

technical report II

Denver Police Department Crime Lab || Denver, Colorado

lighting || electrical

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Executive Summary

The purpose of this report is to detail the electrical systems criteria and scope, as well as existing electrical conditions. The criteria is then compared to the current design. Serving as a laboratory, the Denver Police Department Crime Lab must remain powered nearly 24/7 as to accommodate the demanding schedule of its employees. Security must be maintained, as well as sustainable data and power.

The current electrical design and layout is efficient, and serves a large amount of mechanical and receptacle loads. The laboratory is supplied 480/277V, through a transformer vault located in the basement of the building. The voltage is then fed through distribution panels and sub-panelboards. The project has received LEED Gold for new construction by utilizing water efficient landscaping, light pollution reduction, implementing a heat island effect, and daylight. As competent as the crime lab is, there are still opportunities to increase the reliability and reduce the energy use within the building.

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The documents in the Appendices are courtesy SSG.

Building Overview

All 60,000 SF of the Denver Police Department Crime Lab serve the public of Colorado through proper and thorough forensic investigation. Neighboring the lab in downtown Denver is the Police Department and Department of Safety, along with several other government buildings. The lab itself houses many facilities such as conference rooms, a multipurpose room, open offices, and various laboratories that allow their users to be able to work efficiently and effectively. Architecturally, the crime lab showcases a unique façade that was modeled after a double helix, or DNA molecule. This contemporary look continues on the interior of the building, where distinctive ceiling systems and modern labs.

Part I | Electrical Systems Criteria & Scope of Work

Preliminary Load Calculation

The preliminary load was calculated using the NEC and the knowledge that the Crime Lab is a laboratory classified as Occupancy Type B and A-3 with a gross square footage of 60,000.

Table 1.1	Preliminary	Load (Calculation
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Load	VA/SF	Area (SF)	Total VA	Demand Factor	Total kVA
Lighting	3.5	60,000	210,000	1.0	210
Receptacles					
First 10kVA	1.0	10,000	10,000	1.0	10
Remainder	1.0	50,000	50,000	0.5	25
Mechanical	7.0	60,000	420,000	0.8	336
Elevator	1.1	60,000	66,000	1.0	66
		тс	OTAL kVA: 647		

Utility Company

The Denver Police Crime Lab is served by Xcel Energy, a local utility provider used by most of the state of Colorado.

Service Voltage & Rate Schedule

The Service Voltage provided by Xcel Energy is 480V, $3\phi 4$ -wire. The rate schedule provided by Xcel Energy in the Colorado Electric Tariff Book is Schedule SG and the rates are in Table 1.2 seen below:

Table 1.2 | Electric Rates – Schedule SG

Monthly Rate	Rate
Service and Facility Charge	\$40.00
Demand Charge (All kilowatts of billing demand, per kW)	
Distribution Demand Generation and Transmission Demand – Summer Season* Generation and Transmission Demand – Winter Season**	\$4.84 \$10.96 \$8.00
Energy Charge (All kilowatt hours used, per kWh)	\$0.00473

* Summer Season: June 1 – September 30

**Winter Season: October 1 – May 31

Part I | Electrical Systems Criteria & Scope of Work

Building Utilization Voltage & Voltage Systems

The primary Building Utilization Voltage for the building is 480/277V, and the voltage systems for lighting, receptacle, mechanical and special equipment are located below. The service enters the building through the basement, where the transformer vault is located.

Lighting: 120V Receptacle: 120V Mechanical: 480V 3¢ Special Equipment: Elevator | 120V Office Furnishings | 120V Audio Signal Processing, Amplification, and Reproduction Equipment | 120V IT Equipment | 120V

Emergency Power Requirements

IBC 2009 classifies the crime lab as a Business (B) and Assembly (A-3). The size of the building would warrant a generator as a source of emergency power.

1006.2 | Means of Egress Illumination Level

The means of egress illumination level shall not be less than 1 footcandle at the walking service.

2702.2.1 | Group A Occupancies

Emergency power shall be provided for emergency voice/alarm communication systems in Group A occupancies in accordance with Section 901.5.2.2.4.

2702.2.2 | Smoke Control Systems

Standby power shall be provided for smoke control systems in accordance with Section 909.11.

2702.2.3 | Exit Signs

Emergency power shall be provided for exit signs in accordance with Section 1011.5.3.

2702.2.10 | Hazardous Materials

Emergency or standby power shall be provided in occupancies with hazardous materials in accordance with Section 414.5.4.

2702.2.19 | Elevators

Standby power for elevators shall be provided as set forth in Sections 3003.1, 3007.7, and 3008.15.

Special Occupancy Requirements

Due to this building having multiple lab spaces with hazardous materials contained within, some special occupancy requirements are necessary. NEC 2011 indicates the spaces as Class I, Division I in Article 500.

501.5 | Zone Equipment

Equipment listed and marked in accordance with 505.9(C)(2) for use in Zone 0 locations shall be permitted in Class I, Division I or Division 2 locations for the same gas with a suitable temperature class.

Part I | Electrical Systems Criteria & Scope of Work

501.10(A)(1) | Wiring Methods

In Class I, Division I locations, the wiring methods in (a) through (d) shall be permitted.

- (a) Threaded rigid metal conduit or threaded steel intermediate metal conduit.
- (b) Type MI cable terminated with fittings listed for the location.
- (c) & (d) are for industrial establishments.

501.15(A)(4) | Conduit Seals Boundary

In each conduit run leaving a Class I, Division I location. The sealing fitting shall be permitted on either side of the boundary of such location within 3.05 m (10 ft) of the boundary and shall be designed and installed so as to minimize the amount of gas or vapor within the Division I portion of the conduit from being communicated to the conduit beyond the seal. Except for listed explosionproof reducers at the conduit seal, there shall be no union, coupling, box, or fitting between the conduit seal and the point at which the conduit leaves the Division I location.

501.100(A) | Transformers and Capacitors

In Class I, Division I locations, transformers and capacitors shall comply with 501.100(A)(1) and (A)(2).

501.130(A) | Luminaires

Luminaires shall comply with 501.130(A) or (B).

Priority Assessment

A categorized (high/medium/low) list of priorities based off of the building type and use can be found below.

High

Reliability Low Life Cycle Cost Flexibility

Medium

Redundancy Flexibility

Low

Low First Cost

Optional Back-Up Power

Short-term and long-term power may be desired for the Denver Police Crime Lab being that employees work in the building nearly 24/7, and contains confidential information on suspects.

Short Term Power | UPS

Security Surveillance IT Equipment

Long Term Power | Generator

Elevators Emergency Lighting Life Safety

Communication Systems

Below is a list of communications systems that may be applicable to the Denver Police Crime Lab.

