October 2015

NON-CHAPTER 343 DOCUMENT
PUBLICATION FORM
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

Project Name: Lihue Aerated Solids Contact Tank Improvement

Applicable Law: 36 CFR Part 800

Type of Document: National Historic Preservation Act Section 106

Island: Kauai

District: Kalapaki Ahupua'a, Puna District

TMK: (4) 3-5-001:030

Permits Required: N/A

Applicant or Proposing Agency:
(*Address, Contact Person, Telephone, E-mail*)
State of Hawaii, Department of Health, Environmental Management Division, Wastewater Branch
2827 Waimano Home Road, Rm. 207
Pearl City, HI 96782
Contact and Phone: Chane Hayashida, (808) 586-4294, Chane.Hayashida@doh.hawaii.gov

Approving Agency or Accepting Authority:
(*Address, Contact Person, Telephone, E-mail*)
State of Hawaii, Department of Health, Environmental Management Division, Wastewater Branch
2827 Waimano Home Road, Rm. 207
Pearl City, HI 96782
Contact and Phone: Chane Hayashida, (808) 586-4294, Chane.Hayashida@doh.hawaii.gov

Consultant:
(*Address, Contact Person, Telephone, E-mail*)
Brown and Caldwell
737 Bishop Street, Suite 3000
Honolulu, HI 96813
Contact and Phone: Joshua Schwartzlow, (808) 203-2672, jschwartzlow@brwncald.com

Status: Comments due no later than January 22, 2025 to:
Attn: Chane Hayashida
Department of Health, Wastewater Branch
2827 Waimano Home Road, Rm. 207
Pearl City, HI 96782
Email: wwb@doh.hawaii.gov

Project Summary:
(Summarize proposed action and purpose/need in less than 200 words in the space below)**:**
The Department of Health (DOH) reinitiated Section 106 of the NHPA consultation with the State Historic Preservation Division (SHPD) in accordance with 36 CFR Part 800. In 1990, the U.S. Environmental Protection Agency (EPA) designated the DOH to act on EPA's behalf, pursuant to 36 CFR §800.2 (c) (4), when initiating Section 106 of the NHPA process in connection with projects funded under the Hawai'i Clean Water State Revolving Fund (CWSRF). The DOH is providing funding under the CWSRF to the County of Kauai for the Lihue Aerated Solids Contact Tank Improvement. The proposed project will utilize federal

funding and is considered an undertaking, as defined by Section 106 of the NHPA, 54 U.S.C. §306101 et seq., and 36 CFR Part 800.

The undertaking consists of upgrading the headworks and the aerated solids contact tank at the Līhuʻe Wastewater Treatment Plant (WWTP) to improve service reliability within the Līhuʻe area. The modification to the headworks will include removing a portion of a concrete wall and reinforcing the remaining wall. The modifications to the aerated solids contact tank will include replacing the existing diffusers, air piping, and effluent baffles with new equipment. The improvements will also include the installation of new instrumentation and control valves. All equipment will be replaced or installed in a similar footprint to the existing equipment. All construction activities will be within the 5.0 acre Līhuʻe WWTP parcel (TMK (4) 3-5-001:030).

The DOH has engaged SHPD to determine the presence of potential sites of historic importance within the vicinity of the project area as well as the potential impact of the project on such sites, if present.

JOSH GREEN, M.D.
GOVERNOR OF HAWAIʻI
KE KIAʻĀINA O KA MOKUʻĀINA ʻO HAWAIʻI

KENNETH S. FINK, MD, MGA, MPH
DIRECTOR OF HEALTH
KA LUNA HOʻOKELE

STATE OF HAWAII
DEPARTMENT OF HEALTH
KA ʻOIHANA OLAKINO
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

59-31 S106 ltr (resubmitted - APE&Scope changes) SHPD.docx

December 3, 2024

Jessica L. Puff, Administrator
State of Hawaiʻi, Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Boulevard, Rm. 555
Kapolei, HI 96707
Submitted via: SHPD HICRIS

Dear Ms. Puff:

Subject: National Historic Preservation Act (NHPA)
Request to Initiate Section 106 Consultation
Lihue Aerated Solids Contact Tank Improvement
Clean Water State Revolving Fund (CWSRF) Project No. C150059-31
Kalapaki Ahupuaʻa, Puna District, Island of Kauaʻi, Hawaiʻi
TMK: (4) 3-5-001:030
State Historic Preservation Division (SHPD) Project No. 2024PR00799

On behalf of the Environmental Protection Agency (EPA), the State of Hawaiʻi Department of Health (DOH) requests to reinitiate Section 106 consultation with the State Historic Preservation Officer (SHPO) for the proposed Lihue Aerated Solids Contact Tank Improvement project located in Kalapaki Ahupuaʻa, Puna District, Island of Kauaʻi, Hawaiʻi.

The proposed project may be eligible to utilize federal funding that is administered by the DOH through CWSRF and will be considered a federal action and undertaking, as defined by Section 106 of the NHPA of 1966 (as amended 2014), Title 54 of the United States Code (54 USC) Section 306108, and Title 36 of the Code of Federal Regulations (36 CFR) Part 800.

The EPA has authorized the DOH to act on behalf of the EPA regarding NHPA Section 106 notification and consultation. This letter is to request to reinitiate the Section 106 consultation process with the SHPO and State Historic Preservation Division (SHPD) in accordance with 36 CFR, Section 800.3.

The DOH may provide funding under the CWSRF to the County of Kauaʻi (COK), Department of Public Works for the Lihue Aerated Solids Contact Tank Improvement project.

Overview of Undertaking

The project would upgrade the headworks and the aerated solids contact tank at the Līhuʻe Wastewater Treatment Plant (WWTP) to improve service reliability within the Līhuʻe area. The

modification to the headworks will include removing a portion of a concrete wall and reinforcing the remaining wall. The modifications to the aerated solids contact tank will include replacing the existing diffusers, air piping, and effluent baffles with new equipment. The improvements will also include the installation of new instrumentation and control valves. All equipment will be replaced or installed in a similar footprint to the existing equipment. All construction activities will be within the 5.0 acre Līhuʻe WWTP parcel (TMK (4) 3-5-001:030). See *Attachment A* for the draft drawings of the proposed work.

Area of Potential Effect (APE)

The proposed APE is approximately 5.0 acre (TMK (4) 3-5-001:030). The modification to the headworks requires no ground disturbance and will remain within the existing system's footprint. Construction activities associated with the upgrade of the aerated solids contact tank involve trench excavation, air piping installation, duct bank installation, backfilling, and returning the surface to the original grade. The excavation for the pipe will be approximately 4-feet deep, 3-feet wide, and 48-linear feet long. The excavation of the duct bank will be approximately 4-feet deep, 2-feet wide, and 108-linear feet long. See *Attachment B and C* for the APE and TMK Map and site photos.

Cultural, Historical, and Archaeological Background

The project area is in the Līhuʻe neighborhood of Kauaʻi in the moku (traditional Hawaiian District) of Puna, and the ahupuaʻa (traditional land division) of Kalapakī. The ahupuaʻa of Kalapakī is a very old land division that was permanently inhabited and intensively used in Pre-Contact Hawai'i. The coastal zones were the locus for permanent habitation and numerous trails. There were fishponds at Kalapakī, and intensive agriculture within the valley floodplain of Nāwiliwili River. The dryland areas contained native forest and were cultivated with crops of wauke, sweet potatoes, and gourds. Many features of the landscape are described in legends and historic documents. With the emergence of the sugar industry in the 1800s, Līhuʻe became the central city of the island with the construction of sugar plantations and a large sugar mill.

Topography in the project area is slightly sloped with elevations ranging from 125 to 130 feet above mean sea level. The project area is approximately 0.6 miles inland from the coastline. The soils within the APE consist of Līhuʻe silty clay, 0-8% slope, Līhuʻe silty clay, 25-40% slope, eroded, and Līhuʻe gravelly silty clay, 0-8% slope. Based on as-built research, the treatment plant has been subjected to major development with various projects in 1981, 1997, 2002, and 2019.

Previous Archaeological Research

Eight studies have taken place in the vicinity of the proposed undertaking. In 1980, personnel of Archaeological Research Center Hawaii, Inc. completed preliminary archaeological monitoring of two parcels in Ninini Point area, Kalapaki, Puna. Both parcels were examined for archaeological remains and/or historic remains, but none were found.

An archaeological survey was completed in a portion of coastal land in Kalapaki (Stride and Hammatt, 1988). No archaeological sites were identified.

McMahon (2005) conducted a Historic Preservation Review for the Kauai Development LLC/KD Golf Ownership LLC, for the following TMKs: (4) 3-5-01:27, (4) 3-5-01:165, (4) 3-5-01:168, (4) 3-5-01:169, (4) 3-5-01:170, (4) 3-5-01:171, (4) 3-5-01:172, and (4) 3-5-01:173. There were no historic properties present because intensive cultivation has altered the land and an archaeological assessment found no historic properties.

Altizer and Hammatt (2014) completed an archaeological inventory survey report for the Nawiliwili-Ahukini Bike Path Project. The report found a total of 15 historic properties within the project area, including two habitation terraces, an activity area, and a possible burial mound. The historic properties identified as part of this survey are located along the coastline of Ninini and Ahukini Point, which is over 1,000 feet from the Līhuʻe WWTP property.

An archaeological inventory survey was conducted for Island Helicopters Kauaʻi, Inc. for a proposed administration and customer service building. Previous records have indicated a survey was conducted for the Līhuʻe airport improvements in 2006 (Barnes et al 2006), which shows the project area has been developed and paved for airport use. Based on the previous land disturbance and lack of historic properties in the surrounding area, there are no historic properties in the area (Naone, 2015).

Summary of Historic Properties in the Vicinity of the APE

To the knowledge of the COK, there are multiple historic properties located within the APE. According to as-built research the Aerated Solids Contact Tank, Chlorine Contact Tank, Sludge Drying Beds, Digester Tanks, and Control Building were constructed and put into service in 1966. Based on the definition of a historic property in HRS 6E-2, the Aerated Solid Contact Tank, Chlorine Contact Tank, Sludge Drying Beds, Digester Tanks, and Control Building qualifies as a historic property.

The Aerated Solids Contact Tank, Chlorine Contact Tank, Sludge Drying Beds, Digester Tanks, and Control Building are not registered on the Hawai'i Register of Historic Places, nor on the National Registers of Historic Places. It does not appear that the Aerated Solids Contact Tank Chlorine Contact Tank, Sludge Drying Beds, Digester Tanks, and Control Building are significant historic properties.

The COK conducted archival research of the Environmental Review Program database of environmental assessments (EAs) and the environmental impact statements (EISs) to identify historic properties within or adjacent to the project area. The COK reviewed EAs and EISs which included documents pertaining to the Līhuʻe Airport (State of Hawaii, Department of Transportation, Airport Division, 2018), Nawiliwili-Ahukini Bike Path (State of Hawaii, Department of Transportation, Highways Division, 2017), Nawiliwili Harbor (State of Hawaii, Department of Transportation, Harbor Division, 2017), and Līhuʻe WWTP (County of Kauai, Department of Public Works, Division of Wastewater Management, 2007). The COK determined that although there were some significant historic properties identified within the adjacent parcels none of them are located near the WWTP and will not be impacted by the project.

The COK also asserts that the ground surface within Līhuʻe WWTP is no longer original. Significant construction activities were completed at this facility in 1981, 1997, 2002, and 2019 which has subjected the property to major development. The ground has been previously disturbed to the extent that no subsurface archaeological sites are likely to exist. The extent of previous surface and subsurface disturbances suggests that no intact buried archaeological material is likely to be encountered during ground disturbances associated with the project.

Consultations

Section 106 consultation letters have also been sent to Native Hawaiian organizations, consulting parties, and/or interested persons that might attach significance to this area and have invited them to participate in the process. The mailing list is provided in *Attachment D*.

We welcome any comments that you may have on this project's proposed improvements.

We are particularly interested in any information you may have on the historic and cultural sites that have been recorded in the area. In addition, if you are acquainted with any persons or organizations that are knowledgeable about the proposed project area or any descendants with ancestral, lineal, or cultural ties to, cultural knowledge or concerns for, and/or cultural or religious attachment to the proposed project area, then we would appreciate receiving their names and contact information.

We would appreciate a written response within thirty (30) calendar days from receipt of this letter. Please address any written comments to email: chane.hayashida@doh.hawaii.gov or the following address:

Attn: Chane Hayashida
Department of Health, Wastewater Branch
2827 Waimano Home Road, Room 207
Pearl City, HI 96782

Should you have any questions, please contact Chane Hayashida at (808) 586-4294.

Sincerely,

JONATHAN NAGATO, P.E., CHIEF
Wastewater Branch

Attachments

DO/CH:jn

c: Donald Fujimoto (via email dfufimoto@kauai.gov)
Troy Tanigawa (via email TTanigawa@kauai.gov)
Donn Kakuda (via email dkakuda@kauai.gov)
Stephanie Chin (via email skchin@BrwnCald.com)
Joshua Schwartzlow (via email JSchwartzlow@BrwnCald.com)

Attachment A

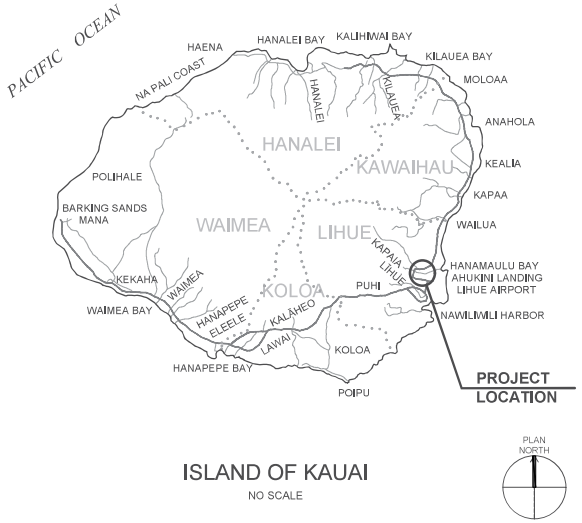
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

TMK: 3-5-001:030

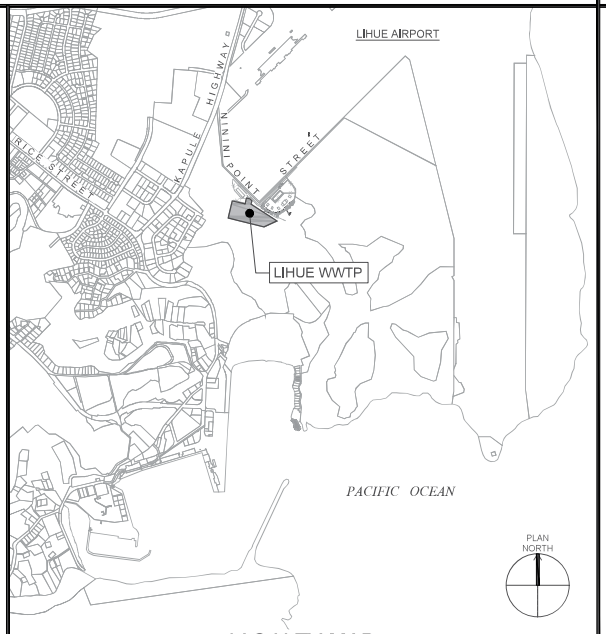
LIHUE, KAUAI, HAWAII
DIVISION OF WASTEWATER MANAGEMENT
DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI

PREPARED BY:
BROWN AND CALDWELL
737 BISHOP STREET, SUITE 3000
PACIFIC GUARDIAN CENTER - MAUKA TOWER
HONOLULU, HI 96813-4020

LOCATION MAPS



ISLAND OF KAUAI
NO SCALE



VICINITY MAP
NO SCALE

APPROVALS

COUNTY ENGINEER — DATE
DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI

CHIEF — DATE
WASTEWATER MANAGEMENT DIVISION
DEPARTMENT OF PUBLIC WORKS
COUNTY OF KAUAI

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

DRAWING T001 SHEET 1 OF 50

LIHUE AERATOR SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319806\156839-GEN-T001.dwg PLOT DATE: Friday, March 22, 2024 12:59:42 PM CAD USER: YOLANDA NODA

INDEX OF DRAWINGS

SHEET	DWG NO.	DESCRIPTION
		GENERAL
1	T001	TITLE, LOCATION AND VICINITY MAPS
2	G001	INDEX OF DRAWINGS
3	G002	ABBREVIATIONS
4	G003	GENERAL CONSTRUCTION NOTES
5	G004	CONSTRUCTION NOTES
6	G005	LOCATION MAP
		CIVIL
7	C001	EROSION CONTROL BMP NOTES
8	C002	YARD PIPING PLAN AND CIVIL DETAIL
9	C003	AIR SUPPLY PIPE PROFILE
10	C004	EROSION AND SEDIMENT CONTROL PLAN
		STRUCTURAL
11	S001	GENERAL NOTES AND TYPICAL DETAILS
12	S101	PARTIAL HEADWORKS PLAN AND SECTION
13	S102	TYPICAL DETAILS
		P&ID
14	P001	LEGEND AND SYMBOLS
15	P101	AERATED SOLIDS CONTACT TANK - 1
16	P102	AERATED SOLIDS CONTACT TANK - 2
		MECHANICAL
17	M001	STANDARD SYMBOLS AND NOTES
18	M002	MISCELLANEOUS DETAILS
19	M101	SOLIDS CONTACT TANKS DEMOLITION PLAN
20	M102	SOLIDS CONTACT TANKS GROUND LEVEL PLAN
		ELECTRICAL
21	E001	ELECTRICAL LEGEND - 1
22	E002	ELECTRICAL LEGEND - 2
23	E003	ELECTRICAL NOTES AND ABBREVIATIONS
24	E004	ELECTRICAL DETAILS - 1
25	E005	ELECTRICAL DETAILS - 2
26	E101	PARTIAL ELECTRICAL SITE PLAN
27	E201	BLOWER ROOM POWER AND CONTROL
28	E202	AERATED SOLIDS CONTACT TANKS POWER AND CONTROL PLAN
29	E401	ONE LINE DIAGRAM
30	E402	PANEL SCHEDULE
31	E403	CIRCUIT SCHEDULE
		INSTRUMENTATION
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34	I102	IOC POWER DISTRIBUTION
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38	I106	ANALOG INPUT MODULE 2A
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42	I110	ANALOG INPUT MODULE 1C
43	I111	ANALOG INPUT MODULE 2A
44	I112	ANALOG INPUT MODULE 2B
45	I113	ANALOG INPUT MODULE 2C
46	I114	ANALOG INPUT MODULE 3A
47	I115	ANALOG INPUT MODULE 3B
48	I116	ANALOG INPUT MODULE 3C
49	I117	ANALOG OUTPUT MODULE 1A
50	I118	ANALOG OUTPUT MODULE 1B

TMK: 3-5-001:030

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15009-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: Bruce L Ball

4/30/2026
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
INDEX OF DRAWINGS

DESIGNED BY: J.SCHWARTZLOW
DRAWN BY: Y.NODA
APPROVED:
CHIEF

CHECKED BY: B.BALL
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

DRAWING G001 SHEET 2 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

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ABBREVIATIONS

A	
A	AERATION
A, AMP	AMP(S), AMPERE(S)
AB	ANCHOR BOLT
ACAMS	ACCESS CONTROL AND MONITORING SYSTEM
ACI	AMERICAN CONCRETE INSTITUTE
ACK	ACKNOWLEDGE
AF	FRAME AMPS
AFF	ABOVE FINISH FLOOR
AHAP	AS HIGH AS POSSIBLE
AIC	AMPS INTERRUPTING CAPACITY, SYMM
AL	ALUMINUM OR ALUM
AM	AUTO/MAIN
ARCH	ARCHITECT(URAL)
AS	SENSOR AMPERES
ASYM	ASYMMETRICAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWS	AMERICAN WELDING SOCIETY
B	
BAT	BATTERY
BC	BARE COPPER
BFE	BIOFILTER EFFLUENT
BKR	BREAKER
BLDG	BUILDING
BLW	BLOWER
BMP	BEST MANAGEMENT PRACTICES
BOT	BOTTOM
BP, BYP	BYPASS
C	
C	CONDUCTOR, CONDUIT
CAT	CATALOG
CB	CIRCUIT BREAKER
CFR	CODE OF FEDERAL REGULATIONS
CHNL	CHANNEL
CKT	CIRCUIT
CL	CENTERLINE, CLOSE
CL2	CHLORINE
CLG	CEILING
CLR	CLEAR
CM	CENTIMETERS
CMAT	COMPUTER/MANUAL/AUTO/TRACKING
CND	CONDUIT
CNTL	CONTROL
C.O.	CONDUIT ONLY
CO	COMPANY
COL	COLUMN
COMB	COMBUSTIBLE GAS
CONC	CONCRETE
COND	CONDUCTIVITY
COSA	CONTRACTOR OPERATIONS AND STAGING AREA
COUNTY	COUNTY OF KAUAI
CPT	CONTROL POWER TRANSFORMER
CR	CRACK REPAIR, CONTROL RELAY
CS	CURRENT SENSOR
CSM	COLLECTION, SERVICE AND MAINTENANCE
CT	CURRENT TRANSFORMER
CU	COPPER
D	
D	DIAMETER, DEPTH, OR DRAIN
DAFT	DISSOLVED AIR FLOATATION THICKENER
DB	DUCT BANK, DIRECT BURIAL
DC	DIRECT CURRENT, DATA CABLE
DEC	DECREASE
DEMO	DEMOLITION
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGRAM
DIP	DUCTILE IRON PIPE
DISC	DISCONNECT
DO	DISSOLVED OXYGEN
DOC	DEWATERING ODOR CONTROL
DPW	DEPARTMENT OF PUBLIC WORKS
DS	DISCONNECT SWITCH
DWG(S)	DRAWING(S)
E	
E, EA	EACH
EC	EMPTY CONDUIT
ECP	EQUIPMENT CONTROL PANEL
EDB	ELECTRICAL DUCTBANK
EG	EXISTING GRADE, ENGINE GENERATOR SET
EGC	ELECTRICAL GROUNDING CONDUCTOR
EL	ELEVATION
EMB	EMBEDDED
EMCB	ELECTRICAL MAIN CONTROL BOARD
EMER	EMERGENCY
EMH	ELECTRICAL MANHOLE
ENCL	ENCLOSURE/ENCLOSED
EP	EXPLOSION PROOF
EPB	ELECTRICAL PULL BOX
EQUIP	EQUIPMENT
ESP	EMERGENCY STOP
ETC	ET CETERA
ETM	ELAPSED TIME METER
EX, EXIST	EXISTING
EW	EACH WAY
F	
FBP	FOR BID PURPOSES
FDR	FEEDER
FL	FLUORESCENT
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE CONDUIT
F.O.	FAIL OPEN
FO	FIBER OPTIC
F/R	FORWARD/REVERSE
F/S	FAST SLOW
FTG	FOOTING
FU	FUSE
FUT	FUTURE
FWD	FORWARD
G	
G, GND	GROUND
GDR	GROUNDING RESISTOR
GEC	GROUND ELECTRODE CONDUCTOR
GF	GROUND FAULT
GFI	GROUND FAULT INTERRUPTER
GPM	GALLONS PER MINUTE
GRS	GALVANIZED RIGID STEEL
H	
H	HIGH
HAR	HAWAII ADMINISTRATIVE RULES
HB	HOSE BIBB
HD	HEAVY DUTY
HDG	HOT DIPPED GALVANIZED
HDPE	HIGH DENSITY POLYETHYLENE
HGT	HEIGHT
HH	HANDHOLE
HHG	HANDHOLE GROUP
HID	HIGH INTENSITY DISCHARGE
HLOA	HIGH/LOW/OFF/AUTO
HMI	HUMAN MACHINE INTERFACE
HOA	HAND/OFF/AUTO
HOAL	HAND/OFF/REMOTE
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HZ	HERTZ (CYCLES PER SECOND)
I	
IBC	INTERNATIONAL BUILDING CODE
ICOM	INTERCOM
ID	INSIDE DIAMETER, IDENTIFICATION
IMC	INTERMEDIATE METAL CONDUIT
IN	INCH
INC	INCORPORATION, INCREASE
INCAND	INCANDESCENT
INTLK	INTERLOCK
INST	INSTANTANEOUS
INV	INVERT
IOC	INPUT OUTPUT CABINET
I/O	INPUT-OUTPUT
IPB	INSTRUMENT PULLBOX
J	
JB	JUNCTION BOX
JOA	JOG/OFF/AUTO
K	
KA	KILO AMPERE
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAR	KILOVOLT-AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT-HOUR
L	
L	LENGTH
LAN	LOCAL AREA NETWORK
LB(S)	POUND(S)
LC	LIGHTING CONTACTOR
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET
LHH	LOW VOLTAGE HANDHOLE
LL	LEAD/LAG
LMH	LOW VOLTAGE MANHOLE
LOR	LOCAL/OFF/REMOTE
LP	LIGHTING PANEL
LT	LONG TIME
LTG	LIGHTING
LV	LOW VOLTAGE
L/R	LOCAL/REMOTE
M	
M	METER
MA	MILLIAMPERE
MAX	MAXIMUM
MBS	MANUAL BYPASS SWITCH
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE, METAL HALIDE
MIC	MICROPHONE
MIN	MINIMUM
MIS	MANAGEMENT INFORMATION STATION
MISC	MISCELLANEOUS
ML	MIXED LIQUOR
MM	MILLIMETER
MMH	MEDIUM VOLTAGE MANHOLE
MOV	MOTOR OPERATED VALVE
MPC	MINI POWER CENTER
MSS	MANUFACTURERS STANDARD SOCIETY
MTS	MANUAL TRANSFER SWITCH
MV	MILLIVOLT, MEDIUM VOLTAGE
MVMC	MEDIUM VOLTAGE MOTOR CONTROL
M/A LS	MANUAL/AUTO LOADING STATION
N	
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEUT, N	NEUTRAL
NF	NON-FUSED
NIC	NOT IN CONTRACT
NO	NUMBER OR NORMALLY OPEN
NOM	NOMINAL
NP	NAMEPLATE
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NPS	NOMINAL PIPE SIZE
NS	NEAR SIDE
NTS	NOT TO SCALE
N/A	NOT APPLICABLE
O	
OC	ON CENTER
OCA	OPEN/CLOSE/AUTO
OCC	OPERATION CONTROL CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OIS	OPERATION INTERFACE STATION
OL	OVERLOAD
OP	OPEN
OSC/LP	OPEN/STOP/CLOSE WITH LOCAL/REMOTE SELECT
OT	OIL TIGHT
OWS	OPERATOR WORKSTATION
P	
P	POLE, PHASE
PA	PAUSE
PAL	LOW PRESSURE
PAVT	PAVEMENT
PB	PUSH BUTTON, PULLBOX
PBD	PANELBOARD
PCP	PROCESS CONTROL PANEL
PF	POWER FACTOR
pH	pH
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PMM	POWER METERING MODULE
PNL	PANEL
POT	POTENTIOMETER
PP	POWER PANEL
PR	PAIR
PRI	PRIMARY
PSI	POUNDS PER SQUARE INCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
Q	
QSB	QUARTZ STANDBY
R	
R	RADIUS
RAS	RETURN ACTIVATED SLUDGE
RC	REINFORCED CONCRETE
RCPT	RECEPTACLE
RDY	READY
REF	REFERENCE
REQD, REQ'D, REQ'D	REQUIRED
REINF	REINFORCE
RE-STL	REINFORCING STEEL
REV	REVERSE
RMS	ROOT MEAN SQUARE
RNG	RUNNING
ROF	REVERSE/OFF/FORWARD
RS	RAW SEWAGE
RST	RESET
RSS	RETURN SECONDARY SLUDGE
RTD	RESISTANCE TEMPERATURE DETECTOR
RTU	REMOTE TERMINAL UNIT
RVSS	REDUCE VOLTAGE SOLID STATE STARTER
RX	RECEIVE
S	
S	SEWER
SA	SURGE ARRESTOR
SC	SECONDARY CLARIFIER
SCADA	SUPERVISORY CONTROL AND DATE ACQUISITION
SCR	SILICON CONTROLLED RECTIFIER
SD	SMOKE DETECTOR
SE	SECONDARY EFFLUENT
SEC	SECONDARY
SEL	SELECTOR
SF	SQUARE FOOT/FEET
SG	SIGNAL GROUND
SHH	SIGNAL HANDHOLE
SL	SLOPE
SMH	SEWER MANHOLE
SO2	SULFUR DIOXIDE
SP	STOP
SPEC, SPECS	SPECIFICATIONS
SPD	SURGE PROTECTION DEVICE
SPKR	SPEAKER
SQ	SQUARE
SSC	SECONDARY SCUM
SST, SSTL	STAINLESS STEEL
ST	START, SHORT TIME
STA	STATION
STD	STANDARD
STP	SHIELDED TWISTED PAIR
SUB	SUBSTATION
SW	SWITCH
SWBD	SWITCHBOARD
SWG	SWITCHGEAR
SYMM	SYMMETRICAL
SYS	SYSTEM
T	
T	TOP
TB	TERMINAL BOX
TBL	TROUBLE
TCP	TEST/CLOSE/PC
TD	TANK DRAIN
TEMP	TEMPERATURE
TFR	TRANSFORMER,
TJB	TRANSIT JUNCTION BOX
TRI	TRIAD
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TX	TRANSMIT
TYP	TYPICAL
T/S	TEST/NORMAL/SILENCE
U	
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTABLE POWER SUPPLY
UV	ULTRAVIOLET
U/G	UNDERGROUND
V	
V	VOLT
VA	VOLTAMPERE
VAR	VOLTAMPERE REACTIVE
VC	VACUUM CONTACTOR
VCP	VENDOR CONTROL PANEL
VDC	VOLTS DIRECT CURRENT
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VND	VENDOR
W	
W	WATT, WIRE, WIDE
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WG	WITH GROUND
WN	NONPOTABLE WATER
W/O	WITHOUT
WP	WEATHERPROOF
WR	PLANT WATER
WWTP	WASTEWATER TREATMENT PLANT
X	
XFMR	TRANSFORMER
XMTR	TRANSMITTER
XP	EXPLOSION PROOF
Z	
Z	IMPEDANCE

TMK: 3-5-001:030

ONE INCH
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REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
ABBREVIATIONS

DESIGNED BY: J.SCHWARTZLOW
DRAWN BY: Y.NODA
APPROVED:
CHIEF

CHECKED BY: B.BALL
SECTION HEAD:
BRANCH HEAD:
DATE

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15009-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE
4/30/2026
EXPIRATION DATE OF THE LICENSE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

DRAWING G002 SHEET 3 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319806\159839-GEN-G002.dwg PLOT DATE: Tuesday, November 5, 2024 5:18:20 PM CAD USER: YOLANDA NODA

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL PERFORM APPLICABLE CONSTRUCTION WORK IN ACCORDANCE WITH THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1984 AS AMENDED, THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1986 OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUAI, AS AMENDED, AND THE HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION, 2005, OF THE DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, STATE OF HAWAII, AS AMENDED.

