RECEPTACLES

	SINGLE RECEPTACLE
	DUPLEX RECEPTACLE
	SINGLE SPECIAL-PURPOSE RECEPTACLE
	DUPLEX SPECIAL-PURPOSE RECEPTACLE *
	FLOOR BOX WITH SINGLE RECEPTACLE
	FLOOR BOX WITH DUPLEX RECEPTACLE
	FLOOR BOX WITH SERVICE FITTING *
	FLOOR BOX - PUBLIC TELEPHONE
	FLOOR BOX - PRIVATE TELEPHONE
UFD	UNDERFLOOR DUCTS WITH ASSOCIATED DEVICES AS INDICATED
TD TD	TRENCH DUCT
	* USE SUBSCRIPT LETTERS TO INDICATE FUNCTION (AC - AIR CONDITIONER, ETC.)

PANELBOARDS, SWITCHBOARDS, ETC.

	LIGHTING
	POWER
	EMERGENCY
PB	PULL BOX
J	JUNCTION BOX
$\boxtimes_2$	MOTOR CONTROLLER, SUBSCRIPT INDICATES NEMA SIZE
F 30/3	DISCONNECT, SUBSCRIPT INDICATES SIZE AND NUMBER OF POLES, F - FUSED WITH SIZE SHOWN
$F\boxtimes_2$	COMBINATION MOTOR STARTER, FUSED, SUBSCRIPT INDICATES NEMA SIZE
$CB\boxtimes_4$	COMBINATION MOTOR STARTER WITH CIRCUIT BREAKER, SUBSCRIPT INDICATES NEMA SIZE MCP - MOTOR CIRCUIT PROTECTOR
(5)	MOTOR, INSERT INDICATES HORSEPOWER
	SWITCHBOARD (SWBD) OR MOTOR CONTROL CENTER (MCC)

MISCELLANEOUS

CCTV	CLOSED CIRCUIT TELEVISION MONITOR
	BUZZER
	BELL
	PUSHBUTTON
M	ELECTRICAL MANHOLE
H	ELECTRICAL HANDHOLE
	HORN
PC	PHOTO CELL
HOA	SELECTOR SWITCH, HAND-OFF-AUTO UNLESS OTHERWISE NOTED
C	CLOCK OUTLET
K	KEY INTERLOCK
SD	SMOKE DETECTOR
(S)	ELECTRICALLY OPERATED DEVICE, S - SOLENOID, R - RELAY

SWITCHES

S	SINGLE-POLE
S_2	DOUBLE-POLE
S_3	THREE-WAY
S_4	FOUR-WAY
S_K	KEY-OPERATED
S_P	WITH PILOT LAMP
S_D	DOOR OPERATED
S_T	TIMED
S_M	MANUAL MOTOR STARTER
S_{MC}	MOMENTARY CONTACT SWITCH OR PUSHBUTTON
S_a	SUBSCRIPT a DENOTES DEVICE CONTROLLED

CONDUCTORS AND CONDUITS

	BURIED RACEWAY
	RACEWAY EMBEDDED IN CEILING, WALL OR FLOOR
	RACEWAY, EXPOSED
MLL2 - 1,2,3	CIRCUIT HOMERUN TO PANELBOARD. MLL2 DENOTES PANEL AND NUMERALS IDENTIFY CIRCUIT NUMBERS
PHASE, NEUTRAL, GROUND	INDICATES NUMBER OF #12 WIRES, NO CROSS LINES INDICATES 2 #12 WIRES UNLESS NOTED.
10	INDICATES NUMBER OF #10 WIRES, SIMILAR TO DESIGNATIONS FOR #12 WIRES
3#8 1"C	NUMBER OF WIRES AND SIZE OF CONDUIT
	FEEDER OR HOMERUN RACEWAY
	GROUND WIRE
	CONDUIT TURNED UP OR TOWARD VIEWER
	CONDUIT TURNED DOWN OR AWAY FROM VIEWER
	CONDUIT BANK, INDICATE TYPE, SIZE, AND NUMBER OF CONDUITS BY CROSS-SECTION, IDENTIFICATION OF EACH RUN OR BY NOTATION
G	GROUND ROD
	RACEWAY CAPPED
	CONDUIT SEAL

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AWG	AMERICAN WIRE GAUGE
CKT	CIRCUIT
C.O.	CONDUIT ONLY
ELEV	ELEVATION, ELEVATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL CONDUIT
HID	HIGH INTENSITY DISCHARGE
HPS	HIGH PRESSURE SODIUM
KCMIL	1000 CIRCULAR MILS (FORMERLY MCM)
LTG	LIGHTING
MC	METALLIC CONDUIT
MH	MOUNTING HEIGHT
MTD, MTG	MOUNTED, MOUNTING
+4'-6"	MOUNTING HEIGHT TO ℄ OUTLET AFF
NC	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
NMC	NON-METALLIC CONDUIT
NTS	NOT TO SCALE
NO	NORMALLY OPEN
PNL	PANEL
Ø, PH.	PHASE
PWR	POWER
PVC	POLYVINYL CHLORIDE CONDUIT
RTU	REMOTE TERMINAL UNIT
SP	SPARE
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
TEL	TELEPHONE
XFR	TRANSFORMER
ZC	ZONE CONTROL
CP	CROSSPASSAGE

LIGHTING FIXTURES

CLG	WALL	
		INCANDESCENT OR HIGH INTENSITY DISCHARGE FIXTURE
		FLOURESCENT FIXTURE
		EXIT LIGHT
B	B	BLANKED
J	J	JUNCTION BOX
O_a	O_a	LETTER SUBSCRIPT DESIGNATES SWITCH CONTROL
		FLOODLIGHT - ARROWS INDICATE DIRECTION OF BEAM
		EMERGENCY LIGHT - FLOURESCENT
		EMERGENCY LIGHT - INCANDESCENT OR HID

FIXTURE TYPE SYMBOL



UPPER LETTER - TYPE OF FIXTURE
LOWER NO. - LAMP WATTS
MH - INDICATES MOUNTING HEIGHT ABOVE FINISHED FLOOR
3 - INDICATES NUMBER OF FIXTURES

SPECIAL IDENTIFICATION

(USED NEXT TO SYMBOL)

DP - DRIPPROOF (NEMA 2)
DT - DUSTTIGHT (NEMA 12)
EP - EXPLOSIONPROOF (NEMA 7, OR 9)
F - FLUSH
G - GROUND
GP - GENERAL PURPOSE (NEMA 1)
R - RECESSED
VT - VAPORTIGHT
WP - WEATHERPROOF (NEMA 3R)
WT - WATERTIGHT (NEMA 4)
WTX - WATERTIGHT, CORROSION RESISTANT (NEMA 4X)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	95	440

PANELBOARD NUMBERING METHOD

I H L 2

PORTAL
IB - INBOUND
OB - OUTBOUND

FLOOR LEVEL
B - BASEMENT
G - GROUND
M - MAIN
1 - FIRST
2 - SECOND
Etc.

VOLTAGE
MV- 12.47kV
H - 480Y/277V 3PH 4W
L - 208Y/120V 3PH 4W
OR
120/240V 1PH 3W

PANEL PURPOSE
C - CONTROL
E - EMERGENCY
L - LIGHTING
P - POWER
U - UNINTERUPTED POWER

PANEL NUMBER per TYPE per FLOOR
1 - FIRST
2 - SECOND
3 - THIRD
Etc.

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL LEGEND -1

STANDARDS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. E1 OF 4 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6400-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	9/24/92
SURVEY PLOTTED BY	
DRAWN BY	CADD
TRACED BY	
DESIGNED BY	P. MASON
QUANTITIES BY	J. J. SASSANI
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

2410V154 2410: V154 ES0029.FGB:1 10JLY90-13.02.30

ELECTRICAL SCHEMATIC AND ONE-LINE DIAGRAM SYMBOLS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	96	440

SYMBOL	REPRESENTS
	TRANSFORMER
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.C.
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.O.
	MECHANICAL CONNECTION
100AF/15AT	CIRCUIT BREAKER, SIZE AS NOTED
	NORMALLY OPEN CONTACT TDC - TIME DELAY TO CLOSE
	NORMALLY CLOSED CONTACT TDO - TIME DELAY TO OPEN
(42)	COIL, 42 - STARTER OR CONTACTOR OTHER NO. - RELAY PER IEEE DEVICE NO.
49	OVERLOAD RELAY CONTACTS
49	OVERLOAD RELAY
50A	FUSE WITH RATING
	GROUND CONNECTION
(R)	PILOT LIGHT, R=RED, G=GREEN, A=AMBER, W=WHITE, C=CLEAR, B=BLUE
(SOL)	SOLENOID COIL
	LIMIT SWITCH, NORMALLY OPEN
	LIMIT SWITCH, NORMALLY CLOSED
	PRESSURE SWITCH, NORMALLY OPEN, CLOSES ON RISING PRESSURE
	PRESSURE SWITCH, NORMALLY CLOSED, OPENS ON RISING PRESSURE
	FLOW SWITCH, NORMALLY OPEN, CLOSES WITH FLOW
	FLOW SWITCH, NORMALLY CLOSED, OPENS WITH FLOW
	TEMPERATURE SWITCH, NORMALLY OPEN, CLOSES ON RISING TEMPERATURE (COOLING THERMOSTAT)
	TEMPERATURE SWITCH, NORMALLY CLOSED, OPENS ON RISING TEMPERATURE (HEATING THERMOSTAT)
	LEVEL SWITCH NORMALLY OPEN, CLOSES ON RISING LEVEL
	LEVEL SWITCH NORMALLY CLOSED OPENS ON RISING LEVEL
	SELECTOR SWITCH, HAND-OFF-AUTOMATIC, OR AS NOTED: K = KEY OPERATED
	SINGLE POLE SINGLE THROW SWITCH
	SINGLE POLE DOUBLE THROW SWITCH
	MANUAL MOTOR STARTER
	GREEN INDICATING LIGHT
	RED INDICATING LIGHT
	WHITE INDICATING LIGHT
	AMBER INDICATING LIGHT

SYMBOL	REPRESENTS
	CONDUCTOR CABLE WITH SHIELD GROUNDED
	COAXIAL CABLE
	DISCONNECTING DEVICE
	CONDUCTORS, CONNECTED
	CONDUCTORS, NOT CONNECTED
	CURRENT TRANSFORMER
	VOLTAGE TRANSFORMER
	OUTLINE OF EQUIPMENT
	BATTERY
	AUDIBLE SIGNAL
C-CONTROL P-POWER	WIRE DESIGNATED SUFFIX
	RECTIFIER, FULL WAVE
E/I	TRANSDUCER, E/I - VOLTAGE TO CURRENT I/E - CURRENT TO VOLTAGE
	POWER CIRCUIT BREAKER, ABOVE 600V, DRAW-OUT TYPE
	POWER CIRCUIT BREAKER, 480V, DRAW-OUT TYPE
	MOLDED CASE CIRCUIT BREAKER
ATS	AUTOMATIC TRANSFER SWITCH
	FUSED SWITCH (15kV)
	TERMINAL IN ITC
	TERMINAL IN SWITCHGEAR
	TERMINAL IN OTHER EQUIPMENT

EQUIPMENT MOUNTING HEIGHT

1. ALL PANELBOARDS (WALL-MOUNTED)	6'-0" TOP OF HIGHEST CIRCUIT BREAKER
2. WALL-MOUNTED TRANSFORMERS	8'-0" BOTTOM OF XFMR.
3. WALL-MOUNTED LOCAL CONTROL STATIONS OR LOCAL CONTROL PANELS	2'-0" BOTTOM OF EQPT. 6'-0" MAX. AT TOP OF HIGHEST PUSH BUTTON
4. LOCAL MOTOR STARTERS, DISCONNECT SWITCH AND CIRCUIT BREAKERS	5'-0" AT HANDLE
5. POWER RECEPTACLES	4'-6" CENTER

SYMBOL	REPRESENTS
2	TIME DELAY STARTING RELAY
3	CHECKING OR INTERLOCKING RELAY
4	MASTER CONTACTOR
5	STOPPING RELAY
26	TEMPERATURE RELAY
27	UNDERVOLTAGE RELAY
32	DIRECTIONAL POWER RELAY
33	LIMIT OR POSITION SWITCH
38	BEARING PROTECTIVE RELAY
39	VIBRATION DETECTOR
43	SELECTOR SWITCH
44	UNIT SEQUENCE STARTING RELAY
45	FIRE DETECTOR
46	REVERSE-PHASE RELAY
49	THERMAL OVERLOAD DEVICE
50	AC INSTANTANEOUS OVERCURRENT RELAY
51	AC TIME OVERCURRENT RELAY
52	AC CIRCUIT BREAKER
62	TIME DELAY RELAY
63	GAS PRESSURE RELAY
67	AC DIRECTIONAL OVERCURRENT RELAY
74	ALARM RELAY
86	LOCK-OUT RELAY
89T	TRANSFORMER DISCONNECT AUXILIARY SWITCH
A	AMMETER
AS	AMMETER SWITCH
AFC	ADJUSTABLE FREQUENCY CONTROLLER
ATS	AUTOMATIC TRANSFER SWITCH
BP	BYPASS
BT	BUS TIE
CB	CIRCUIT BREAKER
CD	CONTROL DAMPER
CF	COOLING FAN
CL	CURRENT LIMITING
CLB	CURRENT LIMITING BREAKER SWITCH
CS	CONTROL SWITCH
DM	DEMAND METER
EF	EXHAUST FAN
EI	ELECTRICAL INTERLOCKING
EO	ELECTRICALLY OPERATED
ETM	ELAPSED TIME METER
F	FREQUENCY METER
FTS	FAST TRANSFER SWITCH
FVNR	FULL VOLTAGE NON REVERSING
FVR	FULL VOLTAGE REVERSING
FCLB	FUSELESS CURRENT LIMITING BREAKER
G	GROUND, GENERATOR
H	HIGH
HR	HAND RESET
HL	HALAWA
HK	HAIKU
I	INSTANTANEOUS
ITC	INTERFACE TERMINAL CABINET
KI	KEY INTERLOCK
L	LOW
LR	LOCAL/REMOTE SWITCH
LSG	LONG TIME/SHORT TIME/GROUND FAULT CIRCUIT BREAKER TRIPS

SYMBOL	REPRESENTS
MCC	MOTOR CONTROL CENTER
MH	MOTOR SPACE HEATER
MCP	MOTOR CIRCUIT PROTECTOR
N	NEUTRAL
NA	NON AUTOMATIC
PF	POWER FACTOR
Q	OIL
SI	NEMA STARTER SIZE I
SF	SUPPLY FAN
SS	SELECTOR SWITCH
SWGR	SWITCHGEAR
T	TRANSFORMER
TS	TEST SWITCH
V	VOLTMETER
VS	VOLTMETER SWITCH
varh	VARHOUR METER
W	WATTMETER
Wh	WATTHOUR METER
X,Y	AUXILIARY RELAY
XDC	TRANSDUCER
a	CIRCUIT BREAKER AUXILIARY CONTACT N.O.
b	CIRCUIT BREAKER AUXILIARY CONTACT N.C.

SURVEY PLOTTED BY	
DRAWN BY	CADD
TRACED BY	
DESIGN BY	F. JIMENEZ
QUANTITIES BY	
CHECKED BY	J. J. SASSANI
DATE	3/14/96 * * * 3/17/96 2/26/96
ORIGINAL PLAN	
NOTE BOOK	
NO.	

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL LEGEND-2

STANDARDS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. E2 OF 4 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

LIGHTING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER	LAMP	INPUT WATT	INPUT VOLTAGE
F1 2-40	TOILET LIGHTING FIXTURE SUSPENDED MOUNTED	LITHONIA COLUMBIA THOMAS INDUSTRIES	2-F40T12LW RS/ES	100VA	277V
F2 1-40	STAIR LIGHTING FIXTURE WALL MOUNTED	PARAMOUNT LITHONIA THOMAS INDUSTRIES	F40T12LW RS/ES	50VA	277V
F3 2-40	TRANSFORMER AND MECHANICAL ROOM LIGHTING FIXTURE WALL MOUNTED	PARAMOUNT LITHONIA THOMAS INDUSTRIES	2-F40T12LW RS/ES	100VA	277V
F4 2-40	LOBBY AREA LIGHTING FIXTURE SUSPENDED	COLUMBIA LITHONIA SYLVANIA	2-F40T12LW RS/ES	100VA	277V
F5 2-40	ELEVATOR MACHINE ROOM LIGHTING FIXTURE SUSPENDED AND SURFACE MOUNTED	PARAMOUNT LITHONIA THOMAS INDUSTRIES	2-F40T12LW RS/ES	100VA	277V
F6 2-40	SWGR / MCC / PANEL ROOM LIGHTING FIXTURE SUSPENDED	LITHONIA COLUMBIA THOMAS INDUSTRIES	2-F40T12LW RS/ES	100VA	277V
F7 2-40	PUMP ROOM LIGHTING FIXTURE WALL MOUNTED	LITHONIA PARAMOUNT COLUMBIA	2-F40T12LW RS/ES	100VA	277V
F18 2-40	PARABOLIC U-LAMP LIGHTING FIXTURES HEAT REMOVAL TROFFER, RECESSED	KEENE MODULINE/HR LITHONIA OPTIMAX HUBBEL PARABOLITE	2-F40CW/U/6	100VA	277V
F9 2-40	WRAPAROUND LIGHTING FIXTURE, SURFACE MOUNTED	DAY-BRITE LITHONIA KEYSTONE	2-F40T12 CW/RS	100VA	277V
F10 2-40	SURFACE MOUNTED/PENDANT LIGHTING FIXTURE, ENCLOSED & GASKETED	PARAMOUNT NU-ART LIGHTING PRUDENTIAL	2-F40T12 CW/RS	100VA	277V
F11 4-40	PARABOLIC MODULAR LIGHTING FIXTURE, SURFACE MOUNTED	DAY-BRITE THOMAS INDUSTRIES KEYSTONE	4-F40T12 CW/RS	200VA	277V
F12 2-40	STATIC TROFFER LIGHTING FIXTURE, RECESSED	DAY-BRITE LITHONIA THOMAS INDUSTRIES	2-F40T12 CW/RS	100VA	277V
F13 4-40	PARABOLIC LIGHTING FIXTURES, HEAT REMOVAL TROFFER, RECESSED	KEENE MODULINE/HR LITHONIA OPTIMAX HUBBEL PARABOLITE	4-F40T12 CW/RS	200VA	277V
F14 1-40	STRIP LIGHTING FIXTURE	LITHONIA HUBBEL GUTH LIGHTING	1-F40T12 CW/RS	50VA	277V
F15 2-40	STANDARD INDUSTRIAL LIGHTING FIXTURE, SUSPENDED MOUNTED	LITHONIA HUBBEL CROUSE-HINDS LTG.	2-F40T12 CW/RS	100VA	277V
F16 2-40	FLOURESCENT FIXTURE PENDANT MOUNTED, CONTINUOUS ROW	KEENE DIR240 ALCKO	2-F40T12 CW/RS	100VA	277V
F17 2-13	8" DOWNLIGHT, RECESSED COMPACT FLOURESCENT ALZAK REFLECTOR	PRESCOLITE LITHONIA STAFF	2-13W PL LAMPS	30VA	277V
E1 2-5	EXIT SIGN FIXTURE, WALL MOUNTED	LITHONIA SYLVANIA GENERAL ELECTRIC	2-F5	12VA	277V
E2 2-5	EXIT SIGN WATERTIGHT	LITHONIA SYLVANIA GENERAL ELECTRIC	2-F5	12VA	277V
H12a 100	SURFACE SQUARE DOWNLIGHT SURFACE MOUNTED, ALZAK REFLECTOR, BRONZE FINISH	GUTH LIGHTING HS4-12100F-IC731-277	100W MH	145VA	277V
F19 2-40	PARABOLIC U-LAMP LIGHT FIXTURES HEAT REMOVAL TROFFER, RECESSED	LIGHTOLIER PARALYTE 2424	2-F40 U/6	100VA	277V

LIGHTING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER	LAMP	INPUT WATT	INPUT VOLTAGE
H1 150	ROOF LEVEL LIGHTING FIXTURE WALL MOUNTED	LITHONIA-TWH150S EMCO GENERAL ELECTRIC	150WHPS	200VA	277V
H2 250	PARKING LOT LIGHTING FIXTURE WALL MOUNTED	LITHONIA-TWH250 EMCO GENERAL ELECTRIC	250WHPS	310VA	277V
H3 150	STORAGE & VAULT ROOM LIGHTING FIXTURE CEILING MOUNTED	LITHONIA-THS150 EMCO GENERAL ELECTRIC	150WHPS	200VA	277V
H4 250	MECHANICAL (FAN) ROOM LIGHTING FIXTURE CEILING MOUNTED	G.E. DGS254HI6M3 LITHONIA HOLOPHANE	250WHPS	310VA	277V
H5 250	HAIKU CROSSOVER AREA LUMINAIRE ON SIGN BRIDGE STRUCTURE	MWC HOLOPHANE KIM	250WHPS	310VA	480V
H6 150	ROADWAY LUMINAIRE WITH 15' BRACKET ARM LENGTH MOUNTED ON FARADAY SHIELD SUPPORT	G.E.M2RC15S5H26M3 EMCO GUARDCO	150WHPS	200VA	480V
H7 150	SAME AS H6 EXCEPT W/ITS OWN STEEL POLE 30' POLE	-	-	-	-
H8 400	HIGH MAST LUMINAIRE ON 100FT STEEL TAPERED POLE W/COMPLETE SERVICE HOIST EQUIPMENT	G.E. HMOTS100SHPPA HOLOPHANE	400WHPS	520VA	480V
H9 250	ROADWAY LUMINAIRE WITH BRACKET ARM LENGTH AS SHOWN ON STEEL POLE.	G.E. MA250 HPS-CUTOFF OR EQUAL EMCO GUARDCO	250WHPS	310VA	480V
H10 100	HID LIGHTING FIXTURE, WALL MOUNTED	LITHONIA WALL-PAK DEVINE WALLPAK HOLOPHANE WALLPAK	175W MH	145VA	277V
H11 175	GARAGE LIGHTING FIXTURE	MWC SDII SERIES DAY-BRITE HOLOPHANE	175W MH	225VA	277V
H12 100	10"CYLINDER DOWNLIGHT SURFACE MTD, ALZAK REFLECTOR, BRONZE FINISH	PRESCOLITE HIDC-3 STAFF LITHONIA	100W MH	145VA	277V
H13 100	HID LIGHTING FIXTURE, WALL MOUNTED	MWC NW IV SERIES LITHONIA DEVINE	100W MH	145VA	277V
H15 175	SIGN LUMINAIRE MOUNTED ON SIGN STRUCTURE	G.E. VERSAFLOOD EMCO	175W MH	225VA	480V
T1 100	2'x2' ASYMMETRICAL TUNNEL LIGHTING FIXTURE CEILING MOUNTED	GE TUNIO ** EMCO DEVOE	100WHPS	145VA	480V 277V NOTE 2
T2 250	2'x2' SYMMETRICAL TUNNEL LIGHTING FIXTURE CEILING MOUNTED	GE TUN25 *** EMCO DEVOE	250WHPS	335VA	480V
T3 400	2'x2' SYMMETRICAL TUNNEL LIGHTING FIXTURE CEILING MOUNTED	GE TUN40 **** EMCO DEVOE	400WHPS	520VA	480V
T4 100	2'x2' SYMMETRICAL TUNNEL LIGHTING FIXTURE CEILING MOUNTED	GE TUNIO * EMCO DEVOE	100WHPS	145VA	480V
T5 100	2'x2' ASYMMETRICAL TUNNEL LIGHTING FIXTURE WALL MOUNTED	GE TUNIO * EMCO DEVOE	100WHPS	145VA	480V
T6 100	PLENUM & SUBSTATION AREA LTG. FIXTURE WALL MOUNTED ENCLOSED AND GASKETED	LITHONIA-204705R EMCO GENERAL ELECTRIC	100WHPS	145VA	277V
P1 100	ELEVATOR PIT LTG. FIXTURE WALL MOUNTED	PRESCOLITE WB-2 LITHONIA COLUMBIA	100W	145VA	120V

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	97	440

NOTES:

1. ALL TYPE H6, H7, H9 AND H15 FIXTURES SHALL BE EQUIPPED WITH A PHOTOELECTRIC CELL FOR ON/OFF NIGHT/DAY CONTROL, UNLESS OTHERWISE NOTED.
2. VOLTAGE OF TUNNEL LIGHTING FIXTURE TYPE T1 USED FOR EMERGENCY LIGHTING SHALL BE 277V
3. SEE SHEET NO. EC5 FOR CONTINUATION OF LIGHTING FIXTURE SCHEDULE.

* GE TUN10S4A2CBM09CGF
** GE TUN10S4A2SYM09CGF
*** GE TUN25S4A2SYM09CGF
**** GE TUN40S4A2SYM09CGF
***** MWCSJ-/1250HPS480CGSX11 AL-6XN

DATE	REVISION
11/23/94	REV. PER DCN 66-054
7/27/94	ADDED H12a FIXTURE PER DCN 66-050
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING FIXTURE SCHEDULE STANDARDS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. E3 OF 4 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

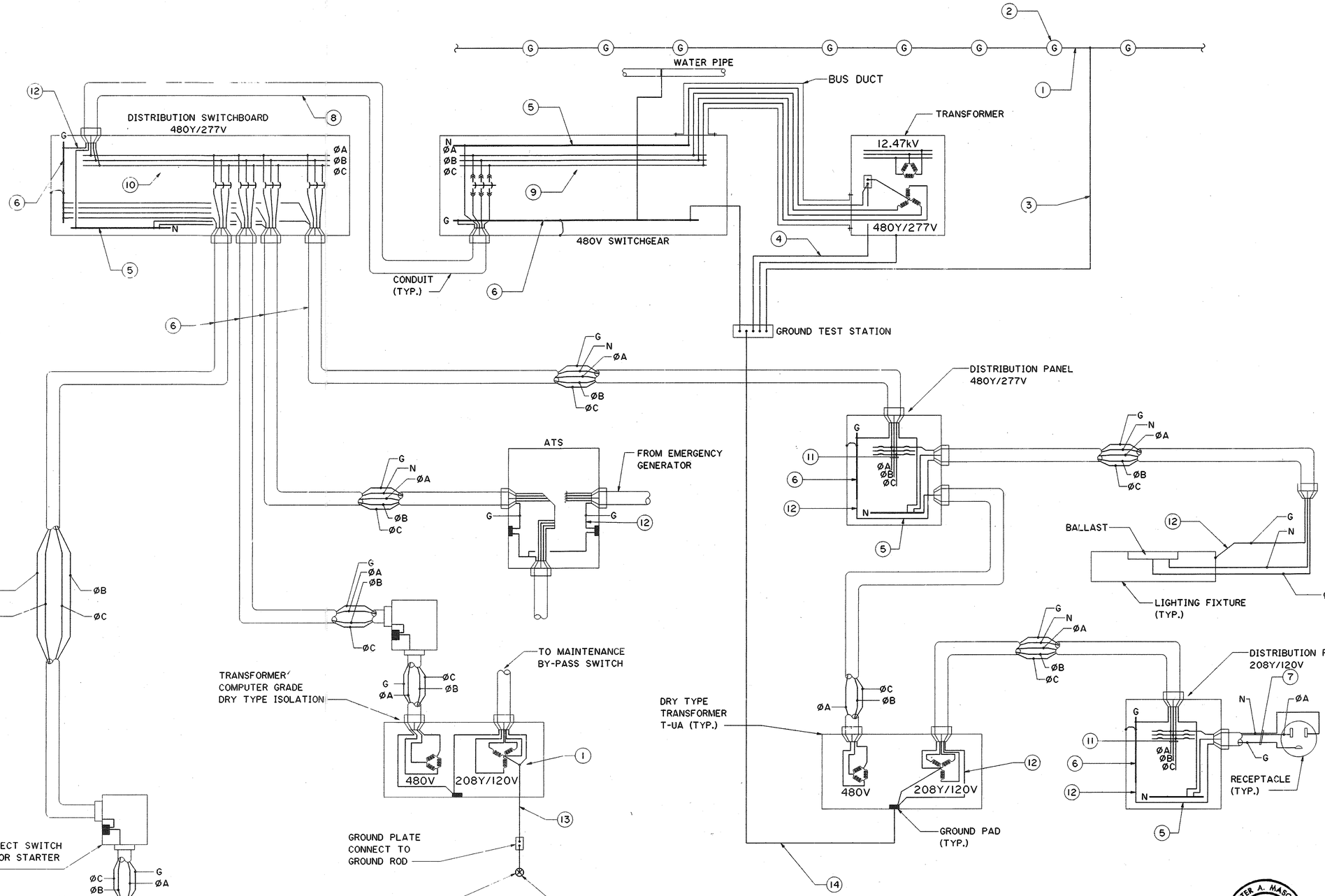
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 5/24/92
	DRAWN BY CADD	
	TRACED BY	
NOTE BOOK	DESIGNED BY RF JAMES/T SANCHEZ	3/17/92
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	5/26/92

2410V156 2410: V156 ES0227.FGB;1 10JLY90-16.26.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	98	440



NOTES:

1. GROUNDING CONDUCTOR UNDER PORTALS AND CONTROL BUILDING.
2. GROUNDING ROD
3. MAIN GROUNDING CONDUCTOR
4. NEUTRAL GROUNDING CONDUCTOR
5. BARE NEUTRAL BUS INSULATED FROM HOUSING
6. UNINSULATED COPPER GROUND BUS. A GROUND SHALL BE PROVIDED FOR AND BONDED TO EACH SECTION OF LOW VOLTAGE SWITCHGEAR HOUSING AND SHALL BE SUITABLY INTERCONNECTED TO PROVIDE A CONTINUOUS BUS.
7. SINGLE PHASE TWO WIRE BRANCH CIRCUIT CONSISTING OF PHASE, NEUTRAL AND GROUNDING CONDUCTORS IN A COMMON METALLIC CONDUIT.
8. GROUNDING CONDUCTORS TO LOADS TO BE PROVIDED IN COMMON CONDUIT WITH PHASE CONDUCTOR.
9. SWITCHGEAR BUSSING
10. SWITCHBOARD BUSSING
11. PANEL BUSSING
12. GREEN INSULATED CONDUCTOR CONNECTED TO THE NON-CURRENT CARRYING PARTS OF EACH ELECTRICAL DEVICE, PANELBOARD AND METALLIC RACEWAY.
13. COMMUNICATION TRANSFORMER CONDUCTOR 1-#4/0 IN 1-½" PVC SCHEDULE 40 CONDUIT.
14. SIZE GROUNDING CONDUCTORS IN ACCORDANCE WITH THE CODE OR AS SHOWN.

ORIGINAL PLAN	NOTE BOOK	NO.	DATE
SURVEY PLOTTED BY	CADD		6-6-90
DRAWN BY	T. Y. Sai-EZ		5-4-90
TRACED BY			
DESIGNED BY			
QUANTITIES BY	J.U.SASSANI		6-26-90
CHECKED BY			

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII U.S.A.

DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GROUNDING

HALAWA APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. E4 OF 4 SHEETS

110915C 2410: V150 E50248.FRB>1 11JUL90-16.12.00 XMULTI E50348

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	99	440

HECO HALAWA 2-
HALAWA 4
46kV FEEDER
(UG CONDUITS
BY CONTRACTOR,
CABLES BY HECO)

TERMINATOR
DISCONNECT SWITCH
HECO EQUIPMENT NIC
HECO TRANSFORMER #1
10MVA
46-12.47kV 8%Z
HECO HALAWA H-3 SUBSTATION

HECO METER
AUTOMATIC TRANSFER ON LOSS OF HECO #1
SEE CONDITION 6 ON SHT. NO. ED2
HALAWA 15 kV SWITCHGEAR
12.47kV BUS "A" BUS "B"
N.C. N.O. N.C.

12.47kV TIE FEEDER VIA INBOUND TUNNEL
12.47kV TIE FEEDER VIA OUTBOUND TUNNEL

HECO KOOLAU 4
-LAELAE-KAHUKU
46kV FEEDER
(UG CONDUITS
BY CONTRACTOR,
CABLES BY HECO.)

LIGTHNING ARRESTOR
DISCONNECT SWITCH
VACUUM BREAKER
HECO TRANSFORMER #2
10MVA
46-12.47kV 8%Z
HECO EQUIPMENT NIC
HECO HAIKU H-3 SUBSTATION

HAIKU 15 kV SWITCHGEAR
AUTOMATIC TRANSFER ON LOSS OF HECO #2
HECO METER
12.47kV BUS "A" BUS "B"
N.C. N.O. N.C.

IB PORTAL BUILDING

HALAWA IB ELECTRICAL ROOM
2500/2800kVA 0A 55/65°C 12.47kV-480V
T1-1 T1-2
FLCB ATS FCLB
EXHAUST SUPPLY SUPPLY EXHAUST
TF-5 TF-6 TF-2 TF-4 TF-1 TF-3 TF-7 TF-8
ALL TUNNEL FANS 300/200hp 1200/600rpm
CONTROL BUILDING PORTAL POWER & LIGHTING
VENT FAN AUXILIARY MCC
AFC'S
100 FIRE PUMP
EMERGENCY PANEL

EMERGENCY GENERATOR
500kW 480Y/277V
(AUTOMATIC START ON LOSS OF BOTH HECO FEEDERS)
TEST LOAD RESISTOR BANK
CONTROL BUILDING EMERGENCY PANEL
480V 3Ø 4W BUS "E"
SPARE SPARE UPS
COMPUTER CONTROL BLDG. POWER PANEL
EMERGENCY LIGHTS CONTROL BLDG. POWER PANEL

UNIT SUBSTATION T2-2
500kVA 3Ø
480V - 12.47 kV
(IB PORTAL BUILDING)

IB TUNNEL LIGHTING FEEDER (FROM BUS "B")
T3-HL T3-1 T3-3 T3-5 T3-7 T3-9 T3-HK
EO

OB TUNNEL LIGHTING FEEDER (FROM BUS "A")

HALAWA OB ELECTRICAL ROOM
2500/2800kVA 0A 55/65°C 12.47kV-480V
T1-3 T1-4
FCLB ATS
EXHAUST SUPPLY SUPPLY EXHAUST
TF-9 TF-11 TF-15 TF-16 TF-13 TF-14 TF-10 TF-12
AFC'S
VENT FAN AUXILIARY MCC
PORTAL THRESHOLD LIGHTING PANEL
CONTROL BUILDING
PORTAL POWER & LIGHTING PANEL
EMERGENCY PANEL

OB PORTAL BUILDING
UNIT SUBSTATION T2-1
500kVA
480V-12.47kV

HAIKU IB ELECTRICAL ROOM
2500/2800kVA 0A 55/65°C 12.47kV-480V
T1-5 T1-6
FCLB ATS
EXHAUST SUPPLY SUPPLY EXHAUST
TF-18 TF-20 TF-21 TF-22 TF-23 TF-24 TF-17 TF-19
AFC'S
VENT FAN AUXILIARY MCC
PORTAL POWER & LIGHTING PANEL
PORTAL THRESHOLD LIGHTING PANEL
EMERGENCY PANEL

HAIKU OB ELECTRICAL ROOM
2500/2800kVA 0A 55/65°C 12.47kV-480V
T1-7 T1-8
FCLB ATS
EXHAUST SUPPLY SUPPLY EXHAUST
TF-31 TF-32 TF-25 TF-27 TF-26 TF-28 TF-29 TF-30
AFC'S
VENT FAN AUXILIARY MCC
PORTAL POWER & LIGHTING PANEL
FIRE PUMP
200
EMERGENCY PANEL

OB PORTAL BUILDING

3Ø 150kVA 12.47kV-480Y/277V PAD MOUNTED TRANSFORMERS (TYP. FOR 7) TUNNEL LIGHTING PANELS WITH LOAD SHEDDING ELECTRICALLY OPERATED LIGHTING CONTACTORS AND 1Ø 277V EMERGENCY LIGHTING PANELS WITH FAST TRANSFER (HID) 90 MINUTE BATTERY BACK-UP INVERTER SYSTEMS.

HALAWA CROSSOVER POWER CENTER — CROSSPASSAGE NO. 1 — CROSSPASSAGE NO. 3 — CROSSPASSAGE NO. 5 — CROSSPASSAGE NO. 7 — CROSSPASSAGE NO. 9 — HAIKU CROSSOVER POWER CENTER

SUB-FEED POWER PANELS (NOT SHOWN) ARE LOCATED IN EVEN NUMBERED CROSSPASSAGES

NOTE:
VENT FAN (TF) AFC'S ARE FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	CADD	2/1/90
NOTE BOOK	TRACED BY		
	DESIGNED BY	E. JIMENEZ	2/1/90
	QUANTITIES BY		
NO.	CHECKED BY	S.T. SASSANI	2/1/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MAIN ONE LINE DIAGRAM

DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-HH3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED1 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

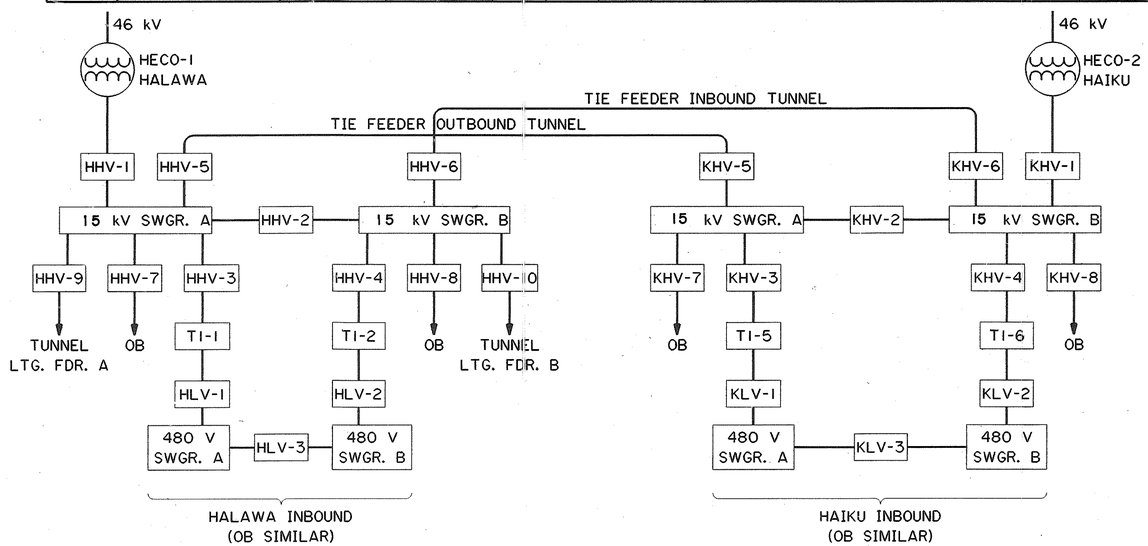
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Peter A. Mason

2410V156 2410: V156 ES0008.FGB#1 11JLY90-11.49.10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	100	440

CONDITION		12.47 kV SWITCHGEAR																						480 V SWITCHGEAR								
		CB	FLA	MVA	CB	FLA	MVA	CB	FLA	MVA	CB	FLA	MVA	CB	FLA	MVA	CB	FLA	MVA	CB	FLA	MVA	CB	FLA	MVA	CB	FLA	MVA	CB	FLA	MVA	CB	FLA	MVA
1	NORMAL OPERATION HALAWA AND HAIKU	HHV-1 CLOSED	302	6.5	HHV-2 OPEN	0	0	HHV-3 CLOSED	71	1.5	HHV-4 CLOSED	67	1.4	HHV-5 CLOSED	134	2.9	HHV-6 CLOSED	151	3.3	HHV-9 CLOSED	22	0.5	HHV-10 CLOSED	22	0.5	HLV-1 CLOSED	1730	1.4	HLV-2 CLOSED	1604	1.3	HLV-3 OPEN	0	0
		KHV-1 CLOSED	299	6.5	KHV-2 OPEN	0	0	KHV-3 CLOSED	63	1.4	KHV-4 CLOSED	75	1.6	KHV-5 CLOSED	134	2.9	KHV-6 CLOSED	151	3.3														
2	HECO HALAWA DOWN	HHV-1 OPEN	0	0	HHV-2 CLOSED	299	6.5	HHV-3 CLOSED	71	1.5	HHV-4 CLOSED	67	1.4	HHV-5 OPEN	0	0	HHV-6 CLOSED	302	6.5														
		KHV-1 CLOSED	579	12.5	KHV-2 CLOSED	134	2.9	KHV-3 CLOSED	63	1.4	KHV-4 CLOSED	75	1.6	KHV-5 OPEN	0	0	KHV-6 CLOSED	151	3.3														
3	HECO HAIKU DOWN	HHV-1 CLOSED	579	12.55	HHV-2 CLOSED	299	6.5	HHV-3 CLOSED	71	1.5	HHV-4 CLOSED	67	1.4	HHV-5 CLOSED	299	6.5	HHV-6 OPEN	0	0														
		KHV-1 OPEN	0	0	KHV-2 CLOSED	134	2.9	KHV-3 CLOSED	63	1.4	KHV-4 CLOSED	75	1.6	KHV-5 CLOSED	299	6.5	KHV-6 OPEN	0	0														
4	TRANSFORMER TI-1 DOWN	HHV-1 CLOSED	231	5.0	HHV-2 OPEN	0	0	HHV-3 OPEN	0	0	HHV-4 CLOSED	133	2.9	HHV-5 CLOSED	134	2.9	HHV-6 CLOSED	217	4.7							HLV-1 OPEN	0	0	HLV-2 CLOSED	3334	2.7	HLV-3 CLOSED	1730	1.4
5	TRANSFORMER TI-2 DOWN	HHV-1 CLOSED	369	8.0	HHV-2 OPEN	0	0	HHV-3 CLOSED	133	2.9	HHV-4 OPEN	0	0	HHV-5 CLOSED	134	2.9	HHV-6 CLOSED	84	1.8							HLV-1 CLOSED	3334	2.7	HLV-2 OPEN	0	0	HLV-3 CLOSED	1604	1.3
6	TIE FEEDER FAULT OUTBOUND	HHV-1 CLOSED	168	3.6	HHV-2 OPEN	0	0	HHV-3 CLOSED	71	1.5	HHV-4 CLOSED	67	1.4	HHV-5 OPEN	0	0	HHV-6 CLOSED	151	3.3														
		KHV-1 CLOSED	433	9.4	KHV-2 CLOSED	134	2.9	KHV-3 CLOSED	63	1.4	KHV-4 CLOSED	75	1.6	KHV-5 OPEN	0	0	KHV-6 CLOSED	151	3.3														
7	TIE FEEDER FAULT INBOUND	HHV-1 CLOSED	431	9.4	HHV-2 CLOSED	151	3.3	HHV-3 CLOSED	71	1.5	HHV-4 CLOSED	67	1.4	HHV-5 CLOSED	134	2.9	HHV-6 OPEN	0	0														
		KHV-1 CLOSED	148	3.2	KHV-2 OPEN	0	0	KHV-3 CLOSED	63	1.4	KHV-4 CLOSED	75	1.6	KHV-5 CLOSED	134	2.9	KHV-6 OPEN	0	0														
8	TIE FEEDER FAULT INBOUND HECO HAIKU DOWN	HHV-1 OPEN	0	0	HHV-2 CLOSED	151	3.3	HHV-3 CLOSED	71	1.5	HHV-4 CLOSED	67	1.4	HHV-5 CLOSED	297	6.4	HHV-6 OPEN	0	0														
		KHV-1 CLOSED	570	12.3	KHV-2 CLOSED	431	9.4	KHV-3 CLOSED	63	1.4	KHV-4 CLOSED	75	1.6	KHV-5 CLOSED	297	6.4	KHV-6 OPEN	0	0														
9	TIE FEEDER FAULT OUTBOUND HECO HAIKU DOWN	HHV-1 CLOSED	579	12.5	HHV-2 CLOSED	433	9.4	HHV-3 CLOSED	71	1.5	HHV-4 CLOSED	67	1.4	HHV-5 OPEN	0	0	HHV-6 CLOSED	297	6.4														
		KHV-1 OPEN	0	0	KHV-2 CLOSED	134	2.9	KHV-3 CLOSED	63	1.4	KHV-4 CLOSED	75	1.6	KHV-5 OPEN	0	0	KHV-6 CLOSED	297	6.4														



INTERLOCKS

GENERAL HECO-1 HALAWA AND HECO-2 HAIKU SUBSTATIONS SHALL NOT BE OPERATED IN PARALLEL.

CIRCUIT BREAKERS HHV-1, HHV-2, HHV-5, HHV-6, KHV-1, KHV-2, KHV-5, KHV-6 SHALL BE HARDWIRE INTERLOCKED TO ENSURE THIS. △ HOWEVER, HECO RESERVES THE RIGHT TO MOMENTARILY PARALLEL BOTH HECO SUBSTATIONS MANUALLY WHEN TAKING ONE SUBSTATION OUT OF SERVICE.

CONDITION 1 NORMAL OPERATION REQUIRES HHV-2 OPEN, HHV-1, HHV-5 AND KHV-5 CLOSED, KHV-2 OPEN, KHV-1, KHV-6 AND HHV-6 CLOSED.

CONDITION 2 WHEN HECO-1 HALAWA IS LOST, HHV-1 OPENS AND LOCKS OUT. HHV-5 OPENS AND HHV-2 AND KHV-2 CLOSE AUTOMATICALLY.

CONDITION 3 WHEN HECO-2 HAIKU IS LOST, KHV-1 OPENS AND LOCKS OUT. KHV-6 OPENS AND KHV-2 AND HHV-2 CLOSE AUTOMATICALLY.

CONDITION 4 INTERLOCK THE 480V CIRCUIT BREAKERS HLV-1, HLV-2 & HLV-3 SO THAT ONLY TWO CAN BE CLOSED AT A TIME. SIMILARLY INTERLOCK KLV-1, KLV-2 & KLV-3. A TIME DELAY IS REQUIRED ON HLV-3 AND KLV-3 TO ALLOW HHV-2 & KHV-2 TO CLOSE.

CONDITION 5 IF HECO 1 AND HECO 2 IS LOST, EMERGENCY GENERATOP STARTS AFTER MAIN BREAKERS HHV-1 AND KHV-1 LOCKOUT.

CONDITION 6 WHEN HECO WISHES TO REMOVE ONE SUBSTATION FOR MAINTENANCE, HECO WILL NOTIFY DOT IN ADVANCE BEFORE PARALLELING BOTH HECO SUBSTATION.

LEGEND:

FLA FULL LOAD AMPERES, (CONNECTED)
MVA MEGAVOLTAMPERES (CONNECTED)
HHV HALAWA HIGH VOLTAGE (12.46 kV)
HLV HALAWA LOW VOLTAGE (480 V)
KHV HAIKU HIGH VOLTAGE (12.47 kV)
KLV HAIKU LOW VOLTAGE (48 V)
CB CIRCUIT BREAKER
TI-1 } TRANSFORMER 3Ø 2500 kVA
TI-2 } 12.47 kV TO 480Y/277V

DATE	REVISION
6/2/94	REVISED PER DCN 66-045

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER FLOW DIAGRAM
SWITCHING & INTERLOCKING DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED2 OF 25 SHEETS

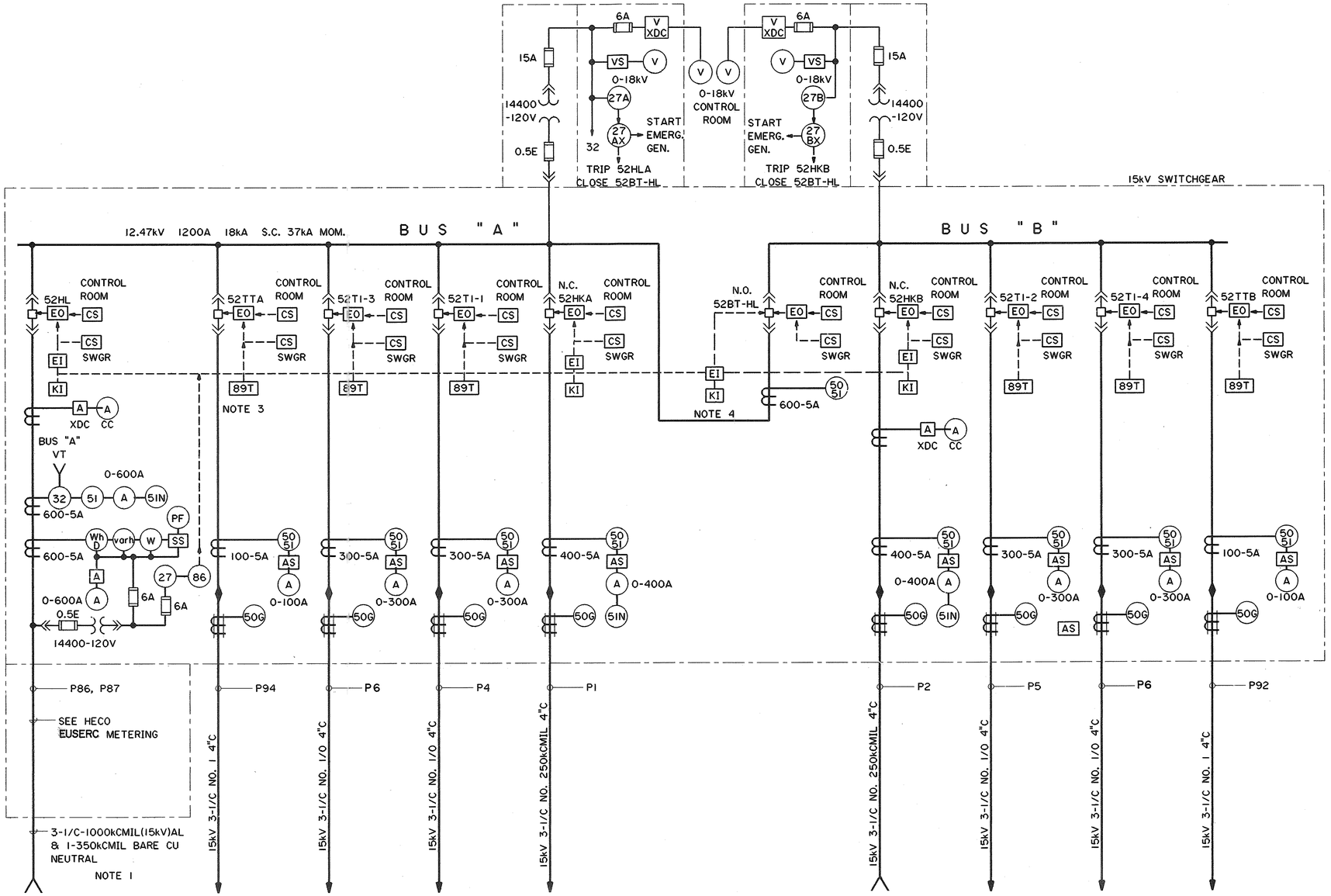
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY CADD	2/16/90
NO.	TRACED BY	
	DESIGNED BY F. JIMENEZ	2/1990
	QUANTITIES BY	
	CHECKED BY J. T. SASSANI	4/10/90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	101	440



NOTES

1. PROVIDE SUFFICIENT LENGTH OF CABLES TO CONNECT TO HECO TERMINALS
2. PROVIDE BARE COPPER 2/0 GROUNDING WIRE IN EACH FEEDER CIRCUIT
3. PROVIDE [K] KEY INTERLOCKS FOR TRANSFORMER DISCONNECT SWITCHES
4. PROVIDE AUXILIARY SWITCH WITH KEY INTERLOCK FOR MANUAL OPERATION

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

ORIGINAL PLAN	SURVEY PLOTTED BY	CADD	DATE 5-4-90
	DRAWN BY	"	" 5-4-90
	TRACED BY	"	" 7-20-90
NOTE BOOK	DESIGNED BY	R. JAMES	
	QUANTITIES BY	"	" 7-20-90
NO.	CHECKED BY	J. J. SASSANI	" 6-26-90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

15kV SWGR ONE LINE
HALAWA PORTAL BUILDING - IB
DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

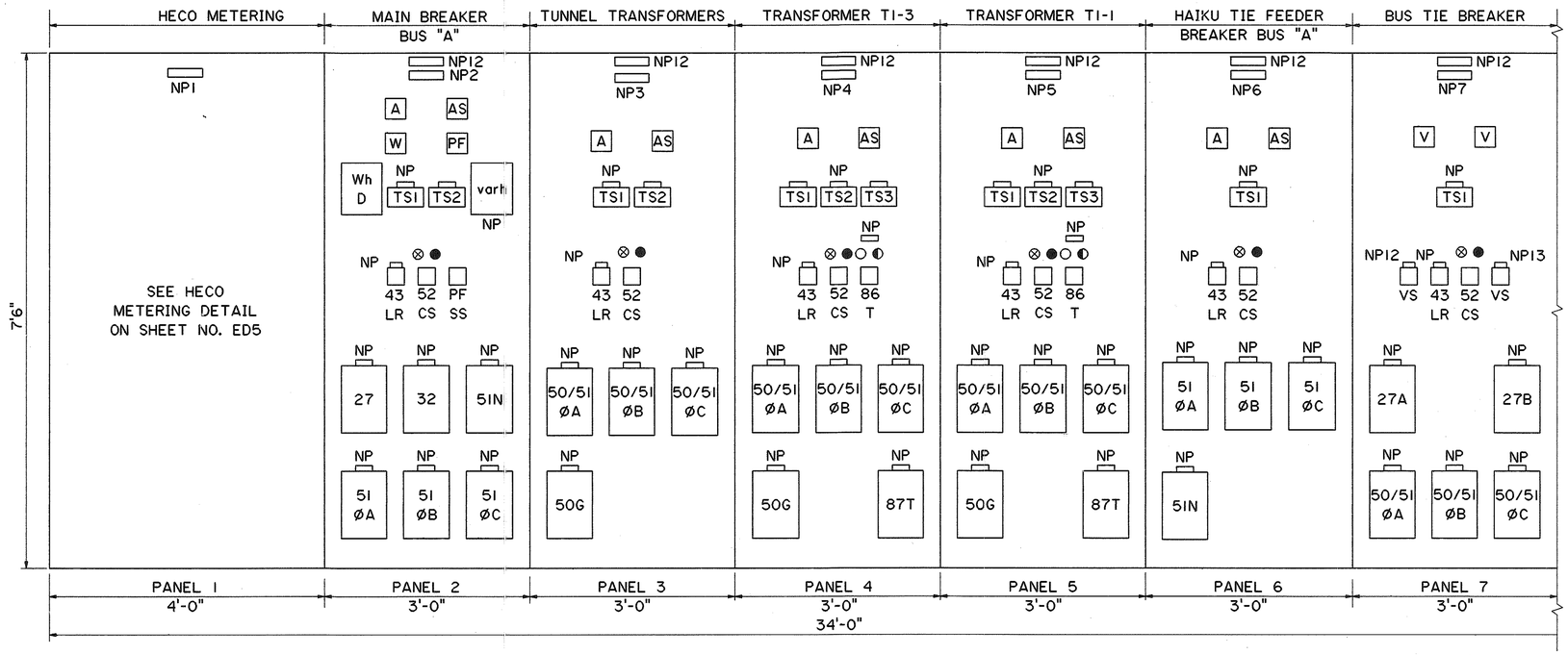
SHEET NO. ED3 OF 25 SHEETS

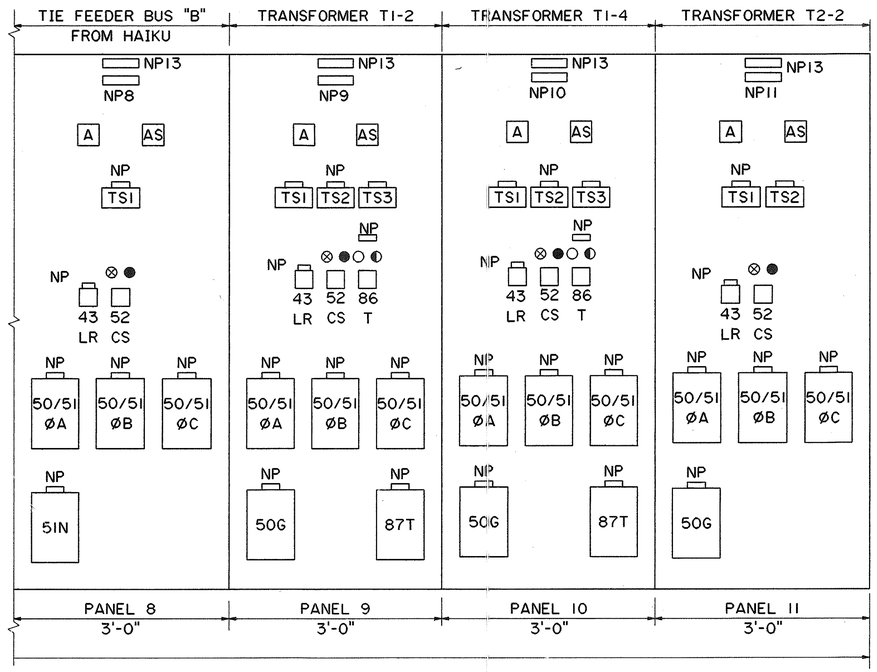
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	102	440





NAMEPLATE ENGRAVING	
NP1	HECO METERING
NP2	MAIN BREAKER BUS "A"
NP3	TRANSFORMER T2-1
NP4	TRANSFORMER T1-1
NP5	TRANSFORMER T1-3
NP6	TIE FEEDER BUS "A" TO HAIKU
NP7	HALAWA BUS TIE BREAKER
NP8	TIE FEEDER BUS "B" FROM HAIKU
NP9	TRANSFORMER T1-2
NP10	TRANSFORMER T1-4
NP11	TRANSFORMER T2-2
* NP12	15kV BUS "A"
* NP13	15kV BUS "B"

* FOR OTHER DEVICE NAMEPLATES, ENGRAVING SHALL CORRESPOND TO DEVICE DESIGNATIONS SHOWN.

ORIGINAL PLAN

	NO.	DATE
SURVEY PLOTTED BY		
DRAWN BY CADD		5/14/90
TRACED BY		5/18/90
DESIGNED BY F. JIMENEZ		
QUANTITIES BY		5/18/90
CHECKED BY J.J. SASSANI		

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

15kV SWITCHGEAR LAYOUT

HALAWA PORTAL BUILDING - IB

DIAGRAMS

INTERSTATE ROUTE H-3

F.A.I. PROJ. NO. I-H3-1(66)

PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6430-E — HAWAII, U.S.A.

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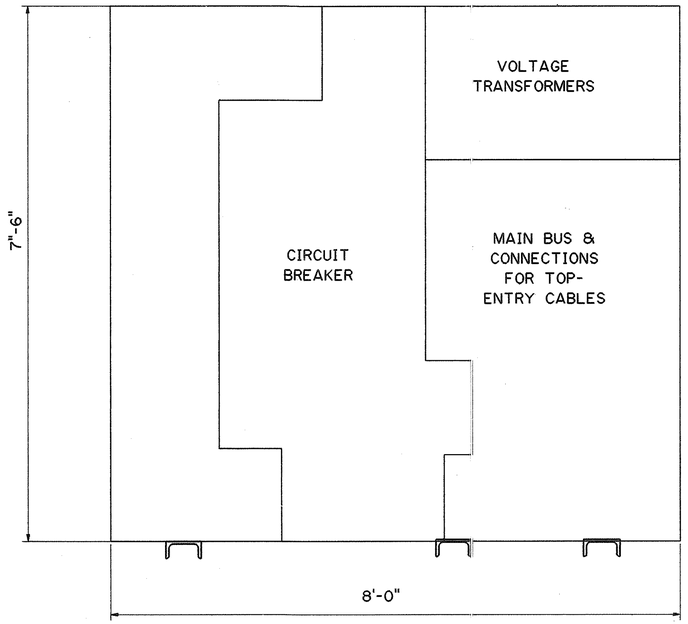
Peter A. Mason

SCALE: NONE DATE: APR 1992

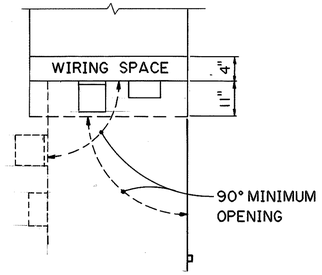
SHEET NO. ED4 OF 25 SHEETS

2410V155 2410: V155 ES0168.rSD:1 13JUN90-13.53.00

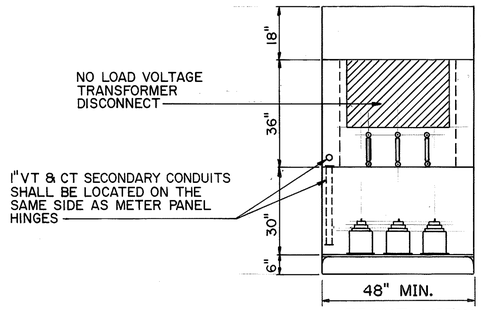
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	103	440



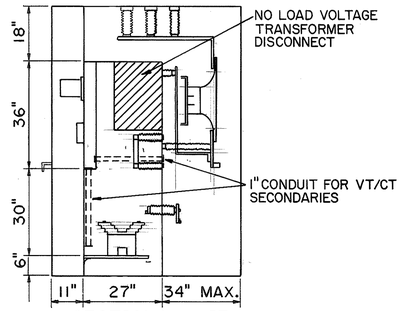
TYPICAL SECTION



TOP VIEW



FRONT VIEW



SECTIONAL VIEW

HECO METERING AND INCOMING BUS CONNECTIONS (TYPICAL FOR HALAWA & HAIKU)

NOTES:

2. AT HALAWA VOLTAGE TRANSFORMERS SHALL BE SUPPLIED FOR:
   - PANEL 6 BUS "A" VOLTAGE
   - PANEL 8 BUS "B" VOLTAGE
   - PANEL 2 HDOT METERING
3. AT HAIKU VOLTAGE TRANSFORMER SHALL BE SUPPLIED FOR:
   - PANEL 1 BUS "A" VOLTAGE
   - PANEL 7 BUS "B" VOLTAGE
   - PANEL 8 HDOT METERING
3. HECO METERING PROVISIONS SHALL BE IN ACCORDANCE WITH EUSERC.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 9/4/90
NOTE BOOK	DRAWN BY CADD	
NO.	TRACED BY	
	DESIGNED BY F. JIMENEZ	3/12/92
	QUANTITIES BY	
	CHECKED BY J.T. SASSANI	6/18/92

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

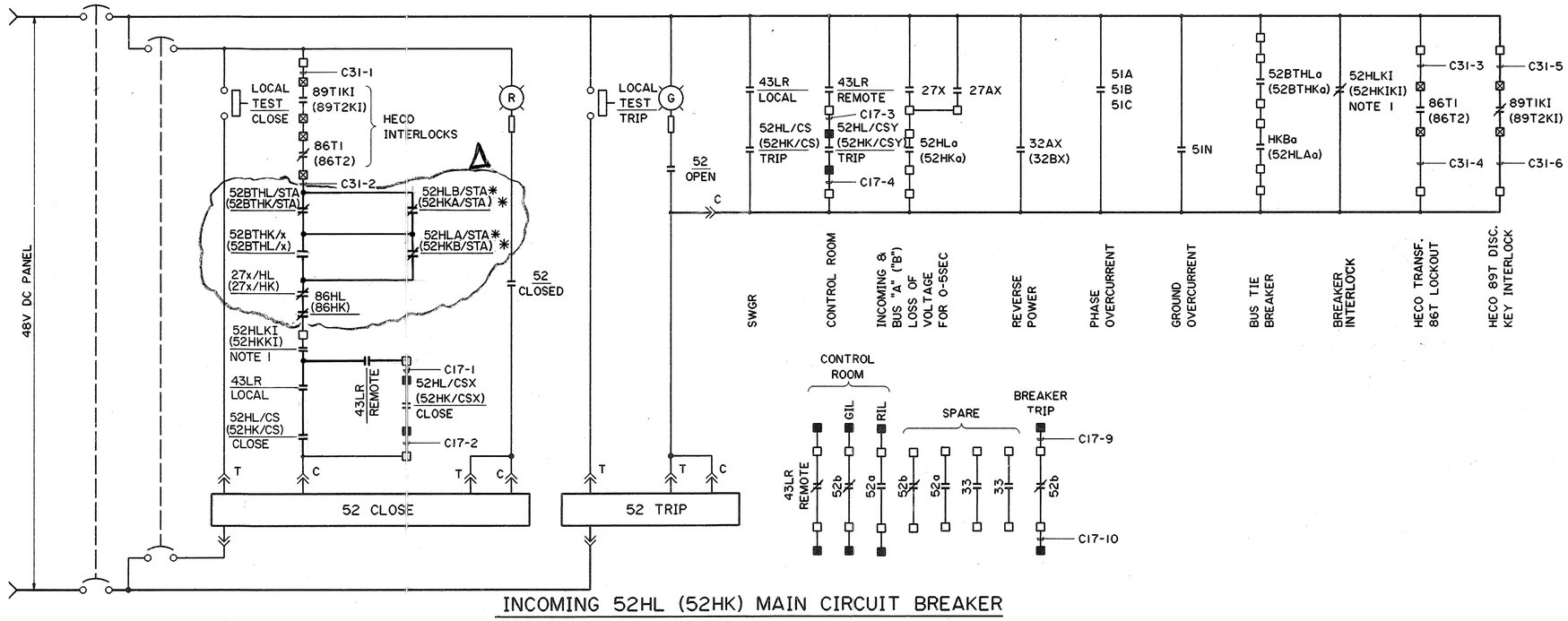
15kV SWGR. METERING
HECO REQUIREMENTS
DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED5 OF 25 SHEETS

2410V155 2410: V155 ES0228.FGB#1 11JLY90-08.20.10

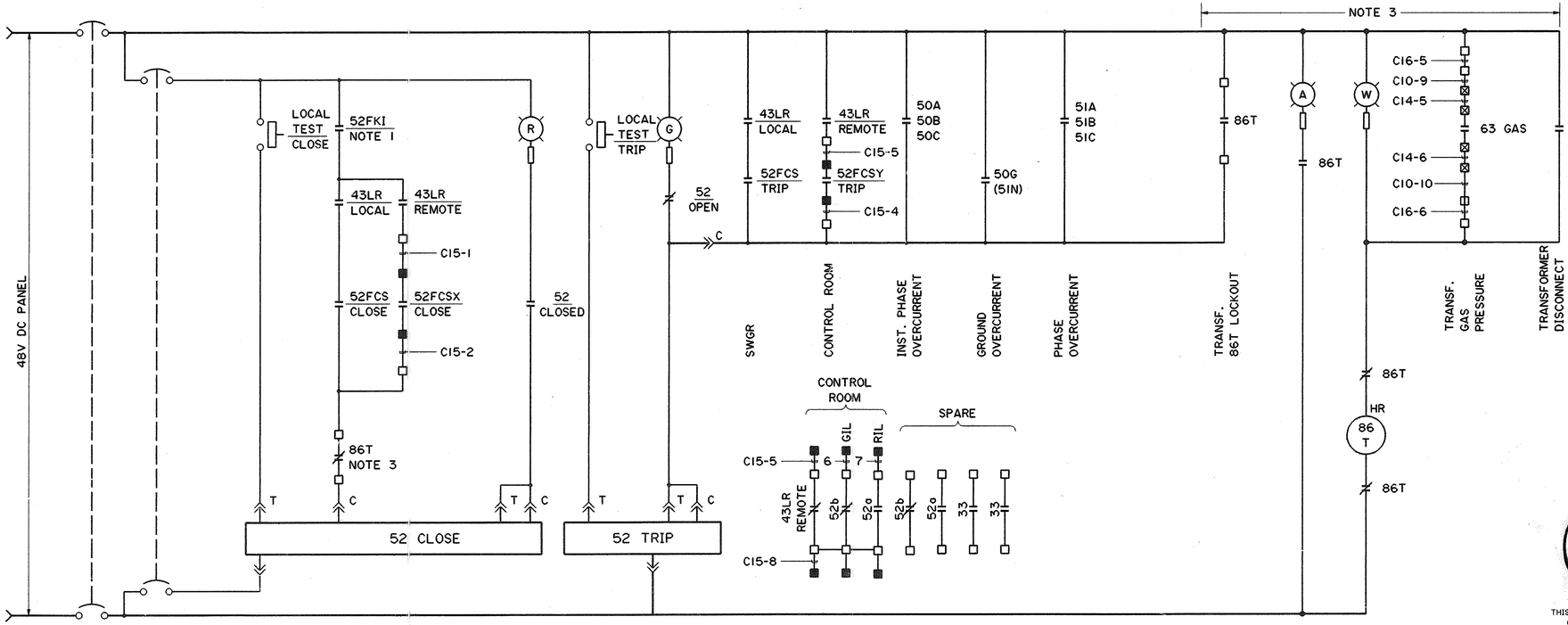
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	104	440



INCOMING 52HL (52HK) MAIN CIRCUIT BREAKER

NOTES:

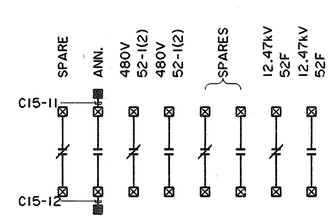
1. PROVIDE HARDWIRE INTERLOCK.
2. THIS CIRCUIT IS TYPICAL FOR ALL FEEDER CIRCUIT BREAKERS. SPECIFIC 52F NAMEPLATE DESIGNATIONS ARE SHOWN ON SHT. NO. ED4 AND ED9.
3. FOR TRANSFORMER FEEDER BREAKERS 52T1-1 TO 52T1-8 INCLUSIVE.
4. * DENOTES NEW



FEEDER 52F CIRCUIT BREAKER

NOTE 2

APPLIES TO 52HLA & 52HKB



1/9/95	REVISED PER DCN 66-060
6/2/94	REVISED PER DCN 66-045
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

15kV SWITCHGEAR
CIRCUIT BREAKER CONTROL DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED6 OF 25 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

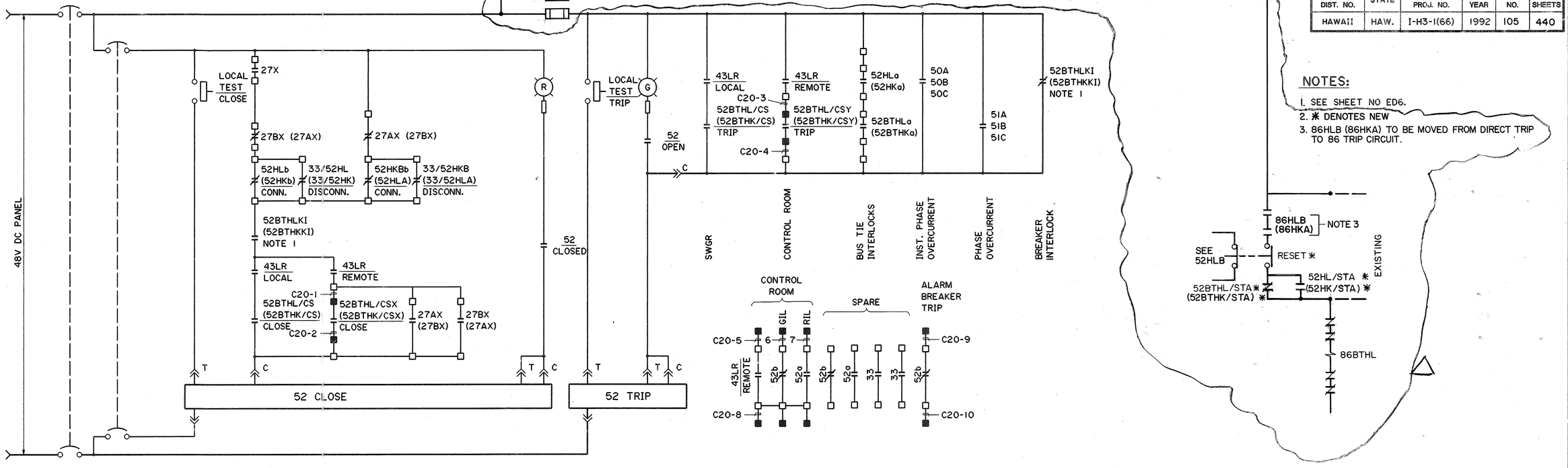
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY LADD	5/14/90
NOTE BOOK	TRACED BY	7/12/90
	DESIGNED BY F. JIMENEZ	
NO.	QUANTITIES BY	
	CHECKED BY J. J. SASSANI	8/18/90

2410V156 2410: V154 ES0035.FGB/1 11JULY90 09.29.20

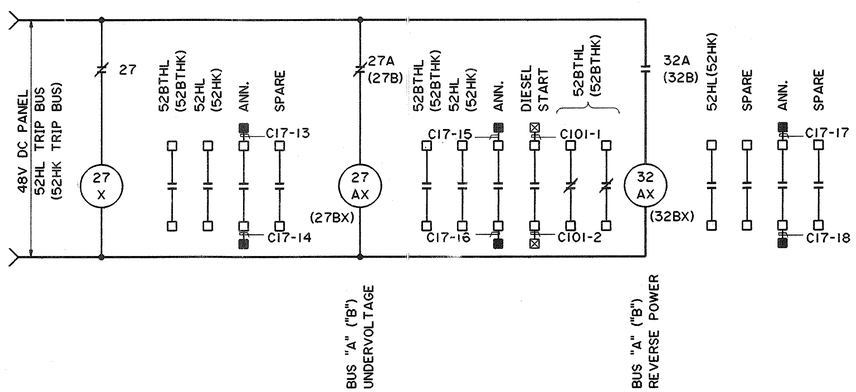
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	105	440



NOTES:

1. SEE SHEET NO ED6.
2. * DENOTES NEW
3. 86HLB (86HKA) TO BE MOVED FROM DIRECT TRIP TO 86 TRIP CIRCUIT.

BUS TIE 52BTHL (52BTHK) CIRCUIT BREAKER



1/9/95	REVISED PER DCN 66-060
6/2/92	REVISED PER DCN 66-045
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

15kV SWITCHGEAR
BUS TIE CONTROL DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED7 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A Mason

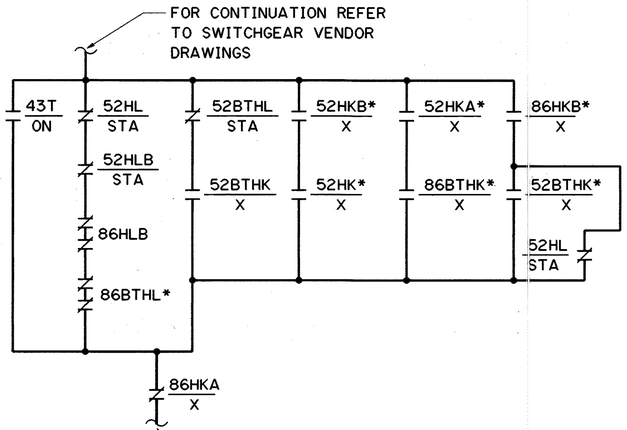
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	"
NOTE BOOK	TRACED BY	"
	REVISED BY	"
NO.	QUANTITIES BY	"
	CHECKED BY	"

2410V156 2410: V154 ES0039.FGB;1 11JLY90·09.31.50

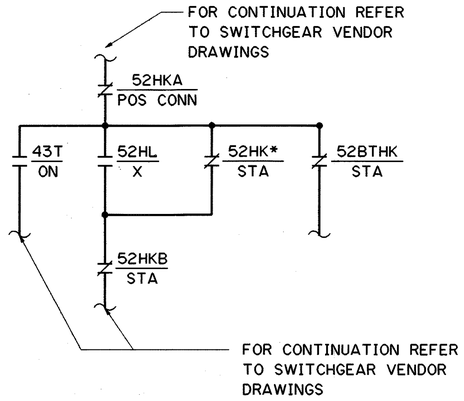
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	105 S-1	440

NOTE:

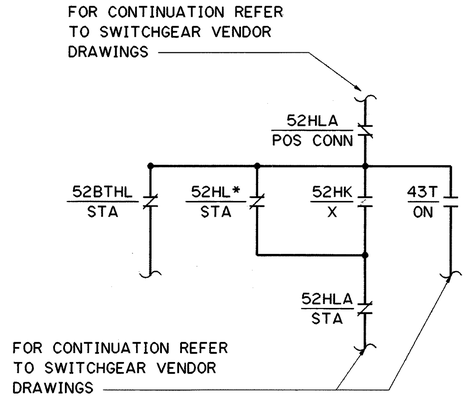
1. * DENOTES NEW.



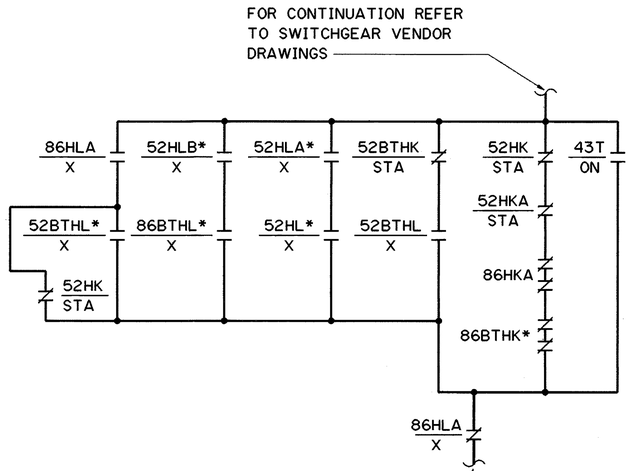
CLOSE CIRCUIT - 52HLA



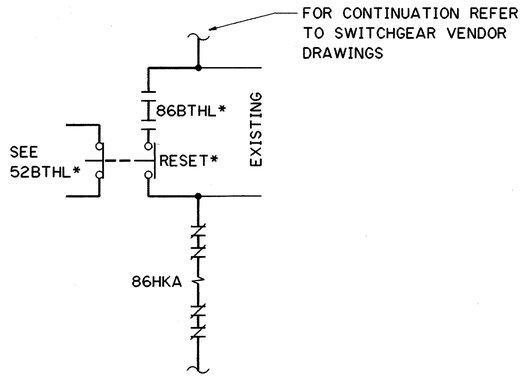
CLOSE CIRCUIT



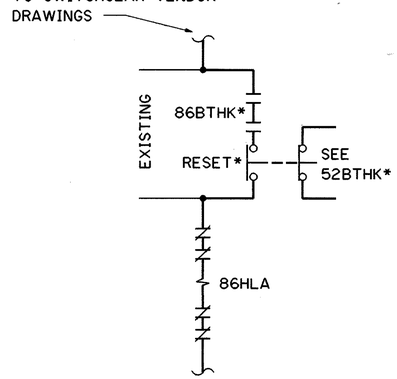
CLOSE CIRCUIT



CLOSE CIRCUIT - 52HKB



86 TRIP CIRCUIT
52HLB



86 TRIP CIRCUIT
52HKA

HALAWA

HAIKU

1/9/95	SHEET ADDED PER DCN 66-060
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

15kV SWITCHGEAR CONTROL MODIFICATIONS

DIAGRAMS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: JAN 1995

SHEET NO. ED7A OF 25 SHEETS

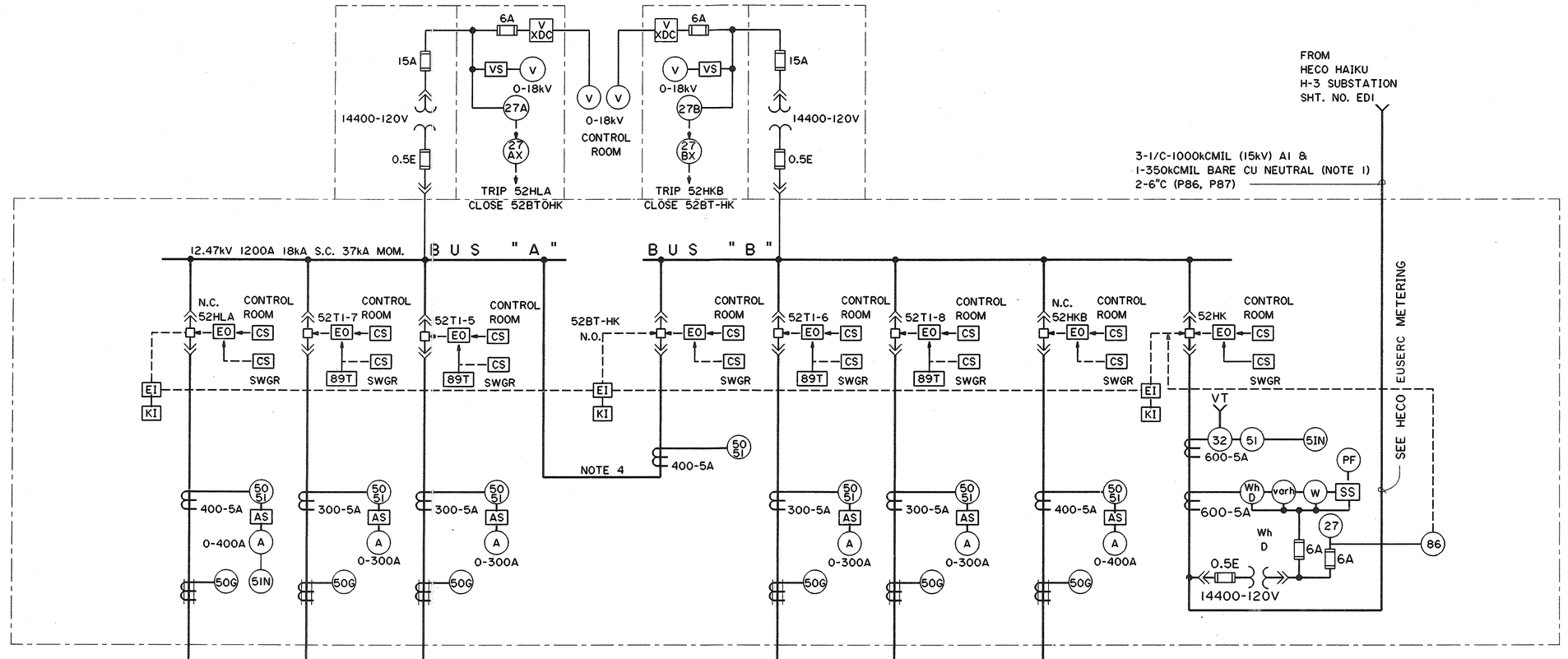
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

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

BUNYI ELW00D1:2410:IDWG.ELECTJE032.FGB71 10JAN95-08.12.40

105S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	106	440



NOTES

SEE SHEET NO. ED3

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	3/14/90
NOTE BOOK	TRACED BY	
	DESIGNED BY P. JIMENEZ	3/12/90
NO.	QUANTITIES BY	
	CHECKED BY J.T. SASSANI	6/18/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

15kV SWGR ONE LINE

HAIKU PORTAL BUILDING - IB

DIAGRAMS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DTAE :APR 1992

SHEET NO. ED8 OF 25 SHEETS

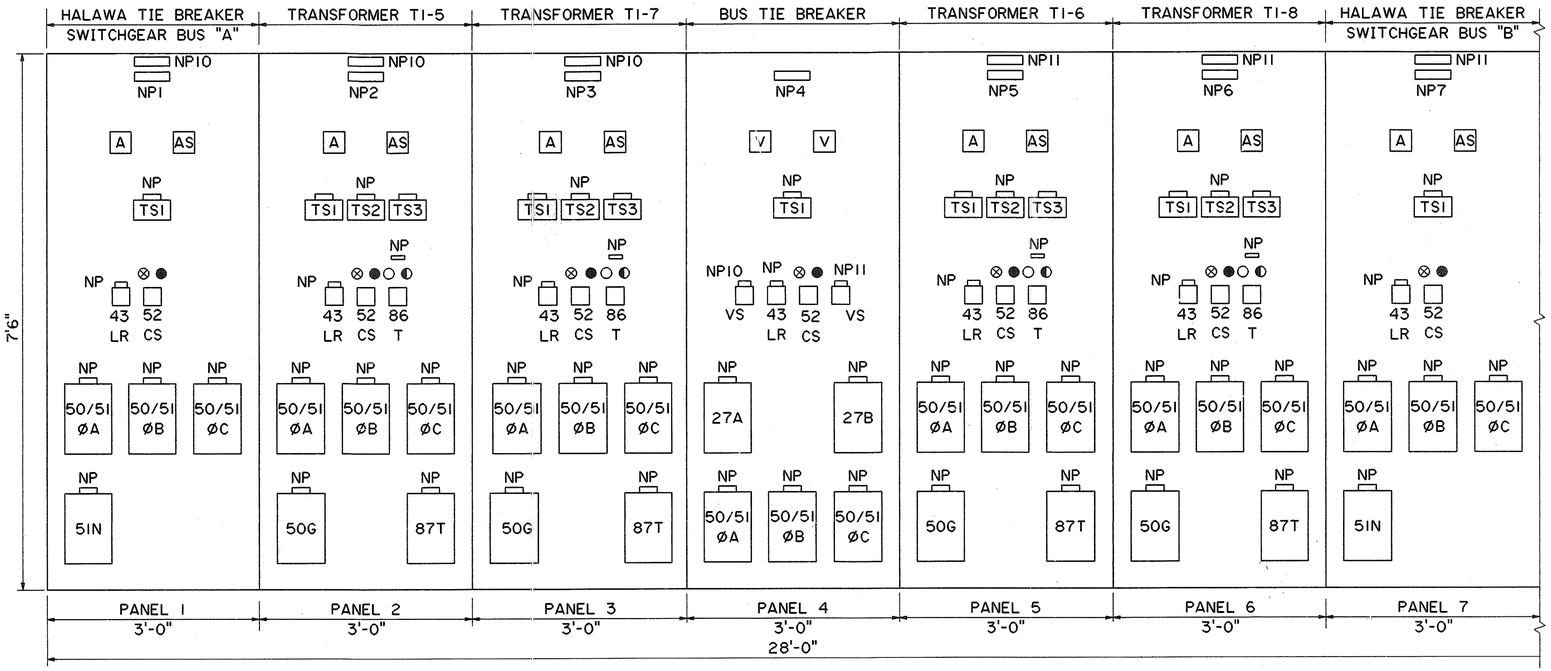
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6400-E
HAWAII, U.S.A.

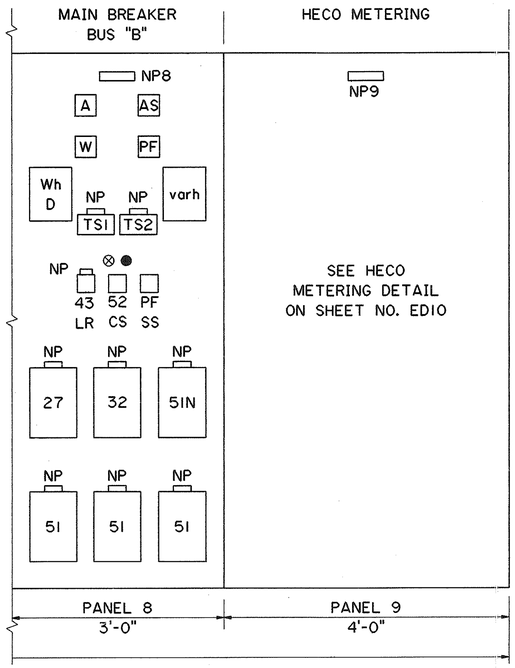
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V156 2410: V154 ES0002.FGB>1 11JLY90-09.50.20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	107	440





NAMEPLATE ENGRAVING		
	NP1	HALAWA 15kV SWITCHGEAR TIE FEEDER BREAKER BUS "A"
	NP2	OB PORTAL BLDG. TRANSFORMER T1-5
	NP3	IB PORTAL BLDG. TRANSFORMER T1-7
	NP4	BUS TIE BREAKER
	NP5	IB PORTAL BLDG. TRANSFORMER T1-6
	NP6	OB PORTAL BLDG. TRANSFORMER T1-8
	NP7	HALAWA 15kV SWITCHGEAR TIE FEEDER BREAKER BUS "B"
	NP8	HECO INCOMING
	NP9	HECO METERING
*	NP10	15kV BUS "A"
*	NP11	15kV BUS "B"

* FOR OTHER DEVICE NAMEPLATES, ENGRAVING SHALL CORRESPOND TO DEVICE DESIGNATIONS SHOWN.

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

15kV SWITCHGEAR LAYOUT

HAIKU PORTAL BUILDING-IB

DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED9 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

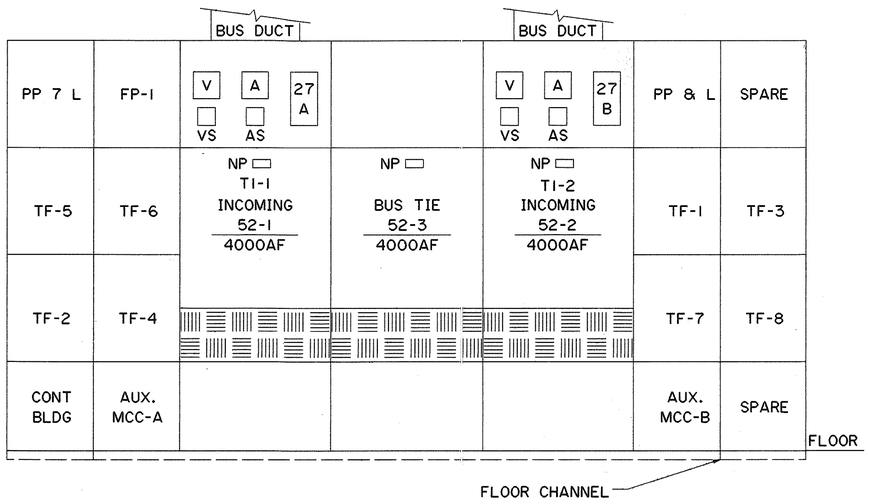
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

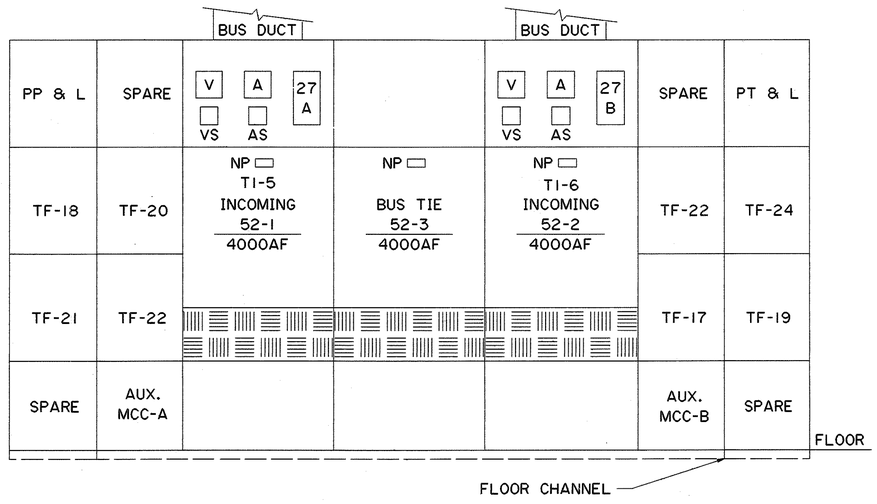
		DATE
ORIGINAL PLAN	SURVEY PLOTTED BY	
	DRAWN BY LADP	3/4/90
NOTE BOOK	TRACED BY	3/12/96
	DESIGNED BY F. JIMENEZ	3/12/96
	QUANTITIES BY	6/18/96
NO.	CHECKED BY J.J. GASSANI	6/18/96

2410V155 2410: V155 ES0167.FGB;1 11JLY90-08.30.30

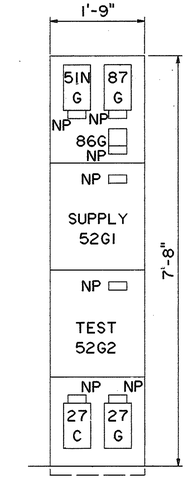
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	108	440



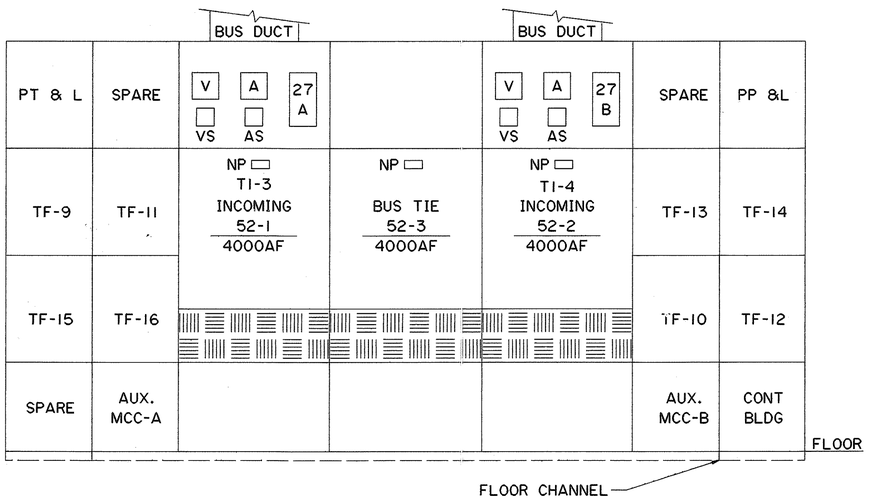
HALAWA IB



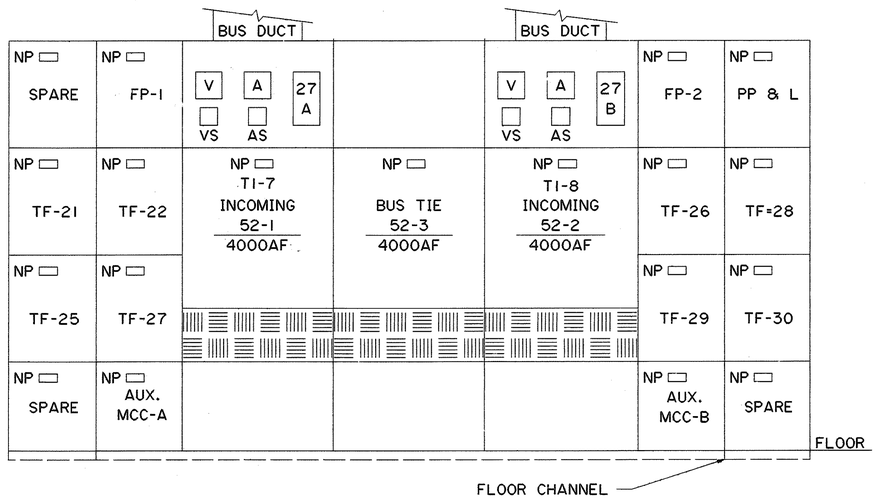
HAIKU IB



EMERGENCY POWER



HALAWA OB



HAIKU OB

NOTES:

1. REFER TO SHT. NOS. EN1, E01, EMI & EQI FOR NAMEPLATE TITLES.
2. ON EACH CIRCUIT BREAKER: PROVIDE A GREEN INDICATING LAMP TO SHOW POWER ON; RED INDICATING LAMP TO SHOW BREAKER CLOSED; A LOCAL TRIP & CLOSE PUSH BUTTON, TO OPERATE THE BREAKER.

FOR DETAIL AS-BUILT INFORMATION REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION

SURVEY PLOTTED BY
DRAWN BY CADD 5/8/92
TRACED BY * * * 3/12/92
DESIGNED BY P. JIMENEZ * * * 5/10/92
QUANTITIES BY * * *
CHECKED BY J. J. SASSANI

ORIGINAL PLAN
NOTE BOOK
NO.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

480V SWITCHGEAR LAYOUT
HALAWA & HAIKU
DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 3/4"=1' DATE: APR 1992

SHEET NO. ED10 OF 25 SHEETS

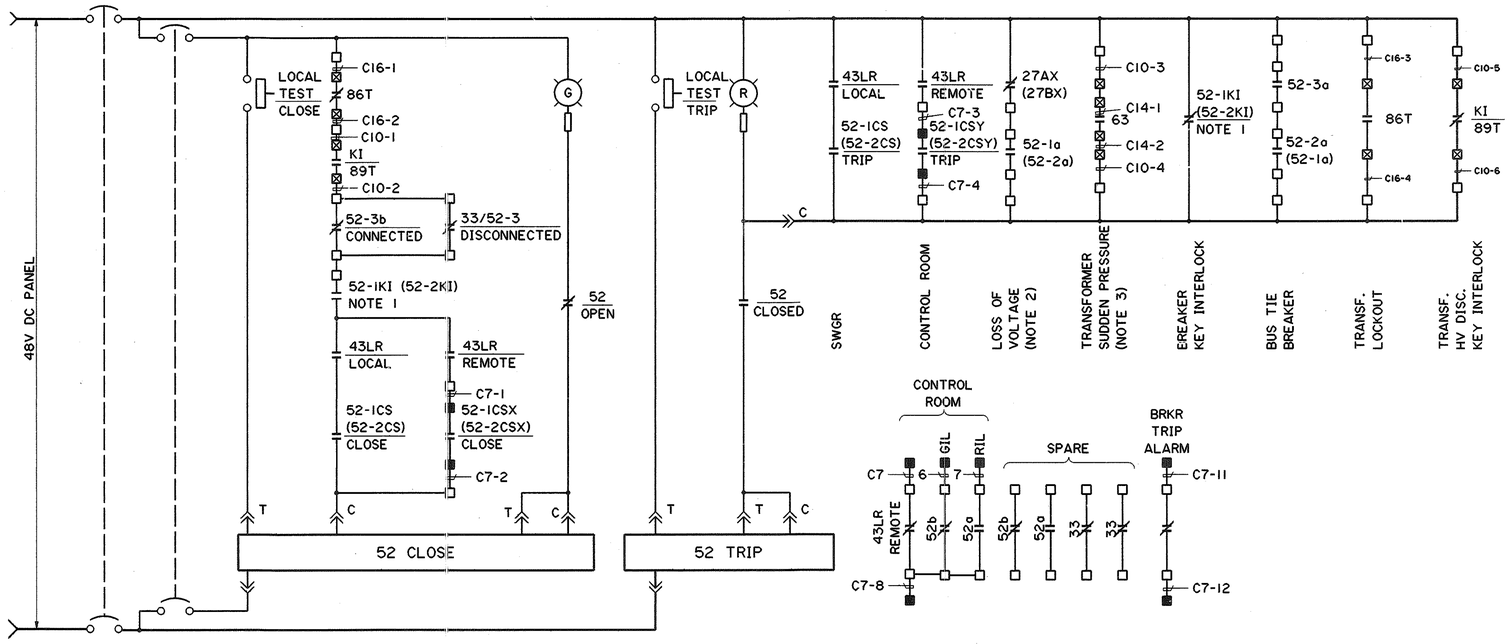
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6430-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

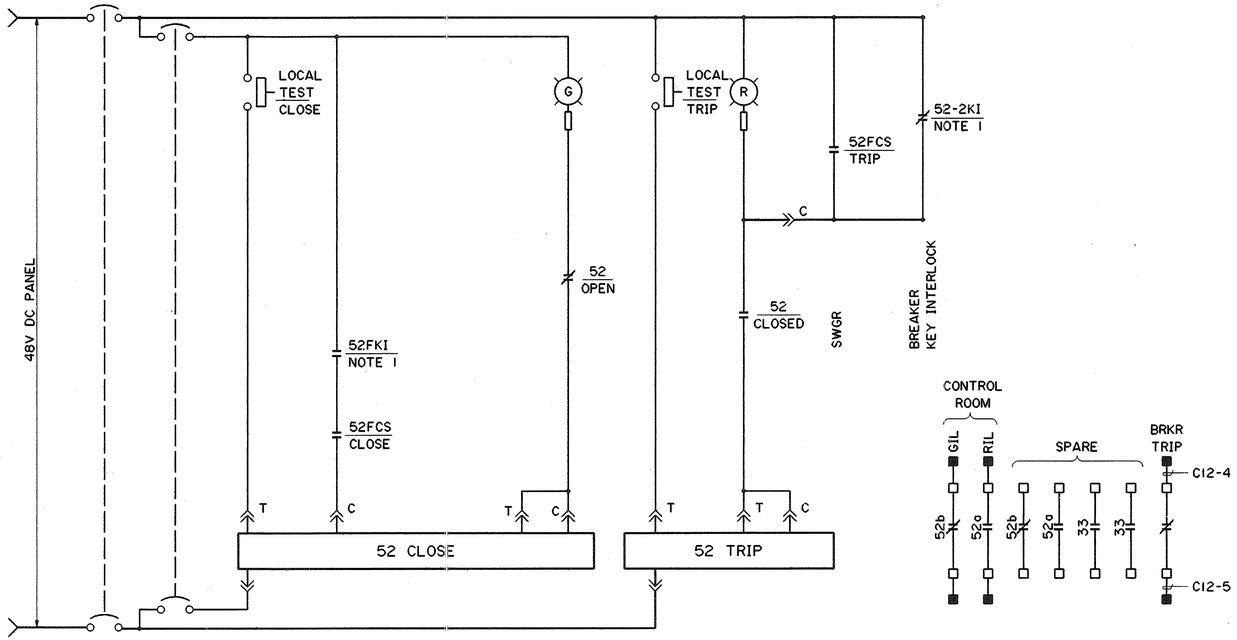
Peter A. Mason

2410V155 2410: V155 ES0154.FGB,1 11JLY90-08.48.40

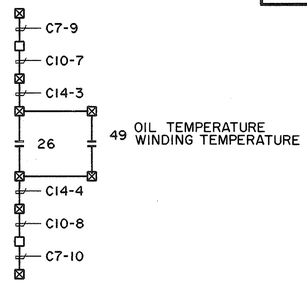
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	109	440



INCOMING 52-1 (52-2) CIRCUIT BREAKER



FEEDER 52F CIRCUIT BREAKER



2500 kVA TRANSFORMER ALARMS

NOTES:

1. CONTACT POSITION SHOWN IS WHEN THE BREAKER IS IN THE "DISCONNECTED" POSITION AND THE KEY IS RELEASED FROM THE BREAKER INTERLOCK.
2. A BUS TIE BREAKER WILL DELAY CLOSING UP TO 5 SEC TO DETERMINE WHETHER VOLTAGE IS RESTORED AT THE 15kV SWITCHGEAR.
3. A BUS TIE BREAKER WILL CLOSE IMMEDIATELY AFTER A MAIN BREAKER OPENS FOR A 2500kVA TRANSFORMER OR BUSDUCT FAULT.
4. RETURN TO MANUAL WILL BE BY MANUAL CONTROL.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/1/90
NOTE BOOK	DRAWN BY CADD	3/1/90
NO.	TRACED BY	
	DESIGNED BY F. JIMENEZ	3/1/90
	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	3/1/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

480V SWITCHGEAR - CIRCUIT BREAKER CONTROL DIAGRAMS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED11 OF 25 SHEETS

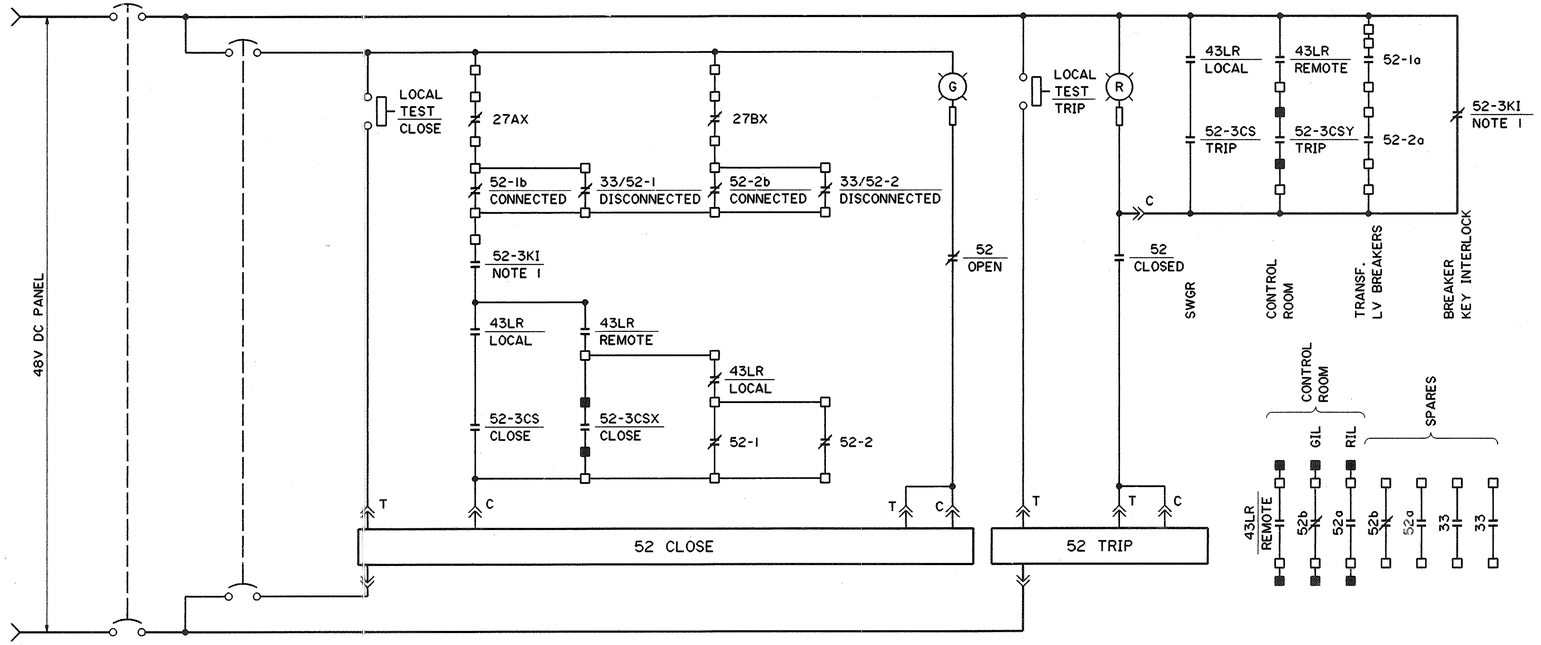
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6430-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

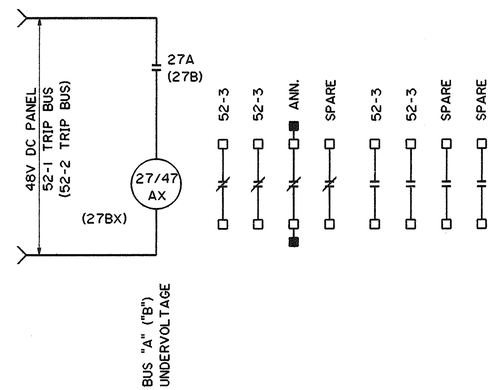
Peter A. Mason

2410V154 2410: V154 ES0034.FGB>1 11JLY90-09.03.20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	110	440



BUS TIE 52-3 CIRCUIT BREAKER



NOTES:

SEE SHEET NO. ED6

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

480 SWITCHGEAR
TIE BREAKER CONTROL DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED12 OF 25 SHEETS

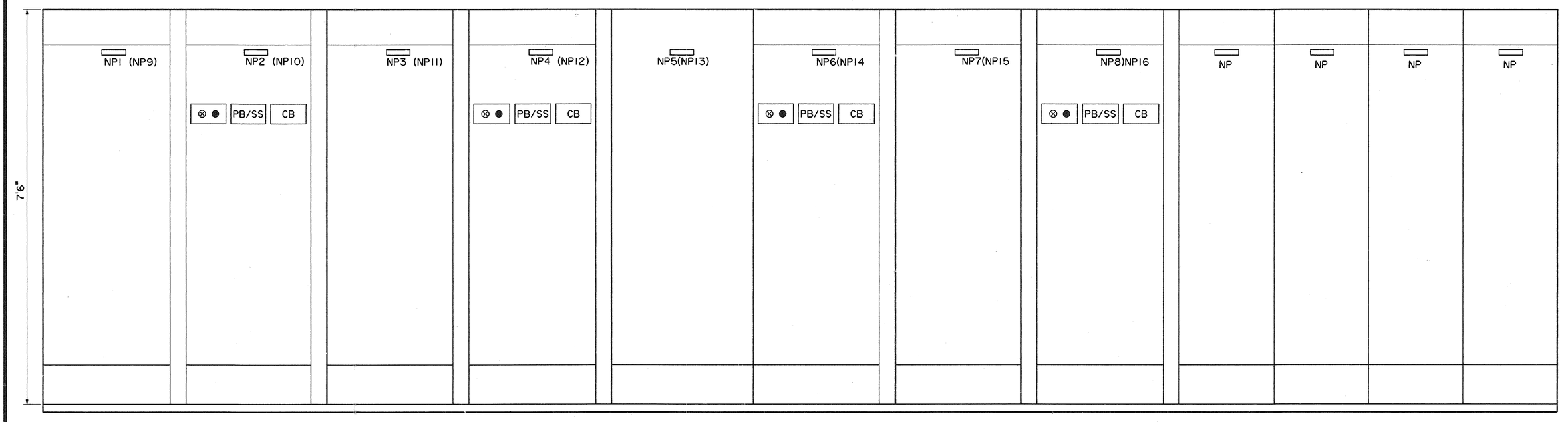
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY EADD	2/14/90
NOTE BOOK	TRACED BY	2/18/90
NO.	DESIGNED BY R. JIMENEZ	6/18/90
	QUANTITIES BY	
	CHECKED BY T.T. BASSANI	6/18/90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	111	440



VENT FAN CONTROLLERS (AFC's)

SEE SHEET NO. ED16
AUXILIARY MCC's

NAMEPLATE AND PANEL ARRANGEMENT

DEVICE	HALAWA		HAIKU		DEVICE	HALAWA		HAIKU	
	INBOUND	OUTBOUND	INBOUND	OUTBOUND		INBOUND	OUTBOUND	INBOUND	OUTBOUND
NP1	EXHAUST FAN TF-5 BUS A	SUPPLY FAN TF-9 BUS A	SUPPLY FAN TF-18 BUS A	EXHAUST FAN TF-31 BUS A	NP9	SUPPLY FAN TF-1 BUS B	EXHAUST FAN TF-13 BUS B	EXHAUST FAN TF-23 BUS B	SUPPLY FAN TF-26 BUS B
NP2	EXHAUST FAN TF-5 BUS A	SUPPLY FAN TF-9 BUS A	SUPPLY FAN TF-18 BUS A	EXHAUST FAN TF-31 BUS A	NP10	SUPPLY FAN TF-1 BUS B	EXHAUST FAN TF-13 BUS B	EXHAUST FAN TF-23 BUS B	SUPPLY FAN TF-26 BUS B
NP3	EXHAUST FAN TF-6 BUS A	SUPPLY FAN TF-11 BUS A	SUPPLY FAN TF-20 BUS A	EXHAUST FAN TF-32 BUS A	NP11	SUPPLY FAN TF-3 BUS B	EXHAUST FAN TF-14 BUS B	EXHAUST FAN TF-24 BUS B	SUPPLY FAN TF-28 BUS B
NP4	EXHAUST FAN TF-6 BUS A	SUPPLY FAN TF-11 BUS A	SUPPLY FAN TF-20 BUS A	EXHAUST FAN TF-32 BUS A	NP12	SUPPLY FAN TF-3 BUS B	EXHAUST FAN TF-14 BUS B	EXHAUST FAN TF-24 BUS B	SUPPLY FAN TF-28 BUS B
NP5	SUPPLY FAN TF-2 BUS A	EXHAUST FAN TF-15 BUS A	EXHAUST FAN TF-21 BUS A	SUPPLY FAN TF-25 BUS A	NP13	EXHAUST FAN TF-7 BUS B	SUPPLY FAN TF-10 BUS B	SUPPLY FAN TF-17 BUS B	EXHAUST FAN TF-29 BUS B
NP6	SUPPLY FAN TF-2 BUS A	EXHAUST FAN TF-15 BUS A	EXHAUST FAN TF-21 BUS A	SUPPLY FAN TF-25 BUS A	NP14	EXHAUST FAN TF-7 BUS B	SUPPLY FAN TF-10 BUS B	SUPPLY FAN TF-17 BUS B	EXHAUST FAN TF-29 BUS B
NP7	SUPPLY FAN TF-4 BUS A	EXHAUST FAN TF-16 BUS A	EXHAUST FAN TF-22 BUS A	SUPPLY FAN TF-27 BUS A	NP15	EXHAUST FAN TF-8 BUS B	SUPPLY FAN TF-12 BUS B	SUPPLY FAN TF-19 BUS B	EXHAUST FAN TF-30 BUS B
NP8	SUPPLY FAN TF-4 BUS A	EXHAUST FAN TF-16 BUS A	EXHAUST FAN TF-22 BUS A	SUPPLY FAN TF-27 BUS A	NP16	EXHAUST FAN TF-8 BUS B	SUPPLY FAN TF-12 BUS B	SUPPLY FAN TF-19 BUS B	EXHAUST FAN TF-30 BUS B

NOTE:
VENT FAN AFC'S ARE FURNISHED BY CONTRACT FAIP I-H3-1(60). INSTALLATION SHALL BE PERFORMED AS PART OF THIS CONTRACT.

FOR DETAIL AS-BUILT INFORMATION REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6430-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TUNNEL VENT FANS
AFC LAYOUT
DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

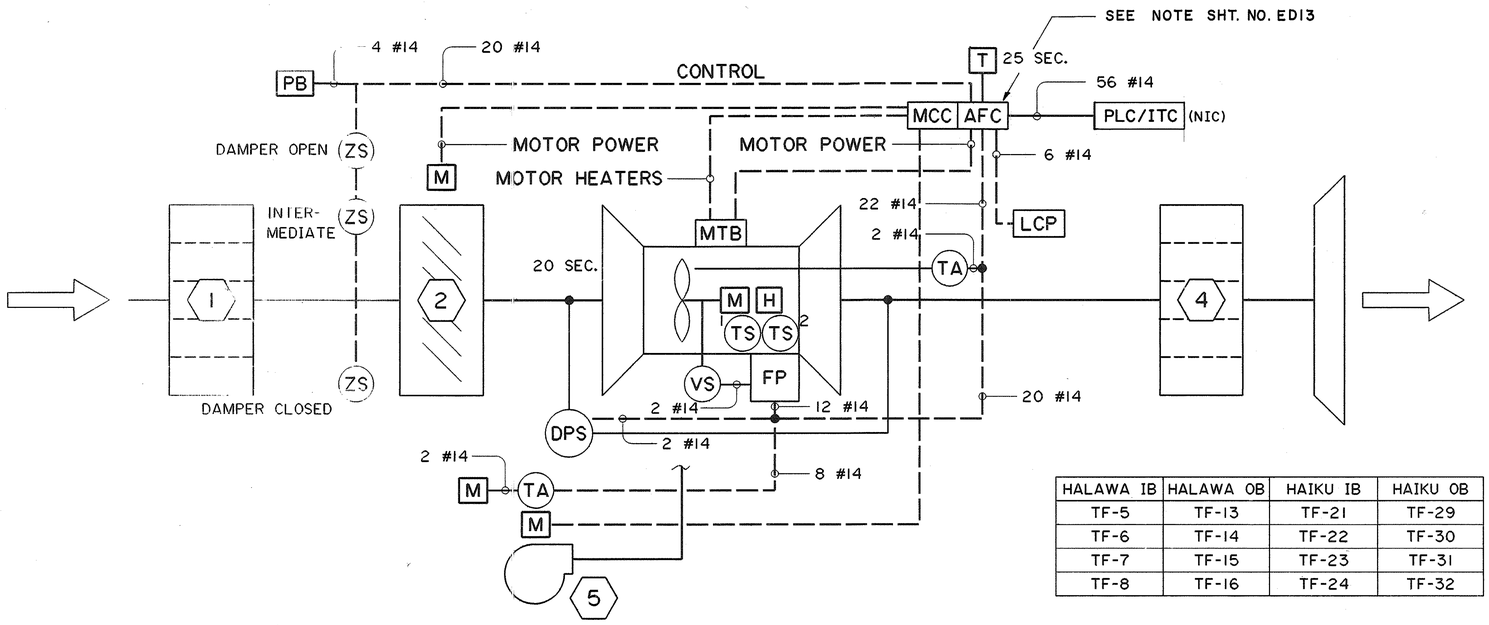
SCALE: NONE DATE: APR 1992

SHEET NO. ED13 OF 25 SHEETS

ORIGINAL PLAN
NOTE BOOK
NO.

SURVEY PLOTTED BY
DRAWN BY CADD DATE 3/24/92
TRACED BY
DESIGNED BY F. JIMENEZ 3/12/92
QUANTITIES BY
CHECKED BY J.J. SASSANI 4/10/92

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	112	440

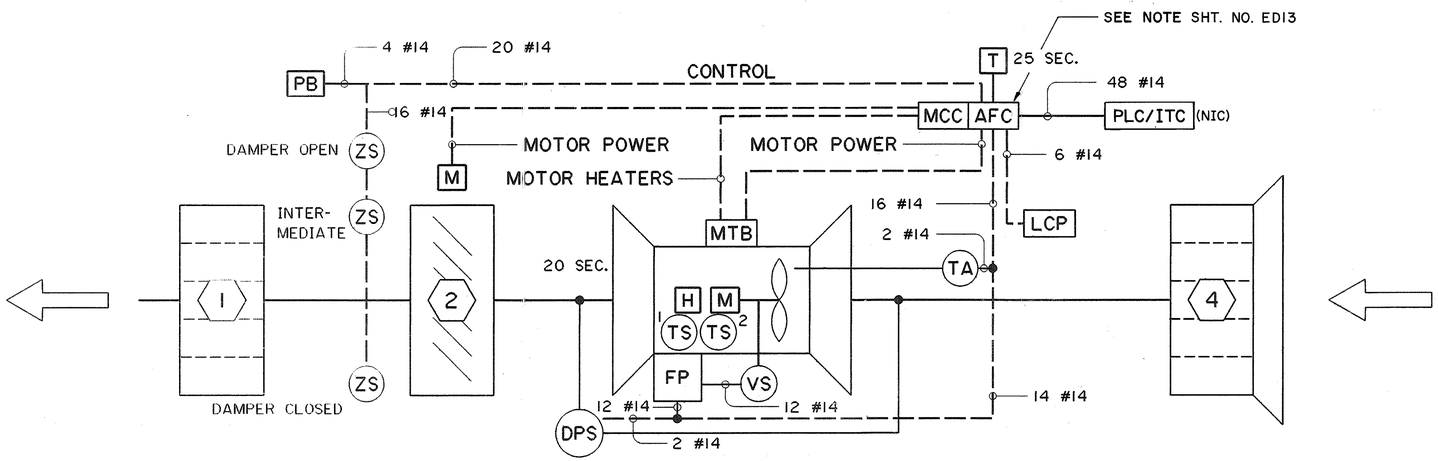


FANS & CONTROL DEVICES BY OTHERS

HALAWA IB	HALAWA OB	HAIKU IB	HAIKU OB
TF-5	TF-13	TF-21	TF-29
TF-6	TF-14	TF-22	TF-30
TF-7	TF-15	TF-23	TF-31
TF-8	TF-16	TF-24	TF-32

TUNNEL VENTILATION EXHAUST FAN

ARRANGEMENT SHOWN IS TYPICAL FOR FOUR **EXHAUST** FANS IN EACH PORTAL BUILDING. TOTAL 16 FANS.



FANS & CONTROL DEVICES BY OTHERS

HALAWA IB	HALAWA OB	HAIKU IB	HAIKU OB
TF-1	TF-9	TF-17	TF-25
TF-2	TF-10	TF-18	TF-26
TF-3	TF-11	TF-19	TF-27
TF-4	TF-12	TF-20	TF-28

TUNNEL VENTILATION SUPPLY FAN

ARRANGEMENT SHOWN IS TYPICAL FOR FOUR SUPPLY FANS IN EACH PORTAL BUILDING. TOTAL 16 FANS.

SYMBOLS & ABBREVIATIONS

EQUIPMENT IDENTIFICATION

- 1 — TUNNEL SIDE ATTENUATOR
- 2 — DAMPER
- 3 — TUNNEL VENTILATION FAN
- 4 — AMBIENT SIDE ATTENUATOR
- 5 — AUXILIARY COOLING FAN

LEGEND:

- VS — VIBRATION SWITCH
- TS — TEMPERATURE SWITCH 1. WINDING 2. BEARING
- ZS — DAMPER POSITION SWTICH
- DPS — DIFFERENTIAL PRESSURE SWITCH
- PB — PUSH BUTTON (START OR STOP)
- TA — TACHOMETER
- M — MOTOR
- T — TIMER
- H — MOTOR WINDING HEATER
- MCC — MOTOR CONTROL CENTER
- AFC — ADJUSTABLE FREQUENCY CONTROLLER
- ITC — INTERFACE TERMINAL CABINET
- PLC — PROGRAMMABLE LOGIC CONTROLLER
- CC — CONTROL CENTER
- MTB — MOTOR TERMINAL BOX
- FP — FAN PANEL FOR CONTROL WIRES
- LCP — LOCAL/REMOTE SW. & START/STOP PB's

NOTES

1. SEQUENCE OF MULTIPLE VENTILATION FAN OPERATION REQUIREMENTS FOR EACH SET OF SUPPLY AND EXHAUST FANS SHALL BE AS FOLLOWS:
   1. ALL OFF
   2. ONE SLOW SPEED
   3. TWO FANS SLOW SPEED
   4. THREE FANS SLOW SPEED
   5. FOUR FANS SLOW SPEED
   6. THREE FANS HIGH SPEED
   7. FOUR FANS HIGH SPEED

   EMERGENCY EXHAUST- FOUR EXHAUST FANS HIGH SPEED
2. DURING NORMAL OPERATION, THE SEQUENCE OF FAN START-UP WILL BE SELECTED BY THE PLC.
3. THE FOLLOWING PROTECTIVE FEATURES WILL BE OVERRIDDEN DURING EMERGENCY EXHAUST OPERATION:
   * EXCESSIVE VIBRATION
   * EXCESSIVE WINDING TEMPERATURE
   * EXCESSIVE BEARING TEMPARATURE
   * MOTOR OVERLOAD
   * PHASE CURRENT UNBALANCE
   * GROUND OVERCURRENT
4. EACH BULKHEAD DAMPER SHALL BE IDENTICAL TO THE DAMPER AS SHOWN ON THIS PLAN. PROVIDE POSITION SWITCHES AND JUNCTION BOXES FOR POWER AND CONTROL WIRING.
5. NORMAL OPERATION (SUPPLY FAN):
   A. PLC GIVES SIGNAL TO START VENT FAN.
   B. AFC SUPPLIES POWER TO MOTOR. AUXILIARY CONTACTOR OPENS TO SHUT OFF MOTOR HEATERS.
   C. TACHOMETER READS SPEED AND SENDS SIGNAL TO OPEN DAMPER. TIMER PICKS UP
   D. IF DAMPER OPENS ALL THE WAY, TIMER IS SHUT IS SHUT OFF. IF NOT, TIMER SHUTS OFF VENT FAN.
   E. IF DAMPER "OPEN" SWITCH JAMS AND DAMPER DOES NOT OPEN, DIFFERENTIAL PRESSURE SWITCH SHUTS OFF VENT FAN.
6. NORMAL OPERATION (EXHAUST FAN):
   A. OPERATION SAME AS ABOVE.
   B. PLC SIGNAL TO START VENT FAN ALSO STARTS AUXILIARY COOLING FAN.
   C. IF AUXILIARY COOLING FANS DOES NOT RUN, TACHOMETER SENDS ALARM TO CONTROL CENTER.

DATE	REVISION

ORIGINAL PLAN | NOTE BOOK | NO.

SURVEY PLOTTED BY
DRAWN BY CADD 5/14/98
TRACED BY
DESIGNED BY F. JIMENEZ 3/12/98
QUANTITIES BY
CHECKED BY J.T. SASSANI 6/18/98

PETER A. MASON
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No. 8480-E
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Peter A. Mason

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

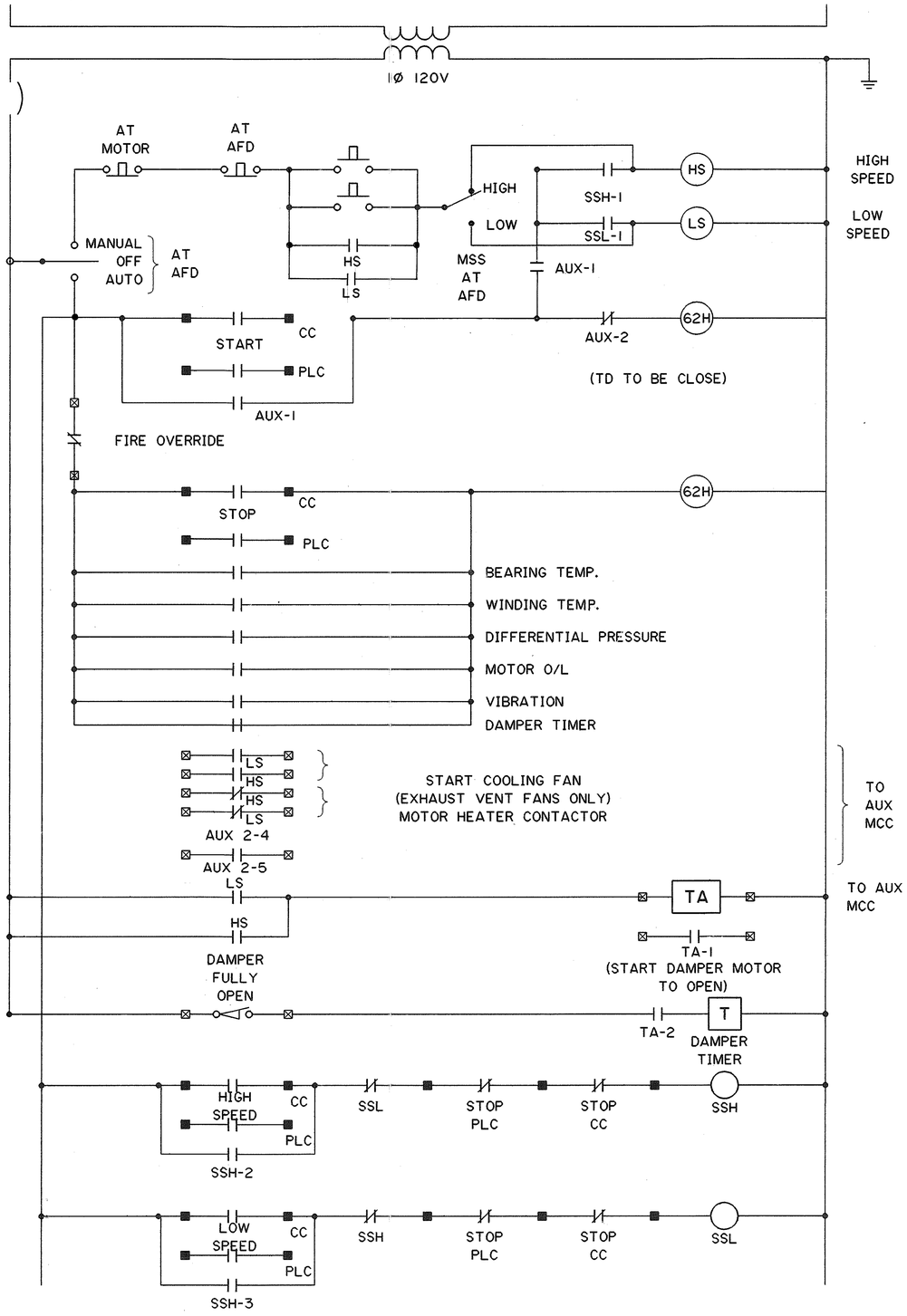
TUNNEL VENT FANS
BLOCK DIAGRAM
DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED14 OF 25 SHEETS

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	113	440



INPUT/OUTPUT POINTS

AFD ITC AFD

- MOTOR POWER OFF
- MAIN SUPPLY PHASE LOSS
- MANUAL
- OFF
- PLC
- RUN HIGH SPEED
- STOP
- RUN LOW SPEED
- BEARING TEMPERATURE HIGH
- WINDING TEMPERATURE HIGH
- DIFFERENTIAL PRESSURE LOW
- MOTOR OVERLOAD
- MOTOR VIBRATION
- PHASE CURRENT UNBALANCE
- GROUND FAULT
- COOLING FAN RUNNING (EXHAUST VENT FANS ONLY)
- DAMPER CLOSED
- DAMPER PARTIALLY OPEN
- DAMPER FULLY OPEN
- POWER OFF (AUX MCC)

SEE ALSO SHEET NO. ED18

ORIGINAL PLAN

	DATE
SURVEY PLOTTED BY	
DRAWN BY	LADD 5/4/90
TRACED BY	
DESIGNED BY	F. JIMENEZ 3/12/90
QUANTITIES BY	
CHECKED BY	J. T. SASAKI 6/18/90

NOTE BOOK NO.

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TUNNEL VENT FANS
SCHEMATIC DIAGRAM
DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED15 OF 25 SHEETS

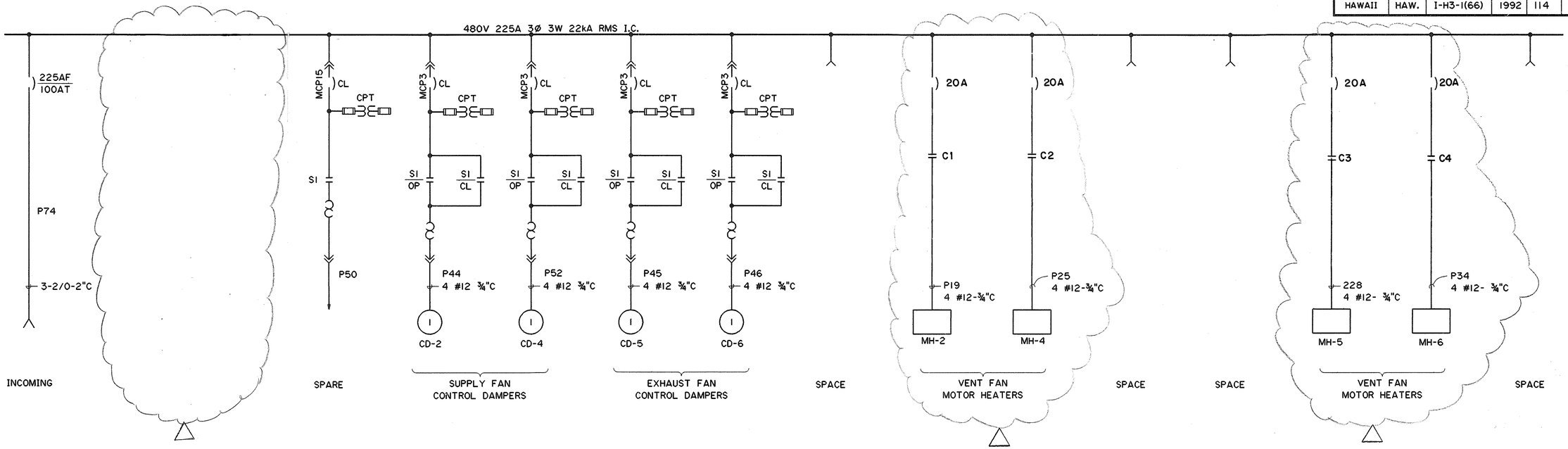
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

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Peter A. Mason

241OV156 2410: V151 ES0161.FGB>1 11JLY90-10.05.50
DRAW: ES0164_NEW

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	114	440



	HALAWA INBOUND				HALAWA OUTBOUND				HAIKU INBOUND				HAIKU OUTBOUND			
	BUS A		BUS B		BUS A		BUS B		BUS A		BUS B		BUS A		BUS B	
COMPARTMENT	DEVICE NO.	CONDUIT NO.	DEVICE NO.	CONDUIT NO.	DEVICE NO.	CONDUIT NO.	DEVICE NO.	CONDUIT NO.	DEVICE NO.	CONDUIT NO.	DEVICE NO.	CONDUIT NO.	DEVICE NO.	CONDUIT NO.	DEVICE NO.	CONDUIT NO.
AS REQUIRED	MAIN SW.	P74	MAIN SW.	P76	MAIN SW.	P74	MAIN SW.	P76	MAIN SW.	P74	MAIN SW.	P76	MAIN SW.	P74	MAIN SW.	P76
	SPARE	-	SPARE	-	SPARE	-	SPARE	-	SPARE	-	SPARE		SPARE	-	SPARE	
	CD-2	P44	CD-1	P43	CD-9	P44	CD-10	P43	CD-18	P44	CD-17	P43	CD-25	P44	CD-26	P43
	CD-4	P52	CD-3	P51	CD-11	P52	CD-12	P51	CD-20	P52	CD-19	P51	CD-27	P52	CD-28	P51
	CD-5	P45	CD-7	P53	CD-15	P45	CD-13	P53	CD-21	P45	CD-23	P53	CD-35	P45	CD-29	P53
	CD-6	P46	CD-8	P54	CD-16	P46	CD-14	P54	CD-22	P46	CD-24	P54	CD-32	P46	CD-30	P54
	SPACE		SPACE		SPACE		SPACE		SPACE		SPACE		SPACE		SPACE	
	MH-2	P19	MH-1	P16	MH-19	P19	MH-10	P16	MH-18	P19	MH-17	P16	MH-25	P19	MH-26	P16
	MH-4	P25	MH-3	P22	MH-11	P25	MH-12	P22	MH-20	P25	MH-19	P22	MH-27	P25	MH-28	P22
	SPACE		SPACE		SPACE		SPACE		SPACE		SPACE		SPACE		SPACE	
	SPACE		SPACE		SPACE		SPACE		SPACE		SPACE		SPACE		SPACE	
	MH-5	P28	MH-7	P31	MH-15	P28	MH-13	P31	MH-21	P28	MH-23	P31	MH-31	P28	MH-29	P31
	MH-6	P34	MH-8	P37	MH-16	P34	MH-14	P37	MH-22	P34	MH-24	P37	MH-32	P34	MH-30	P37
	SPACE		SPACE		SPACE		SPACE		SPACE		SPACE		SPACE		SPACE	

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY LADD	5/4/92
TRACED BY	
DESIGNED BY F. JIMENEZ	3/1992
QUANTITIES BY	
CHECKED BY T.T. SASSANI	6/18/92
NOTE BOOK	
NO.	

DATE	REVISION
6/22/93	DELETED AUX. COOLING FANS
	PER DCN 66-012

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TUNNEL VENT FANS
AUXILIARY MCC
DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED16 OF 25 SHEETS

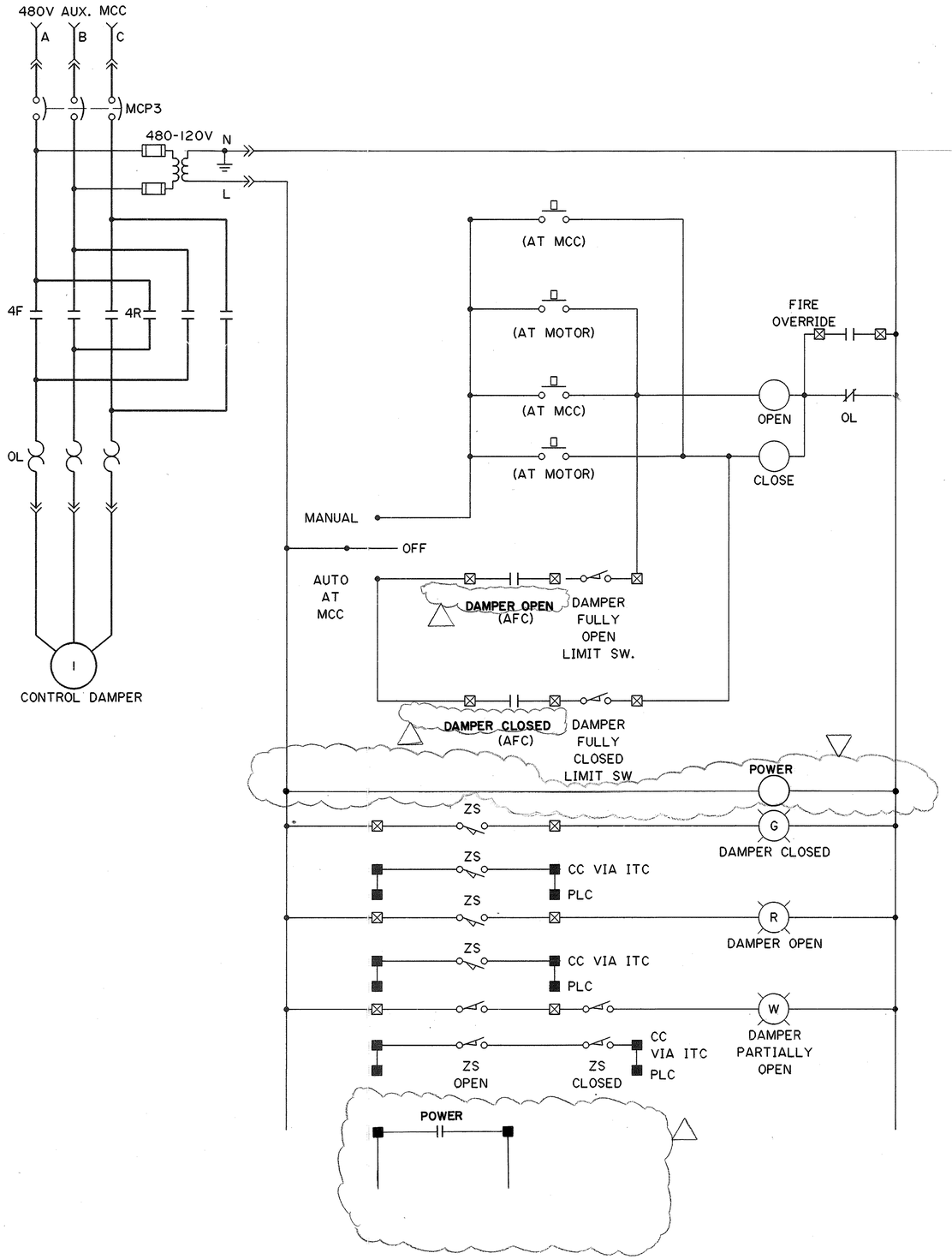
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6430-E HAWAII, U.S.A.

