

CALAVERAS COUNTY WATER DISTRICT ENGINEERING COMMITTEE MEETING

OUR MISSION

Protect, enhance, and develop Calaveras County's water resources and watersheds to provide safe, reliable, and cost-effective services to our communities.

2021-2026 Strategic Plan, Adopted April 28, 2021, can be viewed at this [link](#)

Engineering Committee
Tuesday July 14, 2026
2:00 p.m.

Calaveras County Water District
120 Toma Court
San Andreas, California 95249

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District Board Meetings are open to in-person attendance by the public and are conducted virtually. The public may participate in the District's Board meeting with the link below. Members of the public who participate in the meeting via teleconference or web conference will be given the opportunity to speak and address the Board, and their comments will be included in the recording of the meeting.

While the District makes efforts to facilitate remote participation, please be aware that remote Teams involvement is offered solely for convenience. In the event of a technological malfunction, the Board can only guarantee the receipt of live comments through in-person attendance. The Board retains the right to proceed with the meeting without remote access in the event of a malfunction.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Administration Office at 209-754-3028. Notification in advance of the meeting will enable CCWD to make reasonable arrangements to ensure accessibility to this meeting. Any documents that are made available to the Board before or at the meeting, not privileged or otherwise protected from disclosure, and related to agenda items, will be made available at CCWD for review by the public.

CALL TO ORDER / PLEDGE OF ALLEGIANCE

COMMITTEE MEMBERS

Director Davidson, Chair

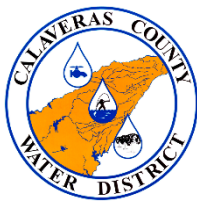
Russ Thomas, Director

1. **ROLL CALL**
2. **PUBLIC COMMENT**
3. **APPROVAL OF MINUTES:** For the meetings of May 12, 2026
4. **NEW BUSINESS**
 - 4a. Copperopolis I&I Study
(Kevin Williams, District Engineer)
 - 4b. Ebbetts Pass Masterplan
(Chase King, Senior Civil Engineer)
 - 4c. Arnold Sewer Masterplan
(Chase King, Senior Civil Engineer)
 - 4d. Lake Tulloch Intertie Project Update
(Kevin Williams, District Engineer)
 - 4e. Electrical Standards Update
(Juan Maya, Associate Engineer)
 - 4f. Arnold Secondary Clarifier Project Update
(Chase King, Senior Civil Engineer)
 - 4g. AMI Project Additional Purchases
(Kevin Williams, District Engineer)
 - 4h. Developer Updates
(Sam Singh, Senior Engineering Technician)
- 5.* **OLD BUSINESS**
- 6.* **GENERAL MANAGER COMMENTS**
- 7.* **DIRECTOR COMMENTS OR FUTURE AGENDA ITEMS**
8. **NEXT COMMITTEE MEETING:**
September 1, 2026
9. **ADJOURNMENT**

*No information included in packet

July 14, 2026, Committee Meeting.

**Agenda
Item
3a**



CALAVERAS COUNTY WATER DISTRICT ENGINEERING COMMITTEE MEETING

MINUTES
May 12, 2026

Directors/Committee Members present:

Russ Thomas
Jeff Davidson

Staff present:

Michael Minkler	General Manager
Kevin Williams	District Engineer
Juan Maya	Associate Civil Engineer
Haley Airola	Engineering Coordinator
Chase King	Civil Engineer
Rebecca Hitchcock	Executive Assistance/Clerk to the board*
Jesse Hampton	Plant Operations Manager*
Damon Wyckoff	Director of Operations
Pat Burkhardt	Construction Manager
Stacey Lollar	Human Resources Manager *
Sam Singh	Senior Engineering Technician*
Kate Jesus	Human Resource Technician*
Kelly Gerkenmeyer	External Affairs Manager
Dylan Smith	Information Systems Administrator*

Others present:

Tracy Eden	Member of the Public*
Allan Scott	Member of the Public*
Alex Johnson	Member of the Public*
Joel Griffin	Member of the Public*
Francisco De La Cruz	Member of the Public*
Ralph Copeland	Member of the Public*

CALL TO ORDER / PLEDGE OF ALLEGIANCE.

1. ROLL CALL

Director Davidson called the Engineering Committee to order at 2:00 p.m. and led the Pledge of Allegiance.

2. PUBLIC COMMENT

No public comments were made.

3. APPROVAL OF MINUTES

Minutes were approved by Director Thomas and seconded by Director Davidson.

4. NEW BUSINESS

4a. Update Assets Management Tool (Kevin Williams, District Engineer)

DISCUSSION: Kevin Williams and HDR presented a proposal to develop a CIP Roadmap and provide asset management framework. Any questions from the Committee were answered directly by Kevin Williams or a member of the HDR team. It was advised by the Committee to move forward with the agreement.

PUBLIC COMMENT: Public comment was given by Francisco De La Cruz.

4b. ADU Policy Update (Kevin Williams, District Engineer)

DISCUSSION: Kevin Williams presented a draft form of an updated ADU ordinance. Any questions from the Committee were answered directly by Kevin Williams. It was recommended that this item be presented to the full Board.

PUBLIC COMMENT: Public comment was given by Francisco De La Cruz.

4c. Service Connection Points (Kevin Williams, District Engineer)

DISCUSSION: Kevin Williams requested direction from the Committee regarding actions to move forward with a formal ordinance regarding required connections for water and sewer. Any questions from the Committee were answered directly by Kevin Williams. It was recommended that this item be presented to the full Board.

PUBLIC COMMENT: No public comment was given.

4d. Service Line Fee Schedule (Sam Singh, Senior Engineering Technician)

DISCUSSION: Sam Singh presented a fee schedule for the construction of new service lines. Any questions from the Committee were answered directly by Sam Singh. It was recommended that this item be presented to the full Board.

PUBLIC COMMENT: Public comments were given by Francisco De La Cruz and Ralph Copeland.

**4e. Timber Trails Redwood Tank & Booster Pump Station
(Sam Singh, Senior Engineering Technician)**

DISCUSSION: Sam Singh provided an update on the grant application status. Any questions from the Committee were answered directly by Sam Singh. It was recommended that this item be presented to the full Board.

PUBLIC COMMENT: Public comment was given by Francisco De La Cruz.

5. OLD BUSINESS

**5a. Project Updates
(Juan Maya, Associate Civil Engineer)**

DISCUSSION: Engineering Staff provided updates on all projects. Any questions from the Committee were answered by Engineering Staff.

PUBLIC COMMENT: Public comments were made by Ralph Copeland and Francisco De La Cruz.

6. GENERAL MANAGER COMMENTS

Michael Minkler commended the engineering department for their work efforts.

7. DIRECTOR COMMENTS OR FUTURE AGENDA ITEMS

Director Thomas requested a report on commercial account charges.

8. NEXT COMMITTEE MEETING

July 7, 2026

9. ADJOURNMENT

There being no further business, the meeting adjourned at approximately 3:47 pm.

Respectfully submitted,

Haley Airola

Haley Airola
Engineering Coordinator

**Agenda
Item
4a**

Agenda Item

DATE: July 14, 2026

TO: Michael Minkler, General Manager

FROM: Kevin Williams, District Engineer

SUBJECT: Copper Cove Sewer Collection System Evaluation and Hydraulic Modeling

RECOMMENDATIONS

Provide concurrence for staff to issue a Request for Proposals (RFP) for professional engineering services to develop a hydraulic model of the Copper Cove wastewater collection system.

BACKGROUND

The FY 2026-27 Engineering Department budget includes funding for an Inflow and Infiltration (I/I) Study of the Copper Cove wastewater collection system. The goal of the study is to identify sources of excess water entering the sewer system and develop strategies to reduce these flows.

The Copper Cove collection system consists of four primary sewer basins connected by gravity sewers, lift stations, and force mains. Excess inflow and infiltration increase the amount of wastewater that must be pumped, treated, and stored, reducing system efficiency and increasing operating costs.

The District is currently moving forward with the Copper Cove Tertiary Facilities Project. However, reducing inflow and infiltration remains important because it can reduce the volume of wastewater requiring treatment and storage in Pond 6. This effort will also support development of a wastewater system water balance and planning for future improvements to the cross-country force main and lift station rehabilitations.

DISCUSSION

As staff has evaluated the project, it has become clear that development of a hydraulic model should be completed before undertaking a comprehensive I/I study.

The Copper Cove sewer system relies heavily on lift stations and force mains and has limited flow monitoring data. As a result, the District does not currently have enough

information to accurately understand flow patterns, identify bottlenecks, or determine where excess water is entering the system.

A hydraulic model will provide a better understanding of system operations, evaluate lift station performance, identify hydraulic constraints, and help determine where future flow monitoring equipment should be installed. The model will also support development of the wastewater system water balance and future capital improvement planning.

In addition, the hydraulic model will allow staff to evaluate opportunities to consolidate lift stations, reduce energy consumption, optimize system operations, and establish design criteria for future lift station rehabilitation projects currently included in the District's Capital Improvement Program.

Because of the size and complexity of the system, limited staffing resources, and the need for additional data collection, staff anticipates this effort will occur over multiple years.

Staff recommends the following phased approach:

Phase 1 – Hydraulic Model Development

- Inventory lift station assets and operating information.
- Review force main routes and system connections.
- Identify hydraulic bottlenecks and operational limitations.
- Evaluate opportunities for lift station consolidation and energy savings.
- Develop a hydraulic model of the wastewater collection system.
- Identify locations for future flow monitoring and rehabilitation projects.

Phase 2 – Flow Monitoring and Data Collection

- Install or upgrade flow meters at strategic locations.
- Collect flow and pump runtime data.
- Calibrate and refine the hydraulic model for seasonal weather conditions.

Phase 3 – Inflow and Infiltration Investigation

- Conduct smoke testing in selected areas.
- Perform targeted CCTV inspections.
- Identify and prioritize sources of inflow and infiltration.

Phase 4 – Rehabilitation and Capital Planning

- Develop projects to reduce inflow and infiltration.
- Establish priorities for lift station rehabilitation projects.
- Support future collection system and treatment facility planning.

FINANCIAL CONSIDERATIONS

The Department Budget includes \$120,000 for the Professional Services for Copper Cove Sewer System. This will not be enough to complete all the tasks in this fiscal year, but we would like to start with Phase 1- Hydraulic Model Development which will provide model as basis for future analysis and project planning. The work effort is going to include research by district staff to provide most accurate information for formation of this plan by consultant. A comprehensive model should greatly reduce the work involved with the desktop I/I studies.

STRATEGIC PLAN ALIGNMENT

This effort supports the District's Strategic Plan by improving long-term planning, system reliability, and operational efficiency.

**Agenda
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4b**

Agenda Item

DATE: July 14, 2026

TO: Engineering Committee, Calaveras County Water District
Michael Minkler, General Manager

FROM: Chase King, Senior Civil Engineer

RE: CIP 10107 Ebbetts Pass Water Master Plan Status Update

PROJECT SUMMARY

The Ebbetts Pass Water Master Plan (Plan) will serve as a comprehensive planning document for the Ebbetts Pass Distribution System. In order to accomplish this, HydroScience Engineers and District staff are reviewing existing facilities, evaluating water treatment plants, constructing a hydraulic model, identifying deficiencies, and analyzing water age and disinfection byproducts. A 20-yr capital improvement plan and evaluation of system capacity for fire flow and emergency interconnections is also being developed.

PLAN DEVELOPMENT ACTIVITIES

Development of the hydraulic model is still in progress but is near completion. District staff is collaborating closely with HydroScience to reconcile data gaps and resolve model discrepancies with field investigations. Preliminary results promise a vital tool for the District once the model is complete.

Efforts have shifted towards developing a model for future peak demand and fire flow conditions. Once developed, the results will be one of the primary drivers of identifying deficiencies, improvements necessary for potential emergency interconnections, and developing the 20-yr capital improvement program.

FINANCIAL CONSIDERATIONS

The Plan is budgeted for FY 26/27 with completion anticipated within the calendar year.



Agenda

Item

4c

Agenda Item

DATE: July 14, 2026

TO: Engineering Committee, Calaveras County Water District
Michael Minkler, General Manager

FROM: Chase King, Senior Civil Engineer

RE: CIP 10116 Arnold Sewer Master Plan Status Update

PROJECT SUMMARY

The Arnold Sewer Master Plan will serve as a comprehensive planning document for the Arnold Wastewater Collection and Treatment System. In order to accomplish this, the project is evaluating existing infrastructure conditions, capacity, and regulatory compliance; permitting; assessing inflow and infiltration (I/I) trends; and developing a prioritized 20-year Capital Improvement Plan (CIP).

In addition to system condition and capacity evaluation, the project is exploring potential consolidation opportunities with nearby CCWD wastewater facilities as well as identifying long-term regional options that could improve operational efficiency and reduce overall costs. The plan includes system modeling, treatment process evaluation, and phasing recommendations to align with potential state and federal funding opportunities

PLAN DEVELOPMENT ACTIVITIES

The master plan activities have been concentrated on gathering sewer collection flow data and development of the collection system model.

The consulting engineers, Verdantas Inc, is actively collecting flow data from seven (7) locations throughout the Arnold sewer service area to help determine where the inflow and/or infiltration (I/I) is found and to what extent. Critical flow data from multiple sites was lost between the months of March and May. To reconcile the lost data, and to ensure the severity of I/I can be determined, staff has requested Verdantas extend data collection into the upcoming wet season.

The sewer model is approximately 50% complete. The model is expected to be ready for initial review by the end of July.

Verdantas and District staff will conduct a field assessment of the lift stations and explore options to consolidate nearby CCWD wastewater facilities in the coming weeks.

FINANCIAL CONSIDERATIONS

The work effort was scheduled to be completed over a 12-month span, however, due to lost flow data the timeline is expected to be extended to allow for data collection to continue into the upcoming wet season. As a result, the project may continue into FY 2027/2028.

**Agenda
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4d**

Agenda Item

DATE: July 14, 2026

TO: Michael Minkler, General Manager

FROM: Kevin Williams, District Engineer

SUBJECT: Copper Cove Lake Tulloch Intertie Project – Preliminary Construction Bid Results

RECOMMENDATION

Receive information and discuss the preliminary construction bid results for the Copper Cove Lake Tulloch Intertie Project (CIP No. 11104). Staff is requesting recommendations to bring to the full board for Project Approval.

BACKGROUND

The Copper Cove Lake Tulloch Intertie Project will construct a new water main along O'Byrnes Ferry Road to connect the C Tank Zone and eliminate the District's reliance on the existing underwater crossing of Lake Tulloch. The project is funded through Private Placement Loan #2 and has a current Engineer's Estimate of approximately \$7.8 million.

DISCUSSION

Construction bids for the project are scheduled to be received on July 9, 2026. Because bid opening will occur after publication of the Engineering Committee agenda packet, final bid tabulations will not be available at the time this agenda item is posted. Staff intend to provide a verbal update on the preliminary bid results during the meeting.

Recent increases in construction material costs, including asphalt, microsurfacing, and piping, have increased the Engineer's Estimate slightly from estimate earlier this year. Staff will provide an overview of how the preliminary bid results compare to the current estimate.

Contractor interest in the project has been strong. The pre-bid meeting was well attended, and staff anticipates receiving a competitive number of bids. Staff will present the apparent low bidder, bid range, and any notable observations from the bidding process, if available.

Following bid opening, staff will complete the detailed evaluation of bid responsiveness, contractor qualifications, references, and project budget impacts. A recommendation for contract award will be presented to the Board at a future meeting after completion of the bid review process.

FINANCIAL CONSIDERATIONS

The project is funded through Private Placement Loan #2. The current Engineer's Estimate is approximately \$7.8 million. Final project costs will be determined following receipt and evaluation of construction bids.

COMMITTEE ACTION

Receive information and provide feedback to staff regarding the preliminary bid results and next steps.

**Agenda
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4e**

Agenda Item

DATE: July 14, 2026

TO: Engineering Committee, Calaveras County Water District
Michael Minkler, General Manager

FROM: Juan Maya, Associate Engineer

RE: CCWD Design and Construction Standards - Update

PROJECT STATUS

Since presenting this effort to the Engineering Committee in March, District Staff has been working closely with A T.E.E.M. Electrical Engineering Design Services and District Electrical Staff to develop the District's Electrical Design Standards. Over the past several months, significant progress has been made, and the project is now nearing completion.

The draft standards include updated electrical design criteria, instrumentation and controls requirements, SCADA integration standards, Division 16 specifications, and standardized electrical details for use on both developer-driven and District capital improvement projects. Throughout the development process, Staff has worked collaboratively with A T.E.E.M. to ensure the standards reflect the District's operational practices, maintenance needs, and long-term infrastructure goals.

ELECTRICAL STANDARD DRAWINGS

As part of this effort, 41 Electrical Standard Drawings have been developed and are attached for the Committee review. These drawings establish standardized electrical details, control schematics, RTU layouts, instrumentation diagrams, and typical installations for lift stations, booster stations, water storage tanks, and other District facilities. Once adopted, these standard drawings will provide consistency across future District capital improvement projects and developer-installed infrastructure.

ELECTRICAL STANDARD SPECIFICATIONS

In addition to the standard drawings, 12 Electrical Standard Specification Sections have been prepared to establish uniform requirements for electrical equipment, installation methods, testing, instrumentation, and control systems. The proposed specification sections include:

Electrical Standards Specification Sections – Table of Contents	
Section No.	Title
16010	ELECTRICAL
16110	CONDUIT, BOXES & GROUNDING
16120	WIRE, FUSES & TERMINAL BLOCKS
16210	DIESEL GENERATOR
16250	AUTOMATIC TRANSFER SWITCH
16426	MAIN SWITCHBOARD
15470	PANELBOARD AND PANELBOARD TRANSFORMER
16480	MOTOR CONTROL CENTER
16481	VARIABLE FREQUENCY DRIVE
16482	SOFT STARTER
16605	ELECTRICAL SYSTEM ANALYSIS
16940	INSTRUMENTATION

NEXT STEPS

Staff is currently completing the final review of the standards and incorporating minor revisions. Once finalized, the complete Electrical Design Standards, including the standard drawings and technical specification sections, will be presented to the Board for formal adoption.

Following completion of the Electrical Design Standards, Staff plans to begin a comprehensive update of the District's Civil Design and Construction Standards. Many portions of the current civil standards are outdated and require revisions to reflect current engineering practices, materials, construction methods, regulatory requirements, and operational needs. Updating the civil standards will build upon the work completed for the electrical standards and continue the District's effort to modernize its Design and Construction Standards.

CONCLUSION

Completion of these efforts will provide the District with a comprehensive and up-to-date set of Design and Construction Standards that promote consistency, improve system reliability, reduce review time for routine engineering components, establish clear design requirements for consultants, contractors, developers, and District staff, and help ensure that future infrastructure investments meet the District's long-term operational and maintenance objectives.

FINANCIAL CONSIDERATIONS

The Engineering Department Budget includes funding for Standards Updates in the current fiscal year. Consultant services for this project will be funded from this existing allocation.

Electrical Standards – Drawing Set Table of Contents	
Sheet No.	Title
S06-E1	Electrical Symbols & Abbreviations
S06-E2	Typical Electrical Details No. 1
S06-E3	Typical Electrical Details No. 2
S06-E4	Typical Electrical Details No. 3
S06-E5	Typical Electrical Details No. 4
S06-E6	Typical Electrical Details No. 5
S06-E7	Typical Electrical Details No. 6
S06-E011	2 Pumps Lift Station - SSS - Pump Elementary & Elevation - Soft Starter
S06-E012	2 Pumps Lift Station - SSS - Typical RTU Backpan and Elevation
S06-E013	2 Pumps Lift Station - SSS - RTU Panel & Control Power Distribution Diagram
S06-E014	2 Pumps Lift Station - SSS - RTU Panel Standard I/O Layout
S06-E021	3 Pumps Lift Station - SSS - Pump Elementary & Elevation - Soft Starter
S06-E022	3 Pumps Lift Station - SSS - Typical RTU Backpan and Elevation
S06-E023	3 Pumps Lift Station - SSS - RTU Panel & Control Power Distribution Diagram
S06-E024	3 Pumps Lift Station - SSS - RTU Panel Standard I/O Layout
S06-E031	2 Pumps Lift Station - VFD - Pump Elementary & Elevation
S06-E032	2 Pumps Lift Station - VFD - Typical RTU Backpan and Elevation
S06-E033	2 Pumps Lift Station - VFD - RTU Panel & Control Power Distribution Diagram
S06-E034	2 Pumps Lift Station - VFD - RTU Panel Standard I/O Layout
S06-E041	2 Pumps Booster Station - SSS - Pump Elementary & Elevation - Soft Starter
S06-E042	2 Pumps Booster Station - SSS - Typical RTU Backpan and Elevation
S06-E043	2 Pumps Booster Station - SSS - RTU Panel & Control Power Distribution Diagram
S06-E044	2 Pumps Booster Station - SSS - RTU Panel Standard I/O Layout
S06-E051	3 Pumps Booster Station - SSS - Pump Elementary & Elevation - Soft Starter
S06-E052	3 Pumps Booster Station - SSS - Typical RTU Backpan and Elevation
S06-E053	3 Pumps Booster Station - SSS - RTU Panel & Control Power Distribution Diagram
S06-E054	3 Pumps Booster Station - SSS - RTU Panel Standard I/O Layout
S06-E062	Tank RTU - Typical RTU Backpan and Elevation
S06-E063	Tank RTU - Control Power Distribution Diagram
S06-E064	Tank RTU - Standard I/O Layout
S06-E071	2 Pumps Lift Station - Single Phase - Pump Elementary & Elevation
S06-E072	2 Pumps Lift Station - Single Phase - Typical RTU Backpan and Elevation
S06-E073	2 Pumps Lift Station - Single Phase - RTU Panel & Control Power Distribution Diagram
S06-E074	2 Pumps Lift Station - Single Phase - RTU Panel Standard I/O Layout
S06-I001	Instrumentation Symbols & Abbreviations
S06-I011	2 Pumps Lift Station - SSS - P&ID
S06-I021	3 Pumps Lift Station - SSS - P&ID
S06-I031	2 Pumps Lift Station - VFD - P&ID
S06-I041	2 Pumps Booster Station - SSS - P&ID
S06-I051	3 Pumps Booster Station - SSS - P&ID
S06-I061	Tank - P&ID

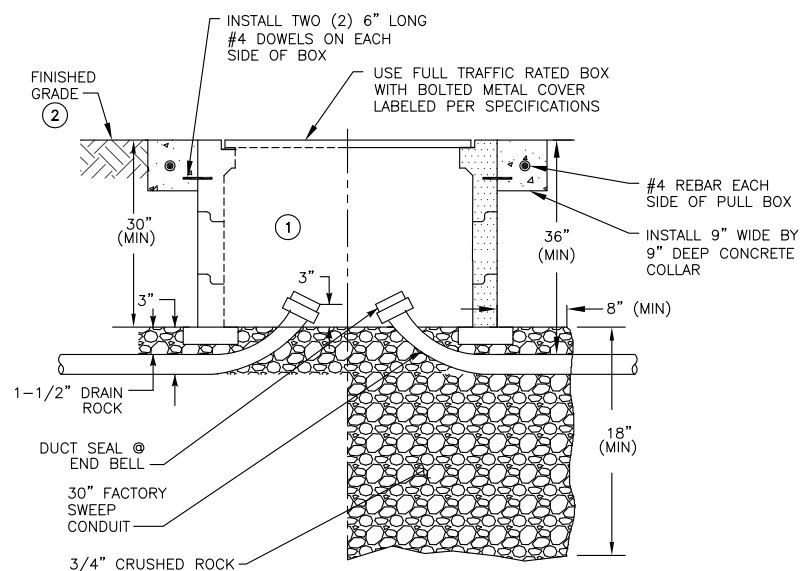
MISCELLANEOUS ELECTRICAL & INSTRUMENTATION ABBREVIATIONS					
&	AND	HOA	HAND-OFF-AUTO	PRESS	PRESSURE
@	AT	HOR	HAND-OFF-REMOTE	PRI	PRIMARY
A	AMBER, AMPERES	HP	HORSEPOWER	PROVIDE	FURNISH, INSTALL & CONNECT
AC	ALTERNATING CURRENT	HPS	HIGH PRESSURE SODIUM	PRR	POWER RELAY
AF	AMP FRAME	HS	HAND SWITCH	PS	PRESSURE SWITCH, POWER SUPPLY
AFF	ABOVE FINISHED FLOOR	HTR	HEATER	PT	POTENTIAL TRANSFORMER
AI	ANALOG INPUT	HZ	HERTZ (CYCLES PER SECOND)	PTT	PUSH TO TEST
AIC	AMP INTERRUPTING CAPACITY SYMMETRICAL	HZD	HAZARDOUS AREA, EXPLOSION PROOF	PV	PROCESS VARIABLE
AL	RIGID ALUMINUM CONDUIT	I	INTERLOCK	PVC	POLY VINYL CHLORIDE
ALT	ALTERNATOR	I/O	INPUT/OUTPUT	PWR	POWER
AM	AMMETER	ICR	INSTRUMENTATION CONTROL RELAY	R	RED
ARMS	ARC FLASH REDUCTION MAINTENANCE SYS	INST	INSTANTANEOUS	RCT	REPEAT CYCLE TIMER
ARV	AIR RELEASE VALVE	ISC	SHORT CKT INTERRUPTING CURRENT (SYMM)	REF	REFERENCE
AO	ANALOG OUTPUT	ISR	INTRINSICALLY SAFE RELAY	RIO	REMOTE I/O
AT	AMP TRIP	J	JUNCTION BOX	RTD	RESISTANCE TEMPERATURE DETECTOR
ATS	AUTOMATIC TRANSFER SWITCH	K	KILO, PREFIX	RTM	RUN TIME METER
AWG	AMERICAN WIRE GUAGE	KAIC	KILO-AMPERE INTERRUPTING CAPACITY	RTU	REMOTE TELEMETRY UNIT
B	BLUE	L	LINE	RVNR	REDUCED VOLTAGE NON-REVERSING
BC	BARE COPPER	LA	LIGHTNING ARRESTOR	(R)	REWIRE, RELOCATE, REVISE, REUSE, REPLACE
BFC	BELOW FINISHED CEILING	LC	LIGHTING CONTACTOR	SC	SHORTING CONTACTOR
BOD	BIOCHEMICAL OXYGEN DEMAND	LCD	LIQUID CRYSTAL DISPLAY	SCH	SCHEDULE
BLK	BLANK	LED	LIGHT EMITTING DIODE	SEC	SECONDARY
BKR	BREAKER	LEL	LOWER EXPLOSIVE LIMIT	SECS	SECONDS
C	CONDUIT	LGT	LIGHT	SEL	SELECTOR
CAP	CAPACITOR	LO	LOW	SFA	SERVICE FACTOR AMPS
CB	CIRCUIT BREAKER	LOR	LOCAL-OFF-REMOTE	SP	SETPOINT
CBL	CABLE	LOS	LOCK-OUT STOP SWITCH	SPD	SURGE PROTECTIVE DEVICE
CH	CHANNEL	LP	LIGHTING PANELBOARD	SPEC	SPECIFICATION
CKT	CIRCUIT	LPU	LINE PROTECTION UNIT	SS	STAINLESS STEEL
COAX	COAXIAL CABLE	LS	LEVEL SWITCH	SSS	SOLID STATE SOFT STARTER
COMM	COMMUNICATION PORT	LSI	LONG, SHORT, INSTANTANOUS	STT	START
CP	CONTROL PANEL	M	MOTOR CONTRACTOR	STP	STOP
CPT	CONTROL POWER TRANSFORMER	MAX	MAXIMUM	SV	SOLENOID VALVE
CR	CONTROL RELAY	MCC	MOTOR CONTROL CENTER	SW	SWITCH
CT	CURRENT TRANSFORMER	MCM	THOUSAND CIRCULAR MILS	SWBD	SWITCHBOARD
CTQ	CONSTANT TORQUE	MCP	MOTOR CIRCUIT PROTECTOR	SWGR	SWITCHGEAR
CU	COPPER, CONDENSING UNIT	MH	MANHOLE	SYMM	SYMMETRICAL
DC	DIRECT CURRENT	MHD	METAL HALIDE	T	TRIP
DET	DETAIL	MIN	MINIMUM	TB	TERMINAL BLOCK
DI	DIGITAL INPUT	MINS	MINUTES	TC	TIME CLOCK
DIA	DIAGRAM	MISC	MISCELLANEOUS	TDOD	TIME DELAY ON DE-ENERGIZATION
DISC	DISCONNECT	MMS	METER/MAIN SWITCHBOARD	TDOE	TIME DELAY ON ENERGIZATION
DIV	DIVISION	MNFR	MANUFACTURER	TEL	TELEMETRY
DO	DIGITAL OUTPUT	MOV	MOTOR OPERATED VALVE	TELCO	TELEPHONE COMPANY
DPDT	DOUBLE POLE DOUBLE THROW	MPS	MOTOR PROTECTION SYSTEM	TEMP	TEMPERATURE
DWG	DRAWING	MS	MOISTURE SENSOR/SWITCH	TM	THERMAL MAGNETIC
EF	EXHAUST FAN	MTR	MOTOR	TOC	TOTAL ORGANIC CARBON
ELEV	ELEVATION	MTS	MANUAL TRANSFER SWITCH	TR	TIME DELAY RELAY
EMT	ELECTRICAL METALLIC TUBING	MV	MEDIUM VOLTAGE	TRIAD	TWISTED & SHIELDED 3 CONDUCTOR
ETM	ELAPSED TIME METER	N	NEUTRAL	TS	TEMPERATURE SWITCH
(E)	EXISTING	NC	NORMALLY CLOSED	TSPR	TWISTED & SHIELDED PAIR
F	FRAME	NEC	NATIONAL ELECTRICAL CODE	TYP	TYPICAL
FC	FAIL CLOSED, FAN COIL	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	UG	UNDERGROUND
FCS	FIELD CONTROL STATION	NIC	NOT IN CONTRACT	UL	UNDERWRITERS LABORATORIES
FCU	FAN CONTROL UNIT	NO	NORMALLY OPEN	UON	UNLESS OTHERWISE NOTED
FLA	FULL LOAD AMPS	NP	NAMEPLATE	UPS	UNINTERRUPTIBLE POWER SUPPLIES
FO	FAIL OPEN	NTS	NOT TO SCALE	V	VOLTAGE
FLEX	FLEXIBLE, METAL LIQUID TIGHT CONDUIT	(N)	NEW	VA	VOLT AMPS
FROA	FORWARD-REVERSE-OFF-AUTO	OC	ON CENTER	VAR	VOLT AMP REACTIVE
FS	FLOW SWITCH OR FULL SPEED	OI	OPERATOR INTERFACE	VFD	VARIABLE FREQUENCY DRIVE
FV, FVNR	FULL VOLTAGE NON-REVERSING	OL	OVERLOAD	VLV	VALVE
FWD	FORWARD	ORP	OXIDATION REDUCTION POTENTIAL	VM	VOLTMETER
(F)	FUTURE	P	PHASE, POLE	VTQ	VARIABLE TORQUE
G	GREEN	PB	PULL BOX	W	WHITE, WATTS
GALV	GALVANIZED	PBI	PULL BOX INSTRUMENT	WHM	WATT-HOUR METER
GEN	GENERATOR	PBP	PULL BOX POWER	WM	WATTMETER
GFI	GROUND FAULT CIRCUIT INTERRUPTER	PE	PHOTOCELL	WP	WATERPROOF, WEATHER PROOF
GND	GROUND	PF	POWER FAIL	WS	TORQUE SWITCH, WATER SURFACE
GRS	GALVANIZED RIGID STEEL CONDUIT	PFR	POWER (PHASE) FAIL RELAY	XFMR	TRANSFORMER
GRS-PVC	PVC COATED GRS CONDUIT	PH	HYDROGEN ION CONCENTRATION	X5	MISCELLANEOUS SWITCH
HACR	HEATING AIR CONDITIONING AND REFRIGERATION	PLC	PROGRAMMABLE LOGIC CONTROLLER	Y	YELLOW
HC	PUSHBUTTON	PMC	POWER MONITOR	Z	IMPEDANCE
HI	HIGH	PMP	PUMP	Z5	LIMIT SWITCH
HID	HIGH INTENSITY DISCHARGE	PNL	PANEL		
HMI	HUMAN MACHINE INTERFACE	PR	PAIR, TWISTED & SHIELDED CABLE		

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
SWITCHES – PROCESS		DEVICES – RELAY		DEVICES – MISCELLANEOUS		PLAN – SYMBOLS	
	FLOW SWITCH – CLOSES UPON INCREASING FLOW		CONTROL RELAY CR1 WITH NORMALLY OPEN CONTACT ON LINE 28 & NORMALLY CLOSED CONTACT ON LINE 111		AUDIBLE ALARM		CONDUIT, EXPOSED
	FLOW SWITCH – OPENS UPON INCREASING FLOW		TIME DELAY RELAY TR2 – ADJUSTABLE TIME DELAY RANGE & SETTING AS SHOWN		TACHOMETER GENERATOR		CONDUIT, IN SLAB OR BELOW GRADE
	LEVEL SWITCH – CLOSES UPON INCREASING LEVEL		TIME DELAY ON ENERGIZATION TIME DELAY ON DE–ENERGIZATION		BATTERY		CONDUIT STUBBED OUT & CAPPED
	LEVEL SWITCH – OPENS UPON INCREASING LEVEL		CONTACTOR OR STARTER M1		HEATER		CONDUIT BENDS TOWARD OBSERVER
	PRESSURE SWITCH – CLOSES UPON INCREASING PRESSURE (INCREASING VACUUM)		SOLENOID		3 PHASE MOTOR # = MOTOR HP		CONDUIT BENDS AWAY FROM OBSERVER
	PRESSURE SWITCH – OPENS UPON INCREASING PRESSURE (INCREASING VACUUM)		NORMALLY OPEN, RELAY CONTACT – ACTUATED BY RELAY CR1 COIL LOCATED ON LINE 105		SINGLE PHASE MOTOR		CONDUIT ENDS
	TEMPERATURE SWITCH – CLOSES UPON INCREASING TEMPERATURE		NORMALLY CLOSED, RELAY CONTACT – ACTUATED BY RELAY CR1	DEVICES – PROTECTIVE			CONDUIT CHANGE IN ELEVATION
	TEMPERATURE SWITCH – OPENS UPON INCREASING TEMPERATURE		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT CLOSES AFTER TR2 IS ENERGIZED		DISCONNECT, 3 POLE		BARE COPPER GROUND WIRE
	LIMIT SWITCH – CLOSES AT SET LIMIT		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSES AFTER TR2 IS ENERGIZED		CIRCUIT BREAKER, 3 POLE THERMAL MAGNETIC (TM) OR MOTOR CIRCUIT PROTECT (MCP)		GROUND CONNECTION BOLTED TYPE
	LIMIT SWITCH – OPENS AT SET LIMIT		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS DE–ENERGIZED		THERMAL OVERLOAD CONTACT		GROUND CONNECTION EXOTHERMIC WELD TYPE
	TORQUE SWITCH – CLOSES UPON INCREASING TORQUE		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS DE–ENERGIZED		THERMAL OVERLOAD ELEMENT		DISCONNECT SWITCH
	TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSES AFTER TR2 IS DE–ENERGIZED		FUSE WITH BLOWN FUSE INDICATING LIGHT		FIELD CONTROL STATION WITH JUNCTION BOX
SWITCHES – OPERATOR		DEVICES – FRONT PANEL		WIRING – CONNECTIONS			FIELD MOUNTED DEVICE
	TOGGLE OR DISCONNECT SWITCH		INDICATING LIGHT, LETTER "X" INDICATES COLOR: R=RED G=GREEN, A=AMBER, W=WHITE Y=YELLOW, B=BLUE		PANEL OR EQUIPMENT WIRING		FIELD CONTROL STATION WITH #AMP DISCONNECT SWITCH
	PUSHBUTTON – NORMALLY OPEN, MOMENTARY ACTION		INDICATING LIGHT, PUSH TO TEST		SPECIAL RECEPTACLE		JUNCTION BOX
	PUSHBUTTON – UNLESS OTHERWISE NOTED ACTION		AMP METER		THERMOSTAT		LIGHTING, FANS, HEATERS
	PUSHBUTTON, MECHANICALLY INTERLOCKED, DOUBLE CIRCUIT – NORMALLY CLOSED AND NORMALLY OPEN, MAINTAINED ACTION		VOLT METER		THERMAL OVERLOAD ELEMENT		LIGHTING, FANS, HEATERS
	SELECTOR SWITCH, 3 POSITION – CONTACT STATUS SHOWN EXISTS AT POSITION OF H–HAND, O–OFF, OR A–AUTO		ELAPSED TIME METER		FUSE		LIGHTING, FANS, HEATERS
	SELECTOR SWITCH, 2 POSITION – CONTACT STATUS SHOWN EXISTS AT POSITION AS SHOWN		RUN TIME METER		FUSED DISCONNECT		LIGHTING, FANS, HEATERS
			MULTI–POSITION SWITCH WHERE LETTER "X" IS FUNCTION: A=AMP, V=VOLT		SHIELDED CABLE		LIGHTING, FANS, HEATERS

CALAVERAS COUNTY WATER DISTRICT

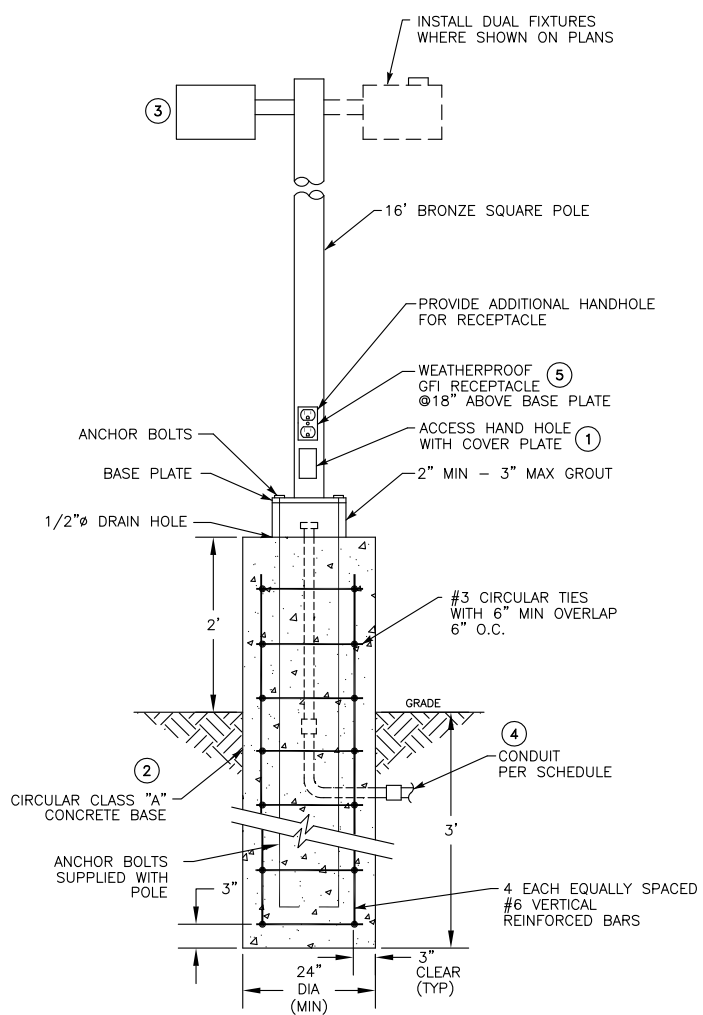
ELECTRICAL SYMBOLS & ABBREVIATIONS

DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-E1
APPROVED: --	DATE: JUNE 2026	



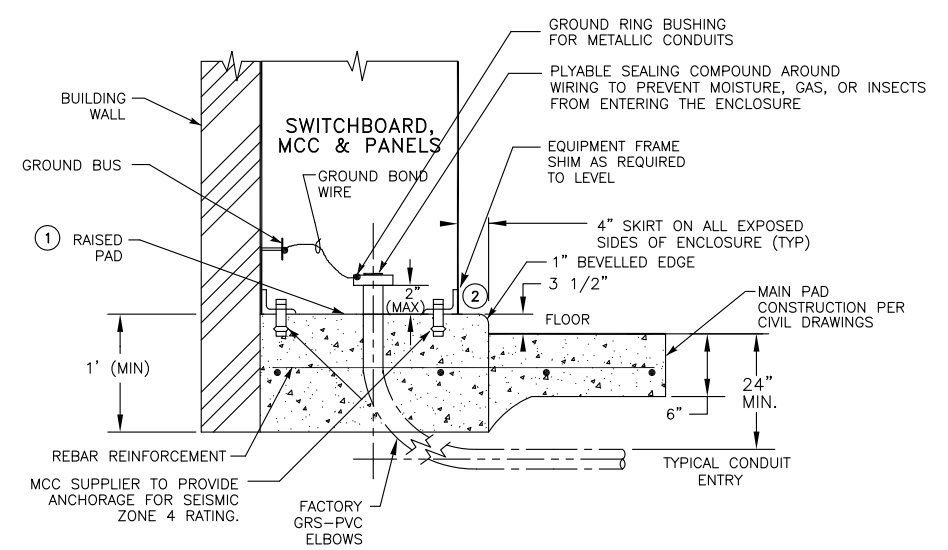
PULL BOX
NOT TO SCALE
DETAIL
A
E2

- NOTES:
- ① TRAFFIC RATED CHRISTY B2436 OR EQUAL, MINIMUM BOX SIZE. PROVIDE LARGER AT NO ADDITIONAL COST TO OWNER.
 - ② ADD EXTENSIONS WHERE NECESSARY TO RAISE COVER TO FINISHED GRADE.



