SAUSALITO-MARIN CITY SANITARY DISTRICT

MARIN COUNTY, CALIFORNIA

MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS

AUGUST 2023

DRAWINGS



WASTEWATER TREATMENT PLANT
1 EAST ROAD
SAUSALITO, CA 94965

LOCATION MAP

DRAWING INDEX

SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE
ELECTRICAL		
1	E-0	COVER SHEET, LOCATION MAP, AND DRAWING INDEX
2	E-1	ELECTRICAL LEGEND AND NOTES
3	E-2	MAIN SINGLE-LINE DIAGRAM MODIFICATIONS
4	E-3	MISC. SINGLE-LINE DEMOLITIONS
5	E-4	MISC. SINGLE-LINE MODIFICATIONS
6	E-5	PANELBOARD SCHEDULES
7	E-6	SITE PLAN
8	E-7	OPS BUILDING PLAN, MCC ROOM PLAN
9	E-8	OPS BUILDING, FIRE ALARM PLAN
10	E-9	PARTIAL SAFETY BUILDING PLAN, PARTIAL HEADWORKS PLAN
11	E-10	CONSTRUCTION DETAILS
12	E-11	CONSTRUCTION DETAILS
13	E-12	CONSTRUCTION DETAILS
14	E-13	CONSTRUCTION DETAILS
15	E-14	TYPICAL DETAILS
16	E-15	TYPICAL DETAILS

CONSTRUCTION NOTES:

1. ALL WORK SHOWN ON THE DRAWINGS E-1 THROUGH E-15 SHALL BE PERFORMED BY LICENSED, EXPERIENCED PERSONNEL IN CLOSE COORDINATION WITH THE DISTRICT.
2. ALL REQUIRED AND APPLICABLE RULES AND REGULATIONS INCLUDING SAFETY CODES SHALL BE STRICTLY FOLLOWED AND OBSERVED.
3. SEQUENCE OF WORK AND ADVANCED SOR (SYSTEM OUTAGE REQUEST) ARE CRITICAL IN THIS PROJECT AND SHALL BE OBSERVED BY THE CONTRACTOR AT ALL TIMES.
4. FINAL FUNCTIONAL TESTS SHALL BE PERFORMED BY THE CONTRACTOR.

REV	DATE	BY	DESCRIPTION

DESIGNED TP
DRAWN LD
CHECKED DTN
DATE 08-25-2023

REGISTERED PROFESSIONAL ENGINEER — DIEP TAN NGUYEN — No. E-19382 — EXP. 6/30/23 — ELECTRICAL — STATE OF CALIFORNIA — 8/25/23

DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS
ELECTRICAL
COVER SHEET, LOCATION MAP AND DRAWING INDEX

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. DTN NO. 462
DRAWING NO. E-0
SHEET NO. 1 OF 16

J:\462_Plant Electrical Reliability Improvements_SMCSD\DRAWINGS\462 E-00.dwg 8-25-23 04:56:58 PM tp

CONTROL DIAGRAM SYMBOLS

- 120V / 120V — CONTROL TRANSFORMER, PRIMARY AND SECONDARY VOLTAGES SHOWN, SIZE AS SHOWN OR SPECIFIED
- 40A — CIRCUIT BREAKER, THERMAL–MAGNETIC, 3 POLE, UON, RATING IN AMPS
- DESIGNATES PLC INPUT TERMINATION OR CONTROL PANEL TERMINATION
- ID — FUSE MODIFIERS: CLF = CURRENT LIMITING FUSE; DE = DUAL ELEMENT; F = CLASS F
- ID — PUSHBUTTON, MOMENTARY CONTACT, NORMALLY OPEN
- ID — PUSHBUTTON, MOMENTARY CONTACT, NORMALLY CLOSED
- ID — STOP PUSHBUTTON WITH LOCKOUT
- H O A; X; X — SELECTOR SWITCH 3 POSITION MAINTAINED CONTACT. X = CONTACTS CLOSED
- LINE (L) — INDICATING LIGHT PUSH TO TEST, TEST VOLTAGE TERMINAL SHOWN. LENS COLOR (L): A = AMBER; B = BLUE; G = GREEN; R = RED; W = WHITE
- 2 CR — CONTROL RELAY OPERATING COIL. FUNCTION: CR= CONTROL RELAY; U = UNLATCH; L = LATCH
- OL — THERMAL OVERLOAD RELAY
- 2CR 2CR — OUTPUT CONTACTS
- 2 TR — TIMING RELAY OPERATING COIL ON/OFF/DELAY. RANGE: SEC/MIN. SET: SEC/MIN
- E–STOP SWITCH
- 2–WAY SOLENOID VALVE

NORMALLY OPEN	NORMALLY CLOSE	DEFINITION
2CR OR	2CR OR	DELAY ON COIL ENERGIZATION (ON DELAY)
		POSITION (LIMIT) SWITCH
		TEMPERATURE SWITCH
		PRESSURE SWITCH

STANDARD ABBREVIATIONS

A	AMMETER
ATS	AUTOMATIC TRANSFER SWITCH
BCW	BARE COPPER WIRE
CB	CIRCUIT BREAKER
C	CONDUIT
C.O.	CONDUIT ONLY (EMPTY CONDUIT)
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL SWITCH
CT	CONTACTOR (HEAVY DUTY)
(E)	EXISTING
FS	FLOAT SWITCH
G OR GND	GROUND
HS	HAND SWITCH
HZ	HERTZ
KVAR	REACTIVE POWER
KW	KILOWATT
KWHR	KILOWATT HOUR
I/O	INPUT/OUTPUT
LOS	LOCKOUT STOP
MTS	MANUAL TRANSFER SWITCH
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MF	MULTI–FUNCTION METER DISPLAY
MIN	MINIMUM
MSGR	MAIN SWITCHGEAR
(N)	NEW
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PAIR OR PR	TWISTED, SHIELDED PAIRS #16AWG
PB	PULL BOX
PLC	PROGRAMMABLE LOGIC CONTROLLER
QUAD	TWISTED, SHIELDED 4–CONDUCTOR CABLE
PP	POWER POLE
RTD	RESISTANCE THERMAL DETECTOR
RTU	REMOTE TERMINAL UNIT
SCADA	SUPERVISORY CONTROL & DATA ACQUISITION
SS	STAINLESS STEEL (316 UON)
SSRS	SOLID STATE REDUCED VOLTAGE STARTER
SWGR	SWITCHGEAR
HD	HARMONIC DISTORTION
TS	TEMPERATURE SWITCH
UON	UNLESS OTHERWISE NOTED
V	VOLTMETER
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHER PROOF (NEMA 4X)
XFMR	TRANSFORMER

LIGHTING

FIXTURE IDENTIFICATION:

5 — XX — 2/40 — R — 8'–6"

- NUMBER OF FIXTURES (SHOWN ONLY WHEN REQUIRED FOR CLARITY)
- FIXTURE TYPE REFER TO FIXTURE SCHEDULE TYPE APPLIES TO ALL FIXTURES OF THE SAME SHAPE WITHIN A ROOM OR AREA
- MOUNTING: C: CEILING; R: RECESSED; PP: POLE; S: STANCHION; P: PENDANT; W: WALL
- MOUNTING HEIGHT, FLOOR TO BOTTOM OF FIXTURE UON. AS HIGH AS POSSIBLE (AHAP)
- NUMBER OF LAMPS/LAMP WATTAGE

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

- FLUORESCENT FIXTURE
- WALL MOUNTED FIXTURE
- POLE MOUNTED FIXTURE
- EMERGENCY LIGHTING UNIT SELF CONTAINED

MOTORS AND EQUIPMENT

- DISCONNECT SWITCH, NON–FUSED, HEAVY DUTY PADLOCKABLE, INDUSTRIAL TYPE
- M — M = MOTOR; SV = SOLENOID VALVE; 125 = 125HP
- FIELD INSTRUMENT
- CONTROL STATION (SEE CONTROL DIAGRAMS FOR DEVICES REQUIRED)

TELEPHONE & COMMUNICATION SYSTEMS

TELEPHONE AND COMMUNICATION SYSTEMS: UNLESS OTHERWISE SPECIFIED, TELEPHONE OUTLETS SHALL BE MOUNTED AT SAME HEIGHT AS THE RECEPTACLES, VERIFY.

- ◄ — EXTERNAL LINE OR PLANT PHONE SYSTEM OUTLET
- T — TELEPHONE

GROUNDING

- GROUND ROD
- GROUND ROD WITH GROUND WELL
- GROUND CONNECTION, BOLTED TYPE
- GROUND CONNECTION, COMPRESSION TYPE
- G — GROUNDING CONDUCTOR, MINIMUM #2/0 BARE COPPER
- INSTRUMENT CABLE SHIELD GROUND

CIRCUITS AND RACEWAYS

- RACEWAY EXPOSED
- RACEWAY CONCEALED IN FLOOR SLAB OR UNDERGROUND
- RACEWAY TURNED TOWARD THE VIEWER
- RACEWAY TURNED DOWN
- HH20 — HH: HANDHOLE, MH: MANHOLE
- (J) — JUNCTION BOX
- TB — TERMINAL BOX
- 3#10 AWG, GNDG, 1"C — RACEWAY SIZE WITH CONDUCTOR CONTENTS AND SIZES
- LP–1 — CIRCUIT HOMERUN WITH DESTINATION NOTED (2#12, #12 GND MIN.)
- T — TELEPHONE SYSTEM CONDUIT WITH PULLING NYLON ROPE
- LIGHT CIRCUIT WITH CONDUCTOR QUANTITY INDICATED
- IXXX — INSTRUMENTATION CONDUIT
- CCXXX — CONTROL CONDUIT
- LP1–2XX — POWER CIRCUIT 240V WITH POWER SOURCE IDENTIFICATION (1XX IS 120V)
- MCC–HW–P–4XX — POWER CIRCUIT 480V WITH POWER SOURCE IDENTIFICATION

WIRING DEVICES

SWITCHES: UNLESS OTHERWISE SPECIFIED, ALL SWITCHES ARE WALL MOUNTED

- $ — TOGGLE SWITCH, SINGLE POLE, 20 AMP
- $ $ — GANGED SWITCHES IN COMMON BOX WITH COMMON WALL PLATE
- $ A 3 — SUPERSCRIPT INDICATES CIRCUIT CONTROLLED: a, b, c, ETC. MAY BE COMBINED WITH CIRCUIT NUMBER: 1a, 4b, ETC.
- SUBSCRIPT MODIFIER INDICATES: 2 = DOUBLE POLE; 3 = THREE WAY; 4 = FOUR WAY; K = KEY OPERATED; MC = MOMENTARY CONTACT, THREE POSITION; MS = MANUAL (MOTOR) STARTER OR SWITCH; R = RHEOSTAT (DIMMER, SPEED CONTROL); WP = WEATHER PROOF

RECEPTACLES: UNLESS OTHERWISE SPECIFIED, ALL RECEPTACLES ARE 125 VOLT, SINGLE PHASE, STRAIGHT BLADE, NON LOCKING, GROUNDING STYLE.

- DUPLEX RECEPTACLE, 20 AMP, 3 WIRE.
- RECEPTACLE MODIFIERS: WP = WEATHER PROOF; GFI = GROUND FAULT CIRCUIT INTERRUPTER; H = HAZARDOUS AREA–EXPLOSION PROOF
- DOUBLE DUPLEX RECEPTACLE

MISCELLANEOUS

- GROUND CONNECTION
- RTU OUTPUT
- E808 / TYP — TYPICAL DETAIL DESIGNATION
- X / – — DETAIL DESIGNATION; DETAIL NUMBER; WHERE DETAIL IS SHOWN
- T — THERMOSTAT
- 5 — NOTE DESIGNATION
- △ — DESIGNATES EQUIPMENT OR DEVICE LOCATED AT LOAD IN THE FIELD
- SPACE HEATER
- ✳ — DESIGNATES EQUIPMENT OR DEVICES LOCATED IN MCC
- ◇ — RTU I/O TERMINATION IN CONTROL PANEL
- IONIZATION SMOKE DETECTOR
- DESIGNATES EQUIPMENT OR DEVICES LOCATED IN CONTROL PANEL
- F — COMBINATION STROBE/HORN
- F — FIRE ALARM PULL STATION
- F — STROBE LIGHT
- FIREALARM CONTROL PANEL
- NEMA 4X — CORROSIVE AREA
- NEMA 12 — GENERAL PURPOSE AREA
- NEMA 7/8 — CLASSIFIED HAZARDOUS AREA

ONE-LINE DIAGRAM SYMBOLS

- SIZE 2 COMBINATION FULL VOLTAGE NON–REVERSING MAGNETIC STARTER MCP SIZED BY MANUFACTURER (OVERLOAD RELAY NOT SHOWN). RV = REDUCED VOLTAGE; 2S2W = TWO–SPEED TWO–WINDING; 2 = SIZE 2
- 400/3 — CURRENT TRANSFORMER WITH RATIO AND NUMBER OF UNITS
- MAIN SERVICE METER (BY UTILITY COMPANY)
- MF — MULTI–FUNCTION ELECTRONIC METER
- K — KIRK–KEY INTERLOCK
- DESIGNATES DEMOLITION WORK U.O.N
- 5.75% Z 480/277V — POWER TRANSFORMER. IMPEDANCE SHOWN
- 480V 3ø, 4W; 600KW 60HZ — GENERATOR. POWER RATING, FREQUENCY, VOLTAGE.
- 200A — 200 AMP SHOWN
- FU — FUSE WITH BLOWN INDICATOR
- G OR — STANDBY GENERATOR