2. THE UNDERGROUND UTILITY LINES AND/OR STRUCTURES KNOWN TO EXIST BY THE ENGINEER FROM HIS/HER SEARCH OF RECORDS ARE INDICATED ON THE PLANS. UNLESS OTHERWISE NOTED, ALL LOCATIONS OF UNDERGROUND UTILITY LINES AND/OR STRUCTURES ARE APPROXIMATE. THE INFORMATION SHOWN, THEREFORE, MAY OR MAY NOT BE REPRESENTATIVE OF ACTUAL FIELD CONDITIONS. THE UNDERGROUND UTILITY LINES AND/OR STRUCTURES MAY OR MAY NOT BE PRESENT AT THE LOCATIONS SHOWN OR OTHER UNDERGROUND UTILITY LINES AND/OR STRUCTURES NOT SHOWN MAY BE PRESENT. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE UNDERGROUND UTILITY LINES AND/OR STRUCTURES AND EXERCISE PROPER CARE WHEN WORKING IN THE AREA. PROTECT EXISTING UTILITIES AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO THEM SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.

3. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL NOTIFY ALL APPLICABLE AGENCIES AND HAVE THEM LOCATE THEIR RESPECTIVE UTILITY LINES IN THE PROJECT AREA. THE CONTRACTOR SHALL BE HELD RESPONSIBLE AND SHALL PAY FOR ALL DAMAGES TO AND MAINTENANCE AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES.

4. EXISTING CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS ARE APPROXIMATE AND OBTAINED FROM RECORD DRAWINGS. PROSPECTIVE CONTRACTORS SHALL VISIT THE PREMISES AND THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL WORK DETAILS AND CONDITIONS BEFORE SUBMITTING BID. REASONABLE MODIFICATIONS TO INDICATED DIMENSIONS AND ARRANGEMENTS TO SUIT ACTUAL JOB CONDITIONS SHALL NOT CONSTITUTE BASIS FOR REQUESTING OF ADDITIONAL FUNDS FROM THE COUNTY.

5. PRIOR TO ORDERING MATERIALS AND EQUIPMENT, THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, MATERIALS, SIZES, AND DIMENSIONS THAT AFFECT HIS WORK. NOTIFY THE OFFICER-IN-CHARGE OF ALL DISCREPANCIES IN WRITING PRIOR TO PROCUREMENT.

6. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY BETWEEN THE EXISTING CONDITION AS SHOWN ON THE DRAWINGS AND IN THE FIELD SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OFFICER-IN-CHARGE FOR CLARIFICATION. CONTRACTOR SHALL NOT PROCEED WITH ANY FURTHER WORK UNTIL WRITTEN NOTIFICATION IS RECEIVED FROM THE OFFICER-IN-CHARGE. OTHERWISE THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY COST INVOLVED IN CORRECTION OF CONSTRUCTION COMPLETED DUE TO SUCH DISCREPANCIES.

7. ALL WORK CALLED FOR ON THE PLANS AND NOT ITEMIZED IN THE BID SCHEDULE AND ALL WORK NOT CALLED FOR BUT REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT, SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE CONTRACTOR'S BID PRICE.

8. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL OR BETTER CONDITION ALL IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION, INCLUDING PAVEMENTS, EMBANKMENT, LANDSCAPING, STRUCTURES, UTILITIES, ETC. UNLESS PROVIDED FOR SPECIFICALLY IN THE PROPOSAL, DEMOLITION AND RESTORATION OF EXISTING ITEMS SHALL BE INCIDENTAL AND INCLUDED WITHIN THE CONTRACTOR'S BID PRICE.

9. PAYMENT FOR RESTORATION OF PAVEMENT AND OTHER CONCRETE STRUCTURES WILL NOT BE MADE DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE IN THE VARIOUS ITEMS OF THE BID.

10. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR WILL PREPARE AND CERTIFY AS-BUILT DRAWINGS THAT REPRESENT ALL CHANGES TO THE ORIGINAL APPROVED CONSTRUCTION PLANS. THE OWNER'S LICENSED DESIGN ENGINEER WILL CERTIFY THAT ALL OF THE CHANGES SHOWN ON THE AS-BUILT DRAWINGS HAVE BEEN APPROVED BY THE DESIGN ENGINEER AND MEET MINIMUM STANDARDS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ORIGINAL APPROVED CONSTRUCTION PLANS. THE DEPARTMENT OF PUBLIC WORKS MAY REQUIRE EVERY REASONABLE FACILITY TO VERIFY ANY IMPROVEMENT ON THE FINAL AS-BUILT PLANS PRIOR TO THE CERTIFICATION BY THE OWNER'S ENGINEER, INCLUDING BUT NOT LIMITED TO HAVING A LAND SURVEYOR LICENSED IN THE STATE OF HAWAII CONFIRM AND CERTIFY THE FINAL LOCATION AND ELEVATIONS.

11. NON-COMPLIANCE TO ANY OF THE CONTRACT REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHOULD COMMENCE IMMEDIATELY. ALL COSTS INCURRED AS A RESULT OF THE CONTRACTOR'S NON-COMPLIANCE SHALL BE BILLED TO THE CONTRACTOR.

12. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY AND FOR WORKER PROTECTION. FURTHERMORE, VIOLATORS SHALL BE SUBJECTED TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.

13. ALL EXISTING UTILITIES, SERVICE LINES, SUPPLY LINES AND COMMUNICATION LINES SHALL REMAIN IN PLACE AND IN SERVICE THROUGHOUT THE TERM OF THE PROJECT. IF RELOCATION OF EXISTING FACILITIES IS REQUIRED FOR THE CONTRACTOR'S CONVENIENCE, INTERRUPTION OF SERVICE SHALL BE KEPT TO A MINIMUM AND SHALL BE DONE AT THE CONTRACTOR'S EXPENSE AND ONLY WITH THE APPROVAL OF THE OFFICER-IN-CHARGE.

14. THE CONTRACTOR SHALL SECURE ALL NECESSARY LICENSES, PERMITS, APPROVALS, AND CLEARANCES, AND SHALL PAY ALL APPLICATIONS, LICENSES, PERMITS, AND INSPECTION FEES REQUIRED FOR THE WORK AND SHALL GIVE ALL NOTICES NECESSARY FOR AND INCIDENTAL TO THE PROPER AND LAWFUL EXECUTION OF THE WORK.

15. THE CONTRACTOR SHALL PROVIDE TEMPORARY SECURITY COVERS OVER ANY AND ALL OPENINGS CREATED AS A CONSEQUENCE OF THE PROJECT WORK. THE COVERING SHALL BE ADEQUATE TO PROTECT ALL NECESSARY EQUIPMENT FROM WEATHER. SECURITY COVERS SHALL BE PROVIDED WHENEVER THE CONTRACTOR IS AWAY FROM THE PROJECT SITE AND/OR AT THE DIRECTION OF THE OFFICER-IN-CHARGE.

16. CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE, IDENTIFYING START AND FINISH OF EACH MAJOR TASK, INCLUDING OUTAGES. THE WORK SHALL BE SEQUENCED TO MINIMIZE INTERRUPTION OF SERVICE. SUBMIT SCHEDULE TO THE OFFICER-IN-CHARGE PRIOR TO START OF WORK. OUTAGES SHALL BE APPROVED BY THE OFFICER-IN-CHARGE.

17. THE CONTRACTOR SHALL CONDUCT OPERATIONS SO AS TO OFFER THE LEAST POSSIBLE OBSTRUCTIONS AND INCONVENIENCE TO THE PLANT OPERATORS AND SHALL HAVE UNDER CONSTRUCTION NO GREATER LENGTH OR AMOUNT OF WORK THAT HE CAN EXECUTE PROPERLY WITH DUE REGARD TO THE RIGHTS OF THE PLANT OPERATORS.

18. THE CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING WITH THE OFFICER-IN-CHARGE BEFORE COMMENCING ANY WORK.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OVERTIME AND/OR NIGHT WORK PAYMENTS FOR THE COUNTY'S STAFF AND INSPECTION PERSONNEL INCLUDING CONSULTANTS, WHEN THE CONTRACT REQUIRES OVERTIME OR NIGHT WORK TO BE PERFORMED, OR DIRECTS THE CONTRACTOR TO WORK ADDITIONAL SHIFTS OR OVERTIME FOR COUNTY'S CONVENIENCE.

20. IF SYSTEM CONDITIONS REQUIRE NON-EMERGENCY NIGHTTIME WORK DURING THE AUTUMN SEABIRD FALL SEASON (SEPTEMBER 15 THROUGH DECEMBER 15) AND THE NENE BREEDING SEASON (OCTOBER THROUGH MARCH), USE OF LIGHTING SHALL BE RESTRICTED BETWEEN 9:00 P.M. TO 4:30 A.M. IF LIGHTING OF THE WORK AREA IS REQUIRED IN SUCH SITUATION, ALL LIGHTS SHALL BE SHIELDED (MINIMUM LIGHT SPILL TOWARDS THE SKY) AND DIRECTED DOWNWARDS TO THE MAXIMUM EXTENT PRACTICABLE. MINIMUM REQUIREMENTS FOR LIGHTING BY HIOSH AND OSHA SHALL BE PROVIDED AND ASSURED BY THE CONTRACTOR. THE CONTRACTOR SHALL TRAIN ALL EMPLOYEES WORKING AT NIGHT (RECORDS RETAINED BY THE CONTRACTOR) ON HOW TO HANDLE ANY RETRIEVED DOWNED BIRDS OR NENE AND SHALL HAVE APPROPRIATE EQUIPMENT AS APPROVED BY SAVE OUR SHEARWATERS (SOS) ON SITE TO HOLD AND TRANSPORT ANY RETRIEVED BIRDS OR NENE TO AN SOS FACILITY. THIS REQUIREMENT DOES NOT ALLOW LIGHTING AS MAY BE RESTRICTED BY OTHER GOVERNMENT AGENCIES.

21. PRIOR TO STARTING ANY EXCAVATION ACTIVITIES, THE CONTRACTOR SHALL CONTACT THE HAWAII ONE CALL CENTER AT 1-866-423-7287.

22. PRIOR TO INSTALLATION OF ANY NEW SEWER LINES, DRAIN LINES, MANHOLES, AND STRUCTURES THAT WILL BE TRANSFERRED TO THE COUNTY OR REQUIRED FOR THE SUBDIVISION OF THE PROPERTY, THE CONTRACTOR SHALL HAVE ALL IMPROVEMENTS (MAINS, PIPES, APPURTENANCES AND STRUCTURES) SURVEYED AND STAKED OUT BY A LICENSED PROFESSIONAL LAND SURVEYOR AND THE CONTRACTOR SHALL EXPOSE, VERIFY, AND BACKFILL ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES IN CLOSE PROXIMITY TO CROSSINGS AND CONNECTIONS PRIOR TO EXCAVATION OF PIPELINE TRENCH. CONTRACTOR SHALL PROVIDE THE LICENSED SURVEYOR CUT SHEET AND PROBING INFORMATION TO THE PUBLIC WORKS ENGINEERING CONSTRUCTION ENGINEER FOR REVIEW AND APPROVAL BEFORE MOVING FORWARD WITH INSTALLATION VIA THE SUBMITTAL REVIEW PROCESS.

23. SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS, OR MOUNDS, OR REMAINS SUCH AS ARTIFACTS BURIALS, CONCENTRATION OF SHELL OR CHARCOAL BE ENCOUNTERED DURING THE CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR AND/OR LANDOWNER SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (808-243-5169), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.

24. PURSUANT TO CHAPTER 6E OF THE HAWAII REVISED STATUTES, ALL CONTRACTORS SHALL ENSURE THAT IN THE EVENT THAT ANY HUMAN SKELETAL REMAINS ARE INADVERTENTLY DISCOVERED DURING CONSTRUCTION, THE REMAINS SHALL NOT BE MOVED AND ANY ACTIVITY IN THE IMMEDIATE AREA THAT COULD DAMAGE THE REMAINS OR THE POTENTIAL HISTORIC SITE SHALL CEASE AND THE DEPARTMENT OF LAND AND NATURAL RESOURCES' HISTORIC PRESERVATION DIVISION (TELEPHONE: 808-243-5169), THE APPROPRIATE MEDICAL EXAMINER OR CORONER, AND THE POLICE DEPARTMENT (TELEPHONE: 808-244-6400), SHALL BE CONTACTED.

TMK: 3-5-001:030

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REVISION	DATE	BRIEF	BY	APPROVED

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15009-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: Bruce L Ball

4/30/2026
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
GENERAL CONSTRUCTION NOTES

DESIGNED BY: J.SCHWARTZLOW
DRAWN BY: Y.NODA
APPROVED:
CHIEF

CHECKED BY: B.BALL
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

DRAWING G003 SHEET 4 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319806\159839-GEN-G003.dwg PLOT DATE: Wednesday, November 6, 2024 4:04:11 PM CAD USER: YOLANDA NODA

TEMPORARY CONTRACTOR OPERATIONS AND STAGING AREA NOTES

1. COORDINATE AND CONFIRM LOCATION AND SIZE OF TEMPORARY CONTRACTOR OPERATIONS AND STAGING AREA (COSA) WITH OFFICER-IN-CHARGE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANING AND REMOVAL OF ANY AND ALL SILT AND DEBRIS GENERATED BY CONTRACTOR'S WORK AND DEPOSITED AND ACCUMULATED WITHIN DOWNSTREAM WATERWAYS, DITCHES AND DRAIN PIPES, STORM DRAIN STRUCTURES (CATCH BASINS, MANHOLES, DRAIN INLETS, ETC), AND ON PUBLIC AND PRIVATE ROADWAYS. THE CONTRACTOR AGREES TO REIMBURSE THE COUNTY FOR ALL COSTS EXPENDED IN PERFORMANCE OF THE ABOVE WORK IF REQUIRED OR ANY FINES IMPOSED FOR PUBLIC HEALTH AND SAFETY, OR MADE NECESSARY BY NON-PERFORMANCE BY THE CONTRACTOR.

3. IN ACCORDANCE WITH THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 58.1, "SOLID WASTE MANAGEMENT CONTROL," DEMOLITION AND CONSTRUCTION WASTES SHALL BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE DEPARTMENT OF HEALTH AT AN AUTHORIZED SITE. THE CONTRACTOR SHALL INFORM THE OFFICER-IN-CHARGE OF THE LOCATION(S) OF DISPOSAL SITE(S) FOR THE EXCESS MATERIAL AND COSA FOR THE PROJECT. THE DISPOSAL SITE SHALL COMPLY WITH REVISED ORDINANCES OF THE COUNTY. THE CONTRACTOR SHALL PAY FOR ALL DISPOSAL FEES. THE CONTRACTOR SHALL INSTALL A STABILIZED CONSTRUCTION INGRESS/EGRESS AT ALL REGULARLY-TRAVELED INTERFACES OF UNPAVED AREAS AND PAVEMENTS.

4. THE CONTRACTOR SHALL MINIMIZE THE QUANTITY OF CONSTRUCTION MATERIAL STORED IN THE COSA.

5. UPON COMPLETION OF THE PROJECT, THE EXCESS MATERIAL AT THE COSA SHALL BE REMOVED AND THE SITE SHALL BE RESTORED TO ITS ORIGINAL OR BETTER CONDITIONS.

6. ELEVATED PLATFORMS MAY BE INSTALLED IN THE COSA FOR SOME MATERIALS SO THAT THEY ARE LOCATED ABOVE AND OUT OF STORM WATER RUNOFF.

DEMOLITION NOTES

1. NO BLASTING SHALL BE PERMITTED ON THIS PROJECT.

2. WHEN DEMOLITION IS ADJACENT TO EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SHORING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES FROM DAMAGE.

3. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING WALLS, VAULTS, BUILDING, UTILITIES AND STRUCTURES OUTSIDE OF THE LIMITS OF DEMOLITION. ANY DAMAGE TO THESE ITEMS SHALL BE REPAIRED TO EQUAL, OR BETTER, THAN EXISTING CONDITIONS BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

PUBLIC HEALTH, SAFETY AND CONVENIENCE NOTES

1. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.

2. THE CONTRACTOR, AT HIS/HER OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.

3. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES, AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC.

4. THE CONTRACTOR'S ATTENTION IS DIRECTED TO TITLE 11, ADMINISTRATIVE RULES, CHAPTER 46, PUBLIC HEALTH REGULATIONS, DEPARTMENT OF HEALTH, STATE OF HAWAII "COMMUNITY NOISE CONTROL FOR KAUAI" IN WHICH MAXIMUM ALLOWABLE NOISE LEVELS HAVE BEEN SET. IF THE CONSTRUCTION ACTIVITIES FOR THIS PROJECT WILL EXCEED THE ALLOWABLE NOISE LEVELS, THE CONTRACTOR WILL BE REQUIRED TO OBTAIN A PERMIT FROM THE DIRECTOR OF THE DEPARTMENT OF PUBLIC HEALTH. THE CONTRACTOR SHALL OBTAIN A COPY OF CHAPTER 46 AND BECOME FAMILIAR WITH THE NOISE LEVEL RESTRICTIONS AND THE PROCEDURES FOR OBTAINING A PERMIT FOR CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL CONTROL NOTES

1. THE GENERAL CONTRACTOR OF THE PROJECT SHALL OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE(S) FOR THE FOLLOWING:

   A. STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE (1) ACRE OR MORE, AND
   B. DISCHARGES OF HYDROTESTING EFFLUENT, DEWATERING EFFLUENT, AND WELL DRILLING EFFLUENT TO STATE WATERS.

   IN ACCORDANCE WITH STATE LAW, ALL DISCHARGES RELATED TO PROJECT CONSTRUCTION OR OPERATIONS ARE REQUIRED TO COMPLY WITH STATE WATER QUALITY STANDARDS (HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54). BEST MANAGEMENT PRACTICES SHALL BE USED TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENT, DEBRIS, AND OTHER POLLUTANTS TO STATE WATERS. PERMIT COVERAGE IS AVAILABLE FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH AT HTTP://HEALTH.HAWAII.GOV/CWB. THE OWNER/DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS AS REQUIRED BY LAW.

2. IN ACCORDANCE WITH CHAPTER 11-60.1, AIR POLLUTION CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES (HAR), THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT EFFECTIVE THAT CONTROL MEASURES ARE PROVIDED TO MINIMIZE OR PREVENT ANY VISIBLE DUST EMISSION CAUSED BY THE CONSTRUCTION WORK FROM IMPACTING THE SURROUNDING ARES INCLUDING THE OFF-SITE ROADWAYS USED TO ENTER/EXIST THE PROJECT SITE.

3. IN ACCORDANCE WITH CHAPTER 11-58, SOLID WASTE MANAGEMENT CONTROL, TITLE 11, HAR, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE DEMOLITION WASTE AND CONSTRUCTION WASTE GENERATED BY THE PROJECT ARE DISPOSED OF IN A MANNER OR AT A SITE APPROVED BY THE STATE DEPARTMENT OF HEALTH. DISPOSAL OF ANY OF THESE WASTES BY BURNING IS PROHIBITED.

4. BMPs SHALL BE EMPLOYED AT ALL TIMES TO THE MAXIMUM EXTENT PRACTICABLE TO PREVENT DAMAGE BY SEDIMENTATION, EROSION OR DUST TO STREAMS, WATERCOURSES, NATURAL AREAS, AND THE PROPERTY OF OTHERS.

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15009-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: Bruce L Ball

4/30/2026
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
CONSTRUCTION NOTES

DESIGNED BY: J.SCHWARTZLOW
DRAWN BY: Y.NODA
APPROVED:
CHIEF

CHECKED BY: B.BALL
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

TMK: 3-5-001:030

DRAWING G004 SHEET 5 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

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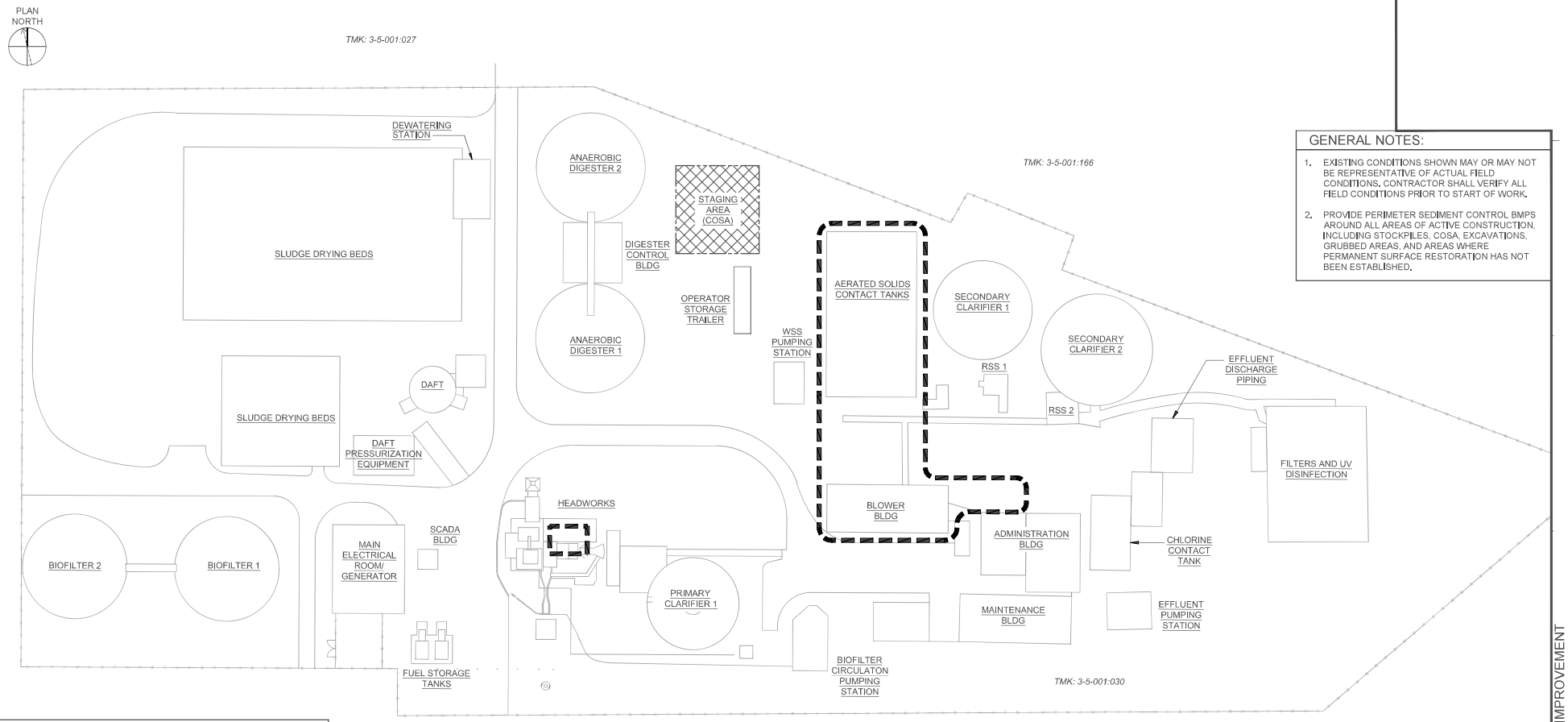


GENERAL NOTES:

1. EXISTING CONDITIONS SHOWN MAY OR MAY NOT BE REPRESENTATIVE OF ACTUAL FIELD CONDITIONS, CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS PRIOR TO START OF WORK.
2. PROVIDE PERIMETER SEDIMENT CONTROL BMPS AROUND ALL AREAS OF ACTIVE CONSTRUCTION, INCLUDING STOCKPILES, COSA, EXCAVATIONS, GRUBBED AREAS, AND AREAS WHERE PERMANENT SURFACE RESTORATION HAS NOT BEEN ESTABLISHED.

LEGEND

- AREAS OF WORK
- CENTER LINE
- NATURAL GROUND OR FINISHED GRADE
- EXISTING (SCREENED)
- EXISTING FENCELINE
- NEW FACILITIES
- EXISTING TO BE REMOVED
- STAGING AREA

LOCATION MAP

SCALE: 1" = 30'

0 30 60
SCALE IN FEET

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
LOCATION MAP

DESIGNED BY: J.SCHWARTZLOW
DRAWN BY: Y.NODA
APPROVED:
CHECKED BY: B.BALL
SECTION HEAD:
BRANCH HEAD:

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15009-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE
4/30/2026
EXPIRATION DATE OF THE LICENSE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

DRAWING G005 SHEET 6 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319806\159839-GEN-G005.dwg PLOT DATE: Tuesday, November 5, 2024 4:08:49 PM CAD USER: YOLANDA NODA

EROSION, SEDIMENT CONTROL, DUST CONTROL AND BEST MANAGEMENT PRACTICE (BMP) NOTES

GENERAL:

1. THESE NOTES ARE INTENDED TO AMEND AND SUPPLEMENT ANY REQUIREMENTS AND PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE III, CHAPTER 54 "WATER QUALITY STANDARDS," AND TITLE II, CHAPTER 55, "WATER POLLUTION CONTROL", STORM WATER RUNOFF SYSTEM MANUAL (JULY 2001 AS AMENDED) OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUA'I; AND, ANY NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS COVERING THE PROJECT. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THESE PLANS, GUIDELINES AND PERMITS. WHERE REQUIREMENTS ARE IN CONFLICT, THE MORE STRINGENT REQUIREMENT SHALL BE IMPLEMENTED.
2. THE BEST MANAGEMENT PRACTICES (BMPS) SHOWN IN PLANS ARE THE MINIMUM REQUIRED AND ARE SELECTED BASED ON ANTICIPATED MEANS AND METHODS. THE CONTRACTOR SHALL DEVELOP A SITE-SPECIFIC BMP PLAN BY MODIFYING AND AMENDING THESE PLANS AS NECESSARY TO ACCOMMODATE THE SPECIFIC MEANS AND METHODS USED, AND COMPLY WITH THE AMENDMENT NOTIFICATION REQUIREMENTS OF THE NPDES PERMITS (IF ANY AND APPLICABLE).
3. WHERE SUFFICIENT DETAIL REGARDING INSTALLATION, CONDUCTING THE WORK, AND/OR MAINTENANCE OF BMPS IS NOT INCLUDED IN THESE PLANS, THE CONTRACTOR SHALL REFER TO THE "BEST MANAGEMENT PRACTICE PRACTICES (BMP'S) FOR SEDIMENT AND EROSION CONTROL" (FEBRUARY 2011 AS AMENDED) OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUA'I.
4. A SPECIFIC INDIVIDUAL APPOINTED BY THE CONTRACTOR SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION, SEDIMENT, AND DUST CONTROLS ON THIS PROJECT.
5. BMPS SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION TO THE MAXIMUM EXTENT PRACTICABLE TO PREVENT DAMAGE BY SEDIMENTATION TO ANY STREAMS, WATERCOURSES, NATURAL AREAS AND THE PROPERTY OF OTHERS.
6. IF THE CONTRACTOR IS NOT ABLE TO SATISFACTORILY CONTROL EROSION, SEDIMENT AND DUST NUISANCE EMISSION FROM THE PROJECT SITE, ALL CONSTRUCTION WORK SHALL CEASE EXCEPT FOR WATERING AND OTHER STABILIZATION EFFORTS.
7. CONSTRUCTION SHALL BE SEQUENCED TO MINIMIZE THE EXPOSURE TIME OF CLEARED SURFACE AREA. THE FIRST CONSTRUCTION SECTION SHALL BE STABILIZED BEFORE THE NEXT SECTION SHALL BEGIN. STABILIZATION SHALL BE ACCOMPLISHED BY TEMPORARILY OR PERMANENTLY PROTECTING THE DISTURBED SOIL SURFACE FROM RAINFALL IMPACT AND RUNOFF.
8. THE CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION, SEDIMENT AND DUST CONTROL STRUCTURES AS NEEDED WHERE CONTRACTOR TRAVELS OR WORKS BEYOND THE LIMITS OF CONSTRUCTION INDICATED ON THESE PLANS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESPONDING TO FUGITIVE DUST AND WATER BORNE SILT COMPLAINTS FROM NEIGHBORING PROPERTIES AND SHALL PROVIDE ADDITIONAL MITIGATION MEASURES AS NECESSARY, TO AVOID NUISANCE.
10. EROSION, SEDIMENT AND DUST CONTROL BMPS SHALL BE IN PLACE AND FUNCTIONAL BEFORE ANY EARTH MOVING, GRUBBING OR EXCAVATION WORK IS INITIATED. THE BMPS SHALL BE PROPERLY CONSTRUCTED AND REGULARLY MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
11. ALL BMPS SHALL BE CHECKED AND REPAIRED AS NECESSARY. INSPECT BMPS WEEKLY IN DRY PERIODS AND WITHIN TWENTY-FOUR HOURS AFTER ANY RAINFALL OF 0.5 INCHES OR GREATER WITHIN A 24-HOUR PERIOD. DURING PROLONGED RAINFALL, DAILY CHECKING IS NECESSARY. THE CONTRACTOR SHALL MAINTAIN RECORDS OF CHECKS AND REPAIRS. AN INSPECTION AND MAINTENANCE REPORT WILL BE GENERATED FOR EACH INVESTIGATION, AND THE REPORTS KEPT ON FILE.
12. IF HEAVY RAINS ARE PROJECTED DURING A WORKDAY, ALL BMPS THAT ARE A PART OF THIS PROJECT SHALL BE INSPECTED IMMEDIATELY AND REINFORCED AS NECESSARY.
13. ALL EROSION, SEDIMENT AND DUST CONTROL BMPS THAT ARE A PART OF THIS PROJECT SHALL REMAIN IN PLACE UNTIL THE SITE HAS BEEN STABILIZED TO PREVENT THE TRANSPORT OF DUST OR SEDIMENT LADEN WATERS FROM THE SITE.
14. THE CONTRACTOR SHALL TRAIN ALL OF HIS/HER EMPLOYEES AND SUBCONTRACTORS ON THE BMPS FOR EROSION, SEDIMENT AND DUST CONTROL PRIOR TO THE COMMENCEMENT OF WORK.

EROSION CONTROL BMPS:

1. CONTAIN LIMIT CONSTRUCTION EQUIPMENT AND ACTIVITIES TO THE LIMITS OF CONSTRUCTION SHOWN ON THESE PLANS.
2. PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN TWENTY (20) CALENDAR DAYS PRIOR TO LAND DISTURBANCE.
3. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN FOURTEEN (14) CALENDAR DAYS. VEGETATIVE COVER SHALL BE PLANTED WITHIN A PERIOD OF THIRTY (30) CALENDAR DAYS AFTER THE SITE HAS BEEN GRADED.
4. PERMANENT SOIL STABILIZATION WITH VEGETATION OR PAVEMENT SHALL BE APPLIED AS SOON AS PRACTICAL AFTER PIPELINE INSTALLATION. TEMPORARY IRRIGATION AND MAINTENANCE OF THE PERMANENT VEGETATION SHALL BE PROVIDED FOR NINETY (90) DAYS AFTER COMPLETION OF VEGETATIVE INSTALLATION UNTIL ROOTS ARE THOROUGHLY ESTABLISHED AND STABILIZED TO THE SATISFACTION OF AND ACCEPTANCE BY THE ENGINEER.
5. PLANTING AND MAINTENANCE OF GRASS SHALL CONFORM TO THE SPECIFICATIONS, "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," DATED 2005 AND ITS SPECIAL PROVISIONS/AMENDMENTS, AND "STANDARDS SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," DATED SEPTEMBER 1986, AS AMENDED OF THE STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION; & COUNTY OF KAUA'I, DEPARTMENT OF PUBLIC WORKS; RESPECTIVELY.

