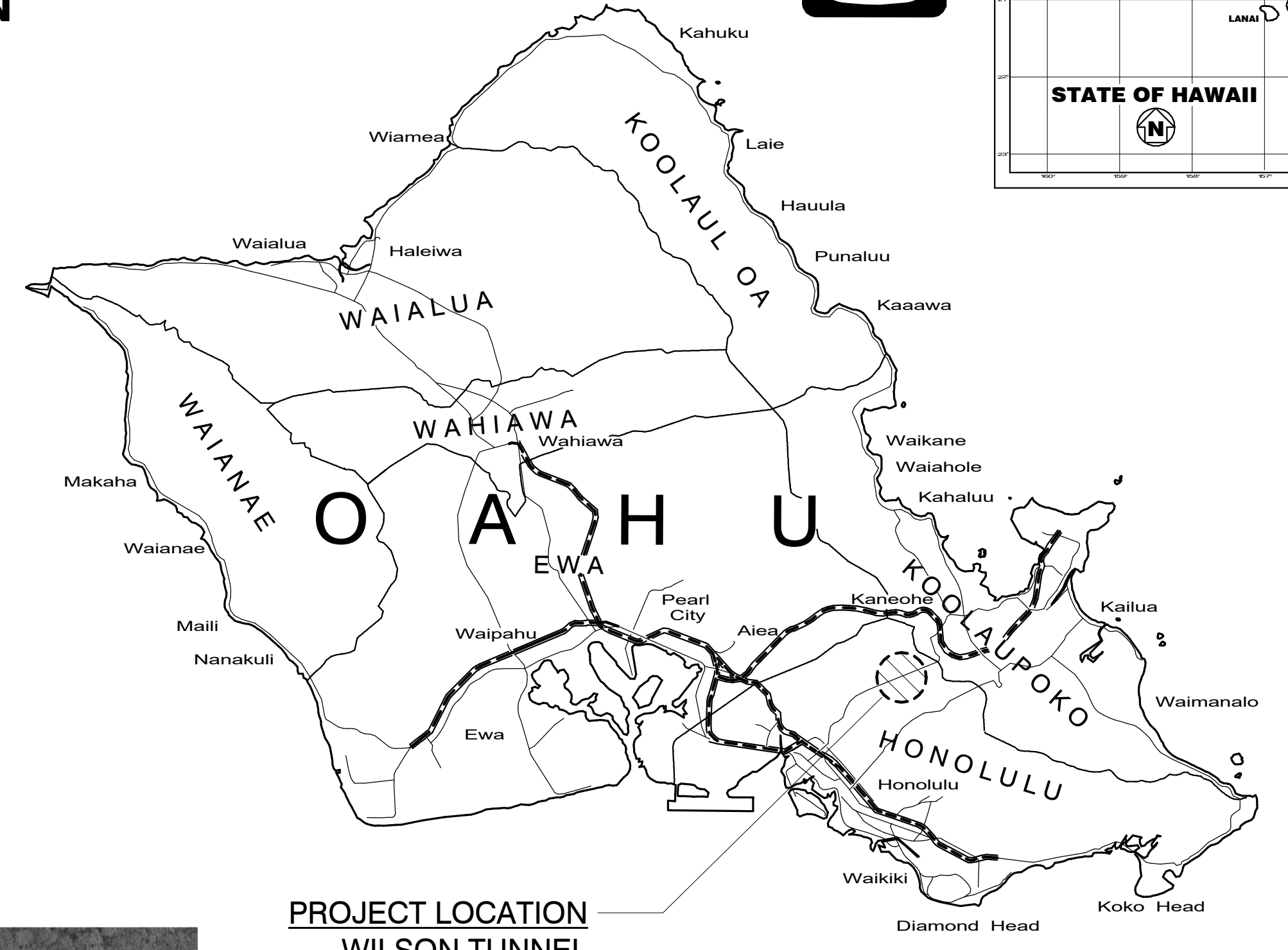
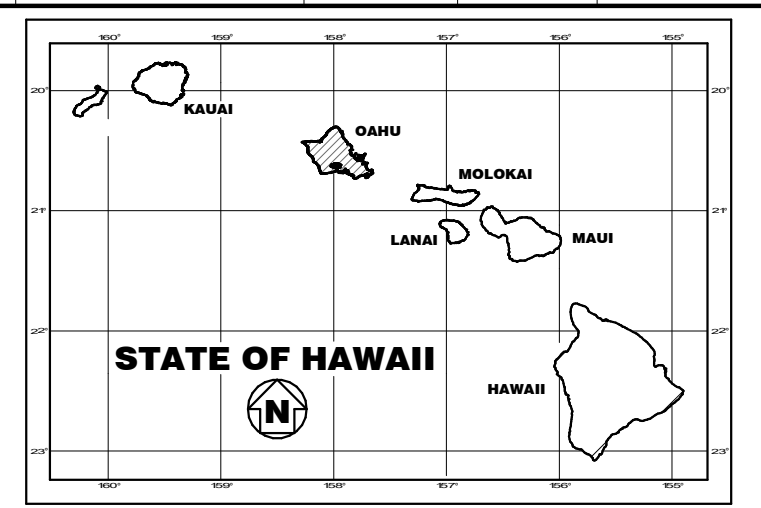
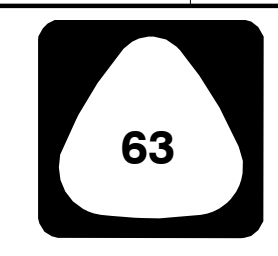


SHEET INDEX	
SHEET NUMBER	SHEET NAME
E0	TITLE SHEET
E1	ABBREVIATIONS, SYMBOLS LEGEND, AND SHEET INDEX
E2	ELECTRICAL NOTES AND SPECIFICATIONS
E3	DEMO VENT BUILDING FIRST FLOOR PLAN
E4	DEMO KALIHI PORTAL PLAN
E5	DEMO KANEHOE PORTAL PLAN
E6	DEMO MV ONE-LINE DIAGRAM
E7	DEMO KALIHI VAULT ONE-LINE DIAGRAM
E8	DEMO KANEHOE VAULT ONE-LINE DIAGRAM
E9	VENT BUILDING FIRST FLOOR PLAN
E10	KALIHI PORTAL PLAN
E11	KANEHOE PORTAL PLAN
E12	TUNNEL & SHAFT SECTION
E13	VENTILATION SHAFT/AIR PLENUM SECTION
E14	TUNNEL PLENUM & SHAFT SECTION AND PROFILE
E15	PORTAL ELEVATIONS
E16	MV ONE-LINE DIAGRAM
E17	KALIHI VAULT ONE-LINE DIAGRAM
E18	KANEHOE VAULT ONE-LINE DIAGRAM

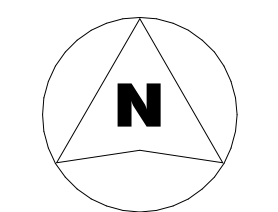
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HONOLULU, HAWAII

PLANS FOR
**LIKELIKE HIGHWAY
WILSON TUNNEL ELECTRICAL
IMPROVEMENTS**
HIGHWAY PROJECT NO. HWY-OT-SMP-01
DISTRICT OF HONOLULU
ISLAND OF OAHU

HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E0	19



PROJECT LOCATION
WILSON TUNNEL



SCALE IN MILES
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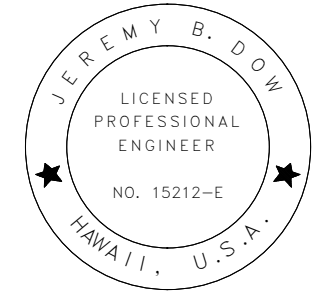
=====
FEDERAL AID INTERSTATE PROJECTS PREVIOUSLY
OR UNDER CONSTRUCTION CONSTRUCTED

MILE POST 5.75 TO MILE POST 6.28



LIMITS OF PROJECT

1 PROJECT SITE PLAN
N.T.S.



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
SIGNATURE: *Jeremy B. Doherty* 4/3/21
EXPIRATION DATE OF THE LICENSE

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII
APPROVED: *[Signature]* 10/06/22
DIR. OF TRANSPORTATION DATE

DESIGNED BY	DATE
P. S. & E. BY	PHONE
CHECKED BY	
QUANTITIES BY	
DESIGNED BY	
TRACED BY	
DRAWN BY	
DATE PLOTTED BY	



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HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E1	19


















ELECTRICAL SYMBOL LIST (NOT ALL MAY BE USED)

RACEWAYS & CONDUCTORS





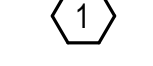
INSTALL PER NEC 210.4

-  RACEWAY AND CONDUCTORS
-  RACEWAY AND CONDUCTORS - NEW WORK

POWER

-  PANELBOARD / EQUIPMENT
-  DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, 3 WIRE, +18" AFF OR AS NOTED
-  DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, 3 WIRE, MOUNTED 6" ABOVE COUNTER OR AS NOTED
-  DOUBLE DUPLEX RECEPTACLE, 20 AMP, 125 VOLT, 3 WIRE, +18" AFF OR AS NOTED
-  FLUSH FLOOR MOUNTED POWER RECEPTACLE, 20 AMP, 125 VOLT, 3 WIRE, HUBBELL B2529 FLOOR BOX, S3925 BRASS COVER
-  NEMA OUTLET, RATING AS INDICATED, +18" AFF OR AS NOTED
-  JUNCTION BOX
-  JUNCTION BOX, FLOOR MOUNTED
-  JUNCTION BOX, WALL MOUNTED
-  CLOCK RECEPTACLE
-  EQUIPMENT CONNECTION
-  MOTOR CONNECTION, FURNISHED BY MECHANICAL, INSTALLED BY ELECTRICAL
-  MAGNETIC STARTER, FURNISHED BY MECHANICAL, INSTALLED BY ELECTRICAL
-  DISCONNECT SWITCH, FURNISHED BY MECHANICAL, INSTALLED BY ELECTRICAL
-  EQUIPMENT MOTOR SWITCH, FURNISHED BY MECHANICAL, INSTALLED BY ELECTRICAL
-  HANDHOLE
-  MANHOLE

SYMBOL

-  VIEW REFERENCE
-  NORTH ARROW
-  CENTERLINE
-  NOTE REFERENCE
-  KEYNOTE REFERENCE
- ABC** LUMINAIRE DESIGNATION, REFER TO LUMINAIRE SCHEDULE

ABBREVIATIONS

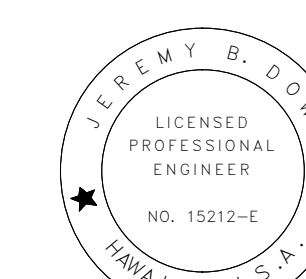
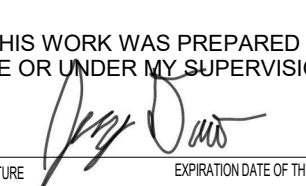
- AF ARC FAULT BREAKER
- C CONDUIT
- CLF CURRENT LIMITING FUSE
- CP COPIER
- DP DISPOSAL
- DW DISHWASHER
- EL EVENING LIGHT, TIMESWITCH CONTROLLED
- EWC ELECTRONIC WATER COOLER
- GFI GROUND FAULT CIRCUIT INTERRUPTER
- HA HACR BREAKER
- HECO HAWAIIAN ELECTRIC COMPANY
- HELCO HAWAII ELECTRIC LIGHT COMPANY (BIG ISLAND)
- IG INSULATED GROUND CIRCUIT(S)
- KIUC KAUAI ISLAND UTILITY COOPERATIVE
- L LIGHT(S)
- LC LIGHTING CONTACTOR
- LB LOCKABLE BREAKER
- MDP MAIN DISTRIBUTION PANEL
- MECO MAUI ELECTRIC COMPANY
- MW MICROWAVE
- NL NIGHT LIGHT, TIMESWITCH CONTROLLED
- PFB PROVISIONS FOR BREAKER
- R RECEPTACLE(S)
- REF REFRIGERATOR
- S SPARE BREAKER
- TR TAMPER RESISTANT
- TBWP THERMOPLASTIC BRAIDED WEATHER PROOF
- WP WEATHERPROOF
- 4X NEMA 4X STAINLESS STEEL

GENERAL NOTES

- INSTALLATION SHALL COMPLY WITH THE 2017 NATIONAL ELECTRICAL CODE, LOCAL AMENDMENTS, AND NECA STANDARDS OF INSTALLATION.
- EXISTING EQUIPMENT INFORMATION SHOWN ON THESE DRAWINGS SHOULD BE FIELD VERIFIED. CONFIRM EQUIPMENT LOCATIONS WITH OWNER AND ADJUST AS REQUIRED.
- ALL CONDUCTOR SIZES SHOWN ARE BASED ON COPPER.
- MAINTAIN MINIMUM 6" CLEARANCE BETWEEN CONDUIT AND PIPING. MAINTAIN 12" CLEARANCE BETWEEN CONDUIT AND HEAT SOURCES SUCH AS FLUES, HEATING PIPES, AND HEATING APPLIANCES.
- VERIFY CEILING TYPES THROUGHOUT; PROVIDE ALL MOUNTING ACCESSORIES, TRIM, FLANGES, OUTLET BOXES, ETC. FOR A COMPLETE AND FINISHED INSTALLATION.
- ALL EQUIPMENT AND MATERIALS ARE UL LISTED WHERE LISTING IS AVAILABLE FOR THAT TYPE OF EQUIPMENT OR CONFORM TO ANSI OR NEMA STANDARDS.
- WORKMANSHIP SHALL CONFORM TO CONSTRUCTION PRACTICES RECOMMENDED BY THE AMERICAN ELECTRICIANS HANDBOOK BY CROFT (LATEST EDITION) AND WILL BE SUBJECTED TO THE APPROVAL OF THE AGENCY THAT HAS JURISDICTION AND THE ENGINEER OF RECORD.
- TEST COMPLETED INSTALLATION AND CORRECT ALL DEFICIENCIES FOUND IN THE SYSTEM OR INSTALLATION.
- ALL EXISTING CIRCUITS AFFECTED DURING ELECTRICAL INSTALLATION SHALL BE RESTORED TO THEIR ORIGINAL OPERATING CONDITION.
- THE CONTRACTOR SHALL MAKE EVERY EFFORT TO VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO DEMOLITION, DIGGING, TRENCHING, OR SIMILAR OPERATIONS. COORDINATE WITH THE CONSTRUCTION MANAGER OR OWNERS REPRESENTATIVE TO REVIEW EACH WORK AREA PRIOR TO BEGINNING WORK.
- ALL EXISTING CONDITION SHOWN ON THE DRAWINGS IS FROM THE BEST AVAILABLE AS-BUILT DRAWINGS AND LIMITED SITE-SURVEY. CONTRACTOR SHALL FIELD VERIFY THE ACTUAL CONDITION BEFORE CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
- ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL CONDUIT AND CONNECTIONS BETWEEN RESPECTIVE DEVICES, FIXTURES, AND EQUIPMENT. CONTRACTOR TO DETERMINE EXACT ROUTING OF CONDUIT CONNECTIONS BETWEEN RESPECTIVE DEVICES, FIXTURES, AND EQUIPMENT. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR EXACT LOCATIONS.
- PROVIDE CIRCUIT IDENTIFICATION LABEL ON DEVICES, LIGHT SWITCHES, AND EQUIPMENT.
- SCAN REBAR PRIOR TO DRILLING. ALERT ENGINEER IF ANY REBAR IS CUT.

