

GENERAL CONSTRUCTION NOTES

(revised June 13, 2012)

- All construction work is to be constructed in accordance with the "Hawai'i Standard Specifications for Road and Bridge Construction, 2005" and its amendments and the Standard Details for Public Works Construction, September 1984" as amended of the Department of Public Works, City and County of Honolulu, and the Counties of Kaua'i, Maui, and Hawai'i.
- No grading between 7 PM to 7 AM on any given day or on Saturdays, Sundays and Holidays without written permission from the County Engineer and State Department of Health.
- Contractor to notify Public Works Department five (5) business days prior to commencing any grading work. When completed and ready for final inspection; notify Public Works Department Inspection Section.
- Construction plans are valid for a period of one year from the date of approval. If construction does not commence within this one-year time from the date of approval, the construction plans shall be resubmitted to all approving agencies for review, approval and recertification.
- All grading, grubbing and stockpiling work shall be performed in accordance with County of Kaua'i ordinance no. 808.
- The Contractor shall remove all silt and debris resulting from his work and deposited in drainage facilities, roadways and other areas. The cost incurred for any necessary remedial action by the County Engineer shall be payable by the Contractor.
- During cleaning operations, the Contractor shall supply a water truck for dust control purposes until vegetation has re-established itself. Excess water, including silt and dirt, shall not be allowed to run-off the property.
- Best Management Practices (BMP's) shall be employed at all times to the maximum extent practicable to prevent damage by sedimentation, erosion or dust to streams, watercourses, natural areas and the property of others.
- Surveys shall be done under the supervision of a surveyor licensed in the State of Hawai'i.
- If system conditions require non-emergency nighttime work during the autumn seabird fall season (September 15 through December 15), use of lighting shall be restricted between 9:00 PM to 4:30 AM. If lighting of the work area is required in such situation, all lights shall be shielded (minimum light spill towards the sky) and directed downwards to the maximum extent practicable. Minimum requirements for lighting by HIOSH and OSHA shall be provided and assured by the Contractor. The Contractor shall train all employees working at night (records retained by the Contractor) on how to handle any downed birds and shall have appropriate equipment as approved by Save Our Shearwaters (SOS) on site to hold and transport any retrieved downed birds to an SOS facility. This requirement does not allow lighting as may be restricted by other government agencies.

- Prior to starting any excavation activities, the contractor shall contact the Hawai'i One Call Center at 1-866-423-7287.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY

(revised June 13, 2012)

- All damaged pavement shall be restored to its original condition in accordance with County of Kaua'i, "Hawai'i Standard Specifications for Road and Bridge Construction (2005)" and its amendments with 2" minimum hot mixed asphalt concrete pavement (State Design Mix V) and 8" base course and the "Standard Details for Public Works Construction, September 1984", as amended of the Department of Public Works, City and County of Honolulu, and the Counties of Kaua'i, Maui, and Hawai'i.
- The Contractor shall provide, install, maintain all necessary signs, lights, flares, barricades, markers, cones and other protective facilities and shall take all necessary precautions for the protection and for the convenience and safety of the public traffic. All such protective facilities and precautions to be taken shall conform with rules and regulations governing the use of traffic control devices at work sites on or adjacent to public streets and highways adopted by the Highway Safety Coordinator and U.S. Federal Highway Administration manual on uniform traffic control devices for streets and highways dated 2009 and its amendments.
- The Contractor shall, whenever necessary, properly sheet and brace all excavations to render it secure and shall remove all such sheeting and bracing before completion of the backfill for water mains. The minimum cover requirements (from top of pipe to finished grade over pipe) is three (3) feet.
- A permit shall be obtained by the Contractor from the Department of Public Works, at the Contractor's expense.
 - Driveways shall be kept open unless owners of the abutting lots using these right-of-way are otherwise provided for satisfactorily.
 - All work including repair of damaged pavement and shoulders shall be inspected and approved by the Department of Public Works. All unapproved work shall be considered unacceptable and shall be reworked and corrected as directed by the Department of Public Works, at the Contractor's expense.
 - Damaged shoulders shall be restored to a condition equal to or better than existing condition.
 - Work on a public street area may be performed only between the hours of 8:00 a.m. to 3:30 p.m. Monday through Friday, except on holidays recognized by the County of Kaua'i, unless otherwise permitted in writing by the County Engineer.
 - During non-working hours, all trenches shall be covered with a safe non-skid bridging material and all lanes shall be opened to public vehicular and pedestrian traffic.
 - No material and/or equipment shall be stockpiled or otherwise stored within County right-of-way except at locations designated in writing and approved by the County Engineer.
 - The Contractor shall conduct his operations so as to offer the least possible obstructions and inconvenience to the public and he shall have under construction no greater length or amount of work that he can prosecute properly with the regard to the rights of the public.
 - All existing drainage flow conditions shall be maintained.
- The Contractor shall retain the services of a Geotechnical Engineer for quality control. Certification from the geotechnical engineer shall be submitted to the Department of Public Works at the completion of the construction work. The Geotechnical Engineer shall certify that the construction work meets "Standard Specifications". The Geotechnical Engineer shall also submit test results as requested by the Department of Public Works.
- The Contractor shall hold a preconstruction meeting with the Construction Inspection and Design Sections of the County Department of Public Works prior to commencing any work.
- Contractor shall exercise extreme caution to preserve benchmarks (survey monuments) whenever the center of a survey monument is less than three (3) feet from the edge of construction. The Contractor shall retain a licensed surveyor to reference the location of said survey monument.
- Benchmarks that are disturbed or destroyed shall be restored under a licensed land surveyor's direction. Copies of field notes, descriptions and new values of the new benchmark shall be sent to the Department of Public Works Survey Section for review and approval prior to final acceptance of the project.
- The Contractor shall be responsible for all overtime or night work payments for County's staff and inspection personnel including consultants when the Contract requires overtime or night work to be performed, or directs the Contractor to work additional shifts or overtime for County's convenience.

WATER POLLUTION AND EROSION CONTROL NOTES

(revised April 13, 2012)

GENERAL NOTES

- The Contractor is reminded of the requirements of Section 209 - WATER POLLUTION AND EROSION CONTROL and Section 620 - DUST CONTROL in the "Hawai'i Standard Specifications for Road and Bridge Construction 2005," as amended. Section 209 describes but is not limited to: submittal requirements; scheduling of a Water Pollution and Erosion Control Conference with the State & County; Construction requirements; method of measurement; and basis of payment. No work shall commence without a BMP plan approved by the Department of Health.
- The Contractor shall follow the guidelines in the "Interim Best Management Practices Manual for Construction Sites for County of Kaua'i, April 2004" in developing, installing and maintaining the Best Management Practices (BMPs) for the project. The Contractor may submit alternate methods to the Engineer for acceptance.
- The Contractor shall keep a copy of the approved BMP, NOI, etc. on the project site. The BMP shall be updated to reflect any changes made during the course of construction for the duration of the project.
- The Engineer may assess liquidated damages of up to \$27,500 for non-compliance of each BMP requirement and each requirement stated in Section 209, for every day of non-compliance. There is no maximum limit on the amount assessed per day.
- The Engineer will deduct the cost from the progress payment for all citations received by the Department for non-compliance, or the Contractor/Owner shall reimburse the State and/or County for the full amount of the outstanding cost incurred by the State and/or County.

WASTE DISPOSAL NOTES

- Waste materials: All waste materials shall be collected and stored in a securely lidded metal dumpster that does not leak. The Dumpster shall meet all local and State Solid Waste Management Regulations. All trash and construction debris from the site shall be deposited in the Dumpster. The Dumpster shall be emptied a minimum of twice per week or as often as is deemed necessary. No construction waste materials shall be buried onsite. The Contractor's supervisory personnel shall be instructed regarding the correct procedure for waste disposal. Notices stating these practices shall be posted in the Office Trailer and the Contractor shall be responsible for seeing that these procedures are followed.
- Hazardous waste: All hazardous waste materials shall be disposed of in the manner specified by local or State regulation or by the manufacturer. The Contractor's site personnel shall be instructed in these practices and shall be responsible for seeing that these practices are followed.
- Sanitary waste: All sanitary waste shall be collected from the portable units a minimum of once per week, or as required.

EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES

- All control measures shall be inspected at least once each week and within 24 hours following any rainfall event of 0.5 inches or greater.
- All measures shall be maintained in good working order. If repair is necessary, it shall be initiated within 24 hours after the inspection.
- Built up sediment shall be removed from silt fence when it has reached one-third the height of the fence.
- Silt screen or fence shall be inspected for depth of sediment, tears, to verify that the fabric is securely attached to the fence posts or concrete slab and to verify that the fence posts are firmly in the ground.
- Temporary and permanent seeding and planting shall be inspected for bare spots, wash outs and healthy growth.
- The Contractor shall submit to the Engineer a maintenance inspection report promptly after each weekly inspection.
- The Contractor shall select a minimum of three personnel who shall be responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.
- Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. They shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.
- All slopes and exposed areas shall be grassed as final grades have been established. Grading to final grade shall be continuous, and any area in which work has been interrupted or delayed or exposed for more than 15 days shall be grassed in order to prevent dust, runoff. Areas with imported soils shall be grassed not more than 5 working days after final grades have been established.
- Temporary erosion controls shall not be removed before permanent erosion controls are in-place and established.

GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES

MATERIALS POLLUTION PREVENTION PLAN

- Applicable materials or substances listed below are expected to be present for onsite during construction. Other materials and substances not listed below shall be added to the inventory of the construction Contractor's site-specific BMP plan.

Concrete	Fertilizers
Detergents	Petroleum based products
Paints (Enamels and Latex)	Cleaning solvents
Metal Studs	Wood
Tar	Masonry Block
- Material management practices shall be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff. An effort shall be made to store only enough products as is required to do the job.
- All materials stored onsite shall be stored in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.
- Products shall be kept in their original containers with the original manufacturer's label.
- Substances shall not be mixed with one another unless recommended by the manufacturer.
- A product shall be used up completely before disposing of the container.
- Manufacturer's recommendations for proper use and disposal shall be followed.
- The Contractor shall conduct a daily inspection to ensure proper use and disposal of materials onsite.

HAZARDOUS MATERIAL POLLUTION PREVENTION PLAN

- Products shall be kept in original containers unless they are not resealable.
- Original labels and material safety data sheets (MSDS) shall be retained and made available to the Engineer upon request.
- Surplus products shall be disposed of according to manufacturer's instructions or local and State recommended actions.

ONSITE AND OFFSITE PRODUCTS SPECIFIC PLANS

- The following product specific practices shall be followed onsite:
 - Petroleum based products: All onsite vehicles shall be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products shall be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used onsite shall be applied according to the manufacturer's recommendation.
 - Fertilizers: Apply fertilizers used only in the minimum amounts recommended by the manufacturer. Once applied, work fertilizer into the soil to limit exposure to storm water. Storage shall be covered in a covered shed. Transfer the contents of any partially used bags of fertilizer to a sealable plastic bin to avoid spills.
 - Paints: Seal and store all containers when not required for use. Do not discharge excess paint to the highway drainage system. Dispose properly according to manufacturer's instruction or State and local regulations.
 - Concrete Trucks: Wash out or discharge concrete truck drum wash water only at designated site. Do not discharge water in the highway drainage system or waters of the United States. Contact Drinking Water Branch, Department of Health at (808) 586-4258 to receive permission to designate a disposal site. Clean disposal site as required by the Owner's representative.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS

- The Contractor shall obtain and comply with the National Pollutant Discharge Elimination System (NPDES) requirements for Kaua'i District permit projects. This is available at the Kaua'i District Office at 3040 Limi Street, Suite 205. Due to potential cost impacts, the Contractor needs to be aware of these requirements.
- The Contractor shall obtain and comply with National Pollution Discharge Elimination System (NPDES) requirements for all projects which will disturb one (1) acre or more of land. The Contractor shall not start construction until Notice of General Permit Coverage (NGPC) is received from the Department of Health, State of Hawai'i and has satisfied any other applicable requirements of the NPDES permit program.
- The Contractor shall complete and submit a Contractor's certification of NPDES compliance, including completion of the Best Management Practice (BMP) checklist and submittal of a written BMP Plan and drawings, prior to issuance of the permit to perform work upon County roadways.
- Spill Control Plan:
 - Post a spill prevention plan to include measures to prevent and clean up each spillway.
 - The Contractor shall be the spill prevention and clean-up coordinator. Designate at least three site personnel who shall receive spill prevention and cleanup training. These individuals shall each become responsible for a particular phase of prevention and cleanup. Post the names of responsible spill personnel in the material storage area and in the office trailer onsite.
 - Clearly post manufacturer's recommended methods for spill cleanup. Make site personnel aware of the procedures and the location of information and cleanup supplies.
 - Keep materials and equipment necessary for spill cleanup in the material storage area onsite.
 - Clean up all spill immediately after discovery.
 - Keep the spill area well ventilated. Personnel shall wear appropriate protective clothing to prevent injury from contact with hazardous substance.
 - Report spills of toxic hazardous material to the appropriate State and local government agency, regardless of the size.

NOTES FOR ENVIRONMENTAL PROTECTION

(revised April 5, 2012)

- In accordance with Chapter 11-60.1, Air Pollution Control, Title 11, Hawai'i Administrative Rules, the Contractor shall be responsible for ensuring that effective control measures are provided to minimize or prevent dust or soil disturbance caused by the construction work from impacting the surrounding areas including the off-site roadways used to enter/exit the project. These measures include but are not limited to the use of water wagons, sprinkler systems, dust fences, etc.
- The Contractor shall be responsible for conformance with the applicable provisions of the Water Quality and Water Pollution Control Standards contained in the Hawai'i Administrative Rules, Title 11, Chapter 54, "Water Quality Standards" and Title 11, Chapter 55, "Water Pollution Control". Best Management Practices shall be employed at all times during the construction period.
- In accordance with Chapter 11-58, Solid Waste Management Control, Title 11, Hawai'i Administrative Rules, the Contractor shall be responsible for ensuring that grub material, demolition waste and construction waste generated by the project are disposed of in a manner or at a site approved by the State Department of Health. Disposal of any of these wastes by burning is prohibited.
- The Contractor shall be responsible for obtaining and paying for all applicable permits from the Department of Health including but not limited to National Pollution Discharge Elimination System (NPDES), Notice of Intent and General Permit for storm water, hydrostatic test and dewatering discharges prior to commencing construction. NPDES permit shall be required prior to grading or grubbing work over an area of one acre or more.
- The Contractor shall remove all silt and debris resulting from this work and deposited in drainage facilities, roadways and other areas. The cost incurred for any necessary remedial action by the County Engineer shall be payable by the Contractor.
- Best Management Plans (BMP's) shall be employed at all times to the maximum extent practicable to prevent damage by sedimentation, erosion or dust to streams, watercourses, natural areas and the property of others.
- The Contractor shall obtain and comply with National Pollution Discharge Elimination System (NPDES) Permit requirements for all projects which will disturb one (1) acre or more of land. The Contractor shall not start construction until notice of General permit coverage (NGPC) is received from the Department of Health, State of Hawai'i and has satisfied any other applicable requirements of the NPDES permit program.
- Noise will be generated during the construction and grading phase of this project. The applicable maximum permissible sound levels as stated in Title 11, Hawai'i Administrative Rules (HAR), Chapter 11-46, entitled Community Noise Control shall not be exceeded unless a noise permit is obtained from the Department of Health (DOH).
- The property may harbor rodents which will be dispersed to the surrounding areas when the site is cleared. In accordance with Chapter 11-26, entitled Vector Control of Title 11, HAR, the applicant shall ascertain the presence or absence of rodents on the property. Should the presence of rodents be determined, the applicant shall eradicate the rodents prior to clearing the site.
- A copy of the plans, construction schedule and/or written measures that is required by the contractor (Dust Control Measures/Plans) should also be sent to the Department of Health for monitoring purposes.