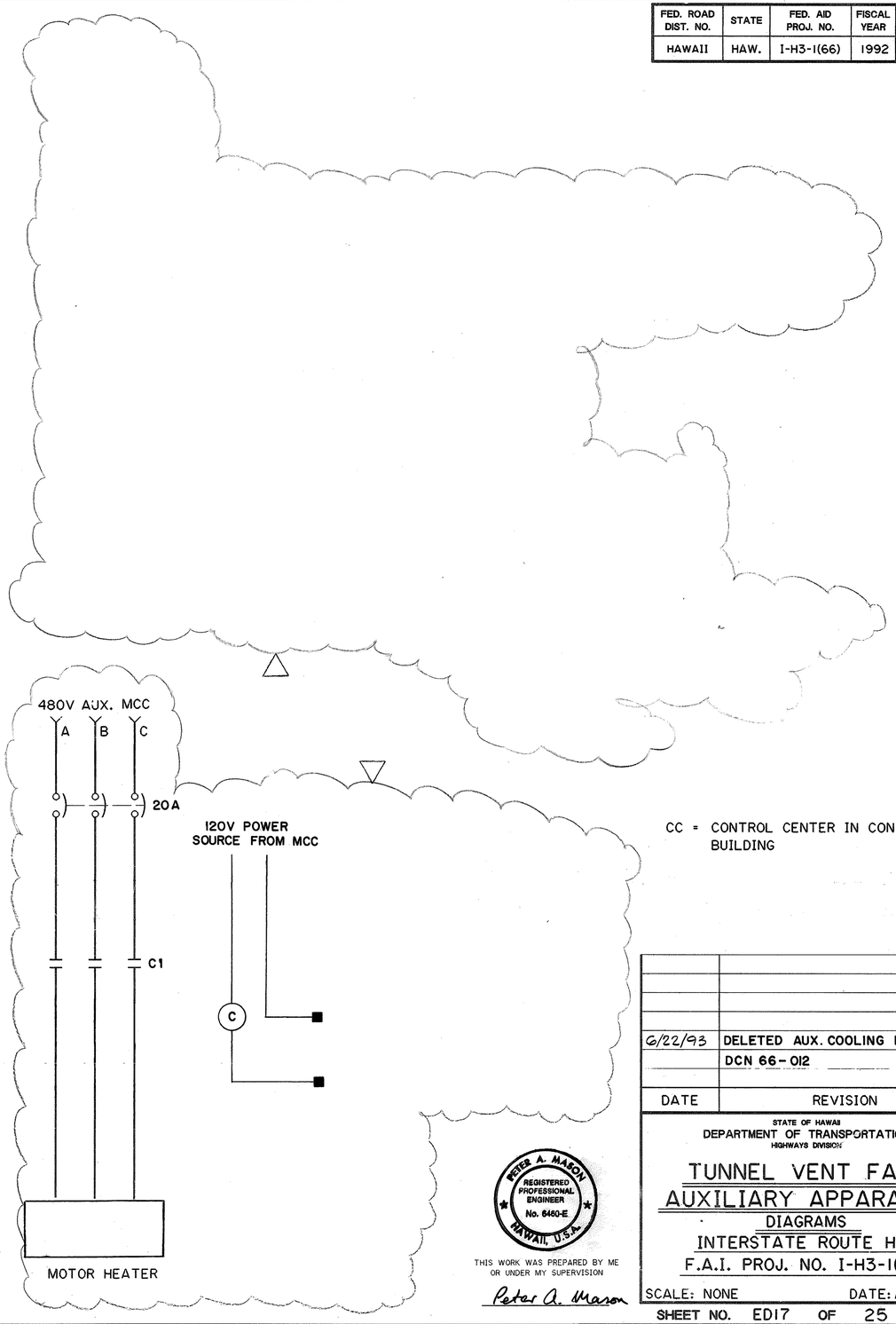
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Peter A. Mason

2410V154 2410: V154 ES0033.FGB>1 11JUL90-15.30.10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	115	440





CC = CONTROL CENTER IN CONTROL BUILDING

6/22/93	DELETED AUX. COOLING FANS PER
	DCN 66-012
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TUNNEL VENT FANS AUXILIARY APPARATUS

DIAGRAMS

INTERSTATE ROUTE H-3

F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED17 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

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Peter A. Mason

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY	LADD 8/16/90
NOTE BOOK	TRACED BY	F. JIMENEZ 8/18/90
	DESIGNED BY	
	QUANTITIES BY	
NO.	CHECKED BY	J. J. SASSANI 8/18/90

2410V151 2410: V151 ES0215.FGB;1 11JUL90-12:05:30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	116	440

TUNNEL ENTRANCE ZONE LIGHTING

PORTAL BUILDING HALAWA OB
(PORTAL BUILDING HAIKU IB SIMILAR)

CONTROL
- 1, 2, 3, 4, 5, 6, 7 — STAGE III LIGHTING ON / STAGE III LIGHTING OFF
- 8
- 9, 10 — STAGE II LIGHTING ON
- 11, 12 — STAGE II LIGHTING OFF
- 13, 14 — STAGE I LIGHTING ON
- 15, 16 — STAGE I LIGHTING OFF
- 17 — NEUTRAL LINE

SPARE
- 16
- 19
- 20

TUNNEL INTERIOR ZONE & PLENUM LIGHTING

TYPICAL FOR CROSSPASSAGE 1, 5 & 9

INDICATION
- 1 — COMMON LINE
- 2 — OB NIGHT LIGHTING ON
- 3 — OB NIGHT LIGHTING OFF
- 4 — IB NIGHT LIGHTING ON
- 5 — IB NIGHT LIGHTING OFF
- 6 — IB DAY LIGHTING ON
- 7 — IB DAY LIGHTING OFF
- 8 — OB DAY LIGHTING ON
- 9 — OB DAY LIGHTING OFF
- 10 — IB EXHAUST PLENUM LIGHTING ON
- 11 — IB EXHAUST PLENUM LIGHTING OFF
- 12 — OB EXHAUST PLENUM LIGHTING ON
- 13 — OB EXHAUST PLENUM LIGHTING OFF

SPARE
- 14
- 15

TUNNEL INTERIOR ZONE & PLENUM LIGHTING

TYPICAL FOR CROSSPASSAGE 3 & 7

INDICATION
- 1 — COMMON LINE
- 2 — OB NIGHT LIGHTING ON
- 3 — OB NIGHT LIGHTING OFF
- 4 — IB NIGHT LIGHTING ON
- 5 — IB NIGHT LIGHTING OFF
- 6 — IB DAY LIGHTING ON
- 7 — IB DAY LIGHTING OFF
- 8 — OB DAY LIGHTING ON
- 9 — OB DAY LIGHTING OFF
- 10 — IB EXHAUST PLENUM LIGHTING ON
- 11 — IB EXHAUST PLENUM LIGHTING OFF
- 12 — OB EXHAUST PLENUM LIGHTING ON
- 13 — OB EXHAUST PLENUM LIGHTING OFF

SPARE
- 14
- 15

TUNNEL INTERIOR ZONE & PLENUM LIGHTING

TYPICAL FOR CROSSPASSAGE 1, 5, & 9

CONTROL
- 1, 2, 3 — OB NIGHT LIGHTING ON / OB NIGHT LIGHTING OFF — Ckt. 7, 9 & 11
- 4
- 5, 6, 7 — IB NIGHT LIGHTING ON / IB NIGHT LIGHTING OFF — Ckt. 1, 3 & 5
- 8
- 9, 10, 11 — IB DAY LIGHTING ON / IB DAY LIGHTING OFF — Ckt. 2, 4 & 6
- 12
- 13, 14, 15 — OB DAY LIGHTING ON / OB NIGHT LIGHTING OFF — Ckt. 8, 10 & 12
- 16
- 17, 18, 19 — IB EXHAUST PLENUM LIGHTING ON / IB EXHAUST PLENUM LIGHTING OFF — Ckt. 13, 15 & 17
- 20
- 21, 22, 23, 24 — OB EXHAUST PLENUM LIGHTING OFF / OB EXHAUST PLENUM LIGHTING OFF — Ckt. 14, 16 & 18

SPARE
- 25 — CONTROL POWER SUPPLY FOR INTERIOR LIGHTING
- 26 — CONTROL POWER SUPPLY FOR PLENUM LIGHTING
- 27
- 28

CROSSPASSAGE LOADSHEDDING CONTACTORS

LOAD SHEDDING CONTACTOR CONTROL
- 1, 2, 3 — HALAWA CROSSOVER 52HLX CLOSE/TRIP
- 1, 2, 3 — CROSSPASSAGE NO. 1 52CP1 CLOSE/TRIP
- 1, 2, 3 — CROSSPASSAGE NO. 3 52CP3 CLOSE/TRIP
- 1, 2, 3 — CROSSPASSAGE NO. 5 52CP5 CLOSE/TRIP
- 1, 2, 3 — CROSSPASSAGE NO. 7 52CP7 CLOSE/TRIP
- 1, 2, 3 — CROSSPASSAGE NO. 9 52CP9 CLOSE/TRIP
- 1, 2, 3 — HAIKU CROSSOVER 52HKX CLOSE/TRIP
- 1, 2, 3 — HALAWA CROSSOVER 52HLX CLOSED/OPEN

LOAD SHEDDING CONTACTOR INDICATION
- 1, 2, 3 — CROSSPASSAGE NO. 1 52CP1 CLOSED/OPEN
- 1, 2, 3 — CROSSPASSAGE NO. 3 52CP3 CLOSED/OPEN
- 1, 2, 3 — CROSSPASSAGE NO. 5 52CP5 CLOSED/OPEN
- 1, 2, 3 — CROSSPASSAGE NO. 7 52CP7 CLOSED/OPEN
- 1, 2, 3 — CROSSPASSAGE NO. 9 52CP9 CLOSED/OPEN
- 1, 2, 3 — HAIKU CROSSOVER 52HKX CLOSED/OPEN

VIADUCT APPROACH LIGHTING

TYPICAL FOR HAIKU & HALAWA (CROSSOVER VAULTS)

CONTROL
- 1 — APPROACH LTG. OFF INDICATION
- 2 — APPROACH LTG. ON INDICATION
- 3 — APPROACH LTG. OFF
- 4 — APPROACH LTG. ON
- 5 — CROSSOVER LTG. OFF
- 6 — CROSSOVER LTG. ON
- 7 — CROSSOVER LTG. INDICATION OFF
- 8 — CROSSOVER LTG. INDICATION ON

BULKHEAD DAMPER MOTOR CONTROL MCC AT CROSSPASSAGE NO. 5

CONTROL
- 1, 2, 3 — CD-33 START/STOP
- 4, 5, 6 — CD-34 START/STOP
- 7, 8, 9 — CD-35 START/STOP
- 10, 11, 12 — CD-36 START/STOP
- 13, 14, 15 — SPARE

INDICATION
- 16, 17, 18 — CD-33 ON/OFF
- 19, 20, 21 — CD-34 ON/OFF
- 22, 23, 24 — CD-35 ON/OFF
- 25, 26, 27 — CD-36 ON/OFF

INDICATION
- 1 — COMMON LINE
- 2, 3, 4 — STAGE III LIGHTING ON / STAGE III LIGHTING OFF
- 5 — STAGE II LIGHTING ON
- 6 — STAGE II LIGHTING OFF
- 7 — STAGE I LIGHTING ON
- 8 — STAGE I LIGHTING OFF
- 9 — SPARE
- 10, 11, 12 — LUMINANCE METER/RECEIVER FAILURE

CONTROL FROM LUMINANCE METER RECEIVER
- 1 — STAGE I LIGHTING
- 2 — STAGE II LIGHTING
- 3 — STAGE III LIGHTING
- 4, 5, 6, 7, 8 — SPARE
- 9 — COMMON LINE
- 10 — SPARE

TUNNEL INTERIOR ZONE & PLENUM LIGHTING

TYPICAL FOR CROSSPASSAGE 3 & 7

CONTROL
- 1, 2, 3 — OB NIGHT LIGHTING ON / OB NIGHT LIGHTING OFF — Ckt. 7, 9 & 11
- 4
- 5, 6, 7 — IB NIGHT LIGHTING ON / IB NIGHT LIGHTING OFF — Ckt. 1, 3 & 5
- 8
- 9, 10, 11 — IB DAY LIGHTING ON / IB DAY LIGHTING OFF — Ckt. 2, 4 & 6
- 12
- 13, 14, 15 — OB DAY LIGHTING ON / OB NIGHT LIGHTING OFF — Ckt. 8, 10 & 12
- 16
- 17, 18, 19 — IB SUPPLY PLENUM LIGHTING ON / IB SUPPLY PLENUM LIGHTING OFF — Ckt. 13, 15 & 17
- 20
- 21, 22, 23, 24 — OB SUPPLY PLENUM LIGHTING OFF / OB SUPPLY PLENUM LIGHTING OFF — Ckt. 14, 16 & 18

SPARE
- 25 — CONTROL POWER SUPPLY FOR INTERIOR LIGHTING
- 26 — CONTROL POWER SUPPLY FOR PLENUM LIGHTING
- 27
- 28

ORIGINAL PLAN	
NOTE BOOK	
NO.	
SURVEY PLOTTED BY	
DRAWN BY	CADD
TRACED BY	
DESIGNED BY	T. SANCHEZ
QUANTITIES BY	
CHECKED BY	J.J. SASSANI
DATE	3/24/92
	5/20/93
	4/24/93

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

COMPUTER INTERFACE TERMINALS-ITC LIGHTING

DIAGRAMS

INTERSTATE ROUTE H-3

F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED18 OF 25 SHEETS

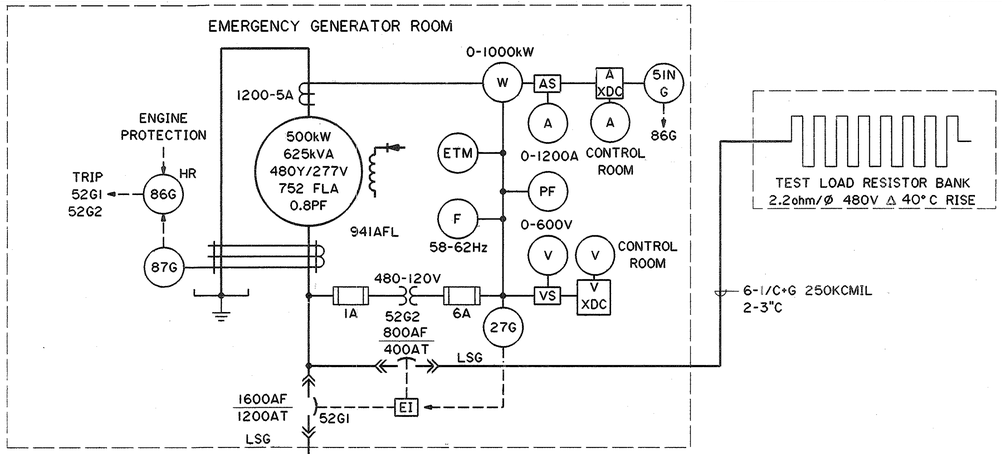
PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6450-E — HAWAII, U.S.A.

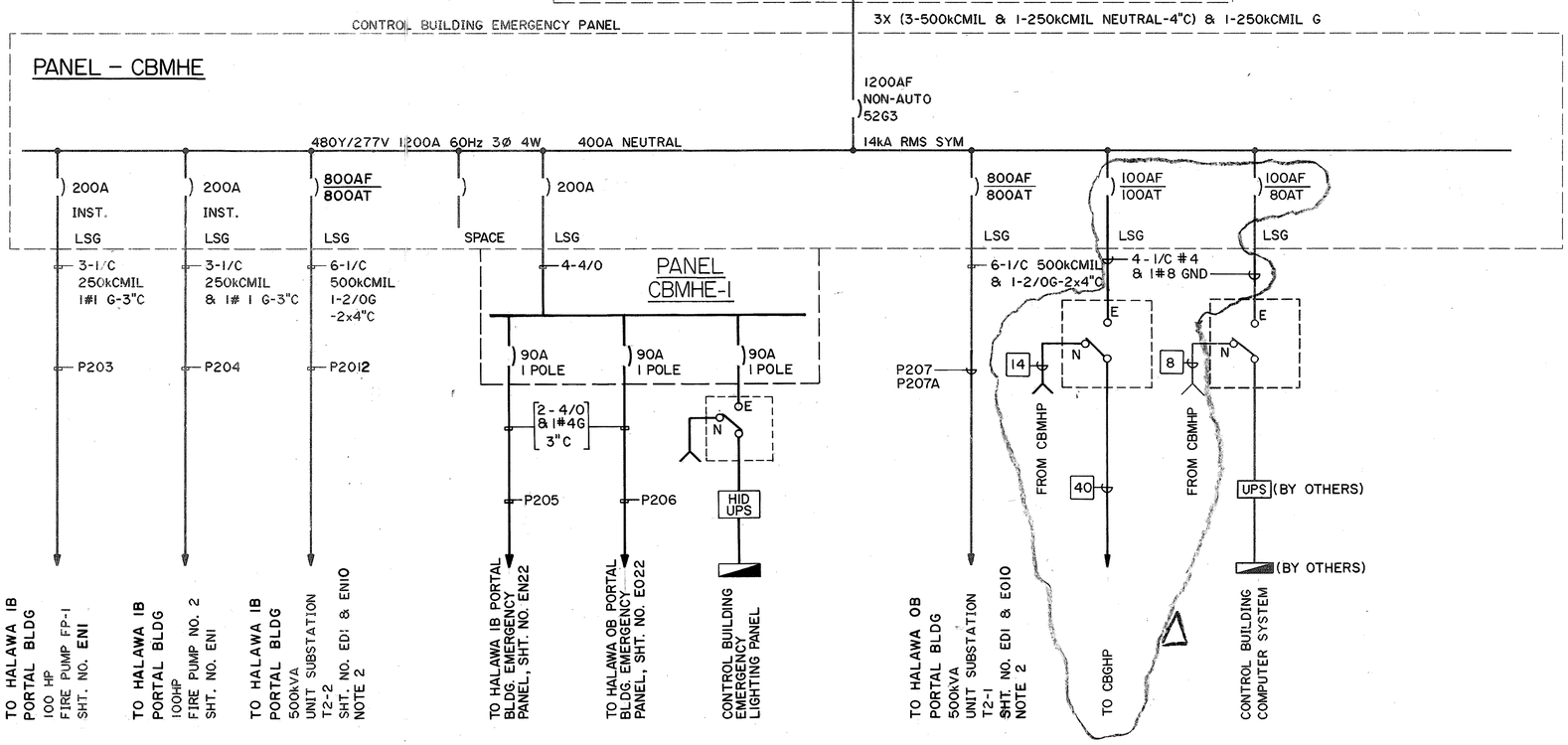
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Peter A. Mason

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	117	440

GENERATOR LOAD TABLE		
DESCRIPTION	KW	KVA
TUNNEL LIGHTS & MISC.	200	224
SIGNAL & COMMUNICATION ROOM PANEL	182	202
PORTAL BUILDING LIGHTS	36	40
HALAWA INBOUND PORTAL FIRE PUMP	90	100
TOTAL	508	556





GENERATOR OPERATION NOTES

I. NORMAL OPERATION:
ALL AUTOMATIC TRANSFER SWITCHES ARE IN POSITION "N".
SUPPLY IS FROM NORMAL FEEDERS, AND 52G1 BREAKER IS OPEN.

II. EMERGENCY OPERATION:
UPON LOSS OF BOTH HECO POWER SERVICES DETERMINED BY THE OPENING OF BOTH MAIN BREAKERS, THE FOLLOWING WILL OCCUR:

1. THE EMERGENCY GENERATOR WILL START-UP AUTOMATICALLY.
2. WHEN THE GENERATOR REACHES THE RATED VOLTAGE (480V), AND FREQUENCY (60Hz), 52G1 WILL CLOSE.
3. AFTER RESTORATION OF NORMAL POWER FROM ONE OR BOTH HECO POWER SERVICES AND RE-TRANSFER TO NORMAL SUPPLY, THE GENERATOR SHALL BE SHUTDOWN MANUALLY.
4. THE GENERATOR WILL CONTINUE TO OPERATE AT NO LOAD FOR AN ADJUSTABLE "COOL DOWN" PERIOD AFTER MANUAL SHUTDOWN.

III. TEST OPERATION:

1. TO ASSURE EMERGENCY POWER RELIABILITY, THE GENERATOR WILL BE TESTED ONCE A WEEK. THE CONTROL SWITCH IS TURNED TO "RUN" POSITION. AUTOMATIC START-UP OF THE GENERATOR WILL OCCUR AT THIS TIME. AT RATED VOLTAGE AND FREQUENCY, THE "TEST" BUTTON CAN BE DEPRESSED AND THE LOAD RESISTOR BANK BREAKER 52G2 WILL BE CLOSED FOR THE TEST PERIOD OF ONE HOUR.
2. AT THE END OF THE TEST PERIOD, BREAKER 52G2 WILL OPEN AND A SIGNAL INDICATING END OF TEST WILL BE GIVEN. THIS ALLOWS FOR OPERATOR INSPECTION OF THE GENERATOR UNIT. SHUTDOWN OF THE GENERATOR SHALL BE PERFORMED MANUALLY.
3. AUTOMATIC TRANSFER TO EMERGENCY SUPPLY IN THE EVENT OF HECO POWER FAILURE SHALL OVER-RIDE THE TEST OPERATION. UPON RETURN OF NORMAL HECO POWER SUPPLY TEST OPERATION SHALL BE RESTARTED.

NOTE

1. ALL CIRCUIT BREAKERS ARE THREE (3) POLE UNLESS NOTED OTHERWISE.
2. PROVIDE C.T. AT 15kV SIDE OF UNIT TRANSFORMER TO TRIP 480V MAIN BREAKER ON DETECTION OF GROUND FAULT ON 15kV SIDE.

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION
6/7/94	REVISED PER DCN 66-044
1/20/94	ADDED GROUND FAULT PROTECTION, REV. EMERGENCY AND TEST OPERATION SEQUENCE DESCRIPTION PER DCN66-032

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/4/92
	DRAWN BY LADP	3/12/92
NOTE BOOK	TRACED BY	
	DESIGNED BY P. JIMENEZ	3/12/92
NO.	QUANTITIES BY	
	CHECKED BY J.T. SASSANI	3/18/92

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

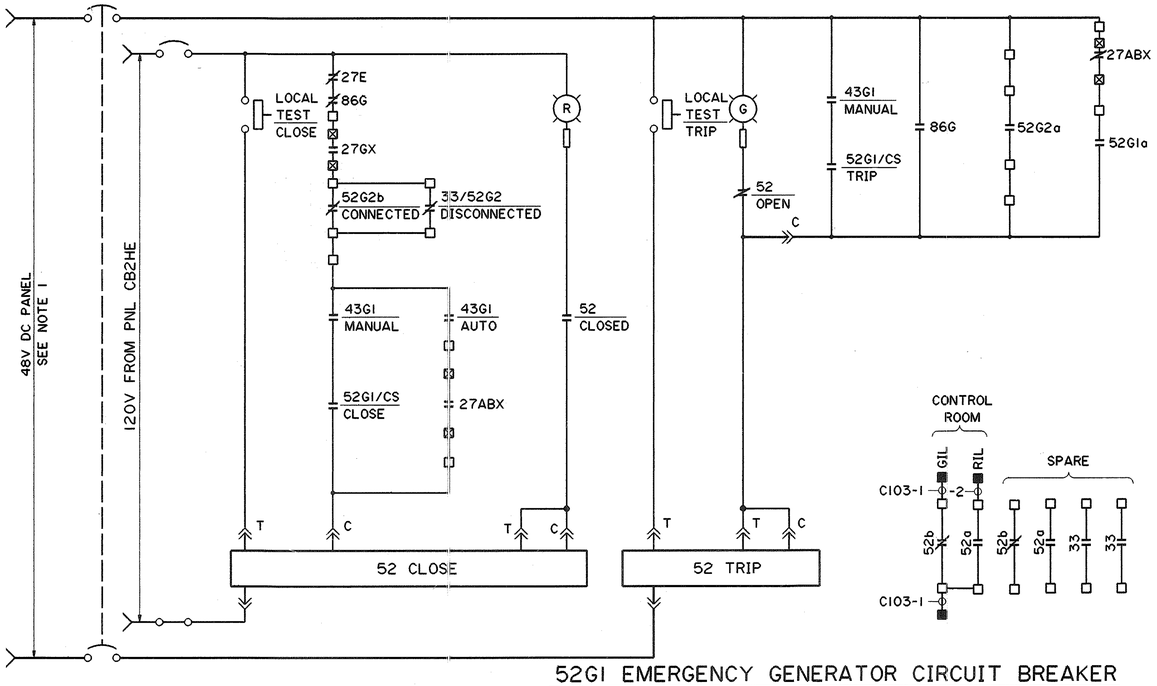
EMERGENCY POWER ONE LINE DIAGRAMS

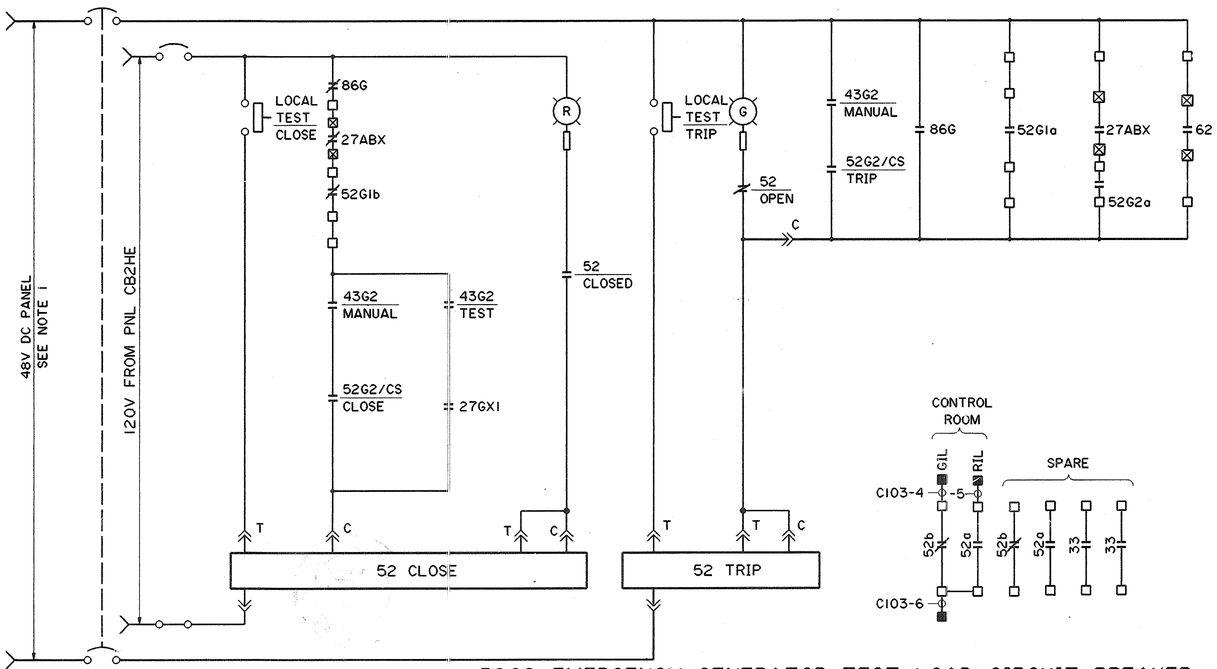
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

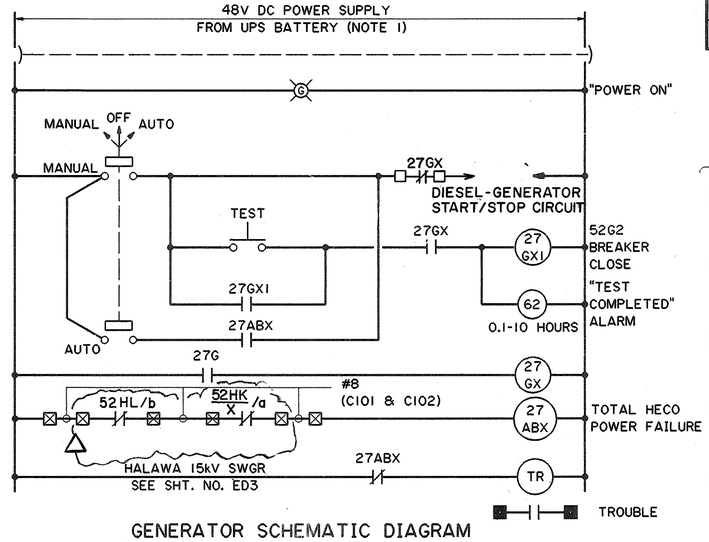
SCALE: NONE DATE: APR 1992
SHEET NO. ED19 OF 25 SHEETS

2410V154 2410: V154 ES0011.FGBJ1 11JUL90-15:05:20

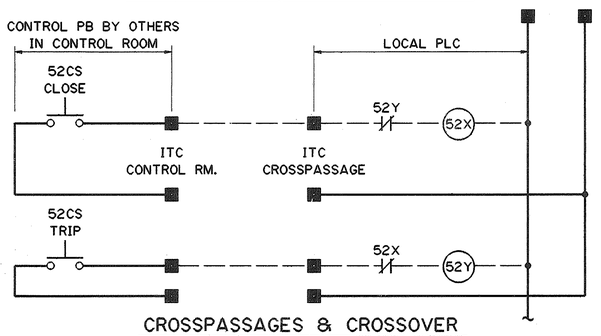
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	118	440



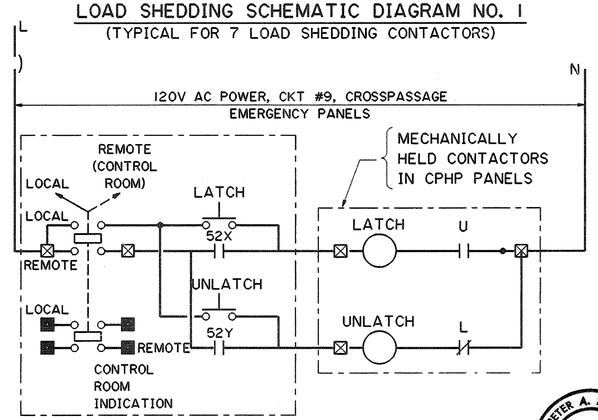




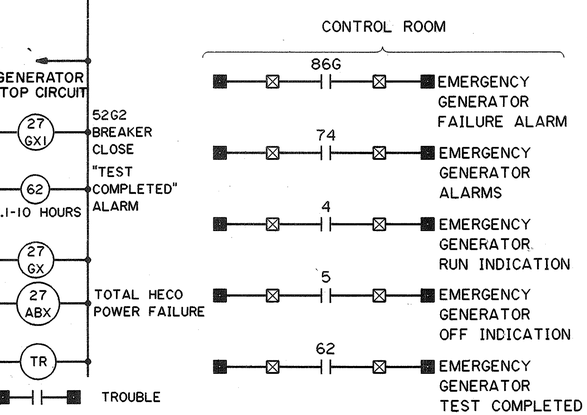
GENERATOR SCHEMATIC DIAGRAM



CROSSPASSAGES & CROSSOVER
LOAD SHEDDING SCHEMATIC DIAGRAM NO. 1
(TYPICAL FOR 7 LOAD SHEDDING CONTACTORS)



CROSSPASSAGES
LOAD SHEDDING SCHEMATIC DIAGRAM NO. 2
(TYPICAL FOR 5, SEE SHEET NO. ET1)



NOTES

1. PROVIDE 2 POLE 120 VOLT 20A DC CIRCUIT BREAKER IN NEMA 12 ENCLOSURE IN THE BATTERY ROOM. WIRE DIRECTLY TO 48 VOLT TERMINALS OF BATTERY.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY LAPP	5/4/92
	TRACED BY	3/12/93
NOTE BOOK	DESIGNED BY F. JIMENEZ	
NO.	QUANTITIES BY	
	CHECKED BY J.T. SASSANI	6/18/93

12/20/94	REV. PER DCN 66-056
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EMERGENCY POWER SCHEMATIC DIAGRAMS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED20 OF 25 SHEETS

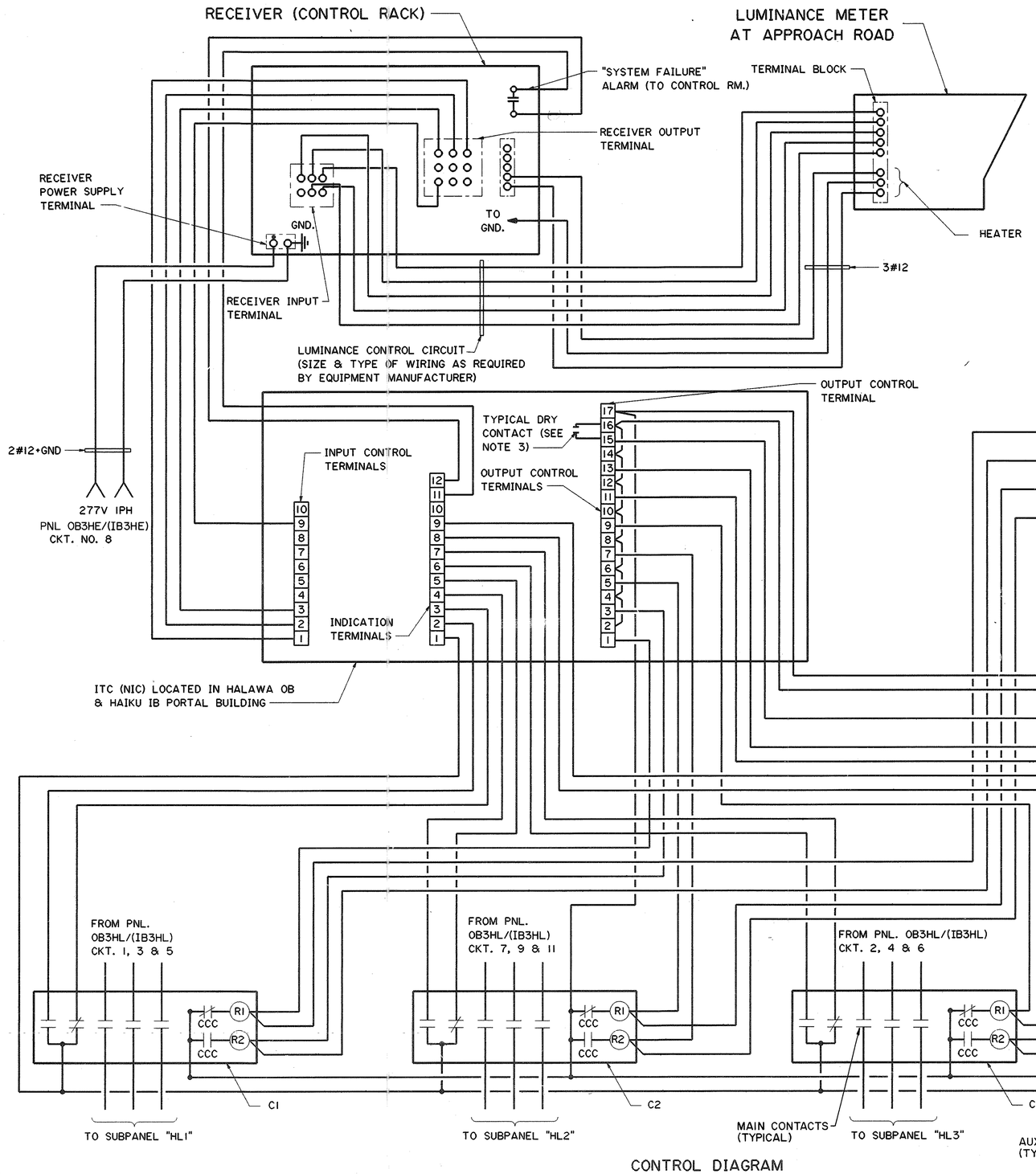
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V155 2410: V155 ES0229.FGB;1 11JUL90-13.35.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	119	440



CONTROL DIAGRAM

APPROACH ROAD LUMINANOE cd/m2	REQUIRED THRESHOLD ZONE LUMINANCE-cd/m2	REQUIRED TRANSITION ZONE LUMINANCE - cd/m2			LIGHTING REQUIRED
		FIRST	SECOND	THIRD	
900 OR LESS	60	15	5	5	STAGE I LIGHTING ONLY
900 TO 1800	120	30	10	5	STAGE II LIGHTING ONLY
1800 TO 3600	240	60	20	10	STAGE III LIGHTING ONLY

NOTES:
1. SYMBOLS REFER TO:
R1 - LATCHING OR CLOSING COIL
R2 - UNLATCHING OR OPENING COIL
CCC - COIL CLEARING CONTACT
I/O - INPUT/OUTPUT
C1 - CONTACTOR NO. 1
C2 - CONTACTOR NO. 2
C3 - CONTACTOR NO. 3
C4 - CONTACTOR NO. 4
GND - GROUND
O O PUSHBUTTON, MOMENTARY

2. CONTACTORS 1,2,3, & 4 ARE ELECTRICALLY OPERATED AND MECHANICALLY HELD CONTACTORS RATED 150AMPS,480V,3PH.

3. I/O CONTACTS PROVIDED BY SYSTEM IN PLC ITC SHALL BE DRY, MOMENTARY AND CAPABLE OF CARRYING CONTACTORS CLOSING COIL CURRENT.

4. FOR STAGE I,II AND III LIGHTING CIRCUIT, SEE SHEET NO. ED24 AND ED25.

5. MINIMUM SIZE OF CONDUCTORS FOR CONTROL WIRING SHALL BE NO. 14 AWG. AND # 12 FOR CONTACTOR WIRING.

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	9/6/92
NOTE BOOK	TRACED BY T.Y. SANCHEZ	3/20/93
	DESIGNED BY	
	QUANTITIES BY J.J. SASSANI	4/24/90
NO.	CHECKED BY	

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

THRESHOLD LTG. CONTROL
HALAWA OB & HAIKU IB
DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED21 OF 25 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V156 2410: V156 ES0347.FGB:1 10JLY90-18.25.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	120	440

SYSTEM: 480V, 3Ø 3W **PANEL –** SUBPANEL HL1 **PANEL LOCATION:** ELECT. ROOM, LEVEL 3
MAINS: 225A LUGS ONLY **SUPPLY LOCATION:** PANEL IB3HL/(OB3HL) VIA CONTACTOR
SHORT CIRCUIT RATING: 25 KAIC ELECT. ROOM, LEVEL 3

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
TNL. ENTRANCE	1	3.42						#10				#10				3.44			2	TNL. ENTRANCE
LIGHTING	3		3.42		100	3	30						100	3	30		3.94		4	LIGHTING
	5			3.42														4.46	6	
	7	3.64														3.12			8	
	9		3.64		100	3	30						100	3	30		3.64		10	
	11			3.12														3.64	12	
	13	3.64														3.12			14	
	15		3.64		100	3	30						100	3	30		2.60		16	
	17			3.12														2.60	18	
	19	2.57														1.34			20	
	21		2.57		100	3	30						100	3	30		1.34		22	
	23			2.57														1.34	24	
	25	1.16														0.58			26	
	27		1.02		100	3	30						100	3	30		0.58		28	
	29			1.02														0.44	30	
	31																		32	
SPARE	33				100	3	30						100	3	30				34	SPARE
	35																		36	
		14.43	14.29	13.25												11.6	11.6	12.48		

		A	B	C
TOTAL CONNECTED	77.65 kVA	26.03	25.89	25.73
ESTIMATED MAXIMUM DEMAND	77.65 kVA	26.03	25.89	25.73

SYSTEM: 480V, 3Ø 3W **PANEL –** SUBPANEL HL2 **PANEL LOCATION:** ELECT. ROOM, LEVEL 3
MAINS: 225A LUGS ONLY **SUPPLY LOCATION:** PANEL IB3HL/(OB3HL) VIA CONTACTOR
SHORT CIRCUIT RATING: 25 KAIC ELECT. ROOM, LEVEL 3

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
TNL. ENTRANCE	1	3.42						#10				#10				3.94			2	TNL. ENTRANCE
LIGHTING	3		3.42		100	3	30						100	3	30		3.94		4	LIGHTING
	5			3.42														4.46	6	
	7	3.64														3.12			8	
	9		3.64		100	3	30						100	3	30		3.64		10	
	11			3.12														3.64	12	
	13	3.64														3.12			14	
	15		3.64		100	3	30						100	3	30		2.60		16	
	17			3.12														2.60	18	
	19	2.57														1.34			20	
	21		2.57		100	3	30						100	3	30		1.34		22	
	23			2.57														1.34	24	
	25	1.16														0.58			26	
	27		1.02		100	3	30						100	3	30		0.58		28	
	29			1.02														0.44	30	
	31																		32	
SPARE	33				100	3	30						100	3	30				34	SPARE
	35																		36	
		14.43	14.29	13.25												12.1	12.1	12.48		

		A	B	C
TOTAL CONNECTED	78.65 kVA	26.53	26.39	25.73
ESTIMATED MAXIMUM DEMAND	78.65 kVA	26.53	26.39	25.73

SYSTEM: 480V, 3Ø 3W **PANEL –** SUBPANEL HL3 **PANEL LOCATION:** ELECT. ROOM, LEVEL 3
MAINS: 225A LUGS ONLY **SUPPLY LOCATION:** PANEL IB3HL/(OB3HL) VIA CONTACTOR
SHORT CIRCUIT RATING: 25 KAIC ELECT. ROOM, LEVEL 3

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
TNL. ENTRANCE	1	3.42						#10				#10				3.94			2	TNL. ENTRANCE
LIGHTING	3		3.42		100	3	30						100	3	30		3.94		4	LIGHTING
	5			3.42														3.42	6	
	7	4.16														3.12			8	
	9		3.12		100	3	30						100	3	30		4.16		10	
	11			3.12														3.12	12	
	13	3.12														3.12			14	
	15		3.12		100	3	30						100	3	30		3.12		16	
	17			4.16														2.08	18	
	19	2.75														1.34			20	
	21		2.38		100	3	30						100	3	30		1.34		22	
	23			2.38														1.34	24	
	25	1.16																	26	
	27		1.16		100	3	30						100	3	30				28	SPARE
	29			0.70															30	
	31																		32	
SPARE	33					3	30						100	3	30				34	SPARE
	35																		36	
		14.61	13.20	13.78												11.52	12.56	9.96		

		A	B	C
TOTAL CONNECTED	75.63 kVA	26.13	25.76	23.74
ESTIMATED MAXIMUM DEMAND	75.63 kVA	26.13	25.76	23.74

SYSTEM: 480V, 3Ø 3W **PANEL –** SUBPANEL HL4 **PANEL LOCATION:** ELECT. ROOM, LEVEL 3
MAINS: 225A LUGS ONLY **SUPPLY LOCATION:** PANEL IB3HL/(OB3HL) VIA CONTACTOR
SHORT CIRCUIT RATING: 25 KAIC ELECT. ROOM, LEVEL 3

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
TNL. ENTRANCE	1	3.42						#10				#10				4.46			2	TNL. ENTRANCE
LIGHTING	3		3.42		100	3	30						100	3	30		4.46		4	LIGHTING
	5			3.42														3.42	6	
	7	3.12														3.12			8	
	9		3.12		100	3	30						100	3	30		3.12		10	
	11			4.16														4.16	12	
	13	4.16														3.12			14	
	15		3.12		100	3	30						100	3	30		3.12		16	
	17			3.12														2.08	18	
	19	2.75														1.34			20	
	21		2.38		100	3	30						100	3	30		1.34		22	
	23			2.38														1.34	24	
	25																		26	
SPARE	27				100	3	30						100	3	30				28	SPARE
	29																		30	
	31																		32	
SPARE	33				100	3	30						100	3	30				34	SPARE
	35																		36	
		13.45	12.04	13.08												12.04	12.04	11.00		

		A	B	C
TOTAL CONNECTED	73.65 kVA	25.49	24.08	24.08
ESTIMATED MAXIMUM DEMAND	73.65 kVA	25.49	24.08	24.08

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/4/92
	DRAWN BY CADD	
	TRACED BY	4/24/92
NOTE BOOK	DESIGNED BY T. SANCHEZ	
	QUANTITIES BY	
No.	CHECKED BY T.T. BASSANI	6/18/92

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

DATE	REVISION
10/4/93	REV. PANELS 'HL1' & 'HL2' PER DCN 66-019
8/19/93	REVISED SCHEDULES PER DCN 66-017

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PANEL SCHEDULES
TUNNEL ENTRANCE - 1
HALAWA OB & HAIKU IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992
SHEET NO. ED 22 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	121	440

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** IB3HL/(OB3HL) **PANEL LOCATION:** ELECT. ROOM, LEVEL 3
MAINS: 600AT/800AF 3P ACB **SUPPLY LOCATION:** SWITCHGEAR ROOM, LEVEL 4
SHORT CIRCUIT RATING: 22 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG
	1	26.03						#1/0
SUBPANEL HL1	3		25.89		225	3	150	
VIA CONTACTOR	5			25.73				
	7	26.53						
SUBPANEL HL2	9		26.39		225	3	150	
VIA CONTACTOR	11			25.73				
	13							
SPARE	15				225	3	150	
	17							
		52.56	52.28	51.46				

A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
			#1/0				26.13			2	
				225	3	150		25.76		4	SUBPANEL HL3
									23.74	6	VIA CONTACTOR
							25.49			8	
				225	3	150		24.08		10	SUBPANEL HL4
									24.08	12	VIA CONTACTOR
										14	
				225	3	150				16	SPARE
										18	
							51.60	49.80	47.80		

	A	B	C
TOTAL CONNECTED	104.15	102.8	99.26
ESTIMATED MAXIMUM DEMAND	104.15	102.8	99.26

TOTAL CONNECTED 306.50 kVA
ESTIMATED MAXIMUM DEMAND 306.50 kVA

ORIGINAL PLANS
SURVEY PLOTTED BY _____ DATE 3/4/90
DRAWING BY LDD " " 3/4/90
TRACED BY " " "
NOTE BOOK DESIGNED BY T. SANGHER " " 4/2/90
QUANTITIES BY " " "
No. _____ CHECKED T.T. SASSANI " " 6/18/90

DATE	REVISION
10/4/93	REV. PANEL 'IB3HL/(OB3HL)' PER DCN 66-019
8/19/93	REVISED SCHEDULES PER DCN 66-017

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PANEL SCHEDULES
TUNNEL ENTRANCE - 2
HALAWA OB & HAIKU IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ED23 OF 25 SHEETS

TUNNEL ENTRANCE LIGHTING CIRCUIT LIST - I
HALAWA OB & HAIKU IB (NORTH ROW)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	122	440

FIXTURE LOCATION	FIXTURE TYPE	SUBPANEL-CIRCUIT NO.
N1	T3 & T1	HL1-1, 3 HL4-1, 3 HL1-3, 5 HL3-1, 3
N2		HL1-5, 1 HL4-3, 5 HL1-1, 3 HL3-3, 5
N3		HL1-3, 5 HL4-5, 1 HL1-5, 1 HL3-5, 1 HL1-1, 3 HL4-1, 3 HL1-3, 5 HL3-1, 3
N4		HL1-5, 1 HL4-3, 5 HL1-1, 3 HL3-3, 5 HL1-3, 5 HL4-5, 1 HL1-5, 1 HL3-5, 1
N5		HL1-2, 4 HL4-2, 4 HL1-4, 6 HL3-2, 4 HL1-6, 2 HL4-4, 6 HL1-2, 4 HL3-4, 6
N6		HL1-4, 6 HL4-6, 2 HL1-6, 2 HL3-6, 2 HL1-2, 4 HL4-2, 4 HL1-4, 6 HL3-2, 4
N7		HL1-6, 2 HL4-4, 6 HL1-2, 4 HL3-4, 6 HL1-4, 6 HL4-6, 2 HL1-6, 2 HL3-6, 2
N8	T3	HL1-2, 4 HL4-2, 4 HL1-4, 6 HL3-2, 4 HL1-6, 2 HL4-4, 6 HL1-6, 2 HL3-4, 6
N9		HL1-7, 9 HL4-7, 9 HL1-9, 11 HL3-7, 9 HL1-11, 7 HL4-9, 11 HL1-7, 9 HL3-9, 11
N10	T3	HL1-9, 11 HL4-11, 7 HL1-11, 7 HL3-11, 7 HL1-7, 9 HL4-7, 9 HL1-9, 11 HL3-7, 9
N11		HL1-11, 7 HL4-9,11 HL1-7, 9 HL3-9, 11 HL1-9, 11 HL4-11, 7 HL1-11, 7 HL3-11, 7
N12		HL1-7, 9 HL4-7, 9 HL1-9, 11 HL3-7, 9 HL1-11, 7 HL4-9, 11 HL1-7, 9 HL3-9, 11
N13		HL1-9, 11 HL4-11, 7 HL1-11, 7 HL3-11, 7 HL1-7, 9 HL4-11, 7 HL1-9, 11 HL3-7, 9
N14		HL1-8, 10 HL4-8, 10 HL1-10, 12 HL3-8, 10 HL1-12, 8 HL4-10, 12 HL1-8, 10 HL3-10, 12
N15		HL1-10, 12 HL4-12, 8 HL1-12, 8 HL3-12, 8 HL1-8, 10 HL4-8,10 HL1-10, 12 HL3-8, 10
N16		HL1-12, 8 HL4-10, 12 HL1-8, 10 HL3-10, 12 HL1-10, 12 HL4-12, 8 HL1-12, 8 HL3-12, 8
N17		HL1-8, 10 HL4-8, 10 HL1-10, 12 HL3-8, 10 HL1-12, 8 HL4-10, 12 HL1-8, 10 HL3-10, 12
N18	T3	HL1-10, 12 HL4-12, 8 HL1-12, 8 HL3-12, 8 HL1-8, 10 HL4-12, 8 HL1-10, 12 HL3-10, 12
N19		HL1-13, 15 HL4-13, 15 HL1-15, 17 HL3-13, 15 HL1-17, 13 HL4-15, 17 HL1-13, 15 HL3-15, 17
N20		HL1-15, 17 HL4-17, 13 HL1-17, 13 HL3-17, 13 HL1-13, 15 HL4-13, 15 HL1-15, 17 HL3-13, 15
N21		HL1-17, 13 HL4-15, 17 HL1-13, 15 HL3-15, 17 HL1-15, 17 HL4-17, 13 HL1-17, 13 HL3-17, 13
N22		HL1-13, 15 HL4-13, 15 HL1-15, 17 HL3-13, 15 HL1-17, 13 HL4-15, 17 HL1-13, 15 HL3-15, 17
N23		HL1-15, 17 HL4-17, 13 HL1-17, 13 HL3-17, 13 HL1-13, 15 HL4-13, 15 HL1-15, 17 HL3-17, 13
N24		HL1-14, 16 HL4-14, 16 HL1-16, 18 HL3-14, 16 HL1-18, 14 HL4-16, 18 HL1-14, 16 HL3-16, 18
N25		HL1-16, 18 HL4-18, 14 HL1-18, 14 HL3-18, 14 HL1-14, 16 HL4-14, 16 HL1-16, 18 HL3-14, 16
N26	T3	HL1-18, 14 HL4-16, 18 HL1-14, 16 HL3-16, 18 HL1-16, 18 HL4-18, 14 HL1-18, 14 HL3-18, 14
N27		HL1-14, 16 HL4-14, 16 HL1-16, 18 HL3-14, 16 HL1-18, 14 HL4-16, 18 HL1-14, 16 HL3-16, 18
N28		HL1-19, 21 HL4-19, 21 HL1-21, 23 HL3-19, 21 HL1-23, 19 HL4-21, 23 HL1-19, 21 HL3-21, 23
N29		HL1-21, 23 HL4-23, 19 HL1-23, 19 HL3-23, 19 HL1-19, 21 HL4-19, 21 HL1-21, 23 HL3-19, 21
N30	T2	HL1-23, 19 HL4-21, 23 HL1-19, 21 HL3-21, 23
N31		HL1-21, 23 HL4-23, 19 HL1-23, 19 HL3-23, 19
N32		HL1-19, 21 HL4-19, 21 HL1-21, 23 HL3-19, 21
N33		HL1-23, 19 HL4-21, 23 HL1-19, 21 HL3-21, 23
N34		HL1-21, 23 HL4-23, 19 HL1-23, 19 HL3-23, 19
N35		HL1-20, 22 HL4-20, 22 HL1-22, 24 HL3-20, 22
N36		HL1-24, 20 HL4-22, 24 HL1-20, 22 HL3-22, 24
N37		HL1-22, 24 HL4-24, 20 HL1-24, 20 HL3-24, 20
N38	T2	HL1-20, 22 HL4-20, 22 HL1-22, 24 HL3-20, 22
N39		HL1-24, 20 HL4-22, 24 HL1-20, 22 HL3-22, 24
N40		HL1-22, 24 HL4-24, 20 HL1-24, 20 HL3-24, 20
N41	T1	HL1-25, 27 HL3-25, 27 HL1-27, 29
N42		HL1-29, 25 HL3-27, 29 HL1-25, 27
N43		HL1-27, 29 HL3-29, 25 HL1-29, 25
N44		HL1-25, 27 HL3-25, 27 HL1-27, 29
N45		HL1-29, 25 HL3-27, 29 HL1-25, 27
N46		HL1-27, 29 HL3-29, 25 HL1-29, 25
N47		HL1-25, 27 HL3-25, 27 HL1-27, 29
N48		HL1-29, 25 HL3-27, 29 HL1-25, 27
N49		HL1-27, 29 HL3-29, 25 HL1-29, 25
N50		HL1-25, 27 HL3-25, 27 HL1-27, 29
N51		HL1-29, 25 HL3-27, 29 HL1-25, 27
N52	T1	HL1-26, 28
N53		HL1-28, 30
N54		HL1-30, 26
N55		HL1-26, 28
N56		HL1-28, 30
N57		HL1-30, 26
N58		HL1-26, 28
N59		HL1-28, 30
N60		HL1-30, 26
N61		HL1-26, 28
N62		HL1-28, 30

TUNNEL ENTRANCE ZONE LIGHTING SWITCHING

SUBPANEL	LIGHTING LEVEL STAGE III	STAGE II	STAGE I
HL1	OFF	OFF	ON
HL2	OFF	OFF	ON
HL3	OFF	ON	ON
HL4	ON	ON	ON
PERCENTAGE	25%	50%	100%

NOTE

1. LIGHTING CIRCUIT NO. 1,3 OR 2,4 REFERS TO CONNECTION OF FIXTURE ACROSS THE 480V CIRCUIT.
2. FOR PANELBOARD SCHEDULE, SEE SHEET NO. ED22 & ED23.

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	5/4/90
	TRACED BY	
	DESIGNED BY T. SANCHEZ	4/2/90
NOTE BOOK	QUANTITIES BY	
	CHECKED BY J. J. SASSANI	6/18/90
NO.		

DATE	REVISION
10/4/93	REV. LIGHTING CIRCUITS PER DCN 66-019

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TUNNEL ENTRANCE LIGHTING CIRCUIT LIST-I
HALAWA AND HAIKU TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6460-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SCALE: NONE DATE: APR 1992

SHEET NO. ED24 OF 25 SHEETS

TUNNEL ENTRANCE LIGHTING CIRCUIT LIST - 2
HALAWA OB & HAIKU IB (SOUTH ROW)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	123	440

FIXTURE LOCATION	FIXTURE TYPE	SUBPANEL-CIRCUIT NO.
S1	T3 & T1	HL2-1, 3 HL4-1, 3 HL2-3, 5 HL3-1, 3
S2		HL2-5, 1 HL4-3, 5 HL2-1, 3 HL3-3, 5
S3		HL2-3, 5 HL4-5, 1 HL2-5, 1 HL3-5, 1 HL2-1, 3 HL4-1, 3 HL2-3, 5 HL3-1, 3
S4		HL2-5, 1 HL4-3, 5 HL2-1, 3 HL3-3, 5 HL2-3, 5 HL4-5, 1 HL2-5, 1 HL3-5, 1
S5		HL2-2, 4 HL4-2, 4 HL2-4, 6 HL3-2, 4 HL2-6, 2 HL4-4, 6 HL2-2, 4 HL3-4, 6
S6		HL2-4, 6 HL4-6, 2 HL2-6, 2 HL3-6, 2 HL2-2, 4 HL4-2, 4 HL2-4, 6 HL3-2, 4
S7		HL2-6, 2 HL4-4, 6 HL2-2, 4 HL3-4, 6 HL2-4, 6 HL4-6, 2 HL2-6, 2 HL3-6, 2
S8	T3	HL2-2, 4 HL4-2, 4 HL2-4, 6 HL3-2, 4 HL2-6, 2 HL4-4, 6 HL2-6, 2 HL3-4, 6
S9		HL2-7, 9 HL4-7, 9 HL2-9, 11 HL3-7, 9 HL2-11, 7 HL4-9, 11 HL2-7, 9 HL3-9, 11

FIXTURE LOCATION	FIXTURE TYPE	SUBPANEL-CIRCUIT NO.
S10	T3	HL2-9, 11 HL4-11, 7 HL2-11, 7 HL3-11, 7 HL2-7, 9 HL4-7, 9 HL2-9, 11 HL3-7, 9
S11		HL2-11, 7 HL4-9,11 HL2-7, 9 HL3-9, 11 HL2-9, 11 HL4-11, 7 HL2-11, 7 HL3-11, 7
S12		HL2-7, 9 HL4-7, 9 HL2-9, 11 HL3-7, 9 HL2-11, 7 HL4-9, 11 HL2-7, 9 HL3-9, 11
S13		HL2-9, 11 HL4-11, 7 HL2-11, 7 HL3-11, 7 HL2-7, 9 HL4-11, 7 HL2-9, 11 HL3-7, 9
S14		HL2-8, 10 HL4-8, 10 HL2-10, 12 HL3-8, 10 HL2-12, 18 HL4-10, 12 HL2-8, 10 HL3-10, 12
S15		HL2-10, 12 HL4-12, 8 HL2-12, 8 HL3-12, 8 HL2-8, 10 HL4-8,10 HL2-10, 12 HL3-8, 10
S16		HL2-12, 8 HL4-10, 12 HL2-8, 10 HL3-10, 12 HL2-10, 12 HL4-12, 8 HL2-12, 8 HL3-12, 8
S17		HL2-8, 10 HL4-8, 10 HL2-10, 12 HL3-8, 10 HL2-12, 8 HL4-10, 12 HL2-8, 10 HL3-10, 12

FIXTURE LOCATION	FIXTURE TYPE	SUBPANEL-CIRCUIT NO.
S18	T3	HL2-10, 12 HL4-12, 8 HL2-12, 8 HL3-12, 8 HL2-8, 10 HL4-12, 8 HL2-10, 12 HL3-10, 12
S19		HL2-13, 15 HL4-13, 15 HL2-15, 17 HL3-13, 15 HL2-17, 13 HL4-15, 17 HL2-13, 15 HL3-11, 7
S20		HL2-15, 17 HL4-17, 13 HL2-17, 13 HL3-17, 13 HL2-13, 15 HL4-13, 15 HL2-15, 17 HL3-13, 15
S21		HL2-17, 13 HL4-15, 17 HL2-13, 15 HL3-15, 17 HL2-15, 17 HL4-17, 13 HL2-17, 13 HL3-17, 13
S22		HL2-13, 15 HL4-13, 15 HL2-15, 17 HL3-13, 15 HL2-17, 13 HL4-15, 17 HL2-13, 15 HL3-15, 17
S23		HL2-15, 17 HL4-17, 13 HL2-17, 13 HL3-17, 13 HL2-13, 15 HL4-13, 15 HL2-15, 17 HL3-17, 13
S24		HL2-12, 8 HL4-10, 12 HL2-8, 10 HL3-10, 12 HL2-10, 12 HL4-12, 8 HL2-12, 8 HL3-12, 8
S25		HL2-16, 18 HL4-18, 14 HL2-18, 14 HL3-18, 10 HL2-12, 8 HL4-10, 12 HL2-8, 10 HL3-10, 12

FIXTURE LOCATION	FIXTURE TYPE	SUBPANEL-CIRCUIT NO.
S26	T3	HL2-18, 14 HL4-16, 18 HL2-14, 16 HL3-16, 18 HL2-16, 18 HL4-18, 14 HL2-18, 14 HL3-18, 14
S27		HL2-14, 16 HL4-14, 16 HL2-16, 18 HL3-14, 16 HL2-18, 14 HL4-16, 18 HL2-14, 16 HL3-16, 18
S28		HL2-19, 21 HL4-19, 21 HL2-21, 23 HL3-19, 21 HL2-23, 19 HL4-21, 23 HL2-19, 21 HL3-21, 23
S29		HL2-21, 23 HL4-23, 19 HL2-23, 19 HL3-23, 19 HL2-19, 21 HL4-19, 21 HL2-21, 23 HL3-19, 21
S30	T2	HL2-23, 19 HL4-21, 23 HL2-19, 21 HL3-21, 23
S31		HL2-21, 23 HL4-23, 19 HL2-23, 19 HL3-23, 19
S32		HL2-19, 21 HL4-19, 21 HL2-21, 23 HL3-19, 21
S33		HL2-23, 19 HL4-21, 23 HL2-19, 21 HL3-21, 23
S34		HL2-21, 23 HL4-23, 19 HL2-23, 19 HL3-23, 19
S35		HL2-20, 22 HL4-20, 22 HL2-22, 24 HL3-20, 22
S36		HL2-24, 20 HL4-22, 24 HL2-20, 22 HL3-22, 24
S37		HL2-22, 24 HL4-24, 20 HL2-24, 20 HL3-24, 20

FIXTURE LOCATION	FIXTURE TYPE	SUBPANEL-CIRCUIT NO.
S38	T2	HL2-20, 22 HL4-20, 22 HL2-22, 24 HL3-20, 22
S39		HL2-24, 20 HL4-22, 24 HL2-20, 22 HL3-22, 24
S40		HL2-22, 24 HL4-24, 20 HL2-24, 20 HL3-24, 20
S41	T1	HL2-25, 27 HL3-25, 27 HL2-27, 29
S42		HL2-29, 25 HL3-27, 29 HL2-25, 27
S43		HL2-27, 29 HL3-29, 25 HL2-29, 25
S44		HL2-25, 27 HL3-25, 27 HL2-27, 29
S45		HL2-29, 25 HL3-27, 29 HL2-25, 27
S46		HL2-27, 29 HL3-29, 25 HL2-29, 25
S47		HL2-25, 27 HL3-25, 27 HL2-27, 29
S48		HL2-29, 25 HL3-27, 29 HL2-25, 27
S49		HL2-27, 29 HL3-29, 25 HL2-29, 25
S50		HL2-25, 27 HL3-25, 27 HL2-27, 29
S51		HL2-29, 25 HL3-27, 29 HL2-25, 27

FIXTURE LOCATION	FIXTURE TYPE	SUBPANEL-CIRCUIT NO.
S52	T1	HL2-26, 28
S53		HL2-28, 30
S54		HL2-30, 26
S55		HL2-26, 28
S56		HL2-28, 30
S57		HL2-30, 26
S58		HL2-26, 28
S59		HL2-28, 30
S60		HL2-30, 26
S61		HL2-26, 28
S62		HL2-28, 30

DATE	REVISION
10/5/93	REV. LIGHTING CIRCUITS PER DCN 66-019

ORIGINAL DRAWING PLAN

SURVEY PLOTTED BY CADD — DATE 3/26/90
DRAWING BY " " " 3/26/90
TRACED BY T. SANCHEZ " 4/2/90
DESIGNED BY " " " 4/2/90
QUANTITIES BY J. J. SASSANI " 6/18/90
CHECKED BY " " " 6/18/90
NOTE BOOK
NO.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

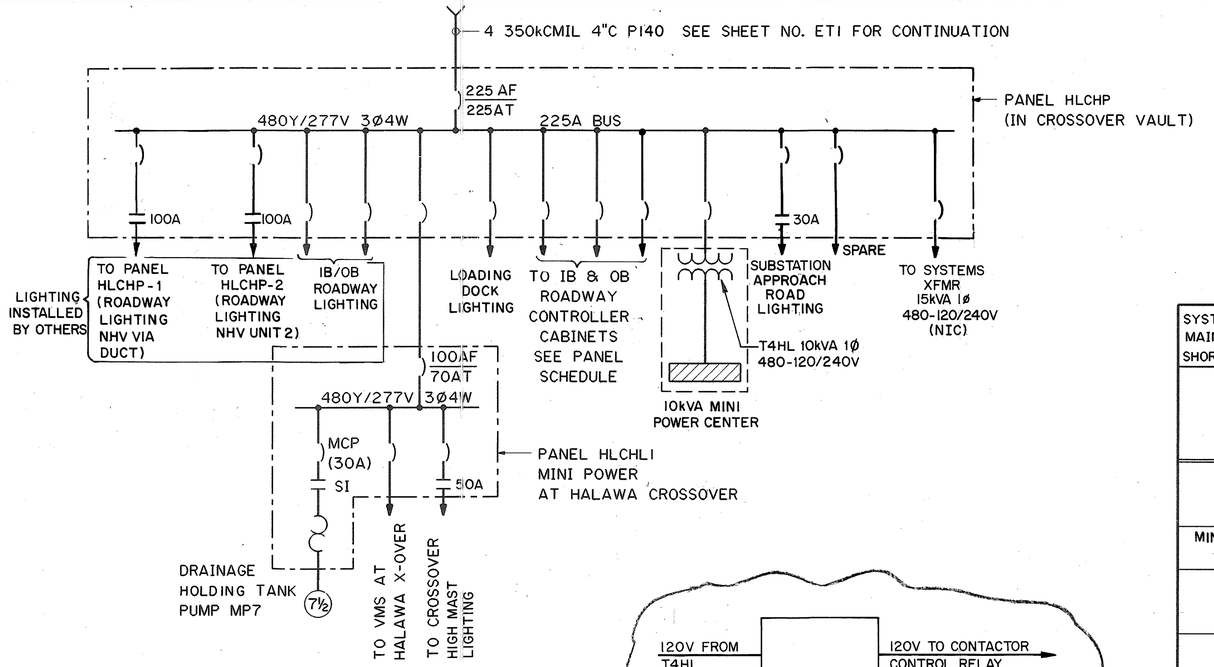
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TUNNEL ENTRANCE LIGHTING CIRCUIT LIST-2
HALAWA AND HAIKU TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE — DATE: APR 1992

SHEET NO. ED25 OF 25 SHEETS

J410V156 2410: V156 ES0109.FGB;1 11JUL90-14.25.10



TYPICAL LIGHTING CONTACTOR SCHEMATIC

NOTES:

1. SEE PANEL SCHEDULES FOR WIRING SIZE & NUMBER OF CONNECTORS
2. PANEL HLCHP SHALL BE NEMA TYPE 4X, BOTTOM ENTRY. ALLOW SPACE FOR 30A RATED LIGHTING CONTACTOR WITH TERMINAL BLOCK & CONTROL TRANSFORMER (SEE LIGHTING CONTACTOR SCHEMATIC FOR DETAILS).
3. LIGHTING CONTACTOR SHALL BE 480V 3PH ELECTRICALLY OPERATED & MECHANICALLY HELD.
4. MINIMUMN SIZE OF CONDUCTORS FOR CONTROL WIRING SHALL BE NO. 12AWG.
5. I/O CONTACTS PROVIDED BY SYSTEM WILL BE DRY, MOMENTARY AND CAPABLE OF CARRYING CONTACTOR CLOSING COIL. SEE SHEET NO. ED18 FOR I/O SCHEDULE.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	124	440

SYSTEM: 480Y/277V 3Ø 4W
MAINS: 225AF/225AT
SHORT CIRCUIT RATING: 14kAIC

PANEL - HLCHP

PANEL LOCATION: HALAWA X-OVER VAULT
SUPPLY LOCATION: XFMR T3-HL

SERVICE	CIRCUIT NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CB FRAME	CB POLES	CB TRIP	WIRE AWG
PANEL HLCHP-1	1	1.55			100	3	100	2
	3		1.55					
	5			1.55				
MINIPOWER CENTER (T4HL)	7	5.00				2	30	8
	9		5.00					
OB ROADWAY TRAFFIC CONTROLLERS	11			3.0				
	13	3.0				3	30	2
	15		3.0					
OB ROADWAY TRAFFIC CONTROLLERS	17			1.8				
	19	1.8				3	30	6
	21		1.8					
SPARE	23							
	25					3	20	
	27							
CROSSOVER/ LOADING DOCK LIGHTING	29			1.8				
	31	1.8				3	20	10
	33		1.8					
SPARE	35			1.8				
	37	1.8				3	20	6
	39		1.8					
SPARE	41					1	20	
SUBTOTAL		16.75	16.75	11.75				

WIRE AWG	CB FRAME	CB POLES	CB TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT NO.	SERVICE
2	100	3	100	1.24			2	
					1.24		4	PANEL HLCHP-2
						1.24	6	
8		2	30	7.5			8	
					7.5		10	15kVA XFMR FOR SYSTEM
						3.0	12	
6		30	3	3.0			14	IB ROADWAY TRAFFIC CONTROLLERS
					3.0		16	
2		3	70			6.3	18	HLCHL-1
				6.3			20	
					6.3		22	
							24	
		3	20				26	SPARE
							28	
						1.8	30	
10		3	20	1.8			32	HECO SUBSTATION APPROACH ROAD LIGHTING
					1.8		34	
							36	
		3	20				38	SPARE
							40	
		1	20				42	SPARE
SUBTOTAL				25.8	25.8	22.3		

SN

TOTAL CONNECTED: 123.15 kVA
ESTIMATED MAXIMUM DEMAND: 123.15 kVA

A	B	C
42.55	42.55	38.05

SYSTEM: 480Y/277V 3Ø 4W
MAINS: 100AF/ 70AT
SHORT CIRCUIT RATING: 14KAIC

PANEL - HLCHL1

PANEL LOCATION: HALAWA X-OVER AREA
SUPPLY LOCATION: PANEL HLCHL IN CROSSOVER VAULT

SERVICE	CIRCUIT NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CB FRAME	CB POLES	CB TRIP	WIRE AWG
CROSSOVER	1	1.39			100	3	30	10
HIGH MAST	3		1.39					
LIGHTING	5			1.39				
MP7	7	2.5						
	9		2.5					
	11			2.5				
SPACE	13							
	15							
SUBTOTAL		3.89	3.89	3.89				

WIRE AWG	CB FRAME	CB POLES	CB TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT NO.	SERVICE
10	100	3	30	2.4			2	SIGN
					2.4		4	CONTROLLERS
						2.4	6	
							8	SPARE
							10	
							12	
							14	SPACE
							16	
				2.4	2.4	2.4		

SN

TOTAL CONNECTED: 18.87 kVA
ESTIMATED MAXIMUM DEMAND: 12.72 kVA

A	B	C
6.29	6.29	6.29
4.24	4.24	4.24

FOR DETAIL AS-BUILT INFORMATION REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION
6/7/94	REVISED PER DCN 66-044
1/24/94	REVISED PER DCN 66-033
8/19/93	REVISED SCHEDULES PER DCN 66-017

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 6-1-90
NOTE BOOK	DRAWN BY CADD	" 5-15-90
	TRACED BY H. TURK/R. F. JAMES	" 6-26-90
	DESIGNED BY	
	QUANTITIES BY	
NO.	CHECKED BY J. J. SASSANI	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM AND PANEL SCHEDULE

HALAWA APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER NO. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SHEET NO. EA1 OF 7 SHEETS

2410V154 2410: V154 ES0046.FGB:1 12JLY90-13.45.20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	124S-1	440

SYSTEM: 480/277V 3Ø, 4W PANEL - "HLCHP1" PANEL LOCATION: HALAWA X-OVER VAULT
MAINS: 125A LUGS ONLY SUPPLY LOCATION: PNL - "HLCHP" HALAWA X-OVER VAULT VIA CONTACTOR
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	B	C	CIRCUIT BREAKER FRAME	POLE	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLE	TRIP	LOAD kVA A	B	C	CKT. NO.	SERVICE
	1					3	20							3	20				2	
	3					↓	↓							↓	↓				4	
	5					↓	↓							↓	↓				6	
	7					3	20							3	20				8	
	9					↓	↓							↓	↓				10	
	11					↓	↓							↓	↓				12	
ROADWAY LIGHTING (OB)	13	1.8				3	20							3	20	1.8			14	ROADWAY LIGHTING (IB)
	15		1.8			↓	↓	10				10		↓	↓		1.8		16	
	17			1.8		↓	↓							↓	↓			1.8	18	

TOTAL CONNECTED
ESTIMATED MAXIMUM DEMAND

A	B	C

SYSTEM: 480/277V 3Ø, 4W PANEL - "HLCHP2" PANEL LOCATION: HALAWA X-OVER VAULT
MAINS: 125A LUGS ONLY SUPPLY LOCATION: PNL - "HLCHP" HALAWA X-OVER VAULT VIA CONTACTOR
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	B	C	CIRCUIT BREAKER FRAME	POLE	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLE	TRIP	LOAD kVA A	B	C	CKT. NO.	SERVICE
	1					3	20							3	20				2	
	3					↓	↓							↓	↓				4	
	5					↓	↓							↓	↓				6	
	7					3	20							3	20				8	
	9					↓	↓							↓	↓				10	
	11					↓	↓							↓	↓				12	
SPACE	13																		14	SPACE
↓	15																		16	↓
	17																		18	

TOTAL CONNECTED
ESTIMATED MAXIMUM DEMAND

A	B	C

SYSTEM: 120/240V 1Ø, 3W PANEL - "MPC-HLCLP" PANEL LOCATION: HALAWA X-OVER VAULT
MAINS: 40AT/100AF 2P CB SUPPLY LOCATION: PNL - "HLCHP"/XFMR (IN MPC) HALAWA X-OVER VAULT
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	B	C	CIRCUIT BREAKER FRAME	POLE	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLE	TRIP	LOAD kVA A	B	C	CKT. NO.	SERVICE
	1					1	20							1	20				2	
	3					↓	↓							↓	↓				4	
	5					↓	↓							↓	↓				6	
	7					↓	↓							↓	↓				8	

TOTAL CONNECTED
ESTIMATED MAXIMUM DEMAND

A	B	C

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

DATE	REVISION
1/24/94	REVISED PER DCN 66-033
8/18/93	ADDED SHEET PER DCN 66-017

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PANEL SCHEDULES

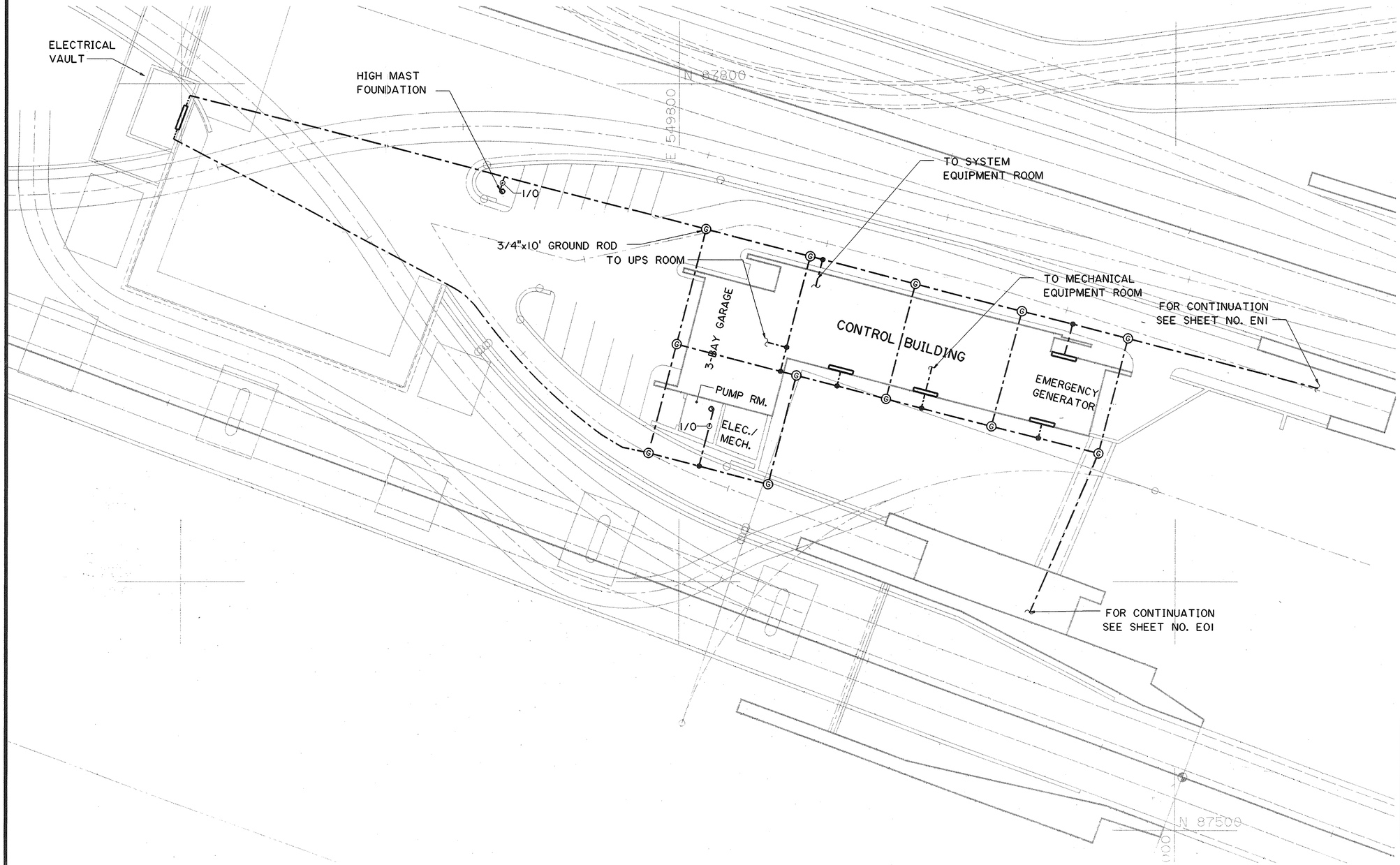
HALAWA APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: AUG 1993

SHEET NO. EAIA OF 7 SHEETS

124S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	125	440



NOTES:

1. CONNECT ALL EQUIPMENT ENCLOSURES TO THE EXISTING EQUIPMENT GROUND TEST STATIONS.
2. CONNECT ALL TRANSFORMER NEUTRALS TO THE EXISTING TRANSFORMER NEUTRAL TEST STATIONS.
3. GROUNDING WIRES SHALL BE BARE COPPER RUN IN ½ INCH GRS CONDUIT SIZED IN ACCORDANCE WITH THE NEC.

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	6-1-90
NOTE BOOK	TRACED BY " "	" "
	DESIGNED BY T. Y. SANCHEZ	6-15-90
	QUANTITIES BY " "	" "
NO.	CHECKED BY J. J. SASSANI	6-26-90

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GROUNDING

HALAWA APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL, 1992

SHEET NO. EA2 OF 7 SHEETS

2410V150 2410:V150 ES0248.FGB:1 27JAN90-14.51.50 XMULTI ES0348

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	126	440

TAP & LEAVE 10' SLACK CABLE IN PULL BOX FOR CONNECTION BY OTHERS

FURNISH & INSTALL 600V CABLE 6 #4 CONDUCTOR (LTG.) IN EXIST. ELECT. CONDUIT FROM HLCHP-1 IN ELECT. VAULT.

FURNISH & INSTALL 600V CABLE 6 #2 CONDUCTOR (LTG.) IN EXISTING ELECTRICAL CONDUIT FROM HLCHP-2 IN ELECT. VAULT.

FURNISHED & INSTALL 600V CABLE 6 #10 CONDUCTOR (LTG.) & #10 CONDUCTOR GROUND FROM DNL HLCHP IN VAULT

46KV SERVICE CABLE BY HECO

TRAFFIC CONTROLLER SEE EA1 FOR WIRING.

DETAIL 1 EA3 EA4

FURNISHED & INSTALL 600V CABLE 6 #10 CONDUCTOR (LTG.), 3 #6 CONDUCTOR CONTROLLER & #10 CONDUCTOR (GROUND) IN EXISTING 2x3"C LTG CONDUIT FROM PNL. HLCHP OR HLCHP-1 ELECTRICAL VAULT.

HB 400/8

FURNISHED & INSTALL 600V CABLE 3 #2 CONDUCTOR (PWR) & #10 CONDUTOR (GROUND) IN EXISTING 2" C FROM PNL. HLCHP TO PNL HLCHP-1.

SIGN STRUCTURE

P130, 15KV CABLE 3-1/C, #1

DRAINAGE HOLDING TANK

PUMP MP7 SEE SHT. NO. EA1 FOR WIRING

FURNISHED & INSTALL 600V CABLE 3 #10 CONDUCTOR (LTG.) CIRCUITED AS SHOWN #10 CONDUCTOR (GROUND) FROM PNL. HLCHP OR HLCHP-1 IN ELECTRICAL VAULT.

ELECTRICAL VAULT SEE SHEET NO. EA5 FOR VAULT DETAIL

FURNISH & INSTALL 600 V CABLE 3 #10 CONDUCTOR (LTG.) AND #10 CONDUCTOR (GROUND) FROM DNL HLCHP

FURNISHED & INSTALL 600V CABLE 3 #10 CONDUCTOR (LTG.), CIRCUITED AS SHOWN 3 #2 & 3 #6 CONDUCTOR CONTROLLER & #10 CONDUCTOR (GROUND) IN EXISTING LTG. CONDUIT FROM PNL. HLCHP OR HLCHP-1 IN ELECTRICAL VAULT.

FURNISH & INSTALL 600 V CABLE 6 #4 CONDUCTOR (LTG.) IN EXISTING CONDUIT FROM PNL HLCHP-1 IN ELECT VAULT

FURNISH & INSTALL 600 V CABLE 6 #2 CONDUCTOR (LTG.) IN EXISTING CONDUIT FROM PNL HLCHP-2 IN ELECTRICAL VAULT

PROVIDE SEPARATE CONDUIT IN POLE FOR CONTROL WIRING OF WEATHER STATION.

HECO SUBSTATION

TC 100 15' 4

LTG. CKT. SEE SHEET NO. EN 14 FOR CONTINUATION

P86, P87, C31

(SP), (P2) C29, C30

PORTAL BLDG. (IB) LEVEL 1

INBOUND (IB) TUNNEL

IB STA 600+20 HALAWA IB TUNNEL PORTAL

(SP)(P130A)

P201, P202, P203, P204, P205
P1, P6, P94, P208

LOADING DOCK

MH

ELECT. M.H. BELOW LOADING DOCK.

CONTROL BUILDING

ELECT. M.H.

(C16 C&D, C18 C&D, C25 C&D)
P94, P96
P207, P207A, P206
P6, P208A
P3, P1

UTILITY TUNNEL

OB STA. 604+35 OB TUNNEL PORTAL

LOADING DOCK

PORTAL BLDG. (OB) LEVEL 1

OUTBOUND (OB) TUNNEL

600

605

630

30,32 (24)
34,30 (23)
32,34 (22)
33,29 (21)
29,31 (16)
33,29 (15)
31,33 (19)
29,31 (11)
29,31 (10)
33,29 (13)
31,33 (12)
33,29 (20)

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

GENERAL NOTES:

1. CONDUIT RUNS SHOWN ARE FOR REFERENCE AND ARE NOT IN THIS CONTRACT, REFER TO SYSTEMS CONTRACT FAIP I-H3-1(65).
2. SEE SHT. NO. EA4 FOR ADDITIONAL NOTES.
3. SEE SHT. NO. EA4A FOR CIRCUIT NO. FOR LIGHTS.

DATE	REVISION
1/24/94	REVISED PER DCN GG-033
8/17/93	REVISED APPROACH LIGHTING PER DCN GG-016

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER & LIGHTING WIRING-1

HALAWA APPROACH

INTERSTATE ROUTE H-3

F. A. I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20'-0" DATE: APR 1992

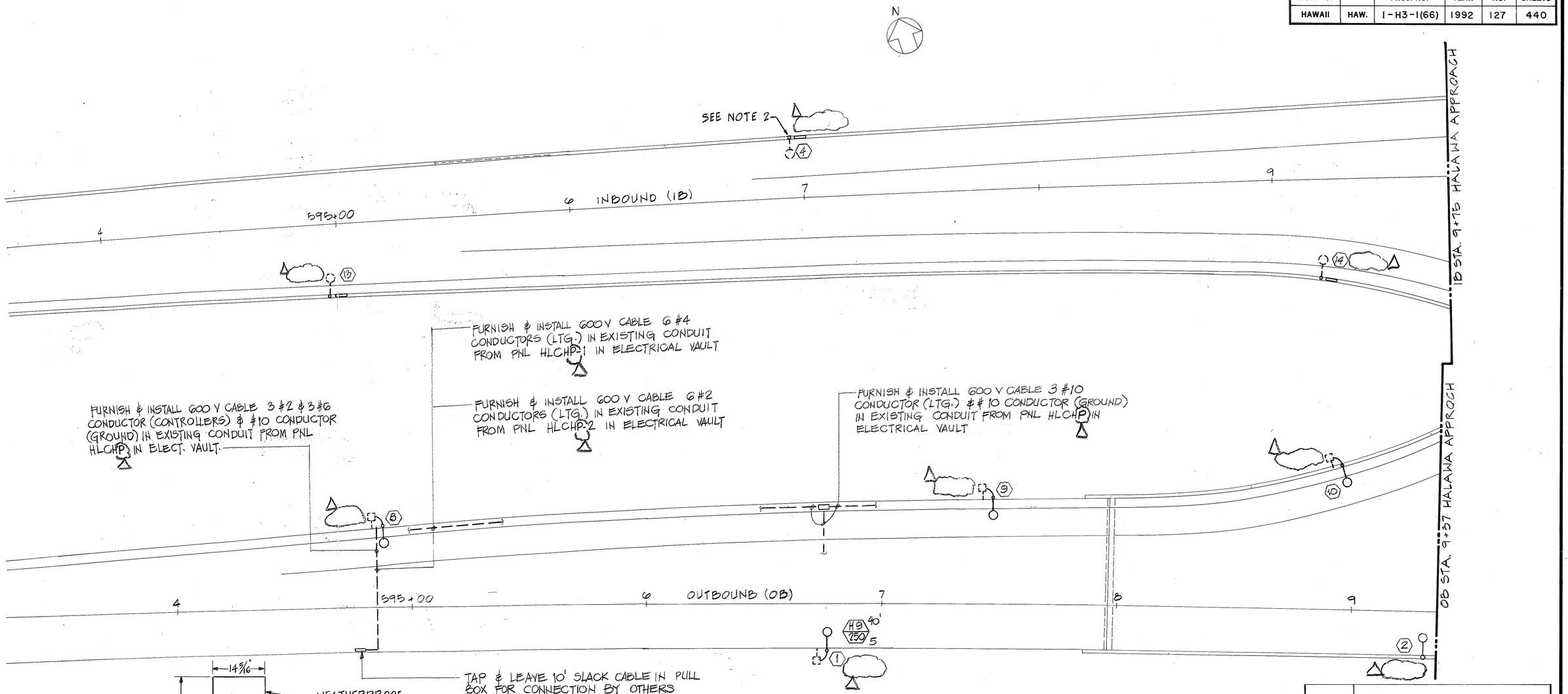
SHEET No. EA3 OF 7 SHEETS

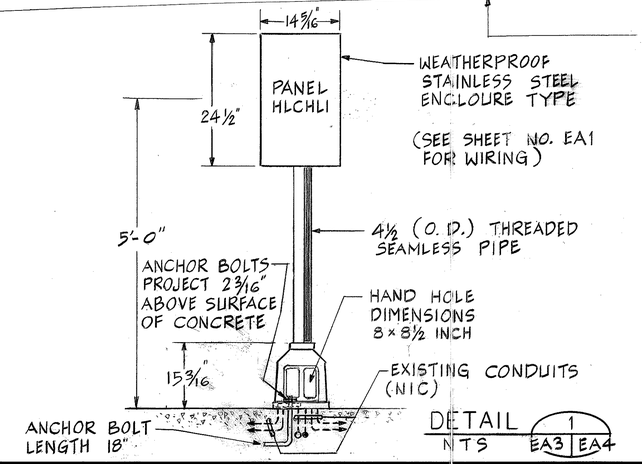
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY EAS	5/16/90
NOTE BOOK	TRACED BY	7/19/90
No.	DESIGNED BY R. JAMES	7/19/90
	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	8/28/90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	127	440





DETAIL 1
NTS EA3 | EA4

NOTES

1. FOR OTHER NOTES SEE SHEET No. EA2.
2. ELECTROLIERS ON IB ROADWAY FROM STA. 594.+00 TO STA. 599+30 ARE NOT IN CONTRACT.
3. SEE TABLE FOR POLE TYPE, POLE HEIGHT ETC., POLE No. INDICATED ⬡.
4. SEE SHT. NO. EA4A FOR CIRCUIT NO. FOR LIGHTS

ORIGINAL PLANS	SURVEY PLOTTED BY G. OKUYANG DATE 5-4-90
	DRAWN BY :
NOTE BOOK	TRACED BY : 4-4-90
	DESIGNED BY R. JAMES :
No.	QUANTITIES BY :
	CHECKED BY J.J. SASSANI : 6-26-90

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

DATE	REVISION
1/24/94	REVISED PER DCN GG-033
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER & LIGHTING

WIRING-2

HALAWA APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20'-0" DATE: APR 1992

SHEET NO. EA4 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	127 S-1	440

LIGHTING POLES ON HALAWA APPROACH

POLE NO.	POLE HEIGHT	ARM LENGTH	LAMP WATT	LUMINAIRE TYPE *	CIRCUIT NO.#	USAGE	REMARKS
1	40 FT.	15 FT.	250 W	H9	8,4##	OB ROADWAY	
2	40 FT.	15 FT.	250 W	H9	6,8##	OB ROADWAY	
3	40 FT.	15 FT.	250 W	H9	4,6##	OB ROADWAY	
4	40 FT.	N. A.	250 W	H 9	3,5##	IB ROADWAY	CONNECTION ONLY
5	40 FT.	20 FT.	250 W	H9	5,7##	IB ROADWAY	
6	40 FT.	15 FT.	250 W	H9	7,3##	IB ROADWAY	
7	30 FT.	15 FT.	250 W	H9	7,3##	IB ROADWAY	ON 10 FT. RETAINING WALL
8	40 FT.	6 FT.	250 W	H9	8,4##	OB CROSSOVER	
9	40 FT.	6 FT.	250 W	H9	6,8##	OB CROSSOVER	
10	40 FT.	6 FT.	250 W	H9	4,6##	OB CROSSOVER	
11	40 FT.	6 FT.	250 W	H9	29, 31	OB CROSSOVER	
12	40 FT.	6 FT.	250 W	H9	31, 33	OB CROSSOVER	
13	40 FT.	N.A.	250 W	H9	5,7##	IB CROSSOVER	CONNECTION ONLY
14	40 FT.	N. A.	250 W	H9	3,5##	IB CROSSOVER	CONNECTION ONLY
15	40 FT.	6 FT.	250 W	H9	33, 29	IB CROSSOVER	
16	30 FT.	6 FT.	250 W	H9	29, 31	IB CROSSOVER	ON 10 FT. RETAINING WALL
17	30 FT.	6 FT.	150 W	H7	29, 31	OB LOADING DOCK	
18	30 FT.	6 FT.	150 W	H7	33, 29	OB LOADING DOCK	
19	30 FT.	6 FT.	150 W	H7	31, 33	IB LOADING DOCK	
20	30 FT.	6 FT.	150 W	H7	33, 29	IB LOADING DOCK	
21	30 FT.	6 FT.	150 W	H7	30, 32	SUBSTATION ROAD	CONTACTOR CONTROLLED
22	30 FT.	6 FT.	150 W	H7	32, 34	SUBSTATION ROAD	CONTACTOR CONTROLLED
23	30 FT.	6 FT.	150 W	H7	34,30	SUBSTATION ROAD	CONTACTOR CONTROLLED
24	30 FT.	6 FT.	150 W	H7	30, 32	SUBSTATION ROAD	CONTACTOR CONTROLLED
25	N.A.	N.A.	175 W	H 15 A	NOTE 1	ON SIGN BRIDGE @ 602+50	SUPPLY & MOUNTING ONLY
26	N.A.	N.A.	175 W	H15	NOTE 2	ON SIGN BRIDGE @ 594+50	
27	N.A.	N.A.	175 W	H15	NOTE 2	ON SIGN BRIDGE @ 573+40	

* ALL LUMINAIRE EXCEPT THOSE CONTROLLED BY CONTACTOR TO BE COMPLETED WITH PHOTO CELL

LUMINAIRE TYPE H9 = GE MA250 HPS - CUTOFF OR EQUAL (480V)

LUMINAIRE TYPE H15 = GE VERSAFLOOD 175W MERC OR EQUAL (480V)

LUMINAIRE TYPE H15A = GE VERSAFLOOD 175W MERC OR EQUAL (120V, CONTACTOR CONTROLLED)

NOTE 1: - CONNECTION BY OTHERS

NOTE 2: - TO BE CONNECTED TO EXISTING ROADWAY LIGHTING CIRCUIT

FROM PANEL HLCHP UNLESS NOTED OTHERWISE.
FROM PANEL HLCHP-1

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

ORIGINAL PLANS
NOTE BOOK
No.

DATE	REVISION
1/24/94	REVISED PER DCN 66-033
12/14/93	SHEET ADDED PER DCN 66-026

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING POLE SCHEDULE

HALAWA APPROACH

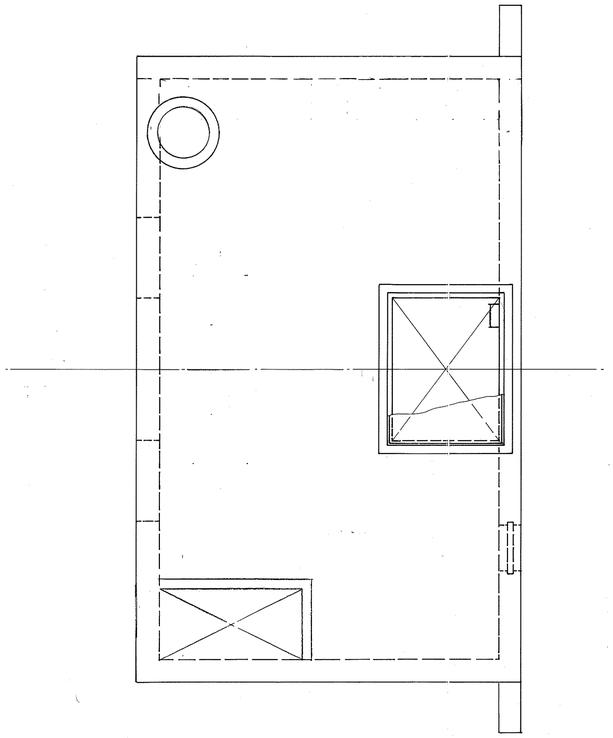
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: DEC 1993

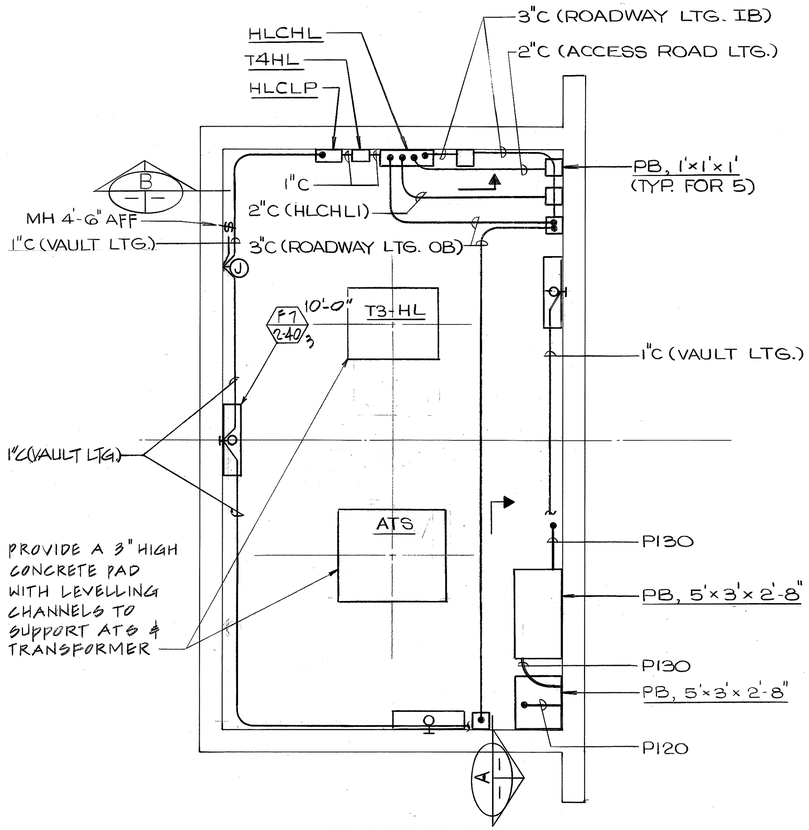
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SHEET NO. EA4A OF 7 SHEETS

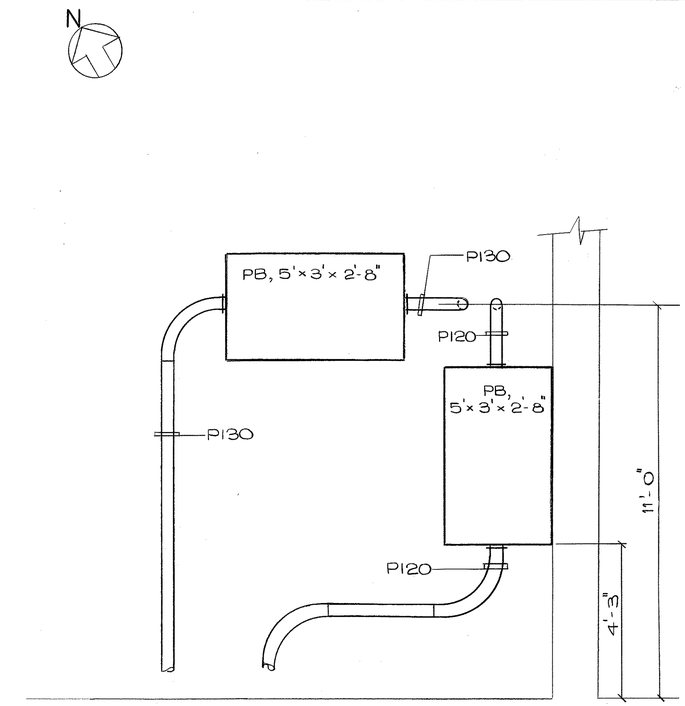
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	128	440



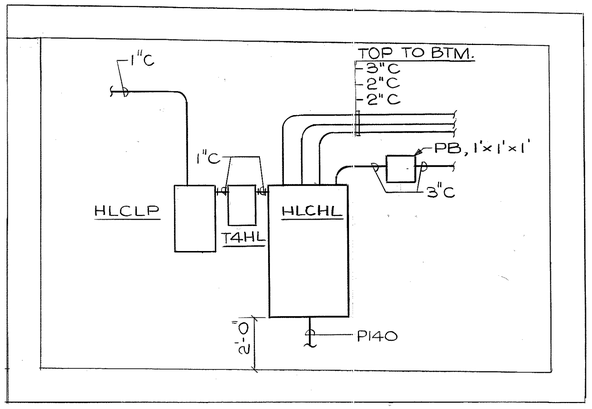
ROOF PLAN
SCALE: 1/4" = 1'-0"



FLOOR PLAN
SCALE: 1/4"=1'-0"



SECTION A
NTS



SECTION B
SCALE: 3/8 = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY T.A. HORTON	6/15/90
NOTE BOOK	TRACED BY	
	DESIGNED BY T.A. HORTON	6/17/90
No.	QUANTITIES BY	
	CHECKED BY J.T. SASSANI	6/26/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL VAULT LAYOUT

HALAWA APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

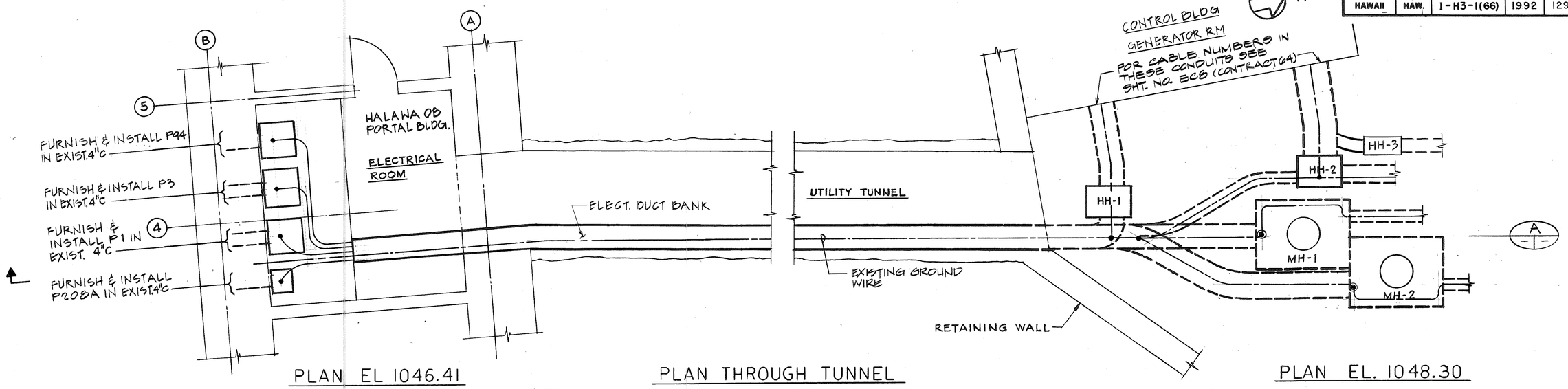
SHEET NO. EA5 OF 7 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

2' 0' 2' 4' 6' 8' 10'
1/4"=1'-0" GRAPHIC SCALE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	129	440

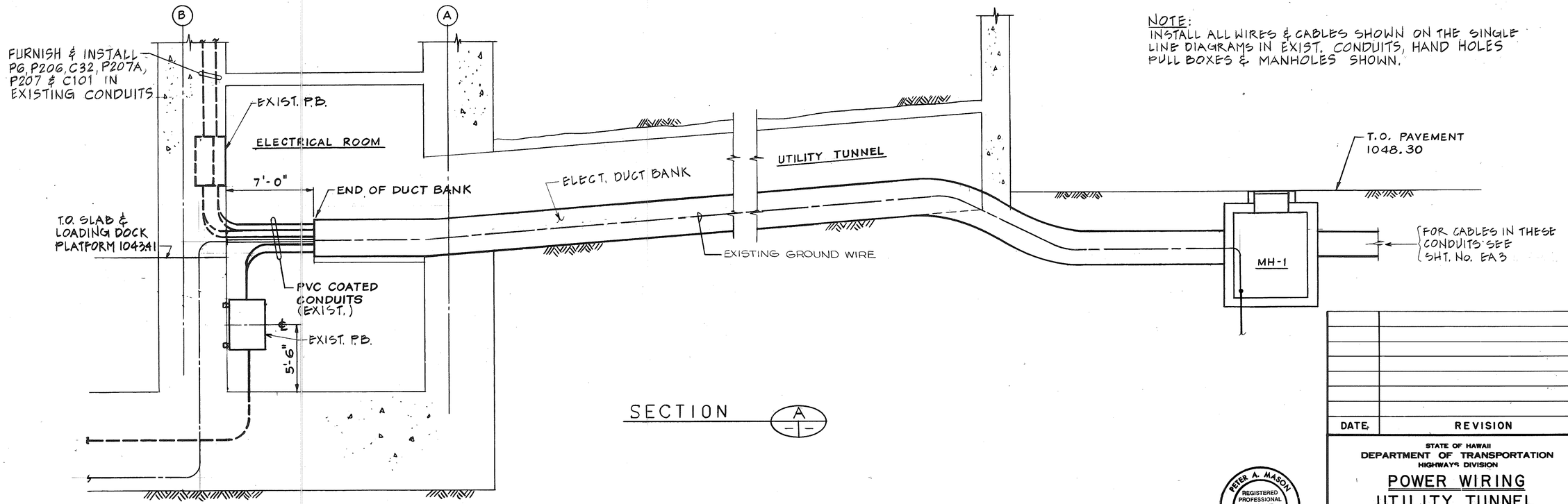


PLAN EL 1046.41

PLAN THROUGH TUNNEL

PLAN EL. 1048.30

NOTE:
INSTALL ALL WIRES & CABLES SHOWN ON THE SINGLE LINE DIAGRAMS IN EXIST. CONDUITS, HAND HOLES PULL BOXES & MANHOLES SHOWN.



SECTION A-A

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY G. ONYANG	5-4-90
NOTE BOOK	TRACED BY	
	DESIGNED BY T. SANCHEZ	2-14-90
No.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	9-28-90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
UTILITY TUNNEL
HALAWA APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

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Peter A. Mason

2' 0' 2 4' 6' 8' 10'
1/4"=1'-0" GRAPHIC SCALE

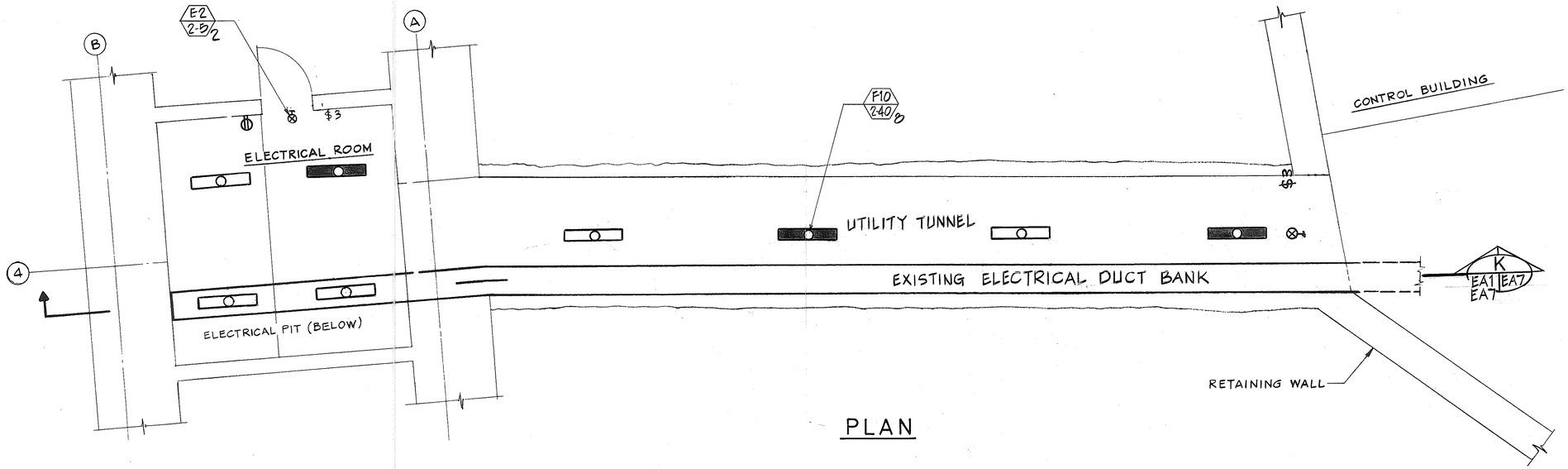
SCALE: 1/4"=1'-0" DATE: APR 1992

SHEET NO. EA6 OF 7 SHEETS

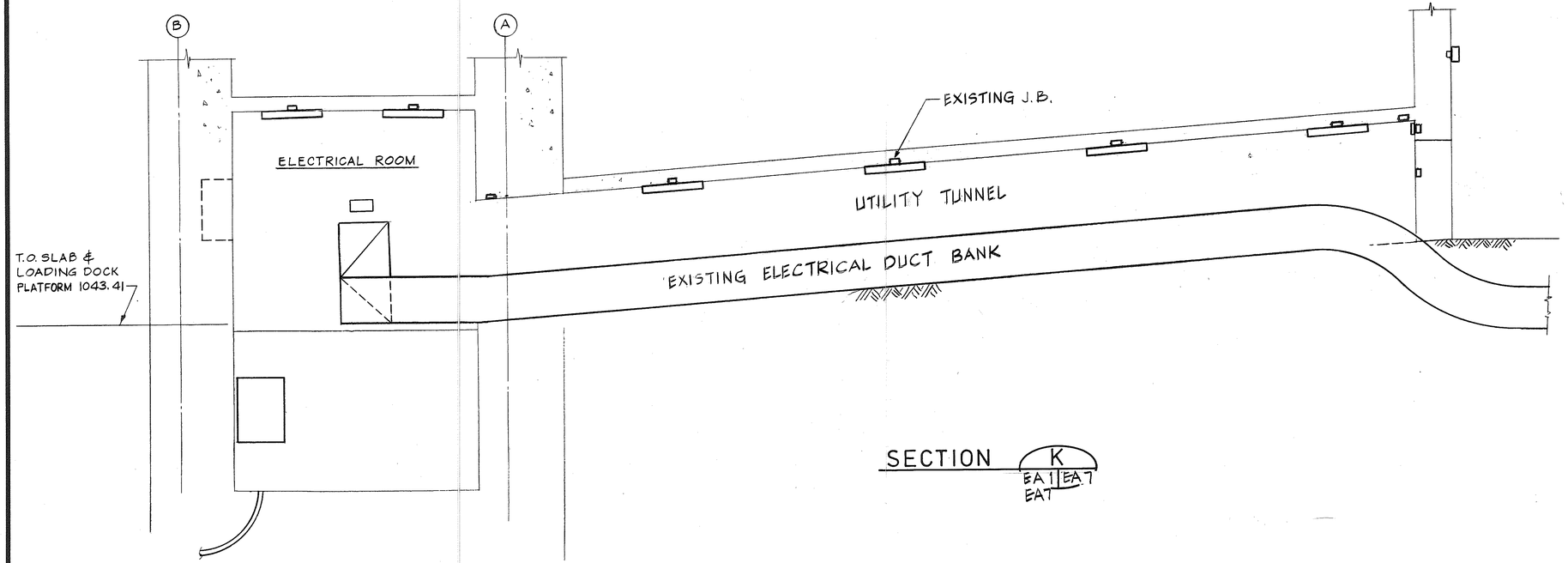
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	130	440

NOTE

1. FOR GENERAL NOTES, SEE SHEET NO. EA1



PLAN



SECTION K (EA1 | EA7, EA7)

ORIGINAL PLAN	SURVEY PLOTTED BY ____ DATE 6-20-90
	DRAWN BY A.N.G.
	TRACED BY
NOTE BOOK	DESIGNED BY T. SANCHEZ 2-11-92
No.	QUANTITIES BY
	CHECKED BY J.J. SASSANI 6/26/92

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
UTILITY TUNNEL
HALAWA APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/4"=1'-0" DATE: APR 1992

SHEET NO. EA7 OF 7 SHEETS

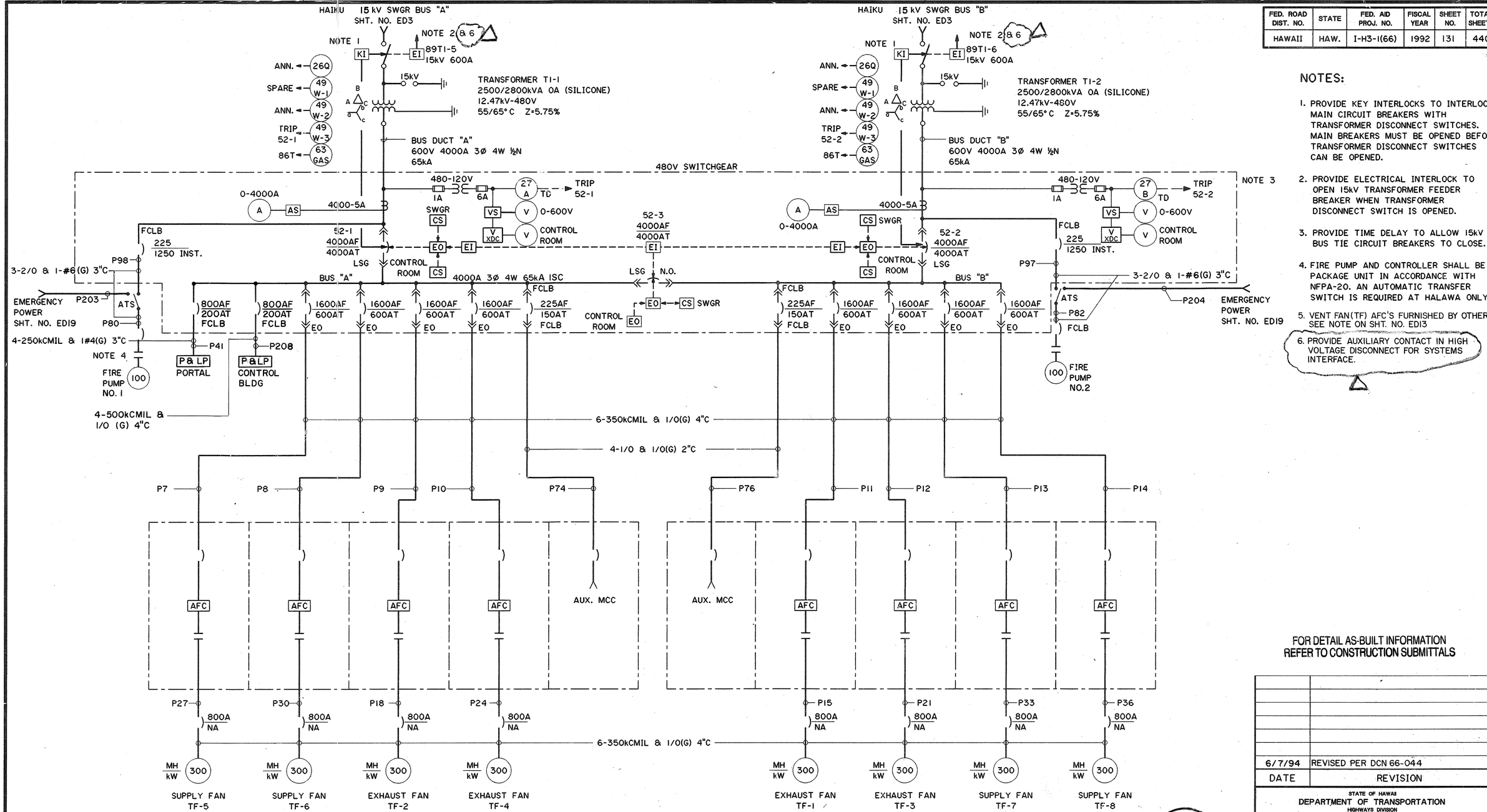
4' 2' 0' 4' 8'
1/4"=1'-0" GRAPHIC SCALE

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	131	440



NOTES:

1. PROVIDE KEY INTERLOCKS TO INTERLOCK MAIN CIRCUIT BREAKERS WITH TRANSFORMER DISCONNECT SWITCHES. MAIN BREAKERS MUST BE OPENED BEFORE TRANSFORMER DISCONNECT SWITCHES CAN BE OPENED.
2. PROVIDE ELECTRICAL INTERLOCK TO OPEN 15kV TRANSFORMER FEEDER BREAKER WHEN TRANSFORMER DISCONNECT SWITCH IS OPENED.
3. PROVIDE TIME DELAY TO ALLOW 15kV BUS TIE CIRCUIT BREAKERS TO CLOSE.
4. FIRE PUMP AND CONTROLLER SHALL BE A PACKAGE UNIT IN ACCORDANCE WITH NFPA-20. AN AUTOMATIC TRANSFER SWITCH IS REQUIRED AT HALAWA ONLY.
5. VENT FAN(TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13
6. PROVIDE AUXILIARY CONTACT IN HIGH VOLTAGE DISCONNECT FOR SYSTEMS INTERFACE.

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY LAPP	7/16/90
NO.	TRACED BY	7/16/90
	DESIGNED BY	
	QUANTITIES BY ROBERT P. JAMES	7/16/90
	CHECKED BY T. J. SASAKI	7/16/90

DATE	REVISION
6/7/94	REVISED PER DCN 66-044

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

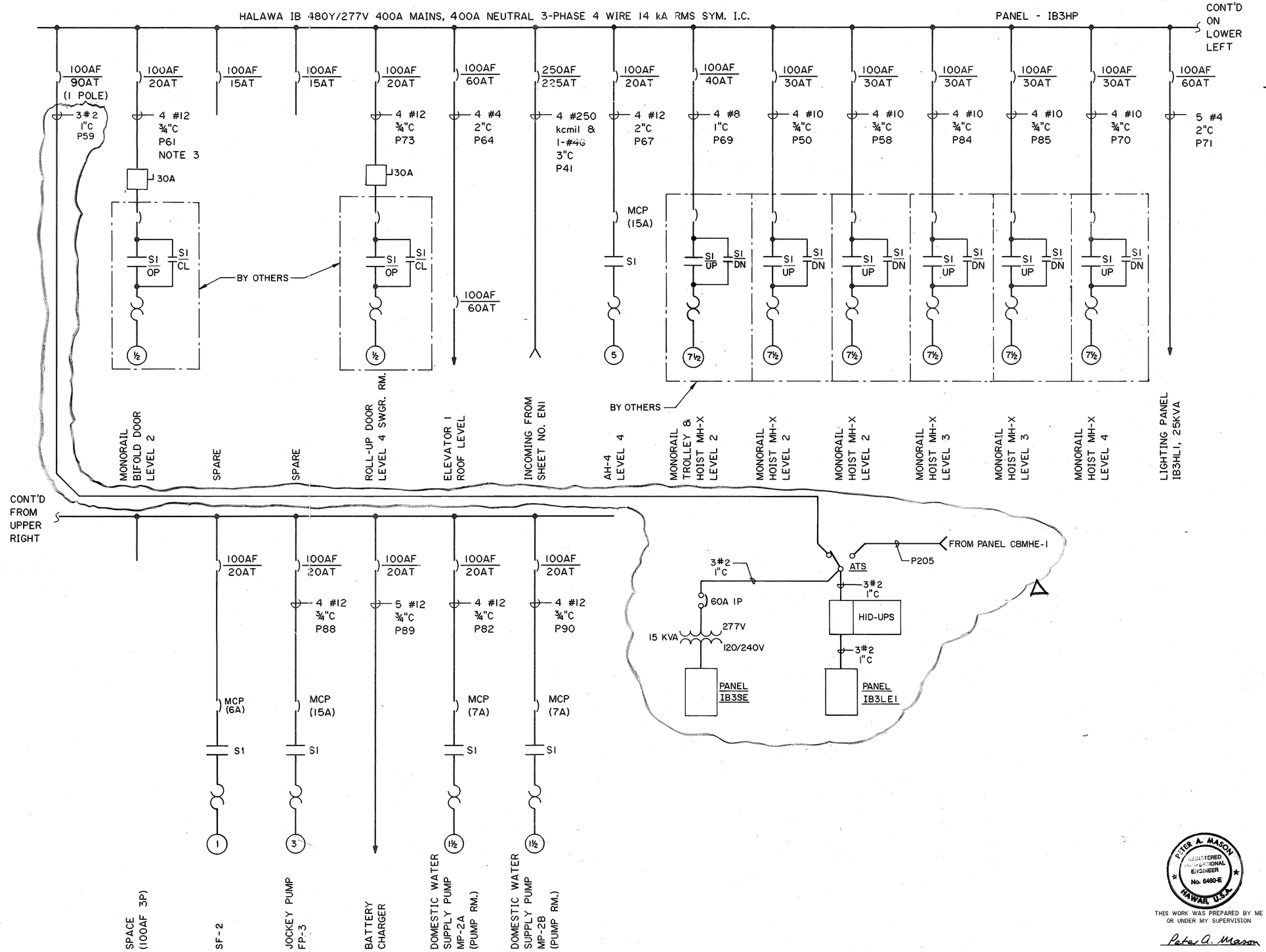
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM
HALAWA IB SUBSTATION
HALAWA PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EN1 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	132	440



NOTES:

1. THE NUMBER OF WIRES SHOWN FOR EACH CONDUIT INCLUDES ONE GROUNDING WIRE UNLESS NOTED OTHERWISE.
2. SOME FEEDER CABLES SHARE COMMON CONDUIT RISERS AS SHOWN ON POWER WIRING LEVEL 3 PLAN.
3. ALL CB'S ARE THREE (3) POLE UNLESS NOTED OTHERWISE.

ABBREVIATIONS:

MCP	MOTOR CIRCUIT PROTECTOR
SI	SIZE 1 MOTOR STARTER

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY GADD	6-6-90
NOTE BOOK	TRACED BY	
	DESIGNED BY T. SANCHEZ	9-14-90
NO.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	9-26-90

DATE	REVISION
12/21/94	REVISED PER DCN 66-044
3/9/94	ADDED SF-2 PER DCN 66-039
8/19/93	REVISED SCHEDULES PER DCN 66-017

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM
480Y/277V POWER
HALAWA PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EN2 OF 22 SHEETS

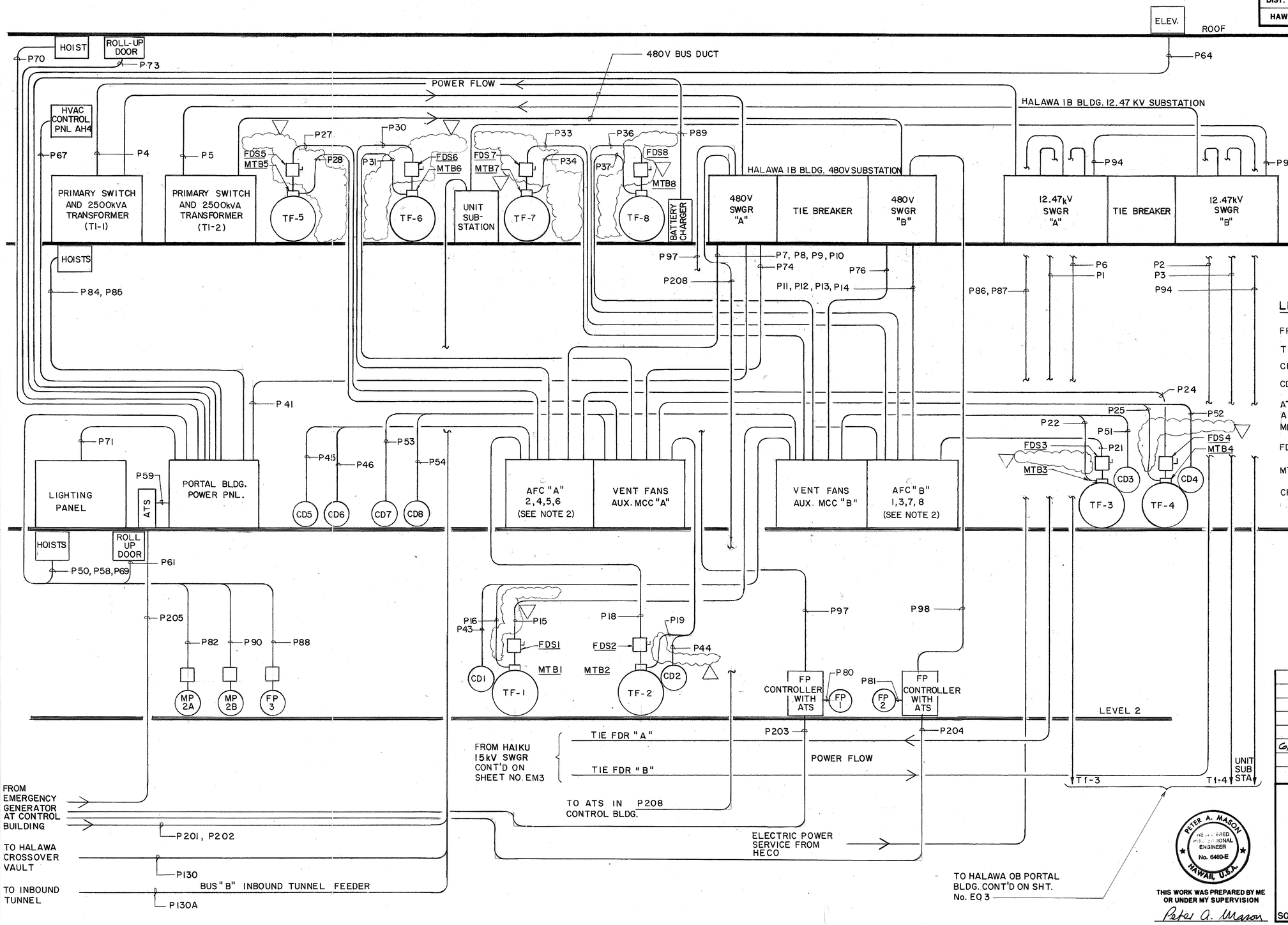
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V152 2410: V152 ES0304.FGB;1 09JLY90-13.07.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	133	440



NOTE:

1. SEE SHT. NO. EN4 FOR CONTROL WIRING PROVISIONS.
2. VENT FAN AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13

LEGEND:

FP	FIRE PUMP / FAN PANEL
TF	TUNNEL FAN
CF	COOLING FAN
CD	CONTROL DAMPER
ATS	AUTOMATIC TRANSFER SWITCH
AFC	ADJUSTABLE FREQUENCY CONTROLLER
MHDS	MOTOR HEATER DISCONNECT SWITCH
FDS	FAN DISCONNECT SWITCH
MTB	MOTOR TERMINAL BOX
CFDS	COOLING FAN DISCONNECT SWITCH

DATE	REVISION
6/22/93	DELETED AUX. COOLING FANS PER
	DCN 66-012

ORIGINAL PLAN | NOTE BOOK | No. _____

SURVEY PLOTTED BY _____ DATE _____
DRAWN BY R. CUADRO 6/89
TRACED BY _____ 5/2/90
DESIGNED BY T. A. HORTON
QUANTITIES BY _____ 9/1994
CHECKED BY J. J. SASSANI

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RISER DIAGRAM
POWER
HALAWA PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

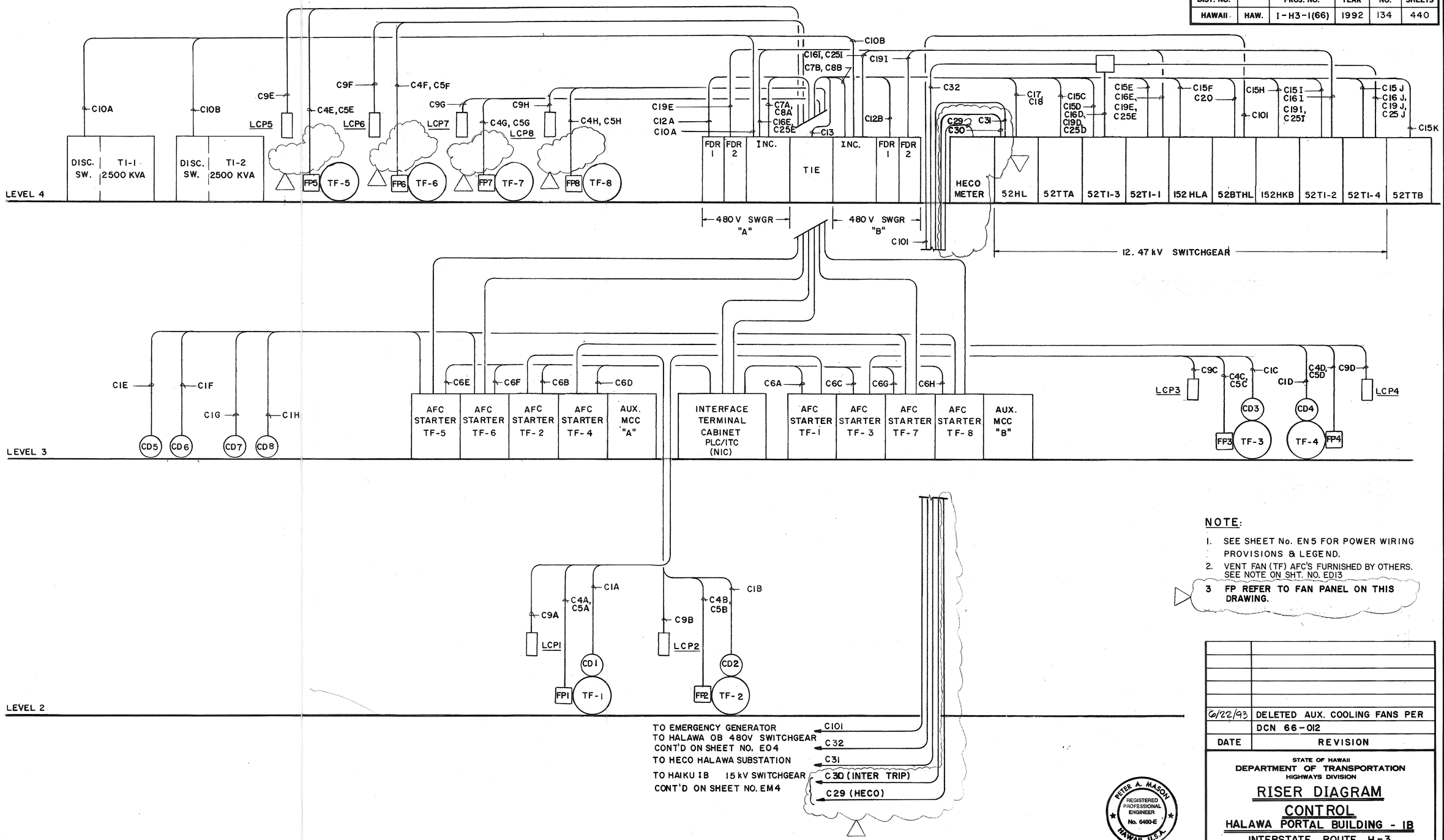
PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6460-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SHEET NO. EN3 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	134	440



NOTE:

1. SEE SHEET No. EN5 FOR POWER WIRING PROVISIONS & LEGEND.
2. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13
3. FP REFER TO FAN PANEL ON THIS DRAWING.

DATE	REVISION
6/22/93	DELETED AUX. COOLING FANS PER
	DCN 66-012

ORIGINAL PLAN
NOTE BOOK
No.
SURVEY PLOTTED BY
DRAWN BY R.QUADRO DATE 6/8/90
TRACED BY
DESIGNED BY T.A. HORTON 5/8/90
QUANTITIES BY
CHECKED BY J.J. SASSANI 9/26/91

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RISER DIAGRAM
CONTROL
HALAWA PORTAL BUILDING - IB

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

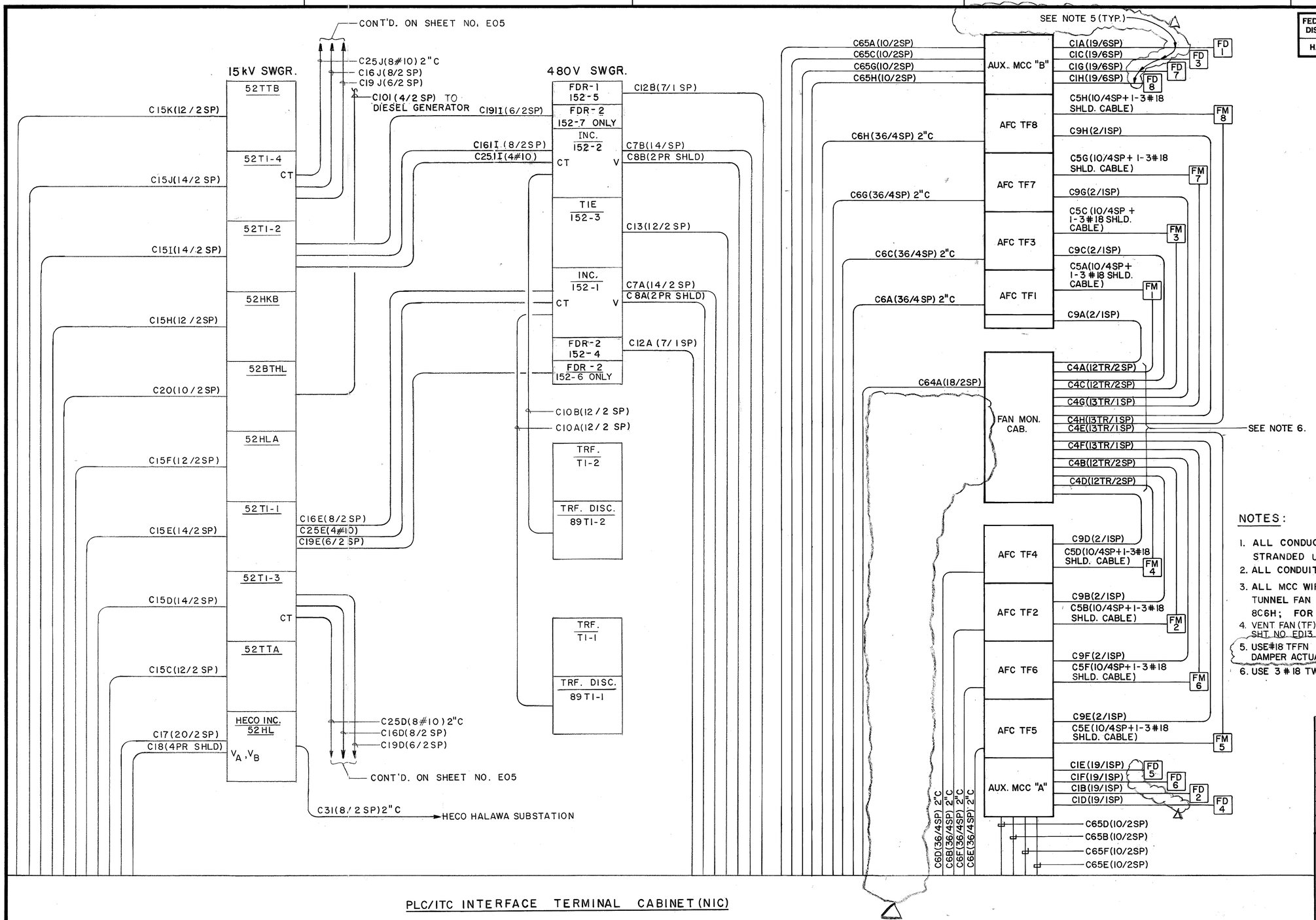
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SHEET NO. EN4 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	135	440



NOTES:

1. ALL CONDUCTORS ARE SINGLE CONDUCTOR #14 AWG STRANDED UNLESS OTHERWISE NOTED.
2. ALL CONDUITS ARE 1" UNLESS OTHERWISE NOTED.
3. ALL MCC WIRE MARKERS SHALL BE PREFIXED WITH TUNNEL FAN NUMBERS DESIGNATION; e.g. FOR TF8, 8C6H; FOR CD1, IC2A; FOR CF1, IC3A ETC.
4. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13
5. USE #18 TFFN FLEX. CABLE FOR CONNECTION BETWEEN DAMPER ACTUATOR AND MCC.
6. USE 3#18 TWISTED CABLE WITH UNSHIELDED JACKET.

PLC/ITC INTERFACE TERMINAL CABINET (NIC)

7/26/94	REVISED PER DCN 66-049
6/3/94	REVISED PER DCN 66-047
5/4/94	REVISED AFC/MCC/ITC CONTROL WIRING PER DCN 66-041
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BLOCK DIAGRAM
CONTROL
HALAWA PORTAL BUILDING-IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

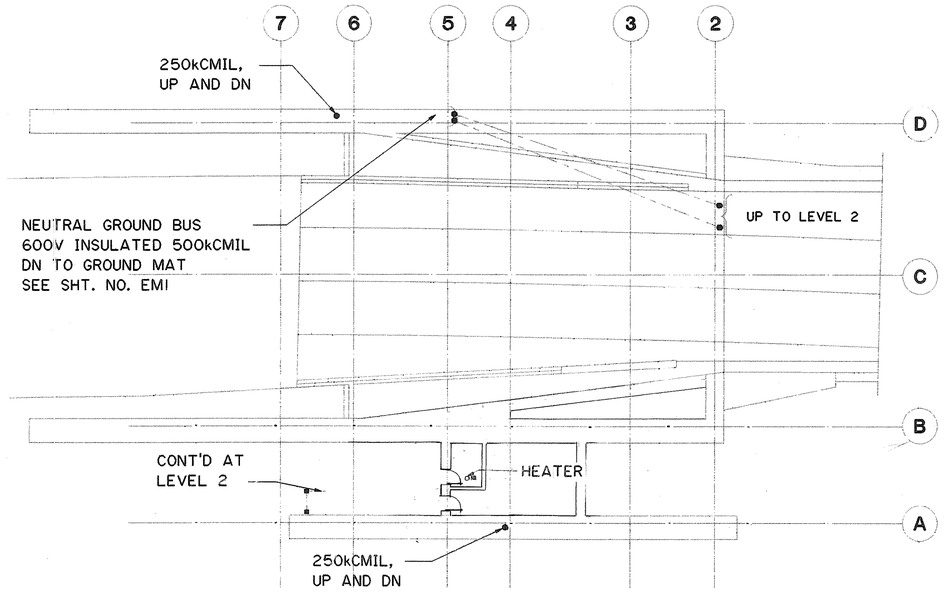
SCALE: NONE DATE: APR 1992

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Peter A. Mason

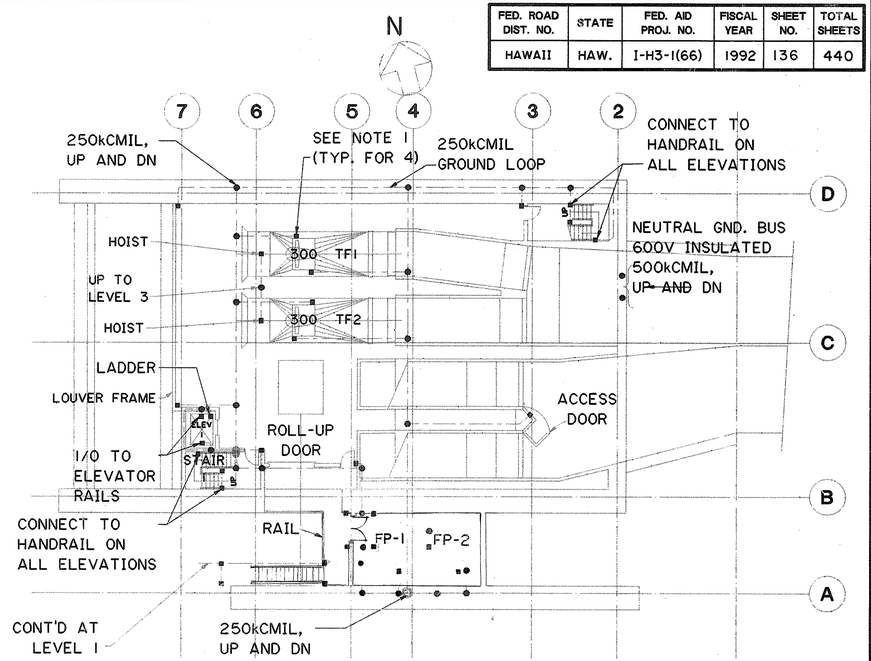
SHEET NO. EN5 OF 22 SHEETS

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY R. QUADRO DATE 6/5/90
TRACED BY
DESIGNED BY L.A. HORTON 5/22/90
QUANTITIES BY
CHECKED BY T.T. SASSANI 6/26/90

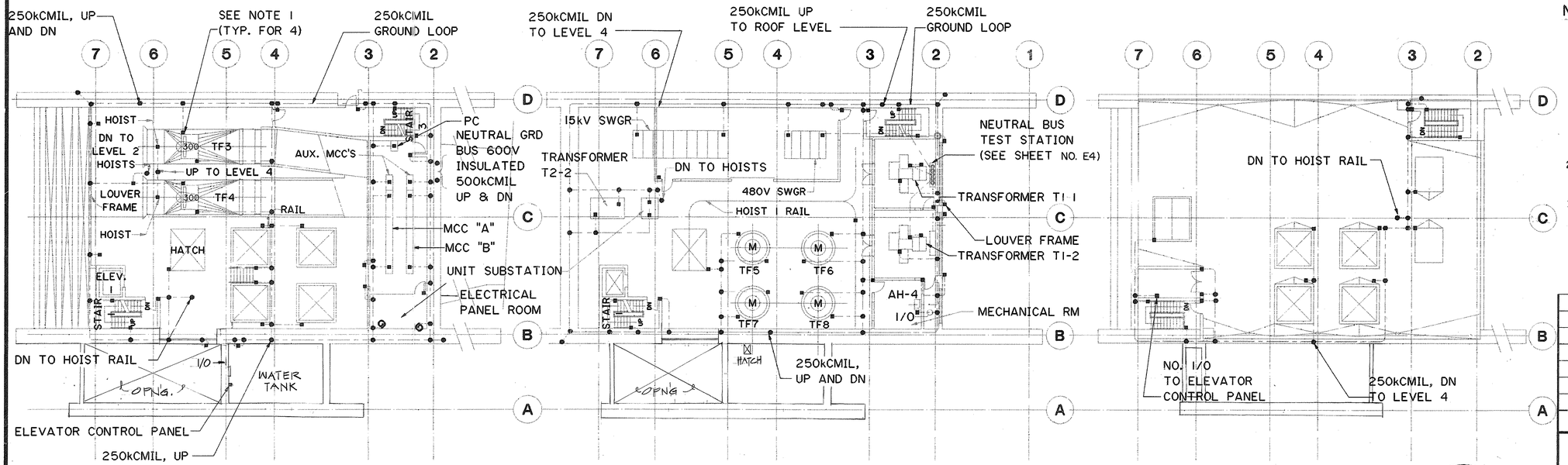
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	136	440



LEVEL 1



LEVEL 2



LEVEL 3 LEVEL 4 ROOF

NOTES:

1. CONNECT TO MOTOR FRAME.
2. RUN GROUND WITH OTHER CONDUCTORS IN CONDUIT FOR PANELS IN THIS AREA.
3. FOR GROUNDING IN VAULTS SEE SHEET NO. E4

ORIGINAL PLAN	SURVEY PLOTTED BY	CADD	DATE 4-6-90
	DRAWN BY	"	" 5-4-90
NOTE BOOK	TRACED BY	F. JIMENEZ	" 6-25-90
	DESIGNED BY	"	"
NO.	QUANTITIES BY	"	"
	CHECKED BY	J.J. SASSANI	"

GRAPHIC SCALE
16' 8' 0' 16' 32'
1/8"=1'-0"

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GROUNDING

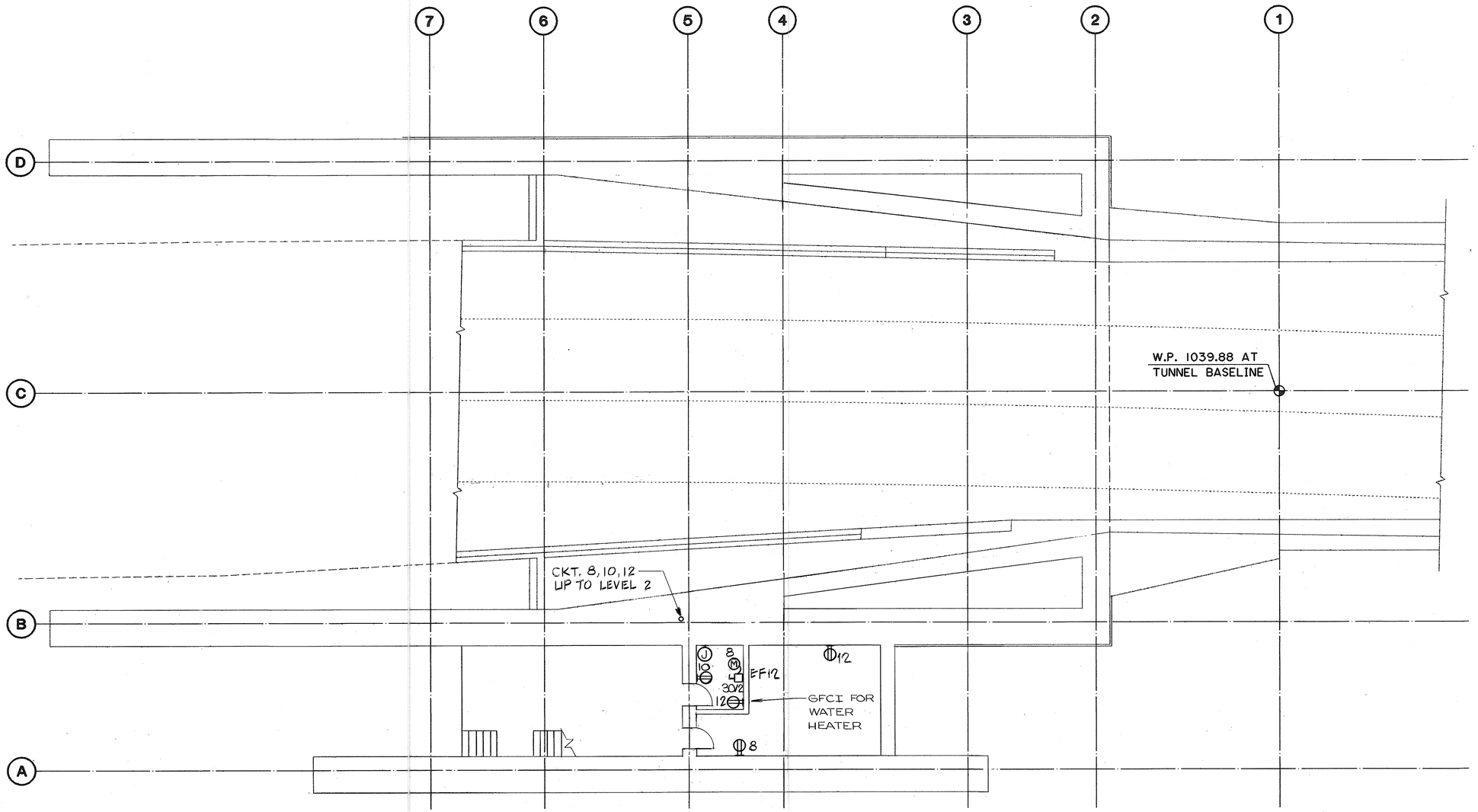
HALAWA PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. EN6 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	137	440

N



NOTES:

1. SEE SINGLE LINE DIAGRAMS SHT. No. ED 3, EN 1 & EN 2. FOR CONDUIT SIZES NOT SHOWN.
2. SEE SHT. No. EN 3, EN4 & EN5 FOR TERMINATIONS OF POWER & CONTROL CONDUIT.

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 1 PLAN
HALAWA PORTAL BUILDING-IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. EN7 OF 22 SHEETS

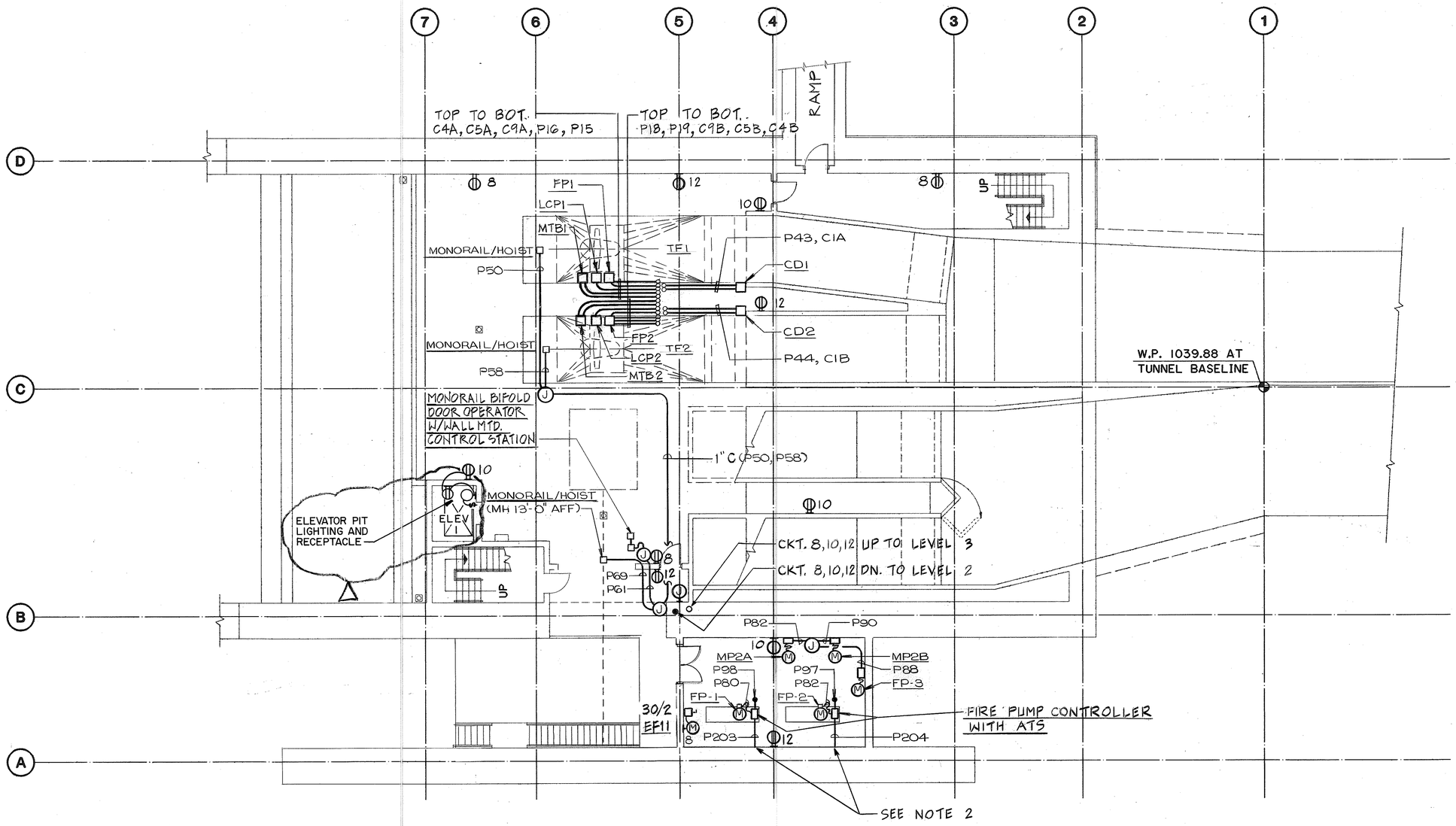
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

ORIGINAL PLAN		DATE
NOTE BOOK	SURVEY PLOTTED BY	
NO.	DRAWN BY R. ANG	6-26-90
	TRACED BY	
	DESIGNED BY I. HORTON	5-2-90
	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	6-26-90

2410V152 2410: V152 ES0250.FGB>1 22SEP89-10.29.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	138	440



NOTES:

1. FOR GENERAL NOTES SEE SHEET NO. EN7
2. CONNECT TO EXISTING CAPPED CONDUIT AND EXTEND AS SHOWN.

ORIGINAL PLAN		DATE
SURVEY PLOTTED BY		
DRAWN BY	R. ANG	6-11-90
TRACED BY		
DESIGNED BY	I. HORTON	5-9-90
QUANTITIES BY		
CHECKED BY	J.J. SASSANI	6-26-90
NOTE BOOK		
NO.		