SEDIMENT CONTROL BMPS:

1. INSTALL SEDIMENT CONTROL BMPS, INCLUDING TEMPORARY CONTRACTOR OPERATIONS AND STAGING AREA (COSA), FILTER SOCKS AND STABILIZED CONSTRUCTION INGRESS/EGRESS AS INDICATED ON THESE PLANS TO AID IN THE REMOVAL AND DIRT/MUD FROM ACCUMULATING ON THE TIRES OF TRUCKS EXITING THE PROJECT SITE AND BEING TRACKED ONTO PUBLIC ROAD PAVEMENTS.
2. PROVIDE PERIMETER SEDIMENT CONTROL BMPS AROUND ALL AREAS OF ACTIVE CONSTRUCTION, INCLUDING STOCKPILES, COSA, EXCAVATIONS, GRUBBED AREAS, AND AREAS WHERE PERMANENT SURFACE RESTORATION HAS NOT BEEN ESTABLISHED.
3. ALL SEDIMENT CONTROL BMPS SHALL BE CLEARED OF SILT IMMEDIATELY FOLLOWING THE END OF ANY RAINFALL THAT CAUSES SILT BUILDUP BEHIND THE BMP.
4. ALL SEDIMENT CONTROL BMPS SHALL BE INSPECTED DAILY FOR DAMAGE AND MAINTAINED SO THAT THEY ARE WORKING PROPERLY.
5. THE CONTRACTOR SHALL SWEEP AND VACUUM STREETS USING EQUIPMENT SPECIFICALLY INTENDED FOR REMOVING SEDIMENTS FROM PAVED ROADWAYS. SWEEPING AND VACUUMING EQUIPMENT SHALL NOT CAUSE FUGITIVE DUST EMISSIONS. THE CONTRACTOR SHALL NOT USE KICK BROOMS OR SWEEPER ATTACHMENTS.
6. THE CONTRACTOR SHALL SWEEP AND VACUUM STREETS OF SEDIMENT DAILY DURING TRENCHING AND EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL NOT WASH SEDIMENT FROM THE CONSTRUCTION SITE TO SURROUNDING AREAS. COLLECTED SEDIMENT SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER.

DUST CONTROL BMPS:

1. THE CONTRACTOR SHALL PROVIDE EFFECTIVE MEASURES FOR THE CONTROL OF FUGITIVE, AND ITS NUISANCE, DUST EMISSIONS FROM THE PROJECT AND SURROUNDING AREAS CAUSED BY HIS/HER OPERATIONS. THESE MEASURES SHALL MEET THE REQUIREMENTS OF STATE ADMINISTRATIVE RULES, DEPARTMENT OF HEALTH, "AIR POLLUTION CONTROL" (11-60.1).
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL MEET WITH THE ENGINEER AND PROVIDE INFORMATION ON THE SOURCE OF WATER FOR DUST CONTROL. IN ADDITION, THE CONTRACTOR SHALL SUBMIT CONSTRUCTION PLANS, SCHEDULES AND/OR OTHER WRITTEN MEASURES WHICH PROVIDE FOR DUST CONTROL. ALL OF THESE DOCUMENTS SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK. THE DUST CONTROL MEASURES SHALL CONTAIN POSITIVE STATEMENTS WHICH REQUIRE ACTION OR WORK THAT PREVENT DUST PROBLEMS.
3. ANY GRUBBED AND GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY PRIOR TO WEEKENDS AND HOLIDAYS.
4. DUST CONTROL WITH WATER SPRAY (BY TRUCK, TEMPORARY SPRINKLERS OR MANUAL HAND EQUIPMENT APPLICATION) SHALL BE INSTALLED AND EMPLOYED AS NEEDED. THE CONTRACTOR SHALL NOT OVERWATER AND CAUSE RUNOFF FROM THE SITE.
5. THE CONTRACTOR SHALL CONDUCT OPERATIONS SO THAT EXCAVATION, EMBANKMENT AND IMPORTED MATERIAL SHALL BE DAMPENED TO PREVENT NUISANCE AND DUST PROBLEMS.

NON-STORMWATER POLLUTION MANAGEMENT BMPS:

1. THE CONTRACTOR SHALL NOT PERFORM EQUIPMENT OR VEHICLE CLEANING OR MAINTENANCE AT THE CONSTRUCTION SITE.
2. PERFORM ALL FUELING AT DESIGNATED FUELING AREA(S) THAT ARE EQUIPPED WITH EMERGENCY SPILL CLEANUP KITS, ARE ON LEVEL GRADE, ARE PROTECTED FROM STORM WATER RUNOFF, AND ARE AT LEAST 50-FEET AWAY FROM DRAINAGE FACILITIES OR WATERCOURSES.

WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPS:

1. ANY AND ALL HAZARDOUS MATERIALS OFF-SITE OR IN THE DESIGNATED COSA WITHIN A COVERED AREA AND DISPOSED OF IN ACCORDANCE WITH FEDERAL AND STATE REGULATIONS.
2. STOCKPILE AND DUMPSTER SHALL BE LOCATED ONLY AT THE COSA AND SHALL NOT BE CLOSE TO CONCENTRATED STORM WATER RUNOFF FLOWING INTO STATE RECEIVING WATERS. STOCKPILING SHALL BE KEPT TO A MINIMUM AS MUCH AS POSSIBLE.
3. PROVIDE SEDIMENT CONTROL BMPS SHALL BE PROVIDED AROUND ALL ACTIVE STOCKPILES PRIOR TO AND DURING WET WEATHER EVENTS.
4. PROVIDE PLASTIC COVERS SHALL BE PROVIDED OVER ALL COLD-MIX STOCKPILES.
5. TRASH DUMPSTERS SHALL BE LEAK PROOF AND SHALL NOT BE OVERFILLED TO THE LEVEL WHERE THEIR COVERS CANNOT BE FULLY SHUT.
6. ALL CONSTRUCTION AND DEMOLITION WASTES INCLUDING ASPHALT PAVEMENT, EXCAVATED SOIL, EXCAVATED ROCK, SITE TRASH, OR OTHER SOLID OR LIQUID WASTES SHALL BE REMOVED TO A RECYCLING OR DISPOSAL FACILITY PERMITTED BY THE STATE OF HAWAII DEPARTMENT OF HEALTH. ALL FEES SHALL BE PAID FOR BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL PROVIDE ADEQUATELY SIZED CONCRETE TRUCK AND CONCRETE PUMP WASHOUT AREAS. CONCRETE WASH WATERS SHALL NOT BE ALLOWED TO EXIT THE CONSTRUCTION SITE, ENTER STORM DRAINS OR FLOW INTO STATE RECEIVING WATERS.
8. THE CONTRACTOR SHALL SWEEP, VACUUM AND PROPERLY DISPOSE OF ALL ASPHALT OR CONCRETE SAW-CUT SLURRY. DO NOT ALLOW SAW-CUT SLURRY TO EXIT THE CONSTRUCTION SITE, ENTER STORM DRAINS OR FLOW INTO STATE RECEIVING WATERS.

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15009-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Bruce L Ball
SIGNATURE

4/30/2024
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE WWTP PROCESS UPGRADES PACKAGE 1B

ITEM:
EROSION CONTROL BMP NOTES

DESIGNED BY: J. BELL
DRAWN BY: R. SELLONA
APPROVED:
CHIEF

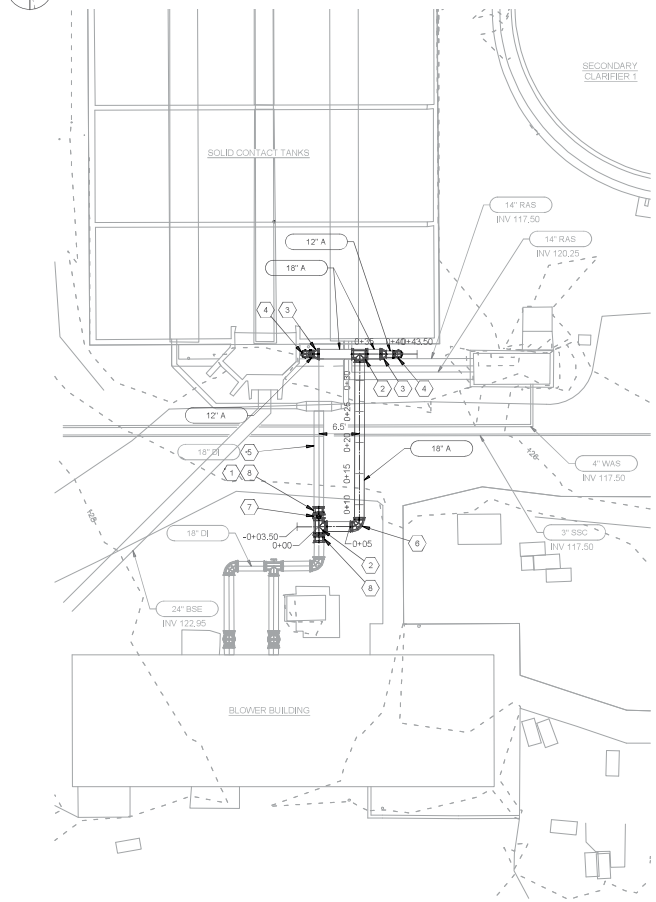
CHECKED BY:
SECTION HEAD:
BRANCH HEAD:
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

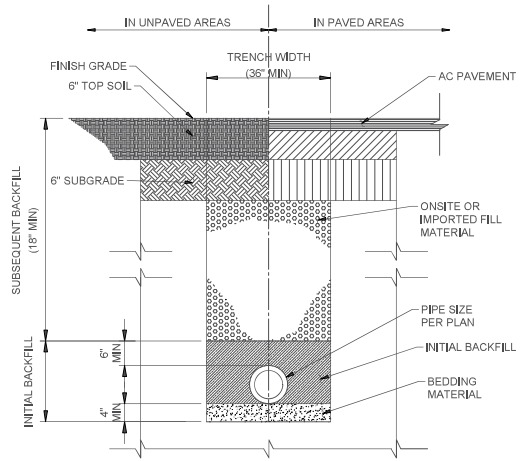
DRAWING C001 SHEET 7 OF 50

LIHUE WWTP PROCESS UPGRADES PACKAGE 1B

C:\bcpw\d3319813\159839-C-001.dwg PLOT DATE: Monday, January 29, 2024 1:36:00 PM CAD USER: RICHARD SELLONA



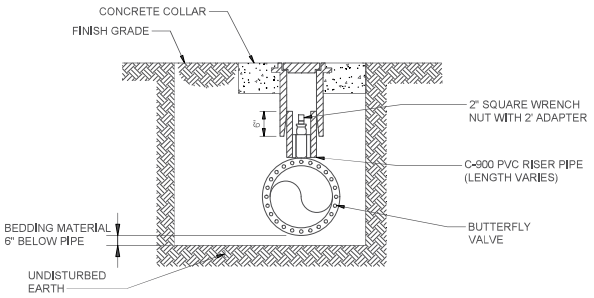
YARD PIPING
PLAN
SCALE: 1" = 10'



TYPICAL TRENCH SECTION FOR DUCTBANKS AND PIPES

DETAIL A C002

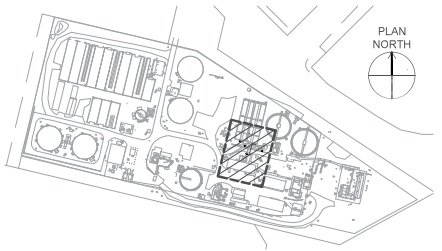
SCALE: NONE



BURIED BUTTERFLY VALVE BOX

DETAIL B C002

SCALE: NONE



KEY PLAN
NOT TO SCALE

0 10' 20'
SCALE IN FEET

GENERAL NOTES:

1. EXISTING UTILITIES ARE APPROXIMATE BASED ON AS-BUILTS AND MAY NOT BE REPRESENTATIVE OF ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO START OF WORK.
2. CONTRACTOR TO FIELD ROUTE PIPING AND SUBMIT A WORKING DRAWING OF THE PIPE CONFIGURATION INCLUDING THE POINT OF CONNECTION AND ELEVATION, LAYOUT OF FITTINGS, AND SEPARATION.

KEY NOTES:

1 CONNECT TO EXISTING 18" DI AIR SUPPLY LINE. CONTRACTOR TO FIELD LOCATE EXISTING 18" DI PIPE AND FIELD VERIFY DEPTH OF COVER. COORDINATE POINT OF CONNECTION WITH OFFICER-IN-CHARGE.

2 18"x18"x18" STAINLESS STEEL TEE PER SECTION 40 05 02.01.

3 18"x12" STAINLESS STEEL REDUCER PER SECTION 40 05 02.01.

4 12" STAINLESS STEEL ELBOW UP PER SECTION 40 05 02.01. SEE MECHANICAL SHEET M102 FOR CONTINUATION.

5 EXISTING 18" DI PIPE TO BE ABANDONED IN PLACE. SEE SHEET M101 FOR DEMOLITION.

6 18" STAINLESS STEEL 90 DEG BEND PER SECTION 40 05 02.01.

7 18" IN-LINE FExFE BUTTERFLY VALVE AND VALVE BOX PER DETAIL B/C002.

8 18" DI RFCA OR EQUIVALENT PER SECTION 40 05 06.

9 DEMO CONFLICTING PIPE AFTER SCT 2 IS COMMISSIONED PER SECTION 01 12 16.

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15008-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2024
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:

DESIGNED BY: J. BELL
DRAWN BY: R. SELLONA
APPROVED:
CHIEF

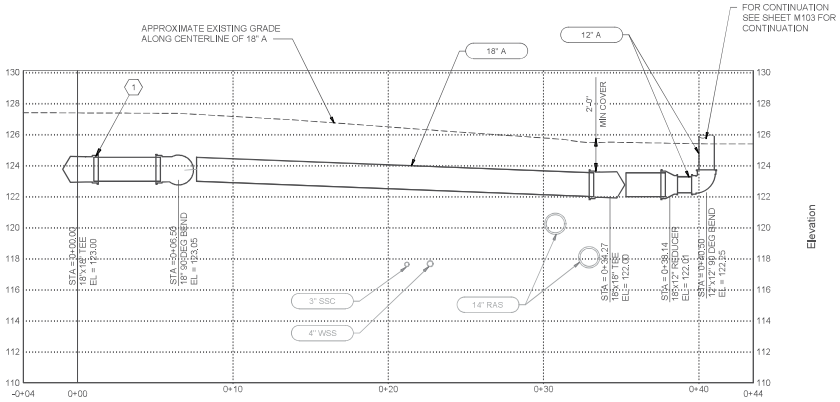
CHECKED BY:
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

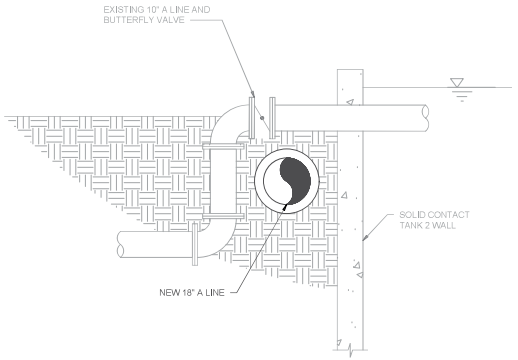
DRAWING C002 SHEET 8 OF 50

LIHUE AERATOR SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319813\159839-C-002.dwg PLOT DATE: Tuesday, March 26, 2024 5:53:58 PM _CAD USER: RICHARD SELLONA



AIR SUPPLY PIPE
PROFILE
SCALE: 1" = 4' HORIZ & VERT



1 C-002 AIR SUPPLY PIPE SECTION
SCALE: 1" = 2'

GENERAL NOTES:

1. EXISTING UTILITIES ARE APPROXIMATE BASED ON AS-BUILTS AND MAY NOT BE REPRESENTATIVE OF ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO START OF WORK.
2. CONTRACTOR TO FIELD ROUTE PIPING AND SUBMIT A WORKING DRAWING OF THE PIPE CONFIGURATION INCLUDING THE POINT OF CONNECTION AND ELEVATION, LAYOUT OF FITTINGS, AND SEPARATION.

KEY NOTES:

1 CONNECT TO EXISTING 18" DI AIR SUPPLY LINE USING RFCA OR EQUIVALENT. CONTRACTOR TO FIELD LOCATE EXISTING 18" DI PIPE AND FIELD VERIFY DEPTH OF COVER. COORDINATE POINT OF CONNECTION WITH OFFICER-IN-CHARGE.

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15008-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE
4/30/2024
EXPIRATION DATE OF THE LICENSE

0 4' 8'
SCALE IN FEET

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
AIR SUPPLY PIPE PROFILE

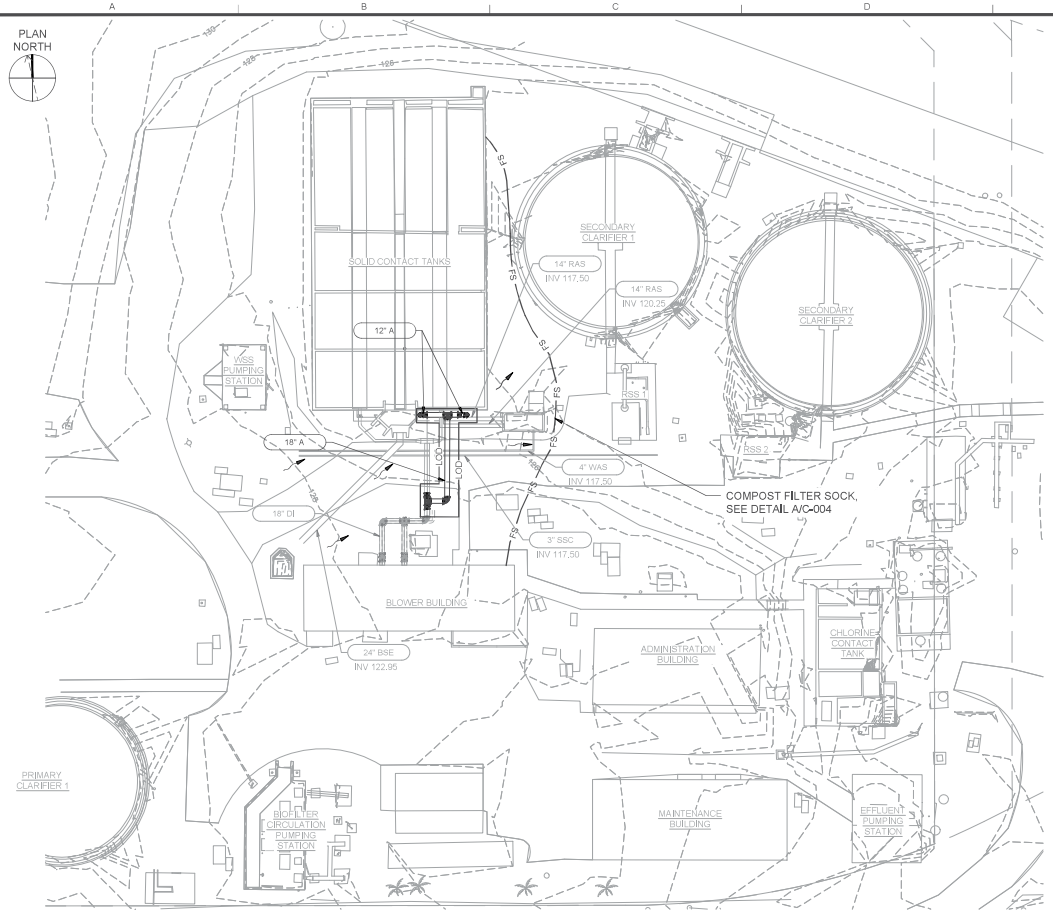
DESIGNED BY: J. BELL
DRAWN BY: R. SELLONA
APPROVED:
CHIEF
CHECKED BY:
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

DRAWING C003 SHEET 9 OF 50

LIHUE AERATOR SOLIDS CONTACT TANK IMPROVEMENT

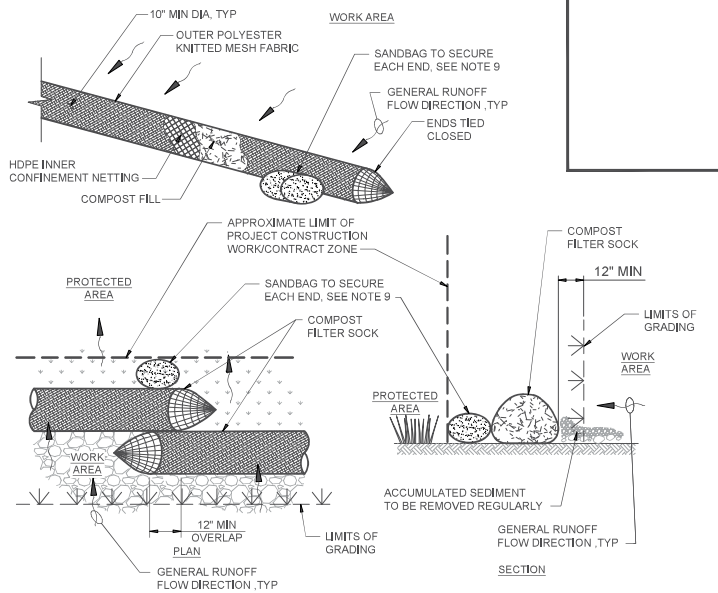
C:\bcpw\d3319813\15983g-C-003.dwg PLOT DATE: Friday, March 29, 2024 3:11:52 PM CAD USER: RICHARD SELLONA



EROSION AND SEDIMENT CONTROL

PLAN

SCALE: 1" = 20'



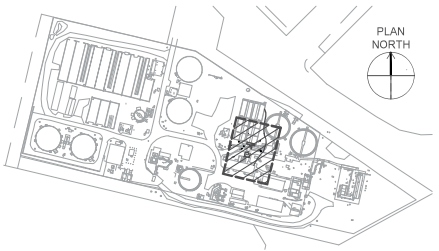
NOTES:

1. 10"-MIN DIA COMPOST FILTER SOCKS.
2. COMPOST FILL MATERIAL SHALL BE PROVIDED PER AASHTO R 51-10, "STANDARD SPECIFICATION FOR COMPOST FOR EROSION/SEDIMENT CONTROL."
3. FILTER SOCKS SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND REPAIRS MADE AS NEEDED TO ENSURE THEIR PROPER AND EFFECTIVE FUNCTION, OR AS DIRECTED BY THE OFFICER-IN-CHARGE.
4. SHOULD FILTER SOCKS BECOME CLOGGED WITH SEDIMENT SO THAT THEY NO LONGER ADEQUATELY PERFORM THEIR FUNCTION, THEY SHALL BE REMOVED, CLEANED AND REPLACED.
5. SILT, SEDIMENT AND DEBRIS SHALL BE DISPOSED OF OFF-SITE AFTER EACH MAINTENANCE CLEANING, SIGNIFICANT RAINFALL (0.5 INCHES WITHIN 24 HOURS), OR AS DIRECTED BY THE OFFICER-IN-CHARGE.
6. INSTALLATION, INSPECTION, MAINTENANCE AND REMOVAL OF FILTER SOCKS SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR SHALL PROVIDE NECESSARY TRAINING FOR PERSONNEL WHO WILL BE RESPONSIBLE FOR IMPLEMENTATION OF BMPS.
8. FILTER SOCK OUTER/ENCASEMENT MATERIAL SHALL BE UV-RESISTANT, DROUGHT-TOLERANT, MARINE-TOLERANT, BRIGHT OSHA SAFETY YELLOW OR ORANGE, AND MULTI-FILAMENT POLYPROPYLENE OR MONOFILAMENT WOVEN HDPE FABRIC WITH FLOW RANGE OF 185 GPM/SF TO 240 GPM/SF.
9. SANDBAG REQUIREMENTS: MINIMUM LENGTH = 18", MINIMUM WIDTH = 12", MINIMUM THICKNESS = 3". PLACE EVERY 6' TYPICAL.
10. NO STAKING OR EMBEDMENT IS NEEDED FOR COMPOST FILTER SOCKS ON CONCRETE OR PAVEMENT.

COMPOST FILTER SOCK

DETAIL A C004

SCALE: NTS



KEY PLAN

NOT TO SCALE

0 20' 40'

SCALE IN FEET

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15008-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: Bruce L Ball

4/30/2024
EXPIRATION DATE OF THE LICENSE

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
EROSION AND SEDIMENT CONTROL PLAN

DESIGNED BY: L. HILL
DRAWN BY: R. SELLONA
APPROVED: CHIEF

CHECKED BY: J. BELL
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

DRAWING C004 SHEET 10 OF 50

LIHUE AERATOR SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319813\15983g-C-004a.dwg PLOT DATE: Friday, March 29, 2024 11:47:10 AM CAD USER: RICHARD SELLONA

GENERAL:

1. WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE BUILDING CODE OF THE COUNTY OF KAUAI (AMENDED IBC, 2018 EDITION). HOWEVER, WHERE REFERENCE IS MADE TO PERFORMANCE CONFORMING TO OTHER STANDARDS THE MORE STRINGENT SHALL APPLY.
2. THE CONTRACTOR SHALL COMPARE ALL THE CONTRACT DOCUMENTS WITH EACH OTHER AND REPORT IN WRITING TO THE OFFICER-IN-CHARGE ALL INCONSISTENCIES AND OMISSIONS.
3. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE DRAWINGS BEFORE COMMENCING WORK. REPORT IN WRITING TO THE OFFICER-IN-CHARGE ALL INCONSISTENCIES AND OMISSIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR METHODS OF CONSTRUCTION, WORKMANSHIP AND JOB SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AS REQUIRED FOR STABILITY OF STRUCTURAL MEMBERS AND SYSTEMS AND SHALL PROVIDE SECURED PLATES/COVERS/BARRIERS AT TEMPORARY OPENINGS DURING CONSTRUCTION. PROVIDE SAFEGUARDS DURING CONSTRUCTION IN ACCORDANCE TO CHAPTER 33 OF THE IBC.
6. CONSTRUCTION LOADING SHALL NOT EXCEED DESIGN LIVE LOAD UNLESS SPECIAL SHORING IS PROVIDED. ALLOWABLE LOADS SHALL BE REDUCED IN AREAS WHERE THE STRUCTURE HAS NOT ATTAINED FULL DESIGN STRENGTH.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE ADJACENT PROPERTIES, STRUCTURES, STREETS AND UTILITIES DURING THE CONSTRUCTION PERIOD. CONTRACTOR SHALL REPAIR ALL DAMAGES FROM CONSTRUCTION ACTIVITY TO THEIR ORIGINAL CONDITION OR BETTER AT NO CHARGE TO THE COUNTY.
8. DETAILS NOTED AS TYPICAL ON THE STRUCTURAL DRAWINGS SHALL APPLY IN ALL CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED.
9. COORDINATE REQUEST FOR ANY UTILITY DOWNTIME OR RESTRICTIONS FOR AREA ACCESS WITH THE COUNTY AT LEAST THREE WEEKS PRIOR TO START OF WORK.

CONCRETE:

1. CONCRETE SHALL BE REGULAR WEIGHT HARD ROCK CONCRETE AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
2. MAXIMUM WATER TO CEMENTITIOUS MATERIALS RATIO SHALL BE 0.40. MAXIMUM AGGREGATE SIZE SHALL BE 3/4".
3. CONCRETE DELIVERY TICKETS SHALL RECORD ALL FREE WATER IN THE MIX: AT BATCHING BY PLANT, FOR CONSISTENCY BY DRIVER, AND ANY ADDITIONAL REQUEST BY CONTRACTOR IF PERMITTED BY THE MIX DESIGN.
4. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60.
5. PROVIDE LAP SPLICE LENGTH OF 48 BAR DIAMETERS, UNLESS OTHERWISE NOTED. BAR BENDS AND HOOKS SHALL BE "STANDARD HOOKS" IN ACCORDANCE WITH ACI 318.
6. REINFORCING BARS, ANCHOR BOLTS, INSERTS, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE SECURED IN POSITION PRIOR TO PLACEMENT OF CONCRETE.
7. THE CONTRACTOR SHALL LOCATE CONSTRUCTION JOINTS SO AS NOT TO IMPAIR THE STRENGTH OF THE STRUCTURE AND TO MINIMIZE SHRINKAGE STRESSES. SUBMIT LOCATION OF CONSTRUCTION JOINTS TO THE COUNTY FOR APPROVAL, UNLESS OTHERWISE NOTED.
8. THE SURFACE FINISH SHALL MATCH THE EXISTING ADJACENT SURFACE FINISH, INCLUDING REVEALS, CHAMFERS, SCORES, ETC. CHAMFER ALL EXPOSED EDGES 3/4", UNLESS SPECIFIED OTHERWISE.
9. NON-SHRINK GROUT SHALL BE A PREMIXED NON-METALLIC FORMULA, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 1 DAY AND 5,000 PSI IN 28 DAYS.
10. EPOXY SHALL BE SIMPSON SET-3G HIGH STRENGTH ANCHORING ADHESIVE AS MANUFACTURED BY SIMPSON STRONG TIE CO., INC., OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
11. ALL INSERTS, ANCHOR BOLTS, PLATES, ETC. TO BE EMBEDDED IN CONCRETE SHALL BE STAINLESS STEEL, UNLESS NOTED OTHERWISE.
12. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST REQUIREMENTS OF THE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318) AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES" (ACI 315), EXCEPT AS MODIFIED BY THE PLANS AND SPECIFICATIONS.
13. PATCHING MATERIAL SHALL BE SIKAQUICK VOH WITH LATEX R BY SIKA, OR APPROVED SUBSTITUTE.
14. MIGRATING CORROSION INHIBITOR SHALL BE MCI 2020M BY CORTEC, OR APPROVED SUBSTITUTE.
15. PROVIDE CRYSTALLINE WATERPROOFING ADMIXTURE (XYPEX C500 OR APPROVED SUBSTITUTE) TO ALL CONCRETE AT A RATE OF 10 LBS PER CY OF CONCRETE.

