

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H11-01-99	2000	32	40

ELECTRICAL SYMBOLS

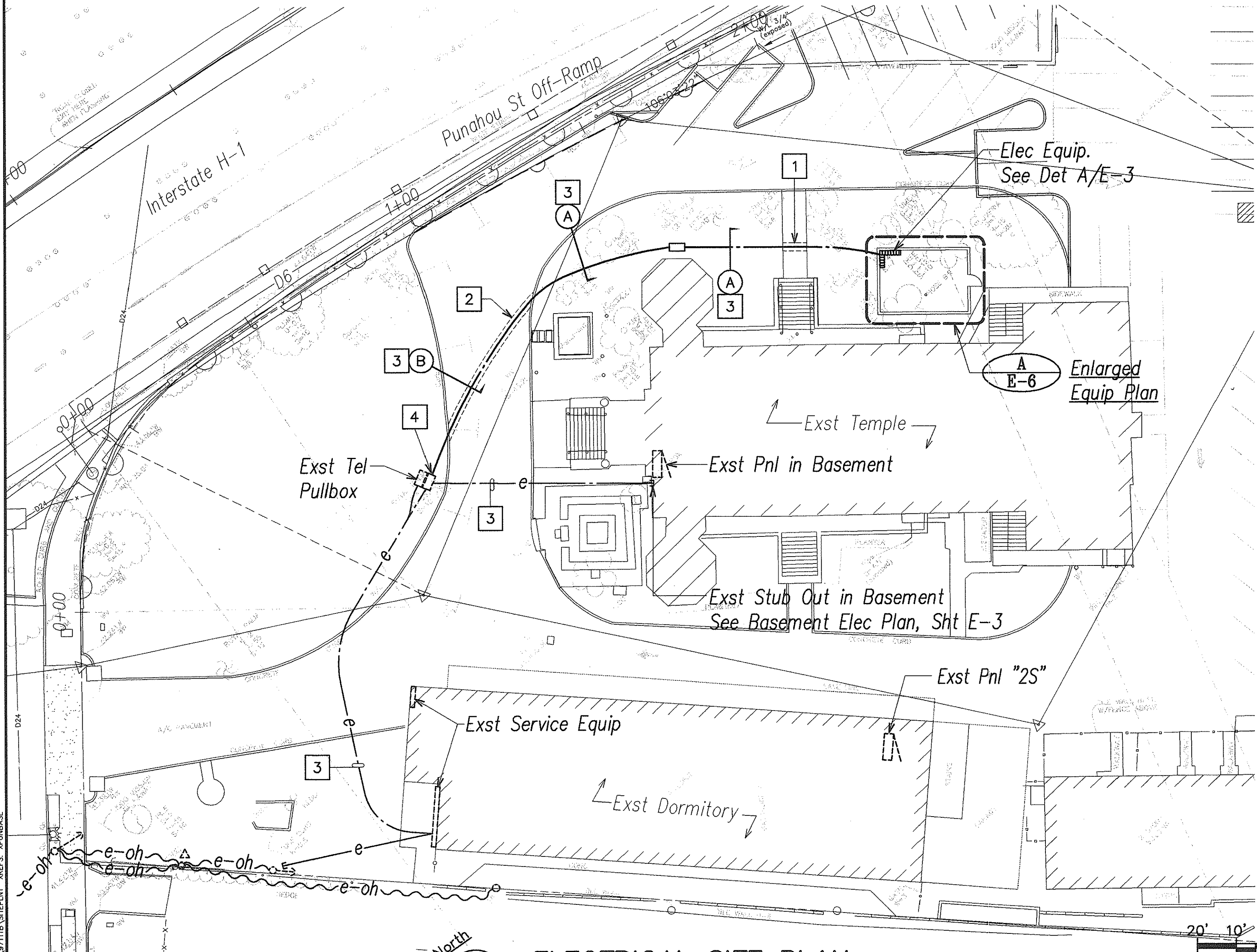
SYMBOL		DESCRIPTION
EXST	NEW	
	⊙	Single Rcpt, 15A, 125V, NEMA 5-15R
	⦿	Single Rcpt, 20A, 250V, NEMA 6-20R
	⦿	Single Rcpt, 30A, 250V, NEMA 6-30R
—e—	—	Concealed Conduit & Wiring in Attic/Suspended Ceiling
	—M—	Surface Metal Raceway & Wiring
---e---	---	Exposed Conduit & Wiring
	~~~~~	Liquid-Tight Flex Metal Conduit & Wiring
	⌊C⌋	Contactor & Enclosure
	\$M	Manual Motor Starter, 240V, Double Pole Single Throw, Wall Mtd, with Thermal Overloads
	\$2	Double Pole, Single Throw Switch, 20A, 208V
	⌊J⌋	Large J-Box, See Plan
	⌊B⌋	Enclosed Breaker
⌋⌋	⌋⌋/⌋⌋	J-Box, 4 11/16" Sq Nom, Wall/Ceiling Mtd
	⦿	Elec Connection
	⌊	Fused Disc Sw
	⌊	Motor Starter/Fused Disc Switch Combination
	⌊	Pullbox, See Plan
	⌊	2' x 4' Pullbox per HECO Std Dwg 30-2005 Except with "Elec" Stamped on Cover
	⌋	Duct Section Indicator; Indicates Typ Duct Section "C". See Sht E-3 for Typ Duct Sections
---e---		Remove Exst Conduit & Wiring
---e---	---	Elec Ductline & Wiring
⦿	⦿	Wall Mtd Incandescent Fixture
○		Ceiling Mtd Incandescent Fixture
	○	Recessed Compact Fluor Fixture

## SYMBOL NOTE(S):

- Number of Hash Marks on Conduit Symbol Denotes Number of Wires Plus Gnd in Conduit, No Hash Marks Indicates 2 Wires Plus Gnd; "≡" Indicates 4 Wires Plus Gnd.

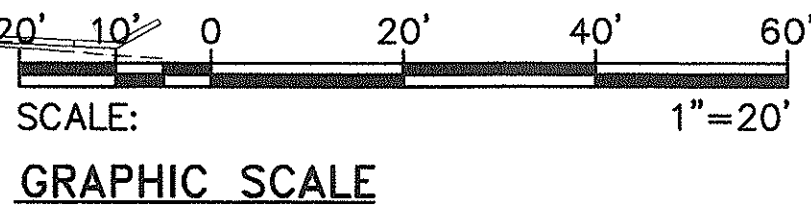
## General Electrical Notes:

- Electrical Work shall be New Unless Indicated Otherwise.
- Existing Electrical Equipment shall Remain Unless Indicated Otherwise.
- The Location of Existing Underground Utilities Shown on Plans are from Existing Records and are Approximations only. Contractor shall not Assume that where no Utilities are Shown that None Exist. Prior to Start of Excavation, Contractor shall "Tone" Existing Utilities. Contractor shall Exercise Caution when Construction Crosses or is in Close Proximity to Existing Underground Utilities. Damages to Existing Underground Utilities shall be Repaired by the Contractor and All Costs shall be Paid by Contractor. Repairs shall be Acceptable to Engineer and Property Owner.
- All Exposed Conduit, Surface Metal Raceway, & Boxes shall be Painted to Match Adjacent Finish. Paint shall be Submitted to Engineer for Approval Prior to Use.



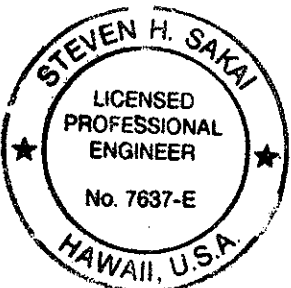
## NOTES:

- Sawcut Exst Conc Sidewalk @ Scoreline Prior to Trenching. Repair to Match Exst. See Det A/E-8
- Sawcut Exst A.C. Pavement Prior to Trenching and Repaving. Repair to Match Exst. See Det A/E-8
- Provide Wiring per Single-Line Diagram
- Penetrate Exst Concrete Pullbox for Conduit Entry. Repair to Match Exst.



SURVEY PLOTTED BY	DATE
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DESIGNED BY	
CHECKED BY	
NO.	

