

WATER NOTES:

1. All work shall be done according to the Water System Standards, State of Hawaii, dated 2002 as amended.

2. The Contractor shall inform the Department of Water Supply (DWS) Engineer 72 hours prior to the beginning of any waterline work and two weeks prior to any connection, chlorination, shut-off or relocation work.

3. The Contractor shall pay for all work, equipment and materials furnished by the DWS.

4. All existing waterlines, waterline appurtenances and other utility locations shown on the plans are obtained from the latest reliable sources. The Contractor shall be responsible to verify the exact location of all utilities in the field and shall bear all cost for damages done to the water system.

5. All connections to existing waterlines shall be done by the DWS. Contractor shall perform all excavation, backfill, road repair, traffic control, and provide equipment necessary to complete the connection.

6. Where water shut-off of more than 3 hours becomes necessary, the Contractor, at his own expense, shall provide a temporary by-pass line. The DWS Engineer shall determine the by-pass line size. If necessary, the DWS Engineer may require a by-pass line, regardless of the expected shut-off period.

7. Minimum horizontal clearance between waterline and other utilities shall be 8 feet unless otherwise specified. Minimum vertical clearance between waterlines and other utilities shall be 12" provided concrete jackets are used, and 18" if no concrete jackets are used. In all applicable instances, the waterlines shall be at a grade higher than other utilities.

8. All fittings (class 250 minimum) and all gate valves (class 200) shall be ductile iron, with mechanical joints unless otherwise specified. Butterfly valves shall be class 250 with epoxy-coated interior unless otherwise specified.

9. The waterline shall be tested at a minimum of 225 psi or one and a half times the static pressure at the low point, whichever is greater, under DWS supervision just prior to paving.

10. The Contractor shall be responsible for the chlorination of the water system and shall bear all costs. The person(s) engaged to do the chlorination work must have the appropriate license to perform the work in the State of Hawaii.

11. Existing valves, F.H. units, valve boxes, frames and covers designated "remove and salvage" shall be cleaned of all dirt, scabs, and concrete and delivered to the respective DWS baseyard. This work shall be considered incidental to the various bid items, unless specified otherwise.

12. Existing waterlines, valves, fittings and appurtenances not designated "remove and salvage" shall be removed and disposed of properly at no cost to the DWS.

13. Relocation of existing meters shall be done by or under DWS supervision. Relocations of customer service lines to relocated meters shall be copper and done by the Contractor. All work and materials required shall be provided by the Contractor and considered incidental to the relocation work. Existing meter boxes damaged by the Contractor shall be replaced at the Contractor's cost. A dielectric union shall be used to connect the copper pipe to the customer's G.I. Pipe (if applicable).

14. The DWS will not assume ownership of nor grant any water service until the water system is dedicated to the DWS along with all necessary easements and documents.

15. When compaction tests are required, the Contractor shall be responsible to provide the DWS with proctor results of materials to be used for that portion of work requiring compaction. These results shall be certified and shall be furnished to the DWS one week prior to commencement of work. Cost for compaction tests shall be incidental to pipeline installation.

16. All newly installed waterlines shall have a blue warning tape labeled "waterline" placed directly over the compacted cushion material.

17. Construction projects requiring temporary water service shall be metered and paid for by the Contractor.

18. The Contractor shall be responsible for record drawings (as-built drawings) and the Licensed Engineer shall certify the drawings as to accuracy and submit the drawings and as-built tracings to the DWS.

19. All waterline 4-inch and larger shall be ductile iron class 52, and all waterlines smaller than 3-inch shall be soft copper type k unless otherwise specified.

20. Lots requiring a Dept. of Water Supply approved backflow prevention assembly shall have one. Its installation is not required for final subdivision approval. The installation shall be the responsibility of the Service Owner, in accordance with DWS Standard Detail V-9. The Owner shall make provisions for the water during the time the backflow is being tested or maintained. As protection to the consumer plumbing system, a suitable pressure relief valve shall be installed and maintained by the Service Owner.

