

GENERAL NOTES:

1. The scope of work for this project includes rehabilitation of AC pavements; installing guardrails, attenuators, retaining walls, curb and gutters, portland cement concrete, highway lighting, signs, system sensor replacements, loop detectors, chain link fence, underdrains, cleanouts, erosion control matting, and pavement markings; upgrading Palama bridge structure railings and end posts; constructing glare screens on the existing median barrier and fixing damaged portions of the existing median barrier; constructing Geosynthetic Reinforced Soil System; widening Nuuanu Stream bridge structure; relocating drainlines; modifying existing drainage inlets; cleaning existing culverts; modifying the irrigation system; landscaping; cold planing, hydro-mulching, and traffic control.

2. Subsection 105.16(A) - Subcontract Requirements requires the Contractor to perform work amounting to not less than 30 percent of the total contract cost less deductible items.

The Contractor's attention is directed to the following Sections of the Standard Specifications and the Special Provisions: Subsection 104.09 - Maintenance of Traffic; Subsection 105.09 - Coordination Between the Contractors; Subsection 107.06 - Contractor Duty Regarding Public Convenience; Subsection 107.12 - Protection of Persons and Property; and Section 645 - Work Zone Traffic Control.

3. 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.

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 notify the Engineer in writing, two (2) weeks prior to starting paving operations.

6. 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 SMA Pavement and will not be paid for separately.

7. All holes, depressions and wheel ruts shall be filled and compacted with HMA Pavement, Mix No. V prior to resurfacing. This work will not be paid for separately and will be considered incidental to the various contract items.

8. Smooth riding connections shall be constructed at all limits of resurfacing, including the beginning and end of project, connecting approaches, and side streets as shown on the plans and/or as ordered by the Engineer.

9. The existing drainage system shall be kept functional at all times during construction. Furnish materials, equipment, labor, tools and incidentals necessary to maintain flow. This work shall be considered incidental to the various contract items.

10. 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.

11. All saw cutting work including vacuuming of slurry shall be considered incidental to SMA Pavement.

12. At the location where the new pavements tie into the existing pavement, the Contractor shall provide smooth riding connection. The Contractor shall saw cut the existing pavement transverse to a traffic lane and provide a neat connection. See Smooth Riding Connection Detail on Sht. R-31.

13. All azimuths and coordinates are referred to NAD27 Hawaii State Plane.

14. 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.

15. No material or equipment shall be stockpiled or otherwise stored within highway right-of-way except at locations shown on the plans or designated in writing and approved by the Engineer.

16. Contact Hawaiian Telcom Outside Plant Engineering Section, a minimum of 72 hours in advance, prior to start of excavation, to locate existing Hawaiian Telcom facilities.

17. 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. Provide beams, struts, or underpinning as necessary. This work shall be considered incidental to various contract items.

18. For night work, the Contractor shall follow all work hours, conditions, and other restrictions as specified in the noise variance and the Special Provisions.

19. Maintain existing pedestrian walkways in a safe and passable condition, or provide other walkway facilities for pedestrians to maintain access. Passages between walkways at intersections shall likewise be provided at all times.

ABBREVIATIONS

AB	Aggregate Base	Lc	Length on Curve
AC	Asphalt Concrete or Elevation of asphalt at curb face	NTS	Not to Scale
ACB	Asphalt Concrete Base	PC	Point of Curvature
ASB	Aggregate Subbase	PT	Point of Tangency
BC	Bottom Curb Elevation	PVC	Polyvinyl Chloride
C	Chord	R	Radius
EB	Eastbound	se	superelevation
EP	New Edge of Pavement	Sht.	Sheet
ep, e.p.	Existing Edge of Pavement	SMA	Stone Matrix Asphalt
ES	New Edge of Shoulder	T	Tangent
es, e.s.	Existing Edge of Shoulder	TC	Top Curb Elevation
HMAB	Hot Mix Asphalt Base	TW	Top Wall Elevation
HMA	Hot Mix Asphalt	WB	Westbound

