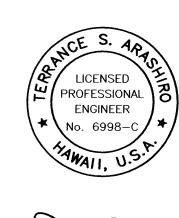


LEGEND AND NOTES

XXX Remove Exist. Pavement Marking

For additional pavement marking legends, notes and details, see sheet 62 and 63.



EXP. 4/30/1

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGNAGE & PAVEMENT

MARKING PLAN

HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1

Lahainaluna Rd. to Hokiokio Pl.

Federal Aid Project NO. NH-030-1(38)

Scale: 1"=20' Date: November 23, 2009

SHEET No. 1 OF 5 SHEETS

FISCAL YEAR

2010

100

SHEETS

213

NEW	<u>LEGEND</u>	EXISTING	
	Standard traffic and pedestrian count down signal heads mounted on Type I Signal Standard, height=10'		
── ▷	12" R Y G Traffic signal head	<u>r</u> >	
	12" R Y ↑ Traffic signal head		
→	12" R←← Traffic signal head	-	
\rightarrow	12" R Y G $\frac{Y}{G}$ Dual-LED traffic signal head	>	
8 40, √ 12, √	Traffic signal heads mounted on Type II Signal Standard 40' M.A.: 12' between heads EVP Detector		
-	Type "A" pullbox		
	Type "B" pullbox		
	Type "C" pullbox		
	Existing pullbox		
C	Model 170 controller on new base		
	Loop detectors		
5 0	Meter pedestal	5=3	
0	Sign	-3-	
•	New traffic signal standard Traffic signal conduits (underground)	oTS	

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 $\stackrel{\checkmark}{\leftarrow}$ and will remain G or $\stackrel{\checkmark}{\leftarrow}$ during the next phase, it shall be G or $\stackrel{\checkmark}{\leftarrow}$ 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, 2008 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 TE-36 of the "Standard Plans" of the Department of Transportation, Highways Division, 2008 shall not be paid for separately but considered incidental to the various contract items.
- 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. Traffic signal standards shall conform to latest revision of the "standard specifications for structural supports for highway signs, luminaires and traffic signals."

D. ROAD IST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-030-1(38)	2010	101	213

CONSTRUCTION NOTES

- 1. 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.
- 2. 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.
- 5. 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.
- 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.