LAST SAVE 11/16/99 4:45:38 PM BY: JLM NOT 55 1-200  
Z:\A40\PROJECTS\97\H11\B\SI\PLAN1.DWG PUNAHOU

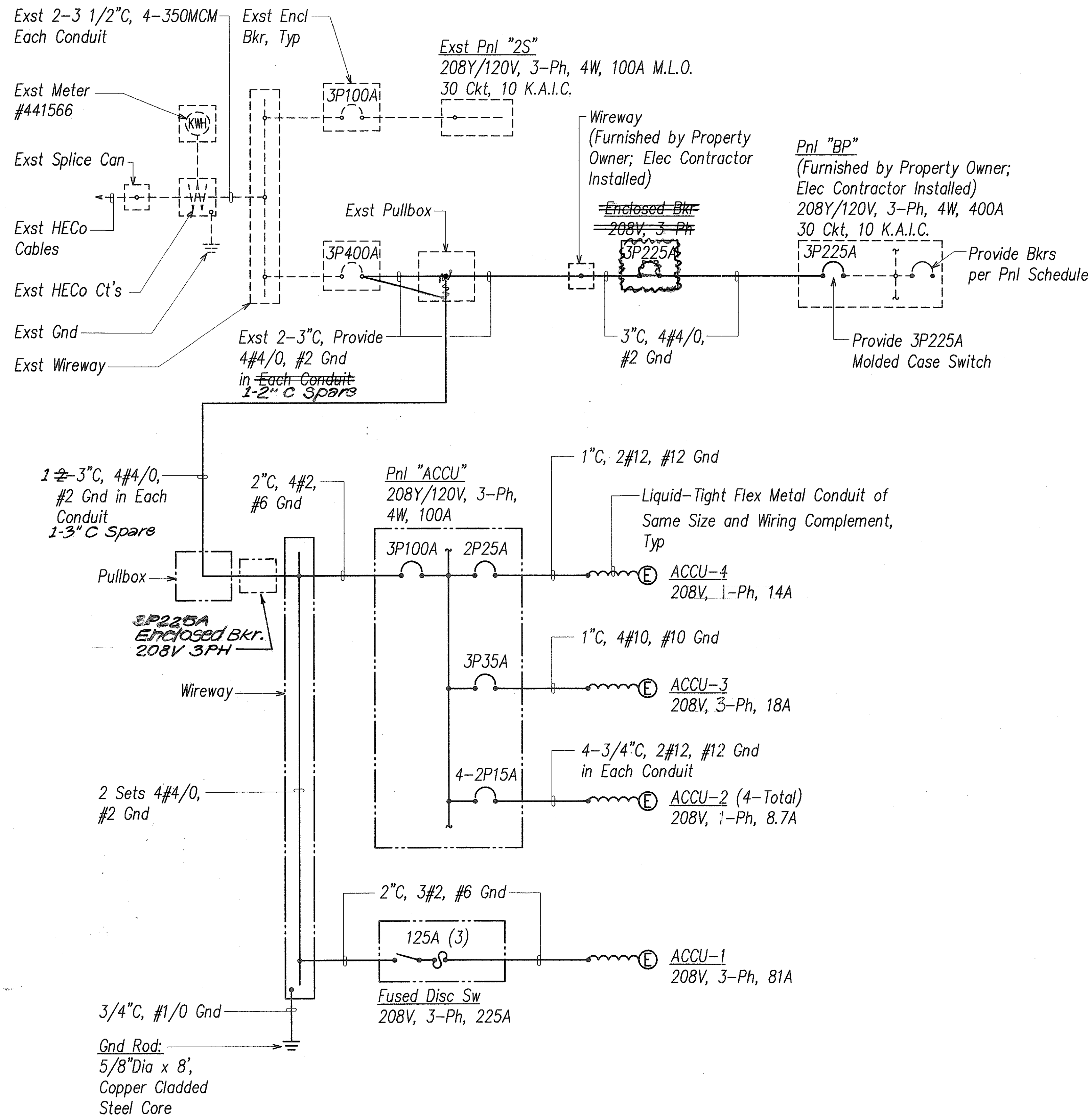


THIS WORK WAS PREPARED BY ME  
UNDER MY SUPERVISION  
*Steven H. Saki*

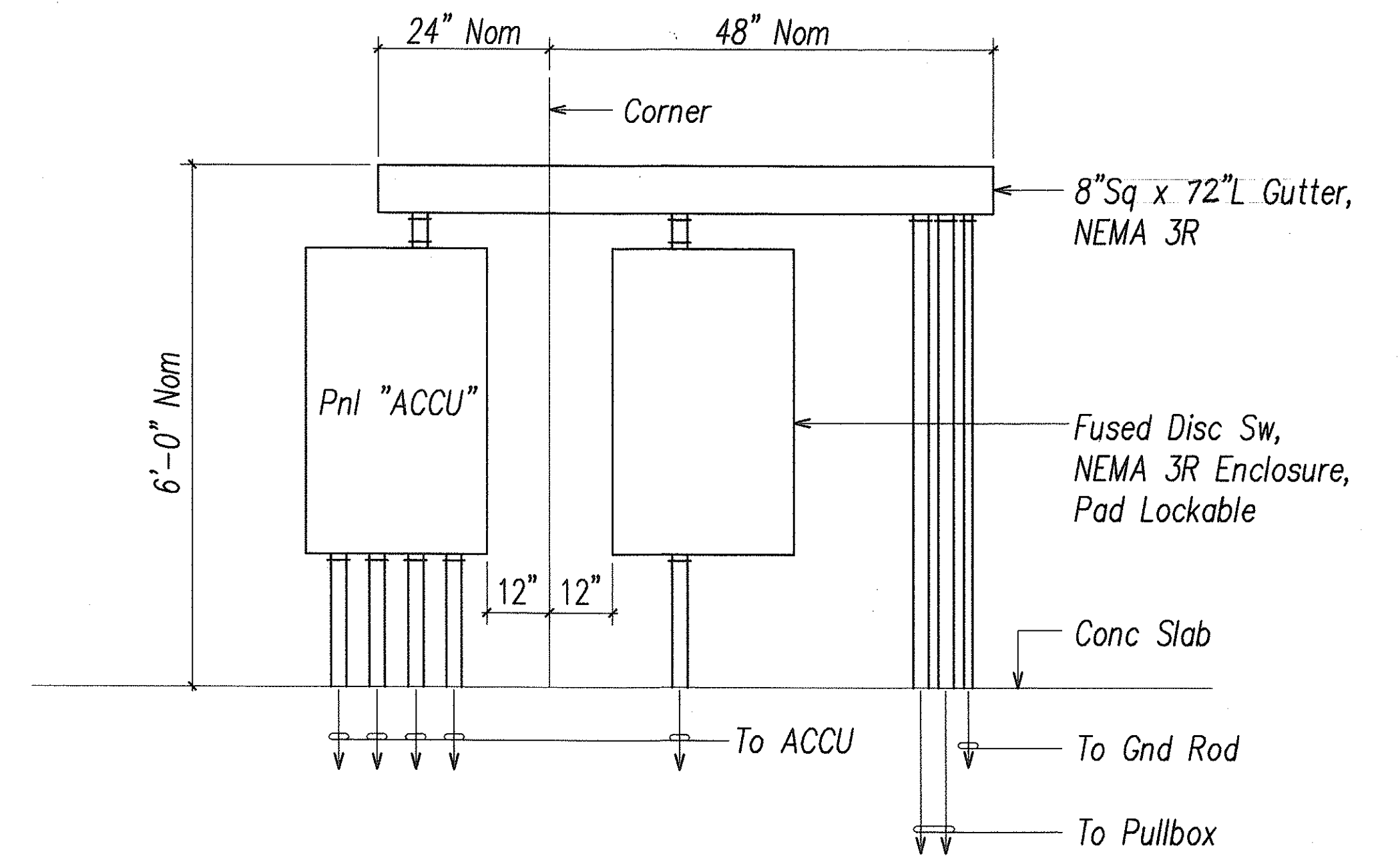
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ELECTRICAL SITE PLAN, SYMBOLS  
& NOTES, LOCATION MAP**  
INTERSTATE ROUTE H-1  
PUNAHOU ST. OFF-RAMP NOISE ABATEMENT  
Project No. H11-01-99  
Scale: AS NOTED  
SHEET No. E-1 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H11-01-99	2000	33	40



**SINGLE-LINE DIAGRAM**



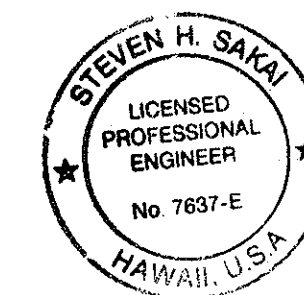
NOTES: Provide GRSC for Exposed Conduit. Paint Conduit & Equip to Match Wall

**EQUIPMENT ELEVATION**  
NOT TO SCALE (EQUIPMENT ENCLOSURE)

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

LAST SAVE: 11/15/99 @ 16:53:21 BY: AM PLOT SC 1'-0"=1'  
2:42AM PROJECTS\99\H11\B\HAWAII

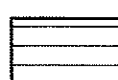
7/28/00	CLARIFIED ACCU RATINGS ON SINGLE LINE DIAGRAM & GUTTER DIMENSION ON EQUIPMENT ELEVATION
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>SINGLE-LINE DIAGRAM EQUIPMENT ELEVATION</b> INTERSTATE ROUTE H-1 PUNAHOU ST. OFF-RAMP NOISE ABATEMENT Project No. H11-01-99 Scale: AS NOTED Date: 12/1/99 <b>SHEET No. E-2 OF 9 SHEETS</b>	

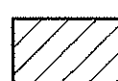


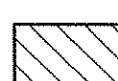
THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION  
*Steven H. Sakai*

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H11-01-99	2000	34	40

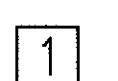
# BACKFILL NOTES:

 Type "A" Backfill – Earth & Gravel. Rock Size to be 1" Max. & the Mixture to Contain not more than 50% by Volume of Rock Particles. 95% Compaction.

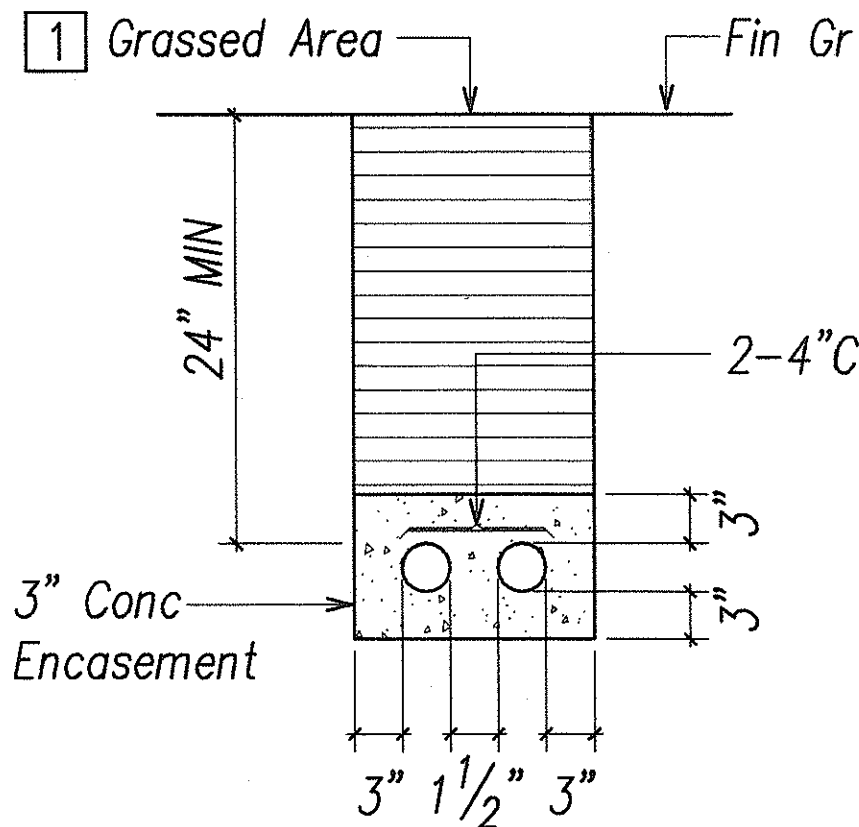
 Type "B" Backfill – Earth & Gravel. Mixture must Pass a 1/2" Mesh Screen & Contain not more than 20% by Volume of Rock Particles. 95% Compaction.

