

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	157	173

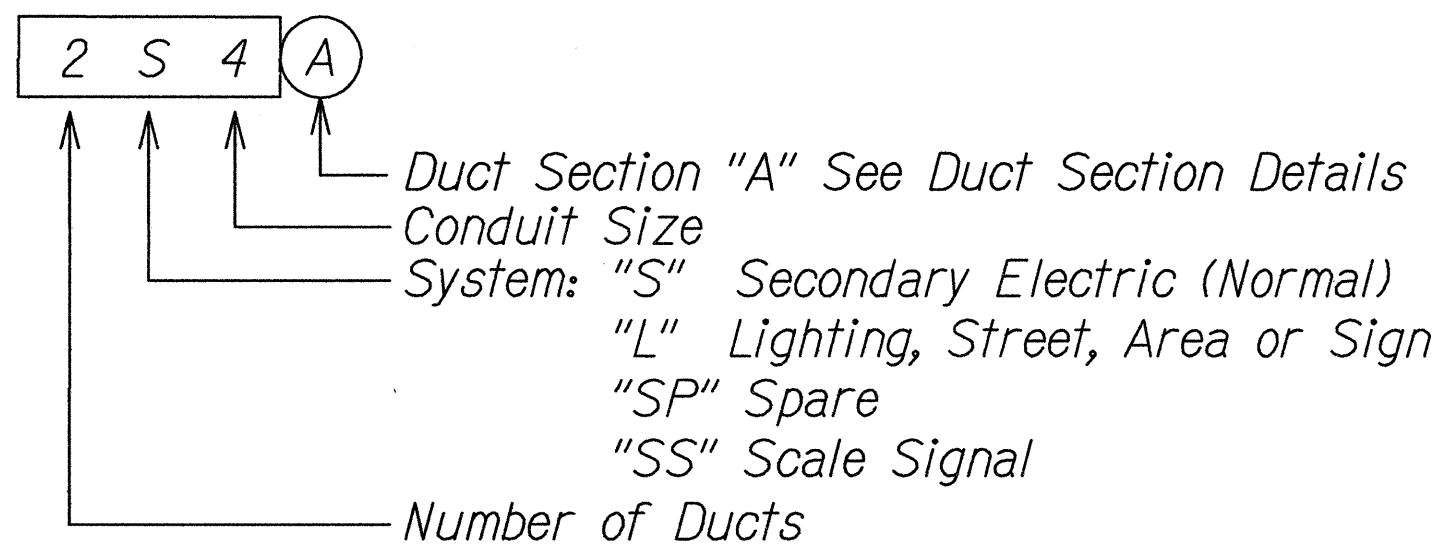
GENERAL NOTES:

1. All Work Shall be Constructed in Accordance With the Following Construction Standards and specifications:  
Construction Standards of Department of Transportation, State of Hawaii, 2005.
- Current Standards Specifications for Road and Bridge Construction, State of Hawaii.
2. It is Not the Intent of These Plans and Specifications to Indicate That All Existing Utilities are Shown on the Plans. The Information on the Existing Utilities are Based on Available Plans. The Locations are Approximate only and the Contractor Shall Verify the Location and Depth of the Facilities and Exercise Proper Care in Excavating in This Area. All Existing Utilities Whether or Not Shown on the Plans Shall be Protected at All Times by the Contractor. The Contractor shall be Responsible for Any Damages to the Facilities Whether Shown or Not Shown on Plans. Any Repair Work Shall be Provided at No Additional Cost to This Project.
3. Exercise Proper Care When Excavating in Areas With Existing Underground Facilities. Damages to the Existing Facilities Shall be Immediately Reported to the Respective Utility Companies, City or State Agency. The Repair Work Shall be Provided at no Additional Cost to the Project.
4. All Saw Cutting Work Shall be Considered Incidental to the Various Contract Items.
5. Notify and Coordinate Work With Construction and Maintenance Services, Department of Transportation, State of Hawaii 72 Hours in Advance of Commencing Installation of Highway Light System. (Ph. No. 831-6712)
6. For Typical Construction Details Not Shown on Plans, Refer to Applicable Standard Details of Construction and Maintenance Services, Department of Transportation, State of Hawaii.
7. The Highway Lighting System Shall Remain Operational During All Night Hours. The Contractor Shall be Responsible for Construction Phasing and/or Providing Temporary Lighting as Required to Maintain Operation of the Highway Lighting System.
8. Furnish Install a Minimum Two Each Keyed Tamper-proof Screws per Pullbox Cover Section Per State DOT Highways Standard. State DOT Highways Approved Screw Manufacturer is Bryce Fastener, Part #3GSRB12300 or Pre-approved Equal, Obtain Standard DOT Key Code from State DOT Highways Project Manager.

PULLBOX SCHEDULE

- 100 State Highways Electric Pullbox Type A, See State DOT Standard Plan TE-37A, See General Note 8.
- 101A State Highways Street Light Pullbox Type B, See State DOT Standard Plan TE-37C, See General Note 8.

DUCT DESIGNATION



SITE ELECTRICAL SYMBOLS

- Single Bracket Arm Highway Light Standard With Breakaway Transformer Base Foundation, 113W LED
- Double Bracket Arm Highway Light Standard With Breakaway Transformer Base Foundation, 113W LED
- Single Bracket Arm Highway Light Standard With Breakaway Transformer Base Foundation, 130W LED
- Junction Box, Wall Mounted, Size as Indicated on the Drawings
- Pullbox
- Transformer and Concrete Pad
- BC Bare Copper
- GRS Galvanized Rigid Steel
- LED Light Emitting Diode
- NWIM Nanotechnology Based Smart Concrete Weigh-In-Motion Scale System
- UON Unless Otherwise Noted
- WIM Weigh-In-Motion Scale System
- WP Weatherproof
- Key Note Indicator
- Underground Ductline
- Conduit & Wiring Concealed Within Concrete Surface
- Conduit & Wiring Exposed
- Existing Overhead Utility Lines

1	D4	III
L140	480V	

Indicates Light Pole Identification Tag, See Detail

C  
E-11

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

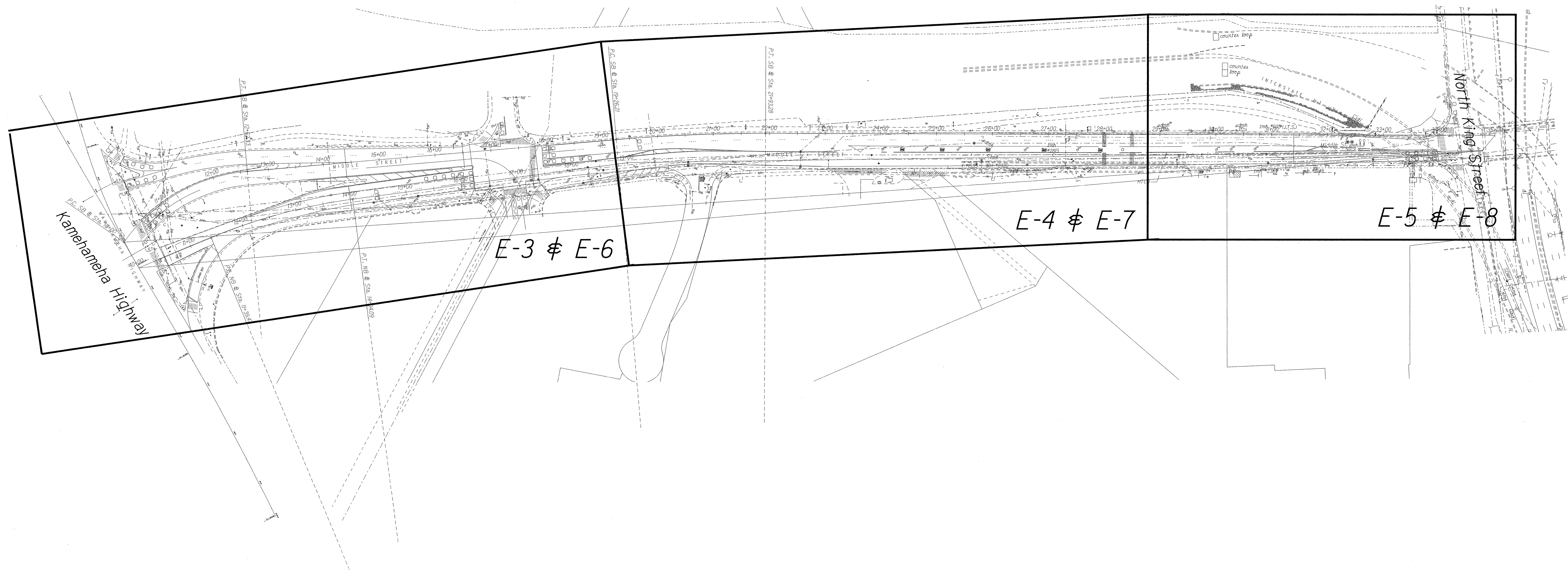
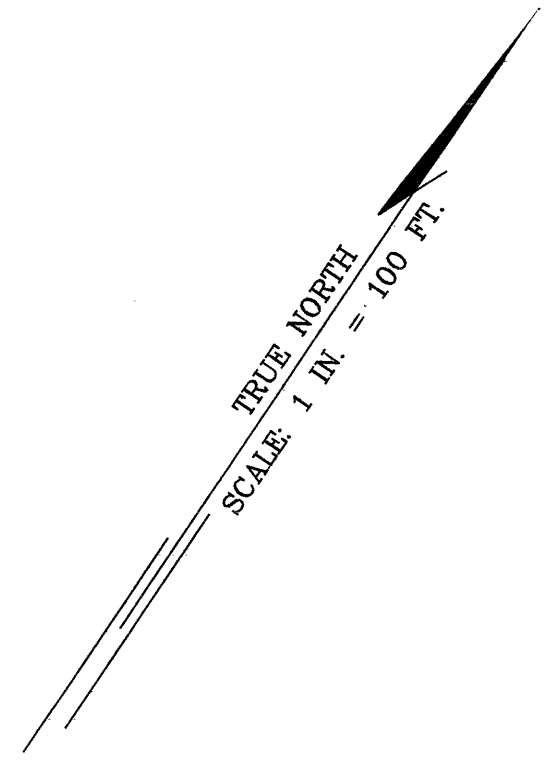
**ELECTRICAL SYMBOLS  
AND NOTES**

MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)

Scale: As Noted Date: June 20, 2014

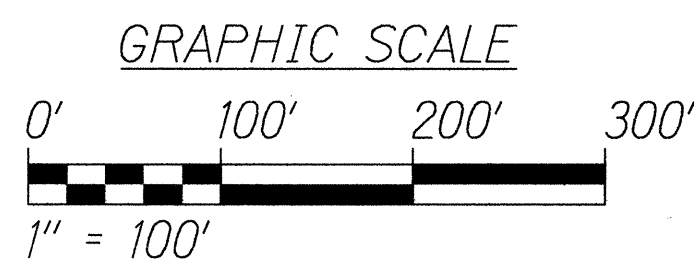
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	158	173

13068



**OVERALL LIGHTING PLAN**  
Scale: 1" = 100'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	



6/17/14

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

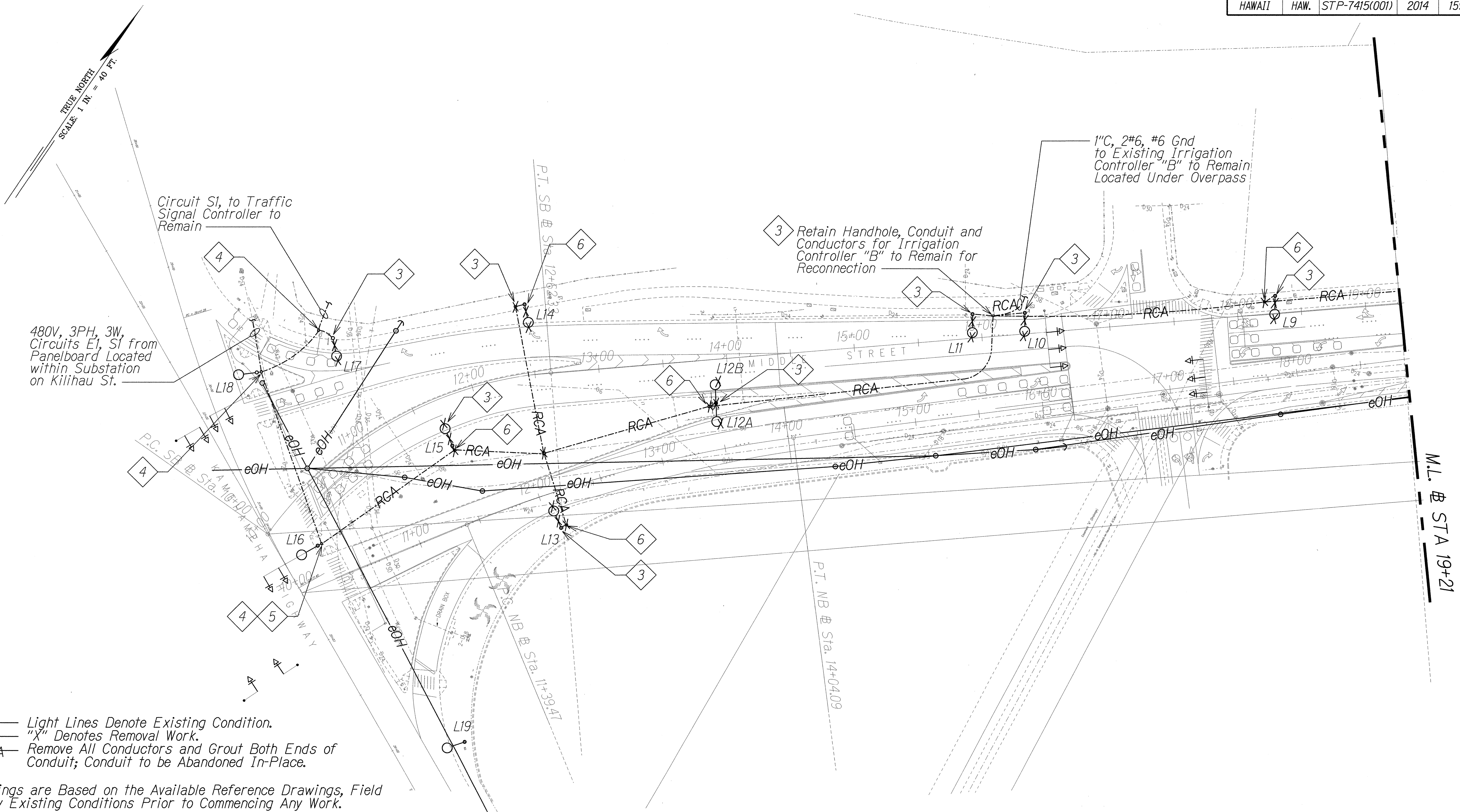
**OVERALL LIGHTING PLAN**

MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)

Scale: As Noted      Date: June 20, 2014



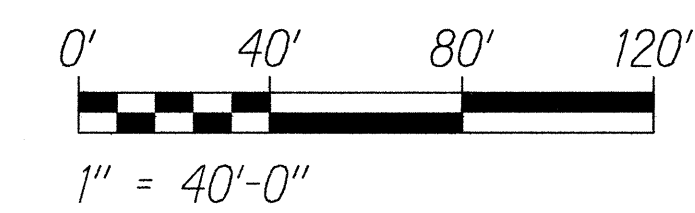
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HAWAII	HAW.	STP-7415(001)	2014	159	173



**NOTES:**

1. — Light Lines Denote Existing Condition.  
—X— Denotes Removal Work.  
—RCA— Remove All Conductors and Grout Both Ends of Conduit; Conduit to be Abandoned In-Place.
2. Drawings are Based on the Available Reference Drawings, Field Verify Existing Conditions Prior to Commencing Any Work.
3. Remove Light Pole, Transformer Pole Base, Anchor Bolts, and Associated Conductors. Pole Foundation Shall be Removed a Minimum 1'-0" Below Grade and Backfill to Match the Surrounding Surface.
4. Maintain Circuit Continuity to Existing Loads to Remain.
5. Temporarily Utilize Circuit "E1" to Provide Power for the New Highway Lighting System Until the Work at Existing Substation is Completed and the New Highway Lighting Circuit is Available. Schedule and Coordinate Cutover from Existing Circuit "E1" to the New Highway Lighting Circuit.
6. Remove Highway Lighting Pullbox, Grout Existing Conduits, and Backfill to Match Surrounding Area.

