Panel ID: A | Voltage: 208 / 120 | Panel Type: NQOD
Location: B.O.H./HALL | Phase: 3 | Type Encl.: NEMA-1
Mounting: SURFACE | Wire: 4
Main Type: 200A MCB | Main Size: 225 Amps

All phases to be balanced to within 10% using actual connected loads.

CKT NO.	BRANCH CIRCUIT DESCRIPTION	CKT BKR SIZE	CKT BKR OPTION	N.E.C. LOAD (KVA)	ACTUAL LOAD (KVA)	PHASE	ACTUAL LOAD (KVA)	N.E.C. LOAD (KVA)	CKT BKR OPTION	CKT BKR SIZE	BRANCH CIRCUIT DESCRIPTION	CKT NO.
1	RTU-1	30/3	HR	2.352	2.352	A	4.308	4.308	HR	50/3	RTU-2	2
3	-- --	--	--	2.352	2.352	B	4.308	4.308	--	--	-- --	4
5	-- --	--	--	2.352	2.352	C	4.308	4.308	--	--	-- --	6
7	P.O.S. REC	20/1		0.900	0.900	A	0.400	0.400	LC-1	20/1	SHOW WINDOW LED MONITOR	8
9	BACKWRAP REC	20/1		0.180	0.180	B	0.000	0.000		20/1	SPARE	10
11	SPARE	20/1		0.000	0.000	C	0.000	0.000		20/1	SPARE	12
13	BACKWRAP REC	20/1		0.180	0.180	A	0.360	0.360		20/1	WRITING DESK REC	14
15	BACKWRAP TV REC	20/1		0.400	0.400	B	0.540	0.540		20/1	WRITING DESK REC	16
17	TC-1/LC-1	20/1	LD	0.200	0.200	C	0.044	0.044	LC-1	20/1	SHOW WINDOW LIGHTS	18
19	SALES WALL LIGHTS	20/1		0.561	0.561	A	1.200	1.200	LC-1	20/1	EXTERIOR SIGN	20
21	SALES LIGHTS (EM/EX)	20/1	LD	1.152	1.152	B	2.844	2.844	HR	35/3	RTU-3	22
23	LAB/SATDRY LTS (EM/EX)	20/1	LD	0.320	0.320	C	2.844	2.844	--	--	-- --	24
25	SHOW WINDOW REC	20/1	LC-1	0.540	0.540	A	2.844	2.844	--	--	-- --	26
27	SALES GENERAL RECS	20/1		0.360	0.360	B	0.000	0.000		20/1	SPARE	28
29	INTERIOR SIGN	20/1		0.400	0.400	C	0.000	0.000			SPACE	30
31	DISPLAY CASE REC	20/1		0.900	0.900	A	0.000	0.000			SPACE	32
33	DISPLAY CASE REC	20/1		1.260	1.260	B	0.000	0.000			SPACE	34
35	RTU REC	20/1		0.360	0.360	C	0.000	0.000			SPACE	36
37	PANEL 'C'	100/3		8.760	8.760	A	5.396	5.396		100/3	PANEL 'B'	38
39	-- --	--		5.580	5.580	B	4.860	4.860		--	-- --	40
41	-- --	--		6.800	6.800	C	4.800	4.800		--	-- --	42

Actual Load Panel Summary
Phase A: 28.7 KVA
Phase B: 23.8 KVA
Phase C: 22.4 KVA
Total: 75.0 KVA

N.E.C. Load Panel Summary
Phase A: 28.7 KVA 239.2 AMPS
Phase B: 23.8 KVA 198.6 AMPS
Phase C: 22.4 KVA 186.9 AMPS
Total: 75.0 KVA 208.1 AMPS

Breaker Options (If Used):
LC# - Wire Thru Lighting Contactor #
LO - Lock-On Device
IG- Isolated Ground Conductor
LC# - Wire Thru Lighting Contactor#
HR - HACR Rated Circuit Breaker

Panel ID: B | Voltage: 208 / 120 | Panel Type: NQOD
Location: B.O.H./HALL | Phase: 3 | Type Encl.: NEMA-1
Mounting: SURFACE | Wire: 4
Main Type: MLO | Main Size: 100 Amps

All phases to be balanced to within 10% using actual connected loads.