 Note – If Normal Material at Bottom of Trench is not Type "B", an Additional 3" Shall be Excavated & Type "B" Backfill Provided.

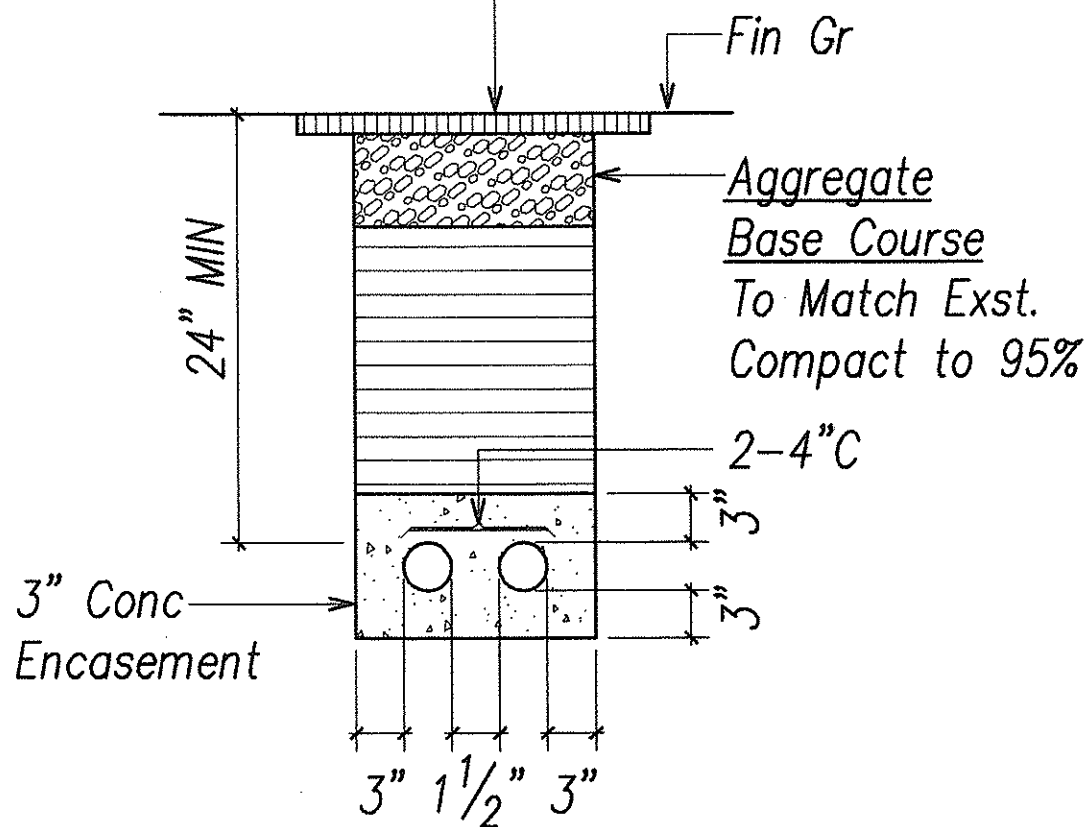
 Concrete – 3" Encasement, 2500 PSI Compressive Strength @ 28 Days.

 1 Contractor Shall Carefully Cut Sod Over Area to be Trenched. Contractor shall Maintain Sod While Trench is Open, then Re-Plant Sod Over Backfilled Trench.

A.C. Pavement Mix IV To Match Exst. See Typ Sawcut Detail, Sht E-8



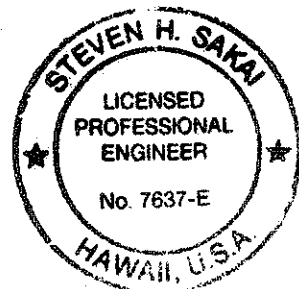
## SECTION A



## SECTION B

# TYPICAL DUCT SECTIONS

Not To Scale



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

## BASEMENT ELECTRICAL PLAN, TYPICAL DUCT SECTIONS

INTERSTATE ROUTE H-1  
PUNAHOU ST. OFF-RAMP NOISE ABATEMENT  
Project No. H11-01-99

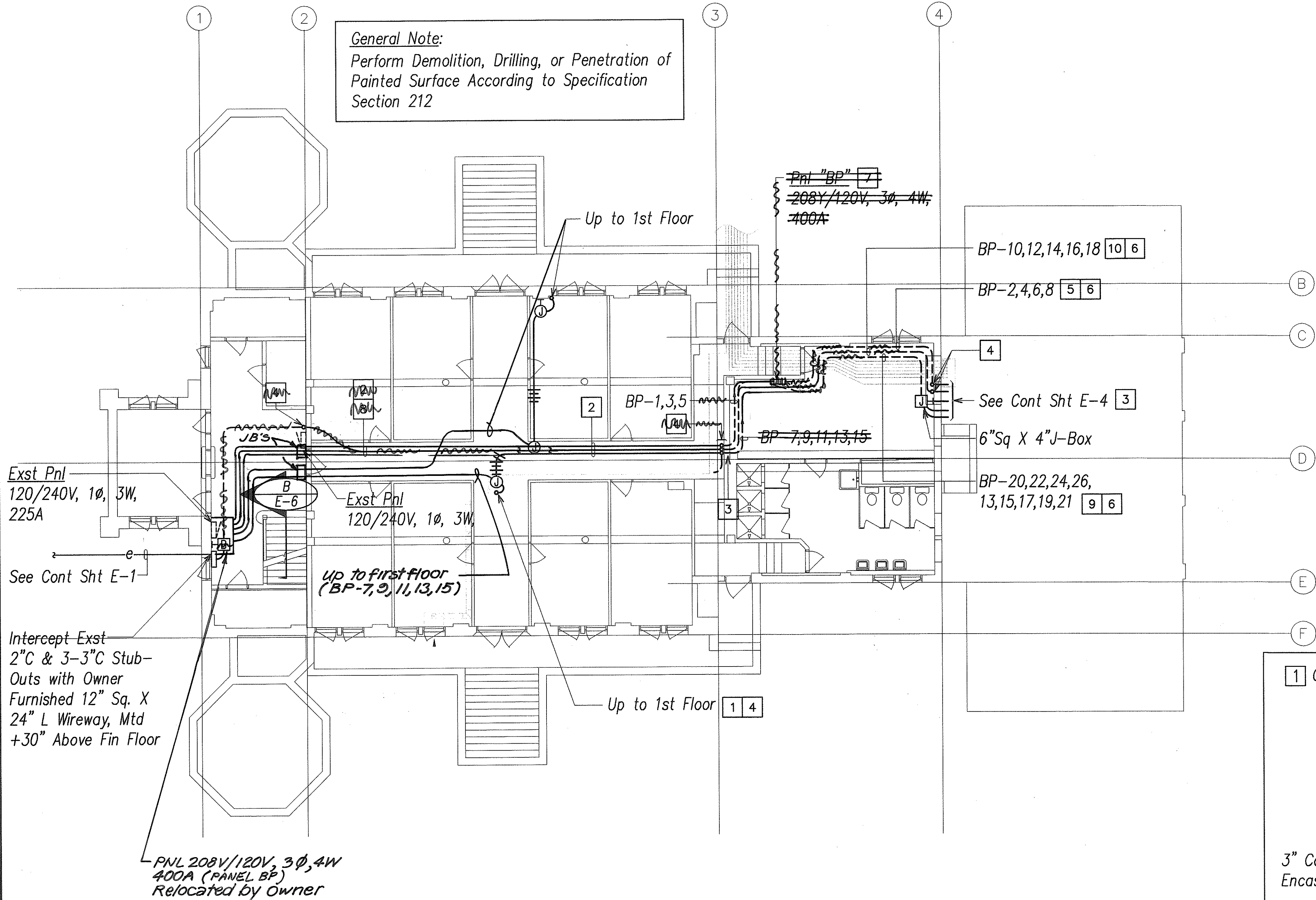
Scale: AS NOTED Date: 12/1/99

SHEET No. E-3 OF 9 SHEETS

"AS-BUILT"

34

General Note:  
Perform Demolition, Drilling, or Penetration of Painted Surface According to Specification Section 212

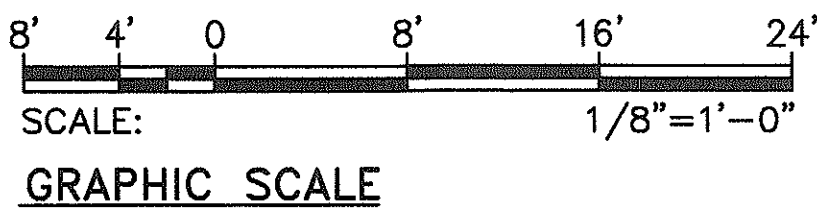


# BASEMENT ELECTRICAL PLAN

SCALE: 1/8"=1'-0"

## NOTES:

- |                                                                                  |                                                                               |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 1 Core Drill Exst Conc for Conduit Routing. Repair to Match Exst                 | 6 Route Conduits Parallel W/ Chilled Water Pipes. Paint to Match Exst Ceiling |
| 2 Conduit Routed Above Suspended Ceiling                                         | 7 Owner Furnished Equip; Contractor Installed                                 |
| 3 Penetrate Exst Wood/Gypboard Partition for Conduit Entry. Repair to Match Exst | 8 Conduit and Wiring Per Single-Line Diagram                                  |
| 4 Provide Conduit Body                                                           | 9 1 1/2"C, 10#8, #8 Gnd                                                       |
| 5 1"C, 4#10, #10 Gnd                                                             | 10 1"C, 6#10, #10 Gnd                                                         |



DATE	
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
ORIGINAL PLAN	
NO.	