STRUCTURAL STEEL:

1. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION, 15TH EDITION.
2. BOLTS AND THREADED RODS SHALL CONFORM TO AISI TYPE 316 STAINLESS, UNLESS OTHERWISE NOTED.
3. STRUCTURAL STEEL SHOP DRAWINGS SHALL BE SUBMITTED TO AND REVIEWED BY THE COUNTY BEFORE FABRICATION. SHOP DRAWINGS SHALL CONTAIN DETAILS OF FABRICATION AND ERECTION. SHOP DRAWINGS SHALL NOT BE REPRODUCTIONS OF THE CONTRACT DRAWINGS.
4. WELDS AND WELDING PROCEDURES SHALL CONFORM TO THE STRUCTURAL WELDING CODE AWS D1.1 AND D1.6 OF THE AMERICAN WELDING SOCIETY.
5. WELDING SHALL BE PERFORMED BY WELDERS PREQUALIFIED FOR WELDING PROCEDURES TO BE USED.
6. WELDING ELECTRODES SHALL BE E316 FOR STAINLESS STEEL AND E70XX FOR ALL OTHER STEEL.
7. ALL STEEL, INCLUDING CONNECTORS, SHALL BE STAINLESS TYPE 316, UNLESS OTHERWISE NOTED. PIPES SHALL CONFORM TO ASTM A312 TP316 SEAMLESS.

SPECIAL INSPECTION NOTES:

1. THE FOLLOWING STRUCTURAL WORK FOR THIS PROJECT REQUIRE SPECIAL INSPECTION IN ACCORDANCE WITH CHAPTER 17 OF THE IBC:

   CONCRETE CONSTRUCTION (TABLE 1705.3)
2. THE GENERAL CONTRACTOR SHALL NOTIFY THE SPECIAL INSPECTOR OF ALL ITEMS REQUIRING SPECIAL INSPECTION A MINIMUM OF 48 HOURS IN ADVANCE.
3. SPECIAL INSPECTIONS DO NOT RELIEVE THE GENERAL CONTRACTOR OF HIS RESPONSIBILITIES TO COMPLETE THE PROJECT IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND TO BE RESPONSIBLE FOR SAFETY ON THE JOBSITE.
4. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

TMK: 3-5-001:030

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

GRANT J. OKUNAGA
LICENSED PROFESSIONAL ENGINEER
No. 13001-S
HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
GENERAL NOTES

DESIGNED BY: B. KUNG — CHECKED BY: G. OKUNAGA
DRAWN BY: D. LUMANTAS — SECTION HEAD
APPROVED: G. OKUNAGA — BRANCH HEAD
CHIEF — DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

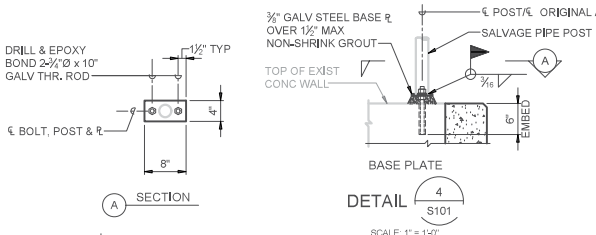
DRAWING S001 SHEET 11 OF 50

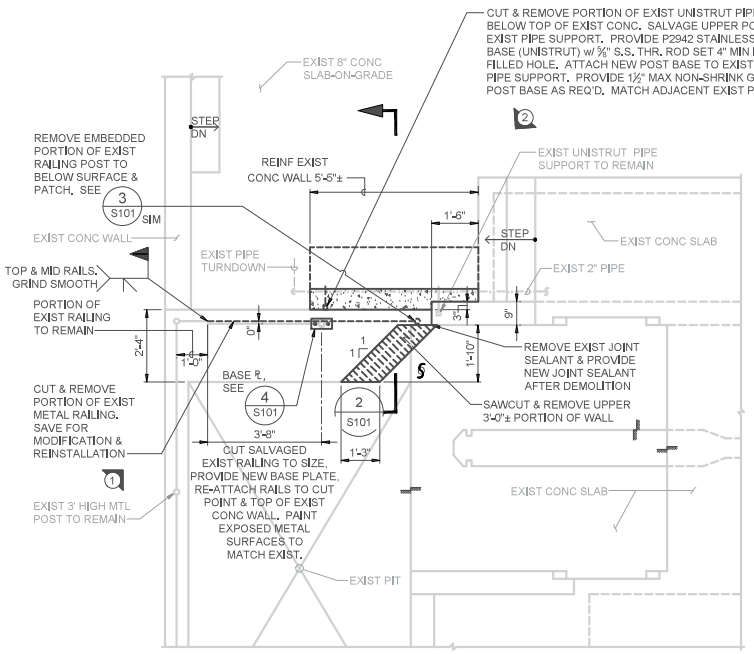
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

D:\OneDrive - MKE Associates LLC\MKE Associates LLC\MKE01 - Documents\MKE Drawings\0301-26500320 Lihue WWTP Upgrades\Drawings\Structural\11-15-24 final\LihueWWTPUpgrades- S001.dwg PLOT DATE: Thursday, November 14, 2024 9:26:41 AM CAD USER: DANNY BOY LUMANTAS

PHOTO 1

PHOTO 2



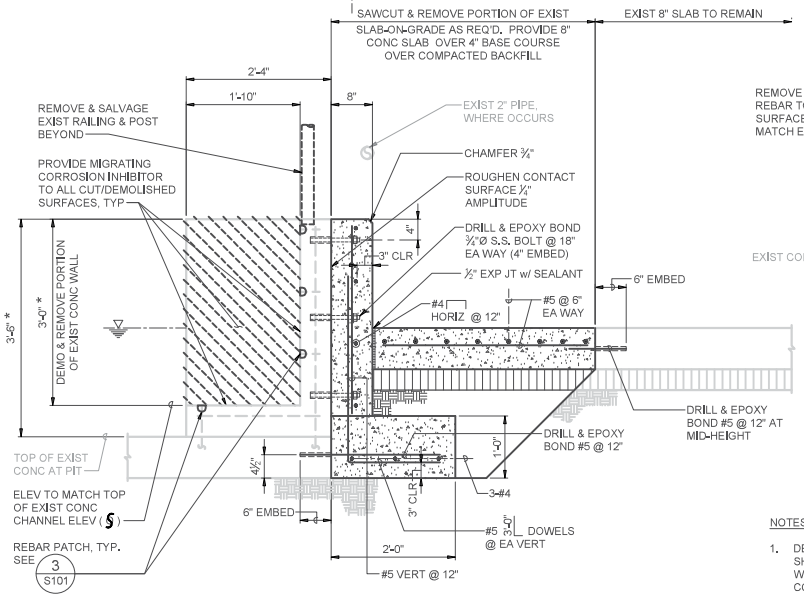


HEADWORKS
PARTIAL PLAN 1 S101
SCALE: 1/2"=1'-0"

PLAN NORTH

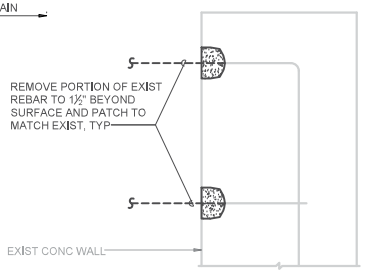
NOTES:

1. 1 INDICATES DIRECTION OF PHOTO TAKEN.
2. EXIST CONCRETE INTERIOR IS COATED WITH PROTECTIVE LINER. REMOVE AS REQUIRED AND RECOAT PER SPECIFICATIONS.



NOTE:

* VERIFY PRIOR TO REBAR FABRICATION.



TYPICAL REBAR PATCH
DETAIL 3 S101
NOT TO SCALE

NOTES:

1. DEMOLITION OF EXISTING CONCRETE WALL SHALL NOT COMMENCE UNTIL REINFORCING WALL CONCRETE HAS ATTAINED 3,000 PSI COMPRESSIVE STRENGTH.
2. COORDINATE WASTEWATER DIVERSION PLAN WITH THE OFFICER-IN-CHARGE TO FACILITATE WORK WITHIN THE PIT.

HEADWORKS
SECTION 2 S101
SCALE: 1" = 1'-0"

0 1' 2' 4'
SCALE IN FEET

1' 0 1' 2'
SCALE IN FEET

TMK: 3-5-001:030

ONE INCH AT FULL SIZE. IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT
ITEM: PARTIAL HEADWORKS PLAN AND SECTION

DESIGNED BY: B. KUNG
DRAWN BY: D. LUMANTAS
APPROVED: G. OKUNAGA
CHECKED BY: G. OKUNAGA
SECTION HEAD
BRANCH HEAD
CHIEF
DATE

GRANT J. OKUNAGA
LICENSED PROFESSIONAL ENGINEER
No. 13001-S
HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE
4/30/2026
EXPIRATION DATE OF THE LICENSE

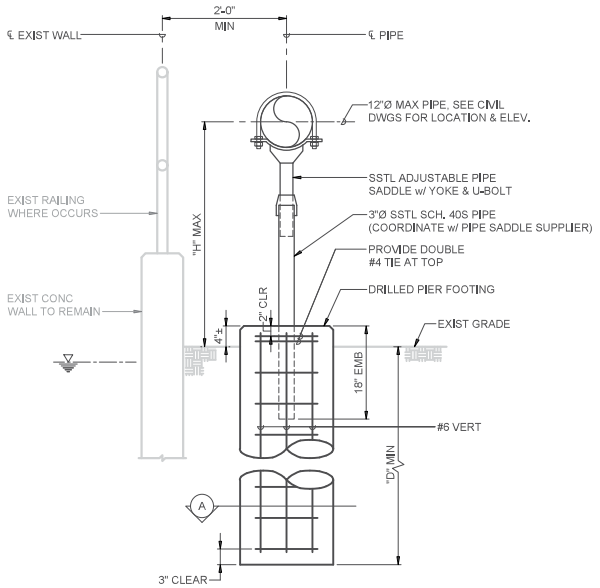
FILE CABINET | DRAWER | FILE | POCKET | FOLDER | NO.

DRAWING S101 SHEET 12 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

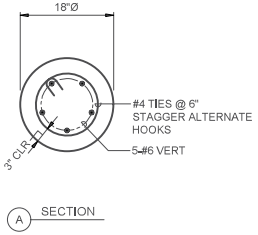
D:\OneDrive - MKE Associates LLC\MKE Associates LLC\MKE01 - Documents\MKE Drawings\2301-2350\2320 Lihue WWTP Upgrades\Drawings\Structural\11-15-24 final\Lihue WWTP Upgrades- S101 S301.dwg PLOT DATE: Thursday, November 14, 2024 9:28:00 AM CAD USER: DANNY BOY LUMANTAS

FOOTING SCHEDULE	
H (FT)	D (FT)
4	4.5
8	6.0

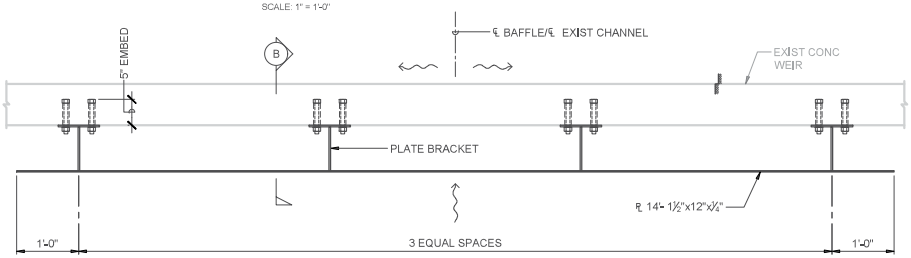


TYPICAL PIPE SUPPORT DETAIL 1 S102

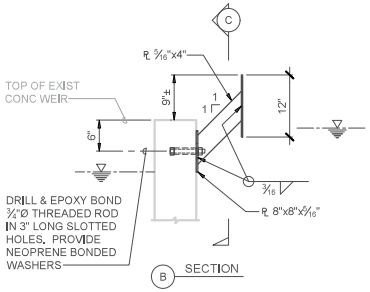
SCALE: 1" = 1'-0"



A SECTION



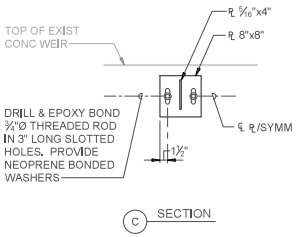
PARTIAL PLAN



B SECTION

REPLACEMENT BAFFLE DETAIL 2 S102

SCALE: 1" = 1'-0"



C SECTION

TMK: 3-5-001:030

1' 0 1' 2'

SCALE IN FEET

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
TYPICAL DETAILS

GRANT J. OKUNAGA
LICENSED PROFESSIONAL ENGINEER
No. 13001-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

DESIGNED BY:	B. KUNG	CHECKED BY:	G. OKUNAGA
DRAWN BY:	D. LUMANTAS	SECTION HEAD	
APPROVED:	G. OKUNAGA	BRANCH HEAD	
CHIEF		DATE	

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

DRAWING S102 SHEET 13 OF 50

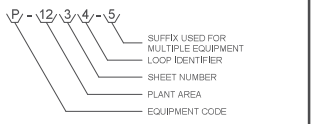
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

D:\OneDrive - MKE Associates LLC\MKE Associates LLC\MKE01 - Documents\MKE Drawings\0301-2650\0320 Lihue WWTP Upgrades\Drawings\Structural\11-15-24 final\Lihue WWTP Upgrades- S102.dwg PLOT DATE: Thursday, November 14, 2024 9:28:39 AM CAD USER: DANNY BOY LUMANTAS

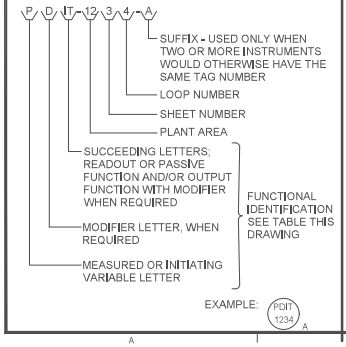
FUNCTIONAL IDENTIFICATION

VARIABLE	MEASURED OR INITIATING VARIABLE DESCRIPTION	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION				
C	CONDUCTIVITY			CONTROL	CLOSE
D	DENSITY, SPECIFIC GRAVITY	DIFFERENTIAL			DEVIATION
E	VOLTAGE, SOLENOID		PRIMARY ELEMENT		
F	FLOW, FLOW RATE	RATIO			
G	FIRE, SMOKE		GLASS		
H	HAND				HIGH
I	CURRENT		INDICATE		
J	POWER		SCAN		
K	TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOISTURE, HUMIDITY, MOTION	MOMENTARY			MIDDLE, INTERMEDIATE
N	EQUIPMENT STATUS				
O	DISSOLVED OXYGEN		ORIFICE		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		RUN
S	SPEED, FREQUENCY	SAFETY		SWITCH	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE, TORQUE		WELL, PROBE		
X	UNCLASSIFIED	X AXIS			
Y	EVENT, STATE OR PRESENCE	Y AXIS		AUXILIARY DEVICES	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, FINAL CONTROL ELEMENT	

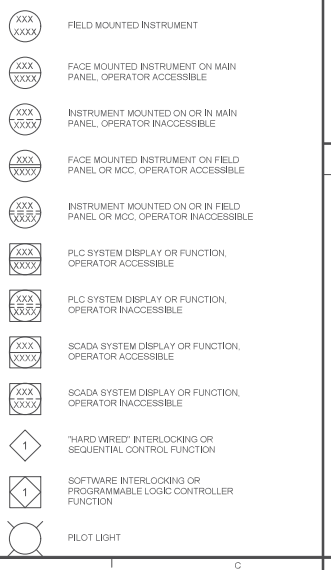
EQUIPMENT IDENTIFICATION



INSTRUMENT TAG NUMBERS



INSTRUMENT AND FUNCTION SYMBOLS



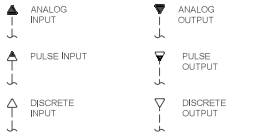
TO/FROM SYMBOL EXAMPLES

NOTE: WHENEVER POSSIBLE, LINES ENTER THE DRAWING FROM THE LEFT SIDE AND EXIT TO THE RIGHT.

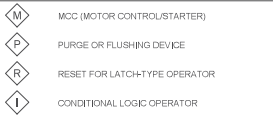
DEFINES A LINE CONTINUING FROM A DRAWING, WHERE "X" IS THE OFF-PAGE CONNECTOR IDENTIFIER NUMBER.

DEFINES A LINE CONTINUING FROM A DRAWING, WHERE "X" IS THE OFF-PAGE CONNECTOR IDENTIFIER NUMBER.

INPUT/OUTPUT SYMBOLS



MISCELLANEOUS SYMBOLS



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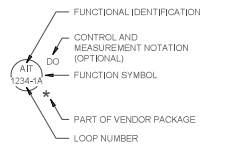
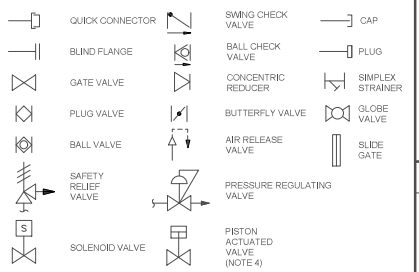
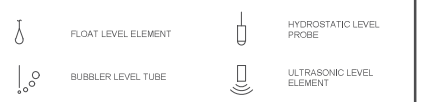


PIPELINE DEVICES, VALVES AND GATES



PRIMARY ELEMENTS



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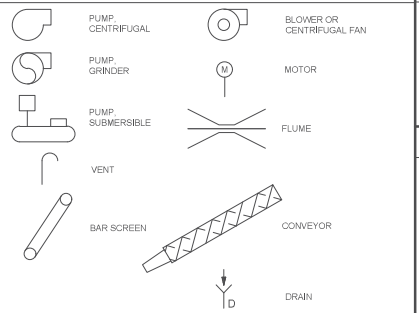
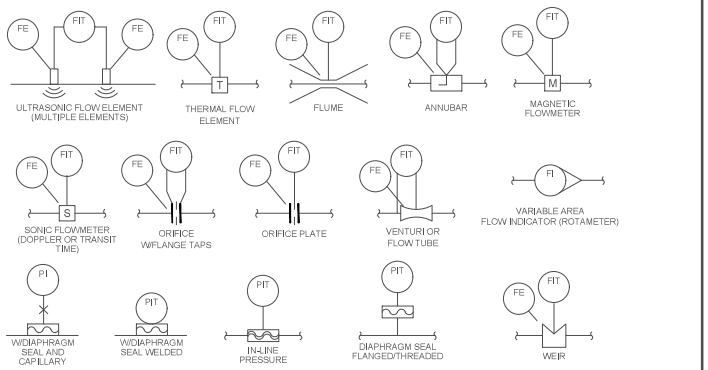


INSTRUMENTATION SYMBOLS



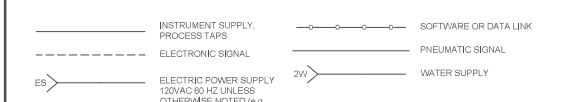
GENERAL NOTES

1. THIS DRAWING IS GENERAL IN NATURE. SOME SYMBOLS AND IDENTIFICATIONS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS.
2. SYMBOLS ARE ARRANGED ON SPECIFIC DRAWINGS AND IN CATEGORIES FOR CONVENIENCE ONLY. SYMBOLS MAY BE USED ON ANY OF THE CONTRACT DRAWINGS.
3. EQUIPMENT DESIGNATED WITH * IS TO BE PROVIDED BY VENDOR.
4. USE VALVE BODY SYMBOL TO MATCH TYPE OF VALVE.

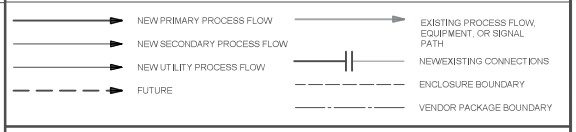
ABBREVIATIONS

BS	BAR SCREEN	LCS	LOCAL CONTROL STATION
D	DRAIN	MOG	MOTOR-OPERATED GATE
GT	GATE	SCN	SCREEN
LCP	LOCAL CONTROL PANEL	SCP	SCREENINGS CONVEYOR
		VCP	VENDOR CONTROL PANEL

INSTRUMENT SIGNAL SYMBOLS



PROCESS LINES



CONTROL AND MEASUREMENT NOTATIONS

ACK	ACKNOWLEDGE	HOR	HAND/OFF/REMOTE	POT	POTENTIOMETER
AM	AUTO/MAIN	INC	INCREASE	RDY	READY
BYP	BYPASS	JOA	JOG/OFF/AUTO	REV	REVERSE
CL	CLOSE	LL	LEAD/LAG	RNG	RUNNING
CL2	CHLORINE	LOR	LOCAL/OFF/REMOTE	ROF	REVERSE/OFF/FORWARD
CMAT	COMPUTER/MANUAL/AUTO/TRACKING	LOS	LOCKOUT STOP	RST	RESET
COMB	COMBUSTIBLE GAS	L/R	LOCAL/REMOTE	SO2	SULFUR DIOXIDE
CP	CONTROL POWER	M/A LS	MAN/AUTO LOADING STATION	SP	STOP
COND	CONDUCTIVITY	OCA	OPEN/CLOSE/AUTO	ST	START
DEC	DECREASE	OCP	PURGE VALVE OP/CL/PC	TCP	TEST/CLOSE/PC
DO	DISSOLVED OXYGEN	OL	OVERLOAD	T/S	TEST/NORMAL/SILENCE
ESP	EMERGENCY STOP	OP	OPEN	TBL	TROUBLE
FWD	FORWARD	OSC/LP	OPEN/STOP/CLOSE WITH LOCAL/REMOTE SELECT		
F/R	FORWARD/REVERSE	PA	PAUSE		
F/S	FAST/SLOW	PAL	LOW PRESSURE		
HLOA	HIGH/LOW/OFF/AUTO	PB	PUSH BUTTON		
HOA	HAND/OFF/AUTO	pH	pH		
HOAL	HAND/OFF/AUTO/LOCAL				

ONE INCH AT FULL SIZE. IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
LEGEND AND SYMBOLS

BRYANT K. KAWAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

DESIGNED BY:	B.FINZEL	CHECKED BY:	
DRAWN BY:	J.MILLER	SECTION HEAD:	
APPROVED:		BRANCH HEAD:	
CHIEF		DATE	

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

GEN PS DRAWING P001

SHEET 14 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

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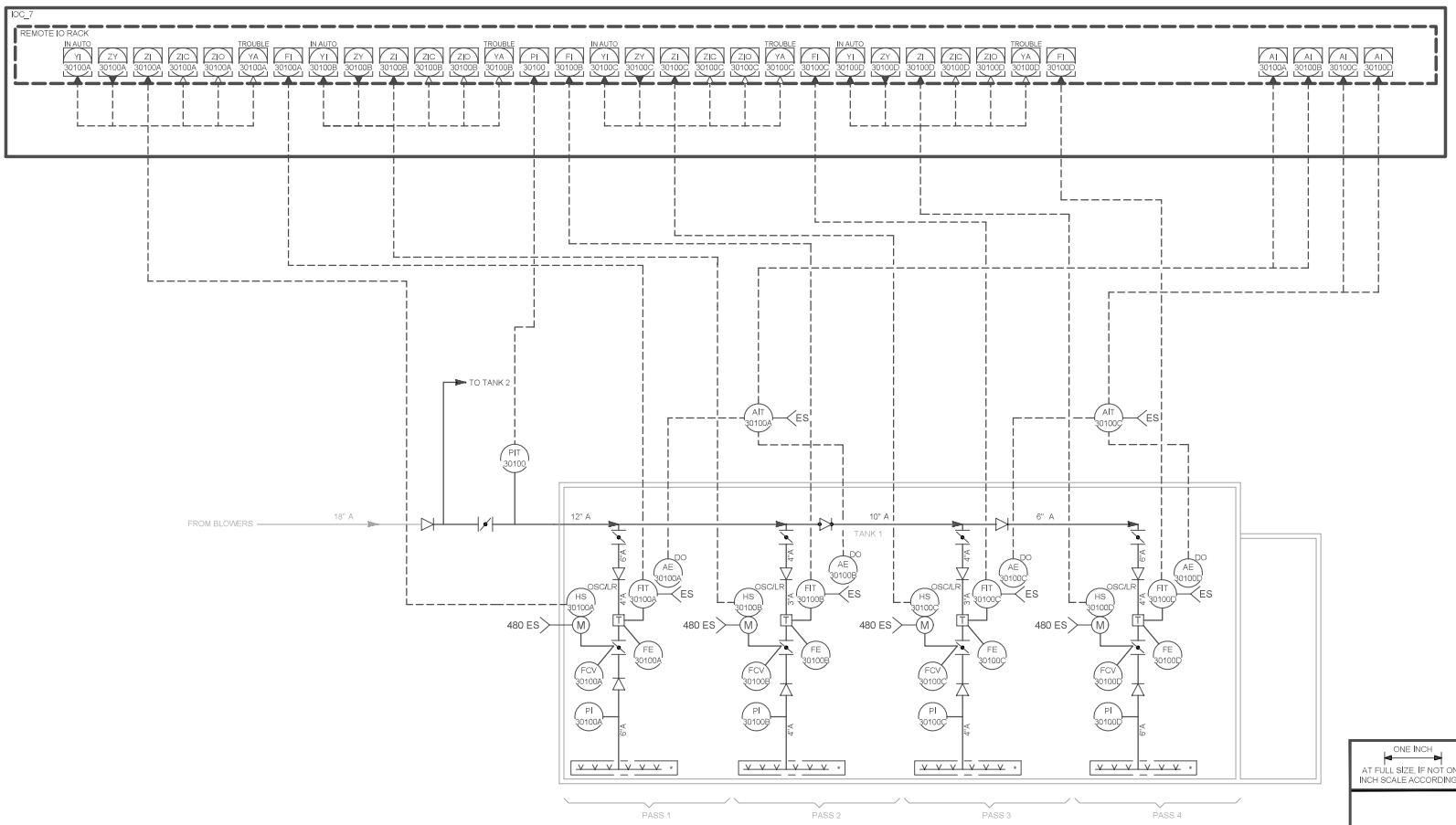

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

BRYANT T. KAWAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
AERATED SOLIDS CONTACT TANK - 1

DESIGNED BY: B.FINZEL
DRAWN BY: J.MILLER
APPROVED:
CHIEF

CHECKED BY:
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

BLW | DRAWING P101 SHEET 15 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

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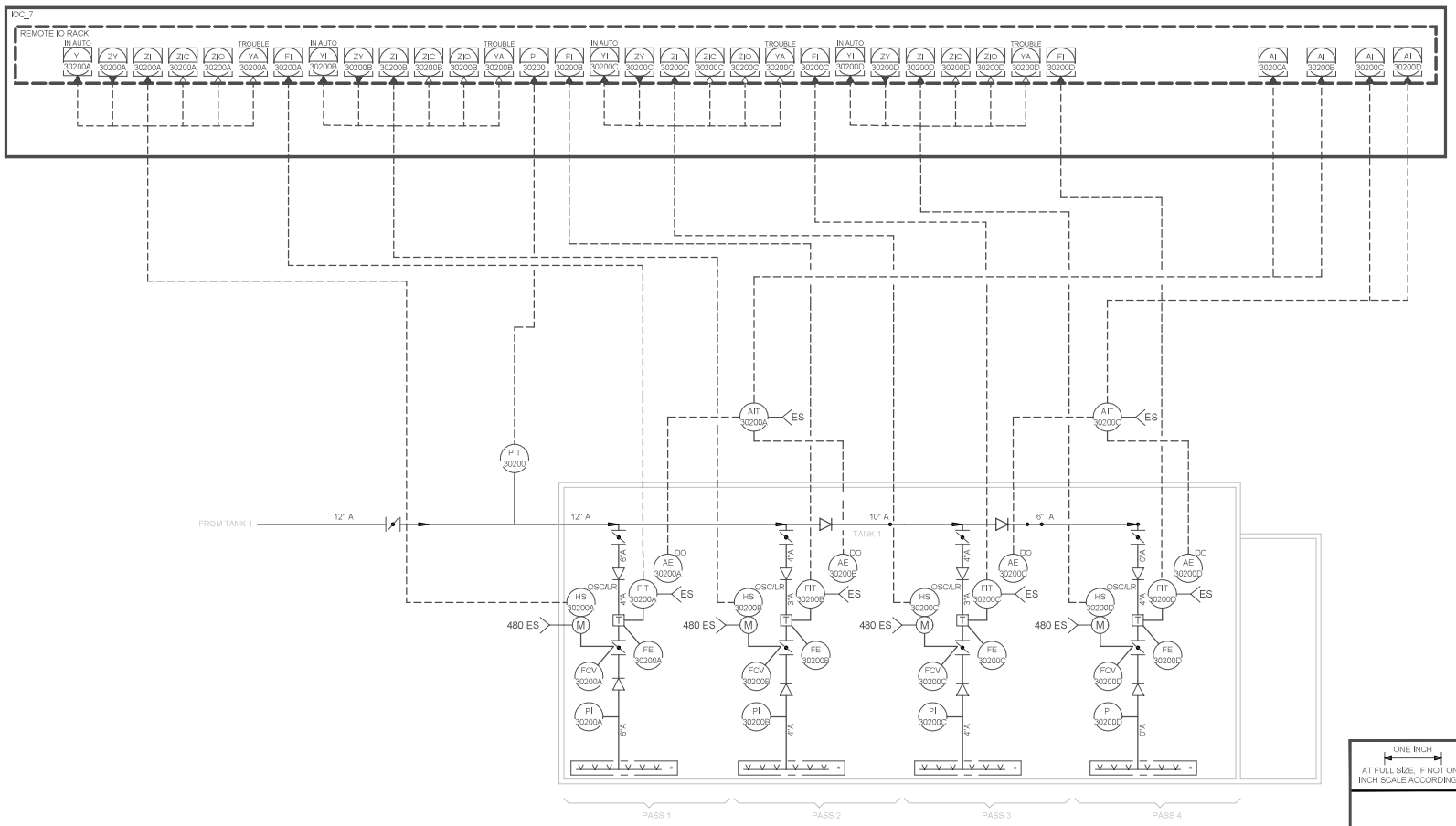


ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

BRYANT K. KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
AERATED SOLIDS CONTACT TANK - 2

DESIGNED BY: B.FINZEL
DRAWN BY: J.MILLER
APPROVED:
CHIEF

CHECKED BY:
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319828115983\BLWP102.dwg PLOT DATE: Wednesday, November 6, 2024 1:37:10 PM CAD USER: YOLANDA NODA

BLW | DRAWING P102 SHEET 16 OF 50

VALVES

SCHEMATIC OR 2D	VALVE TYPE
	THREE WAY VALVE
	GATE VALVE (FLANGED)
	GATE VALVE (THREADED)
	PLUG VALVE (GEAR OPERATOR)
	PLUG VALVE (LEVER HANDLE)
	BALL VALVE (THREADED)
	BALL VALVE (FLANGED)
	BUTTERFLY VALVE (LUGGED/WAFER)
	BUTTERFLY VALVE (AWWA W/ HANDWHEEL ACTUATOR)
	GLOBE VALVE (FLANGED)
	GLOBE VALVE (THREADED)
	DIAPHRAGM VALVE (FLANGED)
	DIAPHRAGM VALVE (THREADED)
	CHECK VALVE
	PUMP DISCHARGE VALVE
	DOUBLE LEAF CHECK VALVE
	ANGLE VALVE
	FLOAT VALVE
	PINCH VALVE
	FUSIBLE LINK VALVE
	NEEDLE VALVE
	BALL CHECK VALVE

SCHEMATIC OR 2D	VALVE TYPE
	GAUGE OR ROOT VALVE
	KNIFE GATE VALVE
	FLAP GATE
	BALANCING COCK
	CIRCUIT SETTER
	THERMOSTATICALLY CONTROLLED VALVE
	PRESSURE AND VACUUM RELIEF VALVE
	VACUUM RELIEF VALVE
	PRESSURE RELIEF VALVE
	IN-LINE, SPRING LOADED RELIEF VALVE
	PRESSURE REGULATING VALVE
	BACK PRESSURE REGULATING VALVE
S	SOLENOID VALVE
	DIAPHRAGM OPERATED VALVE
	PRESSURE BALANCE OPERATED VALVE
M	MOTOR OPERATED VALVE
	PISTON OPERATED VALVE
	CHLORINE INSTITUTE CONTAINER VALVE
	MUD VALVE
	WALL HYDRANT
M	TELESCOPING VALVE

MECHANICAL PIPE AND FITTINGS

2D SINGLE LINE	2D DOUBLE LINE	
		FLANGED JOINT
		PLAIN OR GROOVED END MECHANICAL COUPLING
		PUSH ON OR BALL AND SOCKET JOINT
		MECHANICAL JOINT
		WELDED JOINT
		GROOVED END ADAPTER FLANGE x FLANGE
		UNION
		SLEEVE TYPE MECHANICAL COUPLING
		RESTRAINED SLEEVE TYPE MECHANICAL COUPLING
		FLANGED COUPLING ADAPTER
		RESTRAINED FLANGED COUPLING ADAPTER OR DISMANTLING JOINT
		ELASTOMER AND FABRIC EXPANSION JOINT
		EXPANSION JOINT (SEE SPECS FOR TYPE)
		FLEXIBLE METAL HOSE
		EQUIPMENT CONNECTION FITTING
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER

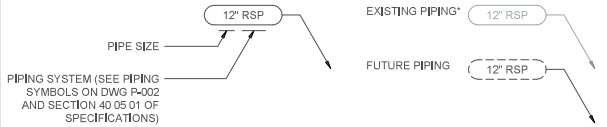
MISCELLANEOUS DEVICES

A	UTILITY STATION (LETTER, IF ANY, DESIGNATES TYPE)
	FLOOR DRAIN
XCO	CLEANOUT; X=DESIGNATION IF ANY
	IN LINE PRESSURE SENSOR

XX	INSTRUMENT
DE	DENSITY ELEMENT
FE	FLOW ELEMENT
LE	LEVEL ELEMENT
PE	PRESSURE ELEMENT
PI	PRESSURE INDICATOR (GAUGE)
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR

PIPING SYSTEMS

PIPING SYSTEMS ARE CALLED OUT BY SIZE FOLLOWED BY PIPING SYMBOL, ENCLOSED AS SHOWN.