LEGEND

[ ]	Resurfacing Limits	⊙ <sub>fh</sub>	Existing Fire Hydrant
[ ]	Resurfacing Limits - Ramps	—Δ—12—	Existing Sewer Line
[ ]	Mainlane Weakened Pavement Reconstruction	⊙ <sub>smh</sub>	Existing Sewer Manhole
[ ]	Shoulder Pavement Reconstruction	—g—6—	Existing 6" Gas Line
[ ]	Bridge Deck Repair	⊙ <sub>gv</sub>	Existing Gas Valve Box
—e—	Existing Electrical Line	⊙ <sub>gmh</sub>	Existing Gas Manhole
⊙ <sub>jp</sub>	Existing Joint Pole	⊙ <sub>mon</sub>	Existing Monument
⊙ <sub>pp</sub>	Existing Power Pole	---d---24---	Existing 24" Drain Line
⊙ <sub>emh</sub>	Existing Electric Manhole	24" RCP	New 24 " RCP Drain Line
—t—	Existing Telephone Line	⊙ <sub>sdmh</sub>	Existing Storm Drain Manhole
⊙ <sub>tp</sub>	Existing Telephone Pole	⊞ <sub>gdi</sub>	Existing Grated Drop Inlet
⊙ <sub>tmh</sub>	Existing Telephone Manhole	⊞ <sub>cb</sub>	Existing Catch Basin
—tv—	Existing TV Cable	⊞ <sub>sign</sub>	Existing Traffic Sign
—Δ.i.c.—	Existing Sandwich Isles Communication Line	⊙ <sub>hl</sub>	Existing Highway Lighting Standard
—w—12—	Existing 12" Water Line	⊞ <sub>hlpb</sub>	Existing Highway Lighting Pullbox
⊙ <sub>wmh</sub>	Existing Water Manhole	⊙ <sub>tsp</sub>	Existing Traffic Signal Pole
⊙ <sub>av</sub>	Existing Water Air Valve	⊞ <sub>tspb</sub>	Existing Traffic Signal Pullbox
⊙ <sub>wvv</sub>	Existing Water Valve Box	⊞	Existing Metal Guardrail
⊞ <sub>wm</sub>	Existing Water Meter	—■—	New Metal Guardrail

PAMELA K. UYEDA

LICENSED PROFESSIONAL ENGINEER

No. 10352-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

07/30/14

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

GENERAL NOTES

INTERSTATE ROUTE H-1 REHABILITATION

Middle Street to Vicinity of Ward Avenue

FAP NO. 1M-HI-1(269)

Scale: None

Date: Apr. 26, 2013

SHEET No. N-2 OF 11 SHEETS

3



FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-K(269)	2013	4	382

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).

CITY & COUNTY OF HONOLULU GRADING NOTES:

1. All grading work shall be done in accordance with Chapter 14, Articles 13, 14, 15 and 16, as related to Grading, Soil Erosion and Sediment Control of the Revised Ordinances of Honolulu, 1990, as amended, and Geotechnical Report by Geolabs, Inc. dated April 26, 2013.
2. No Contractor shall perform any grading operation so as to cause falling rocks, soil or debris in any form to fall, slide or flow onto 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.
3. The Contractor, at his own expense, shall keep the project area and surrounding area free from dust nuisance. The work shall be in conformance with the air pollution control standards contained in the Hawaii Administrative Rules, Title 11, Chapter 60.1, "Air Pollution Control".
4. The underground pipes, cables or ductlines known to exist by the engineer from his search of records are indicated on the plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the area. Wherever connections of new utilities 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.
5. Adequate provisions shall be made to prevent surface waters from damaging the cut face of an excavation or the sloped surfaces of a fill. Furthermore, adequate provisions shall be made to prevent sediment-laden runoff from leaving the site.
6. All slopes and exposed areas shall be sodded or planted as soon as final grades have been established. Planting shall not be delayed until all grading work has been completed. Grading to final grade shall be continuous, and any area within which work has been interrupted or delayed shall be planted.
7. Fills on slopes steeper than 5:1 shall be keyed.