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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11B-01-20	2022	6	34

RANDALL M. UHASEKI

LICENSED PROFESSIONAL ENGINEER

No. 7289-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature

04/30/22

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

UTILITY NOTES

KUAKINI HIGHWAY DRAINAGE IMPROVEMENTS

Vicinity of Mile Post 114

Project No. 11B-01-20

Scale: None

Date: Mar. 2021

SHEET No. 6-5 OF 11 SHEETS

6

GENERAL ELECTRIC AND COMMUNICATION NOTES:

- The drawings do not reflect all the existing conditions that may be encountered during construction. Contractor/Bidder shall visit the project site and become familiar with the existing conditions, the extent of any demolition work, and the new work prior to bidding and the start of on-site construction activities. Report any discrepancies and/or differences between the existing conditions and the construction documents to the Engineer prior to commencing construction. Resolve all discrepancies and questions prior to the start of work.
- Existing device locations, circuit assignments, wiring connections, and conduit runs indicated were derived from available reference documents and limited field investigation. Field verify all existing conditions and make any necessary adjustments to satisfy the intent of the drawings and specifications.
- Re-route all existing conduit, wiring and cabling to remain within the project area as necessary to facilitate the removal of existing equipment as well as the installation of all new equipment. Remove and re-install electrical equipment, including lights, to remain as required.
- Contact the electric, telephone and cable television utility companies and coordinate all work with them. Pay all utility company charges related to this project unless otherwise directed. The drawings depict anticipated utility company requirements. Do not proceed with the utility company related work without verifying their exact requirements. Notify the Engineer of any differences between what is shown on the contract drawings and what is required by the utility companies. Arrange for periodic inspections by the utility companies and perform all work in accordance with the utility company standards.
- Contractor shall investigate and tone area before digging or excavating.
- All equipment shall be properly mounted, anchored, and supported by approved methods for seismic restraint.
- Should project conditions require deviations from the construction drawings, mark such changes on the as-built drawings. If these changes require alternate methods to those specified in the contract documents, submit drawings showing the proposed alternate methods to the Engineer for review and approval. Do not proceed until approval is obtained from the Engineer.

HAWAIIAN TELCOM GENERAL 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 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 the excavation permit section at 546-7146 (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.
- All applicable construction work shall be done in accordance with the "Hawaiian Telcom Standard Specifications for Placing Underground Telephone Systems" dated January 2007, 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 AC 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 County of Hawaii, 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 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.
- 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.
- The Contractor, at his own expense, shall keep the project and surrounding area free from dust nuisance. The cost for supplementary measure, which may be required by the County, shall be borne by the Contractor.
- The Contractor shall pump all manholes dry during final inspection.
- The Contractor shall notify the Hawaiian Telcom Inspector 72 hours prior to the pouring of concrete or backfilling.
- When connecting to manhole walls, all existing reinforcing bars shall be

left intact. Ducts shall be adjusted in the field in order to clear reinforcing.

- The Contractor shall be responsible for laying out all required lines and grades and shall preserve all 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  $5\frac{7}{16}$ " 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 conduit shall have an 1800# polyester mule-tape (NEPTCO, WP1800p, Hawaii 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.
- Ductline may also mean direct bury line.
- The Contractor shall provide Hawaiian Telcom with two sets of as-built reproducible tracings showing the offsets, stationing, and vertical elevation of the ductline(s) constructed.

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	No.	

RANDALL M. UHASEKI

LICENSED  
PROFESSIONAL  
ENGINEER

No. 7289-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.

R. Umile

SIGNATURE

04/30/22

EXPIRATION DATE  
OF THE LICENSE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

UTILITY NOTES

KUAKINI HIGHWAY DRAINAGE IMPROVEMENTS  
Vicinity of Mile Post 114  
Project No. 11B-01-20

Scale: None      Date: Mar. 2021

SHEET No. G-6 OF 11 SHEETS

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HELCO NOTES:

1. Location of HELCO facilities

The location of HELCO'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 HELCO'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. Caution!!! Electrical Hazard!!!

Existing HELCO overhead and underground lines are energized and will remain energized during construction unless prior special arrangements have been made with HELCO. Only HELCO 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 HELCO facilities, which can result in execution.

4. 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 HELCO at least four (4) weeks prior to the planned encroachment so that, if feasible, the necessary protections (e.g. relocate, de-energize, or blanket HELCO lines) can be put in place. HELCO's cost of safeguarding its lines will be charged to the Contractor.

Contact HELCO's Customer Engineering Department for assistance in identifying and safeguarding overhead power lines.

