FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	3	160

GENERAL NOTES:

1. The scope of work for this project includes the design and construction to widen the existing four-lane highway to a six-lane highway. In general, the widening work includes:
   a. Remove existing paved shoulder, widen roadway to accommodate 3 11-foot travel lanes, 5-foot shoulder and concrete curb & gutter for each direction of travel.
   b. Installing a new 6-foot wide concrete sidewalk on the west side.
   c. Widen the existing 8-foot wide asphaltic concrete shared-use pathway to 10-foot wide.
   d. Installing deceleration lanes.
   e. Installing concrete curbing along the existing median.
   f. Installing bus turnouts.
   g. Construct a 6-feet wide concrete pedestrian bridges, one next to Cane Haul Road Overpass Bridge and one next to Honouliuli Bridge.
   h. Construct retaining walls.
   i. Upgrade the traffic signal system to accommodate the new lanes.
   k. Upgrade the street lighting system.
   l. Install cabling for the City's traffic camera system.
   m. Upgrade and/or install new drainage systems to accommodate the widening.
   n. Relocate the US Army Signal cable, the Honolulu Board of Water Supply mains, Hawaiian Telcom's underground systems, the Honolulu Gas Company line and any other utilities to accommodate the widening.
   o. Relocate existing irrigation mains and heads.
   p. Obtain construction easements to accommodate the widening and ancillary work.
   q. Perform design, coordination and permitting, and obtain approval to complete the project in conformance with appropriate federal, state and local standards.
   r. Replace existing landscaping in medians.
2. The Contractor shall reference the "Hawaii Standard Specifications for Road, Bridge, and Public Works Construction, 1994."
3. The Contractor is reminded of the requirements of Subsection 108.01 - Subletting of Contract, which requires him to perform work amounting to not less than 30 percent of the total contract cost less deductible items.
4. The Contractor's attention is directed to the following Sections of the Special Provisions : Subsection 104.04 - Maintenance of Traffic; Subsection 105.06 - Cooperation Between Contractors; Subsection 107.13 - Public Convenience and Safety; Subsection 107.21 - Contractor's Responsibility For Utility Property And Services; and Section 645 -Traffic Control.
5. At the end of each day's work, the Contractor shall remove all equipment and other obstructions to permit free and safe passage of public traffic.
6. 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.
7. The Contractor shall notify in writing, the Oahu Transit Services, Inc. Roads Supervision Office, 811 Middle St., Hon., HI 96819 (Phone: 848-4571) seven (7) days prior to any paving operations.
8. The Contractor shall notify the Engineer in writing, two (2) weeks prior to starting paving operations.
9. The Contractor shall remove and dispose of all existing raised pavement markers and traffic tapes prior to the overlaying of Asphalt Concrete. This work shall be considered incidental to Asphalt Concrete Pavement, Mix No. IV and will not be paid for separately.
10. All holes, depressions and wheel ruts shall be filled and compacted with Asphalt Concrete Pavement, Mix No. V prior to resurfacing. This work will not be paid for separately; it will be considered incidental to the various contract items.
11. Smooth riding connections shall be constructed at all limits of resurfacing, including the beginning and end of project, connecting approaches, side streets and driveways as shown on the plans and/or as directed by the Engineer.
12. The existing drainage system will be 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.
13. All saw cutting work including vacuum of slurry shall be considered incidental to Asphalt Concrete Pavement, Mix. No. IV.
14. At the location where the new pavements tie into the existing pavement, the Contractor shall check the existing and design grades to ensure a smooth riding connection. The Contractor shall saw cut the existing pavement in the transverse direction to provide a neat connection.
15. All azimuths and coordinates are referred to NAD27 Hawaii State Plane. Bench Mark: Fort Weaver Road Baseline Station 124+67, Elev. 14.06.
16. Work required to complete the project but not itemized specifically in the proposal shall be considered incidental to the various contract items and shall not be paid for separately.
17. The Contractor shall comply with the directives of the State of Hawaii Occupational Safety and Health Law (DOSH). Any citation (fine) received by the State for noncompliance by the Contractor shall be deducted from the progress payment.
18. For verifying the location of underground ductlines and for assistance in providing proper support and protection of underground ductlines, the Contractor is to contact Hawaiian Electric Co. Underground Division at 548-7395 a minimum of 72 hours in advance.
19. The Contractor shall exercise extreme caution when the excavation and construction crosses or is in close proximity of underground telephone and signal cable facilities and shall maintain adequate clearance for his equipment while working close to and/or under overhead facilities. Any damages to the existing underground facilities shall be repaired and paid for by the Contractor.
20. For field location of Hawaiian Telcom facilities, contact Hawaiian Telcom Outside Plant Engineering Section, a minimum of 72 hours in advance, prior to start of excavation.
21. Should field conditions and construction procedures require that utility poles be braced, the Contractor shall contact the following person for pole bracing instructions a minimum of 72 hours in advance of actual required bracing - Hawaiian Telcom - Calvin Choy - Area Construction Supervisor at 546-3381.
22. When trench excavation is adjacent to existing structures or facilities, the Contractor is responsible for properly sheeting and bracing the excavation and stabilizing the existing ground to render it safe and secure from possible slides, cave-ins, and settlement, and facilities with beams, struts, or underpinning to fully protect it from damage. This work shall be considered incidental to various contract items.
23. The Contractor shall survey and stake out the State Highway right-of-way and install all appurtenances associated with the project within the State right-of-way or construction parcels as shown in the plans.
24. The term "Engineer for the Utility Companies" shall also mean his delegated Representative and/or the Utilities Inspectors of Record.
25. The Contractor shall stake out all facilities for verification by the utility involved and/or affected.
26. When excavating near utility poles, 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 costs associated to repair and/or straighten pole.
27. Where pedestrian walkways exist, they shall be maintained in a safe and passable condition, or other facilities for pedestrians shall be provided. Passages between walkways at intersections shall likewise be provided at all times.
28. Drainage design of the pavement is to be in accordance with the Pavement Design Manual published by the Materials Testing and Research Branch, Highways Division, March 2002.
29. The Contractor is responsible for hiring a State of Hawaii licensed electrical engineer to provide stamped electrical shop drawings of the proposed electrical work prior to the physical start of construction. The plan shall include but not be limited to street lighting and other utilities details that conform to the latest requirements of the National Electrical Code "NEC," General Order Nos. 6 and 10 of the Hawaii Public Utilities Commission, the standards of the ASTM and ANSI, local power company rules, and local ordinances that may apply. Only upon written approval by the State shall the Contractor proceed with accepted portions of the proposed construction work. Any delays incurred during this process shall be borne by the Contractor at no additional cost and/or time to the State.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES - 1