LAST SAVE: 11/15/99 @ 17:04:07 BY: AM PLT SC 1/8"=1'  
Z:\VOC\PROJECTS\11118\BASEPMT REFS: M-2



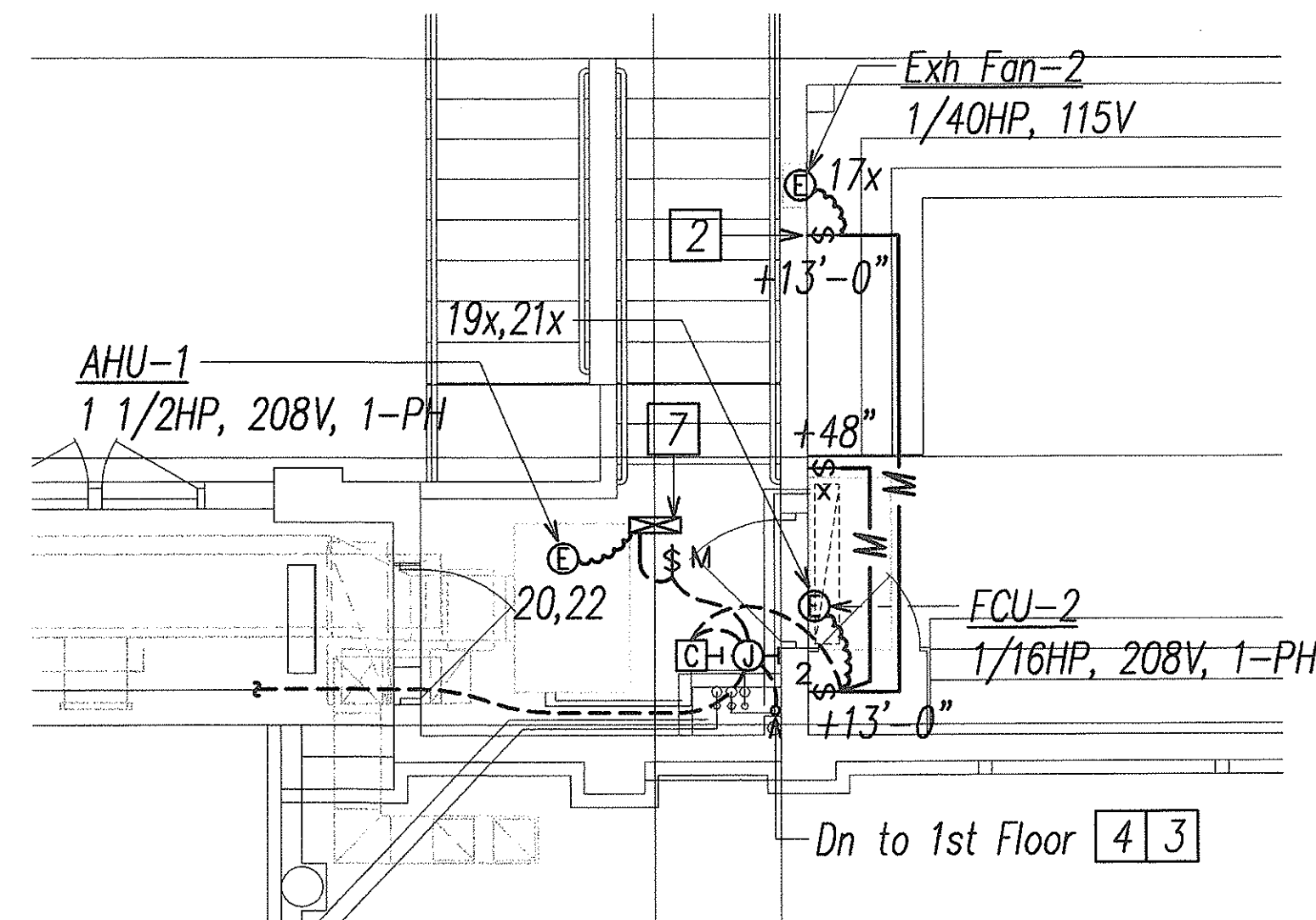


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H11-01-99	2000	37	40

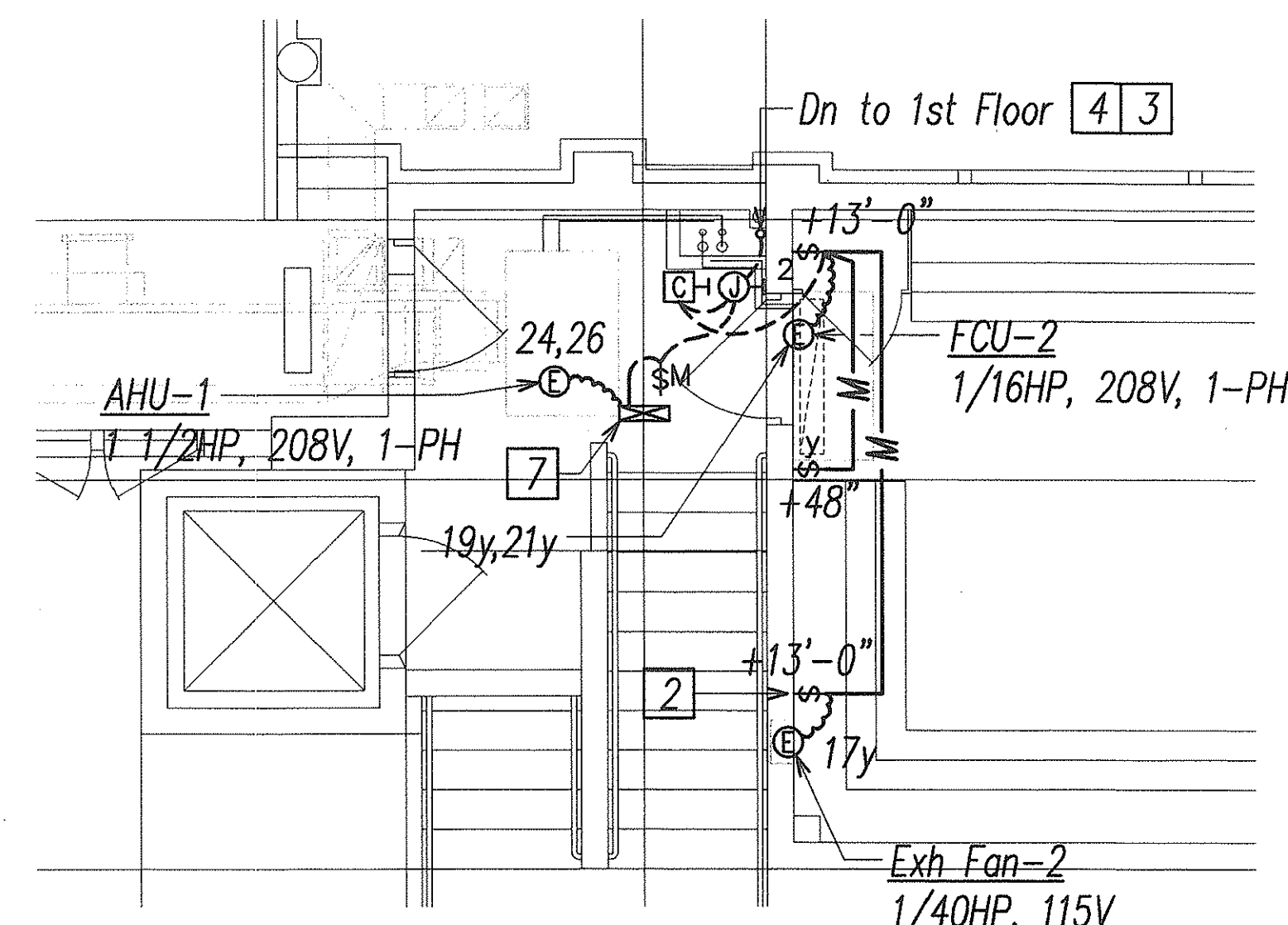
General Note:  
Perform Demolition, Drilling, or Penetration of Painted Surface According to Specification Section 212

Notes:

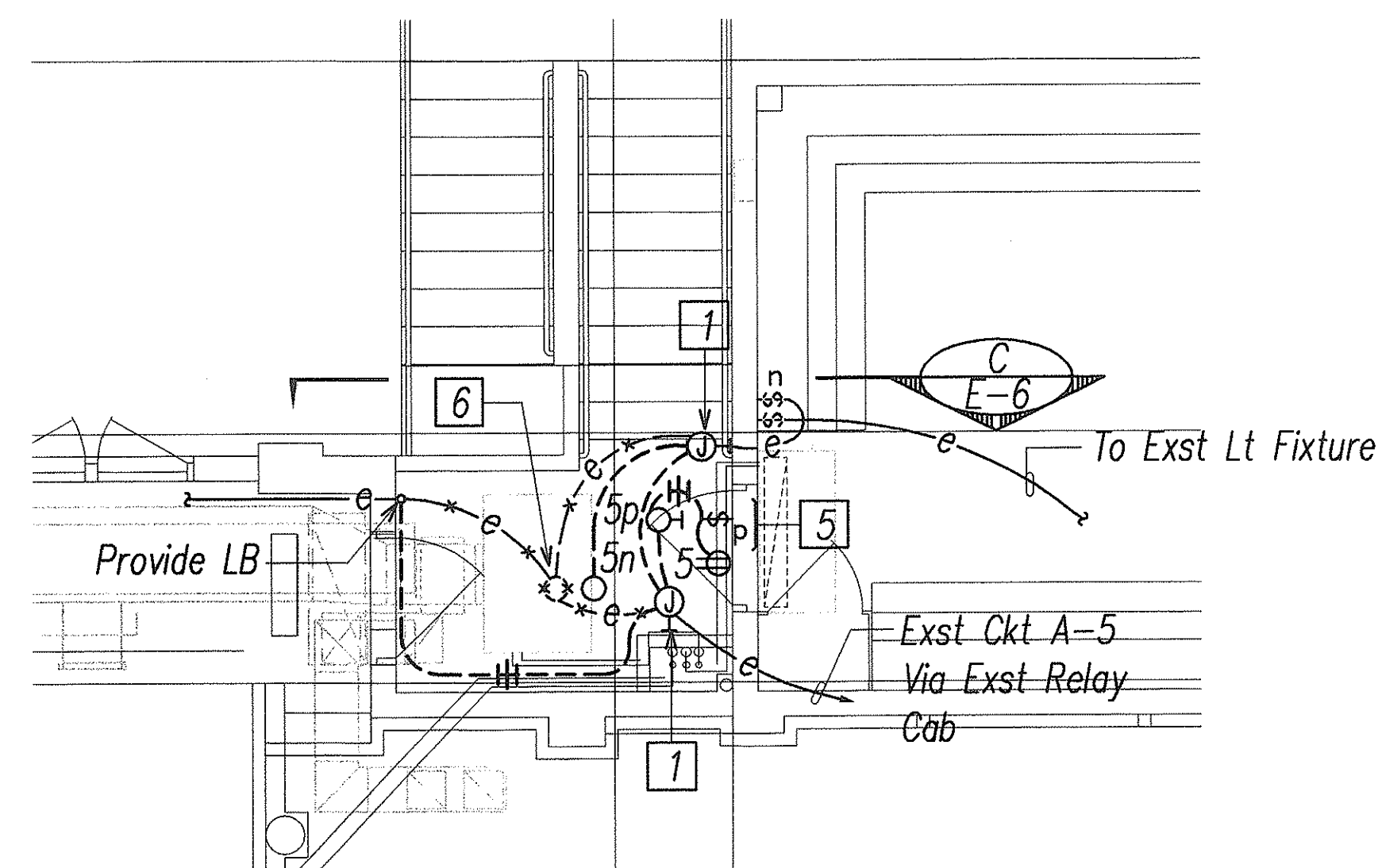
- 1 Intercept Exst Conduit & Wiring w/ J-Box
- 2 Mtd Adjacent to Equip, +72" Above Mezzanine Floor. Coordinate Exact Location with Equip Installer.
