FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-031-1(012)	2013	ADD.4	54

GENERAL NOTES (Cont.):

30. Where pedestrian walkways exist, they shall be maintained in a safe and passable condition, or other facilities for pedestrians shall be provided. Passages between walkways at intersections shall likewise be provided at all times.

31. Drainage design of the pavement is to be in accordance with the Pavement Design Manual published by the Materials Testing and Research Branch, Highways Division, March 2002.

32. Normal working hours shall be from 7:00 a.m. to 3:30 p.m., Monday through Friday, excluding holidays. Work performed between 3:30 p.m. and 7:00 a.m. of the following day is "night work".

33. Lane closures will be allowed only from 8:30 a.m. to 3:00 p.m., Monday through Friday. Exceptions to lane closure hours specified require written acceptance by the Engineer. No increase in contract price or contract time will be given for lane closure restrictions specified. /1

34. The Contractor shall be held liable for any damages incurred to the existing landscaping as a result of his operations.

35. After the project is completed, the Contractor shall restore grades and groundcover in the project limits to a condition equal or better than existing before such damage or injury was done.

36. The Contractor shall verify 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.

37. The Contractor shall notify the Engineer upon uncovering any potential historic artifacts or items of archaeological significance. See State Historic Preservation Notes on sheet G-7.

38. The existing improvements on the premises and in adjacent areas that are not to be removed, shall be preserved and protected. Any and all damages resulting from the Contractor's construction operations shall be replaced and repaired to original condition, to the satisfaction of the Engineer.

39. The Contractor shall phase work to minimize traffic interruption to the public. The Contractor shall submit a Construction Phasing Plan for review and approval by the Engineer four (4) weeks prior to the start of Construction.

40. All steel plates will have a non-skid surface.

41. The Contrator shall coordinate construction of electrical, telephone, cable television and waterline relocation work with Maui Electric Company. Hawaiian Telcom, Oceanic Time Warner Cable, Department of Water Supply, Wastewater Reclamation Division, and The Gas Co., respectively. All coordination shall be considered incidental to Roadway Excavation work.

42. The Contractor shall consider using brackish water or reclaimed water for irrigation or dust control.

GRADING NOTES

1. All grading work shall be done in accordance with Chapter 14, Articles 13, 14, 15 and 16, as related to Grading, Soil Erosion and Sediment Control, of the Revised Ordinances of Honolulu, 1990, as Amended.

2. No Contractor shall perform any grading operation so as to cause falling rocks, soil or debris in any form to fall, slide or flow onto adjoining properties, streets or natural watercourses. Should such violations occur, the costs incurred for any remedial action shall be payable by the Contractor.

3. The Contractor, at his own expense, shall keep the project area and surrounding area free from dust nuisance. The work shall be in conformance with the Air Pollution Control Standards contained in The Hawaii Administrative Rules, Title 11, Chapter 60.1, "Air Pollution Control".

4. The underground pipes, cables or ductlines known to exist by the Engineer from his search of records are indicated on the plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the area. Wherever connections of new utilities are shown on the plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines.

5. Adequate provisions shall be made to prevent surface waters from damaging the cut face of an excavation or the sloped surfaces of a fill. Furthermore, adequate provisions shall be made to prevent sediment-laden runoff from leaving the site.

6. All slopes and exposed areas shall be sodded or planted as soon as final grades have been established. Planting shall not be delayed until all grading work has been completed. Grading to final grade shall be continuous, and any area within which work has been interrupted or delayed shall be planted.

7. Fills on slopes steeper than 5:1 shall be keyed.

8. The Engineer shall be informed of the location of the borrow/disposal site for the project when the application for a grading permit is made. The borrow/disposal site must also fulfill the requirements of the grading ordinance.

9. No grading work shall be done on Saturdays, Sundays and holidays at any time without prior notice to the District Engineer, provided such grading work is also in conformance with The Community Noise Control Standard Contained in The Hawaii Administrative Rules, Title 11 Chapter 46, "Community Noise Control".

10. The limits of the area to be graded shall be flagged before the commencement of the grading work.

11. All grading operations shall be performed in conformance with the applicable provisions of the water pollution control and water quality standards contained in Hawaii Administrative Rules, Title 11 Chapter 55, "Water Pollution Control" and Title 11 Chapter 54, "Water Quality Standards" and if applicable, the NPDES permit for the project.

12. Where applicable and feasible the measures to control erosion and other pollutants shall be in place before any earth moving phase of the grading is initiated.

13. Temporary erosion controls shall not be removed before permanent erosion controls are in-place and established.

14. Temporary erosion control procedures shall be submitted for approval prior to application for grading permit.

15. If the grading work involves contaminated soil, then all grading work shall be done in conformance with applicable State and Federal requirements.

16. Non-compliance to any of the above requirements shall mean immediate suspension of all work, and remedial work shall commence immediately. All remedial work shall be billed to the Contractor. All remedial work shall be at no cost to the State. Furthermore, violators shall be subjected to administrative, civil and/or criminal penalties.

17. Prior to placement of any fill, the existing ground shall be scarified to a depth of six inches and compacted to a minimum of 90 percent compaction as determined by AASHTO T-180.

18. After clearing and grubbing, additional roots and other vegetation found in the upper 6 to 8 inches shall be removed.

19. Construction observation and field density testing shall be performed by the State. Where test and/or observations indicate that the density of uniformity of any portion of the fill is inadequate, that portion shall be removed and reworked until the required density or uniformity has been satisfactorily obtained.

4/10/2013	/1	Revised Notes
Date		Revision

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

NOTE BOOK | No.

T:/16392A-TRAFFIC OPERATIONS IMPROVEMENTS-MAUI/CADD/SHEETS/notes_02.dgn

DEXTER S. EJI
LICENSED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 04/30/14 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

PIILANI HIGHWAY
TRAFFIC OPERATION IMPROVEMENTS AT OHUKAI ROAD
FEDERAL AID PROJECT NO. CMAQ-031-1(012)

Scale: NONE Date: March 2013

SHEET No. G-3 OF 16 SHEETS

ADD. 4

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-031-1(012)	2013	ADD.32	54

PAVEMENT MARKING LEGEND:

- (A) 4" White Stripe with Type C Markers at 40' o.c.
- (B) 4-Type A Markers and Type C Markers at 40' o.c.
- (C) 4" White Stripe with 4-Type A Markers at 40' o.c. and Type C Markers at 20' o.c.
- (D) 4" White Guide Line
- (E) 4" White Stripe
- (F) 8" White Stripe with Type C Markers at 20' o.c. (100 LF)
- (G) 8" White Stripe with Type C Markers at 20' o.c.
- (H) 12" Stop Bar
- (I) 12" White Chevrons
- (J) 12" Yellow Transverse Stripe
- (K) 4" Double Yellow Stripe with Type D Markers at 20' o.c.
- (L) 4" Double Yellow Stripe with Type H Markers at 20' o.c.
- (M) Yield Line. The circled number indicates the number of lanes for payment.
- (N) 12" Solid Yellow Transverse Stripe
- (O) 12" White Channelizing Stripe
- (P) 4" Yellow Guide Line
- (Q) Pavement Arrow
- (R) Pavement Word

ONLY

- (S) Crosswalk and stop line. All stop lines shall be 10'-0" from crosswalk unless otherwise noted. The circle number indicates the number of lanes for payement (Tape, Type III or Thermoplastic Extrusion)

SIGNING LEGEND:

- (A) Existing sign(s) to remain
- (B) Relocate existing sign(s) on new post(s)
- (C) Relocate existing sign(s) on new TSL pole
- (D) Remove existing sign(s) and post(s)
- (E) New sign & post(s)
- (F) New sign(s) on TSL pole
- (G) Relocate existing reflector post 2' from edge stripe
- (H) Remove and salvage existing Sign on TSL pole
- (I) New RM-2 on post @ 35' o.c. behind guardrail.