9/19/94	REV. PER DCN 66-052
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 2 PLAN
HALAWA PORTAL BUILDING-IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. EN 8 OF 22 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

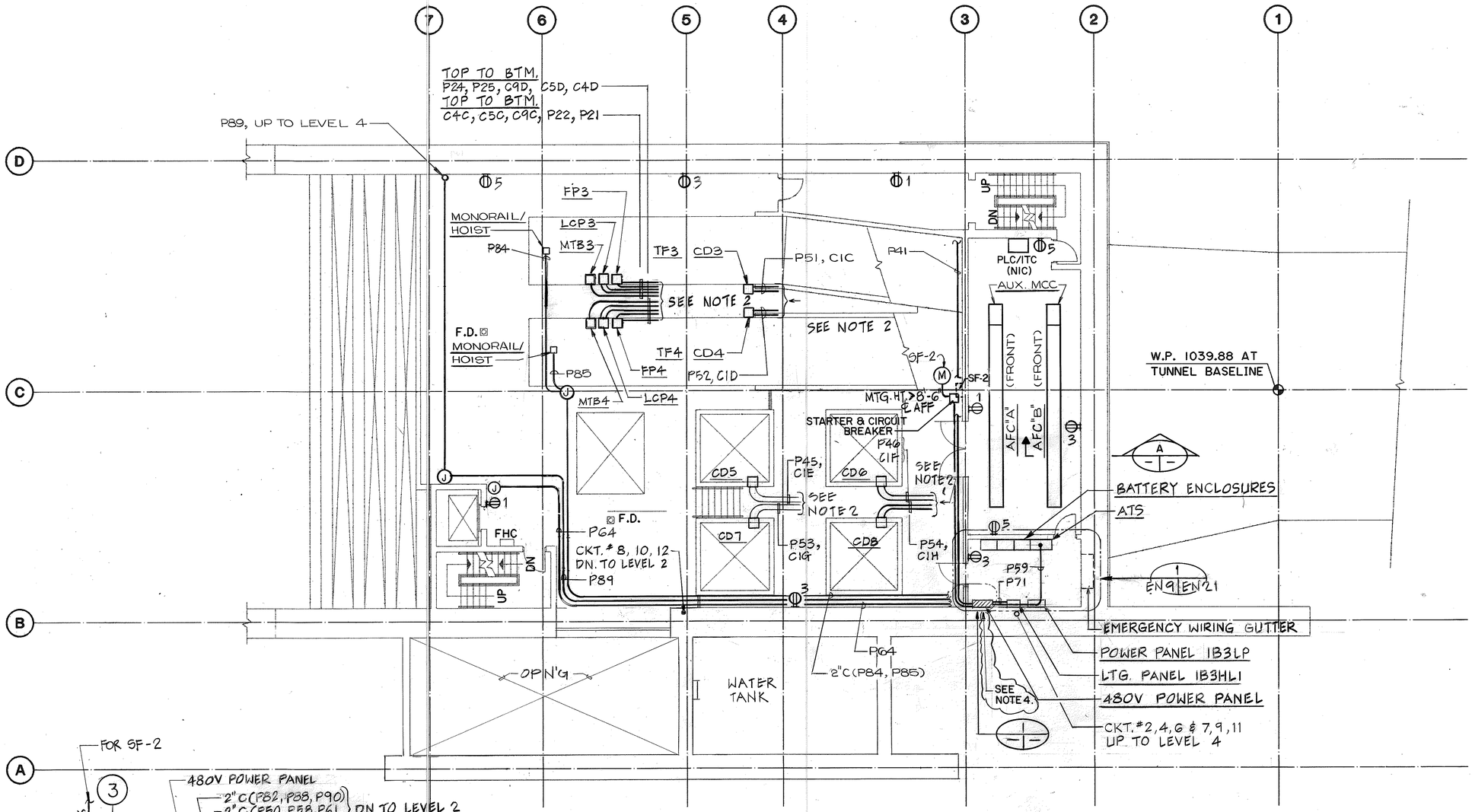
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V152 2410: V152 ES0251.FGB71 22SEP89-10.35.10

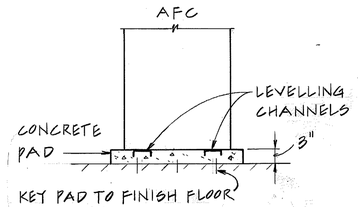
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	139	440

N

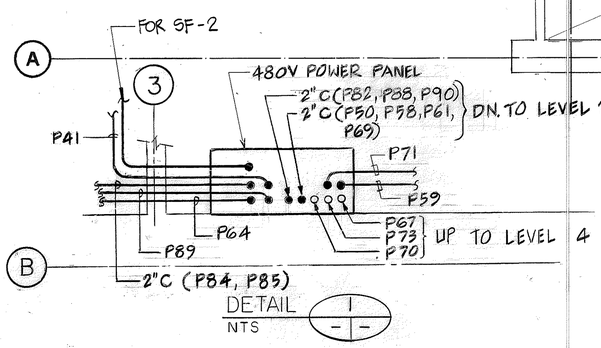


NOTES:

1. FOR GENERAL NOTES SEE SHT. No. EN7.
2. FOR CONDUIT TERMINATION SEE SHEET NOS. EN3, EN4 & EN5.
3. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13.
4. INTERCEPT (E) P64 CONDUIT (ELEVATOR # 1 POWER) PRIOR TO LEAVING ROOM AND FURNISH AND INSTALL (N) J-BOX, 8"x16"x 6". REPULL (E) ELEVATOR #1 POWER CONDUCTORS THROUGH J-BOX BACK TO PANEL IB3HP WITHOUT SPLICING. FURNISH AND INSTALL 1"C, RGS FROM PANEL IB3LP TO J-BOX. FURNISH AND INSTALL 3#12 AWG WITH 600V INSULATION, FROM PANEL IB3LP (ELEVATOR #1 CAB LIGHTS) TO J-BOX AND ON TO ROOF, SHARING THE (E) P64 CONDUIT.



SECTION A
NTS



DETAIL 1
NTS

DATE	REVISION
12/22/94	REVISED PER DCN 66-055
3/9/94	REVISED PER DCN 66-039

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 3 PLAN
HALAWA PORTAL BUILDING-IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. EN9 OF 22 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

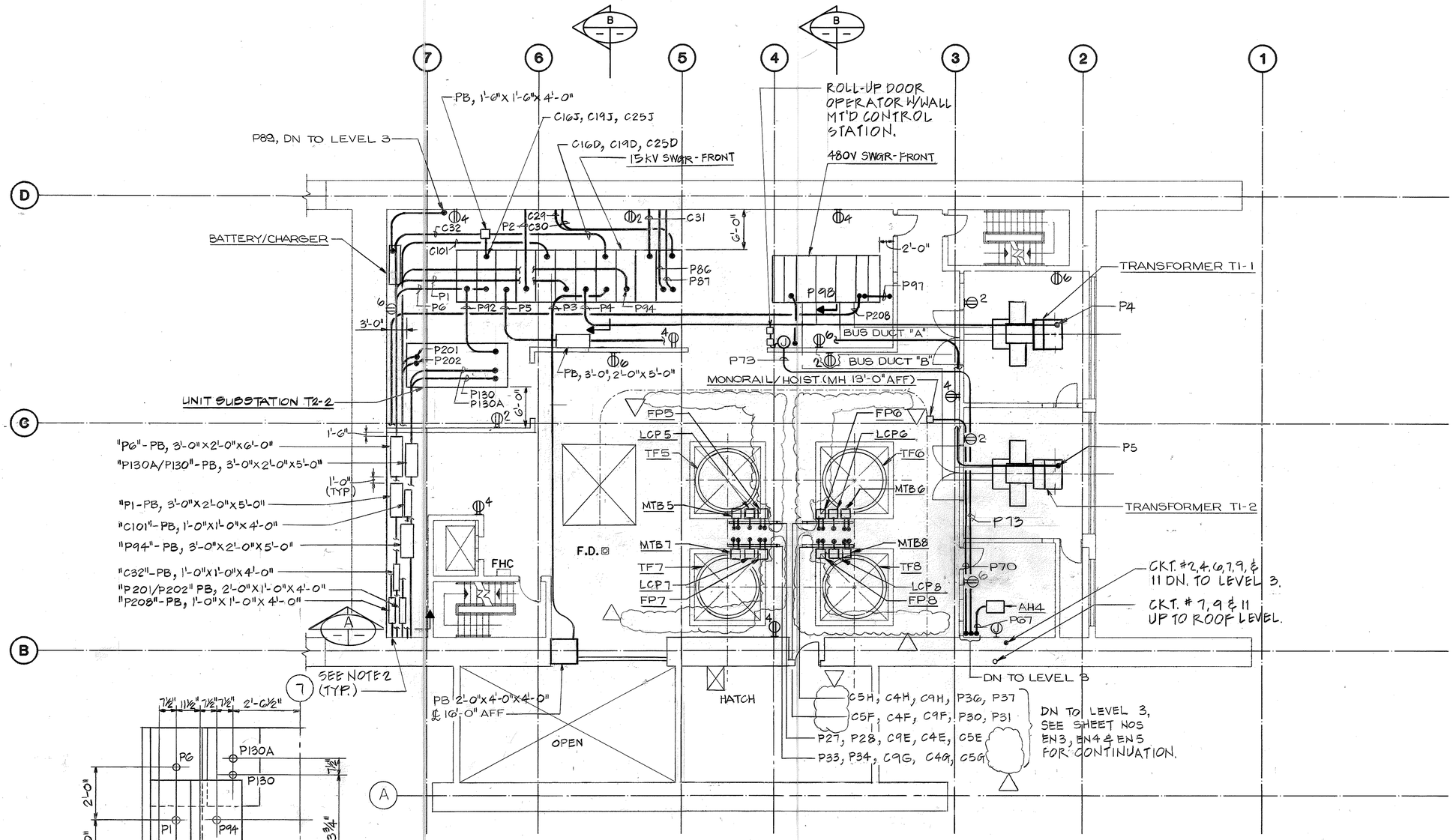
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY R. ANG	6-11-90
NO.	TRACED BY	
	DESIGNED BY I. HORTON	5-9-90
	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	2/96-90

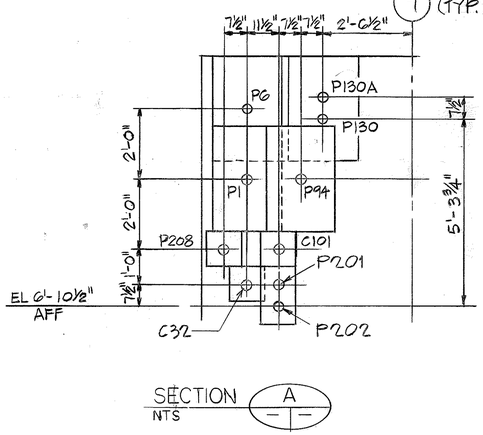
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	140	440

N

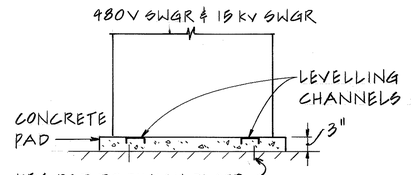
NOTES:

1. FOR GENERAL NOTES, SEE SHT. No. EN 7.
2. CONNECT TO EXIST. CAPPED CONDUIT & EXTEND AS SHOWN.





SECTION A NTS



SECTION B NTS

DATE	REVISION
6/22/93	DELETED AUX. COOLING FANS PER
	DCN 66-012

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 4 PLAN
HALAWA PORTAL BUILDING-IB
INTERSTATE ROUTE H-3

F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. EN10 OF 22 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

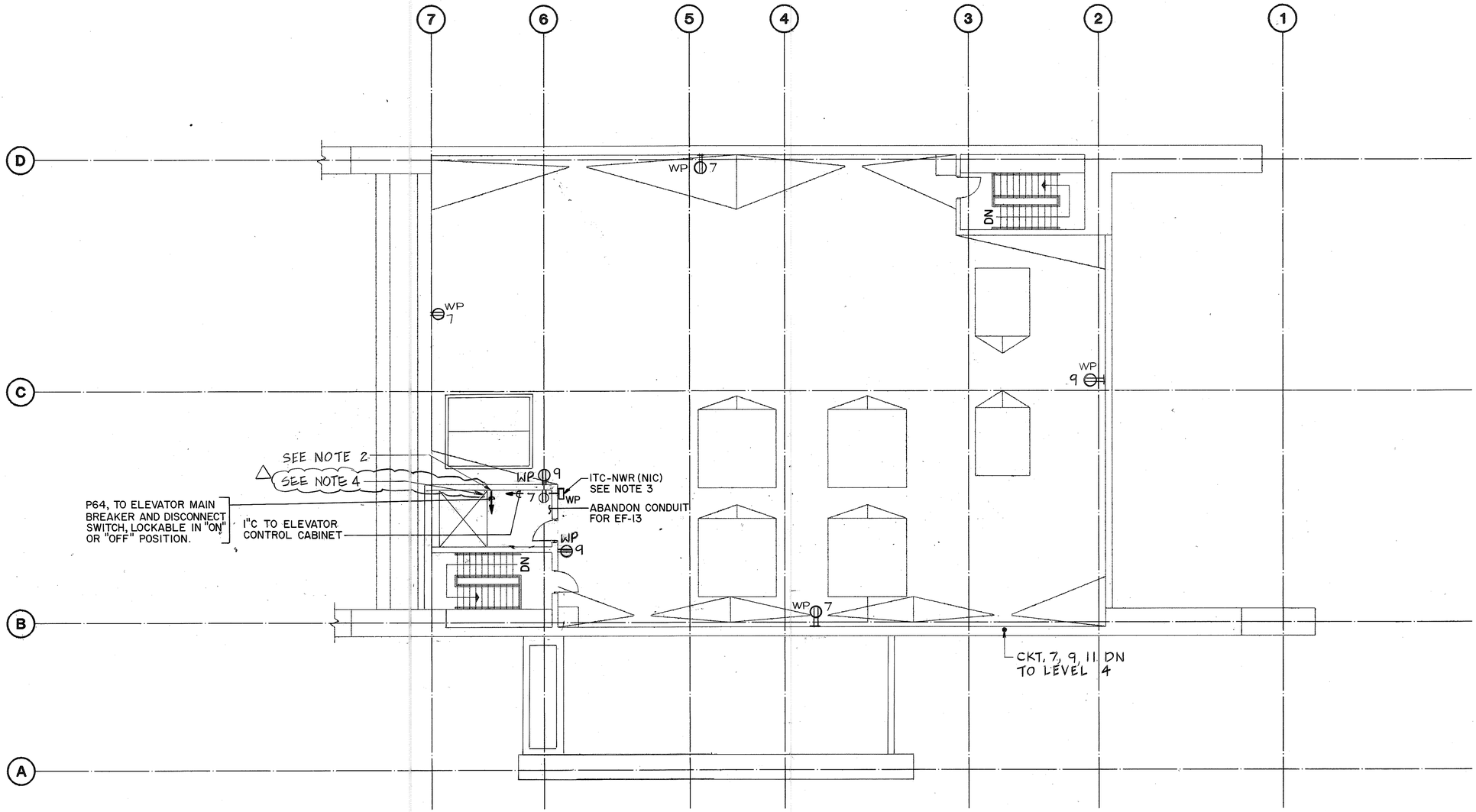
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY P. ANG	6/25/90
NO.	TRACED BY	5/23/90
	DESIGNED BY T.A. HORTON	5/23/90
	QUANTITIES BY	
	CHECKED BY J.T. SASSANI	6/26/90

24 10V152 2410: V152 ES0253.FGB>1 22SEP89-10.38.30

140

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	141	440

N



NOTES:

1. FOR GENERAL NOTES SEE SHT. NO. EN 7.
2. CONNECT TO EXISTING CAPPED CONDUIT & EXTEND AS SHOWN.
3. FOR ITC-NWR, REFER TO SYSTEMS CONTRACT FAIP I-H3-1(65) PLANS.
4. INTERCEPT (E) P64 CONDUIT (ELEVATOR # 1 POWER), UPON ENTERING ELEVATOR SHAFT AND FURNISH AND INSTALL (N) J-BOX, 8"x16"x 6". REPULL (E) ELEVATOR # 1 POWER CONDUCTORS THROUGH J-BOX BACK TO (E) MAIN DISCONNECT WITHOUT SPLICING. FURNISH AND INSTALL 1"C RGS FROM J-BOX TO (N) LOCKABLE FUSED DISCONNECT SWITCH, 240V, 30A, 2 POLE, 20A FUSE. TERMINATE INCOMING 3 # 12 AWG (ELEVATOR CAB LIGHTS) AT (N) DISCONNECT SWITCH WITHOUT SPLICES. FURNISH AND INSTALL 90 MINUTE BATTERY PACK FOR THE ELEVATOR CAB LIGHT, BODINE B-50 OR APPROVED EQUAL. COORDINATE LOCATIONS AND INSTALLATION WITH ELEVATOR SUB-CONTRACTOR AS NECESSARY.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY K. ANG	5-7-90
NOTE BOOK	TRACED BY	5-7-90
	DESIGNED BY I. HORTON	5-7-90
	QUANTITIES BY	6-28-90
NO.	CHECKED BY J.J. SASSANI	

DATE	REVISION
12/22/94	REV. PER DCN 66-055
9/21/94	REV. PER DCN 66-052

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING ROOF PLAN

HALAWA PORTAL BUILDING-IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

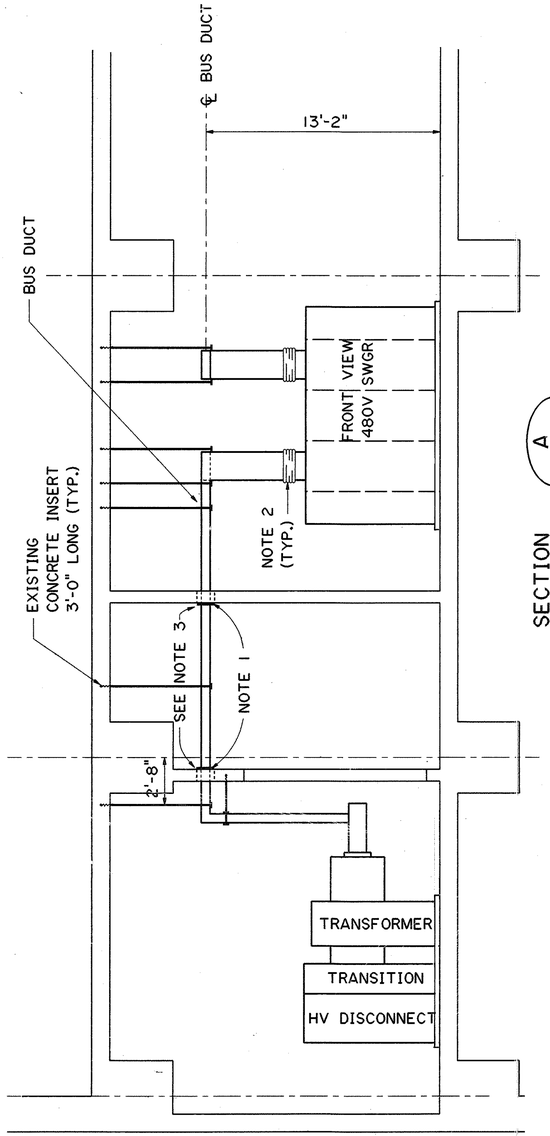
SHEET NO. EN11 OF 22 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

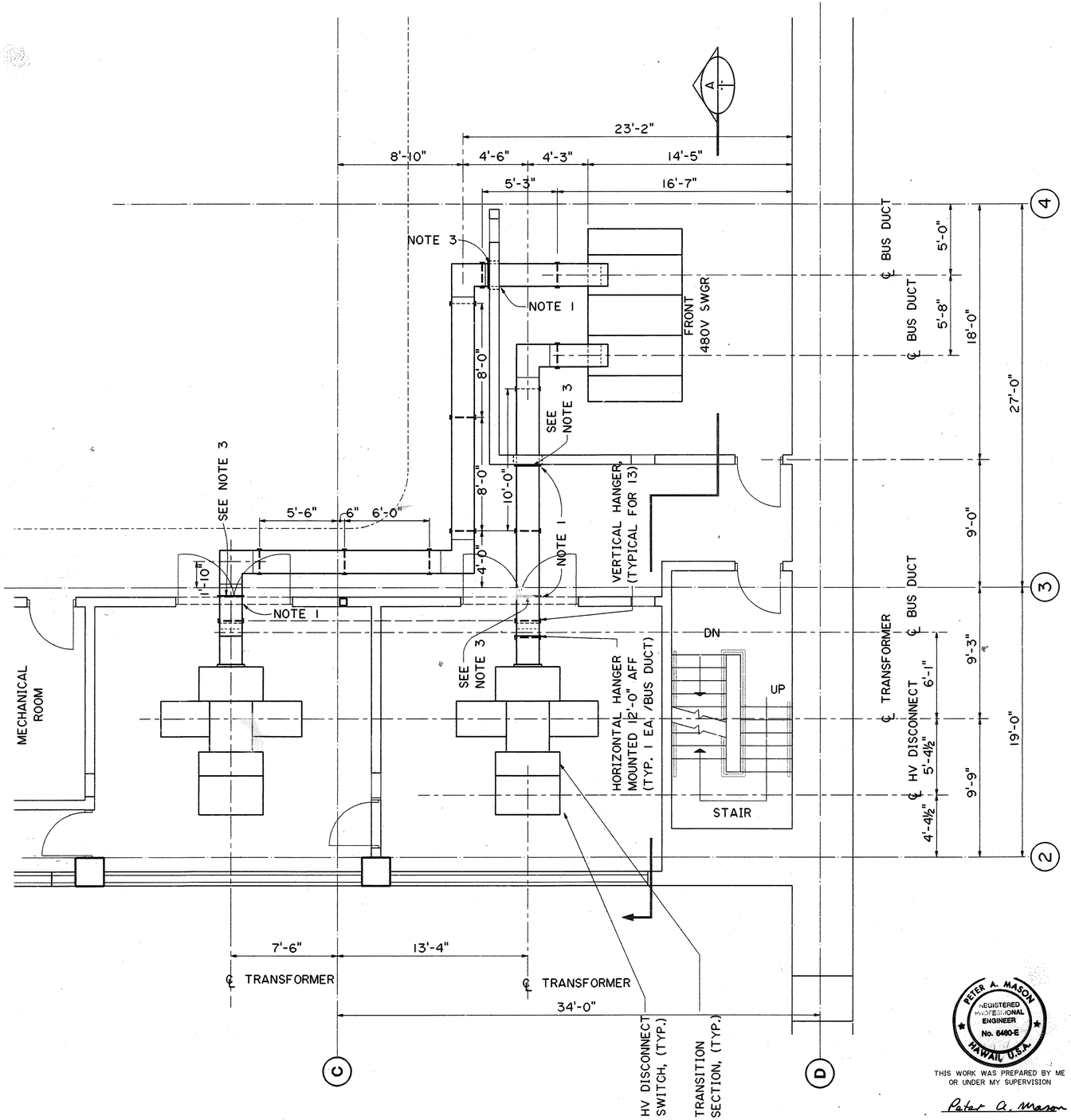
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

2410V152 2410: V152 ES0254.FGB>1 22SEP89-10.41.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	142	440



SECTION A-A



PLAN

NOTES:

1. PROVIDE FIRE STOP AT BUS DUCT WALL PENETRATION.
2. PROVIDE FLEXIBLE CONNECTIONS FOR BUS AND HOUSING.
3. PROVIDE FLANGES FOR WALL PENETRATIONS AT LOCATIONS SHOWN.
4. DIMENSIONS AND LOCATIONS OF EXISTING CEILING INSERTS ARE APPROXIMATE.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	5/9/90
NOTE BOOK	TRACED BY	
	DESIGNED BY J.A. HORTON	4/4/90
NO.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	6/26/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL ARRANGEMENT
480V BUS DUCT
HALAWA PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ¼"=1'-0" DATE: APR 1992

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SHEET NO. EN12 OF 22 SHEETS

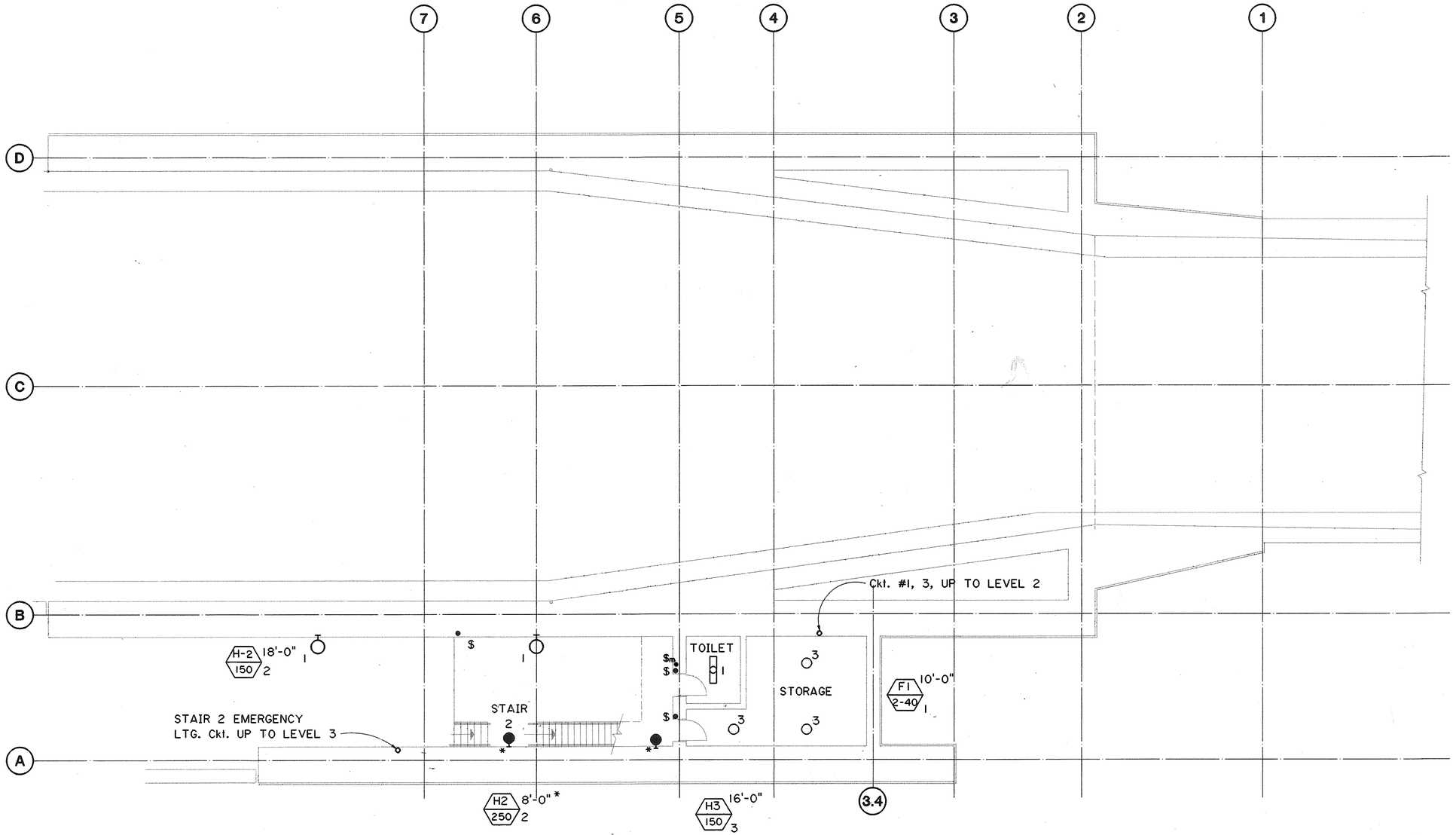
2410V153 2410: V153 ES0312.FGB>1 11JLY90-06.45.20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	143	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



* ABOVE STAIR LEVEL

GRAPHIC SCALE

8' 4' 0' 8' 16'

⅛" = 1'-0"

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6439-E
HAWAII, U.S.A.

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
LEVEL 1 PLAN

HALAWA PORTAL BUILDING-1B
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

SHEET NO. EN13 OF 22 SHEETS

		DATE
SURVEY PLOTTED BY	CADD	6/16/92
DRAWN BY		
TRACED BY		
DESIGNED BY	ROBERT F. JAMES	9/24/92
QUANTITIES BY		
CHECKED BY	J.H. SASSANI	9/24/92

ORIGINAL PLAN
NOTE BOOK
NO.

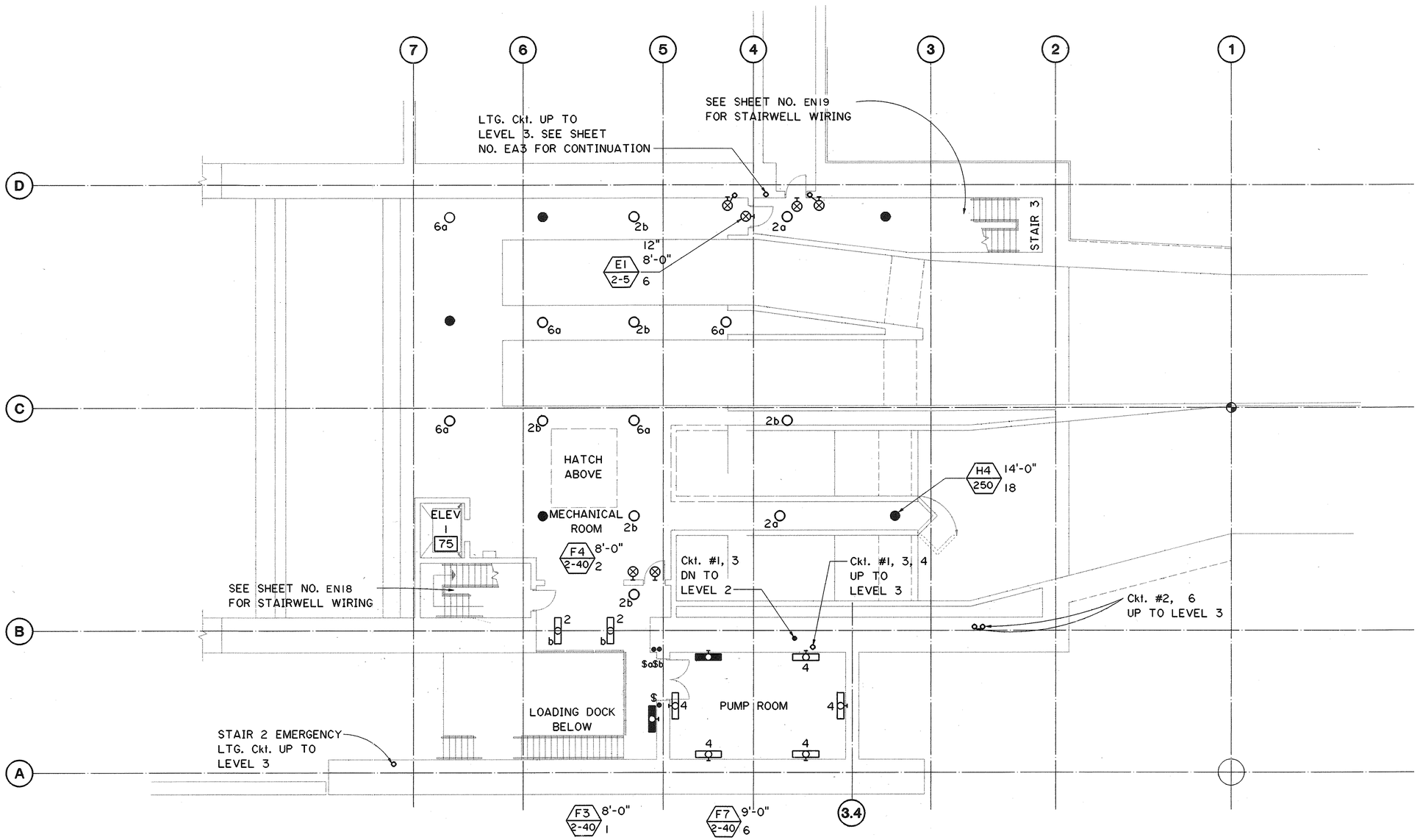
2410V152 2410: V152 ES0188.FGB>1 10JUL90-15.30.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	144	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	CADD	DATE 9/6/96
	DRAWN BY		9/6/96
NOTE BOOK	TRACED BY		9/6/96
	DESIGNED BY	ROBERT F. JAMES	9/6/96
	QUANTITIES BY		9/6/96
NO.	CHECKED BY	J. J. SASSANI	9/6/96

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING LEVEL 2 PLAN

HALAWA PORTALBUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

SHEET NO. EN14 OF 22 SHEETS

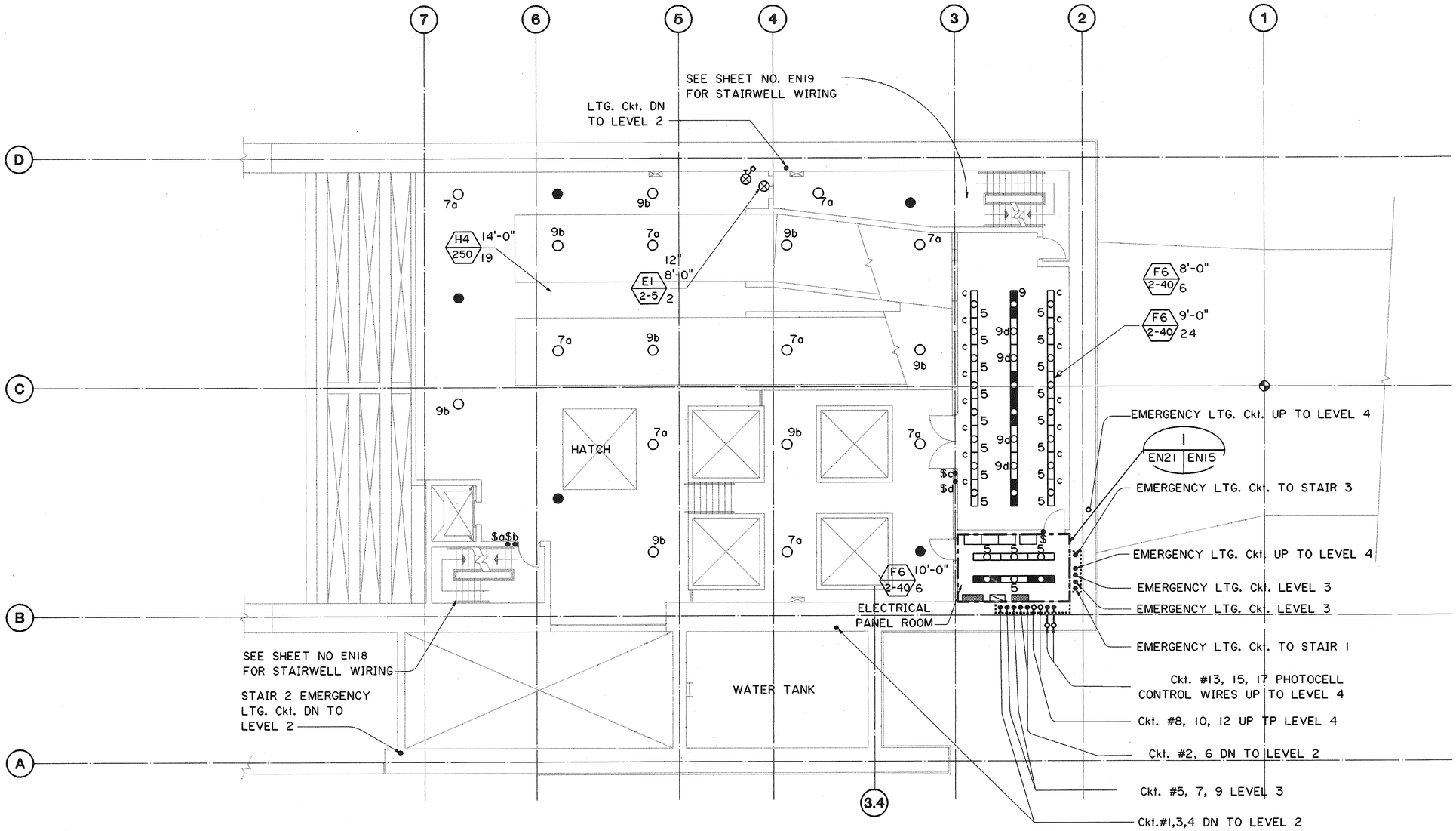
2410V152 2410: V152 ES0189.FGB>1 10JUL90-14.02.10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	145	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	6/16/92
NOTE BOOK	TRACED BY	DATE
	DESIGNED BY ROBERT F. JAMES	2/18/92
NO.	QUANTITIES BY	DATE
	CHECKED BY J. J. SASSANI	6/16/92

GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 3460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING LEVEL 3 PLAN

HALAWA PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

SHEET NO. EN15 OF 22 SHEETS

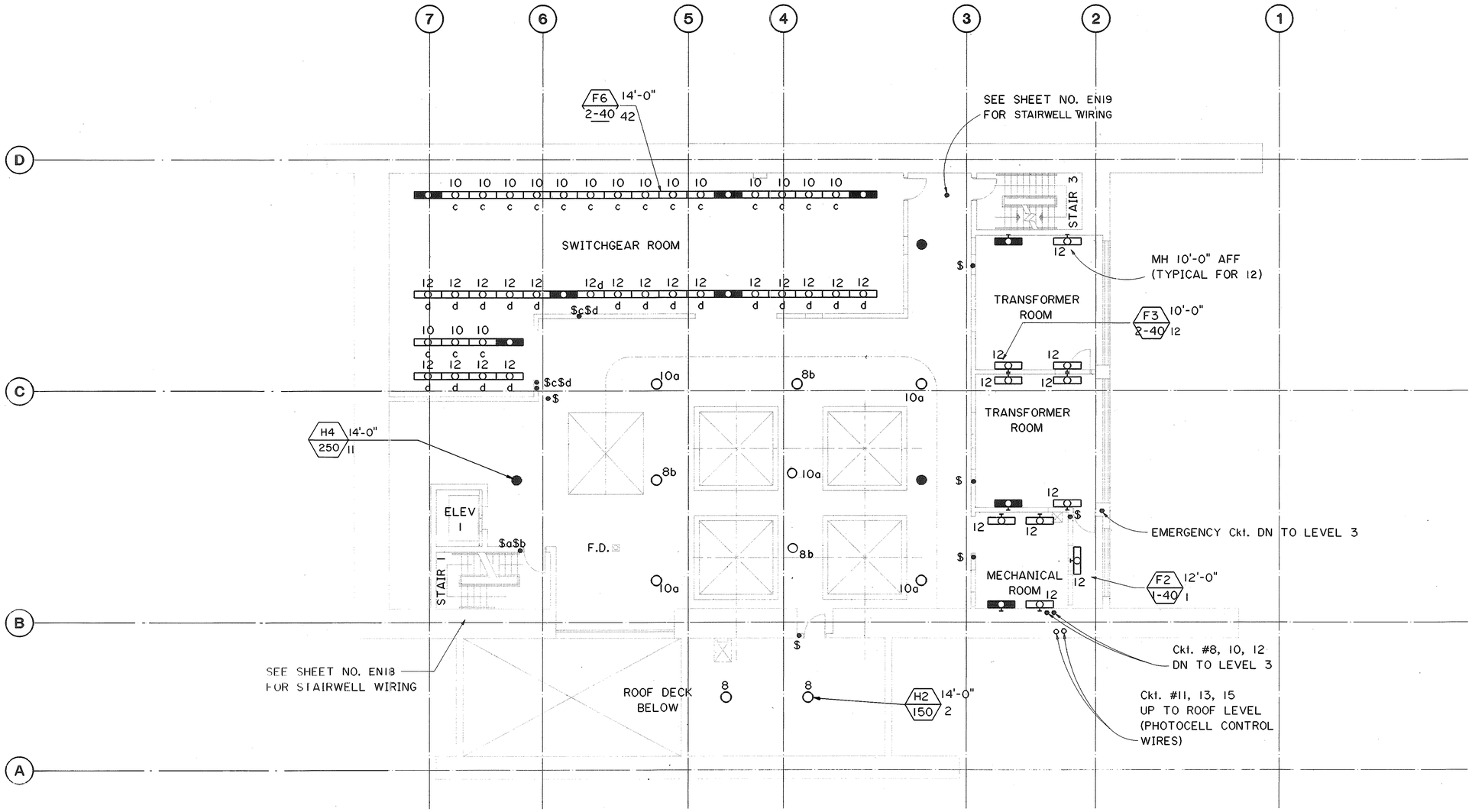
2410V152 2410: V152 ES0190.FGB;1 10JUL90-15.50.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	146	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
LEVEL 4 PLAN
HALAWA PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

SHEET NO. EN16 OF 22 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY ADD	6/6/90
TRACED BY	6/14/90
DESIGNED BY ROBERT E. JAMES	
QUANTITIES BY	
CHECKED J.J.SASSANI	6/20/90

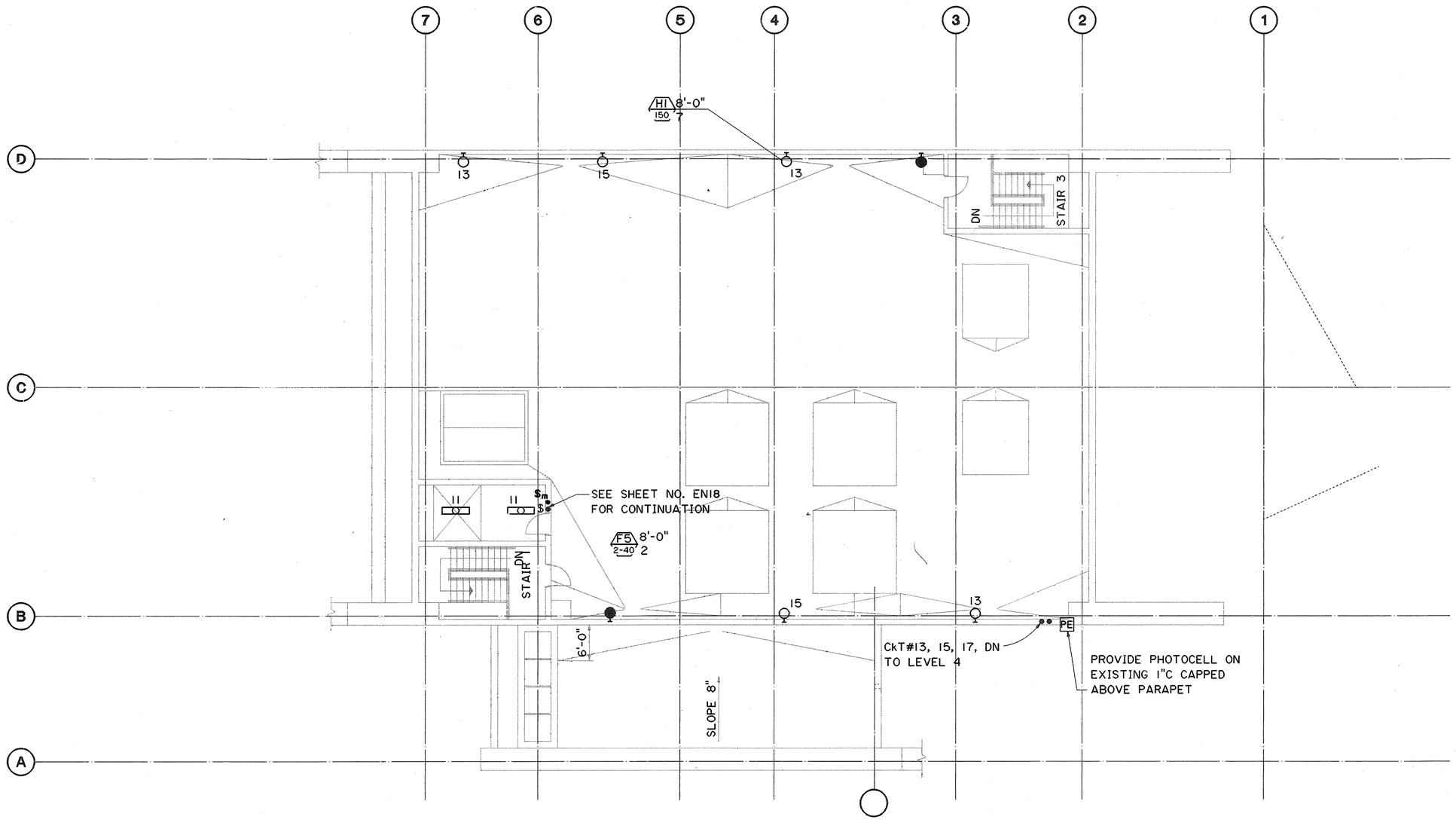
FINAL PLANS
NOTE BOOK
NO.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	147	440

N

NOTES:

1. SEE SHT. NO. E1 FOR GENERAL NOTES.



ORIGINAL PLAN
SURVEY PLOTTED BY CADD 8/6/90
DRAWN BY
TRACED BY
NOTE BOOK DESIGNED BY ROBERT F. JAMES 9/5/90
QUANTITIES BY
NO. CHECKED BY J.J. SASSANI 9/6/90

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

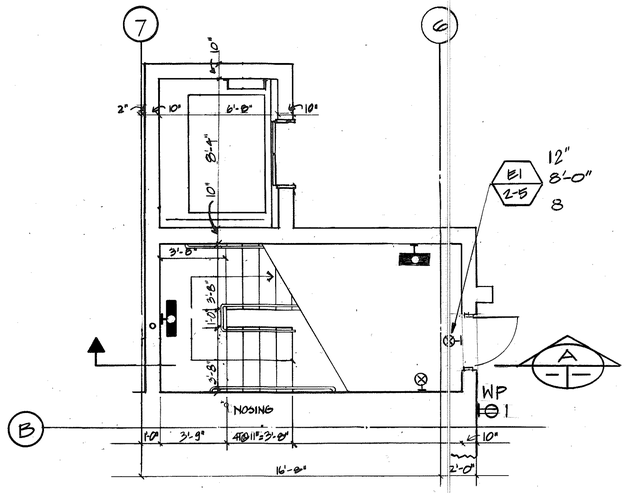
LIGHTING WIRING
ROOF PLAN
HALAWA PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8"=1'-0" DATE: APR 1992

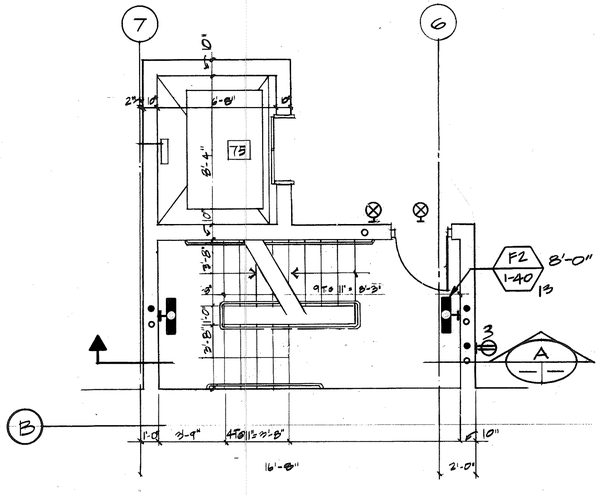
SHEET NO. EN17 OF 22 SHEETS

2410V152 2410: V152 ES0192.FGB>1 10JUL90-15.15.10

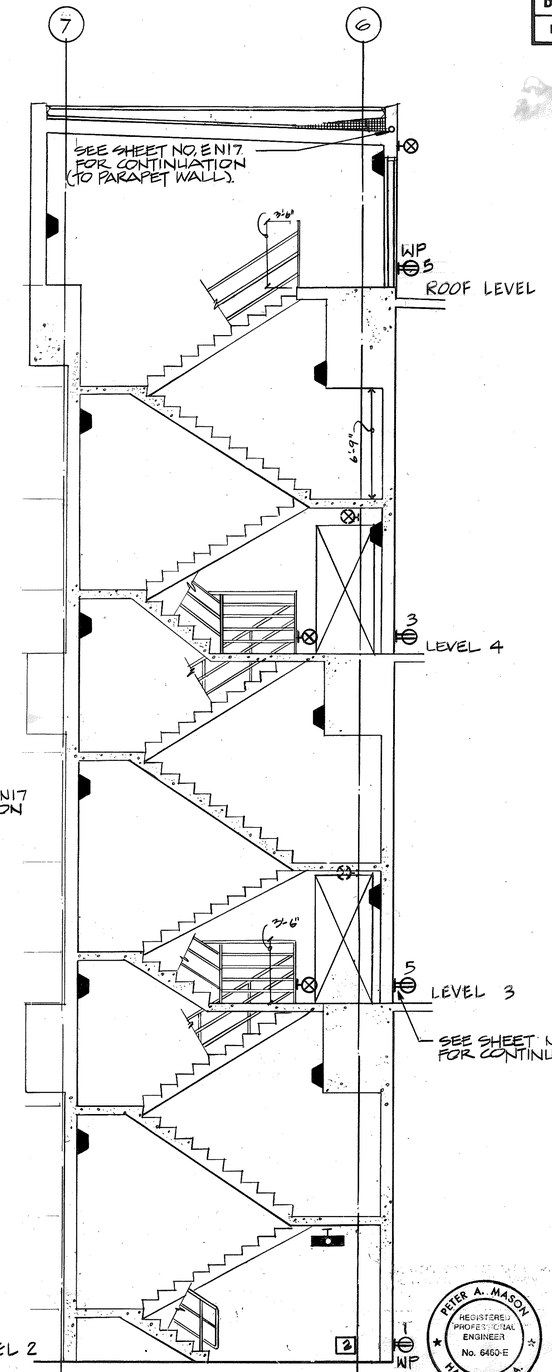
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	148	440



PLAN - LEVEL 2 & 2.25

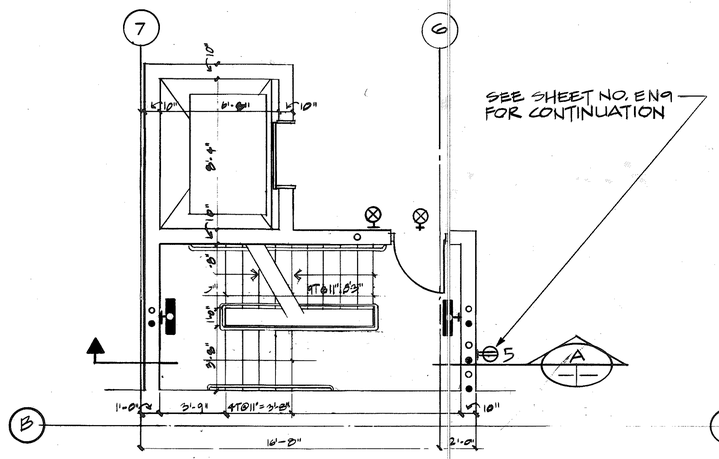


PLAN - LEVEL 4 & 4.25

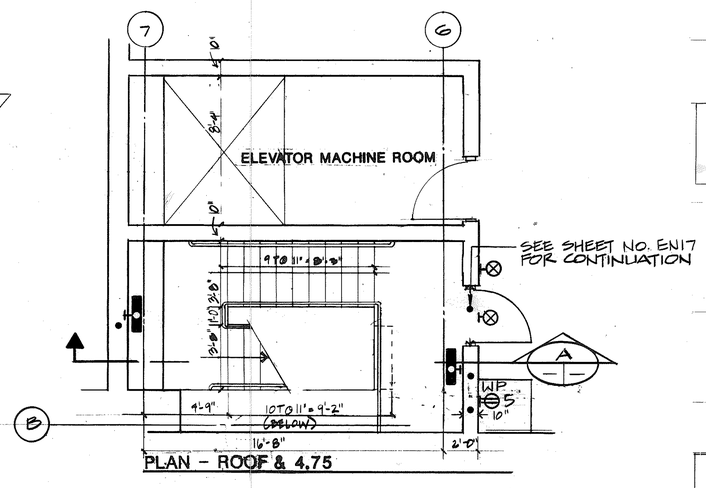


SECTION - STAIR 1

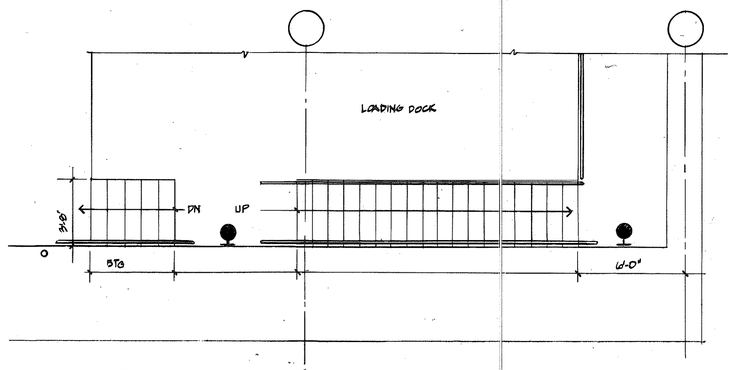
EXIT SIGNS
INTERIOR — TYPE E-1
EXTERIOR — TYPE E-2



PLAN - LEVEL 3 & 3.25



PLAN - ROOF & 4.75



PLAN - STAIR 2 @ LOADING DOCK

ORIGINAL PLANS	SURVEY PLOTTED BY	R. ANG	DATE	6-12-90
	DRAWN BY			
NOTE BOOK	TRACED BY	R. JAMES		1-15-90
	DESIGNED BY			
NO.	QUANTITIES BY			
	CHECKED BY	J.J. SASSANI		6-26-90

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

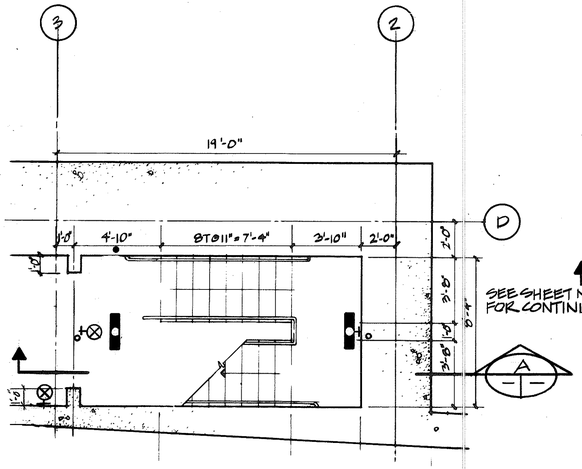
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING & RECEPTACLES
STAIR 1 & 2
HALAWA PORTAL BUILDING (IB)
INTERSTATE ROUTE H-3
F. A. I. PROJ. NO. I-H3-1(66)

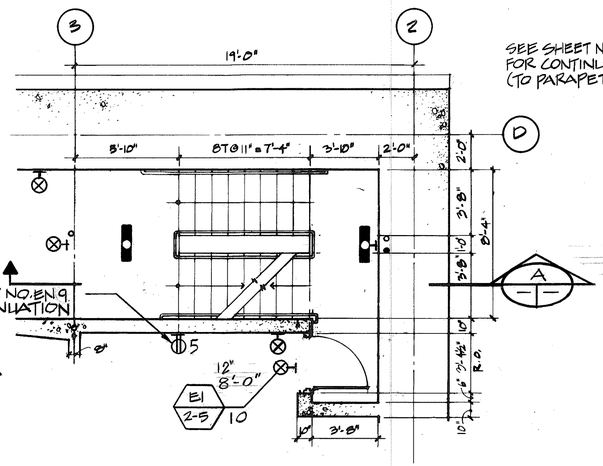
SCALE: 1/4" = 1'-0" DATE: APR 1992

SHEET NO. EN18 OF 22 SHEETS

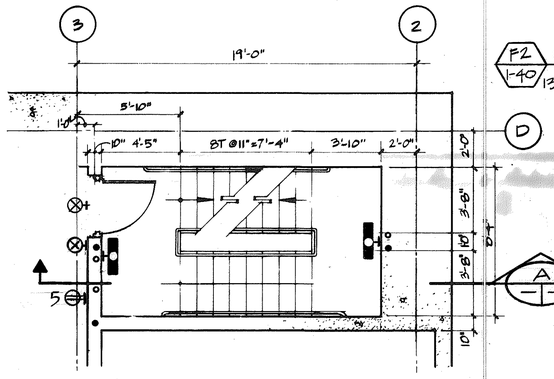
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	149	440



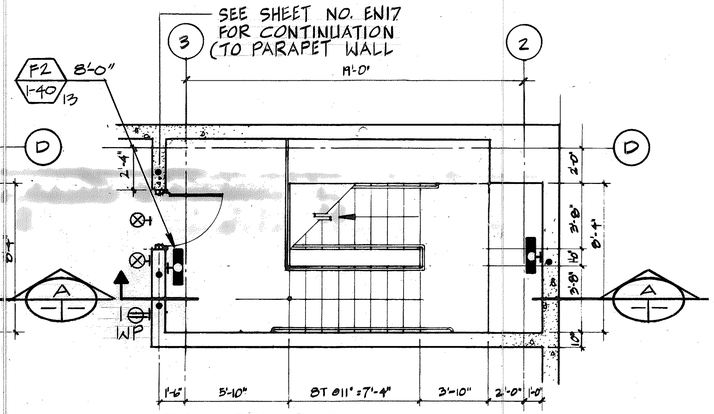
PLAN – LEVEL 2 & 2.25



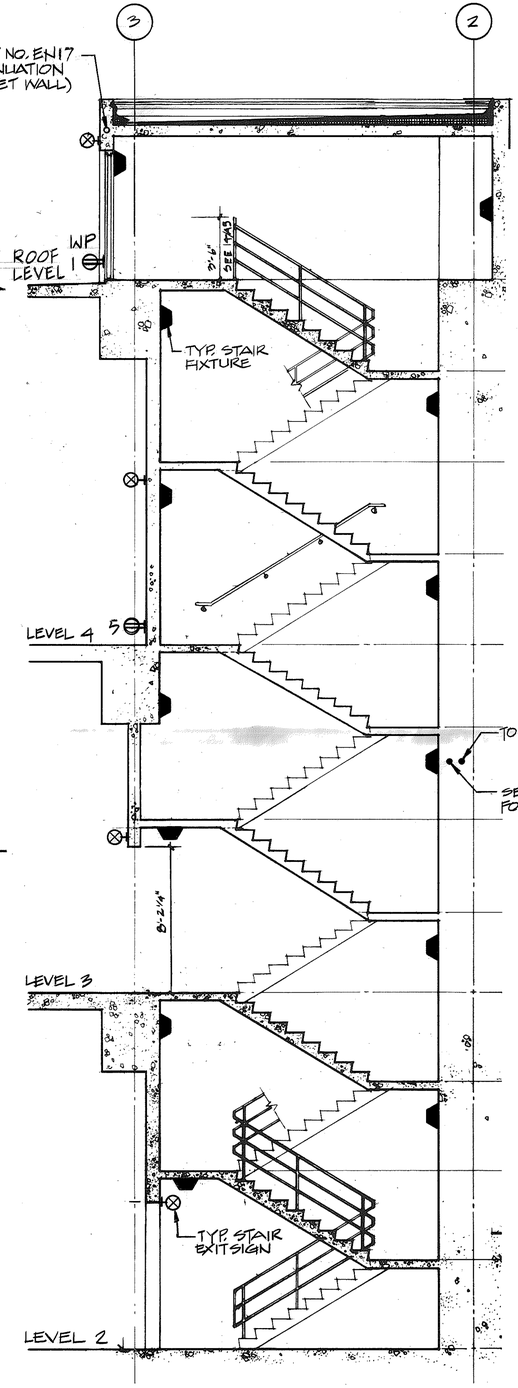
PLAN – LEVEL 3 & 3.25



PLAN – LEVEL 4 & 3.75



PLAN – ROOF & 4.75



SECTION – STAIR 3 (A)

EXIT SIGNS
INTERIOR — TYPE E-1
EXTERIOR — TYPE E-2

GRAPHIC SCALE:
4' 2' 0' 4' 8'
1/4" - 1'-0"

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING & RECEPTACLES
STAIR 3
HALAWA PORTAL BUILDING (IB)
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/4" = 1'-0" DATE: APR 1992

SHEET NO. EN 19 OF 22 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	R. ANG	DATE 6-12-90
	DRAWN BY		
NOTE BOOK	TRACED BY	R. JAMES	1-15-90
	DESIGNED BY		
	QUANTITIES BY		
No.	CHECKED BY	J.J. SASSANI	6-26-90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	150	440

SYSTEM: 480Y/277V 3Ø, 4W **PANEL –** IB3HL1 **PANEL LOCATION:** ELECT. ROOM, LEVEL 3, HALAWA IB
MAINS: 125A LUGS ONLY **SUPPLY LOCATION:** PANEL IB3HP ELECT. ROOM, LEVEL 3, HALAWA IB
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
LEVEL 1	1	0.49			100	1	20	#12	#12	100	1	20	2.04			2	LEVEL 2
↓	3		0.60											0.45		4	↓
LEVEL 3	5			2.34											2.17	6	
↓	7	2.79											1.33			8	LEVEL 4
↓	9		2.84											3.10		10	↓
ROOF	11			0.18											2.52	12	
↓	13	0.60														14	SPARE
↓	15		0.40													16	SPARE
SPARE	17														6.46	18	T4-5
SPARE	19								#8	3	35	6.52				20	
SPACE	21													6.59		22	↓
SPACE	23															24	SPACE
		3.88	3.84	2.52									9.89	10.14	11.15		

TOTAL CONNECTED 41.42 kVA — A 13.77, B 13.98, C 13.67
ESTIMATED MAXIMUM DEMAND 41.42 kVA — A 13.77, B 13.98, C 13.67

SYSTEM: 208Y/120V 3Ø, 4W **PANEL –** IB3LP **PANEL LOCATION:** ELECT. ROOM, LEVEL 3, HALAWA IB
MAINS: 125A LUGS ONLY **SUPPLY LOCATION:** PANEL IB3HLI VIA XFMR T4-5, ELECT. ROOM, LEVEL 3, HALAWA IB
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
LEVEL 3, STAIR 1,	1	1.90			100	1	20	#12	#12	100	1	20	0.90			2	LEVEL 4
& STAIR 3	3		0.90											0.90		4	
↓	5			1.08											0.90	6	
ROOF LEVEL	7	0.54											1.01			8	LEVEL 1 & LEVEL 2
	9		0.54											0.90		10	
↓	11			0.31											1.08	12	
MCC HTR	13	1.5							#12				2.0			14	600V SWGR
15 KV	15		2.7			2	30	#10			3	20		2.0		16	HEATER
SWGR HTR	17			2.7											2.0	18	
ELEV. #1 LIGHTS	19	0.2				1	2	#12	#12		2	20	0.3			20	XFMR DISC
SPACE	21													0.3		22	HEATER
SPACE	23															24	
		4.14	4.14	4.09									4.21	4.1	3.98		

TOTAL CONNECTED 24.66 kVA — A 8.35, B 8.24, C 8.07
ESTIMATED MAXIMUM DEMAND 19.73 kVA — A 6.68, B 6.59, C 6.46

SYSTEM: 277V 1Ø, 3W* **PANEL-** IB3LE1 **PANEL LOCATION:** ELECTRICAL ROOM, LEVEL 3, HALAWA IB
MAINS: 125A SUBFEED (DUAL) LUGS ONLY **SUPPLY LOCATION:** PANELS IB3HP VIA ATS, ELECT. ROOM LEVEL 3, HALAWA IB & CBMHE, CONTROL BLDG.
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD	CKT. NO.	SERVICE
STAIR 1, STAIR 2, & ROOF	1	1.40	100	1	20	#12	#12	100	1	20	2.04	2	STAIR 3, LEVEL 2, & ROOF
LEVEL 3	3	2.09	100	1	20	#12	#12	100	1	20	1.47	4	LEVEL 4
SPARE	5		100	1	20		#12	100	1	20	0.87	6	TNL. ENTRANCE LTG.
SPARE	7		↓	↓	↓			100	1	20		8	SPARE
SPARE	9			1	40							10	SPARE
SPACE	11		↓					↓	↓	↓		12	SPACE
	13											14	SPACE
	15											16	
	17											18	
		3.49									4.38		

TOTAL CONNECTED 7.87 kVA — 7.87
ESTIMATED MAXIMUM DEMAND 7.87 kVA — 7.87

* JUMP ALL PHASES TOGETHER

SYSTEM: 120/240V 1Ø, 3W **PANEL -** IB3SE **PANEL LOCATION:** ELECT. ROOM, LEVEL 3, HALAWA IB
MAINS: 60AT/100AF 2P CB **SUPPLY LOCATION:** ATS ELECT. ROOM, LEVEL 3, HALAWA IB
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLE	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLE	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
	1				1	20							1	20			2	
	3																4	
	5																6	
	7																8	
SPACE	9																10	SPACE
↓	11																12	↓

NOTE
SERVICE CONNECTIONS TO THIS PANEL ARE PART OF CONTRACT F.A.I. PROJ. NO. I-H3-1(65)

TOTAL CONNECTED
ESTIMATED MAXIMUM DEMAND — A, B, C

SURVEY PLOTTED BY
DRAWN BY G. OW-YANG DATE 5-4-90
TRACED BY
DESIGNED BY T. SANCHEZ 5-1-90
QUANTITIES BY
CHECKED BY J.J. SASSANI 5-26-90
ORIGINAL PLAN
NOTE BOOK
No.

PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6480-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

DATE	REVISION
12/21/94	REVISED PER DCN 66-044
12/16/94	REVISED PER DCN 66-055
6/7/94	REVISED PER DCN 66-044
8/19/93	REVISED SCHEDULES PER DCN 66-017

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PANEL SCHEDULES

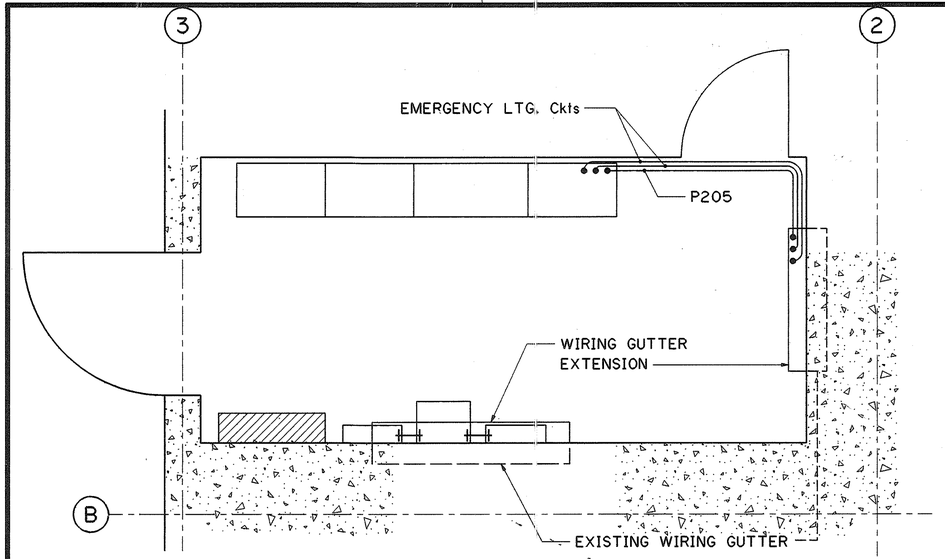
HALAWA PORTAL BUILDING (IB)

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

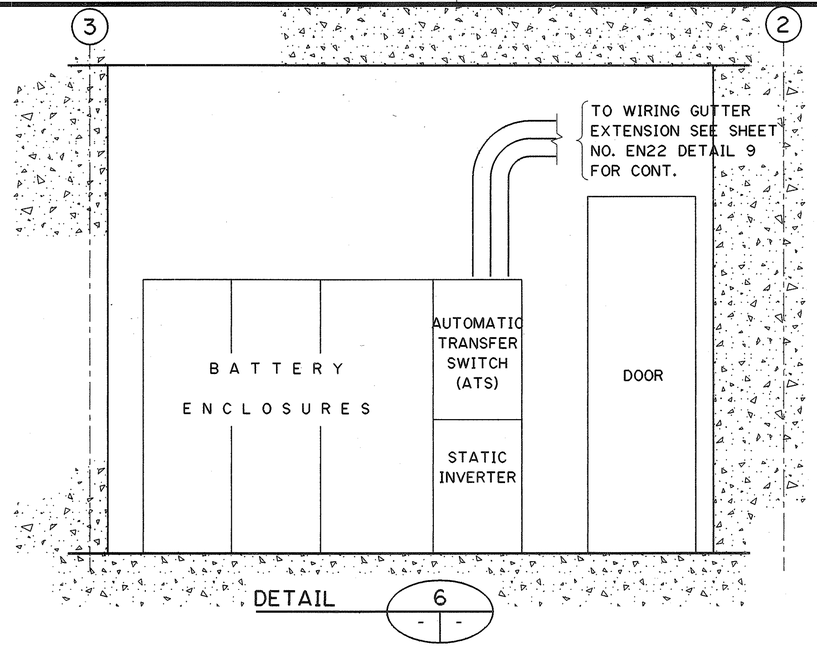
SHEET NO. EN20 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	151	440



ELECTRICAL ROOM LAYOUT PLAN
SCALE: ½" = 1'-0"

DETAIL 1 (EN16 | EN21)

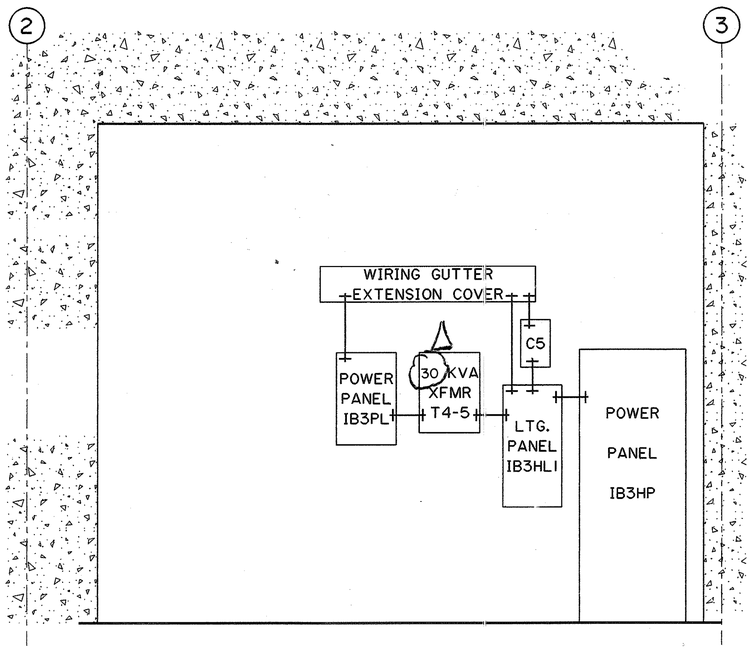


DETAIL 6 (- | -)

ELECTRICAL ROOM LAYOUT (NORTH WALL)
SCALE: ½" = 1'-0"

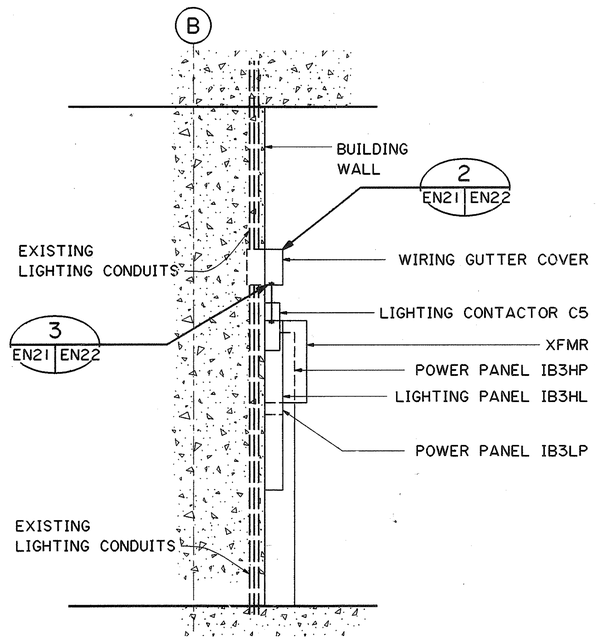
NOTES:

1. WIRING GUTTER EXTENSIONS & COVER SHALL BE FABRICATED WITH CODE GAGE STEEL HOT DIP GALVANIZED AFTER FABRICATION. ENCLOSURE CLASSIFICATION SHALL BE NEMA 4.
2. WIRING GUTTER EXTENSION TO PANEL, & PANEL TO PANEL CONNECTION PROVIDE 3" NIPPLE (OR CONDUIT) WITH LOCKNUT & BUSHINGS.
3. SEE SHEET NO. EM10 & EQ10 FOR PANEL IB3HP & OB3HP CONDUIT LAYOUT CONNECTIONS RESPECTIVELY.



ELECTRICAL ROOM LAYOUT (SOUTH WALL)
SCALE: ½" = 1'-0"

DETAIL 5 (- | -)



ELECTRICAL PANEL ROOM LAYOUT (PROFILE VIEW)
SCALE: ½" = 1'-0"

DETAIL 4 (- | -)

GRAPHIC SCALE
2' 1' 0' 2' 4'
½" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	CADD	DATE 6/14/90
	DRAWN BY	* * *	* * *
	TRACED BY	T.Y.S./R.F.J.	8/17/90
NOTE BOOK	DESIGNED BY		
	QUANTITIES BY	J. J. SASSANI	6/16/94
NO.	CHECKED BY		

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

Peter A. Mason

6/7/94	REVISED PER DCN 66-044
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING INSTALLATION DETAILS - 1

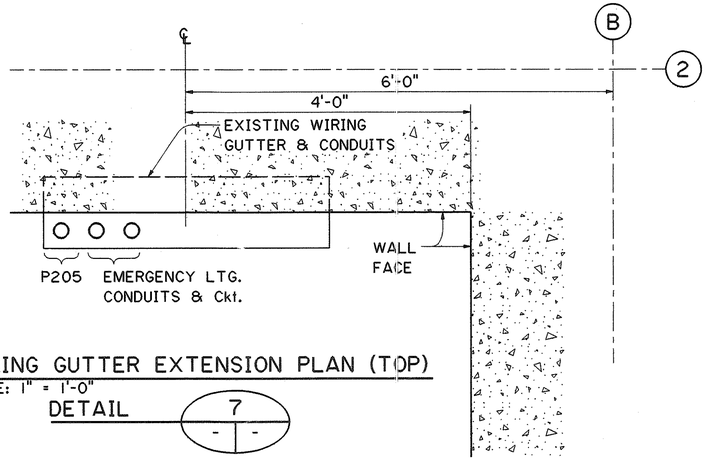
HALAWA PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

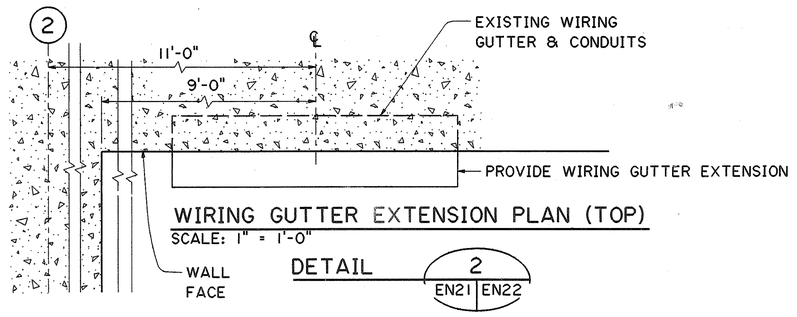
SHEET NO. EN21 OF 22 SHEETS

2410V156 2410: V156 ES0329.FGB;1 10JLY90-15.21.30

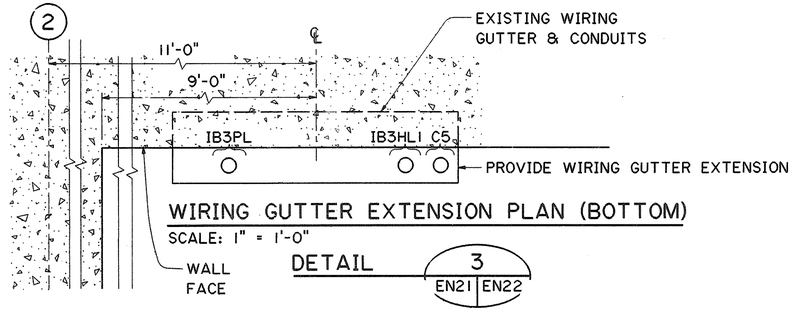
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	152	440



WIRING GUTTER EXTENSION PLAN (TOP)
SCALE: 1" = 1'-0"
DETAIL 7



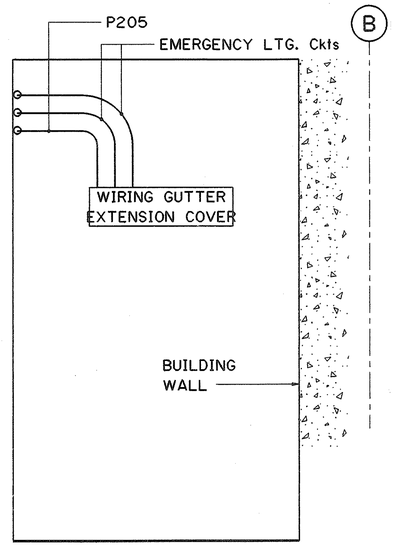
WIRING GUTTER EXTENSION PLAN (TOP)
SCALE: 1" = 1'-0"
DETAIL 2 (EN21 | EN22)



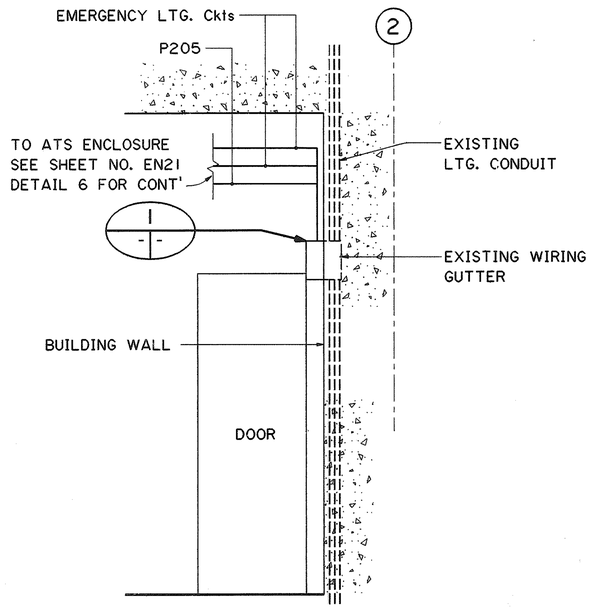
WIRING GUTTER EXTENSION PLAN (BOTTOM)
SCALE: 1" = 1'-0"
DETAIL 3 (EN21 | EN22)

NOTES:

SEE SHT. NO. EN21
FOR NOTES.



ELECTRICAL ROOM LAYOUT (EAST WALL)
DETAIL 8 (EN21 | EN22)
SCALE: ½" = 1'-0"



ELECTRICAL PANEL ROOM LAYOUT
(PROFILE VIEW)
DETAIL 9 (EN21 | EN22)
SCALE: ½" = 1'-0"

GRAPHIC SCALE
1' 0' 1' 2'
1" = 1'-0"

GRAPHIC SCALE
2' 1' 0' 2' 4'
½" = 1'-0"

PETER A. MASON
REGISTERED
PROFESSIONAL
ENGINEER
No. 6400-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING INSTALLATION
DETAILS - 2
HALAWA PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

SHEET NO. EN22 OF 22 SHEETS

ORIGINAL PLAN
NOTE BOOK

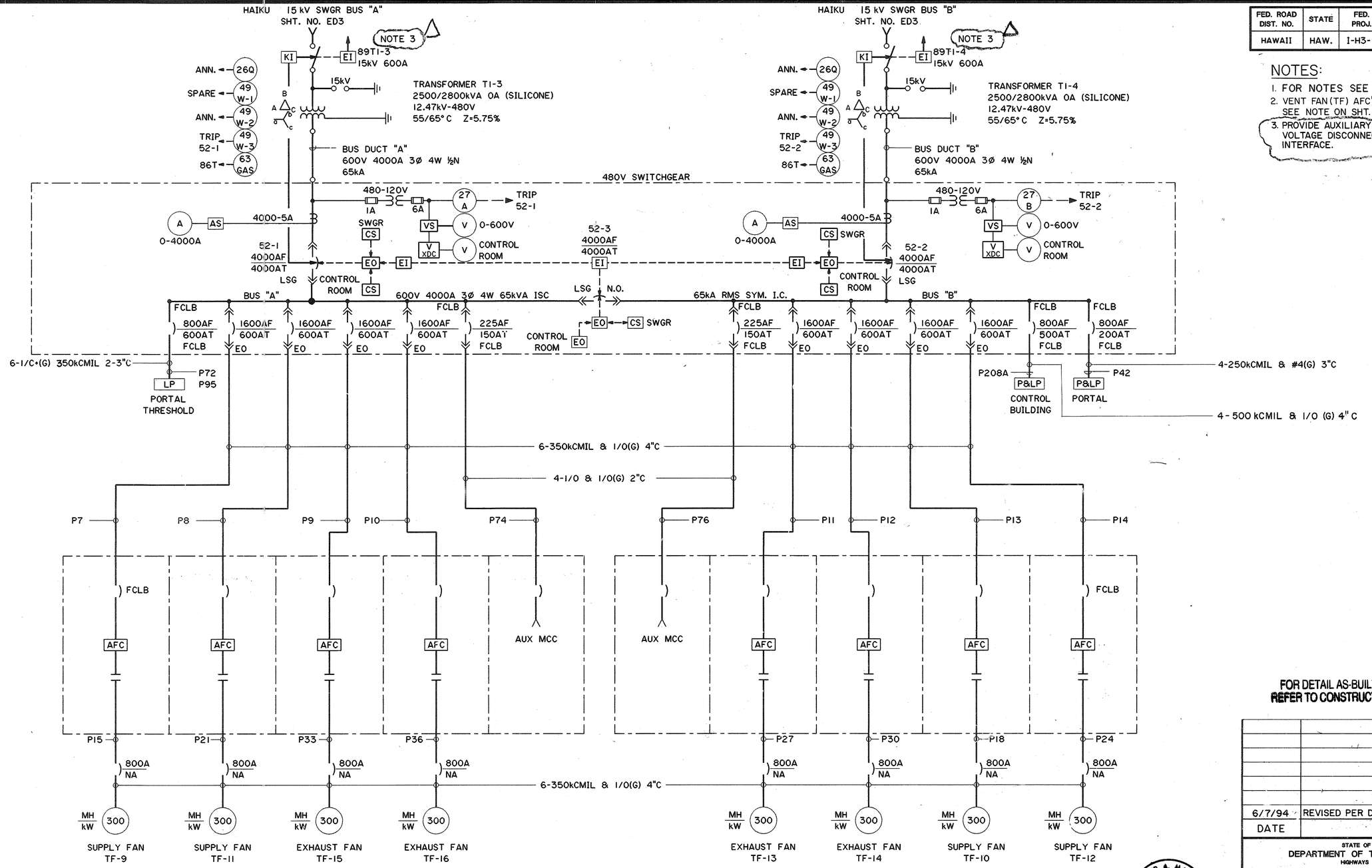
SURVEY PLOTTED BY
DRAWN BY CADD DATE 8/4/92
TRACED BY " " 8/17/92
DESIGNED BY T.Y.S./R.F.J. " 8/17/92
QUANTITIES BY " " 8/17/92
CHECKED BY J. J. SASSANI " 8/17/92

2410V156 2410: V156 ES0331.FGB/1 10JULY90-15.27.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	153	440

NOTES:

1. FOR NOTES SEE SHEET NO. EN1.
2. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13
3. PROVIDE AUXILIARY CONTACT IN HIGH VOLTAGE DISCONNECT FOR SYSTEMS INTERFACE.



FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

6/7/94	REVISED PER DCN 66-044
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM
HALAWA OB SUBSTATION

HALAWA PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. E01 OF 22 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

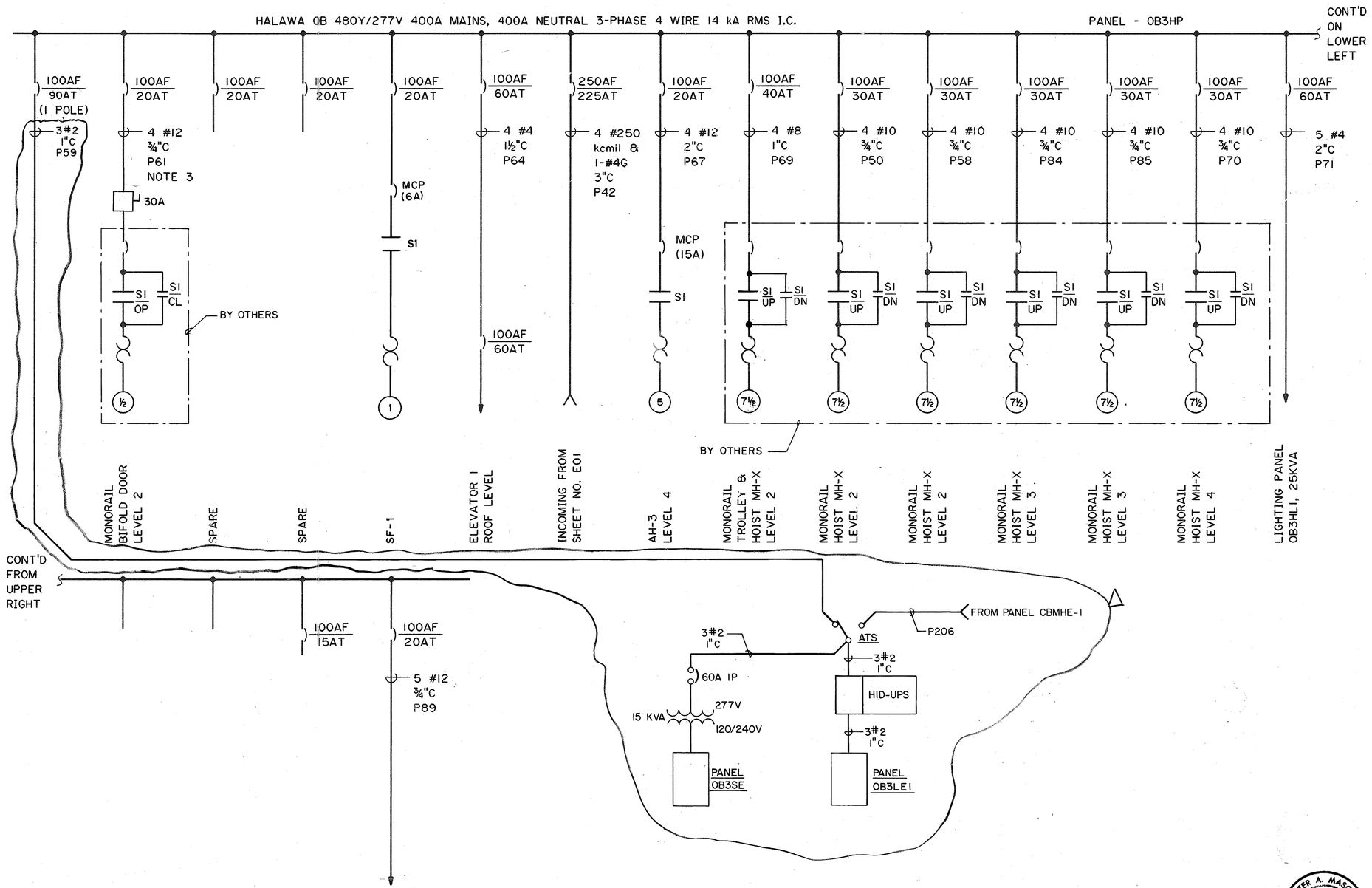
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	
	DRAWN BY	CAD 5-14-90
	TRACED BY	
NOTE BOOK	DESIGNED BY	R.JAMES 5-14-90
	QUANTITIES BY	
NO.	CHECKED BY	J.J. SASSANI 5-16-90

2410V154 2410: V154 ES0121.FGB;1 12JUN90-16.41.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	154	440



NOTES:

1. THE NUMBER OF WIRES SHOWN FOR EACH CONDUIT INCLUDES ONE GROUNDING WIRE UNLESS NOTED OTHERWISE.
2. SOME FEEDER CABLES SHARE COMMON CONDUIT RISERS AS SHOWN ON POWER WIRING LEVEL 3 PLAN.
3. ALL CB'S ARE THREE (3) POLE UNLESS NOTED OTHERWISE.

ABBREVIATIONS:

MCP	MOTOR CIRCUIT PROTECTOR
SI	SIZE 1 MOTOR STARTER

ORIGINAL DRAWING	SURVEY PLOTTED BY	CAD	DATE	5-14-90
	DRAWN BY	"	"	5-14-90
	TRACED BY	"	"	5-14-90
NOTE BOOK	DESIGNED BY	R. JAMES	"	5-4-90
	QUANTITIES BY	"	"	5-4-90
NO.	CHECKED BY	J.J. SASSANI	"	6-26-90

DATE	REVISION
12/21/94	REVISED PER DCN 66-044
3/9/94	ADDED SF-1 PER DCN 66-039
8/19/93	REVISED SCHEDULES PER DCN 66-017

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM
480Y/277V POWER
HALAWA PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. E02 OF 22 SHEETS

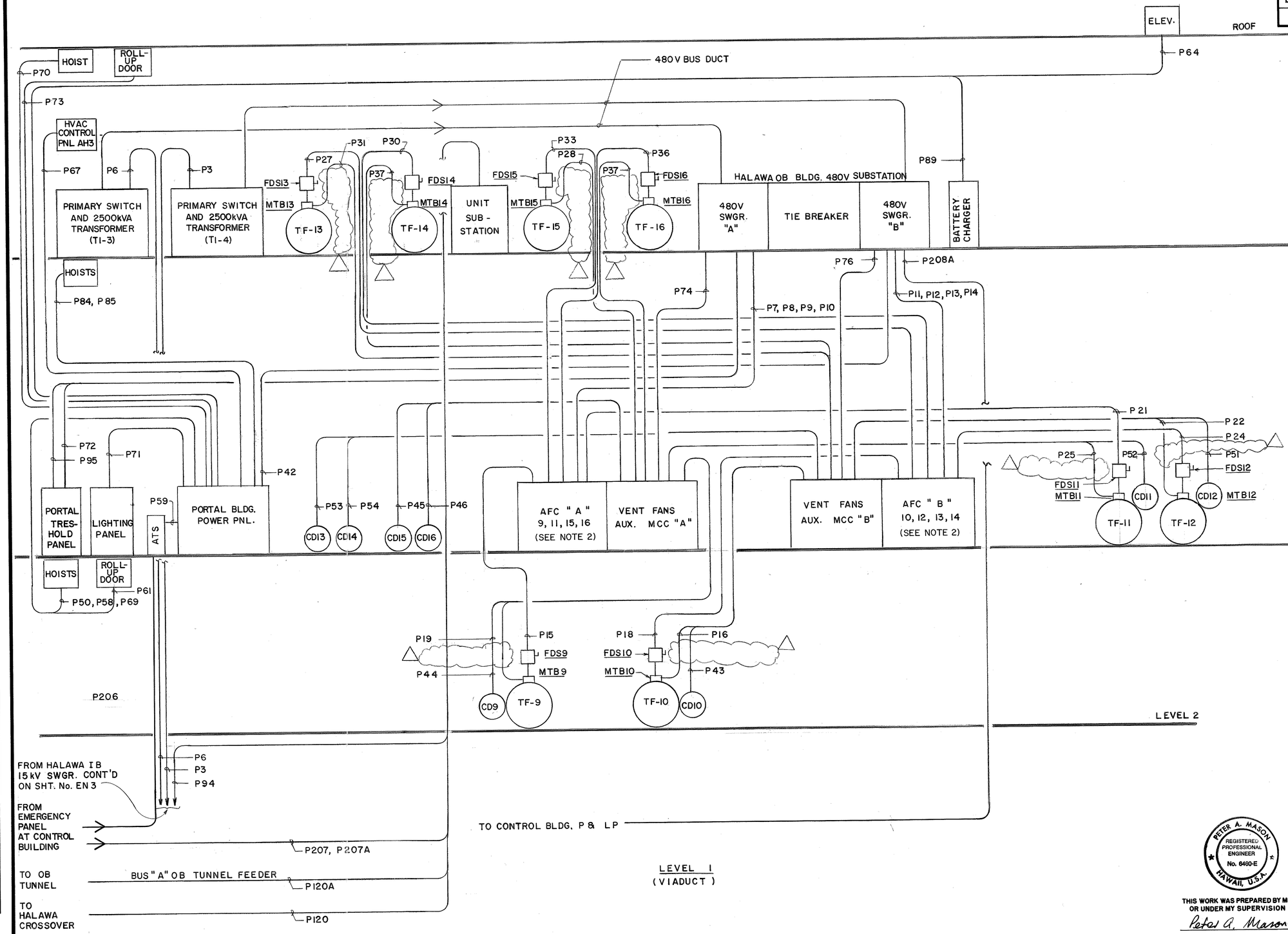
PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6480-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V152 2410: V152 ES0303.FGB>1 0:JULY90-12.55.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	155	440



NOTES:

1. SEE SHT. NO. E04 FOR CONTROL WIRING PROVISIONS.
2. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13

LEGEND:

TF	TUNNEL FAN
CF	COOLING FAN
CD	CONTROL DAMPER
AFC	ADJUSTABLE FREQUENCY CONTROLLER.
ATS	AUTOMATIC TRANSFER SWITCH
MHDS	MOTOR HEATER DISCONNECT SW.
FDS	FAN DISCONNECT SWITCH
MTB	MOTOR TERMINAL BOX
CFDS	COOLING FAN DISCONNECT SW
FP	FAN PANEL

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY R. CUADRO	6/4/90
NOTE BOOK	TRACED BY	
	DESIGNED BY T.A. HORTON	5/9/90
No.	QUANTITIES BY	
	CHECKED BY T.J. SASSANI	6/28/90

DATE	REVISION
6/22/93	DELETE AUX. COOLING FANS PER
	DCN 66-012

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RISER DIAGRAM
POWER
HALAWA PORTAL BUILDING - OB

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

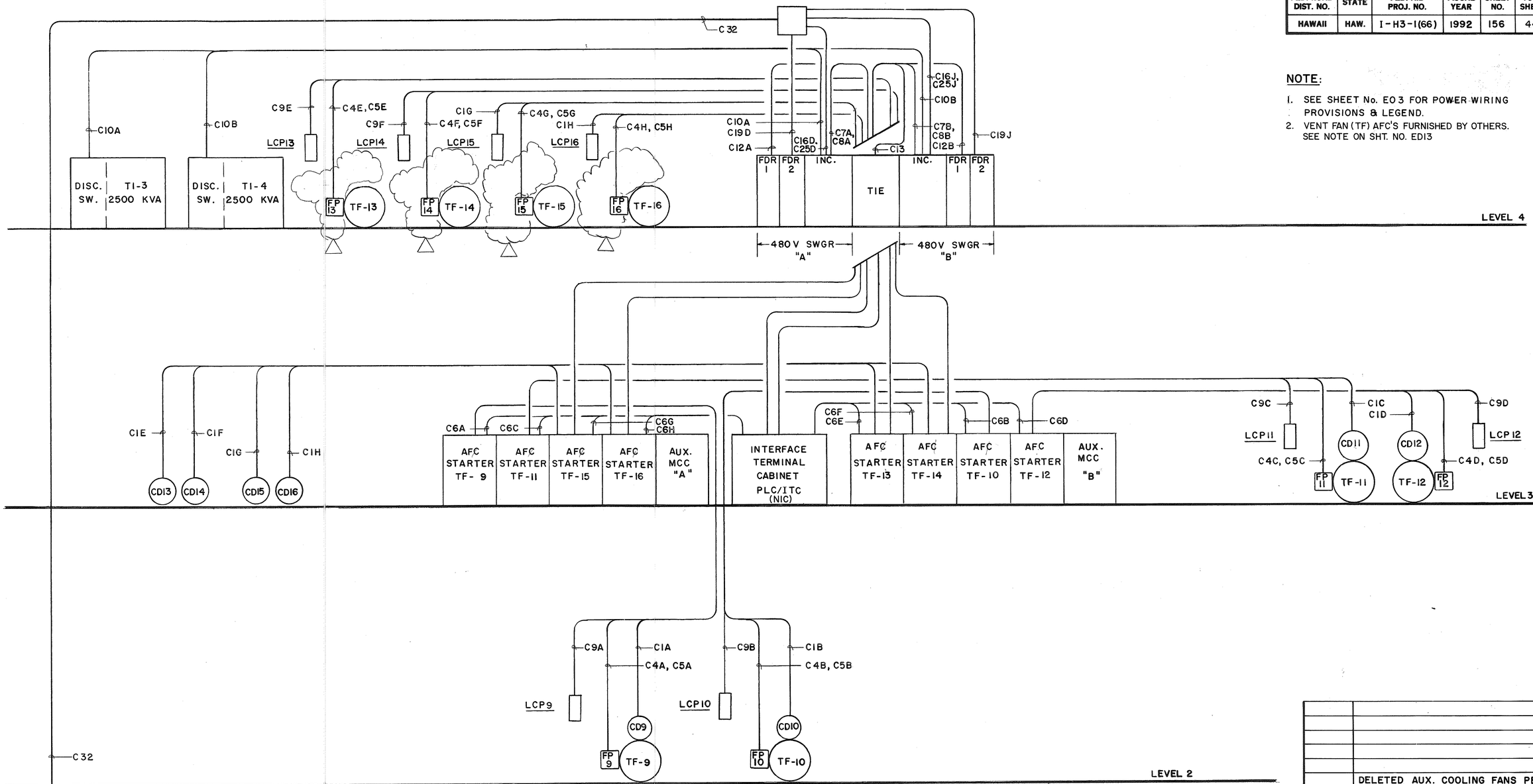
SCALE: NONE DATE: APR 1992

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

SHEET NO. E03 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	156	440



NOTE:

1. SEE SHEET No. E03 FOR POWER WIRING PROVISIONS & LEGEND.
2. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13

	DELETED AUX. COOLING FANS PER
6/22/93	DCN 66-012
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RISER DIAGRAM
CONTROL
HALAWA PORTAL BUILDING - OB

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. E04 OF 22 SHEETS

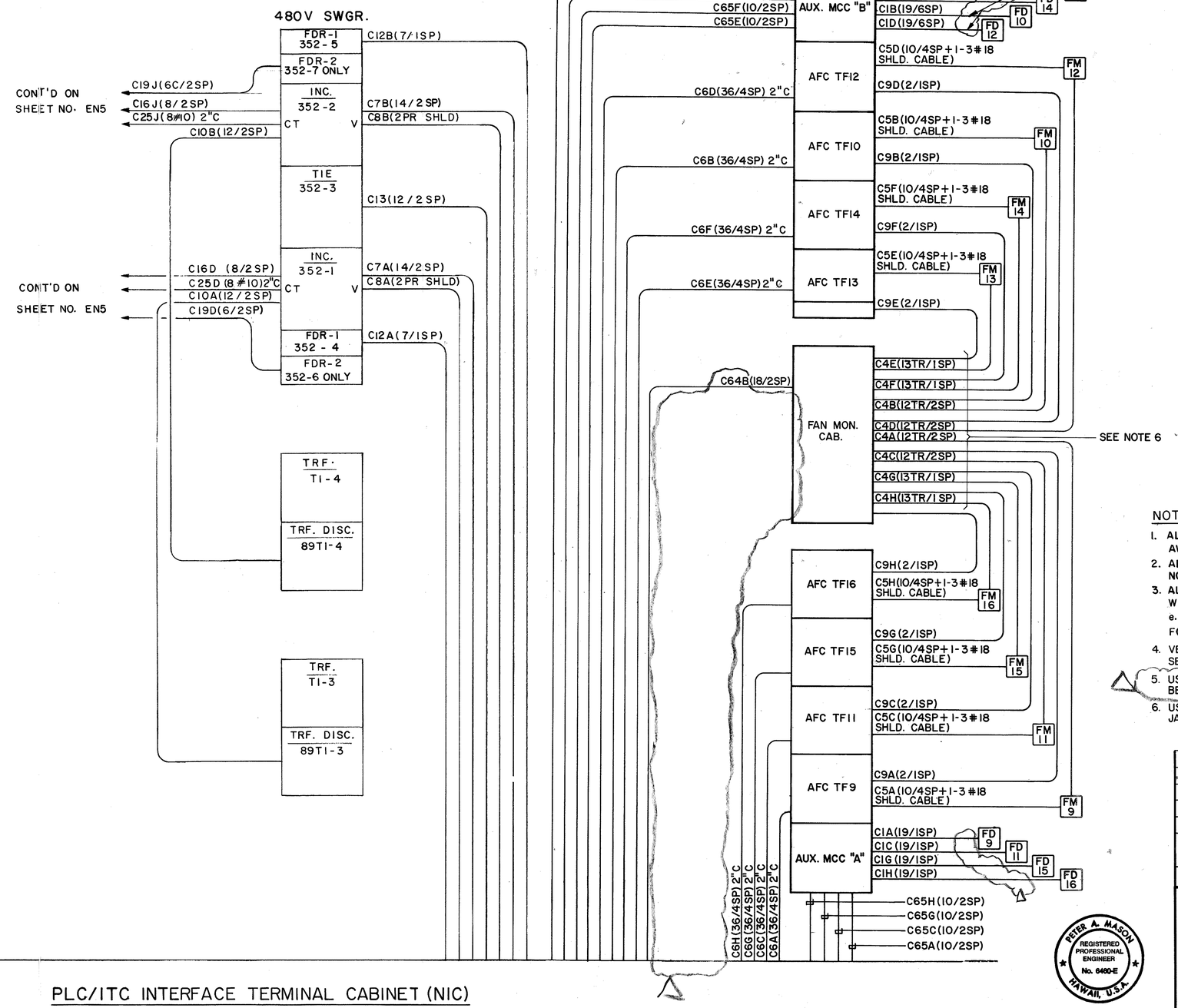
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 6/11/90
	DRAWN BY R. CUADRO	
	TRACED BY	
NOTE BOOK	DESIGNED BY L.A. HORTON	5/10/90
	QUANTITIES BY	
No.	CHECKED BY J.J. GASSANI	9/26/90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	157	440



PLC/ITC INTERFACE TERMINAL CABINET (NIC)

NOTES:

1. ALL CONDUCTORS ARE SINGLE CONDUCTOR #14 AWG STRANDED UNLESS OTHERWISE NOTED.
2. ALL CONDUITS ARE 1" UNLESS OTHERWISE NOTED.
3. ALL MCC WIRE MARKERS SHALL BE PREFIXED WITH TUNNEL FAN NUMBERS DESIGNATION; e.g. FOR TF8, 8C6H; FOR CD1, IC2A; FOR CF1, IC3A, etc.
4. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13.
5. USE #18 TFFN FLEX. CABLE FOR CONNECTION BETWEEN DAMPER ACTUATOR AND MCC.
6. USE 3 #18 TWISTED CABLE WITH UNSHIELDED JACKET.

DATE	REVISION
7/26/94	REVISED PER DCN 66-049
6/6/94	REVISED PER DCN 66-047
5/4/94	REVISED AFC/MCC/ITC CONTROL WIRING PER DCN 66-041

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BLOCK DIAGRAM
CONTROL
HALAWA PORTAL BUILDING-OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. E05 OF 22 SHEETS

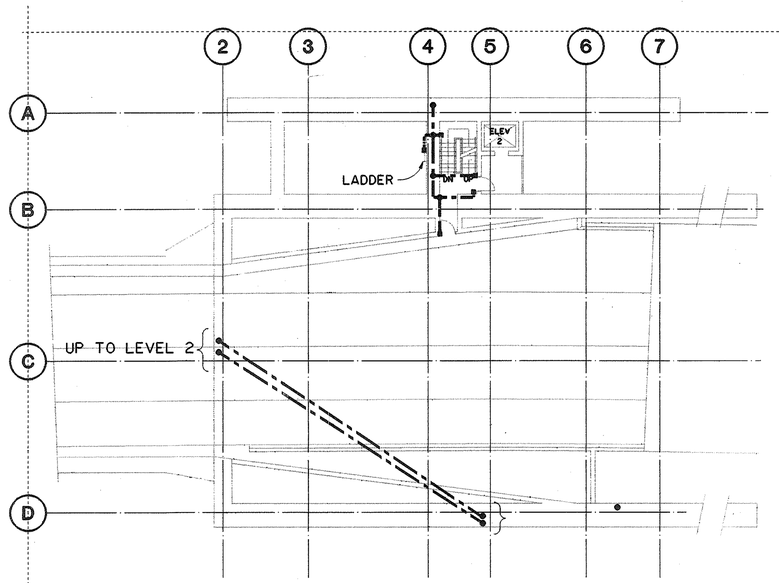
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

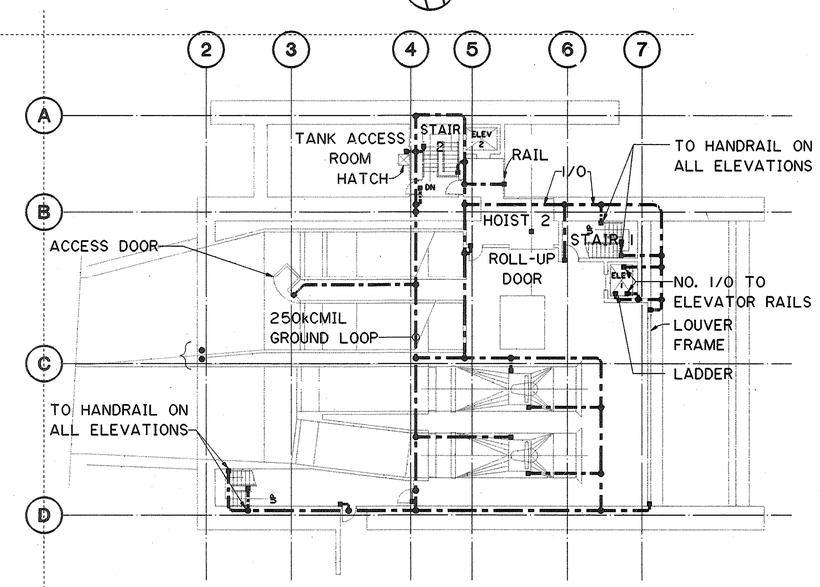
Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY R. CUADRO DATE 6/1/90
NOTE BOOK	DRAWN BY . . . . .
No.	TRACED BY . . . . .
	DESIGNED BY T. A. HORTON 5/4/90
	QUANTITIES BY . . . . .
	CHECKED BY JJ SASSANI 6/26/90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	158	440

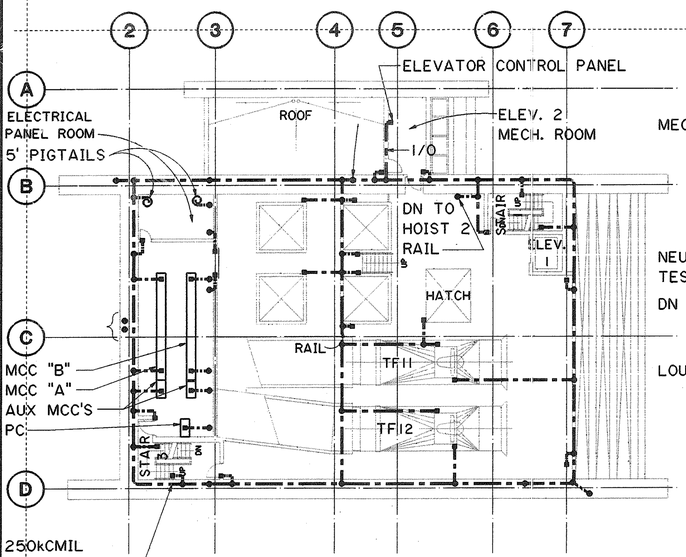


LEVEL 1

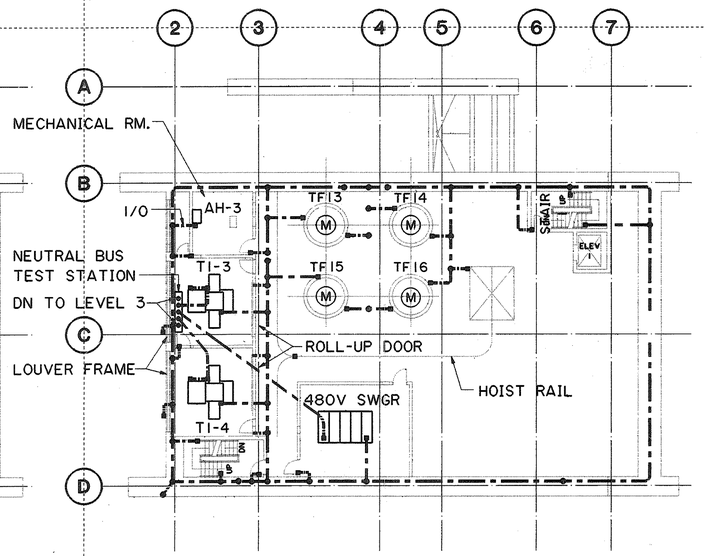


LEVEL 2

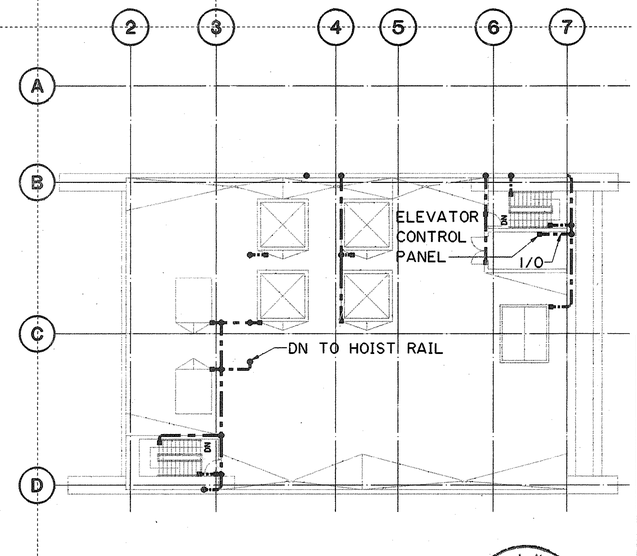
LEVEL 1



LEVEL 3



LEVEL 4



ROOF

GRAPHIC SCALE
16' 8' 0' 16' 32'
1/16"=1'-0"

NOTES:

1. CONNECT TO MOTOR FRAME.
2. UNLESS NOTED OTHERWISE, SIZE OF CABLE CONNECTIONS SHALL BE NO. 4 FOR DOORS, ELECTRICAL WALL MOUNTED PANELS, STAIRS, HATCHES, RAILS AND LOUVERS.
3. CONNECT PIGTAILS TO PANELS.

ORIGINAL PLAN		DATE
SURVEY PLOTTED BY	CADD	6-2-90
DRAWN BY		
TRACED BY	F. JIMENEZ	3-11-96
DESIGNED BY		
NOTE BOOK		
QUANTITIES BY	J.J. SASSANI	5-26-90
CHECKED BY		
NO.		

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GROUNDING

HALAWA PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(64)

SCALE: 1/16"=1'-0" DATE: APR 1992

SHEET NO. E06 OF 22 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 8480 E
HAWAII, U.S.A.

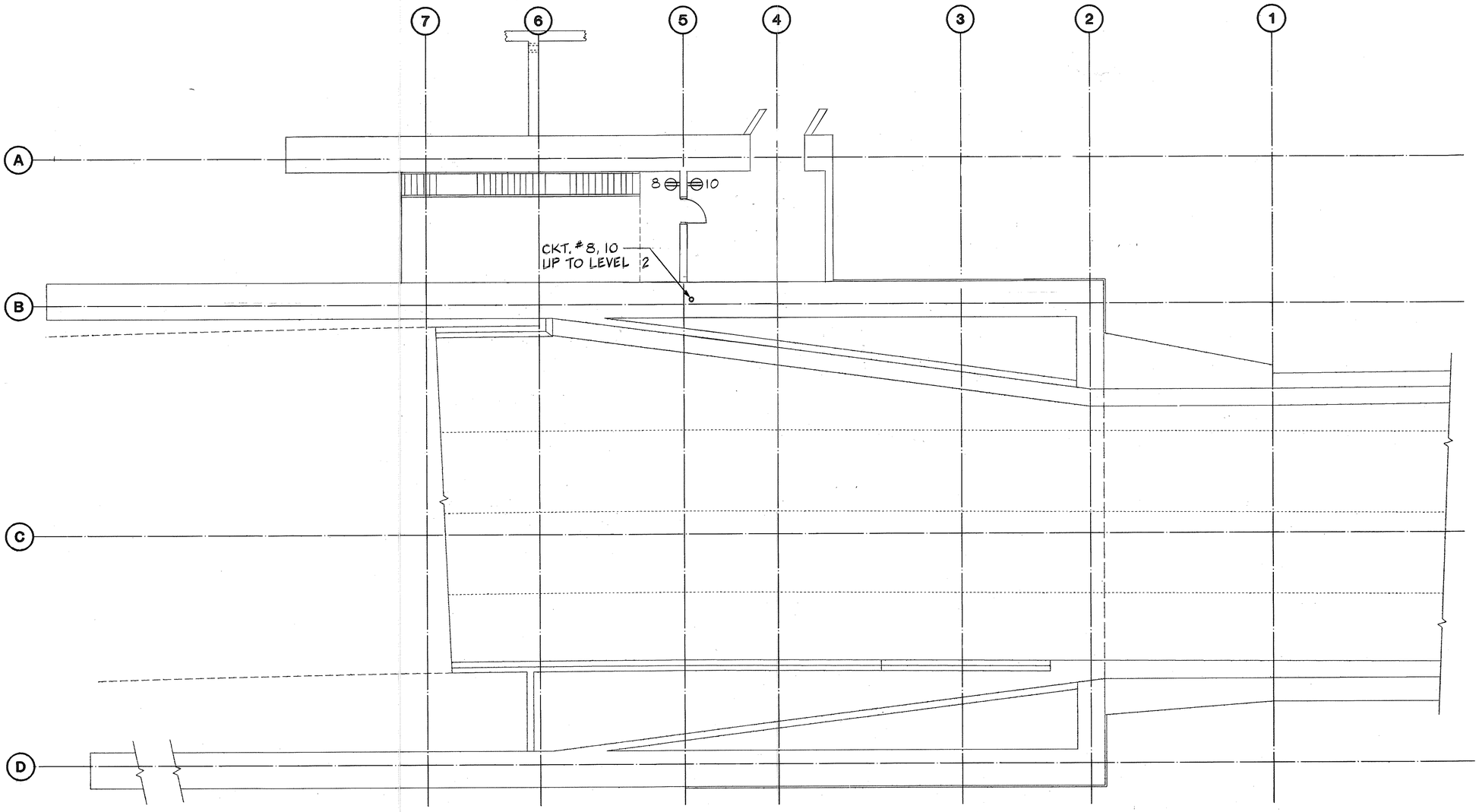
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V152 2410: V152 ES0289.FGB;1 21DEC89-14.28.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	159	440

N



SURVEY PLOTTED BY	DATE 6-12-90
DRAWN BY	R. ANG
TRACED BY	" "
DESIGNED BY	I. HORTON 5-12-90
QUANTITIES BY	" "
CHECKED BY	J.J. SASSANI 6-26-90

ORIGINAL PLAN

NOTE BOOK

NO.

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 1 - PLAN
HALAWA PORTAL BUILDING-OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8"=1'-0" DATE: APR 1992

SHEET NO. E07 OF 22 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6409-E
HAWAII, U.S.A.

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Peter A. Mason

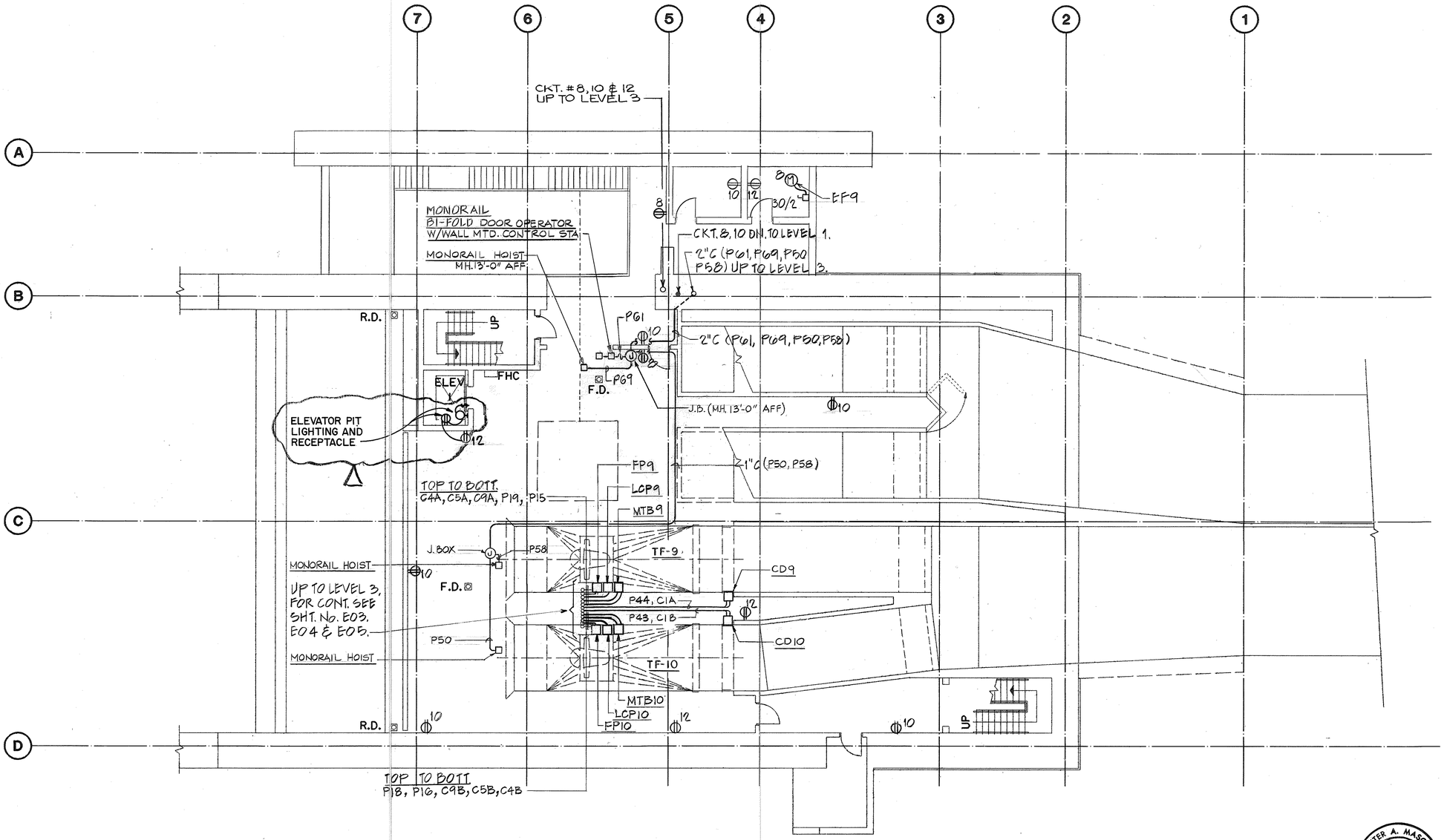
2410V152 2410: V152 ES0245.FGB>1 22SEP89-08.27.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	160	440

N

NOTES:

1. SEE SINGLE LINE DIAGRAMS E03, E01 & E02 FOR CONDUIT SIZES NOT SHOWN.
2. SEE SHT. No. E03, E04 & E05 FOR POWER & CONTROL CONDUIT TERMINATIONS.



ORIGINAL PLAN	NOTE BOOK	NO.	SURVEY PLOTTED BY	DRAWN BY R. ANG	TRACED BY	DESIGNED BY E.A. HORTON	QUANTITIES BY	CHECKED BY J.J. SASSANI	DATE 9/19/90	9/13/90	9/28/90

DATE	REVISION
9/21/94	REV. PER DCN 66-052

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING LEVEL 2-PLAN

HALAWA PORTAL BUILDING-OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0 DATE: APR 1992

SHEET NO. E08 OF 22 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460 E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

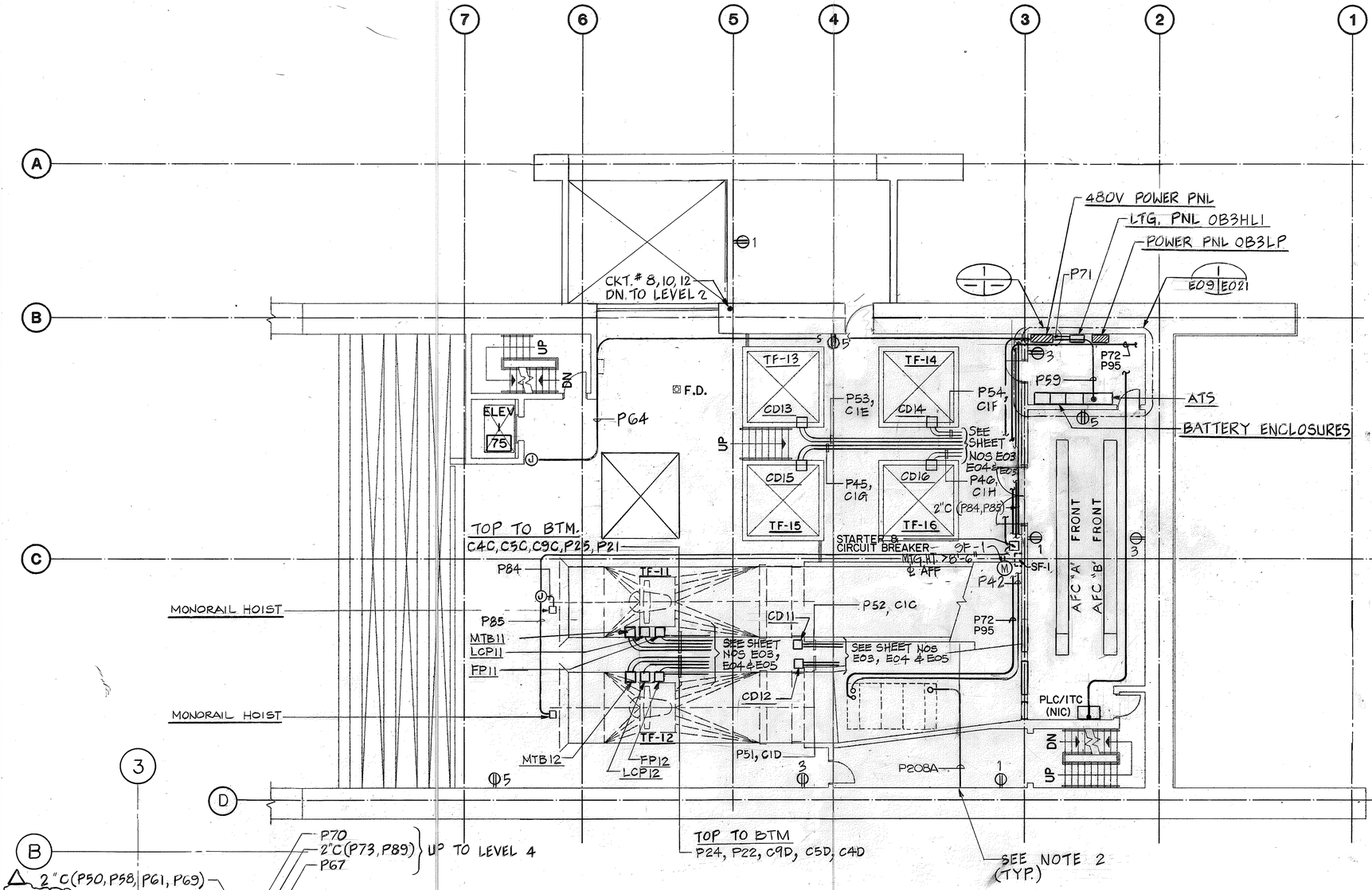
2410V152 2410: V152 ES0246.FGB>1 22SEP89-09.19.10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	161	440

N

NOTES:

1. FOR GENERAL NOTES SEE SHEET NO. E08
2. CONNECT TO EXISTING CAPPED CONDUIT AND EXTEND AS SHOWN.
3. FOR DETAIL OF AFC LEVELLING CHANNELS SEE SHEET NO. EN9.
4. INTERCEPT (E) P64 CONDUIT (ELEVATOR #1 POWER) PRIOR TO LEAVING ELECTRICAL ROOM, AND FURNISH AND INSTALL (N) J-BOX, 8"x16"x 6". REPULL (E) ELEVATOR #1 POWER CONDUCTORS THROUGH J-BOX TO PANEL OB3HP WITHOUT SPLICING. FURNISH AND INSTALL 1"C, RGS FROM OB3LP TO J-BOX. FURNISH AND INSTALL 3 #12 AWG WITH 600V INSULATION, FROM PANEL OB3LP (ELEVATOR #1 CAB LIGHTS) TO J-BOX AND ON TO ROOF, SHARING THE (E) P64 CONDUIT.



DATE	REVISION
12/22/94	REVISED PER DCN 66-055
3/9/94	REVISED PER DCN 66-039

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING LEVEL 3 PLAN

HALAWA PORTAL BUILDING-OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. E09 OF 22 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	R. ANG 6-16-90
TRACED BY	
DESIGNED BY	J. HORTON 5-22-90
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	J.J. SASSANI 6-26-90
NO.	

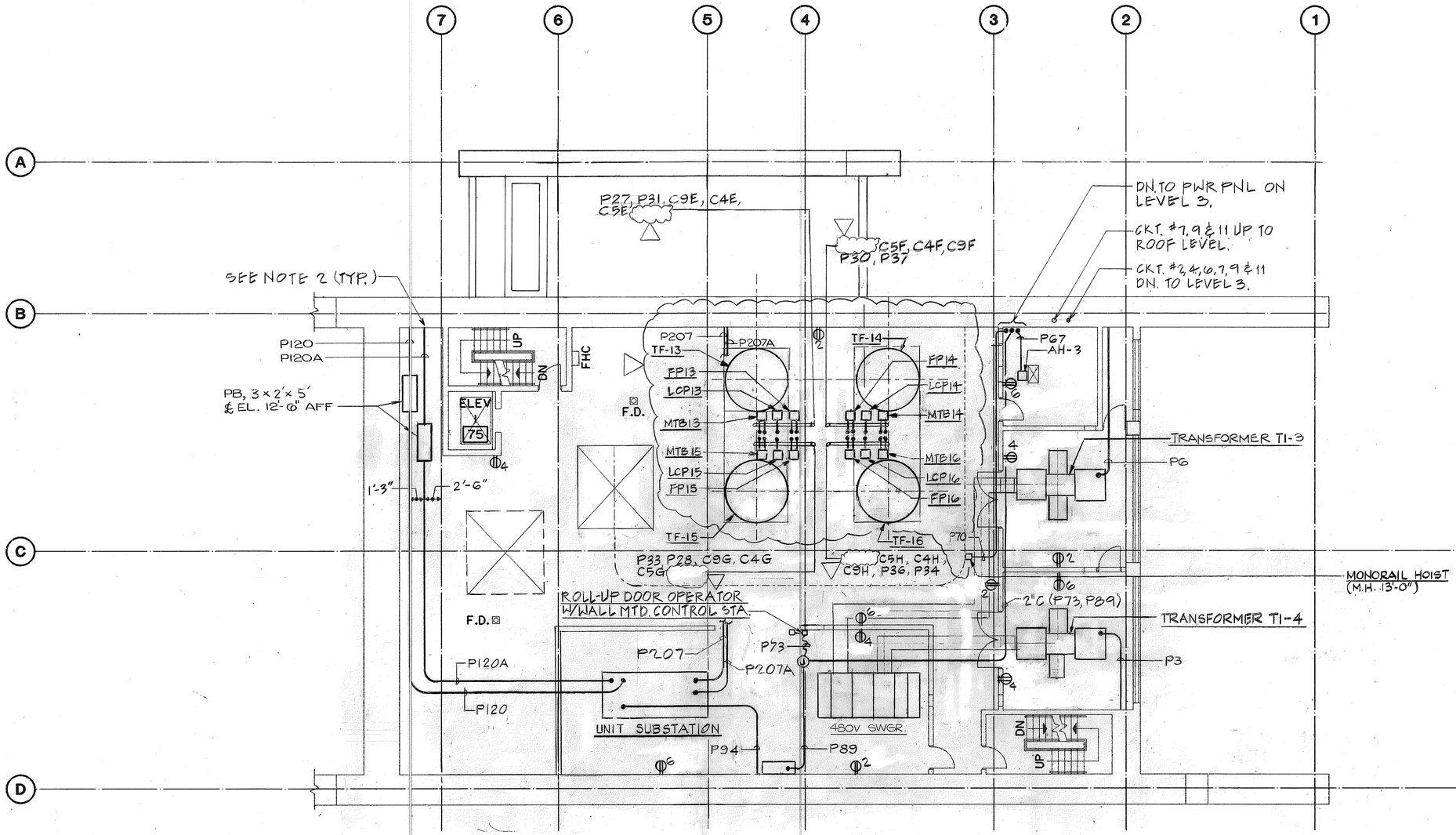
2410V152 2410: V152 ES0247.FGB 1 22SEP89-09.21.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	162	440

N

NOTES:

1. FOR GENERAL NOTES, SEE SHT. No. E08.
2. CONNECT TO EXISTING CAPPED CONDUIT & EXTEND AS SHOWN.
3. FOR DETAILS OF SWGR & UNIT SUBSTN LEVELLING CHANNELS SEE SHEET NO. EN10.



ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY R.ANG	5/14/90
	TRACED BY	
	DESIGNED BY T.A. HORTON	3/23/92
NOTE BOOK	QUANTITIES BY	
	CHECKED BY T.J. SASAKI	9/24/92
NO.		

DATE	REVISION
6/22/93	DELETED AUX. COOLING FANS PER
	DCN 66-012

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 4 PLAN
HALAWA PORTAL BUILDING OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

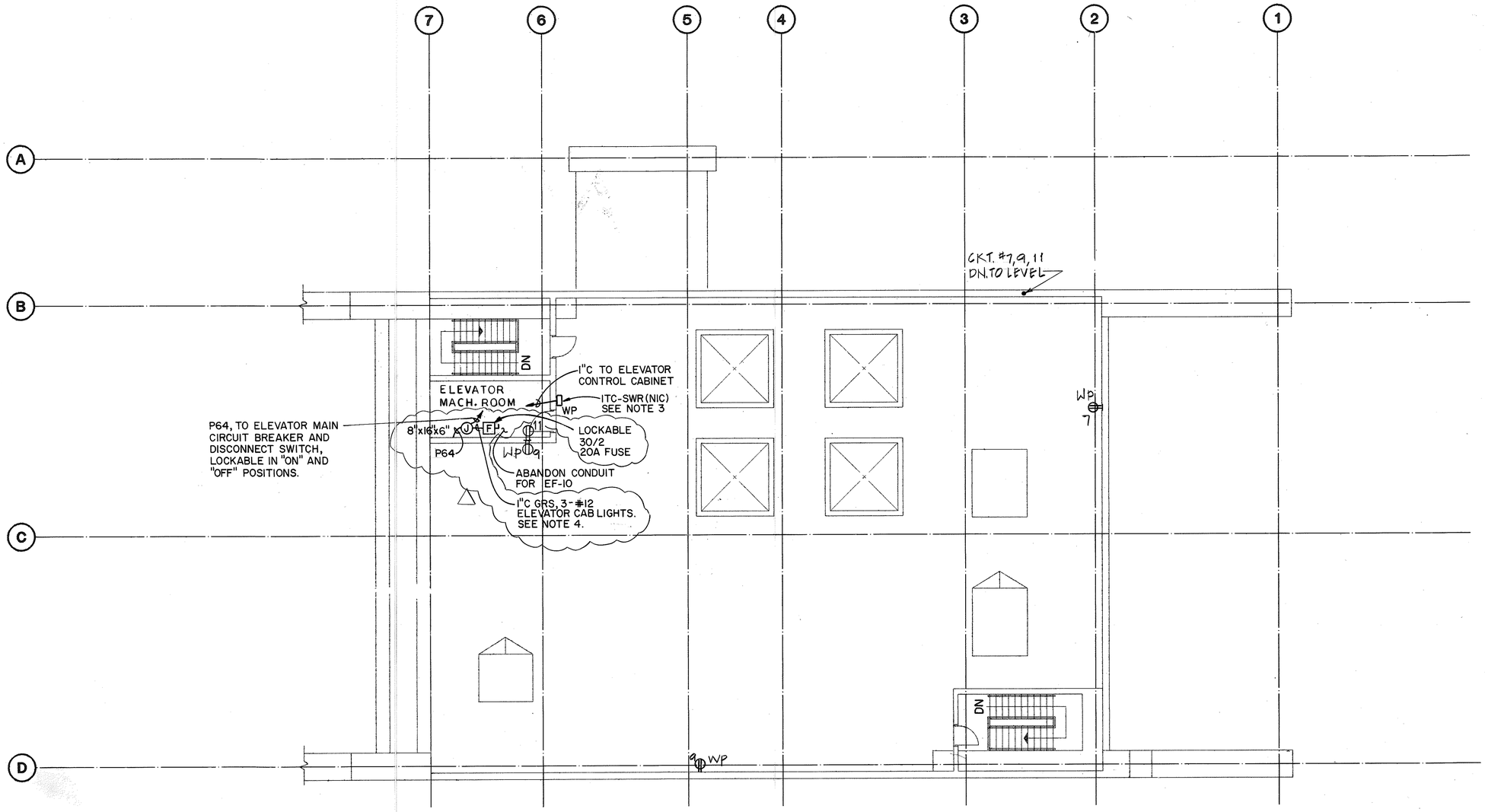
SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. E010 OF 22 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	163	440



NOTES:

1. FOR GENERAL NOTES SEE SHT. No. E08.
2. CONNECT TO EXISTING CAPPED CONDUIT & EXTEND AS SHOWN.
3. FOR ITC-SWR, REFER TO SYSTEMS CONTRACT (65) PLANS, SHEET NO. T05.
4. DO NOT SPLICE ELEVATOR POWER OR CAB LIGHT CONDUCTORS. FURNISH AND INSTALL 90 MINUTE BATTERY PACK FOR THE ELEVATOR CAB LIGHT, BODINE B50 OR APPROVED EQUAL. COORDINATE LOCATIONS AND INSTALLATION WITH ELEVATOR SUB-CONTRACTOR AS NECESSARY.

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY K. ANG	5/22/90
NOTE BOOK	TRACED BY	5-25-90
	DESIGNED BY I. HORTON	
	QUANTITIES BY	6/26/90
NO.	CHECKED BY J.J. SASSANI	

12/22/94	REV. PER DCN 66-055
9/21/94	REV. PER DCN 66-052
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING ROOF PLAN

HALAWA PORTAL BUILDING-OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

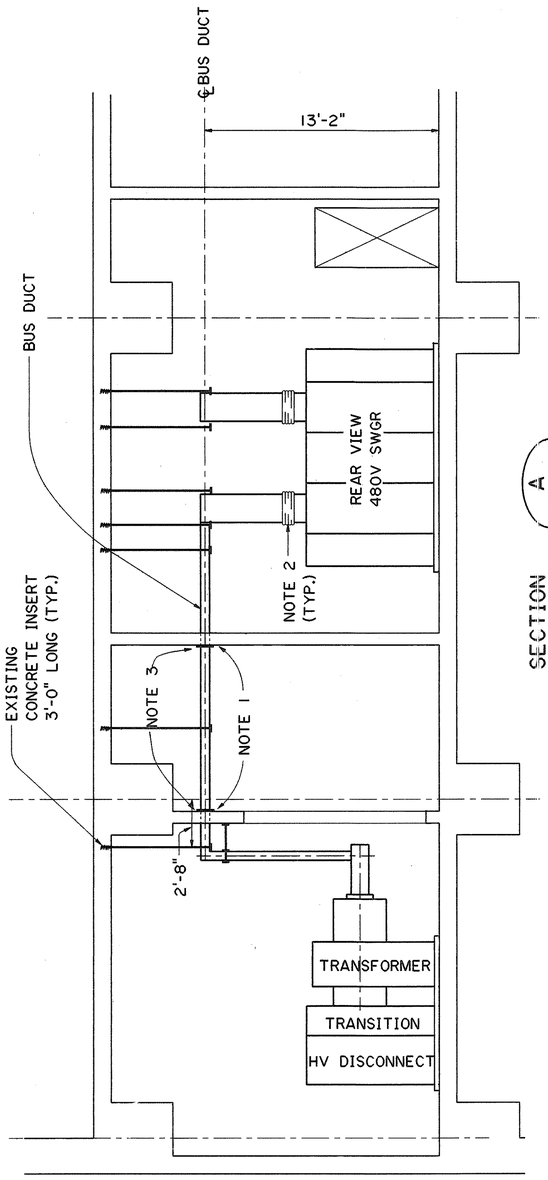
SHEET NO. E011 OF 22 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

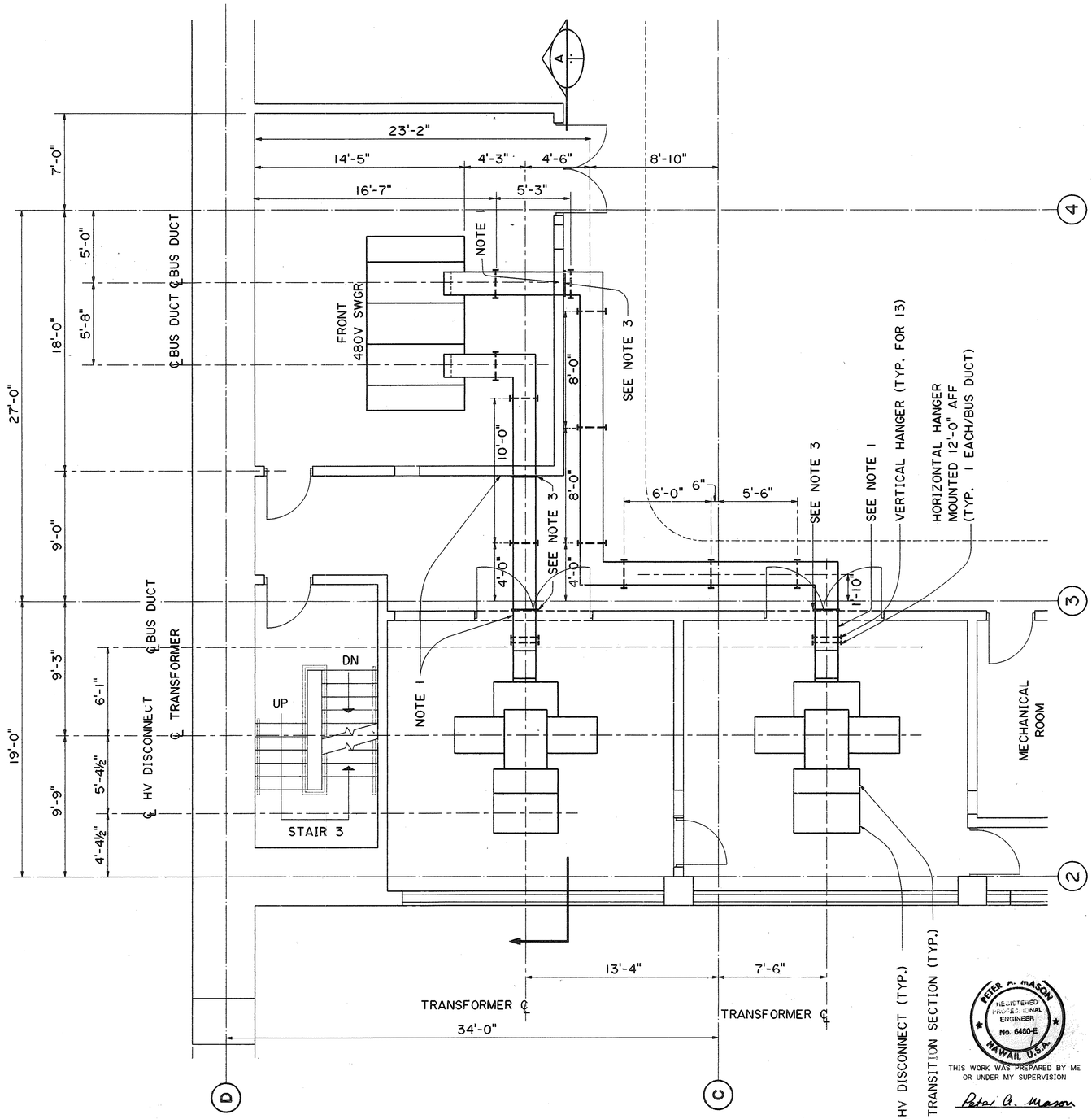
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

2410V152 2410: V152 E50249.FGB:1 22SEP89-09.36.10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	164	440



SECTION A-A



PLAN

NOTES:

1. EXISTING BUS DUCT WALL PENETRATION.
2. PROVIDE FLEXIBLE CONNECTIONS FOR BUS AND HOUSING.
3. PROVIDE FLANGES FOR WALL PENETRATIONS AT LOCATIONS SHOWN.
4. DIMENSIONS AND LOCATIONS OF EXISTING CEILING INSERTS ARE APPROXIMATE.

