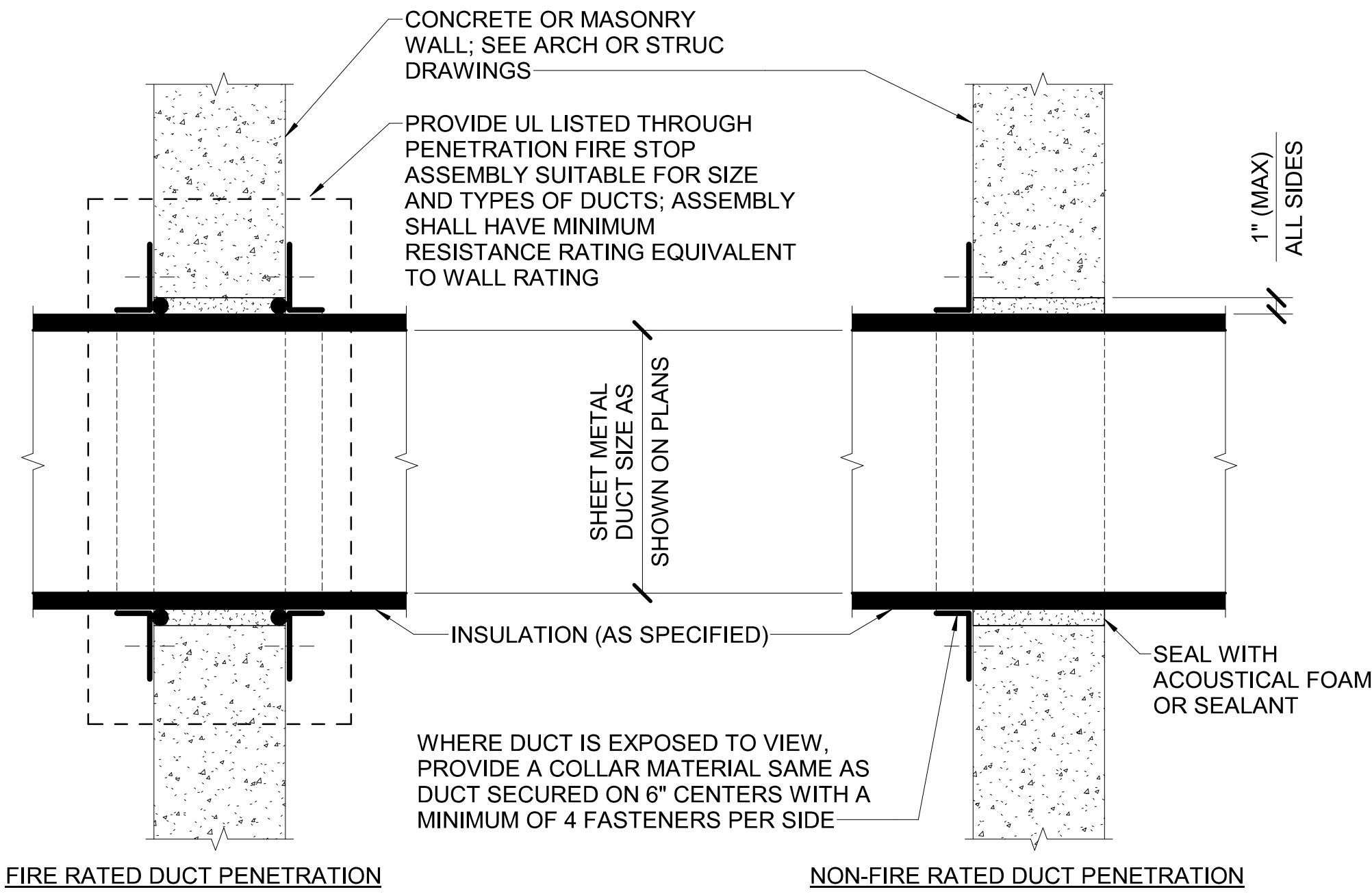


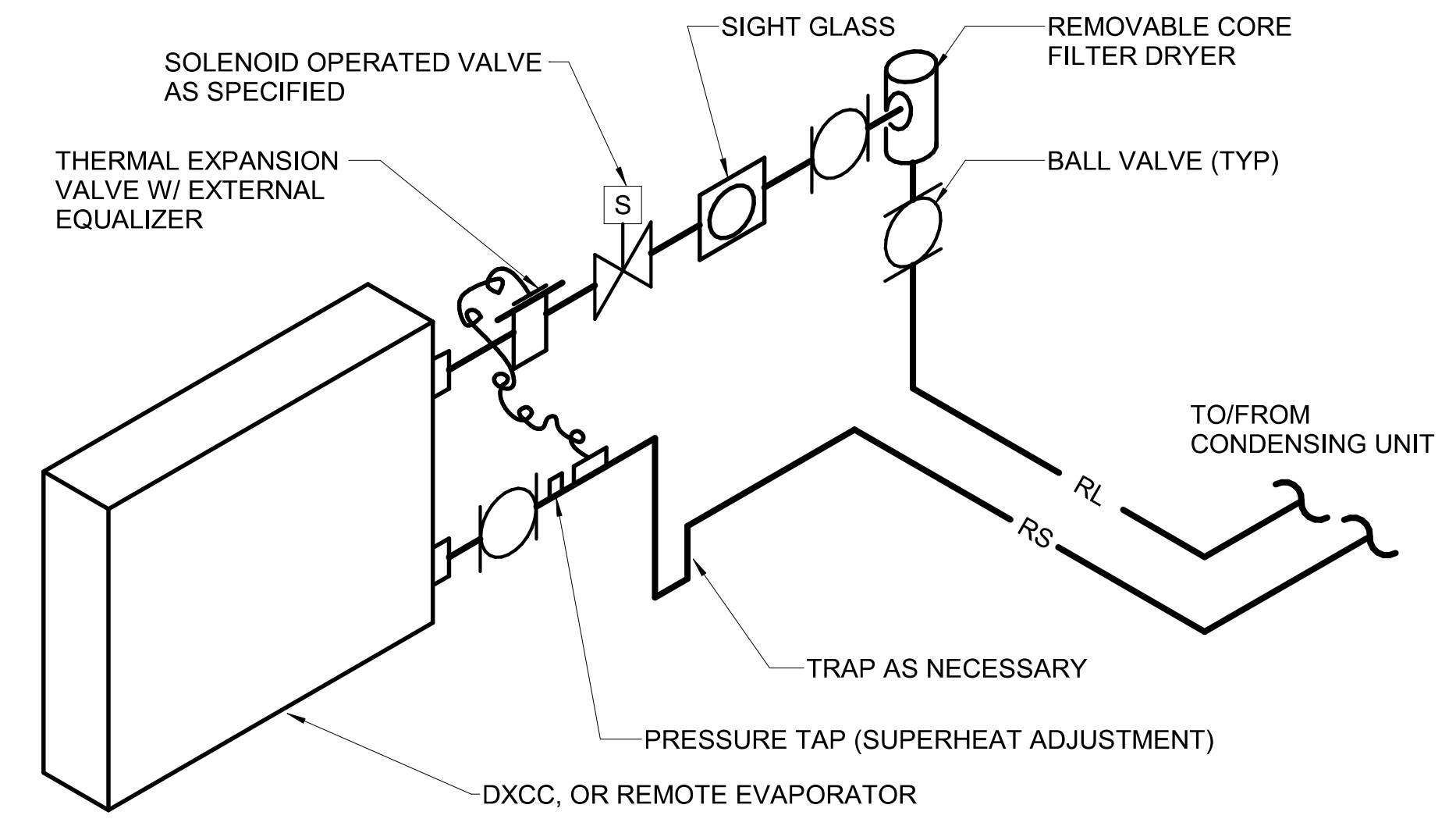
- NOTES:**
1. PROVIDE FIRE DAMPER FOR SQUARE DUCT OR USE TRANSITIONS FOR ROUND TO SQUARE DUCT.
 2. PROVIDE A UL LISTED FIRE DAMPER ASSEMBLY SUITABLE FOR SIZE AND TYPES OF DUCTS.
 3. ASSEMBLY SHALL HAVE MINIMUM RESISTANCE RATING EQUIVALENT TO FLOOR RATING.
 4. ASSEMBLY SHALL BE SUITABLE FOR HORIZONTAL INSTALLATION.

FIRE DAMPER WITH FUSIBLE LINK
NO SCALE



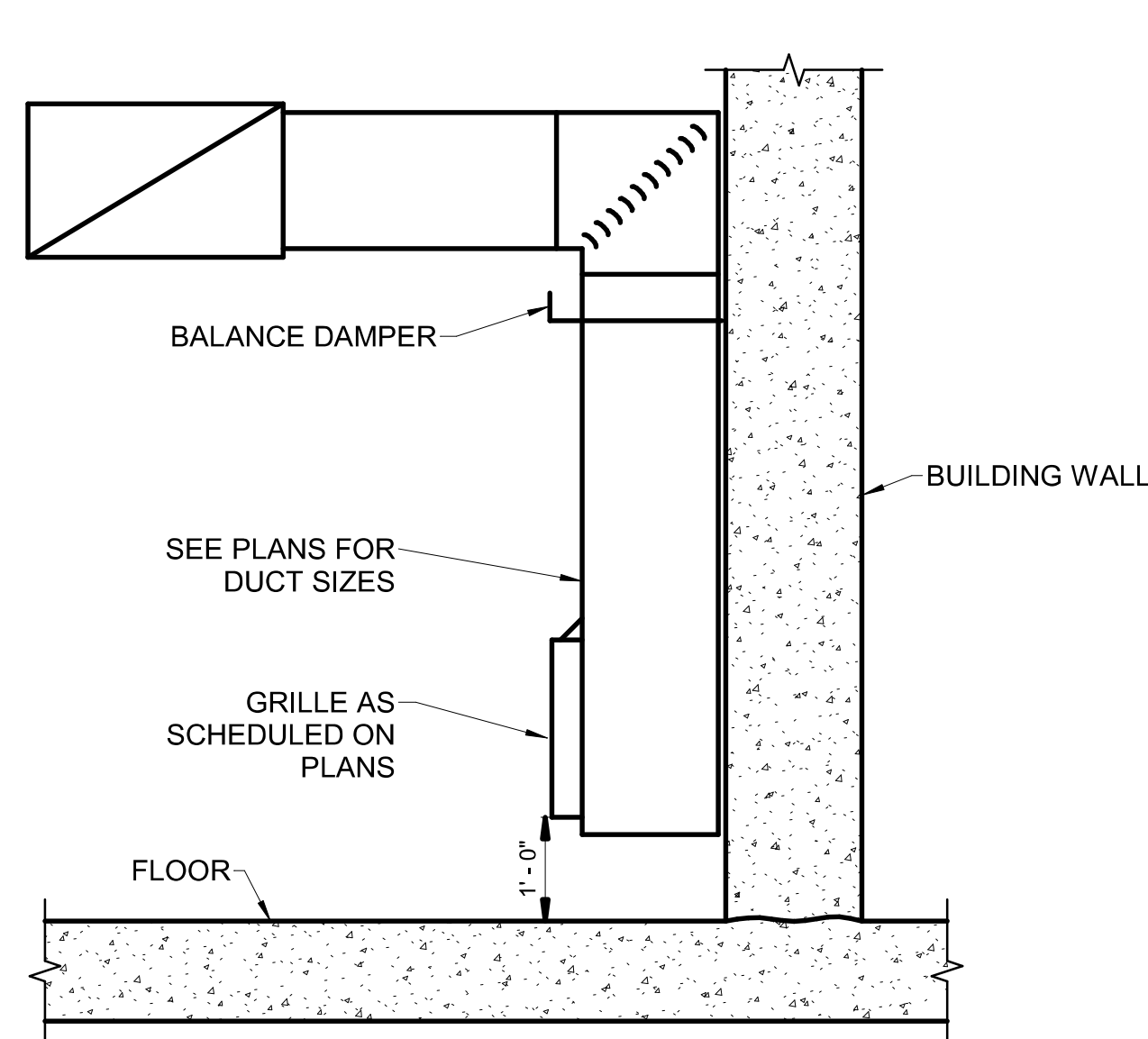
FIRE RATED DUCT PENETRATION **NON-FIRE RATED DUCT PENETRATION**

CONCRETE OR MASONRY WALL DUCT PENETRATION DETAILS
NO SCALE

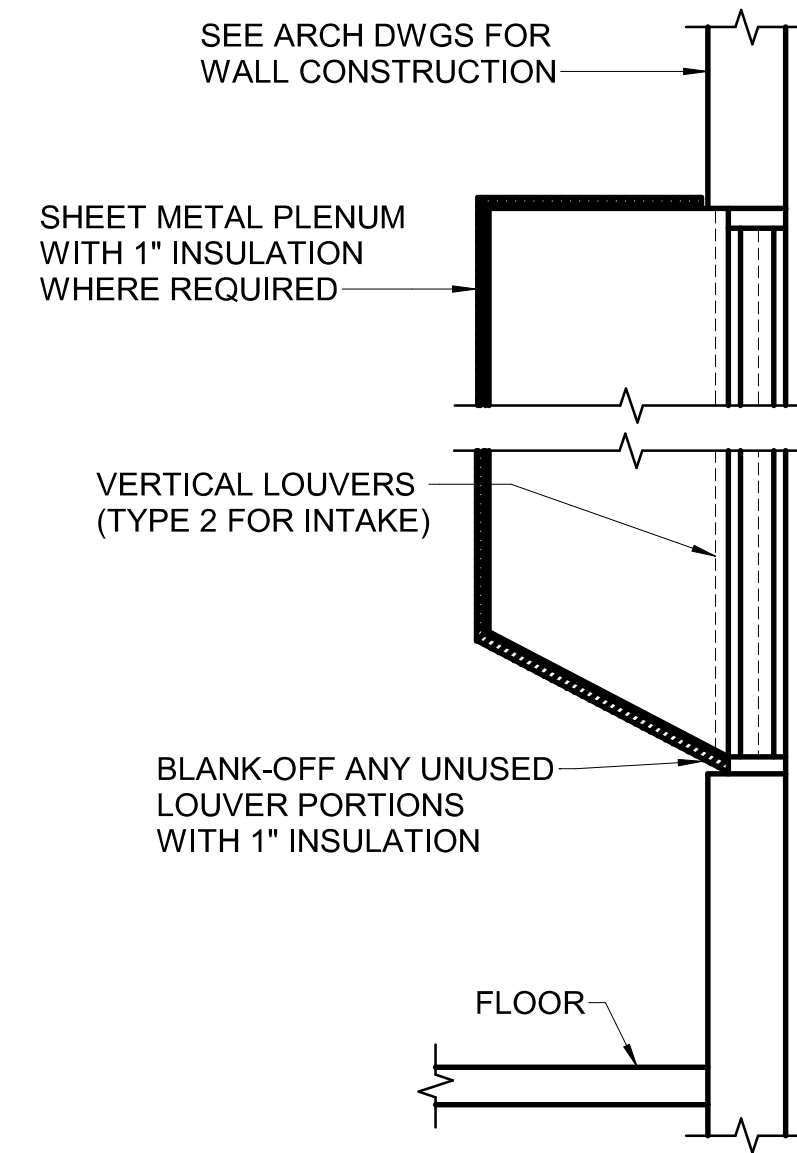


- NOTE:**
1. REFRIGERANT SUCTION (RS) AND REFRIGERANT LIQUID (RL) SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS.

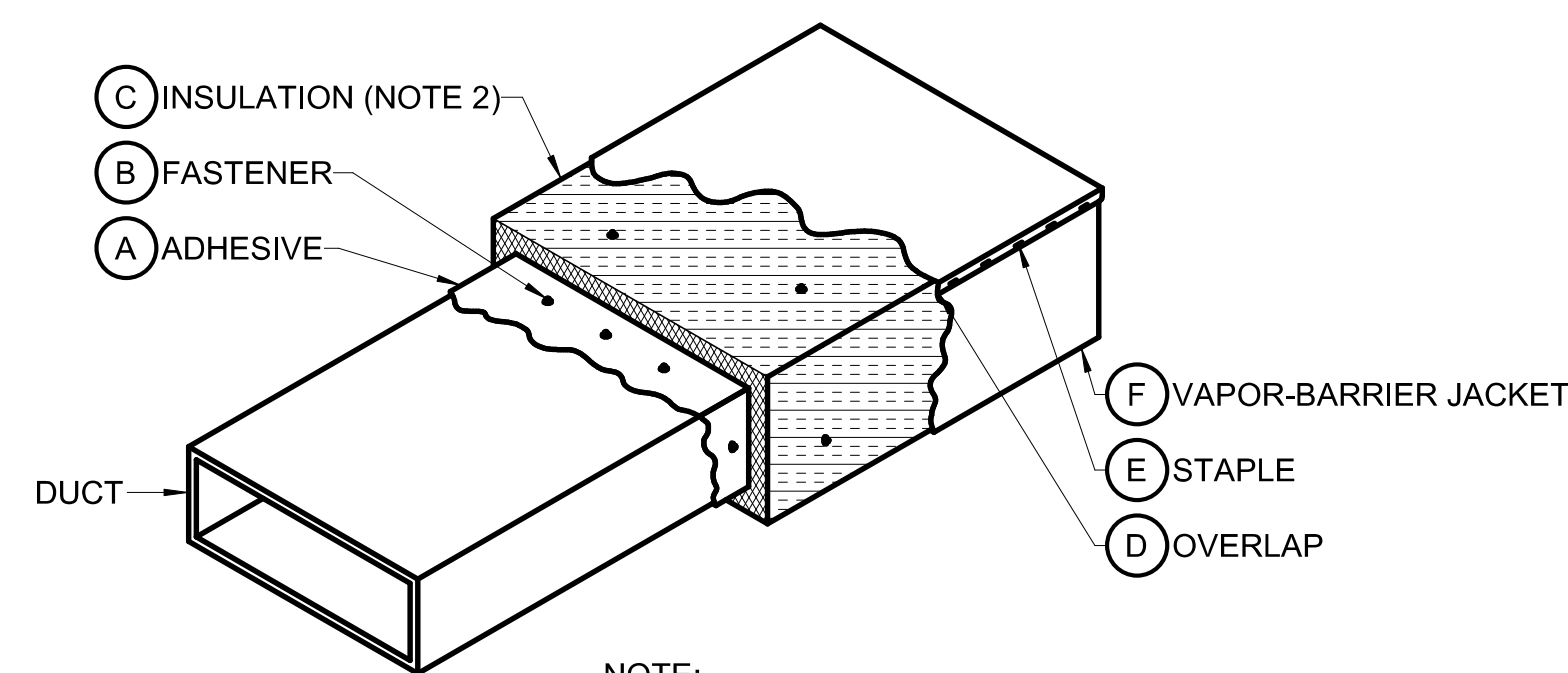
REFRIGERANT COIL PIPING DETAIL
NO SCALE



LOW LEVEL EXHAUST/RETURN DETAIL
NO SCALE

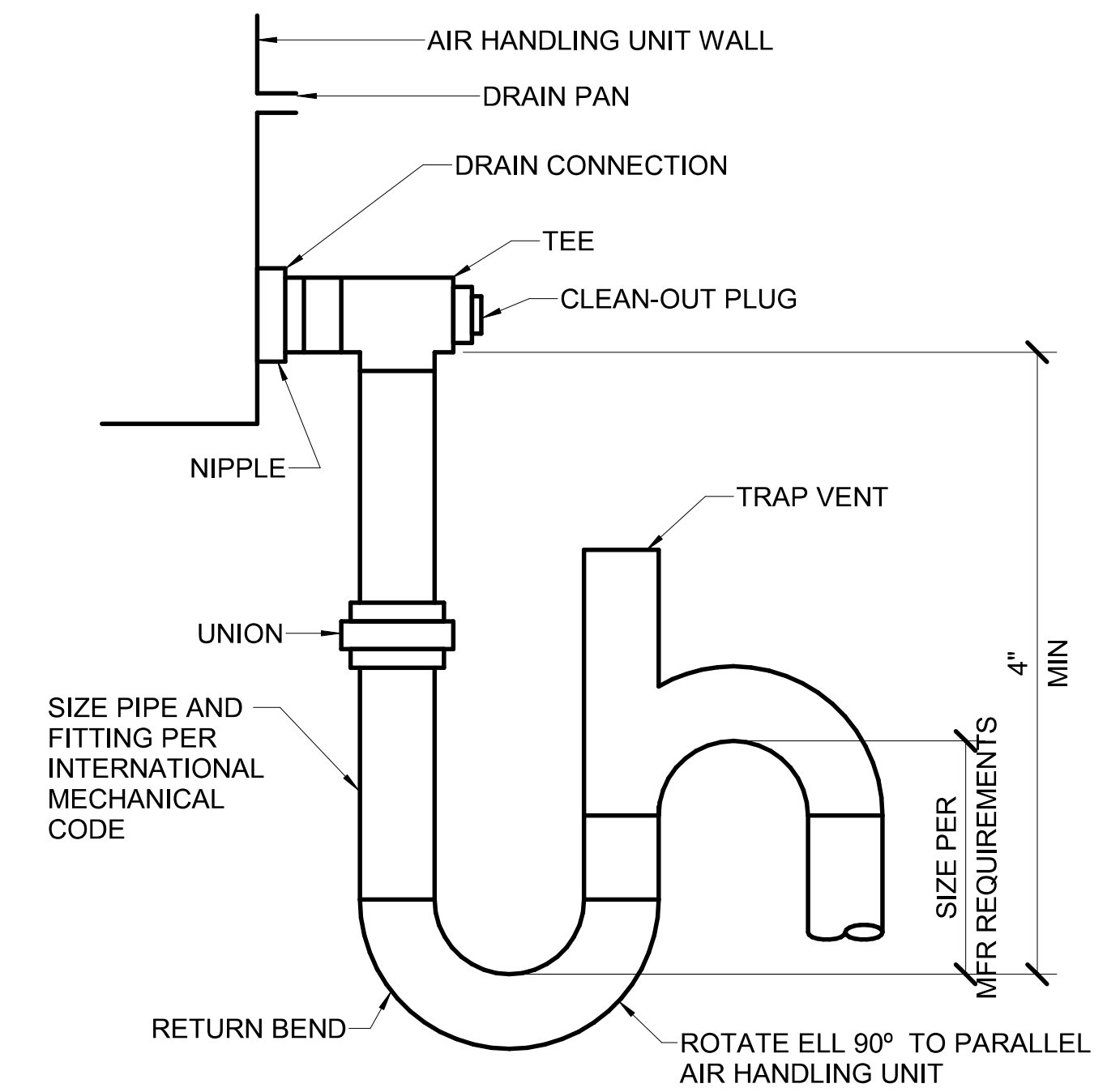


LOUVER & PLENUM DETAIL
NO SCALE



- NOTE:**
1. SEE SPECIFICATION FOR INSULATION THICKNESS.
 2. SEE SPECIFICATION FOR INSULATION MATERIAL.
 3. SEE SPECIFICATION FOR INSTALLATION REQUIREMENTS.

DUCT INSULATION
NO SCALE



TYPICAL COOLING COIL CONDENSATE DRAIN
NO SCALE



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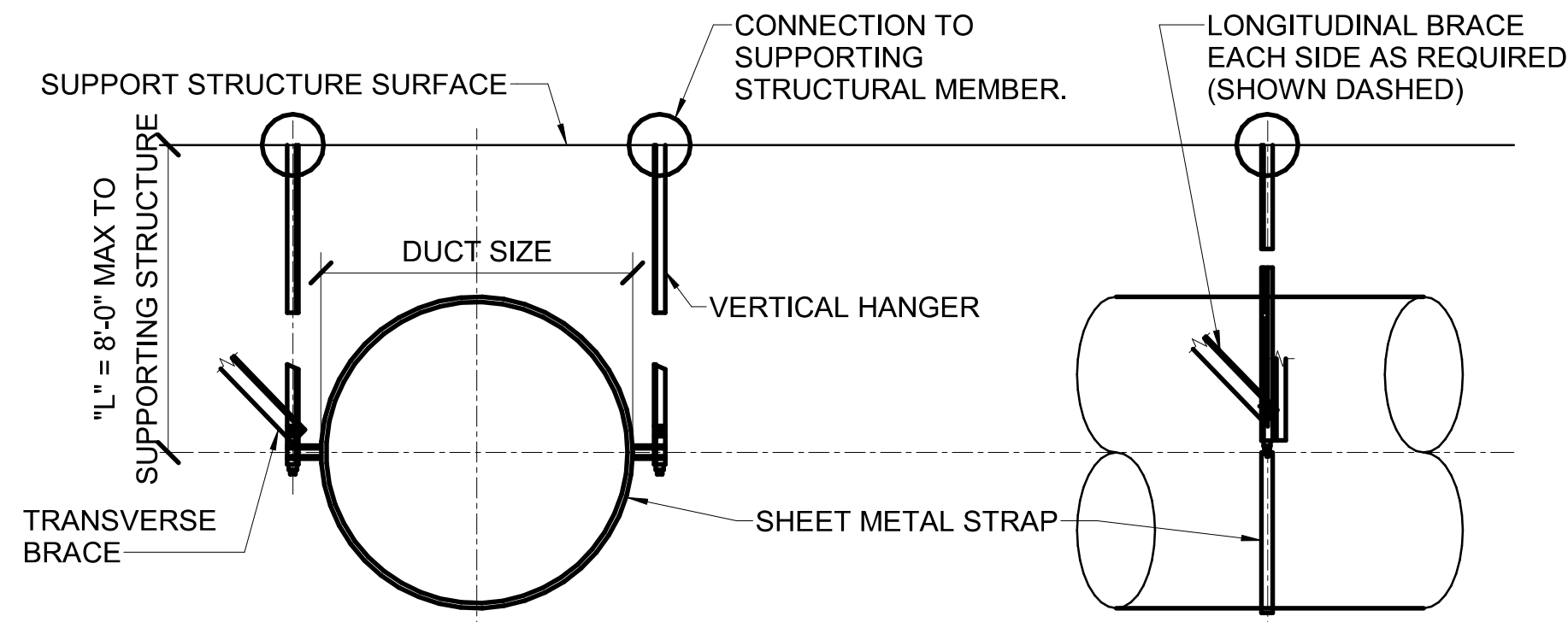
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
MECHANICAL DETAILS

SEC. 31, TOWNSHIP 62S, RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.5026.01
DATE 06/02/2023

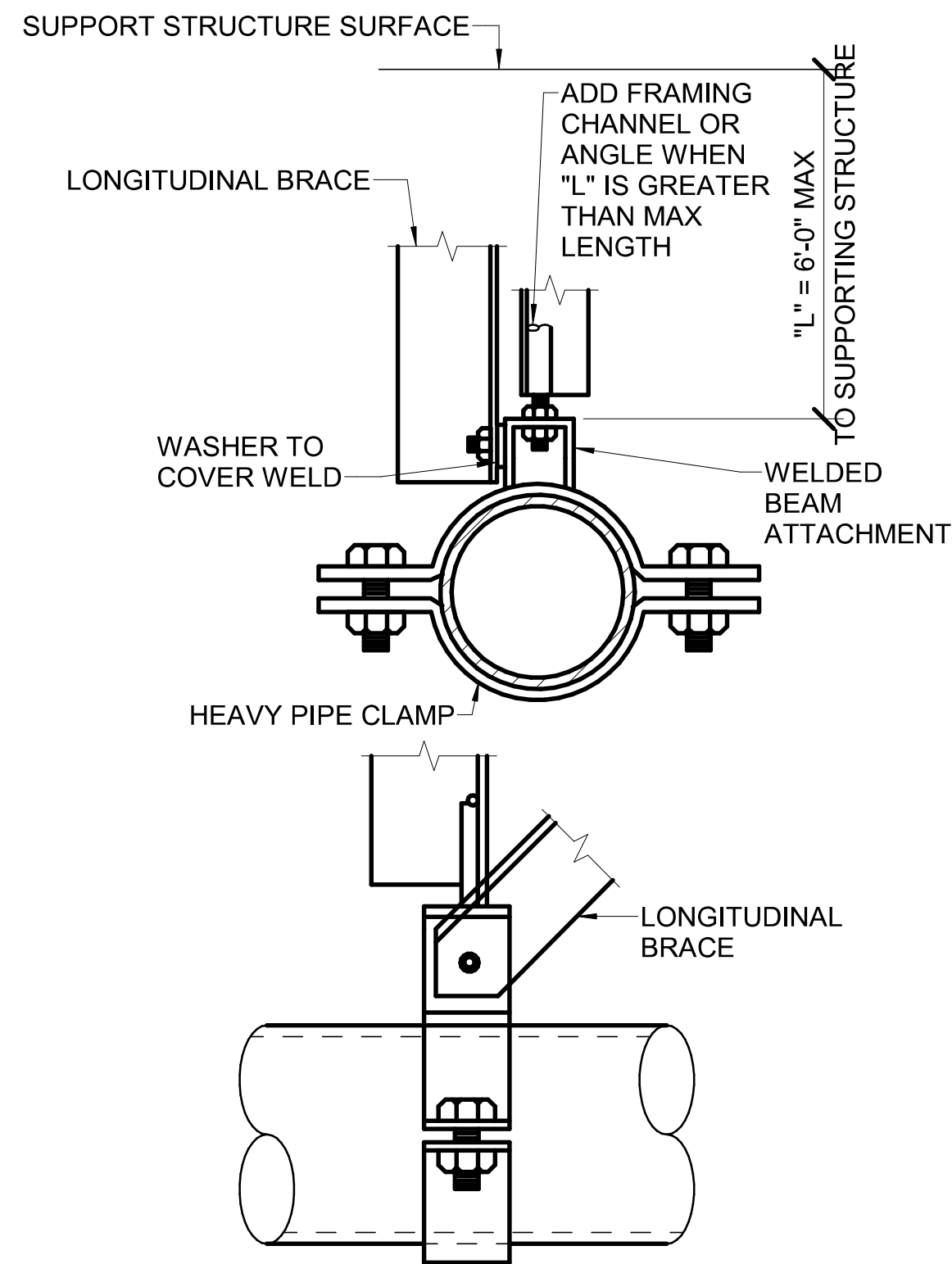
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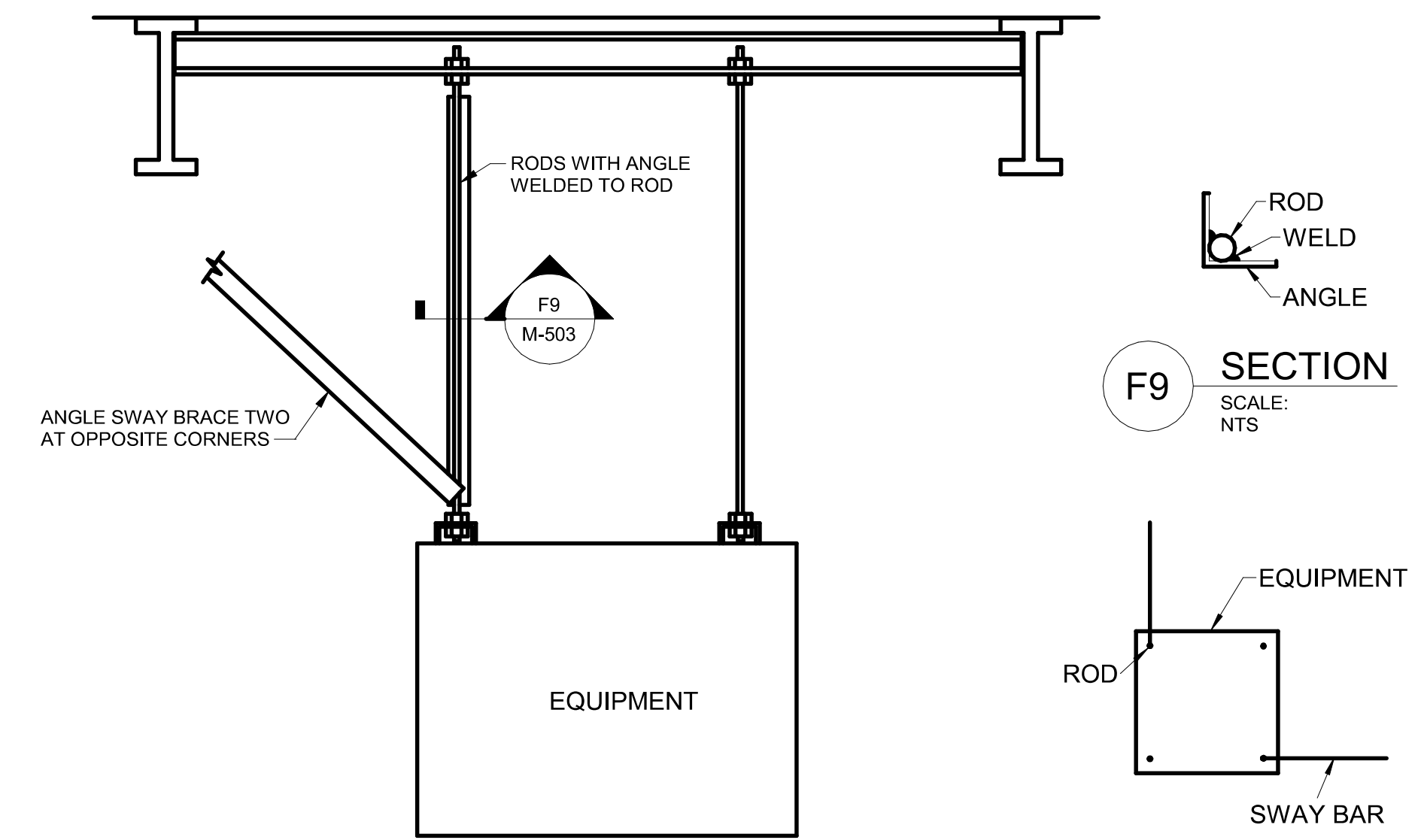
NOTE:
1. REFERENCE SMACNA SEISMIC RESTRAINT MANUAL FIGURE 4-11.

DOUBLE HANGER STRUT BRACING FOR ROUND DUCTS UP TO 84 INCHES
NO SCALE



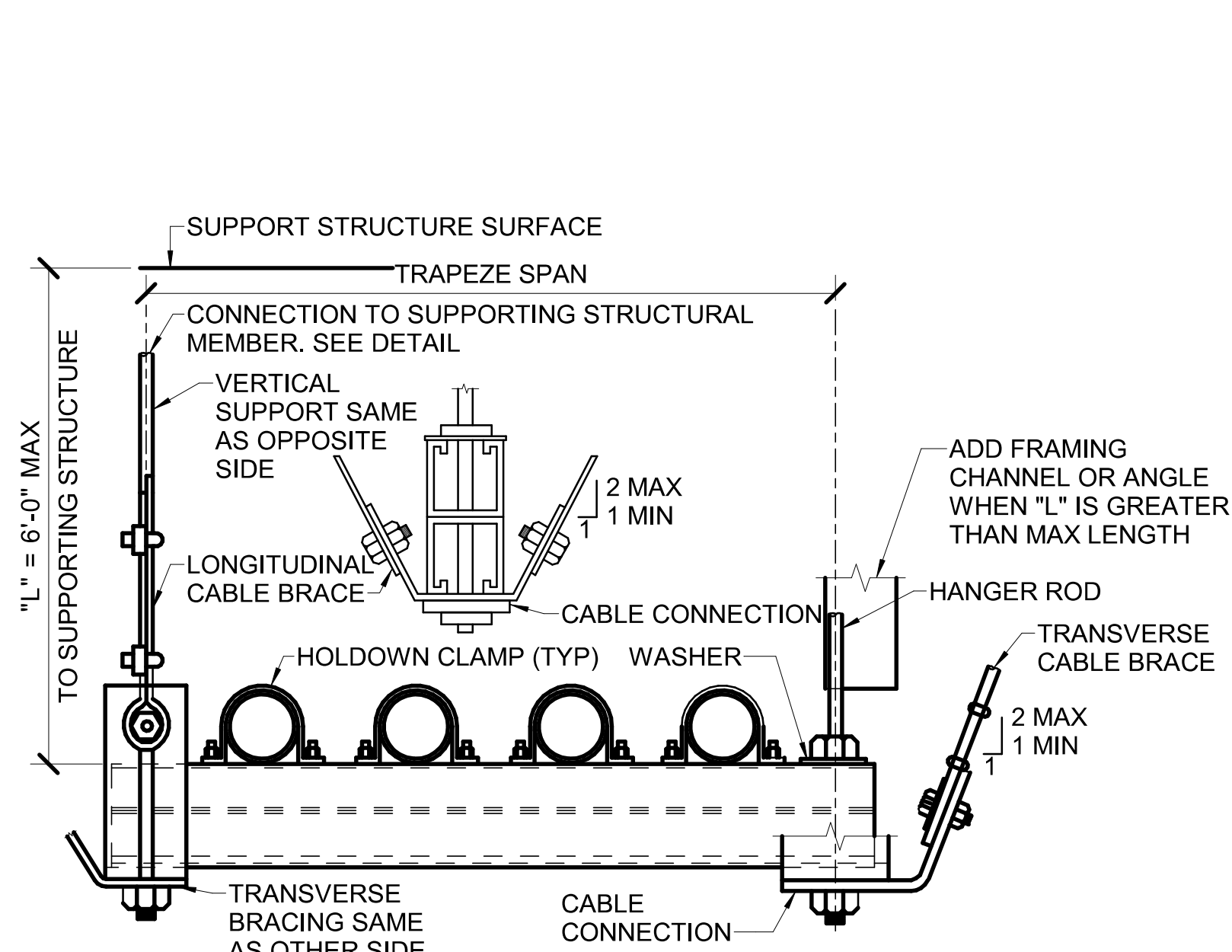
NOTE:
1. REFERENCE SMACNA SEISMIC SUPPORT MANUAL FIGURE 4-16.

LONGITUDINAL BRACING FOR PIPES
NO SCALE



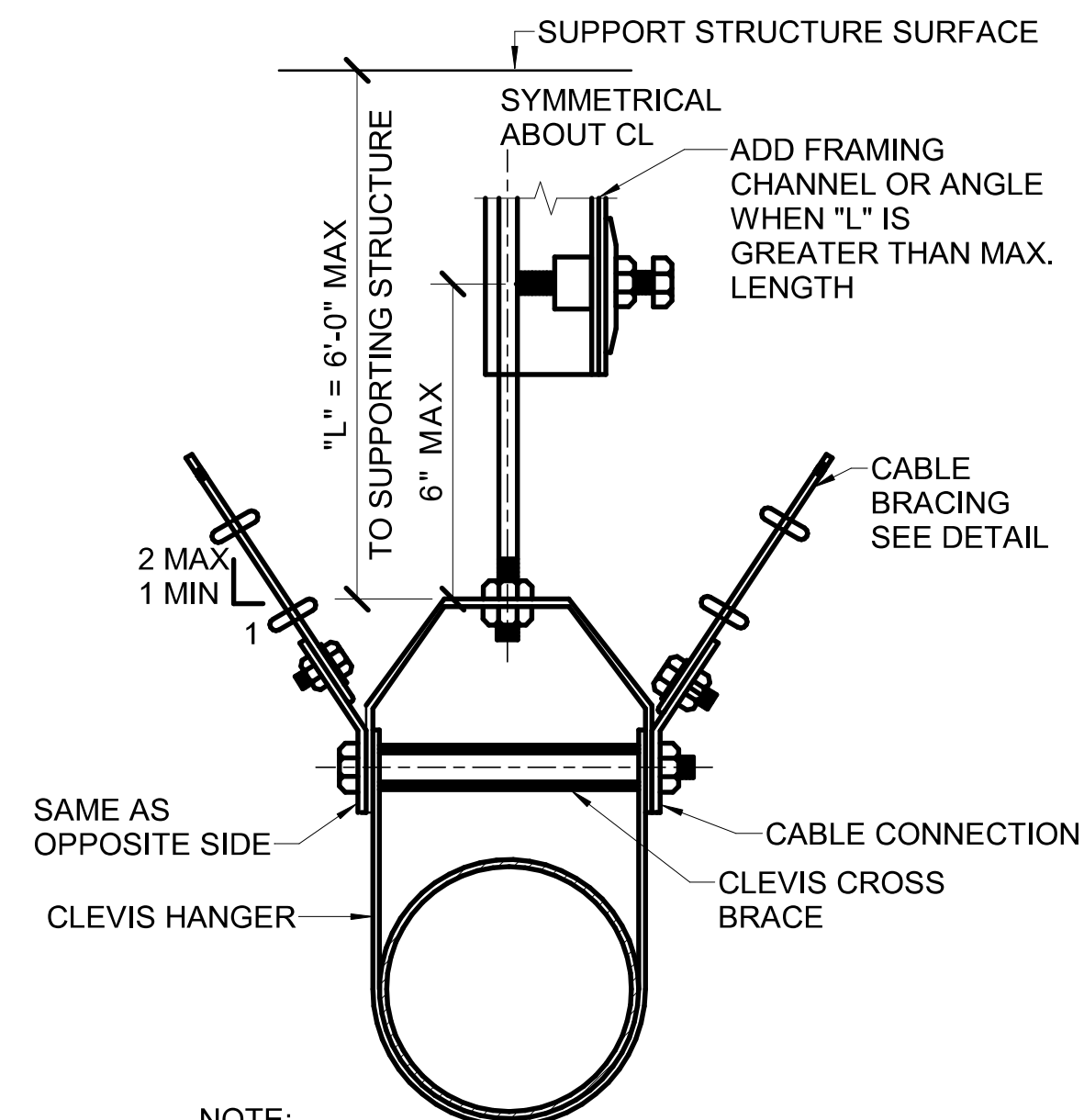
NOTES:
1. FOR EQUIPMENT EXCEEDING 31 POUNDS OR MORE (EXCLUDING DISTRIBUTION SYSTEMS THAT COLLECTIVELY EXCEED THAT WEIGHT):
A. VERTICAL SUPPORTS SHALL RESIST FORCES OF 1.5 TIMES THE EQUIPMENT WEIGHT IN THE VERTICAL DIRECTIONS.
B. SWAY BRACES SHALL RESIST FORCES OF 0.5 TIMES THE EQUIPMENT WEIGHT IN THE HORIZONTAL DIRECTION.
2. ANGLE ON RODS AND SWAY BRACE IS TYPICAL ON AN ACCEPTABLE ARRANGEMENT. CABLE BASED SUPPORT SYSTEMS MEETING UFC REQUIREMENTS ARE ALSO ACCEPTABLE.
3. PROVIDE VIBRATION ISOLATION FOR AIR HANDLING EQUIPMENT.

EQUIPMENT HANGING DETAIL
NO SCALE



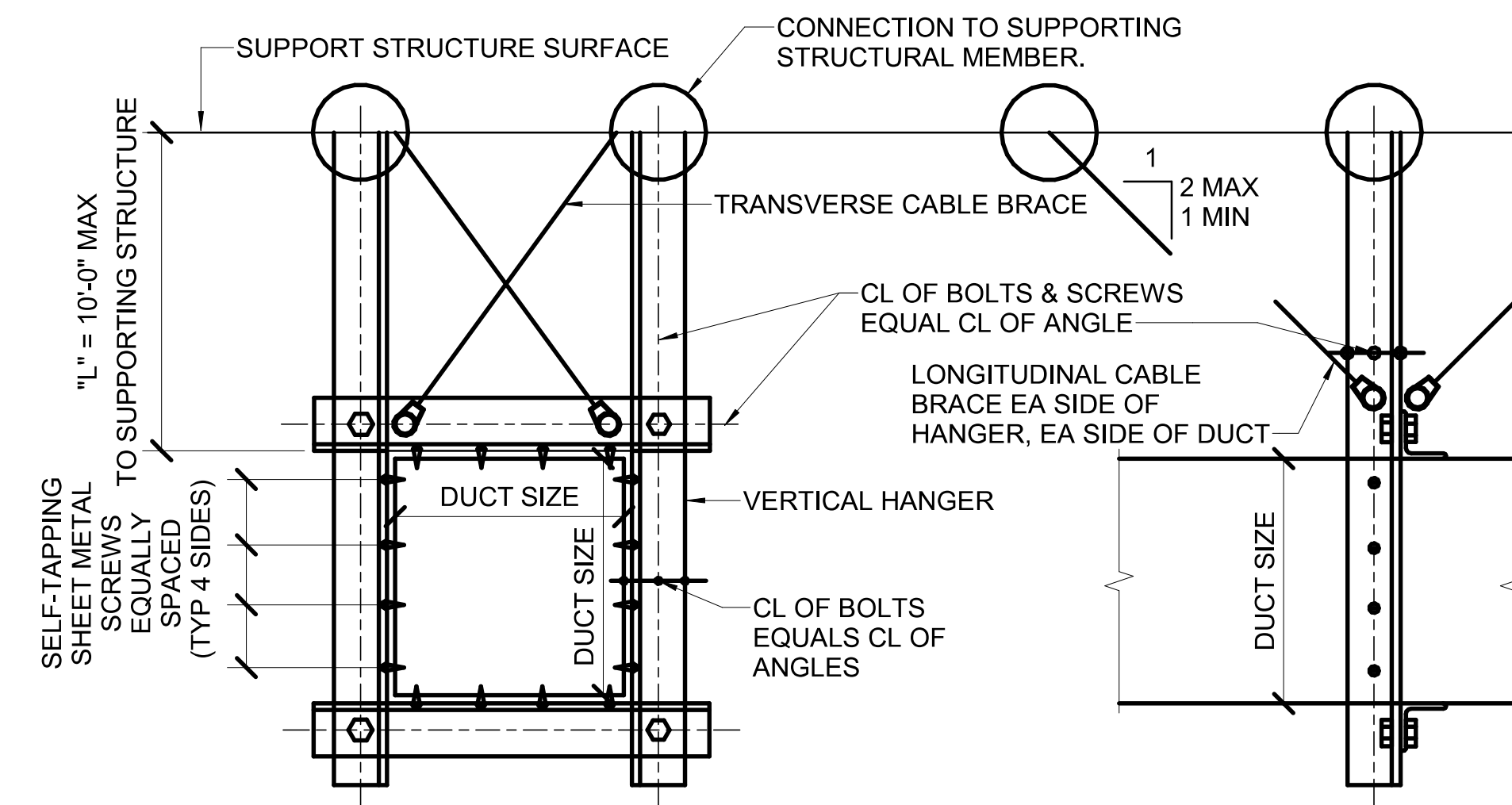
NOTE:
1. REFERENCE SMACNA SEISMIC SUPPORT MANUAL FIGURE 4-21.

CABLE BRACING FOR PIPE TRAPEZE
NO SCALE



NOTE:
1. REFERENCE SMACNA SEISMIC SUPPORT MANUAL FIGURE 4-18.

CABLE BRACING FOR PIPES
NO SCALE



NOTES:
1. REFERENCE SMACNA SEISMIC RESTRAINT MANUAL FIGURE 4-7.

CABLE CENTER BRACING FOR RECTANGULAR DUCTS
NO SCALE

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
MECHANICAL DETAILS
SEC. 31, TOWNSHIP 62S, RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.5026.01
DATE 06/02/2023

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AIR COOLED CONDENSING UNIT (ACCU) SCHEDULE

PLAN DESIGNATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	TYPE	SERVICE	COOLING				HEATING				REFRIGERANT	MAXIMUM REFRIGERANT CHARGE (LB)	EER (AHR)	IEER (AHR)	COP At 17F NON-DUCTED	ELECTRICAL					NOTES
					TOTAL CAPACITY (BTU/HR)	AMBIENT TEMP (°F)	HEATING CAPACITY (BTU/HR)	AMBIENT TEMP (°F)	MCA	MOCP	VOLTAGE	HZ						PHASE					
ACCU-1	DAIKIN	REYQ72XAYDB	HEAT PUMP	VENTILATION AIR	71610.0	95.0	73451.0	32.0	R-410A	25.80	15.8	25.2	2.5	18.9	25	460	60	3	(1)				

NOTES:
 1. PROVIDE BRANCH SELECTOR BOX, BS-1, 208-230V, 1PH, 0.4 MCA, 15 MOCP.
 2. PROVIDE STANCHIONED MECHANICAL SUPPORT ANCHORED TO SLAB ON GRADE. MINIMUM SUPPORT HEIGHT OF 1'-0". BASIS OF DESIGN: MIRO INDUSTRIES, MODEL HD (BG) OR APPROVED EQUIVALENT.

DEDICATED OUTSIDE AIR SUPPLY UNIT (DOAS) SCHEDULE

PLAN DESIGNATION	TYPE	MANUFACTURER	BASIS OF DESIGN MODEL	SERVICE	SUPPLY								EXHAUST								ELECTRICAL			NOTES								
					SUMMER				WINTER				SUMMER				WINTER				MINIMUM SENSIBLE EFFICIENCY (%)	MINIMUM TOTAL EFFICIENCY (%)	VOLTAGE		HZ	PHASE						
					AIRFLOW (CFM)	ESP (IN. W.G.)	FAN MOTOR POWER (KW)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	AIRFLOW (CFM)	ESP (IN. W.G.)	FAN MOTOR POWER (KW)	EAT DB (°F)	EAT WB (°F)							LAT DB (°F)	LAT WB (°F)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)
DOAS-1	TOTAL ENERGY PLATE	OXYGEN 8	H25IN-ERV-BP	VENTILATION AIR	2,000	0.6	2.7	70.5	58.5	73.7	61.4	20.8	20.4	55.5	44.3	2,000	0.6	3	75.0	63.0	71.8	60.1	70.0	52.9	35.6	69.8	70.6	63.6	208	60	3	(1)(2)(3)

NOTES:
 1. ELECTRICAL - THREE TOTAL CONNECTIONS REQUIRED
 A. UNIT: 208V/3PH/60HZ, MCA 19.7
 B. PREHEAT ELECTRIC HEATER: 208V/3PH/60HZ, MCA 38, KW 11
 C. CONTROLLER: 230V/3PH/60HZ, 0.3 MCA
 2. EXTERNAL STATIC PRESSURE INCLUDES FILTERS AND DXHP COIL APD ASSOCIATED WITH DOAS-1.
 3. PROVIDE 2" PLEATED MERV 8 FITLERS.

DIRECT EXPANSION HEAT PUMP COIL (DXHP) SCHEDULE

PLAN DESIGNATION	SERVICE	MANUFACTURER	DESIGN AIRFLOW (CMH)	MINIMUM COIL AREA (FT2)	MAXIMUM FACE VELOCITY (FPM)	MAXIMUM AIR PRESSURE DROP (IN. W.G.)	MINIMUM ROWS	COOLING COIL EAT DB (°F)	COOLING COIL EAT WB (°F)	COOLING COIL LAT DB (°F)	COOLING COIL LAT WB (°F)	TOTAL CAPACITY (BTU/HR)	SENSIBLE CAPACITY (BTU/HR)	HEATING COIL EAT DB (°F)	HEATING COIL LAT DB (°F)	HEATING CAPACITY (BTU/HR)	NOTES
DXHP-1	VENTILATION AIR	OXYGEN 8	2,000	4.50	444.4	0.47	5	73.7	61.3	50.8	50.1	61.6	49.7	55.0	72.0	18.1	
DXHP-2	VENTILATION REHEAT	OXYGEN 8	2,000	4.50	444.4	0.07	2	0.0	0.0	0.0	0.0	0.0	0.0	54.0	72.0	40.2	

ELECTRIC HEATING COIL (EHC) SCHEDULE

PLAN DESIGNATION	SERVICE	MANUFACTURER	DESIGN AIRFLOW (CFM)	EAT (°F)	MIN LAT (°F)	MIN ELECTRICAL COIL HEAT OUTPUT (kW)	VOLTAGE	HZ	PHASE	NOTES
EHC-1	PREHEAT	OXYGEN 8	2,000	5.0	20.0	11.0	480	60	3	

FAN (EF) SCHEDULE

PLAN DESIGNATION	TYPE	SERVICE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	DESIGN AIRFLOW (CFM)	FAN ESP (IN. W.G.)	RPM	DRIVE TYPE	BRAKE POWER (Hp)	MOTOR POWER (Hp)	ELECTRICAL			SOUND LEVEL (SONES)	NOTES
											VOLTAGE	HZ	PHASE		
EF-1	INLINE CENTRIFUGAL	ACID ROOM EXHAUST	LOREN COOK	80SQN-B	600	0.75	2025	BELT	0.260	0.33	120	60	1	9.4	(2)(3)(4)
EF-2	INLINE CENTRIFUGAL	BASE ROOM EXHAUST	LOREN COOK	80SQN-B	600	0.75	2025	BELT	0.260	0.33	120	60	1	9.4	(2)(3)(4)
EF-3	INLINE CENTRIFUGAL	ELECTRICAL ROOM EXHAUST	LOREN COOK	120SQN-B	1,000	0.80	1490	BELT	0.303	0.33	120	60	1	8.2	(1)(2)(3)
EF-4	INLINE CENTRIFUGAL	BLOWER ROOM EXHAUST	LOREN COOK	120SQN-B	1,200	0.80	1632	BELT	0.303	0.5	120	60	1	9.6	(1)(2)(3)

NOTES:
 1. PROVIDE FINISH AS SPECIFIED FOR SPACE TYPE SERVED.
 2. PROVIDE BELT GUARD.
 3. PROVIDE SPRING ISOLATORS FOR VERTICAL INSTALLATION.
 4. PROVIDE CHEMICAL RESISTANT PHENOLIC COATING.
 5. DISCONNECT BY ELECTRICAL CONTRACTOR.

UNIT HEATER ELECTRIC (UH) SCHEDULE

PLAN DESIGNATION	SERVICE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	DESIGN AIRFLOW (CFM)	EAT (°F)	MIN LAT (°F)	MIN ELECTRICAL COIL HEAT OUTPUT (kW)	MINIMUM STAGES	VOLTAGE	HZ	PHASE	NOTES
UH-1	ACID ROOM	QMARK	QWD15832	2,400	65.0	85.0	15.0	1	480	60	3	(1)(2)
UH-2	BASE ROOM	QMARK	QWD15832	2,400	65.0	85.0	15.0	1	480	60	3	(1)(2)
UH-3	ELECTRICAL ROOM	QMARK	QWD03432	700	65.0	79.0	3.0	1	480	60	3	(1)(2)
UH-4	BLOWER ROOM	QMARK	QWD03432	700	65.0	79.0	3.0	1	480	60	3	(1)(2)
UH-5	TREATMENT PLANT	QMARK	QWD15432	2,400	65.0	85.0	15.0	1	480	60	3	(1)(2)
UH-6	TREATMENT PLANT	QMARK	QWD15432	2,400	65.0	85.0	15.0	1	480	60	3	(1)(2)
UH-7	TREATMENT PLANT	QMARK	QWD15432	2,400	65.0	85.0	15.0	1	480	60	3	(1)(2)

NOTES:
 1. PROVIDE REMOTE, 24V, HEATING ONLY THERMOSTAT. THERMOSTAT SHALL WIRE TO UNIT HEATER CONTROL CENTER TERMINAL BLOCK.
 2. DISCONNECT BY ELECTRICAL CONTRACTOR.