CKT NO.	BRANCH CIRCUIT DESCRIPTION	CKT BKR SIZE	CKT BKR OPTION	N.E.C. LOAD (KVA)	ACTUAL LOAD (KVA)	PHASE	ACTUAL LOAD (KVA)	N.E.C. LOAD (KVA)	CKT BKR OPTION	CKT BKR SIZE	BRANCH CIRCUIT DESCRIPTION	CKT NO.
1	WAITING ROOM REC	20/1		0.540	0.540	A	0.700	0.700		20/1	REFRIGERATOR REC	2
3	SPARE	20/1		0.000	0.000	B	1.200	1.200		20/1	MICROWAVE REC	4
5	HALL #105 REC	20/1		0.360	0.360	C	0.100	0.100		20/1	SECURITY ALARM	6
7	BOH/HALL #110, 110b, 111 REC	20/1		0.540	0.540	A	0.400	0.400		20/1	RECEPTION TV REC	8
9	RR/OFFICE/HALL LTS&FANS	20/1		0.560	0.560	B	0.720	0.720		20/1	RECEPTION REC	10
11	STORG/HALL/RECPTN/WTG LTS	20/1	LD	0.320	0.320	C	0.540	0.540		20/1	PRETEST ROOM REC	12
13	RESTROOM REC	20/1		0.720	0.720	A	0.720	0.720		20/1	CONTACT ROOM REC	14
15	OFFICE 119 REC	20/1		0.720	0.720	B	1.260	1.260		20/1	EXAM RM #1 REC	16
17	TELEPHONE BD REC	20/1	LD	0.720	0.720	C	1.260	1.260		20/1	EXAM RM #2 REC	18
19	EXAM LTS & FANS	20/1	LD	0.276	0.276	A	0.000	0.000		20/1	SPARE	20
21	SPARE	20/1		0.000	0.000	B	0.000	0.000		20/1	SPARE	22
23	WATER HEATER	20/2		1.500	1.500	C	0.000	0.000		20/1	SPARE	24
25	-- --	--		1.500	1.500	A	0.000	0.000			SPACE	26
27	EWC REC	20/1		0.400	0.400	B	0.000	0.000			SPACE	28
29	SPACE			0.000	0.000	C	0.000	0.000			SPACE	30
31	SPACE			0.000	0.000	A	0.000	0.000			SPACE	32
33	SPACE			0.000	0.000	B	0.000	0.000			SPACE	34
35	SPACE			0.000	0.000	C	0.000	0.000			SPACE	36
37	SPACE			0.000	0.000	A	0.000	0.000			SPACE	38
39	SPACE			0.000	0.000	B	0.000	0.000			SPACE	40
41	SPACE			0.000	0.000	C	0.000	0.000			SPACE	42

Actual Load Panel Summary
Phase A: 5.4 KVA
Phase B: 4.9 KVA
Phase C: 4.8 KVA
Total: 15.1 KVA

N.E.C. Load Panel Summary
Phase A: 5.4 KVA 45.0 AMPS
Phase B: 4.9 KVA 40.5 AMPS
Phase C: 4.8 KVA 40.0 AMPS
Total: 15.1 KVA 41.8 AMPS

Breaker Options (If Used):
LC# - Wire Thru Lighting Contactor #
LO - Lock-On Device
IG- Isolated Ground Conductor
Connnected to Building Steel
HR - HACR Rated Circuit Breaker

Panel ID: C | Voltage: 208 / 120 | Panel Type: NQOD
Location: LAB | Phase: 3 | Type Encl.: NEMA-1
Mounting: SURFACE | Wire: 4
Main Type: MLO | Bus Amperage: 100 Amps

All phases to be balanced to within 10% using actual connected loads.

