ELECTRICAL SYMBOLS

Existing Flood Light To Be Removed

Existing Ceiling Fluorescent Luminaire

Existing Ceiling Fluorescent Luminaire To Be Removed

Ceiling Exit Light, Blackened Segments Indicates

Illuminated Sides And Arrows Indicates Direction

Existing Ceiling Occupancy Sensor To Be Removed

Wall Occupancy Sensor, Dual Technology Type, +4'-0" To Top Of The Device Plate

Duplex Convenience Outlet, 3W2OA, Grounding Type, +18" To Bottom Of Device Plate Unless Otherwise Noted

Duplex Convenience Outlet, 3W2OA, Ground Fault Interrupter

Type, +18" To Bottom Of Device Plate Unless Otherwise Noted

Existing Duplex Convenience GFI Outlet To Be Removed

Existing Duplex Convenience Outlet To Be Removed

Ceiling Occupancy Sensor, Dual Technology Type

Existing Wall Exit Light To Be Removed

Existing Special Outlet To Be Removed

Existing Wall Junction Box To Be Removed

Ceiling Junction Box, 4-11/16" Square Minimum

Existing Telephone/Data Outlet To Be Removed

Telephone/Data Outlet, +18" To Bottom Of Device Plate

Existing Water Heater Connection

Existing Transformer To Be Removed

Existing Panelboard To Be Removed

Power Pole

Equipment Connection

Existing Wall Junction Box

Existing Telephone Cabinet

Unless Otherwise Noted

Existing Panelboard

Panelboard

Existing Switch To Be Removed

Ceiling Fluorescent Luminiare With Emergency Battery Pack

Existing Post Light

Existing Wall Luminaire

Wall Luminaire, Night Light

Ceiling Fluorescent Luminaire

EX==X==X= Existing Track To Be Removed

Post Light

	Existing Fire Alarm Manual Station To Be Removed 4
F	Fire Alarm Manual Station, +48" To Top Of Device Plate
	Existing Fire Alarm Audible Device To Be Removed

Fire Alarm Audible Device/Flashing Light, +80"

Addressable Fire Alarm Automatic Smoke Detector

Existing Fire Alarm Panel To Be Removed

Fire Alarm Flashing Light, +80"

Fire Alarm Panel

Existing Motor Outlet To Be Removed

Existing Motor Outlet To Be Relocated

Existing Motor Outlet

Relocated Motor Outlet

Motor Outlet

Existing Motor Controller To Be Relocated

Existing Motor Controller

Relocated Motor Controller

Motor Controller

Existing Safety Switch To Be Relocated

Existing Safety Switch

Relocated Safety Switch

Safety Switch 4

Weatherproof

Luminiare Designation, Type "A" Indicated

Wiring In Existing Raceway

 \rightarrow -X - X Wiring In Existing Raceway To Be Removed

-x-EOH-x- Existing Overhead Wiring To Be Removed

——OH—— Overhead Wiring

Wiring In Raceway Concealed In Wall Or Ceiling

——— Wiring In Raceway Concealed Underground Or Below Grade

Wiring In Flexible Raceway

1. Any Circuit With No Further Designation Indicates A Two Wire Circuit. Circuits With Additional Wires Are Indicated As Follows: 1/1 , 3 Wires: 1/1 , 4 Wires, Etc.

2. Ground Wire Per National Electrical Code Indicated As Follows; $-\leftarrow$. Match Adjacent Wall Or Ceiling Surrounding.

3. All Exposed Conduit And Boxes Shall Be Painted To

FISCAL YEAR SHEET TOTAL NO. SHEETS FED. ROAD DIST. NO. PROJ. NO. HWY-0-02-08 2014 ADD.47 57

City And County Of Honolulu Revised Ordinance Chapter 32, Honolulu County Code 1990, As Ammended

To the best of my knowledge, this project's design substantially conforms to the Building Energy Conservation Code for:

Building Component System Electrical Component System Mechanical Component System

Name: Clayton C. Y. Pang, P. E.

Interior Lighting Power Allowance _

April 2014

Title: Principal

License No.: 4145-E

Building Energy Efficiency Standard Calculations

Installed _____NA Exterior Lighting Power Allowance NA 7,424 W Installed 7,192 W

> LICENSED Z PROFESSIONAL ENGINEER No. 4145-E

Club Cy Pration Date of the vicionise 4/50/2018

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

6/20/14	Added Mounting Heights
DATE	REVISIONS
	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
	ELECTRICAL SYMBOLS. ENERGY CALCULATIONS

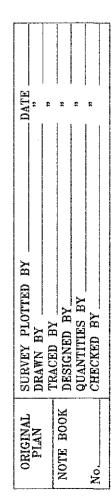
MOTOR VEHICLE SAFETY OFFICE <u>RENOVATION</u> Project No. HWY-0-02-08

