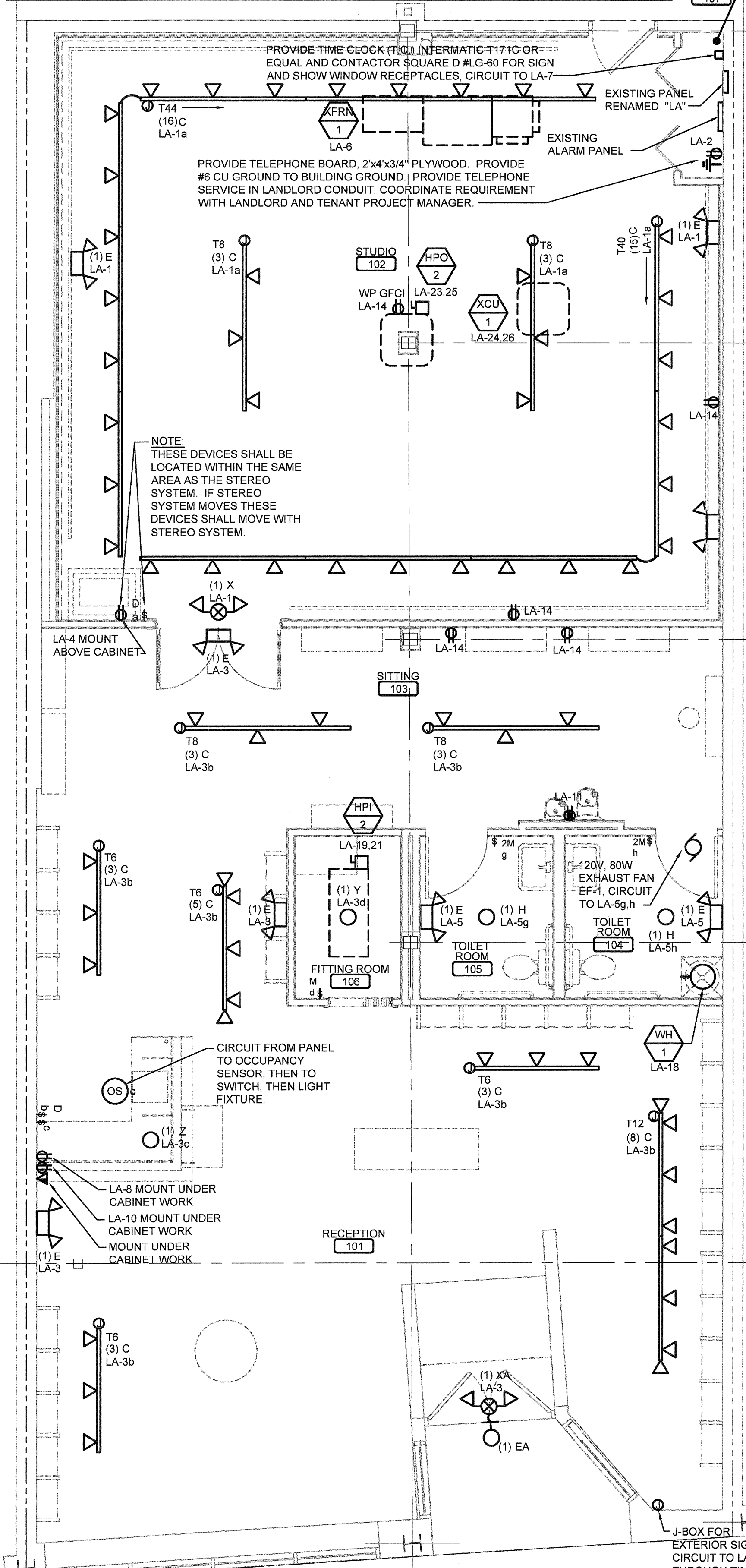