**SITE LIGHTING DEMOLITION PLAN "A"**  
Scale: 1" = 40'-0"



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SITE LIGHTING  
DEMOLITION PLAN "A"**

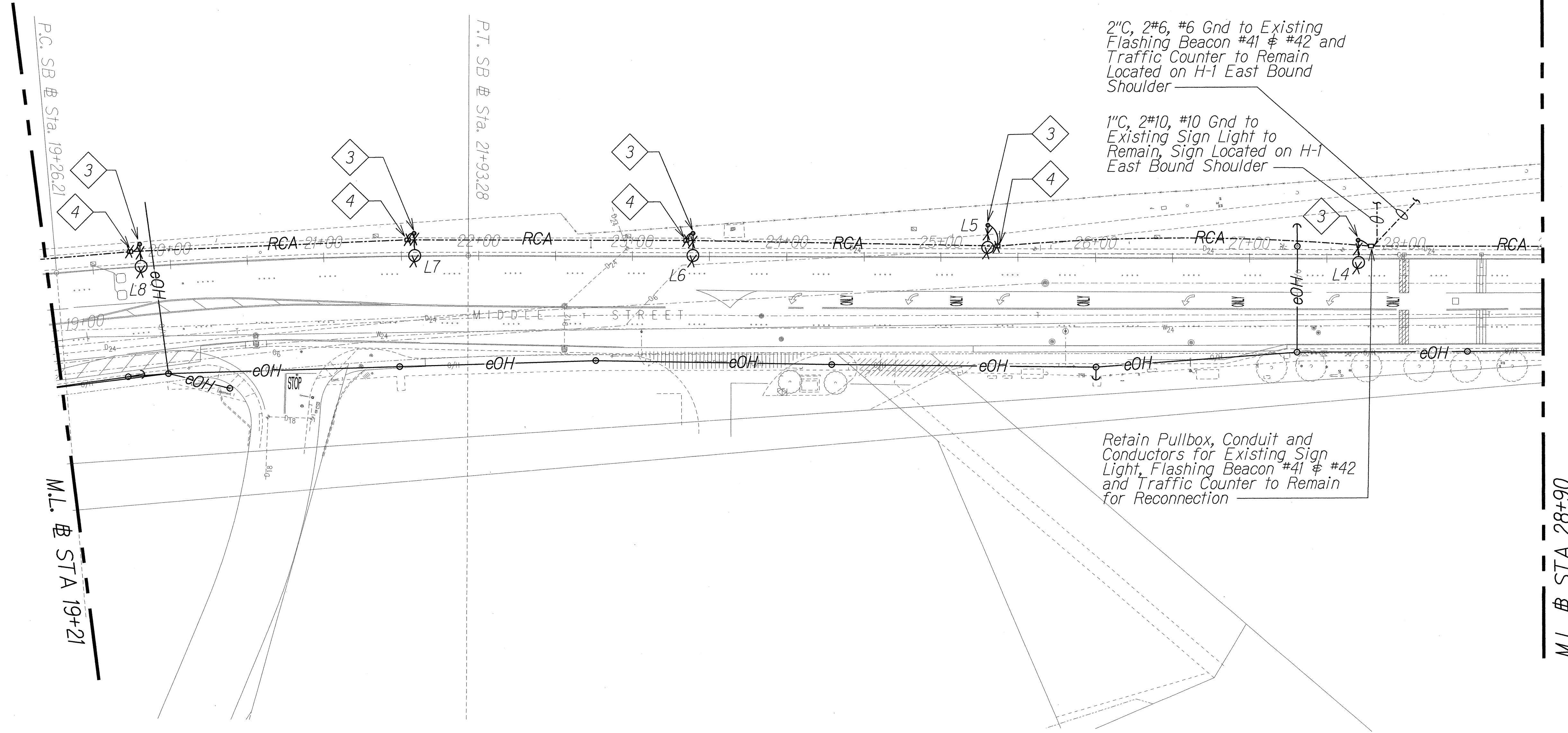
MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)

Scale: As Noted      Date: June 20, 2014

SURVEY PLOTTED BY	DATE
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13068

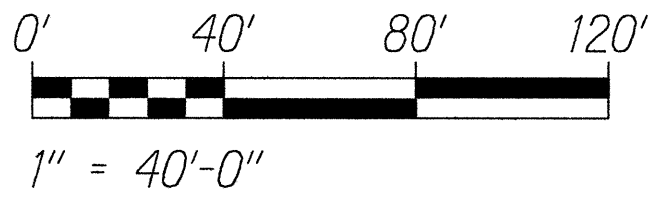


# **SITE LIGHTING DEMOLITION PLAN "B"**

Scale: 1" = 40'-0"

## **NOTES:**

1. Light Lines Denote Existing Condition.  
 "X" Denotes Removal Work.  
 RCA Remove All Conductors and Grout Both Ends of Conduit; Conduit to be Abandoned In-Place.
2. Drawings are Based on the Available Reference Drawings, Field Verify Existing Conditions Prior to Commencing Any Work.
- 3 Remove Light Pole, Transformer Pole Base, Anchor Bolts, and Associated Conductors. Pole Foundation Shall be Removed a Minimum 1'-0" Below Grade and Backfill to Match the Surrounding Surface.
- 4 Remove Highway Lighting Pullbox, Grout Existing Conduits, and Backfill to Match Surrounding Area.



RUSSELL K. MORI  
LICENSED PROFESSIONAL ENGINEER  
No. 5043-E  
HAWAII, U.S.A.  
6/17/14

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SITE LIGHTING  
DEMOLITION PLAN "B"**

MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)

Scale: As Noted Date: June 20, 2014

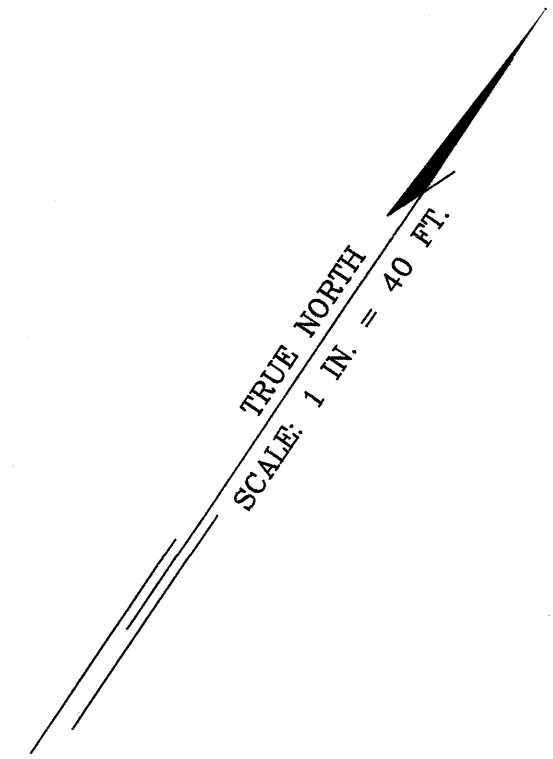
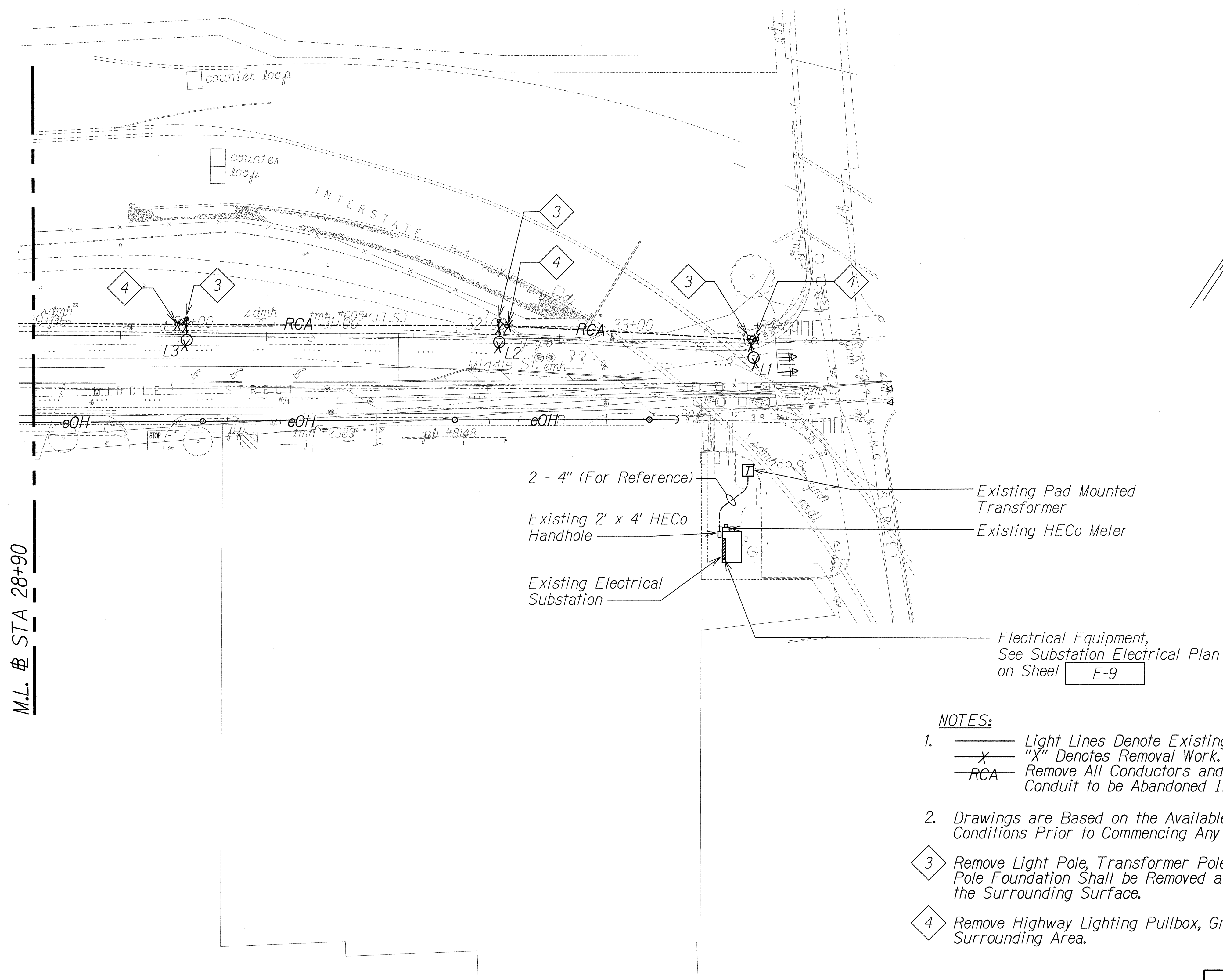
SHEET No. E-4 OF 17 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
DATE	



FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	161	173

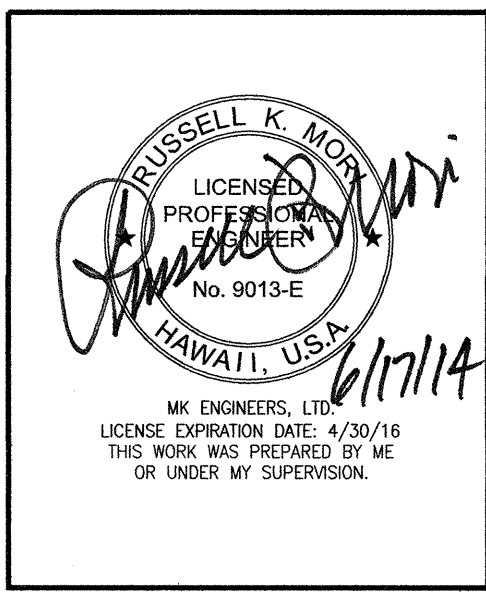
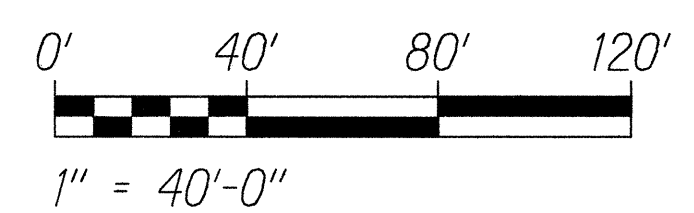
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**NOTES:**

- Light Lines Denote Existing Condition.  
 "X" Denotes Removal Work.  
 RCA Remove All Conductors and Grout Both Ends of Conduit; Conduit to be Abandoned In-Place.
- Drawings are Based on the Available Reference Drawings, Field Verify Existing Conditions Prior to Commencing Any Work.
- Remove Light Pole, Transformer Pole Base, Anchor Bolts, and Associated Conductors. Pole Foundation Shall be Removed a Minimum 1'-0" Below Grade and Backfill to Match the Surrounding Surface.
- Remove Highway Lighting Pullbox, Grout Existing Conduits, and Backfill to Match Surrounding Area.

**SITE LIGHTING DEMOLITION PLAN "C"**  
 Scale: 1" = 40'-0"



STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**SITE LIGHTING  
 DEMOLITION PLAN "C"**

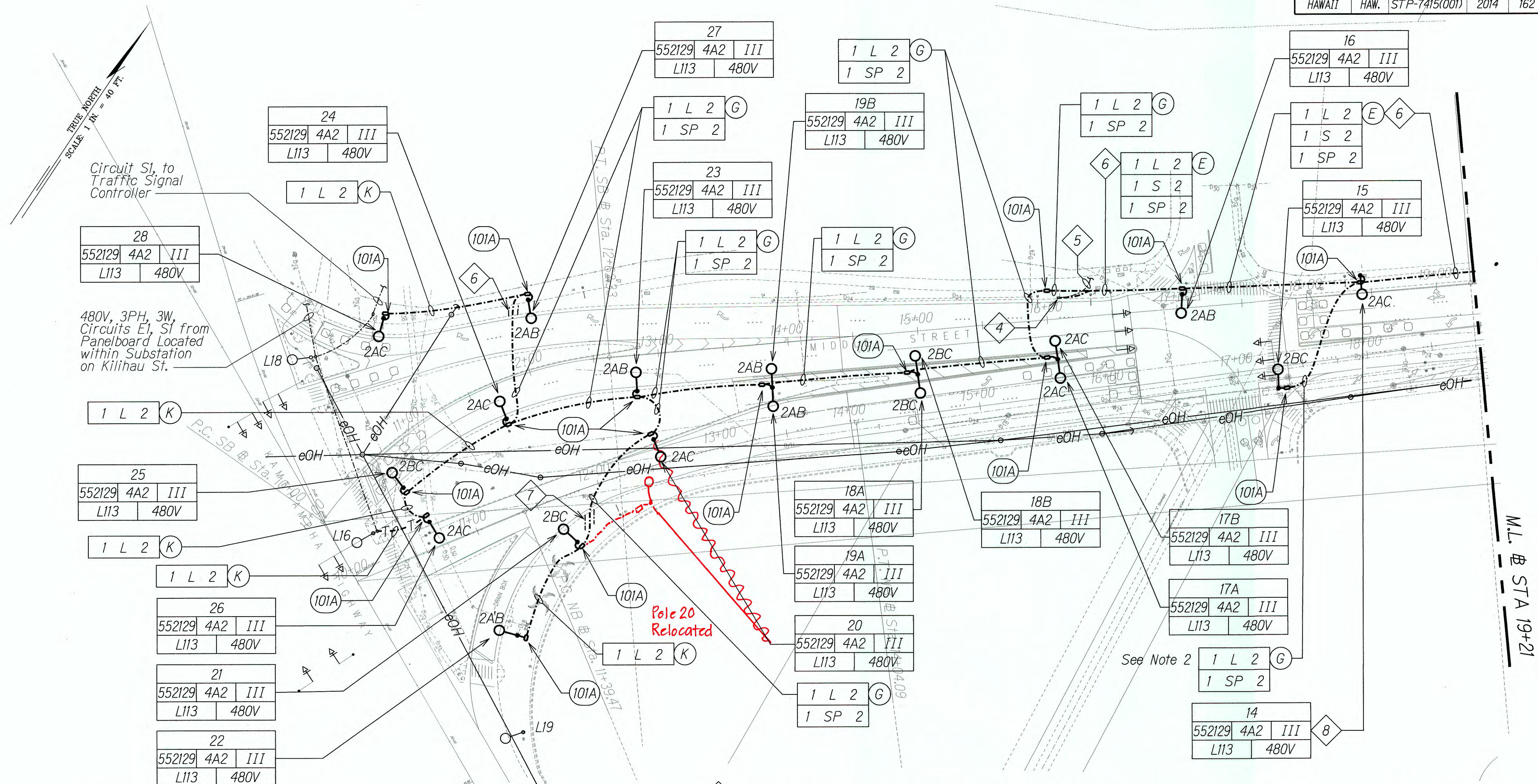
MIDDLE STREET PAVEMENT RECONSTRUCTION  
 North King Street to Kamehameha Highway  
 FAP NO. STP-7415(001)