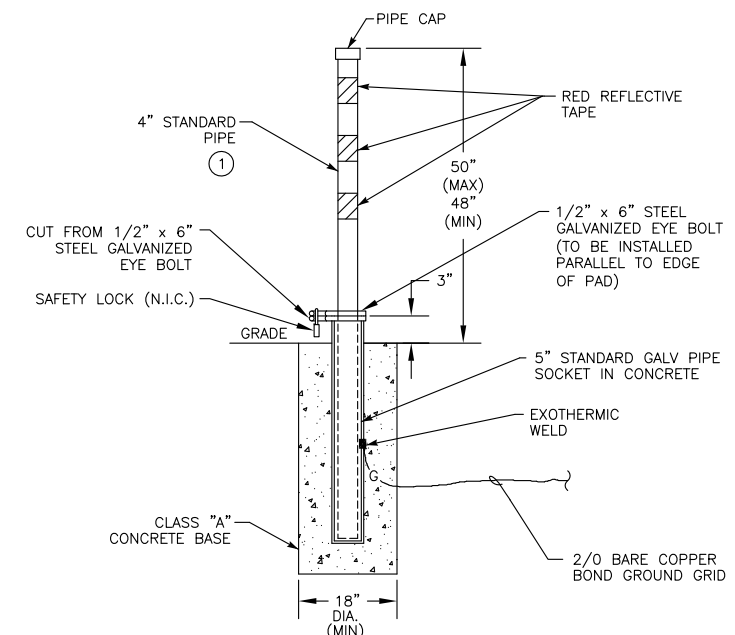
AREA LIGHT
NOT TO SCALE
DETAIL
B
E2

- NOTES:
- ① PROVIDE 2 POLE FUSE HOLDER WITH FUSES & RUBBER BOOTS ON LIGHT WIRING FEED INSIDE HANDHOLE.
 - ② PLACE FINISH CONCRETE ON EXPOSED SURFACE AFTER FORMING TUBE IS REMOVED.
 - ③ LIGHT CONTROLLED BY REMOTE MOUNTED RECEPTACLE TYPE PHOTOCELL.
 - ④ ROUTE CONDUITS TO 11" x 17" LIGHTING PULL BOX WHEN USING MULTIPLE AREA LIGHTS IN SERIES.
 - ⑤ PROVIDE PADLOCKABLE METAL IN-USE COVER.



EQUIPMENT CONCRETE PAD
NOT TO SCALE
DETAIL
C
E2

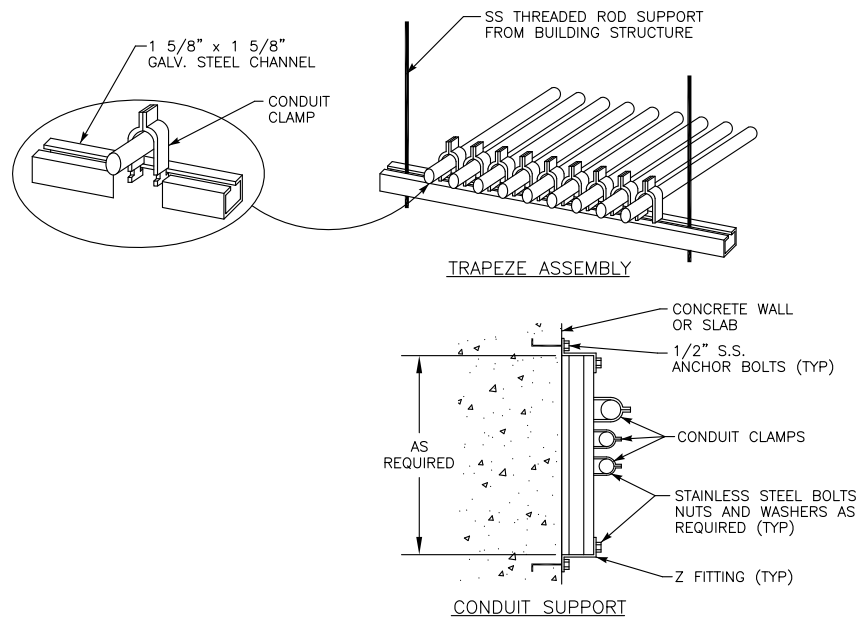
- NOTES:
- ① CONCRETE PAD ABOVE FLOOR TO BE POURED AFTER MAIN PAD HAD BEEN POURED. PAD ABOVE FLOOR TO BE FINE CONCRETE COMPOSITION ACCURATELY LEVELED WITHIN 1/16 INCH.
 - ② ALL ENCLOSURES INSTALLED IN NEMA 4X AREAS TO HAVE BEAD OF SILICON AROUND ALL BOTTOM EDGES TO SEAL OUT WATER.
 - ③ CONDUIT TRANSITIONS PER DWG E3, DETAIL "G".



REMOVABLE GUARD POLE DETAIL
NOT TO SCALE
DETAIL
D
E2

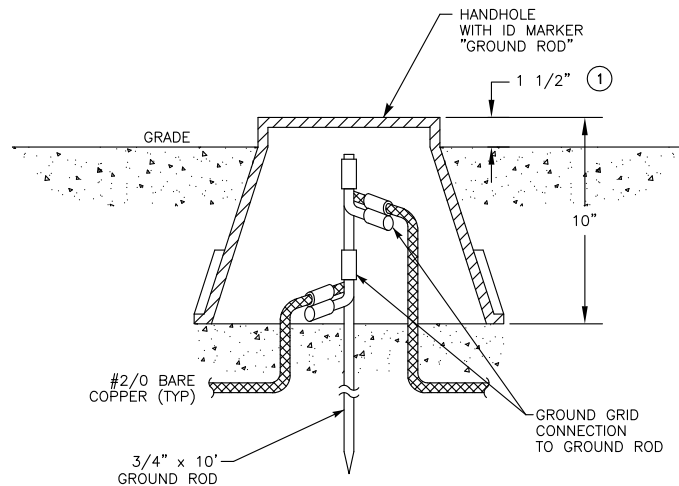
- NOTE:
- ① GUARD POSTS SHALL BE PAINTED YELLOW TO PREVENT CORROSION.
 - ② PER UTILITY STANDARD.

CALAVERAS COUNTY WATER DISTRICT		
TYPICAL ELECTRICAL DETAILS NO.1		
DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-E2
APPROVED: --	DATE: JUNE 2026	



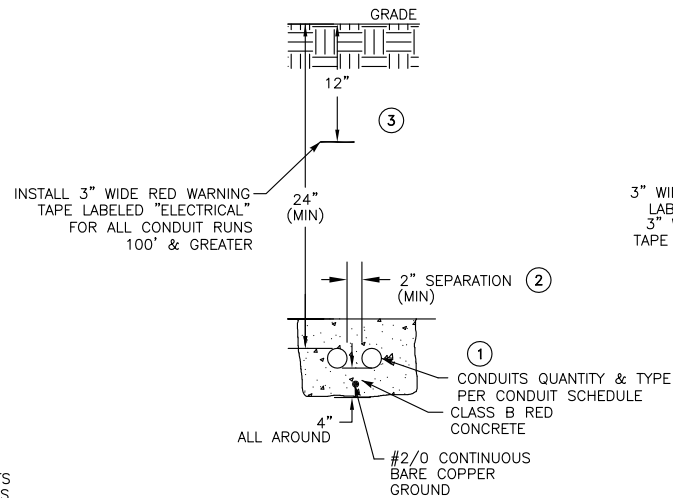
CONDUIT PIPE STRAP MOUNTING
NOT TO SCALE
DETAIL A
E3

- NOTES: ① THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING.
- ② CHANNEL AND ALL SUPPORT DEVICES TO BE NEMA RATED PER AREA CLASSIFICATION. FIELD COAT ALL CUTS, ETC. TO MATCH.
- ③ CHANNELS TO BE SPACED 5' MAXIMUM.



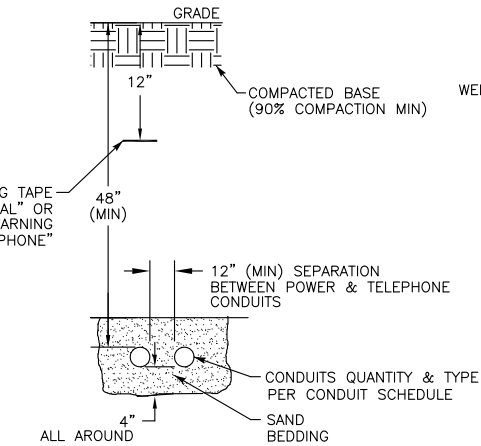
HANDHOLE GROUNDING
NOT TO SCALE
DETAIL E
E3

- NOTES: ① FLUSH IN PAVED AREAS.

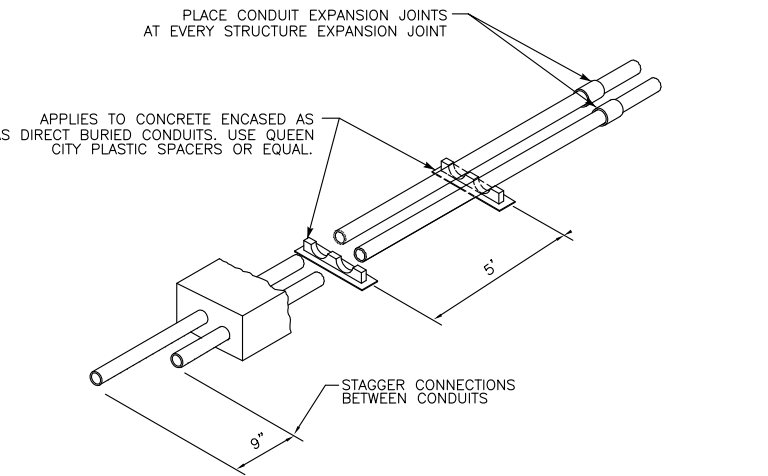


ENCASED CONDUITS
NOT TO SCALE
DETAIL B
E3

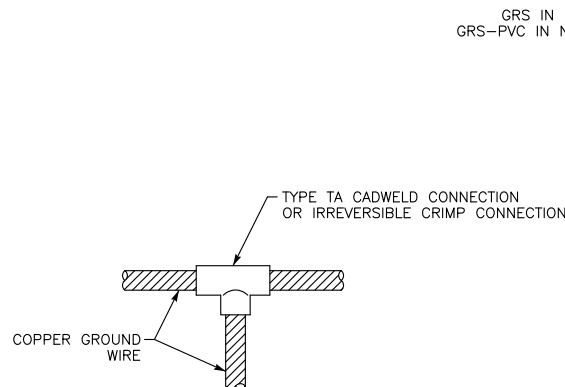
- NOTES: ① PLACE CONDUIT RUNS OF 4 CONDUITS OR GREATER IN PLASTIC SPACERS (RATED FOR DIRECT BURIAL) EVERY 5' ALONG LENGTH OF RUN.
- ② PROVIDE 12" (MIN) SEPERATION BETWEEN "A, C, D & M" TYPE GROUP AND "E, L & P" TYPE GROUP CONDUITS.
- ③ TRENCHING & COMPACTED BACKFILL PER SPECIFICATIONS.



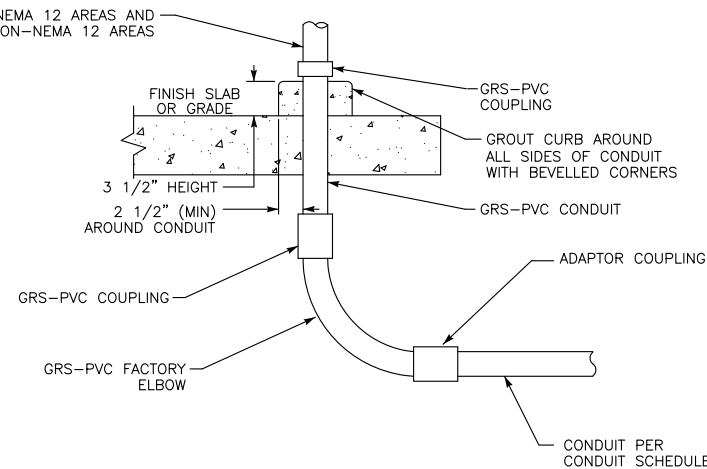
UTILITY CONDUITS
NOT TO SCALE
DETAIL C
E3



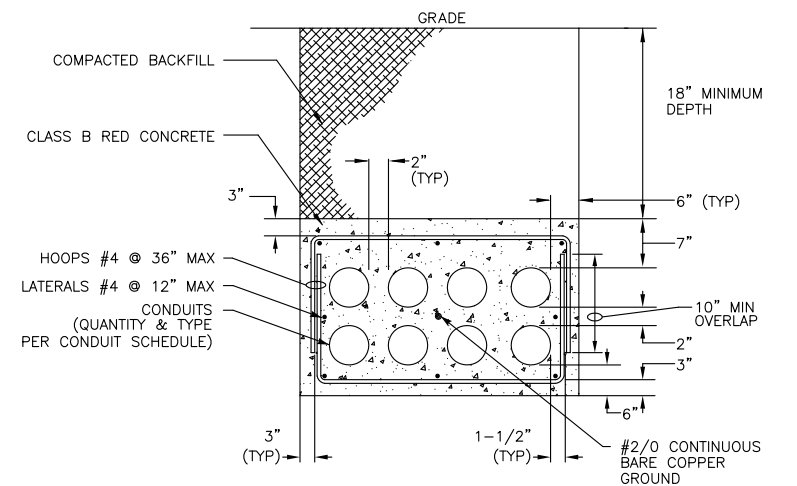
SPACERS AND JOINTS INSTALLATION
NOT TO SCALE
DETAIL D
E3



GROUND CABLE CONNECTION
NOT TO SCALE
DETAIL F
E3

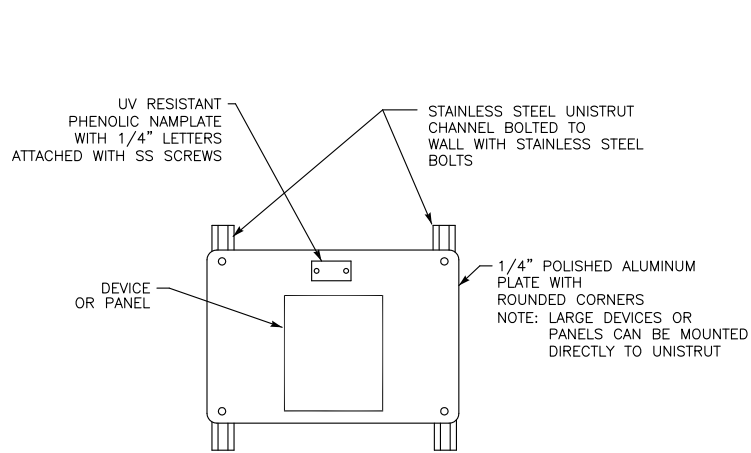


EXPOSED CONDUIT TRANSITION
NOT TO SCALE
DETAIL G
E3

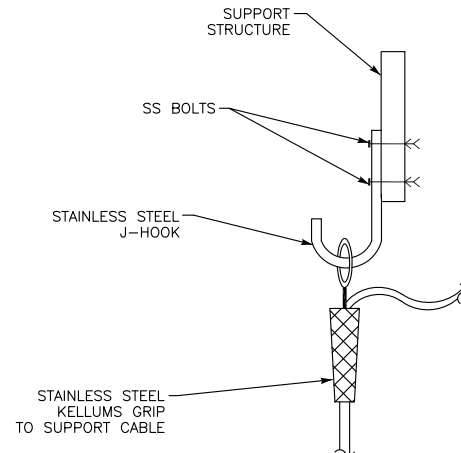


DUCT BANK
NOT TO SCALE
DETAIL H
E3

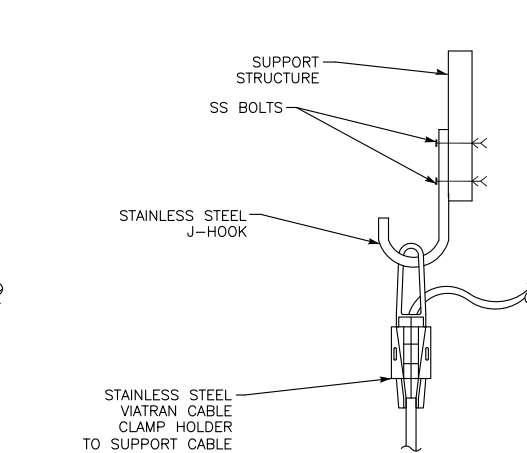
- NOTES: ① PLACE CONDUIT RUNS OF 4 CONDUITS OR GREATER IN PLASTIC SPACERS (RATED FOR DIRECT BURIAL) EVERY 5' ALONG LENGTH OF RUN.
- ② PROVIDE 12" (MIN) SEPERATION BETWEEN "A, C, D & M" TYPE GROUP AND "E, L & P" TYPE GROUP CONDUITS.
- ③ TRENCHING & COMPACTED BACKFILL PER SPECIFICATIONS.



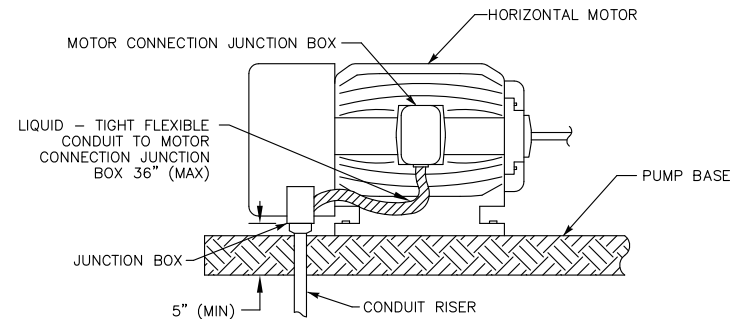
WALL PLATE SUPPORT
NOT TO SCALE DETAIL



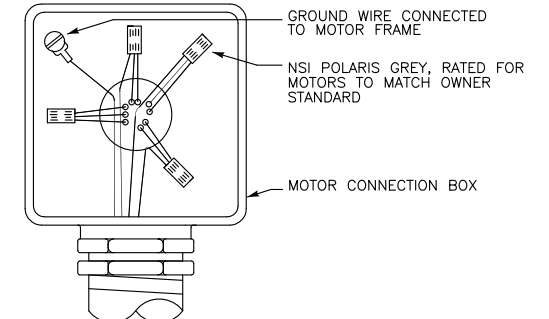
PUMP CABLE SUPPORT
NOT TO SCALE DETAIL



INSTRUMENTATION CABLE SUPPORT
NOT TO SCALE DETAIL

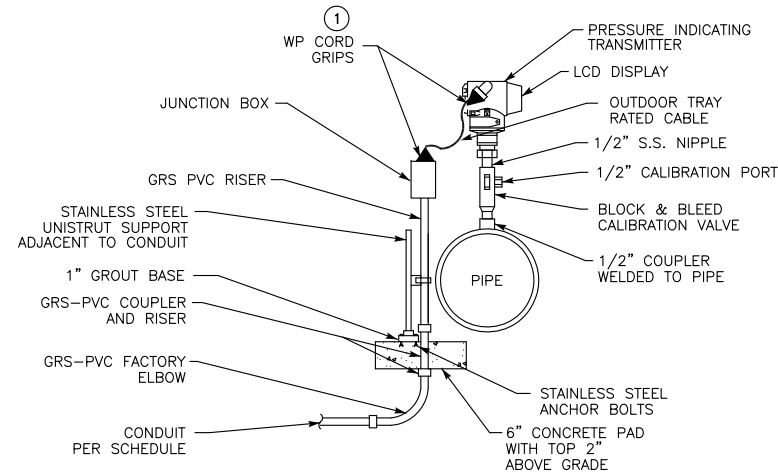


HORIZONTAL MOTOR CONNECTION
NOT TO SCALE DETAIL



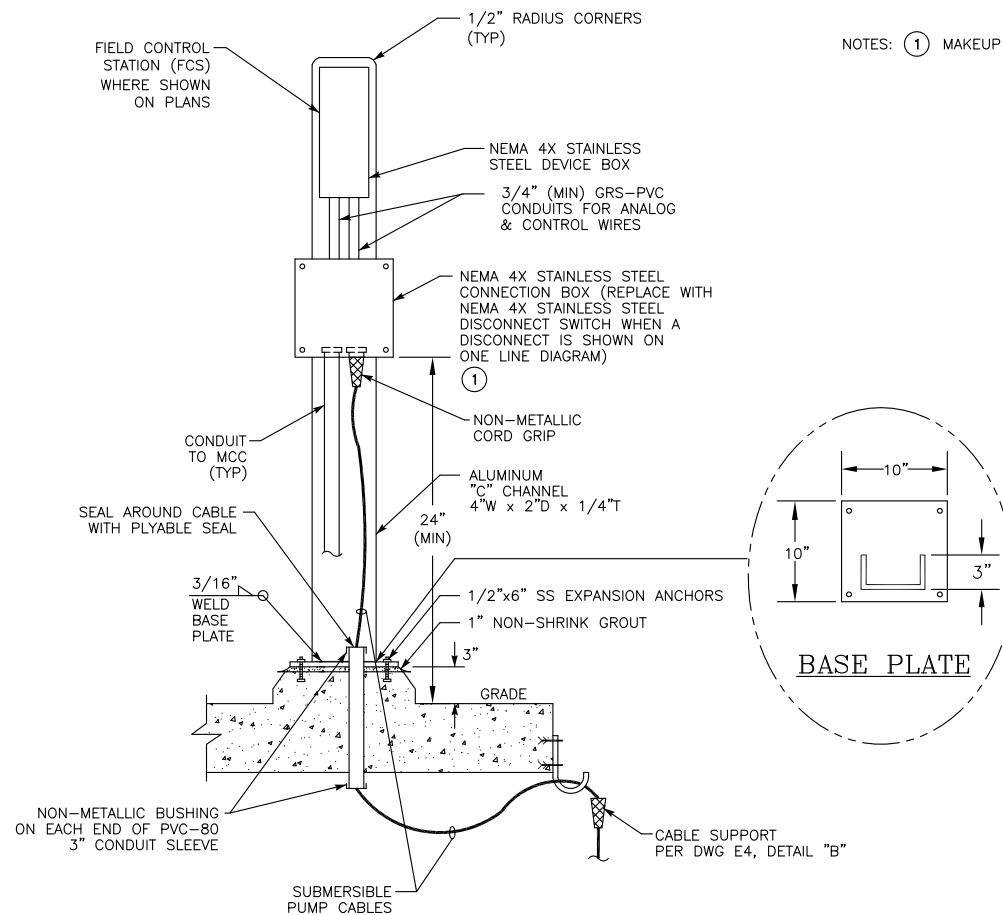
MOTOR MAKE-UP
NOT TO SCALE DETAIL

NOTES: ① MAKEUP MOTOR LEADS PER DWG E16, DETAIL "E".



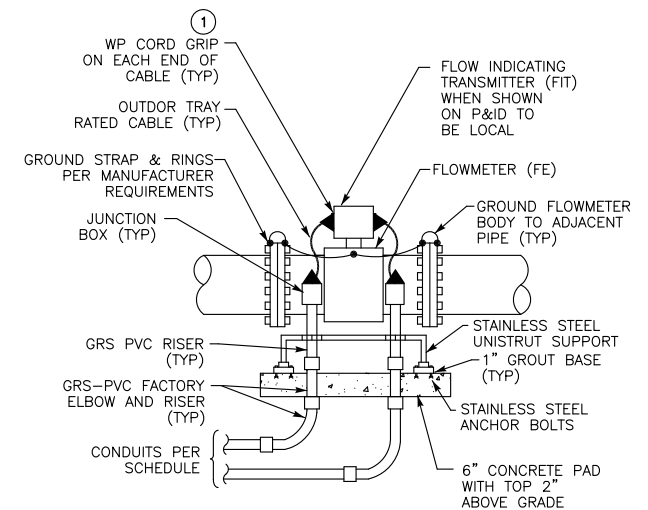
PRESSURE TRANSMITTER
NOT TO SCALE DETAIL

NOTES: ① USE METALLIC FLEX CONDUIT OUTSIDE.



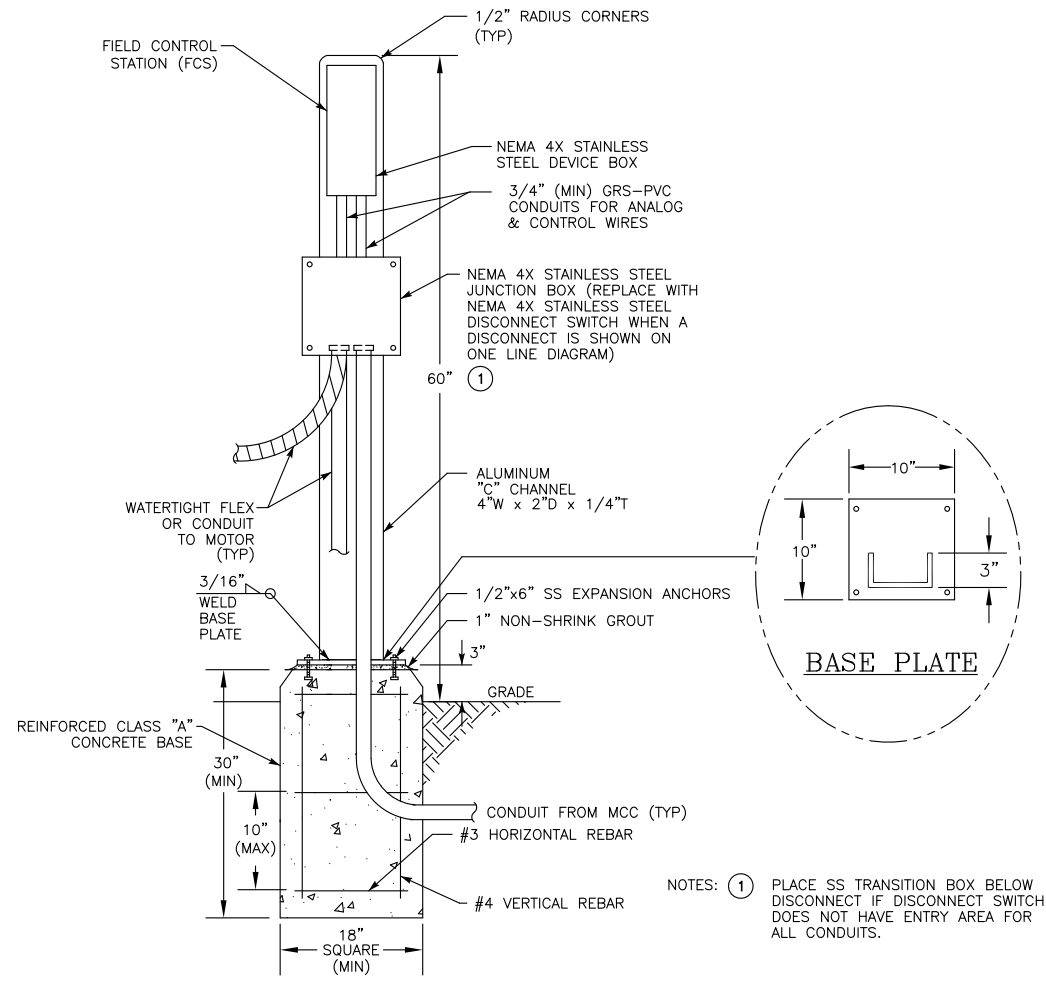
PUMP CABLE ISOLATION
NOT TO SCALE DETAIL

NOTES: ① PLACE SS TRANSITION BOX BELOW DISCONNECT IF DISCONNECT SWITCH DOES NOT HAVE ENTRY AREA FOR ALL CONDUITS.



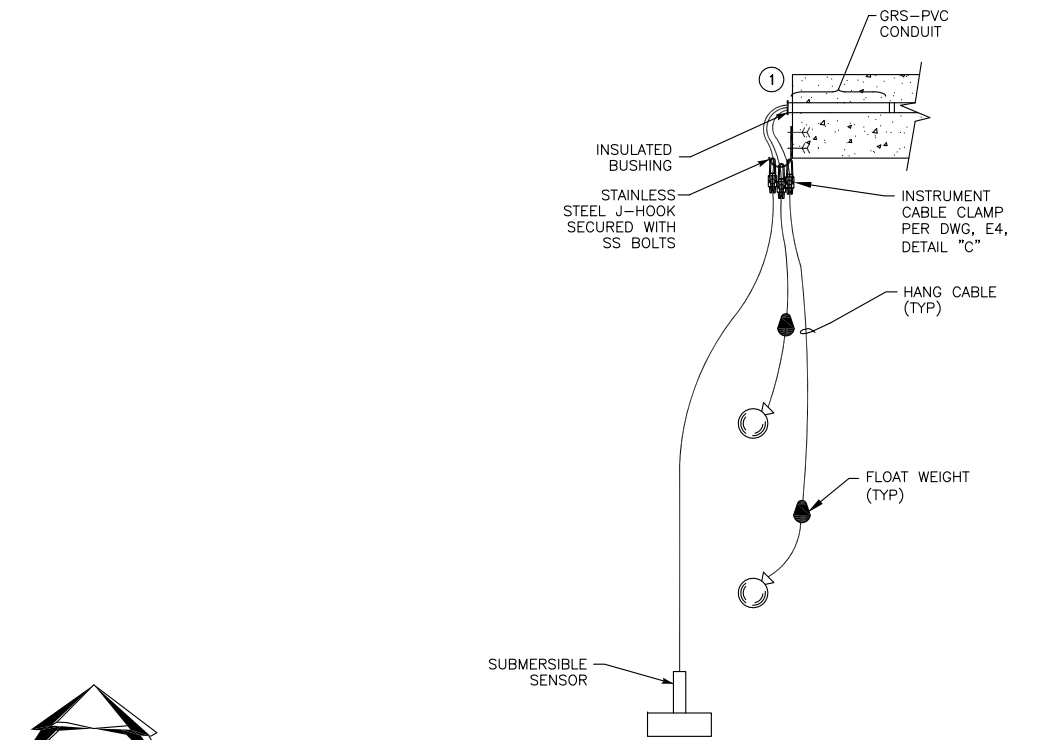
ABOVE GROUND FLOWMETER
NOT TO SCALE DETAIL

NOTES: ① USE METALLIC FLEX CONDUIT OUTSIDE.



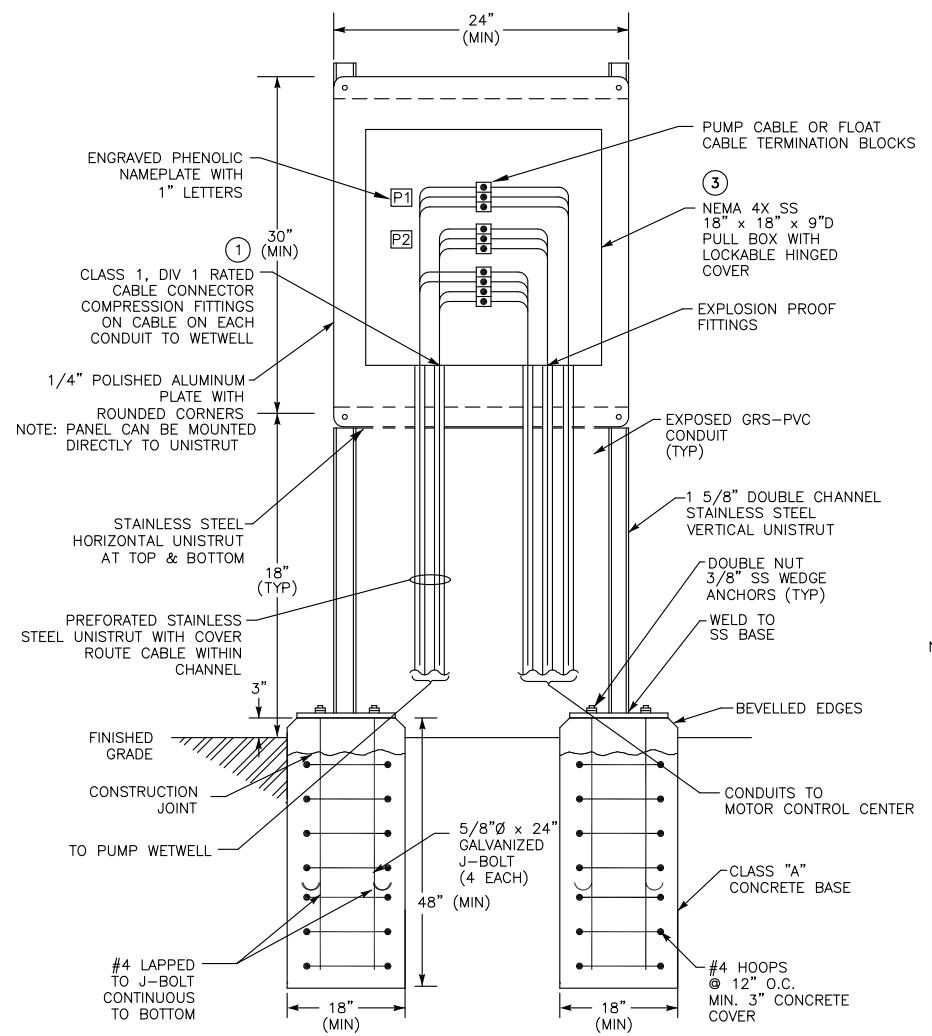
FCS FREESTANDING
NOT TO SCALE
DETAIL

A
E5



LEVEL SWITCH & TRANSMITTER CABLE
NOT TO SCALE
DETAIL

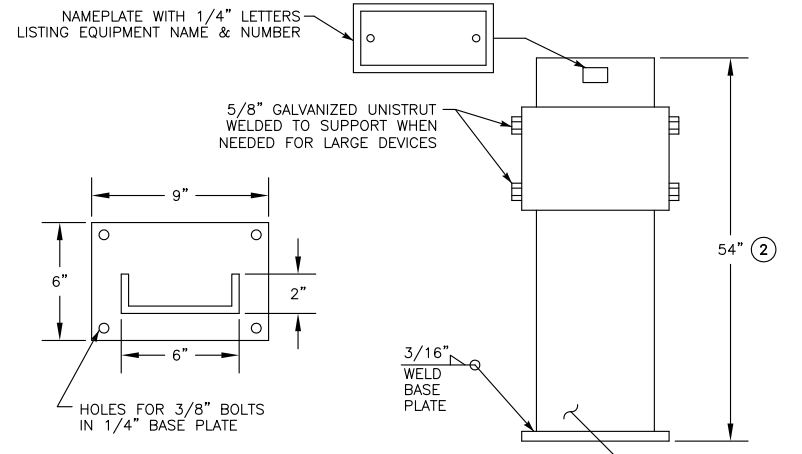
C
E5



PUMP CABLE BOX
NOT TO SCALE
DETAIL

B
E5

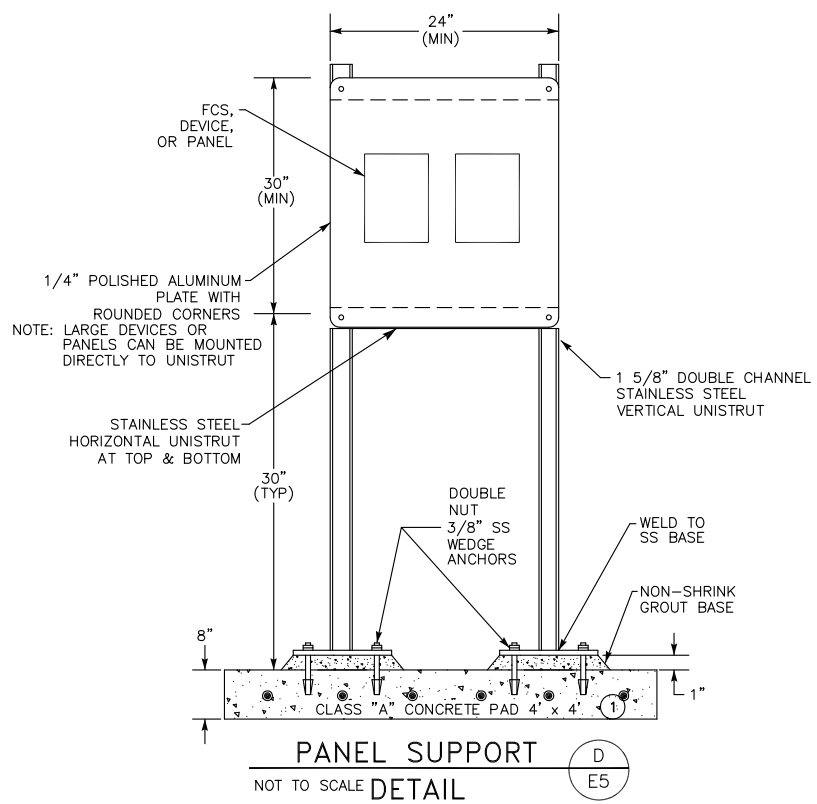
- NOTES:
- ① HUBBELL CORROSION - RESISTANT STRAIGHT NYLON CONNECTORS, MODEL SHC SERIES.
 - ② SECURE TO BUILDING OR HANDRAIL AS SHOWN ON SITE PLANS.
 - ③ PUMP CABLE BOX SHALL HAVE ENGRAVED NAMEPLATE ON PANEL EXTERIOR STATING VOLTAGE, PHASE AND "PUMP CABLE BOX".



