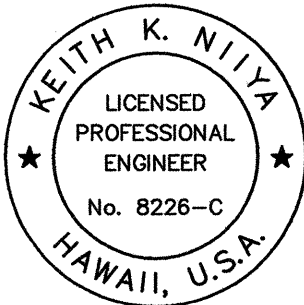


FED.ROAD DIST.NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
OAHU	HAW.	99C-01-13	2014	27	41

CONSTRUCTION NOTES

- Locations of existing underground structures and utilities such as pipelines, conduits, cables, etc., shown on plans are approximate only. It is not the intent of these plans to show the exact location of all underground utilities and structures. It is the responsibility of the contractor to verify the locations of all existing utilities with the respective owners. Existing utilities damaged by the contractor shall be repaired by the contractor at his own cost.
- The contractor shall verify and check all dimensions and details shown on the drawings prior to the start of construction. Any discrepancy shall be immediately brought to the attention of the engineer for clarification.
- The contractor shall notify all agencies to verify, tone and located their existing utilities within the project area prior to excavating. The contractor shall coordinate all work.
- The locations of the new traffic signal standards, traffic signal standards with mastarms, 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 traffic signal work shall conform to the requirements of the "Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 Edition", Federal Highway Administration (2009) as amended.
- Maintenance of traffic through the construction area shall be in accordance with Part VI of the "Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 Edition", Federal Highway Administration (2009) as amended and as specified in the specifications. the contractor shall furnish and maintain adequate barricades, blinkers, construction signs, etc., for the safety of the motoring public.
- At the end of each day's work, the contractor shall remove all equipment and other obstructions to permit free and safe passage of public traffic.



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

AUSTIN, TSUTSUMI & ASSOC. INC. LIC. EXP. DATE
APRIL 30, 2014

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL NOTES AND LEGEND

TRAFFIC OPERATIONAL IMPROVEMENTS
AT VARIOUS LOCATIONS
Vicinity of Kamehameha Highway and
Lumiaina Street
Project No. 99C-01-13

Scale: As Noted Date: Jan 2014

SHEET No. TS-1 OF 6 SHEETS

TRAFFIC SIGNAL NOTES (CONT.)

- Unless otherwise specified, all conduits shall be PVC schedule 40.
- All splicing shall be done in the pullboxes.
- Furnishing and installing the conduit stubouts (pullboxes to the edge of pavement) will not be paid for separately but shall be considered incidental to the various contract items.
- The concrete jacket for the conduit by-pass detail shown on Sheet TE-36 shall not be paid for separately but considered incidental to the various contract items. The engineer shall determine if a concrete jacket is required.
- All cable and elements for grounding shall be new.
- Cables between signal faces, pedestrian heads, CCTV cameras, and evp detectors and the nearest pullboxes are not called out on the plans, but shall be furnished and installed in sufficient numbers and lengths as required. Cost shall be incidental to various traffic signal contract items.
- Conduits between the traffic signal standard and the pullbox shall be in sufficient number as required. cost shall be incidental to the installation of the traffic signal standard foundation.
- The cost of the CCTV camera relocation shall be incidental to the traffic signal contract items.
- While modifying the existing traffic signal system, the contractor shall keep the existing system operational until the new traffic signal system can be put into service.
- All traffic signal hardware removed from the intersection shall be stockpiled and delivered to a location determined by the Engineer.
- The Contractor shall be responsible for any damages to the existing traffic signal facilities, including the traffic signal interconnect system. Any and all damages to these facilities shall be repaired by the contractor at his own cost in accordance with the requirements of the City and County of Honolulu and HDOT.
- The Contractor shall be responsible for any damages to the existing traffic fiber optic cable system. Any and all damages to these facilities shall be repaired by the contractor at his own cost in accordance with the requirements of the City and County of Honolulu and HDOT.
- The Contractor shall provide the necessary equipment (including but not limited to: Ethernet to Serial Data Converter, Serial [RS485] to FSK Converter, Ethernet Module, and Communication Cables), labor, and tools to provide communication between the traffic signal controller and the City's Traffic Management Center utilizing the existing fiber optic system located within the adjacent CCTV cabinet. The contractor shall also provide hard wired communication with the adjacent traffic signal controllers utilizing the existing interconnect cable. Cost shall be considered incidental to the various traffic signal items.
- The Contractor shall notify the Traffic Signal and Technology Division, Department of Transportation Services, three (3) working days prior to commencing work on the traffic signal system (Phone: 768-8387).

LEGEND

Standard traffic and pedestrian count down signal heads mounted on Type I Signal Standard, Height=10'

Pedestrian count down signal head mounted on Type I Signal Standard, Height=8'

12" R Y G Traffic signal head

12" R Y ↑ Traffic signal head

12" ← ← ← Traffic signal head

12" ← ← ← Traffic signal head

12" R Y G ← Traffic signal head

Pedestrian head with count down signal head

Evp detector

Type "A" pullbox

Replace existing with Type "A" pullbox

Type "B" pullbox

Replace existing with Type "B" pullbox

Type "C" pullbox

Replace existing with Type "C" pullbox

Loop detectors

Model 170 controller on new base

Type I traffic signal standard

Traffic signal heads mounted on Type II signal standard
L = Mast arm length
S = Spacing between heads

Traffic signal heads mounted on Type III signal standard
L = Mast arm length
S = Spacing between heads

Meter Pedestal

Pipe guards

Traffic signal conduits (underground)

Existing traffic signal head

Existing pedestrian signal head

Existing evp detector

Existing pullbox

Existing CCTV Camera

Existing loop detectors

Existing traffic signal heads mounted on existing Type III Signal Standard

Existing traffic signal facilities to be removed

TRAFFIC SIGNAL NOTES

- All traffic signal controller equipment shall be completely wired in the cabinet and shall control the traffic signals as called for in the plans.
- Signal indications during the clearance interval:
 - If a signal is G or ←G and will remain G or ←G during the next phase, it shall be G or ←G during the clearance interval.
 - If a signal is G or ←G and will become R or extinguished during the next phase, it shall be Y or ←Y during the clearance interval.
 - if a signal is R and will remain R or becomes G during the next phase, it shall remain R during the clearance interval.
- Back plates with a 5-inch border containing a 1-inch wide retro-reflective tape shall be installed on all mast arm mounted traffic signal heads as indicated on the plan sheets.
- 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.
- A solid #8 bare copper wire shall be pulled with the traffic control cable for equipment ground. Cost shall be incidental to the installation of the control cable.
- A solid #6 bare copper wire shall be pulled with the power cable servicing the Controller and CCTV cabinet for equipment ground. Cost shall be incidental to the installation of the power cable.
- All work for the installation or modification of the traffic signal system shall conform to the latest revisions of the "Hawaii Standard Specifications for Road and Bridge Construction, 2005" and the "Standard Plans" of the State of Hawaii, Department of Transportation, Highways Division, 2008 and as shown on these drawings.
- Traffic Signal Standards shall conform to "4.0 Modifications to AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals" as noted in HDOT "Design Criteria for Bridges and Structures", March 1, 2013.
- Conduits and pullbox locations as shown on the plans are schematic. They may be modified by the contractor with the approval of the engineer.
- The contractor shall install the controller and cabinet in the indicated location.

DATE	_____
SYNOPSIS PLOTTED BY	_____
DESIGNED BY	_____
TRACED BY	_____
DESIGNED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
No.	_____