FORT WEAVER ROAD WIDENING
VICINITY OF AAWA DRIVE TO GEIGER ROAD

Scale: None Date: Sept. 20, 2007

SHEET No. GI-2 OF 11 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	4	160

GENERAL NOTES (CONTINUED):

30. The Contractor is responsible for hiring State of Hawaii licensed civil, structural, environmental, and electrical engineers to provide stamped shop drawings of a traffic control plan; NPDES plans and erosion control plan; shop drawing details of the roadway, road drainage, bridge and retaining wall structures, and all other permanent improvements required to complete the work. Only upon written approval by the State shall the Contractor proceed with accepted portions of the proposed construction work.

31. HDOT performed an Environmental Assessment (EA) in August 23, 2003 for the project. The Contractor shall design and construct the project such that no revisions to the EA will be required and shall comply with the EA provisions. A copy of the EA will be made available for viewing by the State.

32. The Contractor shall prepare the plans and detailed cost proposal for any utility relocation necessary to accommodate the widening and ancillary work and shall obtain plan and cost proposal acceptance from the affected utility or government agency; and from the Department. All utility agreements will be prepared by the State based on complete and accurate information provided by the Contractor.

33. Normal working hours shall be from 7:00 a.m. to 3:30 p.m., Monday through Friday, excluding holidays. Work performed between 3:30 p.m. and 7:00 a.m. of the following day is "night work".

34. Lane closures will be allowed only from 10:30 a.m. to 3:00 p.m., Monday through Friday. Exceptions to lane closure hours specified require written acceptance by the Engineer. No increase in contract price or contract time will be given for lane closure restrictions specified.

PUBLIC HEALTH, SAFETY AND CONVENIENCE NOTES:

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. The Contractor's attention is directed to Chapter 448, Public Health Regulations, Department of Health, State of Hawaii, "Community Noise Control for Oahu" in which maximum allowable noise levels have been set. If the construction activities for this project will exceed the allowable noise levels, the Contractor will be required to obtain a permit from the Director of the Department of Health. The Contractor shall obtain a copy of Chapter 448 and become familiar with the noise level restrictions and the procedures for obtaining a Permit for construction activities.
4. The Contractor is to comply with the directions of the State of Hawaii Occupation Safety and Health Law (DOSH).

TRAFFIC SIGNALS AND TECHNOLOGY DIVISION NOTES:

1. The Contractor shall notify the Traffic Signals and Technology Division, Department of Transportation Services, three (3) working days prior to commencing work on the traffic signal system (Phone: 768-8388).
2. The traffic signal system shall be kept operational during construction. Any relocation required shall be approved by the Traffic Signals and 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 but not limited to the traffic signal fiber optic cable system, and 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 Traffic Signals and Technology Division.

CONSTRUCTION NOTES (WITHIN CITY RIGHT-OF-WAY):

1. All applicable construction work shall be done in accordance with the Standard Specifications for Public Works Construction, September 1986 and Standard Details for Public Works Construction, September 1984, as amended, of the Department of Public Works, City and County of Honolulu and the Counties of Kauai, Maui, and Hawaii.
2. The underground pipes, cables or ductlines known to exist by the engineer from his search of his 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.
3. No Contractor shall perform any construction operation so as to cause falling rocks, soil or debris in any form to fall, slide or flow into existing City drainage systems, or adjoining properties, streets or natural watercourses. Should such violations occur, the Contractor may be cited and the Contractor shall immediately make all remedial actions necessary.
4. The Contractor shall be responsible for conformance with the applicable provisions of the water quality and water pollution control standards contained in Hawaii Administrative Rules, Title 11, Chapter 54, "Water Quality Standards" and Title 11, Chapter 55, "Water Pollution Control", as well as Chapter 14 of the Revised Ordinances of Honolulu, as amended. Best Management Practices shall be employed at all times during construction.
5. The Contractor shall notify the Civil Engineering Branch, Department of Planning and Permitting, at 768-8084 to arrange for inspection services and submit four (4) sets of approved Construction Plans seven (7) days prior to commencement of construction work.
6. Confined Space
   For entry by City personnel, including inspectors, into a permit required confined space as defined in 29 CFR Part 1910.146(b), the Contractor shall be responsible for providing:

   All safety equipment required by the confined space regulations applicable to all parties other than the construction industry, to include, but not limited to, the following:

   a. Full body harnesses for up to two personnel.
   b. Lifeline and associated clips.
   c. Ingress/egress and fall protection equipment.
   d. Two-way radios (walkie-talkies) if out of line-of-sight.
   e. Emergency (escape) respirator (10 minute duration).
   f. Cellular telephone to call for emergency assistance.
   g. Continuous gas detector (calibrated) to measure oxygen, hydrogen sulfide, carbon monoxide and flammables (capable of monitoring at a distance at least 20-feet away).
   h. Personal multi-gas detector to be carried by inspector.
   i. Continuous forced air ventilation adequate to provide safe entry conditions.
   j. One attendant/rescue personnel topside (two, if conditions warrant it).
7. In the event any artifacts or human remains are uncovered during construction operations, the Contractor shall immediately suspend work and notify the Honolulu Police Department, the State Department of Land and Natural Resources-Historic Preservation Division (692-8015). In addition, for non-City projects, the Contractor shall notify the Civil Engineering Branch, Department of Planning and Permitting (768-8084); and for City projects, notify the responsible City agency.
8. For projects abutting State Highways' rights-of-way, the owner or his authorized representative shall notify the State Department of Transportation, Highways Division, Oahu District, Drainage Discharge Unit at 831-6793 for an assessment of State Highways permit requirements.

TRAFFIC NOTES (WITHIN CITY RIGHT-OF-WAY):

1. A permit shall be obtained from the Department of Transportation Services before work on any portion of a public street or highway may begin. Construction traffic control plans approved by the Dept. of Transportation Services and/or the Dept. of Planning and Permitting must be provided when applying for the permit.
2. The Contractor shall provide, install and maintain all necessary signs and other protective facilities, which shall conform with the "Hawaii Administration Rules Governing the Use of Traffic Control Devices at Work Sites on or Adjacent to Public Streets and Highways" adopted by the Director of Transportation, and the current U.S. Federal Highways Administration's "Manual on Uniform Traffic Control Devices for Streets and Highways, Part VI - Traffic Controls for Street and Highway Construction and Maintenance Operations".
3. Work on any city street area may be performed only between the hours of 7:00 a.m. to 3:30 p.m., Monday through Friday, unless otherwise permitted by the Department of Transportation Services.
4. During working hours, the Contractor shall provide for through traffic. During non-working hours, all trenches shall be covered with a safe non-skid bridging material and all lanes shall be open to traffic.
5. As required by the Department of Transportation Services, the Contractor shall provide off-duty police officers to control the flow of traffic.
6. Where pedestrian walkways exist, they shall be maintained in passable condition or other facilities for pedestrians shall be provided, passage between walkways at intersections shall likewise be provided.
7. Driveways shall be kept open unless the owners of the property using these right-of-ways are otherwise provided for satisfactorily. Access to and from public streets shall be provided at all times.
8. The Contractor shall reference to the approval of the Dept. of Transportation Services and the Dept. of Planning and Permitting, all existing traffic signs, posts and pavement markings prior to the commencement of construction. The Contractor shall replace or repair all traffic signs, posts, and pavement markings disturbed by his activities.
9. The Contractor shall notify the Department of Planning and Permitting at 768-8084 one (1) week prior to any work to be done on signs, posts and pavement markings.
10. No material and/or equipment shall be stockpiled or otherwise stored within street right-of-ways except at locations designated in writing and approved by the Department of Transportation Services.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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GENERAL NOTES - 2

FORT WEAVER ROAD WIDENING
VICINITY OF AAWA DRIVE TO GEIGER ROAD

Scale: None Date: Sept. 20, 2007

SHEET No. GI-3 OF 11 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	5	160

WATER POLLUTION AND EROSION CONTROL NOTES:

A. GENERAL:

1. The Contractor is reminded of the requirements of Section 209 - Water Pollution 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.
2. 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.
3. 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.
4. The Engineer may assess liquidated damages of up to $27,500 for non-compliance of each BMP requirement and each requirement stated in Section 209, for every day of non-compliance. There is no maximum limit on the amount assessed per day.
5. 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.
6. 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:

1. 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.
2. All measures shall be maintained in good working order. If repair is necessary, it shall be initiated within 24 hours after the inspection.
3. Built-up sediment shall be removed from silt fence when it has reached one-third the height of the fence.
4. 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.
5. Temporary and permanent seeding and planting shall be inspected for bare spots, washouts and healthy growth.
6. 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.
7. 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.
8. Include designated Concrete Washout Area(s) in the Water Pollution, Dust, and Erosion Control submittals.
9. 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.
10. 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.
11. 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

   a. Products shall be kept in original containers unless they are not resealable.

   b. Original labels and material safety data sheets (MSDS) shall be retained.

   c. Surplus products shall be disposed of according to manufacturers' instructions or local and State recommended methods.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES - 3

FORT WEAVER ROAD WIDENING
VICINITY OF AAWA DRIVE TO GEIGER ROAD

Scale: None Date: Sept. 20, 2007

SHEET No. GI-4 OF 11 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	6	160

WATER POLLUTION AND EROSION CONTROL NOTES: -Cont.