GENERAL NOTES

1. THIS DRAWING IS GENERAL IN NATURE. SOME SYMBOLS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS.
2. IDENTIFICATIONS (ID), SIZES, RATINGS, LOCATIONS AND SIMILAR INFORMATION SHOWN ASSOCIATED WITH SYMBOLS ARE OPTIONAL; EXAMPLES OF SUCH INFORMATION ARE SHOWN WITH SOME SYMBOLS FOR CLARITY.
3. THE ELECTRICAL DRAWINGS USE THE ONE–LINE DIAGRAMS AND PANEL SCHEDULES IN CONJUNCTION WITH SHOWING THE LOCATION OF THE ELECTRICAL/INSTRUMENTATION SOURCES AND LOADS/DEVICES SHOWN ON THE PLAN DRAWINGS TO DEPICT THE WORK. THE CONTRACTOR SHALL USE THESE DOCUMENTS TO DETERMINE AND PROVIDE THE NECESSARY RACEWAY AND WIRING SYSTEM FOR EACH CIRCUIT. ALL INDOOR RACEWAY SHALL BE RUN EXPOSED, AND ROUTED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.
4. THE LOCATION OF THE CONTROL STATIONS SHOWN ON THE PLAN DRAWINGS ARE DIAGRAMMATIC AND THE ACTUAL LOCATION SHALL BE COORDINATED IN THE FIELD WITH THE CONSTRUCTION MANAGER.
5. THE EXACT LOCATION OF THE MOTORS, VALVES, AND ACCESSORIES ARE NOT SHOWN. THE CONTRACTOR SHALL COORDINATE WITH THE STRUCTURAL AND MECHANICAL DRAWINGS FOR EXACT CONDUIT STUB OUT AND TERMINATION LOCATIONS.
6. ALL EQUIPMENT SHALL BE LABELED WITH NAMEPLATES. DESCRIPTION OF EQUIPMENT SHALL BE IN ACCORDANCE WITH THE ONE–LINE DIAGRAM DESCRIPTION. A LIST OF THE NAMEPLATES SHALL BE SUBMITTED TO THE CONSTRUCTION MANAGER PRIOR TO ENGRAVING.
7. UNLESS OTHERWISE NOTED, ALL CONVENIENCE OUTLETS SHALL BE MOUNTED AT 48–INCHES ABOVE FINISHED FLOOR. ALL LIGHT SWITCHES SHALL BE MOUNTED AT 54–INCHES ABOVE FINISHED FLOOR.
8. EACH CONVENIENCE OUTLET AND LIGHTING CIRCUIT SHALL BE PROVIDED WITH A #12AWG GREEN GROUNDING CONDUCTOR.
9. FOR SPARE CONDUCTORS, AT EACH END, TAPE & COIL UP AND PROVIDE ENGRAVED TAG IDENTIFYING "FROM AND TO" DESTINATION.
10. ALL EXTERIOR CONDUITS SHALL BE PVC COATED RIGID GALVANIZED STEEL. ALL OUTDOOR ENCLOSURES SHALL BE NEMA 4X.
11. CONDUIT ENTERING OR LEAVING CLASSIFIED HAZARDOUS LOCATION SHALL BE PROVIDED WITH "EYS" SEALS PER NEC.
12. ELECTRICAL DRAWINGS DO NOT SHOW ALL REQUIRED DEMOLITION. SEE MECHANICAL DRAWINGS FOR ADDITIONAL DEMOLITION.
13. CONDUITS EMBEDDED IN FLOOR SLAB SHALL FOLLOW REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE ACI 318 SECTION 6.3.
14. FOR EACH FIELD MOUNTED DEVICE USING 120VAC, FURNISH AND INSTALL A MOTOR STARTER SWITCH STYLE NEMA 4X TOGGLE SWITCH PADLOCKABLE.
15. FOR EXISTING MOTORIZED EQUIPMENT TO BE DEMOLISHED AS SHOWN ON DEMOLITION DRAWINGS, THE POWER SOURCES SUCH AS EXISTING MOTOR CONTROL CENTERS AND POWER PANELS SHALL BE MARKED AS SPARES ON BREAKERS FEEDING THESE DEMOLISHED LOADS (NOT REUSED OR RELOCATED).
16. EXISTING CABLES REQUIRED TO BE REMOVED AND REPLACED WITH NEW CABLES SHALL BE SALVAGED AND RETURNED TO THE DISTRICT.

REV	DATE	BY	DESCRIPTION

DESIGNED TP | DRAWN LD | CHECKED DTN | DATE 08-25-2023

REGISTERED PROFESSIONAL ENGINEER — DIEP TAN NGUYEN — No. E-19682 — Exp. 6/30/23 — ELECTRICAL — STATE OF CALIFORNIA — 8/25/23

DTN ENGINEERS, INC. Oakland, San Francisco, Orange County, CA

Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT

MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS

ELECTRICAL

LEGEND AND NOTES

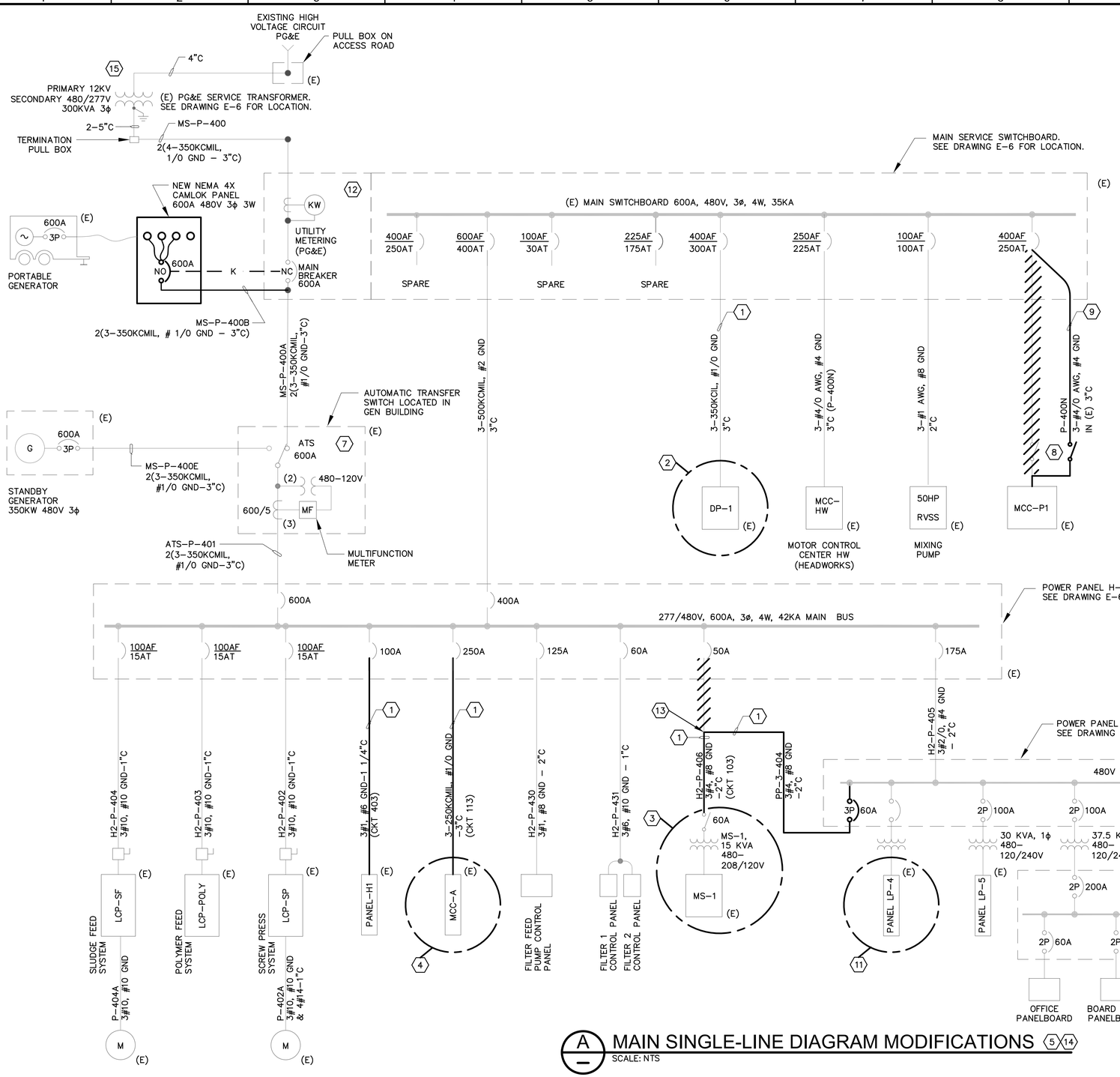
VERIFY SCALES — BAR IS ONE INCH ON ORIGINAL DRAWING (0 — 1") — IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. DTN NO. 462 | DRAWING NO. E-1 | SHEET NO. 2 OF 16

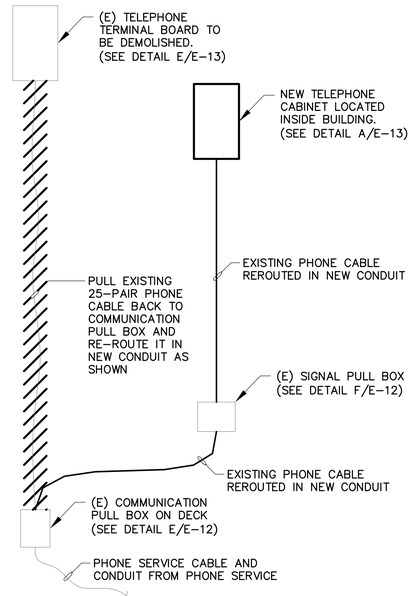
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SHEET NOTES:

1. NEW CONDUCTORS ARE REQUIRED TO REPLACE EXISTING CABLES TO BE REMOVED.
2. THIS PANEL IS REPLACED WITH NEW PANEL. SEE DETAIL A/E-4.
3. THESE EQUIPMENT ARE REPLACED WITH NEW EQUIPMENT. SEE DETAIL A/E-9.
   - NEW TRANSFORMER: 30KVA
   - NEW DISCONNECT SWITCH: 100A 3P 480V
   - NEW PRIMARY: 3#4, #8 GND – 2"C
   - NEW SECONDARY: 3#2 #8 GND – 2"C
   - NEW PANELBOARD "MS-1", SEE DETAIL A/E-5.
4. THIS MCC IS REPLACED WITH NEW MCC AND NEW DISTRIBUTION PANEL. SEE DETAIL B/E-4.
5. SEE DRAWING E-3 FOR DETAILED DEMOLITIONS AND ADDITIONAL EQUIPMENT REPLACEMENTS.
6. SEE DRAWING E-4 AND E-5 FOR NEW EQUIPMENTS REQUIREMENTS.
7. THIS GENITH AUTOMATIC TRANSFER SWITCH SHALL BE SERVICED AND FINE TUNED, SEE SPECS FOR DETAILED REQUIREMENTS.
8. DISCONNECT AND REMOVE EXISTING DISCONNECT SWITCH AND REPLACE IT WITH A NEW DISCONNECT SWITCH LOCATED INSIDE DIGESTER BUILDING. SEE DETAILS A/E-13 AND B/E-13.
9. FURNISH AND INSTALL NEW CIRCUIT CONDUCTORS AS SHOWN IN EXISTING EMPTY CONDUIT AS SHOWN ON DRAWING E-9.
10. SEE DETAILS "E" AND "F" ON DRAWING E-12 FOR PHOTOS OF THE EXISTING PULL BOXES.
11. SEE DETAIL B/E-5.
12. SEE NOTE 4 ON DRAWING E-9 FOR REQUIRED WORK.
13. INTERCEPT EXISTING FEEDER AT EXISTING UNDERGROUND PULL BOX AS PER DETAIL H/E-13.
14. FIELD DATA REQUIRED FOR POWER SYSTEM STUDIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY. LENGTH OF CABLES AND FEEDERS MAY BE APPROXIMATE. SEE SPECS FOR DETAILED REQUIREMENTS.
15. PER PG&E DOCUMENTS, AVAILABLE SHORT CIRCUIT AT SECONDARY IS 22,000A MAX.



