

MECHANICAL SYMBOLS

	SHEET METAL DUCTWORK		EQUIPMENT TAG
	DUCTWORK TRANSITION		CO2 SENSOR MOUNTED IN DUCT
	DEMOLITION		SMOKE DETECTOR MOUNTED IN DUCT
	SUPPLY OR OA DUCT ELBOW DOWN		DETAIL DESIGNATION
	RETURN OR EXHAUST DUCT ELBOW DOWN		CEILING ACCESS PANEL
	45° BOOT BRANCH TAKEOFF		PIPE RISER TO UPPER LEVEL
	DUCT CONTINUATION		CAPPED LINE
	ELBOW WITH TURNING VANES		PIPE ELBOW UP/DOWN
	SUPPLY OR OA DUCT UP		PIPE BRANCH TOP CONNECTION
	RETURN AIR OR EXHAUST DUCT UP		REFRIGERANT PIPES (SUCTION AND LIQUID)
	EXHAUST AIR DUCT UP		PIPE BRANCH BOTTOM CONNECTION
	SUPPLY AIR DIFFUSER		PIPE UNION
	RETURN AIR OR EXHAUST REGISTER		POINT OF CONNECTION
	VOLUME DAMPER		POINT OF DISCONNECTION
	BACKDRAFT DAMPER		

GENERAL MECHANICAL SPECIFICATIONS

- PROVIDE COMPLETE AND OPERATING SYSTEMS AS SPECIFIED AND INDICATED ON DRAWINGS. "PROVIDE" SHALL MEAN "FURNISH AND INSTALL" WHEN USED HEREIN.
- WORK SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES INCLUDING: ANSI B9.1/ASHRAE 15 - SAFETY CODE FOR MECHANICAL REFRIGERATION; HAWAII DOH CHAPTER 39, TITLE 11 - AIR CONDITIONING AND VENTILATION; HAWAII COUNTY BUILDING CODE:ASHRAE 62-2016 - VENTILATION STANDARD; SMACNA HVAC DUCT CONSTRUCTION STANDARDS; 2021 INTERNATIONAL ENERGY CONSERVATION CODE.
- CONTRACTOR SHALL ARRANGE AND PAY FOR ALL PERMITS AND FEES.
- MATERIALS AND EQUIPMENT SHALL BE NEW AND GUARANTEED FOR ONE YEAR FROM THE DATE OF ACCEPTANCE. MATERIALS AND EQUIPMENT SHALL BE AS SCHEDULED OR EQUAL, MEETING THE REQUIREMENTS OF THE SPECIFICATION. MATERIALS AND EQUIPMENT SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO ORDER RELEASE. WORK SHALL BE GUARANTEED AGAINST DEFECTIVE WORKMANSHIP OR MATERIALS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT. WARRANTY WORK SHALL BE COMPLETED AT NO EXTRA CHARGE TO THE OWNER. FURNISH MANUFACTURER'S PRODUCT WARRANTY CERTIFICATES IN A BINDER.
- PRIOR TO COMMENCEMENT OF WORK AND ORDERING OF EQUIPMENT, CONTRACTOR SHALL SUBMIT ELECTRONIC PDF DOCUMENTS OF PROPOSED MATERIALS AND EQUIPMENT. RECORD DRAWINGS, OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE SUBMITTED AS REQUIRED BY OWNER'S REPRESENTATIVE UPON COMPLETION.
- PREPARE SUBMITTALS FOR ALL PRODUCTS TO BE FURNISHED BY THE CONTRACTOR, INCLUDING BUT NOT LIMITED TO EQUIPMENT, DUCTWORK, PIPING, AIR TERMINALS, AND SIMILAR ITEMS. SHOULD CONTRACTOR PROCEED WITH ORDERING OR INSTALLING PRODUCTS PRIOR TO SUBMITTAL REVIEW, ALL COSTS REQUIRED TO MODIFY OR REPLACE SUCH PRODUCTS SHALL BE BORNE BY THE CONTRACTOR. THE PROPOSED USE OF ITEMS SPECIFIED ON THESE DRAWINGS DOES NOT ALLEVIATE THE CONTRACTOR FROM ITS RESPONSIBILITY TO PREPARE SUBMITTALS.
- DRAWINGS SHALL NOT BE SCALED.
- PENETRATIONS OF FIRE RATED WALLS OR FLOORS BY PIPE SHALL BE SEALED BY A FIRESTOPPING SYSTEM UL LISTED FOR THE APPLICATION. INSTALL PENETRATION SEAL MATERIALS IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL FIRE RESISTANCE DIRECTORY AND MANUFACTURERS INSTRUCTIONS. FIRESTOPPING SYSTEM SHALL BE EQUAL TO 3M FIRE BARRIER. FIRESTOPPING MATERIAL SHALL BE CAULK OR PUTTY TYPE. PROVIDE FIRE DAMPERS ON ALL DUCT PENETRATIONS THROUGH FIRE RATED WALLS AS REQUIRED TO PRESERVE THE FIRE RATING OF THE STRUCTURE.
- MECHANICAL EQUIPMENT SHALL BE SECURED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND APPLICABLE SECTIONS OF THE INTERNATIONAL BUILDING CODE AND INTERNATIONAL MECHANICAL CODE.
- ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT SHALL BE VERIFIED WITH ELECTRICAL DRAWINGS PRIOR TO ORDER RELEASE. ADDITIONAL ELECTRICAL WORK RESULTING FROM EQUIPMENT SUBSTITUTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- DUCTWORK, PIPING AND EQUIPMENT SHALL BE PROVIDED WITH SEISMIC RESTRAINTS IN ACCORDANCE WITH THE SMACNA SEISMIC RESTRAINT MANUAL - GUIDELINES FOR MECHANICAL SYSTEMS.
- ELECTRICAL: CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL REVIEW DRAWINGS AND SPECIFICATIONS BY ALL OTHER DIVISIONS. CONTRACTOR SHALL NOTIFY OTHER CONTRACTORS OF ANY ADDITIONAL WORK REQUIRED UNDER OTHER DIVISIONS TO COMPLETE OWN WORK. OBTAIN EQUIPMENT MANUFACTURER'S CONTROL WIRING DIAGRAMS FOR THE EQUIPMENT FURNISHED. ELECTRICAL EQUIPMENT SHALL BE FURNISHED WITH WEATHER PROOF (NEMA 4X WHEN POSSIBLE) ENCLOSURES FOR OUTDOOR INSTALLATIONS AND OTHERWISE AS INDICATED ON PLANS.
- FIELD INVESTIGATIONS: CONTRACTOR SHALL VISIT WORK-SITE TO VERIFY AND BECOME FULLY AWARE OF ALL EXISTING CONDITIONS. EXISTING CONDITIONS PRIOR TO BID. ALL COSTS REQUIRED TO ACCOMMODATE EXISTING CONDITIONS SHALL BE INCLUDED IN THE CONTRACTOR'S BID. NO ADDITIONAL ALLOWANCE AFTER BID WILL BE CONSIDERED DUE TO LACK OF SUCH DUE DILIGENCE OR FIELD EXAMINATION. INVESTIGATE THE CONTRACT DOCUMENTS AND MAKE PROPER PROVISIONS TO AVOID INTERFERENCES OR CONSTRUCTION DELAYS. DETERMINE THE EXACT ROUTE OF EACH DUCT AND PIPE. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.
- WORK CONDITIONS: FIELD VERIFY CONDITIONS AND DIMENSIONS FOR INTERFERENCES. INSTALLED WORK SHALL BE PROTECTED DURING CONSTRUCTION AND CLEANED FOR FINAL INSPECTION. TOUCH-UP PAINT ALL RAW EDGES OF METAL EXPOSED TO WEATHER. COORDINATE WITH OTHER TRADES FOR PIPE SLEEVES AND INSTALLATION OF EQUIPMENT SUPPORTS.
- REQUIREMENTS: PERFORM WORK USING PERSONNEL SKILLED IN THE TRADE INVOLVED. PROVIDE COMPETENT SUPERVISION. FURNISH NEW EQUIPMENT, MATERIALS AND ACCESSORIES BEARING THE MANUFACTURER'S IDENTIFICATION AND CONFORMING TO THE RECOGNIZED COMMERCIAL STANDARDS.
- EQUIPMENT INSTALLATION: INSTALL EQUIPMENT IN THE SPACE ALLOTTED WITH SUFFICIENT CLEARANCE FOR PROPER OPERATION AND MAINTENANCE AND WITH SUFFICIENT HEAD CLEARANCE ACCORDING TO THE BUILDING CODE. WHERE EQUIPMENT DIFFERS IN ARRANGEMENT OR CONNECTIONS FROM THOSE SHOWN, PROVIDE ALL REQUIRED CHANGES IN PIPING, SUPPORTS AND APPURTENANCES. PROVIDE ACCESS PANELS WHERE REQUIRED FOR MAINTENANCE ACCESS TO EQUIPMENT.

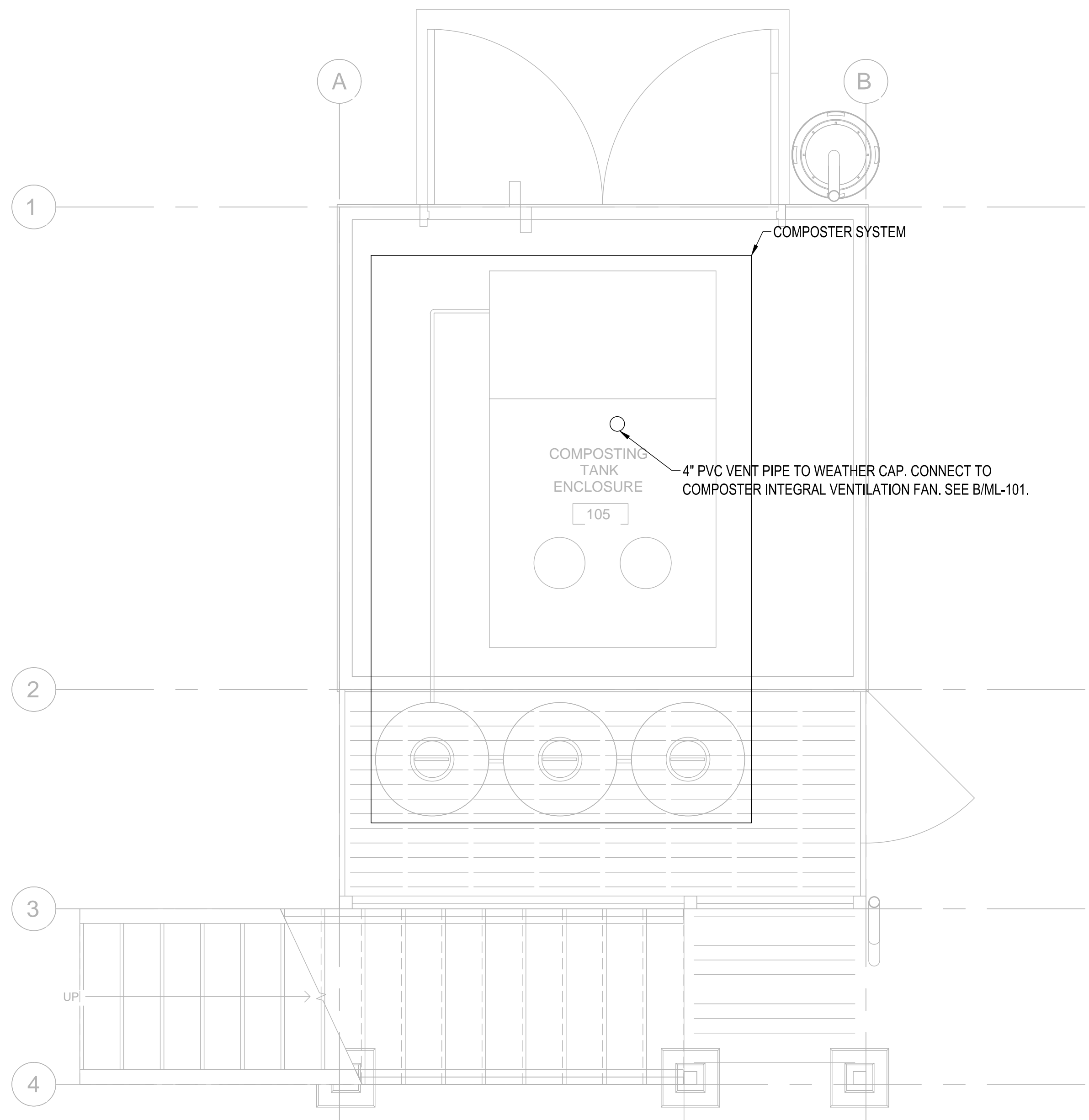
HAWAII COUNTY ENERGY CODE 2021 IECC, HAWAII REVISED STATUTES HRS 107-24 TO 28 COMMERCIAL BUILDING ENERGY EFFICIENCY STANDARDS I CERTIFY THAT, TO THE BEST OF KNOWLEDGE, THIS PROJECTS DESIGN SUBSTANTIALLY CONFORMS TO THE BUILDING ENERGY EFFICIENCY STANDARDS PERTAINING TO THE COMMERCIAL PROVISIONS FOR MECHANICAL SYSTEMS (C403, C404, & C405) OF THE 2021 IECC STATE AMENDMENTS: UNAMENDED COUNTY AMENDMENTS: PENDING ELECTIVE USE OF 2021 CODES TO BEGIN 01/29/2025		
COMPLIANCE METHOD		
X	2021 IECC AS AMENDED, MANDATORY AND PRESCRIPTIVE	
	2021 IECC AS AMENDED,	
	MANDATORY AND TOTAL BUILDING PERFORMANCE	
	ASHRAE STANDARD 90.1-2019, MANDATORY AND PRESCRIPTIVE	
	ASHRAE STANDARD 90.1-2019,	
	MANDATORY AND ENERGY COST BUDGET	
INFORMATION IN CONSTRUCTION DOCUMENTS		
	YES	N/A
HVAC SYSTEMS		
	EQUIPMENT CAPACITY AND EFFICIENCY.	X
	THERMOSTATIC CONTROLS.	X
	VENTILATION RATE.	X
	DEMAND CONTROL VENTILATION CONTROLS.	X
	ENCLOSED PARKING GARAGE VENTILATION CONTROL.	X
	ENERGY RECOVERY VENTILATION SYSTEM.	X
	KITCHEN EXHAUST SYSTEM.	X
	DUCT AND PLENUM INSULATION THICKNESS/R-VALUE.	X
	DUCT AND PLENUM SEALING REQUIREMENTS.	X
	PIPE INSULATION THICKNESS/R-VALUE.	X
	FAN MOTOR HORSEPOWER.	X
	FAN EFFICIENCY.	X
	FAN MOTOR EFFICIENCY.	X
	PUMP MOTOR EFFICIENCY.	X
	VARIABLE-FLOW FAN CONTROL.	X
	STATIC PRESSURE SENSOR LOCATION.	X
	STATIC PRESSURE RESET CONTROL.	X
	CHILLED WATER VARIABLE FLOW CONTROL.	X
	CHILLER ISOLATION.	X
	COOLING TOWER FAN CONTROL.	X
	TERMINAL UNIT MINIMUM AND MAXIMUM AIRFLOW.	X
	COMMISSIONING REQUIREMENTS.	X
REFRIGERATION		
	REFRIGERATION EQUIPMENT EFFICIENCY.	X
	REFRIGERATED DISPLAY CASES.	X
	WALK-IN COOLERS AND FREEZERS.	X
SERVICE WATER HEATING		
	HEAT RECOVERY FOR SERVICE WATER HEATING.	X
	EQUIPMENT CAPACITY AND EFFICIENCY.	X
	PIPE INSULATION.	X
	HOT WATER PIPE LENGTH/VOLUME.	X
	HOT WATER CIRCULATION CONTROLS.	X
	HEATED POOL AND SPA COVERS.	X
	COMMISSIONING REQUIREMENTS.	X
NOTES:		
SIGNATURE: DATE: 04/28/26 TITLE: MECHANICAL ENGINEER NAME: ELI B. WALTZ LICENSE NO.: 18572-M		

05/05/2026 4:32 pm
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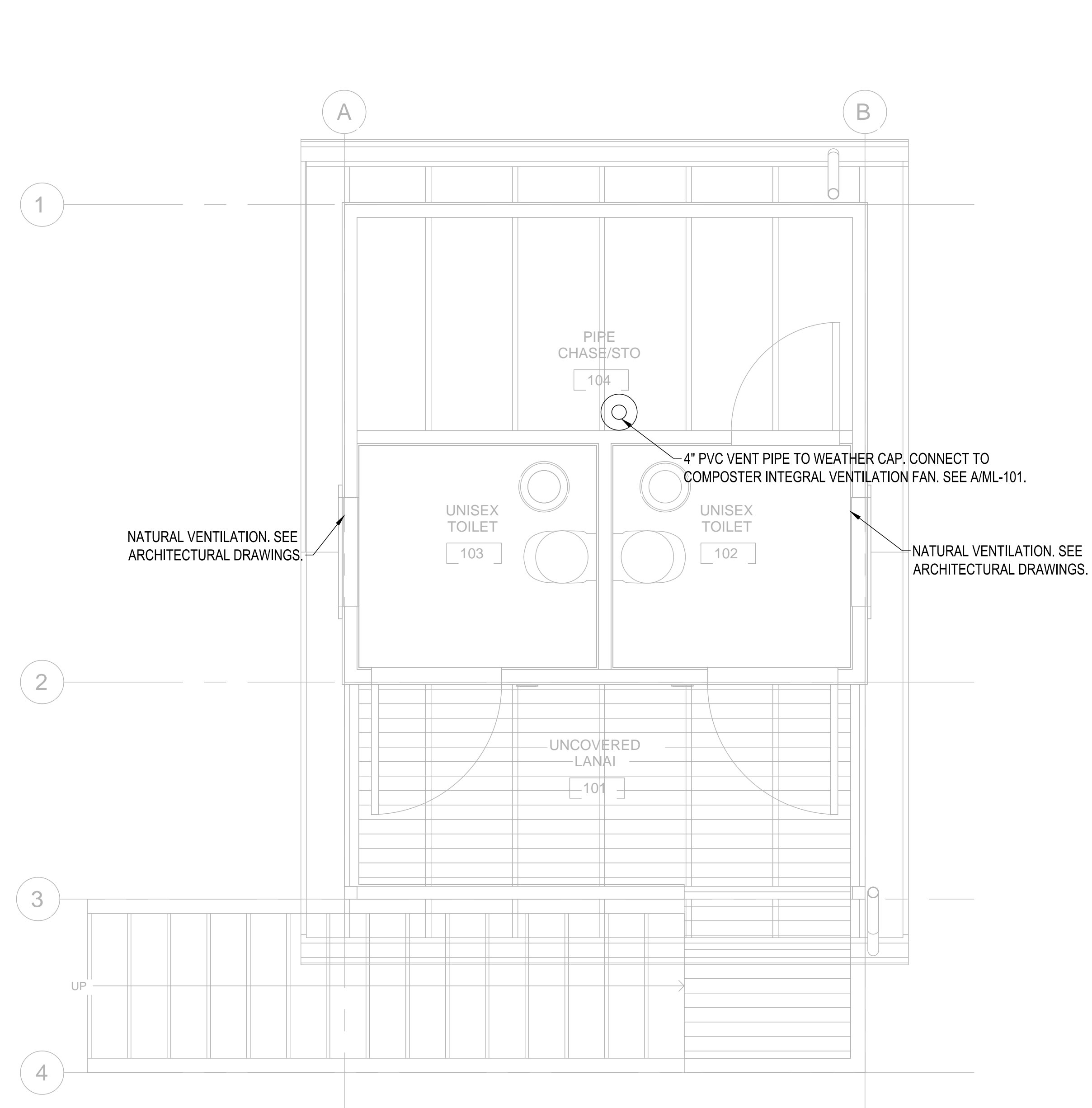
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS MECHANICAL SYMBOLS, NOTES, & IECC ENGINEERING PARTNERS, INC					
DESIGNED: CF		SUBMITTED:			
DRAWN: CF		DATE:			
CHECKED: EW		SCALE: AS NOTED			
APPROVED:		Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer		DRAWING NO. ML-001	
JOB NO.: F14C728D SHEET NO. 115 OF 143 SHEETS					

KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D

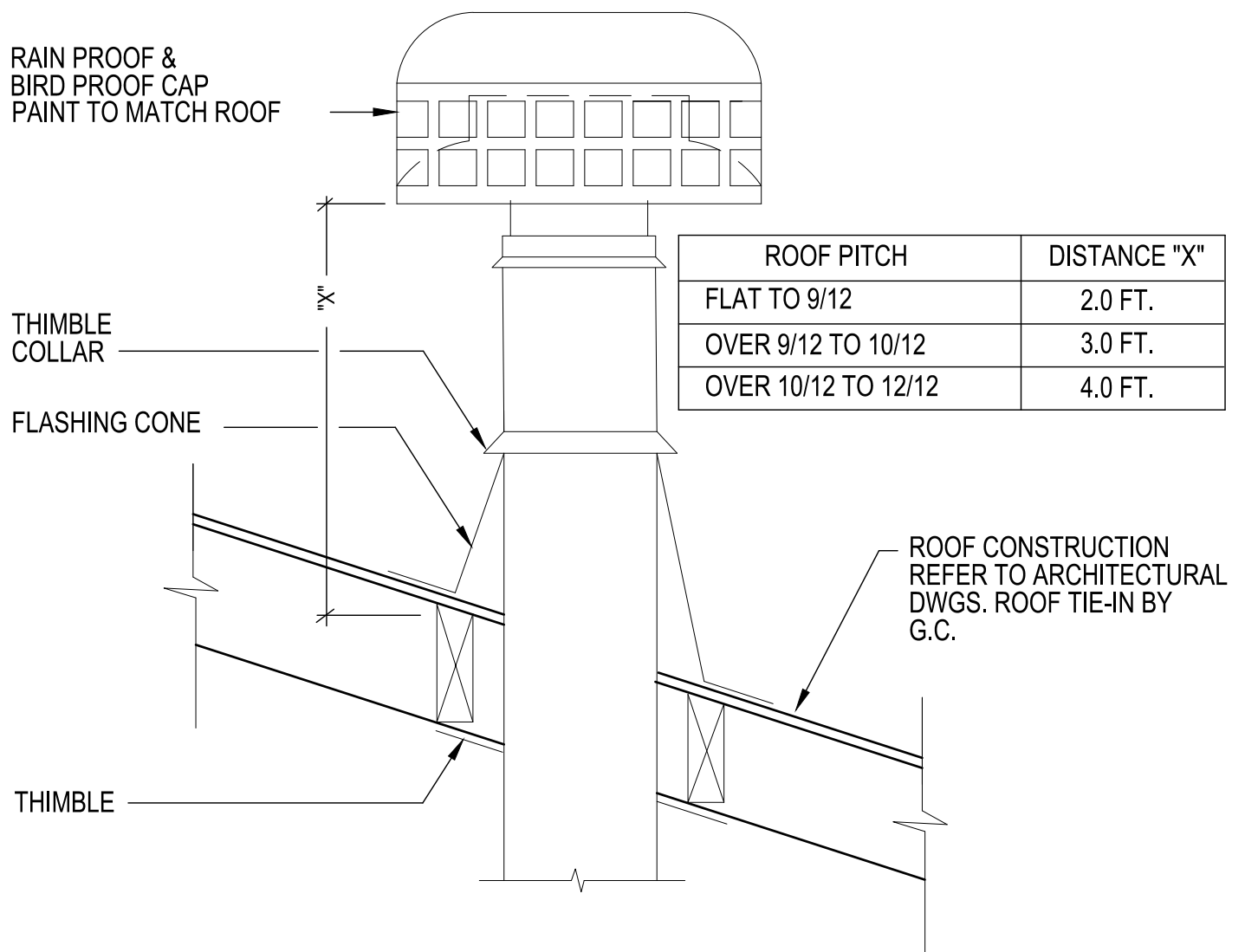
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A VENTILATION PLAN - LOWER FLOOR
SCALE: 1/2" = 1'-0"




B VENTILATION PLAN - MAIN FLOOR
SCALE: 1/2" = 1'-0"



1 WEATHER CAP DETAIL
NO SCALE

NOTICES

- ALL ATTACHMENT HARDWARE FOR ANCHORING OUTDOOR PIPING AND EQUIPMENT SHALL BE STAINLESS STEEL 316 CONSTRUCTION, INCLUDING NUTS, BOLTS, PIPE CLAMPS, AND HANGERS. ALL SLOTTED STEEL CHANNELS SHALL BE STAINLESS STEEL 316 CONSTRUCTION.
- ALL EXPOSED EQUIPMENT, PIPING, AND SUPPORTS SHALL BE PAINTED WITH CORROSION RESISTANT COATINGS. COLOR TO MATCH SURROUNDINGS.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
<p>STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION</p> <p>KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS</p> <p>VENTILATION PLANS - LOWER AND MAIN FLOOR</p> <p>ENGINEERING PARTNERS, INC</p>					
DESIGNED:	CF	SUBMITTED:			
DRAWN:	CF	DATE:			
CHECKED:	EW	SCALE:	AS NOTED		
APPROVED:	<p>Dina Lau E-signed 2026-05-08 09:49PM HST dina.lau@hawaii.gov State of Hawaii Civil Engineer</p>				
CHIEF ENGINEER:	 ELI B. WALTZ LICENSED PROFESSIONAL ENGINEER Exp. 04/30/28 No. 18872-M HAWAII, U.S.A.				
			DRAWING NO.	ML-101	
			SHEET NO.	116	OF 143 SHEETS

KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D

GENERAL PLUMBING NOTES

- PROVIDE COMPLETE PLUMBING SYSTEM AS SPECIFIED AND INDICATED ON DRAWINGS. "PROVIDE" SHALL MEAN "FURNISH AND INSTALL" WHEN USED HEREIN.
- THESE DRAWINGS ARE DIAGRAMMATIC TO SHOW WORK SCOPE, NOT SHOP DRAWINGS SHOWING ALL CONDITIONS OF EXISTING WORK. CONTRACTOR MAY MODIFY TO SUIT CONDITIONS.
- WORK SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES INCLUDING: HAWAII COUNTY PLUMBING CODE, 2021 INTERNATIONAL PLUMBING CODE, HAWAII COUNTY BUILDING CODE, AND ALL OTHER APPLICABLE STANDARDS AND CODES.
- CONTRACTOR SHALL ARRANGE AND PAY FOR ALL PERMITS AND FEES.
- WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES. WORK SHALL BE GUARANTEED AGAINST DEFECTIVE WORKMANSHIP OR MATERIALS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT. WARRANTY WORK SHALL BE COMPLETED AT NO EXTRA CHARGE TO THE OWNERS. FURNISH MANUFACTURER'S PRODUCT WARRANTY CERTIFICATES IN A BINDER.
- MATERIALS AND EQUIPMENT SHALL BE NEW AND GUARANTEED FOR ONE YEAR FROM THE DATE OF ACCEPTANCE. MATERIALS AND EQUIPMENT SHALL BE AS SCHEDULED OR EQUAL, MEETING THE REQUIREMENTS OF THE SPECIFICATION. MATERIALS AND EQUIPMENT SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL PRIOR TO ORDER RELEASE.
- RECORD DRAWINGS, OPERATION MANUALS AND MAINTENANCE MANUALS SHALL BE SUBMITTED AS REQUIRED BY ARCHITECT UPON COMPLETION.
- DRAWINGS SHALL NOT BE SCALED.
- PENETRATIONS OF FIRE RATED WALLS OR FLOORS BY PIPE SHALL BE SEALED BY A FIRESTOPPING SYSTEM UL LISTED FOR THE APPLICATION. INSTALL PENETRATION SEAL MATERIALS IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL FIRE RESISTANCE DIRECTORY AND MANUFACTURERS INSTRUCTIONS. FIRESTOPPING SYSTEM SHALL BE EQUAL TO 3M FIRE BARRIER. FIRESTOPPING MATERIAL SHALL BE CAULK OR PUTTY TYPE.
- EQUIPMENT SHALL BE SECURED AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND APPLICABLE SECTIONS OF THE UNIFORM BUILDING CODE AND UNIFORM MECHANICAL CODE.
- EQUIPMENT SHALL BE IDENTIFIED WITH BAKELITE NAMEPLATES. COLOR CODING OF NAMEPLATES AND IDENTIFICATION INFORMATION SHALL BE COORDINATED WITH THE OWNER.
- ELECTRICAL CHARACTERISTICS OF EQUIPMENT SHALL BE VERIFIED WITH ELECTRICAL DRAWINGS PRIOR TO ORDER RELEASE. ADDITIONAL ELECTRICAL WORK RESULTING FROM EQUIPMENT SUBSTITUTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE OWNER SHALL BE NOTIFIED IN WRITING OF SHUTDOWN OF UTILITIES REQUIRED BY THE EXECUTION OF THIS CONTRACT.
- INSPECTIONS: ARRANGE FOR INSPECTIONS BY ADMINISTRATIVE AUTHORITY.
- ELECTRICAL: CONFORM TO THE REQUIREMENTS OF ANSI, AND NATIONAL ELECTRICAL CODE. OBTAIN EQUIPMENT MANUFACTURER'S CONTROL WIRING DIAGRAMS FOR THE EQUIPMENT FURNISHED.
- FIELD INVESTIGATIONS: VISIT THE WORK-SITE AND BECOME FULLY AWARE OF ALL EXISTING CONDITIONS. INVESTIGATE THE CONTRACT DOCUMENTS AND MAKE PROPER PROVISIONS TO AVOID INTERFERENCES OR CONSTRUCTION DELAYS. EXISTING UTILITY LOCATIONS SHALL BE FIELD-VERIFIED. UNFORESEEN OBSTRUCTIONS OR LACK OF INVERT DEPTH SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
- REQUIREMENTS: PERFORM WORK USING PERSONNEL SKILLED IN THE TRADE INVOLVED. PROVIDE COMPETENT SUPERVISION. FURNISH NEW EQUIPMENT, MATERIALS AND ACCESSORIES BEARING THE MANUFACTURER'S IDENTIFICATION AND CONFORMING TO THE RECOGNIZED COMMERCIAL STANDARDS. COORDINATE WITH OTHER TRADES FOR PIPE SLEEVES AND INSTALLATION OF EQUIPMENT SUPPORTS
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- PIPING: INSPECT FOR AND REMOVE ALL INTERIOR OBSTRUCTIONS AND BURRS BEFORE INSTALLATION. SLOPE DRAINS AT 1/4" PER FOOT. PERFORATED STRAP AND WIRES ARE NOT ACCEPTABLE HANGERS.
- FERROUS PIPING SHALL HAVE A PROTECTIVE COATING OF AN APPROVED TYPE; MACHINE APPLIED IN ACCORDANCE WITH RECOGNIZED STANDARDS. APPROVED NONFERROUS PIPING SHALL NOT BE REQUIRED TO BE WRAPPED.
- WATER LINES: PROTECT AGAINST ELECTROLYSIS WITH TWO LAYERS OF ANTI-CORROSION TAPE WHERE THEY CONTACT FERROUS METAL.
- PRESSURIZE ROUGH-IN WATER LINES TO 125 PSI FOR 3 HOURS AND INSPECT FOR LEAKS BEFORE BEING CLOSED UP. RETEST LINES AT 75 PSI AFTER FIXTURES ARE CONNECTED. TEST WASTE LINES TO HOLD 10' WATER HEAD FOR 15 MINUTES WITHOUT LOSS.
- FLUSH OUT AND DISINFECT WATER LINES WITH 50 PPM CHLORINE FOR 6 HOURS OR 100PPM FOR TWO UNLESS WAIVED BY THE OWNER IN WRITING. FLUSH PIPES UNTIL RESIDUAL IS DOWN TO 0.3 PPM.
- INSTALL INSULATION SYSTEM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING TRADESMAN SKILLED IN THIS TRADE AND APPROVED BY THE INSULATION MANUFACTURER. PROVIDE INSULATION PRODUCTS WITH A COMPOSITE (INSULATION, JACKET AND ADHESIVE) FIRE AND SMOKE HAZARD RATING AS TESTED UNDER ASTM E84, NFPA 255 AND UL 723, NOT EXCEEDING A FLAME SPREAD OF 25 AND SMOKE DEVELOPED OF 50.
- EXPANSION CLEARANCES: AT POINTS WHERE PIPE WILL MOVE DURING EXPANSION AND CONTRACTION (EXPANSION JOINTS, Z-BENDS, EXPANSION LOOPS AND ELLS), CLEARANCES BETWEEN THE PIPE AND ENCASED INSULATION SHALL BE SIZED TO PERMIT FULL PIPE MOVEMENT WITHOUT CRACKING OR DAMAGING INSULATION AND JACKET.
- WATER HAMMER ARRESTOR(S): BUILDING WATER SUPPLY SYSTEMS WHERE QUICK-ACTING VALVES ARE INSTALLED SHALL BE PROVIDED WITH WATER HAMMER ARRESTOR(S) TO ABSORB HIGH PRESSURES RESULTING FROM THE QUICK CLOSING OF THESE VALVE PER UPC 609.11.