ORIGINAL PLAN	SURVEY PLOTTED BY	CAIDO	DATE 5/29/90
	DRAWN BY		4/18/90
NOTE BOOK	TRACED BY	J.A. HORTON	
	DESIGNED BY		4/18/90
NO.	QUANTITIES BY		
	CHECKED BY	J.M. SASSANI	6/26/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL ARRANGEMENT
480V BUS DUCT
HALAWA PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

REGISTERED PROFESSIONAL ENGINEER No. 6460-E PETER A. MASON HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

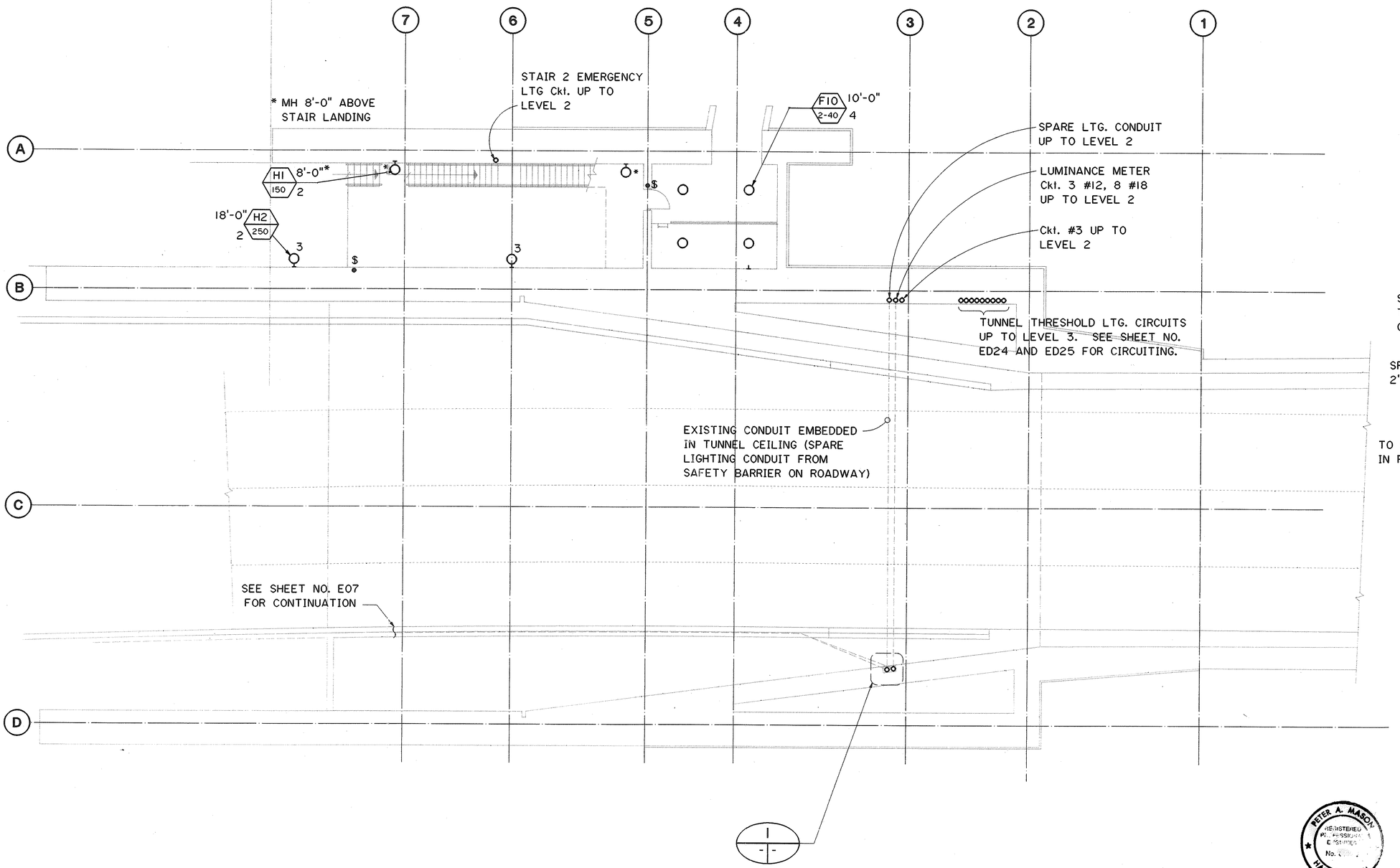
SCALE: ¼" = 1'-0" DATE: APRIL, 1992

SHEET NO. E012 OF 22 SHEETS

2410V153 2410: V153 ES0311.FGB:1 11JLY90-07.07.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	165	440

N



DETAIL I
SCALE: I"=I'-0"

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = I'-0"

GRAPHIC SCALE
I' 0' I' 2'
I" = I'-0"

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. [illegible]
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING LEVEL I PLAN

HALAWA PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APRIL, 1992

SHEET NO. E013 OF 22 SHEETS

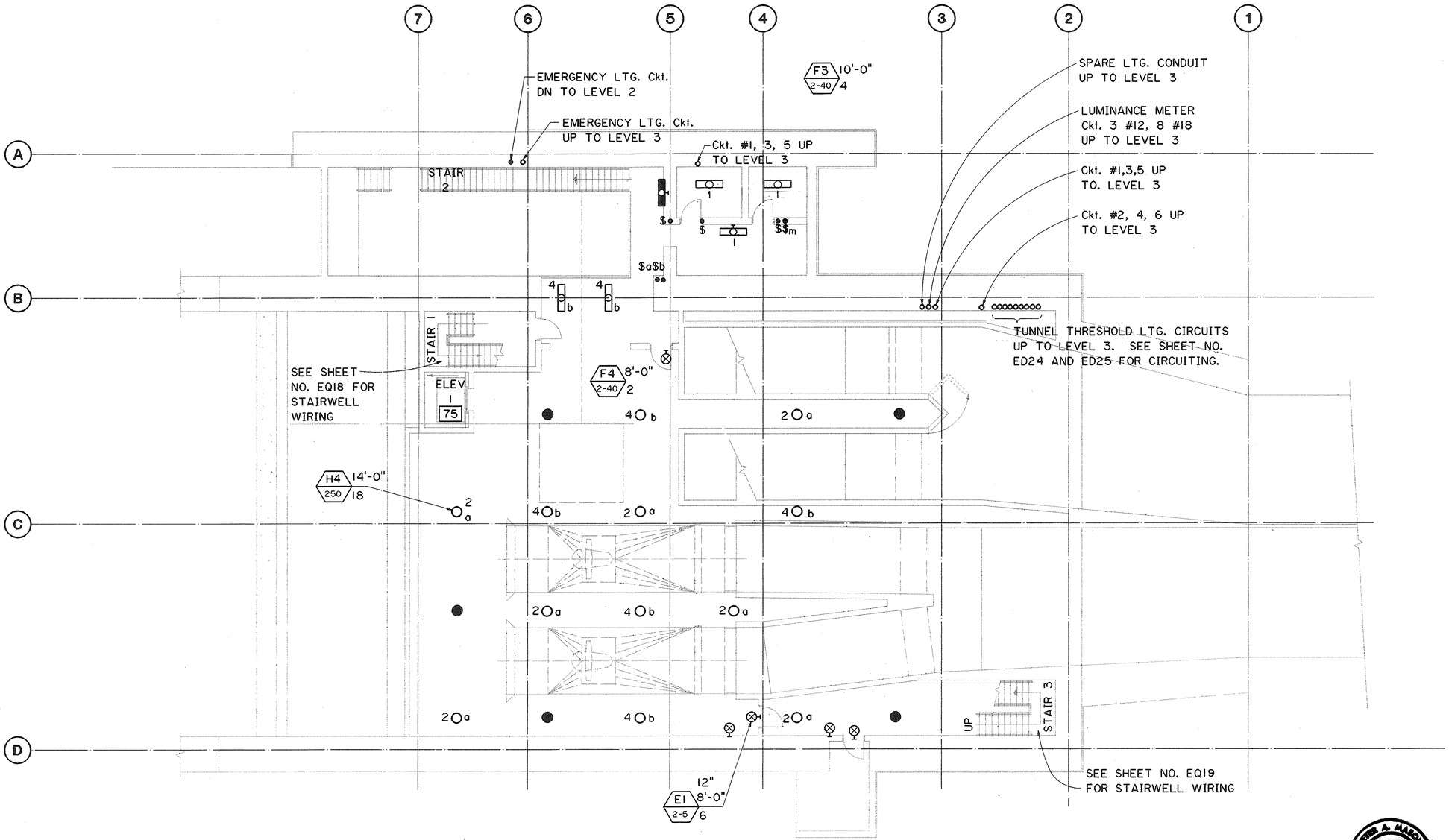
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY CADD	" 9-14-90
NO.	TRACED BY	"
	DESIGNED BY ROBERT F. JAMES	" 11-15-90
	QUANTITIES BY	"
	CHECKED BY J.J. SASSANI	" 12-06-90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	166	440

N

NOTE:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
LEVEL 2 PLAN
HALAWA PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

SHEET NO. E014 OF 22 SHEETS

		DATE
SURVEY PLOTTED BY	CADD	5-24-90
DRAWN BY	"	"
TRACED BY	"	7-15-90
DESIGNED BY	ROBERT F. JAMES	
QUANTITIES BY	"	"
CHECKED BY	J.J. SASSANI	7-16-90

ORIGINAL PLAN
NOTE BOOK
NO.

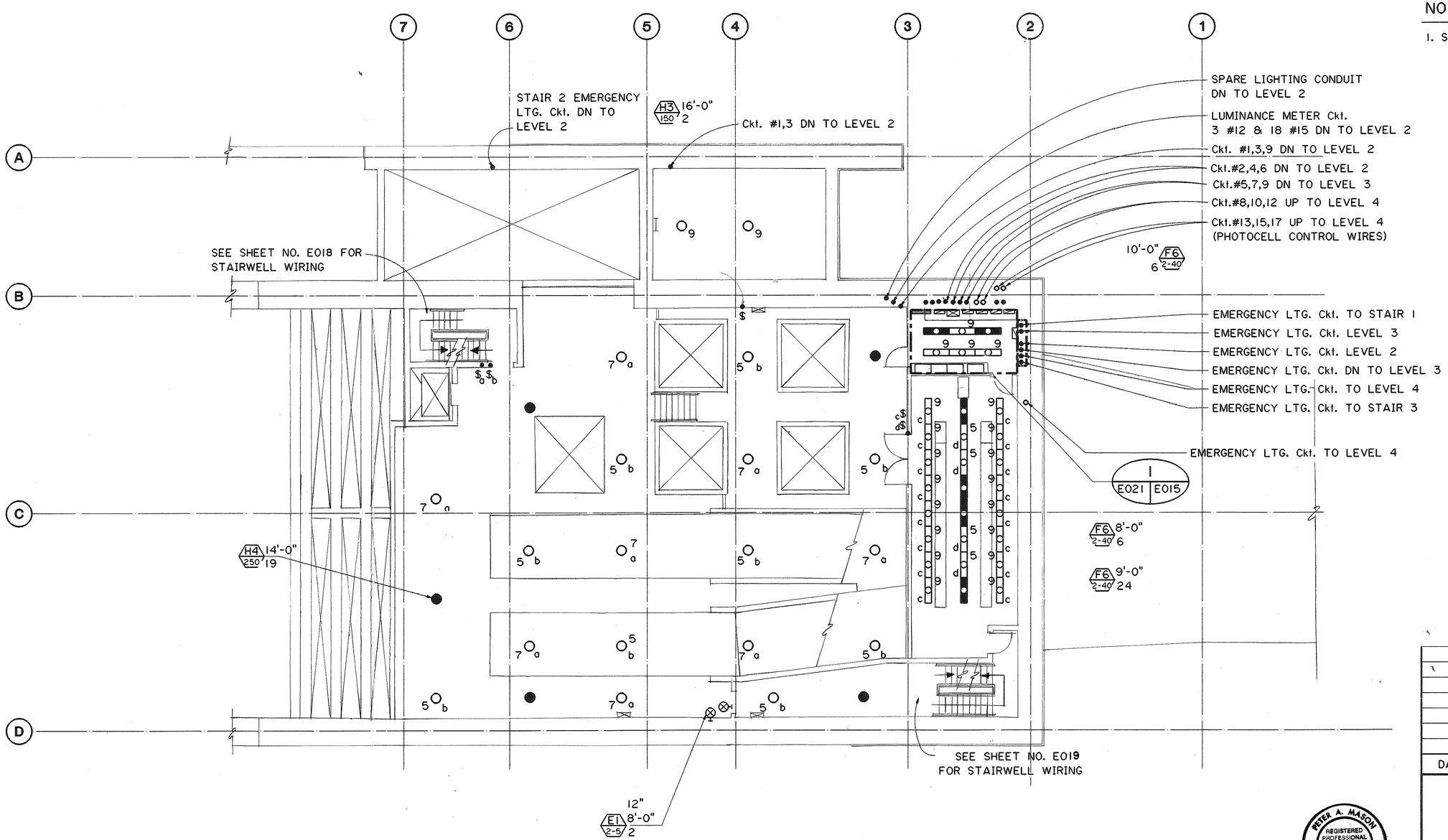
2410V152 2410: V152 ES0194.FGB;1 09JUL90-14.26.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	167	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING LEVEL 3 PLAN

HALAWA PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APRIL, 1992

SHEET NO. E015 OF 22 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

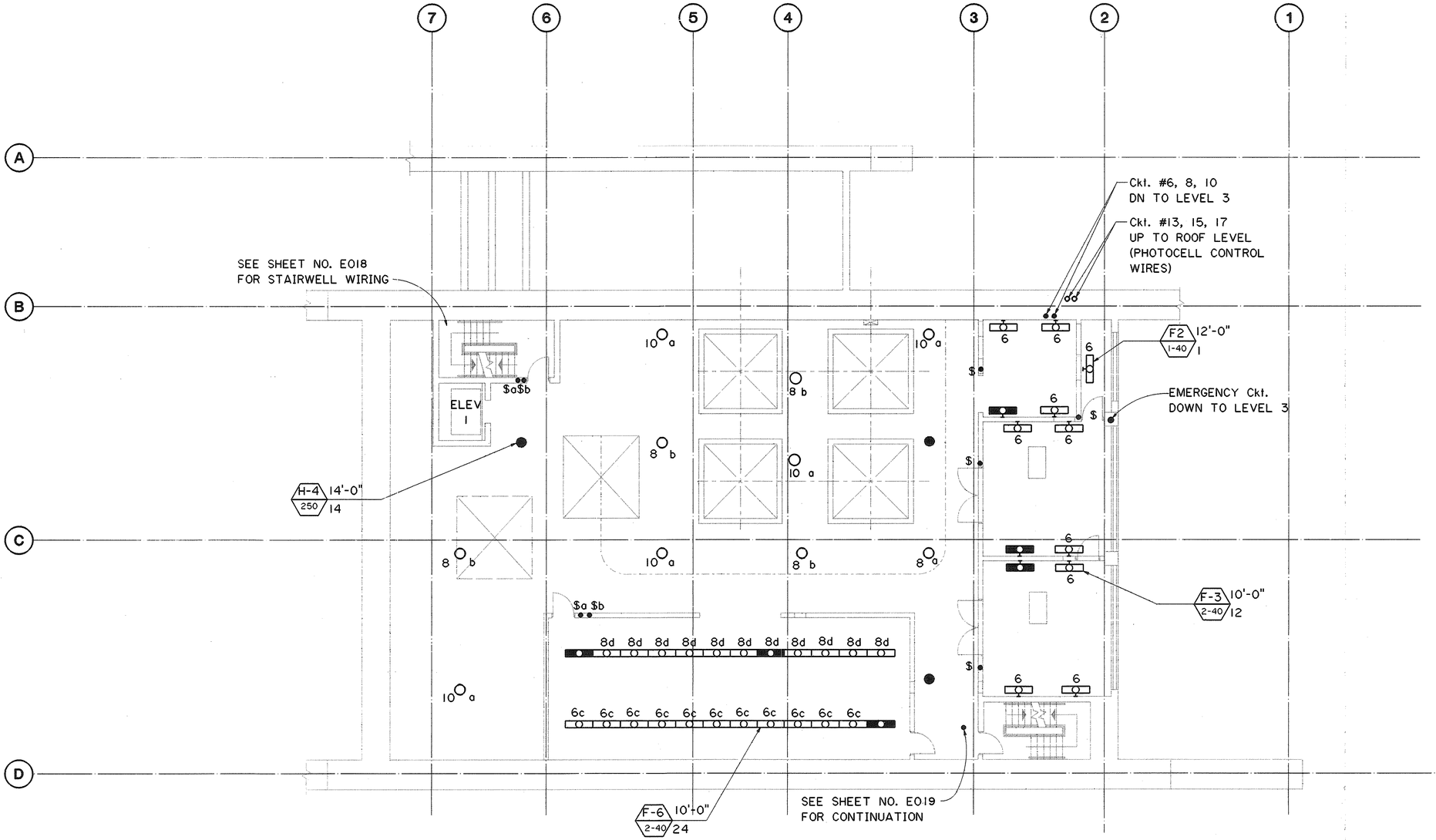
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	2-14-90
NOTE BOOK	TRACED BY	1-6-90
	DESIGNED BY ROBERT F. JAMES	
NO.	QUANTITIES BY	9-26-90
	CHECKED BY J.J. SASSANI	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	168	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	CADD	5-14-90
	TRACED BY	"	"
NOTE BOOK	DESIGNED BY	ROBERT F. JAMES	1-6-90
	QUANTITIES BY	"	"
NO.	CHECKED BY	J.J. SASSANI	6-26-90

DATE	REVISION

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
LEVEL 4 PLAN
HALAWA PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8"=1'-0" DATE: APRIL, 1992

SHEET NO. E016 OF 22 SHEETS

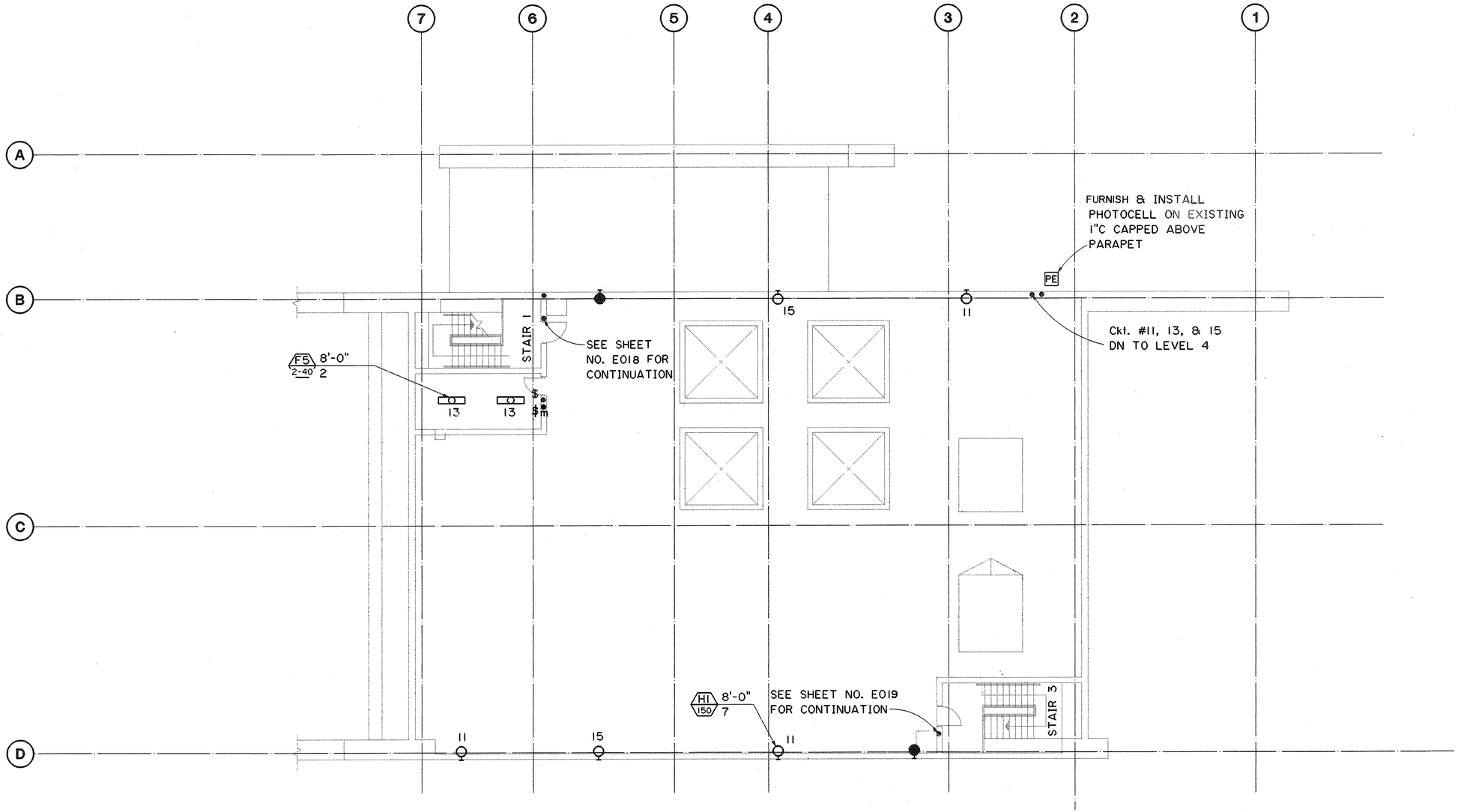
2410V152 2410: V152 ES0196.FGB71 10JLY90-16.02.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	169	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 2-14-90
	DRAWN BY CADD	
	TRACED BY	
NOTE BOOK	DESIGNED BY ROBERT F. JAMES	1-6-90
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	2-26-90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
ROOF PLAN
HALAWA PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

SHEET NO. E017 OF 22 SHEETS

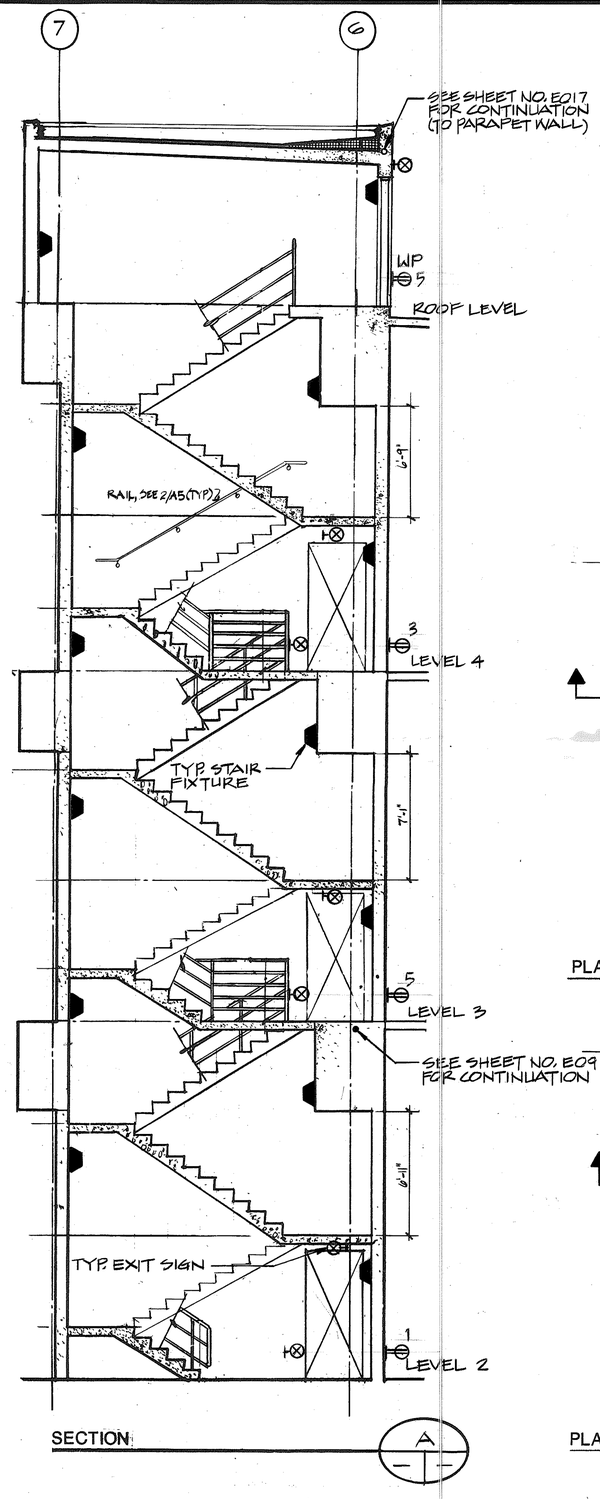
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

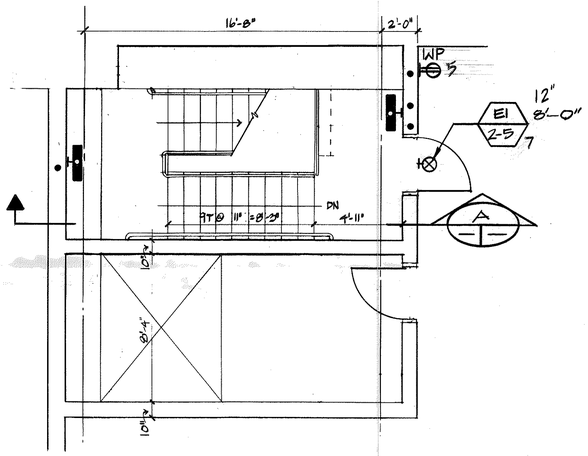
Peter A. Mason

2410V152 2410: V152 ES0197.FGB:1 10JUL90-16.10.10

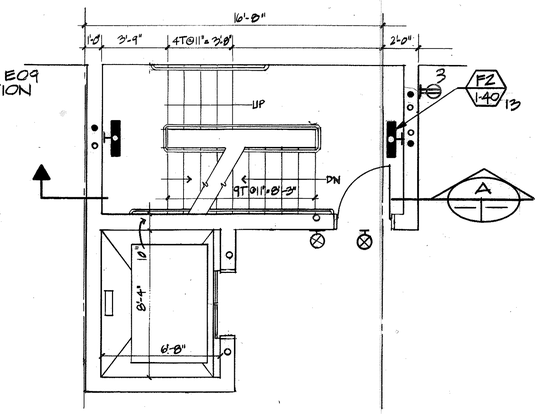
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	170	440



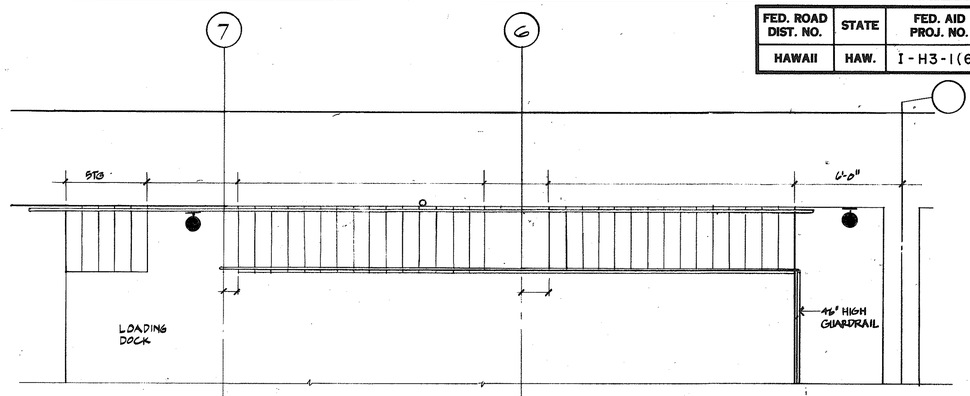
SECTION A



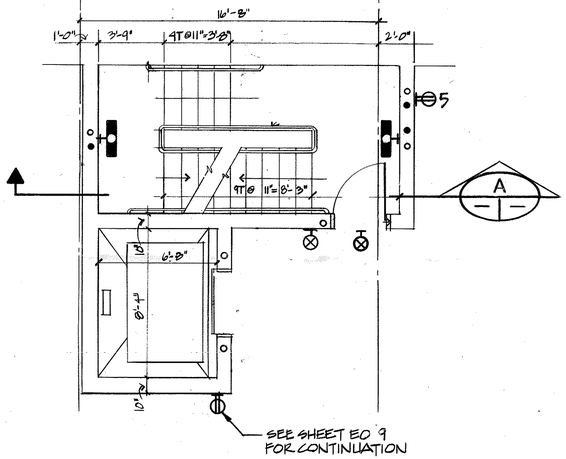
PLAN – ROOF & 4.75



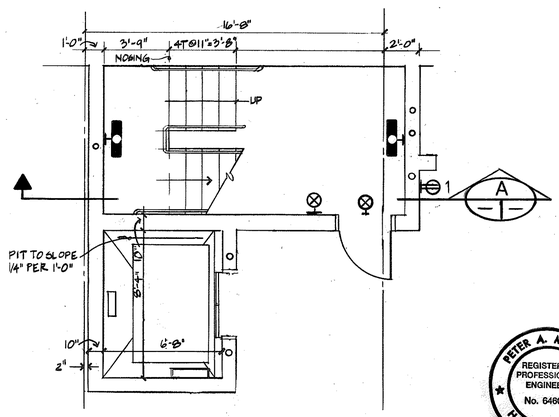
PLAN – LEVEL 4 & 4.25



PLAN – STAIR 2 @ LOADING DOCK



PLAN – LEVEL 3 & 3.25



PLAN – LEVEL 2 & 2.25

EXIT SIGNS
INTERIOR — TYPE E-1
EXTERIOR — TYPE E-2

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY R. ANG	9-12-90
NOTE BOOK	TRACED BY	
	DESIGNED BY R. JAMES	1-15-90
No.	QUANTITIES BY	
	CHECKED BY J.I. SASSANI	9-26-90

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

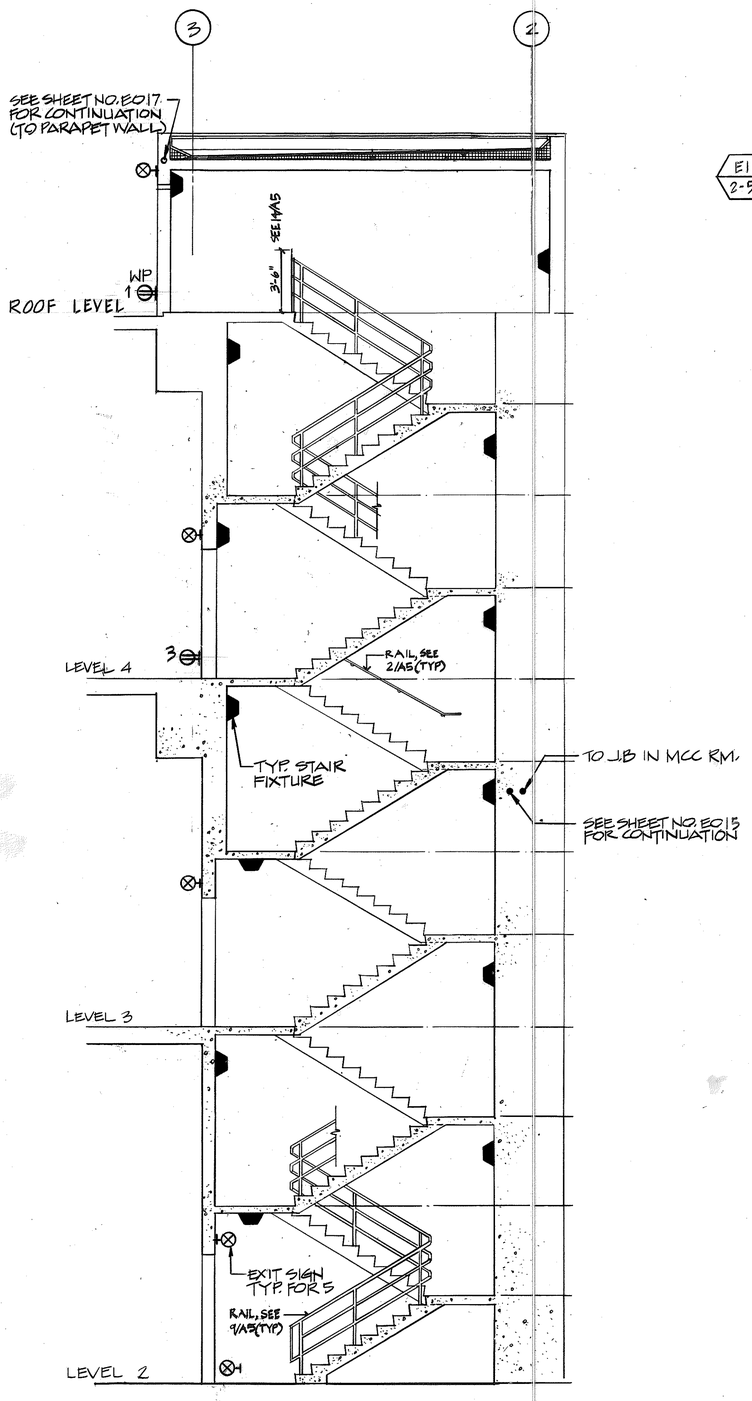
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING & RECEPTACLES
STAIR 1 & 2
HALAWA PORTAL BUILDING (OB)
INTERSTATE ROUTE H-3
F. A. I. PROJ. NO. I-H3-1(66)

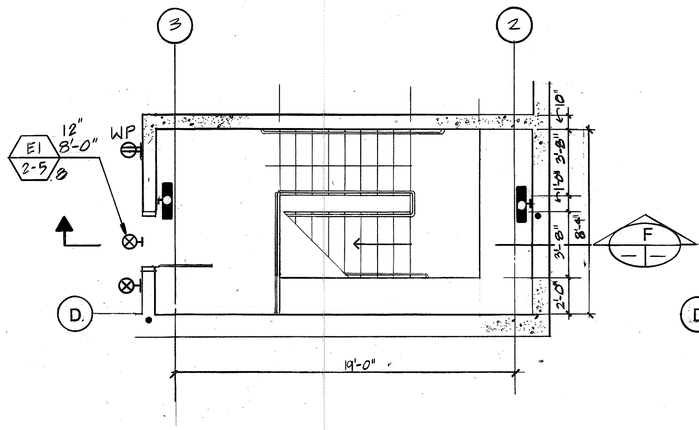
SCALE: 1/4" = 1'-0" DATE: APRIL, 1992

SHEET NO. E018 OF 22 SHEETS

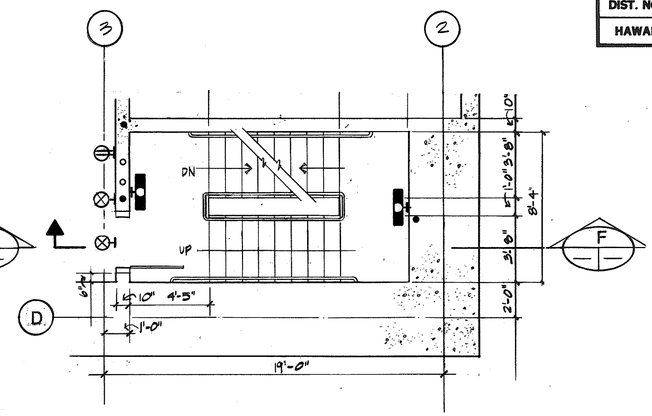
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	171	440



SECTION @ STAIR 3



PLAN @ ROOF LEVEL & 4.75



PLAN @ LEVEL 4 & 3.75

PLAN @ LEVEL 3 & 3.25

PLAN @ LEVEL 2 & 2.25

⊢⊗ EXIT SIGNS
INTERIOR — TYPE E-1
EXTERIOR — TYPE E-2

GRAPHIC SCALE:
4' 3' 2' 1' 0' 4' 8'
1/4" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	R. ANG	DATE 6-12-90
	DRAWN BY	"	1-15-90
	TRACED BY	R. JAMES	"
NOTE BOOK	DESIGNED BY	"	"
No.	QUANTITIES BY	"	6-26-90
	CHECKED BY	J.J. SASSANI	"

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING & RECEPTACLES
STAIR 3
HALAWA PORTAL BUILDING (OB)
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/4" = 1'-0" DATE: APRIL, 1992

SHEET NO. E019 OF 22 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	172	440

SYSTEM: 480Y/277V 3Ø, 4W **PANEL –** OB3HL1
MAINS: 125A LUGS ONLY
SHORT CIRCUIT RATING: 14 KAIC

PANEL LOCATION: ELECT. ROOM, LEVEL 3, HALAWA OB
SUPPLY LOCATION: PANEL OB3HP & L
ELECT. ROOM, LEVEL 3, HALAWA OB

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
LEVEL 1	1	0.27			100	1	20	#12				#12	100	1	20	2.17			2	LEVEL 2
	3		0.40														2.04		4	
LEVEL 3	5			3.15														1.84	6	LEVEL 4
	7	2.48														1.83			8	
	9		2.20														1.86		10	
ROOF	11			0.60															12	SPARE
	13	0.18																	14	SPARE
	15		0.40														5.27		16	T4-6
SPARE	17											#8	3	3	30			5.72	18	
SPARE	19															6.04			20	
SPACE	21																		22	SPACE
SPACE	23																		24	SPACE
		2.93	3.00	3.75												10.04	9.47	7.56		

	A	B	C
	12.99	12.47	11.31
	12.99	12.47	11.31

TOTAL CONNECTED 36.77 kVA
ESTIMATED MAXIMUM DEMAND 36.77 kVA

SYSTEM: 208Y/120V 3Ø, 4W **PANEL –** OB3LP
MAINS: 125A LUGS ONLY
SHORT CIRCUIT RATING: 10 KAIC

PANEL LOCATION: ELECT. ROOM, LEVEL 3, HALAWA OB
SUPPLY LOCATION: PANEL OB3HL1 VIA XFMR T4-6
ELECT. ROOM, LEVEL 3, HALAWA OB

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
LEVEL 3, STAIR 1,	1	1.90			100	1	20	#12				#12	100	1	20	0.72			2	LEVEL 4
& STAIR 3	3		0.90														0.72		4	
	5			1.08														0.72	6	
ROOF LEVEL	7	0.31														0.85			8	LEVEL 1 & LEVEL 2
	9		0.36														0.90		10	
	11			0.18														0.72	12	
XFMR	13	0.3				2	20	#12				#12		3	20	3.0			14	600V SWGR
DISC. HTR	15		0.3														3.0		16	HEATER
MCC HTR	17			1.0		1	20	#12										3.0	18	
ELEV LIGHTS	19	0.2				1	20	#12						1	20				20	SPARE
SPARE	21					1	20							1	20				22	
	23					1	20							1	20				24	
		2.71	1.56	2.26												4.57	4.62	4.44		

	A	B	C
	7.28	6.18	6.70
	6.21	5.27	5.72

TOTAL CONNECTED 20.16 kVA
ESTIMATED MAXIMUM DEMAND 17.20 kVA

SYSTEM: 277V 1 Ø, 3W *PANEL-OB3LE1
MAINS: 125A SUBFEED (DUAL) LUGS ONLY
SHORT CIRCUIT RATING: 14 KAIC

PANEL LOCATION: ELECTRICAL ROOM, LEVEL 3, HALAWA OB
SUPPLY LOCATION: PANEL OB3HP & L VIA ATS, ELECT. ROOM LEVEL 3, HALAWA OB & CBMHE, CONTROL BLDG.

SERVICE	CKT. NO.	LOAD	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG		WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD	CKT. NO.	SERVICE
STAIR 1, STAIR 2, & ROOF	1	1.40	100	1	20	#12		#12	100	1	20	2.04	2	STAIR 3, LEVEL 2, & ROOF
LEVEL 3	3	2.09	100	1	20	#12		#12	100	1	20	1.74	4	LEVEL 4
ENTRANCE LTG. CONTROL	5	1.00	↓	↓	↓	↓		↓	↓	↓	↓	0.87	6	TUNNEL ENTRANCE LIGHTING
SPARE	7		100	1	20			#12	100	1	20	0.50	8	LUMINANCE METER POWER SUPPLY
SPARE	9		↓	↓	↓									
SPARE	11				40				100	1	20		10	SPARE
SPACE	13		↓						↓	↓	↓		12	SPARE
↓	15								↓				14	SPACE
	17												16	SPACE
													18	↓
		4.49										5.15		

TOTAL CONNECTED 9.64 kVA 9.64
ESTIMATED MAXIMUM DEMAND 9.64 kVA 9.64

* JUMP ALL PHASES TOGETHER

SYSTEM: 120/240V 1Ø, 3W **PANEL-** OB3SE
MAINS: 60AT/100AF 2P
SHORT CIRCUIT RATING: 10 KAIC

PANEL LOCATION: ELECT. ROOM, LEVEL 3, HALAWA OB
SUPPLY LOCATION: ATS
ELECT. ROOM, LEVEL 3, HALAWA OB

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLE	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLE	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
	1				1	20							1	20			2	
	3																4	
	5																6	
	7				↓	↓							↓	↓			8	
SPACE	9																10	SPACE
↓	11																12	↓

NOTE
SERVICE CONNECTIONS TO THIS PANEL ARE PART OF CONTRACT F.A.I. PROJ. NO. I-H3-1(65)

	A	B	C
TOTAL CONNECTED			
ESTIMATED MAXIMUM DEMAND			

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	CAD	6-17-90
NOTE BOOK	TRACED BY		5-4-90
	DESIGNED BY	R. JAMES	
	QUANTITIES BY		6-26-90
NO.	CHECKED BY	J.J. SASSANI	

DATE	REVISION
12/22/94	REVISED PER DCN 66-055
12/21/94	REVISED PER DCN 66-044
12/16/94	REVISED PER DCN 66-055
6/7/94	REVISED PER DCN 66-044
8/19/93	REVISED SCHEDULES PER DCN 66-017

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PANEL SCHEDULES

HALAWA PORTAL BUILDING (OB)

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

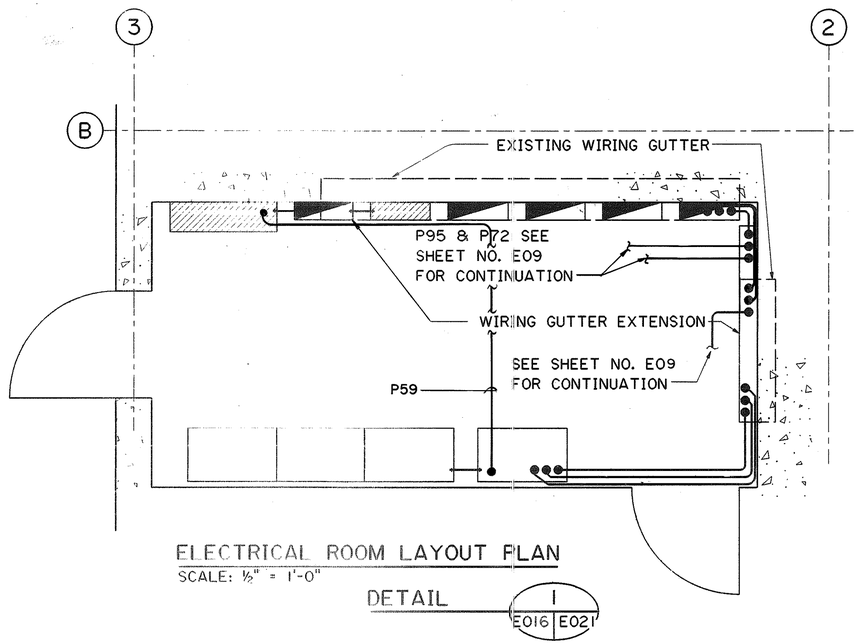
SCALE: NONE DATE: APRIL, 1992

SHEET NO. E0 20 OF 22 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	173	440

NOTES:

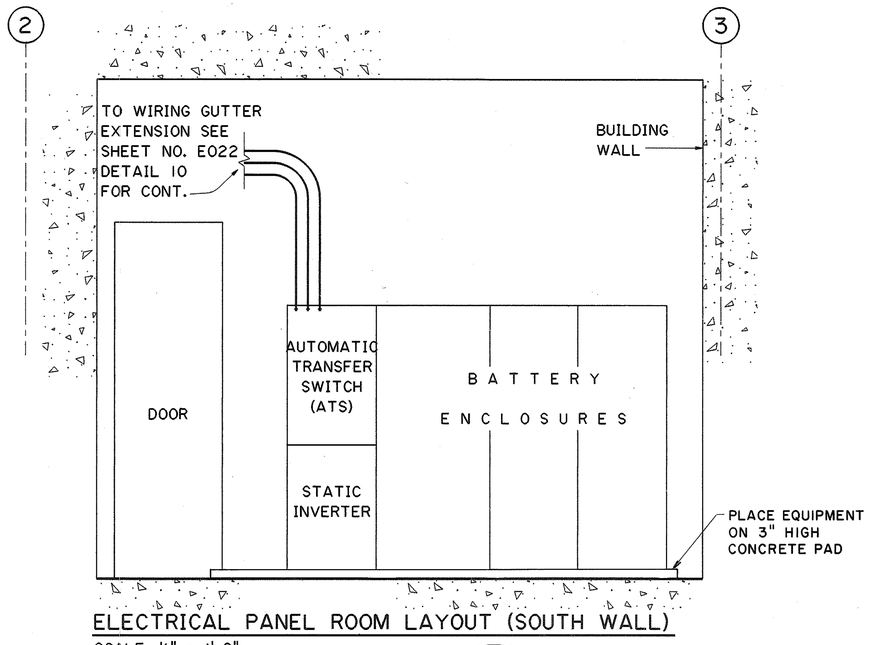
SEE SHEET NO. EN21 FOR NOTES.



ELECTRICAL ROOM LAYOUT PLAN

SCALE: ½" = 1'-0"

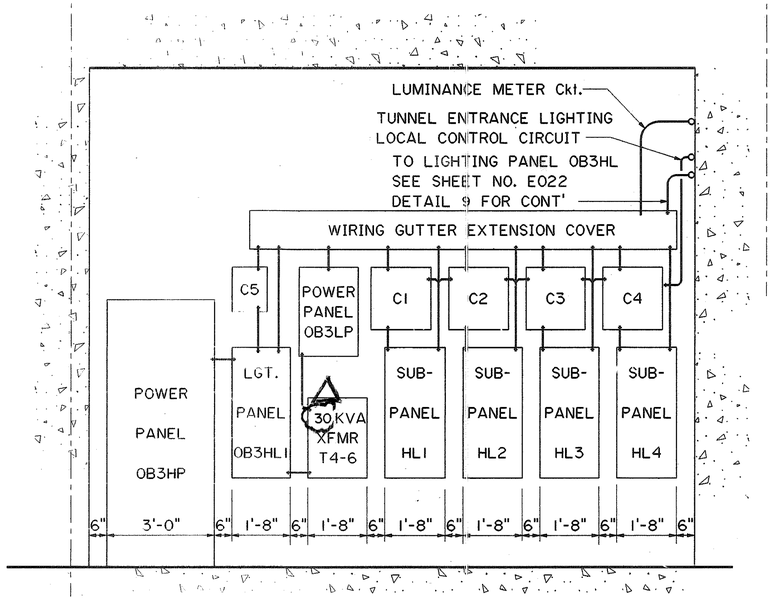
DETAIL 1 (E016 | E021)



ELECTRICAL PANEL ROOM LAYOUT (SOUTH WALL)

SCALE: ½" = 1'-0"

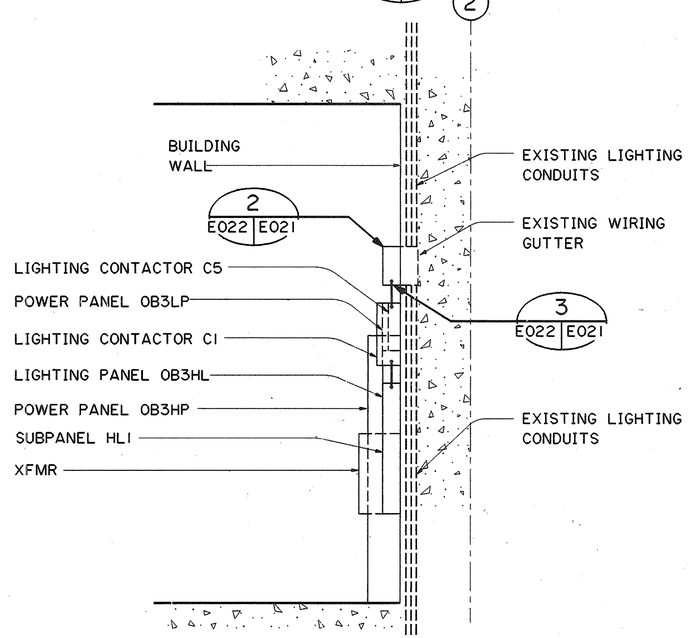
DETAIL 6 (- | -)



ELECTRICAL ROOM LAYOUT (NORTH WALL)

SCALE: ½" = 1'-0"

DETAIL 5 (- | -)



ELECTRICAL PANEL ROOM LAYOUT (PROFILE VIEW)

SCALE: ½" = 1'-0"

DETAIL 4 (- | -)

GRAPHIC SCALE

2' 1' 0' 2' 4'

½" = 1'-0"

SURVEY PLOTTED BY		DATE
DRAWN BY	CADD	1-14-90
TRACED BY		"
DESIGNED BY	T.Y.S./R.F.J.	1-16-90
QUANTITIES BY		"
CHECKED BY	J.J. SASSANI	6-26-90

ORIGINAL PLAN | NOTE BOOK | NO.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6450-E HAWAII, U.S.A.

Peter A. Mason

DATE	REVISION
6/7/94	REVISED PER DCN 66-044

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING INSTALLATION DETAILS - 1

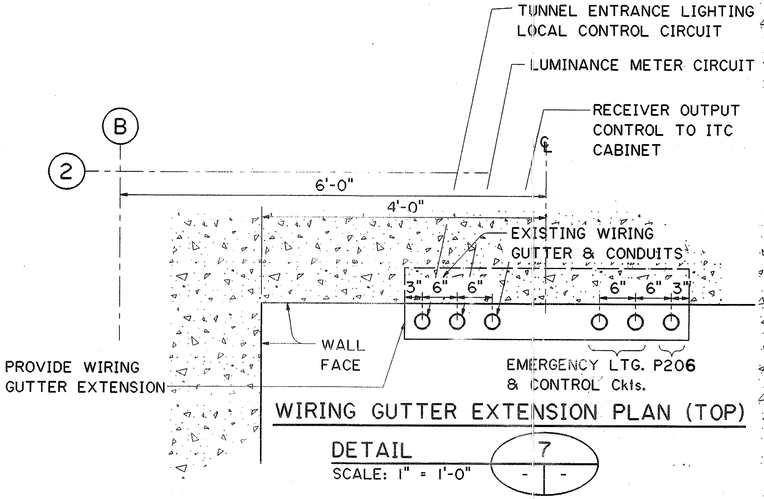
HALAWA PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

SHEET NO. E021 OF 22 SHEETS

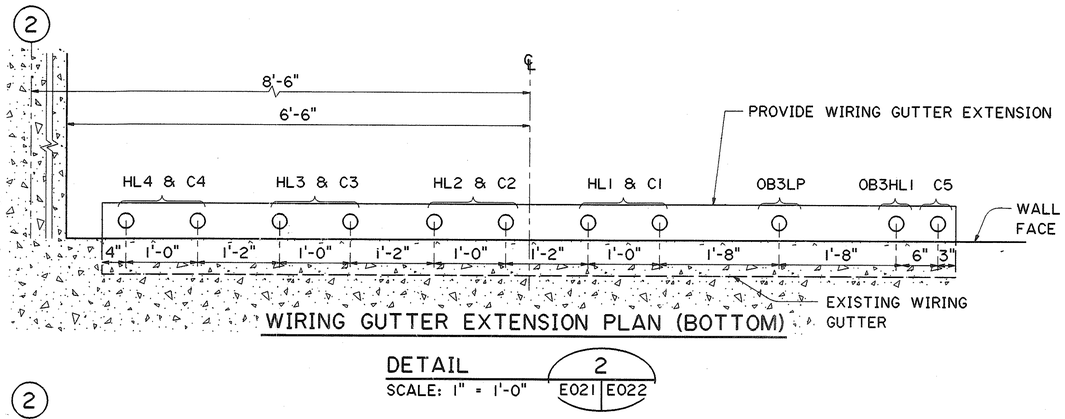
?410V156 2410: V156 ES0330.PGBx1 10.JUL.90-17.15.20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	174	440



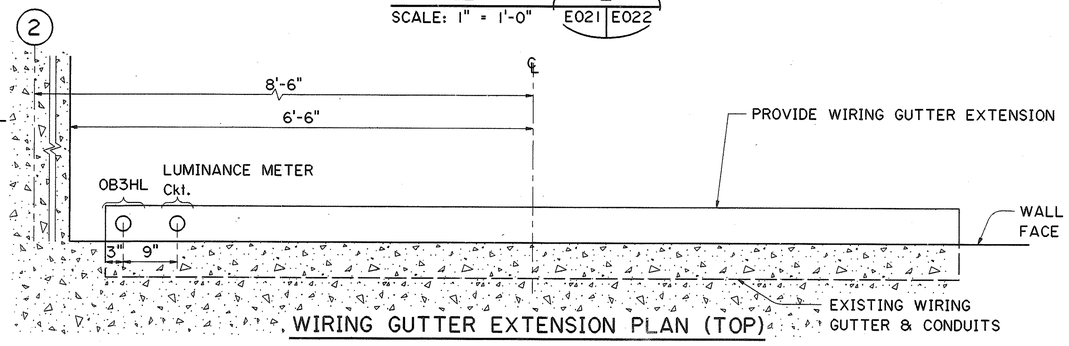
WIRING GUTTER EXTENSION PLAN (TOP)

DETAIL 7 — SCALE: 1" = 1'-0"



WIRING GUTTER EXTENSION PLAN (BOTTOM)

DETAIL 2 — SCALE: 1" = 1'-0" — E021 | E022

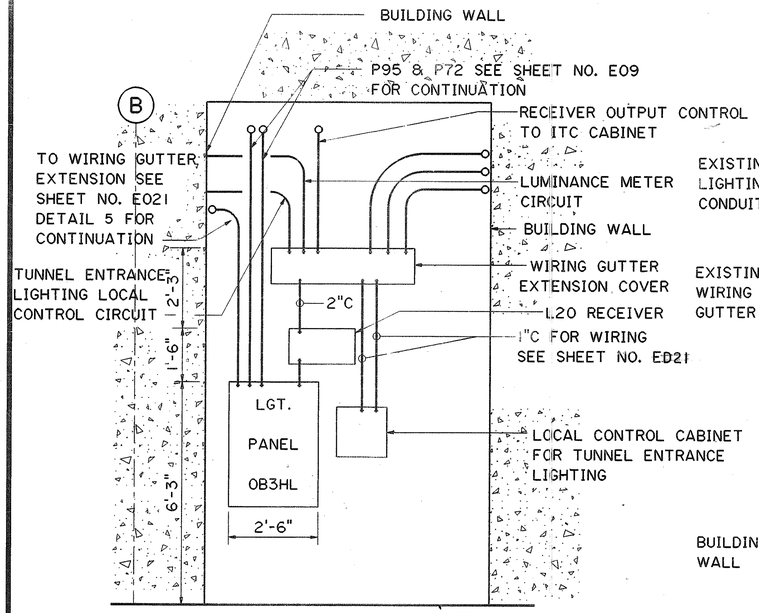


WIRING GUTTER EXTENSION PLAN (TOP)

DETAIL 3 — SCALE: 1" = 1'-0" — E021 | E022

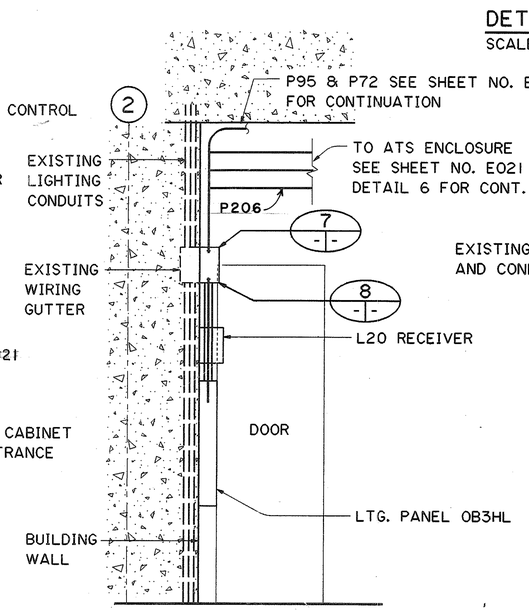
NOTES:

SEE SHEET NO. EN21 FOR NOTES.



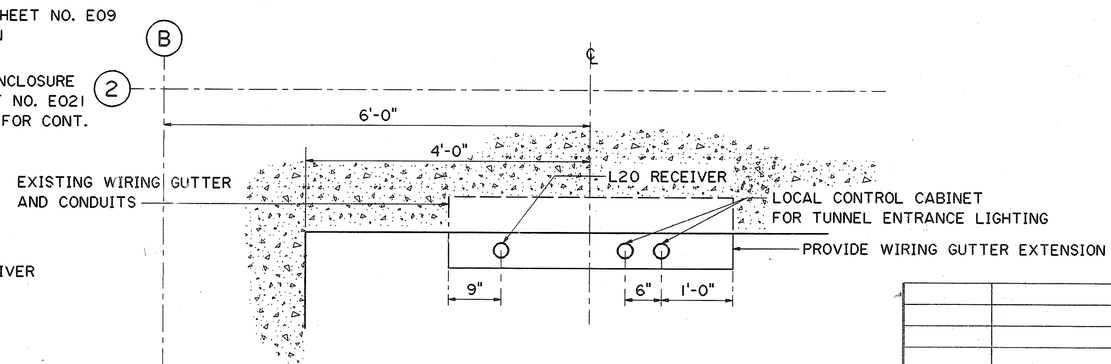
ELECTRICAL ROOM LAYOUT (EAST WALL)

DETAIL 9 — SCALE: ½" = 1'-0" — E021 | E022



ELECTRICAL PANEL ROOM LAYOUT (PROFILE VIEW)

DETAIL 10 — SCALE: ½" = 1'-0" — E021 | E022



WIRING GUTTER EXTENSION PLAN (BOTTOM)

DETAIL 8 — SCALE: 1" = 1'-0"

GRAPHIC SCALE
1' 0' 1' 2'
1" = 1'-0"

GRAPHIC SCALE
2' 1' 0' 2' 4'
½" = 1'-0"

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING INSTALLATION DETAILS - 2

HALAWA PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

SHEET NO. E022 OF 22 SHEETS

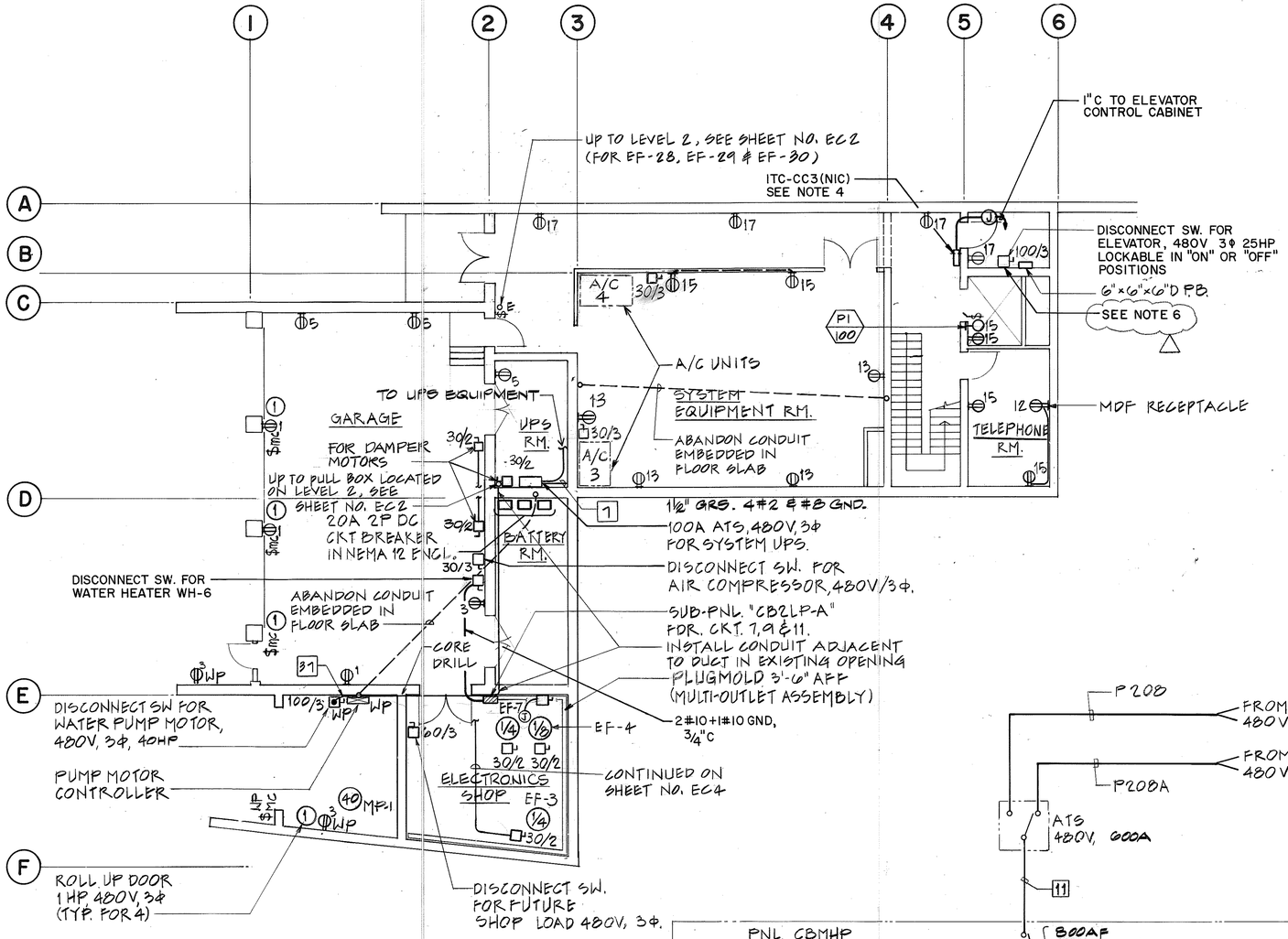
PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6460-E — HAWAII, U.S.A.

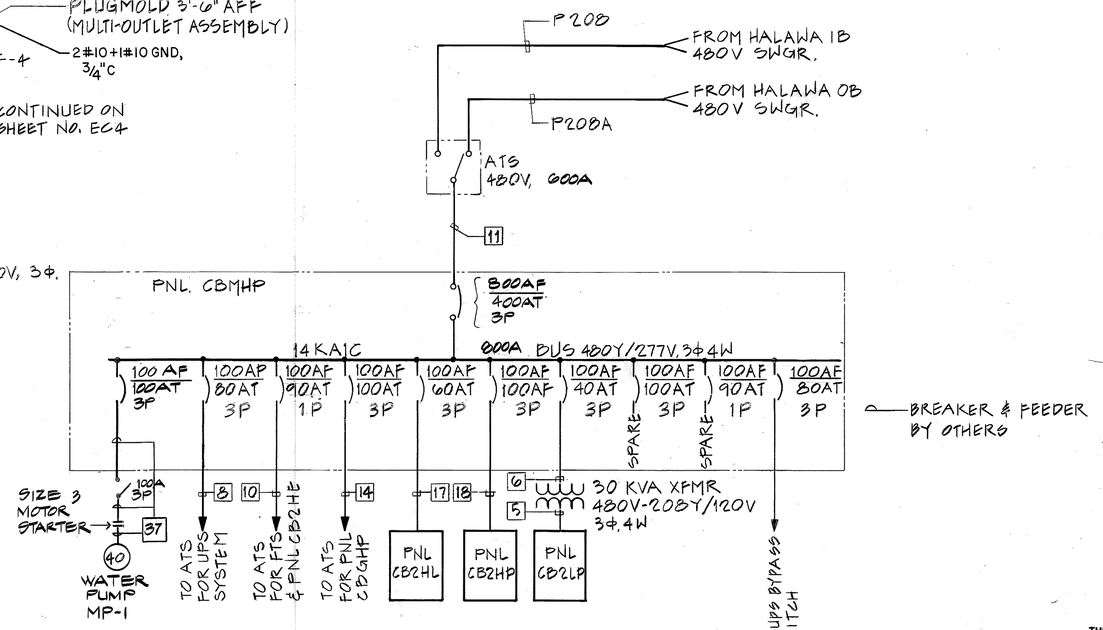
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

		DATE
ORIGINAL PLAN	SURVEY PLOTTED BY	
	DRAWN BY CADD	1-14-90
NOTE BOOK	TRACED BY	
	DESIGNED BY T.Y.S./R.F.J.	1-16-90
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	2-26-90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	175	440





MAIN ONE LINE DIAGRAM

NOTES:

1. FOR SYSTEMS EQUIPMENT LAYOUT & DETAILS IN BATTERY, UPS & EQUIPMENT ROOM, SEE SYSTEMS PLAN.
2. FOR MECHANICAL EQUIPMENT LAYOUT & DETAILS, SEE MECHANICAL PLANS.
3. FOR TAG NO. DESCRIPTIONS, SEE SHEET NO. EC2 AND EC9
4. FOR ITC-CC3, REFER TO SYSTEMS CONTRACT FAIP I-H3-1(65) PLANS.
5. FOR EMERGENCY GENERATOR POWER ONE LINE DIAGRAM, SEE SHEET NO. ED19.
6. INTERCEPT INCOMING 2" CONDUIT FOR ELEVATOR POWER UPON ENTERING ELEVATOR SHAFT AND FURNISH AND INSTALL (N) J-BOX, 8"x16"x6". REPULL ELEVATOR POWER CONDUCTORS THROUGH J-BOX BACK TO ELEVATOR DISCONNECT WITHOUT SPLICING. FURNISH AND INSTALL 1"C, RGS FROM J-BOX TO (N) LOCKABLE FUSED DISCONNECT SWITCH, 240V, 30A, 2POLE, 20A FUSE. TERMINATE INCOMING 3-#12 AWG (ELEVATOR CAB LIGHTS) AT (N) DISCONNECT SWITCH WITHOUT SPLICES. FURNISH AND INSTALL 90 MINUTE BATTERY PACK FOR THE ELEVATOR CAB LIGHT, BODINE B50 OR APPROVED EQUAL. COORDINATE LOCATIONS AND INSTALLATION WITH ELEVATOR SUB-CONTRACTOR AS NECESSARY.

FOR DETAIL AS-BUILT INFORMATION REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION
12/22/94	REV. PER DCN 66-055
9/21/94	REV. PER DCN 66-052
8/1/94	REV. PER DCN 66-051
5-17-93	REVISED PLAN & MAIN ONE LINE DIAGRAM PER DCN 66-005

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL I PLAN
CONTROL BUILDING
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8"=1'-0" DATE: APR 1992

SHEET NO. EC1 OF 9 SHEETS

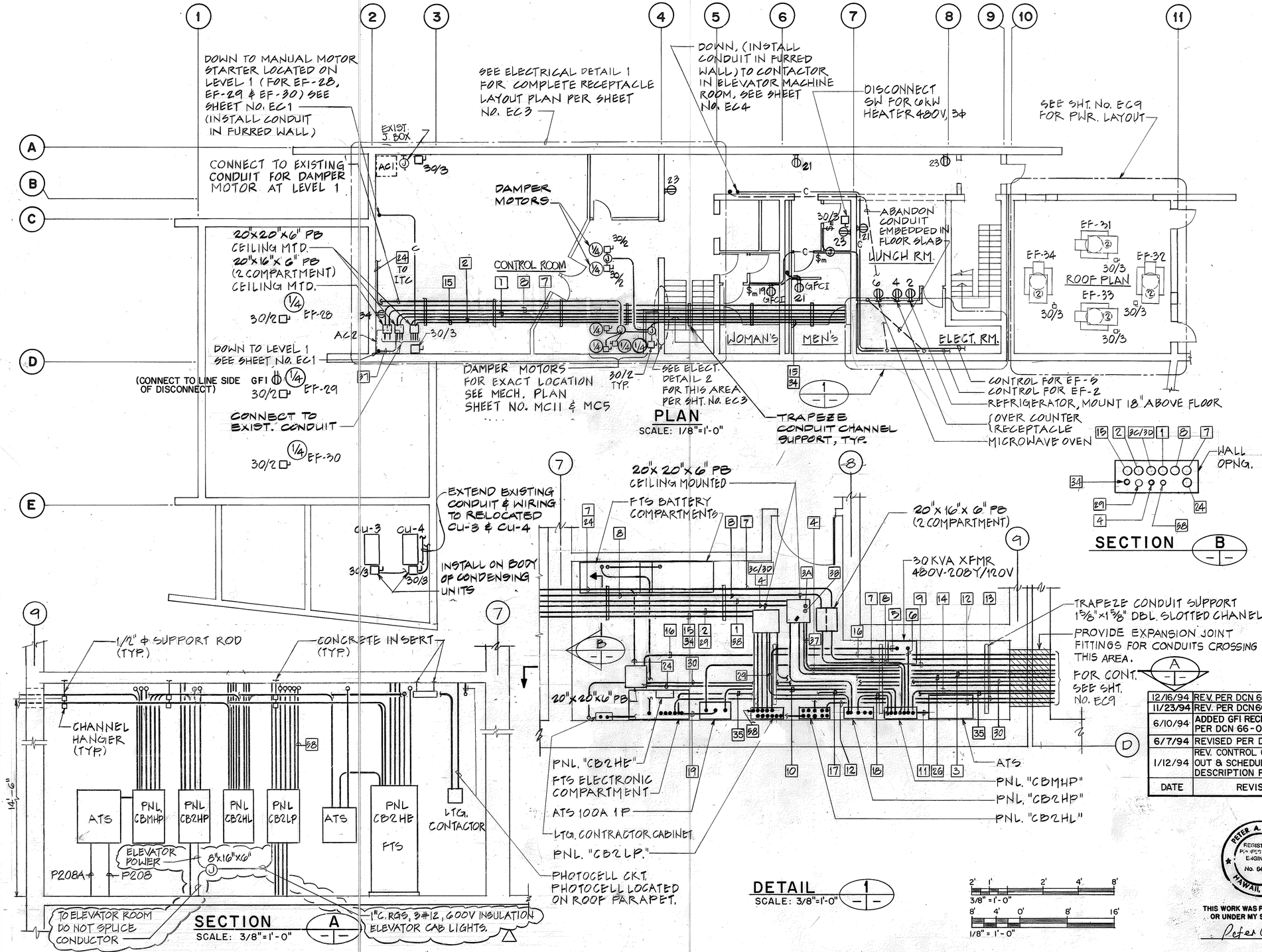
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	G. OW-YANG	DATE 6-18-90
	DRAWN BY		
NOTE BOOK	TRACED BY	T. SANCHEZ	5-1-90
	DESIGNED BY		
	QUANTITIES BY	J.J. SASSANI	6-26-90
No.	CHECKED BY		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	176	440



CONDUIT & WIRING SCHEDULE

TAG No.	DECRIPTIONS	CONDUIT SIZE	WIRING CONDUCTOR SIZE & NUMBERS
1	ROLL-UP DOORS & WATER PUMP (MP-1) CKTS	2"C	12#12+4#12 GND. 3#4+1#8 GND.
2	EF-28, 29, 30, PNL & RCPT CKTS	1"GRS	2#10+1#12 GND. 2#8+1#10 GND 2#12+1#12 GND.
3	CU-1, CU-2, CU-3 & CU-4 CKTS	2" GRS	12#12+4#12 GND.
4	A/C-1, A/C-2, A/C-3 & A/C-4 CKTS.	2"GRS	12#10+4#12 GND.
5	XFMR SECONDARY FDR CKT.	2"GRS	4#2 +1#8 GND.
6	XFMR. PRIMARY FDR. CKT.	1" GRS	3#8 +1#10 GND.
7	GENERATOR FDR. CKT. TO UPS VIA ATS	2"GRS	3#2 + 1#8 GND.
8	NORMAL FDR CKT. TO UPS VIA ATS	2"GRS	4-1/C#4 & 1#8 GND
9	PNL CBMHE FDR. CKT. TO FTS VIA ATS	2" GRS	2#2 + 1#8 GND.
10	NORMAL FDR. CKT. TO FTS VIA ATS	2"GRS	2#2 + 1#8 GND.
11	NORMAL MAIN PWR FDR. VIA ATS	4"GRS	4-500KCMIL + 1/0 GND.
12	NORMAL LTG. CKT. TO GEN. RM. & UTILITY PNL.	3/4"GRS	4#12 + 2#12 GND.
13	EMERGENCY LTG. CKT. TO GEN. RM. & UTILITY PNL	3/4"GRS	4#12 + 2#12 GND.
14	NORMAL FDR. CKT. TO PNL. "CBGHP" VIA ATS	2"GRS	4-1/C#4 & 1#8 GND
15	EF-3, EF-4, EF-1 + EF-4 DAMPER	1"GRS	8#12+4#12 GND.
16	DC PWR SUPPLY FOR AUTO-START OF GEN.	3/4"GRS	2#8 + 1#12 GND.
17	NORMAL FDR TO LTG. PNL.	1" GRS	4#6 + 1#10 GND.
18	NORMAL FDR TO PWR. PNL. CB2HP	2"GRS	4#2 + 1#8 GND.
19	FDR. CKT. FOR FTS VIA ATS	2"GRS	2#2 + 1#8 GND.
9A	CU-2	3/4"GRS	3#12 + 1#12 GND.
9B	CU-1	3/4"GRS	3#12 + 1#12 GND.
8C/3D	CU-3 & CU-4	1"GRS	6#12 + 2#12 GND.
1A	ROLL UP DOORS	1½"GRS	12#12 + 4#12 GND.
6B	CONTROL ROOM LEVEL 2 RECEPTACLES	1"GRS	10#12 + 5#12 GND.

FOR CONTINUATION SEE SHT. NO. EC9

DATE	REVISION
12/16/94	REV. PER DCN 66-055
11/23/94	REV. PER DCN66-054
6/10/94	ADDED GFI RECEPTACLE PER DCN 66-046
6/7/94	REVISED PER DCN 66-044
1/12/94	REV. CONTROL CENTER LAY-OUT & SCHEDULE 3A, 3B DESCRIPTION PER DCN66-030

DATE	REVISION
5-17-93	REVISED CONDUIT WIRING SCHEDULE, PLAN, SECTION A & DETAIL 1 PER DCN 66-005

ORIGINAL PLAN	SURVEY PLOTTED BY	G. OW-YANG	DATE 9-18-90
	DRAWN BY	T. SANCHEZ	5-1-90
NOTE BOOK	TRACED BY		
	DESIGNED BY		
	QUANTITIES BY	J.J. SASSANI	9-26-90
No.	CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 2 PLAN
CONTROL BUILDING
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

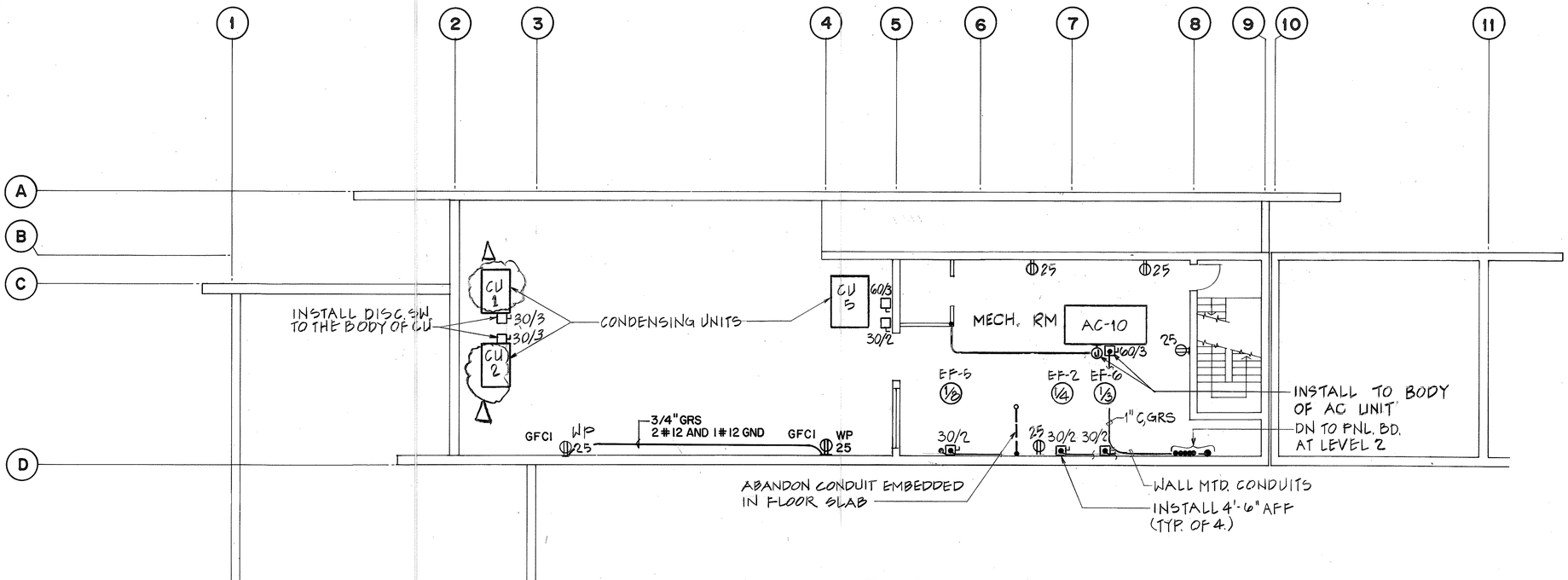
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

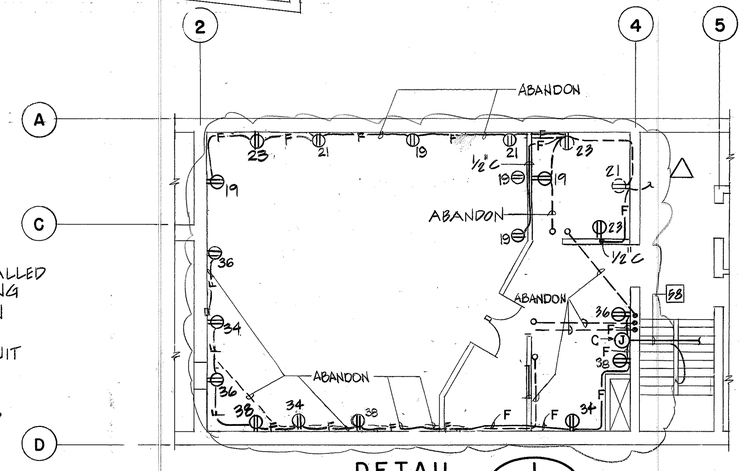
Peter A. Mason

SHEET NO. EC2 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	177	440

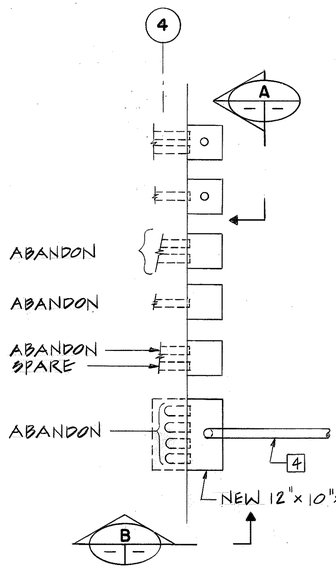


PLAN
SCALE : 1/8" = 1'-0"

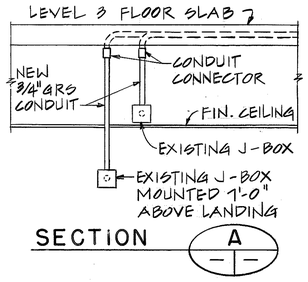


DETAIL 1
SCAL: 1/8"=1'-0" EC2 | EC3

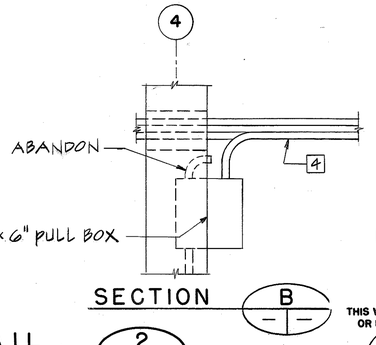
KEY PLAN :
C = CONDUIT OR J-BOX INSTALLED ABOVE ACOUSTIC CEILING
F = CONDUIT CONCEALED IN FURRED WALLS
½"C = MAXIMUM SIZE CONDUIT CONCEALED IN MOVABLE WALLS
ADDITIONAL RECEPTACLES SHOWN IN SOLID LINE



DETAIL 2
N.T.S. EC2 | EC3



SECTION A



SECTION B

GRAPHIC SCALE
8' 4' 0' 8' 16'
1/8" = 1'-0"

DATE	REVISION
11/23/94	REV. PER DCN 66-054
6/10/94	REV. ONE RECEPT. TO GFI AND ADDED SECOND GFI RECEPT. ON ROOF PER DCN 66-046
1/12/94	REVISED CU TAG NO'S AND DETAIL '1' PER DCN 66-030
5-17-93	SHOW ABANDON CONDUIT; ADDED DETAILS 1 & 2 PER DCN 66-005

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 3 PLAN
CONTROL BUILDING
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE : 1/8" = 1'-0" DATE: APRIL, 1992

SHEET NO. EC3 OF 9 SHEETS

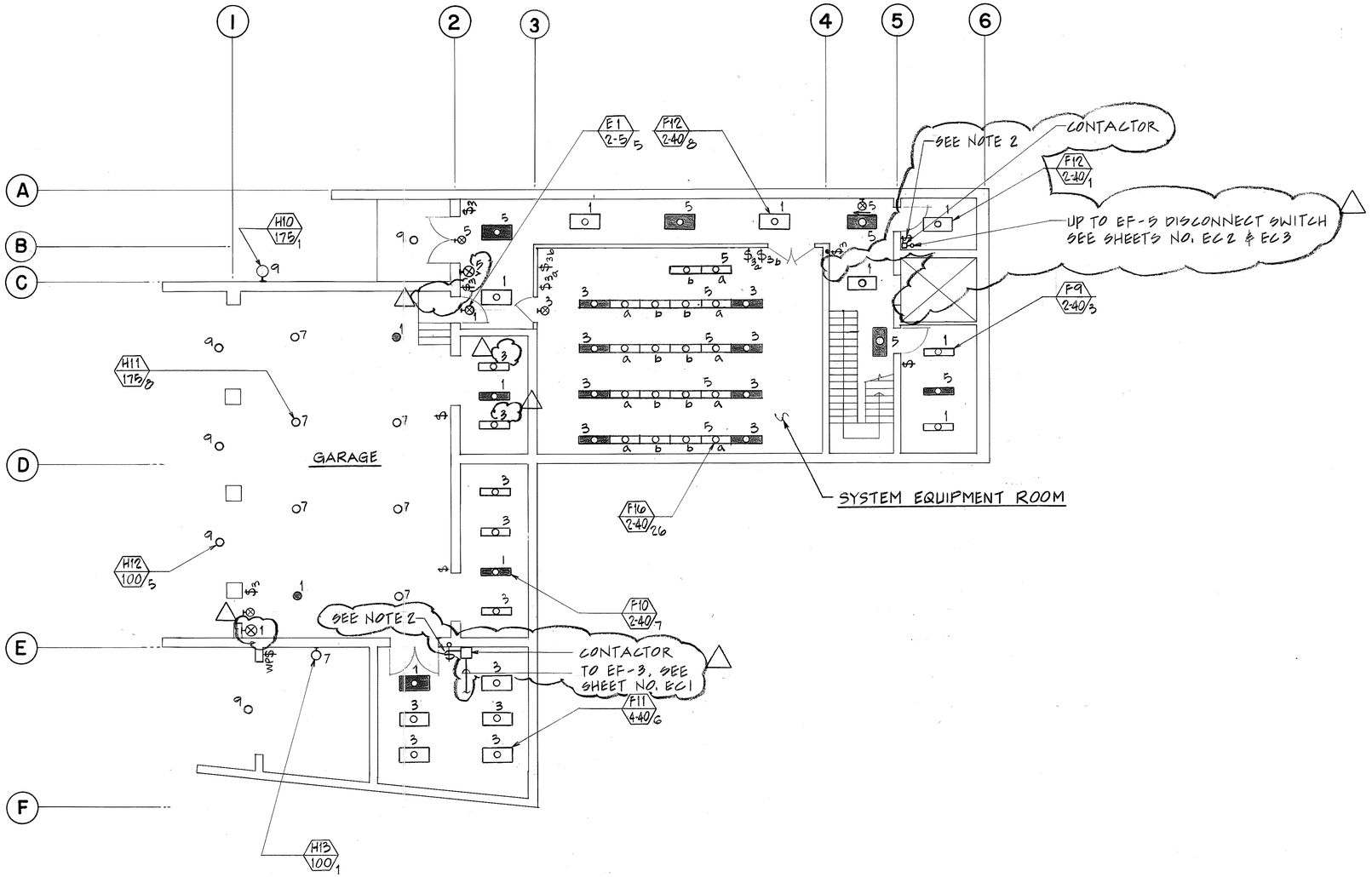
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN		
	SURVEY PLOTTED BY	DATE
	DRAWN BY G. OW-YANG	5-18-90
	TRACED BY	
NOTE BOOK	DESIGNED BY T. SANCHEZ	5-4-90
	QUANTITIES BY	
No.	CHECKED BY J.J. SASSANT	5-26-90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	178	440



NOTE:

1. SWITCHING FOR LIGHTING CIRCUIT 9 & 11 SHALL BE DONE BY PHOTOCELL & LIGHTING CONTACTOR.
2. SWITCH SHALL CONTROL BOTH 277V LIGHTING AND CONTACTOR FOR 120V FAN.

SURVEY PLOTTED BY	
DRAWN BY	G. SW-YANG
TRACED BY	
DESIGNED BY	T. SANCHEZ
QUANTITIES BY	
CHECKED BY	J.J. SASSANI
DATE	11-5-90
	"
	12-90
	"
	6-26-90

ORIGINAL PLAN

NOTE BOOK

No.

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION
5-17-93	REVISED PLAN & ADDED NOTE 2 PER DCN 66-005

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING LEVEL 1 PLAN

CONTROL BUILDING
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

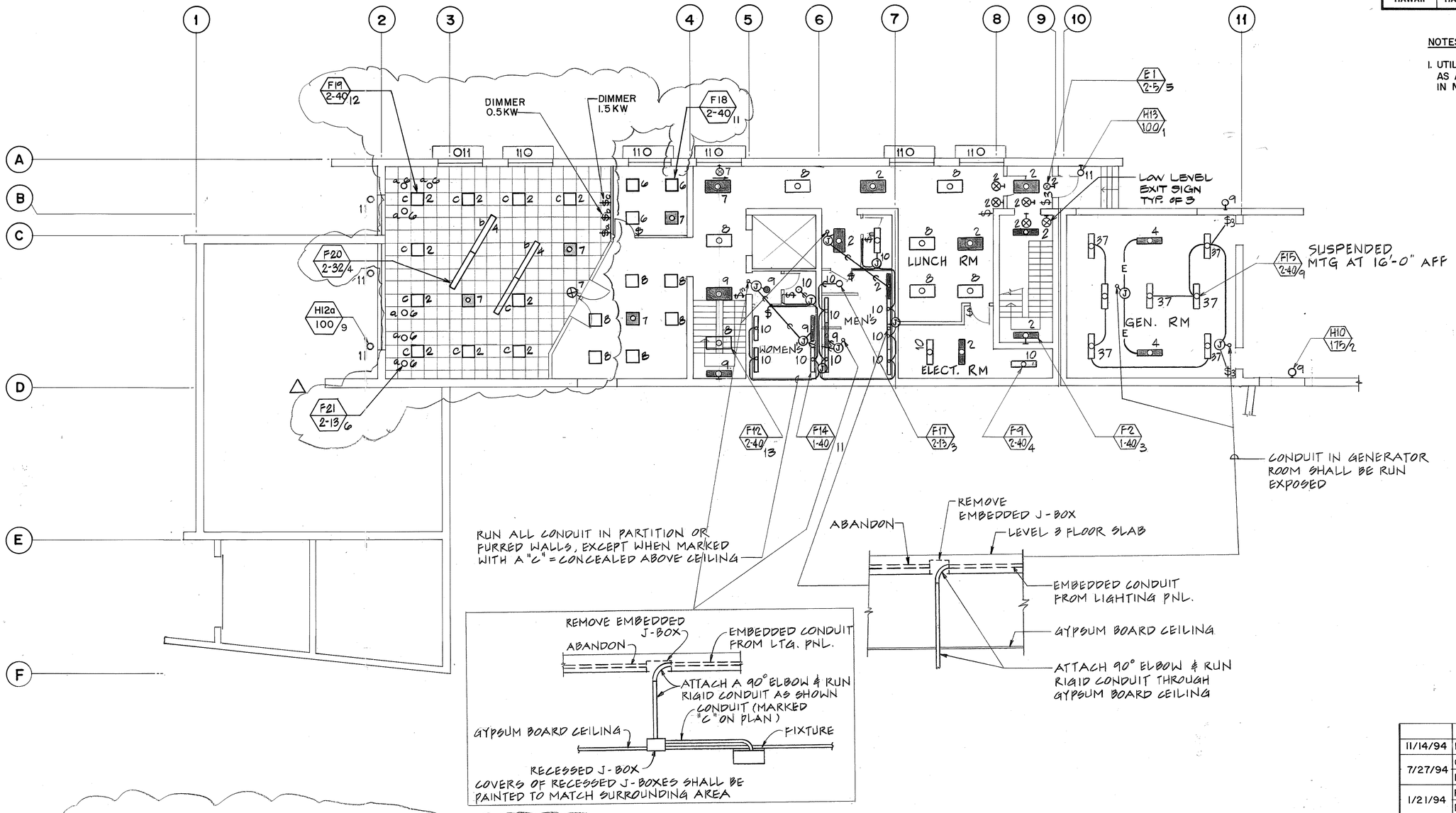
SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. EC4 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	179	440

NOTES:

1. UTILIZE EXISTING LIGHTING CONDUITS/JB'S AS APPROPRIATE TO CONNECT FIXTURES IN NEW LOCATIONS AS SHOWN.



LIGHTING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURE	LAMP	INPUT WATT	INPUT VOLTAGE
F20 2-40	STEM MOUNTED INDIRECT LIGHTING FIXTURE LOW BRIGTNESS LOUVER, SPECULAR SILVER REFLECTOR	LIGHTOLIER LYTESPREAD I/D2	2-32W T8	80 VA	277
F21 2-13	6" OPEN DOWNLIGHT, RECESSED COMPACT FLUORESCENT ALZAK REFLECTOR	LIGHTOLIER	2-13W QT	40 VA	277

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY G. OW-YANG	1-16-90
NOTE BOOK	TRACED BY	
	DESIGNED BY T. SANCHEZ	1-2-90
No.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	6-26-90

DATE	REVISION
11/14/94	REV. PER DCN 66-054
7/27/94	CHANGED H12 LIGHTING FIXTURE TO H12a PER DCN 66-050
1/21/94	REV. CONTROL CENTER LAYOUT AND ADDED NOTE 1 PER DCN 66-030
5-17-93	REVISED PLAN PER DCN 66-005

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING LEVEL 2 PLAN

CONTROL BUILDING
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8"=1'-0" DATE: APR 1992

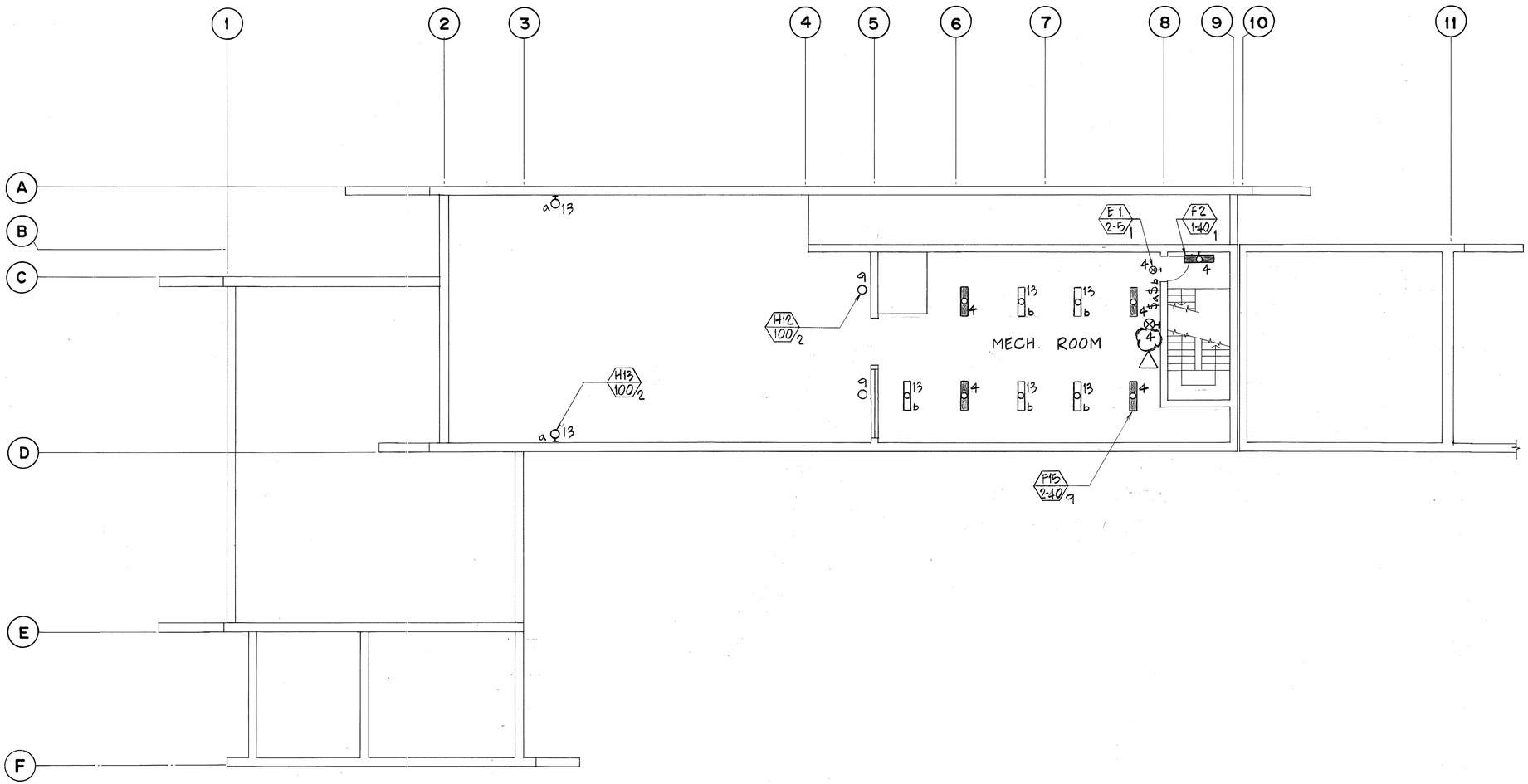
SHEET NO. EC5 OF 9 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A Mason

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	180	440



5-17-93	REVISED NO. OF OUTLETS PER DCN 66-005
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING LEVEL 3 PLAN

CONTROL BUILDING
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8"=1'-0" DATE: APRIL, 1992

SHEET NO. EC6 OF 9 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN

NOTE BOOK

No.

		DATE
SURVEY PLOTTED BY		
DRAWN BY	G. OKAYAMA	1-17-90
TRACED BY		
DESIGNED BY	T. SANCHEZ	1-2-90
QUANTITIES BY		
CHECKED BY	J.J. SASSANI	2-26-90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	181	440

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** "CBMHP" **PANEL LOCATION:** ELECTRICAL ROOM
MAINS: 400AT/800AF 3P CB **SUPPLY LOCATION:** HALAWA IB & OB 480V SWITCHGEAR
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER TRIP	CIRCUIT BREAKER POLES	CIRCUIT BREAKER FRAME	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
	1	9.3						#8				#2				20.1			2	
PNL CB2LP/XFR	3		5.2		100	3	40						100	3	100		19.4		4	PNL CBGHP
	5			6.8														19.4	6	
	7	25.8						#2								16.6			8	UPS SYSTEM
PNL CB2HP	9		25.8		100	3	100						80	3	100		16.6		10	EQUIPMENT
	11			25.8														16.6	12	
	13	6.05						#6					90	1	100	5.0			14	FTS/PNL CB2HE
PNL CB2HL	15		3.24		100	3	60						90	1	100				16	SPARE
	17			4.39									90	1	100				18	SPARE
	19	14						#6											20	
PUMP, MP-1	21		14		100	3	100						100	3	100				22	SPARE
	23			14															24	
UPS BYPASS	25																		26	
SWITCH	27				100	3	80												28	SPACE
(BREAKER	29																		30	
& FEEDER																				
BY OTHERS)																				
SUBTOTAL		55.2	48.2	50.9												41.7	36.0	36.0		

TOTAL CONNECTED = 268 kVA
ESTIMATED MAXIMUM DEMAND 227.1 kVA

A	B	C
96.9	84.3	86.9
81.5	71.7	73.9

SYSTEM: 208Y/120V 3Ø 4W **PANEL –** "CB2LP" **PANEL LOCATION:** ELECTRICAL ROOM
MAINS: 100 AT/225AF 3P CB **SUPPLY LOCATION:** PNL "CBMHP" VIA XFMR. ELECTRICAL ROOM
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER TRIP	CIRCUIT BREAKER POLES	CIRCUIT BREAKER FRAME	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
LEVEL 1 RECEPT	1	0.54			100	1	20	#12				#12	20	1	100	0.7			2	REFRIGERATOR
	3		0.54														0.2		4	OVER COUNTER RECEPTACLE
	5			0.54														1.5	6	MICROWAVE
SUB-PNL.CB2LP-A	7	4.00										#8	40						8	SPARE
	9		1.00			3	40	#8					40						10	SPARE
	11			1.00								#12	20					0.5	12	MDF RECEPT.
LEVEL 1 RECEPT	13	0.72				1	20	#12				#10				0.9			14	EF-28, 29 & 30
	15		1.0									#12					0.3		16	EF-3
	17			0.72														0.3	18	EF-2
LEVEL 2 RECEPT	19	1.08														0.3			20	EF-5
	21		1.08														0.3		22	EF-6
	23			1.08														0.3	24	EF-4
LEVEL 3 RECEPT	25	0.90														0.3			26	E-7
DAMPER MOTORS	27		0.30														0.3		28	DAMPER MTR.
	29			0.30														0.6	30	CU-5 AUX.PWR.
	31	0.30														0.3			32	DAMPER MTR.
	33		0.30									#12					0.54		34	LEVEL 2
	35			0.30								#12						0.54	36	RECEPT.
	37	0.30										#12				0.54			38	
	39		0.30																40	SPARE
	41			0.30								#12						0.2	42	ELEV. LIGHTS
SUBTOTAL		7.84	4.52	4.24												3.04	1.64	3.94		

TOTAL CONNECTED = 25.24 kVA
ESTIMATED MAXIMUM DEMAND = 21.5 kVA

A	B	C
10.9	6.16	8.18
9.3	5.2	7.00

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** "CB2HP" **PANEL LOCATION:** ELECTRICAL ROOM
MAINS: 100 AMPS LUGS ONLY **SUPPLY LOCATION:** PNL "CBMHP" ELECTRICAL ROOM
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER TRIP	CIRCUIT BREAKER POLES	CIRCUIT BREAKER FRAME	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
	1	2.0						#12				#8				5.0			2	
WH-1	3		2.0		100	3	20						40	3	100		5.0		4	AC-10
	5			2.0														5.0	6	
	7	4.0						#8											8	
CU-5	9		4.0		100	3	40						20	3	100				10	SPARE
	11			4.0															12	
	13	8.4						#6				#12				0.35			14	
ELEVATOR	15		8.4		100	3	60						15	3	100		.35		16	ROLL-UP DOOR
	17			8.4														0.35	18	
	19	.35						#12								0.35			20	
ROLL-UP DOOR	21		.35		100	3	15						15	3	100		.35		22	ROLL-UP DOOR
	23			.35														0.35	24	
	25	.35														1.0			26	
ROLL-UP DOOR	27		.35		100	3	15						20	3	100		1.0		28	AIR COMPRESSOR
	29			.35														1.0	30	
FUTURE	31	3.5						#8											32	
SHOP LOAD	33		3.5		100	3	40						15	3	100				34	SPARE
	35			3.5															36	
	37																		38	
SPARE	39				100	3	40						60	3	100				40	SPARE
	41																		42	
SUBTOTAL		18.6	18.6	18.6												6.7	6.7	6.7		

TOTAL CONNECTED = 77.4 kVA
ESTIMATED MAXIMUM DEMAND = 54.18 kVA

A	B	C
25.8	25.8	25.8
18.06	18.06	18.06

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** "CB2HL" **PANEL LOCATION:** ELECTRICAL ROOM
MAINS: 125 AMPS LUGS ONLY **SUPPLY LOCATION:** PNL "CBMHP" ELECTRICAL ROOM
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER TRIP	CIRCUIT BREAKER POLES	CIRCUIT BREAKER FRAME	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
LEVEL 1 LIGHTS	1	0.9			100	1	20	#12				#12	20	1	100	1.0			2	LEVEL 2 LIGHTS
	3		0.9														0.4		4	
	5			1.8														0.54	6	
	7	1.45														1.3			8	
LEVELS 1&3 LTGS	9		1.24														0.7		10	
LEVEL 2 LIGHTS	11			1.45												0.6		0.6	12	UTILITY TNL.LTG.
LEVEL 3 LIGHTS	13	0.8																	14	SPARE
SPARE	15																		16	
	17																		18	
	19																		20	SPACE
	21																		22	
	23																		24	
SUBTOTAL		3.15	2.14	3.25												2.9	1.1	1.14		

TOTAL CONNECTED = 13.68 kVA
ESTIMATED MAXIMUM DEMAND = 13.68 kVA

A	B	C
6.05	3.24	4.39
6.05	3.24	4.39

SURVEY PLOTTED BY: G. OW-YANG DATE: 2-1-90
DRAWN BY: 5-4-90
TRACED BY: T. SANCHEZ
DESIGNED BY: 5-4-90
QUANTITIES BY: 6-26-90
CHECKED BY: J.J. SASSANI
ORIGINAL PLAN
NOTE BOOK
No.

DATE	REVISION
12/22/94	REV. PER DCN 66-055
11/23/94	REV. PER DCN 66-054
8/1/94	REV. PER DCN 66-051
1/12/94	REV. PANEL "CB2LP" PER DCN 66-030
8/19/93	REVISED SCHEDULES PER DCN 66-017
5-17-93	REVISED PANELS "CBMHP", "CB2LP" AND "CB2HL" PER DCN 66-005

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PANEL SCHEDULE-1

CONTROL BUILDING
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

SCALE: NONE DATE: APR 1992
SHEET NO. EC7 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	182	440

SYSTEM: 480Y/277V 3Ø 4W ✳ **PANEL –** "CB2HE" **PANEL LOCATION:** ELECTRICAL ROOM
MAINS: 125A LUGS ONLY **SUPPLY LOCATION:** PNL "CBMHE"/"CBMHP" VIA ATS & HID
SHORT CIRCUIT RATING: 14 KAIC ELECTRICAL/GEN. ROOM UPS

SERVICE	CKT. NO.	LOAD kVA A	B	C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER TRIP	POLES	FRAME	LOAD kVA A	B	C	CKT. NO.	SERVICE
LEVEL 1 LIGHTS	1	0.87			100	1	20	#12				#12	20	1	100	0.7			2	LEVEL 2 LIGHTS
↓	3	0.82														0.7			4	GEN.RM./LEVEL 3
	5	0.6														0.35			6	UTIL. TNL.LIGHTS
LEVEL 2 LIGHTS	7	0.7																	8	SPARE
↓	9	0.4																	10	SPARE
SPACE	11																		12	SPACE
SUBTOTAL		3.4														1.75				

TOTAL CONNECTED = 5.15 kVA
ESTIMATED MAXIMUM DEMAND = 5.15 kVA

A	B	C
5.15		
5.15		

✳ JUMPER ALL PHASES TOGETHER

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** "CBGHP" **PANEL LOCATION:** GEN. ROOM
MAINS: 100AT/100AF 3P CB **SUPPLY LOCATION:** PNL "CBMHE"/"CBMHP" VIA ATS
SHORT CIRCUIT RATING: = 14 KAIC GEN. ROOM

SERVICE	CKT. NO.	LOAD kVA A	B	C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER TRIP	POLES	FRAME	LOAD kVA A	B	C	CKT. NO.	SERVICE
	1	0.2						#12				#10				2.3			2	
CU-1	3		0.2		100	3	20						20	3	100		2.3		4	AC-1
	5			0.2														2.3	6	
	7	0.2														2.3			8	
CU-2	9		0.2		100	3	20						20	3	100		2.3		10	AC-2
	11			0.2														2.3	12	
	13	0.4														4.4			14	
CU-3	15		0.4		100	3	20						30	3	100		4.4		16	AC-3
	17			0.4														4.4	18	
	19	0.4														4.4			20	
CU-4	21		0.4		100	3	20						30	3	100		4.4		22	AC-4
	23			0.4														4.4	24	
	25	1.4										#10				2.5			26	MPC-
EF-31 & 32	27		1.4		100	3	20					↓	30	2	100		2.5		28	CBGLP
	29			1.4															30	SPACE
	31	1.4																	32	
EF-33 & 34	33		1.4		100	3	20						30	3	100				34	SPARE
	35			1.4															36	
GEN.ROOM LTG.	37	0.7			100	1	20												38	
SPARE	39				100	1	20						20	3	100				40	SPARE
↓	41				100	1	20												42	
SUBTOTAL		4.7	4.0	4.0												15.4	15.4	15.4		

TOTAL CONNECTED = 58.9 kVA
ESTIMATED MAXIMUM DEMAND = 58.9 kVA

A	B	C
20.1	19.4	19.4
20.1	19.4	19.4

SYSTEM: 208Y/120V 3Ø 4W **PANEL –** SUB-PANEL "CB2LP-A" **PANEL LOCATION:** ELECTRICAL/MECHANICAL SHOP
MAINS: 40AT/100AF 3P CB **SUPPLY LOCATION:** PNL "CB2LP" ELECTRICAL ROOM
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	B	C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER TRIP	POLES	FRAME	LOAD kVA A	B	C	CKT. NO.	SERVICE
W/REMOLD RECEPT.	1	1.0			100	1	20						30	1	100	3.0			2	WH-6
↓	3		1.0										20						4	SPARE
	5			1.0															6	
SPARE	7																		8	
↓	9																		10	
	11																		12	↓
SUBTOTAL		1.0	1.0	1.0												3.0				

TOTAL CONNECTED = 6.0 kVA
ESTIMATED MAXIMUM DEMAND = 6.0 kVA

A	B	C
4.0	1.0	1.0
4.0	1.0	1.0

SYSTEM: 120/240V 1Ø 3W **PANEL –** MPC-CBGLP **PANEL LOCATION:** GEN. ROOM
MAINS: 40AT/100AF 2P CB **SUPPLY LOCATION:** PNL "CBGHP"/XFMR. (IN MPC) GEN. ROOM
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	B	C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER TRIP	POLES	FRAME	LOAD kVA A	B	C	CKT. NO.	SERVICE
SPARE	1				100	1	20						20	1	100	0.4			2	MP-3
SPARE	3																0.9		4	RECEPTACLE
BATTERY CHARGER	5	0.72																	6	SPARE
SPARE	7																		8	↓
SUBTOTAL																0.4	0.9			

TOTAL CONNECTED = 2.57 kVA
ESTIMATED MAXIMUM DEMAND = 2.57 kVA

A	B	C

SURVEY PLOTTED BY — DATE 5-92
DRAWN BY G. OW-YANG 5-92
TRACED BY · · · · ·
DESIGNED BY T. SANCHEZ 5-1-90
QUANTITIES BY · · · · ·
CHECKED BY JJ. SASSANI 6-26-90
ORIGINAL PLAN
NOTE BOOK
No.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6460-E — HAWAII, U.S.A.

8/1/94	REV. PER DCN 66-051
8/19/93	REVISED SCHEDULES PER DCN 66-017
5-17-93	REVISED PANELS PER DCN 66-005
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

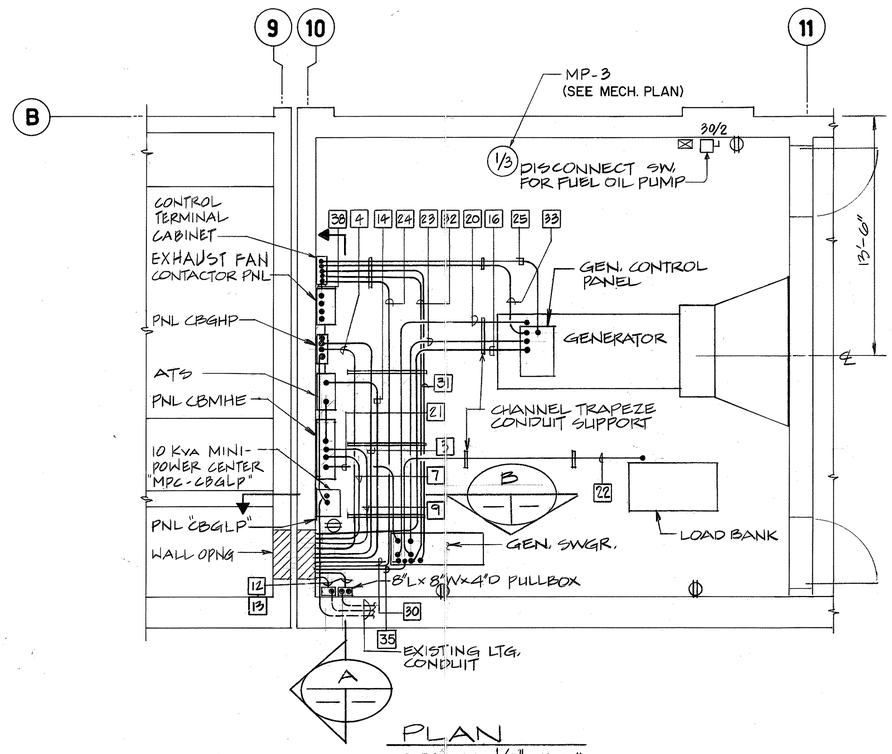
LIGHTING PANEL SCHEDULE-2

CONTROL BUILDING
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APRIL, 1992

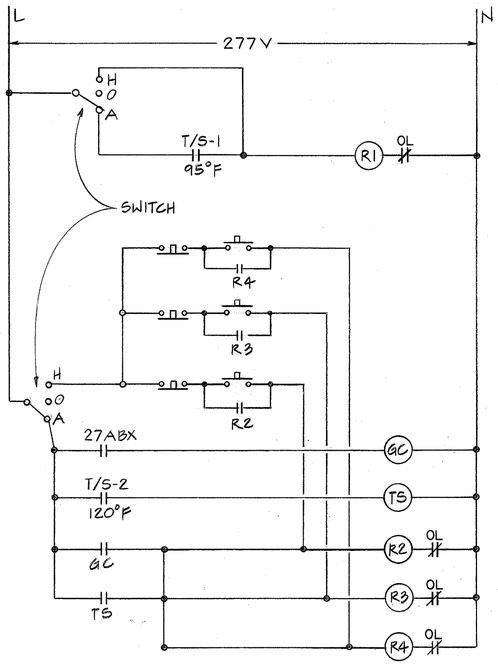
SHEET NO. EC8 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	183	440



PLAN

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



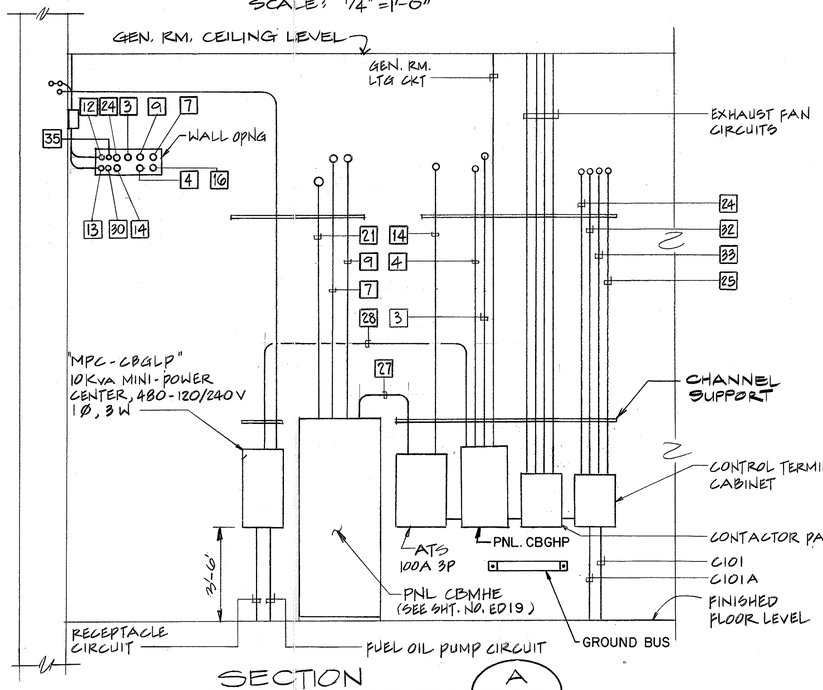
GEN. ROOM EXHAUST FAN CONTROL WIRING DIAGRAM

NOTES:

1. VERIFY EXACT LOCATION OF GEN. POWER TERMINAL, CONTROL PNL., GEN. SWGR., BATTERY CHARGER & LOAD BANK PRIOR TO EXPOSED CONDUIT INSTALLATIONS.
2. EXH. FAN WIRING DIAGRAM SYMBOLS SHOWN ON THIS SHEET REFERS TO:
   - (R1) — CONTACTOR COIL FOR EF-32
   - (R2) — CONTACTOR COIL FOR EF-31
   - (R3) — CONTACTOR COIL FOR EF-33
   - (R4) — CONTACTOR COIL FOR EF-34
   - (GC) — RELAY COIL
   - (T5) — RELAY COIL
   - T5/-1, T5/-2 — CONTACTS OF THERMOSTAT RELAY SHOWN ON MECH. PLAN, SHEET NO. M15.
   - — PUSHBUTTON
   - OL — OVERLOAD RELAY
3. REFER TO SHEET NO. ED19 AND ED20 EMERGENCY GENERATOR ONE LINE AND SCHEMATIC DIAGRAM.

CONDUIT WIRING SCHEDULE (CONT.)

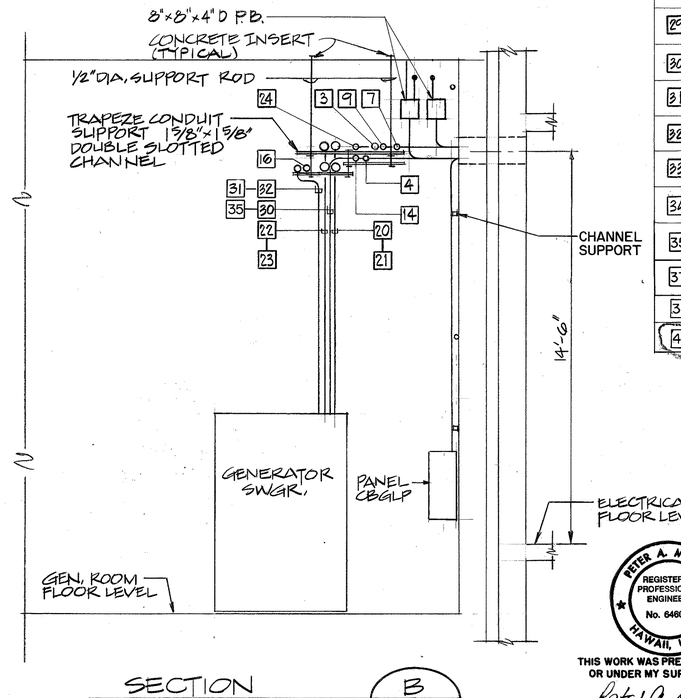
TAG NO.	DESCRIPTION	CONDUIT SIZE	WIRING CONDUCTOR SIZE AND NUMBER
3	CU-1, CU-2, CU-3 & CU-4 CIRCUITS	1" GRS	12#12+4#12 GND
4	AC-1, AC-2, AC-3 & AC-4 CIRCUITS	2"	12#10+4#12 GND
7	GEN. FEEDER CIRCUIT TO UPS VIA ATS	2"	3#2+1#8 GND
9	PNL CB2HE FEEDER CIRCUIT TO ETS VIA ATS	2"	2#2+1#8 GND
12	NORMAL LTG. CIRCUIT	3/4"	4#12+2#12 GND
13	EMERGENCY LTG. CIRCUIT	3/4"	2#12+1#12 GND
14	NORMAL FEEDER CIRCUIT TO PNL. CBGHP VIA ATS	2" GRS	4-1/C#4 & 1#8 GND
20	FEEDER CIRCUIT FROM GEN. TO GEN. SWGR.	3-4" GRS	12-500 KCMIL+ 4/0 GND
21	FEEDER CIRCUIT FROM GEN. SWGR. TO CBMHE	3-4" GRS	12-500 KCMIL+ 250 KCMIL GND
22	LOAD BANK FEEDER CIRCUIT	2-3" GRS	6-250 KCMIL+ 250 KCMIL GND
23	GEN. CONTROL CIRCUIT TO GEN. SWGR.	1½" GRS	16#12+2#12 GND 6#12+ (SPARE)
24	GEN. CONTROL & INDICATION CIRCUIT TO CONTROL RM. ITC	2"	4#12+2#12 GND 6#12 (SPARE)
25	GEN. CONTROL CIRCUIT FROM HALAWA 1B 15KV SWGR.	2"	4#8+1#10 GND
27	FROM PNL. CBMHE TO ATS	2"	4-1/C#4 & 1#8 GND
28	FROM PNL. CBGHP TO MINI-POWER CENTER	1"	2#10+1#12 GND
29	AIR COMPRESSOR & MECH/ELECT. SHOP PWR. LOAD	1"	3#12+1#12 GND 3#8+1#10 GND
30	DC POWER SUPPLY FOR CONTROL OF 52G1 & 52G2	1"	4#8+1#10 GND
31	GEN. AMMETER & VOLTMETER CKT. TO CONTROL ROOM	1"	4#12+1#12 GND. 4#12 (SPARE)
32	GEN. INDICATION & FAILURE ALARM CIRCUIT TO CONTROL ROOM	1"	6#12+1#12 GND. 4#12 (SPARE)
33	GEN. INDICATION & ALARM CIRCUIT TO CONTROL ROOM	1½" GRS	10#12+1#12 GND. 4#12 (SPARE)
34	DAMPER MOTORS BRANCH CIRCUITS	1½"	12#12+3#12 GND
35	AC POWER SUPPLY FOR CONTROL OF 52G1 & 52G2	1"	4#10+1#10 GND
37	WATER PUMP MP-1	1½" GRS	3#4 & 1#8 GND
38	CONTROL CIRCUIT TO START 3 EXH. FAN	3/4" GRS	2#12 & 1#12 GND
40	FROM PANEL CBGHP TO ATS	2" GRS	4-1/C#4 & 1#8 GND



SECTION

SCALE: 3/8" = 1'-0"

A



SECTION

SCALE: 3/8" = 1'-0"

B

DATE	REVISION
	FOR DETAIL AS-BUILT INFORMATION REFER TO CONSTRUCTION SUBMITTALS
6/7/94	REVISED PER DCN 66-044
5-17-93	REVISED CONDUIT WIRING SCHEDULE, PLAN & SECTION A PER DCN 66-005

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
EMERGENCY GENERATOR
CONTROL BUILDING

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/4" = 1'-0" DATE: APR 1992

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

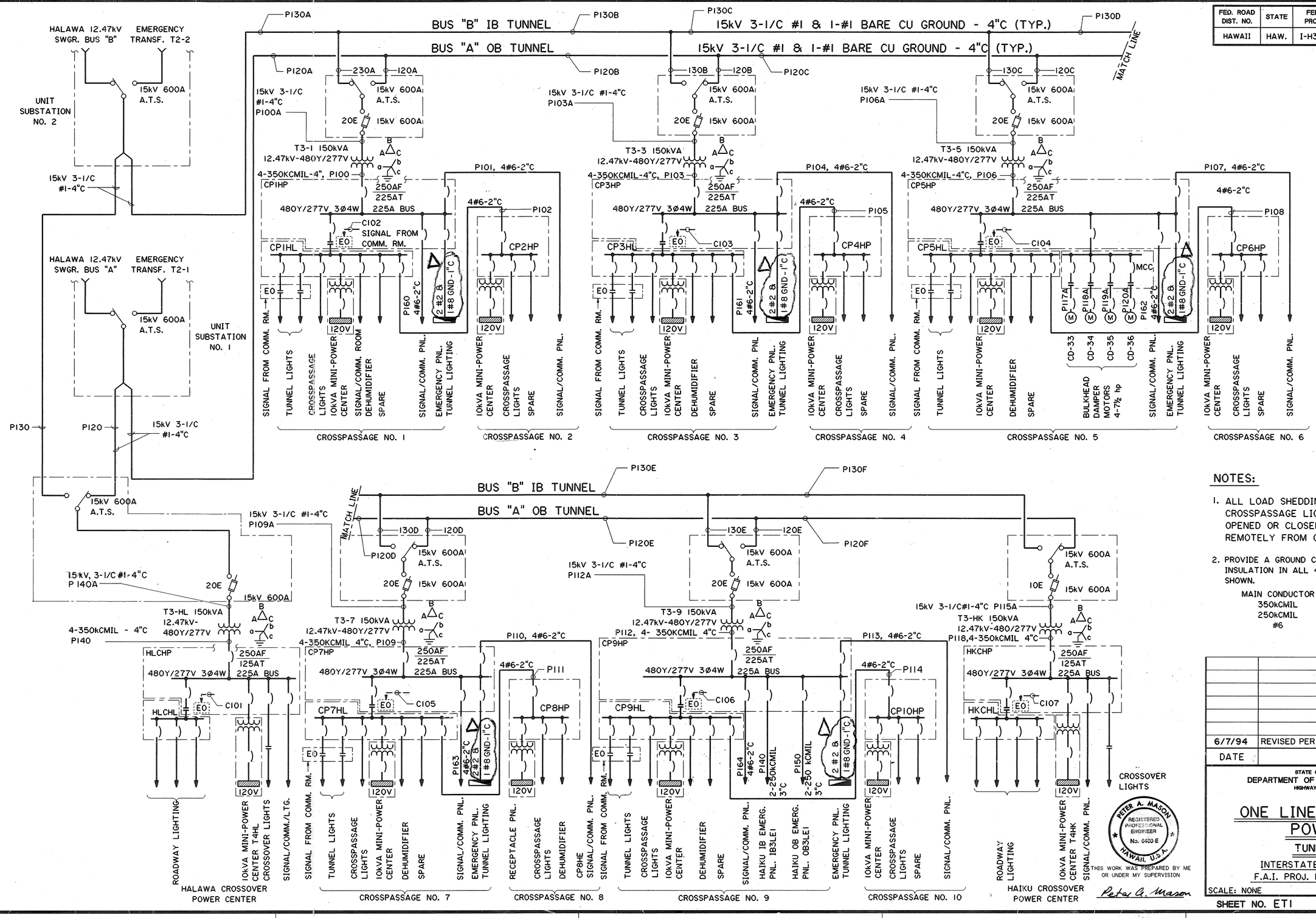
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SHEET NO. EC9 OF 9 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	G. OW-YANG	DATE	5-8-90
	DRAWN BY	"	"	"
	TRACED BY	T. SANCHEZ	"	7-22-90
NOTE BOOK	DESIGNED BY	"	"	"
	QUANTITIES BY			9-26-90
No.	CHECKED BY	J.J. SASSANI		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	184	440



NOTES:

1. ALL LOAD SHEDDING CONTACTORS IN CROSSPASSAGE LIGHTING PANELS ARE OPENED OR CLOSED LOCALLY OR REMOTELY FROM CONTROL ROOM
2. PROVIDE A GROUND CONDUCTOR WITH GREEN INSULATION IN ALL 480V FEEDER CONDUITS SHOWN.

MAIN CONDUCTOR	GROUND
350kCMIL	#2
250kCMIL	#2
#6	#8

6/7/94	REVISED PER DCN 66-044
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM
POWER
TUNNELS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APRIL 1992

SHEET NO. ET1 OF 40 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6469-E HAWAII, U.S.A.

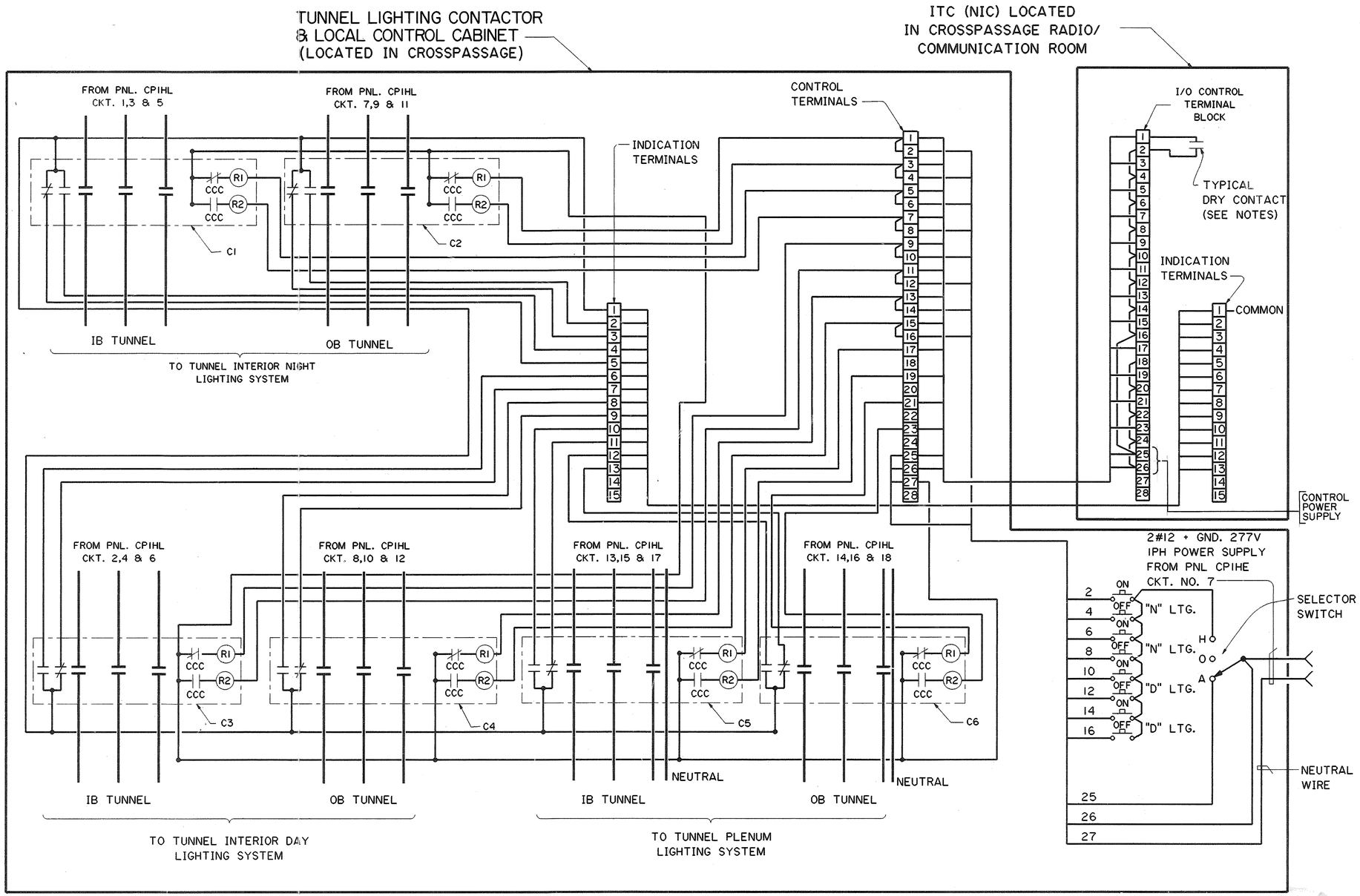
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	5-2-90
	TRACED BY	
NOTE BOOK	DESIGNED BY P.A. MASON	4-2-90
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	6-26-90

2410V156 2410: V156 ES0031.FGB:1 10JULY90-14.59.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	185	440



CONTROL DIAGRAM - CROSSPASSAGE NO. 1
(SIMILAR FOR CROSSPASSAGE NO. 3, 5, 7 & 9
PNL. CP3HL, CP5HL, CP7HL & CP9HL)

NOTES:

1. SYMBOLS SHOWN ON THIS SHEET REFERS TO:
   - R1 - LATCHING OR CLOSING COIL
   - R2 - UNLATCHING OR OPENING COIL
   - CCC - COIL CLEARING CONTACT
   - I/O - INPUT / OUTPUT
   - C1 - CONTACTOR NO. 1
   - C2 - CONTACTOR NO. 2
   - C3 - CONTACTOR NO. 3
   - C4 - CONTACTOR NO. 4
   - C5 - CONTACTOR NO. 5
   - C6 - CONTACTOR NO. 6
   - ⊓ - PUSHBUTTON, MOMENTARY
   - GND - GROUND
2. CONTACTORS 1,2,3,4,5 & 6 ARE ELECTRICALLY OPERATED AND MECHANICALLY HELD CONTACTORS RATED 30AMPS, 480V, 3PH.
3. I/O CONTACTS PROVIDED BY OTHERS IN PLC ITC SHALL BE DRY, MOMENTARY AND CAPABLE OF CARRYING CONTACTORS CLOSING COIL CURRENT.
4. MINIMUM SIZE OF CONDUCTORS FOR CONTACTOR WIRING SHALL BE NO. 12 AWG.
5. TUNNEL INTERIOR LIGHTING OPERATION
   a. EMERGENCY LIGHTS ("E" LIGHTS) SHALL BE ON CONTINUOUSLY AND EMERGENCY PANELS SHALL BE LOCKED SHUT.
   b. AUTOMATIC CONTROL OF THE DAY LIGHTS ("D" LIGHTS) SHALL BE BY THE COMPUTER LOCATED AT CONTROL BLDG. THE COMPUTER SHALL RECEIVE ITS SIGNAL FROM PHOTOCELLS LOCATED AT THE CONTROL BUILDING. TURN ON SHALL BE WHEN DAYLIGHT IS LESS THAN 25 FOOT CANDLES.
   c. NIGHT LIGHTS ("N" LIGHTS) SHALL BE ON CONTINUOUSLY. NIGHT LIGHTS & DAY LIGHTS ARE CIRCUITED TO BE INTERCHANGEABLE SO THAT LAMP LIFE CAN BE EQUALIZED BY USING THE "DAY" LIGHTS AS "NIGHT" LIGHTS AND VICE VERSA.
   d. TUNNEL PLENUM LIGHTS SHALL BE SWITCHED ON & OFF AT THE CONTROL BLDG. MANUALLY OR BY COMPUTER.
6. TUNNEL INTERIOR DAY & NIGHT LIGHTS SHALL ALSO HAVE SWITCHES AT CROSSPASSAGES FOR LOCAL CONTROL.

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONTROL DIAGRAM
INTERIOR LIGHTING
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APRIL 1992

SHEET NO. ET2 OF 40 SHEETS

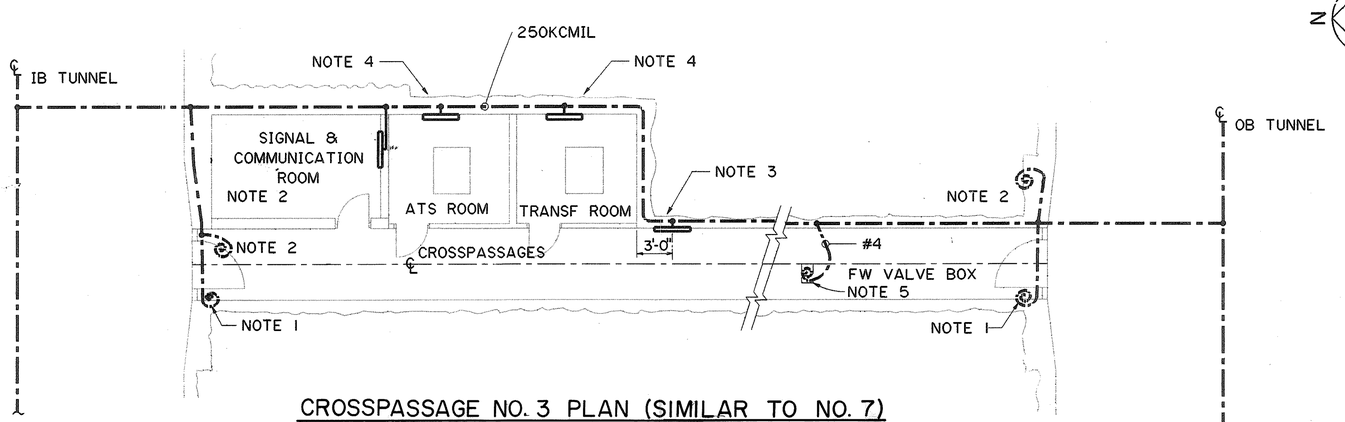
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

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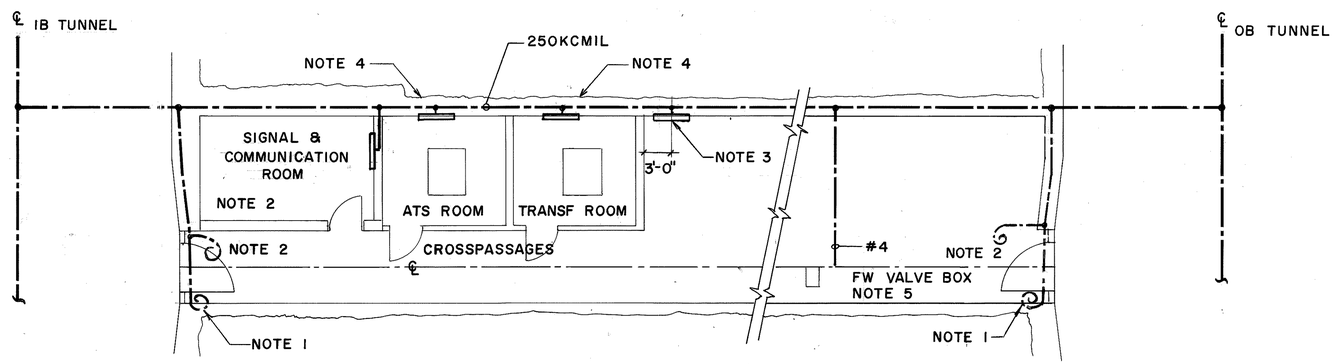
Peter A. Mason

ORIGINAL PLAN	NOTE BOOK	NO.	SURVEY PLOTTED BY	DRAWN BY	TRACED BY	DESIGNED BY	QUANTITIES BY	CHECKED BY	DATE
				CADD		T. Y. SANCHEZ		J. J. SASSANI	5-2-90 / 3/2/90 / 6/18/90

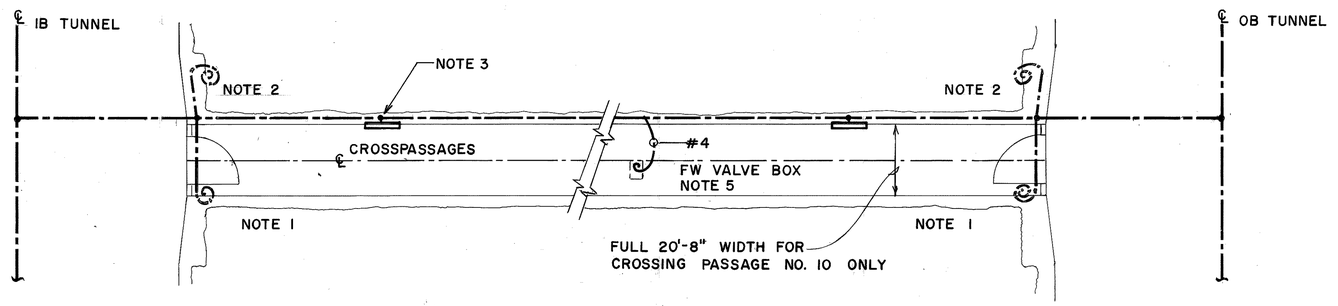
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	186	440



CROSSPASSAGE NO. 3 PLAN (SIMILAR TO NO. 7)
CROSSPASSAGE NO. 1 & 9 OPPOSITE HAND



CROSSPASSAGE NO. 5 PLAN



CROSSPASSAGE NO. 2 PLAN
(SIMILAR TO CROSSPASSAGE NO. 4, 6, 8, & 10)

GENERAL NOTES:

1. CONNECT EXISTING #8 PIGTAIL TO DOOR FRAME WITH EXOTHERMIC CONNECTION
2. CONNECT EXISTING 2/0 PIGTAIL TO JUNCTION BOXES AND CONDUIT ABOVE DOOR WITH SUITABLE GROUNDING CLAMPS
3. CONNECT EQUIPMENT GROUNDS AND TRANSFORMER NEUTRALS TO NEUTRAL GROUNDING TEST STATION WITH SUITABLE GROUNDING LUG SIZE NEUTRAL & GROUNDING CONDUCTORS IN ACCORDANCE WITH THE NEC
4. CONNECT A 350kCMIL TRANSFORMER NEUTRAL TO NEUTRAL GROUNDING TEST STATION WITH SUITABLE GROUNDING LUG. INSTALL WIRE IN A GRS CONDUIT FOR MECHANICAL PROTECTION
5. CONNECT #4 PIGTAIL TO FIRE WATER VALVE WITH EXOTHERMIC CONNECTION

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	2-20-90
	TRACED BY	
NOTE BOOK	DESIGNED BY F. JIMENEZ	2-20-90
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	6-18-90

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

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Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GROUNDING

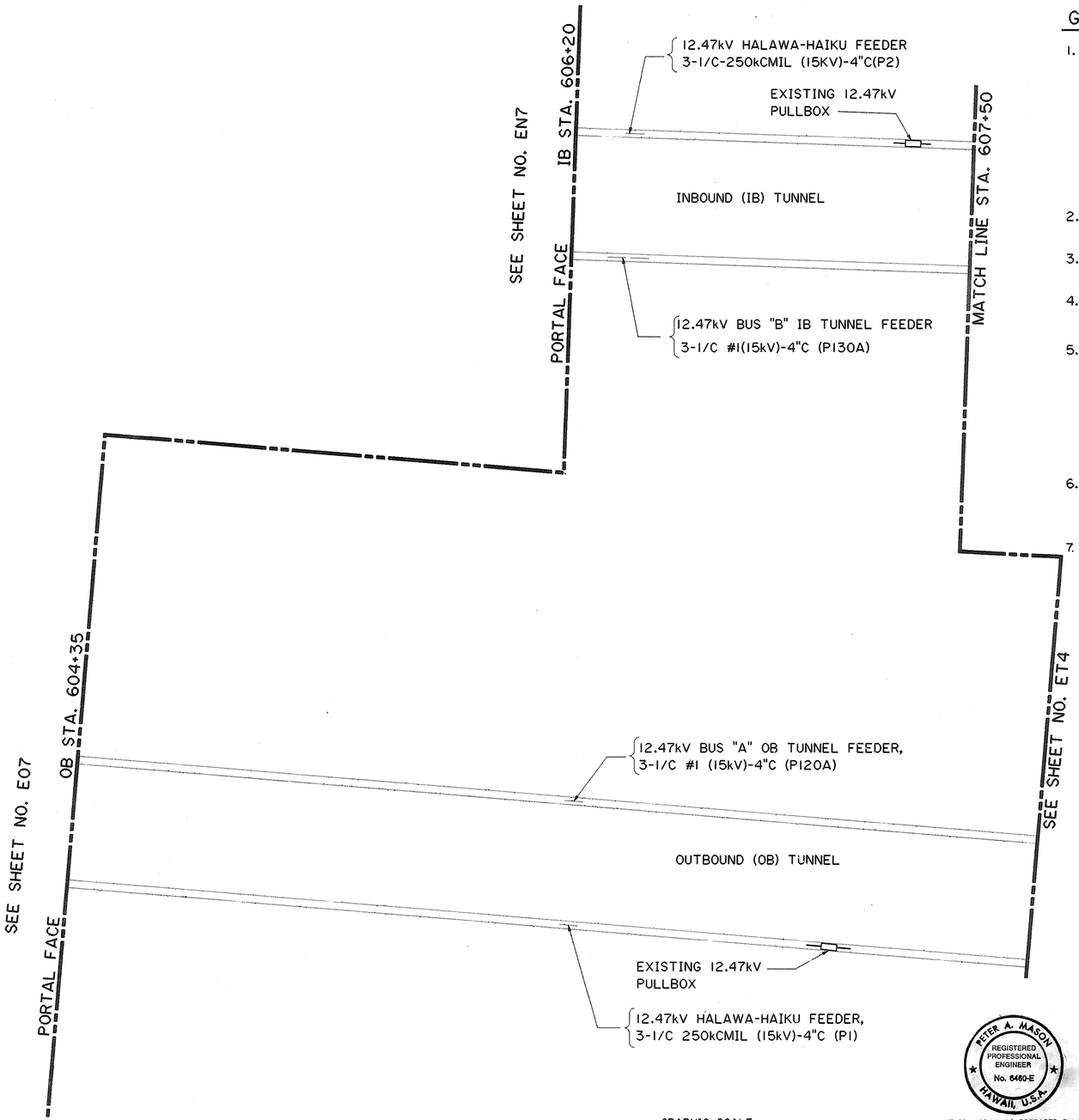
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ET3 OF 40 SHEETS

2410V153 2410: V153 ES0335.FGB;1 26JAN90-13.25.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	187	440



GENERAL NOTES:

1. EXTEND EXISTING CONDUITS, FURNISH AND INSTALL ALL WIRE AND CABLE NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE SINGLE LINE DIAGRAMS. FURNISH AND INSTALL ALL ELECTRICAL EQUIPMENT SHOWN AND ALL INCIDENTAL MATERIALS AND EQUIPMENT NECESSARY TO PROVIDE A COMPLETE WORKING SYSTEM AS SHOWN ON THE SINGLE LINE DIAGRAMS.
2. FOR LOCATION OF PULL BOXES NOTED, SEE STRUCTURAL SHEET NO. ST10. CONTRACTS FAIP I-H3-1(64) & FAIP I-H3-1(61)
3. ALL EXPOSED CONDUITS ARE GALVANIZED RIGID STEEL, UNLESS NOTED OTHERWISE.
4. FOR POWER AND CONTROL CABLE DESIGNATIONS SEE ONE LINE DIAGRAM ET1.
5. EXISTING CONDUITS ARE NOT SHOWN IN DETAIL. THE DESIGNATION IN PARENTHESIS INDICATES AN EXISTING CONDUIT FOR EXAMPLE (P130A). EXTENSIONS ARE SHOWN WITH SOLID LINES. THE DESIGNATION IN PARENTHESIS ALSO INDICATES THE FEEDER AND CONDUIT AS SHOWN ON THE SINGLE LINES.
6. HALAWA-HAIKU FEEDER PULLBOXES ARE LOCATED APPROXIMATELY 120 FT WEST OF CROSSPASSAGES.
7. TRANSFORMERS AND AUTOMATIC TRANSFER SWITCHES SHALL BE INSTALLED ON CONCRETE PADS 3 INCHES HIGH. FASTEN EQUIPMENT DOWN IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY ZADD	6-16-40
NOTE BOOK	TRACED BY	
	DESIGNED BY P.A. MASON	5-21-40
NO.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	9-26-40

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

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Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
PORTAL-607+50
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL 1992

SHEET NO. ET4 OF 40 SHEETS

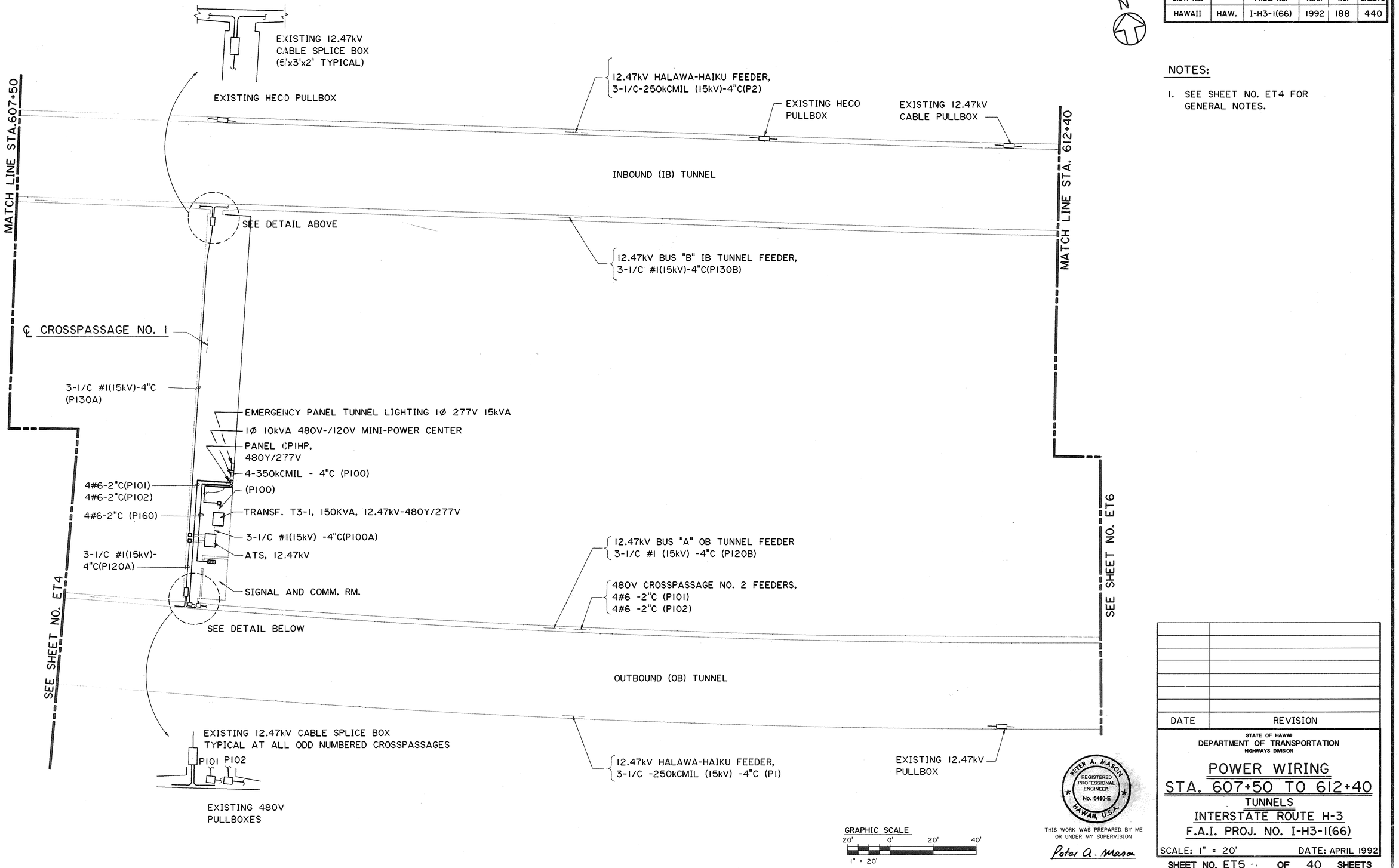
9410V156 2410: V153 ES0230.FGB>1 11.JULY90-08.51.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	188	440

N

NOTES:

1. SEE SHEET NO. ET4 FOR GENERAL NOTES.



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	" 9-18-90
NOTE BOOK	TRACED BY	"
	DESIGNED BY R. JAMES	" 5-1-90
NO.	QUANTITIES BY	"
	CHECKED BY J.J. SASSANI	" 6-29-90

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

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

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Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
STA. 607+50 TO 612+40
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL 1992

SHEET NO. ET5 OF 40 SHEETS

2410V156 2410: V153 ES0231.FGB:1 11.8.Y90-08.55.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	189	440

N

EXISTING 12.47kV CABLE SPLICE BOX

MATCH LINE STA. 612+40

(1-SP.)(P2)

EXISTING HECO PULLBOX

HDOT 12.47kV HALAWA-HAIKU FEEDER,
3-1/C -250kCMIL(15kV)- 4"C(P2)

EXISTING HECO PULLBOX

EXISTING 12.47kV CABLE PULLBOX

MATCH LINE STA. 617+30

(1-SP.)(P130B)

INBOUND (IB) TUNNEL

SEE DETAIL ABOVE

℄ CROSSPASSAGE NO. 2

12.47kV BUS "B" IB TUNNEL FEEDER
3-1/C #1(15kV)- 4"C(P130B)

FURNISH & INSTALL
1-3P4W 480V 100A N/A
DISCONNECT CIRCUIT
BREAKER IN A SS(317)
NEMA 3R ENCLOSURE
FOR SYSTEMS POWER

PANEL, CP2HP
480Y/277V AND
1Ø 10kVA 480V-240/120V
MINI-POWER CENTER

4#6-2"C (P101)

4#6-2"C (P102)

(1-SP.)(P120B)
(P101)(P102)

SEE SHEET NO. ET5

12.47kV BUS "A" OB TUNNEL FEEDER
3-1/C #1(15kV)- 4"C(120B)

SEE DETAIL BELOW

OUTBOUND (OB) TUNNEL

SEE SHEET NO. ET7

12.47kV HALAWA-HAIKU FEEDER
3-1/C -250kCMIL (15kV)- 4"C(P1)

EXISTING 12.47kV CABLE PULLBOX

EXISTING
12.47kV CABLE
SPLICE BOX

EXISTING 480V PULLBOXES

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

NOTES:

1. SEE SHEET NO. ET4 FOR GENERAL NOTES.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 4/2/90
	DRAWN BY CADD	3/13/90
NOTE BOOK	TRACED BY T. SANCHEZ	
	DESIGNED BY	
NO.	QUANTITIES BY JJ. SASSANI	6/26/90
	CHECKED BY	

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
STA. 612+40 TO 617+30
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL 1992

SHEET NO. ET6 OF 40 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

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Peter A. Mason

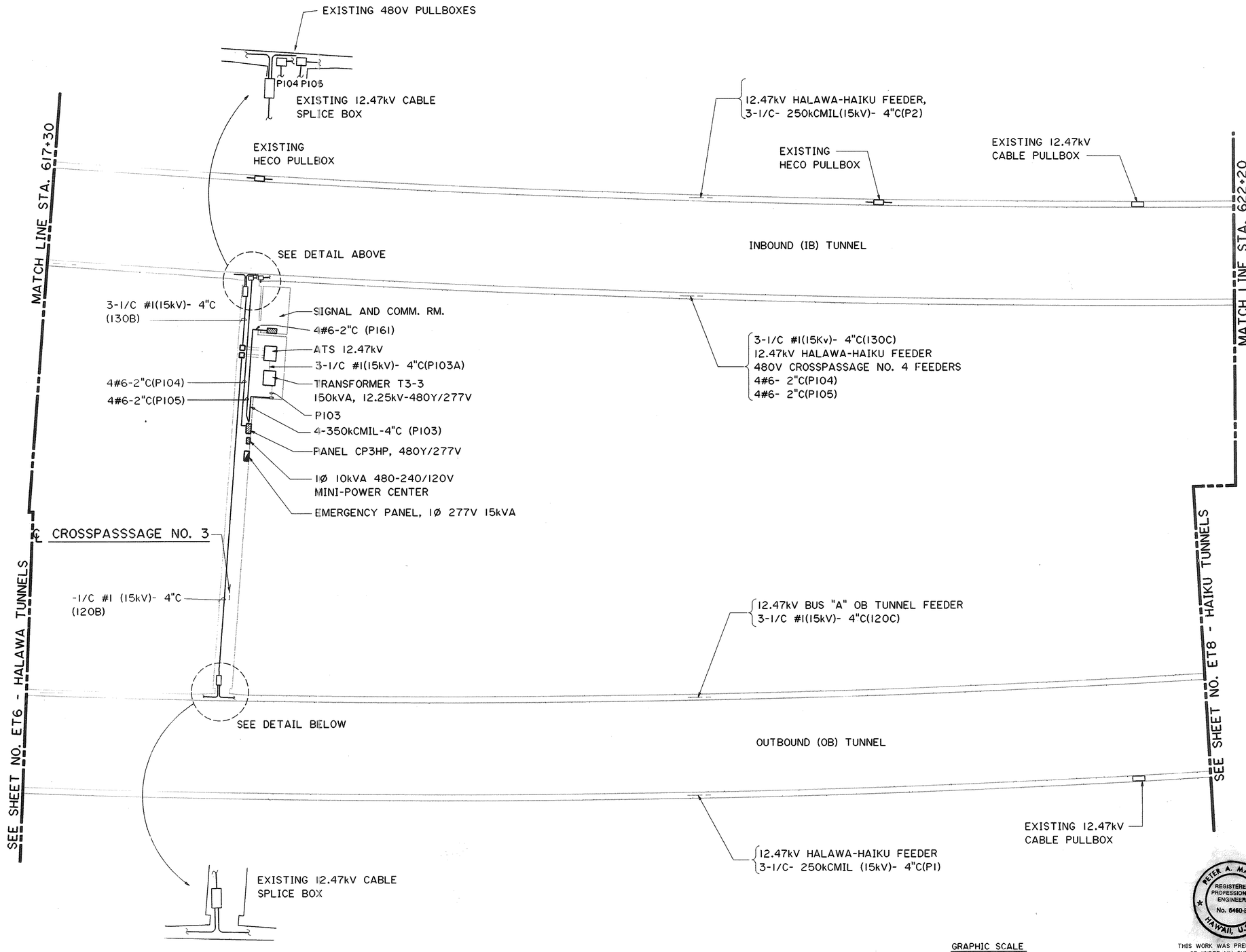
410V156 24101 V153 ES0232.FGB 11 JUY90-08.57.20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	190	440

N

NOTES:

1. SEE SHEET NO. ET4 FOR GENERAL NOTES.



ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	4/2/90
NOTE BOOK	TRACED BY	
	DESIGNED BY T. SANCHEZ	3/13/90
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	6/26/90

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

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 5460-E HAWAII, U.S.A.