- 3 Core Drill Exst Conc Floor for Conduit routing. Repair to Match Exst.
- 4 3/4" C, 6 #12, #12 Gnd
- 5 Rcpt & Switch Mtd in Same Outlet Box, +24" Above Mezzanine Floor.
- 6 Remove Exst Lt Fixture & Return to Property Owner.
- 7 Motor Starter Furnished w/ Equip; Elec Contractor Installed.



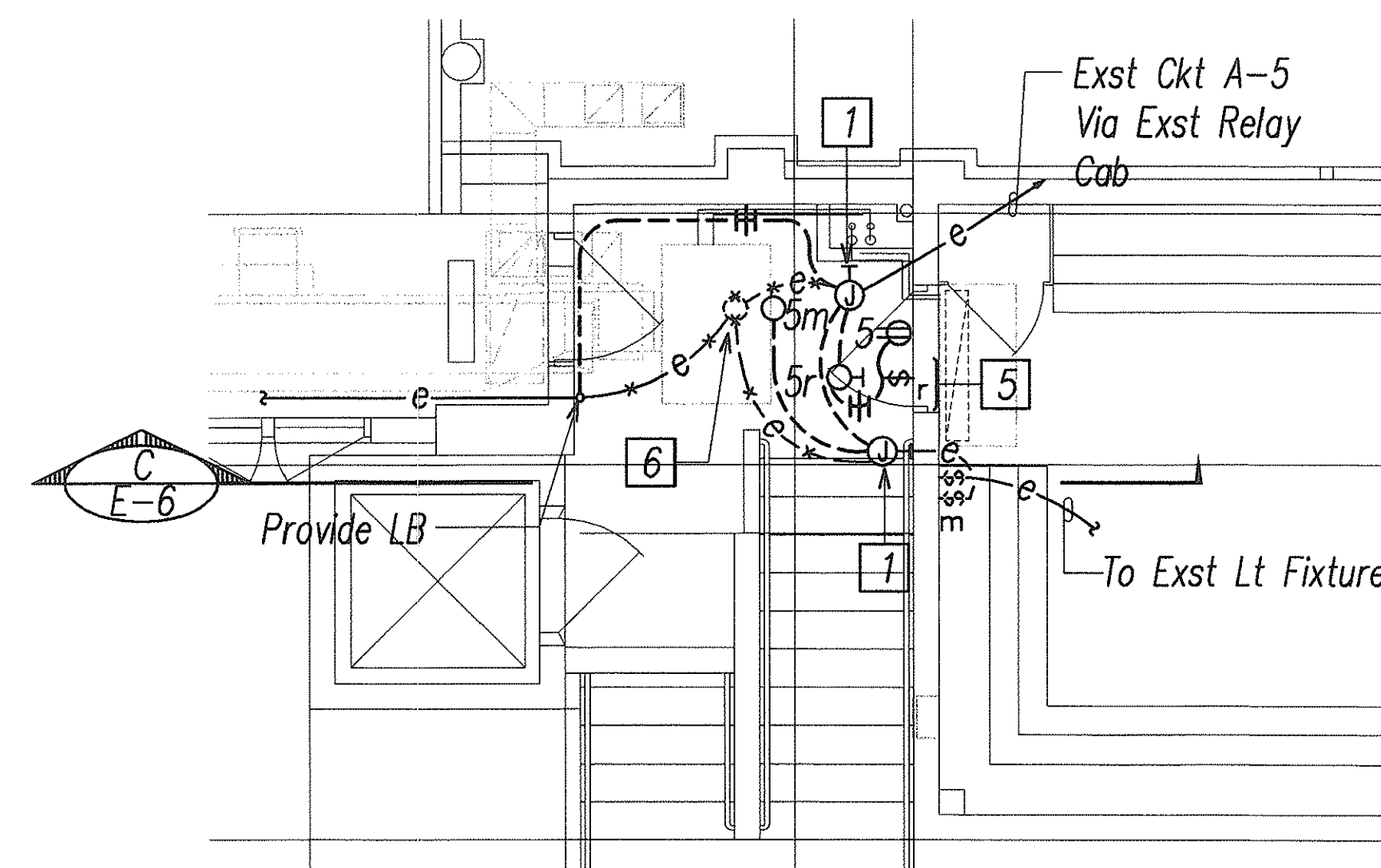
**MECHANICAL MEZZANINE #1  
ELECTRICAL PLAN**  
SCALE: 1/4"=1'-0"



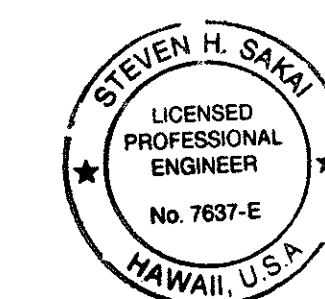
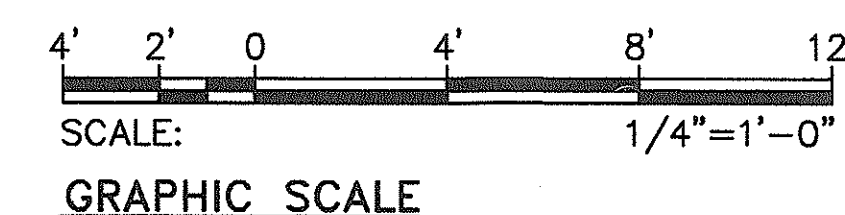
**MECHANICAL MEZZANINE #2  
ELECTRICAL PLAN**  
SCALE: 1/4"=1'-0"



**MECHANICAL MEZZANINE #1  
LIGHTING PLAN**  
SCALE: 1/4"=1'-0"



**MECHANICAL MEZZANINE #2  
LIGHTING PLAN**  
SCALE: 1/4"=1'-0"



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DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**MECHANICAL MEZZANINE  
ELECTRICAL & LIGHTING PLANS**

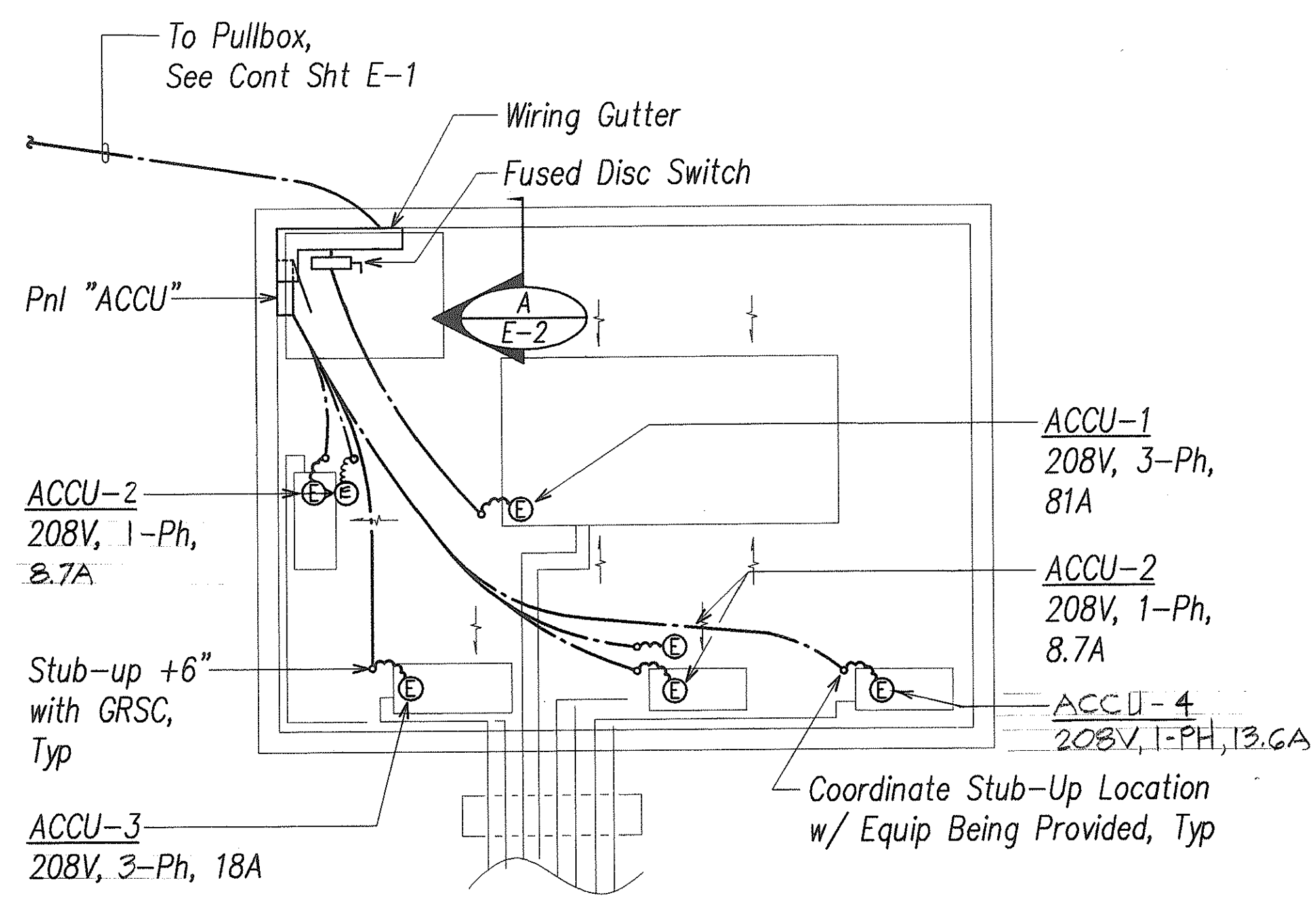
INTERSTATE ROUTE H-1  
PUNAHOU ST. OFF-RAMP NOISE ABATEMENT  
Project No. H11-01-99

Scale: AS NOTED Date: 12/1/99

**SHEET No. E-5A OF 9 SHEETS**

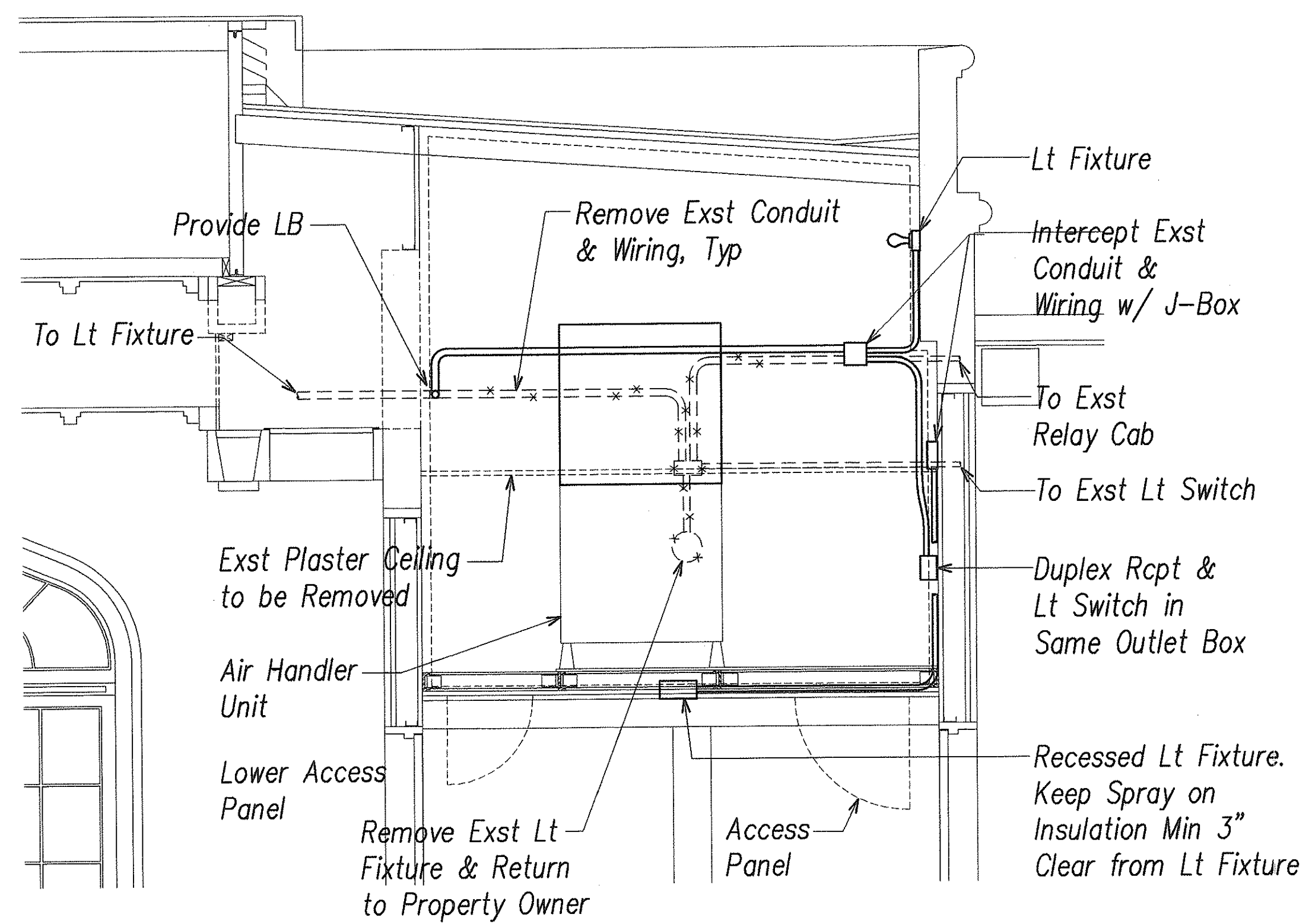
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H11-01-99	2000	38	40

General Note:  
Perform Demolition, Drilling, or Penetration of Painted Surface According to Specification Section 212

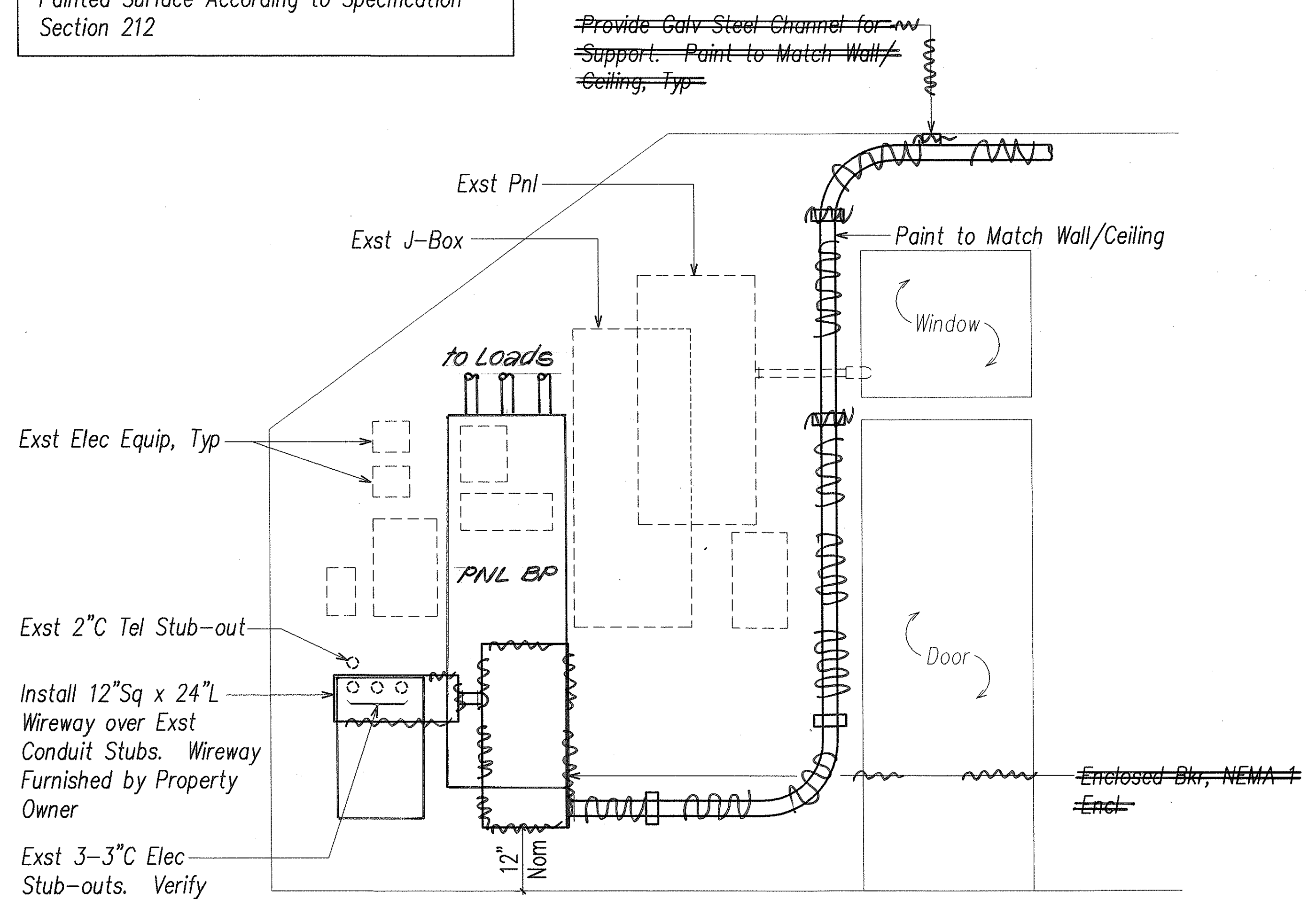


Note: See Single-Line Diagram for Conduit & Wiring Rqmts

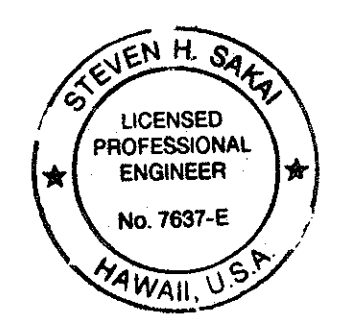
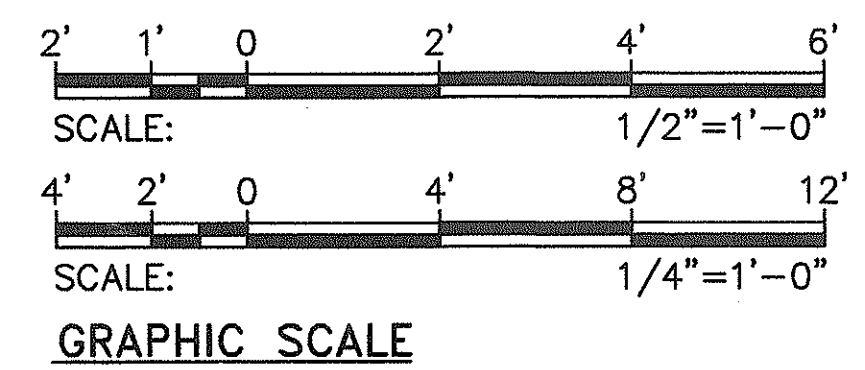
**A**  
E-6 **ENLARGED EQUIPMENT PLAN**  
SCALE: 1/4"=1'-0"