PLUMBING SYMBOLS

	SANITARY LINE
	PLUMBING VENT
	COLD WATER LINE
	HOT WATER LINE
	HOT WATER RETURN LINE
	GAS LINE
	DEMOLITION
	PIPE RISER TO UPPER LEVEL
	CAPPED LINE
	PIPE ELBOW UP/DOWN
	PIPE BRANCH TOP CONNECTION
	PIPE BRANCH BOTTOM CONNECTION
	PIPE UNION
	BALL VALVE
	CHECK VALVE
	GATE VALVE
	PRESSURE REDUCING VALVE
	EMERGENCY GAS SHUT-OFF VALVE
	EQUIPMENT TAG

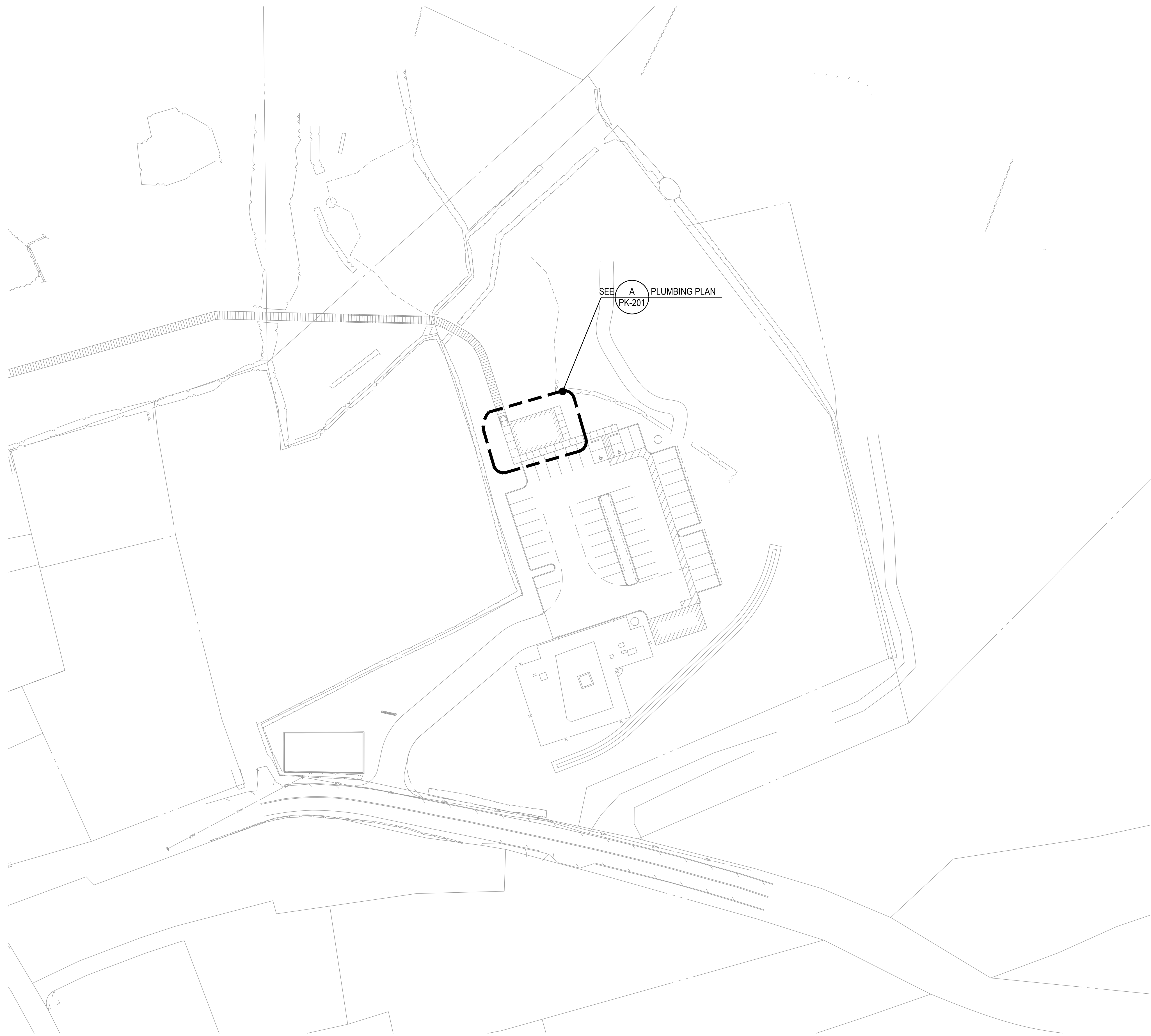
PLUMBING ABBREVIATIONS

(E)	EXISTING	HZ	HERTZ
(D)	DEMOLITION	KW	KILOWATT
(N)	NEW	LAV	LAVATORY
(R)	RELOCATED	MANUF	MANUFACTURER
ABV	ABOVE	MAX	MAXIMUM
ADJ	ADJUSTABLE	MECH	MECHANICAL
AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
AFG	ABOVE FINISHED GRADE	MTD	MOUNTED
APPROX	APPROXIMATELY	NOM	NOMINAL
ARCH	ARCHITECT	NPSH	NET POSITIVE SUCTION HEAD
BLDG	BUILDING	PH	PHASE
BHP	BRAKE HORSEPOWER	PLMB	PLUMBING
BTU	BRITISH THERMAL UNITS	PRV	PRESSURE REDUCING VALVE
BV	BALL VALVE	QTY	QUANTITY
CAP	CAPACITY	RD	ROOF DRAIN
CLG	CEILING	REQ'D	REQUIRED
CONC	CONCRETE	RPBP	REDUCING PRESSURE BACKFLOW PREVENTOR
CONN	CONNECT	RM	ROOM
CONT'N	CONTINUATION	S	SANITARY
COTG	CLEANOUT TO GRADE	SD	SHOWER DRAIN
CW	COLD WATER	SHWR	SHOWER
DF	DRINKING FOUNTAIN	SS	SERVICE SINK
DN	DOWN	SQ	SQUARE
EA	EACH	T&P	TEMPERATURE AND PRESSURE
ELEC	ELECTRICAL	TDH	TOTAL DISCHARGE HEAD
EXIST	EXISTING	TEMP	TEMPERATURE
FD	FLOOR DRAIN	TP	TRAP PRIMER
FCO	FLOOR CLEANOUT	TYP	TYPICAL
FLR	FLOOR	UR	URINAL
FS	FLOOR SINK	V	VENT
GAL	GALLONS	VB	VACUUM BREAKER
GPM	GALLONS PER MINUTE	VTR	VENT TO ROOF
HB	HOSE BIBB	W	WITH
FLEX	FLEXIBLE	WC	WATER CLOSET
FLR	FLOOR	WCO	WALL CLEANOUT
FT	FEET		
HTR	HEATER		

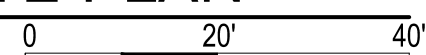
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REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
					
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS					
PLUMBING SYMBOLS & NOTES					
ENGINEERING PARTNERS, INC					
DESIGNED:	MS	SUBMITTED:			
DRAWN:	MS	DATE:			
CHECKED:	EW	SCALE:	AS NOTED		
APPROVED:	Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer		DRAWING NO. P-001		

05/05/2026 4:44 pm
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 Sheet\A-Interpretive Shelter.dwg



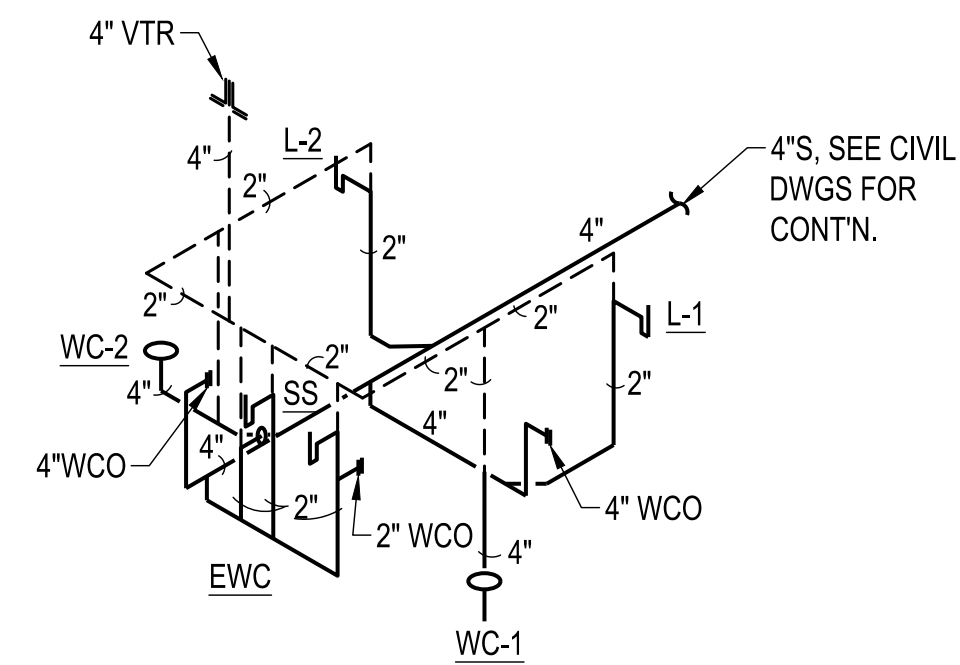
A OVERALL PLUMBING SITE PLAN
 SCALE: 1" = 20'



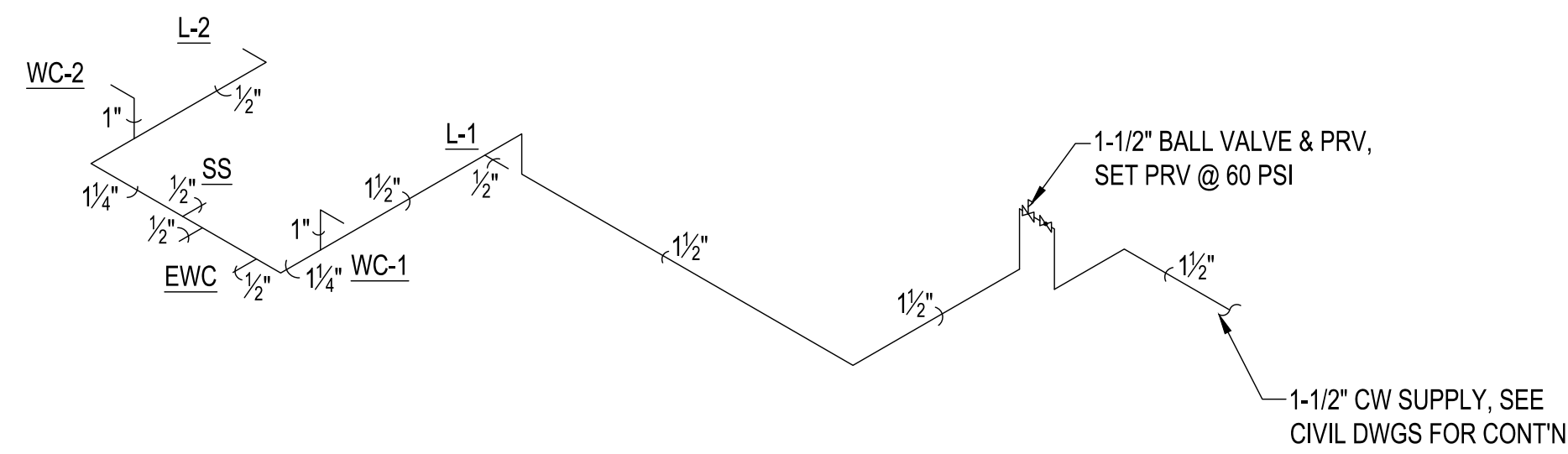
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS OVERALL PLUMBING SITE PLAN ENGINEERING PARTNERS, INC					
DESIGNED: MS DRAWN: MS CHECKED: EW APPROVED: <i>Dina Lau</i> CHIEF ENGINEER			SUBMITTED: <i>EW</i> DATE: SCALE: AS NOTED		DRAWING NO. PK-101



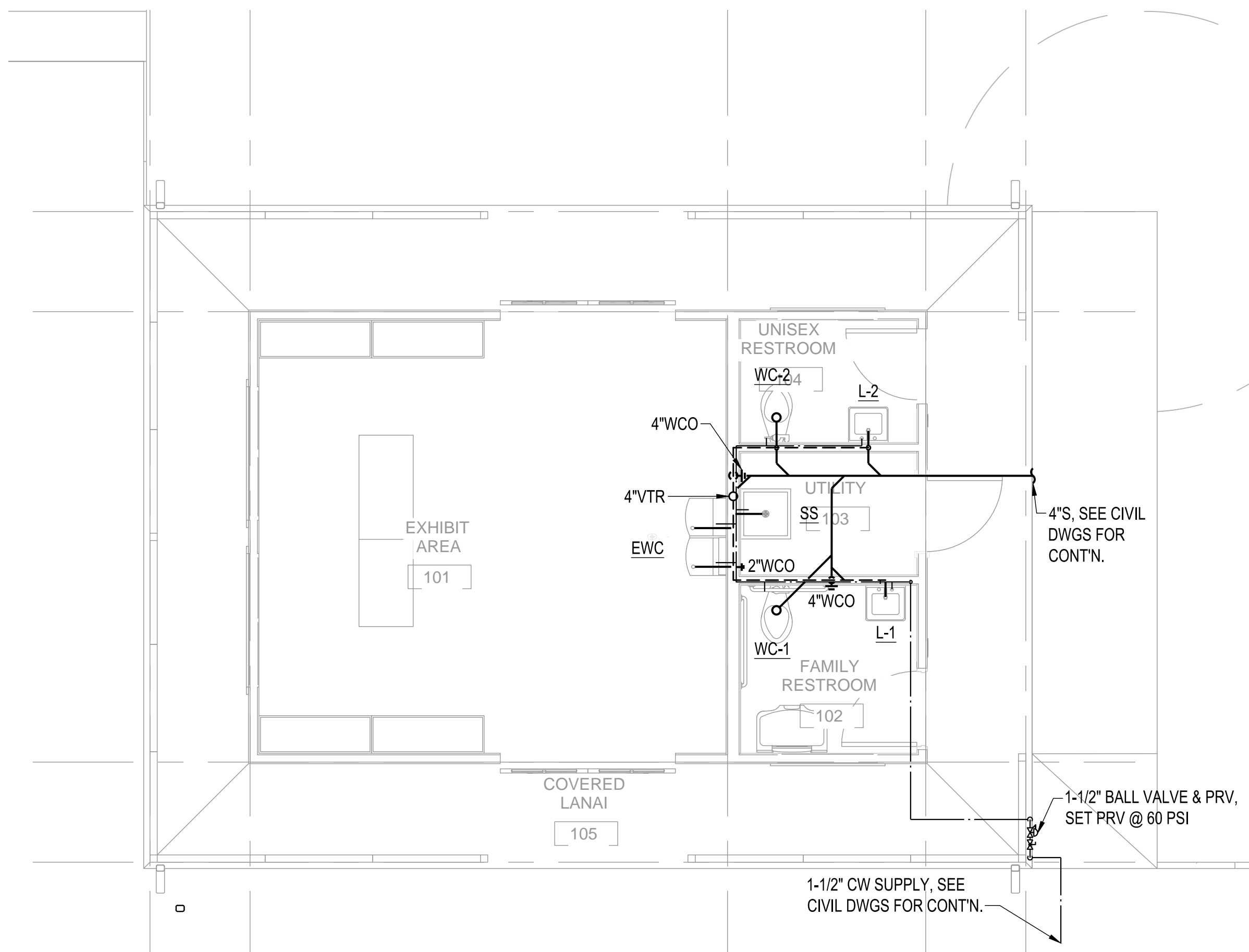
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Eli B. Waltz
 SIGNATURE



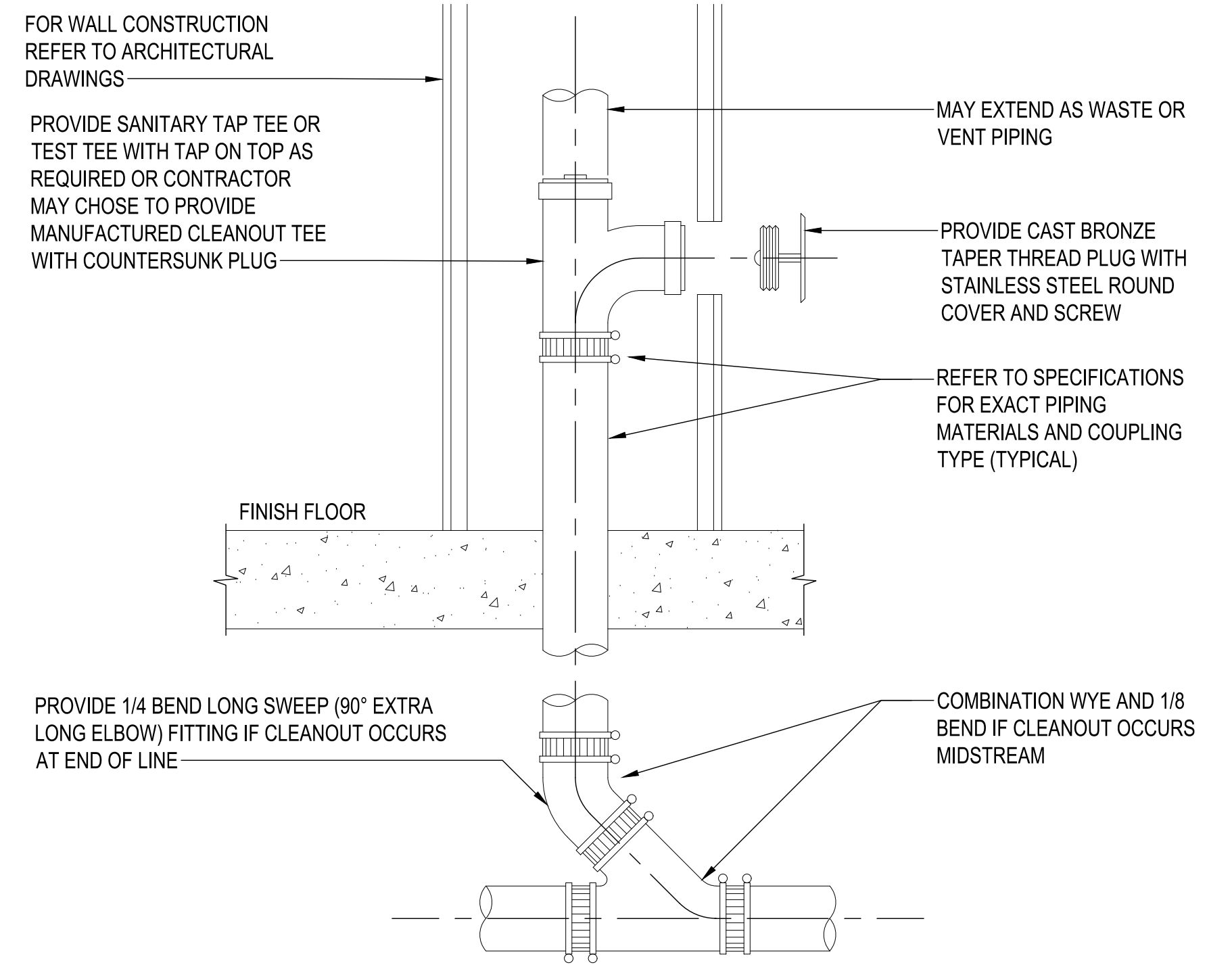
1 SANITARY PIPING DIAGRAM
NO SCALE



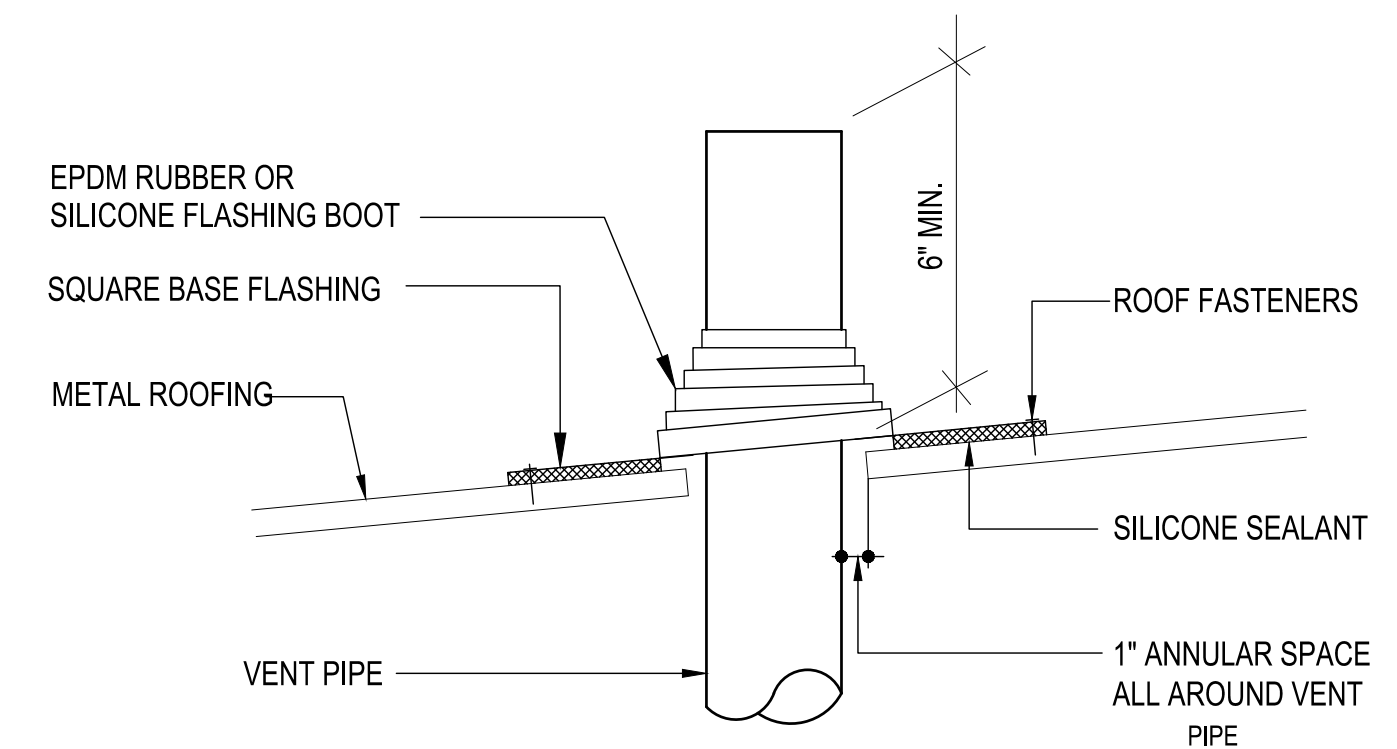
2 WATER PIPING DIAGRAM
NO SCALE



A PLUMBING PLAN
SCALE: 1/4" = 1'-0"



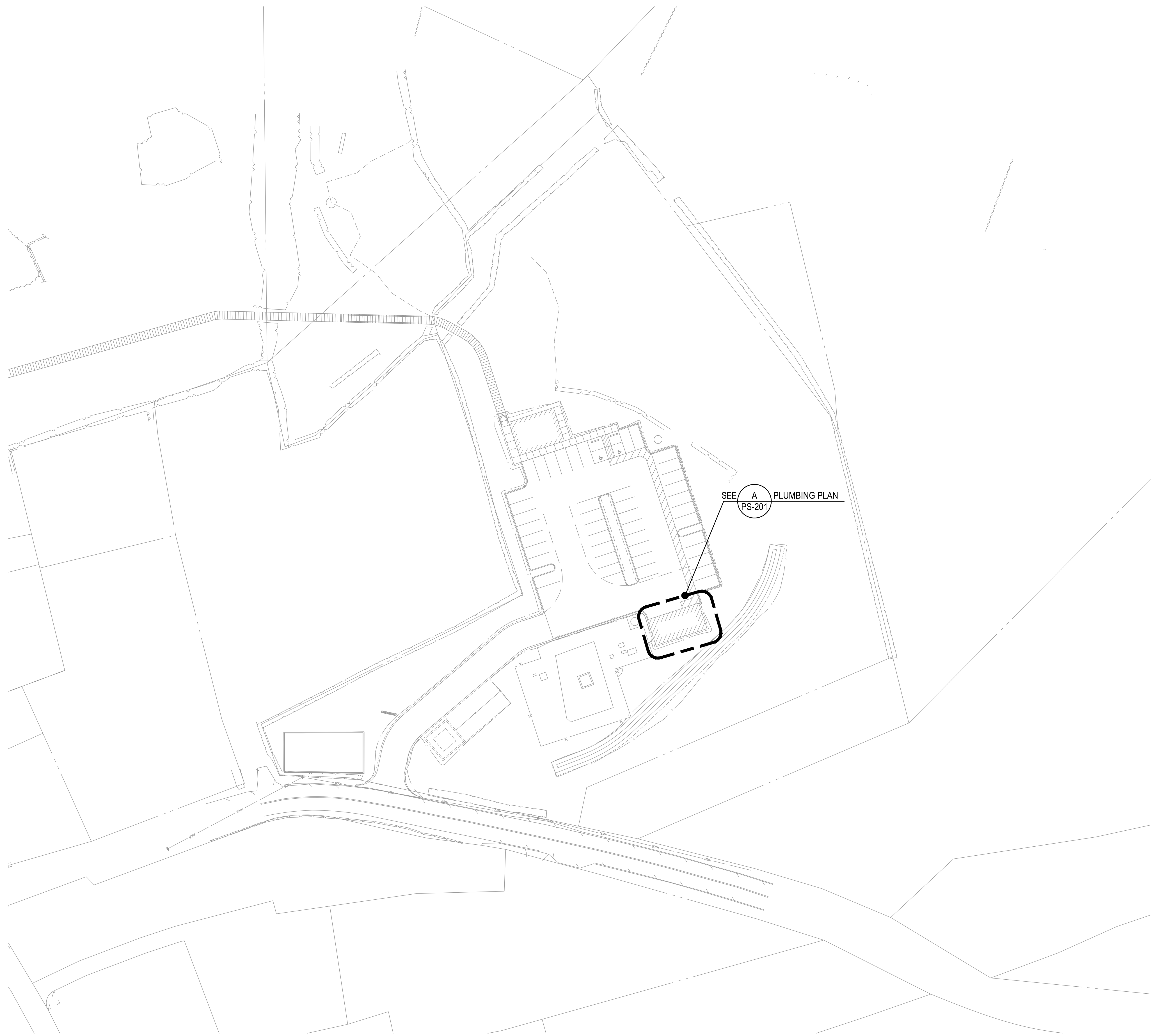
3 WALL CLEANOUT DETAIL
NO SCALE



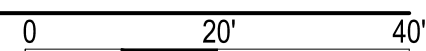
4 VENT THRU ROOF DETAIL
NO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS PLUMBING PLAN, DIAGRAMS & DETAILS ENGINEERING PARTNERS, INC					
DESIGNED: MS DRAWN: MS CHECKED: EW APPROVED: <i>Dina Lau</i> CHIEF ENGINEER			SUBMITTED: <i>MS</i> DATE: SCALE: AS NOTED Dina Lau E-signed 2026-05-08 09:49PM HST dina.lau@hawaii.gov State of Hawaii Civil Engineer		
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.				DRAWING NO. PK-201 SHEET NO. 119 OF 143 SHEETS	

05/05/2026 4:46 pm
 M:\EO Projects\2025 Projects\12005-25-03 Kealahou Bay Historical Park Impr\4-Dwg\Plumbing\Napoopoo Equipment Storage
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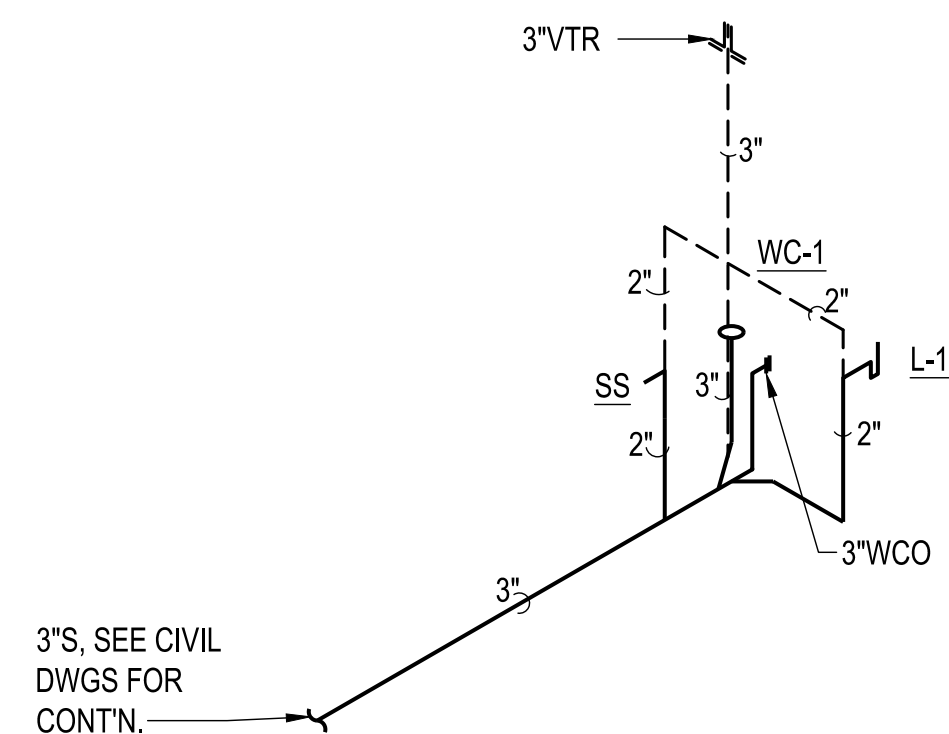


A OVERALL PLUMBING SITE PLAN
 SCALE: 1" = 20'

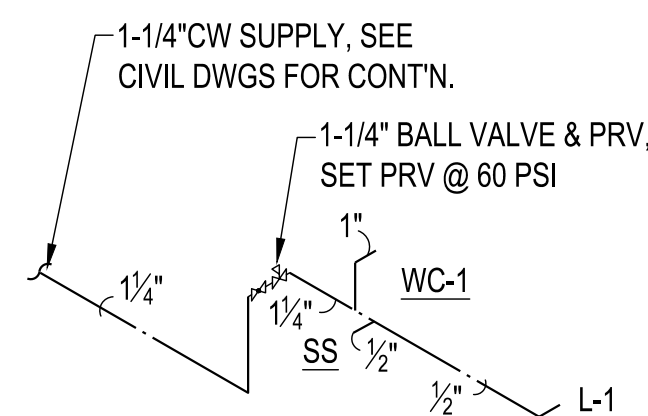


REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS OVERALL PLUMBING SITE PLAN ENGINEERING PARTNERS, INC					
DESIGNED: MS DRAWN: MS CHECKED: EW APPROVED: <i>[Signature]</i> CHIEF ENGINEER: Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer			SUBMITTED: <i>[Signature]</i> DATE: SCALE: AS NOTED		DRAWING NO. PS-101
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.					SHEET NO. 120 OF 143 SHEETS

