

VOLTAGE: 208Y/120 3Ø						PANEL: DP1413AA										FED FROM: T1413AB		
MOUNTING: SURFACE						MAIN TYPE: MCB										MFR: TYPE: AIC: 10 KAIC		
ENCLOSURE: NEMA1						PHASE: 3												
MAIN: 400 A						WIRE: 4												
LC Abbr	Load Served	Wre	Trip	Ckt No	Pole	A		B		C		Ckt No	Trip	Wre	Load Served	LC Abbr		
MI SPD		10	30 A	3	5	0.00	20.21					2			PANEL 'PP1403B'	F		
							0.00	20.49				3	4	200 A			SR	
F	PANEL 'PP1403C'	SR	200 A	9	3	7	15.21	2.70				6			HWP-1	M...		
								15.03	2.70				1	10	40 A	10	HWP-2	M...
										14.06	2.70		1	12	40 A	10	HWP-3	M...
													1	14	20 A	12	BOILER1,2,3 CNTRLs - MECH 1411	M...
M	BOILER#1		12	20 A	15	3			0.67	0.00		--	--	--	SPACE ONLY	--		
				17							0.67	0.00	--	18	--	SPACE ONLY	--	
M	BOILER#2		12	20 A	21	3			0.67	0.00		--	20	--	SPACE ONLY	--		
				23					0.67	0.00		--	22	--	SPACE ONLY	--		
				25		0.67	0.00				0.67	0.00	--	24	--	SPACE ONLY	--	
M	BOILER#3		12	20 A	27	3			0.67	0.00		--	26	20 A	--	SPARE	--	
				29								1	28	20 A	--	SPARE	--	
--	SPACE ONLY	--	--	31	--	0.00	0.00				0.67	0.00	1	30	20 A	--	SPARE	--
--	SPACE ONLY	--	--	33	--				0.00	0.00		--	32	--	--	SPACE ONLY	--	
--	SPACE ONLY	--	--	35	--						0.00	0.00	--	34	--	--	SPACE ONLY	--
--	SPACE ONLY	--	--	37	--	0.00	0.00						--	36	--	--	SPACE ONLY	--
--	SPACE ONLY	--	--	39	--				0.00	0.00			--	38	--	--	SPACE ONLY	--
--	SPACE ONLY	--	--	41	--						0.00	0.00	--	40	--	--	SPACE ONLY	--
													--	42	--	--	SPACE ONLY	--

LOAD		Connected Load	Demand Factor	Estimated Demand	NOTES:
L LIGHTS		1.2 kVA	125.00%	1.5 kVA	1. BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.
LE LIGHTING - EXTERIOR		0.0 kVA	0.00%	0.0 kVA	2. SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.
H HEATING		6.0 kVA	100.00%	6.0 kVA	3. ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.
C COOLING		0.0 kVA	0.00%	0.0 kVA	4. ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.
V VENTILATION		0.9 kVA	100.00%	0.9 kVA	5. PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.
M MOTORS		17.9 kVA	103.77%	18.6 kVA	6. PROVIDE METAL DIRECTORY FRAME.