New or Relocated Sign (Single & Double Post)

Existing Sign

OM2-2V Reflector Marker

SIGNING NOTES:

1. Sign details shall conform to the latest editions and amendments of the following FHWA publications: "Manual on Uniform Traffic Control Devices for Streets and Highways", "Standard Highway Signs" and "Standard Alphabets for Highway Signs".
2. For Miscellaneous Sign Details, see Standard Plan TE-01 to TE-18.
3. Existing Signs to be removed shall be disposed of by the Contractor. Removal of signs shall also include the removal of post and foundation to a minimum height of 1-foot below the ground.
4. The Contractor shall backfill all holes, depressions and pits left by the removal of the existing signs with embankment material and grass all areas exposed in accordance with Specifications Section 618-Grassed Surfaces.
5. The cost of trimming existing vegetation for installation of the sign and to provide a clear view of the sign shall be considered incidental to the sign.
6. ⚠1 The cost of (G) Relocate existing reflector posts 2' from edge stripe shall be considered incidental to the various contract items.
7. ⚠1 The cost of installing (I) New RM-2 on post @ 35' o.c. behind guardrail shall considered incidental to the various contract items.

PAVEMENT MARKING NOTES:

1. Removal of existing conflicting pavement markings on Ohukai Road and Piilani Highway shall be considered incidental to the various contract items.
2. All pavement striping, legends and symbols shall be retroreflective thermoplastic compound pavement markings.
3. Location of pavement markers is shown schematically. For exact location of markers in relation to stripe, see Standard Plans TE-26, TE-27 & TE-28.
4. The Contractor shall remove all RM-2 Markers along the roadside and within the pavement area which conflict with the proposed construction.

ABBREVIATIONS:

RM	Reflector Markers

Date		Revision
4/10/2013	⚠1	Added Notes

DATE
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DEXTER S. EJI
LICENSED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

04/30/14
EXPIRATION DATE OF THE LICENSE

SIGNING AND PAVEMENT MARKINGS NOTES AND LEGEND

PIILANI HIGHWAY
TRAFFIC OPERATION IMPROVEMENTS AT OHUKAI ROAD
FEDERAL AID PROJECT NO. CMAQ-031-1(012)

Scale: NONE Date: March 2013

SHEET No. C-15 OF 29 SHEETS

ADD. 32

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-031-1(012)	2013	ADD. 37	54

Material List				
Pole ⬡	Base Type	Standard Type	Mounting Type	PPB Assembly
A	*	II-40	(1) Type VI	
			(2) Type VI	
			(3) Opticom (Horiz.)	
			(4) Type VI	
			(5) Type IV	
B	*	I-10	(1) Type I (ped head)	1
C	*	I-8	(1) Type I (ped head)	1
D	*	II-40	(1) Type VI	
			(2) Opticom (Horiz.)	
			(3)(4) Type VI	
			(5)(6) Type V	
E	*	I-10	(1) Type I	
			(2) Type IV (ped head)	1
F	*	I-10	(1) Type I (ped head)	1
G	*	II-40	(1) Type VI	
			(2) Type VI	
			(3) Opticom (Horiz.)	
			(4) Type VI	
			(5) Type IV	
H	*	I-10	(1) Type I	
			(2) Type IV (ped head)	1
I	*	II-40	(1) Type VI	
			(2) Type VI	
			(3) Opticom (Horiz.)	
			(4) Type VI	
			(5)(6) Type V	
			(7) Type IV	
J	*	I-8	(1) Type I (ped head)	1

* For Traffic Signal Pole Base, see Std. Plan TE-32, TE-33, TE-33A, and TE 33A.2

Cable and Conduit Schedule						
Run △	Conduit Size	Type 1 Signal Control 26C#14	Type 2 PPB/ Loops 2C#14	Type 6 Power 3C#6	Type 7 Opticom 3C#20	Other
1	2-2"	2				
	2"		8			
	2"				2	
	⚠ 2"	Spare				
2	2-2"	2				
	2"		8			
	2"				1	
	⚠ 2"	Spare				
3	2-2"	2				
	2"		5			
	2"				1	
	⚠ 2"	Spare				
4	2-2"	2				
	2"		1			
	2"				1	
	⚠ 2"	Spare				
5	2"		1			
6	2"(E)		Exist.			
7	2"(E)		Exist.			
8	2-2"	2				
	⚠ 2"	Spare				
9	2-2"	2				
	2"				1	
	⚠ 2"	Spare				
10	2-2"	2				
	2"		3			
	2"				1	
	⚠ 2"	Spare				
11	2"		1			
12	2"(E)		Exist.			
13	4-2"	4				
	2-2"		15			
	2"				1	
	⚠ 2"	Spare				
14	2"			1		

4/10/2013	1	Revised Spare Conduits
Date		Revision

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DEXTER S. FUJI
LICENSED PROFESSIONAL ENGINEER
No. 4739-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

04/30/14
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL PLAN
MATERIAL LIST AND CABLE AND CONDUIT SCHEDULE

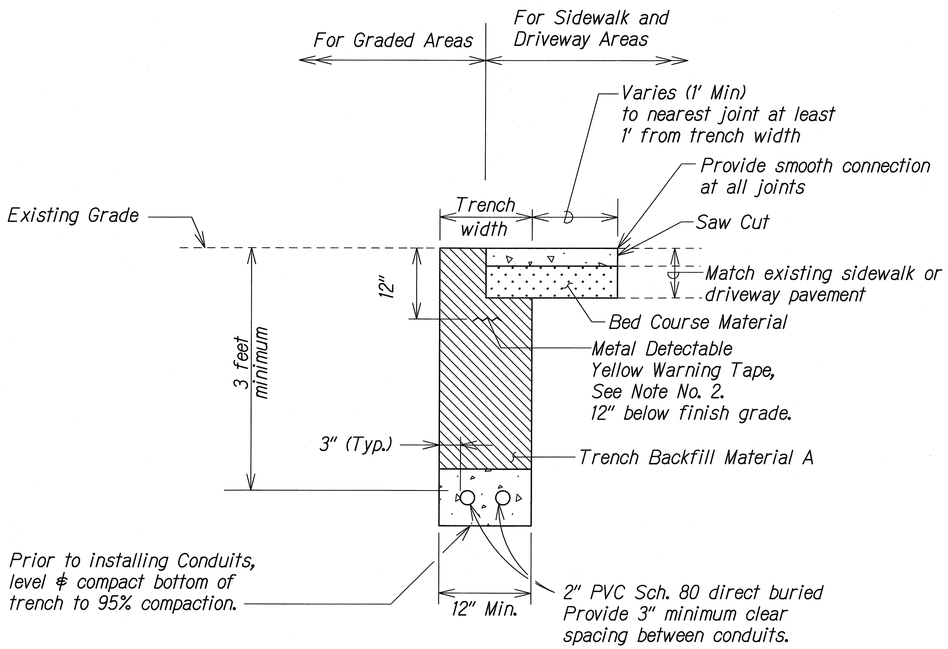
PIILANI HIGHWAY
TRAFFIC OPERATION IMPROVEMENTS AT OHUKAI ROAD
FEDERAL AID PROJECT NO. CMAQ-031-1(012)