ENCLOSURE SUPPORT
NOT TO SCALE
DETAIL

E
E5

- NOTES:
- ① PLACE SUPPORT ON CLASS "A" CONCRETE BASE MIN 24" IN DEPTH WITH #3 REBAR CROSSWAYS AT TOP & BOTTOM. TOP OF BASE TO BE 3" ABOVE GRADE.
 - ② HEIGHT MAY BE REDUCED FOR EQUIPMENT MOUNTED LOWER.



PANEL SUPPORT
NOT TO SCALE
DETAIL

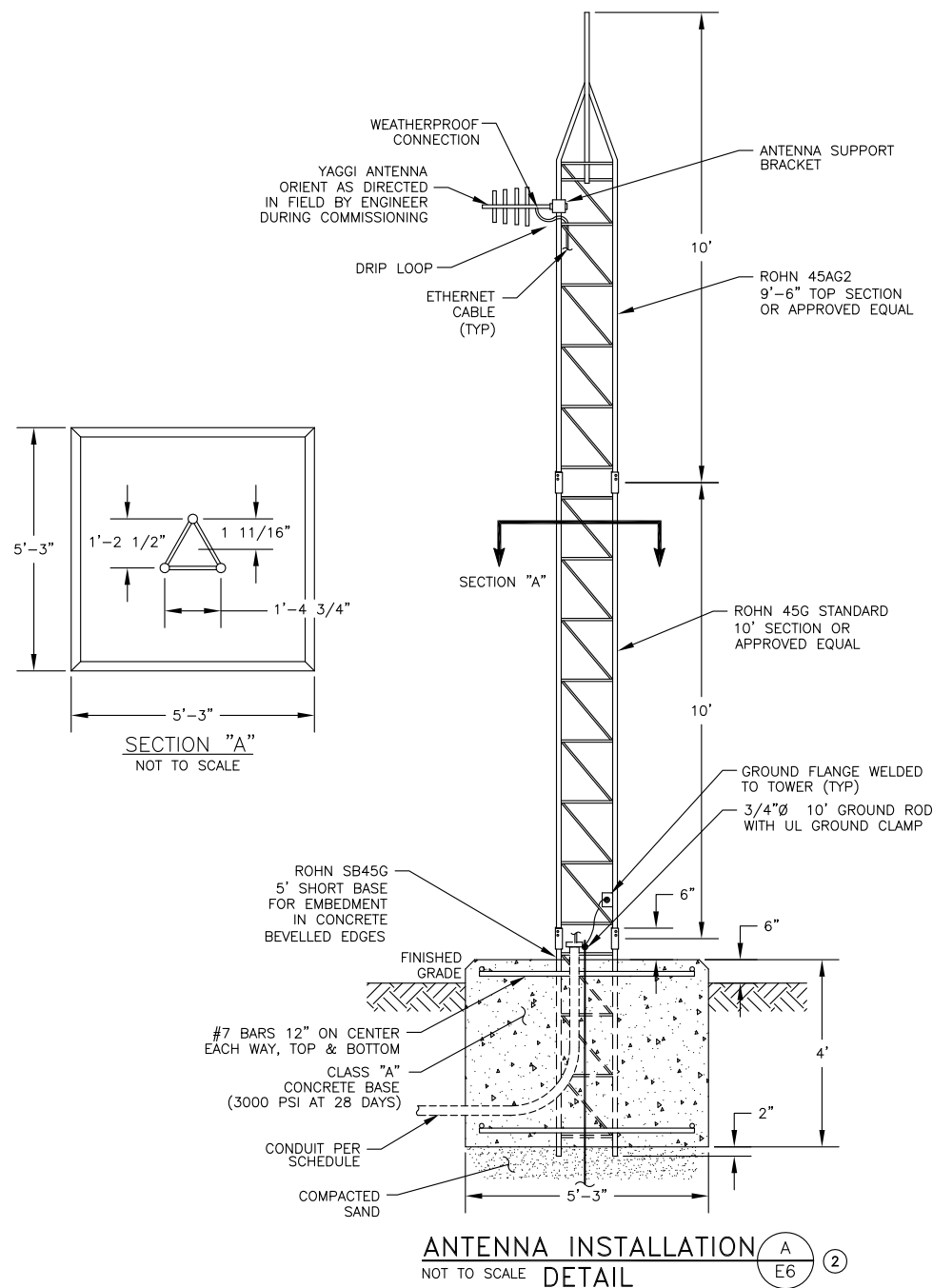
D
E5

- NOTES:
- ① #3 REBAR CROSSWAYS AT 12" INTERVALS INSIDE PAD.

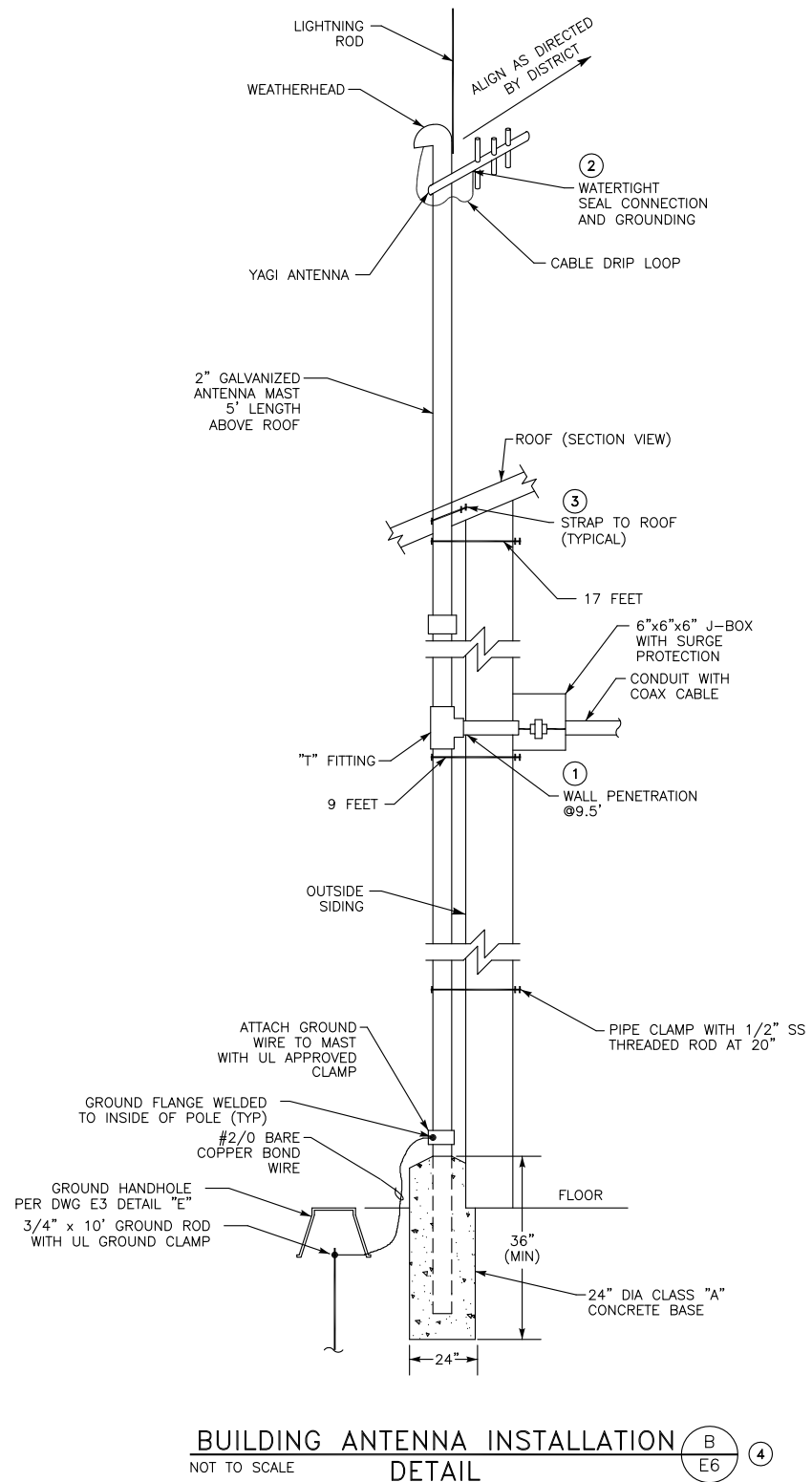
CALAVERAS COUNTY WATER DISTRICT

TYPICAL ELECTRICAL DETAILS NO.4

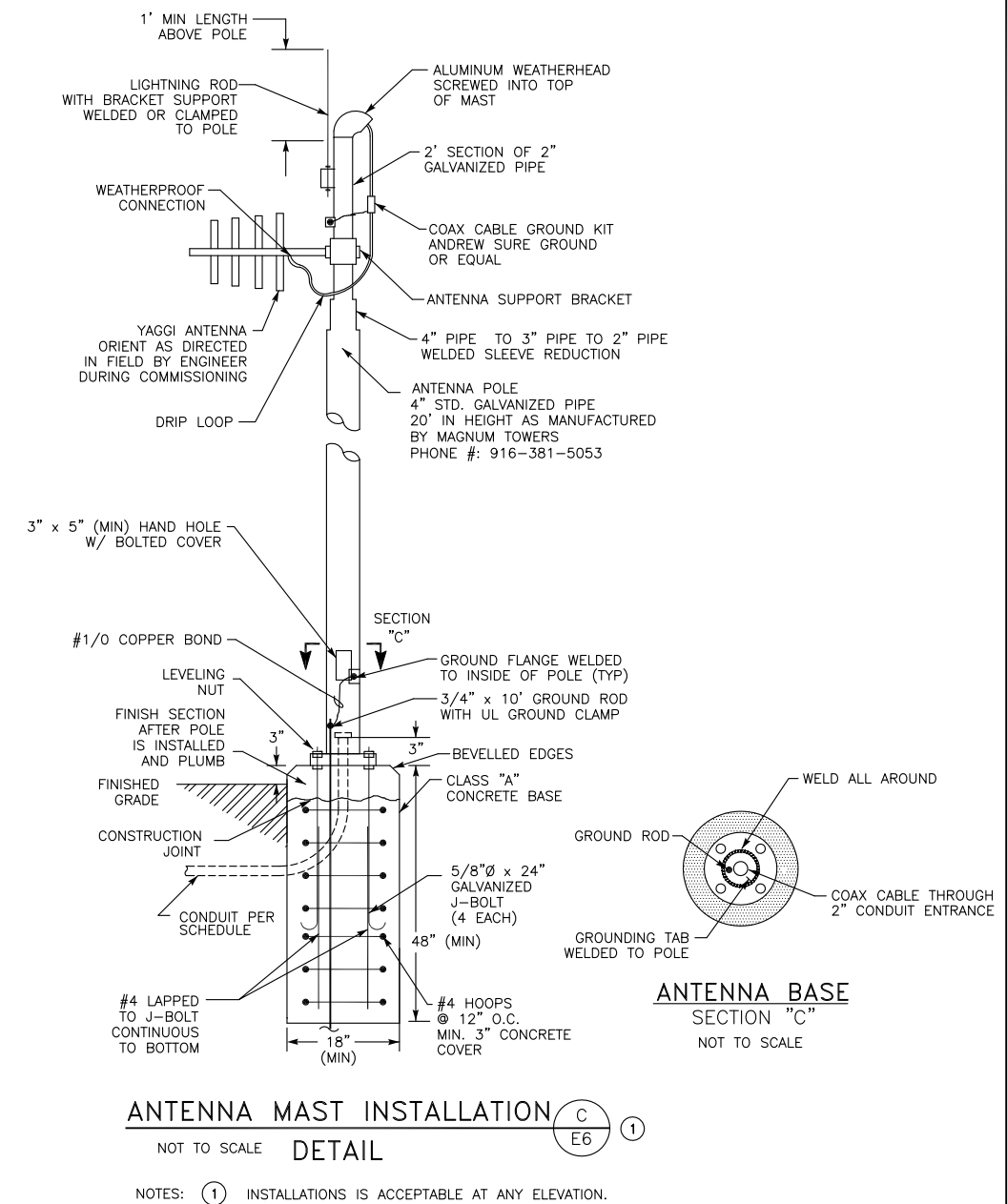
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APPROVED: --	DATE: JUNE 2026	



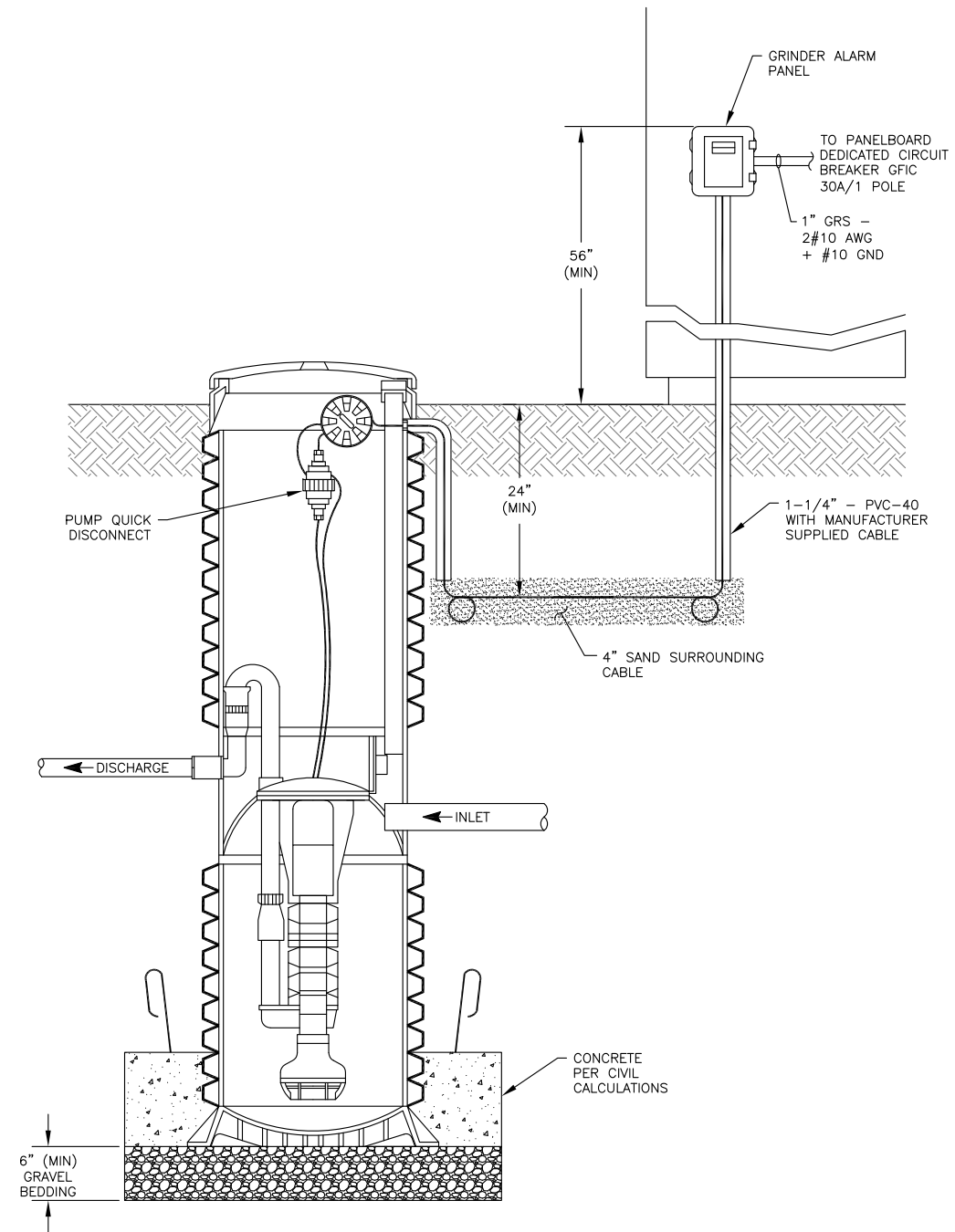
- NOTES:
- ANTENNA TOWER SHALL BE DESIGNED FOR MINIMUM 110 MPH WIND SPEED. ROHN 45.
 - INSTALLATIONS ABOVE 3000 FEET ELEVATION, TOWER SHALL BE INSTALLED NO CLOSER THAN 5 FEET FROM BUILDINGS.



- NOTES:
- WEATHERPROOF AND SEAL OPENING. BOTH INSIDE & OUTSIDE. CAULK/PAINT TO MATCH SIDING & INTERIOR.
 - MAKE CONNECTION WITH ANDREW SURE GROUND KIT OR EQUAL.
 - ALL CLAMPS AND MOUNTING HARDWARE TO BE STAINLESS STEEL. PAINT EXPOSED PORTIONS OF ANTENNA, MAST, SLEEVE AND SUPPORTS UNDER ROOF TO MATCH COLOR OF WALL.
 - INSTALLATION DETAIL IS ACCEPTABLE BELOW 3000 FEET ELEVATION.



CALAVERAS COUNTY WATER DISTRICT		
TYPICAL ELECTRICAL DETAILS NO.5		
DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-E6
APPROVED: --	DATE: JUNE 2026	



PACKAGE GRINDER SYSTEM DETAIL A
NOT TO SCALE E7

NOTES: ① INSTALL CONDUIT & WIRE PER LATEST NEC
& LOCAL CODES.

CALAVERAS COUNTY WATER DISTRICT

TYPICAL ELECTRICAL DETAILS NO.6

DRAWN BY:
ATEEN

SCALE:
NONE

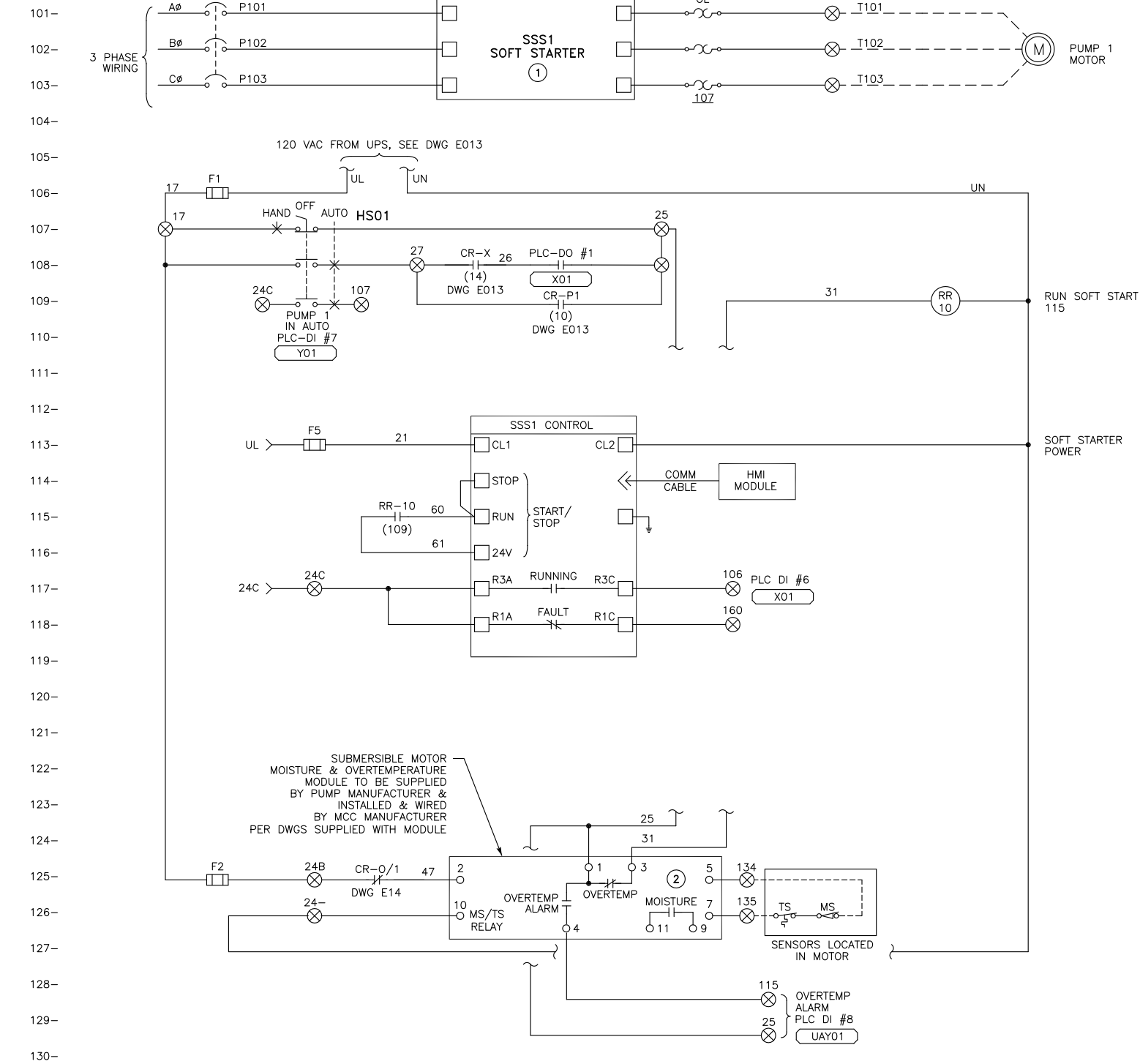
CCWD STANDARD DRAWING NO.

APPROVED:
--

DATE:
JUNE 2026

S06-E7

LINE NO.

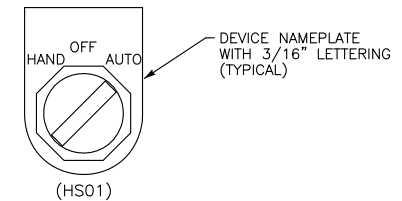
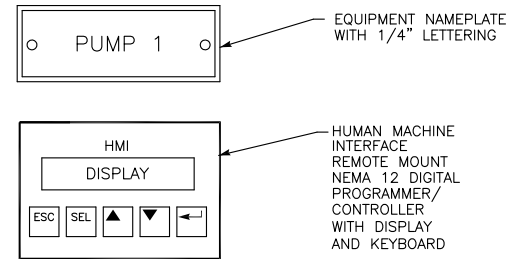


PUMP ELEMENTARY DIAGRAM-SOFT STARTER

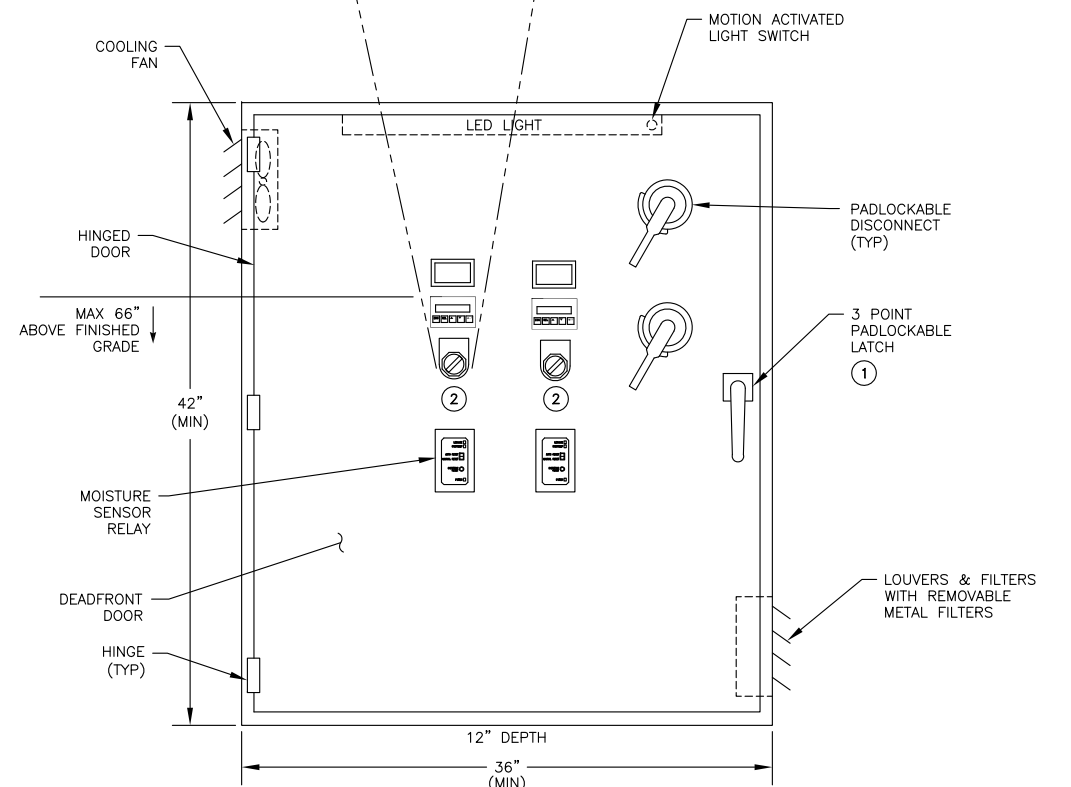
NOTES: ① BUILT-IN PHASE REVERSAL, PHASE LOSS & UNDER VOLTAGE AND OVERLOAD PROTECTION.

② INCLUDE PROVISIONS FOR MOISTURE & OVERTEMPERATURE MODULE FOR FUTURE USE IF NOT REQUIRED AT THIS TIME.

③ TYPICAL FOR PUMPS#1~2. TERMINALS, TAGS SHOWN ARE FOR PUMP 1. USE 02, 20 & 200 SERIES NUMBERING FOR PUMP #2, ETC.



SIMILAR FOR PUMP 2



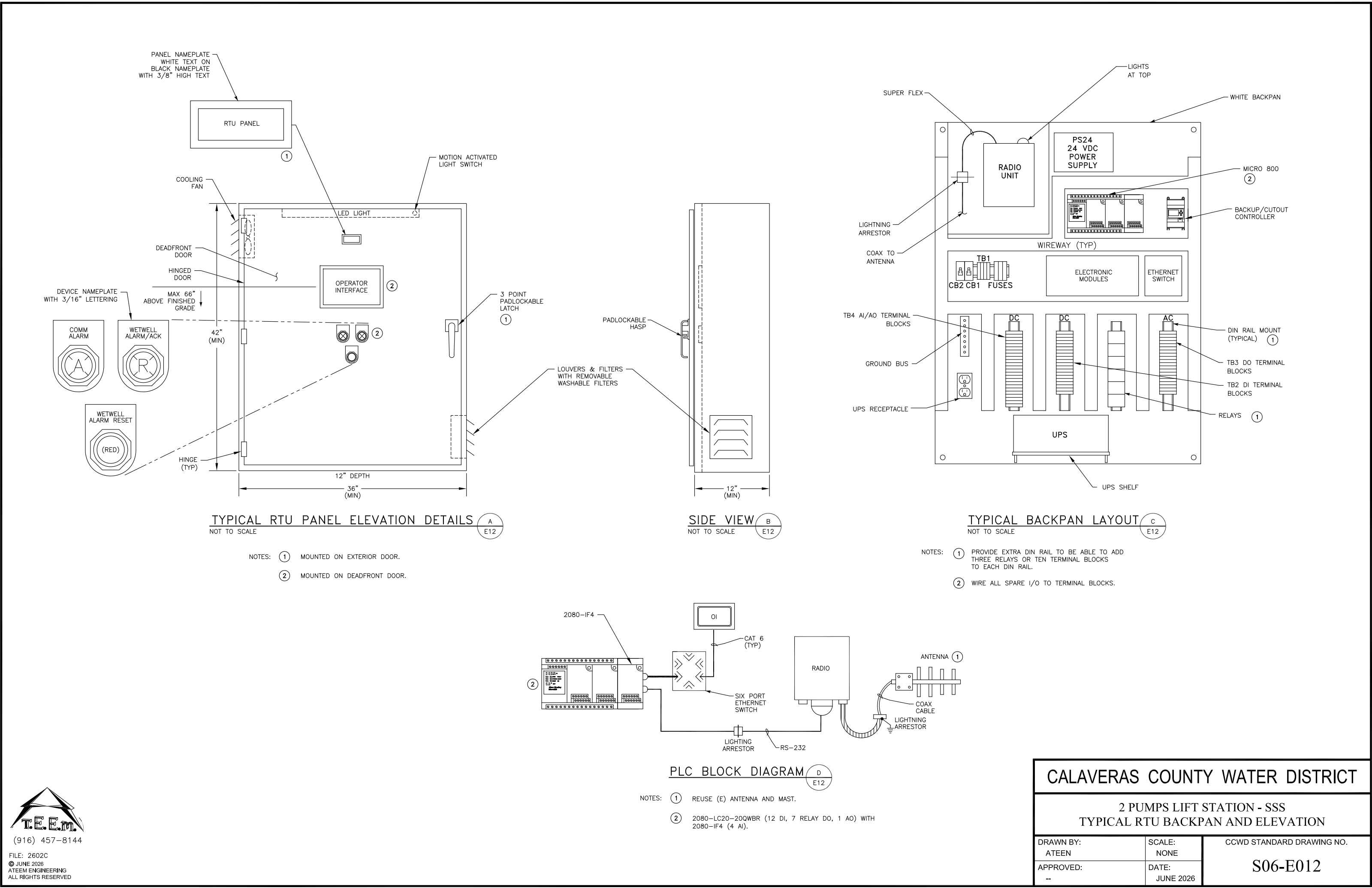
TYPICAL PUMP PANEL ELEVATION DETAILS A E11
NOT TO SCALE

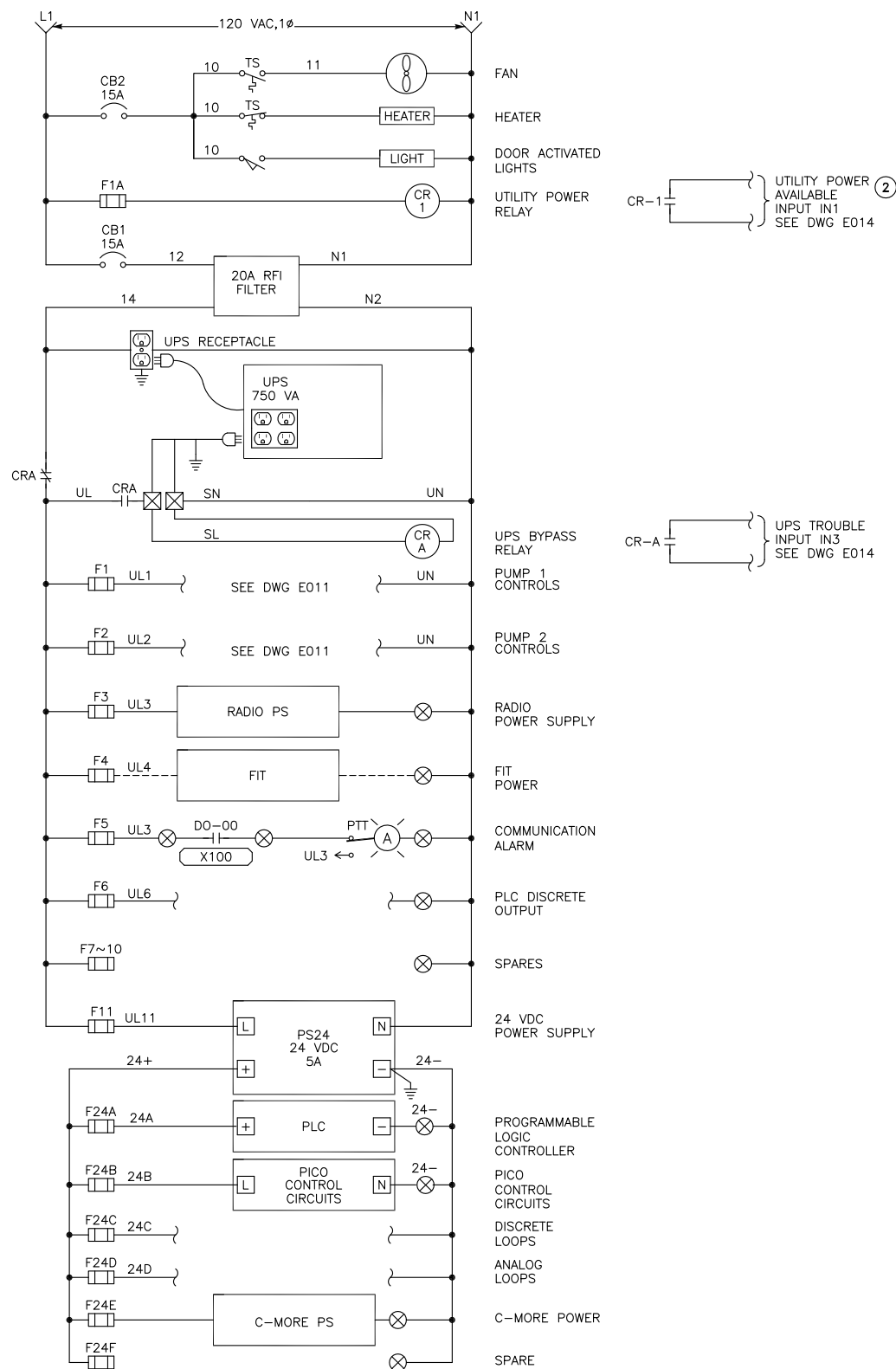
- NOTES: ① MOUNTED ON EXTERIOR DOOR.
- ② MOUNTED ON DEADFRONT DOOR.

CALAVERAS COUNTY WATER DISTRICT

2 PUMPS LIFT STATION - SSS PUMP ELEMENTARY & ELEVATION - SOFT STARTER

DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-E011
APPROVED: --	DATE: JUNE 2026	

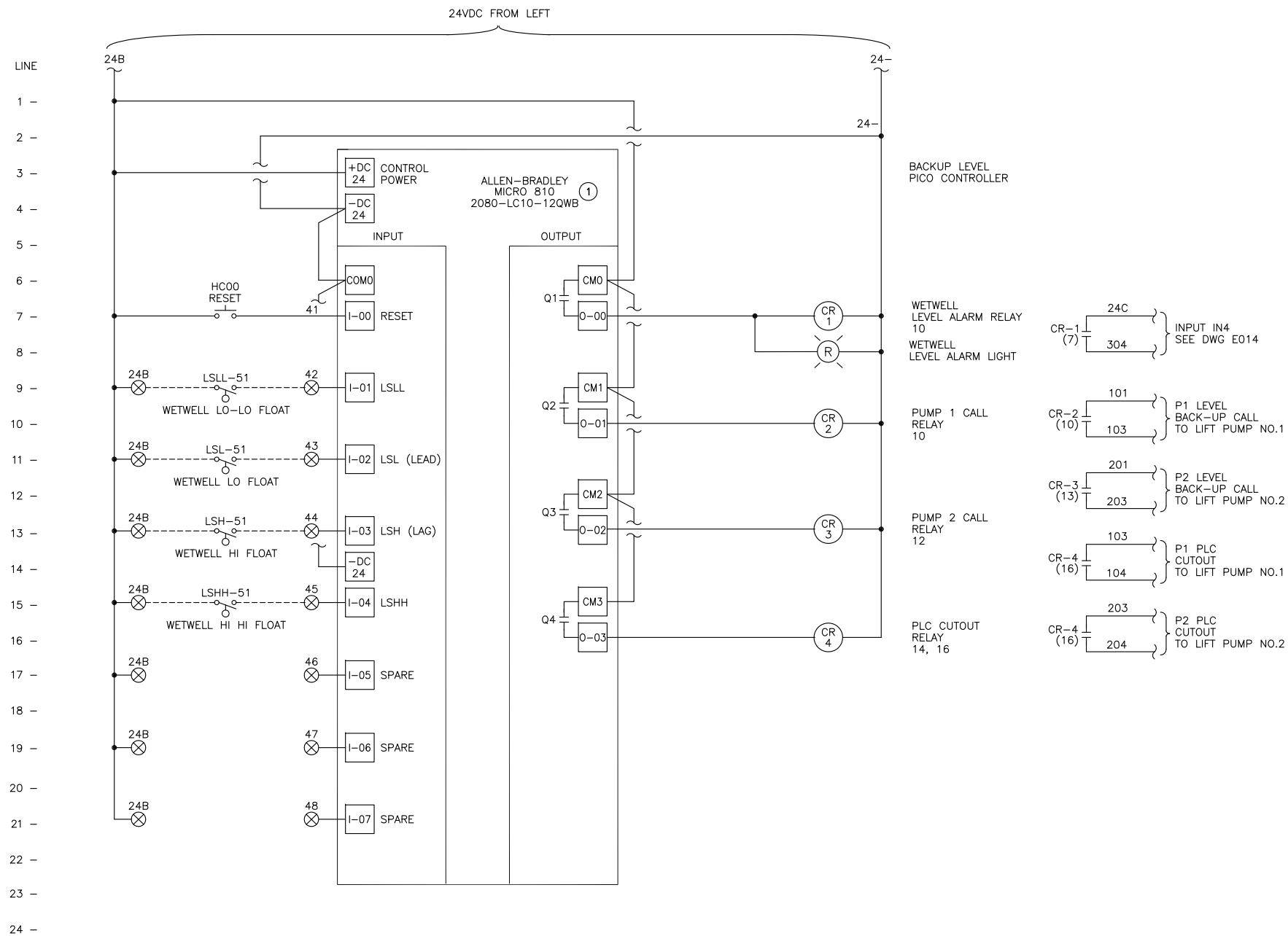




POWER DISTRIBUTION DIAGRAM ①

NOTES: ① DISTRIBUTION DIAGRAM REPRESENTATIVE OF MAJOR COMPONENTS ONLY. ADDITIONAL FUSES, CIRCUITS, AND COMPONENT CONNECTIONS MAY BE REQUIRED FOR A FUNCTIONAL SYSTEM.