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. If 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. If an NPDES Permit for Construction Dewatering is required, the Contractor shall be responsible to obtain the Permit from the Department of Health, Clean Water Branch.

3. 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
b. NPDES Permit for Construction Dewatering
c. NPDES Permit for Hydrotesting Waters
d. Water Quality Certification
e. Stream Channel Alteration Permit
f. Section 404 Army Corps of Engineer Permit

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL NOTES:

A. Erosion and Sediment Control Inspection and Maintenance Practices.

(1) The Contractor shall inspect the erosion and sediment control measures at least once a week or after 0.5 inches of rainfall.

(2) The Contractor shall maintain the erosion and sediment control measures according to the contract. If a repair is necessary, the Contractor shall initiate the repairs within twenty-four (24) hours after the inspection such as:

a. When sediment build-up reaches one-third (1/3) the height of the silt fence, the Contractor shall remove and dispose of the sediment build-up.

b. When the depth of the sediment basin reaches ten percent (10%) of the design capacity, the Contractor shall remove and dispose of the sediment build-up.

c. When tears are found on the silt fence, the Contractor shall replace the fabric.

d. The Contractor shall check to see if the fabric is securely attached to the fence posts and to see that the fence posts are firmly in the ground.

e. The Contractor shall inspect the diversion dike and repair the breaches.

f. The Contractor shall inspect temporary and permanent seeding and planting for bare spots, washouts, and healthy growth.

(3) The Contractor shall have its personnel make a maintenance inspection report promptly after each inspection. The Contractor shall select a minimum of three (3) personnel who will be responsible for inspection, maintenance, repair activities, and filling out the inspection and maintenance report. Personnel selected for the inspection and maintenance responsibilities will receive training from the Contractor. The Contractor shall train these personnel in the inspection and maintenance practices necessary for keeping the erosion and sediment used onsite according to the contract.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES - 4

FORT WEAVER ROAD WIDENING
VICINITY OF AAWA DRIVE TO GEIGER ROAD

Scale: None Date: Sept. 20, 2007

SHEET No. GI-5 OF 11 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	7	160

LEGEND:

- E — Existing Electrical Line
- U.P. — Existing Utility Pole
- Existing Electric Manhole
- TEL — Existing Telephone Line
- Existing Telephone Manhole
- SC — Existing Signal Corps Line
- CATV — Existing Cable TV Line
- W_{12} — Existing 12" Water Line
- Existing Water Manhole
- Existing Water Valve Box
- Existing Water Meter
- F.H. — Existing Fire Hydrant
- S_{12} — Existing 12" Sewer Line
- Existing Sewer Manhole
- G_6 — Existing 6" Gas Line
- ABN. FUEL 8(NAVY) — Existing Navy Fuel Line (Abandoned)
- Existing Monument
- D_{24} — Existing 24" Drain Line
- Existing Storm Drain Manhole
- Existing Drain Inlet
- Existing Catch Basin
- TS — Existing Traffic Signal
- SL — Existing Street Light
- IRR $2\frac{1}{2}$" — Existing 2½" Irrigation Line
- Existing Highway Lighting Standard
- Existing Edge of Shoulder
- Existing Edge of Pavement
- New Edge of Shoulder
- New Edge of Pavement
- 45 — Existing Major Contour
- Existing Minor Contour
- Existing Chain Link Fence
- New Chain Link Fence
- New Guardrail
- Existing Guardrail
- Denotes No Access Permitted and Right of Way
- Denotes Access Permitted and Right of Way
- Denotes New Right of Way
- Remove and Dispose Abandoned Utility

ABBREVIATIONS:

A.C.	Asphalt Concrete
A/C	Air Conditioning
APPROX.	Approximate
ARV	Air Release Valve
℄	Baseline
BC	Bottom Curb
BFP	Back Flow Preventer
BOT.	Bottom
BW	Bottom Wall
CATV	Cable Television
C.B.	Catch Basin
C.L.	Chain Link
CMU	Concrete Masonry Unit
C.O.	Clean Out
COL.	Column
COMM.	Communication
CONC.	Concrete
CRM	Concrete Rubble Masonry
D	Diameter or Drain
D.I.	Drain Inlet
D.S.	Down Spout
DSP	Dry Stand Pipe
DWY.	Driveway
E/ELEC.	Electric
E/ELEC.	Elevation
F.A.	Fire Alarm
F.H.	Fire Hydrant
FL	Flow Line
FM	Force Main
FWR	Fort Weaver Road
G	Gas
G.I.	Grated Inlet
GMH	Gas Manhole
GND.	Ground
G.P.	Guard Post/Guy Pole/Gate Post
GV	Gas Valve
G.W.	Guy Wire
H	Height
H.B.	Hose Bib
ICV	Irrigation Control Valve
INV.	Invert
JTS	Joint Trunking System
L.P.	Lamp Pole
M.B.	Mail Box
MH	Manhole
O/H	Overhead
PAV'T.	Pavement
P.M.	Parking Meter
P.P.	Power Pole
PSL	Pedestrian Signal Light
REF.	Reflector
S	Sewer or Spread
SC	Signal Corps
SCMH	Signal Corps Manhole
SDMH	Storm Drain Manhole
S.E., s.e.	Superelevation
S.L.	Street Light
SLB	Street Light Box
SMH	Sewer Manhole
SPR.	Sprinkler
ST. NAME	Street Name
STA.	Station
TC	Top Curb
TDC	Top Drop Curb
T/TEL.	Telephone
TP	Top Pipe
TRC	Top Rolled Curb
TS	Top Stem
TSL	Traffic Signal Light
TSLB	Traffic Signal Light Box
TV	Top Valve
TW	Top Wall
U.P.	Utility Pole
U.P./S.L.	Utility Pole w/ Street Light
W	Water
WM	Water Meter
WMH	Water Manhole
WV	Water Valve Box
X-WALK	Cross Walk

