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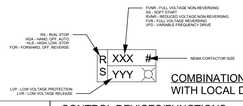
SYMBOLS LIST

X / Y/Z	CIRCUIT BREAKER X - NUMBER OF POLES Y - CIRCUIT BREAKER FRAME SIZE Z - CIRCUIT BREAKER TRIP SETTING
X / Y/Z	CIRCUIT BREAKER W/ TRIP DEVICE ST - SHUNT TRIP UV - UNDER VOLTAGE TRIP
G#	GENERATOR
	COMBINATION STARTER WITH LOCAL DISCONNECT
XX	CONTROL DEVICES/FUNCTIONS PB-PUSH-BUTTON PB/IL-PUSH-BUTTON, ILLUMINATED PS-PRESSURE SWITCH LS-LEVEL SWITCH FR-FIRE SHUTDOWN RELAY FS-FLOW SWITCH DS- DISCONNECT SWITCH TH- THERMOSTAT SC-SPEED CONTROL
C	OEM CONTROLLER SUPPLIED/INTEGRAL WITH EQUIPMENT
LVRE	CONTROLLER, LOW-VOLTAGE RELEASE EFFECT MOUNTED ADJACENT TO EQUIPMENT
X	MOTOR
	SWITCH MAINTAINED
_ kW	EQUIPMENT
	LIGHTING
	DUPLEX RECEPTACLE
	SHORE POWER RECEPTACLE
V A KW	SWITCHBOARD INSTRUMENT
	MOMENTARY SWITCH NORMALLY OPEN

GENERAL NOTES (CONT'D)

10. THE SWITCHBOARD INTERLOCKS SHALL BE ARRANGED TO ALLOW PARALLEL OPERATION OF THE GENERATORS WITH CLOSED BUS TIE OR SPLIT BUS OPERATION IN CASE OF PARALLELING COMPONENT FAILURE. TRANSITION BETWEEN GENERATOR AND SHORE POWER SHALL BE VIA DEENERGIZED 'OPEN' BREAKER SEQUENCE OPERATION.

11. ALL PERMANENTLY INSTALLED ELECTRICAL EQUIPMENT SHALL HAVE METAL ENCLOSURES GROUNDED TO VESSEL STRUCTURE. PROVIDE GROUNDING CONDUCTORS IN WAY OF ISOLATION MOUNTS, GASKETS, POURED CHOCKS, OR OTHER MOUNTING ARRANGEMENTS WHERE GROUND CONTINUITY MAY BE INTERRUPTED.

12. CIRCUIT BREAKERS FOR STEERING GEAR PUMPS REQUIRE INSTANTANEOUS TRIP ONLY AND SHALL BE SIZED PER 46 CFR 58.25-55(a)(2).

13. WIRES TERMINATING IN EQUIPMENT SHALL BE ARRANGED TO PROVIDE A SURPLUS LENGTH OF WIRE SUFFICIENT TO ALLOW FOR DISCONNECTION, AND TO PERMIT MULTIPLE WIRES TO BE CONNECTED AT TERMINAL STUDS.

14. SHORE POWER INLETS AND CONNECTED COMPONENTS SHALL BE ISOLATED FROM VESSEL STRUCTURE TO AVOID SHORTING THE ISOLATION TRANSFOMER. CONNECT THE SHORE POWER GROUND TO THE GALVANIC SHIELD WITHIN THE TRANSFORMER.

INDEX

SHEET NO.	SHEET CONTENT
1	COVER, NOTES, REVS, SYMBOLS, REFERENCES
2	MAIN SWITCHBOARD
3	PANEL P201, PANEL P202
4	PANEL P203, PANEL P204
5	PANEL P205

REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD

GENERAL NOTES

GENERAL
1. THIS DRAWING PROVIDES CONTRACT GUIDANCE FOR THE CONSTRUCTION OF A NEW 91'-7" x 27'-6" x 12'-2" PATROL VESSEL FOR THE ALASKA WILDLIFE TROOPERS ALONG WITH THE CONTRACT SPECIFICATIONS (REF 1). THIS DRAWING SHALL NOT BE USED FOR THE CONSTRUCTION OF ADDITIONAL VESSELS.

2. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.

3. PENETRATIONS AT WATERTIGHT AND FIRE RATED BULKHEADS AND DECKS, AND AT ELECTRICAL ENCLOSURES, SHALL BE SEALED WITH APPROVED STUFFING TUBES OR MULTI-CABLE TRANSITS (MCT). CABLES PASSING THROUGH OTHER TRANSITS SHALL BE SECURED AND PROTECTED FROM CHAFING. PENATRATIONS THROUGH DECK SHALL INCLUDE KICK PIPES OR ELEVATED MCT FRAMES AT LEAST 16" TALLER THAN THE FINISHED DECK SURFACE.

4. POWER DISTRIBUTION CABLE SHALL MEET THE REQUIREMENTS OF IEEE-1580 (2001) AND SHALL BE LOW SMOKE, ZERO HALOGEN TYPE. CABLE OUTSIDE OF HAZARDOUS ZONES SHALL BE UNARMORED, AND POWER DISTRIBUTION CABLE SHALL BE UNSHIELDED. CABLE MEETING MIL-C-24643 MAY BE SUBSTITUTED.

5. CABLES SHOWN ARE SIZED PER IEEE-45 (2002) TABLE 25. CABLE SIZING IS BASED UPON 90 DEGREE C CONDUCTOR TEMPERATURE, 40 DEGREE C AMBIENT TEMPERATURE OUTSIDE OF CLASS A MACHINERY SPACES, AND 50 DEGREE C AMBIENT TEMPERATURE WITHIN CLASS A MACHINERY SPACES.

6. TO THE GREATEST EXTENT POSSIBLE, CABLES SHALL BE LAID IN SINGLE LAYER ROWS WITHIN CABLE TRAYS (SINGLE BANKED) WITH A CABLE DIAMETER OF AIR SPACE BETWEEN LAYERS. WHERE A TWO LAYER ROW (DOUBLE BANKING) IS REQUIRED, CABLES SHALL BE DERATED PER IEEE-45 REQUIREMENTS.

7. THE CONTRACTOR SHALL ADJUST CIRCUIT CONNECTIONS AS NECESSARY TO BALANCE THE LOAD ON EACH PHASE. PHASES SHALL BE BALANCED WITHIN 15% AT FULL LOAD.

8. CABLES SHALL BE LABELED WITH EMBOSSED ALUMINUM TAGS ATTACHED TO THE CABLES BY METALLIC BANDING. CABLES SHALL BE LABELED AT THE ENTRANCE TO EACH ELECTRICAL ENCLOSURE, AND AT EACH WATERTIGHT PENETRATION.

9. SHORT CIRCUIT CURRENT IS ESTIMATED AS TEN TIMES THE GENERATOR CURRENT PLUS FOUR TIMES THE ON-LINE MOTOR CURRENT. VFD DRIVEN MOTOR LOADS ARE NOT INCLUDED.

GENERATOR (2 x 99 kW)	10 x 2 x 344 A = 6880 A
MOTORS (EST 75 HP)	4 x 250 A = 1000 A
TOTAL	7880 A

REFERENCES

1. 24065-200-832-0	SPECIFICATIONS
2. 24065-200-256-1	FRESH WATER COOLING SYSTEM DIAGRAM
3. 24065-200-259-2	ENGINE ROOM AIR SUPPLY AND EXHAUST
4. 24065-200-300-1	AC ELECTRICAL LOADS ANALYSIS
5. 24065-200-521-0	BILGE AND FIRE MAIN PIPING DIAGRAM
6. 24065-200-528-0	BLACK AND GRAY WATER SYSTEM SCHEMATIC
7. 24065-200-533-0	FRESH WATER SYSTEM SCHEMATIC
8. 24065-200-541-0	FUEL PIPING DIAGRAM