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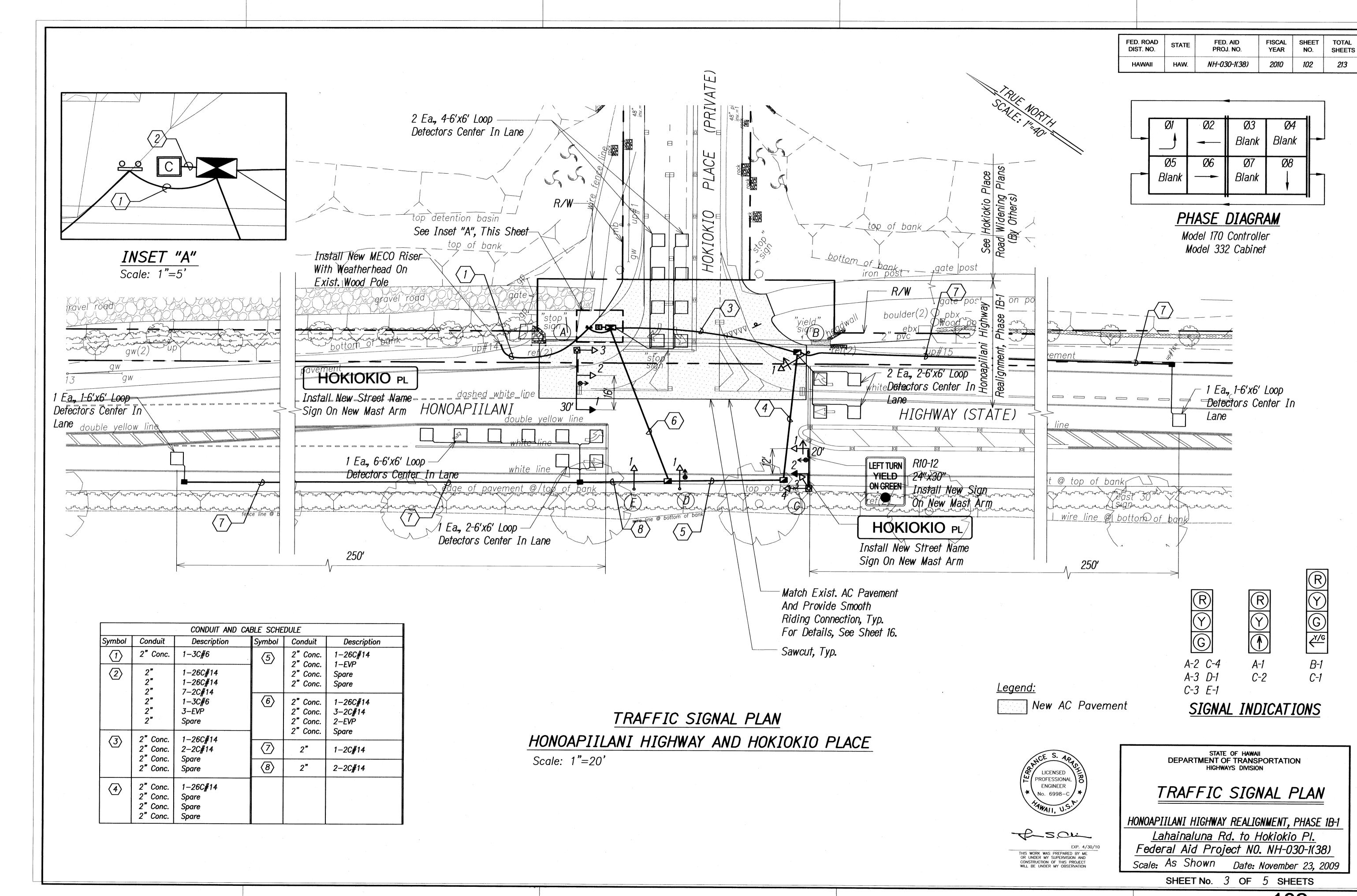
TRAFFIC SIGNAL NOTES AND LEGEND

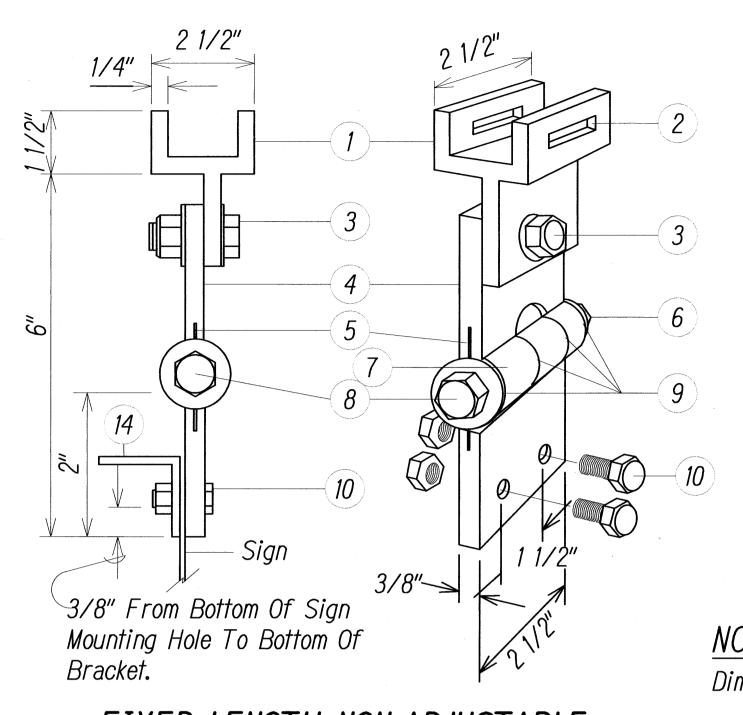
HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1

