AREA OF REFUGE SYSTEM SYMBOL LEGEND

A-4204	AREA OF REFUGE ANNUNCIATOR (5-ZONE)	CORNELL A-4204	CORNELL BB-
APS	AREA OF REFUGE 24VDC POWER SUPPLY	CORNELL B-5243A	SUPPLIED WITH UNIT
AR	AREA OF REFUGE STATION	CORNELL 4201B/V	2-GANG BOX

AREA OF REFUGE WIRE LIST

B	RESCUE ASSISTANCE STATION - 22 AWG 4 CONDUCTOR NON-SHIELDED NON-PLENUM RATED: CMR — PLENUM RATED: CMP ANIXTER SG2204N11 — ANIXTER SG2204N22 AREA = 0.0172 SQ. INCH — AREA = 0.0160 SQ. INCH
C	AUDIO RESCUE ASSISTANCE STATION - 22 AWG 2 CONDUCTOR SHIELDED NON-PLENUM RATED: CMR — PLENUM RATED: CMP ANIXTER SG2202S41 — ANIXTER SG2202S22 AREA = 0.0255 SQ. INCH — AREA = 0.0120 SQ. INCH

CONDUIT SIZE	CONDUCTOR AREA	CONDUIT SIZE	CONDUCTOR AREA
1/2"	0.12 SQ INCH *	1-1/4"	0.60 SQ INCH *
3/4"	0.21 SQ INCH *	1-1/2"	0.82 SQ INCH *
1"	0.34 SQ INCH *	2"	1.34 SQ INCH *

* 40% FILL 2005 N.E.C.

CONTACT YOUR LOCAL SIMPLEXGRINNELL OFFICE FOR ANY CABLE SUBSTITUTIONS

RISER DIAGRAM AREA OF REFUGE

NOT TO SCALE

PANEL HP (ELECTRICAL RM) SECTION 1 120/208 3PH 4W 400 AMP BUS - MLO 42K AIC NEMA TYPE 1 (SURFACE)

CKT #	LOAD DESCRIPTION	AT	P	CA	DF	DA	CKT #	LOAD DESCRIPTION	AT	P	CA	DF	DA
1	ELEVATOR SHUNT TRIP	60	3	42	0.50	21	2	STAIR A LIGHTS	20	1			0
3				42	0.50	21	4	STAIR B LIGHTS	20	1			0
5				42	0.50	21	6	STAIR A RECEPTS	20	1			0
7	2ND FLR CORRIDOR CEILING LIGHTS	20	1			0	8	STAIR B RECEPTS	20	1			0
9	2ND FLR CORRIDOR WALL LIGHTS	20	1			0	10	ENTRY VEST RECEPTS	20	1	5	0.50	3
11	3RD FLR CORRIDOR CEILING LIGHTS	20	1			0	12	FACP	20	1	4	1.00	4
13	3RD FLR CORRIDOR WALL LIGHTS	20	1			0	14	INTERCOM PANEL	20	1	5	1.00	5
15	4TH FLR CORRIDOR CEILING LIGHTS	20	1			0	16	RWH-4 (VEST)	30	2	19	0.70	13
17	4TH FLR CORRIDOR WALL LIGHTS	20	1			0	18				19	0.70	13
19	RWH-4 (STAIR A FIRST FLOOR)	30	2	19	0.70	13	20	RWH-4 (ELEV LOBBY)	30	2	19	0.70	13
21				19	0.70	13	22				19	0.70	13
23	RWH-4 (STAIR B FIRST FLOOR)	30	2	19	0.70	13	24	ELEV PIT LIGHT AND RECEPT	20	1	4	0.50	2
25				19	0.70	13	26	RWH-4 (MECHANICAL)	30	2	19	0.70	13
27	RWH-4 (TRASH)	30	2	19	0.70	13	28				19	0.70	13
29				19	0.70	13	30	RWH-4 (STORAGE)	30	2	19	0.70	13
31	MECHANICAL RM RECEPTS	20	1	9	0.50	5	32				19	0.70	13
33	STORAGE, TRASH & ELECT RECEPTS	20	1	9	0.50	5	34	QUAD ELECT RM	20	1	3	0.50	2
35	EWH (SPRINKLER)	20	2	13	0.70	9	36	QUAD ELECT RM	20	1	3	0.50	2
37				13	0.70	9	38	RWH-4 (TRASH)	30	2	19	0.70	13
39	2ND FLE CORRIDOR RECEPTS	20	1	8	0.50	4	40				19	0.70	13
41	3RD FLR CORRIDOR RECEPTS	20	1	8	0.50	4	42	4TH FLR CORRIDOR RECEPTS	20	1	8	0.50	4

