























## TRAFFIC SIGNAL LEGEND

-  New Traffic Signal Controller. See Details on Sheet 28.
-  CCTV New CCTV Controller. See Details on Sheet 28.
-  Meter New Electric Meter Socket and Cabinet. See Details on Sheet 29.
-  New Traffic Signal Conduits & Cables. See Details on Sheets 26 & 27.
-  New CCTV Camera. See Details on Sheet 30.
-  Existing Traffic Signal Head
-  New 12" RYG Traffic Signal Head
-  New 12" RYG Traffic Signal Head w/Back Plate
-  New 12" RY ↑ Traffic Signal Head
-  New 12" RY ← Traffic Signal Head
-  Existing Type II Traffic Signal Standard with Mast Arm and Traffic Signal Heads
-  New Type II Traffic Signal Standard with Mast Arm and Traffic Signal Heads
-  Existing Pedestrian Signal Head
-  New Pedestrian Signal Head
-  Existing Pullbox
-  New Type A Pullbox (Metric). See Details on Sheet 23.
-  New Type B Pullbox (Metric). See Details on Sheet 24.
-  New Type C Pullbox (Metric). See Details on Sheet 24.
-  Existing Loop Detectors
-  New Loop Detectors. See Details on Sheet 25.
-  New Opticom Receiver
-  Temporary Microwave Detector

## TRAFFIC SIGNAL NOTES

- The locations of the traffic signal standards, 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.
- Any required splicing shall be done in the pullboxes.
- Furnishing and installing controller barriers, risers on poles and 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 and CCTV equipment shall be completely wired in the cabinet and shall control the traffic signals and CCTV Cameras as called for in the Plans.
- The Contractor shall install the meter socket and 50 amp. breaker as shown on the plans in accordance with HECO requirements. The Meter shall be mounted between 5 feet and 6 feet above ground. Meter socket shall be 4-prong, complete with a manual circuit closing device.
- 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 controller 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 whatsoever to the State. All repairs shall be done as soon as possible.
- Existing traffic signal standards to be replaced shall be removed together with its respective footing. The Contractor may elect to remove only the top portion of the footing and shall ensure that the remaining footing is 12 inches below the existing or finish ground. Costs shall be considered incidental to the various contract items.
- The existing traffic signal and CCTV systems 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 clean all existing conduits prior to pulling cables. This work will not be paid for separately but shall be considered incidental to the various contract items.
- The existing controller foundation not to be incorporated in the final traffic signal system shall be removed in accordance with Section 202, "Removal of Structures and Obstructions" of the Standard Specifications. Costs shall be considered incidental to the various contract items.
- The Contractor shall maintain a 36" clearance between the Control Ductline and Loop Detectors.
- Restoration of existing pavements and improvements unavoidably damaged shall be incidental to the various contract items. Restoration shall be to original or better condition.
- The Contractor shall provide off-duty police officer(s) to control the flow of traffic as required by the Engineer.
- Removing and disposing of existing Power Source Equipment (i.e. meter, conduits, cables, etc.) shall not be paid for separately but considered incidental to the various contract items.
- All traffic signal heads, pullbox frame and covers, etc. not incorporated into the new traffic signal system shall be removed. The Engineer shall determine the salvageable equipment. All salvageable equipment shall become the property of the City DTS and the unsalvageable equipment shall become the property of the Contractor for proper disposal. Removing and salvaging existing traffic signal equipment shall not be paid for separately but considered incidental to the various contract items.
- The Contractor shall notify the Traffic Signals and Technology Division, Department of Transportation Services, three (3) days prior to commencing work on the Traffic Signal and CCTV system (Phone: 523-4589).
- Type 2 cables between the pedestrian push button and pullbox shall be furnished and installed in sufficient numbers and lengths, as required. Cost shall be incidental to the installation of pedestrian push buttons.
- Conduits between traffic signal standard and pullbox shall be furnished and installed in sufficient numbers and lengths, as required. Cost shall be incidental to traffic signal foundation.
- Conduits between pedestrian push button pedestals and pullbox shall be furnished and installed in sufficient numbers and lengths, as required. Cost shall be incidental to pedestrian push button pedestal foundation.
- The Contractor shall verify all work in the field prior to submitting of bid, ordering of materials, fabrication of brackets, etc.
- The Contractor shall not construct conduits, pullboxes, traffic signal standard foundations, etc. outside of State or County right-of-way unless shown otherwise on the plans.
- Existing conduits not incorporated into the new traffic signal system shall be plugged with concrete and abandoned in place. Cables shall be removed and disposed. Restore area of demolition work to match existing surrounding. Payment shall be considered incidental to the various contract items.
- Install adhesive Type II Object Markers (2 each) on all Traffic Signal Standards.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-092-1(26)	2002	15	30

REVIEWED BY	DATE
DESIGNED BY	
CHECKED BY	
IN CHARGE	
PROJECT NO.	
DATE	



THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION  
*Brian P. Low*  
BRIAN P. LOW  
10000-C  
HONOLULU, HAWAII 96813

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TRAFFIC SIGNAL NOTES  
AND LEGEND**

Ala Moana Boulevard  
Traffic Signal Modernization  
Federal-Aid Project No. NH-092-1(26)

Date: February, 2002

SHEET No. 1 OF 1 SHEETS