GRAVITY VENTILATOR (GI) SCHEDULE

PLAN DESIGNATION	TYPE	SERVICE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	DESIGN AIRFLOW (CFM)	NECK LENGTH (IN)	NECK WIDTH (IN)	HOOD HEIGHT (IN)	HOOD LENGTH (IN)	HOOD WIDTH (IN)	NOTES
GI-1	GRAVITY VENTILATOR	INTAKE	LOREN COOK	12-PR	600	12.5	12.5	5.0	28.3	28.3	(1)(2)(3)(4)
GI-2	GRAVITY VENTILATOR	INTAKE	LOREN COOK	12-PR	600	12.5	12.5	5.0	28.3	28.3	(1)(2)(3)(4)
GI-3	GRAVITY VENTILATOR	INTAKE	LOREN COOK	24-PR	2,200	24.8	24.8	7.8	42.3	42.3	(1)(2)(3)(4)
GR-1	GRAVITY VENTILATOR	EXHAUST	LOREN COOK	12-PR	600	12.5	12.5	5.0	28.3	28.3	(1)(2)(3)(5)
GR-2	GRAVITY VENTILATOR	EXHAUST	LOREN COOK	12-PR	600	12.5	12.5	5.0	28.3	28.3	(1)(2)(3)(5)
GR-3	GRAVITY VENTILATOR	EXHAUST	LOREN COOK	16-PR	1,000	16.5	16.5	5.0	28.3	28.3	(1)(2)(3)(5)
GR-4	GRAVITY VENTILATOR	EXHAUST	LOREN COOK	20-PR	1,200	20.5	20.5	6.8	36.5	36.5	(1)(2)(3)(5)
GR-5	GRAVITY VENTILATOR	EXHAUST	LOREN COOK	24-PR	2,000	24.8	24.8	7.8	42.3	42.3	(1)(2)(3)(5)

NOTES:
 1. PROVIDE WITH THE FOLLOWING ACCESSORIES:
 2. PROVIDE WITH 14" TALL, 18 GAUGE GALVANIZED STEEL CURB WITH WOOD NAILER AND DAMPER TRAY.
 3. PROVIDE WITH 1/2" MESH BIRDSCREEN.
 4. PROVIDE MOTORIZED INTAKE DAMPER.
 5. PROVIDE GRAVITY BACKDRAFT DAMPER.

GRILLE, REGISTER, & DIFFUSER SCHEDULE

PLAN DESIGNATION	DESCRIPTION	MATERIAL	MOUNTING	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	DEFLECTION	MAXIMUM PRESSURE DROP (IN. W.G.)	MAXIMUM NC LEVEL	FINISH	NOTES
EG-1	EXHAUST GRILLE, 1/2" SPACING	304 STAINLESS	DUCT MOUNTED	TITUS	33R	38	0.04	30	MILL FINISH	(1)
RG-1	RETURN GRILLE, 1/2" SPACING	304 STAINLESS	DUCT MOUNTED	TITUS	33R	38	0.10	30	MILL FINISH	(1)
SG-1	DOUBLE DEFLECTION SUPPLY GRILL	304 STAINLESS	DUCT MOUNTED	TITUS	300R-SS	22	0.10	30	MILL FINISH	(1)
SG-2	DRUM LOUVER, LONG THROW	ALUMINUM	DUCT MOUNTED	TITUS	DL	-	0.05	30	MILL FINISH	(1)

NOTES:
 1. REFER TO PLANS FOR GRILLE, REGSITER AND DIFFUSER DIMENSIONS.

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 WRANGELL, ALASKA
MECHANICAL SCHEDULES

PROJECT 1528.5026.01
 DATE 06/02/2023

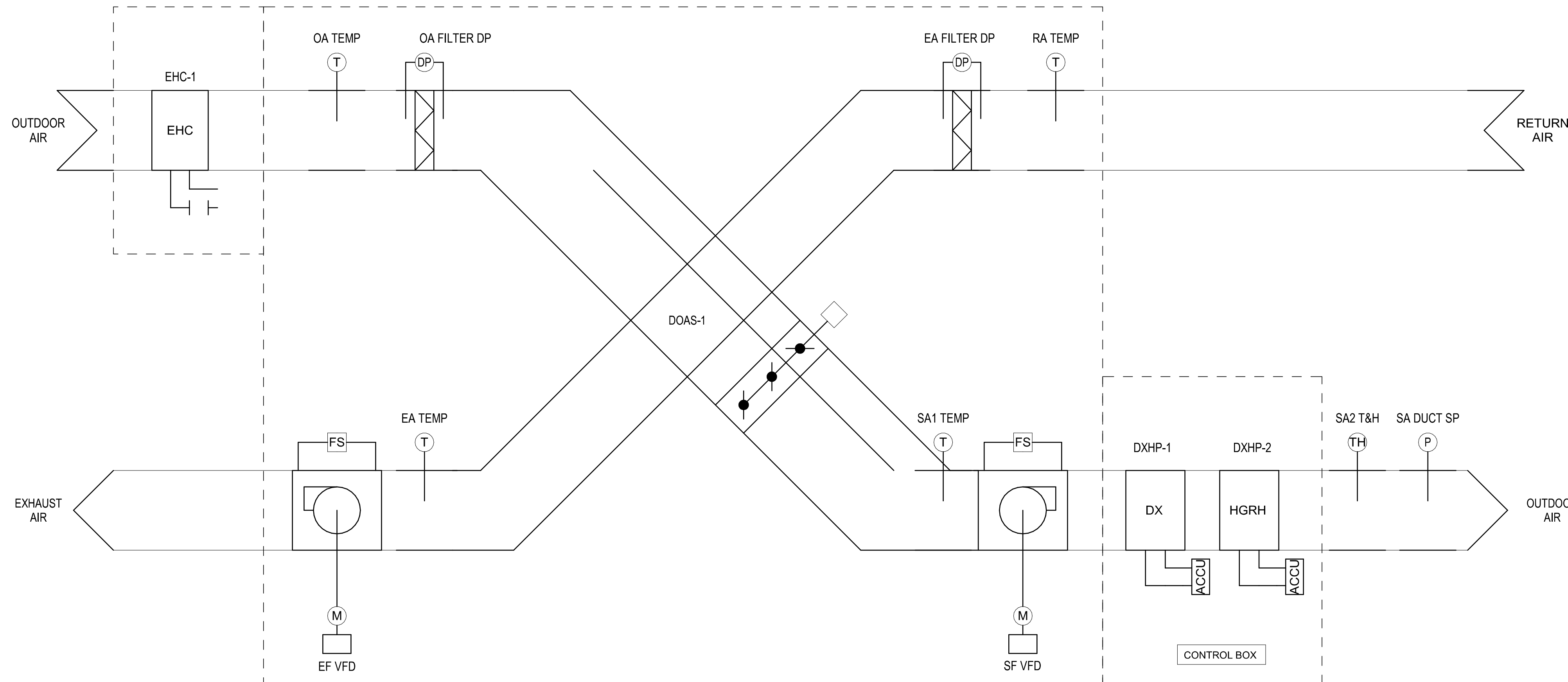
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BID DOCUMENTS
 AGENCY SUBMITTAL - NOT FOR CONSTRUCTION

DEDICATED OUTDOOR AIR UNIT (DOAS) WITH SUPPLY/EXHAUST FANS, ELEC. PRE-HEAT COIL, DX HEAT PUMP COIL, HOT GAS REHEAT COIL AND ENERGY RECOVERY HEAT EXCHANGER:

DOAS SYSTEM RESPONSIBILITY CHART								
	COILS	REHEAT CONTROLLER	EEVS	THERMISTORS	DOAS UNIT & REHEAT CONTROLLER INTERLOCK	POWER	REFR. PIPING	REHEAT CONTROL & ODU INTERLOCK
DOAS UNIT MANUFACTURER	X	X	X	X				
MECHANICAL CONTRACTOR							X	
CONTROLS CONTRACTOR					X			X
ELECTRICAL CONTRACTOR						X		

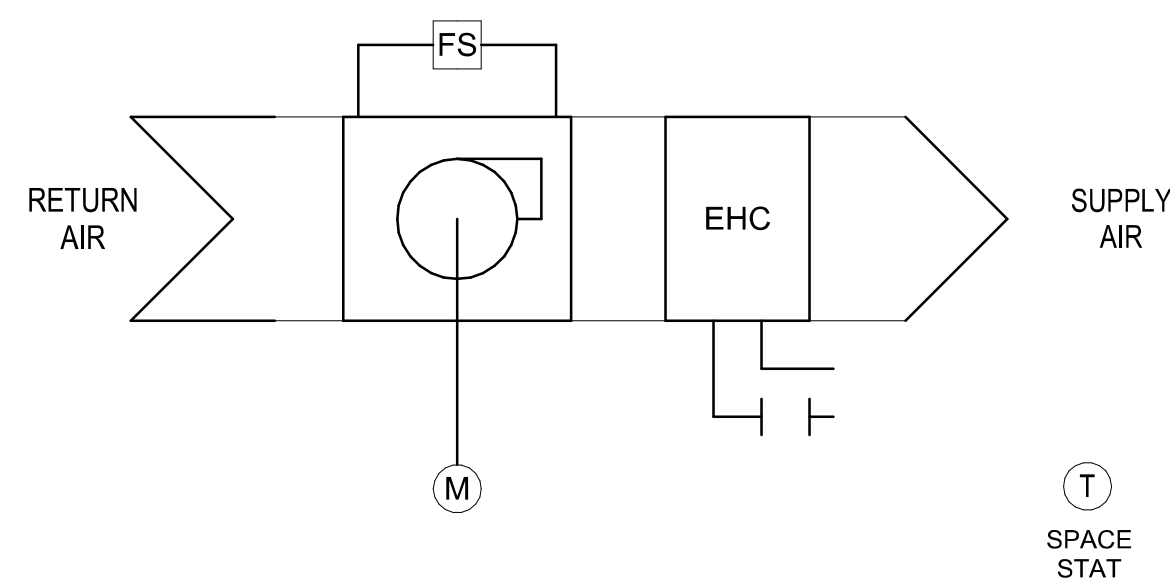


DOAS-1 CONTROL SCHEMATIC
NO SCALE

DEDICATED OUTSIDE AIR-HANDLING UNIT (DOAS-1) CONTROL SEQUENCE:

- DOAS UNIT MUST BE CONTROLLED BY STAND ALONE DIRECT DIGITAL CONTROLLER PROVIDED WITH DOAS / HEAT PUMP PACKAGE.
- AIRFLOW CONTROL:
 - WHEN UNIT IS COMMANDED TO START, SUPPLY AND EXHAUST FANS MUST START. WHEN UNIT STARTS BOTH SUPPLY FAN AND EXHAUST FAN MUST OPERATE CONTINUOUSLY.
 - SUPPLY DUCT PRESSURE CONTROL - SUPPLY FAN MODULATES SPEED TO MAINTAIN SUPPLY DUCT PRESSURE AT THE DUCT PRESSURE SETPOINT. SUPPLY DUCT PRESSURE SENSING WILL BE VIA MANUFACTURER SUPPLIED, DUCT MOUNTED PRESSURE SENSOR, SA DUCT SP. EXHAUST FAN WILL FOLLOW SUPPLY FAN WITH A SELECTABLE FACTOR FROM 0.6 TO 1 (60%-100%).
- HEATING MODE: WHEN SUPPLY AIR TEMPERATURE, SA2 T&H, DROPS BELOW SETPOINT (60 F, ADJUSTABLE) DX HEAT PUMP COIL SHALL MODULATE TO MAINTAIN DISCHARGE AIR SETPOINT.
- COOLING MODE: WHEN SUPPLY AIR TEMPERATURE, SA2 T&H, RISES ABOVE SETPOINT (55 F, ADJUSTABLE) DX HEAT PUMP COIL SHALL MODULATE TO MAINTAIN DISCHARGE AIR AT SETPOINT.
- TEMPERATURE AND HUMIDITY CONTROL:
 - UNIT CONTROLLER SENDS DELTA DEW POINT VALUE TO UNIT CONTROL BOX TO ADJUST DX COIL AND HGRH COIL VALVES TO MAINTAIN SET POINT FOR DISCHARGE AIR TEMPERATURE AND HUMIDITY CONTROL.
- SUPPLY AIR TEMPERATURE SET POINT SHALL BE RESET BASED ON OUTDOOR AIR CONDITIONS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

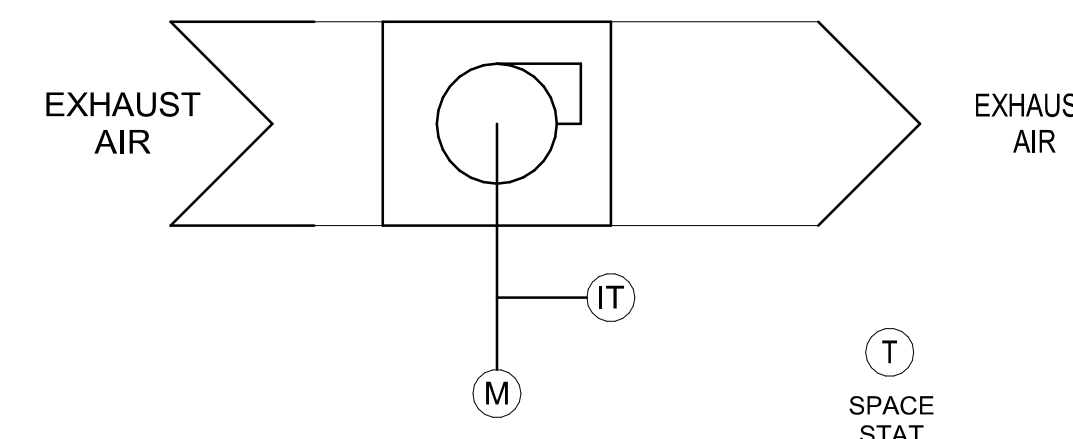
OUTDOOR AIR TEMPERATURE	DISCHARGE AIR TEMPERATURE
70 F (ADJUSTABLE)	55 F (ADJUSTABLE)
50 F (ADJUSTABLE)	60 F (ADJUSTABLE)



UNIT HEATER CONTROL SCHEMATIC
NO SCALE

ELECTRIC UNIT HEATER (UH) CONTROL SEQUENCE:

- ELECTRIC UNIT HEATER MUST BE CONTROLLED BY HEATING ONLY SPACE THERMOSTAT AS SHOWN ON PLANS.
- HEATING MODE: WHEN SPACE TEMPERATURE DROPS BELOW THERMOSTAT SETPOINT (65 F, ADJUSTABLE), UNIT HEATER FAN SHALL PROVE FLOW AND ELECTRIC HEATING COIL SHALL BE ENERGIZED.
- PRIMARY SPACE HEATING SHALL BE PROVIDED VIA DOAS-1 UNIT HEAT PUMP SYSTEM AND UNIT HEATERS SHALL BE SECONDARY.



EXHAUST FAN CONTROL SCHEMATIC
NO SCALE

EXHAUST FAN (EF) CONTROL SEQUENCE (BLOWER AND ELECTRICAL ROOMS):

- EXHAUST FAN SHALL BE CONTROLLED BY LINE VOLTAGE THERMOSTAT AS LOCATED ON PLANS.
- VENTILATION COOLING MODE: WHEN SPACE TEMPERATURE RISES ABOVE THERMOSTAT SETPOINT 80 F (ADJ) EXHAUST FAN SHALL BE ENERGIZED AND GRAVITY INTAKE MOTORIZED DAMPER SHALL OPEN.
- EXHAUST FAN SHALL BE DEENERGIZED WHEN SPACE TEMPERATURE FALLS BELOW 80F (ADJ) AND MOTORIZED DAMPER SHALL CLOSE.



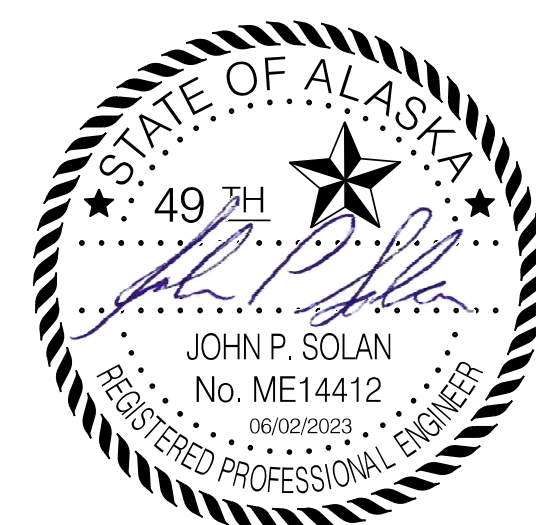
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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
HVAC SCHEMATICS
SEC. 31, TOWNSHIP 62S, RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT 1528.5026.01
DATE 06/02/2023

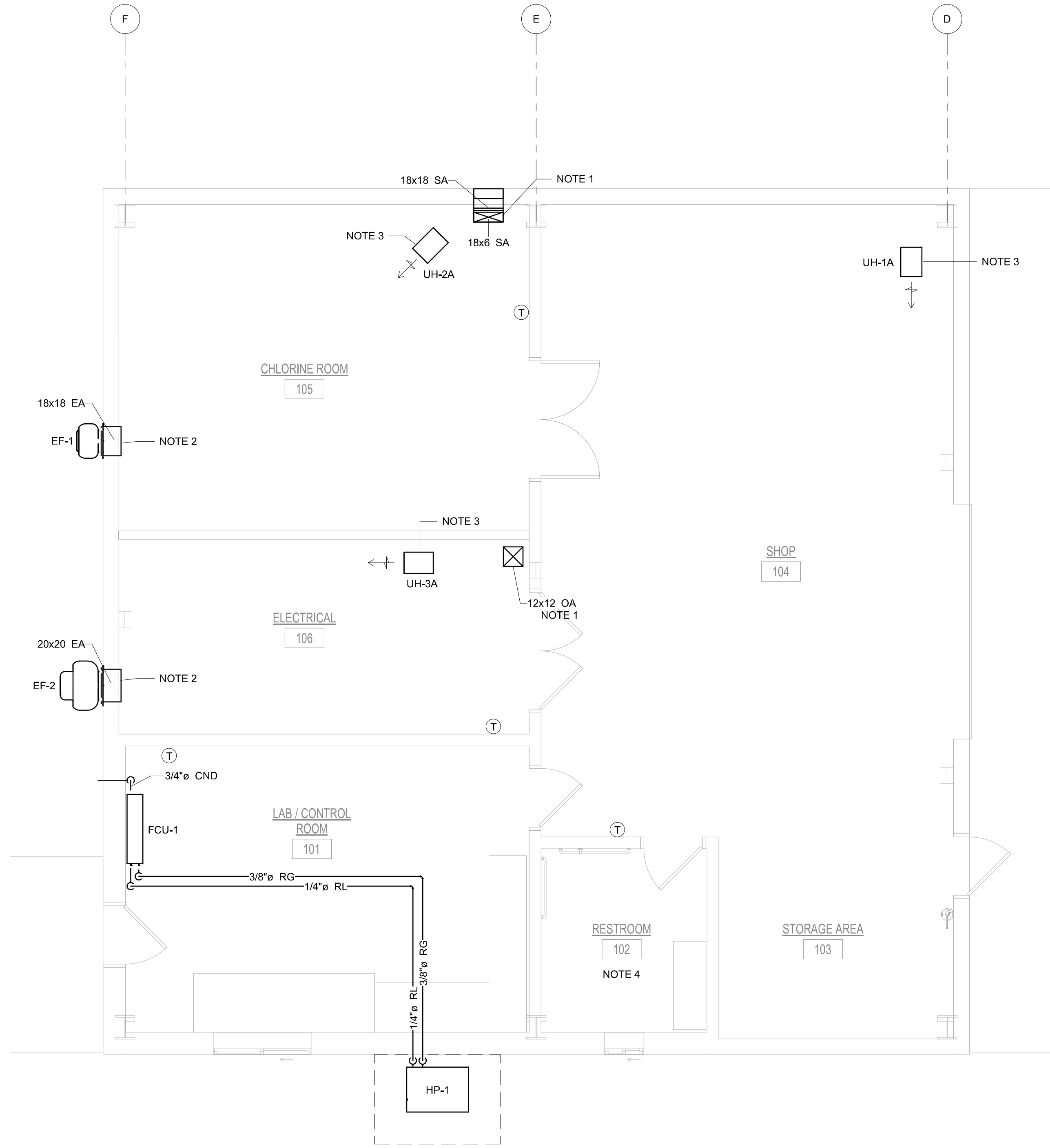
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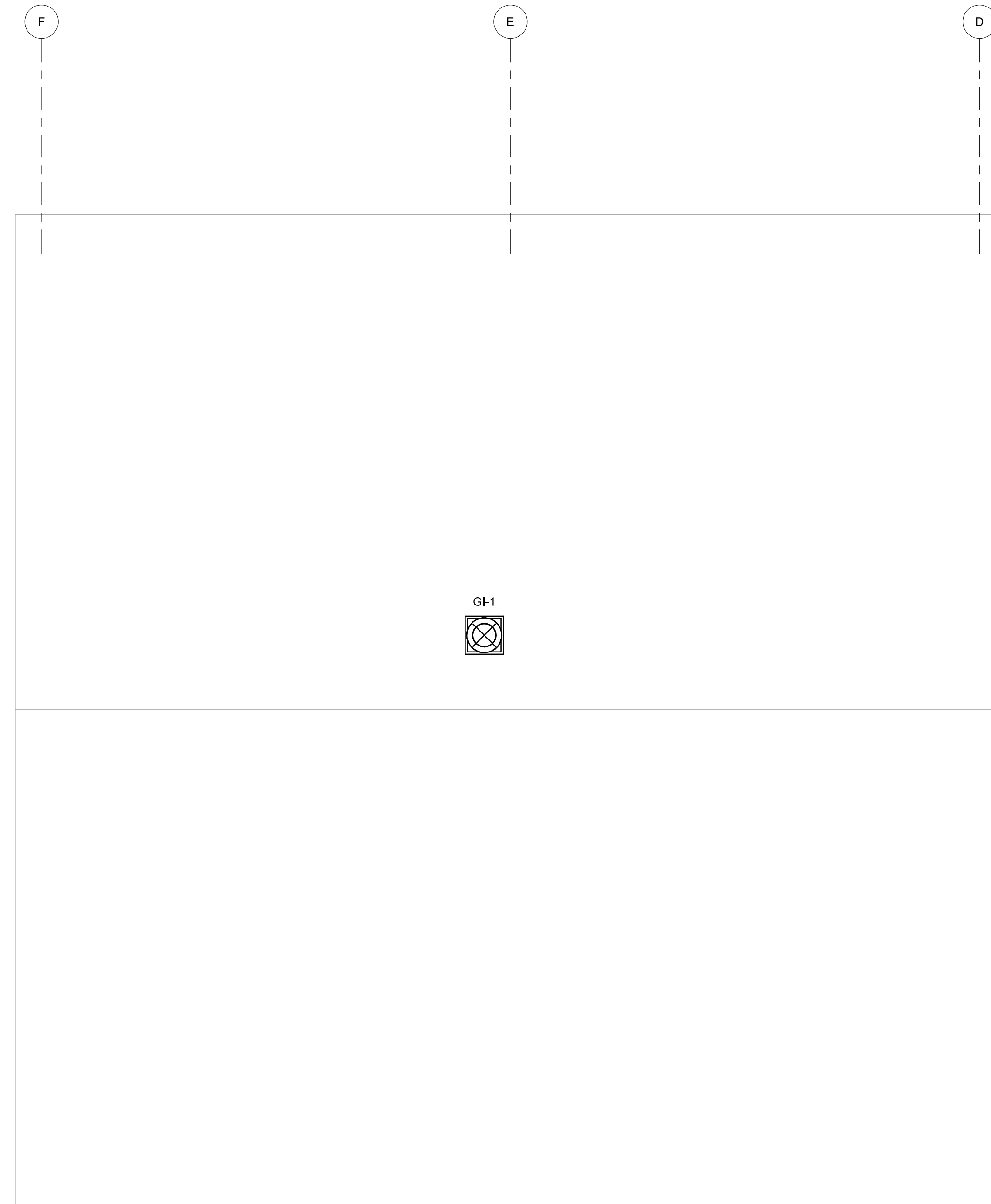


MECHANICAL NOTES:

1. ROUTE DUCT DOWN TO 12" ABOVE FINISHED FLOOR. REFER TO DETAIL 4, SHEET AM-500.
2. PROVIDE 1/2"X1/2" WIRE MESH ACROSS DUCT INLET.
3. BOTTOM OF UNIT HEATER @ 9'-0" ABOVE FINISHED FLOOR.
4. EXISTING RESTROOM TO REMAIN. NO CHANGES IN SCOPE.



CONTROL BUILDING HVAC PLAN
SCALE: 1/4" = 1'-0"



CONTROL BUILDING HVAC ROOF PLAN
SCALE: 1/4" = 1'-0"

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
HVAC PLAN

SEC. 31, TOWNSHIP 62S, RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA



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MINI SPLIT FAN COIL UNIT (FCU) SCHEDULE

PLAN DESIGNATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	AIRFLOW (CFM)	COOLING			HEATING		ELECTRICAL				NOTES
				TOTAL CAPACITY (BTU/HR)	EAT DB (°F)	EAT WB (°F)	HEATING COIL CAPACITY (BTU/HR)	EAT DB (°F)	MCA	VOLTAGE	HZ	PHASE	
FCU-1	mitsubishi	MSZ-FS12NA	300	12000.0	80.0	67.0	14690.0	70.0	1	208	60	1	(1)

NOTES:
1. INDOOR UNIT POWERED VIA OUTDOOR CONDENSER.

MINI SPLIT HEAT PUMP UNIT (HP) SCHEDULE

PLAN DESIGNATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	TYPE	INDOOR UNITS SERVED	COOLING				HEATING			REFRIGERANT	MAXIMUM REFRIGERANT CHARGE (LB)	ELECTRICAL				NOTES	
					TOTAL CAPACITY (BTU/HR)	AMBIENT TEMPERATURE (°F)	EER	IEER	TOTAL CAPACITY (BTU/HR)	AMBIENT TEMPERATURE (°F)	COP			MCA	MOCP	VOLTAGE	HZ		PHASE
HP-1	mitsubishi	MUZ-FS12NA	MINI SPLIT HEAT PUMP	1	12000.0	95.0	13.8	26.1	14690.0	5.0	2.24	R-410A	2.24	10.0	15	208	60	1	(1)

NOTES:
1. PROVIDE WALL BRACKETS FOR TO MOUNT UNIT ALONG EXTERIOR WALL. BOTTOM OF CONDENSER SHALL BE A MINIMUM OF 2'-0" ABOVE GRADE.

EXHAUST FAN (EF) SCHEDULE

PLAN DESIGNATION	TYPE	SERVICE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	DESIGN AIRFLOW (CFM)	FAN ESP (IN. W.G.)	RPM	DRIVE TYPE	BRAKE POWER (Hp)	MOTOR POWER (Hp)	ELECTRICAL			SOUND LEVEL (SONES)	NOTES
											VOLTAGE	HZ	PHASE		
EF-1	SIDEWALL	CHLORINE ROOM	LOREN COOK	ACWD 100	400	0.25	1725	DD	0.125	0.125	120	60	1	6	(2) (3)
EF-2	SIDEWALL	ELECTRICAL	LOREN COOK	ACWD 120	700	0.25	1725	DD	0.125	0.125	120	60	1	5	(1) (3)

NOTES:
1. PROVIDE FINISH AS SPECIFIED FOR SPACE TYPE SERVED.
2. PROVIDE PHENOLIC COATING.
3. DISCONNECT BY ELECTRICAL CONTRACTOR.

UNIT HEATER ELECTRIC (UH-E) SCHEDULE

PLAN DESIGNATION	SERVICE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	DESIGN AIRFLOW (CFM)	EAT (°F)	MIN LAT (°F)	MIN ELECTRICAL COIL HEAT OUTPUT (KW)	MINIMUM STAGES	VOLTAGE	HZ	PHASE	NOTES
UH-1A	SHOP	QMARK	QWD05832	700	55.0	77.0	5.0	1	208	60	3	(1) (2)
UH-2A	CHLORINE ROOM	QMARK	QWD10832	1,450	55.0	77.0	10.0	1	208	60	3	(1) (2)
UH-3A	ELECTRICAL	QMARK	QWD02812	700	55.0	65.0	2.0	1	208	60	3	(1) (2)

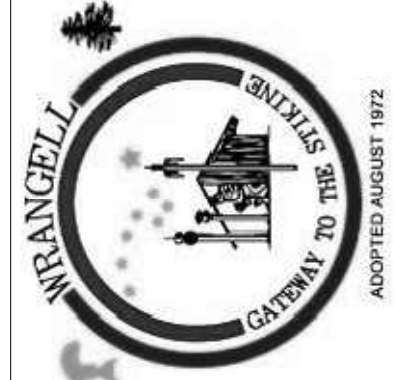
NOTES:
1. PROVIDE INTEGRAL THERMOSTAT.
2. DISCONNECT BY ELECTRICAL CONTRACTOR.

GRAVITY VENTILATOR (GI) SCHEDULE

PLAN DESIGNATION	TYPE	SERVICE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	DESIGN AIRFLOW (CFM)	NECK LENGTH (IN)	NECK WIDTH (IN)	NOTES
GI-1	GRAVITY VENTILATOR	INTAKE	LOREN COOK	PR-8	700	12.5	12.5	(1)

NOTES:
1. PROVIDE WITH THE FOLLOWING ACCESSORIES
A. 14" TALL, 18 GAUGE GALVANIZED STEEL CURB WITH WOOD NAILER AND DAMPER TRAY.
B. 1/2" MESH BIRDSCREEN.
C. INTAKE OR GRAVITY BACKDRAFT DAMPER.

REV	DATE	DESCRIPTION	BY



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
MECHANICAL SCHEDULES



PROJECT 1528.5026.01
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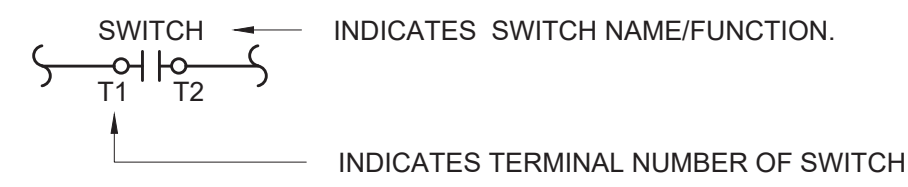
G:\My Drive\Jobs\DWL\Jobs\J000541 - Wrangell WTP Design\Drawings\Master\J000541 IC-00 Abbreviation General Notes & Symbols.dwg PLOT DATE 2023-05-02 13:28 USER: vince

GENERAL NOTES:

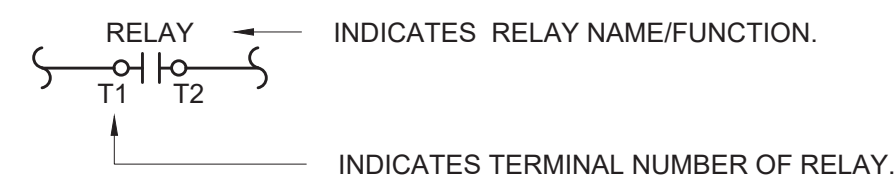
- ALL DEVICES ARE SHOWN IN THE DE-ENERGIZED STATE.
- ALL DIMENSIONS NOTED ARE OUTSIDE MEASUREMENTS, UNLESS OTHERWISE NOTED.
- IDENTIFICATION OF DEVICES ARE SHOWN AS:



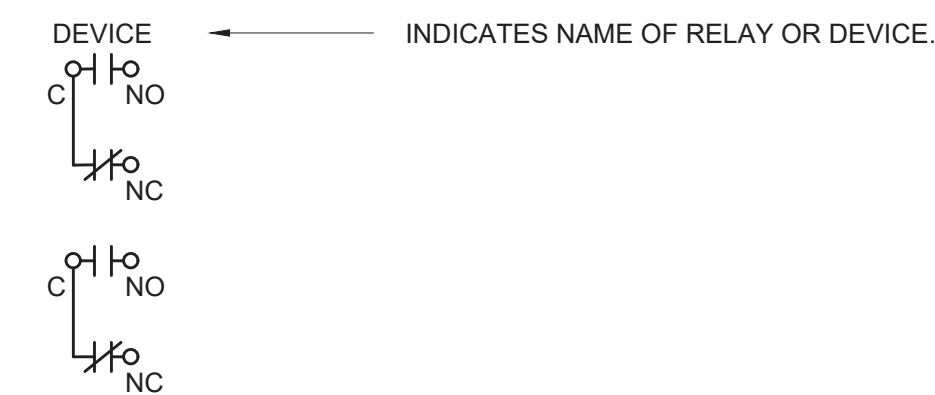
CONTROL SWITCH CONTACTS



AUXILIARY RELAY CONTACTS:



DEVICE CONTACT :



LINES

- CONDUCTOR, INTERNAL TO COMPONENT
- CONDUCTOR, INTERNAL TO PANEL
- FIELD CONDUCTOR
- FIELD DEVICE
- BUS

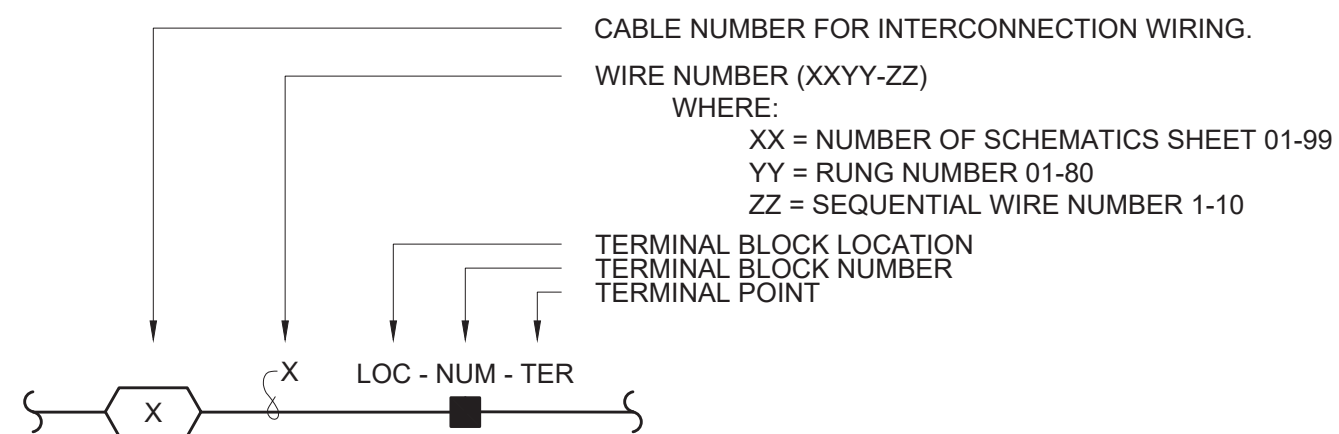
TERMINAL BLOCK LEGEND:

- TERMINAL BLOCK CONNECTIONS TO DEVICES/TERMINALS INTERNAL TO PANEL.
- TERMINAL BLOCK CONNECTIONS TO DEVICES/TERMINALS EXTERNAL TO PANEL.

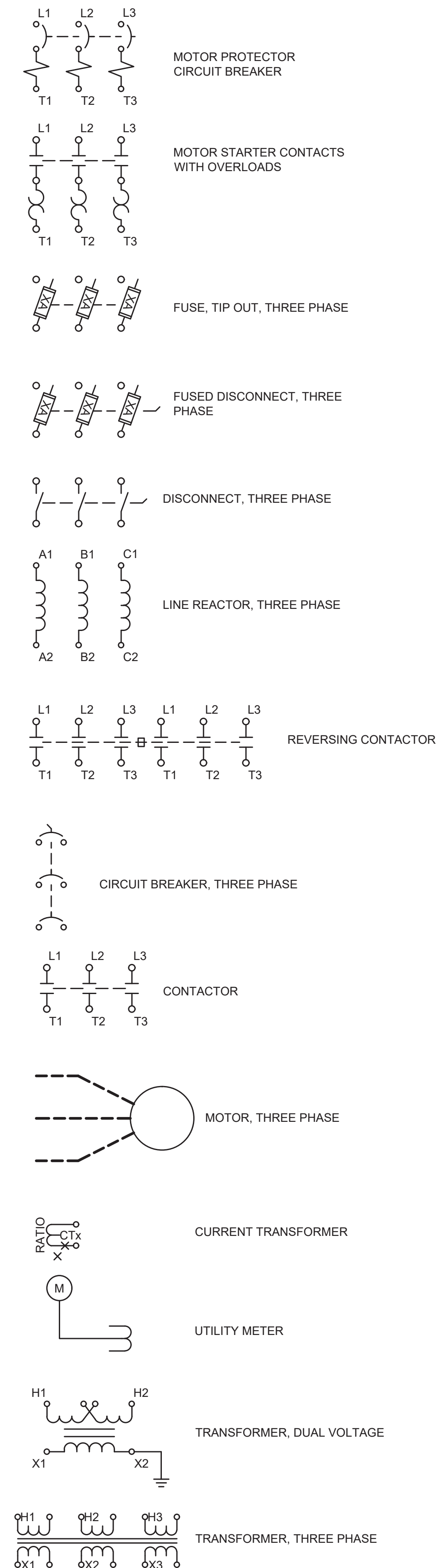
POWER SUPPLY WIRE NUMBERS:

- 480VAC SUPPLY --- A480 - #
B480 - #
C480 - #
 - 120VAC SUPPLY --- L120 - #
N120 - #
 - 125VDC SUPPLY --- +125 - #
125C - #
 - 24VDC SUPPLY --- +24 - #
24C - #
- WHERE: # = CIRCUIT NUMBER

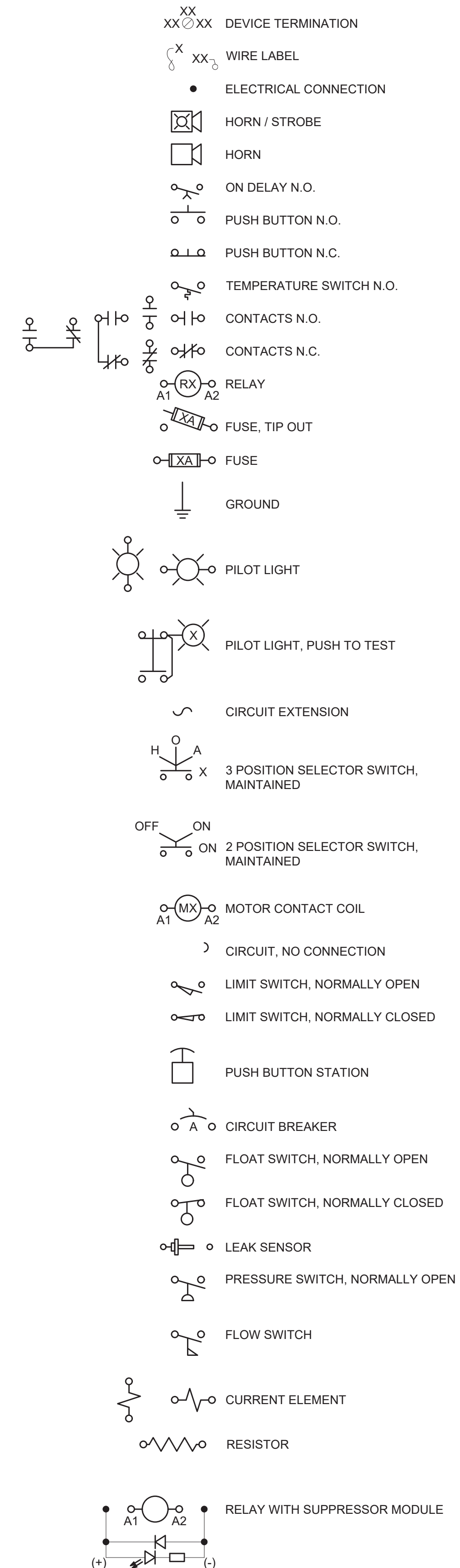
CONTROL SCHEMATICS:



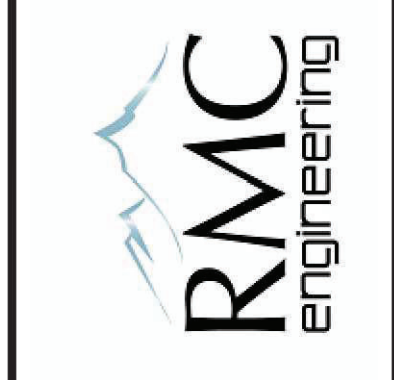
POWER SCHEMATIC SYMBOLS



CONTROL SCHEMATIC SYMBOLS



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REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
GENERAL NOTES & SYMBOLS
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

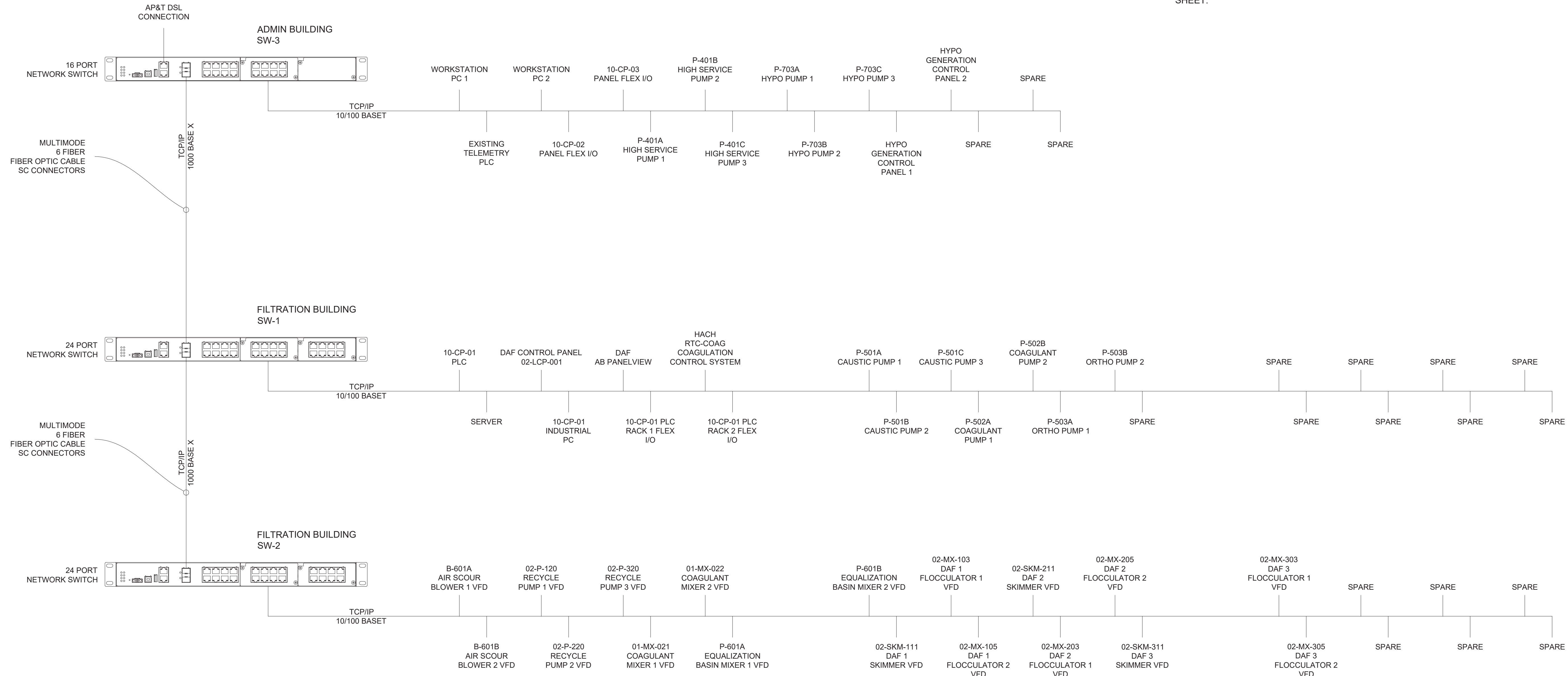
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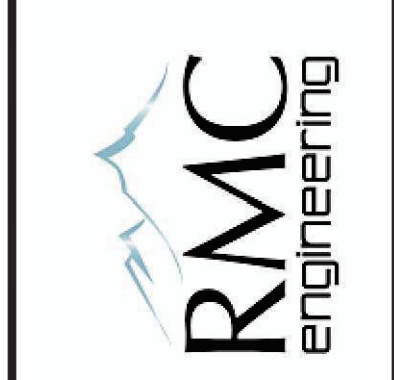


- NOTES:
1. TERMINATE FIBER OPTIC CABLE IN RACK MOUNT FIBER TERMINATION / PATCH PANEL. SEE SHEET EC?? FOR DETAIL.
 2. PROVIDE FIBER OPTIC PATCH CABLES TO CONNECT PATCH PANEL TO NETWORK SWITCHES.
 3. TERMINATION / PATCH PANEL NOT SHOWN ON THIS SHEET TO PROVIDE CLARITY FOR THIS PORTION OF WORK.
 4. PROVIDE SFP STYLE PORTS ON NETWORK SWITCHES FOR FIBER CONNECTIONS.
 5. SFP PORTS SHALL BE MULTIMODE / FULL DUPLEX WITH SC CONNECTORS. ENSURE ALL TRANSMISSION SPEEDS MATCH ON FIBER PORTS.
 6. PROVIDE NETWORK CONNECTION SHOWN. NETWORK CABLES TO BE INSTALLED BY LICENSED PROFESSIONAL THAT IS REGULARLY EMPLOYED TO INSTALL SIMILAR INSTALLATIONS.
 7. PERFORM END TO END TESTING AND CERTIFICATION TEST. PROVIDE TEST RESULTS TO ENGINEER.
 8. LABEL EACH NETWORK CABLE WITH DESTINATION AND ORIGIN. SEE DETAIL 1, THIS SHEET.



1 NETWORK CABLE LABEL EXAMPLE

REV	DATE	DESCRIPTION	BY

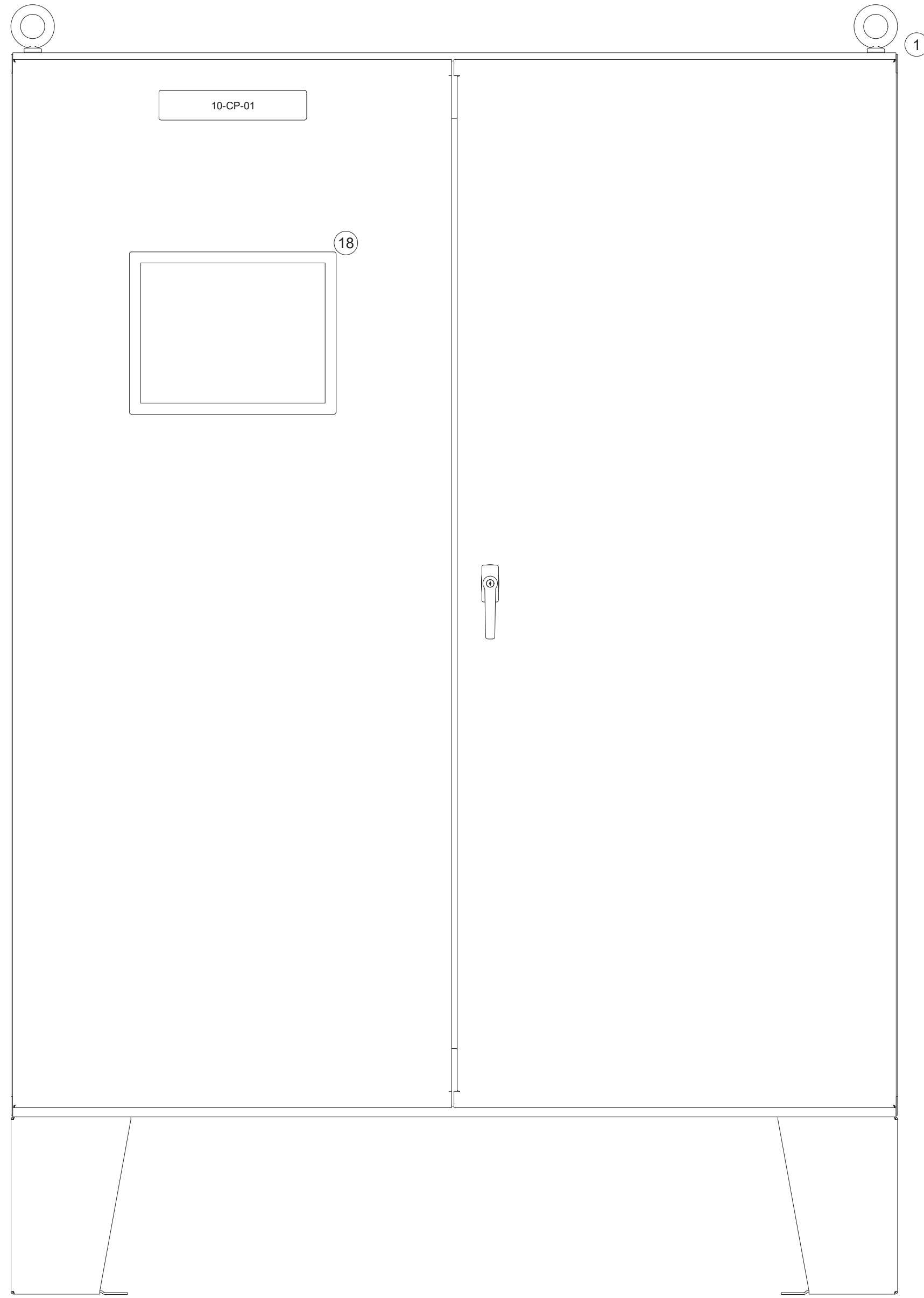
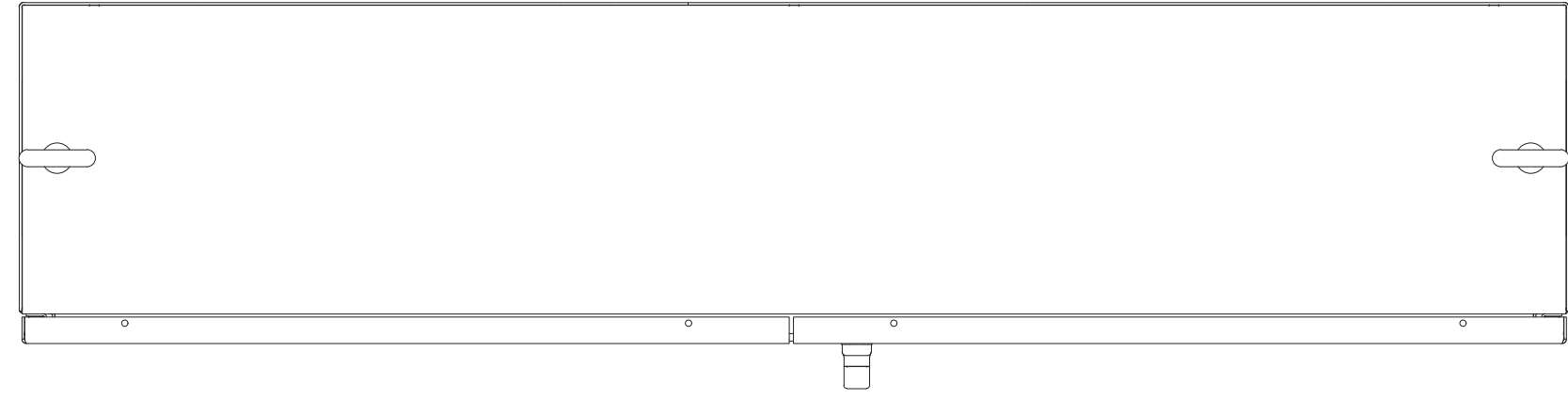


WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
NETWORK RISER DIAGRAM
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

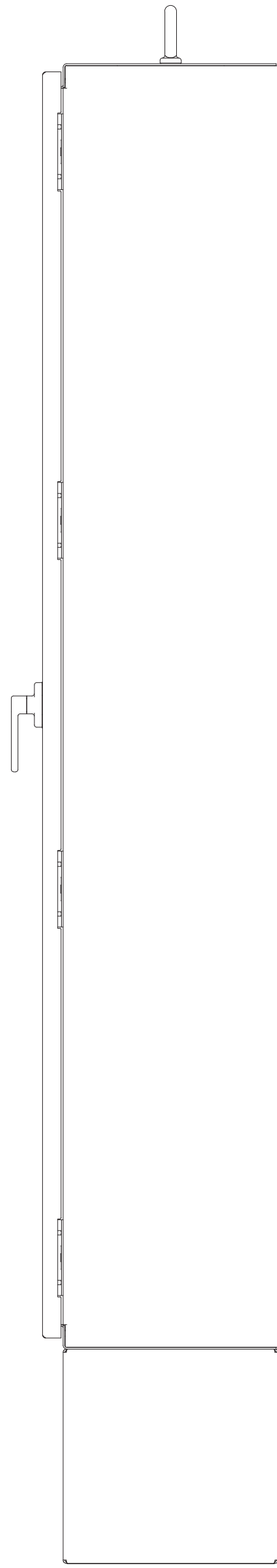
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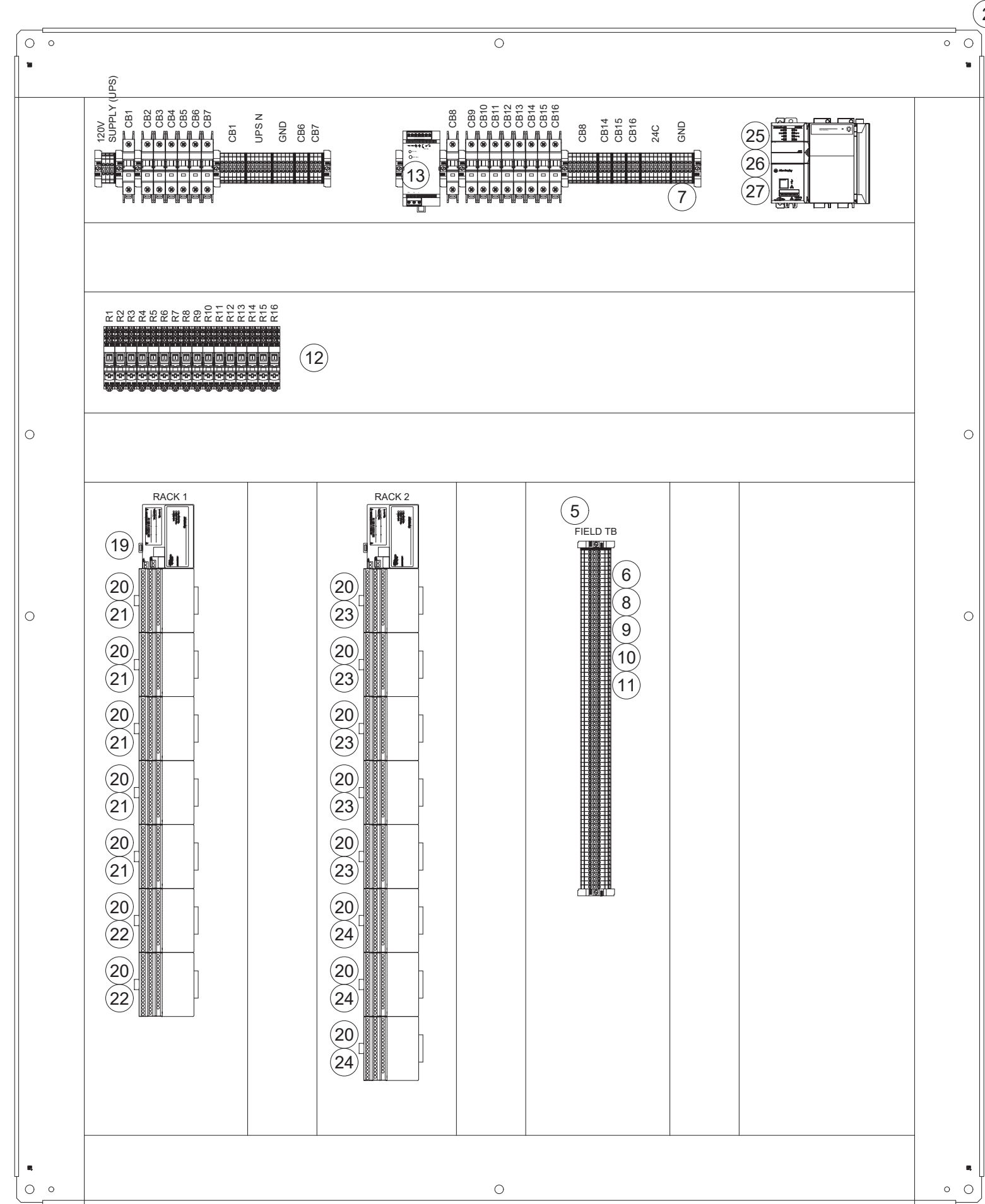


1 10-CP-01 (FILTRATION BUILDING)



NOTES:

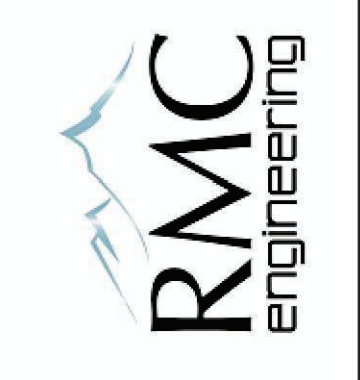
1. QUANTITY AS SHOWN.
2. MAIN 120VAC POWER TO BE SUPPLIED FROM UPS IN 10-NP-01.
3. CONTROL PANEL MANUFACTURER SHALL PERFORM SHOP TESTING PRIOR TO INSTALLATION. SHOP TESTING SHALL BE WITNESSED AND APPROVED BY ENGINEER.
4. ALL EXPENSES ASSOCIATED WITH SHOP TESTING SHALL BE COVERED BY CONTROL PANEL MANUFACTURER. EXPENSES INCLUDE ENGINEER TRAVEL AND LODGING.