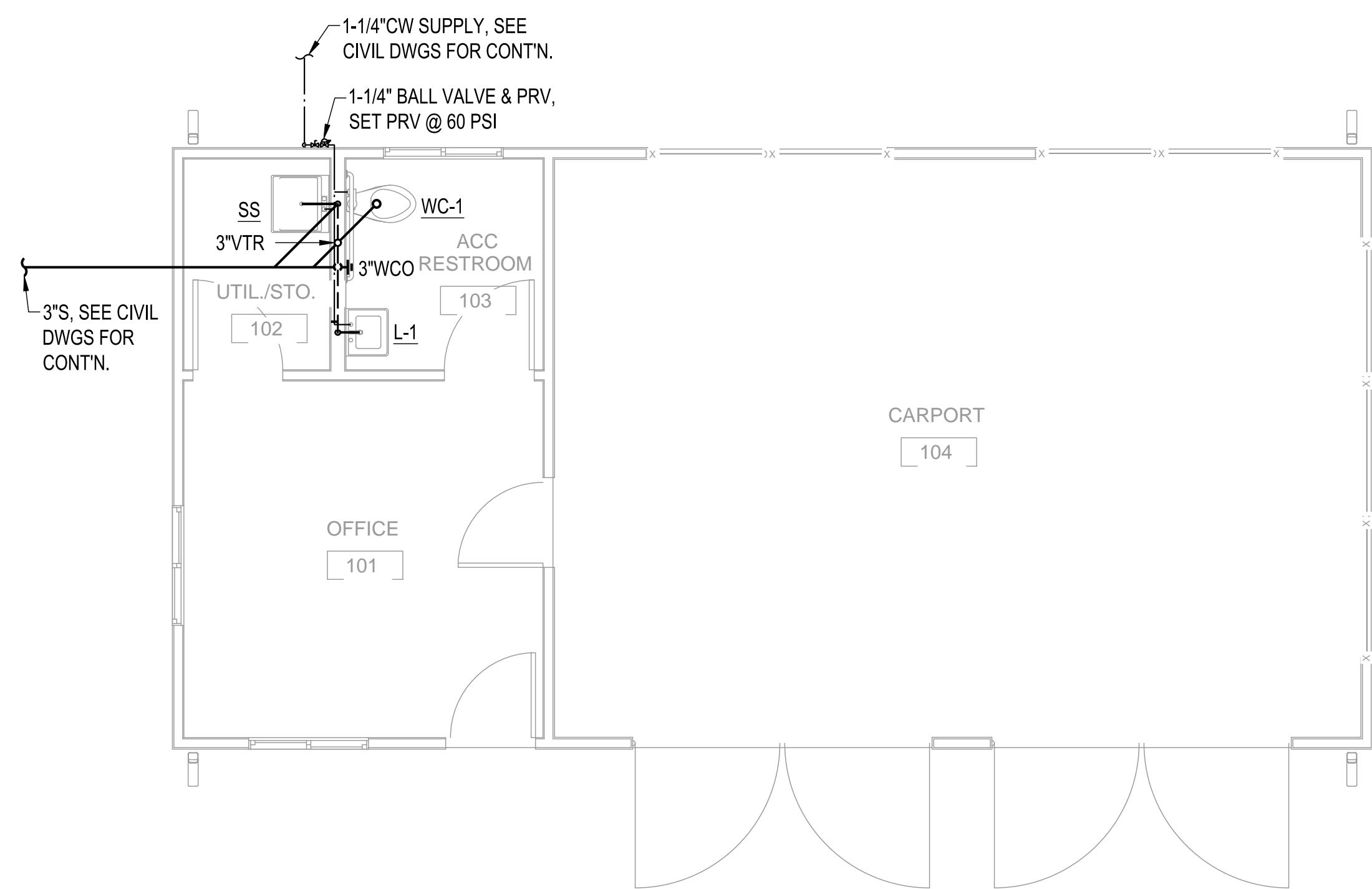
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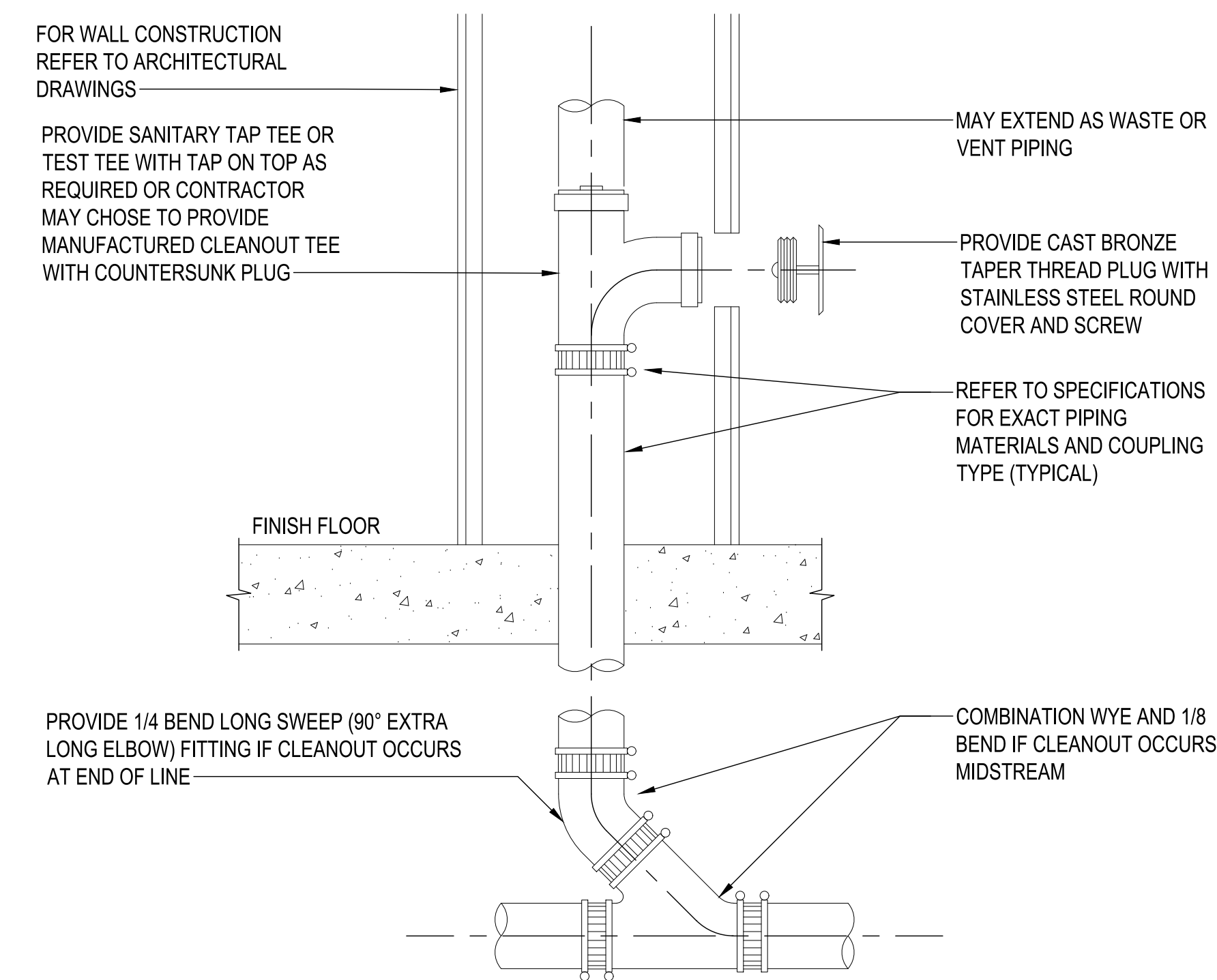
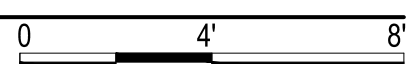
1 SANITARY PIPING DIAGRAM
NO SCALE



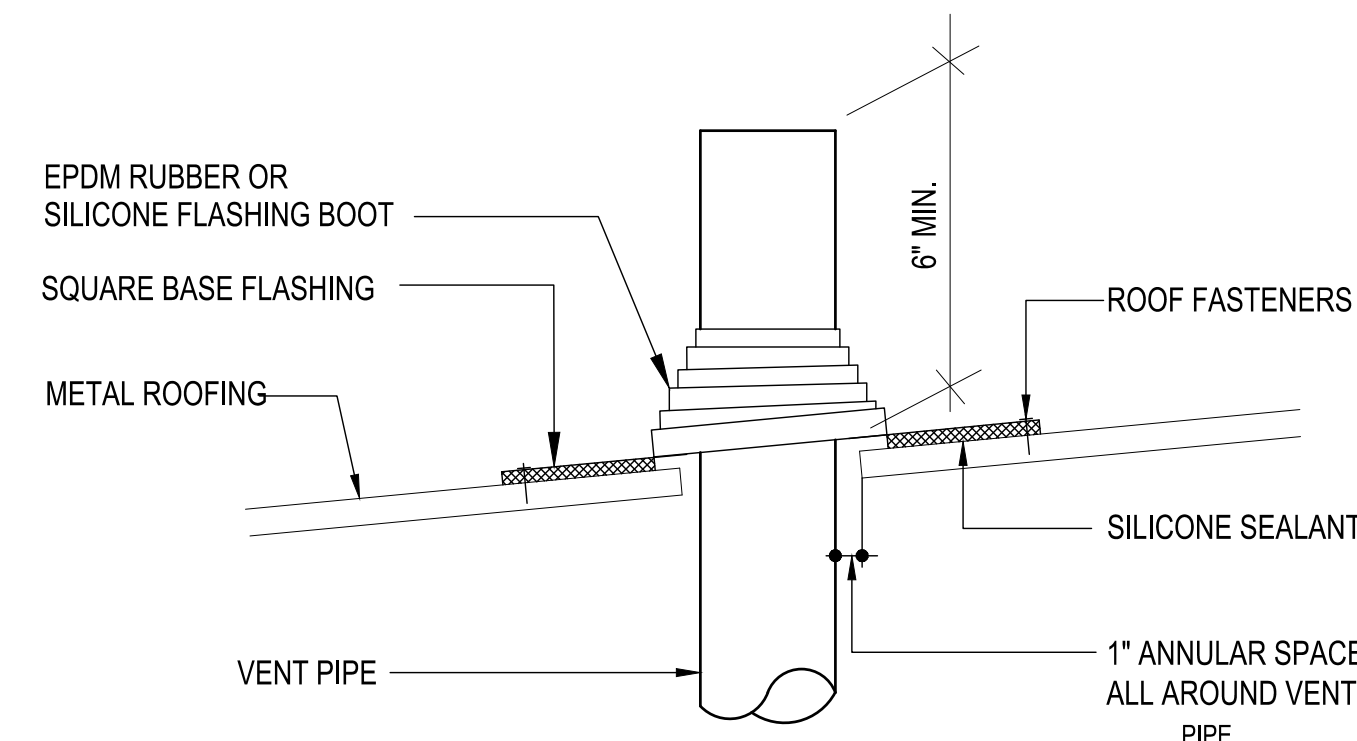
2 WATER PIPING DIAGRAM
NO SCALE



A PLUMBING PLAN
SCALE: 1/4" = 1'-0"



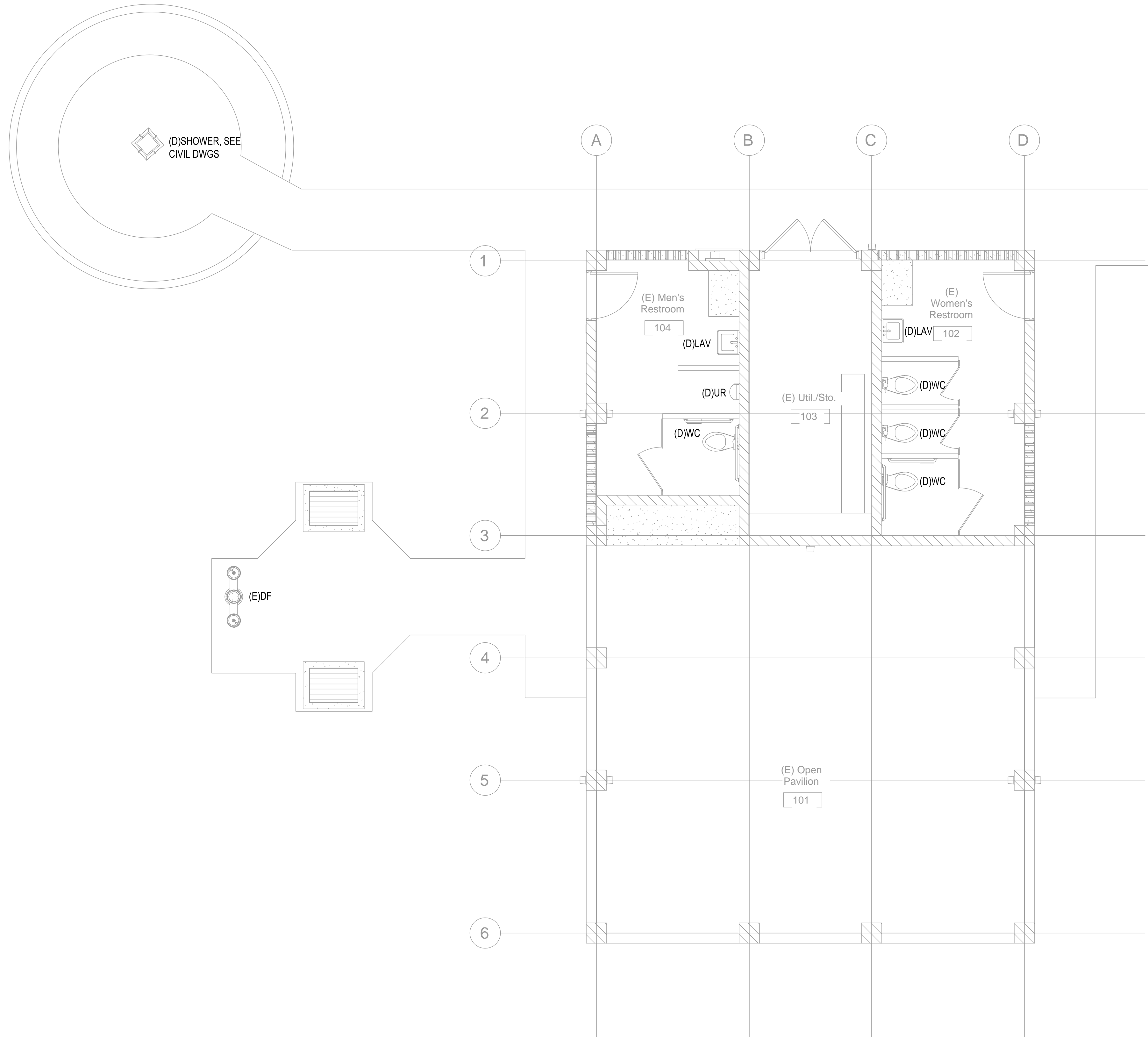
3 WALL CLEANOUT DETAIL
NO SCALE



4 VENT THRU ROOF DETAIL
NO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS PLUMBING PLAN, DIAGRAMS & DETAILS ENGINEERING PARTNERS, INC					
DESIGNED: MS DRAWN: MS CHECKED: EW APPROVED: <i>Dina Lau</i> CHIEF ENGINEER: Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer			SUBMITTED: <i>MS</i> DATE: SCALE: AS NOTED DRAWING NO. PS-201 SHEET NO. 121 OF 143 SHEETS		

05/05/2026 4:43 pm
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 Paving\1-X-Napoopoo_Paving.dwg



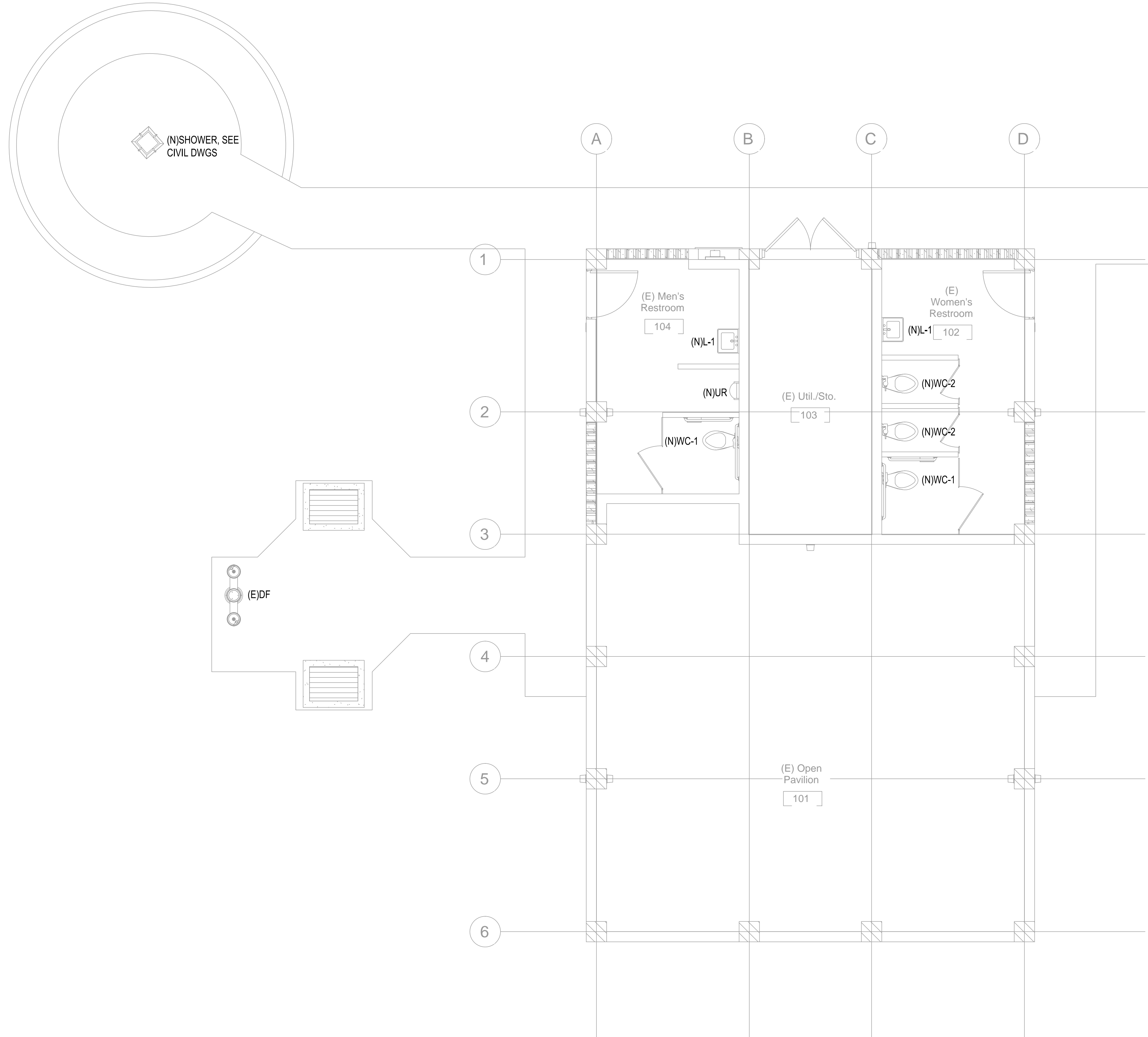
A EXISTING/ DEMOLITION PLUMBING PLAN
 SCALE: 1/4" = 1'-0"
 0 4 8'
 N

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS EXISTING/ DEMOLITION PLUMBING PLAN ENGINEERING PARTNERS, INC					
DESIGNED: MS DRAWN: MS CHECKED: EW APPROVED: <i>Dina Lau</i> CHIEF ENGINEER: Dina Lau E-signed 2026-05-08 09:49PM HST dina.lau@hawaii.gov State of Hawaii Civil Engineer			SUBMITTED: <i>MS</i> DATE: SCALE: AS NOTED DRAWING NO. PP-201 SHEET NO. 123 OF 143 SHEETS		

JOB NO.: F14C728D

KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D

05/05/2026 4:43 pm
 M:\EO Projects\2025 Projects\12005-25-03 Kealahou Bay Historical Park Impr\4-Dwg\Plumbing\Napoopoo Pavilion\1-X-Napoopoo_Pavilion.dwg



A EXISTING/ NEW PLUMBING PLAN
 SCALE: 1/4" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS EXISTING/ NEW PLUMBING PLAN ENGINEERING PARTNERS, INC					
DESIGNED: MS DRAWN: MS CHECKED: EW APPROVED: <i>Dina Lau</i> CHIEF ENGINEER: Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer			SUBMITTED: <i>EW</i> DATE: SCALE: AS NOTED DRAWING NO. PP-202 SHEET NO. 124 OF 143 SHEETS		

KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D

GENERAL ELECTRICAL SPECIFICATIONS

- CONTRACTOR SHALL COMPLY WITH VERSION OF NFPA 70 CURRENTLY ADOPTED AND ENFORCED BY THE AUTHORITY HAVING JURISDICTION.
- DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO BID.
- THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE. ROUTE CONDUITS AND LOCATE EQUIPMENT BASED ON THE INTENT IDENTIFIED ON DRAWINGS, MODIFY TO SUITE FIELD CONDITIONS. PROVIDE ALL CONDUITS, FITTINGS, BOXES, WIRING, CONDUIT SEALS, ETC., AS REQUIRED FOR COMPLETION OF THE RACEWAY SYSTEM IN COMPLIANCE WITH THE NEC AND THE CONTRACT DOCUMENTS.
- FINAL CONNECTIONS & ROUGH-IN REQUIREMENTS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
- CONTRACTOR SHALL REVIEW DRAWINGS AND SPECIFICATIONS BY ALL OTHER DIVISIONS. ELECTRICAL WORK NOTED OR OTHERWISE REQUIRED UNDER OTHER DIVISIONS SHALL BE REVIEWED AND INCLUDED UNDER THE ELECTRICAL CONTRACTOR'S SCOPE.
- CONTRACTOR SHALL VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BID. ALL COSTS REQUIRED TO ACCOMMODATE EXISTING CONDITIONS SHALL BE INCLUDED IN THE CONTRACTOR'S BID. NO ADDITIONAL ALLOWANCE AFTER BID WILL BE CONSIDERED DUE TO LACK OF SUCH DUE DILIGENCE OR FIELD EXAMINATION.
- WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES AND ORDINANCES, OR THOSE CURRENTLY ADOPTED BY THE LOCAL JURISDICTION.
- ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY.
- PROVIDE PERMITS AND INSPECTIONS REQUIRED.
- PREPARE SUBMITTALS FOR ALL PRODUCTS TO BE FURNISHED BY THE CONTRACTOR, INCLUDING BUT NOT LIMITED TO EQUIPMENT, RACEWAYS AND BOXES, WIRING, LIGHT FIXTURES, AND SIMILAR ITEMS. SHOULD CONTRACTOR PROCEED WITH ORDERING OR INSTALLING PRODUCTS PRIOR TO SUBMITTAL REVIEW, ALL COSTS REQUIRED TO MODIFY OR REPLACE SUCH PRODUCTS SHALL BE BORNE BY THE CONTRACTOR, THE PROPOSED USE OF ITEMS SPECIFIED ON THESE DRAWINGS DOES NOT ALLEVIATE THE CONTRACTOR FROM ITS RESPONSIBILITY TO PREPARE SUBMITTALS.
- SYSTEMS SHALL BE COMPLETE, OPERABLE AND READY FOR CONTINUOUS OPERATION. GUARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR. START OF GUARANTEE PERIOD SHALL COMMENCE AFTER 30 DAYS OF TROUBLE FREE OPERATION AFTER AFTER PROJECT ACCEPTANCE. DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT ADDITIONAL COST.
- PROVIDE RECORD DRAWINGS AND ALL OTHER CLOSEOUT MATERIALS REQUIRED AS A PART OF THIS CONTRACT. RECORD DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTINGS, ETC.
- VERIFY EXACT LOCATION AND ELECTRICAL CHARACTERISTICS OF EQUIPMENT TO BE FURNISHED BY OTHER DISCIPLINES PRIOR TO ROUGH-IN.
- SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO ADDITIONAL COST.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING PROVIDED UNDER THIS SECTION OR FACTORY WIRING IN EQUIPMENT PROVIDED UNDER THIS SECTION.
- CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS OR EQUIPMENT.
- PENETRATIONS OF FIRE RATED WALLS OR FLOORS BY PIPE SHALL BE SEALED BY A FIRESTOPPING SYSTEM UL LISTED FOR THE APPLICATION. INSTALL PENETRATION SEAL MATERIALS IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL FIRE RESISTANCE DIRECTORY AND MANUFACTURERS INSTRUCTIONS. FIRESTOPPING SYSTEM SHALL BE EQUAL TO 3M FIRE BARRIER. FIRESTOPPING MATERIAL SHALL BE CAULK OR PUTTY TYPE. FIRESTOP ALL PENETRATIONS THROUGH FIRE RATED WALLS AS REQUIRED TO PRESERVE THE FIRE RATING OF THE STRUCTURE.
- PROTRUDING OBJECTS SHALL COMPLY WITH ADAAG 307. WALL MOUNTED FIXTURES OR SIMILAR WALL MOUNTED DEVICES SHALL NOT PROTRUDE MORE THAN 4" HORIZONTALLY INTO THE CIRCULATION PATH, OR OTHERWISE SHALL BE INSTALLED 80" MINIMUM TO THE BOTTOM OF THE FIXTURE.
- WHERE PROJECT WORK INVOLVES COORDINATION WITH THE LOCAL UTILITY, IMMEDIATELY UPON AWARD OF CONTRACT CONTRACTOR SHALL CONTACT UTILITY TO ENSURE ALL UTILITY AGREEMENTS, PROPOSAL, AND UTILITY DRAWINGS ARE COMPLETE AND APPROVED. PROVIDE PROPOSED DATE OF ENERGIZING SERVICE IN ORDER TO FACILITATE PROPER SCHEDULING WITH THE UTILITY SERVICE.

ELECTRICAL SYMBOLS

	ELECTRICAL DEMOLITION. REMOVE EQUIPMENT AND APPURTENANCES IN THEIR ENTIRETY U.N.O. COORDINATE WORK RESTRICTIONS PRIOR TO DEMOLITION.		LUMINAIRE IDENTIFICATION A = LUMINAIRE DESIGNATION (UPPERCASE) a = SWITCH DESIGNATION (LOWERCASE)
	HOMERUN CONDUIT - STROKES INDICATE QUANTITY OF CONDUCTORS		LAY-IN/RECESSED TROFFER
	CONDUIT/WIRE CONCEALED IN WALL OR ABOVE CEILING EXCEPT IN EXPOSED STRUCTURE AREAS 1/2"-2 #12 & 1 #12 GND THWN U.N.O.		SURFACE MOUNT TROFFER
	CONDUIT AND/OR WIRE BELOW FLOOR OR GRADE 3/4"-2 #12 & 1 #12 GND THWN UNLESS NOTED		LUMINAIRE ON EMERGENCY CIRCUIT OR INTEGRAL BATTERY BACK-UP
	EXISTING CONDUIT AND/OR CONDUCTORS TO REMAIN (SHOWN LIGHT)		SUSPENDED LUMINAIRE
	OVERHEAD POWER LINES		DOWNLIGHT LUMINAIRE
	CONDUIT RISER UP/DOWN		WALL MOUNTED LUMINAIRE
	CONDUIT STUB OUT		EMERGENCY BATTERY LIGHTING UNIT WITH TWIN HEADS AND EXIT SIGN
	SINGLE POLE SWITCH @ +48" TO TOP UNLESS NOTED a = DEVICE SWITCH IDENTIFICATION (LOWERCASE)		TRACK LIGHT WITH FIXTURE HEADS
	SWITCH BANK (IDENTIFIED WITH UPPER CASE)		SURFACE MOUNTED PANELBOARD
	SINGLE RECEPTACLE @ +18" TO CENTER UNLESS NOTED		FLUSH MOUNTED PANELBOARD
	WALL MOUNTED DUPLEX RECEPTACLE @ +18" TO CENTER U.N.O. = RECEPTACLE PROTECTED BY GFCI BREAKER, OR GFCI TYPE RECEPTACLE INSTALLED PER NEC 210.8. = DOUBLE DUPLEX RECEPTACLE = 1/2 SWITCHED (BOTTOM HALF) DUPLEX RECEPTACLE		MAIN SWITCHBOARD, MOTOR CONTROL CENTER OR DISTRIBUTION BOARD
	IF a: C = RECEPTACLE INSTALLED ABOVE COUNTER H = RECEPTACLE INSTALLED HORIZONTALLY		CONCRETE PULLBOX WITH HEAVY DUTY STEEL TRAFFIC COVER
	IF b: MOUNTING HEIGHT IN INCHES TO TOP OF RECEPTACLE		UTILITY PULLBOX
	FLOOR MOUNT RECEPTACLE		METER
	CEILING MOUNT RECEPTACLE		NON-FUSED DISCONNECT SWITCH
	SPECIAL RECEPTACLE @ +18" TO CENTER UNLESS NOTED		FUSED DISCONNECT SWITCH
	CEILING MOUNTED VACANCY SENSOR		JUNCTION BOX, IF a: CF = CEILING FAN S = SIGNAGE WH = WATER HEATER
	PHOTOCELL (INSTALL ON ROOF FACING NORTH)		FUSIBLE SWITCH
	IF a: R = RELAY C = CONTACTOR P = POWER SUPPLY		SINGLE METER WITH CT,
	CB = CIRCUIT BREAKER TS = TIMESWITCH PB = PUSH BUTTON TYPE CONTROL STATION		CIRCUIT BREAKER
	TRANSFORMER		MOTOR LOAD
	AUTOMATIC TRANSFER SWITCH		TELEPHONE/DATA OUTLET (X) 4-PAIR CAT-6 CABLES (TYPE 'H') PROVIDE CORRESPONDING FACEPLATE WITH QTY OF PORTS AS REQUIRED, WHERE "X" INDICATED NUMBER OF PORTS.

HAWAII COUNTY ENERGY CODE 2021 IECC, HAWAII REVISED STATUTES HRS 107-24 TO 28 & HAWAII ADMINISTRATIVE RULES
CHAPTER HAR 3-181.1 COMMERCIAL BUILDING ENERGY EFFICIENCY STANDARDS

I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THIS PROJECTS DESIGN SUBSTANTIALLY CONFORMS TO THE BUILDING ENERGY EFFICIENCY STANDARDS PERTAINING TO THE COMMERCIAL PROVISIONS FOR ELECTRICAL & LIGHTING SYSTEMS (C405, & C408) OF THE 2021 IECC WITH AMENDMENTS PER HAR 3-181.1:

COMPLIANCE METHOD			
X	2021 IECC AS AMENDED. MANDATORY AND PRESCRIPTIVE		
	2021 IECC AS AMENDED. MANDATORY AND TOTAL BUILDING PERFORMANCE		
	ASHRAE STANDARD 90.1-2013. MANDATORY AND PRESCRIPTIVE		
	ASHRAE STANDARD 90.1-2013. MANDATORY AND TOTAL BUILDING PERFORMANCE		
INFORMATION IN CONSTRUCTION DOCUMENTS		YES	N/A
INTERIOR LIGHTING			
	OCCUPANT SENSOR CONTROLS	C405.2.1	X
	TIME SWITCH CONTROLS	C405.2.2	X
	DAYLIGHT RESPONSIVE CONTROLS	C405.2.3	X
	DAYLIGHT ZONES ON PLANS	C405.2.3.2 & C405.2.3.3	X
	GUEST ROOM CONTROLS	C405.2.4	X
	INTERIOR LIGHTING FIXTURE SCHEDULE		X
	INTERIOR LIGHTING POWER ALLOWANCES	C405.3.2	X
	INTERIOR LIGHTING FIXTURE LOCATIONS		X
	LIGHTING CONTROL FUNCTIONAL PERFORMANCE		X
	TESTING REQUIREMENT	C408.3	X
EXTERIOR LIGHTING			
	EXTERIOR LIGHTING CONTROLS	C405.2.6	X
	EXTERIOR LIGHTING FIXTURE SCHEDULE		X
	EXTERIOR LIGHTING POWER ALLOWANCES	C405.4.2	X
	EXTERIOR LIGHTING FIXTURE LOCATIONS		X
ELECTRICAL			
	ELECTRICAL TRANSFORMER EFFICIENCY	C405.6	X
	ELECTRICAL MOTOR EFFICIENCY	C405.7	X
	VOLTAGE DROP LESS THAN 5%	C405.9	X
	TENANT SUBMETERING	C405.10	X

NOTES:

SIGNATURE:

DATE: 04/28/2026
NAME: ELI B. WALTZ
TITLE: ELECTRICAL ENGINEER
LICENSE NO.: 18572-E

ELECTRICAL ABBREVIATIONS

+18"	INDICATES MOUNTING HEIGHTS ARE TO CENTERLINE OF DEVICE AFF OR AFG	GND	GROUND
AF	AMP FUSE (FOR FUSES), AMP FRAME (FOR CIRCUIT BREAKERS)	HELCO	ELECTRICAL UTILITY COMPANY
AFF	ABOVE FINISHED FLOOR	IWP	IN-USE WEATHER-PROOF (NEMA 3R)
AFG	ABOVE FINISHED GRADE	LO	LUGS ONLY (SEE ALSO MLO)
AHJ	LOCAL AUTHORITY HAVING JURISDICTION	MCB	MAIN CIRCUIT BREAKER
AT	AMP TRIP	MLO	MAIN LUGS ONLY
ATS	AUTOMATIC TRANSFER SWITCH	NEC	NATIONAL ELECTRICAL CODE, AS ADOPTED BY THE AHJ
MTS	MANUAL TRANSFER SWITCH	P	POLE
C	CONDUIT	PFFB	PROVISION FOR FUTURE BREAKER
CONT	CONTINUATION	PH	PHASE
CU	COPPER	PNL	INDICATES PANEL
CW	COLD WATER PIPE	TYP	TYPICAL
FACP	FIRE ALARM CONTROL PANEL	UPS	UNINTERRUPTIBLE POWER SYSTEM
AFCI	INDICATES ARC FAULT CIRCUIT INTERRUPTER WITH DEDICATED NEUTRAL	WP	WEATHER-PROOF (NEMA 3R)
GFCI	GROUND FAULT CIRCUIT INTERRUPTER WITH DEDICATED NEUTRAL	XFMR	TRANSFORMER
GFP	GROUND FAULT PROTECTION	UNO	UNLESS NOTED OTHERWISE
		(D)	DEMOLITION
		(E)	EXISTING
		(N)	NEW
		(R)	RELOCATE/RELOCATED

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS ELECTRICAL SYMBOLS, NOTES & IECC					
ENGINEERING PARTNERS, INC					
DESIGNED: CF	SUBMITTED:				
DRAWN: CF	DATE:				
CHECKED: EW	SCALE: AS NOTED				
APPROVED:	Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer		DRAWING NO. EK-001		
CHIEF ENGINEER:					

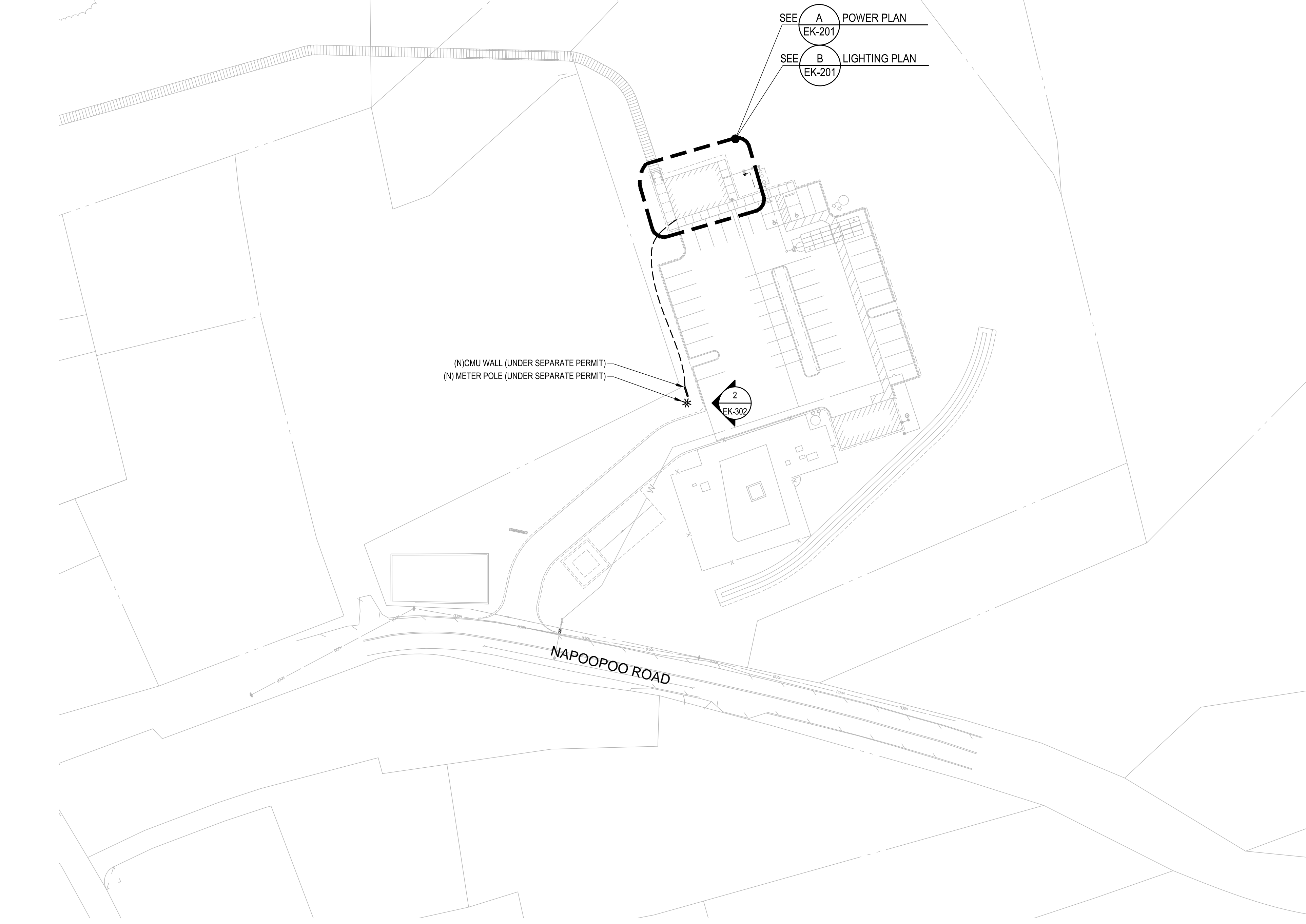
05/05/2026 4:51 pm
 M:\EO Projects\2025 Projects\12005-25-03 Kealahou Bay Historical Park Impr\4-Dwg\Electrical\Napoopoo Interpretive
 Kiosk\Interpretive Kiosk.dwg

GENERAL NOTES

- ALL CONDUIT WITHIN AREAS SUBJECT TO VEHICULAR TRAFFIC SHALL BE CONCRETE ENCASED PER DETAIL 3/EK-302.
- CONDUIT NOT SUBJECT TO VEHICULAR TRAFFIC MAY BE DIRECT BURIED PER DETAIL 4/EK-302.