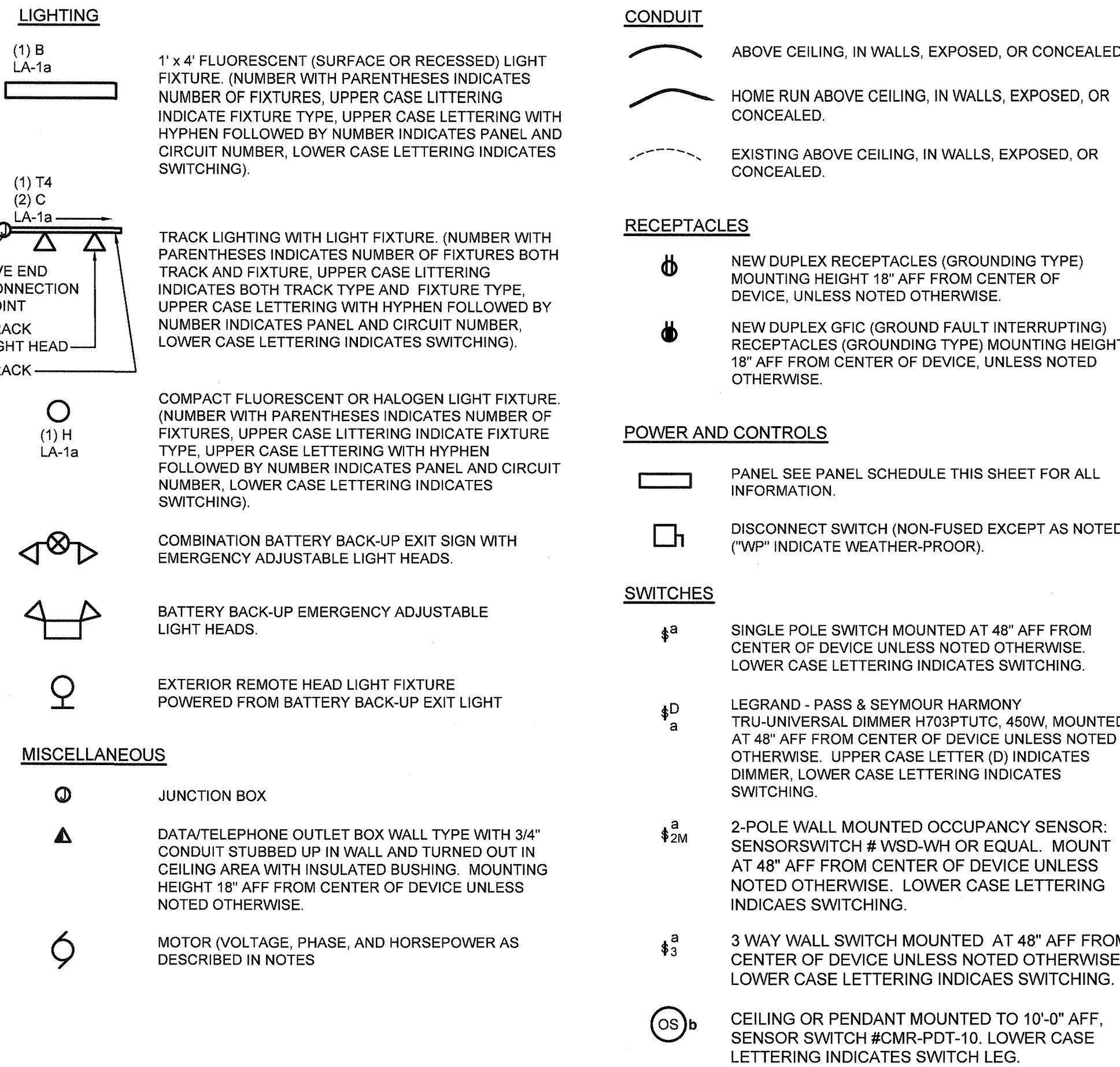


