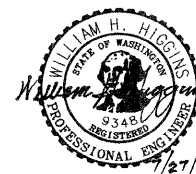


ELECTRICAL GENERAL NOTES

1. THE INSTALLATION, MATERIAL AND METHODS USED IN THE CONSTRUCTION OF THIS VESSEL ARE TO COMPLY WITH USCG REQUIREMENTS FOUND IN 46 CFR SUBCHAPTER J (PARTS 110 THROUGH 113), STANDARDS FOUND IN ABS-STEEL VESSEL RULES (PART 4), AND IN IEEE STD 45.
2. ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED TO THE SHIPS HULL AS REQUIRED BY 46CFR. 111.05-3.
3. THE CABLE TYPES SHOWN ON THE DRAWINGS ARE TO BE LOW SMOKE, MIL-DTL-24643B OR EQUAL.
4. DECK PENETRATIONS SUCH AS WATERTIGHT STUFFING TUBES, TRANSITS AND KICK PIPES SHALL BE USED WHERE REQUIRED, IN ACCORDANCE WITH IEEE STD 45.
5. PROVIDE WIREWAYS AND STUD RUNS AS REQUIRED TO COMPLETE THE INSTALLATION.
6. ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE OF TYPES SUITABLE FOR MARINE APPLICATION IN THE SERVICES INTENDED AND SHALL OPERATE UNDER ALL EXPECTED CONDITIONS OF VIBRATION AND ROLL, PITCH AND TRIM.
7. THE SHIPYARD SHALL PROVIDE ALL EQUIPMENT AND BOXES WITH PROPER FITTINGS, FLANGES, STRAIN RELIEFS, AND MOUNTING SUPPORTS NECESSARY TO COMPRISE A COMPLETE AND FINISHED INSTALLATION. ALL SUCH AUXILIARY ITEMS SHALL BE UL LISTED FOR THE CONDITION OF USE.
8. ALL CABLE SHALL BE TAGGED WITH ITS UNIQUE CIRCUIT DESIGNATION USING EMBOSSED ALUMINUM TAGS ON EACH SIDE OF A PENETRATION, INTO AND OUT OF CONNECTION BOXES AND/OR EQUIPMENT.
9. ALL NEW CABLES SHALL BE TESTED FOR ELECTRICAL INSULATION INTEGRITY (MEGGERED). THE CABLES SHALL MEET IEEE-45 CLAUSE 38.21.1. TEST RESULTS SHALL BE RECORDED AND GIVEN TO THE VESSEL REPRESENTATIVE.
10. NOT LESS THAN 22KAIC (ASYMMETRICAL SHORT-CIRCUIT CURRENT) SHOULD BE USED AS A BASIS FOR THE INTERRUPTING RATING OF FUSES, THE SHORT TIME CURRENT RATING AND MECHANICAL STRENGTH OF SWITCHES, CABLES, AND BUS WORK ON THE MAIN SWITCHBOARD AS PER 46 CFR 111.52 -3(B).
11. 30 KW, 120/240V, SINGLE PHASE 1800 RPM, 60 Hz, 0.8PF REF DWG 233-101.
12. DRIP PROOF ENCLOSURE SQUARE-D 30 SPACE 150 AMP MAIN LUGS SINGLE PHASE, 3 WIRE.
13. DRIP PROOF ENCLOSURE SQUARE-D 24 SPACE 125 AMP MAIN LUGS SINGLE PHASE, 3 WIRE.

