	LEGEND	
<u>NEW</u>	LLOLIND	EXISTING
	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'	O
\longrightarrow	Programmed visibility head (PVH)	\longrightarrow
	12" R Y ↑ Traffic signal head Programmed visibility head (PVH)	>
	12" R Y↑ Traffic signal head	
$\longrightarrow \triangleright$	12" R Y G Traffic signal head	>
	Pedestrian head with count down signal head	
→	12" R Y← Traffic signal head	
$\rightarrow \downarrow \triangleright$	12" R Y G $\stackrel{Y}{\leftarrow}$ Dual-LED traffic signal head	
$\longrightarrow \hspace{-0.5cm} \blacktriangleright$	12" R Y ← Traffic signal head	
	12" R Y G ← Traffic signal head Programmed visibility head (PVH)	\rightarrow
40,	Traffic signal heads mounted on Type II Signal Standard 40' M.A.: 12' between heads	
30.	Traffic signal heads mounted on Type III Signal Standard 30' M.A.: 10' between heads	
\bowtie	CCTV Camera	
\Longrightarrow	EVP Detector	$\otimes\!$
	Type "A" pullbox	
	Type "B" pullbox	
	Type "C" pullbox	
	Existing pullbox	
#	Replace existing pullbox with new Type "A" pullbox	
	Replace existing pullbox with new Type "B" pullbox	
	Replace existing pullbox with new Type "C" pullbox	
	Exist. Model 170 controller	
	New Model 170 controller on new base	
	New Traffic Monitoring and Signal Control System on new base	
	Loop detectors	
5 	Meter pedestal	00
- 6-	Sign	- 0
•TS	New traffic signal standard Traffic signal conduits (underground)	oTS
	Traffic signal conduits/support wire	

(overhead)

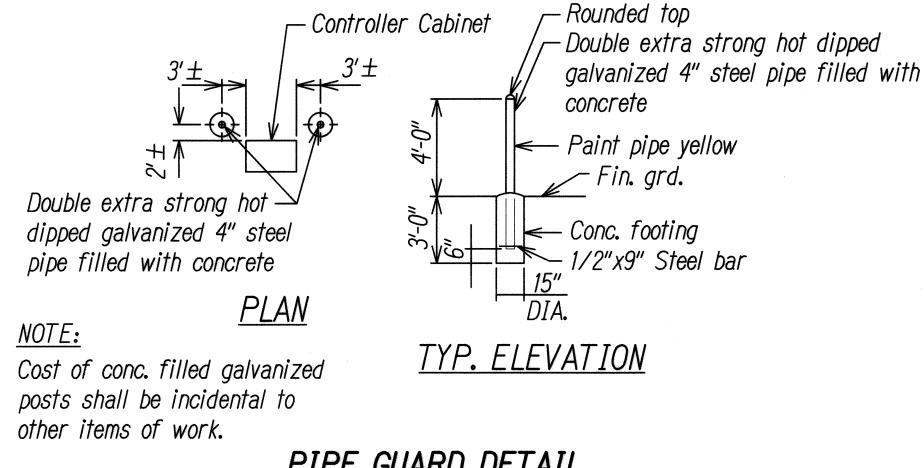
TRAFFIC SIGNAL NOTES

- 1. All traffic signal controller equipment shall be completely wired in the cabinet and shall control the traffic signals as called for in the plans.
- 2. Signal indications during clearance interval:
 - A. 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.
 - B. If a signal is G or G and will become R or extinguished during the next phase, it shall be Y or G during the clearance interval.
 - C. If a signal is R and will remain R or becomes G during the next phase, it shall remain R during the clearance interval.
- 3. 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.
- 4. 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.
- 5. Conduits and pullbox locations as shown on the plans are schematic. They may be modified by the contractor with the approval of the engineer.
- 6. The contractor shall install the controller and cabinet in the indicated location.
- 7. 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 Department of Transportation, Highways Division and as shown on these drawings.
- 8. All splicing shall be done in the pullboxes.
- 9. 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.
- 10. The concrete jacket for the conduit by-pass detail shown on Sheet TS-33 shall not be paid for separately but considered incidental to the various various
- 11. All cable and elements for grounding shall be new.
- 12. Cables between signal faces, pedestrian heads, and EVP detectors and the nearest pullbox are not called out on the plan, but shall be furnished and installed in sufficient numbers and lengths as required. Cost shall be incidental to various traffic signal contract items.
- 13. 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.
- 14. Unless otherwise specified, all conduits shall be concrete encased PVC schedule 80.
- 15. The contractor shall notify the Traffic Control Branch, Department of Transportation Services, three (3) working days prior to commencing work on the traffic signal system (Phone: 768-8388).
- 16. While modifying the existing traffic signal systems, the contract shall keep the existing system operational until the new traffic signal system can be put into service.
- 17. The contractor shall salvage all existing heads, standards, and cables not used in the new system. Cost shall be incidental to the various contract items. Put into service.
- 18. All traffic signal hardware removed from the intersection shall be stockpiled and delivered to a location determined by the Engineer.

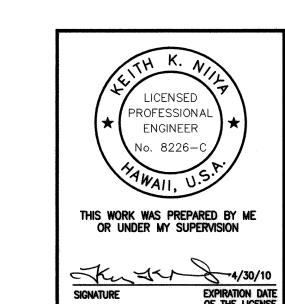
	FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	HAWAII	HAW.	99D/G-01-08	2008	20	89

CONSTRUCTION NOTES

- Locations of existing underground structures and utilities such as pipe-lines, 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.
- 3. The contractor shall notify all agencies to verify, tone and locate their existing utilities within the project area prior to excavating. The contractor shall coordinate all work.
- 4. The locations of the new traffic signal standards, traffic signal standards with mast-arm, 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, 2003 Edition", Federal Highway Administration (2003) 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, 2003 Edition", Federal Highway Administration (2003) as amended and as specified in the special provisions. The contractor shall furnish and maintain adequate barricades, blinkers, construction signs, etc., for the safety of the motoring public.
- 7. At the end of each day's work, the contractor shall remove all equipment and other obstruction to permit free and safe passage of public traffic.



PIPE GUARD DETAIL
NOT TO SCALE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL NOTES & LEGEND

KAMEHAMEHA HIGHWAY
TRAFFIC OPERATIONAL IMPROVEMENTS
VICINITY OF ACACIA ROAD TO CENTER DRIVE
PROJECT NO. 99D/G-01-08

EXPIRATION DATE OF THE LICENSE Scale: None

Date: April 2008
36 SHEETS

SHEET No. *TS-01* OF *36*