<u>Lahainaluna Rd. to Hokiokio Pl.</u> Federal Aid Project NO. NH-030-1(38)

Scale: NA Date: November 23, 2009

SHEET No. 2 OF 5 SHEETS





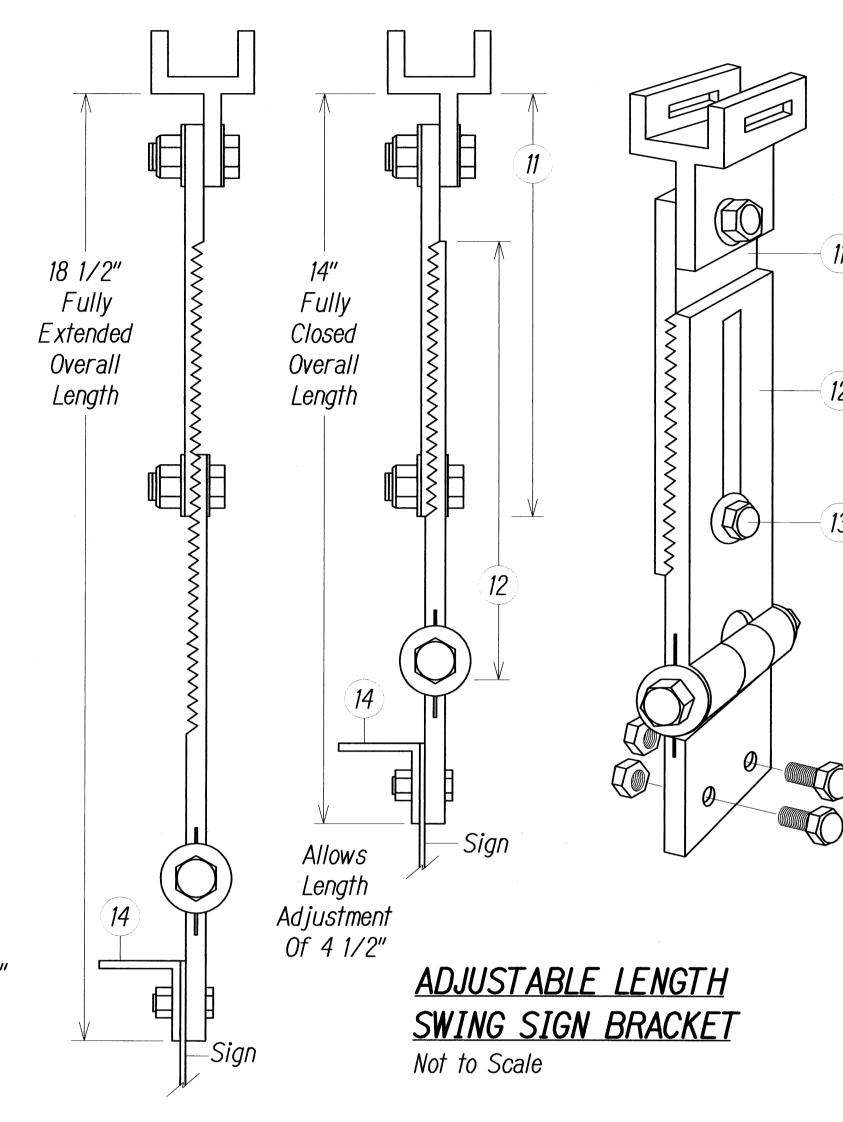
All Aluminum 6061T6 Alloy And Stainless Steel Components.

<u>NOTES:</u>
Dimensions may vary slightly.