HISTORICAL PRESERVATION NOTES

(revised April 12, 2011)

- Should historic remains such as artifacts, burials, concentration of shell or charcoal be encountered during construction activities, work shall cease immediately in the vicinity of the find and the find shall be protected from further damage. The Contractor shall cordon off the area and immediately notify the Planning Department at (808) 241-4050 and the State Historic Preservation Division at (808) 692-8015, which will assess the find and recommend the appropriate mitigation measures, if necessary.

KIUC NOTES

(Revised 7/14/11)

UNDERGROUND CONSTRUCTION NOTES AND REQUIREMENTS:

- 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.
- Contractor shall contact Kaua'i Island Utility Cooperative's ("KIUC") Construction Coordinator/Inspector prior to start of work on KIUC facilities and for scheduling site inspections. [Westside: 246-2323; Eastside: 822-4995]
- Contractor shall contact KIUC's Distribution Engineer @ 246-2373 for design approvals, standard detail drawings, and any items not addressed in these notes or drawings.
- All contractors entering KIUC facilities must be approved by KIUC and must have proper licensing and insurance coverage. Contact KIUC Legal Coordinator @ 246-4369 for details.
- 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.
- The Contractor shall provide a Poly-Line 200 lb. test line or equivalent as a pulling wire in all 1", 2", 3" & 4" conduits. In 5" and 6" conduits, the contractor shall install NEPTCO WP1800 multipse as a pulling line.
- All conduits, pullboxes, handholes, & manholes shall be cleaned and free from objectionable materials. Conduit ends shall be adequately covered until the conductor is installed by the electric company. (Covers shall be Carlon Plug with Pull Tab series P258 equivalent or better)
- For all conduit other than services, refer to conduit schedule on drawings.
- For all services where the conductor is 3/0 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 but less than 150', contact KIUC planner for field verification and underground service requirements. Any deviations will require KIUC written approval.
- Primary and Secondary conduits for new line extensions shall be Schedule 40 PVC. (Carlon P&C 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.
- Schedule 80 PVC conduit may be substituted for the concrete encased Schedule 40 PVC for service conduit only crossing under unopened private driveways & 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.
- 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.
- 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.
- Chairs shall be installed and spaced at a maximum of 5 feet separation when concrete encasing conduits.
- All conduits shall enter boxes at a 90 degree angle, perpendicular and flush to the wall with bell ends to prevent cable damage.
- 90 degree conduit bends shall be factory made with a minimum radius of 3 feet in trench runs.
- Conduit bends exceeding 90 degrees will not be accepted.
- A 36 inch minimum horizontal clearance shall be maintained when running KIUC conduits parallel to water & sewer lines. If clearance is less than 36 inches, KIUC conduit shall be concrete encased.
- No foreign pullboxes, handholes, manholes, concrete sabs/boxes, structures, etc. are to be installed over KIUC facilities with the exception of HTOO, 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.
- Red marker tape to be placed 1 foot above electrical conduits in the trench during backfilling. (E-2 CODE WBT 6 inch wide 4 Mill polyethylene Protect-A-Line Warning Tape NA-0706 "ELECTRIC LINE" in red, equivalent or better)
- Unless otherwise noted, the top of all conduits shall be at a depth of 24 inches.
- 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 of all handholes and manholes for box sizes greater than 3'x5' for KIUC review and approval.
- 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.)
- 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.
- A minimum of 6 inches of #3 crushed rock backfill shall be placed loosely beneath the bottom section of handholes and pullboxes. Crushed rock or other foreign materials are not to be placed inside handholes and pullboxes.

CERTIFIED:

APPROVED:

KAUAI ISLAND UTILITY COOPERATIVE

DATE:

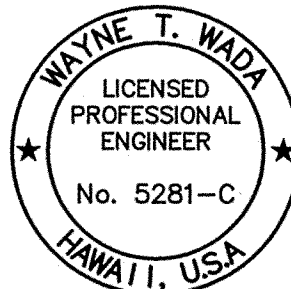
ESAKI
SM
SURVEYING AND
MAPPING, INC.

1610 Halekuna Street
Lihue, Kaua'i, Hawai'i 96766
Ph. (808) 246-0625 Fax (808) 246-0229

• CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED
6-20-12		REVISED CONSTRUCTION NOTES	WW	

REVISIONS



THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

Wayne T. Wada
EXPIRES: APRIL 30, 2014

COMMUNICATION PLAN FOR PILANI MAI KE KAI SUBDIVISION PHASE II

Anahola, Kaua'i, Hawai'i

Tax Map Key: (4) 4-8-22: 89

Client:

Sandwich Isles Communications, Inc.
1003 Bishop Street, 27th Floor
Honolulu, HI 96813

CONSTRUCTION NOTES

APPROVED:

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI

N.A.
MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI

DESIGNED BY: WW

DRAWN BY: CG

DATE: 05/11/12

SHEET

C-2

2 OF 13 SHEETS

SIC NOTES
(Revised 5/10/12)

GENERAL:

- All work shall be in strict accordance with specifications and requirements of the RURAL UTILITIES SERVICES (RUS) and SANDWICH ISLES COMMUNICATIONS (SIC), which complies with all applicable City, County, State and Federal requirements.
- All materials used must be approved and (or) accepted by Sandwich Isles Communications, Inc..
- Contractor may refer to the RUS website (<http://www.rurdev.usda.gov/RUSTelecomPrograms.html>) for Regulations, Bulletins, Forms, etc.
- Contact the Hawaii One Call Center at (866) 423-7287 for locating existing underground facilities prior to beginning any excavation.
- All work shall be coordinated and scheduled with SIC and/or it's representative and any other agency involved with the project.
- The contractor shall procure and pay for all licenses and permits and shall give all notices necessary for prosecution of the work.

CONDUITS:

- All PVC conduits, sweeps, couplings, adapters and bell ends shall be Schedule 40, unless otherwise specified.
- All high density polyethylene conduits shall be SDR 11. Typical 4-pack unit includes four 1-1/2" SDR 11 rated conduits in the colors of black, red, orange, and white, unless otherwise specified. All conduits to be pressure tested at 120 psi. Fusion splicing of the conduit shall be acceptable only when pulling joints through borer. All couplings shall be Double "E-Loe" manufactured by ETOC Specialty Products, Inc.
- Main conduit runs, except riser conduits, shall be constructed with minimum 6-foot radius curves, unless otherwise approved by the engineer.
- After the conduits are installed, a round solid mandrel not less than 12" in length and having a diameter of 1/4" less than the inside diameter of the conduit shall be pulled through each conduit. Suffixes listed in RUS 515B for conduits are applicable.
- Install muletape in all PVC conduits and cap all conduits after testing. The NEPTCO (or approved equal) muletape is available in 3,000ft., 6,500ft., and 10,000ft. Reels from Westinghouse Electric Supply Company (WESCO), the NEPTCO muletape is pre-lubricated and printed with sequential footage markings. Muletape will NOT be installed in conduits designated for fiber.
- All 4" ducts shall have watertight plugs to keep them free of moisture & debris and to accommodate cabling placed on future projects.
4" Plugs shall consist of:
Tyco, Quadplex Jackmoon Plugs, Series 136
Tyco, Jackmoon Hole Plugs & Bushings, Series 136
All other ducts shall have Tyco, Blank Jackmoon Plugs to keep them free of water and debris.
- Conduit stubs from handholes to individual residential lots shall be schedule 40 PVC, 1" diameter and extended 5' beyond property line. Cap and seal end and mark locations with above ground marker.
- All conduits shall enter manholes at a 90 degree angle and shall extend into the manhole as follows: Conduits designated for fiber shall extend 12" into the manhole. All other conduits shall be flush with the inside wall and include bell ends. Any exceptions shall only be permitted when specified by the Engineer.
- All conduits entering manholes or handholes shall be grouted between the conduits and sidewall, inside and out. All conduits will enter the manholes and handholes on the property side at all times unless otherwise specified by the Engineer.
- Backfill and compaction for ductline trenches, manholes and handholes shall be in accordance with:
 - State Highway Department's Standard Specifications for Road and Bridge Construction with latest amendments, if construction is located under a state street or road, or located in private property.
 - The standard specifications for road, bridge and public works construction, dated 1986, of the Department of Public Works, City and County of Honolulu, with latest amendments; County of Kauai, Maui, or Hawaii, as the case may be, if construction is located under county streets and roads.
- Backfilling shall be subject to the approval of the SIC inspector, the authorized representative of the Department of Transportation, State of Hawaii and/or Department of Public Works, City and County of Honolulu, County of Kauai, Maui or Hawaii, as the case may be.
- A third party Geotechnical Engineer, licensed and insured in the State of Hawaii, must certify that the excavated area meets the governing agencies and/or owners standards for backfill and compaction.
- Excavated material may be reused as backfill, providing that it conforms to requirements of type "A" and type "B" backfill, as required within the standard specifications. A written soils report of conformance by a licensed third party Geotechnical Engineer is needed prior to backfill using the excavated material.
 - Type A backfill is defined as beach sand, earth or earth and gravel. Maximum particle size shall be 1" and mixture shall not contain more than 20% by volume of rock particles.
 - Type B backfill is defined as beach sand, earth or earth and gravel. Maximum particle size shall be 1/2" and mixture shall not contain more than 20% by volume of rock particles.
- All conduit runs shall have a 3" non-metallic warning tape placed 12 inches above the conduit run. The tape shall read "CAUTION Buried Fiber Optic Cable Below".