2 BACK PANEL

Item	Part #	Description	Manufacturer
Material List: PLC Control Panel			
1	A72H36DL3PT	Enclosure, Type 4	Hoffman
2	A72P36	Back Panel	Hoffman
3	T1E-4030W-1	Wire Management Gutter, 4in	Iboco
4	T1E-2230W-1	Wire management Gutter, 2.25"	Iboco
5	1201730	Din Rail, Cut to length	Phoenix Contact
6	3044102	Feed Through Terminal Block	Phoenix Contact
7	3044128	Ground Terminal Block	Phoenix Contact
8	3030336	Plug-In Bridge Jumper	Phoenix Contact
9	3047206	Terminal Block End Cover	Phoenix Contact
10	800886	End Clamp	Phoenix Contact
11	UCT-TM 6	Terminal Marker	Phoenix Contact
12	2905291	Relay Module	Phoenix Contact
13	2866763	24VDC Power Supply	Phoenix Contact
14	5600525	Panel Receptacle, Computer Use	Phoenix Contact
15	FAZ-C15-1-NA-SP	15A Circuit Breaker	Eaton
16	FAZ-C10-1-NA-SP	10A Circuit Breaker	Eaton
17	FAZ-C5-1-NA-SP	5A Circuit Breaker	Eaton
18		Panel PC	
19	1794-AENT	Flex I/O Ethernet Adaptor Module	Allen Bradley
20	1794-TB3	Flex I/O Terminal Base	Allen Bradley
21	1794-IB16	Flex I/O Digital Input Module, 16 CH	Allen Bradley
22	1794-OB16	Flex I/O Digital Output Module, 16 CH	Allen Bradley
23	1794-IE8	Flex I/O Analog Input Module, 8 CH	Allen Bradley
24	1794-OE4	Flex I/O Analog Output Module, 4 CH	Allen Bradley
25	1769-L33ER	PLC, Dual Ethernet Ports, 1MB Memory	Allen Bradley
26	1769-PB2	PLC Power Supply, 24VDC	Allen Bradley
27	1769-ECR	Enc Cap Terminator	Allen Bradley

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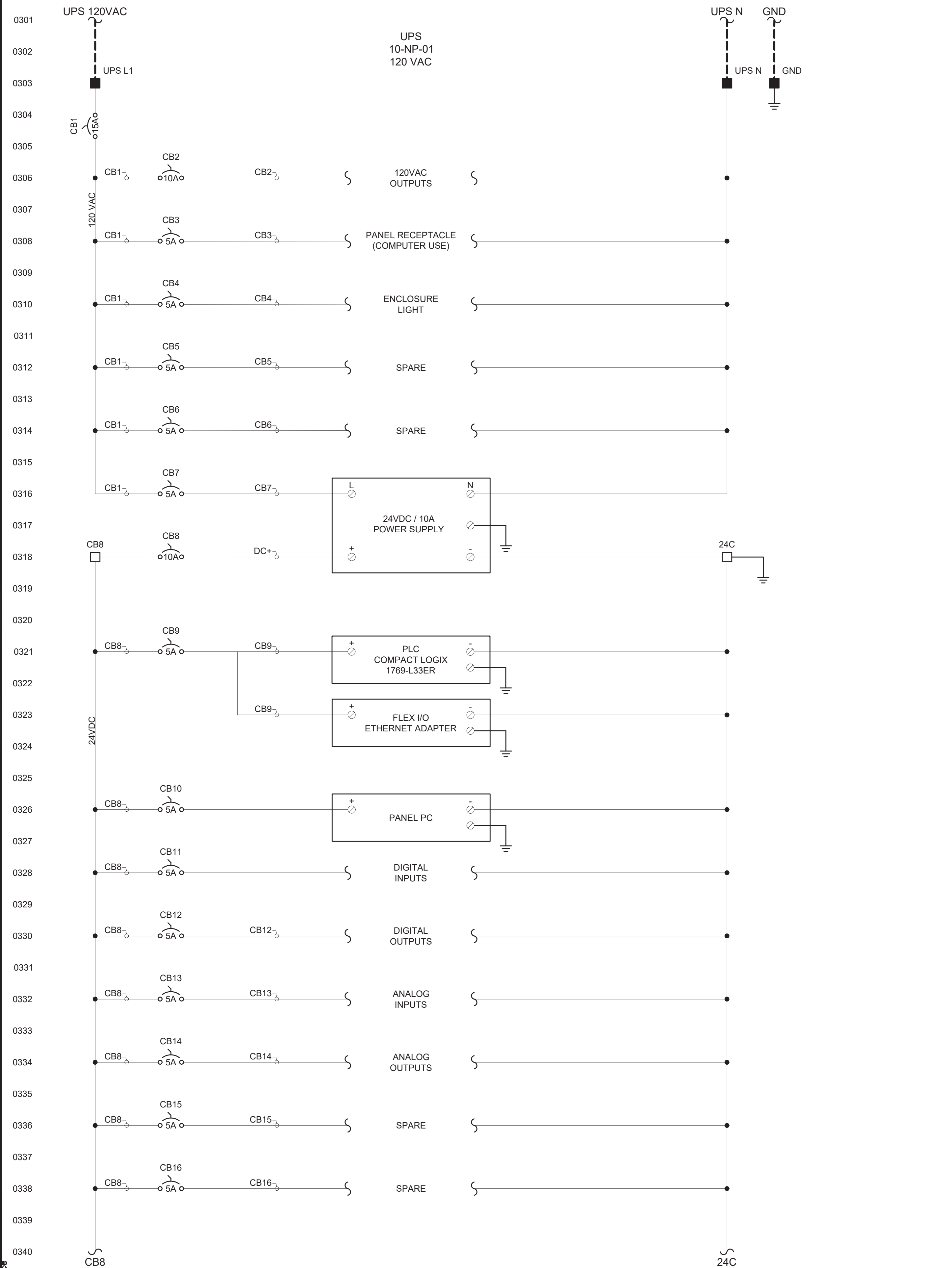
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
10-CP-01 PANEL LAYOUT
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
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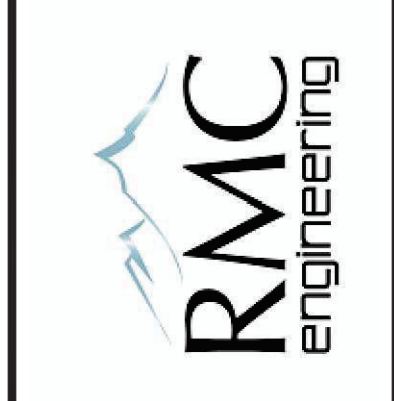
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- 0341 FIELD I/O
- 0342 1. DIGITAL INPUTS
- 0343 1.1. FILTER AIR SCOUR BLOWER NO. A IN HAND.
- 0344 1.2. FILTER AIR SCOUR BLOWER NO. A IN AUTO.
- 0345 1.3. FILTER AIR SCOUR BLOWER NO. A IN REMOTE.
- 0346 1.4. FILTER AIR SCOUR BLOWER NO. B IN HAND.
- 0347 1.5. FILTER AIR SCOUR BLOWER NO. B IN AUTO.
- 0348 1.6. FILTER AIR SCOUR BLOWER NO. B IN REMOTE.
- 0349 1.7. RECYCLE PUMP NO. 1 IN HAND.
- 0350 1.8. RECYCLE PUMP NO. 1 IN AUTO.
- 0351 1.9. RECYCLE PUMP NO. 1 IN REMOTE.
- 0352 1.10. RECYCLE PUMP NO. 2 IN HAND.
- 0353 1.11. RECYCLE PUMP NO. 2 IN AUTO.
- 0354 1.12. RECYCLE PUMP NO. 2 IN REMOTE.
- 0355 1.13. RECYCLE PUMP NO. 3 IN HAND.
- 0356 1.14. RECYCLE PUMP NO. 3 IN AUTO.
- 0357 1.15. RECYCLE PUMP NO. 3 IN REMOTE.
- 0358 1.16. COAGULANT MIXER MX-103A IN HAND.
- 0359 1.17. COAGULANT MIXER MX-103A IN AUTO.
- 0360 1.18. COAGULANT MIXER MX-103A IN REMOTE.
- 0361 1.19. COAGULANT MIXER MX-103B IN HAND.
- 0362 1.20. COAGULANT MIXER MX-103B IN AUTO.
- 0363 1.21. COAGULANT MIXER MX-103B IN REMOTE.
- 0364 1.22. FLOCCULENT MIXER 02-MX-103 IN HAND.
- 0365 1.23. FLOCCULENT MIXER 02-MX-103 IN AUTO.
- 0366 1.24. FLOCCULENT MIXER 02-MX-103 IN REMOTE.
- 0367 1.25. FLOCCULENT MIXER 02-MX-105 IN HAND.
- 0368 1.26. FLOCCULENT MIXER 02-MX-105 IN AUTO.
- 0369 1.27. FLOCCULENT MIXER 02-MX-105 IN REMOTE.
- 0370 1.28. SKIMMER DRIVE 02-SKM-111 IN HAND.
- 0371 1.29. SKIMMER DRIVE 02-SKM-111 IN AUTO.
- 0372 1.30. SKIMMER DRIVE 02-SKM-111 IN REMOTE.
- 0373 1.31. FLOCCULENT MIXER 02-MX-203 IN HAND.
- 0374 1.32. FLOCCULENT MIXER 02-MX-203 IN AUTO.
- 0375 1.33. FLOCCULENT MIXER 02-MX-203 IN REMOTE.
- 0376 1.34. FLOCCULENT MIXER 02-MX-205 IN HAND.
- 0377 1.35. FLOCCULENT MIXER 02-MX-205 IN AUTO.
- 0378 1.36. FLOCCULENT MIXER 02-MX-205 IN REMOTE.
- 0379 1.37. SKIMMER DRIVE 02-SKM-211 IN HAND.
- 0380 1.38. SKIMMER DRIVE 02-SKM-211 IN AUTO.
- 0381 1.39. SKIMMER DRIVE 02-SKM-211 IN REMOTE.
- 0382 1.40. FLOCCULENT MIXER 02-MX-303 IN HAND.
- 0383 1.41. FLOCCULENT MIXER 02-MX-303 IN AUTO.
- 0384 1.42. FLOCCULENT MIXER 02-MX-303 IN REMOTE.
- 0385 1.43. FLOCCULENT MIXER 02-MX-305 IN HAND.
- 0386 1.44. FLOCCULENT MIXER 02-MX-305 IN AUTO.
- 0387 1.45. FLOCCULENT MIXER 02-MX-305 IN REMOTE.
- 0388 1.46. SKIMMER DRIVE 02-SKM-311 IN HAND.
- 0389 1.47. SKIMMER DRIVE 02-SKM-311 IN AUTO.
- 0390 1.48. SKIMMER DRIVE 02-SKM-311 IN REMOTE.
- 0391 1.49. EQUALIZATION BASIN MIXING PUMP P-601A IN HAND.
- 0392 1.50. EQUALIZATION BASIN MIXING PUMP P-601A IN AUTO.
- 0393 1.51. EQUALIZATION BASIN MIXING PUMP P-601A IN REMOTE.
- 0394 1.52. EQUALIZATION BASIN MIXING PUMP P-601B IN HAND.
- 0395 1.53. EQUALIZATION BASIN MIXING PUMP P-601B IN AUTO.
- 0396 1.54. EQUALIZATION BASIN MIXING PUMP P-601B IN REMOTE.
- 0397 1.55. EQUALIZATION BASIN LSH-601.
- 0398 1.56. EQUALIZATION BASIN LSHH-601.
- 0399 1.57. COAGULANT SKID DISCHARGE PSH-502.
- 0400 1.58. ORTHOPHOSPHATE SKID DISCHARGE PSH-503.
- 0401 1.59. FILTER AIR SCOUR INLET PSL-602.
- 0402 1.60. FILTER AIR SCOUR BLOWER A DISCHARGE PSH-604.
- 0403 1.61. FILTER AIR SCOUR BLOWER B DISCHARGE PSH-606.
- 0404 1.62. PUMP P-501A FAULT.
- 0405 1.63. PUMP P-501B FAULT.
- 0406 1.64. PUMP P-501C FAULT.
- 0407 1.65. PUMP P-502A FAULT.
- 0408 1.66. PUMP P-502B FAULT.
- 0409 1.67. PUMP P-503A FAULT.
- 0410 1.68. PUMP P-503B FAULT.
- 0411 2. ANALOG INPUTS
- 0412 2.1. RAW WATER TOC 01-AIT-001 (4-20mA).
- 0413 2.2. RAW WATER PH 01-AIT-002A (4-20mA).
- 0414 2.3. RAW WATER TEMP 01-AIT-002B (4-20mA).
- 0415 2.4. RAW WATER ALKALINITY 01-AIT-003 (4-20mA).
- 0416 2.5. RAW WATER TURBIDITY 01-AIT-004 (4-20mA).
- 0417 2.6. PRE-FILTER TURBIDITY 02-AIT-201 (4-20mA).
- 0418 2.7. PRE-FILTER PH 02-AIT-202A (4-20mA).
- 0419 2.8. PRE-FILTER TEMP 02-AIT-202B (4-20mA).
- 0420 2.9. FILTER 1 FLOW FIT-313 (4-20mA).
- 0421 2.10. FILTER 2 FLOW FIT-314 (4-20mA).
- 0422 2.11. FILTER 3 FLOW FIT-315 (4-20mA).
- 0423 2.12. FILTER 4 FLOW FIT-316 (4-20mA).
- 0424 2.13. FILTER 5 FLOW FIT-317 (4-20mA).
- 0425 2.14. FILTER 6 FLOW FIT-318 (4-20mA).
- 0426 2.15. POST-FILTER TOC 03-AIT-301 (4-20mA).
- 0427 2.16. POST-FILTER TEMP 03-AIT-302A pH, 03-AIT-302B TEMP (4-20mA).
- 0428 2.17. POST-FILTER ALKALINITY 03-AIT-303 (4-20mA).
- 0429 2.18. POST-FILTER TURBIDITY 03-AIT-304 (4-20mA).
- 0430 2.19. POST-FILTER CHLORINE AIT-402 (4-20mA).
- 0431 2.20. POST-FILTER PH AIT-401A (4-20mA).
- 0432 2.21. POST-FILTER TEMP AIT-401B (4-20mA).
- 0433 2.22. EQUALIZATION BASIN LEVEL LIT-601 (4-20mA).
- 0434 2.23. CAUSTIC TOTE LEVEL LIT-501 (4-20mA).
- 0435 2.24. COAGULANT TOTE LEVEL LIT-502 (4-20mA).
- 0436 2.25. ORTHOPHOSPHATE TOTE LEVEL LIT-503 (4-20mA).
- 0437 2.26. FILTER AIR SCOUR INLET PRESSURE PIT-601 (4-20mA).
- 0438 2.27. FILTER AIR SCOUR BLOWER A DISCHARGE PRESSURE PIT-603 (4-20mA).
- 0439 2.28. FILTER AIR SCOUR BLOWER B DISCHARGE PRESSURE PIT-605 (4-20mA).
- 0440 2.29. FILTER AIR SCOUR OUTLET FLOW FIT-607 (4-20mA).
- 0441 2.30. FILTRATION BUILDING TEMPERATURE TT-609 (4-20mA).
- 0442 3. ANALOG OUTPUTS
- 0443 3.1. PUMP P-501A SPEED (4-20mA).
- 0444 3.2. PUMP P-501B SPEED (4-20mA).
- 0445 3.3. PUMP P-501C SPEED (4-20mA).
- 0446 3.4. PUMP P-502A SPEED (4-20mA).
- 0447 3.5. PUMP P-502B SPEED (4-20mA).
- 0448 3.6. PUMP P-503A SPEED (4-20mA).
- 0449 3.7. PUMP P-503B SPEED (4-20mA).

REVISIONS		BY	DATE
REV	DESCRIPTION		



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

10-CP-01 GENERAL CONTROL

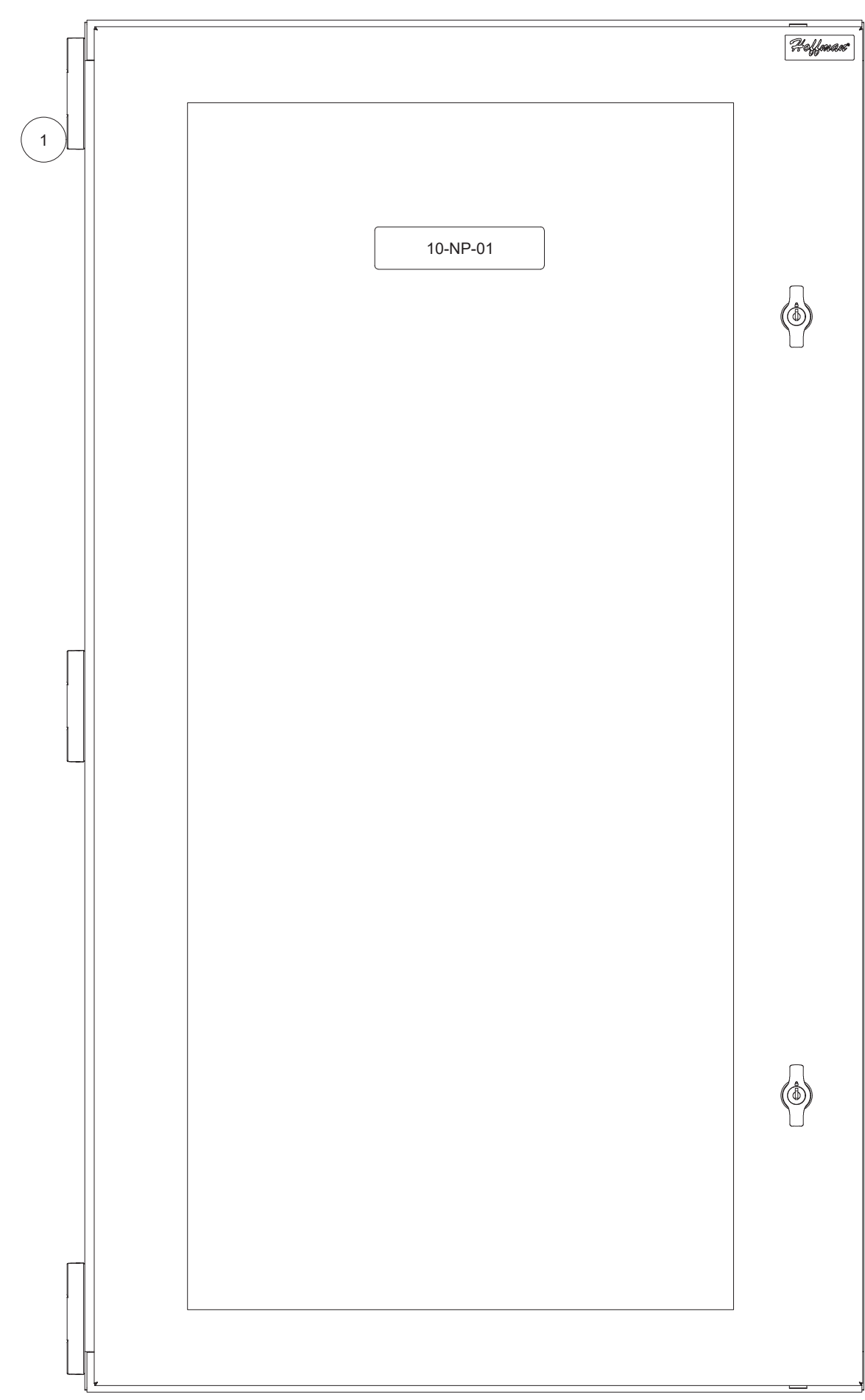
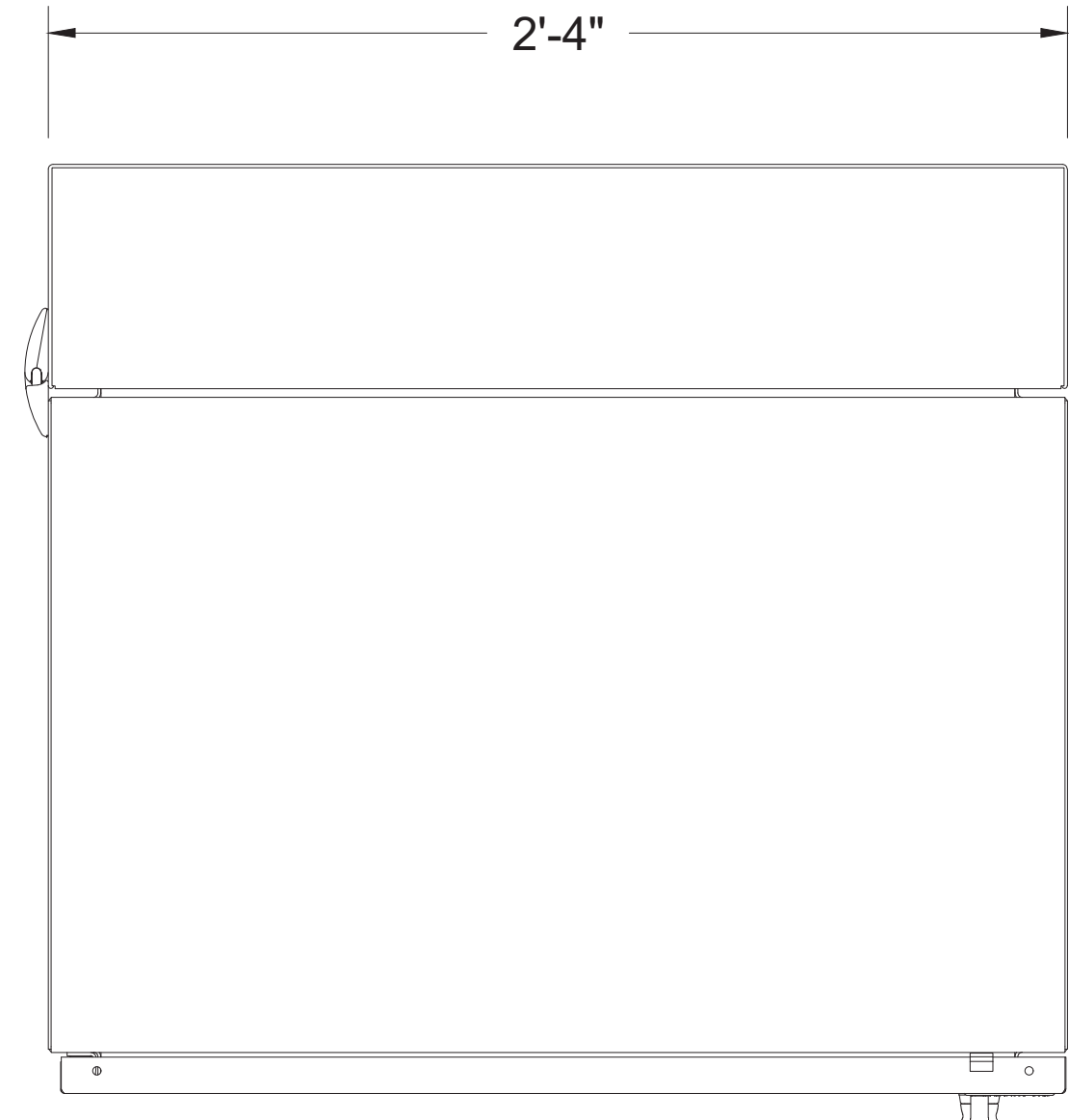
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	J000541
DATE	06/02/2023

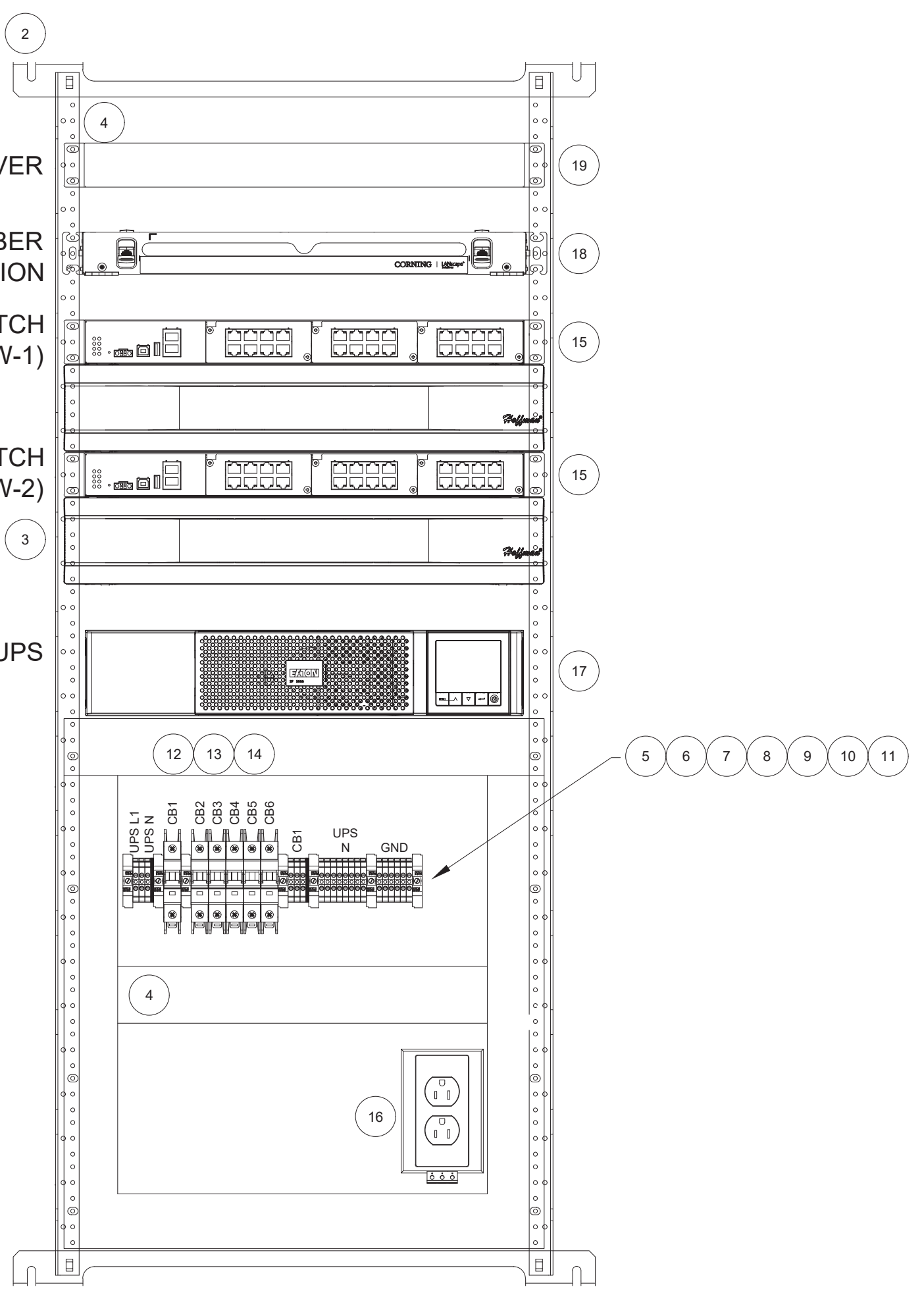
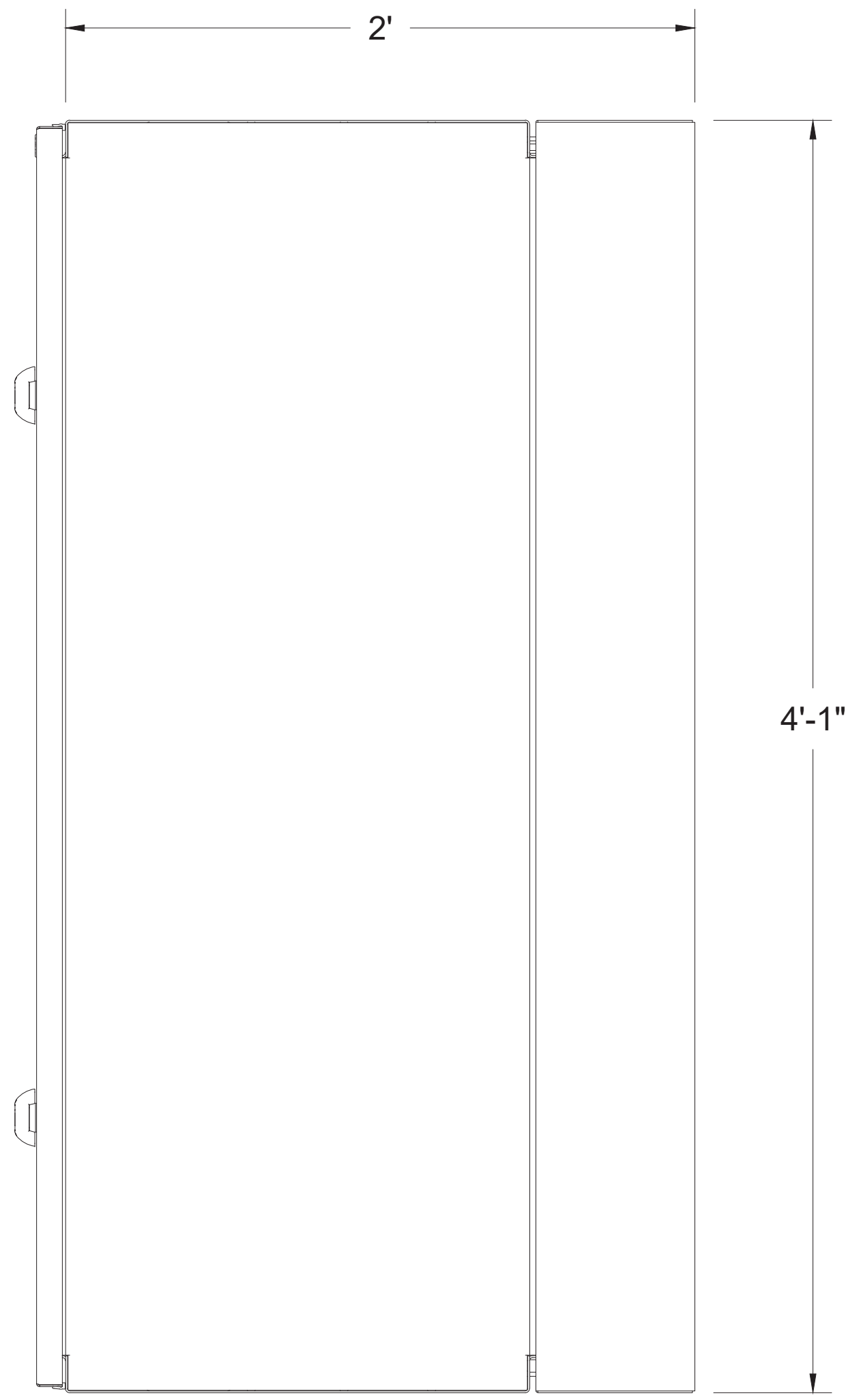
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1 NETWORK ENCLOSURE (FILTRATION BUILDING)

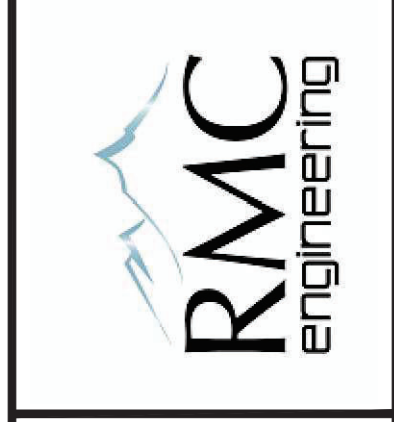


2 NETWORK RACK

- NOTES:
1. QUANTITY AS SHOWN.
 2. PROVIDE ALL NECESSARY PARTS AND EQUIPMENT TO PROVIDE COMPLETE AND OPERABLE NETWORK CABINET.
 3. PROVIDE VERTICAL AND HORIZONTAL CABLE MANAGEMENT.
 4. NEATLY ROUTE NETWORK CABLES WITHIN NETWORK CABINET.
 5. UPS TO SUPPLY BACKUP POWER TO 10-CP-01 CONTROL PANEL.
 6. PROVIDE SERVICE LOOP FOR FIBER OPTIC CABLE.

Item	Part #	Description	Manufacturer
Material List: NP-100			
1	PTHW482824G2	Network Rack Enclosure	Hoffman
2	P19R12UP	Rack Mounted Control Panel	Hoffman
3	DCHS2	Rack Mounted Wire Management	Hoffman
4	T1E-2240W-1	Wire Management Gutter	Iboco
5	1201730	Din Rail, Cut to Length, 35mm	Phoenix Contact
6	3044102	Feed-Through Terminal Block,	Phoenix Contact
7	3044128	Ground Terminal Block	Phoenix Contact
8	3030336	Plug-In Bridge Jumper	Phoenix Contact
9	3047206	Terminal Block End Cover	Phoenix Contact
10	800886	End Clamp	Phoenix Contact
11	UCT-TM 6	Terminal Marker	Phoenix Contact
12	FAZ-C10-1-NA-SP	10A Circuit Breaker	Eaton
13	FAZ-C5-1-NA-SP	5A Circuit Breaker	Eaton
14	FAZ-C20-1-NA-SP	20A Circuit Breaker	Eaton
15		Network Switch (24 Copper Ports, 2 SFP Ports)	Ubiquity
16	5600461	Power Outlet	Phoenix Contact
17	5P750RC	UPS	Eaton
18	CCH-01U	Fiber optic termination / patch panel	Coming
19		Rackmount Server	

REVISIONS		BY	DATE
REV	DESCRIPTION		



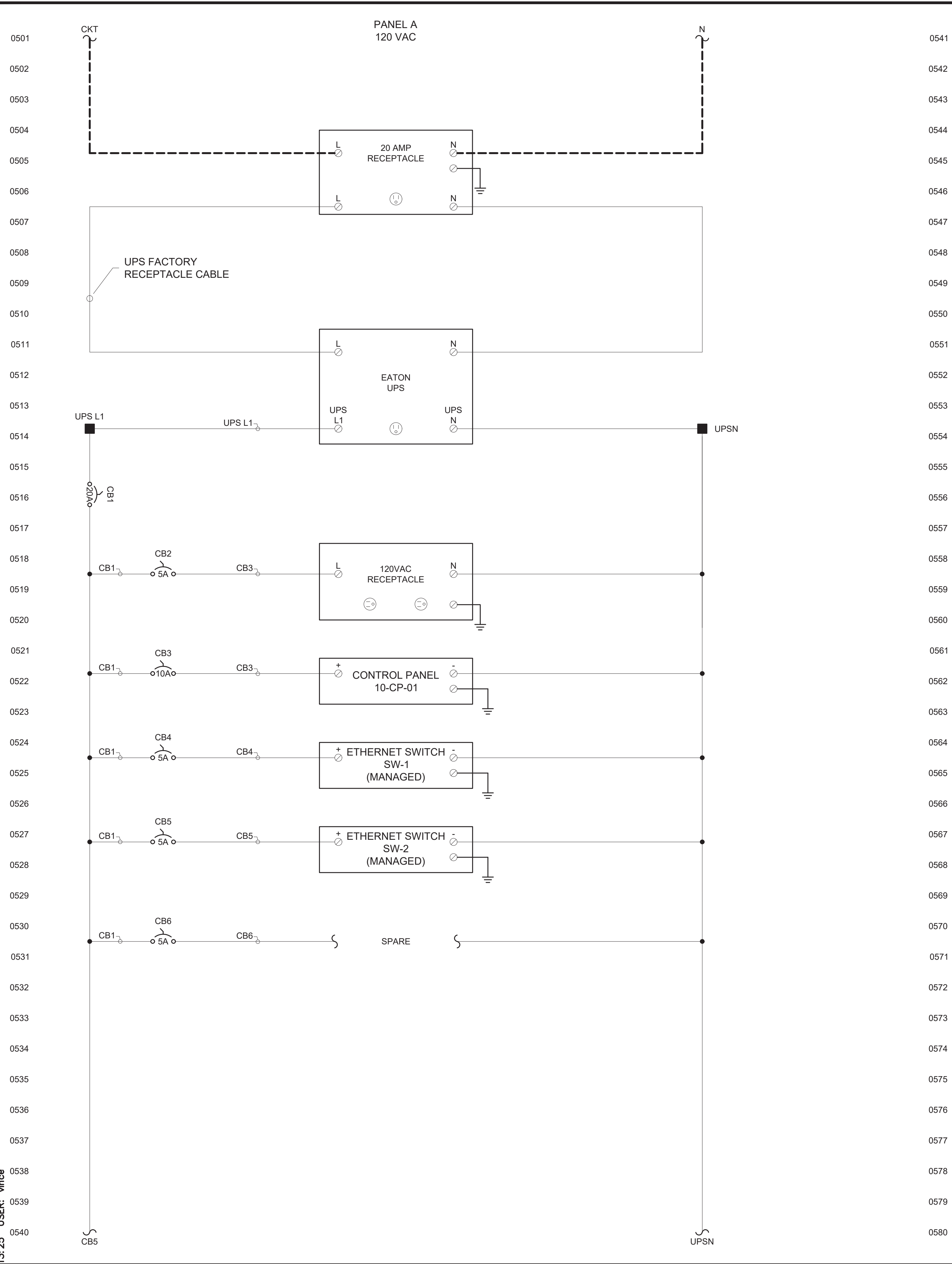
WRANGLER WATER TREATMENT PLANT IMPROVEMENTS
 WRANGLER, ALASKA
10-NP-01 PANEL LAYOUT
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGLER, ALASKA

PROJECT J000541
 DATE 06/02/2023

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IC-04

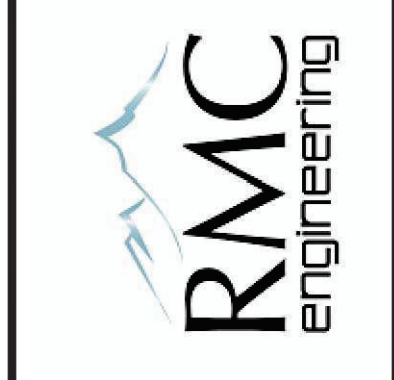
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NOTES:
 1. MOUNT 20 AMP RECEPTACLE ON BACK PANEL OF NETWORK RACK.

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REV	DATE	DESCRIPTION



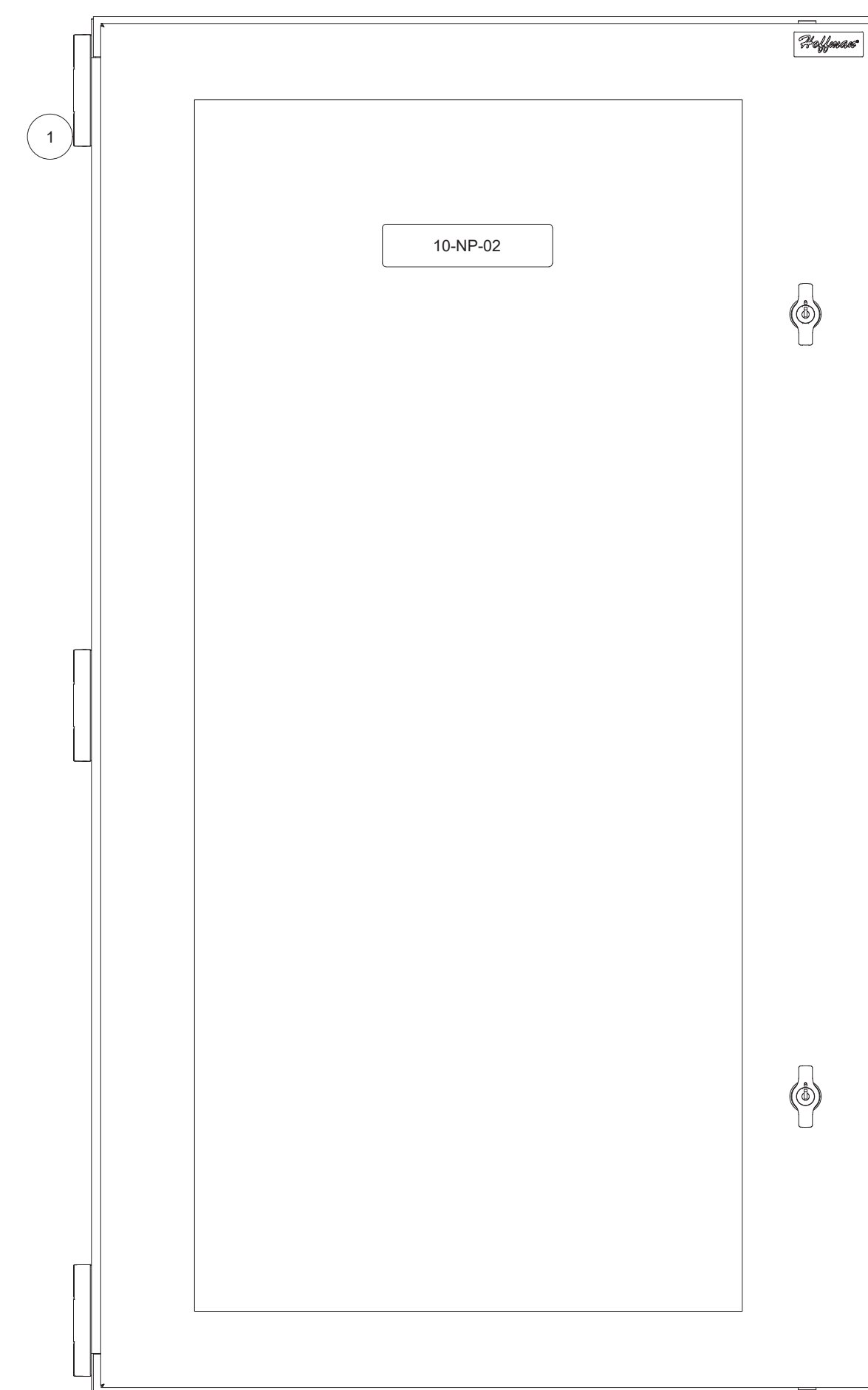
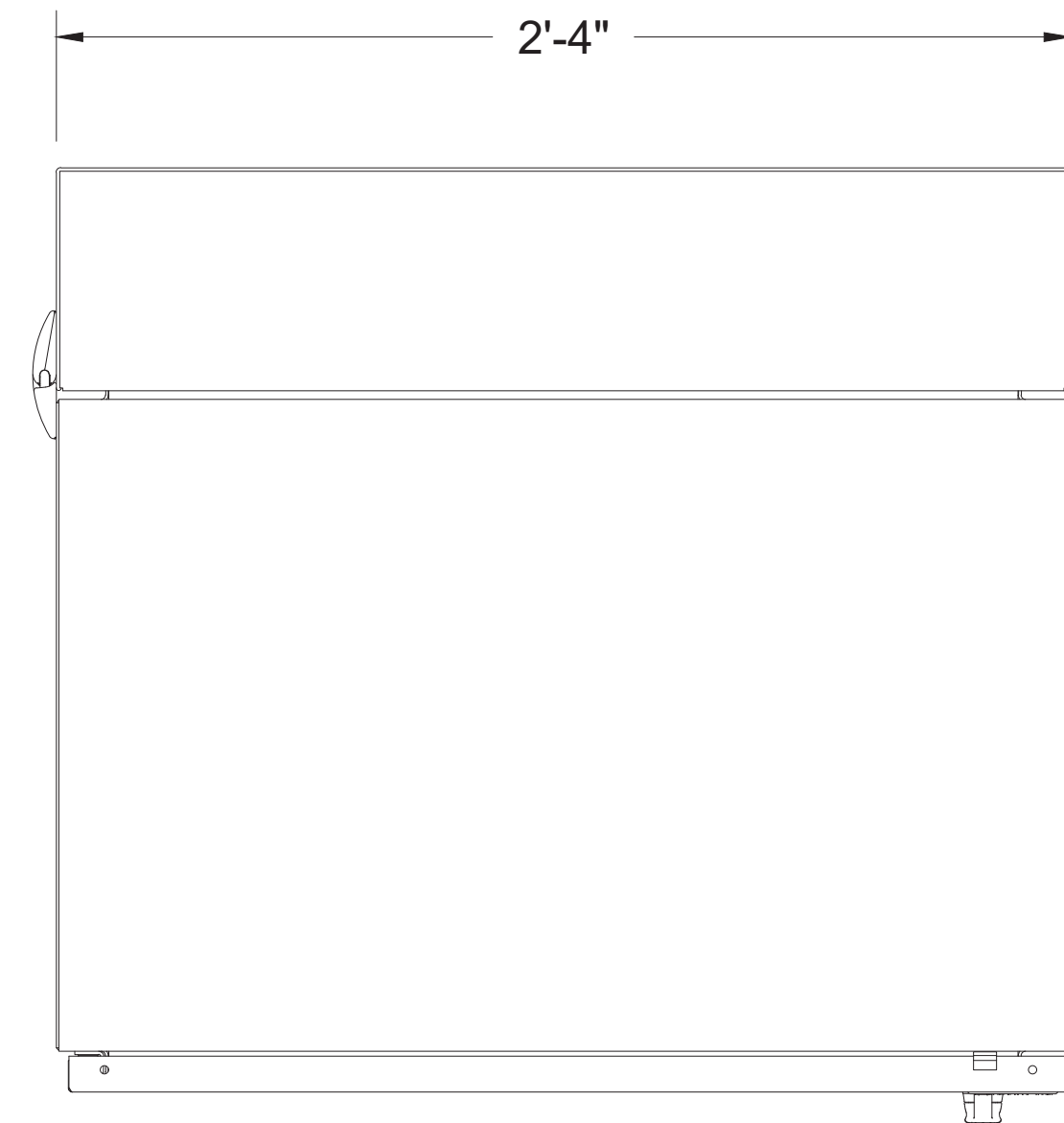
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
10-NP-01 GENERAL CONTROL
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	J000541
DATE	06/02/2023

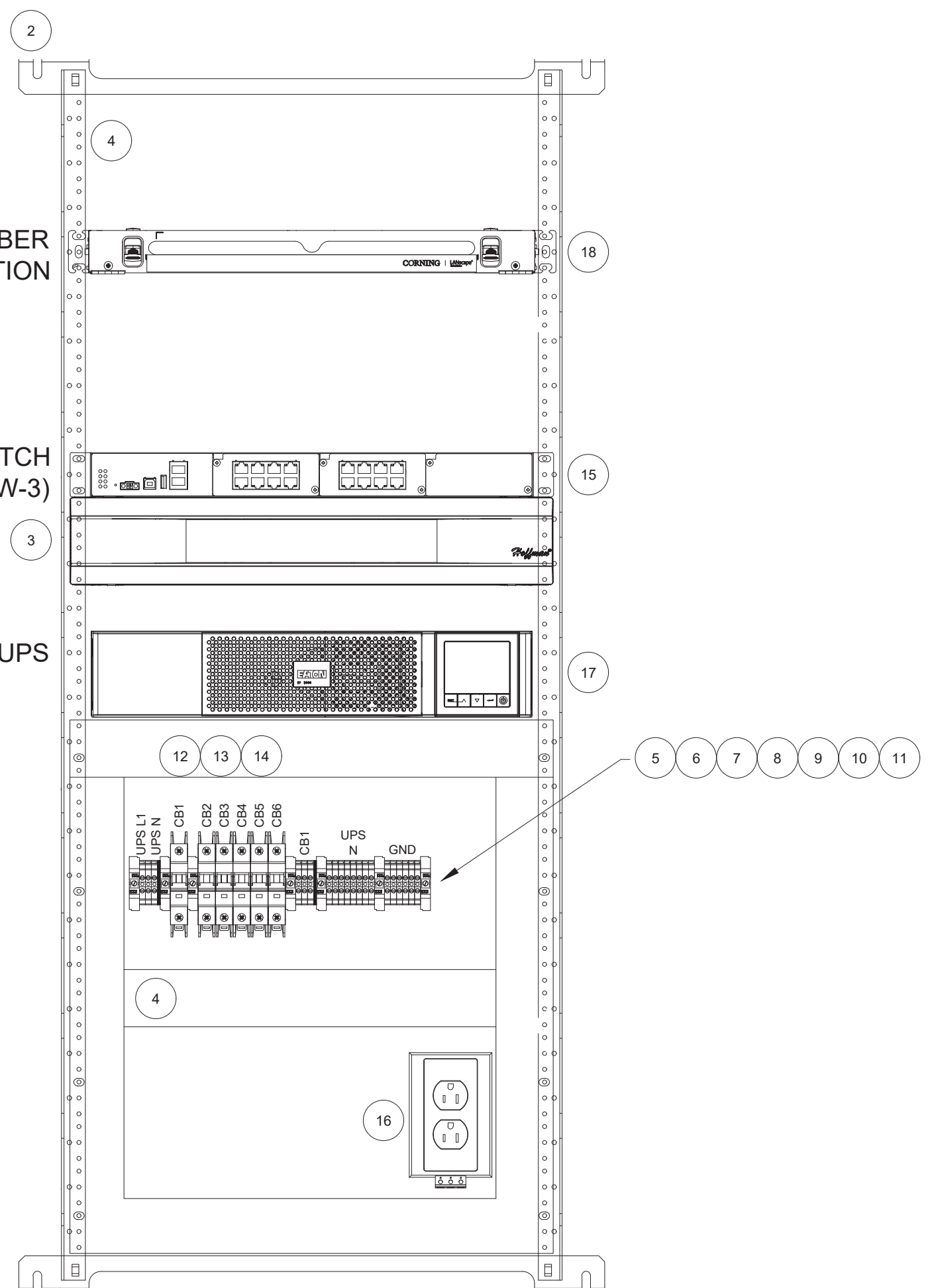
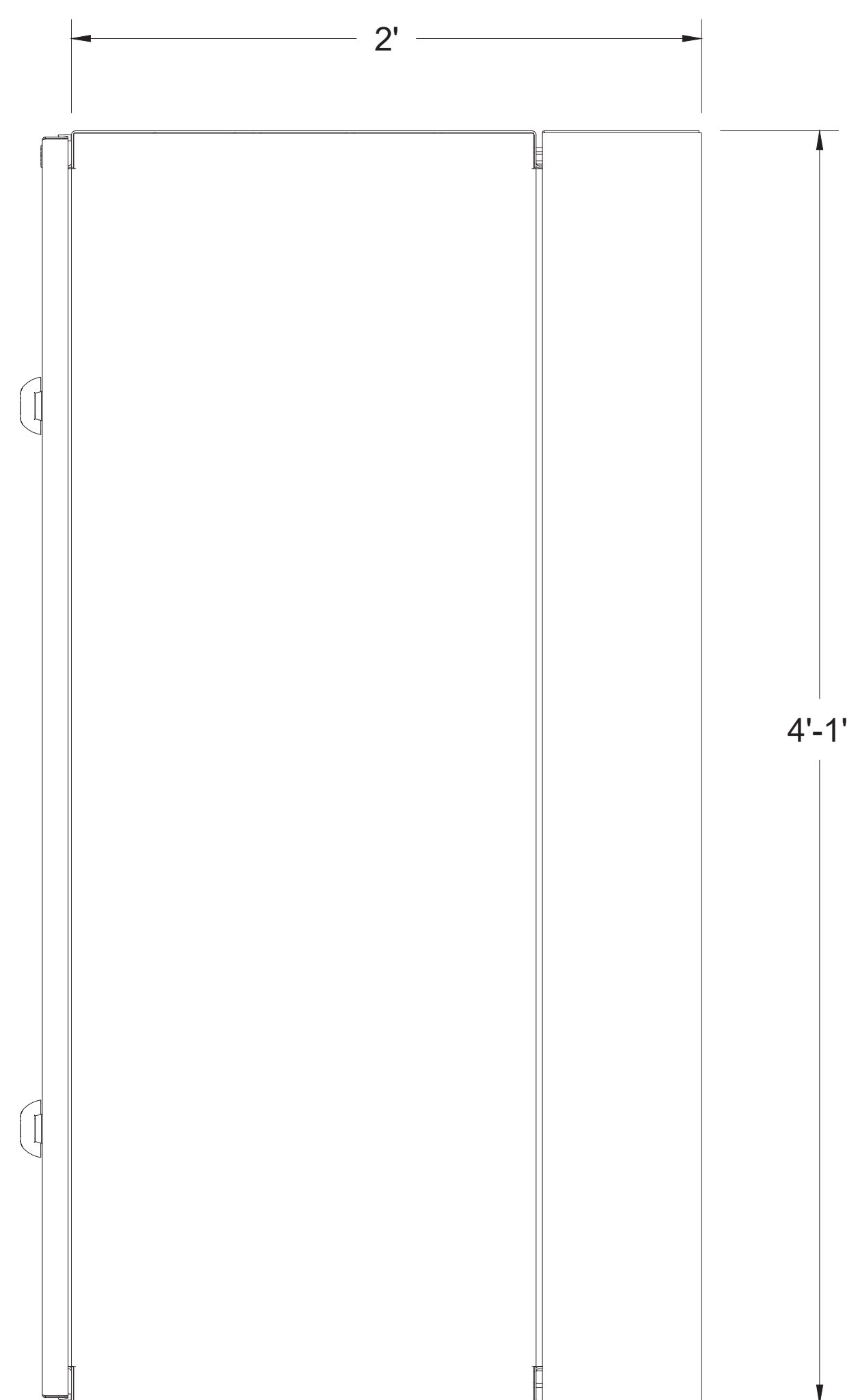
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IC-05

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1 NETWORK ENCLOSURE (ADMIN BUILDING)

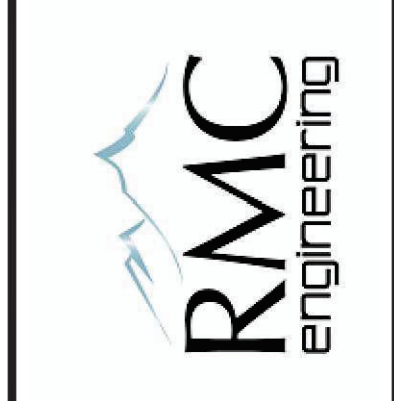


2 NETWORK RACK

- NOTES:
1. QUANTITY AS SHOWN.
 2. PROVIDE ALL NECESSARY PARTS AND EQUIPMENT TO PROVIDE COMPLETE AND OPERABLE NETWORK CABINET.
 3. PROVIDE VERTICAL AND HORIZONTAL CABLE MANAGEMENT.
 4. NEATLY ROUTE NETWORK CABLES WITHIN NETWORK CABINET.
 5. UPS TO SUPPLY BACKUP POWER TO 10-CP-02 CONTROL PANEL.
 6. PROVIDE SERVICE LOOP FOR FIBER OPTIC CABLE.

