KAUAI ELECTRIC "Underground Construction Notes and Requirements"

- Contractor shall contact Kauai Electric's ("KE") Quality Assurance Coordinator prior to start of work on KE facilities and for scheduling site inspections. (Eastside: Mr. Bernard Naea @ (808) 822-9204 or Westside: Dave Taylor @ (808) 335-6223).
- 2. Contractor shall contact KE's Engineering Department (808) 246-4340 for project standard detailed drawings, and any items not addressed in these notes or drawings.
- 3. All Contractors entering KE facilities must be approved by KE and must have proper licensing and insurance coverage. Contact KE Risk Management @ (808) 246-4372 for details. Contractor shall provide written approval from KE prior to bidding.
- 4. All work on electrical facilities shall be in strict accordance with specifications and requirements of KE. The Contractor shall closely coordinate all work with KE's Engineering Department.
- 5. All trenches and pullboxes must be inspected by KE's inspector prior to backfilling and concrete-encasing operations.
- 6. The Contractor shall provide a Poly-Line 200 lb. test line or equivalent as a pulling wire in all conduits.
- 7. 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. (Covers shall be Carlon Plug with Pull Tab Series P258 equivalent or better.)
- 8. Conduit Type EB will not be accepted.
- 9. For all conduit other than services, refer to conduit schedule on drawings.
- 10. For all services where the conductor shall be 3/0 or less, and the distance from KE handhole and Customer's meter is less than 125 feet, the conduit shall be 2-inch Schedule 40 PVC. Any deviations must be approved by KE Engineering Department.
- 11. For services with conduit under driveways, roadways and paved areas, the conduit shall be concrete encased (as noted in item 12) Schedule 40 PVC. (equivalent or better.) Schedule 80 PVC conduit may be substituted for the concrete encased Schedule 40 PVC under concrete driveways.
- 12. All primary and secondary roadway crossings shall be encased in a minimum 3-inch concrete jacket, which shall extend a minimum of 12 inches outside of edge of pavement.
- Supply buried cables in conduits, 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.
- 14. Chairs (duct seats) shall be installed and spaced at a maximum of 5 feet separation when concrete encasing conduits.
- Backfill material around all ducts shall be select material. (Refer to page 21 of Service Installation Manual)
- 16. 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 less than 90 degrees will not be accepted.

- 19. A 36-inch minimum clearance shall be maintained when running KE conduits parallel or crossing water and sewer lines. If clearance is less than 36 inches, KE conduits shall be concrete encased.
- 20. No foreign pullboxes, handholes, manholes, concrete slabs/boxes, structures, etc. are to be installed over KE facilities with the exception of HTCO, CATV or waterline conduit crossings. Such crossings must be approved by KE's Engineering Department and KE 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.
- 21. Yellow marker tape shall be placed 1 foot above electrical conduits in the trench during backfilling. (E-Z CODE WBT 6-inch wide, 4 mil polyethylene Protect-A-Line Warning Tape NA-0708 "ELECTRIC LINE" in yellow, equivalent or better.)
- 22. Unless otherwise noted, the top of all conduits shall be at a depth of 24 inches below finish grade.
- 23. All handholes, pullboxes and manholes shall meet Kauai Electric's Specifications and manufactured by a KE approved supplier.
- 24. Typically, the top of all electrical utility boxes shall be 1-inch above finish grade unless otherwise noted. (Special conditions may apply to sidewalks, roadways, etc., see specific location notation.)
- 25. At no time shall cement mortar, wood or any other material be used between pre-cast sections of KE pullboxes, handholes, or manholes. The permanent installation of wooden wedges to level or raise the pre-cast sections shall not be permitted.
- 26. 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 material are not to be placed inside handholes and pullboxes.