MANHOLES & HANDHOLES:

- All Manholes shall have HS20-44 traffic loading covers (unless otherwise noted). Handholes shall have 20k traffic load rated covers.
- All Manhole and Handhole covers shall have cover logo to read "SIC".
- All Manhole and Handhole cover bolts shall be stainless steel 3/4" Pentahead, unless otherwise noted.
- All Manholes and Handholes are specified as follows:
 - UM35 and UM4x6 Manhole assembly units - Hawaii Precast, Inc. as per Master Purchase Agreement.
 - UHC30x48x33 Handhole (pullbox) assembly unit. This unit shall consist of one two tier Armorcast polymer concrete box & cover assembly. Part number (A60014307A-SIC4) or equivalent.
 - UHC13x24x36 Handhole (pullbox) assembly unit. This unit shall consist of one Armorcast polymer concrete box & cover assembly. Part number (A60019467A-SIC2) or equivalent.
 - UH35 and UH4x6 Handhole assembly units - Hawaii Precast, Inc. as per Master Purchase Agreement.
- All Manholes and Handholes to be ordered with all hardware, including cable racks, steps and locks.
- Set manhole or handhole on a level area, in the bottom of the excavation, on a 4" layer of crushed rock, for drainage purposes.
- The base of all Manholes and Handholes will be placed level. Some Manholes have adjustable frames. All voids created during installation must be filled with mortar mix or concrete. This is especially true for Manholes and Handholes set in roadways.
- Before backfilling and compacting, make sure covers are in place and secure. Layer 6" to 8" of backfill material around the Manhole or Handhole. Tamp each individual layer of backfill material. Continue the layering and "tamping" until final grade is achieved.
- The tops of all Manholes and Handholes shall be flush to grade in paved areas or 1" above finish grade in non-paved areas, unless otherwise specified by Engineer.
- Provide a 5/8-inch diameter x 8 ft. copper clad ground rod at Handholes and Manholes as specified on the drawings or as directed by the Project Manager..

AERIAL PLANT:

- All aerial work shall be in strict accordance with specifications and requirements of the RURAL UTILITIES SERVICES (RUS) Bulletin 1753F-152.
- Utility poles shall be preserved utilizing the Pentachlorophenol (Penta) type treatment.
- Utility poles shall be termite protected utilizing Termimesh Polesack's or equivalent. Polesack's shall extend no more than six inches above ground. Follow the manufacturer's recommendations for installation.
- The pole hole shall be of sufficient diameter to permit the pole to settle freely to the bottom of the hole without trimming the butt and still have sufficient space between the pole and the side of the hole to permit proper tamping of the backfill at every point around the pole, and throughout the entire depth of the hole.
- The pole hole shall not exceed two times the diameter of the poles butt diameter.
- Backfill shall be thoroughly tamped the full depth of the pole hole. Earth must be banked around the pole to a minimum height of six inches above ground level.
- Poles shall be set plumb except at corners where they shall be set and raked against the load so that the pole top will be in line after the load is applied. The rake pole shall not exceed six inches for each ten feet of pole length after the conductors are installed at the required tension. Deadend shall be set so as to be plumb and in line after the load is applied.
- Pole lightning protection shall be a #6 AWG bare copper wire in accordance with RUS construction practices.
- Suspension strand / hardware shall be Class C Galvanized Steel Utility Grade for corrosion areas.
- Guy Guards, yellow in color shall be placed on all down guys.

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

- The permittee shall make minor adjustments at intersections, driveways, bridges, structures, etc., to fit field conditions.
- Cones or delineators shall be extended to a point where they are visible to approaching traffic.
- Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. The others shall then be placed progressively toward the work area.
- Regulatory and warning signs within the construction zone that are in conflict with the Traffic Control Plans shall be removed or covered. All signs shall be restored upon completion of the work.
- Flaggers and/or police officers shall be in sight of each other or in direct communication at all times. Police officer shall be present at all times.
- When required by the Issuing office, the permittee shall install a flashing arrow signal as shown on the Traffic Control Plans.
- Sign spacings (D), taper lengths (T) and spacings of cones or delineators shall be as shown in Table 1, unless otherwise noted on the Traffic Control Plans.
- All traffic lanes shall be a minimum of 10 feet wide.
- All construction warning signs shall be promptly removed or covered whenever the message is not applicable or not in use.
- The backs of all signs used for traffic control shall be appropriately covered to preclude the display of inapplicable sign messages (i.e., when signs have messages on both faces), whenever the messages are not applicable or not in use.
- At the end of each day's work or as soon as the work is completed, the permittee shall remove all traffic control devices no longer needed to permit free and safe passage of public traffic. Removal shall be in the reverse order of installation.
- Replace permanent pavement markings and traffic signs upon completion of each phase of work.
- Police Officers/Flaggers shall be present at all times.
- All workers within Hawaiian Home Roads who are exposed to either vehicles using the roadway or to construction equipment shall wear high visibility safety apparel that meets the performance class 2 or 3 requirements of ANSI/ISEA 107-2004.