A — MAIN SINGLE-LINE DIAGRAM MODIFICATIONS (5)(14)
SCALE: NTS



B — (E) 25-PAIR PHONE CABLE RE-ROUTE SCHEMATIC DIAGRAM (10)
SCALE: NTS

REV	DATE	BY	DESCRIPTION

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REGISTERED PROFESSIONAL ENGINEER — DIEP TAN NGUYEN — No. E-10682 — Exp. 6/30/23 — ELECTRICAL — STATE OF CALIFORNIA — 8/25/23

DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

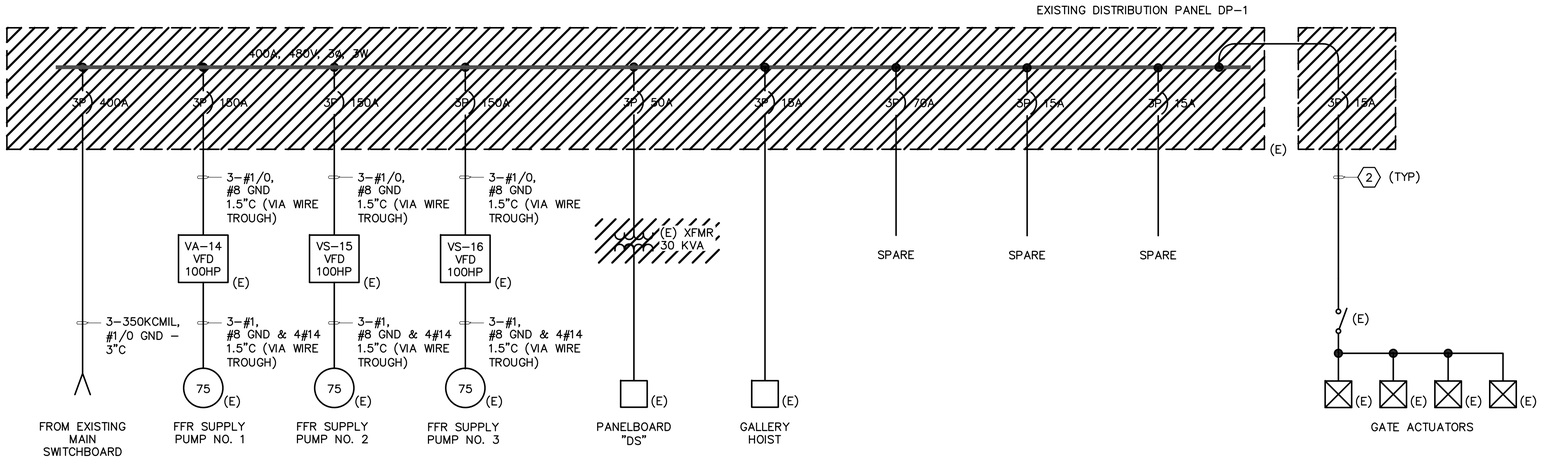
Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS
ELECTRICAL
MAIN SINGLE-LINE DIAGRAM MODIFICATIONS

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JOB NO. DTN NO. 462
DRAWING NO. E-2
SHEET NO. 3 OF 16

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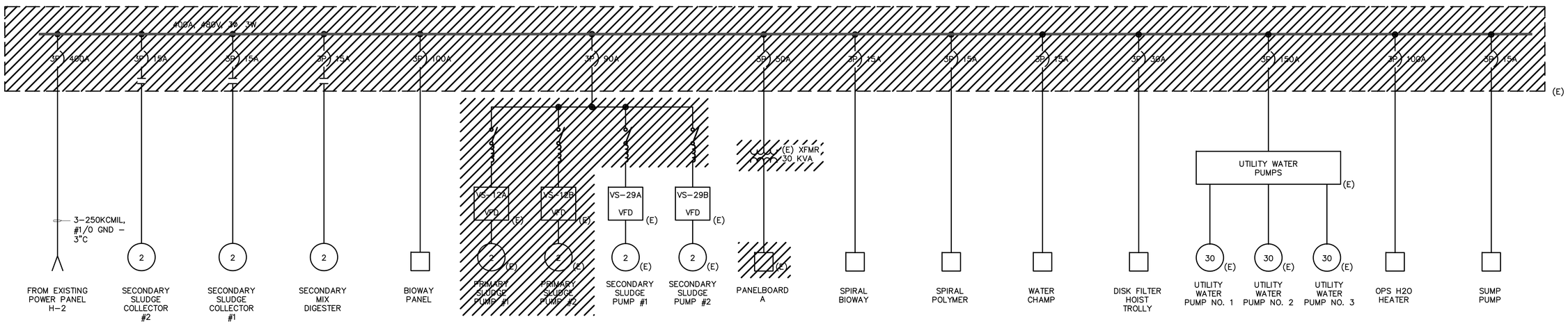
A EXISTING DISTRIBUTION PANEL DP-1 - DEMOLITIONS (1)

SCALE: NTS

SHEET NOTES:

(1) ALL EXISTING CONDUCTORS THAT ARE TO BE REMOVED SHALL BE SALVAGED AND RETURNED TO THE DISTRICT.

(2) FOR EXISTING CABLE SIZES, SEE DRAWING E-4.



B EXISTING MCC-A - DEMOLITIONS (1)

SCALE: NTS

REV	DATE	BY	DESCRIPTION

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CHECKED DTN
DATE 08-25-2023

REGISTERED PROFESSIONAL ENGINEER DIEP TAN NGUYEN No. E-16837 Exp. 6/30/23 ELECTRICAL STATE OF CALIFORNIA 8/25/23

DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

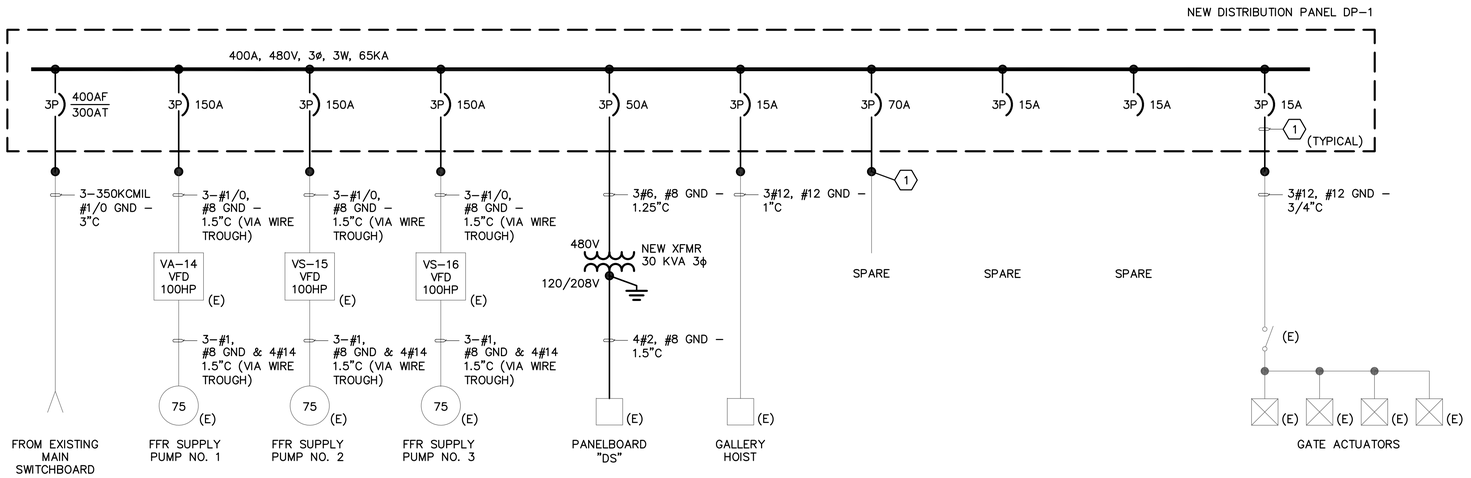
Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS
ELECTRICAL
MISC SINGLE-LINE DIAGRAMS DEMOLITIONS

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JOB NO. DTN NO. 462
DRAWING NO. E-3
SHEET NO. 4 OF 16

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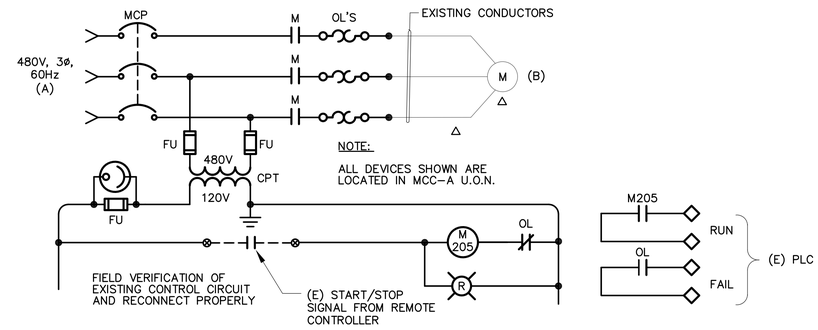


A NEW DISTRIBUTION PANEL DP-1
SCALE: NTS

SHEET NOTES:

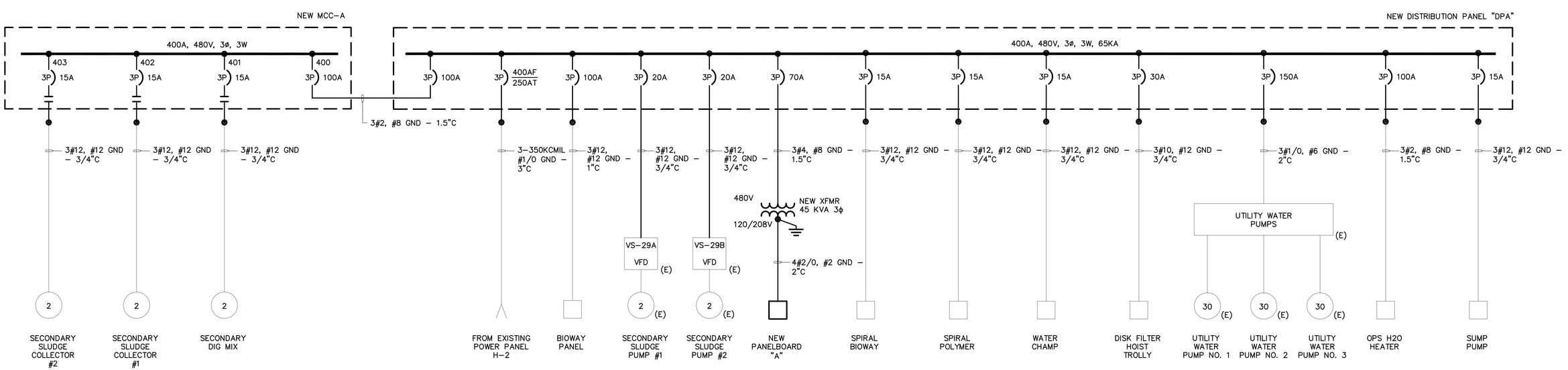
(1) NEW CONDUCTORS SHALL MATCH WITH RATING AND SIZE (AWG) OF THE EXISTING CONDUCTORS AND SHALL HAVE AMPACITY COMPATIBLE WITH THE RATING OF THE NEW CIRCUIT BREAKER AS PER NEC TABLE 210.16.

(2) CABLE SPLICES SHALL BE MADE IN FLOOR MOUNTED PULL BOX OR CEILING MOUNTED PULL BOX AS PER ORIGINAL INSTALLATION.



EQUIPMENT	(A)	(B)	NOTES
SLUDGE COLLECTOR NO. 1	MCC-A-401	(E) MOTOR	
SLUDGE COLLECTOR NO. 2	MCC-A-402	(E) MOTOR	
SECONDARY DIG MIXER	MCC-A-403	(E) MOTOR	

C NEW MCC-A STARTER DIAGRAM
SCALE: NTS



B NEW MCC-A AND NEW DISTRIBUTION PANEL "DPA"
SCALE: NTS

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REGISTERED PROFESSIONAL ENGINEER — DIEP TAN NGUYEN — No. E-10687 — Exp. 6/30/23 — ELECTRICAL — STATE OF CALIFORNIA — 8/25/23

DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
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MISC SINGLE-LINE DIAGRAMS MODIFICATIONS

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DRAWING NO. E-4
SHEET NO. 5 OF 16

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PANEL MS-1 | VOLTAGE/PHASE 120/208V – 3ϕ | POLES 42 | MTG SURFACE

LOCATION SAFETY BLDG | MAIN BREAKER : 100A | BUS 225A | PANEL BREAKER

LOAD DESCRIPTION	WATTAGE øA	WATTAGE øB	WATTAGE øC	WIRE / CONDUIT	TRIP	CKT.	S/N A B C	CKT.	TRIP	WIRE / CONDUIT	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOAD DESCRIPTION
GATE OPENER					20	1		2	20					SPARES
GATE ACC.					20	3		4	20					
LIGHTS & OUTLETS					20	5		6	20					
SPARE					20	7		8	20					
208V CHARGING OUTLET					20/2P	9		10	20					
						11		12						
PANEL LB					20	13		14	20					PANEL LA
						15		16						
					3P	17		18	3P					
SPARES					20	19		20	20					SPARES
					20	21		22	20					
					20	23		24	20					
					20	25		26	20					
					20	27		28	20					
SPACES					20	29		30	20					SPACES
					20	31		32	20					
					20	33		34	20					
					20	35		36	20					
					20	37		38	20					
					20	39		40	20					
					20	41		42	20					
SUBTOTAL	###	###	###								###	###	###	