Refer to HELCO's electric service installation manual for additional guidelines when working around HELCO's facilities. A copy may be obtained from HELCO's Customer Engineering Department.

5. 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 HELCO before implementation. For pole bracing instructions, the Contractor shall call the HELCO Construction and Maintenance Dept., Customer and System Superintendent a minimum of two (2) weeks in advance.

6. Underground Lines

The Contractor shall exercise extreme caution whenever construction crosses or is in close proximity of underground lines. HELCO's existing electrical cables are energized and will remain energized during construction. Only HELCO personnel are to break into existing HELCO facilities, handle these cables, and erect temporary guards to protect these cables from damage. The cost of HELCO's assistance in providing proper support and protection of its underground lines will be charged to the Contractor.

For verification of underground lines, the Contractor shall call "One Call" a minimum of 72 hours in advance, ph. (866) 423-7287.

For assistance in providing proper support and protection of these lines, the Contractor shall call HELCO a minimum of 72 hours in advance.

When unattended, HELCO handholes and manholes must be covered with a steel plate at least 5/16" thick and weighing a minimum of 400#. The plate must seal the box completely in order to be deemed inaccessible.

If HELCO handholes or manholes must be left in an accessible condition after construction hours, at no additional costs, the Contractor will provide one security employee to guard the facility. This is to ensure that no one attempts to enter the box. "Accessibility" is defined as an opening large enough for any person to enter the box.

7. Excavators

When trench excavation is adjacent to or beneath HELCO'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 underpinnings to fully protect it from damage.
- c. Backfilling with proper backfill material including special backfill where existing.

8. Relocation of HELCO 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 these contract obligations shall be borne by the Contractor.

The Contractor shall survey and accurately mark new right-of-way using visible spray paint and mark all necessary property pins prior to HELCO staking of proposed poles and anchors, including location of all underground utilities using the "One Call" process.

9. Conflicts

Any redesign or relocation of HELCO's facilities not shown on the plans may be cause for lengthy delays. The Contractor acknowledges that HELCO or the State is not responsible for any delay or damage that may arise as a result of any conflict discovered if identified with respect to the location or construction of HELCO 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, HELCO should be notified immediately upon discovery or identification of such conflicts.

10. Damage to HELCO Facilities

The Contractor shall be responsible for the protection of all HELCO surface and subsurface utilities and shall be responsible for any damages to HELCO's facilities as a result of his operations. The Contractor shall immediately report such damages to HELCO's trouble dispatcher. Repair work shall be done by HELCO or by the Contractor under HELCO's supervision. Costs for damages to HELCO's facilities shall be borne by the Contractor.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11B-01-20	2022	8	34

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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	DESIGNED BY	
	CHECKED BY	
NOTE BOOK		
No.		

RANDALL M. UHASENI

LICENSED PROFESSIONAL ENGINEER

No. 7289-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

R. Umale

SIGNATURE

04/30/22

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

UTILITY NOTES

KUAKINI HIGHWAY DRAINAGE IMPROVEMENTS

Vicinity of Mile Post 114

Project No. 11B-01-20

Scale: None

Date: Mar. 2021

SHEET No. G-7 OF 11 SHEETS

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HELCO AND HAWAIIAN TELCOM NOTES:

1. The Contractor shall exercise caution when the excavation and construction crosses or is in close proximity of underground telephone and signal cable facilities and maintain adequate clearance for his equipment while working close to and/or under the overhead facilities. Any damage to the existing underground and overhead utilities shall be repaired and paid for by the Contractor.
2. Should it become necessary, any work required to relocate HELCO facilities shall be done by HELCO. The Contractor shall be responsible for all coordination.
3. The Contractor is to exercise extreme caution when the excavation and construction crosses or is in close proximity of HELCO underground and overhead electrical facilities and maintain adequate clearance for his equipment while working close to and/or under HELCO's facilities.
4. Excavation Clearance.
- a. The Contractor shall obtain an excavation from HELCO's planning and design section of the customer installations department, a minimum of ten (10) working days prior to starting construction.
- b. Prior to the excavation of the ductline, the Contractor shall request Hawaiian Telcom to location 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.
5. For verifying the location of HELCO underground ductlines and for assistance in providing proper support and protection of the underground ductlines, the Contractor is to contact "One Call" a minimum of 72 hours in advance. Ph. (866) 423-7287.
6. When trench excavation is adjacent to or under 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 for properly supporting existing structures and facilities with beams, struts or underpinning to fully protect it from damage.
7. Should field conditions and/or construction procedures require that poles be braced to facilitate construction, the Contractor is to contact HELCO a minimum of 72 hours in advance for bracing instruction. Any work required to relocate HELCO facilities shall be done by HELCO and paid for by the Contractor. The Contractor shall be responsible for all coordination.
8. The existence and location of HELCO overhead and underground facilities as shown on the plans are from existing records of varying degrees of accuracy and are not guaranteed as shown. Should relocation of HELCO facilities be required, HELCO is to be contacted four (4) weeks in advance. Any work required to relocate HELCO facilities shall be done by HELCO. The Contractor shall be responsible for all coordination.
9. The Contractor is to comply with the Directions of the State of Hawaii (DOSH) occupational safety and health law.
10. The Contractor shall report any damages to HELCO's facilities to the HELCO's facilities to the HELCO trouble dispatcher, ph. (808) 969-6666.
11. The Contractor shall excavate and backfill around telephone cables in

- the presence of Hawaiian Telcom (HTcom) Engineer or his Representative. All excavation within two feet of telephone cables shall be done by hand.
12. For relocation of any telephone cables and/or ductlines, the Contractor shall notify HTcom five (5) working days before starting work.
13. The Contractor shall notify HTcom immediately after any damage has been caused to existing cables, ductlines, pullboxes, manholes, poles and guys. Repair work on damaged cables shall be done by HTcom and other work involving existing underground facilities shall be done by the Contractor in the presence of HTcom Engineer or his Representative with payment from this work to be borne by the Contractor.
14. Provide adequate support and protection of telephone cables and/or ductlines exposed in the trench and manholes under construction. Such support and protection shall be approved by HTcom.
15. Ductlines may also mean direct bury lines.

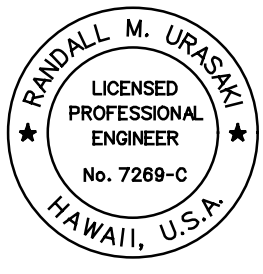
ADJUSTMENT OF EXISTING UTILITY STRUCTURES TO FINISHED GRADES AND COORDINATION WITH UTILITY COMPANIES:

1. Standards:
- A. Hawaiian Telcom Inc. (HTcom) the "Hawaiian Telcom Standard Specifications For Underground Construction" 2007 as amended.
- B. HELCO: Follow HELCO Specification No. CS700I-17 for Construction of Underground Facilities as revised, Standard Drawing No. 892004 and other specifications and drawings that may apply.
2. Materials:
- A. All materials used in the adjustment shall meet the specifications under the respective sections for concrete and mortar, bricks manholes, frames and covers and other castings.
- B. All frames and covers and castings shall be salvaged, cleaned and re-used unless directed otherwise by the Engineer.
3. Construction requirements:
- A. The existing structures shall not be adjusted until the paving is completed.
- B. The new pavement shall be neatly cut in straight lines or circles.
- C. Underground structure walls shall be cleaned and built-up to the required elevations to receive the cover frames or castings.
- D. Backfill shall be constructed with aggregate base course and shall be compacted per specs. The finish surface over the compacted backfill shall be constructed of AC with a minimum compacted thickness of 8 inches or to match existing.
- E. Upon completion of installation, all frames and covers shall be cleaned and painted with one coat of approved asphaltum paint.
4. Coordination with utility companies:
- A. The Contractor shall be responsible for scheduling and/or rescheduling if necessary, with all affected utility agencies. All work including such coordination with utilities of the Contractor.