K KITCHEN		74.8 kVA	65.00%	48.6 kVA	
R RECEPTACLES		6.0 kVA	100.00%	6.0 kVA	
WH WATER HEATER		0.0 kVA	0.00%	0.0 kVA	
MI MISC.		7.4 kVA	100.00%	7.4 kVA	
S Spare		0.0 kVA	0.00%	0.0 kVA	
E ELEVATOR		0.0 kVA	0.00%	0.0 kVA	
LD LAUNDRY		0.0 kVA	0.00%	0.0 kVA	
TOTAL KVA (DEMAND):		91.06 kVA	347.0 A	341.6 A	293.3 A
TOTAL AMP (DEMAND):		323 A			
TOTAL AMP (DEMAND):		253 A			

VOLTAGE: 480Y/277 3Ø										PANEL: LP1413AA										FED FROM: MDP1413AA	
MOUNTING: SURFACE					MAIN TYPE: MCB					MFR: TYPE: AIC: 35 KAIC											
ENCLOSURE: NEMA1					PHASE: 3																
MAIN: 100 A																					
LC Abbr	Load Served	Wire	Trip	Ckt No	Pole	A	B	C	Pole	Ckt No	Trip	Wire	Load Served	LC Abbr							
MI SPD		10	30 A	3	3	0.00	2.47		0.00	0.93		1	2	20 A	10	LIGHTS - MAIN ENTRY					
				5								1	4	20 A	12	LIGHTS - CORRIDOR 1400/1500					
L	LIGHTS - KITCHEN 1403	12	20 A	7	1	1.97	2.78		0.00	2.52		1	8	20 A	12	LIGHTS GLASS - BLDG. E	L				
L	LIGHTS - DIMMED THEATER ZONE	12	20 A	9	1		0.21	2.87				1	10	20 A	6	LIGHTS EXT - BUS LOT	LI...				
L	LIGHTS EXT. BLD. E/F/G	12	20 A	11	1				0.00	0.00	1	12	20 A	--	SPARE		L				
--	SPARE	--	20 A	13	1	0.00	0.00					1	14	20 A	--	SPARE	--				
--	SPARE	--	20 A	15	1			0.00	0.00			1	16	20 A	--	SPARE	--				
--	SPARE	--	20 A	17	1					0.00	0.00	--	18	--	SPACE ONLY		--				
--	SPARE	--	20 A	19	1	0.00	0.00					--	20	--	SPACE ONLY		--				
--	SPACE ONLY	--	--	21	--			0.00	0.00			--	22	--	SPACE ONLY		--				
--	SPACE ONLY	--	--	23	--					0.00	0.00	--	24	--	SPACE ONLY		--				
--	SPACE ONLY	--	--	25	--	0.00	0.00					--	26	--	SPACE ONLY		--				
--	SPACE ONLY	--	--	27	--			0.00	0.00			--	28	--	SPACE ONLY		--				
--	SPACE ONLY	--	--	29	--					0.00	0.00	--	30	--	SPACE ONLY		--				
--	SPACE ONLY	--	--	31	--	0.00	0.00					--	32	--	SPACE ONLY		--				
--	SPACE ONLY	--	--	33	--			0.00	0.00			--	34	--	SPACE ONLY		--				
--	SPACE ONLY	--	--	35	--					0.00	0.00	--	36	--	SPACE ONLY		--				
--	SPACE ONLY	--	--	37	--	0.00	0.00					--	38	--	SPACE ONLY		--				
--	SPACE ONLY	--	--	39	--			0.00	0.00			--	40	--	SPACE ONLY		--				
--	SPACE ONLY	--	--	41	--					0.00	0.00	--	42	--	SPACE ONLY		--				
LOAD		Connected Load		Demand Factor		Estimated Demand		NOTES:													
L	LIGHTS	10.9 kVA		125.00%		13.6 kVA		1. BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.													
LE	LIGHTING - EXTERIOR	2.9 kVA		125.00%		3.6 kVA		2. SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.													
H	HEATING	0.0 kVA		0.00%		0.0 kVA		3. ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.													
C	COOLING	0.0 kVA		0.00%		0.0 kVA		4. ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.													
V	VENTILATION	0.0 kVA		0.00%		0.0 kVA		5. PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.													
M	MOTORS	0.0 kVA		0.00%		0.0 kVA		6. PROVIDE METAL DIRECTORY FRAME.													
K	KITCHEN	0.0 kVA		0.00%		0.0 kVA															
R	RECEPTACLES	0.0 kVA		0.00%		0.0 kVA															
WH	WATER HEATER	0.0 kVA		0.00%		0.0 kVA															
MI	MISC.	0.0 kVA		0.00%		0.0 kVA															
S	Spare	0.0 kVA		0.00%		0.0 kVA															
E	ELEVATOR	0.0 kVA		0.00%		0.0 kVA															
LD	LAUNDRY	0.0 kVA		0.00%		0.0 kVA															
TOTAL KVA...		13.75 kVA		TOTAL PER PHASE: (CONNECTED)				LOAD CLASSIFICATION ABBREVIATIONS (CONT.)													