Scale: None Date: March 2013

SHEET No. C-20 OF 29 SHEETS

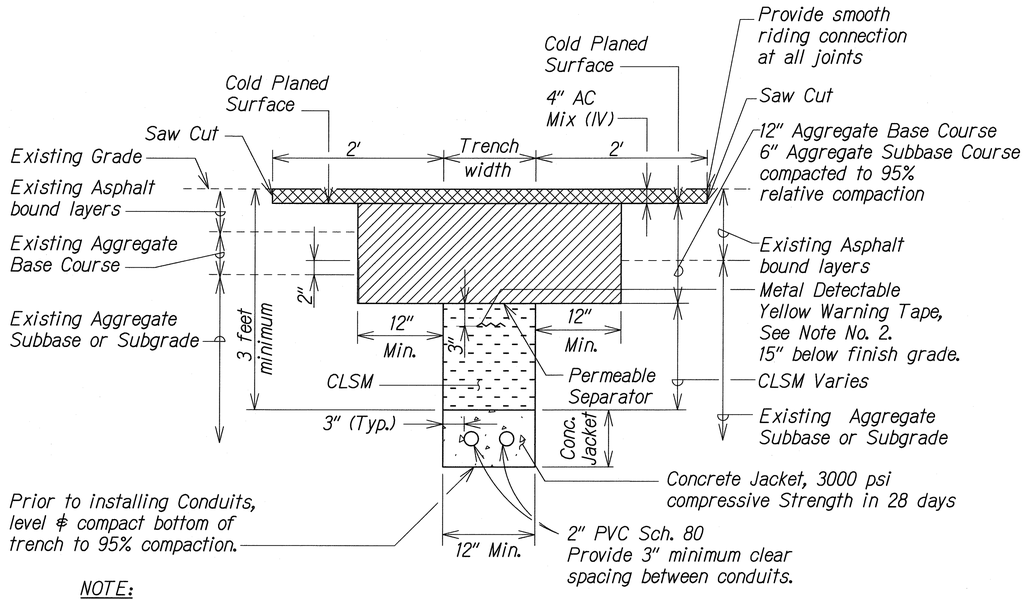
ADD. 37

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-031-1(012)	2013	ADD. 39S-1	54



RESTORATION OF NON-ROADWAY AREAS DUE TO TRENCH EXCAVATION

Not to Scale



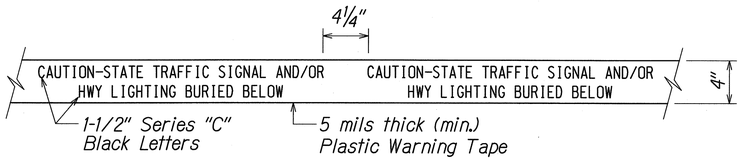
NOTE:
Tack Coat faces of Existing Asphalt Bound Materials prior to filling excavation with New Asphalt bound materials.

RESTORATION OF EXISTING PAVEMENT DUE TO TRENCH EXCAVATION

Not to Scale

GENERAL NOTES

1. If trench is located on unpaved area, the Contractor shall replace 10" A.C. Base Course and 4" A.C. Pavement with Type "A" backfill material.
2. The Metal Detectable Yellow Plastic Warning Tape shall be a minimum 5 mils thick and 4" wide with a continuous metallic backing and corrosion resistant 1± mil thick foil core. The message on the tape shall read, "CAUTION - STATE TRAFFIC SIGNAL AND/OR HWY. LIGHTING BURIED BELOW," utilizing 1-1/2 inches series "C" black lettering. The message will be repeated with a 4-1/4" spacing between top line of message and start of next repeat.
3. The Contractor may begin backfilling the conduit trench when the concrete reaches 3000 psi compressive strength after 3 days.
4. Maximum four (4) conduits per row for multiple conduit duct section.
5. For direct buried duct sections, the concrete jacket required at the conduit by-pass for various utilities shall not be paid for separately but considered incidental to the direct buried conduits.
6. 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 Engineer and shall not be paid for separately but considered incidental to the direct buried and/or concrete encased conduits.



For additional information, see Note No. 2.

METAL DETECTABLE YELLOW PLASTIC WARNING TAPE

Not to Scale

4/10/2013	1	New Sheet
Date		Revision

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

NOTE BOOK | No.

HIDEATSU S. SUEN
LICENSED PROFESSIONAL ENGINEER
No. 8869-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE | 04/30/13 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRENCHING AND MISCELLANEOUS DETAILS

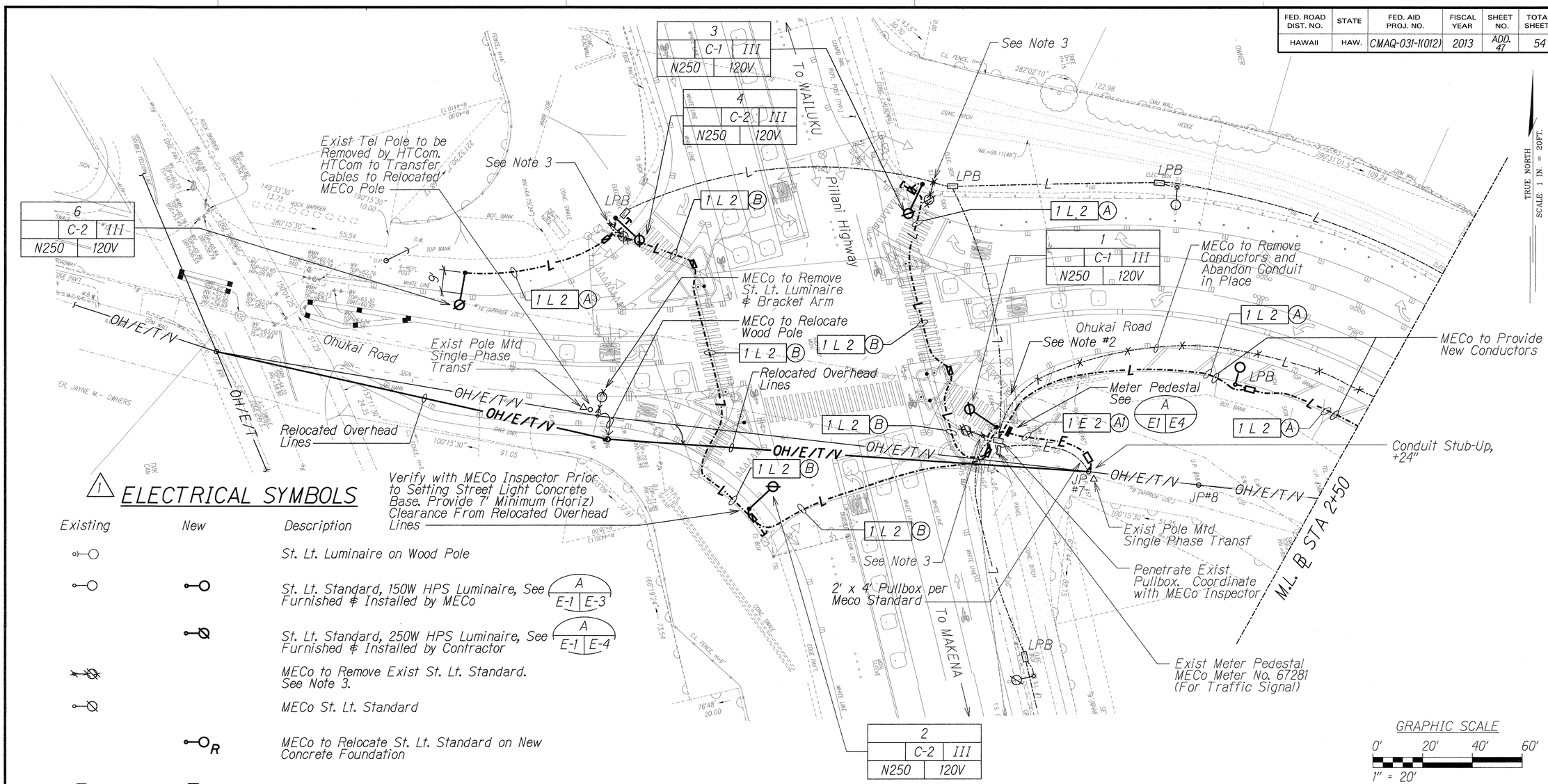
PIILANI HIGHWAY
TRAFFIC OPERATION IMPROVEMENTS AT OHUKAI ROAD
FEDERAL AID PROJECT NO. CMAQ-031-1(012)

Scale: None | Date: March 2013

SHEET No. C-22A OF 29 SHEETS

ADD. 39S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-031-1(012)	2013	ADD. 47	54



