STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Land Division
Honolulu, Hawaii 96813

August 23, 2024

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

PSF No.: 24MD-017

Maui

Issuance of Immediate Management Right-of-Entry and Set-Aside of Lands to the County of Maui for Existing Sewer Pump Station; Lower Honokowai, Lahaina, Maui, Tax Map Key No. (2) 4-4-001:094

APPLICANT:

County of Maui

LEGAL REFERENCE:

Sections 171-11 and -55, Hawaii Revised Statutes (HRS), as amended.

LOCATION:

Government lands situated at Lower Honokowai, Lahaina, Maui, further identified by Tax Map Key: (2) 4-4-001: 094, as shown on the attached map labeled Exhibit A.

AREA:

0.17 acre, more or less.

ZONING:

State Land Use District: Urban
County of Maui CZO: Residential

TRUST LAND STATUS:

Section 5(b) lands of the Hawaii Admission Act
DHHL 30% entitlement lands pursuant to the Hawaii State Constitution: NO

CURRENT USE STATUS:

Existing pump station and related amenities owned and operated by the County of Maui Department of Environmental Management.

PURPOSE OF SET-ASIDE:

Sewer Pump Station Purposes.

TERM OF RIGHT-OF-ENTRY:

Commencing upon Chairperson's execution of a Board-approved immediate management right-of-entry permit (ROE) to the County of Maui that shall expire in one year or upon execution of the set-aside of government lands by Governor's Executive Order for an existing sewer pump station, whichever shall first occur. The Chairperson will be authorized to continue the ROE for additional one-year periods for good cause shown.

CHAPTER 343 - ENVIRONMENTAL ASSESSMENT:

In accordance with Hawaii Administrative Rules (HAR) §§ 11-200.1-15 and -16 and the Exemption List for the Department of Land and Natural Resources reviewed and concurred on by the Environmental Council on November 10, 2020, the subject request is exempt from the preparation of an environmental assessment pursuant to General Exemption Type 1, that states, "Operations, repairs or maintenance of existing structures, facilities, equipment, or topographical features, involving negligible or no expansion or change of use beyond that previously existing," Part 1, Item 36, "Transfer of management authority over state-owned land, such as setting aside of state lands to or from other government agencies through a Governor's executive order."

The subject request is a de minimis action that will probably have minimal or no significant effect on the environment and should be declared exempt from the preparation of an environmental assessment and the requirements of § 11-200.1-17, HAR, as a de minimis action. The County of Maui shall be responsible for compliance with Chapter 343, HRS, to the extent applicable to its project.

REMARKS:

By letter dated September 5, 2023, the County of Maui has requested that the State of Hawaii set-aside land to continue the operation and maintenance of the Napili Pump Station #1, historically known as the Napili-Honokowai Sewage Pump Station #9.

The land is currently used for existing sewer pump station purposes and the County of Maui would like to maintain the usage of this area. There are no feasible options for relocation. The equipment on site is approaching the end of its useful life. Failure to

maintain and upgrade the pump station would be a catastrophe to public health. The County of Maui is currently designing upgrades to the equipment in order to maintain reliability. Research of Land Division records revealed that the County does not have an existing easement or executive order for use of state government lands.

Staff notes there is already C.S.F. map for the site dated August 10, 1981, prepared by the State of Hawaii, Survey Division: C.S.F. 19,361, map(s) and description(s) of Sewer Pump Station No. 9, Napili, Honokowai Sewage System.

RECOMMENDATION:

That the Board:

1. Declare that, after considering the potential effects of the proposed disposition as provided by Chapter 343, HRS, and Chapter 11-200.1-15, 11-200.1-16, HAR, this project will probably have minimal or no significant effect on the environment and is therefore exempt from the preparation of an environmental assessment as a de minimis activity.

2. Authorize the issuance of an immediate management right-of-entry permit to the County of Maui, covering the subject area under the terms and conditions cited above, which are by this reference incorporated herein and further subject to the following:

    A. The standard terms and conditions of the most current right-of-entry permit form, as may be amended from time to time; and

    B. Such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State.

3. Approve of and recommend to the Governor the issuance of an executive order setting aside the subject lands to the County of Maui under the terms and conditions cited above, which are by this reference incorporated herein and subject further to the following:

    A. The standard terms and conditions of the most current executive order form, as may be amended from time to time;

    B. Disapproval by the Legislature by two-thirds vote of either the House of Representatives or the Senate or by a majority vote by both in any regular or special session next following the date of the setting aside;

    C. Review and approval by the Department of the Attorney General;

and

D. Such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State.

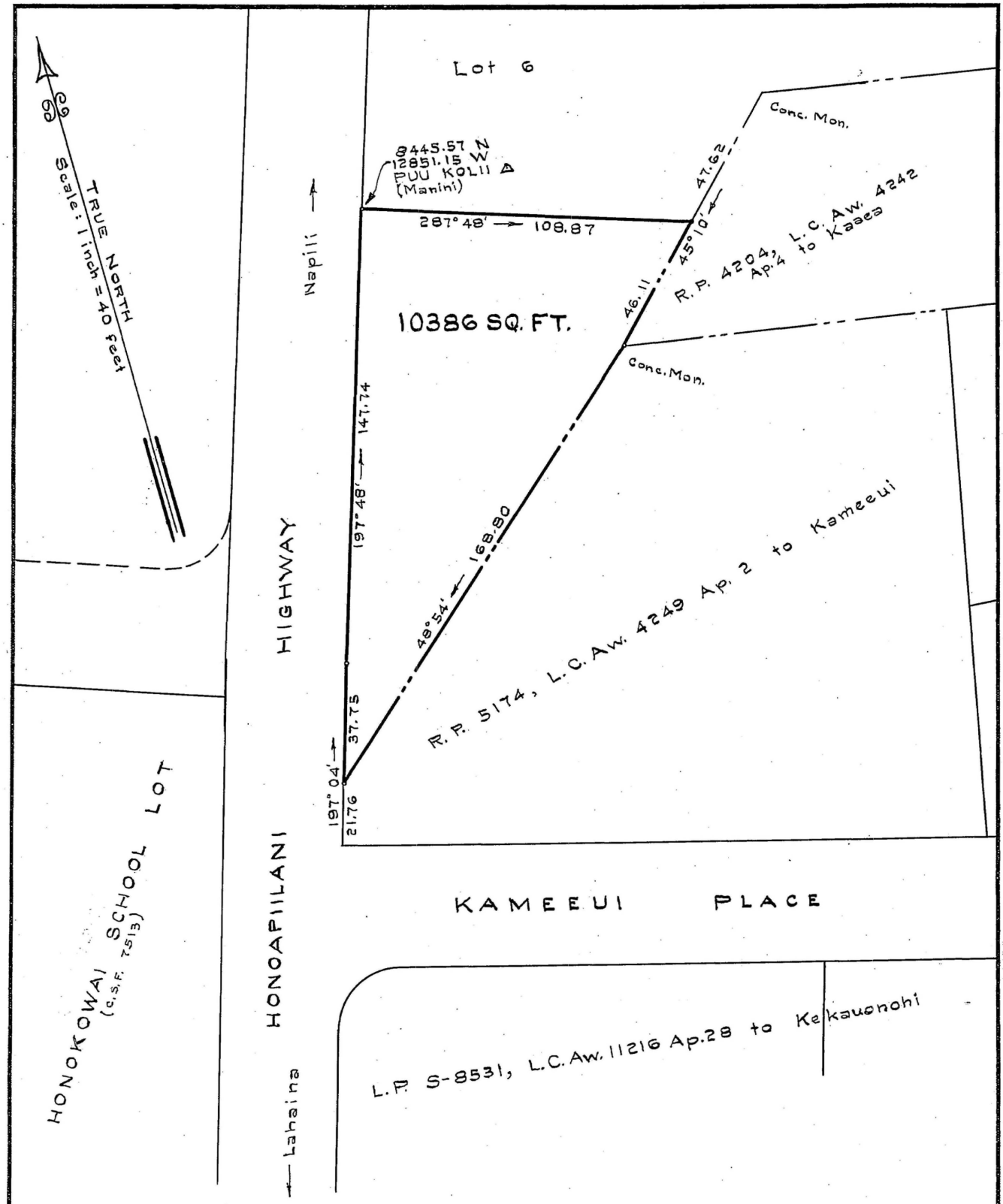
Respectfully Submitted,

Ebony V. Butihi
Documentation Specialist

RT KEM

APPROVED FOR SUBMITTAL:

Dawn N. S. Chang, Chairperson



SEWER PUMP STATION NO. 9

NAPILI-HONOKOWAI SEWAGE SYSTEM

Honokowai, Lahaina (Kaanapali), Maui, Hawaii

Scale: 1 inch = 40 feet

JOB Ma-272 (81)

C. BK Wilder 10:120

EXHIBIT A1

TAX MAP 4-4-01:94 & Por. 26

SURVEY DIVISION

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

C. S. F. No. 19361

STATE OF HAWAII

E.C.W. Jr. Aug. 10, 1981

STATE OF HAWAII
SURVEY DIVISION
DEPT. OF ACCOUNTING AND GENERAL SERVICES
HONOLULU

C.S.F. No. 19,361

August 10, 1981

SEWER PUMP STATION NO. 9

NAPILI-HONOKOWAI SEWAGE SYSTEM

Honokowai, Lahaina (Kaanapali), Maui, Hawaii

Being a portion of the Government (Crown) Land of Honokowai.

Being also all of Lot 7 and a portion of Lot 6 of Honokowai Government Remnants.

Beginning at the northwest corner of this parcel of land, the southwest corner of the remainder of Lot 6, Honokowai Government Remnants and on the east side of Honoapiilani Highway, the coordinates of said point of beginning referred to Government Survey Triangulation Station "PUU KOLII" (Manini) being 8445.57 feet North and 12,851.15 feet West, thence running by azimuths measured clockwise from True South:-

1.	287° 48'	108.87 feet	along the remainder of Lot 6, Honokowai Government Remnants;
2.	45° 10'	46.11 feet	along R.P. 4204, L.C.Aw. 4242, Ap. 4 to Kaaea to a concrete monument;
3.	48° 54'	168.80 feet	along R.P. 5174, L.C.Aw. 4249, Ap. 2 to Kameeui;
4.	197° 04'	37.75 feet	along the east side of Honoapiilani Highway;
5.	197° 48'	147.74 feet	along the east side of Honoapiilani Highway to the point of beginning and containing an AREA OF 10,386 SQUARE FEET.

SURVEY DIVISION
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE OF HAWAII

By: Ellwood C. Wilder Jr.
Ellwood C. Wilder, Jr.
Land Surveyor

vy

Compiled from survey by Park Eng., Inc. & Govt. Survey Records.

EXHIBIT A2

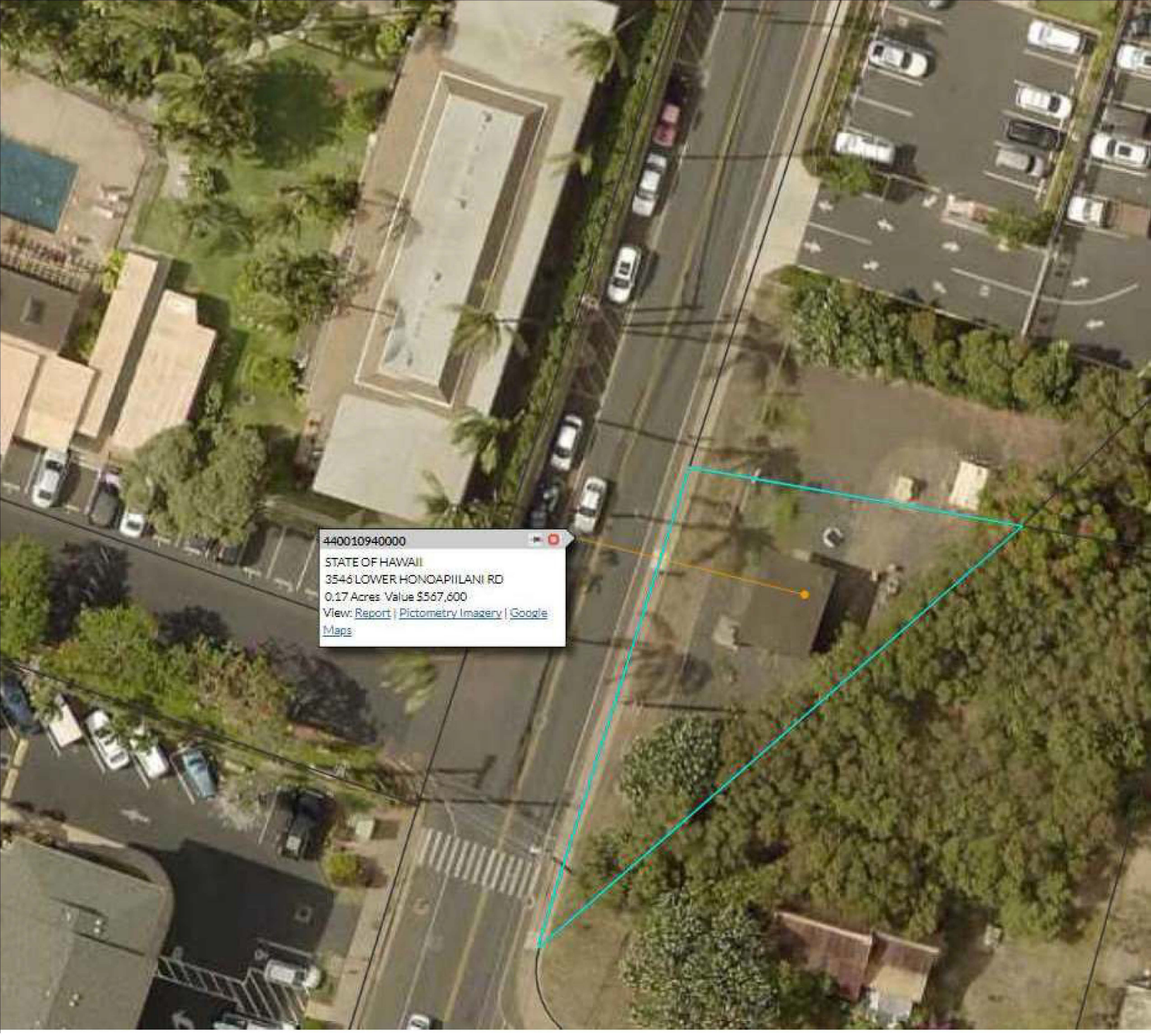

440010940000
STATE OF HAWAII
3546 LOWER HONOAPIILANI RD
0.17 Acres Value $567,600
View: Report | Pictometry Imagery | Google Maps

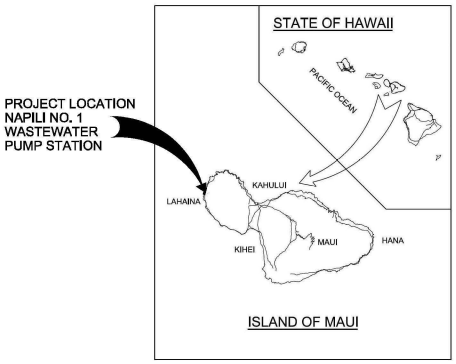
EXHIBIT B

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WASTEWATER RECLAMATION DIVISION
COUNTY OF MAUI, HAWAII
NAPILI NO. 1
PUMP STATION MODIFICATIONS
JOB NO. WW22-004

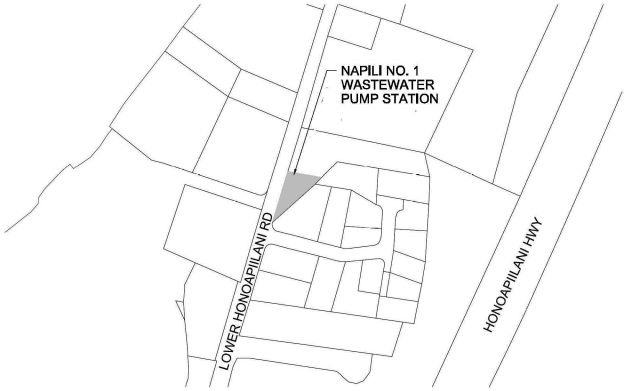
PREPARED BY:

Jacobs

1003 BISHOP STREET, SUITE 1340
HONOLULU, HAWAII 96813



N
LOCATION MAP
NTS



N
VICINITY MAP - MAUI
NTS

APPROVALS

CHIEF, ENVIRONMENTAL MANAGEMENT DIVISION DEPARTMENT OF HEALTH STATE OF HAWAII	DATE	DIRECTOR, DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI	DATE

EXHIBIT C

NO.	DATE	REVISION	BY	APV'D
DSGN	A MANTES/JZZ	DR M MONAHAN	CHK M BALDWIN	APV'D S CHUMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

GENERAL
COVER SHEET

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INDEX OF DRAWINGS

SHT NO.	DWG NO.	DRAWING TITLE
		GENERAL - 001
	001-G-0001	GENERAL - COVER SHEET
	001-G-0002	GENERAL - INDEX OF DRAWINGS
	001-G-0003	GENERAL - ABBREVIATIONS
	001-G-0004	GENERAL - INSTRUMENTATION AND CONTROL LEGEND (1 OF 2)
	001-G-0005	GENERAL - INSTRUMENTATION AND CONTROL LEGEND (2 OF 2)
	001-G-0006	GENERAL - CIVIL LEGEND
	001-G-0007	GENERAL - GENERAL ARCHITECTURAL MATERIAL SYMBOLS, LEGEND, CODE DATA, LIFE SAFETY PLAN, AND SCHEDULES
	001-G-0008	GENERAL - STRUCTURAL NOTES (1 OF 3)
	001-G-0009	GENERAL - STRUCTURAL NOTES (2 OF 3)
	001-G-0010	GENERAL - STRUCTURAL NOTES (3 OF 3)
	001-G-0011	GENERAL - STRUCTURAL SPECIAL INSPECTIONS (1 of 3)
	001-G-0012	GENERAL - STRUCTURAL SPECIAL INSPECTIONS (2 of 3)
	001-G-0013	GENERAL - STRUCTURAL SPECIAL INSPECTIONS (3 of 3)
	001-G-0014	GENERAL - PROCESS MECHANICAL LEGEND
	001-G-0015	GENERAL - HVAC LEGEND
	001-G-0016	GENERAL - ELECTRICAL LEGEND (1 OF 3)
	001-G-0017	GENERAL - ELECTRICAL LEGEND (2 OF 3)
	001-G-0018	GENERAL - ELECTRICAL LEGEND (3 OF 3)
	001-G-0019	GENERAL - PIPE SCHEDULE
	001-G-0020	GENERAL - AREA CLASSIFICATION AND MATERIAL SELECTION
	001-G-0021	GENERAL - CONSTRUCTION SEQUENCE/ PHASING PLAN
		SITE - 050
	050-C-0001	CIVIL - EXISTING SITE SURVEY
	050-C-1001	CIVIL - DEMOLITION PLAN
	050-C-2000	CIVIL - SITE PLAN
	050-C-2001	CIVIL - SITE LAYOUT PLAN
	050-C-2002	CIVIL - EROSION AND SEDIMENT CONTROL PLAN - LAHAINA WWRF
	050-C-2003	CIVIL - EROSION AND SEDIMENT CONTROL PLAN - NAPILI NO. WWPS
	050-C-5001	CIVIL - EROSION AND SEDIMENT CONTROL NOTES
	050-E-2001	ELECTRICAL - SITE PLAN
		INSTRUMENTATION AND CONTROL - 080
	080-N-6001	INSTRUMENTATION AND CONTROL - PUMP STATION P&ID
	080-N-6002	INSTRUMENTATION AND CONTROL - MISCELLANEOUS SIGNALS P&ID
	080-N-6100	INSTRUMENTATION AND CONTROL - NETWORK BLOCK DIAGRAM
		EXISTING PUMP STATION - 090
	090-R-2001	DEMOLITION - WET WELL AND DRY PIT PLAN
	090-R-3001	DEMOLITION - WET WELL AND DRY PIT SECTION
	090-S-2001	STRUCTURAL - EXISTING PUMP STATION PLAN
		PUMP STATION - 100
	100-S-2001	STRUCTURAL - PUMP STATION FOUNDATION PLAN
	100-S-2002	STRUCTURAL - PUMP STATION LOWER PLAN
	100-S-2003	STRUCTURAL - PUMP STATION UPPER PLAN
	100-S-3001	STRUCTURAL - PUMP STATION SECTIONS
	100-S-3002	STRUCTURAL - PUMP STATION SECTIONS
	100-D-2001	PROCESS MECHANICAL - PUMP STATION LOWER PLAN
	100-D-2002	PROCESS MECHANICAL - PUMP STATION UPPER PLAN
	100-D-3001	PROCESS MECHANICAL - PUMP STATION SECTIONS
	100-D-3002	PROCESS MECHANICAL - PUMP STATION SECTIONS
	100-D-9001	PROCESS MECHANICAL - PUMP STATION ISOMETRIC
	100-E-2001	ELECTRICAL - PUMP STATION PLAN
		ELECTRICAL BUILDING - 200
	200-R-2001	DEMOLITION - GENERATOR BUILDING PLAN AND SECTIONS
	200-R-2002	DEMOLITION - GENERATOR BUILDING ELECTRICAL PLAN
	200-R-6001	DEMOLITION - GENERATOR BUILDING ONE-LINE DIAGRAM
	200-A-2001	ARCHITECHTURAL - ELECTRICAL BUILDING PLAN
	200-A-3001	ARCHITECHTURAL - ELECTRICAL BUILDING ELEVATIONS AND SECTION
	200-S-2001	STRUCTURAL - ELECTRICAL BUILDING PLAN AND SECTION
	200-M-2001	HVAC - ELECTRICAL BUILDING PLAN AND SECTIONS
	200-M-6001	HVAC - SCHEDULES
	200-E-2001	PUMP STATION 1 - ELECTRICAL ELECTRICAL BUILDING PLANS
	200-E-6001	ELECTRICAL - ELECTRICAL BUILDING ONE-LINE DIAGRAM
	200-E-6002	ELECTRICAL - PANEL SCHEDULE
	200-E-6101	ELECTRICAL - VFD-A MOTOR CONTROL DIAGRAM
	200-E-6102	ELECTRICAL - VFD-A MOTOR CONTROL DIAGRAM
	200-E-6103	ELECTRICAL - PUMP RELAY AND CONTACTOR CONTROL DIAGRAMS
		GENERATOR - 300
	300-S-2001	STRUCTURAL - GENERATOR PLANS AND SECTION

NO.	DATE	BY	APV'D
DSGN	M BELL	B KASPAR	P MURPHY
DR		CHK	APV'D
REVISION			S CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
LAHAINA, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

GENERAL

INDEX OF DRAWINGS

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ABBREVIATIONS

@	AT
AB	ANCHOR BOLT
ABS	ACRYLONITRILE-BUTADIENE-STYRENE
AC	ACTIVATED CARBON OR ASPHALT CONCRETE
A/C	AIR CONDITIONING
ACFM	ACTUAL CUBIC FEET PER MINUTE
ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASPHALT CONCRETE PAVEMENT
ACT	ACOUSTIC TILE
ADDL	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJACENT OR ADJUSTABLE
AER	AERATION
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHP	AIR: HIGH PRESSURE
AHR	ANCHOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL	ALUMINUM
ALP	AIR: LOW PRESSURE
ALT	ALTERNATE
ALTN	ALTERNATIVE, ALTERNATE
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AS	ADJUSTABLE SPEED
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
ASSY	ASSEMBLY
AUTO	AUTOMATIC
AUX	AUXILIARY
AVRV	AIR VACUUM AND AIR RELEASE VALVE
AWWA	AMERICAN WATER WORKS ASSOCIATION
AWG	AMERICAN WIRE GAGE
BA	BACKWASH AIR
BC	BEGIN CURVE OR BOLT CIRCLE
BD	BOARD
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BFP	BACK FLOW PREVENTER
BLK	BLACK, BLOCK
BLKG	BLOCKING
BLDG	BUILDING
BM	BENCH MARK OR BEAM
BO	BLOW OFF ASSEMBLY
BOD	BIOCHEMICAL OXYGEN DEMAND
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BPV	BACK PRESSURE VALVE
BRG	BEARING
B&S	BELL AND SPIGOT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BTWN	BETWEEN
BV	BALL VALVE
BVC	BEGINNING OF VERTICAL CURVE
BWF	BACKWASH FILL
BWR	BACKWASH RETURN
BWS	BACKWASH SUPPLY WATER
BWW	BACKWASH WASTEWATER
BWV	BACK WATER VALVE
BYP	BYPASS
C	CHANNEL OR CELSIUS
CAB	CABINET
CAP	CAPACITY
CAV	COMBINATION AIR VALVE
CB	CATCH BASIN
CC	CENTER TO CENTER
CCB	CHLORINE CONTACT BASIN
CCP	CONCRETE CYLINDER PIPE
CCS	CENTRAL CONTROL SYSTEM
CD	CEILING DIFFUSER
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEM	CHEMICAL
CHKD PL	CHECKERED PLATE
CI	CAST IRON
CI	CONTINUOUS INSULATION
CIGC	CAST IRON GROOVED COUPLING
CIMJ	CAST IRON MECHANICAL JOINT
CIP	CAST IRON PIPE
CIRJ	CAST IRON RESTRAINED JOINT
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION OR CONTROL JOINT
CL	CENTERLINE
CL	CLASS OR CHLORINE GAS OR CHAIN LINK
CLCS	CEMENT-LINED AND COATED STEEL PIPE
CLDIP	CEMENT-LINED DUCTILE IRON PIPE
CLG	CEILING
CLR	CLEAR, CLEARANCE
CLST	CEMENT-LINED STEEL PIPE

CM	CENTIMETER
CML&C	CEMENT MORTAR LINED & COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN-OUT
COMP	COMPRESSOR
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS OR CONTINUATION
COORD	COORDINATE
COP.	COPPER
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CR	CURB RETURN
CRS	COLD ROLLED STEEL
CS	CAUSTIC SODA
CT	CERAMIC TILE
CTD, CTRD	CENTERED
CTR	CENTER
CTSK	COUNTERSINK
CTV	CABLE TELEVISION
C TO C	CENTER TO CENTER
CU	CUBIC
CU FT	CUBIC FOOT
CU IN.	CUBIC INCH
CU YD	CUBIC YARD
CULV	CULVERT
CV	CHECK VALVE
CW	COLD WATER
CWR	COLD WATER RETURN
CWS	COLD WATER SUPPLY
CYL	CYLINDER
CWO	CHAIN WHEEL OPERATOR
DBA	DEFORMED BAR ANCHOR
d	PENNEY (NAIL SIZE)
DB	DISTRIBUTION BOX
DBL	DOUBLE
DEC	DECANT
DET	DETAIL
DF	DRINKING FOUNTAIN OR DOUGLAS FIR
DG	DOOR GRILLE
DI	DROP INLET, DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFUSER
DIL	DILUTE
DIMJ	DUCTILE IRON MECHANICAL JOINT
DIP	DUCTILE IRON PIPE
DIPGL	DUCTILE IRON PIPE, GLASS LINED
DISCH	DISCHARGE
DISP	DISPENSER
DIR	DIRECTION
DN	DOWN, DECANT
DO	DISSOLVED OXYGEN
DR	DOOR OR DRAIN
DS	DRENCH SHOWER AND EYE WASH
DWG	DRAWING
E	EAST OR ELECTRIC UTILITY
EA	EACH
EC	END CURVE
ECC	ECCENTRIC
EF	EACH FACE OR EXHAUST FAN
EFF	EFFLUENT
EG	EXHAUST GRILL
EL	ELEVATION
ELB	ELBOW
ELC	ELECTRIC LOAD CENTER
ELEC	ELECTRIC OR ELECTRICAL
ENG	ENGINE
ENGR	ENGINEER
EO	EMERGENCY OVERFLOW
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
ERB	EMERGENCY RETENTION BASIN
ESMNT	EASEMENT
EVAP	EVAPORATOR
EVC	END OF VERTICAL CURVE
EW	EACH WAY
EWH	EYE WASH
EXC	EXCAVATE
EXH	EXHAUST
EXHF	EXHAUST FAN
EX-HY	EXTRA HEAVY
EXST	EXISTING
EXP	EXPOSED, EXPANSION
EXP JT	EXPANSION JOINT
EXT	EXTERIOR OR EXTENSION
EMER	EMERGENCY
F	FAHRENHEIT
FAB	FABRICATION OR FABRICATE
FACT	FACTORY
FAI	FRESH AIR INTAKE

FB	FLAT BAR
FC	FLEXIBLE COUPLING
FCA	FLANGE COUPLING ADAPTER
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FD BK	FIELD BOOK
FDN	FOUNDATION
FDR	FEEDER
FE	FINAL EFFLUENT
FES	FLARED END SECTION
FEXT	FIRE EXTINGUISHER
FF	FLAT FACE OR FAR FACE
F TO F	FACE TO FACE
FG	FINISH GRADE
FH	FIRE HYDRANT
FI	FILTER INFLUENT
FIG.	FIGURE
FIN	FINISH OR FINISHED
FLEX	FLEXIBLE
FLOCC	FLOCCULATOR OR FLOCCULATION
FLG	FLANGE
FLH	FLAT HEAD
FLL	FLOW LINE
FLR	FLOOR
FLTR	FILTER
FM	FORCE MAIN
FMH	FLEXIBLE METAL HOSE
FNSH	FINISH
FO	FUEL OIL, FIBER OPTIC
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FPC	FLEXIBLE PIPE COUPLING
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FAR SIDE, FLOOR SINK, FINISHED SURFACE OR FORGED STL
FT	FEET OR FOOT
FTG	FOOTING
FTW	FILTER TO WASTE
FW	FINISHED WATER
FWD	FORWARD
°F	DEGREE FAHRENHEIT
G	GAS
GA	GAGE OR GAUGE
GAL	GALLON
GALV	GALVANIZED
GALVI	GALVANIZED IRON
GC	GROOVED COUPLING
GCO	GRADE CLEAN OUT
GCF	GROOVED COUPLING FITTING
GE	GROOVED END
GEN	GENERATOR
GL	GLASS
GLDIP	GLASS LINED DUCTILE IRON PIPE
GLST	GLASS LINED STEEL PIPE
GLV	GLOBE VALVE
GMMU	GLASS MESH MASONRY UNIT
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRD	GRADE OR GROUND
GR BRK	GRADE BREAK
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GVL	GRAVEL
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HAS	HEADED ANCHOR STUD
HB	HOSE BIB
HD	HUB DRAIN
HDR	HEADER
HDW	HARDWARE
HEX	HEXAGONAL
HGL	HYDRAULIC GRADE LINE
HGT	HEIGHT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPR	HIGH PRESSURE
HR	HOSE RACK OR HANDRAIL
HSS	HOLLOW STRUCTURAL SECTION
HTR	HEATER
HV	HOSE VALVE
H&V	HEATING AND VENTILATION
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HW	HIGH WATER
HWO	HANDWHEEL OPERATED
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HYD	HYDRANT
I&C	INSTRUMENTATION AND CONTROL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
I.F.	INSIDE FACE
IN	INCH

INFL	INFLUENT
IP	IRON PIPE
IPS	IRON PIPE SIZE
IRR	IRRIGATION
INSTM	INSTRUMENTATION
INSUL	INSULATE
INVT	INVERT
JAN	JANITOR
JT	JOINT
KG	KILOGRAM
K	THOUSAND POUNDS
KM	KILOMETER
KV	KILOVOLT
KW	KILOWATT
KWH	KILOWATT HOUR
L	LITER, LENGTH OR ANGLE
LAB	LABORATORY
LAT'L	LATERAL
LAV	LAVATORY
LB, LBS	POUND(S)
LB/CU FT	POUNDS PER CUBIC FOOT
LF	LINEAR FEET
LG	LONG
LH	LEFT HAND
LNTL	LINTEL
LO	LEVER OPERATED
LONG	LONGITUDINAL
LP	LIGHT POLE
LPG	LIQUEFIED PETROLEUM GAS
LR	LONG RADIUS
LT	LEFT
LWR	LOWER
LGTH	LENGTH
M	METER
MAG	MAGNETIC
MAN	MANUAL
MACH	MACHINE
MAX	MAXIMUM
MB	MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MG	MILLION GALLON
MGD	MILLION GALLONS PER DAY
MG/L	MILLIGRAMS PER LITER
MH	MANHOLE
MI	MALLEABLE IRON
MIN	MINIMUM OR MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MK	MARK
MO	MASONRY OPENING OR MOTOR OPERATED
MOD	MODEL OR MODIFY
MTD	MOUNTED
MS	MOP SINK
MSNRY	MASONRY
MTL	METAL OR MATERIAL
MTR	MOTOR
MW	MAN WAY
MWS	MAXIMUM WATER SURFACE
N	NORTH
NBS	NATIONAL BUREAU OF STANDARDS
NC	NORMALLY CLOSED
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
NEPA	NATIONAL FIRE PROTECTION ASSOCIATION
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN OR NUMBER
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NRS	NON RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER OR OVERFLOW DRAIN
O.F.	OUTSIDE FACE OR OVERFLOW
OFR	OVERFLOW RETURN
OG	ORIGINAL GROUND
OH	OVERHEAD
OHE	OVERHEAD ELECTRIC UTILITY
OSD	OPEN SITE DRAIN
OPER	OPERATOR
OPNG	OPENING
OPP	OPPOSITE
OZ	OUNCE
P	PILASTER OR POLE
PC	POINT OF CURVE OR PORTLAND CEMENT
PCC	POINT OF COMPOUND CURVE
PD	PROCESS DRAIN
PDR	PUMPED DRAIN
PE	PLAIN END
PENT	PENETRATION
PG	PRESSURE GAGE
PI	POINT OF INTERSECTION
P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
PJF	PREMOLDED JOINT FILLER

PL	PLATE OR PROPERTY LINE
PLYWD	PLYWOOD
PNEU	PNEUMATIC
PO	POLYMER SOLUTION
POA	ANIONIC POLYMER
POB	POINT OF BEGINNING
POC	CATIONIC POLYMER
POE	POINT OF END
PON	NONIONIC POLYMER
PP	POWER POLE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	PARTS PER MILLION
PR	PAIR
PRC	POINT OF REVERSE CURVE
PRCST	PRECAST
PREFAB	PREFABRICATED
PRESS.	PRESSURE
PRI	PRIMARY
PROP.	PROPERTY
PRV	PRESSURE REGULATING VALVE
PS	PUMP STATION OR PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PSL	PRIMARY SLUDGE
PT	POINT OF TANGENT
PTDF	PRESSURE TREATED DOUGLAS FIR
PTD/WR	PAPER TOWEL DISPENSER / WASTE RECEPTACLE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PW	POTABLE WATER
Q	FLOW
R, RAD	RADIUS
RA	RETURN AIR
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD, ROOF DRAIN OR ROUND
RDCR	REDUCER
RDW	REDWOOD
RECIRC	RECIRCULATION
REF	REFER OR REFERENCE
REFR	REFRIGERATOR
REG	REGULATING
REINF	REINFORCE OR REINFORCING
REQD	REQUIRED
REV	REVISION
RJ	RESTRAINED JOINT
RL	RAIN LEADER
RLS	RUBBER LINED STEEL
RM	ROOM
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RST	REINFORCING STEEL
RT	RIGHT
RTN	RETURN
RV	ROOF VENT
RWBS	RAW WATER BASIN SOLIDS
R/W	RIGHT-OF-WAY
S	SOUTH
SA	SAMPLE
SC	SECONDARY CLARIFIER
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	STORM DRAIN, SOAP DISPENSER
SEC	SECONDARY
SECT	SECTION
SK	SINK
SH	SHOWER
SHT	SHEET
SIM	SIMILAR
SL	SLUDGE
SLP	SLOPE
SOLN	SOLUTION
SP	SPACING, SPACE, SPACES OR STATIC PRESSURE
SPD	SUMP PUMP DRAIN
SPEC	SPECIFICATION
SPLY	SUPPLY
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SS	SANITARY SEWER
SST	STAINLESS
SST STL	STAINLESS STEEL
STA	STATION
STD	STANDARD
STIF	STIFFENER
STL	STEEL

STLS	STEEL PIPE, (SPECIAL)
STR	STAIR
STR TRD	STAIR TREAD
STRL	STRUCTURAL
STRUCT	STRUCTURE
SUBFL	SUB-FLOOR
SUCT	SUCTION
SUSP	SUSPEND
SV	SOLENOID VALVE
SYM	SYMMETRICAL
SYS	SYSTEM
t	THICKNESS
T	THERMOSTAT, TREAD
TAN.	TANGENT
TB	TACK BOARD
TBG	TUBING
T&B	TOP AND BOTTOM
TBC	TOP BACK OF CURB
TBE	THREADED BOTH ENDS
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB
TDH	TOTAL DYNAMIC HEAD
T&G	TONGUE AND GROOVE
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPERATURE
TF	TOP FACE OR TRICKLING FILTER
TH	TOILET PAPER HOLDER
THK	THICK OR THICKNESS
THRD	THREAD
THRHLD	THRESHOLD
TK	TANK
T.O.	TOP OF
TOE .	THREAD ONE END
TOG	TOP OF GRATING
T.O.W.	TOP OF WALL
TP	TELEPHONE POLE
TPO	THERMOPLASTIC POLYOLEFIN
TRANS	TRANSITION OR TRANSMITTER
TRANSV	TRANSVERSE
TRTD	TREATED
TS	TUBE STEEL
TSS	TOTAL SUSPENDED SOLIDS
TT	THRUST TIE
TTD	TOILET TISSUE DISPENSER
TW	THERMOMETER WELL
TV	TELEVISION OR THERMOSTATIC VALVE
TXFR	TRANSFORMER
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UC	UNDER CROSSING
UD	UNDERDRAIN
UG	UNDERGROUND
UGC	UNDERGROUND CONDUIT
UGE	UNDERGROUND ELECTRIC UTILITY
UH	UNIT HEATER
UHMW	ULTRA-HIGH-MOLECULAR-WEIGHT POLYETHYLENE
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UP	UTILITY POLE
UR	URINAL
UV	ULTRA VIOLET
VC	VERTICAL CURVE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WATER, WEST OR WIDTH
W/	WITH
WC	WATER CLOSET, WATER COLUMN
WCO	WALL CLEANOUT
WD	WOOD
WF	WIDE FLANGE
WH	WATER HEATER
WM	WATER METER
W/O	WITHOUT
WP	WORK POINT
WPF	WATER PURIFICATION FACILITY
WR	WATER RESISTANT
WS	WATER SURFACE
WSCOT	WAINSCOT
WSE	WATER SURFACE ELEVATION
WSP	WELDED STEEL PIPE
WSTP	WATER STOP
WT	WEIGHT
WWM	WELDED WIRE MESH
XS	EXTRA STRONG
XXX	DOUBLE EXTRA STRONG
YD	YARD

GENERAL NOTE:

1. THIS IS A STANDARD LEGEND SHEET. THEREFORE, NOT ALL OF THE INFORMATION SHOWN MAY BE USED ON THIS PROJECT. FEB 2023

NO.	DATE	REVISION	BY	APVD

DSGN: M BELL | DR: B KASPAR | CHK: P MURPHY | APVD: S CHAMPLIN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

GENERAL
ABBREVIATIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	001-G-0003
SHEET	of

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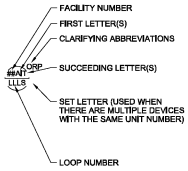
INSTRUMENT IDENTIFICATION

EXAMPLE SYMBOLS



DIGITAL SYSTEM INTERFACES

- ▲ ANALOG INPUT
- ▼ ANALOG OUTPUT
- △ DISCRETE INPUT
- ▽ DISCRETE OUTPUT
- ◊ ETHERNET / IP

INSTRUMENT IDENTIFICATION LETTERS TABLE

LETTER	FIRST-LETTER: PROCESS OR INITIATING VARIABLE	FIRST-LETTER: MODIFIER	SUCCEEDING-LETTERS: READOUT OR PASSIVE FUNCTION	SUCCEEDING-LETTERS: READOUT OR PASSIVE FUNCTION	SUCCEEDING-LETTERS: READOUT OR PASSIVE FUNCTION
A	ANALYSIS (*), AIR		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE (*)	USER'S CHOICE (*)	USER'S CHOICE (*)
C	USER'S CHOICE (*)			CONTROL	
D	DENSITY (S.G.)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT, SENSOR		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE (*)		GLASS, GAUGE VIEWING DEVICE	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTION				MIDDLE, INTERMEDIATE
N	TORQUE		USER'S CHOICE (*)	USER'S CHOICE (*)	USER'S CHOICE (*)
O	USER'S CHOICE (*)		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE	RELIEF		
R	RADIATION		RECORD OR PRINT		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTI VARIABLE		MULTI FUNCTION	MULTI FUNCTION	MULTI FUNCTION
V	VIBRATION, MECHANICAL ANALYSIS	VACUUM		VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	MULTI VARIABLE +	X AXIS	UNCLASSIFIED (*)	UNCLASSIFIED (*)	UNCLASSIFIED (*)
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION	Z AXIS		DRIVE, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

TABLE BASED ON THE INSTRUMENTATION, SYSTEMS, AND AUTOMATION SOCIETY (ISA) STANDARD.

(+) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL. SEE ABBREVIATIONS AND LETTER SYMBOLS.
(*) WHEN USED, DEFINE THE MEANING HERE FOR THE PROJECT.

GENERAL INSTRUMENT OR FUNCTIONAL SYMBOLS

- FIELD MOUNTED
- REAR-OF-PANEL MOUNTED (OPERATOR INACCESSIBLE)
- PANEL MOUNTED (OPERATOR ACCESSIBLE)
- MCC MOUNTED
- COMPUTER FUNCTION
- PLC FUNCTION
- SHARED DISPLAY, SHARED CONTROL

TRANSDUCERS

A	ANALOG	I	CURRENT
D	DIGITAL	P	PNEUMATIC
E	VOLTAGE	PF	PULSE FREQUENCY
F	FREQUENCY	PD	PULSE DURATION
H	HYDRAULIC	R	RESISTANCE

EXAMPLE

FY (I/P) CURRENT TO PNEUMATIC TRANSDUCER (BACK OF PANEL, IN A FLOW LOOP)

ACCESSORY DEVICES

A	ALARM
C	CONTROLLER
I	INDICATOR
R	RECORDER
S	SWITCH
T	TRANSMITTER
X	UNCLASSIFIED

EXAMPLE

FIT (T) TRANSMITTER AS AN ACCESSORY TO A FLOW ELEMENT

SPECIAL CASES

YL (OO) ON AND OFF EVENT LIGHTS

HS (OO) ON-OFF HAND SWITCH, MAINTAINED CONTACT SWITCH (CONTROLLED DEVICE WILL RESTART ON RETURN OF POWER AFTER POWER FAILURE).

HS (SS) STOP-START HAND SWITCH MOMENTARY CONTACT SWITCHES (CONTROLLED DEVICE WILL NOT RESTART ON RETURN OF POWER AFTER POWER FAILURE).

HS (HOA) HAND-OFF-AUTO HAND SWITCH, MAINTAINED CONTACT SWITCH (CONTROLLED DEVICE WILL RESTART ON RETURN OF POWER AFTER POWER FAILURE IN HAND).

LINE LEGEND

- PRIMARY PROCESS (CLOSED CONDUIT, DASHED LINE INDICATES ALTERNATE FLOW STREAM)
- SECONDARY PROCESS
- BYPASS PROCESS
- PROCESS (OPEN CHANNEL)
- ANALOG SIGNAL (4 TO 20 mAdc, ETC.)
- DISCRETE (ON/OFF, ETC.)
- PNEUMATIC SIGNAL
- FILLED SYSTEM SIGNAL
- HYDRAULIC SYSTEM SIGNAL
- DATA LINK
- BUILDING OR FACILITY BOUNDARY
- PACKAGE SYSTEM EQUIPMENT
- SIMILAR SYSTEMS
- HEAT-TRACED PIPE

PARALLELING LINES

(2) (A) 3(2) (B)

(A) TOTAL OF 2 SIGNALS

(B) 3 TYPICAL SETS OF 2 SIGNALS EACH, TOTAL OF 6 SIGNALS.

CONNECTING LINES

NON-CONNECTING LINES

INTERFACE SYMBOLS

WA | S → PROCESS INTERFACE

WA | D → SIGNAL INTERFACE

W SOURCE UNIT PROCESS NO. (1 OR 2 DIGITS)

A INTERFACE NO. (2 DIGITS)

D DESTINATION DRAWING NO.

S SOURCE DRAWING NO.

INTERFACE TO OR FROM PROCESS EXTERNAL TO PROJECT

(N) PROCESS OR SIGNAL LINE CONTINUATION (N)
N=1,2,3,ETC

SELF CONTAINED VALVE & EQUIPMENT TAG NUMBERS

##-D-XXX

##		FACILITY NUMBER
	10	PUMP STATION
	20	ELECTRICAL ROOM
	30	STANDBY POWER
D	ARV	AIR RELEASE VALVE
	F	FAN
	M	MECHANICAL EQUIPMENT
	P	PUMP
	T	TANK
X		LOOP NUMBER

ABBREVIATIONS & LETTER SYMBOLS

AC	ALTERNATING CURRENT
ACC	AREA CONTROL CENTER
AM	AUTO-MANUAL
CAM	COMPUTER-AUTO-MANUAL
CCS	CENTRAL CONTROL SYSTEM
CL_2 etc.	CHLORINE (TYPICAL; USE STANDARD CHEMICAL ELEMENT ABBREVIATIONS)
CLSD	CLOSED
CM	COMPUTER-MANUAL
COD	CHEMICAL OXYGEN DEMAND
CP-X	CONTROL PANEL NO. X
DC	DIRECT CURRENT
DCS	DISTRIBUTED CONTROL SYSTEM
DCU	DISTRIBUTED CONTROL UNIT
DO	DISSOLVED OXYGEN
FCL_2	FREE CHLORINE RESIDUAL
FOS	FAST-OFF-SLOW
FOSA	FAST-OFF-SLOW-AUTO
FOSR	FAST-OFF-SLOW-REMOTE
FP-W-X	FIELD PANEL NO. WX (W=UNIT PROCESS NUMBER X=PANEL NUMBER)
FR	FORWARD-REVERSE
GNG	GO-NO GO
HMI	HUMAN-MACHINE INTERFACE
HOA	HAND-OFF-AUTO
ISR	INTRINSICALLY SAFE RELAY
JB	JUNCTION BOX
LCP	LOCAL CONTROL PANEL
LEL	LOWER EXPLOSIVE LIMIT
LOS	LOCKOUT STOP
LR	LOCAL-REMOTE
MA	MANUAL-AUTO
MC	MODULATE-CLOSE
MCC-X	MOTOR CONTROL CENTER NO. X
MCP	MECHANICAL CONTROL PANEL
MSC	MANUFACTURER SUPPLIED CABLE
NSW	NETWORK SWITCH
OC	OPEN-CLOSE(D)
OCA	OPEN-CLOSE-AUTO
OCR	OPEN-CLOSE-REMOTE
OIT	OPERATOR INTERFACE TERMINAL
OO	ON-OFF
OOA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
ORP	OXIDATION REDUCTION POTENTIAL
OSC	OPEN-STOP-CLOSE
OPND	OPENED
pH	HYDROGEN ION CONCENTRATION
PLC	PROGRAMMABLE LOGIC CONTROLLER
REM	REMOTE
RIO	REMOTE I/O UNIT
RM-X	REMOTE MULTIPLEXING MODULE NO. X
RTU-X	REMOTE TELEMETRY UNIT NO. X
SF	SLOWER-FASTER
SHK	SPEED HAND CONTROL
SHWR	SHOWER
SS	START-STOP
SSC	SUPERVISORY SET POINT CONTROL
TCL_2	TOTAL CHLORINE RESIDUAL
TOC	TOTAL ORGANIC CARBON
TOD	TOTAL OXYGEN DEMAND
TURB	TURBIDITY
VCP	VIBRATION CONTROL PANEL
VHC	VOLATILE HYDROCARBONS
VIB	VIBRATION
Δ	DIFFERENCE
Σ	SUM
×	MULTIPLY
÷	DIVIDE
F(X)	CHARACTERIZED
X^n	RAISED TO THE Nth POWER
$\sqrt{}$	SQUARE ROOT
AVG	AVERAGE
1:1	REPEAT OR BOOST
>	SELECT HIGHEST SIGNAL
<	SELECT LOWEST SIGNAL
)	BIAS
%	GAIN OR ATTENUATE

GENERAL NOTES

1. COMPONENTS AND PANELS SHOWN WITH A SINGLE ASTERISK (✳) ARE TO BE PROVIDED AS PART OF A PACKAGE SYSTEM.
2. COMPONENTS AND PANELS SHOWN WITH A DOUBLE ASTERISK (✳✳) ARE TO BE PROVIDED UNDER DIVISION 26, ELECTRICAL.
3. COMPONENTS SHOWN WITH A TRIPLE ASTERISK (✳✳✳) ARE OWNER FURNISHED.