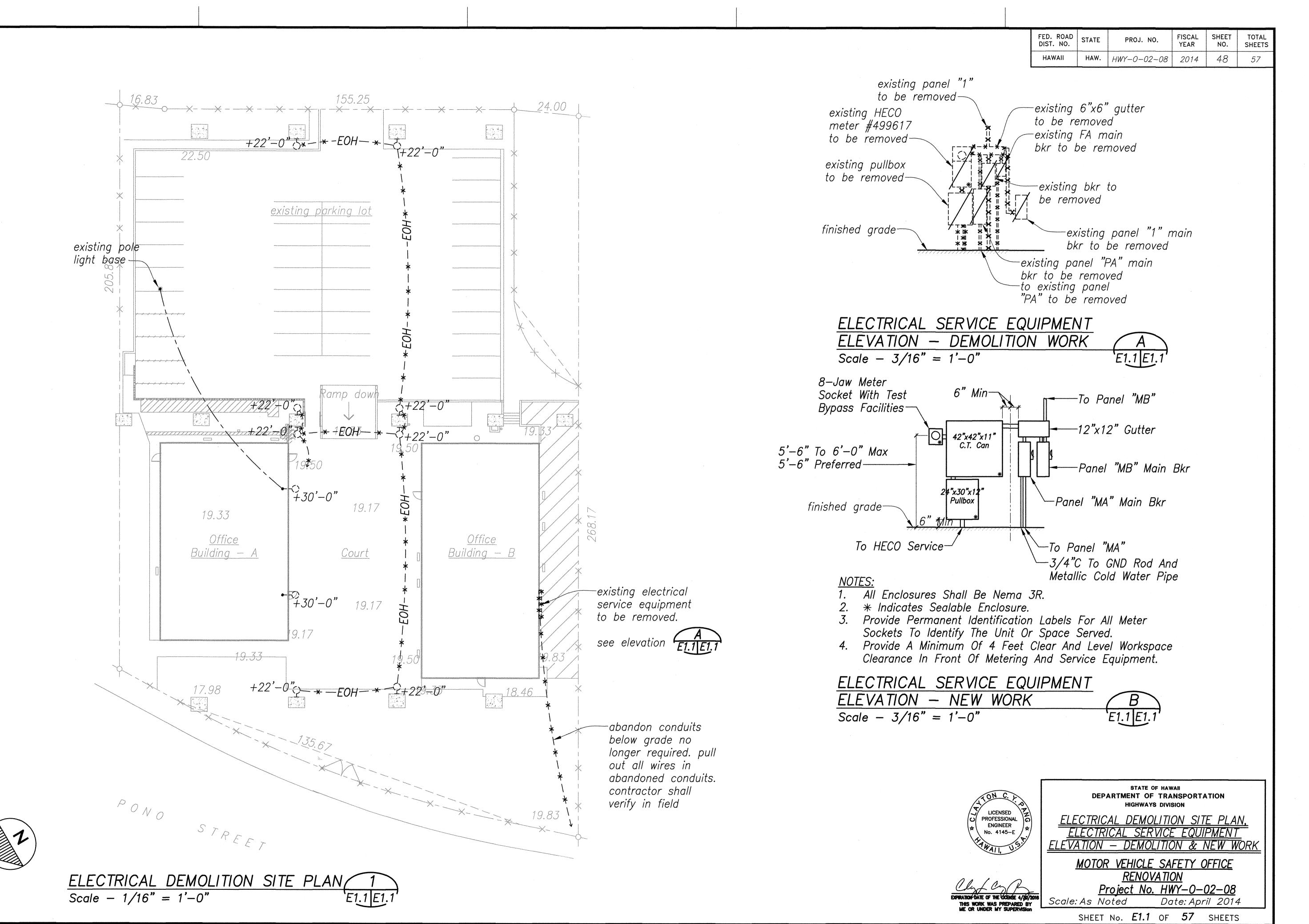
SHEET No. E1.0 OF 57 SHEETS

Scale: As Noted

ADD.47

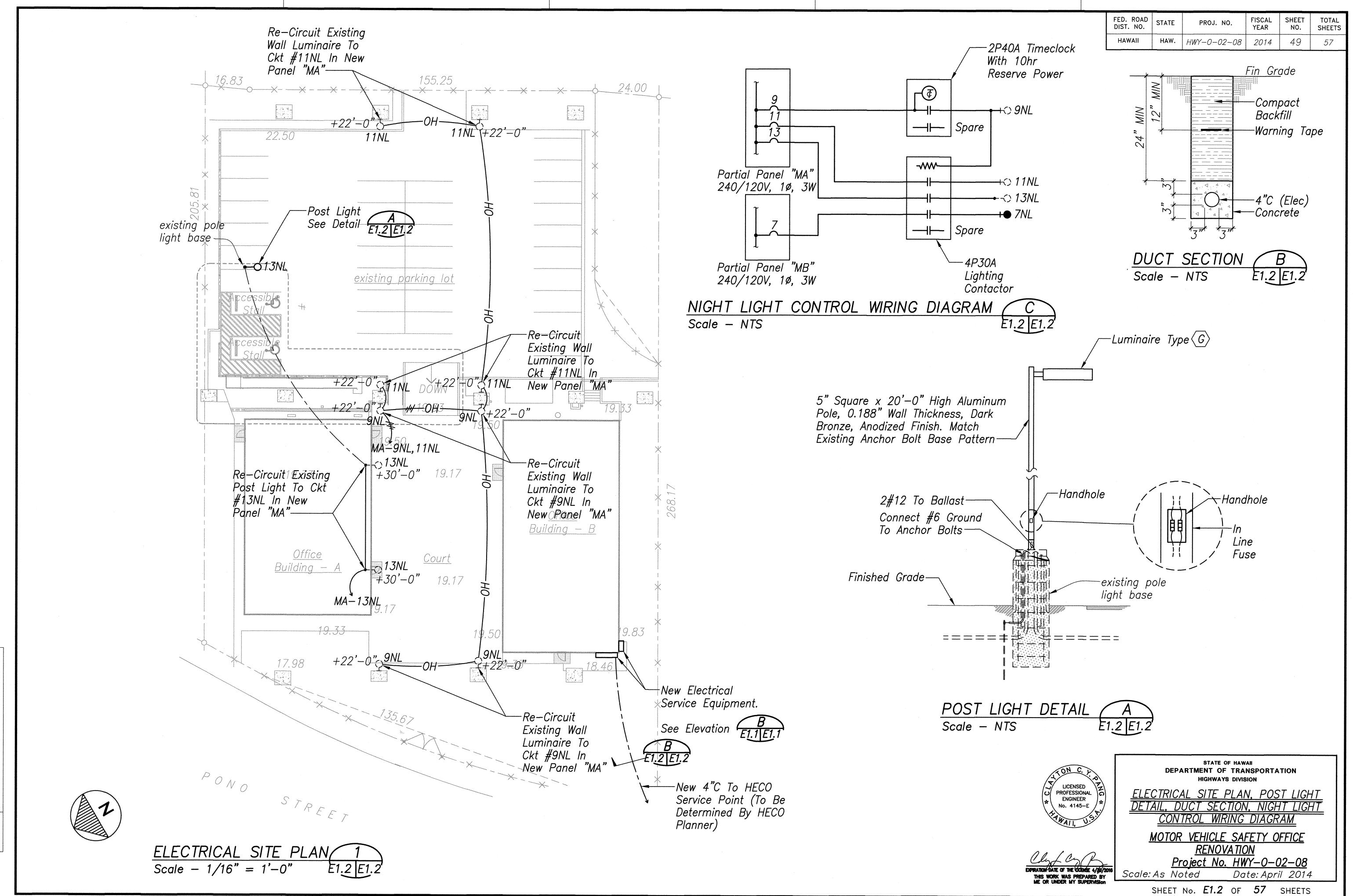
Date: April 2014



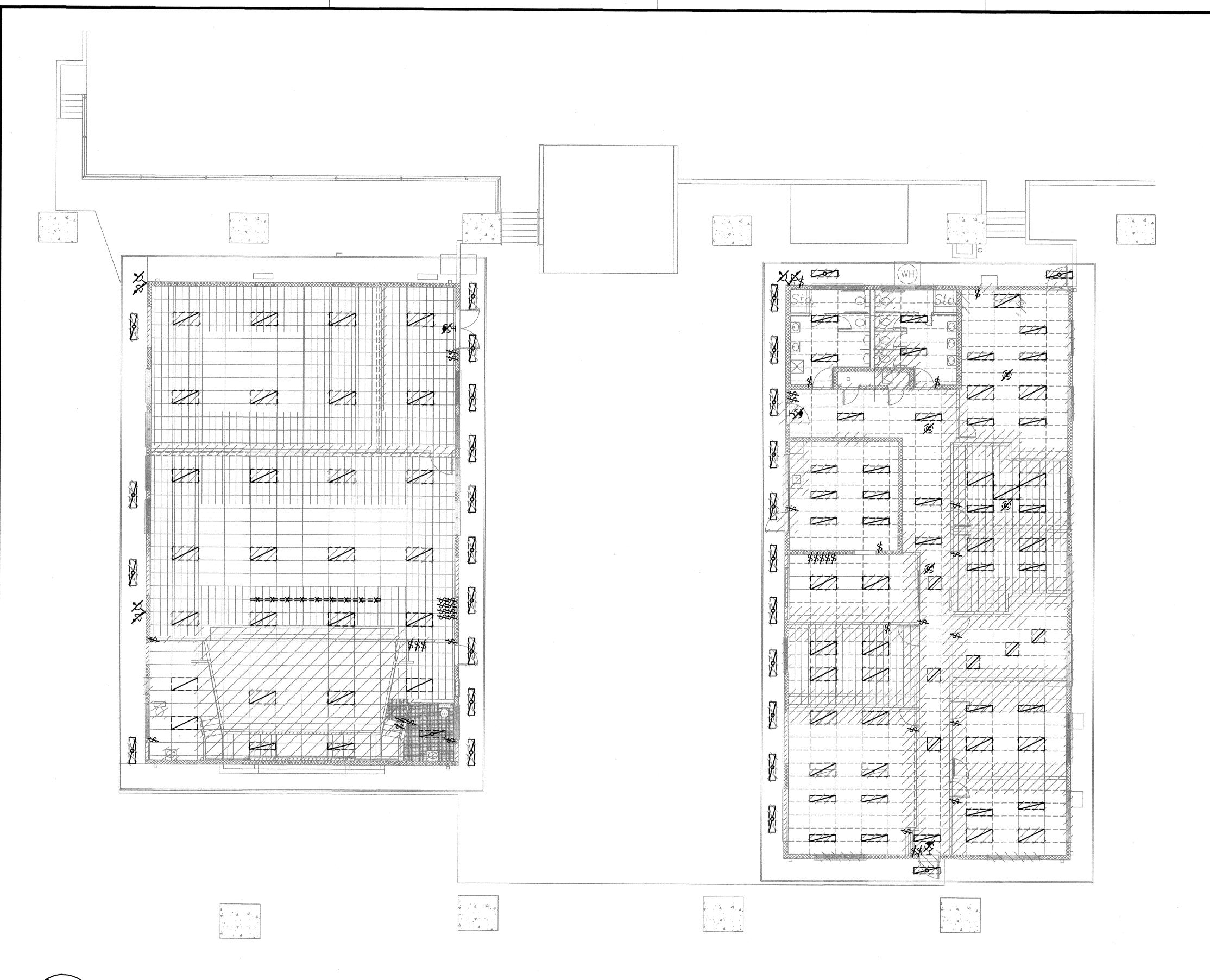


ATE

48



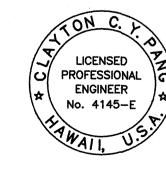
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FISCAL YEAR TOTAL SHEETS HAW. HWY-0-02-08 2014 50

DEMOLITION NOTES

- Existing Plans Do Not Indicate Complete Existing Wiring Conditions. Contractor Shall Verify Existing Conditions Prior To Start Of Work.
- 2. Before Any Wiring Is Cut, Contractor Shall Verify Usage Of Wiring To Be Cut To Assure That Services Required Are Not Discontinued. Provide Additional Wiring Devices And Other Accessories To Ensure Continuity Of Service To Other Parts Of Installation To Remain.
- 3. Remove All Existing Wiring To Not Remain In Service.
- 4. Remove All Conduits No Longer Required.
- 5. Phase Work To Assure Continuity Of Electrical, Telephone And Signal Services To Parts Of Facilities That Will Remain In Use.
- 6. Remove All Existing Lighting Fixtures, Receptacles And Switches Indicated To Be Removed Or No Longer Required. Blank Outlets And Plug All Holes In Boxes And Cabinets.
- 7. Deliver All Salvageable Material As Determined By Engineer At No Additional Cost To Owner. Pack Material In Boxes. Coil All Cables And Tie.
- 8. Abandon Conduits Below Grade No Longer Required. Pull Out All Wires In Abandoned Conduits.
- 9. Return All Removed Light Fixtures To Owner. Deliver Items And Stack In Location As Determined By Engineer.
 Dispose Of Fixtures That Are Not Retained.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION

BUILDING 'A' & 'B' LIGHTING DEMOLITION PLANS, DEMOLITION NOTES

MOTOR VEHICLE SAFETY OFFICE <u>RENOVATION</u>

Project No. HWY-0-02-08 Scale: As Noted Date: April 2014

SHEET No. E2.1 OF 57 SHEETS

LIGHTING DEMOLITION PLAN 2 Scale -1/8" = 1'-0"