Item	Part #	Description	Manufacturer
Material List: NP-200			
1	PTHW482824G2	Network Rack Enclosure	Hoffman
2	P19RP12UP	Rack Mounted Control Panel	Hoffman
3	DCHS2	Rack Mounted Wire Management	Hoffman
4	T1E-2240W-1	Wire Management Gutter	iboco
5	1201730	Din Rail, Cut to Length, 35mm	Phoenix Contact
6	3044102	Feed-Through Terminal Block,	Phoenix Contact
7	3044128	Ground Terminal Block	Phoenix Contact
8	3030336	Plug-In Bridge Jumper	Phoenix Contact
9	3047206	Terminal Block End Cover	Phoenix Contact
10	800886	End Clamp	Phoenix Contact
11	UCT-1M 6	Terminal Marker	Phoenix Contact
12	FAZ-C10-1-NA-SP	10A Circuit Breaker	Eaton
13	FAZ-C5-1-NA-SP	5A Circuit Breaker	Eaton
14	FAZ-C20-1-NA-SP	20A Circuit Breaker	Eaton
15		Network Switch	Ubiquity
16	5600461	Power Outlet	Phoenix Contact
17	5P750RC	UPS	Eaton
18	CCH-01U	Fiber optic termination / patch panel	Coming

REVISIONS		BY
REV	DATE	DESCRIPTION



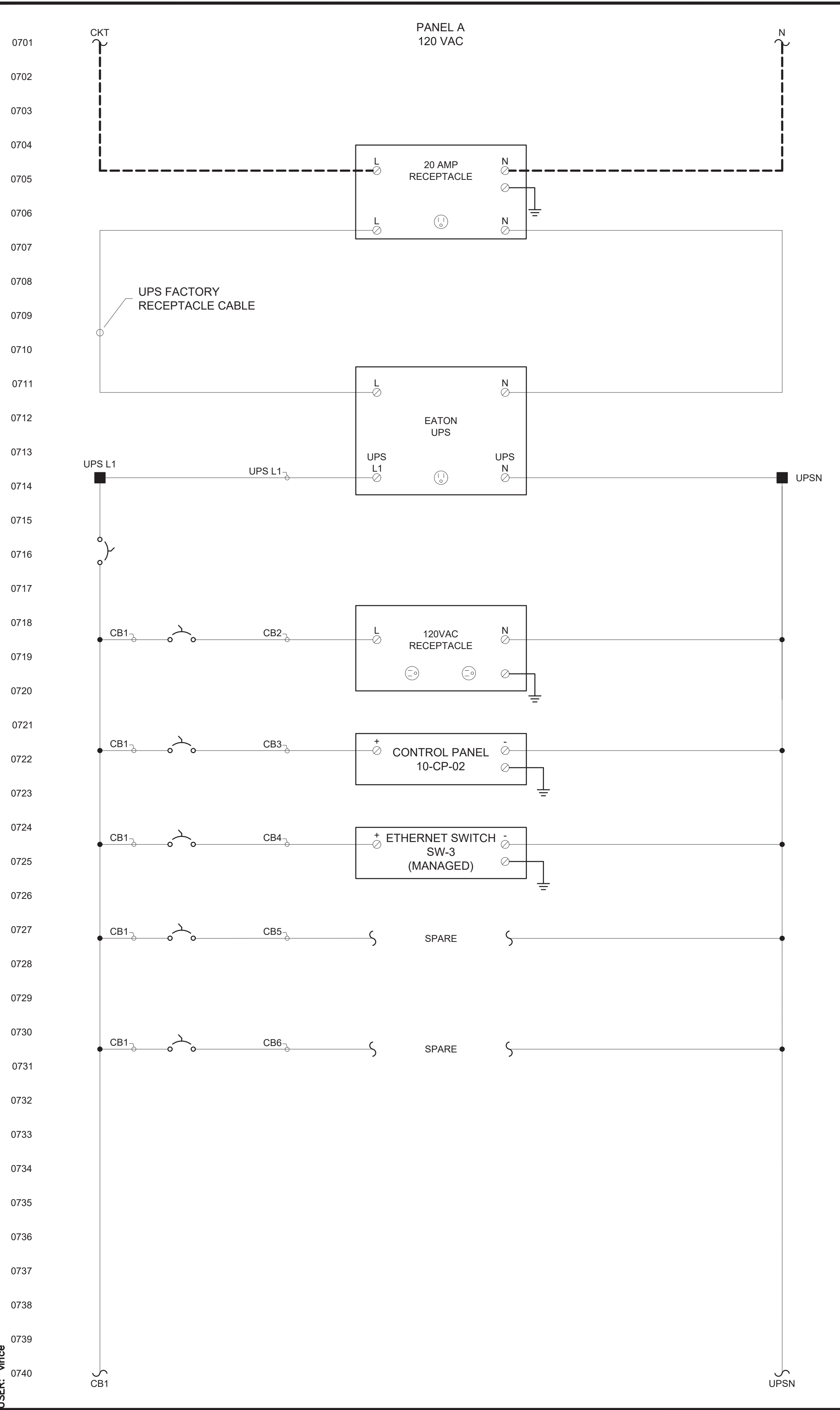
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
10-NP-02 GENERAL LAYOUT
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	J000541
DATE	06/02/2023

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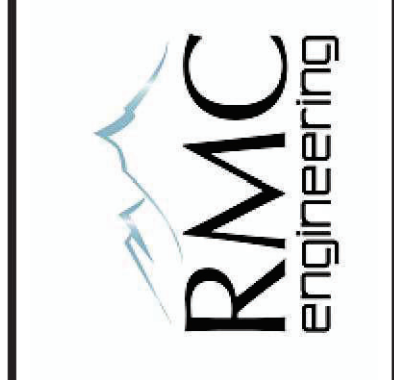
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REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

10-NP-02 GENERAL CONTROL

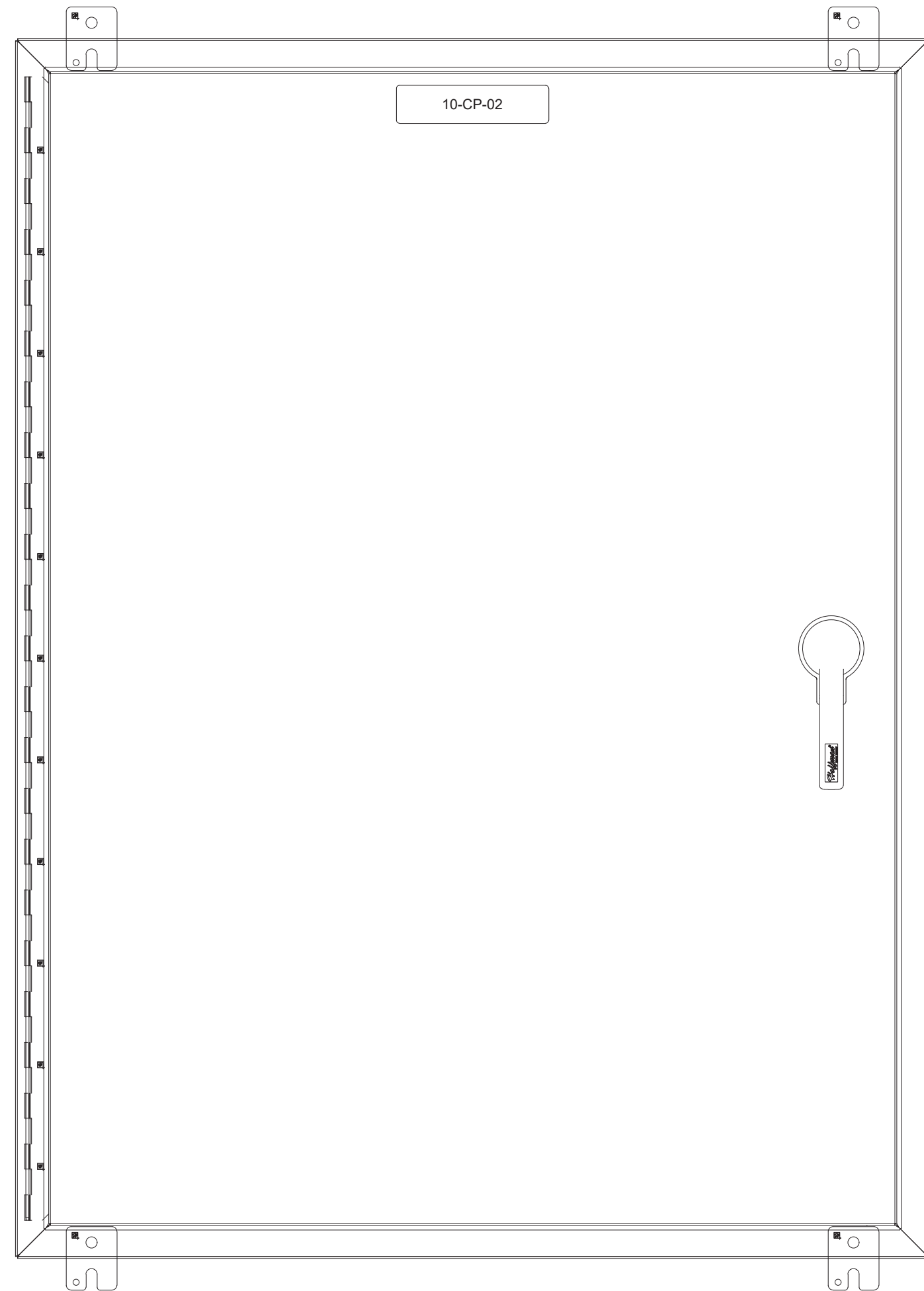
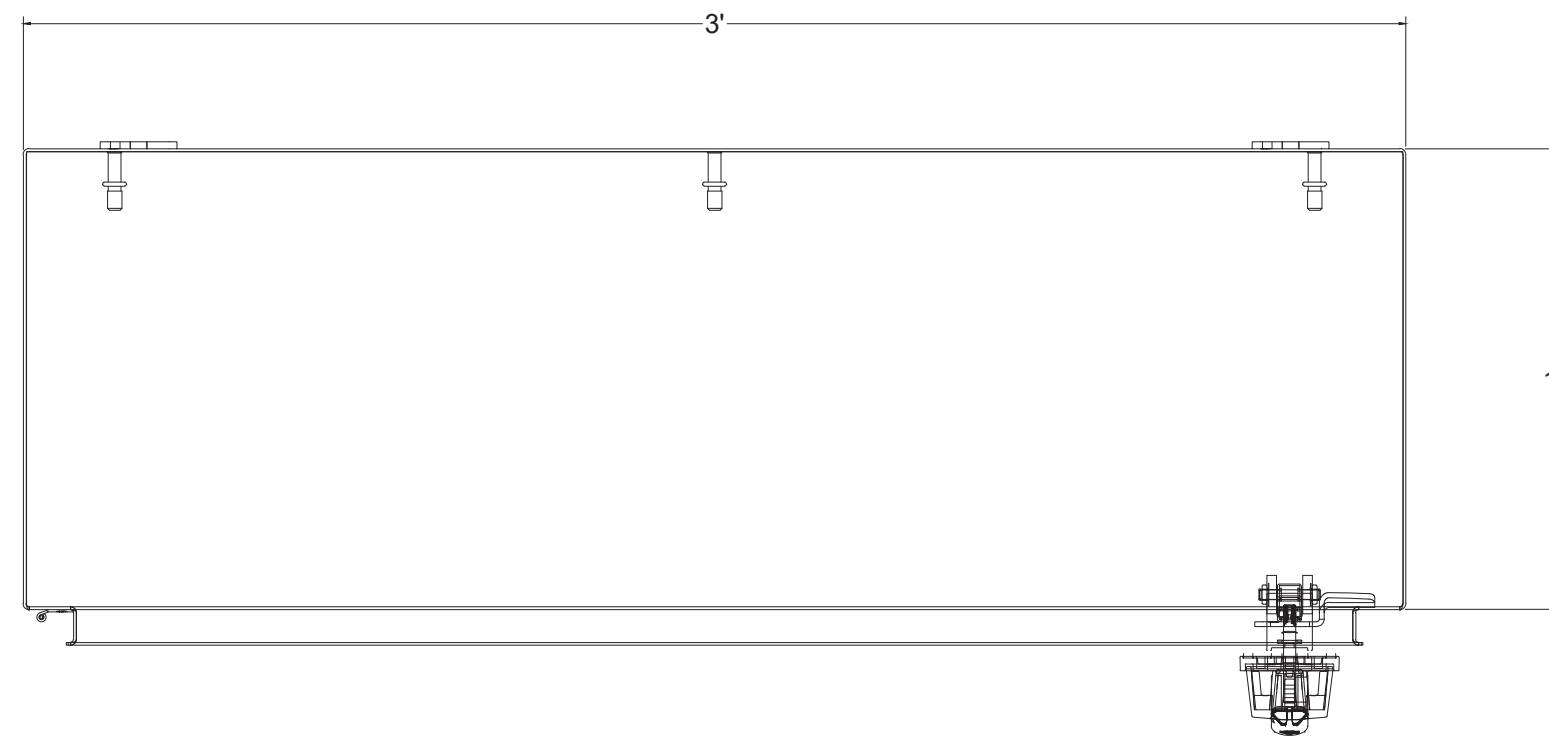
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	J000541
DATE	06/02/2023

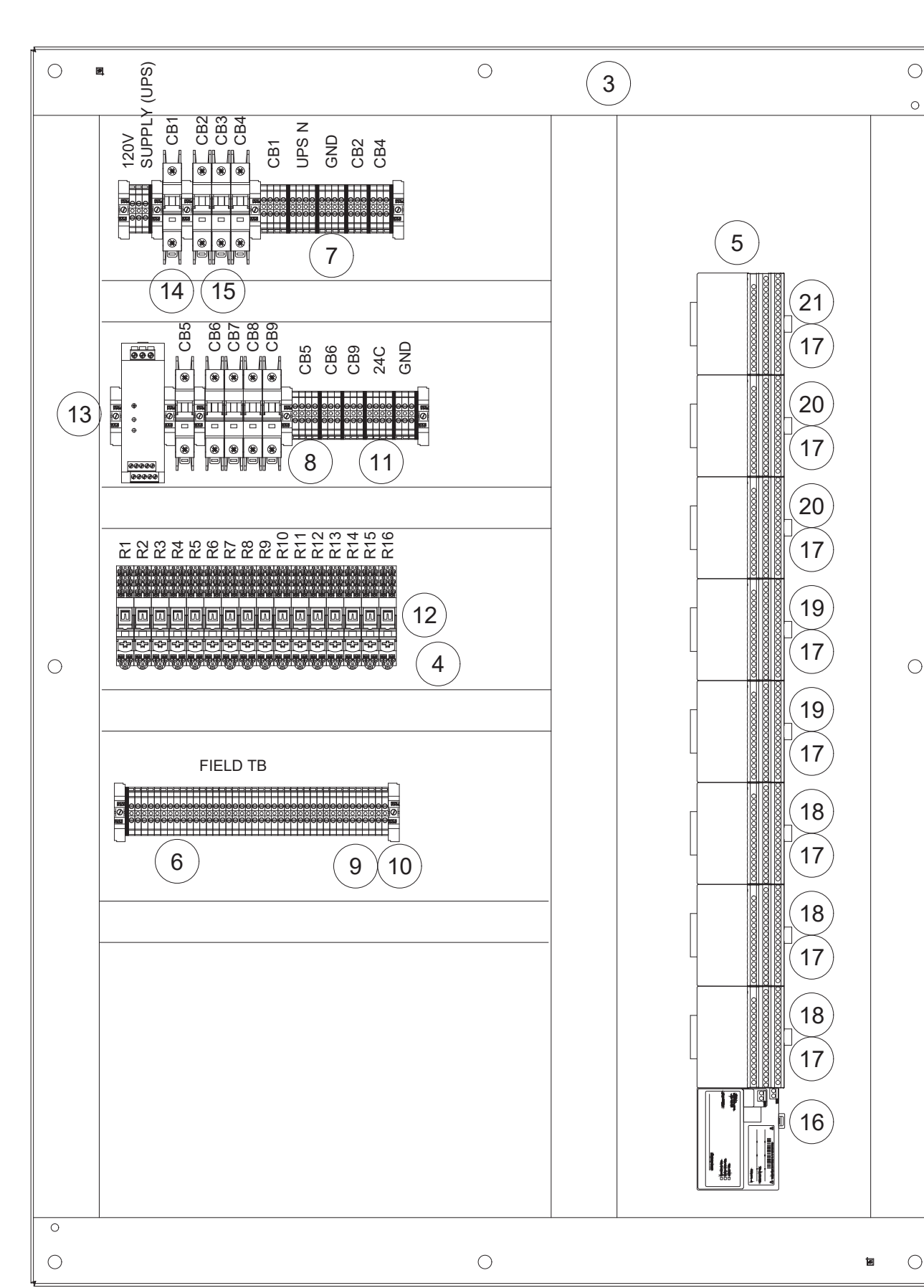
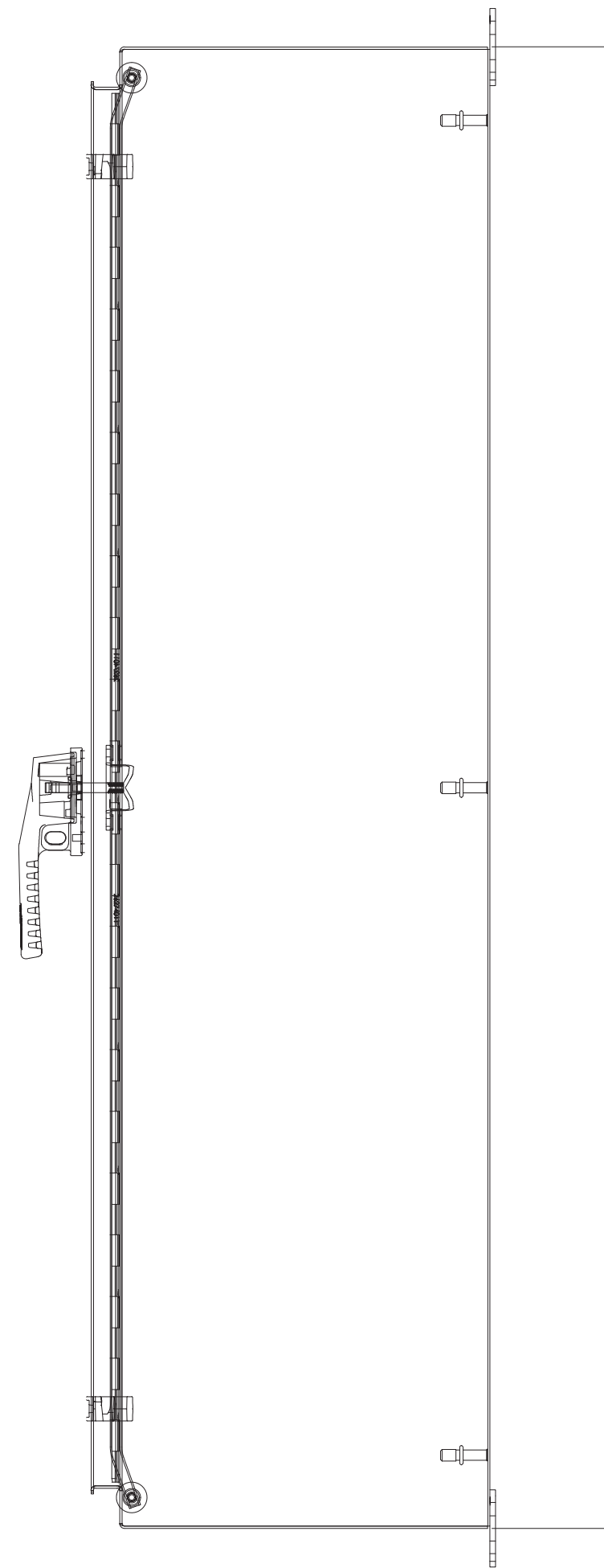
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IC-07

BID DOCUMENTS
AGENCY SUBMITTAL - NOT FOR CONSTRUCTION



1 REMOTE I/O PANEL (ADMIN BUILDING)



2 BACK PANEL

Item	Part #	Description	Manufacturer
Material List: 10-CP-01 Remote IO Panel			
1	A48H36DLP3PT	Enclosure, Type 4	Hoffman
2	A48P36	Back Panel	Hoffman
3	T1E-2230W-1	Wire management Gutter, 2.25"	Iboco
4	T1E-1530W-1	Wire management Gutter, 1.5"	Iboco
5	1201730	Din Rail, Cut to length	Phoenix Contact
6	3044102	Feed Through Terminal Block	Phoenix Contact
7	3044128	Ground Terminal Block	Phoenix Contact
8	3030336	Plug-In Bridge Jumper	Phoenix Contact
9	3047206	Terminal Block End Cover	Phoenix Contact
10	800886	End Clamp	Phoenix Contact
11	UCT-TM 6	Terminal Marker	Phoenix Contact
12	2905291	Relay Module	Phoenix Contact
13	2320908	24VDC Power Supply	Phoenix Contact
14	FAZ-C10-1-NA-SP	10A Circuit Breaker	Eaton
15	FAZ-C5-1-NA-SP	5A Circuit Breaker	Eaton
16	1794-AENT	Flex I/O Ethernet Adaptor Module	Allen Bradley
17	1794-TB3	Flex I/O Terminal Base	Allen Bradley
18	1794-IB16	Flex I/O Digital Input Module, 16 CH	Allen Bradley
19	1794-OW8	Flex I/O Relay Output Module, 8 CH	Allen Bradley
20	1794-IE8	Flex I/O Analog Input Module, 8 CH	Allen Bradley
21	1794-OE4	Flex I/O Analog Output Module, 4 CH	Allen Bradley

NOTES:

1. QUANTITY AS SHOWN.
2. MAIN 120VAC POWER TO BE SUPPLIED FROM UPS IN 10-NP-02.
3. MANUFACTURING AND DESIGN MUST ADHERE TO UL508A.
4. CONTROL PANEL MANUFACTURER SHALL PERFORM SHOP TESTING PRIOR TO INSTALLATION. SHOP TESTING SHALL BE WITNESSED AND APPROVED BY ENGINEER.
5. ALL EXPENSES ASSOCIATED WITH SHOP TESTING SHALL BE COVERED BY CONTROL PANEL MANUFACTURER. EXPENSES INCLUDE ENGINEER TRAVEL AND LODGING.

REVISIONS		BY	DATE	DESCRIPTION
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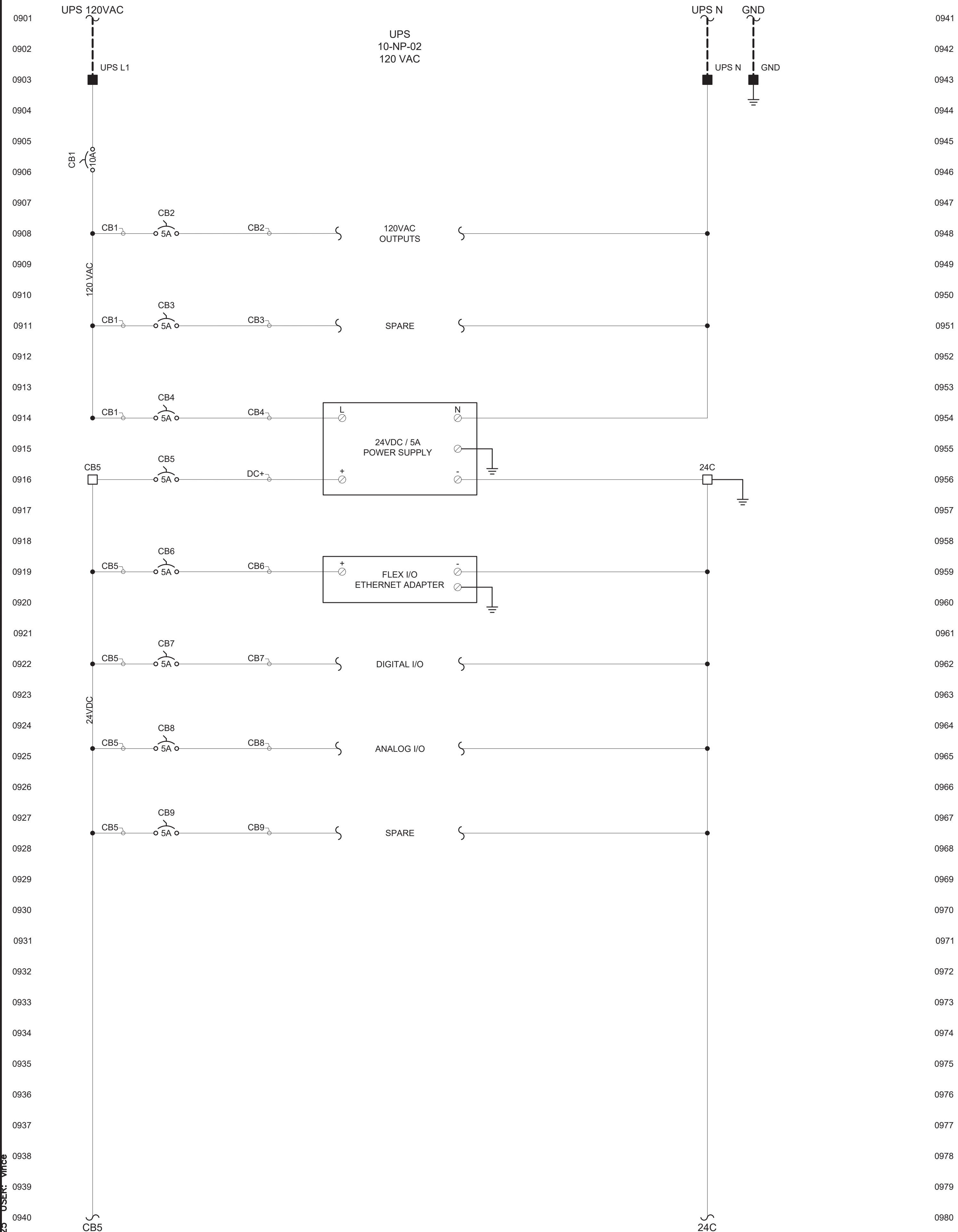
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
10-CP-02 PANEL LAYOUT
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
DATE 06/02/2023

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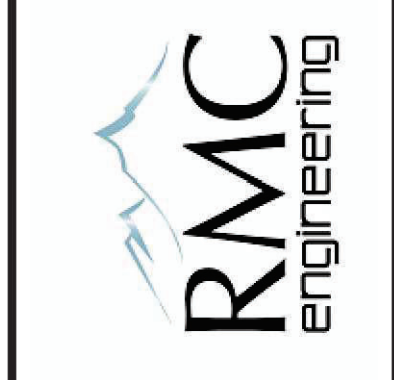
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- 0941 FIELD I/O
- 0942 1. DIGITAL INPUTS
- 0943 1.1. HIGH SERVICE PUMP P-401A IN HAND.
- 0944 1.2. HIGH SERVICE PUMP P-401A IN AUTO.
- 0945 1.3. HIGH SERVICE PUMP P-401A IN REMOTE.
- 0946 1.4. HIGH SERVICE PUMP P-401B IN HAND.
- 0947 1.5. HIGH SERVICE PUMP P-401B IN AUTO.
- 0948 1.6. HIGH SERVICE PUMP P-401B IN REMOTE.
- 0949 1.7. HIGH SERVICE PUMP P-401C IN HAND.
- 0950 1.8. HIGH SERVICE PUMP P-401C IN AUTO.
- 0951 1.9. HIGH SERVICE PUMP P-401C IN REMOTE.
- 0952 1.10. PUMP P-703A FAULT.
- 0953 1.11. PUMP P-703B FAULT.
- 0954 1.12. PUMP P-703C FAULT.
- 0955 2. DIGITAL OUTPUTS
- 0956 2.1. PUMP 07-P-700A RUN.
- 0957 2.2. PUMP 07-P-700B RUN.
- 0958 2.3. SV-TK701 OPEN.
- 0959 2.4. SV-TK702 OPEN.
- 0960 3. ANALOG INPUTS
- 0961 3.1. CLARIFIED WATER TURBIDITY AIT-1001 (4-20mA)
- 0962 3.2. DISTRIBUTION TANK LEVEL LT-1002 (4-20mA).
- 0963 3.3. OSG INLET CHLORINE AIT-1003 (4-20mA).
- 0964 3.4. CLARIFIED WATER FLOW FIT-1004 (4-20mA).
- 0965 3.5. BUILDING TEMPERATURE (4-20mA).
- 0966 3.6. BACKWASH DISCHARGE FLOW FIT-603 (4-20mA).
- 0967 3.7. BACKWASH DISCHARGE VALVE FV-603A POSITION (4-20mA).
- 0968 3.8. BACKWASH DISCHARGE VALVE FV-603B POSITION (4-20mA).
- 0969 4. ANALOG OUTPUTS
- 0970 4.1. PUMP P-703A SPEED (4-20mA).
- 0971 4.2. PUMP P-703B SPEED (4-20mA).
- 0972 4.3. PUMP P-703C SPEED (4-20mA).
- 0973 4.4. BACKWASH DISCHARGE VALVE FV-603A POSITION (4-20mA).
- 0974 4.5. BACKWASH DISCHARGE VALVE FV-603B POSITION (4-20mA).

REVISIONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

10-CP-02 GENERAL CONTROL

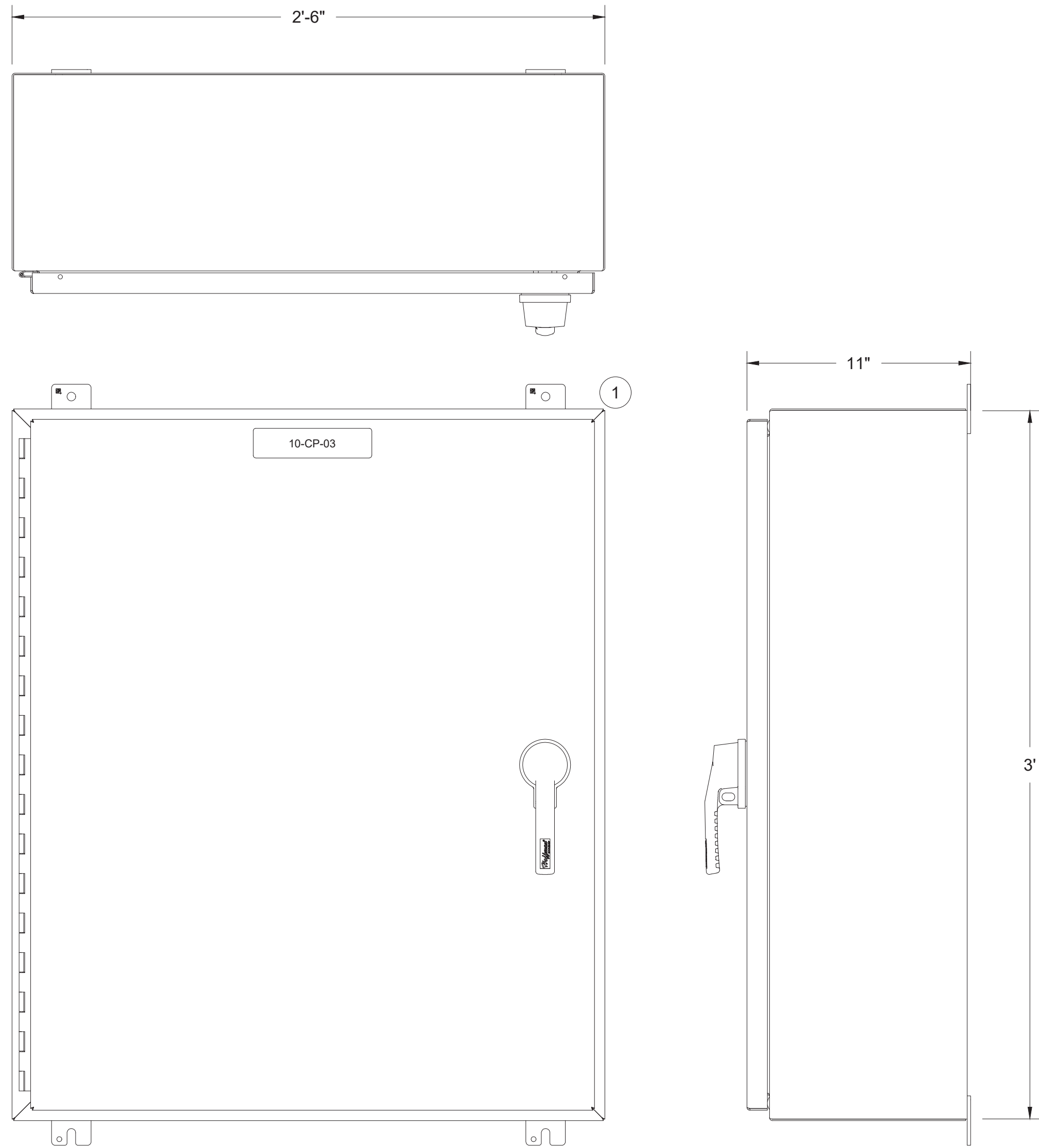
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	J000541
DATE	06/02/2023

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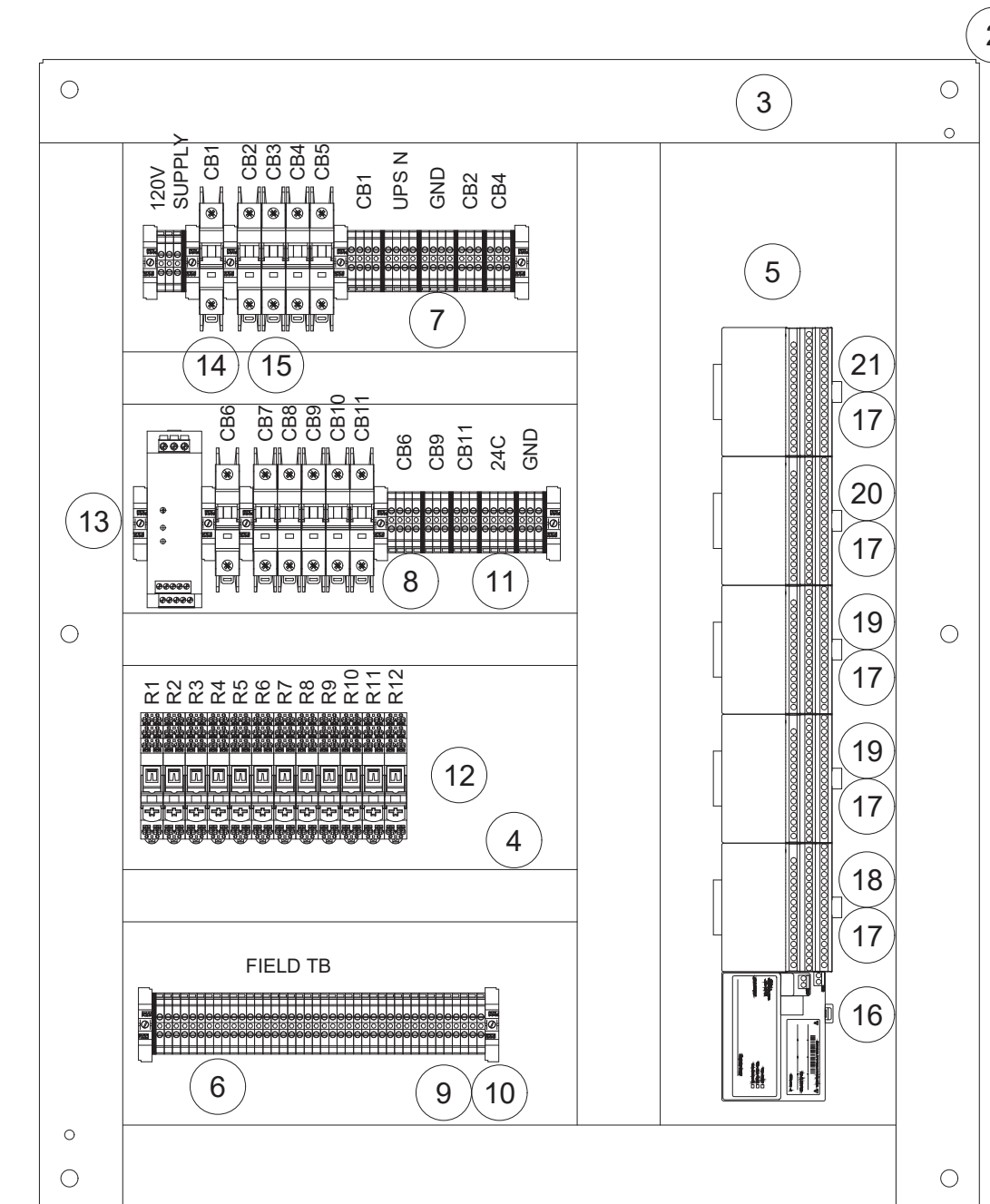


1 REMOTE I/O PANEL (CLEARWELL)

Item	Part #	Description	Manufacturer
Material List: 10-CP-03 Remote IO Panel			
1	A36H3010SS6LP3PT	Enclosure, Type 4X	Hoffman
2	A36P30	Back Panel	Hoffman
3	T1E-2230W-1	Wire management Gutter, 2.25"	Iboco
4	T1E-1530W-1	Wire management Gutter, 1.5"	Iboco
5	1201730	Din Rail, Cut to length	Phoenix Contact
6	3044102	Feed Through Terminal Block	Phoenix Contact
7	3044128	Ground Terminal Block	Phoenix Contact
8	3030336	Plug-In Bridge Jumper	Phoenix Contact
9	3047206	Terminal Block End Cover	Phoenix Contact
10	800886	End Clamp	Phoenix Contact
11	UCT-TM 6	Terminal Marker	Phoenix Contact
12	2905291	Relay Module	Phoenix Contact
13	2320908	24VDC Power Supply	Phoenix Contact
14	FAZ-C10-1-NA-SP	10A Circuit Breaker	Eaton
15	FAZ-C5-1-NA-SP	5A Circuit Breaker	Eaton
16	1794-AENT	Flex I/O Ethernet Adaptor Module	Allen Bradley
17	1794-TB3	Flex I/O Terminal Base	Allen Bradley
18	1794-IB16	Flex I/O Digital Input Module, 16 CH	Allen Bradley
19	1794-OW8	Flex I/O Relay Output Module, 8 CH	Allen Bradley
20	1794-IE8	Flex I/O Analog Input Module, 8 CH	Allen Bradley
21	1794-OE4	Flex I/O Analog Output Module, 4 CH	Allen Bradley

NOTES:

1. QUANTITY AS SHOWN.
2. MANUFACTURING AND DESIGN MUST ADHERE TO UL508A.
3. CONTROL PANEL MANUFACTURER SHALL PERFORM SHOP TESTING PRIOR TO INSTALLATION. SHOP TESTING SHALL BE WITNESSED AND APPROVED BY ENGINEER.
4. ALL EXPENSES ASSOCIATED WITH SHOP TESTING SHALL BE COVERED BY CONTROL PANEL MANUFACTURER. EXPENSES INCLUDE ENGINEER TRAVEL AND LODGING.



2 BACK PANEL

REVISIONS		BY	DATE	DESCRIPTION
REV	DATE			



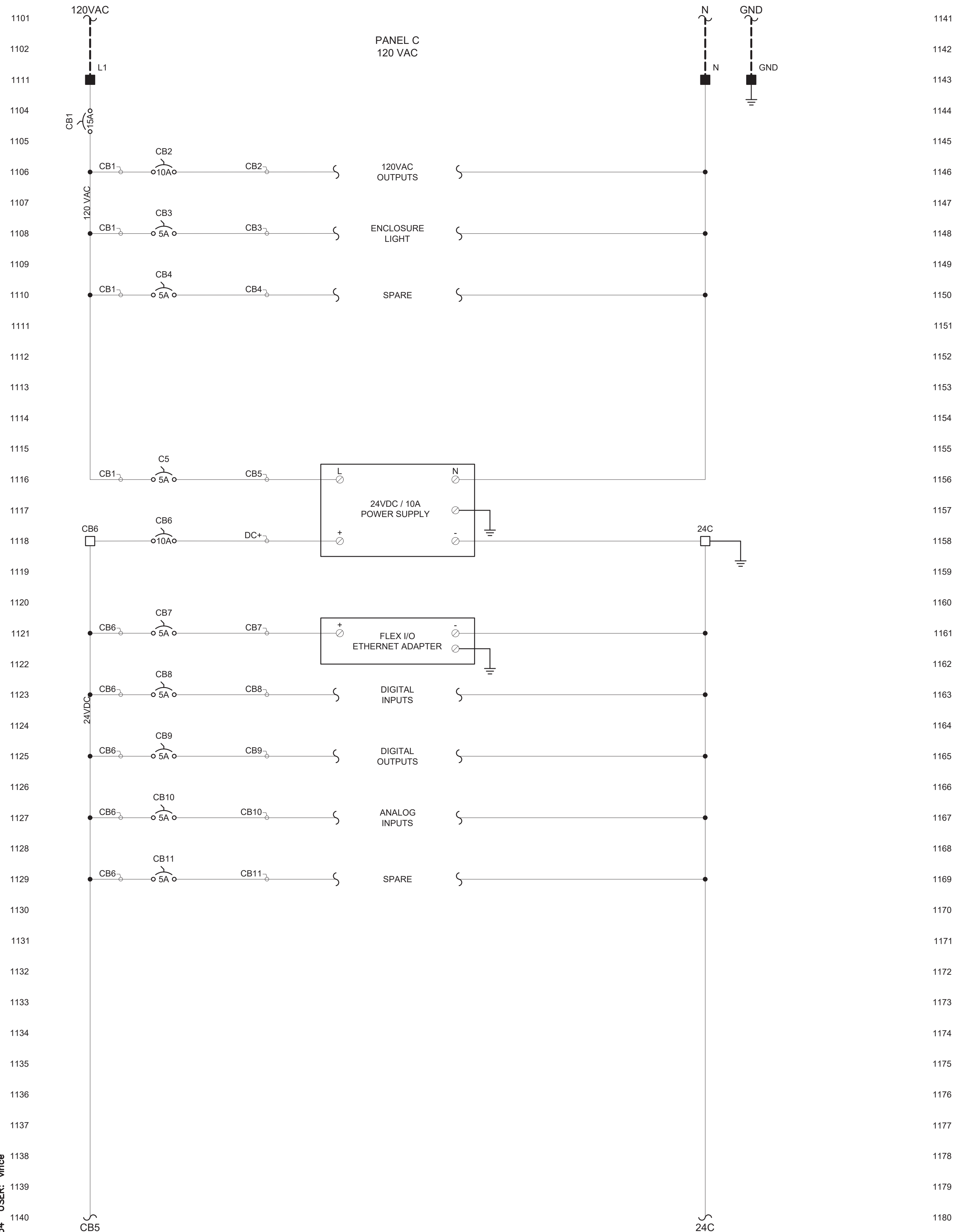
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
10-CP-03 PANE LAYOUT
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
DATE 06/02/2023

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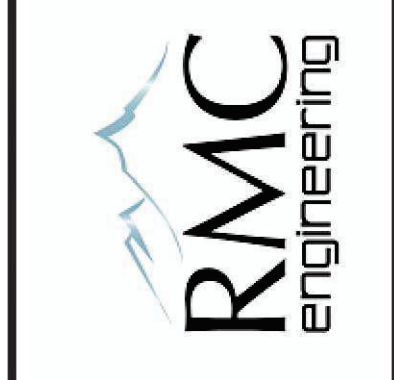
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- FIELD I/O
1. DIGITAL INPUTS
 - 1.1. MOTOR VALVE MV-435 OPEN.
 - 1.2. MOTOR VALVE MV-435 CLOSED.
 - 1.3. MOTOR VALVE MV-436 OPEN.
 - 1.4. MOTOR VALVE MV-436 CLOSED.
 - 1.5. MOTOR VALVE MV-437 OPEN.
 - 1.6. MOTOR VALVE MV-437 CLOSED.
 - 1.7. MOTOR VALVE MV-438 OPEN.
 - 1.8. MOTOR VALVE MV-438 CLOSED.
 - 1.9. MOTOR VALVE MV-439 OPEN.
 - 1.10. MOTOR VALVE MV-439 CLOSED.
 2. DIGITAL OUTPUTS
 - 2.1. MOTOR VALVE MV-435 OPEN.
 - 2.2. MOTOR VALVE MV-435 CLOSE.
 - 2.3. MOTOR VALVE MV-436 OPEN.
 - 2.4. MOTOR VALVE MV-436 CLOSE.
 - 2.5. MOTOR VALVE MV-437 OPEN.
 - 2.6. MOTOR VALVE MV-437 CLOSE.
 - 2.7. MOTOR VALVE MV-438 OPEN.
 - 2.8. MOTOR VALVE MV-438 CLOSE.
 - 2.9. MOTOR VALVE MV-439 OPEN.
 - 2.10. MOTOR VALVE MV-439 CLOSE.
 3. ANALOG INPUTS
 - 3.1. TANK-401A LEVEL LIT-410.
 - 3.2. TANK-401B LEVEL LIT-420.
 - 3.3. TANK-402 LIT-430.

REVISIONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
10-CP-03 GENERAL CONTROL
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

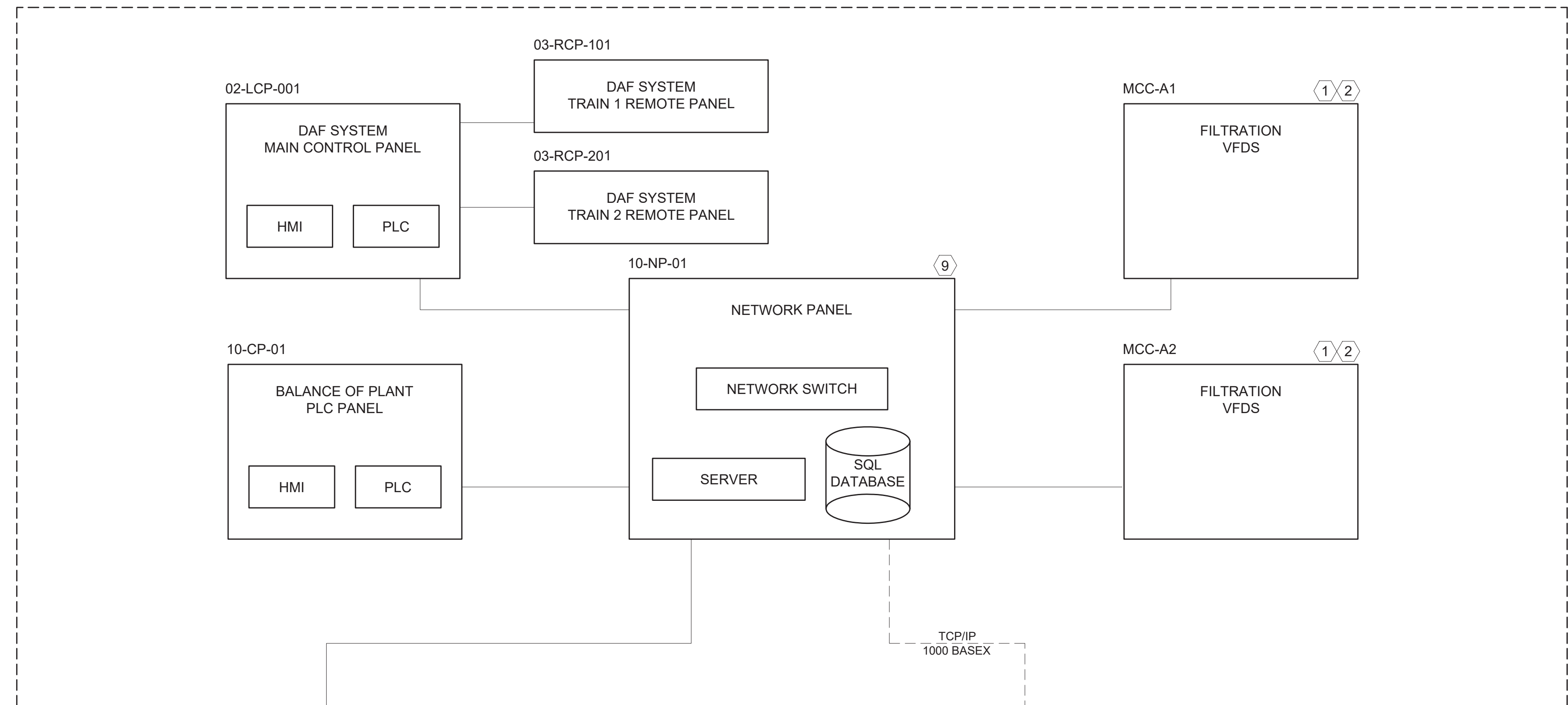
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IC-11

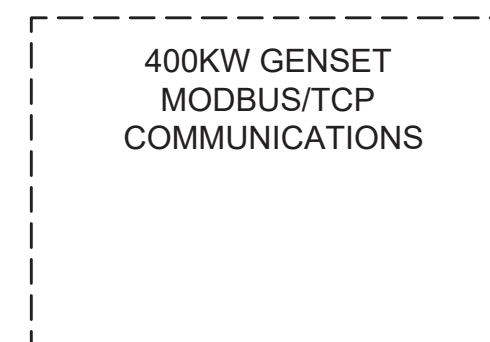
NOTES:

1. ALL MCC VFDS HAVE CAT5 HOME RUN TO NETWORK PANEL.
2. MCC HOA STATUS SIGNALS ARE HARDWIRED BACK TO 10-CP-01.
3. SCADA SYSTEM WILL MONITOR FLOW AND MODULATE VALVES TO DISCHARGE BACKWASH WASTE INTO WASTEWATER SYSTEM. SEE CONTROL NARRATIVES FOR DETAILED DESCRIPTION.
4. SCADA SYSTEM WILL DOSE FILTRATE WATER TO THE CLEARWELL BASINS BASED ON HYPO CONCENTRATION AND FLOW. ADDITIONALLY, SYSTEM WILL ALLOW OPERATOR OPTION TO PROVIDE ADDITIONAL DOSING FROM CLEARWELL TO DISTRIBUTION TANKS. SEE CONTROL NARRATIVES FOR DETAILED DESCRIPTION.
5. MONITOR AND DISPLAY HYPOCHLORITE GENERATOR 1 AND 2 STATUS IN SCADA.
6. OWNER RELIES ON TELEMETRY PLC PANEL IN ADMIN/CONTROL BUILDING TO COMMUNICATE WITH DIFFERENT WATER AND WASTEWATER NODES ACROSS THE CITY.
7. EXISTING PLANT USES A WIN CC BRAND SCADA SYSTEM. WASTEWATER PLANT ALSO USES THE SCADA SYSTEM THROUGH A HARDWIRED CONNECTION FROM WATER PLANT. MAINTAIN EXISTING SCADA SYSTEM THROUGHOUT CONSTRUCTION. COORDINATE WITH OPERATORS WHEN MOVING TELEMETRY PANEL FROM EXISTING MCC ROOM TO NEW ELECTRICAL ROOM AS THIS WILL CAUSE A SCADA OUTAGE.
8. MIGRATE EXISTING WIN CC SCADA INTO NEW IGNITION SCADA.
9. SERVER IN NETWORK PANEL 10-NP-01 TO BE USED TO HOST NEW IGNITION SCADA SYSTEM AND SQL DATABASE FOR DATA STORAGE AND RETRIEVAL. ADDITIONALLY, SERVER SHALL HOST LICENSED PLC PROGRAMMING SOFTWARE FOR OWNER'S FUTURE USE. SEE SPECIFICATIONS FOR DETAILED REQUIREMENTS.