TOTAL VA = #### AMPERES = #### @ 208 V 3ϕ

A PANELBOARD "MS-1"
SCALE: NTS

PANEL LP-4 | VOLTAGE/PHASE 120/208V – 3ϕ –4W | POLES 30 | MTG SURFACE

LOCATION MACHINE SHOP BLDG | MAIN BREAKER : 100A | BUS 100A | PANEL BREAKER BOLT–ON

LOAD DESCRIPTION	VOLTAGE/AMPERE øA	VOLTAGE/AMPERE øB	VOLTAGE/AMPERE øC	WIRE / CONDUIT	TRIP	CKT.	S/N A B C	CKT.	TRIP	WIRE / CONDUIT	VOLTAGE/AMPERE øA	VOLTAGE/AMPERE øB	VOLTAGE/AMPERE øC	LOAD DESCRIPTION
MAIN					100	1		2	30					COMPRESSOR
						3		4						
					3P	5		6	3P					
EAST LIGHTS					20	7		8	60					SPARE
SPARE					20	9		10	2P					
BENCH LIGHTS					20	11		12	20					WOOD POST OUTLET
SPARE					20	13		14	20					SPARE
SPARE					20	15		16	20					SPARE
BACK LIGHTS					20	17		18	20					OUTSIDE LIGHTS
WEST LIGHTS					20	19		20	20					REAR SHOP LIGHTS
HEATER					20/2P	21		22	20/2P					HEATER
						23		24						
UPSTAIRS LIGHTS, PLUG					20	25		26	20					AIR SOLENOID
SPARE					20	27		28	20					SPARE
SPARE					20	29		30	30					A2 HEATER
SUBTOTAL	###	###	###								###	###	###	

TOTAL VA = #### AMPERES = #### @ 208 V 3ϕ

B PANELBOARD "LP-4"
SCALE: NTS

SHEET NOTES:

1. FURNISH AND INSTALL A NEW, TYPED DIRECTORY FOR EACH OF THE NEW PANELBOARD.
2. NEW, MATCHING SIZE CABLES SHALL BE PROVIDED TO REACH CIRCUIT BREAKERS AS REQUIRED. WAGO 200 SERIES , PHOENIX CONTACTS WIRENUTS SHALL BE USED FOR CONDUCTORS TO #10 AWG. FOR LARGER CONDUCTORS USE INSULATED POWER CONNECTORS MADE BY BURNDY, POLARIS, OR EQUAL.
3. PROVIDE BREAKER WITH ECLIPS ELOCK–FA LOCKOUT KIT, OR EQUAL.

PANEL A | VOLTAGE/PHASE 120/208V – 3ϕ | POLES 72 | MTG SURFACE

LOCATION OPS BLDG | MAIN BREAKER : 150A | BUS 225A | PANEL BREAKER

LOAD DESCRIPTION	WATTAGE øA	WATTAGE øB	WATTAGE øC	WIRE / CONDUIT	TRIP	CKT.	S/N A B C	CKT.	TRIP	WIRE / CONDUIT	WATTAGE øA	WATTAGE øB	WATTAGE øC	LOAD DESCRIPTION
LUNCH, OFFICE LIGHTS					20	1		2	20					ELECTRICAL CONTROL PANEL
LUNCH, OFFICE RECEPTACLES					20	3		4	20					INSTRUMENT PANEL
EFFL SAMPLER, CART CHARGER					20	5		6	20					FLOW METER FI/FIT–4
BOOSTER PUMP					20	7		8	20					FLOW METER FI/FIT–5
LAB RECEPTACLES					20	9		10	20					CONTROL ROOM, TOILET OUTLETS
LAB RECEPTACLES					20	11		12	20					FLOW METER FI/FIT–13
UTILITY, ANALYZER, EX. LIGHTS					20	13		14	20					SCREENING SUMP PUMP
UTILITY, ANALYZER, LAB COMP.					20	15		16	20					
JANITOR, LOCKER, LAB LIGHTS					20	17		18	20					SAMPLE PUMP #4, ANALYZER
ANALYZER ROOM RECEPTACLES					20	19		20	20					MICROWAVE
FLOW METER FI/FIT–30					20	21		22	20					SECURITY FIRE ALARM
ANALYZER ROOM RECEPTACLES					20	23		24	20					ANALYZER 1&2 CONTROL PANEL
HOOD #1 OUTLET					20	25		26	20					PIPE GALLERY LIGHTS
OUT–LIGHTS – N, W WALLS					20	27		28	20					PIPE GALLERY OUTLETS
OUT–LIGHTS – N, E WALLS					20	29		30	20					SAMPLE PUMP #6
OUT–LIGHTS – PLUG, FFR AREA					20	31		32	20					HOOD #1 FAN, LIGHT
FFR STAIRS LIGHTS					20	33		34	20					
W. VIEW WALKWAY LIGHTS					20	35		36	20					EFFLUENT SCREEN OUTLET
SUB PANEL A2					20	37		38	20					SAMPLE PUMP #5
					2P	39		40	20					LAB REFRIGERATOR
EFFLUENT FLOWMETER					20	41		42	20					LAB OVEN
HEAT TRACE					50	43		44	50					HEAT TRACE
					2P*	45		46	2P*					
SPARES					20	47		48	20					SPACES
					20	49		50	20					
					20	51		52	20					
					20	53		54	20					
					20	55		56	20					
					20	57		58	20					
(3) FIRE ALARM CONTROL PANEL					20	59		60	20					
SPACES					20	61		62	20					
					20	63		64	20					
					20	65		66	20					
					20	67		68	20					
					20	69		70	20					
					20	71		72	20					
SUBTOTAL	###	###	###								###	###	###	

TOTAL VA = #### AMPERES = #### @ 208 V 3ϕ

* GFI

C PANELBOARD "A"
SCALE: NTS

REV	DATE	BY	DESCRIPTION

DESIGNED TP | DRAWN LD | CHECKED DTN | DATE 08-25-2023

REGISTERED PROFESSIONAL ENGINEER DIEP TAN NGUYEN No. E-10687 Exp. 6/30/23 ELECTRICAL STATE OF CALIFORNIA 8/25/23

DTN ENGINEERS, INC. Oakland, San Francisco, Orange County, CA

Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT

MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS

ELECTRICAL

PANELBOARD SCHEDULES

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. DTN NO. 462

DRAWING NO. E-5

SHEET NO. 6 OF 16

J:\462_Plant Electrical Reliability Improvements_SMCSD\DRAWINGS\462 E-05.dwg 8-25-23 04:57:40 PM tp

SCALE: 1"=16'

0 16 32 48

SCALE IN FEET

SHEET NOTES:

1. SEE DRAWINGS E-7 AND E-8 FOR REQUIRED WORK IN THIS EXISTING CONTROL BUILDING – ELECTRICAL ROOM.
2. SEE DRAWING E-13, DETAIL "G" FOR REQUIRED WORK IN THIS EXISTING MACHINE SHOP.
3. SEE DRAWING E-9, DETAIL "A" FOR REQUIRED WORK IN THIS EXISTING SAFETY EQUIPMENT BUILDING.
4. SEE DRAWING E-11 FOR REQUIRED WORK IN THIS EXISTING GENERATOR BUILDING.
5. SEE DRAWING E-X FOR REQUIRED WORK IN THIS EXISTING ELECTRICAL ROOM OF HEADWORKS AREA.
6. REMOVE EXISTING CONDUCTORS PRIOR TO INSTALLATION OF NEW CABLES.
7. REMOVE EXISTING CONDUCTORS OF EXISTING CIRCUIT H2-P-406.
8. FOR REQUIRED WORK AT THIS AREA, SEE DETAILS A/E-13, B/E-13, C/E-13, D/E-13, E/E-13 AND F/E-13.

(E) PRIMARY CLARIFIER No.1

(E) PRIMARY CLARIFIER No.2

EXISTING CONTROL BUILDING (1)

FIXED FILM REACTOR PUMPS.

(E) FILTERS

EXISTING UTILITY WATER PUMPS

(E) POWER PANEL "H-2"

EXISTING GENERATOR BUILDING (4)

(E) SIGNAL BOX

NEW CONDUIT (2") WITH 25-PAIR PHONE CABLE

NEW CONDUIT (2") UNDER SLAB

EXISTING PLC-6 LOCATED INSIDE BUILDING.

EXISTING MCC-P1 LOCATED INSIDE BUILDING.

EXISTING ELECTRICAL SWITCHBOARD

STAINLESS STEEL PULL BOX (TYP. FOR 2)

NEW TELEPHONE CABINET

PULL BOX

EXISTING HEADWORKS

TRUCK TURNTABLE

(E) MCC-HW

ELECTRICAL ROOM (BELOW)

(E) CHEM VAULT

(E) PULL BOX

(E) PLANT SERVICE TRANSFORMER

FUTURE GM/BOARD OFFICE BUILDING

EXISTING OFFICE BUILDING

EXISTING MACHINE SHOP (2)

(E) PANEL "PP3"

NEW PANEL "LP4"

PP-3-404

(E) ELECTRICAL PULL BOX, SEE DETAIL H/E-13

ACCESS ROAD

EXISTING ELECTRICAL PULL BOX

PP-3-404

PP-3-404

EXISTING SAFETY EQUIPMENT BUILDING (3)

NEW DISCONNECT, TRANSFORMER, AND PANELBOARD "MS-1". SEE DETAIL A/E-9.

PLAN

1"=16'

REV	DATE	BY	DESCRIPTION

DESIGNED TP
DRAWN LD
CHECKED DTN
DATE 08-25-2023

REGISTERED PROFESSIONAL ENGINEER DIEP TAN NGUYEN No. E-10682 Exp. 6/30/23 ELECTRICAL STATE OF CALIFORNIA
8/25/23

DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT

MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS

ELECTRICAL

SITE PLAN

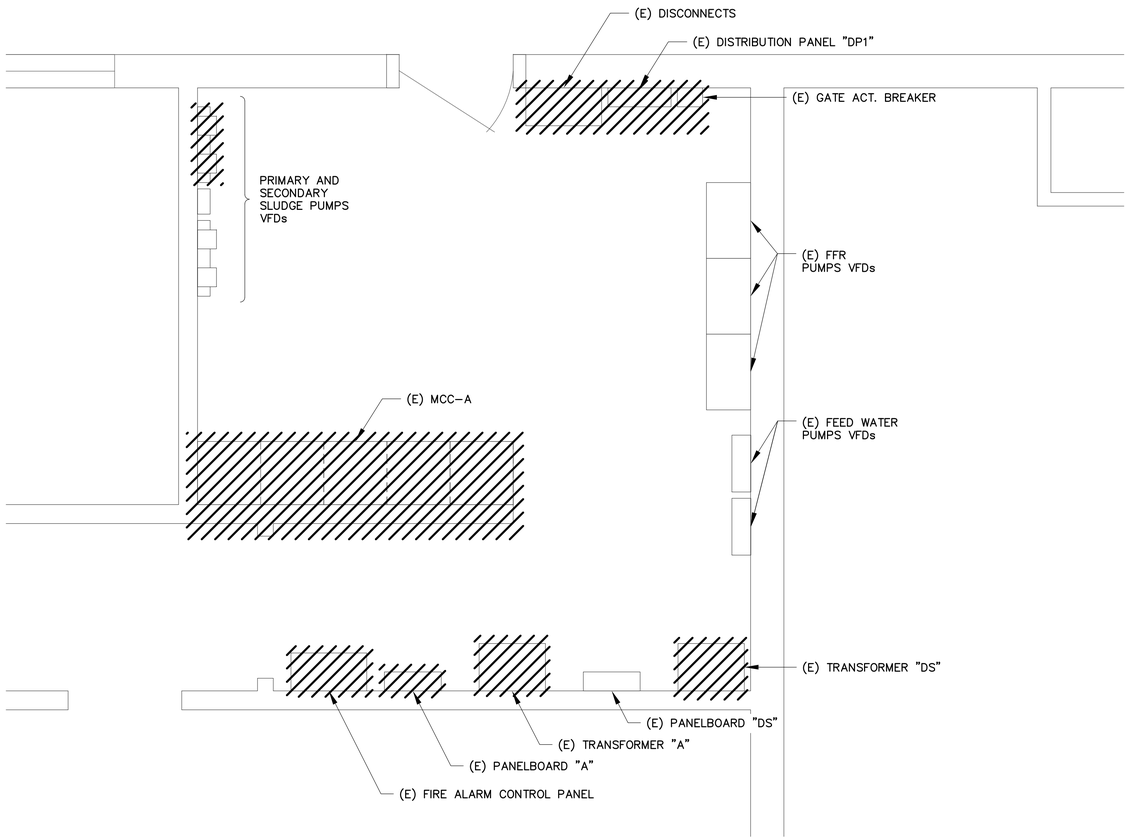
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. DTN NO. 462
DRAWING NO. E-6
SHEET NO. 7 OF 16