PIPING SYSTEM DESIGNATIONS FOR EXISTING PIPE INDICATE TYPE OF SERVICE ONLY AND DO NOT IMPLY PIPE MATERIALS USED . SEE DWG P-001 FOR EXISTING PIPING ABBREVIATIONS.

GENERAL NOTES

1. THIS DRAWING IS GENERAL IN NATURE, SOME DESIGNATIONS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS.
2. SEE DRAWING P-002 FOR EQUIPMENT PREFIXES AND PIPING SYSTEM IDENTIFICATION. EXISTING PIPING IS DESIGNATED BY SERVICE WITHOUT IMPLICATION AS TO PIPING MATERIAL.
3. EXISTING PIPING MATERIAL, IF KNOWN, IS INDICATED SEPARATELY, AND MAY NOT BE THE SAME MATERIAL AS SPECIFIED FOR NEW PIPING FOR THE SAME SERVICE.
4. SEE PIPING SPECIFICATION SHEETS (PIPE SPECS) IN SPECIFICATION SECTION 40 05 01 FOR PIPING SYSTEM REQUIREMENTS.
5. SYMBOLS ARE ARRANGED ON SPECIFIC DRAWINGS AND IN CATEGORIES FOR CONVENIENCE ONLY; SYMBOLS MAY BE USED ON ANY OF THE CONTRACT DRAWINGS.
6. THE MECHANICAL DRAWINGS REPRESENT THE ACTUAL PIPING AND EQUIPMENT LAYOUT AND LOCATIONS. IN CASE OF CONFLICT BETWEEN THE PROCESS-INSTRUMENTATION AND MECHANICAL DRAWINGS, THE CONTRACTOR SHALL REFER TO THE MECHANICAL DRAWINGS.

ONE INCH AT FULL SIZE. IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
STANDARD SYMBOLS AND NOTES

DESIGNED BY: B.FINZEL
DRAWN BY: V.HAVILAND
APPROVED:
CHIEF
CHECKED BY:
SECTION HEAD
BRANCH HEAD
DATE

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15008-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE
4/30/2026
EXPIRATION DATE OF THE LICENSE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

DRAWING M001 SHEET 17 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

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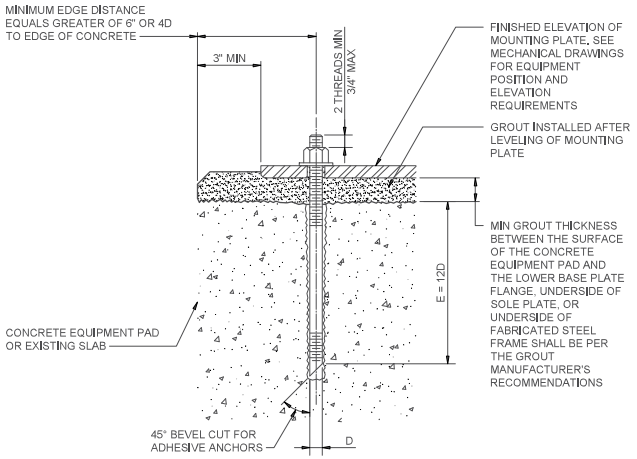
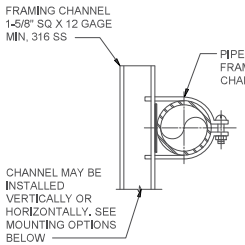
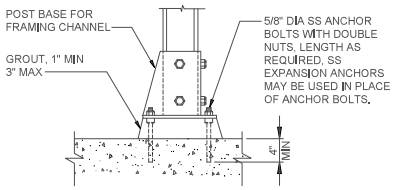


ADHESIVE ANCHORS FOR EQUIPMENT MOUNTING

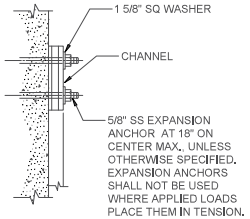
DETAIL A #####

NO SCALE





FRAMING CHANNEL POST BASE MOUNTING



FRAMING CHANNEL WALL OR FLOOR MOUNTING

3/8" THROUGH 8" PIPE FRAMING CHANNEL PIPE CLAMP

DETAIL B M-002

NO SCALE

ONE INCH AT FULL SIZE. IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
MISCELLANEOUS DETAILS

DESIGNED BY: B.FINZEL
DRAWN BY: V.HAVILAND
APPROVED:
CHIEF

CHECKED BY:
SECTION HEAD:
BRANCH HEAD:
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15009-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

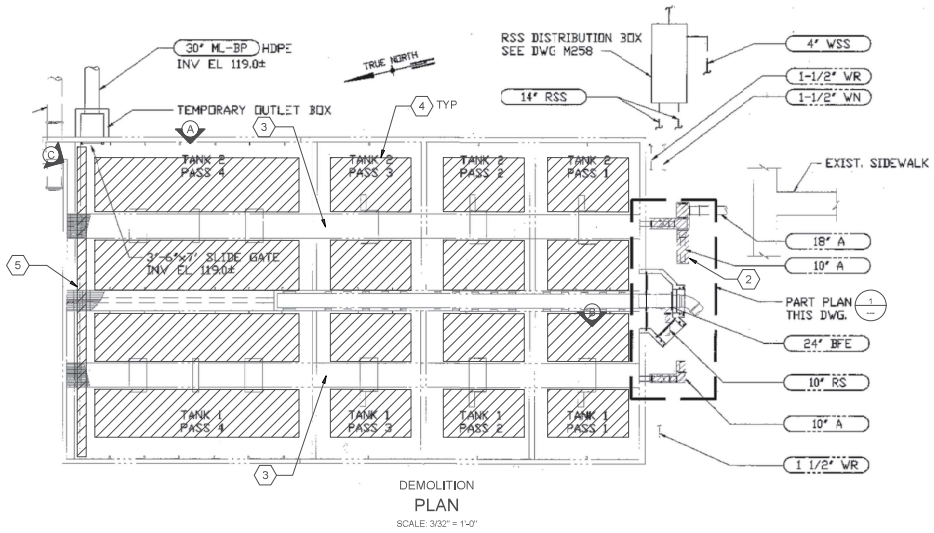
SIGNATURE: Bruce L Ball

4/30/2026
EXPIRATION DATE OF THE LICENSE

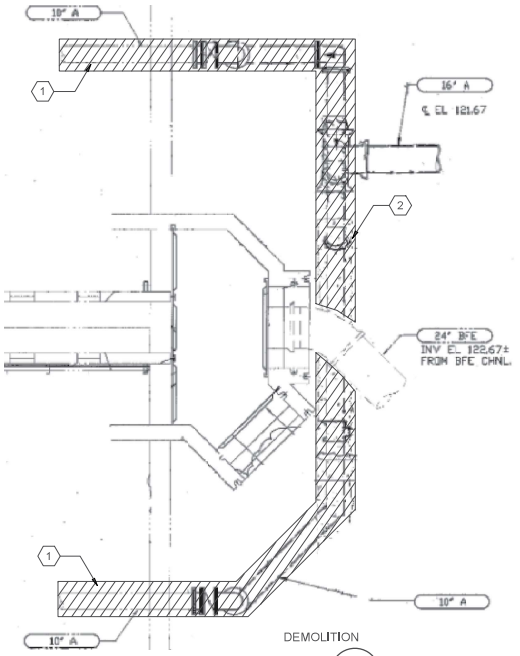
DRAWING M002 SHEET 18 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319817\M002.dwg PLOT DATE: Wednesday, November 6, 2024 3:29:48 PM CAD USER: YOLANDA NODA



DEMOLITION
PLAN
SCALE: 3/32" = 1'-0"



DEMOLITION
ENLARGED PLAN (1 / M101)
SCALE: NTS

GENERAL NOTES:

1. SEE 01 12 16 FOR WORK SEQUENCE.

KEY NOTES:

1. DEMOLISH EXISTING AERATION DIFFUSERS AND PIPING.
2. EXCAVATE AND DEMOLISH BELOW GRADE PIPING OF EXISTING AERATION SYSTEM TO EXISTING 16-INCH TEE. MAINTAIN OPERATION OF ONE AERATION BASIN DURING CONSTRUCTION.
3. DEMOLISH APPROXIMATELY 96' OF AIR PIPING UNDER WALKWAY AND INSTALL BLIND FLANGES.
4. REMOVE DIFFUSERS FROM 10 ZONES. DIFFUSERS OF ONE ZONE SHOWN. REMOVE ALL DIFFUSERS, PIPING, AND SUPPORTS.
5. DEMOLISH EXISTING EFFLUENT BAFFLE. SEE DETAIL 2/S102 FOR INSTALLATION OF NEW EFFLUENT BAFFLE.

PHOTO A / M101
SCALE: NONE

PHOTO B / M101
SCALE: NONE

PHOTO C / M101
SCALE: NONE

ONE INCH
AT FULL SIZE. IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

BRUCE L. BALL
LICENSED PROFESSIONAL ENGINEER
No. 15009-C
HAWAII, U.S.A.

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
SOLIDS CONTACT TANKS DEMOLITION PLAN

DESIGNED BY: B.FINZEL
DRAWN BY: V.HAVILAND
APPROVED:
CHIEF
CHECKED BY:
SECTION HEAD
BRANCH HEAD
DATE

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SIGNATURE
4/30/2026
EXPIRATION DATE OF THE LICENSE

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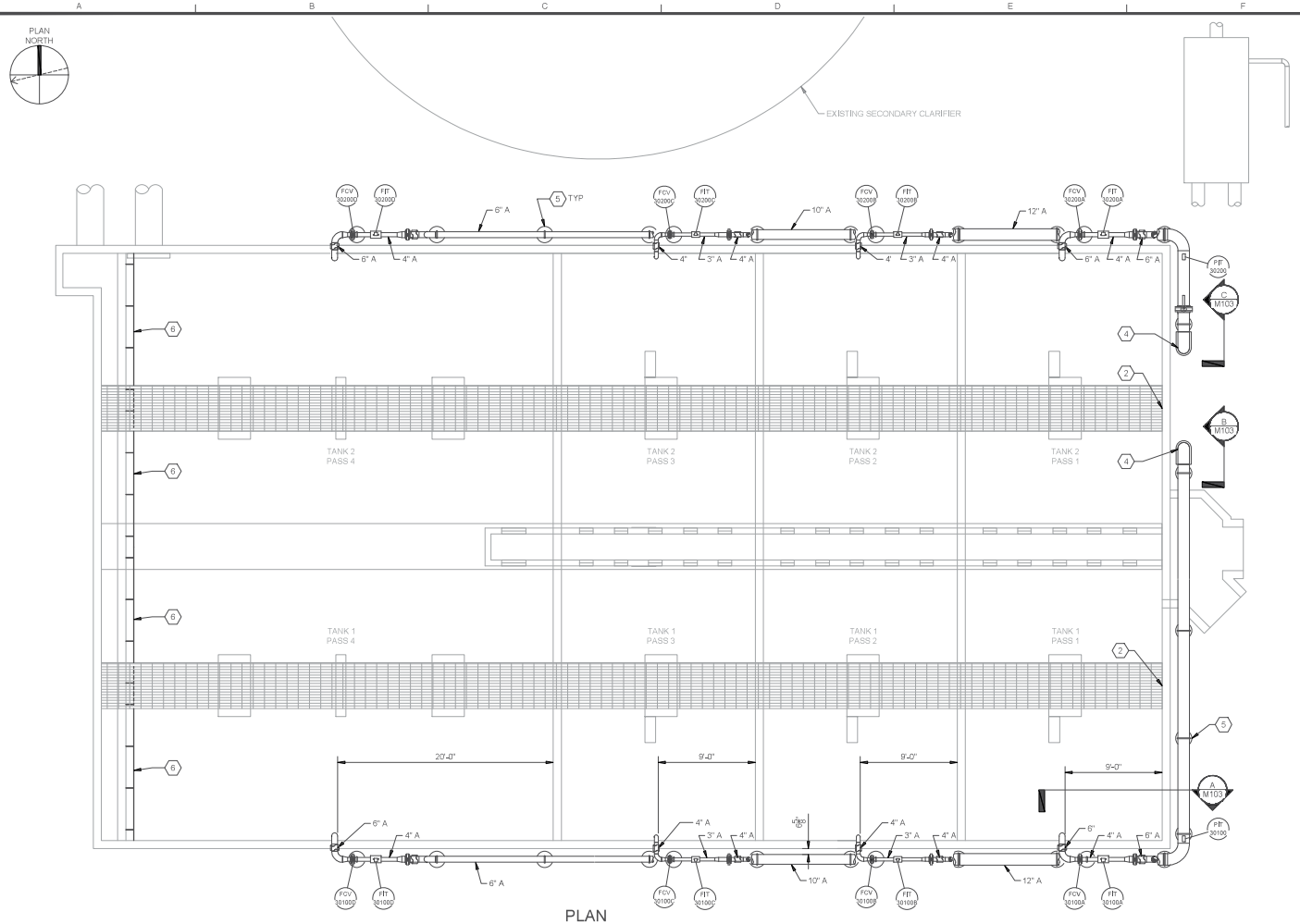
DRAWING M101 SHEET 19 OF 50

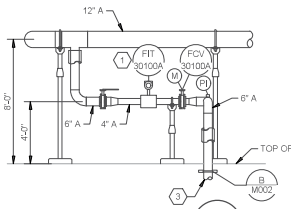
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319817\M101.dwg PLOT DATE: Tuesday, November 5, 2024 4:51:13 PM CAD USER: YOLANDA NODA



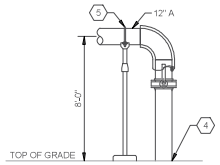
PLAN

SCALE: 3/16" = 1'-0"



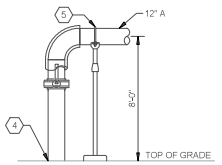
SECTION A M102

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



SECTION B M102

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



SECTION C M102

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

KEY NOTES:

1. INSTALL FLOW METER WITH 3D UPSTREAM AND 2 D DOWNSTREAM PER MANUFACTURER RECOMMENDATIONS.
2. MAINTAIN CLEARANCE IN FRONT OF EXISTING WALKWAYS.
3. PROVIDE DIFFUSERS PER SECTION 46 51 33.
4. SEE CIVIL DRAWINGS FOR CONNECTION TO BELOW GRADE PIPE.
5. INSTALL PIPE SUPPORTS AT 10'-0" MAXIMUM SPACING. SEE DETAIL 1/S102 FOR SUPPORT. INSULATE PIPE PER SPECIFICATION 40 42 00.
6. INSTALL EFFLUENT BAFFLE PER DETAIL 2/S102.

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
SOLIDS CONTACT TANKS GROUND LEVEL PLAN

DESIGNED BY: B.FINZEL
DRAWN BY: V.HAVILAND
APPROVED:
CHIEF
CHECKED BY:
SECTION HEAD
BRANCH HEAD
DATE

BRUCE L. BALL
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No. 15009-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE
4/30/2026
EXPIRATION DATE OF THE LICENSE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

DRAWING M102 SHEET 20 OF 50

C:\bcpw\d3319817\M102.dwg PLOT DATE: Tuesday, November 5, 2024 5:03:40 PM CAD USER: YOLANDA NODA

RACEWAYS

HH23 — MANHOLE (MH), HANDHOLE (HH), PULLBOX (PB)

JB1900 — JUNCTION BOX. OPTIONAL IDENTIFIER

TB-1301 — TERMINAL BOX. OPTIONAL IDENTIFIER

PBD-1900-1,3,5 — HOME RUN EXPOSED - SEE PANELBOARD, SWITCHBOARD, OR MCC SCHEDULE FOR CIRCUIT INFORMATION

EXAMPLE: HOME TO PANELBOARD PBD-1900, CIRCUITS 1, 3, AND 5

PBD-1900-1,3,5 — **HOME RUN CONCEALED - SEE PANELBOARD, SWITCHBOARD, OR MCC SCHEDULE FOR CIRCUIT INFORMATION.**

EXAMPLE: HOME TO PANELBOARD PBD-1900, CIRCUITS 1, 3, AND 5

CABLE TRAY MODIFIERS:
CTS - 24VDC OR LESS
CTC - 120V CONTROL CONDUCTORS
CTP - 600V POWER CONDUCTORS

CABLE #4/0 AND LARGER SHALL NOT BE STACKED VERTICALLY

WHEN TWO TRAY MODIFIERS IDENTIFY A SINGLE TRAY, THE CONTRACTOR MAY USE DIVIDER OR INSTALL SEPARATE TRAYS (CTC/CTS)

CABLE TRAY WITH COVER MODIFIER, AS ABOVE

P-BLW_PNL_1 — RACEWAY IDENTIFIER

RACEWAY EXPOSED
MODIFIERS FOR RACEWAY TYPE:
H - POWER (ABOVE 600V)
P - POWER
C - CONTROL
S - SIGNAL
D - DATA
F - FIBER OPTIC
PC - POWER AND CONTROL
X - SPARE

RACEWAY CONCEALED

RACEWAY TURNED TOWARD THE THE VIEWER

RACEWAY TURNED DOWN

CONDUIT CAPPED

— — DB — — DUCT BANK, DIRECT BURIED

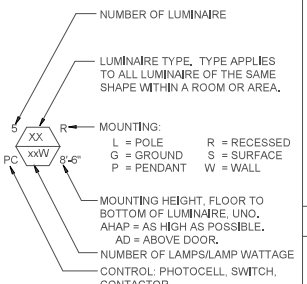
— —CDB— — DUCT BANK, CONCRETE ENCASED

— — RC — — DUCTBANK, REINFORCED CONCRETE ENCASED

— —OHE— — OVERHEAD POWER LINE

LIGHTING

LUMINAIRE IDENTIFIER:



LUMINAIRE SHAPES AND SCALE ARE REPRESENTED WHERE POSSIBLE. THE EXAMPLES SHOWN BELOW ARE TYPICAL APPLICATIONS

RECESSED LUMINAIRE

PENDANT MOUNTED LUMINAIRE

SURFACE MOUNTED LUMINAIRE

NS — EMERGENCY LIGHTING LUMINAIRE, LUMINAIRE WITH EMERGENCY BALLASTS

NS — LUMINAIRE WITH EMERGENCY BATTERY PACK

LUMINAIRE IDENTIFIED WITH AN "NS" SHALL BE PROVIDED WITH NON-SWITCHED POWER SOURCE

DOWN LIGHT

WALL MOUNTED LUMINAIRE

DIRECTIONAL LIGHT

POLE MOUNTED AREA LIGHT

EMERGENCY LIGHTING UNIT SELF CONTAINED

LIGHTING CONTINUED

EXIT LIGHTS:

SURFACE ON CEILING

WALL MOUNTED

WITH DIRECTIONAL ARROWS

3a — CIRCUIT IDENTIFIER: WHEN SHOWN ADJACENT TO LUMINAIRE, IDENTIFIES CIRCUIT NUMBER AND SWITCH. EXAMPLE: CIRCUIT 3, CONTROLLED BY SWITCH a

PC — PHOTO CELL

OS — OCCUPANCY SENSOR

WIRING DEVICES

SWITCHES:

UNLESS NOTED OTHERWISE, ALL SWITCHES ARE WALL MOUNTED

$ — TOGGLE SWITCH, SINGLE POLE

$$ — GANGED SWITCHES IN COMMON BOX WITH COMMON WALL PLATE

$a3 — SUPERSCRIPT INDICATES CIRCUIT CONTROLLED: a, b, c, ETC. MAY BE COMBINED WITH CIRCUIT NUMBER. EXAMPLE: 1a, 4b, ETC

SUBSCRIPT MODIFIER INDICATES:
2 = DOUBLE POLE
3 = THREE WAY
4 = FOUR WAY
K = KEY OPERATED
MC = MOMENTARY CONTACT, THREE POSITION
MS = MANUAL (MOTOR) STARTER OR SWITCH WITH OVERLOADS
R = RHEOSTAT (DIMMER, SPEED CONTROL)
O = OCCUPANCY SWITCH
HOA = HAND- OFF- AUTO SWITCH

D — DIMMER

RECEPTACLES:

C M — DUPLEX RECEPTACLE

RECEPTACLE MODIFIERS:
WP = WEATHER PROOF
GFI = GROUND FAULT CIRCUIT INTERRUPTER
H = HAZARDOUS AREA-EXPLOSION PROOF

EXPLOSION PROOF, CLASS 1, DEAD FRONT, 45° ANGLE, TWO GANG

RECESSED FLOOR RECEPTACLE - ANY RECEPTACLE INSIDE A SQUARE

SURFACE FLOOR RECEPTACLE - ANY RECEPTACLE INSIDE A TRIANGLE

GANGED RECEPTACLES - IN COMMON BOX, WITH COMMON WALL PLATE

C — RECEPTACLE, CLOCK HANGER

RECEPTACLE, DUPLEX ON EMERGENCY

480V RECEPTACLE

GROUNDING

GROUND ROD

GROUND ROD WITH GROUND WELL

GROUND CONNECTION, COMPRESSION TYPE, EXOTHERMIC. SEE SPECIFIC

G — GROUNDING CONDUCTOR

GROUND CONNECTION

GROUND CONNECTION TO STRUCTURAL REINFORCEMENT

LIGHTNING ROD/AIR TERMINAL

MOTORS AND EQUIPMENT

MOTOR STARTER, INDIVIDUAL. NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY

COMBINATION MOTOR STARTER. NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY

60 — DISCONNECT SWITCH, NON-FUSED
EXAMPLE: 60 AMP

F 100/2/80 — DISCONNECT SWITCH, FUSED
EXAMPLE: 100 AMP, 2P, 80 AMP FUSES

M — MOTOR

SV — SOLENOID VALVE

H — HEATER

HY — HYGROTHERMOSTAT

T — THERMOSTAT

WH — WATER HEATER

FIELD INSTRUMENT

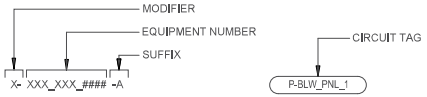
TB — FIELD TERMINAL BOX

LOCAL CONTROL STATION

BLW_PNL_2 — EQUIPMENT DESIGNATION (EXAMPLE)

CONTROL PANEL, VFD, RVSS, APPROXIMATE SHAPE AND SCALE.

CIRCUIT IDENTIFICATION



NOTE:

MODIFIERS FOR CABLE TYPE INCLUDE:
H - POWER (ABOVE 600V)
P - POWER
C - CONTROL
S - SIGNAL
D - DATA
F - FIBER OPTIC
PC - POWER AND CONTROL
X - SPARE

SUFFIX:
A - LETTER TO CREATE UNIQUE ID

GENERAL NOTES:

1. SYMBOLS AND ABBREVIATION DRAWINGS ARE GENERAL IN NATURE. SOME SYMBOLS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS
2. SYMBOLS ARE ARRANGED ON SPECIFIC DRAWINGS AND IN CATEGORIES FOR CONVENIENCE ONLY; SYMBOLS MAY BE USED ON ANY OF THE CONTRACT DRAWINGS
3. IDENTIFICATIONS (ID), SIZES, RATINGS, LOCATIONS AND SIMILAR INFORMATION SHOWN ASSOCIATED WITH SYMBOLS ARE OPTIONAL; EXAMPLES OF SUCH INFORMATION ARE SHOWN WITH SOME SYMBOLS FOR CLARITY

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

BRYANT KAWAMURA — LICENSED PROFESSIONAL ENGINEER — No. 15989-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
ELECTRICAL LEGEND - 1

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED:
CHIEF
CHECKED BY: B. KAWAMURA
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

GEN | DRAWING E001 | SHEET 21 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319826\159839-GEN-E001.dwg PLOT DATE: Wednesday, November 6, 2024 1:44:57 PM CAD USER: YOLANDA NODA

CONTROL DIAGRAM SYMBOLS

GENERAL

- CONDUCTORS CONNECTED
- CONDUCTORS NOT CONNECTED
- TERMINAL POINT FOR EXTERNAL CONNECTIONS
- EXISTING EQUIPMENT (SCREENED)

INDICATING LIGHTS

INDICATING LIGHTS

L = LENS COLOR:
A = AMBER
B = BLUE
G = GREEN
R = RED
W = WHITE

LINE — PUSH TO TEST. TEST VOLTAGE TERMINAL SHOWN

PUSHBUTTONS

- HS-XXXX — PUSHBUTTON, MOMENTARY CONTACT, NORMALLY OPEN
- HS-XXXX — PUSHBUTTON, MOMENTARY CONTACT, NORMALLY CLOSED
- HS-XXXX — PUSHBUTTON WITH MUSHROOM HEAD, EMERGENCY STOP,

SELECTOR SWITCHES

HS-XXXX (1, 2; OX) — 2 POSITION MAINTAINED CONTACT
X = CONTACTS CLOSED
O = CONTACTS OPEN

HS-XXXX (1, 2; XO, OX) — 2 POSITION
SPRING RETURNED TO RIGHT
O = CONTACTS OPENED
X = CONTACTS CLOSED

HS-XXXX (H, O, A; OXO, XOO) — 3 POSITION MAINTAINED CONTACT
X = CONTACTS CLOSED
O = CONTACTS OPENED

CONTROL RELAYS

- CR 2 FUNCTION — OPERATING COIL
  CR = CONTROL RELAY
  U = UNLATCH
  L = LATCH
- OL — OVERLOAD RELAY
- CR2 CR2 — OUTPUT CONTACTS. LINE NUMBER OF RELAY COIL SHOWN (OPTIONAL)

INPUT SWITCHES

NORMALLY OPEN	NORMALLY CLOSED	INITIATING VARIABLE
SS	SS	SPEED
TS	TS	TEMPERATURE
WS	WS	FORCE OR TORQUE
ZS	ZS	POSITION (LIMIT)
FS	FS	FLOW
LS	LS	LEVEL
PS	PS	PRESSURE

TIMING RELAYS

TR 3 — OPERATING COIL
ON or OFF DELAY
RANGE:SEC/MIN
SET:SEC/MIN

NORMALLY OPEN	NORMALLY CLOSED	
TR3 OR TC (LINE)	TR3 OR TO (LINE)	DELAY ON COIL ENERGIZATION (ON DELAY)
TR3 OR TO (LINE)	TR3 OR TC (LINE)	DELAY ON COIL DE-ENERGIZATION (OFF DELAY)

CONTACTORS

ID — OPERATING COILS
C = CONTACTOR, LIGHTING OR GENERAL USE
F = FAST OR FORWARD
M = MAIN OR LINE
1M = FIRST MAIN OR WYE
2M = SECOND MAIN OR DELTA
R = RUN OR REVERSE
S = SLOW OR START
IC = ISOLATION CONTROL

ID / SIZE X — MAIN CONTACTS
MAIN CONTACTS AIR BREAK, NEMA SIZE OPTIONAL

M / SIZE 3 — VACUUM CONTACTOR, NEMA SIZE OPTIONAL.