Telephone/Data

Fire Alarm

The Fire Alarm code in the IBC is more stringent for the Group B rating, so that will be followed. 907.2.2 | Group B

A manual fire alarm system shall be installed in Group B occupancies where one of the following conditions exists:

- (1) The combined Group B occupant load of all floors is 500 or more.
- (2) The Group B occupant load is more than 100 persons above or below the lowest level of exit discharge.

Access Control

Video Surveillance

Major Equipment

Below is a preliminary list of equipment that will require some floor space within the building.

Electrical

Transformers Automatic Transfer Switches Generators UPS Switchboards Panelboards

Mechanical

Air-Handling Units Fire Pump Chilled Water Unit VFD

Actual Connected Load

Please reference the Appendix for additional information on the panelboard schedules.

Table 2.1	Existing Co	nnected Buildi	ng Loads (kVA)		Table 2.2	Emergen	cy Existing Con	nected Building	g Load
Panel	Lighting	Receptacle	Mechanical	Other	Panel	Lighting	Receptacle	Mechanical	Oth
LBA	-	8.3	36.7	12.8	EGLBA	-	-	2.5	36.
HBA	6.2	-	76.8	-	EGHBA	20.6	-	5.0	73.4
L1A	0.1	10.2	36.2	2.6	EGLBB	-	-	3.3	7.1
L1B	0.7	14.2	-	19.7	EGHBB	-	-	35.8	3.8
L1B-IS	-	0.7	-	16.5	EGL1A	-	-	-	10.5
L1C	1.6	34.6	2.4	3.4	EGH1A	4.3	-	-	-
H1A	14.4	-	61.2	-	EGL1B	-	1.4	3.1	0.2
L2A	-	7.7	47.6	3.5	EGL2A	-	-	-	9.0
L2B	7.7	11.3	1.2	1.5	EGH2A	8.9	-	-	-
L2C	1.8	26.3	1.2	0.7	EGL2B	-	-	1.8	-
L2D	0.8	11.9	1.2	0.3	EGL2C	-	-	-	5.1
L2F	-	36.2	5.2	8.5	EGL2D	-	-	15.9	33.8
H2A	20.7	-	-	-	EGL3A	-	-	-	10.0
L3A	-	4.7	54.5	1.8	EGH3A	5.0	-	-	-
L3B	0.8	15.3	4.0	0.3	EGL3B	-	-	1.2	-
L3C	1.5	25.7	8.0	7.8	EGL3C	-	-	-	7.0
L3D	1.4	22.5	1.2	3.7	EGLPA	-	-	5.0	3.0
L3F	6.4	13.3	5.9	5.0	EGHPA	-	-	360.47	3.0
L3G	-	31.1	3.5	4.2	EGHPB	-	-	12.5	-
НЗА	17.8	-	-	_	TOTAL	38.8	1.4	446.57	202.
LPA	0.7	3.6	0.9	-		TOTAL	EMERGENCY	(VA: 689.37	
HPA	0.7	3.6	246.9	-					
TOTAL	83.3	258.7	594.6	92.3					

TOTAL CONNECTED kVA: 1028.9

TOTAL SYSTEM CONNECTED LOAD: 1,718.27 kVA

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The primary Building Utilization Voltage for the building is 480/277V, and the voltage systems for lighting, receptacle, mechanical and special equipment are located below. The service enters the building through the basement, where the transformer vault is located.

Lighting: 120V | 277V Receptacle: 120V Mechanical: 120V | 208V 3¢ | 480V 3¢ Special Equipment: Elevator | 120V Office Furnishings | 120V Audio Signal Processing, Amplification, and Reproduction Equipment | 120V IT Equipment | 120V

Emergency Power

The connected loads for the emergency power system can be found in Table 2.2 (previous page). Emergency power in the Denver Police Crime Lab is supplied by a diesel-fueled generator located in the exterior Southwest corner of the building. The generator is 500kW, 480V, 3 φ , and 4-wire and has a 12 inch base fuel tank. It is also in a sound attenuated enclosure and is connected to the building automation system. The annunciator for the generator is located in the Building Maintenance Office in B102.

The generator is connected to the electrical system through automatic transfer switches. There are three ATS' that can be viewed on the Single Line Diagram provided in Appendix A. ATS-1 is a 200A, 480V, 3φ, open transition bypass isolation for life safety switch. ATS-2 is an 800A, 480V, 3φ, delayed transition bypass isolation for standby switch. ATS-3 is a 100A, 480V, 3φ, open transition bypass isolation legally required switch.

Special Occupancy Requirements

Due to this building having multiple lab spaces with hazardous materials contained within, some special occupancy requirements are necessary. NEC 2011 indicates the spaces as Class I, Division I in Article 500.

501.5 | Zone Equipment

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501.130(A) | Luminaires

Luminaires shall comply with 501.130(A) or (B).

Special Equipment

NEC 2011 indicates the special equipment found within rooms in the crime lab in Article 600.

- 605 | Office Furnishings
- 620 | Elevator
- 640 | Audio Signal Processing, Amplification, and Reproduction Equipment
- 645 | Information Technology Equipment
- 690 | Solar Photovoltaic Systems (Note: A PV Array is not installed, but the circuitry to install one is there.)
- 695 | Fire Pumps

Ratings

Wiring

Copper: All conductors #1/0 and smaller with 75°C terminations up to #1 AWG. Aluminum: All conductors #2/0 and larger are aluminum with 75°C terminations. The Single Line Diagram in Appendix A has every connection labeled with conductor and wire type.

Conduit

Conduit is typically EMT, unless noted in the drawing set. The size of the conduit is based on THWN/THHN wire.

Wiring Devices

Switches, sensors, and receptacles are standard grade and must comply with NFPA 70.

Panelboards

All 22 normal panelboards are bolt-in, and are either designed for high or low loads. Their ratings are indicated in Table 2.3 below. The emergency panels are located after the line break in the table. Further panelboard elaboration can be found in Appendix B.

Panel	Voltage	Phase	MCB/MLO	AIC (kA)
LBA	208/120V	3ф	225A MCB	10
HBA	480/277V	3ф	400A MLO	50
L1A	208/120V	3ф	200A MLO	10
L1B	208/120V	3ф	125A MLO	10
L1B-IS	208/120V	3ф	100A MLO	10
L1C	208/120V	3ф	125A MLO	10
H1A	480/277V	3ф	400A MLO	42
L2A	208/120V	3ф	200A MLO	10
L2B	208/120V	3ф	100A MLO	10
L2C	208/120V	3ф	100A MLO	10
L2D	208/120V	3ф	100A MLO	10
L2F	208/120V	3ф	200A MLO	10
H2A	480/277V	3ф	400A MLO	42
L3A	208/120V	3ф	200A MLO	10
L3B	208/120V	3ф	100A MLO	10
L3C	208/120V	3ф	125A MLO	10
L3D	208/120V	3ф	125A MLO	10
L3F	208/120V	3ф	125A MLO	10
L3G	208/120V	3ф	125A MLO	10
НЗА	480/277V	3ф	400A MLO	42
LPA	208/120V	3ф	100A MCB	10
HPA	480/277V	3ф	400A MLO	42
EGLBA	208/120V	3ф	150A MCB	10
EGHBA	480/277V	3ф	200A MCB	42
EGLBB	208/120V	3ф	100A MCB	10
EGHBB	480/277V	3ф	100A MLO	42
EGL1A	208/120V	3ф	150A MLO	10
EGH1A	480/277V	3ф	200A MLO	42
EGL1B	208/120V	3ф	100A MLO	10