AC ELECTRICAL ONE LINE BILL OF MATERIAL (321-103)			
PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	1 EA	DIESEL GENERATOR	REF DWG 233-101, ITEM 14 NOTE 11
2	1 EA	DISTRIBUTION PANEL, 1ø, 150A, 30 SPACE	SQUARE-D Q030L150RB NOTE 12
3	1 EA	DISTRIBUTION PANEL, 1ø, 125A, 24 SPACE	SQUARE-D NOTE 13
4	1 EA	SHIPSIDE SHORE POWER RECEPTACLE, 100A, 120/240V	HUBBELL, M4100B12R, 3P/4W
5	1 EA	SHORESIDE PLUG, 100A, 120/240V	HUBBELL M4100C12R, 3P/4W (TO MATE WITH PC 4)
6	100 FT	CABLE, TYPE G 4/C, NO 1 AWG	FHOF-133, GAUBERT, ANIXTER OR EQUAL
7	2 EA	GENSET CONTROL PANEL	NORTHERN LIGHTS SERIES 4 OR EQUAL
8	1 EA	MAIN DISTR PANEL, 150A, 120/240V, 1ø	SURFACE MTD. WITH FEEDER BREAKERS AS SHOWN
9	37 EA	CIRCUIT BREAKER	SQUARE-D 15A, 120V, 1 POLE
10	4 EA	CIRCUIT BREAKER	SQUARE-D 15A, 240V, 2 POLE
11	1 EA	CIRCUIT BREAKER	SQUARE-D 20A, 120V, 1 POLE
12	1 EA	CIRCUIT BREAKER	SQUARE-D 50A, 240V, 2 POLE
13	2 EA	CIRCUIT BREAKER	SQUARE-D 30A, 240V, 2 POLE
14	1 EA	CIRCUIT BREAKER	SQUARE-D 60A, 240V, 2 POLE
15	7 EA	SWITCH, SNAP, WATERTIGHT	PAULUHN 862A
16	2 EA	SWITCH, 3-WAY, WITH PILOT LIGHT, NON WATERTIGHT	PAULUHN 2719A
17	6 EA	LIGHT, WT, FLUORESCENT, 2x40W	PAULUHN FPS240
18	2 EA	LIGHT, FLUORESCENT, 2x40W	PAULUHN FLC240
19	15 EA	LIGHT, INCANDESCENT, WT, GUARDED GLOBE	PAULUHN 707A WITH 100W BULB
20	2 EA	FLOODLIGHT, 500W HALOGEN, MARITIME LIGHTING	ORD ON 422-101
21	1 EA	LIGHT, SEARCHLIGHT, MEDIUM PEDESTAL, LEVER/GEAR, 14"	PERKO 885 MP3 WHT, 969 MAO 846, E BULB AND SOCKET
22	9 EA	RECEPTACLE, DUPLEX, NON WATERTIGHT	PAULUHN 2705A-125
23	1 EA	BATTERY CHARGER	NEWMAR PT-80
24	1 EA	MOTOR STARTER, MANUAL, NEMA TYPE 4	SQUARE-D CLASS 2510, KWIB
25	6 EA	SWITCH, TOGGLE, DPST, NON WATERTIGHT	PAULUHN 2712A
26	1 EA	RECEPTACLE, 60A, 240V, 3-POLE/4-WIRE GROUNDING	HUBBELL 8460A AND 7777A WITH WEATHERTIGHT COVER PLATE
27	3 EA	RECEPTACLE, GFCI DUPLEX, NON WATERTIGHT	PAULUHN 2705A-125-GF
28	1 EA	SWITCH, PUSHBUTTON	SQUARE-D 9001-KR2BH6
29	1 EA	TEMPERATURE MONITOR	WINDLAND TA-1 OR EQUAL
30	1 EA	CIRCUIT BREAKER (SHORE POWER)	SQUARE-D 100A, 240V, 2P WITH ELCI, DRIP PROOF ENCLOSURE
31	1 EA	TRANSFER SWITCH	SQUARE-D 200A, 240V, 3P WITH GROUND BUS, SERVICE RATED, DRIP PROOF ENCLOSURE
32	AS REQ	CABLE, 3 CONDUCTOR	AWG 12/3, TYPE G
33	2 EA	PLUG, 30A, 125V, TWIST-LOCK	HUBBELL #HBL26CM13 & HBL60CM32
34	1 EA	RECEPTACLE & BOX, NEMA 6-30R	HUBBELL #9330, 30A, 250VAC
35	1 EA	RECEPTACLE & BOX, NEMA 5-20R	HUBBELL #8310, 20A, 120V
36	-	CURRENT TRANSFORMER	100-T0-1, USE WITH PC 40
37	1 EA	GROUND DETECTION METER	WITH 0-10A SCALE