ORIGINAL PLAN	DATE
DESIGNED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

DRAWING NAME: C:\Users\zachary.cowan\Documents\20255 Wilson Tunnel E_R21_zachary.cowan.rvt PLOT TIME: 9/15/2022 2:01:21 PM


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 4/8/24
 SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
**ABBREVIATIONS, SYMBOLS
 LEGEND, AND SHEET INDEX**
**LIKELIKE HIGHWAY
 WILSON TUNNEL ELECTRICAL
 IMPROVEMENTS**
HWY-OT-SMP-01
 Scale: N.T.S. Date: _____
 SHEET No. E1 OF 19 SHEETS

HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E2	19

1. GENERAL REQUIREMENTS

- A. THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND SPECIFICATIONS FOR ALL PARTS OF THE WORK. IF ANY DISCREPANCIES EXIST BETWEEN THE PLANS FOR HIS WORK AND THE PLANS FOR WORK OF OTHERS, HE SHALL REPORT SUCH DISCREPANCIES TO THE ARCHITECT AND SHALL OBTAIN WRITTEN INSTRUCTIONS. ANY CHANGES IN THE WORK COVERED BY THIS SPECIFICATION MADE NECESSARY THROUGH NEGLIGENCE OR FAILURE OF THE CONTRACTOR TO REPORT SUCH DISCREPANCIES SHALL BE MADE BY AND AT THE EXPENSE OF THE CONTRACTOR.
- B. THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO COVER A COMPLETE INSTALLATION OF SYSTEMS. EVERYTHING THAT IS SPECIFIED, SCHEDULED OR MENTIONED BY ONE SHALL BE BINDING AS IF CALLED BY BOTH.
- C. DEFINITIONS
- 1) "PROVIDE" MEANS "FURNISH AND INSTALL".
 - 2) "WIRING" MEANS "PROVIDE ALL DEVICES, RACEWAYS, CONDUCTORS, CABLES, PROTECTIVE EQUIPMENT, ETC., FOR COMPLETE ELECTRIC CIRCUIT OR SYSTEM.
- D. SCOPE OF WORK:
- 1) THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO EXECUTE WORK AND SHALL OBTAIN AND PAY FOR ALL PERMITS, INSPECTIONS AND ASSOCIATED FEES.
 - 2) THE ELECTRICAL CONTRACTOR SHALL FURNISH TO THE ARCHITECT, AT THE COMPLETION OF THE PROJECT A FINAL INSPECTION CERTIFICATE FROM THE LOCAL INSPECTION AUTHORITY.
 - 3) WORK SHALL INCLUDE BUT SHALL NOT BE LIMITED TO:
 - A) ELECTRICAL DISTRIBUTION SYSTEM
 - B) POWER WIRING
 - C) FINAL CONNECTIONS TO ALL EQUIPMENT
- E. WORK BY OTHERS:
- 1) PRIOR TO COMMENCING, COORDINATE TIME SCHEDULING, PATCHING, INSTALLATION, HOOK-UPS, AND MISCELLANEOUS PROCEDURES WITH ANY AND ALL OTHER CONTRACTORS THAT WILL BE INVOLVED TO EXPEDITE THE COMPLETION OF THE CONTRACT.
 - 2) ELECTRICAL CONTRACTOR SHALL NOTIFY OTHER TRADES AND SUPPLIERS OF PROJECT VOLTAGES
- F. RECORD DRAWINGS:
- THE CONTRACTOR SHALL MAINTAIN AN ACCURATE AND ADEQUATE RECORD OF EACH CHANGE IT OCCURS, REGARDLESS OF HOW ORDERED. AT NO ADDITIONAL CHARGE TO THE OWNER, AFTER FINAL INSPECTION, PREPARE A REPRODUCIBLE COPY OF "AS-BUILT" ELECTRICAL DRAWINGS FROM SITE COPY AND TURN OVER TO ARCHITECT/OWNER.
- G. REGULATIONS AND CODES:
- THE ENTIRE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE N.E.C., IEEE, CSA AND THE RULES, REGULATIONS AND/OR ORDINANCES OF THE GOVERNING AUTHORITY SHALL BE MADE BY THE ELECTRICAL CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER.
- PHASING NOTES:
- A. POWER OUTAGES WILL BE SCHEDULED AND COORDINATED WITH THE DEPARTMENT OF TRANSPORTATION 14 DAYS MINIMUM IN ADVANCE. OUTAGE DURATIONS SHALL NOT EXCEED 4 HOURS.
 - B. CONSTRUCT NEW 5KV FEEDER SYSTEM CABLES/EQUIPMENT AND MAKE READY FOR FINAL TERMINATION TO EXISTING SYSTEMS WHERE ELECTRICAL SITE CONDITIONS PERMIT. KEEP EXISTING SYSTEMS OPERATIONAL TO THE MAXIMUM EXTENT POSSIBLE UP TO THE TIME WHEN THE CHANGEOVER FROM EXISTING TO NEW WILL BE MADE.

2. PRODUCTS

- A. MATERIALS SHALL BE U.L. APPROVED UNLESS OTHERWISE REQUIRED AND SHALL CONFORM TO APPLICABLE N.E.M.A. AND N.E.C. STANDARDS.
- B. RACEWAYS SHALL BE RIGID METAL CONDUIT OR AS NOTED. MANUFACTURED AND INSTALLED ACCORDING TO N.E.C. ARTICLE 344, UNLESS OTHERWISE NOTED. ALL RACEWAYS SHALL HAVE A PULL-WIRE.
- C. PROVIDE #6 AWG MINIMUM 600V INSULATED GROUND WIRE (GREEN) INSTALLED FOR THE ENTIRE LENGTH OF THE TRAY, UNLESS THE TRAY IS LISTED FOR EQUIPMENT GROUND USE.
- D. REQUIRED BENDS, FITTINGS, JUNCTION BOXES, ETC., WHETHER OR NOT THEY ARE SHOWN ON DRAWINGS SHALL BE INSTALLED TO SATISFY ALL CODES AND STANDARDS OF GOOD PRACTICE.
- E. HARDWARE, SUPPORT, BACKING ETC., SHALL BE PROVIDED WHERE NECESSARY TO INSTALL ELECTRICAL EQUIPMENT. WOOD MATERIALS SHALL BE TERMITE TREATED AND FIRE PROOFED, IRON OR STEEL MATERIALS SHALL BE GALVANIZED FOR CORROSION PROTECTION, NON-FERROUS MATERIALS SHALL BE BRASS OR BRONZE. ALL WOOD SCREWS SHALL BE BRASS OR GALVANIZED STEEL.

EQUIPMENT SCHEDULE		
EQUIPMENT	MANUFACTURER OR APPROVED EQUAL	MODEL (CAT. #)
ARMORED CABLE, XLPE 1/1" #6 AWG, 5kV (COPPER) 90 DEG C	SHAWCOR (SHAWFLEX PRODUCTS) LISTING: IEEE 383 & 1202, ICEA T-30-520	#8S210M060105700 MIN. BENDING RADIUS (15.8 INCHES)
NON-SHIELDED CABLE, XLPE 1/1" #6 AWG 5kV (COPPER) 90 DEG C	PRIORITY WIRE LISTING: ICEA -S-66-524, NEMA-WC7	#P0201
CABLE JUNCTION BOX MAX VOLTAGE: 6.6kV	THORNE & DERRICK INTERNATIONAL LISTING: IP66	MJB MOUNTING: WALL
MEDIUM VOLTAGE SWITCHGEAR 5.5kV, 200 AMPERES 600kV BIL, 12.5kA SHORT-TIME RATING	SQUARE D LISTING: UL	MINI-BREAK LOAD INTERRUPTER MOUNTING: WALL
5KV CABLE SPLICE KIT TYPE: ARMORED & NON-ARMORED CABLE RUBBER, IN-LINE	3M LISTING: IEEE 404	#5551-AC

3. EXECUTION

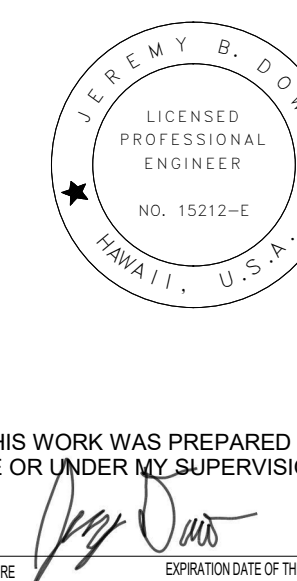
- A. SAFETY PRECAUTIONS SHALL BE TAKEN AT ALL TIMES TO PROTECT PERSONS, PROPERTY AND EQUIPMENT.
- B. RELOCATION OF ANY DEVICE WITHIN 10 FEET OF ITS INDICATED LOCATION BEFORE INSTALLATION SHALL BE DONE WITHOUT ADDITIONAL COST TO THE OWNER.
- C. EQUIPMENT AND FIXTURES SHALL BE PROPERLY CONNECTED WITH ADEQUATE POWER AND CHECKED THOROUGHLY FOR PROPER OPERATION.
- D. EXPOSED EQUIPMENT SHALL BE INSTALLED AS PER DRAWINGS AND IS SUBJECT TO ARCHITECTURAL INSPECTION FOR AESTHETIC APPEARANCE.
- E. PROJECT GROUNDING SYSTEM SHALL BE INSTALLED AS REQUIRED BY N.E.C. ARTICLE 250.
- F. CONTRACTOR SHALL DO ALL CUTTING AND PATCHING OF HIS WORK WHICH MAY BE REQUIRED TO RECEIVE THE WORK OF OTHER CONTRACTORS.
- G. MEGGER TEST PRIOR TO ENERGIZING FOR THE FIRST TIME, ALL PIECES OF ELECTRICAL EQUIPMENT TO ASSURE THEM TO HAVE PROPER PHASE-TO-PHASE AND PHASE-TO-GROUND INSTALLATION AND TO BE FREE OF GROUNDS AND SHORTS.
- H. THE ENTIRE SITE SHALL BE CLEANED OF MATERIALS, DEBRIS, TOOLS, AND EQUIPMENT RELATED TO THIS WORK DAILY. ALL ITEMS OF ELECTRICAL EQUIPMENT ON JOB SITE SHALL BE KEPT PROTECTED AND COVERED AT ALL TIMES.
- I. WARRANTY:
- 1) INSTALLATION SHALL BE COMPLETE IN EVERY DETAIL AND READY TO USE.
 - 2) UNLESS OTHERWISE STATED, THE WARRANTY STARTS ON THE DATE WRITTEN NOTICE FROM THE CONTRACTOR IS GIVEN AND IS ACCEPTED BY THE OWNER STATING THE PROJECT IS COMPLETE AND ALL REQUIRED CORRECTIONS HAVE BEEN MADE. THE WARRANTY SHALL CERTIFY THAT ALL DEFECTS IN MATERIAL OR WORKMANSHIP SHALL BE PROMPTLY REPAIRED OR REPLACED BY THE CONTRACTOR, TO THE SATISFACTION OF THE OWNER, FOR A PERIOD OF ONE (1) YEAR.

DEMOLITION NOTES:

1. THE DEMOLITION DRAWINGS ARE INTENDED TO SHOW THE GENERAL SCOPE OF WORK AND DO NOT NECESSARILY SHOW EVERY DEVICE, BOX, CONDUIT, ETC. TO BE REMOVED. THE CONTRACTOR SHALL FIELD VERIFY OTHER ELECTRICAL SERVICES THAT MAY BE ENCOUNTERED DURING DEMOLITION AND SHALL REMOVE OR REROUTE THESE ITEMS AS DIRECTED.
2. MAINTAIN CIRCUIT CONTINUITY AS REQUIRED FOR FIXTURES AND DEVICES INDICATED TO REMAIN, INCLUDING THOSE OUTSIDE OF PROJECT LIMITS. COORDINATE WITH NEW WORK AND RE-ROUTE CONDUIT AND WIRE AS REQUIRED TO AVOID CONFLICT WITH NEW WORK.
3. ALL REMAINING JUNCTION AND PULL BOXES SHALL BE ACCESSIBLE AS PER NATIONAL ELECTRICAL CODE (N.E.C.). THE CONTRACTOR SHALL MOVE EXISTING BOXES, ETC. AS REQUIRED BY NEW CONSTRUCTION.
4. ALL MATERIALS REMOVED REMAIN THE PROPERTY OF THE OWNER IF THE OWNER CHOOSES TO DISCARD THESE MATERIALS THEN THE CONTRACTOR SHALL DISPOSE OF THEM AS DIRECTED.