Scale: As Noted Date: June 20, 2014

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	



FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	162	173



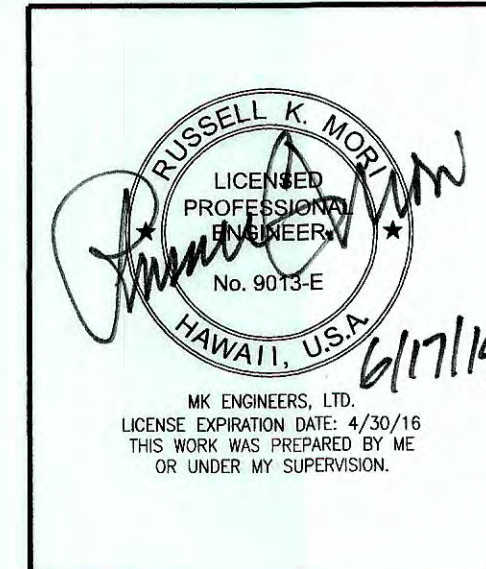
# **SITE LIGHTING PLAN "A"**

Scale: 1" = 40'-0"

## **NOTES:**

1. Light Lines Denote Existing Condition.  
 Bold Lines Denote New Work.  
 "T" Denotes Temporary Power Connection to Existing Circuit "E1".
2. Maintain Minimum Clearances When Crossing Other Utility Structures. Tone and Identify all Transversal Ducts Prior to Excavating to Prevent Damaging Existing Utilities.
3. Coordinate Underground Ductline Work with Construction Phasing Schedule on Sheet **TC-2**. Provide Conduit Stub Provisions to Allow for Extension of Ductline to Subsequent Phases, Provide Conduit Plug for All Stub-outs. Cutting and Patching of New Roadway Pavement is Prohibited.

- 4 Splice Existing Irrigation Controller "B" Conductors to New.
- 5 1"C, 2#6, #6 Gnd to Existing Irrigation Controller "B" Located Under Overpass to Remain.
- 6 Sawcut and Restore A.C. Shared Use Path to Facilitate Ductline Installation, See Detail B E-16
- 7 Sawcut and Restore Concrete Sidewalk to Facilitate Ductline Installation, See State DOT Standard Plan D-15 for Details.
- 8 Maintain Minimum 2'-0" Clear from Edge of Pole Foundation and Freeway Abutment Wall.



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SITE LIGHTING PLAN "A"**

MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)

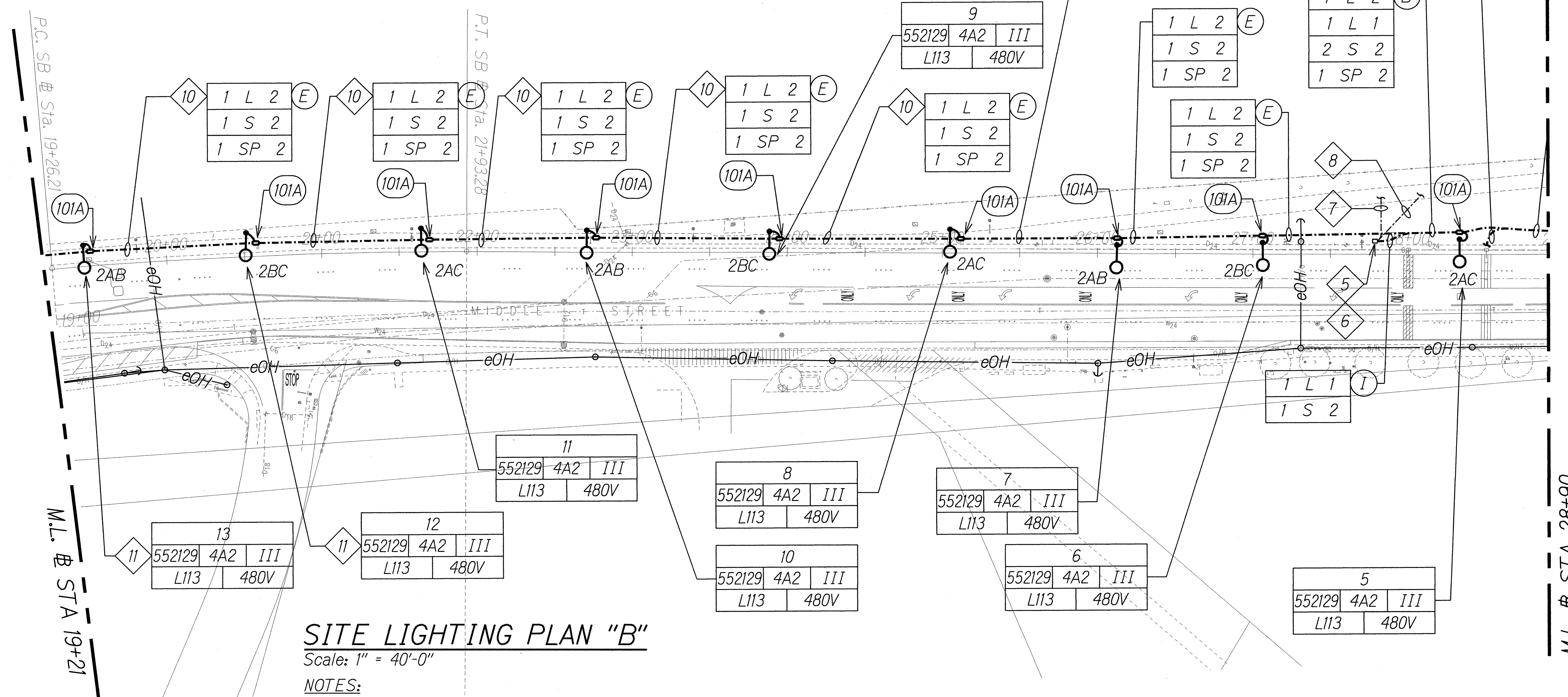
Scale: As Noted Date: June 20, 2014

SHEET NO. E-6 OF 17 SHEETS

**"AS-BUILT"**



FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	163	173

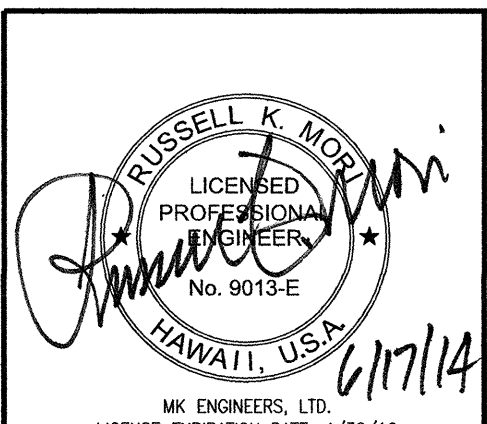
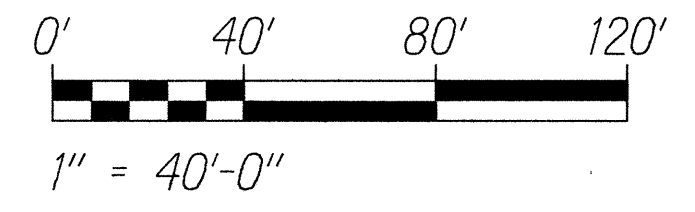


**SITE LIGHTING PLAN "B"**

Scale: 1" = 40'-0"

**NOTES:**

1. Light Lines Denote Existing Condition.  
 Bold Lines Denote New Work.
2. Maintain Minimum Clearances When Crossing Other Utility Structures.
3. Coordinate Underground Ductline Work with Construction Phasing Schedule on Sheet **TC-2**. Provide Conduit Stub Provisions to Allow for Extension of Ductline to Subsequent Phases, Provide Conduit Plug for All Stub-outs. Cutting and Patching of New Roadway Pavement is Prohibited.
4. To WIM Scale Pullbox, See Roadway Plans on Sheet **R-2** and WIM Station Plan on Sheet **W-2** for Pullbox Location and Details.
5. Splice Circuit 4A-2AC (2#2, #2 Gnd) to Existing 2#10, #10 Gnd with Submersible Waterproof Splice to Feed Existing Sign Light. Provide Waterproof In-Line Fuse Holder with 10 Amp Fuse.
6. Splice Circuit 4A-8AB (2#2, #2 Gnd) to Existing 2#6, #6 Gnd with Submersible Waterproof Splice to Feed Existing Flashing Beacon's #41 & #42 and Traffic Counter. Provide Waterproof In-Line Fuse Holder with 10 Amp Fuse.
7. 1" C, 2#10, #10 Gnd to Existing Sign Light Located on Shoulder of H-1 East Bound to Remain.
8. 2" C, 2#6, #6 Gnd to Existing Flashing Beacon's #41 & #42 and Traffic Counter Located on Shoulder of H-1 East Bound to Remain.
9. Not Used
10. Sawcut and Restore A.C. Shared Use Path to Facilitate Ductline Installation, See Detail **B** **E-16**.
11. Maintain Minimum 2'-0" Clear From Edge of Pole Foundation to Freeway Abutment Wall.



STATE OF HAWAII  
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HIGHWAYS DIVISION

**SITE LIGHTING PLAN "B"**

MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)

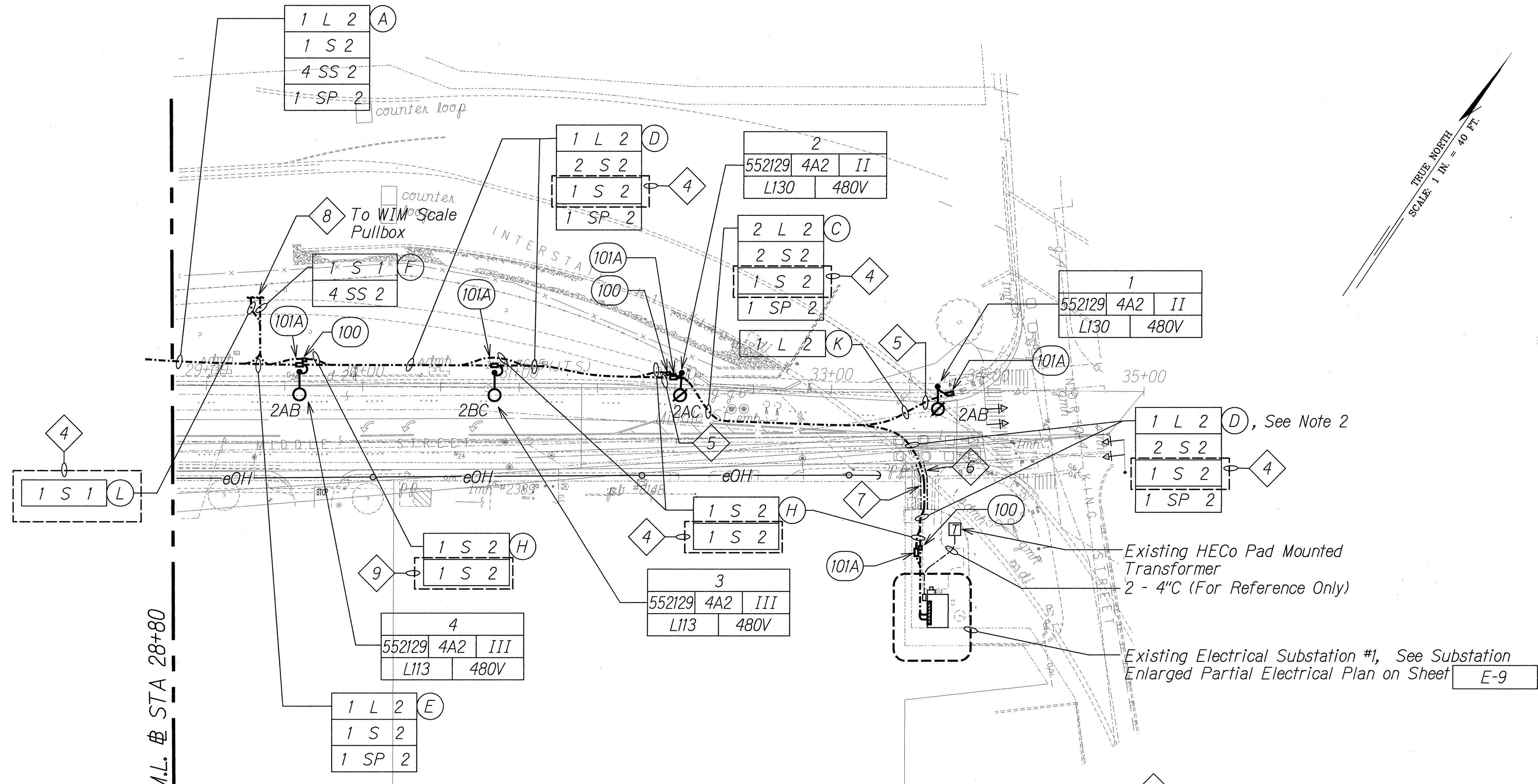
Scale: As Noted      Date: June 20, 2014

SHEET No. E-7 OF 17 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
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ORIGINAL PLAN	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	164	173

13068



**SITE LIGHTING PLAN "C"**

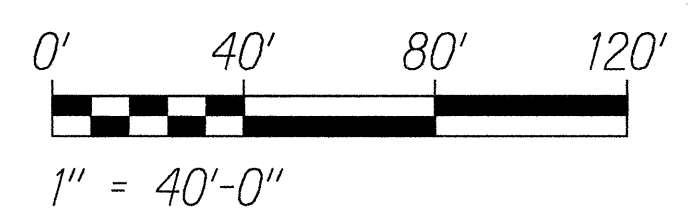
Scale: 1" = 40'-0"

**NOTES:**

1. Light Lines Denote Existing Condition.  
 Bold Lines Denote New Work.
2. Maintain Minimum Clearances When Crossing Other Utility Structures. Tone and Identify All Transversal Ducts Prior to Excavating to Prevent Damaging Existing Utilities. Hand Dig as Required.
3. Coordinate Underground Ductline Work with Construction Phasing Schedule on Sheet **TC-2**. Provide Conduit Stub Provisions to Allow for Extension of Ductline to Subsequent Phases, Provide Conduit Plug for All Stub-outs. Cutting and Patching of New Roadway Pavement is Prohibited.
4. Conduit with Pullstring Shall be Paid Under Various Contract Items Under Section 622. If NWIM System gets Implemented, NWIM Scale and Associated Conductors Shall be Paid Under Item No. 691.1000 - Nanotechnology Weigh-In-Motion System.  
  
