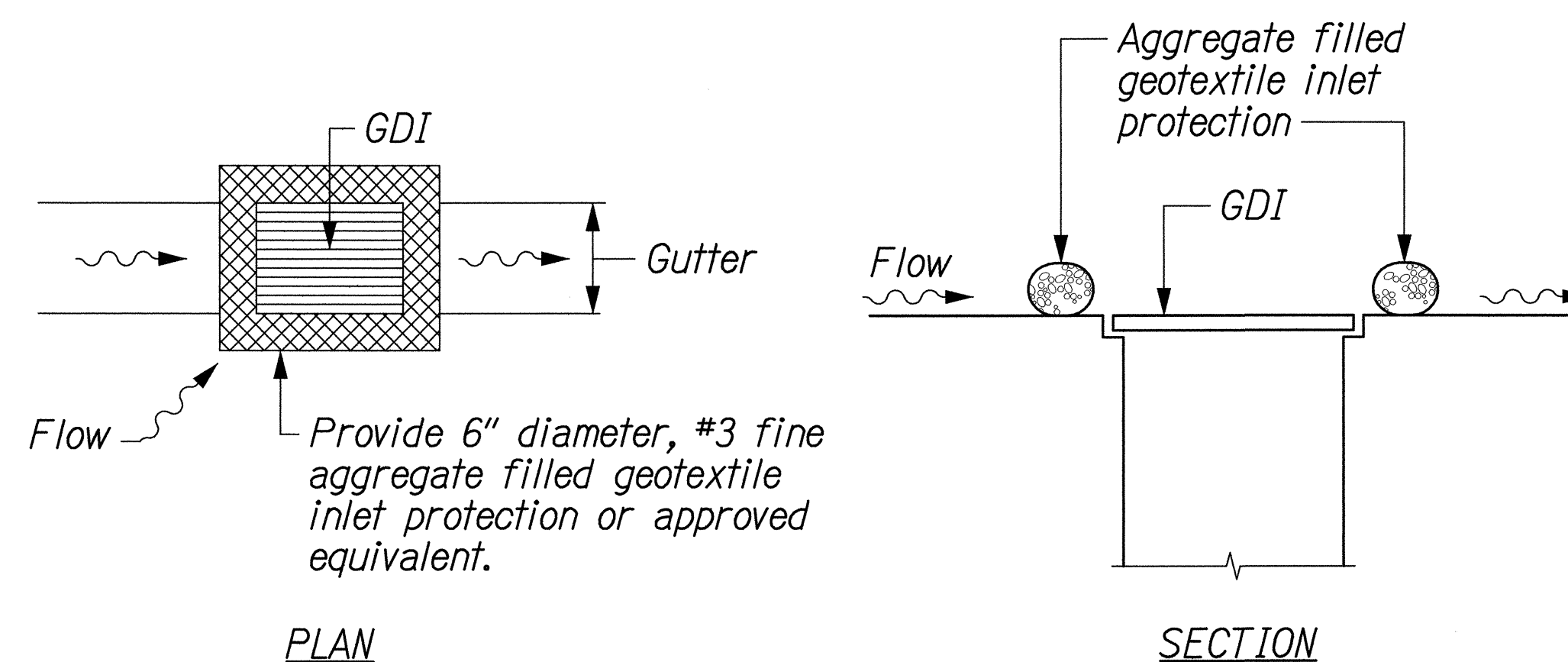
- a) Construction Management Techniques
 - (1) Clearing and grubbing shall be held to the minimum necessary for grading and equipment operation.
 - (2) Construction shall be sequenced to minimize the exposure time of the cleared surface area.
 - (3) Construction shall be staged or phased for large projects. Areas of one phase shall be stabilized before another phase is initiated. Stabilization shall be accomplished by temporarily or permanently protecting the disturbed soil surface from rainfall impacts and runoff.
 - (4) Erosion and sediment control measures shall be in place and functional before earth moving operations begin. These measures shall be properly constructed and maintained throughout the construction period.
 - (5) All control measures shall be checked and repaired as necessary, for example, weekly in dry periods and within twenty-four hours after any rainfall of 0.5 inches or greater within a 24-hour period. During prolonged rainfall, daily checking is necessary. The permittee shall maintain records of checks and repairs.
 - (6) The permittee shall maintain records of the duration and estimated volume of storm water discharge(s).
 - (7) The Contractor shall designate a specific individual to be responsible for erosion and sediment controls on each project site.
- b) Vegetation Controls
 - (1) Pre-construction vegetative ground cover shall not be destroyed, removed, or disturbed more than twenty calendar days prior to land disturbance.
 - (2) Temporary soil stabilization with appropriate vegetation shall be applied on areas that will remain unfinished for more than thirty calendar days.
 - (3) Permanent soil stabilization with perennial vegetation or pavement shall be applied as soon as practical after final grading. Irrigation and maintenance of the perennial vegetation shall be provided for thirty calendar days or until the vegetation takes root, whichever is shorter.
- c) Structural Controls
 - (1) Storm water flowing toward the construction area shall be diverted by using appropriate control measures, as practical.
 - (2) Erosion control measures shall be designed according to the size of disturbed or drainage areas to detain runoff and trap sediment.
 - (3) Water must be discharged in a manner that the discharge shall not cause or contribute to a violation of the basic water quality criteria as specified in section 11-54-04.