EQUIPMENT SCHEDULE		FILE: 316157.xsm							
PLAN MARK	EQUIPMENT SERVED	LOAD	VOLT/ PHASE	FED BY	DISC BY	MCA	MOCPPD	FEEDER	REMARKS
XCU-1	EXISTING CONDENSING UNIT	7.78KVA	208/1	LA	EX	37.4A	50A	(2)#6,#8G 3/4" C	EXISTING DS TO REMAIN
XFRN-1	EXISTING FURNACE	1.79KVA	120/1	LA	EX	14.9A	60A	(2)#12,#12G 1/2" C	EXISTING DS TO REMAIN
HPI-2	HEAT PUMP INDOOR	10.48KVA	208/1	LA	EC	50.4A	60A	(2)#4,#8G 1" C	60A NON-FUSED
HPO-2	HEAT PUMP OUTDOOR	6.49KVA	208/1	LA	EC	31.2A	50A	(2)#6,#8G 3/4" C	60A NON-FUSED
WH 1	WATER HEATER	1.64KVA	120/1	LA	EC	13.7A	20A	(2)#12,#12G 1/2" C	20A TOGGLE SW

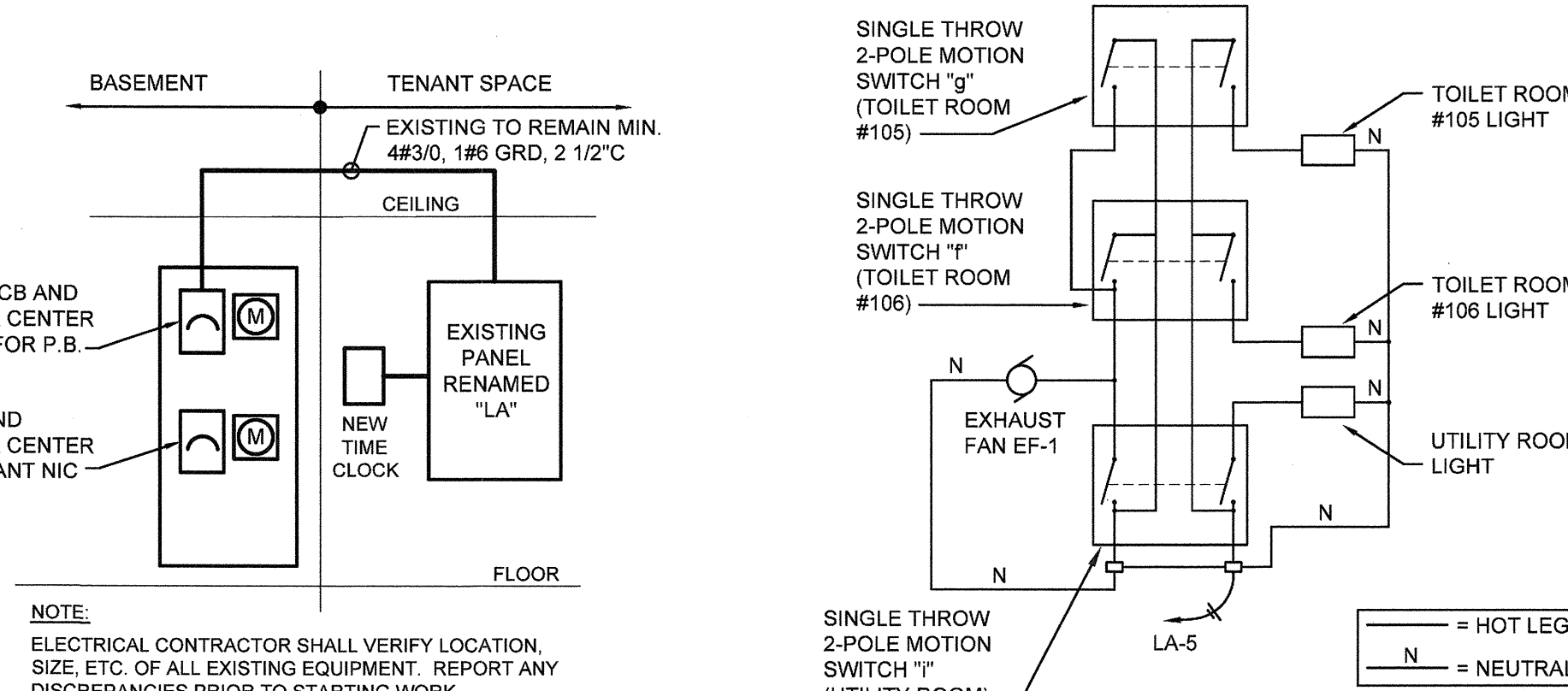


**1 POWER AND LIGHTING**  
SCALE: 1/4" = 1'-0"

### ELECTRICAL SYMBOLS



**2 RISER DIAGRAM**  
SCALE: NOT TO SCALE



**3 EXH. FAN WIRING DIAGRAM**  
SCALE: NOT TO SCALE

### LIGHTING FIXTURE SCHEDULE

PLAN MARK	MANUFACTURER	CATALOG NO.	LAMP DATA		MOUNTING HEIGHT TO BOTTOM OF LIGHT FIXTURE	TOTAL WATTS PER	FIXT COUNT
			** NO.	WATTAGE & LAMPS			
C	NORA	NTH-109B	LED	1	LED14E2P9303KNFLB	14	65
E	SIMKAR	SEM-V	LAMPS FURNISHED WITH FIXTURE		WALL MINIMUM OF 1'-0" BELOW CEILING OR 13'-6" IN AREAS WITH NO CEILING	3.4	7
EA	SIMKAR	REM2WP	LAMPS FURNISHED WITH FIXTURE		REMOTE HEADS WALL MINIMUM AT 1'-0" ABOVE DOOR JAMB CONNECTED TO BATTERY SIDE OF EXIT LIGHT	0	1
H	GEORGE KOVACS	P854-084	CF	1	SCF23EL/MINITYMST	23	2
T6	NORA	NT-302B	6" TRACK WITH: (1) NT-316B END FEED, (1) NT-348/1A END FEED WITH 1A CURRENT LIMITER		SURFACE UNLESS NOTED OTHERWISE (PENDANT BY OWNER)	---	4
T8	NORA	NT-303B	8" TRACK WITH: (1) NT-316B END FEED, (1) NT-348/1A END FEED WITH 1A CURRENT LIMITER		SURFACE UNLESS NOTED OTHERWISE (PENDANT BY OWNER)	---	4