UTILITY COORDINATION

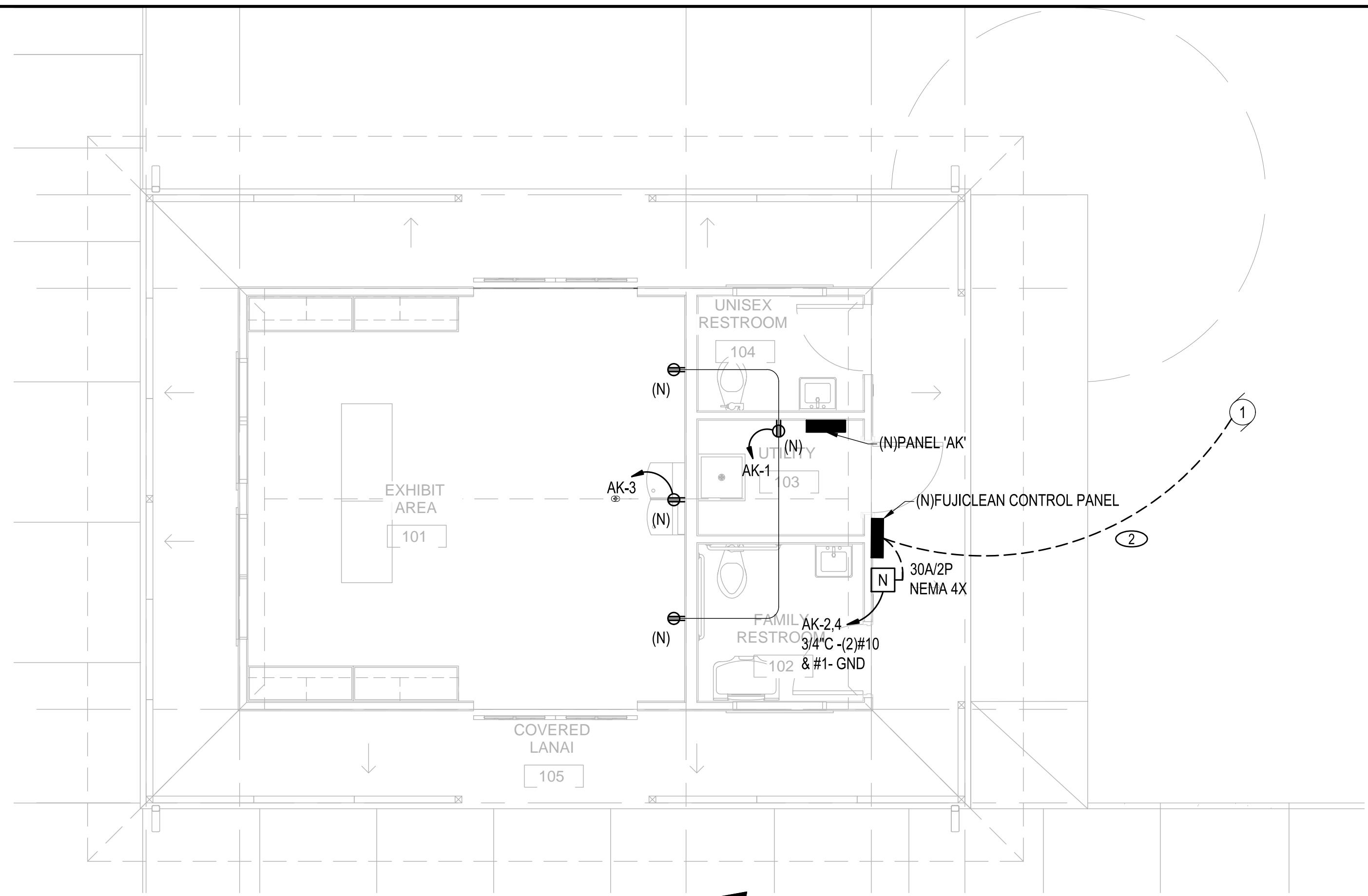
- A. ELECTRICAL SERVICE:**
- COORDINATE WITH THE UTILITY COMPANIES TO PROVIDE SERVICE.
 - FURNISH MATERIALS IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE UTILITIES AND THESE SPECIFICATIONS.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY FOR SCHEDULING AND COORDINATING THE WORK OF SUBCONTRACTORS, SUPPLIERS, AND OTHER INDIVIDUALS OR ENTITIES PERFORMING OR FURNISHING ANY OF CONTRACTOR'S WORK.
 - PROVIDE ALL WORK AND MATERIALS AND BEAR ALL COSTS FOR PROVIDING TEMPORARY CONSTRUCTION POWER AND THE PERMANENT ELECTRICAL SERVICE, INCLUDING BUT NOT LIMITED TO:
 - ALL WORK AND MATERIALS NOT PROVIDED BY THE ELECTRIC UTILITY.
 - ALL PERMITS AND FEES REQUIRED BY THE ELECTRIC UTILITY.
 - PROVIDE ELECTRICAL DUCTS, RACEWAYS, CONDUCTORS AND CONNECTIONS INDICATED ON THE DRAWINGS, AND ALL OTHER WORK AND MATERIALS REQUIRED FOR A COMPLETE ELECTRICAL SERVICE, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - ELECTRICAL SERVICE CONDUITS AND CONDUCTORS FROM THE POINT OF ELECTRIC UTILITY CONNECTION TO THE SERVICE ENTRANCE EQUIPMENT.
 - METERING CONDUITS FROM THE INSTRUMENT TRANSFORMERS TO THE METER.
- B. TELEPHONE/CATV SERVICE:**
- PROVIDE ALL WORK AND MATERIALS AND BEAR ALL COSTS FOR THE TELEPHONE/CATV SERVICE DURING CONSTRUCTION.
 - PROVIDE THE TELEPHONE/CATV ENTRANCE CONDUIT(S) FROM THE TERMINAL POLE TO THE TELEPHONE BOARD, AND ALL OTHER WORK AND MATERIALS REQUIRED FOR A COMPLETE TELEPHONE/CATV SERVICE.
 - COORDINATE AND OBTAIN INSPECTIONS AND FINAL INSTALLATION APPROVAL FROM SERVING UTILITIES AND OTHER AUTHORITIES HAVING JURISDICTION.
 - BEFORE COMMENCING WORK, COORDINATE COMPLETE TELEPHONE/CATV SERVICE:
 - VERIFY COMPLIANCE WITH TELEPHONE/CATV UTILITY REQUIREMENTS.
 - VERIFY EXACT LOCATION OF EACH SERVICE POINT AND TYPE OF SERVICE.
 - PAY ANY CHARGES REQUIRED BY THE TELEPHONE/CATV UTILITY FOR CONNECTION AND TURN-ON.
 - COORDINATE COMPLETE TELEPHONE/CATV LINE CONNECTIONS AT LOCATIONS INDICATED ON THE DRAWINGS WITH THE LOCAL TELEPHONE UTILITY.
- C. CERTIFICATION:**
- PRIOR TO EQUIPMENT PROCUREMENT, SUBMIT CERTIFICATION THAT THE INTENDED INSTALLATION HAS BEEN COORDINATED WITH THE UTILITY COMPANIES AND MEETS ALL UTILITY REQUIREMENTS.
 - BEFORE START OF SITE WORK, MAKE ARRANGEMENTS FOR TEMPORARY TELEPHONE AND ELECTRICAL SERVICE AS REQUIRED.
 - BEFORE BIDDING, THE ELECTRICAL CONTRACTOR SHALL CONTACT THE UTILITIES TO DETERMINE THE WORK AND MATERIALS THAT WILL BE REQUIRED FROM THE CONTRACTOR, AND ALL FEES AND PERMITS THAT WILL BE REQUIRED, SO THAT ALL UTILITY SYSTEMS FURNISHED BY THE CONTRACTOR WILL BE INCLUDED IN THE BID.
 - COORDINATE WORK WITH ENGINEER TO MINIMIZE DOWNTIME OF EXISTING OPERATING EQUIPMENT AND ELECTRICAL DISTRIBUTION SYSTEMS AND TO PRECLUDE UNSAFE OPERATION:
 - NOTIFY OWNER 10 DAYS BEFORE POWER INTERRUPTIONS.
 - COORDINATE DOWNTIME WITH OWNER AND LOCAL ELECTRIC UTILITY.
 - BEFORE COMMENCING WORK, COORDINATE ELECTRIC SERVICE ENTRANCE REQUIREMENTS WITH LOCAL ELECTRIC UTILITY TO ASSURE THAT THE INSTALLATION WILL BE COMPLETE IN ACCORDANCE WITH THESE SPECIFICATIONS AND UTILITY COMPANY REQUIREMENTS:
 - ENSURE POWER TRANSFORMER SIZE, ELECTRICAL CHARACTERISTICS, AND LOCATION ARE CONSISTENT WITH THE DESIGN AND SERVICE VOLTAGE PROVIDED BY THE ELECTRIC UTILITY COORDINATED WITH OTHER TRADES.
 - ARRANGE FOR UTILITY REVENUE METER.
 - COORDINATE INSTALLATION OF METERING C.T.'S AND P.T.'S FURNISHED BY THE ELECTRIC UTILITY.
 - PAY ANY CHARGES REQUIRED BY THE ELECTRIC UTILITY FOR CONNECTION AND TURN-ON.
 - DURING THE CONSTRUCTION OF THE PROJECT, THE EXISTING ELECTRICAL SERVICE MUST REMAIN FULLY FUNCTIONAL IN ORDER TO SUPPLY UNINTERRUPTED ELECTRICAL POWER TO THE FACILITY AND ITS ANCILLARY BUILDINGS AND STRUCTURES.
- D. BEFORE COMMENCING SITE WORK, COORDINATE UNDERGROUND CONDUIT INSTALLATIONS WITH OTHER WORK TO ELIMINATE CONFLICTS AND AVOID INTERFERENCES WITH OTHER UNDERGROUND SYSTEMS.**



A OVERALL ELECTRICAL SITE PLAN
 SCALE: 1" = 40'

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STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS OVERALL ELECTRICAL SITE PLAN ENGINEERING PARTNERS, INC					
DESIGNED: CF DRAWN: CF CHECKED: EW APPROVED: <i>Dina Lau</i> CHIEF ENGINEER: Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer			SUBMITTED: <i>CF</i> DATE: SCALE: AS NOTED DRAWING NO. EK-101 SHEET NO. 126 OF 143 SHEETS		

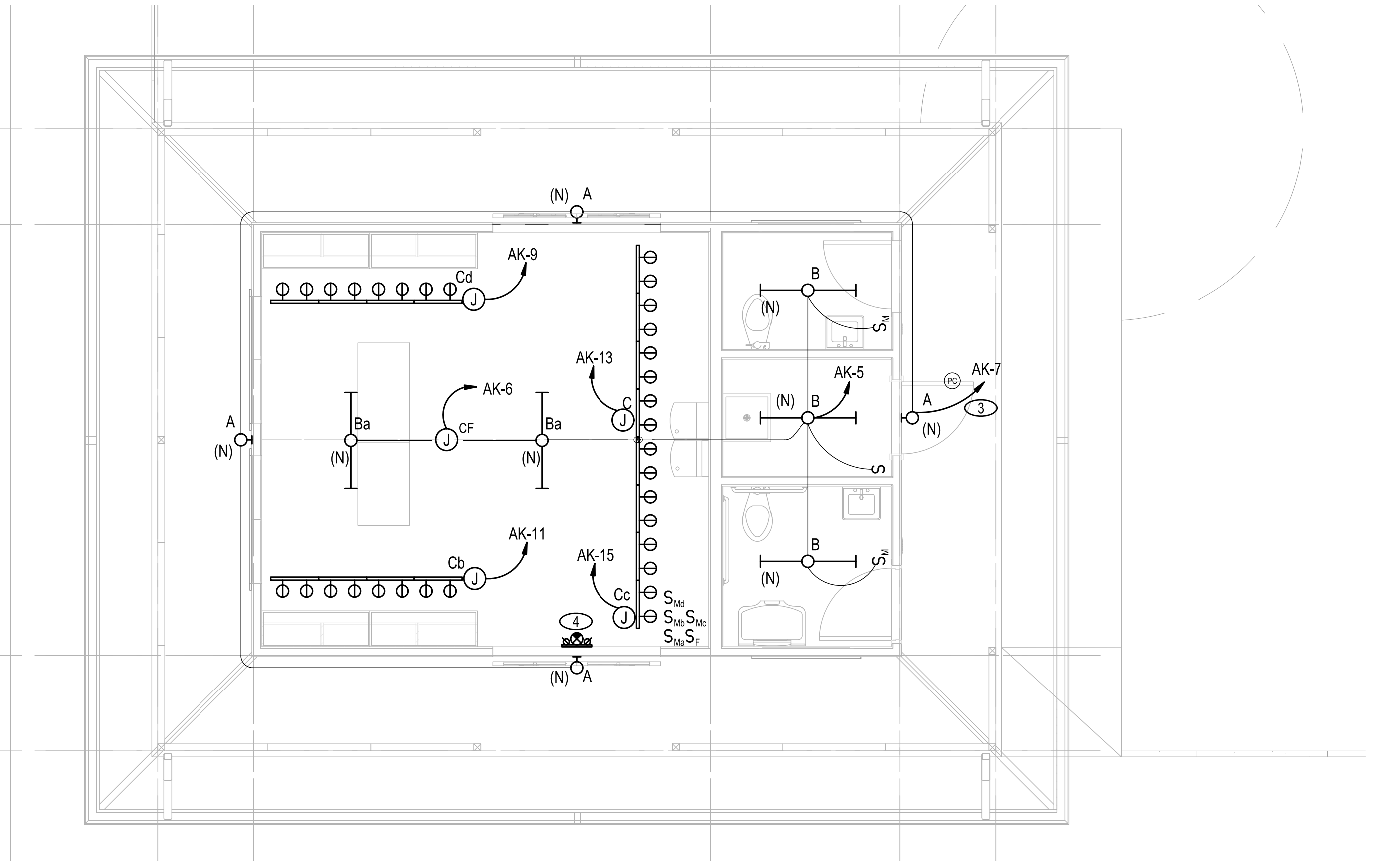
KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D



A POWER PLAN
SCALE: 1/4" = 1'-0"
0 4' 8' N

SHEET NOTES

- ① PROVIDE DISCONNECT TO FUJICLEAN CEN10 SYSTEM IF CONTROL PANEL DOES NOT PROVIDE INTEGRAL DISCONNECT. SEE CIVIL DRAWINGS.
- ② PROVIDE WIRING PER MANUFACTURER'S REQUIREMENTS.
- ③ CIRCUIT VIA PHOTOCELL/ TIMECLOCK, SEE DETAIL 2/EK-302.
- ④ CONNECT NEW EMERGENCY FIXTURE TO NEAREST UNSWITCHED PORTION OF LIGHTING CIRCUIT.



B LIGHTING PLAN
SCALE: 1/4" = 1'-0"
0 4' 8' N

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS POWER & LIGHTING PLANS ENGINEERING PARTNERS, INC					
DESIGNED: CF			SUBMITTED: <i>EW</i>		
DRAWN: CF			DATE:		
CHECKED: EW			SCALE: AS NOTED		
APPROVED: <i>Dina Lau</i>			DRAWING NO. EK-201		
CHIEF ENGINEER: Dina Lau E-signed 2026-05-08 09:49PM HST dina.lau@hawaii.gov State of Hawaii Civil Engineer			SHEET NO. 127 OF 143 SHEETS		

05/05/2026 4:51 pm
 M:\EO Projects\2025 Projects\12005-25-03 Kealakekua Bay Historical Park Impr\4-Dwg\Electrical\Napoopoo Interpretive
 Kiosk\1-Interpretive Kiosk.dwg

KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D

LUMINAIRE SCHEDULE

FIXTURE TYPE	MANUFACTURER		VOLT AMPS	MOUNTING	LAMP TYPE	REMARKS	VOLT
	NAME	CATALOG NUMBER					
A	NLS LIGHTING	FLW-1-T4-16L-35-30K-UNV-WM-BRZ-COHI	25	WALL	LED	OUTDOOR LED SCONCE, 3000K, FULL CUT OFF. 2% OR LESS BLUE LIGHT. COUNTY OF HAWAII APPROVED.	120/277
B	LITHONIA	FEM-L48-3000LM-LPAQL-MD-MVOLT-GZ10-30K-90CRI	18	SURFACE	LED	4' LED SURFACE MOUNT, 3000 LUMEN, 3000K. WET LOCATION, LOW PROFILE LENS.	120/277
C	ALCON	13313 H BK	20/HEAD	WALL	LED	TRACK LIGHTING. PROVIDE 8 HEADS PER 8' TRACK.	120/277
	LITHONIA	LHQM-LED-R-SD	5	UNIVERSAL	LED	EXIT SIGN WITH LED HEAD COMBO AND EMERGENCY 90 MINUTE BATTERY BACK UP OPTION.	120

NEW

PANEL: AK		VOLTAGE: 240 / 120 1Ø 3W		CIRCUIT CODE: blank or		N: NON-CONTINUOUS															
DATE: 4/13/26 6:42 PM		BUS: 125A		LOCATION: INTERIOR		L: LONG-CONTINUOUS															
JOB: 12005-25-03		MAINS: 60A		MOUNTING: SURFACE		R: DEMANDABLE RECEPTACLES															
		AIC RATING: 10,000				K: KITCHEN NO. OF EQUIPMENT: 0															
CIRCUIT NO	CODE	TRIP	POLE	LOAD DESIGNATION				LOAD DESIGNATION				TRIP	POLE	CODE	CIRCUIT NO						
				DESCRIPTION	(NOTE)	M	R	L	ØA	ØB	A					B	ØA	ØB	L	R	M
1	R	20	1	RECEPTS - EXHIBIT AREA & UTILITY						540	500	*	960				WASTE WATER TREATMENT	20	N	2	
3	R	20	1	DRINKING FOUNTAIN								*	960				--	2	N	4	
5	L	20	1	LIGHTS - INTERIOR					125	500	*	100					CEILING FAN	20	1	L	6
7	L	20	1	LIGHTS - EXTERIOR					80		*						SPARE	20	1		8
9	L	20	1	LIGHTS - NORTH TRACK					1200		*						SPARE	20	1		10
11	L	20	1	LIGHTS - SOUTH TRACK					1200	1200	*						PFFB				12
13	L	20	1	LIGHTS - LONG TRACK 1					1200		*						PFFB				14
15	L	20	1	LIGHTS - LONG TRACK 2					1200	1200	*						PFFB				16
17				PFFB							*						PFFB				18
19				PFFB							*						PFFB				20
21				PFFB							*						PFFB				22
23				PFFB							*						PFFB				24
25				PFFB							*						PFFB				26
27				PFFB							*						PFFB				28
29				PFFB							*						PFFB				30
31				PFFB							*						PFFB				32
33											*										34
35											*										36
37											*										38
39											*										40
41											*										42
				PHASE TOTALS				ØA: 4125	ØB: 3940	TOTAL CONNECTED VA				8065							
								CONNECTED VA (CODE N)				1920									
								CONNECTED VA (CODE L)				5105									
								CONNECTED VA (CODE R)				1040									
								CONNECTED VA (CODE K)				0									
								PANEL CONNECTED KVA				8.1									
								PANEL DEMAND KVA				9.3									
								PANEL DEMAND AMPS				38.9									
								HIGH Ø AMPS w/ DEMAND				39.8									

PANEL NOTES:

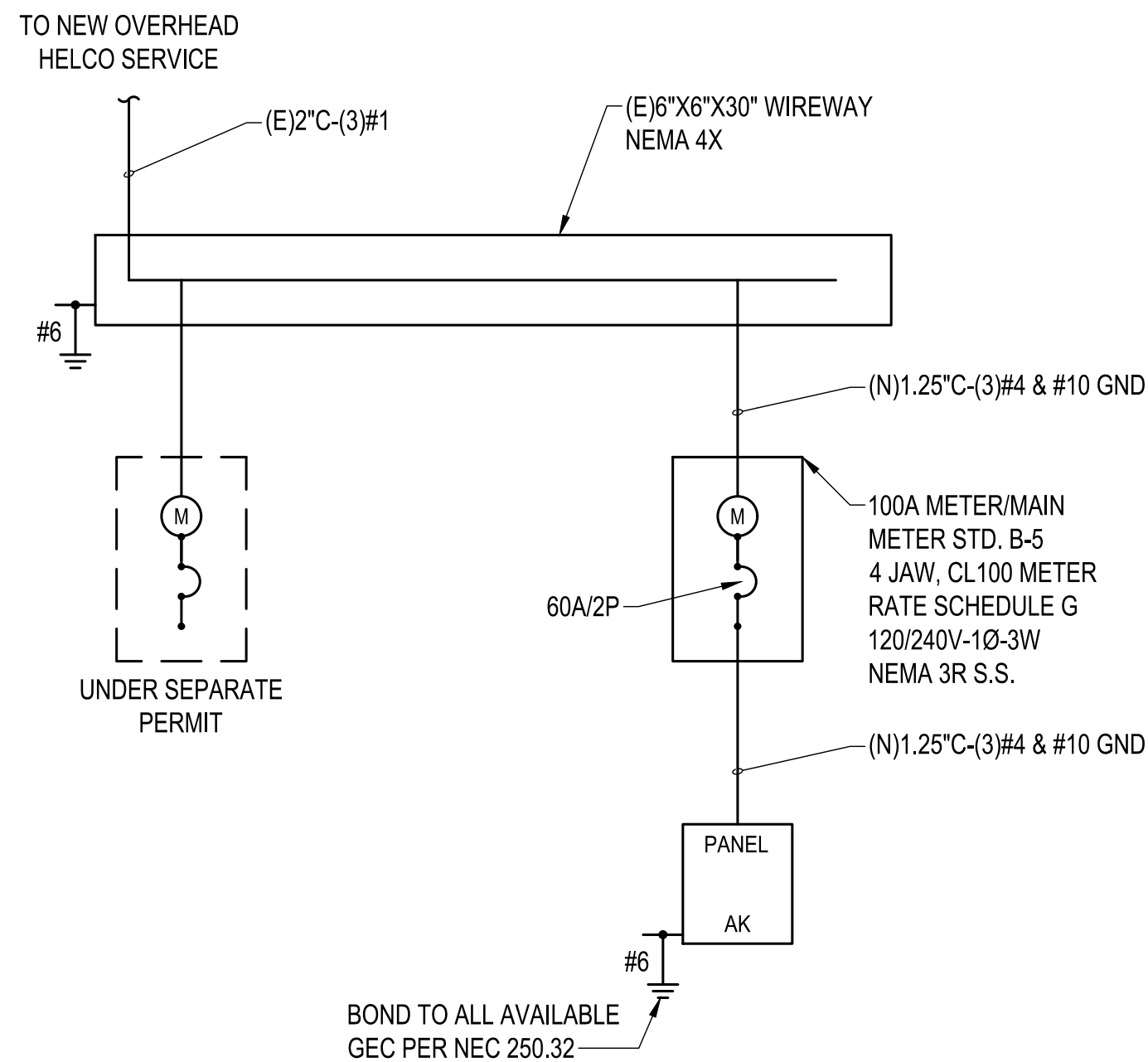
30 CIRCUIT PANEL

SERVICE / LOAD DATA

- A. ELECTRIC
- 1. SERVICE VOLTAGE: 1PH, 240/120V., 3W
- 2. LOAD DATA: CONNECTED KVA: 9.3 KVA, ESTIMATED DEMAND KVA: 6.5 KVA
- 3. SERVICE CONDUCTORS: 1 SET OF #4
- 4. METERING: HAWAIIAN ELECTRIC STD. B-5; RATE G
- 5. TYPE OF SERVICE: OVERHEAD
- 6. BILLING ADDRESS: DEPARTMENT OF LAND AND NATURAL RESOURCES

ELECTRICAL LOAD CALCULATIONS

PANEL 'AK' (60A, 120/240V, 1Ø, 3W)	=	9.3 KVA
LOAD	=	9.3 KVA
TOTAL	=	38.8 A
120 V, 1 Ø	=	



1 SINGLE LINE DIAGRAM

NO SCALE

05/05/2026 4:51 pm M:\EO Projects\2025 Projects\12005-25-03 Kealahou Bay Historical Park Impr\4-Dwg\Electrical\Napoopoo Interpretive Kiosk\1-Interpretive Kiosk.dwg

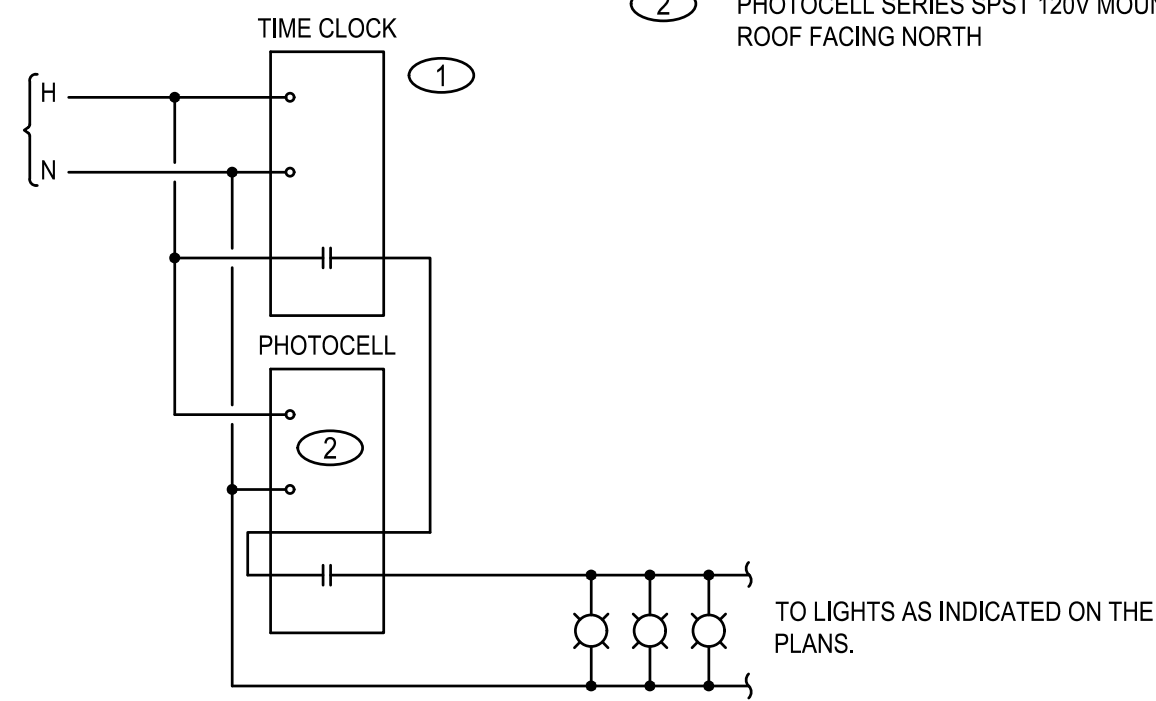
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS ELECTRICAL SINGLE LINE, SCHEDULES & DETAILS ENGINEERING PARTNERS, INC					
DESIGNED: CF	SUBMITTED:				
DRAWN: CF	DATE:				
CHECKED: EW	SCALE: AS NOTED				
APPROVED:	Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer		DRAWING NO.		EK-301
CHIEF ENGINEER:	SHEET NO.		128		

KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D

05/05/2026 4:51 pm M:\EO Projects\2025 Projects\12005-25-03 Kealahou Bay Historical Park Impr\4-Dwg\Electrical\Napoopoo Interpretive\Kiosk\Interpretive Kiosk.dwg