NO.	DATE	REVISION	BY	APV'D
DSGN	DIR	CHK	L WOOD	APV'D
D LOTT	DIR	S FLASKA	S CHAMPLIN	

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

GENERAL

INSTRUMENTATION AND CONTROL LEGEND (1 OF 2)

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	DECEMBER 2023
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DWG	001-G-0004
SHEET	of

100% DESIGN SUBMITTAL

VALVE SYMBOLS

- GATE
- KNIFE GATE
- BUTTERFLY
- GLOBE
- BALL
- V VEE-BALL
- PLUG
- SEAT PORT ECCENTRIC PLUG
- DIAPHRAGM
- DUCK BILL CHECK VALVE
- SLEEVE VALVE
- PINCH
- NEEDLE
- SWING CHECK
- BALL CHECK
- BACKFLOW PREVENTER
- ROTARY
- TELESCOPE
- S SAMPLE
- MUD
- PRESSURE RELIEF
- AIR AND/OR VACUUM RELEASE
- REGULATED SIDE PRESSURE CONTROL
- PRESSURE REGULATION (CLAY-TYPE)
- MULTI-PORT VALVE (GATE VALVE SHOWN. FOR OTHER VALVE TYPES, APPROPRIATE VALVE SYMBOL SHOWN.). SEAT PORTS ARE IMPLIED BY INDICATED FLOW PATTERN.
- ANGLE GATE

GATE SYMBOLS

- SLUICE / WEIR
- BUTTERFLY
- FABRICATED SLIDE
- FLAP
- STOP LOG
- SHEAR

ACTUATOR SYMBOLS

- PNEUMATIC DIAPHRAGM SPRING-OPPOSED, SINGLE OR DOUBLE ACTING
- PNEUMATIC CYLINDER SINGLE OR DOUBLE ACTING ACTUATED BY ONE INPUT
- M ELECTRIC MOTOR
- S SOLENOID
- VALVE POSITIONER
- H HYDRAULIC
- DIAPHRAGM, DIFFERENTIAL PRESSURE
- EH ELECTROHYDRAULIC
- MANUAL

NOTE:
ON LOSS OF PRIMARY POWER (PNEUMATIC, ELECTRICAL, OR HYDRAULIC)

XX: FO FAIL OPEN
FC FAIL CLOSED
FLP FAIL TO LAST POSITION

PRIMARY ELEMENT SYMBOLS

- PARSHALL FLUME
- WEIR
- ORIFICE PLATE
- FLOW TUBE
- PITOT-STATIC
- VORTEX METER
- ULTRASONIC FLOWMETER
- M ELECTROMAGNETIC FLOWMETER
- CORIOLIS FLOWMETER
- PROPELLER OR TURBINE METER
- THERMAL FLOWMETER
- LEVEL (BUBBLER TUBE)
- LET SUBMERSIBLE PRESSURE LEVEL SENSOR
- LS LEVEL (FLOAT)
- FI ROTAMETER
- DE DENSITY METER
- XX GENERIC
- LE LEVEL (ULTRASONIC)
- LET LEVEL (RADAR)
- LS LEVEL (TUNING FORK)

MISCELLANEOUS SYMBOLS

- V VENT TO ATMOSPHERE
- AIR GAP
- T DRIP TRAP
- PIG INSERT POINT
- PIG CATCH POINT
- A SELF CONTAINED AIR SUPPLY
- AP AIR PURGE SET
- F FLUSHING CONNECTION
- S SEAL WATER SET SEAL PLAN (REFER TO STANDARD DETAIL 4027-207)
- WP WATER PURGE SET
- FLEXIBLE CONNECTION
- AERATOR
- DIAPHRAGM SEAL
- ANNULAR DIAPHRAGM SEAL
- SS COMPOSITE SAMPLER
- FLAME TRAP
- CALIBRATION COLUMN
- S INLINE SILENCER
- DISMANTLING JOINT
- BLIND FLANGE
- PIPE CAP
- STRAINER
- FILTER
- PULSATION DAMPENER
- EXPANSION CHAMBER
- S SAMPLE POINT
- DPM DIGITAL POWER MONITOR
- PS POWER SUPPLY
- RM REDUNDANCY MODULE
- SPD SURGE PROTECTION DEVICE
- UPS UNINTERRUPTIBLE POWER SUPPLY
- R INTERPOSING RELAY
- FFLCPLLLX PANEL OUTLINE / PANEL NAME — PANEL CONTINUED ON SAME OR OTHER DRAWING
- 120V — 120 VOLT, 60 HZ POWER
- 120V UPS — 120 VOLT, UNINTERRUPTIBLE SUPPLY 60 HZ POWER
- 480V — 480 VOLT, 60 HZ POWER
- 24V — 24 VOLT, 60 HZ POWER
- XX — AIR SET XX = SUPPLY PRESSURE IN PSIG.
- PLUG
- RECEPTACLE
- RUPTURE DISK (VACUUM)
- RUPTURE DISK (PRESSURE)
- A B AND C — LOGIC ELEMENT; IF A AND NOT B THEN C
- A B OR C — LOGIC ELEMENT; IF A OR B THEN C
- I OR I — INTERLOCK, SEE CONTROL DIAGRAMS
- BASKET STRAINER
- VOICE COMMUNICATION POINT
- SKIMMING MECHANISM
- SCREW CONVEYOR
- MIXER (NON-SUBMERSIBLE)
- M MIXER (SUBMERSIBLE)
- ELECTRIC MOTOR
- POLYMER BLENDING UNIT
- CARRIER PIPE
- INJECTOR
- OUTDOOR SILENCER

PUMP AND COMPRESSOR SYMBOLS

- CENTRIFUGAL PUMP (DRY PIT) XX
- CENTRIFUGAL PUMP
- PROGESSING CAVITY PUMP XX
- BLOWER OR FAN (CENTRIFUGAL) XX
- CENTRIFUGAL WET PIT PUMP OR TURBINE PUMP XX
- SUBMERSIBLE PUMP XX

XX: AS ADJUSTABLE SPEED
CS-1 CONSTANT SPEED (SINGLE SPEED)
CS-2 CONSTANT SPEED (TWO SPEED)
CS-R CONSTANT SPEED (REVERSING)

NETWORK SYMBOLS

- OIT PANEL MOUNTED OPERATOR INTERFACE TERMINAL (OIT)
- PROGRAMMABLE LOGIC CONTROLLER (PLC)
- ETHERNET SWITCH (DIN-RAIL MOUNT)
- RADIO ANTENNA
- RADIO NETWORK RADIO
- E CATEGORY 6 COPPER
- CX COAXIAL CABLE

LINE IDENTIFICATION

2" P
PIPELINE SIZE — FLOW STREAM IDENTIFICATION (SEE BELOW)

FLOW STREAM IDENTIFICATION

RS RAW SEWAGE
V VENT

NO.	DATE	REVISION	BY	APV'D
DSGN	D.LOTT	DR S.FLASKA / CHK L.WOOD	S.CHAMPLIN	APV'D

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NAPILI-HONOKOWAI, MAUI, HAWAII

GENERAL

INSTRUMENTATION AND CONTROL LEGEND (2 OF 2)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	001-G-0005
SHEET	of

100% DESIGN SUBMITTAL

GENERAL SITE NOTES:

1. SOURCE OF TOPOGRAPHY SHOWN ON THE CIVIL PLANS ARE BASE MAPS PREPARED BY CONTROLPOINT SURVEY, INC. DATED DECEMBER 20, 2022. ADDITIONAL MAPPING HAS BEEN ADDED FROM DATA AND SUPPLEMENT SURVEY FROM THE COUNTY OF MAUI. EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN ON THESE PLANS. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND ADJUST WORK PLAN ACCORDINGLY PRIOR TO BEGINNING CONSTRUCTION.
2. EXISTING TOPOGRAPHY, STRUCTURES, AND SITE FEATURES ARE SHOWN SCREENED AND/OR LIGHT-LINED, UNLESS OTHERWISE NOTED. NEW FINISH GRADE, STRUCTURES, AND SITE FEATURES ARE SHOWN HEAVY-LINE, UNLESS OTHERWISE NOTED.
3. SURVEY HORIZONTAL DATUM: AZIMUTHS AND COORDINATES ARE REFERRED TO LOCAL GOVERNMENT SURVEY TRIANGULATION STATION "MANINI (PUU KOLII)" .

SURVEY CONTROL POINT DESCRIPTION	ELEVATION (FEET)	NORTHING	WESTING
STA. 70 MAG NAIL	6.72	8,425.75	12,868.24
ST. MON	7.28	8,244.30	12,932.66

4. SURVEY VERTICAL DATUM: LOCAL STREET MONUMENT, TOP OF BRASS PIN, EL = 27.27 FT., MSL LOCATED AT THE INTERSECTION OF HONOAPIILANI HIGHWAY AND LOWER HONOAPIILANI ROAD WITH N 8,265.74 AND W 13,099.63.
5. MAINTAIN, RELOCATE, OR REPLACE EXISTING SURVEY MONUMENTS, CONTROL POINTS, AND STAKES WHICH ARE DISTURBED OR DESTROYED. PERFORM THE WORK TO PRODUCE THE SAME LEVEL OF ACCURACY AS THE ORIGINAL MONUMENT(S) IN A TIMELY MANNER, AND AT THE CONTRACTOR'S EXPENSE.
6. FOR LOCATION OF CONTROL POINT ON STRUCTURES, SEE DRAWING 050-C-0001.
7. COORDINATES AND DIMENSIONS SHOWN FOR ROADWAY IMPROVEMENTS ARE TO FACE OF CURB OR EDGE OF PAVEMENT.
8. STAGING AND STOCKPILE AREAS SHALL BE FOR CONTRACTOR'S EMPLOYEE PARKING, CONTRACTOR'S TRAILERS AND ON-SITE STORAGE OF MATERIALS.
9. PROVIDE TEMPORARY FENCING AS NECESSARY TO MAINTAIN SECURITY AT ALL TIMES.
10. ELEVATIONS GIVEN ARE TO FINISH GRADE UNLESS OTHERWISE SHOWN.
11. SLOPE UNIFORMLY BETWEEN CONTOURS AND SPOT ELEVATIONS SHOWN.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING EROSION CONTROL DEVICES DURING CONSTRUCTION. EROSION CONTROL DEVICES SHOWN ON DRAWINGS 050-C-2002 AND 050-C-2003 ARE THE MINIMUM REQUIRED.
13. CONTRACTOR SHALL TAKE ALL OTHER MEASURES TO POSITIVELY PRECLUDE EROSION MATERIALS FROM LEAVING THE SITE. CONTRACTOR TO SUBMIT EROSION CONTROL PLAN.

GENERAL YARD PIPING AND UTILITIES NOTES:

1. EXISTING UNDERGROUND UTILITIES OBTAINED FROM AS-BUILTS AND FROM FIELD SURVEY. CONTRACTOR SHALL FIELD VERIFY DEPTH AND LOCATION PRIOR TO EXCAVATION. PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION.
2. FOR PIPING FLOW STREAM IDENTIFICATION, SEE PIPING SCHEDULE ON DRAWING 050-G-0019 AND SPECIFICATIONS.
3. EXISTING PIPING AND EQUIPMENT ARE SHOWN SCREENED AND/OR LIGHT-LINED, UNLESS OTHERWISE NOTED. NEW PIPING AND EQUIPMENT ARE SHOWN HEAVY-LINE UNLESS OTHERWISE NOTED.
4. UNLESS OTHERWISE SHOWN ALL PIPING LESS THAN 4-INCH SHALL HAVE A MINIMUM 2.5- FOOT COVER AND ALL PIPING 6-INCH AND LARGER SHALL HAVE A MINIMUM 4-FOOT OF COVER.
5. ALL PIPES SHALL HAVE A CONSTANT SLOPE BETWEEN INVERT ELEVATIONS UNLESS A FITTING IS SHOWN.
6. ALL NEW WATER PIPES MUST BE PROPERLY FLUSHED, PRESSURE TESTED, CHLORINATED AND BACTERIOLOGICALLY TESTED, AS SPECIFIED.
7. FOR TRENCHING AND BACKFILL, SEE (3123-110) AND SPECIFICATIONS.
8. FOR SURFACE RESTORATION OF ASPHALT CONCRETE, SEE (0157-001) AND SPECIFICATIONS.
9. MINIMUM ALLOWABLE CLEARANCE BETWEEN PIPES AT CROSSINGS SHALL BE 6" WHERE CLEARANCE IS LESS THAN 12" FOR ALL UTILITIES OTHER THAN SEWER, AND WHERE CLEARANCE IS LESS THAN 18" BETWEEN WATER AND SEWER PIPES, CONTROLLED LOW STRENGTH MATERIAL IS REQUIRED AS SHOWN IN (3123-120) AND SPECIFICATIONS

GENERAL NOTE:

1. THIS IS A STANDARD LEGEND SHEET, THEREFORE, NOT ALL OF THE INFORMATION SHOWN MAY BE USED ON THIS PROJECT.

FLOOD INSURANCE RATE MAP (FIRM) DATA:

ZONE: AE, X
BASE FLOOD ELEVATION: 10 FEET
NFIP FEMA MAP NO.: 1500030351F

CIVIL LEGEND

EXISTING | THIS CONTRACT

- SPOT ELEVATION (157.7 / 158.5)
- CONTOUR LINE (155 / 158)
- EMBANKMENT AND SLOPE (3:1)
- DRAINAGEWAY OR DITCH
- CATCH BASIN OR INLET (CB OR CB)
- TRENCH DRAIN
- SIGN (OR)
- MANHOLE (D OR S)
- ELECTRICAL MANHOLE (E)
- ELECTRIC HANDHOLE (H)
- POST OR GUARD POST
- GUY ANCHOR
- FIRE HYDRANT
- UTILITY POLE
- LIGHT POLE
- BENCH MARK (BM)
- SURVEY CONTROL POINT OR POINT OF INTERSECTION
- BRUSH/TREE LINE
- TREE
- PROPERTY LINE
- CENTER LINE, BUILDING, ROAD, ETC.
- STAGING OR WORK AREA LIMITS
- STRUCTURE, BUILDING OR FACILITY LOCATION POINT - COORDINATES (N 1000.00 / E 1000.00)
- BORING LOCATION AND NUMBER (B-1)
- TEST PIT LOCATION AND NUMBER (TP-2)
- PIEZOMETER LOCATION AND NUMBER (P-3)
- DEMOLITION (OR OR)
- STRUCTURE, BUILDING OR FACILITY (OR OR)
- ASPHALT CONCRETE PAVEMENT
- GRAVEL SURFACING
- CONCRETE PAVEMENT
- CURB
- CURB AND GUTTER
- SINGLE SWING GATE
- DOUBLE SWING GATE
- SLIDING GATE
- GUARD RAIL
- CHAIN LINK FENCE
- ARCHITECTURAL FENCE
- WIRE FENCE
- CULVERT

YARD PIPING LEGEND

EXISTING | THIS CONTRACT

- NOMINAL PIPE DIAMETER (8" PE)
- PIPE USE IDENTIFICATION
- PIPING < 30" DIAMETER
- PIPING ≥ 30" DIAMETER
- EXISTING PIPE TO BE ABANDONED
- EXISTING PIPE TO BE REMOVED
- NON-FREEZE HOSE VALVE (V-X) X = NO. IN SPECIFICATIONS
- NON-FREEZE HOSE VALVE WITH HOSE RACK (V-X) X = NO. IN SPECIFICATIONS
- INDICATOR POST VALVE
- GATE VALVE AND VALVE BOX
- BUTTERFLY VALVE AND VALVE BOX
- PLUG VALVE AND VALVE BOX
- FLEXIBLE COUPLING
- 90° ELBOW UP
- 90° ELBOW DOWN
- BEND < 90° UP
- BEND < 90° DOWN
- CONCENTRIC REDUCER
- CAP OR PLUG
- CLEANOUT
- FIRE HYDRANT

EROSION CONTROL LEGEND

COVER PRACTICES	SYMBOL
TEMPORARY SEEDING	TS
MULCHING AND MATTING	MU
CLEAR PLASTIC COVERING	CPC
BUFFER ZONES	BZ
PERMANENT SEEDING AND PLANTING	PS
CONSTRUCTION ENTRANCE	
INTERCEPTOR DIKE	ID
INTERCEPTOR SWALE	IS
CHECK DAMS	
OUTLET PROTECTION / RIPRAP	
FILTER FENCE	
STRAW BALE BARRIER (BIOFILTER)	
SEDIMENT TRAP (OR SUMP)	
SEDIMENT POND OR BASIN	

NO.	DATE	REVISION	BY	APV'D
DSGN	A MANTES(ATA)	DR	M BALDWIN	APV'D
		CHK	M MONAHAN	S CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

GENERAL
CIVIL LEGEND

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND SHALL NOT BE REUSED IN WHOLE OR IN PART, FOR ANY OTHER PROJECT, WITHOUT THE WRITTEN AUTHORIZATION OF JACOBS.

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING.
0 1"

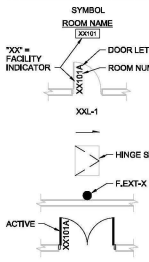
DATE	DECEMBER 2023
PROJ	D3560100
DWG	001-G-0008
SHEET	of

100% DESIGN SUBMITTAL

GENERAL ARCHITECTURAL NOTES

1. UNLESS OTHERWISE INDICATED, PLAN DIMENSIONS ARE TO COLUMN GRID ON CENTERLINES, NOMINAL SURFACE OF MASONRY, FACE OF STUDS AND FACE OF CONCRETE WALLS.
2. "FLOOR LINE" REFERS TO TOP OF CONCRETE SLABS. FINISH FLOORING IS INSTALLED ABOVE THE FLOOR LINE. FOR DEPRESSED FLOORS AND CURBS, SEE STRUCTURAL DRAWINGS.
3. REPETITIVE FEATURES ARE NOT DRAWN IN THEIR ENTIRETY AND SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL.
4. WHERE DOOR IS LOCATED NEAR CORNER OF ROOM AND IS NOT LOCATED BY DIMENSION ON PLAN OR DETAILS, DIMENSION SHALL BE 3-INCHES FROM FACE OF STUD (WALL) TO FACE OF ROUGH OPENING. DIMENSION SHALL BE 6" FROM FACE OF WALL TO EDGE OF ROUGH OPENING AT CONCRETE WALLS, 8" AT CMU WALLS.
5. LINE OF EXISTING GRADES, AS SHOWN ON THE BUILDING ELEVATIONS AND SECTIONS ARE APPROXIMATE, THEY ARE AT THE BUILDING FACE, OR ON THE SECTION END EXCEPT AS NOTED.
6. VERIFY ALL ROUGH-IN DIMENSIONS FOR EQUIPMENT PROVIDED IN THIS CONTRACT, OR BY OTHERS.
7. REFER TO ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER CATEGORIES OF DRAWINGS FOR ADDITIONAL NOTES.
8. VERIFY SIZE AND LOCATION OF, AND PROVIDE: REQUIRED OPENINGS THROUGH FLOORS AND WALLS, ACCESS DOORS, FURRING, CURBS, ANCHORS AND INSERTS. PROVIDE ALL BASES AND BLOCKING REQUIRED FOR ACCESSORIES, MECHANICAL, ELECTRICAL AND OTHER EQUIPMENT.

ARCHITECTURAL/STRUCTURAL LEGEND



BUILDING CODE DATA TABLE

BUILDING CODE:	2018 INTERNATIONAL BUILDING CODE (IBC) AND 2018 INTERNATIONAL EXISTING BUILDING CODE (IEBC)	
CLASSIFICATION OF WORK:	1. REPAIR (IECC SECTION C504) 2. ALTERATION, ROOF REPLACEMENT (IEBC SECTION C503.3.1) 3. ALTERATION, CHANGE IN SPACE CONDITIONING (IEBC SECTION C503.2)	
OCCUPANCY:	NO CHANGE IN OCCUPANCY (IEBC SECTION C505.1)	
ACCESSIBILITY:	1. NOT DECREASED (IBC SECTION 1101) 2. PROCESS AND EQUIPMENT SPACES ARE EXEMPT PER IBC 1103.2.9 (EQUIPMENT SPACES)	
ENERGY CODE: 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)		
COMMERCIAL ENERGY EFFICIENCY BUILDING ENVELOPE REQUIREMENTS		ZONE: 1A
ELEMENTS (TABLE C402.1.3 AND C402.1.4)	ASSEMBLY MAXIMUM (PRESCRIPTIVE METHOD)	PROPOSED DESIGN
WALL (MASS)	R-5.7 CI	8" EXISTING CMU + RIGID INSULATION (R-5) + BATT INSULATION (R-13)
ROOF (INSULATION ENTIRELY ABOVE ROOF DECK)	R-20 CI	RIGID INSULATION ON CONCRETE DECK (R-20 CI)
UNHEATED SLAB	NOT REQUIRED	NOT PROVIDED
SWINGING DOOR	U-0.61	R-7
AIR BARRIER	REQUIRED	PROVIDED

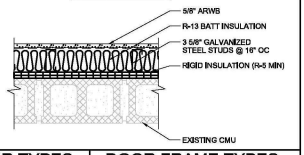
LIFE SAFETY LEGEND

- X : Y — TRAVEL DISTANCE ('X' = TOTAL DISTANCE IN FEET TO EXIT 'Y')
- 'X' — 32" MINIMUM EGRESS WIDTH PROVIDED, TYP
- COMMON PATH OF TRAVEL (CPT); X=CPT TRAVEL DISTANCE

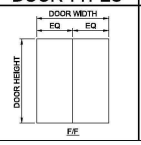
ARCH/STRUCT MATERIAL SYMBOLS

SYMBOL	LEGEND
	EARTH OR FINISH GRADE
	CONCRETE
	CMU WALL (PLAN)
	CMU WALL (SECTION)
	METAL STUD WALL (PLAN)
	RIGID INSULATION
	BATT INSULATION
	STEEL
	WOOD, ROUGH CONTINUOUS
	WOOD, ROUGH NON-CONTINUOUS

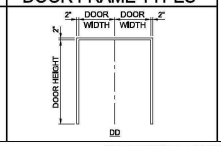
WALL TYPES

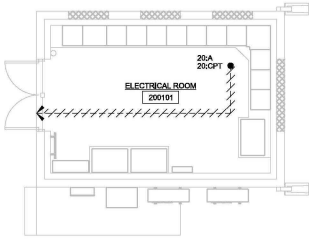


DOOR TYPES



DOOR FRAME TYPES





N

200 - PUMP STATION 1 LIFE SAFETY PLAN

1/4"=1'-0"

INTERIOR FINISH SCHEDULE

ABBREVIATIONS:

ARWB	ABUSE-RESISTANT GWB	HGT	HEIGHT
CLR	CLEAR	MATL	MATERIAL
COL	COLOR	MET	METAL
CONC	CONCRETE	SLR	SEALER
EXST	EXISTING		

NOTES:

NO. 1 NUMBERS IN THE FINISH COLUMN REFER TO PAINT SYSTEMS IN SPECIFICATION SECTION 09 90 00.
NO. 2 CODES IN COL COLUMN REFER TO COLOR LIST ON THIS DRAWING.
NO. 3 FOR EXTERIOR FINISHES AND COLORS, SEE EXTERIOR FINISH SCHEDULE ON THIS DRAWING.
NO. 4 POWER WASH / CLEAN FLOOR SLAB IN ACCORDANCE WITH SEALER MANUFACTURER'S REQUIREMENTS PRIOR TO APPLICATION.
NO. 5 PATCH AND REPAIR IN ACCORDANCE WITH SPECIFICATION SECTION 02 41 00. PREP / CLEAN SURFACE TO BE PAINTED IN ACCORDANCE WITH SPECIFICATION 09 90 00.

SPACE		FLOOR			BASE AND WAINSCOT					TYPICAL WALL			OTHER WALL			CEILING			MISCELLANEOUS				OTHER REQUIREMENTS
NO.	NAME	SUB FL	FINISH	COL	HGT	MATL	FINISH	COL	WALLS	MATL	FINISH	COL	MATL	FINISH	COL	HGT	MATL	FINISH	COL	ITEM	MATL	FINISH	COL	
200101	ELECTRICAL ROOM	EXST CONC / CONC	NOTE 4, SLR / SLR	CLR / CLR	---	---	---	---	---	ARWB	116	P-1	---	---	---	10'-0"	EXST CONC	117, NOTE 5	P-2	EQUIPMENT PADS	CONC	117	OSHA SAFETY YELLOW	

DOOR AND HARDWARE SCHEDULE

ABBREVIATIONS:

COL	COLOR
EXT	EXTERIOR
FLDR	FLOOD-RESISTANT
MATL	MATERIAL

NOTES:

NO. 1 SEE THIS SHEET FOR DOOR AND FRAME TYPES.
NO. 2 FOR DOOR DETAILS, SEE DESIGN DETAILS.
NO. 3 NUMBER CODE IN HARDWARE SET COLUMN REFERS TO HARDWARE SETS IN SPECIFICATION SECTION 08 71 00.
NO. 4 NUMBERS IN FNSH COLUMN REFER TO PAINT SYSTEMS IN SPECIFICATION SECTION 09 90 00.
NO. 5 CODES IN COL COLUMN REFER TO COLOR LIST ON THIS DRAWING.
NO. 6 FIELD VERIFY ROUGH-OPENING FOR DOOR AND FRAME.

OPENING																			
NO.	SIZE		DOOR					FRAME				DETAILS			HARDWARE		FIRE PROTECTION RATING	OTHER REQUIREMENTS
	WIDTH	HEIGHT	CONSTR	TYPE	GLASS	FINISH	COL	MATL	TYPE	FINISH	COL	HEAD	JAMB	SILL	SET NO.	KEY SIDE		
200101A	3'-0" (ACTIVE LEAF); 2' 8" (NOTE 6)	7'-0" (NOTE 6)	FLDP	F / F	---	5	P-3	FLDP	DD	5	P-3	0830-101	0830-103, 0830-104	0830-102	1	EXT	---	REMOVABLE MULLION

EXTERIOR FINISH SCHEDULE

ITEM / MATERIAL	FINISH	COLOR
EXISTING CMU	PAINT SYSTEM 109 / PAINT SYSTEM 20	P-4
MISCELLANEOUS EXPOSED STEEL	PAINT SYSTEM 5	P-4
GUTTERS AND DOWNSPOUTS	PAINT SYSTEM 5	M-1
LUMINARES	FACTORY	AS SELECTED

COLOR LIST

NOTES:

NO. 1 COLOR SELECTIONS FOR THIS PROJECT MAY BE NOTED IN DOOR AND HARDWARE SCHEDULE, INTERIOR FINISH SCHEDULE, EXTERIOR FINISH SCHEDULE, PIPING SCHEDULE AND ON THE DRAWINGS BY THE LETTER-NUMBER COMBINATION IN THE MARK COLUMN OF THIS LIST.
NO. 2 SOME COLOR SELECTIONS MAY BE MADE IN VARIOUS SPECIFICATION SECTIONS.
NO. 3 VERIFY COLORS WITH OWNER BEFORE BEGINNING WORK. IF A COLOR SELECTION IS NOT MADE, REQUEST ONE FROM THE OWNER.

MARK	MATERIAL	MANUFACTURER (BASIS OF DESIGN OR APPROVED EQUAL)	COLOR (NOTE 3)
MISCELLANEOUS			
M-1	GUTTERS AND DOWNSPOUTS	SHERWIN-WILLIAMS	SW6197 - ALOOF GRAY
PAINT			
P-1	PAINT (INTERIOR WALLS)	SHERWIN-WILLIAMS	SW7013 - IVORY LACE
P-2	PAINT (CEILINGS)	SHERWIN-WILLIAMS	SW7003 - TOQUE WHITE
P-3	PAINT (FLOOD PROOF DOOR AND FRAME)	SHERWIN-WILLIAMS	SW6197 - ALOOF GRAY
P-4	PAINT (EXTERIOR WALLS)	SHERWIN-WILLIAMS	MATCH EXISTING

NO.	DATE	DR	REVISION	CHK	APVD	BY	APVD

DESIGN E. GRAY J. HOSTETLER G. KERSTEN S. CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

GENERAL

ARCHITECTURAL NOTES, MATERIAL SYMBOLS, LEGEND, CODE DATA, LIFE SAFETY PLAN, AND SCHEDULES

100% DESIGN SUBMITTAL

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	001-G-0007
SHEET	of

DESIGN CRITERIA

1. APPLICABLE CODE: 2012 INTERNATIONAL BUILDING CODE (IBC), AS AMENDED BY THE COUNTY OF MAUI AND ALL OTHER APPLICABLE LOCAL AGENCIES, 2012 IEBC, ASCE 7-10, ACI 318-11, ACI 350-06, TMS 402-11, AISC 360-10.
2. REFER TO THE DRAWINGS FOR ADDITIONAL AND SPECIFIC STRUCTURE LOADINGS AND REQUIREMENTS.
3. ALL LOADS SHOWN ARE SERVICE LEVEL (UNFACTORED) UNLESS SPECIFICALLY NOTED OTHERWISE.
4. DEAD LOADS:
   A. SELF WEIGHT
5. FLOOR LIVE LOADS:
   - ELECTRICAL ROOM 300 PSF
   - WALKWAYS AND ELEVATED PLATFORMS AND SLABS 100 PSF
6. WIND LOADS:
   - ASCE 7 METHOD = SEE FACILITY PLANS
   - BASIC WIND SPEED (3-SECOND GUST) = 145 MPH
   - EXPOSURE CATEGORY = C
   - INTERNAL PRESSURE COEFFICIENT, GCpl = SEE PLANS
   - RISK CATEGORY = III
   - IMPORTANCE FACTOR, Iw = 1.0
7. SEISMIC LOADS:

   MAPPED SPECTRAL RESPONSE ACCELERATIONS
   - S_S = 0.913g
   - S_1 = 0.228g

   DESIGN SPECTRAL RESPONSE ACCELERATIONS
   - S_{DS} = 0.691g
   - S_{D1} = 0.296g

   SITE CLASS = D
   SEISMIC DESIGN CATEGORY = D
   IMPORTANCE FACTOR, Ie = 1.25

   WATER BEARING STRUCTURES HAVE BEEN ANALYZED USING ACI 350.3 AS MODIFIED BY ASCE 7-10.
8. LATERAL FORCE-RESISTING SYSTEMS, DESIGN BASE SHEAR, SEISMIC RESPONSE COEFFICIENT, RESPONSE MODIFICATION COEFFICIENT AS INDICATED ON FACILITY DRAWINGS.
9. HYDRAULIC LOADS: SEE PLANS FOR STRUCTURE SPECIFIC DESIGN FLUID ELEVATIONS. FLUID LOAD BASED ON FLUID DENSITY OF 62.4 PCF
10. SOIL DESIGN PARAMETERS:
    - A. NET ALLOWABLE SOIL BEARING PRESSURES: 5000 PSF
    - B. GROUND WATER (GW) ELEVATION:
      - NORMAL HIGH GW EL 3.0
      - 100 YEAR FLOOD EL 11.5
    - C. EQUIVALENT DRAINED FLUID PRESSURES (ABOVE GW):
      - AT REST: 56 PCF
      - PASSIVE: 256 PCF
    - D. EQUIVALENT UNDRAINED FLUID PRESSURES (BELOW GW):
      - AT REST: 84 PCF
      - PASSIVE: 159 PCF

      WHERE H IS HEIGHT OF SOIL ADJACENT TO THE WALL
    - E. VERTICAL SURCHARGE: 2 FT OF SOIL WEIGHT
    - F. EARTH PRESSURE COEFFICIENTS:
      - AT REST, Ko 0.56
    - G. FACTOR OF SAFETY FOR UPLIFT RESISTANCE (SOIL FRICTION AND WEDGE FAILURE NOT CONSIDERED):
      - NORMAL HIGH GW ELEVATION FOS = 1.25
      - 100 YEAR FLOOD ELEVATION FOS = 1.10

GENERAL INFORMATION

1. FOR ABBREVIATIONS NOT LISTED, SEE ASME Y14.38 "ABBREVIATIONS AND ACRONYMS: PUBLICATION AS DISTRIBUTED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).
2. DESIGN DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS OCCURRING THROUGHOUT THE PROJECT, WHETHER OR NOT THEY ARE INDIVIDUALLY CALLED OUT.
3. VERIFY FINAL OPENING DIMENSIONS IN WALLS, SLABS, AND DECKS WITH OTHER DISCIPLINE DRAWINGS PRIOR TO CONSTRUCTION OF THESE ELEMENTS.
4. FOR NUMBER, TYPE, SIZE, ARRANGEMENT, AND/OR LOCATION OF EQUIPMENT PADS, SEE OTHER DISCIPLINE DRAWINGS. COORDINATE WITH EQUIPMENT SUPPLIER PRIOR TO PLACING SLABS, WALLS AND FOUNDATIONS. COORDINATE PIPING OPENINGS WITH OTHER DISCIPLINE DRAWINGS.
5. DO NOT CUT OR MODIFY STRUCTURAL MEMBERS FOR PIPES, DUCTS, ETC, UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
6. VISITS TO THE JOB SITE BY THE ENGINEER TO OBSERVE THE CONSTRUCTION DO NOT IN ANY WAY MEAN THAT ENGINEER IS GUARANTOR OF CONSTRUCTOR'S WORK, NOR RESPONSIBLE FOR THE COMPREHENSIVE OR SPECIAL INSPECTIONS, COORDINATION, SUPERVISION, OR SAFETY AT THE JOB SITE.
7. INFORMATION (DETAILING, DIMENSIONS, CONFIGURATIONS, AND ELEVATIONS, ETC.) OF EXISTING CONSTRUCTION SHOWN REFLECTS AVAILABLE EXISTING DESIGN DOCUMENTS, AND DOES NOT NECESSARILY REPRESENT THE AS-CONSTRUCTED CONDITIONS. THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS, ELEVATIONS AND DETAILING OF THE EXISTING STRUCTURES PRIOR TO UNDERTAKING ANY WORK THAT IS AFFECTED BY THE EXISTING STRUCTURE. NOTIFY ENGINEER IF CONDITIONS VARY FROM THAT SHOWN PRIOR TO STARTING WORK

INSPECTION AND TESTING

1. SPECIAL INSPECTION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR INSPECTIONS REQUIRED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL SCHEDULE BOTH INSPECTIONS.
2. SPECIFIED CONCRETE AND MASONRY AND OTHER MATERIAL TESTING RELATED TO SPECIAL INSPECTION DURING CONSTRUCTION WILL BE OWNER FURNISHED.
3. SPECIFIED LABORATORY TEST MIXES AND SIMILAR TEST RESULTS TO VERIFY MATERIAL QUALITY AND CONFORMANCE TO SPECIFICATIONS, AND SUBMITTED FOR REVIEW PRIOR TO ACCEPTANCE FOR USE ON THE PROJECT, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. SPECIAL INSPECTION, TESTING AND OBSERVATION (OWNER FURNISHED) IS REQUIRED IN ACCORDANCE WITH IBC SECTIONS 110 AND 1704 AS INDICATED IN THE STATEMENT OF SPECIAL INSPECTIONS.

FOUNDATIONS

1. REFER TO GEOTECHNICAL DATA REPORT "PUMP STATION 1- NAPILI SEWER FORCE MAIN REPLACEMENT W.O. 8532-00" BY GEOLABS, INC DATED xxx
2. EXCAVATIONS SHALL BE SHORED TO PREVENT SUBSIDENCE AND DAMAGE TO ADJACENT EXISTING STRUCTURES, ROADS, UTILITIES, ETC.
3. FOUNDATION SLABS AND SLABS-ON-GRADE SPECIFICALLY NOTED TO BE ON FILL SHALL BEAR ON
4. FOUNDATION BEARING SURFACES SHALL BE OBSERVED BY THE GEOTECHNICAL ENGINEER OR QUALIFIED DESIGNEE PRIOR TO PLACEMENT OF FORMWORK OR REINFORCING STEEL. THE OBSERVATION SHALL VERIFY IF THE ACTUAL EXPOSED SUBGRADE IS AS ANTICIPATED BY THE SITE SPECIFIC AND DATA REPORTS.
5. NO BACKFILL SHALL BE PLACED BEHIND WALLS UNTIL THE WALL'S CONCRETE HAS ATTAINED 100 PERCENT AND TOP SUPPORTING SLAB'S CONCRETE HAS ATTAINED 80 PERCENT OF THEIR SPECIFIED 28 DAY COMPRESSIVE STRENGTH, OR UNTIL TOP-OF-WALL FRAMING SYSTEMS, INCLUDING STEEL OR WOOD DIAPHRAGMS, HAVE BEEN COMPLETED.
6. NO BACKFILL SHALL BE PLACED BEHIND CANTILEVERED, FREE TOP WALLS UNTIL THE CONCRETE HAS ATTAINED 100 PERCENT OF ITS SPECIFIED 28 DAY COMPRESSIVE STRENGTH.
7. USE OF EXPLOSIVES IS ONLY ALLOWED WITH WRITTEN PERMISSION FROM ENGINEER.

FORMWORK, SHORING, AND BRACING

1. STRUCTURES SHOWN ON THE DRAWINGS HAVE BEEN DESIGNED FOR STABILITY UNDER FINAL CONDITIONS ONLY. DESIGN SHOWN DOES NOT INCLUDE NECESSARY COMPONENTS OR EQUIPMENT FOR STABILITY OF THE STRUCTURES DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR WORK RELATING TO CONSTRUCTION ERECTION METHODS, BRACING, SHORING, RIGGING, GUYS, SCAFFOLDING, FORMWORK, AND OTHER WORK AIDS REQUIRED TO SAFELY PERFORM THE WORK SHOWN.
2. TEMPORARY SHORING SHALL REMAIN IN PLACE UNTIL ELEVATED CONCRETE FLOOR OR SLABS HAVE REACHED 80 PERCENT OF THE 28 DAY COMPRESSIVE STRENGTH AS DETERMINED BY FIELD CYLINDER BREAKS.
3. "BURY" BARS OR "CARRIER" BARS ARE NOT ALLOWED FOR THE BOTTOM MATS OF REINFORCING IN ALL ELEVATED SLABS AND ARE NOT ALLOWED FOR THE TOP MATS OF REINFORCING IN ELEVATED SLABS LESS THAN 12 INCHES THICK.

CONCRETE REINFORCING

1. REINFORCING STEEL:
   - TYPICAL: ASTM A615, GRADE 60
   - WELDED: ASTM A706, GRADE 60 (WELDING IS ONLY PERMITTED WITH WRITTEN PERMISSION FROM ENGINEER)
2. FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CRSI MSP-1 "MANUAL OF STANDARD PRACTICE" AND ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE".
3. FOR REINFORCED CONCRETE FRAME MEMBERS AND DESIGNATED BOUNDARY ELEMENTS OF CONCRETE SHEAR WALL STRUCTURES, REINFORCING STEEL SHALL MEET THE FOLLOWING REQUIREMENTS:
   - A. ACTUAL YIELD STRENGTH BASED ON MILL TESTS SHALL NOT EXCEED SPECIFIED YIELD STRENGTH BY MORE THAN 18,000 PSI. (RETESTS SHALL NOT EXCEED THIS VALUE BY MORE THAN AN ADDITIONAL 3000 PSI.)
   - B. RATIO OF THE ACTUAL ULTIMATE TENSILE STRESS TO ACTUAL TENSILE YIELD STRENGTH SHALL NOT BE LESS THAN 1.25.
4. MINIMUM REINFORCING FOR CONCRETE WALLS AND SLABS SHALL BE AS FOLLOWS:

THICKNESS	REINF EACH WAY	LOCATION
6"	#4@12"	CENTERED
8"	#5@12"	CENTERED
10"	#4@12"	EACH FACE
12"	#5@12"	EACH FACE

   PROVIDE LARGER SIZES AND MORE REINFORCING IN SECTIONS OF CONCRETE WHERE REQUIRED BY THE DETAILS ON THE DRAWINGS OR BY THE SPECIFICATIONS.
5. CONCRETE COVER FOR REINFORCING, UNLESS SHOWN OTHERWISE, SHALL BE:
   - WHEN CAST AGAINST EARTH: 3"
   - EXPOSED TO OZONE OR OZONATED WATER: 3"
   - INTERIOR, DRY, HUMIDITY CONTROLLED AREAS:
     - WALLS, SLABS AND JOISTS 3/4"
     - BEAM STIRRUPS AND COLUMN TIES 1 1/2"
   - CONCRETE EXPOSED TO EARTH, LIQUID, WASHDOWN, OR WEATHER:
     - WALLS AND SLABS 2"
     - BEAM STIRRUPS AND COLUMN TIES 2"
     - BEAM AND COLUMN PRIMARY REINFORCING 2 1/2"
6. REFER TO WALL CORNER AND WALL INTERSECTION REINFORCING DETAIL 0330-003. WALL CORNER REINFORCING SIZES AND SPACINGS SHALL BE AS SHOWN ON THE DRAWINGS AND REFERENCED TO THIS DETAIL. TYPICAL HORIZONTAL WALL REINFORCING SHALL LAP WITH THE CORNER HORIZONTAL REINFORCING.
7. 90 DEGREE BENDS, UNLESS OTHERWISE SHOWN, SHALL BE ACI 318 STANDARD HOOKS.
8. WALL CORNER AND WALL INTERSECTION REINFORCEMENT BARS SHALL BE CONTINUOUS AROUND CORNERS AND THROUGH COLUMNS OR PILASTERS. REINFORCEMENT SHALL BE EXTENDED INTO CONNECTING WALLS AND LAPPED ON THE OPPOSITE FACE OF THE CONNECTING WALLS, AS INDICATED IN DETAIL 0330-003.
9. WALL FOOTING CORNER AND INTERSECTION REINFORCEMENT BARS SHALL BE EXTENDED INTO CONNECTING FOOTINGS AND LAPPED ON THE OPPOSITE FACE OF THE CONNECTING FOOTING. OUTSIDE FACE WALL FOOTING REINFORCEMENT SHALL BE LAPPED WITH CORNER BARS. ALL WALL FOOTING REINFORCEMENT SHALL BE CONTINUOUS THROUGH COLUMNS OR PILASTERS FOOTINGS.
10. LAP VERTICAL WALL BARS WITH DOWELS FROM BASE SLABS AND EXTEND INTO TOP FACE OF ROOF SLABS AND LAP WITH TOP SLAB REINFORCEMENT. PROVIDE A MINIMUM OF FOUR FULL HEIGHT VERTICAL BARS WITH MATCHING DOWELS AT WALL ENDS, CORNERS AND INTERSECTIONS WITH SIZE TO MATCH TYPICAL VERTICAL REINFORCING STEEL SHOWN OR REQUIRED BY NOTES ABOVE.
11. LOCATE ELEVATED SLAB AND BEAM TOP BAR SPLICES AT MIDSPAN AND BOTTOM BAR SPLICES AT SUPPORTS.
12. REINFORCING STEEL FOR FOOTINGS AND SLABS ON GRADE SHALL BE ADEQUATELY SUPPORTED ON BAR SUPPORTS WITH SPACERS TO KEEP REINFORCING ABOVE THE PREPARED GRADE. LIFTING REINFORCING OFF GRADE DURING CONCRETE PLACEMENT IS NOT PERMITTED.
13. REFER TO OPENING REINFORCING DETAILS 0330-001 AND 0330-002.
14. REINFORCEMENT BENDS AND LAPS, UNLESS OTHERWISE NOTED, SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS:

CONCRETE DESIGN STRENGTH = 4,000 PSI MIN AT 28 DAYS[3] GRADE 60 REINFORCING STEEL										
BAR SIZE		#3	#4	#5	#6	#7	#8	#9	#10	#11
LAP SPLICE LENGTH										
SPACING = 3"	TOP BAR[2]	1'-4"	1'-8"	2'-1"	3'-0"	5'-2"	6'-8"	8'-6"	10'-10"	`13'-4"
	OTHER BAR	1'-4"	1'-4"	1'-8"	2'-4"	4'-0"	5'-2"	6'-7"	8'-4"	10'-3"
SPACING = 4"	TOP BAR[2]	1'-4"	1'-8"	2'-0"	2'-5"	3'-10"	5'-0"	6'-5"	8'-1"	10'-0"
	OTHER BAR	1'-4"	1'-4"	1'-7"	1'-10"	3'-0"	3'-11"	4'-11"	6'-3"	7'-8"
SPACING ≥ 6"	TOP BAR[2]	1'-4"	1'-8"	2'-0"	2'-5"	3'-6"	4'-0"	5'-0"	6'-2"	7'-5"
	OTHER BAR	1'-4"	1'-4"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10"	4'-9"	5'-8"
EMBEDMENT LENGTH										
SPACING = 3"	TOP BAR[2]	1'-0"	1'-3"	1'-8"	2'-4"	4'-0"	5'-2"	6'-7"	8'-4"	10'-3"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-10"	3'-1"	4'-0"	5'-1"	6'-5"	7'-11"
SPACING = 4"	TOP BAR[2]	1'-0"	1'-3"	1'-7"	1'-10"	3'-0"	3'-11"	4'-11"	6'-3"	7'-8"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-5"	2'-4"	3'-0"	3'-10"	4'-10"	5'-11"
SPACING ≥ 6"	TOP BAR[2]	1'-0"	1'-3"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10"	4'-9"	5'-8"
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-5"	2'-1"	2'-5"	3'-0"	3'-8"	4'-5"

1. LAP LENGTHS ARE BASED ON MINIMUM CONCRETE COVER OF 2". LONGER LENGTHS ARE REQUIRED FOR CONCRETE COVER LESS THAN 2".
2. TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.
3. WHERE 3000 PSI CONCRETE IS USED, INCREASE ABOVE LENGTHS BY 16 PERCENT. WHERE 3500 PSI CONCRETE IS USED, INCREASE ABOVE LENGTHS BY 7 PERCENT.

CAST IN PLACE CONCRETE

1. 28-DAY COMPRESSIVE STRENGTHS (TO MEET STRUCTURAL STRENGTH REQUIREMENTS):
   - HYDRAULIC STRUCTURES: 4000 PSI
   - BUILDING STRUCTURES: 4000 PSI
   - WALL SLURRY MIXTURE: SAME AS WALL CONCRETE
   - CONCRETE FILL: 3500 PSI
   - CURBS AND SIDEWALKS: 3500 PSI
   - DUCT BANKS AND PIPE ENCASEMENTS NOT INTEGRAL WITH FOUNDATIONS: 3500 PSI
2. 56-DAY COMPRESSIVE STRENGTHS (TO MEET DURABILITY REQUIREMENTS OF ACI 318 AND ACI 350):
   - HYDRAULIC STRUCTURES: 5000 PSI
   - BUILDING STRUCTURES: 4500 PSI
   - CONCRETE FILL: 4500 PSI
   - CURBS AND SIDEWALKS: 4500 PSI
   - DUCT BANKS AND PIPE ENCASEMENTS NOT INTEGRAL WITH FOUNDATIONS: 4500 PSI
3. DESIGN STRENGTHS ARE SAME AS 28-DAY COMPRESSIVE STRENGTHS.
4. CONTINUOUS WATERSTOP AS SPECIFIED SHALL BE INSTALLED IN CONSTRUCTION JOINTS OF HYDRAULIC STRUCTURES, CHANNELS, AND BELOW GRADE STRUCTURES, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
5. CONSTRUCTION JOINTS INDICATED ARE SUGGESTED LOCATIONS. CONTRACTOR MAY REVISE LOCATION OF JOINTS, SUBJECT TO SPECIFIED REQUIREMENTS. LAYOUT SHOWING ALL CONSTRUCTION JOINT LOCATIONS SHALL BE SUBMITTED FOR REVIEW BY ENGINEER.
6. ROUGHEN AND CLEAN CONSTRUCTION JOINTS IN WALLS AND SLABS AS SPECIFIED PRIOR TO PLACING ADJACENT CONCRETE.
7. COORDINATE PLACEMENT OF OPENINGS, PIPE PENETRATIONS, CURBS, DOWELS, SLEEVES, CONDUITS, BOLTS AND INSERTS PRIOR TO PLACEMENT OF CONCRETE.
8. NO ALUMINUM CONDUIT OR PRODUCTS CONTAINING ALUMINUM OR ANY OTHER MATERIAL INJURIOUS TO THE CONCRETE SHALL BE EMBEDDED IN THE CONCRETE.
9. DO NOT PLACE CONDUIT PARALLEL TO BEAM OR COLUMN REINFORCEMENT UNLESS SPECIFICALLY INDICATED IN DRAWINGS.
10. PATCH FORM TIE HOLES IN ACCORDANCE WITH DETAILS 0310-051 AND/OR 0310-052.

CONCRETE UNIT MASONRY

1. MASONRY WALL TYPE: [A: SPECIAL] [B: INTERMEDIATE] [C: ORDINARY] REINFORCED WALLS.
2. DESIGN COMPRESSIVE STRENGTH, f'm, OF THE FINISHED ASSEMBLY AND MATERIAL PROPERTIES SHALL BE PER THE TABLE BELOW.
3. MORTAR: ASTM C270, TYPE S, HYDRATED.
4. GROUT: ASTM C476 COARSE GROUT. USE OF WATER REDUCERS OR SUPERPLASTICIZERS IS NOT PERMITTED.
5. CONCRETE MASONRY UNITS: ASTM C90, [A: NORMAL][B: MEDIUM][C: LIGHT] WEIGHT, LINEAR SHRINKAGE SHALL NOT EXCEED 0.065 PERCENT.
6.

DESIGN COMPRESSIVE STRENGTH f 'm (PSI)	UNIT STRENGTH (PSI)	GROUT STRENGTH (PSI) MIN / MAX	MORTAR PROPERTIES
1,500	1,900	2,000 / 3500	Type S
2,000	2,800	2,000 / 3500	Type S
2,500	3,750	2,500 / 4000	Type S
3,000	4,800	3,000 / 4500	Type S

7. PLACE COURSES IN WALLS, COLUMNS, AND PILASTERS IN RUNNING BOND PATTERN [A: WHERE SHOWN ON DRAWINGS, PROVIDE SOLID GROUTED STACK BOND PATTERN USING OPEN END UNITS].
8. PROVIDE MATCHING FOUNDATION DOWELS FOR ALL TYPICAL AND ADDITIONAL VERTICAL BARS.

NO.	DATE	REVISION	BY	APVD

DSGN T SOBIECK | DR N CRUM | CHK T MCINTOSH | APVD S CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

GENERAL
STRUCTURAL NOTES (1 OF 3)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	001-G-0008
SHEET	of

100% DESIGN SUBMITTAL

9. PROVIDE VERTICAL BARS AND DOWELS WITH LAP LENGTHS AS SHOWN IN DETAIL 0422-004.

10. STAGGER ADJACENT LAP SPLICES BY 24 INCHES WHEN SEPARATED BY 3 INCHES OR LESS.

11. PROVIDE NUMBER OF FULL HEIGHT VERTICAL BARS AT EDGES OF OPENINGS AS SHOWN IN DETAIL 0422-004.

12. PROVIDE FULL HEIGHT VERTICAL BARS IN 3 CELLS AT WALL CORNERS AND INTERSECTIONS AS SHOWN IN DETAIL 0422-001.

13. PROVIDE HORIZONTAL CORNER AND INTERSECTION BARS WITH LAP LENGTHS AS SHOWN IN DETAIL 0422-001.

14. PROVIDE REINFORCED LINTELS ABOVE AND REINFORCED BOND BEAMS BELOW OPENINGS AS SHOWN IN DETAIL 0422-002.

15. PROVIDE FULL HEIGHT VERTICAL BARS WITH MATCHING DOWELS IN CELLS ADJACENT TO OPENINGS AS SHOWN IN DETAIL 0422-003.

16. GROUTING: SOLID GROUT ALL CMU WALLS.

17. MASONRY UNIT AND GROUT TESTING SHALL BE IN CONFORMANCE WITH IBC "UNIT STRENGTH METHOD". TESTING WILL BE OWNER FURNISHED AS INDICATED ON THE STATEMENT OF SPECIAL INSPECTIONS PLAN PROVIDED ON THE DRAWINGS. PRISM TEST METHOD MAY BE SUBMITTED AS AN ALTERNATIVE OR MAY BE REQUIRED BY OWNER'S REPRESENTATIVE TO VERIFY WORK.

18. [A: THE MINIMUM REINFORCING FOR SPECIAL REINFORCED CONCRETE BLOCK WALLS SHALL BE AS FOLLOWS. PROVIDE LARGER SIZES AND MORE REINFORCING IN SECTIONS OF WALLS WHERE REQUIRED BY THE DETAILS ON THE DRAWINGS OR BY THE SPECIFICATIONS.

WALL THICKNESS	VERTICAL REINFORCING	HORIZONTAL REINFORCING	LOCATION
8"	#5@48"	#5@48"	CENTERED
12"	#6@48"	#5@48"	EACH FACE]

[B: THE MINIMUM REINFORCING FOR INTERMEDIATE REINFORCED CONCRETE BLOCK WALLS SHALL BE AS FOLLOWS. PROVIDE LARGER SIZES AND MORE REINFORCING IN SECTIONS OF WALLS WHERE REQUIRED BY THE DETAILS ON THE DRAWINGS OR BY THE SPECIFICATIONS.

WALL THICKNESS	VERTICAL REINFORCING	VERTICAL BAR LOCATION	HORIZONTAL JOINT REINFORCING*
8"	#5@48"	CENTERED	EVERY OTHER COURSE
12"	#6@48"	EACH FACE	EVERY OTHER COURSE]

* EXCEPT WITH BOND BEAMS AT TOP OF WALL AND BOTTOM OF WALL]

19. DO NOT PLACE CONDUIT IN CELLS CONTAINING PARALLEL REINFORCEMENT.

WELDING

1. WELDS SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS):
   - D1.1, STRUCTURAL WELDING CODE STEEL
   - D1.2, STRUCTURAL WELDING CODE ALUMINUM
   - D1.3, STRUCTURAL WELDING CODE SHEET STEEL
   - D1.4, STRUCTURAL WELDING CODE REINFORCING STEEL
   - D1.6, STRUCTURAL WELDING CODE STAINLESS STEEL

2. REPAIR WELDS FOUND DEFECTIVE IN ACCORDANCE WITH AWS D1.1 SECTION 5.26.

3. USE INTERMITTENT WELDS AT FIELD WELDS OF EMBED PLATES AND ANGLES TO AVOID SPALLING OR CRACKING OF THE EXISTING CONCRETE.

4. BUTT JOINT WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) UNLESS INDICATED OTHERWISE.

STRUCTURAL STEEL AND METAL FABRICATIONS

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

W-SHAPES	A992
MISCELLANEOUS SHAPES INCLUDING ANGLES, CHANNELS, PLATES, ETC.	[A: A36] [B: A572, GRADE 50]
[C: MOMENT CONNECTION CONTINUITY PLATES	A572, GRADE 50]
HOLLOW STRUCTURAL SECTIONS (HSS)	A500, GRADE B
STEEL PIPE	A53, GRADE B
STAINLESS STEEL SHAPES	A276

2. ALUMINUM SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

STRUCTURAL SHAPES	B308
PLATES	B209

3. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN CONFORMANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION, CURRENT EDITION, AND CURRENT OSHA STANDARDS.