- B. The utility agreements with the various utility companies are hereby made a part of these plans, and the Contractor shall be familiar with such agreements and be responsible for requirements of the agreements, and for coordination of all utility work required by the agreements.
- C. The Bidder/Contractor warrants and acknowledges that the work required by or for the utility companies in relation to this project (hereafter, "utility work") and the duty to coordinate, cooperate, and schedule such utility work with the requirements shall be the sole responsibility of the Contractor. The County shall not be held responsible for any costs and delays caused by the utilities or utility work. Costs of coordinating, cooperating and scheduling of the utility work by/with the utility companies and any delay costs due to scheduling problems in relation to the utility work shall be considered incidental to the other work items and shall not be paid for separately. The Contractor shall be responsible to communicate with the affected utilities prior to submitting their bid so that the utility work schedule and costs can be incorporated into their bids.
- D. The Contractor shall closely coordinate, cooperate and schedule all work (Contractor's work and utility work including necessary permitting) with the affected utility companies, owners, police, residences, businesses, etc. The Contractor shall not claim or be entitled to any additional compensation costs (i.e.-mobilization/demobilization, overhead, impact, etc.) as a result of any delays to the utility work, including working around the existing and new utilities (overhead and underground, permanent and temporary utility in present or relocated positions), and any inconvenience or damage sustained by the Contractor due to interference from the utility work. Shortly after the award of the contract and before the NTP, the Contractor shall provide the Engineer for approval, a detailed schedule, signed and accepted by the utility companies incorporating the utility work within the allotted contract days.
- E. Existing utility lines and new utility lines are scheduled to be relocated/installed within the contract period or towards the end of the project and the Contractor shall work around the existing lines and complete as much of the project as possible until the lines are relocated/installed. The Contractor shall coordinate with HELCO, Hawaiian Telcom, Spectrum, and Department of Water Supply during construction. The Contractor will receive no additional compensation/payment for the scheduling and phasing of work due to the utility lines relocation/installation work.

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HAWAII	HAW.	11B-01-20	2022	10	34

 <p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.</p> <p><i>R. Urasaki</i></p> <p>SIGNATURE      04/30/22 EXPIRATION DATE OF THE LICENSE</p>	<p>STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION</p> <p><b>UTILITY NOTES</b></p> <p><b>KUAKINI HIGHWAY DRAINAGE IMPROVEMENTS</b> <b>Vicinity of Mile Post 114</b> <b>Project No. 11B-01-20</b></p> <p>Scale: None      Date: Mar. 2021</p>
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SPECTRUM NOTES:

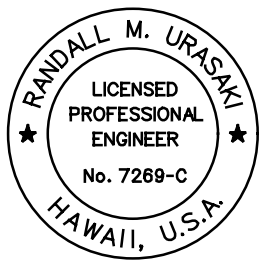
- The Contractor shall procure and pay for all licenses and permits and shall give all notices necessary and incident to the due and lawful prosecution of the work.
- The locations of existing utilities are approximate only. The Contractor shall verify their locations and shall be responsible for any 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.
- The Contractor shall brace all poles or light standards near the new ductline, manhole or handhole during its operations.
- The Contractor shall saw-cut A.C. pavement, concrete gutter, and concrete sidewalk wherever new manholes, handholes, pullboxes or ductlines are to be placed and shall restore to existing condition or better.
- 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.
- 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 Engineer, shall be borne by the Contractor.
- Prior to the excavation of the ductline, the Contractor shall request that Spectrum locate existing ductline wherever required.
- 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 Spectrum Inspector or his representative. Temporary cable and duct support shall be provided wherever necessary.
- The Contractor shall notify the Spectrum Inspector 72 hours prior to the start of work on CATV infrastructure, pouring concrete, or backfilling. Spectrum's Inspector(s): Perry Samuelu at 387-2496.
- 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.
- Contractor shall provide all materials and furnish all labor and equipment necessary to install the ductline in place complete.
- The Contractor shall be responsible for laying out all required lines.
- The Contractor, at his own expense, shall keep the project area free from dust nuisance. The work shall be in conformance with the air pollution control standards and regulations of the State of Hawaii, Department of Health.
- The location of CATV facilities shown on the plans are from existing records with varying degrees of accuracy as to its actual fixed location. The Contractor shall use extreme caution when working in close proximity of CATV facilities.