8. The City shall be informed of the location of the borrow/disposal site for the project when the application for a grading permit is made. The borrow/disposal site must also fulfill the requirements of the grading ordinance.
9. No grading work shall be done on Saturdays, Sundays and holidays at any time without prior notice to the Director, D.P.P., provided such grading work is also in conformance with the community noise control standards contained in the Hawaii Administrative Rules, Title 11, Chapter 46, "Community Noise Control".
10. The limits of the area to be graded shall be flagged before the commencement of the grading work.
11. All grading operations shall be performed in 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", and if applicable, the NPDES permit for the project.
12. Where applicable and feasible the measures to control erosion and other pollutants shall be in place before any earth moving phase of the grading is initiated.
13. Temporary erosion controls shall not be removed before permanent erosion controls are in-place and established.
14. Temporary Erosion Control Procedures shall be submitted for approval prior to application for grading permit.
15. If the grading work involves contaminated soil, then all grading work shall be done in conformance with applicable State and Federal requirements.
16. Building Permit for retaining walls shall be obtained prior to commencement of grading work on project site.
17. For non-City projects, the Contractor shall notify the Civil Engineering Branch, D.P.P. at 768-8084 to arrange for inspectional services and submit two (2) sets of approved Construction Plans seven (7) days prior to commencement of construction work. For City projects, the Contractor shall coordinate inspectional services with the responsible City agency.
18. Pursuant to Chapter 6E, HRS, in the event any artifacts or human remains are uncovered during construction operations, the Contractor shall immediately suspend work and notify the Engineer, 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 inform the Civil Engineering Branch, D.P.P. (768-8084); and for City projects, notify the responsible City agency.
19. For all projects, which will disturb one (1) acre or more of land, the Contractor shall not start construction until a Notice of General Permit Coverage (NGPC) is received from the Department of Health, State of Hawaii, and has satisfied any other applicable requirements of the NPDES permit program. Also, for non-City and other non-governmental agency projects, the Contractor shall provide a written copy of the NGPC to the Permitting and Inspection Section, Civil Engineering Branch, D.P.P., at least seven (7) calendar days before the start of the construction. For City or other governmental projects, the Contractor should provide a written copy of the NGPC to the appropriate City department or governmental agency per their requirements.

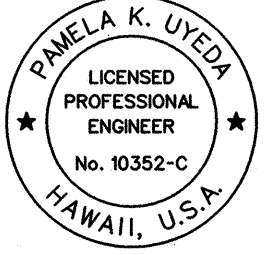
20. All grading and construction work shall implement measures to ensure that the discharge of pollutants from the construction site will be reduced to the maximum extent practicable and will not cause or contribute to an exceedance of water quality standards.
21. Non-compliance to any of the above requirements shall mean immediate suspension of all work, and remedial work shall commence immediately. All costs incurred shall be billed to the violator. Furthermore, violators shall be subjected to administrative, civil and/or criminal penalties.

ARCHAEOLOGICAL NOTES

1. The Contractor shall develop an archaeological monitoring plan (AMP) that shall include archaeological monitoring at the following project extents, at a minimum:
  - Nuuanu Stream bridge widening and lighting replacement activities that disturb soil within 100 feet of Nuuanu Stream
  - Lighting replacement activities that disturb soil within 100 feet of Kapalama Canal
  - Lighting replacement activities that disturb soil within 100 feet of Kalihi Stream
2. The AMP shall be submitted to the DOT and State Historic Preservation Division (SHPD) for review prior to the start of construction.
3. If, during construction, any archaeological sites, such as walls, platforms, pavements, mounds, or remains (such as artifacts, concentration of shell, bone, or charcoal deposits, or rock or coral alignments) are encountered, all earth-moving activities within and around the immediate discovery area shall be diverted until a qualified archaeologist can assess the nature and significance of the find. If the archaeological monitor believes a find may be significant, the Contractor shall inform DOT who will then notify SHPD and Native Hawaiian Organizations.
4. If human remains are discovered, the Contractor shall stop work immediately and contact the DOT, State Historic Preservation Division, and the Honolulu Police Department.