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NOTE BOOK	DRAWN BY	
No.	TRACED BY	
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	QUANTITIES BY	
	CHECKED BY	

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RANDALL M. URASAKI LICENSED PROFESSIONAL ENGINEER No. 7269-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LEGEND AND ABBREVIATIONS

FORT WEAVER ROAD WIDENING
VICINITY OF AAWA DRIVE TO GEIGER ROAD

Scale: None Date: Sept. 20, 2007

SHEET No. G1-6 OF 11 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	8	160

HAWAIIAN TELCOM 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 obtain an excavation permit and toning request from Hawaiian Telcom's Excavation Permit Section, located at 1177 Bishop Street, two weeks prior to the start of construction. Hours of business are 8:00 a.m. to 11:00 a.m. and 1:00 a.m. to 4:00 p.m. Monday through Friday, except holidays.

3. 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.

4. 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.

5. 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 contain Hawaiian Telcom facilities. Temporary cable and duct supports shall be provided wherever necessary.

6. 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. Hawaiian Telcom's Inspectors as follows:
   West Oahu - Colman Nyuha, 840-2995
   East Oahu - Joe Correia, 840-2994

7. All applicable construction work shall be done in accordance with the "Hawaiian Telcom Standard Specifications for Placing Underground Telephone Systems" dated March 1999. All subsequent amendments and additions, and all other pertinent standards for telephone construction. Contractor shall familiarize his personnel by obtaining applicable specifications.

8. 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.

9. The Contractor shall brace all poles or light standards near the new ductline, manhole, or handhole during his operations.

HAWAIIAN TELCOM NOTES (CONT.):

10. 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.

11. The Contractor shall comply with the policy adopted by the Department of Public Works, City and County of Honolulu, concerning the replacement of concrete sidewalks after excavation work.

12. 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.

13. 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.

14. The Contractor, at his own expense, shall keep the project and surrounding area free from dust nuisance. The cost for supplementary measures, which will be required by the City and County, shall be borne by the Contractor.

15. The Contractor shall pump all manholes dry during final inspection.

16. The Contractor shall notify Hawaiian Telcom inspector 24 hours prior to the pouring of concrete or backfilling.

17. 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.

18. The Contractor shall be responsible for laying out all required lines and grades and shall preserve all benchmarks 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.

19. 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

20. 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 building floor slab penetration shall have a bend radius of ten times the diameter of the duct or greater.

21. After ductline has been completed, a mandrel with a square front not less than 12" long and having a diameter of 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.

22. All ducts and conduits shall have an 1800# polyester mule-tape (NEPTCO, WP1800P, Hawaiian Telcom 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.

HECO NOTES:

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.

RANDALL M. URASAKI
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES - 1

FORT WEAVER ROAD WIDENING
VICINITY OF AAWA DRIVE TO GEIGER ROAD

Scale: None Date: Sept. 20, 2007

SHEET No. GI-7 OF 11 SHEETS

ORIGINAL PLAN
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FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	9	160

HECO NOTES (CONT.):

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:

a. 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.

b. Properly supporting existing structures or facilities with beams, struts, or under-pinnings to fully protect it from damage.

c. Backfilling with proper backfill material including special thermal backfill where existing (refer to Engineering Department for thermal backfill specifications).

HECO NOTES (CONT.):

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.

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.

HECO NOTES (CONT.):

14. Clearances:

The following clearances shall be maintained between HECO's ductline and all adjacent structures (Charted and Uncharted) in the trench:

Structural Type	Minimum Clearances (Inches)
Water Lines, Parallel	36
Water Lines, Crossing	12 (A)
Sewer Lines, Parallel	36 (B)
Sewer Lines, Crossing	24 (C)
Drain Lines, Parallel	12
Drain Lines, Crossing	6 (D)
Electrical and Gas Lines, Parallel	12
Electrical and Gas Lines, Crossing	12
Telephone Lines, Parallel	6 (D)
Telephone Lines, Crossing	6 (D)
Chevron Oil Lines, Parallel	36
Chevron Oil Lines, Crossing	48 Below Oil Line (E)

A. The minimum vertical clearances to water lines crossing electrical ductlines can be reduced to 6 inches if the electrical ductline structure is smaller than 16 inches, is concrete encased, and is below the water line.

