

SECTION 26 24 16

PANELBOARDS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Distribution Panelboard.
- B. Branch Circuit Panelboards

1.2 REFERENCES

- A. NECA (National Electrical Contractors Association) "Standard of Installation."
- B. NEMA AB 1 - Molded Case Circuit Breakers.
- C. NEMA PB 1 - Panelboards.
- D. NEMA PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards rated 600 Volts or Less.
- E. NEMA PB 1.2 - Application Guide for Ground-fault Protective Devices for Equipment.
- F. NFPA 70 - National Electrical Code.

1.3 SUBMITTALS

- A. Submit shop drawings for equipment and component devices under provisions of Division 01 and Section 26 00 00.
- B. Include outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, and branch circuit breaker quantities and sizes.
- C. Operating and Maintenance Manuals: Provide for panelboards, enclosed circuit breakers and electrical use submeters.

1.4 SPARE PARTS

- A. Panelboard Cover Keys: Furnish 4 each to Owner.

PART 2 – PRODUCTS

2.1 PANELBOARDS

- A. Acceptable Manufacturers.
 - 1. *Square D.*
 - 2. *Cutler-Hammer.*
 - 3. *General Electric.*
 - 4. *Siemens.*
 - 5. Substitutions: None Permitted.

- B. Description
 - 1. Panelboards: NEMA PB1; Circuit breaker type with bolt-on circuit breakers.
 - 2. Enclosures: NEMA PB 1; Type 1.
 - 3. Cabinet Sizes:
 - a. Branch Circuit Panelboards: 5 ¾ inches deep; 20 inches wide.
 - 4. Provide cabinet fronts with concealed trim clamps, concealed hinge and flush lock all keyed alike. Finish in manufacturer's standard gray enamel
 - 5. Provide copper buses for all panels and load centers. Branch circuits panels and load centers shall be rated as scheduled within specification section 26 06 20.16. Service/distribution panel shall be rated as indicated on the single-line diagram in the contract drawings.
 - 6. Minimum Integrated Short Circuit Ratings:
 - a. Branch Circuit Panelboards: 35,000 AIC at 120/240 volts.
 - 7. Molded Case Circuit Breakers: NEMA AB 1; thermal magnetic trip circuit breakers, with common trip handle for all poles. Provide circuit breakers UL listed as Type SWD for lighting circuits.
 - 8. Provide circuit breaker accessory trip units and auxiliary contacts as indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide panelboards as indicated on the Contract Drawings.
- B. Install panelboards plumb and flush with wall finishes, in conformance with NEMA PB 1.1.
- C. Height: 6 feet to top of panelboard.
- D. Clearance: 3 feet front clearance, floor to ceiling with no foreign pipes, ducts, or other system equipment.
- E. Provide filler plates for unused spaces.
- F. Provide typed circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes required to balance phase loads.

3.2 FIELD QUALITY CONTROL

- A. Measure state load currents at each panelboard feeder. Should the difference at any panelboard between phases exceed 20 percent, rearrange circuits in the panelboard to balance the phase loads within 20 percent. Take care to maintain proper phasing for multi-wire branch circuits.

- B. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers.

END OF SECTION 26 24 16

VOLTS: 120/208 AMPS 225 MAIN: MLO PANEL: TP-2A SECTION 1
MOUNT: SURFACE PHASE: 3 WIRES: 4 LOCATION: 2ND FLOOR ELEC RM

BREAKER		DESCRIPTION	CKT VA	TYPE	CKT NO.	LOAD			CKT NO.	TYPE	CKT VA	DESCRIPTION	BREAKER	
A	P					A	B	C					P	A
20	1	LIGHTS	999	L	1	1898			2	L	899	LIGHTS	1	20
20	1	LIGHTS	706	L	3		1714		4	L	1008	LIGHTS	1	20
20	1	SPARE	500	S	5			1000	6	S	500	SPARE	1	20
20	1	ELECTRIC HEATER #1	1500	H	7	3000			8	H	1500	ELECTRIC HEATER #2	1	20
30	2	AH-219	2880	M	9		6480		10	M	3600	AH-221	2	45
30	2	AH-219	2880	M	11			6480	12	M	3600	AH-221	2	45
45	2	AH-220	3600	M	13	7200			14	M	3600	AH-222	2	45
45	2	AH-220	3600	M	15		7200		16	M	3600	AH-222	2	45
20	1	MOTOT OPER DAMPERS	500	M	17			677	18	M	177	HRU-4	2	20
20	1	SPARE	500	S	19	677			20	M	177	HRU-4	2	20
20	1	SPARE	500	S	21		604		22	M	104	AH-223	2	20
20	1	SPARE	500	S	23			604	24	M	104	AH-223	2	20
80	3	PANEL TP-2A SECTION 1	12700		25	12804			26	M	104	AH-224	2	20
80	3	PANEL TP-2A SECTION 1	11200		27		11304		28	M	104	AH-224	2	20
80	3	PANEL TP-2A SECTION 1	11700		29			12200	30	S	500	SPARE	1	20
20	1	SPARE	500	S	31	1000			32	S	500	SPARE	1	20
20	1	SPARE	500	S	33		1000		34	S	500	SPARE	1	20
20	1	SPARE	500	S	35			1000	36	S	500	SPARE	1	20
20	1	SPARE	500	S	37	1000			38	S	500	SPARE	1	20
20	1	SPARE	500	S	39		1000		40	S	500	SPARE	1	20
20	1	SPARE	500	S	41			1000	42	S	500	SPARE	1	20