Table 2.3 | Panelboard Ratings

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Table 2.3	Panelboard Ratings (continued)				
EGL2A	208/120V	3ф	150A MLO	10	
EGH2A	480/277V	3ф	200A MLO	42	
EGL2B	208/120V	3ф	100A MLO	10	
EGL2C	208/120V	3ф	100A MLO	10	
EGL2D	208/120V	3ф	150A MLO	10	
EGL3A	208/120V	3ф	150A MLO	10	
EGH3A	480/277V	3ф	200A MLO	22	
EGL3B	208/120V	3ф	100A MLO	10	
EGL3C	208/120V	3ф	100A MLO	10	
EGLPA	208/120V	3ф	100A MCB	10	
EGHPA	480/277V	3ф	600A MLO	42	
EGHPB	480/277V	3ф	100A MCB	22	

Transformers

All the ratings for the transformers are listed in Table 2.4, with the first three (T1, T1, T3) being the main service transformers.

Transformer	kVA	Primary	Secondary	Mounting
Main Service T1	750	Utility	480V, 3ф	PAD-MOUNTED
Main Service T2	750	Utility	480V, 3φ	PAD-MOUNTED
Main Service T3	750	Utility	480V, 3ф	PAD-MOUNTED
ТВА	75	480V, 3ф	208/120V, 3ф	SUSPENDED
T1A	112.5	480V, 3ф	208/120V, 3ф	SUSPENDED
T2A	150	480V, 3ф	208/120V, 3ф	FLOOR
ТЗА	225	480V, 3ф	208/120V, 3ф	FLOOR
ТРА	30	480V, 3ф	208/120V, 3ф	SUSPENDED
TEGBA	45	480V, 3ф	208/120V, 3ф	SUSPENDED
TEGBB	30	480V, 3ф	208/120V, 3ф	SUSPENDED
TEG2A	112.5	480V, 3ф	208V, 3ф	SUSPENDED
TEGPA	30	480V <i>,</i> 3φ	208/120V, 3ф	SUSPENDED

Table 2.4 | Transformer Schedule

Motor Starters

The motor starters for the building are individual.

UPS

There is a UPS sub-distribution panel is located on the penthouse level of the crime lab. This system serves most of the lab equipment, surveillance devices, and IT servers. It is 208V, 3ϕ , 400A and fully bussed. Panel schedules for the UPS are located in Appendix C.

Communication Systems

Below is a list of communications systems that are applicable to the Denver Police Crime Lab.

Telephone/Data

Voice and data outlets utilizing CAT-6A cable can be found on all floors.

Fire Alarm

The Fire Alarm code in the IBC is more stringent for the Group B rating, so that will be followed. 907.2.2 | Group B

A manual fire alarm system shall be installed in Group B occupancies where one of the following conditions exists:

- (1) The combined Group B occupant load of all floors is 500 or more.
- (2) The Group B occupant load is more than 100 persons above or below the lowest level of exit discharge.

Building Automation System

There is an electronic demand meter that connects the ATS to the BAS. The BAS also meters the high-load panels and 1000A buss riser.

Access Control

There are monitored and card access doors throughout the building.

Video Surveillance

Floor Space

A list of electrical and telecommunications floor areas along with how much of the building percentage those areas are can be found below. The total building square footage is 60,000.

Electrical Room B100A | 81 SF | 0.1% DCL SES B113 | 238 SF | 0.4% Transformer Vault B112 | 962 SF | 1.6% Electrical 132 | 101 SF | 0.1% Telecom 133 | 134 SF | 0.2% Secure Data Room 206 | 162 SF | 0.2% AV Room 215 | 76 SF | 0.1% Electrical 236 | 105 SF | 0.1% Telecom 237 | 106 SF | 0.1% Electrical 344 | 101 SF | 0.1% Telecom 345 | 106 SF | 0.1% TOTAL | 2,172 SF | 3.6%

Energy Reduction Techniques

The Denver Police Crime Lab is LEED Gold for New Construction and utilizes occupancy sensors. There are also designs for a future solar array when the funds become available.

Single Line Diagram Please see Appendix A.

Part III | Evaluation of Criteria vs. Current Design

Estimated vs. Actual Connected Load

The estimated load was lower than the actual load that was calculated. The estimated load was 647 kVA while the actual load was 1028.9 kVA. This could be due to some receptacle and mechanical loads which are more accurately calculated in the panelboards, but not accounted for in the estimated calculation.

Utility Rate Schedule & Building Utilization Voltage

The current rate schedule is appropriate for the location and type of building. The utilization voltage for the Denver Police Crime Lab is 480/277V, which is stepped down to 208/120V to serve some panelboards. These voltages are a good choice for the building, which utilizes all of them for lighting, receptacle, mechanical or emergency loads. Currently, the building uses both copper and aluminum. It may be worth it to analyze which conductor would serve the crime lab better and switch to a wiring system that consists of just that metal.

Electrical Equipment

The distribution system is very straightforward, and laid out within the building well. Some of the panelboards are scattered across the floor plans, and could benefit from a more uniform layout.

Emergency Power System

There are no discrepancies between the code analysis and the generator and UPS system installed. Since the generator is located on the exterior of the building, a lot of architectural space issues are avoided and the vibrations and sound will not bother any employees.

Optional Back-Up Power

The UPS could be changed to a Double Conversion On-line UPS. This type UPS requires no switching, and the load never sees an outage. It could be a viable option in the crime lab since it is run 24/7, and has need for surveillance and data to remain intact.

Energy Reduction Strategies

Since a rough-in was installed for Solar Photovoltaic arrays, it may be interesting to see if placing panels on the roof will significantly reduce energy. The south plaza may also be another place to consider a PV array. It could double as a shading system for employees, while gathering energy to offset the electrical demand.