PROVIDE WITH FEED THRU LUGS FOR SECTION 2

Section 1	
Tot Amps/PH - Connected Load	**174.00**
Demand Factor	**63.51%**
Total Amps/PH - Demand	**110.50**
Connected KVA	**62.61**
Demand KVA	**39.76**
Min. Panel Size (Demand x 1.25) - Amps	**138.13**

PANEL HP (ELECTRICAL RM) SECTION 2 120/208 3PH 4W 400 AMP BUS - MLO 42K AIC NEMA TYPE 1 (SURFACE)

CKT #	LOAD DESCRIPTION	AT	P	CA	DF	DA	CKT #	LOAD DESCRIPTION	AT	P	CA	DF	DA
43	HEAT TRACE	20	1	1	0.70	1	44	RWH-4 (3RD FLOOR STAIRWAY)	30	2	19	0.70	13
45	HEAT TRACE	20	1	1	0.70	1	46				19	0.70	13
47	HEAT TRACE	20	1	1	0.70	1	48	HEAT TRACE	20	1	15	0.70	11
49	HEAT TRACE	20	1	1	0.70	1	50	HEAT TRACE	20	1	15	0.70	11
51	EWH (ELECTRICAL ROOM)	20	2	13	0.70	9	52	EWH (SPRINKLER CLOSET)	20	2	13	0.70	9
53				13	0.70	9	54				13	0.70	9
55	SPARE	20	1			0	56	SPARE	20	1			0
57	SPARE	20	1			0	58	SPARE	20	1			0
59	SPARE	20	1			0	60	SPARE	20	1			0
61	SPARE	20	1			0	62	SPARE	20	1			0
63	SPARE	20	1			0	64	SPARE	20	1			0
65	SPARE	20	1			0	66	SPARE	20	1			0
67	SPARE	20	1			0	68	TIME CLOCK & PHOTOCELL (LC)	20	1			0
69	SPARE	20	1			0	70	CORRIDOR LIGHTS FLOOR 2	20	1			0
71	SPARE	20	1			0	72	CORRIDOR LIGHTS FLOOR 3	20	1			0
73	SPARE	20	1			0	74	CORRIDOR LIGHTS FLOOR 4	20	1			0
75	TIME CLOCK & PHOTOCELL (LC)	20	1			0	76	LC SPARE	20	1			0
77	LC CIRCUIT	20	2			0	78	LC CIRCUIT	20	1			0
79						0	80	LC CIRCUIT	20	1			0
81	LC CIRCUIT	20	1			0	82	LC CIRCUIT	20	1			0
83	LC CIRCUIT	20	1			0	84	LC CIRCUIT	20	1			0

AT - Amp Trip
P - Poles
A - Amps
CA - Connected Amperes
DF - Demand Factor (1 - .1)
DA - Demand Amperes
MLO - Main Lug Only
MCB - Main Circuit Breaker

Section 2		**Total Combined Load**	
Tot Amps/PH - Connected Load	**41.33**	**Tot Amps/PH - Connected Load**	**215.33**
Demand Factor	**70.00%**	**Demand Factor**	**0.907225**
Total Amps/PH - Demand	**28.93**	**Total Amps/PH - Demand**	**139.43**
Connected KVA	**14.87**	**Connected KVA**	**77.49**
Demand KVA	**10.41**	**Demand KVA**	**50.17**
Min. Panel Size (Demand x 1.25) - Amps	**36.17**	**Min. Panel Size (Demand x 1.25) -**	**174.29**

NOTES:
1. PROVIDE ARC FAULT TYPE CIRCUIT BREAKERS IN ACCORDANCE WITH NEC 210.12
2. PROVIDE TAMPER RESISTANT OUTLETS PER NEC 406.11 SECTION 210.52