ORIGINAL PLAN	DATE
DESIGNED BY	
DESIGNED BY	
QUANTITIES BY	
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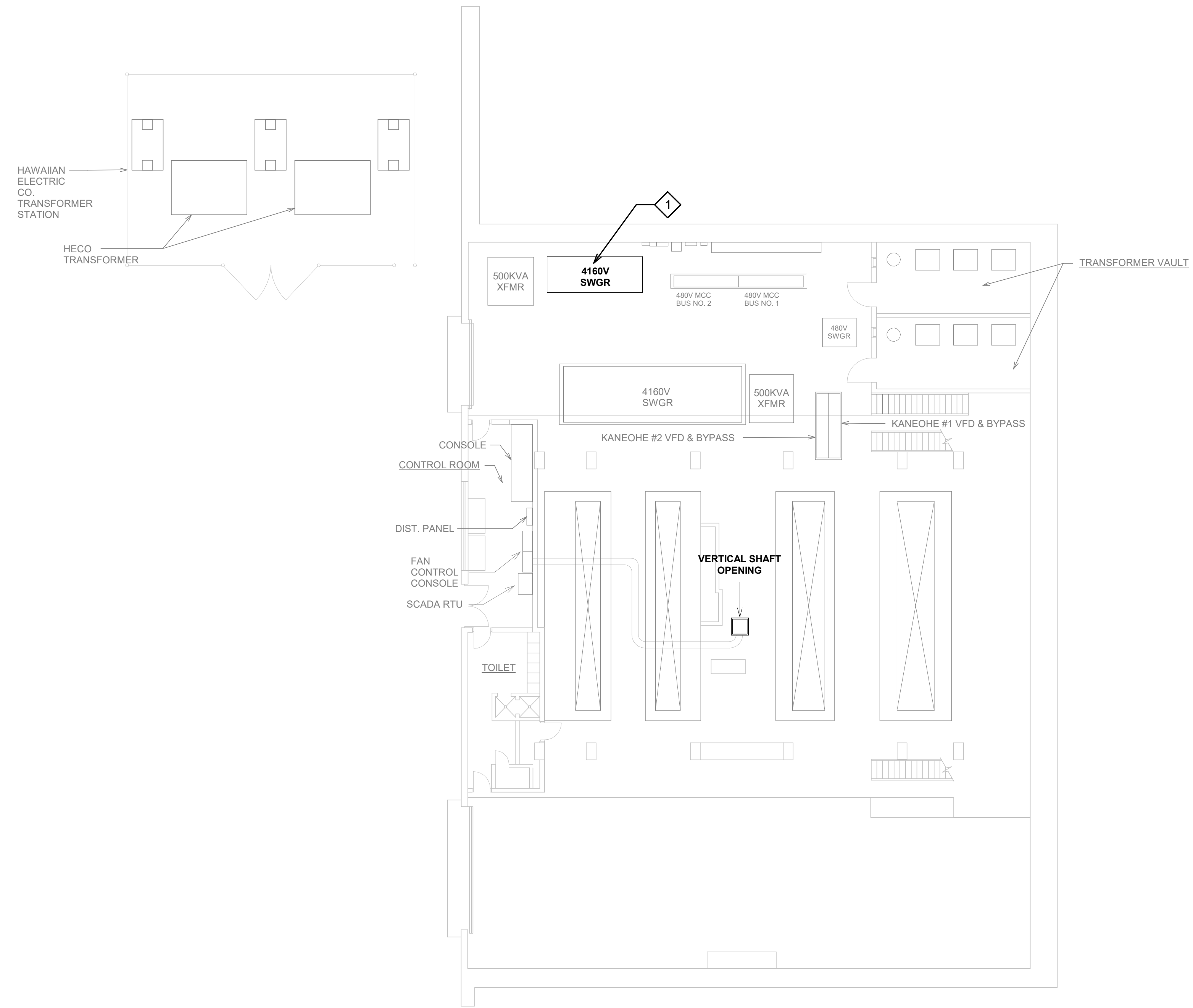
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
 SIGNATURE: *Jeremy B. Doherty* 4/8/24
 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ELECTRICAL NOTES AND SPECIFICATIONS
LIKELIKE HIGHWAY WILSON TUNNEL ELECTRICAL IMPROVEMENTS
HWY-OT-SMP-01

Scale: N.T.S. Date: _____

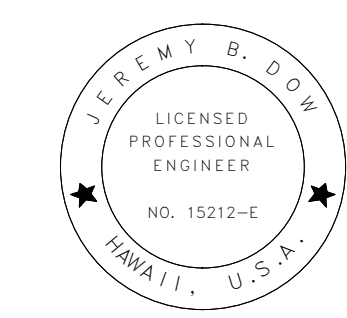
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HAWAII	HAW.	HWY-OT-SMP-01	2022	E3	19



NOTES:

1 THE MV CABLE TO BE REPLACED ORIGINATES AT THIS SWITCHGEAR. REUSE EXISTING BREAKERS AT EITHER END OF THE SWITCHGEAR.

1 DEMO VENT BUILDING FIRST FLOOR PLAN
1/16" = 1'-0"



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 HIGHWAYS DIVISION

DEMO VENT BUILDING FIRST FLOOR PLAN
LIKELIKE HIGHWAY WILSON TUNNEL ELECTRICAL IMPROVEMENTS
HWY-OT-SMP-01

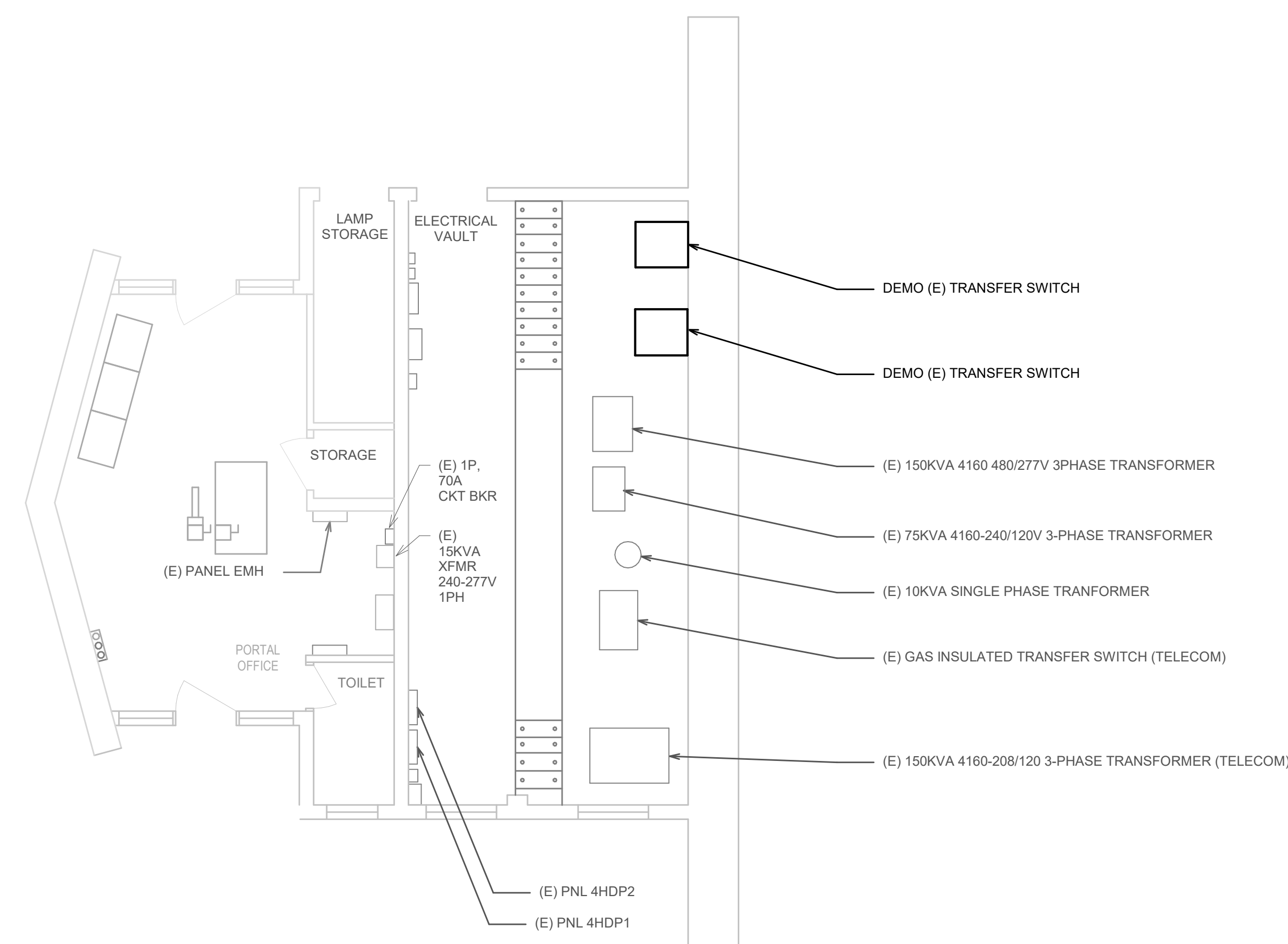
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SHEET No. E3 OF 19 SHEETS

ORIGINAL PLAN	DATE
DRAWN BY	
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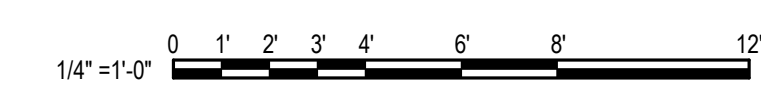
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HAWAII	HAW.	HWY-OT-SMP-01	2022	E4	19



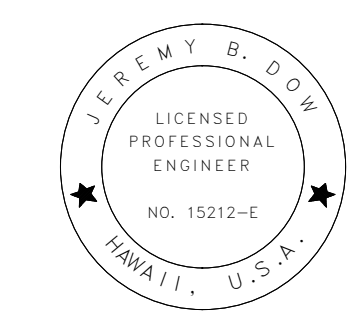
1 DEMO KALIHI PORTAL PLAN
1/4" = 1'-0"

ORIGINAL PLAN	DATE
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TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

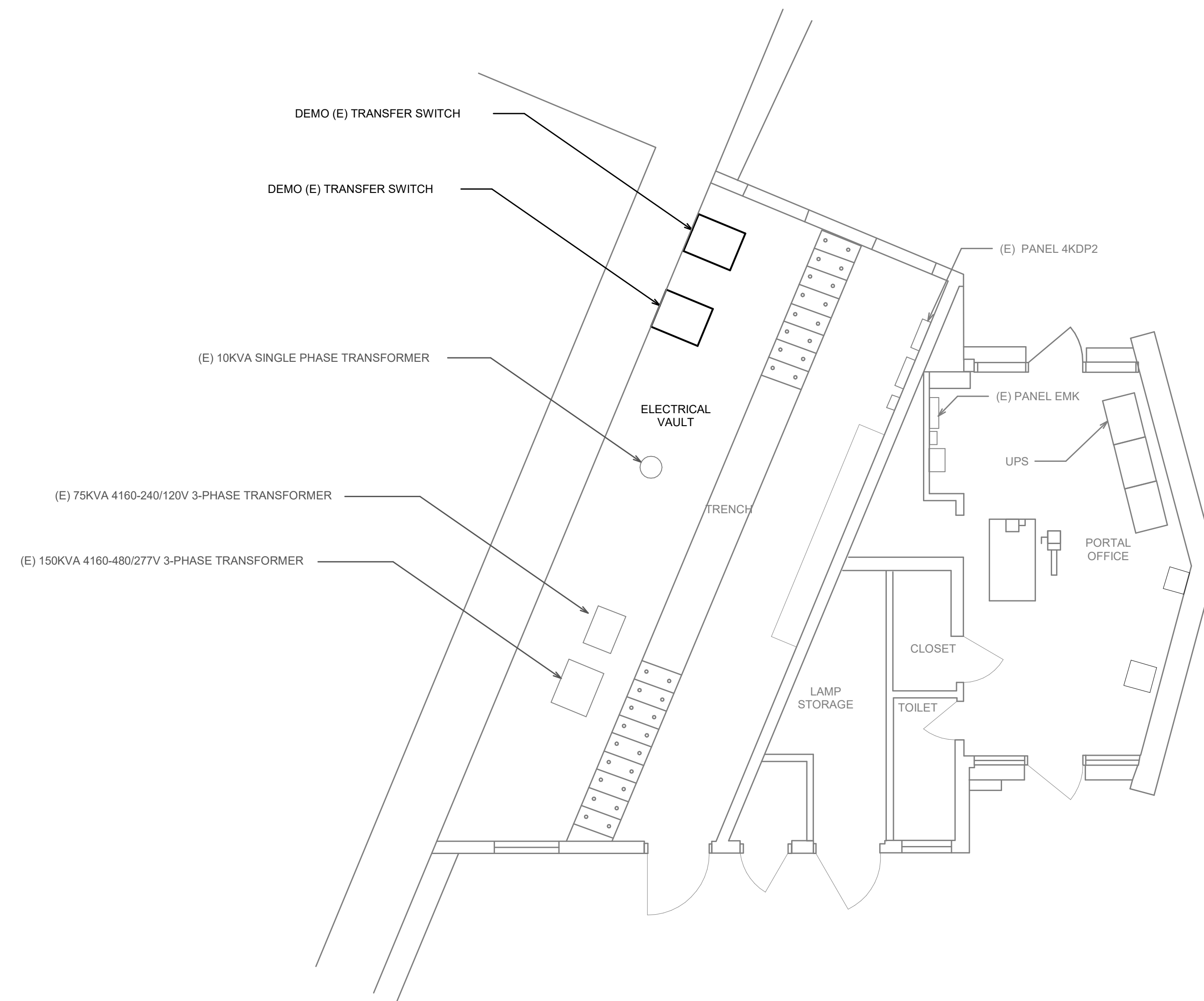
DEMO KALIHI PORTAL PLAN

**LIKELIKE HIGHWAY
WILSON TUNNEL ELECTRICAL
IMPROVEMENTS
HWY-OT-SMP-01**

Scale: 1/4" = 1'-0" Date:

SHEET No. E4 OF 19 SHEETS

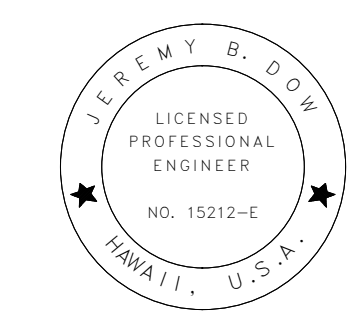
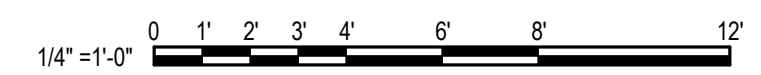
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HAWAII	HAW.	HWY-OT-SMP-01	2022	E5	19



1 DEMO KANEOHE PORTAL PLAN
1/4" = 1'-0"

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

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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