NOTES:

500KW, 480V, 3Ø, 4W

DIESEL FUELED EMERGENCY

GENERATOR WITH 12" BASE

CONNECT TO THE BUILDING

FUEL TANK AND SOUND

AUTOMATION SYSTEM

BLOCK HEATER-

ATTENUATED ENCLOSURE

		WIRE	MINIMUM
KEY	CONDUCTORS	TYPE	CONDUIT SIZE
40.3G	(3 #8 & 1 #10 GND)	CU	3/4"
85.3G	(3 #4 & 1 #8 GND)	CU	1-1/4"
85.4G	(4 #4 & 1 #8 GND)	CU	1-1/4"
100.3G	(3 #2 & 1 #8 GND)	CU	1-1/4"
175.3G	(3 #4/0 & 1 #4 GND)	AL	2"
230.3G	(3-300 KCMIL & 1 #2 GND)	AL	2-1/2"
300.3G	(3-500 KCMIL & 1 #2 GND)	AL	3"
100.4G	(4 #2 & 1 #8 GND)	CU	1-1/4"
100.5G	(5 #2 & 1 #8 GND)	CU	1-1/2"
130.4G	(4 #1 & 1 #6 GND)	CU	1-1/2"
150.4G	(4 #1/0 & 1 #6 GND)	CU	2"
150.5G	(5 #1/0 & 1 #6 GND)	CU	2"
200.4G	(4-250 KCMIL & 1 #4 GND)	AL	2-1/2"
200.5G	(5-250 KCMIL & 1 #4 GND)	AL	2-1/2"
230.4G	(4-300 KCMIL & 1 #2 GND)	AL	2-1/2"
255.4G	(4-350 KCMIL & 1 #2 GND)	AL	3"
380.4G	2(4-250 KCMIL & 1 #1 GND)	AL	2-1/2"
400.4G	2(4-250 KCMIL & 1 #1 GND)	AL	2-1/2"
400.5G	2(5-250 KCMIL & 1 #1 GND)	AL	2-1/2"
500.4G	2(4-350 KCMIL & 1 #1/0 GND)	AL	3"
600.4G	2(4-500 KCMIL & 1 #2/0 GND)	AL	3"
800.4G	3(4-400 KCMIL & 1 #3/0 GND)	AL	3"
1000.4G	4(4-350 KCMIL & 1 #4/0 GND)	AL	3"
2500.4	10(4-350 KCMIL)	AL	3"
30XG	(1 #8 GND)	CU	1/2"
45XG	(1 #6 GND)	CU	1/2"
75XG	(1 #2 GND)	CU	1/2"
112.5XG	(1 #1/0 GND)	CU	3/4"
150XG	(1 #1/0 GND)	CU	3/4"
225XG	(1 #2/0 GND)	CU	3/4"
150BG	(1 #6 GND)	CU	1/2"
2500BG	(1 #3/0 GND)	CU	3/4"
2C			2"
(2)4C			(2) 4"
MECH	SEE MECHANICAL EQUIPMEN	IT SCHED	ULE

1. ALL CONDUCTORS #1/0 AND SMALLER ARE COPPER WITH 75

CONDUCTORS #2/0 AND LARGER ARE ALLUMINUM WITH 75

DEG C TERMINATIONS UP TO #1 AWG, AND 75 DEG

2. CONDUIT SIZES ARE BASED ON THWN / THHN WIRE SIZE.

3. CONDUIT MATERIAL IS BASED ON EMT, UNLESS NOTED

TERMINATIONS FOR LARGER CONDUCTORS. ALL

DEG C TERMINATIONS.

OTHERWISE.





XCEL ENERGY NETWORK VAULT





VOLTS: 208/120V 3P	ΉΔ	W						ľ	лто	SURFACE NEM
MAINS: 225A MAIN E	BRE	AKER							VIIC	MFGR: SEE SPE
A.I.C.: 10KA										TYPE: BOLT-
	Т	K\/A	BKR		KT.	H	BKR	K\/Δ	Т	DESCRIPTI
		1.071						1.07.		DEGORATI
	P	1.80	2041P			2		2.25	н	
BSMNT MECH/STG REC	R	1.00	20A1P	3	•	4	2P	2.25	н	
BSMNT RESTROOM REC	R	1.00	20A1P	5		• 6	20A1P	0.25	0	CO2 SE
CSI CHARGING STN	R	0.36	20A1P	7•	-	8	20A1P	1.18	M	FIRING RNG
CSI CHARGING STN	R	0.36	20A1P	9	•	10	40A1P	1.92	М	BULLET TAN
BLDG MTN OFF REC	R	0.36	20A1P	11	-	• 12	20A1P	0.50	0	IRRIGATION CO
BLDG MTN OFF REC	R	0.36	20A1P	13 •		14	20A1P	0.70	0	WIRELESS AC
FIRING RANGE REC	R	0.72	20A1P	15	•	16	20A1P	1.39	С	VAVR-08/C
BULLET TANK REC	R	0.72	20A1P	17		• 18	20A1P	1.39	С	VVE-16/\
WS-1	М	1.18	20A1P	19 🛉		20	20A1P	1.39	С	CVE-08/C
WASHER	R	0.18	20A1P	21	•	22	20A1P	1.18	М	
JANITORS CLST REC	R	0.18	20A1P	23	-	• 24	20A1P	1.18	М	
FIRING RANGE VAC	0	2.10	35A	25 •		26	20A1P	1.39	С	VAVR-12/C
-	0	2.10		27	•	28	25A1P	1.66	М	
-	0	2.10	3P	29	-	• 30	20A	1.68	М	
LEAD SEPARATOR	Μ	2.10	35A	31 •	_	32	2P	1.68	М	
-	М	2.10		33	•	34	20A1P	1.39	С	VAVR-16/VA
-	M	2.10	3P	35	-	• 36	20A1P	1.39	C	CVE-10/V
	0	3.50	40A1P	37 •	+	38	20A1P	1.39	C	VAVR-10/V
WH-2	н	1.20	20A1P	39	-	40	20A1P	1.39	C	
VAVR-10	IVI	0.70				9 4Z		0.50	0	
	1	4.00								
	П	1.20	20ATP	43 •	_	44	20ATP			
	0	0.50	20ATP	45	-	40	20ATP			
SPARE		0.50	20ATP	10		50	20ATP			
SPARE			20A1P	51	•	52	20A1P			
SPARE			20A1P	53	+	• 54	20A1P			
SPARE			20A1P	55 •	+	56	20A1P			
SPARE			20A1P	57	•	58	20A1P			9
SPARE			20A1P	59	, I	• 60	20A1P			5
SPACE				61 •	1	62				S
SPACE				63	•	64				5
SPACE				65	-	• 66				9
SPACE				67 •		68				5
SPACE				69	•	70				05
SPACE				71		• 72				c,
SPACE				73 •		74				25
SPACE				75	•	76				93
SPACE				77		• 78				
SPACE				79 •		80				9
SPACE				81	•	82				5
SPACE				83		• 84				S
LOAD KVA	RE	C	MTR	HTR	C	ЭΤΗ	r tot	AL 🔨		
CONNECTED	8.	3	29.8	6.9		12.	8 5	7.7 /2	7	
NEC DEMAND	8.	3	31.4	6.9		12.	8 5	9.3		
								A		