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DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

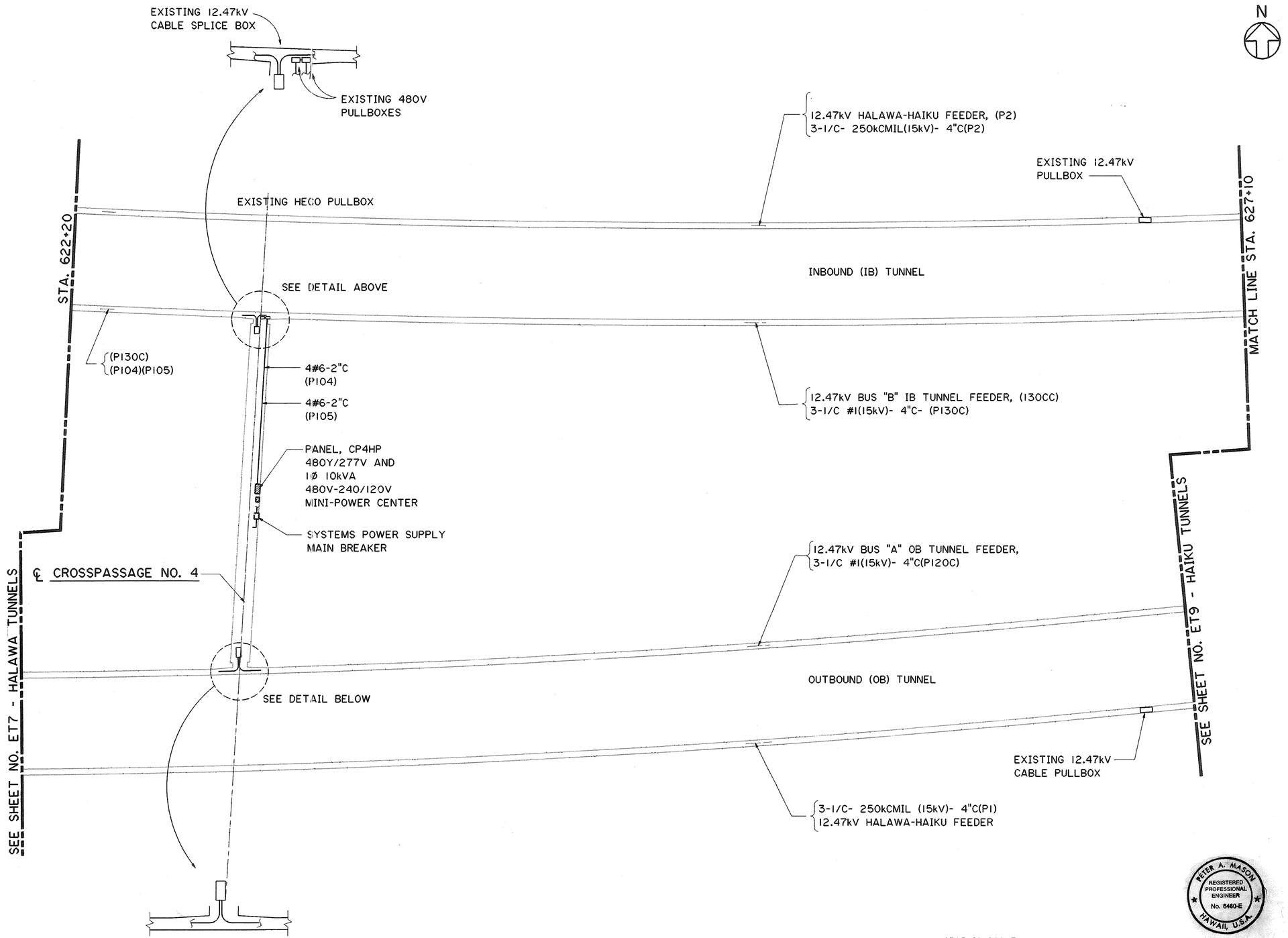
POWER WIRING
STA. 617+30 TO 622+20
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL 1992

SHEET NO. ET7 OF 40 SHEETS

>410V156 2410: V153 ES0233.FGR>1 11JLY90-08.59.20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	191	440



NOTES:

1. SEE SHEET NO. ET4 FOR GENERAL NOTES.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CAPD	4/2/90
	CHECKED BY	
NOTE BOOK	DESIGNED BY T. SANCHEZ	3/19/90
	QUANTITIES BY	
NO.	CHECKED BY JJ. SASZANI	9/26/90

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
STA. 622+20 TO 627+10
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL 1992

SHEET NO. ET8 OF 40 SHEETS

24101153 2410: V153 ES0234.FGBr1 11JLY90-10.10.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	192	440

N

EXISTING 12.47kV CABLE SPLICE BOX

TO BULKHEAD DAMPER MOTORS & CONTROL PB'S (P117A)(P118A)
FURNISH & INSTALL WIRE & CONDUIT IN SUPPLY AIR DUCT

EXISTING HECO PULLBOX

12.47kV HALAWA-HAIKU FEEDER
3-1/C- 250kCMI (15kV)- 4"C (P2)

EXISTING HECO PULLBOX

EXISTING 12.47kV CABLE PULLBOX

EXISTING 2"C

INBOUND (IB) TUNNEL

MATCH LINE STA.632+00

SEE DETAIL ABOVE

3 #8 & 12 #12 } -2"C (P117A)
3 #8 & 12 #12 } (P118A)

3-1/C #1-4"C (P130C)

℄ CROSSPASSAGE NO. 5

3-1/C #1(15kV)- 4"C(130D)
12.47kV BUS "B" IB TUNNEL FEEDER

EMERGENCY PANEL 1Ø 277V 15kVA

CONTROL DAMPER MCC
CD-33, CD-34, CD-35, CD-36
(SEE NOTE 4)

PANEL CP5HP, 480Y/277V AND 1Ø 10kVA
480V-240/120V MINI-POWER CENTER

4-350KCMIL -4"C (P106)

TRANSF. T3-5, 150kVA, 12.47kV-480Y/277V

3-1/C #1(15kV)-4"C (P106A)

ATS, 12.47kV

SIGNAL AND COMM. RM.

4 #6-2"C (P162)

3-1/C #1-4"C(15kV)
(P120C)

3 #8 & 12 #12 } -2"C (P119A)
3 #8 & 12 #12 } (P120A)

12.47kV BUS "A" OB TUNNEL FEEDER (P120D)
480V CROSSPASSAGE NO. 6 FEEDER (P107)(P108)

BULKHEAD CONTROL DAMPERS CD-35 & CD-36

SEE SHEET NO. ET8 - HAIKU TUNNELS

SEE SHEET NO. ET10 - HAIKU TUNNELS

EXISTING 2"C

OUTBOUND (OB) TUNNEL

EXISTING 12.47kV CABLE PULLBOX

TO BULKHEAD DAMPER MOTORS & CONTROL PB'S (P119A)(P120A)
FURNISH & INSTALL WIRE & CONDUIT IN SUPPLY AIR DUCT

3-1/C- 250kCMIL (15kV)- 4"C(P1)
12.47kV HALAWA-HAIKU FEEDER,

LOCAL DISCONNECT (MCP) FOR DAMPER MOTORS

LOCAL/REMOTE SWITCH WITH OPEN/CLOSE PUSH BUTTONS

DAMPER POSITION SWITCHES
TYPICAL IN SUPPLY DUCT & EXHAUST DUCT

EXISTING
12.47kV CABLE
SPLICE BOX

EXISTING 480V
PULLBOXES

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

NOTES:

1. SEE SHEET NO. ET4 FOR GENERAL NOTES.
2. PROVIDE 3 POLE, 480V, 30A MOLDED CASE CIRCUIT BREAKER WITH NON-AUTOMATIC TRIP TO SERVE AS LOCAL DISCONNECT FOR BULKHEAD CONTROL DAMPERS. ENCLOSURE STAINLESS STEEL NEMA 4.
3. PROVIDE PUSHBUTTON STATION AT BULKHEAD DAMPERS WITH "LOCAL-REMOTE" SWITCH AND "START" "STOP" BUTTONS ALL IN A STAINLESS STEEL ENCLOSURE NEMA 4.
4. REMOTE CONTROL OF BULKHEAD DAMPER MOTORS IS TO BE DONE AT CONTROL CENTER IN CONTOL BUILDING. FOR PLC-ITC INTERFACE, SEE SHEET NO. ED18.

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	4/27/90
NOTE BOOK	TRACED BY	
	DESIGNED BY T. SANCHEZ	3/13/90
	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	6/28/90
NO.		

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
STA. 627+10 TO 632+00
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APR 1992

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

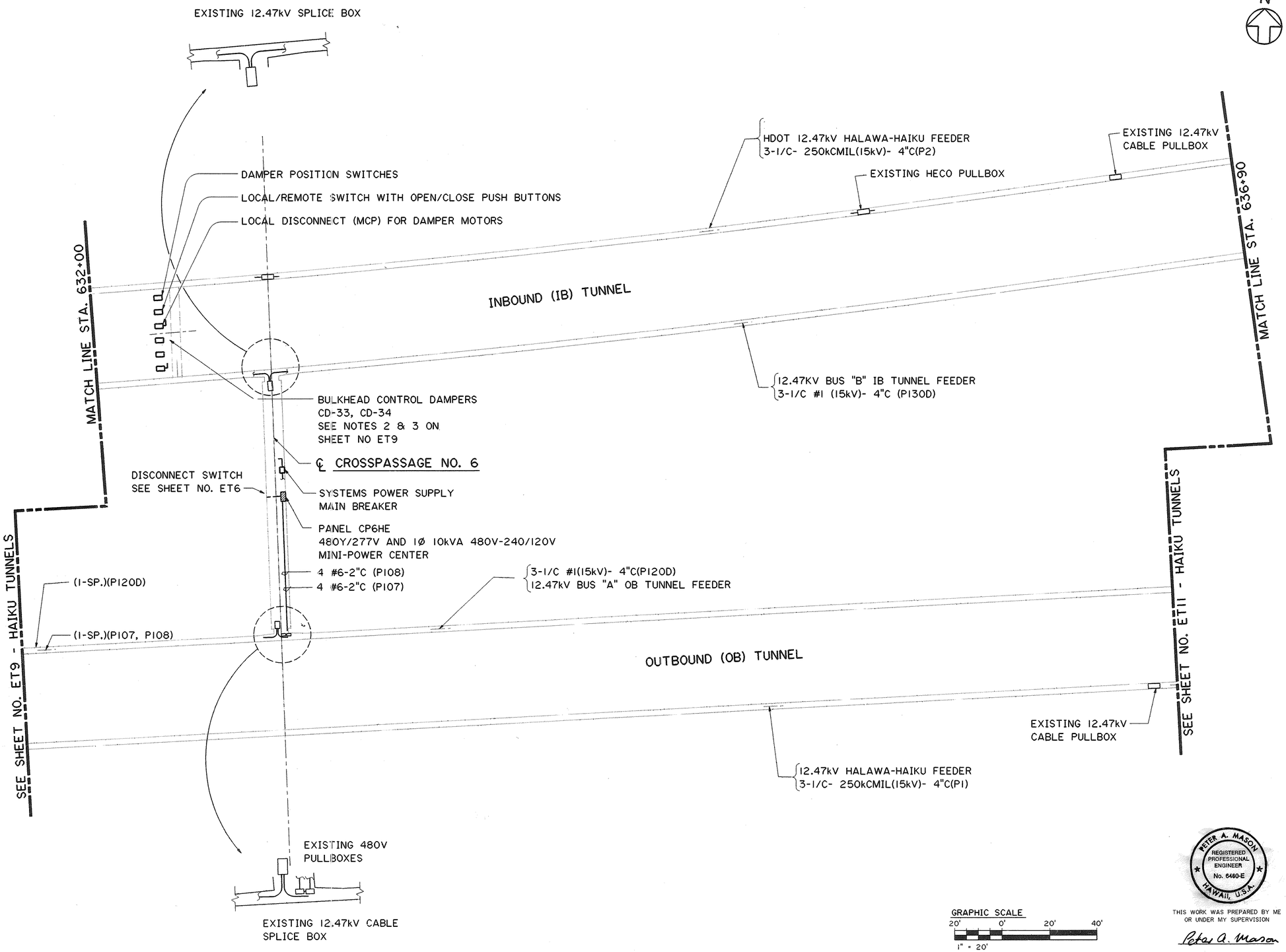
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SHEET NO. ET9 OF 40 SHEETS

2410V153 2410: V153 ES0235.FGB;1 11JL90-11.34.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	193	440



NOTES:

1. SEE SHEET NO. ET4 FOR GENERAL NOTES.

ORIGINAL PLAN	NOTE BOOK	NO.

SURVEY PLOTTED BY
DRAWN BY CADD DATE 4/12/90
TRACED BY
DESIGNED BY T. SANCHEZ 3/13/90
QUANTITIES BY
CHECKED BY J.J. SAISANI 6/26/90

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

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Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

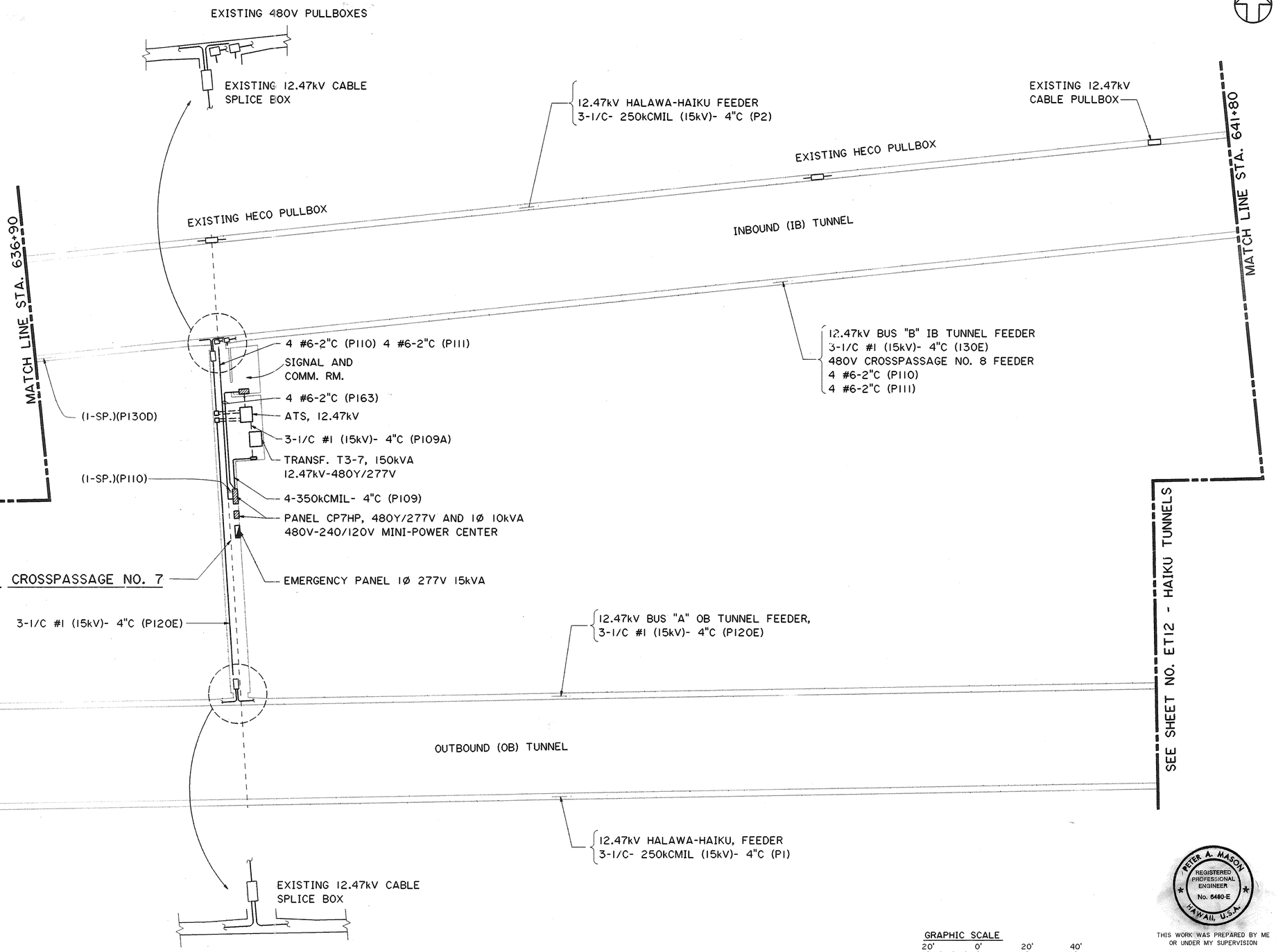
POWER WIRING
STA. 632+00 TO 636+90
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL 1992

SHEET NO. ET10 OF 40 SHEETS

2410V156 2410: V153 ES0236.FGB71 11JLY90-08.36.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	194	440



NOTES:

1. SEE SHEET NO. ET4 FOR GENERAL NOTES.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	4/21/90
NOTE BOOK	TRACED BY T. SANCHEZ	3/13/90
	DESIGNED BY	
	QUANTITIES BY	5/26/90
NO.	CHECKED BY J.J. SASSANI	

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

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
STA. 636+90 TO 641.80
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL 1992

SHEET NO. ET11 OF 40 SHEETS

2410V156 2410: V153 ES0237.FGB>1 11:11 Y90-08. 40. 20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	195	440

N

EXISTING 480V PULLBOXES

EXISTING 12.47kV CABLE SPLICE BOX

12.47kV HALAWA-HAIKU FEEDER, 3-1/C -250kCMIL (15kV) -4"C -(P2)

EXISTING 12.47kV CABLE PULLBOX

EXISTING HECO PULLBOX

EXISTING HECO PULLBOX

INBOUND (IB) TUNNEL

MATCH LINE STA. 641+80

MATCH LINE STA.646+70

12.47kV BUS "B" iB TUNNEL FEEDER, 3-1/C #1 (15kV) -4"C (P130E)

4#6-2"C (P111)

4#6- 2"C (P110)

PANEL CP8HP 480Y/277V AND 1Ø 15kVA 480-240/120V MINI-POWER CENTER

SYSTEMS POWER SUPPLY MAIN BREAKER

℄ CROSSPASSAGE NO. 8

SEE SHEET NO. ET11 - HAIKU TUNNELS

SEE SHEET NO. ET13 - HAIKU TUNNELS

12.47kV BUS "A" OB TUNNEL FEEDER, 3-1/C #1 (15kV)- 4"C (P120E)

OUTBOUND (OB) TUNNEL

EXISTING 12.47kV CABLE PULLBOX

HDOT 12.47kV HALAWA-HAIKU FEEDER, 3-1/C- 250kCMIL (15kV)- 4"C (P1)

EXISTING 12.47kV CABLE SPLICE BOX

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

NOTES:

1. SEE SHEET NO. ET4 FOR GENERAL NOTES.

ORIGINAL PLAN		DATE
NOTE BOOK	SURVEY PLOTTED BY	
	DRAWN BY CADD	4/2/90
NO.	TRACED BY	
	DESIGNED BY T. SANCHEZ	3/13/90
	QUANTITIES BY	
	CHECKED BY J.J. SAISAKI	6/26/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
STA. 641+80 TO 646+70
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL 1992

SHEET NO. ET12 OF 40 SHEETS

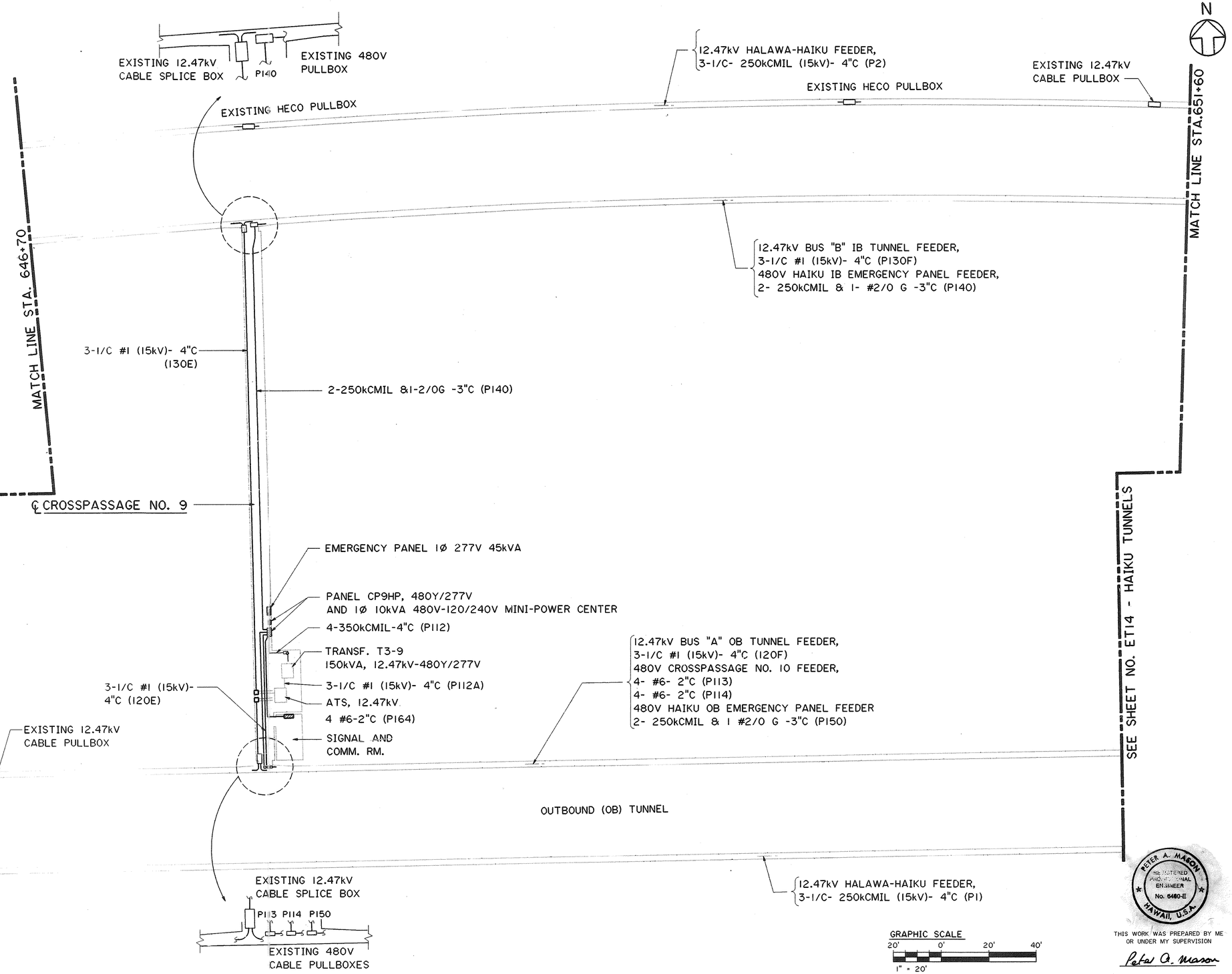
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

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Peter A. Mason

2410V156 2410: V153 ES0238 FG8r1 11.8 Y90-08.43.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	196	440



NOTES:

1. SEE SHEET NO. ET4 FOR GENERAL NOTES.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 4/8/90
	DRAWN BY CADD	3/13/90
NOTE BOOK	TRACED BY T. SANCHEZ	
	DESIGNED BY	
	QUANTITIES BY	6/26/90
NO.	CHECKED BY J.J. SASSANI	

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

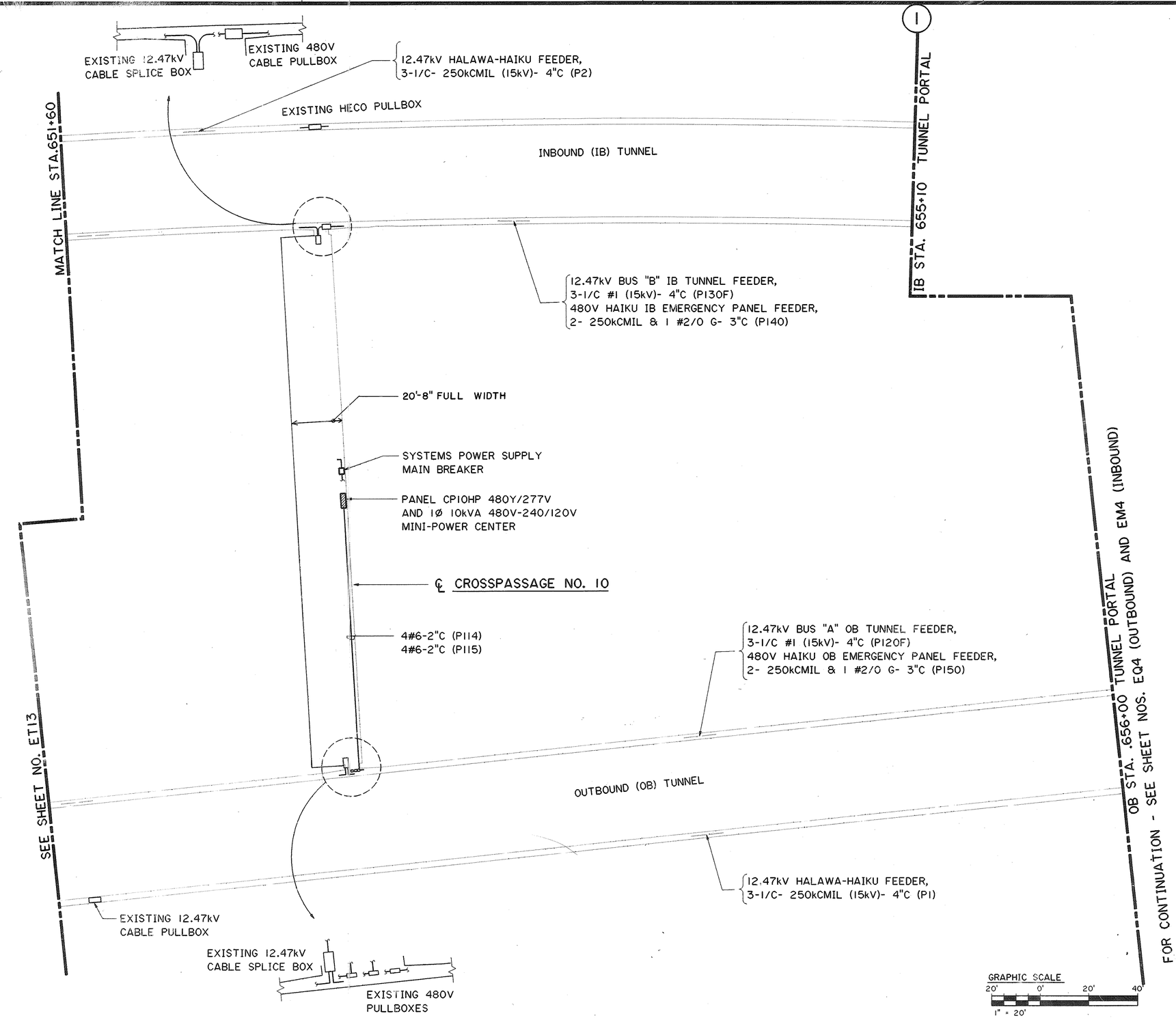
POWER WIRING
STA. 646+70 TO 651+60
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL 1992

SHEET NO. ET13 OF 40 SHEETS

2410V156 2410: V153 ES0239.FGB+1 11:11 Y90-08-15 10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	197	440



NOTES:

1. SEE SHEET NO. ET4 FOR GENERAL NOTES.

ORIGINAL PLAN
NOTE BOOK
NO.

SURVEY PLOTTED BY — DATE: 4/2/90
DRAWN BY CADD — " 4/2/90
TRACED BY — " 3/13/90
DESIGNED BY T. SANCHEZ — " 3/13/90
QUANTITIES BY — " 6/26/90
CHECKED BY J.J. SAYSANI

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
STA. 651+60 TO PORTAL
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APR 1992

SHEET NO. ET 14 OF 40 SHEETS

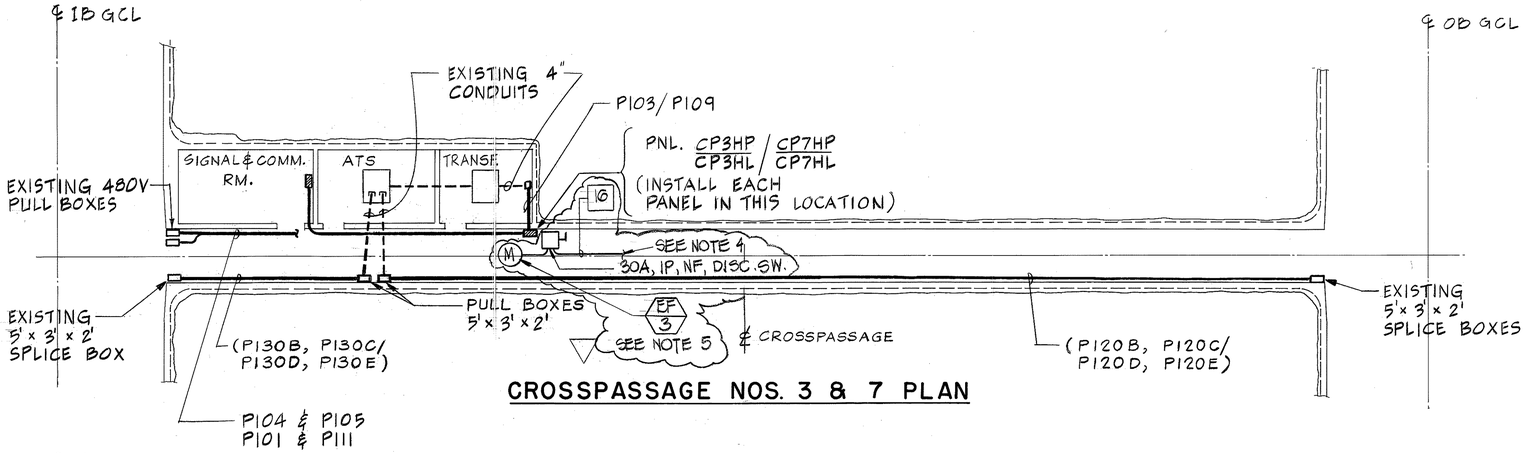
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

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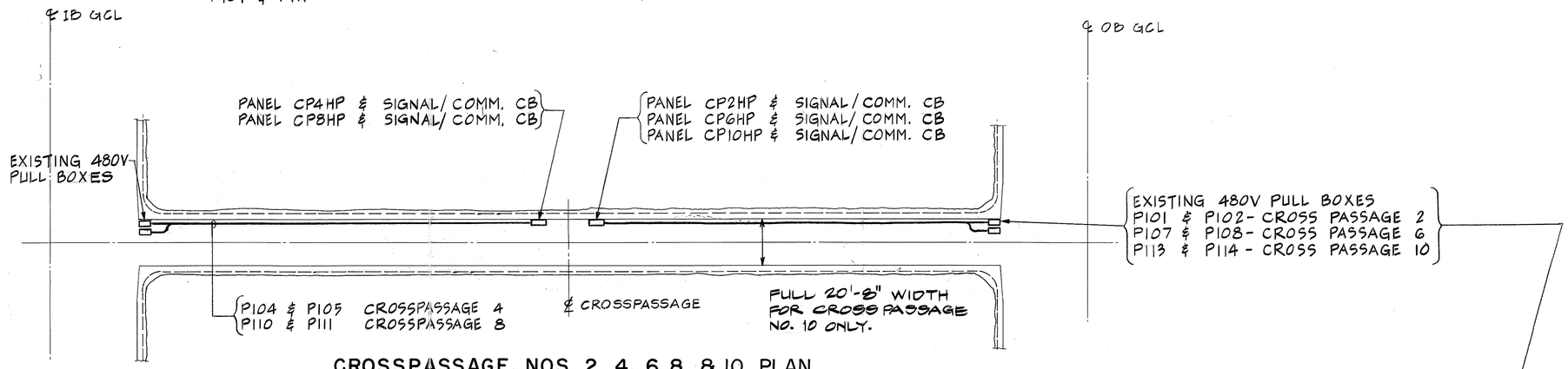
Peter A. Mason

2410V156 2410: V153 ES0240.FGB:1 11JLY90-08.47.10

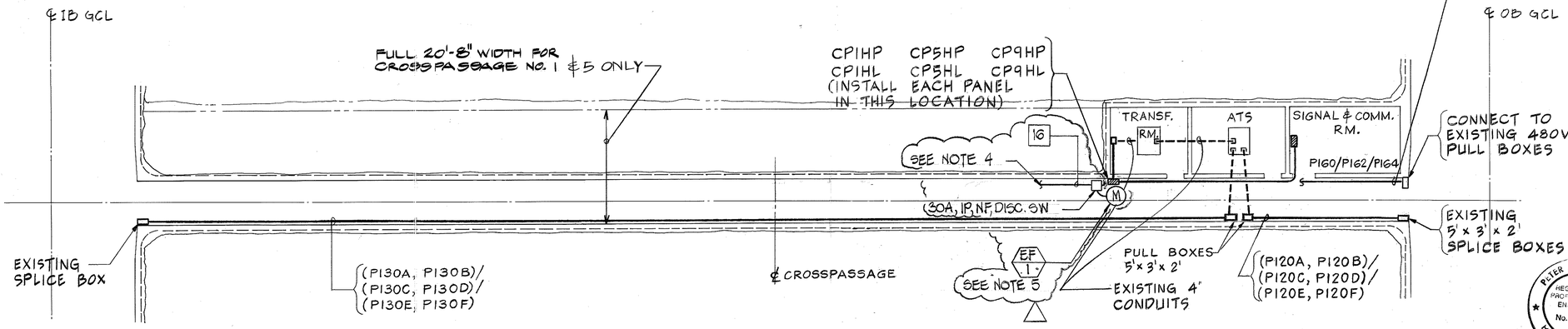
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	198	440



CROSSPASSAGE NOS. 3 & 7 PLAN



CROSSPASSAGE NOS. 2, 4, 6, 8, & 10 PLAN



CROSSPASSAGE NOS. 1, 5 & 9 PLAN

8' 0' 8' 16' 24'
3/32"=1'-0" GRAPHIC SCALE

NOTES :

1. EXTEND CONDUITS PROVIDE PULL BOXES AND INSTALL WIRES AS SHOWN ON SHEET NO. ET1.
2. ALL CONDUIT HARDWARE & PULL BOXES SHALL BE STEEL HOT DIP GALVANIZED AFTER FABRICATION.
3. LOCATE 150 KVA TRANSFORMER SECONDARY MAIN CKT BREAKER WITHIN 25FT OF THE TRANSFORMER.
4. FOR BRANCH CIRCUIT AND CONDUIT ROUTING SEE SHEET NO. ET 32.
5. FOR EXHAUST FANS LOCATIONS AND MOUNTING OF OTHER CROSSPASSAGES SEE SHEET NO. MT3.

3/7/94	REVISED PER DCN 66-037.
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
CROSSPASSAGES
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 3/32"=1'-0" DATE: APR 1992

SHEET NO. ET15 OF 40 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6403 HAWAII

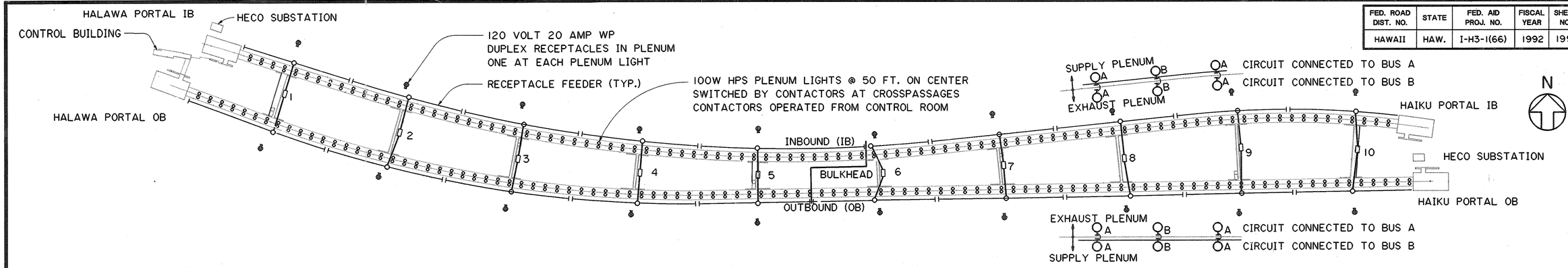
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

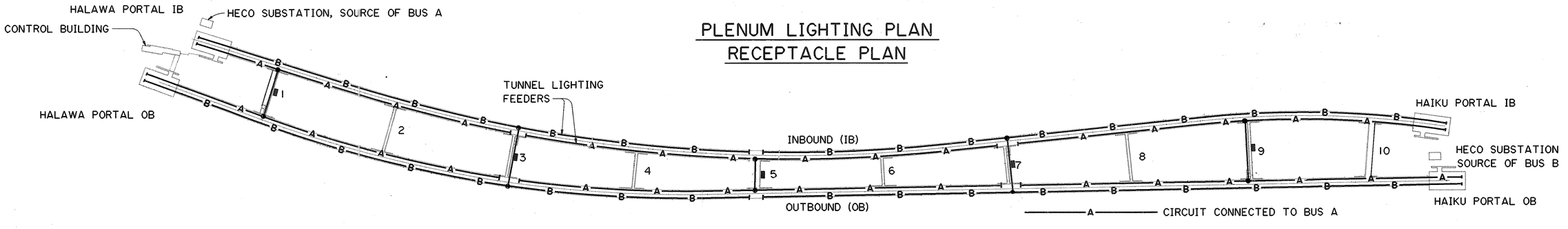
ORIGINAL PLAN	NOTE BOOK	No.

		DATE
SURVEY PLOTTED BY	R. ANG	6-19-90
DRAWN BY		
TRACED BY		
DESIGNED BY	R. JAMES	1-15-90
QUANTITIES BY		
CHECKED BY	J.J. SASSANI	6-26-90

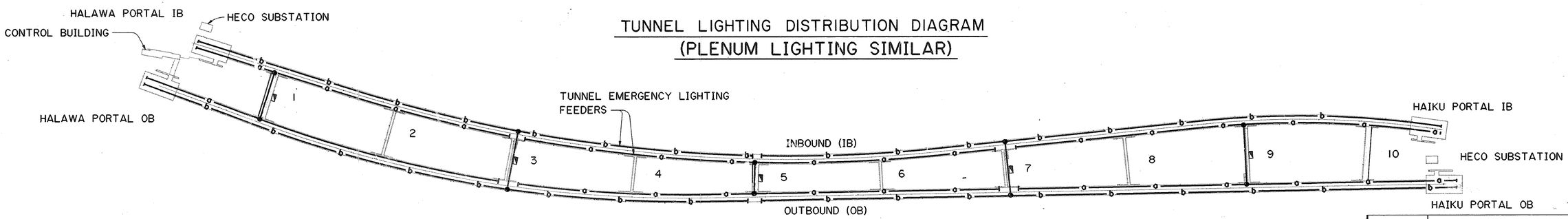
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	199	440



PLENUM LIGHTING PLAN
RECEPTACLE PLAN



TUNNEL LIGHTING DISTRIBUTION DIAGRAM
(PLENUM LIGHTING SIMILAR)



EMERGENCY LIGHTING DISTRIBUTION DIAGRAM

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	4/5/90
	TRACED BY	
	DESIGNED BY T. Y. SANCHEZ	4/22/90
NOTE BOOK	QUANTITIES BY	
	CHECKED BY J. J. SASSANI	6/18/90
NO.		

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TUNNEL LIGHTING DISTRIBUTION DIAGRAM
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 200' DATE: APRIL 1992

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

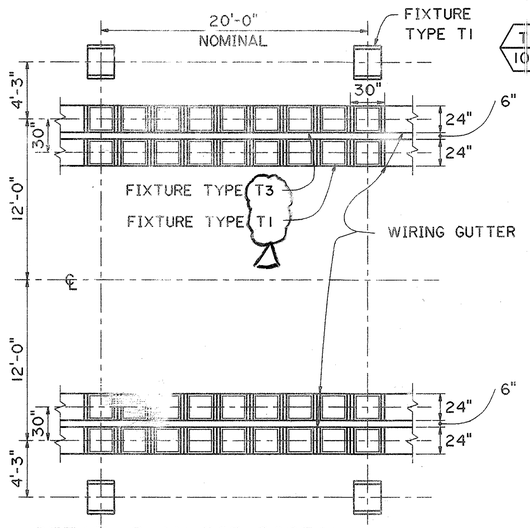
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SHEET NO. ET16 OF 40 SHEETS

2410V156 2410: V156 ES0013.FGB#1 10JLY90-09.42.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	200	440



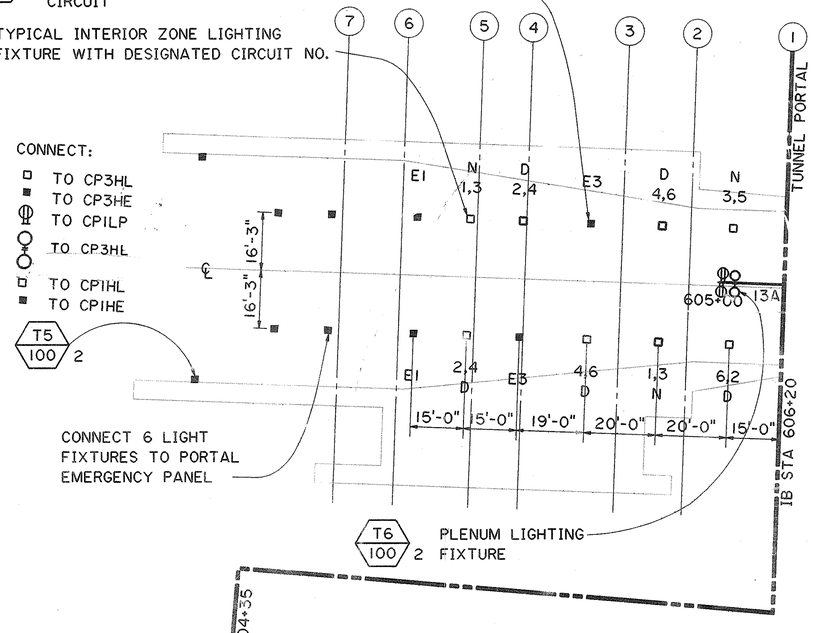
DETAIL PLAN FOR PORTAL ENTRANCE LIGHTING FIXTURES

SCALE: 3/16"=1'-0"

2 | ET17 | ET17 | ET29

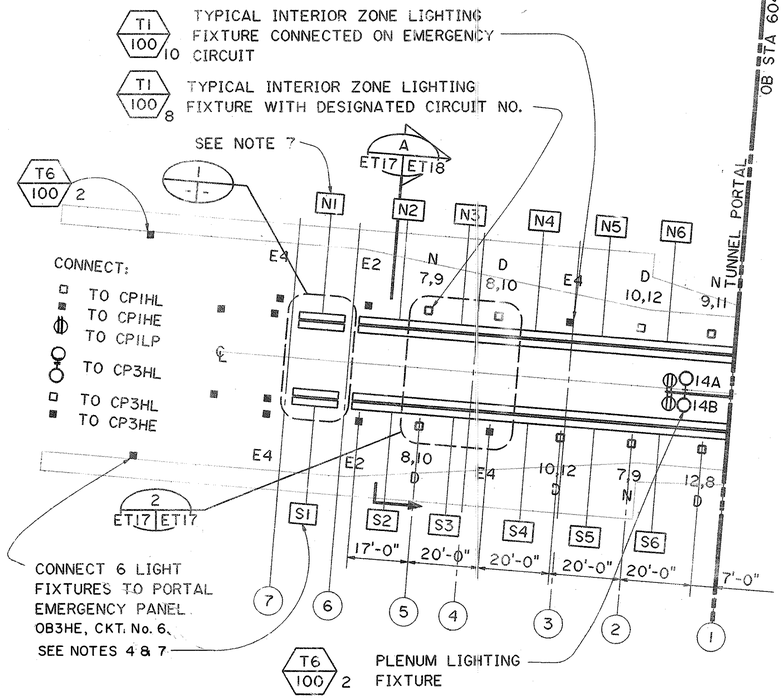
T1 / 100 / 8 TYPICAL INTERIOR ZONE LIGHTING FIXTURE CONNECTED ON EMERGENCY CIRCUIT

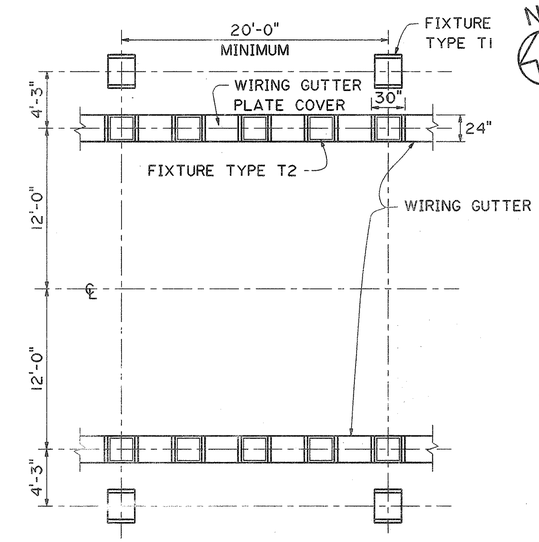
T1 / 100 / 8 TYPICAL INTERIOR ZONE LIGHTING FIXTURE WITH DESIGNATED CIRCUIT NO.



T1 / 100 / 10 TYPICAL INTERIOR ZONE LIGHTING FIXTURE CONNECTED ON EMERGENCY CIRCUIT

T1 / 100 / 8 TYPICAL INTERIOR ZONE LIGHTING FIXTURE WITH DESIGNATED CIRCUIT NO.

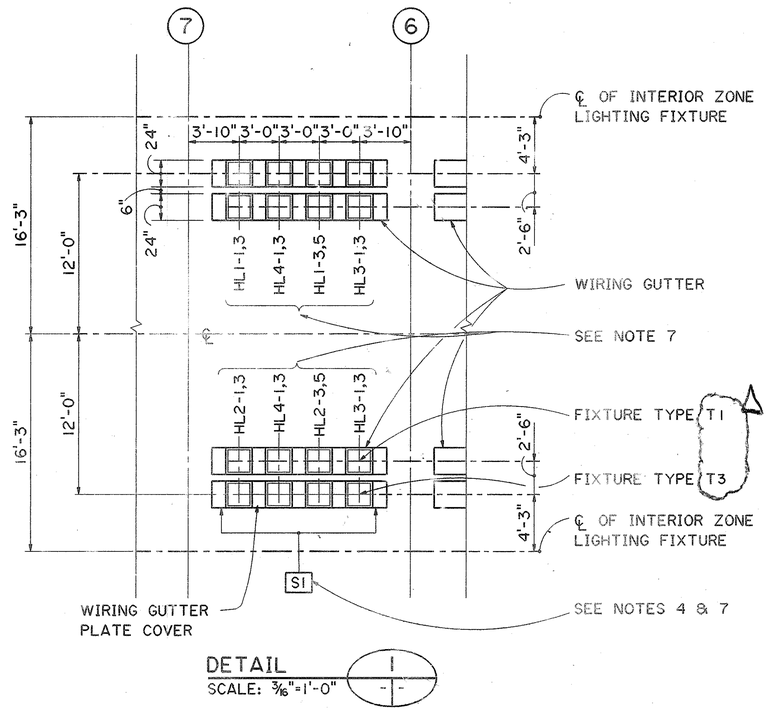




DETAIL PLAN FOR FIRST TRANSITION LIGHTING FIXTURES

SCALE: 3/16"=1'-0"

4 | ET19 | ET17 | ET27



DETAIL

SCALE: 3/16"=1'-0"

1

GENERAL NOTES

1. MINIMUM SIZE OF CONDUIT IN PLENUM SHALL BE ¾" GRS UNLESS NOTED OTHERWISE.
2. MINIMUM SIZE OF CONDUCTORS FOR LIGHTING AND RECEPTACLE CIRCUIT IN TUNNELS AND PLENUM SHALL BE NO. 10.
3. REFER TO SHEET NO. ET16 AND ET30 FOR TUNNEL LIGHTING DISTRIBUTION DIAGRAM AND PANELBOARD LAYOUT.
4. N1 OR S2 IS A TAG FOR FIXTURE OR GROUP OF FIXTURES TO IDENTIFY AND INDICATE FIXTURE LOCATION FOR TUNNEL ENTRANCE LIGHTING.
5. SPACING OF PLENUM LIGHTS AND RECEPTACLES SHALL BE 50 FT.
6. INTERIOR LIGHTING FIXTURES WITH DESIGNATION LETTER D REFERS TO DAY LIGHTING, N FOR NIGHT LIGHTING & E FOR EMERGENCY LIGHTING. CIRCUIT NO. 1, 3 OR 2, 4 REFERS TO FIXTURE CONNECTION ACROSS PHASES A-B OF THE 480V 3Ø CIRCUIT.
7. REFER TO SHEET NO. ED24 & ED25 FOR HALAWA TUNNEL ENTRANCE LIGHTING CIRCUIT LIST. HAIKU IS SIMILAR.
8. FOR FIXTURE, MOUNTING PLATE & WIRING GUTTER DETAIL, SEE SHEET NO. ET34 AND ET35.

FOR DETAIL AS-BUILT INFORMATION REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION
10/5/93	REV. FIXTURE TYPE PER DCN 66-019

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
HALAWA PORTAL
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20'. DATE: APRIL 1992

SHEET NO. ET17 OF 40 SHEETS

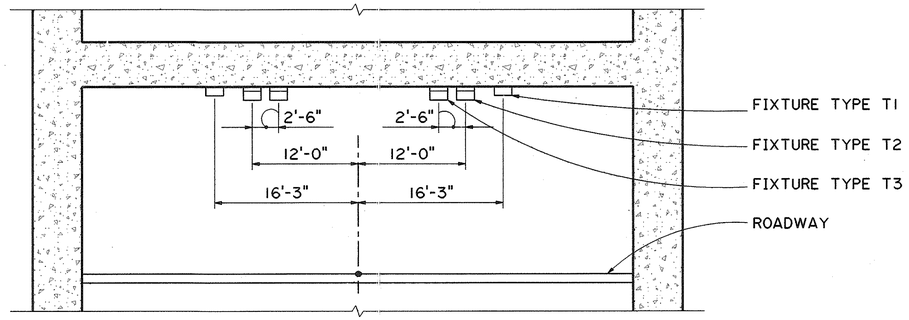
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

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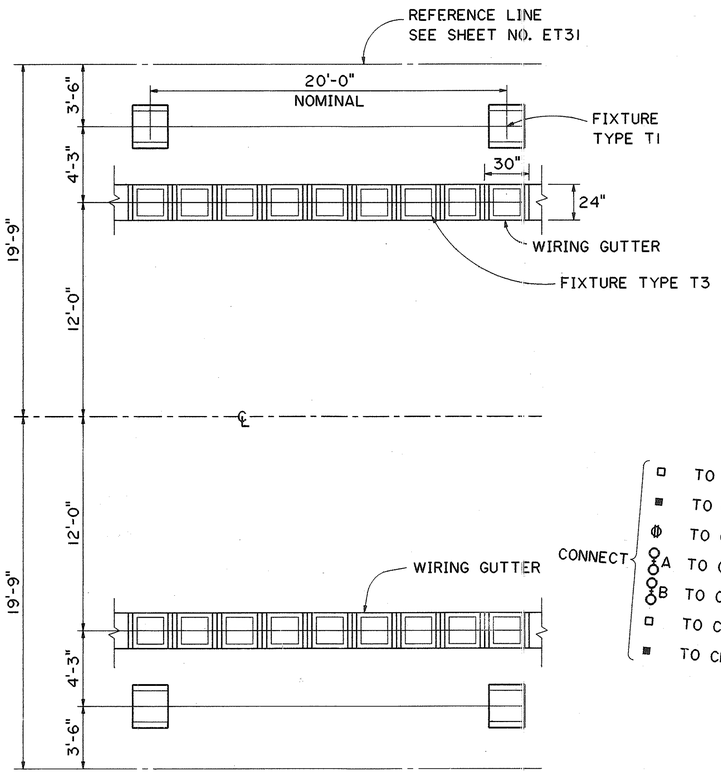
Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	CADD	" 4/5/90
	TRACED BY	Y. SANCHEZ	" 4/2/90
	DESIGNED BY		" 6/18/90
NO.	QUANTITIES BY		
DATE BY/SK	CHECKED BY	J. SASSANI	

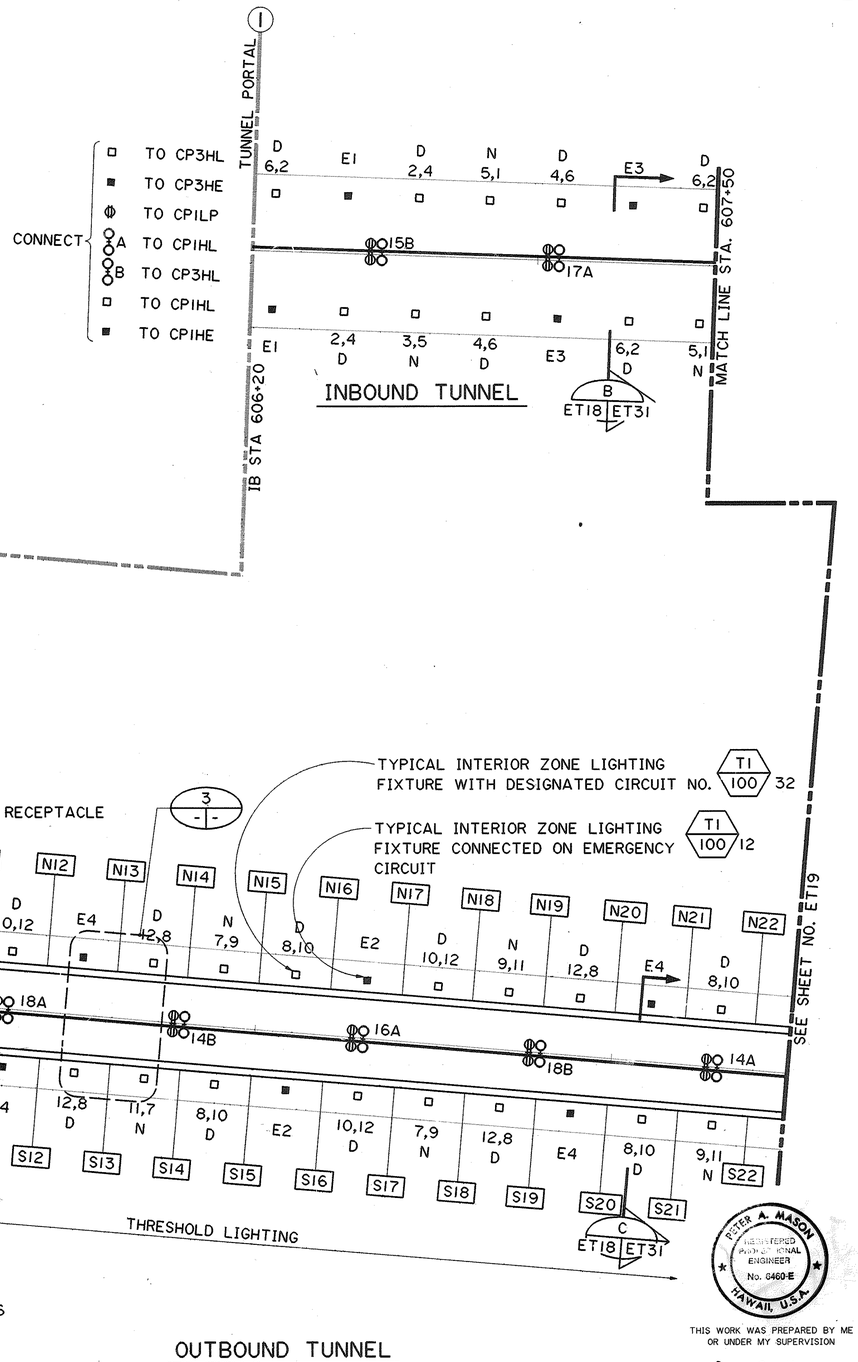
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	201	440



SECTION A
SCALE: ⅛"=1'-0" ET17 | ET18



DETAIL PLAN FOR
THRESHOLD LIGHTING FIXTURES 3
SCALE: ¼"=1'-0" ET28 | ET18



NOTES:

1. FOR GENERAL NOTES, REFER TO SHEET NO. ET17

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
PORTAL TO STA 607+50
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APRIL, 1992

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

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Peter A. Mason

SURVEY PLOTTED BY	
DRAWN BY	CADD
TRACED BY	
DESIGNED BY	T. SANCHEZ
QUANTITIES BY	
CHECKED BY	J.M. SASSANI
DATE	4/5/90 : 4/22/90 : 6/18/90
ORIGINAL PLAN	
NOTE BOOK	
NO.	

SHEET NO. ET18 OF 40 SHEETS

2410V156 2410: V156 ES0208.FGB/1 10JLY90-09.37.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	202	440

N

LIMIT OF PNL CP1LP — LIMIT OF PNL CP2LP

PLENUM LIGHTING AND RECEPTACLE CIRCUIT

PLENUM LIGHTING FIXTURE

T6 / 100 — 40

B ET19 | ET31

MATCH LINE STA. 607+50

MATCH LINE STA. 612+40

PLENUM RECEPTACLE

TYPICAL INTERIOR ZONE LIGHTING FIXTURE WITH DESIGNATED CIRCUIT NO.

T1 / 100 — 76

TYPICAL INTERIOR ZONE LIGHTING FIXTURE CONNECTED ON EMERGENCY CIRCUIT

T1 / 100 — 26

CONNECT:
- □ TO CP2LP
- ■ TO CP3HE
- Φ TO CP2LP
- ○A TO CP1HL
- ○B TO CP3HL
- □ TO CP1HL
- ■ TO CP1HE

INBOUND TUNNEL PLAN

℄ CROSSPASSAGE NO. 1

SEE SHEET NO. ET18

LIMIT OF PNL CP1LP — LIMIT OF PNL CP2LP

C ET19 | ET31

5 ET19 | ET20

SEE SHEET NO. ET20

CONNECT:
- □ TO CP1LP
- ■ TO CP1HE
- Φ TO CP1LP
- ○A TO CP1HL
- ○B TO CP3HL
- □ TO CP3HL
- ■ TO CP3HE

THRESHOLD LIGHTING

1ST TRANSITION LIGHTING

2ND TRANSITION LIGHTING

D ET19 | ET31

4 ET19 | ET17

OUTBOUND TUNNEL PLAN

GRAPHIC SCALE 20' 0' 20' 40'

NOTES:

1. FOR GENERAL NOTES, REFER TO SHEET NO. ET17

SURVEY PLOTTED BY	DATE
DRAWN BY CADD	4/5/90
TRACED BY	
DESIGNED BY T. SANCHEZ	4/2/90
QUANTITIES BY J. J. SASSANI	6/18/90
CHECKED BY	
NOTE BOOK	
NO.	

ORIGINAL PLAN

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
STA. 607+50 TO 612+40
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APRIL, 1992

SHEET NO. ET19 OF 40 SHEETS

PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6460-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V156 2410: V156 ES0209.FGB:1 09JLY90-19.22.00

202

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	203	440

N

LIMIT OF PNL CP2LP

LIMIT OF PNL CP3LP

PLENUM LIGHTING & RECEPTACLE CIRCUIT

PLENUM LIGHTING FIXTURE T6 / 100 40

B ET20 ET31

MATCH LINE STA. 612+40

MATCH LINE - STA. 617+30

INBOUND TUNNEL

TYPICAL INTERIOR ZONE LIGHTING FIXTURE WITH DESIGNATED CIRCUIT NO. T1 / 100 74

TYPICAL INTERIOR ZONE LIGHTING FIXTURE CONNECTED ON EMERGENCY CIRCUIT T1 / 100 28

PLENUM RECEPTACLE

CONNECT
- TO CP3HL
- TO CP3HE
- TO CP3LP
- A TO CP1HL
- B TO CP3HL
- TO CP1HL
- TO CP1HE

℄ CROSSPASSAGE NO. 2

SEE SHEET NO ET21

SEE SHEET NO. ET19

2ND TRANSITION LIGHTING

3RD TRANSITION LIGHTING

7 ET20 ET26

OUTBOUND TUNNEL

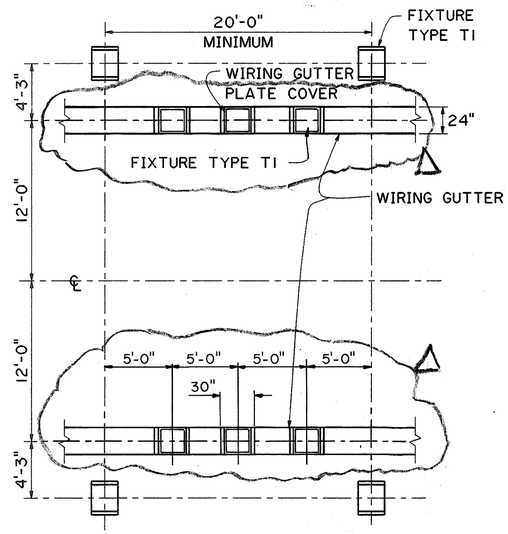
LIMIT OF PNL CP2LP

LIMIT OF PNL CP3LP

CONNECT
- TO CP1HL
- TO CP1HE
- TO CP3LP
- A TO CP1HL
- B TO CP3HL
- TO CP3HL
- TO CP3HE

NOTE:

1. FOR GENERAL NOTES, REFER TO SHEET NO. ET17



DETAIL PLAN FOR SECOND TRANSITION LIGHTING FIXTURES

5 ET19 ET20 ET27

SCALE: 3/16"=1'-0"

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

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION
10/5/93	ADDED WIRING GUTTER TO OB TUNNEL
	THIRD TRANSITION ZONE LIGHTING AND
	REVISED DETAIL '5' PER DCN 65-019

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
STA 612+40 TO 617+30
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APRIL, 1992

SHEET NO. ET20 OF 40 SHEETS

	DATE
SURVEY PLOTTED BY	
DRAWN BY	CADD 5/14/90
TRACED BY	
DESIGNED BY	T. SANCHEZ 4/2/90
QUANTITIES BY	
CHECKED BY	J. J. SASSANI 6/18/90
ORIGINAL PLAN	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	204	440

N

PLENUM LIGHTING AND RECEPTACLE CIRCUIT

PLENUM LIGHTING FIXTURE T6 / 100 / 38

LIMIT OF PNL CP3LP

LIMIT OF PNL CP4LP

MATCH LINE STA. 617+30

MATCH LINE STA. 622+20

N 1,3 | D 2,4 | E1 | D 4,6 | N 3,5 | D 6,2 | E3 | D 2,4 | N 5,1 | D 4,6 | E1 | D 6,2 | N 1,3 | D 2,4 | E3 | D 4,6 | N 3,5 | D 6,2 | E1 | D 2,4 | N 5,1 | D 4,6 | E3 | D 6,2 | N 1,3

17B 13A 15B 15A 13B 13A 17B 17A 15B 15A

4,6 D | E1 | 6,2 D | 1,3 N | E3 | 1,3 N | 2,4 D | 3,5 N | 4,6 D | E3 | 6,2 D | 5,1 N | 2,4 D | E1 | 4,6 D | 1,3 N | 6,2 D | E3 | 2,4 D | 3,5 N | 4,6 D | E1 | 6,2 D | 5,1 N | 2,4 D

CONNECT
- □ TO CP3HL
- ■ TO CP3HE
- ⌀ TO CP4LP
- ⌀A TO CP5HL
- ⌀B TO CP3HL
- □ TO CP5HL
- ■ TO CP5HE

LIMIT OF PNL CP1HL

PLENUM RECEPTACLE

INBOUND TUNNEL

TYPICAL INTERIOR ZONE LIGHTING FIXTURE WITH DESIGNATED CIRCUIT NO. T1 / 100 / 73

TYPICAL INTERIOR ZONE LIGHTING FIXTURE CONNECTED ON EMERGENCY CIRCUIT T1 / 100 / 27

LIMIT OF PNL CP1HE

LIMIT OF PNL CP5HE PNL CP5HL

℄ CROSSPASSAGE NO. 3

LIMIT OF PNL CP1HE

LIMIT OF PNL CP5HE PNL CP5HL

LIMIT OF PNL CP1HL

LIMIT OF PNL CP3LP

LIMIT OF PNL CP4LP

B ET21 | ET31

SEE SHEET NO. ET20

SEE SHEET NO. ET22

E4 D 10,12 | N 7,9 | E2 | N 7,9 | D 8,10 | N 9,11 | D 10,12 | E4 | D 12,8 | N 11,7 | D 8,10 | E2 | D 10,12 | N 7,9 | D 12,8 | E4 | D 8,10 | N 9,11 | D 10,12 | E2 | D 12,8 | N 11,7 | D 8,10

14B 14A 18B 16A 16B 18A 14B 14A 18A

12,8 D | 11,7 N | 8,10 D | E4 | 10,12 D | 7,9 N | 12,8 D | E2 | 8,10 D | 9,11 N | 10,12 D | E4 | 12,8 D | 11,7 N | 8,10 D | E2 | 10,12 D | 7,9 N | 12,8 D | E4 | 8,10 D | 9,11 N | 10,12 D | E2

CONNECT
- □ TO CP5HL
- ■ TO CP5HE
- ⌀ TO CP4LP
- ⌀A TO CP5HL
- ⌀B TO CP3HL
- □ TO CP3HL
- ■ TO CP3HE

OUTBOUND TUNNEL

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6480-E — HAWAII, U.S.A.

Peter A. Mason

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	5/4/90
NOTE BOOK	TRACED BY	
	DESIGNED BY T. SANCHEZ	4/22/90
NO.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	6/18/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
STA. 617+30 TO 622+20
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL, 1990

SHEET NO. ET21 OF 40 SHEETS

2410V156 2410: V156 ES0200.FGB;1 10JULY90-11.08.10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	205	440

N

LIMIT OF PNL CP4LP — LIMIT OF PNL CP5LP

PLENUM LIGHTING AND RECEPTACLE CIRCUIT

PLENUM LIGHTING FIXTURE T6/100/38

MATCH LINE STA. 622+20

D 2,4 | E1 | D 4,6 | N 3,5 | D 6,2 | E3 | D 2,4 | N 5,1 | D 4,6 | E1 | D 6,2 | N 1,3 | D 2,4 | E3 | D 4,6 | B ET22 ET31 | N 3,5 | D 6,2 | E1 | D 2,4 | N 5,1 | D 4,6 | E3 | D 6,2 | N 1,3

13B 13A 17B 17A 15B 15A 13B 13A 17B

E3 | 4,6 D | 1,3 N | E1 | 3,5 N | 6,2 D | 5,1 N | 2,4 D | E3 | 4,6 D | 1,3 N | 6,2 D | E1 | 2,4 D | 3,5 N | 4,6 D | E3 | 6,2 D | 5,1 N | 2,4 D | E1 | 4,6 D | 1,3 N | 6,2 D

PLENUM RECEPTACLE

MATCH LINE STA. 627+10

CONNECT
- □ TO CP3HL
- ■ TO CP3HE
- ⌀ TO CP5LP
- ⌀A TO CP5HL
- ⌀B TO CP3HL
- □ TO CP5HL
- ■ TO CP5HE

NOTE:

1. FOR GENERAL NOTES REFER TO SHEET NO. ET17.

℄ CROSSPASSAGE NO. 4

INBOUND TUNNEL

TYPICAL INTERIOR ZONE LIGHTING FIXTURE WITH DESIGNATED CIRCUIT NO. T1/100/75

TYPICAL INTERIOR ZONE LIGHTING FIXTURE CONNECTED ON EMERGENCY CIRCUIT T1/100/27

LIMIT OF PNL CP4LP — LIMIT OF PNL CP5LP

SEE SHEET NO. ET21

E4 | D 10,12 | N 7,9 | D 12,8 | E2 | D 8,10 | N 9,11 | D 10,12 | E4 | D 12,8 | N 11,7 | D 8,10 | E2 | D 10,12 | N 7,9 | D 12,8 | E4 | D 8,10 | N 9,11 | D 10,12 | E2 | D 12,8 | N 11,7 | D 8,10 | E4

14B 14A 18B 18A 16B 16A 14B 14A 18B 18A

12,8 D | 11,7 N | 8,10 D | E4 | 10,12 D | 7,9 N | 12,8 D | E2 | 8,10 D | 9,11 N | 10,12 D | E4 | 12,8 D | 11,7 N | 8,10 D | E2 | 10,12 D | 7,9 N | 12,8 D | E4 | 8,10 D | 9,11 N | 10,12 D | E2 | 12,8 D

SEE SHEET NO. ET23

CONNECT
- □ TO CP5HL
- ■ TO CP5HE
- ⌀ TO CP5LP
- ⌀A TO CP5HL
- ⌀B TO CP3HL
- □ TO CP3HL
- ■ TO CP3HE

OUTBOUND TUNNEL PLAN

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

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
STA. 622+20 TO 627+10
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL, 1992

SHEET NO. ET22 OF 40 SHEETS

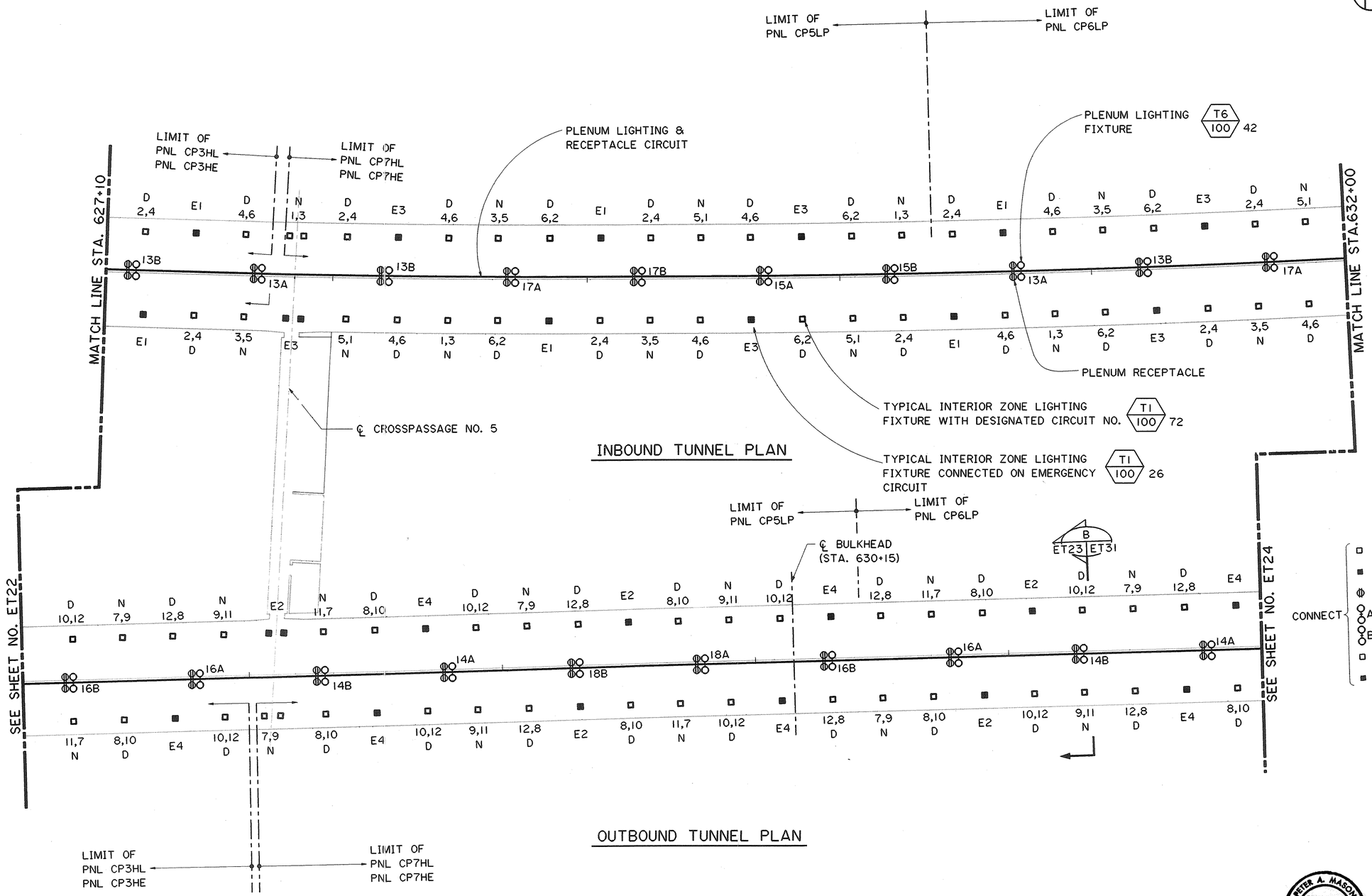
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 2-4-90
	DRAWN BY CADD	
NOTE BOOK	TRACED BY	4/12/90
	DESIGNED BY T. SANCHEZ	
NO.	QUANTITIES BY	
	CHECKED BY J. J. SASSANI	6/18/90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	206	440

N

NOTE:

1. FOR GENERAL NOTES, REFER TO SHEET NO. ET17



INBOUND TUNNEL PLAN

OUTBOUND TUNNEL PLAN

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	5-4-90
NOTE BOOK	TRACED BY T. SANCHEZ	4/2/90
	DESIGNED BY	
	QUANTITIES BY J.J. SASSANI	6/18/90
NO.	CHECKED BY	

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
STA. 627+10 TO 632+00
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APR 1992

SHEET NO. ET23 OF 40 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6450-E HAWAII, U.S.A.

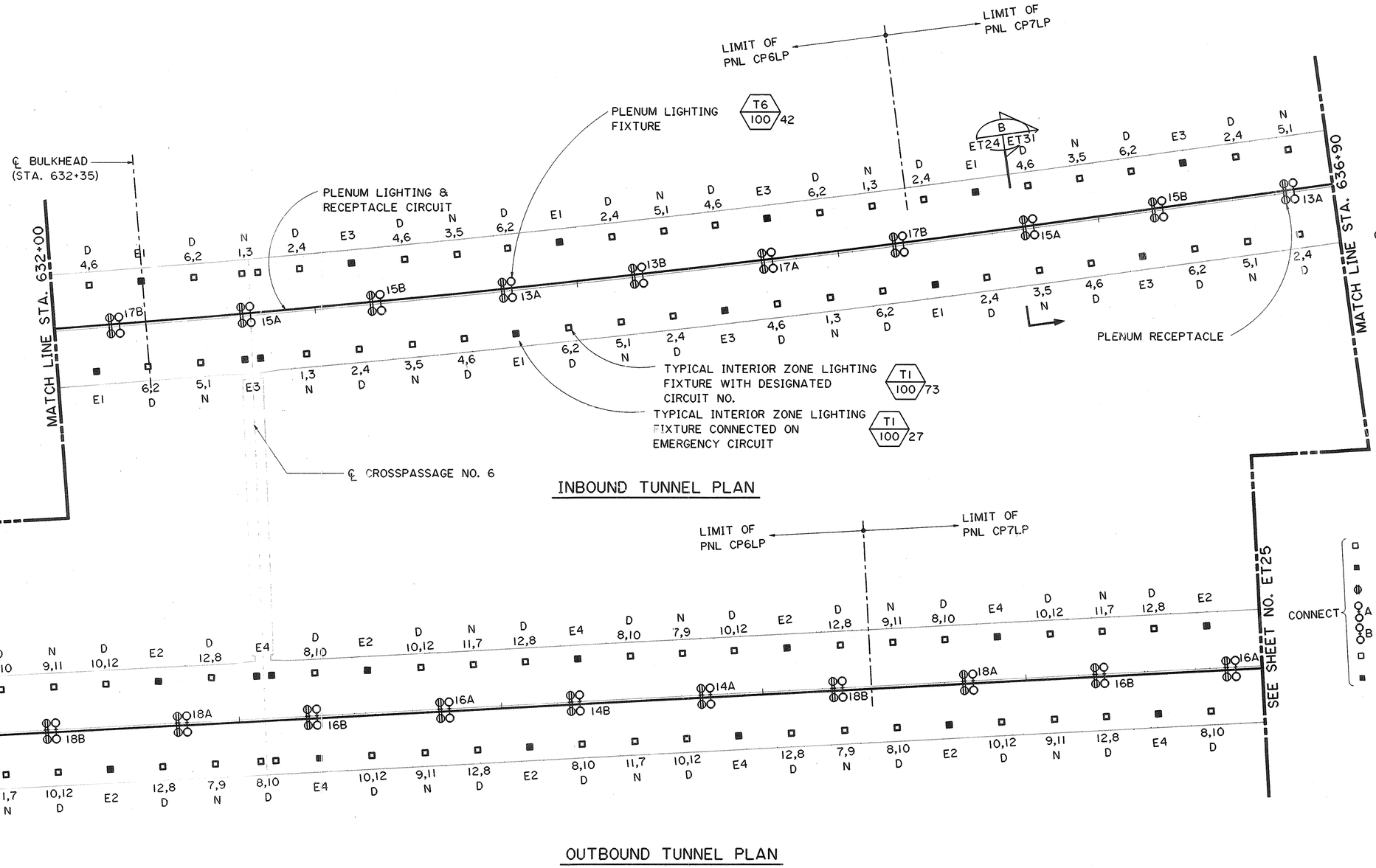
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V156 2410: V156 ES0202.FGB#1 10JLY90-12.05.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	207	440

N



CONNECT
- □ TO CP7HL
- ■ TO CP7HE
- ⌀ TO CP7LP
- ○A TO CP5HL
- ○B TO CP7HL
- □ TO CP7HL
- ■ TO CP7HE

CONNECT
- □ TO CP5HL
- ■ TO CP5HE
- ⌀ TO CP7LP
- ○A TO CP5HL
- ○B TO CP7HL
- □ TO CP7HL
- ■ TO CP7HE

NOTE:

1. FOR GENERAL NOTES, REFER TO SHEET NO. ET17

ORIGINAL PLAN		DATE
NOTE BOOK	SURVEY PLOTTED BY	
	DRAWN BY CADD	5/4/90
	TRACED BY	
	DESIGNED BY T. SANCHEZ	4/2/90
	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	6/18/90
NO.		

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
STA. 632+00 TO 636+90
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL, 1992

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

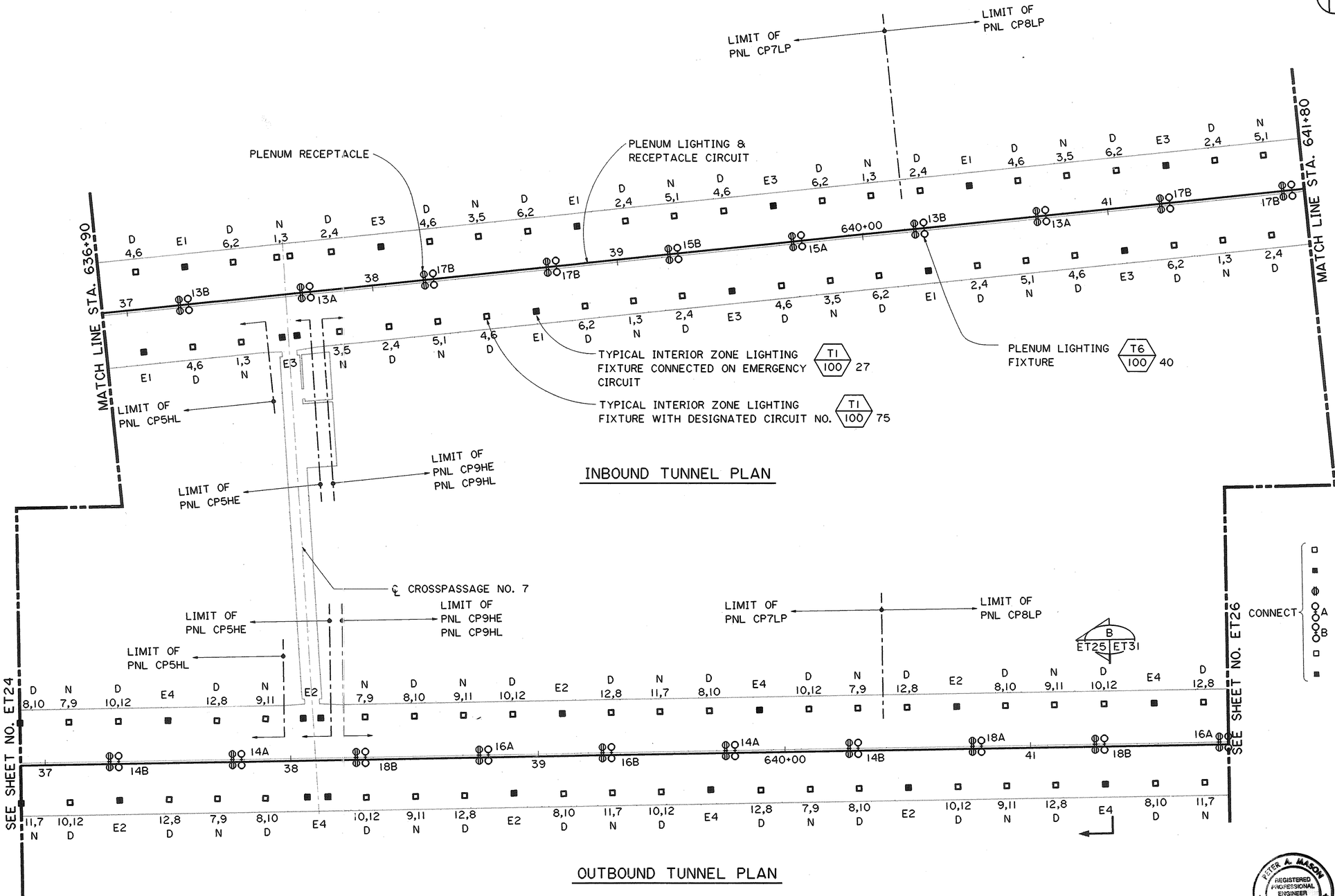
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SHEET NO. ET24 OF 40 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	208	440

N



NOTE:

1. FOR GENERAL NOTES, REFER TO SHEET NO. ET17

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	5/4/90
	TRACED BY	
	DESIGNED BY T. SANCHEZ	4/2/90
NOTE BOOK	QUANTITIES BY	
NO.	CHECKED BY J.M. SASSANI	4/30/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
STA 636+90 TO 641+80
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66):

SCALE: 1"=20' DATE: APRIL, 1992

SHEET NO. ET25 OF 40 SHEETS

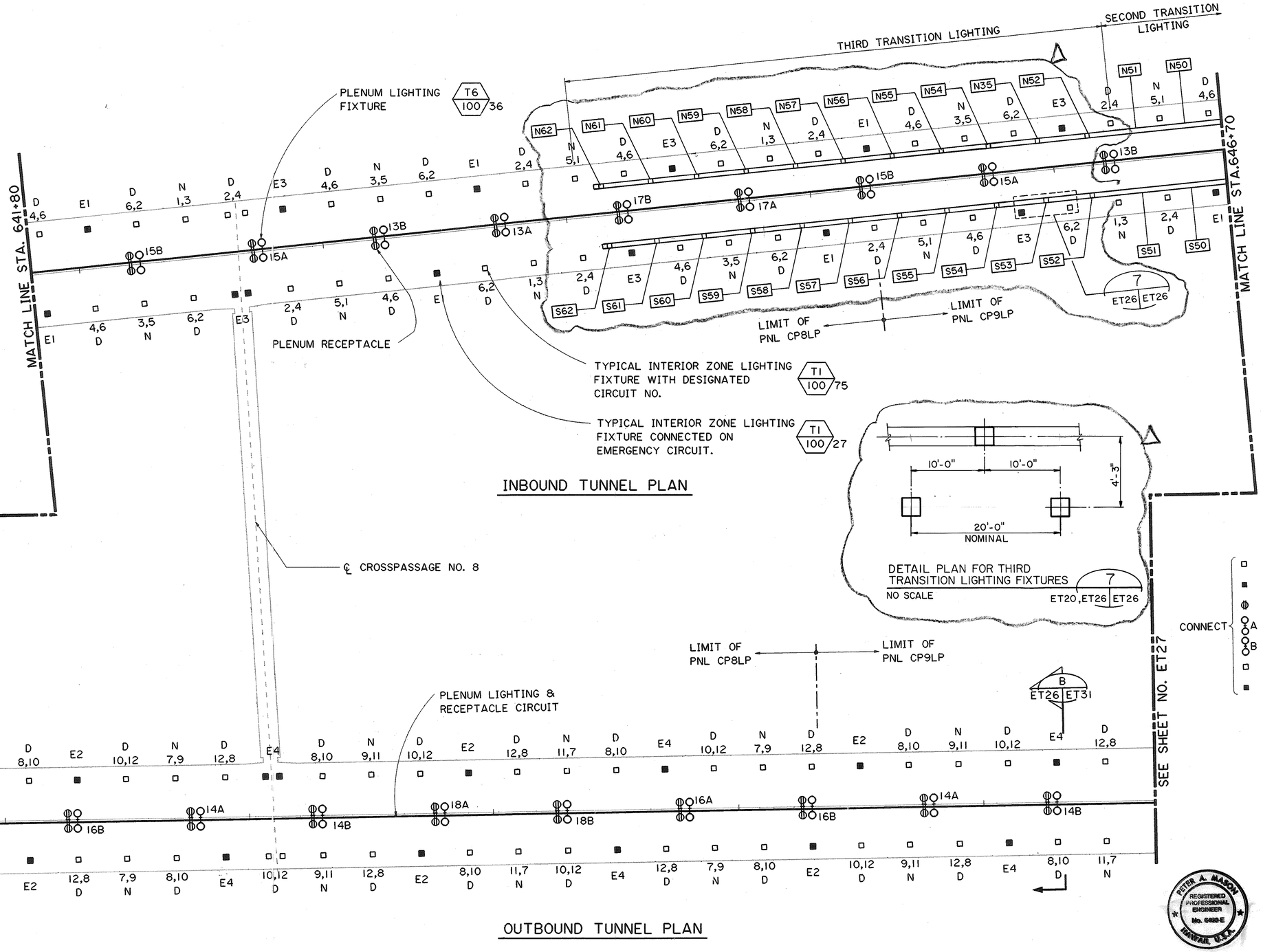
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V156 2410: V156 ES0204.FGB:1 10JLY90-12.53.10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	209	440



NOTE:

1. FOR GENERAL NOTES REFER TO SHEET NO. ET17

DATE	REVISION
10/5/93	ADDED WIRING GUTTER TO IB TUNNEL
	THIRD TRANSITION ZONE LIGHTING AND
	DETAIL '7' PER DCN 66-019

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
STA. 641+80 TO 646+70
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL, 1992

SHEET NO. ET26 OF 40 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

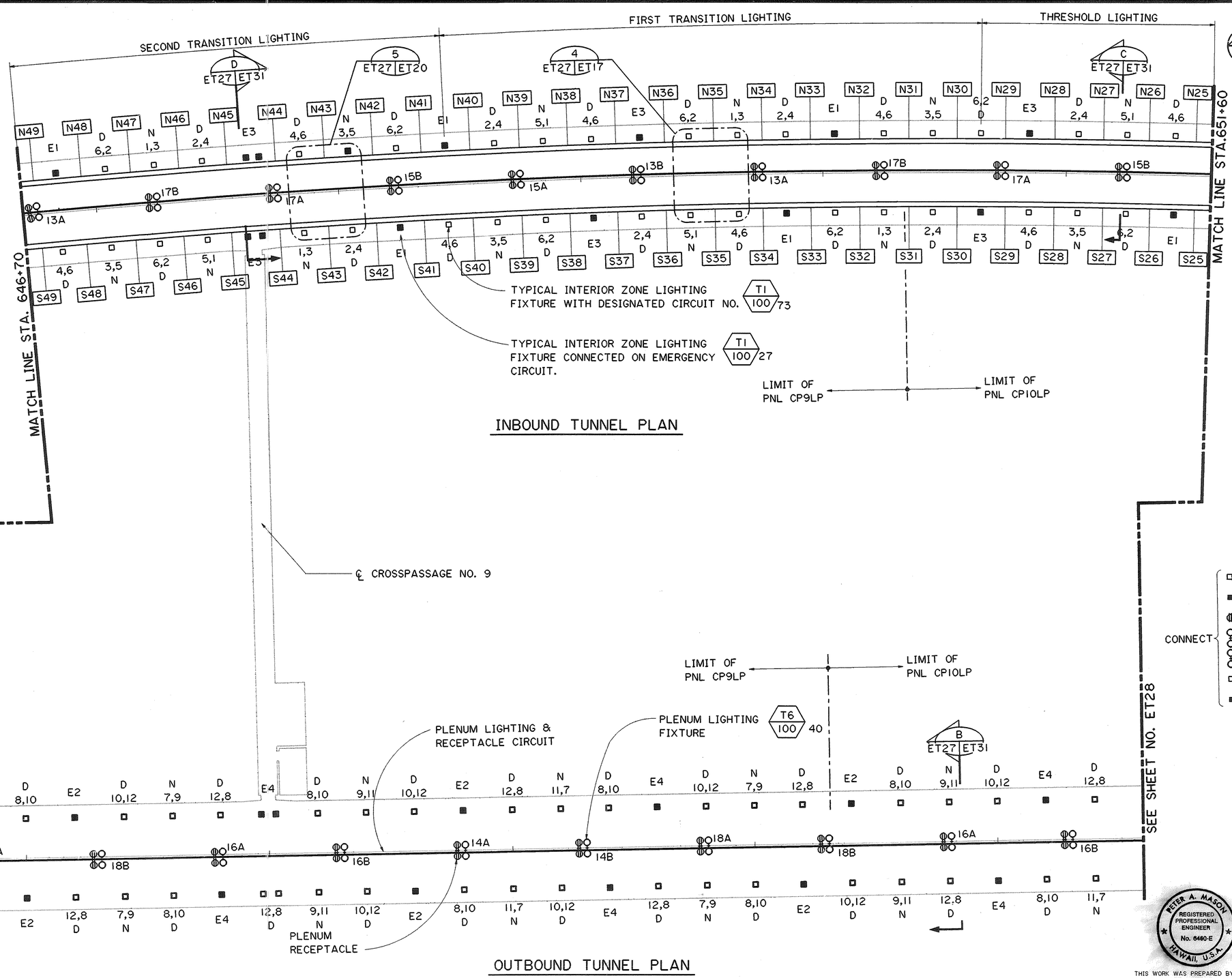
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN		DATE
NOTE BOOK	SURVEY PLOTTED BY	CADD 5/4/90
	DRAWN BY	T. SANCHEZ 4/2/90
	TRACED BY	
	DESIGNED BY	T. SANCHEZ 4/2/90
	QUANTITIES BY	J.J. SASSANI 6/18/90
NO.	CHECKED BY	

2410V156 2410: V156 ES0205.FGB:1 10JLY90-13.52.20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	210	440



N

NOTE:

1. FOR GENERAL NOTES, REFER TO SHEET NO. ET17

CONNECT
- □ TO CP7HL
- ■ TO CP7HE
- ◍ TO CP10LP
- ⊙A TO CP9HL
- ⊙B TO CP7HL
- □ TO CP9HL
- ■ TO CP9HE

CONNECT
- □ TO CP9HL
- ■ TO CP9HE
- ◍ TO CP10LP
- ⊙A TO CP9HL
- ⊙B TO CP7HL
- □ TO CP7HL
- ■ TO CP7HE

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/14/90
	DRAWN BY CADD	3/14/90
NOTE BOOK	TRACED BY T. SANCHEZ	4/27/90
	DESIGNED BY QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	6/18/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
STA. 646+70 TO 651+60
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL, 1992

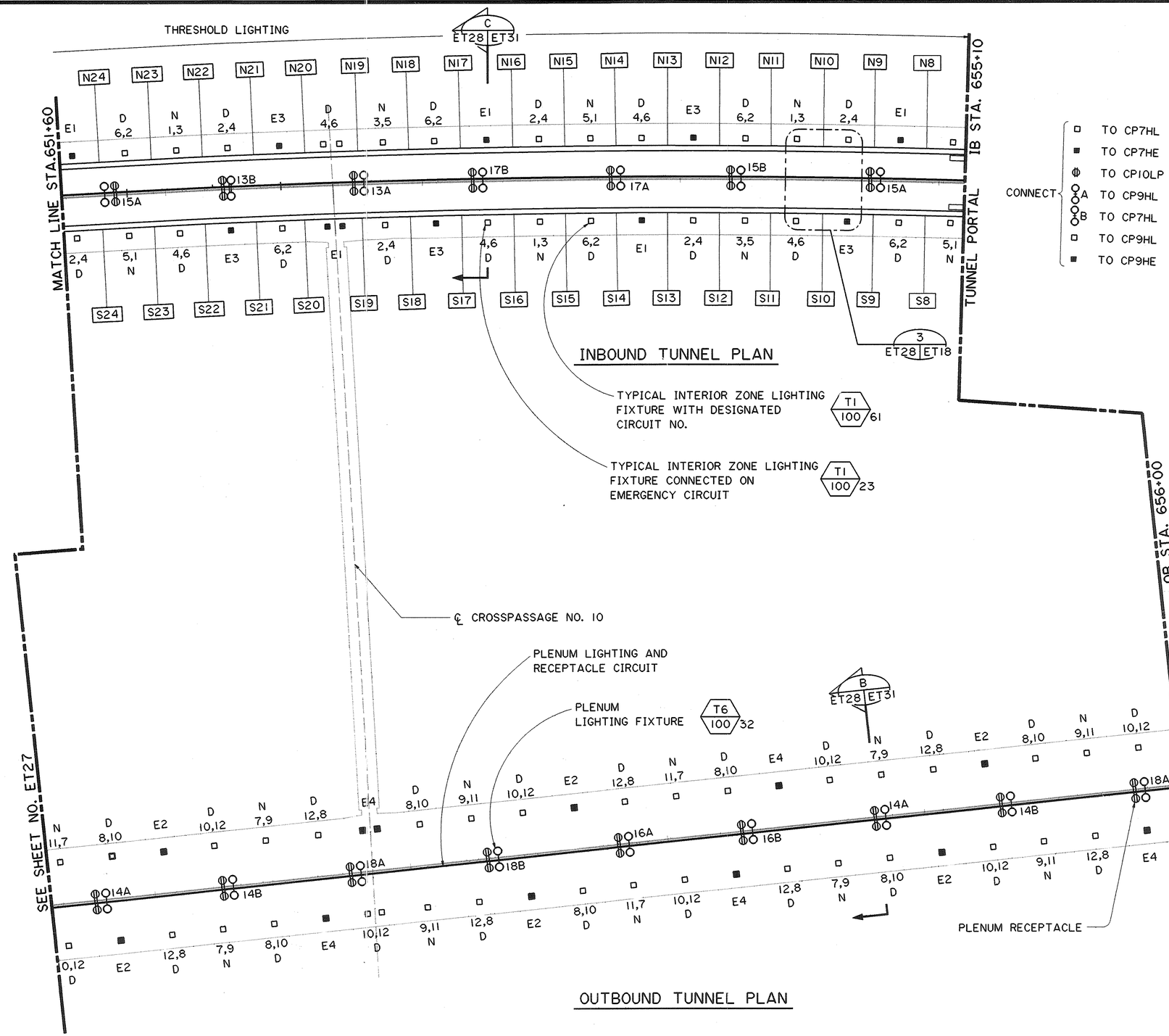
SHEET NO. ET27 OF 40 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	211	440



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 5-14-90
	DRAWN BY CADD	
NOTE BOOK	TRACED BY	4/2/90
	DESIGNED BY T. SANCHEZ	
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	6/18/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
STA. 651+60 TO PORTAL
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL, 1992

SHEET NO. ET28 OF 40 SHEETS

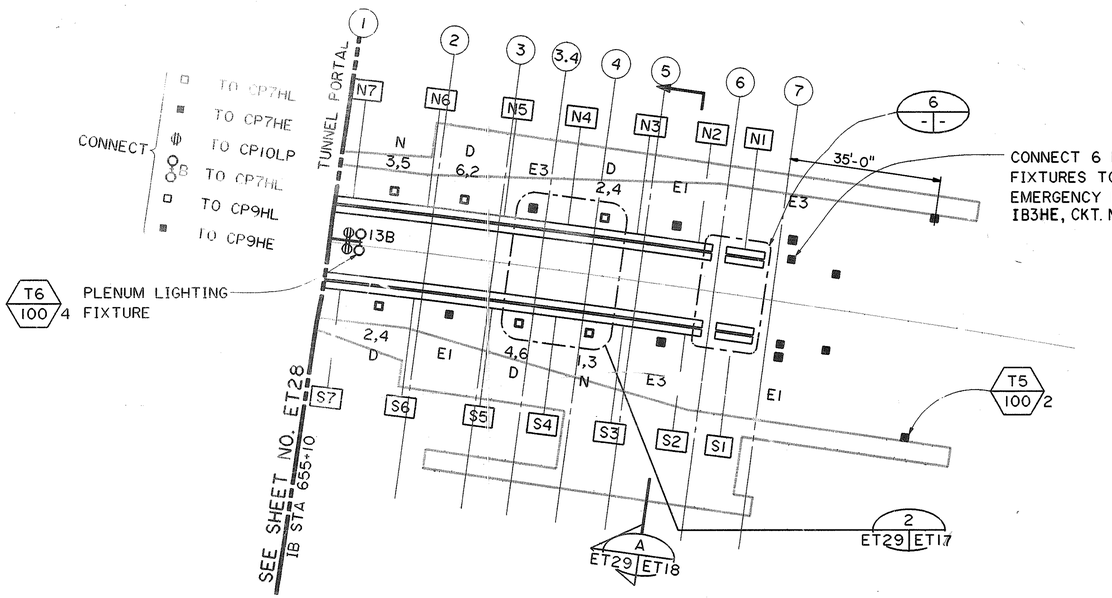
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

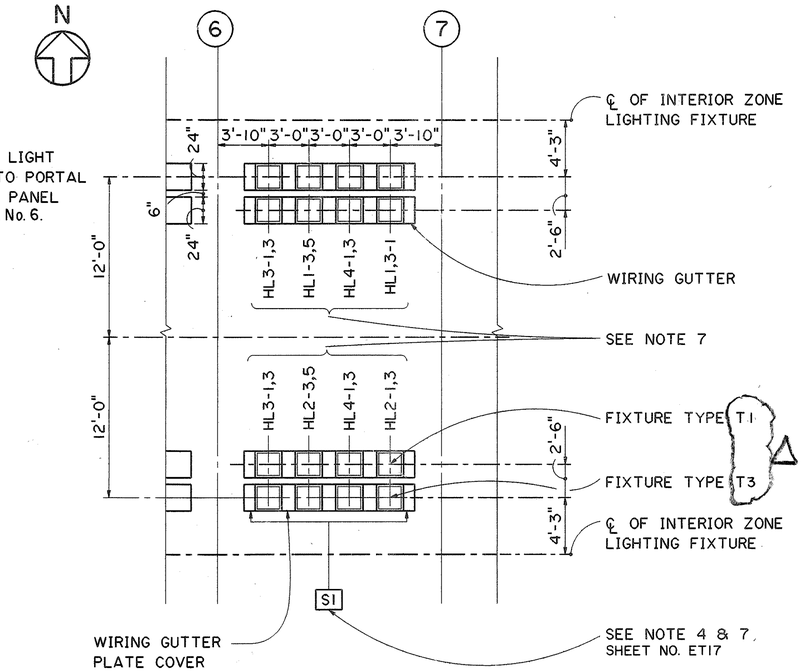
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V156 2410: V156 ES0207.FGB/1 11JLY90-07.36.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	212	440

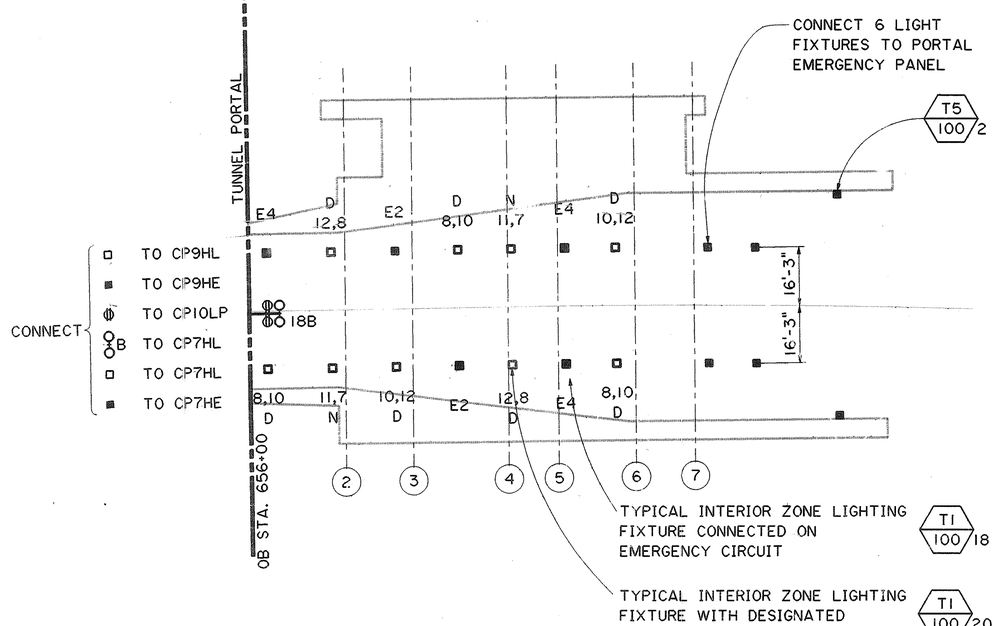




DETAIL 6 / -|-
SCALE: 3/16"=1'-0"

NOTE:

1. FOR GENERAL NOTES, REFER TO SHEET NO. ET17



TYPICAL INTERIOR ZONE LIGHTING FIXTURE CONNECTED ON EMERGENCY CIRCUIT — T1 100 18

TYPICAL INTERIOR ZONE LIGHTING FIXTURE WITH DESIGNATED CIRCUIT NO. — T1 100 20

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	5/24/90
NOTE BOOK	TRACED BY	
	DESIGNED BY T. SANCHEZ	4/2/90
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	6/18/90

10/5/93	REV. FIXTURE TYPE PER DCN 66-019
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
HAIKU PORTAL
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APRIL, 1992

SHEET NO. ET29 OF 40 SHEETS

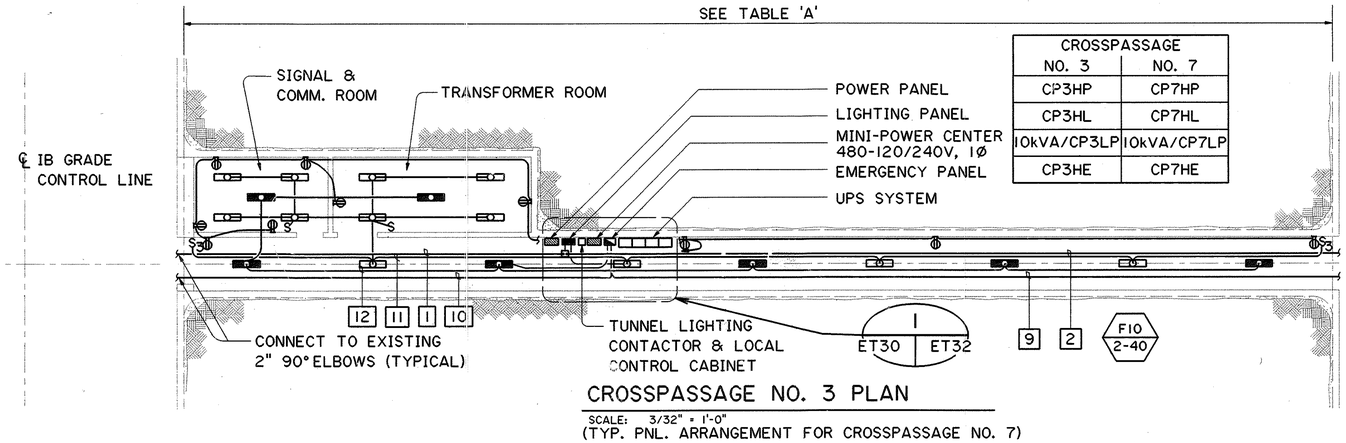
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

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Peter A. Mason

2410V156 2410: V156 ES0212.FGB:1 11/8/90-08:20:50 XREF:11 ES0212

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	213	440

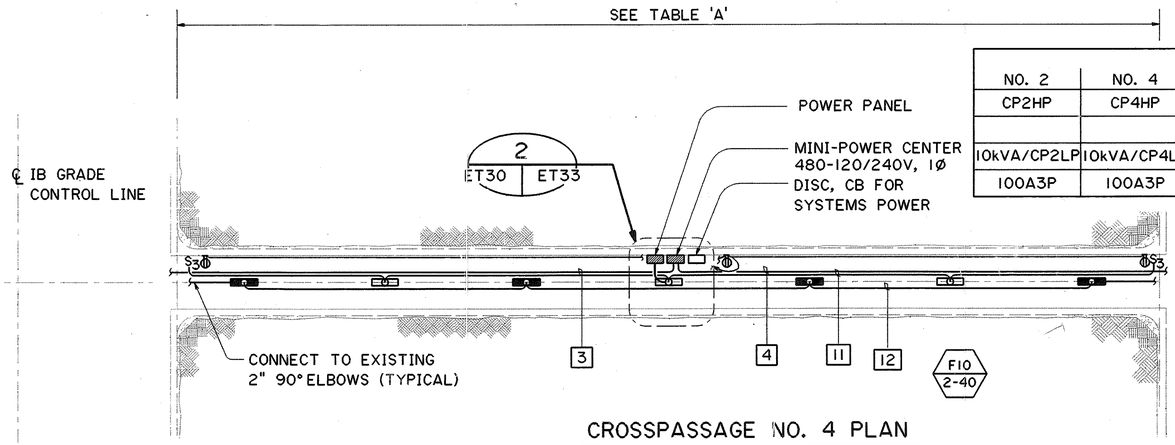


CROSSPASSAGE NO. 3	CROSSPASSAGE NO. 7
CP3HP	CP7HP
CP3HL	CP7HL
10kVA/CP3LP	10kVA/CP7LP
CP3HE	CP7HE

CROSSPASSAGE NO. 3 PLAN

SCALE: 3/32" = 1'-0"

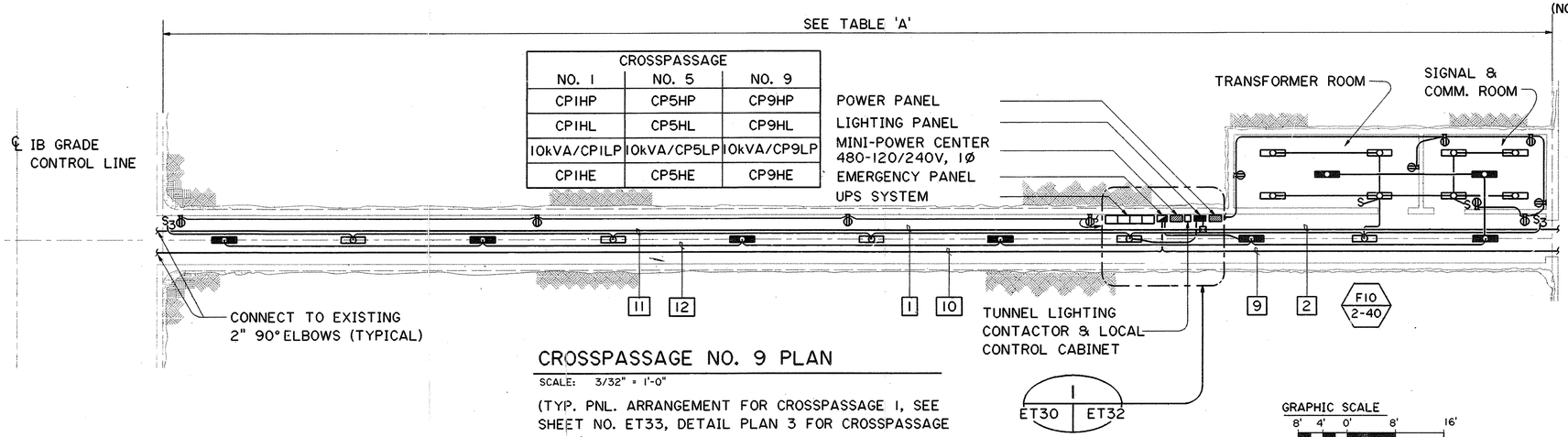
(TYP. PNL. ARRANGEMENT FOR CROSSPASSAGE NO. 7)



CROSSPASSAGE NO. 2	CROSSPASSAGE NO. 4	CROSSPASSAGE NO. 6	CROSSPASSAGE NO. 8	CROSSPASSAGE NO. 10
CP2HP	CP4HP	CP6HP	CP8HP	CP10HP
10kVA/CP2LP	10kVA/CP4LP	10kVA/CP6LP	10kVA/CP8LP	0kVA/CP10LP
100A3P	100A3P	100A3P	100A3P	100A3P

CROSSPASSAGE NO. 4 PLAN

SCALE: 3/32" = 1'-0"



CROSSPASSAGE NO. 1	CROSSPASSAGE NO. 5	CROSSPASSAGE NO. 9
CP1HP	CP5HP	CP9HP
CP1HL	CP5HL	CP9HL
10kVA/CP1LP	10kVA/CP5LP	10kVA/CP9LP
CP1HE	CP5HE	CP9HE

CROSSPASSAGE NO. 9 PLAN

SCALE: 3/32" = 1'-0"

(TYP. PNL. ARRANGEMENT FOR CROSSPASSAGE 1, SEE SHEET NO. ET33, DETAIL PLAN 3 FOR CROSSPASSAGE NO. 5)

TABLE 'A' - CROSSPASSAGE LIGHTING FIXTURE/RECEPTACLE SCHEDULE

AREA	APPROXIMATE LENGTH	FIXTURE QUANTITY NORMAL	FIXTURE QUANTITY EMERGENCY	APPROX. FIXTURE SPACING(℄ TO ℄)	RECEPTACLE QUANTITY
CP NO. 1	185'	4	5	20'-6"	4
CP NO. 2	187'	4	5	20'-9"	4
CP NO. 3	172'	4	5	19'-1"	4
CP NO. 4	147'	3	4	21'-0"	3
CP NO. 5 SEE NOTE 3	114'	3 4	4 0	16'-3"	3
CP NO. 6	110'	3	4	15'-8½"	3
CP NO. 7	143'	3	4	20'-5"	3
CP NO. 8	186'	4	5	20'-8"	4
CP NO. 9	227'	5	6	20'-7½"	5
CP NO. 10 SEE NOTE 4	222'	5 11	6 0	20'-2"	5
SIGNAL AND COMM. ROOM	AS SHOWN	4	1	AS SHOWN	4
TRANSFORMER ROOM	AS SHOWN	4	1	AS SHOWN	2

NOTE

1. FOR PANELBOARD SCHEDULES, SEE SHEET NO. ET36 THRU ET40.
2. FOR TAG [NO.] DESCRIPTIONS, SEE SHEET NO. ET32 & ET33.
3. CROSSPASSAGE NO. 5 IS A FULL 20'-8" WIDTH. INSTALL LIGHTING FIXTURES IN TWO ROWS SPACED 10FT. APART, SEVEN IN THE LONG ROW (NORMAL & EMERGENCY) AND FOUR IN THE SHORT ROW (NORMAL).
4. CROSSPASSAGE NO. 10 IS A FULL 20'-8" WIDTH. INSTALL LIGHTING FIXTURES IN TWO ROWS SPACED 10FT. APART, ELEVEN IN ONE ROW (NORMAL & EMERGENCY) AND ELEVEN IN OTHER ROW (NORMAL).

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY CADD	5/4/90
	TRACED BY	
	DESIGNED BY T. Y. SANCHEZ	4/27/90
	QUANTITIES BY	
NO.	CHECKED BY J. J. SASSANI	6/18/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING CROSSPASSAGES TUNNELS INTERSTATE ROUTE H-3 F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

SHEET NO. ET30 OF 40 SHEETS

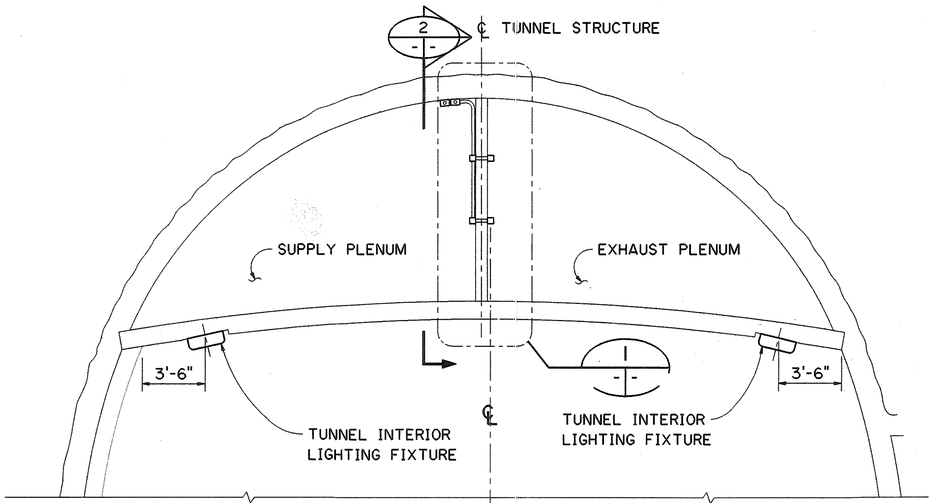
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

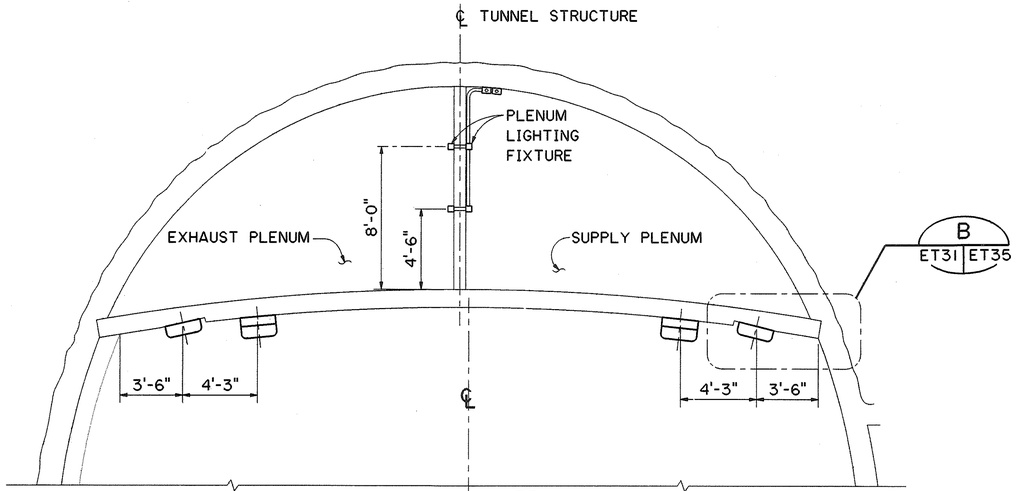
Peter A. Mason

2410V156 2410: V156 ES0213.FGB;1 05JLY90-10.28.10

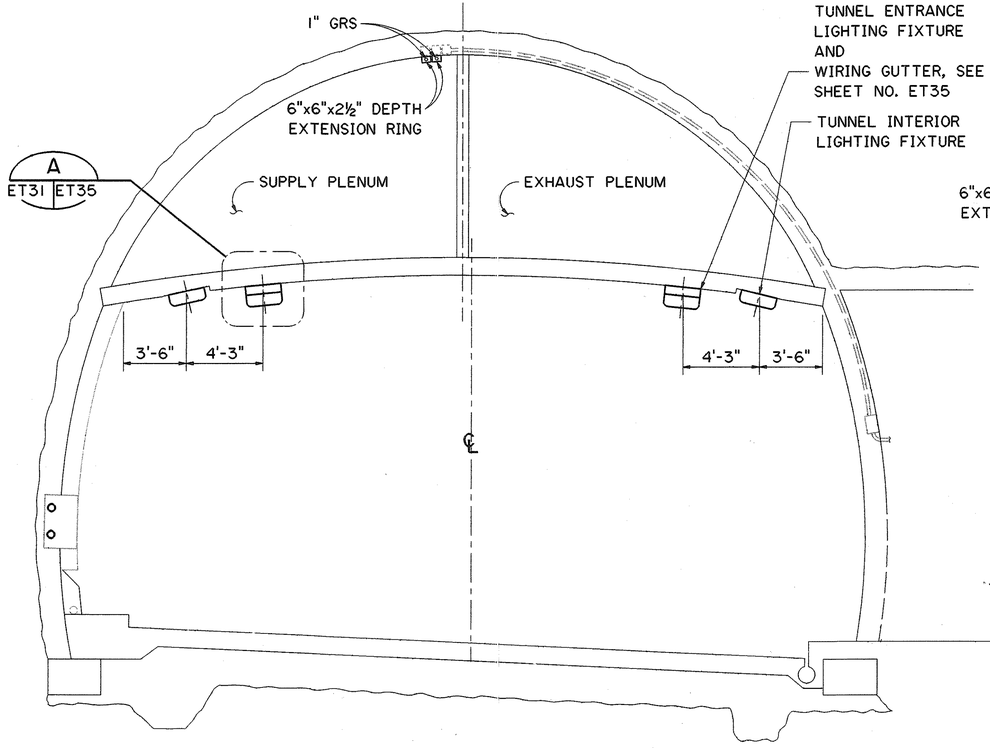
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	214	440



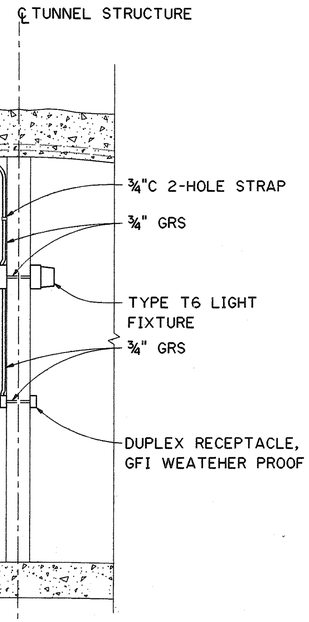
SECTION
SCALE: ¼" = 1'-0"



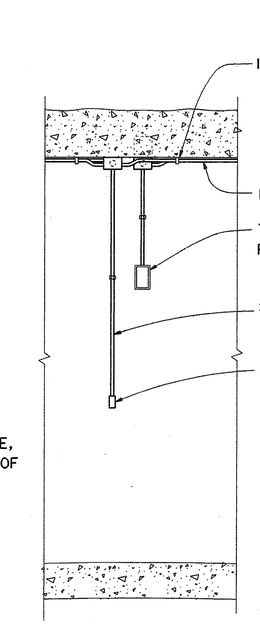
SECTION
SCALE: ¼" = 1'-0"



SECTION
SCALE: ¼" = 1'-0"



DETAIL
SCALE: ½" = 1'-0"



SECTION
SCALE: ½" = 1'-0"

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RECEPTACLE & PLENUM LIGHTING DETAILS

TUNNELS

INTERSTATE ROUTE H-3

F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APRIL, 1992

SHEET NO. ET31 OF 40 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

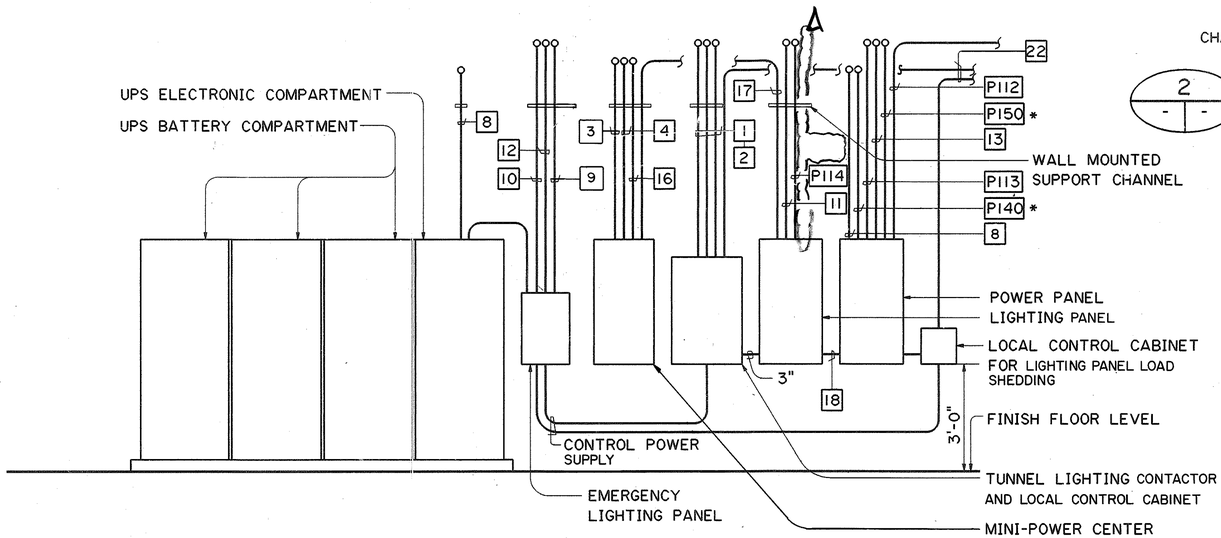
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	5/4/90
	TRACED BY	
NOTE BOOK	DESIGNED BY T. SANCHEZ	4/2/90
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	6/18/90

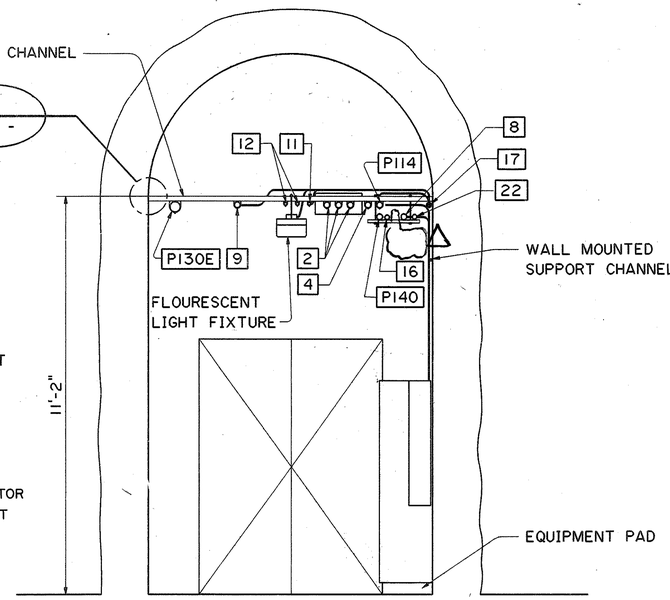
2410V156 2410: V156 ES0276.FGB:1 10JAN90-14.55.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	215	440



ELEVATION A
SCALE: ½" = 1'-0"

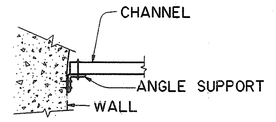
(OPPOSITE HAND FOR CROSSPASSAGE 3 & 7)



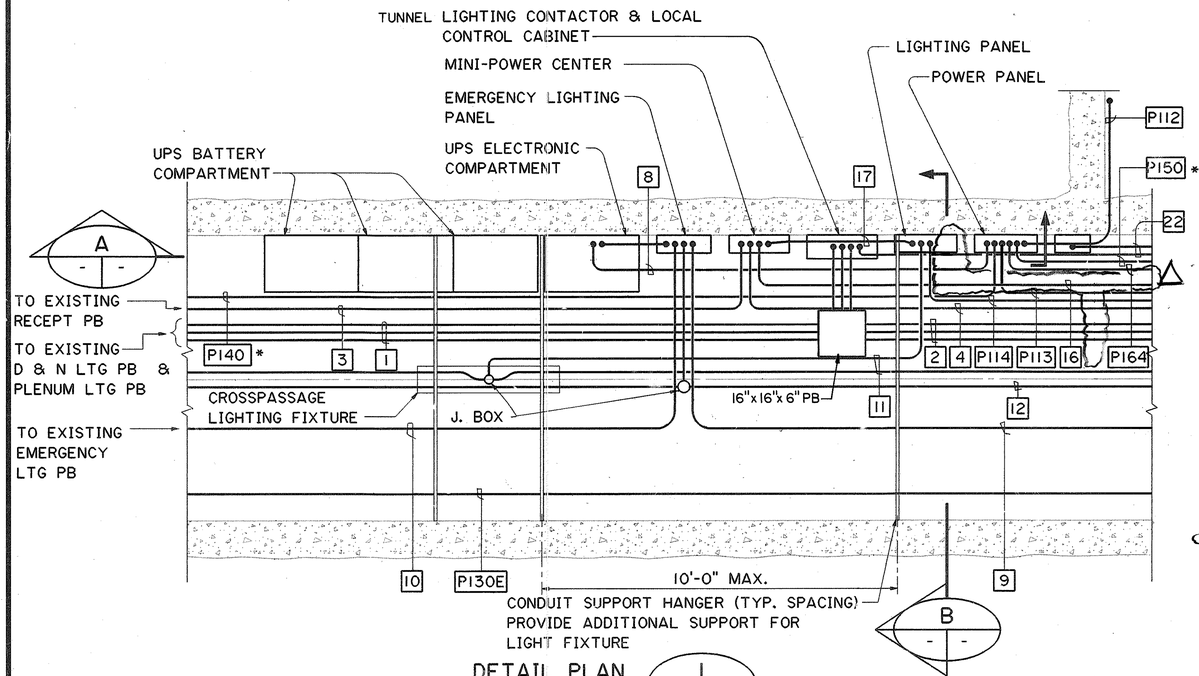
SECTION B
SCALE: ½" = 1'-0"

NOTE:

1. LOCATION OF CROSSPASSAGE LIGHTING FIXTURE AND BRANCH CIRCUIT CONDUITS VARIES IN EACH CROSSPASSAGE, SEE SHEET NO. ET30 FOR DETAILS AND SCHEDULE.
2. PROVIDE CONDUIT REDUCER FOR JOINING ¾" OR 1" CONDUIT TO EXISTING 2" CONDUIT.
3. FEEDER CKT. WITH ASTERISK (*) OPPOSITE TAG NO. EXIST ONLY IN CROSSPASSAGE NO. 9. FOR CONDUIT & WIRING SIZES, SEE SHEET NO. ET1.
4. FOR PANELBOARD SCHEDULE, SEE SHEET NO. ET36 THRU ET40.



DETAIL (TYP.) 2



DETAIL PLAN 1
SCALE: ½" = 1'-0" ET30 ET32

(OPPOSITE HAND FOR CROSSPASSAGE 3 & 7)

TAG NO.	DESCRIPTIONS	CONDUIT SIZE	WIRING CONDUCTOR SIZE & NUMBER
1	IB TUNNEL D & N LIGHTS PLENUM LIGHTS	3-1" GRS	6#10 + 2#12 GND 4#10 + 1#12 GND
2	OB TUNNEL D & N LIGHTS PLENUM LIGHTS	3-1" GRS	6#10 + 2#12 GND 4#10 + 1#12 GND
3	IB PLENUM RECEPTACLE CIRCUIT	1" GRS	4#10 + 2#12 GND
4	OB PLENUM RECEPTACLE CIRCUITS	1" GRS	4#10 + 2#12 GND
P112	MAIN POWER FEEDER	4" GRS	4-350kCMIL + 1#2 GND
P113	FEEDER CKT. TO NEXT CROSS-PASSAGE SIGNAL/COMM. PNL.	2" GRS	4#6 + 1#8 GND
P114	FEEDER CKT. TO NEXT CROSS-PASSAGE POWER PNL.	2" GRS	4#6 + 1#8 GND
8	UPS FEEDER CIRCUIT	1" GRS	2#2 + 1#8 GND
9	OB TUNNEL EMERGENCY LIGHTING CIRCUITS	1" GRS	4#10 + 1#12 GND
10	IB TUNNEL EMERGENCY LIGHTING CIRCUITS	1" GRS	4#10 + 1#12 GND
11	CROSSPASSAGE NORMAL LIGHTING CIRCUIT	¾" GRS	2#12 + 1#12 GND
12	CROSSPASSAGE EMERGENCY LIGHTING CIRCUIT	¾" GRS	2#12 + 1#12 GND
13	FEEDER CIRCUIT FOR SIGNAL/COMM. PANEL	2" GRS	4#6 + 1#8 GND
P130E	15 KV POWER CKT.	4" GRS	SEE POWER WIRING PLAN
16	EF CIRCUIT	3/4" GRS	2#12 + 1#12 GND
17	FEEDER CIRCUIT TO MINI-POWER CENTER	3/4" GRS	2#10 + 1#12 GND
18	FEEDER CIRCUIT TO LIGHTING PANEL	2" GRS	4#2 + 1#8 GND
22	CONTROL CIRCUIT TO ITC CABINET	2-2" GRS	SEE CONTROL DIAGRAM SHT. NO. ET2 & ED20

ORIGINAL PLAN	NOTE BOOK	NO.