② PROVIDE IF GENERATOR AND ATS ARE NOT PROVIDED.



BACKUP/CUTOUT CONTROL ELEMENTARY DIAGRAM

NOTES: ① ALLEN-BRADLEY PICO WITH MICRO 800 LCD DISPLAY & KEYPAD.



(916) 457-8144

FILE: 2602CE001
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CALAVERAS COUNTY WATER DISTRICT

2 PUMPS LIFT STATION - SSS RTU PANEL & CONTROL POWER DISTRIBUTION DIA

DRAWN BY:

ATEEN

SCALE:

NONE

CCWD STANDARD DRAWING NO.

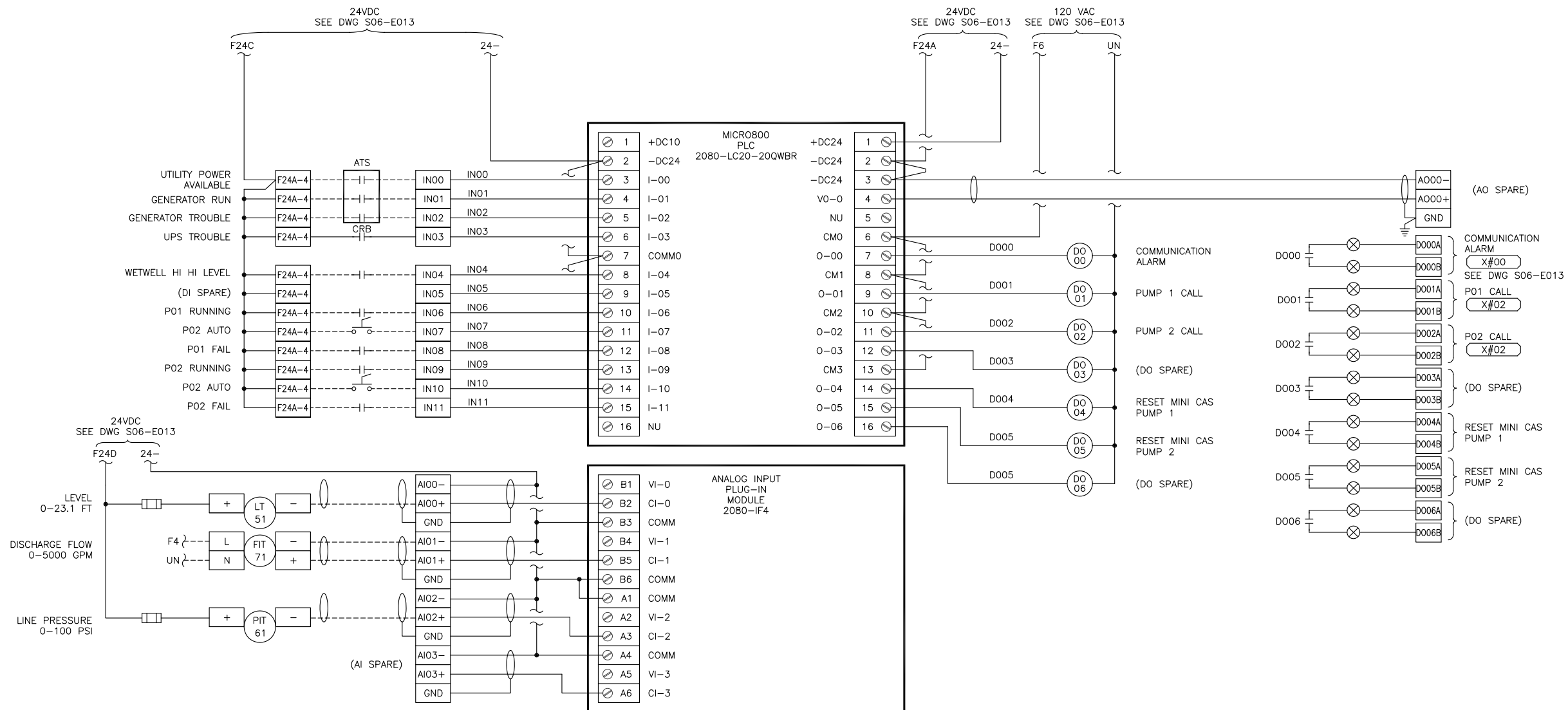
APPROVED:

--

DATE:

JUNE 2026

S06-E013



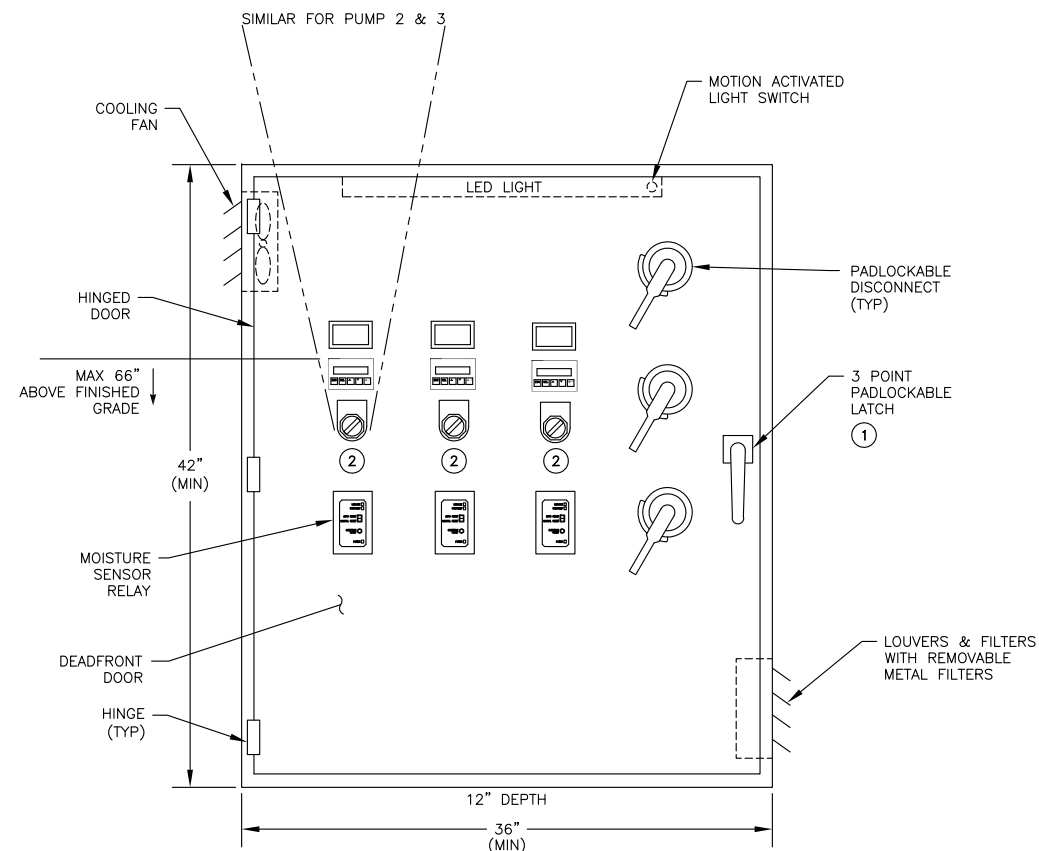
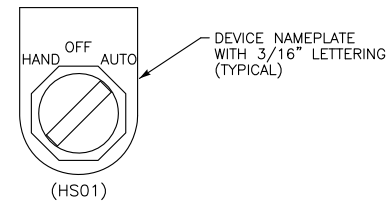
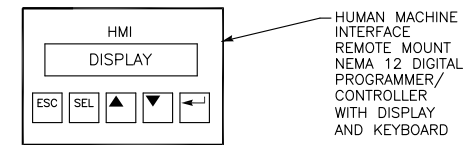
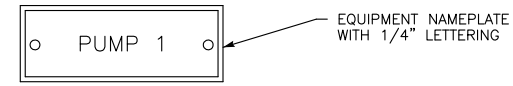
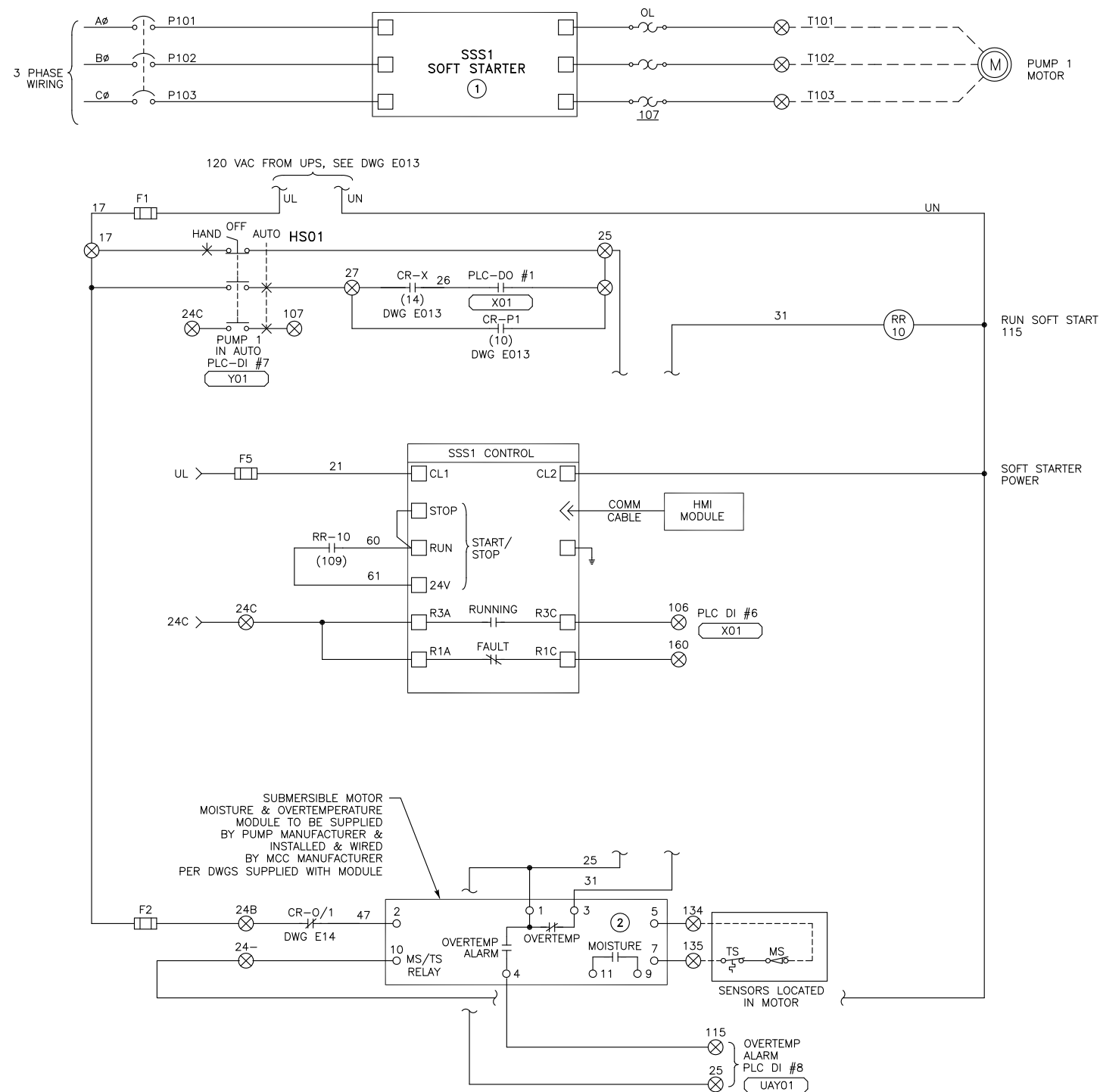
RTU I/O LAYOUT

CALAVERAS COUNTY WATER DISTRICT

2 PUMPS LIFT STATION - SSS RTU PANEL STANDARD I/O LAYOUT

DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-E014
APPROVED: --	DATE: JUNE 2026	

LINE NO.
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130-



TYPICAL PUMP PANEL ELEVATION DETAILS A E21
NOT TO SCALE

- NOTES: ① MOUNTED ON EXTERIOR DOOR.
② MOUNTED ON DEADFRONT DOOR.

PUMP ELEMENTARY DIAGRAM-SOFT STARTER

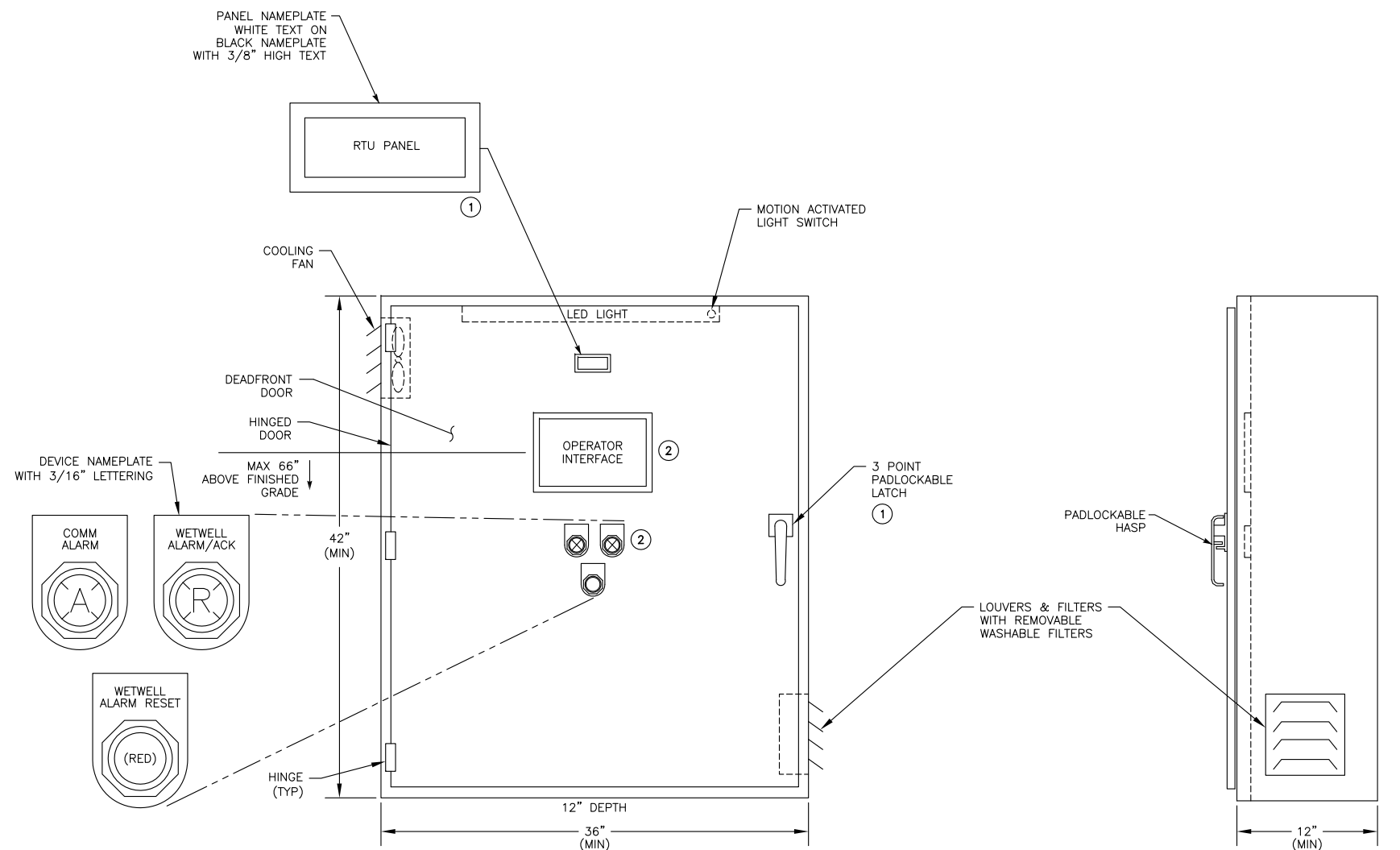
- NOTES: ① BUILT-IN PHASE REVERSAL, PHASE LOSS & UNDER VOLTAGE AND OVERLOAD PROTECTION.
② INCLUDE PROVISIONS FOR MOISTURE & OVERTEMPERATURE MODULE FOR FUTURE USE IF NOT REQUIRED AT THIS TIME.
③ TYPICAL FOR PUMPS #1~2. TERMINALS, TAGS SHOWN ARE FOR PUMP 1. USE 02, 20 & 200 SERIES NUMBERING FOR PUMP #2, ETC.

PMP01
PMP02
PMP03

CALAVERAS COUNTY WATER DISTRICT

3 PUMPS LIFT STATION - SSS PUMP ELEMENTARY & ELEVATION - SOFT STARTER

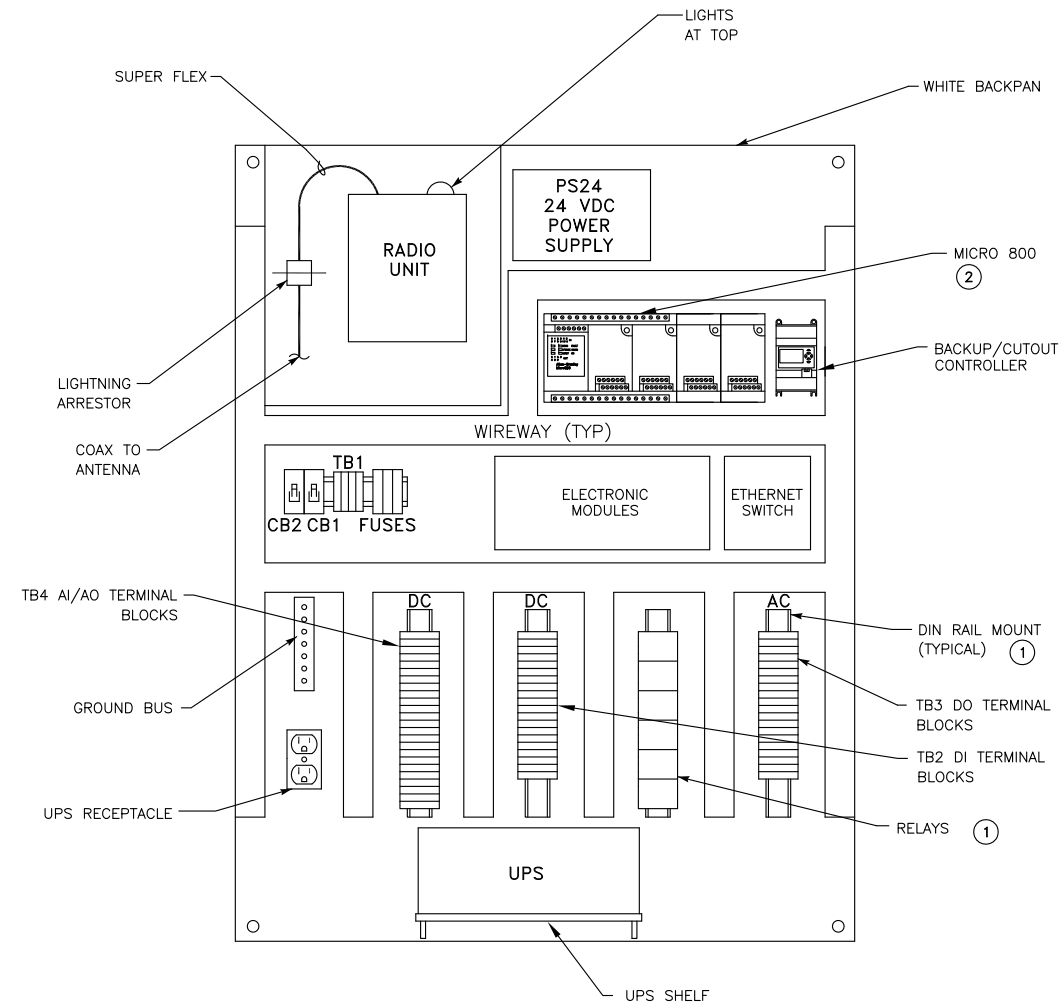
DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-E021
APPROVED: --	DATE: JUNE 2026	



TYPICAL RTU PANEL ELEVATION DETAILS (A) E22
NOT TO SCALE

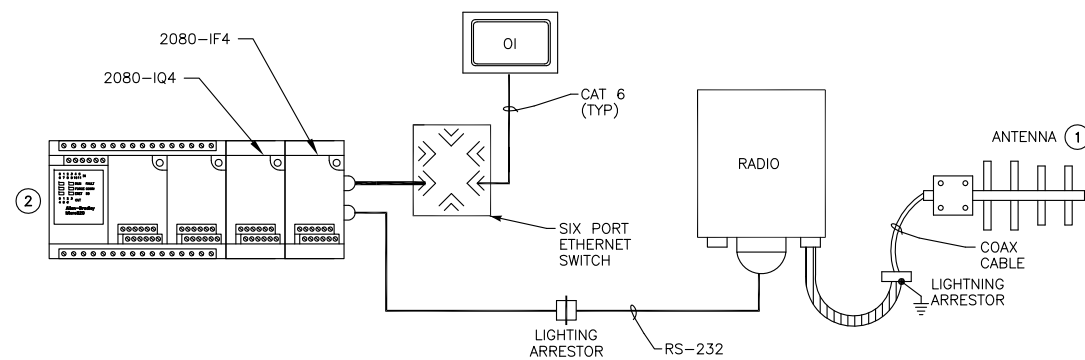
- NOTES: (1) MOUNTED ON EXTERIOR DOOR.
(2) MOUNTED ON DEADFRONT DOOR.

SIDE VIEW (B) E22
NOT TO SCALE



TYPICAL BACKPAN LAYOUT (C) E22
NOT TO SCALE

- NOTES: (1) PROVIDE EXTRA DIN RAIL TO BE ABLE TO ADD THREE RELAYS OR TEN TERMINAL BLOCKS TO EACH DIN RAIL.
(2) WIRE ALL SPARE I/O TO TERMINAL BLOCKS.



PLC BLOCK DIAGRAM (D) E22

- NOTES: (1) REUSE (E) ANTENNA AND MAST.
(2) 2080-LC20-20QWBR (12 DI, 7 RELAY DO, 1 AO) WITH 2080-IQ4 (4 DI) & 2080-IF4 (4 AI).

CALAVERAS COUNTY WATER DISTRICT

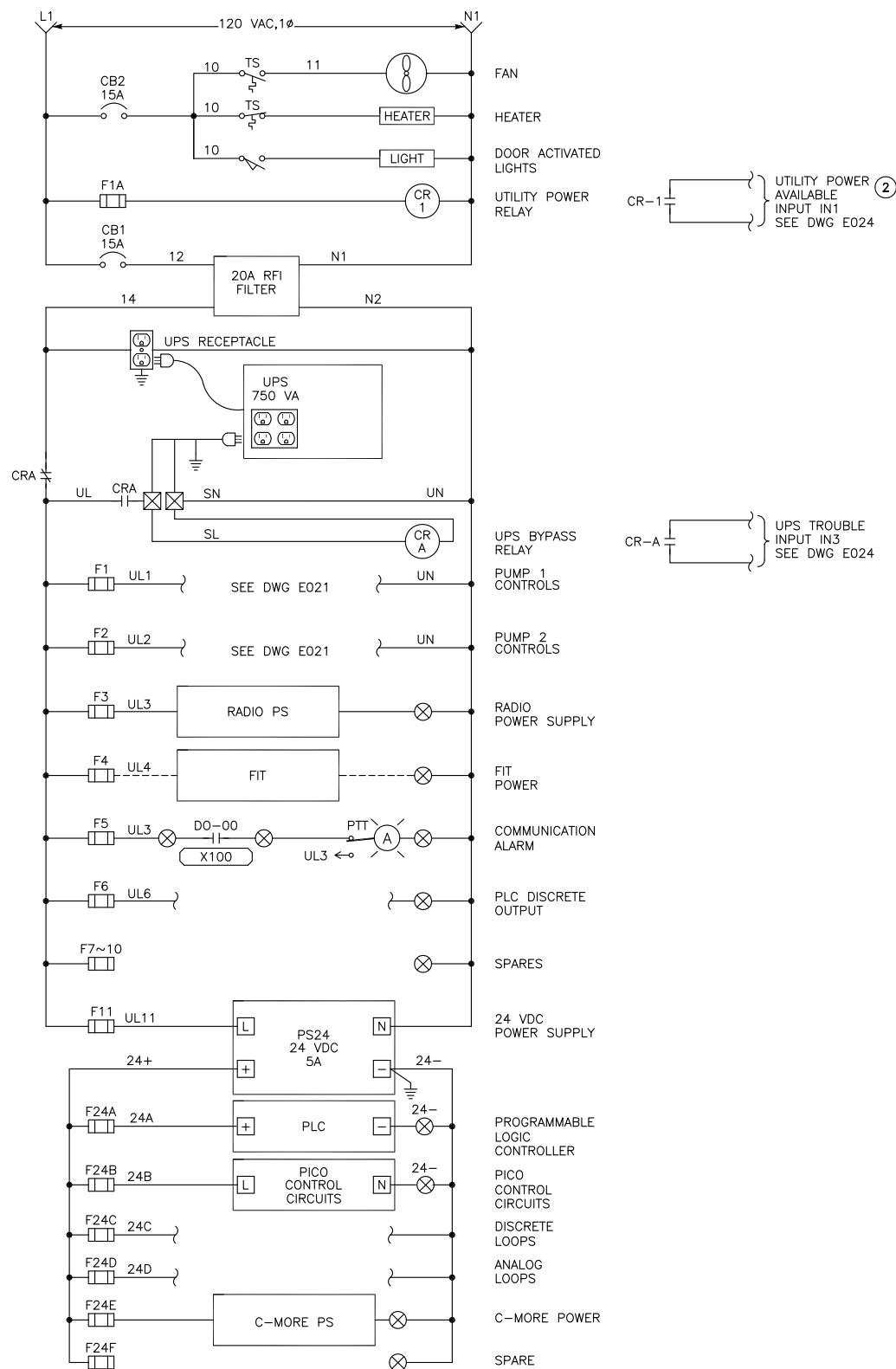
3 PUMPS LIFT STATION - SSS TYPICAL RTU BACKPAN AND ELEVATION

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ATEEN
APPROVED:
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SCALE:
NONE
DATE:
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CCWD STANDARD DRAWING NO.

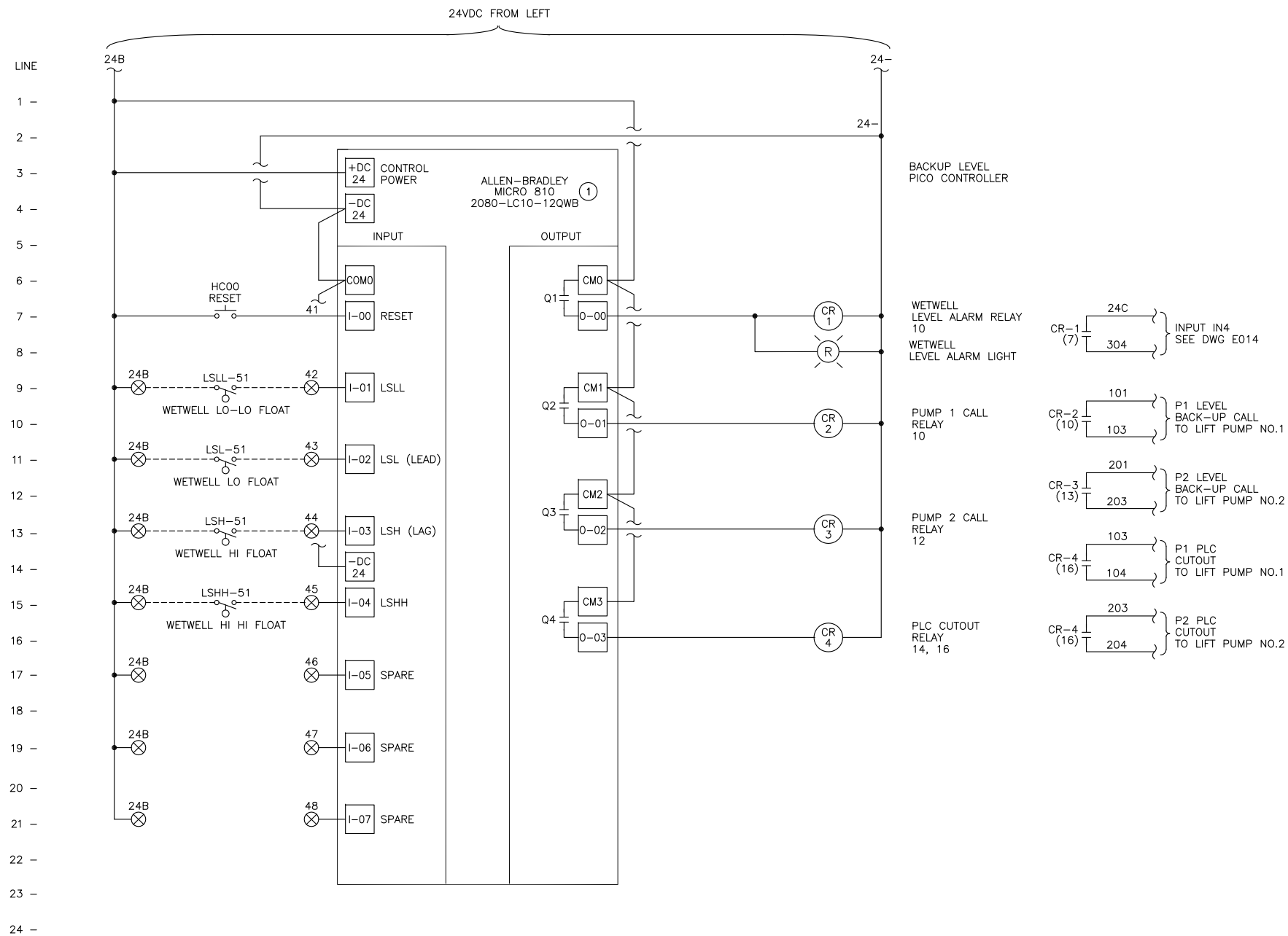
S06-E022



POWER DISTRIBUTION DIAGRAM ①

NOTES: ① DISTRIBUTION DIAGRAM REPRESENTATIVE OF MAJOR COMPONENTS ONLY. ADDITIONAL FUSES, CIRCUITS, AND COMPONENT CONNECTIONS MAY BE REQUIRED FOR A FUNCTIONAL SYSTEM.

② PROVIDE IF GENERATOR AND ATS ARE NOT PROVIDED.



BACKUP/CUTOUT CONTROL ELEMENTARY DIAGRAM

NOTES: ① ALLEN-BRADLEY PICO WITH MICRO 800 LCD DISPLAY & KEYPAD.



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3 PUMPS LIFT STATION - SSS RTU PANEL & CONTROL POWER DISTRIBUTION DIA

DRAWN BY:
ATEEN

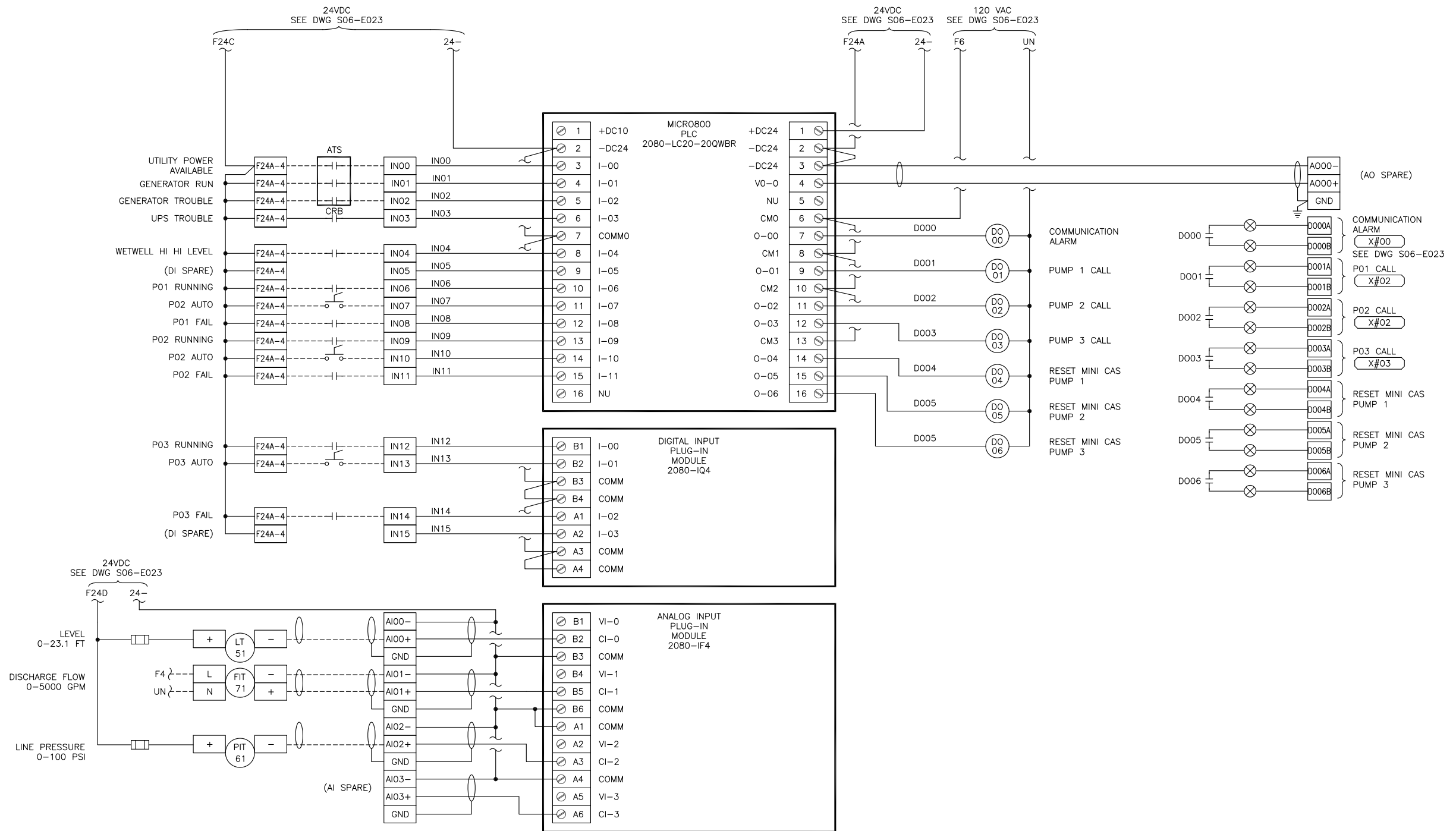
SCALE:
NONE

CCWD STANDARD DRAWING NO.