STATE OF ALASKA
49TH
TAYLOR M. HERINCKX
EE 13808
REGISTERED PROFESSIONAL ENGINEER

10/5/2026

ELLIOTT BAY DESIGN GROUP

CLIENT	ALASKA WILDLIFE TROOPER ANCHORAGE, AK
DWN	BKG
CHK	TMH
APVD	TMH
DATE	10/02/2026
PROJECT	Large Class Enforecement Vessel
TITLE	ELECTRICAL AC ONE-LINE DIAGRAM
SIZE	D
DWG NO.	24065-200-320-0
REV	-
SHEET	1 OF 5
SCALE	AS NOTED

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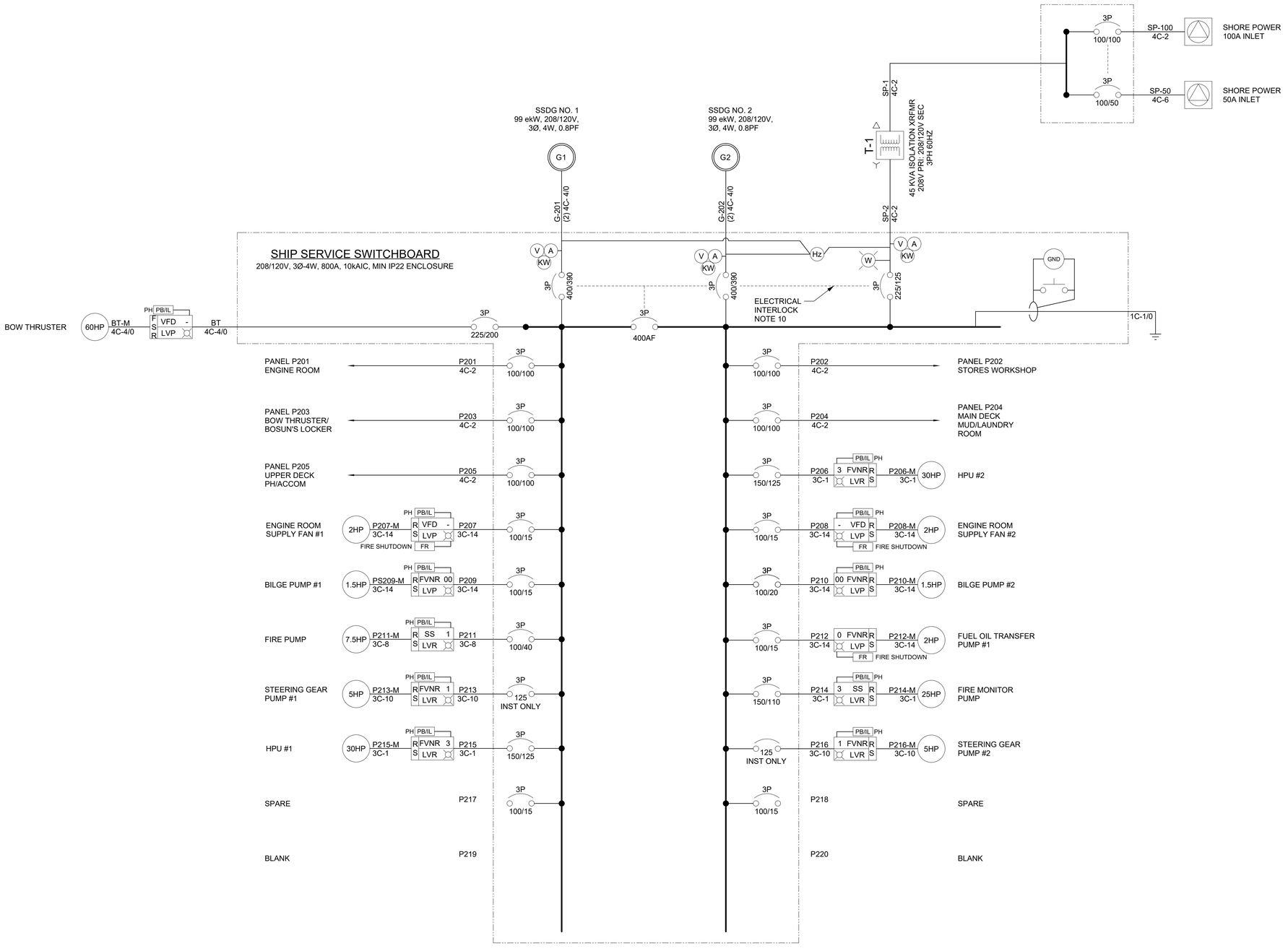