If NWIM System Does Not get Implemented, Provide Conduit Stub-out, Cap and Provide Concrete Marker, See Detail **C** for Marker Detail.

6. Sawcut and Restore A.C. Shared Use Path to Facilitate Ductline Installation, See Detail **B** E-16.  
  
Sawcut and Restore Concrete Sidewalk to Facilitate Ductline Installation, See **B** E-16.
7. Sawcut and Restore A.C. Driveway to Facilitate Ductline Installation, See Detail
8. See Roadway Plan Sheet **R-2** and WIM Station Plan on Sheet **W-2** for Final WIM Controller Type C Pullbox Location.
9. NWIM Scale and Associated Conduit with Pullstring Shall be Paid Under Item No. 691.1000 - Nanotechnology Weigh-In-Motion System.

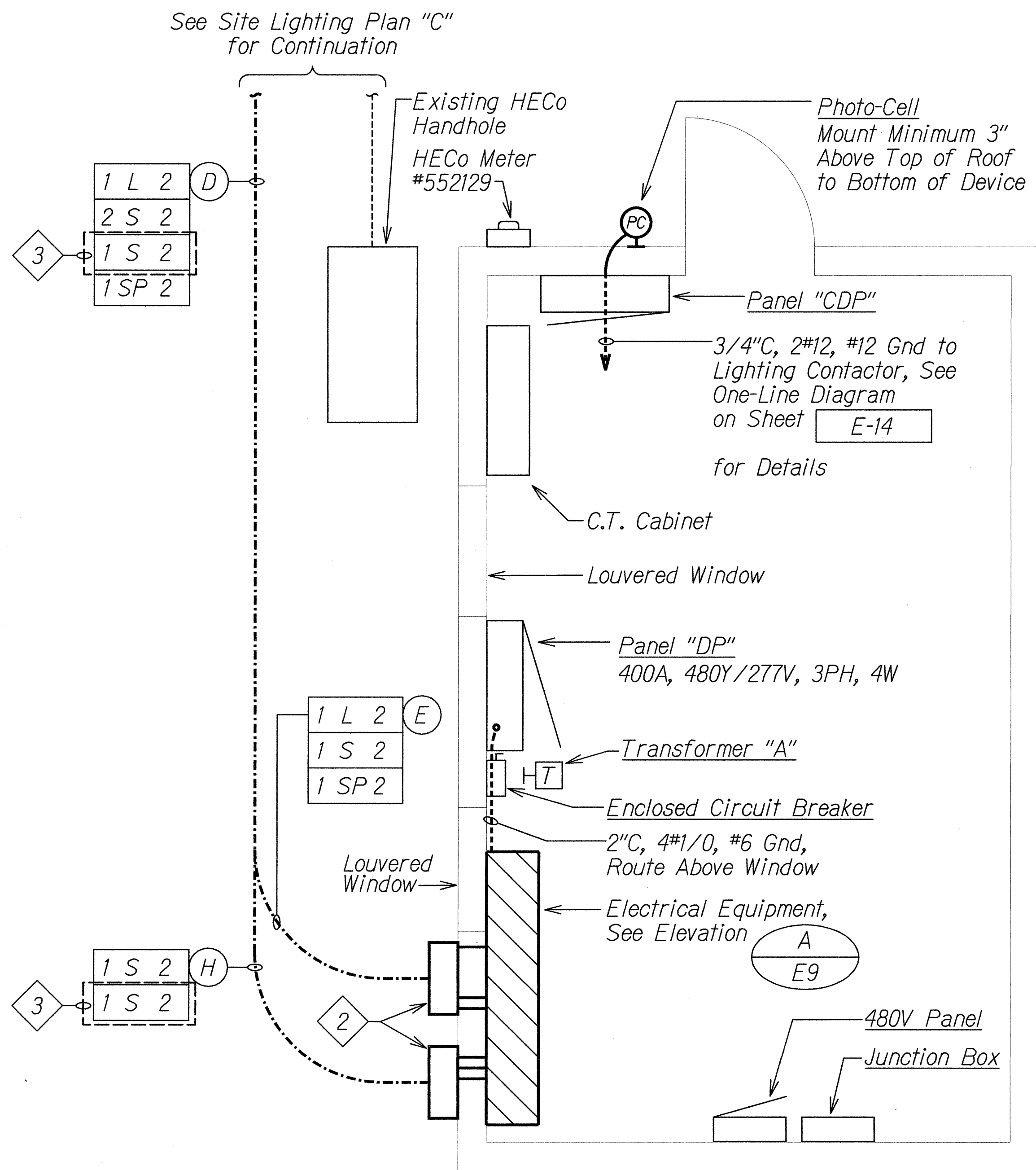
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SITE LIGHTING PLAN "C"**  
**MIDDLE STREET PAVEMENT RECONSTRUCTION**  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)  
Scale: As Noted Date: June 20, 2014  
SHEET No. E-8 OF 17 SHEETS



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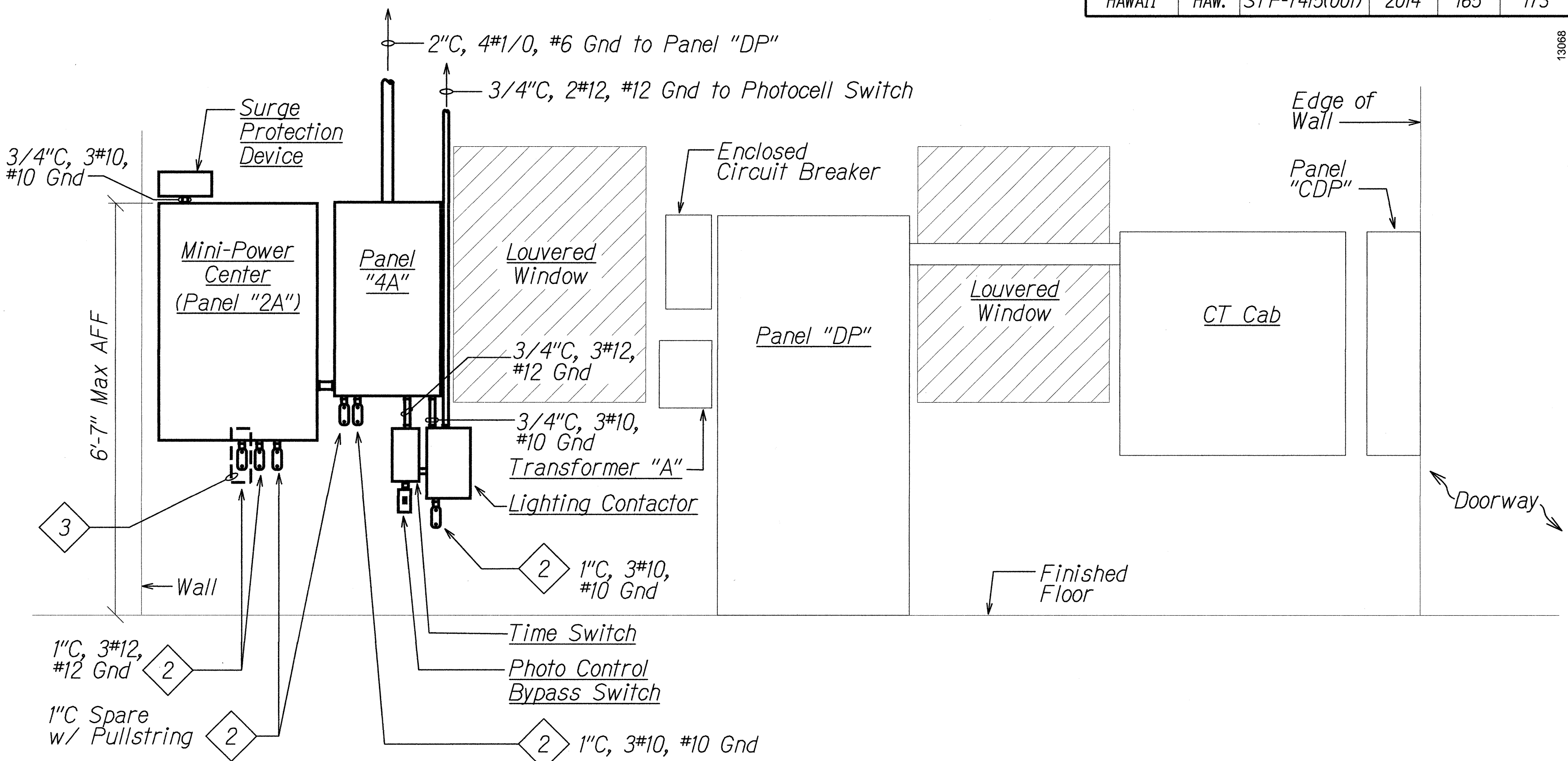


**ENLARGED SUBSTATION PARTIAL  
ELECTRICAL PLAN**

SCALE: 1/2" = 1'-0"

**NOTES:**

- Light Lines Denote Existing Condition.  
Bold Lines Denote New Work.
- Junction Box, 24"H x 20"W x 8"D, NEMA 4X Stainless Steel w/ Hinged Lockable Cover.
- NWIM Scale Conductors Shall be Paid Under Item No. 691-1000 - Nanotechnology Weigh-In-Motion System. Conduit with Pullstring Shall be Paid Under the Various Contract Items Under Section 622.



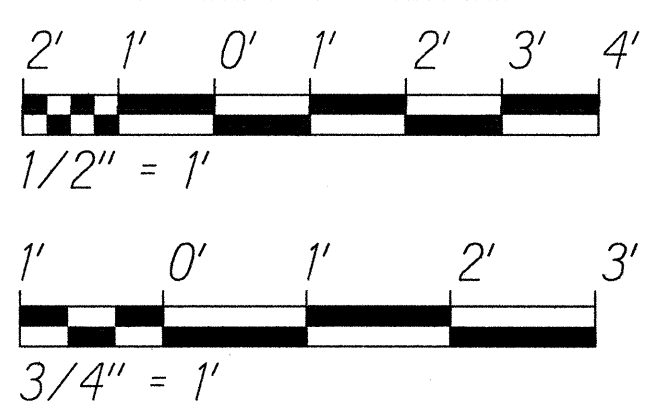
**A  
E-9 ELECTRICAL EQUIPMENT ELEVATION**

SCALE: 3/4" = 1'-0"

**Notes:**

- Light Lines Denote Existing Condition.  
Bold Lines Denote New Work.
- Extend Conduit and Conductors (Where Applicable) to Respective Junction Box on Opposite Side of Wall.
- NWIM Scale Conductors Shall be Paid Under Item No. 691-1000 - Nanotechnology Weigh-In-Motion System. Conduit with Pullstring Shall be Paid Under the Various Contract Items Under Section 622.

**GRAPHIC SCALE**



6/11/14

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ENLARGED PARTIAL SUBSTATION  
ELECTRICAL PLAN**

MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)

Scale: As Noted Date: June 20, 2014

PANEL "4A"																
VOLTAGE: 480Y/277V, 3 PH, 4W			MAIN BKR:			LUG ONLY			EQUIPMENT GROUND BUS: YES							
BUS: COPPER			TYPE:			BOLT-ON			ISOLATED GROUND BUS: NO							
BUS RATING: 225A			MOUNT:			SURFACE			FEED THRU LUGS: NO							
AIC: 14,000			ENCLOSURE:			NEMA 1			U.L. LISTED AS SERVICE							
									ENTRANCE EQUIPMENT: NO							
KVA			DESCRIPTION: L-LIGHTS R-RECEPTACLE, S-SPARE PFB-PROV FOR FUTURE CB				CKT BKR	CKT NO	CKT NO	CKT BKR	DESCRIPTION: L-LIGHTS R-RECEPTACLE, S-SPARE PFB-PROV FOR FUTURE CB			KVA		
A	B	C					BKR	NO	NO	BKR				A	B	C
5.1			MINI-POWER CENTER (PNL 2A)				3P40A	1	2	3P30A	STREET LIGHT PWR (MIDDLE ST.)			3.8		
	5.1		PART OF 1				-	3	4	-	PART OF 2				3.8	
		5.1	PART OF 1				-	5	6	-	PART OF 2					3.8
0.6			LIGHTING CONTACTOR COIL				1P20A	7	8	3P30A	EQUIPMENT PWR (MIDDLE ST.)			3.8		
	0.7		S-SPARE				1P20A	9	10	-	PART OF 8				3.8	
		0.7	S-SPARE				1P20A	11	12	-	PART OF 8					3.8
-			PFB-PROV FOR FUTURE CB				1P	13	14	1P	PFB-PROV FOR FUTURE CB			-		
	-		PFB-PROV FOR FUTURE CB				1P	15	16	1P	PFB-PROV FOR FUTURE CB				-	
		-	PFB-PROV FOR FUTURE CB				1P	17	18	1P	PFB-PROV FOR FUTURE CB					-
5.7	5.8	5.8	SUBTOTALS										7.7	7.6	7.6	
NOTES:																
40.3		TOTAL KVA														
0.96		DEMAND FACTOR														
38.6		DEMAND KVA														
46		DEMAND AMPS														
		480		volts												

PANEL "2A"													
VOLTAGE: 208Y/120V, 3 PH, 4W			MAIN BKR: 3P50A			EQUIPMENT GROUND BUS: YES							
BUS: COPPER			TYPE: BOLT-ON			ISOLATED GROUND BUS: NO							
BUS RATING: 100A			MOUNT: SURFACE			FEED THRU LUGS: NO							
AIC: 10,000			ENCLOSURE: NEMA 1			U.L. LISTED AS SERVICE			NO				
			ENTRANCE EQUIPMENT:						NO				
KVA			DESCRIPTION: L-LIGHTS R-RECEPTACLE, S-SPARE PFB-PROV FOR FUTURE CB				DESCRIPTION: L-LIGHTS R-RECEPTACLE, S-SPARE PFB-PROV FOR FUTURE CB				KVA		
A	B	C	CKT BKR	CKT NO	CKT NO	CKT BKR	A	B	C				
0.1			WIM CABINET PWR	2P20A	1	2	3P20A	SURGE PROTECTOR	0.1				
	0.4		PART OF 1	-	3	4	-	PART OF 2		0.1			
		0.8	S-SPARE	1P20A	5	6	-	PART OF 2			0.1		
0.1			NWIM CABINET PWR	2P20A	7	8	1P20A	S-SPARE	0.6				
	0.4		PART OF 7	-	9	10	1P20A	S-SPARE		-			
		-	S-SPARE	1P20A	11	12	1P20A	S-SPARE			-		
-			PFB-PROV FOR FUTURE CB	1P	13	14	1P	PFB-PROV FOR FUTURE CB	-				
	-		PFB-PROV FOR FUTURE CB	1P	15	16	1P	PFB-PROV FOR FUTURE CB		-			
		-	PFB-PROV FOR FUTURE CB	1P	17	18	1P	PFB-PROV FOR FUTURE CB			-		
0.2	0.8	0.8	SUBTOTALS							0.7	0.1	0.1	
NOTES:													
1. PANELBOARD "2A" IS INTEGRAL TO THE MINI-POWER CENTER.													
2.7 TOTAL KVA													
0.86 DEMAND FACTOR													
2.3 DEMAND KVA													
6 DEMAND AMPS 208 volts													

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

7/22/14

STATE OF HAWAII  
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HIGHWAYS DIVISION