**C**  
E-6 **MECHANICAL MEZZANINE ELEVATION**  
SCALE: 1/2"=1'-0"



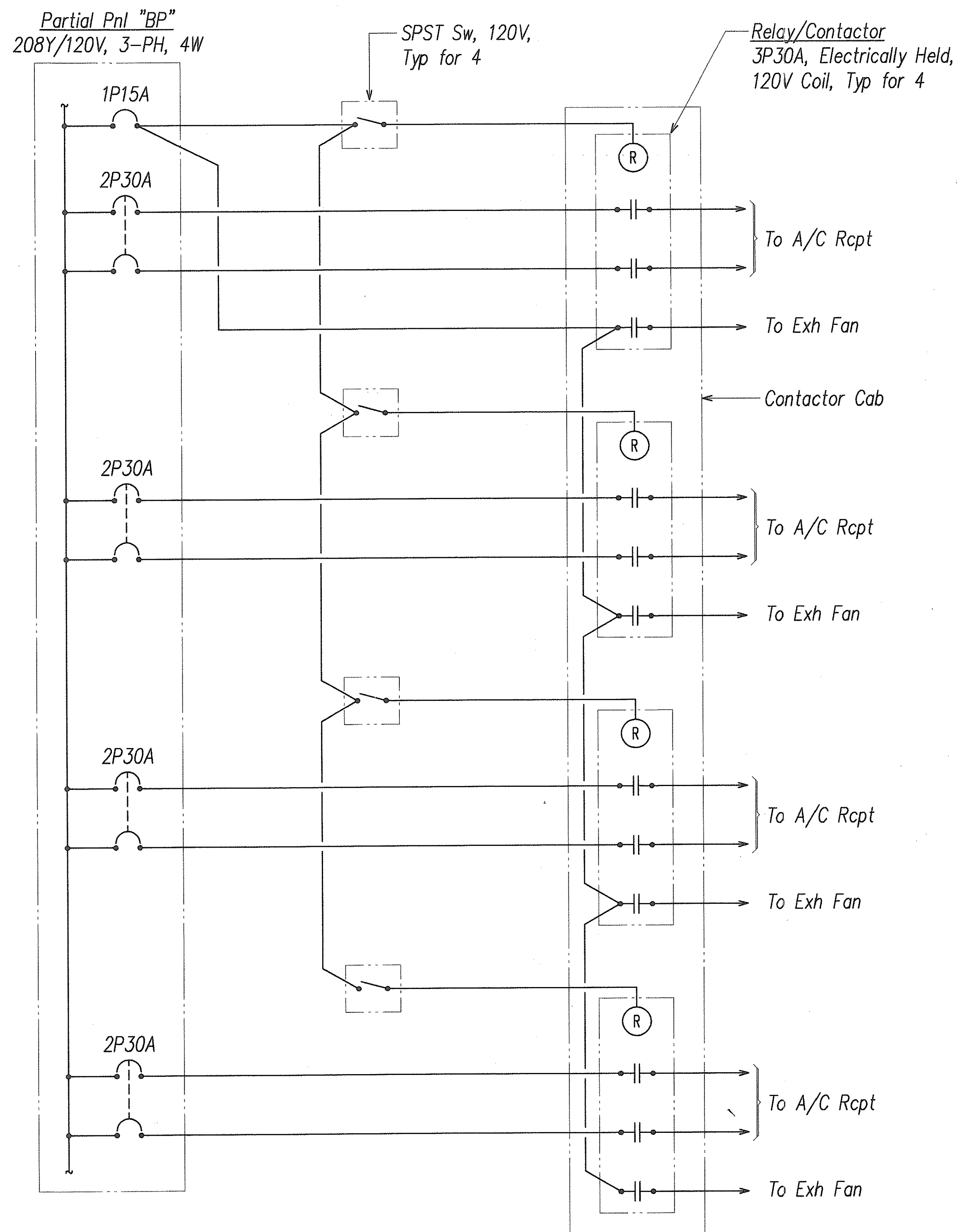
**B**  
E-6 **EQUIPMENT ELEVATION**  
NOT TO SCALE (BASEMENT)



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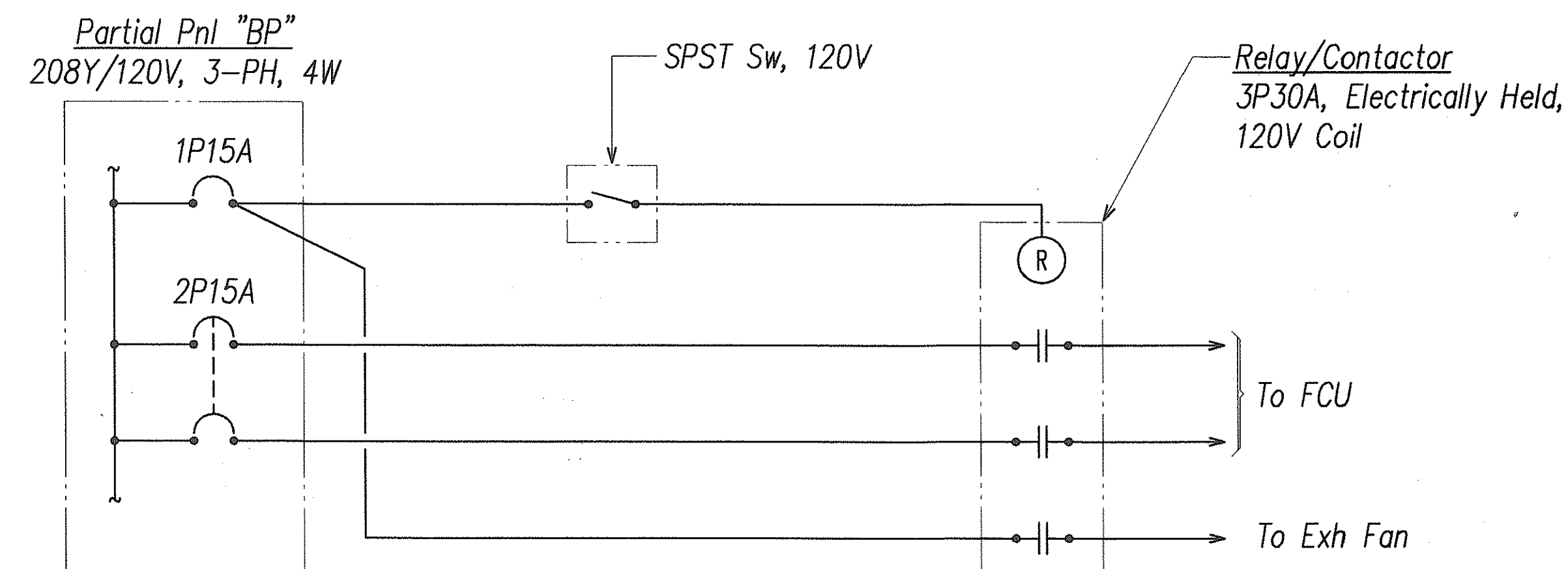
7/28/00	REVISED ACCU LOCATIONS & RATINGS ON ENLARGED EQUIPMENT PLAN
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>ENLARGED EQUIPMENT PLAN</b> <b>EQUIPMENT ELEVATION</b> INTERSTATE ROUTE H-1 PUNAHOU ST. OFF-RAMP NOISE ABATEMENT Project No. H11-01-99 Scale: AS NOTED Date: 12/1/99 <b>SHEET No. E-6 OF 9 SHEETS</b>	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H11-01-99	2000	39	40



Note: See Plans & Pnl Schedule for Conduit & Wiring Rqmts

**WINDOW A/C & EXHAUST FAN CONNECTION DIAGRAM**  
(ASSEMBLY ROOM)

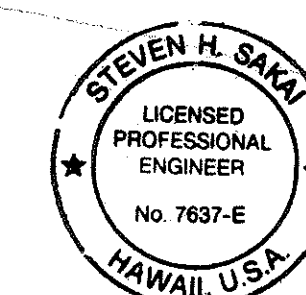


Note: See Plans & Pnl Schedule for Conduit & Wiring Rqmts

**FAN COIL UNIT & EXHAUST FAN CONNECTION DIAGRAM**  
(AT EACH URN ROOM)

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

LAST SAE - 11/15/99  
DRAWN BY - J. H. SAKI  
CHECKED BY - J. H. SAKI



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*Steven H. Saki*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**CONNECTION DIAGRAMS**  
  
INTERSTATE ROUTE H--1  
PUNAHOU ST. OFF-RAMP NOISE ABATEMENT  
Project No. H11-01-99  
Scale: AS NOTED  
Date: 12/1/99  
SHEET No. E-7 OF 9 SHEETS

39

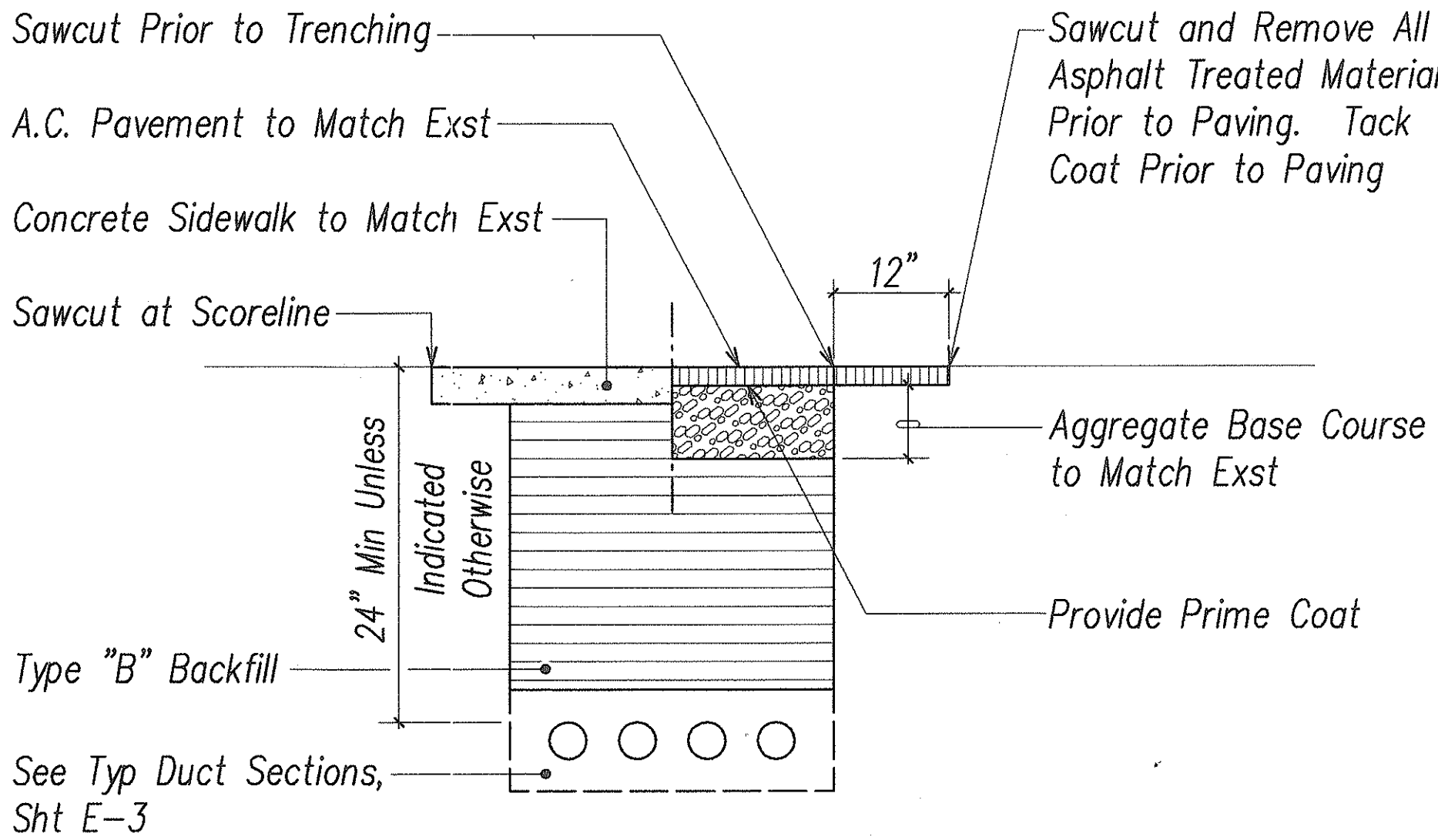
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H11-01-99	2000	40	40

