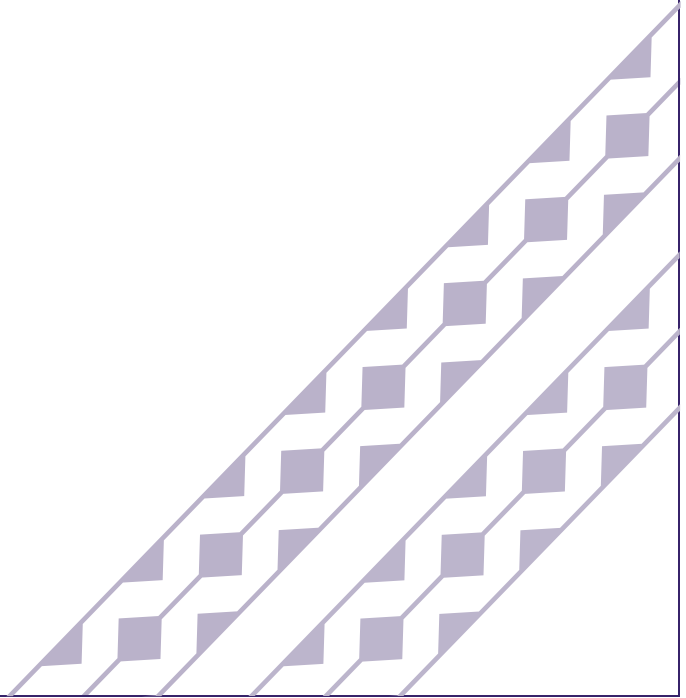




**Hawaiian
Electric**

The information found in this document are general guidelines that may be used to aid in the preparation of your service request proposal. Please be advised that depending on the specific needs and actual conditions of your project, Hawaiian Electric may require your design to comply with different specifications including specifications that include more stringent requirements than those included in these design specification guidelines. For further guidance and clarification on the actual specifications that will apply to your particular project, please refer to instructions issued by Hawaiian Electric's Planner or Engineer who is assigned to your particular (Project/Review Request/...). Additionally, please be advised that Hawaiian Electric reserves the right to require additional modifications to any approved design if it is determined during actual construction that additional modifications must be made to address certain field conditions that were not detected or Hawaiian Electric was unaware of during the design review process.



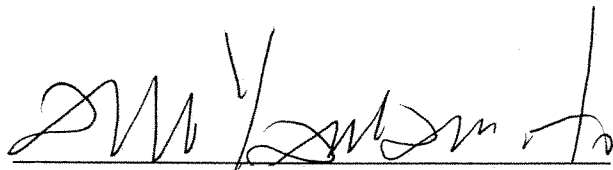
HAWAIIAN ELECTRIC CO., INC.

SPECIFICATION NO. M0302-0

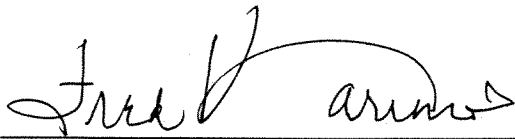
FOR

WARNING TAPE FOR
UNDERGROUND CONDUIT SYSTEMS

Prepared by Engineering Department



a. Yamamoto
Director of Purchasing
Energy Delivery Support Services Department



F. K. Karimoto *mm*
Principal Technical Services Engineer
Engineering Department

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PART 1 SCOPE

- 1.1 Specification Coverage - This specification covers detectable warning tape for installation above underground conduit systems.

PART 2 GENERAL

- 2.1 Warning Tape Use – The detectable warning tapes are to be installed above conduit systems where specified in an effort to provide advanced warning prior to contacting the conduit system.
- 2.2 Applicable Standards - Unless specifically covered in this specification, all warning tapes shall comply with the latest revision of the following specifications:
- A. NTSB-PSS-73-1
 - B. OSHA 1926-956 (c) (1) Covering the location of underground utility lines
 - C. Federal Gas Safety Regulation S-192-321 (c).
 - D. GSA Public Service Guide
 - E. American Gas Association (72-D-56)
 - F. DOT Office of Pipeline Safety USAS B31.8
 - G. API RP 1109

PART 3 PHYSICAL PROPERTIES

- 3.1 Minimum Strength - 1,750 psi lengthwise and 1,500 psi crosswise.
- 3.2 Chemical Resistance – Acid and alkali resistant.
- 3.3 Dimensions
Width - 6"
Minimum Thickness – 0.005" (5 mil)
- 3.4 Detectability – Tape shall have integral wires, foil backing, or other means to enable detection by a metal detector when the tape is buried up to 3 feet deep. This metallic component shall be encased in a protective jacket or provided with other means to protect it from corrosion.

PART 4 COLOR AND MARKING

4.1 Color – The tape shall be red in color to indicate an electrical line.

4.2 Marking –

- A. General – The tape shall bear a continuous printed inscription indicating the presence of a high voltage electrical underground cable or buried electrical line.
- B. State Highways – Tapes to be installed within the State Highway right-of-way shall bear the inscription of the appropriate utility “HECO”, “MECO”, or “HELCO” in addition to the general inscription above.