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SIZE	DWG NO.	REV	SHEET
D	24065-200-320-0	-	2 OF 5
			SCALE AS NOTED

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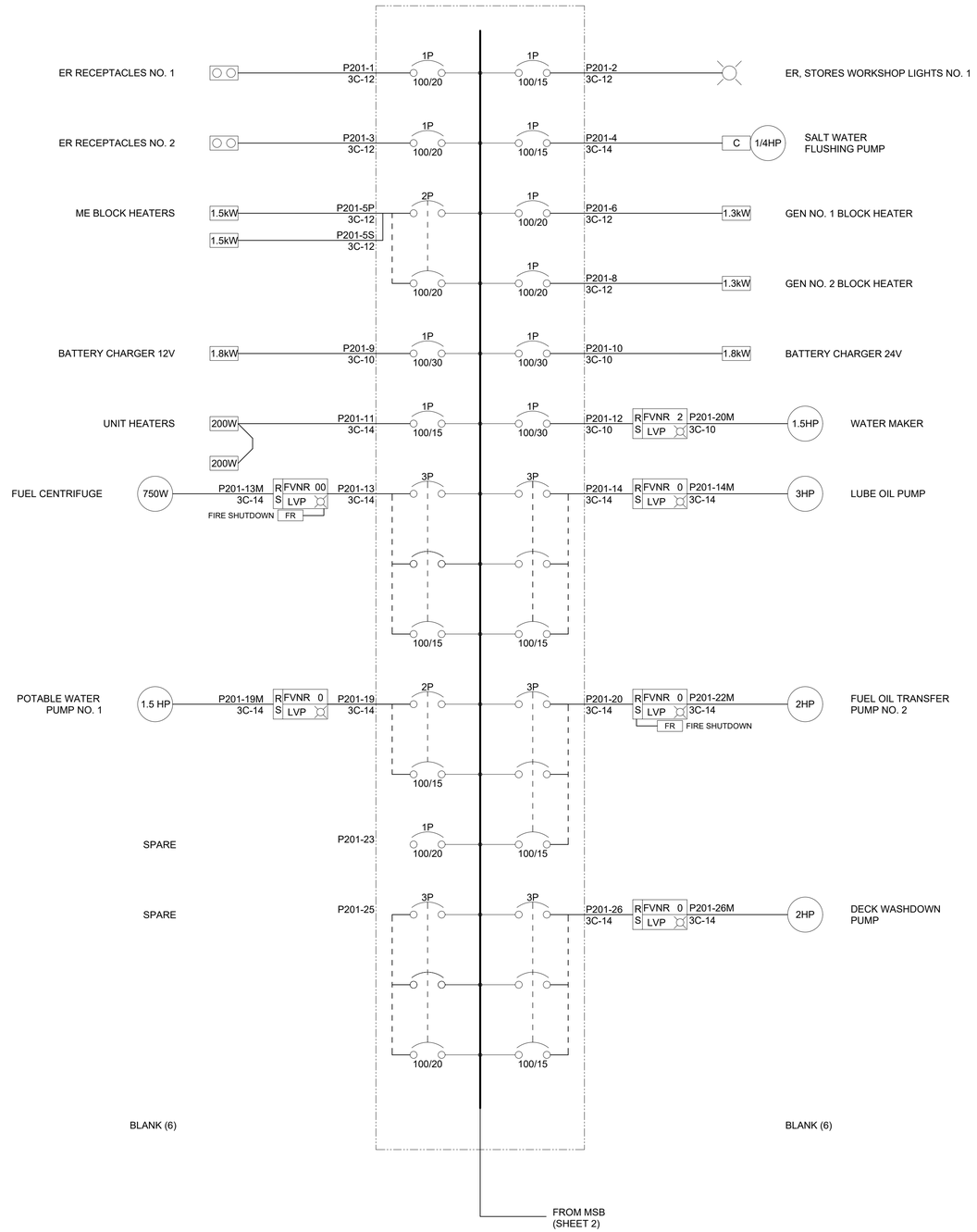
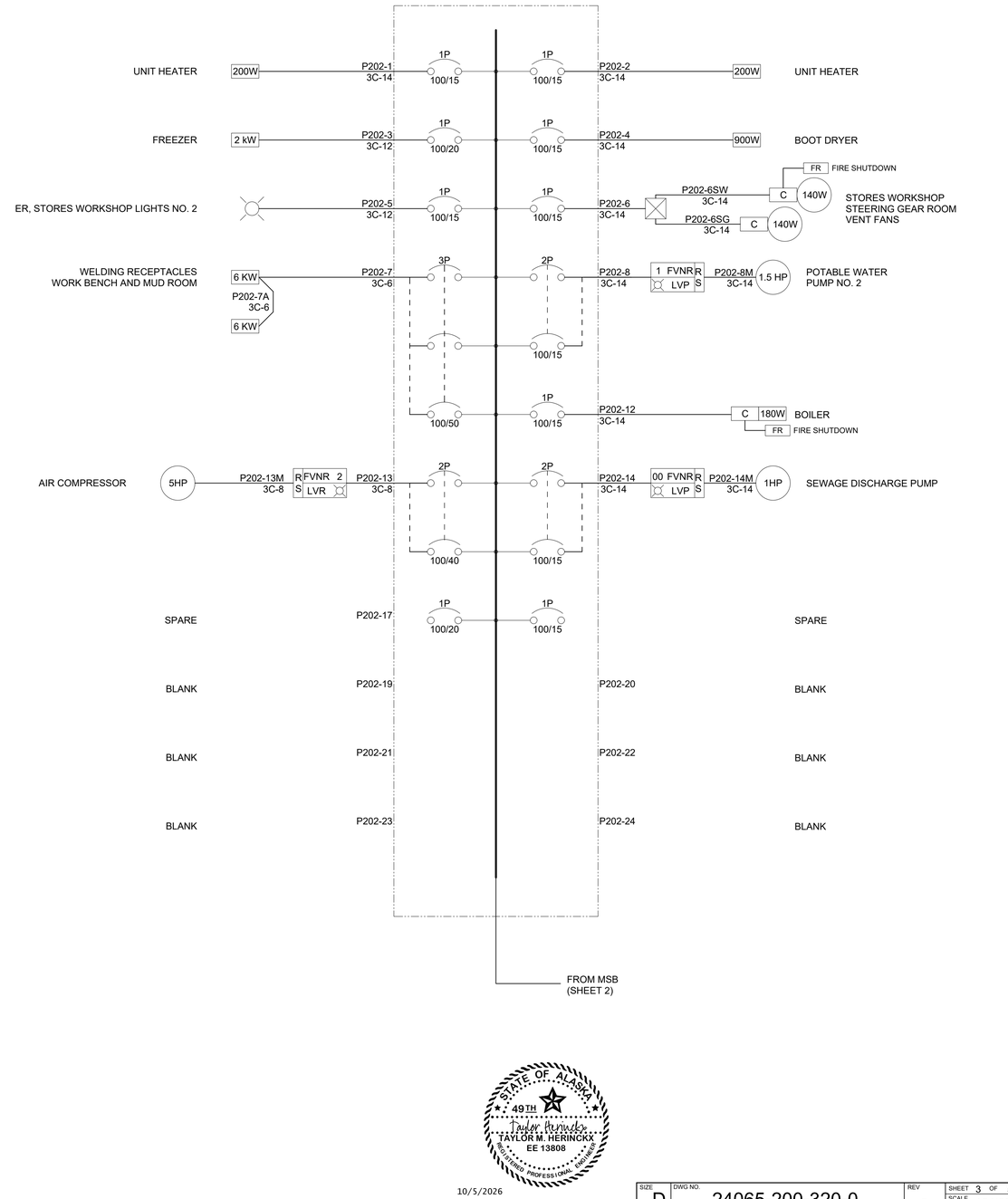
P201
ENGINE ROOM
208/120V, 3Ø-4W, 225A, 42 POLE
SQUARE D QO LOAD CENTER