PANEL LC (UNIT 1.3 2BR) (UNIT WALL) 120/208 1PH 3W 125 AMP BUS - MLO 22K AIC NEMA TYPE 1 (RECESSED)

CKT #	LOAD DESCRIPTION	AT	P	CA	DF	DA	CKT #	LOAD DESCRIPTION	AF	P	CA	DF	DA
1	REFRIGERATOR	20	1	14	1.00	14	2	RANGE	50	2	32	0.50	16
3	COUNTER RECEPT	20	1	2	0.50	1	4				32	0.50	16
5	COUNTER RECEPT AND RANGE HOOD	20	1	3	0.50	2	6	ISLAND RECEPT	20	1	2	0.50	1
7	GARBAGE DISPOSAL	20	1	10	0.50	5	8						0
9	LIVING ROOM RECEPTS & FIREPLACE	20	1	11	0.50	5	10	BEDROOM 1 RECEPTS	20	1	11	0.50	6
11	HALL RECEPTS	20	1	6	0.50	3	12	BATHROOM 1 RECEPT	20	1	2	0.50	1
13	LOW VOLTAGE BOARD	20	1	4	1.00	4	14	WASHER & DSF	20	1	12	0.50	6
15	DRYER	30	2	22	0.50	11	16	DISHWASHER	20	1	12	0.50	6
17				22	0.50	11	18	MICROWAVE	20	1	14	0.50	7
19	EBB	30	2	24	0.50	12	20	WATER HEATER & CIRC PUMP	20	1	15	0.70	11
21				24	0.50	12	22	UNIT LIGHTS	20	1	12	1.00	12
23	UPSTAIR HALL RECEPTS **(SEE NOTE 4)**	20	1	9	0.50	5	24	BEDROOM 2 RECEPTS	20	1	11	0.50	6
25	UNIT SCU AND ALL INDOOR SAC'S	20	2	18	0.70	13	26	BATHROOM 2 RECEPT	20	1	2	0.50	1
27				18	0.70	13	28	DINING ROOM & DEN RECEPTS	20	1	11	0.50	6
29	RWH-1	20	2	15	0.70	11	30	BATHROOM 3 RECEPT **(SEE NOTE 4)**	20	1	2	0.50	1
31				15	0.70	11	32	UNIT SCU AND ALL INDOOR SAC'S	20	2	18	0.70	13
33						0	34				18	0.70	13
35						0	36						0

AT - Amp Trip
P - Poles
A - Amps
CA - Connected Amperes
DF - Demand Factor (1 - .1)
DA - Demand Amperes
MLO - Main Lug Only
MCB - Main Circuit Breaker

Tot Amps/PH - Connected Load	**210.00**
Demand Factor	**59.14%**
Total Amps/PH - Demand	**124.20**
Connected KVA	**50.40**
Demand KVA	**29.81**
Min. Panel Size (Demand x 1.25) - Amps	**155.25**

NOTES:
1. PROVIDE ARC FAULT TYPE CIRCUIT BREAKERS IN ACCORDANCE WITH NEC 210.12
2. PROVIDE TAMPER RESISTANT OUTLETS PER NEC 406.11 SECTION 210.52
3. INSTALL PER ADA REQUIREMENTS IN ALL ADA UNITS.
4. CIRCUIT NOT REQUIRED IN ALL 2 BEDROOM UNITS. CONFIRM UNIT REQUIREMENTS WITH ARCHITECTURAL PLAND PRIOR TO ROUGH-IN.

PANEL LC (UNIT 2.2 3BR) (UNIT WALL) 120/208 1PH 3W 125 AMP BUS - MLO 22K AIC NEMA TYPE 1 (RECESSED)