4. FASTENERS SHALL BE HIGH STRENGTH BOLTS CONFORMING TO THE FOLLOWING ASTM STANDARDS EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE:

UNLESS SHOWN OTHERWISE	A325-N
[A: SLIP CRITICAL	A325-SC]
[B: DIRECT TENSION INDICATORS OR LOAD INDICATOR WASHERS	ASTM F959]
[C: TENSION CONTROL (TC) BOLTS	ASTM A325 AND ASTM F1852]
ANCHOR BOLTS (AB)	
STAINLESS STEEL	F593, AISI TYPE 316, CONDITION CW
STEEL OR GALVANIZED STEEL	F1554, GR 36 / A153
MACHINE BOLTS (MB)	
STEEL	A307
STAINLESS STEEL	F593, AISI TYPE 316, CONDITION CW
GALVANIZED STEEL	A307 / A153
ALUMINUM	F468, ALLOY 2024-T4

5. ITEMS TO BE EMBEDDED IN CONCRETE SHALL BE CLEAN AND FREE OF OIL, DIRT AND PAINT.

6. NO HOLES OTHER THAN THOSE SPECIFICALLY DETAILED SHALL BE ALLOWED THROUGH STRUCTURAL STEEL MEMBERS. NO CUTTING OR BURNING OF STRUCTURAL STEEL IS PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.

DEFERRED SUBMITTALS

1. DEFERRED SUBMITTALS ARE THOSE PORTIONS OF THE DESIGN WHICH ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND WHICH ARE TO BE SUBMITTED TO THE PERMITTING AGENCY FOR ACCEPTANCE PRIOR TO INSTALLATION OF THAT PORTION OF THE WORK OR ARE REQUIRED TO BE SUBMITTED FOR REVIEW ONLY BY THE ENGINEER.

2. WHERE DEFERRED SUBMITTALS INCLUDE ADDITIONAL MATERIALS, INSTALLATION, ANCHORAGE, OR CERTIFICATION OF COMPONENTS THAT REQUIRE SPECIAL INSPECTION AND/OR STRUCTURAL OBSERVATION TO MEET CODE REQUIREMENTS, THE DEFERRED SUBMITTAL SHALL INCLUDE SPECIFIC LINE ITEMS TO BE ADDED TO THE APPROPRIATE TABLES IN THE PROJECT'S STATEMENT OF SPECIAL INSPECTIONS PLAN IF THEY ARE NOT ALREADY IDENTIFIED.

3. THE FOLLOWING IS A LIST OF DEFERRED SUBMITTALS PER IBC SECTION [A: 106.3.4.2 OF 2006 IBC] [B:107.3.4.2 OF 2009 IBC] [C:107.3.4.1 OF 2012 IBC] THAT ARE EXPECTED TO CONTAIN STRUCTURAL CALCULATIONS OR SAFETY RELATED SYSTEM INFORMATION FOR REVIEW TO MEET BUILDING PERMITTING REQUIREMENTS FOR DESIGNED SYSTEMS. PRIOR TO INSTALLATION OF THE INDICATED STRUCTURAL ELEMENT, EQUIPMENT, DISTRIBUTION SYSTEM, OR COMPONENT OR ITS ANCHORAGE, THE CONTRACTOR SHALL SUBMIT THE REQUIRED CALCULATIONS AND SUPPORTING DATA AND DRAWINGS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER. ADDITIONALLY, ACCEPTANCE INDICATED ON THE ENGINEER'S COMMENT FORM, ALONG WITH THE COMPLETED, FINAL SUBMITTAL SHALL THEN BE SUBMITTED BY THE CONTRACTOR TO THE PERMITTING AGENCY AND APPROVED PRIOR TO INSTALLATION OF THESE ITEMS.

SPECIFICATION SECTION	CODE REQUIRED DEFERRED SUBMITTALS FOR REVIEW BY PERMITTING AGENCY
01 88 15	ANCHORAGE AND BRACING
05 52 16	ALUMINUM RAILINGS
06 82 00	GLASS-FIBER-REINFORCED PLASTIC
40 05 15	PIPING SUPPORT SYSTEMS
OTHER	ANY EQUIPMENT OR COMPONENT IN WHICH A TECHNICAL SPECIFICATION REQUIRES SUBMITTAL OF EQUIPMENT OR ANCHORAGE SYSTEM CALCULATIONS

NO.	DATE	REVISION	BY	APV'D
DSGN	T SOBECK	DR	T MCINTOSH	APV'D
CHK	N GRUM		S CHAMPLIN	

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT: COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

GENERAL
STRUCTURAL NOTES (2 OF 3)

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY

DATE	DECEMBER 2023
PROJ	D3560100
DWG	001-G-0009
SHEET	of

100% DESIGN SUBMITTAL

STRUCTURAL ABBREVIATIONS

@	AT
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTION
ADDL	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISH FLOOR
AHR	ANCHOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL	ALUMINUM
ALLOW	ALLOWABLE
ALTN	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
APVD	APPROVED
ARCHL	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BETW	BETWEEN
BF	BOTTOM FACE
BLDG	BUILDING
BM	BEAM
BO	BOTTOM OF
BOT	BOTTOM
BRG	BEARING
C	CHANNEL OR C-SHAPE
C TO C	CENTER TO CENTER
CHKD PL	CHECKERED PLATE
CIPC	CAST-IN-PLACE CONCRETE
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION (WELD)
CL	CENTERLINE
CLR	CLEARANCE, CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
CTLJ	CONTROL JOINT
CTR	CENTER
CTRD	CENTERED
CU	CUBIC
d	PENNY (NAIL SIZE)
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DEG	DEGREE
DET	DETAIL
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DIM.	DIMENSION
DIR	DIRECTION
DL	DEAD LOAD
DO	DITTO
DTI	DIRECT TENSION INDICATOR
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMBED	EMBEDMENT, EMBED
ENGR	ENGINEER
EQL	EQUAL
EQL SP	EQUALLY SPACED
EQPT	EQUIPMENT
EQUIV	EQUIVALENT
EW	EACH WAY
EXP JT	EXPANSION JOINT
EXST	EXISTING
EXT	EXTERIOR
FAB	FABRICATE, FABRICATION
FB	FLAT BAR
FD	FLOOR DRAIN
FDN	FDN
FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOOR
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET, FOOT
FTG	FOOTING
FV	FIELD VERIFY

GA	GAUGE, GAGE
GALV	GALVANIZED (HOT DIP)
GLB	GLUE LAMINATED BEAM
GRTG	GRATING
GVL	GRAVEL
H.A.S.	HEADED ANCHOR STUD
HDR	HEADER
HORIZ	HORIZONTAL
HPT	HIGH POINT
HSS	HOLLOW STRUCTURAL SECTION
HVAC	HEATING , VENTILATION, AND AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
I.F.	INSIDE FACE
IN.	INCH(ES)
INSUL	INSULATION
INTMD	INTERMEDIATE
INTR	INTERIOR
J	JOIST
JB	JOIST BEARING
JT	JOINT
KIP(S)	THOUSAND POUNDS
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	ANGLE OR L-SHAPE
LB(S)	POUND(S) FORCE
LF	LINEAR FEET
LBW	LOAD INDICATING WASHER
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LNTL	LINTEL
LONG.	LONGITUDINAL
LPT	LOW POINT
LSL	LONG SLOTTED HOLE
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MET.	METAL
MFD	MANUFACTURED
MFR(S)	MANUFACTURER (MANUFACTURER'S)
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
O TO O	OUT TO OUT
OC	ON CENTER
OD	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
OPNG(S)	OPENING(S)
OPP	OPPOSITE
P	PILASTER
PERIM	PERIMETER
PJF	PREMOLDED JOINT FILLER
PJP	PARTIAL JOINT PENETRATION (WELD)
PKG	PACKAGE
PL	PLATE
PLCS	PLACES
PLF	POUNDS FORCE PER LINEAR FOOT
PLYWD	PLYWOOD
PNL	PANEL
PRCST	PRECAST
PREFAB	PREFABRICATE(D)
PRELIM	PRELIMINARY
PRI	PRIMARY
PSF	POUNDS FORCE PER SQUARE FOOT
PSI	POUNDS FORCE PER SQUARE INCH
PT	PRESSURE TREATED
PVC	POLYVINYL CHLORIDE
R	RADIUS, RISER
RAD	RADIUS
RC	REINFORCED CONCRETE
RDAA	REBAR DOWEL ADHESIVE ANCHOR
RDW	REDWOOD
RECT	RECTANGULAR, RECTANGLE
REF	REFERENCE
REINF	REINFORCE, REINFORCEMENT
REQD	REQUIRED
RST	REINFORCING STEEL

S	I-BEAM
SC	SLIP CRITICAL (BOLTS)
SCHED	SCHEDULE
SECT.	SECTION
SH	SHEET
SIM	SIMILAR
SOG	SLAB ON GRADE
SP	SPACE
SPEC(S)	SPECIFICATION(S)
SPECD	SPECIFIED
SPG	SPACING
SQ	SQUARE
SSL	SHORT SLOTTED HOLE
SST	STAINLESS STEEL
STD	STANDARD
STIF	STIFFENER
STIR.	STIRRUP
STL	STEEL
STR	STRAIGHT
STRL	STRUCTURAL
STRUCT	STRUCTURE
SYMM	SYMMETRICAL
T	TREAD
T&B	TOP AND BOTTOM
TAS	THREADED ANCHOR STUD
TC	TOP OF CONCRETE, TOP OF CURB
TEMP	TEMPERATURE
TF	TOP OF FOOTING, TOP FACE
THK	THICK
THKNS	THICKNESS
THRU	THROUGH
TM	TOP OF MASONRY
T.O.	TOP OF
TRANSV	TRANSVERSE
TST	TOP OF STEEL
TW	TOP OF WALL
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UNIF	UNIFORM, UNIFORMLY
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL
W	WIDE FLANGE BEAM
W/	WITH
W/O	WITHOUT
WD	WOOD
WP	WORKING POINT
WS	WATERSTOP, WATER SURFACE
WT	WEIGHT
WWF	WELDED WIRE FABRIC

HATCHING LEGEND

UNDISTURBED, EXISTING SOIL

GRANULAR FILL, STRUCTURAL FILL OR BACKFILL

DRAIN, DRAINAGE, UNDERDRAIN ROCK

SAND

CONCRETE FILL, CLSM BACKFILL

STEEL

CHECKERED PLATE

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GENERAL
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STATEMENT OF SPECIAL INSPECTIONS

GENERAL NOTES

1. THE STATEMENT OF SPECIAL INSPECTIONS PROVIDE PROJECT COMPLIANCE WITH THE PROVISIONS OF THE 2012 INTERNATIONAL BUILDING CODE (IBC) CHAPTER 17 FOR SPECIAL INSPECTION, STRUCTURAL OBSERVATION, AND TESTING FOR WIND AND SEISMIC RESISTANCE AS APPLICABLE, EXCEPT WHERE OTHERWISE NOTED, THIS INSPECTION IS OWNER FURNISHED.
2. STANDARD SPECIAL INSPECTION REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS ARE CONTAINED IN TABLE 1.
3. STANDARD SPECIAL INSPECTION REQUIREMENTS FOR STRUCTURAL COMPONENTS, REGARDLESS OF WIND OR SEISMIC DESIGN CATEGORIES, ARE CONTAINED IN TABLE 2. STANDARD TESTING REQUIREMENTS FOR STRUCTURAL COMPONENTS ARE CONTAINED IN TABLE 3.
4. PROJECT SPECIFIC REQUIREMENTS FOR STRUCTURES ARE CONTAINED IN TABLE 4
5. FOR ADDITIONAL REQUIREMENTS, REFER TO SPECIFICATION SECTION 01 45 33, SPECIAL INSPECTION, OBSERVATION, AND TESTING. THESE INCLUDE:

A. CONTRACTOR'S REQUIREMENTS TO PROVIDE ACCESS TO THE WORK FOR REQUIRED INSPECTIONS, AND TO PROVIDE NOTICE OF REQUIRED INSPECTIONS AND STRUCTURAL OBSERVATION.

B. CONTRACTOR'S STATEMENT OF RESPONSIBILITY FOR WORK TO BE PERFORMED ON SYSTEMS DESIGNATED UNDER THE STATEMENT OF SPECIAL INSPECTIONS FOR WIND OR SEISMIC RESISTANCE.

C. DEFINITIONS AND TERMINOLOGY USED IN THIS STATEMENT OF SPECIAL INSPECTIONS.

SPECIAL INSPECTION

1. SPECIAL INSPECTION WILL BE IN ACCORDANCE WITH IBC SECTIONS 1704 AND 1705 TOGETHER WITH LOCAL AND STATE AMENDMENTS. REFER TO THE FOLLOWING TABLES FOR PROJECT SPECIFIC INSPECTION TYPES AND FREQUENCIES.
2. SPECIAL INSPECTIONS WILL BE PROVIDED BY A CERTIFIED OR QUALIFIED INSPECTOR AND ASSOCIATED TESTING WILL BE PERFORMED BY AN APPROVED ACCREDITED INDEPENDENT AGENCY. THE OWNER WILL SECURE AND PAY FOR THE SERVICES OF THE AGENCY TO PERFORM ALL SPECIAL INSPECTION AND ASSOCIATED TESTS. INSPECTORS FOR EACH SYSTEM AND MATERIAL WILL BE INTERNATIONAL CODE COUNCIL (ICC) CERTIFIED OR OTHERWISE APPROVED BY THE BUILDING OFFICIAL.
3. THE SPECIAL INSPECTOR WILL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE APPROVED CONTRACT DOCUMENTS AND SUBMIT RECORDS OF INSPECTION. ALL DISCREPANCIES WILL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
4. SPECIAL INSPECTION AND ASSOCIATED TESTING REPORTS WILL BE SUBMITTED TO THE ENGINEER, CONTRACTOR, BUILDING OFFICIAL, AND OWNER WITHIN ONE WEEK OF INSPECTION OR WITHIN ONE WEEK OF TEST COMPLETION. INSPECTIONS FOR WHICH REPORTING WILL BE REQUIRED ARE NOTED IN THE FOLLOWING TABLES.
5. AT THE CONCLUSION OF CONSTRUCTION, A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF PREVIOUSLY NOTED DISCREPANCIES WILL BE SUBMITTED.

GEOTECHNICAL OBSERVATION

1. ALL FOUNDATION BEARING SURFACES SHALL BE INSPECTED BY GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF REINFORCING STEEL. ADDITIONAL SPECIAL INSPECTION REQUIREMENTS ARE LISTED IN TABLE 1.
2. GEOTECHNICAL TESTING REQUIREMENTS ARE LISTED IN TABLE 3.

STRUCTURAL OBSERVATION

1. STRUCTURAL OBSERVATION WILL BE IN ACCORDANCE WITH IBC SECTION 1704.5 TOGETHER WITH LOCAL AND STATE AMENDMENTS.
2. ONSITE STRUCTURAL OBSERVATION WILL BE PERFORMED FOR EACH IDENTIFIED SEISMIC FORCE- OR WIND FORCE-RESISTING SYSTEM, INCLUDING FOUNDATIONS AND CONNECTIONS. REFER TO THE INDIVIDUAL STRUCTURAL DRAWINGS FOR THE BASIC SEISMIC AND WIND FORCE-RESISTING SYSTEMS FOR THE STRUCTURES INCLUDED IN THE WORK.
3. STRUCTURAL OBSERVATION WILL BE PERFORMED BY A REGISTERED PROJECT DESIGN PROFESSIONAL FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR ANY REQUIRED SPECIAL INSPECTIONS OR INSPECTIONS BY THE BUILDING OFFICIAL.
4. STRUCTURAL OBSERVATION REPORTS, NOTING ANY DEFICIENCIES IN OBSERVED CONSTRUCTION, WILL BE DELIVERED TO THE CONTRACTOR, BUILDING OFFICIAL, AND OWNER FOLLOWING EACH OBSERVATION. THE CONTRACTOR WILL BE NOTIFIED ONSITE OR BY PHONE OR E-MAIL WITHIN 24 HOURS UPON FINDING DEFICIENCIES.
5. AT THE CONCLUSION OF CONSTRUCTION, A WRITTEN STATEMENT WILL BE PROVIDED TO VERIFY THAT THE STRUCTURAL OBSERVATION SITE VISITS WERE MADE AND WHETHER THERE REMAIN ANY STRUCTURAL DEFICIENCIES THAT HAVE NOT BEEN RESOLVED.
6. STRUCTURAL OBSERVATION WILL INCLUDE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM FOR EACH STRUCTURE CONTAINED IN THE WORK. THE CONTRACTOR SHALL SCHEDULE AND FACILITATE STRUCTURAL OBSERVATION, INCLUDING THE ELEMENTS DESCRIBED IN THE STRUCTURAL OBSERVATION TABLES (ATTACHED).

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GENERAL

STRUCTURAL
SPECIAL INSPECTIONS (1 of 3)

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

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TABLE 2
REQUIRED STRUCTURAL SPECIAL INSPECTION
REFER TO SPECIFICATION SECTION 01 45 33

SYSTEM	2012 IBC CODE REFERENCE	REFERENCED STANDARD	PERIODIC OWNER FURNISHED SPECIAL INSPECTION (SEE NOTE 1)	CONTINUOUS OWNER FURNISHED SPECIAL INSPECTION	COMMENTS	TESTING FOR SPECIAL INSPECTION
CONCRETE						
1. INSPECTION OF REINFORCING STEEL AND PLACEMENT	1705.3, 1903.1, 1910.4	ACI 318: 3.5, 7.1-7.7	X			SEE TABLE 6 FOR REINFORCING STEEL TESTING
2. INSPECTION OF ANCHORS CAST IN CONCRETE	1705.3, 1908.5, 1909.1	ACI 318: 8.1.3	X			
3. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS	1705.3, 1909.1	ACI 318: 3.8.6, 8.1.3, ICC-ES EVALUATION REPORTS	X		PROVIDE CONTINUOUS SPECIAL INSPECTION FOR ADHESIVE ANCHORS DESIGNED TO RESIST SUSTAINED TENSION LOADS AND WHERE REQUIRED BY ICC-ES REPORT	
4. VERIFYING USE OF REQUIRED DESIGN MIX	1705.3, 1904.2, 1910.2, 1910.3	ACI 318: Ch. 4, 5.2-5.4	X			
5. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	1705.3, 1910.10	ASTM C 172, ASTM C 31, ACI 318: 5.6, 5.8		X		SEE TABLE 3 FOR CONCRETE TEST REQUIREMENTS
6. INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	1705.3, 1910.6, 1910.7, 1910.8	ACI 318: 5.9, 5.10		X		
7. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	1705.3, 1910.9	ACI 318: 5.11-5.13	X			
8. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	1705.3	ACI 318: 6.1.1	X			
9. INSPECTION OF WATERSTOPS FOR PROPER SHAPE, LOCATION, JOINT QUALITY, AND SURROUNDING CONCRETE PLACEMENT			X			
10. VERIFY PROPER INSTALLATION OF MECHANICAL REINFORCING SPLICES AND CONNECTIONS	1705.1.1 ITEM 3, 1705.3	ICC-ES EVALUATION REPORTS	X			

TABLE 2 CONTINUED
REQUIRED STRUCTURAL SPECIAL INSPECTION
REFER TO SPECIFICATION SECTION 01 45 33

SYSTEM	2012 IBC CODE REFERENCE	REFERENCED STANDARD	PERIODIC OWNER FURNISHED SPECIAL INSPECTION (SEE NOTE 1)	CONTINUOUS OWNER FURNISHED SPECIAL INSPECTION	COMMENTS	TESTING FOR SPECIAL INSPECTION
MASONRY LEVEL B						
1. FOR SELF-CONSOLIDATING GROUT: VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE.	1705.4	ACI 530: Sec. 1.19.2 ACI 530.1: Art. 1.5B.1.b.3	X			
2. VERIFICATION OF f'_m PRIOR TO CONSTRUCTION EXCEPT WHERE SPECIFICALLY EXEMPTED BY CODE	1705.4	ACI 530: Sec. 1 19.2 ACI 530.1: Art. 1.4B	X			
3. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS	1705.4	ACI 530: Sec. 1.19.2 ACI 530.1: Art. 1.5	X			
4. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:						
A. PROPORTIONS OF SITE-PREPARED MORTAR	1705.4	ACI 530: Sec. 1.19.2 ACI 530.1: Art. 2.1, 2.6A	X			
B. CONSTRUCTION OF MORTAR JOINTS	1705.4	ACI 530: Sec. 1.19.2 ACI 530.1: Art. 3.3B	X			
C. LOCATION OF REINFORCEMENT, CONNECTORS, AND ANCHORAGES	1705.4	ACI 530: Sec. 1.19.2 ACI 530.1: Art. 3.4, 3.6A	X			
5. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:						
A. GROUT SPACE	1705.4	ACI 530: Sec. 1.19.2 ACI 530.1: Art. 3.2D, 3.2F	X			
B. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND ANCHORAGES	1705.4	ACI 530: Sec. 1.16, 1.19.2 ACI 530.1: Art. 2.4, 3.4	X			
C. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHORAGES	1705.4	ACI 530: Sec. 1.16, 1.19.2 ACI 530.1: Art. 3.2E, 3.4, 3.6A	X			
D. PROPORTIONS OF SITE-PREPARED GROUT	1705.4	ACI 530: Sec. 1.19.2 ACI 530.1: Art. 2.6B, 2.4G.1.b	X			
E. CONSTRUCTION OF MORTAR JOINTS	1705.4	ACI 530: Sec. 1.19.2	X			
6. VERIFY DURING CONSTRUCTION:						
A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	1705.4	ACI 530: Sec. 1.19.2 ACI 530.1: Art. 3.3F	X			
B. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION	1705.4	ACI 530: Sec. 1.16.4.3, 1.17.1, 1.19.2	X			
7. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS	1705.4, 2105.2.2, 2105.3	ACI 530: Sec. 1.19.2 ACI 530.1: Art. 1.4B.2	X			SEE TABLE 3 FOR UNIT STRENGTH FOR MASONRY

TABLE 2 CONTINUED
REQUIRED STRUCTURAL SPECIAL INSPECTION
REFER TO SPECIFICATION SECTION 01 45 33

SYSTEM	2012 IBC CODE REFERENCE	REFERENCED STANDARD	PERIODIC OWNER FURNISHED SPECIAL INSPECTION (SEE NOTE 1)	CONTINUOUS OWNER FURNISHED SPECIAL INSPECTION	COMMENTS	TESTING FOR SPECIAL INSPECTION
STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL						
1. MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK:						
A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	1705.2.2, 2203.1	Applicable ASTM Material Standards	X			
B. MANUFACTURER'S CERTIFIED TEST REPORTS	1705.2.2		X			
2. INSPECTION OF WELDING, REINFORCING STEEL:						
A. OTHER REINFORCING STEEL	1705.2.2, 1903.1	AWS D1.4 ACI 318: 3.5.2	X		NOTE 2	ALSO SEE REQUIREMENTS OF SPEC. SECTION 05 05 23
ALUMINUM						
1. MATERIAL VERIFICATION OF ALUMINUM						
A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	1705.1.1 ITEM 2		X			
B. MANUFACTURERS' CERTIFIED MILL TEST REPORTS	1705.1.1 ITEM 2		X			
2. INSPECTION OF WELDING:						
A. NONDESTRUCTIVE INSPECTION	1705.1.1 ITEM 2	AWS D1.2	X		NOTE 2	ALSO SEE REQUIREMENTS OF SPEC. SECTION 05 05 23

NOTES:
1. PERIODIC INSPECTION IS DEFINED AS INSPECTION BY THE SPECIAL INSPECTOR OF ALL MATERIALS AND SYSTEMS. IN SOME CASES PERFORMED DURING THEIR PLACEMENT AND IN ALL CASES PERFORMED UPON COMPLETION OF THEIR PLACEMENT. THE COMPLETION INSPECTION SHALL BE PERFORMED SO THAT WORK CAN BE CORRECTED PRIOR TO OTHER RELATED WORK PROCEEDING AND COVERING INSPECTED WORK.

2. VISUAL INSPECTION IS THE RESPONSIBILITY OF THE CONTRACTOR'S WELDING INSPECTOR(S) AND IS NOT CONSIDERED SPECIAL INSPECTION. CONTRACTOR MUST PROVIDE A QUALIFIED WELDING INSPECTOR TO OVERSEE CONTRACTOR'S WELDING OPERATIONS, AS REQUIRED BY AWS D1.1, SECTIONS 6.1.2 & 6.6, SPEC. SECTION 05 05 23 AND REFERENCED WELDING CODES.

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DESIGN: T. SOBECK; DR: N. CRUM; CHK: T. MCINTOSH; APV'D: S. CHAMPLIN

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GENERAL
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII
NAPILI NO. 1 PUMP STATION MODIFICATIONS
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TABLE 3
TESTING FOR REQUIRED SPECIAL INSPECTION
REFER TO SPECIFICATION SECTION 01 45 33

MATERIAL	TYPE OR SCOPE	STANDARD	2012 IBC CODE REFERENCE	FREQUENCY	BY WHOM	COMMENTS
GEOTECHNICAL						
COMPACTED FILL	GRADATION	ASTM C117, C136	1705.6	SECTION 31 23 23, FILL AND BACKFILL	OWNER'S TESTING AGENCY	
COMPACTED FILL	COMPACTION	ASTM D698 OR D1557 AS SPECIFIED	1705.6	SECTION 31 23 23, FILL AND BACKFILL	OWNER'S TESTING AGENCY	
COMPACTED FILL	DENSITY	ASTM D698 OR D1557 AS SPECIFIED	1705.6	SECTION 31 23 23, FILL AND BACKFILL	OWNER'S TESTING AGENCY	
PREPARED SUBGRADE	DENSITY	ASTM D698 OR D1557 AS SPECIFIED	1705.6	SECTION 31 23 13, SUBGRADE PREPARATION	OWNER'S TESTING AGENCY	
CONCRETE						
CONCRETE	STRENGTH	ASTM C39	1705.3	ONCE EACH DAY, BUT NOT LESS THAN ONE SAMPLE FOR EACH 150 CUBIC YARDS OR 5,000 SFT OF WALLS OR SLABS PLACED	OWNER'S TESTING AGENCY	
CONCRETE	SLUMP	ASTM C143, C94	1705.3	ONE SAMPLE PER STRENGTH TEST	OWNER'S TESTING AGENCY	
CONCRETE	AIR CONTENT	ASTM C231, C94	1705.3	ONE SAMPLE PER STRENGTH TEST	OWNER'S TESTING AGENCY	
CONCRETE	TEMPERATURE	ASTM C1064	1705.3	ONE SAMPLE PER STRENGTH TEST	OWNER'S TESTING AGENCY	
MASONRY						
CONCRETE MASONRY	UNIT STRENGTH	ASTM C140	2105.2.2.1.2	ONE SAMPLE SET (6 FULL SIZE UNITS) PER 5,000 SQ. FT. DURING CONSTRUCTION	OWNER'S TESTING AGENCY	
MASONRY	COMPRESSIVE STRENGTH OF GROUT	ASTM C1019	2106.2.2.1	THREE SAMPLES PRIOR TO CONSTRUCTION	OWNER'S TESTING AGENCY	
MASONRY	PRISM	ASTM C1314	2106.2.2.2	TEST THREE PRISMS PRIOR TO CONSTRUCTION	OWNER'S TESTING AGENCY	
STEEL						
REINFORCING STEEL	MAGNETIC PARTICLE NONDESTRUCTIVE TESTING	AWS D1.4	1705.3, 1903.1	SECTION 05 05 23, WELDING	OWNER'S TESTING AGENCY	PERFORM ON FILLET WELDS AND PARTIAL JOINT PENETRATION WELDS

TABLE 4
REQUIRED SPECIAL INSPECTION FOR SEISMIC RESISTANCE FOR STRUCTURAL SYSTEMS
REFER TO TABLE 2 FOR STANDARD STRUCTURAL SPECIAL INSPECTION REQUIREMENTS
REFER TO SPECIFICATION SECTION 01 45 33

The Seismic Design Category (SDC) for this Project is D.

SYSTEM	INSPECTION REQUIRED FOR FOLLOWING SEISMIC DESIGN CATEGORIES	2012 IBC CODE REFERENCE	PERIODIC OWNER FURNISHED SPECIAL INSPECTION (SEE NOTE 1)	CONTINUOUS OWNER FURNISHED SPECIAL INSPECTION	COMMENTS	TESTING FOR SPECIAL INSPECTION
ELECTRICAL						
INSTALLATION OF ANCHORAGE OF ELECTRICAL EQUIPMENT FOR EMERGENCY OR STANDBY POWER SYSTEMS	"C" AND ABOVE	1705.11.6 ITEM 1	X		NOTES 2 & 3	
INSTALLATION OF PIPING INTENDED TO EQUIPMENT USING COMBUSTIBLE ENERGY SOURCES	"C" AND ABOVE	1705.11.6 ITEM 1			NOTES 2 & 3	
INSTALLATION OF VIBRATION ISOLATION SYSTEMS WHERE THE CONSTRUCTION DOCUMENTS REQUIRE A NOMINAL CLEARANCE OF 0.25 INCHES OR LESS BETWEEN THE EQUIPMENT SUPPORT FRAME AND RESTRAINT	"C" AND ABOVE	1705.11.6 ITEM 5	X		NOTES 2 & 3	
INSTALLATION OF OTHER SEISMIC SUPPORTS FOR DESIGNATED ELECTRICAL SYSTEMS AND THEIR COMPONENTS	"C" AND ABOVE	1705.11.6	X		NOTES 2 & 3	SEE TABLE 6
PROCESS MECHANICAL						
INSTALLATION OF OTHER SEISMIC SUPPORTS FOR DESIGNATED MECHANICAL SYSTEMS AND THEIR COMPONENTS	"C" AND ABOVE	1705.11.6	X		NOTES 2 & 3	SEE TABLE 6
BUILDING MECHANICAL						
INSTALLATION OF OTHER SEISMIC SUPPORTS FOR DESIGNATED MECHANICAL SYSTEMS AND THEIR COMPONENTS	"C" AND ABOVE	1705.11.6	X		NOTES 2 & 3	SEE TABLE 6
STRUCTURAL						
COLD FORMED STEEL LIGHT-FRAMED CONSTRUCTION: WELDING, SCREW ATTACHMENT, BOLTING, ANCHORING AND OTHER FASTENINGS WITHIN THE SEISMIC FORCE-RESISTING SYSTEM INCLUDING SHEAR WALLS, BRACES, DIAPHRAGMS, COLLECTORS (DRAG STRUTS), AND HOLD-DOWNS	"C" AND ABOVE	1705.11.3	X		NOTE 4	
INSPECT AND VERIFY THAT THE DESIGNATED SEISMIC SYSTEM COMPONENTS ARE LABELED AND ANCHORAGE OR MOUNTING CONFORMS TO THE CERTIFICATE OF COMPLIENCE	"C" AND ABOVE	1705.11.4	X			

NOTES:
1. PERIODIC INSPECTION IS DEFINED AS INSPECTION BY THE SPECIAL INSPECTOR OF ALL MATERIALS AND SYSTEMS, IN SOME CASES PERFORMED DURING THEIR PLACEMENT AND IN ALL CASES PERFORMED UPON COMPLETION OF THEIR PLACEMENT. THE COMPLETION INSPECTION SHALL BE PERFORMED SO THAT WORK CAN BE CORRECTED PRIOR TO OTHER RELATED WORK PROCEEDING AND COVERING THE INSPECTED WORK
2. TESTING OF SYSTEMS AND THEIR ANCHORAGE SHALL BE IN CONFORMANCE WITH 2012 IBC SECTION 1705.12.3.
3. CERTIFICATION OF SYSTEMS AND THEIR ANCHORAGE SHALL BE IN CONFORMANCE WITH 2012 IBC SECTION 1705.12.3.
4. NOT REQUIRED IF SHEATHING IS GYPSUM BOARD OR FIBERBOARD OR IF SHEATHING IS WOOD STRUCTURAL PANEL OR STEEL SHEETS ON ONE SIDE OF PANEL OR DIAPHRAGM ONLY AND THE FASTENER SPACING IS MORE THAN 4 INCHES.

TABLE 5
TESTING FOR SEISMIC RESISTANCE
REFER TO SPECIFICATION SECTION 01 45 33

MATERIAL	TYPE OR SCOPE	STANDARD	2012 IBC CODE REFERENCE	FREQUENCY	BY WHOM	COMMENTS
TEST IN ACCORDANCE WITH THE QUALITY ASSURANCE REQUIREMENTS OF AISC 341	NONDESTRUCTIVE TESTING	AISC 341 AWS D1.8	1705.12.2	CONTINUOUS	OWNER'S SPECIAL INSPECTOR	
RADIOSCOPIC (RT) OR ULTRASONIC (UT) NONDESTRUCTIVE TESTING OF GROOVE WELDS	NONDESTRUCTIVE TESTING	AISC 341 AWS D1.8	1705.12.2	CONTINUOUS	OWNER'S SPECIAL INSPECTOR	USE UT WHERE RT CANNOT BE PERFORMED. SEE SECTION 05 50 00 METAL FABRICATIONS, SECTION 05 05 23, WELDING
MAGNETIC PARTICLE (MT) OR LIQUID PENETRANT (PT) NONDESTRUCTIVE TESTING	NONDESTRUCTIVE TESTING	AISC 341 AWS D1.8	1705.12.2.	CONTINUOUS	OWNER'S SPECIAL INSPECTOR	FILLET WELDS AND PARTIAL JOINT PENETRATION GROOVE WELDS. SEE SECTION 05 50 00 METAL FABRICATIONS, SECTION 05 05 23, WELDING
OTHER						
DESIGNATED SEISMIC SYSTEM COMPONENTS (AND ASSOCIATED ANCHORAGES) SUBJECT TO PROVISIONS OF ASCE 7 SECTION 13.2.2	CERTIFICATE OF COMPLIANCE	ASCE 7 SECTION 13.2.2	1705.12.3	EACH SYSTEM OR COMPONENT	MANUFACTURER	NOTE 2
DESIGNATED SEISMIC SYSTEM COMPONENTS (AND ASSOCIATED ANCHORAGES) SUBJECT TO PROVISIONS OF ASCE 7 SECTION 13.2.1	CERTIFICATE OF COMPLIANCE	ASCE 7 SECTION 13.2.1	1705.12.3	EACH SYSTEM OR COMPONENT	MANUFACTURER	NOTE 2

NOTES:
1. TESTING AND QUALIFICATION FOR SEISMIC RESISTANCE ARE REQUIRED FOR SEISMIC-FORCE-RESISTING SYSTEMS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E, OR F,UNLESS OTHERWISE NOTED.
2. BASED ON ACTUAL TEST ON SHAKE TABLE, BY THREE-DIMENSIONAL SHOCK TESTS, BY AN ANALYTICAL METHOD USING DYNAMIC CHARACTARISTICS AND FORCES, BY THE USE OF EXPERIENCE DATA, OR BY MORE RIGOROUS ANALYSIS PROVIDING FOR EQUIVALENT SAFETY.

NO.	DATE	DR	REVISION	CHK	APV'D	BY	APV'D

DESIGN T. SOBECK DR N. CRUM CHK T. MCINTOSH APV'D S. CHAMPLIN

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GENERAL
STRUCTURAL
SPECIAL INSPECTIONS (3 of 3)

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII
NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

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VERIFY SCALE
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PIPE AND FITTING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		EXISTING PIPE
		NEW PIPE
		EXISTING PIPE TO BE ABANDONED
		EXISTING PIPE TO BE REMOVED
		WELDED JOINT
		GROOVED END JOINT
		FLANGED JOINT
		MECHANICAL JOINT & PROPRIETARY RESTRAINED JOINT
		BELL & SPIGOT JOINT (LEADED)
		HUB & SPIGOT JOINT (RUBBER GASKET)
		BALL JOINT
		ADAPTER SIDE GROOVED END ADAPTER FLANGE
		FLANGED COUPLING ADAPTER
		FLEXIBLE COUPLING
		METAL BELLOWS EXP JOINT
		ELASTOMER BELLOWS EXP JOINT
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER

DOUBLE LINE	SINGLE LINE	
		REDUCING BUSHING
		UNION
		CAP
		ANCHOR
		ELBOW, 90 DEGREE
		CROSS
		TEE
		ELBOW, 45 DEGREE
		LATERAL
		PHOTO DETAIL PIPE ROUTE

NOTES:

1. ONLY FLANGED END CONNECTIONS ARE SHOWN HERE FOR DOUBLE LINE FITTINGS. FITTINGS WITH OTHER END PATTERNS ARE SHOWN SIMILARLY ON THE CONSTRUCTION DRAWINGS. ALSO SEE PIPING SPECIFICATIONS.
2. SYMBOLS SHOWN HERE FOR SINGLE LINE FITTINGS ARE GENERIC ONLY. REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS.
3. EXISTING PIPE AND EQUIPMENT IS SHOWN LIGHT-LINED AND/OR SCREENED AND IS NOTED AS EXISTING. NEW PIPING AND EQUIPMENT IS SHOWN HEAVY-LINED.

PIPING DESIGNATION

EXAMPLE:

16" TWE

16" TWE

SERVICE, SEE SPECIFICATIONS FOR PIPE SCHEDULE, 001-G-0019

PIPE DIAMETER

VALVE SYMBOLS

SINGLE LINE	DOUBLE LINE	
		GATE
		KNIFE GATE OR
		BUTTERFLY OR
		GLOBE OR
		BALL OR
		SEATING PORT
		ECCENTRIC PLUG OR
		PLUG OR COCK OR
		NEEDLE OR
		DIAPHRAGM OR
		PINCH OR
		SWING CHECK OR
		BALL CHECK OR
		HOSE VALVE (HV- X) OR (V-X) X = NO. IN SPECS
		SAMPLE
		MUD
		PRESSURE RELIEF
		AIR AND/OR VACUUM RELEASE
		REGULATED SIDE
		PRESSURE CONTROL (INTERNAL PILOT)
		REGULATED SIDE
		PRESSURE CONTROL (EXTERNAL PILOT)
		MULTI-PORT VALVE, ARROWS INDICATE FLOW PATTERN, SEATING PORTS ARE IMPLIED BY INDICATED FLOW PATTERN.
		TELESCOPING SCUM VALVE
		CALIBRATION COLUMN

VALVE DESIGNATIONS

MANUAL VALVES AND CHECK VALVES

V 500

VALVE DESIGNATION

VALVE TYPE, SEE SPECIFICATIONS

CONTROL VALVES

M

20FV 6112

UNIT PROCESS

VALVE FUNCTION

UNIQUE TAG NUMBER

NOTE:

SEE I&C LEGENDS FOR FURTHER DEFINITIONS AND ACTUATOR TYPES.

SELF-CONTAINED REGULATING VALVES

20PRV8011

UNIQUE TAG NUMBER, SEE SELF-CONTAINED REGULATION VALVE SCHEDULE IN THE SPECIFICATIONS

VALVE TYPE AND FUNCTON, SEE I&C LEGENDS FOR FURTHER DEFINITIONS

PROCESS OR FACILITY NUMBER.
05 = YARD
95 = CONTROL BUILDING
SEE P&IDS FOR PROCESS VALVES

MECHANICAL LEGEND AND NOTES

GENERIC PIPING NOTES

1. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS.
2. SIZE OF FITTINGS SHOWN ON DRAWINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
3. LOCATION AND NUMBER OF PIPE HANGERS AND PIPE SUPPORTS SHOWN IS ONLY APPROXIMATE. CONTRACTOR SHALL DESIGN SUPPORTS AS SPECIFIED.
4. ALL JOINTS SHALL BE WATERTIGHT. WALL PIPES SHALL BE USED WHEREVER PIPING PASSES FROM A STRUCTURE TO BACKFILL.
5. ALL FLEXIBLE CONNECTORS AND COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST PROTECTION AS SPECIFIED, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.
6. SYMBOLS, LEGENDS, AND PIPE USE IDENTIFICATIONS SHOWN SHALL BE FOLLOWED THROUGHOUT THE DRAWINGS, WHEREVER APPLICABLE. NOT ALL OF THE VARIOUS PIPING COMPONENTS ARE NECESSARILY USED IN THE PROJECT.
7. ALL BURIED PIPING SPECIFIED TO BE PRESSURE TESTED, EXCEPT FLANGED, WELDED, OR SCREWED PIPING, ALL BURIED PIPING SHALL BE PROVIDED WITH THRUST PROTECTION AS SPECIFIED, UNLESS OTHERWISE NOTED.
8. NUMBER AND LOCATION OF UNIONS SHOWN ON DRAWINGS IS ONLY APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
9. WHERE A GROOVED END COUPLING IS SHOWN, IT SHALL BE THE RIGID JOINT TYPE, UNLESS OTHERWISE SPECIFIED. WHERE A FLANGED COUPLING ADAPTER IS SHOWN, A STANDARD FLANGE SHALL BE JOINED TO THE COUPLING ADAPTER.
10. PROCESS FLOW STREAM IDENTIFICATION IS SHOWN ON 1-001-G-0901 INSTRUMENTATION AND CONTROLS LEGEND 2.

NO.	DATE	REVISION	BY	APV'D
DSGN	SR	CHK	APV'D	
	P. MURPHY	B. KASPAR	S. POLSON	S. CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
CITY OF KAHULUI, MAUI, HAWAII
NAPILI-HONOKOWAI MAUI, HAWAII

GENERAL

PROCESS MECHANICAL LEGEND

VERIFY SCALE

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HEATING, VENTILATING, AND AIR CONDITIONING PIPE AND FITTING SYMBOLS

DOUBLE LINE | SINGLE LINE

- EXISTING PIPE (SCREENED)
- NEW PIPE
- EXISTING PIPE TO BE ABANDONED
- EXISTING PIPE TO BE REMOVED
- WELDED JOINT
- GROOVED END JOINT
- FLANGED JOINT
- FLEXIBLE COUPLING
- GROOVED END / GROOVED END ADAPTER FLANGE
- STEEL BELLOWS EXP JOINT
- ELBOW UP
- ELBOW DOWN
- TEE UP
- TEE DOWN
- LATERAL UP
- LATERAL DOWN
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- UNION
- ANCHOR
- PIPE ALIGNMENT GUIDE
- FLEXIBLE (ELASTOMER) PIPE CONNECTION

NOTES:

1. ONLY FLANGED FITTINGS ARE SHOWN FOR DOUBLE LINE PIPING. FITTINGS WITH OTER END PATTERNS ARE SIMILAR.
2. EXISTING PIPING AND EQUIPMENT IS SHOWN LIGHT LINED AND/OR SCREENED AND IS NOTED AS EXISTING. NEW PIPING AND EQUIPMENT IS SHOWN HEAVY-LINED.-

VALVE SYMBOLS

SINGLE LINE | DOUBLE LINE

- GATE
- BUTTERFLY (OR)
- GLOBE (OR)
- BALL (OR)
- SEATING PORT
- ECCENTRIC PLUG (OR)
- PLUG OR COCK (OR)
- NEEDLE (OR)
- SWING CHECK (OR)
- BALL CHECK (OR)
- B — BALANCING FITTING
- F B — COMBINATION FLOWMETER AND BALANCING FITTING
- F B S.O. — COMBINATION FLOWMETER, BALANCING FITTING AND SHUT-OFF VALVE
- PRESSURE RELIEF
- AIR VENT (AUTO)
- AIR VENT (MANUAL)
- REGULATED SIDE PRESSURE CONTROL
- MULTI-PORT VALVE (GLOBE VALVE SHOWN. FOR OTHER VALVE TYPES, APPROPRIATE VALVE SYMBOL SHOWN). ARROWS INDICATE FLOW PATTERN. SEATING PORTS ARE IMPLIED BY INDICATED FLOW PATTERN.
- S — SOLENOID VALVE
- T — TO TEMPERATURE SENSOR
- TEMPERATURE SENSING VALVE

MISCELLANEOUS PIPING SYMBOLS

- X — STEAM TRAP X = NO. IN SPECS
- FS — FLOW SWITCH
- FM X — FLOW METER X = NO. SHOWN IN SPECS
- PS — PRESSURE SWITCH
- STRAINER
- GAUGE WITH COCK
- THERMOMETER
- GAUGE GLASS WITH COCKS

VALVE DESIGNATIONS

MANUAL VALVES AND CHECK VALVES

V 400

- VALVE TYPE, SEE SPECIFICATIONS
- VALVE DESIGNATION

CONTROL VALVES

- ACTUATOR SYMBOL
- FLOW DIRECTION
- VALVE SYMBOL
- FLOW DIRECTION

HVAC EQUIPMENT IDENTIFICATION

ACC	AIR-COOLED CONDENSER
ACCU	AIR-COOLED CONDENSING UNIT
ACU	AIR CONDITIONING UNIT
AHU	AIR HANDLING UNIT
AWC	ABSORPTION WATER CHILLER
BC	BOOSTER HEATING COIL
BD	BUTTERFLY DAMPER
CD	CEILING DIFFUSER
CG	CEILING GRILLE
CR	CEILING REGISTER
CHWP	CHILLED WATER PUMP
CR	CEILING REGISTER
CRP	CONDENSATE RETURN PUMP
CRU	CONDENSATE RETURN UNIT
CT	COOLING TOWER
CTP	COOLING TOWER PUMP
CUH	CABINET UNIT HEATER
CWP	CONDENSER WATER PUMP
DA	DEARATOR
DG	DOOR GRILLE
ECP	ENVIRONMENTAL CONTROL PANEL
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EUH	ELECTRIC UNIT HEATER
FG	FLOOR GRILLE
FD	FIRE DAMPER
HRU	HEAT RECOVERY UNIT
HCG	HIGH-CAPACITY GRILLE
HCSG	HIGH-CAPACITY SUPPLY GRILLE
HTP	HEAT PUMP
HU	HUMIDIFIER
HTR	HIGH THROW REGISTER
HWP	HEATING WATER PUMP
HX	HEAT EXCHANGER
LD	LINEAR DIFFUSER
MD	MOTORIZED DAMPER
ML	MOTORIZED LOUVER
OBD	OPPOSED BLADE DAMPER
PCG	PERFORATED CEILING GRILLE
PCD	PERFORATED CEILING DIFFUSER
PEF	PORTABLE EXHAUST FAN
RAC	ROOM AIR CONDITIONER
SF	SUPPLY FAN
SD	SLOT DIFFUSER
TAC	TERMINAL AIR CONDITIONER
TCU	TERMINAL CONTROL UNIT
UH	UNIT HEATER
WC	WATER CHILLER
WCC	WATER-COOLED CONDENSER
WCCU	WATER-COOLED CONDENSING UNIT
WG	WALL GRILLE
WR	WALL REGISTER
WSG	WATER SUPPLY GRILLE
WSHP	WATER SOURCE HEAT PUMP
WSR	WALL SUPPLY REGISTER

HEATING, VENTILATING, AND AIR CONDITIONING SYMBOLS

- WALL REGISTER OR GRILLE (SUPPLY)
- CEILING DIFFUSER OR REGISTER (SUPPLY)
- CEILING REGISTER OR GRILLE (RETURN AND EXHAUST)
- WALL REGISTER OR GRILLE (RETURN AND EXHAUST)
- TURNING VANES
- 45 DEGREE ENTRY
- CONICAL TEE
- BELLMOUTH
- SD — SMOKE DAMPER
- FD — FIRE DAMPER
- MANUAL OPPOSED-BLADE DAMPER
- MANUAL BUTTERFLY DAMPER
- M — MOTORIZED DAMPER
- SOUND ATTENUATED DUCT
- FLEXIBLE CONNECTION
- FLEXIBLE DUCTWORK
- R — INCLINED RISE IN DUCT
- D — INCLINED DROP IN DUCT
- SUPPLY DUCT (SECTION)
- INTAKE, RETURN, OR EXHAUST DUCT (SECTION)
- T — ROOM TEMPERATURE SENSOR
- P — ROOM PRESSURE SENSOR
- H — ROOM HUMIDITY SENSOR
- ECP — ENVIRONMENTAL CONTROL PANEL
- (200) — 200 SCFM
- M — MOTORIZED VALVE - 3 WAY
- M — MOTORIZED VALVE - 2 WAY

NO.	DATE	REVISION	BY	APV'D
DSGN	S HOFFMAN	DR T WHITE	M DRAGON	S CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

GENERAL
HVAC LEGEND

100% DESIGN SUBMITTAL

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	001-G-0015
SHEET	of

SYMBOL	DESCRIPTION

ONE-LINE DIAGRAM-1

SYMBOL	DESCRIPTION
	DRAWOUT AIR CIRCUIT BREAKER, LOW VOLTAGE
400	CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN, 3 POLE, UNO
AS AF or AT AF	CIRCUIT BREAKER, STATIC TRIP UNIT, SENSOR AMP TRIP AND FRAME RATINGS SHOWN, 3 POLE, UNO
100/M	CIRCUIT BREAKER, MAGNETIC TRIP ONLY, TRIP RATING SHOWN, 3 POLE, UNO
400 400	CIRCUIT BREAKER WITH CURRENT LIMITING FUSES, TRIP AND FUSE RATING INDICATED, 3 POLE, UNO
400 225	FUSED SWITCH, SWITCH AND FUSE CURRENT RATING INDICATED, 3 POLE, UNO
100	SWITCH, CURRENT RATING INDICATED, 3 POLE, UNO
60 (3)	FUSE, CURRENT RATING AND QUANTITY INDICATED
1	MAGNETIC STARTER WITH OVERLOAD, NEMA SIZE INDICATED, FVNR UNO
AFD	ELECTRONIC STARTER/SPEED CONTROL RVSS = REDUCED VOLTAGE SOFT STARTER AFD = AC ADJUSTABLE FREQUENCY DRIVE DC = DC ADJUSTABLE SPEED DRIVE RVAT = REDUCED VOLTAGE AUTO TRANSFORMER TYPE RVRT = REDUCED VOLTAGE REACTOR TYPE
	CABLE OR BUS CONNECTION POINT
K	KEY INTERLOCK
	SURGE ARRESTER (GAP TYPE)
10	CAPACITOR - KVAR INDICATED, 3 PHASE
3	AC MOTOR, SQUIRREL CAGE INDUCTION - HORSEPOWER INDICATED
G 500/625	GENERATOR, KW/KVA RATING SHOWN
VS V 0-600V	ANALOG METER WITH SWITCH - SCALE RANGE SHOWN V = VOLTAGE KW = KILOWATTS A = AMPERAGE KVAR = KILOVARS PF = POWER FACTOR
DPM	DIGITAL POWER METER (MULTIFUNCTION)
	UTILITY REVENUE METER
	GROUND
15 KVA 480-120/240V 1 PH	TRANSFORMER, SIZE, VOLTAGE RATINGS, AND PHASE INDICATED
	SHIELDED ISOLATION TRANSFORMER
480-120V (3)	POTENTIAL TRANSFORMER, VOLTAGE RATING AND QUANTITY INDICATED
100:5 (3)	CURRENT TRANSFORMER, RATIO(100:5) AND QUANTITY INDICATED (3)
A	CONNECTION POINT TO EQUIPMENT SPECIFIED IN OTHER DIVISIONS. RACEWAY, CONDUCTOR AND CONNECTION IN THIS DIVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR

ONE-LINE DIAGRAM-2

SYMBOL	DESCRIPTION
	DRAWOUT POWER CIRCUIT BREAKER, MEDIUM VOLTAGE
	NON DRAWOUT FUSED SWITCH, MEDIUM VOLTAGE
	DRAWOUT FUSED SWITCH AND CONTACTOR, MEDIUM VOLTAGE
	DRAWOUT FUSED SWITCH AND VACUUM CONTACTOR, MEDIUM VOLTAGE
	DRAWOUT VACUUM CONTACTOR, MEDIUM VOLTAGE
	MEDIUM VOLTAGE CABLE STRESS CONE TYPE TERMINATION, OPEN TERMINATOR OR ELBOW
	SWITCH - LOAD BREAK, GROUP OPERATED, MEDIUM VOLTAGE
	SWITCH W/ARCING HORNS, MEDIUM VOLTAGE
	DISCONNECTING FUSE - SOLID MATERIAL, MEDIUM VOLTAGE
	SWITCH - HOOK STICK OPERATED, SINGLE POLE, MEDIUM VOLTAGE
	FUSE - EXPULSION, HOOK STICK OPERATED, SINGLE POLE, MEDIUM VOLTAGE
	GROUND SWITCH, GANG OPERATED
	TERMINAL BLOCK LUG
	DELTA CONNECTION
	WYE GROUNDED CONNECTION, SOLID GROUND
R or Z	WYE NEUTRAL GROUND RESISTOR OR IMPEDANCE CONNECTION
86	RELAY OR DEVICE, FUNCTION NUMBER AS INDICATED
50:5 (1)	CURRENT TRANSFORMER, ZERO SEQUENCE, RATIO AND QUANTITY INDICATED
800/1200:5 (3)	BUSHING CURRENT TRANSFORMER, MULTI-RATIO AND QUANTITY INDICATED
MO	MOTOR OPERATOR, BREAKER OR SWITCH
EUM	ENERGY MONITORING UNIT
MRP	MOTOR PROTECTION RELAY

NOTES:

1. THESE ARE STANDARD LEGEND SHEETS. SOME SYMBOLS AND ABBREVIATIONS MAY APPEAR ON THE LEGEND AND NOT ON THE DRAWINGS.
2. FOR ADDITIONAL ABBREVIATIONS OF OTHER DIVISIONS (HVAC, MECHANICAL, AND STRUCTURAL/ARCHITECTURAL) SEE OTHER LEGENDS.