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

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 <p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.</p> <p><i>[Signature]</i></p> <p>EXPIRATION DATE OF THE LICENSE: 04/30/14</p>	<p>STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION</p> <p><b>GENERAL NOTES</b></p> <p><b>INTERSTATE ROUTE H-1 REHABILITATION</b> <b>Middle Street to Vicinity of Ward Avenue</b> <b>FAP NO. IM-HI-K(269)</b></p> <p>Scale: None Date: Apr. 26, 2013</p>
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FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	5	382

HAWAIIAN TELCOM NOTES:

- The Contractor shall procure and pay for all licenses and permits and shall give all notices necessary and incident to the due and lawful prosecution of the work.
- The Contractor shall obtain an excavation permit and toning request from Hawaiian Telcom's Excavation Permit 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.
- Prior to the excavation of the ductline, the Contractor shall request Hawaiian Telcom to locate existing ductline wherever required. For underground cable locating and marking, five (5) working days advance notice is required. Three (3) working days advance notice is required for any inspection by a designated representative.
- The locations of existing utilities are approximate only. The Contractor shall exercise extreme caution and shall maintain proper clearances whenever construction crosses or is in close proximity of Hawaiian Telcom facilities. The Contractor shall verify their locations and shall be liable for any damages to Hawaiian Telcom facilities. Any damages shall be reported immediately to Hawaiian Telcom's Repair Section at #611 (24 hours) or to the Excavation Permit Section at 840-1444 (normal working hours, Monday through Friday, except holidays). As a result of his operations, adjustments to the new ductline alignment, if required, shall be made to provide the required clearances.
- The Contractor shall take necessary precaution not to damage existing cables or ducts. A Hawaiian Telcom inspector or designated representative is required to be at any job site whenever there will be a breakage into or entry into any structure that contain Hawaiian Telcom facilities. Temporary cable and duct supports shall be provided wherever necessary.
- The Contractor shall notify Hawaiian Telcom's inspector or designated representative a minimum of 72 hours prior to excavation, bracing, or backfilling of Hawaiian Telcom's structures or facilities. Hawaiian Telcom's Inspectors as follows:  
West Oahu - Colman Nyuha, 840-2995  
East Oahu - Joe Correia, 840-2994
- 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.
- When excavation is adjacent to or beneath Hawaiian Telcom's existing structures or facilities, the Contractor shall:
  - Sheet and/or brace the excavation to prevent slides, cave-ins, or settlements to ensure no movement to Hawaiian Telcom's structures or facilities.
  - Protect existing structures and/or facilities with beams, struts, or underpinning while excavating beneath them to ensure no movement to Hawaiian Telcom's structures or facilities.
- The Contractor shall brace all poles or light standards near the new ductline, manhole, or handhole during his operations.

- The Contractor shall saw-cut A.C. pavement and concrete gutter wherever new manholes, handholes, or ductlines are to be placed and shall restore to existing condition or better.
- The Contractor shall comply with the policy adopted by the Department of Planning and Permitting, City and County of Honolulu, concerning the replacement of concrete sidewalks after excavation work.
- The underground pipes, cables, or ductlines known to exist by the Engineer from his search of records are indicated on the plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the area.
- Wherever connections of new utilities to existing utilities are shown on the plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines.
- The Contractor, 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.
- The Contractor shall pump all manholes dry during final inspection.
- The Contractor shall notify Hawaiian Telcom inspector 24 hours prior to the pouring of concrete or backfilling.
- When connecting to manhole walls, all existing reinforcing bars shall be left intact. Ducts shall be adjusted in the field in order to clear reinforcing.
- The Contractor shall be responsible for laying out all required lines and grades and shall preserve all 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.
- Minimum concrete strength shall be:  
For ductline 2500 psi at 28 days  
For manhole 3000 psi at 28 days or as specified in design notes
- Bends in the duct alignment due to changes in grade shall have a minimum radius of 25 feet. All 90 degree C-bends at a pole or at the building floor slab penetration shall have a bend radius of ten times the diameter of the duct or greater.
- After ductline has been completed, a mandrel with a square front not less than 12" long and having a diameter of 1/4" less than the inside diameter of the duct, shall be pulled through each duct after which a brush with stiff bristles shall be pulled through to make certain that no particles of earth, sand, or gravel have been left inside. Ducts shall be completely dry and clean.
- All ducts and conduits shall have an 1800\* polyester mule-tape (NEPTCO, 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:

- 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.

- Compliance with Hawaii Occupational Safety and Health Laws:

The Contractor shall comply with the State of Hawaii's Occupational Safety and Health Laws and Regulations, including without limitation, those related to working on or near exposed or energized electrical lines and equipment.

- Excavation Permit:

The Contractor shall obtain an excavation permit from HECO's Technical Division (543-5654) located at 820 Ward Avenue, 4th floor, two weeks prior to starting construction. Please refer to our request number at that time.

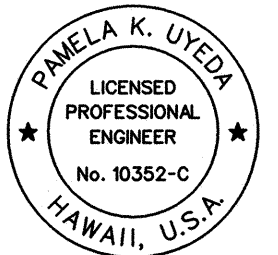
- Caution!!! Electrical Hazard!!!

Existing HECO overhead and underground lines are energized and will remain energized during construction unless prior special arrangements have been made with HECO. Only HECO personnel are to handle these energized lines and erect temporary guards to protect these lines from damage. The Contractor shall work cautiously at all times to avoid accidents and damage to existing HECO facilities, which can result in electrocution.

- Overhead lines:

State law 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.

 <p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.</p> <p>SIGNATURE: <i>P. Uyeda</i> EXPIRATION DATE OF THE LICENSE: 04/30/14</p>	<p>STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION</p> <p><b>UTILITY NOTES</b></p> <p><b>INTERSTATE ROUTE H-1 REHABILITATION</b> <b>Middle Street to Vicinity of Ward Avenue</b> <b>FAP NO. 1M-HI-1(269)</b></p> <p>Scale: None Date: Apr. 26, 2013</p>
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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).

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.

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)

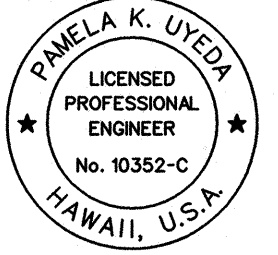
- A. The minimum vertical clearances to water lines crossing electrical ductlines can be reduced to 6 inches if the electrical ductline structure is smaller than 16 inches, is concrete encased, and is below the water line.
- B. A minimum horizontal clearance of 36 inches is required between new handholes 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.

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 <p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.</p> <p><i>[Signature]</i></p> <p>SIGNATURE      EXPIRATION DATE OF THE LICENSE 04/30/14</p>	<p>STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION</p> <p><b>UTILITY NOTES</b></p> <p><b>INTERSTATE ROUTE H-1 REHABILITATION</b> <b>Middle Street to Vicinity of Ward Avenue</b> <b>FAP NO. IM-HI-K(269)</b></p> <p>Scale: None      Date: Apr. 26, 2013</p>
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FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	8	382