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S06-E023

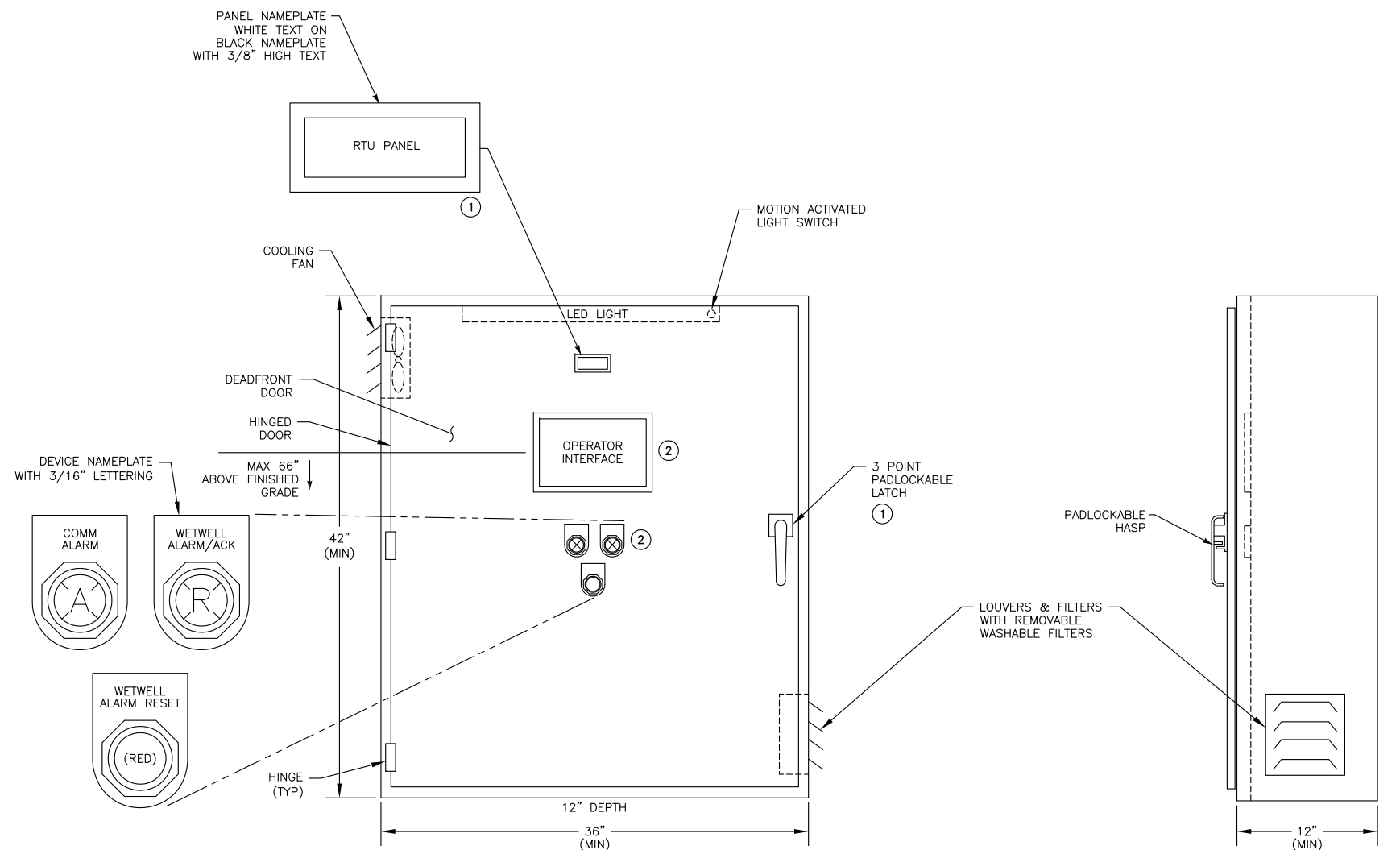


RTU I/O LAYOUT

CALAVERAS COUNTY WATER DISTRICT

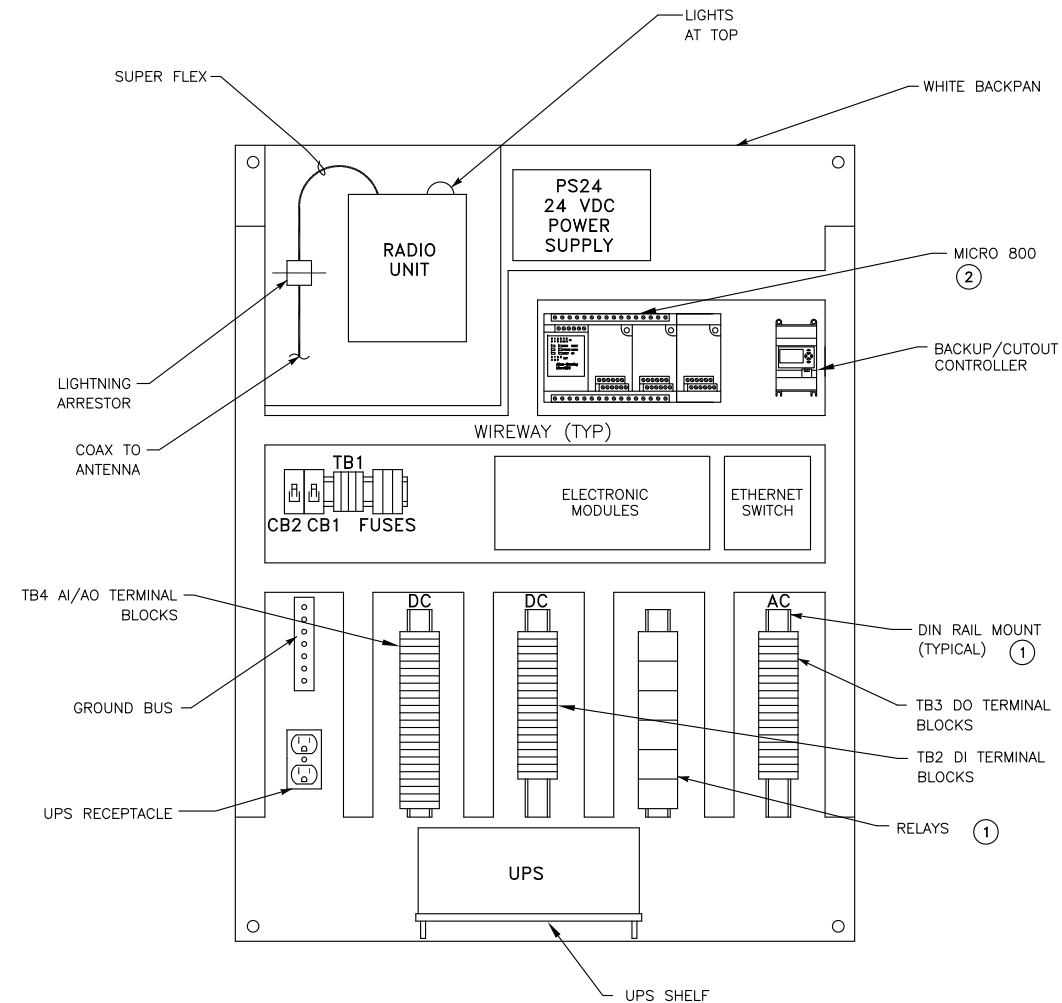
3 PUMPS LIFT STATION - SSS RTU PANEL STANDARD I/O LAYOUT

DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-E024
APPROVED: --	DATE: JUNE 2026	



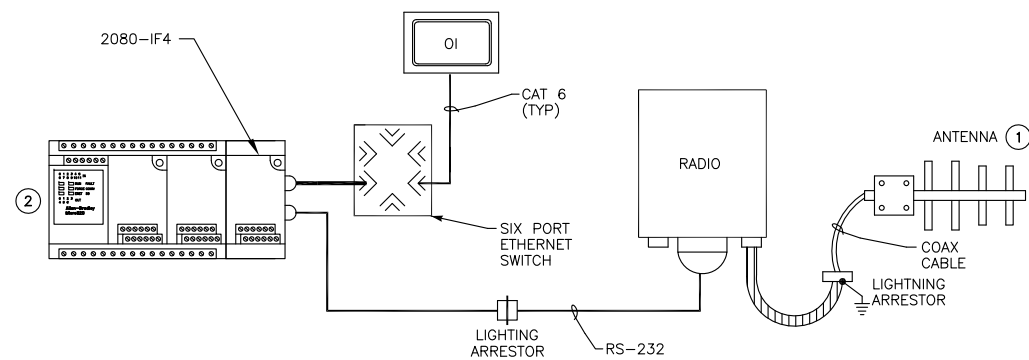
TYPICAL RTU PANEL ELEVATION DETAILS (A) E32
NOT TO SCALE

- NOTES: (1) MOUNTED ON EXTERIOR DOOR.
(2) MOUNTED ON DEADFRONT DOOR.



TYPICAL BACKPAN LAYOUT (C) E32
NOT TO SCALE

- NOTES: (1) PROVIDE EXTRA DIN RAIL TO BE ABLE TO ADD THREE RELAYS OR TEN TERMINAL BLOCKS TO EACH DIN RAIL.
(2) WIRE ALL SPARE I/O TO TERMINAL BLOCKS.



PLC BLOCK DIAGRAM (D) E32

- NOTES: (1) REUSE (E) ANTENNA AND MAST.
(2) 2080-LC20-20QWBR (12 DI, 7 RELAY DO, 1 AO) WITH 2080-IF4 (4 AI).

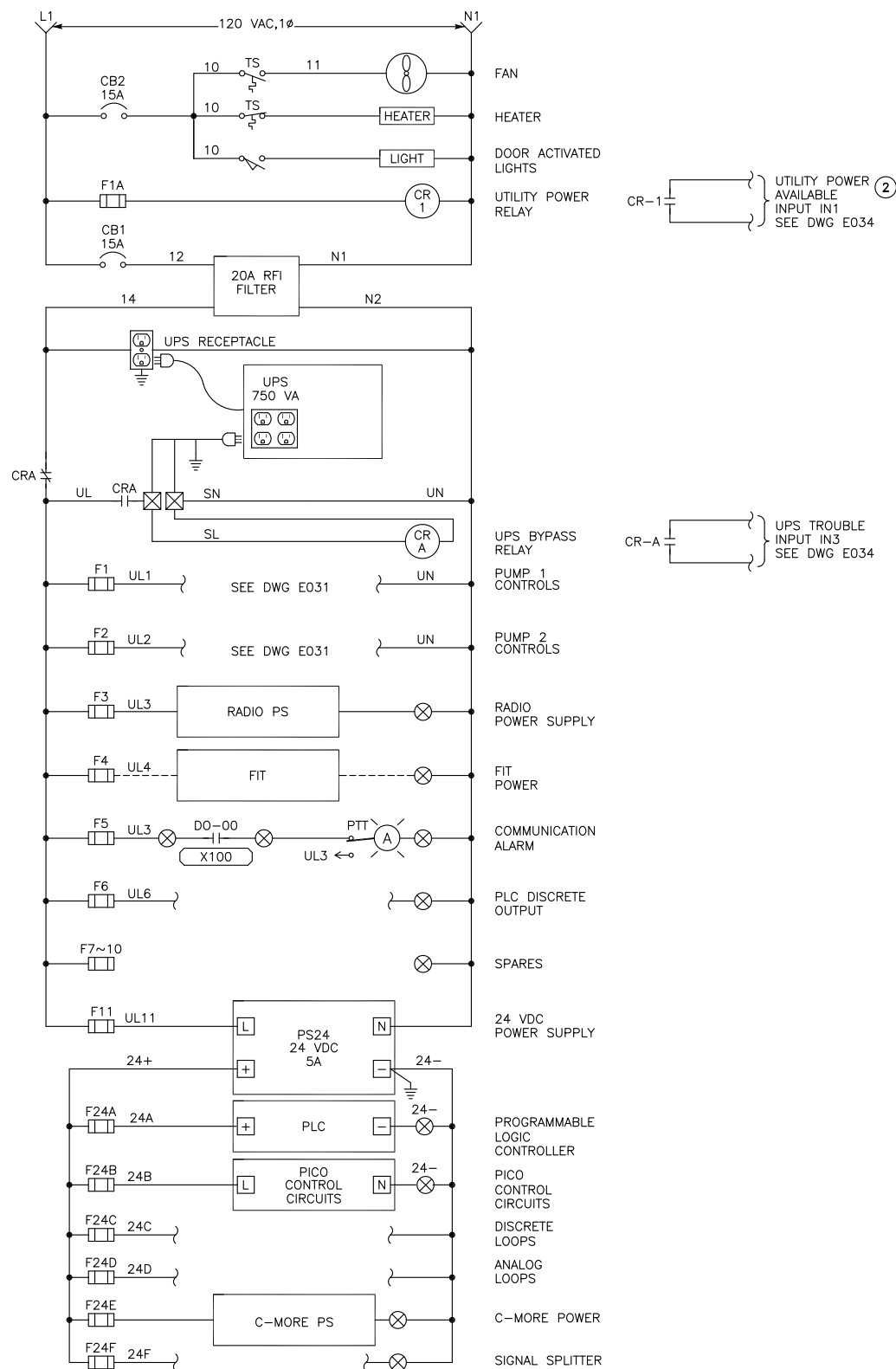
CALAVERAS COUNTY WATER DISTRICT

2 PUMPS LIFT STATION -VFD TYPICAL RTU BACKPAN AND ELEVATION

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APPROVED: --	DATE: JUNE 2026

CCWD STANDARD DRAWING NO.

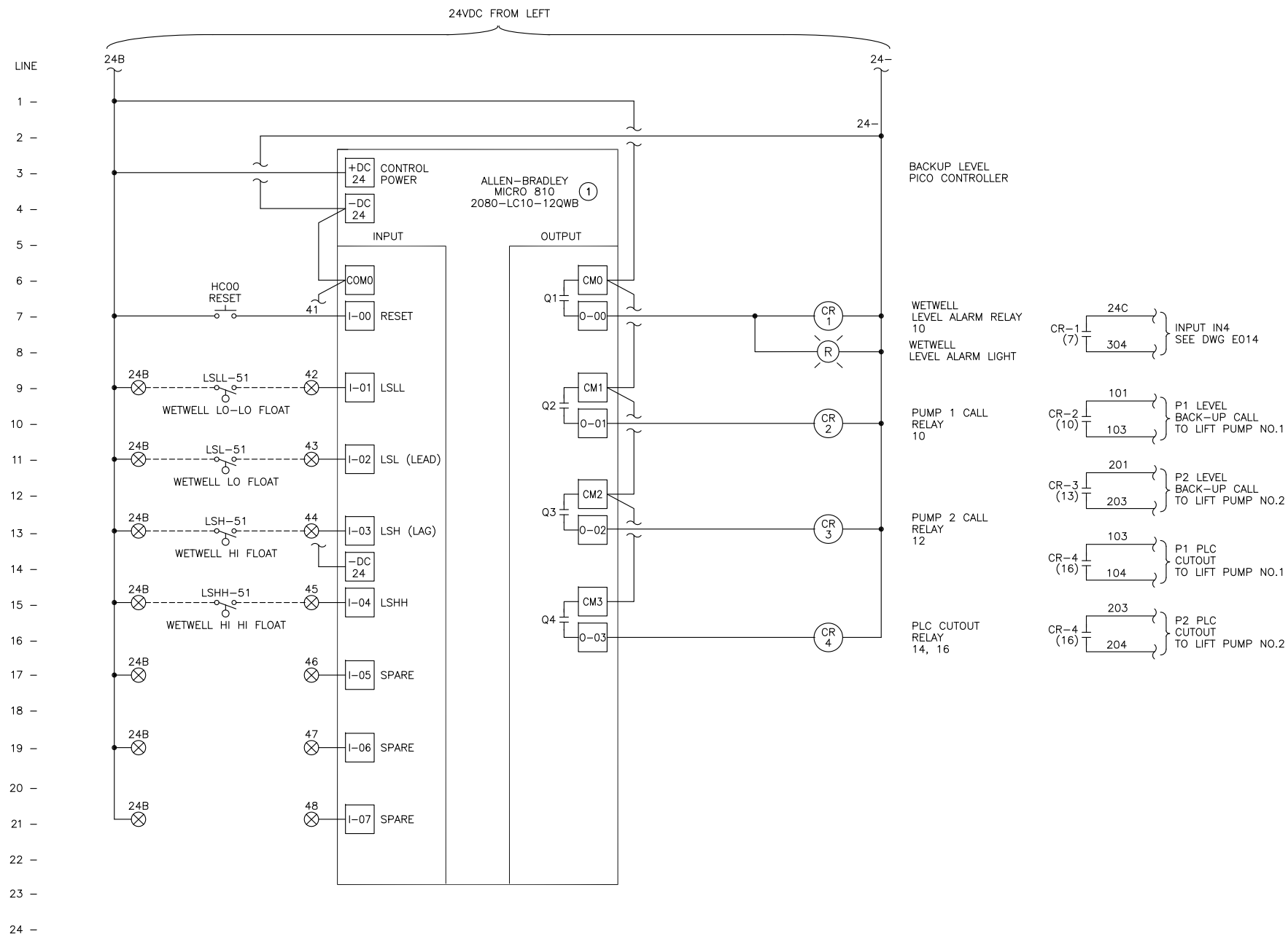
S06-E032



POWER DISTRIBUTION DIAGRAM ①

NOTES: ① DISTRIBUTION DIAGRAM REPRESENTATIVE OF MAJOR COMPONENTS ONLY. ADDITIONAL FUSES, CIRCUITS, AND COMPONENT CONNECTIONS MAY BE REQUIRED FOR A FUNCTIONAL SYSTEM.

② PROVIDE IF GENERATOR AND ATS ARE NOT PROVIDED.



BACKUP/CUTOUT CONTROL ELEMENTARY DIAGRAM

NOTES: ① ALLEN-BRADLEY PICO WITH MICRO 800 LCD DISPLAY & KEYPAD.

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2 PUMPS LIFT STATION - VFD RTU PANEL & CONTROL POWER DISTRIBUTION DIA

DRAWN BY:

ATEEN

SCALE:

NONE

CCWD STANDARD DRAWING NO.

APPROVED:

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DATE:

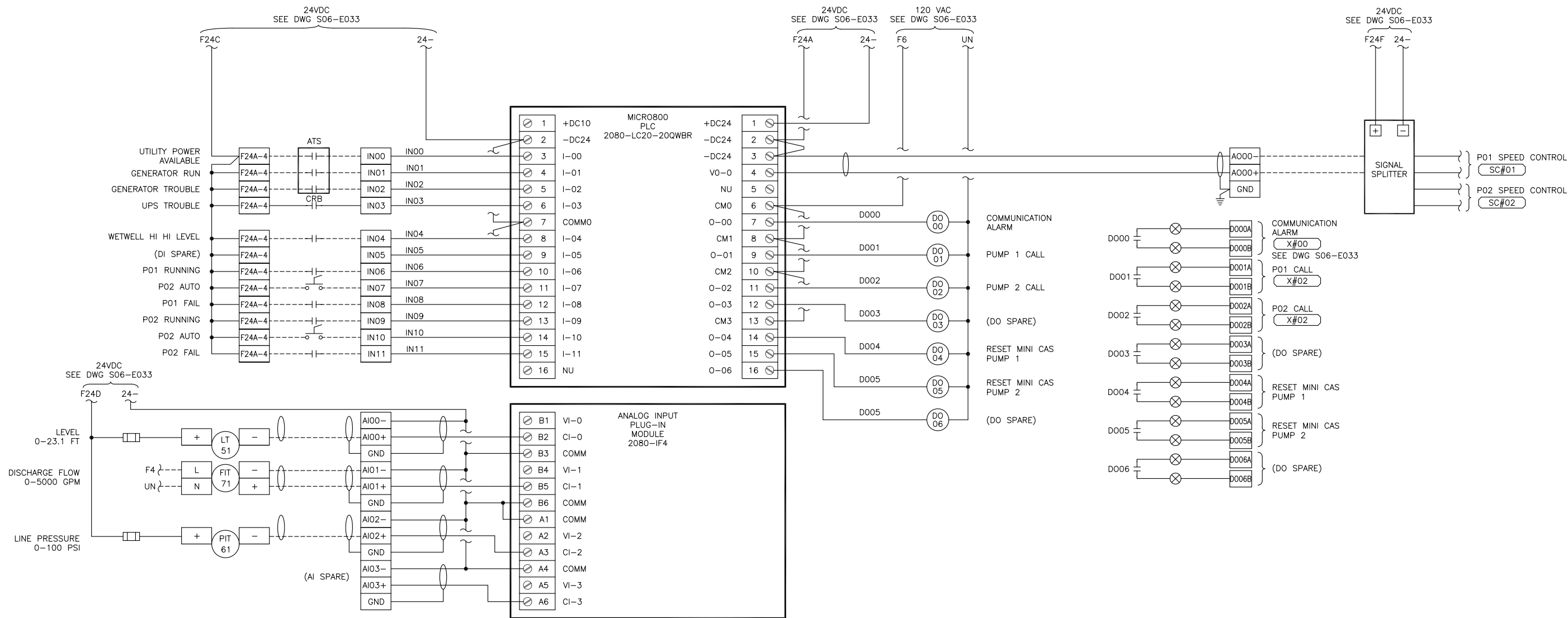
JUNE 2026

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RTU I/O LAYOUT

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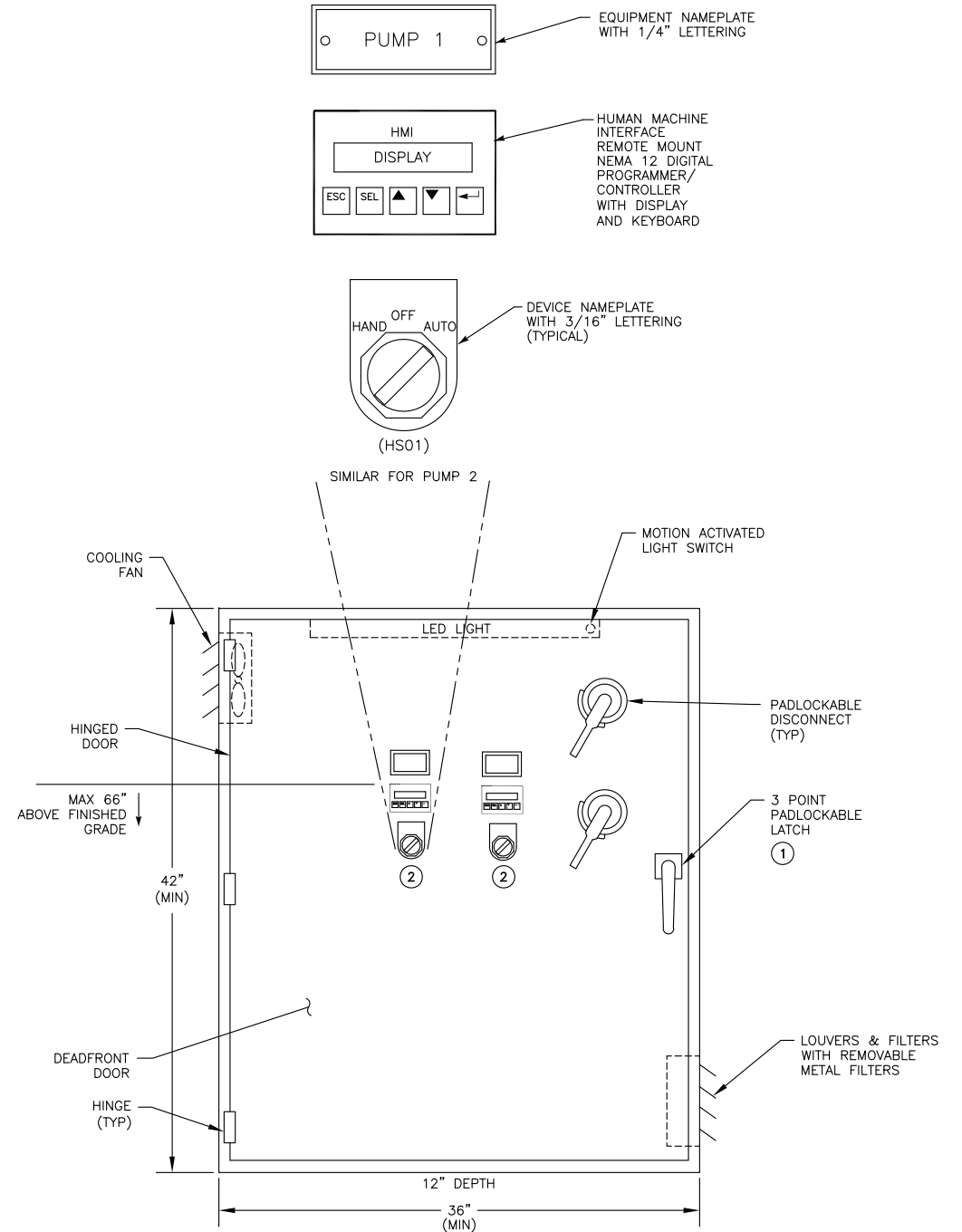
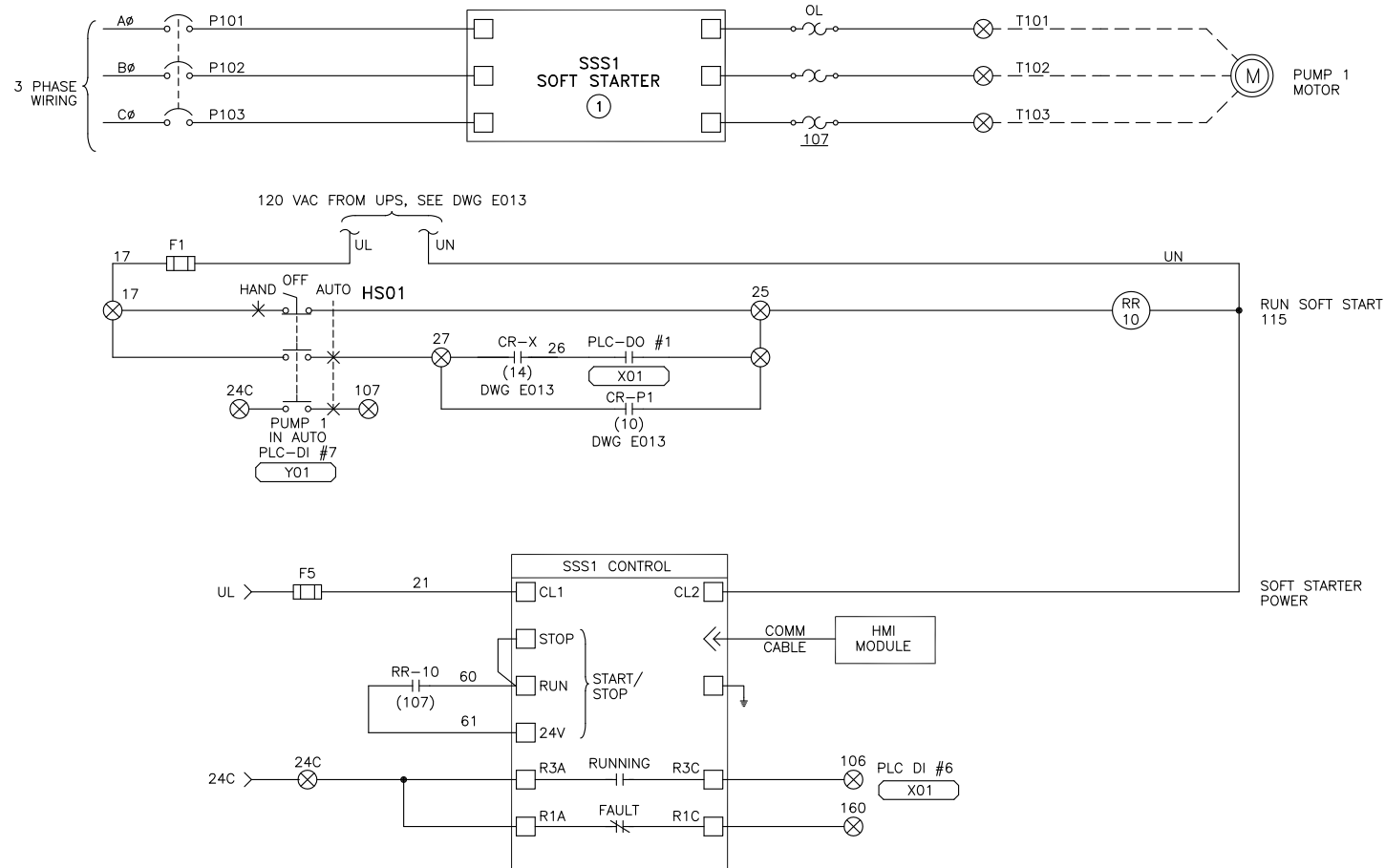
2 PUMPS LIFT STATION - VFD
RTU PANEL STANDARD I/O LAYOUT

DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-E034
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TYPICAL PUMP PANEL ELEVATION DETAILS
NOT TO SCALE

- NOTES: ① MOUNTED ON EXTERIOR DOOR.
② MOUNTED ON DEADFRONT DOOR.

PUMP ELEMENTARY DIAGRAM-SOFT STARTER

- NOTES: ① BUILT-IN PHASE REVERSAL, PHASE LOSS & UNDER VOLTAGE AND OVERLOAD PROTECTION.
② INCLUDE PROVISIONS FOR MOISTURE & OVERTEMPERATURE MODULE FOR FUTURE USE IF NOT REQUIRED AT THIS TIME.
③ TYPICAL FOR PUMPS#1~2. TERMINALS, TAGS SHOWN ARE FOR PUMP 1. USE 02, 20 & 200 SERIES NUMBERING FOR PUMP #2, ETC.

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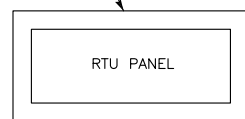
2 PUMPS BOOSTER STATION - SSS PUMP ELEMENTARY & ELEVATION - SOFT STARTER

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CCWD STANDARD DRAWING NO.

S06-E041

PANEL NAMEPLATE
WHITE TEXT ON
BLACK NAMEPLATE
WITH 3/8" HIGH TEXT



①

MOTION ACTIVATED
LIGHT SWITCH

COOLING FAN

LED LIGHT

DEADFRONT
DOOR

HINGED
DOOR



②

DEVICE NAMEPLATE
WITH 3/16" LETTERING



MAX 66"
ABOVE FINISHED
GRADE

42"
(MIN)

HINGE
(TYP)

12" DEPTH
36" (MIN)

TYPICAL RTU PANEL ELEVATION DETAILS

NOT TO SCALE

A
E42

NOTES: ① MOUNTED ON EXTERIOR DOOR.

② MOUNTED ON DEADFRONT DOOR.

PADLOCKABLE
HASP

LOUVERS & FILTERS
WITH REMOVABLE
WASHABLE FILTERS

①

SIDE VIEW

NOT TO SCALE

B
E42

SUPER FLEX

LIGHTS
AT TOP

WHITE BACKPAN

PS24
24 VDC
POWER
SUPPLY

RADIO
UNIT

MICRO 800
②

LIGHTNING
ARRESTOR

COAX TO
ANTENNA

WIREWAY (TYP)

TB1
CB2 CB1 FUSES

ELECTRONIC
MODULES

ETHERNET
SWITCH

TB4 AI/AO TERMINAL
BLOCKS

GROUND BUS

UPS RECEPTACLE

UPS

UPS SHELF

DIN RAIL MOUNT
(TYPICAL) ①

TB3 DO TERMINAL
BLOCKS

TB2 DI TERMINAL
BLOCKS

RELAYS ①

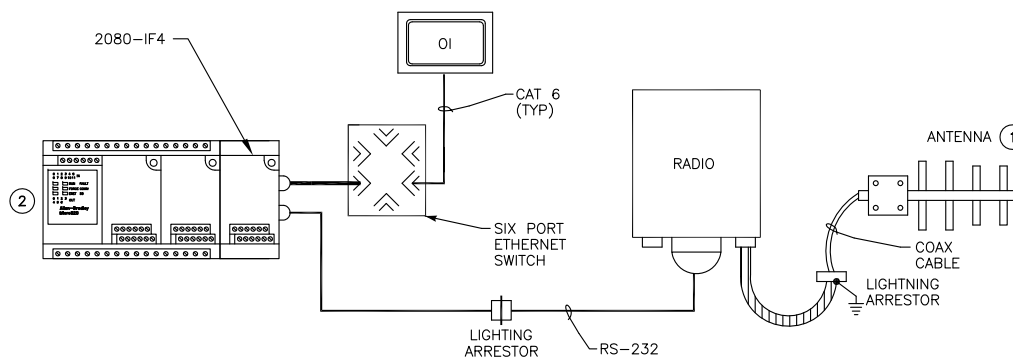
TYPICAL BACKPAN LAYOUT

NOT TO SCALE

C
E42

NOTES: ① PROVIDE EXTRA DIN RAIL TO BE ABLE TO ADD THREE RELAYS OR TEN TERMINAL BLOCKS TO EACH DIN RAIL.

② WIRE ALL SPARE I/O TO TERMINAL BLOCKS.



PLC BLOCK DIAGRAM

NOT TO SCALE

D
E42

NOTES: ① REUSE (E) ANTENNA AND MAST.

② 2080-LC20-20QWBR (12 DI, 7 RELAY DO, 1 AO) WITH 2080-IF4 (4 AI).

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2 PUMPS BOOSTER STATION -SSS TYPICAL RTU BACKPAN AND ELEVATION

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SCALE:
NONE

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S06-E042



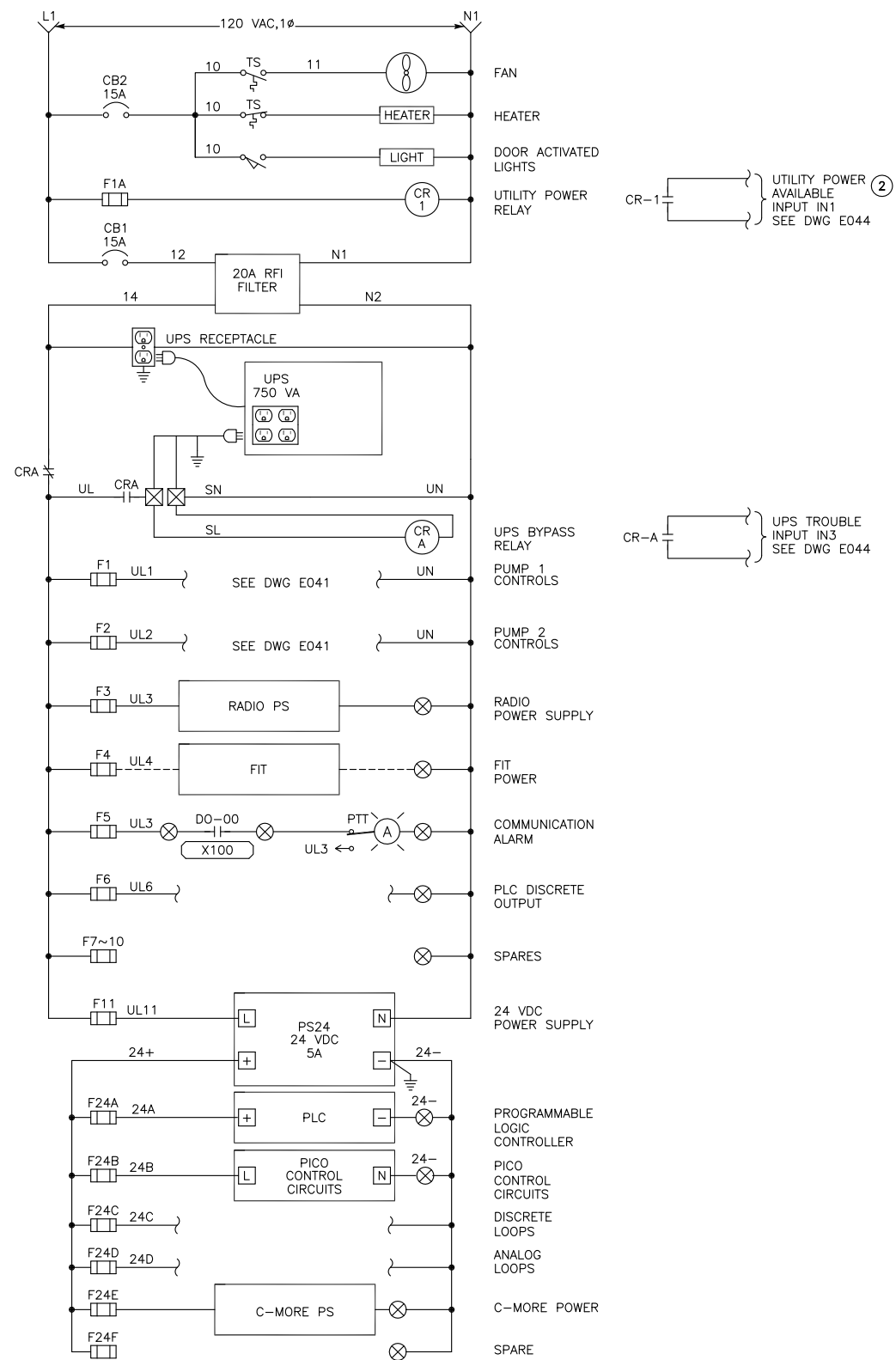
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POWER DISTRIBUTION DIAGRAM ①

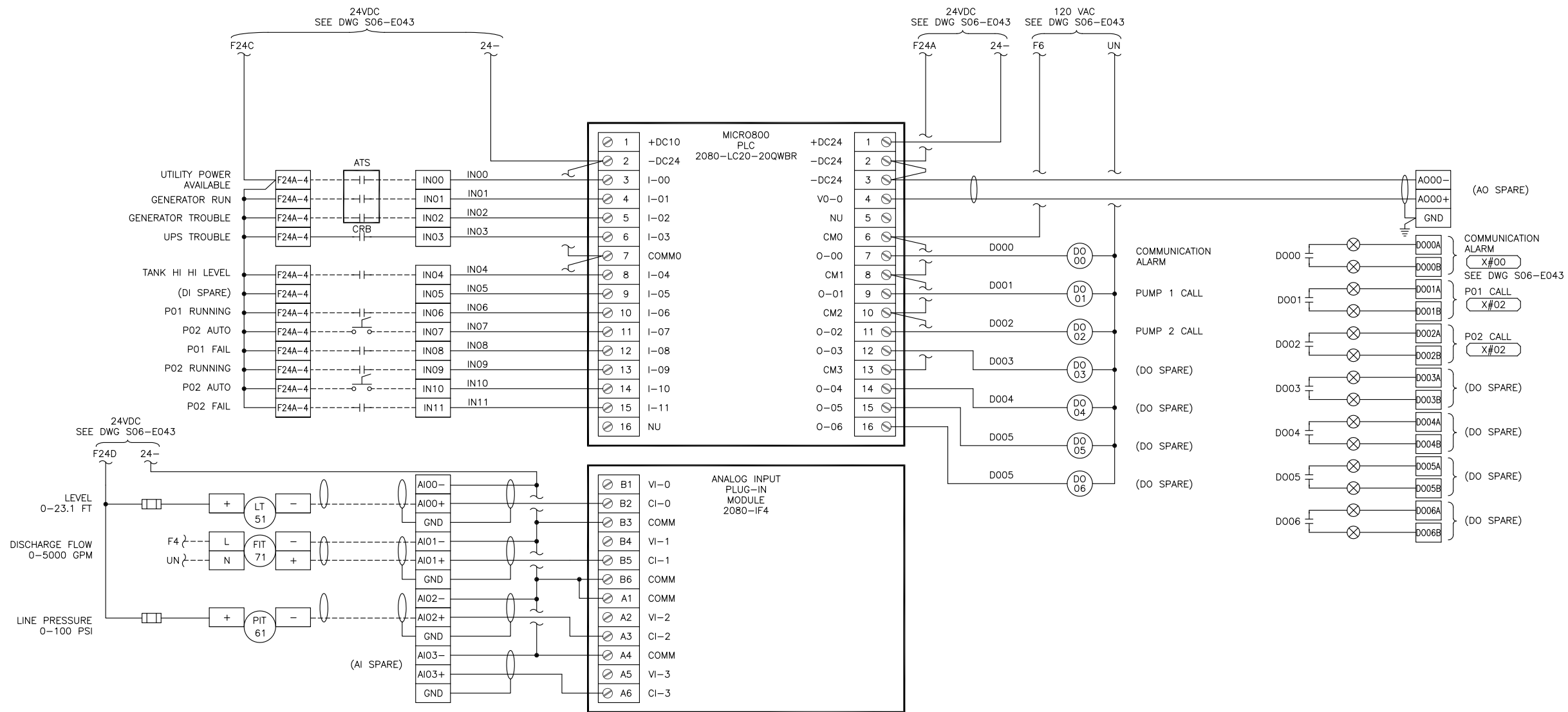
NOTES: ① DISTRIBUTION DIAGRAM REPRESENTATIVE OF MAJOR COMPONENTS ONLY. ADDITIONAL FUSES, CIRCUITS, AND COMPONENT CONNECTIONS MAY BE REQUIRED FOR A FUNCTIONAL SYSTEM.

② PROVIDE IF GENERATOR AND ATS ARE NOT PROVIDED.

