

WATER CONSTRUCTION NOTES:

- ORIGINAL PLAN

SURVEY PLOTTED BY

DRAWN BY

TRACED BY

DESIGNED BY

NOTE BOOK

QUANTITIES BY

CHECKED BY

DATE

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- Unless otherwise specified, all materials and construction of water facilities and appurtenances shall be in accordance with the "Water System Standards, 2002" as adopted by the Department of Water, County of Kauai, including all subsequent amendments and additions.
  - All required project submittals (materials, shop drawings, chlorination plan, etc.) shall be approved by the Department Construction Management Division before a pre-construction conference can be scheduled. Once all project submittals have been approved by DOW Construction Engineer, the DOW Construction Engineer will notify the Contractor that a pre-construction conference can be arranged. The Contractor shall arrange a pre-construction conference at least ten (10) calendar days before construction and shall notify the Department of Water at least three (3) working days prior to start of construction.
  - The Contractor shall submit the names and telephone numbers of its authorized Job Superintendent and at least three (3) additional persons to contact in case of an emergency during non-working hours.
  - The Contractor shall notify the Department of Water at least 24 hours prior to any trenching, pipe laying, backfilling, testing or disinfection activities to ensure that inspection services will be available.
  - All materials (pipe, lubricants, paints, sealants, form oil, concrete admixtures, etc.) in direct contact with the potable water shall have National Sanitation Foundation (NSF) certifications. The Cntractor shall submit these certifications to the Dpartment of Wter for review and approval prior to its application.
  - The location of existing water mains and appurtenances shown on the plans are approximate only. The Contractor shall verify the exact locations in the field. Excavation around any existing water main shall be done by hand.
  - The Contractor shall provide unobstructed access to existing hydrants, valves and water meters at all times.
  - The Contractor shall secure all excavations in accordance with OSHA regulations.
  - There shall be no physical connection between a public or private potable water system and a non-potable water system, sewer, or appurtenance thereto which could permit the passage of any sewage or polluted water into the potable water supply.
  - Trench excavation, backfilling in lifts, and repaving shall conform to the "Hawai'i Standard Specifications for Road and Bridge Construction, 2005" as amended.
  - Warning tape shall be in accordance with Division 200, section 212.08 of the "Water System Standards." The warning tape shall be four mil thick, non-metallic, acid and alkali resistant polyethylene and 6-inches wide with minimum strength of 1750 psi lengthwise and 1500 psi crosswise. Tape color shall be "Safety Precaution Blue" and shall bear a continuous printed inscription "CAUTION WATER LINE BURIED BELOW". Inscription shall be 2-inches high, black text.

- All hydrants shall receive a minimum sspc sp3 surface preparation and coated in accordance with division 200, section 206.01 of the "Water System Standards."
- Unless otherwise directed, prior to the connection of any pipelines and/or laterals to the existing main, the pipelines/laterals installed shall be cleaned, pressure tested, chlorinated, flushed, and sampled in accordance with Division 300, Sections 302.27 to 302.29 of the "Water System Standards."
- Water samples shall be tested for total coliforms by a laboratory certified by the State of Hawaii to perform coliform analysis. Presence of coliform bacteria is unacceptable.
- In addition to the test for coliforms, a separate test for Heterotrophic Plate Count (HPC) shall be conducted. The HPC count shall be less than 300 cfu/ml.
- Prior to chlorination, a Water Chlorination and Sanitation Contractor with a C-37D License shall submit a chlorination plan with water source, injection points, sampling points and procedure clearly defined for approval by the DOW.
- The tested pipelines and/or laterals must be connected to the existing DOW system within 14 calendar days of pulling the first disinfection sample tested by a certified laboratory. The Department of Water will require the Contractor to redo the cleaning, pressure testing, and/or disinfection of the pipelines and/or laterals at the Contractor's expense if the connection is not completed within these 14 calendar days.
- Polyurethane foam "Pigs" shall be "Pushed" through the length of the installed pipeline using pressurized water.
- All connections shall be scheduled in coordination with the Department of Water.
  - An advance deposit is required for operating valves, flushing lines and notifying consumers affected by a water shutdown during connections. The Contractor will be charged the actual cost.
  - The Contractor shall place the deposit prior to scheduling the connection date.
  - Shutdown connections shall be scheduled on tuesdays through thursdays. no connections shall be scheduled on mondays, fridays, weekends, and holidays, or from December 18 - January 8 of each year.
  - All materials shall be on hand and approved by the Engineer prior to scheduling the connection date.