P202
STORES WORKSHOP
208/120V, 3Ø-4W, 125A, 24 POLE
SQUARE D QO LOAD CENTER



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SIZE	DWG NO.	REV	SHEET 3 OF 5
D	24065-200-320-0	-	SCALE AS NOTED

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P203
BOSUN'S LOCKER
208/120V, 3Ø-4W, 125A, 24 POLE
SQUARE D QO LOAD CENTER

THRUSTER ROOM, VOID VENT FANS	140W + 140W	P203-1R 3C-14, P203-1T 3C-14	P203-1 3C-14	1P 100/15	1P 100/30	P203-2 3C-10	3 KW	OFF-VESSEL RECEPTACLE (30A)
RECEPTACLES		P203-3 3C-12	1P 100/20	1P 100/15	P203-4 3C-14			LIGHTING
SPARE		P203-5	1P 100/20	1P 100/15	P203-6 3C-14	200W		UNIT HEATER FAN
SPARE		P203-7	1P 100/15	1P 100/15	P203-8 3C-14	R FVNR 00, S LVR	P203-8M 3C-14	500W GASOLINE PUMP
SPARE		P203-9	3P	1P 100/15	P203-10			SPARE
			2P		P203-12			SPARE
			100/15	100/15				
BLANK		P203-15			P203-16			BLANK
BLANK		P203-17			P203-18			BLANK
BLANK		P203-19			P203-20			BLANK
BLANK		P203-21			P203-22			BLANK
BLANK		P203-23			P203-24			BLANK

FROM MSB (SHEET 2)

P204
MESS
208/120V, 3Ø-4W, 200A, 42 POLE
SQUARE D QO LOAD CENTER

LIGHTING		P204-1 3C-14	1P 100/15	1P 100/20	P204-2 3C-12			RECEPTACLES NO. 1
LIGHTING		P204-3 3C-14	1P 100/15	1P 100/20	P204-4 3C-12			RECEPTACLES NO. 2
EXTERIOR RECEPTACLES		P204-5 3C-12	1P 100/20	1P 100/15	P204-6 3C-14	0.5kW		HEAD EXHAUST FAN
AHU FAN	2 kW	P204-7 3C-12	3P	1P 100/15	P204-8 3C-14	0.5kW		RANGE HOOD FAN
			1P 100/15	1P	P204-10 3C-14	1.2kW		GALLEY MICROWAVE
			100/15	1P 100/20	P204-12 3C-12			GALLEY RECEPTACLES
DRYER	5kW	P204-13 3C-10	2P	1P 100/20	P204-14 3C-12	2kW		GALLEY REFRIGERATOR
			100/30	1P 100/20	P204-16 3C-12	2kW		PANTRY FRIDGE/ FREEZER
WASHER	1.2kW	P204-17 3C-14	1P 100/15	1P	P204-18 3C-10	4kW		RANGE
AHU COMPRESSOR	2kW	P204-19 3C-12	2P	100/30				
			100/20	1P 100/20	P204-22 3C-12	500W	P204-22A 3C-12	PAW WALL HEATERS MAIN DECK
						500W	P204-22B 3C-12 500W	
COFFEE MAKER	2kW	P204-23 3C-14	2P	1P 100/15	P204-24 3C-14	500W	P204-24A 3C-12	PAW WALL HEATERS MAIN DECK
			100/15			500W		
				1P 100/15	P204-26 3C-14	500W	P204-26A 3C-12	PAW WALL HEATERS MAIN DECK
						500W		
SPARE		P204-27	1P 100/15	1P 100/15	P204-28			SPARE
BLANK (7P)								BLANK (7P)