DEMO KANEOHE PORTAL PLAN

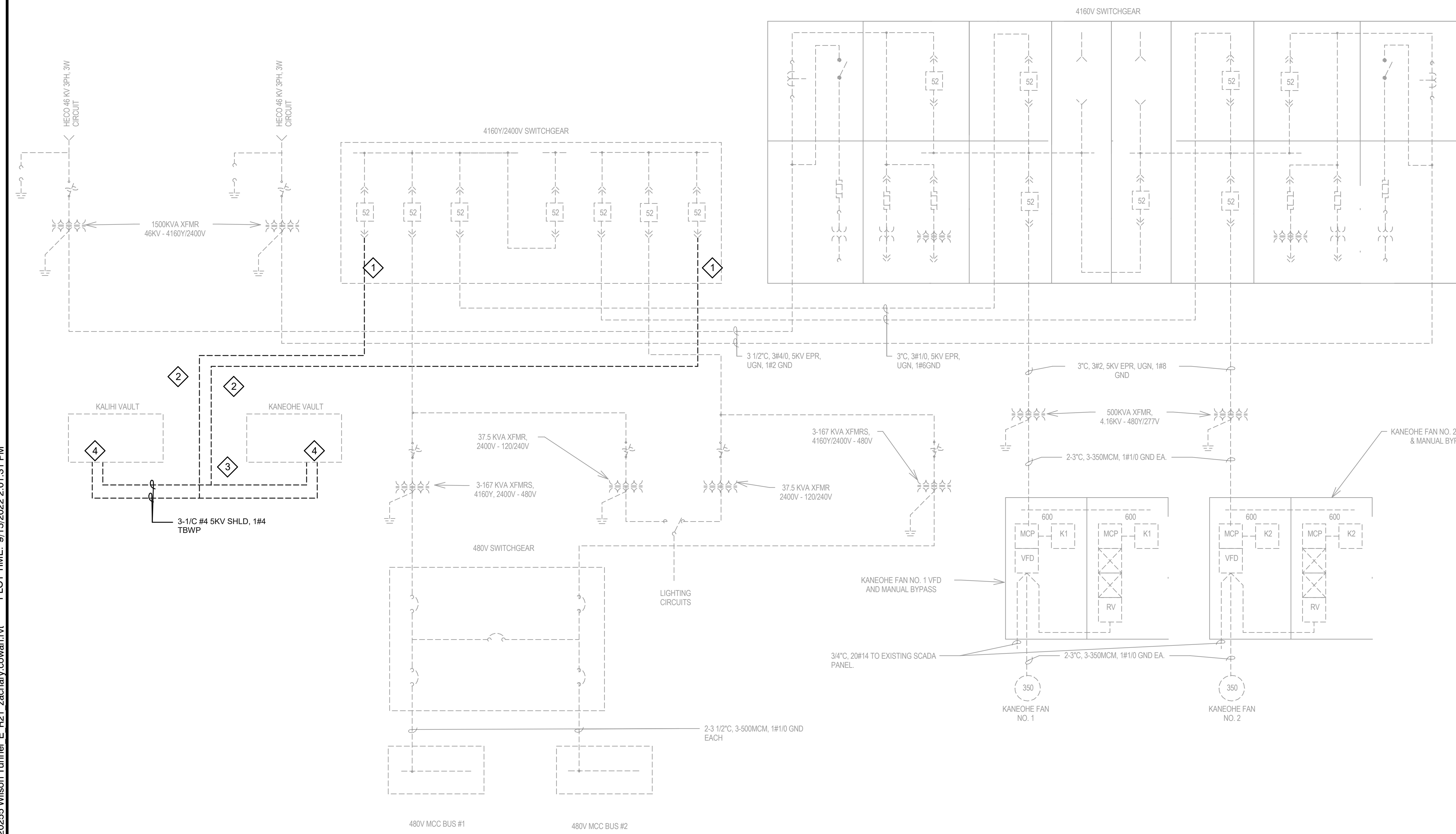
LIKELIKE HIGHWAY WILSON TUNNEL ELECTRICAL IMPROVEMENTS

HWY-OT-SMP-01

Scale: 1/4" = 1'-0" Date:

SHEET No. E5 OF 19 SHEETS

HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E6	19



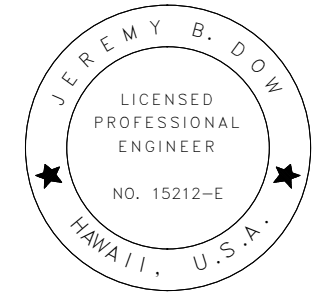
SHEET NOTES:

- 1 DISCONNECT MEDIUM VOLTAGE CABLES FROM INDICATED SWITCHGEAR BREAKERS. EXISTING SWITCHGEAR BREAKERS TO BE REUSED. CABLES MAY BE ABANDONED IN PLACE AFTER EXITING THE SWITCHGEAR.
- 2 ABANDON EXISTING MEDIUM VOLTAGE CABLE AND EXISTING PATHWAY TO THE PORTAL BUILDINGS. EXISTING PATHWAY IS ROUTED FROM THE VENT BUILDING TO EACH PORTAL THROUGH JUNCTION BOXES IN THE KALIHI BOUND TUNNEL SIDEWALK.
- 3 DISCONNECT AND DEMOLISH CABLES AT EITHER END OF THE FEEDER RUNS SUCH THAT ABANDONED CABLES ARE REMOVED FROM SWITCHGEAR AND NEATLY REMOVED FROM THE EXISTING PORTAL BUILDING. WHERE POSSIBLE, REUSE THE ABANDONED CONDUIT PENETRATIONS AT THE ENDS OF THE PLENUMS.
- 4 DISCONNECT AND DEMOLISH EXISTING MEDIUM VOLTAGE CABLES FROM THE PORTAL BUILDINGS. CABLES MAY BE ABANDONED IN PLACE AFTER EXITING THE PORTAL BUILDING. REFER TO DRAWINGS E7 AND E8.

1 DEMO MV ONE-LINE DIAGRAM
N.T.S.

ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

DRAWING NAME: C:\Users\zachary.cowan\Documents\20255 Wilson Tunnel E_R21_zachary.cowan.rvt PLOT TIME: 9/15/2022 2:01:31 PM

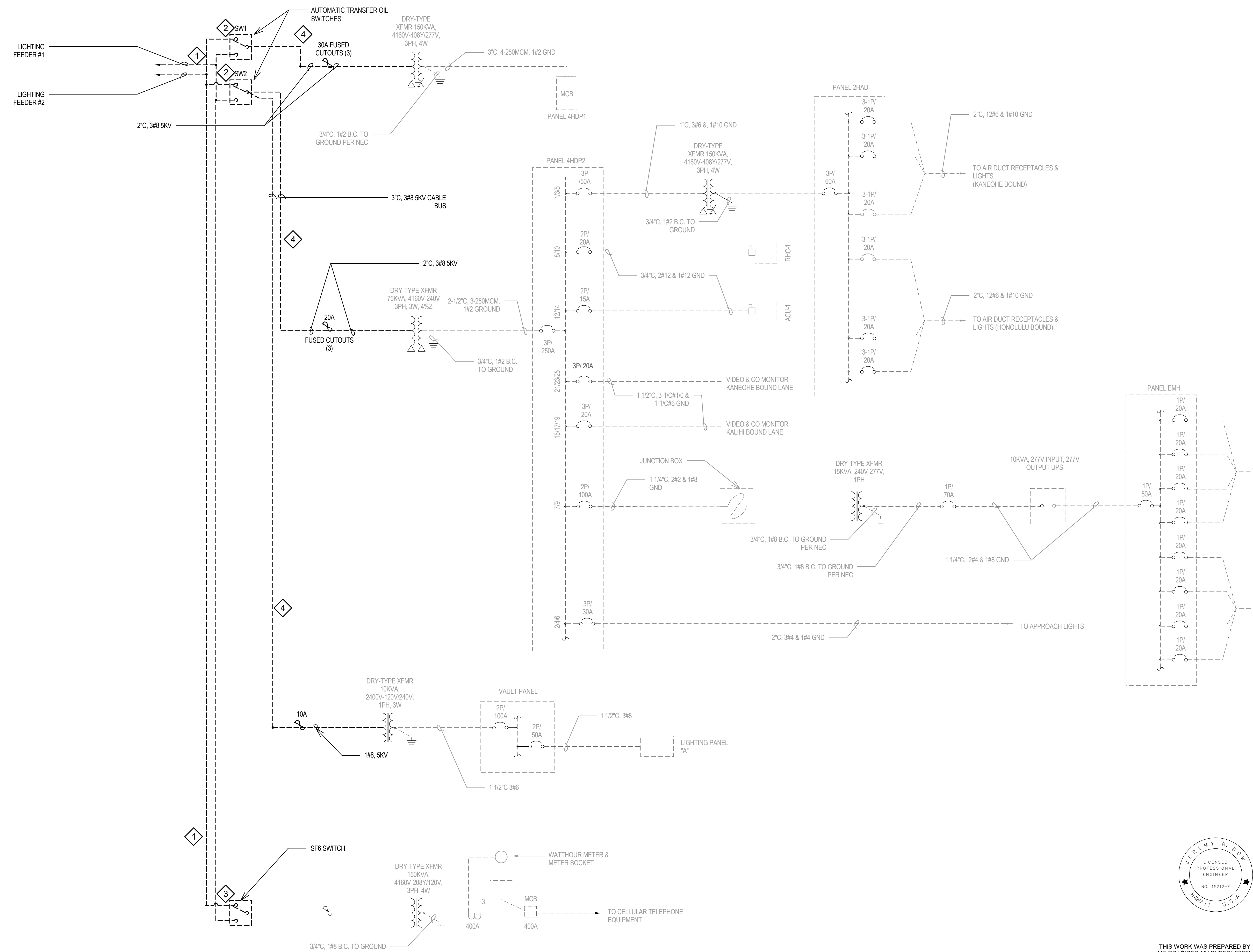

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 SIGNATURE: *Jeremy B. Doherty* 4/3/24
 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
DEMO MV ONE-LINE DIAGRAM

**LIKELIKE HIGHWAY
 WILSON TUNNEL ELECTRICAL
 IMPROVEMENTS
 HWY-OT-SMP-01**
 Scale: N.T.S. Date:

SHEET No. E6 OF 19 SHEETS

HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E7	19



- SHEET NOTES:**
- 1 DISCONNECT AND DEMOLISH MV CABLES OUT OF PORTAL BUILDING. CABLES MAY BE ABANDONED IN PLACE AFTER EXITING THE PORTAL BUILDING. REUSE EXISTING/ABANDONED PENETRATION WHERE POSSIBLE TO MINIMIZE ADDITIONAL PENETRATIONS INTO THE PORTAL BUILDING.
 - 2 DISCONNECT AND DEMOLISH EXISTING MANUAL TRANSFER SWITCHES.
 - 3 EXISTING MANUAL TRANSFER SWITCH TO REMAIN DURING THE PROJECT SCOPE OF WORK. EXISTING CIRCUIT TO RE-TERMINATE TO THE SAME LOCATION AS EXISTING CIRCUIT TO MAINTAIN POWER TO CELL EQUIPMENT.
 - 4 DISCONNECT AND DEMOLISH EXISTING MV CABLES AND FUSED CUTOUTS BETWEEN THE TRANSFER SWITCHES AND TRANSFORMERS.

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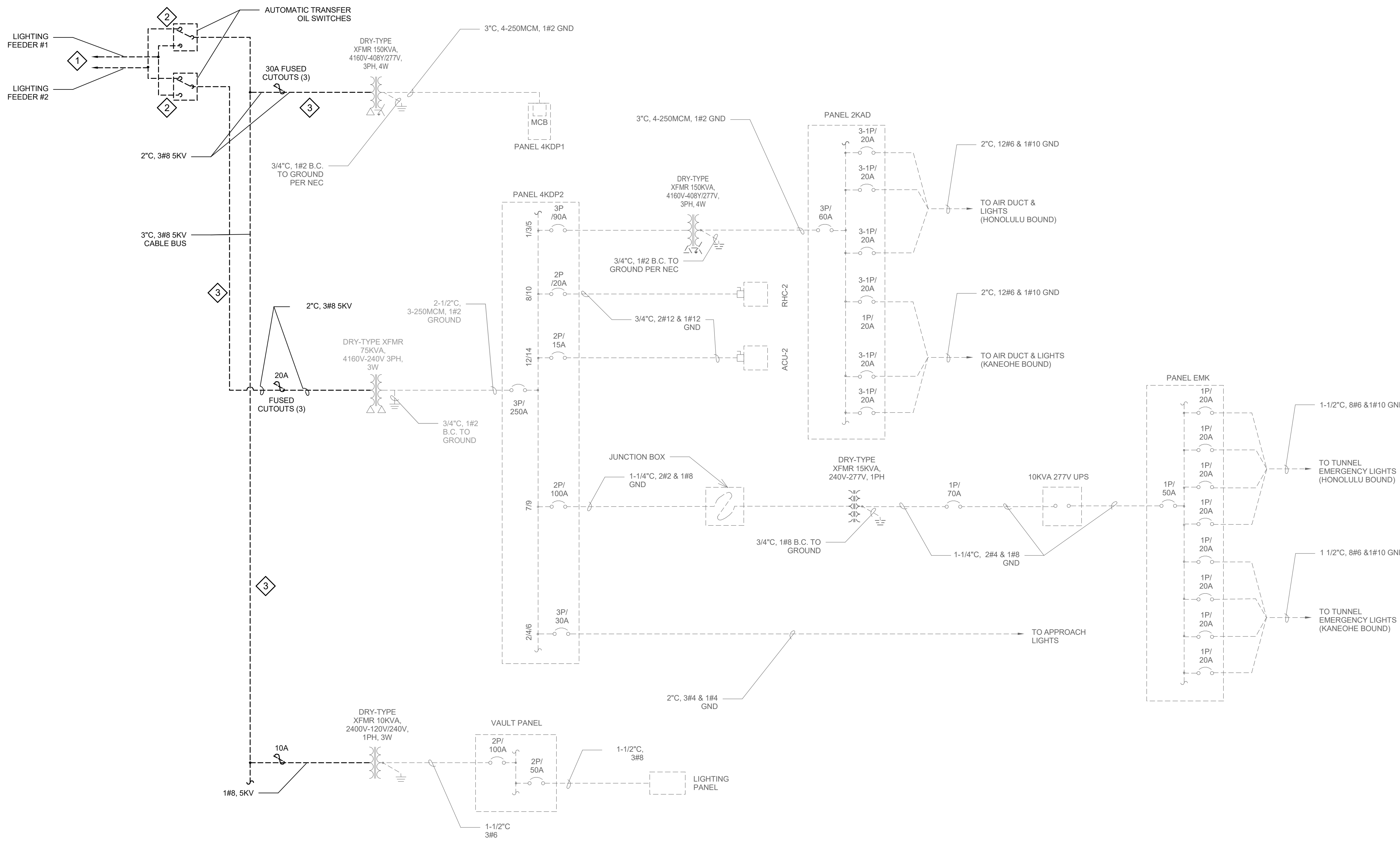
DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
IN CHARGE	

1 DEMO KALIHI VAULT ONE-LINE DIAGRAM
N.T.S.

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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
DEMO KALIHI VAULT ONE-LINE DIAGRAM
LIKELIKE HIGHWAY WILSON TUNNEL ELECTRICAL IMPROVEMENTS
HWY-OT-SMP-01
 Scale: N.T.S. Date: _____
 SHEET No. E7 OF 19 SHEETS

HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E8	19



- SHEET NOTES:**
- 1 DISCONNECT AND DEMOLISH MV CABLES OUT OF PORTAL BUILDING. CABLES MAY BE ABANDONED IN PLACE AFTER EXITING THE PORTAL BUILDING. REUSE EXISTING/ABANDONED PENETRATION WHERE POSSIBLE TO MINIMIZE ADDITIONAL PENETRATIONS INTO THE PORTAL BUILDING.
 - 2 DISCONNECT AND DEMOLISH EXISTING MANUAL TRANSFER SWITCHES.
 - 3 DISCONNECT AND DEMOLISH EXISTING MV CABLES AND FUSED CUTOUPS BETWEEN THE TRANSFER SWITCHES AND TRANSFORMERS.