- Pumps used to de-water the connection area shall be operated in the presence of the Engineer prior to scheduling the connection date.
  - All connections shall be performed in the presence of the Engineer.
  - No live taps shall be scheduled from December 24 - December 31 of each year.
- In order to prevent damage to the polyethylene encasement from excessive handling, the polyethylene encasement shall be installed around the barrel of the ductile iron pipe at its final location along the trenchline. The polyethylene encased pipe shall be lifted using a fabric type sling or a suitably padded cable or chain to prevent damage to the polyethylene.
  - The Contractor shall take all necessary compaction tests while the waterline trench is being backfilled and while the subbase/basecourse is being placed. If the test results indicate that additional compaction is required, the corrective work shall be completed before any additional trench excavation or placing of subbase/basecourse is allowed.
  - The Contractor shall retain the services of a registered Geotechnical Engineer for quality control. The Compaction Test results shall be certified by the Geotechnical Engineer and submitted to the Department of Water, State Highways Division (for work done within State R/W) and the Department of Public Works (for work done within County R/W). The Geotechnical Engineer shall certify that the Compaction results meet the requirements of the current Standard Specifications for Road and Bridge Construction.
  - The Contractor shall connect all existing consumer piping to the new service laterals. The Department of Water will transfer the existing water meters only.
  - All fittings shall be Mechanical Joint (MJ) at each end unless otherwise noted. "Megalug" retainer glands shall be used with all mechanical joint fittings and valves used in connecting new water mains to existing water mains unless otherwise noted.


RANDALL M. UHAKAWA

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

WATER NOTES

KUHIO HIGHWAY

REPAIRS TO WAILUA RIVER BRIDGE

PROJECT NO. ER-23(001)

Scale: None

Date: Oct. 2020

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WATER CONSTRUCTION NOTES CONT'D:

20. All water valves that will be abandoned in place shall be placed in the "Closed" position. Remove top section of valve box and concrete settlement slab. Fill remainder of valve box with concrete. Place backfill and repair pavement section to applicable State or County standards. Backfill to finish grade in road shoulder area.

21. The Contractor shall obtain all applicable Department of Health permits prior to the start of construction. Permits include, but are not limited to, National Pollution Discharge Elimination System (NPDES) permits for storm water, hydrostatic test, dewatering, and for construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area.

The Contractor shall be responsible for the proper disposal of storm water discharges and effluent associated with construction activities including hydrotesting and disinfection operations, to safeguard public health and safety in accordance with applicable Department of Health requirements. All permits and licenses for storm water and construction water disposal, including all application, charges, fees, and taxes, are the responsibility of the Contractor.

22. The Contractor is responsible for dewatering trench as necessary where groundwater is encountered. All associated costs for dewatering shall be borne by the Contractor.

23. The use of known sewer pump trucks is prohibited for DOW projects for any use, including but not limited to dewatering and testing of new facilities.

24. The Contractor shall verify outside diameter of all existing asbestos-cement (AC) waterlines to be connected. Contractor shall verify use of proper gaskets prior to connection. AC pipe and gasket information shall be submitted to Engineer for approval.

25. All removal, disposal and connection work that involves asbestos pipe/material shall be done in the presence of or by a licensed Asbestos Contractor.

The licensed Asbestos Contractor shall submit their plan for all associated removal, disposal and connection work for the project to DOW for review and approval prior to conducting the work.

26. All connections to existing AC pipe shall be at the nearest ac pipe joint. AC pipe shall be removed by entire length(s) to facilitate the connection. Cutting of AC pipe is prohibited.

27. The Contractor shall follow all applicable OSHA, HIOSH and Federal regulations in handling and disposal of asbestos-cement pipe. Disposal of the pipe shall be at an approved asbestos material disposal site.

28. All waterworks brass fittings shall be in compliance with the Amended Section 1417 of Safe Drinking Water Act (SDWA) which takes effect on January 4, 2014. the Amendment includes a change to the definition of "Lead-Free" by reducing lead content from 8% to a weighted average of not more than 0.25% in the wetted surface material. All waterworks brass fittings installed for potable water service on January 4, 2014 and beyond shall conform to the amended definition of "Lead-Free".