1 ELECTRICAL SYMBOLS

Existing	New	Description
		St. Lt. Luminaire on Wood Pole
		St. Lt. Standard, 150W HPS Luminaire, See A E-1 E-3 Furnished & Installed by MECo
		St. Lt. Standard, 250W HPS Luminaire, See A E-1 E-4 Furnished & Installed by Contractor
		MECo to Remove Exist St. Lt. Standard. See Note 3.
		MECo St. Lt. Standard
	R	MECo to Relocate St. Lt. Standard on New Concrete Foundation
LPB	LPB	St. Lt. Pullbox (Similar to MECo 2' x 4' Pullbox)
		St. Lt. Type "A" Pullbox, See Standard Plan TE-37a
L	L	St. Lt. Ductline with Pullwire
X L X		MECo to Remove Exist Conductors. Exist Conduit to be Abandoned in Place
OH/E/T/N	OH/E/T/N	Overhead Elec/Telephone/CATV Lines, (Relocation Work by Respective Utility Co.)
	1 L 2 (A)	Denote 1-2" Lighting Conduit & Duct Section "A"
		Conduit Stub Out w/ Marker, See B E-1 E-2

SURVEY PLOTTED BY ____ DATE
DRAWN BY ____
TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
CHECKED BY ____
ORIGINAL PLAN
NOTE BOOK ____ No. ____

GRAPHIC SCALE
0' 20' 40' 60'
1" = 20'

1 SITE ELECTRICAL PLAN - PART A

NOTES:

1. ——— Light Lines Denote Existing Condition
   ——— Bold Lines Denote New Work
   X X "X" Denotes Removal Work
2. Verify the Location of Existing 16-inch Waterline at Street Light Ductline Crossing. Provide a Minimum of 6-inch Clearance Between Waterline and Ductline at Crossing.
3. Demolish St Lt Pole Conc. Foundation 24" Below Grade. Backfill to Match Finish Grade.

DATE		REVISION
4/10/13	1	Revised Lighting Plan & Electrical Symbols

RUSSELL K. MORI LICENSED PROFESSIONAL ENGINEER No. 9013-E HAWAII, U.S.A. 4/12/13
MK ENGINEERS, LTD. LICENSE EXPIRATION DATE: 4/30/14
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SITE LIGHTING PLAN
PART A

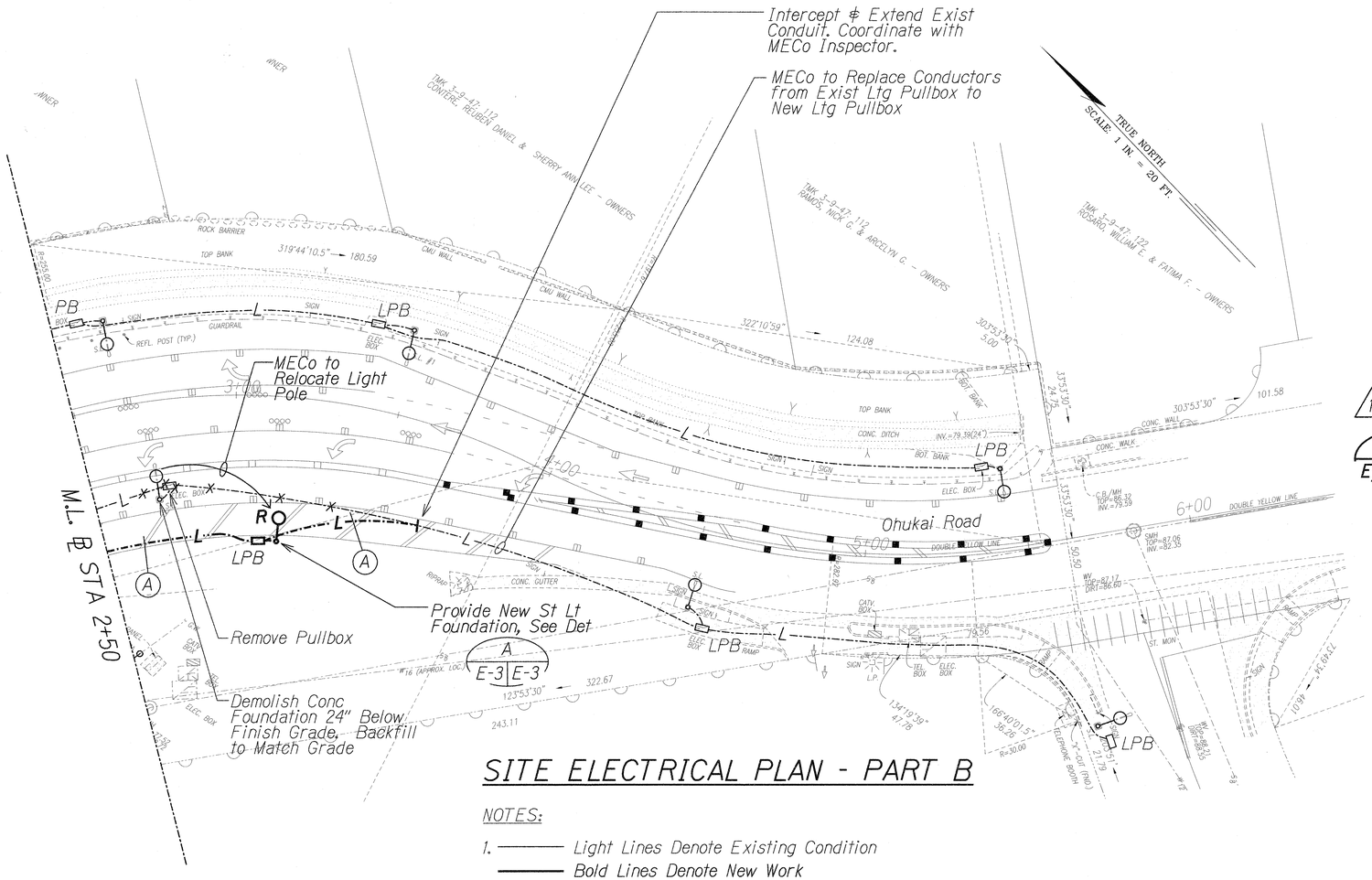
PIILANI HIGHWAY
TRAFFIC OPERATION IMPROVEMENTS AT OHUKAI ROAD
FEDERAL AID PROJECT NO. CMAQ-031-1(012)

Scale: 1" = 20'-0" Date: April 11, 2013

SHEET No. E-1 OF 4 SHEETS

ADD. 47

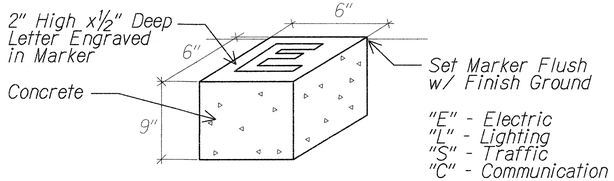
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-031-1(012)	2013	ADD. 48	54



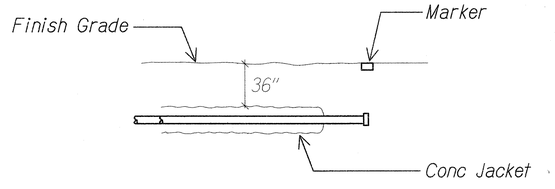
SITE ELECTRICAL PLAN - PART B

NOTES:

1. ——— Light Lines Denote Existing Condition
   ——— Bold Lines Denote New Work
   -x-x- "X" Denotes Removal Work

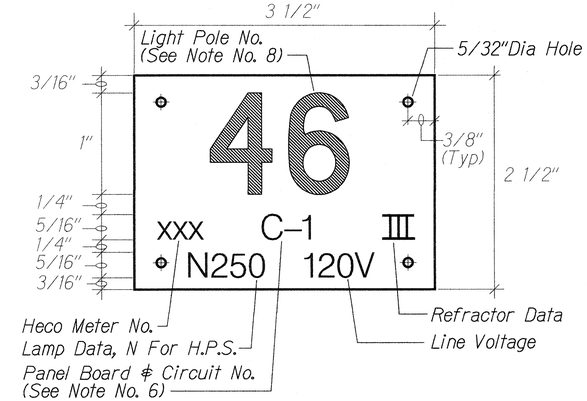


MARKER FOR STUB OUT



CONDUIT STUB OUT DETAIL

1 B E-1 | E-2 NTS — CONDUIT STUB OUT & MARKER DETAILS



1 A E-4 | E-2 NTS — STREET LIGHT POLE TAG DETAIL

NOTES:

1. 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. Light Pole Number Size Shall Be 1" High and Engraved 1/8" Wide, White in Color (Number as Required).
3. Nomenclature Size Shall be 5/16" High and Engraved 1/32" Wide, White in Color (Heco Meter Number Panel Board and Circuit Number, Line Voltage, Lamp Data and Refractor Data as Required).
4. Attach to Aluminum and Steel Post with No. 8 Stainless Steel, 1/2" Long Drive Screws in 1/8" Drill Hole. Attach to Wood Poles with 4D Aluminum Nail.
5. Numbers are Inscribed by Cutting Through "Black Cap Sheet" to Expose "White Letters."
6. Nomenclature Required for Systems with Two or More Circuits (Letter Indicates Panel Board, Number Indicates Circuit).

GRAPHIC SCALE
0' 20' 40' 60'
1" = 20'

DATE		REVISION
4/10/13	1	Add Pole Tag Detail & Conduit Stubout & Marker Details

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | NOTE BOOK | N.

RUSSELL K. MORITA LICENSED PROFESSIONAL ENGINEER No. 9013-E HAWAII, U.S.A. 4/12/13

MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/14
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SITE LIGHTING PLAN PART B

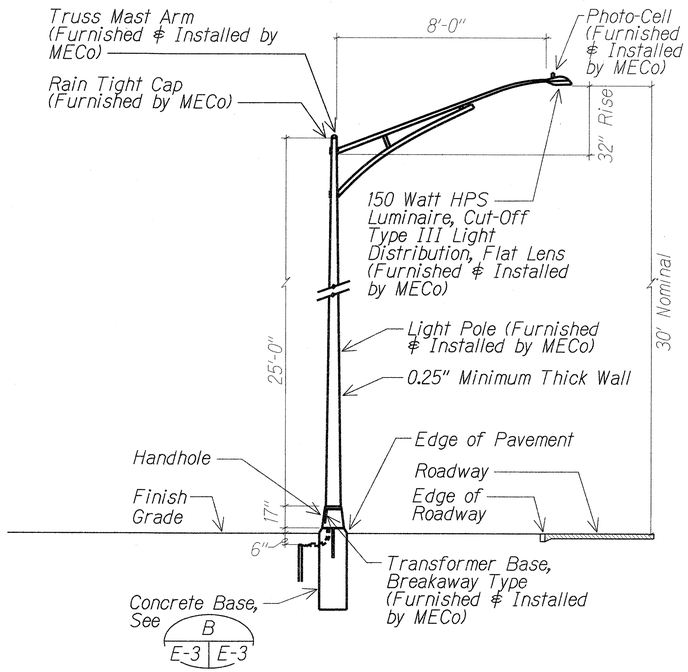
PIILANI HIGHWAY
TRAFFIC OPERATION IMPROVEMENTS AT OHUKAI ROAD
FEDERAL AID PROJECT NO. CMAQ-031-1(012)

Scale: 1" = 20'-0" Date: April 11, 2013

SHEET No. E-2 OF 4 SHEETS

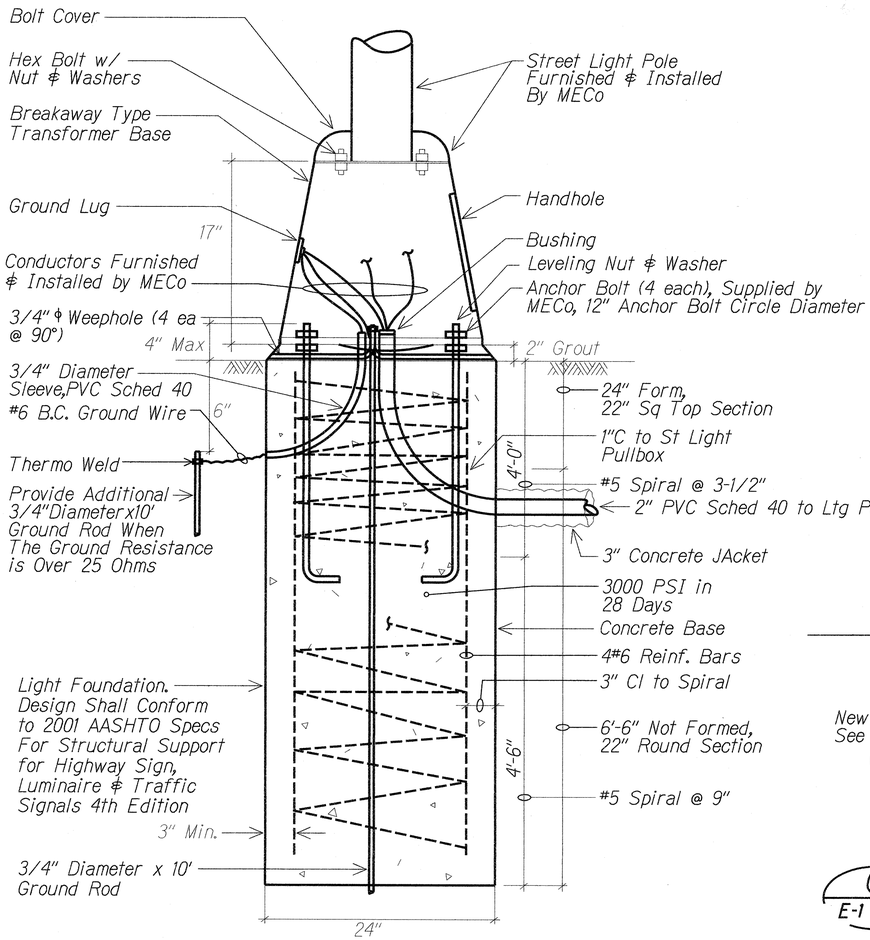
ADD. 48

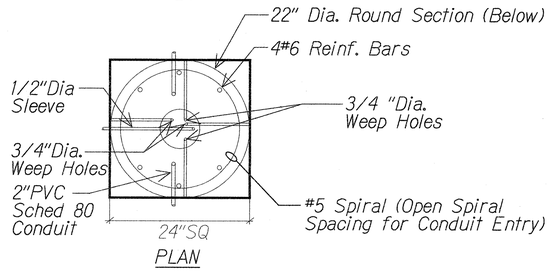
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-031-1(012)	2013	ADD. 49	54