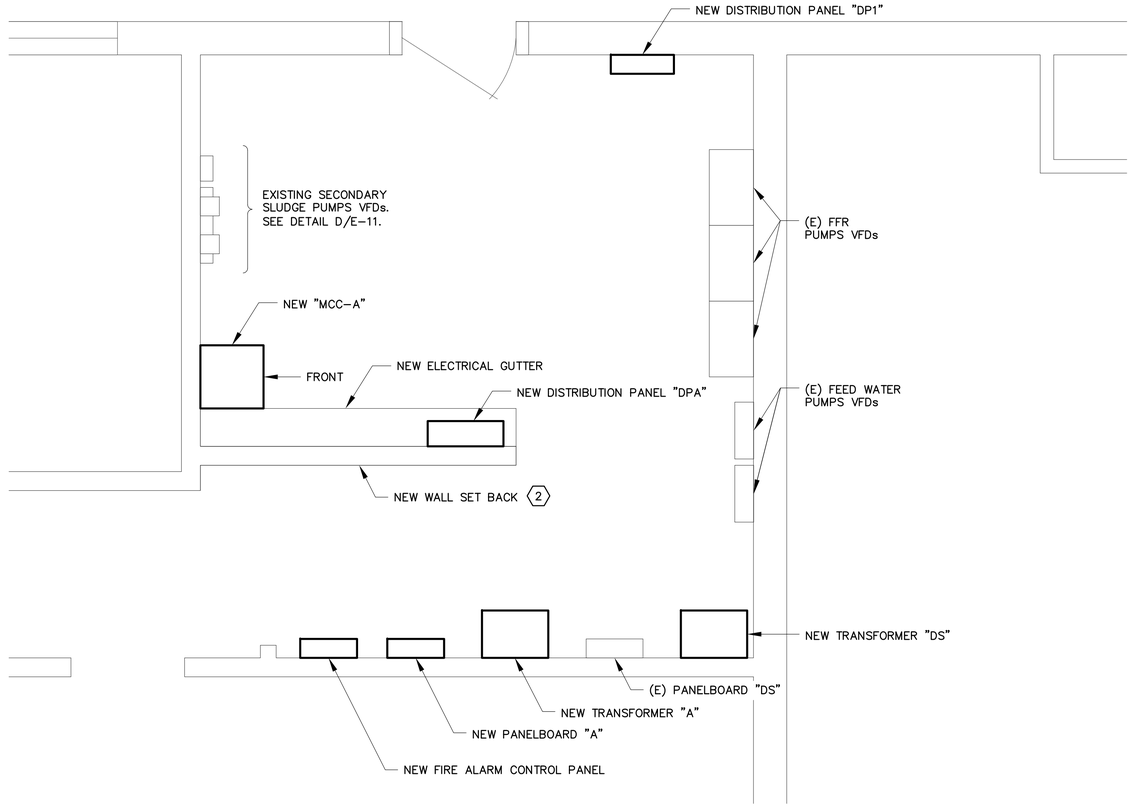
J:\462_Plant Electrical Reliability Improvements_SMCSD\DRAWINGS\462 E-06.dwg 8-25-23 04:58:04 PM tp

SHEET NOTES:

1. REFER TO SINGLE-LINE DIAGRAMS SHOWN ON DRAWINGS E-3 AND E-4 FOR ELECTRICAL CONNECTIONS BETWEEN EACH ELECTRICAL PANEL.
2. RELOCATE EXISTING OUTLET AND THERMOSTAT AS REQUIRED ON ORIGINAL WALL.



A PARTIAL OPERATIONS BLDG - MCC ROOM
SCALE: 1/2" = 1'-0"



B PARTIAL OPERATIONS BLDG - MCC ROOM AFTER MODIFICATIONS 1
SCALE: 1/2" = 1'-0"

REV	DATE	BY	DESCRIPTION

DESIGNED TP
DRAWN LD
CHECKED DTN
DATE 08-25-2023

REGISTERED PROFESSIONAL ENGINEER — DEP TAN NGUYEN — No. E-18637 — Exp. 5/31/23 — ELECTRICAL — STATE OF CALIFORNIA — 8/25/23

DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

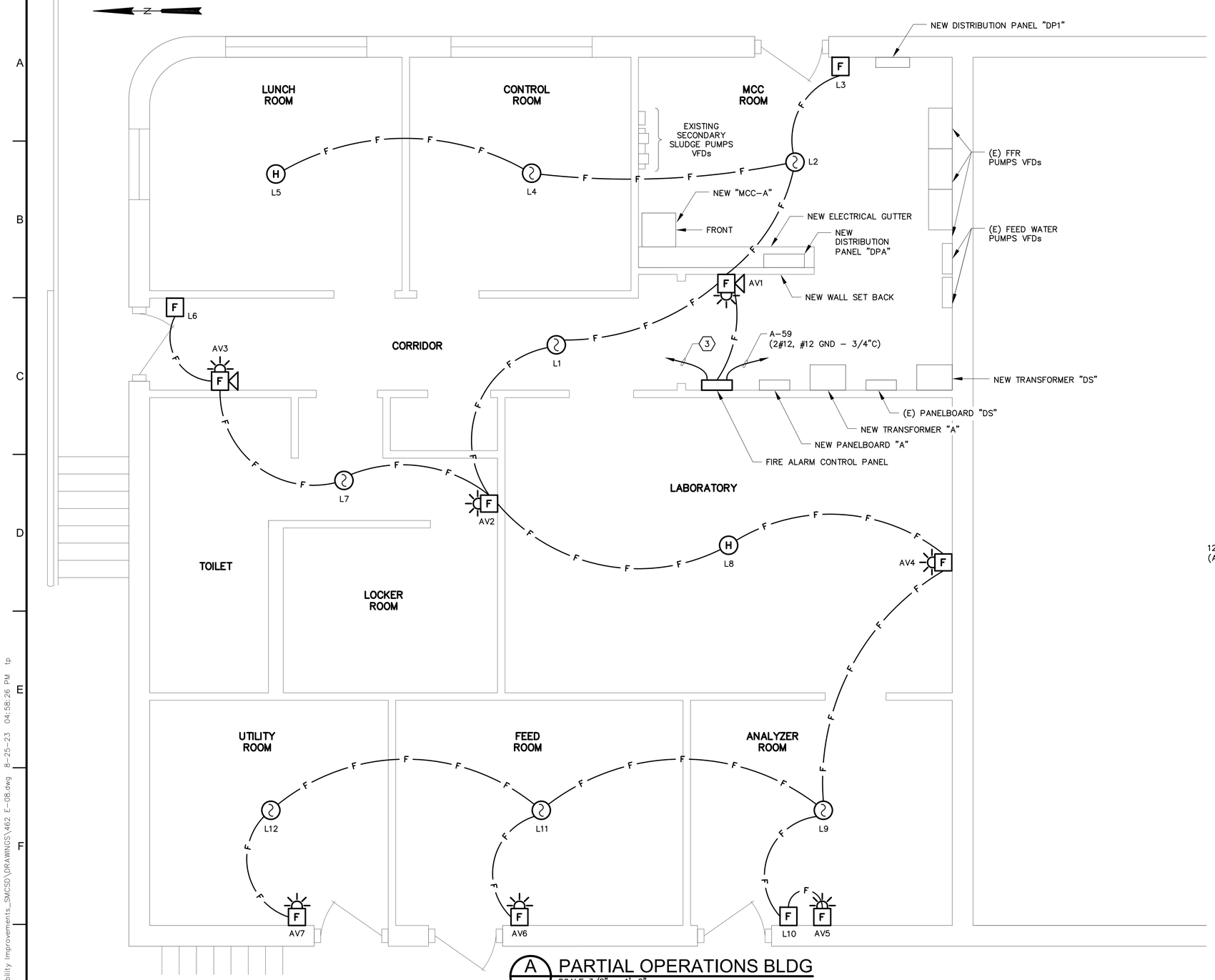
Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS
ELECTRICAL
OPS BUILDING PLAN
MCC ROOM PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 — 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. DTN NO. 462
DRAWING NO. E-7
SHEET NO. 8 OF 16

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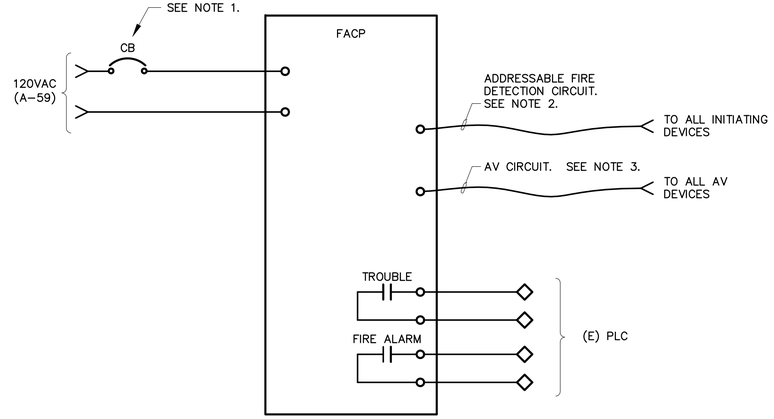
A PARTIAL OPERATIONS BLDG
SCALE: 3/8" = 1'-0"

SHEET NOTES:

1. CEILING MOUNTED DEVICES SHOWN ARE APPROXIMATE LOCATIONS. COORDINATE EXACT LOCATIONS IN THE FIELD TO AVOID CONFLICTS WITH EXISTING LIGHT FIXTURES ETC.
2. FIRE ALARM DEVICES SHALL BE INSTALLED AS FOLLOWS:
   - PULL STATIONS 42" AFF
   - STROBES 80" AFF
   - STROBE/HORN 80" AFF

   LOCATE IONIZATION DETECTOR 3' MINIMUM AWAY FROM CEILING AIR GRILLS.
3. 6#14 (2 SPARES) - 3/4"C TO EXISTING PLC LOCATED IN CONTROL ROOM. TERMINATE CONDUCTORS ON SPARE DIGITAL INPUT POINT/CARD.

ALL FIRE ALARM WORK IS OPTIONAL AS BID ALTERNATE



NOTES:

1. THIS BREAKER SHALL BE PAINTED RED AND MARKED "FIRE ALARM" ON THE DIRECTORY.
2. 2-CONDUCTOR SHIELDED CABLE, 300V, #18 AWG, SOLID COPPER, TYPE FPLP - 3/4"C.
3. 2-CONDUCTOR SHIELDED CABLE, 300V, #12 AWG, STRANDED COPPER, TYPE FPLP - 3/4"C

B FIRE ALARM RISER DIAGRAM
SCALE: NTS

REV	DATE	BY	DESCRIPTION

DESIGNED TP
DRAWN LD
CHECKED DTN
DATE 08-25-2023

REGISTERED PROFESSIONAL ENGINEER DIEP TAN NGUYEN No. E-10687 Exp. 6/30/23 ELECTRICAL STATE OF CALIFORNIA 8/25/23

DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS
ELECTRICAL
OPS BUILDING
FIRE ALARM PLANS

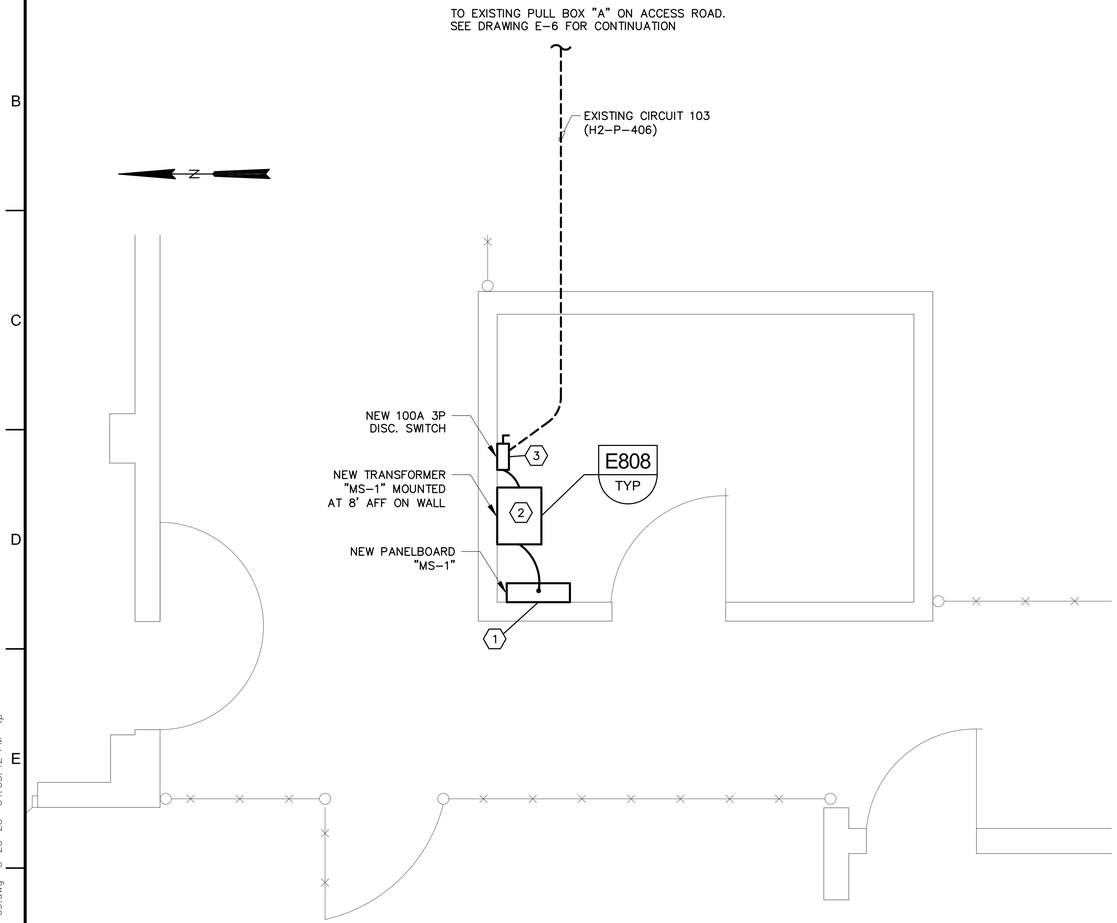
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. DTN NO. 462
DRAWING NO. E-8
SHEET NO. 9 OF 16