FIXED LENGTH NON-ADJUSTABLE SWING SIGN BRACKET

NOT TO SCALE

- Pivotal Upper Bracket
- 2 1 5/8" x 1/4" Slot for double strapping to electrolier mast arm. (M2G-34S(HD) .030" x 3/4" Heavy Duty Stainless Steel Strap with M2G-34B(HD) Buckle recommended.)
- 3 1/2" 13 x 1 1/2" Stainless Steel Hex Head Bolt with Stainless Steel Hex Lock Nut and 1/16 " Stainless Steel Washer (both sides). Allows upper bracket to pivot and align with electrolier mast arm.
- (4) 6" Overall drop with Fixed Length Sign Bracket
- (5) Stainless Steel Dampener Spring (Removable)
- 6 Stainless Steel Hex Lock Nut with 1/16" Stainless Steel Washer
- 7) 1" O.D. Axle Housing
- (8) 1/2" 13 x 4" Stainless Steel Hex Head Bolt with 1/16" Stainless Steel Washer
- (9) Oilite Bushing
- Sign Mounting Sets, consisting of two each 5/16" 18 x 1" Stainless Steel Hex Head Bolt with Stainless Steel Hex Lock Nut. Two holes on 1 1/2" centers provide positive lock sign mounting to bracket.
- (11) 8 1/4" overall length Upper Adjustable Sign Bracket section
- 9" overall length Lower Adjustable Sign Bracket section, including Axle Housing (8" overall length to top of Axle Housing)
- 13) 1/2" 13 x 1 1/2" Stainless Steel Hex Bolt with Stainless Steel Hex Lock Nut and 1/16" Stainless Steel Washers (both sides). Loosen lock nut, adjust bracket teeth to level sign.
- (14) 1 1/4" x 1 1/4" x 1/8" Aluminum Angle



6'-2"

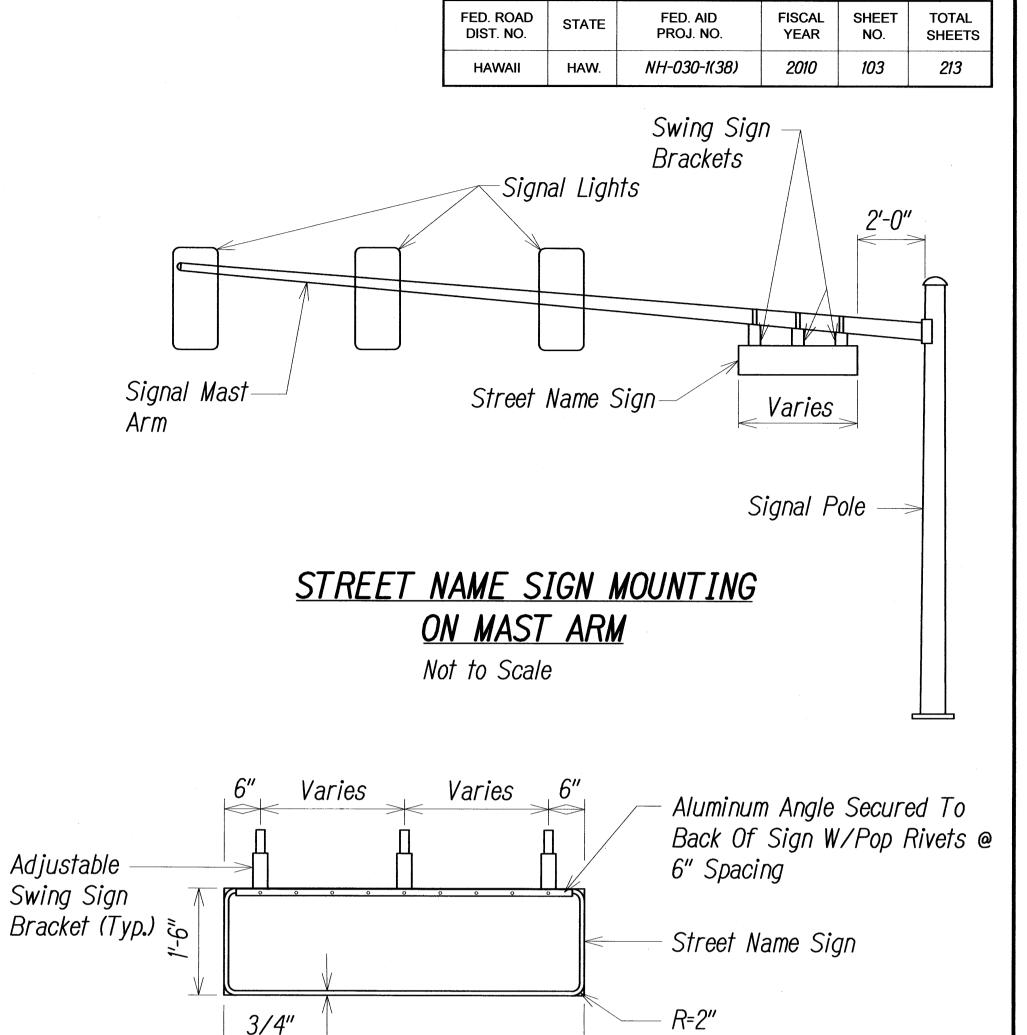
4'-1 ¹¹/16"