PANEL "ACCU": 3P100A M.B., 208Y/120V, 3 PHASE, 4 WIRE, 10,000 A.I.C. BOLT-ON BKRS., 100A BUS, SURFACE MOUNTED WITH DOOR, NEMA 3R ENCLOSURE							
CKT. NO.	BREAKER		USE: L-LTS, R-RCPTS, PFB-PROV FOR FUTURE BKR, S-SPARE	KVA ON BUSESSES			WIRE SIZE
	POLE	AMPS		A	B	C	
1	—	—	PFB	1.0			
2	1	20	S				
3	—	—	PFB		0.9		12
4*	2	15	ACCU-2				
5	—	—	PFB			0.9	12
6	—	—	PART OF CKT 4				
7	—	—	PFB	0.9			12
8*	2	15	ACCU-2				
9	2	25	ACCU-4		1.7 0.9		12 12
10	—	—	PART OF CKT 8				
11	—	—	PART OF CKT 9			1.7 0.9	12 12
12*	2	15	ACCU-2				
13	3	35	ACCU-3	2.5 0.9			10 12
14	—	—	PART OF CKT 12				
15	—	—	PART OF CKT 13		2.5 0.9		10 12
16*	2	15	ACCU-2				
17	—	—	PART OF CKT 13			2.5 0.9	10 12
18	—	—	PART OF CKT 16				
TOTAL LOAD PER LEG				5.3	6.9	6.9	
TOTAL CONNECTED LOAD				19.1 KVA			
DEMAND FACTOR				70%			
TOTAL DEMAND LOAD				13.4 KVA			
TOTAL DEMAND AMPERE				37.2 A			

* - PROVIDE PROVISION FOR LOCKING BREAKER IN OFF POSITION

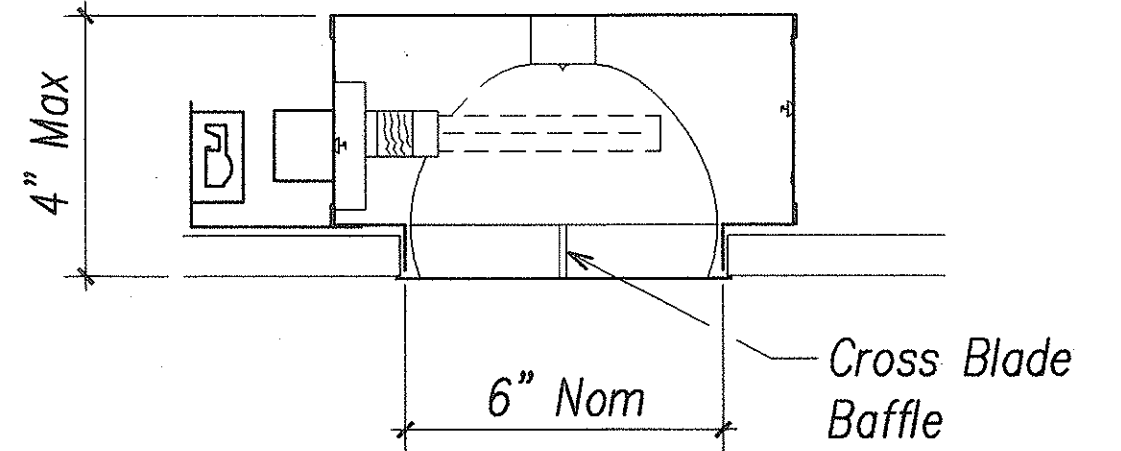
EXST PANEL "BP": 3P225A M.B. (NON-AUTO), 208Y/120V, 3 PHASE, 4 WIRE, 10,000 A.I.C. BOLT-ON BKRS., 400A BUS, SURFACE MOUNTED WITH DOOR							
CKT. NO.	BREAKER		USE: L-LTS, R-RCPTS, PFB-PROV FOR FUTURE BKR, S-SPARE	KVA ON BUSSES			WIRE SIZE
	POLE	AMPS		A	B	C	
1	1	15	R-A/C	0.9			12
2	2	30	R-ASSEMBLY A/C	1.9			10
3	1	15	R-A/C		0.9		12
4	—	—	PART OF CKT 2		1.9		10
5	1	15	R-A/C			0.9	12
6	2	30	R-ASSEMBLY A/C			1.6	10
7	1	15	R-A/C	0.9			12
8	—	—	PART OF CKT 6	1.6			10
9	1	15	R-A/C		0.9		12
10	2	30	R-ASSEMBLY A/C		1.6		10
11	1	15	R-A/C			0.9	12