1 DEMO KANEHOE VAULT ONE-LINE DIAGRAM
N.T.S.

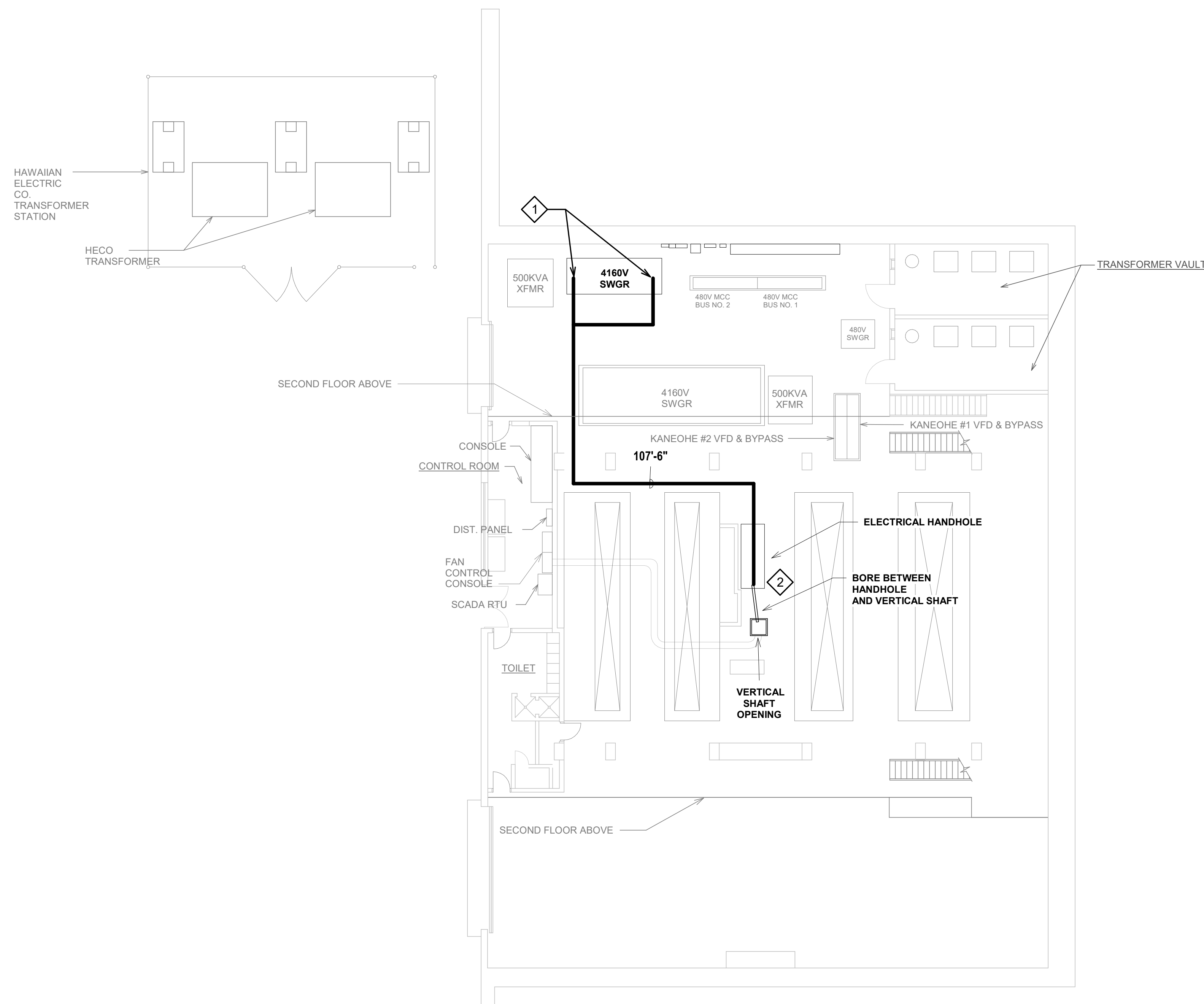
DESIGNED BY	DATE
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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
**DEMO KANEHOE VAULT
 ONE-LINE DIAGRAM
 LIKELIKE HIGHWAY
 WILSON TUNNEL ELECTRICAL
 IMPROVEMENTS
 HWY-OT-SMP-01**
 Scale: N.T.S. Date:

HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E9	19



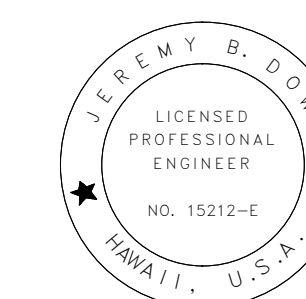
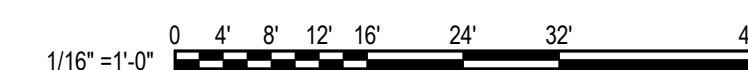
NOTES:

- 1 CONNECT MEDIUM VOLTAGE CABLES TO EXISTING BREAKERS IN EXISTING SWITCHGEAR. PROVIDE NEW CABLE TRAY FROM TOP OF SWITCHGEAR TO THE VENT BUILDING VERTICAL SHAFT. SECURE CABLE TRAY TO THE UNDERSIDE OF THE SECOND FLOOR.
- 2 SPLICE CONDUCTORS INTO ARMORED CABLE IN HANDHOLE WITH APPROVED SPLICE KIT. CONDUIT ROUTE DOWN TO VENTILATION SHAFT, SEE SHEET E12.
- 3 OBSERVE BENDING RADIUS OF ARMORED CABLE AS PER MANUFACTURER'S REQUIREMENTS.

1 VENT BUILDING FIRST FLOOR PLAN
1/16" = 1'-0"

ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

VENT BUILDING FIRST FLOOR PLAN

LIKELIKE HIGHWAY WILSON TUNNEL ELECTRICAL IMPROVEMENTS

HWY-OT-SMP-01

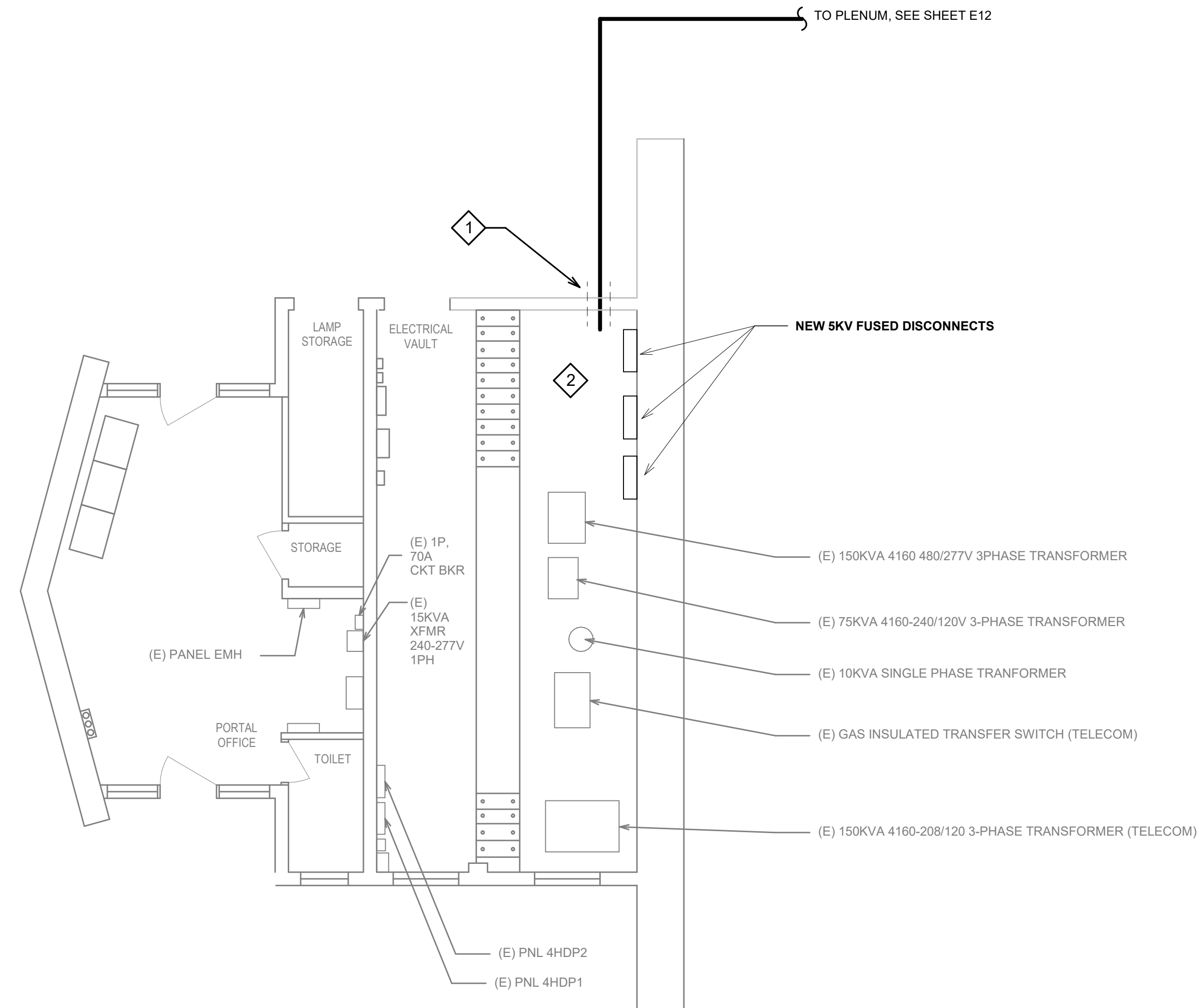
Scale: 1/16" = 1'-0" Date: _____

SHEET No. E9 OF 19 SHEETS

HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E10	19

NOTES:

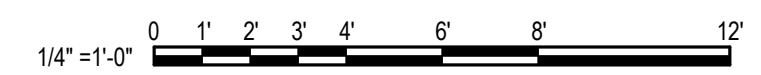
- 1 SCAN FOR REBAR, CORE DRILL, AND SLEEVE INTO PORTAL BUILDING.
- 2 REFER TO ONE-LINE DIAGRAM FOR NEW CONNECTIONS, SEE SHEET E17.

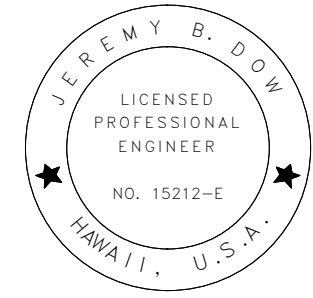


2 KALIHI PORTAL PLAN
1/4" = 1'-0"

ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

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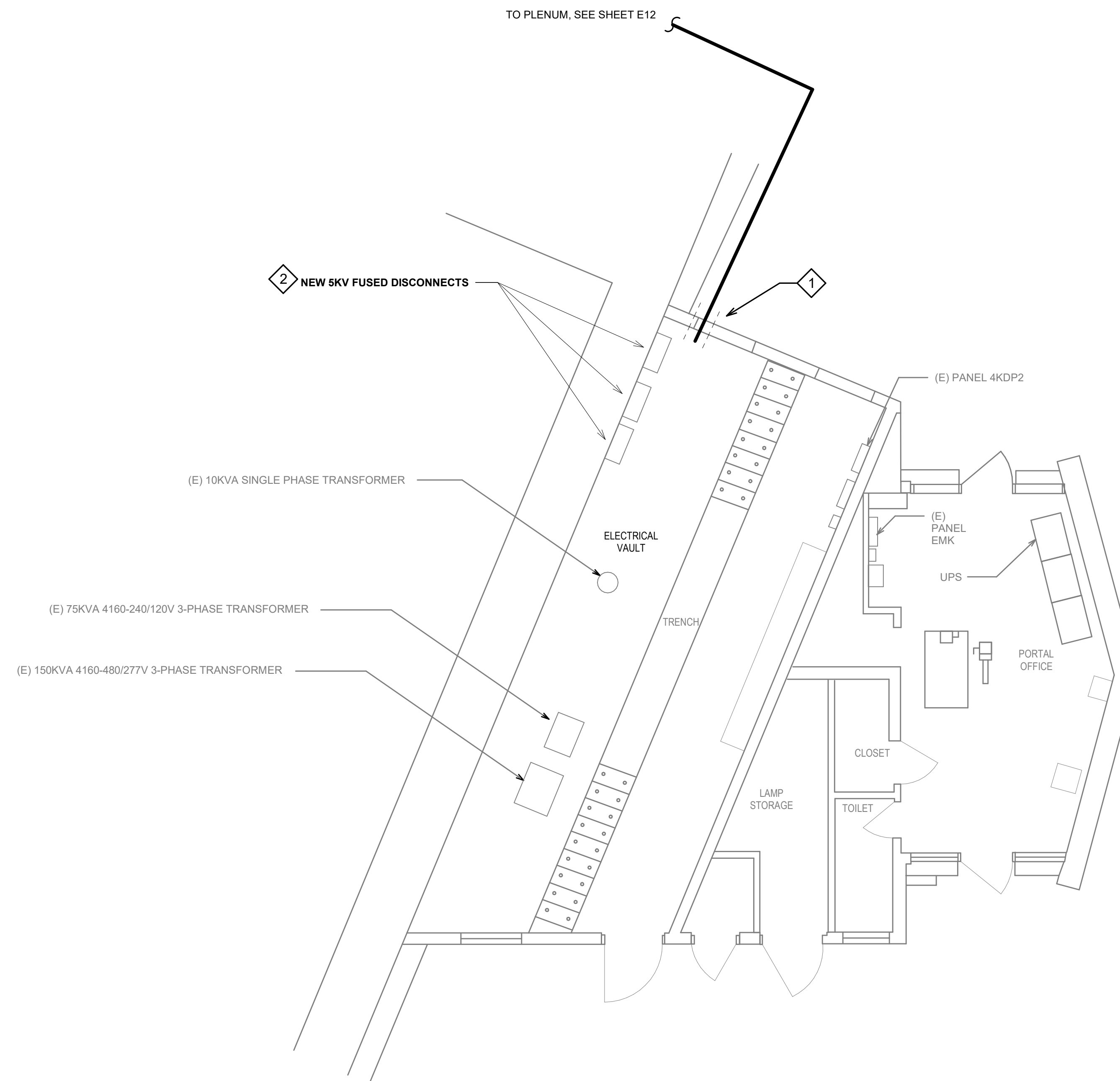