T12	NORA	NT-303B + (1) NT302B + (1) NT303B TRACK WITH: (1) NT-316B END FEED, (1) NT-348/1A END FEED WITH 1A CURRENT LIMITER, (1) NT-310B CONNECTOR, (1) NT-313B CONNECTOR	12" TRACK: (1) NT301B + (1) NT302B + (1) NT303B TRACK WITH: (1) NT-316B END FEED, (1) NT-348/1A END FEED WITH 1A CURRENT LIMITER, (1) NT-310B CONNECTORS, (1) NT-313B CONNECTOR		SURFACE UNLESS NOTED OTHERWISE (PENDANT BY OWNER)	---	1
T40	NORA	NT-302B + (1) NT303B + (3) NT304B TRACK WITH: (1) NT-316B END FEED, (1) NT-348/2.5A END FEED WITH 2.5A CURRENT LIMITER, (3) NT-310B CONNECTORS, (1) NT-313B CONNECTOR	40" TRACK: (1) NT-302B + (1) NT303B + (3) NT304B TRACK WITH: (1) NT-316B END FEED, (1) NT-348/2.5A END FEED WITH 2.5A CURRENT LIMITER, (4) NT-310B CONNECTORS, (1) NT-313B CONNECTOR		SURFACE UNLESS NOTED OTHERWISE (PENDANT BY OWNER)	---	1
T44	NORA	NT-303B + (4) NT304B TRACK WITH: (1) NT-316B END FEED, (1) NT-348/2.5A END FEED WITH 2.5A CURRENT LIMITER, (4) NT-310B CONNECTORS, (1) NT-313B CONNECTOR	44" TRACK: (2) NT303B + (4) NT304B TRACK WITH: (1) NT-316B END FEED, (1) NT-348/2.5A END FEED WITH 2.5A CURRENT LIMITER, (4) NT-310B CONNECTORS, (1) NT-313B CONNECTOR		SURFACE UNLESS NOTED OTHERWISE (PENDANT BY OWNER)	---	1
X	SIMKAR	SCL2RW	LAMPS FURNISHED WITH FIXTURE		WALL 6" ABOVE DOOR OR SURFACE MOUNTED ON CEILING	4.4	1
XA	SIMKAR	SCL2RW-REM	LAMPS FURNISHED WITH FIXTURE		WALL 6" ABOVE DOOR OR SURFACE MOUNTED ON CEILING	4.4	2
Y	CANARM	IPL104A01CH	LED	1	SLED813C/BENT/DIM827	6	2
Z	POSSINI	59774	H	3	LAMPS INCLUDED	60	1

\*\* LAMPS: I - INCANDESCENT F - FLUORESCENT CF - COMPACT FLUORESCENT H - HALOGEN MH - METAL HALIDE HPS - HIGH PRESSURE SODIUM.