MISCELLANEOUS

- FU 2B / 15 AMP — FUSE WITH SIZE AND OPTIONAL IDENTIFICATION
- FU 3/15 AMP — FUSE WITH BLOWN FUSE INDICATOR
- 480V / 250VA / 120V — CONTROL TRANSFORMER PRIMARY AND SECONDARY SHOWN SIZE AS SHOWN OR AS SPECIFIED
- 50/5 (3) — CURRENT TRANSFORMER. PRIMARY TURNS RATIO SHOWN (OPTIONAL)
- 250 OHM RES — RESISTOR
- RECTIFIER
- SURGE OR ARC SUPPRESSOR
- KVAR — CAPACITOR
- CONNECTOR
- XX — INCOMING LINE POWER SUPPLY
- DRAWOUT MECHANISM
- SOLENOID VALVE
- BUS DUCT
- GROUND CONNECTION
- POTENTIOMETER
- METER WITH ALPHA IDENTIFIERS:
  H = ELAPSED TIME
  A = AMMETER
  V = VOLTMETER
- BATTERY
- SHIELDED CABLE
- LOCATED IN FIELD
- AC TERMINAL BLOCK
- DC TERMINAL BLOCK
- XX — PLC I/O POINTS
  DO = DIGITAL OUT SIGNAL
  DI = DIGITAL IN SIGNAL
  AO = ANALOG OUT SIGNAL
  AI = ANALOG IN SIGNAL

ONE LINE DIAGRAM SYMBOLS

- SENSOR FRAME / 52 — AC CIRCUIT BREAKER AND DRAWOUT MECHANISM, OTHER THAN MOLDED CASE. CURRENT SENSOR RATING OVER BREAKER FRAME SIZE.
- SENSOR TRIP FRAME LSIG — CIRCUIT BREAKER WITH CURRENT SENSOR RATING OVER BREAKER FRAME SIZE. SOLID STATE TRIP FEATURES SHOWN:
  L = LONG DELAY
  S = SHORT DELAY
  I = INSTANTANEOUS
  G = GROUND FAULT
- SIZE / TYPE — CIRCUIT BREAKER (TYPE: MCP = MOTOR CIRCUIT PROTECTOR OR 3P = 3-POLE THERMAL MAGNETIC TRIP
- 30A / 3P / CLF — FUSED SWITCH: FUSE RATING AND POLES SHOWN
  MODIFIERS:
  CLF = CURRENT LIMITING FUSE
  DE = DUAL ELEMENT
  F = CLASS F
  E = E RATED
- 100F — FUSE. 100 AMP CLASS "F" SHOWN
- ATS # / 60A, 3P — POWER TRANSFER SWITCH. DESIGNATION, AMP RATING AND CONFIGURATION SHOWN
  MTS = MANUAL TRANSFER SWITCH
  ATS = AUTOMATIC TRANSFER SWITCH
  SUSE= SUITABLE FOR USE AS SERVICE ENTRANCE
- AIR BREAK CONTACTOR, FVNR
  U,O,N, NEMA SIZE 1 INDICATED
  FVR = FULL VOLTAGE, REVERSING STARTER
  2S2W = TWO SPEED, TWO WINDING STARTER
- METERING (ANSI/IEEE FUNCTIONS AS SPECIFIED)
  POWER MONITOR (PM) POWER QUALITY MONITOR (HARMONIC ANALYSIS) (PQM) MOTOR MONITOR AND PROTECTION RELAY (MPR) FEEDER PROTECTION RELAY (FPR)
- 5 KVA — PACKAGED EQUIPMENT OR NON-MOTOR LOAD. KVA, KW, AMPS AS NOTED.
- XXHP ##AMPS — VARIABLE FREQUENCY DRIVE, (VFD) NORMAL DUTY UON. HP IS INDICATED IF DIFFERENT THAN DRIVEN LOAD HP.
  ##AMPS=RATED CONTINUOUS AMPS
- SOLID STATE REDUCED VOLTAGE STARTER
- SPD — SURGE PROTECTION DEVICE
- 64 N / 3 — ANSI C37.2 DEVICE. QUANTITIES SHOWN.

- 600kW 480V / 60 Hz 3ph, 4w — G — GENERATOR WITH WINDING CONFIGURATION VOLTAGE, POWER, FREQUENCY SHOWN. POWER FACTOR OPTIONAL
- 5 — MOTOR, HORSEPOWER SHOWN
- 55 KVAR — POWER FACTOR CORRECTION CAPACITOR. KVAR RATING INDICATED
- POTHEAD
- STRESS CONE TERMINATOR
- MV TERMINATOR
- INDICATES THAT ALL OR PART OF CONDUIT MAYBE ROUTED IN DUCT BANK OR UNDERGROUND
- PORTABLE CABLE
- CABLE BUS
- BUS CONDUCTOR
- CABLE CONDUCTOR
- SURGE ARRESTOR
- LIGHTNING ARRESTOR AND GROUND
- TEST DEVICE
- 200A — DISCONNECT OR ISOLATING SWITCH. 200 AMP SHOWN
- 50 AMP/ 10 SEC / GDR — NEUTRAL GROUNDING RESISTOR. AMPS/TIME RATING SHOWN
- KIPS_PM_9206 / PM — POWER MONITOR WITH TAG SHOWN
- CTSB — CURRENT TRANSFORMER SHORTING BLOCK

- 480 V 30KVA 5% Z / 208/120V — POWER TRANSFORMER. VOLTAGES, SIZE, IMPEDANCE SHOWN
- 480 V 30KVA 5% Z / 208/120V — ZIG ZAG TRANSFORMER. VOLTAGES, SIZE, IMPEDANCE SHOWN
- 1,5 KVA 480 V / 2,5% Z 480 V — ISOLATION TRANSFORMER. VOLTAGES, SIZE, IMPEDANCE SHOWN
- 3 / 480V - 120V — POTENTIAL TRANSFORMER. PT QUANTITY (3) AND VOLTAGES SHOWN
- 250/5 / 3 — CURRENT TRANSFORMER. CT QUANTITY AND 250:5 TURNS RATIO SHOWN

WINDING CONFIGURATIONS:
- DELTA
- WYE (GROUNDED)

- K — KIRK KEY INTERLOCK
- T — FIELD TERMINAL BOX
- A — AUTOMATIC BREAKER CONTROL SYSTEM
- 1 FVNR — SMART OVERLOAD RELAY WITH CONTROL BACK TO CONTACTOR
- K ---- K — KIRK KEY CONNECTION SIGNAL
- A ---- A — AUTOMATIC BREAKER CONTROL SYSTEM SIGNAL

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT: LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM: ELECTRICAL LEGEND - 2

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED:
CHECKED BY: B.KAWAMURA
SECTION HEAD:
BRANCH HEAD:

BRYANT KAWAMURA — LICENSED PROFESSIONAL ENGINEER — No. 15989-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

GEN | DRAWING E002 | SHEET 22 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319826\159839-GEN-E002.dwg PLOT DATE: Wednesday, November 6, 2024 1:53:11 PM CAD USER: YOLANDA NODA

ABBREVIATIONS

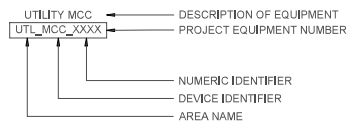
NOTES:
1. ABBREVIATIONS SHOWN ON ELECTRICAL DRAWINGS ARE IN ACCORDANCE WITH ASME STANDARD Y14.38A
2. ABBREVIATIONS ON THIS SHEET ARE IN ADDITION TO THE ABBREVIATIONS DEFINED ON OTHER DRAWINGS.
3. ABBREVIATIONS HERE IN SHALL TAKE PRECEDENCE IN CASE OF CONFLICT.
4. ABBREVIATIONS ARE NOT EQUIPMENT NUMBERING PREFIXES LISTED ON OTHER DRAWINGS.

A, AMP	AMP(S), AMPERE(S)	EP	EXPLOSION PROOF	MAX	MAXIMUM		
AC	ALTERNATING CURRENT	EQUIP	EQUIPMENT	MBS	MANUAL BYPASS SWITCH	SA	SURGE ARRESTOR
ACAMS	ACCESS CONTROL AND MONITORING SYSTEM	EW	EACH WAY	MCC	MOTOR CONTROL CENTER	SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
		EX	EXISTING	MCP	MOTOR CIRCUIT PROTECTOR		
AF	FRAME AMPS			MPC	MINI POWER CENTER	SCR	SILICON CONTROLLED RECTIFIER
AFF	ABOVE FINISHED FLOOR	FBP	FOR BID PURPOSES	MECH	MECHANICAL		
AHAP	AS HIGH AS POSSIBLE	FDR	FEEDER	MFR	MANUFACTURE(R)	SD	SMOKE DETECTOR
AIC	AMPS INTERRUPTING CAPACITY, SYMM.	FL	FLUORESCENT	MH	MANHOLE, METAL HALIDE	SEC	SECONDARY
		FLA	FULL LOAD AMPS	MIC	MICROPHONE	SEL	SELECTOR
AL	ALUMINUM	FLEX	FLEXIBLE CONDUIT	MIN	MINIMUM	SG	SIGNAL GROUND
ARCH	ARCHITECT(URAL)	F.O.	FAIL OPEN	MIS	MANAGEMENT INFORMATION STATION	SMH	SIGNAL HANDHOLE
AS	SENSOR AMPERES	FO	FIBER OPTIC			SMH	SIGNAL MANHOLE
ASYM	ASYMMETRICAL	FT	FEET	MISC	MISCELLANEOUS	SPEC	SPECIFICATION
AT	AMPERE TRIP	FTE	FULL TIME EMPLOYEE	MM	MILLIMETER	SPD	SURGE PROTECTION DEVICE
ATS	AUTOMATIC TRANSFER SWITCH	FU	FUSE	MMH	MEDIUM VOLTAGE MANHOLE	SPKR	SPEAKER
AUTO	AUTOMATIC	FUT	FUTURE	MOV	MOTOR OPERATED VALVES	SST	STAINLESS STEEL
AUX	AUXILIARY			MTS	MANUAL TRANSFER SWITCH	ST	SHORT TIME
AWG	AMERICAN WIRE GAUGE	GDR	GROUNDING RESISTOR	MV	MILLIVOLT, MEDIUM VOLTAGE	STP	SHIELDED TWISTED PAIR
		GEC	GROUND ELECTRODE CONDUCTOR	MVMC	MEDIUM VOLTAGE MOTOR CONTROL	SUB	SUBSTATION
BAT	BATTERY					SW	SWITCH
BC	BARE COPPER	GF	GROUND FAULT			SWBD	SWITCHBOARD
BKR	BREAKER	GFI	GROUND FAULT INTERRUPTER	N/A	NOT APPLICABLE	SWG	SWITCHGEAR
BLDG	BUILDING	GND, G	GROUND	N.C.	NORMALLY CLOSED	SYMM	SYMMETRICAL
BOT	BOTTOM	GRS	GALVANIZED RIGID STEEL	NEC	NATIONAL ELECTRICAL CODE	SYS	SYSTEM
		H	HIGH	NEUT, N	NEUTRAL		
C	CONDUCTOR, CONDUIT	HD	HEAVY DUTY	NF	NON-FUSED	TB	TERMINAL BOX
CAT.	CATALOG	HGT	HEIGHT	NIC	NOT IN CONTRACT	TEL	TELEPHONE
CB	CIRCUIT BREAKER	HH	HANDHOLE	N.O.	NORMALLY OPEN	TEMP	TEMPERATURE
CKT	CIRCUIT	HHG	HANDHOLE GROUP	NO.	NUMBER	TFR	TRANSFORMER
CLG	CEILING	HID	HIGH INTENSITY DISCHARGE	NOM	NOMINAL	TJB	TRANSIT JUNCTION BOX
CLR	CLEAR	HMI	HUMAN MACHINE INTERFACE	NP	NAMEPLATE	TRI	TRIAD
CM	CENTIMETERS	HP	HORSEPOWER	NTS	NOT TO SCALE	TV	TELEVISION
CND	CONDUIT	HPS	HIGH PRESSURE SODIUM			TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
CNTL	CONTROL	HTR	HEATER	OC	ON CENTER		
C.O.	CONDUIT ONLY, SPARE	HV	HIGH VOLTAGE	OCC	OPERATION CONTROL CENTER	TX	TRANSMIT
COM	COMMON	HVAC	HEATING, VENTILATION, AND AIR CONDITIONING	OD	OUTSIDE DIAMETER	TYP	TYPICAL
CONC	CONCRETE			OH	OVERHEAD		
CPT	CONTROL POWER TRANSFORMER	HZ	HERTZ (CYCLES PER SECOND)	OIS	OPERATOR INTERFACE STATION	U/G	UNDERGROUND
						UNO	UNLESS NOTED OTHERWISE
CR	CONTROL RELAY	ICOM	INTERCOM	OT	OIL TIGHT	UPS	UNINTERRUPTABLE POWER SUPPLY
CS	CURRENT SENSOR	ID	INSIDE DIAMETER	OWS	OPERATOR WORKSTATION		
CSM	COLLECTION, SERVICE, AND MAINTENANCE	IMC	INTERMEDIATE METAL CONDUIT				
		INCAND	INCANDESCENT	P	POLE, PHASE	V	VOLT
CT	CURRENT TRANSFORMER	INTLK	INTERLOCK	PBD	PANEL BOARD	VA	VOLTAMPERE
CU	COPPER	INST	INSTANTANEOUS	PB	PUSHBUTTON, PULLBOX	VAR	VOLTAMPERE REACTIVE
		IOC	INPUT-OUTPUT CABINET	PCP	PROCESS CONTROL PANEL	VC	VACUUM CONTACTOR
DB	DUCT BANK, DIRECT BURIAL	I/O	INPUT-OUTPUT	PF	POWER FACTOR	VCP	VENDOR CONTROL PANEL
		IPB	INSTRUMENT PULLBOX	PH	PHASE	VDC	VOLTS DIRECT CURRENT
DC	DIRECT CURRENT, DATA CABLE			PLC	PROGRAMMABLE LOGIC CONTROLLER	VFD	VARIABLE FREQUENCY DRIVE
DCU	DISTRIBUTED CONTROL UNIT	JB	JUNCTION BOX				
DET	DETAIL			PMM	POWER METERING MODULE	VND	VENDOR
DO	DISSOLVED OXYGEN	KA	KILO AMPERE	PNL	PANEL		
DOC	DEWATERING ODOR CONTROL	KCMIL	1000 CIRCULAR MIL	PP	POWER PANEL	W	WATT, WIRE, WIDE
DIAG	DIAGRAM	KV	KILOVOLT	PR	PAIR	W/	WITH
DISC	DISCONNECT	KVA	KILOVOLT-AMPERE	PRI	PRIMARY	W/O	WITHOUT
DS	DISCONNECT SWITCH	KVAR	KILOVOLT-AMPERE REACTIVE	PT	POTENTIAL TRANSFORMER	WW	WIREWAY
DWG	DRAWING	KW	KILOWATT	PVC	POLYVINYL CHLORIDE	WG	WITH GROUND
		KWH	KILOWATT-HOUR	PWR	POWER	WP	WEATHERPROOF
EA	EACH						
EC	EMPTY CONDUIT	L	LONG	QSB	QUARTZ STANDBY	XFMR	TRANSFORMER
EGC	ELECTRICAL GROUNDING CONDUCTOR	LAN	LOCAL AREA NETWORK			XMTR	TRANSMITTER
		LC	LIGHTING CONTACTOR	RCPT	RECEPTACLE	XP	EXPLOSION PROOF
ECP	EQUIPMENT CONTROL PANEL	LCP	LOCAL CONTROL PANEL	REF	REFERENCE		
EDB	ELECTRICAL DUCTBANK	LCS	LOCAL CONTROL STATION	REM	REMOTE	Z	IMPEDANCE
EG	ENGINE GENERATOR SET	LED	LIGHT EMITTING DIODE	REQD	REQUIRED		
EL	ELEVATION	LHH	LOW VOLTAGE HANDHOLE	RE STL	REINFORCING STEEL		
ELEC	ELECTRIC(AL)	LMH	LOW VOLTAGE MANHOLE	RMS	ROOT MEAN SQUARE		
EMCB	ELECTRICAL MAIN CONTROL BOARD	LP	LIGHTING PANEL	RTD	RESISTANCE TEMPERATURE DETECTOR		
		LT	LONG TIME				
EMH	ELECTRICAL MANHOLE	LTG	LIGHTING	RTU	REMOTE TERMINAL UNIT		
EMER	EMERGENCY	LV	LOW VOLTAGE	RVSS	REDUCED VOLTAGE SOLID STATE STARTER		
ENCL	ENCLOSURE/ENCLOSED						
EPB	ELECTRICAL PULLBOX	M	METER, MOTOR	RX	RECEIVE		
ETM	ELAPSED TIME METER	MA	MILLIAMPERE				

GENERAL NOTES

1. THE ELECTRICAL DRAWINGS USE THE ONE LINE DIAGRAMS, RISER DIAGRAMS, CIRCUIT SCHEDULE, AND PANEL SCHEDULES IN CONJUNCTION WITH SHOWING THE LOCATION OF THE ELECTRICAL/INSTRUMENTATION SOURCES AND LOADS/DEVICES SHOWN ON THE PLAN DRAWINGS TO DEPICT THE WORK. THE CONTRACTOR SHALL USE THESE DOCUMENTS TO DETERMINE AND PROVIDE THE NECESSARY RACEWAY AND WIRING SYSTEM FOR EACH CIRCUIT. ALL INDOOR RACEWAY SHALL BE RUN EXPOSED AND ROUTED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED. THE TYPE OF RACEWAY AND WIRE USED SHALL BE AS SPECIFIED.
2. IF EQUIPMENT SUPPLIED BY MANUFACTURER HAS A LARGER LOAD THAN INDICATED ON THE SINGLE LINE DIAGRAM, THE OFFICER-IN-CHARGE SHALL BE NOTIFIED. THE CABLE, CONDUIT, AND ELECTRICAL EQUIPMENT SHALL BE SIZED AS REQUIRED, TO ACCOMMODATE THE HIGHER VALUE.
3. IN AREAS WHERE THERE ARE OVERHEAD BRIDGE CRANES, HOISTS, ETC., OR WHERE EQUIPMENT IS LIFTED AND MOVED FOR MAINTENANCE OR REPLACEMENT, NO CONDUITS SHALL BE RUN OVERHEAD THAT WILL INTERFERE WITH THE OPERATION OF THE EQUIPMENT OR ACCESS TO EQUIPMENT.
4. THE LOCATION OF THE CONTROL STATIONS SHOWN ON THE PLAN DRAWINGS ARE DIAGRAMMATIC ONLY. THE ACTUAL LOCATION SHALL BE COORDINATED IN THE FIELD WITH THE OFFICER-IN-CHARGE AND ADJACENT EQUIPMENT SUCH AS PIPING, PROCESS EQUIPMENT, ETC.
5. THE CONTRACTOR SHALL COORDINATE WITH THE STRUCTURAL AND MECHANICAL DRAWINGS FOR CONDUIT STUB UP AND TERMINATION LOCATIONS.
6. WHERE EXISTING CONDUIT IS SPECIFIED TO BE REUSED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING EXISTING WIRING, MANDREL TESTING (CONCEALED/UNDERGROUND SECTIONS), AND CLEANING EXISTING CONDUIT PRIOR TO INSTALLING NEW WIRING. IF CONDUIT FAILS MANDREL TESTING OR THE CONTRACTOR OTHERWISE BELIEVES THAT CONDUIT IS NOT SUITABLE FOR REUSE, THE CONTRACTOR SHALL IMMEDIATELY INFORM THE OFFICER-IN-CHARGE.

EQUIPMENT TAG DEFINITION



ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

BRYANT KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
ELECTRICAL NOTES AND ABBREVIATIONS

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED:
CHIEF

CHECKED BY: B.KAWAMURA
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

GEN | DRAWING E003 SHEET 23 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

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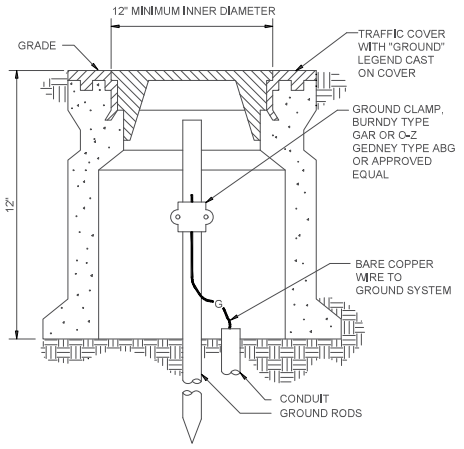
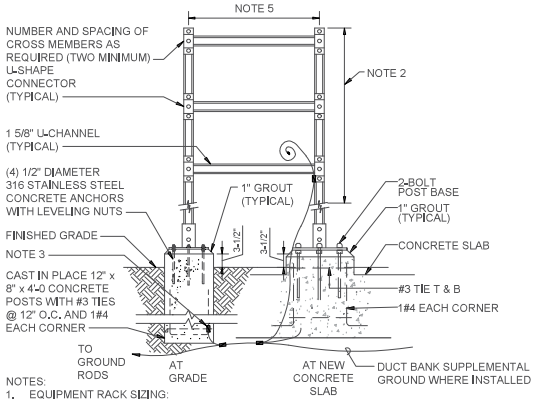


GROUND WELL AND ROD DETAIL

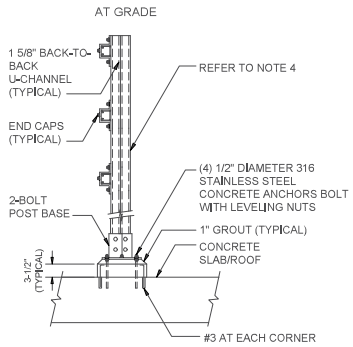
DETAIL 1 / E004

SCALE: NONE



NOTES:

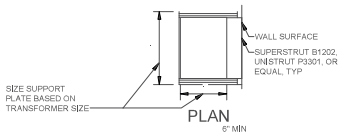
1. EQUIPMENT RACK SIZING:
   A. PROVIDE 316 STAINLESS STEEL CHANNEL, END-CAPS, AND FITTINGS.
   B. PROVIDE 1/4" MINIMUM ALUMINUM PLATE FOR SMALL ITEMS.
2. MOUNT EQUIPMENT OPERATING HANDLES FOUR FEET ABOVE GRADE.
3. BOND VIA EXOTHERMIC WELD OR LISTED IRREVERSIBLE CLAMP #1/0 GROUND WIRE TO REBAR AND RACK.
4. PROVIDE GROUNDING PIGTAIL TO BOND EQUIPMENT GROUND CONDUCTOR OF LARGEST BRANCH CIRCUIT LOAD TO RACK. PIGTAIL SHALL MATCH EGC AWG SIZE.
5. RACK WIDTH SHALL ALLOW FOR EQUIPMENT ENCLOSURES MOUNTED SIDE BY SIDE WITH 5" MIN SEPARATION.

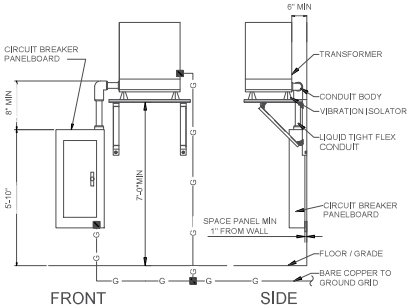


EQUIPMENT RACK

DETAIL 2 / E004

SCALE: NONE





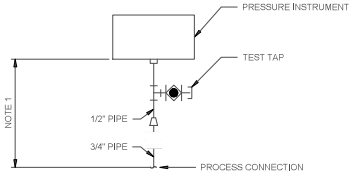
NOTE:

1. PROVIDE 30" CLEAR WORK SPACE IN FRONT OF PANEL. CLEAR WORKING DISTANCE FROM FROM OF PANEL PER 110.26.

TRANSFORMER AND PANELBOARD WALL MOUNT

DETAIL 3 / E004

SCALE: NONE



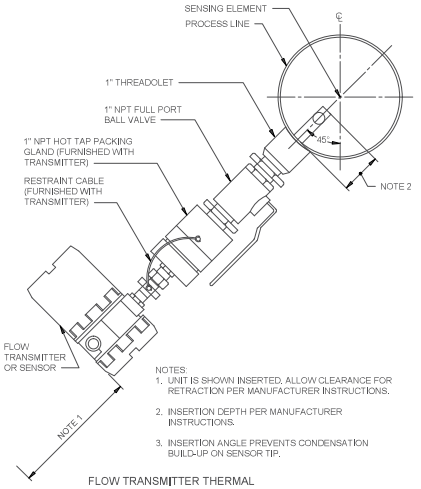
NOTES:

1. 8" MAX BETWEEN PROCESS PIPELINE AND PRESSURE INSTUMENT.
2. ALL MATERIAL TO BE COMPATIBLE WITH PROCESS FLUID.
3. DETAIL SHOWN WITH BALL VALVES; IF GAUGE/ROOT VALVES ARE REQUIRED, SUBSTITUTE VALVES AS APPROPRIATE.
4. THIS INSTALLATION DETAIL IS INTENDED FOR CLEAN WATER APPLICATIONS. SEE SEPARATE DETAIL FOR SUSPENDED SOLIDS APPLICATIONS.

PRESSURE INSTRUMENT - DIRECT MOUNT

DETAIL 4 / E004

SCALE: NONE



NOTES:

1. UNIT IS SHOWN INSERTED. ALLOW CLEARANCE FOR RETRACTION PER MANUFACTURER INSTRUCTIONS.
2. INSERTION DEPTH PER MANUFACTURER INSTRUCTIONS.
3. INSERTION ANGLE PREVENTS CONDENSATION BUILD-UP ON SENSOR TIP.

FLOW TRANSMITTER THERMAL DISPERSION - GAS SERVICE

DETAIL 5 / E004

SCALE: NONE

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
ELECTRICAL DETAILS - 1

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED:
CHIEF

CHECKED BY: B.KAWAMURA
SECTION HEAD
BRANCH HEAD
DATE

BRYANT KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
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4/30/2026
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LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

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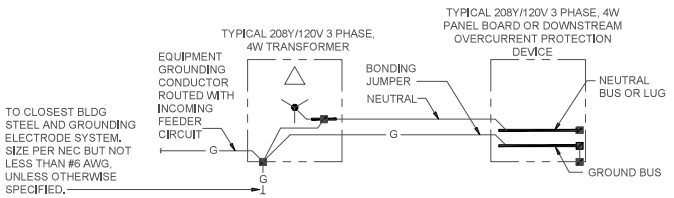
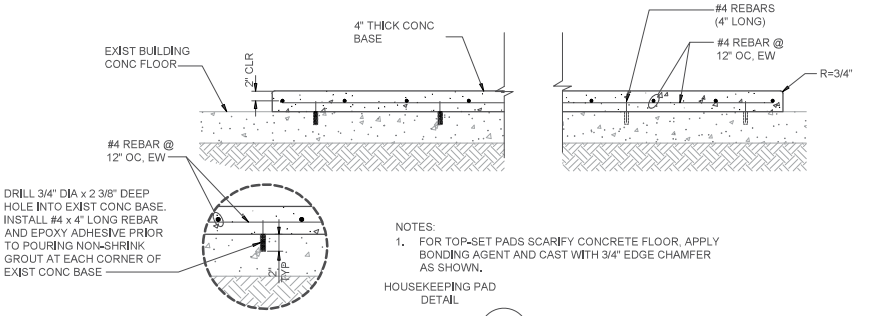


TYPICAL 3 PHASE, 4W DRY TYPE TRANSFORMER AND PANEL BOARD GROUNDING

TRANSFORMER GROUNDING

DETAIL 1 / E005

SCALE: NONE

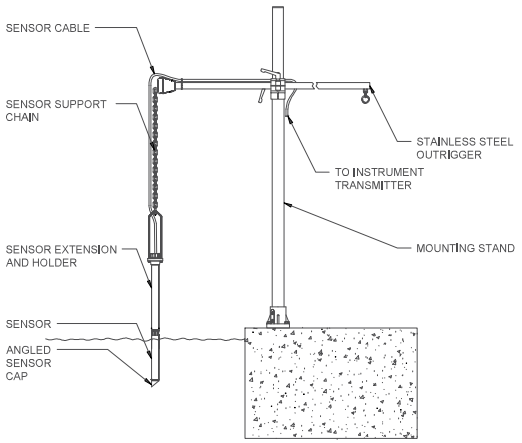


NOTES:
1. FOR TOP-SET PADS SCARIFY CONCRETE FLOOR, APPLY BONDING AGENT AND CAST WITH 3/4" EDGE CHAMFER AS SHOWN.

HOUSEKEEPING PAD DETAIL

DETAIL 2 / E005

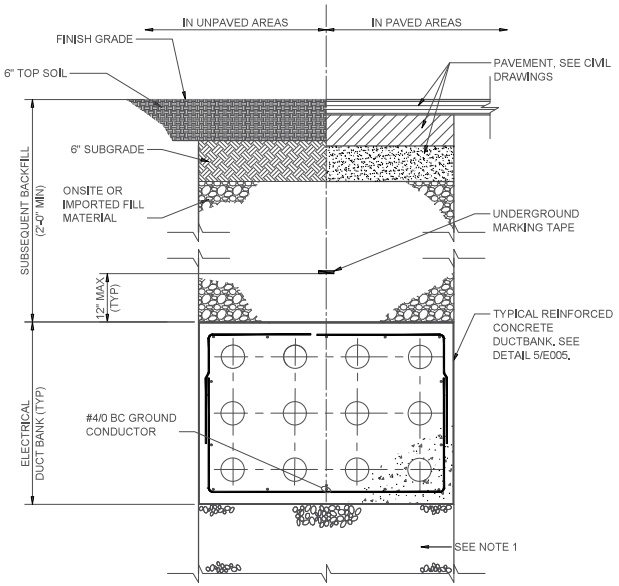
SCALE: NONE



DO SENSOR MOUNTING

DETAIL 3 / E005

SCALE: NONE

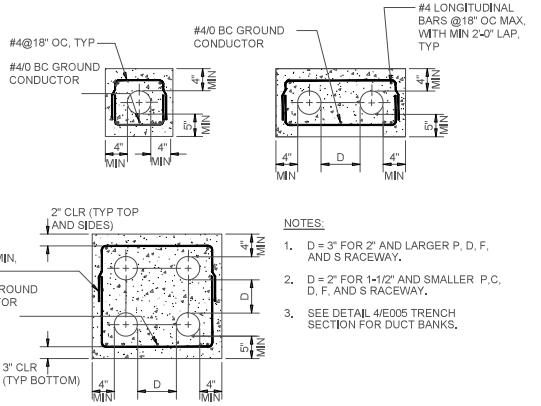


TYPICAL TRENCH SECTION FOR DUCT BANKS

DETAIL 4 / E005

SCALE: NONE

NOTES:
1. PROVIDE 6" MINIMUM COMPACTED GRAVEL, 3/4" MINUS, UNDER CONCRETE ENCASED DUCT BANK (UNLESS OTHERWISE SPECIFIED ON ELECTRICAL SITE PLAN).
2. PROVIDE STEEL REINFORCEMENTS WHERE CALLED OUT ON THE DRAWINGS.



NOTES:
1. D = 3" FOR 2" AND LARGER P, D, F, AND S RACEWAY.
2. D = 2" FOR 1-1/2" AND SMALLER P,C, D, F, AND S RACEWAY.
3. SEE DETAIL 4/E005 TRENCH SECTION FOR DUCT BANKS.