A.I.C.: 10KA	Э.								MFGR: SEE SPECS TYPE: BOLT-ON
DESCRIPTION	Т	KVA	BKR	CK	(T#	BKR	KVA	Т	DESCRIPTION
			S	ECTIC	DN ON			•	
COMMONS 103A REC	R	1.80	20A1P	1•	2	20A1P	0.18	R	ELEVATOR EQP R
SEC/ RECEPTION REC	R	1.08	20A1P	3	• 4	20A1P	1.08	R	GENERAL RECE
COMMONS 103A	R	1.62	20A1P	5	• 6	20A1P	0.54	R	JC/STG/ELEC RM RE
ELEVATOR RECEP	R	0.18	20A1P	7•	8	20A1P	1.40	0	WIRELESS ACCES
PFPR-8/PFPR-10	С	1.56	20A1P	9	• 10	20A1P	0.70	0	WIRELESS ACCES
PFPR-8/PFPR-10	С	1.56	20A1P	11	• 12	20A1P	1.39	С	VAR-08/CVE-0
PFPR-08/PFPR-06	С	1.39	20A1P	13 •	14	20A1P	1.39	С	VAV-08/PFPR-0
(2) PFPR-08	С	1.39	20A1P	15	• 16	20A1P	1.56	С	PFPR-14/VAV-
PFPR-8/PFPR-10	С	1.56	20A1P	17	• 18	20A1P	0.70	М	FC-10
PFPR-12/PFPR-14	С	1.73	20A1P	19 •	20	20A1P	0.18	R	KRONOS TIMECLOC
PFPR-14/PFPR-16	С	2.04	25A1P	21	22	20A1P	0.50	0	CARD READE
SP-4	М	1.66	25A1P	23	• 24	20A1P	0.72	R	RECEPTION DES
VAV-16/PFPR-16	С	1.87	20A1P	25 •	26	20A1P	0.36	R	DISPLAY CASE RECE
(2) VAV-16	С	1.39	20A1P	27	28	20A1P	0.11	L	DISPLAY LIGHTIN
VAVR-08/VAVR-10	С	1.39	20A1P	29	• 30	20A1P	1.18	М	MOTRZD FLAG HLD
VAVR-08/PFPR-10	С	1.56	20A1P	31 •	32	20A1P	1.39	С	(2) VAVR-
(2) PFPR-08	М	0.70	20A1P	33	• 34	20A1P	0.70	М	FC-10
VAVR-12/VAVR-08	С	1.39	20A1P	35	• 36	20A1P	1.87	С	VAVR-08/PFPR-
VAVR-12/VVE-12	С	1.39	20A1P	37 🔹	38	20A1P	0.70	М	VAVR-0
(2) VAVR-08	С	1.39	20A1P	39	• 40	20A1P	0.54	R	14TH AVE TREE RE
(2) VVC-12	С	1.39	20A1P	41	• 42	20A1P	0.54	R	14TH AVE TREE RE
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	$\sim$	$\sim$	S	ECTIC	N TWO	C			
SHELL RECEPT	R	1.44	20A1P	43 •	44	20A1P			SPAF
SPARE			20A1P	45	46	20A1P			SPAR
SPARE			20A1P	47	• 48	20A1P			SPAF
SPARE			20A1P	49 •	50	20A1P			SPAF
SPARE			20A1P	51	• 52	20A1P			SPAF
SPARE			20A1P	53	• 54	20A1P			SPAR
SPARE			20A1P	55 🗕	56	20A1P			SPAR
SPARE			20A1P	57	• 58	20A1P			SPAR
SPARE			20A1P	59	• 60	20A1P			SPAR
SPACE				61 🗕	62				SPAC
SPACE				63	• 64				SPAC
SPACE				65	• 66				SPAC
SPACE				67 •	68				SPAC
SPACE				69	• 70				SPAC
SPACE				71	• 72				SPAC
SPACE				73 •	74				SPAC
SPACE				75	• 76				SPAC
SPACE				77	• 78				SPAC
SPACE				79 •	80				SPAC
SPACE				81	82				SPAC
SPACE				83	• 84				SPAC
LOAD KVA CONNECTED NEC DEMAND AMPS	LT( 0. 0.	G   1 1	REC 10.2 10.1	MTR 36.2 36.7	OTHI 2. 2.	R TOT 6 4 6 4 13	AL 9.1 9.5 7.5	4	
PHASE KVA PHASE IMBALANC	E (%)		A A/B	= 1 = 5	5.5 .3	B = B/C =	= 14. = 18.	7 8	C = 17.5 C/A = 12.8

# **RECORD DRAWING**

THESE RECORD DOCUMENTS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. SCANLON CONSULTING HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY BE INCORPORATED AS A RESULT OF ERRONEOUS INFORMATION PROVIDED BY OTHERS.







PANEL	"L	_1C"	(FIRE	EAF	RN	1 &	TOO	LMA	\Rk	( LAB)
VOLTS: 208/120V,3P MAINS: 125A M.L.O.	H,4	W							M I	TG: FLUSH NEMA 1 MFGR: SEE SPECS
A.I.C TUKA	-			-					<del></del>	TTPE. BOLT-ON
DESCRIPTION	Т	KVA	BKR			#	BKR	KVA	Т	DESCRIPTION
	-		<u> </u>	SECI			=			
LEICA MICROSCOPE	R	1.08	20A1P	1 •	·	2	20A1P	1.08	R	FIREARM FUR
LEICA MICROSCOPE	R	1.08	20A1P	3	•	4	20A1P	1.08	R	FIREARM FUR
LEICA MICROSCOPE	R	1.08	20A1P	5		• 6	20A1P	1.08	R	FIREARM FUR
LEICA MICROSCOPE	R	1.08	20A1P	7 •	,	8	20A1P	1.08	R	FIREARM FUR
CONF RM RECEP	R	1.26	20A1P	9	•	10	20A1P	1.08	R	FIREARM FUR
TECH LEAD OFFICE	R	0.90	20A1P	11	_	• 12	20A1P	1.08	R	FIREARM FUR
LAB CEILING PNL	С	0.77	20A1P	13 •	·	14	20A1P	0.77	C	LAB CEILING PN
LAB CEILING PNL	С	0.77	20A1P	15	+	16	20A1P	0.77	C	LAB CEILING PN
	С	0.77	20A1P	17	_	• 18	20A1P	0.77	C	LAB CEILING PN
	C	0.77	20A1P	19 •	<u> </u>	20	20A1P	0.77	C	LAB CEILING PN
	C	0.77	20A1P	21	+	22	20A1P	0.77	C	LAB CEILING PN
	C	0.77	20A1P	23	_	• 24	20A1P	0.77		
		0.85	20A1P	25	,	26	20A1P	0.77		
		0.45	20A1P	27	-	28	20A1P	0.77		
		1.26	20A1P	29	_	• 30	20A1P	0.77		
		0.41	20ATP	22	<u></u>	32	20ATP	0.77		
		1.08	20ATP	25	-	34	20ATP	0.77		
		0.90	20415	37		* 30 38	20ATP	0.77		
	M	1.10	20A11	30		40	20A11	0.77		
		0.85	20A1P	41		• 42	20A1P	0.77	R	EXAM BOOM BECE
	Ŭ	0.00	<u> </u>	BECT			2 <i>0,</i> (11 )	0.72		
TOOLMARK RECEP	R	0.90	20A1P	43 •	,	44	20A1P	0.18	R	SONIC BAT
TOOLMARK RECEP	R	0.90	20A1P	45	•	46	20A1P	0.18	R	SONIC BAT
WIRELESS ACCESS	0	1.05	20A1P	47		• 48	20A 🦯	0.75	0	SONICATO
SPACE				49 •	,	50	2P	0.75	0	-
SPACE				51	•	52				SPAC
SPACE				53		• 54				SPAC
SPACE				55 •	,	56				SPAC
SPACE				57	•	58				SPAC
SPACE				59		• 60				SPAC
SPACE				61 •	,	62				SPAC
SPACE				63	•	64				SPAC
SPACE				65	_	• 66				SPAC
SPACE				67 •	,	68				SPAC
SPACE				69	+	70				SPAC
SPACE				71	_	• 72				SPAC
SPACE				73 •	<u> </u>	74				SPAC
SPACE				75	+	76				SPAC
SPACE						• /8				SPAC
SPACE				19	<u>}</u>	80				SPAC
				01	-	02				SPAC
				83		• 84				5PAC
	LTO	G I	REC	MTR	(	ΟΤΗΙ	R TOT	AL		
	1.	6	34.6	2.4		3.	4 4	1.9		
	۷.	U	22.3	2.0		3.	4 3	0.3 84		
								04		
PHASE KVA	10.1		Α	=	14.	0	B =	= 13.	7	C = 14.3
PHASE IMBALANCE	(%)	)	A/B	=	2.2		B/C =	4.5		C/A = 2.3