NOTES:  
 1. ALL FLUORESCENT LAMPS BASED ON PHILIPS LIGHTING COMPANY.  
 2. ALL LIGHT FIXTURES, TRACKS AND ACCESSORIES ARE FURNISHED AND INSTALLED BY CONTRACTOR. FINALIZE SELECTION FIXTURES 'H', 'Y' AND 'Z' WITH TENANT PRIOR TO PURCHASING.  
 3. ALL FLUORESCENT LUMINAIRES SHALL BE PROVIDED WITH DISCONNECTING MEANS AS REQUIRED PER NEC 410.130(G).

### ELECTRICAL SPECIFICATIONS

- GENERAL**
  - CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES REQUIRED FOR THE EXECUTION OF HIS WORK.
  - THE WORK SHALL INCLUDE FURNISHING ALL LABOR, MATERIAL, EQUIPMENT AND SERVICES TO CONSTRUCT AND INSTALL THE EQUIPMENT AND SYSTEMS NECESSARY TO COMPLETE THE WORK INDICATED ON DRAWINGS.
  - IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS TO PROVIDE A WORKING INSTALLATION IN EVERY DETAIL AND ALL ITEMS REQUIRED FOR SUCH AN INSTALLATION SHALL BE FURNISHED WHETHER OR NOT SPECIFICALLY SHOWN OR MENTIONED.
  - THE INSTALLATION SHALL COMPLY WITH THE APPLICABLE ORDINANCES OF THE LOCAL AUTHORITIES, ALL STATE REQUIREMENTS, THE REGULATIONS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS AND THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, ANYTHING IN THESE SPECIFICATIONS OR DRAWINGS TO THE CONTRARY NOTWITHSTANDING.
  - BEFORE SUBMITTING THE PROPOSAL FOR HIS WORK, THE CONTRACTOR SHALL VISIT THE SITE. HE SHALL SATISFY HIMSELF AS TO THE NATURE AND LOCATION OF THE WORK AND THE GENERAL CONDITIONS. HE SHALL HAVE FULL KNOWLEDGE AS TO TRANSPORTATION, DISPOSAL, HANDLING AND STORAGE OF MATERIALS. AVAILABILITY OF WATER, ELECTRIC POWER AND ALL OTHER FACILITIES IN THE AREA WHICH WILL HAVE A BEARING ON THE PERFORMANCE OF HIS WORK AND THE CONTRACT FOR WHICH HE SUBMITS A PROPOSAL. FAILURE BY THE CONTRACTOR TO ACQUAINT HIMSELF WITH ALL AVAILABLE INFORMATION SHALL NOT RELIEVE HIM OF ANY RESPONSIBILITY FOR PERFORMING HIS WORK PROPERLY. ADDITIONAL COMPENSATION SHALL NOT BE ALLOWED FOR CONDITIONS INCREASING THE CONTRACTOR'S COST, WHERE THE CONDITION WAS OBVIOUS AND COULD HAVE BEEN DISCOVERED BY HIM IF HE HAD VISITED THE PROJECT AND HAD THOROUGHLY INFORMED HIMSELF OF ALL EXISTING CONDITIONS WHICH WOULD AFFECT HIS WORK.