CONTROL DIAGRAM-1

SYMBOL	DESCRIPTION
	PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY OPEN
	PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY CLOSED
	PUSH BUTTON SWITCH, MAINTAINED CONTACTS WITH MECHANICAL INTERLOCK
	3 POSITION SELECTOR SWITCH MAINTAINED CONTACT
HAND OFF REMOTE	SELECTOR SWITCH - MAINTAINED CONTACT - CHART IDENTIFIES OPERATION WHEN NEEDED FOR CLARITY;

	POSITION		
CKT	HAND	OFF	REMOTE
1	X	O	O
2	O	O	X

X = CLOSED CONTACT
O = OPEN CONTACT

SYMBOL	DESCRIPTION
	TOGGLE SWITCH, ON-OFF TYPE
ON OFF	SELECTOR SWITCH, ON-OFF TYPE
	MUSHROOM HEAD PUSHBUTTON SWITCH
A	INDICATING LIGHT, PUSH-TO-TEST, LETTER INDICATES COLOR
A	INDICATING LIGHT - LETTER INDICATES COLOR A - AMBER G - GREEN S - STROBE B - BLUE R - RED C - CLEAR W - WHITE
ETM	ELAPSED TIME METER
M	MOTOR STARTER CONTACTOR COIL
CR X	CONTROL RELAY, X INDICATES NUMERICAL ORDER IN CIRCUIT
TDR X	TIME DELAY RELAY, X INDICATES NUMERICAL ORDER IN CIRCUIT
SV X	SOLENOID VALVE, X INDICATES NUMERICAL ORDER IN CIRCUIT
	CONTACT - NORMALLY OPEN
	CONTACT - NORMALLY CLOSED
	REMOTE DEVICE
	TIME DELAY RELAY CONTACT, NORMALLY OPEN, CLOSES WHEN ENERGIZED AND TIMED OUT
A	TIME DELAY RELAY CONTACT, NORMALLY CLOSED, OPENS WHEN ENERGIZED AND TIMED OUT
	TIME DELAY RELAY CONTACT, CLOSES WHEN ENERGIZED, OPENS WHEN DE-ENERGIZED AND TIMED OUT
	TIME DELAY RELAY CONTACT, OPENS WHEN ENERGIZED, CLOSES WHEN DE-ENERGIZED AND TIMED OUT
	MOTOR SPACE HEATER
	TERMINAL BLOCK, REMOTE
	TERMINAL BLOCK, INTERNAL
	FUSED TERMINAL BLOCK
	FUSE, RATING INDICATED
CPT 120V	TRANSFORMER, CONTROL POWER
	THERMOCOUPLE

CONTROL DIAGRAM-2

SYMBOL	DESCRIPTION
	CAPACITOR
	BATTERY
	LIMIT SWITCH, NORMALLY OPEN, CLOSES AT END OF TRAVEL
	LIMIT SWITCH, NORMALLY CLOSED, OPENS AT END OF TRAVEL
	TEMPERATURE SWITCH, OPENS ON TEMPERATURE RISE
	TEMPERATURE SWITCH, CLOSES ON TEMPERATURE RISE
	FLOAT SWITCH, NORMALLY OPEN, CLOSES ON DESCENDING LEVEL
	FLOAT SWITCH, NORMALLY OPEN, CLOSES ON RISING LEVEL
	PRESSURE SWITCH, NORMALLY CLOSED, OPENS ON RISING PRESSURE
	PRESSURE SWITCH, NORMALLY OPEN, CLOSES ON RISING PRESSURE
	FLOW SWITCH, CLOSES ON INCREASED FLOW
	FLOW SWITCH, OPENS ON INCREASED FLOW
NGR	NEUTRAL GROUND CURRENT LIMITING RESISTOR
RES	CALIBRATING RESISTOR
GEN	TACHOMETER GENERATOR
GFS	GROUND FAULT SENSOR
	FLASHER
	SEALED CONTACT
	BUZZER
	POTENTIOMETER
	RESISTOR
	BLOWN FUSE INDICATOR
	COAXIAL CABLE
	MULTICONDUCTOR SHIELDED CABLE
	DUPLEX RECEPTACLE
	RELAY, WITH MECHANICAL LATCH
	FULLWAVE DIODE BRIDGE (AC TO DC)

NO.	DATE	REVISION	BY	APVD
DSGN	J JAMES	DR A CUGLAR	CHK J LANDMAN	APVD S CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII
NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

GENERAL
ELECTRICAL
LEGEND (1 OF 3)

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SHEET	of

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SYMBOL	DESCRIPTION

POWER SYSTEM PLAN-1

SYMBOL	DESCRIPTION
	CONNECTION POINT TO EQUIPMENT SPECIFIED. RACEWAY, CONDUCTOR,TERMINATION AND CONNECTION IN THIS DIVISION.
MCC-A	MAJOR ELECTRICAL COMPONENT OR DEVICE - NAME OR IDENTIFYING SYMBOL AS SHOWN.
LPXXA	PANELBOARD - SURFACE MOUNTED PANELBOARD LETTER OR NUMBER FACILITY NUMBER LP - LOW VOLTAGE PANEL DP - DISTRIBUTION PANEL
	PANELBOARD - FLUSH MOUNTED
	TERMINAL JUNCTION BOX
M	MOTOR, SQUIRREL CAGE INDUCTION
G	GENERATOR, VOLTAGE AND SIZE AS INDICATED.
LPXXA	HOME RUN - DESTINATION SHOWN
or G	EXPOSED CONDUIT AND CONDUCTORS*
or G	CONCEALED CONDUIT AND CONDUCTORS*

NOTE:
ALL UNMARKED CONDUIT RUNS CONSIST OF TWO NO. 12, ONE NO. 12 GROUND CONDUCTORS IN 3/4" CONDUIT. RUNS MARKED WITH CROSSHATCHES INDICATE NUMBER OF NO. 12 CONDUCTORS. CROSSHATCH WITH SUBSCRIPT "G" INDICATES GREEN GROUND WIRE.

SYMBOL	DESCRIPTION
G	CROSSHATCHES WITH BAR INDICATE NO.10 CONDUCTOR, SIZE CONDUIT ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE.
[A1]	CONDUIT AND CONDUCTOR CALLOUT, SEE LEGEND.
	CONDUIT DOWN
	CONDUIT UP
	CONDUIT, STUBBED AND CAPPED
	CONDUIT TERMINATION AT CABLE TRAY
EX	EXISTING CONDUIT/ DUCT BANK
BD	BUS DUCT - SEE SPECIFICATIONS
CE	CONCRETE ENCASED CONDUIT
DB	DIRECT BURIED CONDUIT
FO	FIBER OPTIC CONDUIT
XXXX	CONCRETE ENCASED DUCT BANK WHERE XXXX IS THE DUCT BANK NAME, SEE CIRCUIT AND RACEWAY CODING DEFINITION
	CONCEALED CONDUIT ROUTING AREA
	CONDUIT ROUTING AREA
	CABLE TRAY
T	TRANSFORMER
J or HH	GENERAL CONTROL OR WIRING DEVICE, LETTER SYMBOLS OR ABBREVIATIONS INDICATE TYPE OF DEVICE
CS	CONTROL STATION, SEE CONTROL DIAGRAMS FOR CONTROL DEVICE(S) REQUIRED.
30	NONFUSED DISCONNECT SWITCH, CURRENT RATING INDICATED, 3 POLE
60/40	FUSED DISCONNECT SWITCH, CURRENT RATING INDICATED (60/40, 60=SWITCH RATING / 40=FUSE RATING) 3 POLE
2	COMBINATION CIRCUIT BREAKER AND MAGNETIC STARTER, NEMA SIZE INDICATED

POWER SYSTEM PLAN-2

SYMBOL	DESCRIPTION
100/40	BREAKER, SEPARATELY MOUNTED, CURRENT RATING INDICATED (100/40, 100 = FRAME SIZE; 40 = TRIP RATING) 3 POLE
2	CONTACTOR, MAGNETIC, NEMA SIZE INDICATED
L 30	LIGHTING CONTACTOR, CURRENT RATING INDICATED
2	STARTER, MAGNETIC NEMA SIZE INDICATED
XX 2	CONVENIENCE RECEPTACLE - DUPLEX UNLESS NOTED OTHERWISE WP- WEATHERPROOF C- CLOCK HANGER TL - TWIST LOCK CRE- CORROSION RESISTANT GFCI- GROUND FAULT CIRCUIT INTERRUPTER SUBSCRIPT NUMBER AT RECEPTACLE INDICATES CIRCUIT
	240V RECEPTACLE
	CONVENIENCE RECEPTACLE - QUADRUPLEX
	MULTI OUTLET ASSEMBLY
	DUPLEX CONVENIENCE RECEPTACLE - FLUSH IN FLOOR
	CONVENIENCE RECEPTACLE, PEDESTAL, DUPLEX SINGLE FACE UNLESS INDICATED OTHERWISE
L20R 20	RECEPTACLE, SPECIAL PURPOSE-NEMA CONFIGURATION AND AMPERAGE INDICATED
T	THERMOSTAT
	UTILITY REVENUE METERING FACILITY
EUH	ELECTRIC UNIT HEATER
AC	ELECTRIC AIR CONDITIONER (SELF CONTAINED UNIT)
	UTILITY POLE

LIGHTING SYSTEM PLAN

SYMBOL	DESCRIPTION
1 or 1	LUMINAIRE, SEE SCHEDULE
1	LUMINAIRE, SEE SCHEDULE
1 or	LUMINAIRE WITH INTERNAL BATTERY BACKUP, SEE SCHEDULE
1	STRIP LUMINAIRE, SEE SCHEDULE
4 or 4	LUMINAIRE AND POLE, SEE SCHEDULE
5 or 5	WALL MOUNTED LUMINAIRE, SEE SCHEDULE
1	FLOOD LIGHTS - AIM IN THE DIRECTION SHOWN
	STANDBY LIGHTING UNIT, SURFACE MOUNTED, SEE SCHEDULE
XX or	EXIT LIGHTS - FILLED SECTION INDICATES LIGHTED FACE, ARROW INDICATES EGRESS DIRECTIONAL INDICATORS, XX = FIXTURE NUMBER, SEE SCHEDULE
$a or 2a	SMALL LETTER SUBSCRIPT AT SWITCH AND LUMINAIRE INDICATES SWITCHING. SUBSCRIPT NUMBER AT LUMINAIRE INDICATES CIRCUIT
$3	WALL SWITCH: 2- DOUBLE POLE P- PILOT LIGHT 3- THREE WAY K- KEY OPERATED 4- FOUR WAY D- DIMMER WP- WEATHERPROOF CRE- CORROSION RESISTANT EX- EXPLOSIONPROOF L- MOMENTARY 3-WAY M- MOTOR RATED MS- MANUAL STARTER WITH OVERLOADS
OS	OCCUPANCY SENSOR
LC	LIGHTING CONTACTOR
MD	MOTION DETECTOR
PC	PHOTOCELL

FIRE ALARM SYSTEM PLAN AND RISER

SYMBOL	DESCRIPTION
F P	FIRE ALARM STATION, MANUAL
	FIRE ALARM SYSTEM, AUTOMATIC SMOKE DETECTOR
HD	FIRE ALARM SYSTEM, AUTOMATIC, HEAT DETECTOR
F	FIRE ALARM BELL
F	FIRE ALARM HORN
	FIRE ALARM HORN/STROBE LIGHT
	FIRE ALARM STROBE LIGHT
	AIR DUCT DETECTOR
FS	FIRE SPRINKLER FLOW SWITCH
TS	FIRE SPRINKLER TAMPER SWITCH
D	DOOR HOLDER

TELEPHONE SYSTEM PLAN AND RISER

SYMBOL	DESCRIPTION
TTC	TELEPHONE TERMINAL CABINET
	TELEPHONE RECEPTACLE FLOOR BOX
	TELEPHONE RECEPTACLE
T	TELEPHONE SYSTEM RACEWAY

COMPUTER SYSTEM (DATA) PLAN AND RISER

SYMBOL	DESCRIPTION
CTC	COMPUTER SYSTEM TERMINAL CABINET
	COMPUTER NETWORK CONNECTION
	COMPUTER NETWORK CONNECTION, FLUSH IN FLOOR
D	DATA SYSTEM RACEWAY

COMBINED TELEPHONE/COMPUTER SYSTEM PLAN AND RISER

SYMBOL	DESCRIPTION
4	COMBINATION TELEPHONE/DATA RECEPTACLE, WALL MOUNTED, NUMBER OF PORTS INDICATED
4	COMBINATION TELEPHONE/DATA RECEPTACLE, FLOOR BOX, NUMBER OF PORTS INDICATED

CLOSED CIRCUIT/TELEVISION CABLE PLAN AND RISER

SYMBOL	DESCRIPTION
	COMBINATION CLOSED CIRCUIT TELEVISION RECEPTACLE (CCTV) AND DUPLEX CONVENIENCE RECEPTACLE IN TWO GANG BOX WITH BARRIER, 12" DOWN FROM CEILING
	COMBINATION TELEVISION CABLE RECEPTACLE (TV) AND DUPLEX CONVENIENCE RECEPTACLE IN TWO GANG BOX WITH BARRIER, 12" DOWN FROM CEILING
	CLOSED CIRCUIT TELEVISION RECEPTACLE, FLOOR BOX
	TELEVISION CABLE RECEPTACLE, FLOOR BOX

SOUND SYSTEM PLAN AND RISER

SYMBOL	DESCRIPTION
S	SPEAKER, CONE TYPE, RECESSED IN CEILING, SEE ARCHITECTURAL DRAWINGS FOR CEILING TYPE
S	SPEAKER, CONE TYPE, WALL MOUNTED
S	SPEAKER, CONE TYPE, SURFACE MOUNTED
V	VOLUME CONTROL, WALL MOUNT 5'-0" AFF
S	INTERIOR PAGING TRUMPET SOUND REPRODUCER WITH REMOTE AMPLIFIER, SURFACE MOUNTED
M	MICROPHONE OUTLET
S	SOUND SYSTEM RACEWAY
S	COMMUNICATION STATION

SECURITY SYSTEM PLAN AND RISER

SYMBOL	DESCRIPTION
CR	CARD KEY ACCESS
CS	CONTROL STATION
DS	DOOR SWITCH
EP	EGRESS PUSHBUTTON
	ELECTRONIC LOCK M = MAGENITIC S = STRIKE
	INTERCOM
	MONITOR
	MOTION SENSOR
	VIDEO CAMERA PTZ = PAN/TILT/ZOOM F = FIXED

GROUND SYSTEM PLAN

SYMBOL	DESCRIPTION
	GROUND ROD
	GROUND ROD IN TEST WELL
G	GROUNDING CONDUCTOR, SIZE AS INDICATED
	PIGTAIL FOR CONNECTION TO EQUIPMENT CABINET OR FRAME
G	EQUIPMENT GROUND BUS
N	EQUIPMENT NEUTRAL BUS

NO.	DATE	REVISION	BY	APV'D
DSGN	J JAMES	DR A CUSLAY	J LANDMAN	AP'D S CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII
NAPILI NO. 1 PUMP STATION IMPROVEMENTS
NAPILI-HONOKOWAI, MAUI, HAWAII

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GENERAL
ELECTRICAL
LEGEND (2 OF 3)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	001-G-0017
SHEET	of

100% DESIGN SUBMITTAL

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CIRCUIT AND RACEWAY

GENERAL CIRCUIT CONDUCTOR AND CONDUIT IDENTIFICATION

POWER CIRCUIT CALLOUTS			
[P1]	[1/2"FLEX, 2#12,#12G]	[P24]	[1*C,3#6,3#14,1#10G]
[P2]	[3/4"C,2#12,1#12G]	[P25]	[1*C,3#6,4#14,1#10G]
[P3]	[3/4"C,3#12,1#12G]	[P26]	[1*C,3#6,5#14,1#10G]
[P4]	[3/4"C,4#12,1#12G]	[P27]	[1*C,2#6, 1#10G]
[P5]	[3/4"C,5#12,1#12G]	[P28]	[1*C,3#6, 1#8G]
[P6]	[3/4"C,6#12,1#12G]	[P29]	[1*C,3#6, 2#14,1#8G]
[P7]	[3/4"C,7#12,1#12G]	[P30]	[1 1/4"C,3#6, 3#14,1#8G]
[P8]	[3/4"C,8#12,1#12G]	[P31]	[1 1/4"C,3#6, 4#14,1#8G]
[P9]	[3/4"C,3#12,2#14,1#12G]	[P32]	[1 1/4"C,3#6, 5#14,1#8G]
[P10]	[3/4"C,3#12,3#14,1#12G]	[P33]	[1 1/4"C,3#4, 1#8G]
[P11]	[3/4"C,3#12,4#14,1#12G]	[P34]	[1 1/4"C,3#4,3#14,1#8G]
[P12]	[3/4"C,3#12,5#14,1#12G]	[P35]	[1 1/4"C,3#4,5#14,1#8G]
[P13]	[3/4"C,3#12,6#14,1#12G]	[P36]	[1 1/4"C,3#3, 1#6G]
[P14]	[1"C,3#12,7#14,1#12G]	[P37]	[1 1/4"C,3#3, 3#14,1#6G]
[P15]	[3/4"C,2#10,1#10G]	[P38]	[1 1/4"C,3#2, 1#6G]
[P16]	[3/4"C,3#10,1#10G]	[P39]	[1 1/2"C,3#1, 1#6G]
[P17]	[3/4"C,3#10,2#14,1#10G]	[P40]	[2"C,3#1, 3#14,1#6G]
[P18]	[3/4"C,3#10,3#14,1#10G]	[P41]	[2"C,3#2/0, 1#4G]
[P19]	[3/4"C,3#10,4#14,1#10G]	[P42]	[2"C,3#3/0, 1#4G]
[P20]	[1"C,3#10,5#14,1#10G]	[P43]	[2"C,3#4/0, 1#3G]
[P21]	[1"C,2#6,1#10G]		
[P22]	[1"C,3#8,1#10G]		
[P23]	[1"C,3#6,2#14,1#10G]		

MULTICONDUCTOR POWER CABLE CIRCUIT CALLOUTS	
[PC1]	[3/4"C,1 (3C#12,1#12G) TYPE 2]
[PC2]	[3/4"C,1 (3C#10,1#10G) TYPE 2]
[PC3]	[3/4"C,1 (3C#6,1#10G) TYPE 2]
[PC4]	[3/4"C,2 (3C#12,1#12G) TYPE 2]
[PC5]	[1"C,2 (3C#10,1#10G) TYPE 2]
[PC1A]	[3/4"C,1 (2C#12,1#12G) TYPE 2]
[PC2A]	[3/4"C,1 (2C#10,1#10G) TYPE 2]

EMPTY CONDUIT	
[EC-1]	[3/4"C,WITH PULL STRING]
[EC-2]	[1"C,WITH PULL STRING]
[EC-3]	[1 1/4"C,WITH PULL STRING]
[EC-4]	[1 1/2"C,WITH PULL STRING]
[EC-5]	[2"C,WITH PULL STRING]
[EC-6]	[3"C,WITH PULL STRING]
[EC-7]	[4"C,WITH PULL STRING]
[EC-8]	[5"C,WITH PULL STRING]

ANALOG CIRCUIT CALLOUTS	
[A1]	[3/4"C,1 TYPE 3]
[A2]	[3/4"C,2 TYPE 3]
[A3]	[1"C,3 TYPE 3]
[A4]	[1 1/4"C,4 TYPE 3]
[A5]	[1 1/4"C,5 TYPE 3]
[A6]	[1 1/4"C,6 TYPE 3]
[A7]	[1 1/2"C,7 TYPE 3]
[A8]	[1 1/2"C,8 TYPE 3]
[A9]	[1 1/2"C,9 TYPE 3]
[A10]	[2"C,10 TYPE 3]
[A11]	[2"C,11 TYPE 3]
[A12]	[2"C,12 TYPE 3]
[A13]	[2"C,13 TYPE 3]
[A14]	[2"C,14 TYPE 3]
[A15]	[3/4"C,1 TYPE 4]
[A16]	[3/4"C,2 TYPE 4]
[A17]	[1"C,3 TYPE 4]
[A18]	[1 1/4"C,4 TYPE 4]
[A19]	[1 1/4"C,5 TYPE 4]
[A20]	[1 1/4"C,6 TYPE 4]
[A21]	[1 1/2"C,7 TYPE 4]
[A22]	[1 1/2"C,8 TYPE 4]
[A23]	[2"C,9 TYPE 4]
[A24]	[3/4"C,1-4 pr. TYPE 5]
[A25]	[1"C,2-4 pr. TYPE 5]

CONTROL CIRCUIT CALLOUTS	
[C1]	[3/4"C,MSC]
[C2]	[3/4"C,2#14,1#14G]
[C3]	[3/4"C,3#14,1#14G]
[C4]	[3/4"C,4#14,1#14G]
[C5]	[3/4"C,5#14,1#14G]
[C6]	[3/4"C,6#14,1#14G]
[C7]	[3/4"C,7#14,1#14G]
[C8]	[3/4"C,8#14,1#14G]
[C9]	[3/4"C,9#14,1#14G]
[C10]	[3/4"C,10#14,1#14G]
[C11]	[3/4"C,11#14,1#14G]
[C12]	[3/4"C,12#14,1#14G]
[C13]	[3/4"C,13#14,1#14G]
[C14]	[1"C,14#14,1#14G]
[C15]	[1"C,15#14,1#14G]
[C16]	[1"C,16#14,1#14G]
[C17]	[1"C,17#14,1#14G]
[C18]	[1"C,18#14,1#14G]
[C19]	[1"C,19#14,1#14G]
[C20]	[1"C,20#14,1#14G]
[C21]	[1"C,21#14,1#14G]
[C22]	[1"C,22#14,1#14G]
[C23]	[1"C,23#14,1#14G]
[C24]	[1 1/4"C,24#14,1#14G]
[C25]	[1 1/4"C,25#14,1#14G]

MULTICONDUCTOR CONTROL CABLE CIRCUIT CALLOUTS	
[CC3]	[3/4"C,1-3C TYPE 1]
[CC5]	[3/4"C,1-5C TYPE 1]
[CC7]	[3/4"C,1-7C TYPE 1]
[CC9]	[1"C,1-9C TYPE 1]
[CC12]	[1"C,1-12C TYPE 1]
[CC19]	[1 1/2"C, 1-19C TYPE 1]
[CC25]	[1 1/2"C,1-25C TYPE 1]
[CC37]	[2"C,1-37C TYPE 1]
[CCC1]	[1-7C #12 TYPE 1]

NOTES:

1. FOR CABLE TYPES, SEE SPECIFICATIONS.
2. POWER CIRCUIT CALLOUTS ARE BASED ON THE AREA OF THW CONDUCTORS. CONTROL CIRCUIT CALLOUTS ARE BASED ON THE AREAS OF SCHEDULE 40 PVC CONDUIT AND TYPES XHHW & XHHW-2 INSULATION.
3. SIZING OF CONDUCTORS #1AWG AND SMALLER BASED ON AMPACITIES AT 60 DEGREES C, SIZING OF CONDUCTORS #1/0AWG AND LARGER BASED ON AMPACITIES AT 75 DEGREES C.
4. WHERE CIRCUITS ARE UNDERGROUND, DIRECT BURIED OR CONCRETE ENCASED, MINIMUM CONDUIT SIZE SHALL BE 1".
5. FOR METRIC CONDUIT SIZES USE THE FOLLOWING CONVERSION:

1/2" = 16 mm	1 1/4" = 35 mm
3/4" = 21 mm	1 1/2" = 41 mm
1" = 27 mm	2" = 53 mm

NO.	DATE	BY	APVD

REVISION

DSGN J.JAMES DR A.CUGLAR CHK J.LANDMAN APVD S.CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION IMPROVEMENTS
NAPILI-HONOKOWAI, MAUI, HAWAII

GENERAL

ELECTRICAL LEGEND (3 OF 3)

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	001-G-0018
SHEET	of

100% DESIGN SUBMITTAL

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PIPING SCHEDULE

SERVICE	LEGEND	SIZE(S) (INCHES) (NOTE 1)	EXPOSURE (NOTE 2)	PIPING MATERIAL (NOTE 3)	SPECIFICATION SECTION	JOINT TYPE (NOTE 4)	LINING (NOTE 5)	COATING (NOTE 6)	FLANGE TYPE & RATING	BOLTING	GASKET	TEST PRESSURE AND TYPE (PSIG) (H = HYDROSTATIC, G = GRAVITY, P = PNEUMATIC) (NOTE 7)	PAINT COLORS	REMARKS
RAW SEWAGE	RS	3-INCH & SMALLER	OUT EXP	316 SST, SCH 40S	40 27 00.08	S, FLG	NONE	NA	ANSI B16.5, CLASS 150	ASTM A320/A320M, GRADE S8M HEX HEAD BOLTS WITH ASTM A 194/A194M GRADE 8M HEX HEAD NUT. ASTM F436 TYPE 3 ALLOY WASHER	1/8-INCH HOMOGENEOUS BLACK RUBBER (EPDM)	80 PSIG, H	BROWN W/ WHITE LETTERING	
		ALL	BUR	DI	40 27 00.01	PRJ	EPOXY	SYSTEM 8	NA	MANUFACTURER STANDARD	MANUFACTURER STANDARD		NA	
		4-INCH & LARGER	SUB			FLG		SYSTEM 2	ANSI B16.1, CLASS 125	ASTM A320/A320M, GRADE S8M HEX HEAD BOLTS WITH ASTM A 194/A194M GRADE 8M HEX HEAD NUT. ASTM F436 TYPE 3 ALLOY WASHER	1/8-INCH HOMOGENEOUS BLACK RUBBER (EPDM)		BROWN W/ WHITE LETTERING	
			OUT EXP					SYSTEM 4						
VENT	V	ALL	OUT EXP	DI	40 27 00.08	FLG, W	EPOXY	SYSTEM 4	ANSI B16.1, CLASS 150	ASTM A320/A320M, GRADE S8M HEX HEAD BOLTS WITH ASTM A 194/A194M GRADE 8M HEX HEAD NUT. ASTM F436 TYPE 3 ALLOY WASHER	1/8-INCH HOMOGENEOUS BLACK RUBBER (EPDM)	G	BROWN W/ WHITE LETTERING	

NOTES:
1. ">" GREATER THAN
"<" LESS THAN
"<=" LESS THAN OR EQUAL TO
">=" GREATER THAN OR EQUAL TO
"ALL" ALL SIZES

2. EXPOSURE TYPE:
ALL - ALL
SUB -SUBMERGED
OUT EXP - OUTDOOR EXPOSED
BUR- BURIED

3. PIPING MATERIAL:
DI - DUCTILE IRON
SST - STAINLESS STEEL

4. JOINT TYPE:
FLG - FLANGED
S - SCREWED
MJ - MECHANICAL JOINT
PRJ - PROPRIETARY RESTRAINED JOINT
W - BUTT/SOCKET WELD

5. LINING TYPE:
EPOXY - CERAMIC EPOXY

6. COATING SYSTEM NUMBER AS SPECIFIED IN 09 90 00 PAINTING AND COATING

7. REFER TO SPECIFICATION SECTION 40 80 01 PROCESS PIPING LEAKAGE TESTING FOR PROCESS PIPING

8. REFER TO IDENTIFICATION REQUIREMENTS SPECIFIED IN 40 27 00, PROCESS PIPING AND SECTION 09 90 00, PAINTING AND COATING.

NO.	DATE	REVISION	BY	APV'D
DSGN	P. MURPHY	DR	B. KASPAR	S. POLSON
		CHK	S. CHAMPLIN	

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GENERAL
PIPE SCHEDULE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII
NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

100% DESIGN SUBMITTAL

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	001-G-0013
SHEET	of

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AREA CLASSIFICATION TABLE

FACILITY NUMBER	FACILITY NAME	ROOM / AREA	NFPA 820 CLASSIFICATION	EXTENT OF CLASSIFIED AREA	NFPA 820 REFERENCE	NFPA 820 REQUIRED VENTILATION	VENTILATION PROVIDED	NFPA 820 FIRE PROTECTION MEASURES	NOTES
050	SITE	OUTDOOR AREAS UNLESS DESIGNATED OTHERWISE	UNCLASSIFIED	N/A	N/A	N/A	NR	NR	
		INSIDE PROCESS VAULTS CONTAINING WASTEWATER	CLASS 1 DIV 1	ENTIRE ENCLOSED AREA	T4 2.2 ROW 15a	NNV	NR	NR	
		INSIDE ELECTRICAL VAULTS AND HANDHOLES	UNCLASSIFIED	N/A	N/A	N/A	NR	NR	
090	EXISTING PUMP STATION	BELOW GRADE PUMP VAULT	UNCLASSIFIED	ENTIRE ENCLOSED AREA	T4 2.2 ROW 15a	6 ACH	6 ACH	N/A	NOTE 5
	EXISTING WET WELL	WET WELL	CLASS 1 DIV 1	ENTIRE ENCLOSED AREA	T4 2.2 ROW 14a	<12 ACH	NR	NR	
100	PUMP STATION	WET WELL	CLASS 1 DIV 1	ENTIRE ENCLOSED AREA	T4 2.2 ROW 14a	<12 ACH	NR	NR	
		ABOVE GRADE	CLASS 1 DIV 1	AREA WITHIN 3 FEET OF VENTS	T4 2.2 ROW 14a	<12 ACH	NR	NR	
			CLASS 1 DIV 2	AREA BETWEEN 3 FEET AND 5 FEET OF VENTS	T4 2.2 ROW 14a	<12 ACH	NR	NR	
			CLASS 1 DIV 2	AREA WITHIN 3 FEET HORIZONTAL AND 1.5 FEET VERTICAL OF HATCHES	T4 2.2 ROW 14a	<12 ACH	NR	NR	
200	ELECTRICAL BUILDING	ELECTRICAL ROOM	UNCLASSIFIED	N/A	N/A	N/A	NR	NR	
		BUILDING EXTERIOR	UNCLASSIFIED	N/A	N/A	N/A	NR	NR	
300	STANDBY GENERATOR	WEATHER PROTECTIVE ENCLOSURE	UNCLASSIFIED	N/A	N/A	N/A	NR	NR	

NOTES:
1. AREA CLASSIFICATION IS BASED ON NFPA 820-2020.
2. SEE MATERIAL SELECTION TABLE FOR TYPICAL MATERIALS OF CONSTRUCTION REQUIRED IN EACH AREA.
3. ELECTRICAL INSTALLATION WITHIN CLASS 1 DIV 1 OR CLASS 1 DIV 2 AREAS SHALL BE IN ACCORDANCE WITH NFPA 70 (NEC) ARTICLES 500 AND 501.
4. EQUIPMENT LOCATED OUTDOORS IS CONSIDERED TO HAVE NATURAL AIRFLOW MEETING MINIMUM AIR CHANGES IDENTIFIED.
5. EXISTING BELOW GRADE PUMP VAULT TO BE DEMOLISHED. PROVIDE MINIMUM AIRFLOW TO ENSURE UNCLASSIFIED SPACE WHEN WORKING WITHIN THE PUMP VAULT.

ABBREVIATIONS
ACH: AIR CHANGES PER HOUR
COD: COMBUSTIBLE GAS DETECTION SYSTEM
FAS: FIRE ALARM SYSTEM
FDS: FIRE DETECTION SYSTEM
FE: PORTABLE FIRE EXTINGUISHER
FSS: FIRE SUPPRESSION SYSTEM
H: HYDRANT PROTECTION
N/A: NOT APPLICABLE
NEC: IN ACCORDANCE WITH NFPA 70
NNV: NOT NORMALLY VENTILATED
NR: NO REQUIREMENT

MATERIAL SELECTION TABLE

FACILITY NUMBER	FACILITY NAME	ROOM / AREA	INSTRUMENTATION & CONTROLS		ELECTRICAL				STRUCTURAL					ALL TRADES				REMARKS
			NEMA 250 ENCLOSURE TYPE (NOTE 3)	CONTROL PANELS (NOTE 3)	NEMA 250 ENCLOSURE TYPE (NOTE 3)	ELECTRICAL CONDUIT (NOTE 10)	ELECTRICAL BOXES & FITTINGS (NOTE 3)	SUPPORTS FOR ELECTRICAL CONDUITS & CABLE TRAYS	STRINGERS, STAIR LANDINGS, PLATFORMS, AND EQUIPMENT SUPPORTS	STAIR TREADS AND LANDING PLATFORMS GRATING	HANDRAILS	HATCHES	CHECKER PLATE COVERS	PIPE SUPPORTS (NOTE 8)	NON-STRUCTURAL FRAMING CHANNEL (STRUT) NOTE 7	HARDWARE (THREADED ROD, NUTS, BOLTS, FASTENERS, ETC.) NOTE 11	CONCRETE ANCHORAGE	
050	SITE	OUTDOOR AREAS UNLESS DESIGNATED OTHERWISE	4X 316 SST	316 SST	4X 316 SST	RTRC PVC COATED RGS	FRP PVC COATED RGS	316 SST	ALUMINUM	ALUMINUM	ANODIZED AL	ALUMINUM	ALUMINUM	316 SST	316 SST	316 SST	316 SST	NOTE 4
		INSIDE PROCESS VAULTS CONTAINING WASTEWATER	7	N/A	7	PVC COATED RGS	PVC-COATED	316 SST	ALUMINUM	ALUMINUM	ANODIZED AL	ALUMINUM	ALUMINUM	N/A	316 SST	316 SST	316 SST	
		INSIDE ELECTRICAL VAULTS AND HANDHOLES	4X 316 SST	316 SST	4X 316 SST	RTRC PVC COATED RGS	FRP PVC COATED RGS	316 SST	N/A	N/A	N/A	ALUMINUM	ALUMINUM	N/A	316 SST	316 SST	316 SST	
090	EXISTING PUMP STATION	BELOW GRADE PUMP VAULT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NOTE 12
	EXISTING WET WELL	WET WELL	N/A	N/A	7	PVC COATED RGS	PVC-COATED	316 SST	N/A	N/A	N/A	ALUMINUM	ALUMINUM	316 SST	316 SST	316 SST	316 SST	
		WET WELL	N/A	N/A	7	PVC COATED RGS	PVC-COATED	316 SST	N/A	N/A	N/A	ALUMINUM	ALUMINUM	316 SST	316 SST	316 SST	316 SST	
100	PUMP STATION	ABOVE GRADE CLASS 1 DIV 1 AREAS	7	N/A	7	PVC COATED RGS	PVC-COATED	316 SST	ALUMINUM	ALUMINUM	ANODIZED AL	ALUMINUM	ALUMINUM	316 SST	316 SST	316 SST	316 SST	NOTE 4
		ABOVE GRADE CLASS 1 DIV 2 AREAS	7	N/A	7	PVC COATED RGS	PVC-COATED	316 SST	ALUMINUM	ALUMINUM	ANODIZED AL	ALUMINUM	ALUMINUM	316 SST	316 SST	316 SST	316 SST	NOTE 4
200	ELECTRICAL BUILDING	ELECTRICAL ROOM	12	PAINTED STEEL	12	RGS	CAST METAL	316 SST	ALUMINUM	ALUMINUM	ANODIZED AL	ALUMINUM	ALUMINUM	N/A	316 SST	316 SST	316 SST	
		BUILDING EXTERIOR	4X 316 SST	316 SST	4X 316 SST	RTRC PVC COATED RGS	FRP PVC COATED RGS	316 SST	ALUMINUM	ALUMINUM	ANODIZED AL	ALUMINUM	ALUMINUM	N/A	316 SST	316 SST	316 SST	NOTE 4
300	STANDBY GENERATOR	WEATHER PROTECTIVE ENCLOSURE	BY MFG	BY MFG	BY MFG	RTRC PVC COATED RGS	FRP PVC COATED RGS	316 SST	ALUMINUM	ALUMINUM	ANODIZED AL	ALUMINUM	ALUMINUM	N/A	316 SST	316 SST	316 SST	NOTES 4, 13

NOTES:
GENERAL: SITE ELEVATION 8 FEET ABOVE SEA LEVEL. AMBIENT TEMPERATURE RANGE BETWEEN 58 TO 93 DEGREES F.
1. MATERIALS SHOWN ARE TYPICAL UNLESS OTHERWISE INDICATED ON SPECIFIC DRAWINGS OR SPECIFICATIONS.
2. SUBMERGED INCLUDES AREA BELOW LIQUID SURFACE, BELOW TOP OF BASIN, AND UNDERSIDE OF TANK COVER OR TANK SLAB (INCLUDES WET VAPOR SPACE ABOVE LIQUID SURFACE).
3. MATERIAL DESIGNATION FOR CONTROL AND ELECTRICAL ENCLOSURES SHALL COMPLY WITH SPECIFICATIONS 260502 AND 260533, AND AS PERMITTED BY NFPA 70, ARTICLES 500 AND 501 FOR HAZARDOUS LOCATIONS.
4. OUTDOOR AREAS ARE CONSIDERED 'CORROSIVE' DUE TO LOCAL CONDITIONS. MATERIAL ARE SELECTED BASED ANTICIPATED LOCAL ATMOSPHERIC CONDITIONS
5. GALV STL SHALL BE GALVANIZED PER ASTM A123. HIGH STRENGTH FASTENERS THAT REQUIRE GALVANIZING SHALL BE ASTM A325 BOLTS AND SHALL COMPLY WITH ASTM A143.
6. MALLEABLE IRON SHALL HAVE HOT DIPPED GALVANIZED FINISH.
7. FRAMING MATERIAL IDENTIFIED DOES NOT APPLY TO STRUCTURAL SUPPORTS SUCH AS PIPE RACKS, METAL BUILDINGS, STAIR STRINGERS, CANOPY SUPPORTS AND PLATFORMS
8. COATING SYSTEM NO. 4 SHALL BE USED FOR 'COATED CARBON STEEL.' COATING SYSTEM NO. 5 SHALL BE USED FOR 'COATED GALV STEEL'.
9. REFERENCE SPECIFICATIONS DIVISION 09 FOR ARCHITECTURAL FINISHES.
10. PAINT EXPOSED CONDUIT TO MATCH BACKGROUND SURFACE. SEE SPECIFICATIONS DIVISION 09 AND DIVISION 26.
11. PROVIDE XYLAN 1014 COATED NUTS AND BOLTS.
12. EXISTING BELOW GRADE PUMP STATION TO BE DEMOLISHED.
13. ENCLOSURES, BOXES, AND CONDUITS PROVIDED BY GENERATOR MANUFACTURER ARE EXEMPT FROM MATERIAL SELECTION TABLE. REFER TO SPECIFICATION 263213.13.

ABBREVIATIONS
ACH: AIR CHANGES PER HOUR
COD: COMBUSTIBLE GAS DETECTION SYSTEM
FAS: FIRE ALARM SYSTEM
FDS: FIRE DETECTION SYSTEM
FE: PORTABLE FIRE EXTINGUISHER
FSS: FIRE SUPPRESSION SYSTEM
H: HYDRANT PROTECTION
N/A: NOT APPLICABLE
NEC: IN ACCORDANCE WITH NFPA 70
NNV: NOT NORMALLY VENTILATED
NR: NO REQUIREMENT

DEFINITIONS:
CST – CARBON STEEL
EMT – ELECTRICAL METALLIC TUBING
FRP – FIBERGLASS REINFORCED PLASTIC
GALV – GALVANIZED
PVC – POLYVINYL CHLORINE CONDUIT
RAC – RIGID ALUMINUM CONDUIT
RGS – RIGID GALVANIZED STEEL CONDUIT
RTRC – REINFORCED THERMOSETTING RESIN CONDUIT
SST – STAINLESS STEEL
STL – STEEL

NO.	DATE	DSGN	DR	CHK	APVD	BY	APVD

REVISION

J. JAMES | A. CUSLAY | J. LANDMAN | S. CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

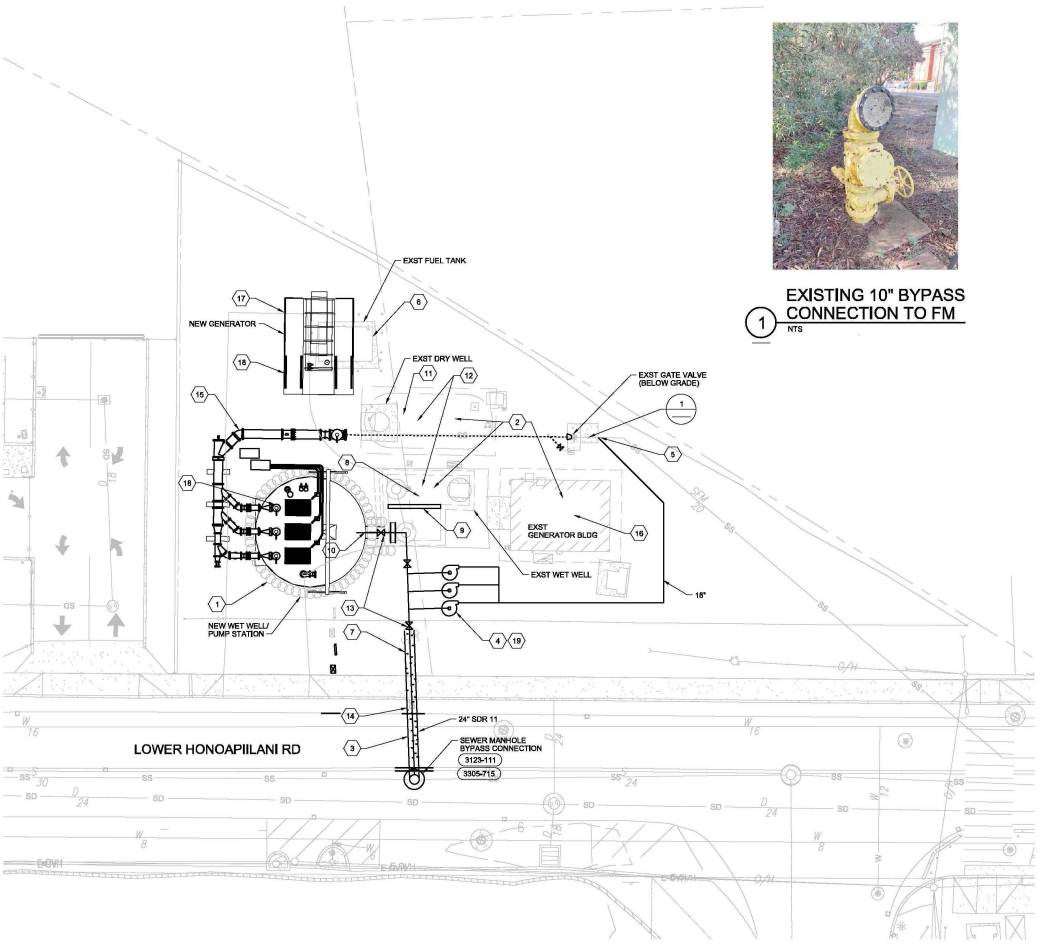
NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

GENERAL
AREA CLASSIFICATION AND MATERIAL SELECTION

100% DESIGN SUBMITTAL

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	001-G-A0201
SHEET	of



1 EXISTING 10" BYPASS CONNECTION TO FM
NTS

PHASE 1

1. INSTALL SHORING, DEWATERING, CONSTRUCT NEW WET WELL
2. MAINTAIN OPERATION OF EXISTING WET WELL, PUMPS AND ELECTRICAL

PHASE 2

3. CONNECT BYPASS PIPING TO EXISTING MANHOLE IN LOWER HONOAPIILANI ROAD PROVIDE TRAFFIC CONTROL AS REQUIRED FOR INSTALLATION
4. INSTALL BYPASS PIPING AND BYPASS PUMPS
5. INSTALL BYPASS PUMP DISCHARGE AND CONNECT TO FORCEMAIN
6. DEMOLISH EXISTING FUEL TANK

PHASE 3

7. BYPASS PUMP ALL FLOW FROM MANHOLE IN LOWER HONOAPIILANI ROAD TO FORCEMAIN BYPASS. ISOLATE EXISTING WET WELL AND PUMP STATION
8. DEWATER AND CLEAN EXISTING WET WELL
9. INSTALL CONCRETE WALL
10. INSTALL PIPING TO NEW WET WELL
11. DEMOLISH AND REMOVE EQUIPMENT IN DRY WELL TO EXTENT SHOWN ON DRAWINGS
12. FLOW FILL WET WELL AND DRY PIT WITH CLSM AS SHOWN ON DRAWINGS

PHASE 4

13. ISOLATE MANHOLE IN LOWER HONOAPIILANI ROAD. INSTALL INFLATABLE PLUG TO NEW WET WELL INLET PIPING TO PREVENT WASTEWATER FROM ENTERING NEW WETWELL BYPASS PUMP FROM EXISTING WET WELL
14. REMOVE CONNECTION PIPING FROM MANHOLE REPAIR MANHOLE AND ASPHALT PAVING. PROVICE TRAFFIC CONTROL AS REQUIRED.
15. INSTALL NEW MECHANICAL EQUIPMENT AND NEW PIPING. CONNECT NEW PIPING TO EXISTING FORCEMAIN.
16. DEMOLISH ELECTRICAL AS SHOWN ON DRAWINGS. INSTALL NEW ELECTRICAL
17. INSTALL NEW GENERATOR

PHASE 5

18. COMMISSION NEW PUMPS, GENERATOR AND ALL OTHER SYSTEMS.
19. REMOVE BYPASS PUMPING, PIPING AND EQUIPMENT

NOTES:

1. PROTECT EXISTING 16" WATER MAIN LOCATED ALONG LOWER HONOAPIILANI ROAD AND 3/4" WATERLINE LOCATED WITHIN THE WWPS SITE IN PLACE WHEN ROUTING TEMPORARY PIPING TO EXISTING SEWER MANHOLE #I-20. SHOULD WATER UTILITY REQUIRE INTERRUPTION TEMPORARY SERVICE INFRASTRUCTURE AND/OR RELOCATION, THE CONTRACTOR IS TO CONSULT WITH THE OWNER.

FOR APPROVAL PRIOR TO EXCAVATION, REMOVAL OR CONSTRUCTION.

0 10 20 30
Scale In Feet

NO.	DATE	REVISION	BY	APVD

DSGN A MANTEGAZZA | DR M MONAHAN | CHK P MURPHY | APVD S CHAMPLIN

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GENERAL
CONSTRUCTION SEQUENCE/ PHASING PLAN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

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VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MARCH 2023
PROJ	D3560100
DWG	001-G-0021
SHEET	of

50% DESIGN SUBMITTAL

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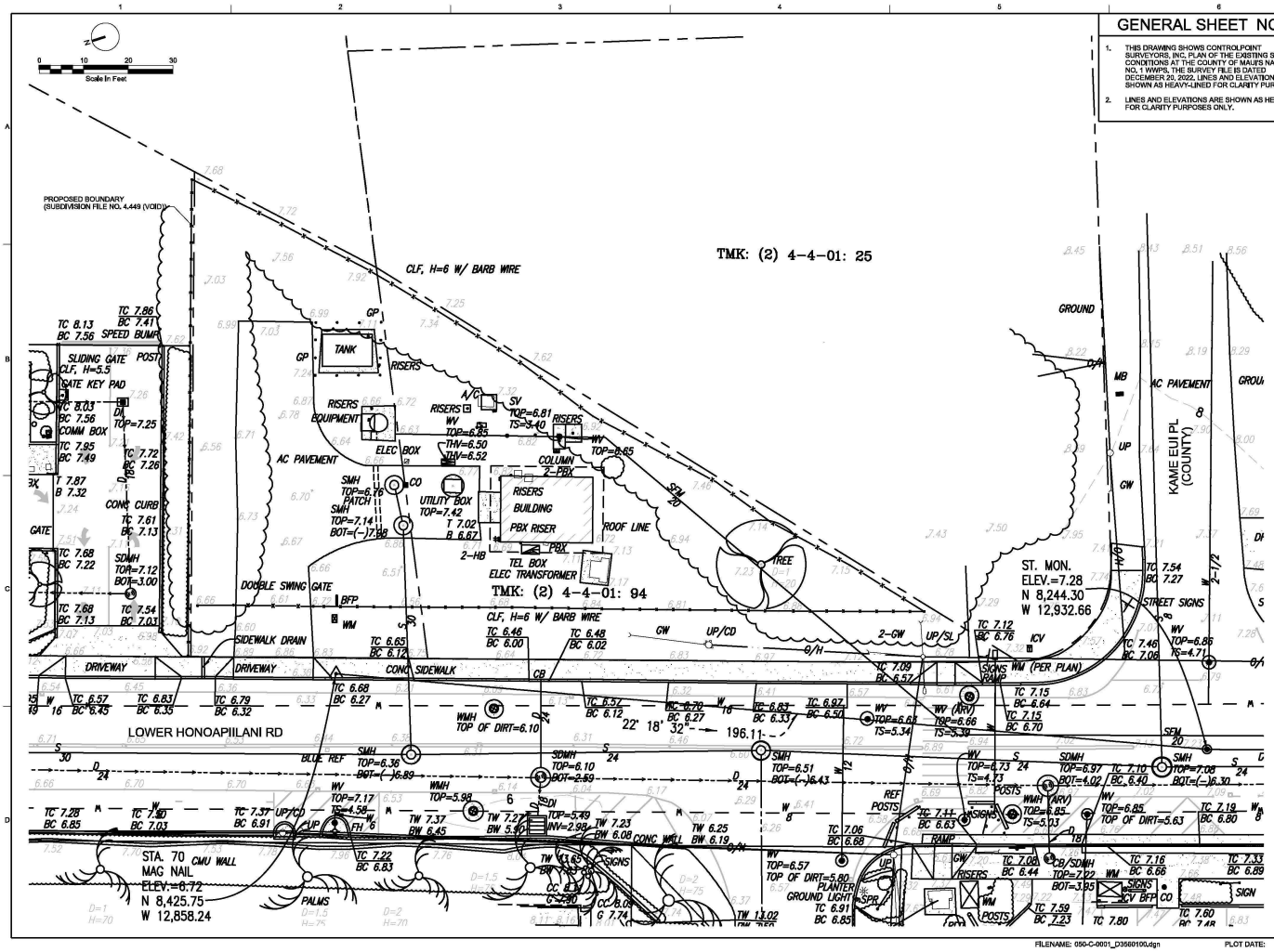

GENERAL SHEET NOTES

1. THIS DRAWING SHOWS CONTROLPOINT SURVEYORS, INC. PLAN OF THE EXISTING SITE CONDITIONS AT THE COUNTY OF MAUIS NAPILI NO. 1 WWPS. THE SURVEY FILE IS DATED DECEMBER 20, 2022. LINES AND ELEVATIONS ARE SHOWN AS HEAVY-LINED FOR CLARITY PURPOSES ONLY.
2. LINES AND ELEVATIONS ARE SHOWN AS HEAVY-LINED FOR CLARITY PURPOSES ONLY.