CKT #	LOAD DESCRIPTION	AT	P	CA	DF	DA	CKT #	LOAD DESCRIPTION	AF	P	CA	DF	DA
1	REFRIGERATOR	20	1	14	1.00	14	2	RANGE	50	2	32	0.50	16
3	COUNTER RECEPT	20	1	2	0.50	1	4				32	0.50	16
5	COUNTER RECEPT AND RANGE HOOD	20	1	3	0.50	2	6	ISLAND RECEPT	20	1	2	0.50	1
7	GARBAGE DISPOSAL	20	1	10	0.50	5	8						0
9	LIVING ROOM RECEPTS & FIREPLACE	20	1	11	0.50	5	10	BEDROOM 1 RECEPTS	20	1	11	0.50	6
11	HALL RECEPTS	20	1	6	0.50	3	12	BATHROOM 1 RECEPT	20	1	2	0.50	1
13	LOW VOLTAGE BOARD	20	1	4	1.00	4	14	WASHER & DSF	20	1	12	0.50	6
15	DRYER	30	2	22	0.50	11	16	DISHWASHER	20	1	12	0.50	6
17				22	0.50	11	18	MICROWAVE	20	1	14	0.50	7
19	EBB	30	2	24	0.50	12	20	WATER HEATER & CIRC PUMP	20	1	15	0.70	11
21				24	0.50	12	22	UNIT LIGHTS	20	1	12	1.00	12
23	LIVING ROOM RECEPTS	20	1	6	0.50	3	24	BEDROOM 2 RECEPTS	20	1	6	0.50	3
25	UNIT SCU AND ALL INDOOR SAC'S	20	2	18	0.70	13	26	BEDROOM 3 RECEPTS	20	1	9	0.50	5
27				18	0.70	13	28	BATHROOM 2 RECEPT	20	1	2	0.50	1
29						0	30						0
31						0	32						0
33						0	34						0
35						0	36						0

AT - Amp Trip
P - Poles
A - Amps
CA - Connected Amperes
DF - Demand Factor (1 - .1)
DA - Demand Amperes
MLO - Main Lug Only
MCB - Main Circuit Breaker

Tot Amps/PH - Connected Load	**171.25**
Demand Factor	**57.36%**
Total Amps/PH - Demand	**98.23**
Connected KVA	**41.10**
Demand KVA	**23.57**
Min. Panel Size (Demand x 1.25) - Amps	**122.78**

NOTES:
1. PROVIDE ARC FAULT TYPE CIRCUIT BREAKERS IN ACCORDANCE WITH NEC 210.12
2. PROVIDE TAMPER RESISTANT OUTLETS PER NEC 406.11 SECTION 210.52
3. INSTALL PER ADA REQUIREMENTS IN ALL ADA UNITS.

PANEL LC (UNIT 2.7 1BR) (UNIT WALL) 120/208 1PH 3W 125 AMP BUS - MLO 22K AIC NEMA TYPE 1 (RECESSED)

CKT #	LOAD DESCRIPTION	AT	P	CA	DF	DA	CKT #	LOAD DESCRIPTION	AF	P	CA	DF	DA
1	REFRIGERATOR	20	1	14	1.00	14	2	RANGE	50	2	32	0.50	16
3	COUNTER RECEPT	20	1	2	0.50	1	4				32	0.50	16
5	COUNTER RECEPT AND RANGE HOOD	20	1	3	0.50	2	6	ISLAND RECEPT	20	1	2	0.50	1
7	GARBAGE DISPOSAL	20	1	10	0.50	5	8						0
9	LIVING ROOM RECEPTS & FIREPLACE	20	1	11	0.50	5	10	BEDROOM RECEPTS	20	1	11	0.50	6
11	HALL RECEPTS	20	1	6	0.50	3	12	BATHROOM RECEPT	20	1	2	0.50	1
13	LOW VOLTAGE BOARD	20	1	4	1.00	4	14	WASHER & DSF	20	1	12	0.50	6
15	DRYER	30	2	22	0.50	11	16	DISHWASHER	20	1	12	0.50	6
17				22	0.50	11	18	MICROWAVE	20	1	14	0.50	7
19	EBB	30	2	24	0.50	12	20	WATER HEATER & CIRC PUMP	20	1	15	0.70	11
21				24	0.50	12	22	UNIT LIGHTS	20	1	12	1.00	12
23	UNIT SCU AND ALL INDOOR SAC'S	20	2	18	0.70	13	24	RWH-1	20	2	15	0.70	11
25				18	0.70	13	26				15	0.70	11
27						0	28						0
29						0	30						0

AT - Amp Trip
P - Poles
A - Amps
CA - Connected Amperes
DF - Demand Factor (1 - .1)
DA - Demand Amperes
MLO - Main Lug Only
MCB - Main Circuit Breaker

Tot Amps/PH - Connected Load	**175.00**
Demand Factor	**58.91%**
Total Amps/PH - Demand	**103.10**
Connected KVA	**42.00**
Demand KVA	**24.74**
Min. Panel Size (Demand x 1.25) - Amps	**128.88**

NOTES:
1. PROVIDE ARC FAULT TYPE CIRCUIT BREAKERS IN ACCORDANCE WITH NEC 210.12
2. PROVIDE TAMPER RESISTANT OUTLETS PER NEC 406.11 SECTION 210.52
3. INSTALL PER ADA REQUIREMENTS IN ALL ADA UNITS.