CKT NO.	BRANCH CIRCUIT DESCRIPTION	CKT BKR SIZE	CKT BKR OPTION	N.E.C. LOAD (KVA)	ACTUAL LOAD (KVA)	PHASE	ACTUAL LOAD (KVA)	N.E.C. LOAD (KVA)	CKT BKR OPTION	CKT BKR SIZE	BRANCH CIRCUIT DESCRIPTION	CKT NO.
1	SPARE	20/1		0.000	0.000	A	1.000	1.000		20/1	LENS CENTER LOCATE #L04	2
3	VERTOMETER #L30	20/1		0.200	0.200	B	0.180	0.180		20/1	COMPUTER #L01	4
5	BEAN PAN #L34 & FRAME BFR #L54	20/1		1.240	1.240	C	0.180	0.180		20/1	EMPLOYEE TIME CLOCK #L02	6
7	STKG KIT #L52 & FLEX DRILL #L53	20/1		1.300	1.300	A	1.000	1.000		20/1	LENS MAKER #L09 (CS-7)	8
9	DBI DYE TANK #L41	20/1		1.800	1.800	B	1.000	1.000		20/1	LAP SERVICE SAVER #L05	10
11	CERAMIC HAND EDGER #L37	20/1		0.780	0.780	C	0.720	0.720		20/1	BLOCKER #L07 (SURFACE)	12
13	440 WRCD EDGER #L35	20/1		1.200	1.200	A	1.560	1.560		20/1	LENS REC #L16	14
15	CS-7 BLKR #L31 & VERTMTR #L30	20/1		0.440	0.440	B	1.600	1.600		20/1	CYLINDER MACHINE #L18	16
17	LENS COATING #L38	20/1		0.720	0.720	C	1.600	1.600		20/1	CYLINDER MACHINE #L18	18
19	BACKSIDE COATER #L40	20/1		0.960	0.960	A	0.180	0.180		20/1	CHILLER #L23 (OM-003-8)	20
21	SPACE	20/1		0.000	0.000	B	0.180	0.180		20/1	RECLAIN TANK #L20	22
23	SPACE	20/1		0.000	0.000	C	1.560	1.560		20/2	AIR COMPRESSOR	24
25	SPACE	20/1		0.000	0.000	A	1.560	1.560		--	-- --	26
27	SPACE	20/1		0.000	0.000	B	0.180	0.180		20/1	GENREAL LAB REC	28
29	SPACE	20/1		0.000	0.000	C	0.000	0.000		20/1	SPARE	30
31	SPACE	20/1		0.000	0.000	A	0.000	0.000		20/1	SPARE	32
33	SPACE	20/1		0.000	0.000	B	0.000	0.000		20/1	SPARE	34
35	SPACE	20/1		0.000	0.000	C	0.000	0.000		20/1	SPARE	36
37	SPACE	20/1		0.000	0.000	A	0.000	0.000			SPACE	38
39	SPACE	20/1		0.000	0.000	B	0.000	0.000			SPACE	40
41	SPACE	20/1		0.000	0.000	C	0.000	0.000			SPACE	42

Actual Load Panel Summary
Phase A: 8.8 KVA
Phase B: 5.6 KVA
Phase C: 6.8 KVA
Total: 21.1 KVA

N.E.C. Load Panel Summary
Phase A: 8.8 KVA 73.0 AMPS
Phase B: 5.6 KVA 46.5 AMPS
Phase C: 6.8 KVA 56.7 AMPS
Total: 21.1 KVA 58.7 AMPS

Breaker Options (If Used):
TC - Wire Thru TimeClock
LO - Lock-On Device
IG- Isolated Ground Conductor
Connected to Building Steel
HR - HACR Rated Circuit Breaker