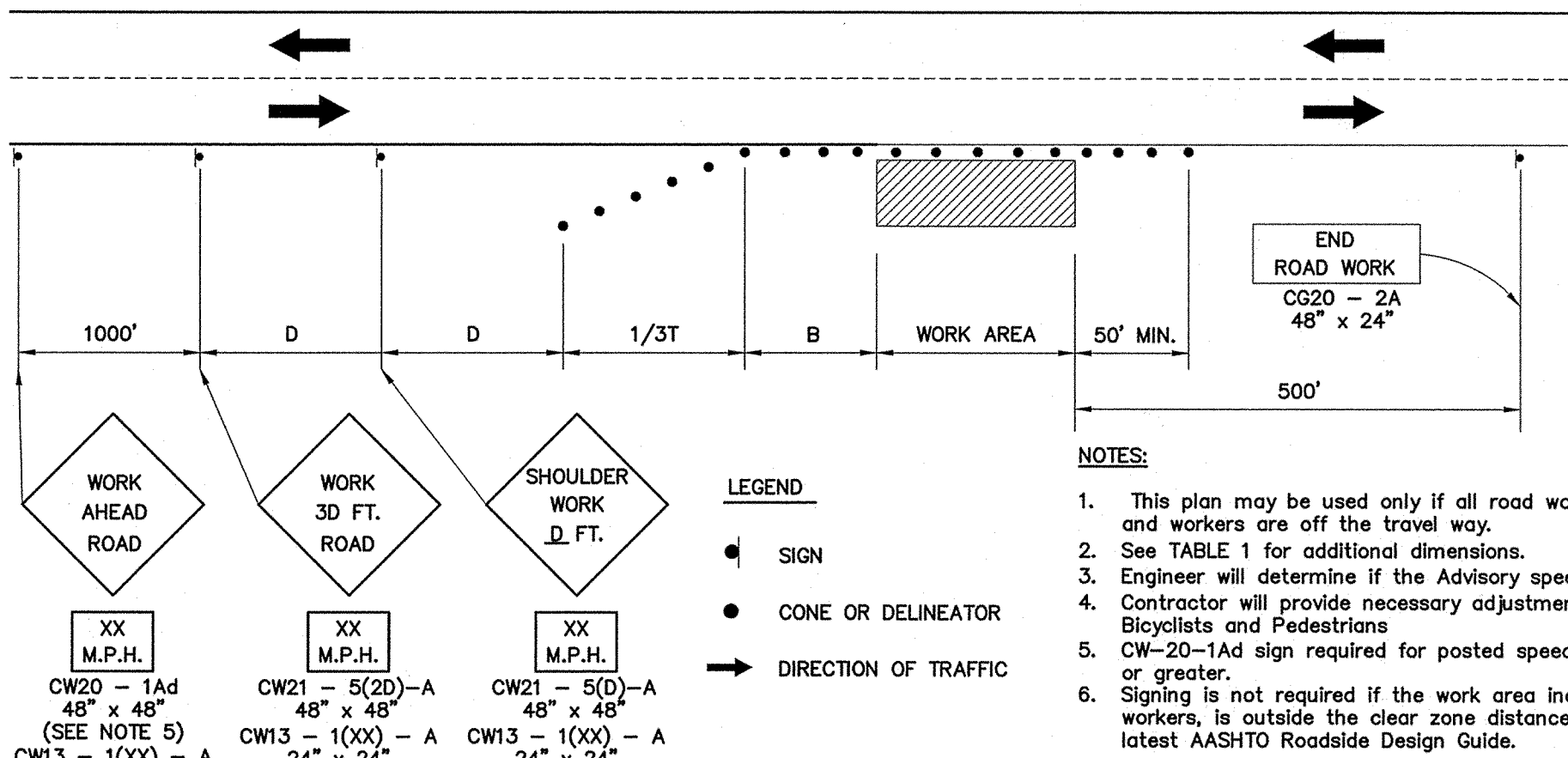
"Workers" is defined as people on foot whose duties place them within Hawaiian Home Roads, such as but not limited to construction and maintenance forces, equipment operators, survey crew, utility crews, responders to incidents (eg. EMT, and firemen), and law enforcement personnel directing traffic, investigating accidents, handling lane closures and installing service connections & roadway improvements.

NOTES:

- Use advisory speeds when posted
- W = width of lane, shoulder, or offset
- not applicable for two-lane highways

TABLE 1 FOR TRAFFIC CONTROL PLAN

POSTED SPEED LIMIT ① (M.P.H.)	SIGN SPACING (D) (FEET)	TAPER LENGTH (T) (FEET)		LONGITUDINAL BUFFER SPACE (B) (FEET)	SPACING OF CONES OR DELINEATORS (FEET) ③		
		W = 12' OR LESS ②	W = GREATER THAN 12' ②		TAPER	TANGENT	WORK AREA
20	250	200	W X 17	35	20	20	10
25	250	200	W X 17	55	25	25	10
30	250	250	W X 20	85	30	30	10
35	250	250	W X 20	120	35	35	10
40	500	350	W X 30	170	40	40	10
45	500	550	W X 45	220	45	45	10
50	1000	600	W X 50	280	50	50	10
55	1000	700	W X 55	335	55	55	10



WORKING ON SHOULDER OR ROADSIDE
FIGURE 7 - TRAFFIC CONTROL PLAN

CERTIFIED:

APPROVED:

SANDWICH ISLES COMMUNICATIONS, INC. DATE:

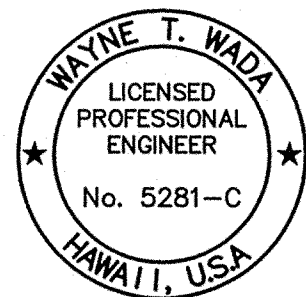
ESAKI
SURVEYING AND
MAPPING, INC.

1610 Haleukana Street
Lihue, Kaua'i, Hawai'i 96766
Ph. (808) 246-0625 Fax (808) 246-0229

• CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED
6-20-12		REVISED CONSTRUCTION NOTES	WW	

REVISIONS



THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

Wayne T. Wada
EXPIRES: APRIL 30, 2014

COMMUNICATION PLAN FOR
PILANI MAI KE KAI SUBDIVISION
PHASE II

Anahola, Kaua'i, Hawai'i

Tax Map Key: (4) 4-8-22: 89

Client:

Sandwich Isles Communications, Inc.
1003 Bishop Street, 27th Floor
Honolulu, HI 96813

CONSTRUCTION
NOTES

APPROVED:

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, DATE
COUNTY OF KAUAI

N.A.
MANAGER & CHIEF ENGINEER, DEPT. OF WATER, DATE
COUNTY OF KAUAI

DESIGNED BY: WW

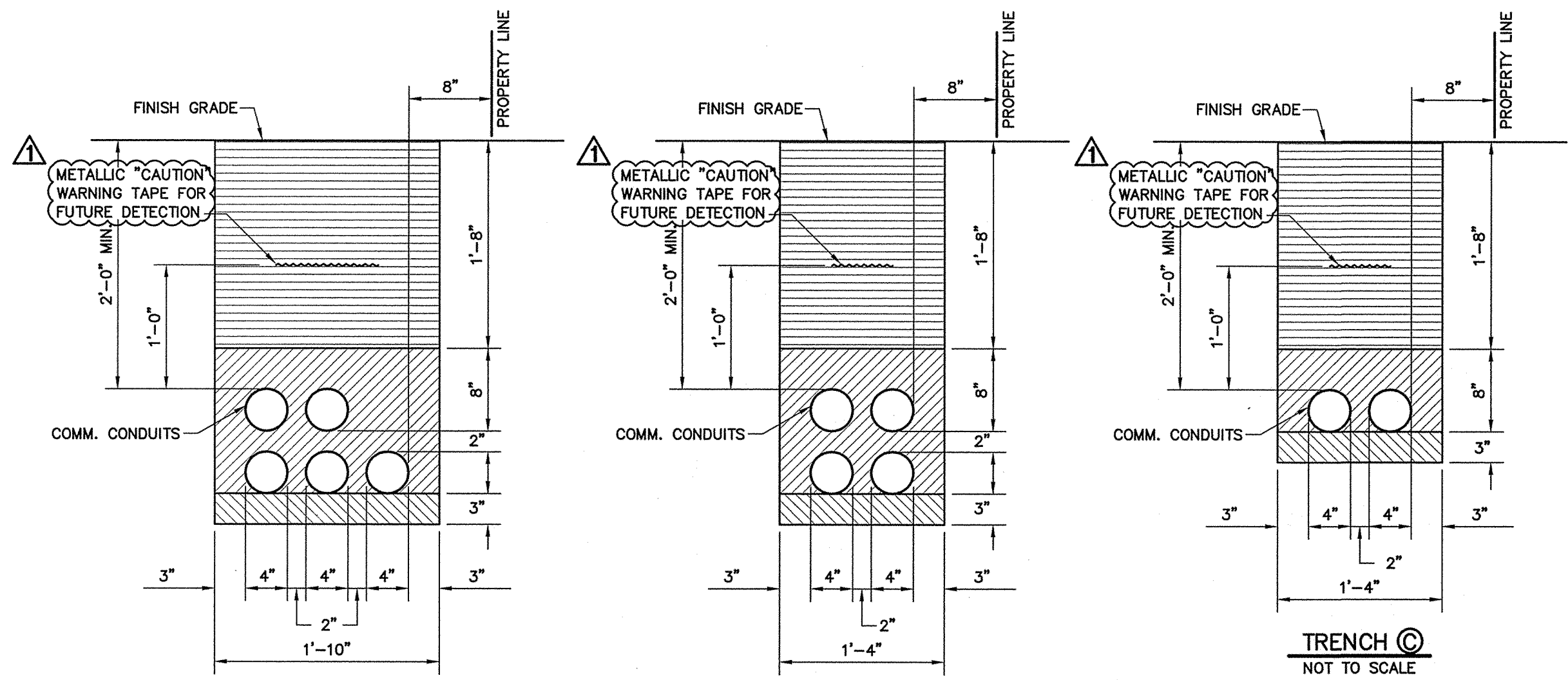
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DATE: 05/11/12