DEPARTMENT OF PLANNING AND PERMITTING  
SEWER NOTES

1. All sewer construction shall be performed in accordance with the City's Standard Specifications, Sept. 1986, the Department of Public Works Standard Details, Sept. 1984, current City Practices and Revised Ordinances of Honolulu, as Amended, and the Design Standards of the Department of Wastewater Management Vol. 1, July 1993.
2. The Contractor shall notify the Construction Management Branch, Wastewater Division, DDC, at 768-8773 or 768-8770 to arrange for inspection services and submit four sets of approved construction plans seven days prior to commencement of sewer work. The Contractor shall pay for all inspection costs.
3. The underground pipes, cables, or ductlines known to exist by the Engineer from his research of records are indicated on the plans. The Contractor shall verify the location and depth of the facilities, including and affecting sewer lines, in the presence of the Wastewater Inspector and exercise proper care in excavating the area. The Contractor shall be responsible and shall pay for all damaged utilities.
4. The Contractor shall be responsible for maintaining continuous sewer service to all affected areas during construction.
5. The Contractor shall be responsible for any sewage spills caused during construction. The Contractor shall notify the State Department of Health and utilize appropriate sampling and analyzing procedures. The Contractor shall be responsible for all public notification and press releases.
6. Maintain 3'-0" min. horizontal clear separation between all sewer systems and nearest street lighting ductlines, pullboxes, and handholes paralleling the sewer system.
7. Maintain 5'-0" min. horizontal clear separation between street lighting standards (including any modular units) and nearest sewer line system. Contractor shall field verify for conflicts at each street lighting standard location. Where conflicts occur, the Contractor shall coordinate with Project Engineer to revise the street light standard to provide the required clearances.
8. At electrical/signal ductline sewer crossings, adjust all electrical/signal ductline elevations to maintain 24" vertical clear separation from all sewer lines.
9. For sewer manhole (SMH) adjustments upward less than 3", See Std. Detail S-25. For SMH adjustments upward greater than 3" or for any adjustments downward, reconstruct the SMH top from below the cone section.
10. 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:

1. 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 harness 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 of at least 20-feet away).
  - h. Personal multi-gas detector to be carried by inspector.
2. Continuous forced air ventilation adequate to provide safe entry conditions.
3. One attendant/rescue personnel topside (two, if conditions warrant it).

11. If Contractor encounters flow monitoring devices such as special sewer manhole cover embedded with solar panels; notify C&C of Honolulu, ENV-CSM at 768-7272 to coordinate temporary removal.
12. Contractor shall maintain visibility and maintenance access to live sewer manhole locations at all times, including during non-work hours and paving operations.
13. Contractor shall use manhole debris catching device when performing manhole height adjustment work and remove any construction debris that has fallen into the manhole. Disposal of construction debris in the sewer system is strictly prohibited.