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2 PUMPS BOOSTER STATION - SSS RTU PANEL & CONTROL POWER DISTRIBUTION DIA

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RTU I/O LAYOUT

CALAVERAS COUNTY WATER DISTRICT

2 PUMPS BOOSTER STATION - SSS RTU PANEL STANDARD I/O LAYOUT

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CCWD STANDARD DRAWING NO.

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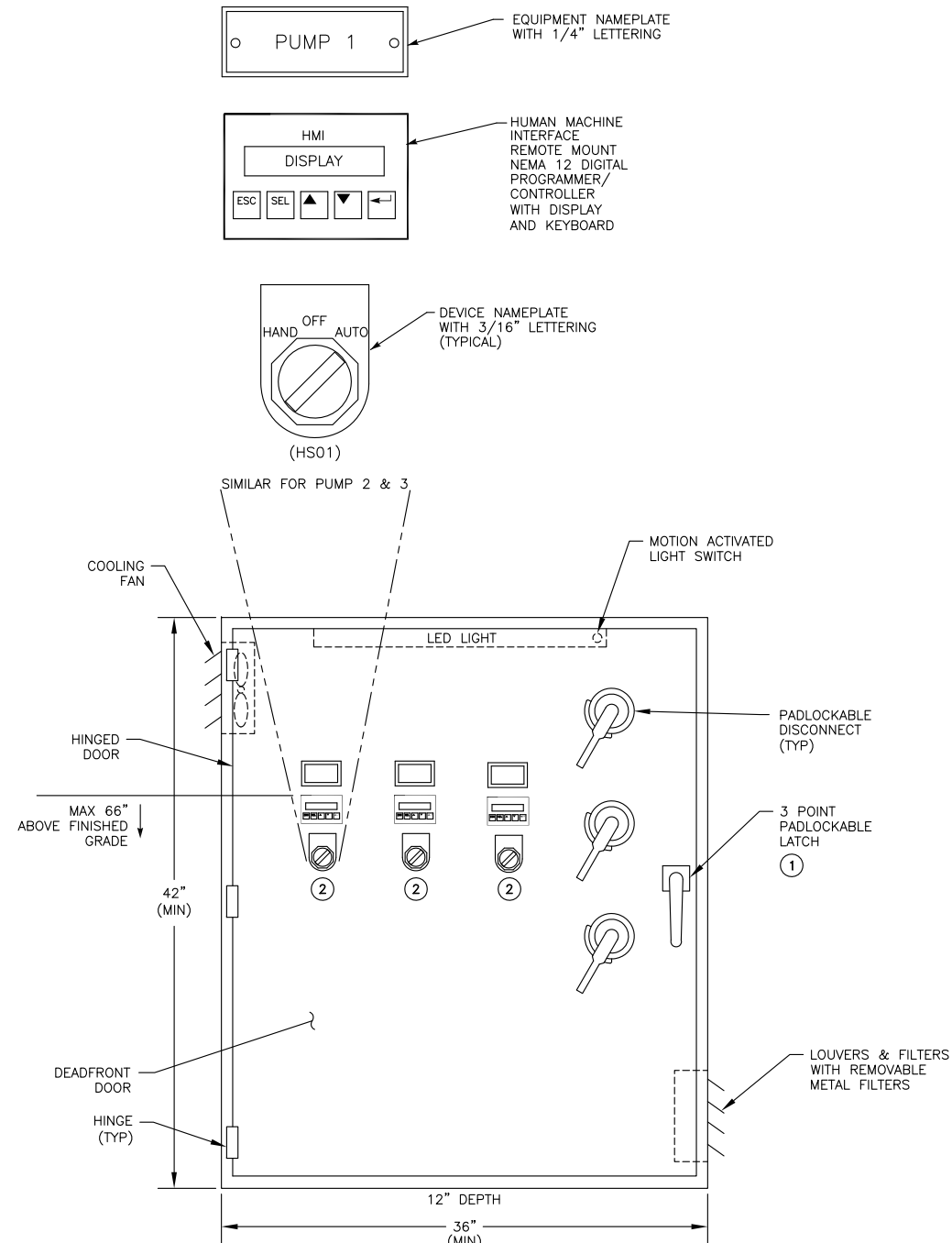
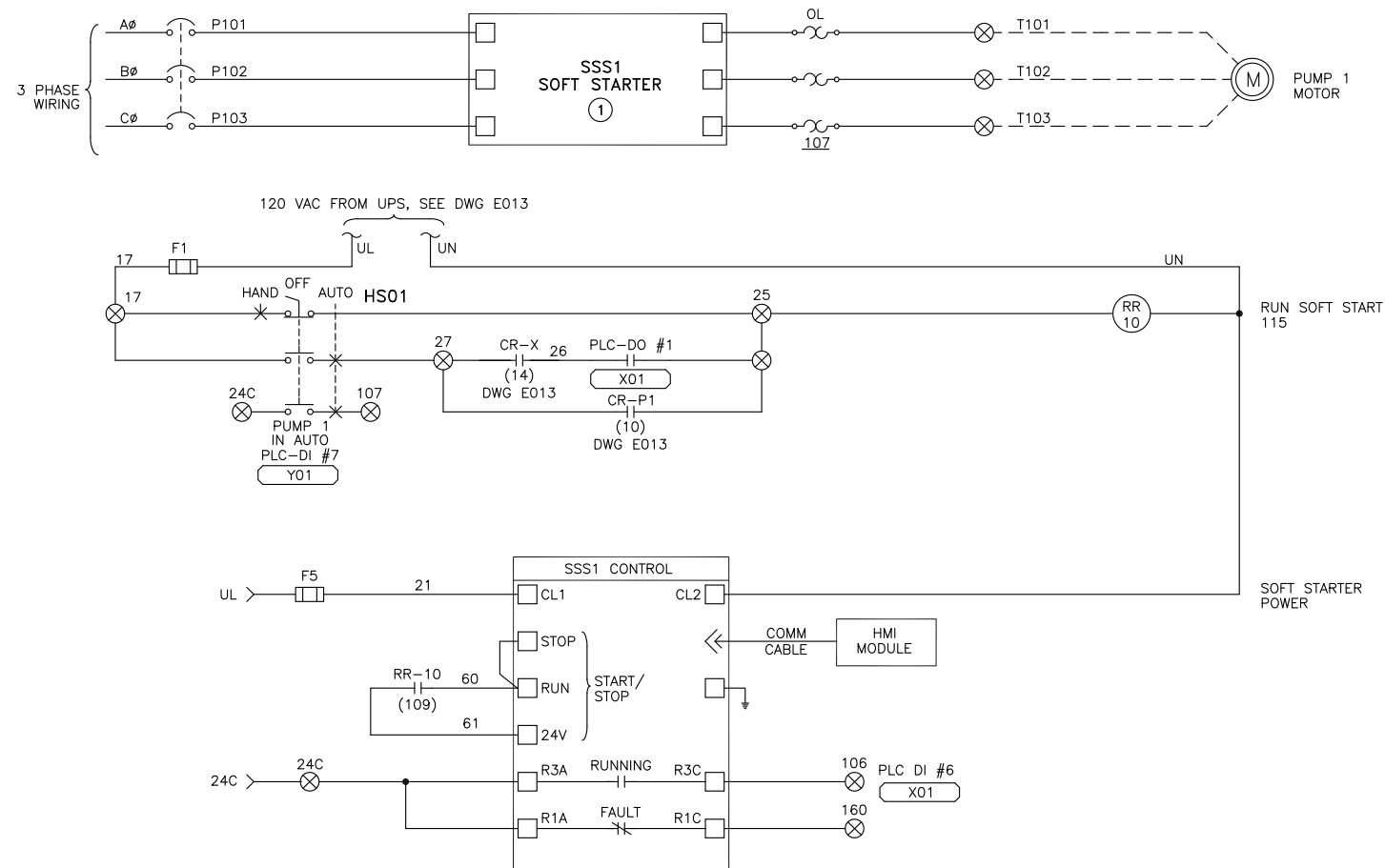
S06-E044



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TYPICAL PUMP PANEL ELEVATION DETAILS A
NOT TO SCALE E21

- NOTES: ① MOUNTED ON EXTERIOR DOOR.
② MOUNTED ON DEADFRONT DOOR.

PUMP ELEMENTARY DIAGRAM-SOFT STARTER

- NOTES: ① BUILT-IN PHASE REVERSAL, PHASE LOSS & UNDER VOLTAGE AND OVERLOAD PROTECTION.
② INCLUDE PROVISIONS FOR MOISTURE & OVERTEMPERATURE MODULE FOR FUTURE USE IF NOT REQUIRED AT THIS TIME.
③ TYPICAL FOR PUMPS#1~2. TERMINALS, TAGS SHOWN ARE FOR PUMP 1. USE 02, 20 & 200 SERIES NUMBERING FOR PUMP #2, ETC.

PMP01
PMP02
PMP03



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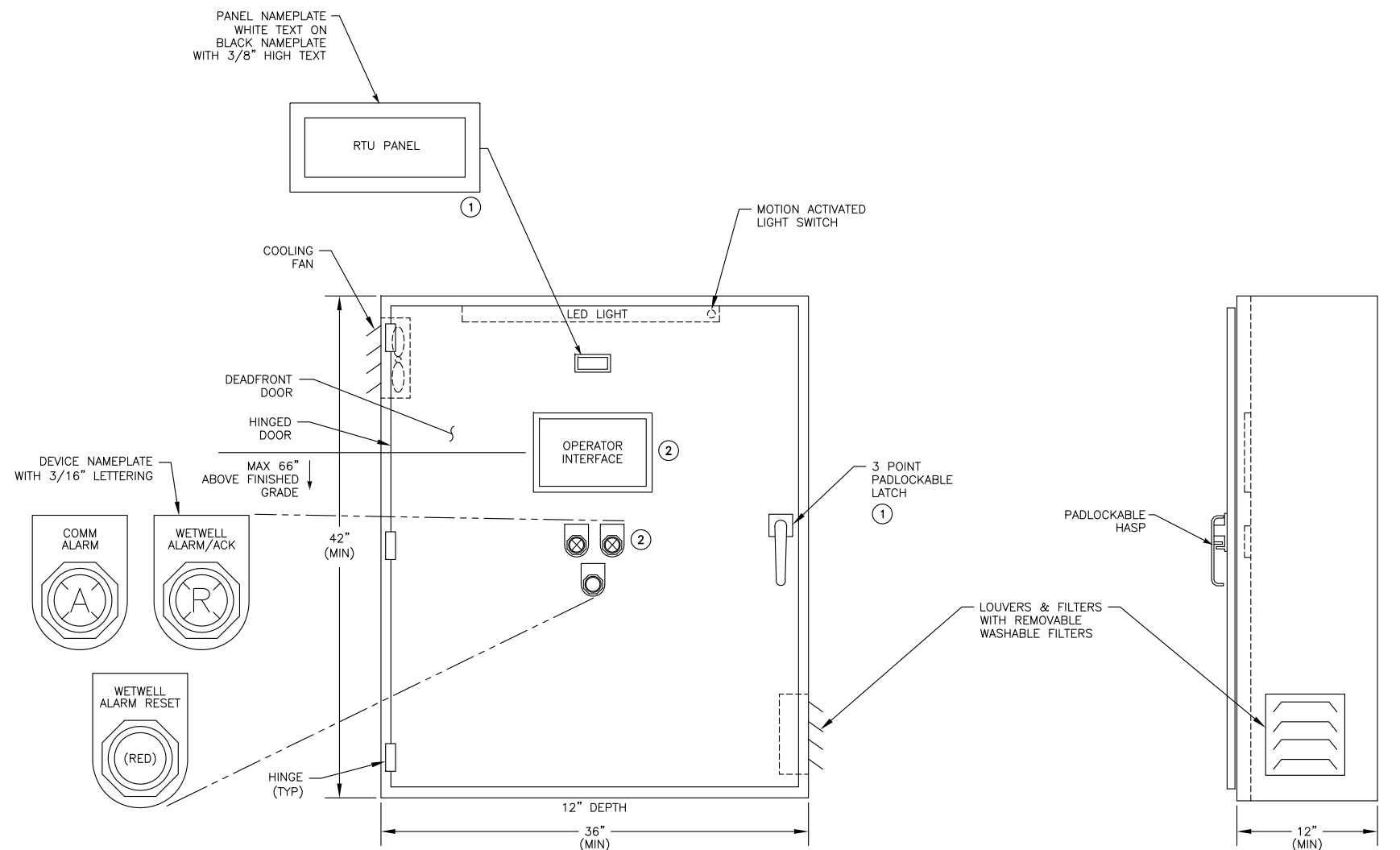
3 PUMPS BOOSTER STATION - SSS PUMP ELEMENTARY & ELEVATION - SOFT STARTER

DRAWN BY:
ATEEN
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SCALE:
NONE
DATE:
JUNE 2026

CCWD STANDARD DRAWING NO.

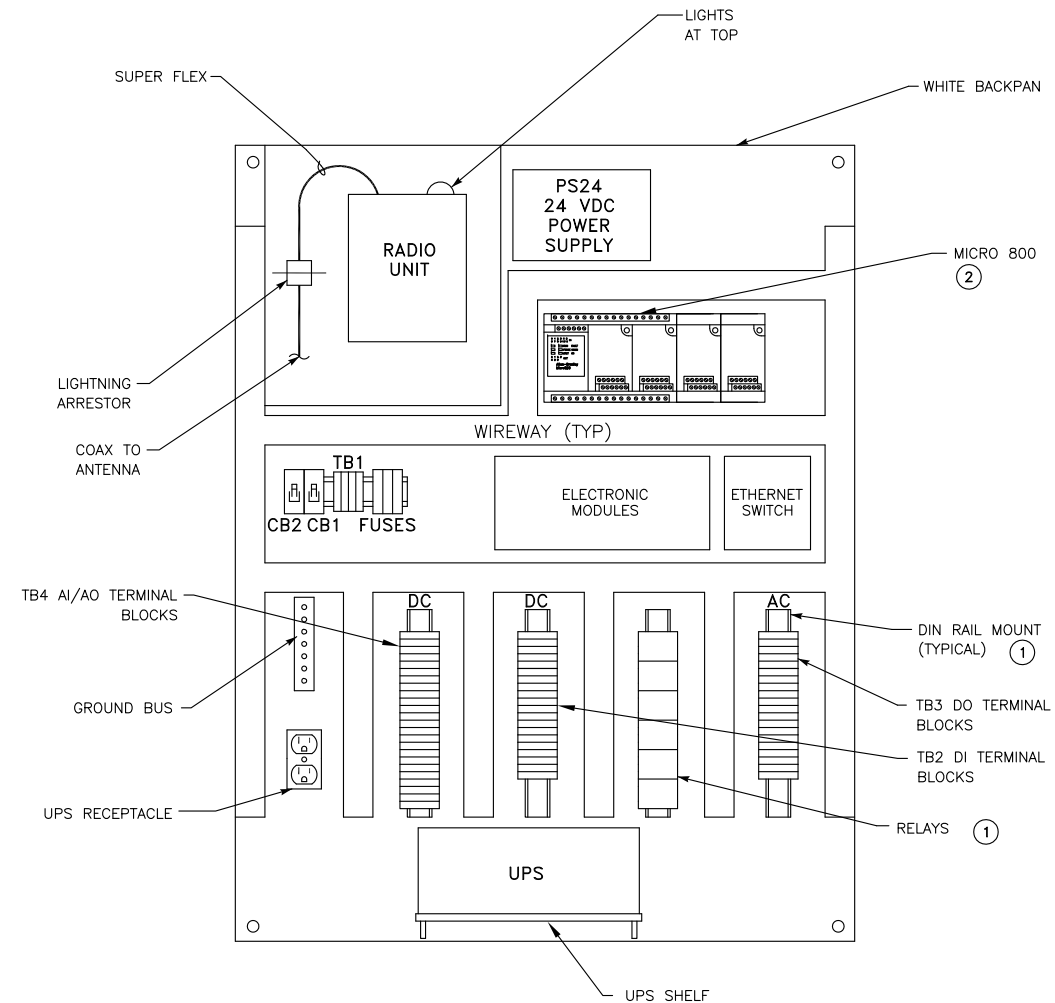
S06-E051



TYPICAL RTU PANEL ELEVATION DETAILS (A) E52
NOT TO SCALE

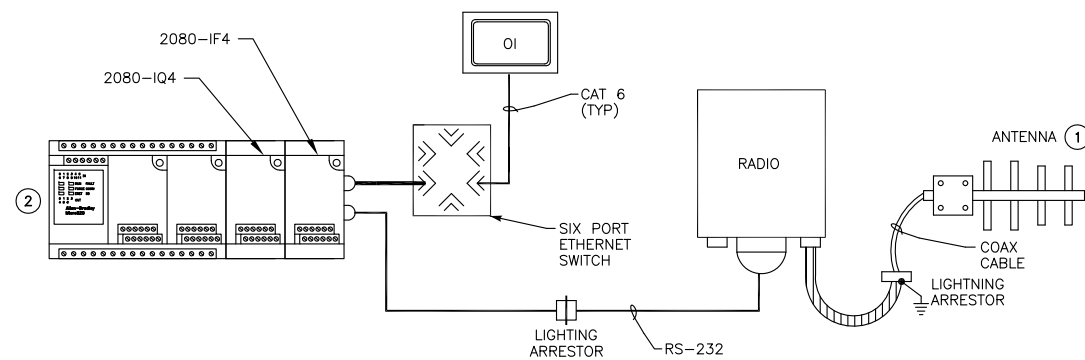
- NOTES: (1) MOUNTED ON EXTERIOR DOOR.
(2) MOUNTED ON DEADFRONT DOOR.

SIDE VIEW (B) E52
NOT TO SCALE



TYPICAL BACKPAN LAYOUT (C) E52
NOT TO SCALE

- NOTES: (1) PROVIDE EXTRA DIN RAIL TO BE ABLE TO ADD THREE RELAYS OR TEN TERMINAL BLOCKS TO EACH DIN RAIL.
(2) WIRE ALL SPARE I/O TO TERMINAL BLOCKS.



PLC BLOCK DIAGRAM (D) E52

- NOTES: (1) REUSE (E) ANTENNA AND MAST.
(2) 2080-LC20-20QWBR (12 DI, 7 RELAY DO, 1 AO) WITH 2080-IQ4 (4 DI) & 2080-IF4 (4 AI).

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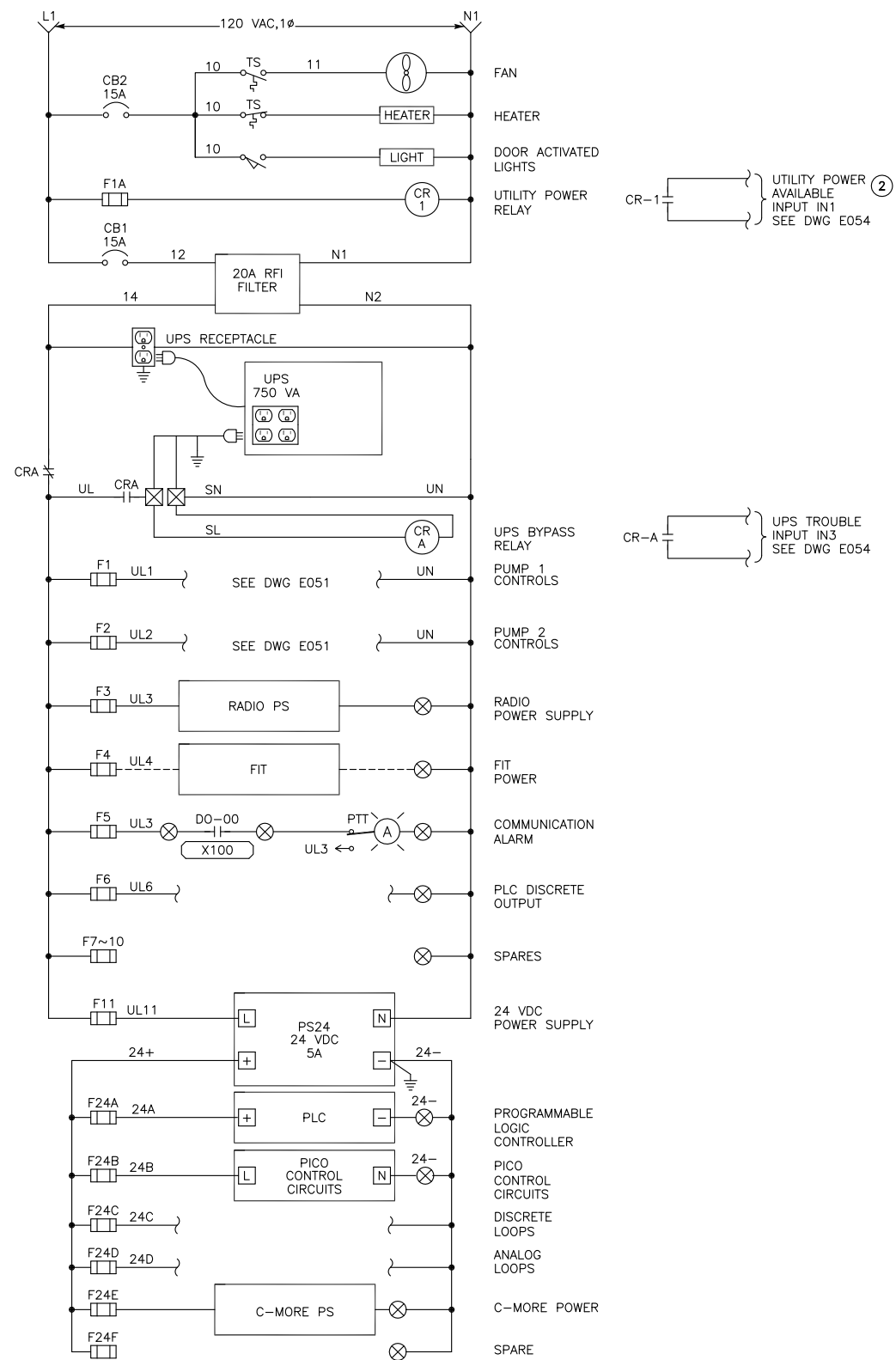
3 PUMPS BOOSTER STATION - SSS TYPICAL RTU BACKPAN AND ELEVATION

DRAWN BY:
ATEEN
APPROVED:
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SCALE:
NONE
DATE:
JUNE 2026

CCWD STANDARD DRAWING NO.

S06-E052



POWER DISTRIBUTION DIAGRAM ①

NOTES: ① DISTRIBUTION DIAGRAM REPRESENTATIVE OF MAJOR COMPONENTS ONLY. ADDITIONAL FUSES, CIRCUITS, AND COMPONENT CONNECTIONS MAY BE REQUIRED FOR A FUNCTIONAL SYSTEM.

② PROVIDE IF GENERATOR AND ATS ARE NOT PROVIDED.

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3 PUMPS BOOSTER STATION - SSS RTU PANEL & CONTROL POWER DISTRIBUTION DIA

DRAWN BY:

ATEEN

SCALE:

NONE

CCWD STANDARD DRAWING NO.

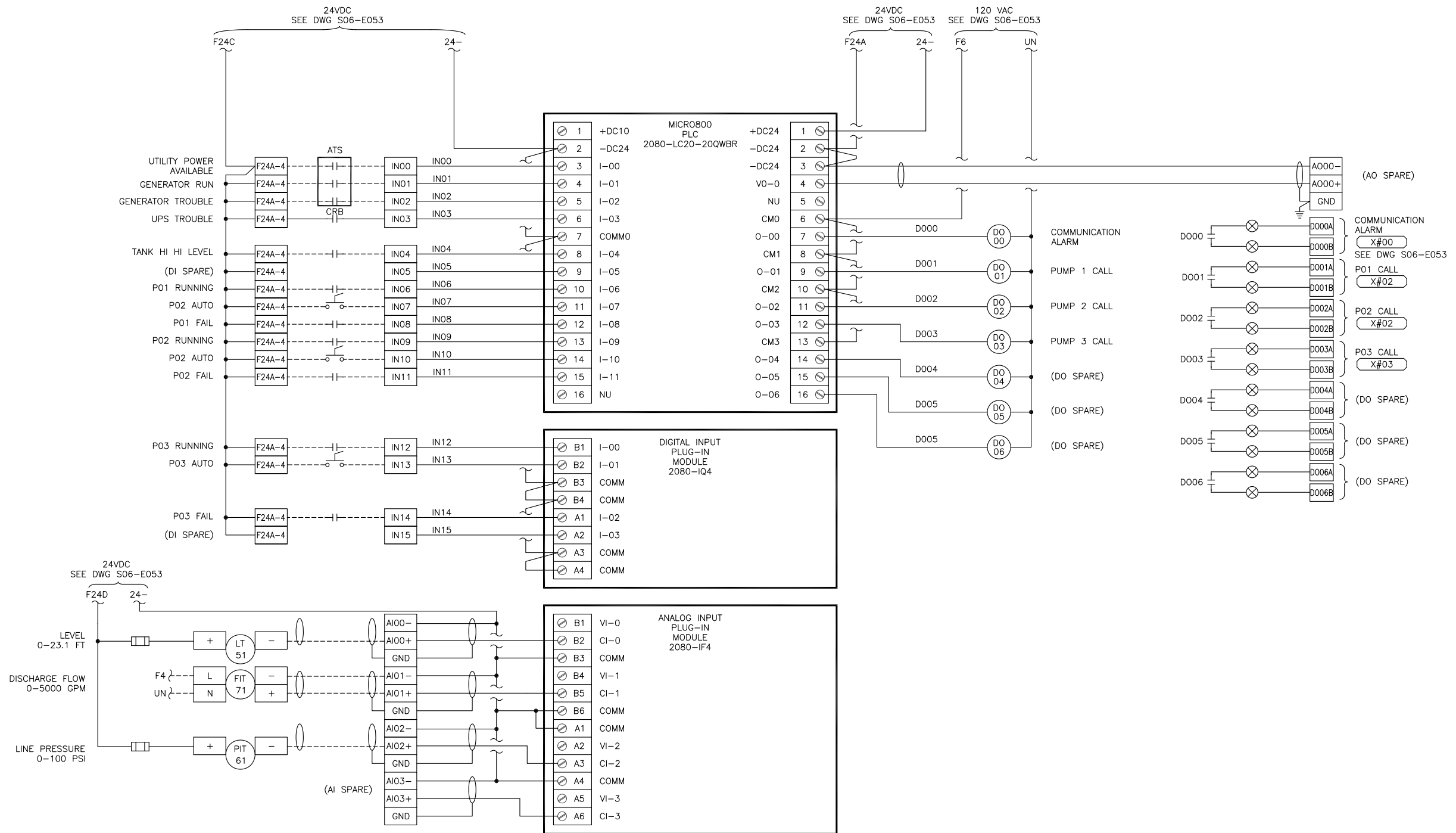
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S06-E053

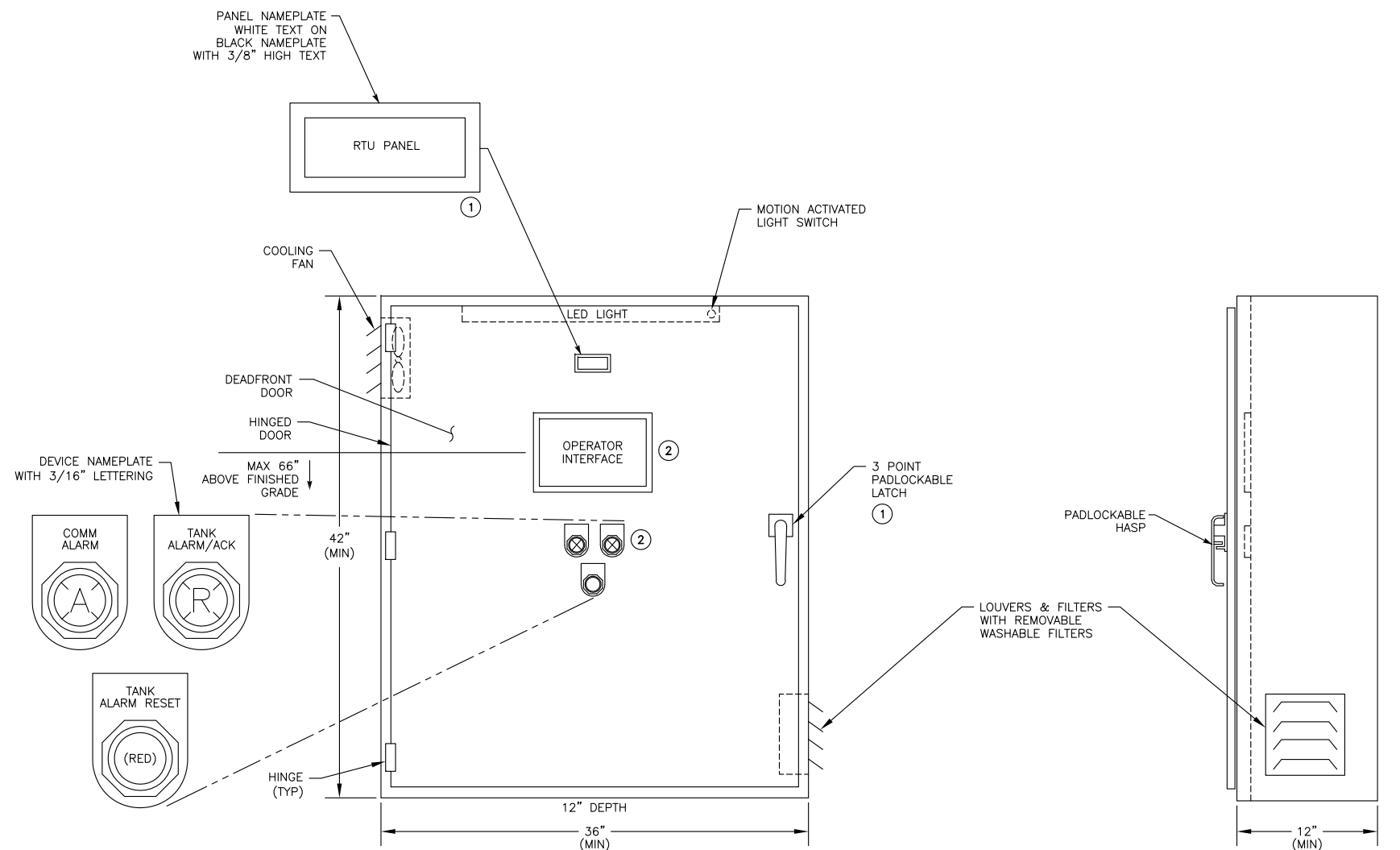


RTU I/O LAYOUT

CALAVERAS COUNTY WATER DISTRICT

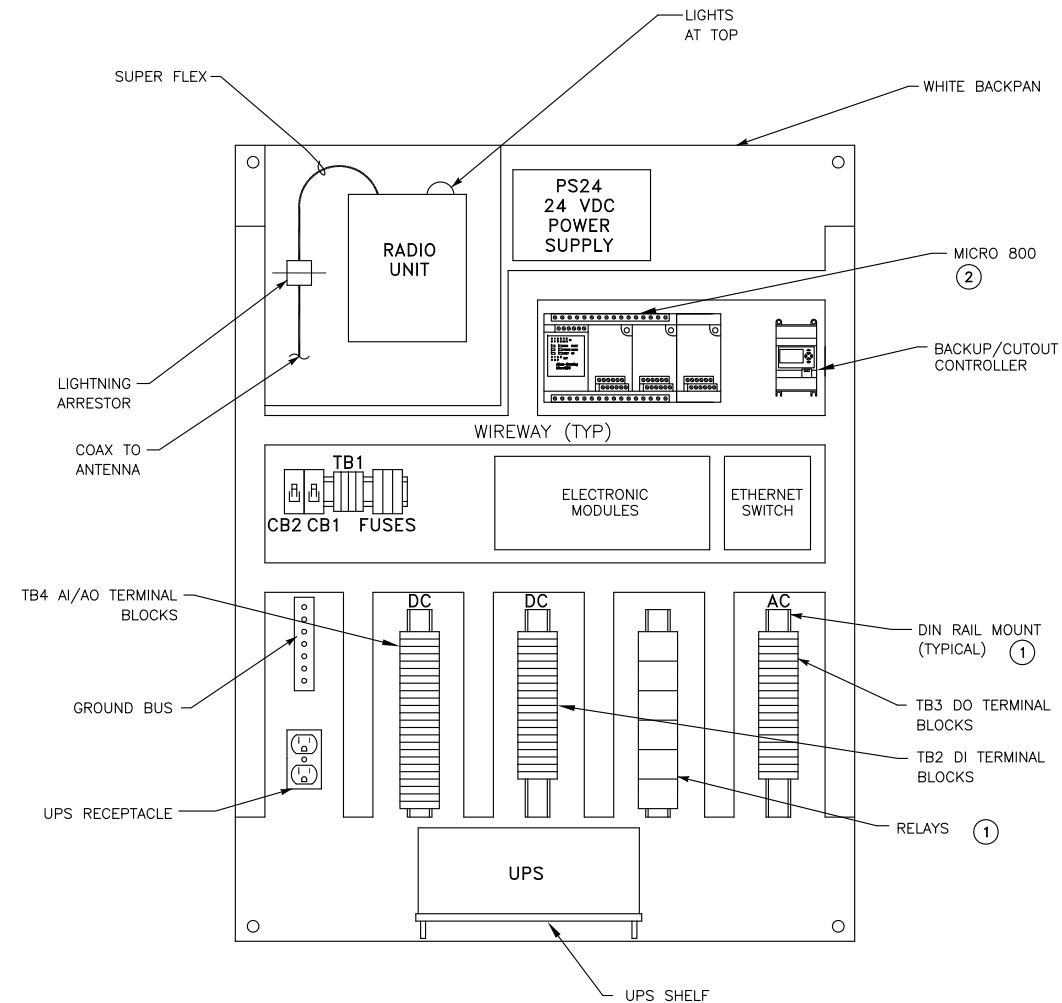
3 PUMPS BOOSTER STATION - SSS RTU PANEL STANDARD I/O LAYOUT

DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-E054
APPROVED: --	DATE: JUNE 2026	



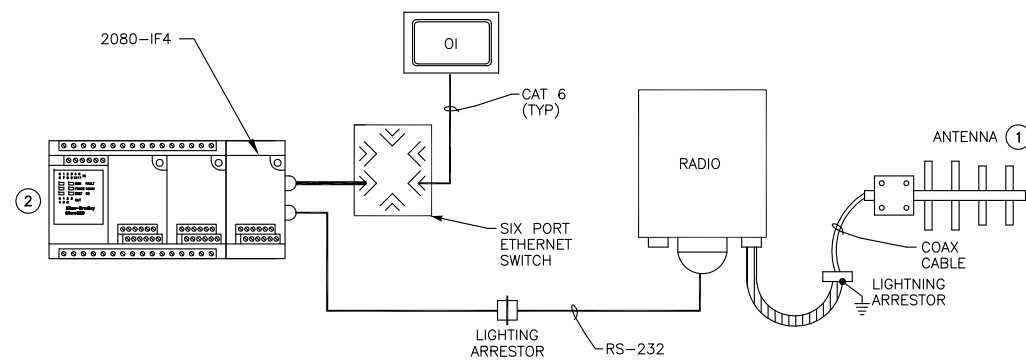
TYPICAL RTU PANEL ELEVATION DETAILS (A) E62
NOT TO SCALE

- NOTES: (1) MOUNTED ON EXTERIOR DOOR.
(2) MOUNTED ON DEADFRONT DOOR.



TYPICAL BACKPAN LAYOUT (C) E62
NOT TO SCALE

- NOTES: (1) PROVIDE EXTRA DIN RAIL TO BE ABLE TO ADD THREE RELAYS OR TEN TERMINAL BLOCKS TO EACH DIN RAIL.
(2) WIRE ALL SPARE I/O TO TERMINAL BLOCKS.



PLC BLOCK DIAGRAM (D) E62

- NOTES: (1) REUSE (E) ANTENNA AND MAST.
(2) 2080-LC20-20QWBR (12 DI, 7 RELAY DO, 1 AO) WITH 2080-IF4 (4 AI).

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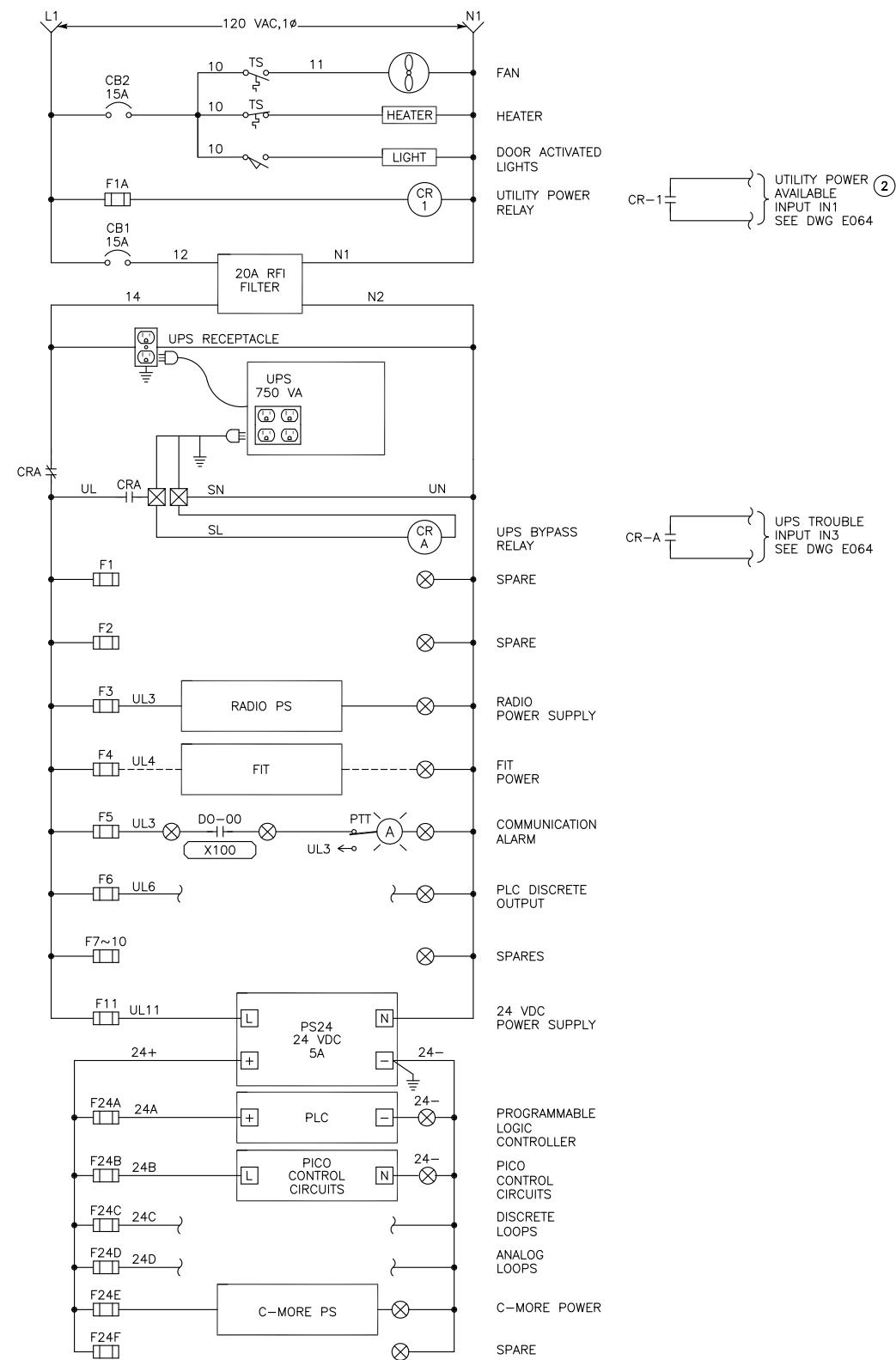
TANK TYPICAL RTU BACKPAN AND ELEVATION

DRAWN BY:
ATEEN
APPROVED:
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SCALE:
NONE
DATE:
JUNE 2026

CCWD STANDARD DRAWING NO.