A E-1 E-3 **STREET LIGHT STANDARD DETAIL (150 WATT HPS)**

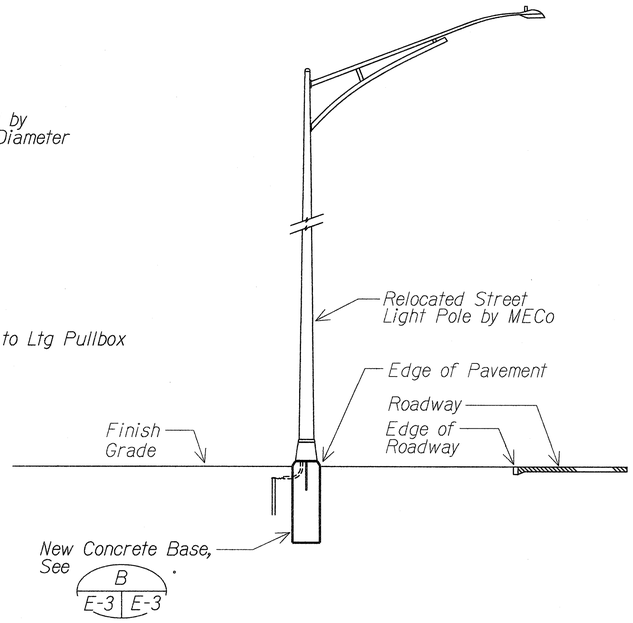
NTS





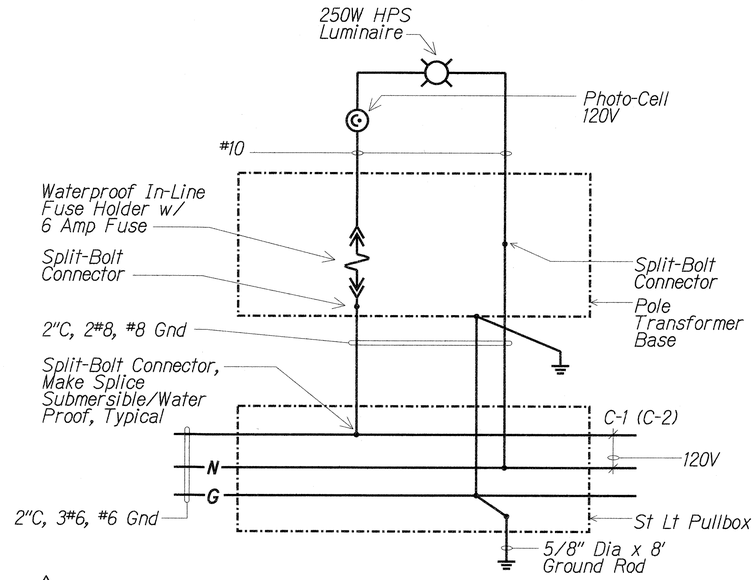
PLAN

B E-3 E-3 **TYPICAL TRANSFORMER BASE DETAIL**



C E-1 E-3 **STREET LIGHT STANDARD RELOCATION DETAIL**

NTS



1 **TYPICAL STREET LIGHT WIRING DIAGRAM**

No Scale

ORIGINAL PLANS — SURVEY PLOTTED BY — DRAWN BY — TRACED BY — DESIGNED BY — QUANTITIES BY — CHECKED BY — NOTE BOOK — DATE — No.

4/10/13	1	Added Typ St Lt Wiring Diagram
DATE		REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RUSSELL K. MIOKA — LICENSED PROFESSIONAL ENGINEER — No. 9013-E — HAWAII, U.S.A. — 4/12/13

MK ENGINEERS, LTD.
LICENSE EXPIRATION DATE: 4/30/14
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

ROADWAY LIGHTS STANDARD DETAILS

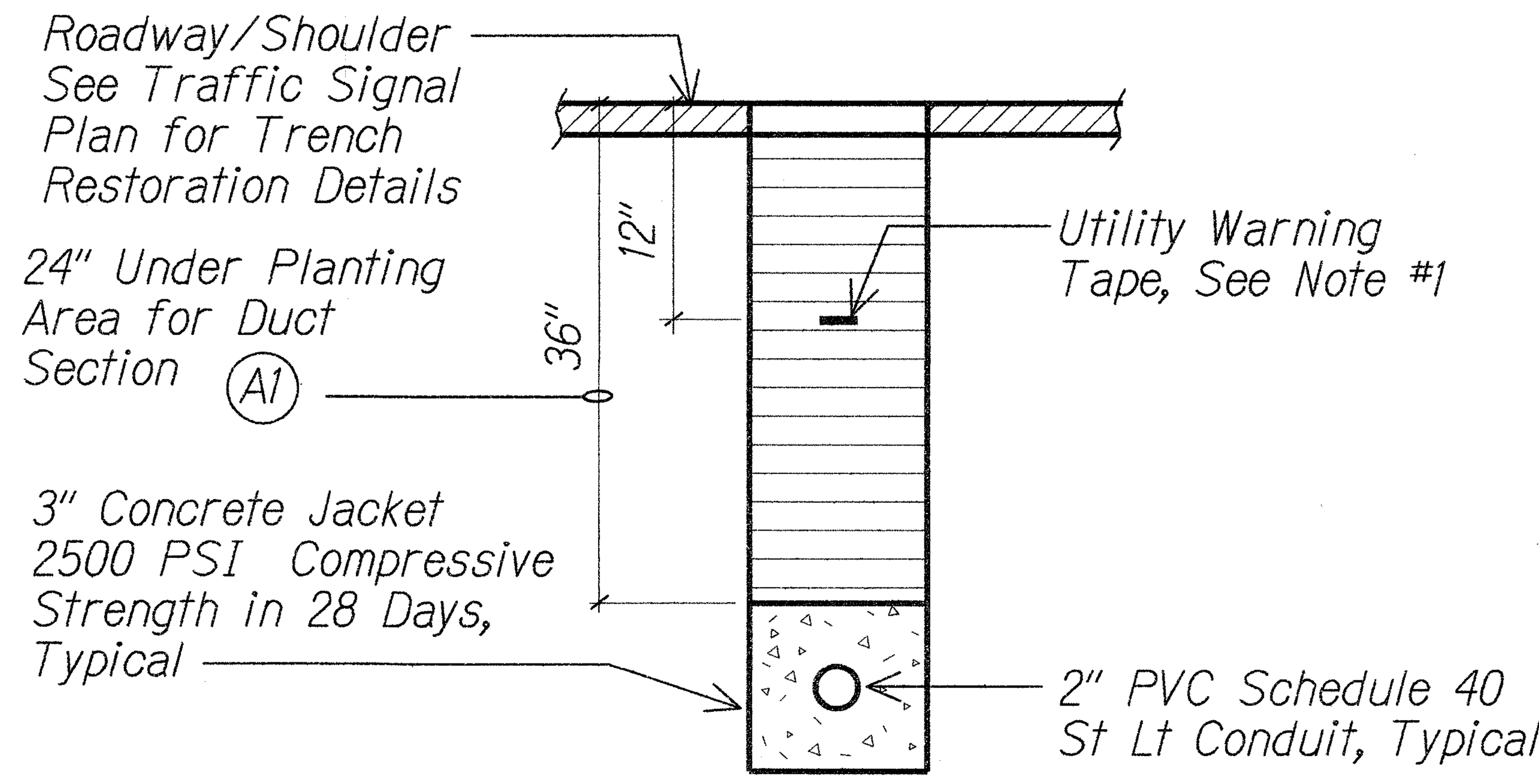
PIILANI HIGHWAY
TRAFFIC OPERATION IMPROVEMENTS AT OHUKAI ROAD
FEDERAL AID PROJECT NO. CMAQ-031-1(012)