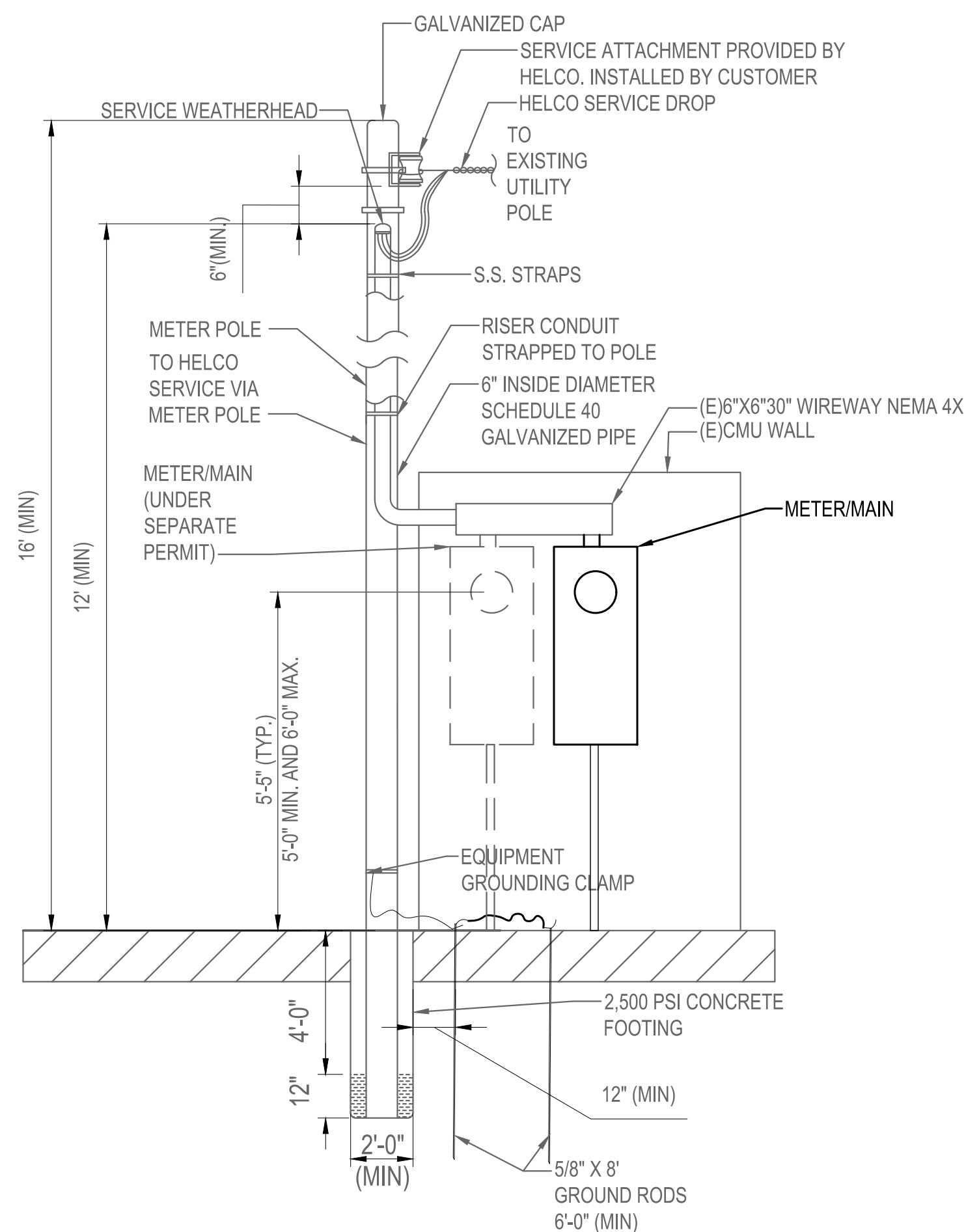
NOTES

- ① INTERMATIC ASTRONOMICAL TIMECLOCK DIGITAL INTERFACE WITH 10HR BATTERY BACKUP. MOUNT ABOVE PANEL.
- ② PHOTOCELL SERIES SPST 120V MOUNT ON ROOF FACING NORTH



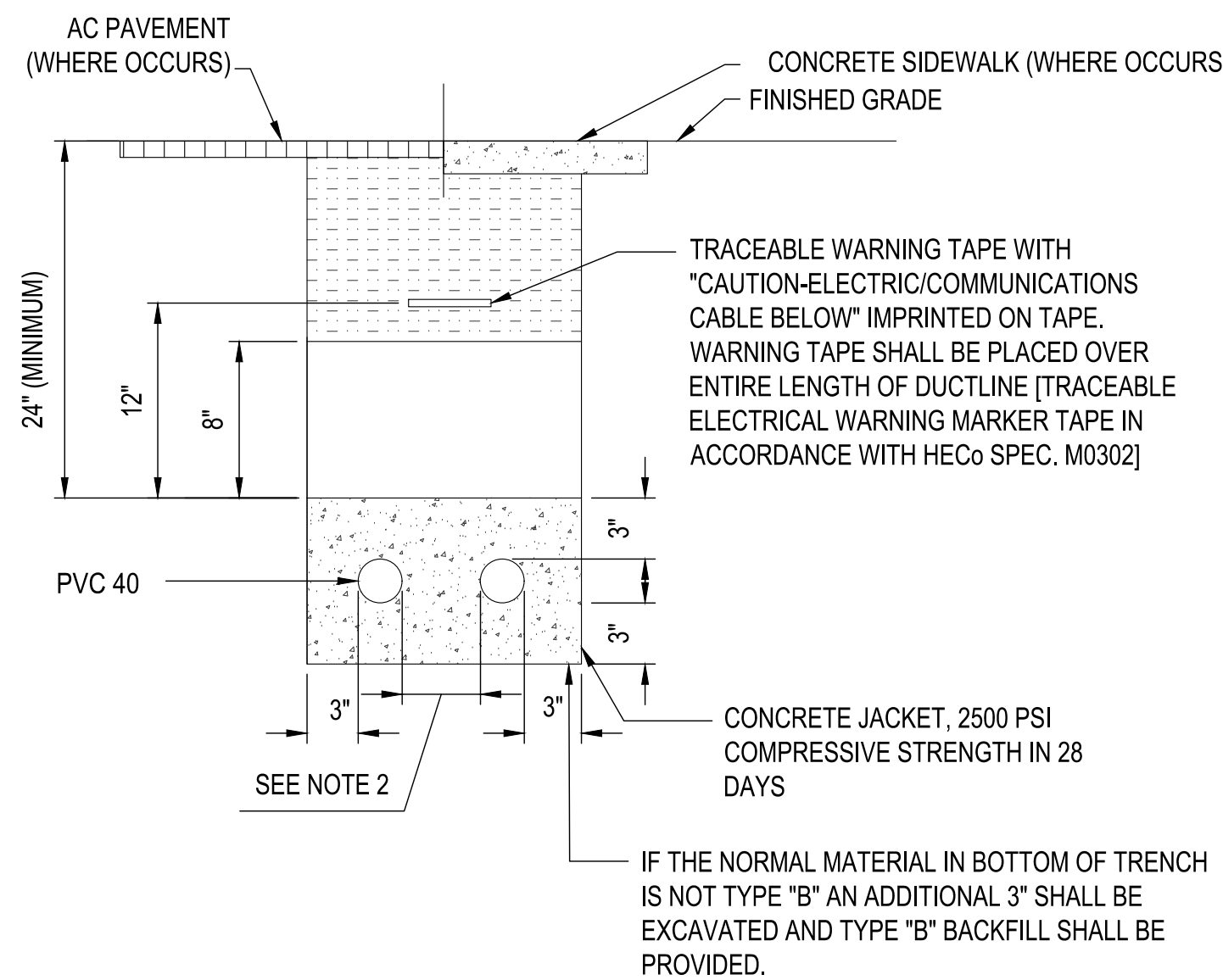
LIGHTING CONTROL WITH TIMECLOCK AND PHOTOCELL

② NO SCALE



METER ELEVATION

① NO SCALE



BACKFILL:
TYPE "A"

NON-CONTAMINATED NATIVE SOIL MATERIAL WHICH DOES NOT CONTAIN MORE THAN 50% GRAVEL, AND ALSO, DOES NOT CONTAIN HARD LUMPS OF EARTH 3 INCHES IN GREATEST DIMENSION, ROCKS LARGER THAN 3 INCHES IN LARGEST DIMENSION, HIGHLY PLASTIC CLAY, POORLY-GRADED SAND AND GRAVEL (CLASSIFIED AS SP AND GP USING THE UNITED SOIL CLASSIFICATION SYSTEM), ORGANICS, DEBRIS, OR OTHER UNSUITABLE OR DELETERIOUS MATERIALS.

TYPE "B"

SELECT GRANULAR MATERIAL PASSING A ONE (1) INCH SIEVE SUCH AS THREE-QUARTERS (3/4) INCH AGGREGATE BASE COURSE GRAVEL, S4C OR MATERIAL THAT IS FREE OF ORGANICS DEBRIS OR HIGHLY-PLASTIC CLAY AND MEETS THE FOLLOWING GRADATION:

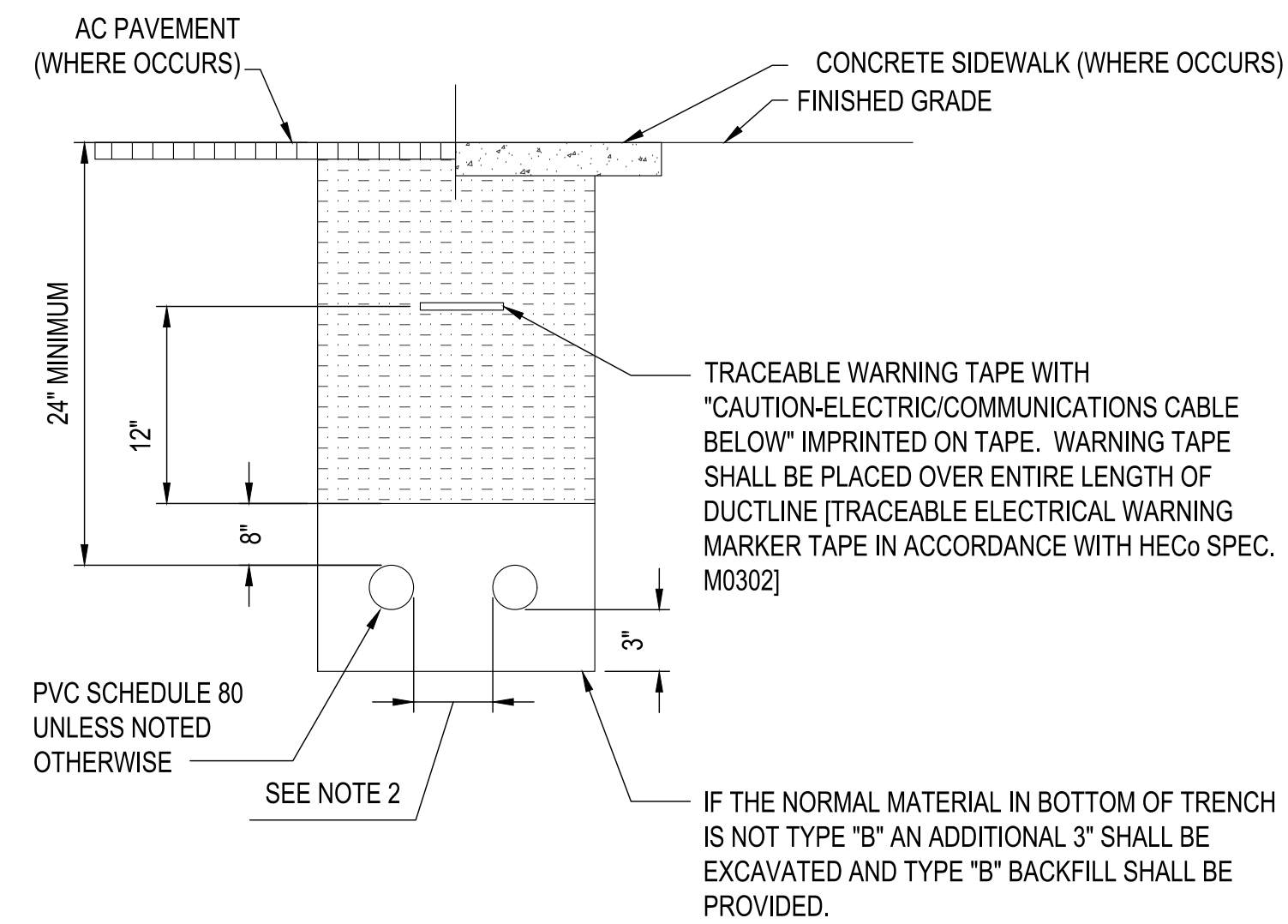
SIEVE SIZE	PERCENT PASSING BY WEIGHT
1"	100
3/4"	90-100
NO. 4	35-100
NO. 40	10-30
NO. 200	3-15

NOTES:

- ELECTRICAL AND TELEPHONE DUCTS SIMILAR.
- PROVIDE 3" SEPARATION BETWEEN DUCTS OF SAME SYSTEM AND 12" BETWEEN DUCTS OF DIFFERENT SYSTEMS
- WHERE TRENCH ENCOUNTERS EXISTING CONCRETE OR ASPHALT CONCRETE, SURFACE SHALL BE SAWCUT. BACKFILL, COMPACT AND PATCH SURFACE TO MATCH ADJACENT AREA. SEE TRENCH RESTORATION DETAIL
- SEE DUCT SECTION DETAILS FOR CONDUIT ARRANGEMENT

TYPICAL DUCT SECTION CONCRETE ENCASED

③ NO SCALE



BACKFILL:
TYPE "A"

NON-CONTAMINATED NATIVE SOIL MATERIAL WHICH DOES NOT CONTAIN MORE THAN 50% GRAVEL, AND ALSO, DOES NOT CONTAIN HARD LUMPS OF EARTH 3 INCHES IN GREATEST DIMENSION, ROCKS LARGER THAN 3 INCHES IN LARGEST DIMENSION, HIGHLY PLASTIC CLAY, POORLY-GRADED SAND AND GRAVEL (CLASSIFIED AS SP AND GP USING THE UNITED SOIL CLASSIFICATION SYSTEM), ORGANICS, DEBRIS, OR OTHER UNSUITABLE OR DELETERIOUS MATERIALS.

TYPE "B"

SELECT GRANULAR MATERIAL PASSING A ONE (1) INCH SIEVE : SUCH AS THREE-QUARTERS (3/4) INCH AGGREGATE BASE COURSE GRAVEL, S4C OR MATERIAL THAT IS FREE OF ORGANICS DEBRIS OR HIGHLY-PLASTIC CLAY AND MEETS THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT PASSING BY WEIGHT
1"	100
3/4"	90-100
NO. 4	35-100
NO. 40	10-30
NO. 200	3-15

NOTES:

- WHERE TRENCH ENCOUNTERS EXISTING CONCRETE OR ASPHALT CONCRETE, SURFACE SHALL BE SAWCUT. BACKFILL, COMPACT AND PATCH SURFACE TO MATCH ADJACENT AREA.
- PROVIDE 3" SEPARATION BETWEEN DUCTS OF SAME SYSTEM AND 12" SEPARATION BETWEEN ELECTRICAL DUCTS AND DUCTS OF DIFFERENT SYSTEMS.

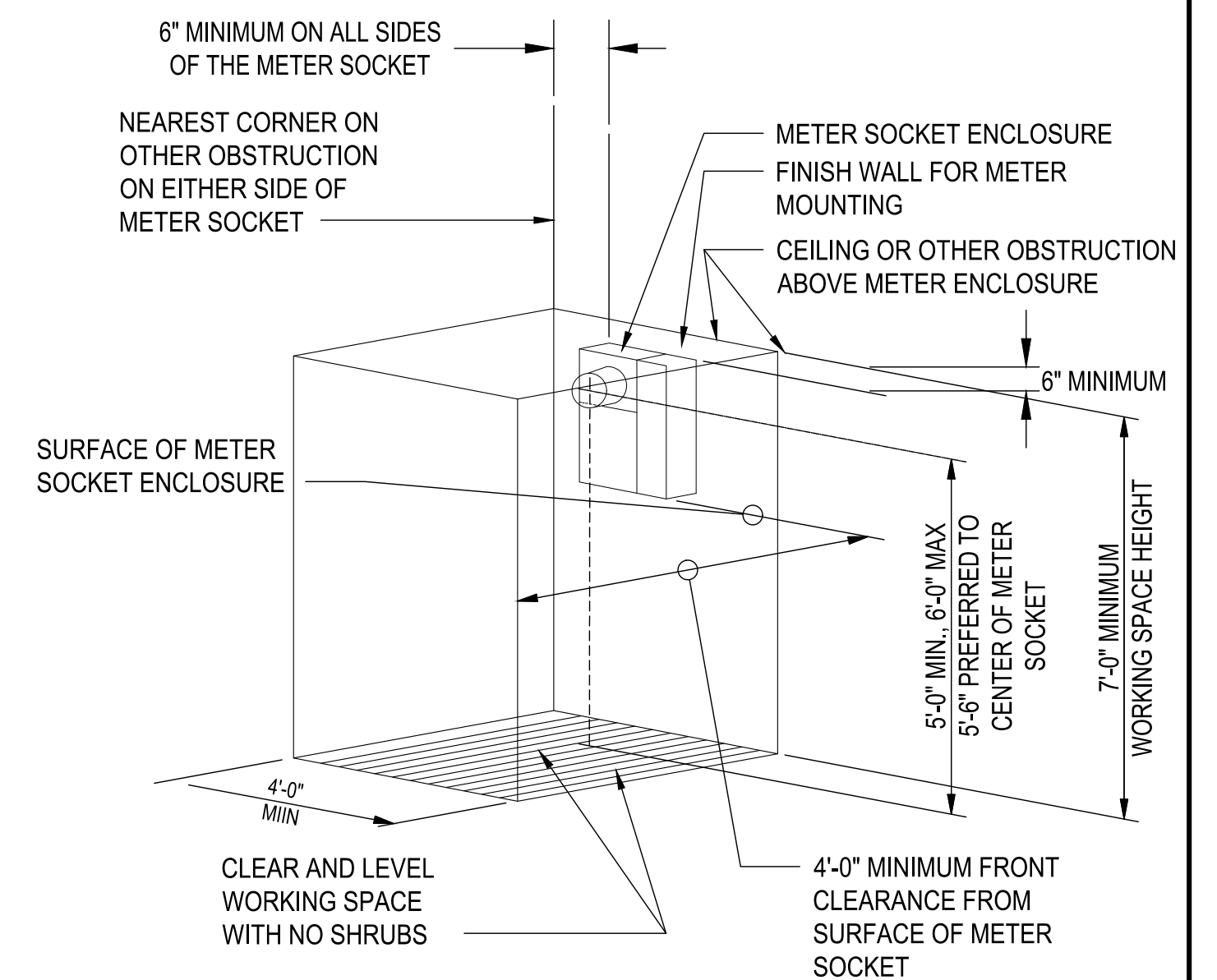
TYPICAL DUCT SECTION DIRECT BURIED

④ NO SCALE

CLEARANCES AROUND METERS

ALLOW THE FOLLOWING CLEARANCES AROUND METERING EQUIPMENT:

- CLEARANCE AROUND THE METER: 6 INCHES ABOVE, AND TO THE SIDE OF THE METER SOCKET ENCLOSURE OR INSTRUMENT TRANSFORMER ENCLOSURE, TO ANY OBSTRUCTION.
- A CLEARANCE IN FRONT OF METERING EQUIPMENT OF 4 FEET BY 7 FEET WITH NO OBSTRUCTIONS SUCH AS WALLS, FENCES, TREES, HEDGES, OR OTHER STRUCTURES OR EQUIPMENTS.



- DIAGRAM PROVIDED FOR REFERENCE ONLY
- REFERENCE HAWAII ELECTRIC LIGHT COMPANY ELECTRIC SERVICE INSTALLATION MANUAL, NINTH EDITION FOR ACTUAL REQUIREMENTS

HELCO METER CLEARANCE REQUIREMENTS

⑤ NO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
<p>STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION</p> <p>KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS</p> <p>ELECTRICAL DETAILS</p> <p>ENGINEERING PARTNERS, INC</p>					
DESIGNED: CF	SUBMITTED: <i>[Signature]</i>				
DRAWN: CF	DATE:				
CHECKED: EW	SCALE: AS NOTED				
APPROVED: <i>[Signature]</i>	Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov		DRAWING NO. EK-302		
CHIEF ENGINEER:	State of Hawaii Civil Engineer		SHEET NO. 129 OF 143 SHEETS		

GENERAL ELECTRICAL SPECIFICATIONS

- CONTRACTOR SHALL COMPLY WITH VERSION OF NFPA 70 CURRENTLY ADOPTED AND ENFORCED BY THE AUTHORITY HAVING JURISDICTION.
- DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO BID.
- THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE. ROUTE CONDUITS AND LOCATE EQUIPMENT BASED ON THE INTENT IDENTIFIED ON DRAWINGS. MODIFY TO SUITE FIELD CONDITIONS. PROVIDE ALL CONDUITS, FITTINGS, BOXES, WIRING, CONDUIT SEALS, ETC., AS REQUIRED FOR COMPLETION OF THE RACEWAY SYSTEM IN COMPLIANCE WITH THE NEC AND THE CONTRACT DOCUMENTS.
- FINAL CONNECTIONS & ROUGH-IN REQUIREMENTS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
- CONTRACTOR SHALL REVIEW DRAWINGS AND SPECIFICATIONS BY ALL OTHER DIVISIONS. ELECTRICAL WORK NOTED OR OTHERWISE REQUIRED UNDER OTHER DIVISIONS SHALL BE REVIEWED AND INCLUDED UNDER THE ELECTRICAL CONTRACTOR'S SCOPE.
- CONTRACTOR SHALL VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BID. ALL COSTS REQUIRED TO ACCOMMODATE EXISTING CONDITIONS SHALL BE INCLUDED IN THE CONTRACTOR'S BID. NO ADDITIONAL ALLOWANCE AFTER BID WILL BE CONSIDERED DUE TO LACK OF SUCH DUE DILIGENCE OR FIELD EXAMINATION.
- WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES AND ORDINANCES, OR THOSE CURRENTLY ADOPTED BY THE LOCAL JURISDICTION.
- ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY.
- PROVIDE PERMITS AND INSPECTIONS REQUIRED.
- PREPARE SUBMITTALS FOR ALL PRODUCTS TO BE FURNISHED BY THE CONTRACTOR, INCLUDING BUT NOT LIMITED TO EQUIPMENT, RACEWAYS AND BOXES, WIRING, LIGHT FIXTURES, AND SIMILAR ITEMS. SHOULD CONTRACTOR PROCEED WITH ORDERING OR INSTALLING PRODUCTS PRIOR TO SUBMITTAL REVIEW, ALL COSTS REQUIRED TO MODIFY OR REPLACE SUCH PRODUCTS SHALL BE BORNE BY THE CONTRACTOR, THE PROPOSED USE OF ITEMS SPECIFIED ON THESE DRAWINGS DOES NOT ALLEVIATE THE CONTRACTOR FROM ITS RESPONSIBILITY TO PREPARE SUBMITTALS.
- SYSTEMS SHALL BE COMPLETE, OPERABLE AND READY FOR CONTINUOUS OPERATION. GUARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR. START OF GUARANTEE PERIOD SHALL COMMENCE AFTER 30 DAYS OF TROUBLE FREE OPERATION AFTER AFTER PROJECT ACCEPTANCE. DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT ADDITIONAL COST.
- PROVIDE RECORD DRAWINGS AND ALL OTHER CLOSEOUT MATERIALS REQUIRED AS A PART OF THIS CONTRACT. RECORD DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTINGS, ETC.
- VERIFY EXACT LOCATION AND ELECTRICAL CHARACTERISTICS OF EQUIPMENT TO BE FURNISHED BY OTHER DISCIPLINES PRIOR TO ROUGH-IN.
- SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO ADDITIONAL COST.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING PROVIDED UNDER THIS SECTION OR FACTORY WIRING IN EQUIPMENT PROVIDED UNDER THIS SECTION.
- CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS OR EQUIPMENT.
- PENETRATIONS OF FIRE RATED WALLS OR FLOORS BY PIPE SHALL BE SEALED BY A FIRESTOPPING SYSTEM UL LISTED FOR THE APPLICATION. INSTALL PENETRATION SEAL MATERIALS IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL FIRE RESISTANCE DIRECTORY AND MANUFACTURERS INSTRUCTIONS. FIRESTOPPING SYSTEM SHALL BE EQUAL TO 3M FIRE BARRIER. FIRESTOPPING MATERIAL SHALL BE CAULK OR PUTTY TYPE. FIRESTOP ALL PENETRATIONS THROUGH FIRE RATED WALLS AS REQUIRED TO PRESERVE THE FIRE RATING OF THE STRUCTURE.
- PROTRUDING OBJECTS SHALL COMPLY WITH ADAAG 307. WALL MOUNTED FIXTURES OR SIMILAR WALL MOUNTED DEVICES SHALL NOT PROTRUDE MORE THAN 4" HORIZONTALLY INTO THE CIRCULATION PATH, OR OTHERWISE SHALL BE INSTALLED 80" MINIMUM TO THE BOTTOM OF THE FIXTURE.
- WHERE PROJECT WORK INVOLVES COORDINATION WITH THE LOCAL UTILITY, IMMEDIATELY UPON AWARD OF CONTRACT CONTRACTOR SHALL CONTACT UTILITY TO ENSURE ALL UTILITY AGREEMENTS, PROPOSAL, AND UTILITY DRAWINGS ARE COMPLETE AND APPROVED. PROVIDE PROPOSED DATE OF ENERGIZING SERVICE IN ORDER TO FACILITATE PROPER SCHEDULING WITH THE UTILITY SERVICE.

ELECTRICAL SYMBOLS

- (D)** ELECTRICAL DEMOLITION. REMOVE EQUIPMENT AND APPURTENANCES IN THEIR ENTIRETY U.N.O. COORDINATE WORK RESTRICTIONS PRIOR TO DEMOLITION.
- or**
- HOMERUN CONDUIT - STROKES INDICATE QUANTITY OF CONDUCTORS
- CONDUIT/WIRE CONCEALED IN WALL OR ABOVE CEILING EXCEPT IN EXPOSED STRUCTURE AREAS 1/2"-2 #12 & 1 #12 GND THWN U.N.O.
- CONDUIT AND/OR WIRE BELOW FLOOR OR GRADE 3/4"-2 #12 & 1 #12 GND THWN UNLESS NOTED
- EXISTING CONDUIT AND/OR CONDUCTORS TO REMAIN (SHOWN LIGHT)
- OH—OH—** OVERHEAD POWER LINES
- ↕** CONDUIT RISER UP/DOWN
- CONDUIT STUB OUT
- S_a** SINGLE POLE SWITCH @ +48" TO TOP UNLESS NOTED
a = DEVICE SWITCH IDENTIFICATION (LOWERCASE)
- IF b:**
F = 3 SPEED SWITCH D = DIMMER SWITCH
2 = 2 POLE SWITCH K = KEY OPERATED SWITCH
3 = 3-WAY SWITCH M = VACANCY SENSOR SWITCH
- S_A** SWITCH BANK (IDENTIFIED WITH UPPERCASE)
- ⊖** SINGLE RECEPTACLE @ +18" TO CENTER UNLESS NOTED
- ⊖** WALL MOUNTED DUPLEX RECEPTACLE @ +18" TO CENTER U.N.O.
⊖ = RECEPTACLE PROTECTED BY GFCI BREAKER, OR GFCI TYPE RECEPTACLE INSTALLED PER NEC 210.8.
⊖ = DOUBLE DUPLEX RECEPTACLE
⊖ = 1/2 SWITCHED (BOTTOM HALF) DUPLEX RECEPTACLE
- ⊖^a** IF a:
C = RECEPTACLE INSTALLED ABOVE COUNTER
H = RECEPTACLE INSTALLED HORIZONTALLY
- IF b:**
MOUNTING HEIGHT IN INCHES TO TOP OF RECEPTACLE
- ⊖** FLOOR MOUNT RECEPTACLE
- ⊖** CEILING MOUNT RECEPTACLE
- ⊖** SPECIAL RECEPTACLE @ +18" TO CENTER UNLESS NOTED
- ⊖** CEILING MOUNTED VACANCY SENSOR
- ⊖** PHOTOCELL (INSTALL ON ROOF FACING NORTH)
- ⊖** IF a:
R = RELAY CB = CIRCUIT BREAKER
C = CONTACTOR TS = TIMESWITCH
P = POWER SUPPLY PB = PUSH BUTTON TYPE CONTROL STATION
- ⊖ x** TELEPHONE/DATA OUTLET
(X) 4-PAIR CAT-6 CABLES (TYPE 'H')
PROVIDE CORRESPONDING FACEPLATE WITH QTY OF PORTS AS REQUIRED, WHERE "X" INDICATED NUMBER OF PORTS.
- ^a** LUMINAIRE IDENTIFICATION
A = LUMINAIRE DESIGNATION (UPPERCASE)
a = SWITCH DESIGNATION (LOWERCASE)
- LAY-IN/RECESSED TROFFER
- SURFACE MOUNT TROFFER
- LUMINAIRE ON EMERGENCY CIRCUIT OR INTEGRAL BATTERY BACK-UP
- SUSPENDED LUMINAIRE
- DOWNLIGHT LUMINAIRE
- WALL MOUNTED LUMINAIRE
- ⚡** EMERGENCY BATTERY LIGHTING UNIT WITH TWIN HEADS
- ⚡** EMERGENCY BATTERY LIGHTING UNIT WITH TWIN HEADS AND EXIT SIGN
- SURFACE MOUNTED PANELBOARD
- FLUSH MOUNTED PANELBOARD
- ▨** MAIN SWITCHBOARD, MOTOR CONTROL CENTER OR DISTRIBUTION BOARD
- CONCRETE PULLBOX WITH HEAVY DUTY STEEL TRAFFIC COVER
- UTILITY PULLBOX
- ⊖** METER
- ⊖** NON-FUSED DISCONNECT SWITCH
- ⊖** FUSED DISCONNECT SWITCH
- ⊖^a** JUNCTION BOX, IF a:
CF = CEILING FAN
S = SIGNAGE
WH = WATER HEATER
- ⊖** COMBINATION METER/MAIN
- ⊖** FUSIBLE SWITCH
- ⊖** SINGLE METER WITH CT.
- ⊖** CIRCUIT BREAKER
- ⊖** TRANSFORMER
- ⊖** MOTOR LOAD
- ⊖** AUTOMATIC TRANSFER SWITCH
- ⊖** GROUND BUS & GROUND ELECTRODES
- *** UTILITY POLE

ELECTRICAL ABBREVIATIONS

+18"	INDICATES MOUNTING HEIGHTS ARE TO CENTERLINE OF DEVICE AFF OR AFG	GND	GROUND
AF	AMP FUSE (FOR FUSES), AMP FRAME (FOR CIRCUIT BREAKERS)	HELCO	ELECTRICAL UTILITY COMPANY
AFF	ABOVE FINISHED FLOOR	IWP	IN-USE WEATHER-PROOF (NEMA 3R)
AFG	ABOVE FINISHED GRADE	LO	LUGS ONLY (SEE ALSO MLO)
AHJ	LOCAL AUTHORITY HAVING JURISDICTION	MCB	MAIN CIRCUIT BREAKER
AT	AMP TRIP	MLO	MAIN LUGS ONLY
ATS	AUTOMATIC TRANSFER SWITCH	NEC	NATIONAL ELECTRICAL CODE, AS ADOPTED BY THE AHJ
MTS	MANUAL TRANSFER SWITCH	P	POLE
C	CONDUIT	PFFB	PROVISION FOR FUTURE BREAKER
CONT	CONTINUATION	PH	PHASE
CU	COPPER	PNL	INDICATES PANEL
CW	COLD WATER PIPE	TYP	TYPICAL
FACP	FIRE ALARM CONTROL PANEL	UPS	UNINTERRUPTIBLE POWER SYSTEM
AFCI	INDICATES ARC FAULT CIRCUIT INTERRUPTER WITH DEDICATED NEUTRAL	WP	WEATHER-PROOF (NEMA 3R)
GFCI	GROUND FAULT CIRCUIT INTERRUPTER WITH DEDICATED NEUTRAL	XFMR	TRANSFORMER
GFP	GROUND FAULT PROTECTION	UNO	UNLESS NOTED OTHERWISE
		(D)	DEMOLITION
		(E)	EXISTING
		(N)	NEW
		(R)	RELOCATE/RELOCATED

HAWAII COUNTY ENERGY CODE 2021 IECC, HAWAII REVISED STATUTES HRS 107-24 TO 28 & HAWAII ADMINISTRATIVE RULES
CHAPTER HAR 3-181.1 COMMERCIAL BUILDING ENERGY EFFICIENCY STANDARDS

I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THIS PROJECTS DESIGN SUBSTANTIALLY CONFORMS TO THE BUILDING ENERGY EFFICIENCY STANDARDS PERTAINING TO THE COMMERCIAL PROVISIONS FOR ELECTRICAL & LIGHTING SYSTEMS (C405, & C408) OF THE 2021 IECC WITH AMENDMENTS PER HAR 3-181.1:

COMPLIANCE METHOD			
X	2021 IECC AS AMENDED. MANDATORY AND PRESCRIPTIVE		
	2021 IECC AS AMENDED. MANDATORY AND TOTAL BUILDING PERFORMANCE		
	ASHRAE STANDARD 90.1-2013. MANDATORY AND PRESCRIPTIVE		
	ASHRAE STANDARD 90.1-2013. MANDATORY AND TOTAL BUILDING PERFORMANCE		
INFORMATION IN CONSTRUCTION DOCUMENTS		YES	N/A
INTERIOR LIGHTING			
	OCCUPANT SENSOR CONTROLS	C405.2.1	X
	TIME SWITCH CONTROLS	C405.2.2	X
	DAYLIGHT RESPONSIVE CONTROLS	C405.2.3	X
	DAYLIGHT ZONES ON PLANS	C405.2.3.2 & C405.2.3.3	X
	GUEST ROOM CONTROLS	C405.2.4	X
	INTERIOR LIGHTING FIXTURE SCHEDULE		X
	INTERIOR LIGHTING POWER ALLOWANCES	C405.3.2	X
	INTERIOR LIGHTING FIXTURE LOCATIONS		X
	LIGHTING CONTROL FUNCTIONAL PERFORMANCE		X
	TESTING REQUIREMENT	C408.3	X
EXTERIOR LIGHTING			
	EXTERIOR LIGHTING CONTROLS	C405.2.6	X
	EXTERIOR LIGHTING FIXTURE SCHEDULE		X
	EXTERIOR LIGHTING POWER ALLOWANCES	C405.4.2	X
	EXTERIOR LIGHTING FIXTURE LOCATIONS		X
ELECTRICAL			
	ELECTRICAL TRANSFORMER EFFICIENCY	C405.6	X
	ELECTRICAL MOTOR EFFICIENCY	C405.7	X
	VOLTAGE DROP LESS THAN 5%	C405.9	X
	TENANT SUBMETERING	C405.10	X

NOTES:

SIGNATURE: *El B. Waltz*
DATE: 04/28/2026
NAME: ELI B. WALTZ
TITLE: ELECTRICAL ENGINEER
LICENSE NO.: 18572-E

REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED
<p>STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION</p> <p>KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS</p> <p>ELECTRICAL SYMBOLS, NOTES & IECC</p> <p>ENGINEERING PARTNERS, INC</p>					
DESIGNED: CF		SUBMITTED: <i>CF</i>			
DRAWN: CF		DATE:			
CHECKED: EW		SCALE: AS NOTED			
APPROVED: <i>El B. Waltz</i> SIGNATURE		Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer		DRAWING NO. ES-001	

05/05/2026 4:53 pm
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GENERAL NOTES

1. ALL CONDUIT WITHIN AREAS SUBJECT TO VEHICULAR TRAFFIC SHALL BE CONCRETE ENCASED PER DETAIL 1/ES-303.
2. CONDUIT NOT SUBJECT TO VEHICULAR TRAFFIC MAY BE DIRECT BURIED PER DETAIL 2/ES-303.