- The Contractor shall obtain excavation permit clearance from Spectrum's Engineering Section located at 200 Akamainui St., Millilani Tech park.
- For any field assistance or verification of CATV facilities, the Contractor shall call the Technical Operations Center at 625-8378.
- Any work required to relocate CATV facilities shall be done by Spectrum and the Contractor shall be responsible for all coordination requirements and associated costs.
- Any damage to Spectrum facilities shall be reported to Spectrum's Repair Dispatch Department at 625-8185.
- The Contractor shall tunnel under existing concrete curb and gutter as necessary to extend conduit into existing CATV pullbox and into the proposed power supply pullbox.
- All existing improvements that are disturbed during the construction phase shall be restored to its original or better condition at no cost to the HDOT in accordance with HDOT's standards.
- At locations where existing CATV pullbox replacement is proposed, 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 Spectrum and paid for by the Contractor.
- Coordinate all penetration of telephone pullboxes with Hawaiian Telcom Inspector.
- Smooth finish inside wall of existing pullboxes and handholes to its original condition or better.
- All new concrete encased conduit shall be PVC pipe-schedule 40. All new direct-buried conduit shall be PVC pipe-schedule 80. Use of any other material type shall be limited to matching existing facilities. Connection of dissimilar materials to require approval from Spectrum Inspector and Engineering Department.
- 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 Hawaiian Telcom 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.
- The Contractor shall place poly cord throughout project, and secure in manholes, handholes, and pullboxes.
- Penetration into pullboxes if necessary to be from factory installed opening or from bricks position. Penetration from pullbox walls is not acceptable.
- 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 10 times the diameter of the duct or greater.
- Minimum length of conduit used shall not be less than 5-feet in length. Use of partial conduit sections allowable is at Spectrum Inspector(s) discretion.
- All conduits shall enter through the end "short wall" of the pullbox. Entry shall be at 90 degrees (perpendicular) to wall face with bends no less than 12" from exterior wall.

- A minimum of two (2) precast riser sections must be used on all 2 x 4 or 2 x 6 pullboxes.
- All new construction shall utilize concrete precast base unless otherwise approved or specified by Spectrum Inspector(s).
- When three (3) or more 4" conduits enter one end wall of any pullbox, only brick bases will be allowed unless otherwise instructed/approved by Spectrum Inspector(s).
- Two minimum layers of bricks to be used lower than the lowest duct entering the pullbox. Top layer of brick to be flush with top of conduit or higher.
- For upgrade/repairs to existing pullboxes, bricks may be used and shall always be at least two layers lower than the lowest duct entering the pullboxes.
- 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:
  - Pre-cast base(s) - Using gravel layer under base (Type 3B or equivalent approved by Spectrum Inspector)
  - Brick base(s) - Adjustments to brickwork section. The permanent installation of wooden wedges to accomplish this purpose will not be accepted.
- 5/8" copper ground rods shall be placed in all pullboxes unless otherwise directed by Spectrum. Ground rods will be placed in the corner 3" to 4" from the wall and away from any conduit with no more than 8" sticking up above ground.
- Trenching to be by hand digging near and across existing utility lines.
- Minimum clearance between streetlight stand and fire hydrants shall be three feet.
- Underground utilities shown hereon is for information only. No guarantee is made on the accuracy or completeness of said installation.
- For underground cable locating 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. Spectrum 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 Spectrum facilities.

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11B-01-20	2022	11	34

 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. <i>R. Urasaki</i> SIGNATURE 04/30/22 EXPIRATION DATE OF THE LICENSE	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION  <b>UTILITY NOTES</b>  KUAKINI HIGHWAY DRAINAGE IMPROVEMENTS Vicinity of Mile Post 114 Project No. 11B-01-20  Scale: None Date: Mar. 2021
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SPECTRUM NOTES (CONTINUED):

43. Concrete strength shall be 3000 psi in 28 days.
44. 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.
45. After ductline has been completed, a mandrel with a square front not less than 12-inch long and having a diameter of  $5\frac{7}{16}$  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.
46. Metallic entrance conduits shall be grounded.
47. All construction must be inspected and approved by Spectrum prior to the installation of any of its facilities and the energizing of its system.
48. Contractor and/or customer shall provide Spectrum with sufficient installation time in their occupancy timetable.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11B-01-20	2022	12	34

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
NOTE BOOK		
Number		

RANDALL M. UHASENI

LICENSED PROFESSIONAL ENGINEER

No. 7289-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

04/30/22

SIGNATURE

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

UTILITY NOTES

KUAKINI HIGHWAY DRAINAGE IMPROVEMENTS

Vicinity of Mile Post 114

Project No. 11B-01-20

Scale: None

Date: Mar. 2021