SURVEY PLOTTED BY	CADD	DATE 5/4/90
DRAWN BY	T. Y. SANCHEZ	4/2/90
TRACED BY		
DESIGNED BY	T. Y. SANCHEZ	4/2/90
QUANTITIES BY	J. J. SASSANI	6/18/90
CHECKED BY	J. J. SASSANI	6/18/90

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

DATE	REVISION
3/7/94	REVISED PER DCN 66-037

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSSPASSAGE SECTION & DETAILS-1

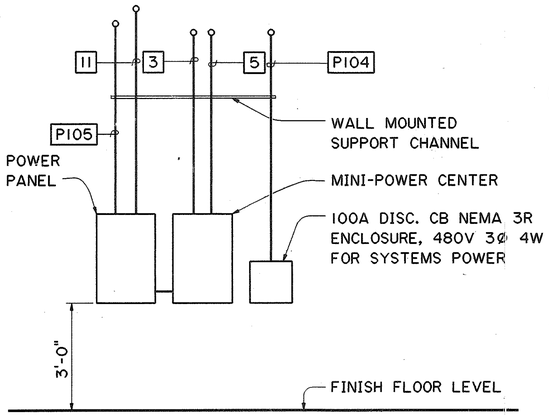
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APRIL, 1992

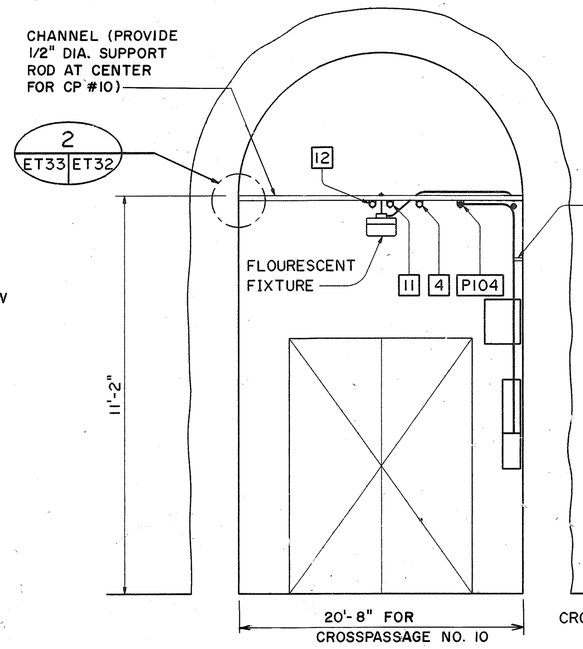
SHEET NO. ET32 OF 40 SHEETS

2410V156: 2410: V156 ES0316.FGB:1 10JUL90-14.15.30

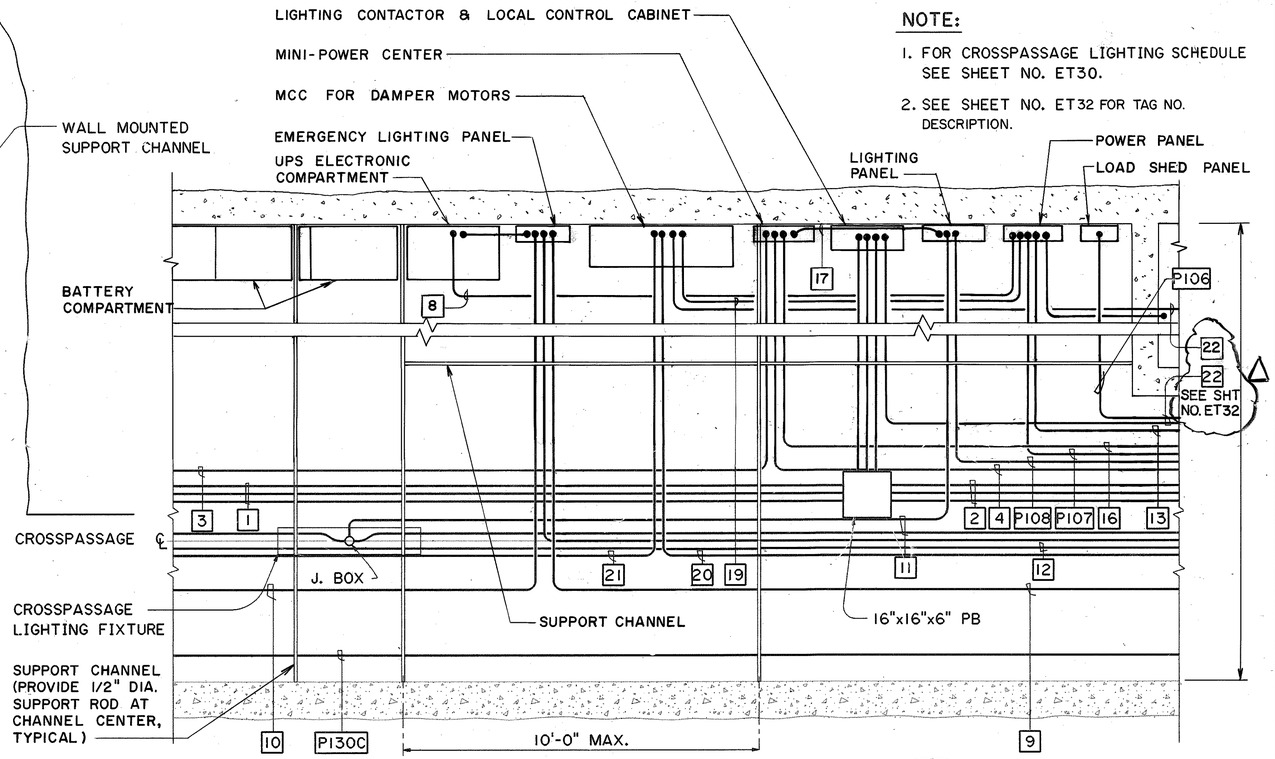
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	216	440



ELEVATION A
SCALE: ½" = 1'-0"



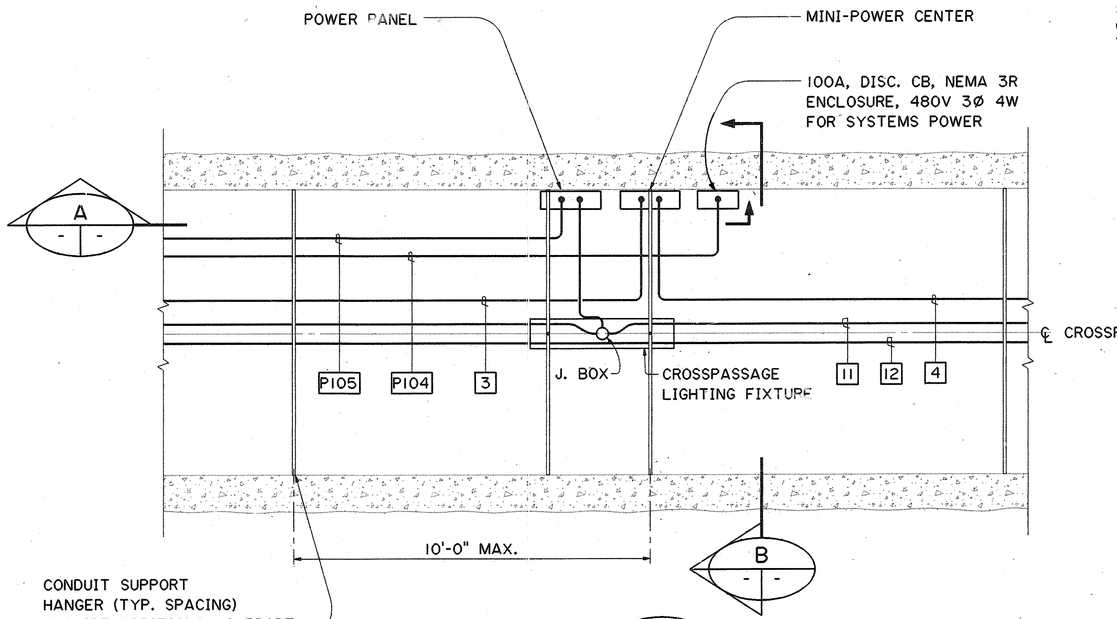
SECTION B
SCALE: ½" = 1'-0"



DETAIL PLAN 3
SCALE: ½" = 1'-0"

NOTE:

1. FOR CROSSPASSAGE LIGHTING SCHEDULE SEE SHEET NO. ET30.
2. SEE SHEET NO. ET32 FOR TAG NO. DESCRIPTION.



DETAIL PLAN 2
SCALE: ½" = 1'-0"

CONDUIT & WIRING SCHEDULE

TAG NO.	DESCRIPTIONS	CONDUIT SIZE	WIRING CONDUCTOR SIZE & NUMBER
11	CROSSPASSAGE NORMAL LIGHTING CIRCUIT	¾" GRS	2#12 + 1#12 GND
12	CROSSPASSAGE EMERGENCY LIGHTING CIRCUIT	¾" GRS	2#12 + 1#12 GND
P105	POWER PANEL FEEDER CIRCUIT	2" GRS	4#6 + 1#8 GND
P104	SIGNAL/COMM. FEEDER CIRCUIT	2" GRS	4#6 + 1#8 GND
4	OB PLENUM RECEPTACLE CIRCUIT	1" GRS	4#10 + 2#12 GND
3	IB PLENUM RECEPTACLE CIRCUIT	1" GRS	4#10 + 2#12 GND
P106	MAIN POWER FEEDER	4" GRS	4-350kCMIL+1#2 GND
P107	FEEDER CKT. TO NEXT CROSS-PASSAGE SIGNAL/COMM. PNL.	2" GRS	4#6 + 1#8 GND
P108	FEEDER CKT. TO NEXT CROSS-PASSAGE POWER PNL.	2" GRS	4#6 + 1#8 GND
P130C	15kV POWER CIRCUIT	4" GRS	SEE POWER WIRING PLAN
19	FEEDER CKT. TO MCC DAMPER MOTORS	2" GRS	3#6 + 1#8 GND
20	OB TNL DAMPER MOTORS CIRCUIT & CONTROL	2" GRS	6#8 + 24#12
21	IB TNL DAMPER MOTORS CITCUIT & CONTROL	2" GRS	6#8 + 24#12
22	MCC DAMPER MOTOR CONTROL CIRCUIT TO ITC CABINET	2" GRS	24#12 + 6#12 SPACE

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY CADD	5/4/90
	TRACED BY T Y SANCHEZ	4/2/90
	DESIGNED BY	
	QUANTITIES BY J J SASSANI	6/18/90
	CHECKED BY	
NO.		

DATE	REVISION
12/21/94	REVISED PER DCN 66-044
3/7/94	REVISED PER DCN 66-037

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSSPASSAGE SECTION & DETAILS-2

TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

SHEET NO. ET33 OF 40 SHEETS

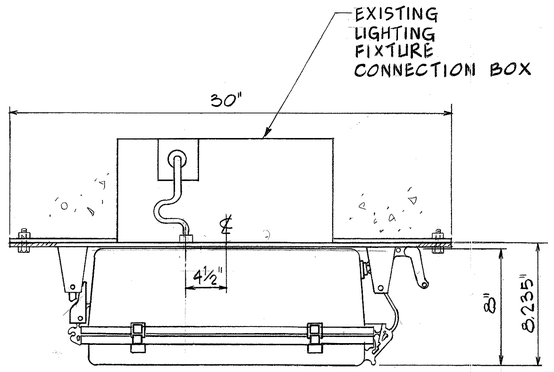
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

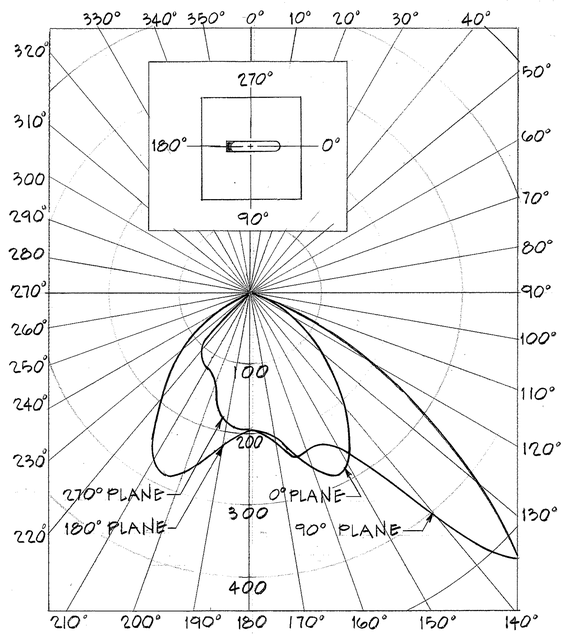
2410V156 2410: V156 ES0317.FGB/1 · 10JUL90-12.20.25

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	217	440

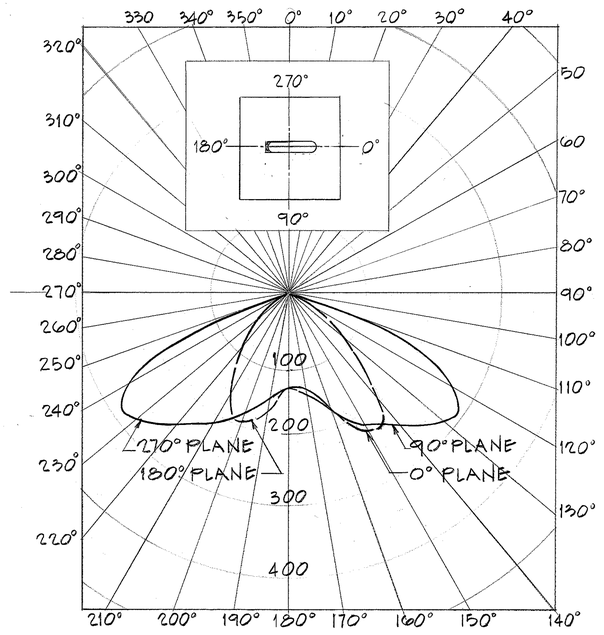


SIDE VIEW
TYPE T1 FIXTURE

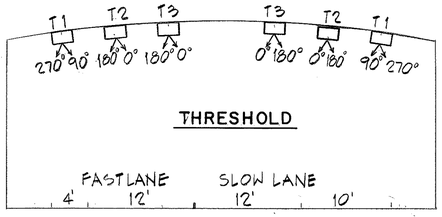
NOTE:
NORMAL LIGHTING FIXTURE INSTALLATION IS SHOWN. EMERGENCY LIGHTING FIXTURE BASE MAY BE ROTATED 180° TO ALLOW PLUG & CORD TO ENTER EMERGENCY LIGHTING COMPARTMENT BUT THE LAMP & REFLECTOR ORIENTATION SHALL BE MAINTAINED AS SHOWN.

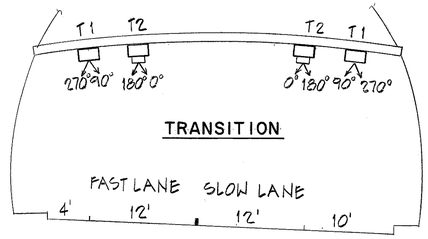


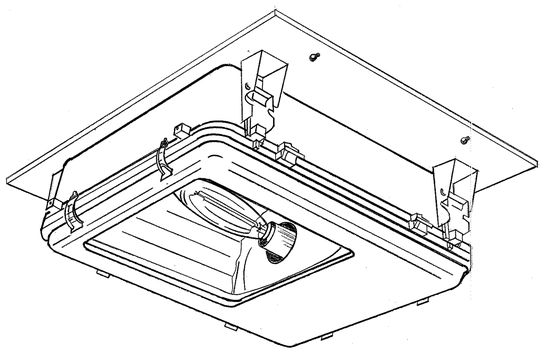
PHOTOMETRIC DIAGRAM
TYPE T1 FIXTURE



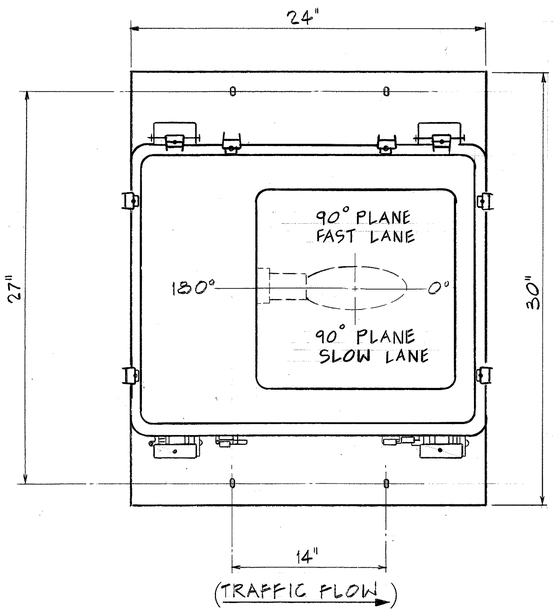
PHOTOMETRIC DIAGRAM
TYPE T2 & T3 FIXTURE



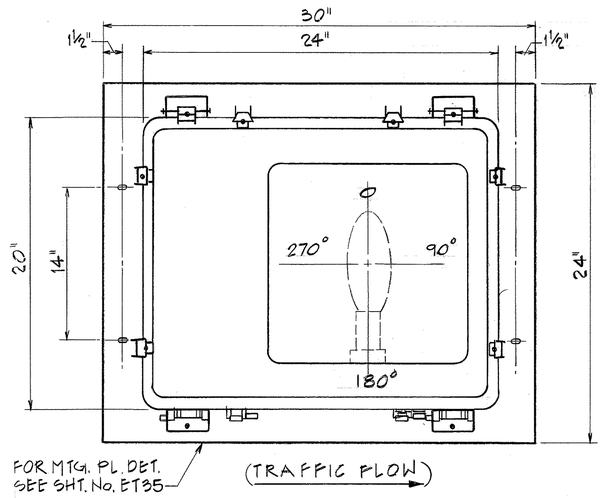




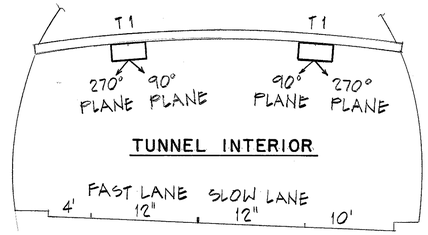
TUNNEL LIGHTING FIXTURE (TYPE T1)
PERSPECTIVE VIEW



BOTTOM VIEW
TYPE T1 FIXTURE



BOTTOM VIEW
TYPE T2 & T3 FIXTURES



REFLECTOR ORIENTATION
DIAGRAM

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LUMINAIRE DETAILS

TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ET34 OF 40 SHEETS

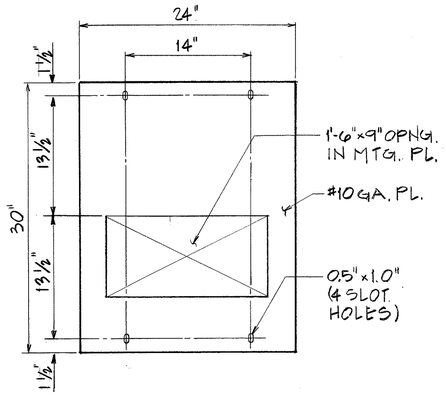
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6400-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

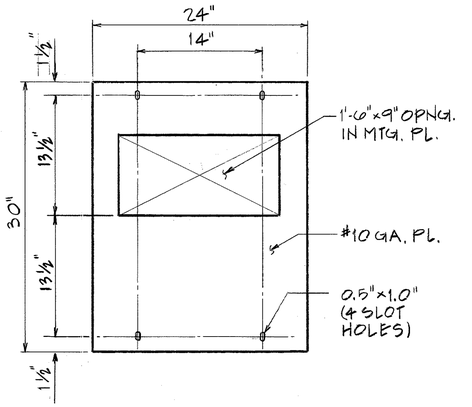
Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	G. ON-YANG	DATE 2-14-90
	DRAWN BY	: :	: :
NOTE BOOK	TRACED BY	T. SANCHEZ	1-6-90
	DESIGNED BY	: :	: :
No.	QUANTITIES BY	J.J. SASSANI	6-26-90
	CHECKED BY	: :	: :

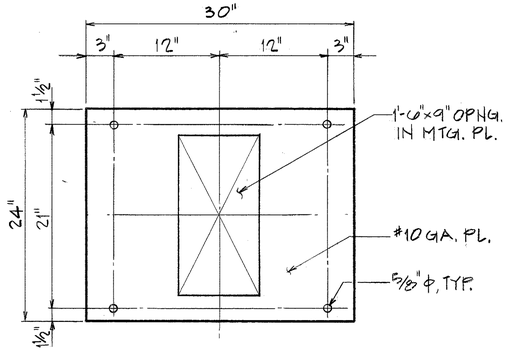
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	218	440



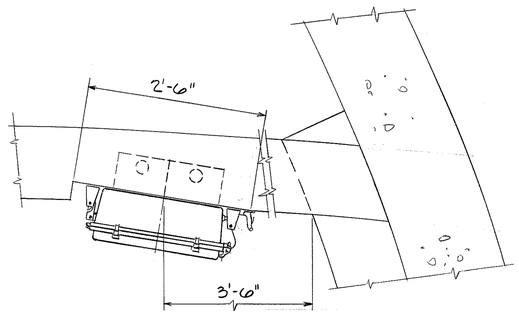
MOUNTING PLATE DETAIL FOR INTERIOR ZONE NORMAL LIGHTING FIXTURE (TYPE T1)
(OPPOSITE HAND FOR SOUTH ROW FIXTURE)



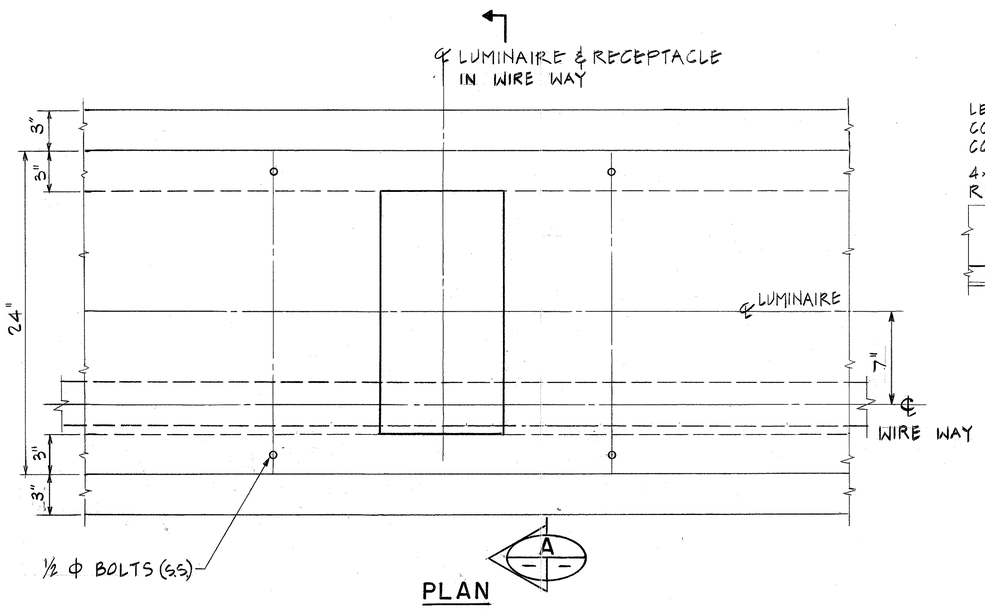
MOUNTING PLATE DETAIL FOR INTERIOR ZONE EMERGENCY LIGHTING FIXTURE (TYPE T1)
(OPPOSITE HAND FOR SOUTH ROW FIXTURES)



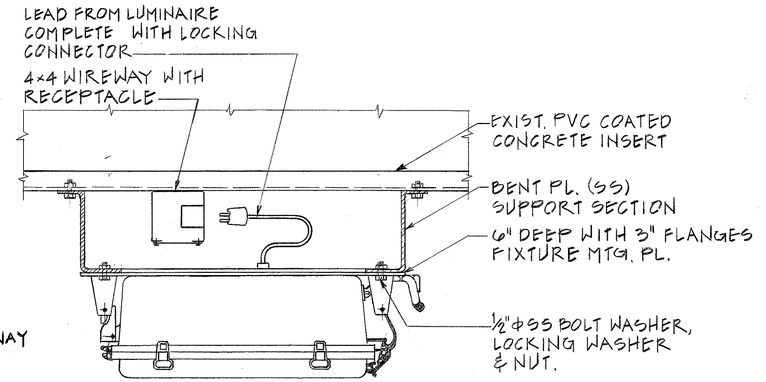
MOUNTING PLATE DETAIL FOR ENTRANCE ZONE LIGHTING FIXTURE (TYPE T2 & T3) - WIRE GUTTER MOUNTED



SECTION B-B



PLAN



SECTION A-A

SURFACE MOUNTED LUMINAIRE WIREWAY MOUNTED

ORIGINAL PLANS	SURVEY PLOTTED BY	G. ONYANG	DATE	2-14-90
	DRAWN BY			
NOTE BOOK	TRACED BY	T. SANCHEZ		1-6-90
	DESIGNED BY			
No.	QUANTITIES BY			6-20-90
	CHECKED BY	J.J. SASSANI		

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6409 E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LUMINAIRE INSTALLATION DETAILS
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. ET35 OF 40 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	219	440

SYSTEM: 120/240V 1Ø 3W **PANEL –** CP1LP **PANEL LOCATION:** CP #1
MAINS: 40AT/100AF 2P CB (MINI-POWER CENTER) **SUPPLY LOCATION:** PANEL CP1HL VIA TRANSFORMER CP #1 (IN MPC)
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
IB PLENUM RECPT.	1	1.80		100	1	20	#10			#10	100	1	20	1.44		2	OB PLENUM RECPT.
↓	3		1.80	↓	↓	↓	#10			#10	↓	↓	20		1.44	4	↓
CP RECEPTACLE	5	0.72					#12			#10			20	1.80		6	
CP ROOM RECPT.	7		1.08				#12			#12			15		1.13	8	EF-23
		2.52	2.88											3.24	2.57		

TOTAL CONNECTED 11.21 kVA — A 5.76, B 5.45
ESTIMATED MAXIMUM DEMAND 6.73 kVA — A 3.36, B 3.36

SYSTEM: 120/240V 1Ø 3W **PANEL –** CP2LP **PANEL LOCATION:** CP #2
MAINS: 40AT/100AF 2P CB (MINI-POWER CENTER) **SUPPLY LOCATION:** PANEL CP2HP VIA TRANSFORMER CP #2 (IN MPC)
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
IB PLENUM RECPT.	1	1.80		100	1	20	#10			#10	100	1	20	1.80		2	OB PLENUM RECPT.
↓	3		1.80				#10			#10					1.80	4	↓
CP RECEPTACLE	5	0.72		↓	↓	↓	#12				↓	↓	↓			6	SPARE
SPARE	7															8	SPARE
		2.52	1.80											1.80	1.80		

TOTAL CONNECTED 7.92 kVA — A 4.32, B 3.60
ESTIMATED MAXIMUM DEMAND 4.75 kVA — A 2.38, B 2.38

SYSTEM: 120/240V 1Ø 3W **PANEL –** CP3LP **PANEL LOCATION:** CP #3
MAINS: 40AT/100AF 2P CB (MINI-POWER CENTER) **SUPPLY LOCATION:** PANEL CP3HP VIA TRANSFORMER CP #3 (IN MPC)
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
IB PLENUM RECPT.	1	1.80		100	1	20	#10			#10	100	1	20	1.80		2	OB PLENUM RECPT.
↓	3		1.80				#10			#10			20		1.80	4	↓
CP RECEPTACLE	5	0.72					#12			#12			15	1.13		6	EF-24
CP ROOM RECPT.	7		1.08	↓	↓	↓	#12				↓	↓	20			8	SPARE
		2.52	2.88											2.93	1.80		

TOTAL CONNECTED 10.13 kVA — A 5.45, B 4.68
ESTIMATED MAXIMUM DEMAND 6.08 kVA — A 3.04, B 3.04

SYSTEM: 120/240V 1Ø 3W **PANEL –** CP4LP **PANEL LOCATION:** CP #4
MAINS: 40AT/100AF 2P CB (MINI-POWER CENTER) **SUPPLY LOCATION:** PANEL CP4HP VIA TRANSFORMER CP #4 (IN MPC)
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
IB PLENUM RECPT.	1	1.44		100	1	20	#10			#10	100	1	20	1.80		2	OB PLENUM RECPT.
↓	3		1.80				#10			#10					1.80	4	↓
CP RECEPTACLE	5	0.54					#12									6	SPARE
SPARE	7			↓	↓	↓					↓	↓	↓			8	SPARE
		1.98	1.80											1.80	1.80		

TOTAL CONNECTED 7.38 kVA — A 3.78, B 3.60
ESTIMATED MAXIMUM DEMAND 4.43 kVA — A 2.22, B 2.22

SYSTEM: 120/240V 1Ø 3W **PANEL –** CP5LP **PANEL LOCATION:** CP #5
MAINS: 40AT/100AF 2P CB (MINI-POWER CENTER) **SUPPLY LOCATION:** PANEL CP5HL, VIA TRANSFORMER CP #5 (IN MPC)
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
IB PLENUM RECPT.	1	1.80		100	1	20	#10			#10	100	1	20	1.80		2	OB PLENUM RECPT.
↓	3		1.80				#10			#10			20		1.80	4	↓
CP RECEPTACLE	5	0.54					#12			#12			15	1.13		6	EF-25
CP ROOM RECPT.	7		1.08	↓	↓	↓	#12				↓	↓	20			8	SPARE
		2.34	2.88											2.93	1.80		

TOTAL CONNECTED 9.95 kVA — A 5.27, B 4.68
ESTIMATED MAXIMUM DEMAND 5.97 kVA — A 2.98, B 2.98

SYSTEM: 120/240V 1Ø 3W **PANEL –** CP6LP **PANEL LOCATION:** CP #6
MAINS: 40AT/100AF 2P CB (MINI-POWER CENTER) **SUPPLY LOCATION:** PANEL CP6HP VIA TRANSFORMER CP #6 (IN MPC)
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
IB PLENUM RECPT.	1	1.80		100	1	20	#10			#10	100	1	20	1.80		2	OB PLENUM RECPT.
↓	3		1.80				#10			#10					1.80	4	↓
CP RECEPTACLE	5	0.54					#12									6	SPARE
SPARE	7			↓	↓	↓					↓	↓	↓			8	SPARE
		1.94	1.80											1.80	1.80		

TOTAL CONNECTED 7.34 kVA — A 3.74, B 3.60
ESTIMATED MAXIMUM DEMAND 4.41 kVA — A 2.21, B 2.20

SYSTEM 120/240V 1Ø 3W **PANEL –** CP7LP **PANEL LOCATION:** CP #7
MAINS: 40AT/100AF 2P CB (MINI-POWER CENTER) **SUPPLY LOCATION:** PANEL CP7HL VIA TRANSFORMER CP #7 (IN MPC)
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
IB PLENUM RECPT.	1	1.80		100	1	20	#10			#10	100	1	20	1.80		2	OB PLENUM RECPT.
↓	3		1.80				#10			#10			20		1.80	4	↓
CP RECEPTACLE	5	0.54					#12			#12			15	1.13		6	EF-26
CP ROOM RECPT.	7		1.08	↓	↓	↓	#12				↓	↓	20			8	SPARE
		2.34	2.88											2.93	1.80		

TOTAL CONNECTED 9.95 kVA — A 5.27, B 4.68
ESTIMATED MAXIMUM DEMAND 5.97 kVA — A 2.98, B 2.98

SYSTEM: 120/240V 1Ø 3W **PANEL –** CP8LP **PANEL LOCATION:** CP #8
MAINS: 40AT/100AF 2P CB (MINI-POWER CENTER) **SUPPLY LOCATION:** PANEL CP8HP VIA TRANSFORMER CP #8 (IN MPC)
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
IB PLENUM RECPT.	1	1.80		100	1	20	#10			#10	100	1	20	1.80		2	OB PLENUM RECPT.
↓	3		1.80				#10			#10					1.80	4	↓
CP RECEPTACLE	5	0.72					#12									6	SPARE
SPARE	7			↓	↓	↓					↓	↓	↓			8	SPARE
		2.52	1.80											1.80	1.80		

TOTAL CONNECTED 7.92 kVA — A 4.32, B 3.60
ESTIMATED MAXIMUM DEMAND 4.78 kVA — A 2.39, B 2.39

3/7/94	REVISED PER DCN 66-037
8/19/93	REVISED SCHEDULES PER DCN 66-017
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSSPASSAGE
PANEL SCHEDULE-1
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APRIL, 1992

SHEET NO. ET36 OF 40 SHEETS

PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6460-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SURVEY PLOTTED BY	S. OW-YANG	6-1-90
DRAWN BY		
TRACED BY	T. SANCHEZ	5-24-90
DESIGNED BY		
QUANTITIES BY	J.J. SASSANI	6-26-90
CHECKED BY		

ORIGINAL PLANS — NOTE BOOK — No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	220	440

SYSTEM: 120/240V 1Ø 3W **PANEL –** CP9LP **PANEL LOCATION:** CP #9
MAINS: 40AT/100AF 2P CB (MINI-POWER CENTER) **SUPPLY LOCATION:** PANEL CP9HL VIA TRANSFORMER CP #9 (IN MPC)
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
IB PLENUM RECPT.	1	1.80		100	1	20	#10			#10	100	1	20	1.80		2	OB PLENUM RECPT.
↓	3		1.80				#10			#10			20		1.80	4	↓
CP RECEPTACLE	5	0.90					#12			#12			15	1.13		6	EF-27
CP ROOM RECPT.	7		1.08	↓	↓	↓	#12				↓	↓	20			8	SPARE
		2.70	2.88											2.93	1.80		

	A	B
	5.63	4.68
	3.09	3.09

TOTAL CONNECTED 10.31 kVA
ESTIMATED MAXIMUM DEMAND 6.18 kVA

SYSTEM: 120/240V 1Ø 3W **PANEL –** CP10LP **PANEL LOCATION:** CP #10
MAINS: 40AT/100AF 2P CB (MINI-POWER CENTER) **SUPPLY LOCATION:** PANEL CP10HP VIA TRANSFORMER CP #10 (IN MPC)
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	CKT. NO.	SERVICE
IB PLENUM RECPT.	1	1.80		100	1	20	#10			#10	100	1	20	1.44		2	OB PLENUM RECPT.
↓	3		2.16				#10			#10					1.44	4	↓
CP RECEPTACLE	5	0.90					#12			#10				1.44		6	
SPARE	7			↓	↓	↓					↓	↓	↓			8	SPARE
		2.70	2.16											2.88	1.44		

	A	B
	5.58	3.60
	2.76	2.76

TOTAL CONNECTED 9.18 kVA
ESTIMATED MAXIMUM DEMAND 5.51 kVA

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP1HP **PANEL LOCATION:** CP #1
MAINS: 225AT/250AF 3P CB **SUPPLY LOCATION:** T3-1, TRANSFORMER ROOM, CP #1
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
	1	15.16														4.00			2	CP#2 SIGNAL/
PANEL CP1HL	3		18.01		100	3	100	#2				#6	100	3	70		4.00		4	COMM.PANEL
	5			14.67														4.00	6	
CP#1 SIGNAL/	7	5.00										#6	100	1	90	8.48			8	PANEL CP1HE
COMM.PANEL	9		5.00		100	3	70	#6					100	1	90				10	SPARE
	11			5.00										1	90				12	SPACE
	13																		14	
SPARE	15				100	3	100						100	3	70				16	SPARE
	17																		18	
	19																		20	
SPACE	21					3	100							3	70				22	SPACE
	23																		24	
		20.16	23.01	19.67												12.48	4.00	4.00		

	A	B	C
	32.64	27.01	23.67
	32.64	27.01	23.67

TOTAL CONNECTED 83.32 kVA
ESTIMATED MAXIMUM DEMAND 83.32 kVA

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP2HP **PANEL LOCATION:** CP #2
MAINS: 70AT/100AF 3P CB **SUPPLY LOCATION:** PANEL CP1HL, CP #1
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
XFMR IN	1	3.96			100	2	20	#10					100	1	20				2	SPARE
CP2LP MPC	3		3.96																4	
CP #2 LIGHTS	5			0.40	100	1	20	#12											6	
SPARE	7					1	20												8	
↓	9					2	20												10	
	11				↓								↓	↓	↓				12	↓
		3.96	3.96	0.40												--	--	--		

	A	B	C
	3.96	3.96	0.40
	3.96	3.96	0.40

TOTAL CONNECTED 8.32 kVA
ESTIMATED MAXIMUM DEMAND 8.32 kVA

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP 3HP **PANEL LOCATION:** CP #3
MAINS: 225AT/250AF 3P CB **SUPPLY LOCATION:** T3-3, TRANSFORMER ROOM, CP #3
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
	1	19.84														4.00			2	CP#4 SIGNAL/
PANEL CP3HL	3		23.73		100	3	100	#2				#6	100	3	70		4.00		4	COMM.PANEL
	5			19.70														4.00	6	
CP#3 SIGNAL/	7	5.00										#6	100	1	90	10.54			8	PANEL CP3HE
COMM.PANEL	9		5.00		100	3	70	#6					100	1	90				10	SPARE
	11			5.00										1					12	SPACE
	13																		14	
SPARE	15				100	3	100						100	3	70				16	SPARE
	17																		18	
	19																		20	
SPACE	21					3	100												22	SPACE
	23																		24	
		24.84	28.73	24.70												14.54	4.00	4.00		

	A	B	C
	39.38	32.73	28.70
	39.38	32.73	28.70

TOTAL CONNECTED 100.81 kVA
ESTIMATED MAXIMUM DEMAND 100.81 kVA

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP4HP **PANEL LOCATION:** CP #4
MAINS: 70AT/100AF 3P CB **SUPPLY LOCATION:** PANEL CP3HL, CP #3
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
XFMR IN	1	3.69			100	2	20	#12					100	1	20				2	SPARE
CP4LP MPC	3		3.69																4	
CP#4 LIGHTS	5			0.30		1	20												6	
SPARE	7					1	20												8	
↓	9					2	20												10	
	11				↓								↓	↓	↓				12	↓
		3.69	3.69	0.30												--	--	--		

	A	B	C
	3.69	3.69	0.30
	3.69	3.69	0.30

TOTAL CONNECTED 7.68 kVA
ESTIMATED MAXIMUM DEMAND 7.68 kVA

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP5HP **PANEL LOCATION:** CP #5
MAINS: 225AT/250AF 3P CB **SUPPLY LOCATION:** T3-5, TRANSFORMER ROOM, CP #5
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
	1	17.96														4.00			2	CP#6 SIGNAL/
PANEL CP5HL	3		21.03		100	3	100	#2				#6	100	3	70		4.00		4	COMM.PANEL
	5			17.29														4.00	6	
	7	10.00										#6	100	1	90	10.51			8	PANEL CP5HE
MCC/DAMPER	9		10.00		100	3	70	#6					100	1	90				10	SPARE
MOTORS	11			10.00										1					12	SPACE
	13	5.00																	14	
CP#5 SIGNAL/	15		5.00		100	3	70	#6					100	3	70				16	SPARE
COMM.PANEL	17			5.00															18	
	19																		20	
SPARE	21				100	3	100							3	100				22	SPACE
	23																		24	
		32.96	36.03	32.29												14.51	4.00	4.00		

	A	B	C
	47.47	40.03	36.29
	47.47	40.03	36.29

TOTAL CONNECTED 123.79 kVA
ESTIMATED MAXIMUM DEMAND 123.79 kVA

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP6HP **PANEL LOCATION:** CP #6
MAINS: 70AT/100AF 3P CB **SUPPLY LOCATION:** PANEL CP5HL, CP #5
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
XFMR IN	1	3.67			100	2	20	#10					100	1	20				2	SPARE
CP6LP MPC	3		3.67																4	
CP#6 LIGHTS	5			0.30		1	20	#12											6	
SPARE	7					1	20												8	
↓	9					2	20												10	
	11				↓								↓	↓	↓				12	↓
		3.67	3.67	0.30												--	--	--		

	A	B	C
	3.67	3.67	0.30
	3.67	3.67	0.30

TOTAL CONNECTED 7.64 kVA
ESTIMATED MAXIMUM DEMAND 7.64 kVA

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6460-E — HAWAII, U.S.A.

DATE	REVISION
3/7/94	REVISED PER DCN 66-037
8/19/93	REVISED SCHEDULES PER DCN 66-017

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSSPASSAGE
PANEL SCHEDULE-2
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APRIL, 1992

SHEET NO. ET37 OF 40 SHEETS

ORIGINAL PLAN BY	SURVEY PLOTTED BY G. OW-YANG DATE 6-4-90
NOTE BOOK	DRAWN BY . . . . .
No.	TRACED BY T. SANCHEZ 5-1-90
	DESIGNED BY . . . . .
	QUANTITIES BY . . . . .
	CHECKED BY J.J. SASSANI 6-26-92

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	221	440

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP7HP **PANEL LOCATION:** CP #7
MAINS: 225AT/250AF 3P CB **SUPPLY LOCATION:** T3-7, TRANSFORMER ROOM, CP #7
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
	1	24.06																	2	SF HA
PANEL CP7HL	3		25.95		225	3	125	#2				#6	100	3	225				4	SPACE
	5			22.47															6	↓
CP#7 SIGNAL/	7	5.00										#6							8	SPARE
COMM. PANEL	9		5.00		100	3	70	#6					100	3	70				10	↓
	11			5.00															12	
	13												100	1	90	11.77			14	PANEL CP7HE
SPARE	15				100	3	100						100	1	90				16	SPARE
	17																		18	SPACE
	19																		20	
SPACE	21																		22	SPACE
	23																		24	
		29.06	30.95	27.47												15.77	4.00	4.00		

	A	B	C
	44.83	34.95	31.47
	44.83	34.95	31.47

TOTAL CONNECTED 111.25 kVA
ESTIMATED MAXIMUM DEMAND 111.25 kVA

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP8HP **PANEL LOCATION:** CP #8
MAINS: 70AT/100AF 3P CB **SUPPLY LOCATION:** PANEL CP7HL, CP #7
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
XFMR IN	1	3.96			100	2	20	#10					100	1	20				2	SPARE
CP8LP MPC	3		3.96																4	
CP#8 LIGHTS	5			0.40		1	20	#12											6	
SPARE	7					1	20												8	
↓	9					2	20												10	
	11				↓								↓	↓	↓				12	↓
		3.96	3.96	0.40												--	--	--		

	A	B	C
	3.96	3.96	0.40
	3.96	3.96	0.40

TOTAL CONNECTED 8.32 kVA
ESTIMATED MAXIMUM DEMAND 8.32 kVA

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP9HP **PANEL LOCATION:** CP #9
MAINS: 225AT/250AF 3P CB **SUPPLY LOCATION:** T3-9, TRANSFORMER ROOM
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
	1	19.28														4.00			2	
PANEL CP9HL	3		20.47		100	3	100	#2				#6	100	3	70		4.00		4	
	5			20.47														4.00	6	
CP#9 SIGNAL/	7	5.00										#6	100	1	90	10.58			8	
COMM. PANEL	9		5.00		100	3	70	#6					100	1	90		5.89		10	
	11			5.00									100	1	90			5.89	12	
	13																		14	
SPARE	15				100	3	100						100	3	70				16	SPARE
	17																		18	
	19																		20	
SPACE	21																		22	SPACE
	23																		24	
		24.28	25.47	25.47												14.58	9.89	9.89		

	A	B	C
	38.86	35.36	35.36
	38.86	35.36	35.36

TOTAL CONNECTED 109.58 kVA
ESTIMATED MAXIMUM DEMAND 109.58 kVA

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP10HP **PANEL LOCATION:** CP #10
MAINS: 70AT/100AF 3P CB **SUPPLY LOCATION:** PANEL CP9HL, CP #9
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
XFMR IN	1	4.59			100	2	20	#10					100	1	20				2	SPARE
CP10LP MPC	3		4.59																4	
CP#10 LIGHTS	5			0.50		1	20	#12											6	
SPARE	7					1	20												8	
↓	9					2	20												10	
	11				↓								↓	↓	↓				12	↓
		4.59	4.59	0.50												--	--	--		

	A	B	C
	4.59	4.59	0.50
	4.59	4.59	0.50

TOTAL CONNECTED 9.68 kVA
ESTIMATED MAXIMUM DEMAND 9.68 kVA

ORIGINAL PLANS	SURVEY PLOTTED BY	DATE
	DRAWN BY G. ONG-YANG	6-1-90
NOTE BOOK	TRACED BY T. SANCHEZ	5-4-90
	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY J.J. SASSANI	5-6-90

DATE	REVISION
8/19/93	REVISED SCHEDULES PER DCN 66-017

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSSPASSAGE
PANEL SCHEDULE-3
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

SCALE: NONE DATE: APRIL, 1992

SHEET NO. ET38 OF 40 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	222	440

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** GP1HL
MAINS: 100A LUGS ONLY / 3P CONTACTOR
SHORT CIRCUIT RATING: 14 KAIC

PANEL LOCATION: CP #1
SUPPLY LOCATION: PANEL CP1HP, CP #1

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
IB TUNNEL	1	0.87														1.45			2	IB TUNNEL
NIGHT LTG.	3		0.87		100	3	20	#10				#10	100	3	20		1.45		4	DAY LTG.
	5			0.87														1.45	6	
OB TUNNEL	7	1.02														1.74			8	OB TUNNEL
NIGHT LTG.	9		0.87		100	3	20	#10				#10	100	3	20		1.74		10	DAY LTG.
	11			0.87														1.60	12	
IB TUNNEL	13	1.31														1.45			14	OB TUNNEL
PLENUM LTG.	15		1.16		100	3	20	#10				#10	100	3	20		1.31		16	PLENUM LTG.
	17			1.16														1.31	18	
CP LTG.	19	1.20				1	20	#12											20	
XFMR IN	21		5.67			2	20	#10				100	3	20					22	SPARE
CP1LP MPC	23			4.67															24	
	25															3.96			26	
SPARE	27				100	3	20					#6	100	3	70		3.96		28	PANEL CP2HP
	29																	0.40	30	
	31																		32	
SPARE	33				100	3	20						100	3	70				34	SPARE
	35																		36	
		4.40	8.57	7.57												8.6	8.46	4.76		

TOTAL CONNECTED 42.36 kVA
ESTIMATED MAXIMUM DEMAND 42.36 kVA

A	B	C
13.0	17.03	12.33
13.0	17.03	12.33

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP5HL
MAINS: 100A LUGS ONLY / 3P CONTACTOR
SHORT CIRCUIT RATING: 14 KAIC

PANEL LOCATION: CP #5
SUPPLY LOCATION: PANEL CP5HP, CP #5

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
IB TUNNEL	1	1.45														2.32			2	IB TUNNEL
NIGHT LTG.	3		1.31		100	3	20	#10				#10	100	3	20		2.32		4	DAY LTG.
	5			1.31														2.18	6	
OB TUNNEL	7	1.31														2.32			8	OB TUNNEL
NIGHT LTG.	9		1.31		100	3	20	#10				#10	100	3	20		2.32		10	DAY LTG.
	11			1.16														2.32	12	
IB TUNNEL	13	1.89														2.03			14	OB TUNNEL
PLENUM LTG.	15		1.89		100	3	20	#10				#10	100	3	20		1.89		16	PLENUM LTG.
	17			1.74														1.89	18	
CP LIGHTING	19	1.10			100	1	20	#12											20	
XFMR IN	21		4.49		100	2	20	#10				100	3	20					22	SPARE
CP5LP MPC	23			4.68															24	
	25															3.67			26	
SPARE	27				100	3	20					#6	100	3	70		3.67		28	PANEL CP6HP
	29																	0.30	30	
	31																		32	
SPARE	33				100	3	20						100	3	70				34	SPARE
	35																		36	
		5.75	9.00	8.89												10.34	10.19	6.69		

TOTAL CONNECTED 50.86 kVA
ESTIMATED MAXIMUM DEMAND 50.86 kVA

A	B	C
16.09	19.19	15.58
16.09	19.19	15.58

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP9HL
MAINS: 100A LUGS ONLY / 3P CONTACTOR
SHORT CIRCUIT RATING: 14 KAIC

PANEL LOCATION: CP #9
SUPPLY LOCATION: PANEL CP9HP, CP #9

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
IB TUNNEL	1	1.16														2.18			2	IB TUNNEL
NIGHT LTG.	3		1.16		100	3	20	#10				#10	100	3	20		2.18		4	DAY LTG.
	5			1.16														2.03	6	
OB TUNNEL	7	1.31														2.32			8	OB TUNNEL
NIGHT LTG.	9		1.16		100	3	20	#10				#10	100	3	20		2.32		10	DAY LTG.
	11			1.16														2.18	12	
IB TUNNEL	13	1.74														1.89			14	OB TUNNEL
PLENUM LTG.	15		1.74		100	3	20	#10				#10	100	3	20		1.74		16	PLENUM LTG.
	17			1.74														1.74	18	
CP LIGHTING	19	1.30			100	1	20	#12											20	
XFMR IN	21		4.85		100	2	20	#10				100	3	20					22	SPARE
CP9LP MPC	23			4.68															24	
	25															4.59			26	
SPARE	27				100	3	20					#6	100	3	70		4.59		28	PANEL CP10HP
	29																	0.50	30	
	31																		32	
SPARE	33				100	3	20						100	3	70				34	SPARE
	35																		36	
		5.51	8.91	8.74												10.98	10.83	6.45		

TOTAL CONNECTED 51.42 kVA
ESTIMATED MAXIMUM DEMAND 51.42 kVA

A	B	C
16.49	19.74	15.19
16.49	19.74	15.19

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP3HL
MAINS: 100A LUGS ONLY / 3P CONTACTOR
SHORT CIRCUIT RATING: 14 KAIC

PANEL LOCATION: CP #3
SUPPLY LOCATION: PANEL CP3HP, CP #3

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
IB TUNNEL	1	1.45														2.76			2	IB TUNNEL
NIGHT LTG.	3		1.89		100	3	20	#10				#10	100	3	20		2.76		4	DAY LTG.
	5			1.31														2.61	6	
OB TUNNEL	7	1.45														3.05			8	OB TUNNEL
NIGHT LTG.	9		1.45		100	3	20	#10				#10	100	3	20		3.05		10	DAY LTG.
	11			1.60														2.90	12	
IB TUNNEL	13	2.03														2.32			14	OB TUNNEL
PLENUM LTG.	15		2.18		100	3	20	#10				#10	100	3	20		2.32		16	PLENUM LTG.
	17			2.18														2.32	18	
CP LTG.	19	1.20			100	1	20	#12											20	
XFMR IN	21		4.68		100	2	20	#10				100	3	20					22	SPARE
CP3LP MPC	23			4.68															24	
	25															3.69			26	
SPARE	27				100	3	20					#6	100	3	70		3.69		28	PANEL CP4HP
	29																	0.30	30	
	31																		32	
SPARE	33				100	3	20						100	3	70				34	SPARE
	35																		36	
		6.13	10.20	9.77												11.79	11.82	8.13		

TOTAL CONNECTED 57.84kVA
ESTIMATED MAXIMUM DEMAND 57.84kVA

A	B	C
17.92	22.02	17.9
17.92	22.02	17.9

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** CP7HL
MAINS: 150A LUGS ONLY / 3P CONTACTOR
SHORT CIRCUIT RATING: 14 KAIC

PANEL LOCATION: CP #7
SUPPLY LOCATION: PANEL CP7HP, CP #7

SERVICE	CKT. NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	CIRCUIT BREAKER POLES	CIRCUIT BREAKER TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CKT. NO.	SERVICE
IB TUNNEL	1	2.18														3.63			2	IB TUNNEL
NIGHT LTG.	3		1.74		100	3	20	#10				#8	100	3	20		3.34		4	DAY LTG.
	5			1.60														3.34	6	
OB TUNNEL	7	1.74														3.77			8	OB TUNNEL
NIGHT LTG.	9		1.74		100	3	20	#10				#8	100	3	20		3.77		10	DAY LTG.
	11			1.74														3.63	12	
IB TUNNEL	13	2.76														2.76			14	OB TUNNEL
PLENUM LTG.	15		2.61		100	3	20	#10				#10	100	3	20		2.76		16	PLENUM LTG.
	17			2.61														2.76	18	
CP LIGHTING	19	1.10			100	1	20	#12											20	
XFMR IN	21		4.49		100	2	20	#10				100	3	20					22	SPARE
CP7LP MPC	23			4.68															24	
	25															3.96			26	
SPARE	27				100	3	20					#6	100	3	70		3.96		28	PANEL CP8HP
	29																	0.40	30	
	31																		32	
SPARE	33				100	3	20						100	3	70				34	SPARE
	35																		36	
		7.78	10.58	10.63												14.12	13.83	10.13		

TOTAL CONNECTED 67.07 kVA
ESTIMATED MAXIMUM DEMAND 67.07 kVA

A	B	C
21.9	24.41	20.76
21.9	24.41	20.76

ORIGINAL PLAN	SURVEY PLOTTED BY	G. OY-YANG	DATE	9-1-90
	DRAWN BY			
NOTE: WORK	TRACED BY	T. SANCHEZ		5-4-90
	DESIGNED BY			
ADDITIONS	QUANTITIES BY	J.J. SASSANI		6-26-90
No.	CHECKED BY			

3/7/94	REVISED PER DCN 66-037
8/19/93	REVISED SCHEDULES PER DCN 66-017
DATE	REVISION

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSSPASSAGE
PANEL SCHEDULE-4

TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APRIL, 1992

SHEET NO. ET 39 OF 40 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	223	440

SYSTEM: 480Y/277V 3Ø, 4W * **PANEL - CP1HE** **PANEL LOCATION:** CP #1
MAINS: 125A LUGS ONLY **SUPPLY LOCATION:** PANEL CP1HP, CP #1 VIA HID-UPS
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG		WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD	CKT. NO.	SERVICE
IB TUNNEL	1	1.31	100	1	20	#10		#10	100	1	20	1.89	2	OB TUNNEL
EMERGENCY LTG.	3	1.74				↓		↓				1.74	4	EMERGENCY LTG.
CP#1 EMERG.LTG.	5	0.70				#12		#12				0.40	6	CP#2 EMERG.LTG.
LTG. CONTROL	7	0.50				#12							8	SPARE
120V PWR.SUPPLY	9	0.20	↓	↓	↓	↓			↓	↓	↓		10	SPARE
FOR LOAD SHEDG.													12	SPACE
SPACE	11													
		4.45										4.03		
TOTAL CONNECTED 8.48 kVA							8.48							
ESTIMATED MAXIMUM DEMAND 8.48 kVA							8.48							

SYSTEM: 480Y/277V 3Ø, 4W * **PANEL - CP3HE** **PANEL LOCATION:** CP #3
MAINS: 125A LUGS ONLY **SUPPLY LOCATION:** PANEL CP3HP, CP #3 VIA HID-UPS
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG		WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD	CKT. NO.	SERVICE
IB TUNNEL	1	2.18	100	1	20	#10		#10	100	1	20	2.32	2	OB TUNNEL
EMERGENCY LTG.	3	2.03				#10		#10				2.61	4	EMERGENCY LTG.
CP#3 EMERG.LTG.	5	0.70				#12							6	SPARE
LTG. CONTROL	7	0.50											8	
120V PWR.SUPPLY	9	0.20	↓	↓	↓	↓			↓	↓	↓		10	
FOR LOAD SHEDG.													12	SPACE
SPACE	11													
		5.61										4.93		
TOTAL CONNECTED 10.54 kVA							10.54							
ESTIMATED MAXIMUM DEMAND 10.54 kVA							10.54							

SYSTEM: 480Y/277V 3Ø, 4W * **PANEL - CP5HE** **PANEL LOCATION:** CP #5
MAINS: 125A LUGS ONLY **SUPPLY LOCATION:** PANEL CP5HP, CP #5 VIA HID-UPS
SHORT CIRCUIT RATING: 14KAIC

SERVICE	CKT. NO.	LOAD	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG		WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD	CKT. NO.	SERVICE
IB TUNNEL	1	2.03	100	1	20	#10		#10	100	1	20	2.32	2	OB TUNNEL
EMERGENCY LTG.	3	2.18				↓		↓				2.03	4	EMERGENCY LTG.
CP#5 EMERG.LTG.	5	0.60				#12		#12				0.80	6	CP#4 & #6 LTG.
LTG. CONTROL	7	0.50				#12							8	SPARE
120V PWR.SUPPLY	9	0.20	↓	↓	↓	↓			↓	↓	↓		10	SPARE
FOR LOAD SHEDG.													12	SPACE
SPACE	11													
		5.51										5.15		
TOTAL CONNECTED 10.66 kVA							10.66							
ESTIMATED MAXIMUM DEMAND 10.66 kVA							10.66							

SYSTEM: 480Y/277V 3Ø, 4W * **PANEL - CP7HE** **PANEL LOCATION:** CP #7
MAINS: 125A LUGS ONLY **SUPPLY LOCATION:** PANEL CP7HP, CP #7 VIA HID-UPS
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG		WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD	CKT. NO.	SERVICE
IB TUNNEL	1	2.61	100	1	20	#10		#10	100	1	20	2.61	2	OB TUNNEL
EMERGENCY LTG.	3	2.90				↓		↓				2.90	4	EMERGENCY LTG.
CP#7 EMERG.LTG.	5	0.60				#12							6	SPARE
LTG. CONTROL	7	0.50				#12							8	
120V PWR. SUPPLY	9	0.20	↓	↓	↓	↓			↓	↓	↓		10	
FOR LOAD SHEDG.													12	SPACE
SPACE														
		6.81										5.51		
TOTAL CONNECTED 12.32 kVA							12.32							
ESTIMATED MAXIMUM DEMAND 12.32 kVA							12.32							

SYSTEM: 480Y/277V 3Ø, 4W * **PANEL - CP9HE** **PANEL LOCATION:** CP #9
MAINS: 125A LUGS ONLY **SUPPLY LOCATION:** PANEL CP9HP, CP #9 VIA HID-UPS
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG		WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD	CKT. NO.	SERVICE
IB TUNNEL	1	2.03	100	1	20	#10		#10	100	1	20	1.74	2	OB TUNNEL
EMERGENCY LTG.	3	2.32				↓		↓				2.03	4	EMERGENCY LTG.
CP#9 EMERG.LTG.	5	0.80				#12		#12				1.10	6	CP#8 &#10 LTG.
LTG. CONTROL	7	0.50				#12							8	SPARE
120V PWR. SUPPLY	9	0.20	↓	↓	↓	↓			↓	↓	↓		10	SPARE
FOR LOAD SHEDG.													12	SPACE
SPACE	11													
		5.85										4.87		
TOTAL CONNECTED 10.72 kVA							10.72							
ESTIMATED MAXIMUM DEMAND 10.72 kVA							10.72							

* JUMPER ALL PHASES TOGETHER

ORIGINAL PLAN
SURVEY PLOTTED BY — DATE
DRAWN BY G. OW-YANG 6-1-90
TRACED BY —
DESIGNED BY T. SANCHEZ 5-4-90
QUANTITIES BY —
CHECKED BY J.J. SASSANI 6-20-90
NOTE BOOK —
No. —

DATE	REVISION
8/19/93	REVISED SCHEDULES PER DCN 66-017

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

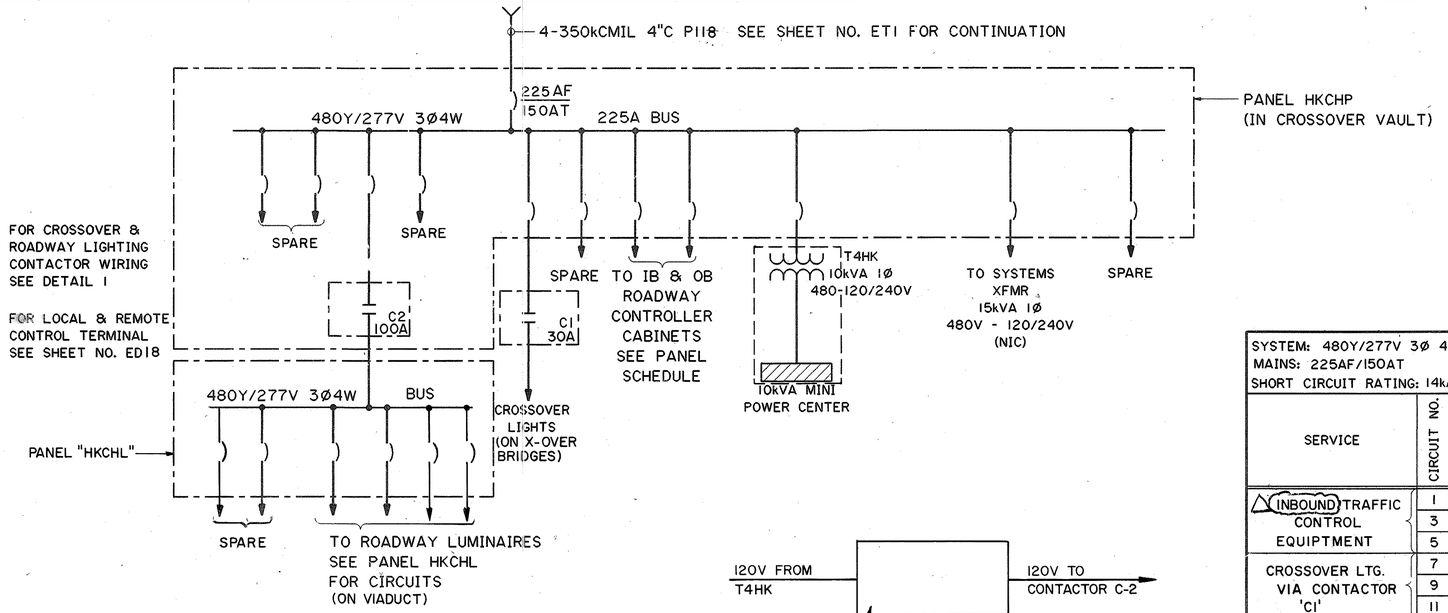
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

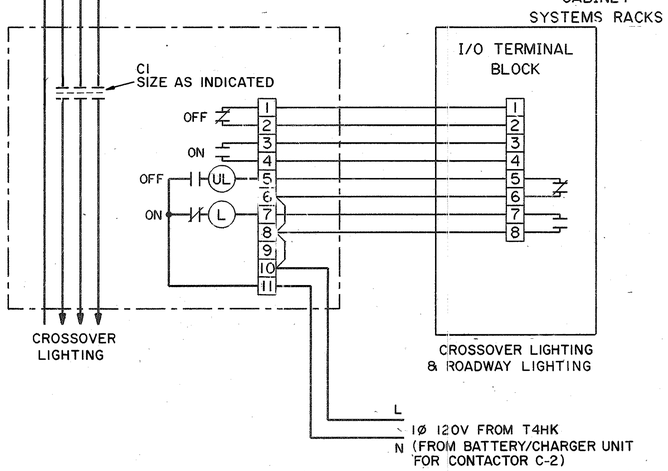
CROSSPASSAGE
PANEL SCHEDULE-5
TUNNELS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APRIL, 1992

SHEET NO. ET40 OF 40 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	224	440





CROSSOVER LIGHTING & ROADWAY LIGHTING CONTACTOR SCHEMATIC

DETAIL 1

NOTES:

1. SEE PANEL SCHEDULES FOR WIRING SIZE & NUMBER OF CONNECTORS
2. PANEL HKCHP SHALL BE NEMA TYPE 4X, BOTTOM ENTRY & SPLIT BUS TYPE. ALLOW SPACE FOR 100AF/80AT RDWY LTG. MAIN BREAKER, 100A RATED LIGHTING CONTACTOR WITH TERMINAL BLOCK & CONTROL TRANSFORMER (SEE LIGHTING CONTACTOR SCHEMATIC FOR DETAILS).
3. LIGHTING CONTACTOR SHALL BE 480V 3PH ELECTRICALLY OPERATED & MECHANICALLY HELD.
4. MINIMUMN SIZE OF CONDUCTORS FOR CONTROL WIRING SHALL BE NO. 12AWG.
5. I/O CONTACTS PROVIDED BY SYSTEMS SHALL BE DRY, MOMENTARY AND CAPABLE OF CARRYING CONTACTOR CLOSING COIL. SEE SHEET NO. ED18 FOR I/O SCHEDULE.

SYSTEM: 480Y/277V 3Ø 4W
MAINS: 225AF/150AT
SHORT CIRCUIT RATING: 14kAIC

PANEL - HKCHP

PANEL LOCATION: HAIKU X-OVER VAULT
SUPPLY LOCATION: XFMR T3-HK

SERVICE	CIRCUIT NO.	LOAD kVA A	LOAD kVA B	LOAD kVA C	CB FRAME	CB POLES	CB TRIP	WIRE AWG
(INBOUND) TRAFFIC CONTROL EQUIPTMENT	1	6.0			100	3	30	2
	3		9.0					
	5			7.0				
CROSSOVER LTG. VIA CONTACTOR 'C1'	7	1.1			100	3	20	10
	9		1.0					
	11			1.0				
SYSTEM XFMR 15kVA	13	7.5			100	2	30	6
	15		7.5					
SPARE	17				100	2	20	
	19							
SPARE	21				100	3	30	
	23							
	25							
VIADUCT LIGHTING	1	2.6			100	3	20	2
	3		2.6					
	5			2.4				
VIADUCT LIGHTING	7	2.6			100	3	20	2
	9		2.6					
	11			2.4				
SPARE	13							
	15							
	17							
SUBTOTAL		19.8	22.7	11.8				

100AF 80AT

WIRE AWG	CB FRAME	CB POLES	CB TRIP	LOAD kVA A	LOAD kVA B	LOAD kVA C	CIRCUIT NO.	SERVICE
8	100	3	30	2.0			2	(OUTBOUND) TRAFFIC CONTROL EQUIPMENT
					2.0		4	
						1.0	6	
	100	3	30				8	SPARE
							10	
							12	
6	100	2	20	5			14	MINILOAD CENTER T4HK
					5		16	
	100	2	20				18	SPARE
							20	
	100	3	30				22	SPARE
							24	
							26	
2	100	3	20	2.6			2	VIADUCT LIGHTING
					2.6		4	
						2.4	6	
2	100	3	20	2.6			8	VIADUCT LIGHTING
					2.6		10	
						2.4	12	
							14	SPARE
							16	
							18	
				12.2	12.2	5.8		

SN

A	B	C
32.0	34.9	17.6

TOTAL CONNECTED: 84.5 kVA
ESTIMATED MAXIMUM DEMAND: 84.5 kVA

DATE	REVISION
1/12/95	REVISED PER DCN 66-059
6/7/94	REVISED PER DCN 66-044
1/24/94	REVISED PER DCN 66-033
8/19/93	REVISED SCHEDULES PER DCN 66-017

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM AND PANEL SCHEDULE

HAIKU APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

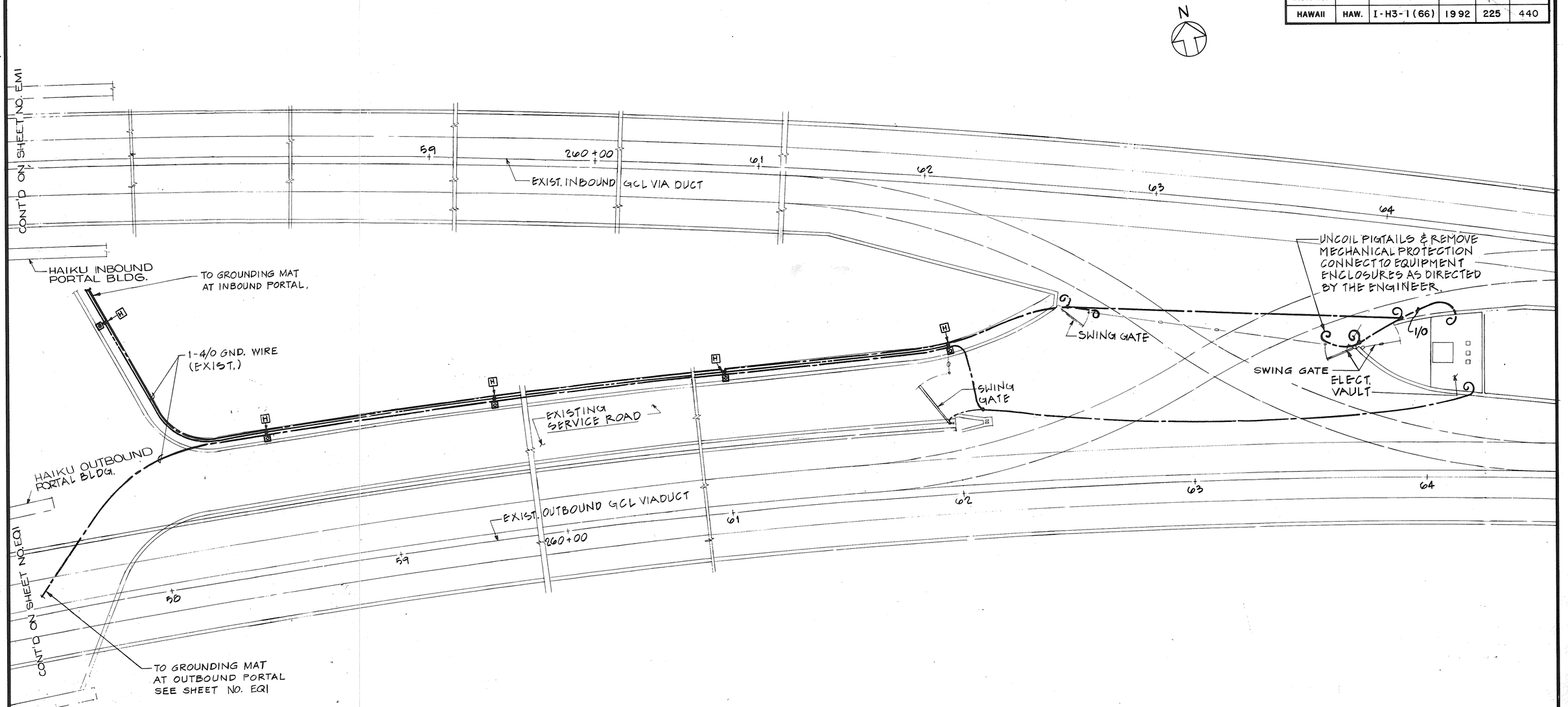
SCALE: NONE DATE: APR 1992

SHEET NO. EB1 OF 19 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	2-26-90
NOTE BOOK	TRACED BY	1-15-90
	DESIGNED BY R. JAMES	
	QUANTITIES BY	
NO.	CHECKED BY J. J. SASSANI	2-26-90

2410V156 2410: V154 ES0045.FGB11 11JLY90-12.02.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	225	440



NOTES:

1. GROUNDING CABLES ARE INSTALLED 2'-0" BELOW GROUND SURFACE.
2. DO NOT CONNECT EXISTING FARADAY SHIELD TO TUNNEL SYSTEM OR EQUIPMENT GROUND WIRE.
3. FURNISH & INSTALL ALL MATERIALS NECESSARY TO CONNECT GATES, ELECTROLLIERS, & ELECTRICAL EQUIPMENT IN THE ELECTRICAL VAULT TO THE EXISTING PIGTAILS CONNECTED TO THE EXISTING GROUND WIRES.

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GROUNDING

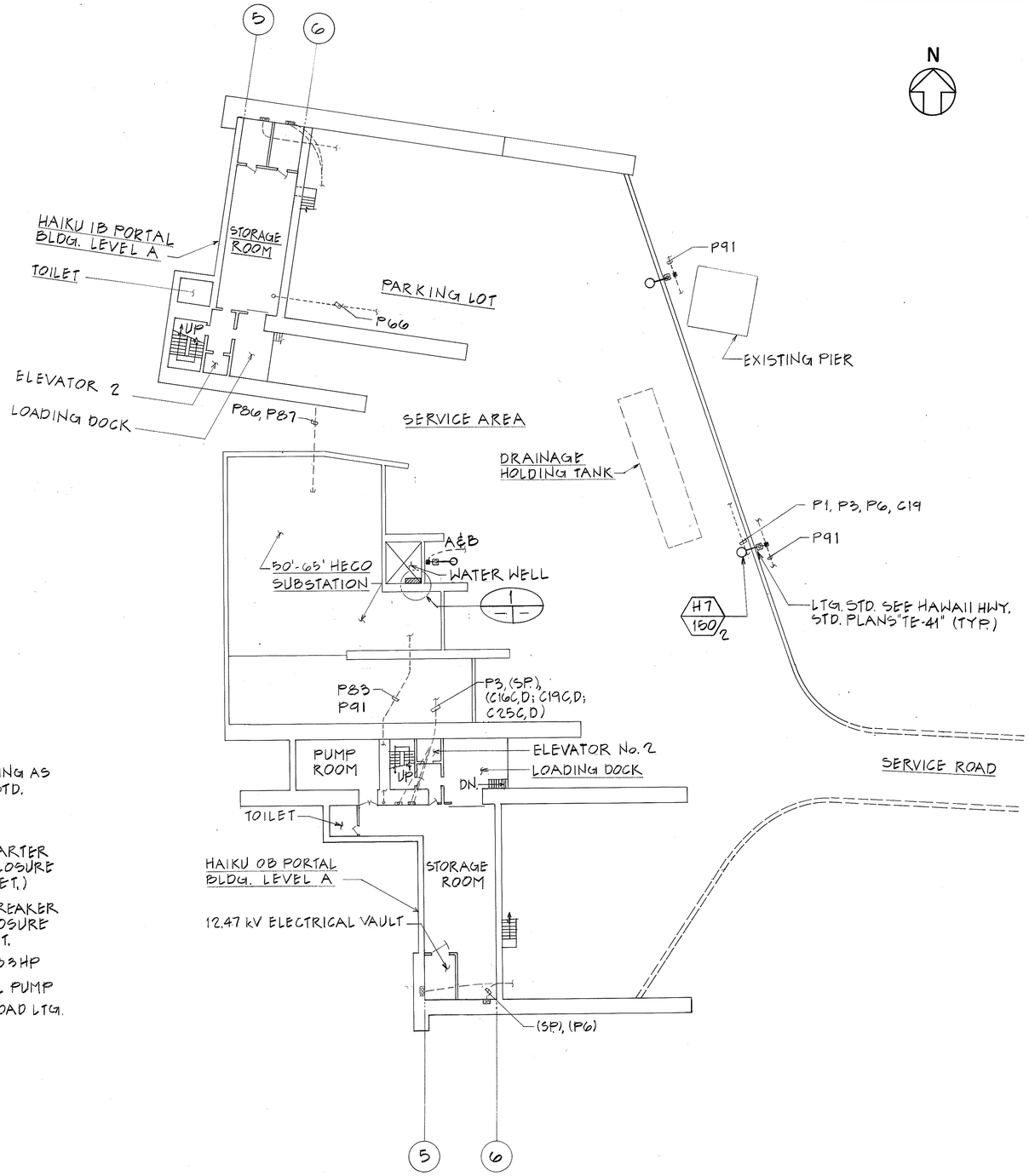
HAIKU APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

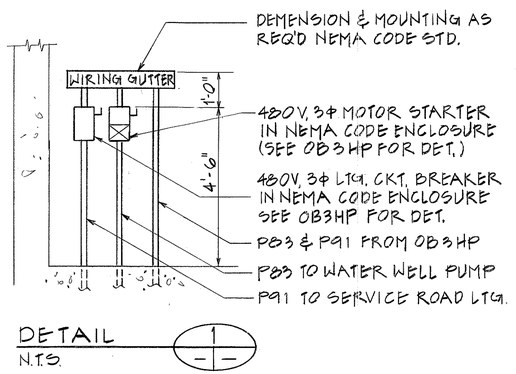
SCALE: 1"=20' DATE: APR 1992

SHEET NO. EB2 OF 19 SHEETS

ORIGINAL PLANS	SURVEY PLOTTED BY	DATE
	DRAWN BY G. OW-YANG	2-20-90
NOTE BOOK	TRACED BY	
	DESIGNED BY G. LOHMAN	1-15-90
No.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	2-26-90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	226	440





DETAIL
N.T.S.

GENERAL NOTES:

1. CONDUIT RUNS SHOWN ARE FOR REFERENCE AND ARE NOT IN THIS CONTRACT No. 5.
2. FOR CABLE NUMBER SEE SHEET No. ED1.

ORIGINAL PLAN		
NOTE BOOK	SURVEY PLOTTED BY	G. OW-YANG 7-20-90
	DRAWN BY	" " "
	TRACED BY	T. SANCHEZ 1-15-90
	DESIGNED BY	" " "
	QUANTITIES BY	J.J. SASSANI 9-26-90
No.	CHECKED BY	" " "

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

FOR DETAIL AS-BUILT INFORMATION REFER TO CONSTRUCTION SUBMITTALS

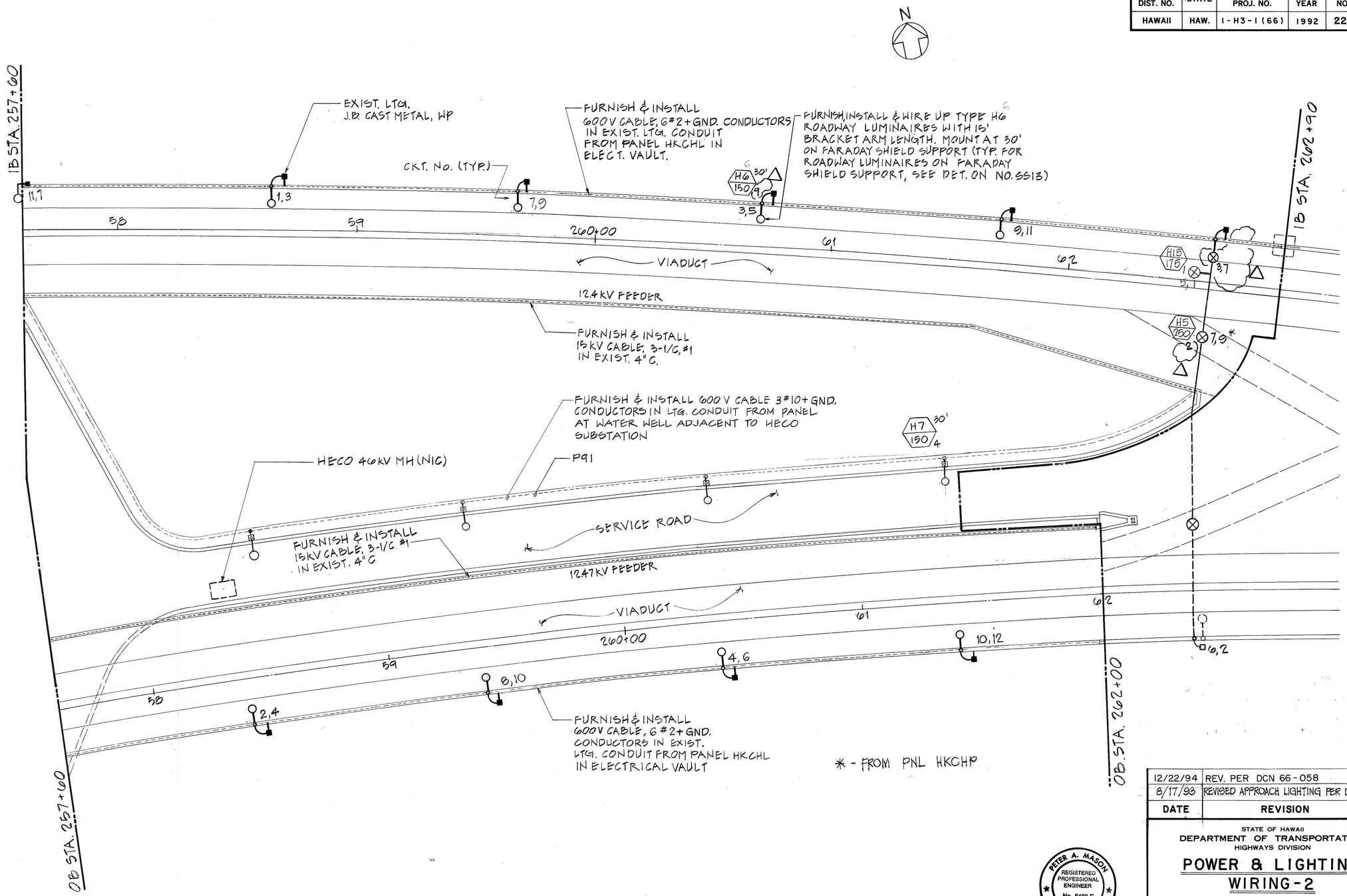
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER & LIGHTING
WIRING - 1
HAIKU APPROACH
INTERSTATE ROUTE H-3
F. A. I. PROJ. NO. I-H3-1(66)

SCALE: 1"=20' DATE: APR 1992

SHEET No. EB3 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	227	440



ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY	A. Ow-Yang 8/20/94
NOTE BOOK	TRACED BY	
	DESIGNED BY	T. SANCHEZ 1/16/90
	QUANTITIES BY	
No.	CHECKED BY	J.J. SASSANI 4/26/94

DATE	REVISION
12/22/94	REV. PER DCN 66-058
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER & LIGHTING WIRING-2

HAIKU APPROACH

INTERSTATE ROUTE H-3

F. A. I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APR 1992

SHEET No. EB4 OF 19 SHEETS

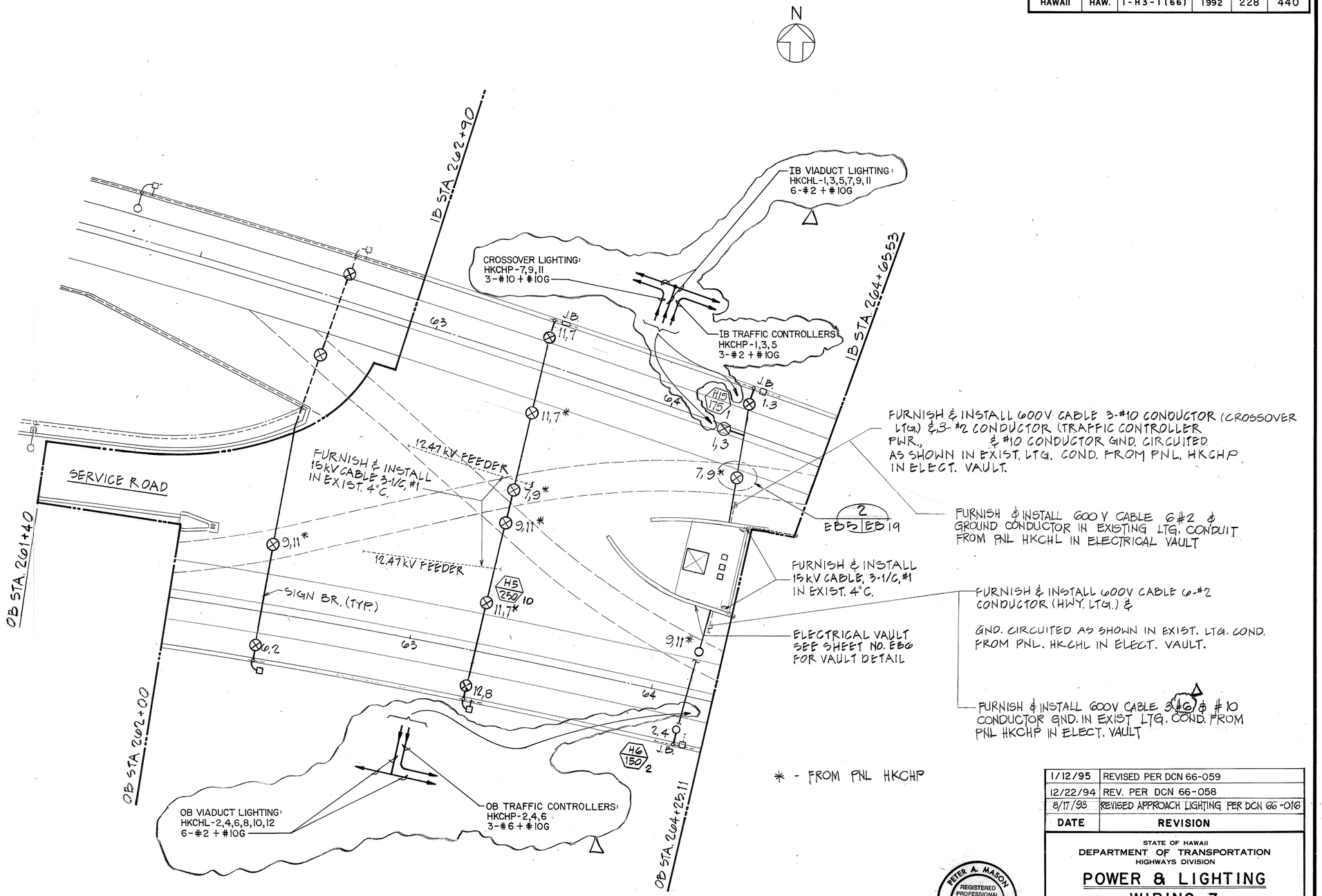
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

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

FED. ROAD. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	228	440



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY B. ONO-YANG	2/26/92
	TRACED BY " "	"
NOTE BOOK	DESIGNED BY T. SANCHEZ	1/16/92
	QUANTITIES BY " "	"
No.	CHECKED BY J.T. SASSANI	1/16/92

DATE	REVISION
1/12/95	REVISED PER DCN 66-059
12/22/94	REV. PER DCN 66-058
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER & LIGHTING
WIRING-3
HAIKU APPROACH
INTERSTATE ROUTE H-3
F. A. I. PROJ. NO. I-H3-1(66)

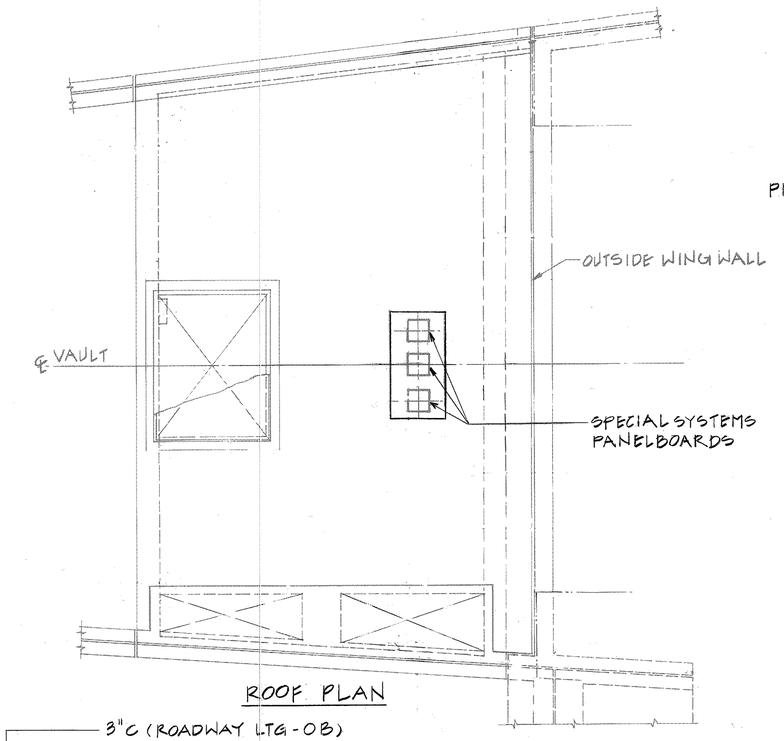
SCALE: 1" = 20' DATE: APRIL 1992

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

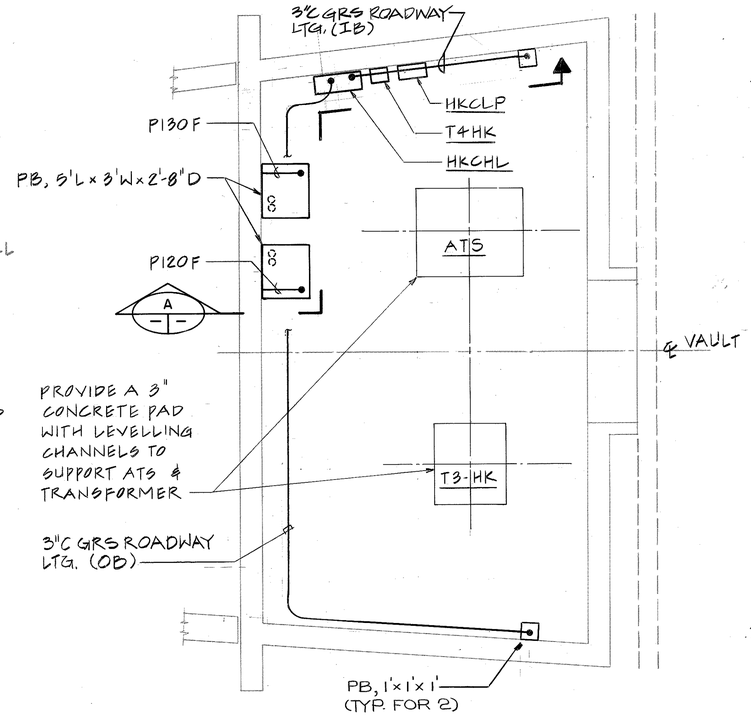
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

SHEET NO. EB5 OF 19 SHEETS

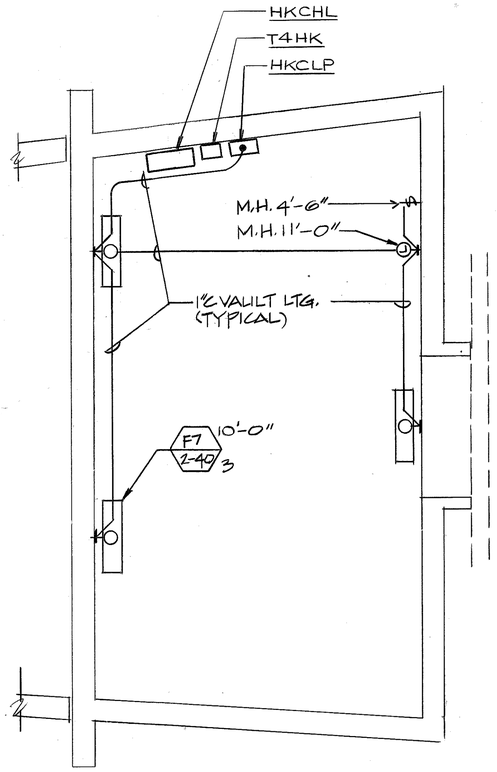
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	229	440



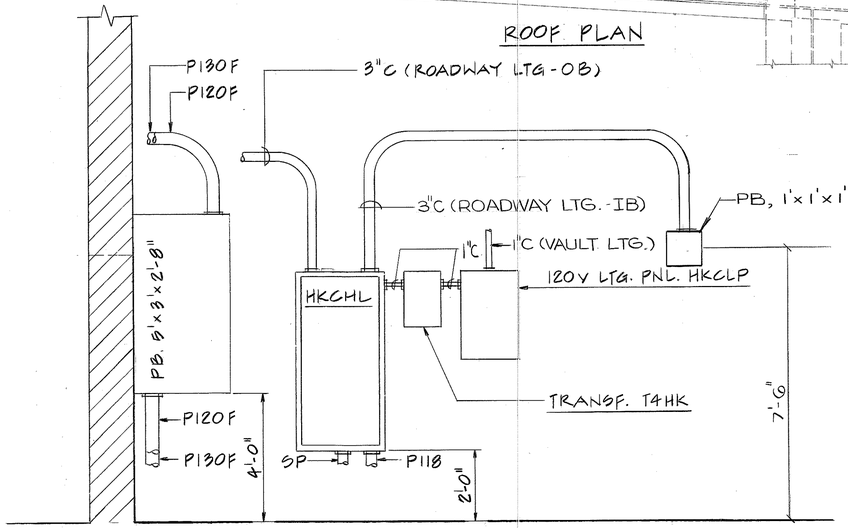
ROOF PLAN



FLOOR PLAN
POWER



FLOOR PLAN
LIGHTING



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

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6403-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

4' 0' 4' 8'
1/4" = 1'-0" GRAPHIC SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL VAULT LAYOUT

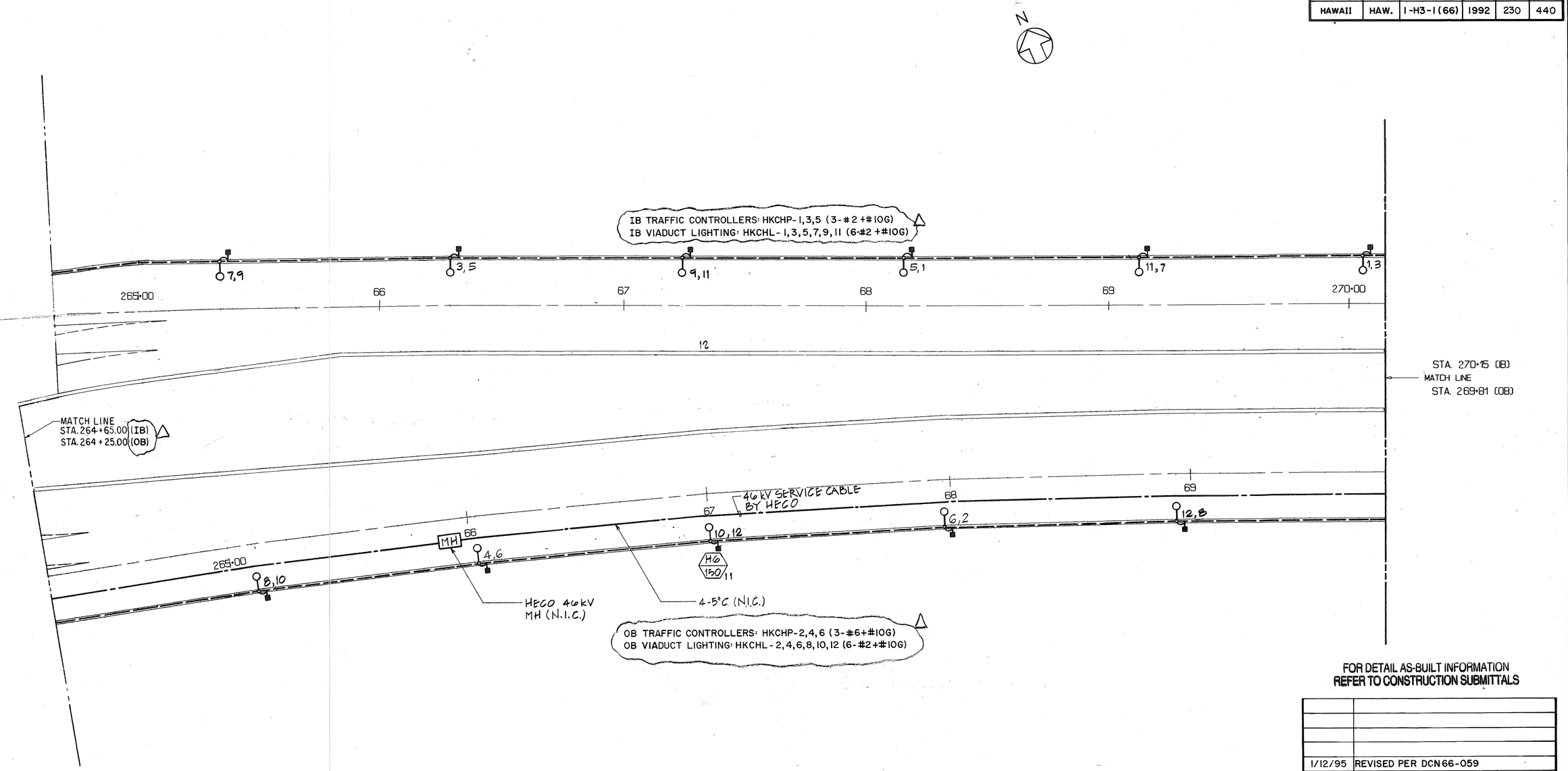
HAIKU APPROACH
INTERSTATE ROUTE H-3
F. A. I. PROJ. NO. I-H3-1(66)

SCALE: 1/4" = 1'-0" DATE: APR 1992

SHEET No. EB6 OF 19 SHEETS

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY T.A. HORTON	5/16/90
	TRACED BY	
NOTE BOOK	DESIGNED BY T.A. HORTON	5/14/90
	QUANTITIES BY	
No.	CHECKED BY J.T. SASAKI	6/26/90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-I(66)	1992	230	440



FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION
1/12/95	REVISED PER DCN 66-059
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE PER DCN 66-003

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VIADUCT POWER & LIGHTING
WIRING-I
HAIKU APPROACH
INTERSTATE ROUTE H-3

F.A.I. PROJ. NO. I-H3-I(66):

SCALE: 1" = 20' DATE: APR 1992

SHEET No. E87 OF 19 SHEETS

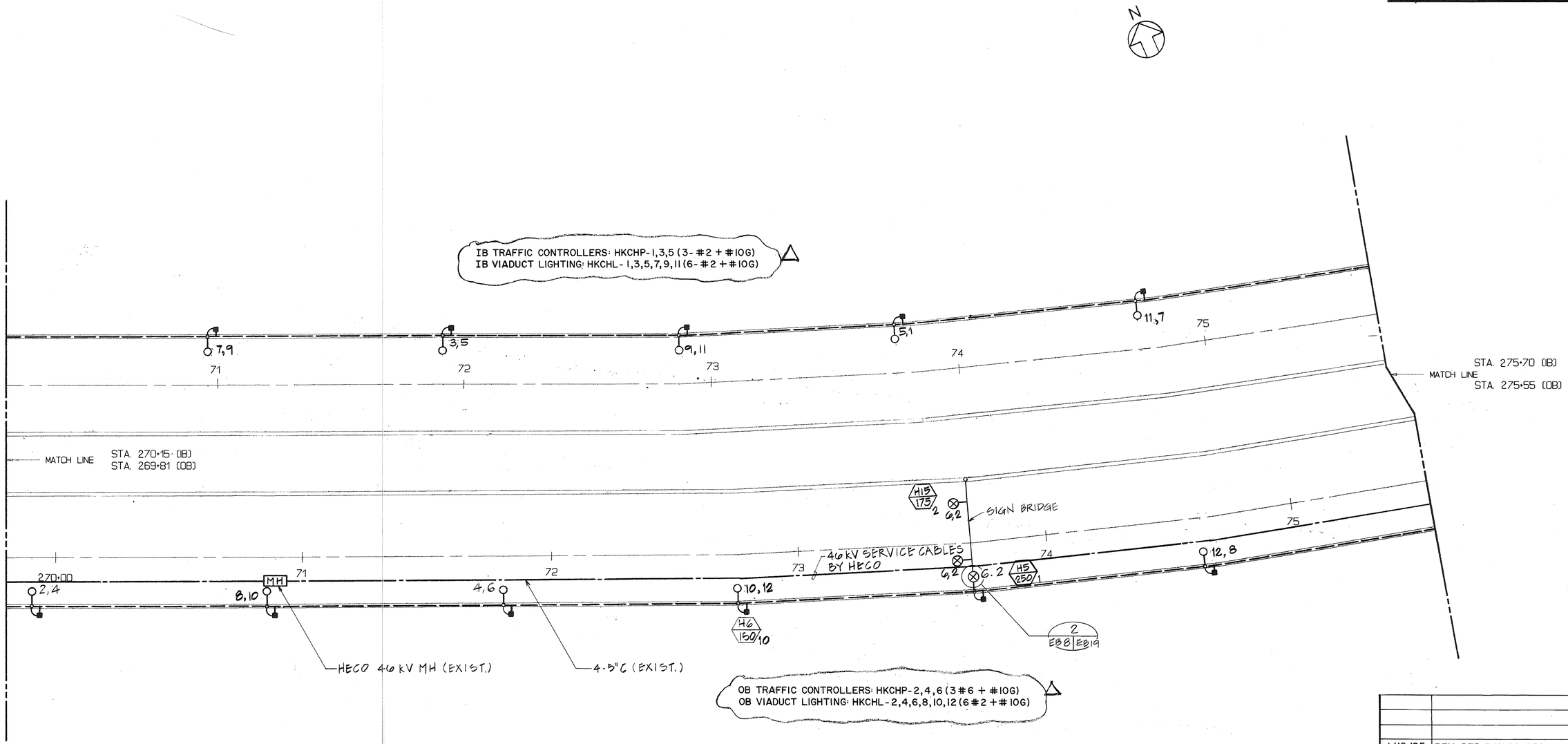
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

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

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY	G. OW-YANG 2-14-90
	TRACED BY	
	DESIGNED BY	T. SANCHEZ 1-15-90
NOTE BOOK	QUANTITIES BY	
	CHECKED BY	J.J. SASSANI 6-26-90
NO.		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	231	440



ORIGINAL PLAN	SURVEY PLOTTED BY	G. CW-YANG	2-14-90
	DRAWN BY		
NOTE BOOK	TRACED BY	T. SANCHEZ	1-15-90
	DESIGNED BY		
	QUANTITIES BY	J.J. SASSAKI	6-26-90
NO.	CHECKED BY		

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

DATE	REVISION
1/12/95	REV. PER DCN 66-059
12/22/94	REV. PER DCN 66-058
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE PER DCN 66-003

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

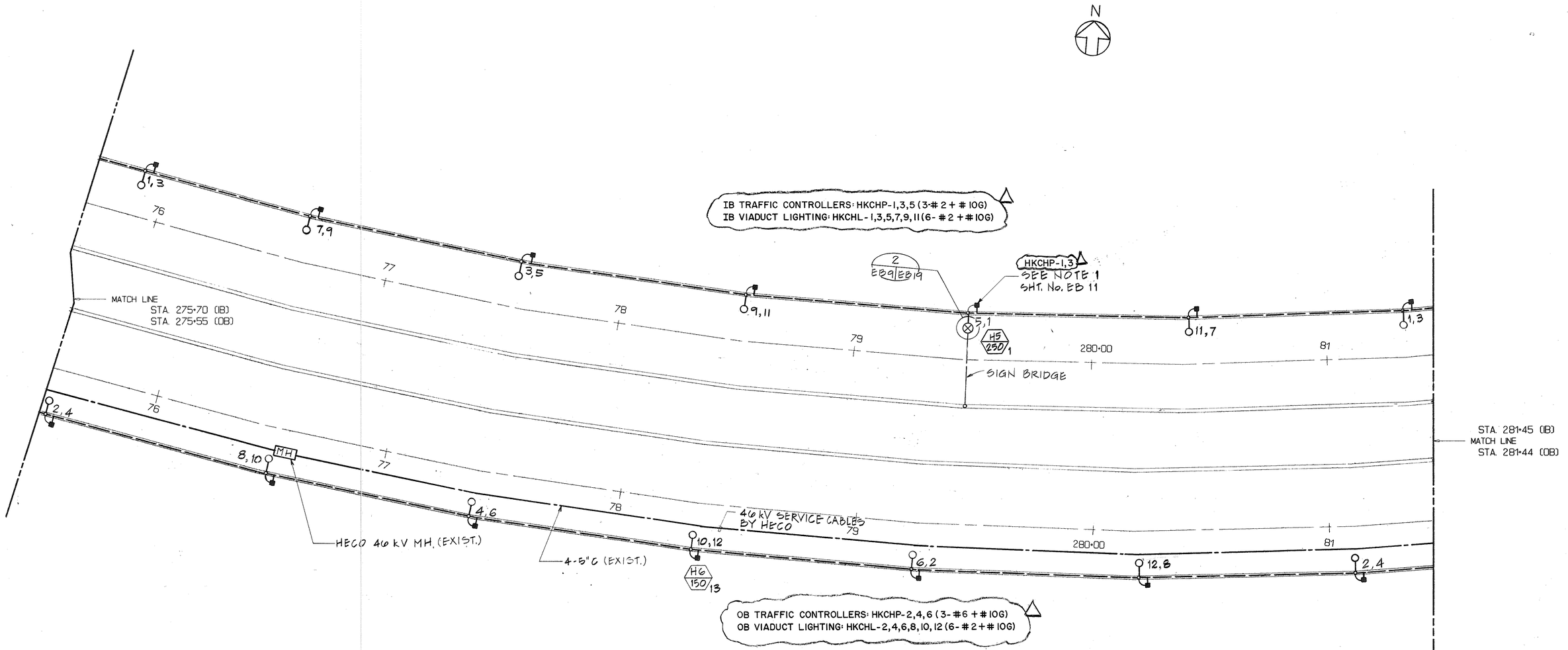
VIADUCT POWER & LIGHTING WIRING-2

HAIKU APPROACH
INTERSTATE ROUTE H-3
F. A. I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APR 1992

SHEET No. EB8 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	232	440



ORIGINAL PLAN	SURVEY PLOTTED BY G. OW-YANG DATE 2-14-90
NOTE BOOK	DRAWN BY " " "
	TRACED BY " " "
	DESIGNED BY T. SANCHEZ " 1-15-90
	QUANTITIES BY " " "
NO.	CHECKED BY J.J. SASSANI " 6-26-90

1/12/95	REV. PER DCN 66-059
12/22/94	REV. PER DCN 66-058
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE AND REVISED NOTE
	REFERENCE PER DCN 66-003
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VIADUCT POWER & LIGHTING WIRING-3

HAIKU APPROACH

INTERSTATE ROUTE H-3

F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1"=20' DATE: APR 1992

SHEET No. EB9 OF 19 SHEETS

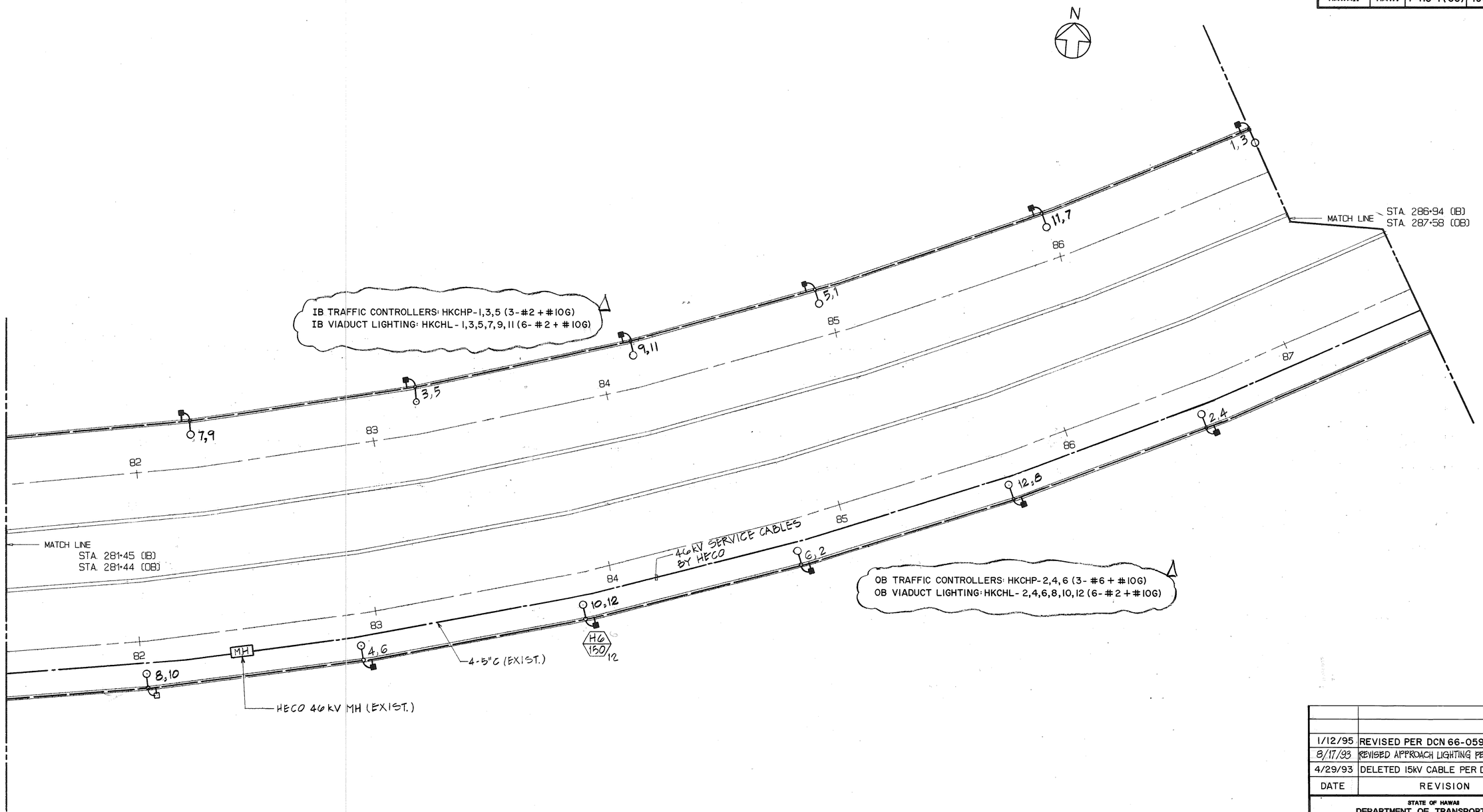
20' 0' 20' 40'
1"=20' GRAPHIC SCALE

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	233	440



	DATE
SURVEY PLOTTED BY	
DRAWN BY	G. ON-YANG 2-14-90
TRACED BY	
DESIGNED BY	T. SANCHEZ 1-15-90
QUANTITIES BY	
CHECKED BY	J.J. SASSANI 6-26-90

ORIGINAL PLAN

NOTE BOOK

NO.

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

DATE	REVISION
1/12/95	REVISED PER DCN 66-059
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE PER DCN 66-003

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

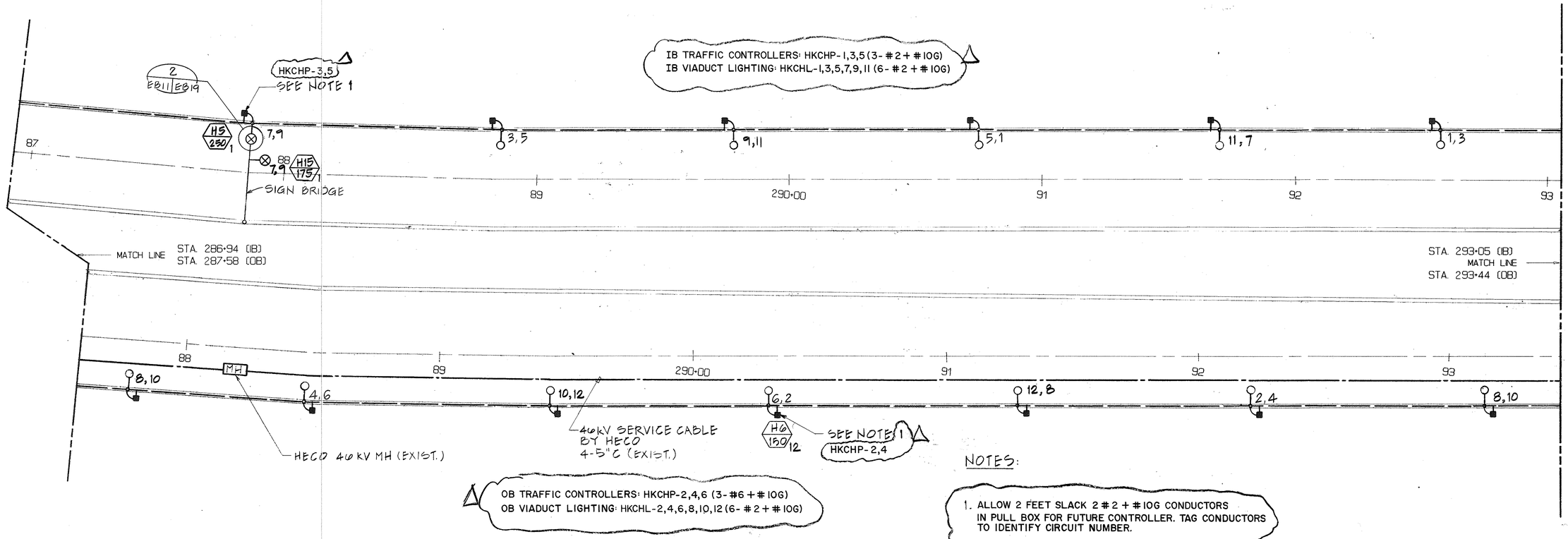
VIADUCT POWER & LIGHTING
WIRING-4
HAIKU APPROACH
INTERSTATE ROUTE H-3

F. A. I. PROJ. NO. I-H3-1(66):

SCALE: 1"=20' DATE: APR 1992

SHEET No. EB10 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	234	440



NOTES:

1. ALLOW 2 FEET SLACK 2#2+#10G CONDUCTORS IN PULL BOX FOR FUTURE CONTROLLER. TAG CONDUCTORS TO IDENTIFY CIRCUIT NUMBER.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY G. OW-YANG	2-14-90
NOTE BOOK	TRACED BY	
	DESIGNED BY T. SANCHEZ	1-15-90
NO.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	5-24-90

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

DATE	REVISION
1/12/95	REV. PER DCN 66-059
12/22/94	REV. PER DCN 66-058
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE AND REVISED NOTE
	REFERENCES PER DCN 66-003

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

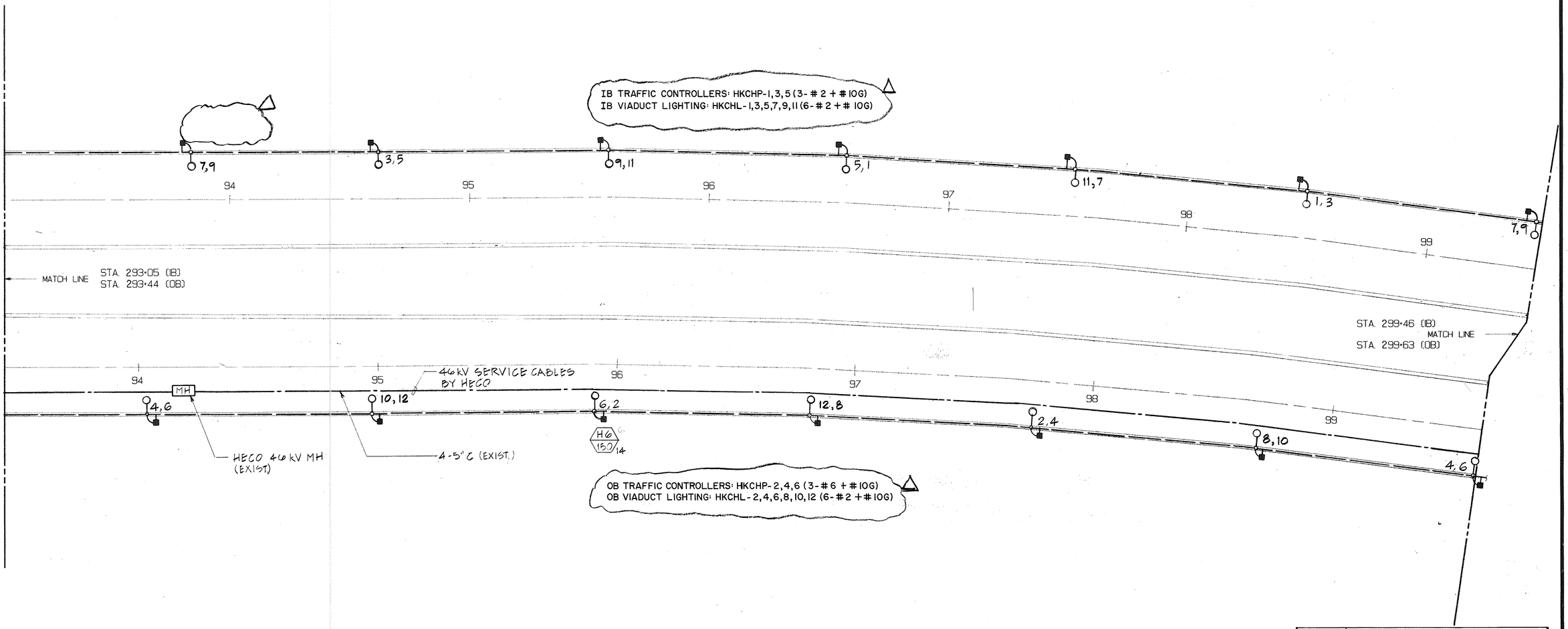
VIADUCT POWER & LIGHTING
WIRING-5
HAIKU APPROACH
INTERSTATE ROUTE H-3

F. A. I. PROJ. NO. I-H3-1(66):

SCALE: 1"=20' DATE: APR 1992

SHEET No. EB11 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	235	440



ORIGINAL PLAN	SURVEY PLOTTED BY	G. ONO-YANG	DATE 7-14-90
	DRAWN BY		
NOTE BOOK	TRACED BY		
	DESIGNED BY	T. SANCHEZ	1-15-90
NO.	QUANTITIES BY		
	CHECKED BY	J.J. SASSARI	6-26-90

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

DATE	REVISION
1/12/95	REV. PER DCN 66-059
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE PER DCN 66-003

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

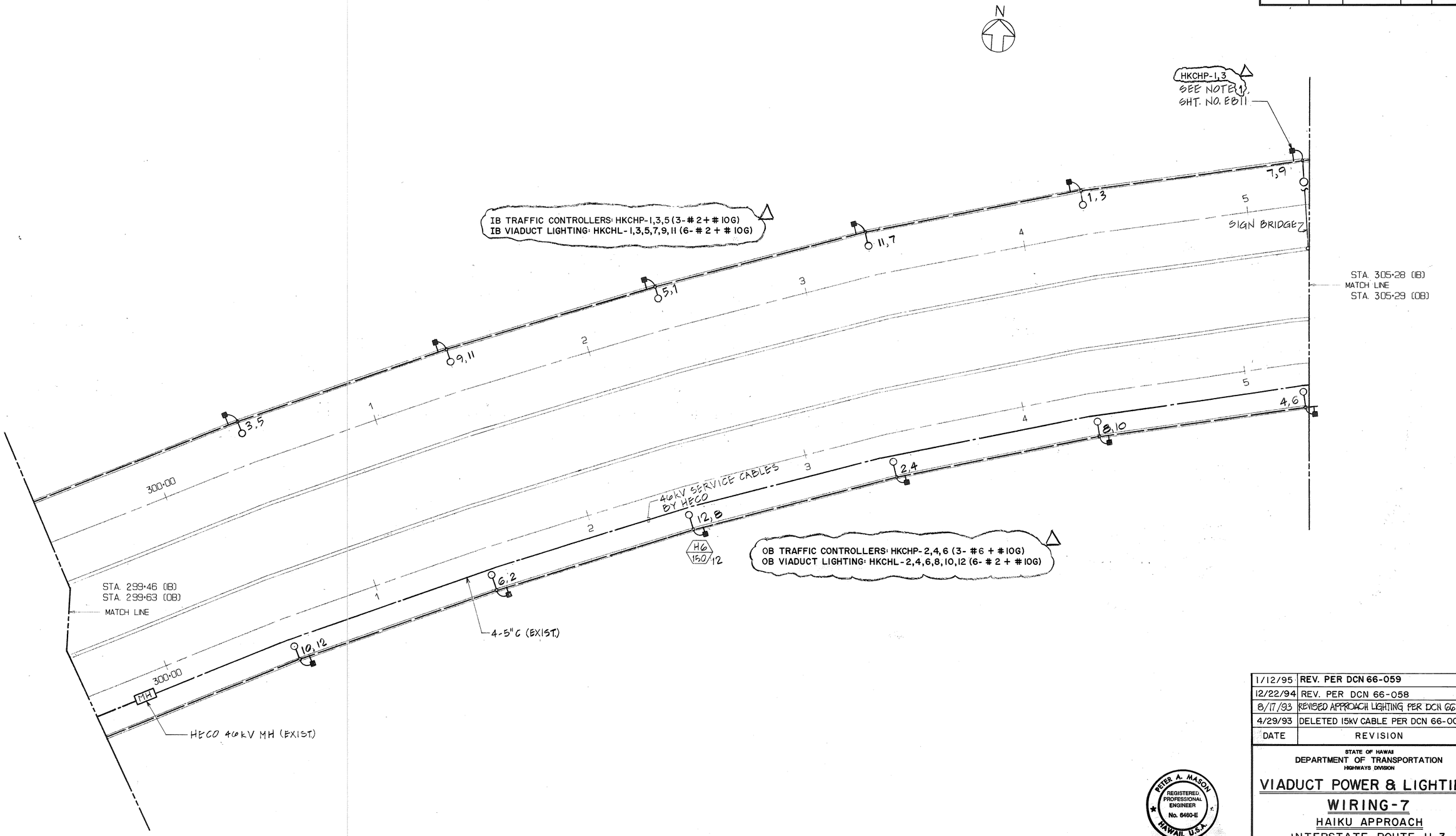
VIADUCT POWER & LIGHTING
WIRING-6
HAIKU APPROACH
INTERSTATE ROUTE H-3

F. A. I. PROJ. NO. I-H3-1(66):

SCALE: 1" = 20' DATE: APR 1992

SHEET No. EB12 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	236	440



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY G. OW-YANG	2-14-90
NOTE BOOK	TRACED BY	
	DESIGNED BY T. SANCHEZ	1-15-90
NO.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	4-26-90

DATE	REVISION
1/12/95	REV. PER DCN 66-059
12/22/94	REV. PER DCN 66-058
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE PER DCN 66-003

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VIADUCT POWER & LIGHTING
WIRING-7
HAIKU APPROACH
INTERSTATE ROUTE H-3
F. A. I. PROJ. NO. I-H3-1(66)

SCALE: 1"=20' DATE: APR 1992

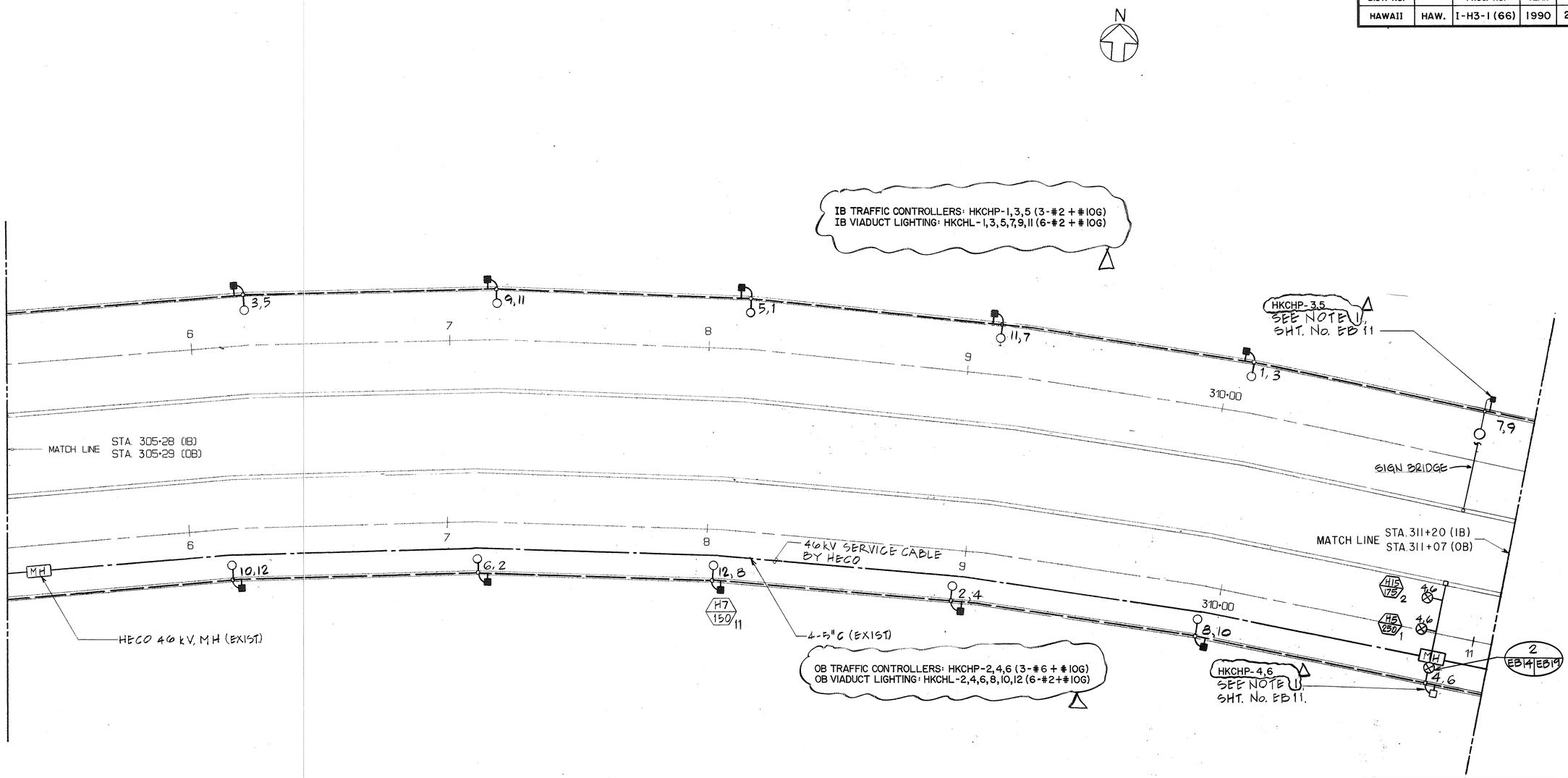
SHEET No. EB13 OF 19 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1990	237	440



DATE	REVISION
1/12/95	REVISED PER DCN 66-059
12/22/94	REV. PER DCN 66-058
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE; INDICATED CORRECT
	SIGN BRIDGE LOCATION PER DCN 66-003

	DATE
SURVEY PLOTTED BY	
DRAWN BY	G. ONG-YANG 2-14-90
TRACED BY	
DESIGNED BY	T. SANCHEZ 1-15-90
QUANTITIES BY	
CHECKED BY	J.J. SASSANI 5-26-90
ORIGINAL PLAN	
NOTE BOOK	
NO.	

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

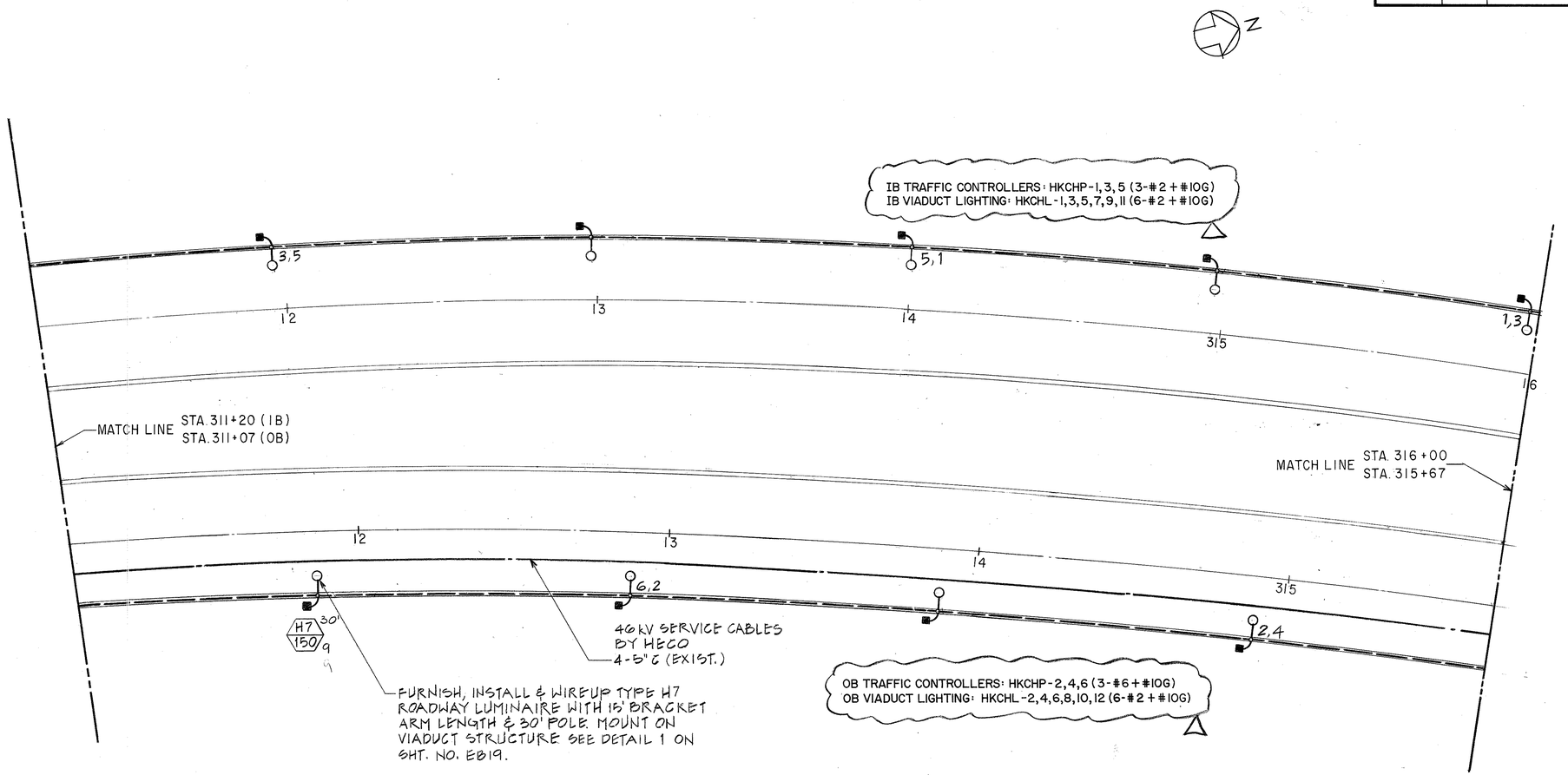
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VIADUCT POWER & LIGHTING
WIRING-8
HAIKU APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66):

SCALE: 1"=20' DATE: APR 1992

SHEET No. EB14 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	238	440



ORIGINAL PLANS	SURVEY PLOTTED BY	G. ONOYANG DATE 2-14-90
	DRAWN BY	" " "
	TRACED BY	T. SANCHEZ 1-15-90
NOTE BOOK	DESIGNED BY	" " "
	QUANTITIES BY	J.J. SASSANI 6-26-90
No.	CHECKED BY	" " "

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

DATE	REVISION
1/12/95	REVISED PER DCN 66-059
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE PER DCN 66-003

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

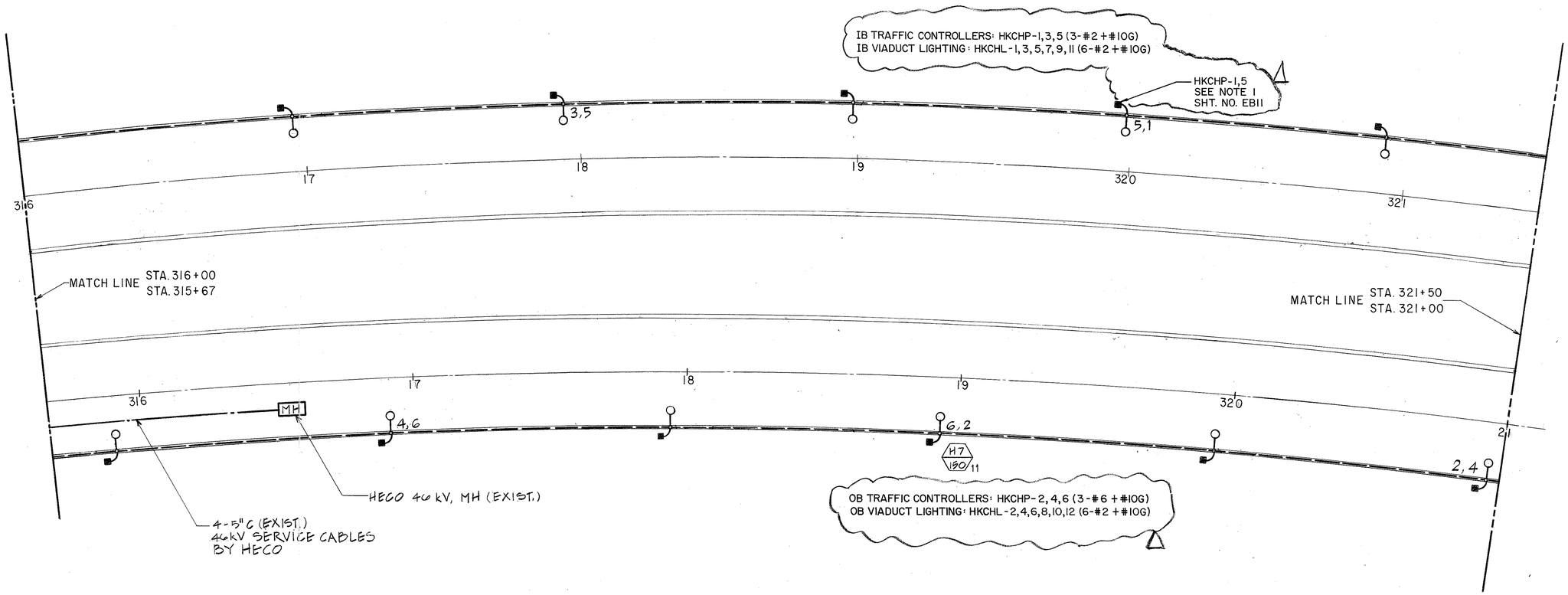
VIADUCT POWER & LIGHTING
WIRING-9
HAIKU APPROACH
INTERSTATE ROUTE H-3

F.A.I. PROJ. NO. I-H3-1(66):

SCALE: 1" = 20' DATE: APR 1992

SHEET No. EB15 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	239	440



ORIGINAL PLAN	SURVEY PLOTTED BY G. ONG-TANG DATE 2-14-90
NOTE BOOK	DRAWN BY " " "
No.	TRACED BY T. SANCHEZ " 1-15-90
	DESIGNED BY " " "
	QUANTITIES BY " " "
	CHECKED BY J. J. SASSANI " 6-26-90

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

DATE	REVISION
1/12/95	REVISED PER DCN 66-059
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE PER DCN 66-003

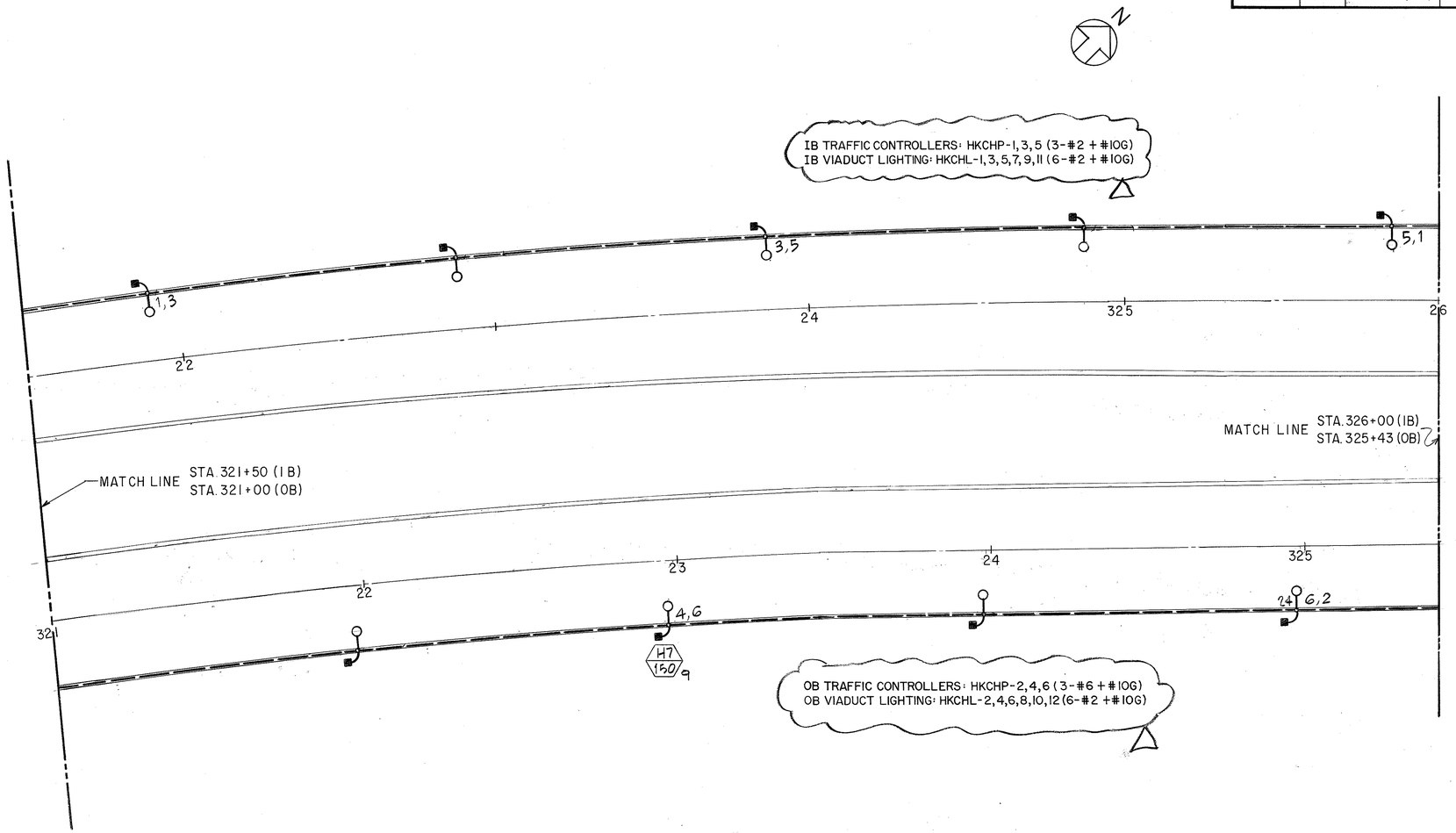
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VIADUCT POWER & LIGHTING WIRING-10

HAIKU APPROACH
INTERSTATE ROUTE H-3
F. A. I. PROJ. NO. I-H3-1(66);
SCALE: 1" = 20' DATE: APR 1992

SHEET No. EB16 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	240	440



ORIGINAL PLAN	SURVEY PLOTTED BY	Gr. ONO-TANG	DATE 2-14-92
	DRAWN BY	" "	" "
NOTE BOOK	TRACED BY	T. SANCHEZ	1-15-90
No.	DESIGNED BY	" "	" "
	QUANTITIES BY	" "	" "
	CHECKED BY	J.J. SASSANI	9-22-90

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

DATE	REVISION
1/12/95	REVISED PER DCN 66-059
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE PER DCN 66-003

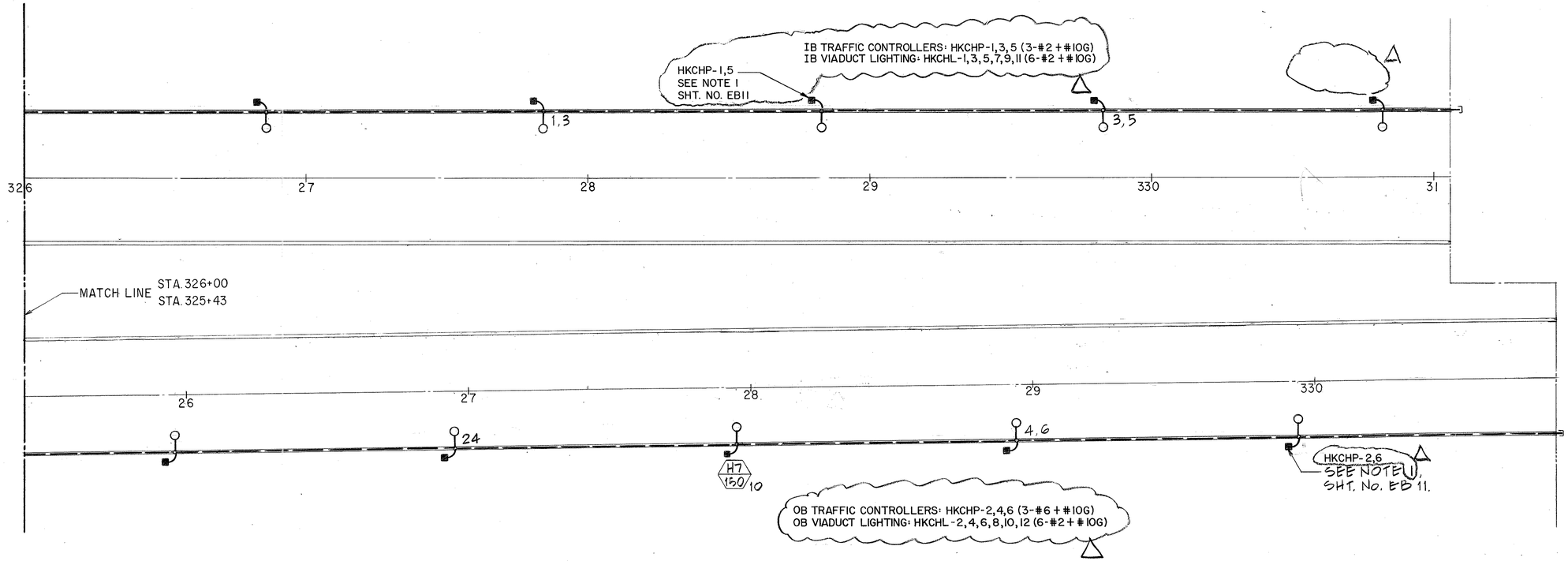
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VIADUCT POWER & LIGHTING
WIRING-II
HAIKU APPROACH
INTERSTATE ROUTE H-3
F. A. I. PROJ. NO. I-H3-1(66)

SCALE: 1" = 20' DATE: APR 1992

SHEET No. EB17 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	241	440



ORIGINAL PLAN		SURVEY PLOTTED BY	G. OW-YANG	DATE	2-14-90
		DRAWN BY	"	"	"
NOTE BOOK		TRACED BY	T. SANCHEZ		1-15-90
		DESIGNED BY	"	"	"
		QUANTITIES BY	J.J. SASSANI		3-26-90
No.		CHECKED BY	"	"	"

DATE	REVISION
1/12/95	REVISED PER DCN 66-059
8/17/93	REVISED APPROACH LIGHTING PER DCN 66-016
4/29/93	DELETED 15kV CABLE AND REVISED NOTE
	REFERENCE PER DCN 66-003

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VIADUCT POWER & LIGHTING WIRING-12

HAIKU APPROACH

INTERSTATE ROUTE H-3

F. A. I. PROJ. NO. I-H3-1(66):

SCALE: 1" = 20' DATE: APR 1992

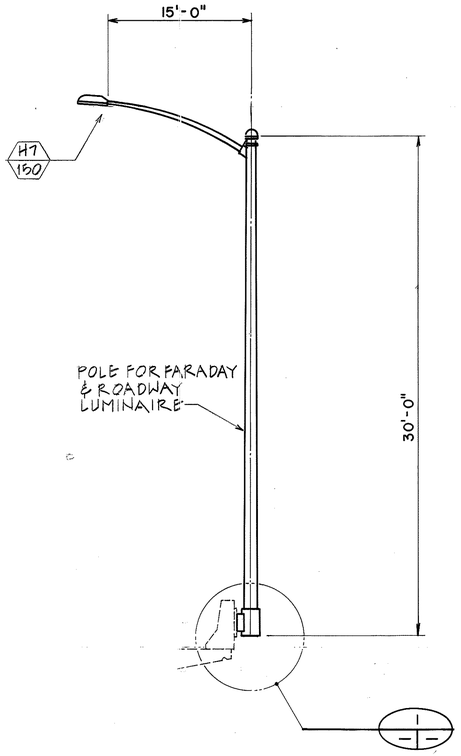
SHEET No. EB18 OF 19 SHEETS

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

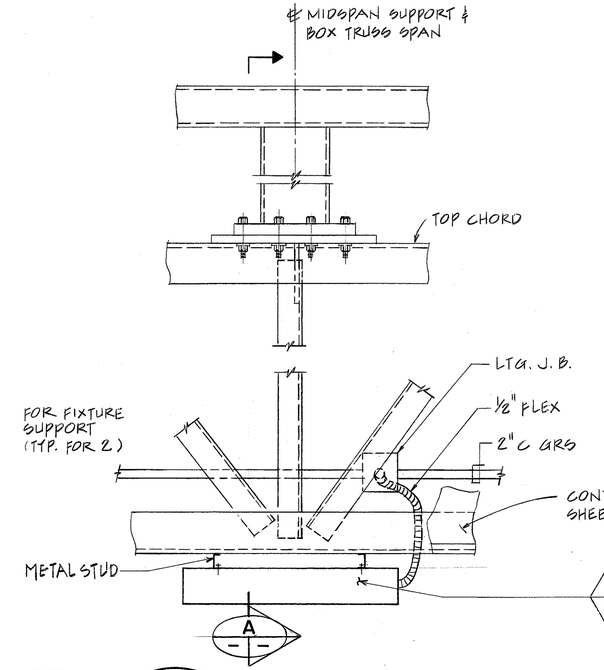
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

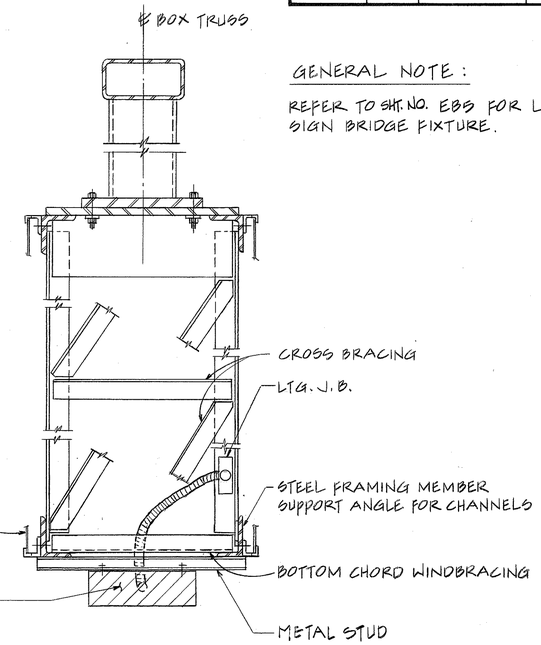
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	242	440



LIGHTING STANDARD DETAIL



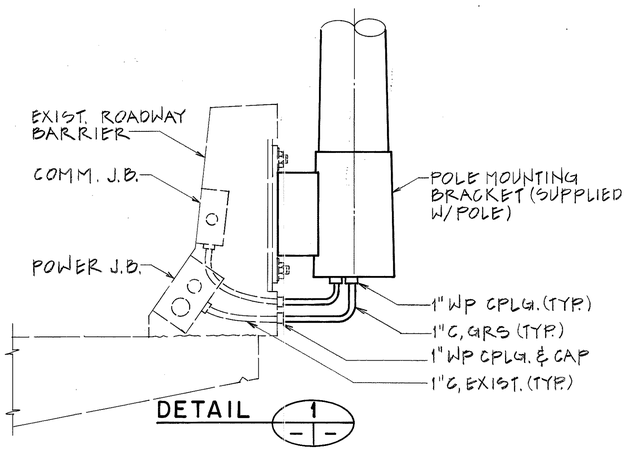
DETAIL 2 MIDSPAN SUPPORT ELEVATION



SECTION A

GENERAL NOTE :

REFER TO SHT. NO. EB5 FOR LOCATION OF SIGN BRIDGE FIXTURE.