UTILITY COORDINATION

- A. ELECTRICAL SERVICE:**
1. COORDINATE WITH THE UTILITY COMPANIES TO PROVIDE SERVICE.
 2. FURNISH MATERIALS IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE UTILITIES AND THESE SPECIFICATIONS.
 3. IT IS THE CONTRACTOR'S RESPONSIBILITY FOR SCHEDULING AND COORDINATING THE WORK OF SUBCONTRACTORS, SUPPLIERS, AND OTHER INDIVIDUALS OR ENTITIES PERFORMING OR FURNISHING ANY OF CONTRACTOR'S WORK.
 4. PROVIDE ALL WORK AND MATERIALS AND BEAR ALL COSTS FOR PROVIDING TEMPORARY CONSTRUCTION POWER AND THE PERMANENT ELECTRICAL SERVICE, INCLUDING BUT NOT LIMITED TO:
 - a. ALL WORK AND MATERIALS NOT PROVIDED BY THE ELECTRIC UTILITY.
 - b. ALL PERMITS AND FEES REQUIRED BY THE ELECTRIC UTILITY.
 5. PROVIDE ELECTRICAL DUCTS, RACEWAYS, CONDUCTORS AND CONNECTIONS INDICATED ON THE DRAWINGS, AND ALL OTHER WORK AND MATERIALS REQUIRED FOR A COMPLETE ELECTRICAL SERVICE, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - a. ELECTRICAL SERVICE CONDUITS AND CONDUCTORS FROM THE POINT OF ELECTRIC UTILITY CONNECTION TO THE SERVICE ENTRANCE EQUIPMENT.
 - b. METERING CONDUITS FROM THE INSTRUMENT TRANSFORMERS TO THE METER.
- B. TELEPHONE/CATV SERVICE:**
1. PROVIDE ALL WORK AND MATERIALS AND BEAR ALL COSTS FOR THE TELEPHONE/CATV SERVICE DURING CONSTRUCTION.
 2. PROVIDE THE TELEPHONE/CATV ENTRANCE CONDUIT(S) FROM THE TERMINAL POLE TO THE TELEPHONE BOARD, AND ALL OTHER WORK AND MATERIALS REQUIRED FOR A COMPLETE TELEPHONE/CATV SERVICE.
 3. COORDINATE AND OBTAIN INSPECTIONS AND FINAL INSTALLATION APPROVAL FROM SERVING UTILITIES AND OTHER AUTHORITIES HAVING JURISDICTION.
 4. BEFORE COMMENCING WORK, COORDINATE COMPLETE TELEPHONE/CATV SERVICE:
 - a. VERIFY COMPLIANCE WITH TELEPHONE/CATV UTILITY REQUIREMENTS.
 - b. VERIFY EXACT LOCATION OF EACH SERVICE POINT AND TYPE OF SERVICE.
 - c. PAY ANY CHARGES REQUIRED BY THE TELEPHONE/CATV UTILITY FOR CONNECTION AND TURN-ON.
 5. COORDINATE COMPLETE TELEPHONE/CATV LINE CONNECTIONS AT LOCATIONS INDICATED ON THE DRAWINGS WITH THE LOCAL TELEPHONE UTILITY.
- C. CERTIFICATION:**
1. PRIOR TO EQUIPMENT PROCUREMENT, SUBMIT CERTIFICATION THAT THE INTENDED INSTALLATION HAS BEEN COORDINATED WITH THE UTILITY COMPANIES AND MEETS ALL UTILITY REQUIREMENTS.
 2. BEFORE START OF SITE WORK, MAKE ARRANGEMENTS FOR TEMPORARY TELEPHONE AND ELECTRICAL SERVICE AS REQUIRED.
 3. BEFORE BIDDING, THE ELECTRICAL CONTRACTOR SHALL CONTACT THE UTILITIES TO DETERMINE THE WORK AND MATERIALS THAT WILL BE REQUIRED FROM THE CONTRACTOR, AND ALL FEES AND PERMITS THAT WILL BE REQUIRED, SO THAT ALL UTILITY SYSTEMS FURNISHED BY THE CONTRACTOR WILL BE INCLUDED IN THE BID.
 4. COORDINATE WORK WITH ENGINEER TO MINIMIZE DOWNTIME OF EXISTING OPERATING EQUIPMENT AND ELECTRICAL DISTRIBUTION SYSTEMS AND TO PRECLUDE UNSAFE OPERATION:
 - a. NOTIFY OWNER 10 DAYS BEFORE POWER INTERRUPTIONS.
 - b. COORDINATE DOWNTIME WITH OWNER AND LOCAL ELECTRIC UTILITY.
 5. BEFORE COMMENCING WORK, COORDINATE ELECTRIC SERVICE ENTRANCE REQUIREMENTS WITH LOCAL ELECTRIC UTILITY TO ASSURE THAT THE INSTALLATION WILL BE COMPLETE IN ACCORDANCE WITH THESE SPECIFICATIONS AND UTILITY COMPANY REQUIREMENTS:
 - a. ENSURE POWER TRANSFORMER SIZE, ELECTRICAL CHARACTERISTICS, AND LOCATION ARE CONSISTENT WITH THE DESIGN AND SERVICE VOLTAGE PROVIDED BY THE ELECTRIC UTILITY COORDINATED WITH OTHER TRADES.
 - b. ARRANGE FOR UTILITY REVENUE METER.
 - c. COORDINATE INSTALLATION OF METERING C.T.'S AND P.T.'S FURNISHED BY THE ELECTRIC UTILITY.
 - d. PAY ANY CHARGES REQUIRED BY THE ELECTRIC UTILITY FOR CONNECTION AND TURN-ON.
 6. DURING THE CONSTRUCTION OF THE PROJECT, THE EXISTING ELECTRICAL SERVICE MUST REMAIN FULLY FUNCTIONAL IN ORDER TO SUPPLY UNINTERRUPTED ELECTRICAL POWER TO THE FACILITY AND ITS ANCILLARY BUILDINGS AND STRUCTURES.
- D. BEFORE COMMENCING SITE WORK, COORDINATE UNDERGROUND CONDUIT INSTALLATIONS WITH OTHER WORK TO ELIMINATE CONFLICTS AND AVOID INTERFERENCES WITH OTHER UNDERGROUND SYSTEMS.**

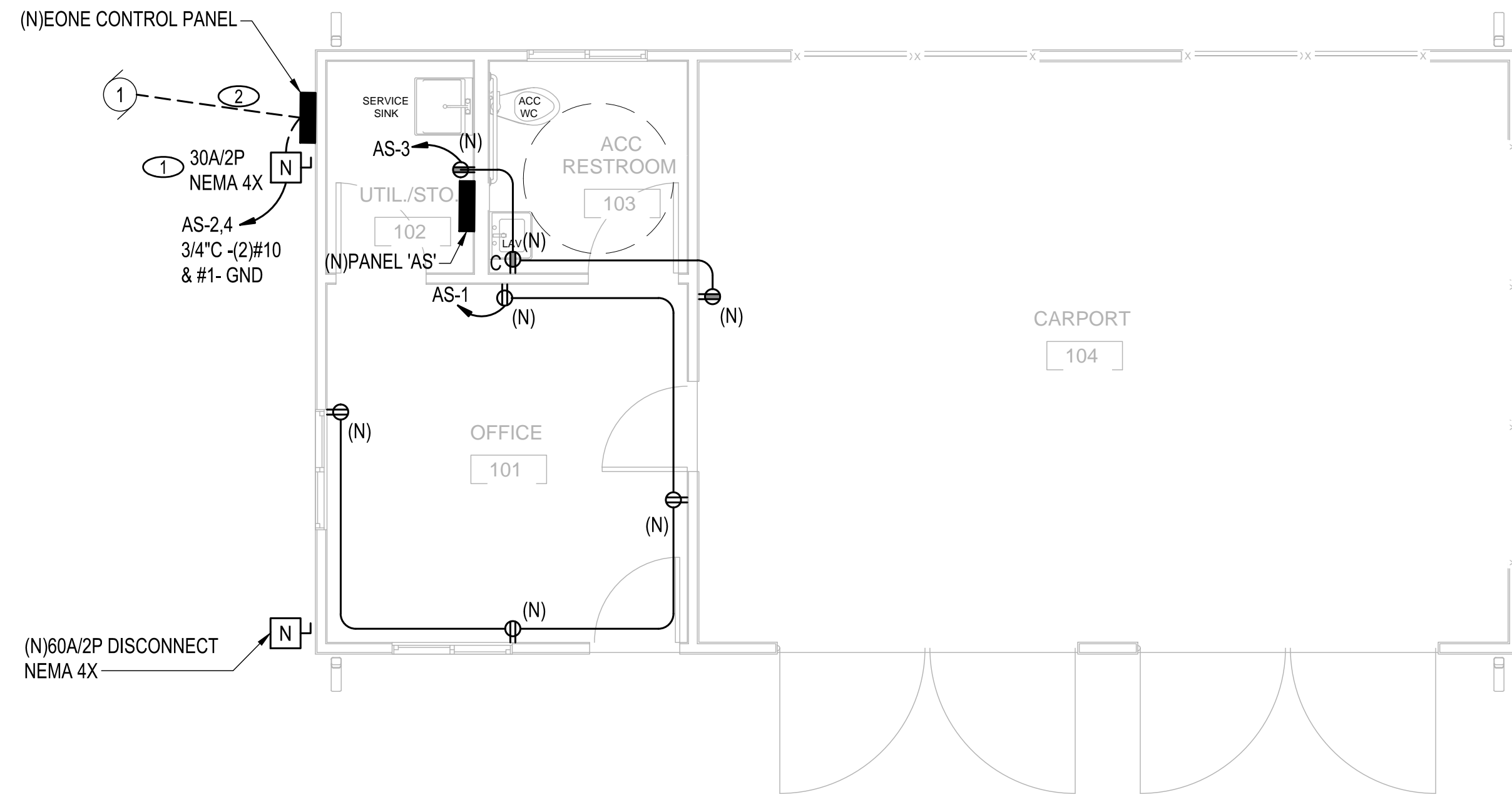


A OVERALL ELECTRICAL SITE PLAN
 SCALE: 1" = 40'

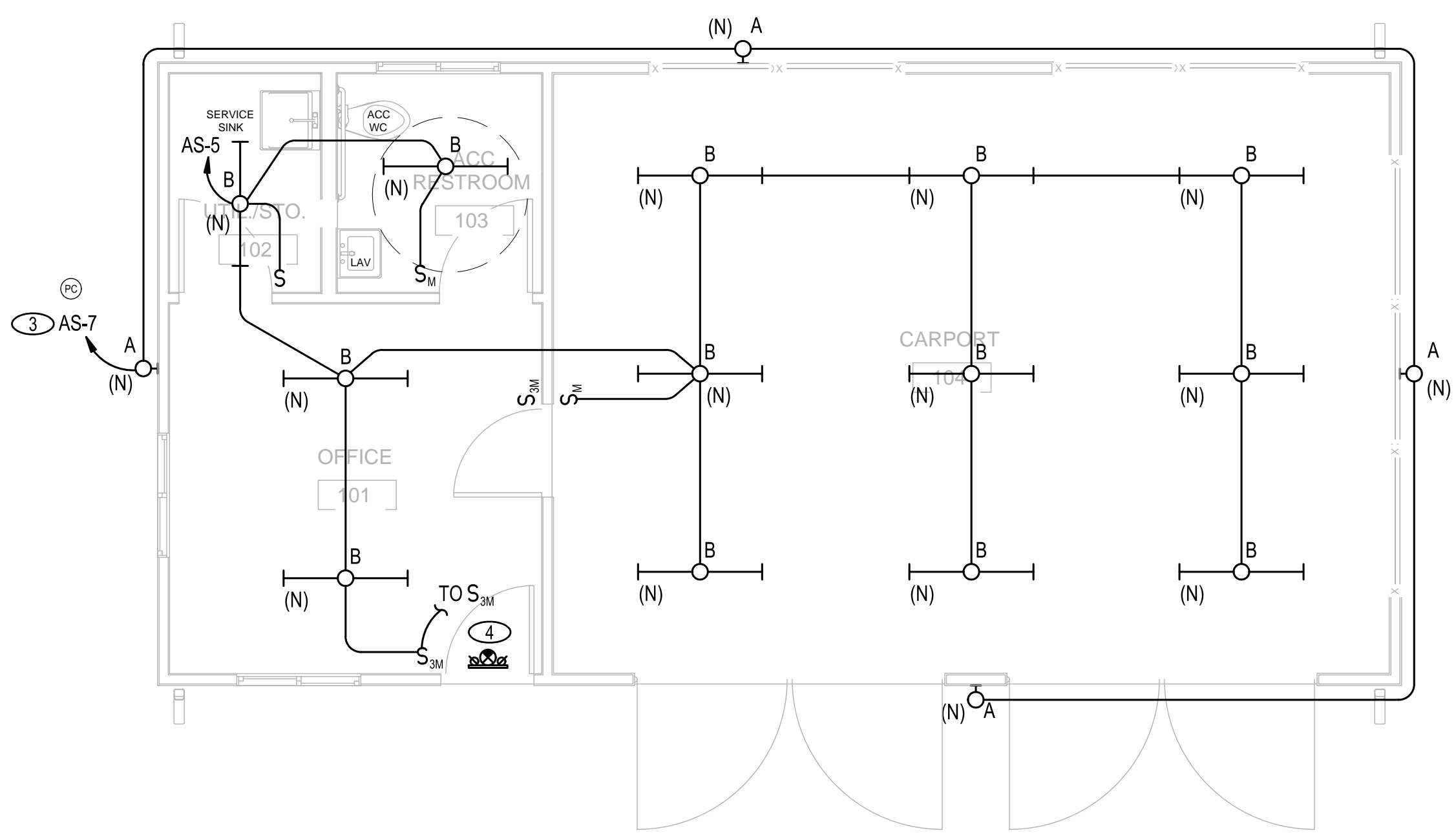
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS OVERALL ELECTRICAL SITE PLAN ENGINEERING PARTNERS, INC					
			DESIGNED: CF DRAWN: CF CHECKED: EW APPROVED: Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Chief Engineer		
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. 			SUBMITTED: [initials] DATE: [blank] SCALE: AS NOTED DRAWING NO. ES-101 SHEET NO. 131 OF 143 SHEETS		

KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D

05/05/2026 4:53 pm
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 room\1-E-A-Equipment-Storage.dwg



A POWER PLAN
 SCALE: 1/4" = 1'-0"
 0 4' 8' N



B LIGHTING PLAN
 SCALE: 1" = 20'
 0 20' 40' N

SHEET NOTES

- ① PROVIDE DISCONNECT TO EONE SYSTEM IF CONTROL PANEL DOES NOT PROVIDE INTEGRAL DISCONNECT. SEE CIVIL DRAWINGS.
- ② PROVIDE WIRING PER MANUFACTURER'S REQUIREMENTS.
- ③ CIRCUIT VIA PHOTOCELL/ TIMECLOCK, SEE DETAIL 3/ES-302.
- ④ CONNECT NEW EMERGENCY FIXTURE TO NEAREST UNSWITCHED PORTION OF LIGHTING CIRCUIT.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS POWER & LIGHTING PLANS ENGINEERING PARTNERS, INC					
DESIGNED: CF DRAWN: CF CHECKED: EW APPROVED: <i>Dina Lau</i> CHIEF ENGINEER: Dina Lau <small>E-signed 2026-05-08 09:49PM HST dina.lau@hawaii.gov State of Hawaii Civil Engineer</small>			SUBMITTED: <i>EW</i> DATE: SCALE: AS NOTED DRAWING NO. ES-201 SHEET NO. 132 OF 143 SHEETS		

KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D

LUMINAIRE SCHEDULE

FIXTURE TYPE	MANUFACTURER		VOLT AMPS	MOUNTING	LAMP TYPE	REMARKS	VOLT
	NAME	CATALOG NUMBER					
A	NLS LIGHTING	FLW-1-T4-16L-35-30K-UNV-WM-BRZ-COHI	25	WALL	LED	OUTDOOR LED SCONCE, 3000K, FULL CUT OFF. 2% OR LESS BLUE LIGHT. COUNTY OF HAWAII APPROVED.	120/277
B	LITHONIA	FEM-L48-3000LM-LPACL-MD-MVOLT-GZ10-30K-90CRI	18	SURFACE	LED	4' LED SURFACE MOUNT, 3000 LUMEN, 3000K. WET LOCATION, LOW PROFILE LENS.	120/277
	LITHONIA	LHQM-LED-R-SD	5	UNIVERSAL	LED	EXIT SIGN WITH LED HEAD COMBO AND EMERGENCY 90 MINUTE BATTERY BACK UP OPTION.	120

NEW

PANEL: AS		VOLTAGE: 240 / 120 1Ø 3W		CIRCUIT CODE: blank or		N: NON-CONTINUOUS												
DATE: 4/30/26 10:09 AM		BUS: 125A		LOCATION: INTERIOR		L: LONG-CONTINUOUS												
JOB: 12005-25-03		AIC RATING: 10,000		MOUNTING: SURFACE		R: DEMANDABLE RECEPTACLES												
						K: KITCHEN NO. OF EQUIPMENT: 0												
CIRCUIT NO	TRIP POLE	LOAD DESIGNATION				CONNECTED VA				LOAD DESIGNATION								
		DESCRIPTION (NOTE)	M	R	L	ØA	ØB	A	B	ØA	ØB	L	R	M	DESCRIPTION (NOTE)	TRIP	POLE	CIRCUIT NO
1	R 20	1	RECEPTS - OFFICE			720				960					WASTE WATER TREATMENT	20	Z	N 2
3	R 20	1	RECEPTS - STOR, RESTROOM, CARPORT				540			960					--			N 4
5	L 20	1	LIGHTS - INTERIOR			325								SPARE				6
7	L 20	1	LIGHTS - EXTERIOR				80							SPARE				8
9	L 20	1	SPARE											SPARE				10
11	L 20	1	SPARE											PPFB				12
13			PPFB											PPFB				14
15			PPFB											PPFB				16
17			PPFB											PPFB				18
19			PPFB											PPFB				20
21			PPFB											PPFB				22
23			PPFB											PPFB				24
25			PPFB											PPFB				26
27			PPFB											PPFB				28
29			PPFB											PPFB				30
31																		32
33																		34
35																		36
37																		38
39																		40
41																		42
PANEL NOTES:						PHASE TOTALS		ØA: 2005		ØB: 1580		TOTAL CONNECTED VA		3585				
												CONNECTED VA (CODE N)		1920				
												CONNECTED VA (CODE L)		405				
												CONNECTED VA (CODE R)		1260				
												CONNECTED VA (CODE K)		0				
												PANEL CONNECTED KVA		3.6				
												PANEL DEMAND KVA		3.7				
												PANEL DEMAND AMPS		15.4				
												HIGH Ø AMPS w/ DEMAND		17.4				
3Ø CIRCUIT PANEL																		

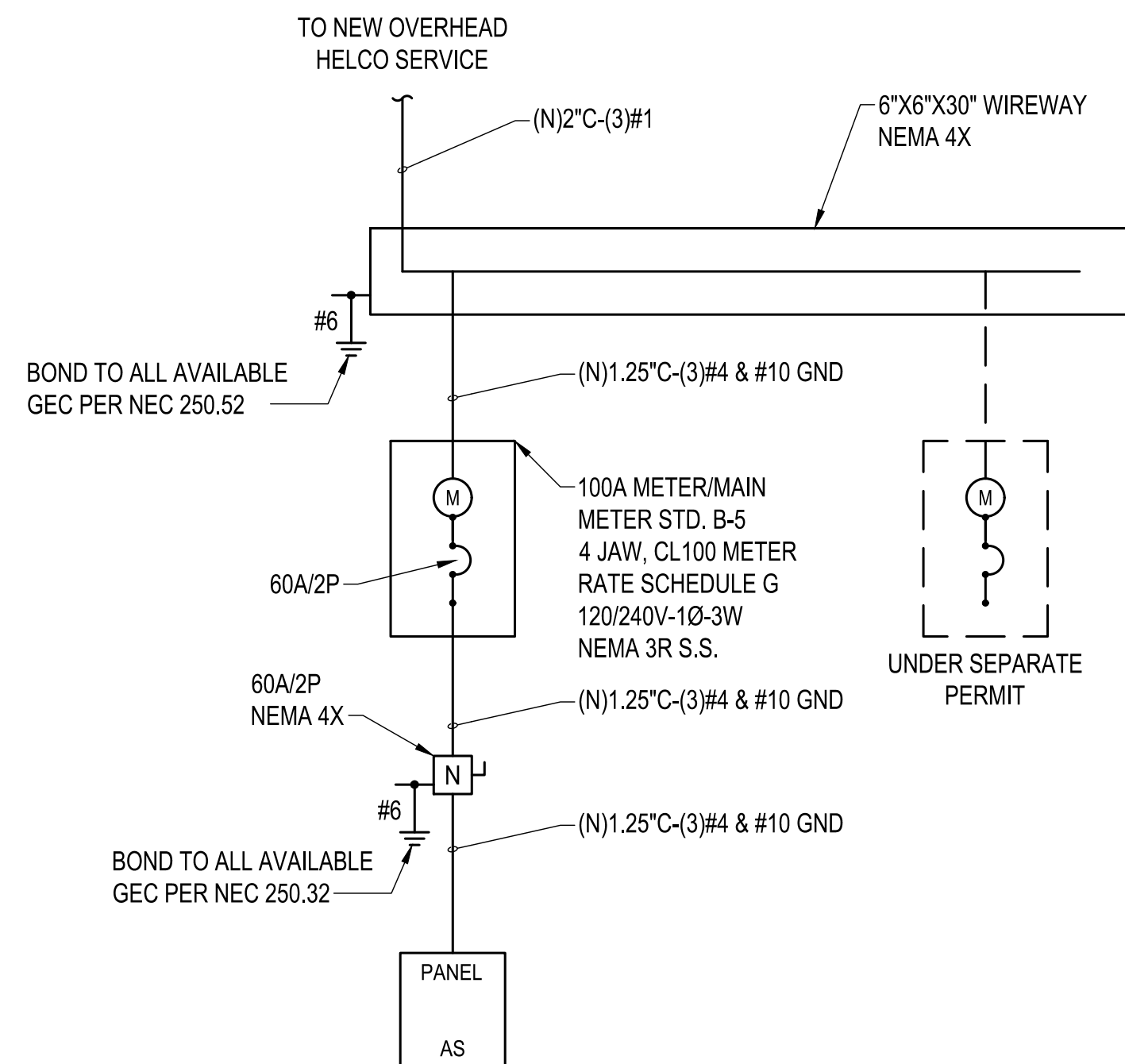
SERVICE / LOAD DATA

- A. ELECTRIC
 1. SERVICE VOLTAGE: 1PH, 240/120V., 3W
 2. LOAD DATA:

CONNECTED KVA:	3.7 KVA
FUTURE CONNECTED KVA:	10.0 KVA
ESTIMATED DEMAND KVA:	9.8 KVA
 3. SERVICE CONDUCTORS: 1 SET OF #4
 4. METERING: HAWAIIAN ELECTRIC STD. B-5; RATE G
 5. TYPE OF SERVICE: OVERHEAD
 6. BILLING ADDRESS: DEPARTMENT OF LAND AND NATURAL RESOURCES

ELECTRICAL LOAD CALCULATIONS

PANEL 'AS'		
(60A, 120/240V, 1Ø, 3W)		
NEW	=	3.7 KVA
TOTAL	=	3.7 KVA
/240 V, 1Ø	=	15.4 A



1 SINGLE LINE DIAGRAM

NO SCALE

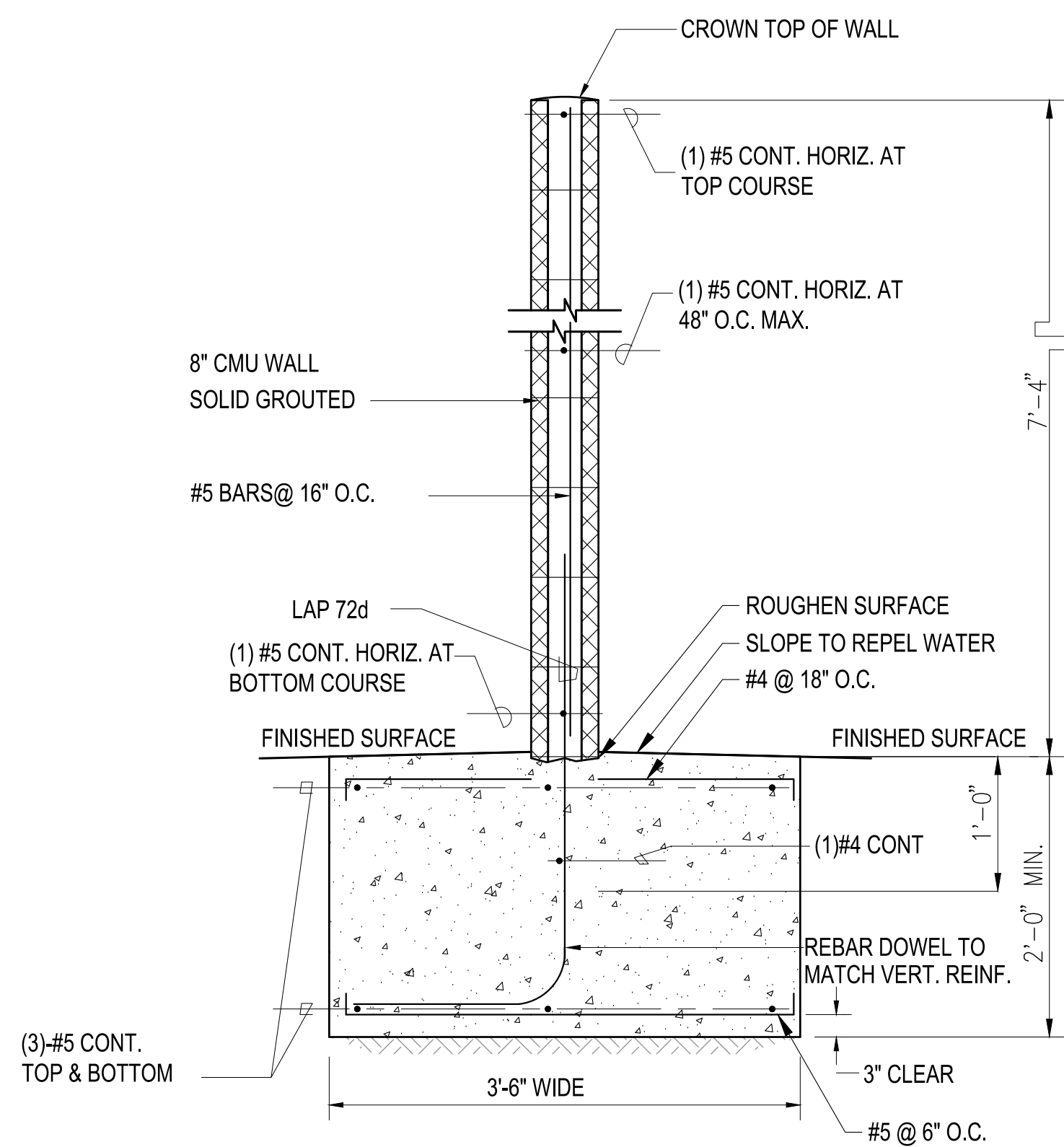
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <p>ELI B. WALTZ LICENSED PROFESSIONAL ENGINEER Exp. 04/30/28 No. 18572-E HAWAII, U.S.A.</p> </div> <div style="text-align: center;"> <p>STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION</p> <p>KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS</p> <p>ELECTRICAL SINGLE LINE, SCHEDULES & DETAILS</p> <p>ENGINEERING PARTNERS, INC</p> </div> </div>					
DESIGNED: CF		SUBMITTED:			
DRAWN: CF		DATE:			
CHECKED: EW		SCALE: AS NOTED			
APPROVED:		Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer		DRAWING NO. ES-301	
CHIEF ENGINEER:				SHEET NO. 133 OF 143 SHEETS	

JOB NO.: F14C728D

05/05/2026 4:53 pm M:\EO Projects\2025 Projects\12005-25-03 Kealahou Bay Historical Park Impr\4-Dwg\Electrical\Napoopoo Equipment Storage\0000\1-Electrical\Equipment_Storage.dwg

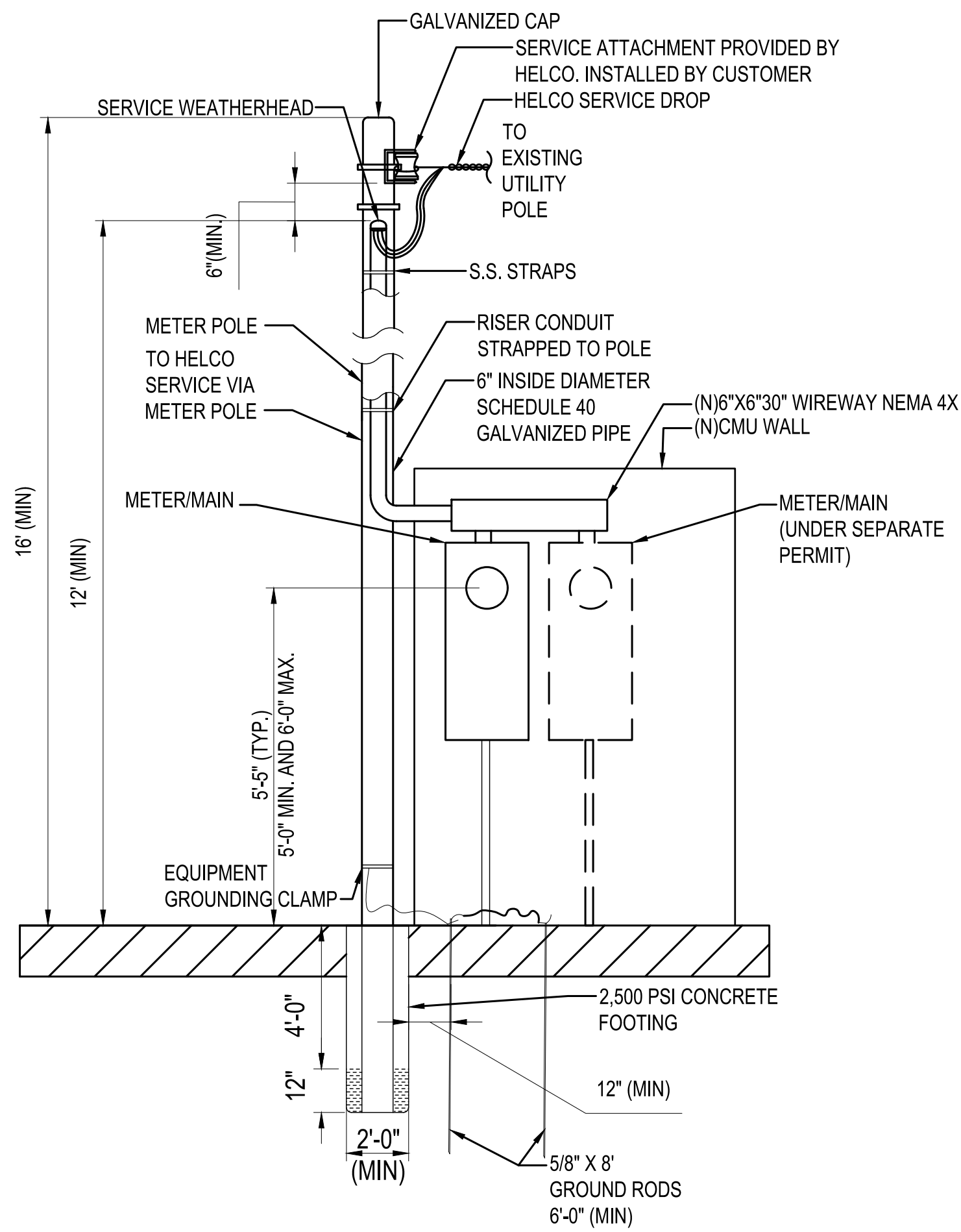
GENERAL NOTES:

- UTILIZE CONCRETE ANCHORS SUCH AS TAPCON, AS NECESSARY TO MOUNT UNISTRUT AND ELECTRICAL COMPONENTS. FOLLOW ALL MANUFACTURER INSTALLATION REQUIREMENTS.
- CONCRETE: 3000 PSI COMPRESSIVE STRENGTH IN 28 DAYS. MOISTURE CURE CONCRETE PAD A MINIMUM OF 7 DAYS. DO NOT INSTALL EQUIPMENT UNTIL CONCRETE COMPRESSIVE STRENGTH REACHES 1,500 PSI MINIMUM OR AFTER 14 DAYS.
- GROUT SHALL BE 2500 PSI COMPRESSIVE STRENGTH IN 28 DAYS.