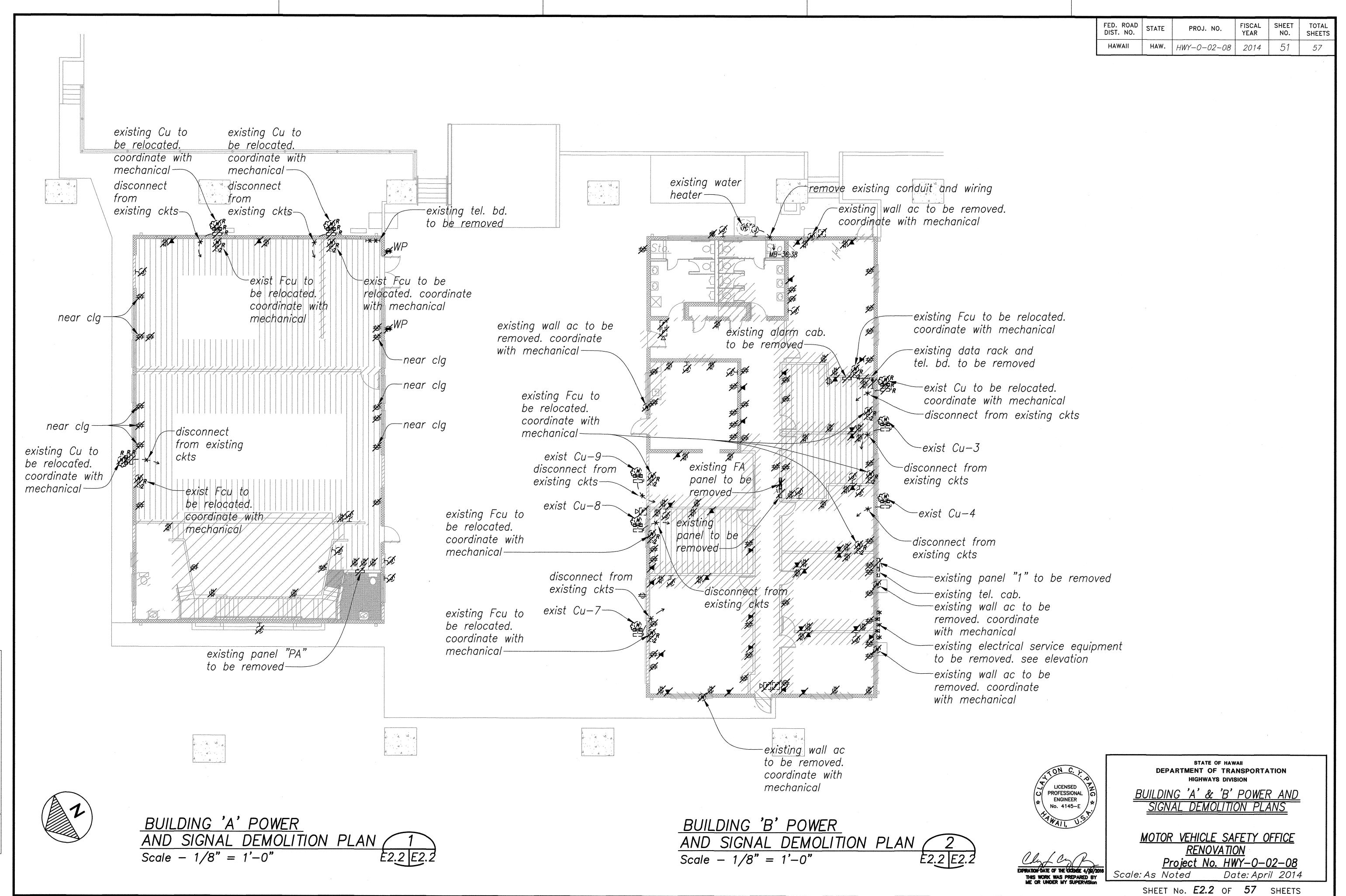
BUILDING 'A'

Scale -1/8" = 1'-0"

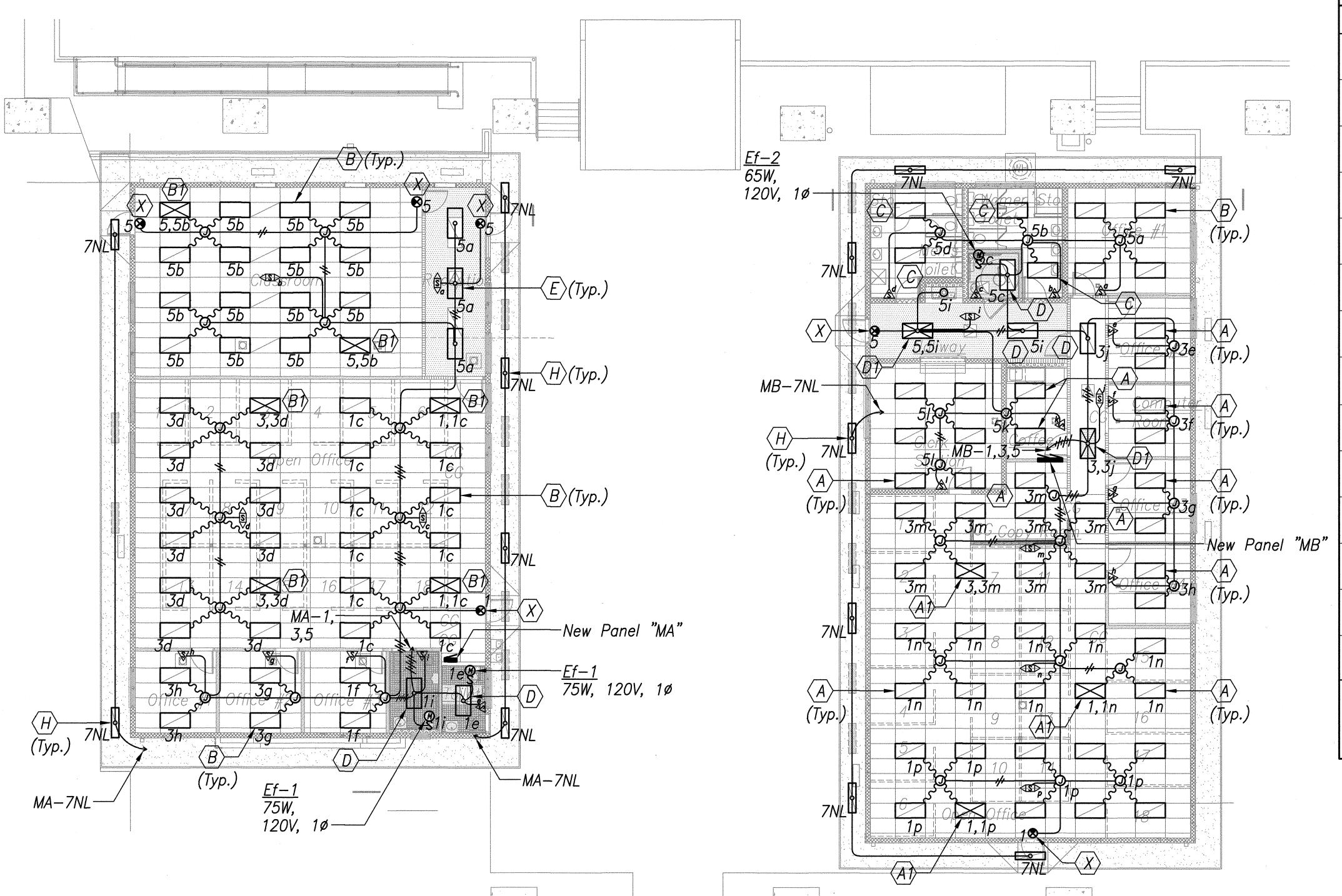
LIGHTING DEMOLITION PLAN 1

BUILDING 'B'