As indicated in Section 211 of Water System Standards - Brass Products, all brass fittings shall conform to NSF Standard 61 and Section 1417 of the Safe Drinking Water Act (SDWA), in addition, all brass fittings shall conform to NSF Standard 372.

29. Contractor shall install water facilities only after reaching final subgrade or higher. The Department of Water will not allow installation of any water facilities until the final subgrade layer at minimum has been achieved.

30. Prior to installation of new water lines and /or facilities, the Contractor shall have all facilities surveyed and staked out by a licensed Surveyor and the Contractor shall expose, verify, and backfill all existing underground utilities and structures in close proximity to crossings and connections prior to excavation of pipeline trench. Ccontractor shall provide the licensed Surveyor cut sheet and the probing information to the DOW Construction Engineer for review and approval before moving forward with installation via the submittal review process.

31. The Department shall be provided twenty (20) working days for all submittal reviews from the time of submission by the Contractor.

32. Unless otherwise specified, all ductile iron pipes, valves, and fittings, shall be encased in one layer of 8 mil minimum thickness polyethylene material in accordance with ANSI A-21.5 and AWWA C105. The Polyethylene Encasement Film shall be manufactured from Virgin Polyethylene and shall consist of three layers of co-extruded linear low density polyethylene (LLDPE), fused into a single thickness of not less than 8 mils. The inside surface of the polyethylene wrap to be in contact with the pipe exterior shall be infused with a blend of an antimicrobial to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic corrosion. Polyethylene material shall have permanent markings per AWWA C105.

Copper service laterals shall be encased with polyethylene wrap from the connection to the water main to the angle ball valve located in the water meter box.

33. All Design Consultant and Construction Contractor staffing will be required to utilize the Department of Water's construction management software/platform, if any, during construction management of the project.

34. Any existing water manholes and valve boxes wihin project limits shall be adjusted to match new finish grade, whether shown on these drawings or not.

Existing cast iron frame and cover shall be carefully removed, cleaned, and painted with approved asphaltum paint prior to installation. The Contractor shall replace any frame and cover damaged during removal. Frames and covers and valve boxes to be adjusted shall match new finish grade.

35. Contractor shall install hydrant markers for all existing hydrants where road will be resurfaced.

36. Thermoplastic roadway striping shall be cut around water manhole and water valve covers to allow easy use for access.

SPECIAL NOTES TO DEVELOPER:

Certification of completion for these water systems facilities will not be issued until:

- All water improvements are complete and dedicated to the Department of Water.
- As-built tracings are submitted to the Department of Water.
- Final cost breakdown for the water improvements are submitted and approved by the Department of Water. The Developer shall certify costs.
- Roadway and pipeline easements are conveyed to the Department of Water, if applicable.
- Payment of all applicable fees for the development have been received by the Department of Water.
- Other required conditions are completed, if applicable.

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RANDALL M. URAGAMI

LICENSED PROFESSIONAL ENGINEER

No. 7289-C

HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature

04/30/22

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HIGHWAYS DIVISION

WATER NOTES

KUHIO HIGHWAY

REPAIRS TO WAILUA RIVER BRIDGE

PROJECT NO. ER-23(001)

Scale: None

Date: Oct. 2020

SHEET No. G-7 OF 9 SHEETS

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UTILITY NOTES FOR KIUC

1. All work on utility facilities shall be done in strict accordance with the Specifications and Requirements of Kauai Island Utility Cooperative (KIUC) for the facilities within their jurisdiction.

2. The Contractor shall closely coordinate all work with KIUC.

3. These notes are not intended to be used in place of the Service Installation Manual, please refer to Service Installation Manual for all service issues.

4. Contractor shall contact Kauai Island Utility Cooperative's (KIUC) Baseyard Supervisor, Ken Yamamoto, at 246-4343 prior to start of work on KIUC facilities and for scheduling site inspections.

5. Contractor shall contact KIUC's Baseyard Supervisor, Ken Yamamoto at 246-4343 for Design Approvals, Standard Detail drawings and any items not addressed in these notes or drawings.

6. All Contractors entering KIUC facilities must be approved by KIUC and must have proper licensing and insurance coverage. Contact KIUC Baseyard Supervisor, Ken Yamamoto at 246-4343 for details.

7. All trenches and pullboxes must be inspected by KIUC prior to backfilling and concrete-encasing operations. For detailed trenching and backfilling requirements refer to KIUC's Service Installation Manual.