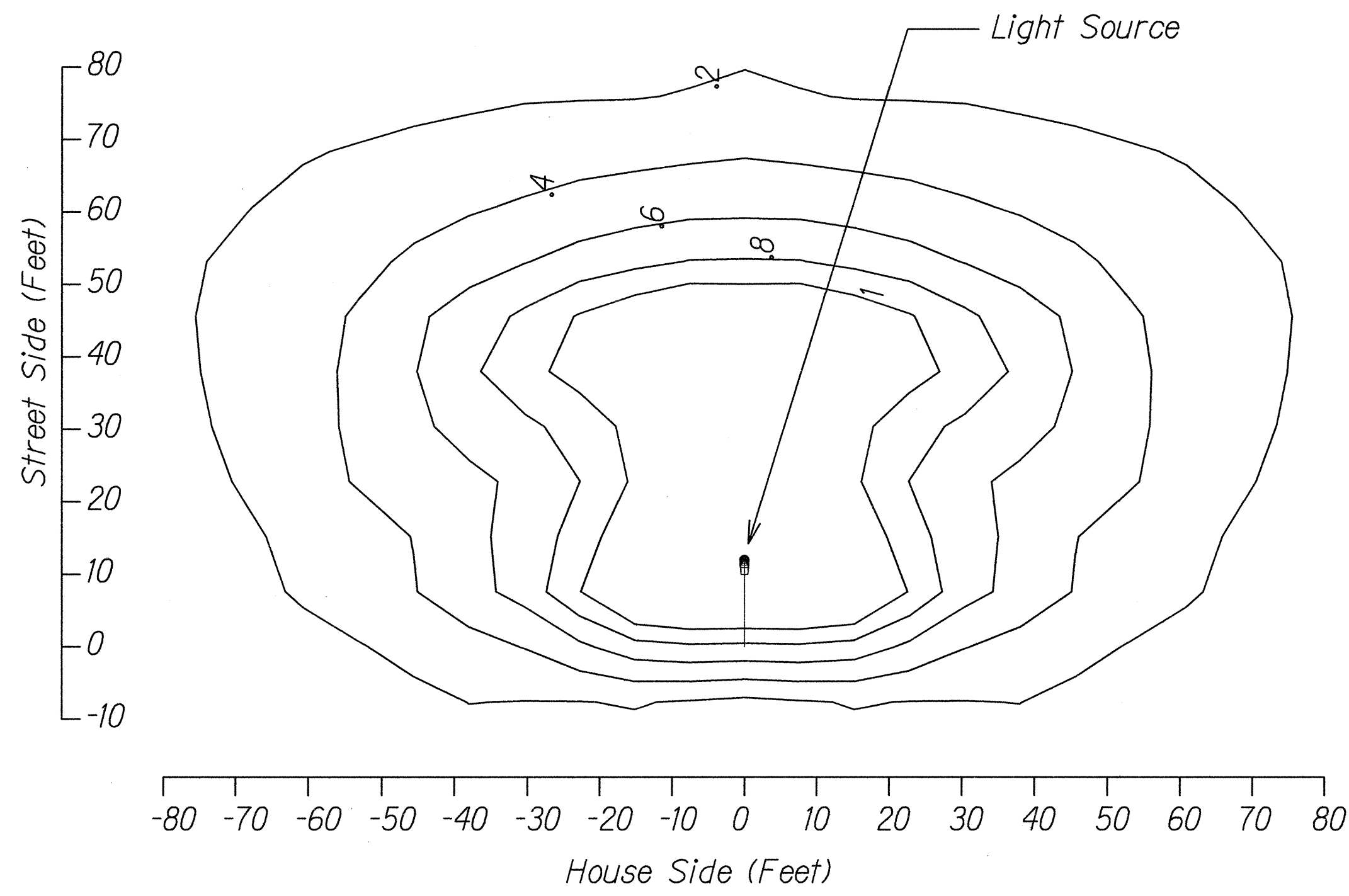
**PANEL SCHEDULES**

MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)

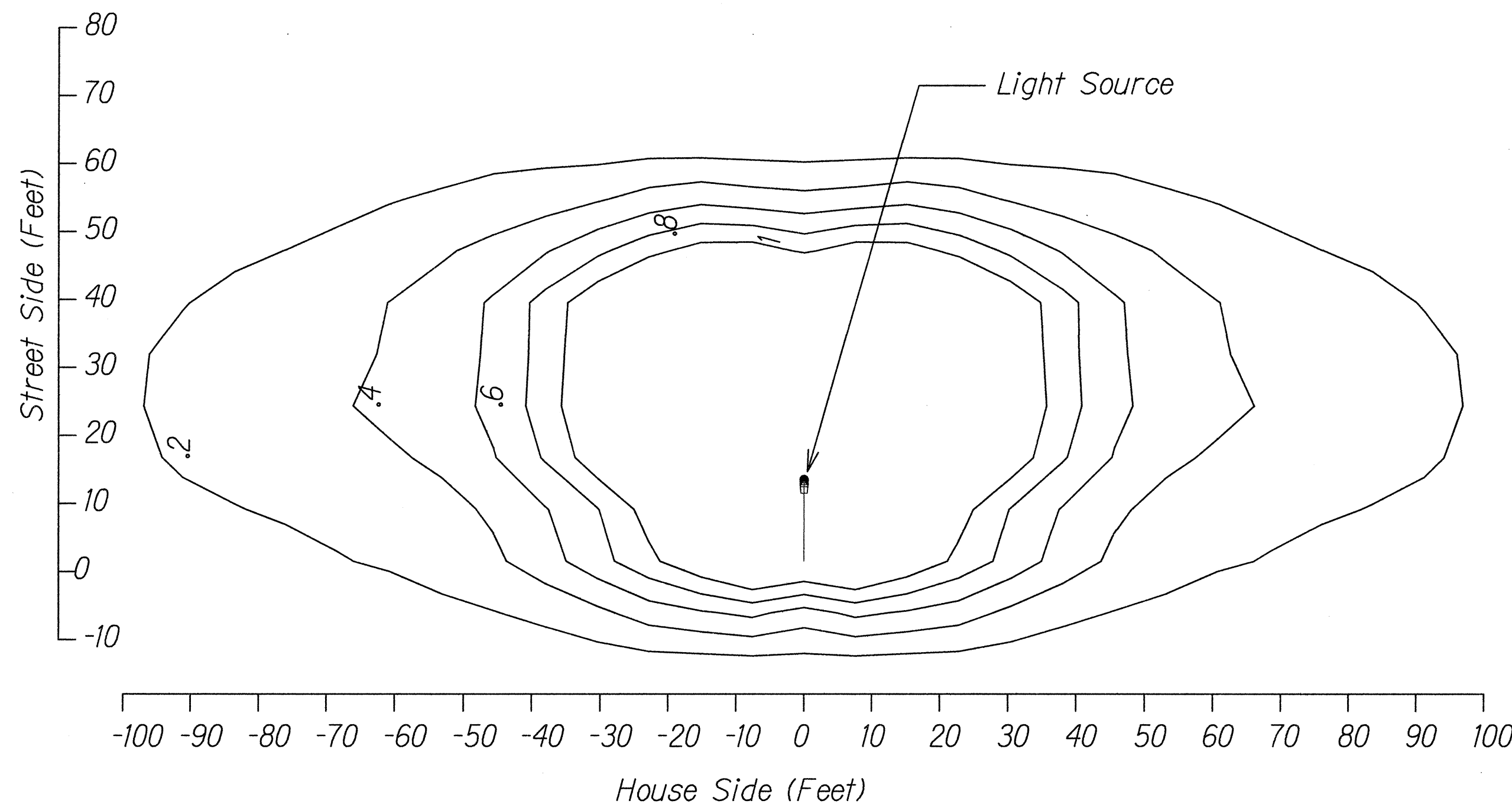
Scale: As Noted      Date: June 20, 2014







113W LED LUMINAIRE - ISO FOOT-CANDLE CURVE



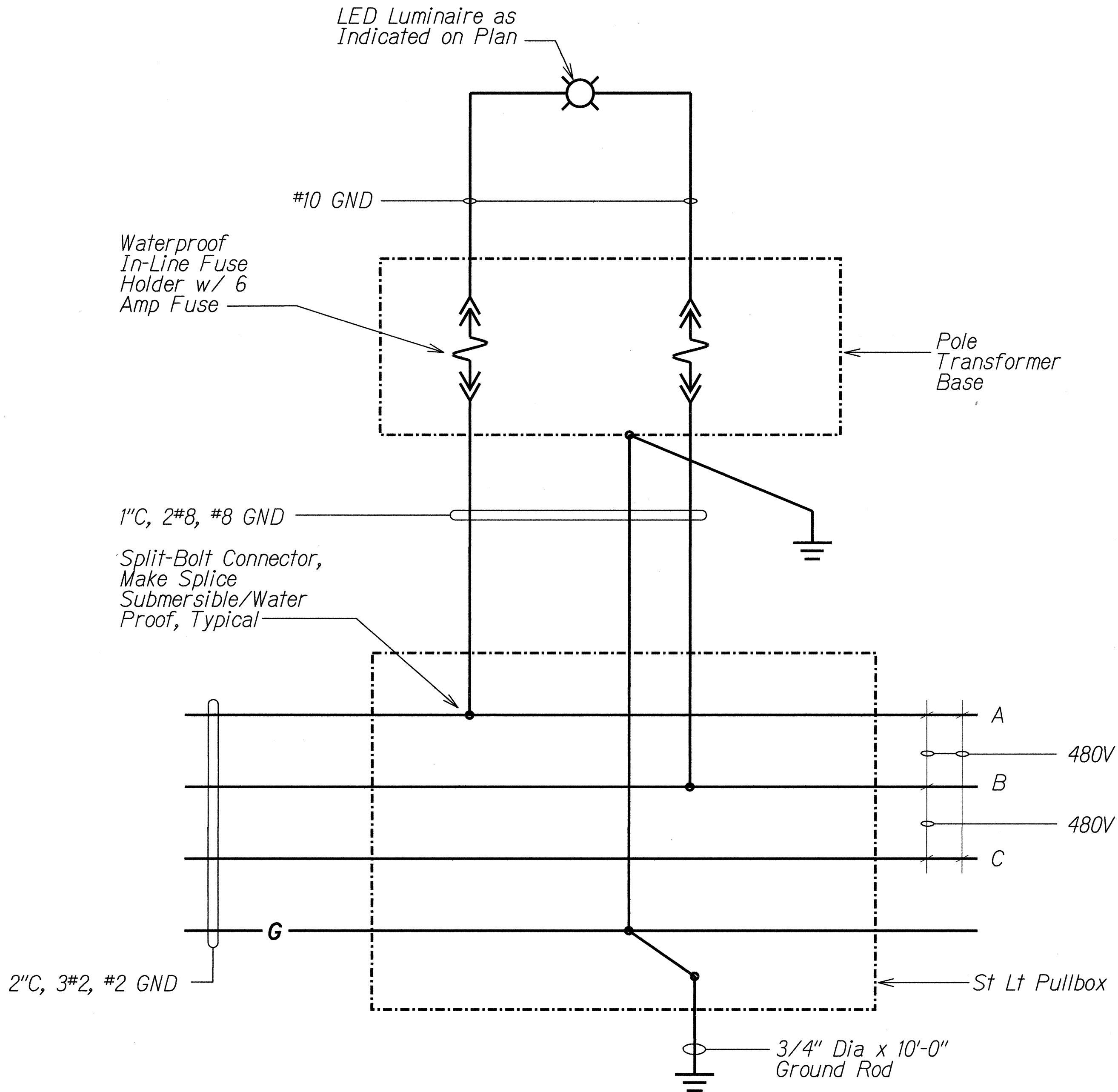
130W LED LUMINAIRE - ISO FOOT-CANDLE CURVE

PHOTOMETRIC DATA

NTS

NOTES:

1. Distance Shown in Feet. Values Shown are Initial Foot-Candle and are Based on the Luminaire Mounted 38'-0" Above Grade.



TYPICAL HIGHWAY LIGHT STANDARD WIRING DIAGRAM

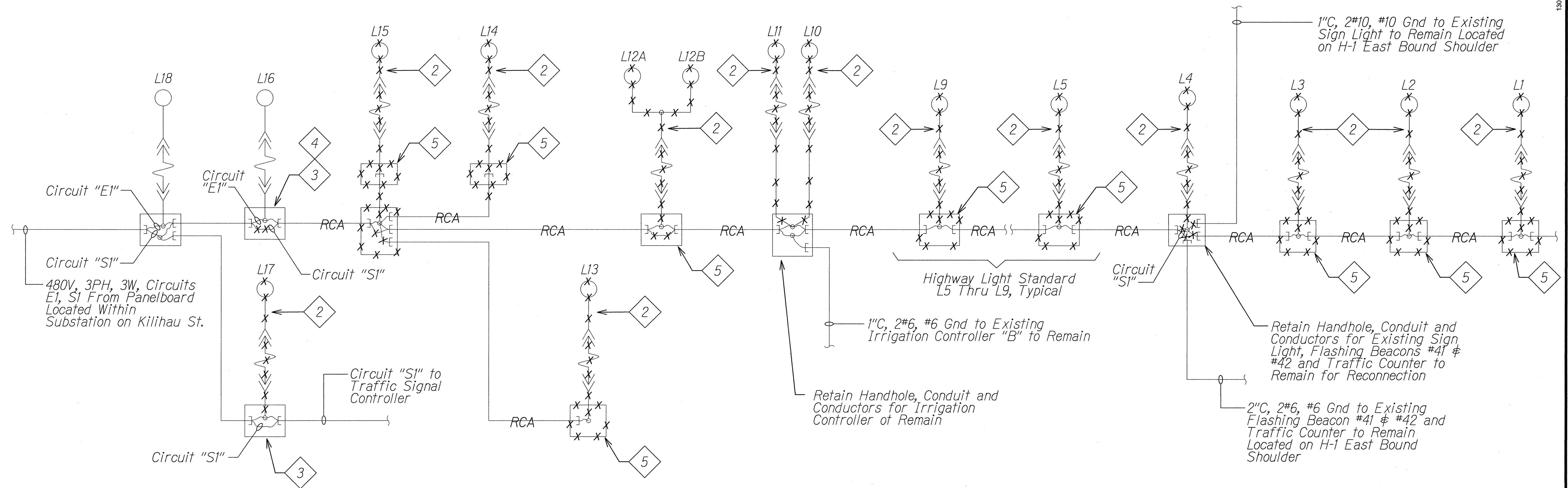
NTS

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NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**TYPICAL HIGHWAY LIGHT  
STANDARD WIRING DIAGRAM**  
MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)  
Scale: As Noted Date: June 20, 2014  
SHEET No. E-12 OF 17 SHEETS



FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	169	173



**PARTIAL ONE-LINE DIAGRAM - REMOVAL WORK**

NTS

Notes:

1. ——— Light Lines Denote Existing Condition.  
—x—x— "X" Denote Removal Work.  
—RCA— Remove All Conductors and Grout Both Ends of Conduit; Conduit to be Abandoned in Place.
- 2 Remove Light Pole, Transformer Pole Base, Anchor Bolts, and Associated Conductors. Pole Foundation Shall be Removed a Minimum 1'-0" Below Grade and Backfill to Match the Surrounding Surface.
- 3 Maintain Circuit Continuity to Existing Loads to Remain.
- 4 Temporarily Utilize Circuit "E1" to Provide Power for the New Highway Lighting System. Until the Work at Existing Substation is Completed and the New Highway Lighting Circuit is Available. Schedule and Coordinate Cutover from Existing Circuit "E1" to the New Highway Lighting Circuit.
- 5 Remove Highway Lighting Pullbox, Grout Existing Conduits, and Backfill to Match Surrounding Area.