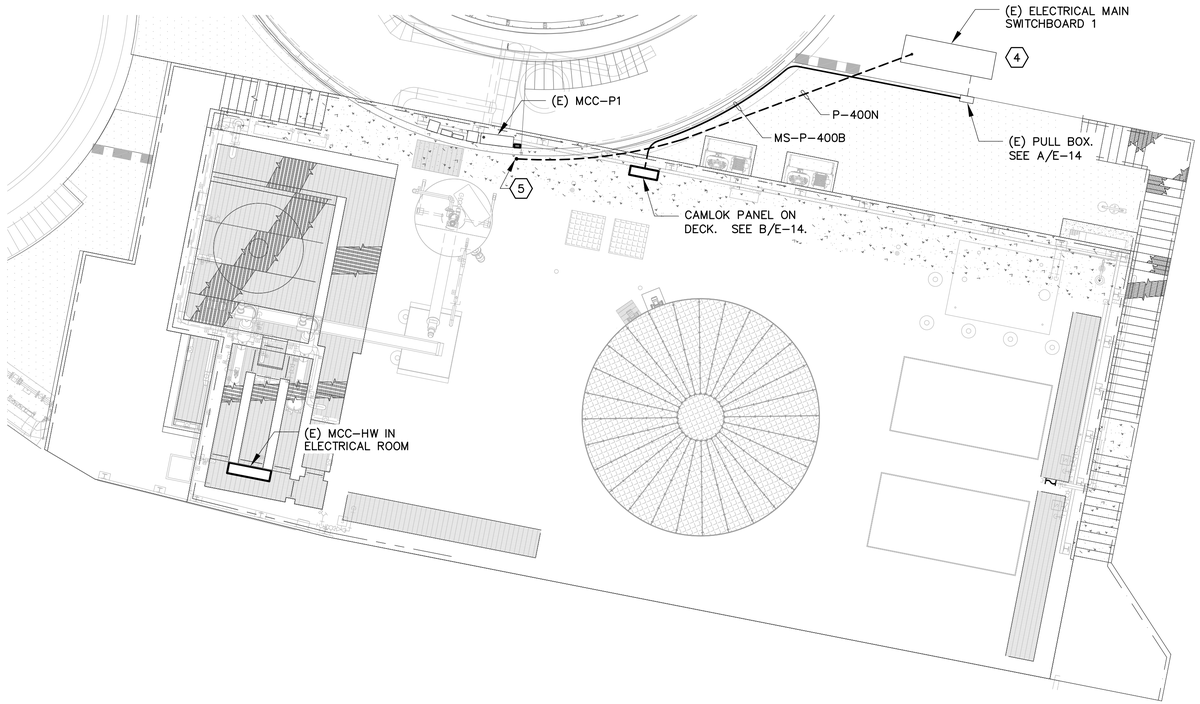
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SHEET NOTES:

1. DISCONNECT, REMOVE AND REPLACE EXISTING PANELBOARD MS-1 AT THIS LOCATION PRIOR TO INSTALLATION OF NEW PANELBOARD MS-1 AND RECONNECT ALL EXISTING CIRCUITS AS PER SINGLE-LINE DIAGRAM AND PANELBOARD SCHEDULE.
2. DISCONNECT, REMOVE AND REPLACE EXISTING 15KVA TRANSFORMER AT THIS LOCATION PRIOR TO INSTALLATION OF NEW 30KVA TRANSFORMER AND RECONNECT PRIMARY AND SECONDARY CIRCUITS AS PER SINGLE-LINE DIAGRAM SHOWN ON DRAWING E-2.
3. DISCONNECT, REMOVE AND REPLACE EXISTING 60A 3P DISCONNECT SWITCH AT THIS LOCATION PRIOR TO INSTALLATION OF A NEW 100A 3P HEAVY DUTY , INDUSTRIAL, 600V, NEMA 12 DISCONNECT SWITCH AND RECONNECT TO FEEDER CIRCUIT AS PER SINGLE-LINE DIAGRAM SHOWN ON DRAWING E-2.
4. IN THIS EXISTING MAIN SERVICE SWITCHBOARD, FURNISH AND INSTALL A KIRK KEY FOR INTERLOCKING WITH A BREAKER LOCATED IN THE CHARLOK PANEL AS SHOWN ON THE SINGLE-LINE DIAGRAM ON DRAWING E-2. FURNISH NEW DOUBLE LUGS REQUIRED FOR INSTALLATION OF EXISTING AND NEW CABLES FOR CIRCUIT MS-P-400B. SEE DETAIL C/E-14 FOR ADDITIONAL INFORMATION.
5. SEE DETAIL A/E-13 FOR WORK INVOLVING NEW DISCONNECT FOR (E) MCC-P1.



A PARTIAL SAFETY EQUIPMENT BLDG - ELECTRICAL CLOSET
SCALE: 1/2" = 1'-0"



B PARTIAL HEADWORK PLAN
SCALE: 1" = 8'

REV	DATE	BY	DESCRIPTION

DESIGNED TP
DRAWN LD
CHECKED DTN
DATE 08-25-2023

REGISTERED PROFESSIONAL ENGINEER
DIEP TAN NGUYEN
No. E-10687
Exp. 6/30/23
ELECTRICAL
STATE OF CALIFORNIA
8/25/23

DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS
ELECTRICAL
PARTIAL SAFETY BUILDING PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. DTN NO. 462
DRAWING NO. E-9
SHEET NO. 10 OF 16

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A (E) MCC-A 3
SCALE: NTS



B (E) TRANSFORMER "DS"
SCALE: NTS

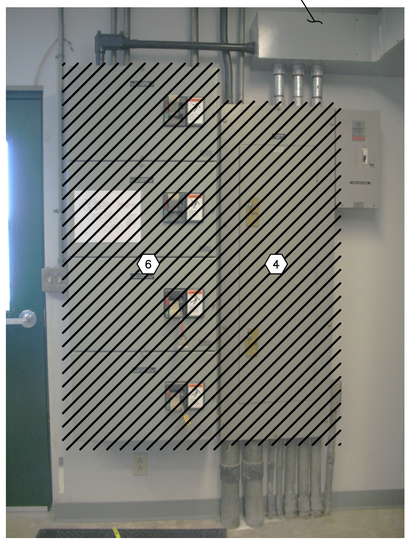


C (E) PANELBOARD "DS"
SCALE: NTS

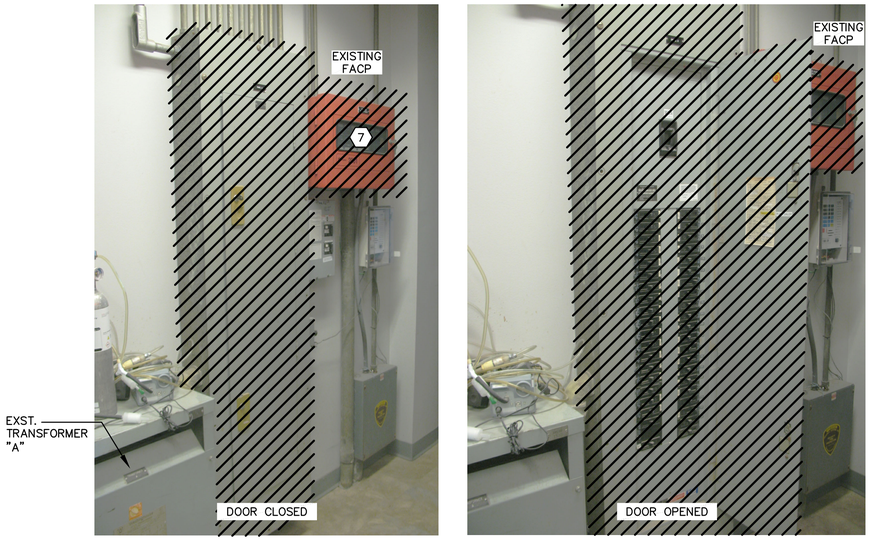
SHEET NOTES:

1. THIS EXISTING TRANSFORMER SHALL BE DISCONNECTED, REMOVED, AND REPLACED WITH NEW TRANSFORMER. FOR TRANSFORMER'S RATING, SEE DETAIL A/E-4.
2. THIS 300A 120/208V 3ϕ 4W PANELBOARD AND EXTERNAL GFI BREAKERS SHALL BE DISCONNECTED, REMOVED AND REPLACED WITH NEW PANELBOARD. RECONNECT ALL EXISTING LOADS TO NEW BREAKERS AS PER ORIGINAL CONFIGURATION.
3. THIS EXISTING MCC SHALL BE DISCONNECTED, REMOVED AND REPLACED WITH:
   A) NEW MCC-A
   b) NEW DISTRIBUTION PANEL DPA

   FOR NEW EQUIPMENT'S RATINGS, SEE DETAIL B/E-4.
4. DISCONNECT AND REMOVE THIS EXISTING PANEL AND REPLACE IT WITH A NEW PANEL AS SHOWN ON SINGLE-LINE DIAGRAM DETAIL A/E-4.
5. THIS EXISTING PANELBOARD SHALL REMAIN AND SHALL BE RECONNECTED TO NEW TRANSFORMER "DS" AS DETAIL B ON THIS DRAWING.
6. DISCONNECT AND REMOVE THESE BREAKERS AND REACTORS AS PER DETAIL B/E-3.
7. REMOVE EXISTING PANEL AND REPLACE WITH NEW FIRE ALARM CONTROL PANEL (FACP) AT SAME LOCATION. SEE DRAWING E-8 FOR DETAILS.



D (E) DISTRIBUTION PANEL "DP-1"
SCALE: NTS



E (E) PANELBOARD "A" 2
SCALE: NTS



REV	DATE	BY	DESCRIPTION

DESIGNED TP
DRAWN LD
CHECKED DTN
DATE 08-25-2023

REGISTERED PROFESSIONAL ENGINEER DEEP TAN NGUYEN No. E-16837 Exp. 6/30/23 ELECTRICAL STATE OF CALIFORNIA 8/25/23

DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS
ELECTRICAL
CONSTRUCTION DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. DTN NO. 462
DRAWING NO. E-10
SHEET NO. 11 OF 16

J:\462_Plant Electrical Reliability Improvements_SMCSD\DRAWINGS\462 E-10.dwg 8-25-23 05:01:58 PM tp

SHEET NOTES:

1. THIS EXISTING TRANSFORMER SHALL BE DISCONNECTED, REMOVED, AND REPLACED WITH NEW TRANSFORMER. FOR TRANSFORMER'S RATING, SEE DETAIL B/E-4.
2. THIS EXISTING 60A 3P HEAVY DUTY DISCONNECT SWITCH SHALL BE DISCONNECTED, REMOVED AND REPLACED WITH NEW 100A 3P 600V HEAVY DUTY DISCONNECT SWITCH (NEMA 12). RECONNECT TO EXISTING CIRCUITS WITH CONDUCTORS AS PER SINGLE-LINE DIAGRAM SHOWN ON DRAWING E-2 (NOTE 3 ON DRAWING E-2).
3. SEE NOTE 7 ON DRAWING E-2 FOR REQUIRED WORK FOR THIS EXISTING 600A 480V TRANSFER SWITCH.
4. REMOVE THIS EXISTING FACP AND REPLACE IT WITH A NEW UNIT AS SHOWN ON DRAWING E-8.