7'-4\"/>

1 NO SCALE

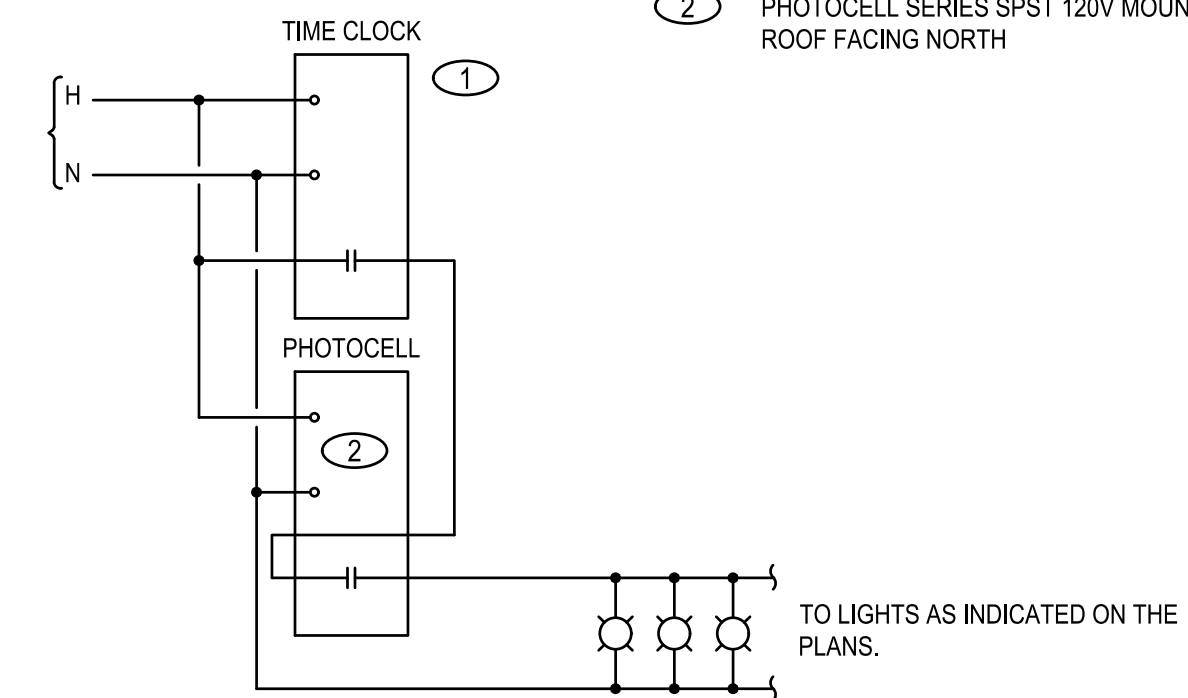


2 METER ELEVATION

NO SCALE

NOTES

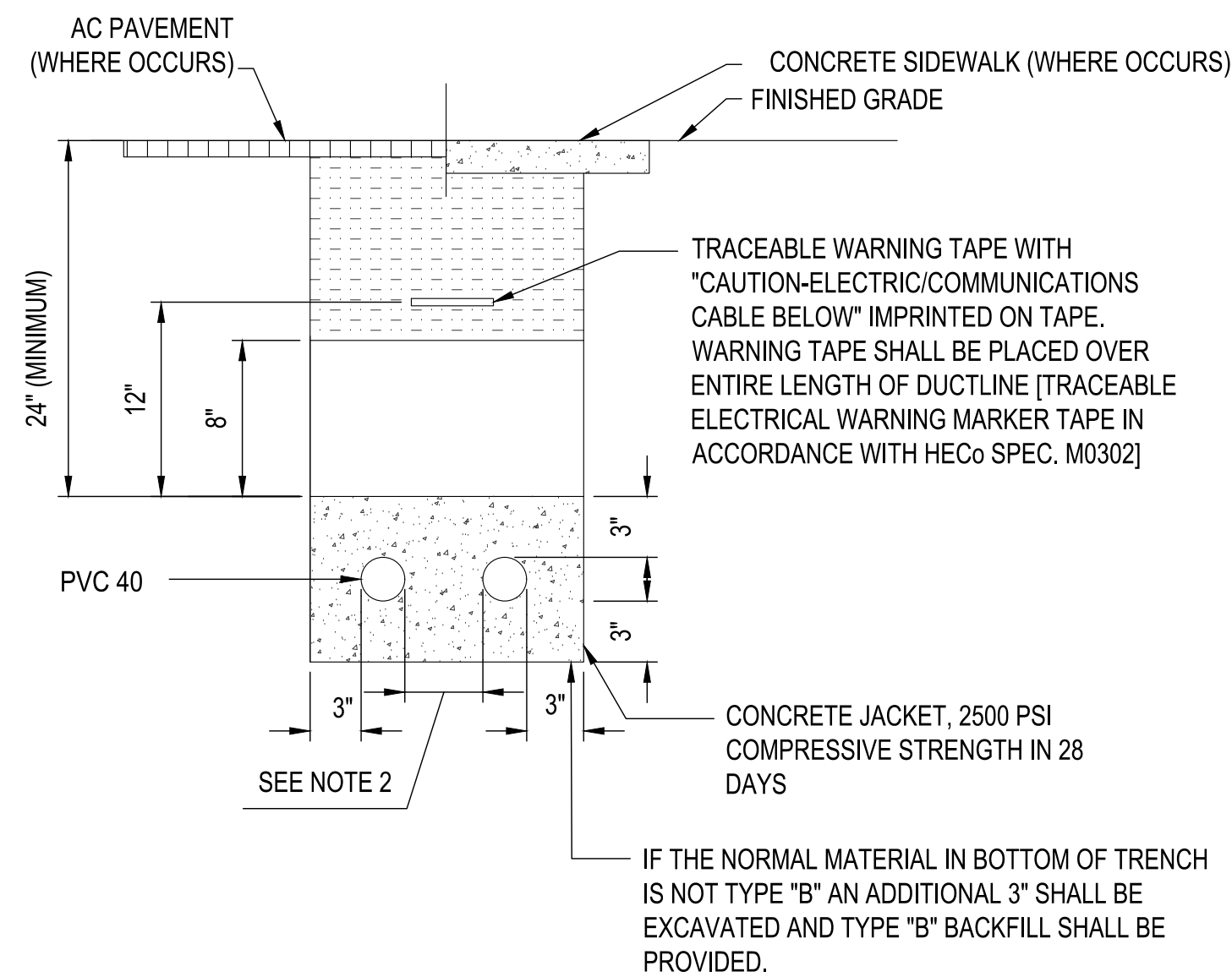
- INTERMATIC ASTRONOMICAL TIMECLOCK, DIGITAL INTERFACE WITH 10HR BATTERY BACKUP. MOUNT ABOVE PANEL.
- PHOTOCELL SERIES SPST 120V MOUNT ON ROOF FACING NORTH



3 LIGHTING CONTROL WITH TIMECLOCK AND PHOTOCELL

NO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS					
ELECTRICAL DETAILS					
ENGINEERING PARTNERS, INC					
DESIGNED: CF			SUBMITTED: <i>CF</i>		
DRAWN: CF			DATE:		
CHECKED: EW			SCALE: AS NOTED		
APPROVED: <i>Dina Lau</i>	Dina Lau E-signed 2026-05-08 09:49PM HST dina.lau@hawaii.gov State of Hawaii Civil Engineer		DRAWING NO. ES-302		
CHIEF ENGINEER:			SHEET NO. 134 OF 143 SHEETS		



BACKFILL:
 TYPE "A"

NON-CONTAMINATED NATIVE SOIL MATERIAL WHICH DOES NOT CONTAIN MORE THAN 50% GRAVEL, AND ALSO, DOES NOT CONTAIN HARD LUMPS OF EARTH 3 INCHES IN GREATEST DIMENSION, ROCKS LARGER THAN 3 INCHES IN LARGEST DIMENSION, HIGHLY PLASTIC CLAY, POORLY-GRADED SAND AND GRAVEL (CLASSIFIED AS SP AND GP USING THE UNITED SOIL CLASSIFICATION SYSTEM), ORGANICS, DEBRIS, OR OTHER UNSUITABLE OR DELETERIOUS MATERIALS.

TYPE "B"

SELECT GRANULAR MATERIAL PASSING A ONE (1) INCH SIEVE SUCH AS THREE-QUARTERS (3/4) INCH AGGREGATE BASE COURSE GRAVEL, S4C OR MATERIAL THAT IS FREE OF ORGANICS DEBRIS OR HIGHLY-PLASTIC CLAY AND MEETS THE FOLLOWING GRADATION:

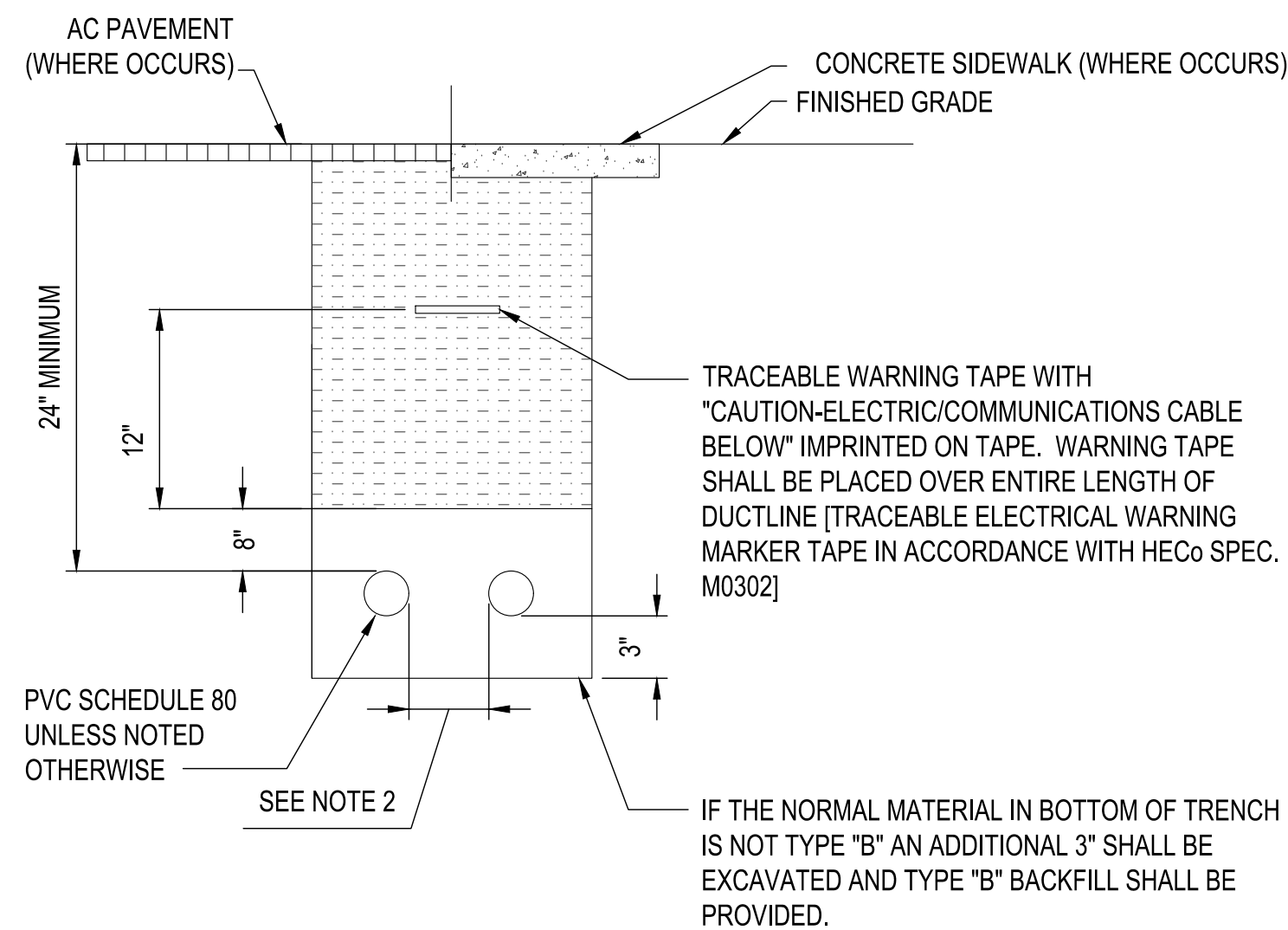
SIEVE SIZE	PERCENT PASSING BY WEIGHT
1"	100
3/4"	90-100
NO. 4	35-100
NO. 40	10-30
NO. 200	3-15

NOTES:

- ELECTRICAL AND TELEPHONE DUCTS SIMILAR.
- PROVIDE 3" SEPARATION BETWEEN DUCTS OF SAME SYSTEM AND 12" BETWEEN DUCTS OF DIFFERENT SYSTEMS
- WHERE TRENCH ENCOUNTERS EXISTING CONCRETE OR ASPHALT CONCRETE, SURFACE SHALL BE SAWCUT, BACKFILL, COMPACT AND PATCH SURFACE TO MATCH ADJACENT AREA. SEE TRENCH RESTORATION DETAIL
- SEE DUCT SECTION DETAILS FOR CONDUIT ARRANGEMENT

**TYPICAL DUCT SECTION
 CONCRETE ENCASED**

1
 NO SCALE



BACKFILL:
 TYPE "A"

NON-CONTAMINATED NATIVE SOIL MATERIAL WHICH DOES NOT CONTAIN MORE THAN 50% GRAVEL, AND ALSO, DOES NOT CONTAIN HARD LUMPS OF EARTH 3 INCHES IN GREATEST DIMENSION, ROCKS LARGER THAN 3 INCHES IN LARGEST DIMENSION, HIGHLY PLASTIC CLAY, POORLY-GRADED SAND AND GRAVEL (CLASSIFIED AS SP AND GP USING THE UNITED SOIL CLASSIFICATION SYSTEM), ORGANICS, DEBRIS, OR OTHER UNSUITABLE OR DELETERIOUS MATERIALS.

TYPE "B"

SELECT GRANULAR MATERIAL PASSING A ONE (1) INCH SIEVE : SUCH AS THREE-QUARTERS (3/4) INCH AGGREGATE BASE COURSE GRAVEL, S4C OR MATERIAL THAT IS FREE OF ORGANICS DEBRIS OR HIGHLY-PLASTIC CLAY AND MEETS THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT PASSING BY WEIGHT
1"	100
3/4"	90-100
NO. 4	35-100
NO. 40	10-30
NO. 200	3-15

NOTES:

- WHERE TRENCH ENCOUNTERS EXISTING CONCRETE OR ASPHALT CONCRETE, SURFACE SHALL BE SAWCUT, BACKFILL, COMPACT AND PATCH SURFACE TO MATCH ADJACENT AREA.
- PROVIDE 3" SEPARATION BETWEEN DUCTS OF SAME SYSTEM AND 12" SEPARATION BETWEEN ELECTRICAL DUCTS AND DUCTS OF DIFFERENT SYSTEMS.

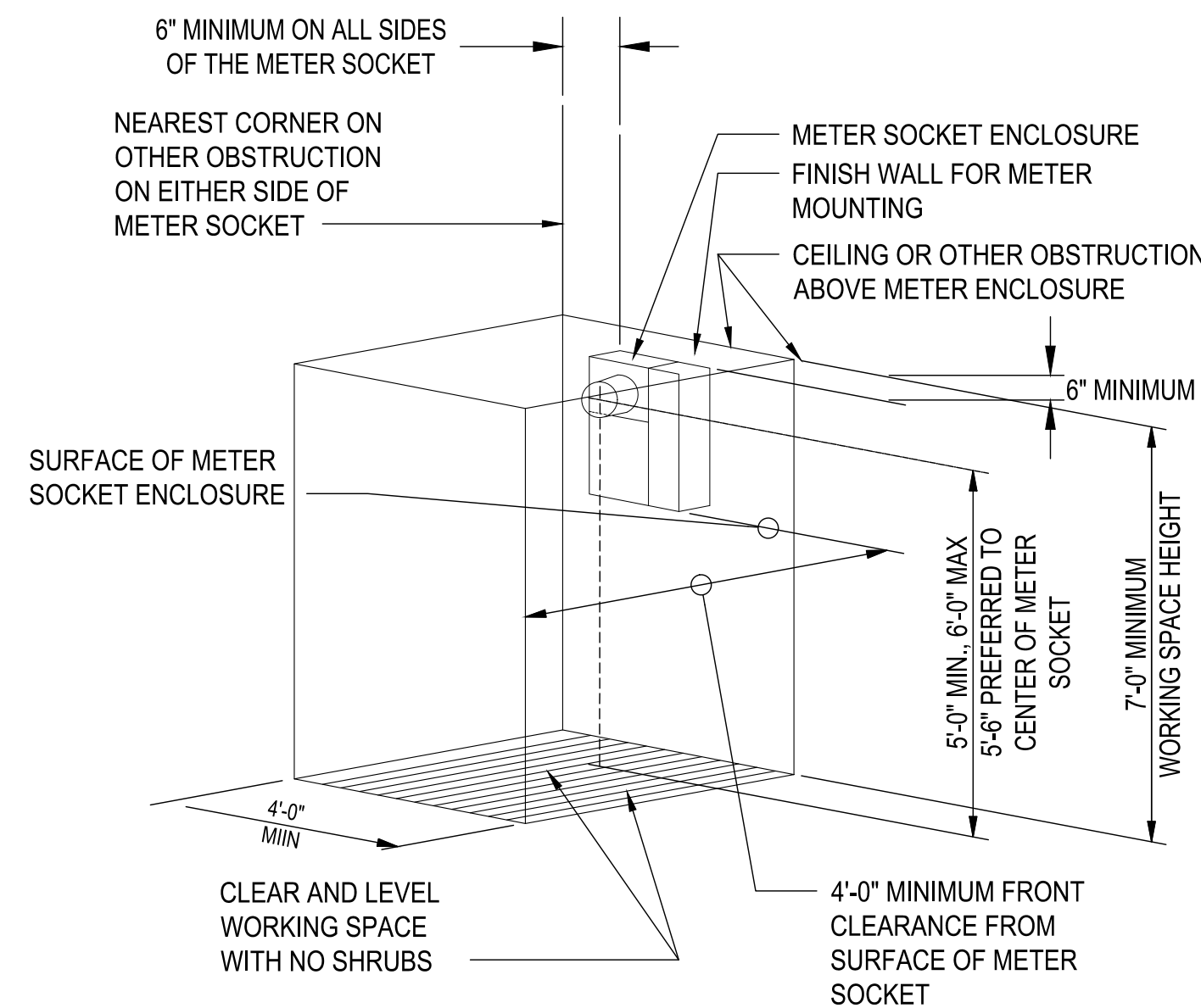
**TYPICAL DUCT SECTION
 DIRECT BURIED**

2
 NO SCALE

CLEARANCES AROUND METERS

ALLOW THE FOLLOWING CLEARANCES AROUND METERING EQUIPMENT:

- CLEARANCE AROUND THE METER: 6 INCHES ABOVE, AND TO THE SIDE OF THE METER SOCKET ENCLOSURE OR INSTRUMENT TRANSFORMER ENCLOSURE, TO ANY OBSTRUCTION.
- A CLEARANCE IN FRONT OF METERING EQUIPMENT OF 4 FEET BY 7 FEET WITH NO OBSTRUCTIONS SUCH AS WALLS, FENCES, TREES, HEDGES, OR OTHER STRUCTURES OR EQUIPMENTS.



- DIAGRAM PROVIDED FOR REFERENCE ONLY
- REFERENCE HAWAII ELECTRIC LIGHT COMPANY ELECTRIC SERVICE INSTALLATION MANUAL, NINTH EDITION FOR ACTUAL REQUIREMENTS

**HELCO METER
 CLEARANCE REQUIREMENTS**

3
 NO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS ELECTRICAL DETAILS ENGINEERING PARTNERS, INC					
DESIGNED: CF DRAWN: CF CHECKED: EW APPROVED: Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer			SUBMITTED: [Signature] DATE: SCALE: AS NOTED DRAWING NO. ES-303 SHEET NO. 135 OF 143 SHEETS		

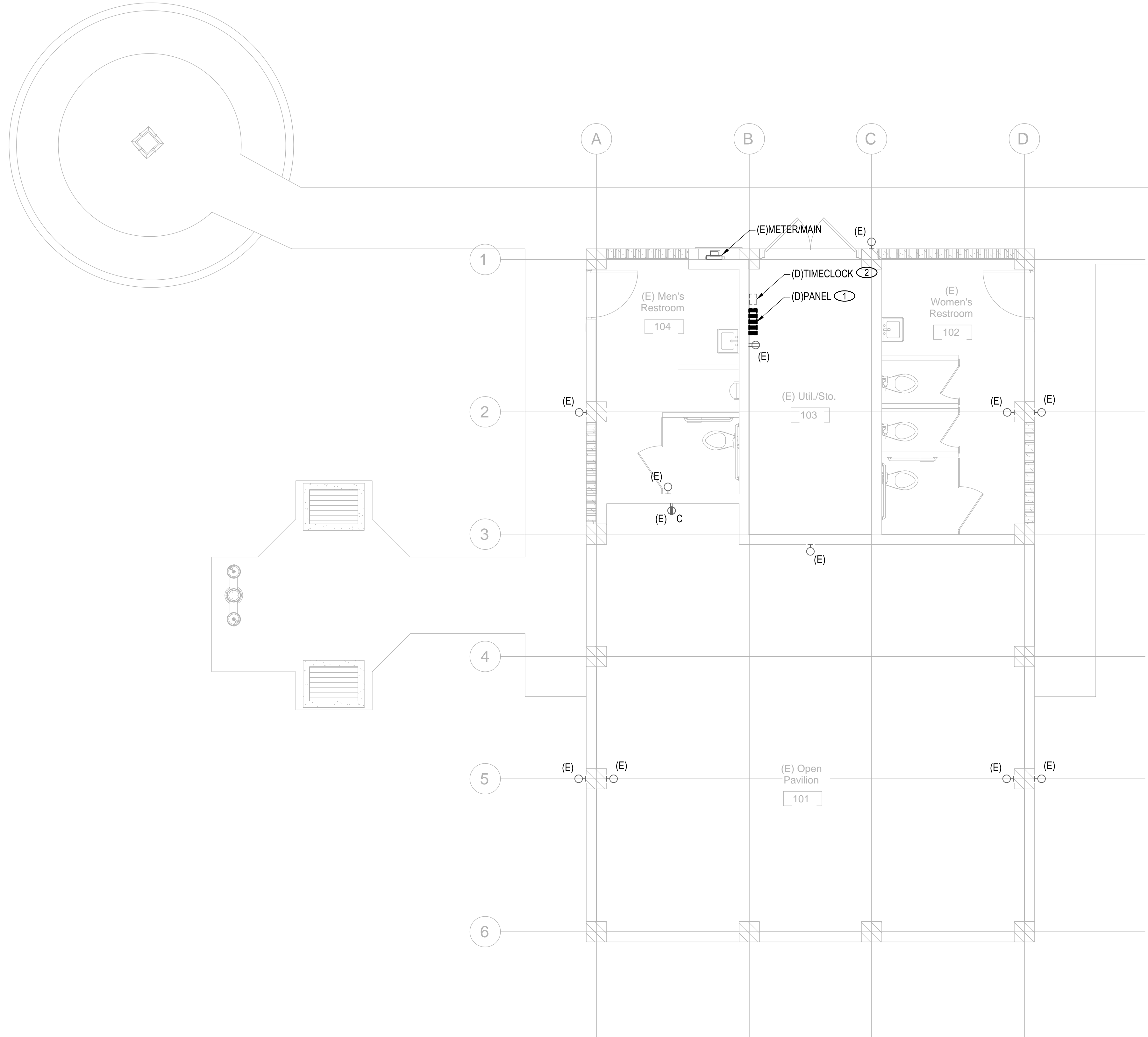
05/05/2026 4:47 pm
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 P\12005-25-03_Kealahou Bay Historical Park Impr\4-Dwg\Electrical\Napoopoo\EP-101-Overall Electrical Site Plan.dwg



A OVERALL ELECTRICAL SITE PLAN
 SCALE: 1" = 40'

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS OVERALL ELECTRICAL SITE PLAN ENGINEERING PARTNERS, INC					
DESIGNED: CF DRAWN: CF CHECKED: EW APPROVED: <i>Dina Lau</i> CHIEF ENGINEER: Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer			SUBMITTED: <i>CF</i> DATE: SCALE: AS NOTED		DRAWING NO. EP-101

05/05/2026 4:47 pm
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SHEET NOTES

- ① RETAIN CIRCUITS AND CONNECT TO NEW PANEL.
- ② RETAIN CONNECTIONS TO EXISTING LIGHTS AND CONNECT TO NEW TIMECLOCK. DEMOLISH CONDUIT AND CONDUCTORS BACK TO SOURCE.

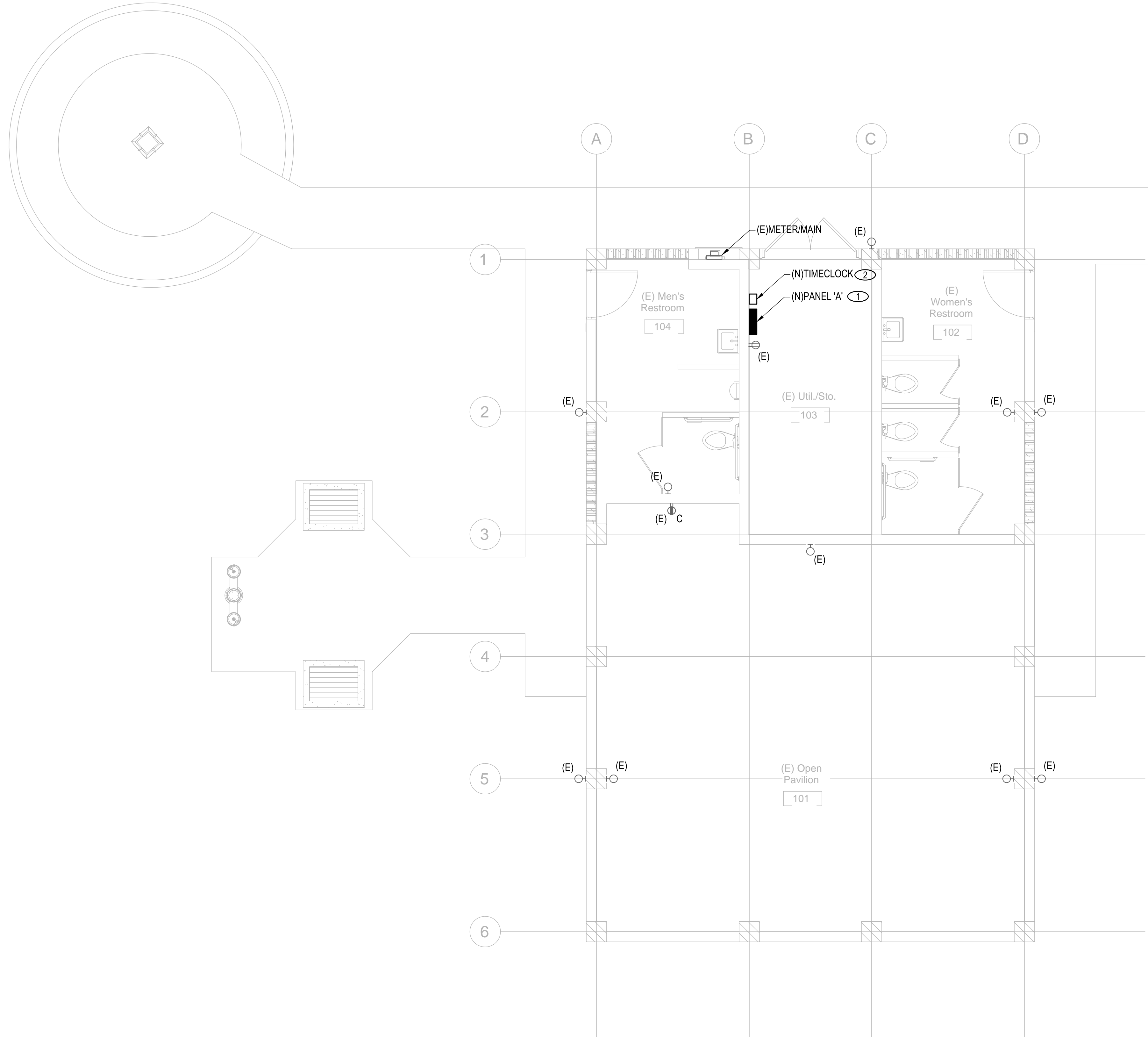
A EXISTING/ DEMOLITION ELECTRICAL PLAN
 SCALE: 1/4" = 1'-0"
 0 4' 8'

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS EXISTING/DEMOLITION ELECTRICAL PLAN ENGINEERING PARTNERS, INC					
DESIGNED: CF DRAWN: CF CHECKED: EW APPROVED: <i>Dina Lau</i> CHIEF ENGINEER: Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer			SUBMITTED: <i>EW</i> DATE: SCALE: AS NOTED DRAWING NO. EP-201 SHEET NO. 138 OF 143 SHEETS		

JOB NO.: F14C728D

KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D

05/05/2026 4:47 pm
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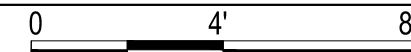


SHEET NOTES

- ① CONNECT AND EXTEND EXISTING CIRCUITS TO NEW PANEL.
- ② PROVIDE INTERMATIC ASTRONOMICAL TIMECLOCK, DIGITAL INTERFACE WITH 10HR BATTERY BACKUP. RETAIN CONNECTIONS TO EXISTING LIGHTS AND CONNECT TO NEW TIMECLOCK.