B. A minimum horizontal clearance of 36 inches is required between new handholes and existing sewer laterals.

C. The minimum vertical clearances to sewer pipes crossing electrical ductlines can be reduced to 12 inches if the sewer pipe is jacketed in concrete.

D. The minimum clearances shall be increased to 12 inches if the electrical ductline is direct buried.

E. The minimum vertical clearances to oil lines crossing electrical ductlines can be reduced to 24 inches below oil lines if the crossings are encased in 6 inches of concrete.

F. The Contractor shall notify the Construction Manager & HECO of any heat sources (Power Cable Duct Bank, Steamline, Etc.) encountered that are not properly identified on the drawing.

15. Indemnity:

The Contractor shall indemnify, defend and hold harmless HECO from and against all losses, damages, claims, and actions, including but not limited to reasonable attorney's fees and costs based upon or arising out of damage to property or injuries to persons, or other tortious acts caused or contributed to by Contractor or anyone acting under its direction or control or on its behalf; provided Contractor's indemnity shall not be applicable to any liability based upon the sole negligence of HECO.

ORIGINAL PLAN — SURVEY PLOTTED BY — DATE
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QUANTITIES BY
No. — CHECKED BY

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RANDALL M. URASAKI — LICENSED PROFESSIONAL ENGINEER — No. 7269-C — HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES - 2

FORT WEAVER ROAD WIDENING
VICINITY OF AAWA DRIVE TO GEIGER ROAD

Scale: None — Date: Sept. 20, 2007

SHEET No. GI-8 OF 11 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	10	160

HECO NOTES (CONT.): ADDITIONAL NOTES WHEN WORK INVOLVES CONSTR. OF HECO FACILITIES:

16. Schedule:

    Contractor shall furnish his construction schedule 10 working days prior to starting work on HECO facilities. Contractor shall give HECO, in writing, 10 working days notice to proceed with HECO's portion of work.

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, handhole, 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. Stakeout:

    The Contractor 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.

21. 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.

22. Joint pole removal:

    The last joint pole occupant off the poles shall remove the poles.

23. As-built plans:

    The Contractor shall provide HECO with two sets of As-Built reproducible tracings showing the offsets, stationing, and vertical elevation of the duct lines(s) constructed.

CONSTRUCTION NOTES FOR GAS FACILITIES:

1. The Gas Company gas pipelines in the project area are plastic coated and cathodically protected. The Contractor shall be extremely careful when working near these gas pipelines.

2. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

ORIGINAL PLAN
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THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
RANDALL M. URASAKI LICENSED PROFESSIONAL ENGINEER No. 7269-C HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES - 3

FORT WEAVER ROAD WIDENING
VICINITY OF AAWA DRIVE TO GEIGER ROAD

Scale: None Date: Sept. 20, 2007

SHEET No. GI-9 OF 11 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	11	160

WATER 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 AND BRIDGE 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 Capital Projects Division, Construction Section in writing and submit six (6) 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 his 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 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.

9. The Contractor shall adjust all manhole frames/valve boxes/meter boxes within the resurfaced area. The Contractor shall be responsible for "referencing" these manholes/valve boxes/meter boxes to facilitate the adjustments.

10. Maintain 3'-0" minimum cover for all existing waterlines (18" minimum for service laterals) from new finish grade. The Contractor shall probe the waterline and service laterals and submit the probing data to BWS Capital Projects Division, Construction Section. Any adjustments to the existing water system to meet the minimum cover and the requirements of the BWS standards, whether shown on plans or not, shall be done by the Contractor at no cost to BWS.

11. All waterline construction requiring shutdown connection shall be scheduled for normal working hours at six (6) hours maximum downtime.

12. Maintain 3'-0" min. horizontal clear separation between all waterline systems and nearest electrical/signal ductlines paralleling the water system at no cost to the Board of Water Supply.

13. 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 ot the Board of Water Supply.

14. Maintain 3'-0" min. 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 light/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 BWS.

15. 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. (For copper service laterals only.)

16. Soil resistivity for the site has a corrosion rating of 2#4 as reported by Hirata & Associates, Inc. All required electrical isolation procedures and corrosion control requirements shall apply.

17. Pipe cushion shall be of high resistivity material. The Contractor shall submit a soil certification that high resistant cushion material has a resistivity greater than 5,000 OHM-CM. Remainder of the backfill material shall be as specified in the Water Systems Standards. Pipe cushion and backfill material shall contain no hazardous substances above regulatory action levels including but not limited to lead, asbestos, mercury, chromium, cadmium, zinc, strontium, and polychlorinated biphenyls (PCB).

18. All ductile iron pipe, fittings and valves shall be wrapped with two layers of 8 mil. Polyethylene wrap.

19. Polyvinyl chloride (PVC) pipes shall be Class 150 or 200. All ductile iron valves and metallic fittings shall be wrapped with two layers of 8 mil polyethylene wrap. No bending of polyvinyl chloride pipes shall be permitted. The installation of PVC pipe, according to the plans and specifications as bid on by the Contractor, may require additional design work, additional fittings and special couplings and shall be considered incidental to the unit price bid in the proposal for PVC pipe. Any additional design work shall be the responsibility of the Contractor. Electronic markers shall be installed along the centerline of the entire length of the pipeline at a minimum depth of 2 feet and a maximum depth of 3 feet from finish grade.