NO.	DATE	DR	REVISION	APV'D	BY	APV'D
DSGN	A MANTEGAZZA	M MONAHAN	M BALDVIN		S CHAMPLIN	

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

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CIVIL

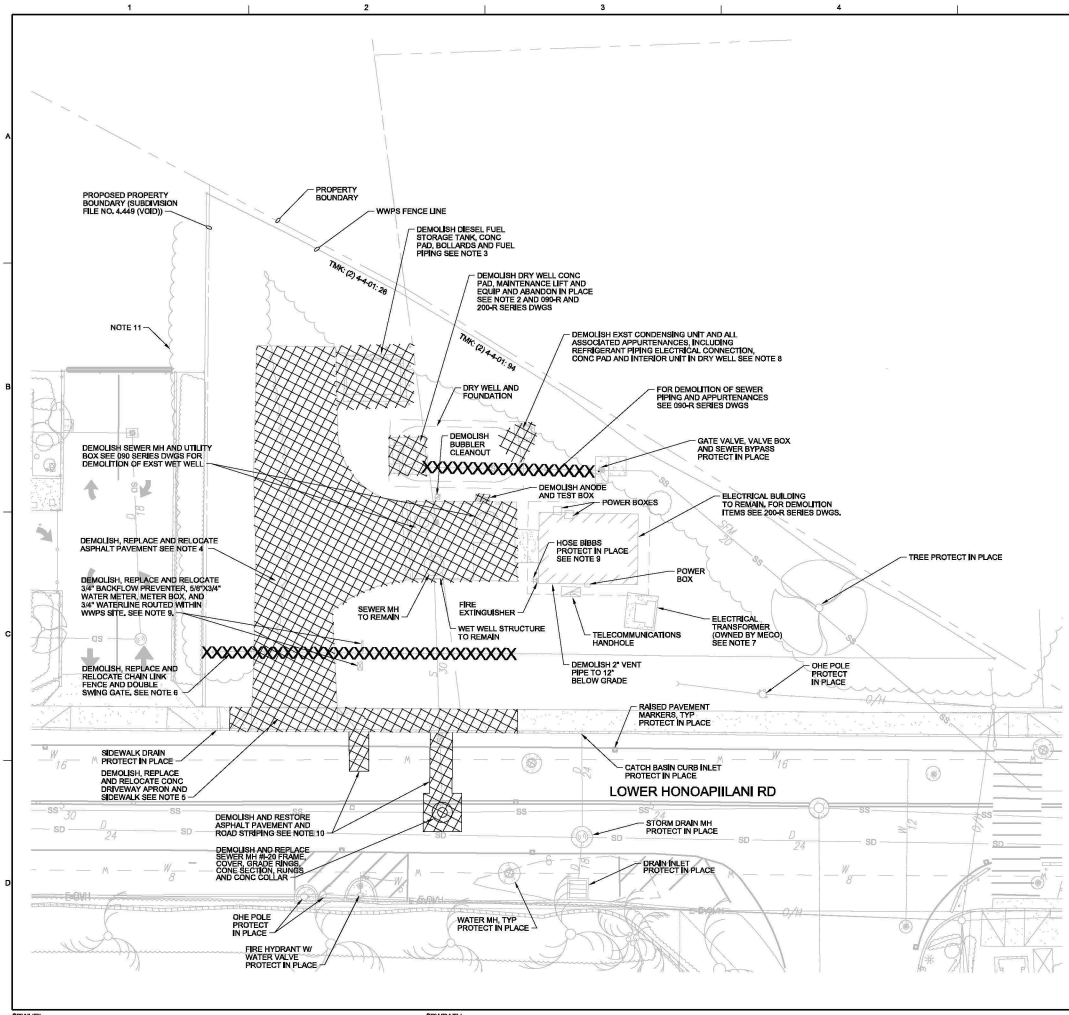
EXISTING SITE SURVEY

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING.
0 1

DATE	DECEMBER 2023
PROJ	D3560100
DWG	050-C-0001
SHEET	of

100% DESIGN SUBMITTAL

FILENAME: 050-C-0001_D3560100.dgn PLOT DATE: PLOT TIME:



GENERAL SHEET NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION, MATERIAL, SIZE AND ROUTING OF PIPING, CONDUITS AND STRUCTURES PRIOR TO REMOVAL OR INSTALLATION. THE CONTRACTOR SHALL NOTIFY THE COUNTY OF MAUI OF DISCREPANCY WITH DRAWINGS AND SUBMIT ANY DETAILS AND ROUTING FOR APPROVAL PRIOR TO REMOVAL OR CONSTRUCTION.
2. REMOVE AND CUT THE MAINTENANCE LIFT A MINIMUM OF 7.5 FEET BELOW EXISTING GRADE INCLUDING THE ABOVE GROUND CONCRETE PAD FOR DISPOSAL. PUMP OUT AND DISINFECT THE DRY WELL. DRILL MINIMUM 1-INCH DIA HOLES AT CROWN OF DRY WELL AT 4-FEET ON CENTER. PLUG SUCTION AND DISCHARGE PIPES WITH 3 X 14" AND 1 X 16" CONCRETE PLUG A MINIMUM 2 X PIPE O.D. IN LENGTH TO SEAL AND DISABLE ALL DRY WELL INLET AND OUTLET OPENINGS. FILL DRY WELL AND MAINTENANCE LIFT WITH CONTROLLED LOW-STRENGTH MATERIAL (CLSM) TO THE TOP OF THE MAINTENANCE LIFT SIDE WALLS AND BACKFILL EXCAVATION TO MATCH EXISTING OR FINAL GRADE AS APPLICABLE.
3. REMOVE 2 X BELOW-GROUND FUEL PIPES RUNNING FROM THE SOUTHEAST CORNER OF THE FUEL TANK TO THE NORTHWEST CORNER OF THE ELECTRICAL BUILDING. BACKFILL CONCRETE PAD, BOLLARD AND PIPE EXCAVATIONS TO MATCH EXISTING GRADE.
4. PROVIDE SAWCUT CLEAN EDGE ALONG EXISTING SIDEWALK FACES AND BACKFILL EXCAVATION TO MATCH EXISTING OR FINAL GRADE AS APPLICABLE.
5. PROVIDE SAWCUT CLEAN EDGE ALONG EXISTING SIDEWALK AND LOWER HONOAPIILANI ROAD FACES.
6. DEMOLISH TO NEAREST FENCE POST AND BACKFILL FENCE POST EXCAVATIONS TO MATCH EXISTING OR FINAL GRADE AS APPLICABLE.
7. THE CONTRACTOR SHALL COORDINATE WITH MECO FOR THE REPLACEMENT/UPGRADE OF THE ELECTRICAL TRANSFORMER.
8. BACKFILL CONCRETE PAD EXCAVATIONS TO MATCH EXISTING OR FINAL GRADE AS APPLICABLE.
9. FIELD VERIFY AND LOCATE 3/4" WATER PIPE ROUTING AND ELEVATION WITHIN THE WWPS SITE AND WATER METER TAP LOCATION AT THE 16" WATER MAIN LOCATED ALONG LOWER HONAPIILAN ROAD. CONFIRM AND VERIFY WATER METER SIZE OF 5/8" X 3/4" WITH THE COUNTY OF MAUI.
10. CONTRACTOR TO PROTECT ALL EXISTING UTILITIES ALONG LOWER HONOAPIILANI ROAD IN PLACE DURING CONSTRUCTION. SHOULD UTILITIES REQUIRE INTERRUPTION, TEMPORARY SERVICE INFRASTRUCTURE AND/OR RELOCATION, THE CONTRACTOR IS TO CONSULT WITH THE OWNER FOR APPROVAL PRIOR TO EXCAVATION, REMOVAL OR CONSTRUCTION.
11. CLEAR, GRUB AND REMOVE TREES, HEDGES AND VEGETATION ALONG THE WWPS SITE NORTH FENCE LINE AS NEEDED TO ACCOMMODATE NEW CONSTRUCTION. NO CLEARING OR GRUBBING IS PERMITTED ALONG THE WWPS SITE EAST FENCE LINE SHARED WITH RESIDENTIAL PRIVATE PROPERTY. TRIM TREES, HEDGES AND VEGETATION ALONG THE WWPS SITE EAST FENCE LINE AS NEEDED TO ACCOMODATE FOR NEW CONSTRUCTION.
12. ALL SLABS ON GRADE REQUIRING DEMOLITION SHALL BE REMOVED TO A DEPTH OF NOT LESS THAN 2-FEET BELOW EXISTING GRADE.

NO.	DATE	DSGN	DR	REVISION	CHK	BY	APV'D
		A MANTEGAZZA	M MONAHAN		M BALDWIN		S CHAMPLIN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
TMK: (2) 4-4-001:094
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

CIVIL
DEMOLITION PLAN

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	050-C-1001
SHEET	of

100% DESIGN SUBMITTAL

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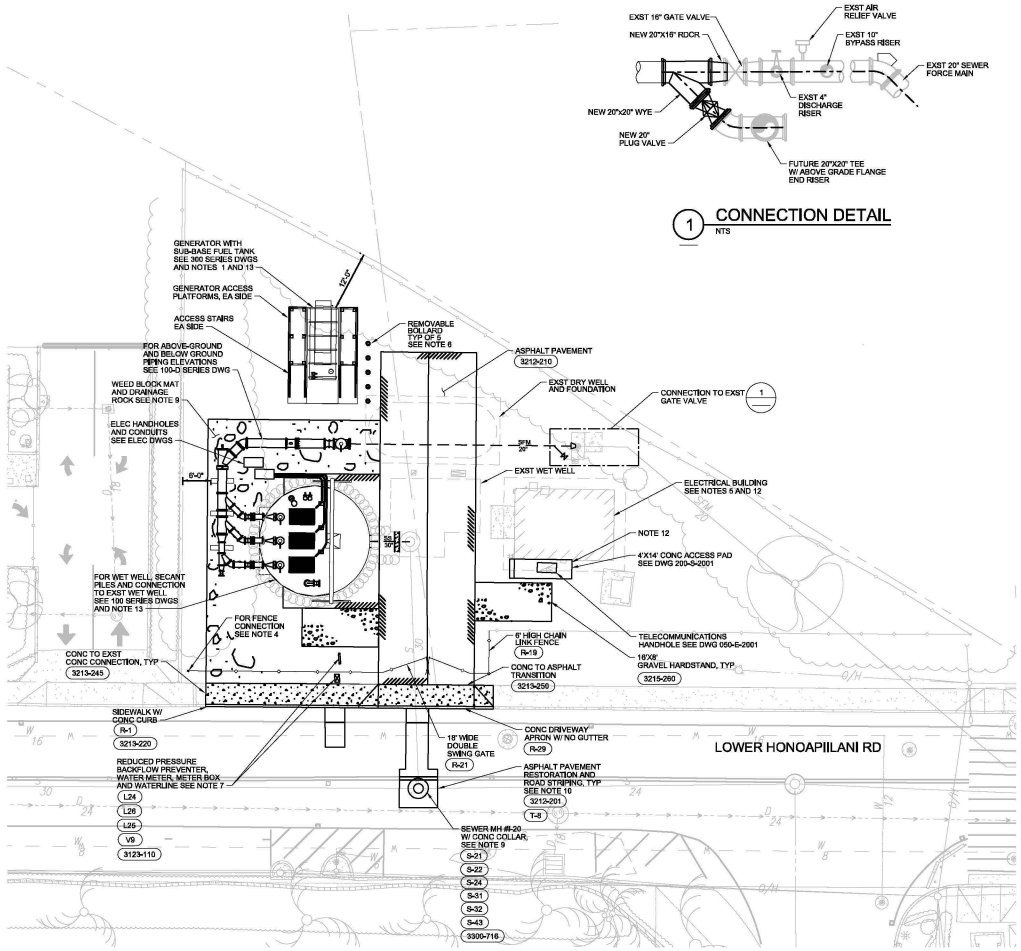
1 CONNECTION DETAIL
NTS



GENERAL SHEET NOTES

1. CLEAR, TRIM AND/OR GRUB HEDGES, TREES AND VEGETATION AS SPECIFIED IN DWG 050-C-1001 NOTE 11 AND SPECIFICATIONS TO PROVIDE A MIN. 10-FT SEPARATION DISTANCE FROM FUEL TANK TO COMBUSTIBLES (WEEDS, BRUSH, OR OTHER).
2. GRADE AND BACKFILL A MIN. 1% AWAY FROM ALL BUILDINGS AND CONCRETE PADS FOR DRAINAGE AND BLEND TO MATCH EXISTING GRADE AS NEEDED.
3. BACKFILL AND BLEND AROUND ASPHALT PAVEMENT AND GRAVEL SURFACING EDGES TO MATCH EXISTING GRADE AS NECESSARY TO MAINTAIN EXISTING DRAINAGE PATTERNS WITH 5% MAXIMUM SLOPE.
4. CONNECT TO EXISTING SITE FENCE CURRENTLY COVERED BY TREES/VEGETATION AND NOT SHOWN ON SURVEY BACKGROUND. CONTRACTOR TO FIELD VERIFY FENCE CONNECTION LOCATION AND PROVIDE FENCE LAYOUT PLAN FOR APPROVAL PRIOR TO REMOVAL OR CONSTRUCTION.
5. SEE 200-A SERIES DRAWINGS FOR PUMP STATION BUILDING DOWNSPOUT AND SPLASH BLOCK LOCATIONS.
6. INSTALL 4" x 36" POST GUARD ENCORE COMMERCIAL PRODUCTS, INC. REMOVABLE STEEL POWDER COATED YELLOW BOLLARD OR APPROVED EQUAL SPACED 3'-0" O.C. PER MANUFACTURER SPECIFICATIONS AND INSTALLATION GUIDELINES.
7. INSTALL SINGLE SERVICE LATERAL WATER SERVICE CONNECTION FOR 5/8" x 3/4" WATER METER TO 16" WATER MAIN LOCATED ALONG LOWER HONAPIILANI ROAD. INSTALL ABOVE-GROUND 3/4" REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY AND REROUTE 3/4" WATERLINE ACROSS THE WWPS SITE AS NEEDED TO AVOID CONFLICTS WITH NEW CONSTRUCTION AND MAINTAIN EXISTING SITE WATER SERVICE AREAS. THE CONTRACTOR SHALL CONSULT WITH THE OWNER AND SUBMIT ROUTING, EQUIPMENT AND APPURTENANCES DETAILS FOR APPROVAL TO THE COUNTY OF MAUI AND THE OWNER PRIOR TO REMOVAL AND CONSTRUCTION. DESIGN AND CONSTRUCTION OF WATER SERVICES MUST COMPLY WITH 2002 WATER SYSTEM STANDARDS, STATE OF HAWAII SPECIFICATIONS AND DETAILS, AND THE LATEST VERSION OF THE COUNTY OF MAUI, DEPARTMENT OF WATER SUPPLY AMMENDMENTS TO THE 2002 WATER SYSTEM STANDARDS, STATE OF HAWAII SPECIFICATIONS AND DETAILS.
8. INSTALL HS-20 TRAFFIC-RATED 2'-0" DIA. PRECAST GRADE RINGS, 4'-0" DIA. PRE-CAST CONCRETE SEWER MANHOLE ECCENTRIC CONE SECTION AND 2'-0" DIA. CAST IRON FRAME AND COVER. INSTALL 4'-0" CONCRETE COLLAR AROUND 2'-0" DIA. COVER AND FRAME TO PROVIDE ADDITIONAL STRENGTH AND REINFORCEMENT TO THE MANHOLE FROM VEHICLE TRAFFIC. FOR MORE DETAILS ON EXISTING MH #I-20, REFER TO COUNTY OF MAUI NAPILI HONOKOWAI SEWERAGE SYSTEM AS-BUILT DRAWINGS SHEET 42 OF 85.
9. INSTALL PROPEX GEOSOLUTIONS GEOTEX 311 POLYPROPYLENE NON-WOVEN GEOTEXTILE FABRIC OR APPROVED EQUAL PER MANUFACTURER SPECIFICATIONS AND INSTALLATION GUIDELINES. PLACE AND SPREAD A MINIMUM 6" LAYER OF 1-1/2"-3/4" HCSD, LLC GRADE A M09211 #4 COURSE AGGREGATE OR APPROVED EQUAL OVER THE TOP OF THE GEOTEXTILE FABRIC TO PREVENT WEED GROWTH AND FACILITATE FILTRATION AND DRAINAGE.
10. PROVIDE AND APPLY ROAD STRIPING MATERIAL PER HAWAII DEPARTMENT OF TRANSPORTATION 2005 STANDARD SPECIFICATIONS SECTION 755 - PAVEMENT MARKING MATERIALS. THE CONTRACTOR IS TO SUBMIT PAVEMENT MARKING MATERIAL FOR APPROVAL TO THE COUNTY OF MAUI PRIOR TO CONSTRUCTION.
11. PROVIDE GRAVEL SURFACING PER DETAIL (3215-260) IN AREAS OF EXCAVATION WHERE NO NEW SURFACING IS SHOWN AND BLEND TO MATCH EXISTING OR FINISHED GRADE AS NEEDED TO MAINTAIN EXISTING DRAINAGE PATTERNS WITH A MAXIMUM SLOPE OF 5%.
12. SEE 200-M SERIES DRAWINGS FOR INSTALLATION INFORMATION REGARDING THE EXTERIOR MOUNT AC UNITS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND AVOIDING EXISTING UNDERGROUND UTILITIES DURING THE JET-GROUTED COLUMN INSTALLATION REQUIRED FOR FOUNDATION SUPPORT AND GROUNDWATER CONTROL AT THE PROPOSED WET WELL AND GENERATOR WITH SUB-BASE FUEL TANK SLAB OR GRADE.

NO.	DATE	DSGN	DR	REVISION	CHK	APVD	BY	APVD
		A MANTEGAZZA	M MONAHAN		M BALDWIN		S CHAMPLIN	

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII
NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

CIVIL
SITE PLAN

100% DESIGN SUBMITTAL

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	050-C-2000
SHEET	of

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Scale In Feet

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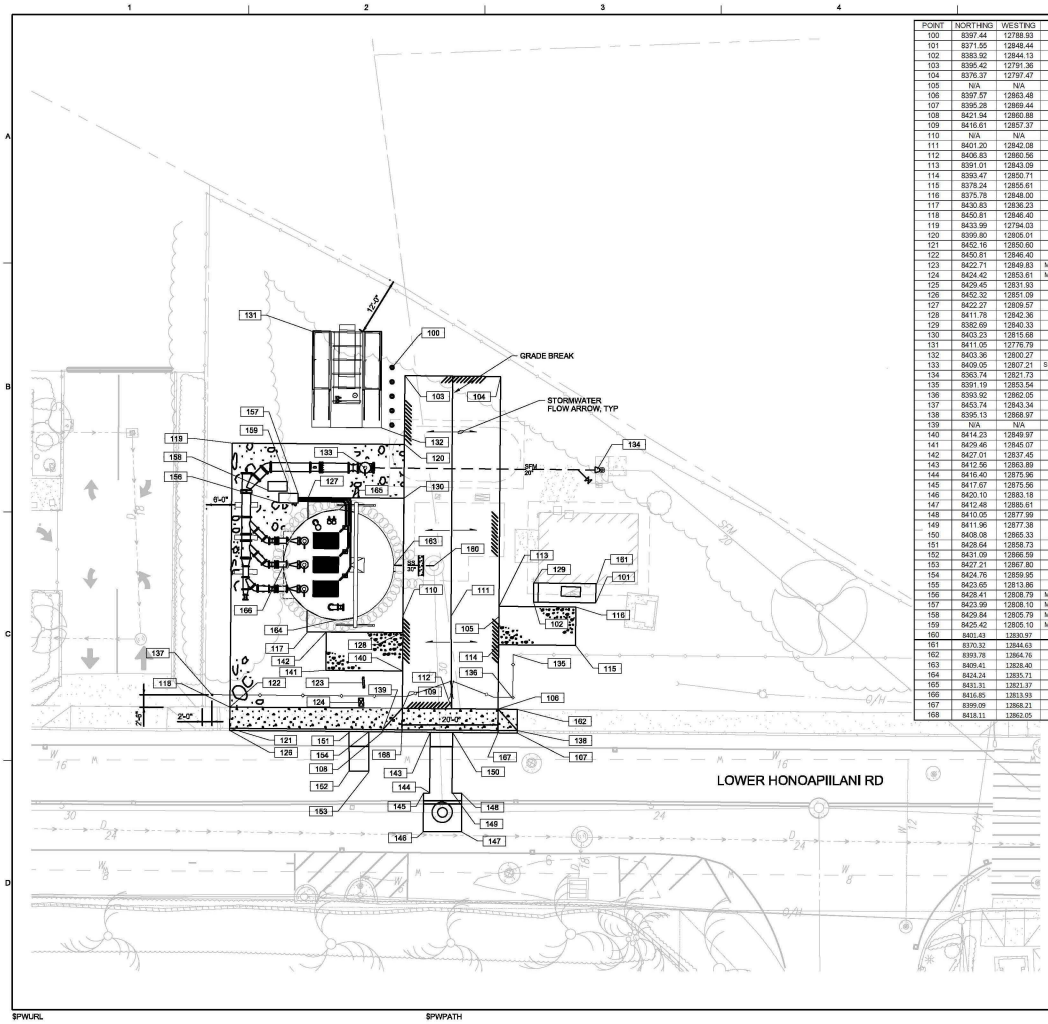

POINT	NORTHING	WESTING	ELEVATION	DESCRIPTION
100	8397.44	12788.93	MATCH EXST GRADE	BOLLARD BASE
101	8371.55	12848.44	6.70	ACCESS PAD BOC
102	8393.92	12844.13	6.70	ACCESS PAD BOC
103	8395.42	12791.36	6.91	EOP FENCE (NORTH)
104	8376.37	12797.47	6.91	EOP FENCE (SOUTH)
105	N/A	N/A	N/A	NOT USED
106	8397.57	12863.48	6.91	EOP ENTRANCE (SOUTH) / CONC DRIVEWAY / SIDEWALK
107	8395.28	12869.44	MATCH EXST GRADE	CONC DRIVEWAY CURB (SOUTH)
108	8421.94	12860.88	MATCH EXST GRADE	CONC DRIVEWAY CURB (NORTH)
109	8416.61	12857.37	6.91	EOP ENTRANCE (NORTH) / CONC DRIVEWAY / WEED BLOCK & DRAINAGE ROCK / SIDEWALK
110	N/A	N/A	N/A	NOT USED
111	8401.20	12842.08	7.21	PAVEMENT FENCE (GRADE BREAK)
112	8406.83	12860.56	7.21	PAVEMENT ENTRANCE (GRADE BREAK)
113	8391.01	12843.09	6.91	GRAVEL HARDSTAND (ELEC BUILDING)
114	8393.47	12850.71	6.91	GRAVEL HARDSTAND (ELEC BUILDING)
115	8378.24	12855.61	6.59	GRAVEL HARDSTAND (ELEC BUILDING)
116	8375.78	12848.00	6.59	GRAVEL HARDSTAND (ELEC BUILDING)
117	8430.83	12836.23	6.51	EOP (WET WELL)
118	8450.81	12846.40	6.40	WEED BLOCK & DRAINAGE ROCK (NORTH)
119	8433.99	12794.03	6.40	WEED BLOCK & DRAINAGE ROCK (NORTH)
120	8399.80	12805.01	6.91	WEED BLOCK & DRAINAGE ROCK (SOUTH)
121	8452.16	12850.60	MATCH EXST GRADE	SIDEWALK CURB (NORTH)
122	8450.81	12846.40	MATCH EXST GRADE	SIDEWALK (NORTH)
123	8422.71	12849.83	MATCH FINISHED GRADE	REDUCED PRESSURE BACKFLOW PREVENTER
124	8424.42	12853.61	MATCH FINISHED GRADE	WATER METER BOX
125	8429.45	12831.93	6.51	EOP (WET WELL)
126	8452.32	12851.09	MATCH EXST GRADE	SIDEWALK CURB (NORTH)
127	8422.27	12809.57	6.51	EOP (WET WELL)
128	8411.78	12842.36	6.91	EOP (WET WELL) / GRAVEL HARDSTAND (WET WELL)
129	8382.69	12840.33	6.70	ACCESS PAD BOC
130	8403.23	12815.68	6.91	EOP (WET WELL)
131	8411.05	12776.79	7.00	DIESEL TANK/GENERATOR ENCLOSURE TOC
132	8403.36	12800.27	7.00	DIESEL TANK/GENERATOR ENCLOSURE TOC
133	8409.05	12807.21	SEE 100-D SERIES DWGS	PIPING TRANSITION
134	8363.74	12821.73	MATCH EXST PIPE CL	CONNECT TO EXST FORCE MAIN
135	8391.19	12853.54	MATCH EXST GRADE	FENCE
136	8393.92	12862.05	MATCH EXST GRADE	FENCE
137	8453.74	12843.34	MATCH EXST GRADE	FENCE
138	8395.13	12868.97	MATCH EXST GRADE	SIDEWALK CURB (SOUTH)
139	N/A	N/A	N/A	NOT USED
140	8414.23	12849.97	6.91	GRAVEL HARDSTAND (WET WELL)
141	8429.46	12845.07	6.59	GRAVEL HARDSTAND (WET WELL)
142	8427.01	12837.45	6.59	GRAVEL HARDSTAND (WET WELL)
143	8412.56	12863.89	MATCH EXST GRADE	AC PAVEMENT RESTORATION
144	8416.40	12875.96	MATCH EXST GRADE	AC PAVEMENT RESTORATION
145	8417.67	12875.56	MATCH EXST GRADE	AC PAVEMENT RESTORATION
146	8420.10	12883.18	MATCH EXST GRADE	AC PAVEMENT RESTORATION
147	8412.48	12885.61	MATCH EXST GRADE	AC PAVEMENT RESTORATION
148	8410.05	12877.99	MATCH EXST GRADE	AC PAVEMENT RESTORATION
149	8411.96	12877.38	MATCH EXST GRADE	AC PAVEMENT RESTORATION
150	8408.08	12865.33	MATCH EXST GRADE	AC PAVEMENT RESTORATION
151	8428.64	12858.73	MATCH EXST GRADE	AC PAVEMENT RESTORATION
152	8431.09	12866.59	MATCH EXST GRADE	AC PAVEMENT RESTORATION
153	8427.21	12867.80	MATCH EXST GRADE	AC PAVEMENT RESTORATION
154	8424.76	12859.95	MATCH EXST GRADE	AC PAVEMENT RESTORATION
155	8423.65	12813.86	6.51	EOP (WET WELL)
156	8428.41	12808.79	MATCH FINISHED GRADE	ELEC HANDHOLE
157	8423.99	12808.10	MATCH FINISHED GRADE	ELEC HANDHOLE
158	8429.84	12805.79	MATCH FINISHED GRADE	ELEC HANDHOLE
159	8425.42	12805.10	MATCH FINISHED GRADE	ELEC HANDHOLE
160	8401.43	12830.97	7.14	EXST SEWER MANHOLE AT EXST WET WELL
161	8370.32	12844.63	6.70	ACCESS PAD BOC
162	8393.78	12864.76	MATCH EXST GRADE	SIDEWALK (SOUTH)
163	8409.41	12828.40	6.88	WET WELL TOC
164	8424.24	12835.71	6.63	WET WELL TOC
165	8431.31	12821.37	6.63	WET WELL TOC
166	8416.85	12813.93	6.41	WET WELL TOC
167	8399.09	12868.21	MATCH EXST GRADE	CONC DRIVEWAY CURB
168	8418.11	12862.05	MATCH EXST GRADE	CONC DRIVEWAY CURB

NO.	DATE	REVISION	BY	APV'D
DSGN	A MANTEGAZZA	DR M MONAHAN	CHK M BALDWIN	APV'D S CHAMPLIN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

CIVIL

SITE LAYOUT PLAN

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	050-C-2001
SHEET	of

100% DESIGN SUBMITTAL

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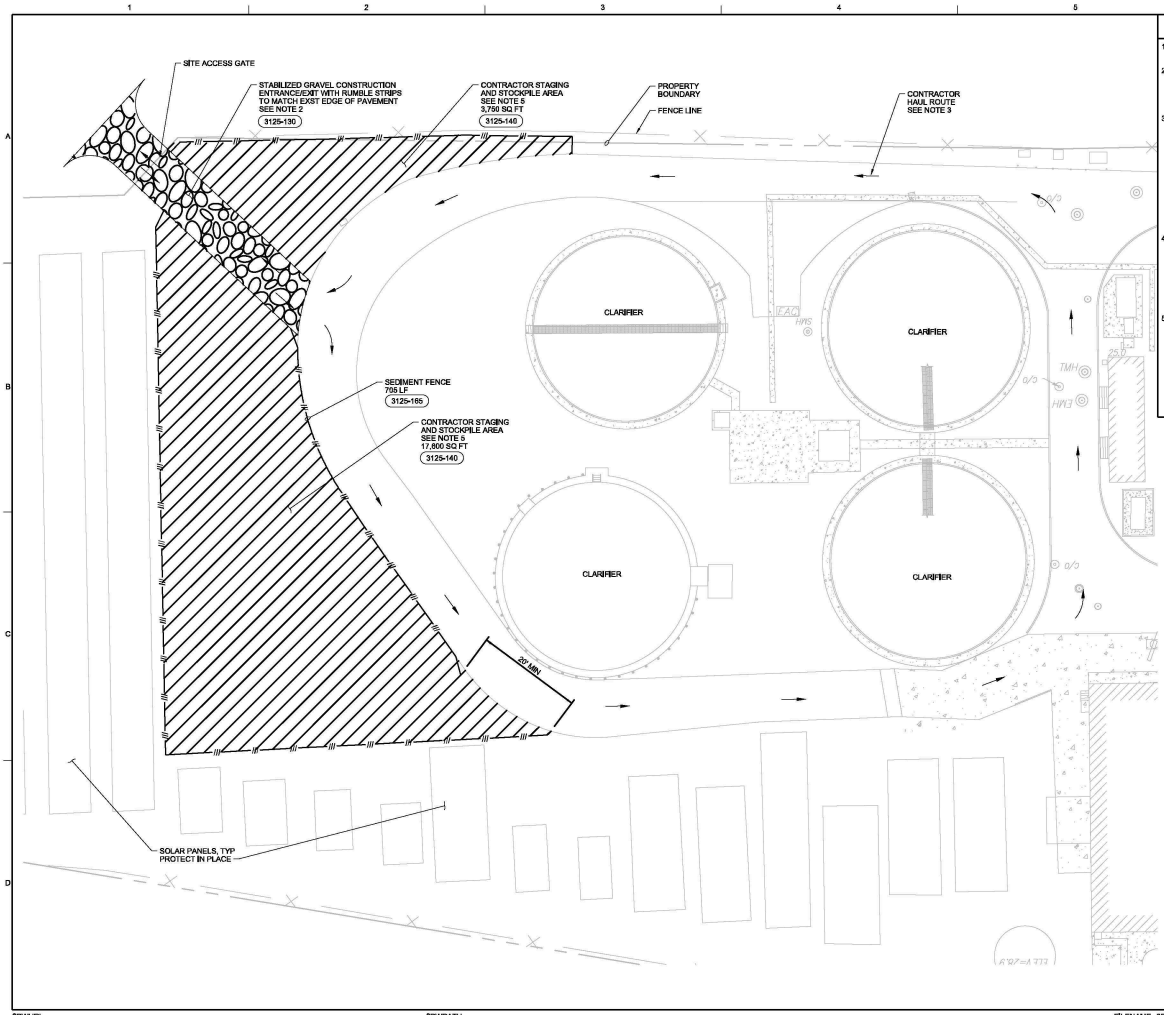
Scale In Feet

$PWURL $PWPATH FILENAME: 050-C-2001_D3560100.dgn PLOT DATE: 12/13/2023 PLOT TIME: 1:28:54 PM



GENERAL SHEET NOTES

1. REFER TO DRAWING 050-C-5001 FOR EROSION AND SEDIMENT CONTROL NOTES.
2. INSTALL MIN 20 FOOT (W) X MIN 50 FOOT (L) CONSTRUCTION ENTRANCE/EXIT, PLACE CONEXWEST STEEL RUMBLE PLATES TRACKOUT CONSTRUCTION GRATES #CXW-GRATE/SA310 OR APPROVED EQUAL AT CONSTRUCTION ENTRANCE/EXIT TO PREVENT TRACK OUT OF CONSTRUCTION SEDIMENT.
3. THE CONTRACTOR IS TO ENTER AND EXIT THE LAHAINA WWRF SITE VIA HONOAPILANI HWY DURING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR AND/OR RESTORE DAMAGE TO PRIVATE, STATE OR COUNTY PROPERTY INCLUDING BUT NOT LIMITED TO ROADS, CURB AND GUTTER, AND UTILITY MANHOLES/HANDHOLES, APPURTENANCES AND EQUIPMENT CAUSED BY CONSTRUCTION TRAFFIC TO PRECONSTRUCTION CONDITIONS OR BETTER IN ACCORDANCE WITH THE LATEST VERSION OF THE COUNTY STANDARD DETAILS AND SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, DEPARTMENT OF PUBLIC WORKS, COUNTY OF MAUI; HAWAII DEPARTMENT OF TRANSPORTATION STANDARD DETAILS AND SPECIFICATIONS; AND/OR UTILITY OWNER STANDARD DETAILS, SPECIFICATIONS AND REQUIREMENTS RESPECTIVELY.
4. THE CONTRACTOR SHALL COORDINATE WITH THE FOLLOWING ONGOING PROJECTS AT THE LAHAINA WASTEWATER RECLAMATION FACILITY (WWRF):
   - WW14-02: WEST MAUI RECYCLED WATER EXPANSION PHASE 2
   - WW20-11: LAHAINA WWRF R1 EXPANSION-FILTERS AND FLOW EQUALIZATION
   - WW18-18: LAHAINA RTU ELECTRICAL
   - WW18-17: LAHAINA RTU SYSTEM INTEGRATION
5. THE CONTRACTOR SHALL USE THE STAGING AND STOCKPILE AREAS SHOWN AT THE COUNTY OF MAUI'S LAHAINA WWRF LOCATED AT 2822 HONOAPILANI HIGHWAY, LAHAINA HI 96761 WITH TMKS (2) 4-4-002:023 AND (2) 4-4-001:194 FOR PARKING OF VEHICLES, CONTRACTOR'S TRAILERS, STOCKPILE AREAS AND PLACING OF EQUIPMENT AS APPROVED BY THE COUNTY OF MAUI. THE CONTRACTOR SHALL PROTECT DRAIN INLETS OR CATCH BASINS LOCATED IN CLOSE PROXIMITY TO STAGING AND STOCKPILE AREAS AND HAUL ROUTES PER NOTE 7 ON DRAWING 050-C-2003 OR APPROVED SIMILAR. NO CLEARING OR GRUBBING IS PERMITTED AT THE LAHAINA WWRF SITE AND ALL TREES SHALL BE PROTECTED IN PLACE.

NO.	DATE	DSGN	DR	REVISION	APVD	BY	APVD
		A MANTEGAZZA	M MONAHAN	M BALDWIN		S CHAMPLIN	

Jacobs
CIVIL

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

EROSION AND SEDIMENT CONTROL PLAN - LAHAINA WWRF

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	050-C-2002
SHEET	of

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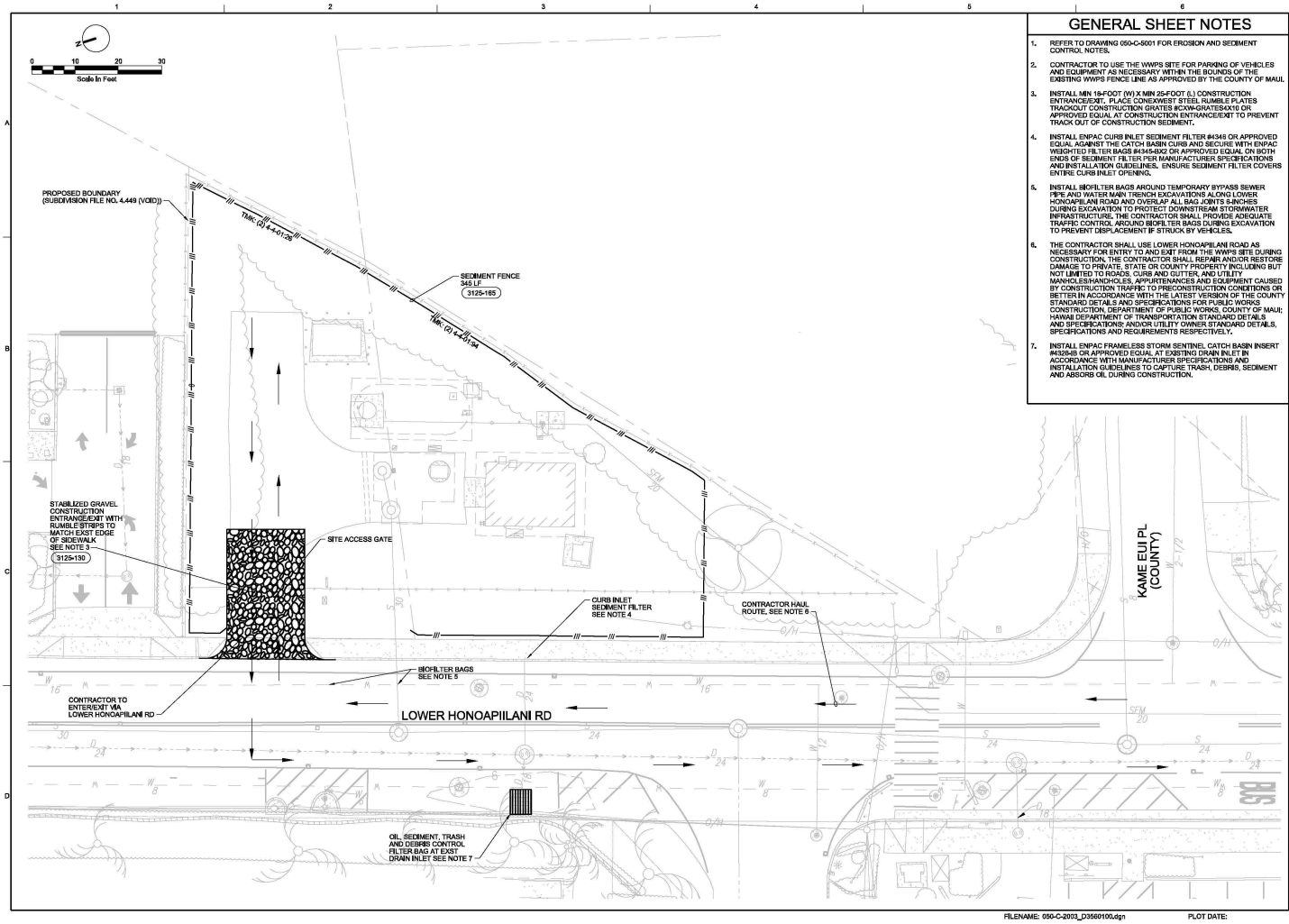

GENERAL SHEET NOTES

1. REFER TO DRAWING 050-C-5001 FOR EROSION AND SEDIMENT CONTROL NOTES.
2. CONTRACTOR TO USE THE WWPS SITE FOR PARKING OF VEHICLES AND EQUIPMENT AS NECESSARY WITHIN THE BOUNDS OF THE EXISTING WWPS FENCE LINE AS APPROVED BY THE COUNTY OF MAUI.
3. INSTALL MIN 16-FOOT (W) X MIN 25-FOOT (L) CONSTRUCTION ENTRANCE/EXIT. PLACE CONEXWEST STEEL RUMBLE PLATES TRACKOUT CONSTRUCTION GRATES #CXW-GRATES-4X10 OR APPROVED EQUAL AT CONSTRUCTION ENTRANCE/EXIT TO PREVENT TRACK OUT OF CONSTRUCTION SEDIMENT.
4. INSTALL ENPAC CURB INLET SEDIMENT FILTER #4348 OR APPROVED EQUAL AGAINST THE CATCH BASIN CURB AND SECURE WITH ENPAC WEIGHTED FILTER BAGS #4345-6X2 OR APPROVED EQUAL ON BOTH ENDS OF SEDIMENT FILTER PER MANUFACTURER SPECIFICATIONS AND INSTALLATION GUIDELINES. ENSURE SEDIMENT FILTER COVERS ENTIRE CURB INLET OPENING.
5. INSTALL BIOFILTER BAGS AROUND TEMPORARY BYPASS SEWER PIPE AND WATER MAIN TRENCH EXCAVATIONS ALONG LOWER HONOAPIILANI ROAD AND OVERLAP ALL BAG JOINTS 6-INCHES DURING EXCAVATION TO PROTECT DOWNSTREAM STORMWATER INFRASTRUCTURE. THE CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL AROUND BIOFILTER BAGS DURING EXCAVATION TO PREVENT DISPLACEMENT IF STRUCK BY VEHICLES.
6. THE CONTRACTOR SHALL USE LOWER HONOAPIILANI ROAD AS NECESSARY FOR ENTRY TO AND EXIT FROM THE WWPS SITE DURING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR AND/OR RESTORE DAMAGE TO PRIVATE, STATE OR COUNTY PROPERTY INCLUDING BUT NOT LIMITED TO ROADS, CURB AND GUTTER, AND UTILITY MANHOLES/HANDHOLES, APPURTENANCES AND EQUIPMENT CAUSED BY CONSTRUCTION TRAFFIC TO PRECONSTRUCTION CONDITIONS OR BETTER IN ACCORDANCE WITH THE LATEST VERSION OF THE COUNTY STANDARD DETAILS AND SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, DEPARTMENT OF PUBLIC WORKS, COUNTY OF MAUI; HAWAII DEPARTMENT OF TRANSPORTATION STANDARD DETAILS AND SPECIFICATIONS; AND/OR UTILITY OWNER STANDARD DETAILS, SPECIFICATIONS AND REQUIREMENTS RESPECTIVELY.
7. INSTALL ENPAC FRAMELESS STORM SENTINEL CATCH BASIN INSERT #4328-S OR APPROVED EQUAL AT EXISTING DRAIN INLET IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS AND INSTALLATION GUIDELINES TO CAPTURE TRASH, DEBRIS, SEDIMENT AND ABSORB OIL DURING CONSTRUCTION.

NO.	DATE	DR	REVISION	DR	APV'D	BY	APV'D
D3560				M BALDVIN		S CHAMPLIN	

A MANTEGAZZA M MONAHAN

Jacobs

CIVIL

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 - PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

EROSION AND SEDIMENT CONTROL PLAN - NAPILI NO. WWPS

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	050-C-2003
SHEET	of

100% DESIGN SUBMITTAL

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FILENAME: 050-C-2003_D3560100.dgn PLOT DATE: PLOT TIME:

1 | 2 | 3 | 4 | 5 | 6

GENERAL

1. MEASURES TO PREVENT AND CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY CONSTRUCTION IS INITIATED.

2. BEST MANAGEMENT PRACTICES (BMPS) IDENTIFIED ON DRAWINGS 050-C-2002 AND 050-C-2003 ARE THE MINIMUM REQUIRED TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL PROVIDE ADDITIONAL BMPS AS NEEDED TO ADDRESS EROSION AND SEDIMENT CONTROL AT THE PROJECT SITE.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING EROSION AND SEDIMENT CONTROL DEVICES DURING CONSTRUCTION PER DRAWINGS 050-C-2002 AND 050-C-2003.

4. STAGING AND STOCKPILE AREAS SHALL BE FOR CONTRACTOR'S EMPLOYEE PARKING, CONTRACTOR'S TRAILERS AND ON-SITE STORAGE OF MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE STAGING AREAS.

5. STAGING OR STOCKPILE AREAS OF MATERIALS OUTSIDE THE CONTRACTOR STAGING AND STOCKPILE AREAS SPECIFIED ON DRAWINGS 050-C-2002 AND 050-C-2003 WILL NOT BE ALLOWED EXCEPT FOR IMMEDIATE CONSTRUCTION ACTIVITIES.

6. THE CONTRACTOR SHALL TAKE ALL OTHER MEASURES TO POSITIVELY PRECLUDE ERODED MATERIALS FROM LEAVING THE SITE. WITHIN 24 HOURS, REMEDIATE ANY SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE. INVESTIGATE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF DISCHARGE WITHIN SAME 24 HOURS. PERFORM IN-STREAM CLEANUP OF SEDIMENT ACCORDING TO APPLICABLE REGULATIONS. DO NOT BEGIN ANY SITE ACTIVITIES THAT HAVE POTENTIAL TO CAUSE EROSION OR SEDIMENT MOVEMENT UNTIL THE TESC PLAN AND IMPLEMENTATION SCHEDULES ARE APPROVED BY AN ENGINEER.

7. THE CONTRACTOR IS TO SUBMIT AN EROSION AND SEDIMENT CONTROL PLAN FOR APPROVAL. THE CONTRACTOR SHALL NOT BEGIN ANY SITE ACTIVITIES THAT HAVE POTENTIAL TO CAUSE EROSION OR SEDIMENT MOVEMENT UNTIL THE EROSION AND SEDIMENT CONTROL PLAN AND IMPLEMENTATION SCHEDULES ARE APPROVED BY AN ENGINEER.

8. ESCP INSPECTIONS WILL BE PERFORMED WEEKLY AT A MINIMUM AND MAY BE PERFORMED MORE FREQUENTLY AS REQUIRED BY THE CONSTRUCTION STORMWATER DISCHARGE PERMIT(S) OR AS DIRECTED BY ENGINEER.

EROSION PREVENTION BMPS:

1. PERMANENT STABILIZATION

   . BMPS SHALL NOT BE REMOVED UNTIL FINAL STABILIZATION IS COMPLETE FOR THAT PHASE AND WHEN ENGINEER DETERMINES THAT AN EROSION CONTROL BMP IS NO LONGER REQUIRED. THIS INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING

      . ALL EXPOSED DISTURBED AREAS MUST BE PERMANENTLY STABILIZED WITH GROUND COVERING SUCH AS VEGETATION, GRAVEL, OR PAVERS;

      . RAIN GUTTETS, DOWNSPOUTS, AND CHANNELIZED FLOWS MUST BE INSTALLED AND FUNCTIONING AS DESIGNED;

      . IN SEEDED AREAS, GRASS OR VEGETATION MUST COVER AT LEAST 90 PERCENT OF THE DISTURBED SOILS OR MUST BE TEMPORARY STABILIZED WHILE IT IS GROWING;

      . TEMPORARY MEASURES, SUCH AS SEDIMENT BARRIERS, SHOULD BE REMOVED WHEN PERMANENT MEASURES ARE IN PLACE;

      . ALL PAVED SURFACES MUST BE CLEAN; AND

      . STORM DRAIN INLET FILTERS MUST BE REMOVED AFTER ALL CLEANUP ACTIVITIES HAVE BEEN COMPLETED.

2. TEMPORARY STABILIZATION

   . TEMPORARY STABILIZATION IS REQUIRED ON DISTURBED AREAS WHICH ARE AT FINAL GRADE OR WHEN THE DISTURBED AREA WILL NOT BE WORKED FOR 14 CONSECUTIVE DAYS OR MORE, DURING THE WEEKEND (IF NEEDED) AND HOLIDAYS (IF NEEDED).

   . THIS PROJECT WILL USE NON-VEGETATIVE MEASURES (BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH) OR PLANTING AND VEGETATION COVERING AT LEAST 70% OF STABILIZED AREA FOR TEMPORARY STABILIZATION.

   . ENSURE SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF YEAR.

SEDIMENT CONTROL BMPS:

1. PERIMETER CONTROLS

   . SEDIMENT FENCES OR BARRIERS SHALL BE USED AT THE PERIMETER OF ALL DISTURBED AREAS WHERE THERE IS POTENTIAL FOR RUNOFF TO FLOW OFF THE PROJECT SITE. BARRIERS MAY INCLUDE GRAVEL BAGS, SAND BAGS, FIBER ROLLS, SILT FENCES, COMPOST SOCKS, OR AN APPROVED EQUIVALENT BMP THAT INTERCEPTS RUNOFF.

2. INLET PROTECTION

   . ALL STROM DRAIN INLETS ONSITE AND THOSE OFFSITE WHICH MAY RECEIVE RUNOFF FROM THE SITE SHALL USE AN INLET PROTECTION DEVICE UNLESS THEY ARE DIRECTED TO A SEDIMENT BASIN OR TRAP.

   . SEDIMENT LEVELS MAY NOT EXCEED ONE THIRD OF HEIGHT OF A SEDIMENT BARRIER OR INLET PROTECTION DEVICE AT ANY POINT ALONG THE LENGTH OF THE SEDIMENT BARRIER OR THE INLET PROTECTION DEVICE.
   . SEDIMENT BARRIERS AND INLET PROTECTION DEVICES MUST BE UNCLOGGED AND CLEANED WHEN PERFORMANCE IS COMPROMISED.
   . TORN, WEATHERED OR SAGGING SEDIMENT BARRIERS OR INLET PROTECTION DEVICES MUST BE REPAIRED OR REPLACED IMMEDIATELY.

GOOD HOUSEKEEPING BMPS:

1. BMP AND SITE MAINTENANCE

   . REGULARLY INSPECT AND MAINTAIN BMPS TO ENSURE CONTINUED PERFORMANCE.

   . INITIATE REPAIR OR REPLACEMENT OF DAMAGED EROSION AND SEDIMENT CONTROL BMPS IMMEDIATELY, AND WORK COMPLETED BY END OF NEXT WORK DAY. SIGNIFICANT REPLACEMENT OR REPAIR MUST BE COMPLETED WITHIN 7 DAYS, UNLESS INFEASIBLE.

   . WITHIN 24 HOURS, REMEDIATE ANY SIGNIFICANT SEDIMENT THAT HAS LEFT CONSTRUCTION SITE. INVESTIGATE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF DISCHARGE WITHIN SAME 24 HOURS. PREFORM IN-STREAM CLEANUP OF SEDIMENT ACCORDING TO APPLICABLE REGULATIONS.

2. DUST CONTROL

   . DUST FROM THE PROJECT SITE SHALL NOT BE TRANSPORTED OR DISCHARGED TO OFF-SITE AREAS.

   . THIS PROJECT WILL USE STOCKPILE COVERS, AND WATER TO MAINTAIN SOIL MOISTURE TO PREVENT DUST.

3. CONCRETE WASTE MANAGEMENT

   . PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM CONCRETE WASTE BY CONDUCTING WASHOUT OFFSITE OR PERFORMING ONSITE WASHOUT IN AN APPROVED DESIGNATED AREA CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

   . PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

   . CONTAINMENT AREAS OR DEVICES SHOULD NOT BE LOCATED WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS.

   . WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75 PERCENT FULL.

   . ONCE CONCRETE WASTES ARE WASHED INTO THE APPROVED DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHOULD BE BROKEN UP, REMOVED, AND DISPOSED OF AS SOLID WASTES.

4. STOCKPILE MANAGEMENT

   . SEDIMENT BARRIERS OR SILT FENCES SHALL BE USED AROUND THE BASE OF ALL STOCKPILES. STOCKPILES SHALL NOT EXEED 15 FEET IN HEIGHT. STOCKPILES GREATER THAN 15 FEET IN HEIGHT SHALL REQUIRE 8-FEET WIDE BENCHING. STOCKPILES AND ALL INACTIVE ERODIBL EARTH AREAS (WHETHER AT FINAL GRADE OR NOT) MUST BE COVERED WITH PLASTIC SHEETING OR A COMPARABLE MATERIAL IF THEY WILL NOT BE ACTIVELY USED WITHIN 7 DAYS.

5. VEHICLE TRACKING CONTROL

   . MINIMIZE SEDIMENT TRACK-OUT ONTO OFF-SITE STREETS, OTHER PAVED AREAS, AND SIDEWALKS FROM VEHICLES EXITING THE CONSTRUCTION SITE BY RESTRICTING VEHICLE TRAFFIC TO PROPERLY DESIGNATED AREAS AND USING ADDITIONAL CONTROLS TO REMOVE SEDIMENT FROM VEHICLE TIRES PRIOR TO EXITING THE SITE.