DETAIL 1

ORIGINAL PLAN	
NOTE BOOK	
No.	
SURVEY PLOTTED BY	DATE
DRAWN BY	A. OKI-TANIA 2/1978
TRACED BY	: :
DESIGNED BY	R. JAMES 1/1980
QUANTITIES BY	: :
CHECKED BY	J.T. SASSANI 10/1980

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INSTALLATION DETAILS

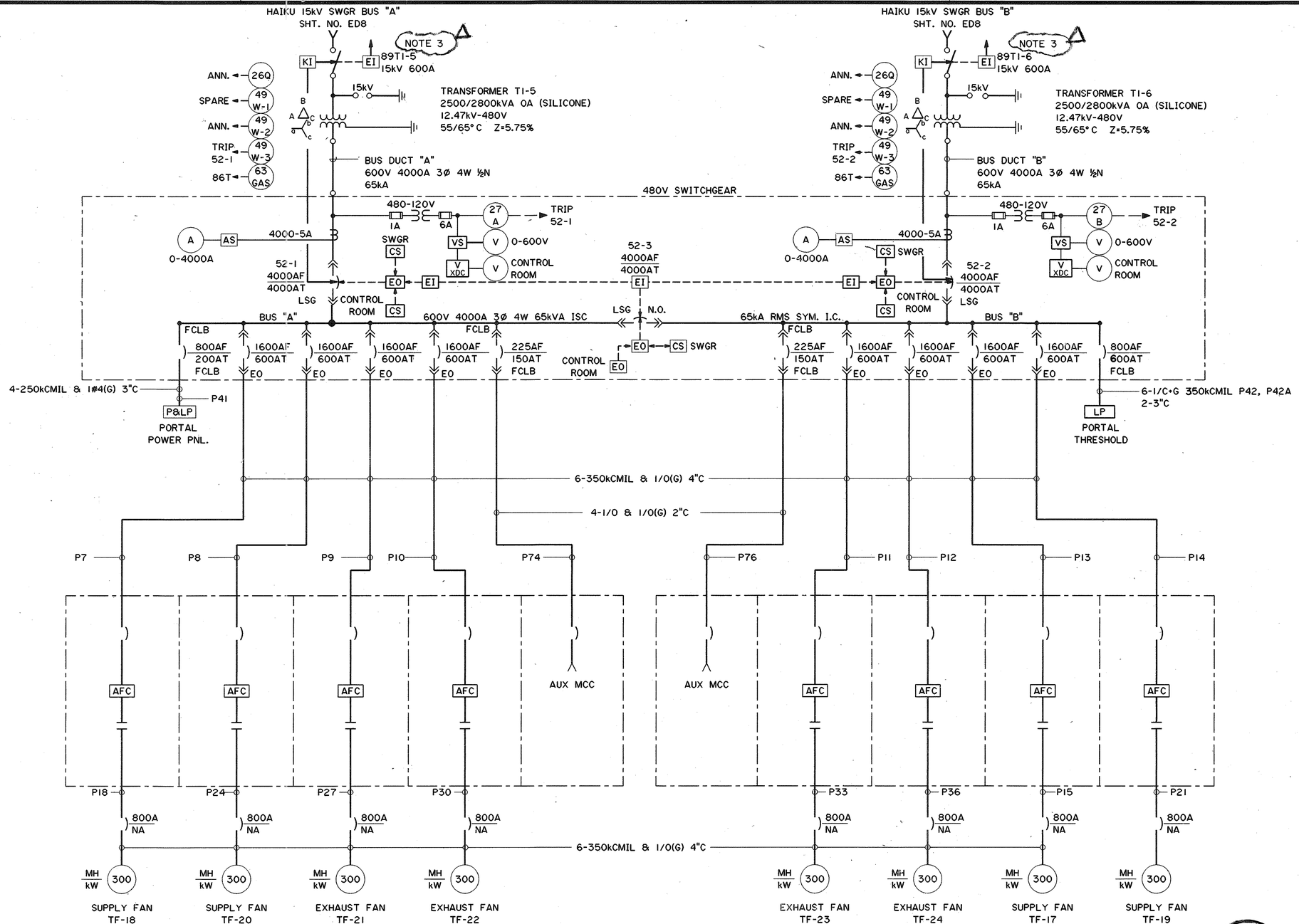
HAIKU APPROACH
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EB19 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	243	440

NOTES:
1. FOR NOTES SEE SHEET NO. EN1.
2. VENT FAN(TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13
3. PROVIDE AUXILIARY CONTACT IN HIGH VOLTAGE DISCONNECT FOR SYSTEMS INTERFACE.



ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY EADD 6/11/90
TRACED BY
DESIGNED BY R.JAMES 3/1/90
QUANTITIES BY
CHECKED BY J.T.GASSAN 6/18/90
NOTE BOOK
NO.

6/7/94	REVISED PER DCN 66-044
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM
HAIKU IB SUBSTATION
HAIKU PORTAL BUILDING - IB

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EM1 OF 25 SHEETS

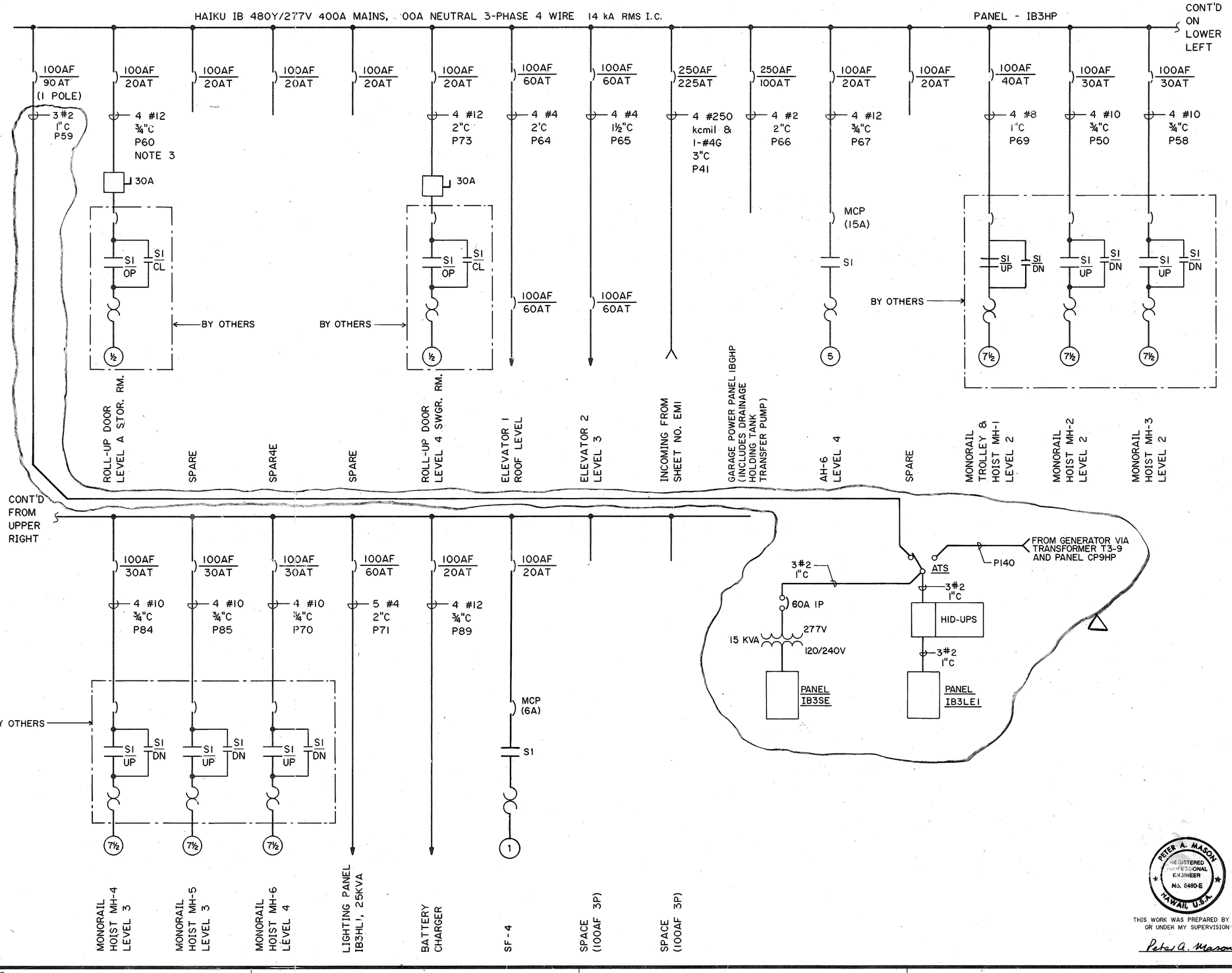
PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

2410V154 2410: V154 ES0010.FGB:1 10JLY90-10.45.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	244	440



NOTES:

1. THE NUMBER OF WIRES SHOWN FOR EACH CONDUIT INCLUDES ONE GROUNDING WIRE UNLESS NOTED OTHERWISE.
2. SOME FEEDER CABLES SHARE COMMON CONDUIT RISERS AS SHOWN ON POWER WIRING LEVEL 3 PLAN.
3. ALL CB'S ARE THREE (3) POLE UNLESS NOTED OTHERWISE.

ABBREVIATIONS:

MCP	MOTOR CIRCUIT PROTECTOR
SI	SIZE 1 MOTOR STARTER

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 6/1/90
	DRAWN BY LADD	
NOTE BOOK	TRACED BY	
	DESIGNED BY R. JAMES	5/11/90
NO.	QUANTITIES BY	
	CHECKED BY T.T. SASSANI	6/26/90

DATE	REVISION
12/21/94	REVISED PER DCN 66-044
3/9/94	ADDED SF-4 PER DCN 66-039
8/19/93	REVISED SCHEDULES PER DCN 66-017

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM
480Y/277V POWER
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EM2 OF 25 SHEETS

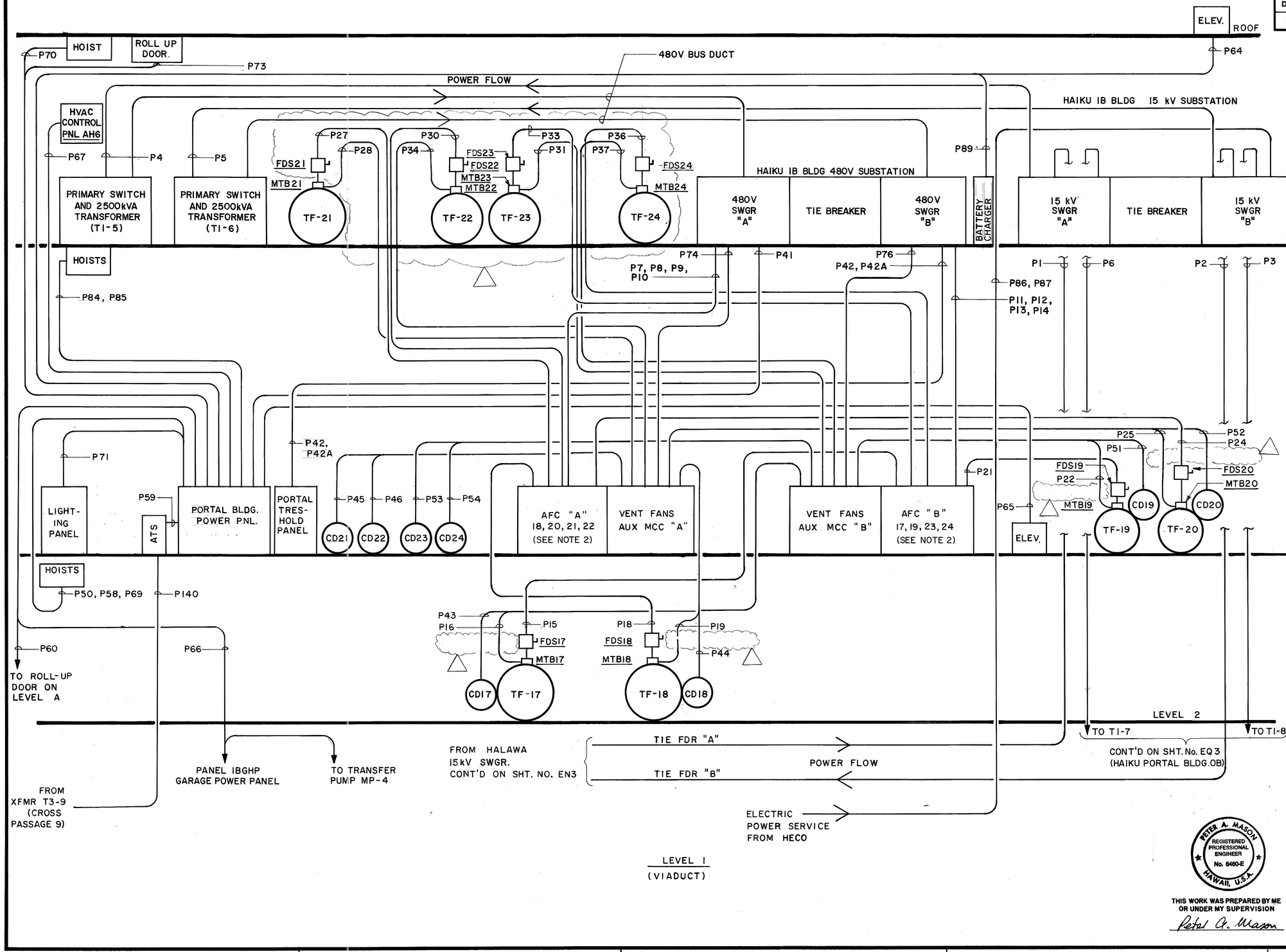
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

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Peter A. Mason

2410V152 2410: V152 ES0278.FGB:1 12JAN90-15.30.20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	245	440



NOTE:

1. SEE SHT. NO. EM4 FOR CONTROL WIRING PROVISIONS.
2. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. EDI3

LEGEND:

TF	TUNNEL FAN
CF	COOLING FAN
CD	CONTROL DAMPER
AFC	ADJUSTABLE FREQUENCY CONTROLLER
ATS	AUTOMATIC TRANSFER SWITCH
MHDS	MOTOR HEATER DISCONNECT SWITCH
FDS	FAN DISCONNECT SWITCH
MTB	MOTOR TERMINAL BOX
CFDS	COOLING FAN DISCONNECT SWITCH

DATE	REVISION
6/22/93	DELETED AUX. COOLING FANS PER
	DCN 66-012

ORIGINAL PLAN

		DATE
SURVEY PLOTTED BY		
DRAWN BY	R. ANG	6/11/90
TRACED BY		
DESIGN BY	T. A. HORTON	5/8/90
QUANTITIES BY		
CHECKED BY	T. T. SASAKI	6/28/90

NOTE BOOK

No.

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

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Peter A. Mason

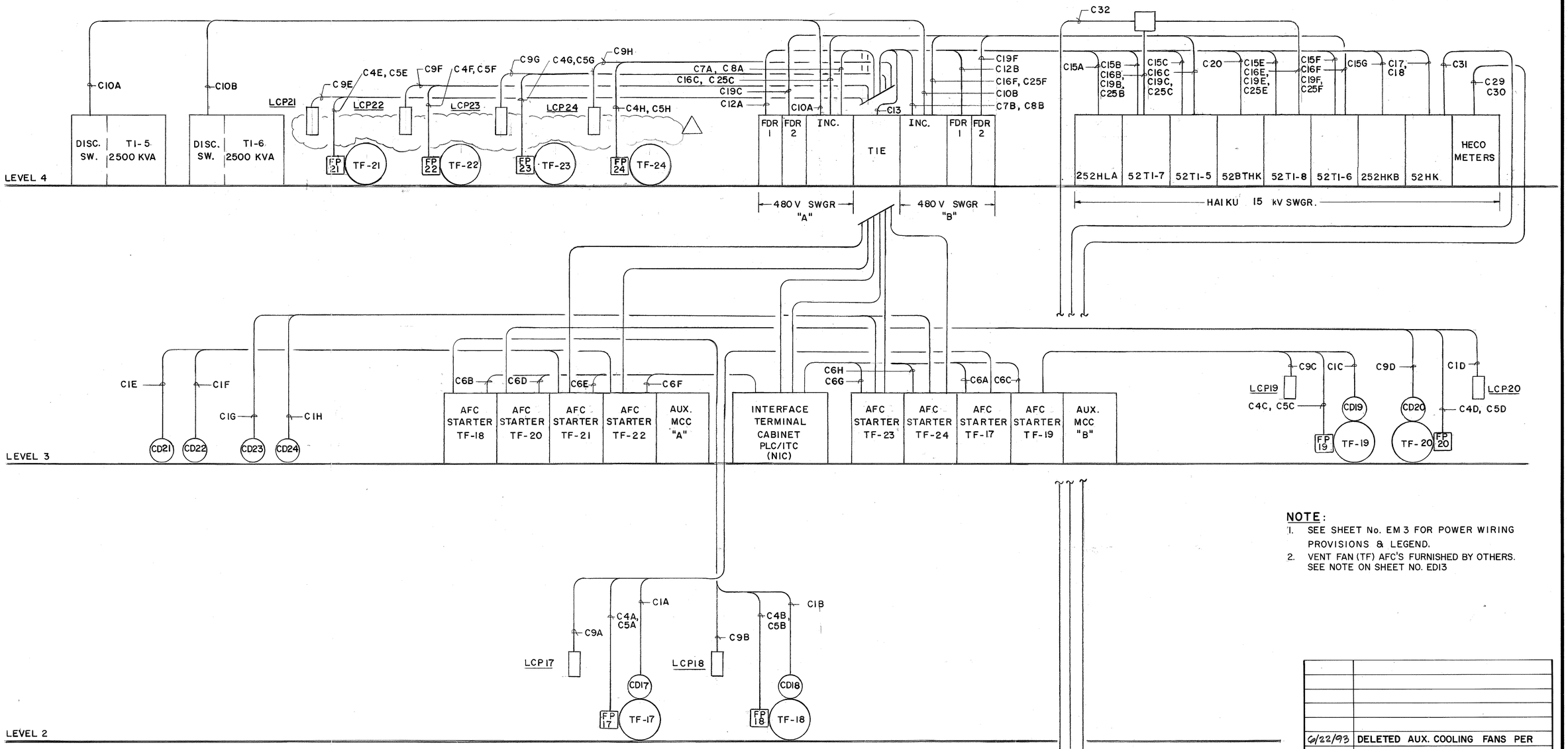
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RISER DIAGRAM
POWER
HAIKU PORTAL BUILDING IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EM 3 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	246	440



NOTE:

1. SEE SHEET No. EM 3 FOR POWER WIRING PROVISIONS & LEGEND.
2. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHEET NO. ED13

DATE	REVISION
6/22/93	DELETED AUX. COOLING FANS PER
	DCN 66-012

ORIGINAL PLAN
NOTE BOOK
No. ____

	DATE
SURVEY PLOTTED BY	
DRAWN BY R. CUADRO	6/12/90
TRACED BY	"
DESIGNED BY T.A. HORTON	5/11/90
QUANTITIES BY	"
CHECKED BY J.J. SASSANI	6/18/90

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RISER DIAGRAM
CONTROL
HAIKU PORTAL BUILDING - 1B
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

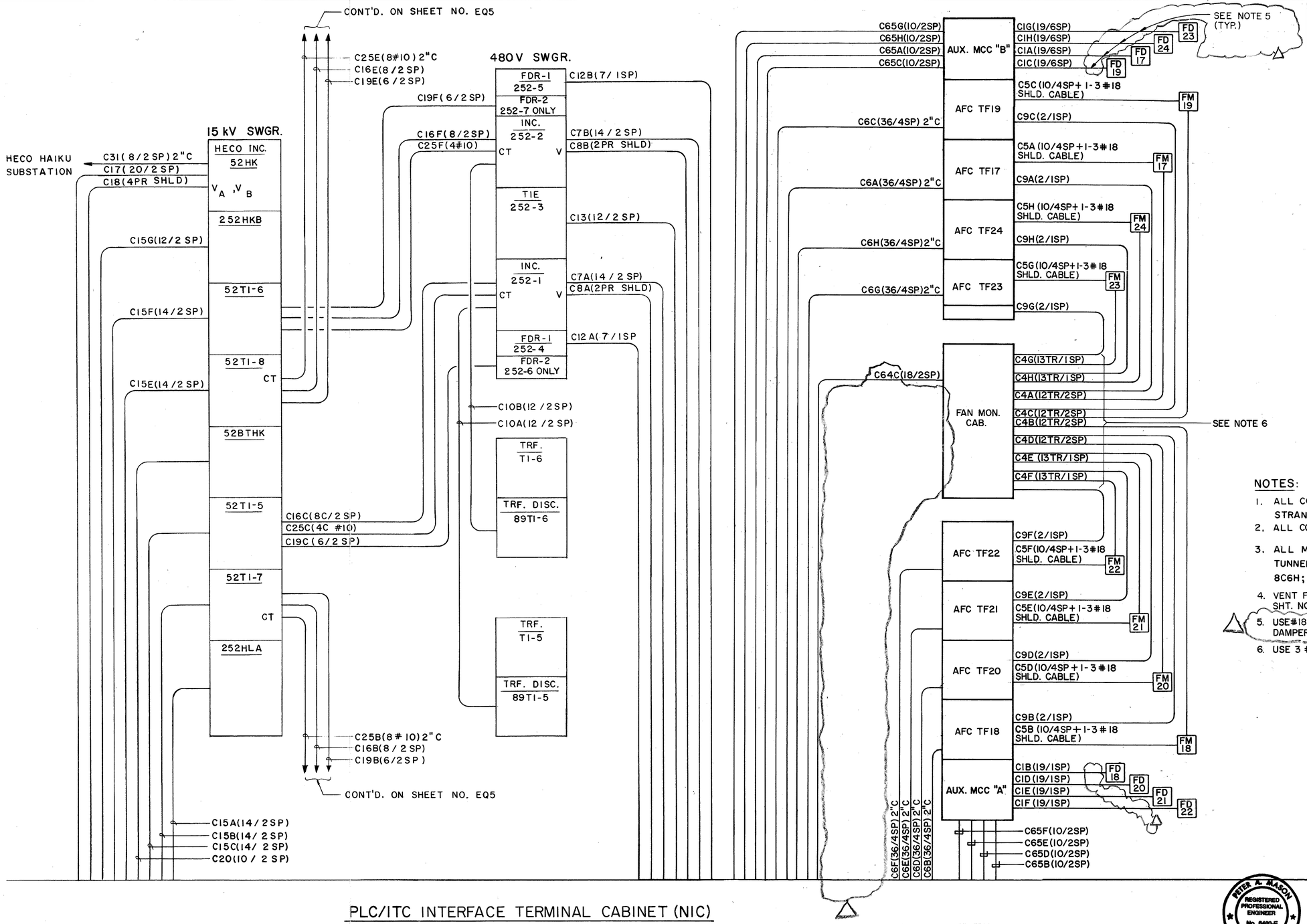
SCALE: NONE DATE: APR 1992

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Peter A. Mason

SHEET NO. EM4 OF 25 SHEETS



PLC/ITC INTERFACE TERMINAL CABINET (NIC)

NOTES:

1. ALL CONDUCTORS ARE SINGLE CONDUCTOR #14 AWG STRANDED UNLESS OTHERWISE NOTED.
2. ALL CONDUITS ARE 1" UNLESS OTHERWISE NOTED.
3. ALL MCC WIRE MARKERS SHALL BE PREFIXED WITH TUNNEL FAN NUMBERS DESIGNATION; e g FOR TF8 8C6H; FOR CDI, IC2A; FOR CFI, IC3A ETC.
4. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13
5. USE #18 TFFN FLEX. CABLE FOR CONNECTION BETWEEN DAMPER ACTUATOR AND MCC.
6. USE 3 #18 TWISTED CABLE WITH UNSHIELDED JACKET.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	247	440

7/26/94	REVISED PER DCN 66-049
6/6/94	REVISED PER DCN 66-047
5/5/94	REVISED AFC/MCC/ITC CONTROL WIRING PER DCN 66-041
DATE	REVISION

ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY
DRAWN BY R. CUADRO DATE 6/18/90
TRACED BY
DESIGNED BY E.A. HORTON 5/24/90
QUANTITIES BY
CHECKED BY J.J. SASSANI 6/24/90
No.

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Peter A. Mason
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

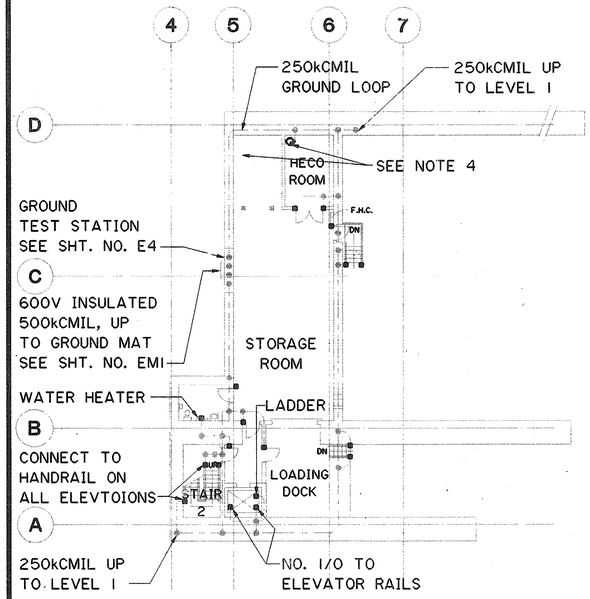
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BLOCK DIAGRAM
CONTROL
HAIKU PORTAL BUILDING-IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

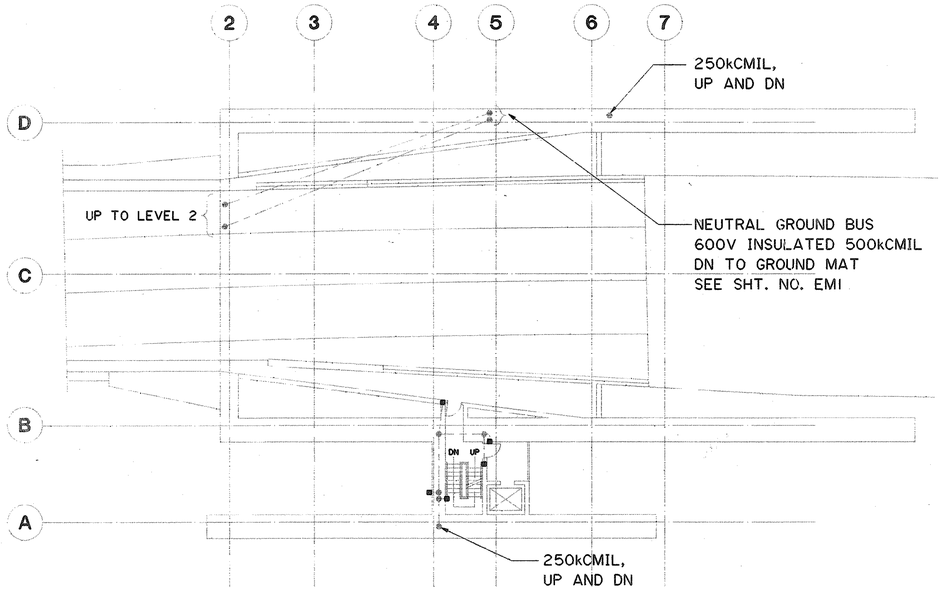
SCALE: NONE DATE: APR 1992

SHEET NO. EM5 OF 25 SHEETS

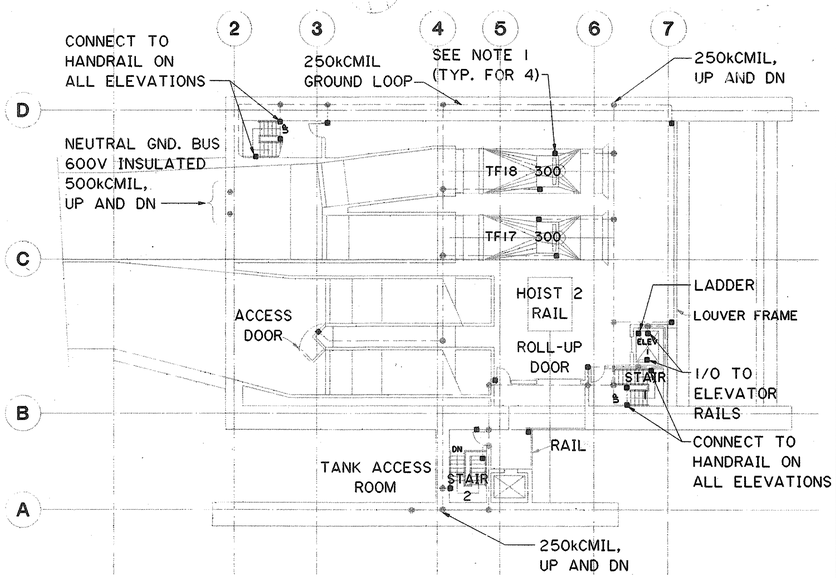
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	248	440



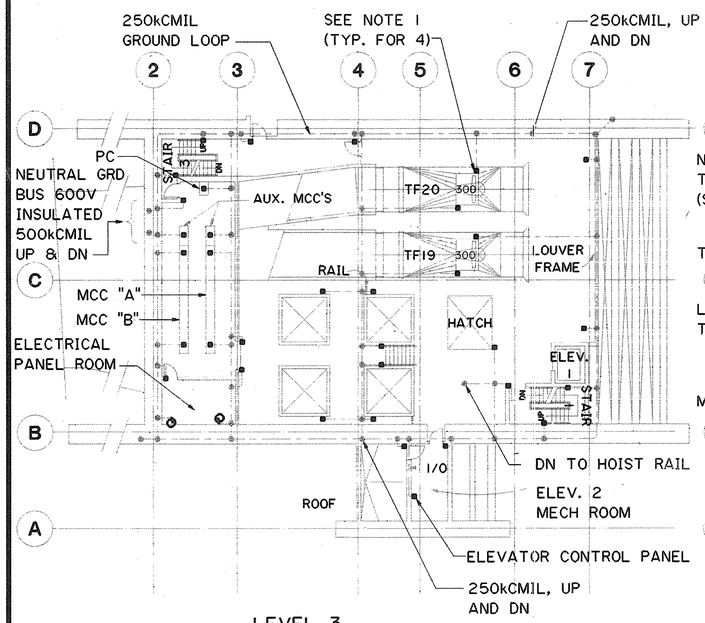
LEVEL A



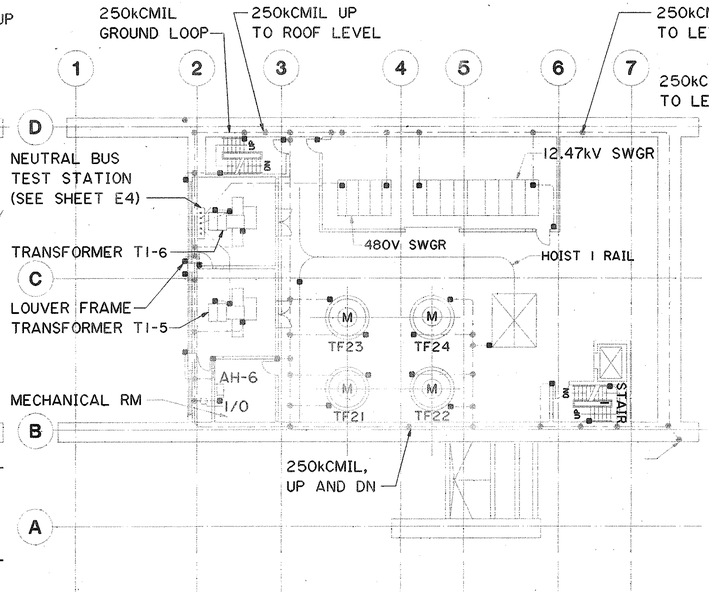
LEVEL 1



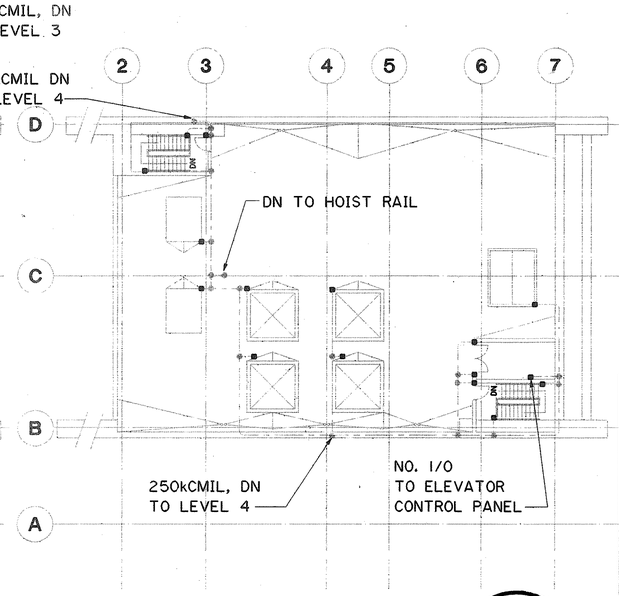
LEVEL 2



LEVEL 3



LEVEL 4



ROOF

NOTES:

1. CONNECT TO MOTOR FRAME.
2. RUN GROUND WITH OTHER CONDUCTORS IN CONDUIT FOR PANELS IN THIS AREA.
3. FOR GROUNDING IN VAULTS SEE SHEET NO. E4

GRAPHIC SCALE
16' 8' 0' 16' 32'
1/16"=1'-0"

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GROUNDING

HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/16" = 1'-0" DATE. APR 1992

SHEET NO. EM6 OF 25 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

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Peter A. Mason

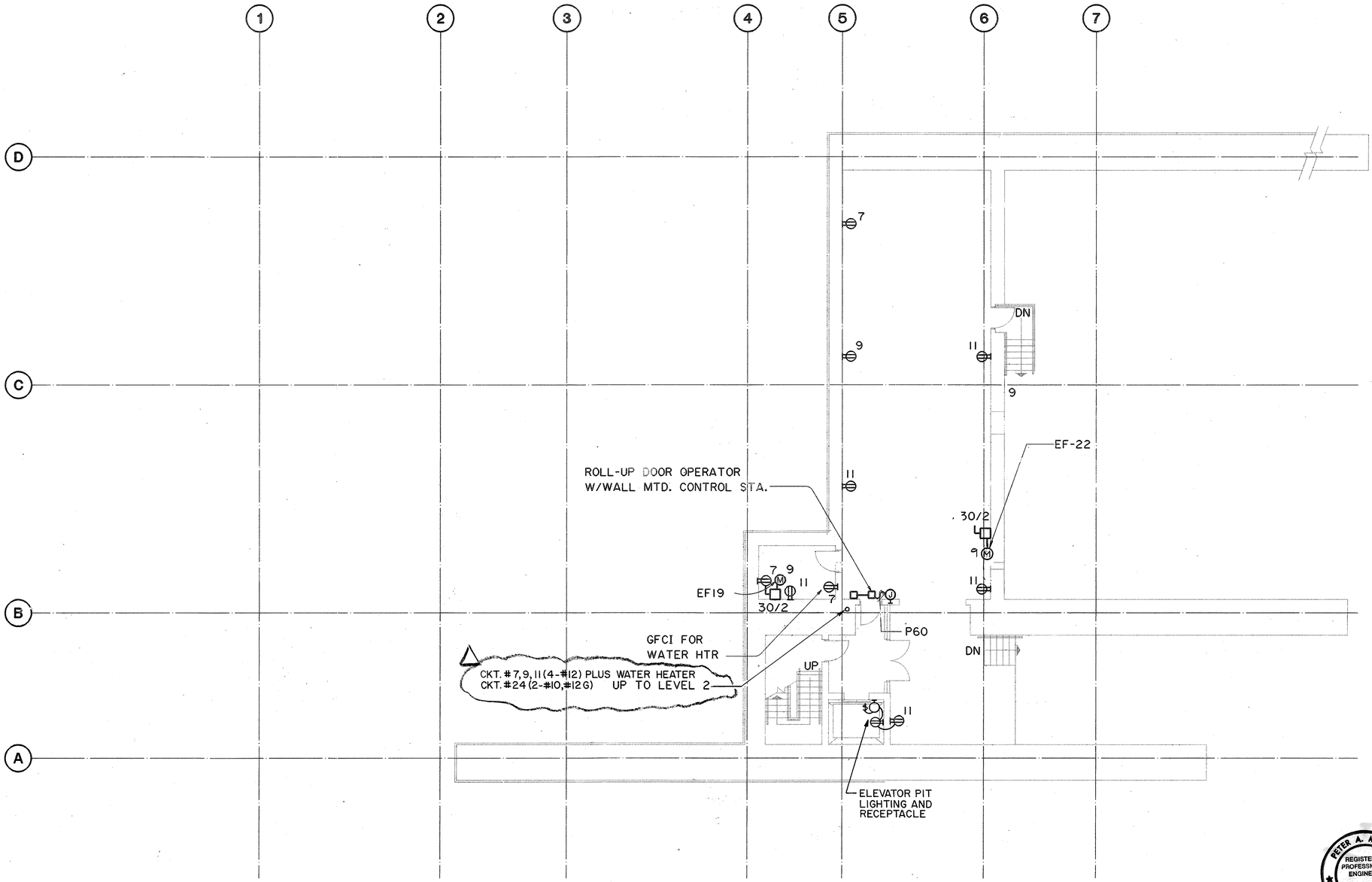
ORIGINAL PLANS	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	5-11-90
NOTE BOOK	TRACED BY	5-1-90
	DESIGNED BY F. JIMENEZ	
NO.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	5-24-90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	249	440

N

NOTE:

1. SEE SHEET NO'S. EM3, EM4 OR EM5 FOR TERMINATIONS OF POWER AND CONTROL CONDUIT.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	4/6/90
NOTE BOOK	TRACED BY	
	DESIGNED BY	3/2/90
	QUANTITIES BY H.A. HORTON	
NO.	CHECKED BY J.J. SASSANI	6/24/90

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION
10/21/94	REV. PER DCN 66-053
9/22/94	REV. PER DCN 66-052

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL A PLAN
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

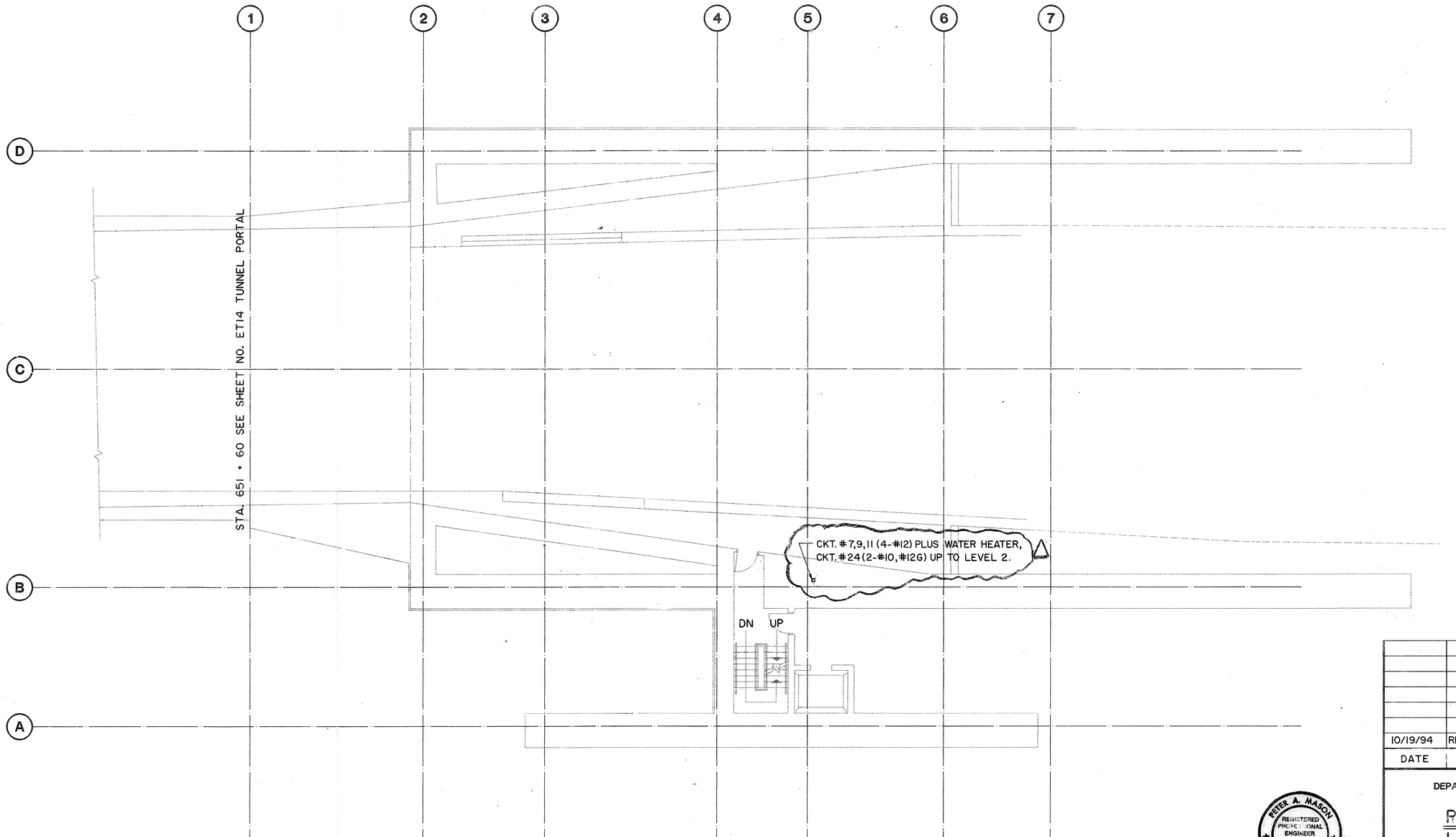
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Peter A. Mason

SHEET NO. EM7 OF 25 SHEETS

2410V152 2410: V152 ES0161.FGB,1 09JLY90-16.27.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	250	440



ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	CADD	4/15/90
NOTE BOOK	TRACED BY		
	DESIGNED BY	I.A. HORTON	3/9/90
	QUANTITIES BY		
NO.	CHECKED BY	J.J. SASSANI	6/24/90

10/19/94	REV. PER DCN 66-053
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL I PLAN
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

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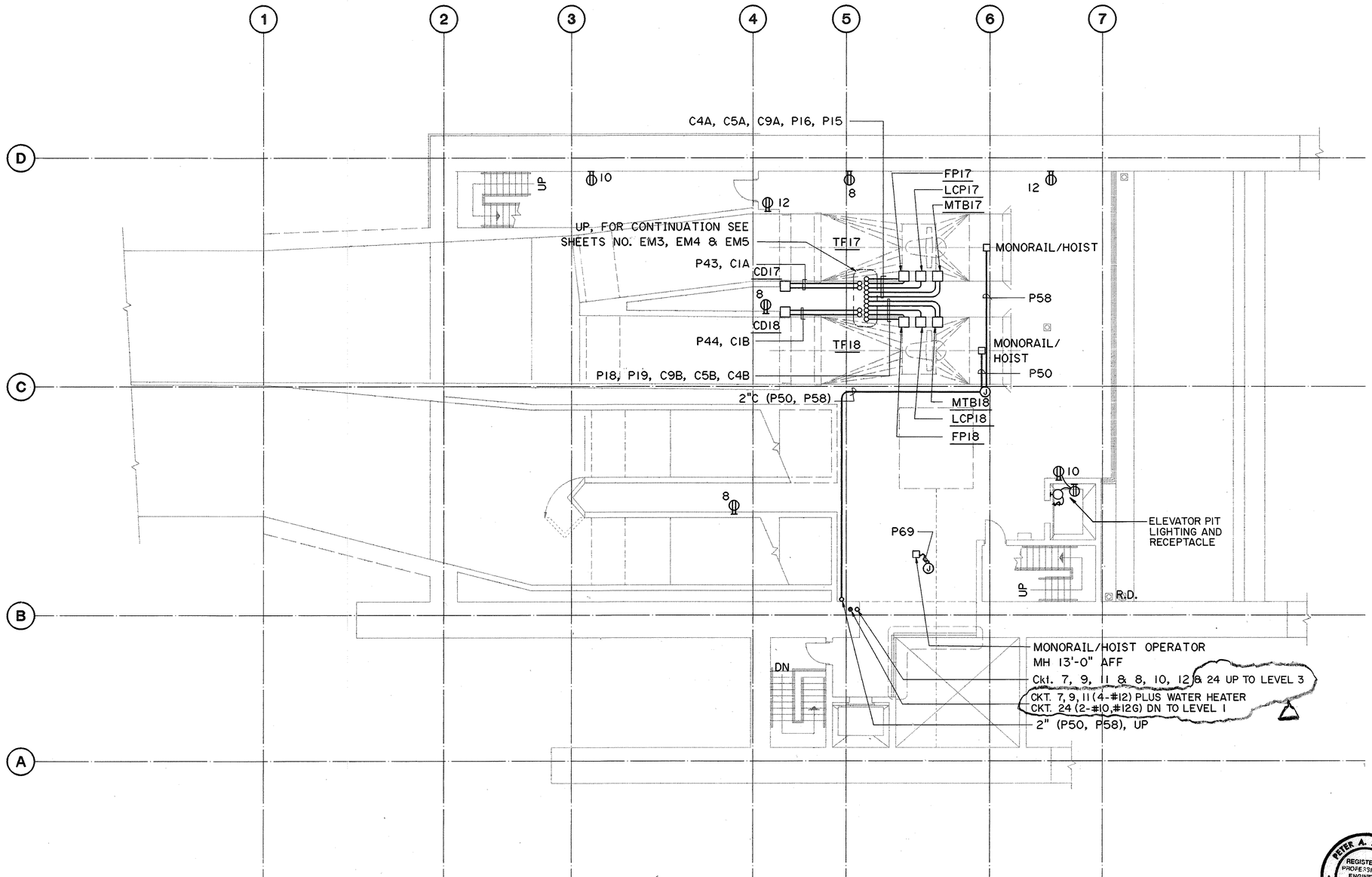
Peter A. Mason

SCALE: 1/8"=1'-0" DATE: APR 1992

SHEET NO. EM8 OF 25 SHEETS

2410V152 2410: V152 ES0162.FGB:1 05JLY90-09.46.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	251	440



NOTE:

1. FOR GENERAL NOTES SEE SHEET NO. EM7.

DATE	REVISION
10/21/94	REV. PER DCN 66-053
9/22/94	REV. PER DCN 66-052

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 2 PLAN
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8"=1'-0" DATE: APR 1992

SHEET NO. EM9 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

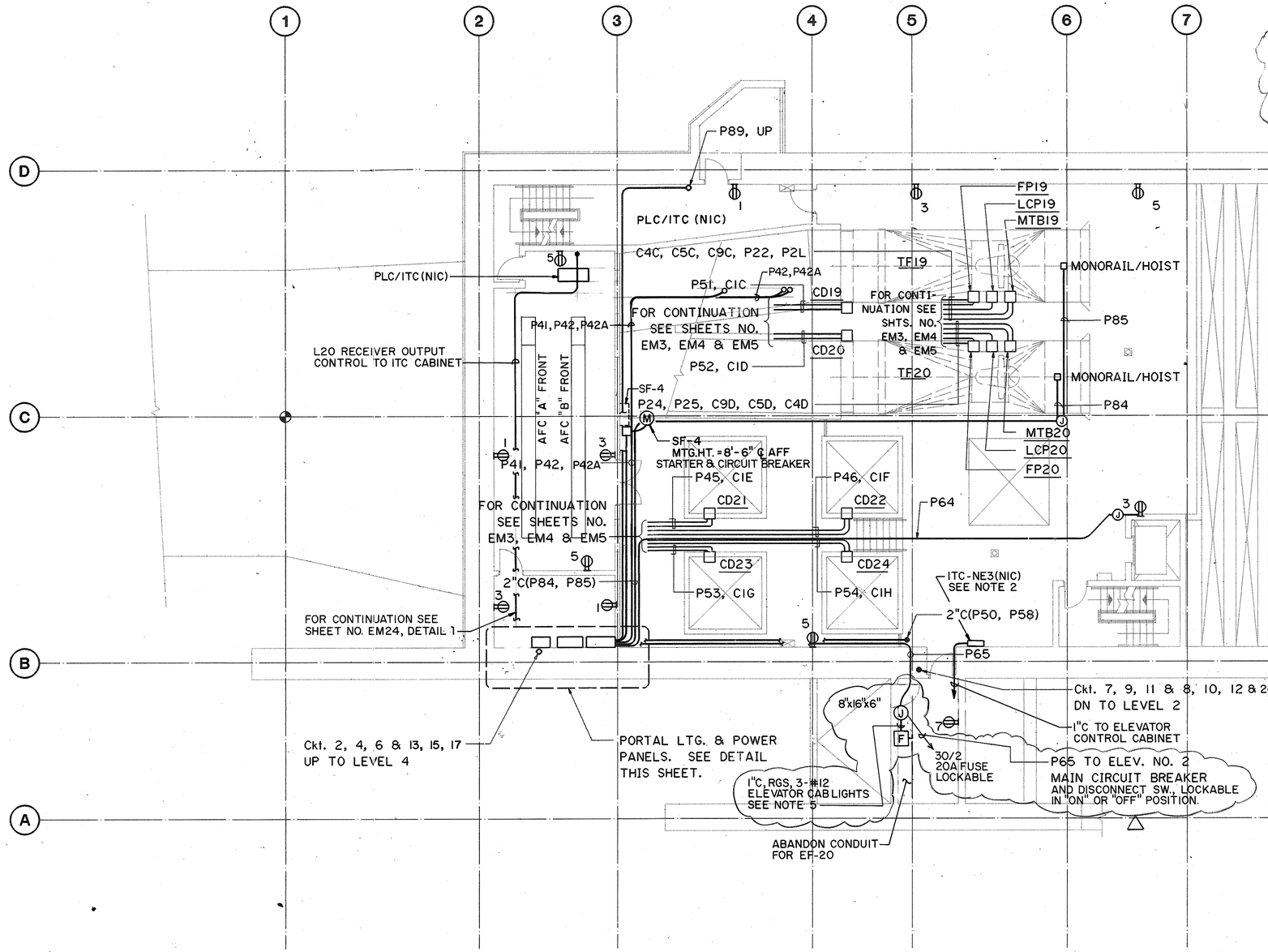
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	NOTE BOOK	NO.	SURVEY PLOTTED BY	DRAWN BY	TRACED BY	DESIGNED BY	QUANTITIES BY	CHECKED BY	DATE
				CADD		I.A. HORTON		J.J. SASSANT	4/20/90 3/16/90 6/26/90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	252	440

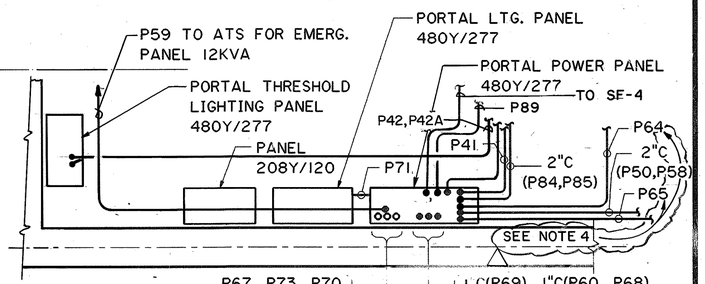
N



△ 5. DO NOT SPLICE ELEVATOR POWER OR CAB LIGHT CONDUCTORS. FURNISH AND INSTALL 90 MINUTE BATTERY PACK FOR THE ELEVATOR CAB LIGHT, BODINE B50 OR EQUAL. COORDINATE LOCATIONS AND INSTALLATION WITH ELEVATOR SUB-CONTRACTOR AS NECESSARY.

NOTE:

1. FOR GENERAL NOTES SEE SHEET NO. EM7.
2. FOR ITC-NE3, REFER TO SYSTEMS CONTRACT (65) PLANS, SHEET NO. TM4.
3. FOR DETAILS OF AFC LEVELLING CHANNELS SEE SHEET NO. EN9.
4. INTERCEPT (E) P64 CONDUIT (ELEVATOR #1 POWER) AND (E) P65 CONDUIT (ELEVATOR #2 POWER), AND FURNISH AND INSTALL (N) J-BOX, 12"x20"x8". REPULL (E) ELEVATOR #1 & #2 POWER CONDUCTORS THROUGH J-BOX BACK TO PANEL IB3HP WITHOUT SPLICING. FURNISH AND INSTALL 1"C, RGS FROM PANEL IB3LP TO J-BOX. FURNISH AND INSTALL 6-#12 AWG WITH 600V INSULATION, FROM PANEL IB3LP (ELEVATOR #1 & #2 CAB LIGHTS) TO J-BOX AND ON TO ROOF FOR ELEVATOR #1 AND LEVEL 3 FOR ELEVATOR #2, SHARING THE (E) P64 AND P65 CONDUITS, 3-#12 AWG IN EACH.



ELECTRICAL PANEL ROOM
POWER CONDUIT BLOCK DIAGRAM
N.T.S.

12/22/94	REV. PER DCN 66-055
10/21/94	REV. PER DCN 66-053
9/22/94	REV. PER DCN 66-052
3/9/94	REVISED PER DCN 66-039
DATE	REVISION

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY C.ABO	4/27/90
	TRACED BY	
NOTE BOOK	DESIGNED BY J.A. HORTON	3/23/90
	QUANTITIES BY	
NO.	CHECKED BY Jos. SASSANI	5/26/90

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 3 PLAN
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8"=1'-0" DATE: APR 1992

SHEET NO. EMIO OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

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Peter A. Mason

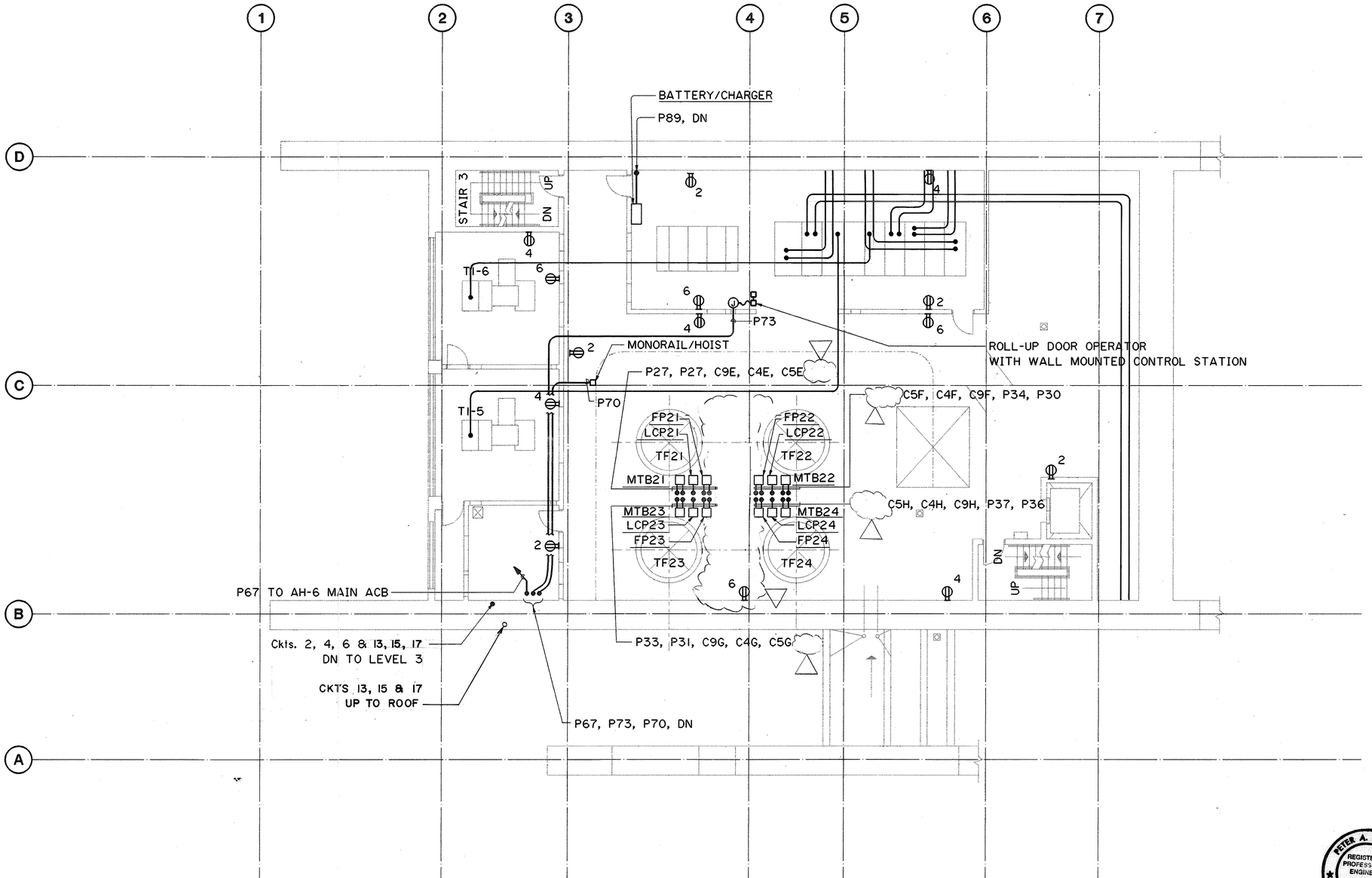
2410V152 2410: V152 ES0163.FGB#1 09JUL90-16.13.10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	253	440

N

NOTE:

1. FOR GENERAL NOTES SEE SHEET NO. EM7.
2. FOR DETAILS OF SWGR LEVELLING CHANNELS SEE SHEET NO. EN10.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

6/22/93	DELETED AUX. COOLING FANS PER DCN 66-012
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 4 PLAN
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

SHEET NO. EM11 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

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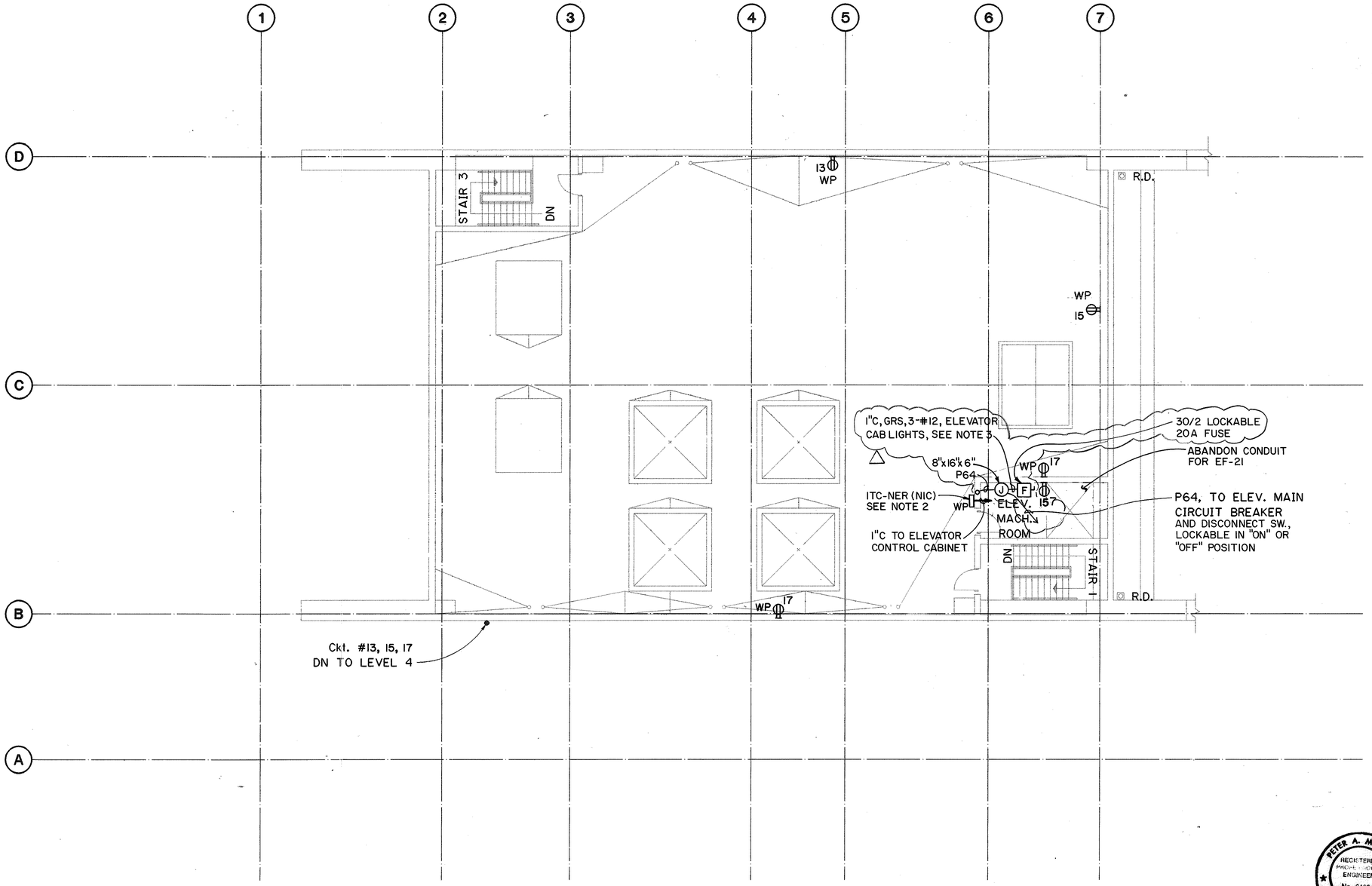
Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	CADD	5/4/90
	DRAWN BY		
	TRACED BY		
NOTE BOOK	DESIGNED BY	I.A. HORTON	3/30/90
	QUANTITIES BY		
NO.	CHECKED BY	J.J. SASSANI	6/26/90

2410V152 2410: V152 ES0158.FGB;1 05JUL90-10.40.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	254	440

N



NOTE:

1. FOR GENERAL NOTES SEE SHEET NO. EM7.
2. FOR ITC-NER REFER TO SYSTEMS CONTRACT(65) PLANS, SHEET NO. TM6
3. DO NOT SPLICE ELEVATOR POWER OR CAB LIGHT CONDUCTORS. FURNISH AND INSTALL 90 MINUTE BATTERY PACK FOR THE ELEVATOR CAB LIGHT, BODINE B50 OR APPROVED EQUAL. COORDINATE LOCATIONS AND INSTALLATION WITH ELEVATOR SUB-CONTRACTOR AS NECESSARY.

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	5/11/90
	TRACED BY	
	DESIGNED BY I.A. HORTON	4/6/90
NOTE BOOK	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	6/26/90
NO.		

GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION
12/16/94	REV. PER DCN 66-055
9/22/94	REV. PER DCN 66-052

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

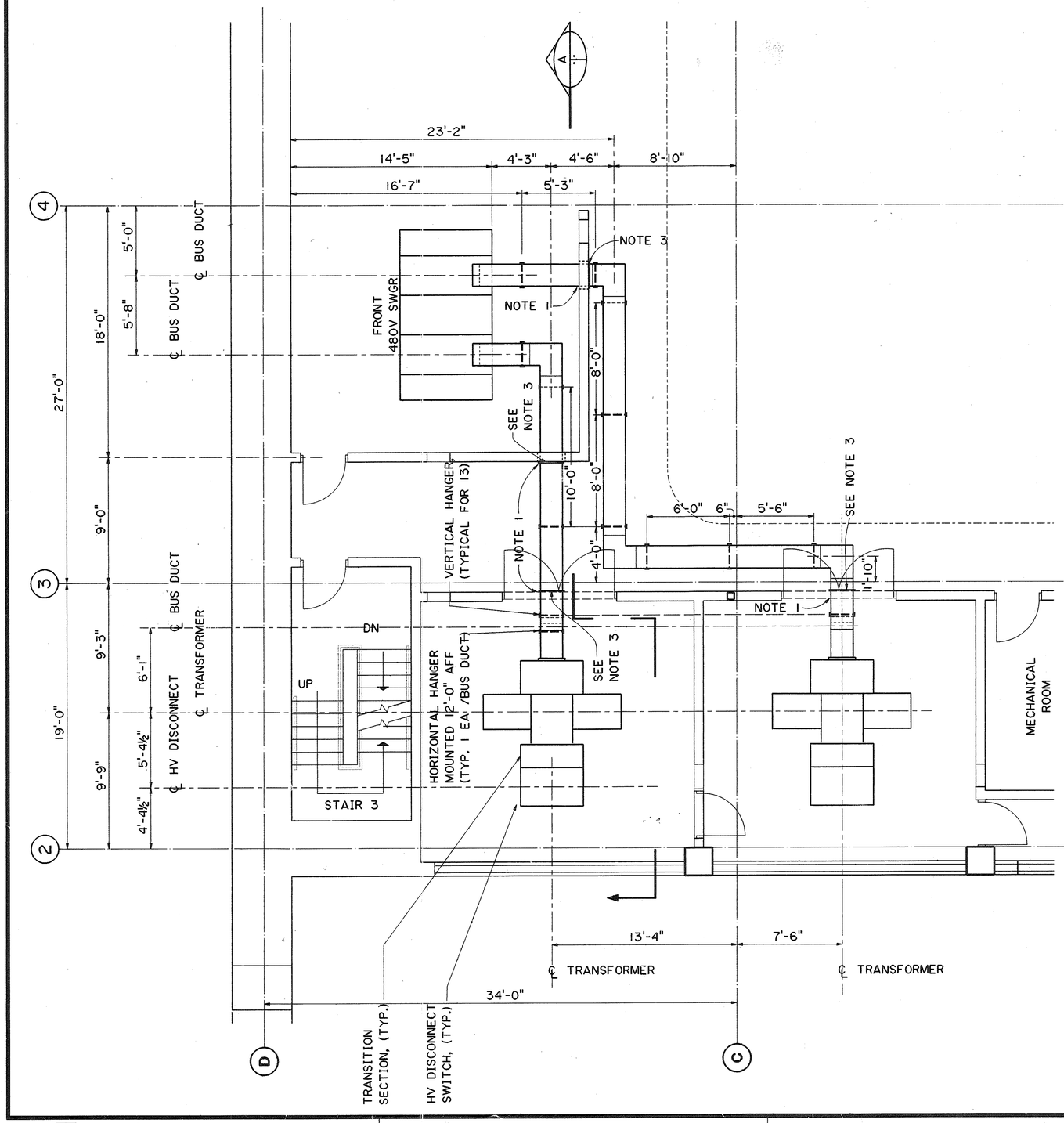
POWER WIRING
ROOF PLAN
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

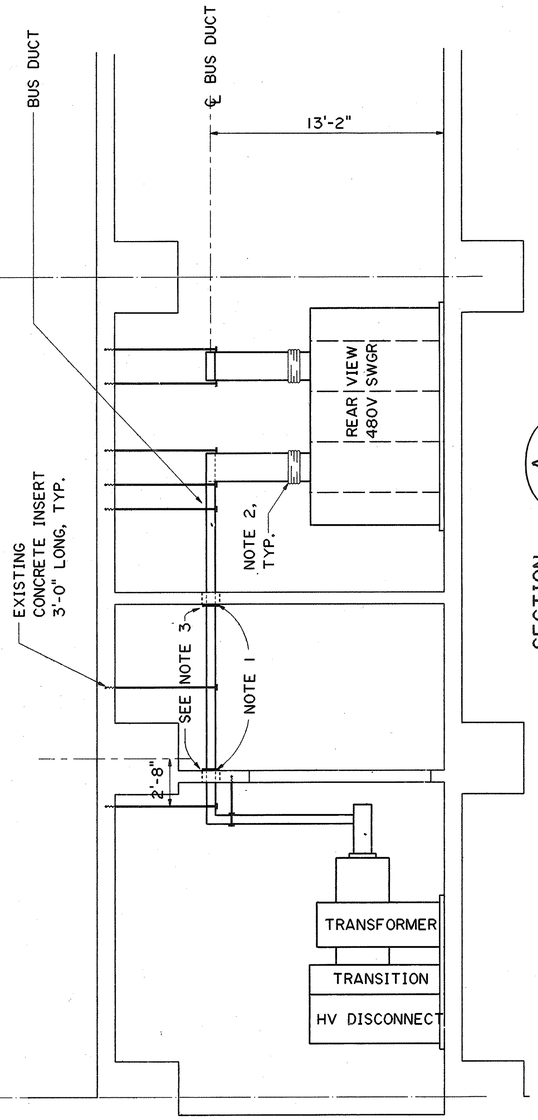
SHEET NO. EM12 OF 25 SHEETS

2410V152 2410: V152 ES0159.FGB:1 10JLY90-14.50.10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	255	440



PLAN



SECTION

NOTES:

1. EXISTING BUS DUCT WALL PENETRATION.
2. PROVIDE FLEXIBLE CONNECTIONS FOR BUS AND HOUSING.
3. PROVIDE FLANGES FOR WALL PENETRATIONS AT LOCATIONS SHOWN.
4. DIMENSIONS AND LOCATIONS OF EXISTING CEILING INSERTS ARE APPROXIMATE.

ORIGINAL PLAN	SURVEY PLOTTED BY	CADD	DATE 5/16/90
	DRAWN BY	"	" "
NOTE BOOK	TRACED BY	"	" "
	DESIGNED BY	J.A. HORTON	" 4/11/90
	QUANTITIES BY	"	" "
NO.	CHECKED BY	J.J. SASSANI	" 5/25/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL ARRANGEMENT
480V BUS DUCT
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ¼"=1'-0" DATE: APR 1992

SHEET NO. EM13 OF 25 SHEETS

PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6490-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

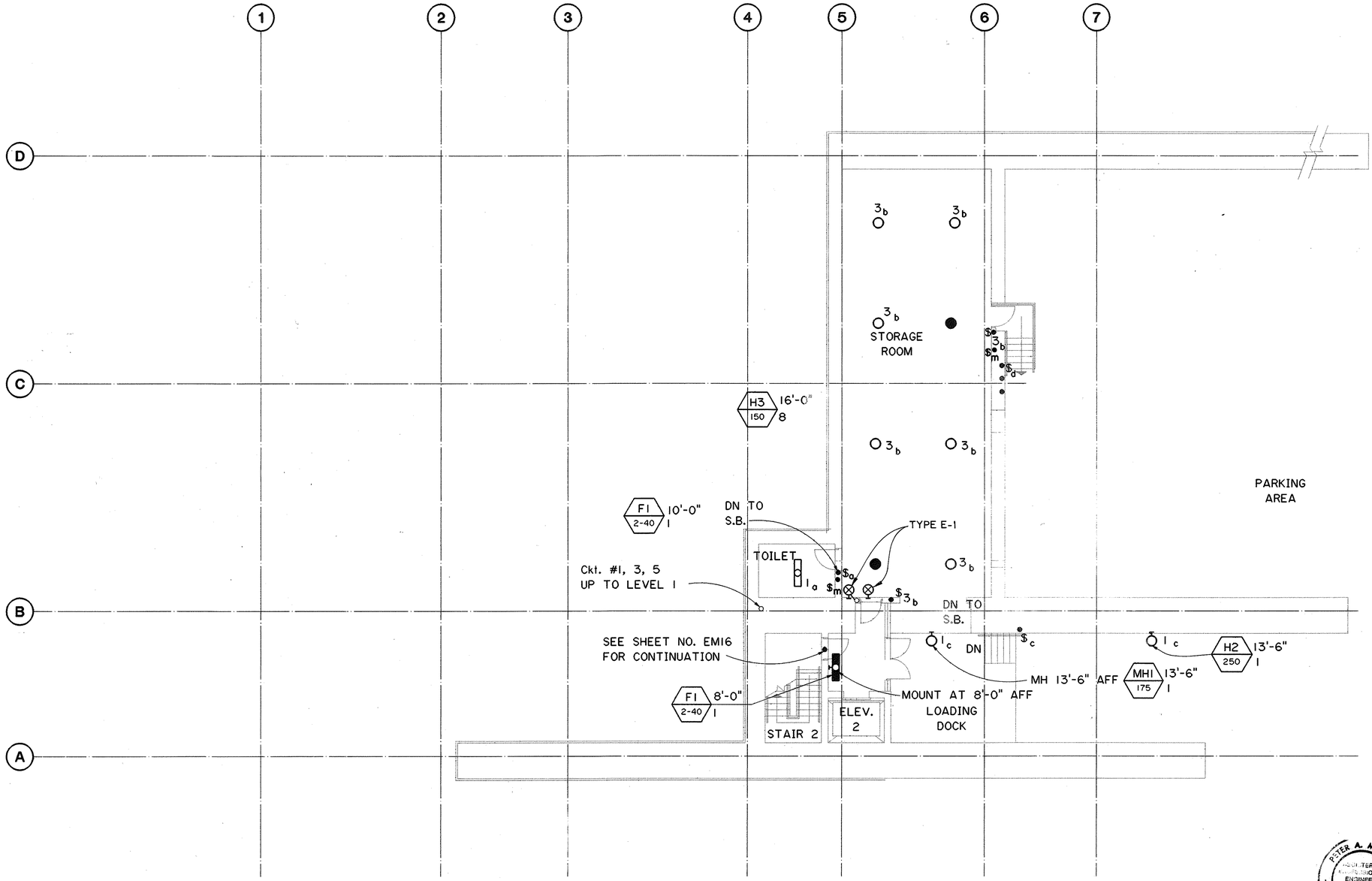
Peter A. Mason

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	256	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



FOR DETAIL AS-BUILT INFORMATION REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING LEVEL A PLAN

HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8"=1'-0" DATE: APR 1992

SHEET NO. EM14 OF 25 SHEETS

GRAPHIC SCALE
6' 4' 0' 8' 16'
1/8" = 1'-0"

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

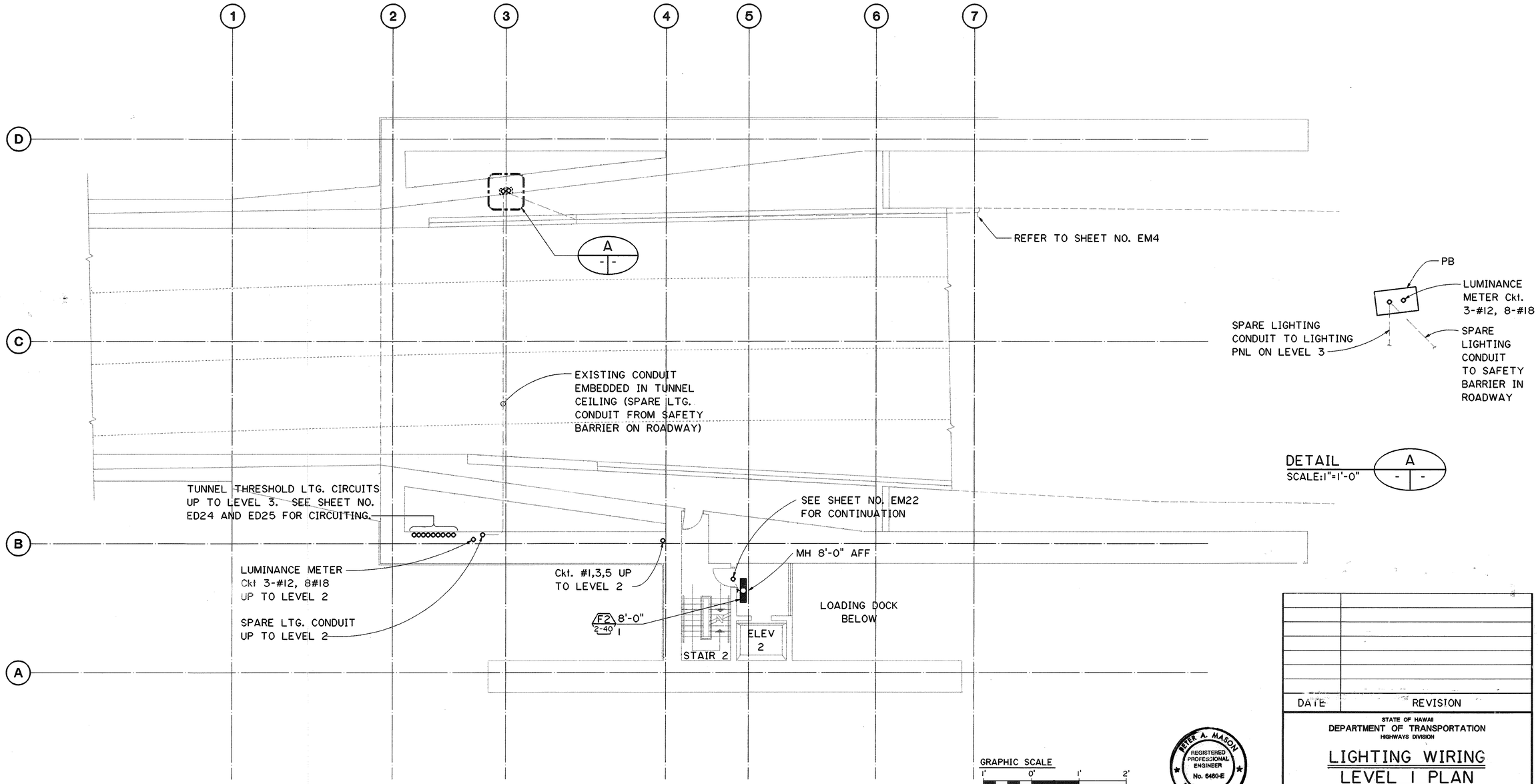
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	6/11/90
	TRACED BY	" "
NOTE BOOK	DESIGNED BY ROBERT F. JAMES	6/14/90
	QUANTITIES BY	" "
NO.	CHECKED BY J.J. SASSANI	6/24/90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	257	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



DETAIL A
SCALE: 1"=1'-0"

GRAPHIC SCALE
1' 0' 1' 2'
1" = 1'-0"

GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING LEVEL 1 PLAN

HAIKU PORTAL BUILDING-IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-(66)

SCALE: AS NOTED DATE: APR 1992

SHEET NO. EM15 OF 25 SHEETS

ORIGINAL PLANS	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	6/14/90
NOTE BOOK	TRACED BY	6/14/90
	DESIGNED BY ROBERT F. JAMES	6/14/90
NO.	QUANTITIES BY	6/14/90
	CHECKED BY J.J. SASSANI	6/14/90

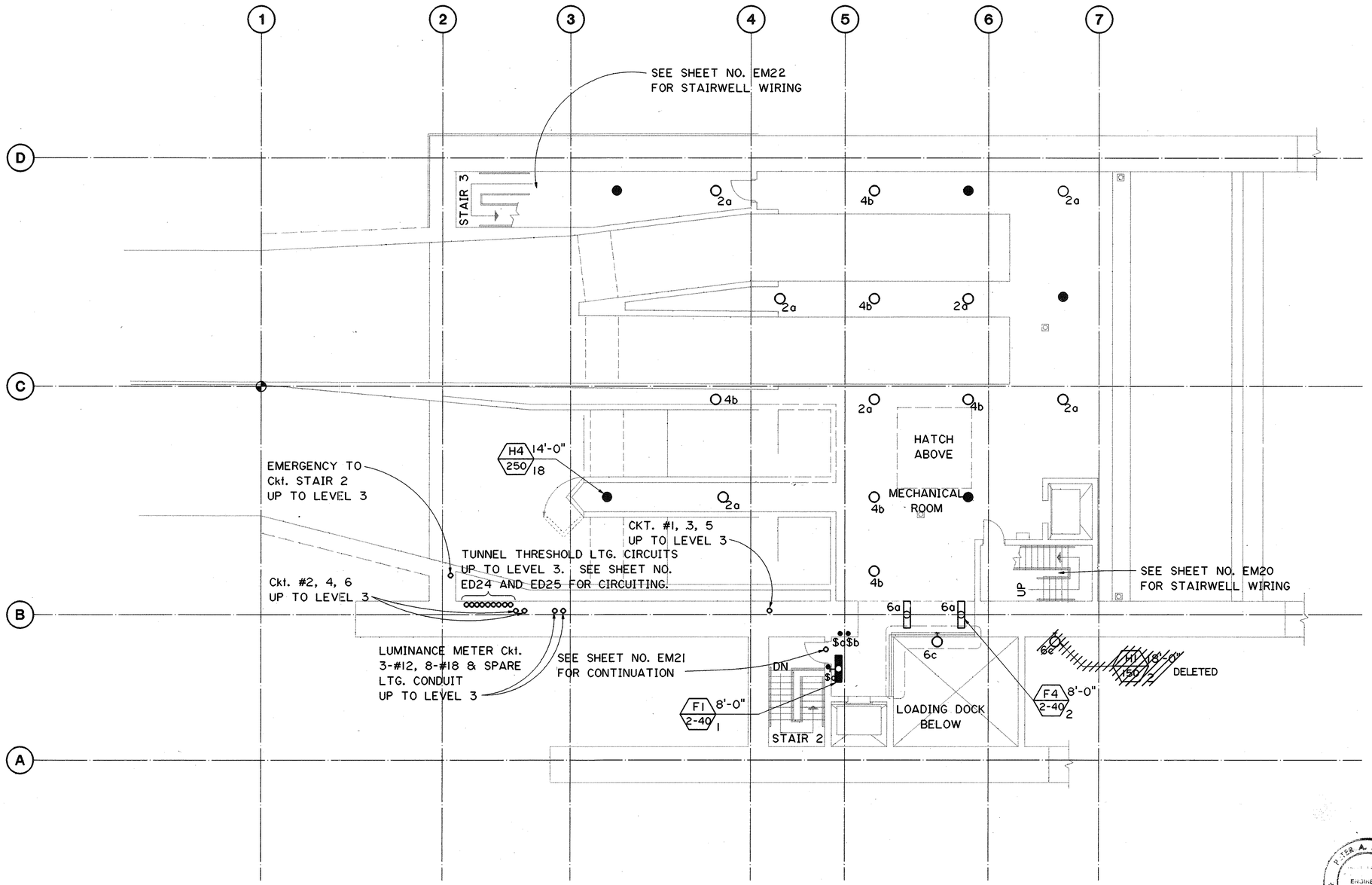
2410V152 2410: V152 ES0169.FGB;1 25JUN90-15.48.20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	258	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	5-4-90
	TRACED BY	
NOTE BOOK	DESIGNED BY ROBERT F. JAMES	1-8-90
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	6-26-90

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
LEVEL 2 PLAN
HAIKU PORTALBUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8"=1'-0" DATE: APR 1992

SHEET NO. EM16 OF 25 SHEETS

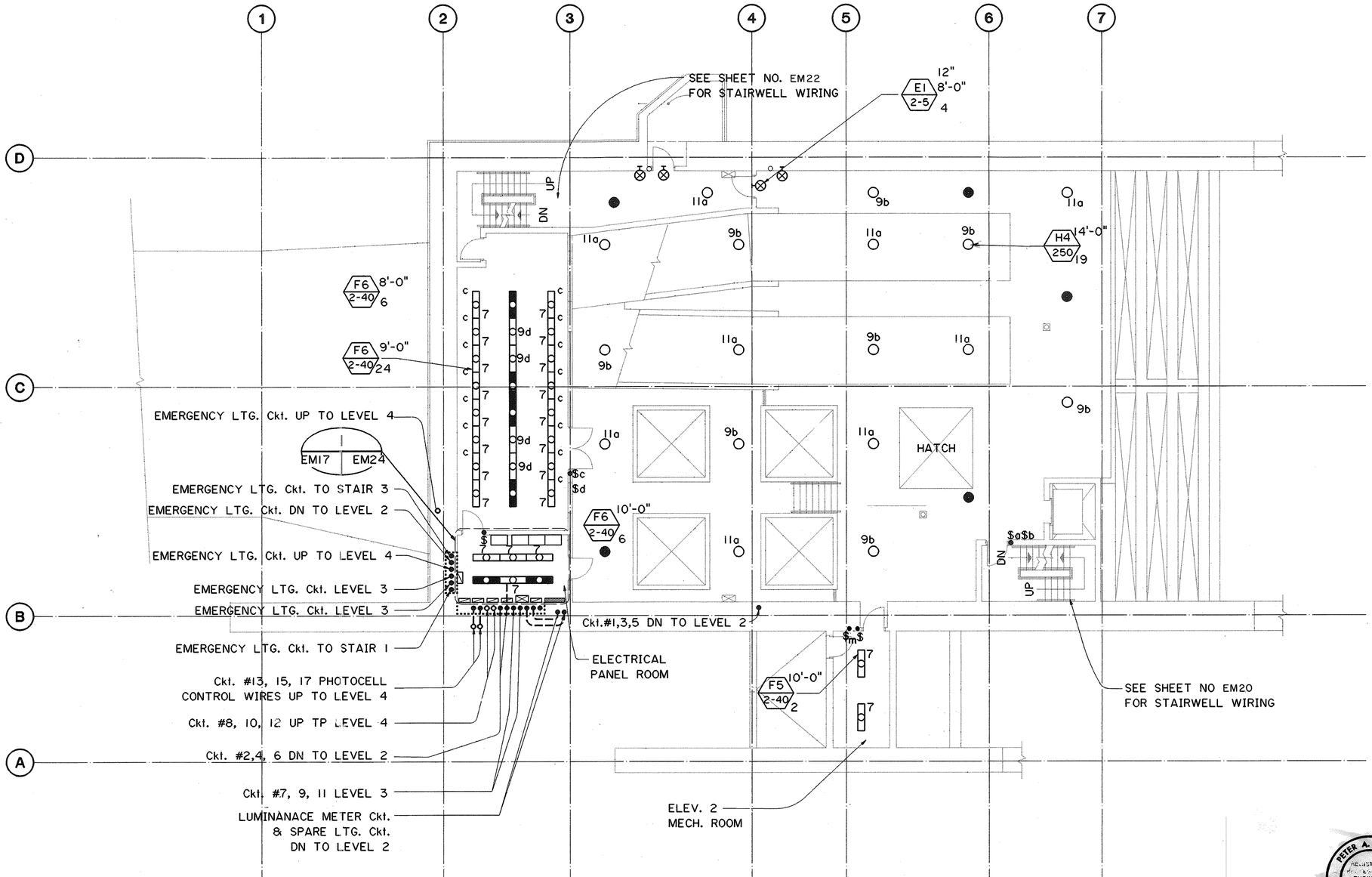
2410V152 2410: V152 ES0170.FGB#1 09JLY90-07.45.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	259	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
1/8" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	2/11/90
	TRACED BY	6/14/90
NOTE BOOK	DESIGNED BY ROBERT F. JAMES	
	QUANTITIES BY	6/24/90
NO.	CHECKED BY J. J. SASSANI	

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
LEVEL 3 PLAN
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SCALE: 1/8"=1'-0" DATE: APR. 1992

SHEET NO. EM17 OF 25 SHEETS

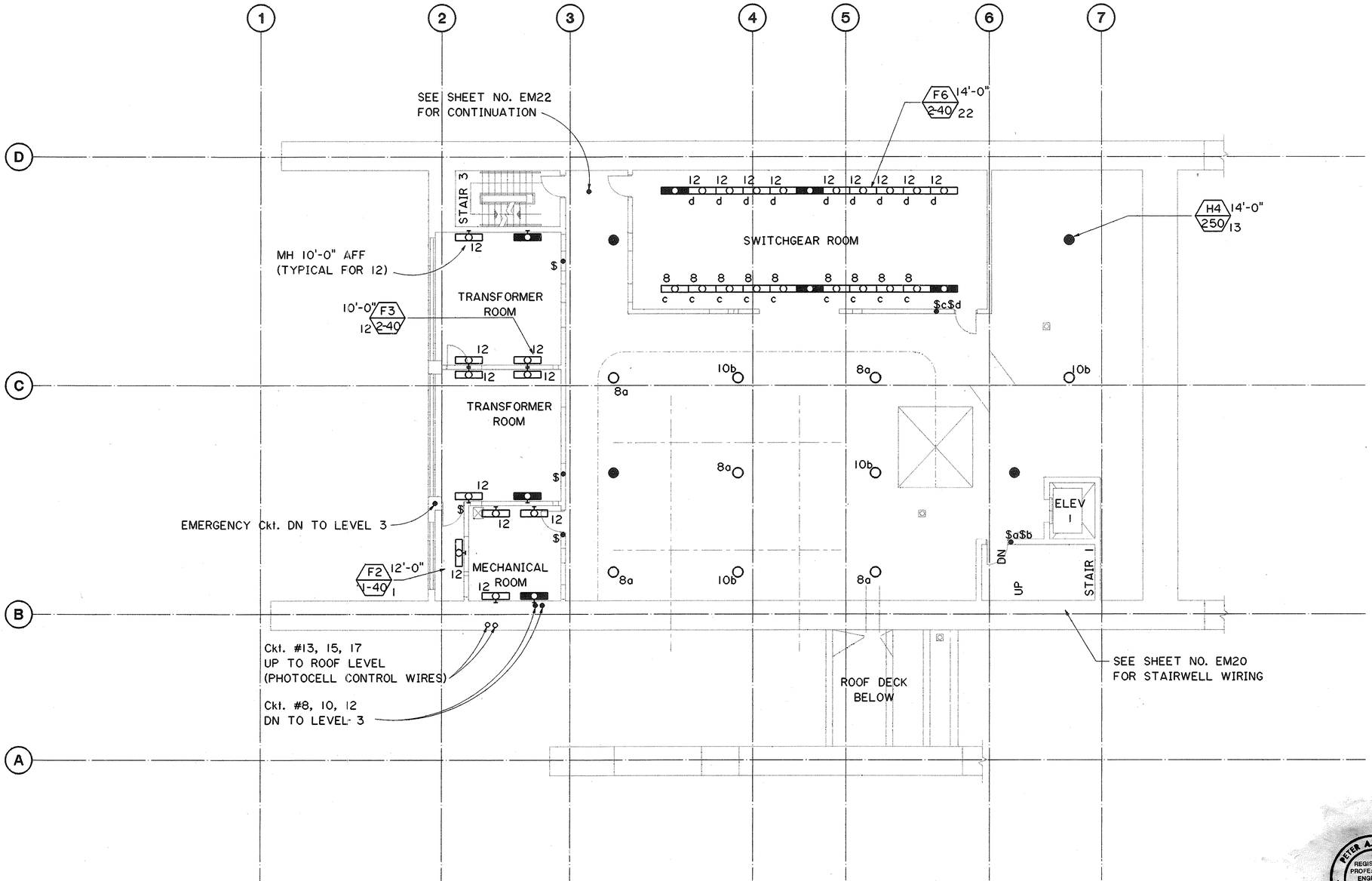
2410V152 2410: V152 ES0171.FGB#1 10JUL90-16.45.46

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	260	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

ORIGINAL PLAN	NOTE BOOK	NO.

SURVEY PLOTTED BY	
DRAWN BY	CADD 6/11/90
TRACED BY	6/14/90
DESIGNED BY	ROBERT F. JAMES 6/24/90
QUANTITIES BY	
CHECKED BY	J. J. SASSANI

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
LEVEL 4 PLAN
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

SCALE: 1/8"=1'-0" DATE: APR 1992

SHEET NO. EM18 OF 25 SHEETS

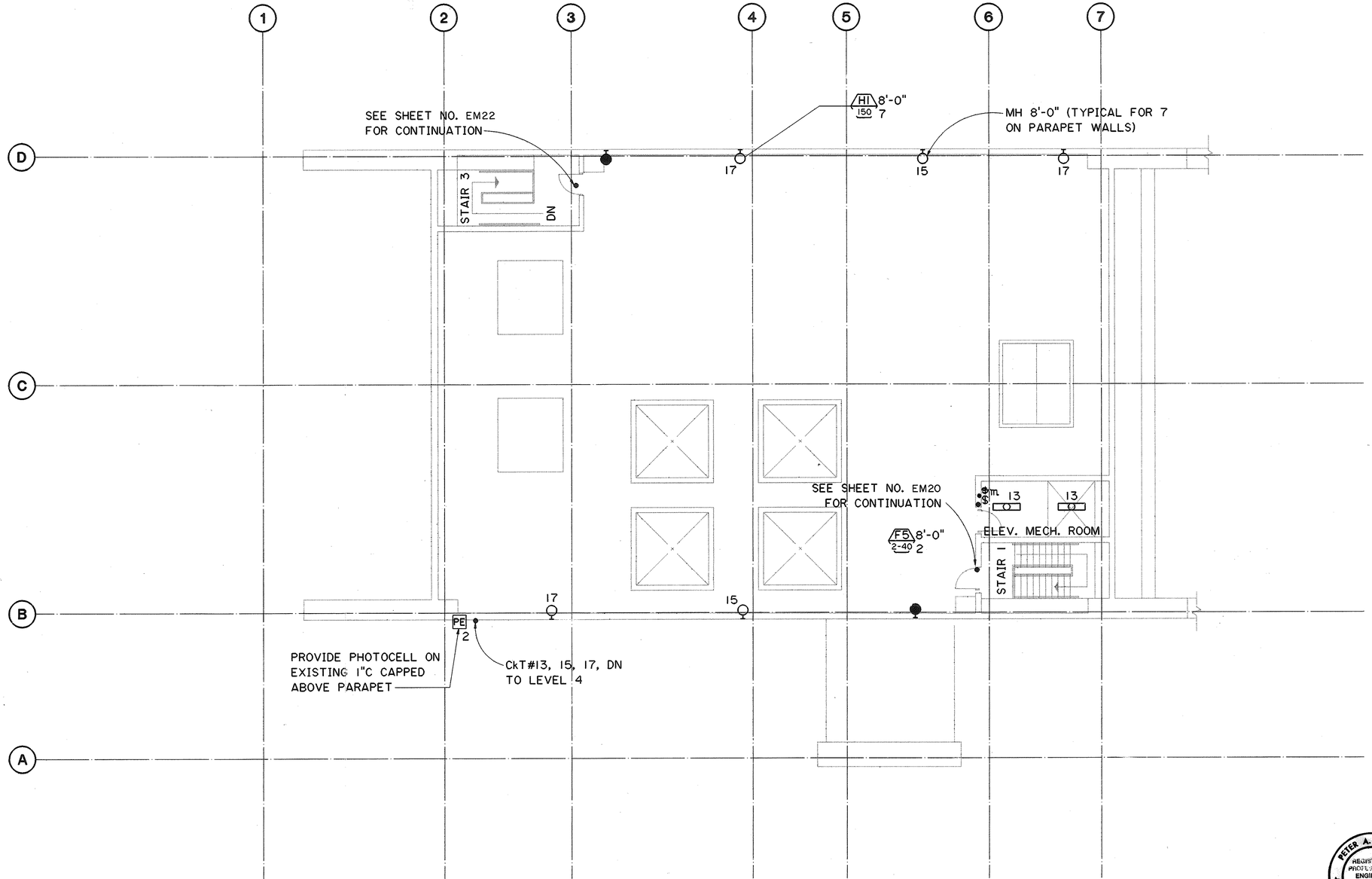
2410V152 2410: V152 ES0172.FGB>1 11JLY90-07.28.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	261	440

N

NOTES:

1. SEE SHT. NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
ROOF PLAN
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

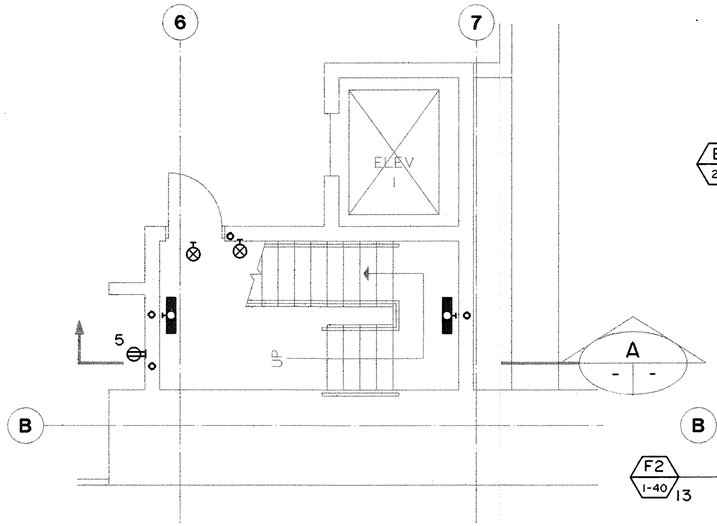
SHEET NO. EM19 OF 25 SHEETS

		DATE
SURVEY PLOTTED BY	CADD	6/11/90
DRAWN BY	"	6/14/90
TRACED BY	"	6/14/90
DESIGNED BY	ROBERT F. JAMES	6/24/90
QUANTITIES BY	"	"
CHECKED BY	J.J. SASSANI	"

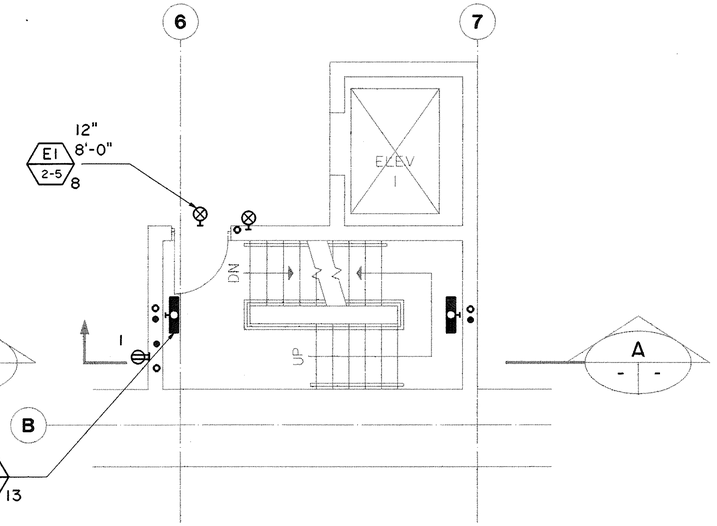
ORIGINAL PLAN
NOTE BOOK
NO.

2410V152 2410: V152 ES0173.F6B:1 10JLY90-16.05.20

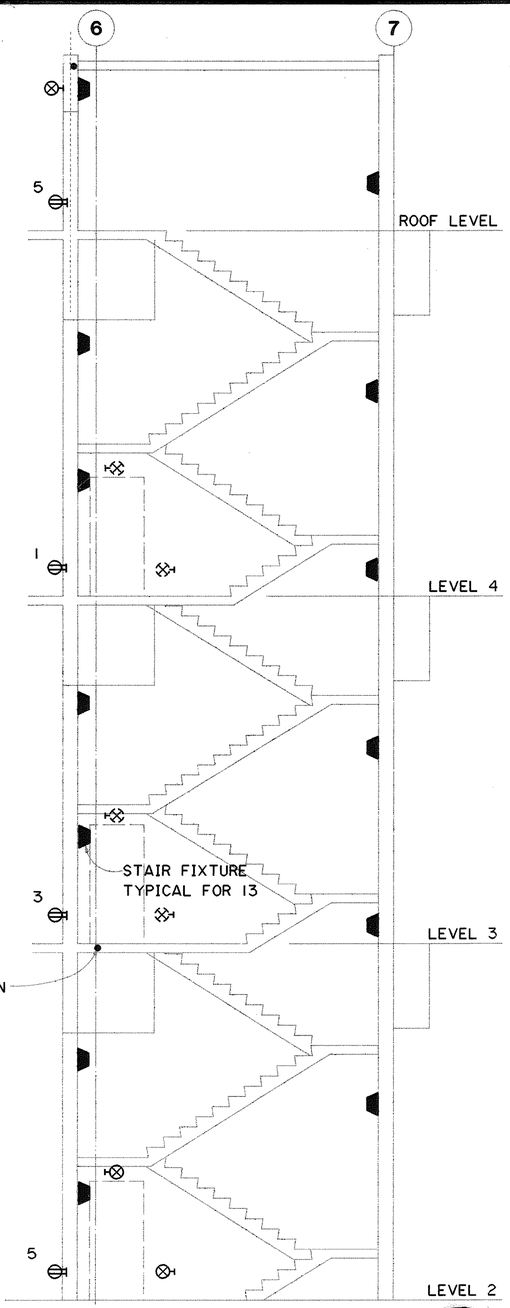
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	262	440



LEVEL 2 PLAN
SCALE: ¼"=1'-0"

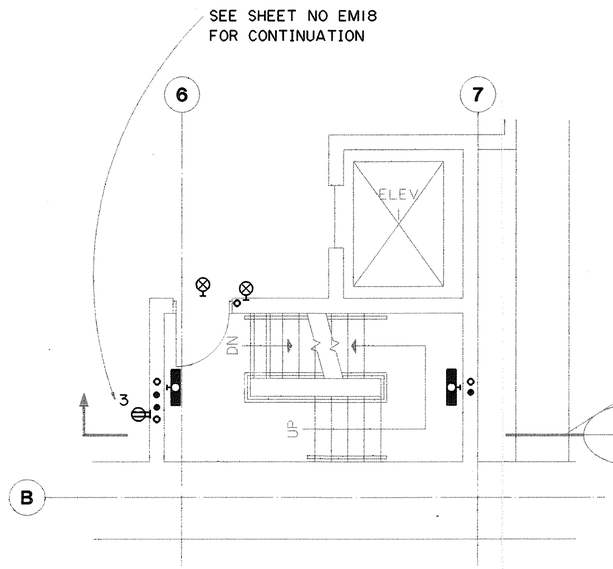


LEVEL 4 PLAN
SCALE: ¼"=1'-0"

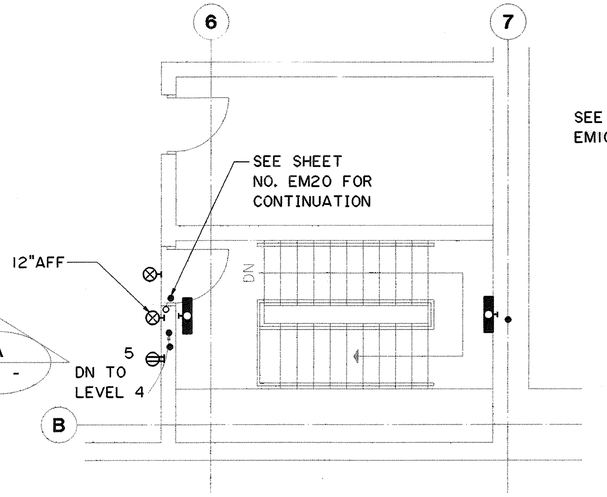


NOTE:
HANDRAILS NOT SHOWN FOR CLARITY.

STAIR SECTION A



LEVEL 3 PLAN
SCALE: ¼"=1'-0"



ROOF LEVEL PLAN
SCALE: ¼"=1'-0"

GRAPHIC SCALE
4' 2' 0' 4' 8'
¼" = 1'-0"

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.

⊗ EXIT SIGNS
INTERIOR — TYPE E-1
EXTERIOR — TYPE E-2

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING & RECEPTACLES
STAIR 1
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

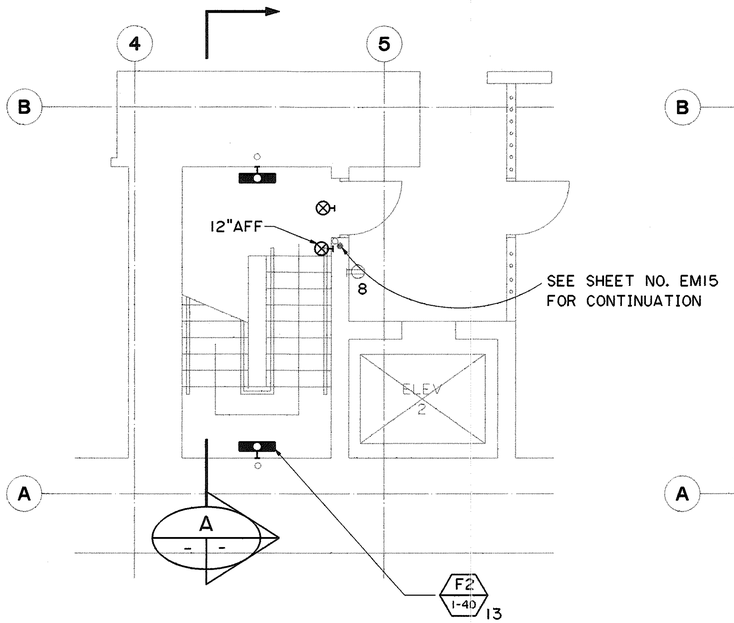
SCALE: AS NOTED DATE: APR 1992

SHEET NO. EM20 OF 25 SHEETS

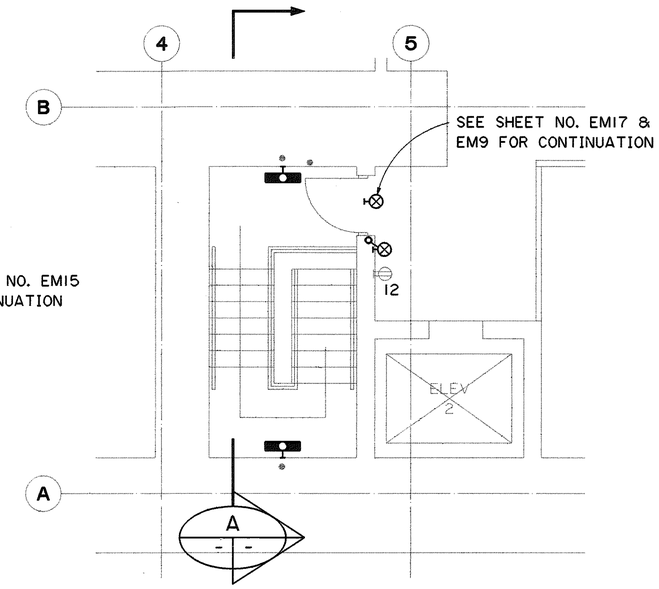
ORIGINAL PLAN		DATE:
	SURVEY PLOTTED BY	CADD 6/11/90
	DRAWN BY	6/14/90
	TRACED BY	
NOTE BOOK	DESIGNED BY	ROBERT F. JAMES 6/14/90
	QUANTITIES BY	6/24/90
NO.	CHECKED BY	J.J. SASSANI

2410V152 2410: V152 ES0174.FGB11 02JLY90-12.26.30

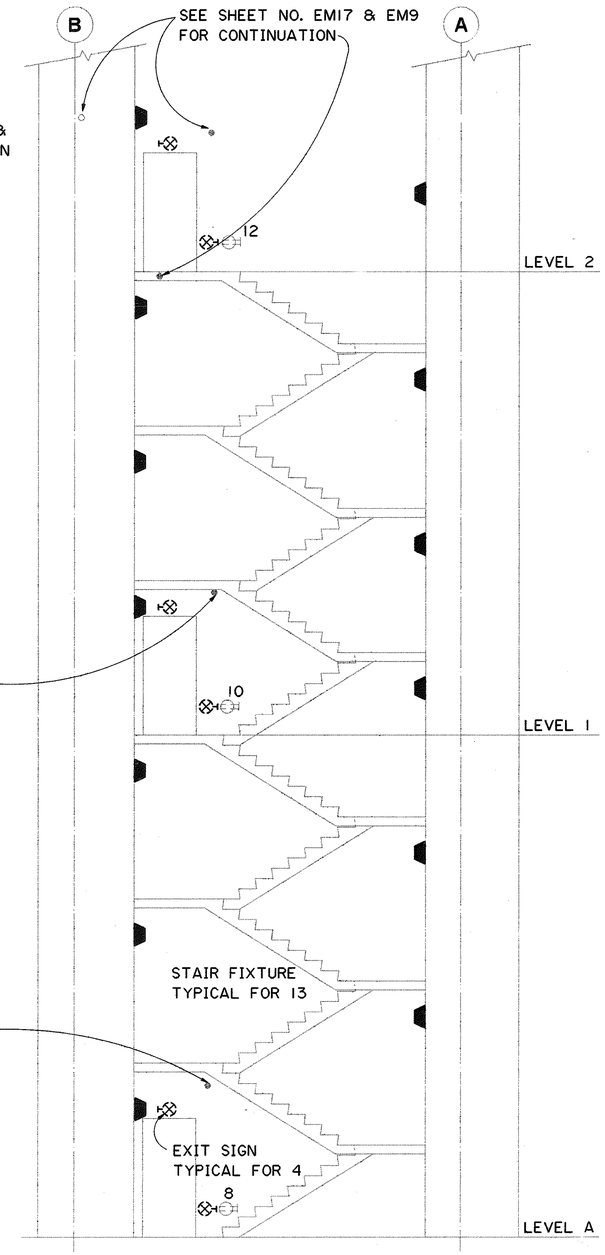
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	263	440



LEVEL A PLAN
SCALE: ¼"=1'-0"

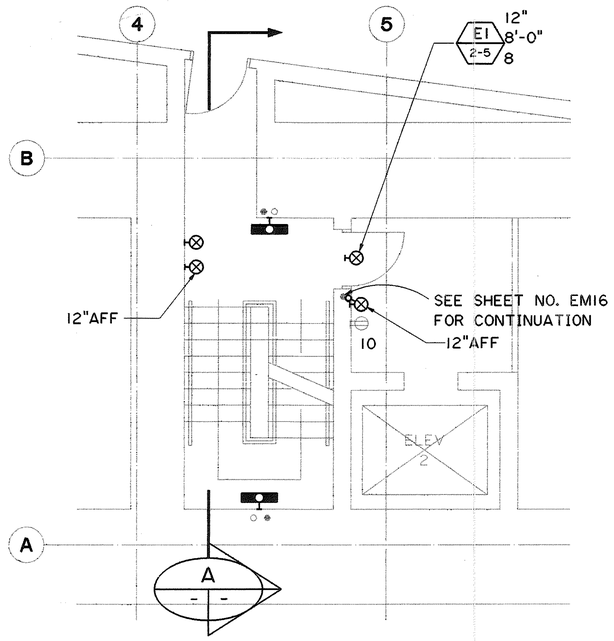


LEVEL 2 PLAN
SCALE: ¼"=1'-0"



NOTE:
HANDRAILS NOT SHOWN FOR CLARITY.

STAIR SECTION A



LEVEL 1 PLAN
SCALE: ¼"=1'-0"

GRAPHIC SCALE
4' 2' 0' 4' 8'
¼" = 1'-0"

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.

EXIT SIGNS
INTERIOR — TYPE E-1
EXTERIOR — TYPE E-2

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	6/11/90
NOTE BOOK	TRACED BY	
	DESIGNED BY ROBERT F. JAMES	6/14/90
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	6/22/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

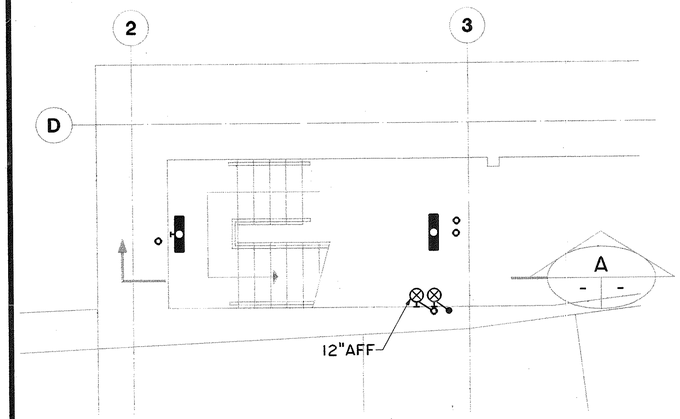
LIGHTING & RECEPTACLES
STAIR 2
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

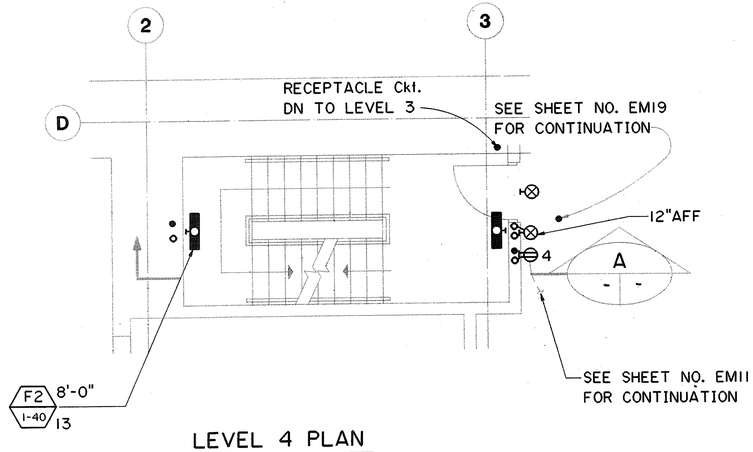
SHEET NO. EM21 OF 25 SHEETS

2410V152 2410: V152 ES0175.FGB:1 02JLY90-12.23.10

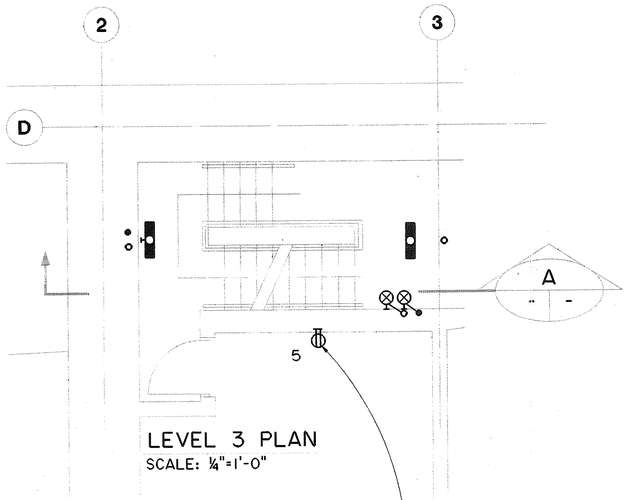
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	264	440



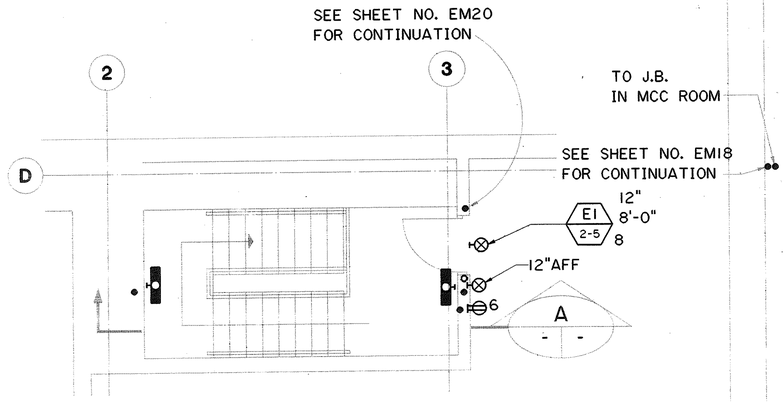
LEVEL 2 PLAN
SCALE: ¼"=1'-0"



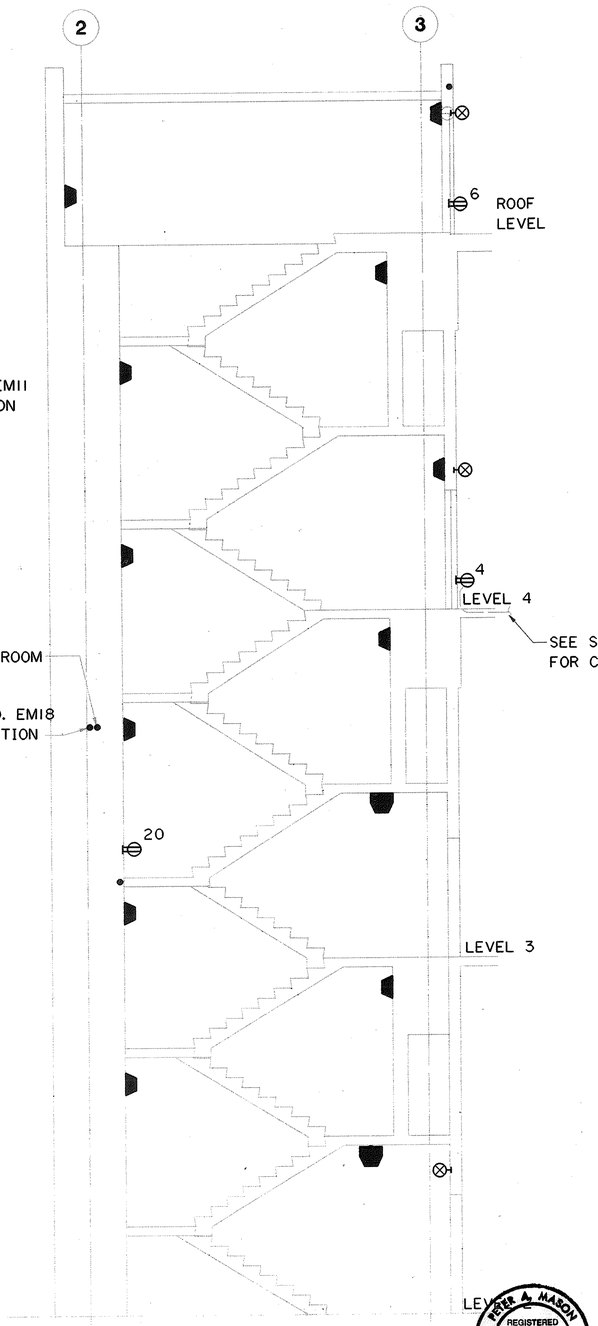
LEVEL 4 PLAN
SCALE: ¼"=1'-0"



LEVEL 3 PLAN
SCALE: ¼"=1'-0"



ROOF LEVEL PLAN
SCALE: ¼"=1'-0"



STAIR SECTION A

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.

EXIT SIGNS
INTERIOR — TYPE E-1
EXTERIOR — TYPE E-2

GRAPHIC SCALE
4' 2' 0' 4' 8'
¼" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	6/11/90
NOTE BOOK	TRACED BY	6/14/90
	DESIGNED BY ROBERT F. JAMES	6/14/90
NO.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	6/24/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING & RECEPTACLES
STAIR 3 PLAN
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

SCALE: AS NOTED DATE: APR 1992

SHEET NO. EM22 OF 25 SHEETS

2410V152 2410: V152 ES0176.FGB:1 02 NOV90-12 10:30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	265	440

SYSTEM: 480Y/277V 3Ø 4W **PANEL –** IB3HL1 **PANEL LOCATION:** ELECT. ROOM, LEVEL 3, HAIKU IB
MAINS: 125A LUGS ONLY **SUPPLY LOCATION:** PANEL IB3HP ELECT. ROOM, LEVEL 3, HAIKU IB
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD kVA A	B	C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	B	C	CKT. NO.	SERVICE
LEVEL 4	1	0.54			100	1	20	#12				#12	100	1	20	2.17			2	LEVEL 2
	3		1.20														1.86		4	
	5			1.86														0.58	6	
LEVEL 3	7	1.98														2.36			8	LEVEL 4
	9		2.34														1.24		10	
	11			2.76														1.64	12	
ROOF	13	0.18																	14	SPARE
	15		0.40																16	SPARE
	17			0.60															18	SPACE
T4-5	19	5.82																	20	SPACE
	21		6.93		3	35	#8												22	SPACE
	23			6.64															24	SPACE
SPACE	25																		26	SPACE
	27																		28	
	29																		30	
		8.52	10.87	11.86												4.53	3.10	2.22		

	A	B	C
TOTAL CONNECTED	13.05	13.97	14.08
ESTIMATED MAXIMUM DEMAND	13.05	13.97	14.08

TOTAL CONNECTED 41.10 kVA
ESTIMATED MAXIMUM DEMAND 41.10 kVA

SYSTEM: 208Y/120V 3Ø,4W **PANEL –** IB3LP **PANEL LOCATION:** ELECT. ROOM, LEVEL 3, HAIKU IB
MAINS: 125A LUGS ONLY **SUPPLY LOCATION:** PANEL IB3HL1 VIA XFMR T4-5 ELECT. ROOM, LEVEL 3, HAIKU IB
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	B	C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	B	C	CKT. NO.	SERVICE
LEVEL 3 & STAIR 1	1	0.90			100	1	20	#12				#12	100	1	20	0.90			2	LEVEL 4 & STAIR 3
	3		1.08														1.08		4	
	5			1.08														0.90	6	
LEVEL A	7	0.68														0.72			8	LEVEL 2 & STAIR 2
	9		0.70														0.54		10	
	11			0.81														0.54	12	
ROOF	13	0.40										#12				2.0			14	600V SWGR
	15		0.40										3	20			2.0		16	HEATER
	17			0.40														2.0	18	
MCC HEATER	19	1.5										#12		2	20	0.3			20	XFMR DISC.
15kV SWGR	21		2.7		2	30	#10										0.3		22	HEATER
HEATER	23			2.7								10		1	40			3.0	24	WATER HEATER
ELEV #1 LIGHTS	25	0.2			1	20	#12							1	20				26	SPARE
ELEV #2 LIGHTS			0.2		1	20	#12							1	20				28	SPARE
		3.68	5.08	4.99												3.92	3.92	6.44		

TOTAL CONNECTED 28.03 kVA
ESTIMATED MAXIMUM DEMAND 22.07 kVA

	A	B	C
	7.60	9.00	11.43
	5.98	7.09	9.00

SYSTEM: 277V 1Ø, 3W *PANEL – IB3LEI **PANEL LOCATION:** ELECTRICAL ROOM, LEVEL 3, HAIKU IB
MAINS: 125A SUBFEED(DUAL) MAIN LUGS **SUPPLY LOCATION:** PANEL IB3HP ELECT. ROOM, LEVEL 3, HAIKU IB & CP9HP, CP # 9
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG		WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD	CKT. NO.	SERVICE
LEVEL 1, LEVEL 1, & LEVEL 2	1	2.99	100	1	20	#12		#12	100	1	20	2.05	2	STAIR 2 & LEVEL 3
STAIR 1 & ROOF	3	0.97	100	1	20	#12		#12	100	1	20	0.97	4	STAIR 3 & ROOF
LEVEL 4	5	1.60	100	1	20	#12		#12	100	1	20	0.87	6	TNL.,ENTRANCE LTG.
ENTRANCE LTG. CONTROL	7	1.00	100	1	20	#12		#12	100	1	20	0.50	8	LUMINANCE METER POWER SUPPLY
SPARE	9		100	1	20				100	1	20		10	SPARE
SPARE	11			1	20					1	20		12	SPARE
SPARE	13			1	40								14	SPACE
SPACE	15												16	SPACE
SPACE	17												18	SPACE
		6.56										4.39		

TOTAL CONNECTED 10.95 kVA
ESTIMATED MAXIMUM DEMAND 10.95 kVA

10.95
10.95

* – JUMPER ALL PHASES TOGETHER

SYSTEM: 120/240V 1Ø 3W **PANEL –** IB3SE **PANEL LOCATION:** ELECT. ROOM, LEVEL 3, HAIKU IB
MAINS: 60 AT/100 AF **SUPPLY LOCATION:** ATS
SHORT CIRCUIT RATING: 10 KAIC ELECT. ROOM, LEVEL 3, HAIKU IB

SERVICE	CKT. NO.	LOAD kVA A	B	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	B	CKT. NO.	SERVICE
	1				1	20							1	20			2	
	3																4	
	5																6	
	7				↓	↓							↓	↓			8	
SPACE	9																10	SPACE
↓	11																12	↓

NOTE
SERVICE CONNECTIONS TO THIS PANEL ARE PART OF CONTRACT F.A.I. PROJ. NO. I-H3-1(65)

TOTAL CONNECTED kVA
ESTIMATED MAXIMUM DEMAND kVA

A	B	C

ORIGINAL PLAN	SURVEY PLOTTED BY	CADD	DATE	6/10/90
	DRAWN BY			
NOTE INDIC.	TRACED BY	T. SANCHEZ		5/12/90
	DESIGNED BY			
No.	QUANTITIES BY			6/24/90
	CHECKED BY	J.T. GASSAWAY		

12/22/94	REVISED PER DCN 66-055
12/21/94	REVISED PER DCN 66-044
12/16/94	REV. PER DCN 66-055
10/19/94	REV. PER DCN 66-053
6/7/94	REVISED PER DCN 66-044
8/19/93	REVISED SCHEDULES PER DCN 66-017
DATE	REVISION

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PANEL SCHEDULES

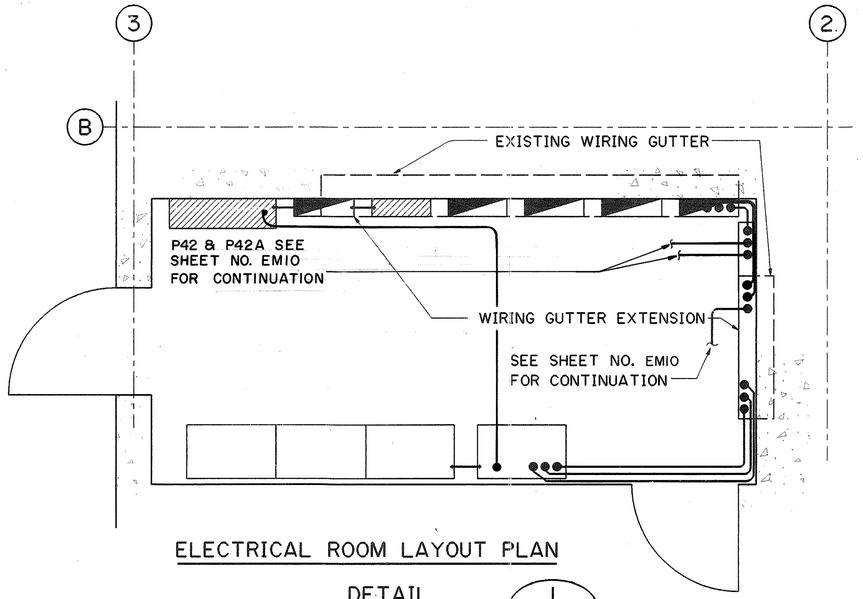
HAIKU PORTAL BUILDING (IB)

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EM 23 OF 25 SHEETS

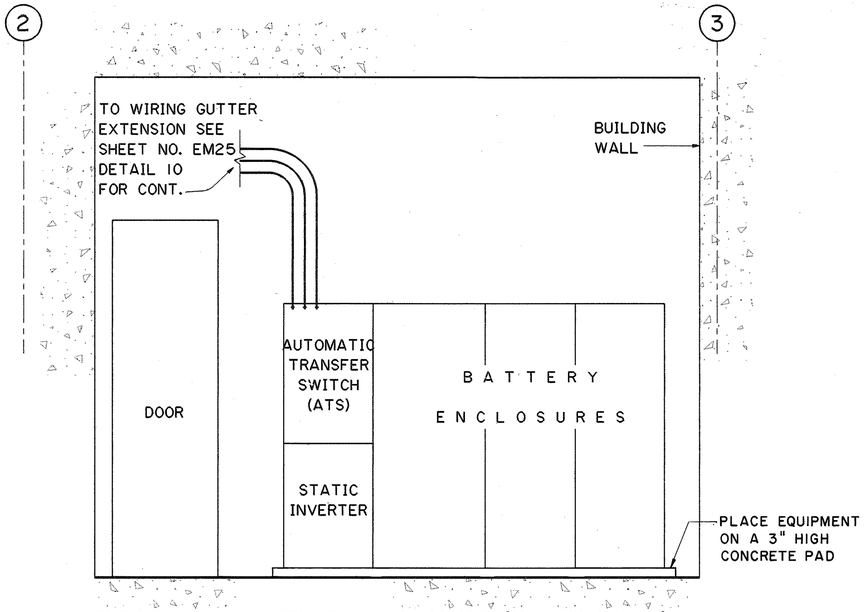
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	266	440



ELECTRICAL ROOM LAYOUT PLAN

DETAIL 1 (EM17 | EM24)

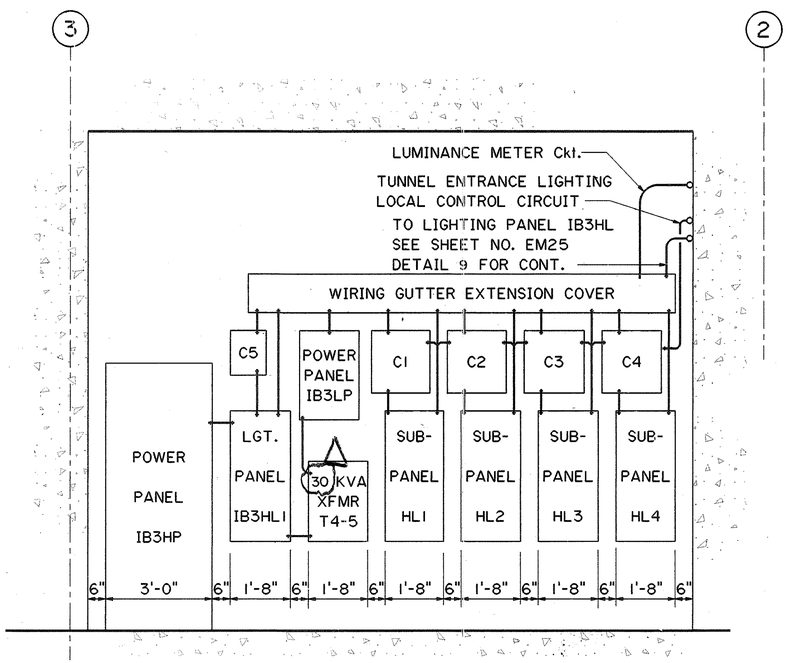
SCALE: ½" = 1'-0"



ELECTRICAL PANEL ROOM LAYOUT (NORTH WALL)

DETAIL 6 (- | -)

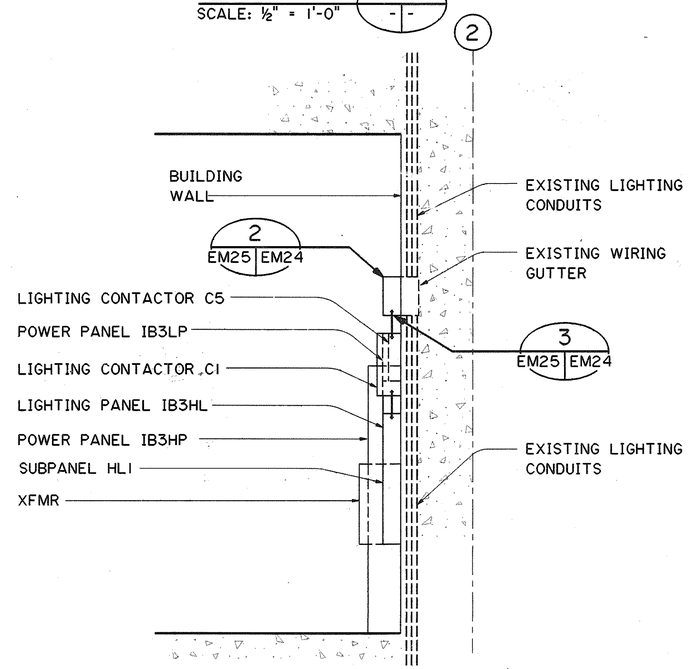
SCALE: ½" = 1'-0"



ELECTRICAL ROOM LAYOUT (SOUTH WALL)

DETAIL 5 (- | -)

SCALE: ½" = 1'-0"



ELECTRICAL PANEL ROOM LAYOUT (PROFILE VIEW)

DETAIL 4 (- | -)

SCALE: ½" = 1'-0"

GRAPHIC SCALE

2' 1' 0' 2' 4'

½" = 1'-0"

NOTES:

1. WIRING GUTTER EXTENSIONS & COVER SHALL BE FABRICATED WITH CODE GAGE STEEL HOT DIP GALVANIZED AFTER FABRICATION. ENCLOSURE CLASSIFICATION SHALL BE NEMA 4.
2. WIRING GUTTER EXTENSION TO PANEL, & PANEL TO PANEL CONNECTION PROVIDE 3" NIPPLE (OR CONDUIT) WITH LOCKOUT & BUSHINGS.
3. SEE SHT. NO. EM5 & EQ5 FOR PANEL OB3HP & OB3HP CONDUIT LAYOUT CONNECTIONS RESPECTIVELY.

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	CADD	6/10/90
	TRACED BY		
	DESIGNED BY	T.Y.S./R.F.J.	6/14/90
NOTE BOOK	QUANTITIES BY		6/24/90
NO.	CHECKED BY	J.J. SASSANI	

6/7/94	REVISED PER DCN 66-044
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING INSTALLATION
DETAILS - 1
HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ NO. I-H3-1(66)

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

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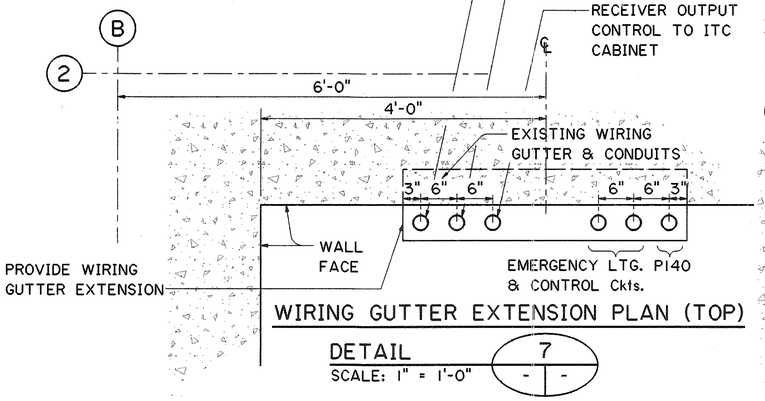
Peter A. Mason

SCALE: AS NOTED DATE: APR 1992

SHEET NO. EM24 OF 25 SHEETS

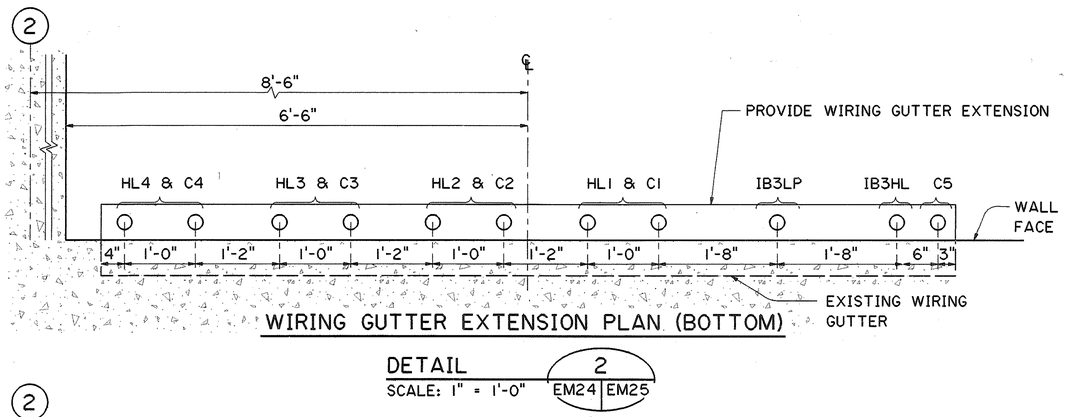
2410V152 2410: V152 ES0272.FGB:1 10JLY90-16.53.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	267	440



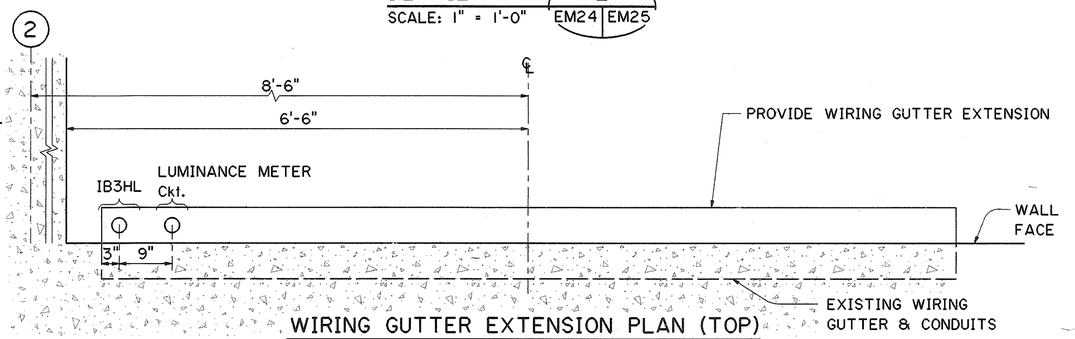
WIRING GUTTER EXTENSION PLAN (TOP)

DETAIL 7 — SCALE: 1" = 1'-0" — - | -



WIRING GUTTER EXTENSION PLAN (BOTTOM)

DETAIL 2 — SCALE: 1" = 1'-0" — EM24 | EM25

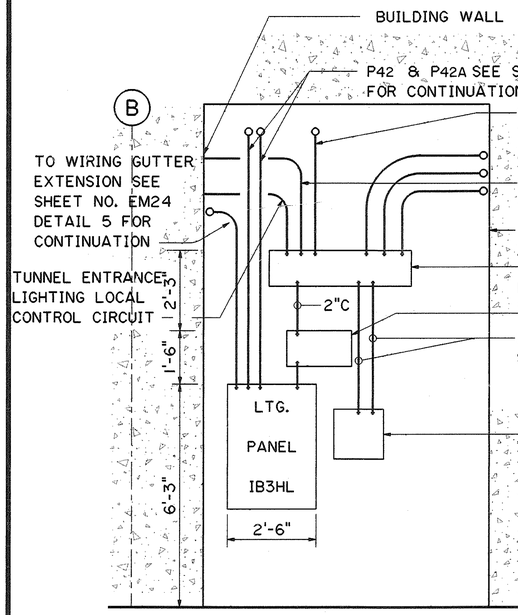


WIRING GUTTER EXTENSION PLAN (TOP)

DETAIL 3 — SCALE: 1" = 1'-0" — EM24 | EM25

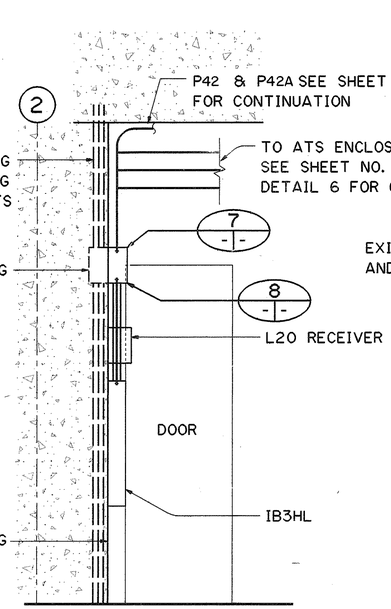
NOTES:

SEE SHEET NO. EM24 FOR NOTES.



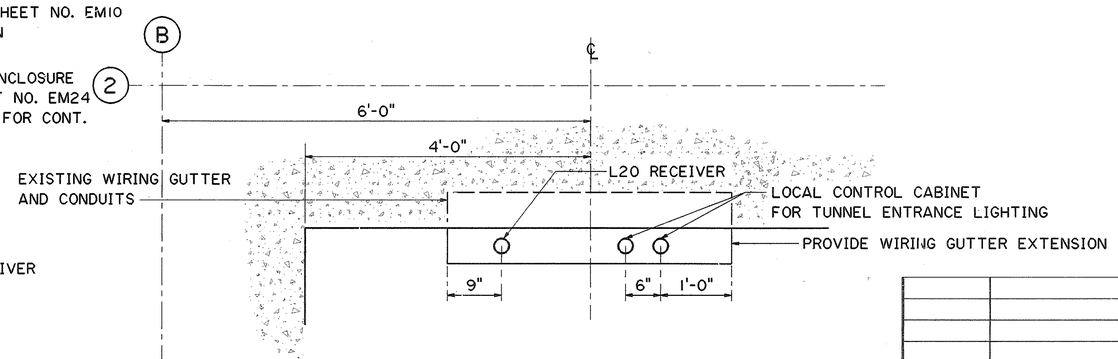
ELECTRICAL ROOM LAYOUT (EAST WALL)

DETAIL 9 — SCALE: ½" = 1'-0" — EM24 | EM25



ELECTRICAL PANEL ROOM LAYOUT (PROFILE VIEW)

DETAIL 10 — SCALE: ½" = 1'-0" — EM24 | EM25



WIRING GUTTER EXTENSION PLAN (BOTTOM)

DETAIL 8 — SCALE: 1" = 1'-0" — - | -

GRAPHIC SCALE
1' 0' 1' 2'
1" = 1'-0"

GRAPHIC SCALE
2' 1' 0' 2' 4'
½" = 1'-0"

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING INSTALLATION DETAILS - 2

HAIKU PORTAL BUILDING - IB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

SHEET NO. EM25 OF 25 SHEETS

PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6480-E — HAWAII, U.S.A.

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Peter A. Mason

ORIGINAL PLANS	SURVEY PLOTTED BY	DATE
	SURVEY BY	
NOTE BOOK	TRACED BY CADD	6/11/90
	DESIGNED BY T.Y.S./R.F.J.	6/14/90
NO.	QUANTITIES BY	
	CHECKED BY J.T. SASSANI	6/24/90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	268	440

HAIKU 15 kV SWGR BUS "A"
SEE SHEET NO. ED8

NOTE 3

89T1-7

KI — EI 15kV 600A

ANN. 26Q
SPARE 49 W-1
ANN. 49 W-2
TRIP 52-1 49 W-3
86T 63 GAS

15kV

TRANSFORMER T1-7
2500/2800kVA OA (SILICONE)
12.47kV-480V
55/65°C Z=5.75%

BUS DUCT "A"
600V 4000A 3Ø 4W ½N
65kA

480V SWITCHGEAR

480-120V
1A 6A
27 A
TRIP 52-1

A AS 4000-5A
0-4000A

SWGR
CS
VS V 0-600V
V XDC V CONTROL ROOM

52-1
1600AF 1500AT INST.
4000AF 4000AT LSG
EO EI
CONTROL ROOM CS

52-3
4000AF 4000AT
EI
LSG N.O.
EO CS SWGR
CS CONTROL ROOM

600V 65kVA ISC
4000A 3Ø 4W 480V

65kA RMS SYM. I.C.

BUS A

3-1/C
500kCMIL 4"C
& 1-3/0 G
P80

1600AF 600AT EO
225AF 150AT FCLB

FCLB
FIRE PUMP FP-4
200

6-350kCMIL & 1/0G-4"C

4-1/0 & 1/0G-2"C

P7 P8 P9 P10 P74 P76 P11 P12 P13 P14

AFC
AUX. MCC

P33 P36 P15 P21 P18 P24 P27 P30

6-350kCMIL & 1/0G-4"C

800A NA

MH KW 300

SUPPLY FAN TF-31
SUPPLY FAN TF-32
EXHAUST FAN TF-25
EXHAUST FAN TF-27
EXHAUST FAN TF-26
EXHAUST FAN TF-28
SUPPLY FAN TF-29
SUPPLY FAN TF-30

HAIKU 15 kV SWGR BUS "B"
SEE SHEET NO. ED8

NOTE 3

89T1-8

KI — EI 15kV 600A

ANN. 26Q
SPARE 49 W-1
ANN. 49 W-2
TRIP 52-2 49 W-3
86T 63 GAS

15kV

TRANSFORMER T1-8
2500/2800kVA OA (SILICONE)
12.47kV-480V
55/65°C Z=5.75%

BUS DUCT "B"
600V 4000A 3Ø 4W ½N
65kA

480-120V
1A 6A
27 B
TRIP 52-2

A AS 4000-5A
0-4000A

SWGR
CS
VS V 0-600V
V XDC V CONTROL ROOM

52-2
1600AF 1500AT INST.
4000AF 4000AT LSG
EI EO
CONTROL ROOM CS

BUS B

1600AF 600AT EO

250AF
225AF
FCLB

4-1/C+G
250KCMIL
3"C P42
P&LP
PORTAL

3-1/C
500kCMIL 4"C
& 1-3/0 G
P81

FCLB
200 FIRE PUMP FP-5
SEE NOTE 4

NOTES:

1. FOR NOTES SEE SHEET NO. EN1
2. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13
3. PROVIDE AUXILIARY CONTACT IN HIGH VOLTAGE DISCONNECT FOR SYSTEMS INTERFACE.

