

TRAFFIC SIGNAL NOTES

- The locations of the Traffic Signal Standards, Traffic Signal Standards w/Mast Arms, Pedestrian Push Buttons, Traffic Controller, Pullboxes, Conduits and Loop Detectors shall be staked out in the field by the Contractor and approval of the locations shall be obtained from the Engineer prior to construction and installation.
- All splicing shall be done in the pullboxes.
- Furnishing and installing the conduit stubouts (pullboxes to edge of pavement) will not be paid for separately but shall be considered incidental to the various contract items.
- A solid #8 bare copper wire shall be pulled with the traffic signal control cable for equipment ground. Cost shall be incidental to the installation of the control cable.
- All Traffic signal controller equipment shall be completely wired in the cabinet and shall control the traffic signals as called for in the plans.
- The loop amplifier units furnished for this project shall be capable of operating the loop detector configurations shown on the plans. Cost for the loop amplifier shall be incidental to the installation of the loop detector.
- Should any defect be encountered during the warranty period, the manufacturer will be notified and he shall promptly correct such defect. Service call (by factory qualified representative) during the warranty period for repairs or other maintenance shall be answered within 24 hours and shall be done at no expense to the State. All repairs shall be done as soon as possible.
- All traffic signal work shall conform to the requirements of the "Manual On Uniform Traffic Control Devices For Streets And Highways", Federal Highway Administration (1988) and Amendments.
- Locations of traffic markings and markers (lane lines, Stop lines, crosswalk, etc.) shown on the plans shall be verified with the Engineer prior to the installation of the traffic signal system.
- All Conduits between pullboxes and Traffic Signal/Highway Lighting Standards shall not be paid for separately but shall be considered incidental to the various contract items.
- All Signal-Drop Cables (Type 5 Cables) from the various Types of Traffic Signal Head on the traffic signal standards and mast arms to the pullboxes shall not be paid for separately but considered incidental to the Traffic Signal Head.
- After installing all the traffic signal cables, the Contractor shall duct seal all conduits in the pullboxes, traffic signal standards and traffic signal controller cabinet concrete base. The duct seal material shall be approved by the Traffic Signal Inspector/Engineer and shall not be paid for separately but considered incidental to the direct buried and/or concrete encased conduits.
- After installing the Traffic Signal System, the Contractor shall apply grease to all parts of the Traffic Signal System (i.e. fittings, brackets, nipples, elbows, screws, signal head assemblies, bolts, hinges, etc.) as directed by the Traffic Signal Inspector, to prevent rust and corrosion. The grease material shall be approved by the Signal Inspector.
- Connecting into existing traffic signal system and making all necessary adjustments shall not be paid for separately, but considered incidental to the various traffic signal contract items.

- Existing flasher standards to be removed shall be removed together with its respective footing. The Contractor may elect to remove only the top portion of the footing. In such cases, the Contractor shall ensure that the remaining footing shall be 6 inches below the existing ground. The Engineer will determine whether the removed standards shall be disposed of or salvaged. Cost shall be considered incidental to the various contract items.
- Exist conduits, cables and pullboxes not to be incorporated in the new traffic signal system shall remain in place unless otherwise noted on plans or directed by the Engineer.
- Locations of all new traffic signal equipment shall be staked out in the field by the Contractor for approval by the Engineer prior to construction and installation.
- The existing flasher system shall remain in operation until the new traffic signal system is put into service. The Contractor shall arrange his work accordingly and shall provide temporary relocations and wirings as necessary. Payment shall be considered incidental to the various contract items.
- The Contractor shall clean and/or repair the existing traffic signal pullboxes to be used prior to installing conduits and cables. This work will not be paid for separately but shall be considered incidental to the various contract items.
- The Contractor shall notify the Traffic Division, Public Works Department, County of Hawaii, 2 weeks prior to commencing any work on the traffic signal system.
- Public Works Department, County of Hawaii, will assist the Engineer in Construction inspection for the traffic signal system.
- The Contractor shall maintain a 36" clearance between the Control Ductline and Loop Detectors.
- All conduits shall be concrete encased unless directed by the County of Hawaii Engineer Inspector. All conduits encased in concrete shall be Schedule 40. Conduits not encased shall be Schedule 80.
- If abandoned in place, existing conduits and cables shall be saw cut completely through every 10' to prevent inductive coupling.
- All pavement markings removed due to the installation of the traffic signal ductlines shall be replaced. This work shall not be paid for separately but shall be considered incidental to various contract items.

TRAFFIC SIGNAL LEGEND

NEW	EXISTING	
_____	-----	Traffic Signal Conduit
△ 1 △ 2 △ 3	△ 1 △ 2 △ 3	Conduit Run Numbers
(A) (B) (C)	(A) (B) (C)	Equipment description, installation or item no.
Ⓜ	Ⓜ	Traffic Signal Master Controller Door Indicates Front of Cabinet
ⓐ	ⓐ	Traffic Signal Controller Door Indicates Front of Cabinet
Ⓞ	Ⓞ	Meter Pedestal
←	←	12" RYG Traffic Signal Head
←↑	←↑	12" RY↑ Traffic Signal Head
←↑	←↑	12" RY← Traffic Signal Head
←↑	←↑	12" RY← Traffic Signal Head (Programmed Visibility)
←↑	←↑	12" RYG ← Fiber Optic Traffic Signal Head
←↑	←↑	Type I Standard and Attached Signals
←↑	←↑	Type II Standard with Signal Mast Arm and Attached Signals (Nos. indicates mast arm length & distance between signal heads as specified on plans)
←↑	←↑	Flashing Beacon, One Signal Section, "Y" indicates 12" Yellow Lens
←⊗	←⊗	Opticom Receiver (Arrow indicates direction detector faces)
•	•	Pipe Guard
Ⓜ	Ⓜ	Pedestrian Signal Head
□	□ tspt	Type A Pullbox
⊗	⊗ tspt	Type B Pullbox
⊗	⊗ tspt	Type C Pullbox
□ □	□ □	Loop Detectors

HIGHWAY LIGHTING LEGEND

NEW	EXISTING	
— HL —	--- tL ---	Highway Lighting Conduit
■	□ tL	Type A Pullbox (Hwy. Ltg.)
●	○	Highway Lighting Standard

ORIGINAL PLAN
 SURVEY PLATTED BY DATE
 DRAWN BY M. Lakshmi
 DESIGNED BY Shivan Yashida
 CHECKED BY
 04-1-97

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
TRAFFIC SIGNAL LEGEND
AND NOTES
 KEAAU-PAHOA ROAD
 Installation of Traffic Signals at
 Pahoa-Kapoho Road
 Project No. 130A-01-99
 Date: April, 2000
 SHEET No. 1 OF 1 SHEETS