SURVEY PLOTTED BY	DATE
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NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

6/17/14

STATE OF HAWAII  
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HIGHWAYS DIVISION

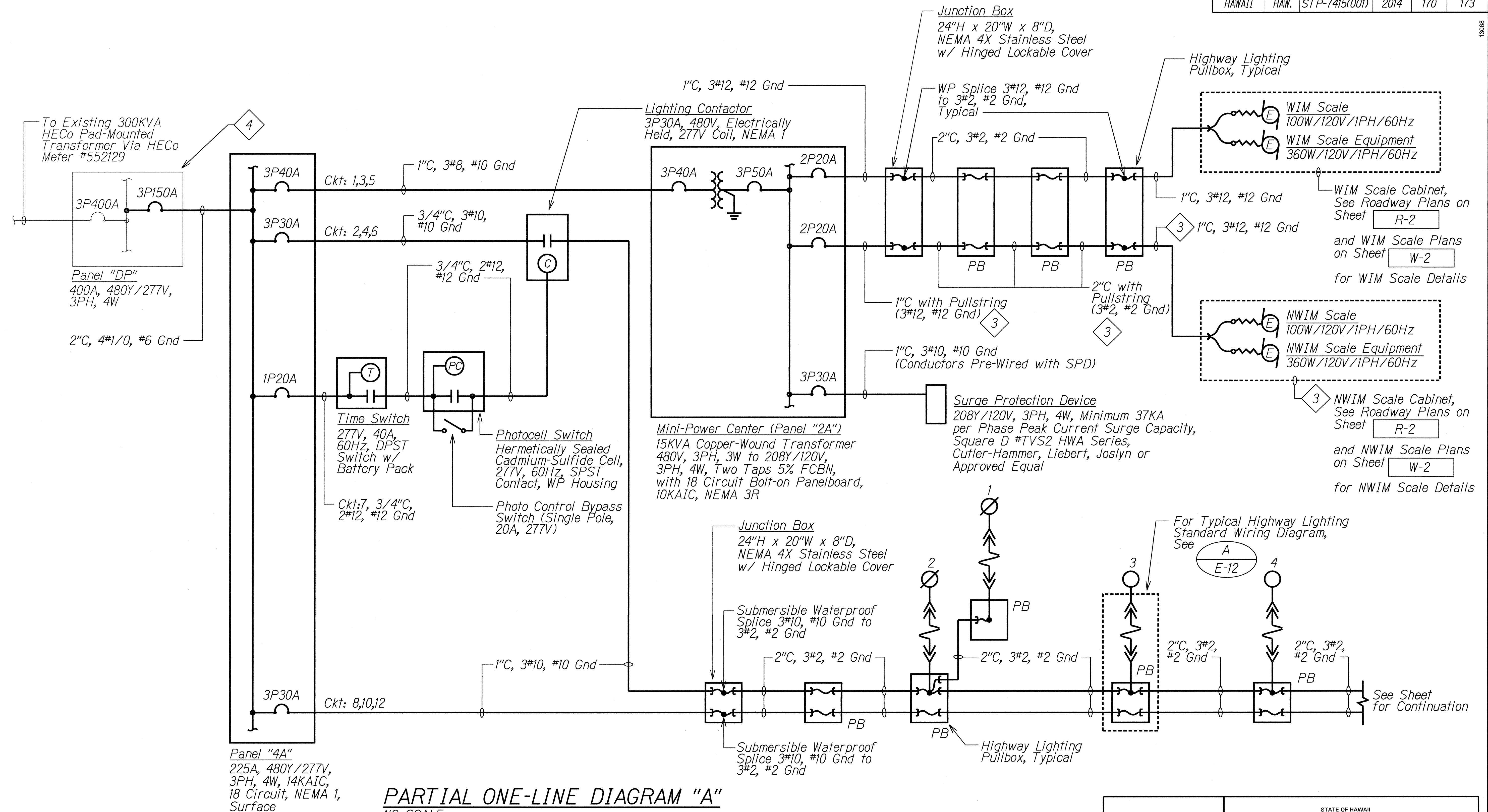
**PARTIAL ONE-LINE  
DIAGRAM - REMOVAL WORK**

**MIDDLE STREET PAVEMENT RECONSTRUCTION**  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)

Scale: As Noted      Date: June 20, 2014

SHEET No. E-13 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	170	173



## PARTIAL ONE-LINE DIAGRAM "A"

NO SCALE

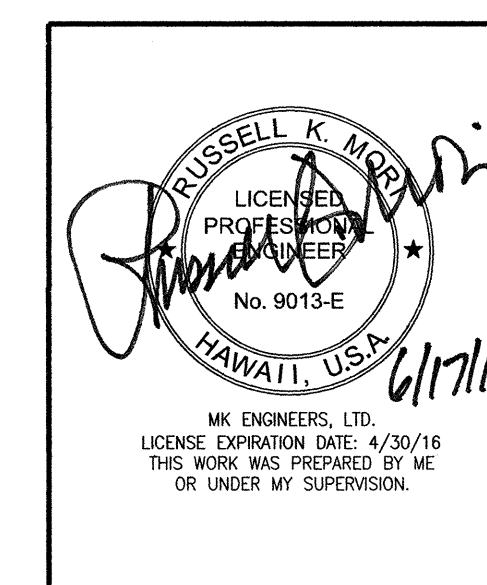
### Notes:

- Light Lines Denote Existing Condition. Bold Lines Denote New Work.
- See Site Lighting Plans for Highway Lighting Pullbox Sizes.

3 Conduit and Pullstring Shall be Paid Under Item No. 622.5031.

Conductors as Indicated Shall be Paid Under Item No. 691.1000 - Nanotechnology Weigh-In-Motion System.

4 Provide New Circuit Breaker; New Breaker Shall be Fully Compatible with the Existing Panel, Including AIC Rating.



STATE OF HAWAII  
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HIGHWAYS DIVISION

**PARTIAL ONE-LINE DIAGRAM "A"**  
MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)

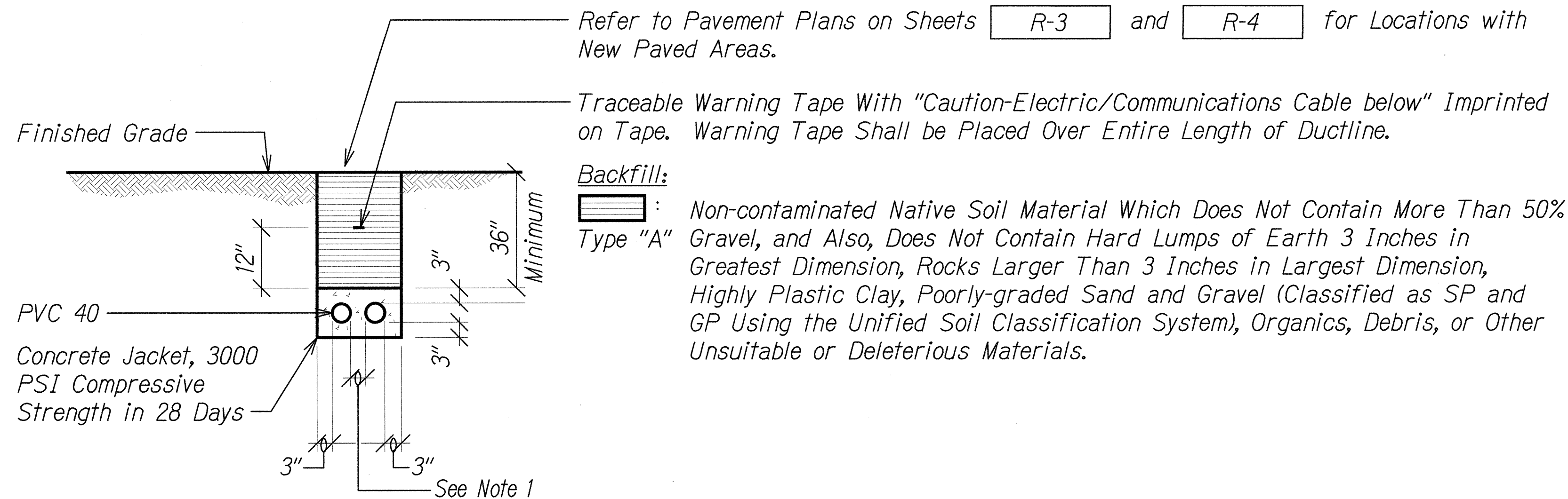
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SHEET NO. E-14 OF 17 SHEETS





FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	172	173

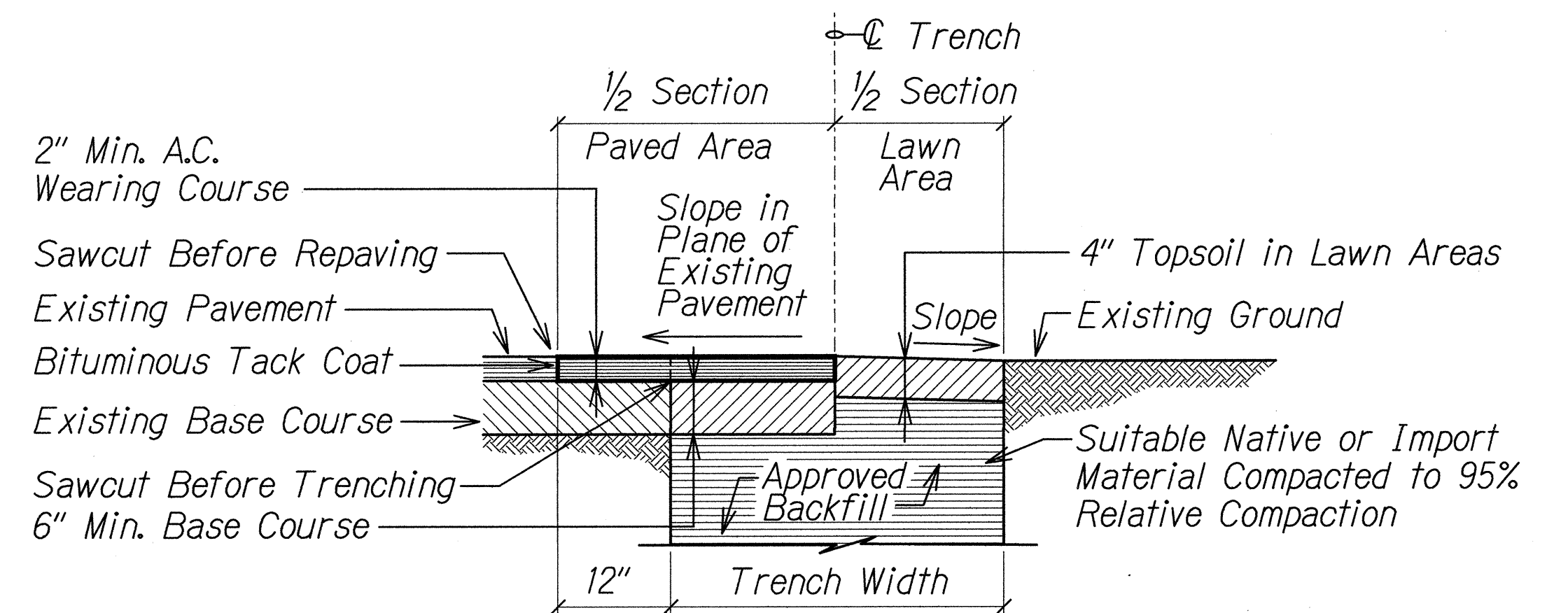


## A TYPICAL DUCT SECTION (CONCRETE ENCASED) FOR UNPAVED AREAS

E-16 NOT TO SCALE

### NOTES:

1. Provide 2" Separation between Ducts of Same System and 3" between Ducts of Different Systems.
2. Where Trench Encounters Grass or Landscaping, Provide 4" Top Soil After Trench is Backfilled, and Restore Landscaping to Match Existing Adjacent Area.
3. See Duct Section Details for Conduit Arrangement.

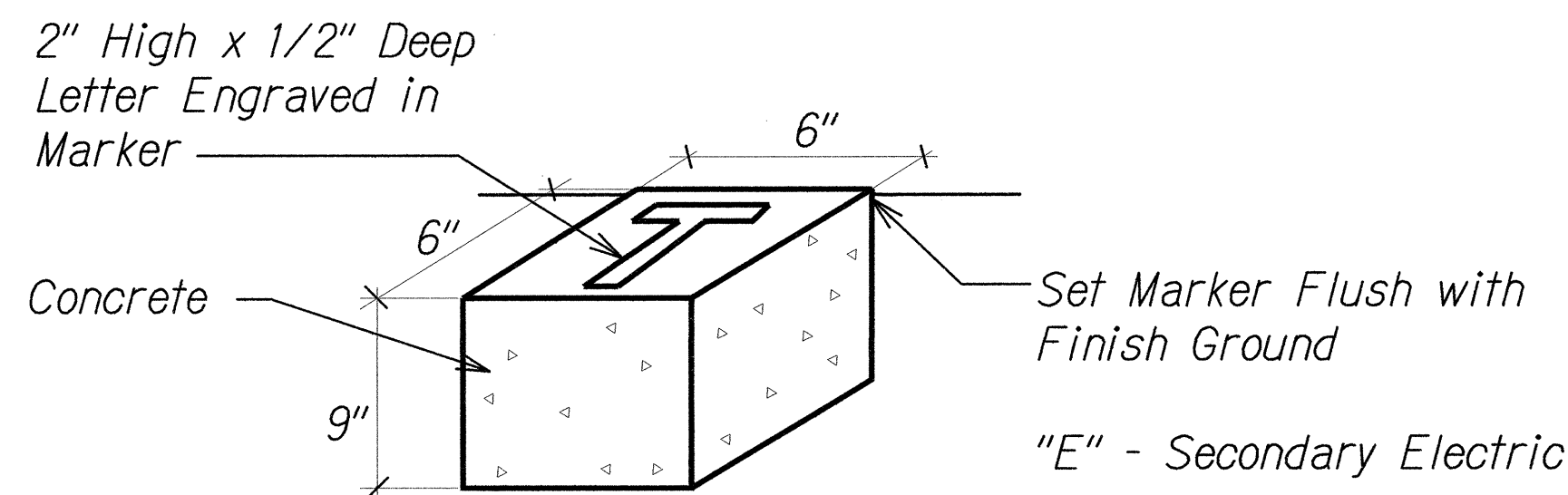


## B TRENCH RESTORATION DETAIL

E-16 NTS

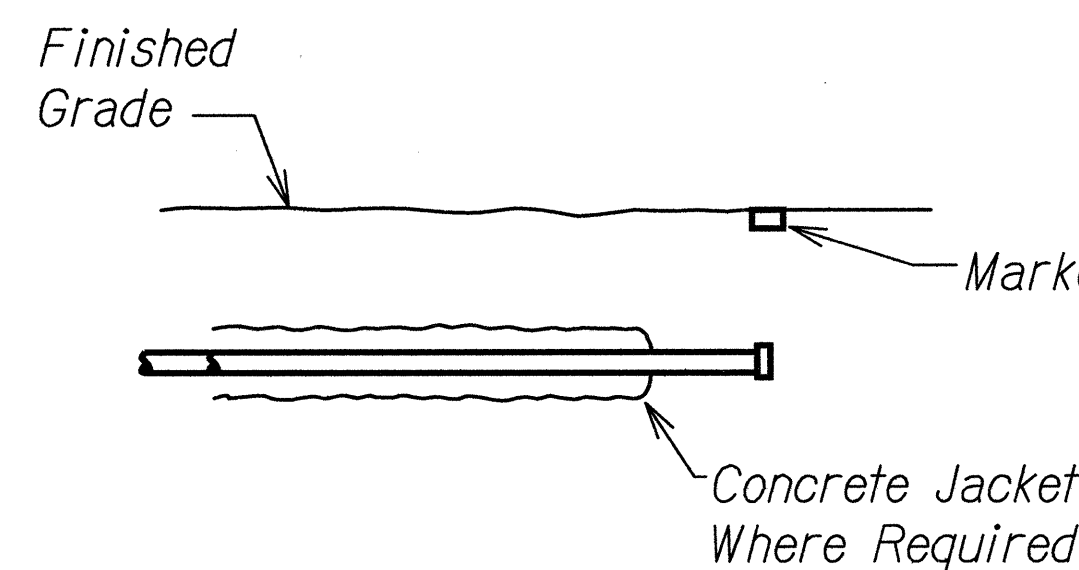
### NOTE:

1. This Detail Applies to Shared Use Path and Driveways Indicated on Plan.



## C CONCRETE MARKER DETAIL

E-16 NOT TO SCALE



## D CONCRETE STUB OUT DETAIL

E-16 NOT TO SCALE

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	

STATE OF HAWAII  
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**TRENCH RESTORATION DETAILS**

MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
FAP NO. STP-7415(001)

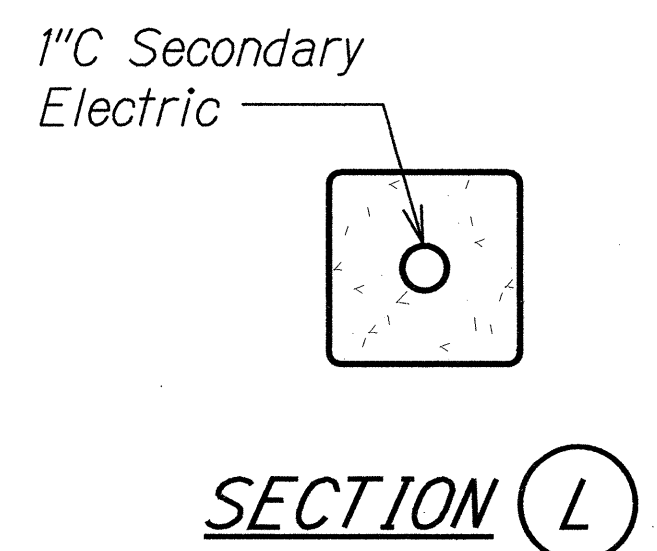
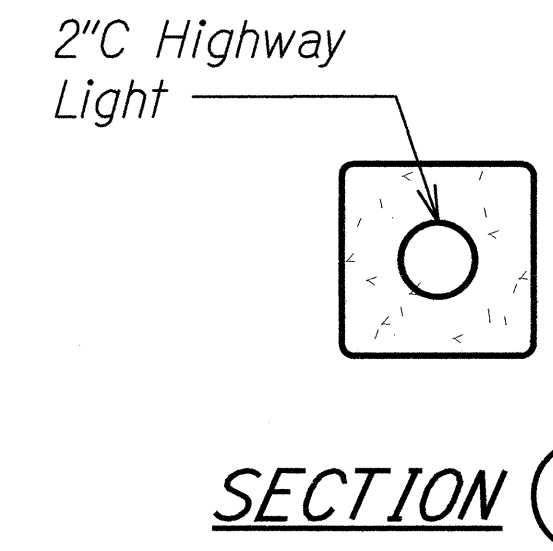
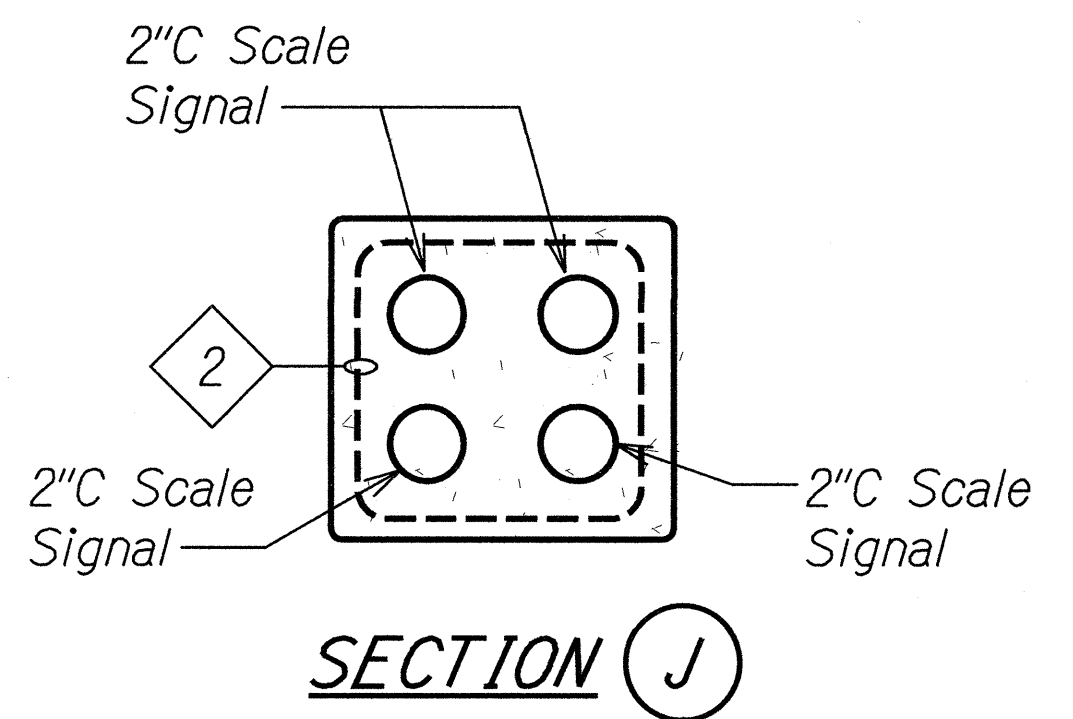
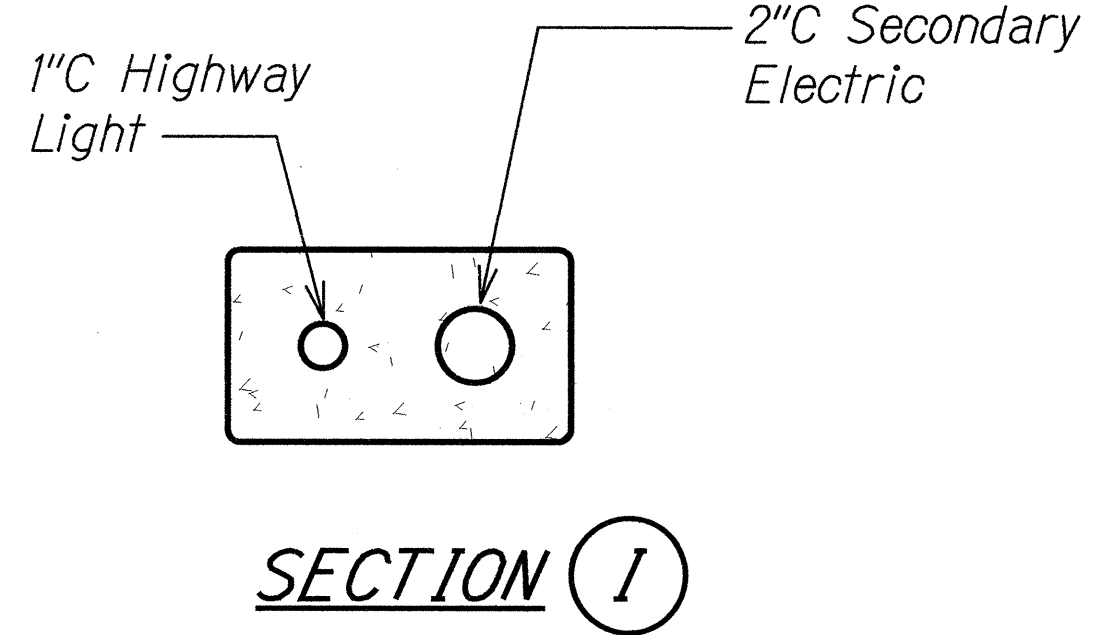
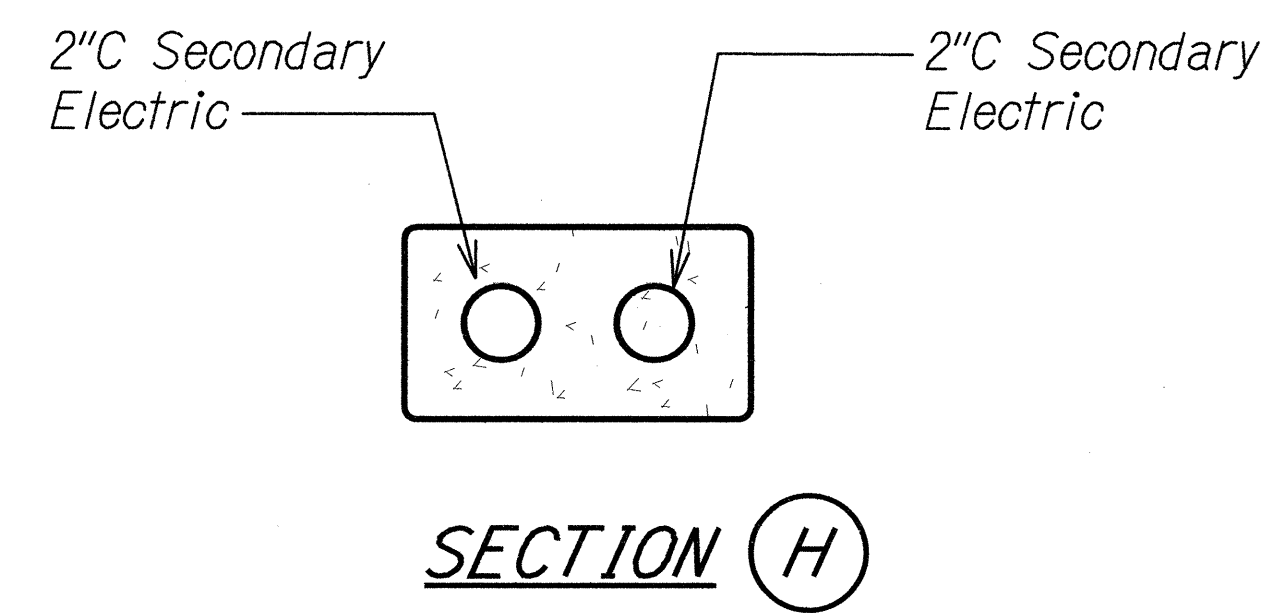
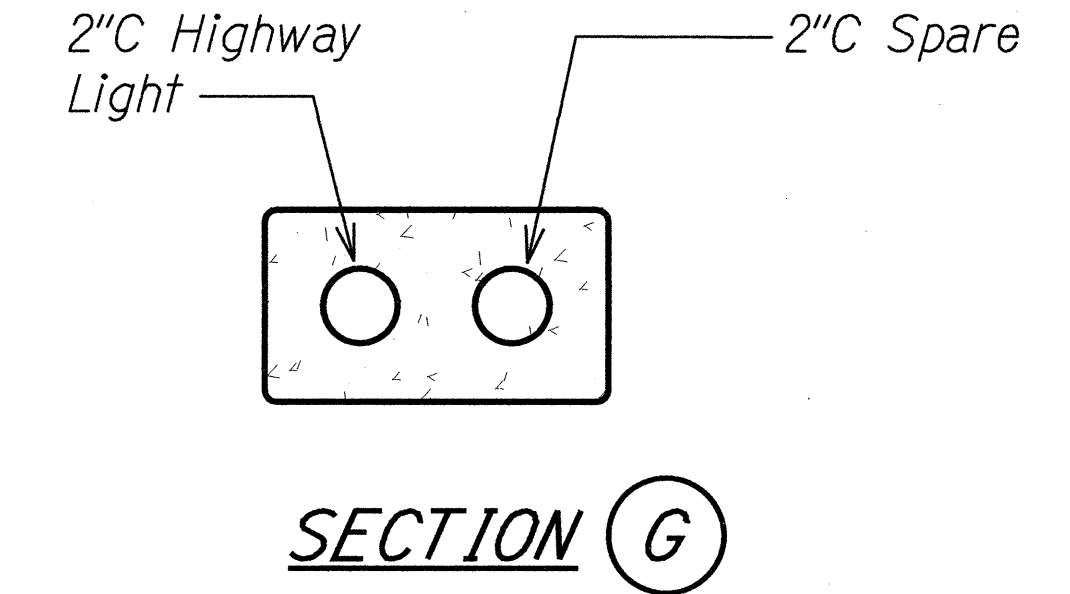
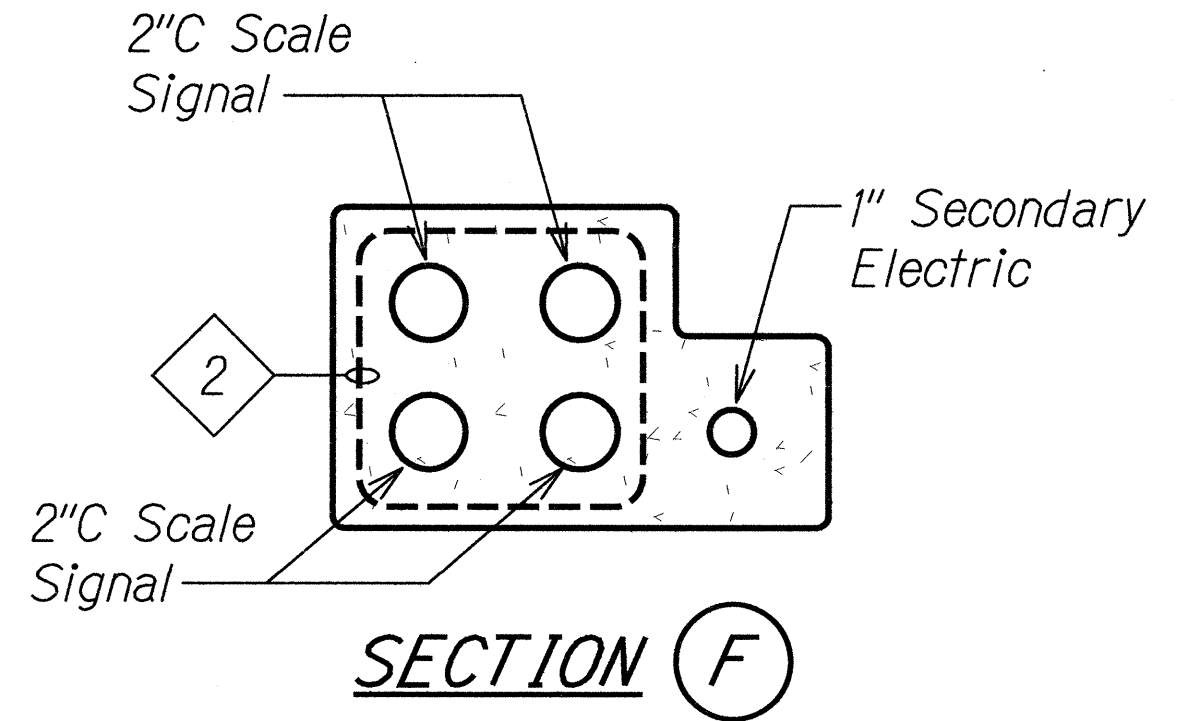
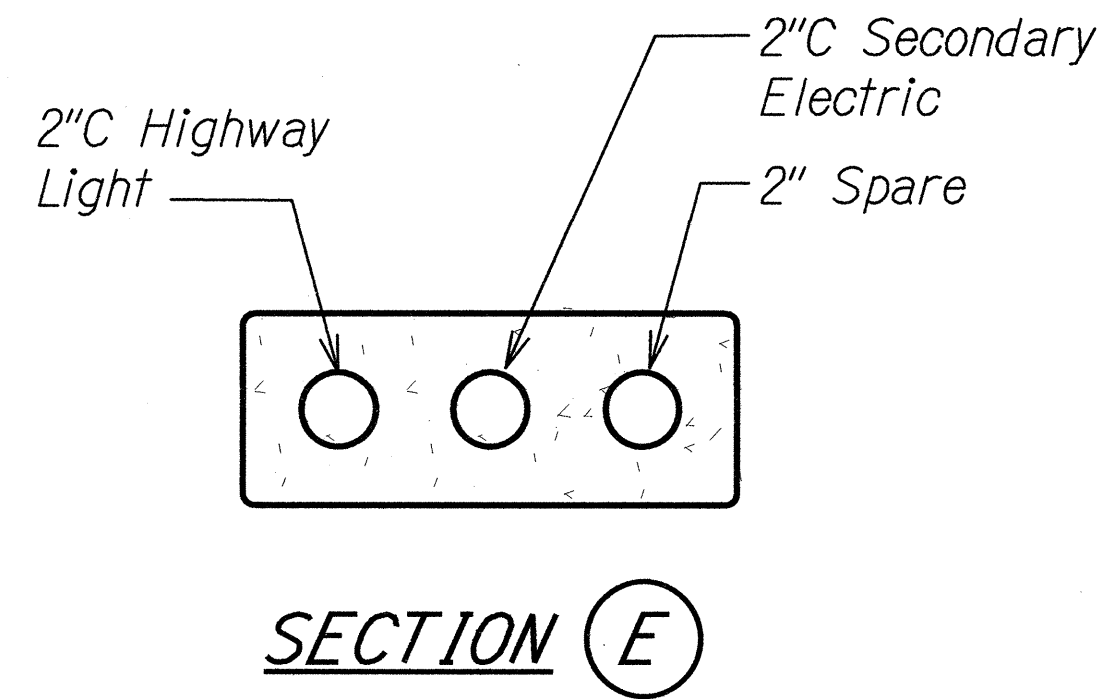
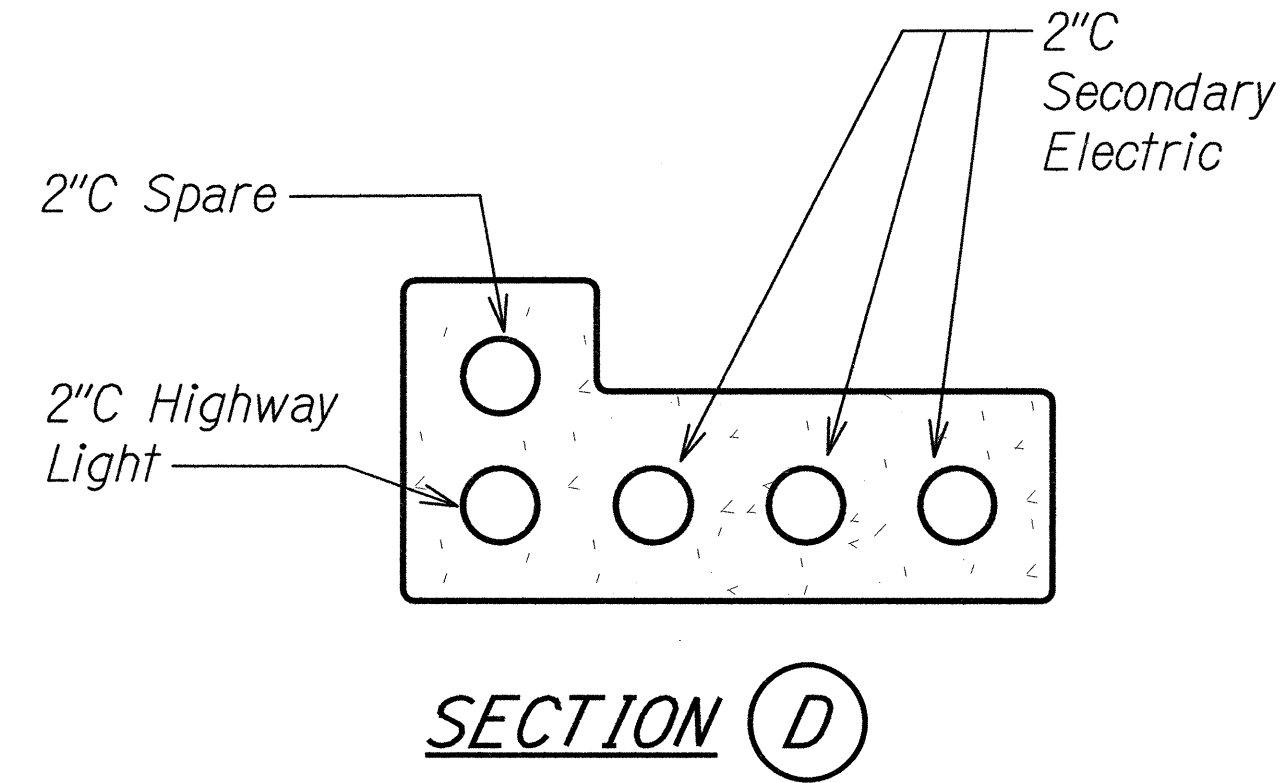
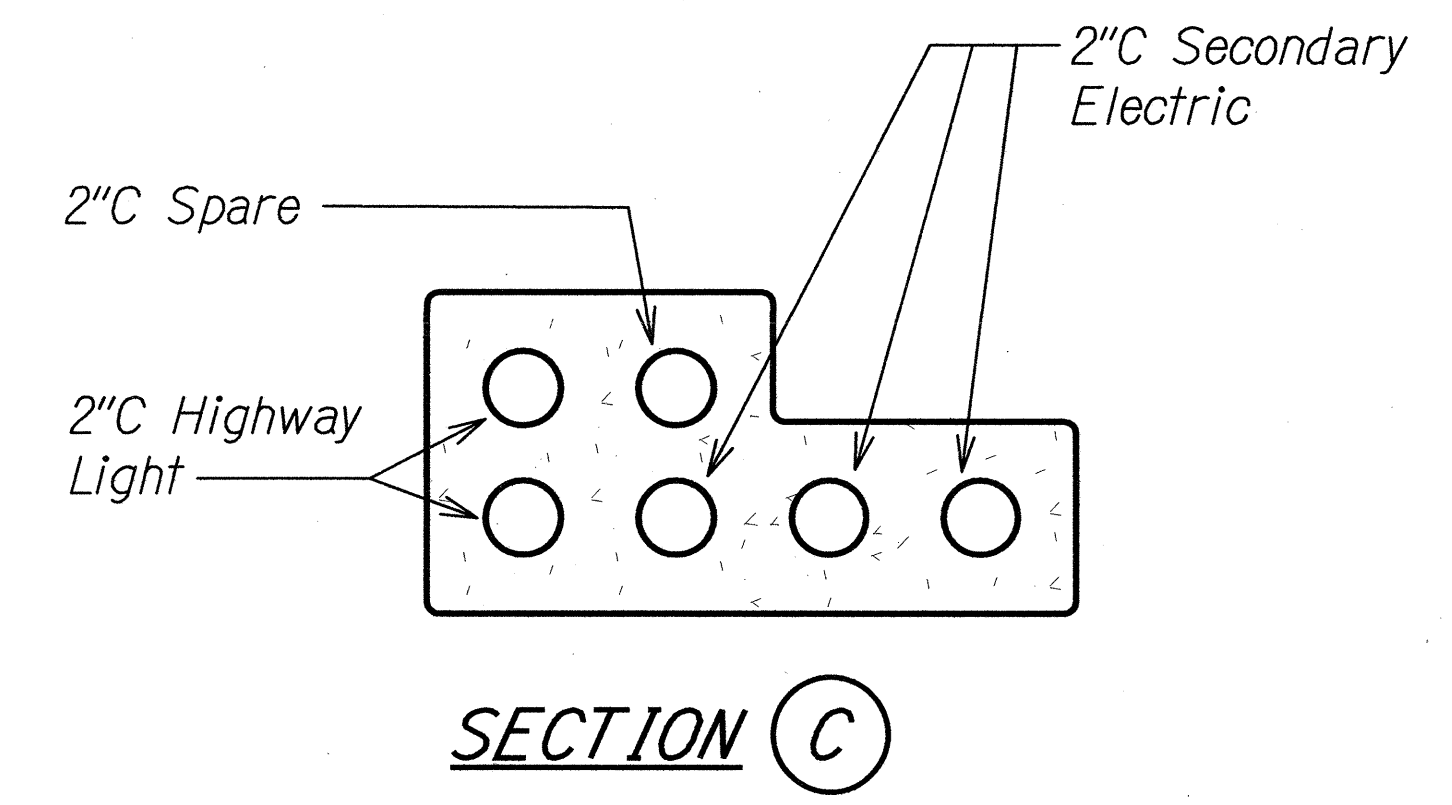