A (E) FACP 4
SCALE: NTS



B (E) TRANSFORMER "A" 1
SCALE: NTS



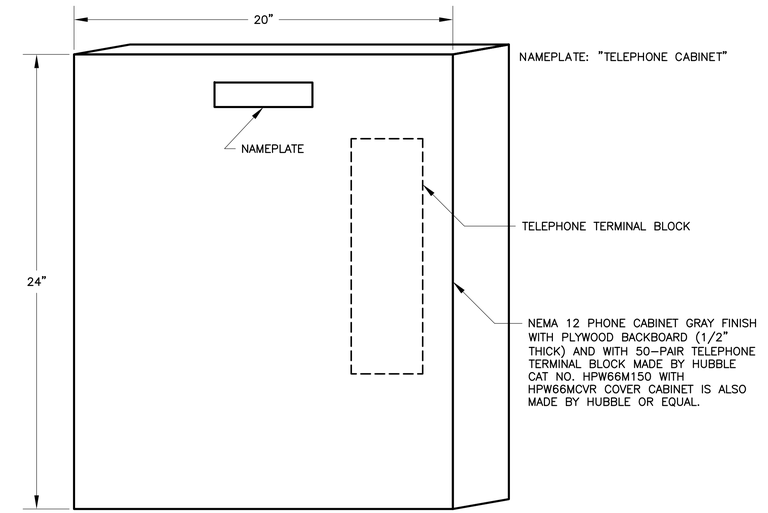
E (E) SAFETY BLDG POWER DISCONNECT
SCALE: NTS



C (E) ATS
SCALE: NTS



D (E) PRIMARY & SECONDARY SLUDGE PUMPS
SCALE: NTS



F TELEPHONE TERMINAL CABINET
SCALE: NTS

REV	DATE	BY	DESCRIPTION

DESIGNED TP
DRAWN LD
CHECKED DTN
DATE 08-25-2023

REGISTERED PROFESSIONAL ENGINEER DIEP TAN NGUYEN No. E-16827 Exp. 6/30/23 ELECTRICAL STATE OF CALIFORNIA 8/25/23

DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS
ELECTRICAL
CONSTRUCTION DETAILS

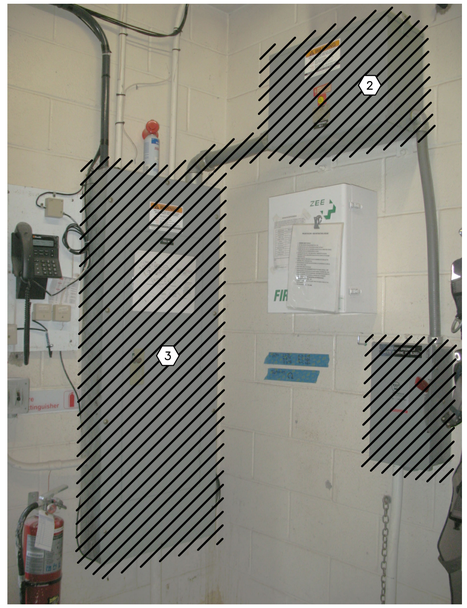
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BAR IS ONE INCH ON ORIGINAL DRAWING
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. DTN NO. 462
DRAWING NO. E-11
SHEET NO. 12 OF 16

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A (E) POWER PANEL "PP-3" & PANELBOARD "LP4"
SCALE: NTS



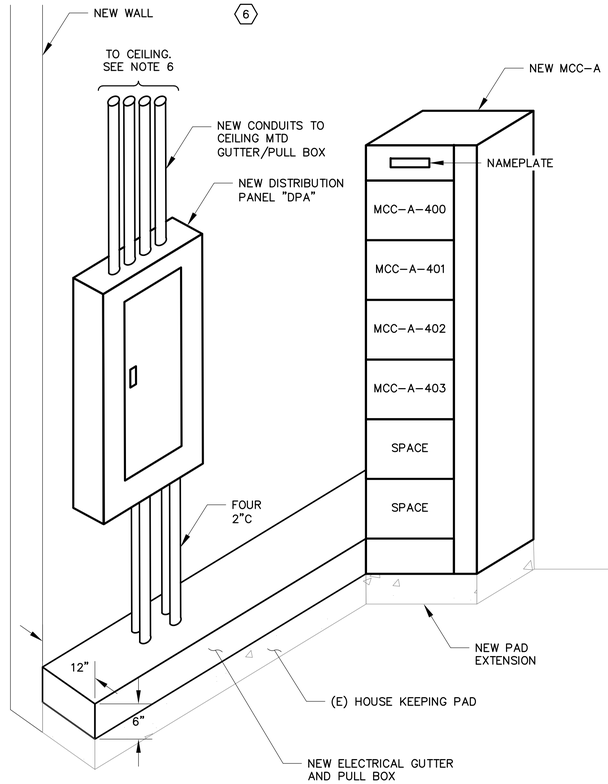
B (E) PANELBOARD "MS-1"
SCALE: NTS



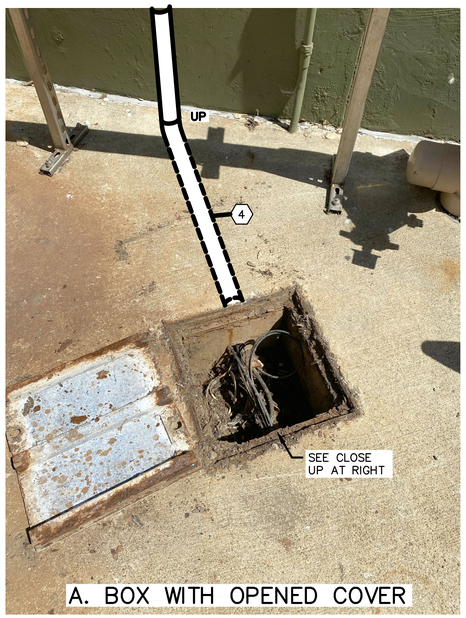
C (E) TRANSFORMER "MS-1"
SCALE: NTS

SHEET NOTES:

1. THIS EXISTING PANELBOARD LP-4 SHALL BE DISCONNECTED, REMOVED, AND REPLACED WITH NEW PANELBOARD. SEE PANELBOARD SCHEDULE ON DRAWING E-5.
2. THIS EXISTING 15KVA 3ϕ TRANSFORMER SHALL BE DISCONNECTED, REMOVED, AND REPLACED WITH NEW 30KVA TRANSFORMER INSTALLED AT SAME LOCATION WITH NEW CABLES AND CONDUIT AS PER SINGLE-LINE DIAGRAM SHOWN ON DRAWING E-2.
3. THIS 100A 120/208V 3ϕ 4W PANELBOARD AND EXTERNAL GFI BREAKERS SHALL BE DISCONNECTED, REMOVED AND REPLACED WITH NEW PANELBOARD. RECONNECT ALL EXISTING LOADS TO NEW BREAKERS AS PER ORIGINAL CONFIGURATION.
4. THIS PORTION OF CONDUIT SHALL BE INSTALLED BELOW THE DECK'S CONCRETE SLAB.
5. THE EXISTING 25-PAIR PHONE CABLE SHALL BE RE-ROUTED THRU NEW 2" CONDUIT AS SHOWN.
6. FURNISH AND INSTALL A NEW ELECTRICAL GUTTER AND PULL BOX ON CEILING FOR EXISTING CABLES AND OVERHEAD CONDUITS TO EXISTING MCC-A.
7. FURNISH AND INSTALL NEW 60A 2P BREAKER PER DETAIL G/E-13.



D (E) WALL MODIFICATION DETAIL
SCALE: NTS

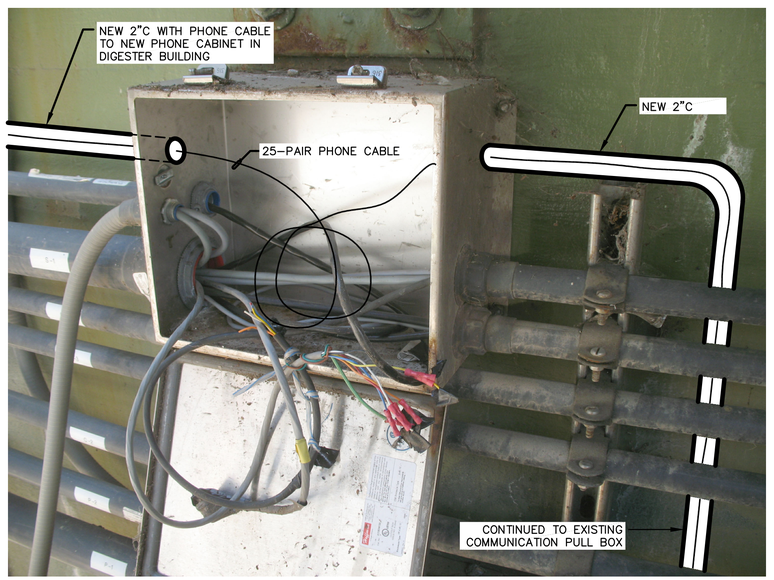


A. BOX WITH OPENED COVER



B. BOX CLOSE-UP

E (E) COMMUNICATION PULL BOXES
SCALE: NTS



F (E) INSTRUMENTATION PULL BOX MODIFICATION
SCALE: NTS

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REGISTERED PROFESSIONAL ENGINEER DIEP TAN NGUYEN No. E-10682 Exp. 6/30/23 ELECTRICAL STATE OF CALIFORNIA 8/25/23

DTN ENGINEERS, INC.
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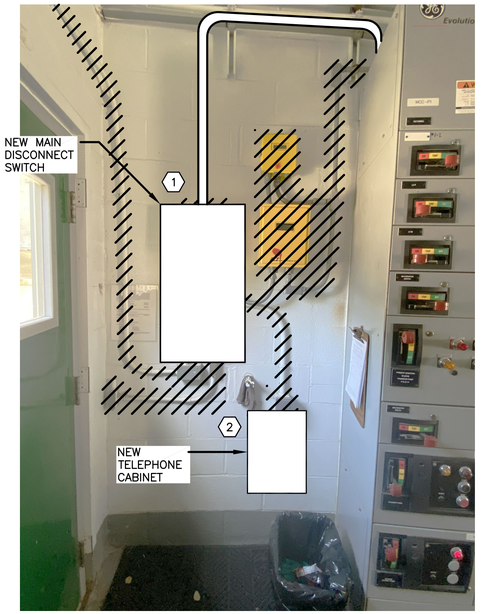
Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS
ELECTRICAL
CONSTRUCTION DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. DTN NO. 462
DRAWING NO. E-12
SHEET NO. 13 OF 16

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A NEW DISCONNECT FOR MCC-P1
SCALE: NTS



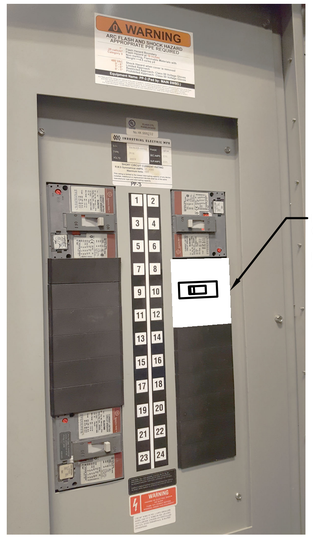
B CONDUIT ENTRY DETAILS
SCALE: NTS



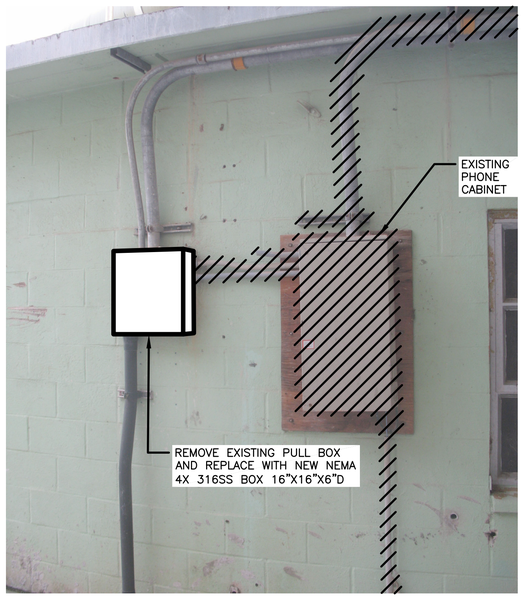
C CONDUIT DEMOLITIONS
SCALE: NTS

SHEET NOTES:

1. DISCONNECT AND REMOVE ALL EXISTING WALL-MOUNTED DEVICES AND CONDUITS. FURNISH AND INSTALL NEW 400A 3P MAIN DISCONNECT SWITCH FOR MCC-P1 AND RECONNECT PER SINGLE-LINE DIAGRAM.
2. FURNISH AND INSTALL A NEW TELEPHONE TERMINAL CABINET. SEE DETAILS F/E-11, A AND F ON THIS DRAWING.
3. REMOVE THIS 2" CONDUIT AS PER NOTE 6.
4. DISCONNECT AND REMOVE THIS CONDUIT THAT PRESENTLY FEEDS EXISTING LIGHTING TRANSFORMER LT-M. SEE DETAIL A/E-2.
5. FURNISH AND INSTALL NEW CONDUIT WITH AN LB FOR ENTERING INTO THE BUILDING TO NEW 400A 3P 480V DISCONNECT LOCATED INSIDE. SEE DETAIL "A" ON THIS DRAWING FOR CONTINUATION.
6. THIS 2" PHONE CONDUIT SHALL BE DEMOLISHED WITH EXISTING 25-PAIR PHONE CABLE TO BE REROUTED INTO THE BUILDING VIA A NEW ROUTE. SEE DRAWING E-6 FOR NEW CONDUIT ROUTE.