- WIRE**
  - ALL BUILDING WIRE SHALL BE 600 VOLTS COPPER, TYPE THWN OR THW, UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS. THE MINIMUM SIZE CONDUCTOR FOR LIGHTING, POWER AND CONTROL SHALL BE NUMBER 12 AWG.
  - UPSIE BRANCH CIRCUIT WIRE FOR A MAXIMUM VOLTAGE DROP OF 3%.
- CONDUIT**
  - CONDUITS MUST BE RIGID OR INTERMEDIATE METAL CONDUIT (IMC) FROM FINISH FLOOR TO A POINT 5'-0" ABOVE FINISH FLOOR IF EXPOSED, OTHERWISE CONDUIT MAY BE GALVANIZED THIN WALL CONDUIT OR ELECTRO-METALLIC TUBING (EMT). CONDUIT BELOW FLOOR MAY BE PVC. PVC CONDUIT MUST BE COUPLED TO RIGID STEEL BEFORE RISING THRU SLAB. PVC NOT PERMITTED ABOVE SLAB.
  - CONDUIT IS TO BE RUN EITHER PARALLEL OR PERPENDICULAR TO ONE SIDE OF BUILDING, AND AS HIGH AS POSSIBLE. CONCEALED ABOVE THE CEILING, WHERE CONDUIT CANNOT BE CONCEALED ABOVE THE CEILING, CONTRACTOR SHALL NOTIFY OWNER FOR DIRECTION. CONDUIT SHALL NOT BE ROUTED EXPOSED ABOVE THE ROOF DECK.
  - COMMERCIAL METAL DEVICES THAT WILL HOLD PERMANENTLY SHALL BE USED IN ANCHORING CONDUIT TO MASONRY OR CONCRETE. WOODEN PUGS WILL NOT BE PERMITTED, AND THE ROOF DECK SHALL NOT BE PENETRATED.
  - ALL CONDUIT SHALL BE MINIMUM 1/2", UNLESS OTHERWISE NOTED, AND AS REQUIRED BY THE "NEC" CONDUIT FILL TABLES.
  - THE USE OF ROMEX SHALL NOT BE PERMITTED.
  - FINAL CONNECTION TO ROOF TOP EQUIPMENT MAY BE MADE WITH FLEXIBLE CONDUIT PER CODE.
  - IF ROOF PENETRATIONS ARE REQUIRED TO SERVICE THE RTU'S, THE CONTRACTOR SHALL EMPLOY A ROOFING CONTRACTOR. PROVIDE WEATHER TIGHT PITCH POCKETS AND EXTEND GROUNDED CONDUIT AND SEAL TIGHT TO RTU DISCONNECTS ETC.
- POWER EQUIPMENT**
  - ALL NEW POWER EQUIPMENT SHALL BE COMPATIBLE WITH EXISTING EQUIPMENT.
  - NEW PANEL BOARD SHALL BE SQUARE 'D' I-LINE SERIES, EATON, GE, OR SIEMENS.
  - SAFETY SWITCHES SHALL BE NEMA 3R, HEAVY DUTY, AS MANUFACTURED BY SQUARE 'D', EATON, GE, OR SIEMENS.
- POWER**
  - THE CONTRACTOR SHALL PROVIDE ALL POWER DEVICES AS SHOWN ON THE DRAWINGS, IN COMPLIANCE WITH ALL OTHER NOTES SHOWN ON THE DRAWINGS, AND CONNECT AS SHOWN ON THE DRAWINGS.