S06-E062



POWER DISTRIBUTION DIAGRAM ①

NOTES: ① DISTRIBUTION DIAGRAM REPRESENTATIVE OF MAJOR COMPONENTS ONLY. ADDITIONAL FUSES, CIRCUITS, AND COMPONENT CONNECTIONS MAY BE REQUIRED FOR A FUNCTIONAL SYSTEM.

② PROVIDE IF GENERATOR AND ATS ARE NOT PROVIDED.

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**TANK RTU PANEL
CONTROL POWER DISTRIBUTION DIA**

DRAWN BY:
ATEEN

SCALE:
NONE

CCWD STANDARD DRAWING NO.

APPROVED:
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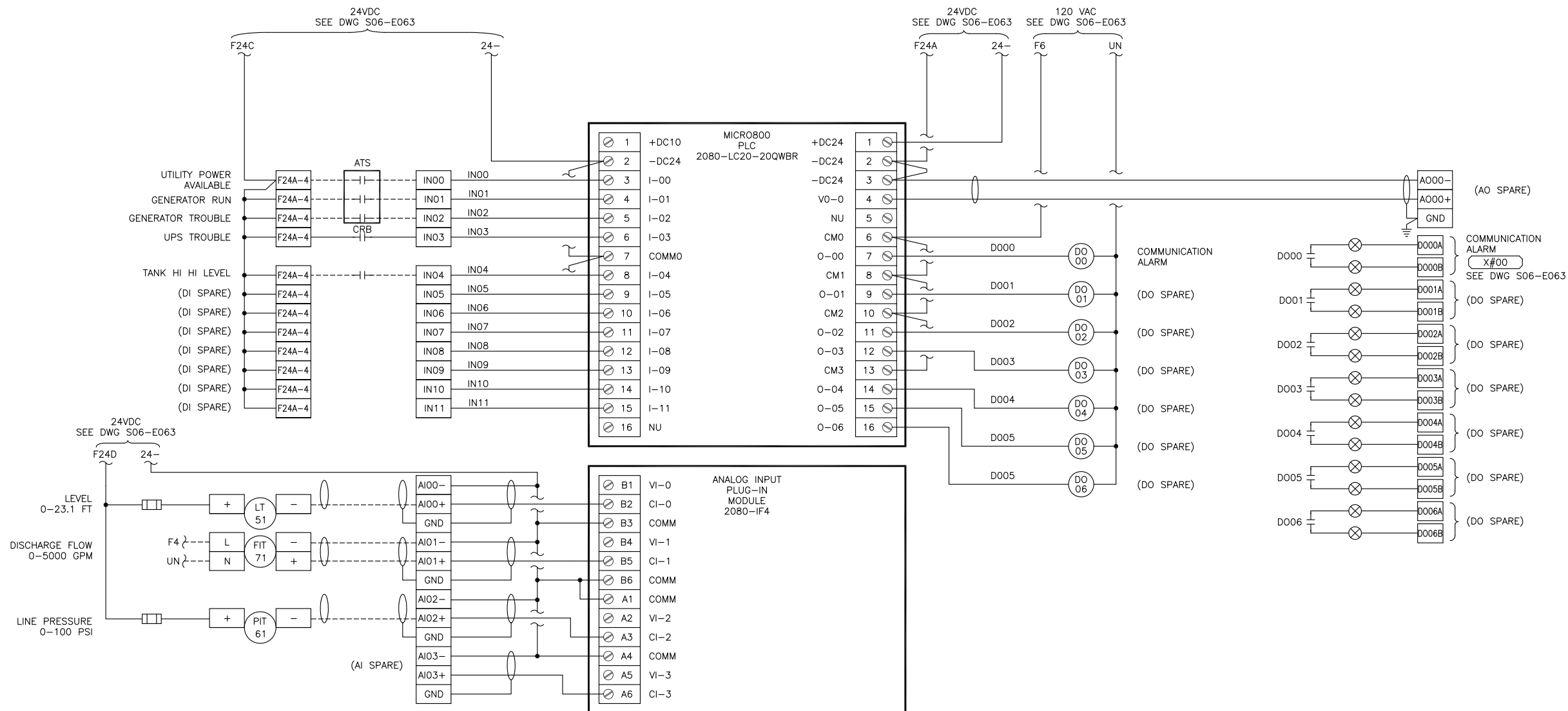
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RTU I/O LAYOUT

CALAVERAS COUNTY WATER DISTRICT

TANK RTU PANEL STANDARD I/O LAYOUT

DRAWN BY:

ATEEN

SCALE:

NONE

CCWD STANDARD DRAWING NO.

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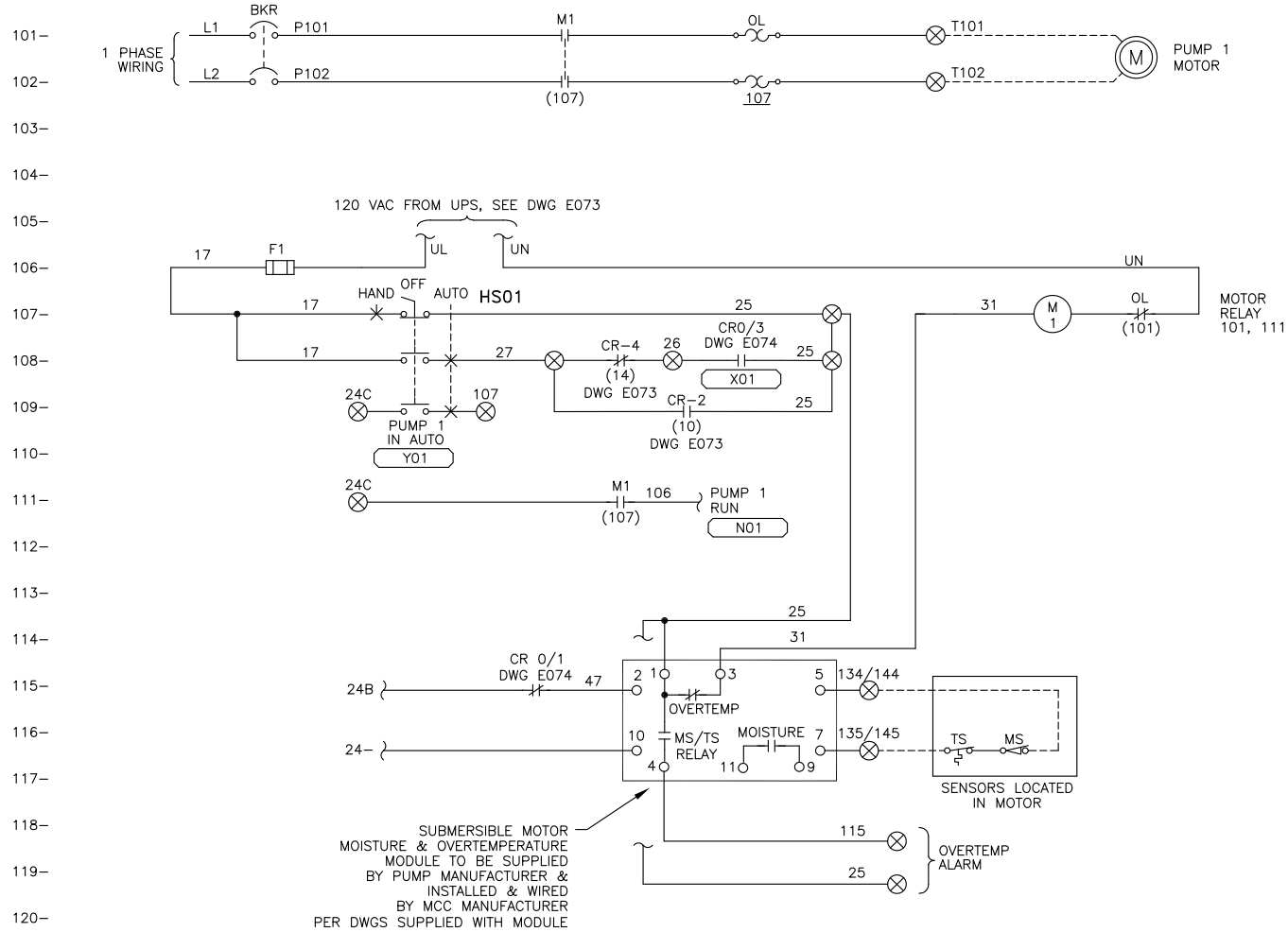
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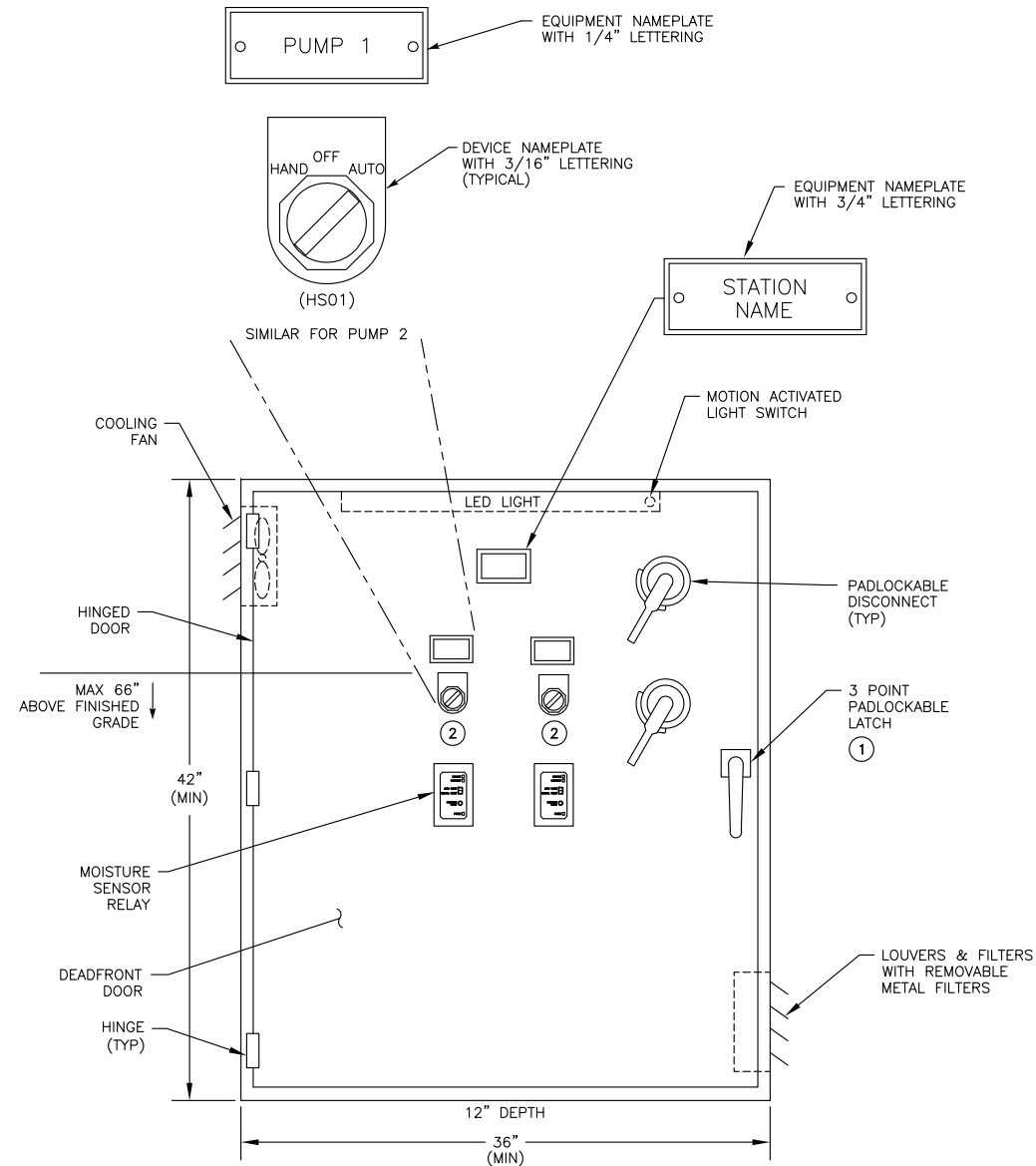
LINE NO.



PUMP ELEMENTARY DIAGRAM-SINGLE PHASE

PMP01
PMP02

- NOTES: ① INCLUDE PROVISIONS FOR MOISTURE & OVERTEMPERATURE MODULE FOR FUTURE USE IF NOT REQUIRED AT THIS TIME.
- ③ TYPICAL FOR PUMPS#1~2. TERMINALS, TAGS SHOWN ARE FOR PUMP 1. USE 02, 20 & 200 SERIES NUMBERING FOR PUMP #2, ETC.



TYPICAL PUMP PANEL ELEVATION DETAILS A
NOT TO SCALE E11

- NOTES: ① MOUNTED ON EXTERIOR DOOR.
- ② MOUNTED ON DEADFRONT DOOR.

CALAVERAS COUNTY WATER DISTRICT

2 PUMPS LIFT STATION - SINGLE PHASE PUMP ELEMENTARY & ELEVATION

DRAWN BY:
ATEEN

SCALE:
NONE

CCWD STANDARD DRAWING NO.

APPROVED:
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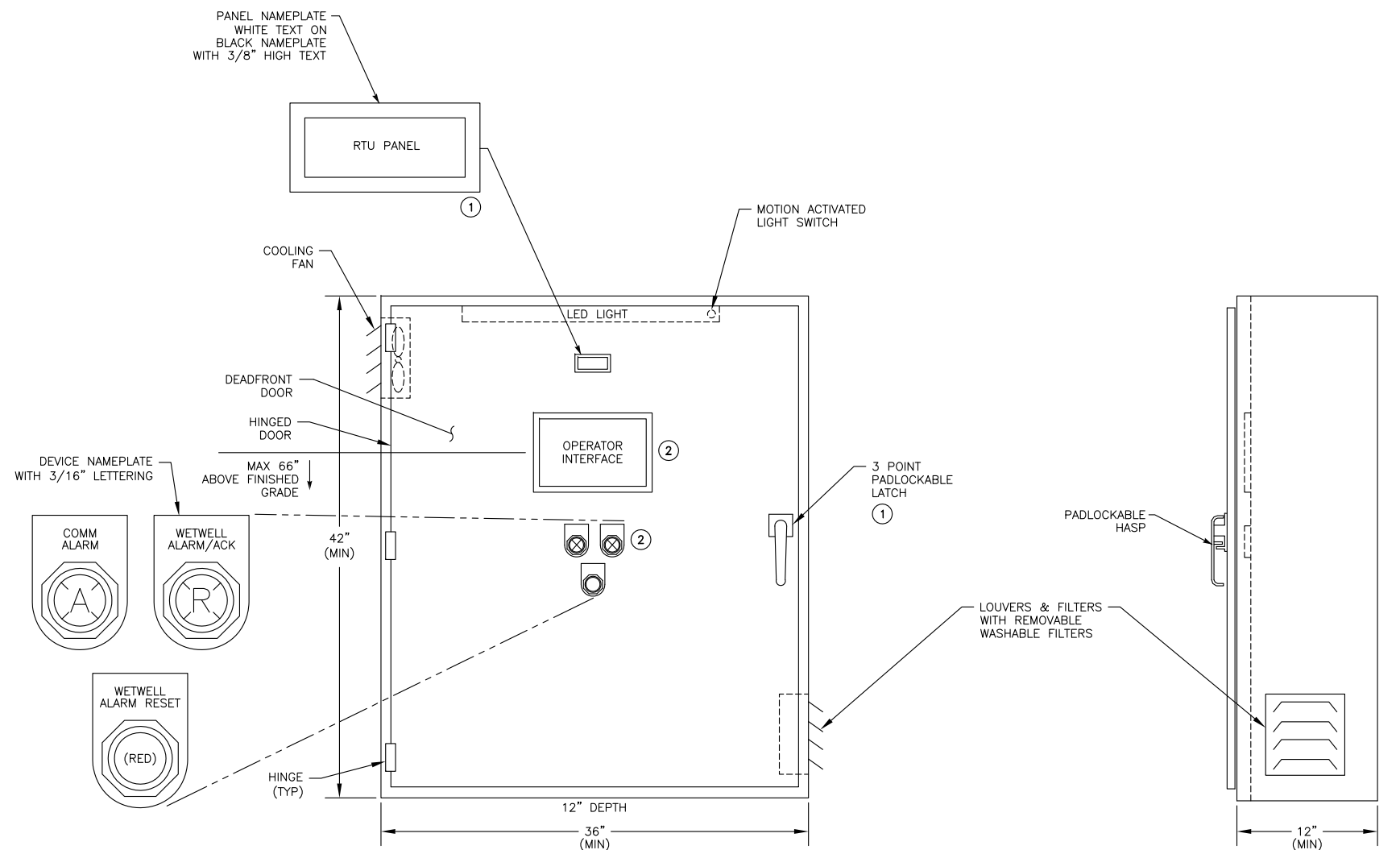
DATE:
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S06-E071



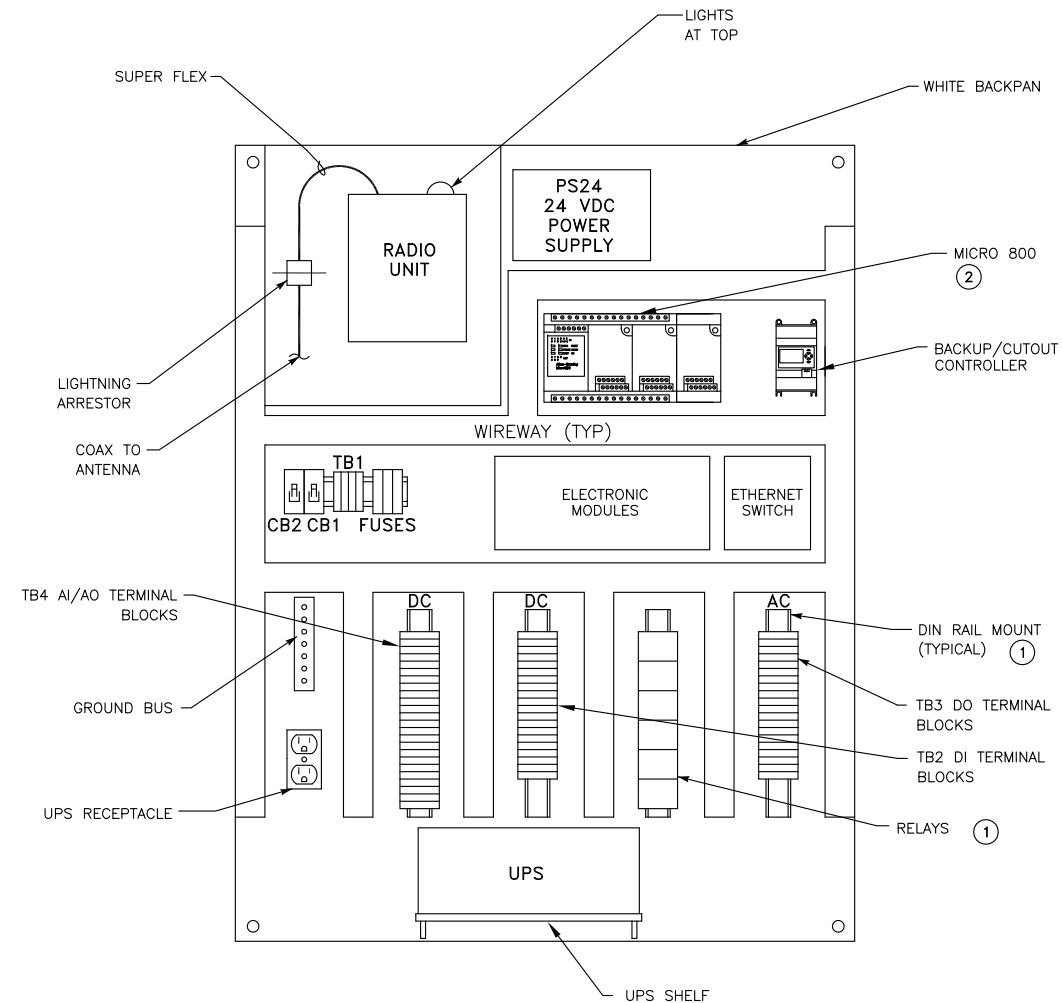
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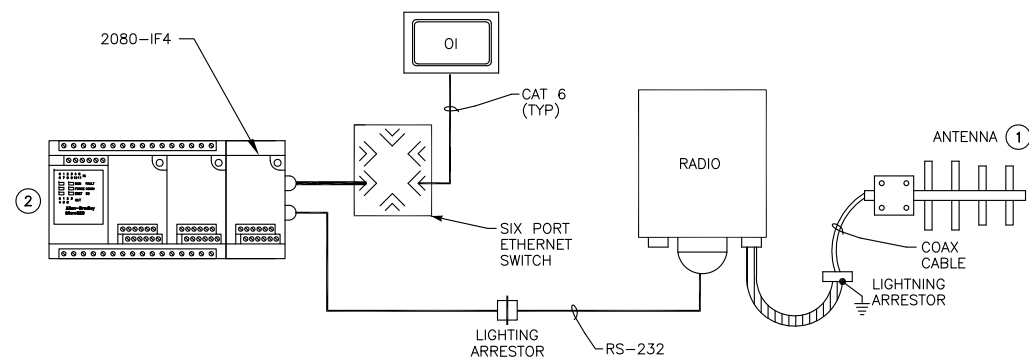
TYPICAL RTU PANEL ELEVATION DETAILS (A)
NOT TO SCALE (E72)

- NOTES: (1) MOUNTED ON EXTERIOR DOOR.
(2) MOUNTED ON DEADFRONT DOOR.



TYPICAL BACKPAN LAYOUT (C)
NOT TO SCALE (E72)

- NOTES: (1) PROVIDE EXTRA DIN RAIL TO BE ABLE TO ADD THREE RELAYS OR TEN TERMINAL BLOCKS TO EACH DIN RAIL.
(2) WIRE ALL SPARE I/O TO TERMINAL BLOCKS.



PLC BLOCK DIAGRAM (D)
NOT TO SCALE (E72)

- NOTES: (1) REUSE (E) ANTENNA AND MAST.
(2) 2080-LC20-20QWBR (12 DI, 7 RELAY DO, 1 AO) WITH 2080-IF4 (4 AI).

CALAVERAS COUNTY WATER DISTRICT

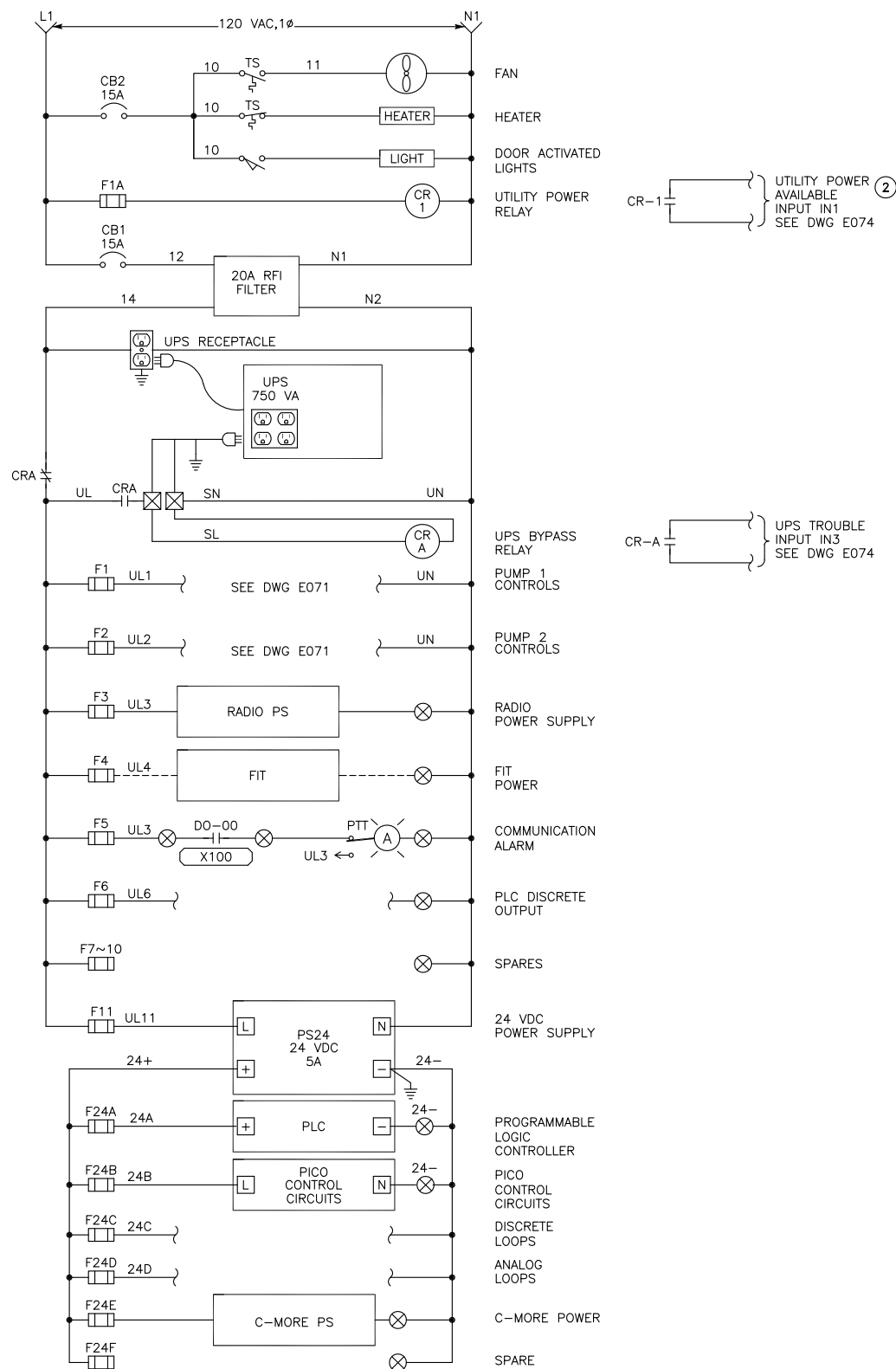
2 PUMPS LIFT STATION - SINGLE PHASE TYPICAL RTU BACKPAN AND ELEVATION

DRAWN BY:
ATEEN
APPROVED:
--

SCALE:
NONE
DATE:
JUNE 2026

CCWD STANDARD DRAWING NO.

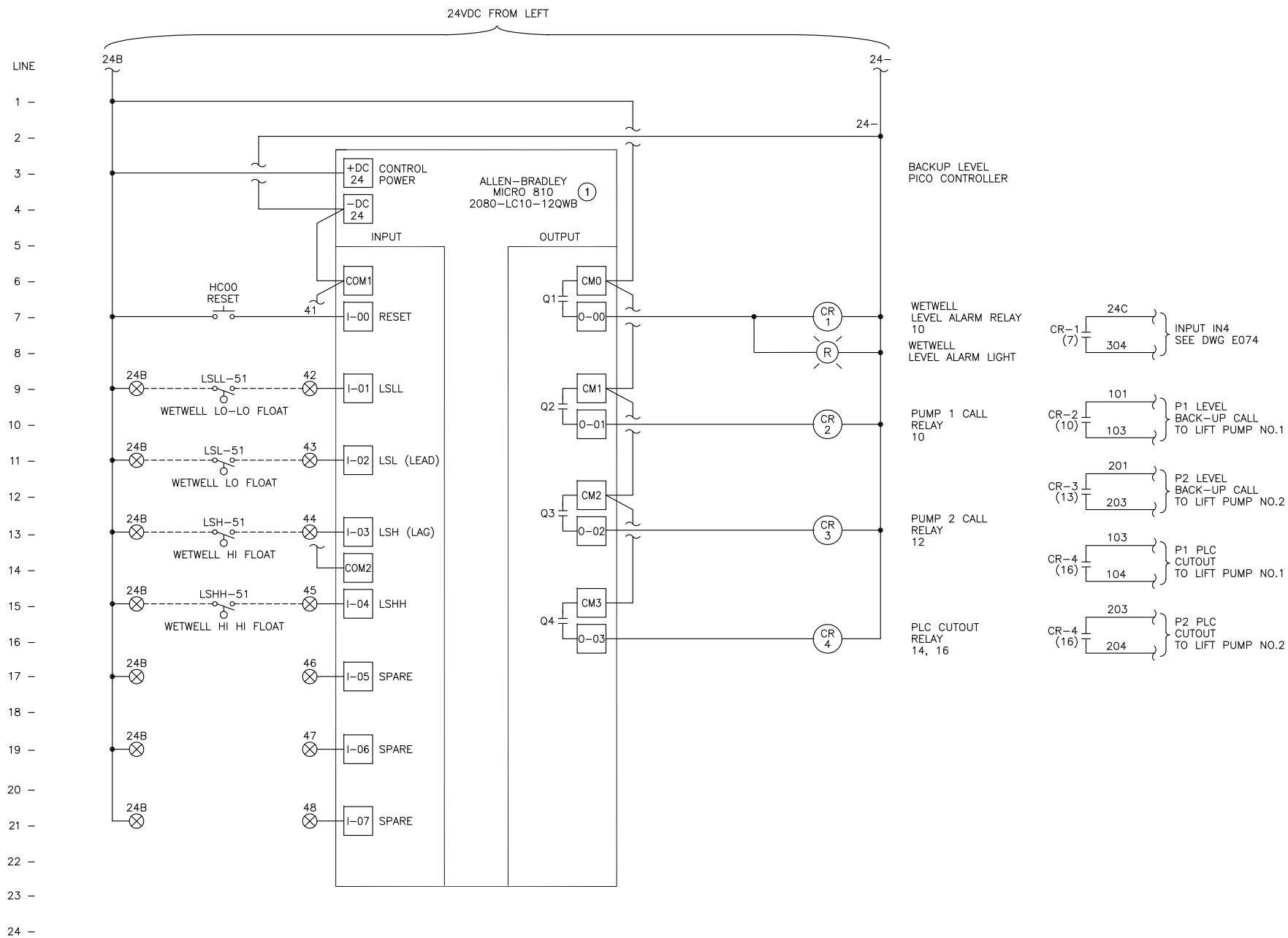
S06-E072



POWER DISTRIBUTION DIAGRAM ①

NOTES: ① DISTRIBUTION DIAGRAM REPRESENTATIVE OF MAJOR COMPONENTS ONLY. ADDITIONAL FUSES, CIRCUITS, AND COMPONENT CONNECTIONS MAY BE REQUIRED FOR A FUNCTIONAL SYSTEM.

② PROVIDE IF GENERATOR AND ATS ARE NOT PROVIDED.



BACKUP/CUTOUT CONTROL ELEMENTARY DIAGRAM

NOTES: ② ALLEN-BRADLEY PICO WITH MICRO 800 LCD DISPLAY & KEYPAD.



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CALAVERAS COUNTY WATER DISTRICT

2 PUMPS LIFT STATION - SINGLE PHASE RTU PANEL & CONTROL POWER DISTRIBUTION DIA

DRAWN BY:
ATEEN

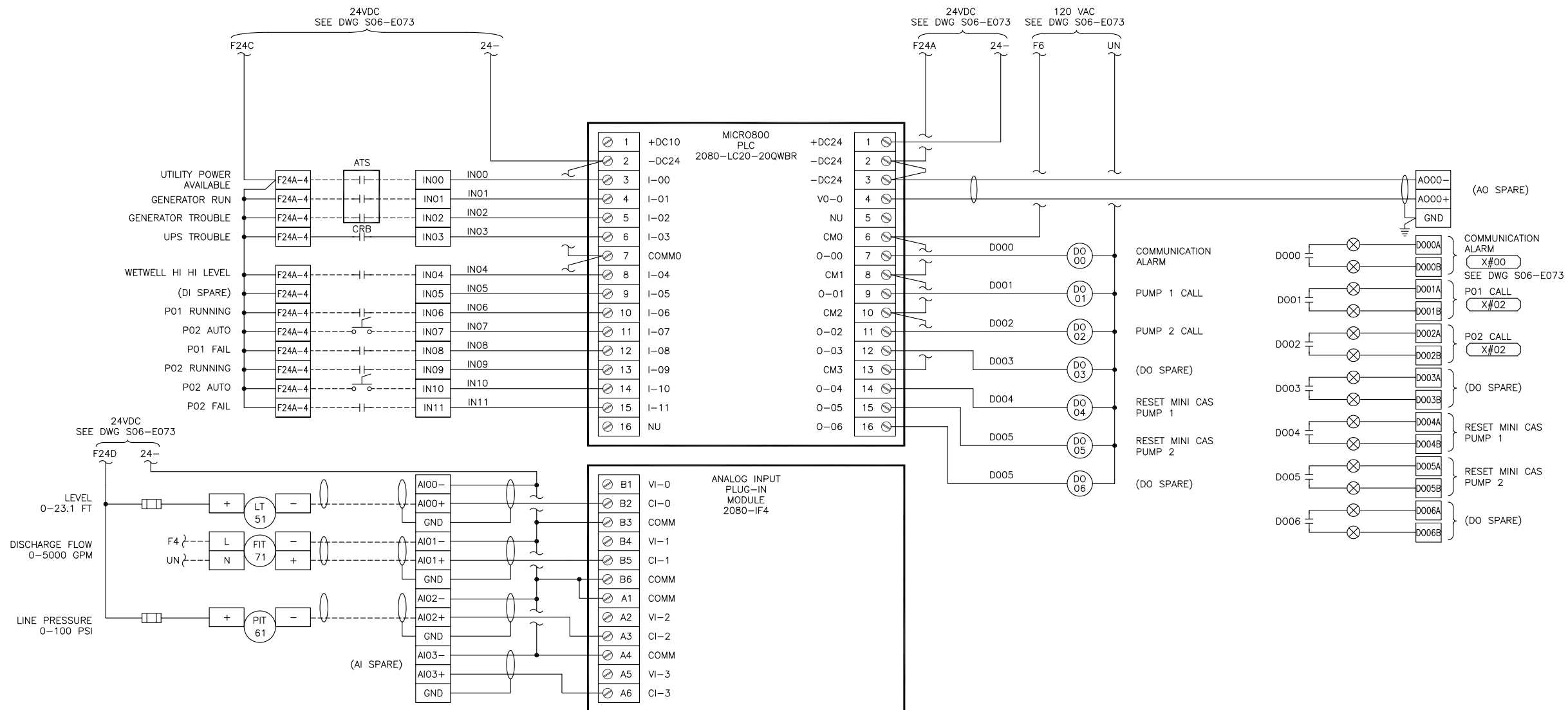
SCALE:
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CCWD STANDARD DRAWING NO.