Scale: Not to Scale — Date: April 11, 2013

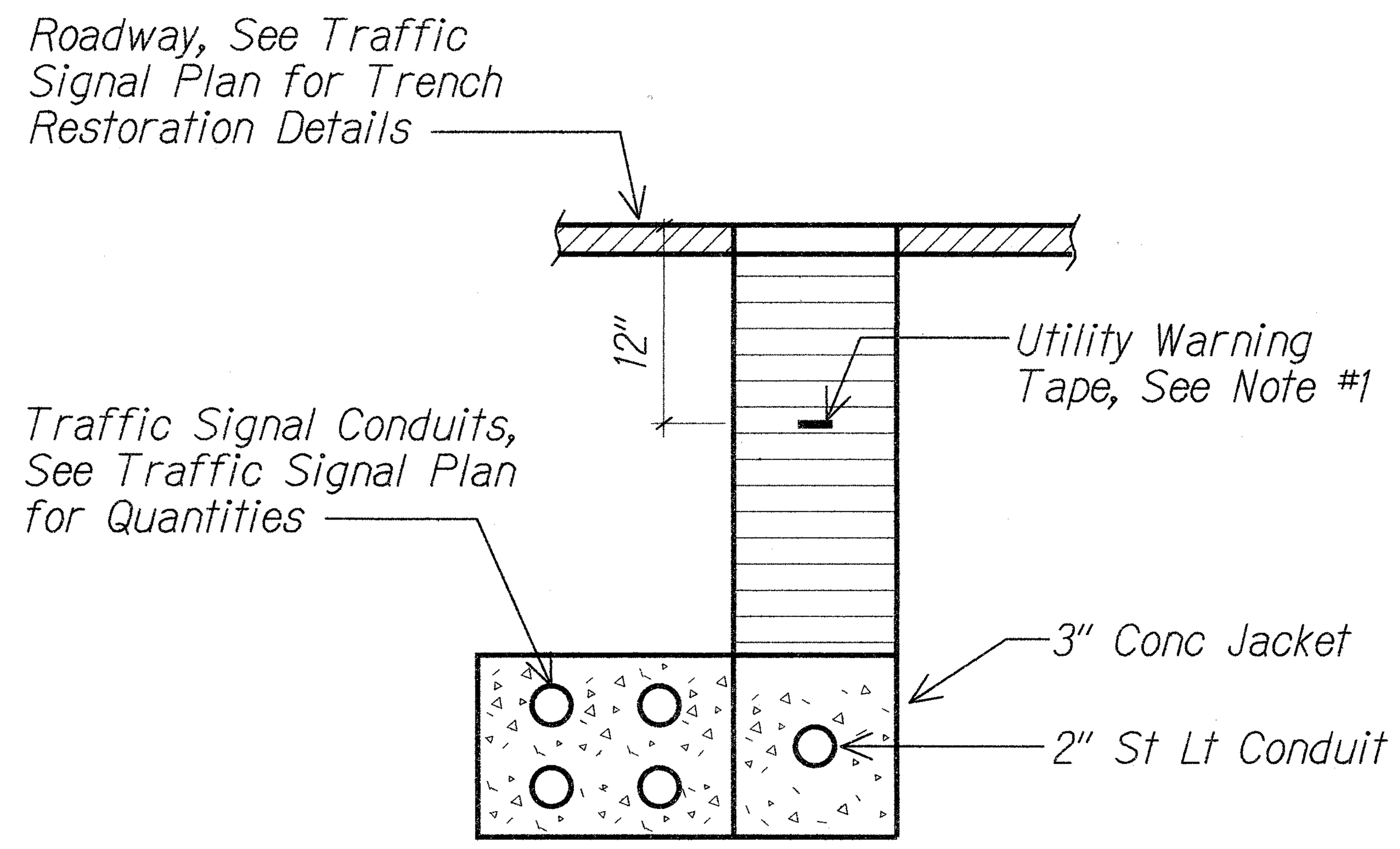
SHEET No. E-3 OF 4 SHEETS

ADD. 49

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-031-1(012)	2013	ADD. 50	54



DUCT SECTION (A)



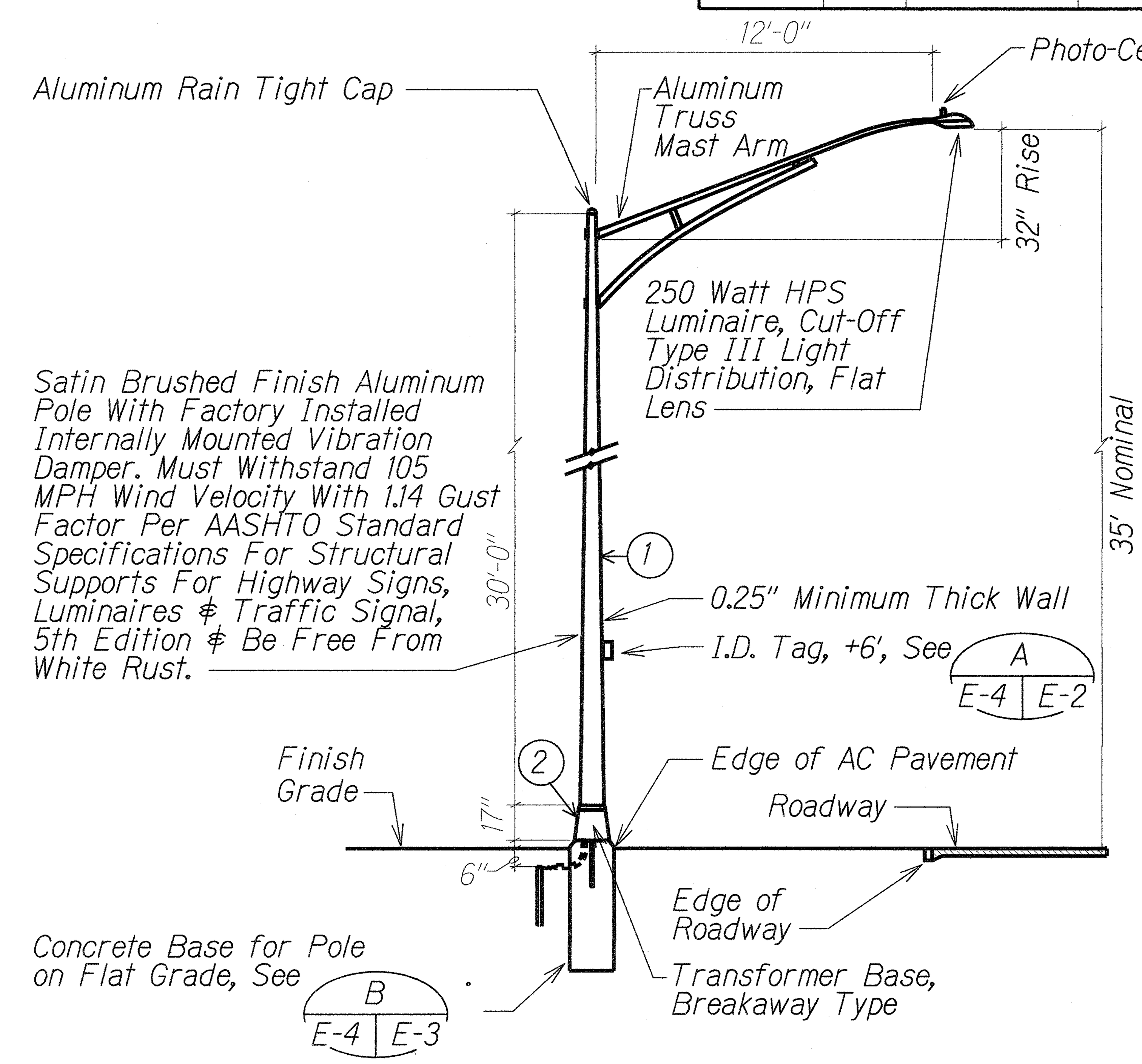
DUCT SECTION (B)