8. The Contractor shall provide a Poly-line 200 lb. test line or equivalent as a pulling wire in all 1", 2", 3" and 4" conduits. In 5" and 6" conduits, the Contractor shall install Neptco WP1800 Muletape as a pulling line.

9. All conduits, pullboxes, handholes, and manholes shall be cleaned and free from objectionable materials. Conduit ends shall be adequately covered until the Conductor is installed by the Electric Company. (Cover's shall be Carlon Plug with Pull Tab Series P258 equivalent or better)

10. For all conduit other than services, refer to Conduit Schedule on drawings.

11. For all services where the conductor is 1/0 or less, the distance from KIUC's handhole and customer's meter is less than 125 feet, and not crossing any driveways or roads the conduit shall be 2 inch Schedule 40 PVC. For services greater than 125 feet, contact KIUC Planner for field verification and underground service requirements. Any deviations will require KIUC written approval.

12. Primary and secondary conduits for new line extensions shall be schedule 40 PVC. (Carlon PΦC Duct Type DB equivalent or better) Under driveways and roadways, the conduits shall be encased in a minimum of 3 inch concrete jacket extending 12" outside the edge of pavement.

13. Schedule 80 PVC conduit may be substituted for the concrete encased Schedule 40 PVC for service conduit only crossing under unpaved Private driveways and roadways from KIUC pole/handhole to Customer's meter. If concrete driveway will be built over service conduit immediately after conduit is installed, then Schedule 40 PVC may be used provided that it meets with Rule No. 21.

14. All primary and secondary conduits which are crossing State or County roadways shall be Schedule 40 PVC encased in a minimum 3 inch concrete jacket, which shall extend a minimum of 12 inches outside of the edge of pavement.

15. Electrical supply ducts, when installed near communication cables, shall be separated from communication duct systems and buried communication cables or conductors by not less than 3 inches of concrete or 12 inches of earth when paralleling or crossing.

16. Chairs shall be installed and spaced at a maximum of 5 feet separation when concrete encasing conduits.

17. All conduits shall enter boxes at 90 degree angle, perpendicular and flush to the wall with bell ends to prevent cable damage.

18. 90 degree conduit bends shall be factory made with a minimum radius of 3 feet in trench runs.

19. Conduit bends exceeding 90 degrees will not be accepted.

20. A 36 inch minimum horizontal clearance shall be maintained when running KIUC conduits parallel to water and sewer lines. If clearance is less than 36 inches, KIUC conduit shall be concrete encased.

21. No foreign pullboxes, handholes, manholes, concrete slabs/boxes, structures, etc. are to be installed over KIUC facilities with the exception of HTCO, CATV or waterline conduit crossings. Such crossing must be approved by KIUC's Service Assurance Department and KIUC conduit to be concrete encased. Concrete encasement must be minimum of 3 inch encasement and extend a minimum of 1 foot beyond crossing conduit or pipe.

22. Yellow marker tape to be placed 1 foot above electrical conduits in the trench during backfilling. (E-Z Code WBT 6 inch wide 4 mill Polyethylene Protect-A-Line Warning Tape NA-0708 "Electric Line" in yellow, equivalent or better)

23. Unless otherwise noted, the top of all conduits shall be at a depth of 24 inches.

24. All handholes, pullboxes, and manholes shall be Walker Industries Type or approved equal. Contact KIUC prior to ordering underground boxes for vendor approval. Customer to submit Manufacturer's Shop Drawings if substituting from Walker Industries Type.

25. Typically, the top of all electrical utility boxes shall be 1 inch above finish grade, single phase transformer pads shall be 2 inches above finish grade, and three phase transformer pads shall be 4 inches above finish grade unless otherwise noted. (special conditions may apply to sidewalks, roadways, etc. see specific location notation)

26. At no time shall cement mortar, wood or any other material be used between pre-cast sections of KIUC pullboxes, handholes, or manholes. The permanent installation of wooden wedges to level or raise the pre-cast sections shall not be permitted.