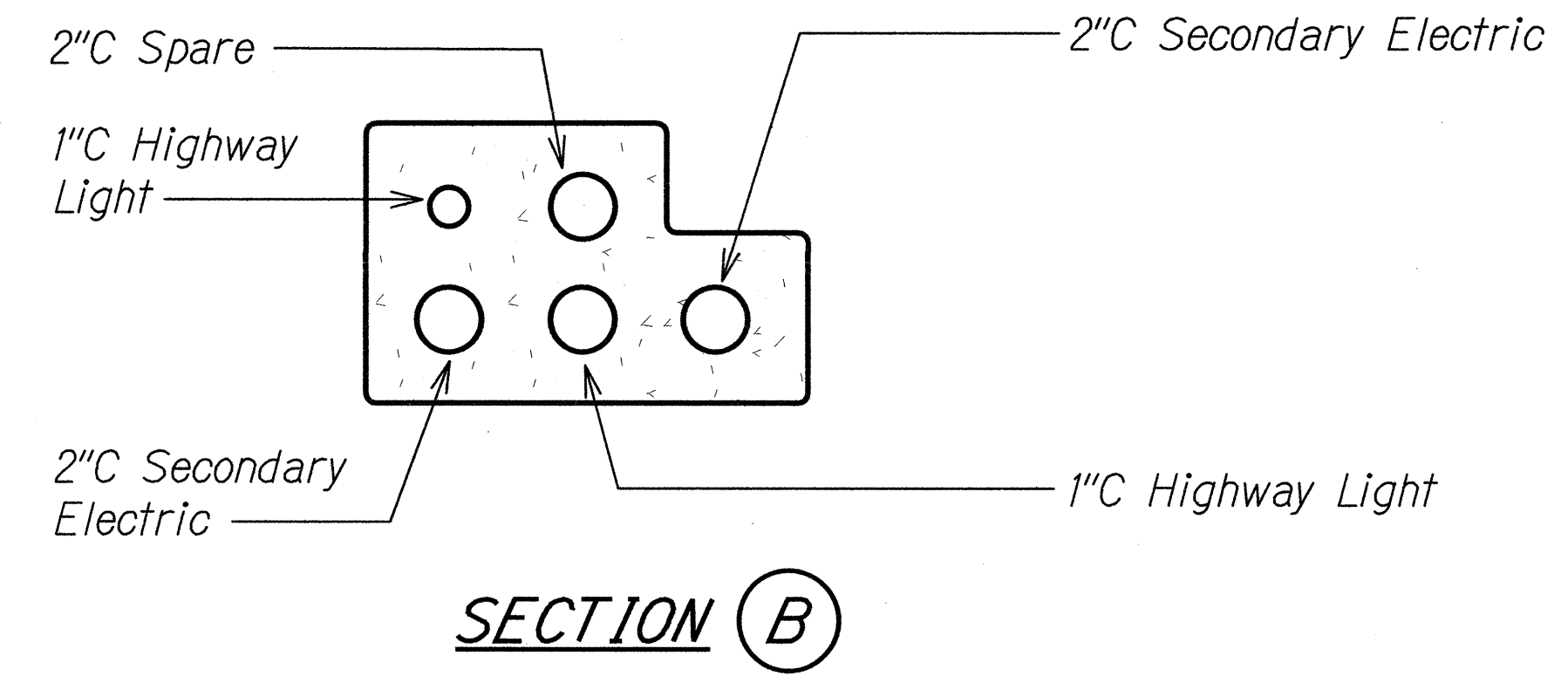
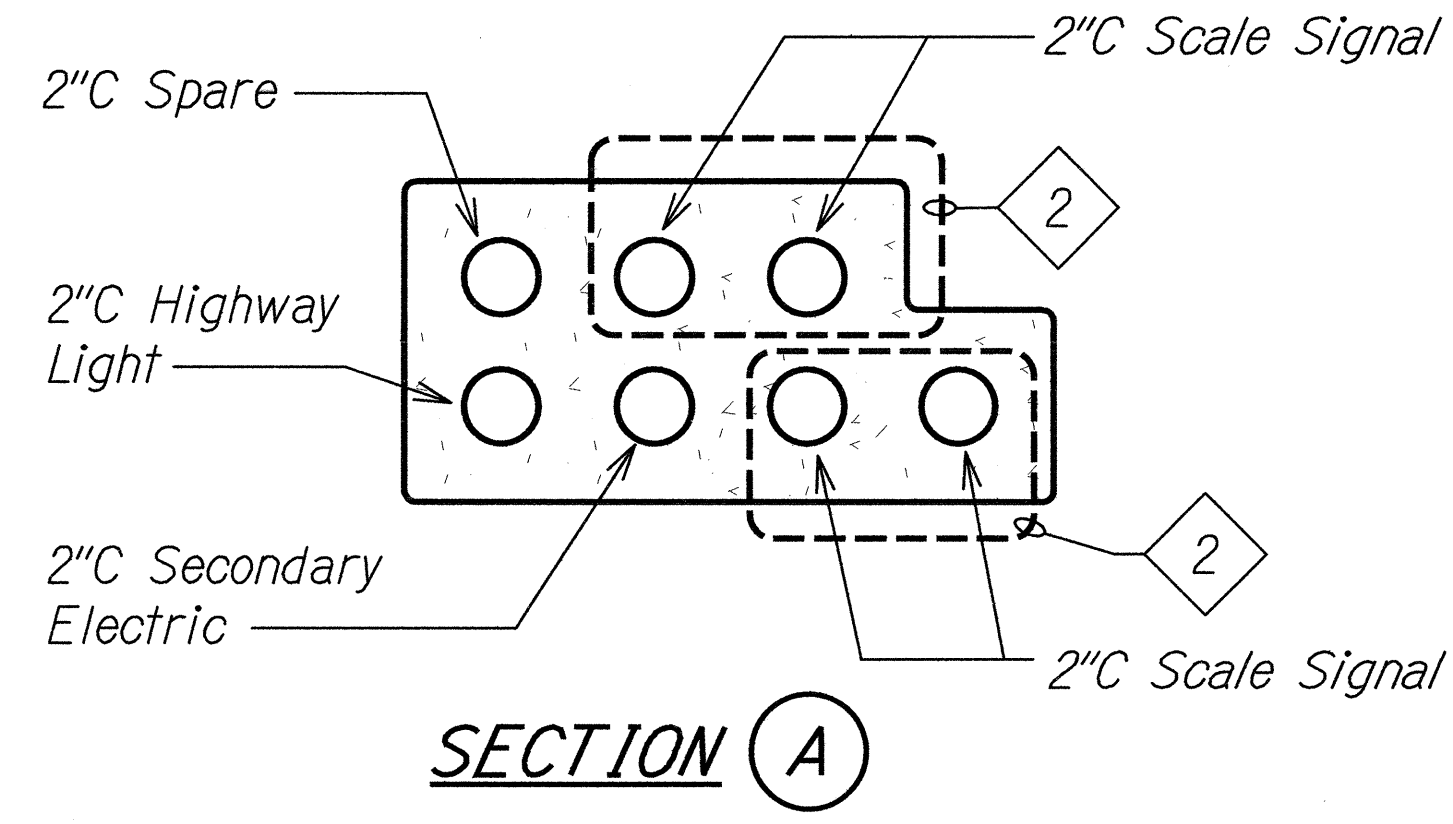
Scale: As Noted Date: June 20, 2014

SHEET No. E-16 OF 17 SHEETS



FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	173	173

13068



### DUCT SECTION DETAILS

NTS

#### NOTES:

- See Typical Duct Section (Concrete Encased) for Unpaved Areas for Minimum Clearance and Cover Requirements.

A  
E-16

2 See WIM Controller Plan on Sheet W-2 for Signal Cable Requirements.

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
NOTE BOOK	
CHECKED BY	

RUSSELL K. MORRELL  
LICENSED PROFESSIONAL ENGINEER  
HAWAII, U.S.A.  
9013-E

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DUCT SECTION DETAILS**

MIDDLE STREET PAVEMENT RECONSTRUCTION  
North King Street to Kamehameha Highway  
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SHEET No. E-17 OF 17 SHEETS