### ELECTRICAL GENERAL NOTES

- BEFORE SUBMITTING THE BID PROPOSAL, THE ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE AND FULLY ACQUAINT HIMSELF WITH THE JOB CONDITIONS AND VERIFY SERVICE CONNECTIONS, INCLUDING ALL NECESSARY PULL BOXES, SIZE AND NUMBER OF CONDUITS AND CONDUCTORS, SWITCHGEAR, METERING, CABLE CHARGES ETC., WHETHER SHOWN ON DRAWINGS OR NOT BUT REQUIRED BY SERVICE UTILITY CO. TO MAKE A COMPLETE AND OPERATING ELECTRICAL SERVICE WITHOUT ADDITIONAL COST TO THE OWNER. VERIFY SERVICES AND CHARGES WITH POWER AND TELEPHONE COMPANIES.
- CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF ALL OTHERS TRADES AND SHALL INSTALL LIGHTING FIXTURES AS SHOWN ON THE DRAWINGS, AND ACCOMMODATE FIXTURES WITH OTHER EQUIPMENT INSTALLATIONS. PRIOR TO FINISH OF EFFECTED WORK, CONTRACTOR SHALL INSTRUCT THE OWNER AND/OR MANAGER ON THE USE AND MAINTENANCE OF THE ELECTRICAL SYSTEM.
- CONTRACTOR SHALL VERIFY ALL REQUIREMENTS WITH OTHER TRADES EQUIPMENT AND WITH MECHANICAL DRAWINGS AND SPECIFICATIONS, AND SHALL PROVIDE ALL ITEMS REQUIRED BY THAT CONTRACTOR FOR COMPLETE INSTALLATION.
- RUNNING OVER CURRENT PROTECTION AND DISCONNECT MEANS SHALL BE INSTALLED ON ALL MOTORS TO COMPLY WITH CODE.
- ALL DISCONNECT SWITCHES SHALL BE 'HORSEPOWER RATED' FOR THE MOTOR CONNECTED.
- FLUORESCENT BALLASTS SHALL COMPLY WITH ALL APPLICABLE STANDARDS, AND CODES.
- CIRCUIT BREAKERS IN LIGHTING PANELS CONTROLLING FLUORESCENT FIXTURES NOT WITHIN SIGHT OF PANEL SHALL HAVE APPROVED MEANS FOR LOCKING IN THE OPEN POSITION.
- ELECTRICAL WORK AND MATERIALS SHALL COMPLY WITH THE LATEST "NEC" AND ALL LOCAL CODES AND ORDINANCES. IN CASES OF CONFLICT AMONG REQUIREMENTS, THE MOST RESTRICTIVE SHALL APPLY.
- LIGHTING FIXTURES AND ELECTRICAL DEVICES FOR USE OUTSIDE THE BUILDING SHALL BE WEATHERPROOF.
- GROUND ELECTRICAL EQUIPMENT PER "NEC" AND LOCAL CODE REQUIREMENTS.
- ALL CONDUCTORS SHALL BE # 12 AWG WITH INSULATION PER SPECIFICATIONS, EXCEPT AS OTHERWISE NOTED OR AS REQUIRED FOR VOLTAGE DROP. SEE SPECIFICATION. ALL CONDUIT SHALL BE 1/2" MINIMUM EXCEPT AS OTHERWISE NOTED OR AS REQUIRED FOR CONDUCTORS.
- CONTRACTOR SHALL PROVIDE ALL WIRING TO ALL SIGNS AND SHALL MAKE FINAL CONNECTIONS TO ALL SIGNS. SIGNS ARE PROVIDED BY VENDORS, CONTRACTOR SHALL COORDINATE LOCATION OF ROUGH-UP WITH SIGN VENDOR.
- THE WORDS "SHALL PROVIDE" INDICATES "FURNISH AND INSTALLED"
- IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO VERIFY LANDLORDS PROVIDED FIRE ALARM SYSTEM, AND TO PROVIDE ANY AND ALL ADDITIONAL DEVICES AND EQUIPMENT NECESSARY TO PROVIDING A WORKABLE AND COMPATIBLE SYSTEM, WHICH MAY INCLUDE CONTRACTING WITH A THIRD PARTY VENDOR.
- EMERGENCY LIGHT FIXTURES AND EXIT SIGNS SHALL BE WIRED AHEAD OF LOCAL SWITCHES AND CONTACTOR CONTROL PER N.E.C.