APPROVED:
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DATE:
JUNE 2026

S06-E073



RTU I/O LAYOUT

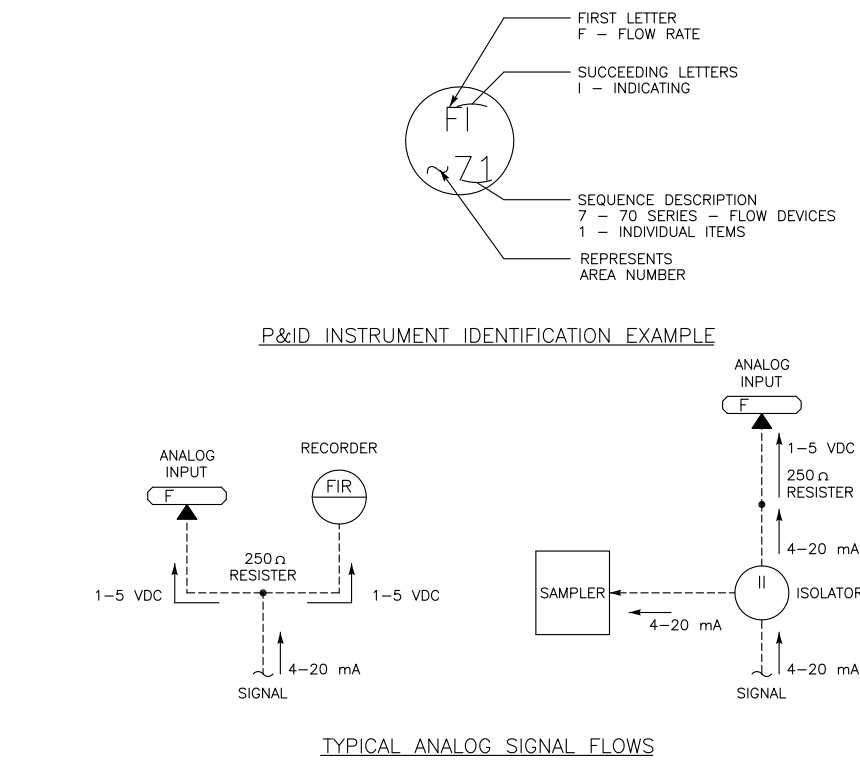
CALAVERAS COUNTY WATER DISTRICT

2 PUMPS LIFT STATION - SINGLE PHASE RTU PANEL STANDARD I/O LAYOUT

DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-E074
APPROVED: --	DATE: JUNE 2026	

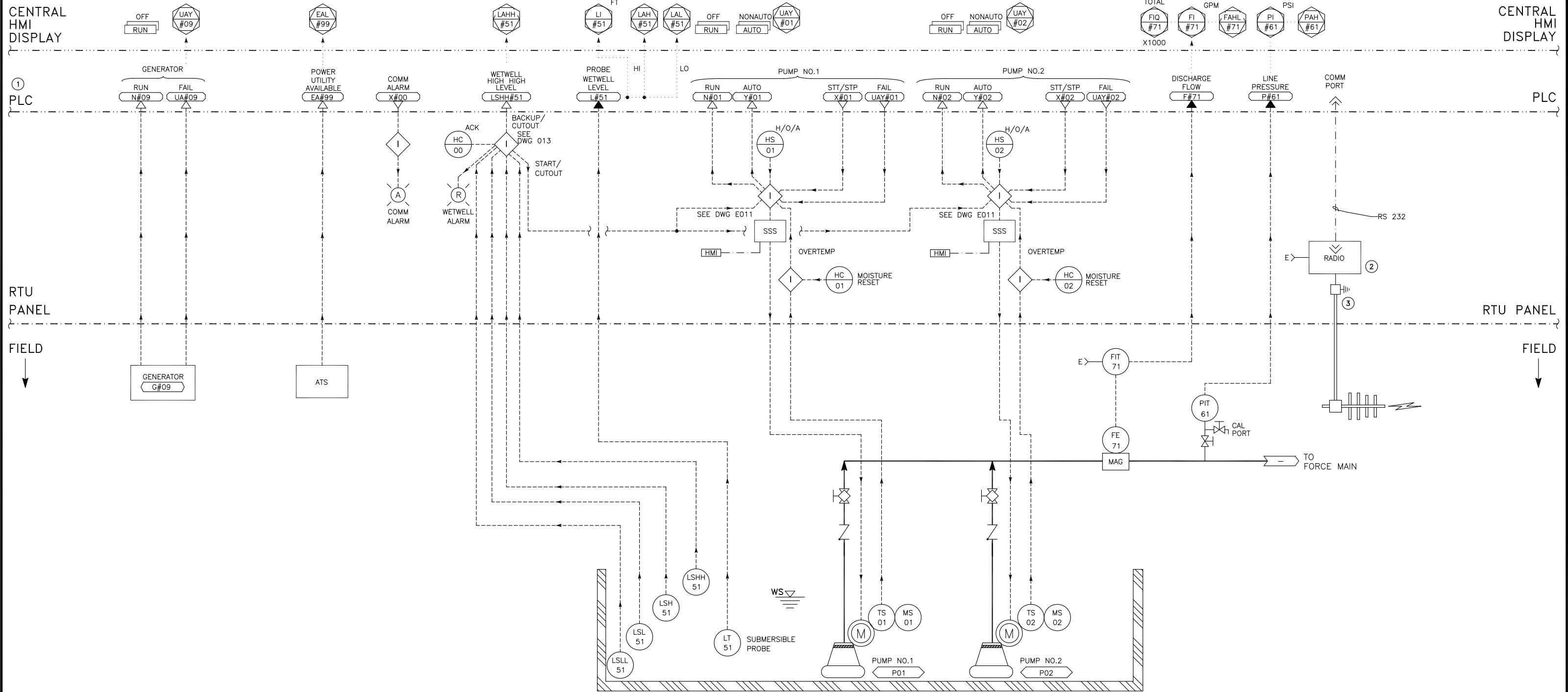
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
P & I DIAGRAM SYMBOLS		P & I DIAGRAM SYMBOLS	
	FIELD MOUNTED INSTRUMENT		OPEN
	FACE MOUNTED INSTRUMENT ON LOCAL PANEL, OPERATOR ACCESSIBLE		CLOSED
	FACE MOUNTED INSTRUMENT ON FIELD PANEL, OPERATOR ACCESSIBLE		GATE VALVE
	INSTRUMENT MOUNTED IN LOCAL PANEL, OPERATOR INACCESSIBLE		PLUG VALVE
	INSTRUMENT MOUNTED IN FIELD PANEL, OPERATOR INACCESSIBLE		GLOBE VALVE
	OPERATION PERFORMED WITH LOGIC OR HARDWIRED DEVICES		BALL VALVE
	PLC OR COMPUTER FUNCTION PERFORMING OPERATION WITH VISUAL INDICATION		BUTTERFLY VALVE
	PLC OR COMPUTER FUNCTION PERFORMING OPERATION WITH VISUAL ALARM INDICATION		MUD VALVE
	PLC OR COMPUTER PERFORMING INTERNAL OPERATION		V-PORT VALVE
	PROPORTIONAL, INTEGRAL, AND DIFFERENTIAL PARAMETERS		ECCENTRIC VALVE
	RATIO AND BIAS PARAMETERS		KNIFE GATE
	AUDIBLE ALARM (BUZZER OR HORN)		SLIDE GATE
	ANNUNCIATOR WINDOW R - ROW # C - COLUMN #		SLUICE GATE
	LAMP INDICATION (STATUS OR ALARM)		CLAMP GATE
	DISCRETE INPUT		WEIR SLIDE GATE
	DISCRETE OUTPUT		FLAP GATE
	ANALOG INPUT		SWING CHECK VALVE
	ANALOG OUTPUT		BALL CHECK VALVE
	JUMP TAG FROM ONE AREA TO ANOTHER AREA OF DRAWING		PRESSURE REGULATOR
	"g" TAG CONNECT POINT ON EACH DRAWING		PUMP (GENERAL)
	CONTINUED ON DWG I-X		
	AUTODIALER PRIORITY #		BLOWER (GENERAL)
	PC BASED SOFTWARE		EQUIPMENT NUMBER
			VALVE OF GATE NUMBER
			ELECTRIC SIGNAL
			LOGIC OR DATA SIGNAL
			PNEUMATIC SIGNAL
			CAPILLARY TUBING (FILLED SYSTEM)
			HYDRAULIC SIGNAL
			SONIC OR ELECTROMAGNETIC SIGNAL
			ELECTRIC SUPPLY FROM PANELBOARD CKT
			SERVICE AIR
			INSTRUMENT AIR

INSTRUMENT IDENTIFICATION LETTERS				
FIRST - LETTER	SUCCEEDING - LETTER			
MEASURED OF INITIATING VARIABLE	MODIFIER	READOUT PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A ANALYSIS		ALARM		
B BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C CONDUCTIVITY			CONTROLLER	
D DENSITY	DIFFERENTIAL			
E VOLTAGE		SENSOR, PRIMARY ELEMENT		
F FLOW RATE	RATIO (FRACTION)			
G GENERAL		GLASS VIEWING DEVICE		
H HAND				HIGH, OPENED
I CURRENT (ELEC.)		INDICATING, INDICATOR		
J POWER	SCAN			
K TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L LEVEL		LIGHT		LOW, CLOSED
M MOISTURE	MOMENTARY			MIDDLE
N STATUS		STATUS	USER'S CHOICE	USER'S CHOICE
O OPERATOR		ORIFICE, RESTRICTION		
P PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q QUANTITY	INTERGRATE, TOTALIZE			
R RESET		RECORD		
S SPEED, FREQUENCY	SAFETY		SWITCH	
T TEMPERATURE			TRANSMITTER	TEST
U MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V VIBRATION, MECH. ANALYSIS			VALVE, DAMPER LOUVER	
W WEIGHT, FORCE		WELL		
X SWITCH	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTER, CONVERTOR	
Z POSITION DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSEIFIED FINAL CONTROL ELEMENT	



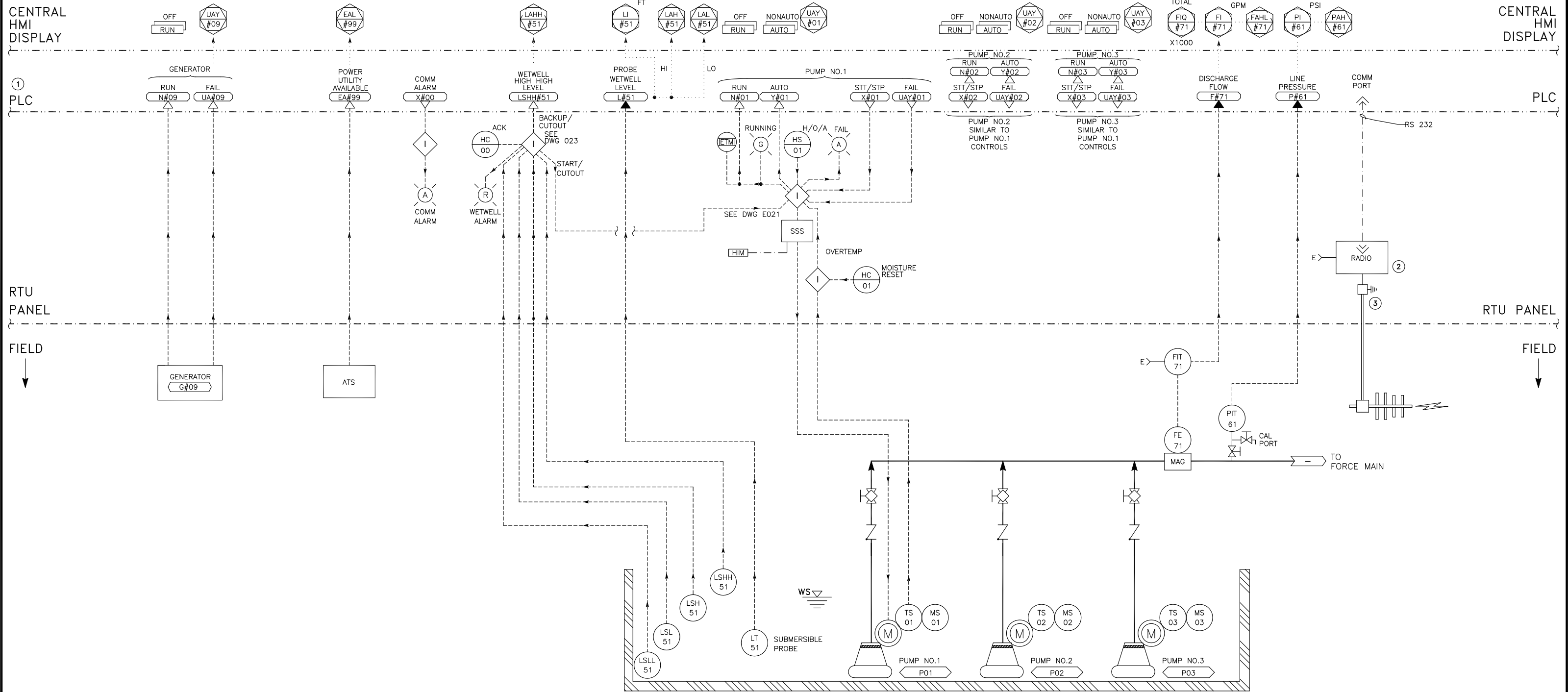
NUMBERING SEQUENCE	
SEQUENCE NUMBER	DESCRIPTION
00	COMMON ALARM
01-09	INDIVIDUAL ITEMS
10	MECHANICAL
20	MECHANICAL
30	MECHANICAL
40	MECHANICAL
50	LEVEL DEVICES
60	PRESSURE DEVICES
70	FLOW DEVICES
80	ANALYTICAL DEVICES
90	SAFETY & SECURITY DEVICES

CALAVERAS COUNTY WATER DISTRICT		
INSTRUMENTATION SYMBOLS & ABBREVIATIONS		
DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-I001
APPROVED: --	DATE: JUNE 2026	



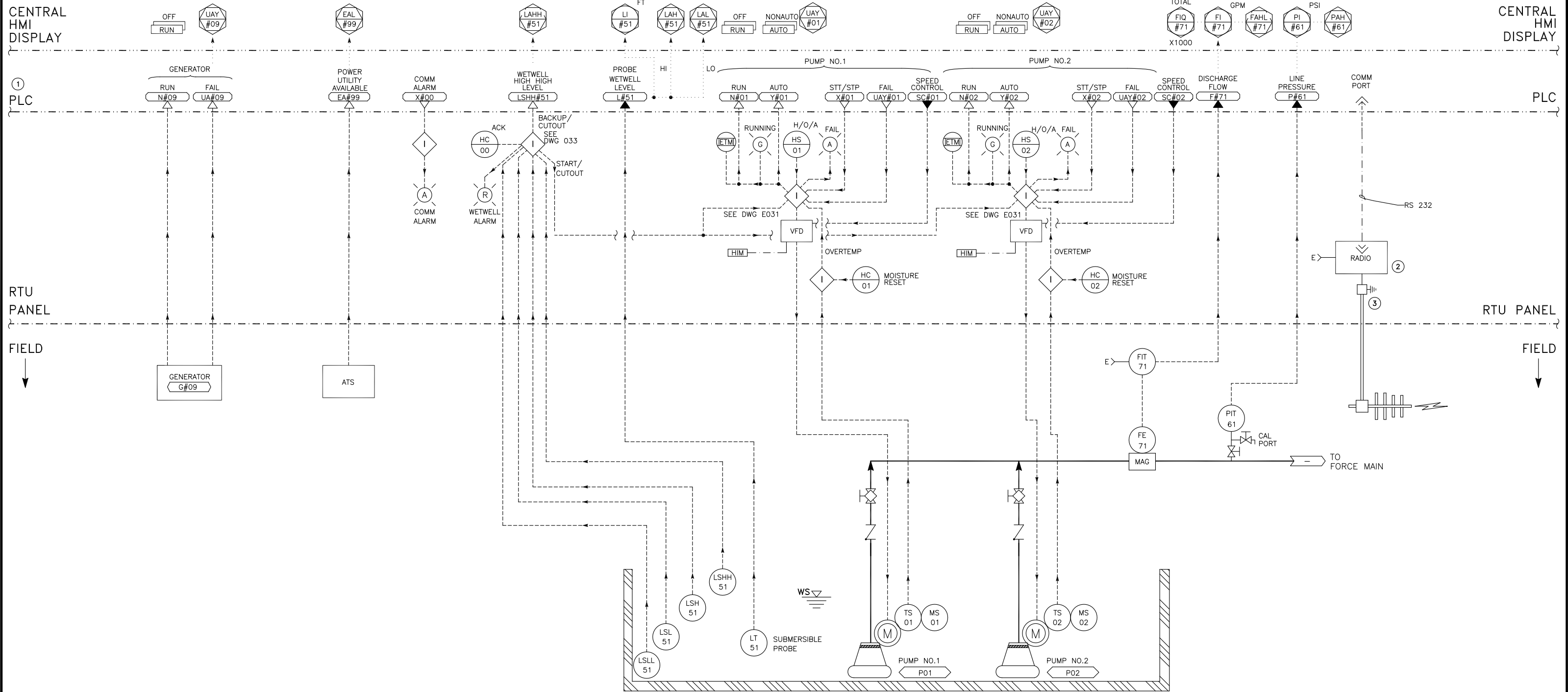
2 PUMPS LIFT STATION RTU

- NOTES:
- ① SEE E014 FOR TYPICAL I/O WIRING.
SEE TABLE FOR EQUIPMENT
NUMBERED I/O AREA PREFIX.
 - ② LICENSED RADIO PROVIDED
& INSTALLED BY CCWD.
 - ③ LIGHTNING ARRESTOR PROVIDED
& INSTALLED BY CCWD.



3 PUMPS LIFT STATION RTU

- NOTES:
- ① SEE E014 FOR TYPICAL I/O WIRING.
SEE TABLE FOR EQUIPMENT
NUMBERED I/O AREA PREFIX.
 - ② LICENSED RADIO PROVIDED
& INSTALLED BY CCWD.
 - ③ LIGHTNING ARRESTOR PROVIDED
& INSTALLED BY CCWD.



2 PUMPS VFD LIFT STATION RTU

- NOTES:
- SEE E014 FOR TYPICAL I/O WIRING.
SEE TABLE FOR EQUIPMENT
NUMBERED I/O AREA PREFIX.
 - LICENSED RADIO PROVIDED
& INSTALLED BY CCWD.
 - LIGHTNING ARRESTOR PROVIDED
& INSTALLED BY CCWD.



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CALAVERAS COUNTY WATER DISTRICT

2 PUMPS LIFT STATION - VFD P&ID

DRAWN BY:
ATEEN

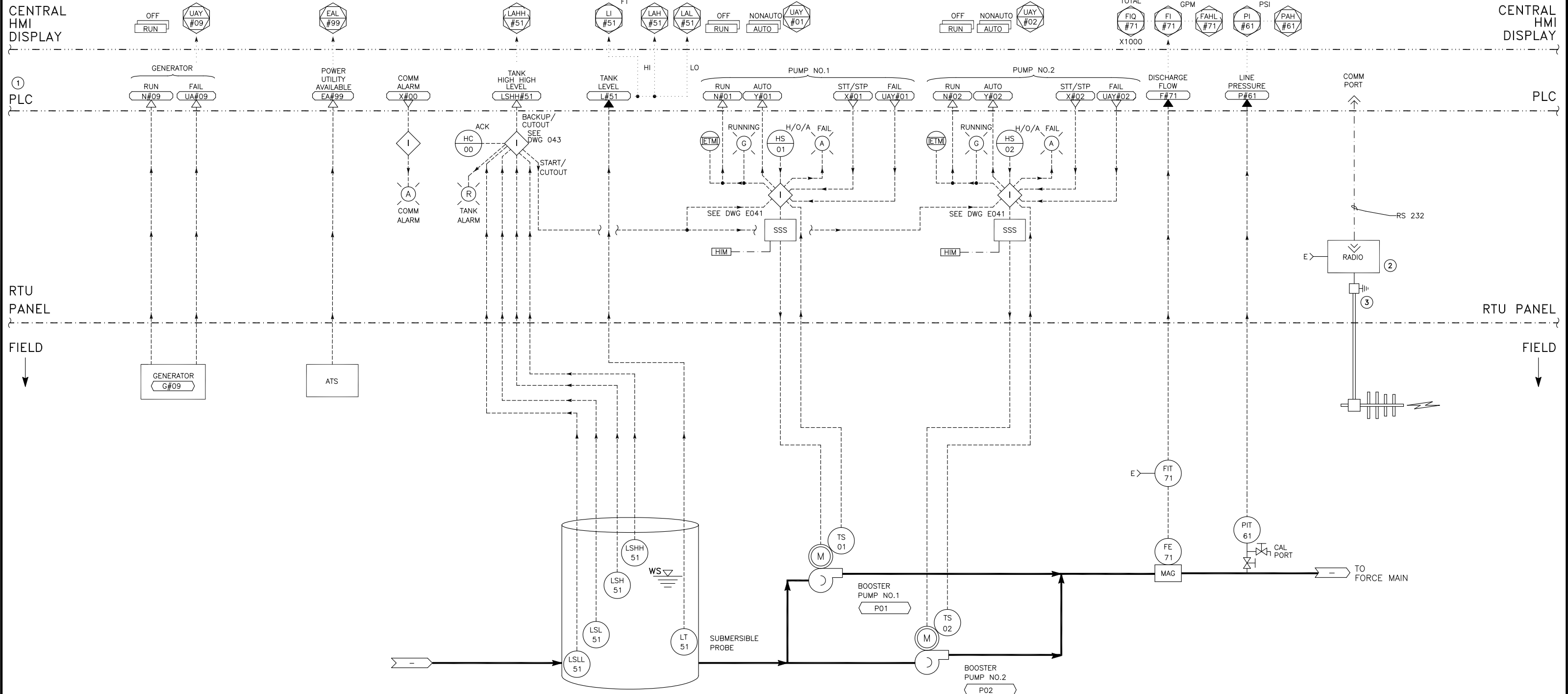
SCALE:
NONE

CCWD STANDARD DRAWING NO.

APPROVED:
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DATE:
JUNE 2026

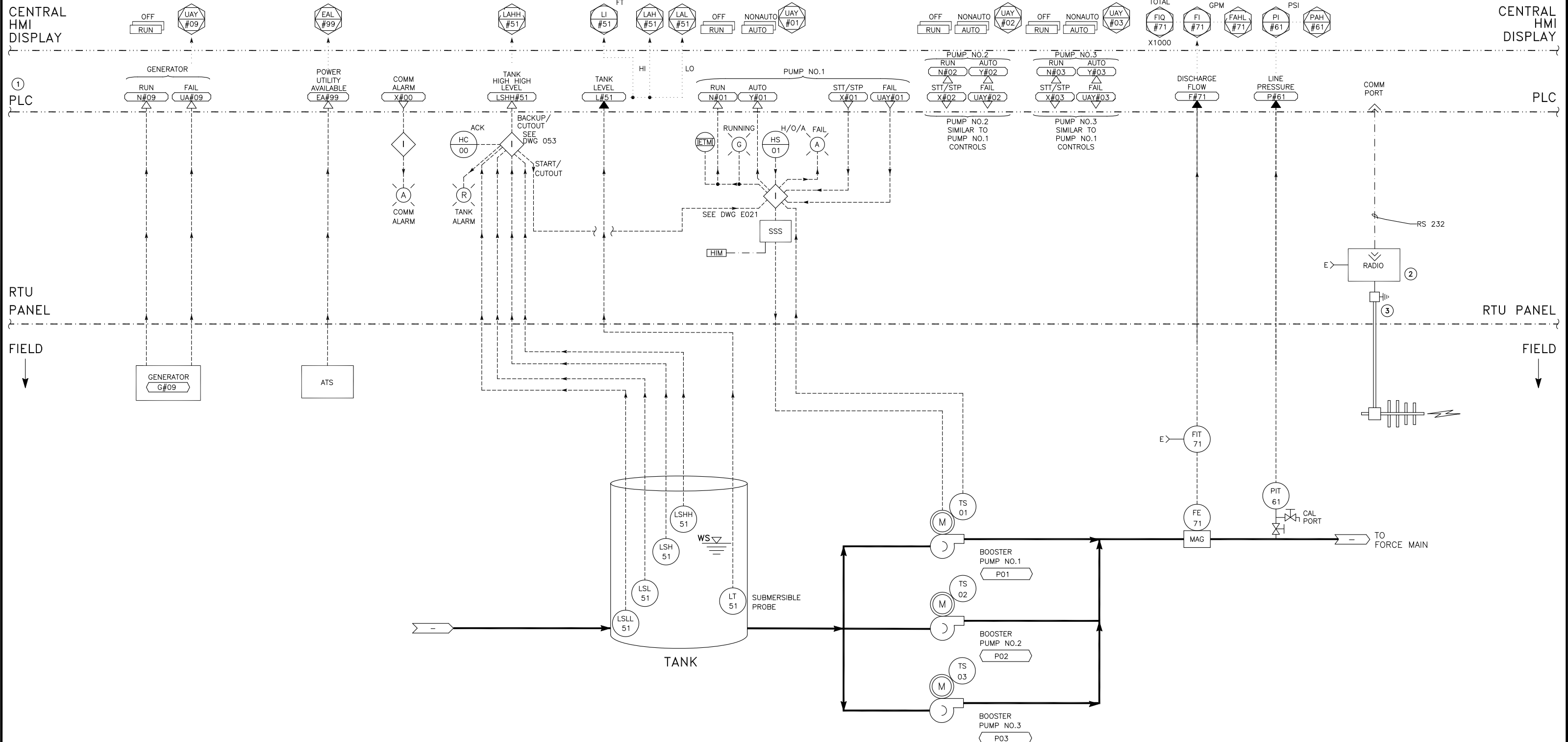
S06-I031



2 PUMPS BOOSTER STATION RTU

- NOTES:
- ① SEE E044 FOR TYPICAL I/O WIRING. SEE TABLE FOR EQUIPMENT NUMBERED I/O AREA PREFIX.
 - ② LICENSED RADIO PROVIDED & INSTALLED BY CCWD.
 - ③ LIGHTNING ARRESTOR PROVIDED & INSTALLED BY CCWD.

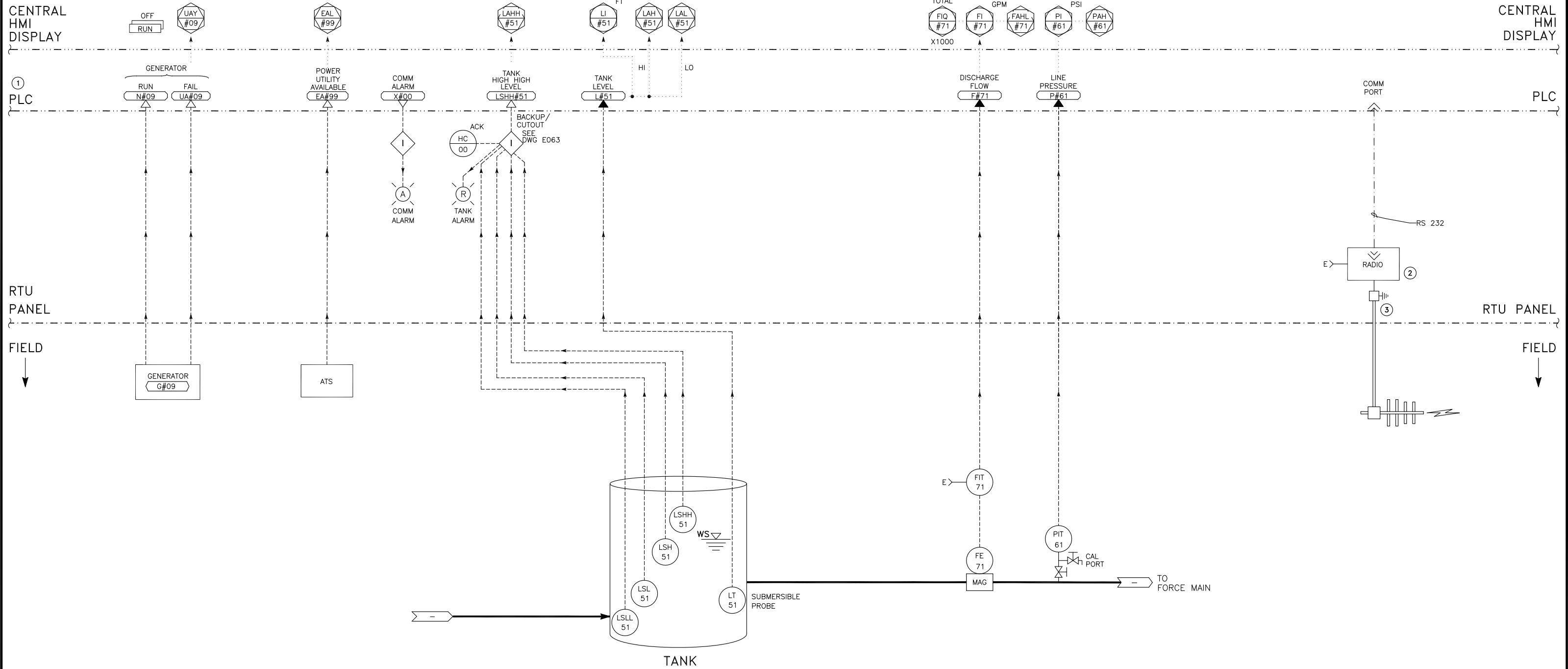
CALAVERAS COUNTY WATER DISTRICT		
2 PUMPS BOOSTER STATION - SSS P&ID		
DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-I041
APPROVED: --	DATE: JUNE 2026	



3 PUMPS BOOSTER STATION RTU

- NOTES:
- ① SEE E054 FOR TYPICAL I/O WIRING. SEE TABLE FOR EQUIPMENT NUMBERED I/O AREA PREFIX.
 - ② LICENSED RADIO PROVIDED & INSTALLED BY CCWD.
 - ③ LIGHTNING ARRESTOR PROVIDED & INSTALLED BY CCWD.

CALAVERAS COUNTY WATER DISTRICT		
3 PUMPS BOOSTER STATION - SSS P&ID		
DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-I051
APPROVED: --	DATE: JUNE 2026	



TANK RTU

- NOTES:
- ① SEE E064 FOR TYPICAL I/O WIRING. SEE TABLE FOR EQUIPMENT NUMBERED I/O AREA PREFIX.
 - ② LICENSED RADIO PROVIDED & INSTALLED BY CCWD.
 - ③ LIGHTNING ARRESTOR PROVIDED & INSTALLED BY CCWD.

CALAVERAS COUNTY WATER DISTRICT		
TANK P&ID		
DRAWN BY: ATEEN	SCALE: NONE	CCWD STANDARD DRAWING NO. S06-I061
APPROVED: --	DATE: JUNE 2026	



Agenda

Item

4f

Agenda Item

DATE: July 14, 2026

TO: Engineering Committee, Calaveras County Water District
Michael Minkler, General Manager

FROM: Chase King, Senior Civil Engineer

RE: CIP 15095 Arnold WWTF Phase 1 Improvements Project Status Update

PROJECT SUMMARY

This Project is in the process of upgrading the existing wastewater treatment process and fully replacing the electrical and control systems to improve the reliability, capacity, and efficiency of the wastewater treatment facility. Improvements include construction of a new secondary clarifier with a new effluent pump, new metering and flow-splitting structures, replacement of the Return Activated Sludge and Waste Activated Sludge (RAS/WAS) pump station, and construction of two (2) additional aerobic digesters with submersible self-aspirating aerators.

The Project also includes the construction of a new electrical and control building with a new motor control center and master control panel, upgrades to PG&E power service, replacement of the existing generator with a new generator, and improvements to yard piping, grading, paving, power and control conduit and wiring, instrumentation, and PLC/SCADA controls.

CONSTRUCTION ACTIVITIES (APRIL TO PRESENT)

April: The Contractor had Dewberry Engineers conduct the biological pre-construction survey 4/16/26. The Contractor began mobilization, clearing and grubbing on 4/16/26.

May: Majority of work involved mobilization and preliminary site work such as removing trees, clearing and grubbing, the delivery and hook-up of the jobsite office, placement of portable toilets and wash station, placement of SWPPP measures. Additional work included construction staking and excavation for the new aerobic digester.

June: The digester subgrade was prepped, the slab was formed and poured, the wall reinforcement was tied, and the walls were formed. Two (2) 8" to 10" cedars were removed at existing digesters to improve access for tie-ins. The flow meter box subgrade was prepped, the slab was formed, and the slab reinforcement placed.

July: The digester walls and meter box pad were poured on 7/1/26. The flow splitter box pad is anticipated to be formed and ready to pour by mid-July. Excavation for the new control building subgrade is in progress.

FINANCIAL CONSIDERATIONS

As of today, the Project is approximately 5% complete. The U.S. Department of Agriculture (USDA) requires the submittal of monthly Outlay Reports to report expenses and request reimbursement of construction activities. April and May Outlay Reports totaling \$552,000 have been reviewed and approved by the USDA.

The District will be submitting a Change Order to the USDA to incorporate an agreement with the Calaveras Band of Mi-Wuk Indians (CBMI) for tribal cultural resource protection and construction monitoring that will require Board approval. The USDA's Letter of Conditions for loan approval identified the requirement to coordinate with CBMI where native soils will be disturbed. The Project specifications include cultural resource protection measures as required, however the USDA has requested the District provide an agreement with CBMI to formalize the implementation of these measures in order to be eligible for reimbursement. Once the terms are agreed upon with CBMI, the agreement will be brought to the Board for review and approval.

ATTACHMENTS:

None



Agenda

Item

4g

Agenda Item

DATE: July 14, 2026

TO: Michael Minkler, General Manager

FROM: Kevin Williams, District Engineer

SUBJECT: Utilization of Remaining USDA AMI Grant Funds for System Monitoring and Asset Management Improvements

RECOMMENDATION

Staff requests concurrence from the Engineering Committee to recommend that the Board of Directors authorize the purchase of equipment and materials utilizing the remaining funds from the USDA Advanced Metering Infrastructure (AMI) Grant.

BACKGROUND

The District completed the USDA-funded AMI Project, which modernized customer metering infrastructure and improved water system monitoring capabilities throughout the distribution system.

The USDA funding package included approximately \$5 million in loan funding and \$1 million in grant funding. Under the funding agreement, loan funds were required to be fully expended before grant funds could be applied to eligible project costs. During project closeout, staff carefully monitored expenditures to ensure the project remained within budget and that costs were properly allocated between the loan and grant components.

As a result of this funding structure, approximately \$250,000 of project costs that staff anticipated would ultimately be funded through the grant were instead allocated to the loan portion of the project. This left approximately \$250,000 in grant funds available for additional eligible project expenditures consistent with the original project objectives.

The District previously utilized a portion of these grant funds to purchase pressure reducing valves (PRVs) equipped with flow monitoring devices.

Following discussions with USDA Rural Development, staff requested authorization to utilize the remaining grant funding for additional equipment that supports the goals of the AMI Project. USDA reviewed the District's request and approved the proposed

purchases, including extending the expenditure period to allow the remaining grant funds to be fully utilized.

DISCUSSION

The approved purchases will improve the District's ability to monitor water system performance, identify water loss, and maintain accurate infrastructure records.

The proposed purchases include:

- Materials necessary to install previously purchased PRVs with integrated flow monitoring equipment, including couplings, spool pieces, Romac couplers, valves, bolts, and associated appurtenances. Purchased from water works suppliers, obtaining competitive bids.
- Five 6-inch Mueller main flow meters and associated concrete vaults, piping, and valves at strategic locations throughout the District's water distribution system. These will be purchased directly from Mueller to be compatible with AMI network.
- Survey-grade GPS equipment to support GIS mapping, asset management, infrastructure inventory, and future capital improvement planning and design efforts. Purchased from factory authorized vendor for our region that can provide ongoing support for the District.

The Engineering Department evaluated three of the leading survey-grade GPS equipment manufacturers and determined that Topcon provides the best overall value to the District. While pricing among the leading vendors was similar, Topcon offers local network access (TopNet Live – complete coverage of Calaveras County), technical support, training resources, ongoing service and was highly recommended by survey professionals.

The five Mueller flow meters will allow staff to monitor flows between pressure zones and service areas throughout the District. By comparing water system flow data with customer consumption data collected through the AMI system, staff will be better able to identify water losses, evaluate system performance, and prioritize maintenance and capital improvements.

The Purchasing Agent is coordinating with Operations and Engineering staff to obtain competitive quotations for the vaults, piping, valves, and associated materials necessary for installation of the new flow monitoring facilities.

The total estimated cost of the proposed equipment and materials is approximately \$219,075, which is within the available USDA grant funding balance is approximately \$297,000 and allows buffer for additional materials that maybe required for installations.

STRATEGIC PLAN ALIGNMENT

This project supports the District's Strategic Plan by:

- Improving operational efficiency and system reliability.
- Enhancing water accountability and reducing water loss.
- Improving asset management and infrastructure planning.
- Maximizing available grant funding for the benefit of District customers.
- Supporting data-driven decision making for operations and capital improvements.

FISCAL IMPACT

The estimated cost of approximately \$219,075 will be funded entirely through previously awarded USDA AMI Grant funds. No additional District funding is required. If purchases, more than \$100,000 will be brought back to the board for approval.



**Agenda
Item
4h**

Agenda Item

DATE: July 14, 2026
TO: Michael Minkler, General Manager
FROM: Kevin Williams, District Engineer
SUBJECT: Developer Project Updates

DEVELOPER PROJECTS

Copper Town Square

Copper Town Square Forcemain and Lift Station – CV Development has secured approximately \$12 million in BOLD financing to complete this project. CCWD has received the force main construction drawings for review and comment, and the developer has indicated that lift station plans will be submitted within the next few weeks. The project will convey wastewater from Copper Town Square to the Saddle Creek Main Lift Station in Copper Valley through a new 6-inch force main along Little John Road. CCWD completed the required CEQA documentation last year, and construction is anticipated to begin within the next several months.

Reed Turnpike Pump Station – CV Development has retained Moyle Excavation to construct a new water pump station on Reed Turnpike. CCWD recently acquired an easement from the adjacent property owner to accommodate expansion of the facility. The new pump station will provide additional water supply capacity to the Copper Tank Zone, which is necessary to support planned development within Copper Town Square. The developer intends to have the pump station operational prior to occupancy of the new developments, as the existing facility does not have sufficient capacity to meet projected demands. CCWD completed CEQA documentation last year, and the project has been cleared for construction. Most critical submittals have been reviewed and approved, and construction is expected to begin soon.

Building 15 and Townhomes – CCWD has reviewed the proposed water and sewer improvements associated with the Building 15 and Townhome developments within Copper Town Square and provided comments to the developer. The developer and design team are currently addressing the District's comments before final approval.

NVP / LGI Homes (Jenny Lind / La Contenta Service Area)

Lift Stations A and B and New Sewer Force Main – Final construction drawings have been approved for two new lift stations and an associated sewer force main serving the North Vista Plaza development. The contractor has begun submitting material submittals and cut sheets for District review. Construction of both lift stations and the force main crossing Highway 26 is expected to be completed within the next 12 months, according to the developer's schedule.

Sewer and Water Utilities – Site clearing and preparation activities are currently underway. CCWD has approved the underground water and sewer infrastructure plans, and installation of the utilities is expected to begin once rough grading operations are completed. Significant onsite grading is required before underground construction can proceed.

Jenny Lind Elementary School Lift Station and Force Main Construction – Construction activities have started; however, several design revisions have been required due to unforeseen field conditions and utility conflicts. CCWD has been working closely with KASL and the contractor to resolve these issues as quickly as possible and minimize impacts to the project schedule.

CONCEPT REVIEW/PRE-APPLICATION PROCESS

CCWD continues to participate in the County's pre-application review process to identify water and wastewater service requirements early in the development review process. This effort has resulted in several concept review applications being submitted to the District for evaluation. At this time, no major changes have occurred with previously reviewed projects. The most notable activity is the proposed expansion of the West Point Fire Department onto an adjacent parcel, which will require relocation of existing sewer infrastructure to accommodate the development.

SUMMARY

Over the past five years, CCWD has experienced very little development activity within its service area. As a result, managing multiple development projects will represent a significant transition for the Engineering Department. The department will be responsible for administering these projects and performing construction inspections, both of which require substantial staff time and resources.

To improve efficiency and streamline project management, CCWD has implemented new project management software, including CIP0. This platform allows field staff to access project documents, perform redline markups, and complete inspection reports directly from an iPad or computer. Developers and contractors also have access to the system, enabling them to submit submittals, plan sheets, as-built drawings, RFIs, and

project correspondence through a centralized platform. In addition, contractors working on development projects will use the software to schedule and request inspections, providing a more organized and transparent process for project administration and documentation.