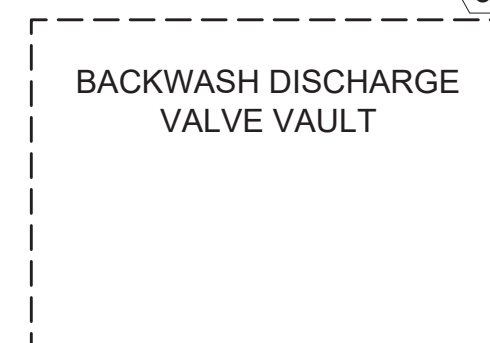
NEW TREATMENT PLANT



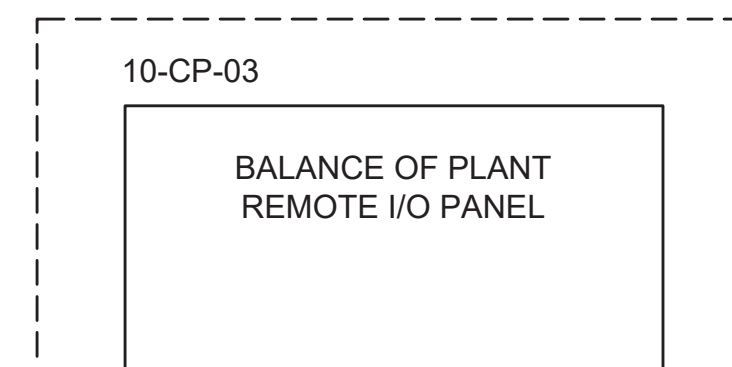
STANDBY GENERATOR



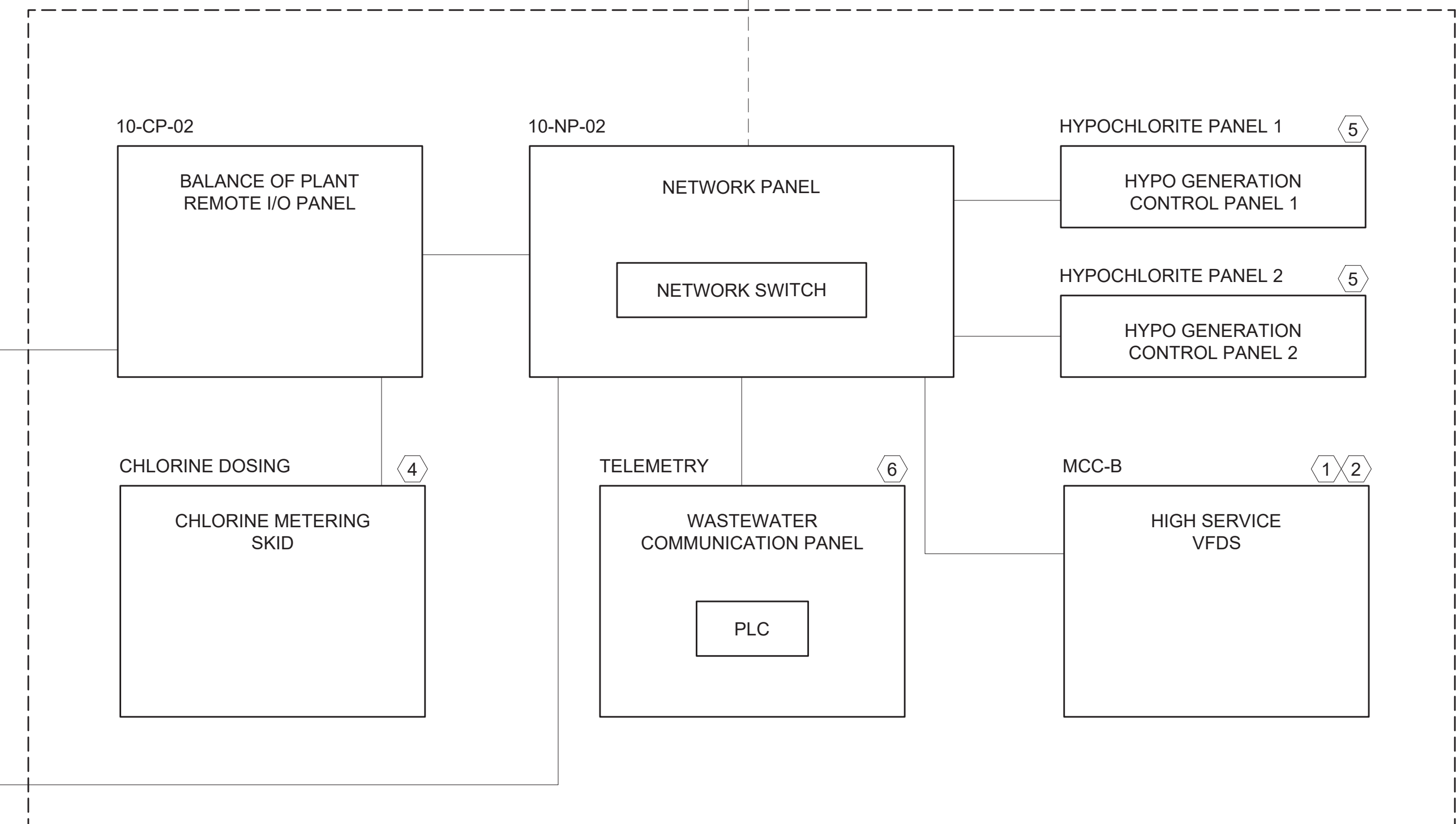
WASTE VAULT



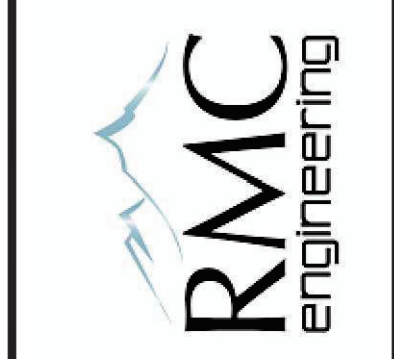
CLEARWELL BUILDING



CONTROL BUILDING



REVISIONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
SCADA DIAGRAM
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	J000541
DATE	06/02/2023

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IC-12

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ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ATS	AUTOMATIC TRANSFER SWITCH
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
DC	DIRECT CURRENT
E	EXISTING
EF	EXHAUST FAN
FU	FUSE
FACP	FIRE ALARM CONTROL PANEL
FREQ	FREQUENCY
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HOA	HAND - OFF - AUTO
HP	HORSE POWER
HZ	HERTZ
IC	INTERRUPTING CAPACITY
JB	JUNCTION BOX
KA	KILOAMPS
KV	KILOVOLTS
KVA	KILOVOLTAMPS
KW	KILOWATTS
LC	LIGHTING CONTROL
LTFMC	LIQUID TIGHT FLEXIBLE METALLIC CONDUIT
M	MOTOR
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OL	OVERLOAD RELAY
PB	PULL BOX
PC	PHOTO CELL
RECEP	RECEPTACLE
RGS	RIGID GALVANIZED STEEL CONDUIT
SPD	SURGE PROTECTIVE DEVICE
SV	SOLENOID VALVE
TR	TIMING RELAY
TDR	TIME DELAY RELAY
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
V	VOLTS
WP	WEATHERPROOF
WML&P	WRANGLE MUNICIPAL LIGHT AND POWER
XFMR	TRANSFORMER

POWER SYSTEM

S _{DM}	SWITCH, DIMMABLE
S	SINGLE POLE SWITCH
S ₃	THREE WAY SWITCH
⊠	OCCUPANCY SENSOR: W=WALL SWITCH, U=ULTRASONIC, D=DUAL TECHNOLOGY
Ⓝ	JUNCTION BOX
Ⓜ	DOUBLE DUPLEX RECEPTACLE
Ⓢ	DUPLEX RECEPTACLE
▭	PANEL BOARD
▭	CONTROL PANEL
Ⓜ	SEPARATELY MOUNTED CIRCUIT BREAKER
Ⓜ	NON FUSED DISCONNECT
Ⓜ	FUSED DISCONNECT
Ⓜ	COMBINATION MOTOR STARTER
T	TRANSFORMER
Ⓜ	EARTH GROUND
Ⓜ	LIGHTING CONTACTOR
Ⓜ	MOTOR, REFER TO SINGLE LINE FOR SIZE AND PHASE
CS	CONTROL STATION
T	THERMOSTAT
PC	PHOTOCELL
▽	DATA AND TELEPHONE
▽	DATA
▽	TELEPHONE

LINE TYPES

— UGE — UGE —	UNDERGROUND ELECTRICAL
— FO — FO —	FIBER OPTIC CABLE
— ENET — ENET —	CAT 6 NETWORK CABLE

NOTES

1. PROVIDE A COMPLETE AND FULLY FUNCTIONAL SYSTEM IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. PROVIDE LABOR AND MATERIAL NECESSARY TO MAKE ALL ELECTRICAL CONNECTIONS. THE WORK INCLUDES MAKING ELECTRICAL CONNECTIONS TO EQUIPMENT PROVIDED BY OTHER TRADES AND OWNER PROVIDED EQUIPMENT.
3. COMPLY WITH THE MOST RECENT STATE, FEDERAL, AND LOCAL CODES.
4. ALL MATERIAL SHALL BE NEW AND LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY, UL OR ETL.
5. ALL CONDUIT, HANGERS, STRAPS AND OTHER ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDED PROCEDURE AND USED FOR ITS INTENDED USE.
6. CORROSION RESISTANT RACEWAYS AND WIRING METHODS TO BE USED IN CORROSIVE ENVIRONMENTS.
7. WATERTIGHT RACEWAYS AND WIRING METHODS TO BE USED IN WET LOCATIONS.
8. ACCESSIBLE JUNCTION BOXES SHALL BE LABELED WITH PRINTED LABELS WITH THE PANEL AND CIRCUITS CONTAINED WITHIN THE JUNCTION BOX. LABELS SHALL BE UNIFORM SIZE AND FONT THROUGHOUT THE FACILITY.
9. ANY DEVIATIONS FROM THE CONTRACT DRAWING SHALL BE RECORDED ON A SET OF AS-BUILT DRAWINGS AND PROVIDED TO THE ENGINEER.

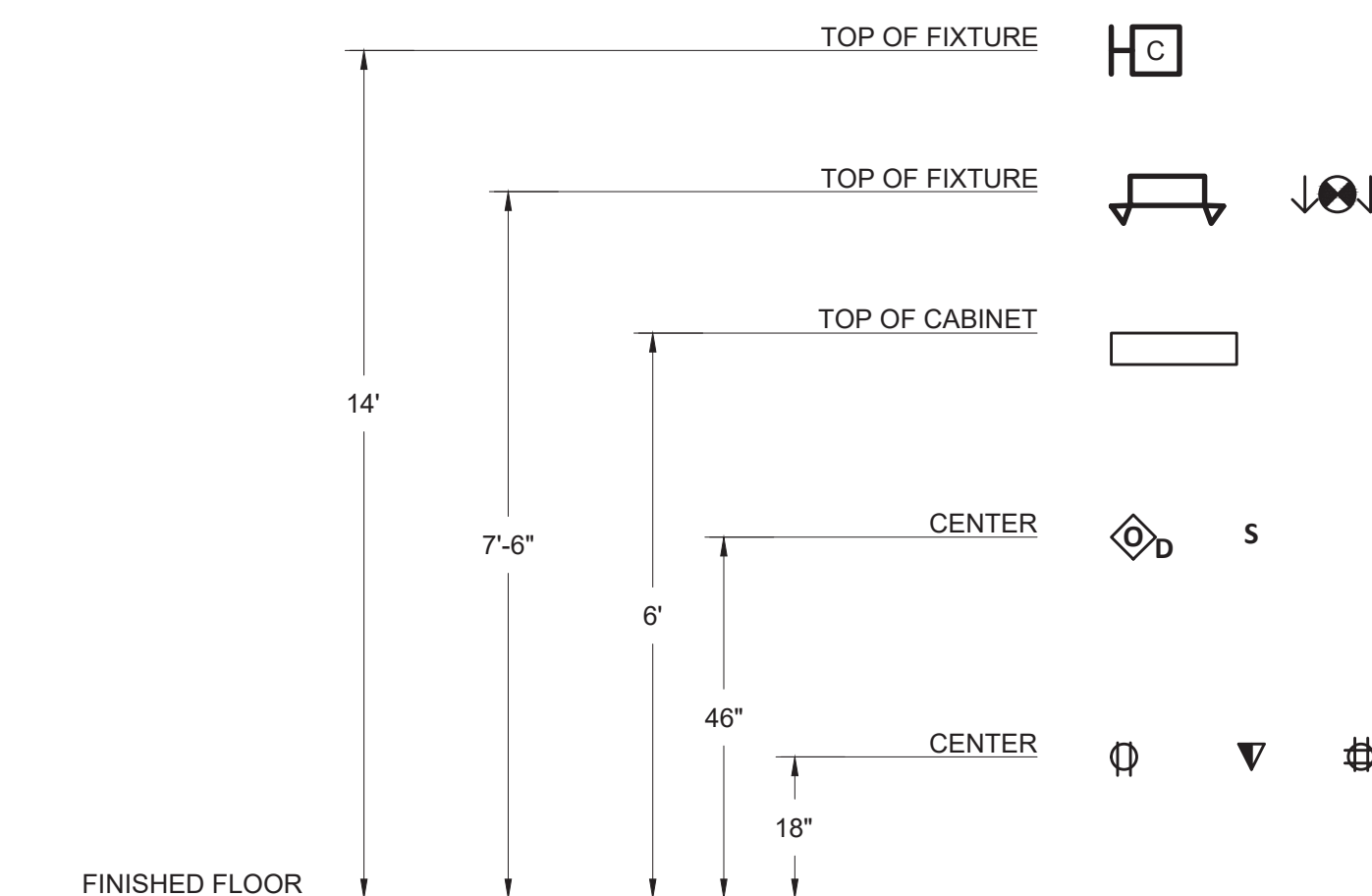
CONDUITS

—>	CONDUIT DOWN
—○—	CONDUIT UP
—┐	CONDUIT STUBBED AND CAPPED
—┘	CONDUIT STUBBED AT CABLE TRAY
Ⓜ	LTFMC, UNLESS NOTED OTHERWISE

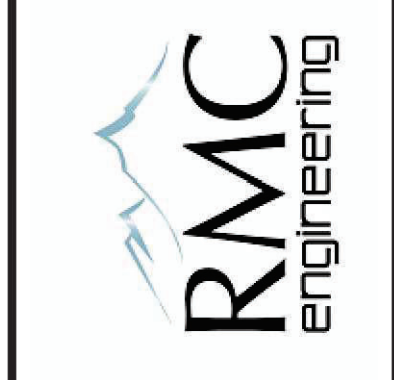
1. ALL CONDUITS SHALL BE SIZED IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE NATIONAL ELECTRIC CODE.
2. UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC.
3. UNDERGROUND CONDUITS TRANSITIONING TO ABOVE GROUND INCLUDING 90 DEGREE ELBOWS SHALL BE GALVANIZED RIGID CONDUIT.
4. LIGHTING CIRCUIT CONDUITS SHALL BE EMT. CAST FITTINGS ARE NOT ALLOWED.
5. CONDUITS AND FITTINGS IN CORROSIVE ENVIRONMENTS SHALL BE SCHEDULE 40 PVC.
6. CONDUITS INSTALLED BELOW A 8 FOOT PLANE WITHIN THE FILTRATION AREA SHALL BE GALVANIZED RIGID CONDUIT.

LIGHTING SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER	PART #	MOUNTING
Ⓜ	EMERGENCY EXIT COMBO LIGHT	LITHONIA	ECRG SQ M6	WALL MOUNT
Ⓜ	EMERGENCY LIGHT	LITHONIA	ERE W T SQ M12	WALL MOUNT
Ⓜ	INDOOR LIGHT	COOPER LIGHTING	UHBS-2436-MV-L84050-U, 277V	SUSPENDED PENDANT
Ⓜ	INDOOR LIGHT	COOPER LIGHTING	UHBS-2436-MV-L84050-U, 277V WITH EMERGENCY LED DRIVER	SUSPENDED PENDANT
Ⓜ	INDOOR LIGHT	LITHONIA	IBG 12000LM HEF ACL GND 40K 80CRI	
Ⓜ	OUTDOOR SECURITY LIGHT	LITHONIA	TWH LED ALO 50	WALL
Ⓜ	INDOOR LIGHT	LITHONIA	IBG 24000LM HEF ACL GND 40K 80CRI	
Ⓜ	INDOOR / OUTDOOR VAPOR TIGHT	LITHONIA	DMW2 L24 3000LM AFL MD MVOLTGZ1050K80CRI	



REV	DATE	DESCRIPTION	BY	
			DATE	BY



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
ELECTRICAL ABBREVIATIONS, GENERAL NOTES & SYMBOLS
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	J000541
DATE	06/02/2023

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E-01

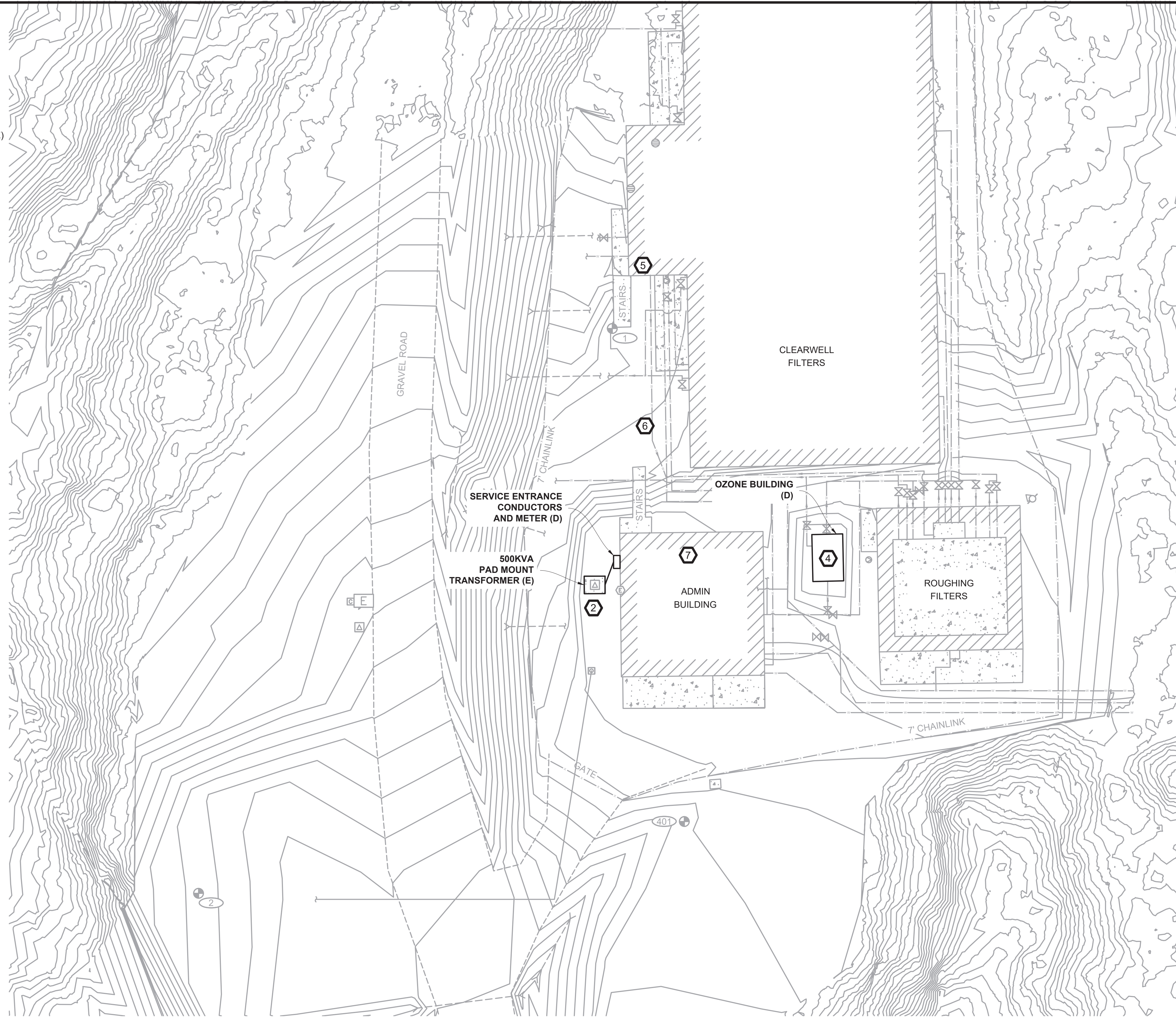
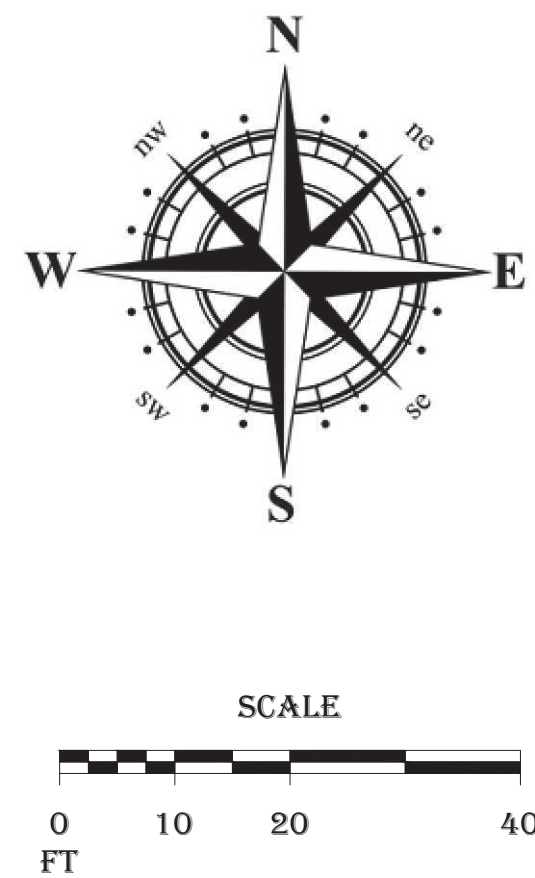
DEMOLISH

LEGEND:

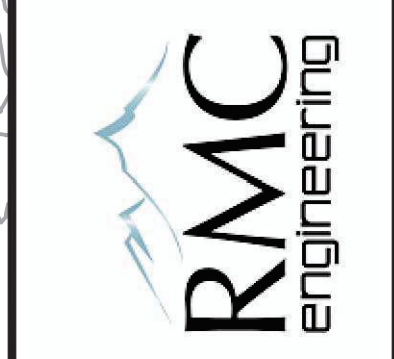
- (E) EXISTING
- (D) DEMOLISH (DEMOLISH AND DISPOSE OF EQUIPMENT UNLESS NOTED OTHERWISE)
- (N) NEW

NOTES:

1. PRIOR TO DIGGING, COORDINATE WITH THE OWNER AND WML&P TO LOCATE UNDERGROUND ELECTRICAL UTILITIES AS EXISTING. UNDERGROUND UTILITIES MAY NOT BE IN THE LOCATION SHOWN.
2. COORDINATE WITH THE OWNER AND WML&P TO DEMOLISH THE EXISTING ADMIN BUILDING SERVICE. THE ADMIN BUILDING WILL BE FED FROM A NEW MAIN DISTRIBUTION PANEL (MDP) LOCATED IN THE FILTER BUILDING. THE ADMIN BUILDING MUST REMAIN POWERED DURING THE COURSE OF CONSTRUCTION. AN OUTAGE TIME OF A MAXIMUM OF 8 HOURS IS ACCEPTABLE FOR THE CHANGE OVER.
3. WML&P WILL COMPLETE THEIR SCOPE OF WORK UNDER A SEPARATE CONTRACT WITH THE OWNER.
4. COORDINATE WITH ALL TRADES TO DEMOLISH OZONE EQUIPMENT BUILDING COMPLETELY.
5. DEMOLISH HIGH SERVICE PUMPS, CONDUITS, DISCONNECTS, AND ASSOCIATED ELECTRICAL EQUIPMENT. COORDINATE WITH ALL TRADES TO COMPLETE THE DEMOLITION.
6. DEMOLISH UNDERGROUND CONDUITS ROUTED FROM ADMIN BUILDING TO CLEARWELL FILTER BUILDING.
7. DEMOLISH EXISTING ELECTRICAL EQUIPMENT IN ADMIN BUILDING AS PER THE DETAILS GIVEN IN SHEET E03.
8. DEMOLISH THE EQUIPMENT AS PER THE DEMOLITION PLAN.



REVISIONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
**SITE PLAN ELECTRICAL
 (DEMOLISH)**
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	J000541
DATE	06/02/2023

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E-02

1 SITE PLAN (DEMOLISH)

BID DOCUMENTS
 AGENCY SUBMITTAL - NOT FOR CONSTRUCTION

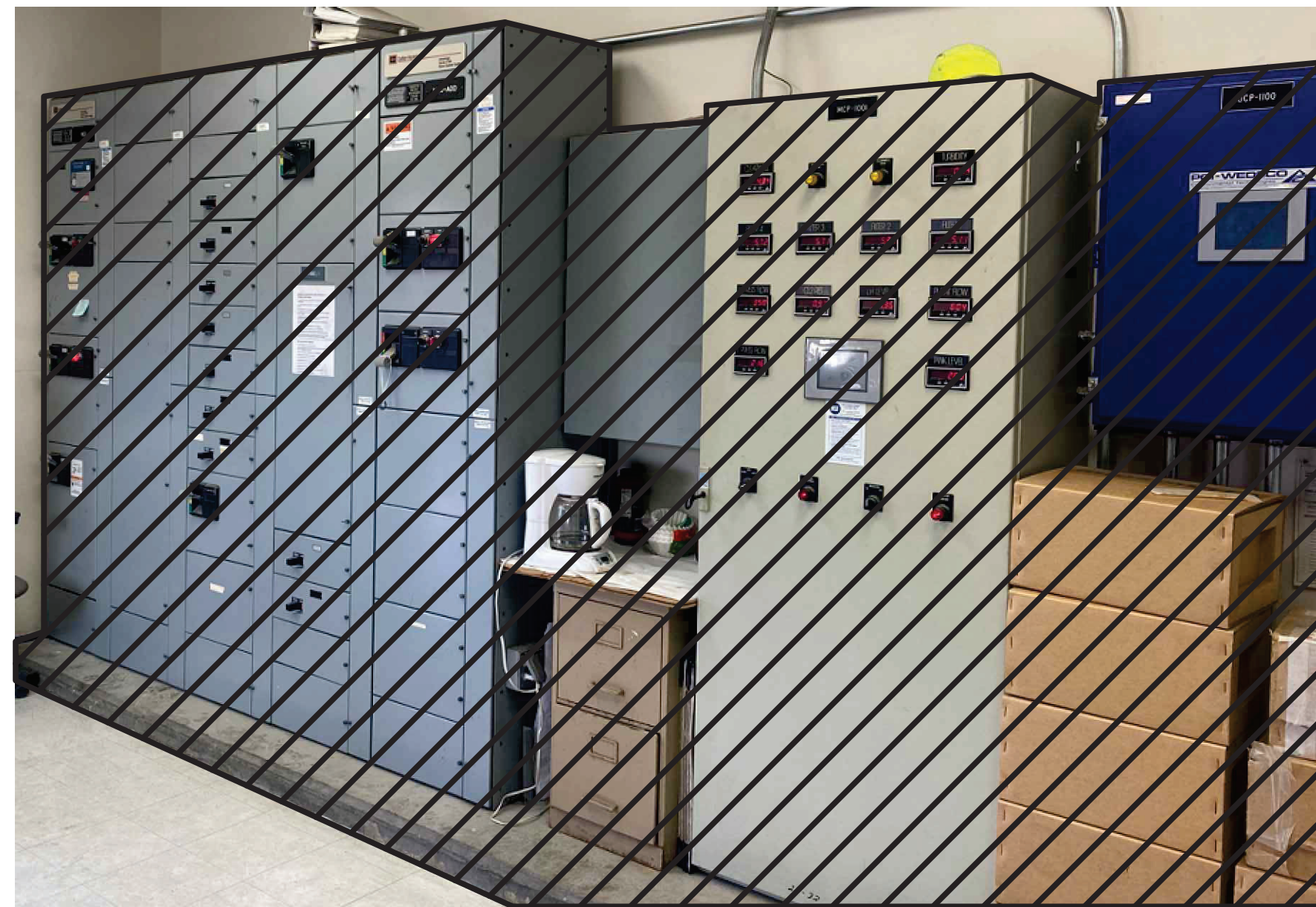
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LEGEND:

- (E) EXISTING
- (D) DEMOLISH (DEMOLISH AND DISPOSE OF EQUIPMENT UNLESS NOTED OTHERWISE)
- (N) NEW

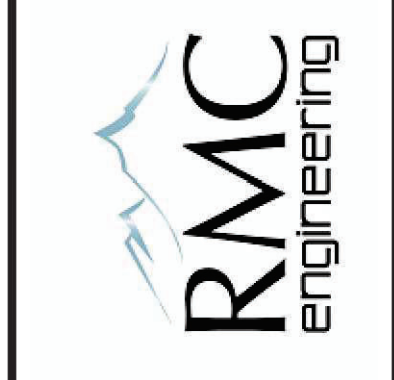
NOTES:

1. COORDINATE WITH THE OWNER AND ENGINEER FOR DEMOLITION OF EQUIPMENT.
2. REFERENCE DEMOLITION SHEETS FOR COMPLETE DEMOLITION SCHEDULE.
3. DEMOLISH EXISTING MOTOR CONTROL CENTER.
4. DEMOLISH EXISTING MASTER CONTROL PANEL.
5. DEMOLISH OCP-1100.
6. DEMOLISH EXISTING HOUSEKEEPING PAD. SAW CUT TO REMOVE HOUSE KEEPING PAD.
7. TAKE CARE NOT TO DAMAGE EXISTING UNDERGROUND CONDUITS.
8. REMOVE COMMUNICATION PANEL AND MOVE TO NEW LOCATION SHOWN ON SHEET E28 COORDINATE WITH SYSTEM INTEGRATOR TO MINIMIZE COMMUNICATION DOWN TIME.
9. MAINTAIN EXISTING SCADA SYSTEM UNTIL NEW SCADA SYSTEM IS COMMISSIONED AND APPROVED BY ENGINEER.



2 ADMIN BUILDING ELECTRICAL EQUIPMENT (DEMOLISH)

REVISIONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
**ADMIN BUILDING ELECTRICAL
 (DEMOLISH)**
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
 DATE 06/02/2023

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E-03

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LEGEND:

- (E) EXISTING
- (D) DEMOLISH (DEMOLISH AND DISPOSE OF EQUIPMENT UNLESS NOTED OTHERWISE)
- (N) NEW

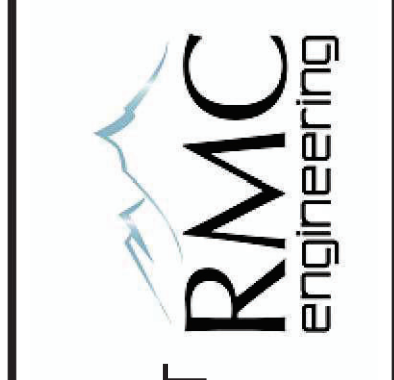
NOTES:

1. DEMOLISH ALL ELECTRICAL EQUIPMENT COMPLETELY.
2. THE PHOTOS PROVIDED ARE NOT INTENDED TO SHOW ALL EQUIPMENT TO BE DEMOLISHED, BUT TO SERVE AS AN ADDITIONAL RESOURCE TO THE DEMOLITION PLAN. FOLLOW THE DEMOLITION PLAN FOR REMOVING THE EQUIPMENT.



1 ADMIN BUILDING OZONE ELECTRICAL EQUIPMENT (DEMOLISH)

REVISIONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
**OZONE BUILDING ELECTRICAL EQUIPMENT
 (DEMOLISH)**
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
 DATE 06/02/2023

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E-04

LEGEND:

- (E) EXISTING
- (D) DEMOLISH (DEMOLISH AND DISPOSE OF EQUIPMENT UNLESS NOTED OTHERWISE)
- (N) NEW

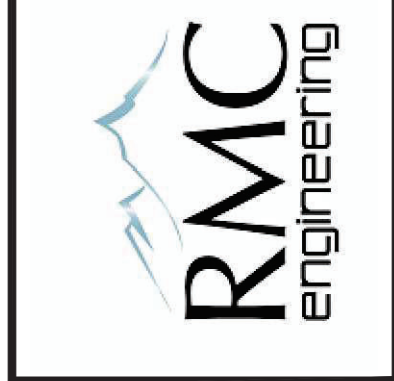
NOTES:

1. COORDINATE WITH THE OWNER AND ENGINEER FOR DEMOLITION OF EQUIPMENT.
2. REFERENCE SHEET X-110 FOR COMPLETE DEMOLITION SCHEDULE.
3. DEMOLISH UNDERGROUND CONDUITS TO THE EXTENT THAT IS POSSIBLE. CUT FLUSH AND SEAL UNDERGROUND CONDUITS THAT CANNOT BE REMOVED DURING CONSTRUCTION. COORDINATE WITH THE ENGINEER TO IDENTIFY CONDUITS TO BE DEMOLISHED.



1 CLEARWELL BUILDING ELECTRICAL EQUIPMENT (DEMOLISH)

REVISONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
**CLEARWELL BUILDING ELECTRICAL
 (DEMOLISH)**
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	J000541
DATE	06/02/2023

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E-05

NEW

LEGEND:

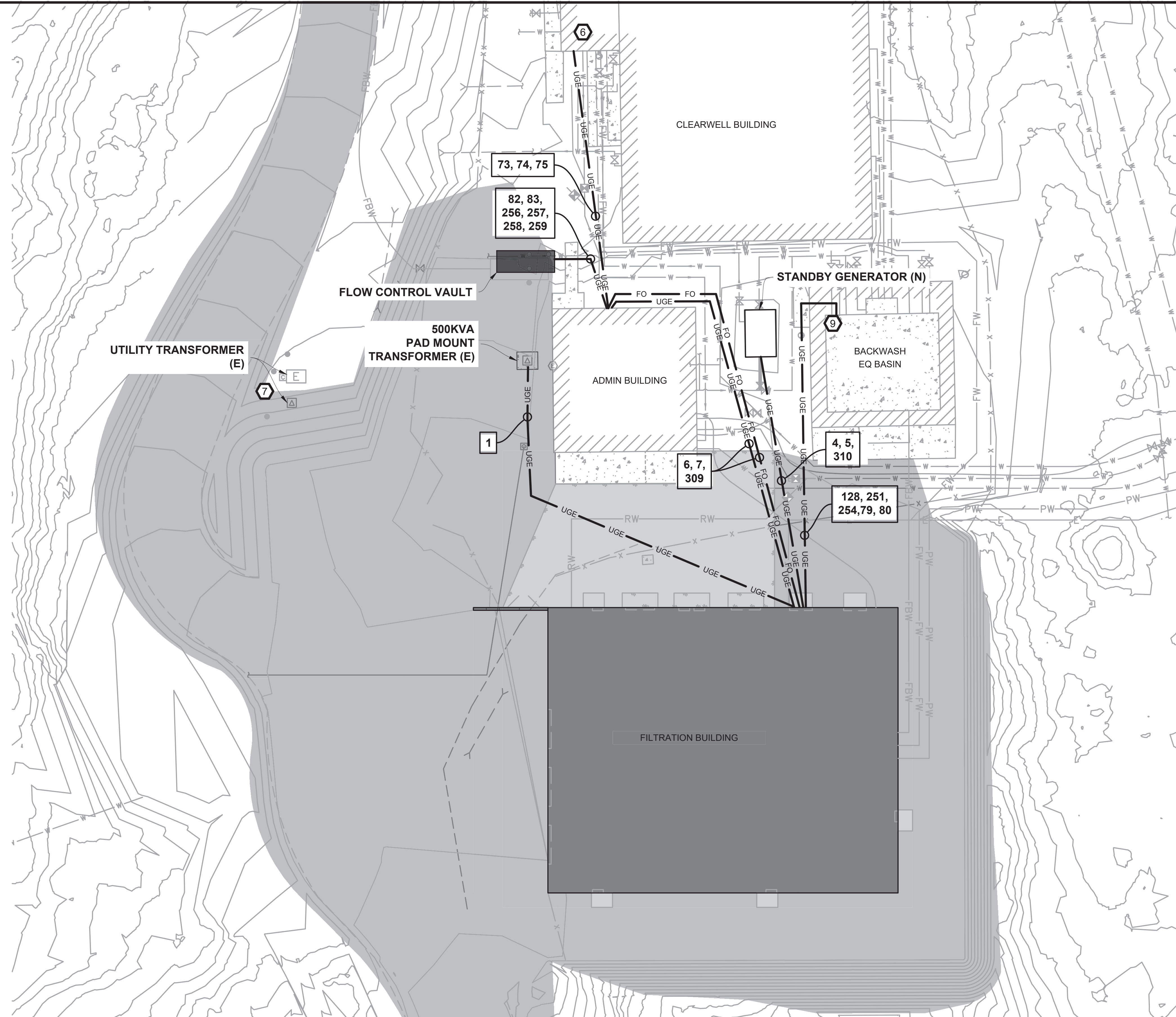
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- (D) DEMOLISH (DEMOLISH AND DISPOSE OF EQUIPMENT UNLESS NOTED OTHERWISE)
- (N) NEW

NOTES:

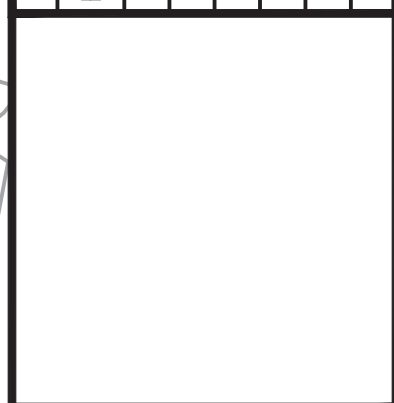
1. COORDINATE WITH WML&P TO INSTALL SERVICE ENTRANCE CONDUCTORS TO THE NEW FILTRATION BUILDING.
2. WML&P WILL PROVIDE THE NECESSARY MATERIAL AND LABOR TO INSTALL THE SERVICE ENTRANCE CONDUCTORS.
3. THE CONTRACTOR AND WML&P SHALL COORDINATE WITH THE OWNER TO DETERMINE THE EXACT LOCATION OF THE UNDERGROUND ELECTRICAL CONDUITS. CONDUITS SHALL BE INSTALLED IN AREA SO THAT THEY WILL NOT BE DISTURBED BY FUTURE WORK OUTSIDE OF THIS CONTRACT.
4. EXISTING UNDERGROUND UTILITIES MAY NOT BE IN LOCATION SHOWN. FIELD VERIFY LOCATION OF UNDERGROUND UTILITIES PRIOR TO DIGGING.
5. WML&P WILL COMPLETE THEIR SCOPE OF WORK UNDER A SEPARATE CONTRACT WITH THE OWNER.
6. HIGH SERVICE PUMPS 3EA.
7. EXISTING UTILITY TRANSFORMER TO REMAIN IN PLACE. TAKE CARE NOT TO DAMAGE TRANSFORMER DURING CONSTRUCTION.
8. NEW CONTRACTOR PROVIDED STANDBY GENERATOR. PROVIDE FOUNDATION AND SUPPORTS PER THE MANUFACTURERS INSTALLATION REQUIREMENTS.
9. COORDINATE WITH ALL TRADES TO ROUTE CONDUITS INTO BACKWASH EQ BASIN. CORE DRILL IF REQUIRED, SEAL CONDUITS WITH LINK-SEAL OR ENGINEER APPROVED DEVICE.
10. PROVIDE MINIMUM OF ONE SPARE CONDUIT TO EACH LOCATION. SIZE AS SHOWN. COORDINATE WITH ENGINEER.

UNDERGROUND CONDUIT SCHEDULE

ID	Size	Conductors	Location 1	Location 2
1		PROVIDED BY UTILITY	TRANSFORMER	CT CABINET
6, 7	3"	3NO. 350KCMIL, 1NO. 4/0, 1NO. 1AWG GND	MDP	PANEL B
309	2"	FIBER OPTIC, 6 STRAND, MULTI MODE	10-NP-01	10-NP-02
73	2"	VFD CABLE - 3NO. 6AWG, 1NO. 8AWG GND	MCC-B	HIGH SERVICE PUMP 1
74	2"	VFD CABLE - 3NO. 6AWG, 1NO. 8AWG GND	MCC-B	HIGH SERVICE PUMP 1
75	2"	VFD CABLE - 3NO. 6AWG, 1NO. 8AWG GND	MCC-B	HIGH SERVICE PUMP 1
4, 5	4"	3NO. 350KCMIL, 1NO. 4/0, 1NO. 1AWG GND	TRANSFER SWITCH	GENERATOR
310	1"	CAT 6	10-NP-01	GENERATOR
128	1"	2NO. 12AWG, 1NO. GND	PANEL A-1	EQ BASIN
251, 254	1.5"	3 Ea. TWISTED SHIELDED PAIR	10-CP-01	EQ BASIN
79	1"	VFD CABLE - 3NO. 10AWG, 1NO. 12 AWG GND	MCC-A	EQ BASIN P-601A
80	1"	VFD CABLE - 3NO. 10AWG, 1NO. 12 AWG GND	MCC-A	EQ BASIN P-601B
84	1"	2NO. 12AWG, 1NO. GND	PANEL B-1	FLOW CONTROL VAULT
82, 83	1"	4NO. 14 AWG, 1NO. 14 AWG GND	10-CP-02	FLOW CONTROL VAULT
256, 258	1.5"	12NO. 14 AWG, 1NO. 14 AWG GND	10-CP-02	FLOW CONTROL VAULT
257, 259	1.5"	3 Ea. TWISTED SHIELDED PAIR	10-CP-02	FLOW CONTROL VAULT



REV	DATE	DESCRIPTION	BY



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
SITE PLAN ELECTRICAL
(NEW)

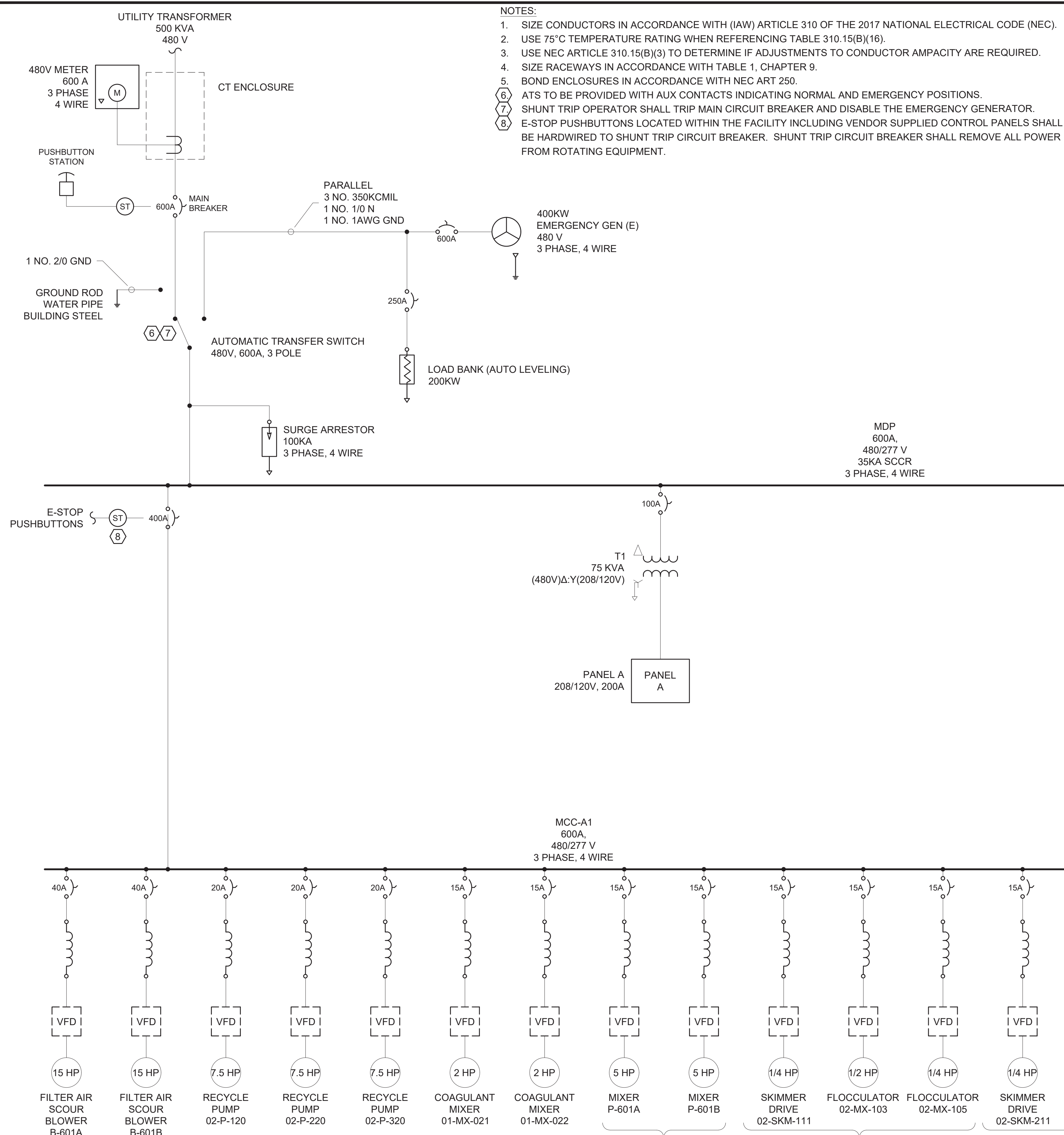
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
DATE 06/02/2023

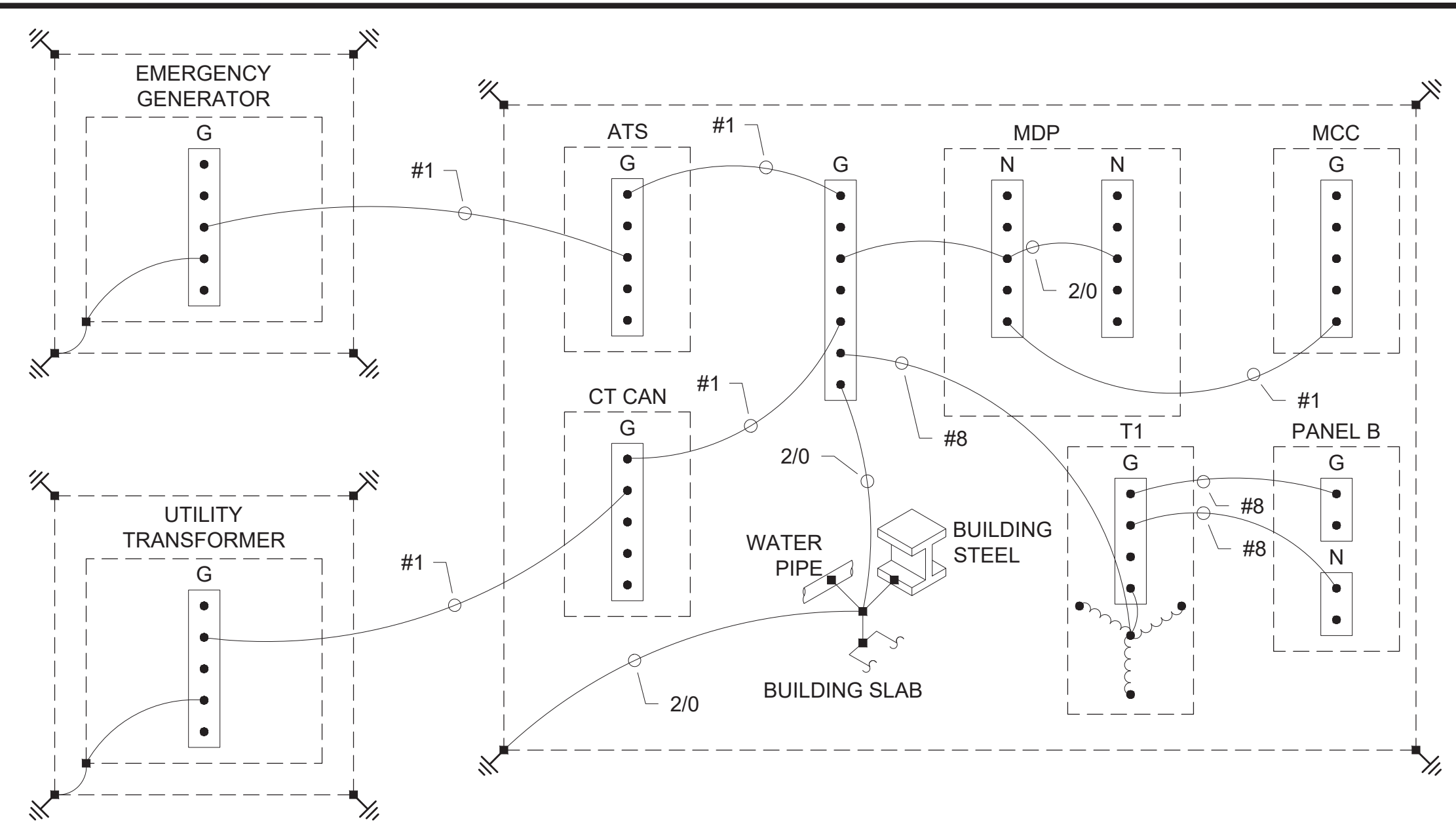
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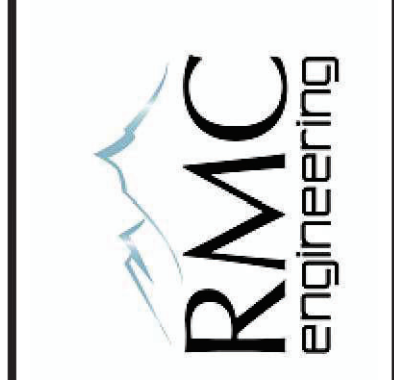


1 FILTRATION PLANT POWER ONE-LINE



2 FILTRATION PLANT GROUNDING

REV	DATE	DESCRIPTION	BY



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

ONE-LINE DIAGRAM

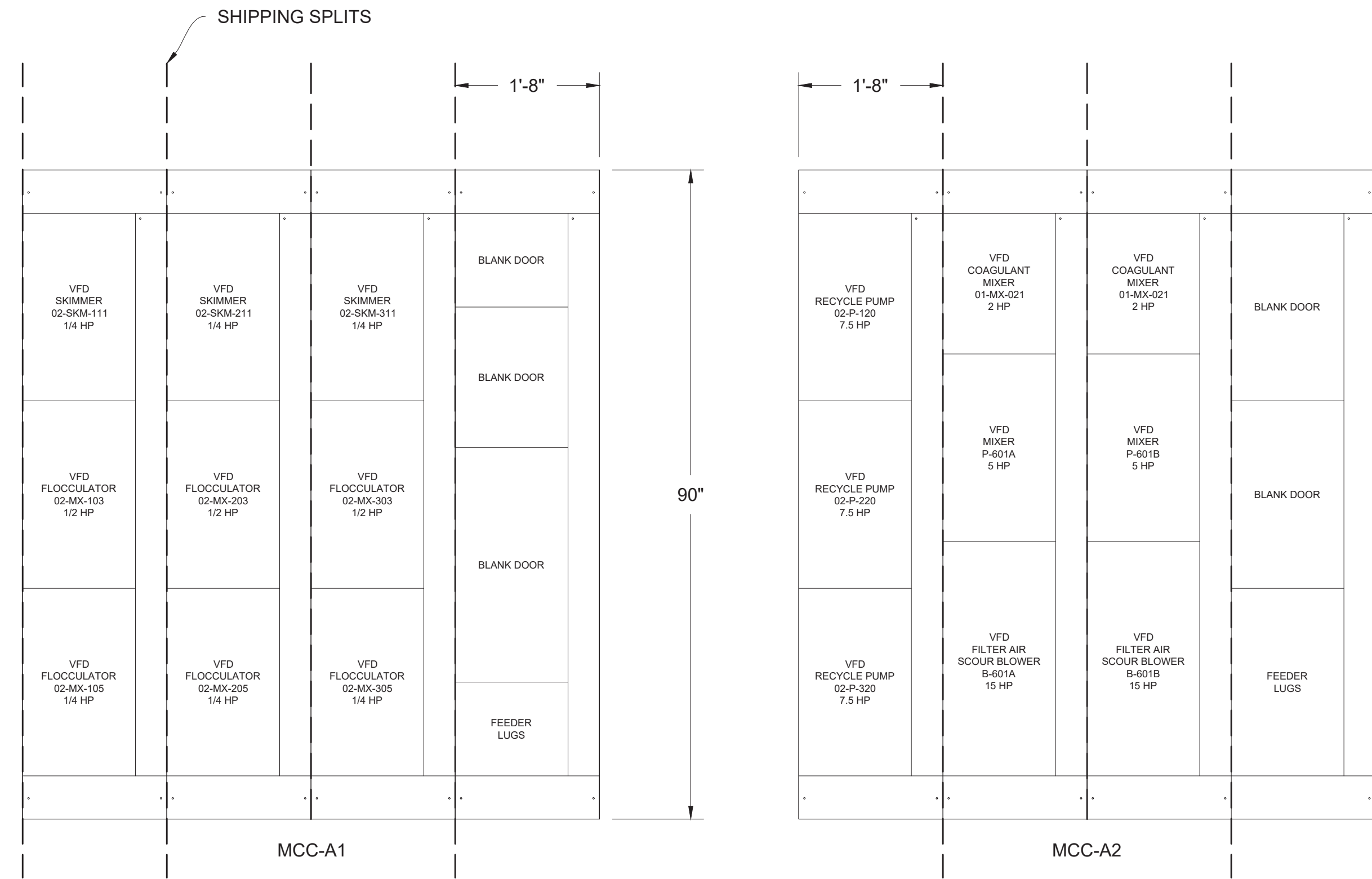
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CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	J000541
DATE	06/02/2023

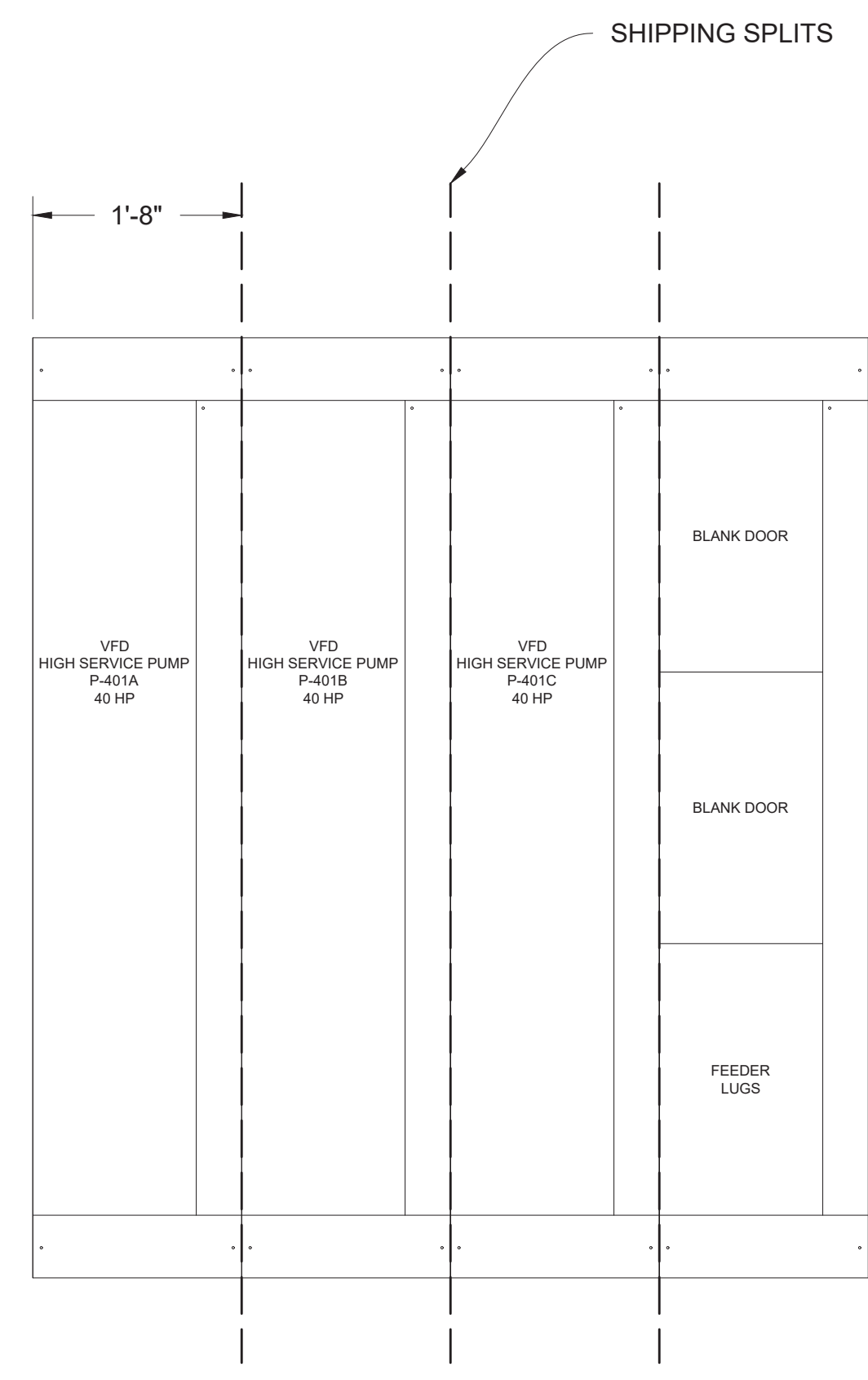
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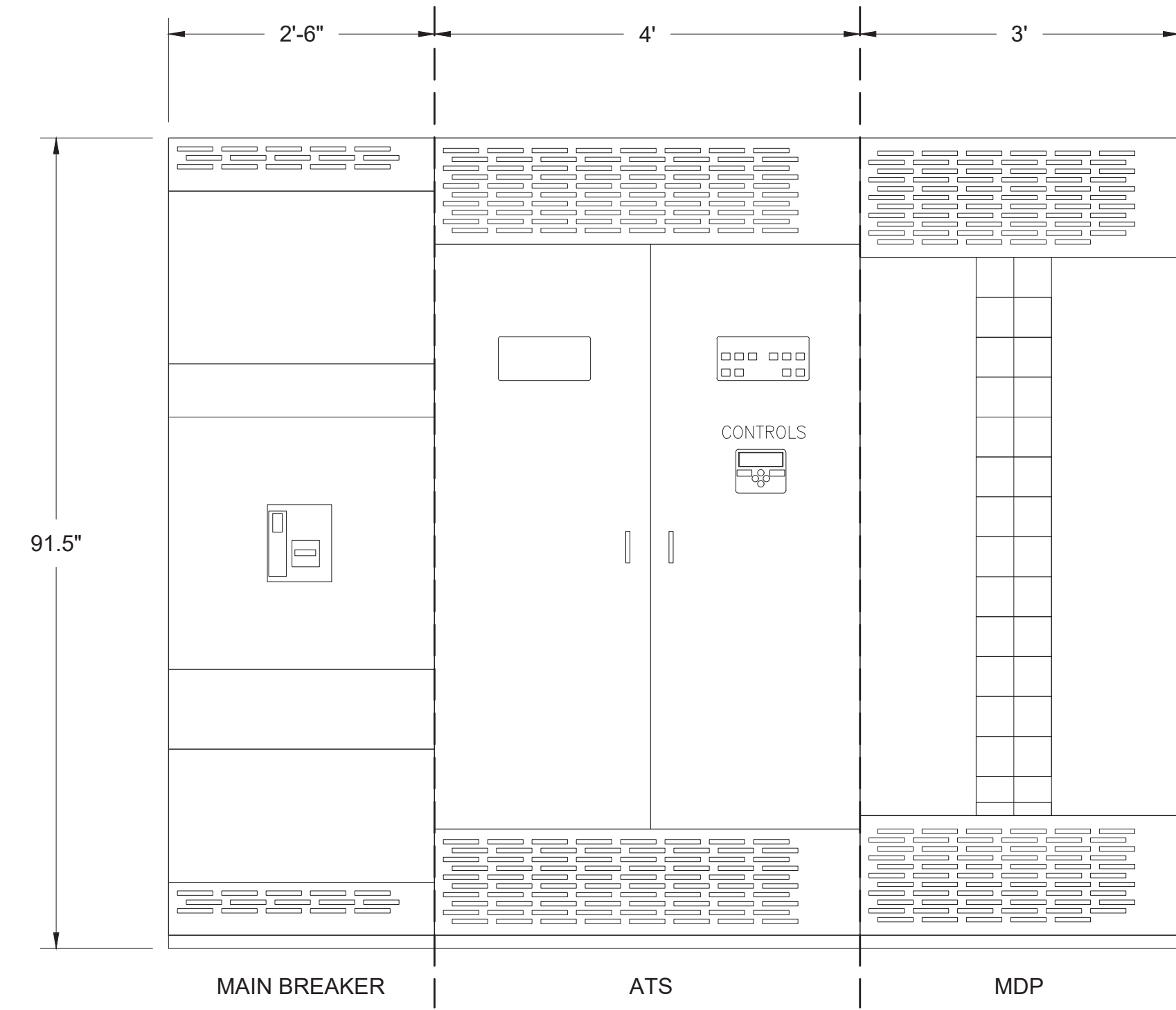
1 MCC-A1 AND MCC-A2



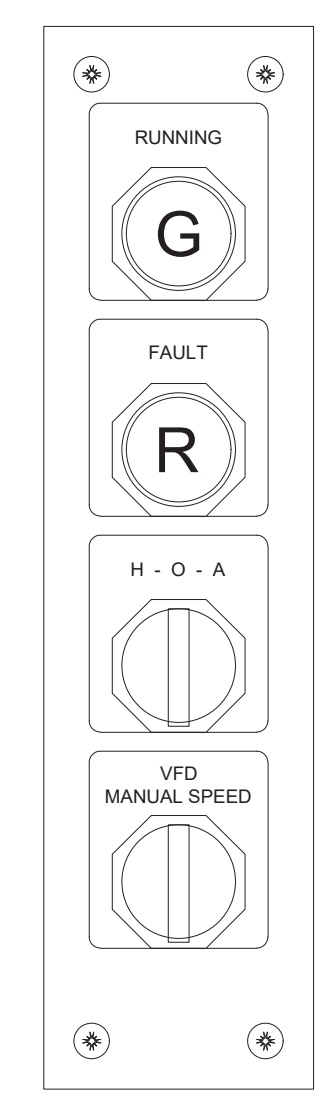
2 MCC B



- NOTES:
- MCC TO BE EITHER SQUARE D MODEL 6 OR ALLEN BRADLEY CENTERLINE 2100 SERIES.
 - FIELD VERIFY DIMENSIONS AND EQUIPMENT MOUNTING HEIGHTS.
 - VFD TO BE EQUIPPED WITH:
 - ETHERNET/IP PROTOCOL.
 - H-O-A SWITCH
 - MANUAL SPEED POTENTIOMETER
 - 2 EA. DRY CONTACT OUTPUTS FOR RUNNING AND FAULT FEEDBACK.
 - NATIVE PROTOCOL CAPABLE OF COMMUNICATING WITH PLC WITHOUT THE ADDITION OF ANY PROTOCOL CONVERTER.