* PROVIDE COMMON HANDLE TIE FOR CIRCUITS SHARING SAME NEUTRAL WITHIN FURNITURE SYSTEM AND / OR LAB WORKSTATIONS.

			PA	NE	EL	"L2	2 <b>A</b> "			
VOLTS: 208/120V,3F	PH,4	W							МΤΟ	G: SURFACE NEMA 1
A.I.C.: 10KA										TYPE: BOLT-ON
DESCRIPTION	Т	KVA	BKR		CK.	T#	BKR	KVA	Т	DESCRIPTION
	-			SECT	10	N ON	Ξ			
GENERAL RECEP	R	1.80	20A1P	1.		2	20A1P	0.90	R	CONF ROOM RECEF
RESTROOM ELEC RM	R	0.90	20A1P	3	•	4	20A1P	1.36	С	PROJECTOR/SCREEN
BREAK ROOM REC	R	1.08	20A1P	5		• 6	20A1P	0.75	Н	HEAT TRACE
BREAK ROOM TV	R	0.18	20A1P	7 •		8	20A1P	0.18	R	TV RECEF
REF/FREEZER	0	0.85	20A1P	9	•	10	20A1P	0.18	R	VENDING MACHINE
REF/FREEZER	0	0.85	20A1P	11		• 12	20A1P	0.18	R	VENDING MACHINE
BREAK ROOM REC	R	0.36	20A1P	13 •		14	20A1P	0.18	R	VENDING MACHINE
BREAK ROOM REC	R	0.36	20A1P	15	•	16	20A1P	1.75	0	WIRELESS ACCESS
BREAK ROOM REC	R	0.36	20A1P	17		• 18	20A1P	1.39	С	VAVR-10/CVE-08
PFPR-10/PFPR-06	С	1.39	20A1P	19 •		20	20A1P	1.39	С	VAVR-10/CVE-08
PFPR-08/PFPR-08	С	1.39	20A1P	21	•	22	20A1P	1.39	С	(2) VAVR-10
(2) PFPR-12	С	1.73	20A1P	23		• 24	20A1P	1.39	С	VVE-16/CVC-10
PFPR-10/PFPR-12	С	1.56	20A1P	25 •		26	20A1P	1.39	С	VAVR-10/VVE-14
(2) PFPR-12	С	1.73	20A1P	27	•	28	20A1P	1.39	С	VAVR-10/VAVR-12
PFPR-08/PFPR-14	С	1.56	20A1P	29		• 30	20A1P	1.39	С	VAVR-06/VAVR-10
PFPR-10/PFPR-10	С	1.56	20A1P	31 •		32	20A1P	1.39	С	(2) VVE-14
PFPR-12/PFPR-10	С	1.73	20A1P	33	•	34	20A1P	1.39	С	VAV-10/VVE-08
PFPR-10	М	0.86	20A1P	35		• 36	20A1P	0.70	М	VAV-14
(2) PFPR-10	С	1.73	20A1P	37 •		38	20A1P	1.39	С	VVC-10/VVE-10
VAVR-10/PFPR-10	С	1.56	20A1P	39	•	40	20A1P	1.39	С	VAVR-08/VVE-12
VAVR-08/CVE-08	С	1.39	20A1P	41		• 42	20A1P	1.39	С	(2) VAVR-10
			۰ ع	ECT	10		 C			
VAVR-10/VVC-10	С	1.39	20A1P	43		44	20A1P	1.18	М	DISPOSAL
VVE-08/VVE-10	С	1.39	20A1P	45	•	46	20A1P	0.18	R	BREAK RM MICRC
VVE-10/VAVR-10	С	1.39	20A1P	47		• 48	20A1P	0.18	R	BREAK RM MICRC
VVE-08/VAVR-10	С	1.39	20A1P	49 •		50	20A1P	0.18	R	BREAK RM MICRC
VAVR-10	М	0.70	20A1P	51	•	52	20A1P	0.18	R	BREAK RM MICRC
FC-204	М	0.70	20A1P	53		• 54	20A1P	0.18	R	BREAK RM MICRC
SPARE			20A1P	55 •		56	20A1P	1.18	М	BREAK RM DISHWSHR
SPARE			20A1P	57	•	58	20A1P	0.70	М	FC-203
SPARE			20A1P	59		• 60	20A1P			SPARE
SPARE			20A1P	61 •		62	20A1P			SPARE
SPARE			20A1P	63	•	64	20A1P			SPARE
SPARE			20A1P	65		• 66	20A1P			SPARE
SPARE			20A1P	67		68	20A1P			SPARE
SPARE			20A1P	69	•	70	20A1P			SPARE
SPACE				71		• 72				SPACE
SPACE				73		74				SPACE
SPACE				75	•	76				SPACE
SPACE				77		• 78				SPACE
SPACE				79		80				SPACE
SPACE				81	•	82				SPACE
SPACE				83		• 84				SPACE
						ОТН	рато [.]	 ΤΔΙ		
		7	16 8			2	ς ιΟ 5 ι	1AL 58.7		
	7.	7	40.0 47 1	0.0		3.	5 5	59.0		
AMPS		•	** • 1	0.0		0.	- · ·	164		
			Δ		~~~	. 7			-	0 47 5
	(0/)	N	А л/D	=	20	)./ 0	B/C	= 20.	.5 4	C = 1/.5
	( /0,	)	r\D		Ι.	U	0/0	- 17	.4	
* PROVIDE GFI CIRCUIT	BRE	AKER F	RATED FOR	R HEA	T ٦	<b>FRACE</b>	•			