50

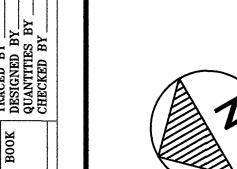


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-02-08	2014	52	57



·	LUI	MINAIRE SCHEDULE
TYPE	LAMP	DESCRIPTION
A	2-28W T8	Columbia STE24-232G-MP0-EPU Or Equal
A1	2-28W T8	Columbia STE24—232G—MPO—EPU—EL Or Equal
В	3-32W T8	Columbia STE24-332G-MP0-EPU Or Equal
B1	3-32W T8	Columbia STE24-332G-MP0-EPU-EL Or Equal
С	2-32W T8	Columbia ST824—232G—FSA12—EPU Or Equal
D	2-32W T8	Columbia ST824-232F-FSA12-EPU Or Equal
D1	2-32W T8	Columbia ST824—232F—FSA12—EPU—EL Or Equal
Ε	3-32W T8	Columbia ST824-332F-FSA12-EPU Or Equal
F	1-26W CFL	Prescolite SFR6126EB ST372A1 LP26Q430K B6 Or Equal
G	1-150W HPS	Raven RCS—A4—S15—H4—F—Q—DB Or Equal
Н	2-32W T8	Columbia WT14-232F-FAA12-EPU
X	LED	Dual-Lite LX-U-R-W-E Or Equal

<u>NOTE:</u> 1. All Fluorescent Luminaires Shall Be Furnished With Program Start Electronic Ballasts With Less Than 10% THD With Full Lumen Output.



BUILDING 'A'
LIGHTING PLAN — NEW WORK

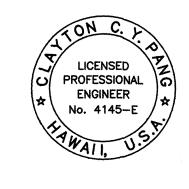
Scale - 1/8" = 1'-0"

E2.3 E2.3

BUILDING 'B'

LIGHTING PLAN — NEW WORK 2

Scale — 1/8" = 1'-0"E2.3 E2.3

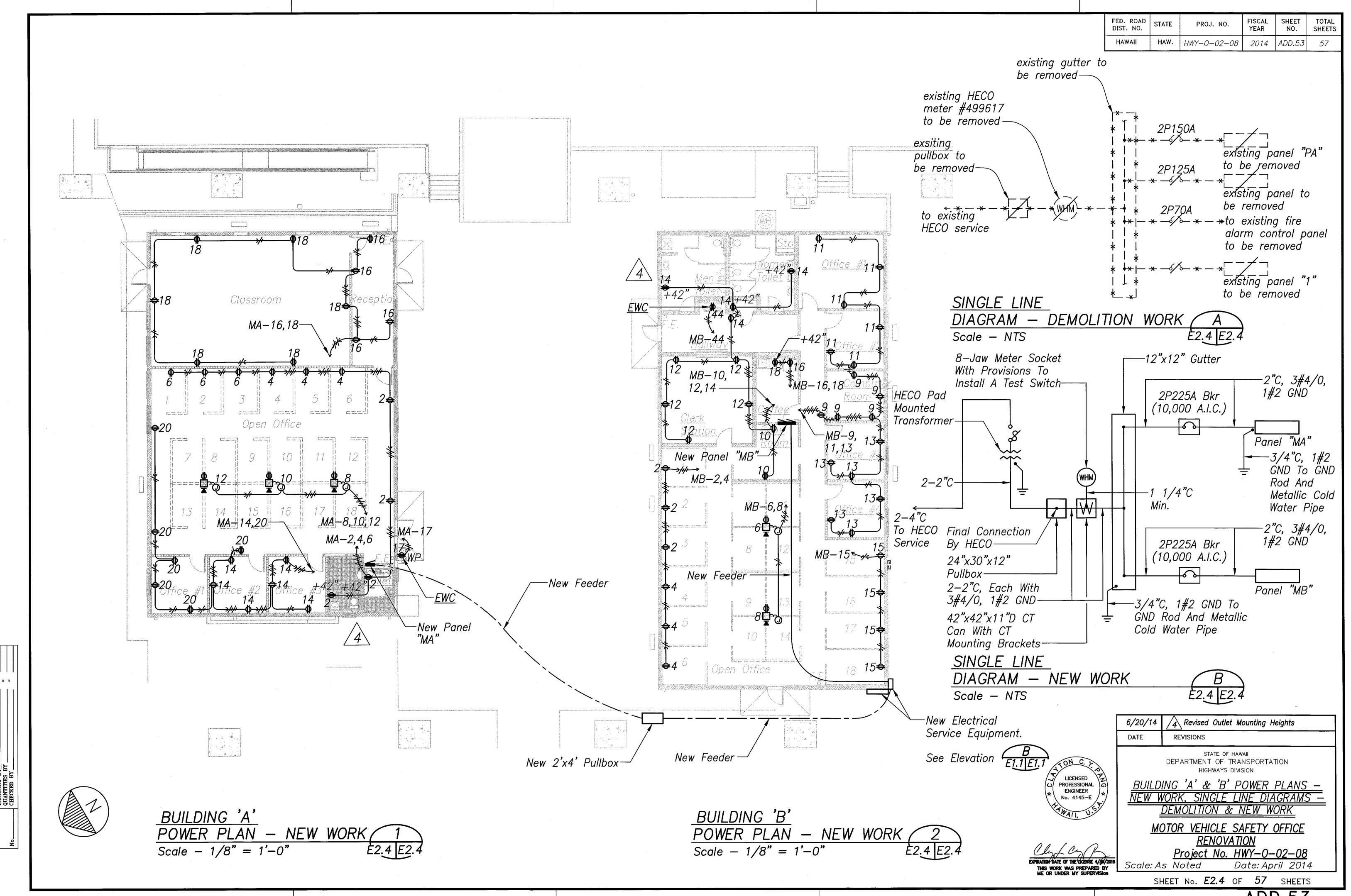


BUILDING 'A' & 'B' LIGHTING
PLANS — NEW WORK,
LUMINAIRE SCHEDULE
MOTOR VEHICLE SAFETY OFFICE
RENOVATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