⚠1 TYPICAL DUCT SECTIONS

NTS

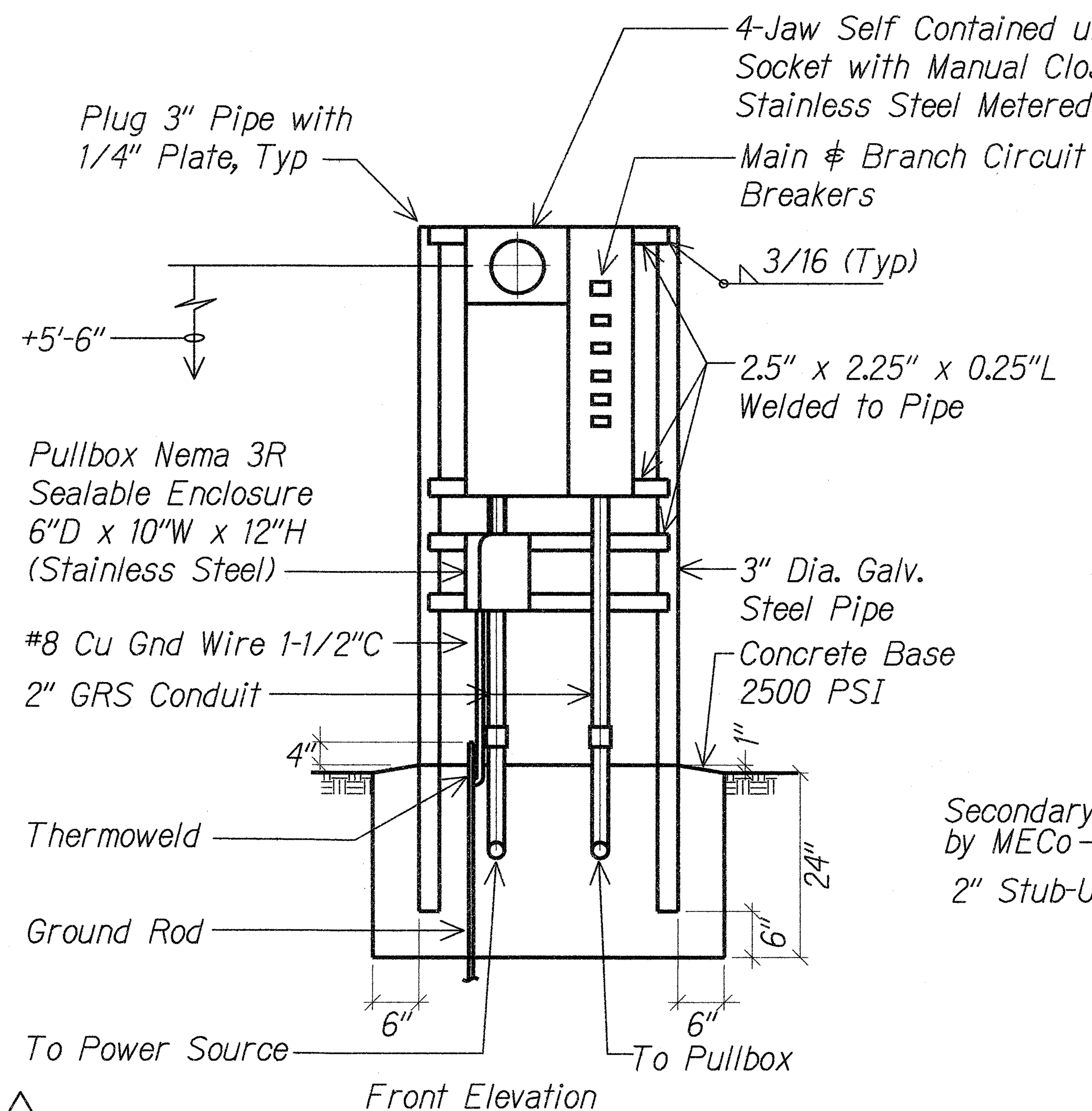
NOTES:

1. 8 MIL Thick Red Colored Plastic Warning Tape 3" Wide, Entire Length of Duct. Tape to Have Continuous Metallic Backing and Corrosion Resistant Foil Core. Warning and Identification to be Imprinted on Tape and Shall Read "Caution Buried Electric Cable Below". Message Shall Be Repeated Approximately Every Ten Feet.



⚠1 A E-1 E-4 STREET LIGHT STANDARD DETAIL (250 WATT HPS)

NTS

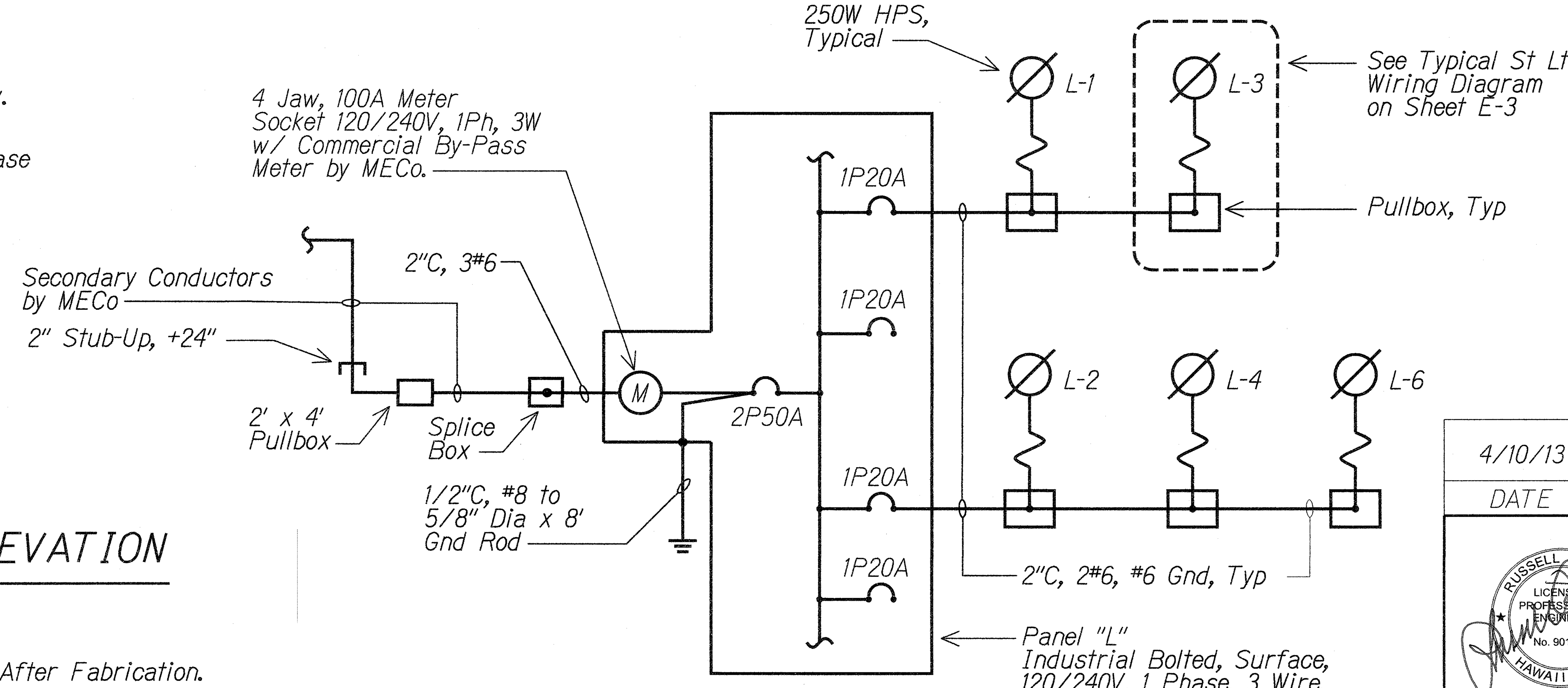


⚠1 B E-1 E-4 SERVICE EQUIPMENT ELEVATION

NTS

NOTES:

1. Pedestal Shall be Hot Dipped Galvanized After Fabrication.
2. All Fastening Bolts, Nuts, and Washers Shall be Stainless Steel.
3. Provide 4 Feet Clearance in Front of Weter.



⚠1 ONE-LINE DIAGRAM

DATE		REVISION
4/10/13	⚠1	Add Service Equipment Elevation, Duct Sections & St. Lt. Detail

RUSSELL K. MINAI LICENSED PROFESSIONAL ENGINEER No. 9013-E HAWAII, U.S.A. 4/12/13

MK ENGINEERS, LTD. LICENSE EXPIRATION DATE: 4/30/14 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL STREET LIGHT WIRING DIAGRAM & DUCT SECTIONS

PIILANI HIGHWAY
TRAFFIC OPERATION IMPROVEMENTS AT OHUKAI ROAD
FEDERAL AID PROJECT NO. CMAQ-031-1(012)

Scale: Not to Scale Date: April 11, 2013

SHEET No. E-4 OF 4 SHEETS

ADD. 50

ORIGINAL PLAN / NOTE BOOK / No. — SURVEY PLOTTED BY / DRAWN BY / TRACED BY / DESIGNED BY / QUANTITIES BY / CHECKED BY — DATE