TOTAL KVA (DEMAND):		17.19 kVA		26.9 A		15.3 A		9.1 A		F - FEEDER FOR DOWN STREAM PANEL LOADS ARE INCLUDED IN THE PANEL LOAD SUMMARY.											
TOTAL AMP...		17 A																			
TOTAL AMP (DEMAND):		21 A																			

VOLTAGE: 208Y/120 3Ø										PANEL: PP1413AA										FED FROM: T1413AA	
MOUNTING: SURFACE										MAIN TYPE: MCB										MFR: TYPE: AIC: 10 KAIC	
ENCLOSURE: NEMA1										PHASE: 3											
MAIN: 400 A										WIRE: 4											
LC Abbr	Load Served	Wre	Trip	Ckt No	Pole	A	B	C	Pole	Tri	Wre	Load Served	LC Abbr								
MI SPD		10	30 A	1	3	0.00	0.18			2	20 A	8 FLOOR MACHINE CUSTODIAL 1609 R	MI								
				5		0.96	0.96			3	6	15 A	12 ATHLETIC WASHER MI								
MI	ATHLETIC WASHER	12	20 A	9	3			0.96	0.00	0.96	3	8	10	20 A	12 MOTOR DAMPERS-ELEC/MECH RM MI						
				11							1	12	20 A	12 ATHLETIC DRYER (GAS) MI							
MI	ATHLETIC DRYER (GAS)	10	20 A	13	1	1.00	0.57			1	12	20 A	10	20 A	12 MOTOR DRYER (GAS) MI						
M	RCP1	12	20 A	15	1		0.60	0.57		2	16	15 A	12	RCP3	M						
		12	20 A	17	1				1.00	0.50	1	18	15 A	12	RCP3A	M					
WH	WH2	12	20 A	19	1	0.70	0.70			1	20	20 A	12	WH2	WH						
WH	WH2	12	20 A	21	1		0.70	0.70		1	22	20 A	12	WH3	WH						
WH	WH3	12	20 A	23	1			0.70	0.70	1	24	20 A	12	WH4	WH						
WH	WH1	12	20 A	25	1	0.70	0.70			1	26	20 A	12	WH1	WH						
WH	WH1	12	20 A	27	1		0.70	0.70		1	28	20 A	12	WH1	WH						
MI	EWIC - CORR 1000 (NOTE 8)	12	20 A	29	1			0.40	1.26	1	30	20 A	8	RCPT - HEALTH 1402 R							
RCPT	- HEALTH 1402	8	20 A	31	1	1.12	0.72			1	32	20 A	8	RCPT - COACH OFF. 1406 R							
RCPT	- COACH OFF. 1406	12	20 A	33	1		0.54	0.90		1	34	20 A	10	RCPT - COACH OFF. 1408 R							
RCPT	- COACH OFF. 1408	10	20 A	35	1				0.72	1.08	1	36	20 A	8	RCPT - LAMINO-MEZZ 1401 R						
RCPT	- CORR. 1500	8	20 A	37	1	1.26	1.08			1	38	20 A	10	RCPT - ATHL OFF 1415 R							
RCPT	- ATHL OFF 1414	10	20 A	39	1		1.08	0.90		1	40	20 A	12	RCPT - HEALTH 1407 R							
RCPT	- HEALTH 1407	10	20 A	41	1				1.12	1.44	1	42	20 A	12	RCPT - TRAINING 1409 R						
MI	RCPT - ICE TUB TRAIN 1409 (NOTE 8)	12	20 A	43	1	1.00	1.00			1	44	20 A	12	RCPT - ICE TUB TRAIN 1409 (NOTE 8) MI							
RCPT	- OFF 1409A	12	20 A	45	1		1.08	0.40		1	46	20 A	12	RCPT - WEIGHTS 1501 R							
RCPT	- WEIGHTS 1501	12	20 A	47	1				1.08	0.00	1	48	20 A	12	RCPT - DANCE 1505 R						
RCPT	- DANCE 1505	10	20 A	49	1	1.26	1.30			1	50	20 A	12	RCPT - DANCE 1505 R							
RCPT	- STOR/PRAC. DANCE CHORAL	12	20 A	51	1		1.80	1.08		1	52	20 A	10	RCPT - CHORAL 1515 R							