HOKIOKIO

0

2

-2" Radius, Typ.



PANEL & SWING BRACKET LAYOUT FOR STREET NAME SIGN

Varies

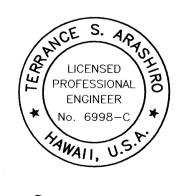
(Rear View)

Not to Scale

- ³/4"Border

NOTES:

- 1. Street name signs shall have white message and border on green background.
- 2. All sign faces shall be completely reflectorized with Type "B" reflective sheeting.
- 3. The sign shall be in conformance with the requirements of Section 750 of the Standard Specification.



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HIGHWAYS DIVISION

STREET NAME SIGN DETAILS

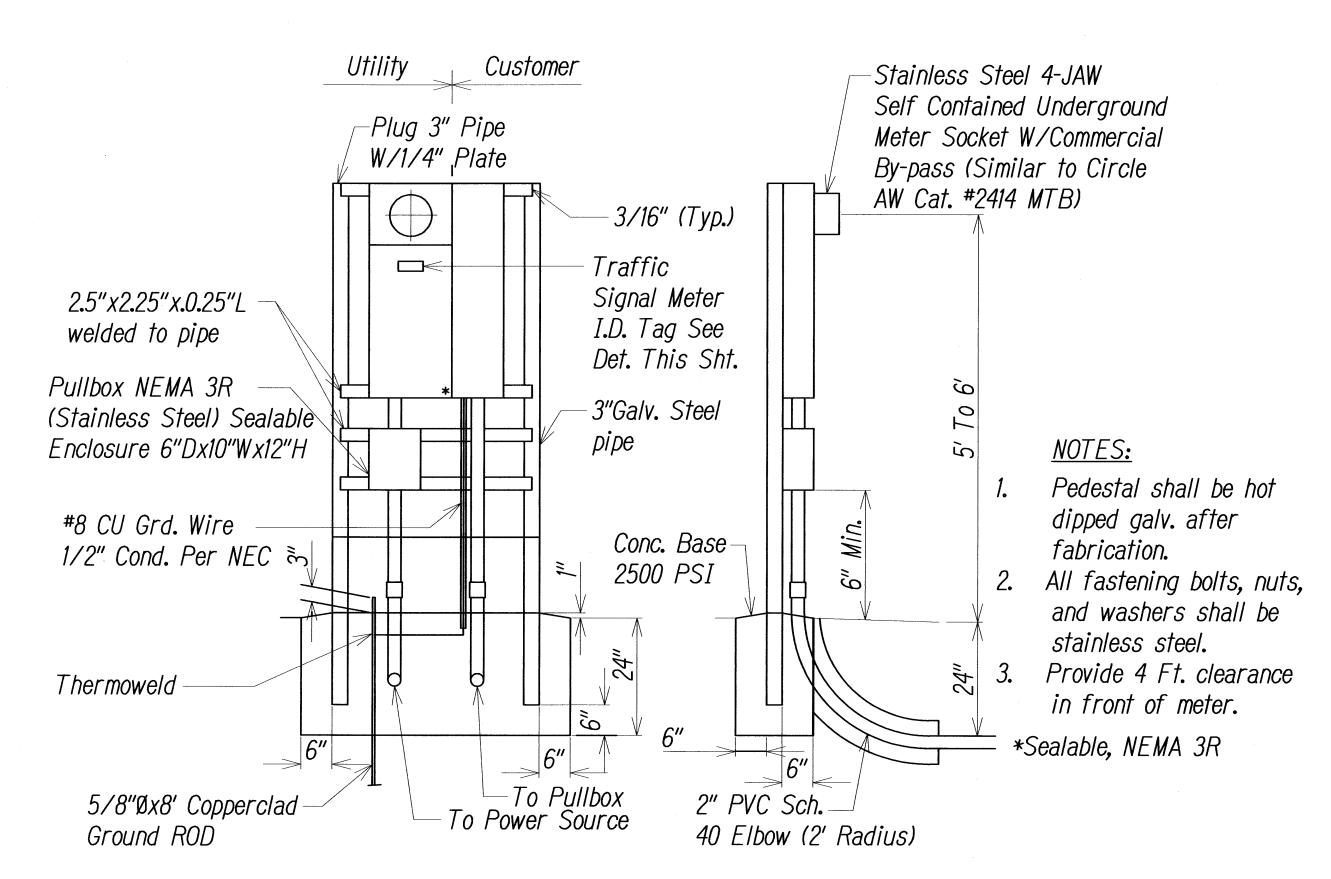
HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1

Lahainaluna Rd. to Hokiokio Pl.