6/7/94	REVISED PER DCN 66-044
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM
HAIKU OB SUBSTATION
HAIKU PORTAL BUILDING - OB

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EQ1 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

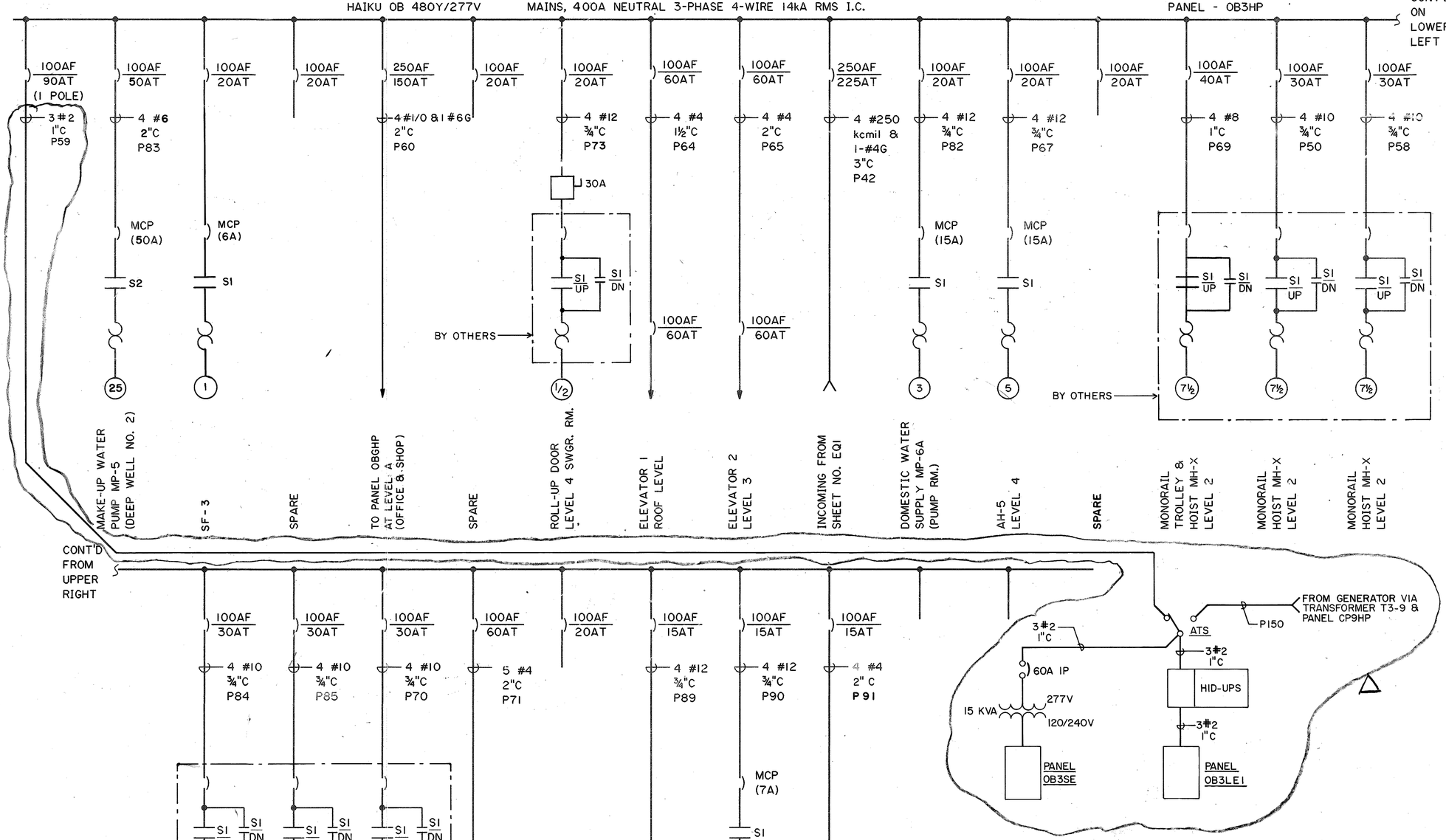
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Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 6-13-90
	DRAWN BY CADD	
NOTE BOOK	TRACED BY	12/14/90
	DESIGNED BY R. JAMES	
NO.	QUANTITIES BY	
	CHECKED BY J.T. SASSANI	2/18/91

2410V154 2410: V154 FS00054.FGB;1 10JLY90-09.39.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	269	440



NOTES:

1. THE NUMBER OF WIRES SHOWN FOR EACH CONDUIT INCLUDES ONE GROUNDING WIRE UNLESS NOTED OTHERWISE.
2. SOME FEEDER CABLES SHARE COMMON CONDUIT RISERS AS SHOWN ON POWER WIRING LEVEL 3 PLAN.
3. ALL CB'S ARE THREE (3) POLE UNLESS NOTED OTHERWISE.

ABBREVIATIONS:

MCP	MOTOR CIRCUIT PROTECTOR
SI	SIZE 1 MOTOR STARTER
S2	SIZE 2 MOTOR STARTER

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	5-18-90
	TRACED BY	5-14-90
NOTE BOOK	DESIGNED BY R. JAMES	
	QUANTITIES BY	6-26-90
NO.	CHECKED BY J.J. SASSANI	

DATE	REVISION
12/21/94	REVISED PER DCN 66-044
3/9/94	ADDED PER DCN 66-039
8/19/93	REVISED SCHEDULES PER DCN 66-017

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM
480Y/277V POWER
HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EQ2 OF 25 SHEETS

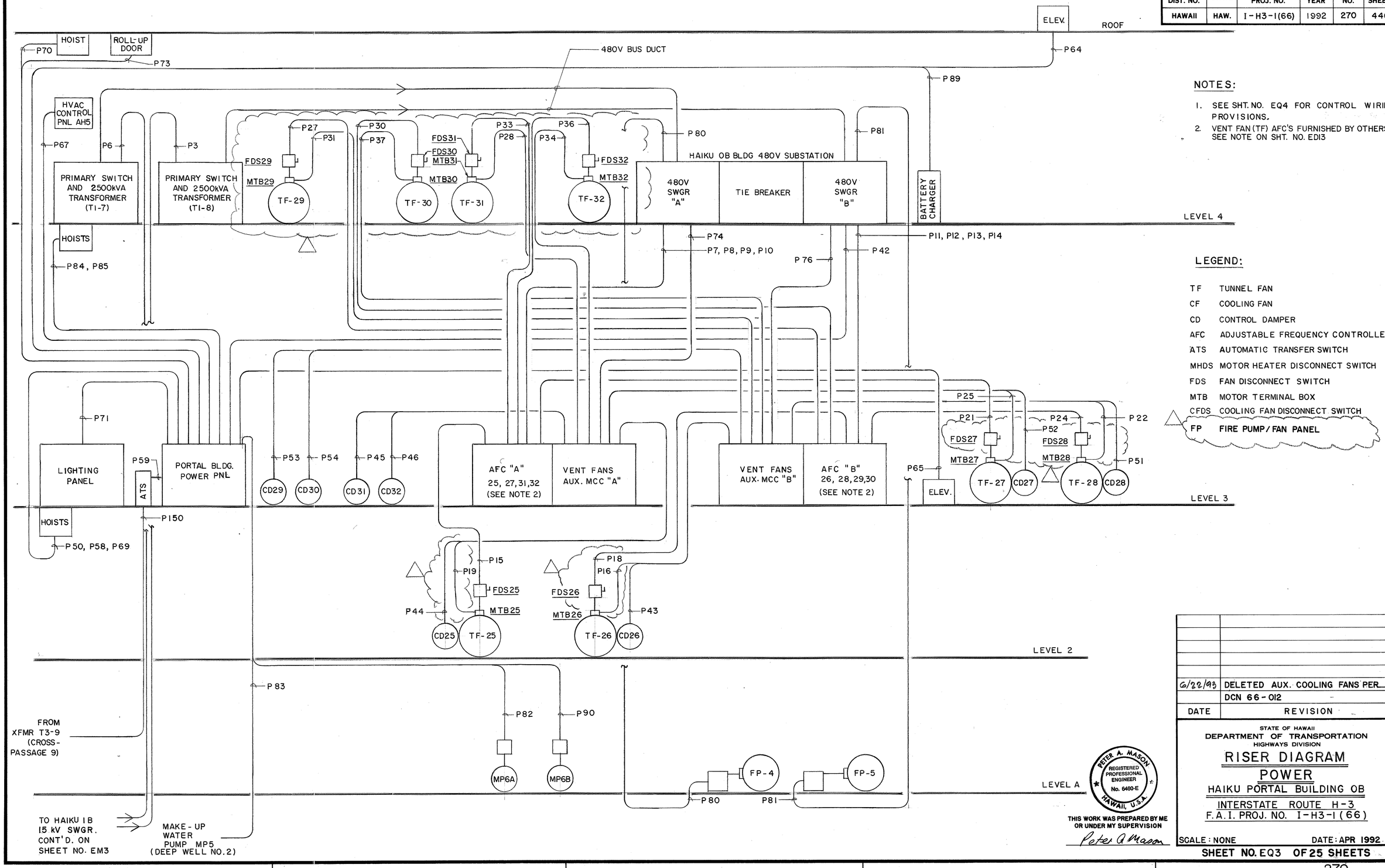
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6400-E HAWAII, U.S.A.

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Peter A. Mason

2410V152 2410: V152 ES0277.FGB:1 09JLY90-14.13.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	270	440



NOTES:

1. SEE SHT. NO. EQ4 FOR CONTROL WIRING PROVISIONS.
2. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13

LEGEND:

TF	TUNNEL FAN
CF	COOLING FAN
CD	CONTROL DAMPER
AFC	ADJUSTABLE FREQUENCY CONTROLLER.
ATS	AUTOMATIC TRANSFER SWITCH
MHDS	MOTOR HEATER DISCONNECT SWITCH
FDS	FAN DISCONNECT SWITCH
MTB	MOTOR TERMINAL BOX
CFDS	COOLING FAN DISCONNECT SWITCH
FP	FIRE PUMP/FAN PANEL

ORIGINAL PLAN	NOTE BOOK	No.	SURVEY PLOTTED BY	DRAWN BY	TRACED BY	DESIGNED BY	QUANTITIES BY	CHECKED BY	DATE
				R. CUADRO		T. A. HORTON		J. I. SASSANI	6/19/90 5/24/90 6/26/90

DATE	REVISION
6/22/93	DELETED AUX. COOLING FANS PER
	DCN 66-012

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RISER DIAGRAM
POWER
HAIKU PORTAL BUILDING OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

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Peter A Mason

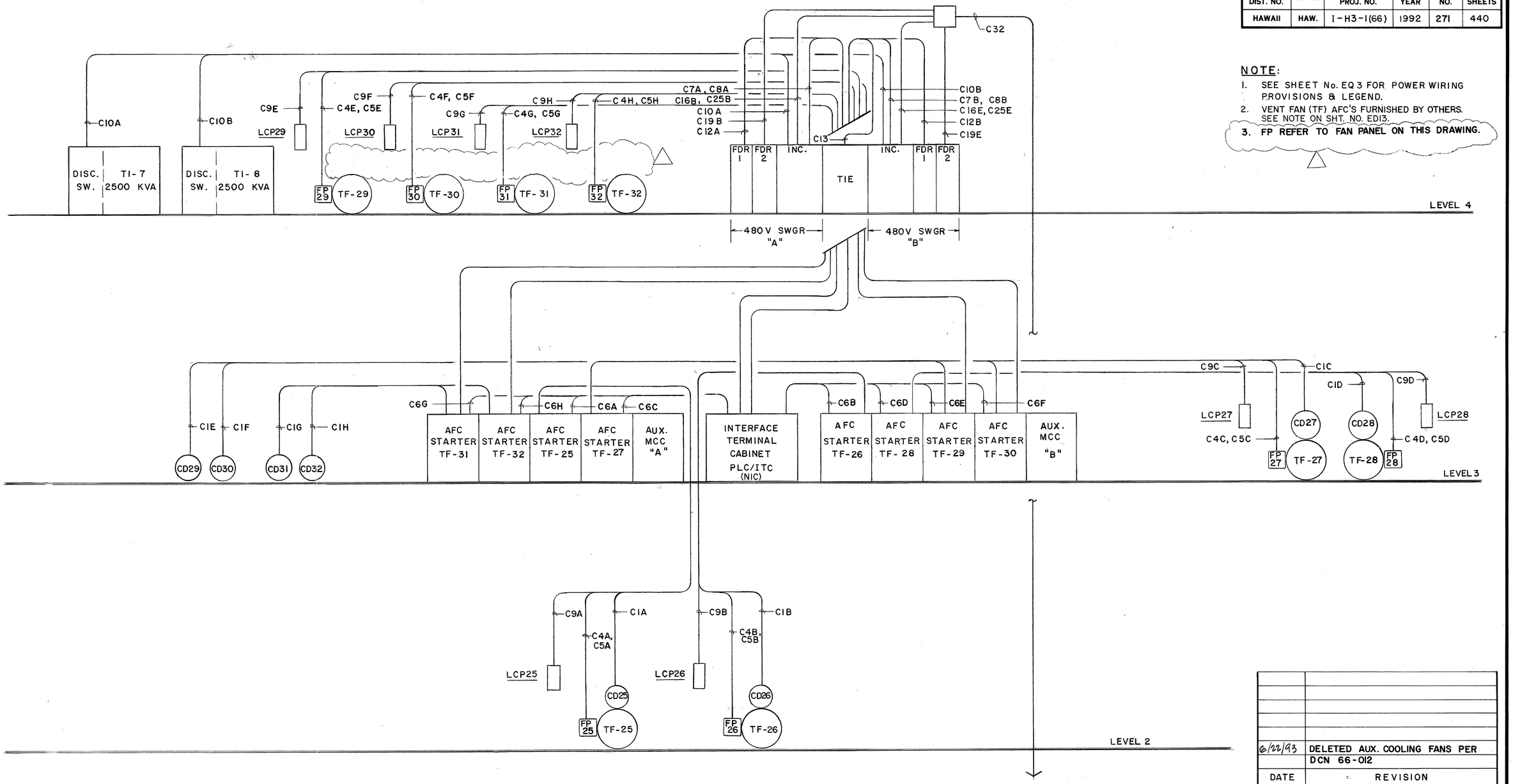
SCALE: NONE DATE: APR 1992

SHEET NO. EQ3 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	271	440

NOTE:

1. SEE SHEET No. EQ 3 FOR POWER WIRING PROVISIONS & LEGEND.
2. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. EDI3.
3. FP REFER TO FAN PANEL ON THIS DRAWING.



TO HAIKU IB
15 kV SWITCHGEAR
CONT'D ON SHEET NO. EM4

6/22/93	DELETED AUX. COOLING FANS PER DCN 66-012
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RISER DIAGRAM
CONTROL
HAIKU PORTAL BUILDING - OB

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EQ4 OF 25 SHEETS

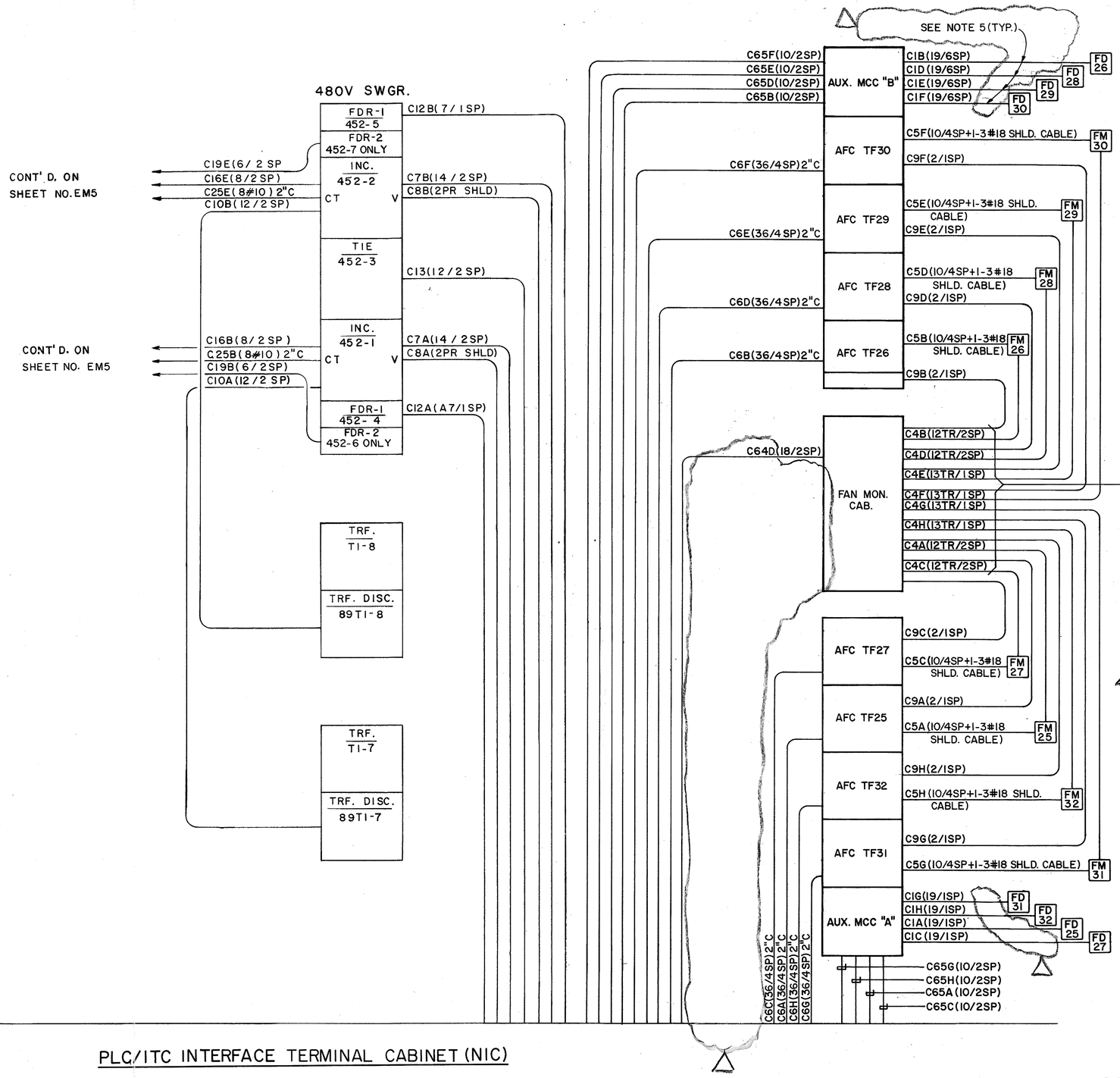
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY R. CUADRO	6/20/90
NOTE BOOK	TRACED BY	5/15/90
	DESIGNED BY F.A. HORTON	
No.	QUANTITIES BY	9/26/92
	CHECKED BY J.J. SASSANI	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	272	440



PLC/ITC INTERFACE TERMINAL CABINET (NIC)

NOTES:

1. ALL CONDUCTORS ARE SINGLE CONDUCTOR #14 AWG STRANDED UNLESS NOTED OTHERWISE.
2. ALL CONDUITS ARE 1" UNLESS NOTED OTHERWISE.
3. ALL MCC WIRE MARKERS SHALL BE PREFIXED WITH TUNNEL FAN NUMBERS DESIGNATION; e.g. FOR TF8, 8C6H; FOR CD1, IC2A; FOR CF1, IC3A ETC.
4. VENT FAN (TF) AFC'S FURNISHED BY OTHERS. SEE NOTE ON SHT. NO. ED13
5. USE #18 TFFN FLEX. CABLE FOR CONNECTION BETWEEN DAMPER ACTUATOR AND MCC.
6. USE 3#18 TWISTED CABLE WITH UNSHIELDED JACKET.

7/26/94	REVISED PER DCN 66-049
6/6/94	REVISED PER DCN 66-047
5/5/94	REVISED AFC/MCC/ITC CONTROL WIRING PER DCN 66-041
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BLOCK DIAGRAM
CONTROL
HAIKU PORTAL BUILDING-OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EQ5 OF 25 SHEETS

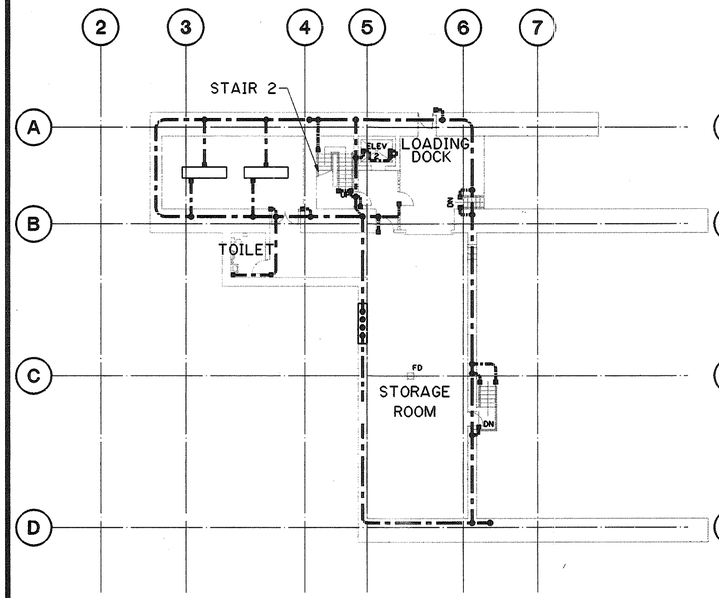
PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

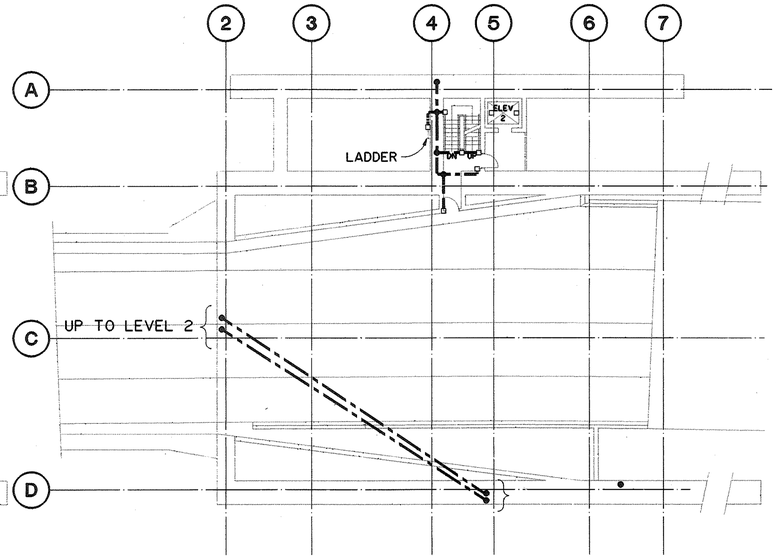
ORIGINAL PLAN
NOTE BOOK
No.
SURVEY PLOTTED BY
DRAWN BY R. CUADRO DATE 9/21/93
TRACED BY
DESIGNED BY T.A. HORTON 9/13/93
QUANTITIES BY
CHECKED BY J.J. SASSANI 9/26/93

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	273	440

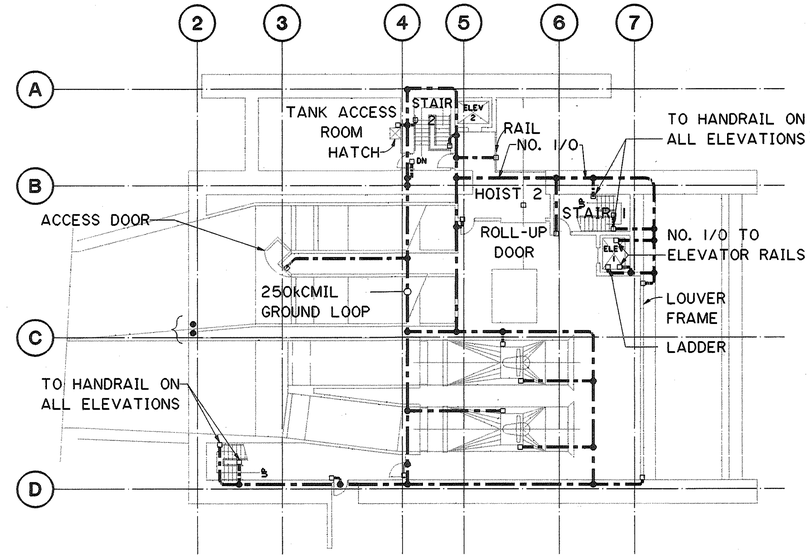
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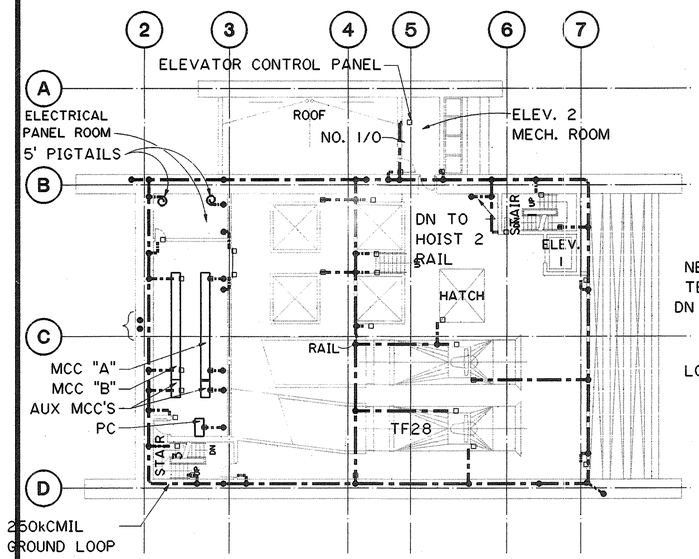
LEVEL A



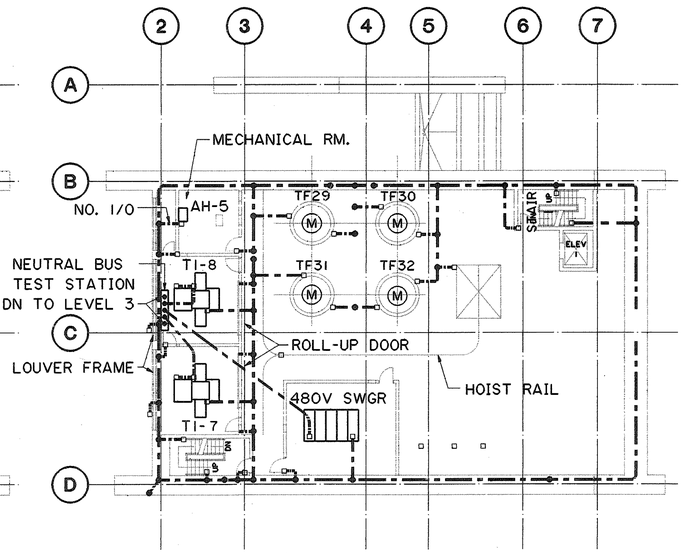
LEVEL 1



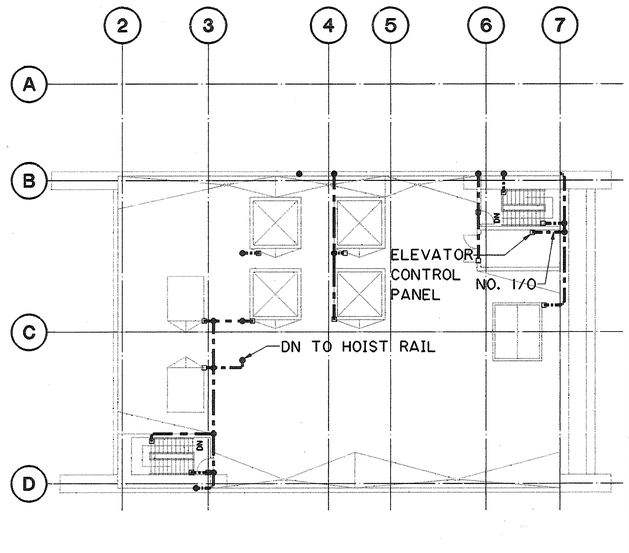
LEVEL 2



LEVEL 3



LEVEL 4



ROOF

NOTES:

1. CONNECT TO MOTOR FRAME.
2. UNLESS NOTED OTHERWISE, SIZE OF CABLE CONNECTIONS SHALL BE NO. 4 FOR DOORS, ELECTRICAL WALL MOUNTED PANELS, STAIRS, HATCHES, RAILS AND LOUVERS.
3. CONNECT PIGTAILS TO PANELS.

GRAPHIC SCALE
16' 8' 0' 16' 32'
1/16"=1'-0"

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GROUNDING

HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/16"=1'-0" DATE: APR 1992

SHEET NO. EQ6 OF 25 SHEETS

ORIGINAL PLAN	NOTE BOOK	NO.	SURVEY PLOTTED BY	DRAWN BY	TRACED BY	DESIGNED BY	QUANTITIES BY	CHECKED BY	DATE
				CADD		F. JIMENEZ		J.J. SASSANI	5-19-90 2-6-90 6-26-90

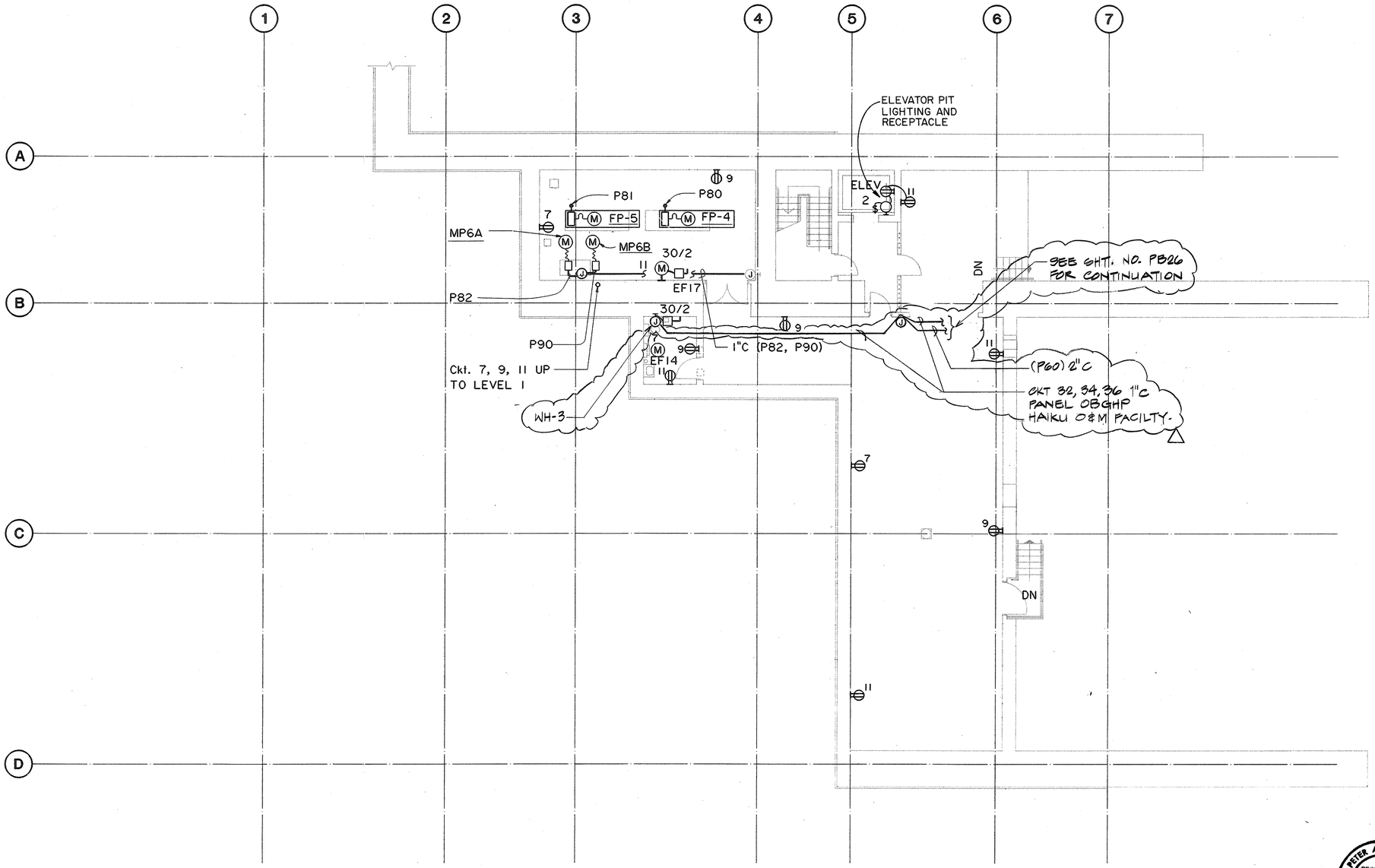
2410V152 2410: V152 ES0186.FGB#1 20DEC89-12.46.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	274	440

N

NOTE:

1. SEE SHT. NO. EQ3, EQ4 & EQ5 FOR TERMINATIONS OF POWER & CONTROL CONDUIT.



FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

12/22/94	REV. PER DCN 66-057
9/22/94	REV. PER DCN 66-052
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL A PLAN
HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. EQ7 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6450-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Peter A. Mason

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	2/5/90
	TRACED BY " "	" "
NOTE BOOK	DESIGNED BY J.A. HORTON	1/2/90
	QUANTITIES BY " "	" "
NO.	CHECKED BY J.J. SASSANI	6/26/90

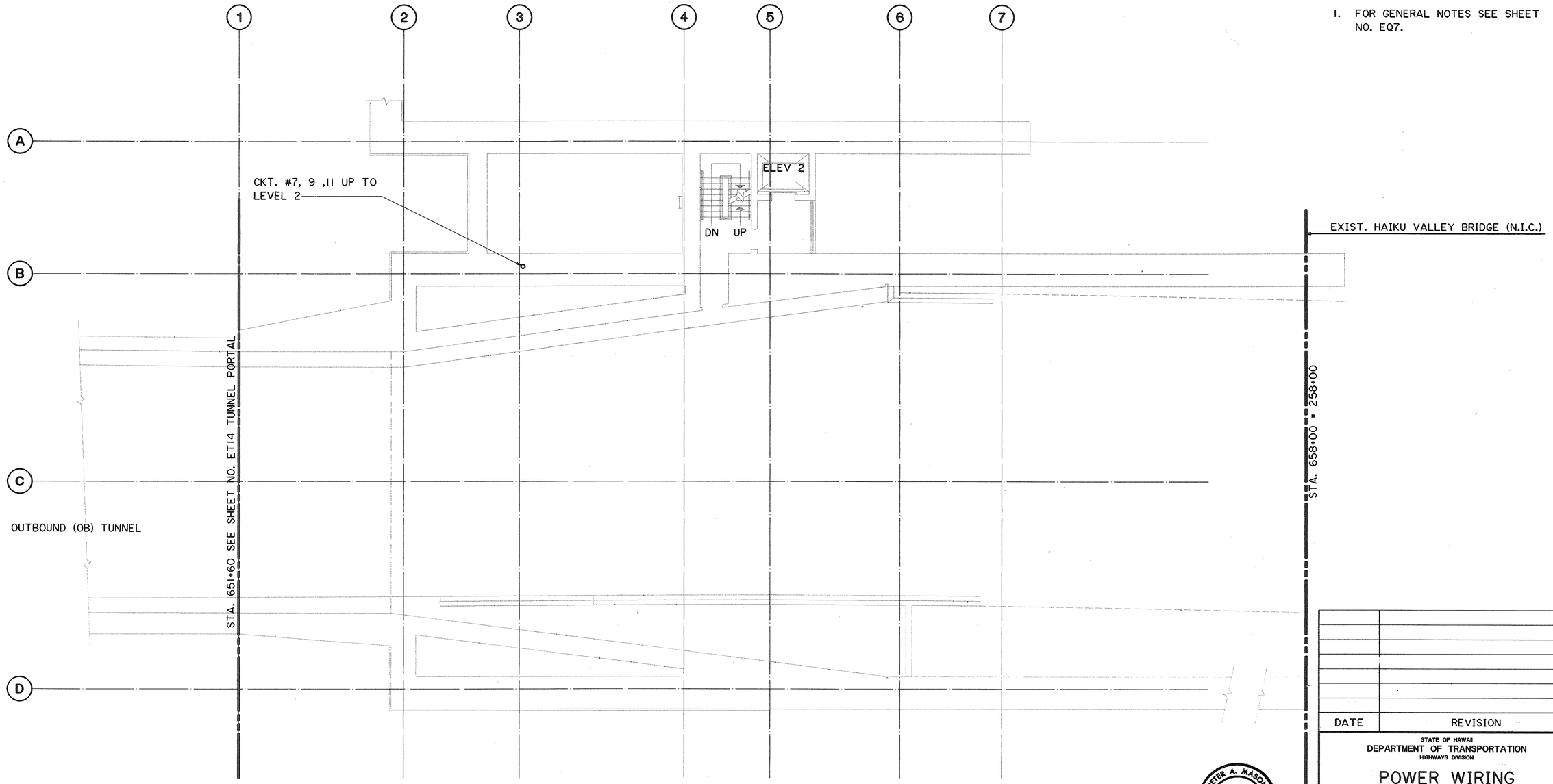
2410V152 2410: V152 ES0265.FGB>1 10JLY90-14.26.40

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	275	440

N

NOTES:

1. FOR GENERAL NOTES SEE SHEET NO. EQ7.



ORIGINAL PLANS	SURVEY PLOTTED BY	DATE 2/12/90
	DRAWN BY CADD	
	TRACED BY	
NOTE BOOK	DESIGNED BY J.A. HORTON	1/8/90
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	6/26/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL I PLAN
HAIKU PORTAL BUILDING OB
INTERSTATE ROUTE H-3
F.A.I. PROJ NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. EQ8 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

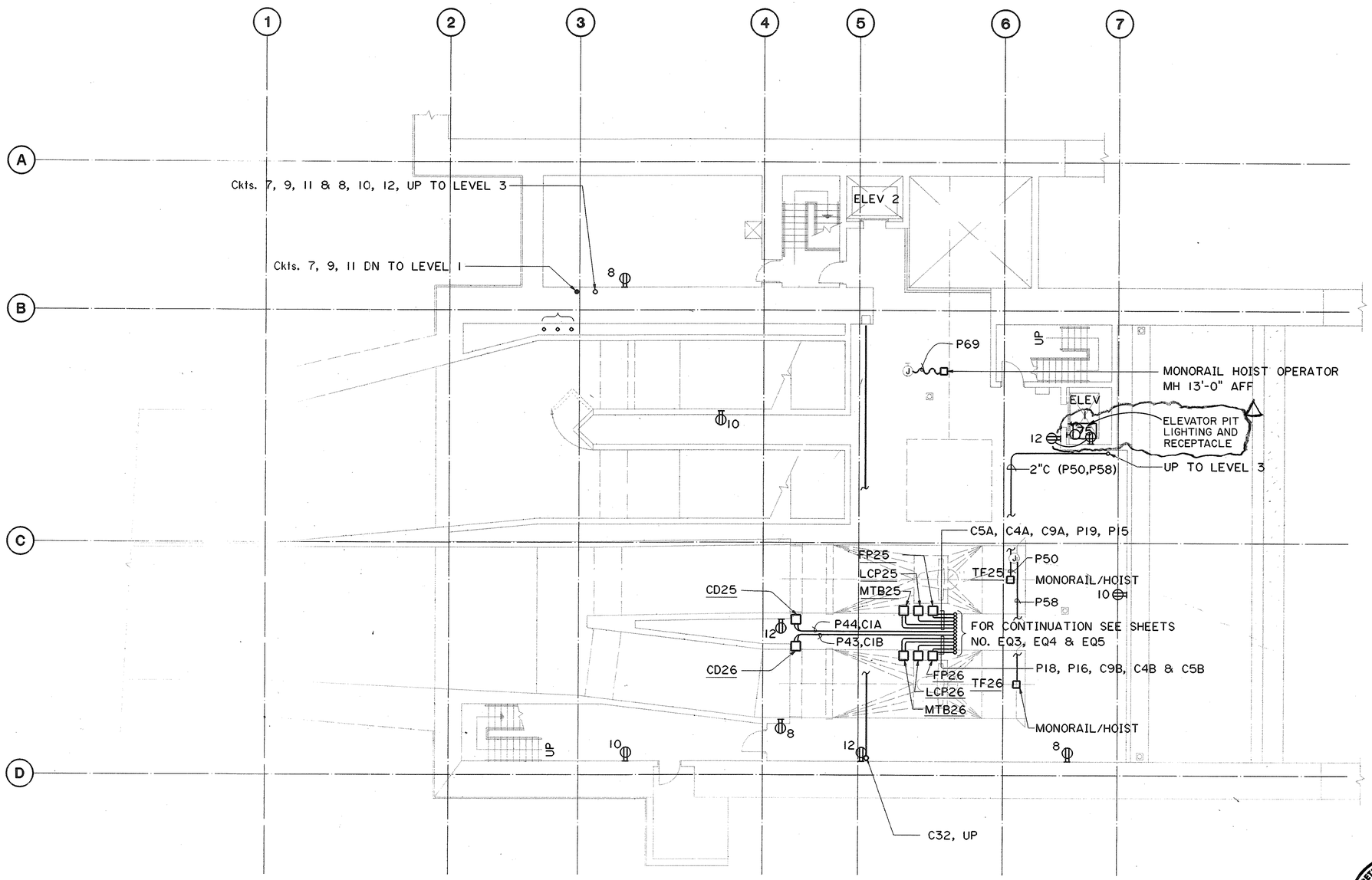
2410V152 2410: V152 ES0266.FGB:1 10JLY90-14.29.20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	276	440

N

NOTES:

1. FOR GENERAL NOTES SEE SHEET NO. EQ7.



ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY CADD	2/20/90
	TRACED BY "	"
	DESIGNED BY "	"
NOTE BOOK	QUANTITIES BY J.A. NORTON	1/15/90
	CHECKED BY J.J. SASSANI	6/26/90
NO.		

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

Peter A. Mason

DATE	REVISION
9/22/94	REV. PER DCN 66-052

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

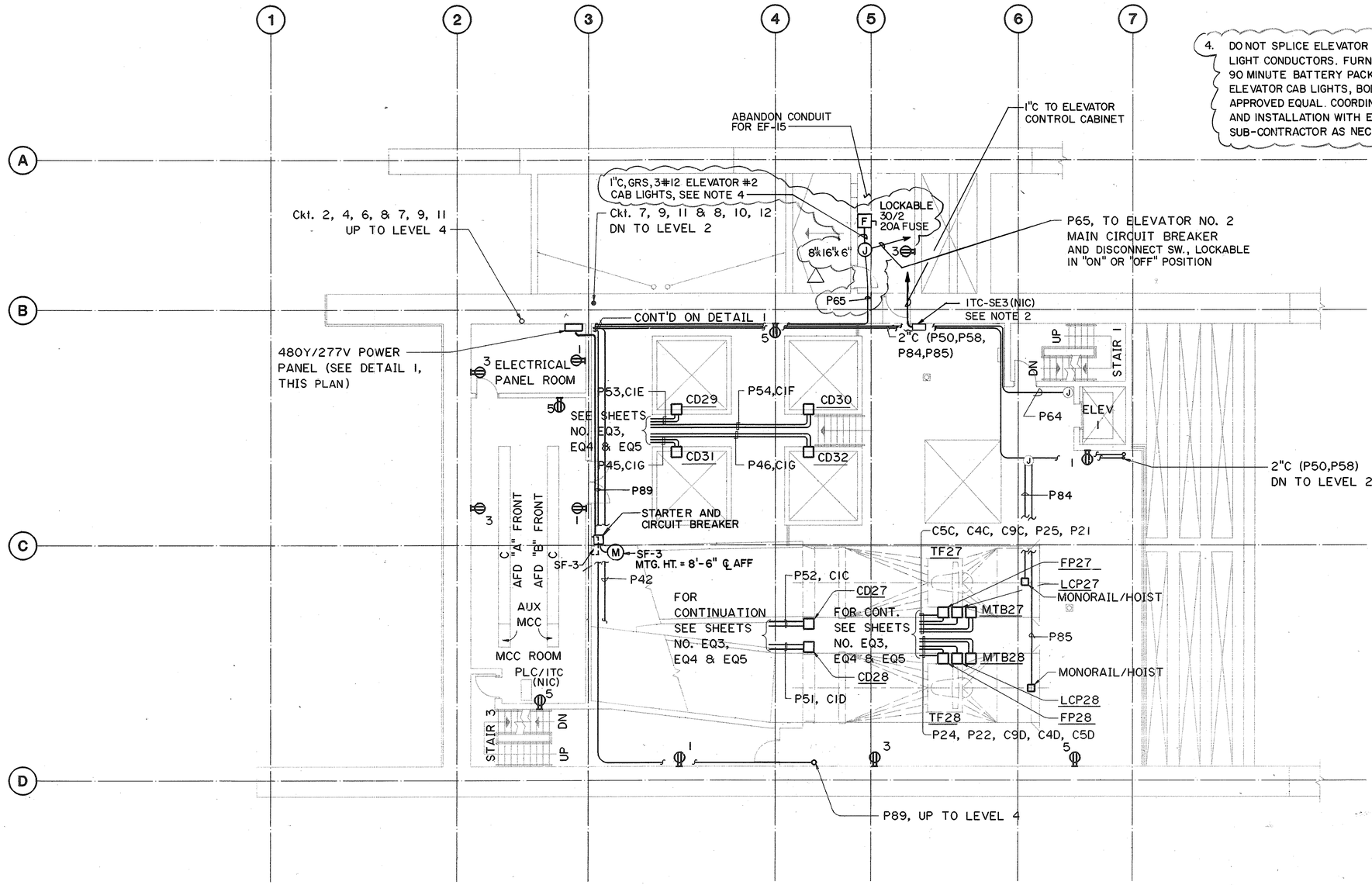
POWER WIRING
LEVEL 2 PLAN
HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. EQ9 OF 25 SHEETS

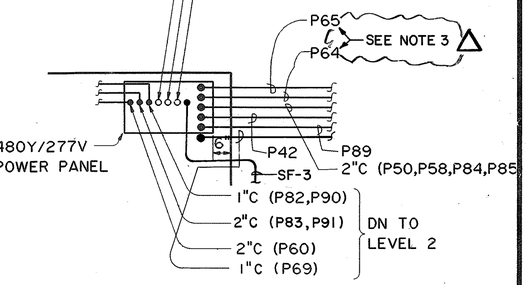
2410V152 2410: V152 ES0267.FGB:1 05JLY90-13.21.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	277	440



NOTES:

1. FOR GENERAL NOTES SEE SHEET NO. EQ7
2. FOR ITC-SE3 REFER TO SYSTEMS CONTRACT (65) PLANS, SHEET NO. TQ4
3. INTERCEPT (E) P64 CONDUIT (ELEVATOR #1 POWER) AND (E) P65 CONDUIT (ELEVATOR #2 POWER) PRIOR TO LEAVING ELECTRICAL ROOM, AND FURNISH AND INSTALL (N) J-BOX, 12"x 20"x 8". REPULL (E) ELEVATOR #1 & #2 POWER CONDUCTORS THROUGH J-BOX BACK TO PANEL OB3HP WITHOUT SPLICING. FURNISH AND INSTALL 1"C, RGS FROM PANEL OB3LP TO J-BOX. FURNISH AND INSTALL 6-#12 AWG WITH 600V INSULATION, FROM PANEL OB3LP (ELEVATOR #1 & #2 CAB LIGHTS) TO J-BOX AND ON TO ROOF FOR ELEVATOR #1 AND LEVEL #3 FOR ELEVATOR #2, SHARING THE (E)P64 AND P65 CONDUITS, 3-#12 AWG IN EACH.



DETAIL 1
NTS

12/22/94	REV. PER DCN 66-055
10/19/94	REV. PER DCN 66-052
3/9/94	REVISED PER DCN 66-039
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING LEVEL 3 PLAN

HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR. 1992

SHEET NO. EQ10 OF 25 SHEETS

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

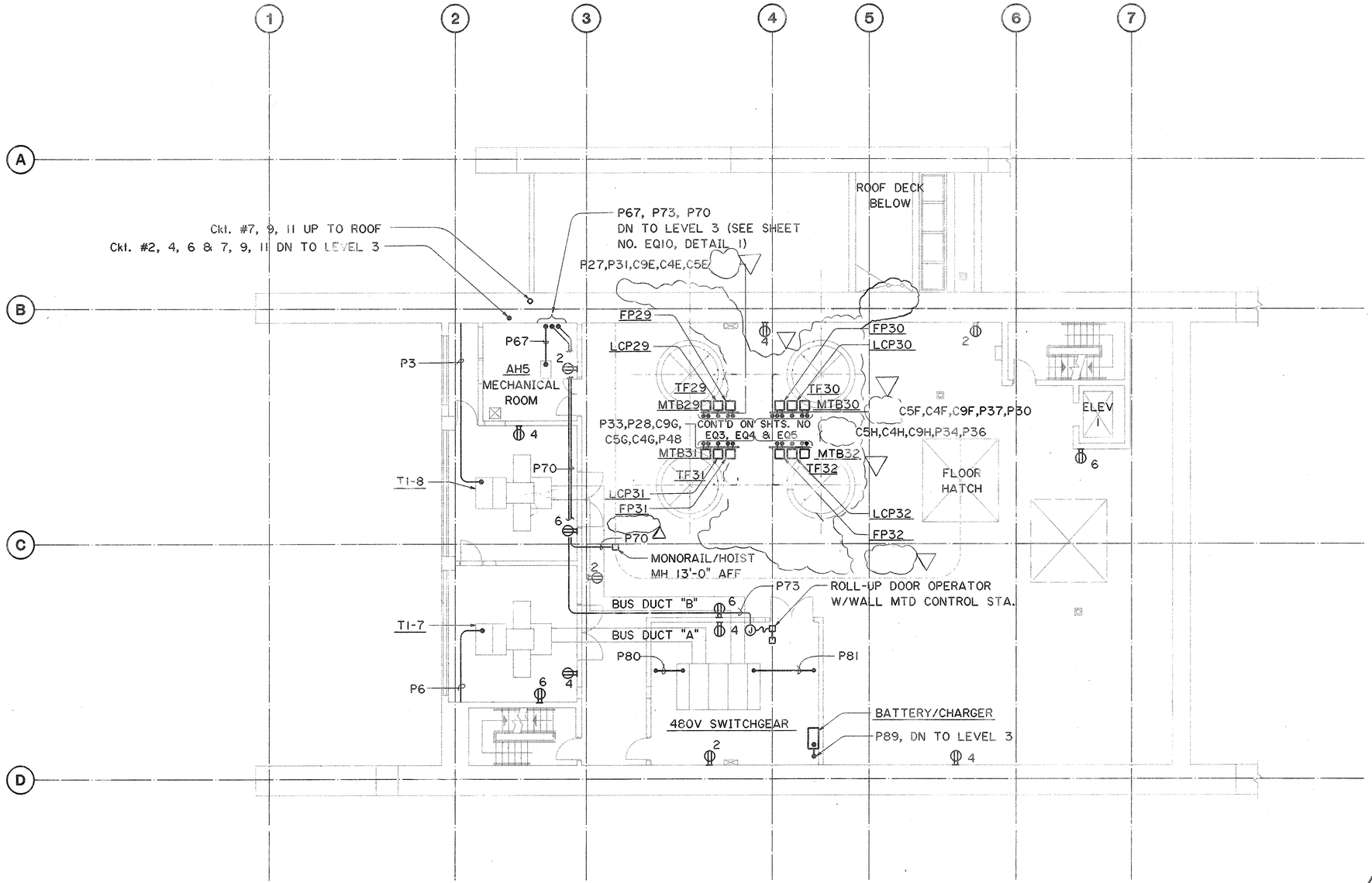
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	2/26/90
NOTE BOOK	TRACED BY	3/5/90
	DESIGNED BY J.A. HORTON	
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	6/26/90

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	278	440

N

NOTES:

1. FOR GENERAL NOTES SEE SHEET NO. EQ7
2. FOR DETAILS OF SWGR LEVELLING CHANNELS SEE SHEET NO. EN10.



ORIGINAL PLANS	SURVEY PLOTTED BY	DATE 3/19/90
	DRAWN BY CADD	
NOTE BOOK	TRACED BY	
	DESIGNED BY T.A. HORTON	3/6/90
	QUANTITIES BY	
NO.	CHECKED BY J.J. SASSANI	3/6/90

DATE	REVISION
6/22/93	DELETED AUX. COOLING FANS PER DCN 66-012

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 5460-E HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
LEVEL 4 PLAN
HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. EQ11 OF 25 SHEETS

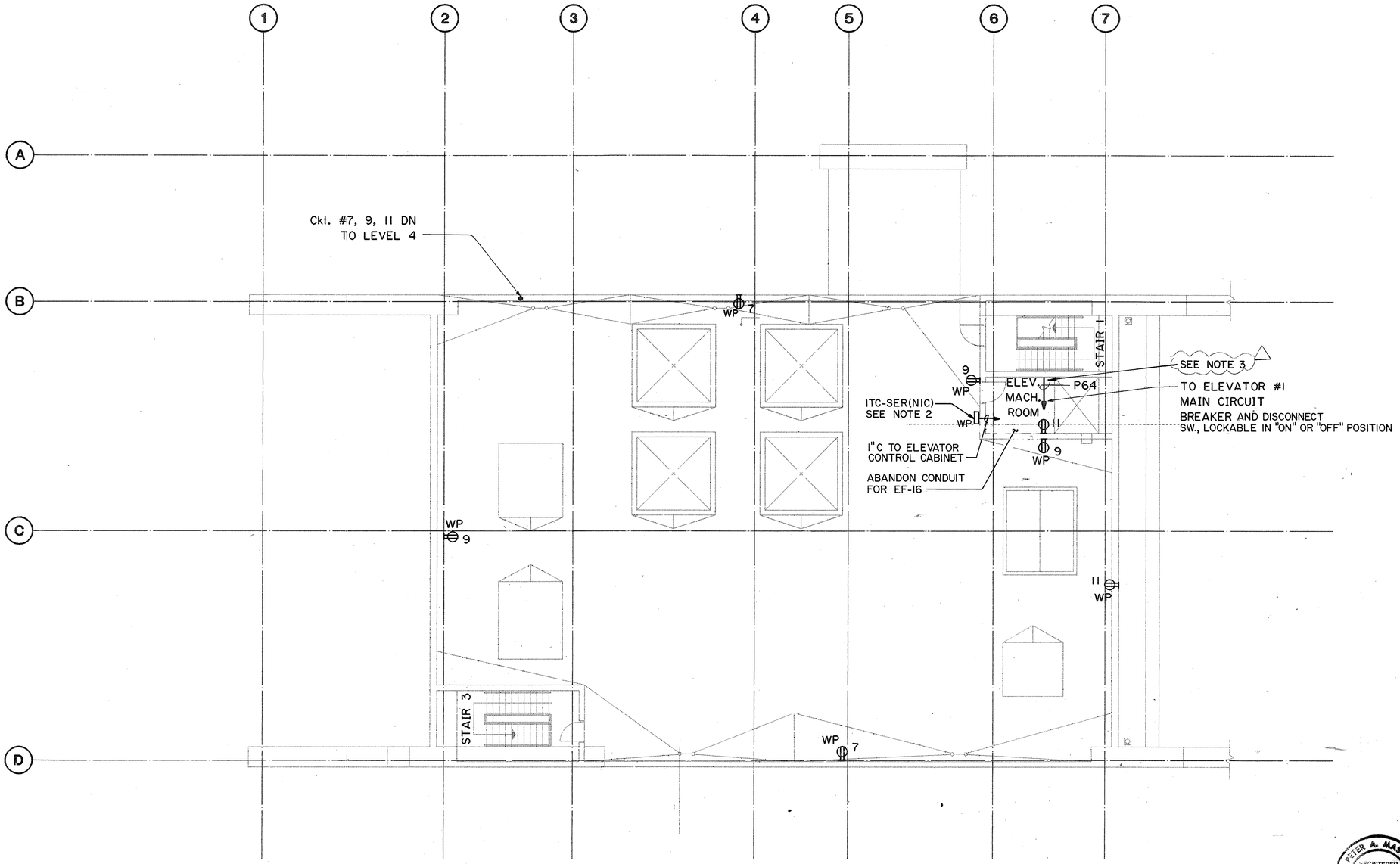
2410V152 2410: V152 ES0269.FCB:1 10JLY90-13.41.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	279	440

N

NOTES:

1. FOR GENERAL NOTES SEE SHEET NO. EQ7
2. FOR ITC-SER, REFER TO SYSTEMS CONTRACT(65) PLANS, SHEET NO. TQ6
3. INTERCEPT INCOMING P64 CONDUIT FOR ELEVATOR POWER UPON ENTERING ELEVATOR SHAFT AND FURNISH AND INSTALL (N) J-BOX, 8"x16"x6". REPULL ELEVATOR POWER CONDUCTORS THROUGH J-BOX BACK TO ELEVATOR DISCONNECT WITHOUT SPLICING. FURNISH AND INSTALL 1"C, RGS FROM J-BOX TO (N) LOCKABLE FUSED DISCONNECT SWITCH, 240V, 30A, 2 POLE, 20A FUSE. TERMINATE INCOMING 3-#12 AWG (ELEVATOR CAB LIGHTS) AT (N) DISCONNECT SWITCH WITHOUT SPLICES. FURNISH AND INSTALL 90 MINUTE BATTERY PACK FOR THE ELEVATOR CAB LIGHT, BODINE B50 OR APPROVED EQUAL. COORDINATE LOCATIONS AND INSTALLATION WITH ELEVATOR SUB-CONTRACTOR AS NECESSARY.



GRAPHIC SCALE
8' 4' 0' 8' 16'
1/8" = 1'-0"

12/22/94	REV. PER DCN 66-055
10/19/94	REV. PER DCN 66-052
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POWER WIRING
ROOF LEVEL PLAN
HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8" = 1'-0" DATE: APR 1992

SHEET NO. EQ12 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

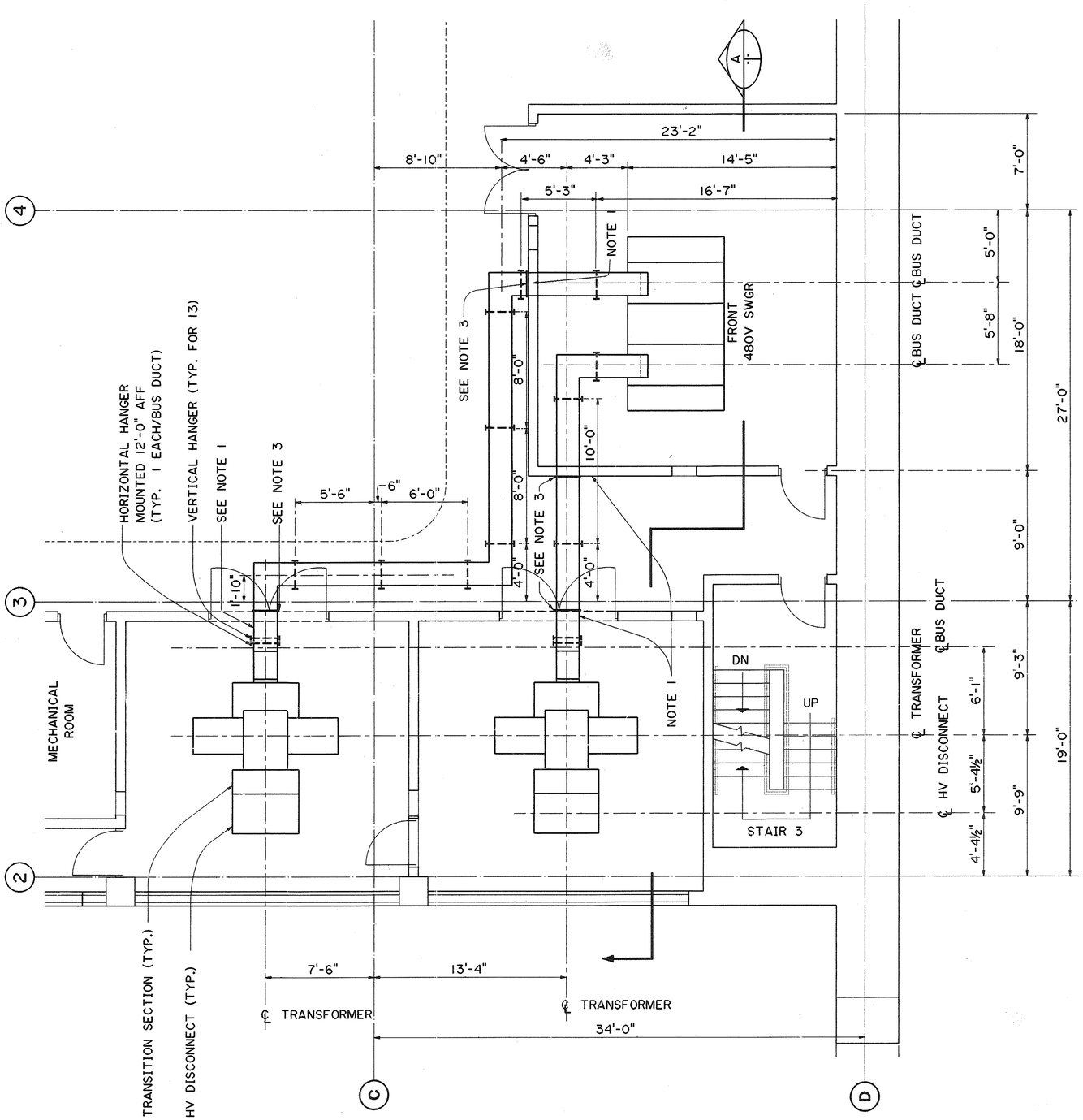
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

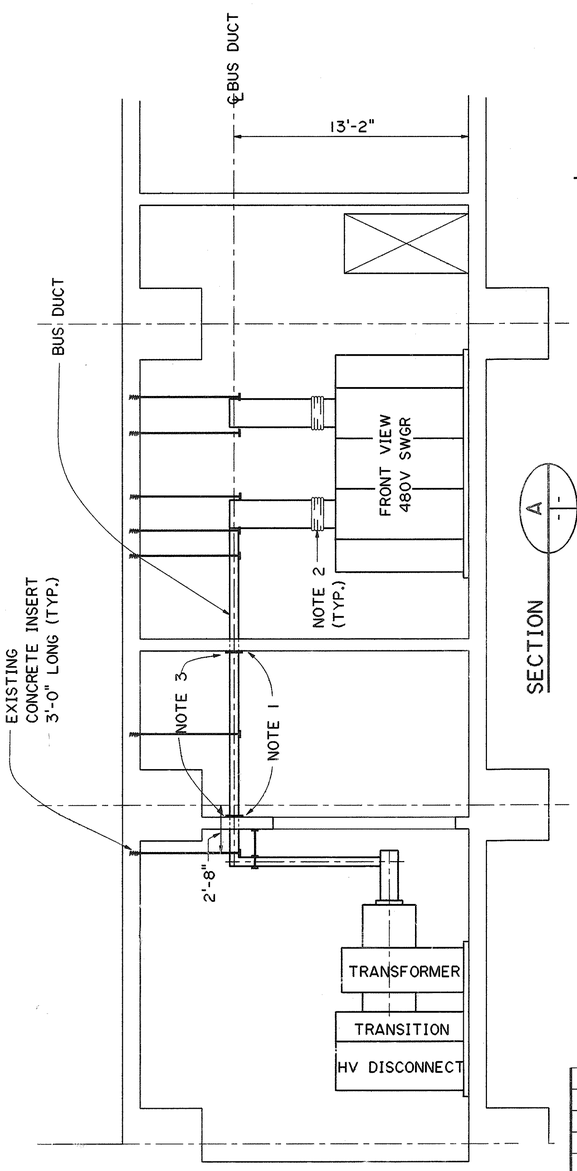
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	4/22/90
NOTE BOOK	TRACED BY	3/13/90
	DESIGNED BY INGA HORTON	
NO.	QUANTITIES BY	
	CHECKED BY J. SASSANI	6/26/90

2410V152 2410: V152 ES0270.FGB;1 09JLY90-16.01.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	280	440



PLAN



SECTION

NOTES:

1. EXISTING BUS DUCT WALL PENETRATION.
2. PROVIDE FLEXIBLE CONNECTIONS FOR BUS AND HOUSING.
3. PROVIDE FLANGES FOR WALL PENETRATIONS AT LOCATIONS SHOWN.
4. DIMENSIONS AND LOCATIONS OF EXISTING CEILING INSERTS ARE APPROXIMATE.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY CADD	5/30/90
NO.	TRACED BY	
	DESIGNED BY I.A. HORTON	4/25/90
	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	6/26/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL ARRANGEMENT
480V BUS DUCT
HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ¼" = 1'-0" DATE: APR 1992

SHEET NO. EQ13 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

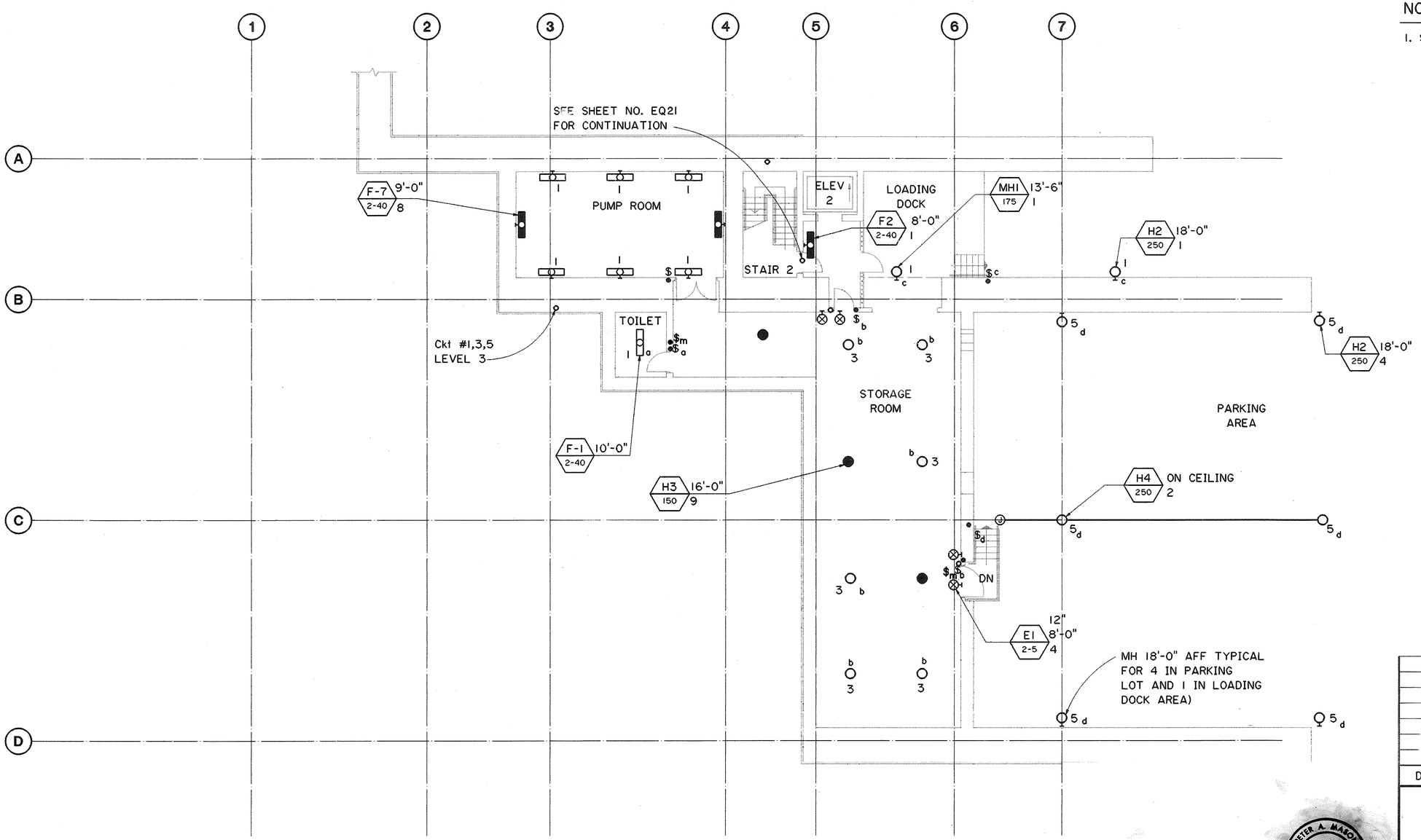
2410V155 2410: V155 ES0155.FGB;1 11JUL90-07.34.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	281	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

FOR DETAIL AS-BUILT INFORMATION
REFER TO CONSTRUCTION SUBMITTALS

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
LEVEL A PLAN
HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

SHEET NO. EQ14 OF 25 SHEETS

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	CADD 4-2-90
	TRACED BY	" " "
NOTE BOOK	DESIGNED BY	ROBERT F. JAMES 5-6-90
	QUANTITIES BY	" " "
NO.	CHECKED BY	J.J. SASSANI 6-26-90

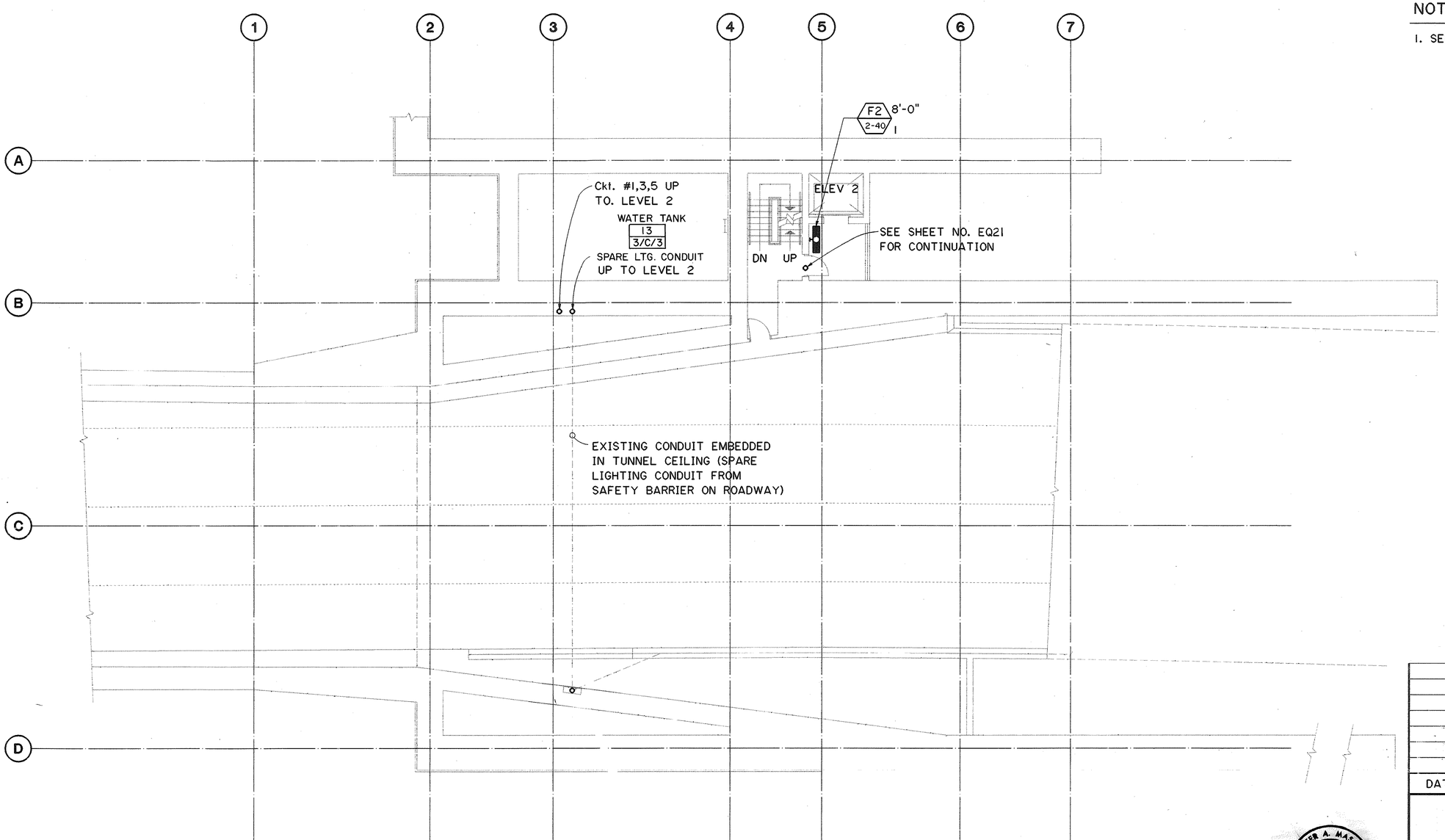
2410V152 2410: V152 ES0177.FGB;1 11JLY90-08.45.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	282	440

N

NOTE:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

GRAPHIC SCALE
1' 0' 1' 2'
1" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	CADD	4-2-90
NOTE BOOK	TRACED BY		
	DESIGNED BY	ROBERT F. JAMES	5-15-90
NO.	QUANTITIES BY		
	CHECKED BY	J.J. SASSANI	6-26-90

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING LEVEL 1 PLAN

HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

SHEET NO. EQ15 OF 25 SHEETS

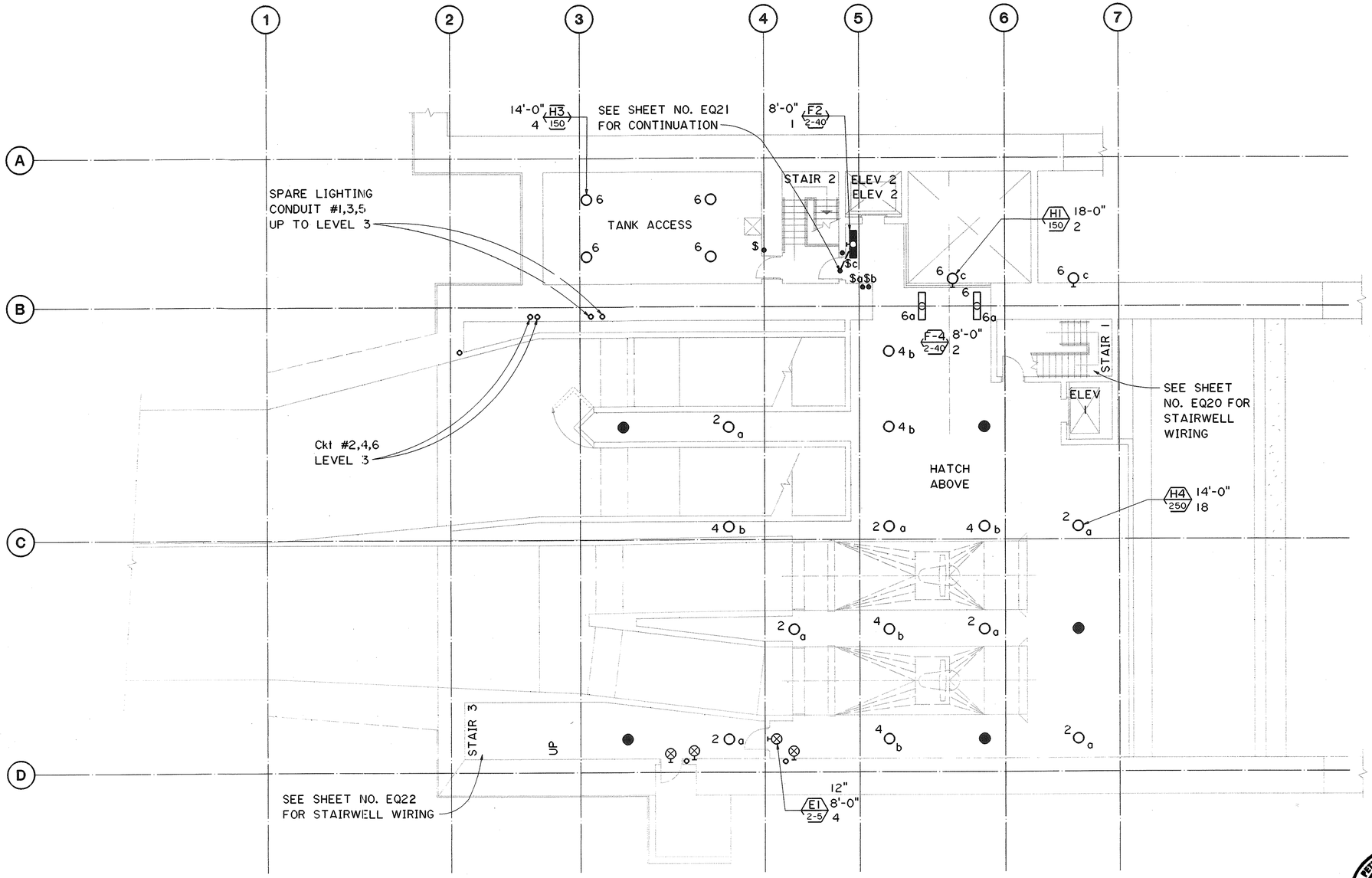
2410V152 2410: V152 ES0178.FGB;1 11JLY90-08.35.10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	283	440

N

NOTE:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6460-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING LEVEL 2 PLAN

HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

SHEET NO. EQ16 OF 25 SHEETS

ORIGINAL PLAN	NOTE BOOK	NO.	SURVEY PLOTTED BY	DRAWN BY CADD	TRACED BY	DESIGNED BY ROBERT F. JAMES	QUANTITIES BY	CHECKED BY J.J. SASSANI	DATE 2-13-90	"	"	3-23-90	"	6-26-90

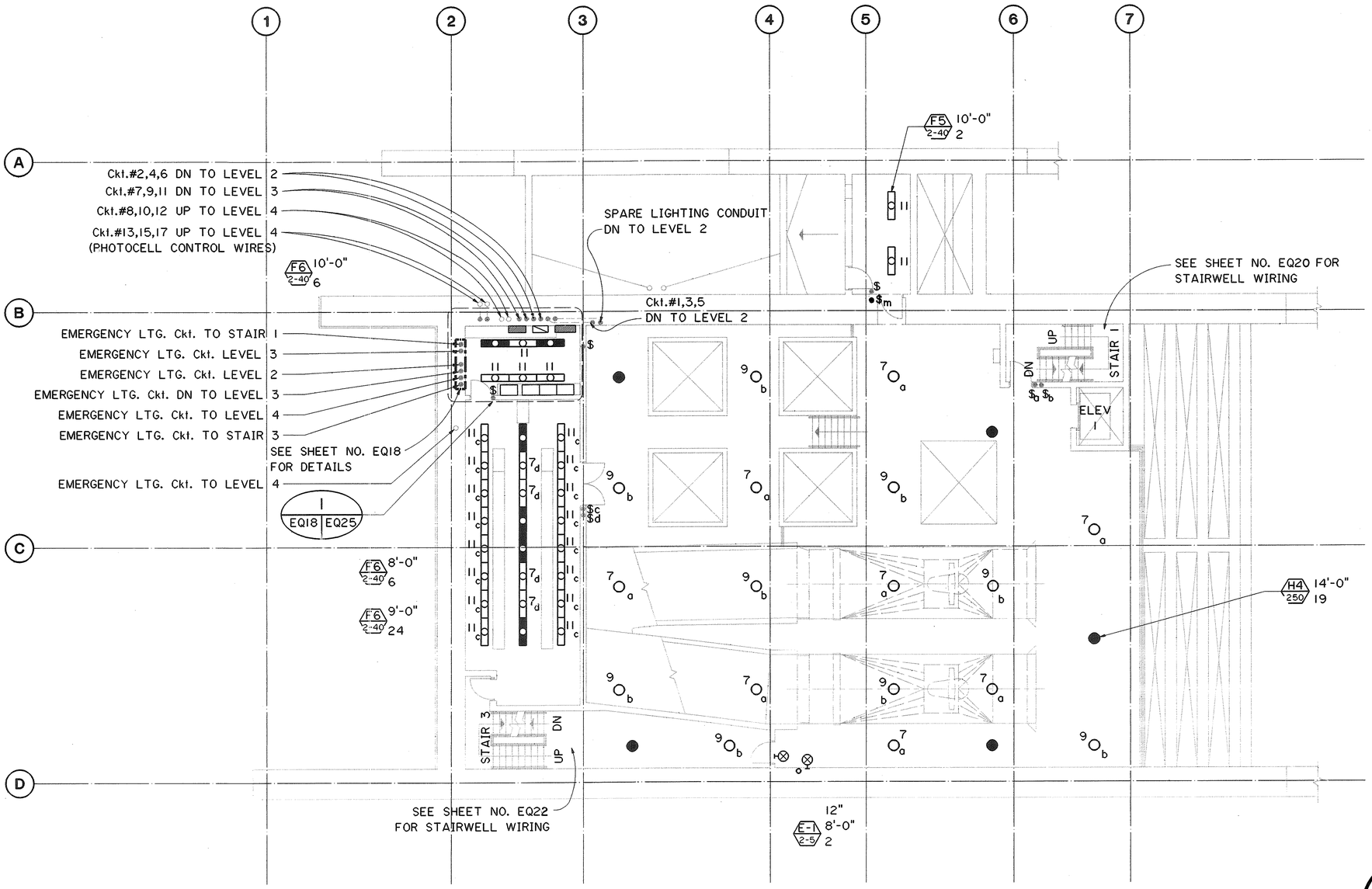
2410V152 2410: V152 ES0179.FGB;1 02JLY90-12.16.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	284	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	CADD	7-6-90
NOTE BOOK	TRACED BY		11-6-90
	DESIGNED BY	ROBERT F. JAMES	
	QUANTITIES BY		
NO.	CHECKED BY	J.J. SASSANI	12-26-90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
LEVEL 3 PLAN

HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: ⅛"=1'-0" DATE: APR 1992

SHEET NO. EQ17 OF 25 SHEETS

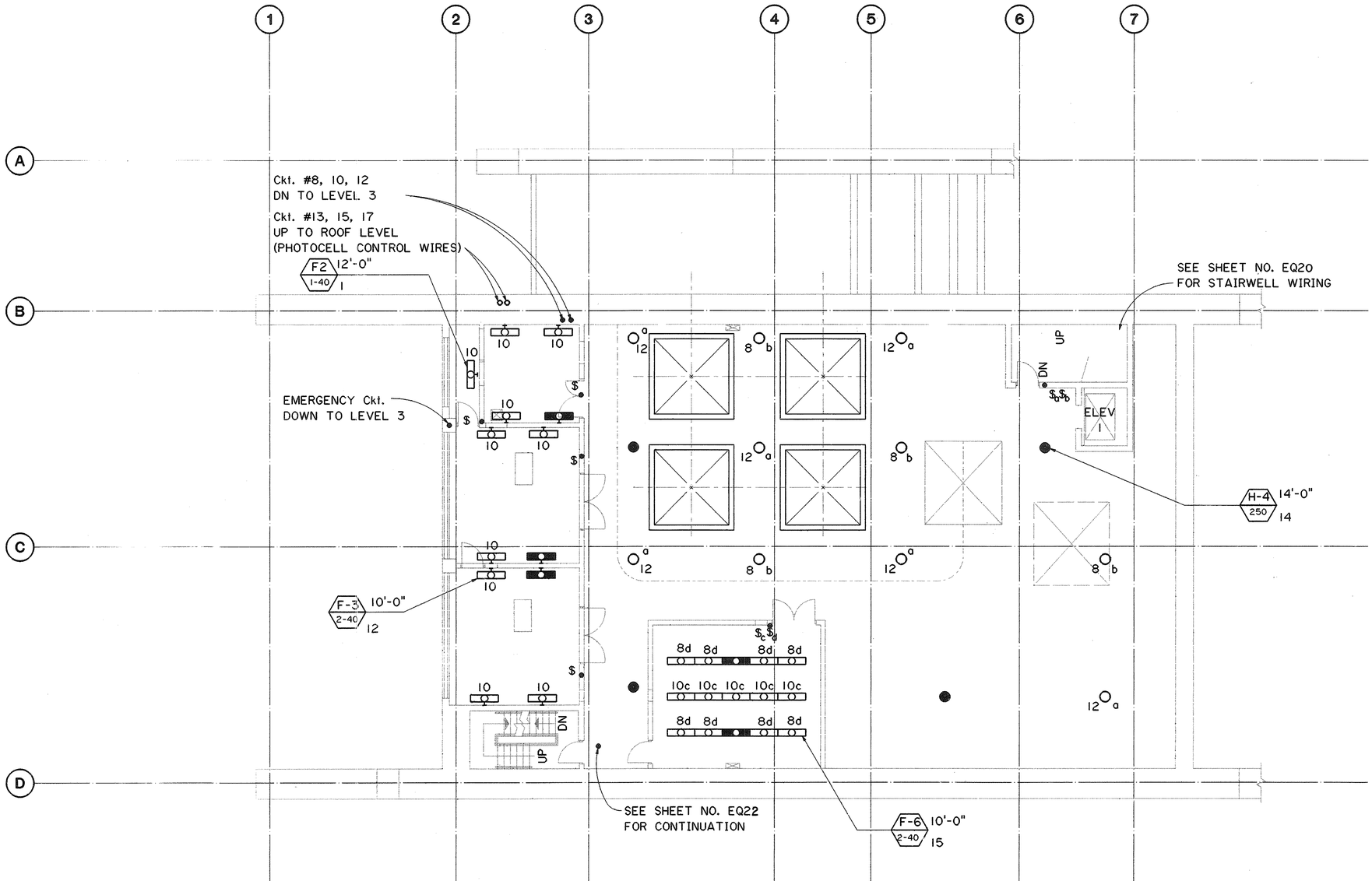
2410V152 2410: V152 ES0180.FGB:1 11JLY90-08.53.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	285	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



SURVEY PLOTTED BY	CADD
DRAWN BY	
TRACED BY	
DESIGNED BY	ROBERT F. JAMES
QUANTITIES BY	
CHECKED BY	J.A. SASSANI
DATE	4-2-90 / 5-15-90 / 6-26-90

ORIGINAL PLAN
NOTE BOOK
NO.

GRAPHIC SCALE
8' 4' 0' 8' 16'
⅛" = 1'-0"

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING LEVEL 4 PLAN

HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: 1/8"=1'-0" DATE: APR 1992

SHEET NO. EQ18 OF 25 SHEETS

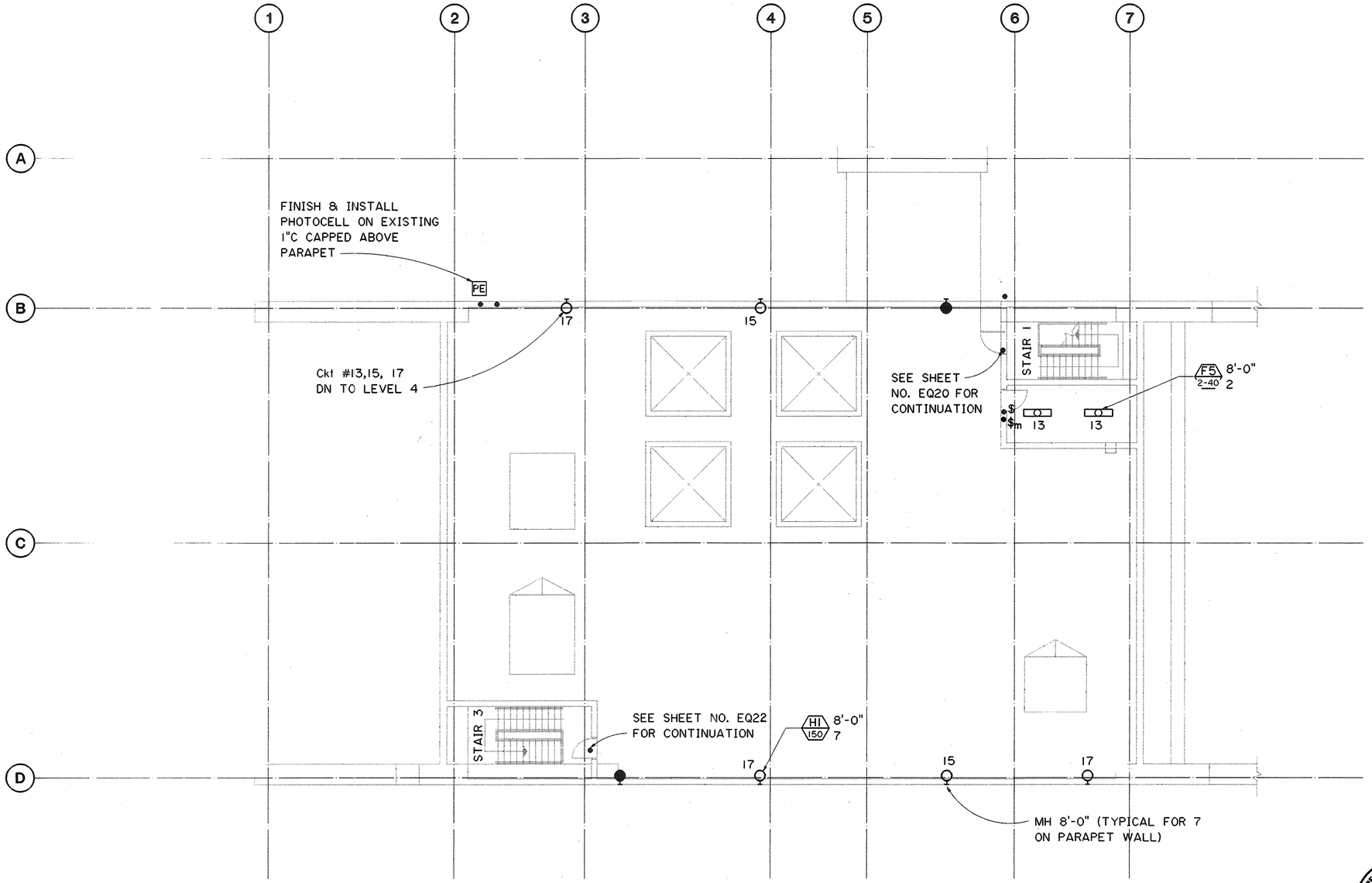
2410V152 2410: V152 ES0181.FGB/1 11JULY90-08.56.30

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	286	440

N

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.



GRAPHIC SCALE

8' 4' 0' 8' 16'

⅛" = 1'-0"

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING WIRING
ROOF PLAN
HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

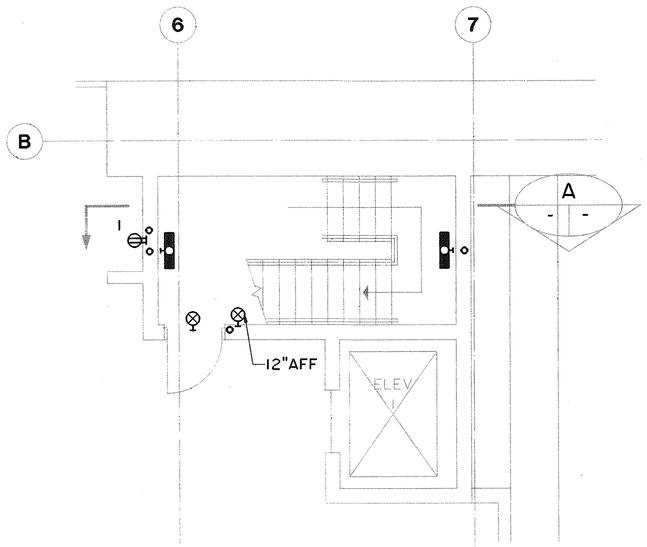
SCALE: ⅛"=1'-0" DATE: APR 1992

SHEET NO. EQ19 OF 25 SHEETS

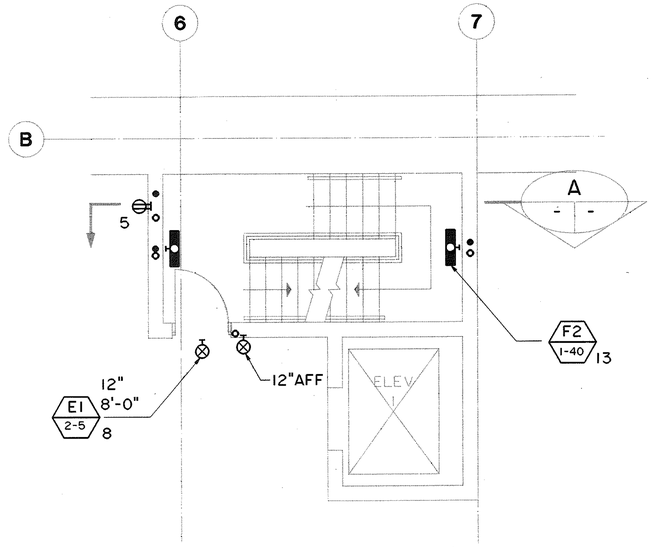
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	4-2-90
NOTE BOOK	TRACED BY	
	DESIGNED BY ROBERT F. JAMES	5-15-90
NO.	QUANTITIES BY	
	CHECKED BY J.J. SASSANI	6-26-90

2410V152 2410: V152 ES0182.PGB>1 11JLY90-09.02.40

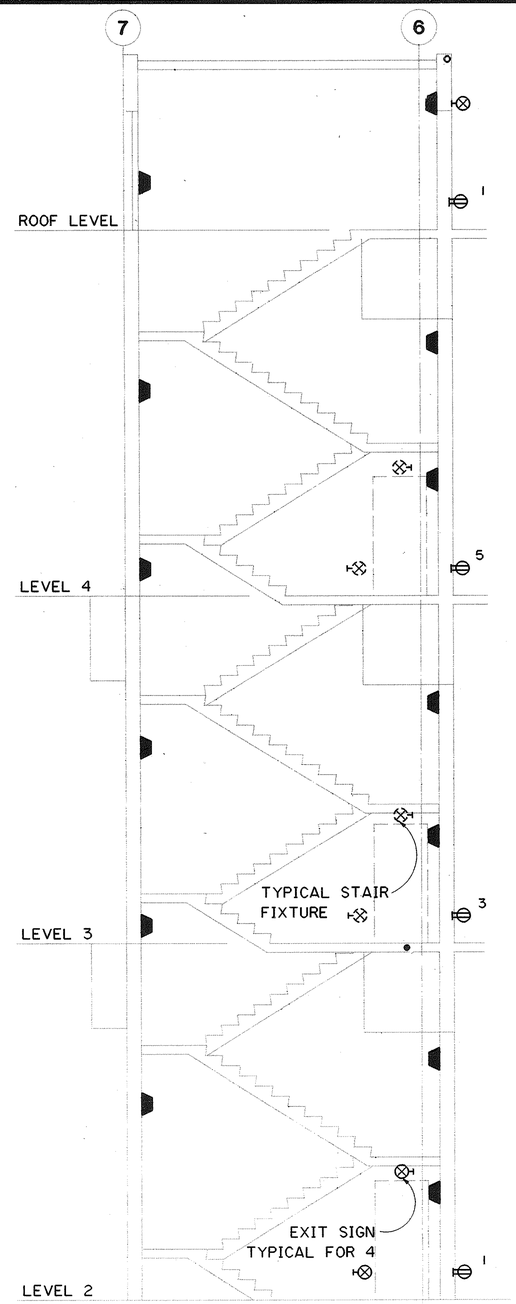
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-I(66)	1992	287	440



LEVEL 2 PLAN
SCALE: ¼"=1'-0"

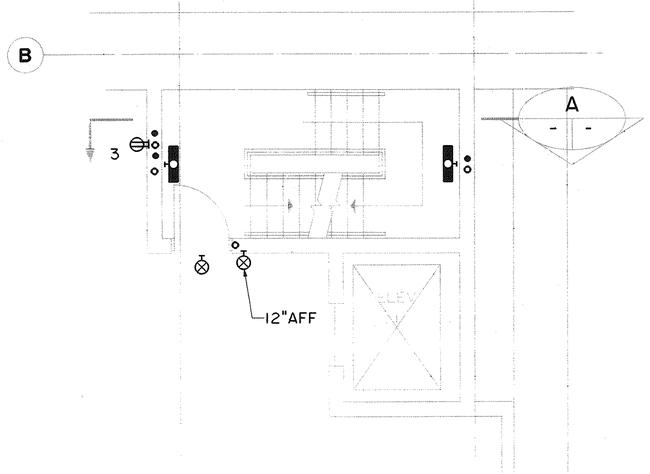


LEVEL 4 PLAN
SCALE: ¼"=1'-0"

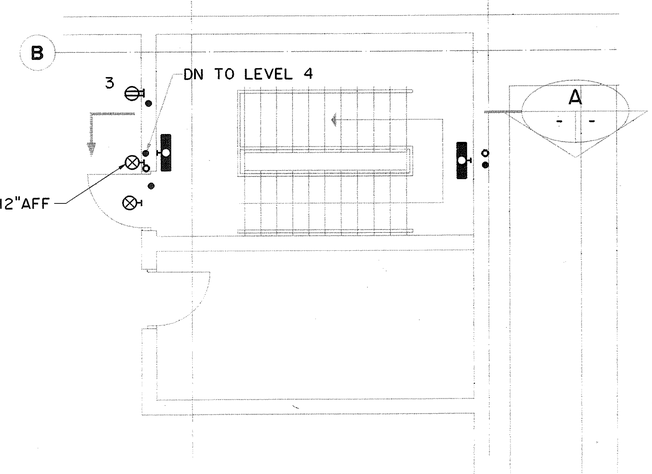


NOTE:
HANDRAILS NOT SHOWN FOR CLARITY.

STAIR SECTION A



LEVEL 3 PLAN
SCALE: ¼"=1'-0"



ROOF LEVEL PLAN
SCALE: ¼"=1'-0"

GRAPHIC SCALE
4' 2' 0' 4' 8'
¼" = 1'-0"

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.

⊢⊗ EXIT SIGNS
INTERIOR — TYPE E-1
EXTERIOR — TYPE E-2

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING & RECEPTACLES
STAIR 1
HAIKU PORTAL BUILDING - 0B
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

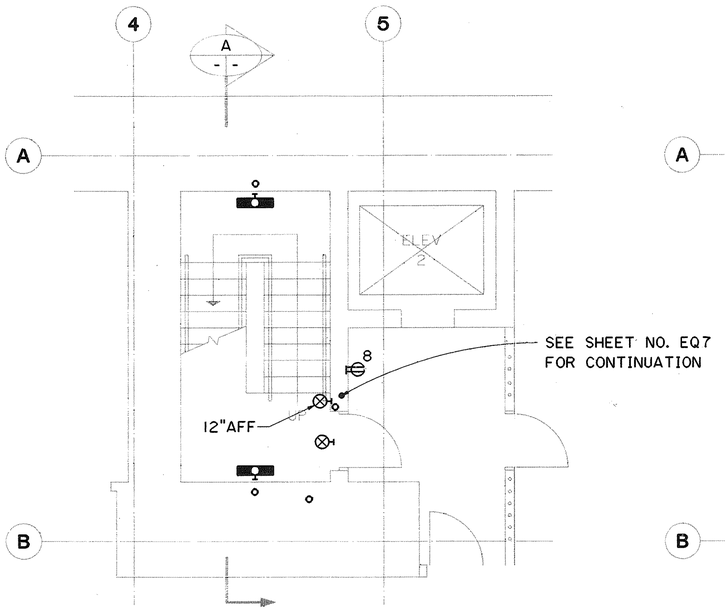
SHEET NO. EQ20 OF 25 SHEETS

287

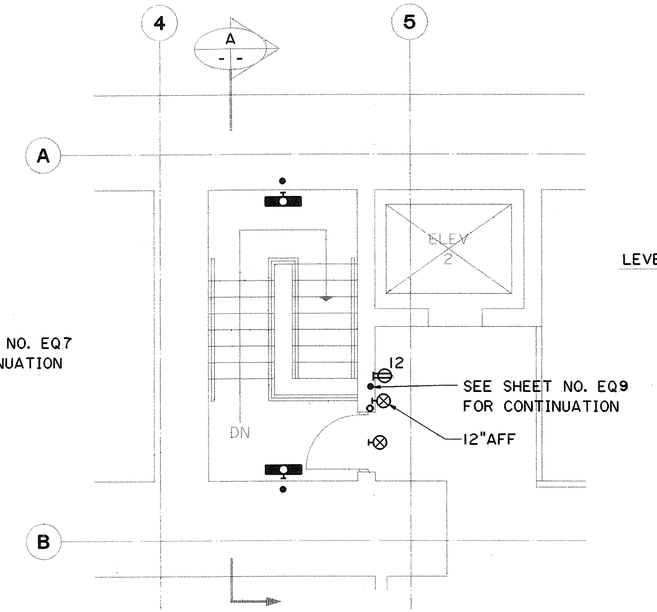
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	2/6/90
NOTE BOOK	CHECKED BY	1/6/90
	DESIGNED BY ROBERT F. JAMES	
NO.	QUANTITIES BY	6/26/90
	CHECKED BY J.J. SASSANI	

2410V152 2410: V152 ES0183.FGB#1 02JLY90-12.12.30

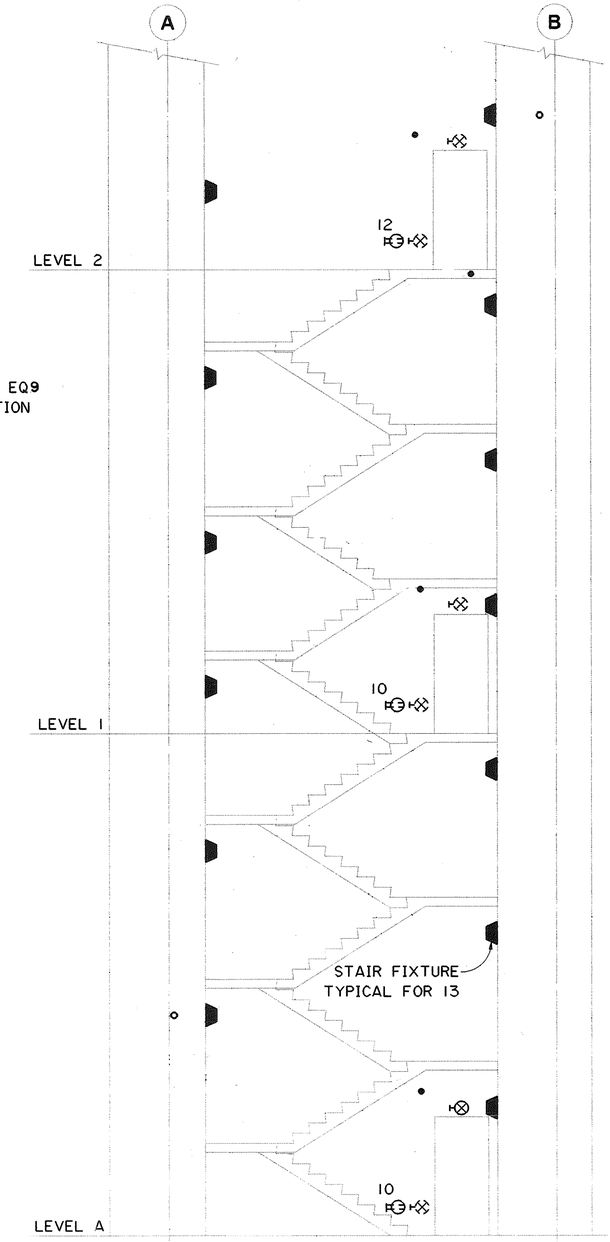
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	288	440



LEVEL A PLAN
SCALE: ¼"=1'-0"

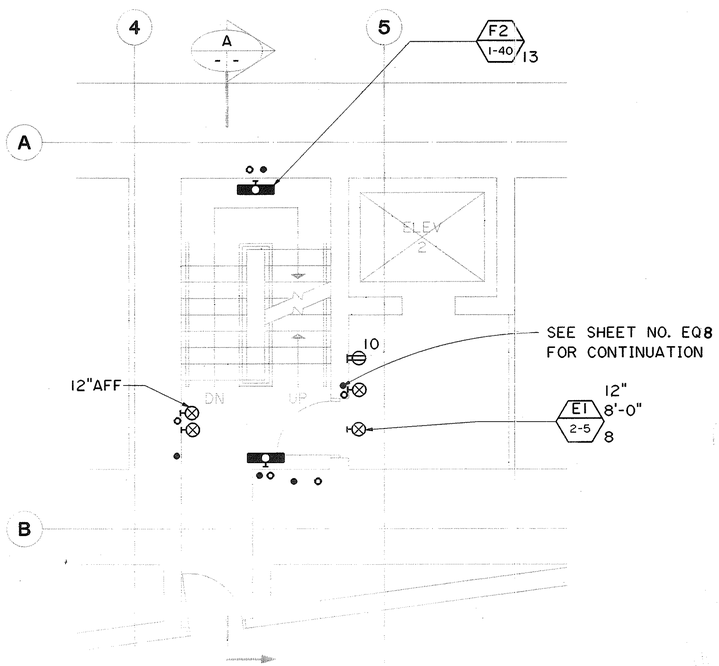


LEVEL 2 PLAN
SCALE: ¼"=1'-0"



NOTE:
HANDRAILS NOT SHOWN FOR CLARITY.

STAIR SECTION A - -



LEVEL 1 PLAN
SCALE: ¼"=1'-0"

GRAPHIC SCALE
4' 2' 0' 4' 8'
¼" = 1'-0"

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.

⊗ EXIT SIGNS
INTERIOR — TYPE E-1
EXTERIOR — TYPE E-2

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING & RECEPTACLES
STAIR 2
HAIKU PORTAL BUILDING - 0B
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

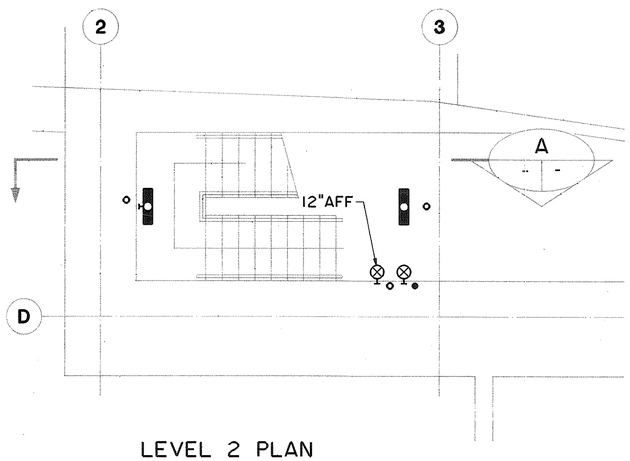
SCALE: AS NOTED DATE: APR 1992

SHEET NO. EQ21 OF 25 SHEETS

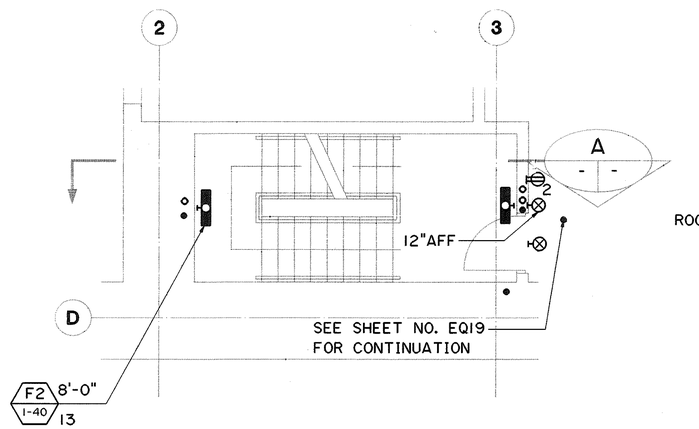
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 2/6/90
NOTE BOOK	DRAWN BY CADD	" "
NO.	TRACED BY	" "
	DESIGNED BY ROBERT F. JAMES	1/6/90
	QUANTITIES BY	" "
	CHECKED BY J.J. SASSANI	1/6/90

2410V152 2410: V152 ES0184.FGB:1 02JLY90-12.10.00

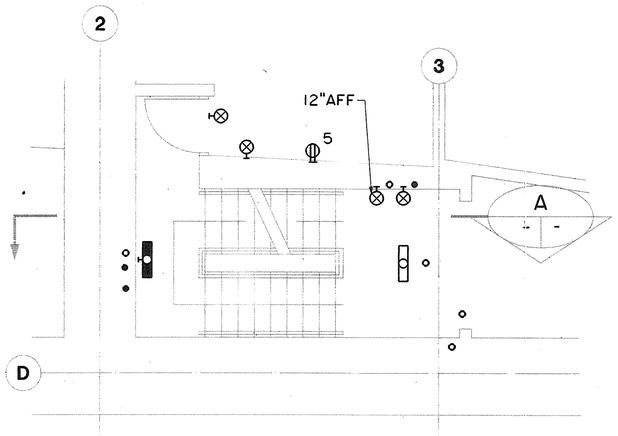
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	289	440



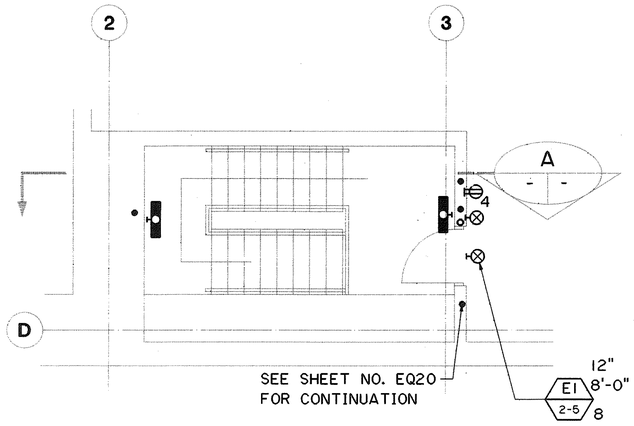
LEVEL 2 PLAN
SCALE: ¼"=1'-0"



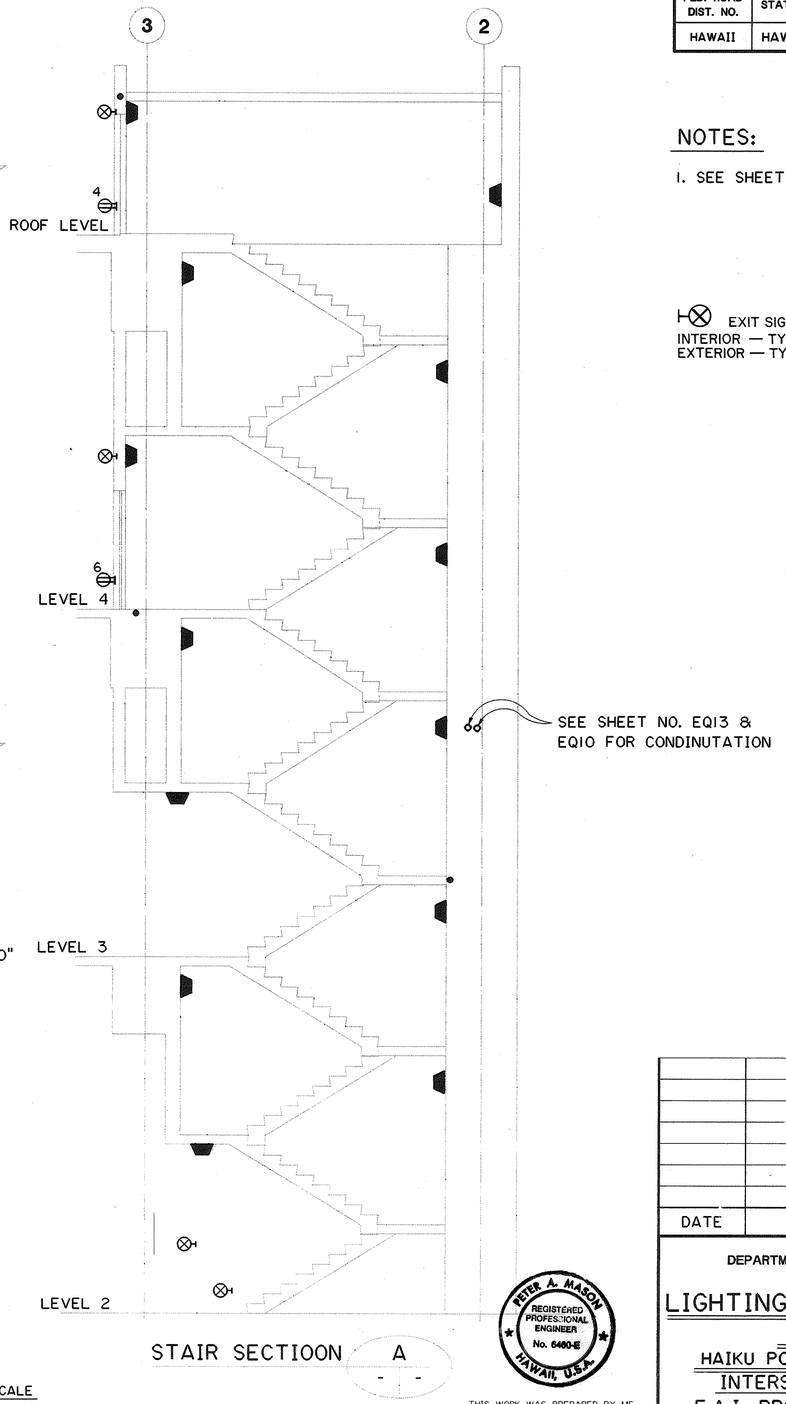
LEVEL 4 PLAN
SCALE: ¼"=1'-0"



LEVEL 3 PLAN
SCALE: ¼"=1'-0"



ROOF LEVEL PLAN
SCALE: ¼"=1'-0"



STAIR SECTIOON A

NOTES:

1. SEE SHEET NO. E1 FOR GENERAL NOTES.

⊗ EXIT SIGNS
INTERIOR — TYPE E-1
EXTERIOR — TYPE E-2

GRAPHIC SCALE
4' 2' 0' 4' 8'
¼" = 1'-0"

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	2/6/90
NOTE BOOK	PLOTTED BY "	"
	DESIGNED BY ROBERT F. JAMES	1/6/90
	QUANTITIES BY "	"
NO.	CHECKED BY J.J. SASSANI	1/6/90

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING & RECEPTACLES
STAIR 3
HAIKU PORTAL BUILDING - 0B
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

SHEET NO. EQ22 OF 25 SHEETS

2410V152 2410: V152 ES0185.FGB>1 02JLY90-12.07.00

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	290	440

SYSTEM: 480Y/277V 3Ø, 4W **PANEL –** OB3HL1 **PANEL LOCATION:** ELECT. ROOM, LEVEL 3, HAIKU OB
MAINS: 125A LUGS ONLY **SUPPLY LOCATION:** PANEL OB3HP
SHORT CIRCUIT RATING: 14 KAIC ELECT. ROOM, LEVEL 3, HAIKU OB

SERVICE	CKT. NO.	LOAD kVA A	B	C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	B	C	CKT. NO.	SERVICE
LEVEL A	1	1.17			100	1	20	#12				#12	100	1	20	2.17			2	LEVEL 2
	3		0.60														1.55		4	
	5			1.86														1.38	6	
LEVEL 3	7	2.17														1.65			8	LEVEL 4
	9		2.79														1.35		10	
	11			1.98														1.86	12	
ROOF	13	0.18																	14	SPARE
	15		0.60																16	SPARE
	17			0.60															18	SPACE
	19	5.43																	20	SPACE
T4-6	21		5.59			3	30	#8											22	
	23			5.88															24	
		8.95	9.58	10.32												3.82	2.90	3.24		

TOTAL CONNECTED 38.81 kVA
ESTIMATED MAXIMUM DEMAND 38.81 kVA

A	B	C
12.77	12.48	13.56
12.77	12.48	13.56

SYSTEM: 208Y/120V 3Ø, 4W **PANEL –** OB3LP **PANEL LOCATION:** ELECT. ROOM, LEVEL 3, HAIKU OB
MAINS: 125 A LUGS ONLY **SUPPLY LOCATION:** PANEL OB3HL1 VIA XFMR T4-6
SHORT CIRCUIT RATING: 10 KAIC ELECT. ROOM, LEVEL 3, HAIKU OB

SERVICE	CKT. NO.	LOAD kVA A	B	C	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD kVA A	B	C	CKT. NO.	SERVICE
LEVEL 3	1	1.21			100	1	20	#12				#12	100	1	20	0.72			2	LEVEL 4
STAIR 1	3		0.90														1.10		4	STAIR 3
	5			0.90														0.90	6	
LEVEL A	7	1.30														0.72			8	LEVEL 2
ROOF LEVEL	9		1.44														0.72		10	STAIR 2
	11			1.33														0.72	12	
XFMR	13	0.3				2	20	#12				12	3	20		3.0			14	600V SWGR
DISC. HEATER	15		0.3														3.0		16	HEATER
MCC HEATER	17			1.0		1	20	#12										3.0	18	
SPARE	19					1	20						1	20					20	SPARE
ELEV.#1 LIGHTS	21		0.2			1	20	#12					1	20					22	
ELEV.#2 LIGHTS	23			0.2		1	20	#12					1	20					24	
		2.81	2.84	3.43												4.44	4.82	4.62		

TOTAL CONNECTED 22.96 kVA
ESTIMATED MAXIMUM DEMAND 17.22 kVA

A	B	C
7.25	7.66	8.05
5.43	5.75	6.04

SYSTEM: 277V 1Ø, 3W ✱ **PANEL –** OB3LE1 **PANEL LOCATION:** ELECTRICAL ROOM, LEVEL 3, HAIKU OB
MAINS: 125A SUBFEED (DUAL) MAIN LUGS **SUPPLY LOCATION:** PANEL OB3HP, ELECT. ROOM, LEVEL 3, HAIKU OB & CB9HP, CP #9 VIA ATS
SHORT CIRCUIT RATING: 14 KAIC

SERVICE	CKT. NO.	LOAD	CIRCUIT BREAKER FRAME	POLES	TRIP	WIRE AWG		WIRE AWG	CIRCUIT BREAKER FRAME	POLES	TRIP	LOAD	CKT. NO.	SERVICE
LEVEL A, LEVEL 1, LEVEL 2, STAIR 2	1	3.23	100	1	20	#12		#12	100	1	20	2.12	2	LEVEL 3
STAIR 1 & ROOF	3	0.95	100	1	20	#12		#12	100	1	20	0.97	4	STAIR 3 & ROOF
LEVEL 4	5	1.69	100	1	20	#12		#12	100	1	20	0.87	6	TNL.ENTRANCE LTG.
SPARE	7			1	20					1	20	3.0	8	SPARE
SPARE	9			1	20					1	20		10	SPARE
SPARE	11			1	40								12	SPACE
SPACE	13												14	SPACE
	15												16	
	17												18	
		5.87										3.96		

TOTAL CONNECTED 9.83 kVA
ESTIMATED MAXIMUM DEMAND 9.83 kVA

	9.83
	9.83

✱ JUMPER ALL PHASES TOGETHER

SYSTEM: 120/240V 1Ø, 3W **PANEL –** OB3SE **PANEL LOCATION:** ELECT. ROOM, LEVEL 3, HAIKU OB
MAINS: 60AT/100AF 2P **SUPPLY LOCATION:** ATS ELECT. ROOM, LEVEL 3, HAIKU OB
SHORT CIRCUIT RATING: 10 KAIC

SERVICE	CKT. NO.	LOAD kVA A	B	CIRCUIT BREAKER FRAME	POLE	TRIP	WIRE AWG	A	B	C	WIRE AWG	CIRCUIT FRAME	POLE	TRIP	LOAD kVA A	B	CKT. NO.	SERVICE
	1				1		20						1	20			2	
	3																4	
	5																6	
	7																8	
SPACE	9																10	SPACE
	11																12	

TOTAL CONNECTED kVA
ESTIMATED MAXIMUM DEMAND kVA

A	B	C

NOTE
SERVICE CONNECTIONS TO THIS PANEL ARE PART OF CONTRACT F.A.I. PROJ. NO. I-H3-1(65).

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY CADD	4-6-90
NOTE BOOK	TRACED BY T. SANCHEZ	5-15-90
	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY J.T. SASSANI	6-20-90

DATE	REVISION
12/21/94	REVISED PER DCN 66-044
12/16/94	REVISED PER DCN 66-055
6/7/94	REVISED PER DCN 66-044
8/10/93	REVISED SCHEDULES PER DCN 66-017

PETER A. MASON — REGISTERED PROFESSIONAL ENGINEER — No. 6480-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Peter A. Mason

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PANEL SCHEDULES

HAIKU PORTAL BUILDING (OB)

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

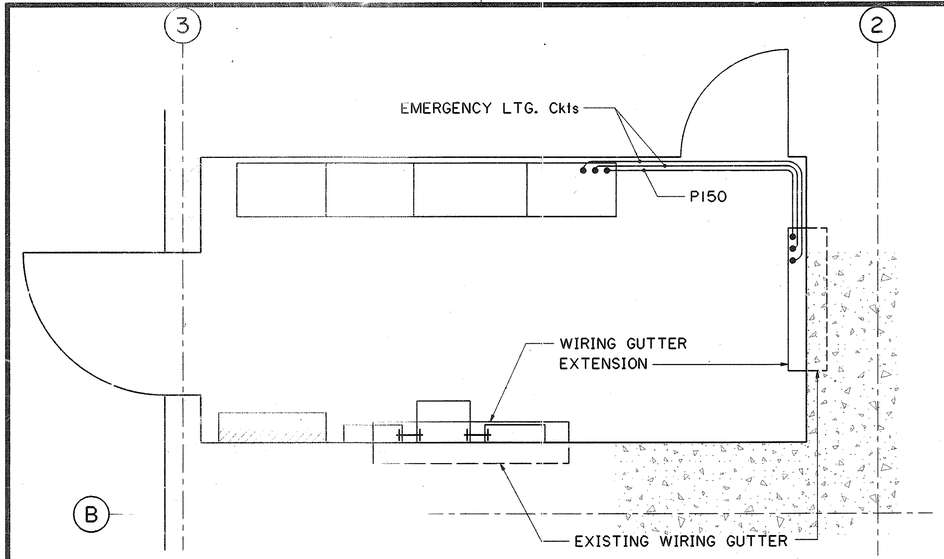
SCALE: NONE DATE: APR 1992

SHEET NO. EQ23 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	291	440

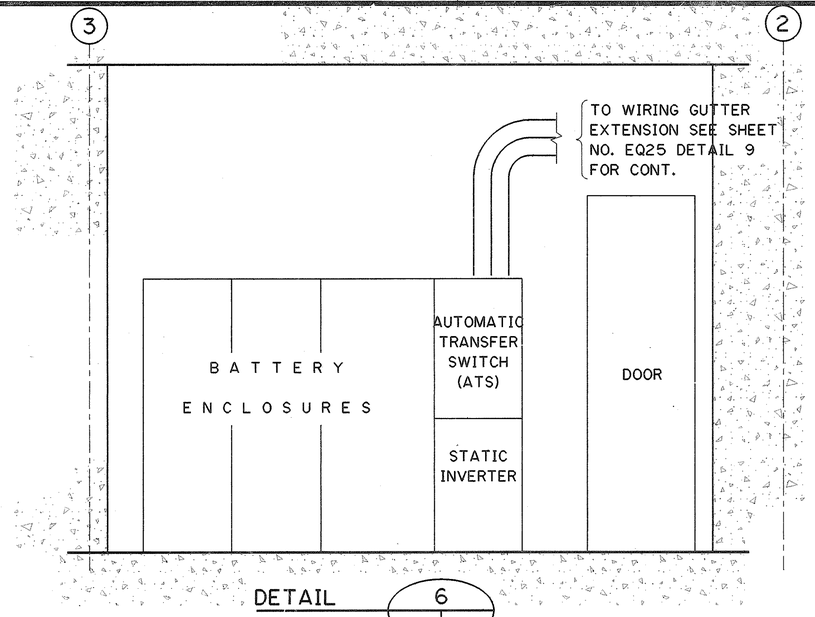
NOTES:

SEE SHEET NO. EM24 FOR NOTES.



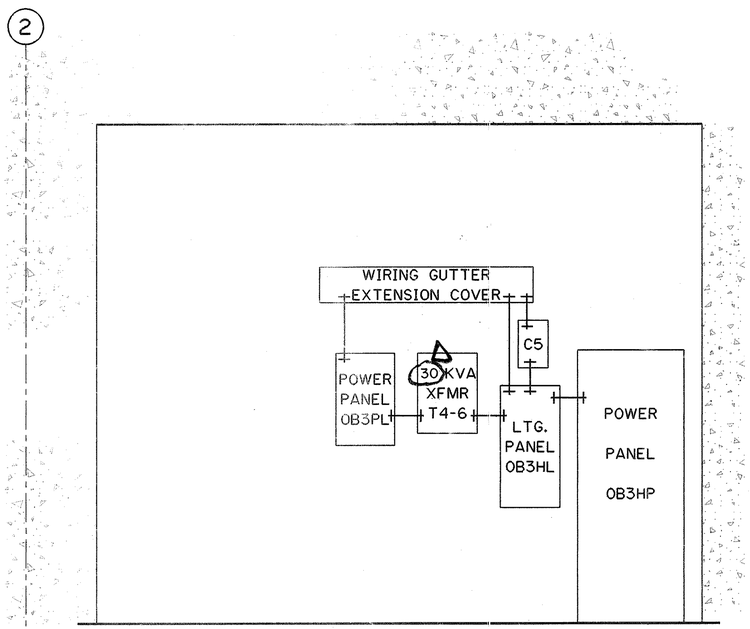
ELECTRICAL ROOM LAYOUT PLAN
SCALE: ½" = 1'-0"

DETAIL 1 (EQ17 | EQ24)



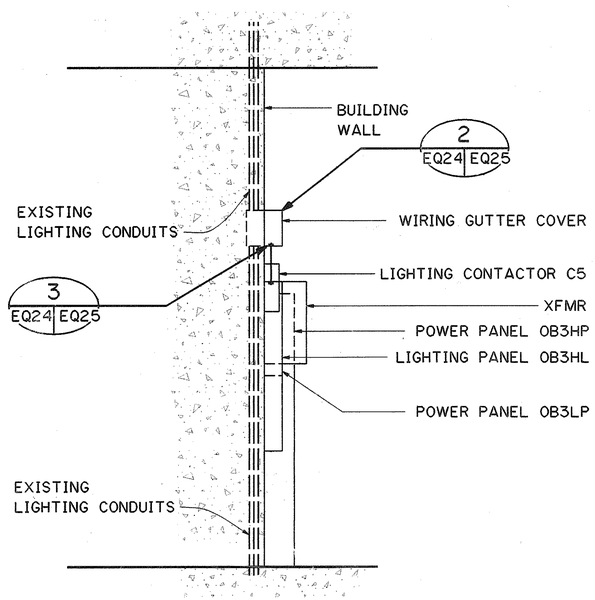
DETAIL 6 (- | -)

ELECTRICAL ROOM LAYOUT (SOUTH WALL)
SCALE: ½" = 1'-0"



ELECTRICAL ROOM LAYOUT (NORTH WALL)
SCALE: ½" = 1'-0"

DETAIL 5 (- | -)



ELECTRICAL PANEL ROOM LAYOUT (PROFILE VIEW)
SCALE: ½" = 1'-0"

DETAIL 4 (- | -)

GRAPHIC SCALE
2' 1' 0' 2' 4'
½" = 1'-0"

ORIGINAL PLAN	NOTE BOOK	NO.

		DATE
SURVEY PLOTTED BY	CADD	2/6/90
DRAWN BY	T.Y.S/R.F.T.	1/6/90
TRACED BY	T.Y.S/R.F.T.	1/6/90
DESIGNED BY	T.Y.S/R.F.T.	1/6/90
QUANTITIES BY	T.Y.S/R.F.T.	1/6/90
CHECKED BY	J.J.SASSANI	1/6/90

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PETER A. MASON REGISTERED PROFESSIONAL ENGINEER No. 6480-E HAWAII, U.S.A.

Peter A. Mason

DATE	REVISION
6/7/94	REVISED PER DCN 66-044

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

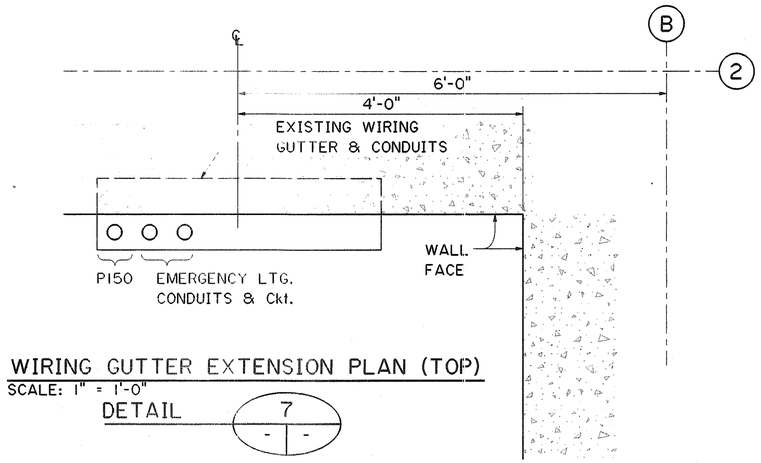
LIGHTING INSTALLATION
DETAILS - 1
HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ NO. I-H3-1(66)

SCALE: AS NOTED DATE: APR 1992

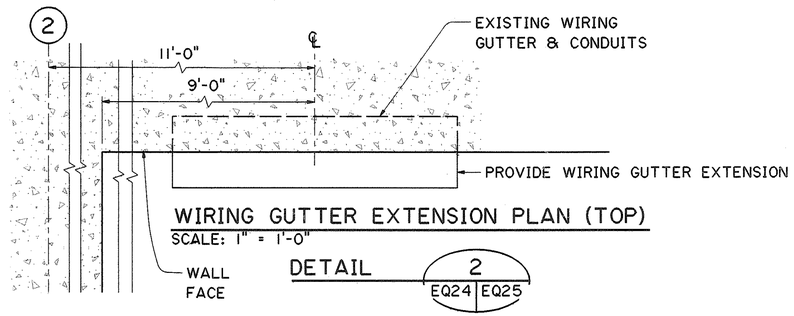
SHEET NO. EQ24 OF 25 SHEETS

2410V152 2410: V152 F5027 FEB:1 11 8 90 09:29:50

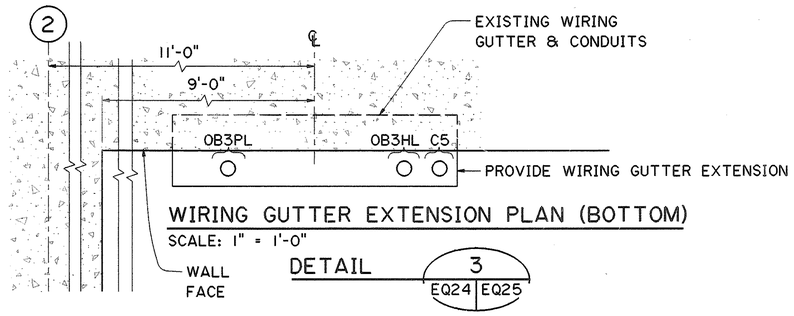
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	292	440



WIRING GUTTER EXTENSION PLAN (TOP)
SCALE: 1" = 1'-0"
DETAIL 7 (-|-)



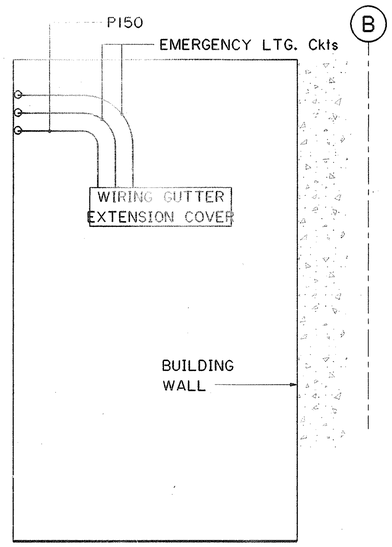
WIRING GUTTER EXTENSION PLAN (TOP)
SCALE: 1" = 1'-0"
DETAIL 2 (EQ24 | EQ25)



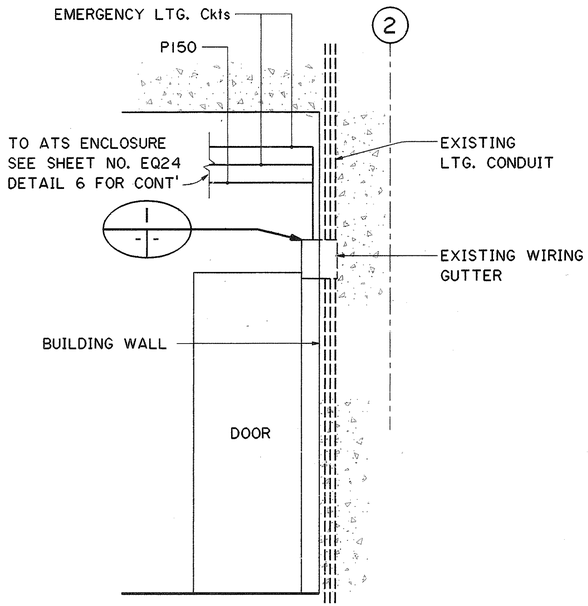
WIRING GUTTER EXTENSION PLAN (BOTTOM)
SCALE: 1" = 1'-0"
DETAIL 3 (EQ24 | EQ25)

NOTES:

SEE SHEE NO. EQ24
FOR NOTES.



ELECTRICAL ROOM LAYOUT (WEST WALL)
DETAIL 8 (EQ24 | EQ25)
SCALE: ½" = 1'-0"



ELECTRICAL PANEL ROOM LAYOUT
(PROFILE VIEW)
DETAIL 9 (EQ24 | EQ25)
SCALE: ½" = 1'-0"

GRAPHIC SCALE
1' 0' 1' 2'
1" = 1'-0"

GRAPHIC SCALE
2' 1' 0' 2' 4'
½" = 1'-0"

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	CADD
	DRAWN BY	" " "
NOTE BOOK	TRACED BY	T.Y.S./R.F.J.
	DESIGNED BY	" " "
NO.	QUANTITIES BY	" " "
	CHECKED BY	J. J. SASSANI

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING INSTALLATION
DETAILS - 2
HAIKU PORTAL BUILDING - OB
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6480-E
HAWAII, U.S.A.

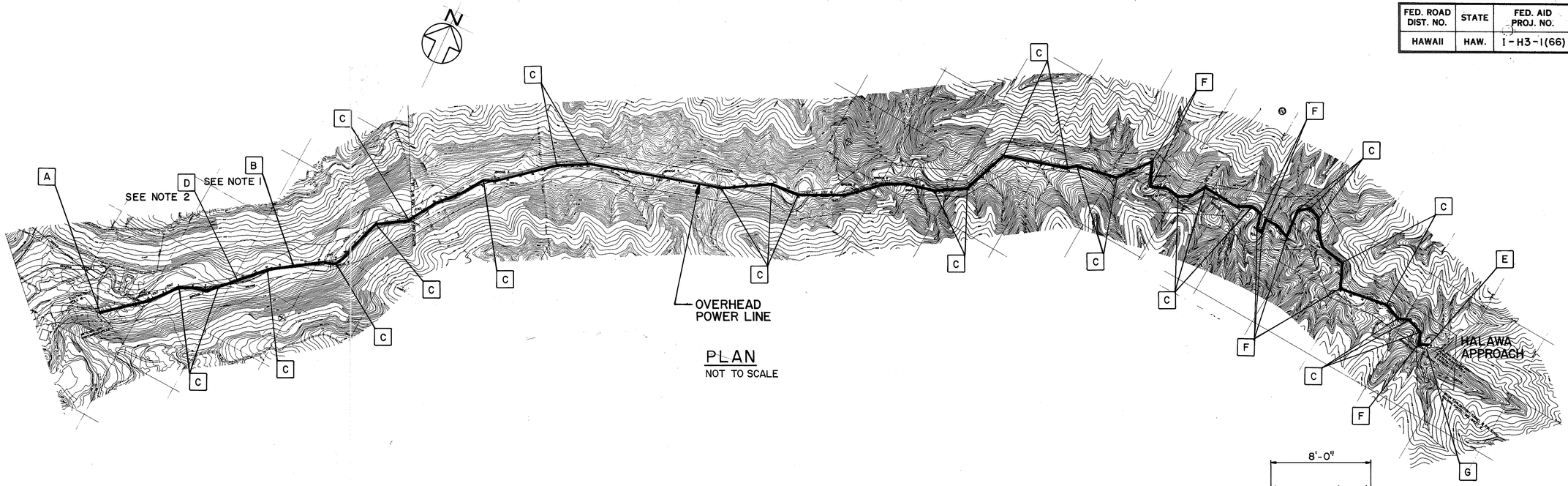
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

Peter A. Mason

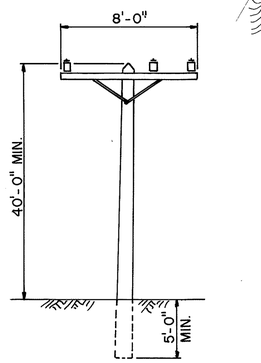
SCALE: AS NOTED DATE: APR 1992
SHEET NO. EQ25 OF 25 SHEETS

2410V152 2410: V152 ES0510.FGB,1 11JLY90-09.43.10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	293	440



PLAN
NOT TO SCALE



TYPICAL POLE ELEVATION
NOT TO SCALE

GENERAL NOTES

1. POLE(S) WITHOUT IDENTIFICATION TAG ARE SIMILAR TO TAG [B]
2. OVERHEAD LINE CONDUCTORS WITHOUT IDENTIFICATION TAG ARE SIMILAR TO TAG [D]
3. FOR SINGLE ARM STRAIGHT LINE, DOUBLE ARM DEADEND AND POLE LINE DEVIATION DETAIL, REFER TO REFERENCE PLANS, F.A.I. PROJ. NO. I-H3-1(37), SHEET NO. 25
4. FOR DISCONNECT AND METERING DETAILS, REFER TO REFERENCE PLANS, F.A.I. PROJ. NO. I-H3-1(37), SHEET NO. 24
5. FOR GROUNDING AND SUBSTATION LAYOUT, REFER TO REFERENCE PLANS, F.A.I. PROJ. NO. I-H3-1(37), SHEET NO. 26
6. REFER TO REFERENCE PLANS, F.A.I. PROJ. NO. I-H3-1(37), SHEET NO'S. 16 THRU 19 FOR OTHER LINE DETAILS.

ESTIMATED QUANTITIES

IDENTIFICATION TAG	DESCRIPTION	TOTAL
[A]	METERING AND DISCONNECT POLE	1 EA.
[B]	SINGLE ARM STRAIGHT LINE POLE	77 EA.
[C]	DOUBLE ARM LINE DEVIATION POLE	29 EA.
[D]	OVERHEAD LINE CONDUCTORS 3/0 AAAC	72,000 LF.
[E]	DOUBLE ARM DEADEND POLE	1 EA.
[F]	BUCK ARM POLE LINE DEVIATION	9 EA.
[G]	SUBSTATION INCLUDES: SWITCH POLE, TRANSFORMER, CABLE BUS, LOW VOLTAGE PANEL & SHED, ALL LOW VOLTAGE FEEDERS, FENCE, CONCRETE PADS AND GROUND WIRE	1 LOT

SURVEY PLOTTED BY _____ DATE
DRAWN BY _____
TRACED BY _____
DESIGNED BY _____
QUANTITIES BY _____
CHECKED BY _____

ORIGINAL PLAN
NOTE BOOK _____
No. _____

DATE	REVISION

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HALAWA ACCESS ROAD OVERHEAD POWER LINE DEMOLITION PLAN

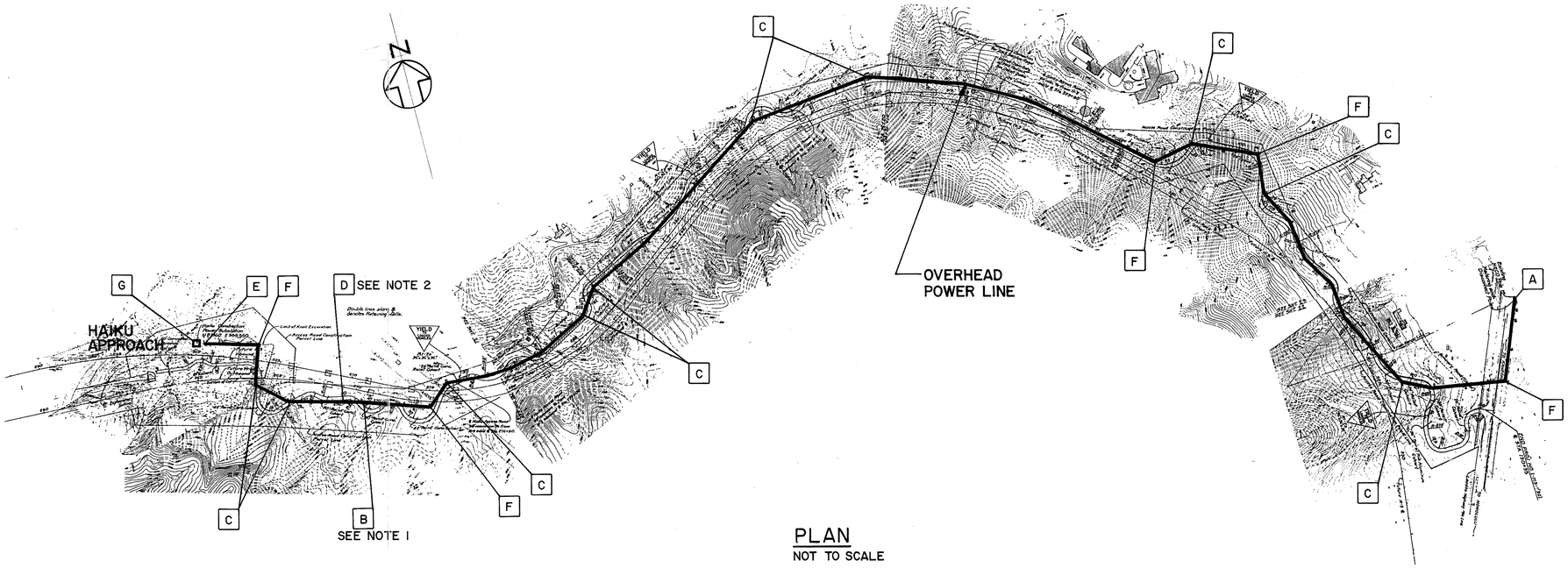
TEMPORARY POWER DEMOLITION

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

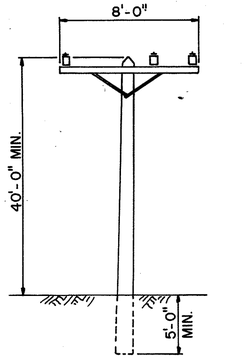
SCALE: NONE DATE: APR 1992

SHEET NO. EP1 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(66)	1992	294	440



PLAN
NOT TO SCALE



TYPICAL POLE ELEVATION
NOT TO SCALE

GENERAL NOTES

1. POLE(S) WITHOUT IDENTIFICATION TAG ARE SIMILAR TO TAG [B]
2. OVERHEAD LINE CONDUCTORS WITHOUT IDENTIFICATION TAG ARE SIMILAR TO TAG [D]
3. FOR SINGLE ARM STRAIGHT LINE, DOUBLE ARM DEADEND AND POLE LINE DEVIATION DETAIL, REFER TO REFERENCE PLANS, F.A.I. PROJ. NO. I-H3-1(37), SHEET NO. 25
4. FOR DISCONNECT AND METERING DETAILS, REFER TO REFERENCE PLANS, F.A.I. PROJ. NO. I-H3-1(37), SHEET NO. 24
5. FOR GROUNDING AND SUBSTATION LAYOUT, REFER TO REFERENCE PLANS, F.A.I. PROJ. NO. I-H3-1(37), SHEET NO. 26
6. REFER TO REFERENCE PLANS, F.A.I. PROJ. NO. I-H3-1(37), SHEET NO'S. 20 THRU 23 FOR OTHER LINE DETAILS.

ESTIMATED QUANTITIES

IDENTIFICATION TAG	DESCRIPTION	TOTAL
[A]	METERING AND DISCONNECT POLE	1 EA.
[B]	SINGLE ARM STRAIGHT LINE POLE	37 EA.
[C]	DOUBLE ARM LINE DEVIATION POLE	10 EA.
[D]	OVERHEAD LINE CONDUCTORS 3/0 AAAC	34,000 LF.
[E]	DOUBLE ARM DEADEND POLE	1 EA.
[F]	BUCK ARM POLE LINE DEVIATION	5 EA.
[G]	SUBSTATION INCLUDES: SWITCH POLE, TRANSFORMER, CABLE BUS, LOW VOLTAGE PANEL & SHED, ALL LOW VOLTAGE FEEDERS, FENCE, CONCRETE PADS AND GROUND WIRE	1 LOT

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

PETER A. MASON
REGISTERED PROFESSIONAL ENGINEER
No. 6460-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Peter A. Mason

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAIKU ACCESS ROAD OVERHEAD POWER LINE DEMOLITION PLAN

TEMPORARY POWER DEMOLITION

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(66)

SCALE: NONE DATE: APR 1992

SHEET NO. EP2 OF 2 SHEETS