RCPT	- CHORAL 1515	12	20 A	53	1			0.94	1.44	1	54	20 A	6	RCPT - EXTERIOR BLDG. G R							
RCPT	- STOR - STOR 1515, 1516A	12	20 A	55	1	1.08	1.12			1	56	20 A	10	RCPT - DRAMA 1516 R							
RCPT	- DRAMA 1516	10	20 A	57	1		0.90	0.40		1	58	20 A	12	RCPT - CORR. 1500A (NOTE 8) R							
RCPT	- LIBRARY 1514G	8	20 A	59	1			1.26	1.44	1	60	20 A	8	RCPT - STOR BAND 1514 R							
RCPT	- BAND 1514	8	20 A	61	1	1.26	1.30			1	62	20 A	8	RCPT - BAND 1514 R							
RCPT	- PRAC./STOR 1514	6	20 A	63	1		1.44	1.30		1	64	20 A	8	RCPT - PRAC. 1514B R							
RCPT	- CORR. 1500A	8	20 A	65	1			1.08	0.36	1	66	20 A	10	RCPT - DRESSING RM. 1513 R							
RCPT	- EXTERIOR BLDG. G	8	20 A	67	1	0.72	0.94			1	68	20 A	8	RCPT - TECH 1511 R							
RCPT	- TECH 1511	8	20 A	69	1		1.08	1.08		1	70	20 A	8	RCPT - TECH 1511 R							
RCPT	- TECH 1511	8	20 A	71	1			0.90	1.10	1	72	20 A	8	MOTORS - TECH 1511 M							
M	MOTORS - TECH 1511	8	20 A	73	1	1.10	0.90			1	74	20 A	8	VAV 14.01-14.18 CONTROLS MI							
RCPT	- LOCKER ROOMS	8	20 A	75	1		1.44	1.00		1	76	20 A	10	HAND DRYER - TLT 1416A (NOTE 10) H							
H	HAND DRYER - TLT 1416A (NOTE 10)	10	20 A	77	1			1.00	1.00	1	78	20 A	10	HAND DRYER - TLT 1416A(NOTE 10) H							
H	HAND DRYER - TLT 1416A(NOTE 10)	10	20 A	79	1	1.00	1.44			1	80	20 A	10	HAND DRYER - TLT 1416A(NOTE 10) H							
RCPT	- CUSTODIAL 1428	10	20 A	81	1		0.54	1.26		1	82	20 A	6	RCPT - AUXILIARY GYM 1605 R							
RCPT	- AUXILIARY GYM 1605	8	20 A	83	1			1.08	1.62	1	84	20 A	6	RCPT - CORR. 1600B R							
MI	EWIC - CORR. 1600B (NOTE 8)	12	20 A	85	1	0.40	0.40			1	86	20 A	12	EWIC - CORR. 1600B (NOTE 8) MI							
H	HAND DRYER - MEN 1607 (NOTE 10)	8	20 A	87	1		1.00	1.00		1	88	20 A	8	HAND DRYER - MEN 1607 (NOTE 10) H							
H	HAND DRYER-WOMEN 1608(NOTE 10)	8	20 A	89	1				1.00	1.00	1	90	20 A	8	HAND DRYER-WOMEN 1608(NOTE 10) H						
RCPT	- EXTERIOR BLDG. D	8	20 A	91	1	0.54	0.36			1	92	20 A	12	TROPHY - LOBBY 1600 R							
R	TROPHY CASE - CORR. 1000	10	20 A	93	1		0.36	1.08		1	94	20 A	8	RCPT - STOR-LOBBY 1600/1605 R							
RCPT	- CONC. 1608	8	20 A	95	1			0.90	0.36	1	96	20 A	12	RCPT - CONC. 1608 R							
RCPT	- CONC. 1608	12	20 A	97	1	0.36	1.00			1	98	20 A	8	HAND DRYER - MEN 1604 (NOTE 10) H							
H	HAND DRYER - MEN 1604 (NOTE 10)	8	20 A	99	1		1.00	1.00		1	100	20 A	8	HAND DRYER-WOMEN 1603(NOTE 10) H							
H	HAND DRYER-WOMEN 1603(NOTE 10)	8	20 A	101	1			1.00	0.40	1	102	20 A	10	EWIC - CORR 1600C (NOTE 8) MI							