   . VEHICULAR PARKING AND MOVEMENTS ON PROJECT SITE MUST BE CONFINED TO PAVED SURFACES OR PREDEFINED PARKING AREAS AND VEHICLE PATHS, WHICH SHALL BE MARKED WITH FLAGS OR BOUNDARY FENCING.

   . ALL POLLUTANTS AND MATERIAIS THAT ARE DROPPED, WASHED, TRACKED, SPILLED, OR OTHERWISE DISCHARGED FROM A PROJECT SITE TO OFF-SITE STREETS, OTHER PAVED AREAS, SIDEWALKS, OR THE STORM DRAINAGE SYSTEM MUST BE CLEANED USING DRY METHODS SUCH AS SWEEPING OR VACUUMING.

   . WASHING POLLUTANTS AND MATERIALS THAT ARE DISCHARGED FROM THE PROJECT SITE TO THE STORM DRAINAGE SYSTEM INTO DRAIN INLETS OR CATCH BASINS IS PROHIBITED UNLESS THE MATERIAL IS SEDIMENT AND THE INLETS ARE DIRECTED TO A SEDIMENT BASIN OR SEDIMENT TRAP.

6. MATERIALS DELIVERY, STORAGE AND USE MANAGEMENT

   . MINIMIZE THE STORAGE OF POTENTIAL POLLUTANTS ONSITE, STORE MATERIALS IN A DESIGNATED AREA, AND INSTALL SECONDARY CONTAINMENT. DO NOT STORE MATERIALS IN BUFFER AREAS, NEAR AREAS OF CONCENTRATED FLOW, OR AREAS ABUTTING THE STORM DRAINAGE SYSTEM, RECEIVING WATERS, OR DRAIANGE IMPROVEMENTS THAT DISCHARGE OFF-SITE.

7. SPILL PREVENTION AND CONTROL

   . KEEP AMPLE SUPPLY OF CLEANUP MATERIALS ONSITE. CLEAN UP SPILLS IMMEDIATELY, USING DRY CLEAN-UP METHODS WHERE POSSIBLE, AND DISPOSE OF USED MATERIALS PROPERLY.

8. SOLID WASTE MANAGEMENT

   . PREVENT OR REDUCE DISCHARGE OF POLLUTANTS TO THE LAND, GROUNDWATER, AND IN STORM WATER FROM SOILD WASTE OR CONSTRUCTION AND DEMOLITION WASTE BY PROVIDING DESIGNATED WASTE COLLECTION AREAS, COLLECT SITE TRASH DAILY, AND ENSURING THAT CONSTRUCTION WASTE IS COLLECTED, REMOVED, AND DISPOSED OF ONLY AT AUTHORIZED DISPOSAL AREAS.

9. PORTABLE TOILETS (SANITARY/SEPTIC WASTE MANAGEMENT)

   . TEMPORARY AND PORTABLE SANITARY AND WASTE SYSTEMS SHALL BE MOUNTED OR STAKED IN, WELL- MAINTAINED AND SCHEDULED FOR REGULAR WASTE DISPOSAL AND SERVICING. SOURCES OF SANITARY AND/OR SEPTIC WASTE SHALL NOT BE STORED NEAR THE STORM DRAINAGE SYSTEM OR RECEIVING WATERS.

10. VEHICLE AND EQUIPMENT CLEANING, FUELING, AND MAINENANCE

   . PREVENT POLLUTANTS IN STORM WATER FROM VEHICLE AND EQUIPMENT CLEANING, FUELING AND MAINTENANCE BY USING OFF-SITE FACILITIES WHEN FEASIBLE, PERFORMING WORK IN DESIGNATED AREAS ONLY, USING SPILL PADS UNDER VEHICLES AND EQUIPMENT, CHECKING FOR LEAKS AND SPILLS, AND CONTAINING AND CLEANING UP SPILLS IMMEDIATELY.

11. HAZARDOUS MATERIALS

   . PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM HAZARDOUS WASTE THROUGH PROPER MATERIAL USE AND WASTE DISPOSAL. IN THE EVENT THAT HAZARDOUS MATERIALS ARE DISCHARGED TO THE STORM DRAINAGE SYSTEM, THE PROPERTY OWNER OR CONTRACTOR SHALL IMMEDIATELY NOTIFY THE COUNTY OF MAUI, LOCAL FIRE DEPARTMENT, AND LOCAL POLICE DEPARTMENT OF THE DISCHARGE BY TELEPHONE. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED, THE REASONS FOR THE DISCHARGE, AND THE MEASURES THAT HAVE BEEN TAKEN OR WILL BE TAKEN TO PREVENT A REOCCURRANCE OF THE DISCHARGE SHALL BE SUBMITTED TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.

12. NON-HAZARDOUS MATERIALS

   . IN THE EVENT THAT NON-HAZARDOUS MATERIALS ARE DISCHARGED TO THE STORM DRAINAGE, THE PROPERTY OWNER OR CONTRACTOR SHALL NOTIFY THE COUNTY OF MAUI BY TELEPHONE NO LATER THAN THE NEXT BUSINESS DAY. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED, THE REASONS FOR THE DISCHARGE, AND THE MEASURES THAT HAVE BEEN TAKEN OR WILL BE TAKEN TO PREVENT A REOCCURRENCE OF THE DISCHARGE SHALL BE SUBMITTED TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.

13. STREET SWEEPING AND VACUUMING:

   . ALL POLLUTANTS DISCHARGED FROM THE PROJECT CONSTRUCTION SITE TO OFF-SITE AREAS MUST BE SWEPT OR VACUUMED EACH DAY BEFORE LEAVING THE PROJECT SITE.

14. DEWATERING OPERATIONS

   . INSPECT THE DEATERING SITES SEVERAL TIMES DAILY TO ENSURE THAT PUMPING IS ADEQUATELY CONTROLLING AND MANAGING THE EXCESS WATER THROUGHOUT THE DURATION OF GROUNWATER DEWATERING OPERATIONS.

OMITTED BMPS:

THE FOLLOWING BMPS WERE DETERMINED TO BE NOT APPLICABLE BECAUSE THEY WOULD NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL BASED ON THE SPECIFIC SITE CONDITIONS. AS CONSTRUCTION PROGRESSES, REVISIONS MAY BE NECESSARY AND WILL BE PROVIDED BY THE CONTRACTOR TO THE COUNTY OF MAUI FOR APPROVAL.

OMITTED BMPS	RATIONALE
LIQUID WASTE MANAGEMENT	THERE WILL BE NO LIQUID WASTE OR NON-STORM WATER ON SITE.
SLOPE MANAGEMENT AND PROTECTION	ALL WORK WILL BE ON SLOPES LESS THAN 15%.
CONTAMINATED SOIL MANAGEMENT	THERE ARE NO CONTAMINATED SOILS ANTICIPATED ON SITE.
VEHICLE AND EQUIPMENT CLEANING, FUELING AND MAINTENANCE	THERE WILL BE NO ON-SITE CLEANING, FUELING OR MAINTENANCE OF ANY CONSTRUCTION VEHICLES OR EQUIPMENT.

RAIN RESPONSE PLAN:

THE FOLLOWING WILL BE PERFORMED WHEN SEVERE RAIN IS IMMINENT OR IS FORCASTED IN THE NEXT 48 HOURS:

1. TEMPORARILY SUSPEND LAND DISTURBING ACTIVITIES INCLUDING CLEARING, GRUBBING, GRADING AND TRENCHING.

2. INSPECT ALL BMPS AND MAINTAIN AS NEEDED.

3. REINSTALL BMPS THAT WERE REMOVED DUE TO ACTIVE WORK IN THE AREA.

4. IF A SEVERE STORM IS EXPECTED, REMOVE INLET PROTECTION DEVICES TO PREVENT FLOODING ON SURROUNDING STREETS.

5. COVER OR RELOCATE MATERIAL STOCKPILES AND LIQUID MATERIAL CONTAINERS TO AVOID CONTACT WITH RAINWATER.

6. PLACE SPILL PANS OR OIL-ONLY SPILL PADS UNDER CONSTRUCTION VEHICLES TO PREVENT RUNOFF FROM CONTACTING ANY SPILLED PETROLEUM PRODUCTS. PROPERLY DISPOSE OF ANY ACCUMULATED ONLY WATER AFTER THE RAIN EVENT.

7. RE-INSPECT PROJECT SITE AFTER THE RAIN EVENT AND REPLACE OR MAINTAIN BMPS AS NEEDED.

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NO.	DATE	REVISION	BY	APVD

DSGN A MANTEGAZZA | DR M MONAHAN | CHK M BALDWIN | APVD S CHAMPLIN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII
NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

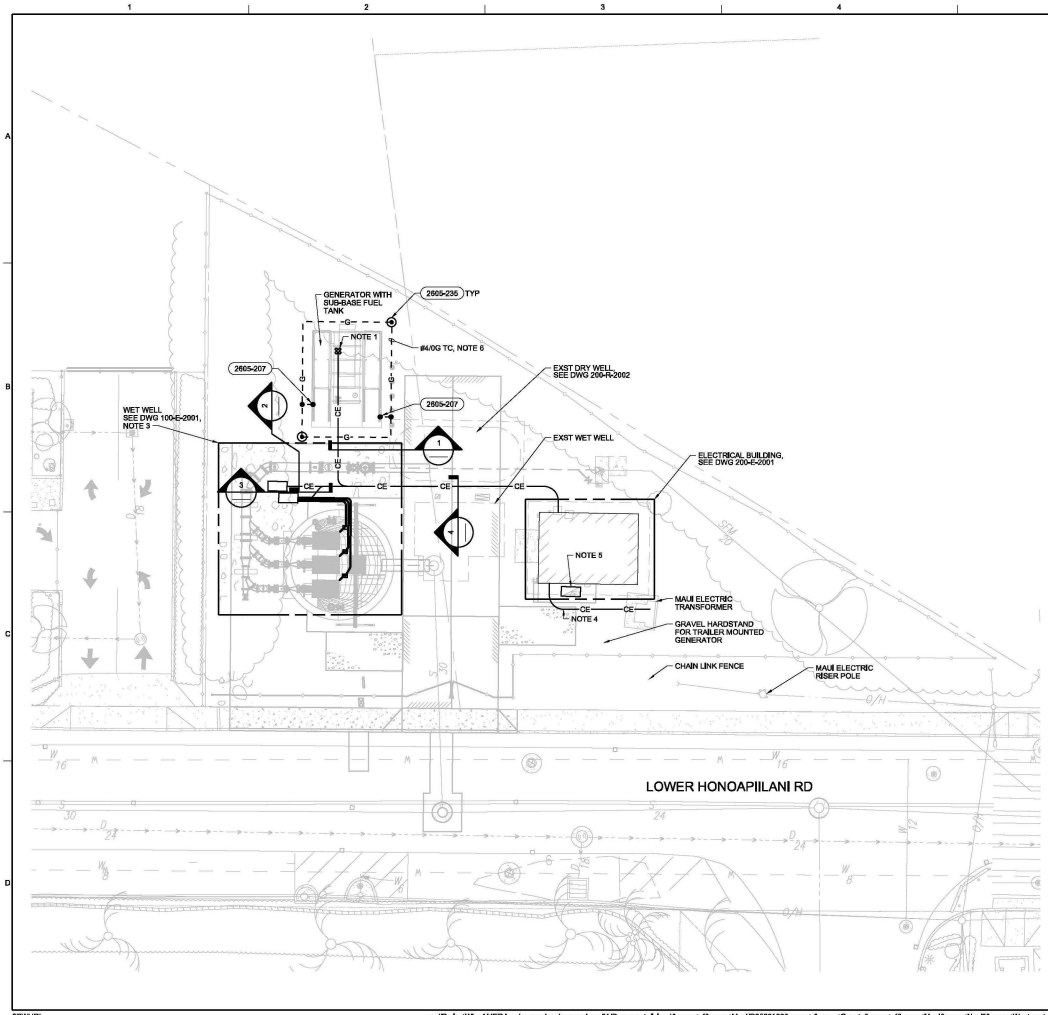
Jacobs

CIVIL
EROSION AND SEDIMENT CONTROL NOTES

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

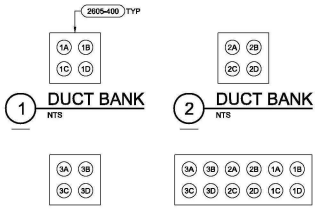
DATE	DECEMBER 2023
PROJ	D3560100
DWG	050-C-5001
SHEET	of

100% DESIGN SUBMITTAL



NOTES

1. COORDINATE CONDUIT STUB-UPS WITH GENERATOR EQUIPMENT.
2. PROVIDE 3/4 INCH CONDUITS FROM GATE OPERATOR TO LOCAL KEYPAD PEDESTAL S. COORDINATE INTERCONNECTION WIRING WITH EQUIPMENT SUPPLIER.
3. CLASSIFIED (HAZARDOUS) AREAS EXIST. REFER TO AREA CLASSIFICATION TABLE.
4. INTERCEPT SECONDARY FEED FROM MECO TRANSFORMER AND REROUTE TO NEW SERVICE DISCONNECT. COORDINATE WORK WITH MECO.
5. PROVIDE GRADE RINGS AND NEW LID AT EXISTING TELECOM HAND HOLE TO RAISE TO TOP OF ACCESS PLATFORM. SEE CIVIL AND STRUCTURAL DRAWINGS.
6. PROVIDE GROUND RING AROUND GENERATOR, BURIED AT 36-INCHES BELOW GRADE AND MINIMUM 36-INCHES AWAY FROM GENERATOR PAD AND ACCESS PLATFORMS. BOND ACCESS PLATFORMS TO GROUND RING. PROVIDE GROUNDING CONDUCTOR STUB UP WITH POWER CONDUITS FOR GENERATOR BONDING.



1 DUCT BANK NTS

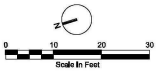
2 DUCT BANK NTS

3 DUCT BANK NTS

4 DUCT BANK NTS

DUCT BANK SCHEDULE			
DUCT ID	CONDUIT	CONDUCTORS	CIRCUITS
1A	4"	4#500KCM, 1#3G	GENERATOR OUTPUT
1B	2"	4#6, 1#10G	GENERATOR SHORE POWER
1C	2"	12#14, 2#14G	GENERATOR CONTROLS
1D	2"	PULL STRING	SPARE
2A	2"	2#16TSP	10-PIT-140, 10-FIT-150
2B	1"	2#14, 1#14G	10-FIT-150
2C	2"	PULL STRING	SPARE
2D	1"	3#16TSP	10-LET-100A, 10-LET-100B, 10-LSH-100 (NOTE 1)
3A	2"	3#1/0, 1#6G, 2#14	10-P-111
3B	2"	3#1/0, 1#6G, 2#14	10-P-112
3C	2"	3#1/0, 1#6G, 2#14	10-P-113
3D	2"	PULL STRING	SPARE

NOTES
1. INTRINSICALLY SAFE CIRCUITS. MAINTAIN 2-INCH MINIMUM SEPARATION FROM NONINTRINSICALLY CIRCUITS AT HAND HOLES, JUNCTION BOXES, AND ENCLOSURES.



NO.	DATE	DR	REVISION	CHK	APV'D	BY	APV'D
DSGN	J.JAMES	A.CUGLAY		J.LANDMAN		S.CHAMPLIN	

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

ELECTRICAL
SITE PLAN

VERIFY SCALE
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0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	050-E-2001
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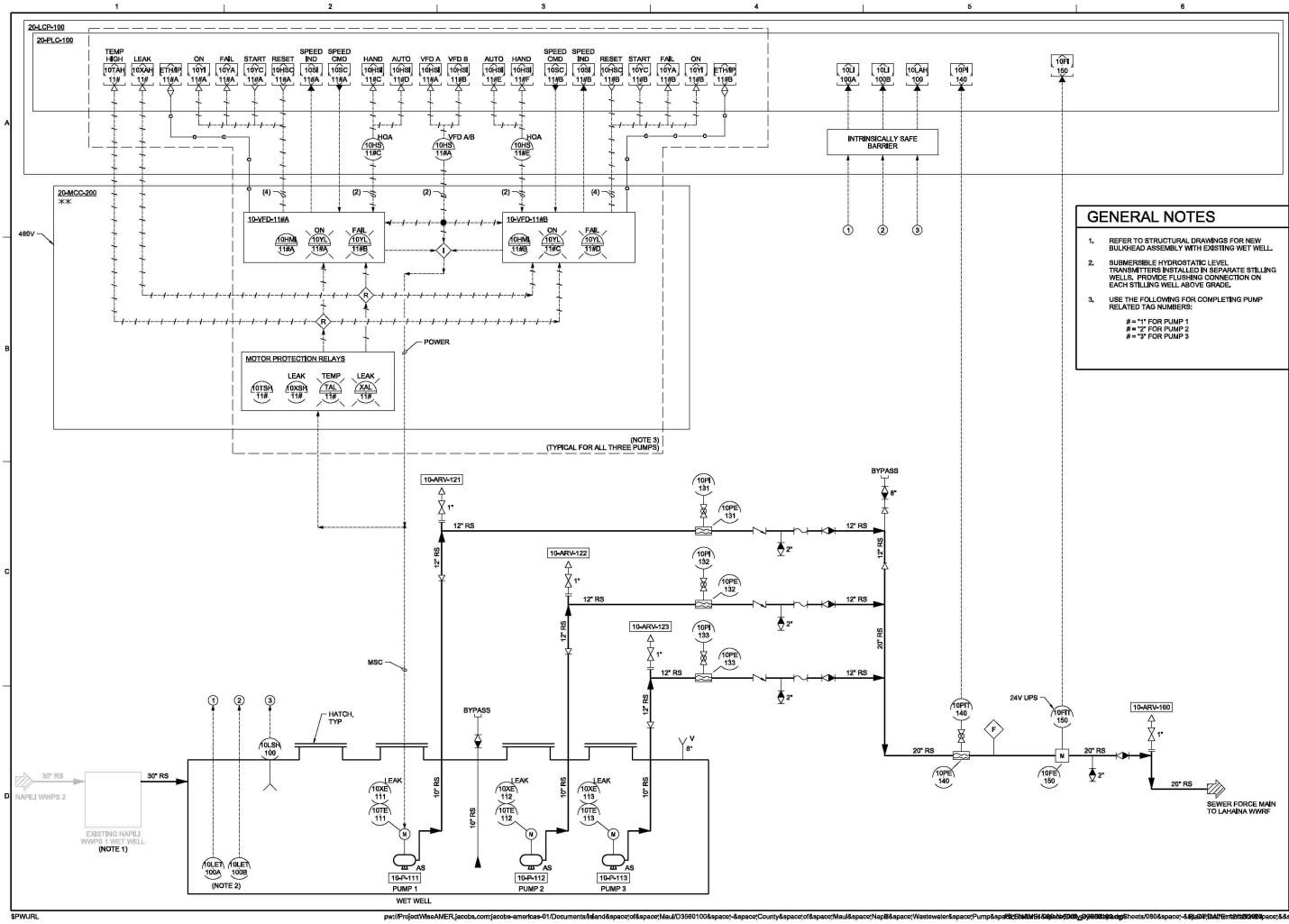

GENERAL NOTES

1. REFER TO STRUCTURAL DRAWINGS FOR NEW BULKHEAD ASSEMBLY WITH EXISTING WET WELL.
2. SUBMERSIBLE HYDROSTATIC LEVEL TRANSMITTERS INSTALLED IN SEPARATE STILLING WELLS. PROVIDE FLUSHING CONNECTION ON EACH STILLING WELL ABOVE GRADE.
3. USE THE FOLLOWING FOR COMPLETING PUMP RELATED TAG NUMBERS:

   # = "1" FOR PUMP 1
   # = "2" FOR PUMP 2
   # = "3" FOR PUMP 3

NO.	DATE	REVISION	BY	APV'D
DSGN	D.LOTT	DR	S.FLASKA	L.WOOD
		CHK	S.CHAMPLIN	APV'D

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

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INSTRUMENTATION AND CONTROL
PUMP STATION
P&D

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0 1"

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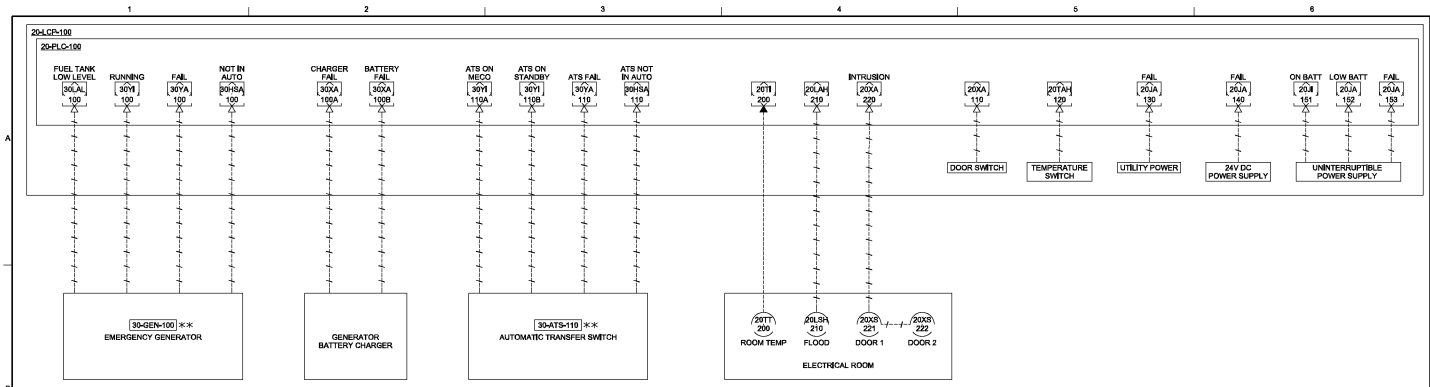

NO.	DATE	BY	APV'D
DSGN	D.LOTT	S.CHAMPLIN	
DR	S.FLASKA	L.WOOD	
CHK			

REVISION

Jacobs

INSTRUMENTATION AND CONTROL

MISCELLANEOUS SIGNALS P&ID

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
CITY OF KAHULUI, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

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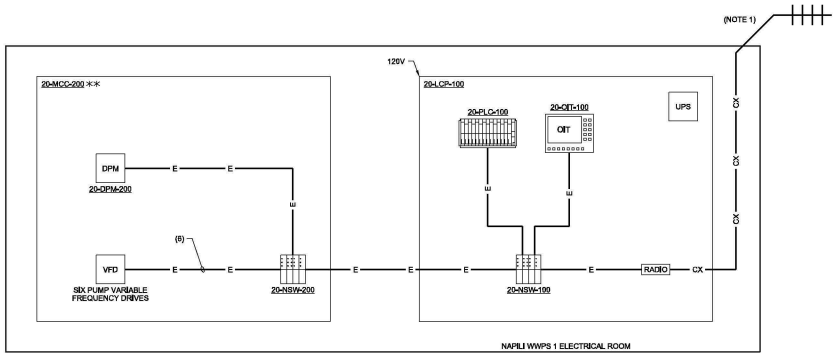
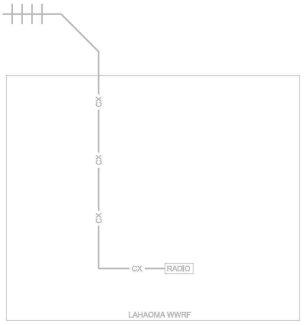
GENERAL NOTES

1. AIM ANTENNA TOWARDS LAHAINA WWRF.
   AZIMUTH 181.0 DEGREES.
   ANTENNA TO BE MINIMUM 10 FEET ABOVE GROUND LEVEL





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DR	SELASKA	L.WOOD	
CHK			

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NAPILI NO. 1 PUMP STATION MODIFICATIONS
CITY OF LAHAINA, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

INSTRUMENTATION AND CONTROL

NETWORK BLOCK DIAGRAM

ISSUE OF DOCUMENTS:

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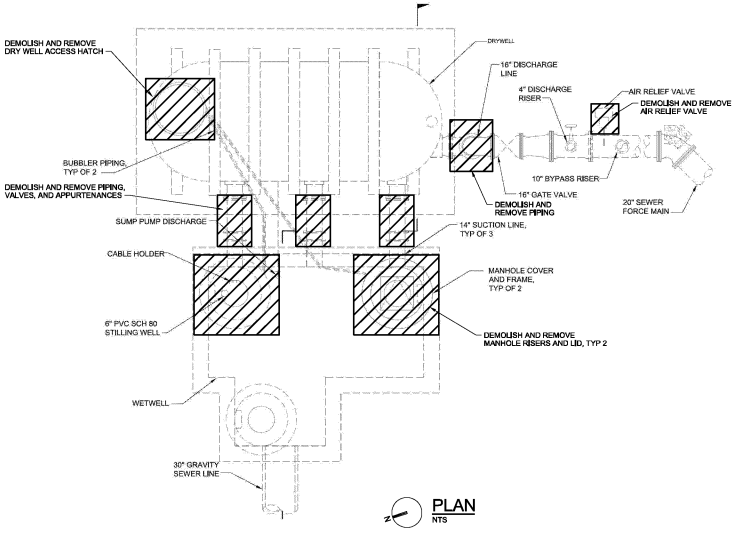

NO.	DATE	BY	APV'D
DSGN	P. MURPHY		
DWN	B. KASPAR		
CHK	S. POLSON		
REVISION			

S CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

DEMOLITION
WET WELL AND DRY PIT PLAN

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING.
0 [redacted] 1"

DATE	DECEMBER 2023
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DWG	090-R-2001
SHEET	of

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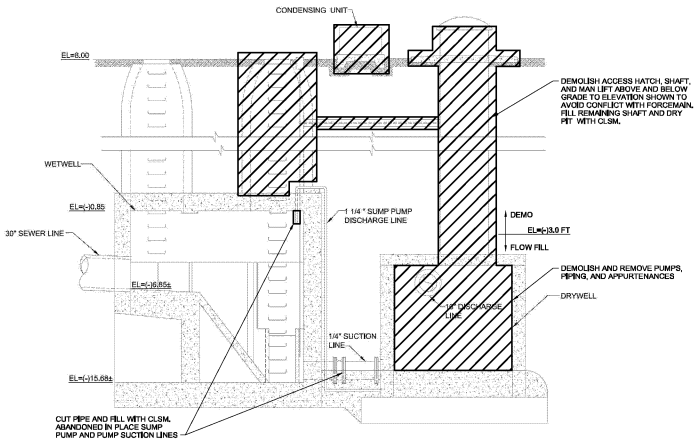

SECTION

NTS

NO.	DATE	BY	APV'D
DSGN	P. MURPHY		
DWN	B. KASPAR	S. POLSON	
CHK		S. CHAMPLIN	

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NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

DEMOLITION

WET WELL AND DRY PIT SECTION

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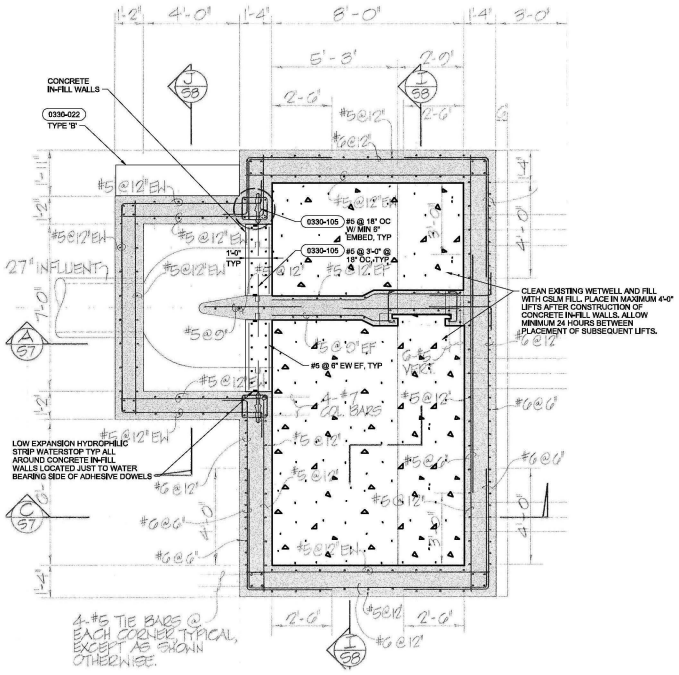
0 [redacted] 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	090-R-3001
SHEET	of

GENERAL NOTES

1. SEE GENERAL STRUCTURL NOTES SHEETS FOR ADDITIONAL DETAILS, DESIGN CRITERIA, ANF REQUIREMENTS
2. LIQUID LEVEL:
   A. NORMAL: EL -10.67
   B. HIGH: EL 1.67
3. PERFORM LEAKAGE TESTING PRIOR TO BACKFILLING. FILL TANKS FOR LEAKAGE TEST TO EL 1.67.



NO.	DATE	DR	REVISION	CHK	APV'D	BY	APV'D
DSGN	T. SCIBEK		N. CRUM	T. MCINTOSH		S. CHAMPLIN	

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
CITY OF KAHULUI, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

STRUCTURAL
EXISTING PUMP STATION PLAN

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
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SHEET	of

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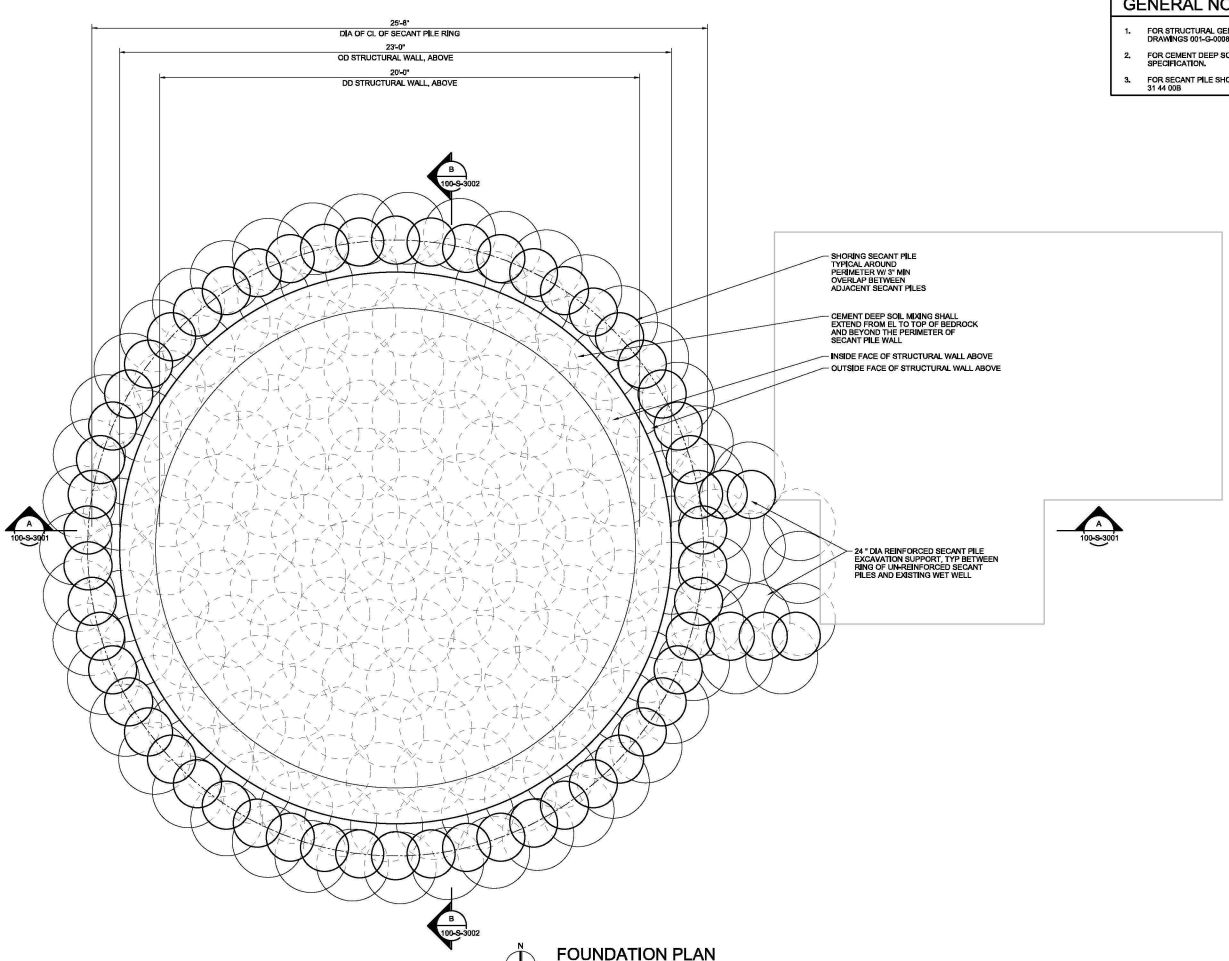

N

FOUNDATION PLAN

1/2"=1'-0"

GENERAL NOTES

1. FOR STRUCTURAL GENERAL NOTES SEE DRAWINGS 001-G-0008 AND 001-G-0009.
2. FOR CEMENT DEEP SOIL MIXING SEE SPECIFICATION.
3. FOR SECANT PILE SHORING SEE SPECIFICATION 31 44 00B

NO.	DATE	REVISION	BY	APV'D
DSGN	T SOBECK	DR P KARABAN	CHK T MCINTOSH	APV'D S CHAMPLIN

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STRUCTURAL

PUMP STATION FOUNDATION PLAN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION UPGRADE
NAPILI-HONOKOWAI, MAUI, HAWAII

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0 1"

DATE	DECEMBER 2023
PROJ	D3560100
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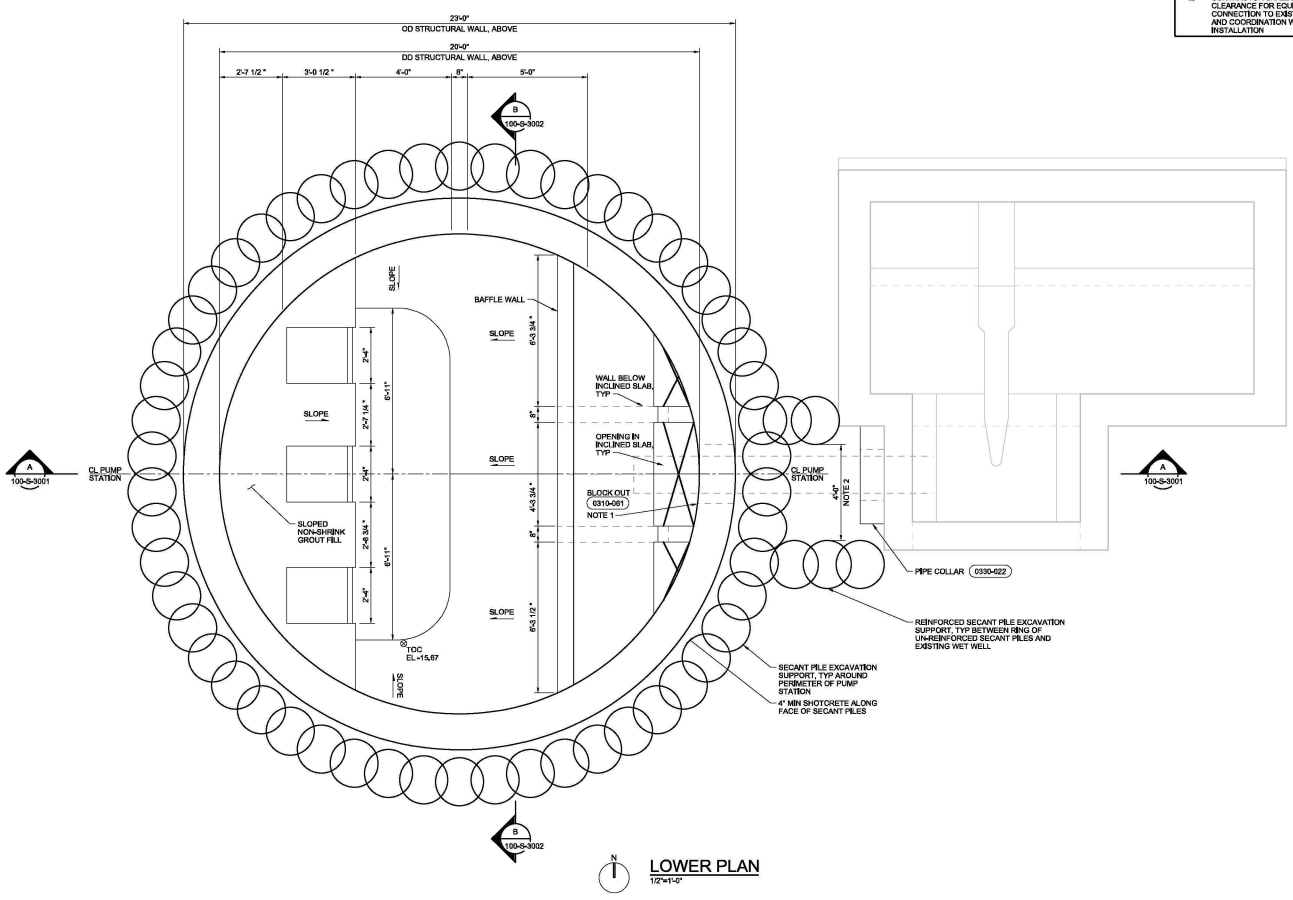
GENERAL NOTES

1. PROVIDE BLOCKOUT IN WALL OF PUMP STATION. CORE PENETRATION THROUGH SECANT PILE WALL FOR INSTALLATION OF NEW 30" RS PIPE. REINFORCE OPENING IN WALL PER (0330-001)
2. CONTRACTOR SHALL DETERMINE REQUIRED CLEARANCE FOR EQUIPMENT NEEDED TO MAKE CONNECTION TO EXISTING MANHOLE STRUCTURE AND COORDINATION WITH THE SECANT PILE INSTALLATION



N

LOWER PLAN

1/2"=1'-0"

NO.	DATE	BY	APV'D
DSGN	T SOBECK	DR	P KARABAN
		CHK	T MCINTOSH
			S CHAMPLIN

REVISION

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION UPGRADE
NAPILI-HONOKOWAI, MAUI, HAWAII

STRUCTURAL
PUMP STATION
LOWER PLAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	100-S-2002
SHEET	of

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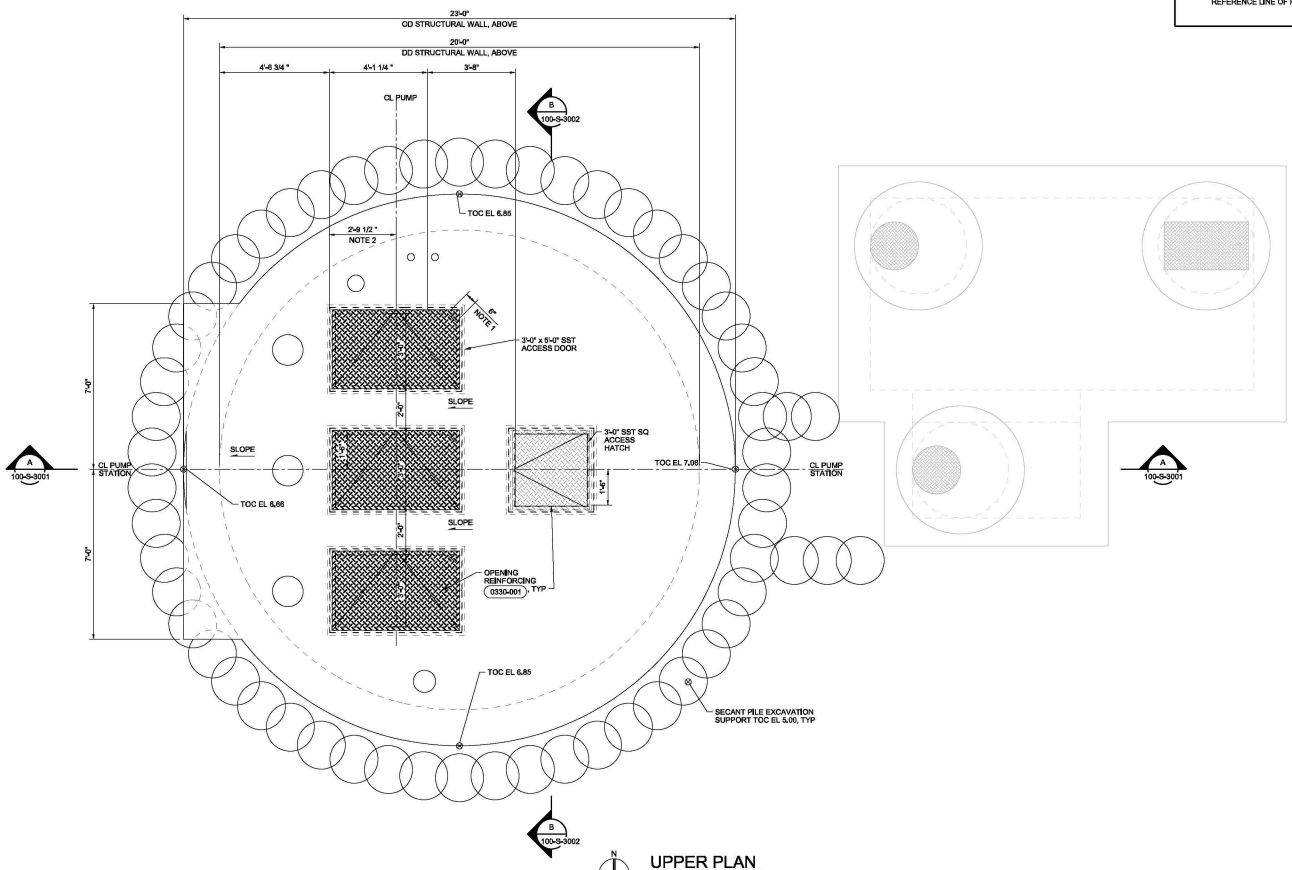
GENERAL NOTES

1. PROVIDE 6" WIDE CHAMFER IN CORNER OF ACCESS HATCH OPENING TO ENABLE CONDUIT PENETRATION TO BE PERPENDICULAR TO FACE OF CONCRETE.
2. COORDINATE LOCATION OF HATCH OPENING WITH REFERENCE LINE OF PUMPS.



UPPER PLAN

1/2"=1'-0"

NO.	DATE	REVISION	BY	APV'D
DSGN	T SOBECK	DR P KARABAN	CHK T MCINTOSH	APV'D S CHAMPLIN

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STRUCTURAL
PUMP STATION
UPPER PLAN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
OLOWALU, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

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VERIFY SCALE
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SHEET	of

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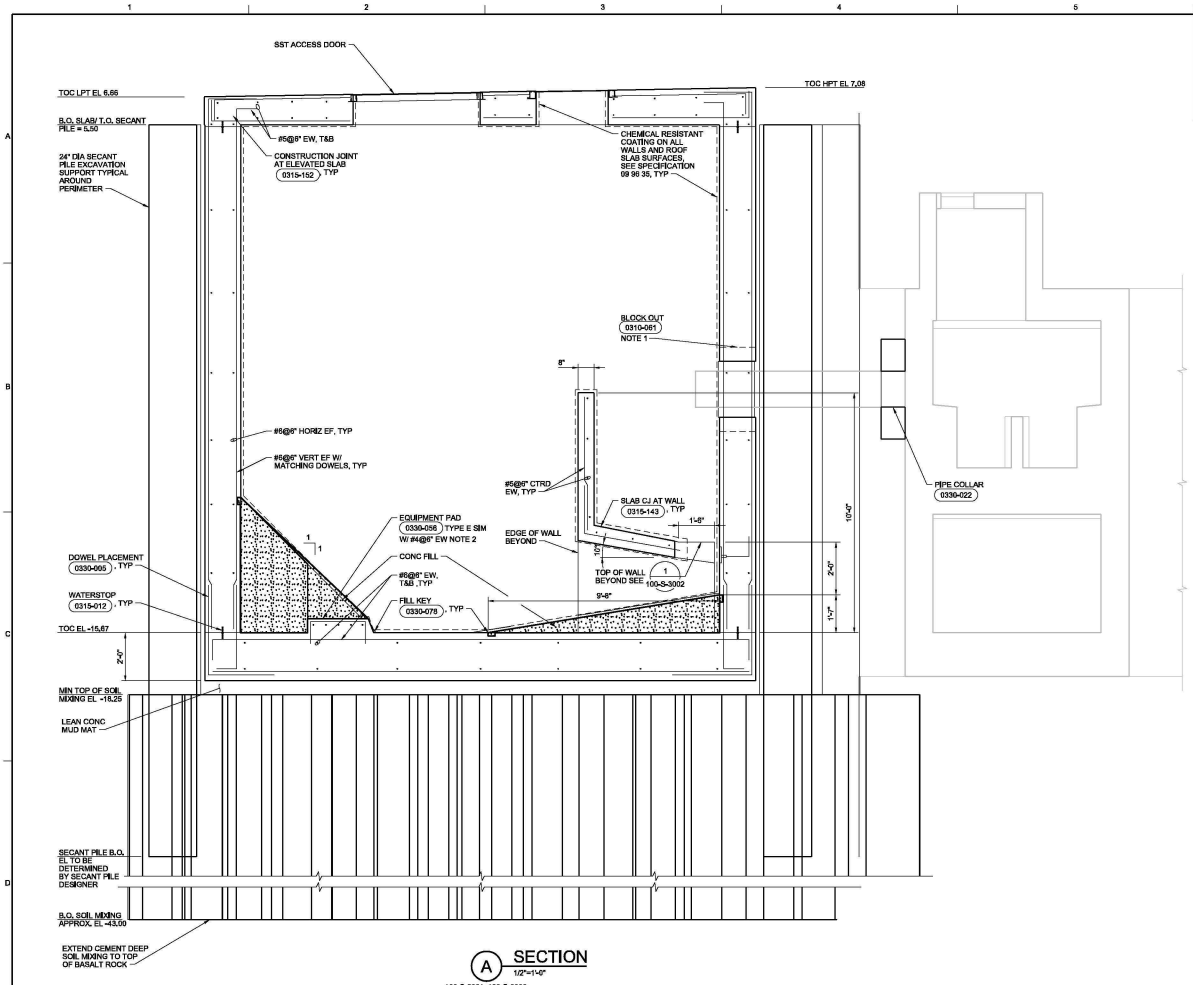

A SECTION
1/2"=1'-0"
100-S-2001, 100-S-2002, 100-S-2003

GENERAL NOTES

1. PROVIDE BLOCK OUT IN WALL OF PUMP STATION. CORE PENETRATION THROUGH SECANT PILE WALL FOR INSTALLATION OF NEW 30" RS PIPE. REINFORCE OPENING IN WALL PER 0330-061
2. VERIFY TOP OF CONCRETE WITH PUMP MANUFACTURER TO PROVIDE THE REQUIRED CLEARANCES AND ANCHORAGE FOR PUMPS

NO.	DATE	REVISION	BY	APV'D
DSGN	T SOBECK	DR P KARABAN	CHK T MCINTOSH	APV'D S CHAMPLIN

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STRUCTURAL
PUMP STATION SECTION

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII
NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

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VERIFY SCALE
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0 1"

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PROJ	D3560100
DWG	100-S-3001
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$PWURL

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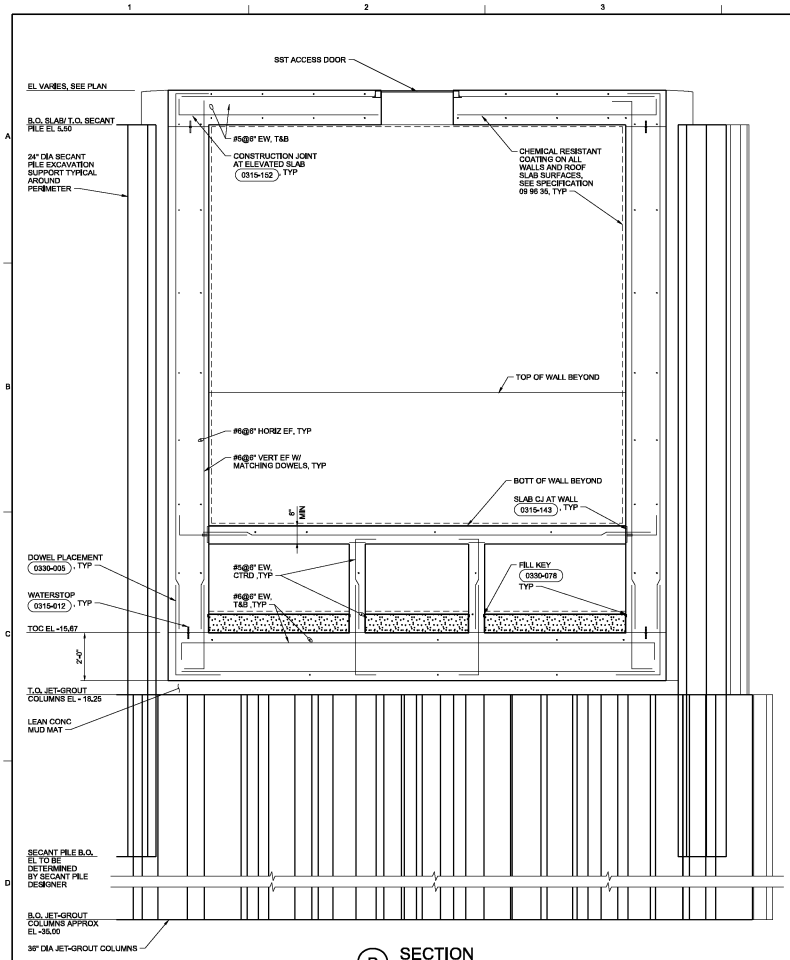
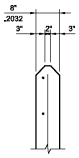


B SECTION
1/2"=1'-0"
100-S-2001, 100-S-2002, 100-S-2003



1 BAFFLE WALL CHAMFER
3/4"=1'-0"
100-S-3001

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION IMPROVEMENTS
CITY OF KAHULUI, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

STRUCTURAL
PUMP STATION SECTION

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0 1"

DATE	DECEMBER 2023
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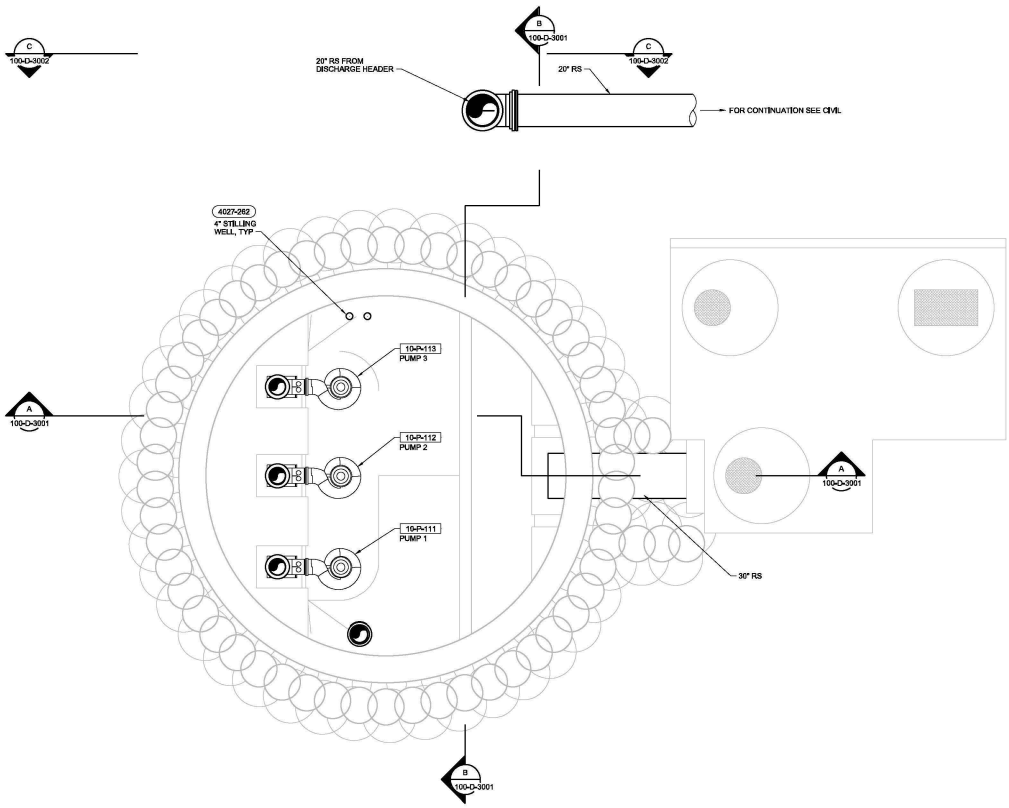
DWG	100-S-3002
SHEET	of

GENERAL NOTES

1. PROVIDE FLANGE 10-INCH LONG RADIUS FLARE 90-DEG BEND. FITTING SHALL BE COATED AND LINED PER PIPE SCHEDULE.



LOWER PLAN
3/8" = 1'-0"

NO.	DATE	BY	APV'D
DSGN	DR	CHK	APV'D
P MURPHY	B KASPAR	S POLSON	S CHAMPLIN

REVISION

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
CITY OF NAPILI, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

PROCESS MECHANICAL
PUMP STATION
LOWER PLAN

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VERIFY SCALE
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0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	100-D-2001
SHEET	of

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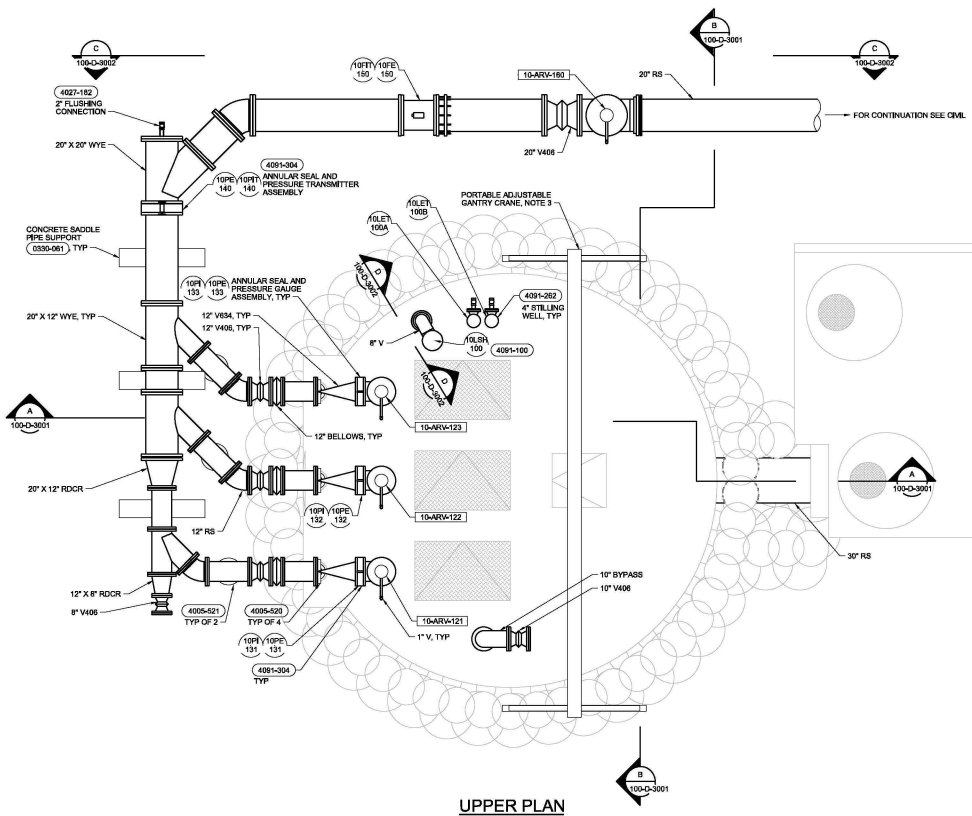

UPPER PLAN

3/8" = 1'-0"

GENERAL NOTES

1. PROVIDE ODOR CONTROL CARBON CANISTER. UNIT SHALL BE PROVIDED WITH STAINLESS STEEL INTERNALS. MANUFACTURERS AND PRODUCTS: EVOQUA VENT-SCRUB ADSORBER MODEL NO. 400, OR APPROVED EQUAL.
2. PROVIDE ODOR CONTROL VENT FAN. FAN SHALL BE TUBULAR CENTRIFUGAL INLINE, DIRECT DRIVE TYPE, WITH FLANGED INLET/OUTLET CONNECTIONS AND SHALL BE SUITABLE FOR HORIZONTAL MOUNTING. FAN SHALL BE RATED FOR 200 CFM AT 2.5 IN W.C. MANUFACTURERS AND PRODUCTS: COOK, TCN-D OR APPROVED EQUAL.
3. HARRINGTON 2 TON PORTABLE ADJUSTABLE GANTRY CRANE WITH 29-FOOT SPAN, MODEL NUMBER 512-4000-25-10, STEEL MATERIALS WITH EPOXY COATING FINISH. EQUIPPED WITH MANUAL HOIST AND TROLLEY.