12	—	—	PART OF CKT 10			1.6	10
13	2	15	FCU (1ST FLOOR)	0.6			8
14	2	30	R-ASSEMBLY A/C	1.9			10
15	—	—	PART OF CKT 13		0.6		8
16	—	—	PART OF CKT 14		1.9		10
17	1	15	EXHAUST FAN (2ND FLOOR)			0.1	8
18	1	15	EXHAUST FAN (ASSEMBLY)			0.2	10
19	2	15	FCU (2ND FLOOR)	0.2			8
20	2	20	AHU-1 (2ND FLOOR)	0.8			8
21	—	—	PART OF CKT 19		0.2		8
22	—	—	PART OF CKT 20		0.8		8
23	1	20	S			1.0	8
24	2	20	AHU-1 (2ND FLOOR)			0.8	8
25	—	—	PFB				
26	—	—	PART OF CKT 24	0.8			10
27	—	—	PFB				
28	—	—	PFB				
29	—	—	PFB				
30	—	—	PFB				
TOTAL LOAD PER LEG				9.5	8.8	7.1	
TOTAL CONNECTED LOAD				25.3 KVA			
DEMAND FACTOR				70%			
TOTAL DEMAND LOAD				17.7 KVA			
TOTAL DEMAND AMPERE				49.2 A			

NOTE: PROVIDE MAIN BKR AND ALL BRANCH CKT BKRS

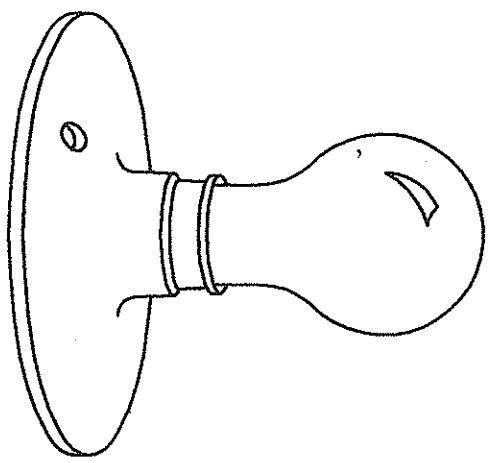


A  
E-8  
**TYPICAL SAWCUT AND PAVEMENT SECTION**  
NOT TO SCALE

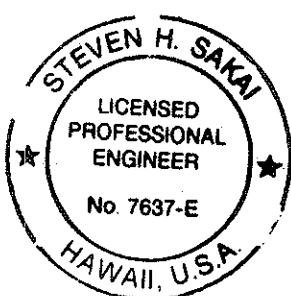
### LIGHT FIXTURE SCHEDULE



Symbol  Lamps: 2-13TT Compact Fluorescent  
Description: Recessed Fluorescent Low Profile Downlight, Specular Alzak Reflector, 120V, HPF Factor Ballast  
Manuf: Lightolier, Lithonia



Symbol  Lamp: 1-100 Watt, A-19  
Description: Incandescent Lampholder, Porcelain, Two Piece, Wall Mounted



WORK WAS PREPARED BY ME  
UNDER MY SUPERVISION  
*Steven H. Sakai*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**PANEL & LIGHT FIXTURE SCHEDULES**  
INTERSTATE ROUTE H-1  
PUNAHOU ST. OFF-RAMP NOISE ABATEMENT  
Project No. H11-01-99  
Scale: AS NOTED Date: 12/1/99  
**SHEET No. E-8 OF 9 SHEETS**