PANEL "L1B-IS" VOLTS: 208/120V,3PH,4W MTG: FLUSH NEMA 1 MAINS: 100A M.L.O. MFGR: SEE SPECS A.I.C.: 10KA TYPE: SEE SPECS T KVA BKR CKT# BKR KVA T DESCRIPTION DESCRIPTION 60A2P RECEPTACLE 50A2P RECEPTACLE 60A 🦯 4.50 ) 3.75 |50A 🦯 1 | 2 2P 4.50 I 
 O
 3.75
 2P
 3
 4
 2P
 4.50
 O

 R
 0.18
 20A1P
 5
 • 6
 20A1P
 0.18
 R
  $3 \mid \phi \mid \Delta$ 20A1P RECEPTACLE 20A1P RECEPTACLE 20A1P RECEPTACLE R 0.18 20A1P 7 8 20A1P 0.18 R 20A1P RECEPTACLE SPACE SPACE 9 🔸 SPACE 11 • 12 SPACE LOAD KVA REC OTHR TOTAL CONNECTED 0.7 16.5 17.2 NEC DEMAND 0.7 16.5 17.2 AMPS 48 A = 8.6 B = 8.2 C = 0.4PHASE KVA PHASE IMBALANCE (%) A/B = 4.4 B/C = 2191.7 C/A = 2291.7

	PA	NE	EL
	VOLTS: 208/120V,3P MAINS: 100A M.L.O.	H,4	W
	A.I.C.: 10KA		
	DESCRIPTION BIO RACEWAY	T R	K 1
	BIO RACEWAY FREEZER	R O	1 0
	EXAM LIGHTS BIO HOOD	L M	1
	EXAM ROOM REC	R R	1
	EXAM RM TASK/REC	C	0
	EXAM LIGHT		1
	PRINT STATION	L R	1 0
	TASKLIGHT/REC TASKLIGHTS	C L	0 1
	GENERAL REC GENERAL REC	R R	0
	WIRELESS ACCESS SPACE	0	0
	SPACE		
	SPACE		
	LOAD KVA CONNECTED	LT( 7.	G 7
	NEC DEMAND AMPS	9.	6
	PHASE KVA	(0/,)	
	* PROVIDE GFI CIRCUIT	BRE	EAk
	DANE		77 8
		<b>L</b>	
	MAINS: 100A M.L.O.	п,4	vv
	DESCRIPTION	Т	K
*	MICROSCOPE STN MICROSCOPE STN	C C	0
*		C	0
	TASK LIGHTS	L	1
*	EXTRACTION STATION EXTRACTION STATION	C C	0
*	EXTRACTION STATION EXTRACTION STATION	C C	0
*	EXTRACTION STATION EXTRACTION STATION	C C	0
*	EXTRACTION STATION EXTRACTION STATION	C C	0
*	EXTRACTION STATION	C	0
*	EXTRACTION STATION	C	0
*	EXTRACTION STATION BIO MAIN RACEWAY	C R	0 1
	SPACE SPACE		
		1.	3 8 3
	AMPS	Ζ.	5
	PHASE KVA PHASE IMBALANCE	(%)	)
	* PROVIDE COMMON HAI		E T
	* PROVIDE COMMON HAI FURNITURE SYSTEMS		
	* PROVIDE COMMON HAI FURNITURE SYSTEMS /		E T
	* PROVIDE COMMON HAI FURNITURE SYSTEMS / VOLTS: 208/120V,3P MAINS: 100A M.L.O.	NDL AND PA	N W
	* PROVIDE COMMON HAI FURNITURE SYSTEMS / VOLTS: 208/120V,3P MAINS: 100A M.L.O. A.I.C.: 10KA DESCRIPTION	NDL AND PA H,4	K
	* PROVIDE COMMON HAI FURNITURE SYSTEMS / VOLTS: 208/120V,3P MAINS: 100A M.L.O. A.I.C.: 10KA DESCRIPTION POST AMP HOOD WATER PURIFICATION	NDL AND PA H,4	E T L / N W
	* PROVIDE COMMON HAI FURNITURE SYSTEMS / VOLTS: 208/120V,3P MAINS: 100A M.L.O. A.I.C.: 10KA DESCRIPTION POST AMP HOOD WATER PURIFICATION POST AMP RECEP WIRELESS ACCESS	NDL AND PA H,4 T R R O	K 0 0 0
	* PROVIDE COMMON HAI FURNITURE SYSTEMS / VOLTS: 208/120V,3P MAINS: 100A M.L.O. A.I.C.: 10KA DESCRIPTION POST AMP HOOD WATER PURIFICATION POST AMP RECEP WIRELESS ACCESS SPACE SPACE	NDL AND PA H,4 T R R O	K 1 0 0
	* PROVIDE COMMON HAI FURNITURE SYSTEMS / VOLTS: 208/120V,3P MAINS: 100A M.L.O. A.I.C.: 10KA DESCRIPTION POST AMP HOOD WATER PURIFICATION POST AMP RECEP WIRELESS ACCESS SPACE SPACE SPACE	NDL AND PA H,4 T R R R O	K 0 0 0
	* PROVIDE COMMON HAI FURNITURE SYSTEMS / VOLTS: 208/120V,3P MAINS: 100A M.L.O. A.I.C.: 10KA DESCRIPTION POST AMP HOOD WATER PURIFICATION POST AMP RECEP WIRELESS ACCESS SPACE SPACE SPACE SPACE		
	* PROVIDE COMMON HAI FURNITURE SYSTEMS / VOLTS: 208/120V,3P MAINS: 100A M.L.O. A.I.C.: 10KA DESCRIPTION POST AMP HOOD WATER PURIFICATION POST AMP RECEP WIRELESS ACCESS SPACE SPACE SPACE SPACE SPACE SPACE SPACE	PA H,4	
	* PROVIDE COMMON HAI FURNITURE SYSTEMS / VOLTS: 208/120V,3P MAINS: 100A M.L.O. A.I.C.: 10KA DESCRIPTION POST AMP HOOD WATER PURIFICATION POST AMP RECEP WIRELESS ACCESS SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE		
	* PROVIDE COMMON HAI FURNITURE SYSTEMS / VOLTS: 208/120V,3P MAINS: 100A M.L.O. A.I.C.: 10KA DESCRIPTION POST AMP HOOD WATER PURIFICATION POST AMP RECEP WIRELESS ACCESS SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE	PA H,4	
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	* PROVIDE COMMON HAI FURNITURE SYSTEMS / VOLTS: 208/120V,3P MAINS: 100A M.L.O. A.I.C.: 10KA DESCRIPTION POST AMP HOOD WATER PURIFICATION POST AMP RECEP WIRELESS ACCESS SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE		$ \begin{bmatrix}                                    $

FURNITURE SYSTEM. ** LOAD SHOWN FOR ELECTRICAL DISTRIBUTION BOX IS LARGEST ANTICIPATED LOAD FOR EQUIPMENT USED.