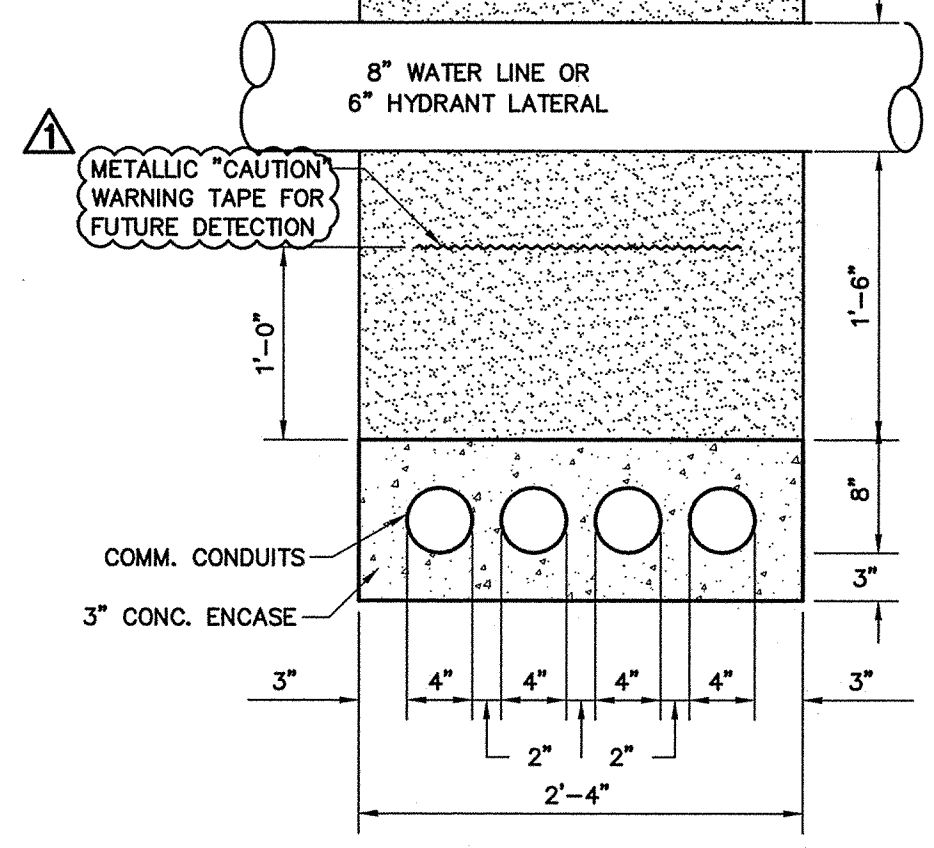
SHEET

C-3

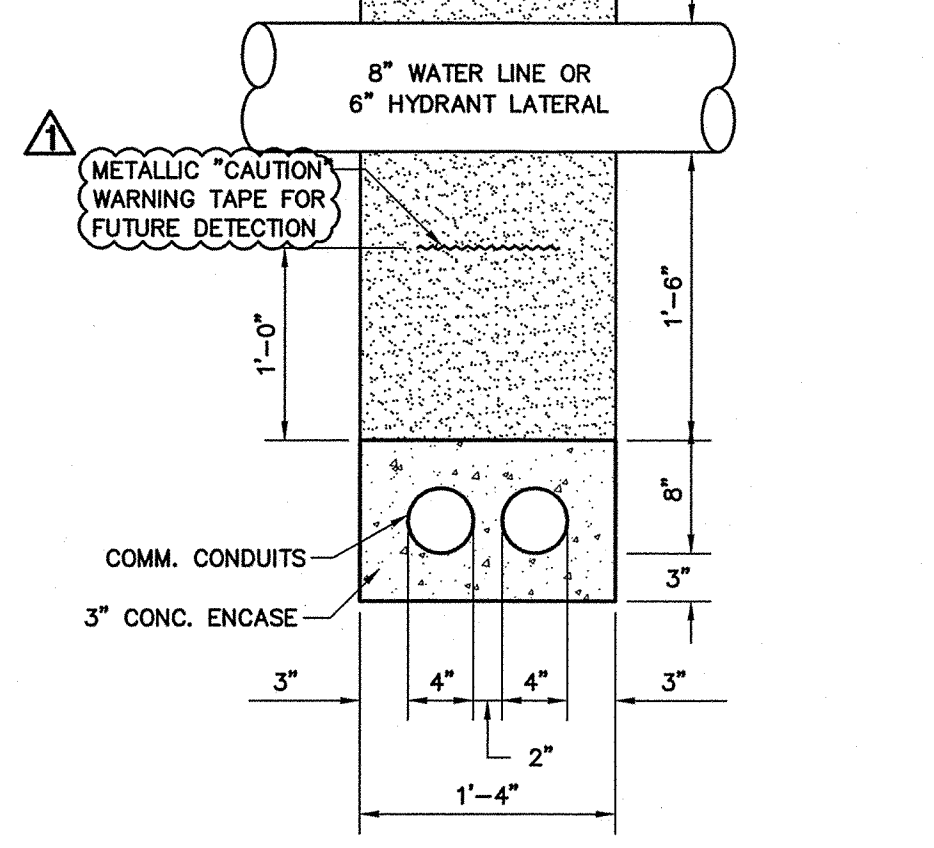
3 OF 13 SHEETS



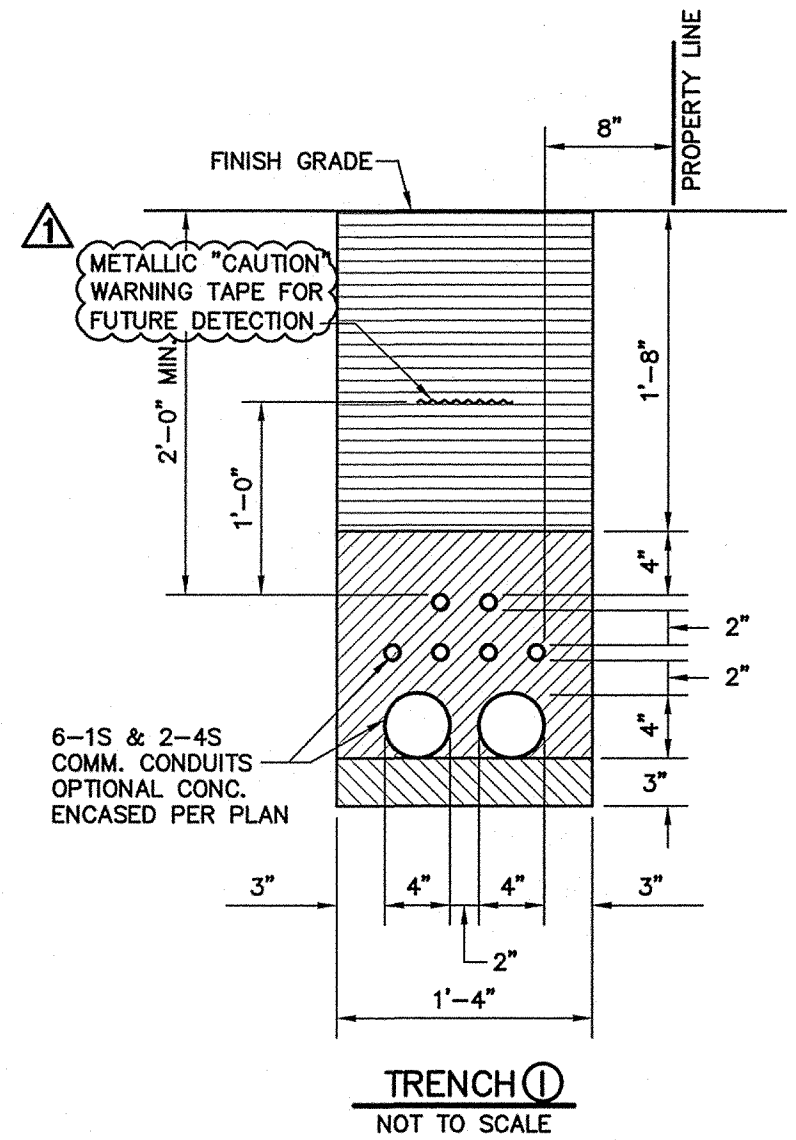
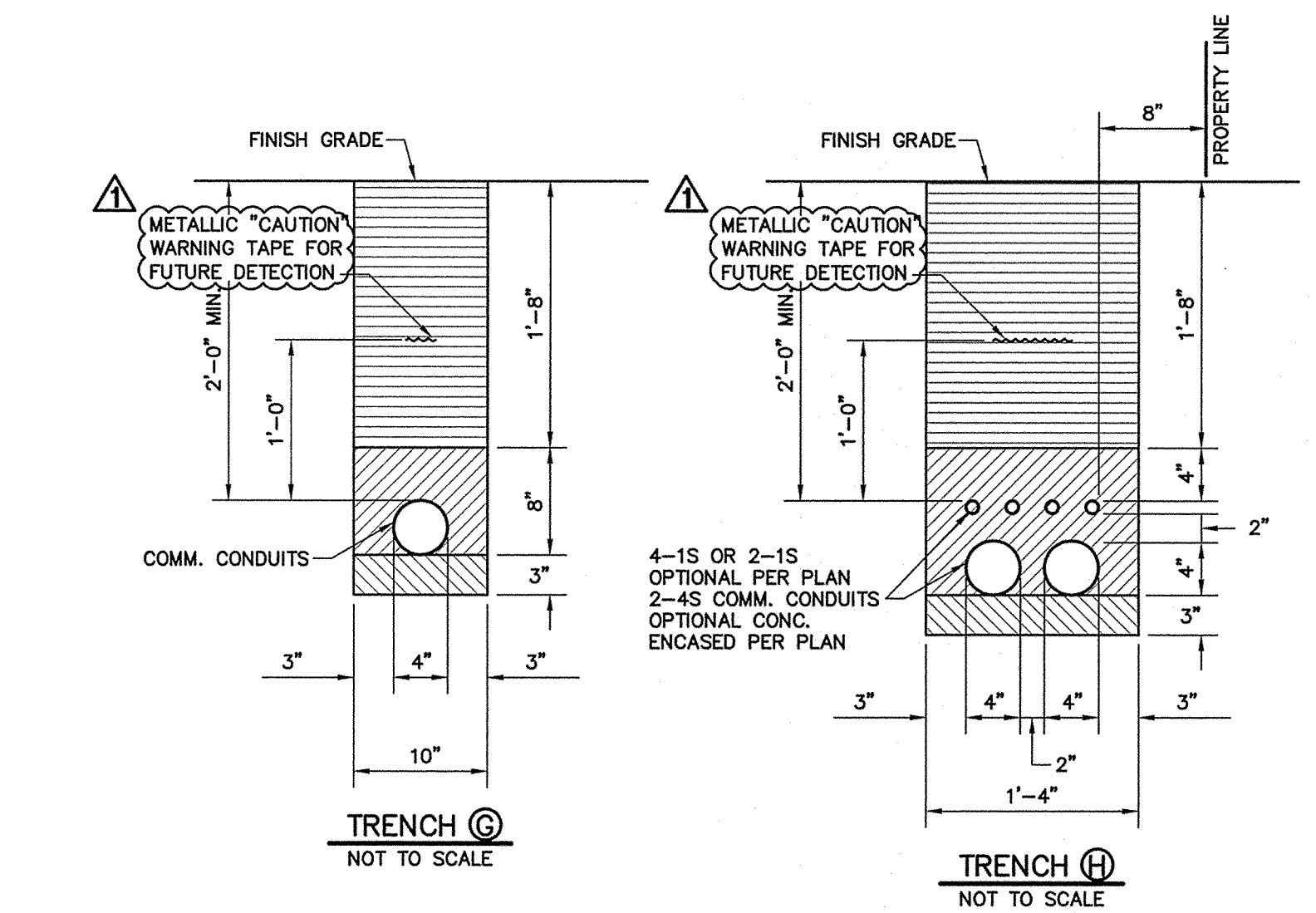