NO.	DATE	BY	APV'D
DSGN	P.MURPHY		
DR	B.KASPAR		
CHK	S.POLSON		
REVISION			

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S.CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
CITY OF KAHULUI, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

PROCESS MECHANICAL
PUMP STATION
UPPER PLAN

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VERIFY SCALE
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0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	100-D-2002
SHEET	of

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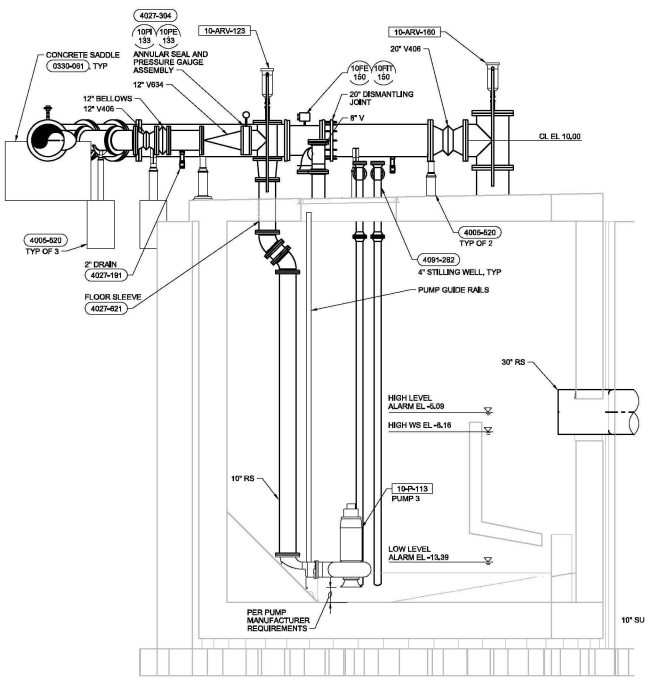
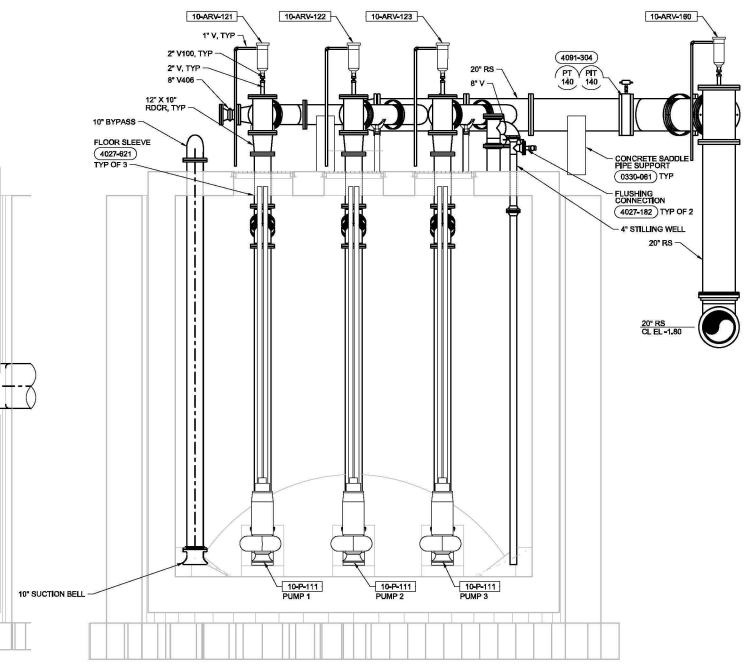


A SECTION
3/8"=1'-0"
100-D-2001



B SECTION
3/8"=1'-0"
100-D-2001

NO.	DATE	BY	APV'D
DSGN	P MURPHY	SR	S CHAMPLIN
DRN	B KASPAR	CHK	S POLSON

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

PROCESS MECHANICAL
PUMP STATION SECTIONS

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	100-D-3001
SHEET	of

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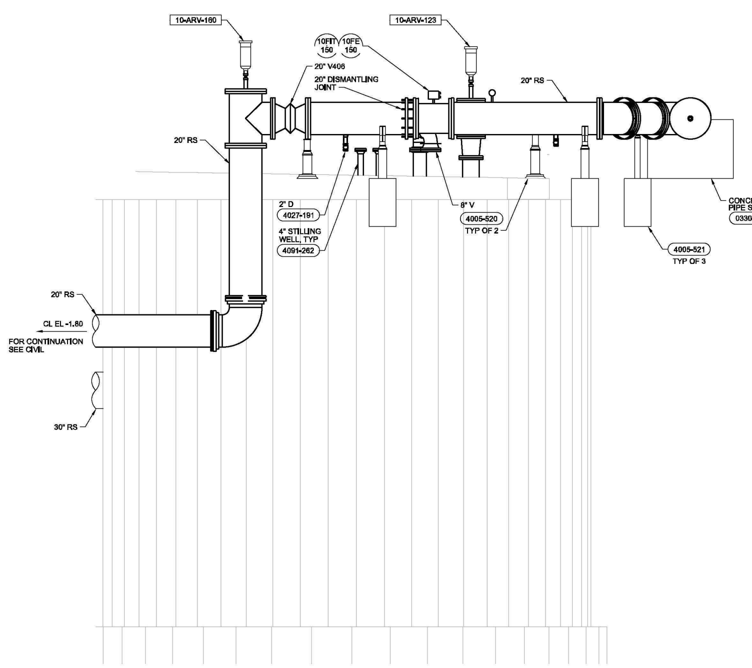
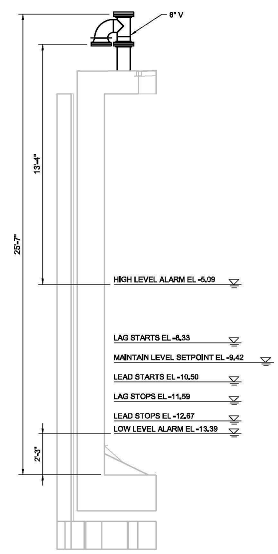
A B C D



C **SECTION**
3/8" = 1'-0"
100-D-2001



D **SECTION**
3/8" = 1'-0"
100-D-2001

NO.	DATE	REVISION	BY	APVD

DSGN P MURPHY | DR B KASPAR | CHK S POLSON | APVD S CHAMPLIN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII
NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

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PROCESS MECHANICAL
PUMP STATION SECTIONS

VERIFY SCALE
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0 1"

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DWG	100-D-3002
SHEET	of

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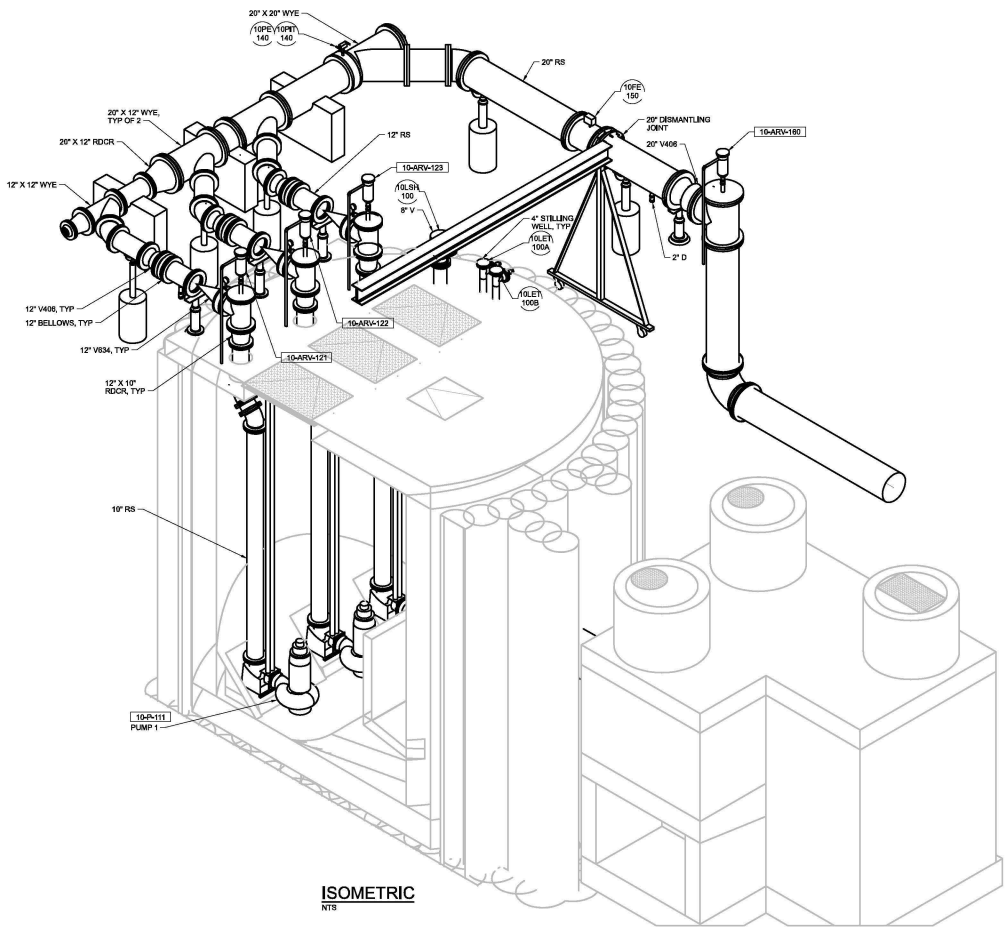

ISOMETRIC

NTS

NO.	DATE	REVISION	BY	APV'D
DSGN	DR	CHK	APV'D	
P.MURPHY	B.KASPAR	S.POLSON	S.CHAMPLIN	

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PROCESS MECHANICAL

PUMP STATION ISOMETRIC

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
CITY OF KAPALUA, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

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DATE	DECEMBER 2023
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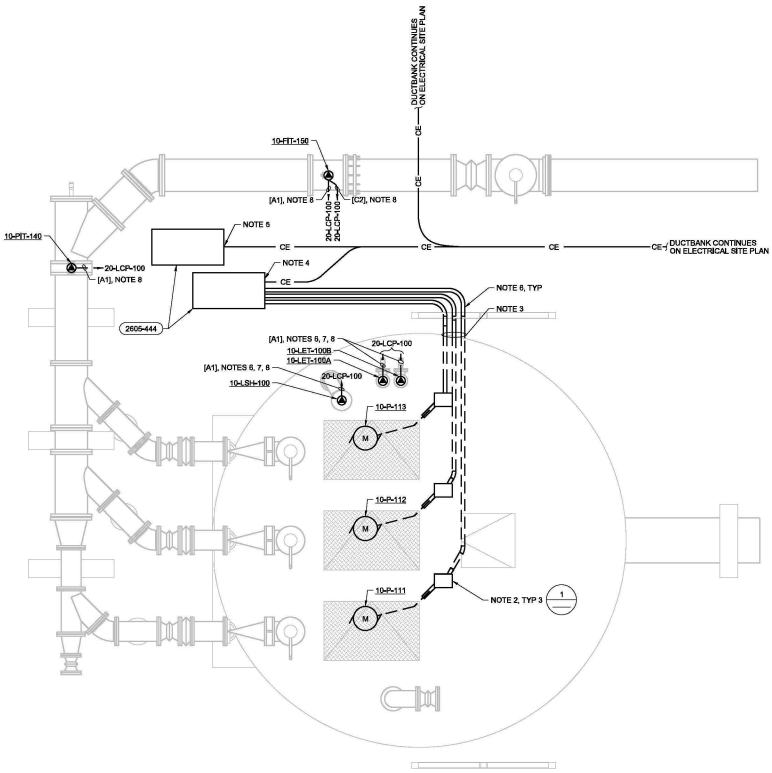
SHEET	of

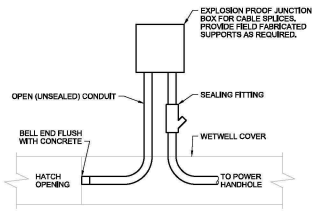


WET WELL PROCESS PLAN

3/8"=1'-0"
NOTE 1

NOTES

1. CLASSIFIED (HAZARDOUS) AREAS EXIST. REFER TO AREA CLASSIFICATION TABLE.
2. EXPLOSION PROOF JUNCTION BOX FOR PUMP CABLE SPLICES. MOUNT BOX A MINIMUM OF 16-INCHES ABOVE TOP OF WET WELL. PROVIDE 2-INCH OPEN CONDUIT FROM JUNCTION BOX INTO PUMP HATCH ACCESS OPENING FOR FLEXIBLE PUMP CABLE. TERMINATE CONDUIT WITH BELL END FITTING. PROVIDE CONDUIT SEAL BETWEEN JUNCTION BOX AND HAND HOLES.
3. 2-INCH EMBEDDED CONDUIT IN WET WELL COVER SPACED 6-INCHES ON CENTER.
4. 24-INCH WIDE, 48-INCH LONG, 36-INCH DEEP ELECTRICAL HANDHOLE FOR 120V AND GREATER POWER CIRCUITS.
5. 24-INCH WIDE, 48-INCH LONG, 36-INCH DEEP ELECTRICAL HAND HOLE FOR 120V AND LESS INSTRUMENT AND CONTROL CIRCUITS.
6. TRANSITION CONDUIT ELEVATION TO 24-INCHES BELOW GRADE FOR DIRECT BURIED CONDUITS TO HAND HOLE.
7. EMBEDDED CONDUIT IN WET WELL COVER.
8. FIELD ROUTE CONDUIT FROM INSTRUMENT TO CONTROL HAND HOLE, THEN TO ELECTRICAL BUILDING VIA DUCT BANK.



1 SPLICE JUNCTION BOX

NTS

0 4 7 10
3/8"=1'-0"

NO.	DATE	DSGN	DR	REVISION	CHK	BY	APV'D
		J JAMES	DR	A CUGLIAT	J LANDMAN	S CHAMPLIN	

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
OUTLINE PLAN, NAPILI-HONOKOWAI, MAUI, HAWAII

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ELECTRICAL
PUMP STATION PLAN

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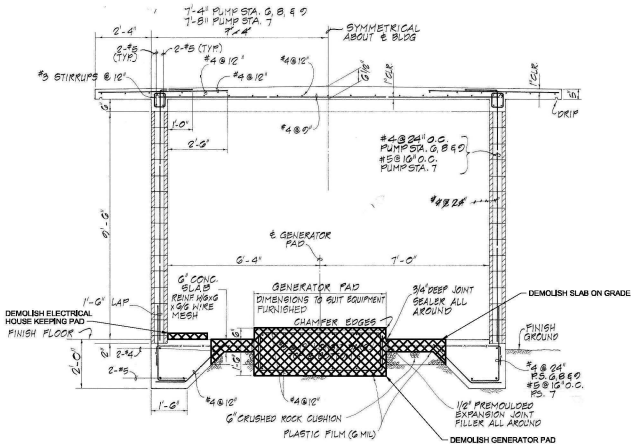
0 1"

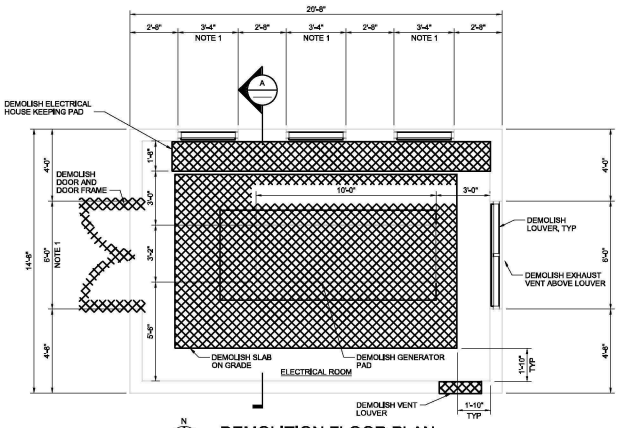
DATE	DECEMBER 2023
PROJ	D3560100
DWG	100-E-2001
SHEET	of

SHEET NOTES

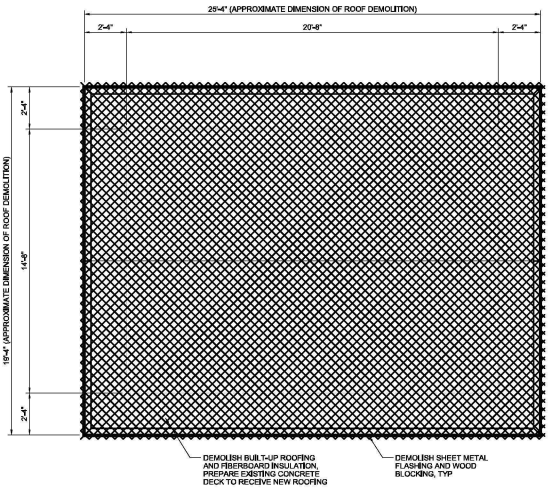
1. ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS THAT RELATE TO EXISTING WORK PRIOR TO COMMENCING NEW WORK.
2. CROSS-HATCHED AREA DENOTES GENERAL AREA OF DEMOLITION, SOME AREAS OMITTED FOR CLARITY.



A SECTION
1/2"=1'-0"



N
DEMOLITION FLOOR PLAN
3/8" = 1'-0"



N
DEMOLITION ROOF PLAN
3/8" = 1'-0"

NO.	DATE	REVISION	BY	APV'D
DSGN	T SOBECK	DR	CHK	APV'D

T MCINTOSH
N GRUM
S CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
CIP NO. 200-R-2001
NAPILI-HONOKOWAI, MAUI, HAWAII

DEMOLITION

GENERATOR BUILDING PLAN AND SECTIONS

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DWG	200-R-2001
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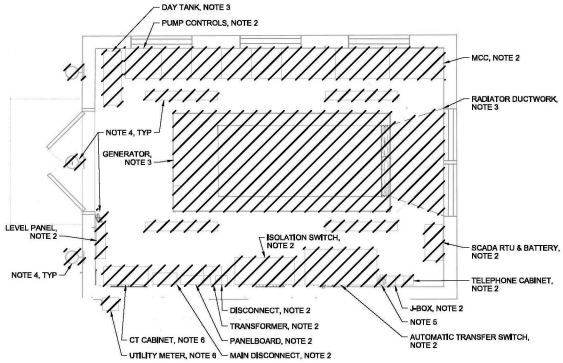
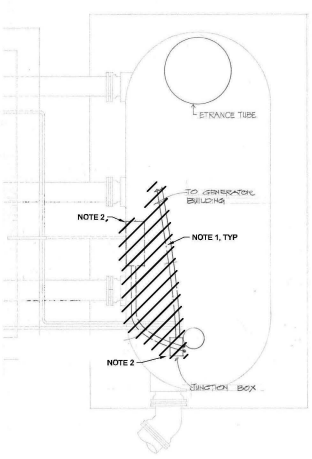


GENERATOR BUILDING

3/16"=1'-0"



EXISTING DRY WELL PUMP STATION

3/16"=1'-0"

NOTES

1. DEMOLISH ELECTRICAL EQUIPMENT, CONDUCTORS, AND EXPOSED CONDUIT FROM PUMP STATION DRY PIT PUMP STATION.
2. DEMOLISH ELECTRICAL EQUIPMENT INCLUDING PANELS, TRANSFORMERS, METERING, TRANSFER SWITCHES, AND APPURTANCES.
3. DEMOLISH ENGINE GENERATOR, DUCT WORK, FUEL SYSTEM, COOLANT SYSTEM, AND APPURTANCES.
4. DEMOLISH LIGHTING FIXTURES AND SWITCHES. PROVIDE BLANK COVER ON FLUSH BOXES.
5. DEMOLISH RECEPTACLES. PROVIDE BLANK COVER ON FLUSH BOXES.
6. COORDINATE WITH MAUI ELECTRIC (MECO) FOR REMOVAL OF PRIMARY SWITCHES, FUSES, TRANSFORMER, AND METER.

NO.	DATE	REVISION	BY	APV'D

DSGN J JAMES DR A CUSLAY CHK J LANDMAN APV'D S CHAMPLIN

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DEMOLITION

GENERATOR BUILDING ELECTRICAL PLAN

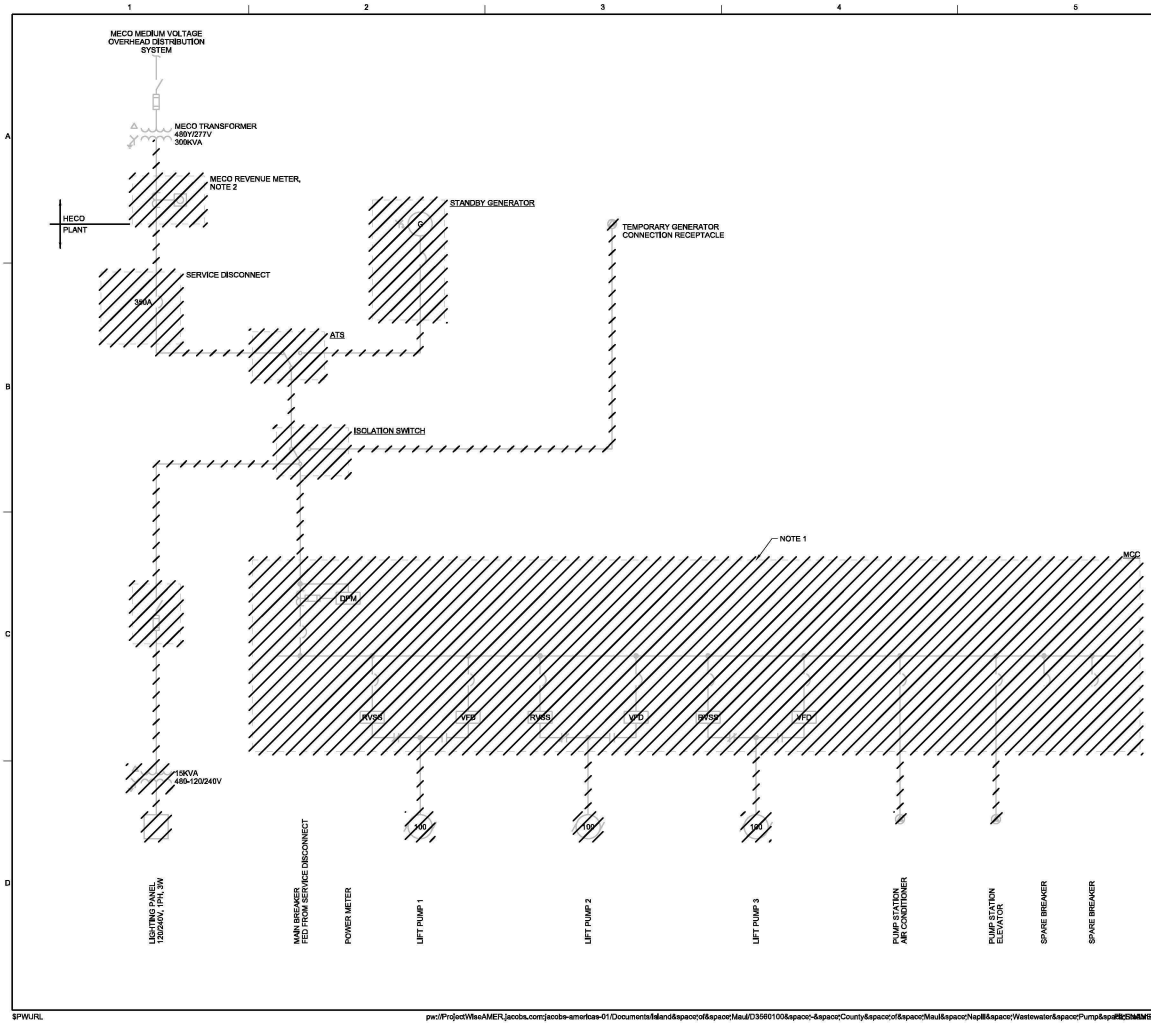
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
CITY OF KAHULUI, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

100% DESIGN SUBMITTAL

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	200-R-2002
SHEET	of



NOTES

1. DEMOLISH ELECTRICAL EQUIPMENT, CONDUCTORS AND EXPOSED CONDUIT.
2. COORDINATE METER AND CT DEMOLITION WITH MAUI ELECTRIC (MECO).

NO.	DATE	REVISION	BY	APV'D
DSGN	J JAMES	DR A CUGLIAT	CHK J LANDMAN	APV'D S CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION IMPROVEMENTS
OLD PUMP STATION NAPILI
NAPILI-HONOKOWAI, MAUI, HAWAII

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DEMOLITION

GENERATOR BUILDING ONE-LINE DIAGRAM

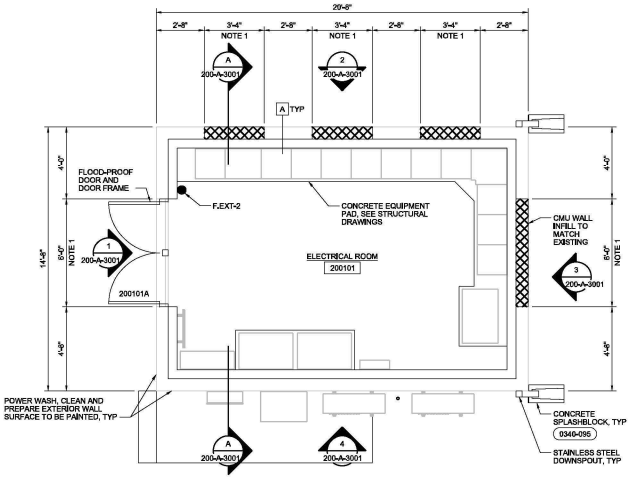
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	200-R-6001
SHEET	of

100% DESIGN SUBMITTAL

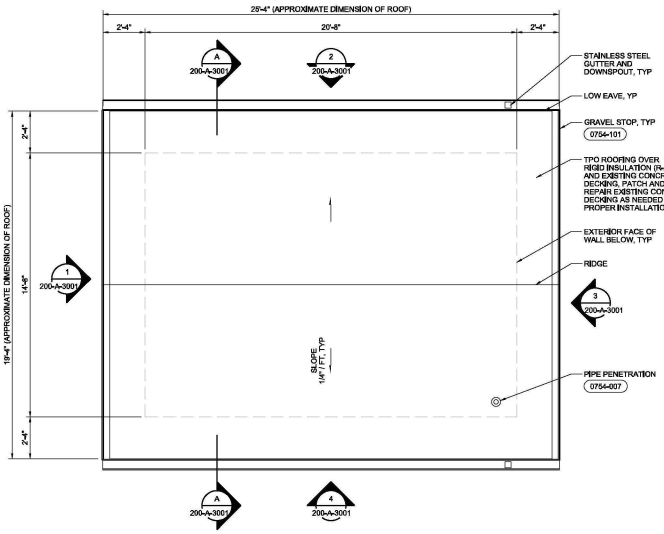
SHEET NOTES

1. ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS THAT RELATE TO EXISTING WORK PRIOR TO COMMENCING NEW WORK.
2. FOR GENERAL ARCHITECTURAL NOTES, MATERIAL SYMBOLS, LEGEND, ABBREVIATIONS, BUILDING CODE DATA AND LIFE SAFETY PLAN, SEE DRAWING 001-G-0007.



FLOOR PLAN

3/8" = 1'-0"



ROOF PLAN

3/8" = 1'-0"

NO.	DATE	REVISION	BY	APV'D
DSGN	E.GRAY	DR. J.HOSTETLER	G.MESSTEN	S.CHAMPLIN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

ARCHITECTURAL

ELECTRICAL BUILDING PLAN

VERIFY SCALE
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0 1"

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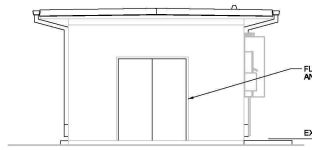
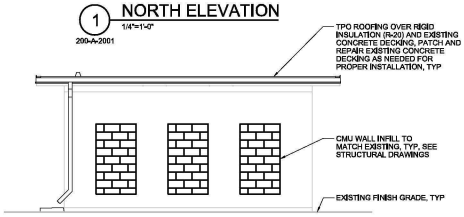


1 NORTH ELEVATION
1/4"=1'-0"
200-A-2001



2 EAST ELEVATION
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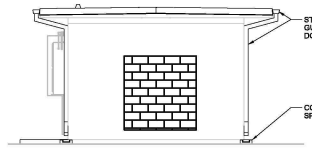
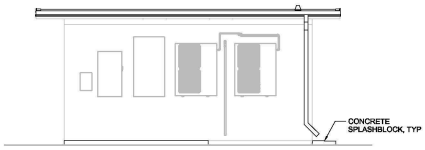
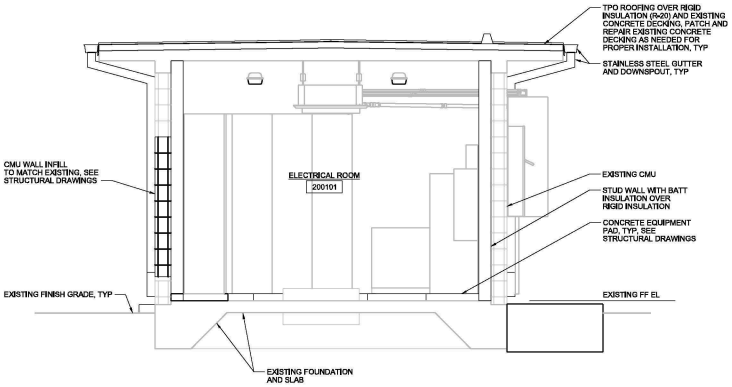
200-A-2001



3 SOUTH ELEVATION
1/4"=1'-0"
200-A-2001



4 WEST ELEVATION
1/4"=1'-0"
200-A-2001



A SECTION
1/2"=1'-0"
200-A-2001

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DSGN	E.GRAY	DR	J.HOSTETLER	CHK G.WESTEN APV'D S.CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION UPGRADE
DOWNTOWN MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

ELECTRICAL BUILDING ELEVATIONS AND SECTION

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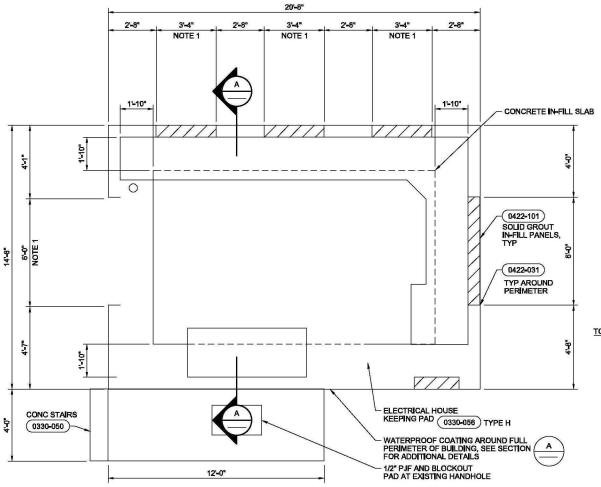
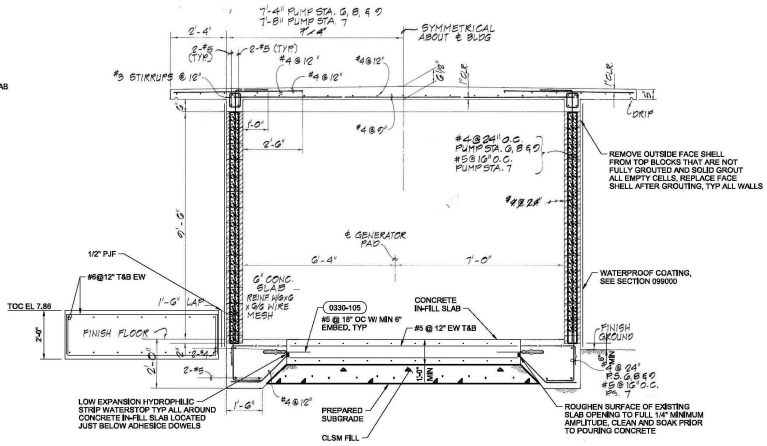
SHEET NOTES

1. ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY, CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS THAT RELATE TO EXISTING WORK PRIOR TO COMMENCING NEW WORK.
2. CROSS-HATCHED AREA DENOTES GENERAL AREA OF DEMOLITION, SOME AREAS OMITTED FOR CLARITY.



FLOOR PLAN
3/8" = 1'-0"



SECTION
1/2"=1'-0"

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DSGN	T SOBECK		N CRUM	T MCINTOSH		S CHAMPLIN	

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

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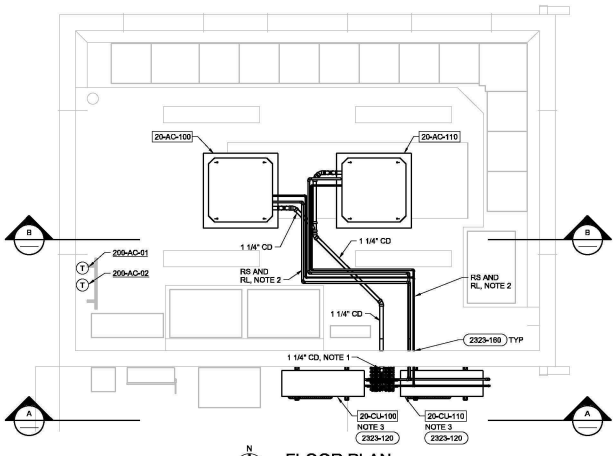
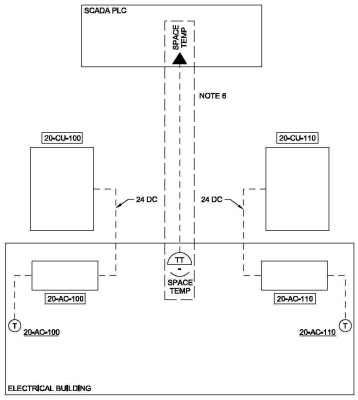


FLOOR PLAN
1/2"=1'-0"



AIRFLOW SCHEMATIC
NTS

GENERAL NOTES

1. DISCHARGE 1 1/4" CONDENSATE PIPING INTO 1'-0" WIDE x 1'-0" LENGTH x 4" DEEP RIPRAP ROCK TO PREVENT SLIP HAZARD.
2. REFRIGERANT LIQUID AND REFRIGERANT SUCTION PIPING SHALL BE INSTALLED PER MANUFACTURER INSTALLATION REQUIREMENTS AND INSULATED PER 23 07 00 - HVAC INSULATION.
3. BOTTOM OF CONDENSING UNIT SHALL BE MOUNTED ABOVE FLOOD LEVEL (EL. 11.50).
4. PROVIDE SEISMIC RESTRAINTS OF AC UNITS, SIZED THROUGH DEFERRED DESIGN PER SPECIFICATION 01 88 13 - ANCHORAGE AND BRACING.
5. PROVIDE SEISMIC RESTRAINTS OF CONDENSING UNITS, SIZED THROUGH DEFERRED DESIGN PER SPECIFICATION 01 88 15 - ANCHORAGE AND BRACING.
6. TT FOR SPECIAL TEMPERATURE NOTIFICATION SHALL BE INSTALLED PER DIVISION 40 SCADA CONTRACTOR. SEE I&C SHEETS FOR TAGGING AND INSTALLATION.

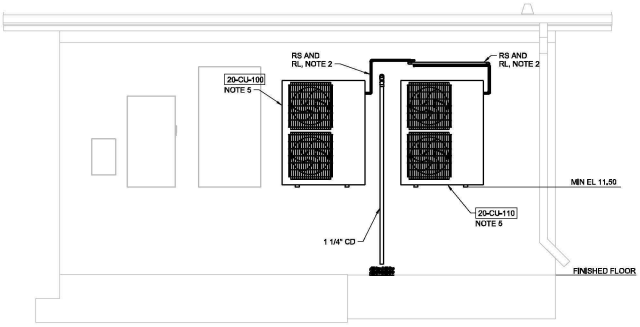
SEQUENCE OF OPERATION

SPLIT SYSTEM ROOM AIR CONDITIONER:
WHEN SPACE ROOM TEMPERATURE IS BELOW 80°F (ADJ), BOTH 20-AC-100 AND 20-AC-110 AND ASSOCIATED CONDENSING UNITS SHALL BE DE-ENERGIZED.

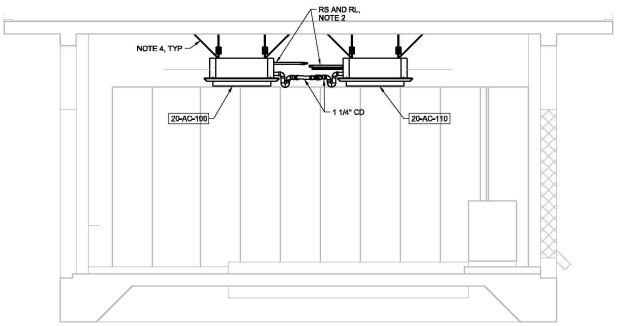
WHEN SPACE ROOM TEMPERATURE IS ABOVE 80°F (ADJ), AIR CONDITIONER 20-AC-100 AND ASSOCIATED CONDENSING UNIT SHALL ACTIVATE TO COOL THE SPACE AND MAINTAIN 80°F (ADJ) SPACE TEMPERATURE 20-AC-110 AND ASSOCIATED CONDENSING UNIT SHALL REMAIN DE-ENERGIZED.

UNIT SETPOINT FOR 20-AC-100 AND 20-AC-110 SHALL BE MANUALLY ALTERNATED EVERY TWO WEEKS TO ENSURE OPERATION OF BOTH UNITS TO MAINTAIN COMPRESSOR SEALS AND MOTOR ACTIVITY.

SPACE TEMPERATURE INDICATING TRANSMITTER (TIT):
WHEN THE SPACE TIT REGISTERS A TEMPERATURE ABOVE 85°F (ADJ), TIT SHALL PROVIDE AN ALARM SCADA PLC TO INDICATE THAT INITIAL SETPOINT HAS BEEN EXCEEDED AND AC UNITS SHALL BE INVESTIGATED FOR FAILURE.



A SECTION
1/2"=1'-0"



B SECTION
1/2"=1'-0"

NO.	DATE	BY	REVISION	BY	APV'D
DSGN	S HOFFMAN	SR	T WHITE	SR	M DRAGON
					S CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
CITY OF KAHULUI, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

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HVAC

ELECTRICAL BUILDING PLAN AND SECTIONS

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SPLIT SYSTEM DX UNITS

23 81 00

INDOOR UNIT TAG NUMBER	OUTDOOR UNIT TAG NUMBER	LOCATION	DX COOLING DATA			OUTDOOR FAN DATA				COMPRESSOR DATA					UNIT ELECTRICAL DATA								MAXIMUM DIMENSIONS				MANUFACTURER	MODEL NO.
			CAPACITY BTU/HR	AMBIENT TEMP. DEG. F	SEER @ ARI	NO.	VOLTS	PH	ACFM (TOTAL)	NO.	RLA (EA.)	LRA (EA.)	VOLTS	PH	# CONN	MCA AMPS	MOCP (FUSE)	MOTOR ENCLOSURE	NEMA CLASS	VOLTS	PH	INCHES L	INCHES W	INCHES H	WEIGHT LBS.		
20-AC-100	20-CU-100	ELECTRICAL FACILITY	42,000	95	21.0	2	208	1	3,880	1	8.0	13.0	208	1	1	25.0	30	ODP	4X	208	1	41.4	14.2	52.7	211	MITSUBISHI	PUY-A42NKA7
20-AC-110	20-CU-110	ELECTRICAL FACILITY	42,000	95	21.0	2	208	1	3,880	1	8.0	13.0	208	1	1	25.0	30	ODP	4X	208	1	41.4	14.2	52.7	211	MITSUBISHI	PUY-A42NKA7

REMARKS:

1. OUTDOOR UNIT FEEDS INDOOR UNIT AT 24 V
2. PROVIDE WALL MOUNTED WIRED THERMOSTAT.
3. UNIT SHALL BE PROVIDED SEACOAST PROTECTION.
4. DISCONNECT SHALL BE PROVIDED BY DIVISION 26
5. OUTDOOR UNIT SHALL WALL MOUNTED ABOVE FLOOD LEVEL WITH WALL BRACKET FROM VENDOR (STAINLESS STEEL)

INDOOR UNIT

23 81 00.02

FAN DATA				DX COOLING DATA					MAXIMUM DIMENSIONS				MANUFACTURER	MODEL	REMARKS
SUPPLY AIR (MAX) CFM	SUPPLY AIR (MIN) CFM	OUTSIDE AIR CFM	EXTERNAL STATIC P IN. WG.	TOTAL BTU/HR	SENS. BTU/HR	EAT DEG. F DB	EAT DEG. F WB	COND. DEG. F	INCHES L	INCHES W	INCHES H	WEIGHT LBS.			
1200	1200	0	0.25	42,000	38,000	85	52.6	95	33.1	33.1	11.75	67	MITSUBISHI	PLA-A42EA7	1, 2, 3, 4, 5
1200	1200	0	0.25	42,000	38,000	85	52.6	95	33.1	33.1	11.75	67	MITSUBISHI	PLA-A42EA7	1, 2, 3, 4, 5

NO.	DATE	REVISION	BY	APV'D
DSGN	S HOFFMAN	DR T WHITE	CHK M DRAGON	APV'D S CHAMPLIN

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HVAC
SCHEDULES

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
CONTRACT NO. 24-01
NAPILI-HONOKOWAI, MAUI, HAWAII

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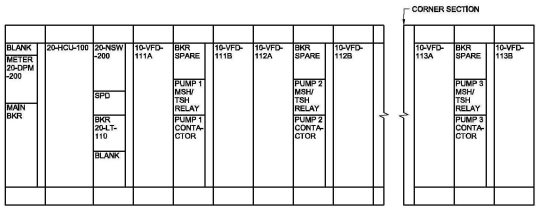


B 20-MCC-200 ELEVATION

1/2" = 1'-0"
NOTE 5

Maul County Code Chapter 20.35
Outdoor Lighting

The Electrical Outdoor Lighting Installation and Equipment have been reviewed by me and to the best of my knowledge, this design substantially conforms to the requirements specified in Maui County Code Chapter 20.35.

Signature _____ Title _____

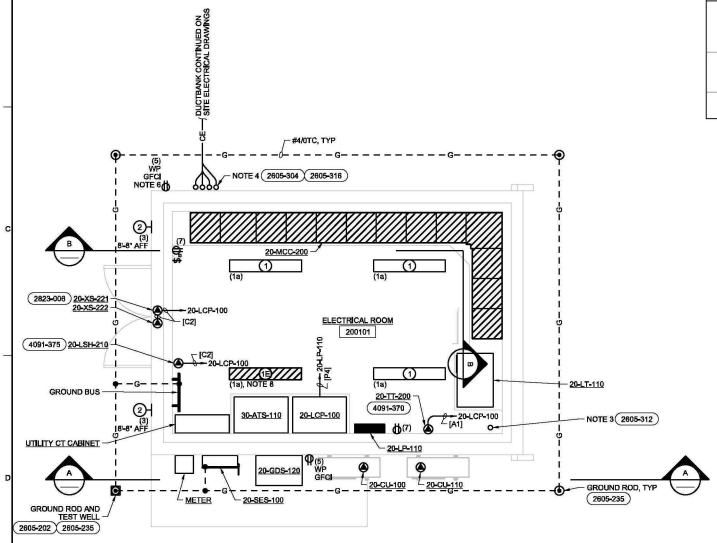
Printed Name _____ State of Hawaii License Number _____

NOTES

1. LIGHTING AND RECEPTACLES ARE CIRCUITED FROM PANEL "LP". PROVIDE [P2] CONDUIT/CONDUCTORS.
2. PROVIDE NEW BURIED GROUNDING RING AND RODS. BOND GROUND RING TO NEW GROUNDING BUS IN ELECTRICAL BUILDING.
3. PROVIDE 2-INCH CONDUIT ANTENNA MAST MOUNTED TO ROOF. MOUNT ANTENNA 10 FEET ABOVE ROOF LEVEL. BOND MAST TO BUILDING GROUND ROD.
4. PENETRATE CONDUITS INTO ELECTRICAL BUILDING ABOVE MCC. SEE ELECTRICAL SITE PLAN FOR DUCTBANK CONDUIT SIZES.
5. MCC LAYOUT IS BASED ON FIRST NAMED MANUFACTURER'S PUBLISHED MCC DESIGN GUIDES. ACTUAL ARRANGEMENT WILL BE DETERMINED BY MANUFACTURER.
6. OUTDOOR ELECTRICAL EQUIPMENT SHALL BE MOUNTED AT 11.50 FT.
7. LIGHTING AND RECEPTACLE CIRCUITS ARE FED FROM PANEL 200-LP-01. CIRCUIT NUMBER IS INDICATED IN PARENTHESIS (#). PROVIDE [3/4"C, 2#12, 1#12G] CIRCUIT CONDUCTORS.
8. WIRE EMERGENCY LIGHT BATTERY VOLTAGE SENSE/CHARGER TO NON-SWITCHED LEG OF CIRCUIT.