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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
KALIHI PORTAL PLAN
 LIKELIKE HIGHWAY
 WILSON TUNNEL ELECTRICAL
 IMPROVEMENTS
 HWY-OT-SMP-01
 Scale: 1/4" = 1'-0" Date: _____
 SHEET No. E10 OF 19 SHEETS

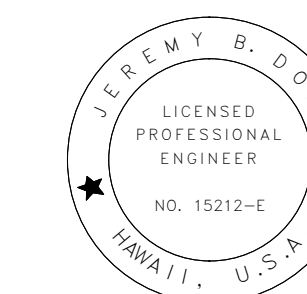
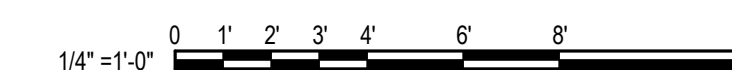
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HAWAII	HAW.	HWY-OT-SMP-01	2022	E11	19

NOTES:

- 1 SCAN FOR REBAR, CORE DRILL, AND SLEEVE INTO PORTAL BUILDING.
- 2 REFER TO ONE-LINE DIAGRAM FOR NEW CONNECTIONS. SEE SHEET E18.



1 KANEOHE PORTAL PLAN
1/4" = 1'-0"



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KANEOHE PORTAL PLAN

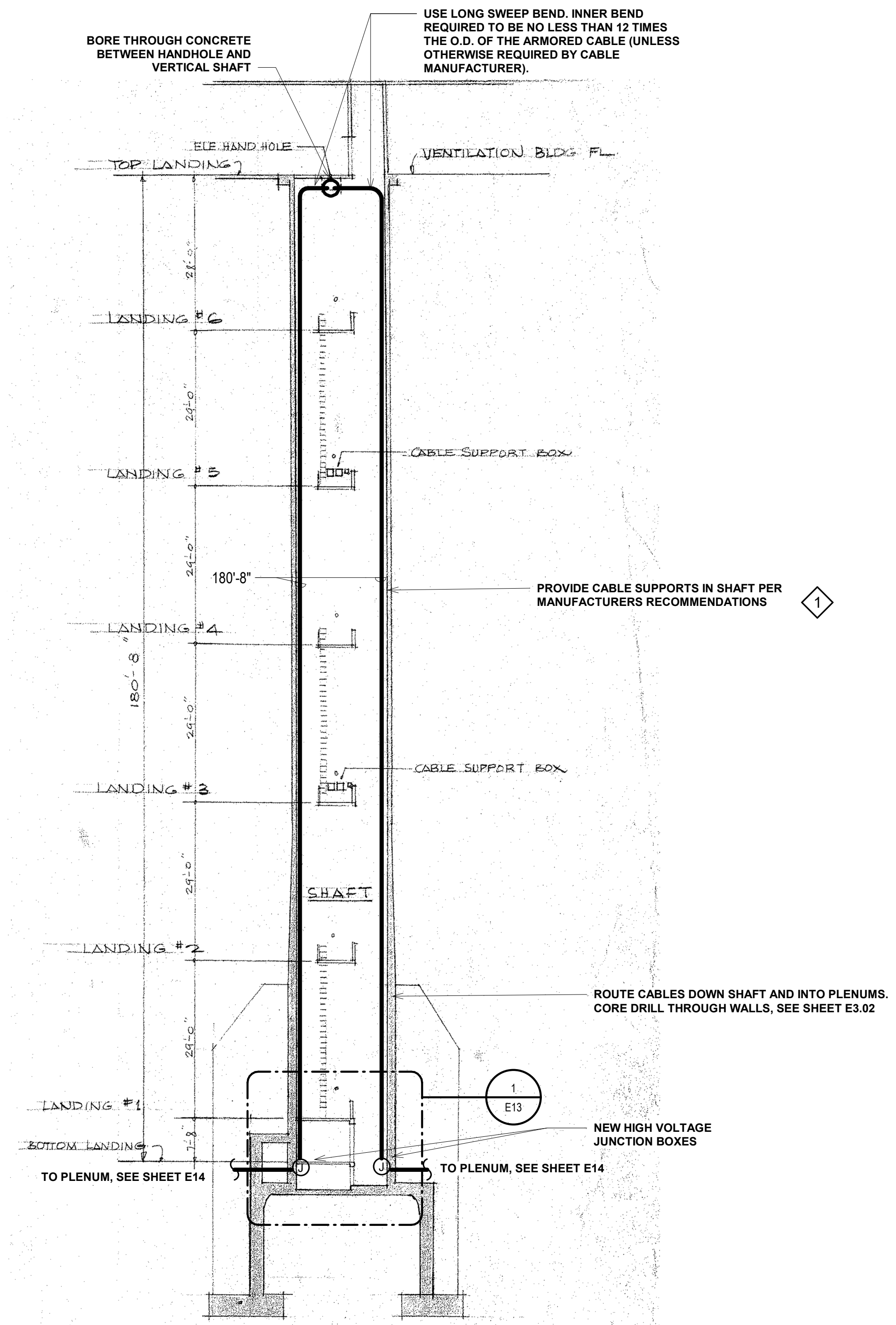
**LIKELIKE HIGHWAY
WILSON TUNNEL ELECTRICAL
IMPROVEMENTS
HWY-OT-SMP-01**

Scale: 1/4" = 1'-0" Date:

ORIGINAL PLAN	DATE
DESIGNED BY	
CHECKED BY	
NOTED BY	
DATE	

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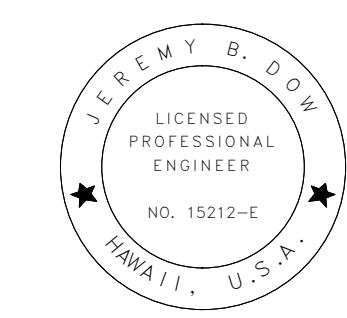
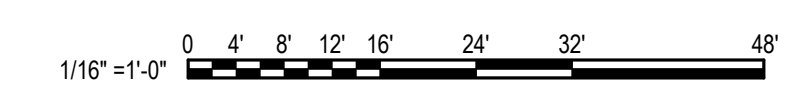
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HAWAII	HAW.	HWY-OT-SMP-01	2022	E12	19



NOTES:

- 1 SUPPORT AT THE TOP AND SPACE BETWEEN SUPPORTS IS 100 FEET PER NFPA 70 TABLE 300.19(A).

1 TUNNEL & SHAFT SECTION
1/16" = 1'-0"



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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

TUNNEL & SHAFT SECTION

**LIKELIKE HIGHWAY
 WILSON TUNNEL ELECTRICAL
 IMPROVEMENTS
 HWY-OT-SMP-01**

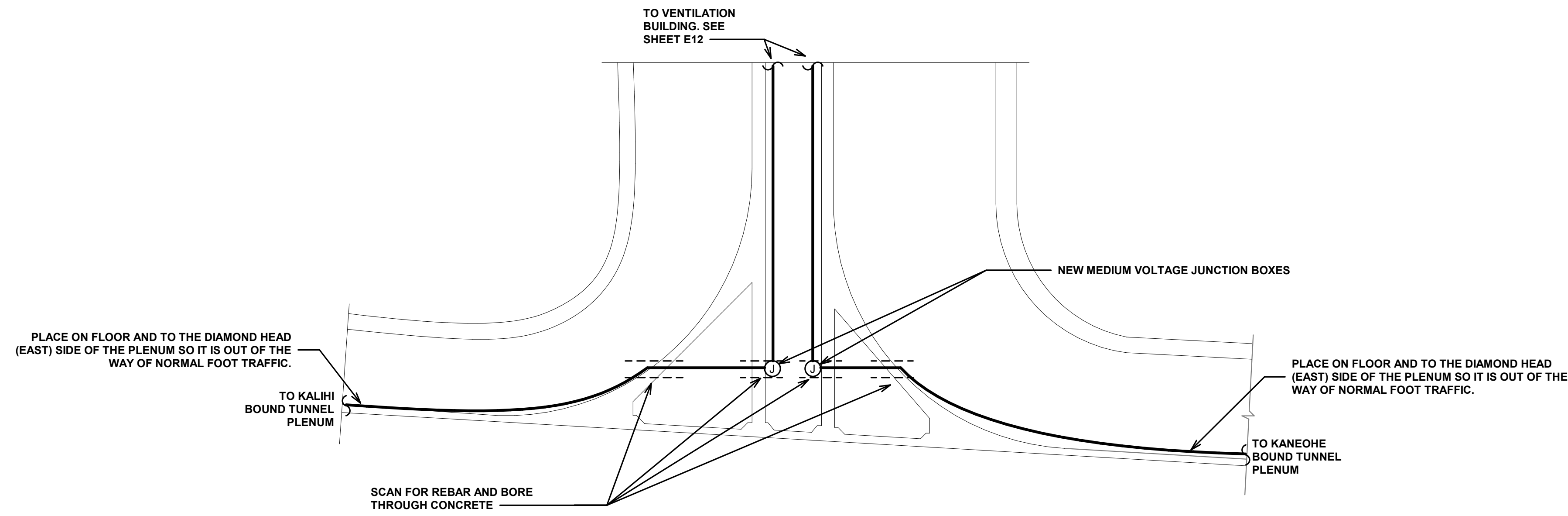
Scale: 1/16" = 1'-0" Date: _____

SHEET No. E12 OF 19 SHEETS

DESIGNED BY	DATE
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CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

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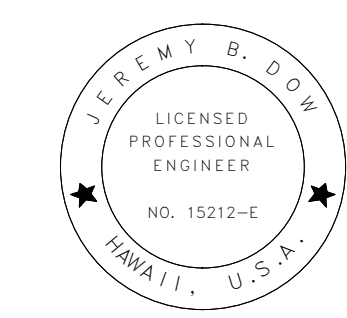
HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E13	19



1 VENTILATION SHAFT/AIR PLENUM SECTION
N.T.S.

DESIGNED BY	DATE
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QUANTITIES BY	
DATE	

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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

VENTILATION SHAFT/AIR PLENUM SECTION
LIKELIKE HIGHWAY WILSON TUNNEL ELECTRICAL IMPROVEMENTS
HWY-OT-SMP-01

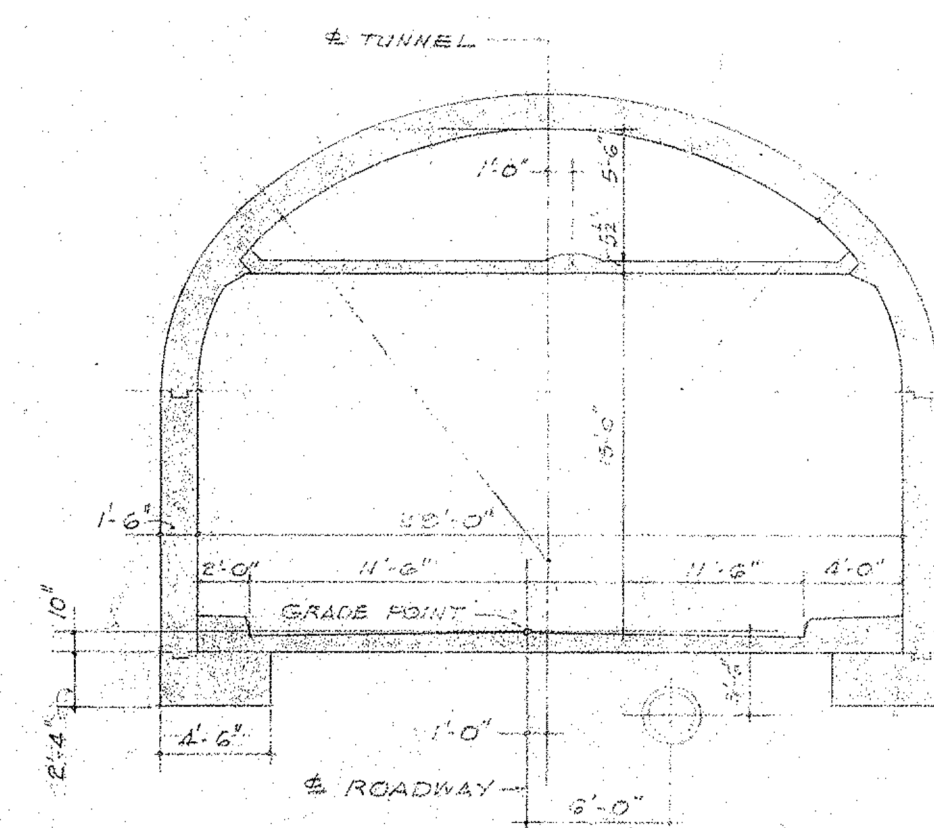
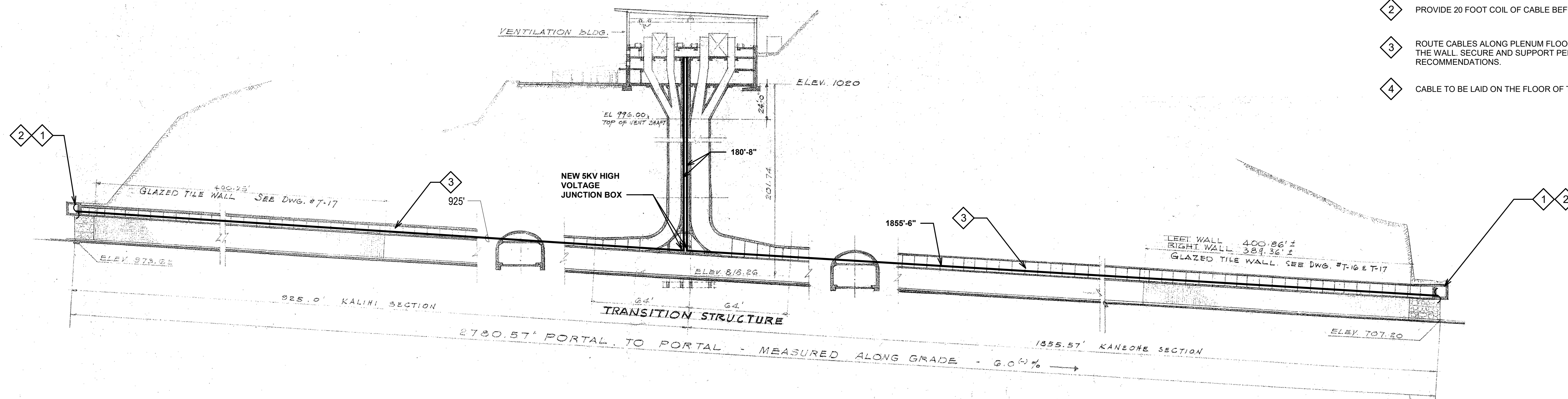
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SHEET No. E13 OF 19 SHEETS

