#### TRAFFIC SIGNAL NOTES

- 1. 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.
- 2. All splicing shall be done in the pullboxes.
- 3. 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.
- 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. All Traffic signal controller equipment shall be completely wired in the cabinet and shall control the traffic signals as called for in the plans.
- 6. 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.
- 7. 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.
- 8. 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.
- 9. 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.
- 10. 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.
- 11. 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.
- 12. 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.
- 13. Before 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.
- 14. 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.
- 15. The Contractor shall notify the Traffic Control Branch, Department of Transportation Services, City & County of Honolulu, (phone no. 523-4589) two weeks prior to commencing any work on the traffic signal system.

#### TRAFFIC SIGNAL NOTES (CONTINUED)

- 16. The Department of Transportation Services, City & County of Honolulu, will assist the Engineer in construction inspection for the traffic signal system. The Contractor shall notify the Electrical and Maintenence Services Division, Department of Transportation Services, three (3) working days prior to commencing work on the traffic signal system (phone no. 523-4589).
- 17. The top of all traffic signal pullboxes shall be constructed as specified in Section 622.03(C)(8) "Pullboxes" of the Special Provisions.

### HIGHWAY LIGHTING NOTES:

- 1. All luminaires to be 250 watt high pressure sodium.
- 2. Existing luminaires or ductlines will not be removed or de-energized until its replacement luminaire or ductline is placed in service.
- 3. Existing arms, luminaires, underground cables and appurtenances that will be removed shall be fully dismantled and stock-piled as directed by the Engineer. Existing pullboxes and pole footings or foundations shall be removed and disposed of by the Contractor.
- 4. The Contractor shall exercise extreme caution when the excavation and construction crosses, or is in close proximity of, underground utilities, signal cable facilities, traffic signal conduits, and highway lighting conduits. In addition, the Contractor shall maintain a minimum 13'-0" clearance for his equipment while working close to and/or under overhead facilities. Any damages to the existing underground facilities shall be repaired and paid for by the Contractor.
- 5. The Contractor shall be liable for any damages to HECo facilities, and shall immediately report such damages to HECo's Trouble Dispatcher at 543-7864.
- 6. When trench excavation is adjacent to existing structures or facilities, the Contractor is responsible for properly sheeting and bracing the excavation and stabilizing the existing ground to render it safe and secure from possible slides, cave-ins, and settlement, and for properly supporting existing structures and facilities with beams, struts, or underpinning to fully protect it from damage.
- 7. The Contractor shall remove all conduits, cables, and other connections from removed highway lighting standards to the respective pullboxes.
- 8. All splices shall be done in pullboxes for slip-based and breakaway highway lighting standards or in transformer bases for non-breakaway highway lighting standards.
- 9. The locations of the highway lighting standards, pullboxes, and conduits 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.
- 10. All existing highway lighting pullboxes to be adjusted shall be adjusted such that the top of the pullbox is as specified in Section 622.03(C)(8) "Pullboxes" of the Special Provisions.
- 11. The Contractor shall remove all cables, then plug both ends of all ductlines to be abandoned in place. This work will not be paid for separately, but shall be considered incidental to the various roadway lighting contract items.

FED. ROAD<br/>DIST. NO.STATEFED. AID<br/>PROJ. NO.FISCAL<br/>YEARSHEET<br/>NO.TOTAL<br/>SHEETSHAWAIIHAW.DE-0200(803)20005979

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

### TRAFFIC SIGNAL & HIGHWAY LIGHTING NOTES

KAMEHAMEHA HIGHWAY

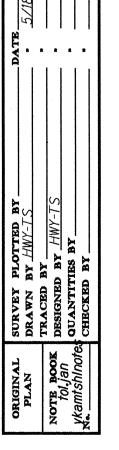
Intersection Improvements at

Leilehua Golf Course Road

Fed. Aid Project No. DE-0200(803)

Date: May 18, 2000

SHEET No. TE1 OF 13 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	DE-0200(803)	2000	60	79

## TRAFFIC SIGNAL AND HIGHWAY LIGHTING LEGEND

$\wedge$	
	Traffic Signal Conduit (Shown on Traffic Signal Plans)
†s	Traffic Signal Conduit (Shown on Other Plan Sheets)
$\sqrt{2}\sqrt{3}$	Conduit Run Numbers
A B C	Equipment description, installation or item no.
M	Traffic Signal Master Controller Door Indicates Front of Cabinet
C	Traffic Signal Controller Door Indicates Front of Cabinet
00	Meter Pedestal
$\triangleleft$ —	12" RYG Traffic Signal Head
<b>4</b>	12" RY↑ Traffic Signal Head
<b>◆</b>	12" RY← Traffic Signal Head
	12" RY← Traffic Signal Head (Programmed Visibility)
44	12" RYG $\frac{G}{Y}$ Fiber Optic Traffic Signal Head
	Type I Standard and Attached Signals (Shown on Traffic Signal Plans)
	Type I Traffic Signal Standard with Foundation. (Shown on Other Plan Sheets)
24'   12'	Type II Standard with Signal Mast Arm and Attached Signals (Nos. indicates mast arm length \$\phi\$ distance between signal heads as specified on plans) (Shown on Traffic Signal Plans)
	Type II Traffic Signal Standard with Foundation. (Shown on Other Plan Sheets)
24'   12'   V	Type III Standard with Luminaire and Signal Mast Arm and Attached Signals (Nos. indicates mast arm lengths ♥ distance between signal heads as specified on plans)
Y	Flashing Beacon, One Signal Section, "Y" indicates 12" Yellow Lens
$\leftarrow \otimes$	Opticom Receiver (Arrow indicates direction detector faces)
•	Pipe Guard
	Pedestrain Signal Head
	New Type A Pullbox

New Type B Pullbox

New Type C Pullbox

Loop Detectors

 $\boxtimes$ 

	Existing Highway Lighting Pullbox to Remain (These Pullboxes are Not to Scale on Hwy, Ltg. Plan)
	Existing Highway Lighting Pullbox to be Removed (These Pullboxes are Not to Scale on Hwy, Ltg. Plan)
	Existing Highway Lighting Pullbox to be Adjusted (These Pullboxes are Not to Scale on Hwy, Ltg. Plan)
ħ[	Exist. Underground Highway Lighting Conduit to Remain.
-×-h1×	Exist. Underground Highway Lighting Conduit to be Removed.
-AIP - the - AIP -	Exist. Underground Highway Lighting Conduit to be Abandoned In Place.
——HL——	New Underground Highway Lighting Conduit.
——H <b>\$</b> T——	New Underground Conduits - Combined Highway Lighting # Traffic Signal.
<b>○</b>	Exist. Highway Lighting Standard to Remain.
$\sim \hspace{-0.2cm} \nearrow$	Exist. Highway Lighting Standard to be Removed.
•—•	New Highway Lighting Standard.
(DB)	Direct Buried Conduit(s)
(CE)	Concrete Encased Conduit(s)
CAP	Corrugated Aluminum Pipe (Dimensions = 29"x18")
BC	Bare Copper
A.I.P.	Remove Existing Wires and Abandon Conduit In Place.
	Tree

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# TRAFFIC SIGNAL & HIGHWAY LIGHTING LEGEND

KAMEHAMEHA HIGHWAY Intersection Improvements at Leilehua Golf Course Road

Fed. Aid Project No. DE-0200(803)

Date: May 18, 2000

SHEET No. TE2 OF 13 SHEETS