ELECTRICAL LOAD SUMMARY

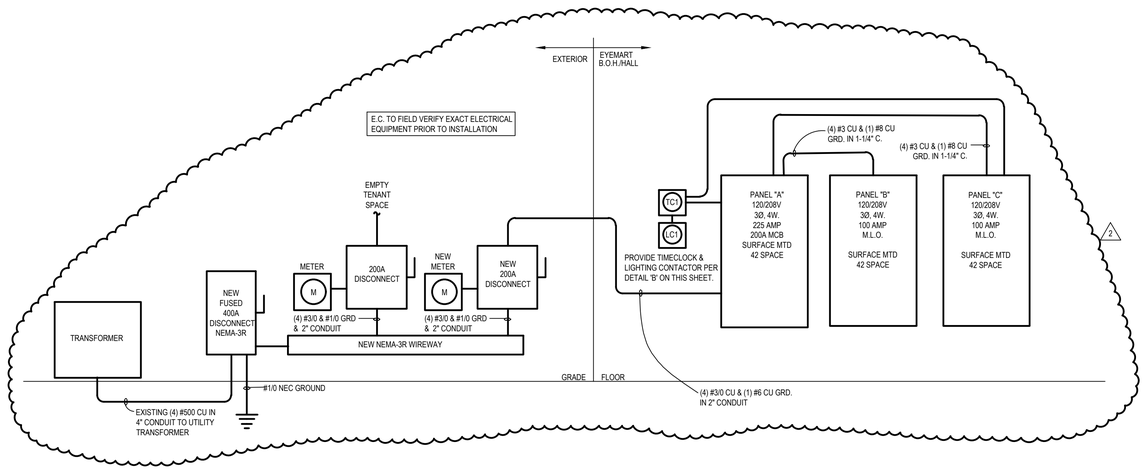
DESCRIPTION	CONNECTED KW	POWER FACTOR	CONNECTED DEMAND KVA	N.E.C. CONNECTED KVA	N.E.C. DEMAND FACTOR	N.E.C. FEEDER DEMAND KVA
LIGHTING	4.435	1.0	4.435	4.435	1.25	5.544
0 LF OF TRACK LIGHTING	0.000	1.0	0.000	0.000	1.25	0.000
RECEPTACLES	30.440	1.0	30.440	30.440	1.0 < 10 KW 0.5 REMNDR	20.220
MOTORS	7.880	0.9	8.756	8.756	125% OF LARGEST MOTOR	8.756
FIXED ELEC. SPACEHEATING *	0.000	1.0	0.000	0.000	1.0	0.000
AIR CONDITIONING SYSTEM *	28.512	1.0	28.512	28.512	125% OF LARGEST MOTOR	29.587
ELECTRIC WATER HEATER	3.000	1.0	3.000	3.000	1.25	3.750
MISCELLANEOUS	0.698	1.0	0.698	0.698	1.0	0.698
TOTALS:	74.965		75.841	75.841		68.554

NOTES:
* USE GREATER OF THE LF - LINEAR FEET

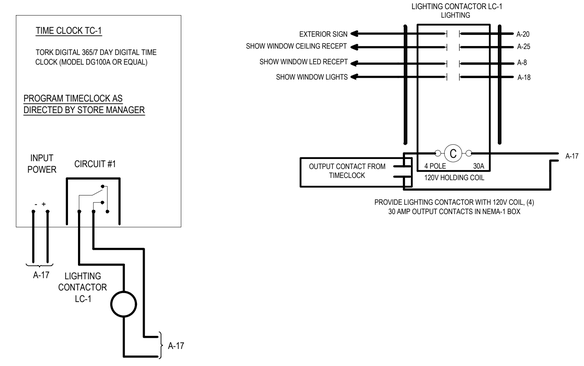
N.E.C. DEMAND KVA x 1000 / SYSTEM VOLTAGE x 1.73 = MIN FEEDER AMPS

ELECTRICAL SERVICE VOLTAGE = 208 V - 3 PHASE
MINIMUM ELECTRICAL SERVICE AMPERAGE = 200 AMPS

68.554 KVA x 1000 / 208 x 1.73 = 190.4 AMPS



A ELECTRIC RISER DIAGRAMS



B LIGHTING CONTROL WIRING DIAGRAM

ENGINEER OF RECORD
Point One Design, Ltd.
Consulting Engineers
2800 Corporate Exchange Dr.
Suite 270
Columbus, Ohio 43231
614-540-3500 Fax 614-540-3502
columbus@pointonedesign.com
9941 York Theta Drive
North Royalton, Ohio 44133
440-230-1800 Fax 440-230-1831
cleveland@pointonedesign.com

CONSULTANT

PROJECT NAME

EYEMART EXPRESS
STORE #:
SITE LOCATION:

1041 NE SAM WALTON DR LEE'S SUMMIT, MO 64086

ENGINEER OF RECORD

STATE OF MISSOURI
JAMES A. KNOCHEL
NUMBER PE-2007012518
REGISTERED PROFESSIONAL ENGINEER
1-14-21

* ■ 10-28-2020 Permit
* ■ 1 10-29-2020 Bldg. Dept. Comments
* ■ 2 01-14-2021 Revision

PERMIT

* INDICATES AFFECTED SHEETS

ELECTRICAL DETAILS

DATE
01-14-2021
PROJECT NUMBER
EYEM101520LSMO
SHEET NUMBER
E4.1