TYPICAL REINFORCED CONCRETE DUCK BANK, SMALL

DETAIL 5 / E005

SCALE: NONE

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

BRYANT T. KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
ELECTRICAL DETAILS - 2

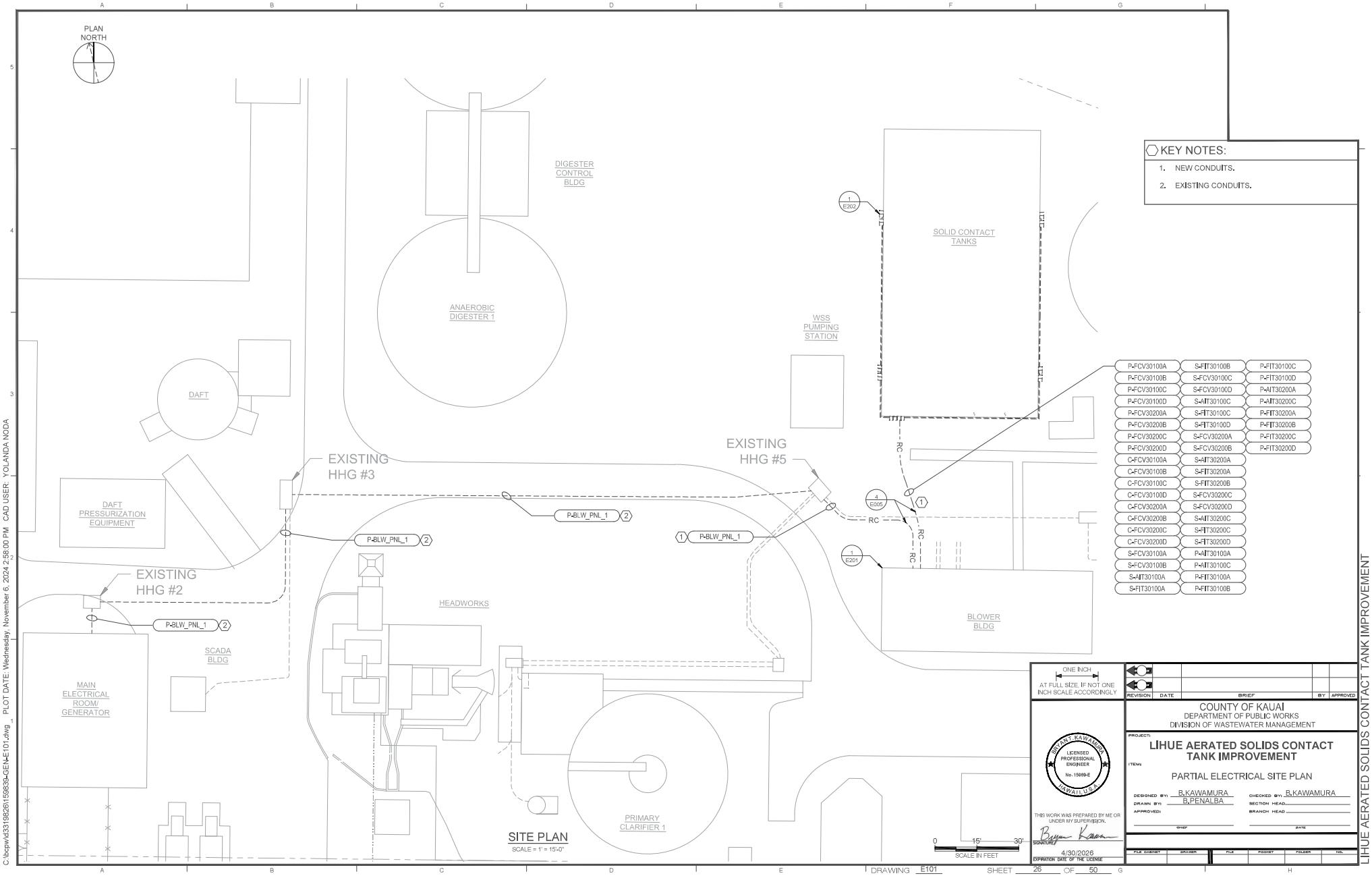
DESIGNED BY:	B.KAWAMURA	CHECKED BY:	B.KAWAMURA
DRAWN BY:	B.PENALBA	SECTION HEAD:	
APPROVED:		BRANCH HEAD:	
CHIEF		DATE	

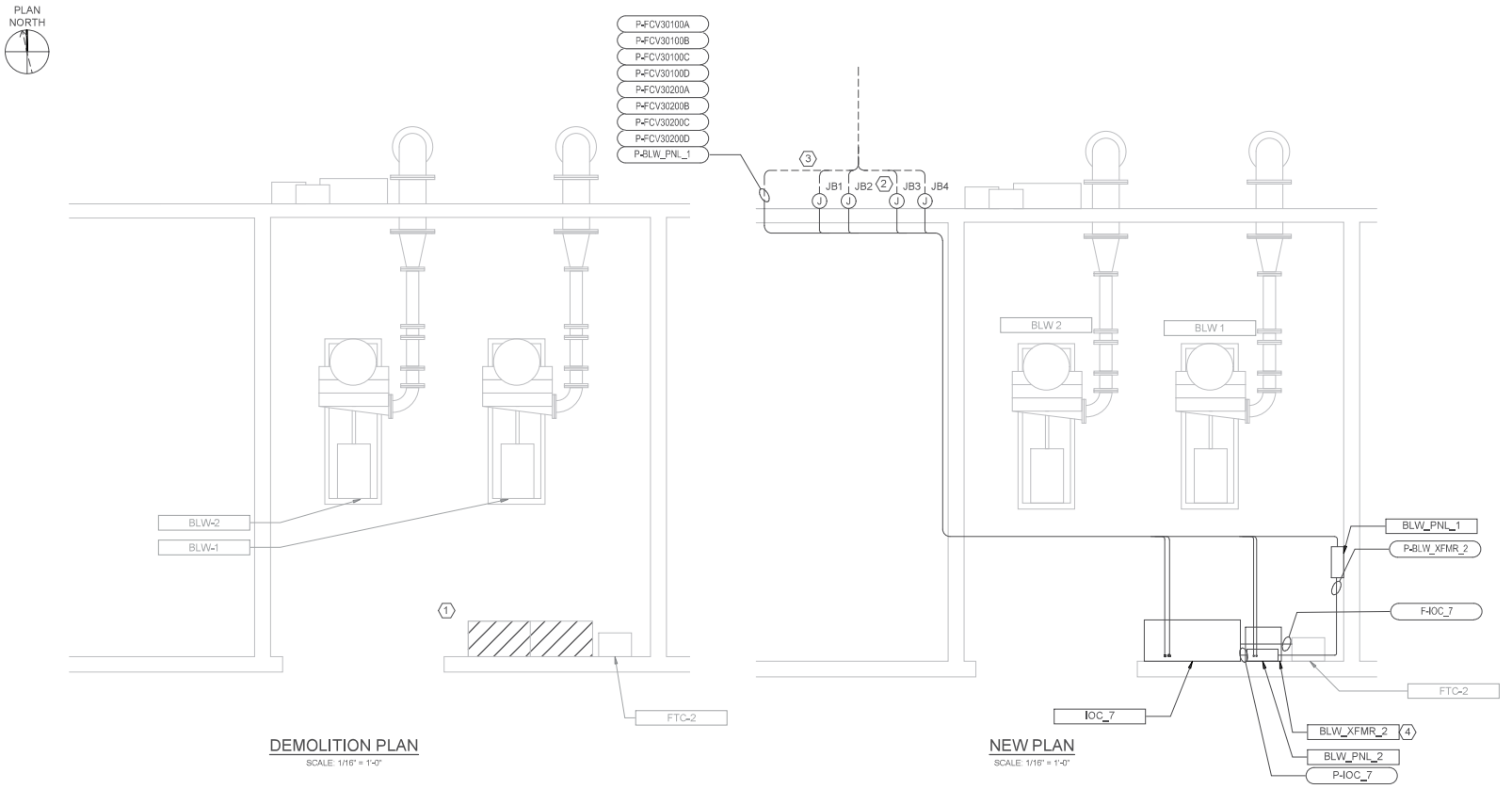
FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

GEN | DRAWING E005 | SHEET 25 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319826\159839-GEN-E005.dwg PLOT DATE: Wednesday, November 6, 2024 1:58:31 PM CAD USER: YOLANDA NODA


PLAN NORTH
DIGESTER CONTROL BLDG
ANAEROBIC DIGESTER 1
SOLID CONTACT TANKS
WSS PUMPING STATION
DAFT
DAFT PRESSURIZATION EQUIPMENT
EXISTING HHG #3
EXISTING HHG #5
EXISTING HHG #2
P-BLW_PNL_1
HEADWORKS
SCADA BLDG
MAIN ELECTRICAL ROOM/ GENERATOR
BLOWER BLDG
PRIMARY CLARIFIER 1
RC
1 E202
4 E005
1 E201
KEY NOTES:
1. NEW CONDUITS.
2. EXISTING CONDUITS.
P-FCV30100A
P-FCV30100B
P-FCV30100C
P-FCV30100D
P-FCV30200A
P-FCV30200B
P-FCV30200C
P-FCV30200D
C-FCV30100A
C-FCV30100B
C-FCV30100C
C-FCV30100D
C-FCV30200A
C-FCV30200B
C-FCV30200C
C-FCV30200D
S-FCV30100A
S-FCV30100B
S-AIT30100A
S-FIT30100A
S-FIT30100B
S-FCV30100C
S-FCV30100D
S-AIT30100C
S-FIT30100C
S-FIT30100D
S-FCV30200A
S-FCV30200B
S-FIT30100B
S-FIT30200B
S-AIT30200C
S-FIT30200C
S-FIT30200B
S-FCV30200C
S-FCV30200D
S-AIT30200C
S-FIT30200C
P-AIT30100A
P-AIT30100C
P-FIT30100A
P-FIT30100B
P-FIT30100C
P-FIT30100D
P-AIT30200A
P-AIT30200C
P-FIT30200A
P-FIT30200B
P-FIT30200C
P-FIT30200D
ONE INCH AT FULL SIZE. IF NOT ONE INCH SCALE ACCORDINGLY
REVISION
DATE
BRIEF
BY
APPROVED
BRYANT KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15969-E
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE
4/30/2026
EXPIRATION DATE OF THE LICENSE
COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT
PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT
ITEM:
PARTIAL ELECTRICAL SITE PLAN
DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
CHECKED BY: B.KAWAMURA
APPROVED:
CHIEF
SECTION HEAD
BRANCH HEAD
DATE
FILE CABINET
DRAWER
FILE
POCKET
FOLDER
NO.
SITE PLAN
SCALE = 1" = 15'-0"
0 15' 30'
SCALE IN FEET
DRAWING E101
SHEET 26 OF 50
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT
C:\bcpw\d3319826\159839-GEN-E1101.dwg PLOT DATE: Wednesday, November 6, 2024 2:58:00 PM CAD USER: YOLANDA NODA



DEMOLITION PLAN

SCALE: 1/16" = 1'-0"

NEW PLAN

SCALE: 1/16" = 1'-0"

KEY NOTES:

1. NEW BLOWERS AND VFDS WILL BE INSTALLED BY OTHERS. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF OLD BLOWER STARTER ENCLOSURES.
2. INSTALL NEW JUNCTION BOXES ON THE OUTSIDE WALL.
   JB1 - 120VAC BASIN ONE
   JB2 - 120VAC BASIN TWO
   JB3 - ANALOG CIRCUITS
   JB4 - DIGITAL CIRCUITS
   JUNCTION BOXES SHOULD BE AT A MINIMUM 8" X 8" AND COMPLY WITH THE NEC.
3. RUN ALL 8 VALVE ACTUATOR CIRCUITS AND INCOMING POWER TO BLW_PNL_1 IN SEPARATE CONDUITS. CONTRACTOR SHALL PROVIDE CONDUIT BODIES OR BOXES AS REQUIRED TO COMPLY WITH THE NEC.
4. WALL MOUNT TRANSFORMER ABOVE BLW_PNL_2

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
BLOWER ROOM POWER AND CONTROL

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED:
CHIEF

CHECKED BY: B.KAWAMURA
SECTION HEAD
BRANCH HEAD
DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

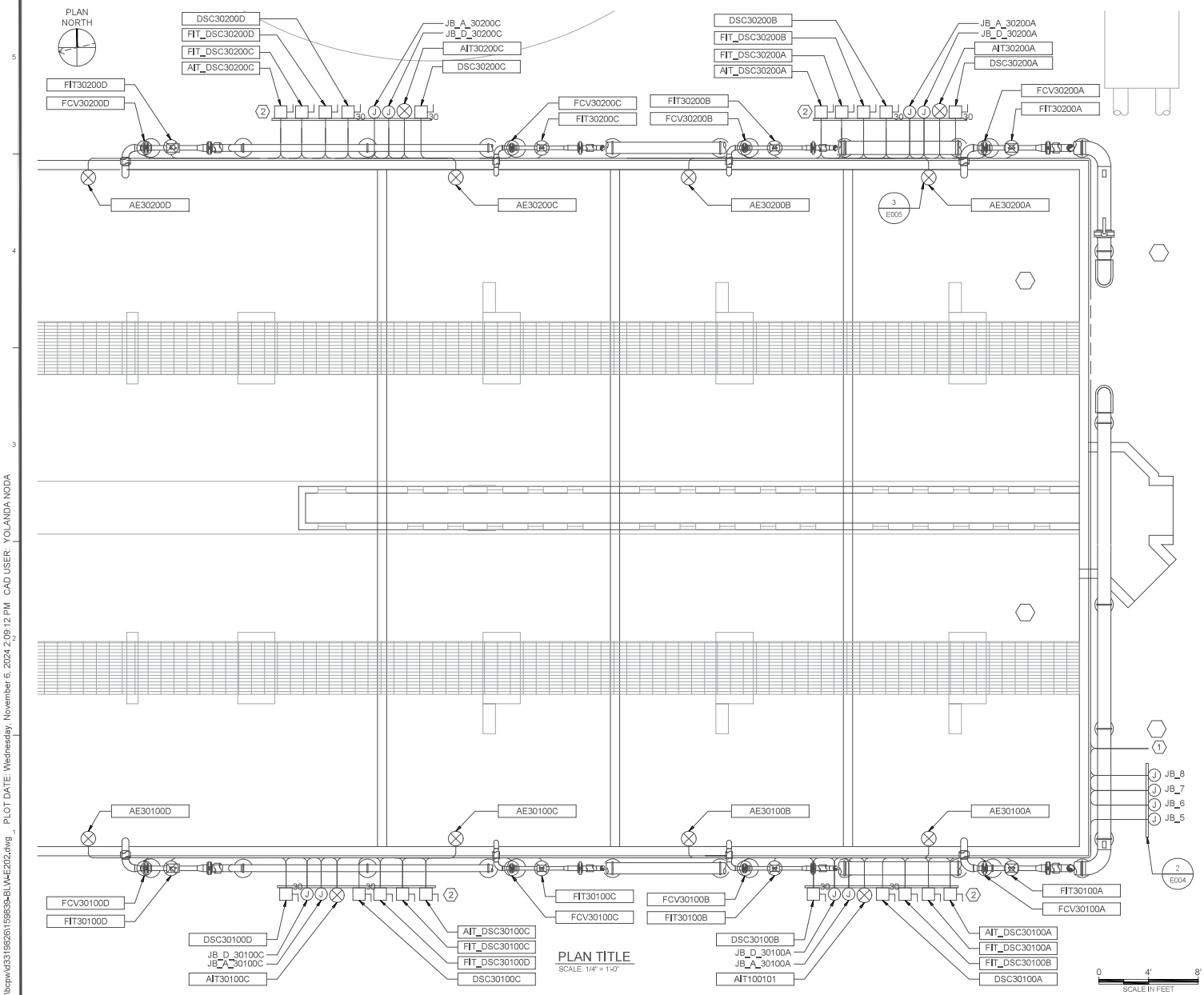
4/30/2026
EXPIRATION DATE OF THE LICENSE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

BLW | DRAWING E201 | SHEET 27 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319826\159839\BLWE201.dwg PLOT DATE: Wednesday, November 6, 2024 2:04:48 PM CAD USER: YOLANDA NODA



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

KEY NOTES:

1. RUN ALL EIGHT VALVE ACTUATOR CIRCUITS IN INDIVIDUAL CONDUITS TO PANEL. USE CONDUIT BODIES AS NEEDED.
2. SEE DETAIL 2/E004 FOR EQUIPMENT RACK DETAILS.

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

BRYANT KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
AERATED SOLIDS CONTACT TANKS POWER AND CONTROL PLAN

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED:
CHIEF

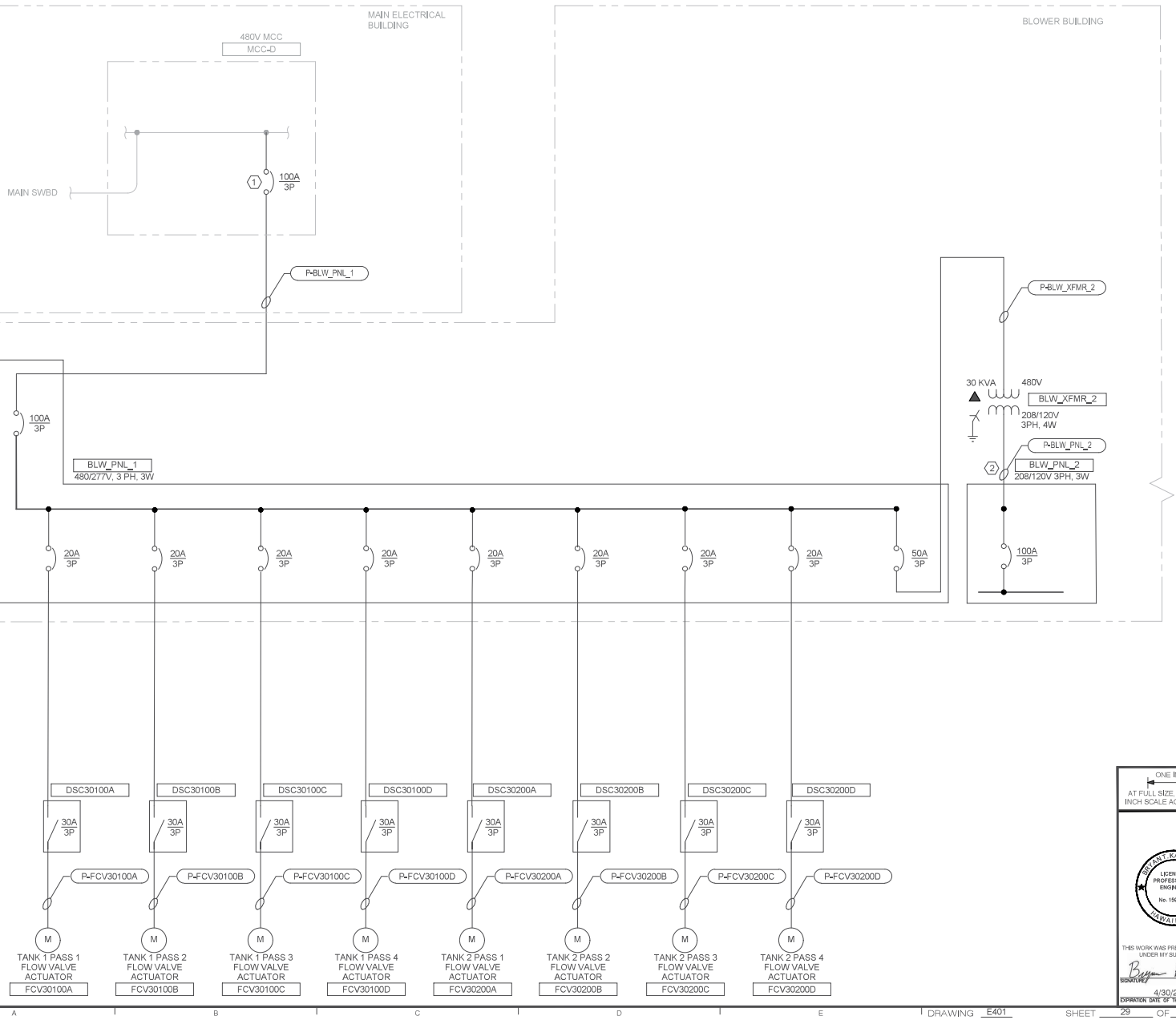
CHECKED BY: B.KAWAMURA
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

BLW | DRAWING E202 SHEET 28 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319826\159839-BLWE202.dwg PLOT DATE: Wednesday, November 6, 2024 2:09:12 PM CAD USER: YOLANDA NODA



KEY NOTES:

1. CONTRACTOR TO REMOVE EXISTING BREAKER 47701 IN MCC-D AND REPLACE WITH NEW EQUIVALENT EATON CUTLER-HAMMER MODEL.
2. LIMIT CIRCUIT LENGTH TO 10 FEET OR LESS PER NEC 240. 21.

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

BRYANT KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT: LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:

ONE LINE DIAGRAM

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED:
CHECKED BY: B.KAWAMURA
SECTION HEAD:
BRANCH HEAD:

SHEET DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

DRAWING E401 SHEET 29 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319826\159839-BLWE401.dwg PLOT DATE: Wednesday, November 6, 2024 2:11:04 PM CAD USER: YOLANDA NODA

PANEL SCHEDULE — BLOWER BUILDING PANEL BLW-PNL-1

480 VOLTS	NORMAL POWER	BUS RATING:	125 AMPS	LOCATION:	BLOWER AREA	FEED-THRU LUGS	N
3 -PHASE	PNL. MFR.:	MAIN BKR:	100 AMPS, CB	MOUNTING:	WALL-MOUNT	DOUBLE LUGS	N
4 -WIRE	CAT. NO.:	A.I.C. RATING:	18 K AIC SYM	FED FROM:	MCC-C	ISOLATED GND	N
	REF. DWG.:			CONDUCTORS:		200% NEUTRAL	N

CKT NO.	CIRCUIT DESCRIPTION	CODE	LOAD (Kva)	BKR AMPS	PH	BKR AMPS	LOAD (kVA)	CODE	CIRCUIT DESCRIPTION	CKT NO.
1			1.00		-A-		1.00			2
3	TANK 1 PASS 1 VALVE ACTUATOR	LM	1.00	20	-B-	20	1.00	M	TANK 1 PASS 2 VALVE ACTUATOR	4
5			1.00		-C-		1.00			6
7			1.00		-A-		1.00			8
9	TANK 1 PASS 3 VALVE ACTUATOR	M	1.00	20	-B-	20	1.00	M	TANK 1 PASS 4 VALVE ACTUATOR	10
11			1.00		-C-		1.00			12
13			1.00		-A-		1.00			14
15	TANK 2 PASS 1 VALVE ACTUATOR	M	1.00	20	-B-	20	1.00	M	TANK 2 PASS 2 VALVE ACTUATOR	16
17			1.00		-C-		1.00			18
19			1.00		-A-		1.00			20
21	TANK 2 PASS 3 VALVE ACTUATOR	M	1.00	20	-B-	20	1.00	M	TANK 2 PASS 4 VALVE ACTUATOR	22
23			1.00		-C-		1.00			24
25			10.00		-A-	20			SPARE	26
27	TRANSFORMER BLW-XMFR-2	Z	10.00	50	-B-	20			SPARE	28
29			10.00		-C-	20			SPARE	30
31	SPARE			20	-A-	20			SPARE	32
33	SPARE			20	-B-	20			SPARE	34
35	SPARE			20	-C-	20			SPARE	36
37	SPARE			20	-A-	20				38
39	SPARE			20	-B-	20		Z	SURGE PROTECTION DEVICE	40
41	SPARE			20	-C-	20				42

CODES:	CONNECTED LOAD	CALCULATED DEMAND LOAD		NOTES	
H = HVAC LOADS	0.00 kVA	0.00 kVA	(100%)	1.	
K = KITCHEN EQUIPMENT	0.00 kVA	0.00 kVA	(100%)	2.	
L = LIGHTING LOADS	0.00 kVA	0.00 kVA	(125%)	3.	
LM = LARGEST SINGLE MOTOR	3.00 kVA	3.75 kVA	(125%)		
M = OTHER MOTOR LOADS	21.00 kVA	21.00 kVA	(100%)		
NC = NON-COINCIDENTAL LOADS	0.00 kVA	0.00 kVA	(0%)		
R = GENERAL USE RECEPTACLES	0.00 kVA	0.00 kVA	(50%>10kVA)		
S = DEDICATED RECEPTACLES	0.00 kVA	0.00 kVA	(100%)	PHASE BALANCE ONLY	
Z = MISC. OR APPLIANCES	30.00 kVA	30.00 kVA	(100%)	PHASE A	65 AMPS
TOTALS:	54.00 kVA	54.75 kVA		PHASE B	65 AMPS
	65	66		PHASE C	65 AMPS

PANEL SCHEDULE — BLOWER BUILDING PANEL BLW-PNL-2

208Y/120 VOLTS	NORMAL POWER	BUS RATING:	125 AMPS	LOCATION:	BLOWER AREA	FEED-THRU LUGS	N
3 -PHASE	PNL. MFR.:	MAIN BKR:	100 AMPS, CB	MOUNTING:	SWITCHBOARD	DOUBLE LUGS	N
4 -WIRE	CAT. NO.:	A.I.C. RATING:	18 Ka AIC SYM	FED FROM:	BLW-PNL-1	ISOLATED GND	N
	REF. DWG.:			CONDUCTORS:		200% NEUTRAL	N

CKT NO.	CIRCUIT DESCRIPTION	CODE	LOAD (Kva)	BKR AMPS	PH	BKR AMPS	LOAD (kVA)	CODE	CIRCUIT DESCRIPTION	CKT NO.
1	SOLIDS CONTACT TANK 1 DO CONTROLLER 1	Z	0.60	20	-A-	20	0.60	Z	SOLIDS CONTACT TANK 1 DO CONTROLLER 2	2
3	SOLIDS CONTACT TANK 2 DO CONTROLLER 1	Z	0.60	20	-B-	25	0.60	Z	SOLIDS CONTACT TANK 2 DO CONTROLLER 2	4
5	SOLIDS CONTACT TANK 1 PASS 1 FLOW METER	Z	0.60	20	-C-	20	0.60	Z	SOLIDS CONTACT TANK 1 PASS 2 FLOW METER	6
7	SOLIDS CONTACT TANK 1 PASS 3 FLOW METER	Z	0.60	20	-A-	20	0.60	Z	SOLIDS CONTACT TANK 1 PASS 4 FLOW METER	8
9	SOLIDS CONTACT TANK 2 PASS 1 FLOW METER	Z	0.60	20	-B-	20	0.60	Z	SOLIDS CONTACT TANK 2 PASS 2 FLOW METER	10
11	SOLIDS CONTACT TANK 2 PASS 3 FLOW METER	Z	0.60	20	-C-	20	0.60	Z	SOLIDS CONTACT TANK 2 PASS 4 FLOW METER	12
13	PLC CABINET	Z	1.00	20	-A-	20			SPARE	14
15	SPARE			20	-B-	20			SPARE	16
17	SPARE			20	-C-	20			SPARE	18
19	SPARE			20	-A-	20			SPARE	20
21	SPARE			20	-B-	20			SPARE	22
23	SPARE			20	-C-	20			SPARE	24
25	SPARE			20	-A-	20			SPARE	26
27	SPARE			20	-B-	20			SPARE	28
29	SPARE			20	-C-	20			SPARE	30
31	SPARE			20	-A-	20			SPARE	32
33	SPARE			20	-B-	20			SPARE	34
35	SPARE			20	-C-	20			SPARE	36
37	SPARE			20	-A-	20				38
39	SPARE			20	-B-	20		Z	SURGE PROTECTION DEVICE	40
41	SPARE			20	-C-	20				42

CODES:	CONNECTED LOAD	CALCULATED DEMAND LOAD		NOTES:	
H = HVAC LOADS	0.00 kVA	0.00 kVA	(100%)	1.	
K = KITCHEN EQUIPMENT	0.00 kVA	0.00 kVA	(100%)	2.	
L = LIGHTING LOADS	0.00 kVA	0.00 kVA	(125%)	3.	
LM = LARGEST SINGLE MOTOR	0.00 kVA	0.00 kVA	(125%)		
M = OTHER MOTOR LOADS	0.00 kVA	0.00 kVA	(100%)		
NC = NON-COINCIDENTAL LOADS	0.00 kVA	0.00 kVA	(0%)		
R = GENERAL USE RECEPTACLES	0.00 kVA	0.00 kVA	(50%>10kVA)		
S = DEDICATED RECEPTACLES	0.00 kVA	0.00 kVA	(100%)	PHASE BALANCE ONLY	
Z = MISC. OR APPLIANCES	9.40 kVA	9.40 kVA	(100%)	PHASE A	26 AMPS
TOTALS:	9.40 kVA	9.40 kVA		PHASE B	25 AMPS
	78	26		PHASE C	25 AMPS

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

BRYANT K. KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

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SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
PANEL SCHEDULE

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED:
CHIEF

CHECKED BY: B.KAWAMURA
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

GEN | DRAWING E402 | SHEET 30 OF 50

C:\bcpw\d3319826\159839-BLWE402.dwg PLOT DATE: Wednesday, November 6, 2024 2:12:39 PM CAD USER: YOLANDA NODA

CIRCUIT NAME	CABLE TYPE	CONDUCTOR SIZE	GND SIZE	RW SIZE (INCH)	FROM	VIA	WIRE COUNT	RW SIZE (INCH)	VIA	WIRE COUNT	RW SIZE (INCH)	VIA	WIRE COUNT	RW SIZE (INCH)	TO	NOTES
P-BLW_PNL_1	XHHW-2	3-#6	1-#6	2	BLW_PNL_1										MCC-C BREAKER	
P-BLW_XFMR_2	XHHW-2	3-#6	1-#8	1	BLW_XFMR_2										BLW_PNL_1	
P-BLW_PNL_2	XHHW-2	4-#6	1-#6	2	BLW_PNL_2										BLW_XFMR_2	
P-IOC_7	XHHW-2	2-#10	1-#10	1	IOC_7										BLW_PNL_2	
F-IOC_7	ETHERNET	CAT6	-	2	IOC_7										FTC-2	
P-FCV30100A	XHHW-2	3-#10	1-#10	1	BLW_PNL_1							DSC30100A	3-#10, 1-#10	1	FCV30100A	
P-FCV30100B	XHHW-2	3-#10	1-#10	1	BLW_PNL_1							DSC30100B	3-#10, 1-#10	1	FCV30100B	
P-FCV30100C	XHHW-2	3-#10	1-#10	1	BLW_PNL_1							DSC30100C	3-#10, 1-#10	1	FCV30100C	
P-FCV30100D	XHHW-2	3-#10	1-#10	1	BLW_PNL_1							DSC30100D	3-#10, 1-#10	1	FCV30100D	
P-FCV30200A	XHHW-2	3-#10	1-#10	1	BLW_PNL_1							DSC30200A	3-#10, 1-#10	1	FCV30200A	
P-FCV30200B	XHHW-2	3-#10	1-#10	1	BLW_PNL_1							DSC30200B	3-#10, 1-#10	1	FCV30200B	
P-FCV30200C	XHHW-2	3-#10	1-#10	1	BLW_PNL_1							DSC30200C	3-#10, 1-#10	1	FCV30200C	
P-FCV30200D	XHHW-2	3-#10	1-#10	1	BLW_PNL_1							DSC30200D	3-#10, 1-#10	1	FCV30200D	
C-FCV30100A	XHHW-2	8-#14	1-#14	3/4	IOC_7	JB_D_100101	16-#14	1	JB_8	64-#14	2	JB_4	64-#14	2	FCV30100A	
C-FCV30100B	XHHW-2	8-#14	1-#14	3/4											FCV30100B	
C-FCV30100C	XHHW-2	8-#14	1-#14	3/4		JB_D_100103	16-#14	1							FCV30100C	
C-FCV30100D	XHHW-2	8-#14	1-#14	3/4											FCV30100D	
C-FCV30200A	XHHW-2	8-#14	1-#14	3/4		JB_D_200101	16-#14	1							FCV30200A	
C-FCV30200B	XHHW-2	8-#14	1-#14	3/4											FCV30200B	
C-FCV30200C	XHHW-2	8-#14	1-#14	3/4		JB_D_200103	16-#14	1							FCV30200C	
C-FCV30200D	XHHW-2	8-#14	1-#14	3/4											FCV30200D	
S-FCV30100A	SIC	2-STP	-	1	IOC_7	JB_A_100101	7-STP	2	JB_7	28-STP	4	JB_3	28-STP	4	FCV30100A	
S-FCV30100B	SIC	2-STP	-	1											FCV30100B	
S-AIT30100A	SIC	1-STP	-	3/4											AIT30100A	
S-FIT30100A	SIC	1-STP	-	3/4											FIT30100A	
S-FIT30100B	SIC	1-STP	-	3/4											FIT30100B	
S-FCV30100C	SIC	2-STP	-	1		JB_A_100103	7-STP	2							FCV30100C	
S-FCV30100D	SIC	2-STP	-	1											FCV30100D	
S-AIT30100C	SIC	1-STP	-	3/4											AIT30100C	
S-FIT30100C	SIC	1-STP	-	3/4											FIT30100C	
S-FIT30100D	SIC	1-STP	-	3/4											FIT30100D	
S-FCV30200A	SIC	2-STP	-	1		JB_A_200101	7-STP	2							FCV30200A	
S-FCV30200B	SIC	2-STP	-	1											FCV30200B	
S-AIT30200A	SIC	1-STP	-	3/4											AIT30200A	
S-FIT30200A	SIC	1-STP	-	3/4											FIT30200A	
S-FIT30200B	SIC	1-STP	-	3/4											FIT30200B	
S-FCV30200C	SIC	2-STP	-	1		JB_A_200103	7-STP	2							FCV30200C	
S-FCV30200D	SIC	2-STP	-	1											FCV30200D	
S-AIT30200C	SIC	1-STP	-	3/4											AIT30200C	
S-FIT30200C	SIC	1-STP	-	3/4											FIT30200C	
S-FIT30200D	SIC	1-STP	-	3/4											FIT30200D	
P-AIT30100A	XHHW-2	2-#10	1- #10	3/4	BLW_PNL_2				JB_5	12-#10, 1#10	2	JB_1	12-#10, 1#10	2	AIT30100A	
P-AIT30100C	XHHW-2	2-#10	1- #10	3/4											AIT30100C	
P-FIT30100A	XHHW-2	2-#10	1- #10	3/4											FIT30100A	
P-FIT30100B	XHHW-2	2-#10	1- #10	3/4											FIT30100B	
P-FIT30100C	XHHW-2	2-#10	1- #10	3/4											FIT30100C	
P-FIT30100D	XHHW-2	2-#10	1- #10	3/4											FIT30100D	
P-AIT30200A	XHHW-2	2-#10	1- #10	3/4					JB_6	12-#10, 1#10	2	JB_2	12-#10, 1#10	2	AIT30200A	
P-AIT30200C	XHHW-2	2-#10	1- #10	3/4											AIT30200C	
P-FIT30200A	XHHW-2	2-#10	1- #10	3/4											FIT30200A	
P-FIT30200B	XHHW-2	2-#10	1- #10	3/4											FIT30200B	
P-FIT30200C	XHHW-2	2-#10	1- #10	3/4											FIT30200C	
P-FIT30200D	XHHW-2	2-#10	1- #10	3/4											FIT30200D	

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

BRYANT T. KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
CIRCUIT SCHEDULE

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED:
CHIEF

CHECKED BY: B.KAWAMURA
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

GEN I DRAWING E403

SHEET 31 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

C:\bcpw\d3319826\15983\BLWE403.dwg PLOT DATE: Wednesday, November 6, 2024 2:15:09 PM CAD USER: YOLANDA NODA

CONTROL DIAGRAM SYMBOLS

GENERAL

- EXTERNAL WIRING
- CONDUCTORS CONNECTED
- CONDUCTORS NOT CONNECTED
- CONNECTION POINT
- TB ID / ID — TERMINAL POINT
- DEMOLITION

TRANSFORMERS

- 480V / 250VA / 120V — CONTROL TRANSFORMER. PRIMARY AND SECONDARY VOLTAGES SHOWN. SIZE AS SHOWN OR SPECIFIED.
- 50/5 — CURRENT TRANSFORMER. PRIMARY/ SECONDARY TURNS RATIO SHOWN.