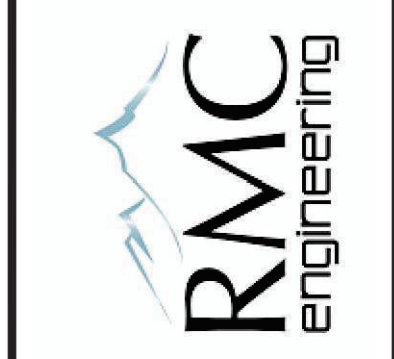


3 MAIN BREAKER, ATS, MDP



4 VFD CONTROLS

REVISIONS		BY
REV	DATE	DESCRIPTION



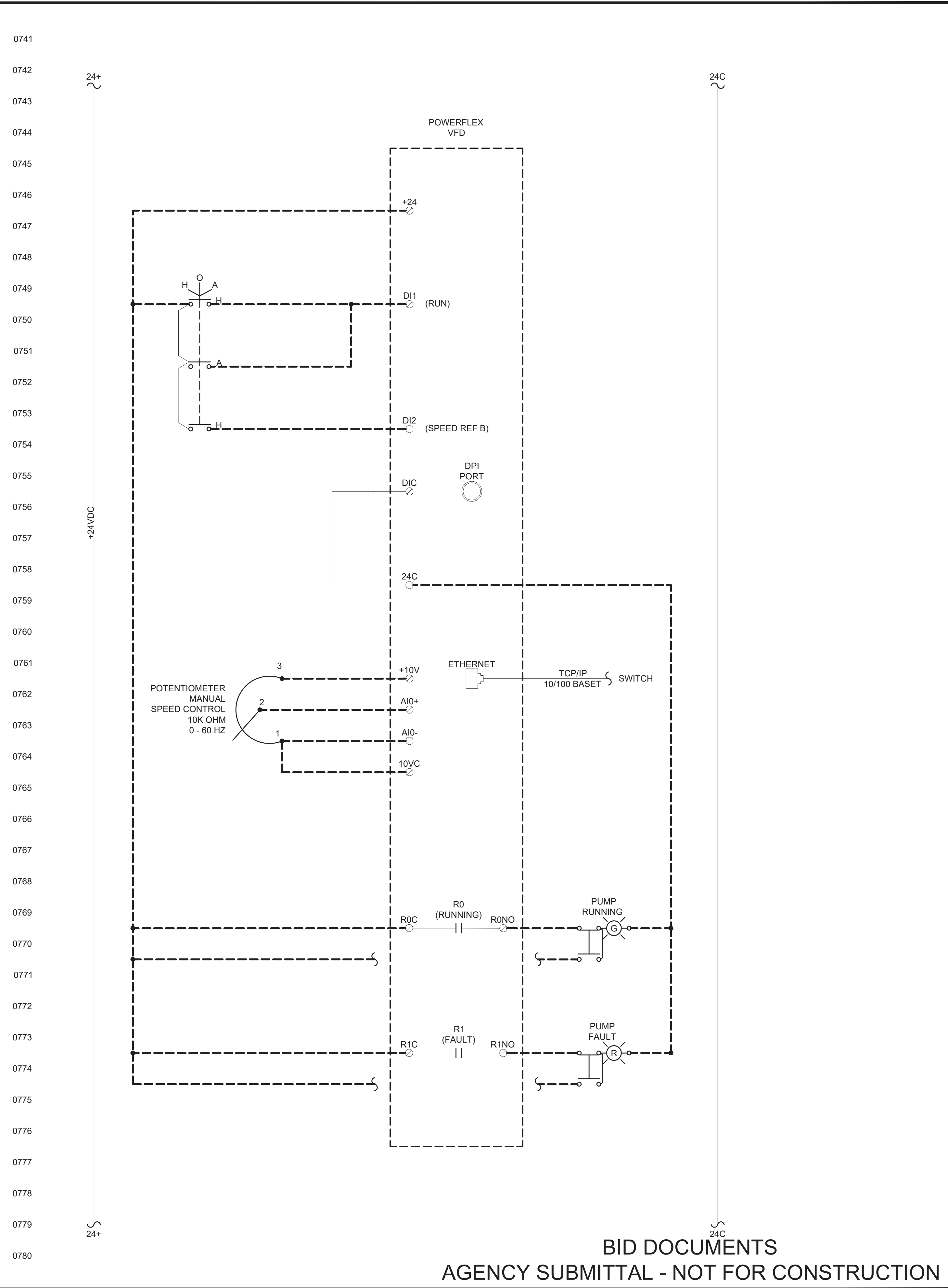
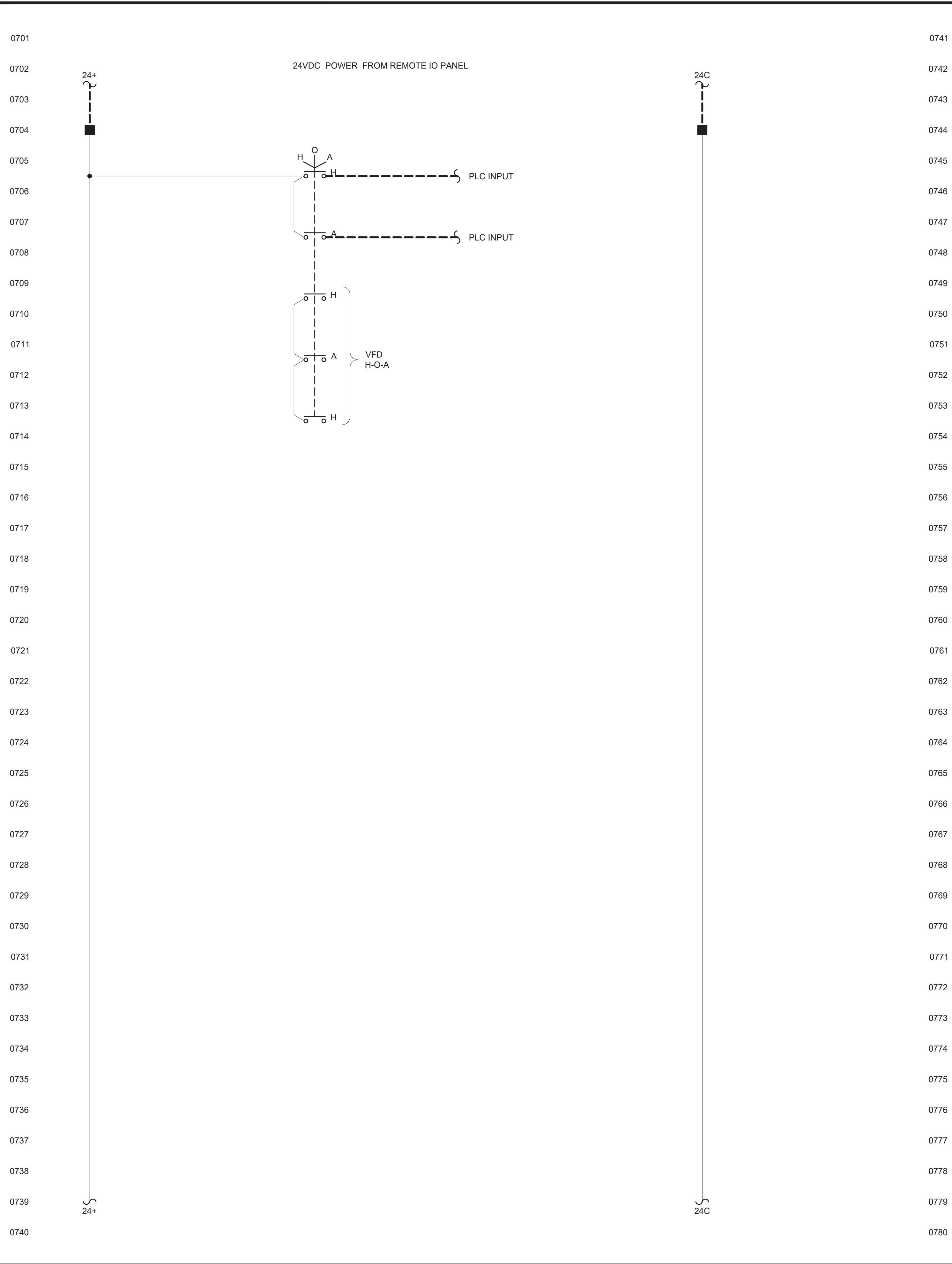
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
EQUIPMENT ELEVATIONS
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
DATE 06/02/2023

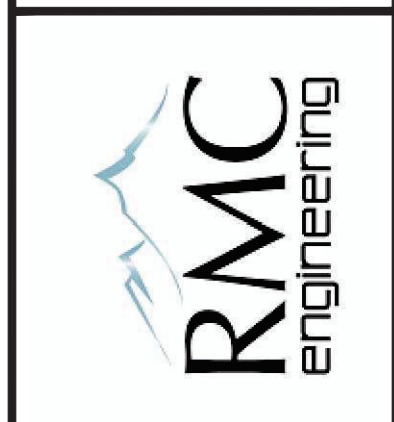
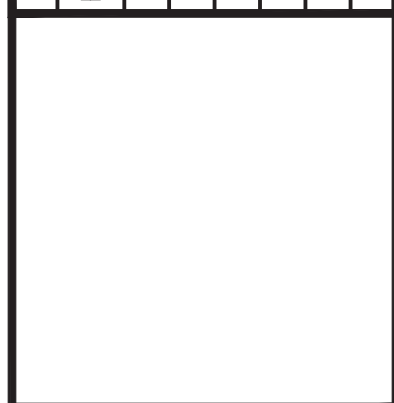
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REVISIONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

**VFD CONTROLS
(TYPICAL)**

SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT	J000541
DATE	06/02/2023

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E-09

PANEL: MDP																	
VOLTAGE: 480/277																	
AIC: 35KA																	
ENCLOSURE: NEMA 1																	
PHASE: 3																	
BUS AMPACITY: 600 A																	
WIRE: 4																	
MAIN CB: 600 A																	
MOUNTING: Surface																	
CKT NO.	DESCRIPTION	VA	TYPE	PKT BREAKER	PHASE	CKT BREAKER	LOAD	DESCRIPTION	CKT NO.	VA	TYPE	PKT BREAKER	PHASE	CKT BREAKER	LOAD	DESCRIPTION	CKT NO.
1	Panel B (Control Building)	52877	N	3	A	400	57877	H	5000	2	H	5000				Acid Room Heater (UH-1)	4
3		52877	N		B		57877	H	5000	4	H	5000					4
5		52877	N		C		57877	H	5000	6	H	5000					6
7	Air Cooled Condensing Unit (ACCU-1)	5546	H	3		20	10546	H	5000	8	H	5000				Base Room Heater (UH-2)	10
9		5546	H				10546	H	5000	12	H	5000					12
11		5546	H				10546	H	5000	14	H	5000					14
13	Transformer T1 / Panel A	12412	N	3	A	150	13412	N	1000	16	N	1000				Electrical Room Heat (UH-3)	16
15		12412	N		B		13412	N	1000	18	N	1000					18
17		12412	N		C		13412	N	1000	20	N	1000					20
19	MCC	31652	M	3		400	32652	N	1000	22	N	1000				Blower Room Heater (UH-4)	22
21		31652	M				32652	N	1000	24	N	1000					24
23		31652	M				32652	N	1000	26	N	1000					26
25	Overhead Lighting	304	L	1		20	5304	H	5000	28	H	5000				Process Room (UH-5)	28
27		304	L				5304	H	5000	30	H	5000					30
29	Outdoor Lighting	4670	H	3		30	9670	H	5000	32	H	5000				Process Room (UH-6)	32
31	DOAS Unit	4670	H	3		30	9670	H	5000	34	H	5000				Process Room (UH-6)	34
33	Preheat Electric Heater	4670	H				9670	H	5000	36	H	5000					36
35							5000	H	5000	38	H	5000				Process Room (UH-7)	38
37							5000	H	5000	40	H	5000					40
39							5000	H	5000	42	H	5000					42
41							5000	H	5000	44	H	5000					44

LOAD SUMMARY				
CONNECTED		DEMAND		
KVA	FACTOR	LOAD TYPE	FACTOR	KVA
A PHASE: 134.5	0.61	LIGHTING (L)	1.25	0.76
B PHASE: 134.5	0.00	RECEPTACLE (R)	1.00	0.00
C PHASE: 134.2	0.00	REC (>10000VA) (LR)	0.50	0.00
TOTAL: 403.1	105.65	HVAC (H)	1.25	132.06
	0.00	LARGEST MOTOR (LM)	1.25	0.00
	94.96	REMAIN MOTOR (M)	1.00	94.96
	201.87	KNOW DEMAND (N)	1.00	201.87
	0.00	EXISTING LOAD (E)	1.00	0.00
	0.00	ADDITIONAL LOAD (A)	1.00	0.00
TOTAL:	403.08			429.64 <- TOTAL KVA
				516.8 <- TOTAL A/PH

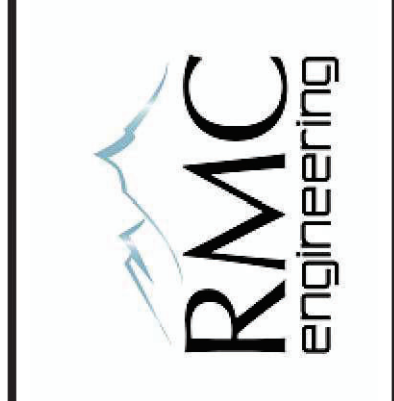
1 PANEL MDP (FILTRATION BUILDING)

PANEL: A																	
VOLTAGE: 208/120																	
AIC: 35KA																	
ENCLOSURE: NEMA 1																	
PHASE: 3																	
BUS AMPACITY: 200 A																	
WIRE: 4																	
MAIN CB: 200 A																	
MOUNTING: Surface																	
CKT NO.	DESCRIPTION	VA	TYPE	PKT BREAKER	PHASE	CKT BREAKER	LOAD	DESCRIPTION	CKT NO.	VA	TYPE	PKT BREAKER	PHASE	CKT BREAKER	LOAD	DESCRIPTION	CKT NO.
1	DOAS Unit	2370	M	3	A	30	4370	H	2000	2	H	2000				Water Heater	2
3		2370	M		B		4370	H	2000	4	H	2000					4
5		2370	M		C		4370	H	2000	6	H	2000					6
7	Compressor C-08-A-C-810	1242	M	3		20	1482	N	240	8	N	240				Coagulant Skid Recep	8
9		1242	M				1482	N	240	10	N	240				Coagulant Skid-502	10
11		1242	M				1482	N	240	12	N	240				Caustic Dosing Skid Recep	12
13		1242	M				1482	N	240	14	N	240				Caustic Dosing Skid-501	14
15	Compressor C-08-A-C-820	1242	M	3		20	1546	L	304	16	L	304				Base Room Lighting	16
17		1242	M				1546	L	304	18	L	304				Acid Room Lighting	18
19							304	L	304	20	L	304				Electrical Room Lighting	20
21							304	L	304	22	L	304				Blower Room Lighting	22
23							304	L	304	24	L	304				Platform Lighting	24
25							1000	N	1000	26	N	1000				10-NP-01 (Network Panel)	26
27							100	M	100	28	M	100				Circ Pump CP-1	28
29							100	M	100	30	M	100				Raw Water Instrument Panel	30
31	Orthophosphate Skid Recep	240	N	1		20	840	N	600	32	N	600				Raw Water Instrument Panel	32
33	Orthophosphate Skid-502	240	N	1		20	840	N	600	34	N	600				Clarified Water Instrument Panel	34
35	DOAS Controller	100	N	1		20	700	N	600	36	N	600				Clarified Water Instrument Panel	36
37	02-LCP-001 (DAF Control Panel)	1000	N	1		40	1600	N	600	38	N	600				Filtrate Water Instrument Panel	38
39	03-RCP-101 (DAF Remote Panel)	1000	N	1		40	1600	N	600	40	N	600				Filtrate Water Instrument Panel	40
41	03-RCP-201 (DAF Remote Panel)	1000	N	1		40	1600	N	600	42	N	600				Outside Recept	42
43	Acid Room Exhaust Fan (EF-1)	100	N	1		20	700	N	600	44	N	600				Inside Recept	44
45	Base Room Exhaust Fan (EF-2)	100	N	1		20	700	N	600	46	N	600				Work Station Recept	46
47	Electrical Room Fan (EF-3)	125	N	1		20	725	N	600	48	N	600				Acid Room, Base Room Recept	48
49	Roof Blower (EF-4)	185	N	1		20	785	N	600	50	N	600				Electrical Room Recept	50
51							600	N	600	52	N	600				Platform Recept	52
53							0			54							54
55							0			56							56
57							0			58							58
59							0			60							60
61							0			62							62
63							0			64							64
65							0			66							66

LOAD SUMMARY				
CONNECTED		DEMAND		
KVA	FACTOR	LOAD TYPE	FACTOR	KVA
A PHASE: 12.6	1.22	LIGHTING (L)	1.25	1.52
B PHASE: 11.5	0.00	RECEPTACLE (R)	1.00	0.00
C PHASE: 11.3	0.00	REC (>10000VA) (LR)	0.50	0.00
TOTAL: 35.4	6.00	HVAC (H)	1.25	7.50
	0.00	LARGEST MOTOR (LM)	1.25	0.00
	14.66	REMAIN MOTOR (M)	1.00	14.66
	13.55	KNOW DEMAND (N)	1.00	13.55
	0.00	EXISTING LOAD (E)	1.00	0.00
	0.00	ADDITIONAL LOAD (A)	1.00	0.00
TOTAL:	35.43			37.24 <- TOTAL KVA
				103.4 <- TOTAL A/PH

2 PANEL A (FILTRATION BUILDING)

REVISIONS			
REV	DATE	DESCRIPTION	BY



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

PANEL SCHEDULES

PROJECT: J000541
DATE: 06/02/2023

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E-10

PANEL B																
VOLTAGE: 480/277			PHASE: 3			WIRE: 4			MAIN CB: 400 A			MOUNTING: Surface				
AIC: 35KA			BUS AMPACITY: 400 A			ENCLOSURE: NEMA 1										
CKT NO.	DESCRIPTION	LOAD VA	LOAD TYPE	CKT BREAKER P	CKT BREAKER A	CKT BREAKER OPT	PHASE A	PHASE B	PHASE C	CKT BREAKER OPT	CKT BREAKER A	CKT BREAKER P	LOAD TYPE	LOAD VA	DESCRIPTION	CKT NO.
1		32011	M	3	400		43953						N	11941.7	Transformer T2 / Panel A-1	2
3	MCC-B	32011	M				43953				80	3	N	11941.7		4
5		32011	M					43953					N	11941.7		6
7							0						N			8
9							0	0			20	3	N		OSHG-1 Rectifier	10
11							0						N			12
13							0	0					N			14
15							0				20	3	N		OSHG-2 Rectifier	16
17							0	0					N			18
19							0						N			20
21							0	0					N			22
23							0						N			24
25							0	0					N			26
27							0						N			28
29							0	0					N			30
31							0						N			32
33							0	0					N			34
35							0						N			36
37							0	0					N			38
39							0						N			40
41							0	0					N			42

LOAD SUMMARY					
CONNECTED		LOAD TYPE		DEMAND	
KVA	FACTOR			KVA	
A PHASE: 44.0	0.00	LIGHTING (L)	1.25	0.00	
B PHASE: 44.0	0.00	RECEPTACLE (R)	1.00	0.00	
C PHASE: 44.0	0.00	REC (>1000VA) (LR)	0.50	0.00	
TOTAL: 131.9	0.00	HVAC (H)	1.25	0.00	
	0.00	LARGEST MOTOR (LM)	1.25	0.00	
	96.03	REMAIN MOTOR (M)	1.00	96.03	
	35.83	KNOW DEMAND (N)	1.00	35.83	
	0.00	EXISTING LOAD (E)	1.00	0.00	
	0.00	ADDITIONAL LOAD (A)	1.00	0.00	
TOTAL:	131.86			131.86 <- TOTAL KVA	
				158.6 <- TOTAL A/PH	

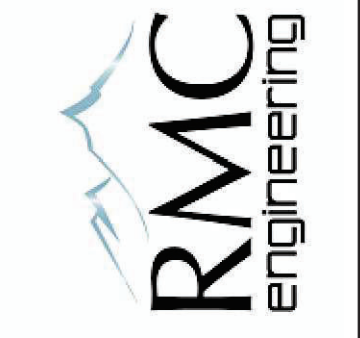
1 PANEL B (ADMIN BUILDING)

PANEL B-1																
VOLTAGE: 208/120			PHASE: 3			WIRE: 4			MAIN CB: 200 A			MOUNTING: Surface				
AIC: 35KA			BUS AMPACITY: 200 A			ENCLOSURE: NEMA 1										
CKT NO.	DESCRIPTION	LOAD VA	LOAD TYPE	CKT BREAKER P	CKT BREAKER A	CKT BREAKER OPT	PHASE A	PHASE B	PHASE C	CKT BREAKER OPT	CKT BREAKER A	CKT BREAKER P	LOAD TYPE	LOAD VA	DESCRIPTION	CKT NO.
1	Shop Heater (UH-1A)	2500	N	2	30		2600				20	1	N	100	Chlorine Room Fan (EF-1)	2
3		2500	N				2600				20	1	N	100	Electrical Room Fan (EF-2)	4
5	Chlorine Room Heater (UH-2A)	5000	N	2	60		6000				20	1	N	1000	10-NP-02 (Network Panel)	6
7		5000	N				6000				20	1	N	1000	Panel C (Clearwell Building)	8
9	Electrical Room Heater (UH-3A)	1000	N	2	20		2100				20	1	LM	1100	07-P700A Booster Pump 1	10
11		1000	N				2100				20	1	M	1100	07-P700B Booster Pump 2	12
13	Lab Heat Pump (HP-1)	1200	N	2	30		1200				20	1	N		OSHG-1 Controls	14
15		1200	N				1200				20	1	N		OSHG-2 Controls	16
17							0				20	2	M		OSHG-1 Blower	18
19	Control Room Lighting	400	L	1	20		400						M			20
21	Storage Area Lighting	800	L	1	20		800				20	2	M		OSHG-2 Blower	22
23	Electrical Room Lighting	500	L	1	20		500						M			24
25	Chlorine Room Lighting	700	L	1	20		700				20	1	N		OSHG Dosing Skid Recep	26
27	Shop Lighting	1000	L	1	20		1000				20	1	N		OSHG Dosing Skid Pumps	28
29	Bathroom	200	L	1	20		200									30
31	Outside Lighting	5000	L	1	20		5000									32
33	Communication Panel	1000	N	1	20		1000									34
35							0									36
37							0									38
39							0									40
41							0									42
43							0									44
45							0									46
47							0									48
49							0									50
51							0									52
53							0									54
55							0									56
57							0									58
59							0									60
61							0									62
63							0									64
65							0									66

LOAD SUMMARY					
CONNECTED		LOAD TYPE		DEMAND	
KVA	FACTOR			KVA	
A PHASE: 15.9	8.60	LIGHTING (L)	1.25	10.75	
B PHASE: 8.7	0.00	RECEPTACLE (R)	1.00	0.00	
C PHASE: 8.8	0.00	REC (>1000VA) (LR)	0.50	0.00	
TOTAL: 33.4	0.00	HVAC (H)	1.25	0.00	
	0.00	LARGEST MOTOR (LM)	1.25	1.38	
	1.10	REMAIN MOTOR (M)	1.00	1.10	
	22.60	KNOW DEMAND (N)	1.00	22.60	
	0.00	EXISTING LOAD (E)	1.00	0.00	
	0.00	ADDITIONAL LOAD (A)	1.00	0.00	
TOTAL:	33.40			35.83 <- TOTAL KVA	
				99.4 <- TOTAL A/PH	

2 PANEL B-1 (ADMIN BUILDING)

REVISIONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
PANEL SCHEDULES
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
DATE 06/02/2023

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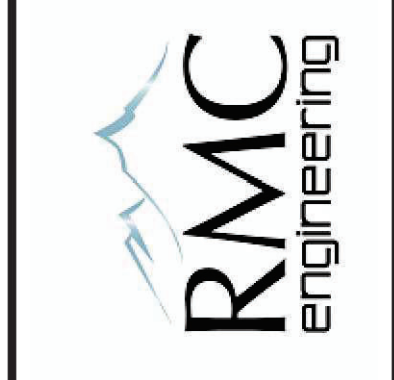
E-11

ID	UNDER GROUND	CONDUIT	CONDUCTORS	LOCATION 1		LOCATION 2	
				BUILDING	EQUIPMENT	BUILDING	EQUIPMENT
1	YES	Provided by Utility		OUTSIDE	UTILITY TRANSFORMER	FILTRATION	CT CABINET
2	YES	4"	3NO. 350 MCM, 1NO. 4/0 AWG, 1NO. 1 AWG GND	FILTRATION	CT CABINET	FILTRATION	MAIN CIRCUIT BREAKER
3	YES	4"	3NO. 350 MCM, 1NO. 4/0 AWG, 1NO. 1 AWG GND	FILTRATION	CT CABINET	FILTRATION	MAIN CIRCUIT BREAKER
4	YES	4"	3NO. 350 MCM, 1NO. 4/0 AWG, 1NO. 1 AWG GND	OUTSIDE	GENERATOR	FILTRATION	TRANSFER SWITCH
5	YES	4"	3NO. 350 MCM, 1NO. 4/0 AWG, 1NO. 1 AWG GND	OUTSIDE	GENERATOR	FILTRATION	TRANSFER SWITCH
6	YES	3"	4NO. 3/0, 1NO. 3 AWG GND	FILTRATION	MDP	ADMIN	PANEL B
7	YES	3"	4NO. 3/0, 1NO. 3 AWG GND	FILTRATION	MDP	ADMIN	PANEL B
8			3NO. 3 AWG, 1NO. 8 AWG GND	FILTRATION	MDP	FILTRATION	TRANSFORMER T1
9	YES	3"	4NO. 3/0, 1NO. 3 AWG GND	FILTRATION	MDP	FILTRATION	MCC-A
10	YES	3"	4NO. 3/0, 1NO. 3 AWG GND	FILTRATION	MDP	FILTRATION	MCC-A
11			4NO. 3/0, 1NO. 3 AWG GND	FILTRATION	TRANSFORMER T1	FILTRATION	PANEL A
12			2NO. 12 AWG, 1NO. 12 AWG GND, 1NO. 12 AWG	FILTRATION	MDP	FILTRATION	OVERHEAD LIGHTING
13			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	PLATFORM LIGHTING
14			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MDP	FILTRATION	OUTDOOR LIGHTING
15			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	ACID ROOM LIGHTING
16			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	BASE ROOM LIGHTING
17			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	ELECTRICAL ROOM LIGHTING
18			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	BLOWER ROOM LIGHTING
19			3NO. 8 AWG, 1NO. 10 AWG GND	FILTRATION	MDP	FILTRATION	AIR COOLED CONDENSING UNIT, ACCU-1
20			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	ACID ROOM EXHAUST FAN (EF-1)
21			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	BASE ROOM EXHAUST FAN (EF-2)
22			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	ELECTRICAL ROOM EXHAUST FAN (EF-3)
23			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	ROOF BLOWER EXHAUST FAN (EF-4)
24			3NO. 10 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	WATER HEATER
25			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	CIRC PUMP CP-1
26			3NO. 10 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	DOAS UNIT
27			3NO. 6 AWG, 1NO. 8 AWG GND	FILTRATION	PANEL A	FILTRATION	DOAS UNIT PREHEAT ELECTRIC HEATER
28			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	DOAS CONTROLLER
29			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	10-NP-01
30			2NO. 8 AWG, 1NO. 10 AWG GND	FILTRATION	PANEL A	FILTRATION	02-LCP-001
31			2NO. 8 AWG, 1NO. 10 AWG GND	FILTRATION	PANEL A	FILTRATION	03-RCP-101
32			2NO. 8 AWG, 1NO. 10 AWG GND	FILTRATION	PANEL A	FILTRATION	03-RCP-201
33			3NO. 10 AWG, 1NO. 12 AWG GND	FILTRATION	MDP	FILTRATION	ACID ROOM UNIT HEATER (UH-1)
34			3NO. 10 AWG, 1NO. 12 AWG GND	FILTRATION	MDP	FILTRATION	BASE ROOM UNIT HEATER (UH-2)
35			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MDP	FILTRATION	ELECTRICAL ROOM UNIT HEATER (UH-3)
36			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MDP	FILTRATION	BLOWER ROOM UNIT HEATER (UH-4)
37			3NO. 10 AWG, 1NO. 12 AWG GND	FILTRATION	MDP	FILTRATION	PROCESS ROOM UNIT HEATER (UH-5)
38			3NO. 10 AWG, 1NO. 12 AWG GND	FILTRATION	MDP	FILTRATION	PROCESS ROOM UNIT HEATER (UH-6)
39			3NO. 10 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	PROCESS ROOM UNIT HEATER (UH-7)
40			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	10-NP-01	FILTRATION	10-CP-01
41			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	02-LCP-001	FILTRATION	RAW WATER FLOW METER 01-FIT-013
42			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	02-LCP-001	FILTRATION	RAW WATER CONTROL VALVE 02-FV-014
43			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	Panel A	FILTRATION	RAW WATER INSTRUMENT PANEL
44			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	Panel A	FILTRATION	RAW WATER INSTRUMENT PANEL
45			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	RAPID MIXER 01-MX-021
46			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	RAPID MIXER 01-MX-022
47			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #1 FLOC #1 02-MX-103
48			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #1 FLOC #2 02-MX-105
49			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #1 SKIMMER 02-MX-111
50			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #1 RECYCLE PUMP 02-P-120
51			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #2 FLOC #1 02-MX-203
52			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #2 FLOC #2 02-MX-205
53			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #2 SKIMMER 02-MX-211
54			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #2 RECYCLE PUMP 02-P-220
55			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #3 FLOC #1 02-MX-303
56			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #3 FLOC #2 02-MX-305
57			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #3 SKIMMER 02-MX-311
58			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	FILTRATION	DAF #3 RECYCLE PUMP 02-P-320
59			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	Panel A	FILTRATION	CLARIFIED WATER INSTRUMENT PANEL
60			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	Panel A	FILTRATION	CLARIFIED WATER INSTRUMENT PANEL
61			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	Panel A	FILTRATION	FILTRATE WATER INSTRUMENT PANEL
62			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	Panel A	FILTRATION	FILTRATE WATER INSTRUMENT PANEL
62			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	10-CP-01	FILTRATION	FILTER #1 FILTERED WATER FIT-313
63			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	10-CP-01	FILTRATION	FILTER #2 FILTERED WATER FIT-314
64			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	10-CP-01	FILTRATION	FILTER #3 FILTERED WATER FIT-315
65			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	10-CP-01	FILTRATION	FILTER #4 FILTERED WATER FIT-316
66			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	10-CP-01	FILTRATION	FILTER #5 FILTERED WATER FIT-317
67			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	10-CP-01	FILTRATION	FILTER #6 FILTERED WATER FIT-318
68			2NO. 14 AWG, 1NO. 14 AWG GND	ADMIN	10-CP-03	CLEARWELL	CLEARWELL VALVE MV-435
69			2NO. 14 AWG, 1NO. 14 AWG GND	ADMIN	10-CP-03	CLEARWELL	CLEARWELL VALVE MV-436
70			2NO. 14 AWG, 1NO. 14 AWG GND	ADMIN	10-CP-03	CLEARWELL	CLEARWELL VALVE MV-437

NOTES:

1. THE EQUIPMENT SUPPLIED MAY AFFECT THE POWER CABLE SCHEDULE.
2. THE CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS, ELECTRICAL SUBMITTALS, AND EQUIPMENT MANUFACTURERS' INSTALLATION INSTRUCTIONS TO IDENTIFY AND ACCOUNT FOR ALL ELECTRICAL CONDUCTORS REQUIRED FOR THE CONSTRUCTION OF THE WATER PLANT.
3. THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES INVOLVED IN THE WATER PLANT CONSTRUCTION, INCLUDING MECHANICAL, STRUCTURAL, AND CIVIL CONTRACTORS, TO ENSURE THAT ALL ELECTRICAL REQUIREMENTS ARE CONSIDERED.
4. ALL ELECTRICAL WORK SHALL BE PROPERLY DOCUMENTED, INCLUDING AS-BUILT DRAWINGS, TEST RESULTS, AND COMMISSIONING REPORTS.
5. ALL ELECTRICAL WORK SHALL BE COMPLETED TO THE OWNER'S SATISFACTION, AND THE FINAL PRODUCT SHALL MEET ALL DESIGN REQUIREMENTS AND SPECIFICATIONS. THE POWER CABLE SCHEDULE IS NOT A COMPREHENSIVE LIST OF REQUIRED CONDUCTORS BUT A REFERENCE TO PROVIDE THE CONTRACTOR WITH A GENERAL SCOPE OF THE CONDUCTORS.
7. FIELD VERIFY ALL CONDUCTORS.

REVISIONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
CABLE SCHEDULE
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
 DATE 06/02/2023

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E-12

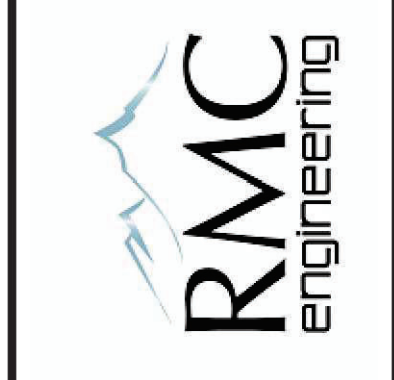
1 POWER CONDUCTORS SCHEDULE

G:\My Drive\Jobs\DWL\Jobs\J000541 - Wrangell WTP Design\Drawings\Master\J000541 E-13 Conduit And Cable Schedule Power Conductors 2.dwg PLOT DATE 2023-6-1 10:20 SAVED DATE 2023-05-09

ID	UNDER GROUND	CONDUIT	CONDUCTORS	LOCATION 1		LOCATION 2	
				BUILDING	EQUIPMENT	BUILDING	EQUIPMENT
71			2NO. 14 AWG, 1NO. 14 AWG GND	ADMIN	10-CP-03	CLEARWELL	CLEARWELL VALVE MV-438
72			2NO. 14 AWG, 1NO. 14 AWG GND	ADMIN	10-CP-03	CLEARWELL	CLEARWELL VALVE MV-439
73			3NO. 4 AWG, 1NO. 4 AWG GND	ADMIN	MCC-B	CLEARWELL	HIGH SERVICE PUMP P-401A
74			3NO. 4 AWG, 1NO. 4 AWG GND	ADMIN	MCC-B	CLEARWELL	HIGH SERVICE PUMP P-401B
75			3NO. 4 AWG, 1NO. 4 AWG GND	ADMIN	MCC-B	CLEARWELL	HIGH SERVICE PUMP P-401C
76			2NO. 14 AWG, 1NO. 14 AWG GND	ADMIN	10-CP-02		TURBIDIMETER AIT-1001
77			2NO. 14 AWG, 1NO. 14 AWG GND	ADMIN	10-CP-02		CHLORINE RESIDUAL ANALYZER AIT-1003
78			2NO. 14 AWG, 1NO. 14 AWG GND	ADMIN	10-CP-02		FLOW METER FIT-1004
79	YES		3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	BW EQ BASIN	BACKWASH FLOOR SCOUR PUMP P-601A
80	YES		3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	MCC-A	BW EQ BASIN	BACKWASH FLOOR SCOUR PUMP P-601B
81	YES		2NO. 14 AWG, 1NO. 14 AWG GND	ADMIN	10-CP-02	BW VAULT	BW EQ FLOW FIT-603
82	YES		2NO. 14 AWG, 1NO. 14 AWG GND	ADMIN	10-CP-02	BW VAULT	BW EQ VALVE FV-603A
83	YES		2NO. 14 AWG, 1NO. 14 AWG GND	ADMIN	10-CP-02	BW VAULT	BW EQ VALVE FV-603B
84	YES		2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	BW VAULT	RECEP AND LIGHTING
85			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL-A	FILTRATION	COMPRESSOR 810
86			3NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL-A	FILTRATION	COMPRESSOR 820
87			3NO. 10 AWG, 1NO. 10 AWG GND	FILTRATION	MCC-A	FILTRATION	BLOWER B-601A
88			3NO. 10 AWG, 1NO. 10 AWG GND	FILTRATION	MCC-A	FILTRATION	BLOWER B-601B
89			2NO. 12 AWG, 1NO. 14 AWG GND	FILTRATION	10-CP-01	FILTRATION	BLOWER FLOW FIT-607
90			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	BASE ROOM CAUSTIC DOSING SKID-501
91			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	CHEMICAL DOSING CAUSTIC PUMPS
92			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	ACID ROOM COAGULANT SKID-502
93			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	CHEMICAL DOSING COAG PUMPS
94			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	ACID ROOM ORTHOPHOSPHATE SKID-502
95			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL A	FILTRATION	CHEMICAL DOSING PHOSPHATE PUMPS
96			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	OSHG BOOSTER PUMP 07-P-700A
97			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	OSHG BOOSTER PUMP 07-P-700B
98			3NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B	ADMIN	OSHG-1 RECTIFIER
99			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	OSHG-1 CONTROLS
100			3NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	OSHG-1 BLOWER POWER
101			3NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	OSHG-1	ADMIN	OSHG BLOWER B-710
102			3NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B	ADMIN	OSHG-2 RECTIFIER
103			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	OSHG-2 CONTROLS
104			3NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	OSHG-2 BLOWER POWER
105			3NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	OSHG-2	ADMIN	OSHG BLOWER B-720
106			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	OSHG DOSING SKID SKID-703
107			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	OSHG DOSING SKID PUMPS
108			4NO. 3/0, 1NO. 3 AWG GND	ADMIN	PANEL B	ADMIN	MCC-B
109			4NO. 3/0, 1NO. 3 AWG GND	ADMIN	PANEL B	ADMIN	MCC-B
110			3NO. 3 AWG, 1NO. 8 AWG GND	ADMIN	PANEL B	ADMIN	TRANSFORMER T2
111			4NO. 3/0, 1NO. 3 AWG GND	ADMIN	TRANSFORMER T2	ADMIN	PANEL B-1
112			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	10-NP-02
113			2NO. 8 AWG, 1NO. 8 AWG GND	ADMIN	PANEL B-1	ADMIN	SHOP UNIT HEATER (UH-1A)
114			2NO. 6 AWG, 1NO. 6 AWG GND	ADMIN	PANEL B-1	ADMIN	CHLORINE ROOM UNIT HEATER (UH-2A)
115			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	ELECTRICAL ROOM UNIT HEATER (UH-3A)
116			2NO. 10 AWG, 1NO. 10 AWG GND	ADMIN	PANEL B-1	ADMIN	LAB HEAT PUMP (HP-1)
117			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	CONTROL ROOM LIGHTING
118			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	STORAGE AREA LIGHTING
119			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	ELECTRICAL ROOM LIGHTING
120			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	CHLORINE ROOM LIGHTING
121			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	SHOP LIGHTING
122			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	BATHROOM
123			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	OUTSIDE LIGHTING
124			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	CHLORINE ROOM EXHAUST FAN (EF-1)
125			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	CHLORINE ROOM EXHAUST FAN (EF-2)
126			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	PANEL B-1	ADMIN	10-NP-02
127			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	10-NP-02	ADMIN	10-CP-02
128			2NO. 12 AWG, 1NO. 12 AWG GND	FILTRATION	PANEL-A	EQ BASIN	RECEP
129			2NO. 12 AWG, 1NO. 12 AWG GND	ADMIN	Panel -A	CLEARWELL	10-CP-03
130			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	02-LCP-001	FILTRATION	02-JB-102 DAF UNIT #1 SAT SKID JBOX (120V TO 02-FIT-126)
131			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	02-LCP-001	FILTRATION	02-JB-202 DAF UNIT #2 SAT SKID JBOX (120V TO 02-FIT-226)
132			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	02-LCP-001	FILTRATION	02-JB-302 DAF UNIT #3 SAT SKID JBOX (120V TO 02-FIT-326)
133			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	02-LCP-001	FILTRATION	02-JB-101 DAF UNIT #1 JBOX (120V TO 02-XV-104)
134			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	02-LCP-001	FILTRATION	02-JB-102 DAF UNIT #1 SAT SKID JBOX (120V TO 02-XV-125)
135			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	02-LCP-001	FILTRATION	02-XV-204 DAF UNIT #2 RW INLET VLV (120V SUPPLY)
136			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	02-LCP-001	FILTRATION	02-JB-202 DAF UNIT #2 SAT SKID JBOX (120V TO 02-XV-225)
137			2NO. 14 AWG, 1NO. 14 AWG GND	FILTRATION	02-LCP-001	FILTRATION	02-JB-301 DAF UNIT #3 JBOX (120V TO 02-XV-304)
138				FILTRATION	02-LCP-001	FILTRATION	02-JB-302 DAF UNIT #3 SAT SKID JBOX (120V TO 02-XV-325)
139				FILTRATION	03-RCP-101 FILTER UNIT	FILTRATION	03-XV-180 FILTER TANK 3 INLET VLV (120V SUPPLY)
140				FILTRATION	03-RCP-201 FILTER UNIT	FILTRATION	03-XV-280 FILTER TANK 6 INLET VLV (120V SUPPLY)

1 POWER CONDUCTORS SCHEDULE (CONTINUED)

REVISIONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
CABLE SCHEDULE
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
 DATE 06/02/2023

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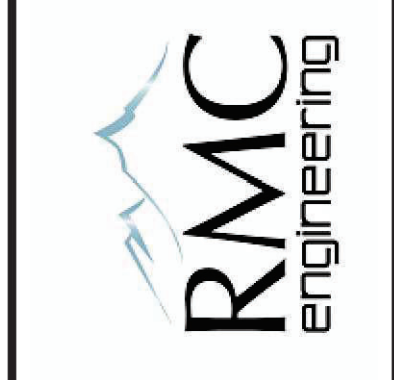
NO	TAG	DESCRIPTION	CONDUCTORS				LOCATION 1	LOCATION 2
			TYPE	V OR I	QTY	TYPE		
200	01-AIT-001	RW TOTAL ORGANIC CARBON	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	RW SAMPLE PANEL
201	01-AIT-002	RW pH & TEMPERATURE	ANALOG	4-20 mA	2	#18 TSP	10-CP-01	RW SAMPLE PANEL
202	01-AIT-003	RW ALKALINITY	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	RW SAMPLE PANEL
203	01-AIT-004	RW TURBIDITY	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	RW SAMPLE PANEL
204	01-FIT-013	RW FLOW RATE	ANALOG	4-20 mA	1	#18 TSP	02-LCP-001	RW PIPING
205	01-FV-014	RW FLOW CONTROL VALVE	ANALOG	4-20 mA	2	#18 TSP	02-LCP-001	RW PIPING
206	01-LSH-023	TRENCH FLOAT SWITCH	CONTROL	24 VDC	2	#14 AWG	10-CP-01	TRENCH
207	01-MX-021	RAPID MIX TANK STAGE 1 MIXER	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
208	01-MX-022	RAPID MIX TANK STAGE 2 MIXER	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
209	01-LIT-020	RAPID MIX TANK LEVEL	ANALOG	4-20 mA	1	#18 TSP	02-LCP-001	RAPID MIX TANK
210	02-MX-103	DAF UNIT #1 STAGE 1 MIXER	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
211	02-MX-105	DAF UNIT #1 STAGE 2 MIXER	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
212	02-MX-111	DAF UNIT #1 SOLIDS SKIMMER	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
213	02-P-120	RECYCLE PUMP #1	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
214	02-MX-203	DAF UNIT #2 STAGE 1 MIXER	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
215	02-MX-205	DAF UNIT #2 STAGE 2 MIXER	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
216	02-MX-211	DAF UNIT #2 SOLIDS SKIMMER	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
217	02-P-220	RECYCLE PUMP #2	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
218	02-MX-303	DAF UNIT #3 STAGE 1 MIXER	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
219	02-MX-305	DAF UNIT #3 STAGE 2 MIXER	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
220	02-MX-311	DAF UNIT #3 SOLIDS SKIMMER	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
221	02-P-320	RECYCLE PUMP #3	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
222	FIT-313	FILTER #1 FILTERED WATER	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	FILTERED WATER MANIFOLD
223	FIT-314	FILTER #2 FILTERED WATER	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	FILTERED WATER MANIFOLD
224	FIT-315	FILTER #3 FILTERED WATER	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	FILTERED WATER MANIFOLD
225	FIT-316	FILTER #4 FILTERED WATER	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	FILTERED WATER MANIFOLD
226	FIT-317	FILTER #5 FILTERED WATER	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	FILTERED WATER MANIFOLD
227	FIT-318	FILTER #6 FILTERED WATER	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	FILTERED WATER MANIFOLD
228	02-AIT-201	CLARIFIED TOTAL ORGANIC CARBON	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	CW SAMPLE PANEL
229	02-AIT-202	CLARIFIED pH & TEMPERATURE	ANALOG	4-20 mA	2	#18 TSP	10-CP-01	CW SAMPLE PANEL
230	03-AIT-301	FILTRATE TOTAL ORGANIC CARBON	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	FW SAMPLE PANEL
231	03-AIT-302	FILTRATE pH & TEMPERATURE	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	FW SAMPLE PANEL
232	03-AIT-303	FILTRATE TURBIDITY	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	FW SAMPLE PANEL
233	03-AIT-304	FILTRATE TURBIDITY	ANALOG	4-20 mA	2	#14 AWG	10-CP-01	FW SAMPLE PANEL
234	AIT-401	EFFLUENT TO CCB pH & TEMPERATURE	ANALOG	4-20 mA	2	#14 AWG	10-CP-01	
235	AIT-402	EFFLUENT TO CCB CHLORINE RESIDUAL	ANALOG	4-20 mA	2	#14 AWG	10-CP-01	
236	MV-435	CCB #1 INLET VALVE	CONTROL		6	#14 AWG	10-CP-03	
237	MV-436	CCB BYPASS VALVE	CONTROL		6	#14 AWG	10-CP-03	
238	MV-437	CCB#2 INLET VALVE	CONTROL		6	#14 AWG	10-CP-03	
239	MV-438	CCB #1 OUTLET VALVE	CONTROL		6	#14 AWG	10-CP-03	
240	MV-439	CCB #2 OUTLET VALVE	CONTROL		6	#14 AWG	10-CP-03	
241	LIT-410	CCB #1 LEVEL	POWER	4-20 mA	1	#18 TSP	10-CP-03	CCB #1 TK-401A
242	LIT-420	CCB #2 LEVEL	POWER	4-20 mA	1	#18 TSP	10-CP-03	CCB #2 TK-401B
243	LIT-430	CLEARWELL LEVEL	POWER	4-20 mA	1	#18 TSP	10-CP-03	CLEARWELL TK-402
244	P-401A	HIGH SERVICE PUMP #1	CONTROL	24 VDC	3	#14 AWG	10-CP-02	MCC-B
245	P-401B	HIGH SERVICE PUMP #2	CONTROL	24 VDC	3	#14 AWG	10-CP-02	MCC-B
246	P-401C	HIGH SERVICE PUMP #3	CONTROL	24 VDC	3	#14 AWG	10-CP-02	MCC-B
247	AIT-1001	CLEARWELL TO STORAGE TURBIDITY	ANALOG	4-20 mA	1	#18 TSP	10-CP-03	
248	LT-1002	STORAGE TANK LEVEL	ANALOG	4-20 mA	1	#18 TSP	10-CP-03	
249	FIT-1004	CLEARWELL TO STORAGE FLOW RATE	ANALOG	4-20 mA	1	#18 TSP	10-CP-03	
250	AIT-1003	STORAGE TO WTP CHLORINE RESIDUAL	ANALOG	4-20 mA	1	#18 TSP	10-CP-03	
251	LSH-601	BW EQ BASIN HIGH LEVEL SWITCH	CONTROL	24VDC	2	#14 AWG	10-CP-01	BW EQ BASIN TK-601
252	P-601A	BACKWASH FLOOR SCOUR PUMP #1	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
253	P-601B	BACKWASH FLOOR SCOUR PUMP #2	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
254	LIT-601	BW EQ BASIN LEVEL	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	BW EQ BASIN TK-601

1 CONTROL CONDUCTORS SCHEDULE

NOTES:

1. THE CONTROL CABLE SCHEDULE COULD BE AFFECTED BY EQUIPMENT THAT IS SUPPLIED.
2. THE CONTRACTOR SHALL REVIEW ALL ELECTRICAL SUBMITTALS AND PROJECT REQUIREMENTS TO ENSURE THEY HAVE A FULL UNDERSTANDING OF THE SCOPE OF CONSTRUCTION.
3. IDENTIFY AND ACCOUNT FOR ALL ELECTRICAL CONDUCTORS REQUIRED FOR THE CONSTRUCTION OF THE WATER PLANT.
4. COORDINATE WITH THE OTHER TRADES INVOLVED IN THE CONSTRUCTION OF THE WATER PLANT, INCLUDING MECHANICAL, STRUCTURAL, AND CIVIL CONTRACTORS, TO ENSURE THAT ALL ELECTRICAL REQUIREMENTS ARE TAKEN INTO CONSIDERATION.
5. ENSURE THAT ALL ELECTRICAL WORK IS PROPERLY DOCUMENTED, INCLUDING AS-BUILT DRAWINGS, TEST RESULTS, AND COMMISSIONING REPORTS.
6. ENSURE THAT ALL ELECTRICAL WORK IS COMPLETED TO THE SATISFACTION OF THE CLIENT AND THAT THE FINAL PRODUCT MEETS ALL DESIGN REQUIREMENTS AND SPECIFICATIONS

REVISIONS		BY
REV	DATE	DESCRIPTION



WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
CABLE SCHEDULE
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
 DATE 06/02/2023