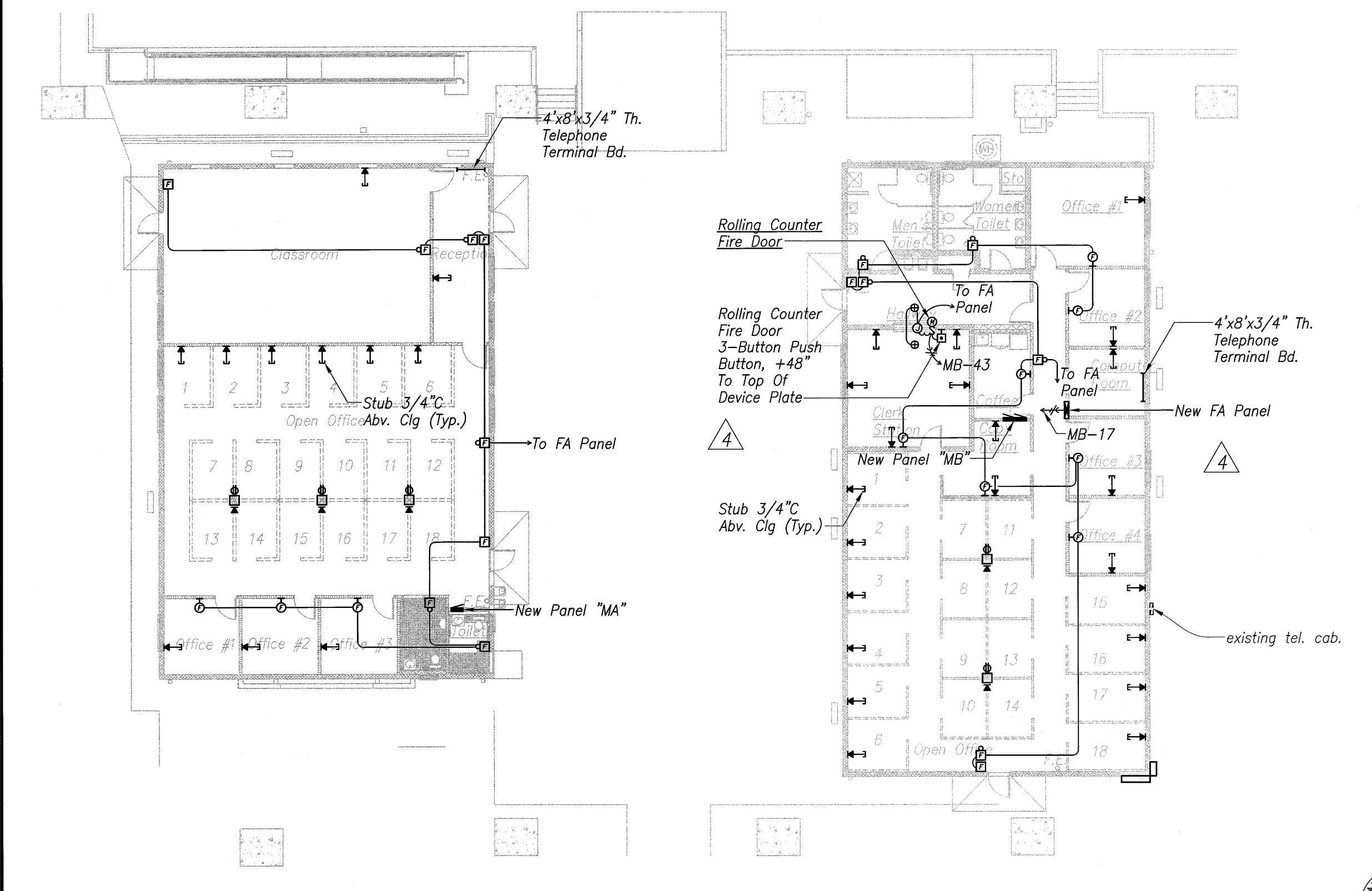
Project No. HWY-0-02-08
Scale: As Noted Date: April 2014

SHEET No. E2.3 OF 57 SHEETS



ADD.53

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
HAWAII	HAW.	HWY-0-02-08	2014	ADD.54	57



BUILDING 'B'

 $\frac{BUILDING}{SIGNAL} = 1'-0"$ E2.5 = 2.5

BUILDING 'A' SIGNAL SIGNAL PLAN — NEW WORK

Scale - 1/8" = 1'-0"

LICENSED PROFESSIONAL ENGINEER
No. 4145-E

/4 Indicated Push Button Mounting Height REVISIONS

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

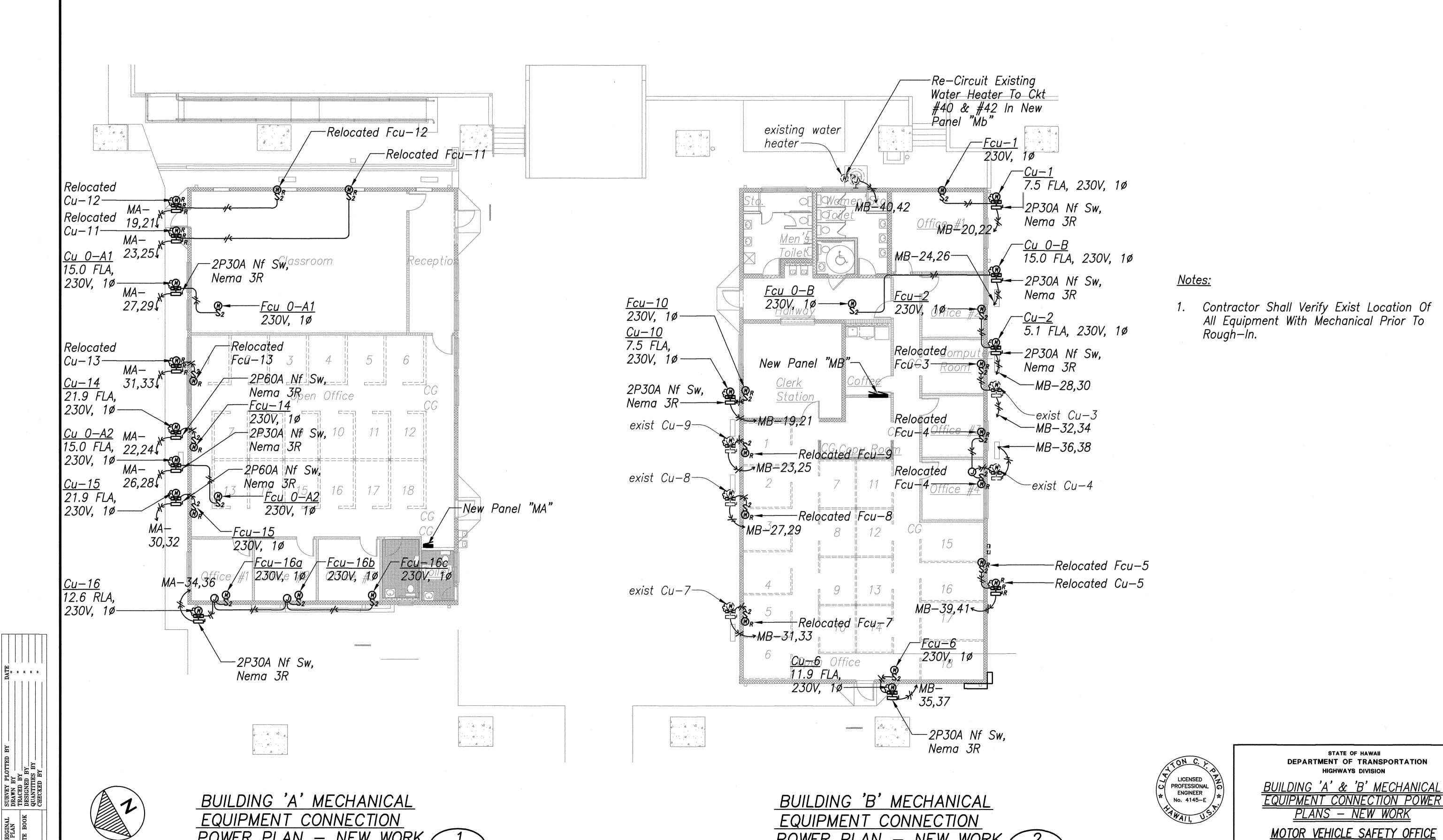
BUILDING 'A' & 'B' SIGNAL PLANS - NEW WORK