20 All Polyvinyl Chloride (PVC) pipe deflections shall be accomplished only by the use of special PVC deflection couplings. Deflection around curves shall be accomplished only by the use of PVC deflection couplings.

21. 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.

22. All sections of the water main requiring reinforced concrete jacketing shall be ductile iron pipe Class 52 with ductile iron fittings or concrete cylinder pipe and fittings.

23. Bossed tees required for all lateral and ARV connections to PVC mains.

24. The Contractor shall install electronic markers to all mains and test the electronic markers prior to installations to verify proper operation. BWS personnel shall verify the number and locations of placed electronic markers before final paving of the project.

25. All PVC fittings shall conform to American Water Works Associations (AWWA) C-907. Ductile iron fittings shall be used for all types of fittings not specified in AWWA C-907.

26. Reaction block requirements for PVC fittings shall be the same for ductile iron fittings.

27. The use of hub clamps and set screws on PVC fittings is not approved.

28. Prior to the PVC fitting installation, the Contractor shall submit for approval by the BWS, the manufacturer's certification that all PVC fittings conform to AWWA C-907.

29. Pipe Alternatives

    A. Ductile iron pipes shall be Class 52, wrapped with two layers of 8 mil. polyethylene.

    B. Concrete Cylinder pipes shall be Class A.

30. Two-way blue reflective hydrant markers Type DB shall be installed at all new fire hydrant installations. Contractor shall verify the exact locations of hydrant markers with the nearest Honolulu Fire Department Battalion Chief.

31. The Contractor shall coordinate the securing of the existing water system with the BWS prior to excavating behind or removing any existing thrust blocks, structural struts or reaction beams, or any fittings such as tees, plugs, caps, bends, offsets, and valves, or any other pipeline appurtenance. The Contractor shall be responsible for all associated damages resulting from failure to adequately secure the existing system.

32. Water Pipeline Chlorination and Testing Procedures:

    A. The following chlorination and water sample collection procedure shall apply to all water pipeline projects:

    Step 1: Chlorinate main by filling with water and introducing chlorine in sufficient quantity to obtain a minimum chlorine concentration of 50 parts per million. Leave chlorinated water in main overnight.

    Step 2: Flush main with fresh water until all chlorine has been flushed out as evidenced by the ortho-tolidine test, then collect a water sample while continuing to flush the main.

Approved:

for Robert Chun 9/27/07

Chief, Capital Projects Division, BWS Date

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
N.	CHECKED BY	

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

UTILITY NOTES - 4

FORT WEAVER ROAD WIDENING
VICINITY OF AAWA DRIVE TO GEIGER ROAD

Scale: None Date: Sept. 20, 2007

SHEET No. GI-10 OF 11 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	12	160

Step 3: Repeat Steps 1 and 2. After collecting the second water sample, stop flushing and allow the water to stand in the main overnight.

Step 4: Thoroughly flush the main with fresh water until all water that had been standing in the main overnight has been flushed out. Stop flushing and let the water stand in the main for one hour. Collect a water sample.

B. *The main is deemed acceptable and certified when (1) two consecutive water samples, collected 24 hours apart under Steps 1 and 2, show no total and fecal coliform and less than 200 colony forming units (CFU) of total bacteria and (2) the sample of water held in the main for one hour, collected under Step 4, also shows no total and fecal coliform and less than 200 CFU of total bacteria.*

C. *Chlorination, flushing, sampling and testing will be extended should unsatisfactory results be encountered. Any sample that shows positive coliform presence or total bacteria greater than 200 CFU is unsatisfactory.*

D. *Steps 1 and 2 may be repeated before collecting the one-hour hold sample specified in Step 4. Repeating Steps 1 and 2 is recommended in the event samples show the presence of coliforms and/or increasing total bacterial results from one sample to the next.*

E. *Water samples that show the presence of atypical colonies, debris or results inconsistent with existing water are subject to reconfirmation. BWS reserves the right to request and test additional water samples in the interest of safeguarding public health and safety.*

32. *Test pressure shall be 150 psi. During the 30-minute pressure test, the pressure shall not drop more than 10 psi.*

33. *The Contractor shall chlorinate the entire inside surface of each pipe and fitting with disinfection solution of 5 ounces of sodium hypochlorite mixed with 10 gallons of water. (For connection only)*

34. *Prior to installation, the Contractor shall submit for approval by Board of Water Supply, the manufacturer's certification that all cast iron (gray or ductile) fittings for the project conform in all respects to the Water Systems Standards, dated 2002.*

35. *Polygon shape for mechanical joint glands as described in AWWA Standard C111 shall be "straight-sided" or an approved equal on a job-to-job basis.*

36. *Contractor shall cut and plug all existing unused laterals at the main whether or not shown on the plans. 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.*

37. *The Contractor/Developer shall obtain a NPDES permit prior to chlorination and/or dewatering. A copy of the permit shall be submitted to the Board of Water Supply, Capital Projects Division, Construction Section.*

38. *All ductile iron pipe, fittings and valves shall be wrapped with two layers of 8 mil. polyethylene wrap.*

39. *Ball corp and ball stop shall be used in lieu of corporation stop and stopcock, respectively.*