DC ELECTRICAL ONE LINE BILL OF MATERIAL (321-102)			
PC NO.	QTY	DESCRIPTION	MATERIAL/SPECIFICATION/REMARKS
1	4 EA	LIGHT, WEATHERTIGHT MULTI-LITE	WEST MARINE #350611 WITH 311025 BULB OR EQUAL
2	4 EA	LIGHT, 7" DOME, EXTERIOR	PERKO, 1253 DP2 WHT
3	1 EA	BATTERY CHARGER	NEWMAR PT80
4	1 EA	SEL SWITCH, MOMENTARY CONTACT 3-WAY DPDT TOGGLE	NORMALLY OPEN
5	1 EA	HAILER, INTERCOM, AND PUBLIC ANNOUNCING SYSTEM	RAYTHEON RAY 430, ORDERED ON DWG 401-101
6	1 EA	LIGHT, CHART WITH FLEXIBLE GOOSENECK	WITH RED FILTER
7	2 EA	LIGHT, INTERIOR/NAV 7" DOME	WEST MARINE #1471408, RED AND WHITE OR EQUAL
8	2 EA	STATE RADIO	OFF
9	2 EA	VHF-FM MARINE BAND RADIO	ICOM IC-M504, ORDERED ON DWG 401-101
10	1 EA	LIGHT, SEARCHLIGHT, MEDIUM PEDESTAL, LEVER/GEAR, 10"	PERKO 885 MP2 WHT, 969 MAO 816, F BULB AND SOCKET
11	3 EA	WINDSHIELD WIPERS	12VDC, 2A
12	2 EA	FUSE & FUSE HOLDER	12VDC, 100A
13	1 EA	TERMINAL BLOCK	MCMMASTER-CARR 7626K43 - 175A
14	2 EA	BATTERY, HT/80, 221 AH @ 20HR RATE, 1050 CCA @ 0°F	ROLLS 60A30 WITH BOX
15	3 EA	SWITCH, SNAP, WATERTIGHT	PAULUHN 862A
16	2 EA	DC DISTRIBUTION PANEL, 16 CIRCUITS WITH AMMETER	BASS 90-5235
17	1 EA	NAVIGATION LIGHT PANEL	BASS 90-5145, 50 GROVE ST. SALEM, MA 01970
18	2 EA	FAN, OSCILLATING	GUEST #900, 150CFM ORDERED ON DWG 512-101
19	2 EA	AMMETER, DC	0-50A, 12VDC
20	7 EA	JUNCTION BOX, WATERTIGHT, SIZE AS REQ	PAULUHN 574 OR EQUAL
21	1 EA	METER VOLT	0-15VDC
22	4 EA	SWITCH, PUSHBUTTON MOMENTARY	CONTACT N.O. 10A, 24VDC
23	1 EA	SWITCH, TOGGLE, SPDT	12VDC, 10A
24	1 EA	PLACARD	WHT PHENOLIC WITH 1/4" BLK LETTERS
25	6 EA	SWITCH, BILGE, HIGH LEVEL	RULE 33ALA, ORDERED ON DWG 233-101
26	1 EA	FIRE ALARM PANEL	ORDERED ON DWG 401-101
27	1 EA	ALARM ANNUNCIATOR	ORDERED ON DWG 401-101
28	1 EA	DIGITAL INDICATOR	ORDERED ON DWG 401-101
29	1 EA	FUEL PANEL	ORDERED ON DWG 401-101
30	1 EA	STEERING POWER JUNCTION BOX	ORDERED ON DWG 566-101



FILE NAME =	USER NAME =	DESIGNED - W. HIGGINS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IDOT BRUSSELS FERRY ELECTRICAL GENERAL NOTES - PUSHBOAT	F.A.P. RTE. =	SECTION =	COUNTY =	TOTAL SHEETS =	SHEET NO. =	
	PLOT SCALE =	DRAWN - C. FAWVER	REVISED -			304	21-3	NEW JERSEY	47	27	
	PLOT DATE =	CHECKED - P. MARTIN	REVISED -			CONTRACT NO. 76D29					
		DATE - 7/19/2011	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					