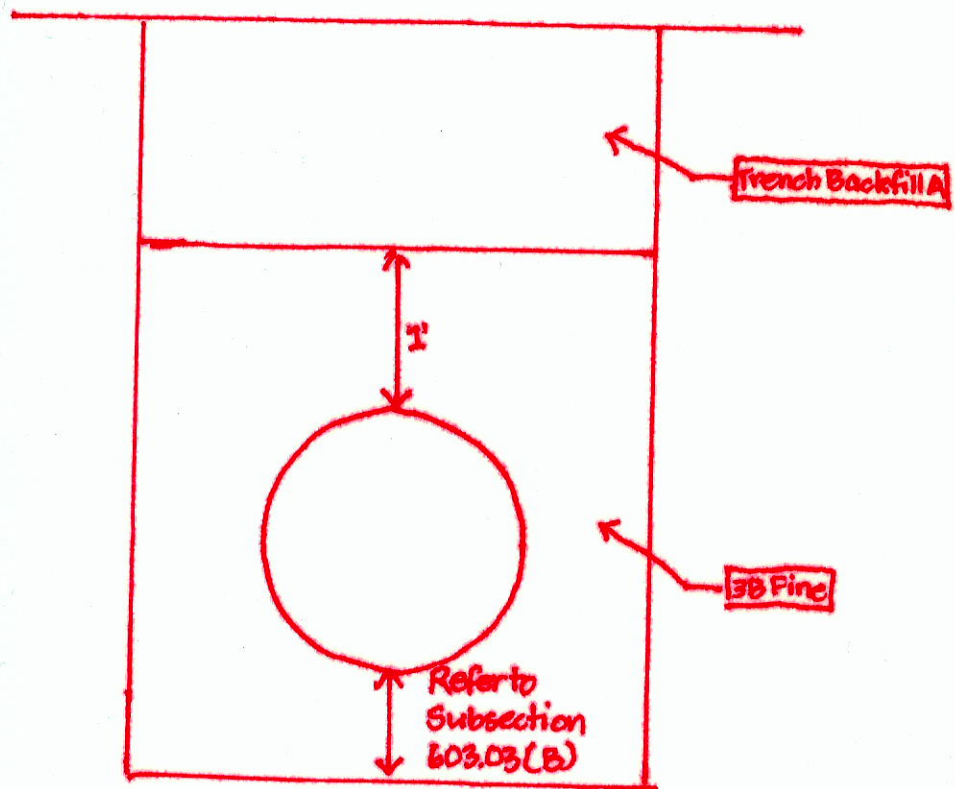
DEPARTMENT OF DESIGN AND CONSTRUCTION  
COLLECTION SYSTEM MAINTENANCE NOTE

1. The Contractor shall be responsible for the protection of all sewer facilities. The Contractor shall immediately report any damages to Albert Kim, CSM, at 768-7253 (phone) or 351-3603 (cellular). All costs for damages to sewer facilities shall be borne by the Contractor.

ADJUSTMENT TO EXISTING UTILITIES NOTE:

1. Adjust all utility valve box frames & covers, water meter boxes, manhole frames & covers, street monument covers, etc., to new finish grade. Coordinate with private companies and City agencies for work on each respective utility.

The 36" Drainline was Back-filled with the Approved 3B Fine (Submittal 02) 6" below the drainline with 1" Cover Above the drainline, and Approved Trench Backfill A (Submittal T7) Above 1" (Per RFI 048)



Typical Section- 36" Drainline  
NTS

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Approved:

Scott Gushko  
Chief, Wastewater Branch, DPP

5/10/13  
Date

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	SHEET No. N-7 OF 11 SHEETS

"AS-BUILT"



FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-K(269)	2013	9	382

WATER NOTES

1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, dated 2005, as amended, of the Hawaii Highways Division, Department of Transportation, and the City and County of Honolulu Board of Water Supply's "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, and all subsequent amendments and additions.
2. All plans approved by the Board of Water Supply are based solely on the adequacy of the water supply.
3. The Contractor shall notify BWS Capital Projects Division, Construction Section in writing 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. Any adjustments to the existing water system required during construction to meet requirements of BWS Standards, whether shown on the plans or not, shall be done by the Contractor at no cost to the Board.
11. 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.

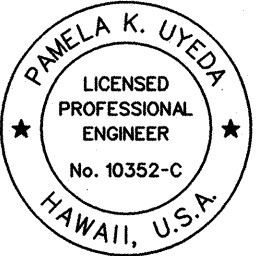
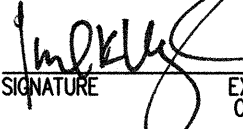
Approved:



Manager and Chief Engineer, BWS  
(For Work Affecting BWS Facilities in City/State R/W and BWS Easements Only)

9-11-2013

Date

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SHEET No. N-8 OF 11 SHEETS

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FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	10	382

OCEANIC CABLE NOTES:

1. The locations of existing utilities are approximate only. The Contractor shall verify their locations and shall be responsible for any damages to these utilities as a result of his operations. Adjustments to the new ductline alignment, if required, shall be made to provide the required clearances.
2. 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 areas. 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. Prior to the excavation of the ductline, the Contractor shall request that Oceanic Cable Company to locate existing ductline wherever required.
4. The Contractor shall take necessary precaution not to damage existing cables or ducts. Any work involving existing cables or ducts shall be done in the presence of the Oceanic Cable Company inspector or his representative.
5. The Contractor shall notify the Oceanic Cable Company inspector 48 hours prior to the start of work on CATV infrastructure, pouring of concrete or backfilling. Oceanic's inspector, Moki Place, can be reached at 625-8378.
6. Wherever connections to existing utilities are shown on the plans, the Contractor shall expose the existing lines prior to excavation of the main trenches to verify their locations and depths.
7. The location of CATV facilities shown on plans are from existing records with varying degrees or accuracy as to its actual fixed location. The Contractor shall use extreme caution when working in close proximity of CATV facilities.
8. The Contractor shall obtain excavation permit clearance from Oceanic's Engineering Section located at 200 Akamainui St., Mililani Tech Park.
9. For any field assistance or verification of CATV facilities, the Contractor shall call the Technical Operations Center at 625-8378.
10. Any work required to relocate CATV facilities shall be done by Oceanic Cable and the Contractor shall be responsible for all coordination requirements and associated costs.
11. Any damage to Oceanic's facilities shall be reported to OCI's repair dispatch department at 625-8437 or 625-8666.
12. All existing improvements that are disturbed during the construction phase shall be restored to its original or better condition.
13. The Contractor shall take all necessary precaution not to damage the existing cables in the pullbox. All damages to existing cables shall be repaired by Oceanic Cable and paid for by the Contractor.
14. Coordinate all penetration of telephone pullboxes with Verizon inspector.

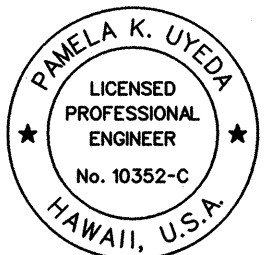
15. Smooth finish inside wall of existing pullboxes and handholes to its original condition or better. All entrances into the pullbox shall be grouted around conduits.
16. For 3" conduits or larger, the Contractor shall install Neptco WP1800 MULETAPE or approved equal in all ductlines. Leave MULETAPE in place for future use as a pull or fish line, unless otherwise noted. Reference Verizon Material Code No. 571154. All ducts shall be capped to prevent entry of foreign material during construction and at completion of installation. Endbells are required for conduits 2" and larger.
17. For conduits less than 3", the Contractor shall place poly cord through out project, and secure in manholes, handholes, and pullboxes.
18. Penetration into pullboxes if necessary to be from factory installed opening or from bricks position. Penetration from pullbox walls is not acceptable. All conduits shall enter through the end of the pullbox at 90 degrees.
19. A minimum of (2) precast sections must be used on all 2x4 or 2x6 pullboxes.
20. Two minimum layers of bricks to be used shall always be at least one layer lower than the lowest duct entering the pullbox. At no time however, shall there be less than two layers of bricks on each installation.
21. At no time shall cement mortar, wood, or any other material be used between precast sections. Leveling or raising of boxes to grade must be done at brickwork section using cement mortar. The permanent installation of wooded wedges to accomplish this purpose will not be accepted.
22. Concrete precast base may be used as an alternative to bricks.
23. Trenching to be by hand digging near and across existing utility lines.
24. Minimum clearance between street light stand and fire hydrants shall be three feet.
25. Underground utilities shown hereon is for information only. No guarantee is made on the accuracy or completeness of said installation.
26. For underground cable location and marking, five working days advance notice is required. Three working days advance notice is required for any inspection by a designated representative. Contractor shall take necessary precaution not to damage any existing cables or ducts. Oceanic's inspector or designated representative is required to be at any job site whenever there will be a breakage into or entry into any structure that contain Oceanic's facilities.
27. Concrete strength shall be 3000 psi in 28 days.

Bends in the duct alignment, due to changes in grade shall have a minimum radius of 20-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.

28. After ductline has been completed, a mandrel with a square front not less than 12-inch long and having a diameter of 1/4-inch less than the inside diameter of 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.
29. All construction must be inspected and approved by Oceanic prior to the installation of any of its facilities and the energizing of its system.
30. Contractor and/or customer shall provide Oceanic with sufficient installation time in their occupancy time table.
31. Install 4-mil thick orange color warning tape 3-inch wide, entire length of trench when placing CATV conduits. Tape should read "CAUTION BURIED CABLE LINE BELOW". Manufactured by Harris Industries, Inc., catalog number UT-43 or equivalent tape. Tape to be installed 12-inches below grade.

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