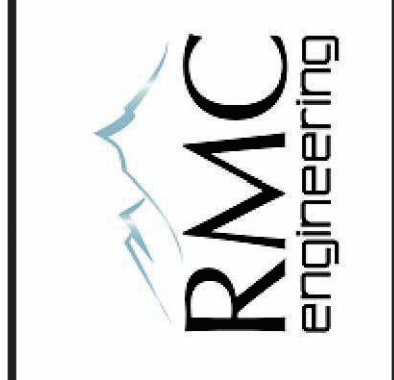
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NO	TAG	DESCRIPTION	CONDUIT & CONDUCTORS				LOCATION 1	LOCATION 2
			TYPE	V OR I	QTY	TYPE		
255	FIT-603	BW EQ BASIN FLOW RATE	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	BW EQ VAULT
256	FV-603A	BW EQ BASIN CONTROL VALVE #1	CONTROL		6	#14 AWG	10-CP-01	BW EQ VAULT
257	FV-603A	BW EQ BASIN CONTROL VALVE #1	ANALOG	4-20 mA	2	#18 TSP	10-CP-01	BW EQ VAULT
258	FV-603B	BW EQ BASIN CONTROL VALVE #2	CONTROL		6	#14 AWG	10-CP-01	BW EQ VAULT
259	FV-603B	BW EQ BASIN CONTROL VALVE #2	ANALOG	4-20 mA	2	#18 TSP	10-CP-01	BW EQ VAULT
260	08-AC-810	CENTRIFUGAL AIR COMPRESSOR #1	CONTROL		4	#14 AWG	02-LCP-001	
261	08-AC-820	CENTRIFUGAL AIR COMPRESSOR #2	CONTROL		4	#14 AWG	02-LCP-001	
262	PSH-812	COMPRESSOR #1 PRESSURE SWITCH	CONTROL		2	#14 AWG	02-LCP-001	
263	PSH-813	COMPRESSOR #2 PRESSURE SWITCH	CONTROL		2	#14 AWG	02-LCP-001	
264	08-XV-819	COMPRESSED AIR SOLENOID	CONTROL		3	#14 AWG	02-LCP-001	
265	B-601A	AIR SCOUR BLOWER #1	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
266	B-601B	AIR SCOUR BLOWER #2	CONTROL	24 VDC	3	#14 AWG	10-CP-01	MCC-A
267	PIT-601	BLOWERS INLET PRESSURE	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	
268	PSL-602	BLOWERS INLET PRESSURE SWITCH	CONTROL		2	#14 AWG	10-CP-01	
269	PIT-603	BLOWER #1 DISCHARGE PRESSURE	ANALOG	4-20 mA	1	#18 TSP	10-CP-02	
270	PSH-604	BLOWER #1 DISCHARGE PRESSURE SWITCH	CONTROL		2	#14 AWG	10-CP-02	
271	PIT-605	BLOWER #2 DISCHARGE PRESSURE	ANALOG	4-20 mA	1	#18 TSP	10-CP-02	
272	PSH-606	BLOWER #2 DISCHARGE PRESSURE SWITCH	CONTROL		2	#14 AWG	10-CP-02	
273	FIT-607	BLOWER COMBINED FLOW	ANALOG	4-20 mA	1	#14 AWG	10-CP-02	
274	LIT-501	CAUSTIC FEED TOTE LEVEL	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	
275	P-501A	CAUSTIC PERISTALTIC PUMP A	CONTROL		9	#14 AWG	10-CP-01	
276	P-501A	CAUSTIC PERISTALTIC PUMP A	ANALOG	4-20 mA	2	#18 TSP	10-CP-01	
277	P-501B	CAUSTIC PERISTALTIC PUMP B	CONTROL		9	#14 AWG	10-CP-01	
278	P-501B	CAUSTIC PERISTALTIC PUMP B	ANALOG	4-20 mA	2	#18 TSP	10-CP-01	
279	P-501C	CAUSTIC PERISTALTIC PUMP C	CONTROL		9	#14 AWG	10-CP-01	
280	P-501C	CAUSTIC PERISTALTIC PUMP C	ANALOG	4-20 mA	2	#18 TSP	10-CP-01	
281	LIT-502	COAGULANT FEED TOTE LEVEL	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	
282	P-502A	COAGULANT PERISTALTIC PUMP #1	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	
283	P-502A	COAGULANT PERISTALTIC PUMP #1	CONTROL		9	#14 AWG	10-CP-01	
284	P-502B	COAGULANT PERISTALTIC PUMP #2	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	
285	P-502B	COAGULANT PERISTALTIC PUMP #2	CONTROL		9	#14 AWG	10-CP-01	
286	PSH-502	COAGULANT FEED PUMP OUTPUT PSH	CONTROL		2	#14 AWG	10-CP-01	
287	LIT-503	ORTHOPHOSPHATE BARREL LEVEL	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	
288	P-503A	ORTHOPHOSPHATE PERISTALTIC PUMP #1	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	
289	P-503A	ORTHOPHOSPHATE PERISTALTIC PUMP #1	CONTROL		9	#14 EGC	10-CP-01	
290	P-503B	ORTHOPHOSPHATE PERISTALTIC PUMP #2	ANALOG	4-20 mA	1	#18 TSP	10-CP-01	
291	P-503B	ORTHOPHOSPHATE PERISTALTIC PUMP #2	CONTROL		9	#14 EGC	10-CP-01	
292	PSH-503	ORTHOPHOSPHATE FEED PUMP PSH	CONTROL		2	#14 AWG	10-CP-01	
293	07-PT-700A	OSHG WATER SUPPLY PUMP #1 PRESSURE	ANALOG	4-20 mA	1	#18 TSP	10-CP-02	
294	07-P-700A	OSHG WATER SUPPLY PUMP #1	CONTROL		5	#14 AWG	10-CP-02	
295	07-P-700A	OSHG WATER SUPPLY PUMP #1	ANALOG	4-20 mA	1	#18 TSP	10-CP-02	
296	07-PT-700B	OSHG WATER SUPPLY PUMP #2 PRESSURE	ANALOG	4-20 mA	1	#18 TSP	10-CP-02	
297	07-P-700B	OSHG WATER SUPPLY PUMP #2	CONTROL	24 VDC	5	#14 AWG	10-CP-02	
298	07-P-700B	OSHG WATER SUPPLY PUMP #2	ANALOG	4-20 mA	1	#18 TSP	10-CP-02	
299	LS-TK700	OSHG BRINE STORAGE TANK LEVEL SWITCH	CONTROL	24 VDC	2	#14 AWG	10-CP-02	
300	SV-TK701	OSHG STORAGE TANK TK-701	CONTROL	120 VAC	3	#14 AWG	10-CP-02	
301	SV-TK702	OSHG STORAGE TANK TK-702	CONTROL	120 VAC	3	#14 AWG	10-CP-02	
302	P-703A	HYPOCHLORITE PERISTALTIC PUMP A	CONTROL	24 VDC	9	#14 AWG	10-CP-02	
303	P-703A	HYPOCHLORITE PERISTALTIC PUMP A	ANALOG	4-20 mA	2	#18 TSP	10-CP-02	
304	P-703B	HYPOCHLORITE PERISTALTIC PUMP B	CONTROL	24 VDC	9	#14 AWG	10-CP-02	
305	P-703B	HYPOCHLORITE PERISTALTIC PUMP B	ANALOG	4-20 mA	2	#18 TSP	10-CP-02	
306	P-703C	HYPOCHLORITE PERISTALTIC PUMP C	CONTROL	24 VDC	9	#14 AWG	10-CP-02	
307	P-703C	HYPOCHLORITE PERISTALTIC PUMP C	ANALOG	4-20 mA	2	#18 TSP	10-CP-02	
308		10-CP-01	ANALOG	4-20mA	2	#18 TSP	02-LCP-001	
309		10-NP-01	FIBER	6 STRAND	1	#18 TSP	10-NP-02	
310		10-CP-01	CAT6	CAT6	1		GENERATOR	

1 CONTROL CONDUCTORS SCHEDULE (CONTINUED)

REVISIONS		BY
REV	DATE	DESCRIPTION



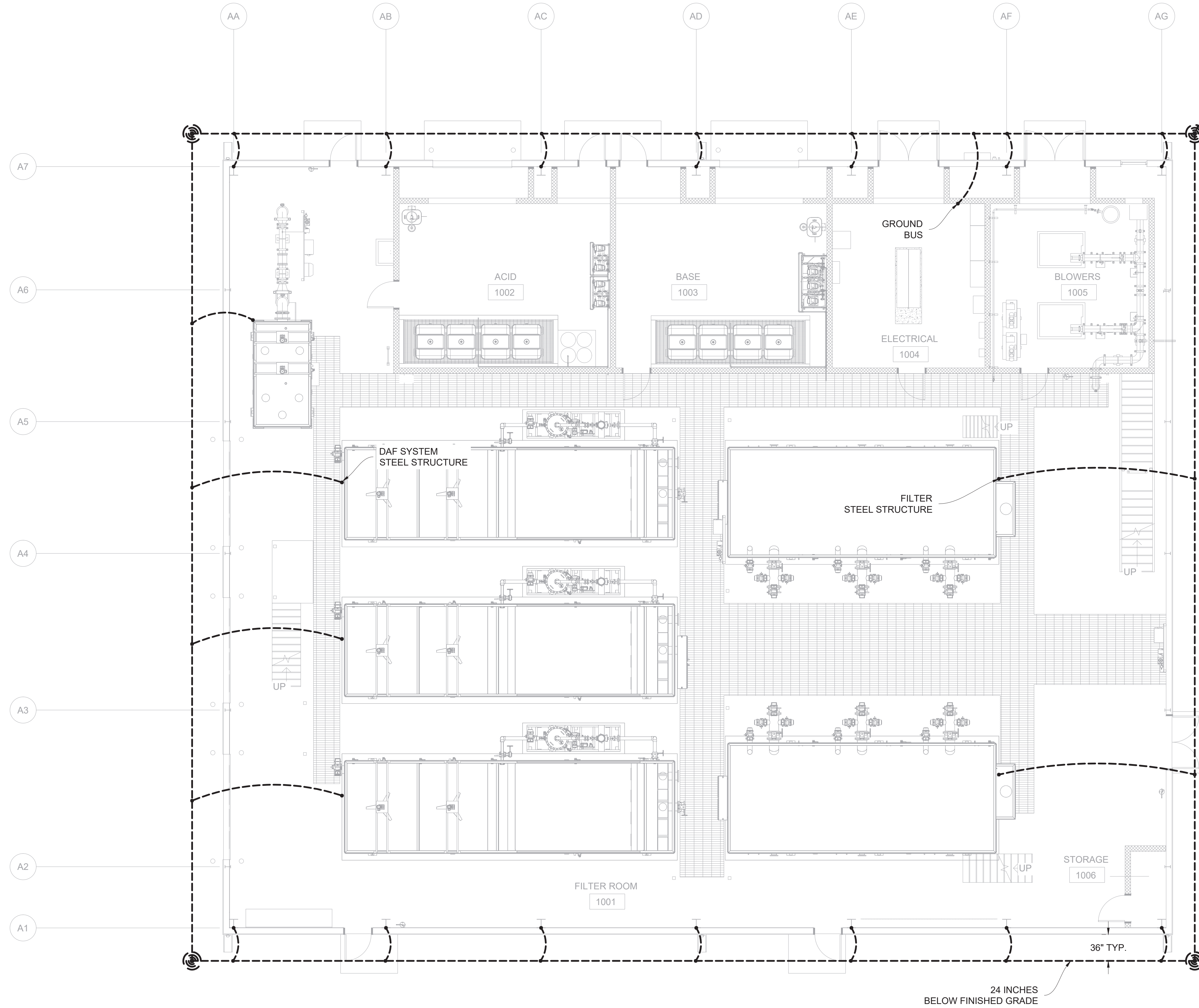
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
CABLE SCHEDULE
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
 DATE 06/02/2023

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E-15

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3/4" X 10' COPPER-CLAD GROUND ROD

NOTES:

1. MOUNT GROUND BUS IN VISIBLE AND ACCESSIBLE LOCATION. PROVIDE 40153-020 GROUND BUS, OR ENGINEER APPROVED EQUAL.
2. CONNECT GROUND CONDUCTORS TO GROUND BUS USING COMPRESSION LUGS, WASHERS, LOCK WASHERS, AND MINIMUM GRADE 5 HARDWARE.
3. SINGLE HOLE LUGS ARE ACCEPTABLE IN INSTALLATION WHERE NO ROTATING FORCE IS EXERTED ON THE LUG.
4. ATTACH GROUND CONDUCTOR TO STRUCTURAL STEEL USING EXOTHERMIC WELD. WELDS TO BE INSPECTED BY ENGINEER.
5. ATTACH GROUND CONDUCTOR TO GROUND ROD USING EXOTHERMIC WELD.
6. IN AREAS WHERE EXOTHERMIC WELDS ARE USED AND THE FACTORY FINISH IS DAMAGED OR DISCOLORED DUE TO WELD. REPAIR FACTORY FINISH TO ORIGINAL CONDITION OR BETTER.

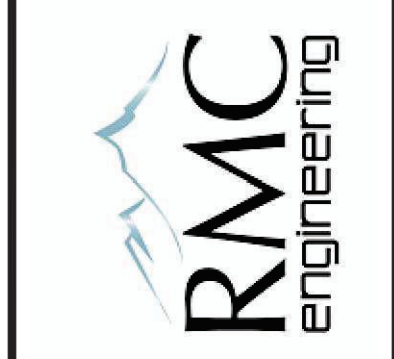
1 GROUNDING PLAN

24 INCHES BELOW FINISHED GRADE

36" TYP.

AGENCY SUBMITTAL - NOT FOR CONSTRUCTION

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REV	DATE	DESCRIPTION



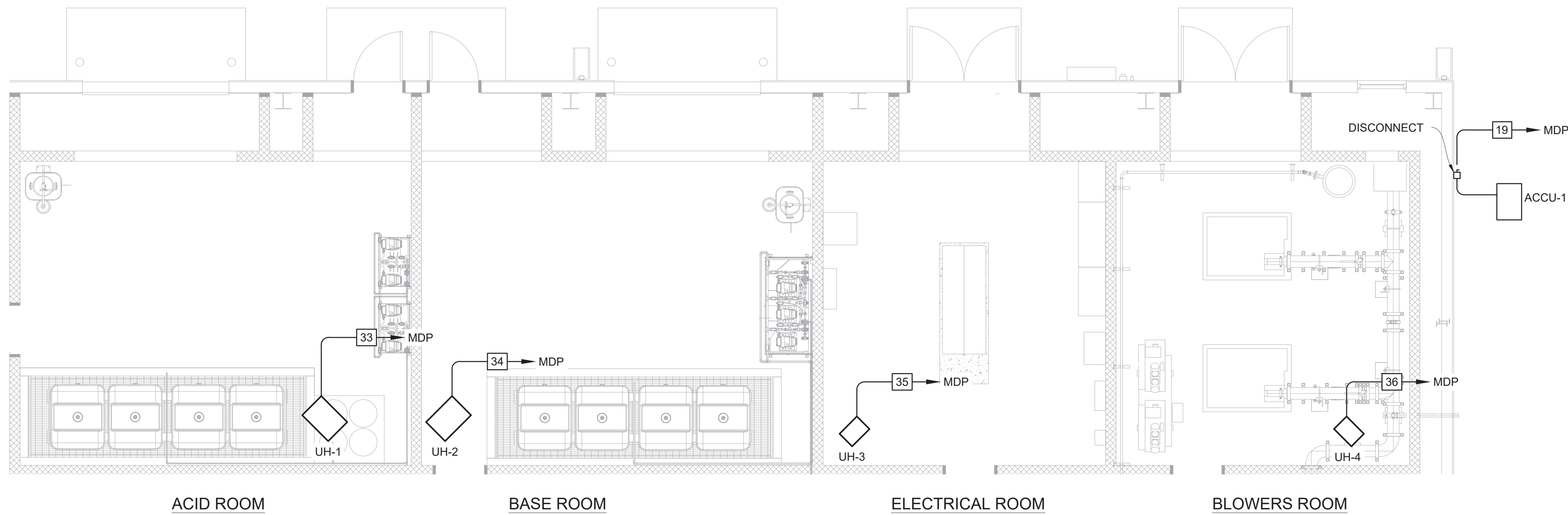
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
GROUNDING PLAN
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
DATE 06/02/2023

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E-16

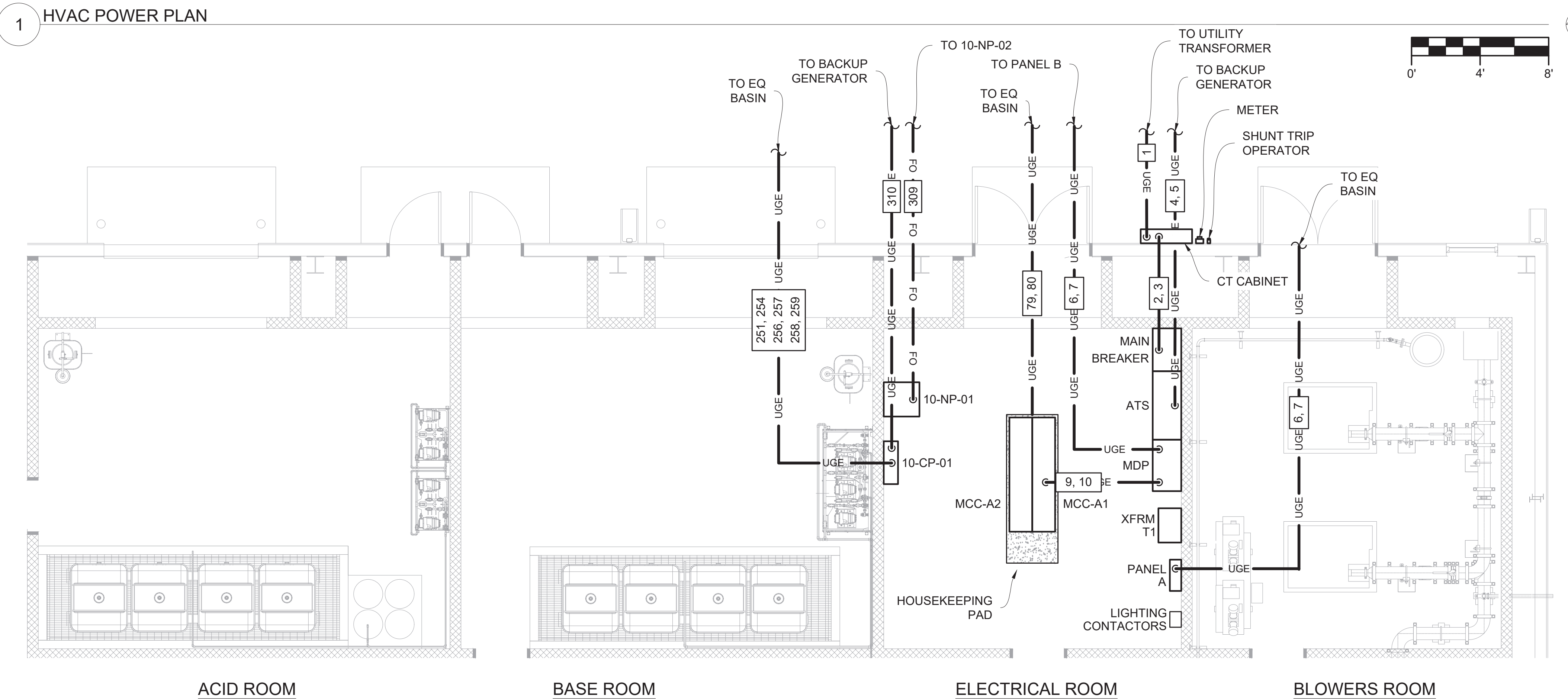
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1 HVAC POWER PLAN

NOTES:

- REFER TO MECHANICAL DRAWINGS FOR HVAC DETAILS AND CONTROLS.



2 POWER PLAN

NOTES:

- INSTALL UNDERGROUND CONDUIT IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS RECOMMENDED LOCATIONS.
- REFERENCE SHEET E-06 FOR UNDERGROUND CONDUIT FINAL LOCATION.

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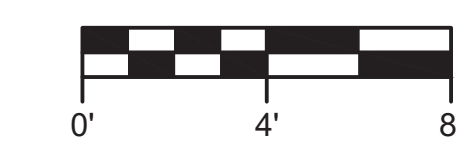


WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
ELECTRICAL ROOM LAYOUT
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
DATE 06/02/2023

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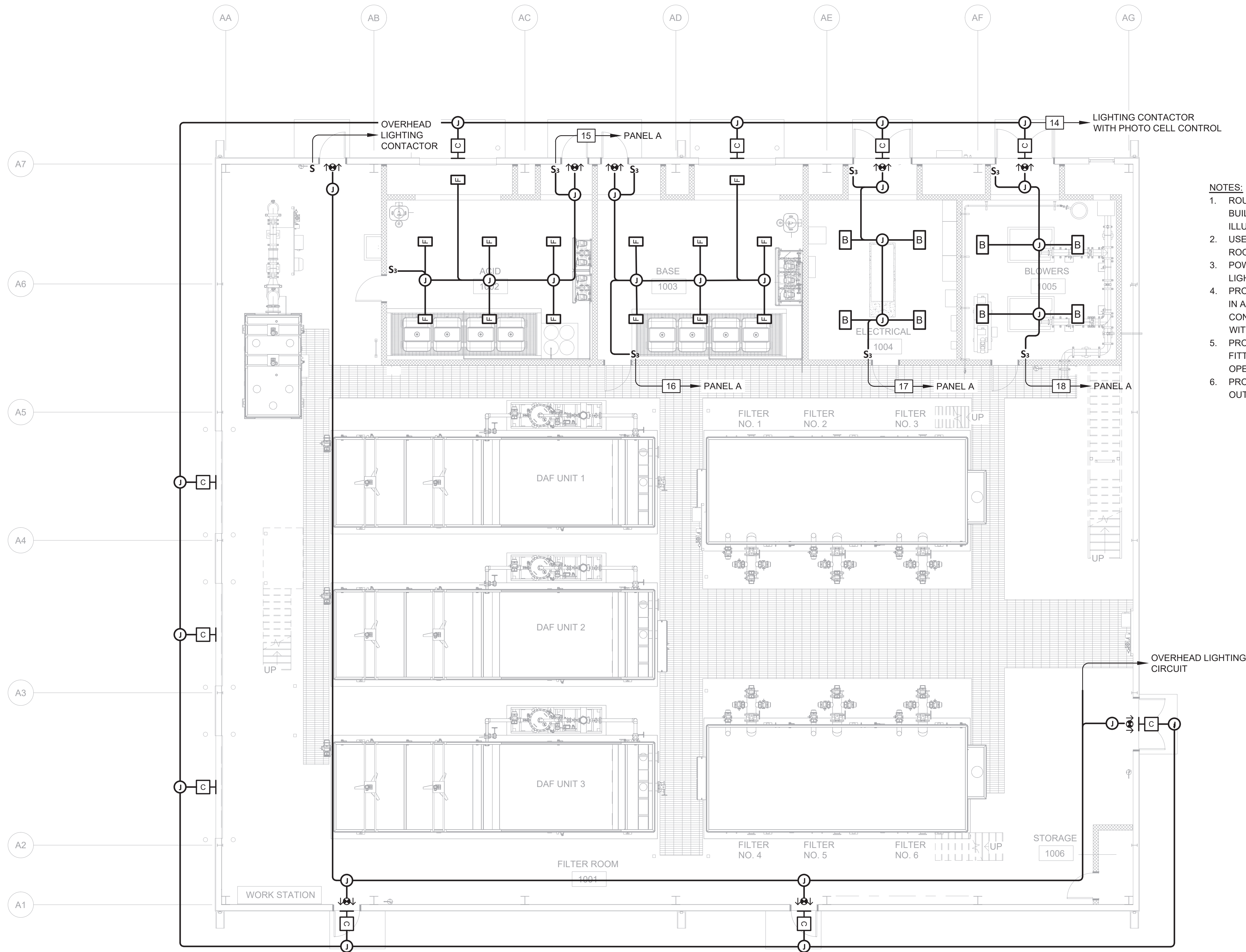
E-17



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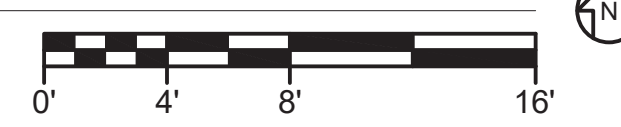
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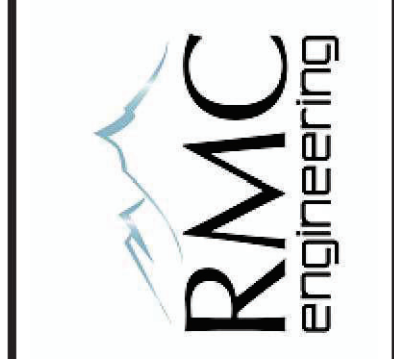
- NOTES:**
1. ROUTE CONDUIT FOR EXTERIOR LIGHTS ON INTERIOR OF THE BUILDING. CONDUIT SHOWN ON EXTERIOR FOR ILLUSTRATION PURPOSES ONLY.
 2. USE CORROSIVE RESISTANT PVC CONDUIT AND FITTINGS IN ROOMS WITH CORROSIVES ENVIRONMENTS.
 3. POWER EMERGENCY EXIT LIGHTS FROM INDIVIDUAL ROOM LIGHTING CIRCUITS.
 4. PROVIDE JUNCTION BOXES AS NEEDED TO ROUTE CONDUIT IN A NEAT AND WORKMAN LIKE MANNER. CALCULATE CONDUIT FILL AND CONDUCTOR AMPACITY IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
 5. PROVIDE ALL CONDUIT, JUNCTION BOXES, WIRE, AND FITTINGS NECESSARY TO CONSTRUCT COMPLETE AND OPERABLE LIGHTING SYSTEM.
 6. PROVIDE LIGHTING CONTACTOR WITH H-O-A SWITCH FOR OUTDOOR LIGHTING.

1 GROUND FLOOR LIGHTING PLAN



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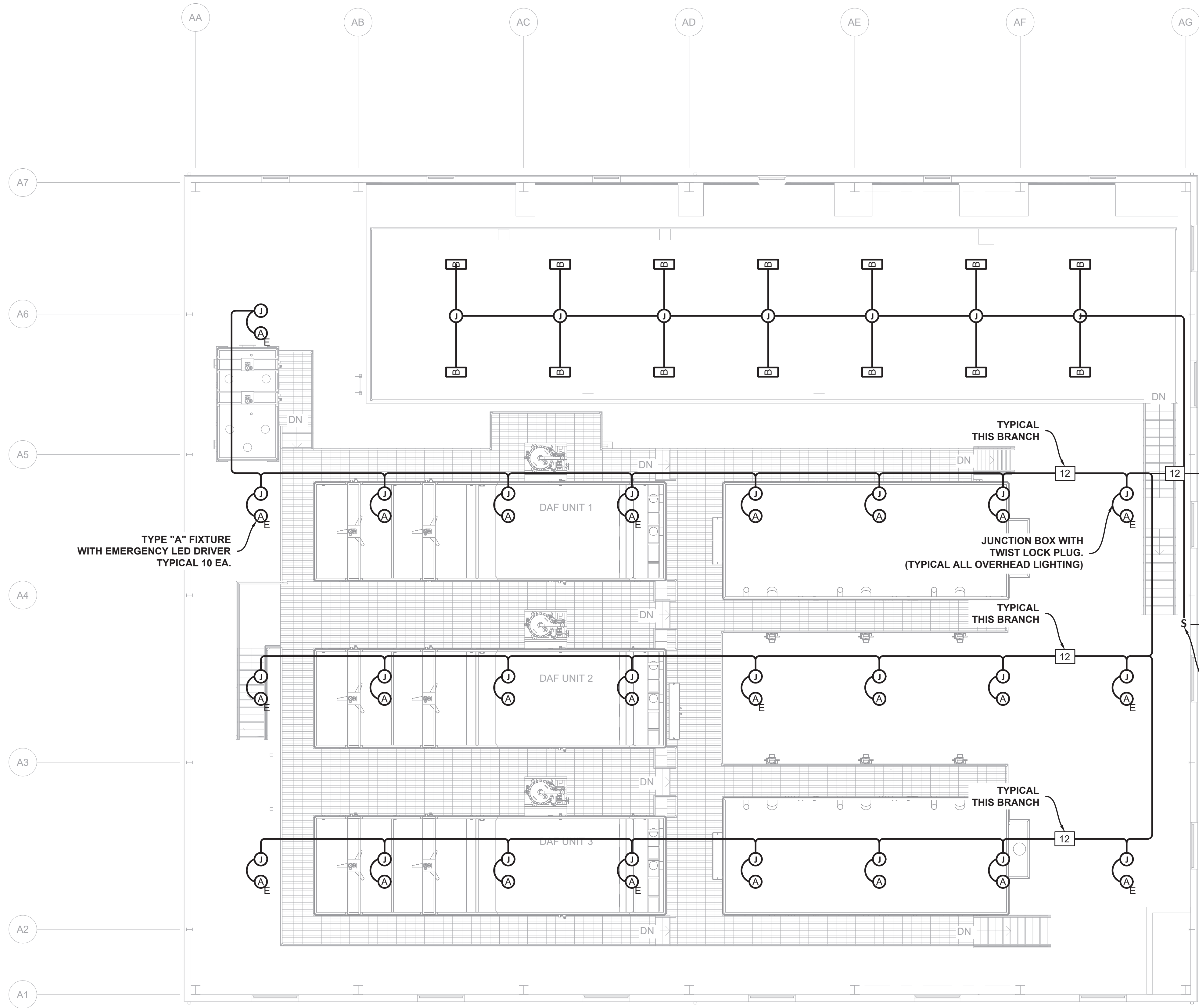
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
GROUND FLOOR LIGHTING PLAN
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

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NOTES:

1. IF CONFLICTS ARISE BETWEEN LIGHTING AND OTHER EQUIPMENT ADJUST LIGHTING LOCATION.
2. COORDINATE WITH OWNER AND ENGINEER FOR FINAL HEIGHT OF SUSPENDED TYPE A FIXTURES
3. OVERHEAD LIGHTING TO BE CONTROLLED BY LIGHTING CONTACTOR LOCATED IN ELECTRICAL ROOM.
4. LIGHTING CONTACTOR SHALL HAVE H-O-A OPERATOR SWITCH. AUTO POSITION TO BE CONTROLLED BY WALL MOUNT SWITCHES. PROVIDE 20 AMP 4 POLE LIGHTING CONTACTOR.
5. ROUTE CONDUIT ALONG PURLINS. PROVIDE JUNCTION BOX WITH 15 AMP TWIST LOCK RECEPTACLE AT EACH LIGHT LOCATION. CONNECT LIGHT WITH FLEXIBLE CORD AND TWIST LOCK RECEPTACLE.
6. PROVIDE EMERGENCY LED DRIVER AT LOCATIONS SHOWN.

TYPE "A" FIXTURE WITH EMERGENCY LED DRIVER TYPICAL 10 EA.

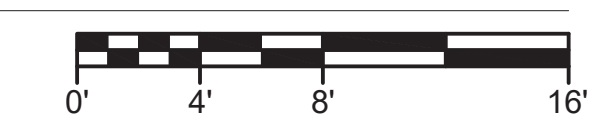
JUNCTION BOX WITH TWIST LOCK PLUG. (TYPICAL ALL OVERHEAD LIGHTING)

LIGHTING CONTRACTOR

PANEL A

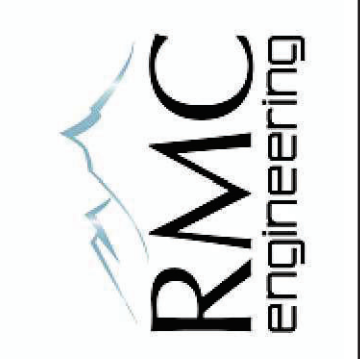
SWITCH LOCATED AT BOTTOM OF STAIRS

1 PLATFORM LIGHTING PLAN



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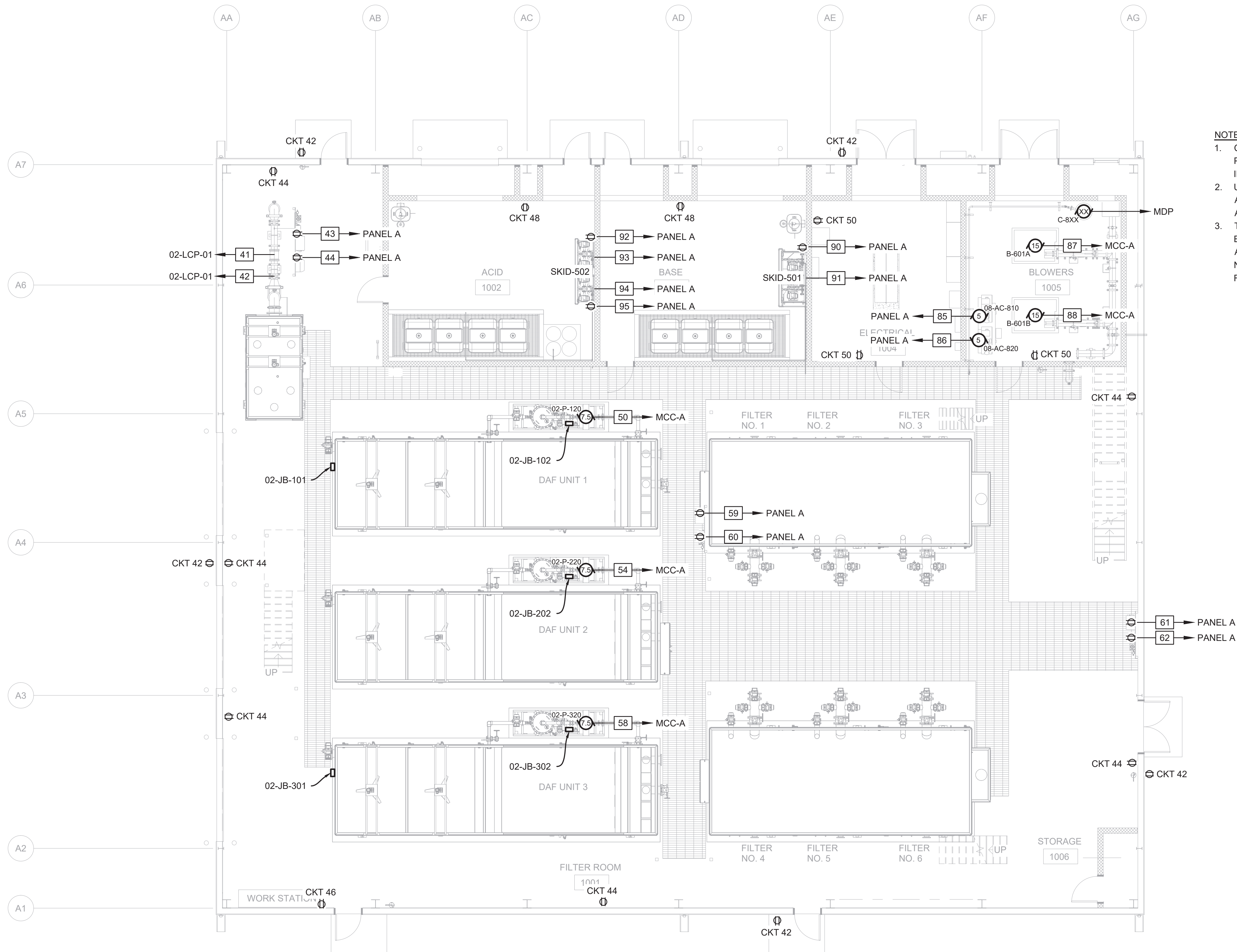


WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
PLATFORM LIGHTING PLAN
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
DATE 06/02/2023

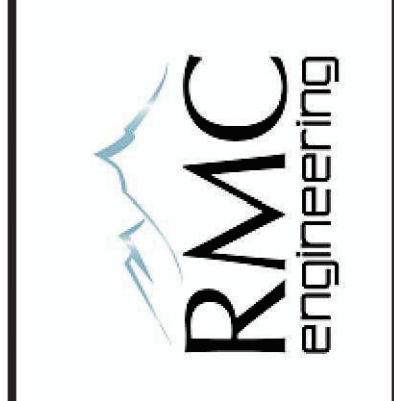
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- NOTES:**
1. CONTRACTOR TO PROVIDE CONDUIT ROUTING PLAN FOR ENGINEER APPROVAL PRIOR TO INSTALLATION.
 2. UNDERGROUND / IN SLAB CONDUITS ARE ALLOWED WITHIN THE FACILITY WITH ENGINEER APPROVAL AND NO CHANGE IN COST.
 3. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL CONDUITS ARE INSTALLED IN ACCORDANCE THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE, STATE AND LOCAL REQUIREMENTS.

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

GROUND FLOOR POWER PLAN

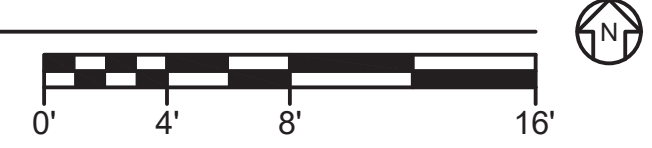
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
DATE 06/02/2023

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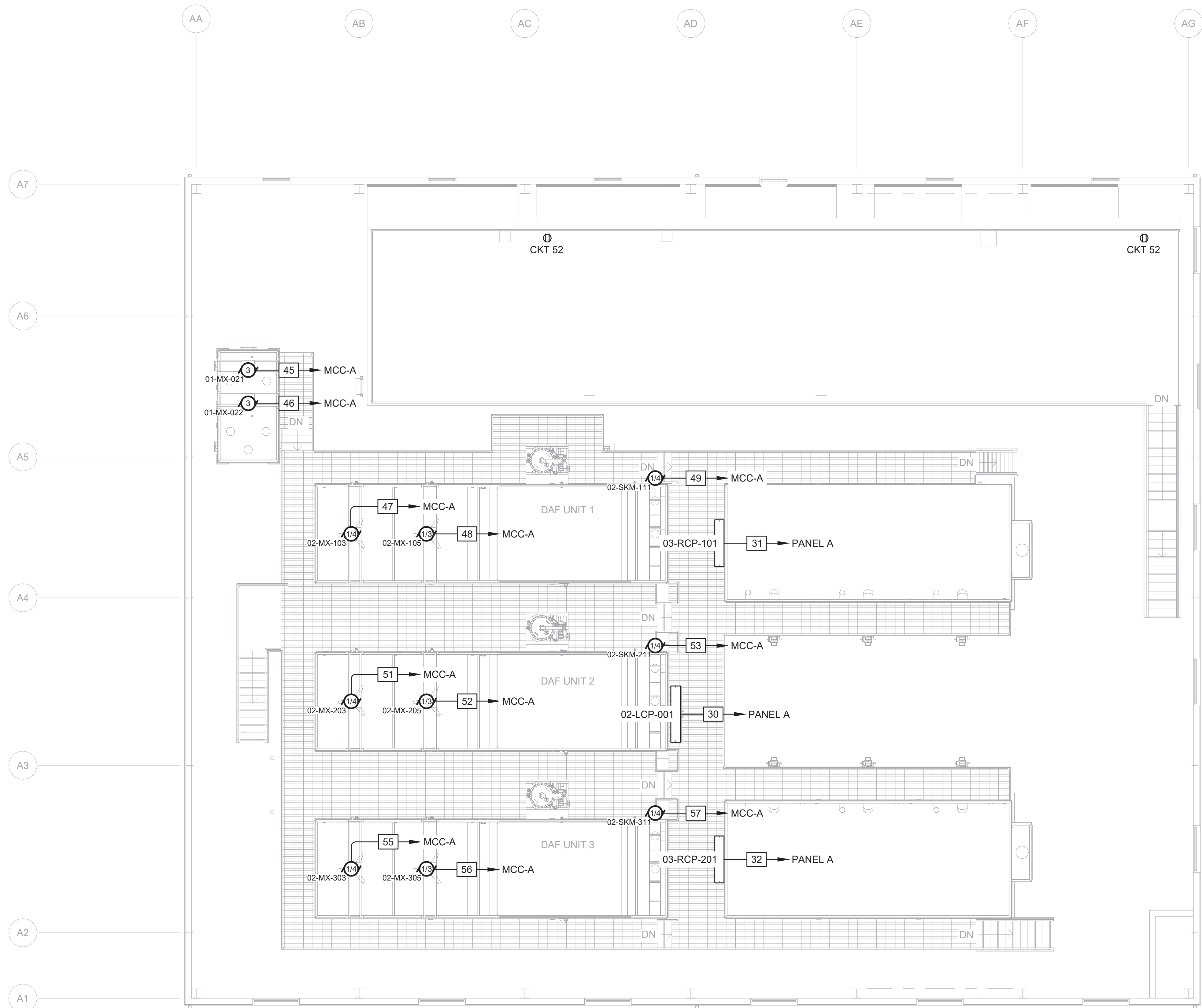
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1 GROUND FLOOR POWER PLAN



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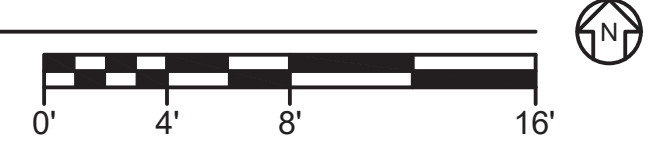
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NOTES:

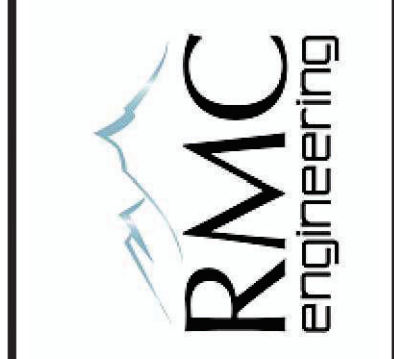
1. NOT ALL EQUIPMENT IS SHOWN TO PROVIDE CLARITY FOR THIS PORTION OF WORK.
2. ADDITIONAL DEVICES AND WORK MAY EXIST IN THIS LOCATION. REFER TO DAF FILTRATION REFERENCE DRAWINGS TO ACCOUNT FOR WORK.

1 PLATFORM POWER PLAN



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REV	DATE	DESCRIPTION



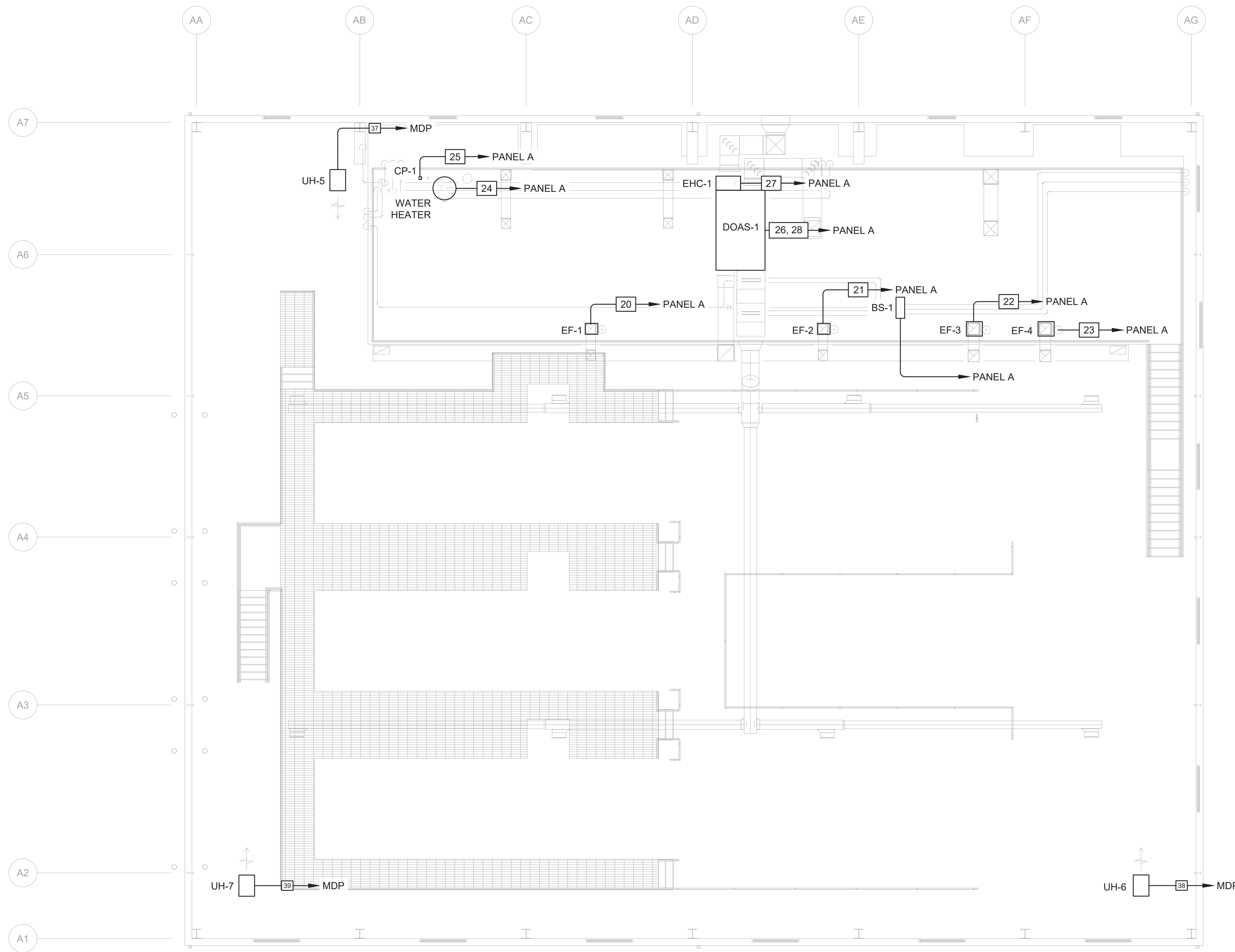
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA
PLATFORM POWER PLAN
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
DATE 06/02/2023

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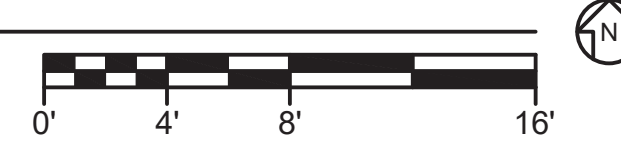
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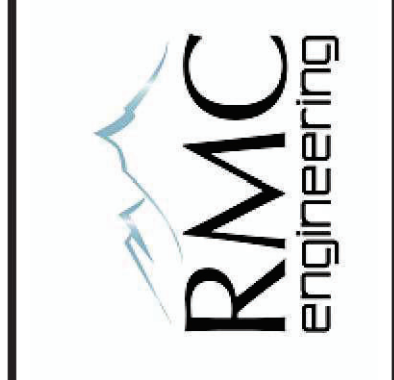
NOTES:
1. REFER TO MECHANICAL SHEETS FOR COMPLETE INSTALLATION.

1 PLATFORM MECHANICAL POWER PLAN



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REV	DATE	DESCRIPTION



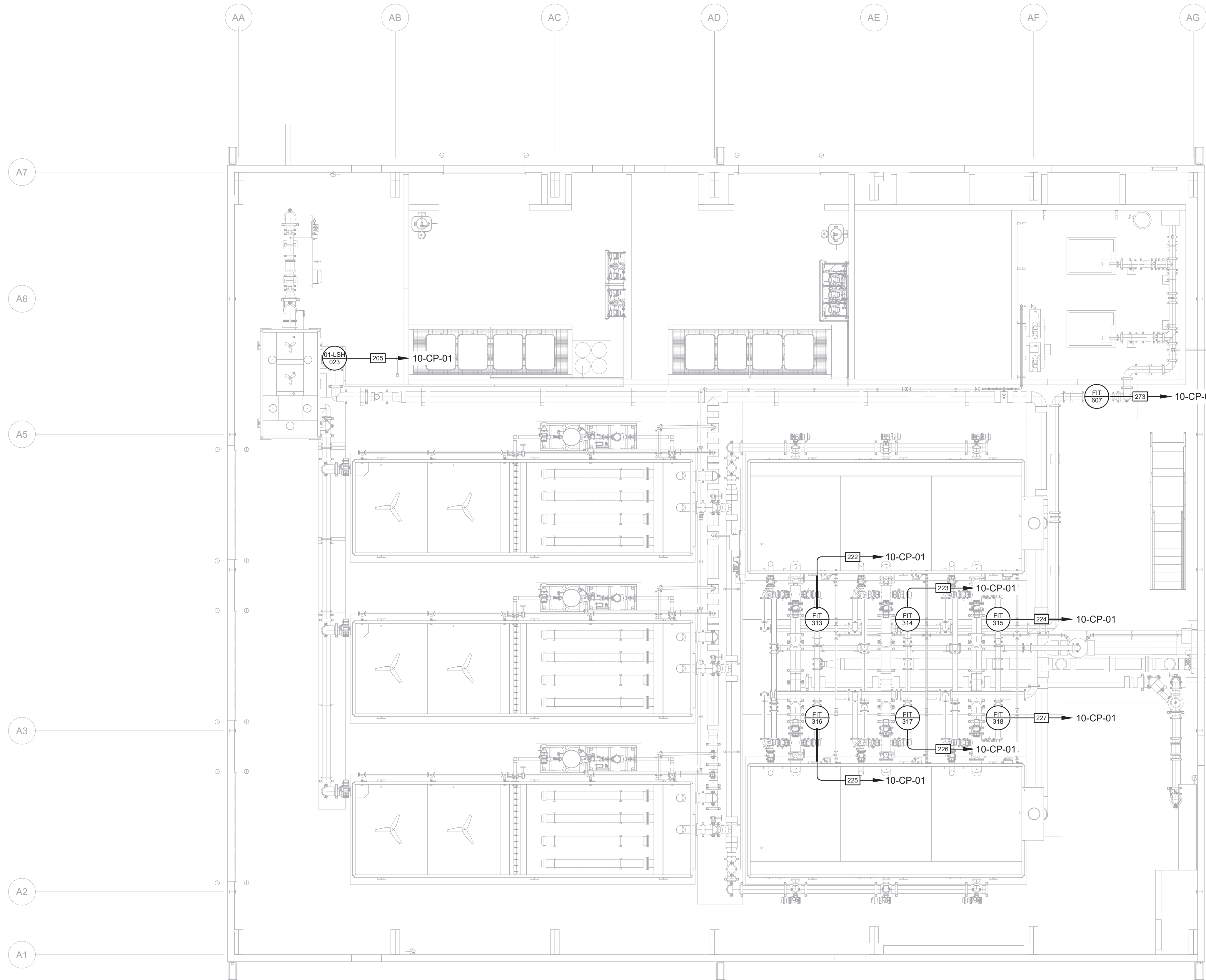
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WRANGELL, ALASKA
PLATFORM MECHANICAL POWER PLAN
SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
DATE 06/02/2023

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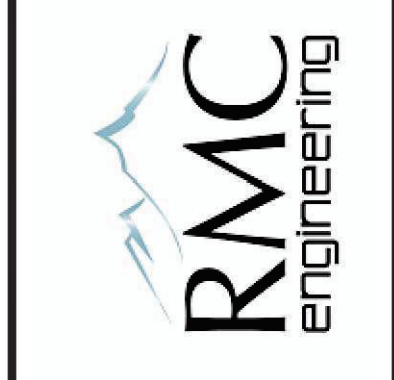
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NOTES:

1. FOR FLOW METERS WITH REMOTE MOUNT TRANSMITTERS. COORDINATE WITH OWNER AND ENGINEER FOR FINAL LOCATION OF REMOTE MOUNT TRANSMITTER. DO NOT MOUNT TRANSMITTERS IN PIPE TRENCH.
2. ADDITIONAL DEVICES AND WORK MAY EXIST IN THIS LOCATION. REFER TO DAF FILTRATION REFERENCE DRAWINGS TO ACCOUNT FOR WORK.
3. CONDUIT INSTALLED WITHIN PIPING TRENCH SHALL BE GALVANIZED RIGID CONDUIT.
4. STRUT INSTALLED WITHIN PIPING TRENCH SHALL BE HOT DIPPED GALVANIZED STRUT WITH HDG OR STAINLESS STEEL FASTENERS.

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REV	DATE	DESCRIPTION



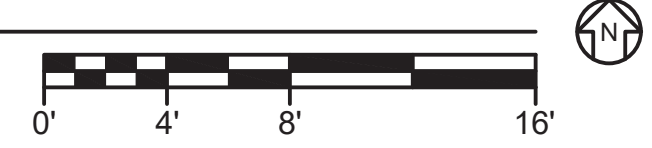
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
**GROUND FLOOR PIPING
 INSTRUMENT PLAN**
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
 DATE 06/02/2023

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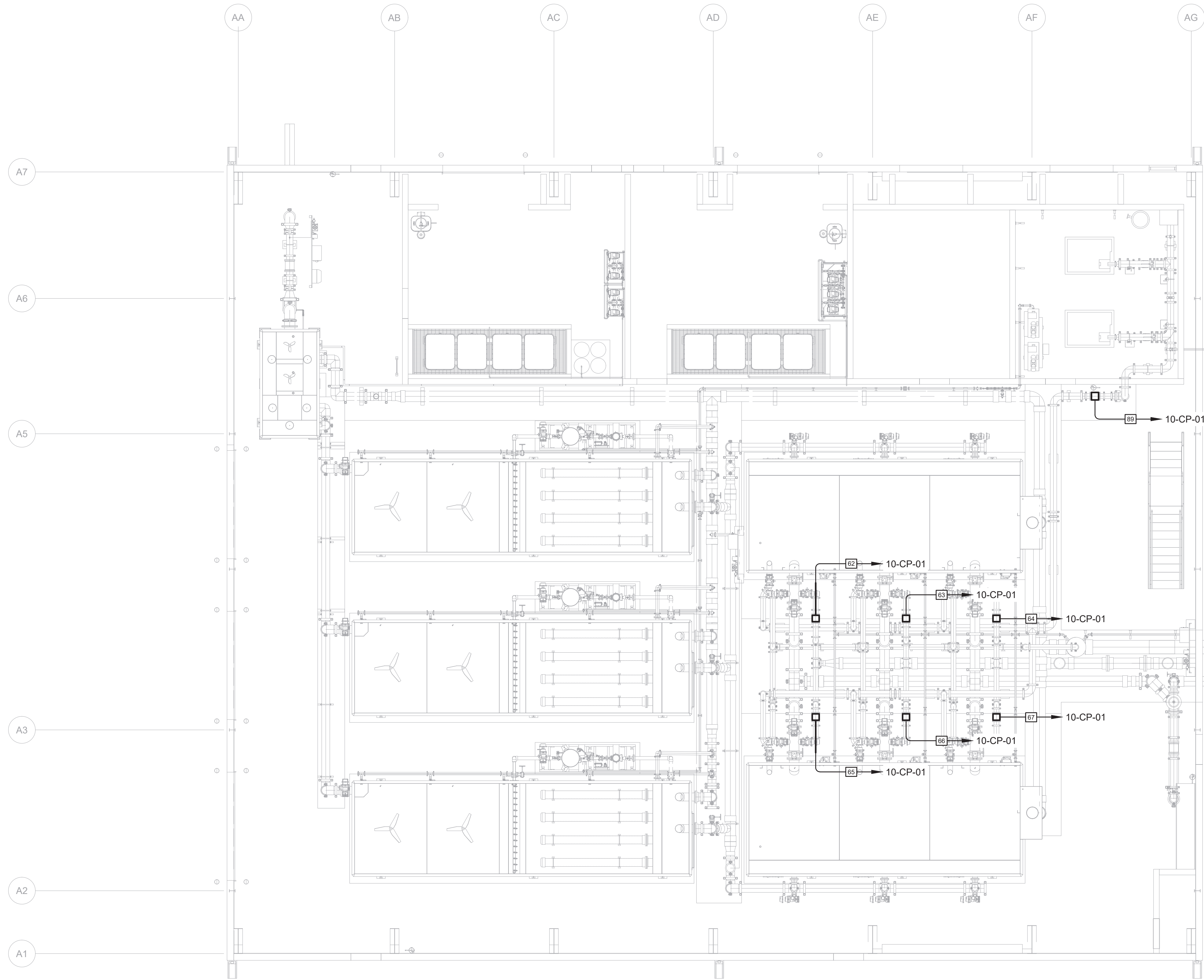
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1 GROUND FLOOR PIPING INSTRUMENT PLAN



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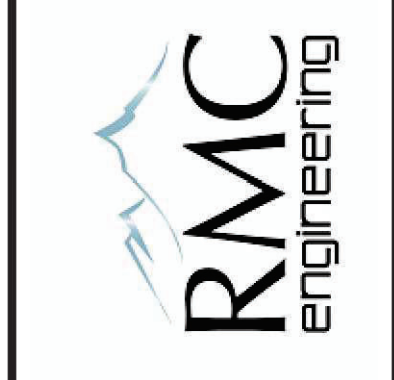
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NOTES:

1. ADDITIONAL DEVICES AND WORK MAY EXIST IN THIS LOCATION. THE CONTRACTOR IS REQUIRED TO CONSULT THE DAF FILTRATION REFERENCE DRAWINGS IN ORDER TO ACCOUNT FOR THIS WORK.