RCPT	- CORR. 1600C	6	20 A	103	1	1.08	0.90			1	104	20 A	8	RCPT - STAGE 1602 R							
RCPT	- STAGE 1602	6	20 A	105	1		1.26	1.10		1	106	20 A	8	MOTORS - STAGE 1602 M							
M	MOTORS - STAGE 1602	8	20 A	107	1			1.10	1.08	1	108	20 A	8	RCPT - STAGE 1602 R							
RCPT	- STAGE 1602	10	20 A	109	1	0.54	1.08			1	110	20 A	6	RCPT - THEATER 1601 R							
H	HAND DRYER - THEATER 1601	6	20 A	111	1		1.08	0.90		1	112	20 A	8	RCPT - THEATER 1601 R							
RCPT	- THEATER 1601	8	20 A	113	1			0.72	0.90	1	114	20 A	6	RCPT - CONTROL 1601C R							
RCPT	- CONTROL 1601C	8	20 A	115	1	0.72	0.72			1	116	20 A	6	RCPT - CONTROL 1601C R							
R	REC - CONTROL 1601C	10	20 A	117	1		0.36	1.01		1	118	20 A	12	VAV 14.19-14.20 CONTROLS MI							
MI	ASS. LST. - SOUND 1003D	10	20 A	119	1			0.50	0.50	1	120	20 A	12	SOUND SYSTEM - SOUND 1003D MI							
RCPT	- SOUND 1003D	10	20 A	121	1	1.08	0.36			1	122	20 A	12	RCPT - GYM SEATING 1003S R							
RCPT	- ELEC/STOR 1413A, 1413	12	20 A	123	1		1.08	0.90		1	124	20 A	12	RCPT - MECHANICAL 1411 R							
MI	BAS - MECHANICAL 1411	12	20 A	125	1			0.18	0.50	1	126	20 A	12	RCPT - IDF 1404 MI							
H	HEAT TRATE - CHILLER 1 - (9)	12	20 A	127	1	1.00	1.00			1	128	20 A	12	HEAT TRATE - CHILLER 2 - (9) H							
MI	CONTROLS - CHILLER 1	12	20 A	129	1		0.50	0.50		1	130	20 A	12	CONTROLS - CHILLER 2 MI							
H	HEAT - CHILLER 1	12	20 A	131	1				1.00	1.00	1	132	20 A	12	HEAT - CHILLER 2 H						
RCPT	- IDF 1404	12	20 A	133	1	0.50	0.36			1	134	20 A	12	RCPT - IDF 1404 R							
RCPT	- IDF 1404	12	20 A	135	1		0.36	0.18		1	136	20 A	12	RCPT - IDF 1404 R							
RCPT	- IDF 1404	12	20 A	137	1			0.54	0.36	1	138	20 A	12	RCPT - IDF 1404 R							
MI	MISC.	12	20 A	139	1	0.50	0.36			1	140	20 A	12	RCPT - IDF 1423 R							
RCPT	- IDF 1423	12	20 A	141	1		0.50	0.50		1	142	20 A	12	RCPT - IDF 1423 R							
MI	MISC. IDF 1423	12	20 A	143	1			0.50	0.36	1	144	20 A	12	RCPT - IDF 1423 R							
RCPT	- IDF 1423	12	20 A	145	1	0.54	0.18			1	146	20 A	12	RCPT - IDF 1423 R							
RCPT	- IDF 1423	12	20 A	147	1		0.36	2.00		1	148	20 A	12	RCPT - IDF 1423 R							
				149							150	30 A	6	BLEACHERS SOUTH - GYM MI							
MI	BLEACHERS NORTH - GYM	6	30 A	151	3	2.00	2.00			1	152	20 A	12	FUTURE AV POWER - STAGE 1602 MI							
MI	FUTURE AV POWER - STAGE 1602	12	20 A	155	1		2.00	0.00		1	154	20 A	12	RCPT - WEIGHTS 1501 R							
R	RCPT - GEN MECH, MEZZ 1411A	12	20 A	157	1	0.54	1.00			1	158	20 A	12	RCPT - GEN MECH, MEZZ 1411A R							