Federal Aid Project NO. NH-030-1(38)

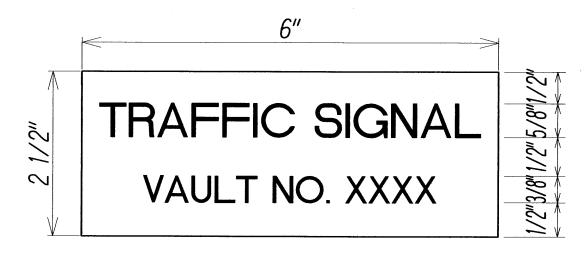
Scale: As Shown Date: November 23, 2009

SHEET No. 4 OF 5 SHEETS



METER PEDESTAL FOR UNDERGROUND ELECTRICAL SERVICE DETAIL

Not to Scale



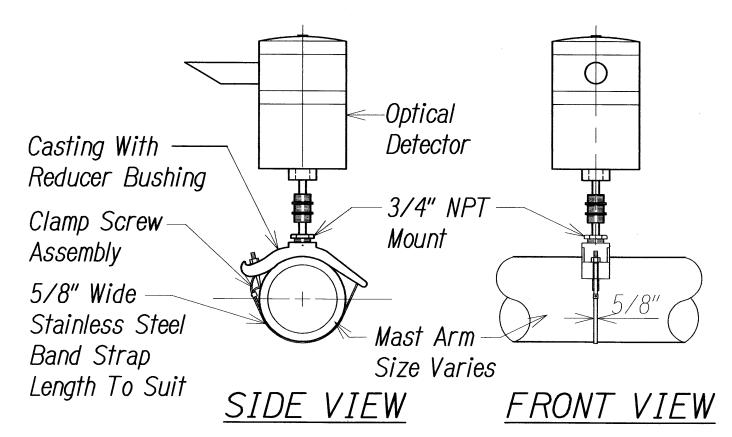
- Use 3-PLY laminated flexible plastic, black-white-black thickness: black cap sheet 0.010", white base sheet 0.052", black base sheet 0.010".
- 2. Attach to meter box using scotch 3M brand very high bond (VHB) double coated acrylic foam tape or equivalent.
- 3. Letters/numbers shall be 1/16" stroke, (white in color).
- 4. Letters/numbers shall be inscribed by cutting through "Black cap sheet" to expose white letters/numbers.