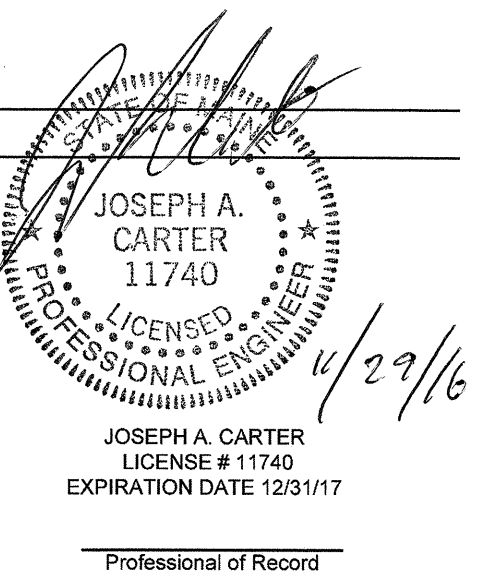
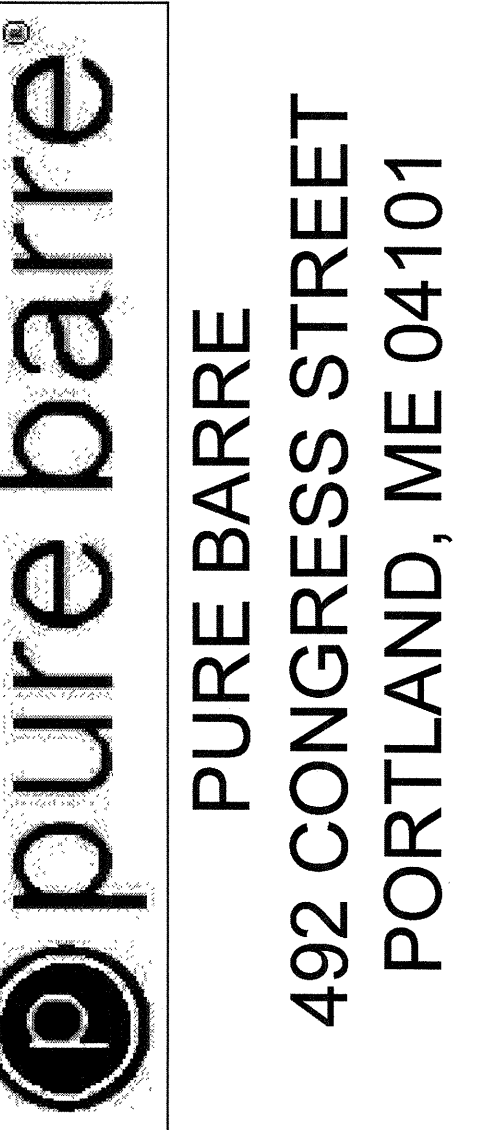
CONTROL		MOUNT: FLUSH		120/208 3-PHASE, 4W		PANEL LA		CAPACITY: 200A		INT CAP: EXISTING		CONTROL	
CKT	LG	REC	HVAC	MISC	NP	DESCRIPTION	AMP	POLE	PH	DESCRIPTION	LG	REC	CKT
1	0.5					STUDIO LTG	20	1	A	20	0.2		2
3	1.2					RECEPTION LTG	20	1	B	20	0.2		4
5	0.5	0.1				BACK ROOMS LTG	20	1	C	20	0.9		6
7				0.1		TIME CLOCK	20	1	A	20	0.2		8
9	1.2	0.2				EXTERIOR SIGN	20	1	B	20	0.2		10
11						DRINK FOUNTAIN	20	1	C	20			12
13		0.1				EXISTING ALARM PNL	20	1	A	20	0.6	0.1	14
16						SPARE	20	1	B	20			16
17						SPARE	20	1	C	20			18
19			5.2			HPI-2	60	2	A	20			20
21			5.2			HPI-2	60	2	B	20			22
23			3.2			HPO-2	60	2	C	60	3.9		24
25			3.2			HPO-2	60	2	A	60	3.9		26
27						SPARE	20	1	B	20			28
29						SPARE	20	1	C	20			30
PHASE BALANCE		LOAD TYPE		CONNECTED		DEMAND		DEMAND FORMULA		TOTAL LOAD		DEMAND	
φ	LOAD	%	RECEPTACLE	3.4 KVA	4.3 KVA	10KVA + 60% REMAINDER NEC 220.44	32.7 KVA	28.4KVA					
A	11.8 KVA	42%	HVAC	26.7 KVA	20.8 KVA	LOAD X 80% (USED MCA IN CALCULATION)	90.7A	78.8A					
B	7.8 KVA	27%	MISC	1.8 KVA	1.8 KVA	LOAD X 100% NEC 210.19 NON-CONT.							
C	9.0 KVA	32%	NP	0.0 KVA	0.0 KVA	NONCOINCIDENTAL LOADS NEC 220.80	316157.xsm						

NOTES:  
 A. THIS IS AN EXISTING PANEL TO REMAIN CONTRACTOR TO RENAME PANEL AS INDICATED AND REARRANGE CIRCUITS AS SHOWN. PANEL ARE TO BE PERMANENTLY MARKED AND VISIBLE TO WARN QUALIFIED PEOPLE OF POTENTIAL ELECTRIC FLASH HAZARDS.  
 B. L.O. - PROVIDE HANDLE LOCK-OFF DEVICE; H - HACR BREAKER.  
 C. ELECTRICAL CONTRACTOR SHALL BALANCE ALL LOADS BETWEEN PHASES TO WITHIN 10%.  
 D. CIRCUITS AND LOADS SHOWN WITH LIGHT LINES ARE EXISTING TO REMAIN, CIRCUITS AND LOADS SHOWN WITH HEAVY LINES ARE NEW.



ISSUED DATES	
OWNER	11-23-16
BID/PERMIT	11-28-16

REVISIONS	



DRAWN BY  
GLR

CHECKED BY  
JAC

PROJECT NUMBER  
316157

SHEET NAME  
POWER AND LIGHTING PLAN

SHEET NUMBER  
E1