A EXISTING/ NEW ELECTRICAL PLAN

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



REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS EXISTING/NEW ELECTRICAL PLAN ENGINEERING PARTNERS, INC					
DESIGNED: CF DRAWN: CF CHECKED: EW APPROVED: <i>Dina Lau</i> CHIEF ENGINEER: Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer			SUBMITTED: <i>EW</i> DATE: SCALE: AS NOTED DRAWING NO. EP-301 SHEET NO. 139 OF 143 SHEETS		

JOB NO.: F14C728D

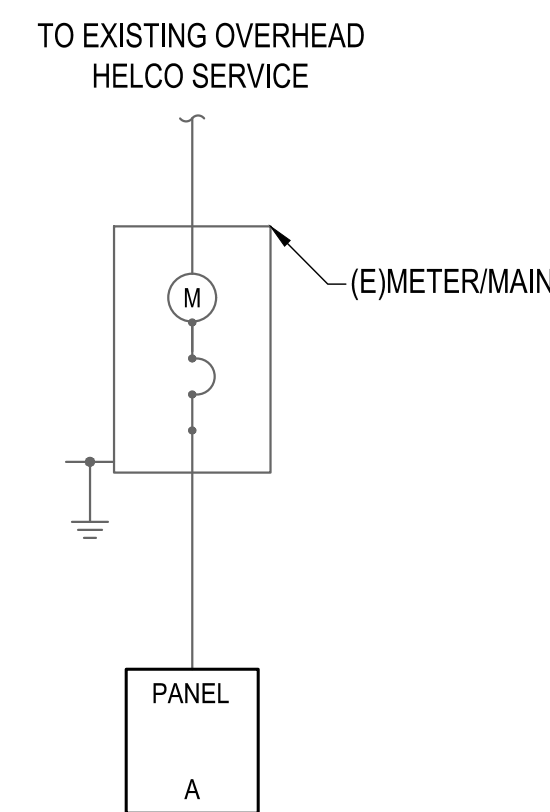
KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D

NEW

PANEL: A ①		VOLTAGE: 240 / 120 1Ø3W		CIRCUIT CODE: blank or		N: NON-CONTINUOUS L: LONG-CONTINUOUS													
DATE: 4/28/26 10:06 AM		BUS: 125A		LOCATION: INTERIOR		R: DEMANDABLE RECEPTACLES													
JOB: 12005-25-03		AIC RATING: 10,000		MOUNTING: SURFACE		K: KITCHEN NO. OF EQUIPMENT: 0													
CIRCUIT NO	TRIP	POLE	LOAD DESIGNATION				CONNECTED VA				LOAD DESIGNATION				TRIP	POLE	CIRCUIT NO		
			DESCRIPTION	(NOTE)	M	R	L	ØA	ØB	A	B	ØA	ØB	L				R	M
1	20	1	EXISTING LOAD						*								20	1	2
3	20	1	EXISTING LOAD						*								20	1	4
5	20	1	EXISTING LOAD						*								20	1	6
7	20	1	EXISTING LOAD						*								20	1	8
9	20	1	EXISTING LOAD						*								20	1	10
11			PFFB						*										12
13			PFFB						*										14
15			PFFB						*										16
17			PFFB						*										18
19			PFFB						*										20
21			PFFB						*										22
23			PFFB						*										24
25			PFFB						*										26
27			PFFB						*										28
29			PFFB						*										30
31			PFFB						*										32
33			PFFB						*										34
35			PFFB						*										36
37			PFFB						*										38
39			PFFB						*										40
41			PFFB						*										42
PANEL NOTES:			PHASE TOTALS				ØA: 0		ØB: 0		TOTAL CONNECTED VA				0				
							CONNECTED VA (CODE N)		0										
							CONNECTED VA (CODE L)		0										
							CONNECTED VA (CODE R)		0										
							CONNECTED VA (CODE K)		0										
							PANEL CONNECTED KVA		0.0										
							PANEL DEMAND KVA		0.0										
							PANEL DEMAND AMPS		0.0										
							HIGH Ø AMPS w/ DEMAND		0.0										

SHEET NOTES

① QUANTITY OF EXISTING CIRCUITS TO BE CONFIRMED IN FIELD.



1 SINGLE LINE DIAGRAM

NO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Eli B. Waltz
SIGNATURE

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS

ELECTRICAL SINGLE LINE, SCHEDULES & DETAILS

ENGINEERING PARTNERS, INC

DESIGNED: CF	SUBMITTED: <i>cf</i>
DRAWN: CF	DATE:
CHECKED: EW	SCALE: AS NOTED

APPROVED: <i>Dina Lau</i>	DATE: 2026-05-08 09:49PM HST	DRAWING NO. EP-401
CHIEF ENGINEER: Dina Lau	dina.u.lau@hawaii.gov	
Civil Engineer	State of Hawaii	

GENERAL ELECTRICAL SPECIFICATIONS

- CONTRACTOR SHALL COMPLY WITH VERSION OF NFPA 70 CURRENTLY ADOPTED AND ENFORCED BY THE AUTHORITY HAVING JURISDICTION.
- DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO BID.
- THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE. ROUTE CONDUITS AND LOCATE EQUIPMENT BASED ON THE INTENT IDENTIFIED ON DRAWINGS, MODIFY TO SUITE FIELD CONDITIONS. PROVIDE ALL CONDUITS, FITTINGS, BOXES, WIRING, CONDUIT SEALS, ETC., AS REQUIRED FOR COMPLETION OF THE RACEWAY SYSTEM IN COMPLIANCE WITH THE NEC AND THE CONTRACT DOCUMENTS.
- FINAL CONNECTIONS & ROUGH-IN REQUIREMENTS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
- CONTRACTOR SHALL REVIEW DRAWINGS AND SPECIFICATIONS BY ALL OTHER DIVISIONS. ELECTRICAL WORK NOTED OR OTHERWISE REQUIRED UNDER OTHER DIVISIONS SHALL BE REVIEWED AND INCLUDED UNDER THE ELECTRICAL CONTRACTOR'S SCOPE.
- CONTRACTOR SHALL VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BID. ALL COSTS REQUIRED TO ACCOMMODATE EXISTING CONDITIONS SHALL BE INCLUDED IN THE CONTRACTOR'S BID. NO ADDITIONAL ALLOWANCE AFTER BID WILL BE CONSIDERED DUE TO LACK OF SUCH DUE DILIGENCE OR FIELD EXAMINATION.
- WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES AND ORDINANCES, OR THOSE CURRENTLY ADOPTED BY THE LOCAL JURISDICTION.
- ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY.
- PROVIDE PERMITS AND INSPECTIONS REQUIRED.
- PREPARE SUBMITTALS FOR ALL PRODUCTS TO BE FURNISHED BY THE CONTRACTOR, INCLUDING BUT NOT LIMITED TO EQUIPMENT, RACEWAYS AND BOXES, WIRING, LIGHT FIXTURES, AND SIMILAR ITEMS. SHOULD CONTRACTOR PROCEED WITH ORDERING OR INSTALLING PRODUCTS PRIOR TO SUBMITTAL REVIEW. ALL COSTS REQUIRED TO MODIFY OR REPLACE SUCH PRODUCTS SHALL BE BORNE BY THE CONTRACTOR. THE PROPOSED USE OF ITEMS SPECIFIED ON THESE DRAWINGS DOES NOT ALLEVIATE THE CONTRACTOR FROM ITS RESPONSIBILITY TO PREPARE SUBMITTALS.
- SYSTEMS SHALL BE COMPLETE, OPERABLE AND READY FOR CONTINUOUS OPERATION. GUARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR. START OF GUARANTEE PERIOD SHALL COMMENCE AFTER 30 DAYS OF TROUBLE FREE OPERATION AFTER AFTER PROJECT ACCEPTANCE. DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT ADDITIONAL COST.
- PROVIDE RECORD DRAWINGS AND ALL OTHER CLOSEOUT MATERIALS REQUIRED AS A PART OF THIS CONTRACT. RECORD DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTINGS, ETC.
- VERIFY EXACT LOCATION AND ELECTRICAL CHARACTERISTICS OF EQUIPMENT TO BE FURNISHED BY OTHER DISCIPLINES PRIOR TO ROUGH-IN.
- SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO ADDITIONAL COST.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING PROVIDED UNDER THIS SECTION OR FACTORY WIRING IN EQUIPMENT PROVIDED UNDER THIS SECTION.
- CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS OR EQUIPMENT.
- PENETRATIONS OF FIRE RATED WALLS OR FLOORS BY PIPE SHALL BE SEALED BY A FIRESTOPPING SYSTEM UL LISTED FOR THE APPLICATION. INSTALL PENETRATION SEAL MATERIALS IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL FIRE RESISTANCE DIRECTORY AND MANUFACTURERS INSTRUCTIONS. FIRESTOPPING SYSTEM SHALL BE EQUAL TO 3M FIRE BARRIER. FIRESTOPPING MATERIAL SHALL BE CAULK OR PUTTY TYPE. FIRESTOP ALL PENETRATIONS THROUGH FIRE RATED WALLS AS REQUIRED TO PRESERVE THE FIRE RATING OF THE STRUCTURE.
- PROTRUDING OBJECTS SHALL COMPLY WITH ADAAG 307. WALL MOUNTED FIXTURES OR SIMILAR WALL MOUNTED DEVICES SHALL NOT PROTRUDE MORE THAN 4" HORIZONTALLY INTO THE CIRCULATION PATH, OR OTHERWISE SHALL BE INSTALLED 80" MINIMUM TO THE BOTTOM OF THE FIXTURE.
- WHERE PROJECT WORK INVOLVES COORDINATION WITH THE LOCAL UTILITY, IMMEDIATELY UPON AWARD OF CONTRACT CONTRACTOR SHALL CONTACT UTILITY TO ENSURE ALL UTILITY AGREEMENTS, PROPOSAL, AND UTILITY DRAWINGS ARE COMPLETE AND APPROVED. PROVIDE PROPOSED DATE OF ENERGIZING SERVICE IN ORDER TO FACILITATE PROPER SCHEDULING WITH THE UTILITY SERVICE.

ELECTRICAL ABBREVIATIONS

+18"	INDICATES MOUNTING HEIGHTS ARE TO CENTERLINE OF DEVICE AFF OR AFG	GND	GROUND
AF	AMP FUSE (FOR FUSES), AMP FRAME (FOR CIRCUIT BREAKERS)	HELCO	ELECTRICAL UTILITY COMPANY
AFF	ABOVE FINISHED FLOOR	IWP	IN-USE WEATHER-PROOF (NEMA 3R)
AFG	ABOVE FINISHED GRADE	LO	LUGS ONLY (SEE ALSO MLO)
AHU	LOCAL AUTHORITY HAVING JURISDICTION	MCB	MAIN CIRCUIT BREAKER
AT	AMP TRIP	MLO	MAIN LUGS ONLY
ATS	AUTOMATIC TRANSFER SWITCH	NEC	NATIONAL ELECTRICAL CODE, AS ADOPTED BY THE AHJ
MTS	MANUAL TRANSFER SWITCH	P	POLE
C	CONDUIT	PFFB	PROVISION FOR FUTURE BREAKER
CONT	CONTINUATION	PH	PHASE
CU	COPPER	PNL	INDICATES PANEL
CW	COLD WATER PIPE	TYP	TYPICAL
FACP	FIRE ALARM CONTROL PANEL	UPS	UNINTERRUPTIBLE POWER SYSTEM
AFCI	INDICATES ARC FAULT CIRCUIT INTERRUPTER WITH DEDICATED NEUTRAL	WP	WEATHER-PROOF (NEMA 3R)
GFCI	GROUND FAULT CIRCUIT INTERRUPTER WITH DEDICATED NEUTRAL	XFMR	TRANSFORMER
GFP	GROUND FAULT PROTECTION	UNO	UNLESS NOTED OTHERWISE
		(D)	DEMOLITION
		(E)	EXISTING
		(N)	NEW
		(R)	RELOCATE/RELOCATED

ELECTRICAL SYMBOLS

	ELECTRICAL DEMOLITION. REMOVE EQUIPMENT AND APPURTENANCES IN THEIR ENTIRETY U.N.O. COORDINATE WORK RESTRICTIONS PRIOR TO DEMOLITION.		LUMINAIRE IDENTIFICATION A = LUMINAIRE DESIGNATION (UPPERCASE) a = SWITCH DESIGNATION (LOWERCASE)
	HOMERUN CONDUIT - STROKES INDICATE QUANTITY OF CONDUCTORS		LAY-IN/RECESSED TROFFER
	CONDUIT/WIRE CONCEALED IN WALL OR ABOVE CEILING EXCEPT IN EXPOSED STRUCTURE AREAS 1/2"-2 #12 & 1 #12 GND THWN U.N.O.		SURFACE MOUNT TROFFER
	CONDUIT AND/OR WIRE BELOW FLOOR OR GRADE 3/4"-2 #12 & 1 #12 GND THWN UNLESS NOTED		LUMINAIRE ON EMERGENCY CIRCUIT OR INTEGRAL BATTERY BACK-UP
	EXISTING CONDUIT AND/OR CONDUCTORS TO REMAIN (SHOWN LIGHT)		SUSPENDED LUMINAIRE
	OVERHEAD POWER LINES		DOWNLIGHT LUMINAIRE
	CONDUIT RISER UP/DOWN		WALL MOUNTED LUMINAIRE
	CONDUIT STUB OUT		EMERGENCY BATTERY LIGHTING UNIT WITH TWIN HEADS
	SINGLE POLE SWITCH @ +18" TO TOP UNLESS NOTED a = DEVICE SWITCH IDENTIFICATION (LOWERCASE)		EMERGENCY BATTERY LIGHTING UNIT WITH TWIN HEADS AND EXIT SIGN
	SWITCH BANK (IDENTIFIED WITH UPPERCASE)		SURFACE MOUNTED PANELBOARD
	SINGLE RECEPTACLE @ +18" TO CENTER UNLESS NOTED		FLUSH MOUNTED PANELBOARD
	WALL MOUNTED DUPLEX RECEPTACLE @ +18" TO CENTER U.N.O. = RECEPTACLE PROTECTED BY GFCI BREAKER, OR GFCI TYPE RECEPTACLE INSTALLED PER NEC 210.8. = DOUBLE DUPLEX RECEPTACLE = 1/2 SWITCHED (BOTTOM HALF) DUPLEX RECEPTACLE		MAIN SWITCHBOARD, MOTOR CONTROL CENTER OR DISTRIBUTION BOARD
	IF a: C = RECEPTACLE INSTALLED ABOVE COUNTER H = RECEPTACLE INSTALLED HORIZONTALLY		CONCRETE PULLBOX WITH HEAVY DUTY STEEL TRAFFIC COVER
	IF b: MOUNTING HEIGHT IN INCHES TO TOP OF RECEPTACLE		UTILITY PULLBOX
	FLOOR MOUNT RECEPTACLE		METER
	CEILING MOUNT RECEPTACLE		NON-FUSED DISCONNECT SWITCH
	SPECIAL RECEPTACLE @ +18" TO CENTER UNLESS NOTED		FUSED DISCONNECT SWITCH
	CEILING MOUNTED VACANCY SENSOR		JUNCTION BOX. IF a: CF = CEILING FAN S = SIGNAGE WH = WATER HEATER
	PHOTOCELL (INSTALL ON ROOF FACING NORTH)		COMBINATION METER/MAIN
	IF a: R = RELAY C = CONTACTOR P = POWER SUPPLY		FUSIBLE SWITCH
	CB = CIRCUIT BREAKER TS = TIMESWITCH PB = PUSH BUTTON TYPE CONTROL STATION		SINGLE METER WITH CT,
	HP = TRANSFORMER		CIRCUIT BREAKER
	ATS = AUTOMATIC TRANSFER SWITCH		TRANSFORMER
	TELEPHONE/DATA OUTLET (X) 4-PAIR CAT-6 CABLES (TYPE 'H') PROVIDE CORRESPONDING FACEPLATE WITH QTY OF PORTS AS REQUIRED. WHERE "X" INDICATED NUMBER OF PORTS.		MOTOR LOAD
			AUTOMATIC TRANSFER SWITCH
			GROUND BUS & GROUND ELECTRODES
			UTILITY POLE

HAWAII COUNTY ENERGY CODE 2021 IECC, HAWAII REVISED STATUTES HRS 107-24 TO 28 & HAWAII ADMINISTRATIVE RULES
CHAPTER HAR 3-181.1 COMMERCIAL BUILDING ENERGY EFFICIENCY STANDARDS

I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THIS PROJECTS DESIGN SUBSTANTIALLY CONFORMS TO THE BUILDING ENERGY EFFICIENCY STANDARDS PERTAINING TO THE COMMERCIAL PROVISIONS FOR ELECTRICAL & LIGHTING SYSTEMS (C405. & C408) OF THE 2021 IECC WITH AMENDMENTS PER HAR 3-181.1:

COMPLIANCE METHOD			
X	2021 IECC AS AMENDED. MANDATORY AND PRESCRIPTIVE		
	2021 IECC AS AMENDED. MANDATORY AND TOTAL BUILDING PERFORMANCE		
	ASHRAE STANDARD 90.1-2013. MANDATORY AND PRESCRIPTIVE		
	ASHRAE STANDARD 90.1-2013. MANDATORY AND TOTAL BUILDING PERFORMANCE		
INFORMATION IN CONSTRUCTION DOCUMENTS		YES	N/A
INTERIOR LIGHTING			
	OCCUPANT SENSOR CONTROLS	C405.2.1	X
	TIME SWITCH CONTROLS	C405.2.2	X
	DAYLIGHT RESPONSIVE CONTROLS	C405.2.3	X
	DAYLIGHT ZONES ON PLANS	C405.2.3.2 & C405.2.3.3	X
	GUEST ROOM CONTROLS	C405.2.4	X
	INTERIOR LIGHTING FIXTURE SCHEDULE		X
	INTERIOR LIGHTING POWER ALLOWANCES	C405.3.2	X
	INTERIOR LIGHTING FIXTURE LOCATIONS		X
	LIGHTING CONTROL FUNCTIONAL PERFORMANCE		X
	TESTING REQUIREMENT	C408.3	X
EXTERIOR LIGHTING			
	EXTERIOR LIGHTING CONTROLS	C405.2.6	X
	EXTERIOR LIGHTING FIXTURE SCHEDULE		X
	EXTERIOR LIGHTING POWER ALLOWANCES	C405.4.2	X
	EXTERIOR LIGHTING FIXTURE LOCATIONS		X
ELECTRICAL			
	ELECTRICAL TRANSFORMER EFFICIENCY	C405.6	X
	ELECTRICAL MOTOR EFFICIENCY	C405.7	X
	VOLTAGE DROP LESS THAN 5%	C405.9	X
	TENANT SUBMETERING	C405.10	X

NOTES:

SIGNATURE:

DATE: 04/28/2026

NAME: ELI B. WALTZ

TITLE: ELECTRICAL ENGINEER

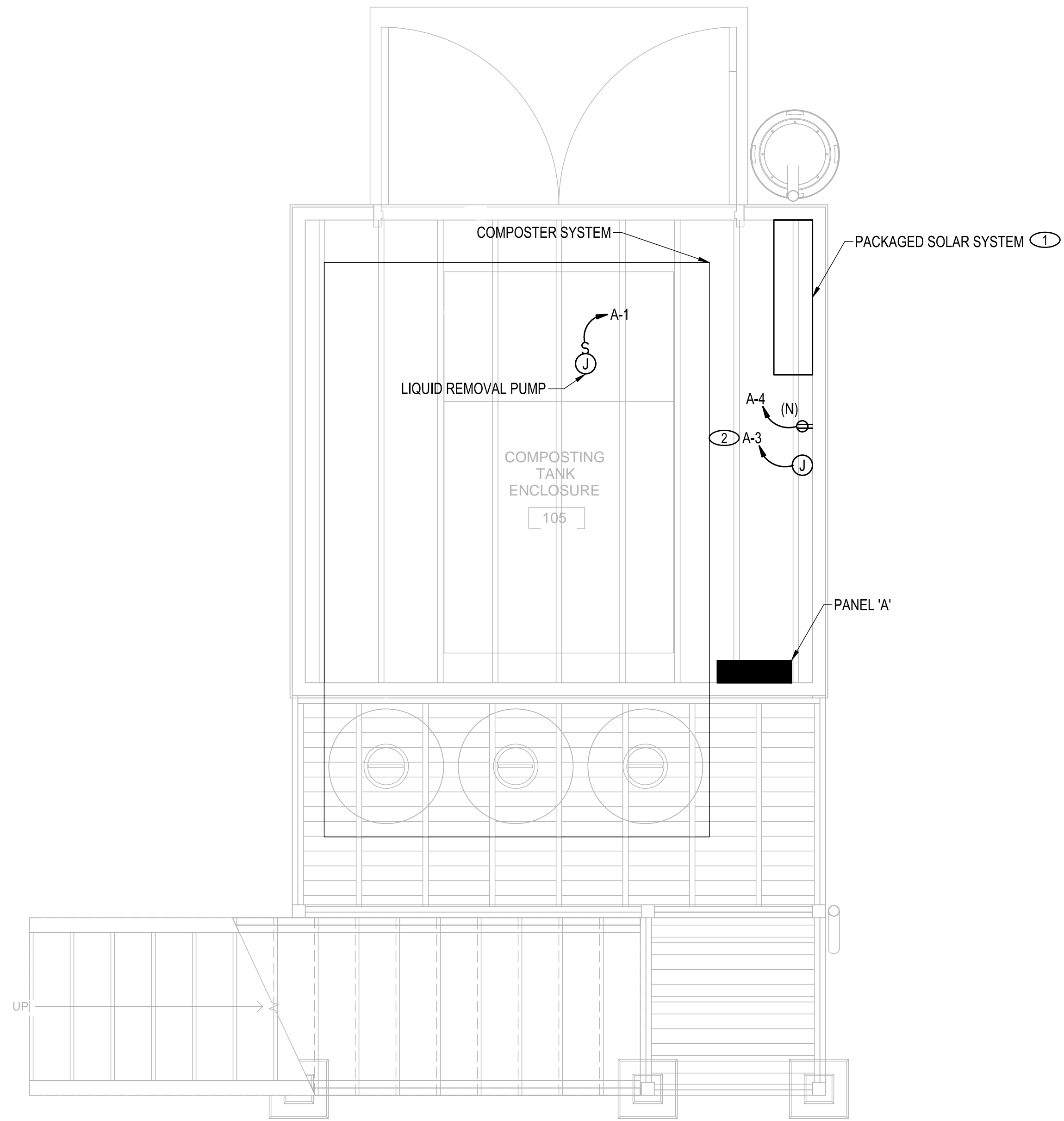
LICENSE NO.: 18572-E

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS ELECTRICAL SYMBOLS, ABBREVIATIONS, & IECC					
ENGINEERING PARTNERS, INC					
DESIGNED: CF	SUBMITTED:				
DRAWN: CF	DATE:				
CHECKED: EW	SCALE: AS NOTED				
APPROVED:	Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer		DRAWING NO. EL-001		
CHIEF ENGINEER:					

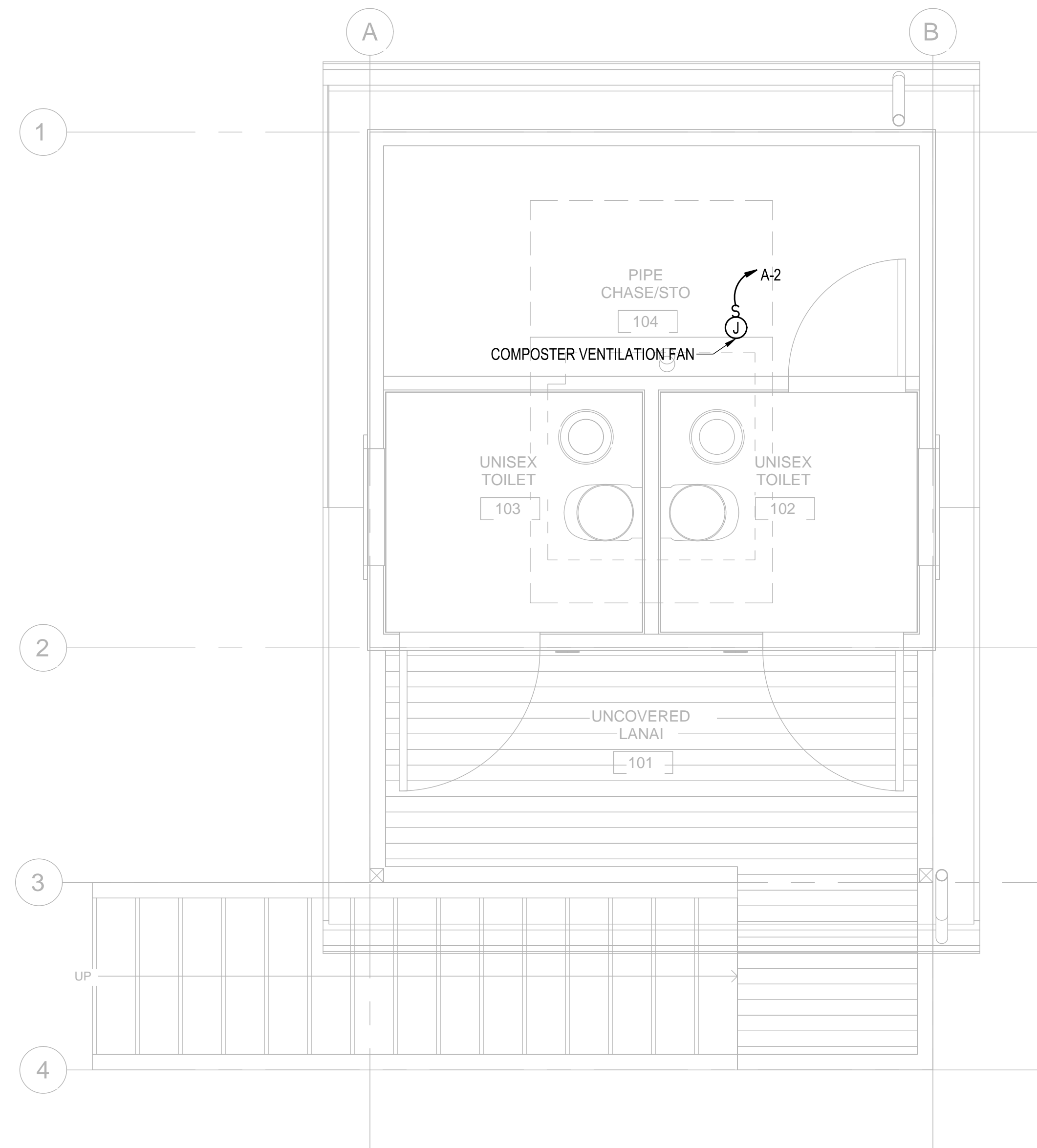
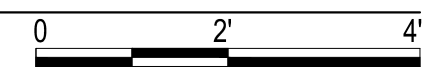
05/05/2026 4:35 pm M:\EO Projects\2025 Projects\12005-25-03 Kealakekua Bay Historical Park Impr\4-Dwg\Electrical\Compost_Lua\E-X.dwg

KEALAKEKUA BAY HISTORICAL PARK SITE IMPROVEMENTS JOB NO. F14C728D

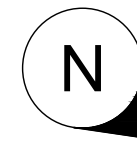
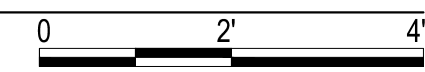
05/05/2026 4:35 pm
 M:\EO Projects\2025 Projects\12005-25-03 Kealahou Bay Historical Park Impr\4-Dwg\Electrical\Compost_Lua\E-X.dwg



A ELECTRICAL PLAN - LOWER FLOOR
 SCALE: 1/2" = 1'-0"



B ELECTRICAL PLAN - MAIN FLOOR
 SCALE: 1/2" = 1'-0"



SHEET NOTES

- ① PROVIDE PACKAGED SOLAR SYSTEM WITH BATTERY BACKUP FOR COMPOSTING TOILET SYSTEM. SYSTEM SHALL PROVIDE MINIMUM OF 5KWH BATTERY BACKUP AND MINIMUM OF 800W OF SOLAR PANELS. OUTPUT VOLTAGE SHALL BE 120/240V-1PH. CONTRACTOR TO PROVIDE CONNECTIONS AND WIRING PER MANUFACTURER'S REQUIREMENTS.
- ② PROVIDE CONNECTIONS TO COMPOSTER SYSTEM CONTROLS AND ALARMS PER MANUFACTURER REQUIREMENTS.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS ELECTRICAL PLAN - LOWER/ MAIN FLOOR ENGINEERING PARTNERS, INC					
DESIGNED: CF DRAWN: CF CHECKED: EW APPROVED: <i>Dina Lau</i> CHIEF ENGINEER: Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer			SUBMITTED: <i>CF</i> DATE: SCALE: AS NOTED DRAWING NO. EL-101		

05/05/2026 4:35 pm
 M:\EO Projects\2025 Projects\12005-25-03 Kealahou Bay Historical Park Impr\4-Dwg\Electrical\Compost_Lua\E-X.dwg

NEW

PANEL: A

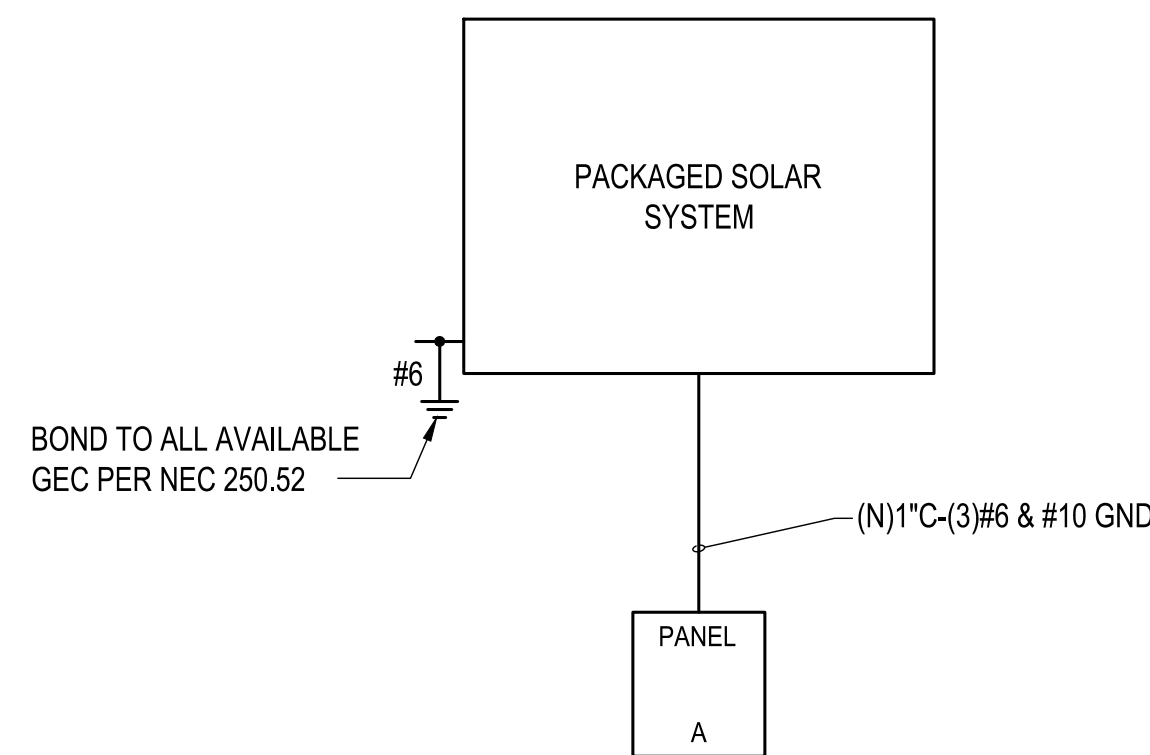
VOLTAGE: 240 / 120 1Ø 3W CIRCUIT CODE: blank or N: NON-CONTINUOUS
 BUS: 50A L: LONG-CONTINUOUS
 DATE: 4/27/26 4:03 PM MANS: 50A LOCATION: INTERIOR R: DEMANDABLE RECEPTACLES
 JOB: 12005-25-03 AIC RATING: 10,000 MOUNTING: SURFACE K: KITCHEN NO. OF EQUIPMENT: 0

CIRCUIT NO	CODE	TRIP	POLE	LOAD DESIGNATION				CONNECTED VA				LOAD DESIGNATION				TRIP	POLE	CODE	CIRCUIT NO				
				DESCRIPTION	(NOTE)	M	R	L	ØA	ØB	A	B	ØA	ØB	L					R	M	(NOTE)	DESCRIPTION
1	N	20	1	LIQUID REMOVAL PUMP						575					71				COMPOSTER VENTILATION FAN	20	1	N	2
3	N	20	1	TANK ALARM & CONTROLS											190				MAINTENANCE RECEPTACLE	20	1	R	4
5				PFFB															PFFB				6
7																							8
9																							10
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33																							34
35																							36
37																							38
39																							40
41																							42
PANEL NOTES:				PHASE TOTALS				ØA: 646	ØB: 200				TOTAL CONNECTED VA				846						
								CONNECTED VA (CODE N)				666											
								CONNECTED VA (CODE L)				0											
								CONNECTED VA (CODE R)				190											
								CONNECTED VA (CODE K)				0											
								PANEL CONNECTED KVA				0.8											
								PANEL DEMAND KVA				0.8											
								PANEL DEMAND AMPS				3.5											
								HIGH Ø AMPS w/ DEMAND				5.4											

6 CIRCUIT PANEL

SHEET NOTES

- ① PROVIDE PACKAGED SOLAR SYSTEM WITH BATTERY BACKUP FOR COMPOSTING TOILET SYSTEM. SYSTEM SHALL PROVIDE MINIMUM OF 5KWH BATTERY BACKUP AND MINIMUM OF 800W OF SOLAR PANELS. OUTPUT VOLTAGE SHALL BE 120/240V-1PH. CONTRACTOR TO PROVIDE CONNECTIONS AND WIRING PER MANUFACTURER'S REQUIREMENTS.



1

SINGLE LINE DIAGRAM

NO SCALE

ELECTRICAL LOAD CALCULATIONS

PANEL 'A' (60A, 120/240V, 1Ø, 3W)	=	
LOAD	=	0.8 KVA
TOTAL	=	0.8 KVA
/240 V, 1Ø	=	3.3 A

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
KEALAKEKUA BAY STATE HISTORICAL PARK IMPROVEMENTS					
ELECTRICAL SCHEDULES & DETAILS					
ENGINEERING PARTNERS, INC					
DESIGNED: CF	SUBMITTED: <i>CF</i>				
DRAWN: CF	DATE:				
CHECKED: EW	SCALE: AS NOTED				
APPROVED: <i>EL</i>	Dina Lau E-signed 2026-05-08 09:49PM HST dina.u.lau@hawaii.gov State of Hawaii Civil Engineer		DRAWING NO. EL-201		
CHIEF ENGINEER:	SIGNATURE				