DISCONNECTS AND OVERCURRENT DEVICES

- TB ID / ID / AMPS — CIRCUIT BREAKER, THERMAL-MAGNETIC, 1 POLE
- DISCONNECT, 1 POLE, UON
- TB ID / ID / AMPS; ID / AMPS — FUSE TERMINAL BLOCK, 1 POLE
- BLOWN FUSE INDICATOR

PUSHBUTTONS

- ID — PUSHBUTTON, MOMENTARY CONTACT, NORMALLY OPEN
- ID — PUSHBUTTON, MOMENTARY CONTACT, NORMALLY CLOSED
- ID — PUSHBUTTON WITH MUSHROOM HEAD, EMERGENCY STOP, MAINTAINED CONTACT

SELECTOR SWITCHES

- ID; 1, 2 — 2 POSITION MAINTAINED CONTACT; X = CONTACTS CLOSED
- ID; 1, 2, 3 — 3 POSITION MAINTAINED CONTACT; X = CONTACTS CLOSED
- ID; 1, 2 — LOCATION — 2 POSITION SPRING RETURNED TO RIGHT; X = CONTACTS CLOSED
- ID; 1, 2, 3 — 3 POSITION SPRING RETURNED TO CENTER; X = CONTACTS CLOSED

INPUT SWITCHES

NORMALLY OPEN	NORMALLY CLOSED	INITIATING VARIABLE
FS-101	FS-102	FLOW
LS-101	LS-102	LEVEL
PS-101	PS-102	PRESSURE
SS-101	SS-102	SPEED
TS_1001	TS_1001	TEMPERATURE
WS-101	WS-102	FORCE OR TORQUE
ZS-101	ZS-102	POSITION (LIMIT)

CONTROL RELAYS

- CR 2 — FUNCTION — OPERATING COIL
  - CR = CONTROL RELAY
  - U = UNLATCH
  - L = LATCH
- OL — THERMAL OVERLOAD RELAY
- CR2 CR2 — OUTPUT CONTACTS

INDICATING LIGHTS

INDICATING LIGHTS

L = LENS COLOR:
- A = AMBER
- B = BLUE
- G = GREEN
- R = RED
- W = WHITE

- L — STATUS — DIRECT CONNECTION
- X1 — L — STATUS — PUSH TO TEST. TEST VOLTAGE TERMINAL SHOWN

CONTACTORS

- ID; C — OPERATING COILS
  - C = CONTACTOR, LIGHTING OR GENERAL USE
  - F = FAST OR FORWARD
  - M = MAIN OR LINE
  - 1M = FIRST MAIN OR WYE
  - 2M = SECOND MAIN OR DELTA
  - R = RUN OR REVERSE
  - S = SLOW OR START
- ID; SIZE — MAIN CONTACTS

OUTPUT LOADS AND DEVICES

- M — MOTOR
- 250 W — SPACE HEATER, WATTAGE SHOWN
- SOLENOID
- H — HOUR METER (ELAPSED TIME)
- KIC — TIME CONTROLLER
- ENCLOSURE FAN

DEFINITIONS

A/R = AS REQUIRED

TIMING RELAYS

- CR 3 — ON or OFF DELAY; RANGE:SEC/MIN; SET:SEC/MIN — OPERATING COIL

NORMALLY OPEN	NORMALLY CLOSED
TR3 DESC	TR3 DESC

ON DELAY (DELAY ON COIL ENERGIZATION) RELAY CONTACTS WITH NUMERIC PREFIX AND OPTIONAL REF. OR DESCRIPTION. NOTC = NORMALLY OPEN TIME CLOSE. NCTO = NORMALLY CLOSED TIME OPEN

TR3 DESC	TR3 DESC

OFF DELAY (DELAY ON COIL DE-ENERGIZATION) RELAY CONTACTS WITH NUMERIC PREFIX AND OPTIONAL REF. OR DESCRIPTION. NOTO = NORMALLY OPEN TIME OPEN. NCTC = NORMALLY CLOSED TIME CLOSE

TR3 DESC	TR3 DESC

TIME DELAY RELAY INSTATANEOUS CONTACTS WITH NUMERIC PREFIX AND OPTIONAL REF. OR DESCRIPTION.

MISCELLANEOUS

- HORN
- 250 OHM / RES — RESISTOR
- RECTIFIER
- SURGE OR ARC SUPRESSOR
- KVAR — CAPACITOR
- CONNECTOR PLUG
- LOCATION — REMOTE DEVICE LOCATED AT FIELD EQUIPMENT
- MECHANICAL INTERLOCK
- GROUND CONNECTION
- CHASSIS GROUND
- ETHERNET RJ-45 CONNECTION

GENERAL NOTES

1. THIS DRAWING IS GENERAL IN NATURE. SOME SYMBOLS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS. SYMBOLS ARE ARRANGED ON SPECIFIC DRAWINGS AND IN CATEGORIES FOR CONVENIENCE ONLY; SYMBOLS MAY BE USED ON ANY OF THE CONTRACT DRAWINGS.

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT: LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM: LEGEND AND SYMBOLS

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED: CHIEF
CHECKED BY: B.KAWAMURA
SECTION HEAD:
BRANCH HEAD: DATE

BRYANT T. KAWAMURA — LICENSED PROFESSIONAL ENGINEER — No. 15989-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
SIGNATURE
4/30/2026
EXPIRATION DATE OF THE LICENSE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

GEN PS DRAWING 1001 SHEET 32 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

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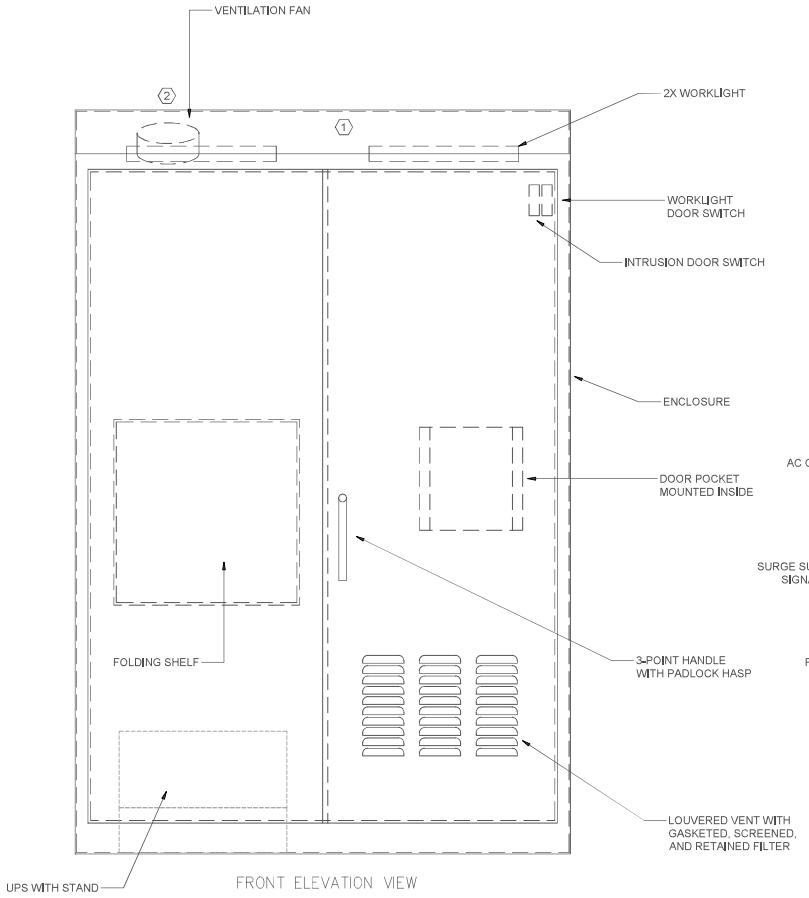
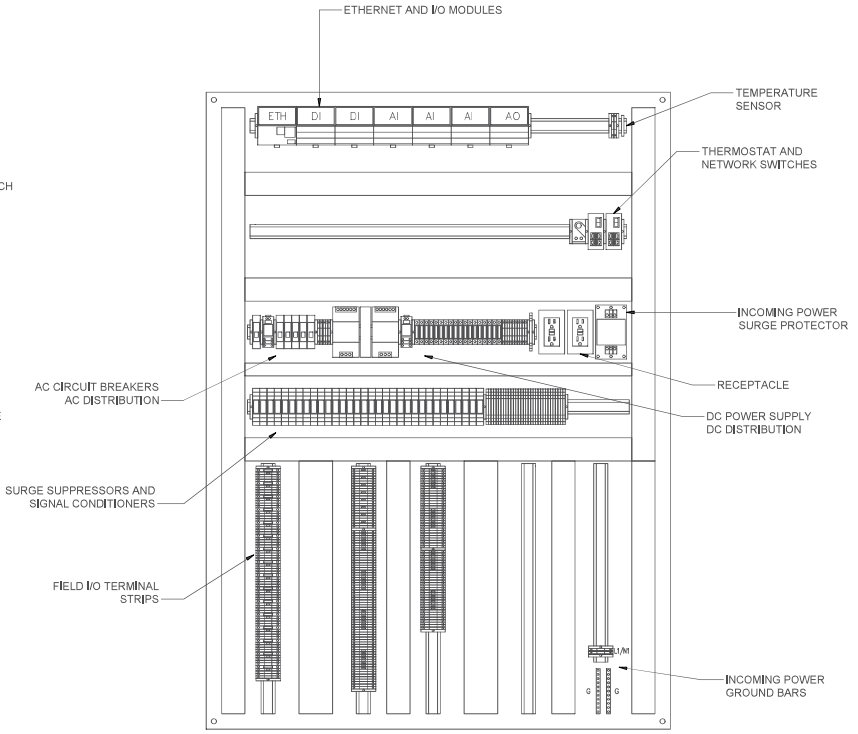


FRONT ELEVATION VIEW



BACK PAN LAYOUT

GENERAL NOTES

1. PLANT PROGRAMMER TO USE THIS SHEET AS A GUIDE IN FABRICATION. PLANT PROGRAMMER TO PROVIDE FABRICATION DRAWINGS. PLANT PROGRAMMER TO REDLINE THE FABRICATION DRAWINGS DURING CONSTRUCTION AND PRODUCE AS-BUILT DRAWINGS.
2. PLANT PROGRAMMER TO ADD SIDE PANELS AS NECESSARY.
3. PLANT PROGRAMMER TO PROVIDE THE IOC WITH A UL 508A LABEL.
4. CONTRACTOR TO INSTALL PANELS.

KEY NOTES

1. PROVIDE SPACE FOR TOP MOUNTED CONDUITS.
2. OVERHANG VENT WITH GASKETED, SCREENED, AND RETAINED FILTER.

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

BRYANT KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
IOC ELEVATION

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED:
CHECKED BY: B.KAWAMURA
SECTION HEAD
BRANCH HEAD
CHIEF
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

DRAWING 1101
SHEET 33 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

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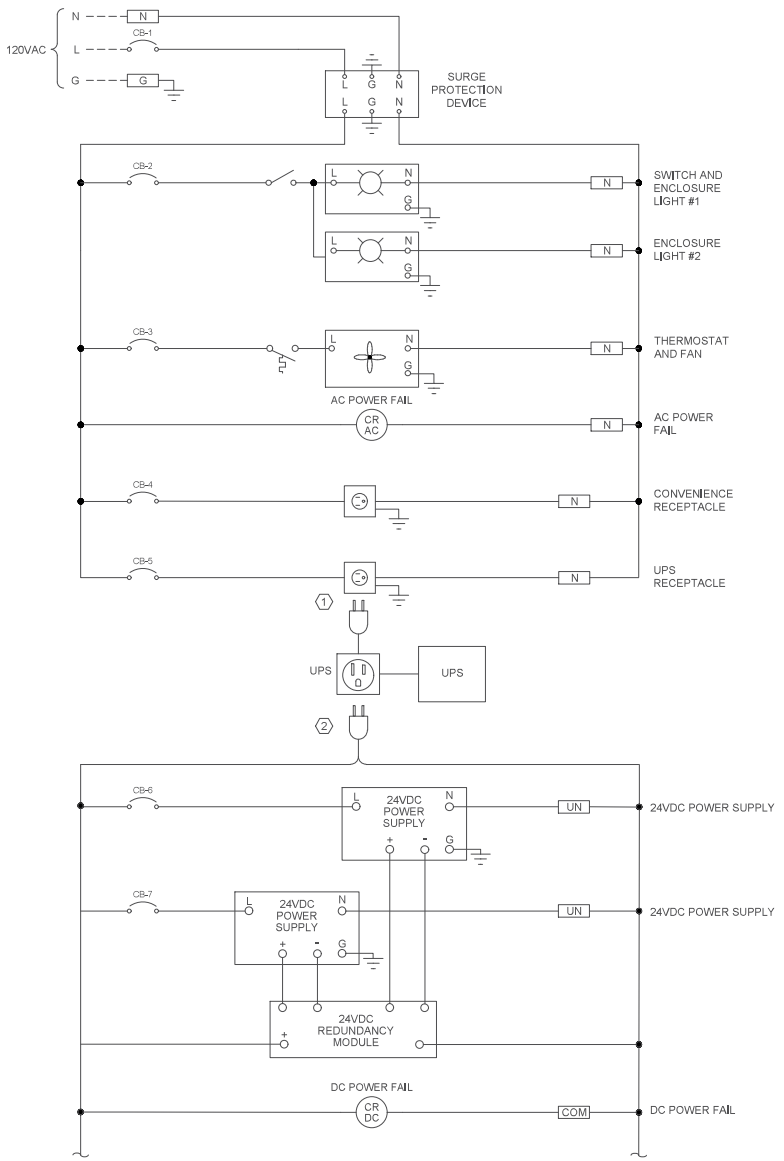

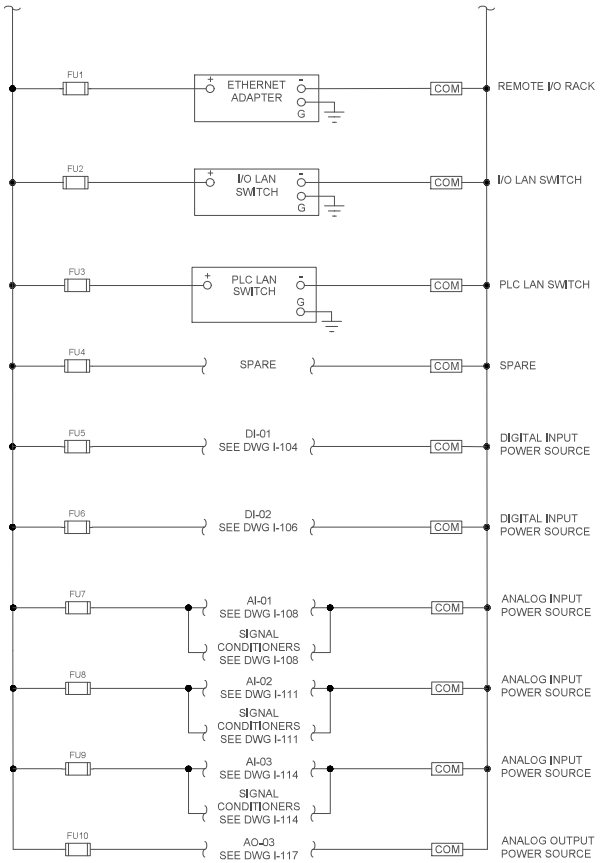

GENERAL NOTES

1. PLANT PROGRAMMER TO USE THIS SHEET AS A GUIDE IN FABRICATION. PLANT PROGRAMMER TO PROVIDE FABRICATION DRAWINGS. PLANT PROGRAMMER TO REDLINE THE FABRICATION DRAWINGS DURING CONSTRUCTION AND PRODUCE AS-BUILT DRAWINGS.

KEY NOTES

1. 15A CIRCUIT BREAKER IS FOR RECEPTACLE WITH NEMA 5-15R RATING, WITH A CURRENT MAXIMUM OF 15A. DOWNSTREAM UPS USES NEMA 5-15P, WITH A MAXIMUM CURRENT OF 15A.
2. UPS HAS SIX 5-15R AVAILABLE. USE 5-15P FOR 120 VAC UPS CONTROL POWER WHEN CONNECTING TO UPS.

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

BRYANT KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

PROJECT:
LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

ITEM:
IOC POWER DISTRIBUTION

DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED: CHIEF
CHECKED BY: B.KAWAMURA
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

BLW | DRAWING 102 SHEET 34 OF 50

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

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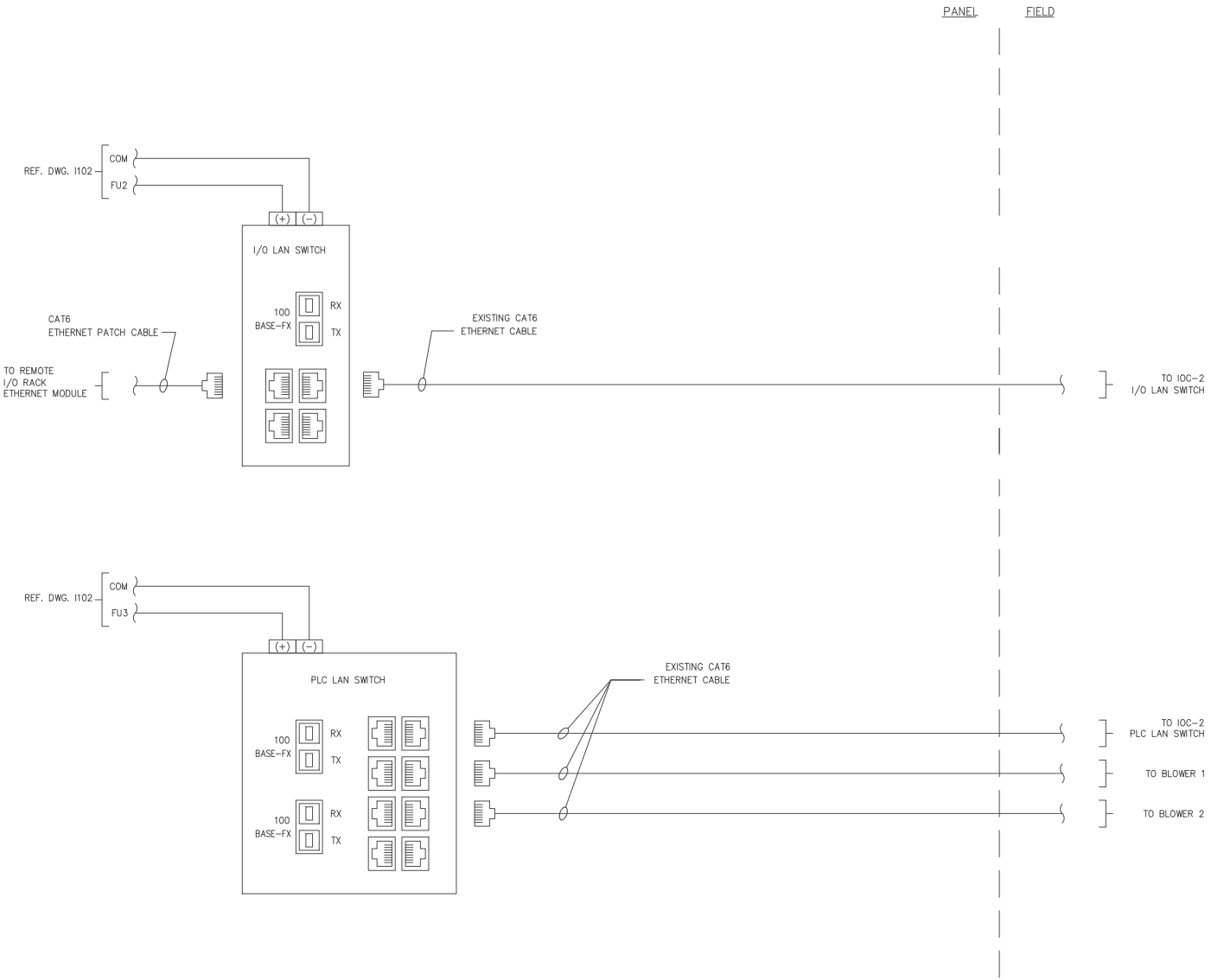


GENERAL NOTES

1. PLANT PROGRAMMER TO USE THIS SHEET AS A GUIDE IN FABRICATION. PLANT PROGRAMMER TO PROVIDE FABRICATION DRAWINGS. PLANT PROGRAMMER TO REDLINE THE FABRICATION DRAWINGS DURING CONSTRUCTION AND PRODUCE AS-BUILT DRAWINGS.
2. CONTRACTOR TO REROUTE THE TWO CAT6 CONNECTIONS FROM IOC-2 TO THE BLOWERS TO THE SWITCHES IN IOC-7. CONTRACTOR TO CONNECT BLOWERS TO IOC-7 PLC I/O LAN SWITCH. CONTRACTOR TO RELOCATE ONE OF THE I/O LAN SWITCH CONNECTIONS IN IOC-2 TO THE PLC LAN SWITCH.

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

REVISION	DATE	BRIEF	BY	APPROVED

BRYANT T. KAWAMURA
LICENSED PROFESSIONAL ENGINEER
No. 15989-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE

4/30/2026
EXPIRATION DATE OF THE LICENSE

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WASTEWATER MANAGEMENT

PROJECT: **LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT**

ITEM: IOC NETWORK DIAGRAM

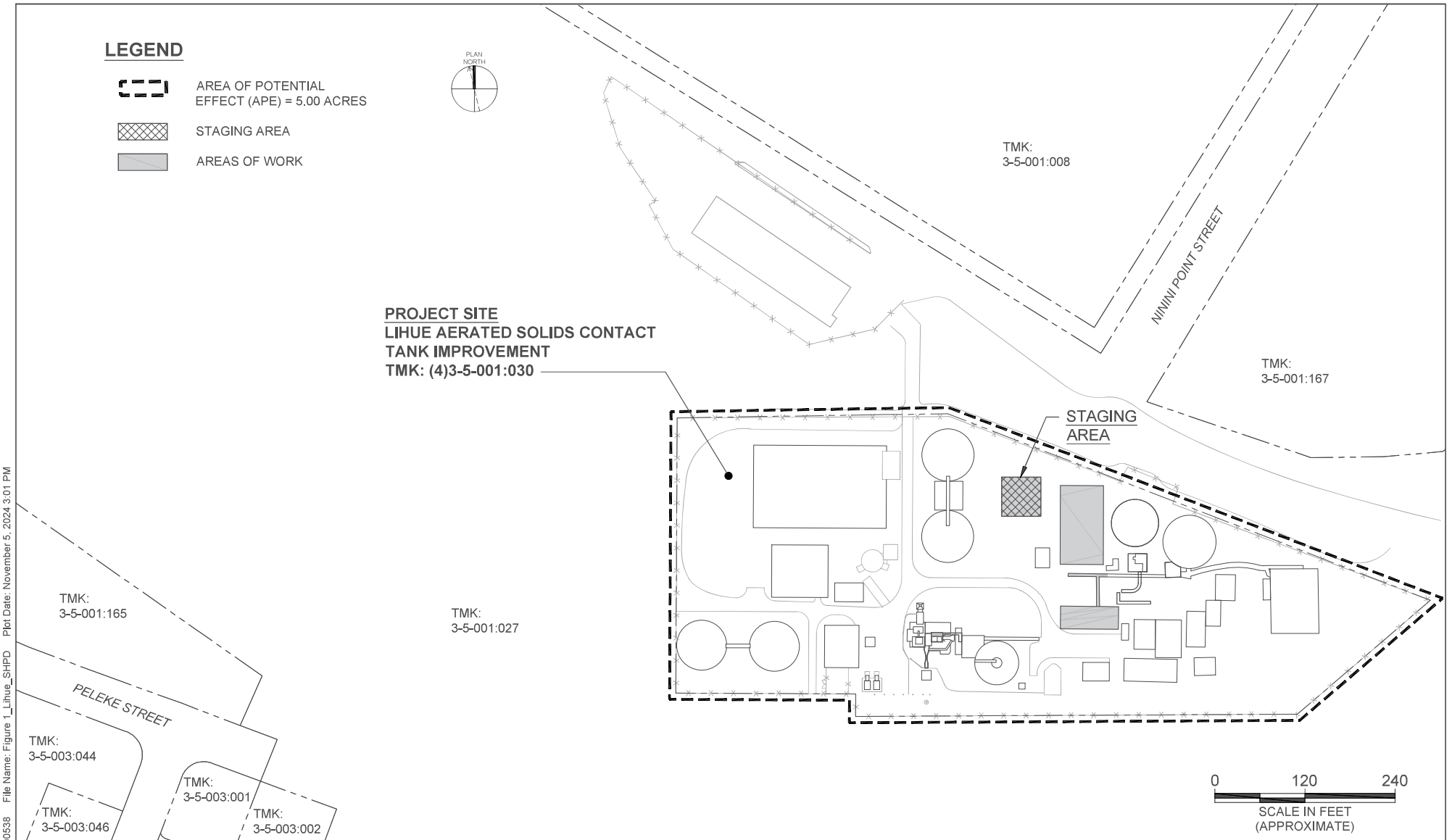
DESIGNED BY: B.KAWAMURA
DRAWN BY: B.PENALBA
APPROVED:
CHIEF

CHECKED BY: B.KAWAMURA
SECTION HEAD
BRANCH HEAD
DATE

FILE CABINET	DRAWER	FILE	POCKET	FOLDER	NO.

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

Attachment B



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Path: C:\bcpw\d3700538 File Name: Figure 1_Lihue_SHPD Plot Date: November 5, 2024 3:01 PM

Brown AND Caldwell

SCALE: 1" = 120'

DATE: November 5, 2024

LIHUE AERATED SOLIDS CONTACT TANK IMPROVEMENT

LIHUE WWTP LOCATION MAP - TMK BASE

FIGURE F1

Attachment C

Figure 1: Street View of Access Road to Lihue WWTP

Figure 2: View of the Aerated Solids Contact Tank from the South

Figure 3: View of the Aerated Solids Contact Tank from the Southwest

Figure 4: View of the Aerated Solids Contact Tank from the Southeast

Figure 5: View of the Aerated Solids Contact Tank from the West

Figure 6: View of the Aerated Solids Contact Tank from the East

Figure 7: View of the Aerated Solids Contact Tank from the North

Figure 8: View of the Headworks Tank from the South

Figure 9: View of the Headworks from the Northeast

Figure 10: View of the Headworks from the West

Attachment D

Native Hawaiian Organization / Interested Parties Consultation List

1. Anela Jackson
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3. Dre Kalili
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16. Dennis W. Ragsdale
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    Email: order@kamehameha-1.org

17. Sheri-Ann Daniels
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20. Kauai Historical Society
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21. Kauai Museum
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22. Grove Farm Homestead Museum (Waioli Corporation)
    P.O. Box 1631
    Lihue, HI 96766
    (808) 245-3202
    Email: curator@grovefarm.org