RCPT	- DRESSING RM. 1512	12	20 A	159	1		0.36	1.00		1	160	20 A	12	REFRIGERATOR CONC. (NOTE 9) MI							
--	- SPARE	--	15A	161	1			0.00	0.18	1	162	25 A	10	HOT CABINET (NOTE 9) MI							
--	- SPARE	--	20A	163	1	0.00	0.18			1	164	20 A	10	HOT COS MACHINE MI							
--	- SPARE	--	20A	165	1		0.00	1.92		1	166	25 A	10	POPCORN MAKER MI							
--	- SPARE	--	20A	167	1			0.00	1.00	1	168	20 A	12	CONCESSIONS EQUIPMENT MI							
--	- SPARE	--	20A	169	1	0.00	0.00			1	170	20 A	--	- SPARE --							
--	- SPACE ONLY	--	--	171	--			0.00	0.00	1	172	20 A	--	- SPARE --							
--	- SPACE ONLY	--	--	173	--			0.00	0.00	1	174	20 A	--	- SPARE --							
				175		0.60	0.36			1	176	20 A	12	RECEPTACLES R							
M	RCP2	12	20 A	177	3		0.60	1.00		1	178	20 A	12	RCPT - ICE TUB TRAIN 1409 (NOTE 8) MI							
				179				0.60	0.70	1	180	20 A	12	REF. TRAINING 1409 (NOTE 8) MI							

## 1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to replace or replace SPDs that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

## PART 2 - PRODUCTS

## 2.1 GENERAL SPD REQUIREMENTS

- A. SPD with Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.
- C. Comply with UL 1449, latest Edition.
- D. MCOV of the SPD shall be the nominal system voltage.
- E. Comply with IEEE C62.41.1: 2002, "Guide on the Surge Environment in Low-Voltage (1000V and less) AC Power Circuits".
- F. Comply with IEEE C62.41.2: 2002, "Recommended Practice on Characterization of Surges in Low-Voltage (1000V and Less) AC Power Circuits".
- G. Comply with IEEE C62.45: 2002, "Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1000V and Less) AC Power Circuits".
- H. Comply with IEEE C62.62: 2000, "Standard Test Specifications for Surge Protective Devices for Low Voltage (1000V and Less) AC Power Circuits".
- I. Comply with IEEE C62.72: 2007, "Guide for the Application of Surge Protective Devices for Low Voltage (1000V and Less) AC Power Circuits".
- J. Comply with NEMA LS 1.
- K. Comply with UL 769 9<sup>th</sup> Edition, Printed Wiring Boards".
- L. Comply with UL 1283 5th Edition, "Electromagnetic Interference Filters".

## 2.2 SERVICE ENTRANCE SUPPRESSOR

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. ASCO - Emerson
  2. Current Technology Inc.
  3. SOLA
  4. RayCap
  5. LEA International.
- B. SPDs: Comply with UL 1449, Type 2.
- C. SPDs: Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 1449, Type 2