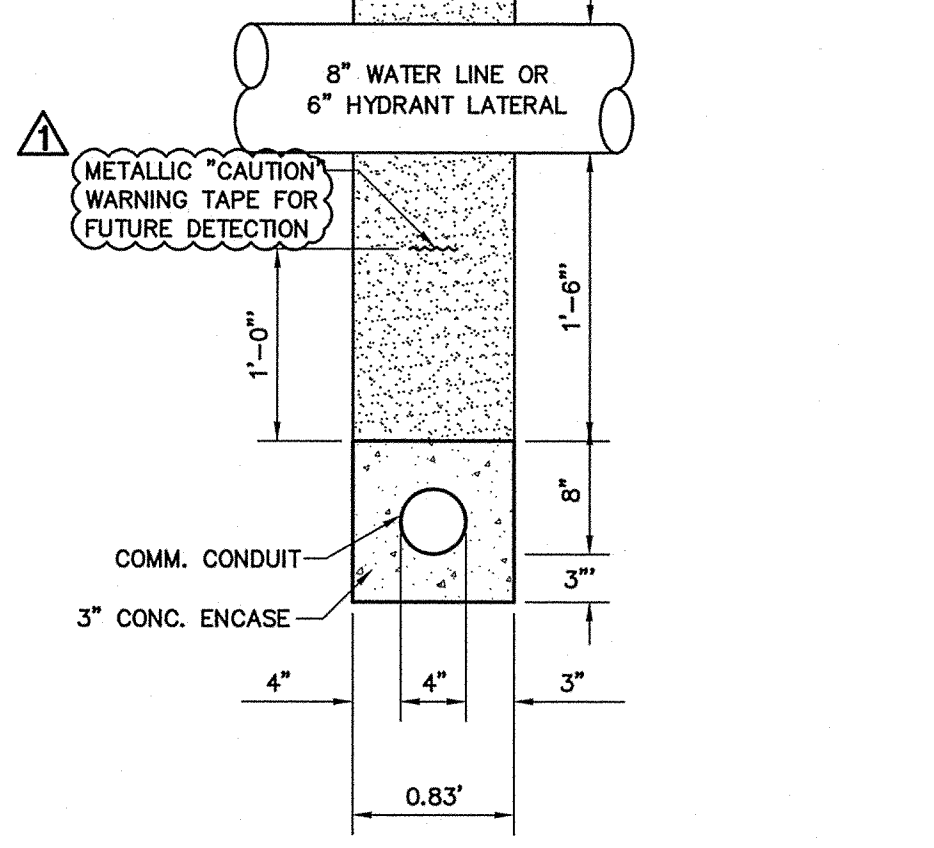
BACKFILL AROUND WATER PIPE CROSSING OVER UTILITY DUCTS SHALL MATCH BACKFILL AROUND WATER PIPE NOT CROSSING UTILITY DUCTS. BACKFILL SHALL NOT CONTAIN ROCKS, STONES, ETC.,



