

TRAFFIC SIGNAL NOTES

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-01-12	2016	27	29

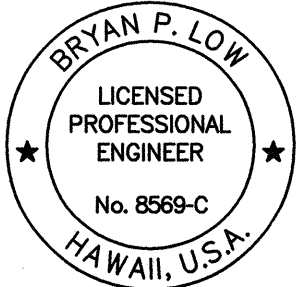
1. The locations of the traffic signal standards, pedestrian push buttons, traffic controller, pullboxes, conduits and loop detectors shall be staked out in the field by the Contractor and approval of the locations shall be obtained from the Engineer prior to construction and installation.
2. Any required splicing shall be done in the pullboxes.
3. Furnishing and installing conduit stubouts (pullboxes to edge of pavement) will not be paid for separately but shall be considered incidental to the various contract items.
4. 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.
5. 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.
6. The existing traffic signal 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.
7. 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.
8. 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.
9. The existing pullboxes 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. Pavement shall be constructed to match surrounding pavement. Costs shall be considered incidental to the various contract items.
10. The Contractor shall maintain a 36" clearance between the Control Ductline and Loop Detectors.
11. Restoration of existing pavements and improvements unavoidably damaged shall be incidental to the various contract items. Restoration shall be to original or better condition.
12. The Contractor shall provide off-duty police officer(s) to control the flow of traffic as required by the Engineer.
13. The Contractor shall verify and remove existing traffic signal heads, standards, foundations, pedestrian pushbuttons, pullbox frame and covers, cables, and appurtenances, etc. which are called for removal in the plans. The Engineer shall determine the salvageable equipment. All salvageable equipment shall become the property of the City Department of Transportation Services 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 signal items of the Contract.
14. 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 system (Phone: 768-8388).

15. Conduits and 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.
16. Conduits and signal drop cables between traffic signal standards and pullboxes shall be furnished and installed in sufficient numbers and lengths, as required. Cost shall be incidental to traffic signal foundation.
17. The Contractor shall verify all work in the field prior to submitting of bid, ordering of materials, fabrication of brackets, etc.
18. The Contractor shall not construct conduits, pullboxes, traffic signal standard foundations, etc. outside of State or City and County right-of-way unless shown otherwise on the plans.
19. 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.
20. The Contractor shall remove and dispose all temporary microwave detectors not incorporated in the final signal system after the new signal system is operational and prior to final acceptance unless otherwise notified by the State.
21. All traffic signal work shall conform to the requirements of the Federal Highways Administration, 'Manual on Uniform Traffic Control Devices for Streets and Highways', 2009 Edition, and amendments.
22. Maintenance of the traffic through the construction area shall be in accordance with Part VI of the Federal Highways Administration, 'Manual on Uniform Traffic Control Devices for Streets and Highways', 2009 Edition, and amendments as specified in the special provisions.
23. Notes for Traffic Signal Standards.
- A. A wire cloth screen shall be placed vertically between the base plate and the top of foundation and wrapped horizontally around the base plate with a 3-inch minimum lap. The wire cloth shall be galvanized steel standard grade plain weave 2x2 mesh 0.63 inch diameter wires. The screen shall be attached to the base plate with stainless steel self-tapping 1/4-inch diameter screws with stainless steel washers spaced at 9-inches on center.
- B. Traffic signal standards, footings, fittings, and appurtenances shall be constructed per the State of Hawaii, Department of Transportation, Highways Division, Standard Plans, 2008.
- C. Traffic signal standards shall be designed to meet the following criteria:
- Design wind pressure = 105 mph  
A wind importance factor recurrence interval = 50 years  
Resist an equivalent static natural wind gust pressure
- D. Design of traffic signal standards shall be based on Fatigue Category I in Table 11-1 of AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.
- E. Traffic signal standards shall be designed for galloping-induced cyclic loads and to resist an equivalent static truck gust pressure range based on a truck speed of 20 mph over the posted speed.

TRAFFIC SIGNAL SYMBOL LEGEND

Existing	New	
		Traffic Signal Controller Cabinet
		New Traffic Signal Conduits & Cables. See See Standard Plan TE-36
		12" RYG Traffic Signal Head
		12" RYG Traffic Signal Head
		New 12" RYG Programmable Traffic Signal Head
		Type I Traffic Signal Standard with Traffic Signal Heads. See Standard Plan TE-32.
		Type II Traffic Signal Standard with Mast Arm and Traffic Signal Heads.
		Pedestrian Signal Head
		Existing Pullbox
		Type A Traffic Signal PullBox. See Standard Plan TE-37.
		Type B Traffic Signal PullBox. See Standard Plan TE-37.
		Loop Detectors.
		Opticom Receiver.
		Temporary Microwave Detector
		Demolish and Remove Existing Pullbox
		Abandon Existing Conduit in Place

DATE	DESIGNED BY	CHECKED BY
PLANNED BY	DESIGNED BY	CHECKED BY
NOTED BY	DESIGNED BY	CHECKED BY
NO.	DESIGNED BY	CHECKED BY



THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION

SIGNATURE

4/30/16

EXPIRATION  
DATE OF THE  
LICENSE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TRAFFIC SIGNAL NOTES  
AND LEGEND**

FARRINGTON HIGHWAY DRAINAGE IMPROVEMENTS  
Vicinity of Princess Kahanu Avenue  
Project No. 93A-01-12

Date: Oct. 2015

SHEET No. 1 OF 3 SHEETS