FROM MSB (SHEET 2)

STATE OF ALASKA
49TH
Taylor Herinckx
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10/5/2026

SIZE	DWG NO.	REV	SHEET
D	24065-200-320-0	-	4 OF 5
		SCALE	AS NOTED

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P205
PILOT HOUSE
208/120V, 3Ø-4W, 200A, 42 POLE
SQUARE D QO LOAD CENTER

PILOT HOUSE LIGHTING		P205-1 3C-12	1P 100/20	1P 100/20	P205-2 3C-12				PILOT HOUSE RECEPTACLES
ACCOMMODATION LIGHTING		P205-3 3C-12	1P 100/20	1P 100/20	P205-4 3C-12				ACCOMMODATION RECEPTACLES NO. 1
HEAD FAN	50W	P205-5 3C-14	1P 100/15	1P 100/20	P205-6 3C-12	1 kW			DECK LIGHTS
SEARCHLIGHT	1 KW	P205-7 3C-12	1P 100/20	1P 100/20	P205-8 3C-12	1 kW			UPS BATTERY CHARGER NO. 1
12V BATTERY CHARGER	1 kW	P205-9 3C-12	1P 100/20	1P 100/20	P205-10 3C-12				DECK RECEPTACLES NO. 1
WINDSHIELD WIPERS	0.5kW	P205-11 3C-12	1P 100/15	1P 100/20	P205-12 3C-12	1.2kW			WINDOW HEATERS
FIRE DETECTION AND ALARM	100W	P205-13 3C-14	1P 100/15	3P	P205-14 3C-12	R S FVNR 0 LVR	P203-14M 3C-12	2kW	UPPER DECK DAVIT
24V BATTERY CHARGER	1 kW	P205-15 3C-12	1P 100/15						
FLOOD LIGHTS		P205-17 3C-12	1P 100/20	100/20					
ACCOMMODATION RECEPTACLES NO. 2		P205-19 3C-12	1P 100/20	1P 100/20	P205-20 3C-12	1.2kW			WINDOW HEATERS
UPS BATTERY CHARGER NO. 2	1 kW	P205-21 3C-14	3P 100/15	1P 100/20	P205-22 3C-12	500W	P205-22A 3C-12	500W	PAW WALL HEATERS PH/UPPER DECK
						500W	P205-22B 3C-12	500W	
SPARE		P205-23	1P 100/15	1P 100/15	P205-24 3C-14	500W	P205-24A 3C-14	500W	PAW WALL HEATERS PH/UPPER DECK
SPARE		P205-25	1P 100/20	1P 100/15	P205-26 3C-14	500W	P205-26A 3C-14	500W	PAW WALL HEATERS PH/UPPER DECK
SPARE		P205-27	1P 100/15	2P	P205-28 3C-12	1.5kW			PH HVAC UNIT
SPARE		P205-29	1P 100/15	100/20					
BLANK (6P)									BLANK (6P)

FROM MSB
(SHEET 2)

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D	24065-200-320-0	-	5 OF 5
			SCALE AS NOTED