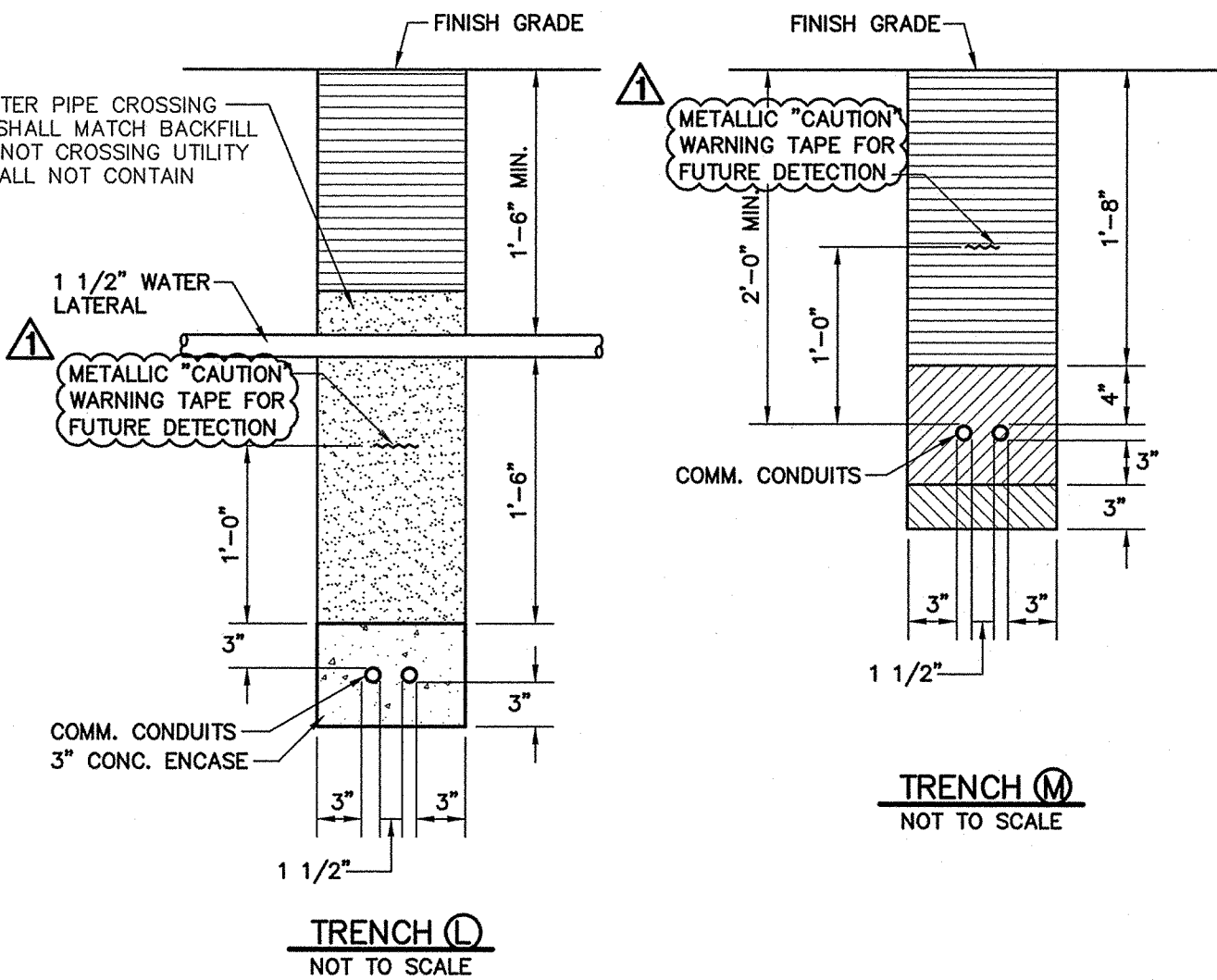
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TRENCH M
NOT TO SCALE

- TYPE "A" BACKFILL - EARTH & GRAVEL. ROCK SIZE TO BE 1" MAX & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. THE MATERIAL SHALL BE NON-EXPANSIVE. 95% COMPACTION.
- TYPE "B" BACKFILL - EARTH & GRAVEL. MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.
- NOTE - IF NORMAL MATERIAL AT BOTTOM OF TRENCH IS NOT TYPE "B", AN ADDITIONAL 3" SHALL BE EXCAVATED & TYPE "B" BACKFILL PROVIDED.
- CONCRETE - 3" ENCASEMENT, 2500 PSI COMPRESSIVE STRENGTH @ 28 DAYS.

- NOTES:**
- UTILITY DUCTS SHALL BE CONCRETE ENCASED AT ALL WATER FACILITIES CROSSINGS. AT INTERSECTION OF WATER PIPE AND UTILITY DUCTS, A 18" MIN. SEPARATION BETWEEN WATER PIPE AND TOP OF CONCRETE ENCASEMENT SHALL BE MAINTAINED. STONES, ROCKS, ETC., SHALL NOT BE USED WITH BACKFILL MATERIAL. CONTRACTOR SHALL NOTIFY THE DEPT. OF WATER 24 HOURS PRIOR TO SCHEDULED ELECTRICAL/WATER TRENCH BACKFILLING OPERATIONS.
 - ELECTRICAL WARNING TAPE-HEAVY GAUGE 4 MIL. RED WITH BLACK LETTERING, 3" WIDE, "BURIED ELECTRIC LINE BELOW-CAUTION" @ DIRECT BURIED CONDUITS.
 - ALL CONDUIT RUNS SHALL HAVE A 3" NON-METALLIC WARNING TAPE PLACED 12 INCHES ABOVE THE CONDUIT RUN. THE TAPE SHALL READ "CAUTION BURIED FIBER OPTIC CABLE BELOW".
 - 3" SEPARATION REQUIRED BETWEEN ELECTRICAL AND COMM. CONDUITS WITHIN CONCRETE ENCASEMENT.

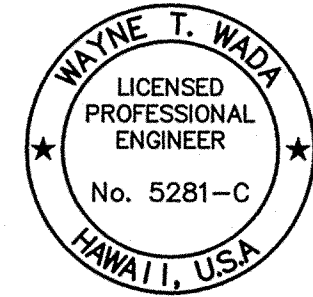
- WATER NOTES:**
- THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATION OF THE EXISTING WATER FACILITIES PRIOR TO TRENCHING. EXCAVATION AROUND EXISTING WATER FACILITIES SHALL BE DONE BY HAND.
 - MATERIAL USED FOR BACKFILLING AT THE WATER FACILITIES CROSSINGS SHALL NOT CONTAIN ANY STONES, ROCKS OR OTHER SIMILAR MATERIAL AND SHALL NOT CONTAIN VEGETABLE MATTER OR DEBRIS OF ANY KIND. NO "ADOBE" OR SIMILAR MATERIAL SHALL BE USED.
 - PROVIDE CONCRETE ENCASEMENT FOR THE CONDUITS AT ALL WATERLINE, SERVICE LATERAL AND FIRE HYDRANT CROSSINGS. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER AT LEAST 24-HOURS PRIOR TO SCHEDULING BACKFILLING OPERATIONS AT THE WATER FACILITIES CROSSINGS.
 - FOR TRENCHLESS INSTALLATION WORK (MICRO TUNNELING, DIRECTIONAL DRILLING, PIPE RAMMING/JACKING) PROVIDE 3- FEET MIN. VERTICAL CLEARANCE AT ALL WATER-LINE, SERVICE LATERAL AND FIRE HYDRANT CROSSINGS. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER AT LEAST 24-HOURS PRIOR TO SCHEDULING TRENCHLESS INSTALLATION WORK AT THE WATER FACILITIES CROSSINGS.

CERTIFIED:

APPROVED:	APPROVED:
SANDWICH ISLES COMMUNICATIONS, INC. DATE:	KAUAI ISLAND UTILITY COOPERATIVE DATE:

REVISION	DATE	DESCRIPTION	BY	APPROVED
6-20-12		REVISED TRENCH DETAILS		

REVISIONS



THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

Wayne T. Wada
EXPIRES: APRIL 30, 2014

**COMMUNICATION PLAN FOR
PILANI MAI KE KAI SUBDIVISION
PHASE II**

Anahola, Kaua'i, Hawai'i
Tax Map Key: (4) 4-8-22: 89

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1003 Bishop Street, 27th Floor
Honolulu, HI 96813

**MISCELLANEOUS
DETAILS**

APPROVED:

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, DATE
COUNTY OF KAUAI (FOR WORK WITHIN COUNTY R/W)

MANAGER & CHIEF ENGINEER, DEPT. OF WATER, DATE
COUNTY OF KAUAI