MOTOR VEHICLE SAFETY OFFICE
RENOVATION Project No. HWY-0-02-08 Scale: As Noted Date: April 2014

SHEET No. E2.5 OF 57 SHEETS

ADD.54

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-02-08	2014	55	<i>57</i>



POWER PLAN - NEW WORK 2

Scale -1/8" = 1'-0"

E2.6 E2.6

POWER PLAN - NEW WORK /

Scale -1/8" = 1'-0"

E2.6 E2.6

Date: April 2014

RENOVATION

Scale: As Noted

Project No. HWY-0-02-08

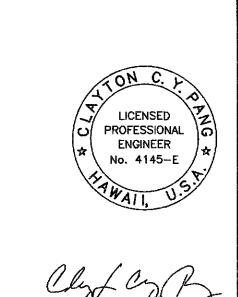
SHEET No. **E2.6** OF **57** SHEETS

EXPIRATION DATE OF THE LICENSE 4/80/2016
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-02-08	2014	ADD.56	57

CKT NO.	BKR	LOAD	K\ L1	VA L2	WIRE	
1	1P20A	Lights, EF-1	1.4	—	12	
2	1, 20, 1	Recep	1.0			
3		Lights		1.3		
4		Recep		1.0		
5		Lights	0.9			
6		Recep	1.0			
7		Lights — NL		0.7		
8		Recep	,	1.0		
9		Lights — Courtyard NL	0.8		10	
10		Recep	1.0		12	
11		Lights — Courtyard NL		0.8	10	
12		Recep		1.0	12	
13		Lights — Roof Flood NL	0.4			
14		Recep	1.0			
15		Spare				
16		Recep		1.0	12	
17		Recep - EWC	1.0			
18	•	Recep	1.0		+	
19,21	2P30A	Relocated Cu-12/Fcu-12	2.0	2.0	8	
20	1P20A	Recep		1.0	12	
22,24	2P45A	Cu-14/Fcu-14	2.5	2.5	8	
23,25	2P30A	Relocated Cu-11/Fcu-11	2.0	2.0	8	
26,28	2P30A	Cu 0-A2/Fcu 0-A2	1.7	1.7	8	
27,29	2P30A	Cu 0-A1/Fcu 0-A1	1.7	1.7	8	
30,32	2P45A	Cu-15/Fcu-15	2.5	2.5	8	
31,33	2P30A	Relocated Cu-13/Fcu-13	2.0	2.0	8	
	_,					
34,36	2P20A	Cu-16/Fcu-16	1.4	1.4	12	
35	1P20A	Spare				
37	1P	PFB				
38						
39						
40						
41						
42						

CKT NO.	BKR	LOAD	K\ L1	/A L2	WIRE	CKT NO.	BKR	LOAD	L1	/A L2	WIRE
1	1P20A	Lights	1.2	LZ.	12	31,33	2P20A	Exist Cu-7/Fcu-7	1.2	1.2	12
2	11 ZUA	Recep	1.0		1 4	32,34	1P20A	Cu-3/Fcu-3	1.0	1.0	12
3		Lights	7.0	1.1			11 Zea O7 (04 07 1 04 0			
4		Recep		1.0							
5		Lights, EF-2, EF-3, EF-4	1.3			35,37	2P25A	Cu-6/Fcu-6	1.4	1.4	10
6		Recep	1.0			36,38	2P25A	Relocated Cu-4/Fcu-4	1.6	1.6	10
7		Lights — NL		0.6		,					
8		Recep		1.0							
9			1.0			39,41	2P20A	Relocated Cu-5/Fcu-5	1.2	1.2	12
10			1.0			40,42	2P30A	Existing Water Heater	1.8	1.8	8
11				1.0							
12				1.0							
13			1.0			43	1P20A	Rolling Counter Fire Door	1.5		12
14			1.0			44		Recep – EWC	1.0		12
15				1.0		45		Spare		-	
16				1.0		46					
17		FA Panel	1.0			47				-t	
18		Recep	1.0			48					
19,21	2P20A	Cu-10/Fcu-10	0.9	0.9		49	1P	PFB			
20,22	2P20A	Cu-1/Fcu-1	0.9	0.9		50					
						51					
						52					
23,25	2P25A	Exist Cu-9/Fcu-9	1.6	1.6	10	53					
24,26	2P30A	Cu 0-B/Fcu 0-B	1.7	1.7	8	54					
						55					
07.00	00451	F: 1 0 0/F 0	0.7	0.7	10	56					
27,29	2P15A	Exist Cu-8/Fcu-8	0.7	0.7	12	57					
28,30	2P15A	Cu-2/Fcu-2	0.6	0.6	12	58					
· · · · · · · · · · · · · · · · · · ·						59 60					
						60					



6/20/14 A Changed Panel To Flush Mounted REVISIONS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PANEL SCHEDULES