METER I.D. TAG DETAIL

Not to Scale

FED. ROAD DIST. NO. STATE FED. AID PROJ. NO. FISCAL SHEET NO. SHEETS

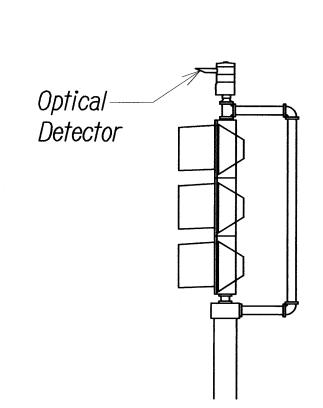
HAWAII HAW. NH-030-1(38) 2010 104 213



NOTES:

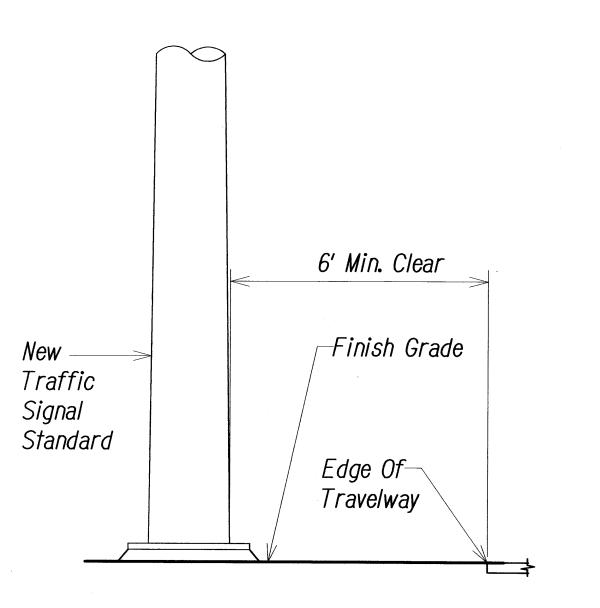
- 1. Optical detector shall be "Model 711 preemption detector", or approved equal, unless noted otherwise in the special provisions.
- 2. Support saddle assembly shall be "ASTRO MINI-BRAC, AB-0132-29", or approved equal, unless noted otherwise in the special provisions.

OPTICAL DETECTOR FOR MAST ARM MOUNTING Not to Scale



OPTICAL DETECTOR FOR POST TOP MOUNTING

Not to Scale



TRAFFIC SIGNAL STANDARD DETAIL

Not to Scale

10"Wx12"Hx6"D — 4 JAW, 100A Meter Socket, 120/240, 10, 3W W/Commercial By-pass \$ 2P 50A Breaker (Sealable)

To MECO

2" Conduit, 3# 4 # 8 Ground to Ground — 2" Conduit, 3# 6 To Pole ROD Per NEC # 1# 8 Ground

ONE-LINE DIAGRAM

Not to Scale



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HIGHWAYS DIVISION

TRAFFIC SIGNAL MISCELLANEOUS DETAILS

HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1

Lahainaluna Rd. to Hokiokio Pl.

Federal Aid Project NO. NH-030-1(38)

Scale: As Shown Date: November 23, 2009

SHEET No. 5 OF 5 SHEETS