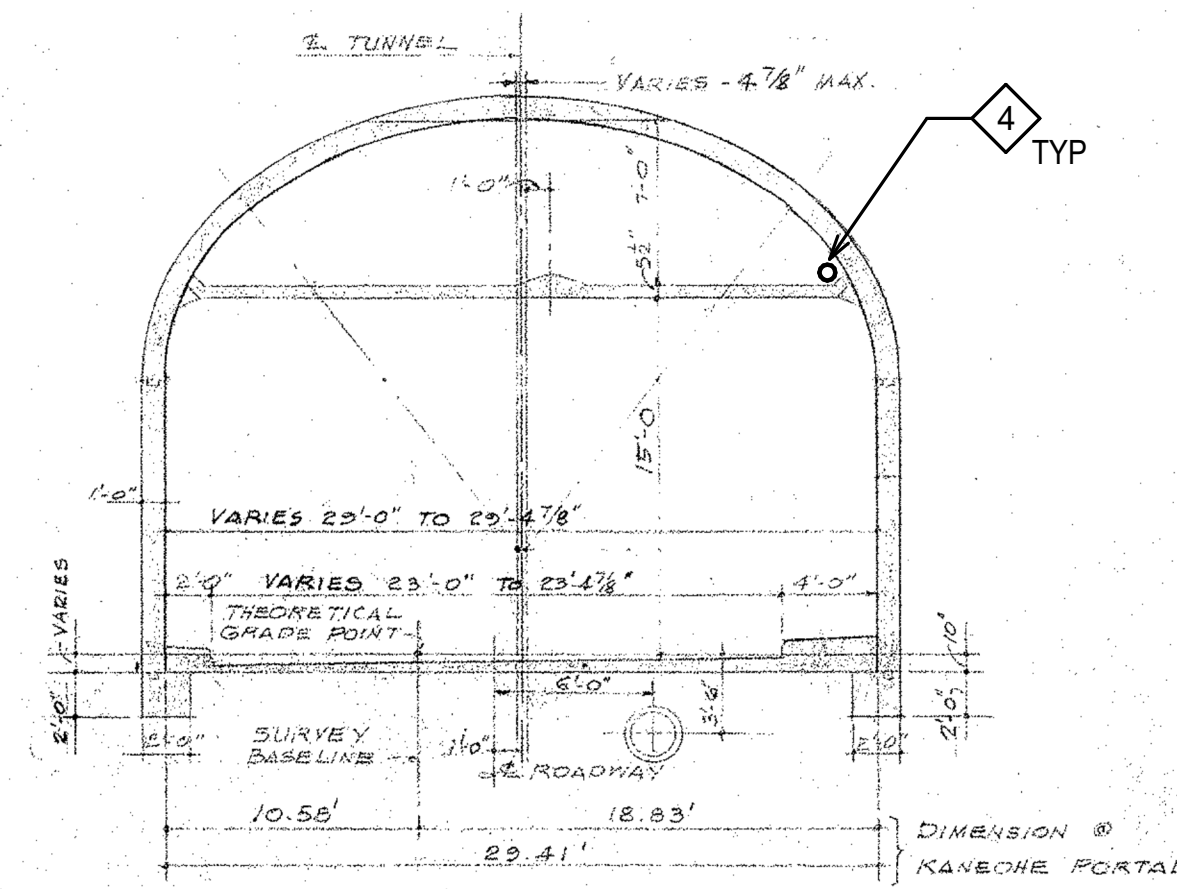
HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E14	19

NOTES:

- 1 PROVIDE LOADBREAK JUNCTION BOX AT END OF PLENUM WITH CONDUIT ROUTED OUT AND INTO THE PORTAL BUILDING. SEE SHEET E15.
- 2 PROVIDE 20 FOOT COIL OF CABLE BEFORE JUNCTION BOX.
- 3 ROUTE CABLES ALONG PLENUM FLOOR TUCKED NEXT TO THE WALL. SECURE AND SUPPORT PER MANUFACTURER'S RECOMMENDATIONS.
- 4 CABLE TO BE LAID ON THE FLOOR OF THE CORNER WALL.



KALIHI TUNNEL SECTION



KANEOHE TUNNEL SECTION
FROM STA 263+01.54 (KALIHI) TO KANEOHE PORTAL
WIDTH VARIES
SEE DWG. NO. X-8

1 TUNNEL PLENUM & SHAFT SECTION AND PROFILE
N.T.S.

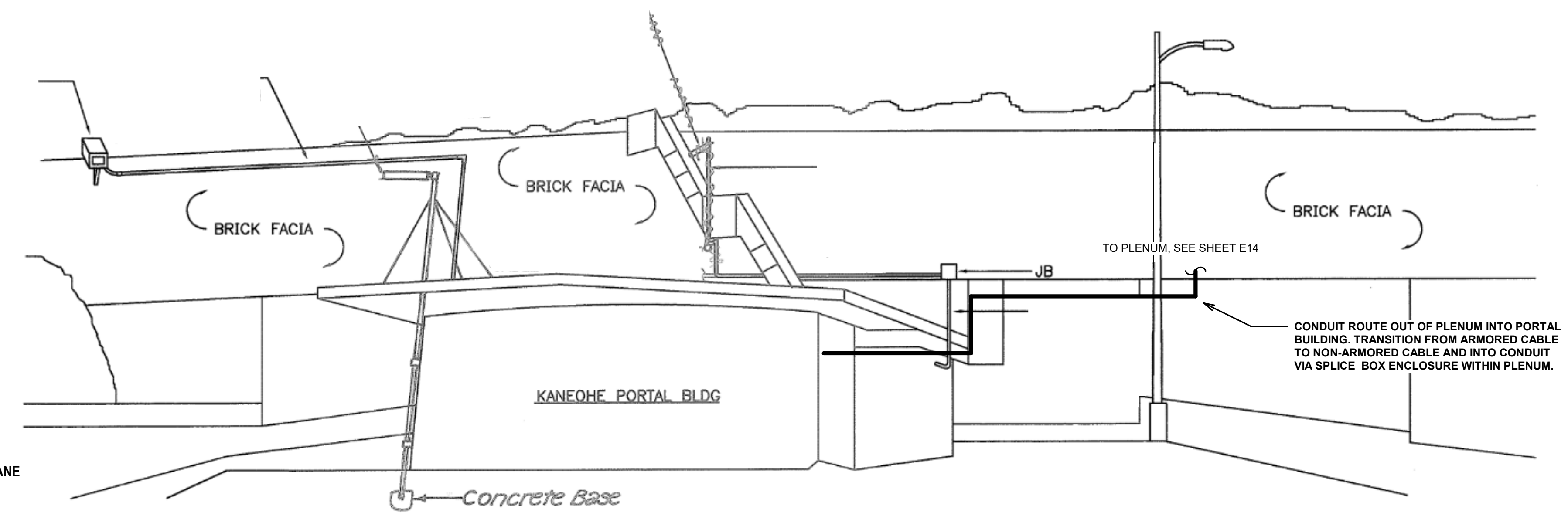
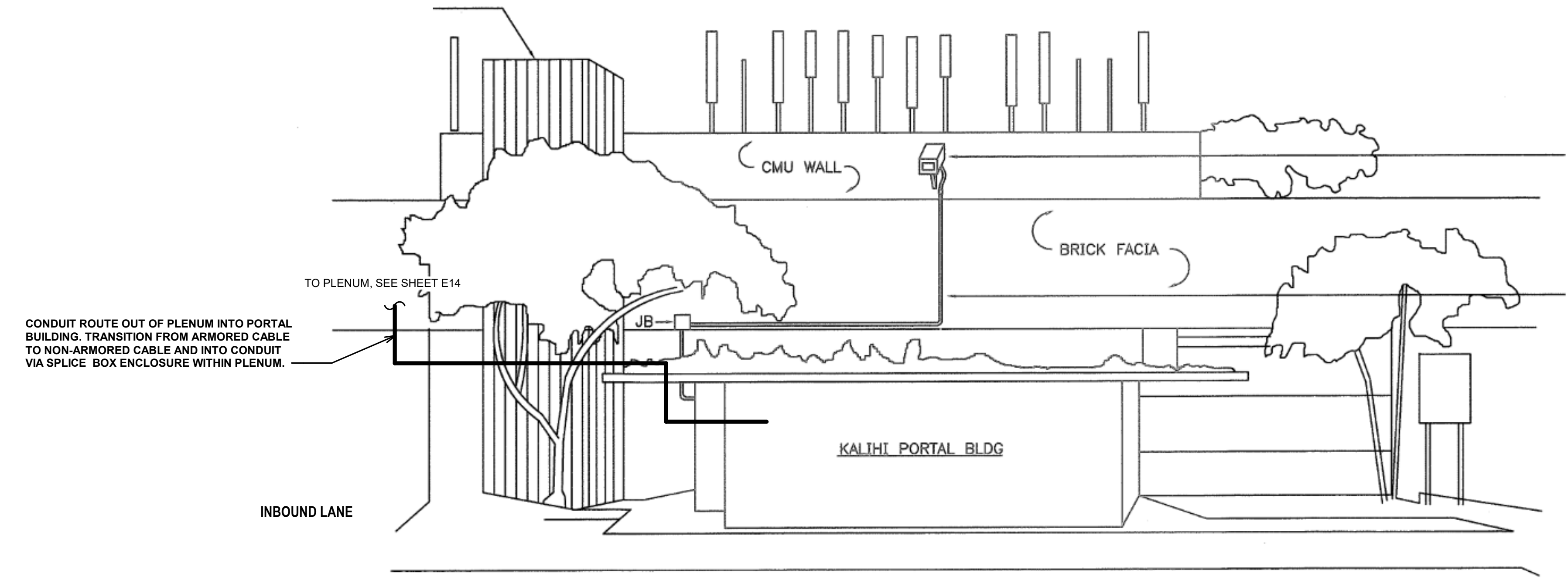
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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
**TUNNEL PLENUM & SHAFT
 SECTION AND PROFILE**
**LIKELIKE HIGHWAY
 WILSON TUNNEL ELECTRICAL
 IMPROVEMENTS**
HWY-OT-SMP-01
 Scale: N.T.S. Date: _____
 SHEET No. E14 OF 19 SHEETS

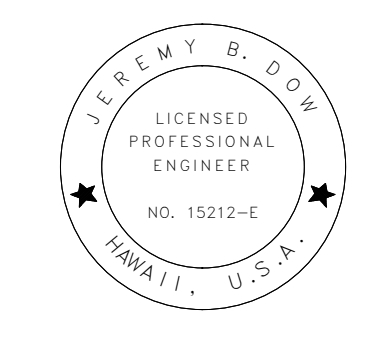
HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E15	19



DESIGNED BY	DATE
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DATE	

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1 PORTAL ELEVATION
N.T.S.



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STATE OF HAWAII
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 HIGHWAYS DIVISION