MOTOR VEHICLE SAFETY OFFICE

RENOVATION
Project No. HWY-0-02-08

Scale: As Noted Date: April 2014

SHEET No. E3.1 OF 57 SHEETS

ADD.56

FIRE ALARM NOTES

- Indicates Number Of #14 Wires, 2-Wires Indicated.
- 2. Structures Undergoing Construction, Alteration, Or Demolition Operations, Including Those In Underground Locations, Shall Comply With NFPA 241, Standard For Safeguarding Construction, Alteration, And Demolition Operations, And This Chapter. 2006 NFPA 1. Fire Safety During Alteration
- 3. 16.4.4.1 Where The Building Is Protected By Fire Protection Systems, Such Systems Shall Be Maintained Operational At All Times During Alteration.
- 16.4.4.2 Where Alteration Requires Modification Of A Portion Of The Fire Protection System, The Remainder Of The System Shall Be Kept In Service And The Fire Department Shall Be Notified.
- 16.4.4.3 When It Is Necessary To Shut Down The System, The AHJ Shall Have The Authority To Require Alternate Measures Of Protection Until The System Is Returned To Service.
- 10.8.1.1 As Necessary During Emergencies, Maintenance, Drills, Prescribed Testing, Alterations, Or Renovations, Portable Or Fixed Fire-Extinguishing Systems Or Devices Or Any Fire-Warning System Shall Be Permitted To Be Made Inoperative Or Inaccessible. A Fire Watch Shall Be Required As Specified In Sections 13.3.4.3.5.2(3), 13.7.1.4.4, 16.5.4.20.3.6, 34.6.3.3, 41.2.2.5, 41.2.2.6, 41.2.4, 41.3.4, 41.4.1, 34.5.4.3, And 25.1.8 At No Cost To AHJ. NFPA 1 2006 As Amended.

AHJ Approval

4. 13.1.1 The AHJ Shall Have The Authority To Required That Construction Documents For All Fire Protection Systems Be Submitted For Review And Approval And A Permit Be Issued Prior To The Installation, Rehabilitation, Or Modification. Further, The AHJ Shall Have The Authority To Require That Full Acceptance Tests Of The Systems Be Performed In The AHJ's Presence Prior To Final System Certification. Fire Alarm Systems; Fire Hydrant Systems; Fire-Extinguishing Systems; Standpipes; And Other Fire-Protection Systems And Appurtenances Required By This Code Shall Be Approved By The AHJ As To Installation And Location And Shall Be Subject To Acceptance Tests Required By The Appropriate County Agency. NFPA 1, Chapter 13 As Amended.

- Detection, Alarm, And Communication Systems 5. 13.7.1.1 Where Building Fire Alarm Systems Or Automatic Fire Detectors Are Required By Other Sections Of This Code, They Shall Be Provided And Installed In Accordance With NFPA 70, NFPA 72 (1999 Edition), National Fire Alarm Code, And Section 13.7. 2006 NFPA 1.
- 6. 13.7.1.4.9.8 Audibility. The Alarm Signal Shall Be A Distinctive Sound, Which Is Not Used For Any Other Purpose Other Than The Fire Alarm. Alarm-Signaling Devices Shall Produce A Sound That Exceeds The Prevailing Equivalent Sound Level In The Room Or Space By 15 Decibels Minimum, Or Exceeds Any Maximum Sound Level With With A Duration Of 60 Seconds Minimum By 5 Decibels Minimum, Whichever Is /4 Louder. Sound Levels For Alarm Signals Shall Be 110 Decibels Maximum. 2006 NFPA 1, Amended. Ensure Audibility Is Met Through All Occupiable Areas And Spaces. This Will Be Thoroughly Checked At Time Of The Alarm Acceptance Test.

Approval And Acceptance

7. 13.7.3.2.1.2 Before Requesting Final Approval Of The Installation, If Required By The AHJ, The Installing Contractor Shall Furnish A Written Statement Stating That The System Has Been Installed In Accordance With Approved Plans And Tested In Accordance With The Manufacturer's Specifications And The Appropriate NFPA Requirements. [72:4.5.1.2] 13.7.3.2.1.3* The Record Of Completion Form, Figure 4.5.2.1 Of NFPA 72 (1999 Edition), Shall Be Permitted To Be A Part Of The Written Statement Required In 13.7.3.2.1.2. When More Than One Contractor Has Been Responsible For The Installation, Each Contractor Shall Complete The Portions Of The Form For Which That Contractor Had Responsibility. 13.7.3.2.1.4 The Record Of Completion Form, Figure 4.5.2.1 Of NFPA 72 Shall Be Permitted To Be A Part Of The Documents That Support The Requirements Of 13.7.3.2.1.3. 2006 NFPA 1.

Notification Devices

8. 13.7.1.4.9.5 Unless Otherwise Provided In 13.7.1.4.9.5.1 Through 13.7.1.4.9.5.6, Notification Signals For Occupants To Evacuate Shall Be Audible And Visible Signals In Accordance With NFPA 72 (1999 Edition) And ICC/ANSI A117.1, American Standard For Accessible And Usable Buildings And Facilities, Or Other Means Of Notification Acceptable To The AHJ Shall Be Provided. NFPA 1 2006, Chapter 13 As Amended. 13.7.1.4.9.5.1 Areas Not Subject To Occupancy By Persons Who Are Hearing Impaired Shall Not Be Required To Comply With The Provisions For Visible Signals. NFPA 1 2006, Chapter 13 As Amended.

Manual Fire Alarm Boxes

9. 13.7.1.4.7.3 A Manual Fire Alarm Box Shall Be Provided In The Natural Exit Access Path Near Each Required Exit From An Area, Unless Modified By Another Section Of This Code. 13.7.1.4.7.4* Additional Manual Fire Alarm Boxes Shall Be Located So That, On Any Given Floor In Any Part Of The Building, No Horizontal Distance On That Floor Exceeding 200 FT (60M) Shall Need To Be Traversed To Reach A Manual Fire Alarm Box [9.6.2.4]

13.7.3.3.6 Manual Fire Alarm Boxes Shall Be Located Within 5 FT (1.5M) Of The Exit Doorway Opening At Each Exit On Each Floor. The Location Of Manual Fire Alarm Boxes May Be Modified By The AHJ. 2006 NFPA 1, Amended.

(4) (4)E F F

> MB-17<--//<-- -New FA Panel

FIRE ALARM RISER DIAGRAM



No. 4145-E

FIRE ALARM NOTES MOTOR VEHICLE SAFETY OFFICE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

FIRE ALARM RISER DIAGRAM,

6/20/14 A Revised Fire Alarm Note

REVISIONS

RENOVATION Project No. HWY-0-02-08 Date: April 2014 Scale: As Noted

SHEET No. E3.2 OF 57 SHEETS

ADD.57

FISCAL YEAR

HAW. | HWY-0-02-08 | 2014 | ADD.57 | 57

PROJ. NO.

FED. ROAD DIST. NO.