27. A minimum of 6 inches of #3 Crushed Rock Backfill shall be placed loosely beneath the bottom section of handholes and pullboxes.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-23(001)	2020	9	91

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SHEET No. G-8 OF 9 SHEETS

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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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UTILITY NOTES FOR HAWAIIAN TELCOM

- All work on utility facilities shall be in strict accordance with specifications and requirements of Hawaiian Telcom for the facilities within their jurisdiction.
- The Contractor shall closely coordinate all work with Hawaiian Telcom. The Contractor shall notify Hawaiian Telcom's Jimmy Sone at 808-241-5052 or Duke Sardinha at 808-371-2962, or their designated Representative, at least four weeks in advance of any work involving the Hawaiian Telcom facilities.
- Unless otherwise indicated, all conduits, sweeps, couplings, adapters and bell ends shall be Schedule 40 PVC if direct buried. If concrete encased, conduits may be GT42 2" or 4" PVC meeting GTE Specification GTS-8342. Two inch bends are available with a 24" or 36" radius. Four inch bends are available with a 36" or 48" radius. Refer to HTCO Standard Drawing 34028 for installation.
- All conduits shall be cleaned and be free from objectionable materials with its ends adequately covered until Hawaiian Telcom installs its cable facilities.
- Contractor shall maintain 6" minimum separation between water pipe and direct buried utility ducts at intersection of water pipe and direct buried utility ducts. When utility ducts are concrete encased at intersections of water pipe and utility ducts, a 3" minimum separation between water pipe and concrete encasement shall be maintained. Stones, Rocks, etc. shall not be used with backfill material, only select materials shall be used as a backfill material.
- A 4" wide warning tape orange in color with a black imprinted message "Warning - Stop Digging - Call Hawaiian Telcom, Communications Cable Buried Below, Failure to Comply Could Result in Legal Action" shall be placed 12" below the surface over the duct or concrete jacket for the entire length of duct installations. See HTCO Standard Drawing 34028. Recommended tape is manufactured by Thor Enterprises, Inc. Sun Prairie, WI 53590 (1-800-827-8467) Part Numbers DTOGTE-41 (1000') and DTOGTE-46 (6000'). Equivalent tapes are acceptable.
- After the ducts are installed a mandrel 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 in the line. Main duct runs except riser ducts and cross-connect pedestal ducts should be constructed with long smooth riding sweeps. Offsets and elevation changes shall be constructed with not less than 20 foot radius Telcom Inspector. Approved duct runs with less than 20 foot radius shall utilize a flexible mandrel followed by a stiff bristle brush. A flexible mandrel having a diameter of 1/4" less than the inside diameter will be utilized on 2" duct runs after which a brush with stiff bristles shall be pulled through.

- Install Neptco WP1800P Muletape in all new ducts after testing. The Neptco Muletape is available in 3,000', 6,500' and 10,000' reels. The Neptco Muletape is prelubricated and printed with sequential footage marking. Using the Neptco Muletape, The Contractor shall measure at least one duct of a common duct run. The distance shall be marked on the record prints and submitted to the Hawaiian Telcom Inspector for record keeping.
- All conduits shall enter boxes at a 90 degree angle and be flush to the wall with flared or junior end bells to prevent cable damage.
- The Contractor shall furnish and install a No. 4 bare copper ground wire (direct buried) from all transformer pad ground rods to the nearest Hawaiian Telcom pullbox, as specified in HTCO Standard Drawing 34045. Install one 5/8" x 8' ground rod in all other Hawaiian Telcom 435T, 435TB6 and 4' x 6' Type 1 boxes, except in the Type 436T meter boxes (12" x 20"). Ground rods are to extend 4" above the finished pullbox/handhole floor (grade) and be located 4" from the pullbox corner.

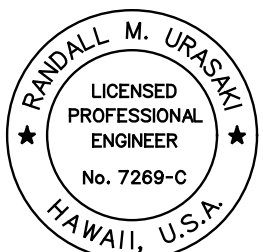
UTILITY NOTES FOR SPECTRUM

- The Contractor shall take necessary precaution not to damage existing cables. Any work involving existing cables shall be done in the presence of Spectrum's Inspector or his representative.
- 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's facilities shall be reported to Spectrum's Repair Dispatch Department at 625-8437 or 625-8666.
- All Construction must be inspected and approved by Spectrum prior to the installation of any of its facilities and the energizing of its system.
- Contractor and/or Customer shall provide Spectrum with sufficient installation time in their occupancy time table.

UTILITY NOTES FOR SANDWICH ISLES COMMUNICATIONS

- The Contractor shall take necessary precaution not to damage existing cables. Any work involving existing cables shall be done in the presence of SIC's Inspector or his representative.
- The Contractor shall notify SIC's project manager, Lily Duran at 808-284-3683 or 808-540-5772, or their designated representative, at least four weeks in advance of any work involving the SIC facilities.

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