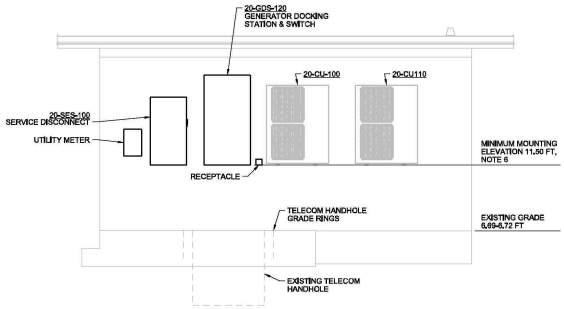
LUMINAIRE SCHEDULE

TYPE	LIGHT SOURCE	INPUT VOLTAGE	INPUT WATTS	OUTPUT LUMENS	DESCRIPTION	COLOR TEMPERATURE CCT	MANUFACTURER		MOUNTING
							NAME	PRODUCT NUMBER	
1	LED	120V	24	4000	LINEAR LED, ENCLOSED, GASKETED, FIBERGLASS HOUSING, LOW PROFILE FROSTED ACRYLIC LENS, MEDIUM DISTRIBUTION, STAINLESS STEEL LATCHES, SURFACE MOUNT BRACKET. UL WET LOCATION.	4000K 80CRI	LITHONIA	FEM-L48-4000LM-LPPFL-MD-MVOLT-40K-80CRI STSL, FEMSMB	CEILING, SURFACE MOUNT
1E	LED	120V	48	4000	SAME AS TYPE 1 WITH EMERGENCY BATTERY WITH DIAGNOSTICS	4000K 80CRI	LITHONIA	FEM-L48-4000LM-LPPFL-MD-MVOLT-40K-80CRI E10WMCP, STSL, FEMSMB	CEILING, SURFACE MOUNT
2	LED	120V	24	3120	FULL-CUTOFF WALL PACK, UL WET LOCATION, LESS THAN 2% BLUE LIGHT, PHOTOCELL, BLACK HOUSING	2600K	E2	E2-WPF-3MW-HL-S-UV-N-P-BL	WALL



FLOOR PLAN

3/8" = 1'-0"



A SECTION

3/8" = 1'-0"

0 4 7 10
3/8"=1'-0"

NO.	DATE	REVISION	BY	APVD
DSGN	J JAMES		S CHAMPLIN	
DR	A CUSLAY		J LANDMAN	
CHK				

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
COUNTY OF MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

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ELECTRICAL

ELECTRICAL BUILDING PLANS AND SECTION

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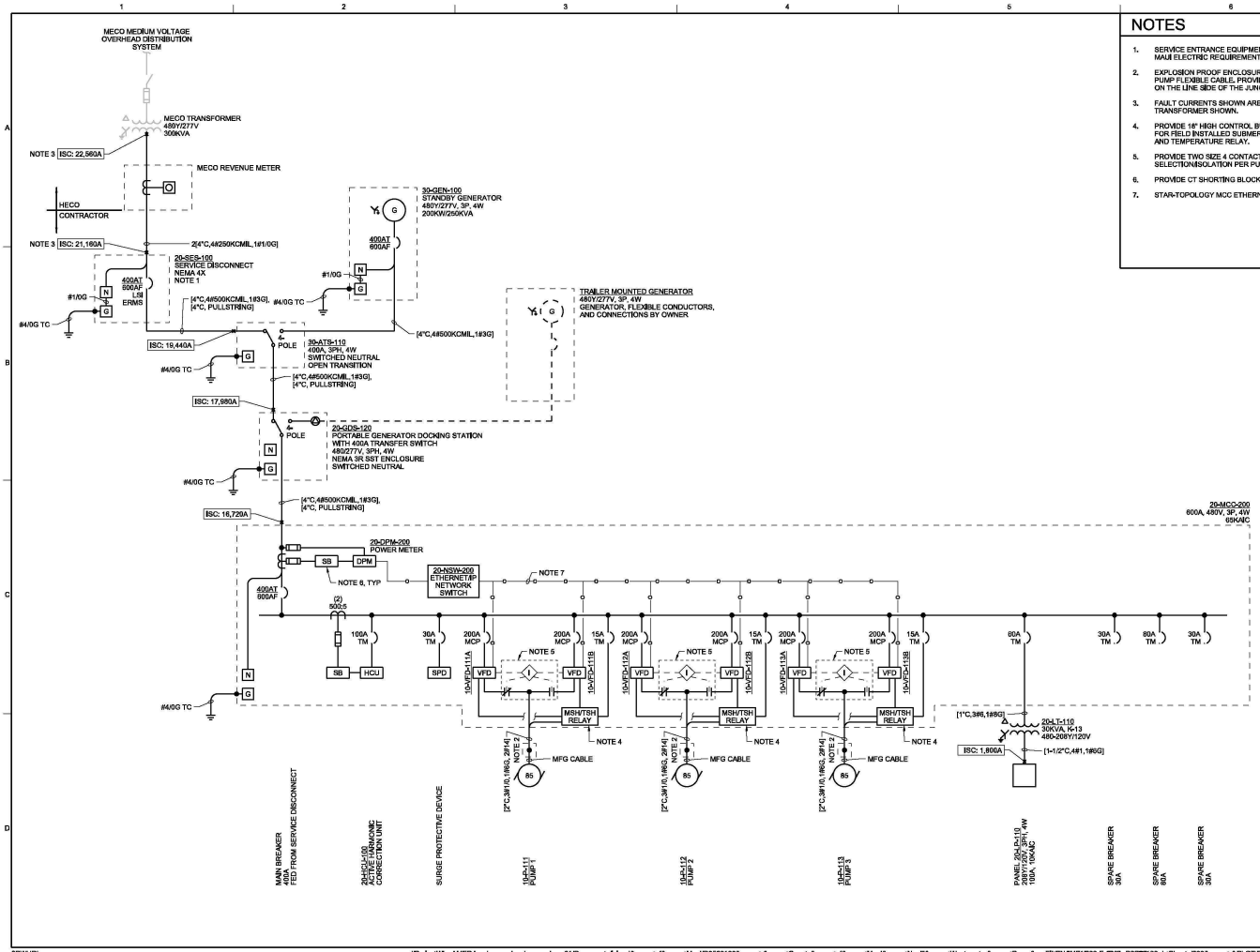

NOTES

1. SERVICE ENTRANCE EQUIPMENT TO COMPLY WITH MAUI ELECTRIC REQUIREMENTS.
2. EXPLOSION PROOF ENCLOSURE FOR SPLICING PUMP FLEXIBLE CABLE. PROVIDE CONDUIT SEALS ON THE LINE SIDE OF THE JUNCTION BOX.
3. FAULT CURRENTS SHOWN ARE BASED ON UTILITY TRANSFORMER SHOWN.
4. PROVIDE 18" HIGH CONTROL BUCKET WITH CPT FOR FIELD INSTALLED SUBMERSIBLE PUMP LEAK AND TEMPERATURE RELAY.
5. PROVIDE TWO SIZE 4 CONTACTORS FOR VFD SELECTION/ISOLATION PER PUMP.
6. PROVIDE CT SHORTING BLOCK.
7. STAR-TOPOLOGY MCC ETHERNET NETWORK.

NO.	DATE	REVISION	BY	APVD
DSGN	J JAMES	DR A CUGLIAT CHK J LANDMAN	APVD S CHAMPLIN	

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
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ELECTRICAL

ELECTRICAL BUILDING ONE-LINE DIAGRAM

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PANEL: 20-LP-110	LOCATION: NAPILI SPS1A ELECTRICAL BUILDING	
SERVICE VOLTAGE: 208Y120	PHASE: 3	WIRE: 4	SCCR: 10,000A
TOTAL LOAD KVA: 20.3	BUS SIZE: 225	MAIN SIZE: 110	TYPE: BRKR
REMARKS: FED VIA 30KVA XFMR 20-LT-110	NEUTRAL: FULL	MOUNTING: SURFACE	FED FROM: 20-MCC-200

LOAD IN VA				BKR	CK NO	CK NO	BKR		LOAD IN VA		
A	B	C	CIRCUIT DESCRIPTION	A/P			A/P	CIRCUIT DESCRIPTION	A	B	C
120			INTERIOR LIGHTING	20/1	1	2	20/1	20-LCP-100 (PLC)	1200		
	48		EXTERIOR LIGHTING	20/1	3	4	20/1	20-LCP-110 (LIGHT & RCPT)		200	
		360	EXTERIOR RECEPTACLES	20/1	5	6	20/1	SPARE			
360			INTERIOR RECEPTACLES	20/1	7	8	20/1	SPARE			
	1500		20-CU-100	30/2	9	10	20/1	SPARE			
		1500	AIR CONDITIONER		11	12	20/1	SPARE			
1500			20-CU-110	30/2	13	14	20/1	SPARE			
	1500		AIR CONDITIONER		15	16	20/1	SPARE			
			SPARE	20/1	17	18	20/1	SPARE			
			SPARE	20/1	19	20	20/1	SPARE			
			SPARE	20/1	21	22	20/1	SPARE			
			SPARE	20/1	23	24	20/1	SPARE			
			SPACE	-	25	26	-	SPACE			
			SPACE	-	27	28	-	SPACE			
			SPACE	-	29	30	-	SPACE			
			SPACE	-	31	32	-	SPACE			
			SPACE	-	33	34	-	SPACE			
			SPACE	-	35	36	-	SPACE			
					37	38		30-GEN-100	4000		
			SURGE PROTECTIVE DEVICE	30/3	39	40	50/3	STANDBY GENERATOR PANEL		4000	
					41	42					4000
1980	3048	1860	TOTAL						5200	4200	4000

NO.	DATE	BY	APV'D
DSGN	J JAMES	S CHAMPLIN	
DR	A CUSLAY	J LANDMAN	
CHK			

REVISION

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ELECTRICAL

ELECTRICAL BUILDING PANEL SCHEDULE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
CIVIL, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

VERIFY SCALE
BARS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	200-E-E002
SHEET	of

100% DESIGN SUBMITTAL

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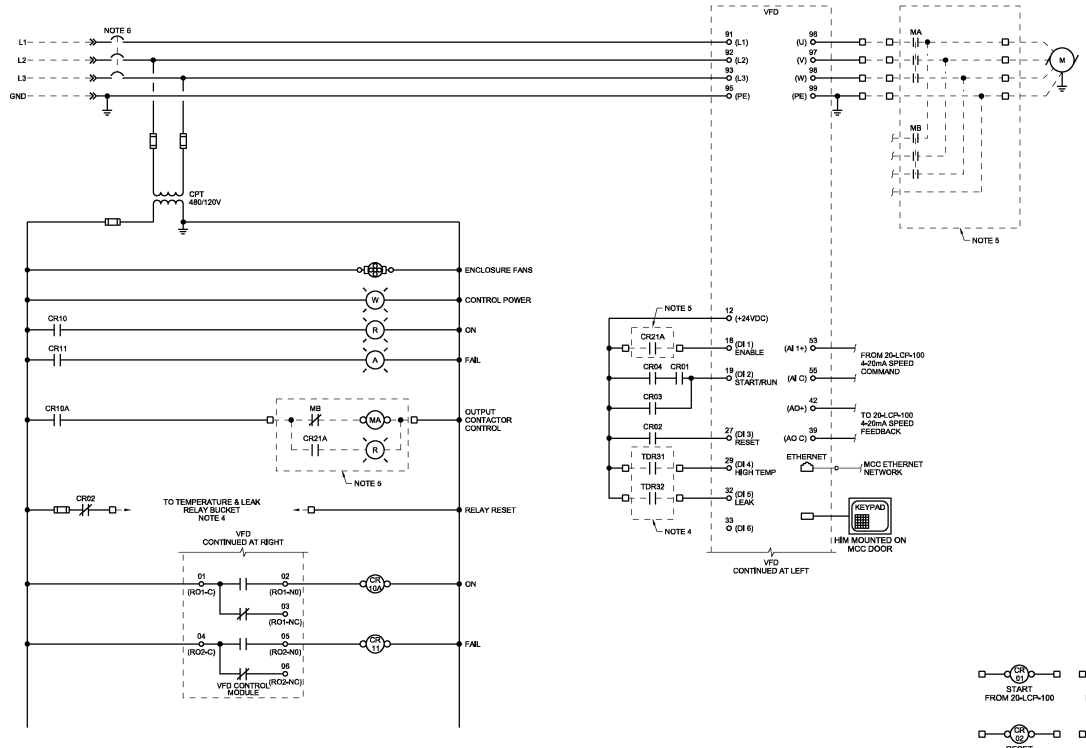
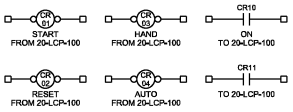
pw://ProjectWiseAMER.jacobs.com:jacobs-americas-01/Documents/Island&space;of&space;Maui/D3560100&space;-&space;County&space;of&space;Maui&space;Napili&space;Wastewater&space;Pump&space;Station&space;Improvements/Sheets/200&space;-&space;Electrical/Building/200-E-E002.dwg 12/15/2023 7:56:56 AM



VFD "A" CONTROL DIAGRAM

NOTE 1



EXTERNAL DISCRETE SIGNAL I/O

NOTES 2, 3

NOTES

1. CONTROL DIAGRAMS SHOW THE GENERAL FUNCTION OF THE EQUIPMENT. MANUFACTURER SHALL REVIEW AND DEVELOP MOTOR CONTROLS FOR THE EQUIPMENT SUPPLIED PROVIDING THE IDENTIFIED FUNCTIONS. ADDITIONAL COMPONENTS MAY BE REQUIRED THAT ARE NOT REFLECTED IN THIS DIAGRAM. DIAGRAM IS BASED ON FIRST-NAME MANUFACTURER LISTED IN THE SPECIFICATIONS.
2. PROVIDE 120V INTERPOSING RELAY FOR DISCRETE INPUT SIGNAL. COIL VOLTAGE SUPPLIED BY SIGNAL SOURCE PANEL INDICATED.
3. WETTING VOLTAE FOR DISCRETE OUTPUT CONTACTS PROVIDED BY EXTERNAL SOURCE INDICATED.
4. SUBMERSIBLE MOTOR TEMPERATURE AND LEAK PROTECTION RELAY AND INTERPOSING RELAYS ARE LOCATED IN SEPARATE MCC BUCKET FROM DRIVES AND CONTACTORS. SEE DIAGRAM ON DRAWING 200-E-6103.
5. CONTACTORS FOR REDUNDANT DRIVE ISOLATION, CONTACTORS AND DRIVE SELSCTION CONTROLS ARE LOCATED IN SEPARATE MCC BUCKET FROM DRIVE. SEE DIAGRAM ON DRAWING 200-E-6103.
6. SEE ONE-LINE DIAGRAM FOR CIRCUIT BREAKER RATING.

NO.	DATE	REVISION	BY	APVD
DSGN	J JAMES	DR A CUGLAR	CHK J LANDMAN	APVD S CHAMPLIN

Jacobs

ELECTRICAL

ELECTRICAL BUILDING
VFD-A MOTOR CONTROL DIAGRAM

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION UPGRADE
NAPILI-HONOKOWAI, MAUI, HAWAII

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	200-E-6101
SHEET	of

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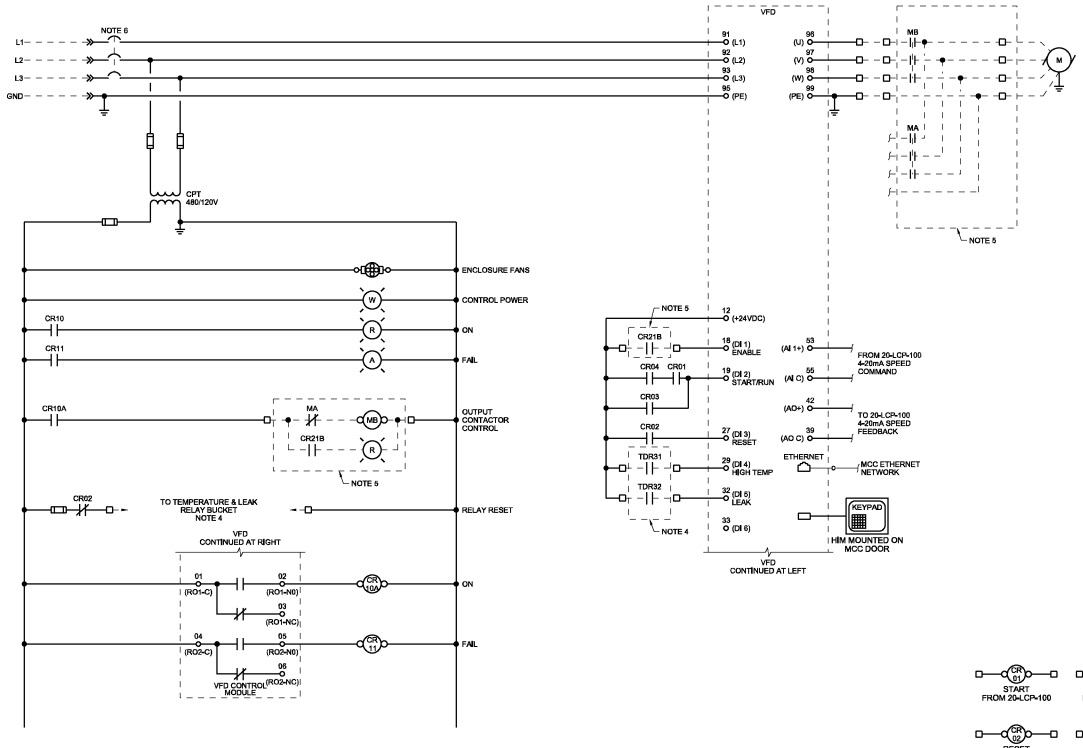
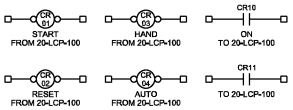


VFD "B" CONTROL DIAGRAM

NOTE 1



EXTERNAL DISCRETE SIGNAL I/O

NOTES 2, 3

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3. WETTING VOLTAE FOR DISCRETE OUTPUT CONTACTS PROVIDED BY EXTERNAL SOURCE INDICATED.
4. SUBMERSIBLE MOTOR TEMPERATURE AND LEAK PROTECTION RELAY AND INTERPOSING RELAYS ARE LOCATED IN SEPARATE MCC BUCKET FROM DRIVES AND CONTACTORS. SEE DIAGRAM ON DRAWING 200-E-6103.
5. CONTACTORS FOR REDUNDANT DRIVE ISOLATION, CONTACTORS AND DRIVE SELSCTION CONTROLS ARE LOCATED IN SEPARATE MCC BUCKET FROM DRIVE. SEE DIAGRAM ON DRAWING 200-E-6103.
6. SEE ONE-LINE DIAGRAM FOR CIRCUIT BREAKER RATING.

NO.	DATE	REVISION	BY	APVD
DSGN	J JAMES	DR A CUGLAR	CHK J LANDMAN	APVD S CHAMPLIN

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ELECTRICAL

ELECTRICAL BUILDING
VFD-B MOTOR CONTROL DIAGRAM

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION UPGRADE
NAPILI-HONOKOWAI, MAUI, HAWAII

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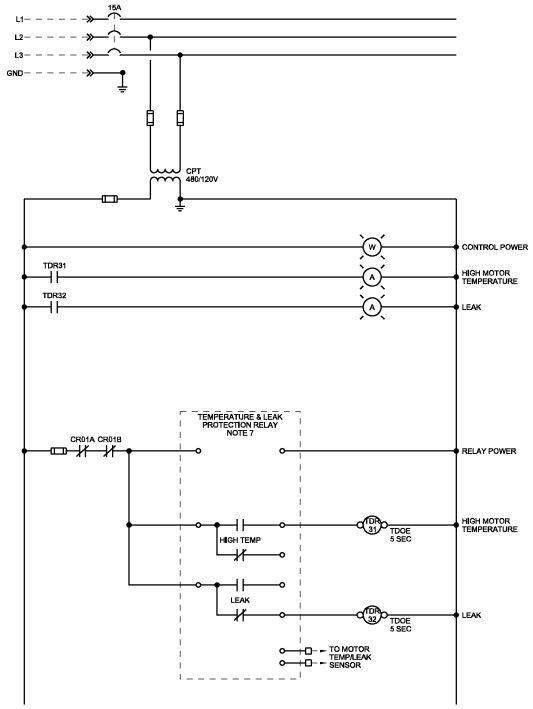
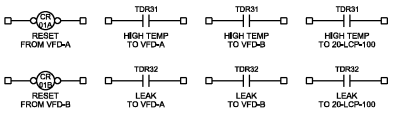
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	200-E-6102
SHEET	of

100% DESIGN SUBMITTAL

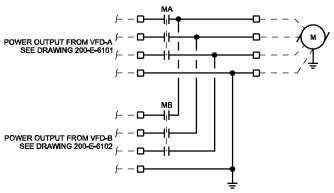


TEMPERATURE & LEAK DETECTION RELAY CONTROL DIAGRAM



EXTERNAL DISCRETE SIGNAL I/O

NOTES 2, 3



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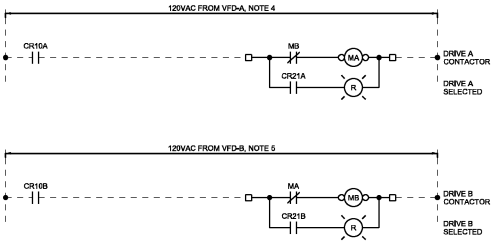
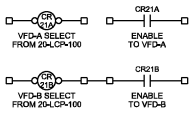
3. WETTING VOLTAGE FOR DISCRETE OUTPUT CONTACTS PROVIDED BY EXTERNAL SOURCE INDICATED.
4. CONTACTOR COIL VOLTAGE SUPPLIED BY VFD-A CONTROL CIRCUIT.
5. CONTACTOR COIL VOLTAGE SUPPLIED BY VFD-B CONTROL CIRCUIT.
6. PROVIDE PROCEDURAL SIGNAGE ON BUCKET INDICATING MULTIPLE POWER SOURCES. IDENTIFY SPECIFIC SOURCE DRIVE IDENTIFICATION.
7. FIELD INSTALLED TEMPERATURE AND LEAK DETECTION RELAY PROVIDED BY SUBMERSIBLE PUMP SUPPLIER. PROVIDE TERMINAL BLOCKS IN BUCKET TO FACILITATE FIELD INSTALLATION.



DRIVE ISOLATION/SELECTION CONTACTOR CONTROL DIAGRAM



EXTERNAL DISCRETE SIGNAL I/O

NOTES 2, 3

NO.	DATE	DSGN	DR	CHK	APVD	BY
		J JAMES	A CUGLIAT	J LANDMAN		S CHAMPLIN

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ELECTRICAL

ELECTRICAL BUILDING PUMP RELAY AND CONTACTOR CONTROL DIAGRAMS

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION MODIFICATIONS
NAPILI-HONOKOWAI, MAUI, HAWAII

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	DECEMBER 2023
PROJ	D3560100
DWG	200-E-6103
SHEET	of

100% DESIGN SUBMITTAL

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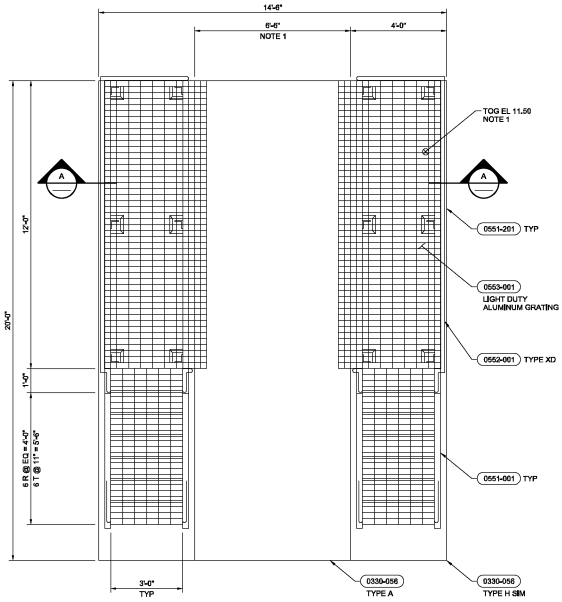
GENERAL NOTES

1. FOR STRUCTURAL GENERAL NOTES, SEE DRAWINGS 001-G-0008 AND 001-G-0009.

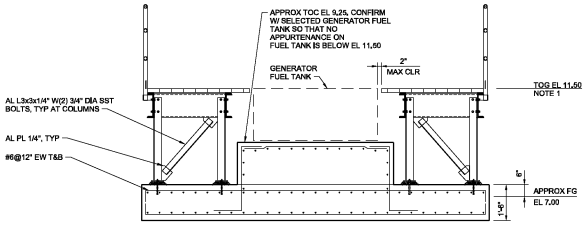


NOTES:

1. TOP OF GRATING SHALL MATCH TOP OF TANK FOR GENERATOR AT EL 11.50 AND SHALL BE 2" MAXIMUM CLEAR FROM THE FUEL TANK

N

PLAN
1/2"=1'-0"



NOTES:

1. TOP OF GRATING SHALL MATCH TOP OF TANK FOR GENERATOR AT EL 11.50, AND SHALL BE 2" MAXIMUM CLEAR FROM THE FUEL TANK

A SECTION
1/2"=1'-0"

NO.	DATE	REVISION	BY	APV'D
DSGN	T SOBECK	DR N GRUM	CHK T MCINTOSH	APV'D S CHAMPLIN

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, COUNTY OF MAUI, HAWAII

NAPILI NO. 1 PUMP STATION UPGRADE
CITY OF LAHAINA, MAUI, HAWAII
NAPILI-HONOKOWAI, MAUI, HAWAII

Jacobs

STRUCTURAL
GENERATOR
PLANS AND SECTION

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DATE	DECEMBER 2023
PROJ	D3560100
DWG	300-S-2001
SHEET	of

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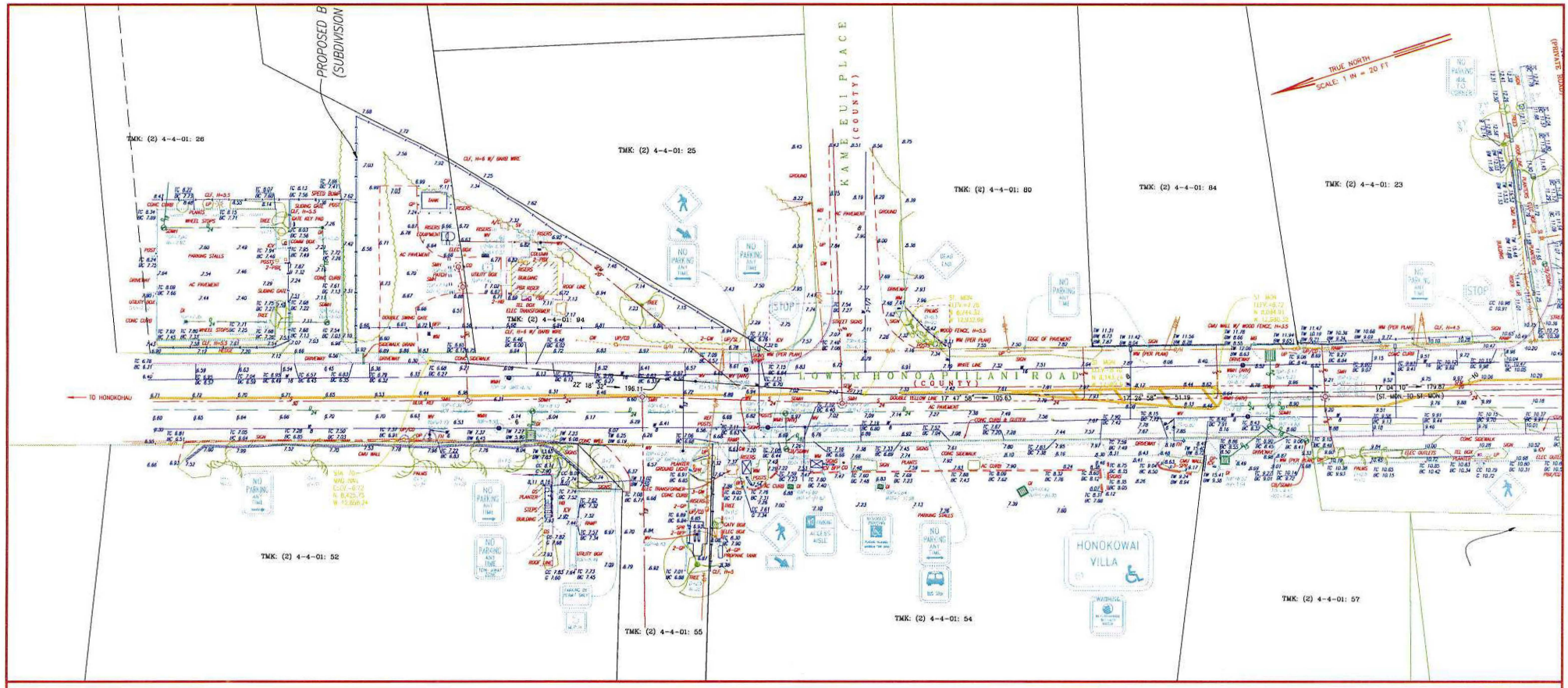
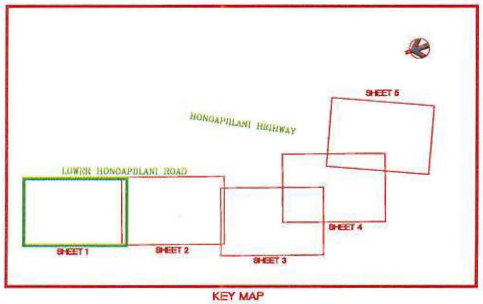




KEY MAP

SURVEY CONTROL

HORIZONTAL
COORDINATES AND COORDINATES ARE REFERRED TO
CENTRALIZED SURVEY TRANSLATION STATION "MAWAI (PUU KOLU)"

VERTICAL
STREET MONUMENT
TOP OF BRASS PIN
ELEV.=22.21 FT., MSL
LOCATED AT THE INTERSECTION OF HONOAPIILANI HIGHWAY AND LOWER HONOAPIILANI ROAD

LANDSCAPE AND SITE LEGEND

- GUARD RAIL
- CHAIN LINK FENCE
- WOOD FENCE / RAILING
- METAL RAILING
- ROCK WALL (CRM)
- HOLLOW TILE WALL (CMU)
- LOOSE ROCK WALL
- LANDSCAPE ROCKS
- CONCRETE SURFACE OR PAVEMENT
- BUILDING FOOTPRINT
- RIGHT OF WAY LINE
- ADJACENT PROPERTY LINE

TREES (D=DIAMETER, H=HEIGHT)
(APPROXIMATE DRIP LINE AS SHOWN)

- TREE
- PALM
- HEDGES
- VEGETATION LINE
- COLUMN
- STREET LIGHT
- LAMP POST
- SPEED BUMP

ABBREVIATIONS:

AC	ASPHALT CONCRETE	LP	LAMP POST
ARV	AIR RELEASE VALVE	MB	MAILBOX
BC	BOTTOM CURB	MH	MANHOLE
BFP	BACK FLOW PREVENTER	O/H	OVERHEAD
BOT	BOTTOM	PB	PEDESTRIAN BUTTON
BW	BOTTOM WALL	PBX	PABX BOX OR PULL BOX
CATV	CABLE TELEVISION	PSL	PEDESTRIAN SIGNAL LIGHT
CB	CATCH BASIN	RET	REFLECTOR
CD	CONDUIT	RPM	RAISED PAVEMENT MARKINGS
CLF	CHAIN LINK FENCE	S	SEWER
CMU	CONCRETE MASONRY UNIT (HOLLOW TILE)	SFM	SEWER FORCE MAIN
CO	CLEAN OUT	SL	STREET LIGHT
COMM	COMMUNICATION	SMH	SEWER MANHOLE
CONC	CONCRETE	SDMH	STORM DRAIN MANHOLE
CRM	CONCRETE RUBBLE MASONRY (ROCK) WALL	SPR	SPRINKLER
D	DIAMETER OR DRAIN	TC	TOP CURB
DI	DRAIN INLET	TEL	TELEPHONE
DS	DOWN SPOUT	THV	TOP VALVE
DWY	DRIVEWAY	TP	TOP PIPE
ELEC	ELECTRIC	TS	TOP STEM
ELEV	ELEVATION	TSL	TRAFFIC SIGNAL LIGHT
FH	FIRE HYDRANT	TSLB	TRAFFIC SIGNAL LIGHT BOX
SFM	FORCE MAIN	TW	TOP WALL
G	GROUND	UP	UTILITY POLE
GP	GUARD POST	W	WATER
GW	GUY WIRE	WM	WATER METER
HB	HOSE BIB	WMH	WATER MANHOLE
ICV	IRRIGATION CONTROL VALVE	WV	WATER VALVE BOX
INV	INVERT		

NOTES:

THIS MAP AND ASSOCIATED CADD FILE IS A TOPOGRAPHIC SURVEY OF THE SUBJECT PARCEL OR PROJECT SITE. THE DEFINITION OF BOUNDARIES AND ENCUMBRANCES AFFECTING THE PROJECT SITE ARE TAKEN FROM LARGE TAX MAPS ONLY. OBTAINING A COPY OF THE CURRENT TITLE REPORT OR DEED FOR AREAS WHERE PROPERTY AND ENCUMBRANCE ISSUES ARE CRITICAL IS RECOMMENDED PRIOR TO ANY DESIGN AND CONSTRUCTION WORK.

UNDERGROUND UTILITY LINES AND/OR STRUCTURES, IF SHOWN, ARE PROVIDED BASED ON INFORMATION FROM PLANS/MAPS PREPARED BY OTHERS, AND NEED TO BE REVIEWED BY PUBLIC UTILITY AGENCIES OR ASSOCIATED FACILITIES.

UNLESS OTHERWISE NOTED, ALL LOCATIONS OF UNDERGROUND UTILITY LINES AND/OR STRUCTURES ARE APPROXIMATE. NO GUARANTEE IS MADE ON THE ACCURACY OF COMPLETENESS OF THE INFORMATION SHOWN. THE AGENCIES OF THIS TOPOGRAPHIC SURVEY MAP SHALL VERIFY THE INFORMATION, AS NEEDED, DURING DESIGN AND CONSTRUCTION.

TOPOGRAPHIC SURVEY MAP
COUNTY OF MAUI
NAPILI SEWER FORCE MAIN #1 REPLACEMENT
AT NAPILI, HONOKOWAI, MAUI, HAWAII

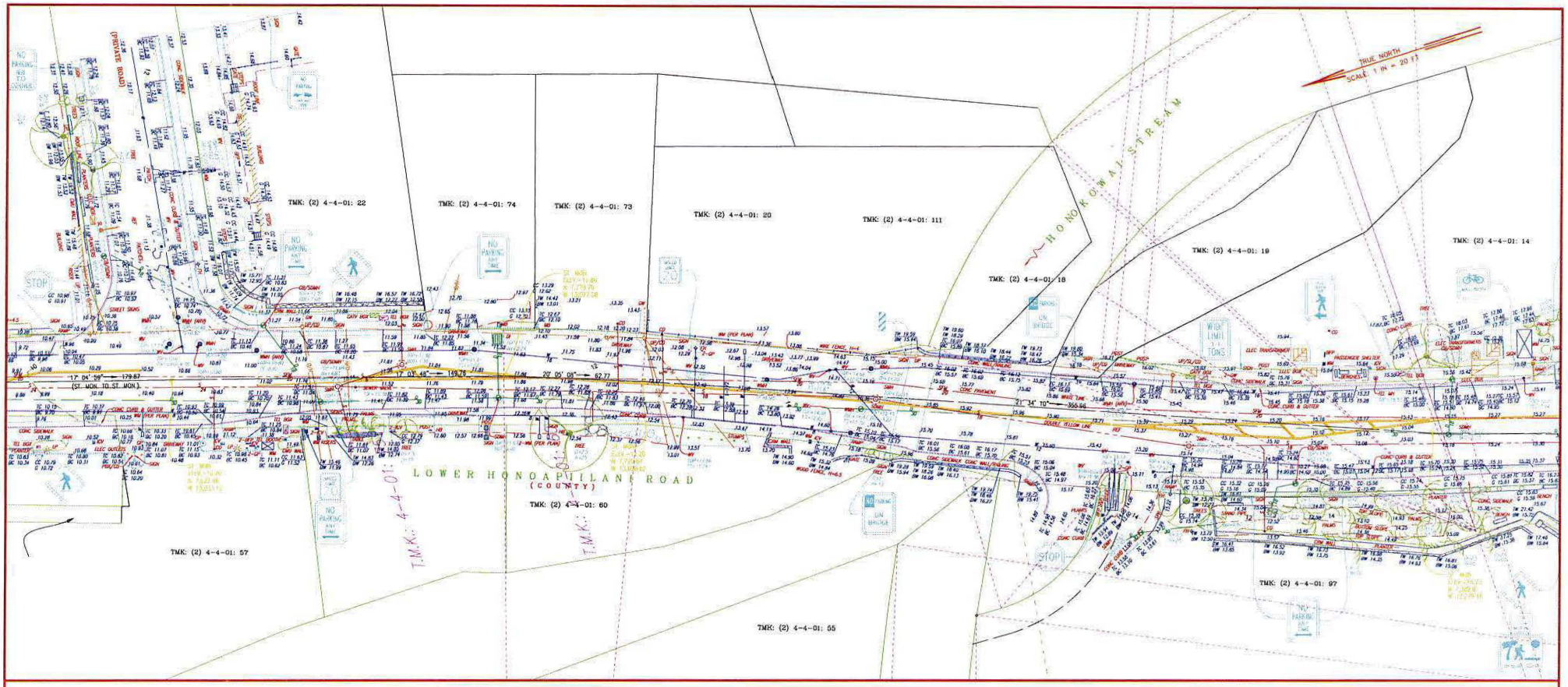
TMK: 4-4-01 & 14
SCALE: 1 in. = 20 ft. NOVEMBER 08, 2022
JOB NO. 22001-13 FIELD BOOK: 3687 : 35
DRN: SN-M CHK: FLD: AG

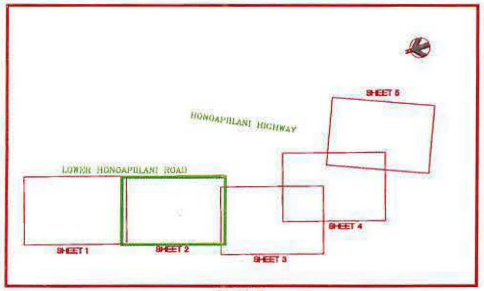
CONTROLPOINT SURVEYING, INC.
1100 South King Street, Suite 1300
(HONOLULU), HAWAII 96814

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

SHEET 1 OF 5
36 x 24

EXHIBIT D





KEY MAP

SURVEY CONTROL:

HORIZONTAL
COORDINATES ARE REFERRED TO
HORIZONTAL "SURVEY THANGULATION STATION" "NAKAI (PAU-KOUI)"

VERTICAL
STREET MONUMENT
TOP OF UNDOLIN
ELEVATION 17.14 MSL

LOCATED AT THE INTERSECTION OF HONOAPIILANI HIGHWAY AND LOWER HONOAPIILANI ROAD

LANDSCAPE AND SITE LEGEND

- GUARD RAIL
- CHAIN LINK FENCE
- WOOD FENCE / RAILING
- METAL RAILING
- ROCK WALL (CRM)
- HOLLOW TILE WALL (CMU)
- LOOSE ROCK WALL
- LANDSCAPE ROCKS
- CONCRETE SURFACE OR PAVEMENT
- BUILDING FOOTPRINT
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TREES (D=DIAMETER, H=HEIGHT)
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ABBREVIATIONS:

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CO	CLEAN OUT	SL	STREET LIGHT
CONN	CONNAMICHION	SMH	SEWER MANHOLE
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DI	DRAIN INLET	TEL	TELEPHONE
DS	DOWN SPOUT	TRV	TOP VALVE
DWY	DRIVEWAY	TP	TOP POST
ELEC	ELECTRIC	TS	TOP STEM
ELEV	ELEVATION	TSL	TRAFFIC SIGNAL LIGHT
FH	FIRE HYDRANT	TSLB	TRAFFIC SIGNAL LIGHT BOX
SFM	FORCE MAIN	TW	TOP WALL
G	GROUND	UP	UTILITY POLE
GP	GUARD POST	W	WATER
GW	GUY WIRE	WM	WATER METER
HB	HOSE BIB	WMH	WATER MANHOLE
ICV	IRRIGATION CONTROL VALVE	WV	WATER VALVE BOX
INV	INVERT		

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TOPOGRAPHIC SURVEY MAP
COUNTY OF MAUI
NAPILI SEWER FORCE MAIN #1 REPLACEMENT
AT NAPILI, HONOKOWAI, MAUI, HAWAII

TMK: 4-4-01 & 14
SCALE: 1 in. = 20 ft. NOVEMBER 08, 2022
JOB NO. 22001-13 FIELD BOOK: 3687 : 35
DRN: SN-M CHK: FLD: AG

CONTROLPOINT SURVEYING, INC.
1100 Ala Moana Blvd., Suite 1200
HONOLULU, HAWAII 96814

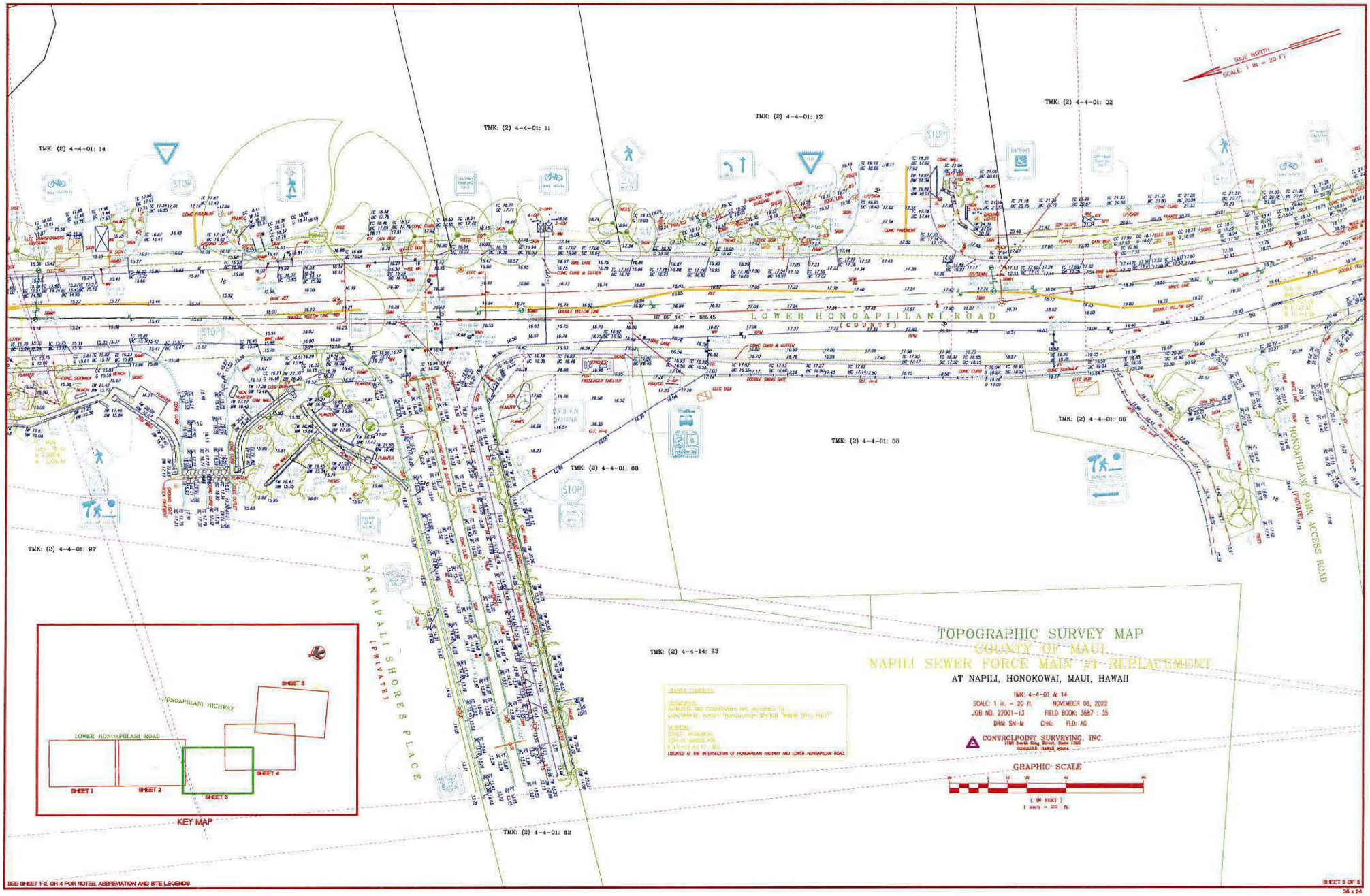
GRAPHIC SCALE

20 5 10 20 40 80

(IN FEET)
1 inch = 20 ft.

SHEET 2 OF 5

36 x 24



TOPOGRAPHIC SURVEY MAP
COUNTY OF MAUI
NAPILI SEWER FORCE MAIN #1 REPLACEMENT
AT NAPILI, HONOKOWAI, MAUI, HAWAII

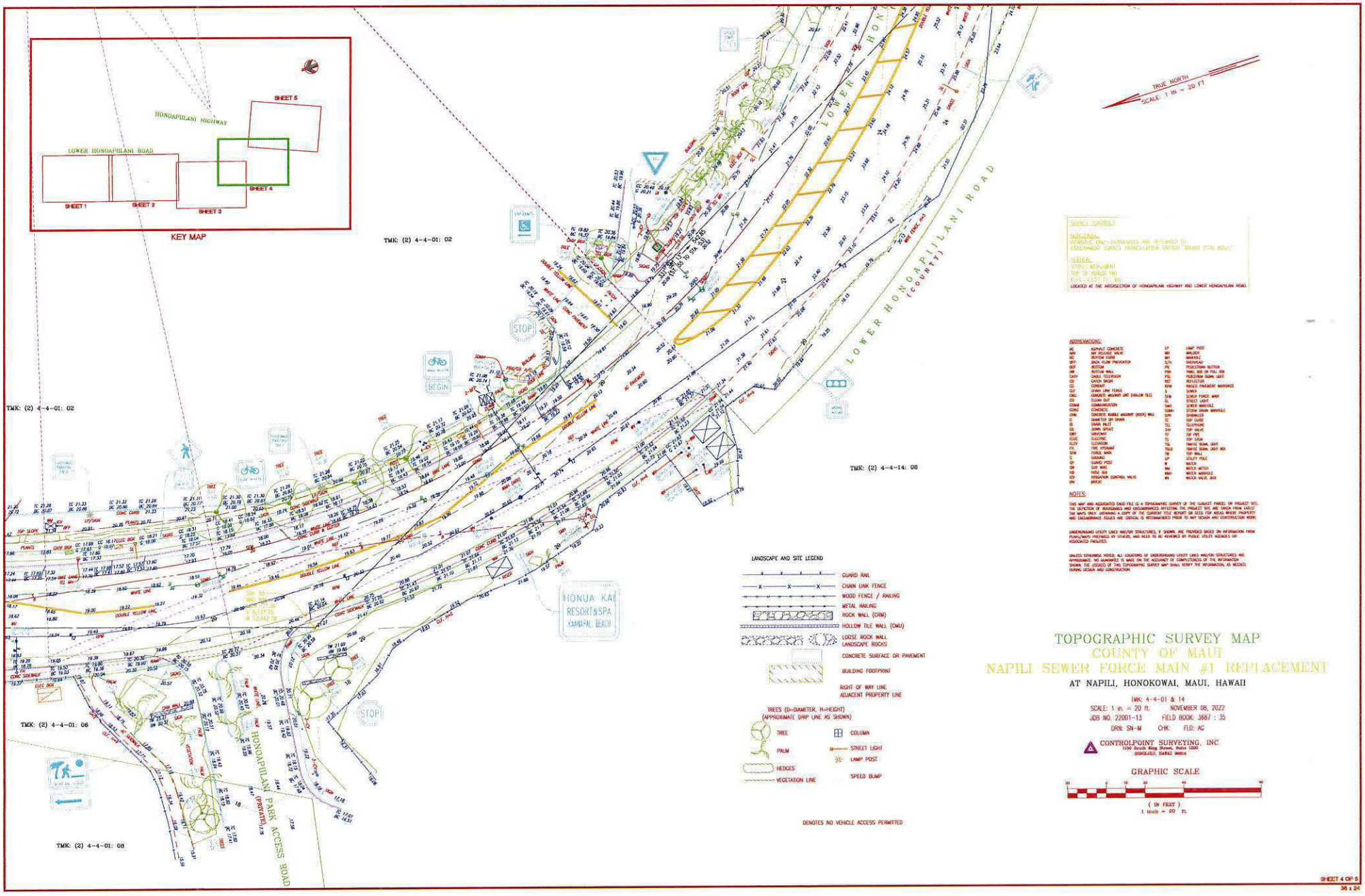
TMK: 4-4-01 & 14
SCALE: 1 in. = 20 ft. NOVEMBER 08, 2022
JOB NO. 22001-13 FIELD BOOK: 3687 : 35
DRN: SN-M CHK: FLD: AG

CONTROLPOINT SURVEYING, INC.
1200 South King Street, Suite 1202
HONOLULU, HAWAII 96814

SEE SHEET 1-2, OR 4 FOR NOTES, ABBREVIATION AND SITE LEGENDS

SHEET 3 OF 5

36 x 24



TOPOGRAPHIC SURVEY MAP
COUNTY OF MAUI
NAPILI SEWER FORCE MAIN #1 REPLACEMENT
AT NAPILI, HONOKOWAI, MAUI, HAWAII

TMK: 4-4-01 & 14

SCALE: 1 in. = 20 ft. NOVEMBER 08, 2022

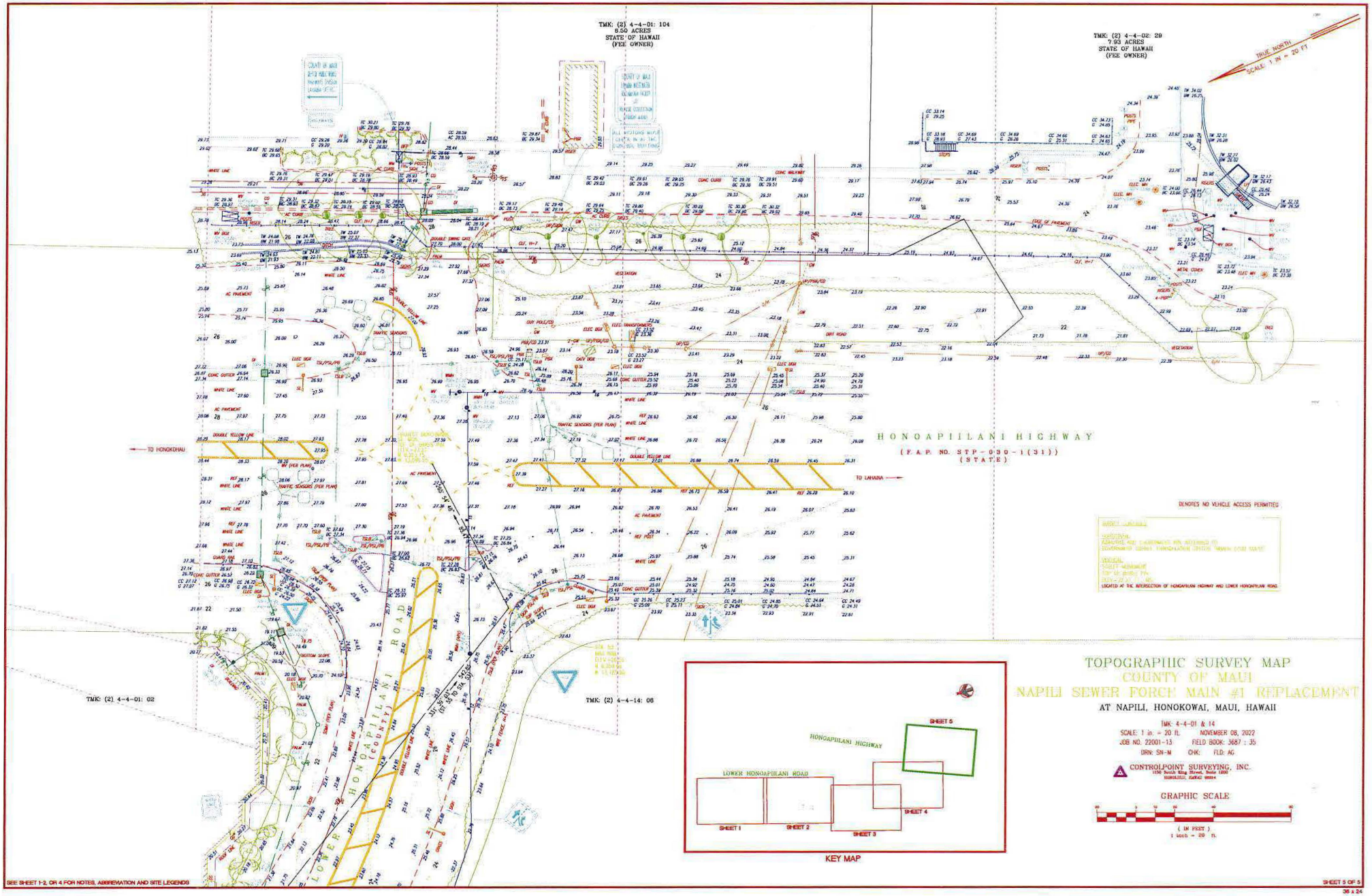
JOB NO. 22001-13 FIELD BOOK: 368 / : 35

DRW: SN-M CHK: FLD: AG

CONTROLPOINT SURVEYING, INC.
1150 South King Street, Suite 1200
HONOLULU, HAWAII 96814

SHEET 4 OF 5

36 x 24



KEY MAP

TOPOGRAPHIC SURVEY MAP
COUNTY OF MAUI
NAPILI SEWER FORCE MAIN #1 REPLACEMENT

AT NAPILI, HONOKOWAI, MAUI, HAWAII

TMK: 4-4-01 & 14

SCALE: 1 in. = 20 ft. NOVEMBER 08, 2022

JOB NO. 22001-13 FIELD BOOK: 3687 : 35

DRN: SN-M CHK: FLD: AG

CONTROLPOINT SURVEYING, INC.
1150 South King Street, Suite 1800
HONOLULU, HAWAII 96814

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.