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REV	DATE	DESCRIPTION



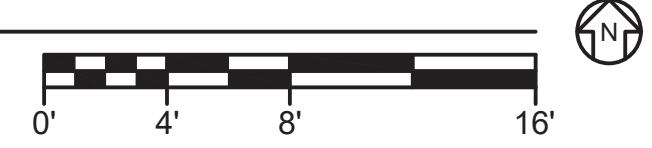
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
**GROUND FLOOR PIPING
 INSTRUMENT PLAN**
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
 DATE 06/02/2023

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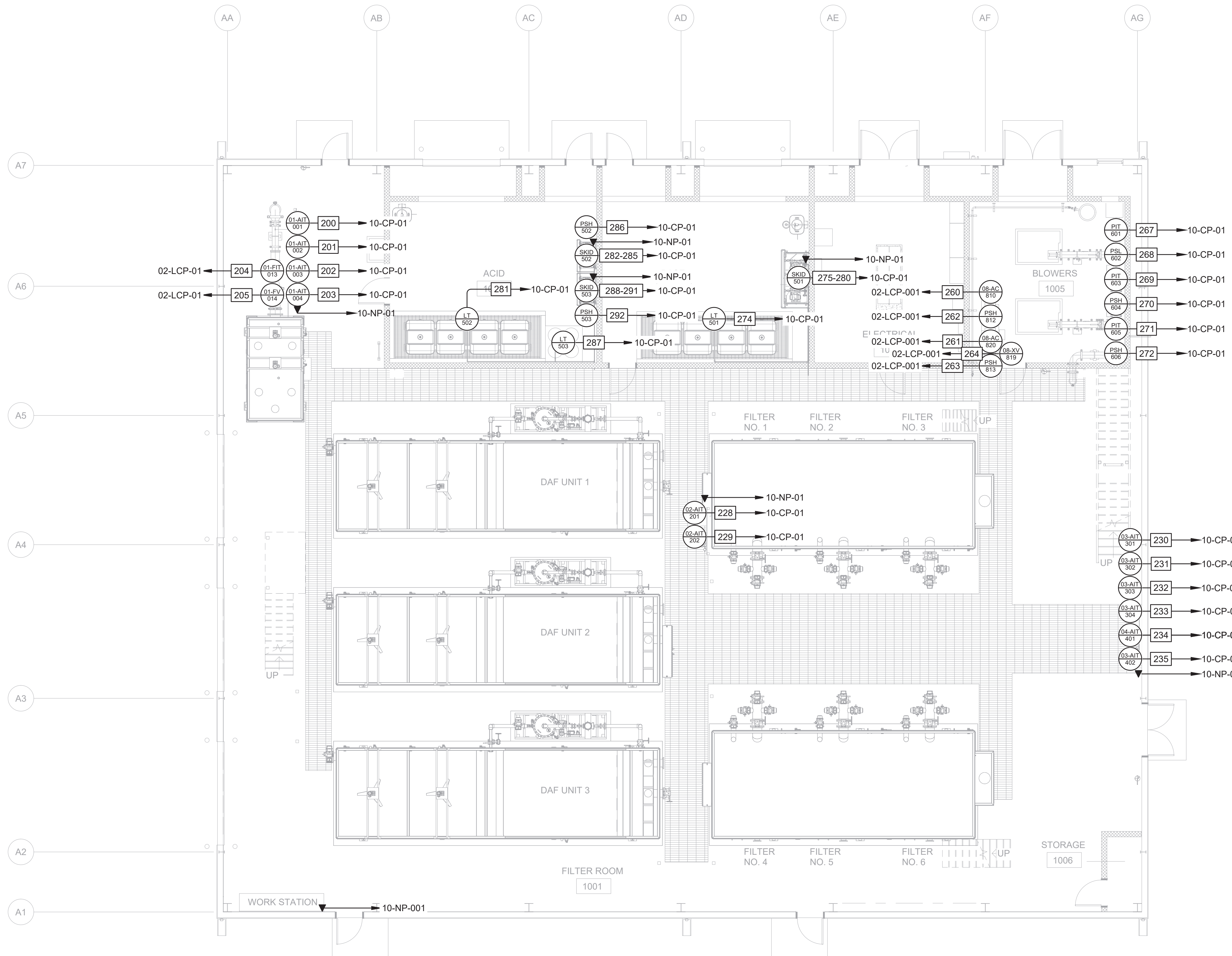
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1 GROUND FLOOR PIPING INSTRUMENT PLAN

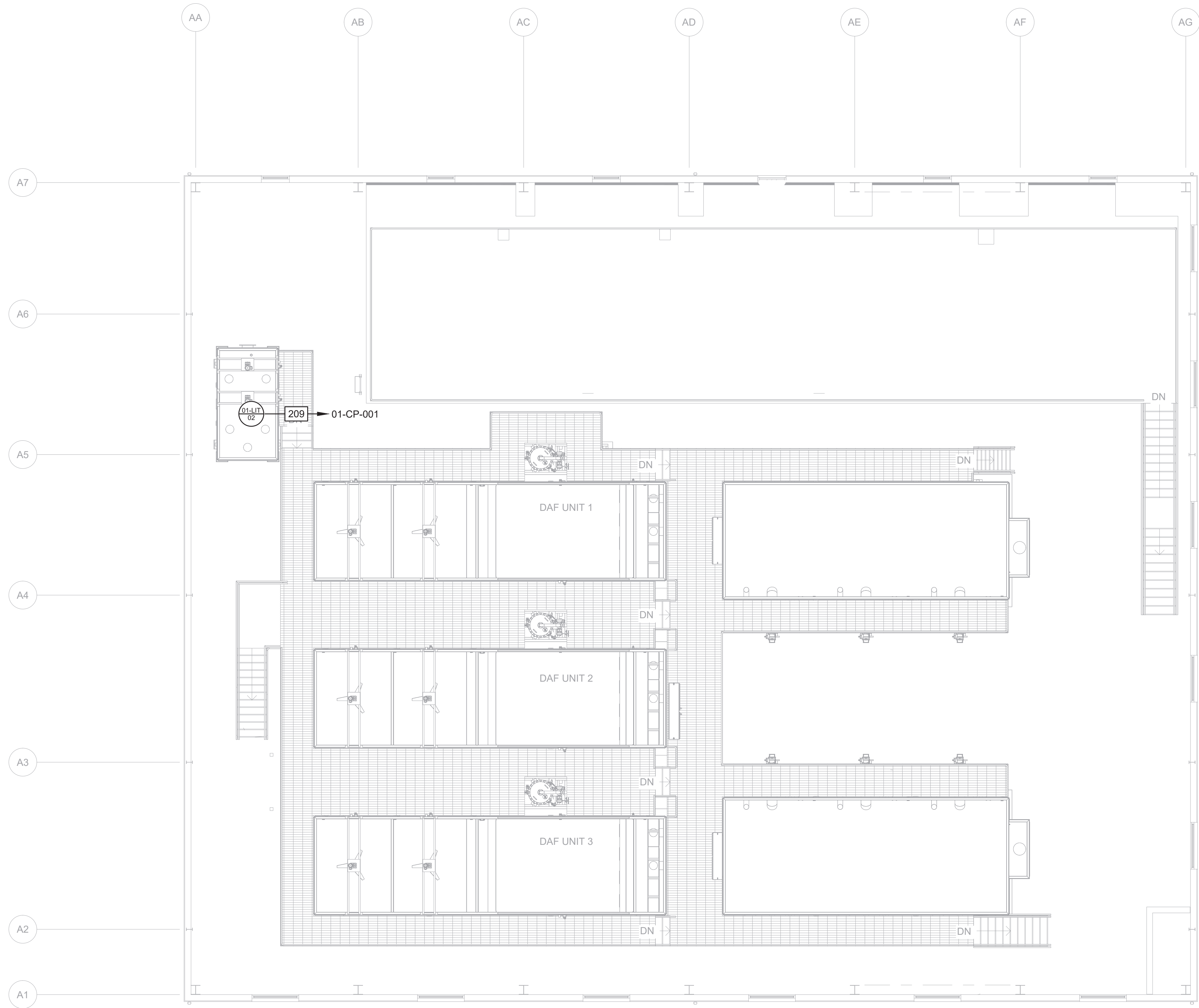


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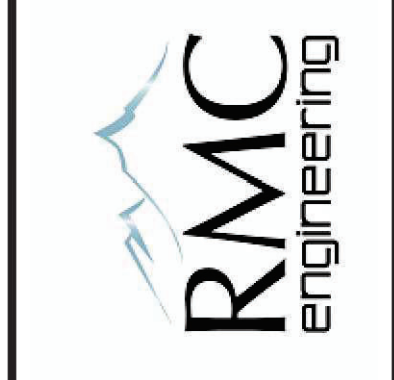
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NOTES:

1. NOT ALL EQUIPMENT IS SHOWN TO PROVIDE CLARITY FOR THIS PORTION OF WORK.
2. ADDITIONAL DEVICES AND WORK MAY EXIST IN THIS LOCATION. REFER TO DAF FILTRATION REFERENCE DRAWINGS TO ACCOUNT FOR WORK.

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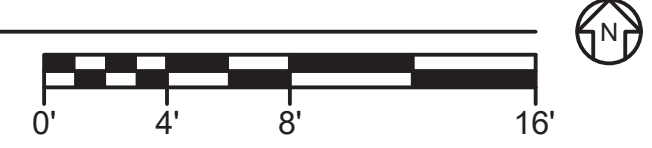
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
PLATFORM INSTRUMENT PLAN
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
 DATE 06/02/2023

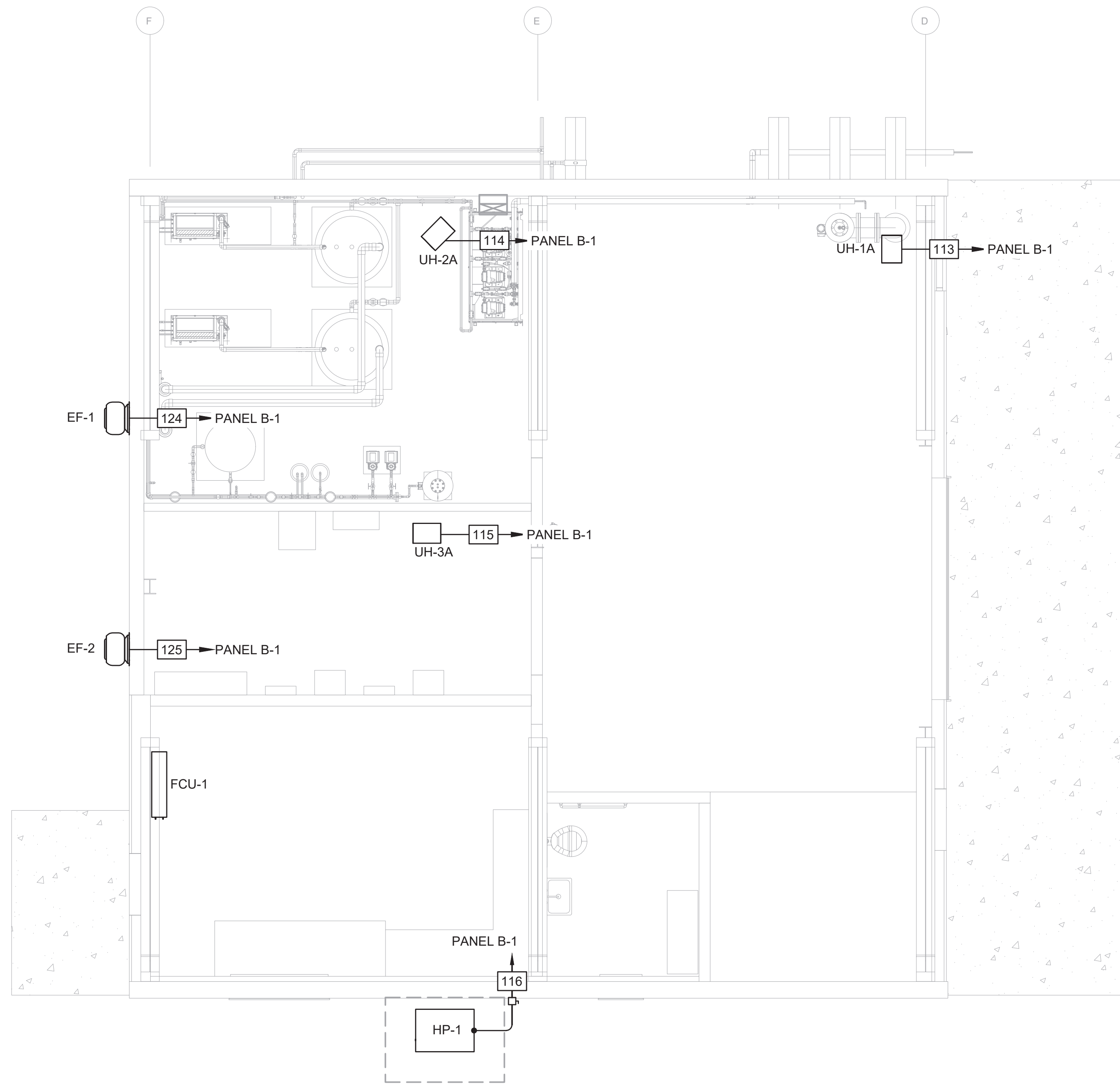
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1 PLATFORM INSTRUMENT PLAN



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1 ADMIN BUILDING HVAC POWER PLAN

NOTES:

1. REFER TO MECHANICAL SHEETS FOR HVAC INSTALLATION AND CONTROLS.

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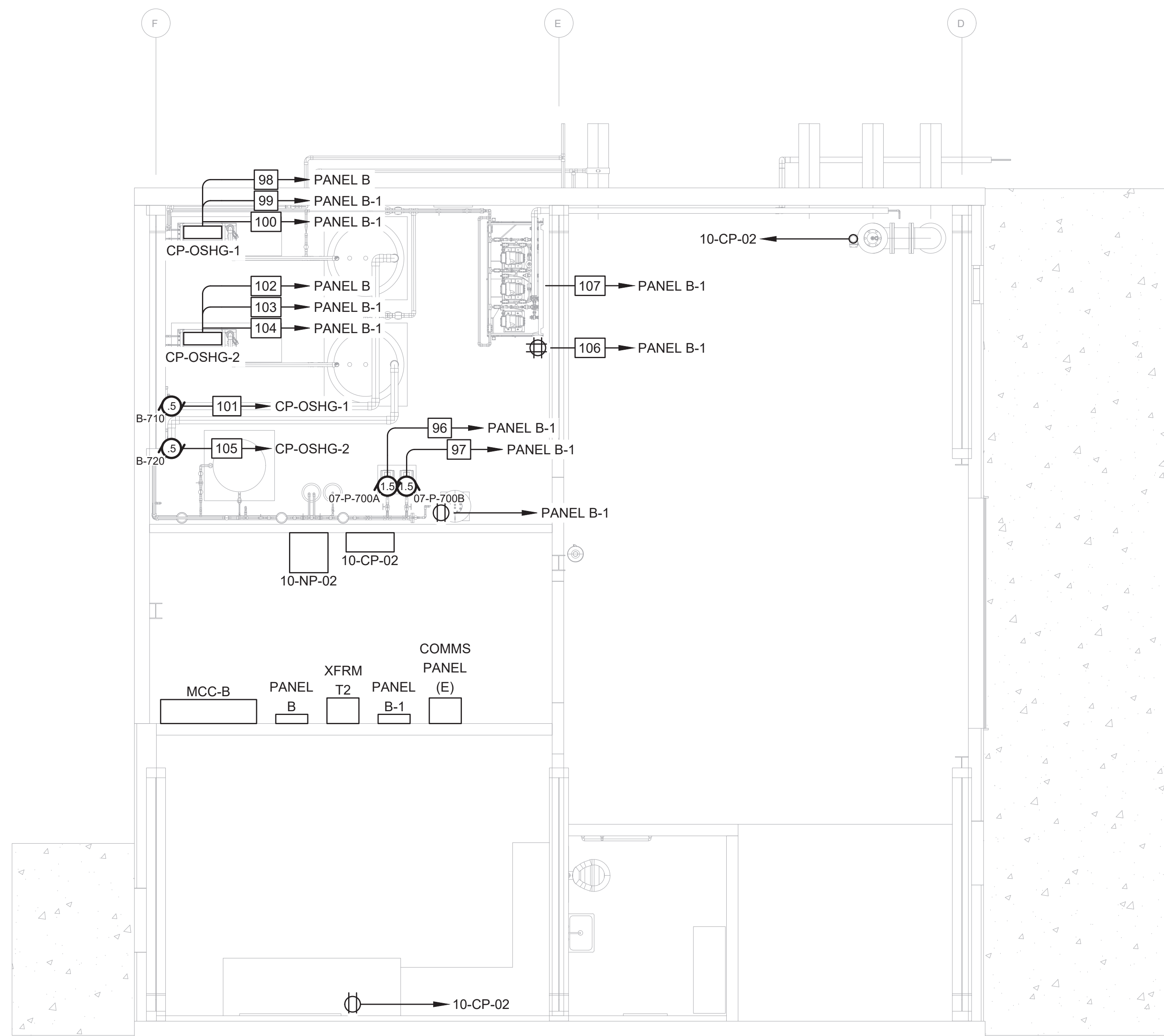
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
 ADMIN BUILDING
 MECHANICAL POWER PLAN
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

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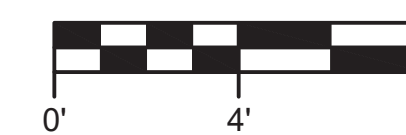
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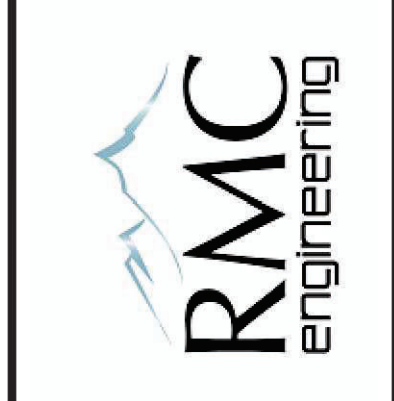
NOTES:

1. DURING DEMOLITION INTERCEPT EXISTING LIGHTING AND RECEPTACLE CONDUITS AND CIRCUITS UNDER FINISHED FLOOR. ROUTE CONDUITS TO SURFACE OF THE EAST WALL OF THE LAB. INSTALL CONDUITS ON SURFACE OF THE WALL AND ROUTE TO OVERHEAD AND INTO PANEL B-1.
2. PATCH AND FINISH FLOOR PER ARCHITECTURAL DRAWINGS.
3. REFEED ALL EXISTING CIRCUITS FROM NEW PANEL B.

1 ADMIN BUILDING POWER PLAN



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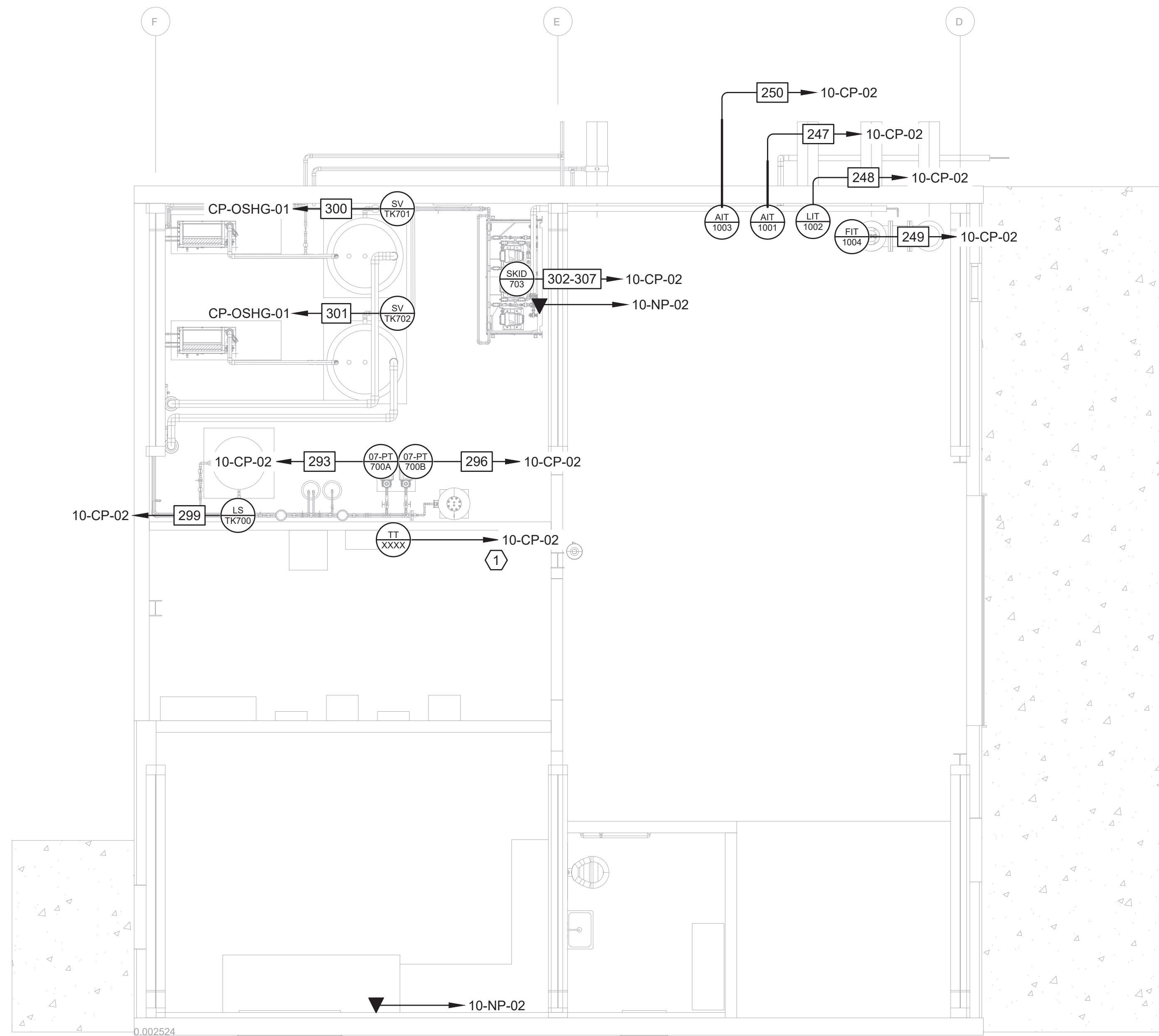
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
**ADMIN BUILDING
 POWER PLAN**
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

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NOTES:

- ① TEMPERATURE TRANSMITTER. DWYER BTT-N00-3, OR ENGINEER APPROVED EQUAL.

1 ADMIN BUILDING INSTRUMENT PLAN



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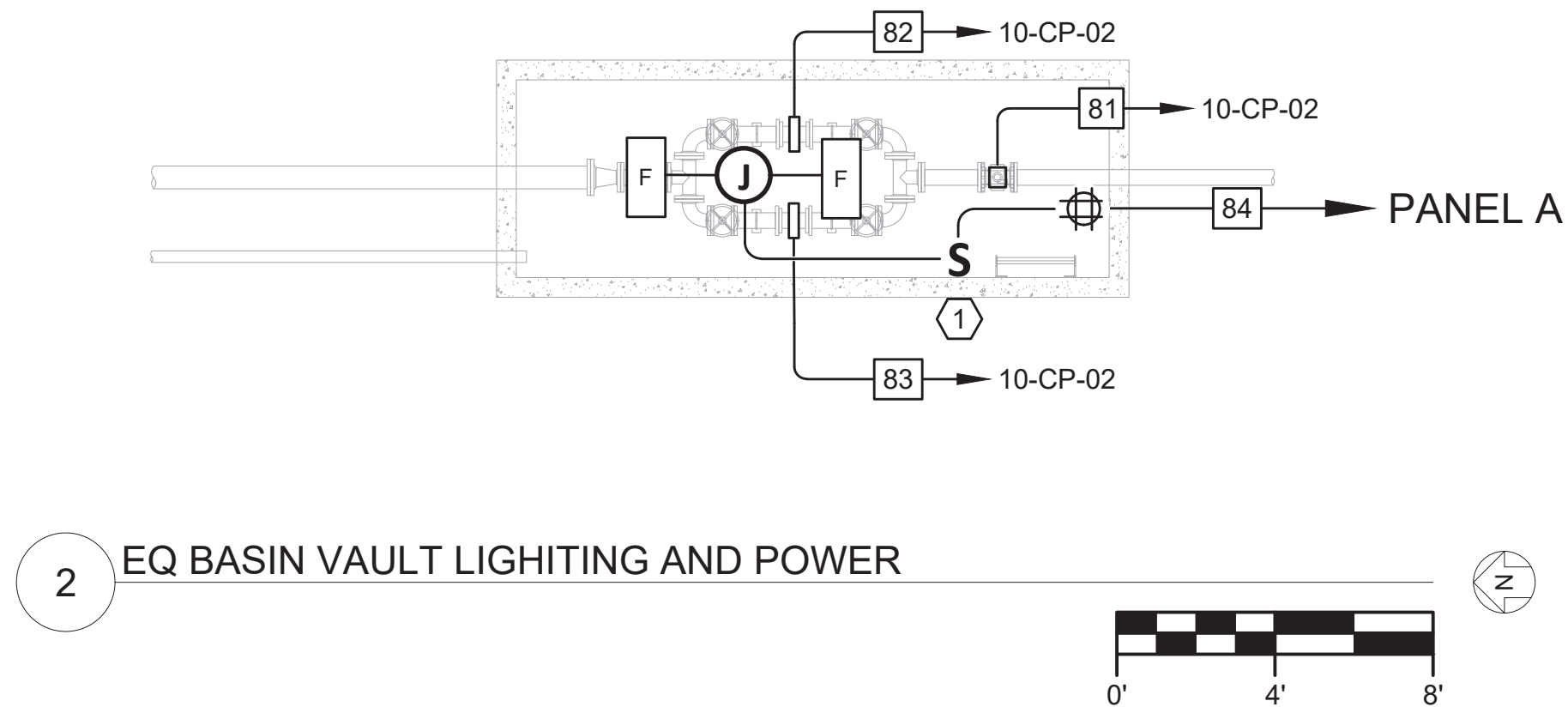
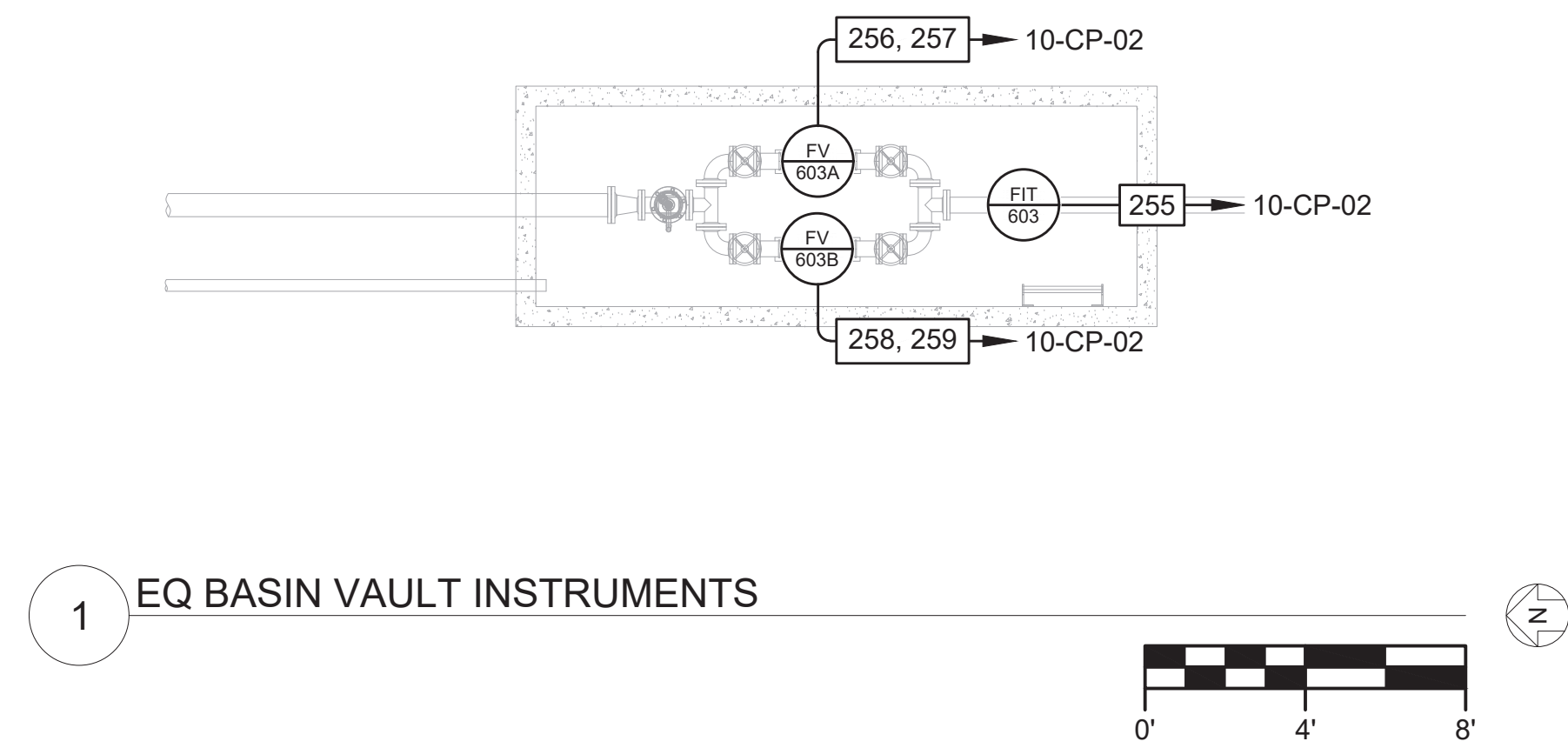
WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
 ADMIN BUILDING
 INSTRUMENT PLAN
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

PROJECT J000541
 DATE 06/02/2023

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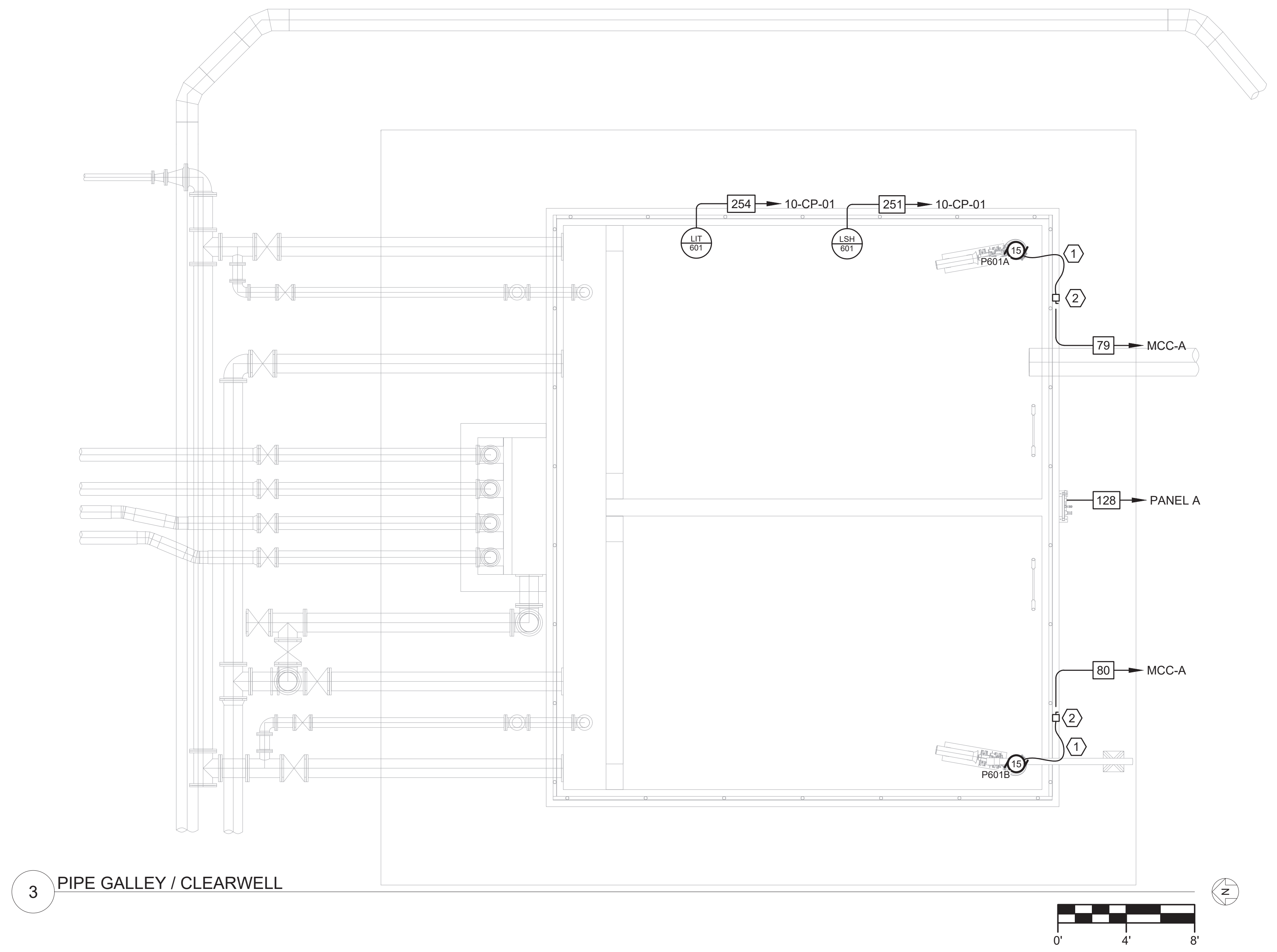
E-29

G:\My Drive\Jobs\DWL\Jobs\J000541 - Wrangell WTP Design\Drawings\Master\J000541 E-30 EQ Basin Backwash EQ Basin Vault.dwg PLOT DATE 2023-05-09 12:32 USER: vince



NOTES:

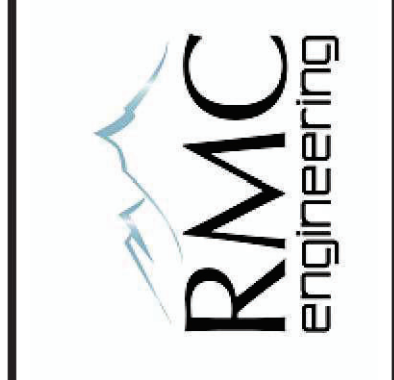
1. LOCATE LIGHT SWITCH AT ENTRANCE TO VAULT.
2. GFCI RECEPTACLES 2 EACH.
 - 2.1. LOCATED 18" ABOVE FINISHED FLOOR
 - 2.2. LOCATED AT ENTRANCE TO VAULT.
3. USE NON METALLIC SCHEDULE 40 PVC CONDUIT FOR INSTALLATION OF ELECTRICAL EQUIPMENT WITHIN VAULT.



NOTES:

1. PROVIDE FACTORY CABLES WITH SUBMERSIBLE PUMPS.
2. PROVIDE STAINLESS STEEL DISCONNECTS. MOUNT DISCONNECTS ON STRUT CHANNEL RACK. STRUT CHANNEL TO BE HOT DIPPED GALVANIZED WITH HDG HARDWARE.
3. COORDINATE WITH OWNER AND ENGINEER TO DETERMINE FINAL LOCATION OF LIT-601 AND LSH-601.

REVISIONS		BY
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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

EQ BASIN / BACKWASH VAULT

SEC. 31; TOWNSHIP 62S; RANGE 84E
CITY AND BOROUGH OF WRANGELL, ALASKA

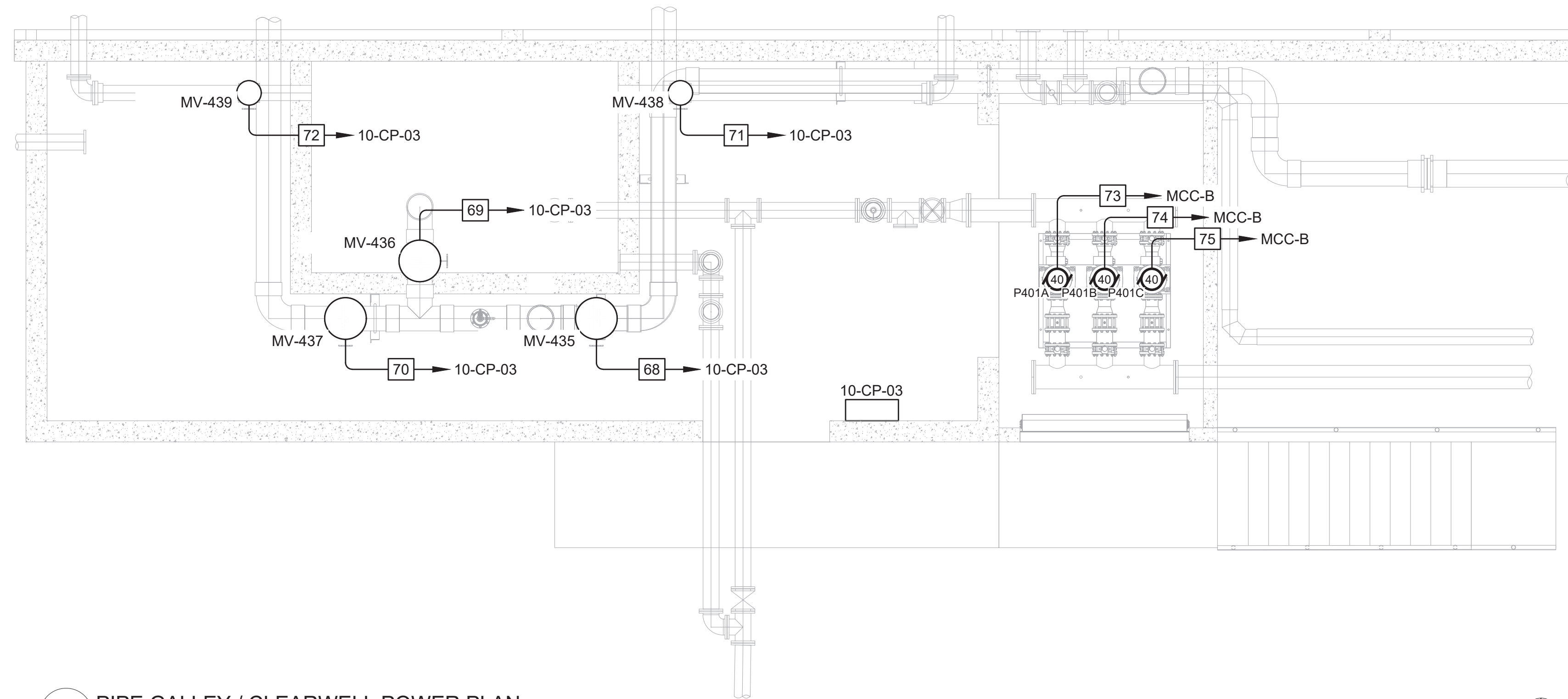
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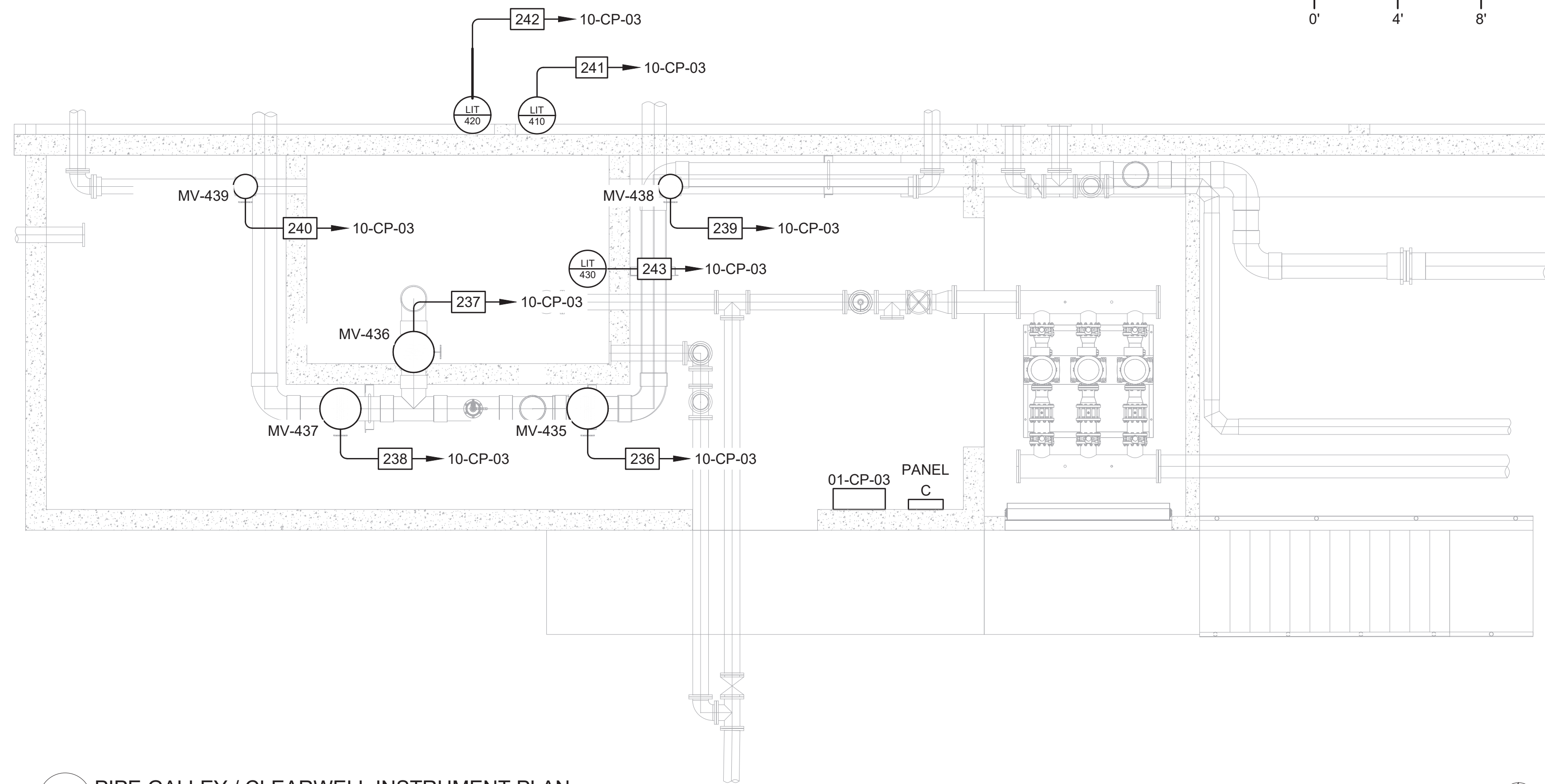
E-30

BID DOCUMENTS
AGENCY SUBMITTAL - NOT FOR CONSTRUCTION

G:\My Drive\Jobs\DWL\Jobs\J000541 - Wrangell WTP Design\Drawings\Master\J000541 E-31 Pipe Galley_Clearwell.dwg PLOT DATE 2023-6-1 10:21 SAVED DATE 2023-05-09 12:32 USER: vince



1 PIPE GALLEY / CLEARWELL POWER PLAN

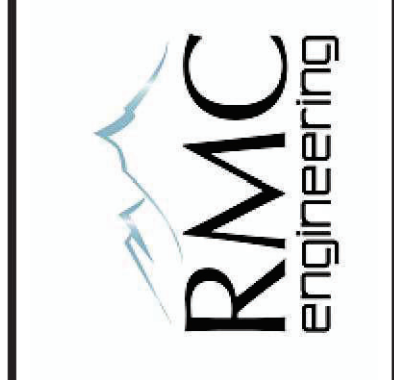


2 PIPE GALLEY / CLEARWELL INSTRUMENT PLAN

NOTES:

1. IN ACCORDANCE WITH NEC 725.3(A) - CONTROL CONDUCTORS AND POWER CONDUCTORS SHALL BE INSTALLED IN SEPARATE RACEWAYS.
2. CONTROL CONDUCTORS INCLUDE COMMUNICATION CABLES, SIGNAL CABLES, AND LOW-VOLTAGE CONTROL WIRING.
3. POWER CONDUCTORS INCLUDE ELECTRICAL CABLES THAT SUPPLY ELECTRICAL ENERGY TO MOTORS, HEATERS, AND OTHER ELECTRICAL DEVICES.

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
 WRANGELL, ALASKA
**PIPE GALLEY / CLEARWELL
 POWER AND INSTRUMENT PLAN**
 SEC. 31; TOWNSHIP 62S; RANGE 84E
 CITY AND BOROUGH OF WRANGELL, ALASKA

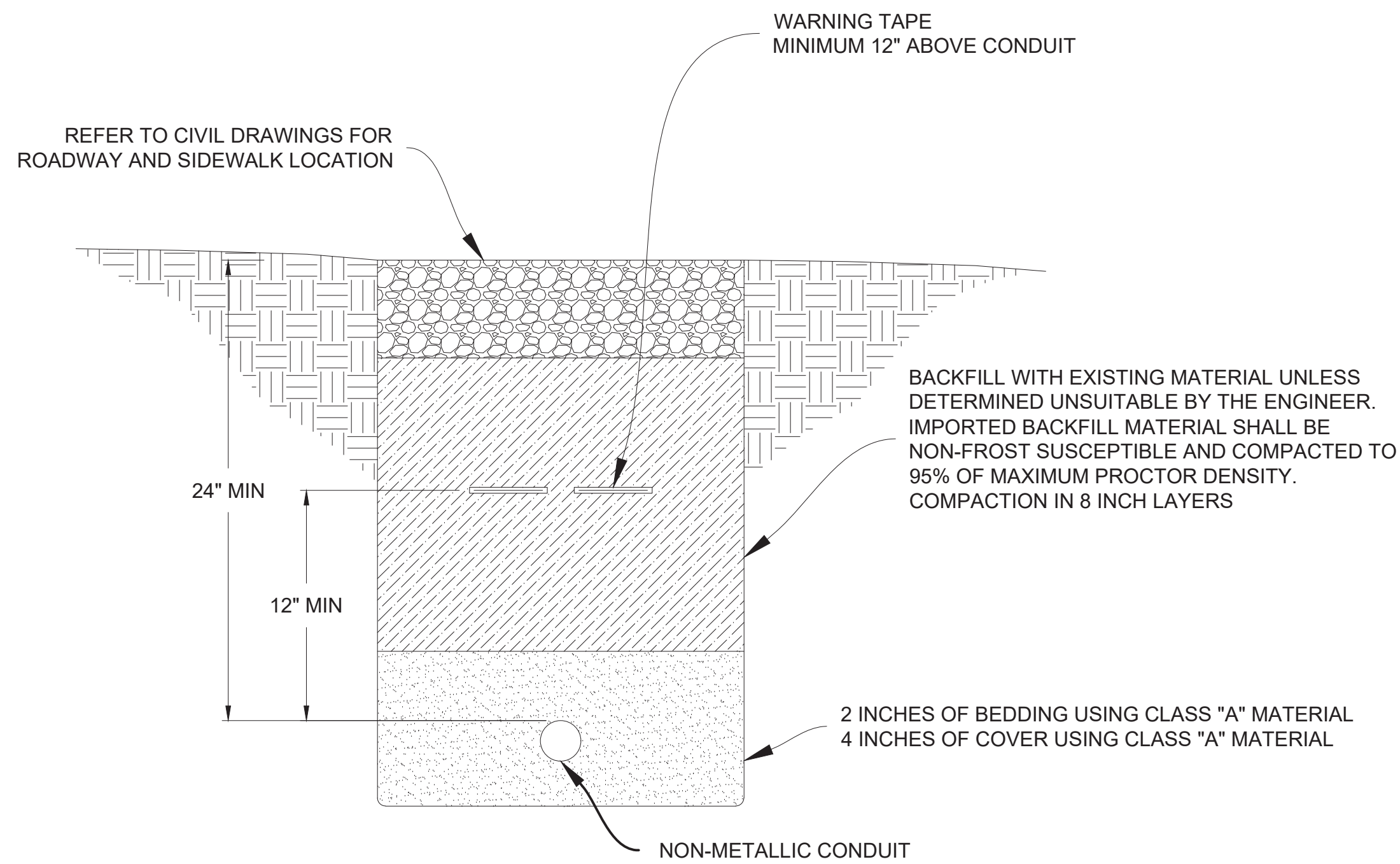
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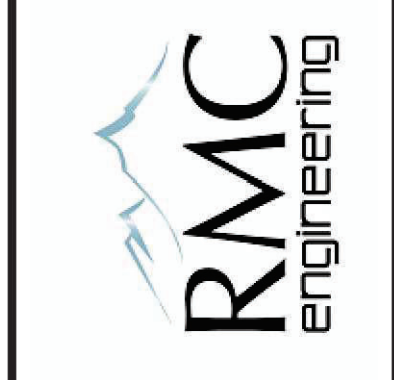
NOTES:

1. REFER TO CIVIL DRAWINGS FOR BACKFILL AND COMPACTION REQUIREMENTS WHEN UNDERGROUND RACEWAY IS IN ROADWAY.
2. TRENCH DEPTH SHALL BE PER THE TRENCH DETAIL DRAWING. MINIMUM CONDUIT BURIAL DEPTH SHALL BE 24 INCHES. THIS DEPTH MAY BE REDUCED IF CONCRETE ENCASEMENT OR OTHER SUPPLEMENTAL PROTECTION IS PROVIDED. THE BOTTOM OF THE TRENCH SHALL BE FREE OF ANY SHARP ROCKS OR MATERIAL THAT MAY CAUSE DAMAGE TO CABLES AND CONDUIT. AT NO POINT SHALL THE CABLES SUSPEND OVER A HOLE OR GAP IN THE TRENCH, SUCH VOIDS SHALL BE FILLED WITH APPROPRIATE MATERIAL.
3. ALL TRENCHING DEPTHS SPECIFIED ARE MINIMUM AS MEASURED FROM THE FINAL GRADE TO THE TOP SURFACE OF THE CONDUIT. THE TRENCH ROUTING MAY BE ALTERED FROM THE LOCATION SHOWN ON THE SITE PLAN TO MAINTAIN THE MINIMUM DEPTH. COORDINATE WITH THE OWNER TO DETERMINE THE FINAL LOCATION.
4. CARE SHALL BE EXERCISED TO MINIMIZE THE RISK OF WATER FLOW SINCE THIS MAY CAUSE TRENCH DAMAGE AND A REDUCTION IN TRENCH DEPTH. IF THIS OCCURS, THE TRENCH MUST BE CLEARED TO THE SPECIFIED DEPTH BEFORE INSTALLING THE CONDUIT AND CABLE.
5. CONSTRUCTION SHALL BE ARRANGED SO THAT TRENCHES MAY BE LEFT OPEN FOR THE SHORTEST PRACTICAL TIME TO AVOID CREATING A HAZARD TO THE PUBLIC AND TO MINIMIZE THE LIKELIHOOD OF COLLAPSE OF THE TRENCH DUE TO OTHER CONSTRUCTION ACTIVITY, RAIN, ACCUMULATION OF WATER IN THE TRENCH, ETC.
6. THE FIRST 6 INCHES OF TRENCH BACKFILL SHALL BE CLASS A BEDDING MATERIAL. THIS BACKFILL LAYER MUST BE CAREFULLY COMPACTED SO THAT THE CABLE CONDUIT WILL NOT BE DAMAGED.
7. BACKFILLING MUST BE COMPLETED IN SUCH A MANNER THAT VOIDS WILL BE ELIMINATED.
8. PIECES OF SCRAP CABLE OR OTHER MATERIAL REMAINING AFTER INSTALLATION MUST NOT BE BURIED IN THE TRENCH AS A MEANS OF DISPOSAL.
9. BACKFILLED MATERIAL SHALL BE COMPACTED FOR ALL ROAD CROSSINGS.
10. ALL EXPOSED ENDS OF CONDUIT MUST BE PLUGGED DURING CONSTRUCTION TO PREVENT THE ENTRANCE OF FOREIGN MATTER AND MOISTURE INTO THE CONDUIT. BURRS OR SHARP PROJECTIONS WHICH MIGHT DAMAGE THE CABLE MUST BE REMOVED.
11. ENSURE THE MINIMUM BENDING RADIUS OF THE CABLE IS 12 TIMES THE OVERALL DIAMETER OF THE CABLE OR PER THE MANUFACTURER'S INSTRUCTIONS, WHICHEVER IS LARGER. THE BENDING RADIUS IS MEASURED TO THE SURFACE OF THE CABLE ON THE INSIDE OF THE BEND.
12. CABLES SHALL BE TAGGED AND IDENTIFIED AT ALL ACCESSIBLE LOCATIONS AS THE CABLES ARE LAID. THE IDENTIFICATION MUST BE OF A PERMANENT TYPE, SUCH AS THAT DONE ON PLASTIC OR CORROSION RESISTANT METAL TAGS. THE TAG MUST BE SECURELY ATTACHED TO THE CABLE. PAPER OR CLOTH TAGS ARE NOT ACCEPTABLE.
13. UNDERGROUND CONDUIT SHALL BE NON-METALLIC, SCHEDULE 40.



1 TRENCH DETAIL

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WRANGELL WATER TREATMENT PLANT IMPROVEMENTS
WRANGELL, ALASKA

TRENCH DETAIL

SEC. 31; TOWNSHIP 62S; RANGE 84E
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