PHASE TOTALS 27579 29302 22961

CONNECTED VOLT-AMPERES= 79842
CONNECTED AMPERES= 222
DEMAND VOLT-AMPERES= 43227
DEMAND AMPERES= 120

CIRCUIT TYPE CODES DEMAND FACTOR
L LIGHTS 1.0
M MOTORS 0.5
R RECEPTACLES 0.5
H HEAT 1.0
O OTHER 0.5
S SPARE 0.5

COMPASS HEALTH TENANT
PROJECT: FIT-UP MERRILL'S WHARF
PROJ. NO: 11-0032
DATE: 08/01/11
STATUS: FOR CONSTRUCTION

Bartlett Design
LIGHTING & ELECTRICAL ENGINEERING
942 WASHINGTON STREET BATH, MAINE 04530
TEL (207) 443-5447 FAX (207) 443-5560

VOLTS: 120/208 AMPS 225 MAIN: MLO **PANEL:** TP-2A SECTION 2
MOUNT: SURFACE PHASE: 3 WIRES: 4 LOCATION: 2ND FLOOR ELEC RM

BREAKER		DESCRIPTION	CKT VA	TYPE	CKT NO.	LOAD			CKT NO.	TYPE	CKT VA	DESCRIPTION	BREAKER	
A	P					A	B	C					P	A
20	1	RECEPTACLES	1000	R	43	2000			44	R	1000	COPIER	1	20
20	1	RECEPTACLES	400	R	45		2900		46	R	2500	COPIER	2	30
20	1	RECEPTACLES	400	R	47			2900	48	R	2500	COPIER	2	30
20	1	REFRIGERATOR	1500	R	49	2300			50	R	800	RECEPTACLES	1	20
20	1	RECEPTACLES	1000	R	51		2000		52	R	1000	RECEPTACLES	1	20
20	1	RECEPTACLES	1000	R	53			2000	54	R	1000	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	55	2200			56	R	1000	RECEPTACLES	1	20
20	1	RECEPTACLES	600	R	57		1600		58	R	1000	RECEPTACLES	1	20
20	1	RECEPTACLES	1000	R	59			2000	60	R	1000	RECEPTACLES	1	20
20	1	NETWORK RACK	1000	R	61	2000			62	R	1000	RECEPTACLES	1	20
20	1	TELECOM EQUIPMENT	500	O	63		1700		64	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	600	R	65			1800	66	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	67	2200			68	R	1000	RECEPTACLES	1	20
20	1	SPARE	500	S	69		1000		70	S	500	SPARE	1	20
20	1	SPARE	500	S	71			1000	72	S	500	SPARE	1	20
20	1	SPARE	500	S	73	1000			74	S	500	SPARE	1	20
20	1	SPARE	500	S	75		1000		76	S	500	SPARE	1	20
20	1	SPARE	500	S	77			1000	78	S	500	SPARE	1	20
20	1	SPARE	500	S	79	1000			80	S	500	SPARE	1	20
20	1	SPARE	500	S	81		1000		82	S	500	SPARE	1	20
20	1	SPARE	500	S	83			1000	84	S	500	SPARE	1	20

PHASE TOTALS 12700 11200 11700

CONNECTED VOLT-AMPERES= 35600
CONNECTED AMPERES= 99
DEMAND VOLT-AMPERES= 17800
DEMAND AMPERES= 49

CIRCUIT TYPE CODES		DEMAND FACTOR
L	LIGHTS	1.0
M	MOTORS	0.5
R	RECEPTACLES	0.5
H	HEAT	1.0
O	OTHER	0.5
S	SPARE	0.5

COMPASS HEALTH TENANT
PROJECT: **FIT-UP MERRILL'S WHARF**
PROJ. NO: 11-0032
DATE: 08/01/11
STATUS: FOR CONSTRUCTION

Bartlett Design
LIGHTING & ELECTRICAL ENGINEERING
942 WASHINGTON STREET BATH, MAINE 04530
TEL (207) 443-5447 FAX (207) 443-5560