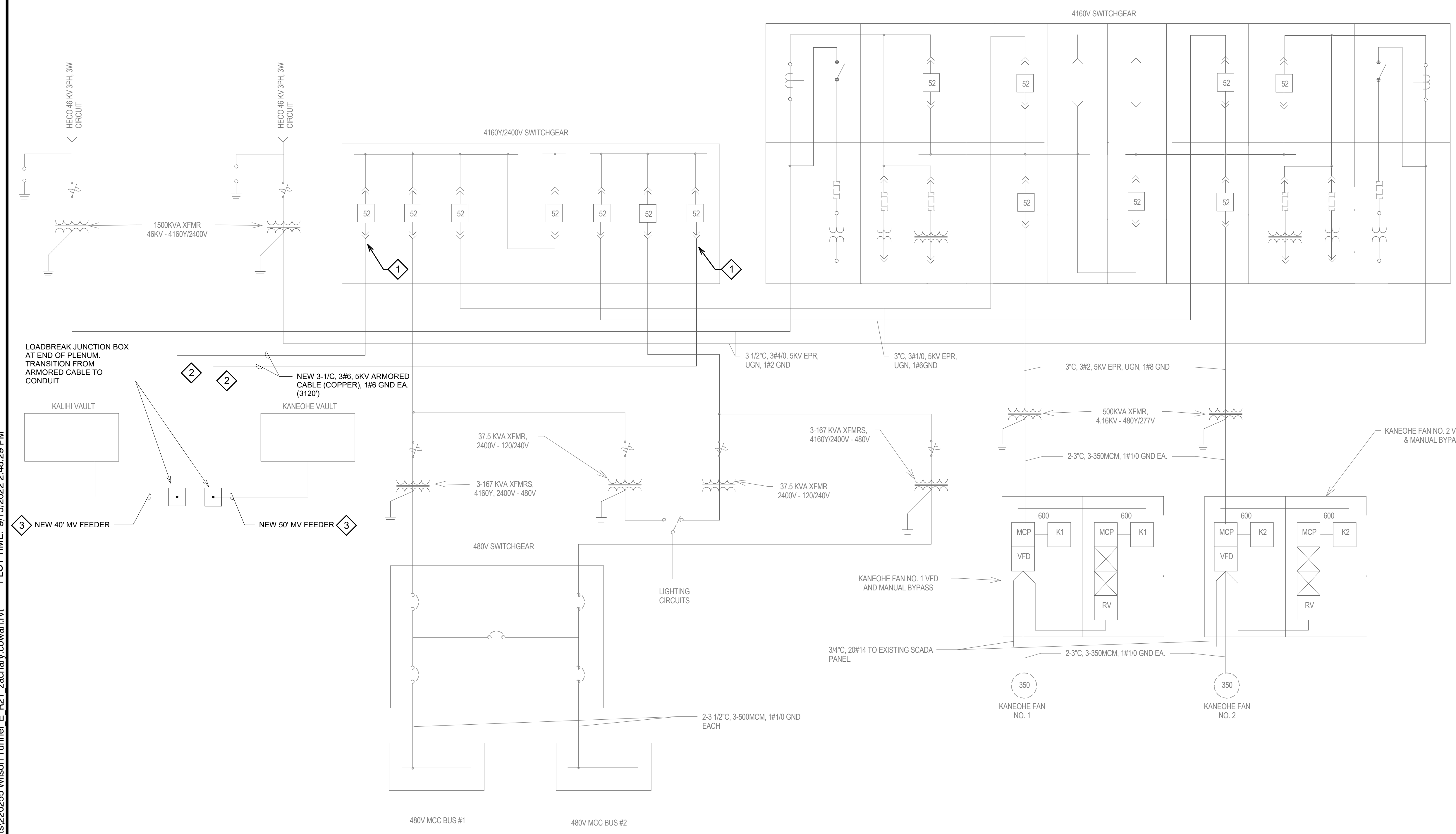
PORTAL ELEVATIONS

**LIKELIKE HIGHWAY
 WILSON TUNNEL ELECTRICAL
 IMPROVEMENTS
 HWY-OT-SMP-01**

Scale: N.T.S. Date: _____

SHEET No. E15 OF 19 SHEETS

HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E16	19



- SHEET NOTES:**
- CONNECT MEDIUM VOLTAGE CABLES TO EXISTING BREAKERS IN EXISTING SWITCHGEAR. PROVIDE NEW CABLE TRAY FROM TOP OF SWITCHGEAR TO THE VENT BUILDING VERTICAL SHAFT. SECURE CABLE TRAY TO THE UNDERSIDE OF THE 2ND FLOOR.
 - ROUTE CABLES ALONG PLENUM FLOORS. REFER TO SHEET E12. TOTAL ARMORED CABLE LENGTH IS APPROXIMATELY 3120 FEET.
 - ROUTE CABLES THROUGH PLENUM AND INTO PORTAL BUILDINGS. SEE SHEETS E17 AND E18 FOR PORTAL BUILDING ONE-LINE DIAGRAMS. WHERE POSSIBLE, REUSE THE ABANDONED CONDUIT PENETRATIONS AT THE ENDS OF THE PLENUMS AND PORTAL BUILDINGS.
 - WIRE SIZES ARE MINIMUM.

1 MV ONE-LINE DIAGRAM
N.T.S.

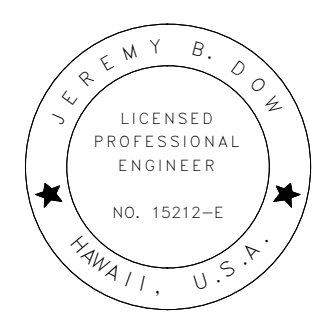
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4/8/24

EXPIRATION DATE OF THE LICENSE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MV ONE-LINE DIAGRAM

**LIKELIKE HIGHWAY
WILSON TUNNEL ELECTRICAL
IMPROVEMENTS
HWY-OT-SMP-01**

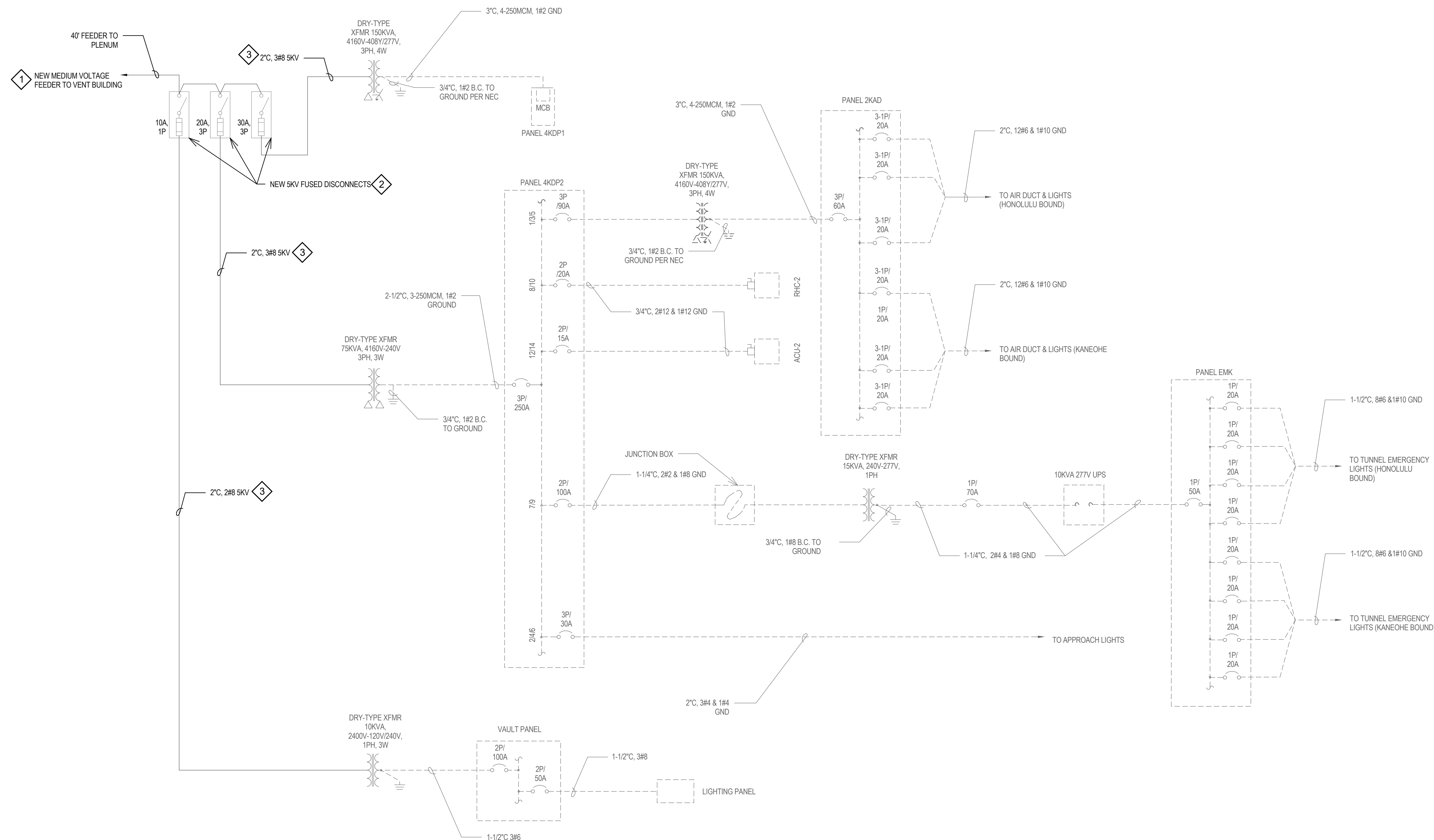
Scale: N.T.S. Date:

SHEET No. E16 OF 19 SHEETS

HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E17	19

SHEET NOTES:

- 1 NEW MEDIUM VOLTAGE CABLES FROM VENT BUILDING SWITCHGEAR. SEE SHEET E16, FLOOR PLANS AND ELEVATIONS.
- 2 PROVIDE AND INSTALL NEW 5KV RATED DISCONNECT SWITCHES.
- 3 PROVIDE AND INSTALL NEW CABLES AND CONDUIT FROM NEW DISCONNECT SWITCHES TO EXISTING TRANSFORMERS.
- 4 WIRE SIZES ARE MINIMUM.



1 KALIHI VAULT ONE-LINE DIAGRAM
N.T.S.

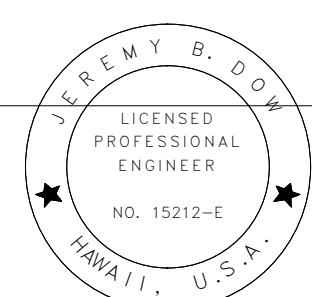
ORIGINAL PLAN	DATE
DESIGNED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

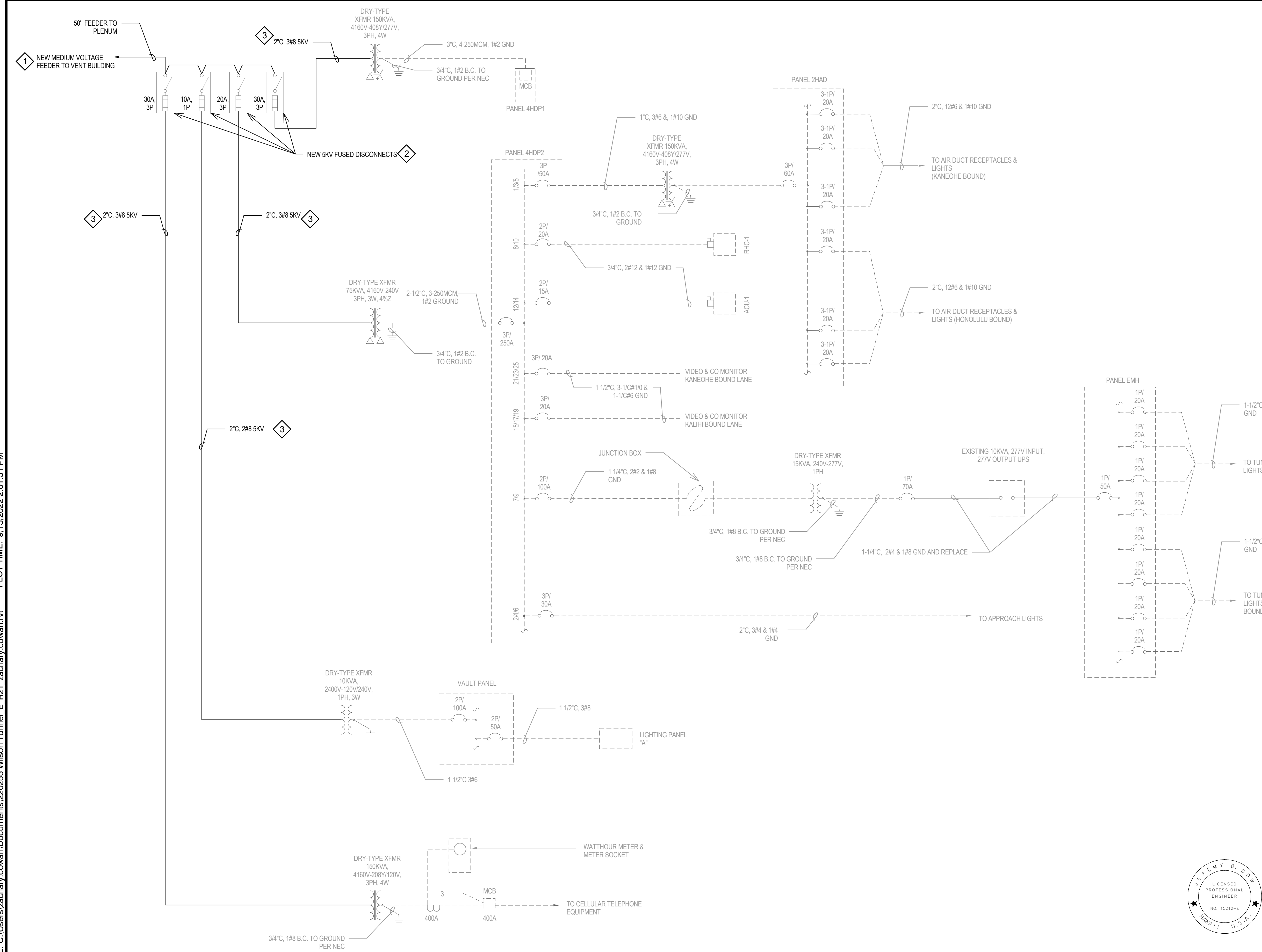
**KALIHI VAULT ONE-LINE
DIAGRAM**

**LIKELIKE HIGHWAY
WILSON TUNNEL ELECTRICAL
IMPROVEMENTS
HWY-OT-SMP-01**

Scale: N.T.S. Date:

SHEET No. E17 OF 19 SHEETS

HIGHWAY DIST. NO.	STATE	HIGHWAY PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-OT-SMP-01	2022	E18	19



SHEET NOTES:

- 1 NEW MEDIUM VOLTAGE CABLES FROM VENT BUILDING SWITCHGEAR. SEE SHEET E16, FLOOR PLANS AND ELEVATIONS.
- 2 PROVIDE AND INSTALL NEW 5KV RATED DISCONNECT SWITCHES.
- 3 PROVIDE AND INSTALL NEW CABLES AND CONDUIT FROM NEW DISCONNECT SWITCHES TO EXISTING TRANSFORMERS.
4. WIRE SIZES ARE MINIMUM.

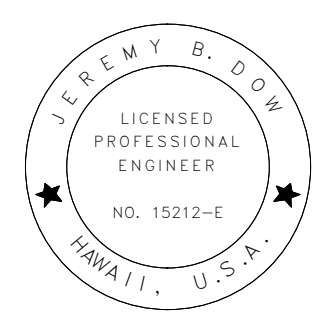
DRAWING NAME: C:\Users\zachary.cowan\Documents\20255 Wilson Tunnel E R21 zachary.cowan.rvt PLOT TIME: 9/15/2022 2:01:51 PM

ORIGINAL PLAN	DATE
DESIGNED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

1 KANEOHE VAULT ONE-LINE DIAGRAM
N.T.S.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

 SIGNATURE: *Jeremy B. Doherty* 4/8/24
 EXPIRATION DATE OF THE LICENSE



STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

KANEOHE VAULT ONE-LINE DIAGRAM

LIKELIKE HIGHWAY WILSON TUNNEL ELECTRICAL IMPROVEMENTS

HWY-OT-SMP-01

Scale: N.T.S. Date: _____

SHEET No. E18 OF 19 SHEETS