SILT FENCE NOTES:

1. Filter fabric shall be of the type specified and installed in combination with a support net of polyester netting or approved equal. The filter fabric shall be a minimum of 36 inches wide and the support net a minimum of 30 inches.
2. If silt fence is obtained from manufacturer as a package (i.e. fabric attached to post) the manufacturers installation instructions shall be adhered to.
3. Posts shall be metal where possible, cross section of post will be substantial enough to support a loaded silt fence without bending. Post spacing shall be 6 feet maximum.
4. Some manufacturers only supply silt fence with wooden post. During installation, measures should be taken to prevent damage to post.



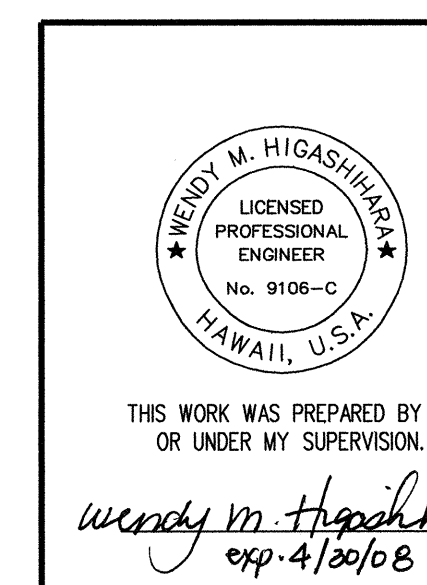
SILT FENCE DETAIL
Not to Scale



PLAN

SECTION

INLET PROTECTION
Not to Scale



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**WATER POLLUTION AND
EROSION CONTROL NOTES**
SLOPE MAINTENANCE FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU
Project No. HWY-0-10-06M
Scale: None Date: April 2006

HECO NOTES: (01/03/05)

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-10-06M	2006	6	57

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 (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 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 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.

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 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:

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

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.

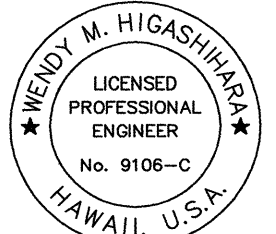
13. HECO Stand-By Personnel

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.

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HECO NOTES: (01/03/05)

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 and Gas Lines, Parallel	12
Electrical and 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 inches if the water line is greater than or equal to 16 inches 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 concrete 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 & HECO of any heat sources (power cable duct bank, steamline, etc.) encountered that are not properly identified on the drawing.

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 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.

ORIGINAL PLAN	DESIGNED BY	DATE
NOTE BOOK	DRAWN BY	
No.	CHECKED BY	

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WENDY M. HIGASHIHARA

LICENSED
PROFESSIONAL
ENGINEER

No. 9108-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

Wendy M. Higashihara
exp. 4/30/08

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

UTILITY NOTES

SLOPE MAINTENANCE FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU
Project No. HWY-O-10-06M

Scale: None Date: April 2006

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-10-06M	2006	8	57

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 1994, 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 Ualea 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.

ORIGINAL PLAN	DATE
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DRAWN BY
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CHECKED BY
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STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

UTILITY NOTES

SLOPE MAINTENANCE FOR EROSION CONTROL

AT VARIOUS SITES ON OAHU

Project No. HWY-0-10-06M

Scale: None

Date: April 2006

WENDY M. HIGASHIMURA

LICENSED PROFESSIONAL ENGINEER

No. 9106-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

wendy m Higashimura

exp. 4/30/08

SHEET No. N-7 OF 8 SHEETS

8

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-10-06M	2006	9	57

MECHANICAL/ELECTRICAL DESIGN AND
ENGINEERING DIVISION NOTES:

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

TRAFFIC SIGNALS & TECHNOLOGY DIVISION:

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

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.

DATE	_____
QUANTITY NOTED BY	_____
DRAWN BY	_____
TRACED BY	_____
DESIGNED BY	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____
No.	_____

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<div><div><div>WENDY M. HIGASHIHARA</div><div>LICENSED PROFESSIONAL ENGINEER</div><div>No. 9106-C</div><div>HAWAII, U.S.A.</div></div><div><div>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.</div><div><i>Wendy M. Higashihara</i></div><div>exp. 4/20/08</div></div></div>	<div>STATE OF HAWAII</div> <div>DEPARTMENT OF TRANSPORTATION</div> <div>HIGHWAYS DIVISION</div> <div><u>UTILITY NOTES</u></div> <div><u>SLOPE MAINTENANCE FOR EROSION CONTROL</u></div> <div><u>AT VARIOUS SITES ON OAHU</u></div> <div><u>Project No. HWY-0-10-06M</u></div> <div>Scale: None</div> <div>Date: April 2006</div>
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