PANEL LC (UNITS 3.5 & 4.5 3BR) (UNIT WALL) 120/208 1PH 3W 225 AMP BUS - MLO 22K AIC NEMA TYPE 1 (RECESSED)

CKT #	LOAD DESCRIPTION	AT	P	CA	DF	DA	CKT #	LOAD DESCRIPTION	AF	P	CA	DF	DA
1	REFRIGERATOR	20	1	14	1.00	14	2	RANGE	50	2	32	0.50	16
3	COUNTER RECEPT	20	1	2	0.50	1	4				32	0.50	16
5	COUNTER RECEPT AND RANGE HOOD	20	1	3	0.50	2	6	ISLAND RECEPT	20	1	2	0.50	1
7	GARBAGE DISPOSAL	20	1	10	0.50	5	8						0
9	LIVING ROOM RECEPTS & FIREPLACE	20	1	11	0.50	5	10	BEDROOM 1 RECEPTS	20	1	11	0.50	6
11	HALL RECEPTS	20	1	6	0.50	3	12	BATHROOM 1 RECEPT	20	1	2	0.50	1
13	LOW VOLTAGE BOARD	20	1	4	1.00	4	14	WASHER & DSF	20	1	12	0.50	6
15	DRYER	30	2	22	0.50	11	16	DISHWASHER	20	1	12	0.50	6
17				22	0.50	11	18	MICROWAVE	20	1	14	0.50	7
19	EBB	30	2	24	0.50	12	20	WATER HEATER & CIRC PUMP	20	1	15	0.70	11
21				24	0.50	12	22	UNIT LIGHTS	20	1	12	1.00	12
23	LIVING ROOM RECEPTS	20	1	6	0.50	3	24	BEDROOM 2 RECEPTS	20	1	6	0.50	3
25	OVEN	50	2	32	0.50	16	26	BEDROOM 3 RECEPTS	20	1	9	0.50	5
27				32	0.50	16	28	BATHROOM 2 RECEPT	20	1	2	0.50	1
29	COUNTER RECEPT	20	1	5	0.50	2	30	BATHROOM 3 RECEPT	20	1	2	0.50	1
31	BATHROOM 4 RECEPT	20	1	2	0.50	1	32	UNIT SCU AND ALL INDOOR SAC'S	20	2	18	0.70	13
33	DINING ROOM RECEPTS	20	1	5	0.50	2	34				18	0.70	13
35						0	36						0
37						0	38						0
39						0	40						0
41						0	42						0

AT - Amp Trip
P - Poles
A - Amps
CA - Connected Amperes
DF - Demand Factor (1 - .1)
DA - Demand Amperes
MLO - Main Lug Only
MCB - Main Circuit Breaker

Tot Amps/PH - Connected Load	**209.25**
Demand Factor	**56.02%**
Total Amps/PH - Demand	**117.23**
Connected KVA	**50.22**
Demand KVA	**28.13**
Min. Panel Size (Demand x 1.25) - Amps	**146.53**

NOTES:
1. PROVIDE ARC FAULT TYPE CIRCUIT BREAKERS IN ACCORDANCE WITH NEC 210.12
2. PROVIDE TAMPER RESISTANT OUTLETS PER NEC 406.11 SECTION 210.52
3. INSTALL PER ADA REQUIREMENTS IN ALL ADA UNITS.

CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 06/09/16

Prepared For:

Consultant:
BENNETT ENGINEERING
MECHANICAL ELECTRICAL
207/883-6415

Architect:

Project:
SEAPORT LOFTS
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PORTLAND ME

Revisions:
OWNER REVISIONS

Scale: 1/8" = 1'-0"

Date: 12/03/15

FIRE ALARM AND LOW VOLTAGE SYSTEMS & TENANT PANELS

E2.3