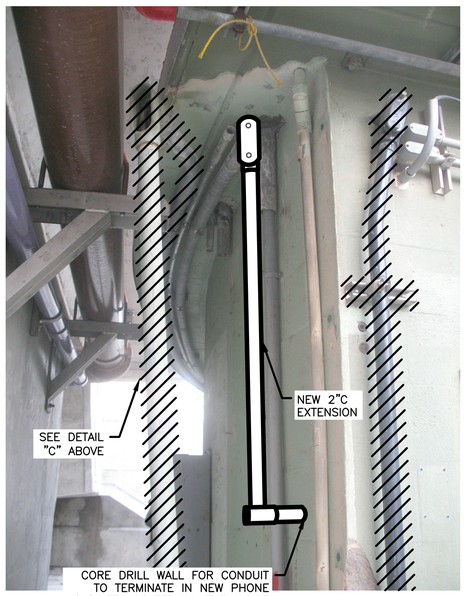
G (E) PANEL PP-3 MODIFICATION
SCALE: NTS



D (E) PHONE CABINET DEMOLITION
SCALE: NTS



E (E) PHONE CONDUIT DEMOLITION
SCALE: NTS



F (E) CONDUIT EXTENSION
SCALE: NTS



H CONDUIT ENTERING MAINTENANCE SHOP
SCALE: NTS

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DATE 08-25-2023

REGISTERED PROFESSIONAL ENGINEER — DIEP TAN NGUYEN — No. E-10687 — Exp. 6/30/23 — ELECTRICAL — STATE OF CALIFORNIA — 8/25/23

DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
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JOB NO. DTN NO. 462
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SHEET NO. 14 OF 16

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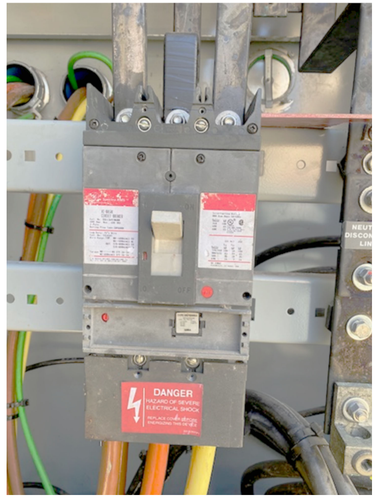
SHEET NOTES:

1. FURNISH AND INSTALL 2–3"C (MS–P–400B) FROM EXISTING MAIN SERVICE SWITCHBOARD TO CAMLOK CABINET VIA THIS EXISTING PULL BOX.
2. FURNISH AND INSTALL KIRK KEY INTERLOCK FOR THIS BREAKER AND THE CAMLOK PANEL PER SINGLE–LING DIAGRAM ON DRAWING E–2.

   FURNISH AND INSTALL DOUBLE LUGS OR USE INSULATED MULTITAP CONNECTORS TO ACCOMMODATE INSTALLATION OF TWO ADDITIONAL SETS OF 350KCMIL CONDUCTORS.

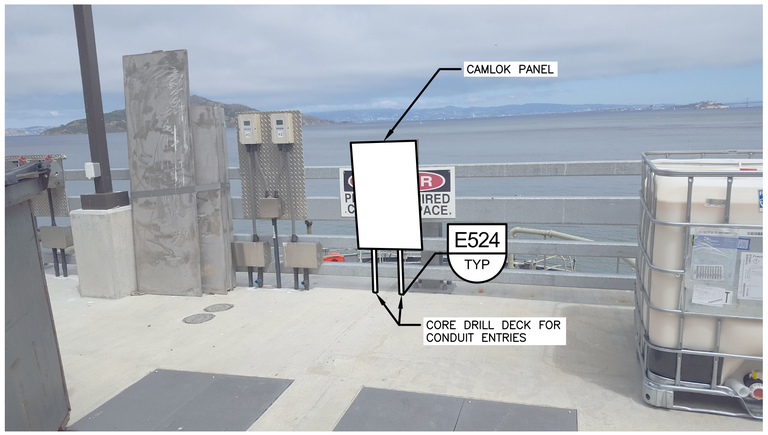


WITH PANEL COVER

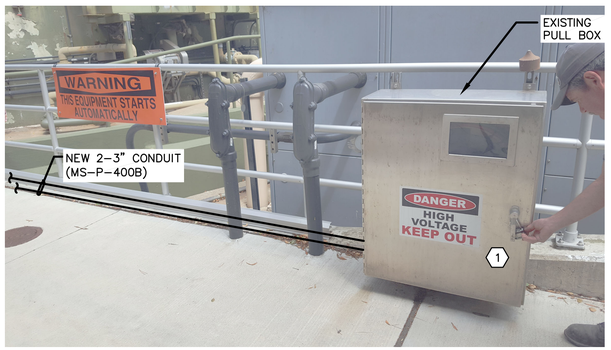


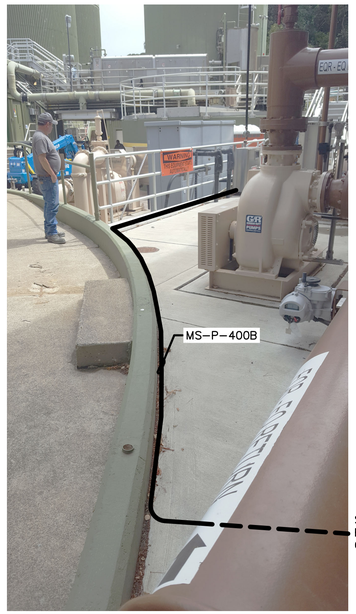
WITH COVER REMOVED

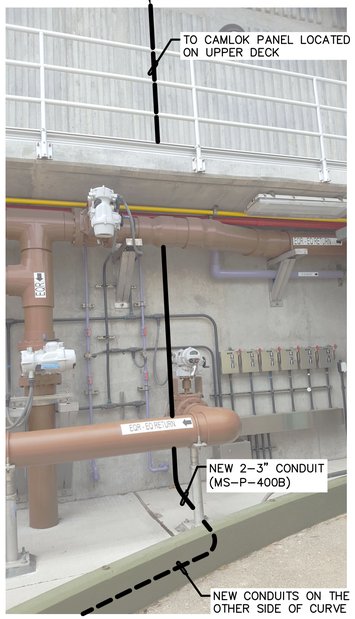
C (E) MAIN SWB BREAKER MODIFICATIONS
SCALE: NTS

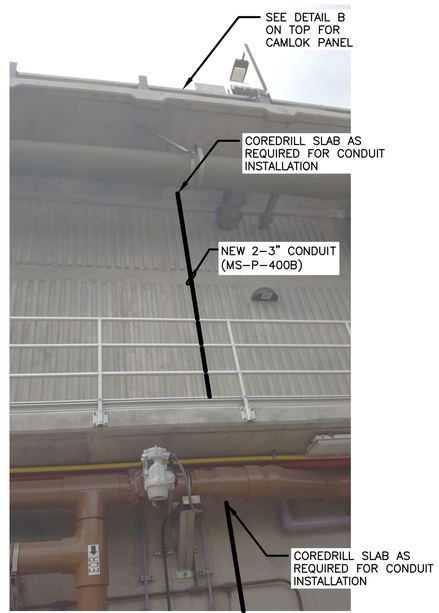


B CAMLOK PANEL LOCATION
SCALE: NTS









A NEW FEEDER TO CAMLOK PANEL
SCALE: NTS

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REGISTERED PROFESSIONAL ENGINEER DEP TAN NGUYEN No. E-18687 Exp. 6/30/23 ELECTRICAL STATE OF CALIFORNIA 8/25/23

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Oakland, San Francisco, Orange County, CA

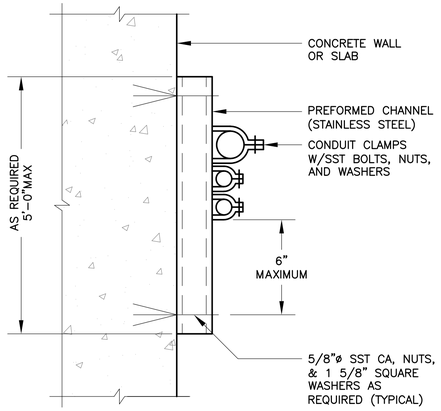
Sausalito-Marin City Sanitary District

SAUSALITO-MARIN CITY SANITARY DISTRICT
MAIN PLANT ELECTRICAL SYSTEM IMPROVEMENTS
ELECTRICAL
TYPICAL DETAILS

VERIFY SCALES
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DRAWING NO. E-14
SHEET NO. 15 OF 16

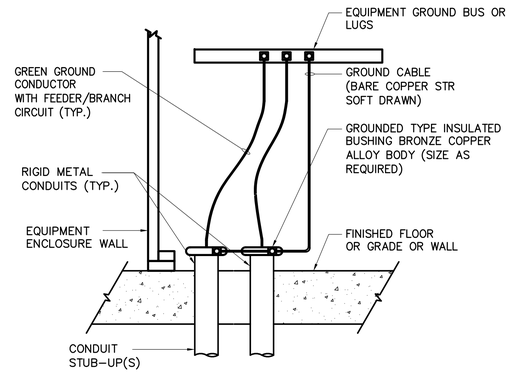
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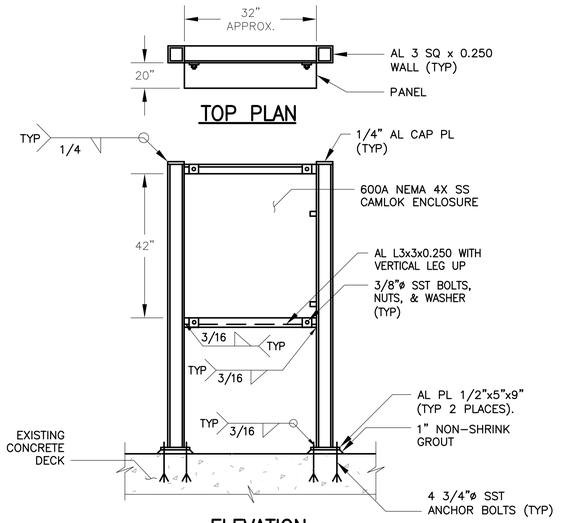
NOTES:

1. THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING.
2. PREFORMED CHANNEL, FITTINGS, AND CLAMPS SHALL BE STAINLESS STEEL FOR NEMA 12 AREAS AND STAINLESS STEEL FOR ALL AREAS. FIELD COAT ALL CUTS PER SPECIFICATIONS.
3. CHANNELS TO BE SPACED AT 5'-0" OC MAXIMUM.

E340 TYP — CONDUIT SUPPORT
SCALE: NTS



E374 TYP — CONDUIT GROUNDING
SCALE: NTS



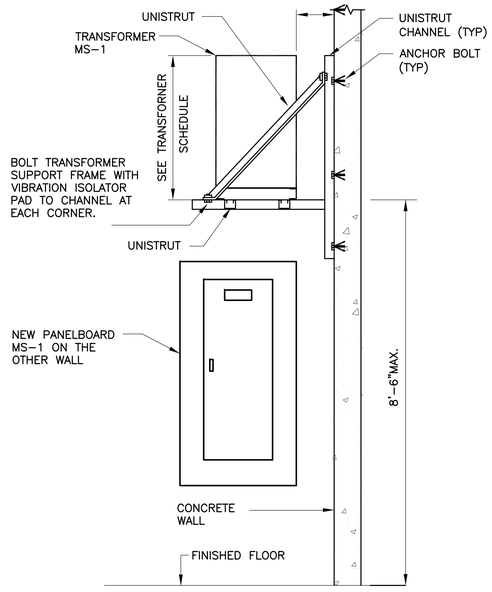
NOTES:

1. THE ABOVE DIMENSIONS SHALL BE ADJUSTED TO MATCH WITH ACTUAL DIMENSIONS OF EQUIPMENT FURNISHED.
2. TOTAL WEIGHT OF ENCLOSURE SHALL NOT EXCEED 275 LBS.
3. ADJUST LOCATION OF SUPPORT ANGLES TO MATCH MOUNTING HOLES IN PANEL.

E524 TYP — CAMLOK PANEL SUPPORT DETAIL
SCALE: NTS

SHEET NOTES:

(1) CONDUIT TAGS SHALL BE PROVIDED FOR ALL LOCATIONS PER SPECS. THIS DETAIL IS A TYPICAL DETAIL WHICH APPLIES TO ENTIRE PROJECT.



TRANSFORMER SCHEDULE

TRANSFORMER	H	W	D	WEIGHT
30 KVA	30".13	20".13	14".13	230 LBS.

E808 TYP — TRANSFORMER WALL INSTALLATION
SCALE: NTS

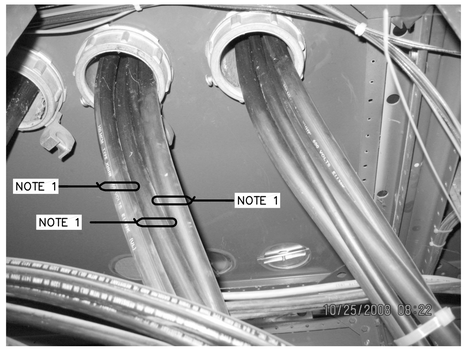


ENGRAVED STAINLESS STEEL TAG (2" DIA.) WITH CIRCUIT DESTINATION AS PER SINGLE-LINE DIAGRAMS. (TYPICAL)

NOTE:

TAGS SHALL BE PROVIDED AT EACH CONDUIT TERMINATION.

E805 TYP — CONDUIT TAGGING (1)
SCALE: NTS



NOTES:

1. EACH POWER CABLE SHALL BE PROVIDED WITH A NON-CORROSIVE TAG INDICATING CIRCUIT NUMBER AND FROM TO DESCRIPTION. SEE DIV. 16 FOR ADDITIONAL DETAILED REQUIREMENTS. THIS TAGGING REQUIREMENT APPLIES TO ALL POWER CIRCUITS.

E807 TYP — POWER CABLE TAGGING
SCALE: NTS

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DTN ENGINEERS, INC.
Oakland, San Francisco, Orange County, CA

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SHEET NO. 16 OF 16

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