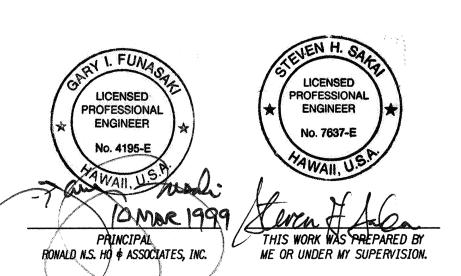
GTE HAWAIIAN TELEPHONE NOTES

- The location of GTE Hawaiian Tel's existing facilities are approximate only. The Contractor shall exercise extreme caution and shall maintain proper clearances whenever construction crosses or is in close proximity to GTE Hawaiian Tel's facilities. The Contractor shall verify their locations and shall be liable for any damages to GTE Hawaiian Tel's facilities. Any damages shall be reported immediately to GTE Hawaiian Tel's Repair Section at #611 (24 hours) or to the Excavation Permit Section at 246-3200, during normal work day hours, Monday thru Friday, except Holidays.
- 2. 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.
- 3. The Contractor shall take necessary precautions not to damage any existing cables or ducts. Any work involving existing GTE Hawaiian Tel cables or ducts shall be done in the presence of a GTE Hawaiian Tel Inspector or designated representative.
- 4. The Contractor shall obtain an excavation permit and toning request from GTE Hawaiian Tel's Excavation Permit Section, two weeks prior to the start of construction. Hours of business are 7:00 am to 10:30 am and 11:30 am to 3:00 pm, Monday thru Friday, except Holidays.
- 5. The Contractor shall notify GTE Hawaiian Tel's Inspector or designated representative 72 hours prior to excavation, bracing or backfilling of GTE Hawaiian Tel's structures or facilities.

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HAWAII	HAW.	STP-051-1(9)	1999	19	23

Sumbol ELECTRICAL LEGEND					
Symbol .	Description				
jp ↔<	exist. joint pole and anchor				
<i>jp </i>	exist. joint pole and anchor to be removed by KE				
JP•—<	New Anchor Pole and Anchor by KE				
—ET/0H—	New Overhead Electric/Signal Lines by respective utility companies				
× et/oh ×	exist. overhead electric/signal lines to be removed by respective utility				
	companies				
— et/oh —	exist. overhead electric/signal lines				
	New Electric Ductline, Designator Indicates Type "2L" Duct, 1-2" KE				
	Light Duct, see Conduit Schedule and Duct Section "A", Sheet 21				
T					
•——◎	New Highway Light 250W, 15 Foot Arm, Breakaway Transformer Base,				
	See Mounting Details, Sheet 22				
(2)	exist. 250W highway light and 14 foot arm mounted to exist. joint pole				
(3)	Relocated 250W Highway Light and 14 Foot Arm by KE				
/=\	exist. county 100W street light and 6 foot arm mounted to exist. joint				
()	pole				
×(Zi)	exist. 250W highway light to be relocated by KE				
	2' x 4' KE Pullbox, See Detail Sheet 21				
	Stub, Cap and Mark Conduit				

- 6. When excavation is adjacent to or beneath GTE Hawaiian Tel's existing structures or facilities, the Contractor shall:
 - a. Sheet and/or brace the excavation to prevent slides, cave-ins or settlements to ensure no movement to GTE Hawaiian Tel's structures or
 - b. Protect existing structures and/or facilities with beams, struts or underpinning while excavating beneath them to ensure no movement to GTE Hawaiian Tel's structures or facilities.
- Should it become necessary to relocate any GTE Hawaiian Tel facilities, the work shall be done by GTE Hawaiian Tel. The Contractor shall be responsible for all coordination and costs associated with the relocation.
- 8. Should field conditions and construction procedures require that utility poles be braced, the Contractor shall contact GTE Hawaiian Tel for pole bracing instructions a minimum of 72 hours in advance of actual required bracing.



DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

ELECTRICAL SYMBOLS \$ NOTES

KAPULE HIGHWAY, INTERSECTION IMPROVEMENTS AT HAOA STREET

Federal Aid Proj. No. STP-051-1(9) Scale: None

Date: May 1998 SHEETS

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