40. *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 with "CAUTION WATER LINE BURIED BELOW".*

41. *Cleaning shall be by the use of "pigs" introduced into the pipeline and run completely through all installed pipelines and all branch lines for fire hydrants. "Pigging" of service laterals is not required. Bare foam "pigs" shall be used to swab piping clean as each length of the pipeline is installed. Each "pig" shall consist of a cylindrical piece of polyurethane foam with a density of 3-7 pounds per cubic foot and a vinyl-coated nose. Outside diameter of the "pig" shall be equal to 1-1/4 to 1-1/2 times the inside diameter of the pipe being installed. The length of the "pig" shall be 1-1/2 to 2 times its diameter. Prior to use, the "pig" shall be submerged in a chlorine solution of 1 oz. of 5% chlorine bleach in 5 gallons of water. "Pigging" of the pipeline shall be considered incidental to the installation of the new pipeline.*

42. *Nuts and bolts for flange connections within meter boxes shall be bronze or stainless steel except coupling adapters where "COR-TEN" (U.S. Steel) or "MAYARI" (Bethlehem Steel) may be used. Flange connections outside of meter box may use "COR-TEN" or "MAYARI" type nuts and bolts.*

43. *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. (1)*

44. *For meters 3 inches and larger (Compound, F.M. and Detector Check), Contractor shall notify Customer Care Division - Service Engineering Section in writing after the plan is approved, no later than 120 days, prior to withdrawing meter from BWS storeyard. Such notice shall indicate number, size, and type of meter (Compound, F.M. or Detector Check) and approximate month and year meter is anticipated to be drawn out. If the approved plan is allowed to lapse, the 120 day notice will be voided.*

NON-POTABLE WATER SYSTEM OR IRRIGATION IMPROVEMENT NOTES:

1. *Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the City and County of Honolulu Board of Water Supply's "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, and all subsequent amendments and additions.*

2. *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. *Test pressure shall be 150 psi. During the 30-minute pressure test, the pressure shall not drop more than 10-psi.*

4. *The Contractor shall notify BWS Capital Projects Division, Construction Section in writing and submit six (6) sets of approved construction plans one week prior to commencing work on the water system.*

5. *The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy or the encountering of other obstacles during the course of the work. The Contractor shall be responsible and pay for all damages to existing utilities. The Contractor shall not assume that where no utilities are shown, that none exist.*

6. *Interconnection between irrigation/non-potable and potable mains shall not be allowed.*

Approved:

for Robert Onuma 9/27/07

Chief, Capital Projects Division, BWS Date

7. *Prior to installation, the Contractor shall submit for approval by the Board of Water Supply, the manufacturer's certification that all cast iron (gray or ductile) fittings for the project conform in all respects to the Water System Standards, dated 2002.*

8. *The Contractor shall be responsible for the protection of all water lines during construction. The Contractor shall be especially careful when excavating behind waterlines, 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 BWS approval) and/or modifying his construction method.*

9. *The Contractor/Developer shall obtain a NPDES permit prior to chlorination and/or dewatering. A copy of the permit shall be submitted to the Board of Water Supply, Capital Projects Division, Construction Section.*

10. *Three-inch wide warning tape, purple in color, with the words "CAUTION NON-POTABLE WATER - DO NOT DRINK" imprinted in intervals not greater than five feet shall be installed directly on the top of all irrigation/non-potable laterals, PVC pipes not marked non-potable, and ductile iron pipes. The warning tape shall be installed longitudinally and continuously over the entire length of the pipe and shall be fastened to the pipe with fiber-reinforced tape at 8 feet on centers. Letters shall be a minimum of 3/4 inch high.*

11. *Materials for frames and covers of manholes, valve boxes, and meter boxes shall conform to the requirements specified in the Water System Standards. The irrigation/non-potable covers shall be cast with the word "IRRIGATION" and shall be provided with a 24-inch long galvanized steel coil chain, 3/16-inch size with 12.5 links per foot, and be welded to the frame and cover.*

12. *Horizontal clearance of 3-feet and vertical clearance of 6-inches shall be maintained between irrigation/non-potable and other pipelines.*

13. *Valve covers, manhole covers, fire hydrants, meter covers and bodies shall all be painted OSHA purple for identification.*

14. *PVC C900 pipe shall be in compliance with AWWA C900, 4-inch to 12-inch. All non-potable C900 PVC mains shall be marked on opposite sides to read "CAUTION NON-POTABLE WATER - DO NOT DRINK" in intervals not greater than five feet. Letters shall be a minimum of 3/4 inches high. Non-potable C900 PVC mains may be purple in color.*

15. *Prior to any excavating, the Contractor shall verify in the field the location of existing water mains and appurtenances.*

16. *The Contractor shall install electronic markers to all mains and test the electronic markers prior to installations to verify proper operation. BWS personnel shall verify the number and locations of placed electronic markers before paving of the project.*

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

J:/FORT WEAVER ROAD/MISC/NOTES_13.dgn

RANDALL M. URASAKI LICENSED PROFESSIONAL ENGINEER No. 7269-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES - 5

FORT WEAVER ROAD WIDENING
VICINITY OF AAWA DRIVE TO GEIGER ROAD

Scale: None *Date: Sept. 20, 2007*

SHEET No. *GI-11* OF *11* SHEETS