			PA	NE	L	"L2	2 <b>F</b> "			
VOLTS: 208/120V,3F MAINS: 200A M.L.O. A.I.C.: 10KA	°H,4	W							Ν	MTG: FLUSH NEM MFGR: SEE SPE TYPE: BOLT-
DESCRIPTION	Т	KVA	BKR	С	KT;	#	BKR	KVA	Т	DESCRIPTI
			ç	SECT	ON	ON	=			
	R	0.72	20A1P			2		0.72	R	
	R	0.72	20/(11 2041P	3		2 1	20A1P	0.72	R	
	R	0.72	20A1P	5		• 6	20A1P	0.72	R	
	R	0.72	20/11P	7.		8	20A1P	0.72	R	
	R	1.08	20A1P	9	•	10	20A1P	1.08	R	
MULTI SCRN/PROJ		1.00	20A1P	11		• 12	20A1P	1.00	R	BIO FUR
213 REFRIGERATOR	0	0.85	20A1P	13 •		14	20A1P	1 44	R	BIO FUR
213 REFRIGERATOR	0	0.85	20A1P	15	•	16	20A1P	1 44	R	BIO FUR
213 WARM CABINET	н	1.50	20A1P	17		• 18	20A1P	1 44	R	BIO FUR
213 WARM CABINET	0	1.50	20A1P	19 •		20	20A1P	1 44	R	BIO FUR
213 BRK RM RFC	R	0.54	20A1P	21	•	22	20A1P	1.44	R	BIO FUR
DISPOSAL	м	1 18	20A1P	23		• 24	20A1P	1 44	R	BIO FUR
DISHWASHER	0	0.65	20A1P	25 •		26	20A1P	1 44	R	BIO FUR
BRK RM REC	R	0.54	20A1P	27	•	28	20A1P	1 44	R	BIO FUR
BRK RM REC	R	0.54	20A1P	29		• 30	20A1P	1 44	R	BIO FUR
COFFEE BAR DISP	M	1 18	20A1P	31 •		32	20A1P	1 44	R	BIO FUR
COFFEE BAR REC	R	0.72	20A1P	33	•	34	20A1P	1 44	R	BIO FUR
AV ROOM REC	R	0.36	20A1P	35		• 36	20A1P	1.26	R	GENERAL F
AV ROOM REC	R	0.36	20A1P	37 •		38	20A1P	0.90	R	CONF RM 20
OFFICE RECEP	R	0.90	20A1P	39	•	40	20A1P	0.50	0	PR
OFFICE RECEP	R	0.90	20A1P	41		• 42	20A1P	1.40	0	WIRELESS AC
			S		ON	TW	) )			
210 WRKRM REC	R	0.72	20A1P	43 •		44	20A1P	1.05	0	WIRELESS AC
210 WRKRM COPIER	0	0.65	20A1P	45	•	46	20A1P	1.05	0	WIRELESS AC
210 WRKRM REC	R	0.72	20A1P	47		• 48	20A1P	1.44	R	BIO FUR
A/V CLOSET RECEP	R	0.18	20A1P	49 •		50	20A1P	0.36	R	TV RECEPTA
A/V CLOSET RECEP	R	0.18	20A1P	51	•	52	20A1P	0.02	L	LTG PREFUN DIS
SPARE			20A1P	53		• 54	20A1P		_	5
SPARE			20A1P	55 •		56	20A1P			
SPARE			20A1P	57	•	58	20A1P			
SPARE			20A1P	59		• 60	20A1P			S
SPARE			20A1P	61 •		62	20A1P			
SPACE				63	•	64				S
SPACE				65		• 66				S
SPACE				67 •		68				S
SPACE				69	•	70				S
SPACE				71		• 72				S
SPACE				73 •		74				S
SPACE				75	•	76				S
SPACE				77		• 78				S
SPACE				79 •		80				S
SPACE				81	•	82				5
SPACE				83		• 84				S
ΙΟΑΟ ΚΛΑ	I TO	G	RFC	MTR		нт	R OTH	R T	ОТ	AI
CONNECTED	0.	0	36.2	3.7		1.	5 8.	5	49	9.9
NEC DEMAND	0.	0	23.1	4 0		1.	5 8.	5	37	7.2
AMPS									1	03
			Δ	_	16	Δ	в -	= 15	3	C = 182
PHASE IMBALANCE	(%)		A A/R	=	7 0	+	B/C. =	- 10. = 10.4	2	C = 10.2 C/A = 11.4
	(,,,)		,,,,,				2,0	13.	۲	<i><i>u</i>, <i>u</i>, <i>u</i>, <i>u</i>, <i>u</i>, <i>u</i>, <i>u</i>, <i>u</i>,</i>

* PROVIDE COMMON HANDLE TIE FOR CIRCUITS WITH SHARED NEUTRALS WITHIN FURNITURE AND LAB WORKBENCHES.

	VOLTS: 480/277V,3F MAINS: 400A M.L.O.	PH,4	W					ſ	ито	G: SURFACE N MFGR: SEE S	EN SPE
				DKD							
	DESCRIPTION		KVA	BKR	CKI	#		KVA		DESCRI	PT
	LIG BASEMENT EAST		2.08	20A1P	1•	2	15A	2.11	M		
	LTG BASEMENT WEST		2.36	20A1P	3 •	4		2.11	M		
	LTG NW STAIR	L	1.12	20A1P	5	• 6	3P	2.11	M		
^	LTG SITE		0.69	20A1P	7•	8	20A	2.49	М		
2	RO-ST	M	2.11	15A	9 •	10		2.49	М		
	-	M	2.11		11	• 12	3P	2.49	М		
	-	M	2.11	3P	13 •	14	60A	7.48	М		H
	DI-CP	М	2.77	20A 🧹	15 •	16		7.48	М		
	-	М	2.77		17	• 18	JP 3P	7.48	М		
	-	М	2.77	J 3P	19 •	20	15A 🦯	2.11	М		
	DI-1	М	1.66	15A	21 •	22		2.11	М		
	-	М	1.66		23	• 24	J 3P	2.11	М		
	-	М	1.66	J 3P	25 •	26	15A 🦯	2.66	М		
	SPACE				27 •	28		2.66	М		
	SPACE				29	• 30	3P	2.66	М		
	SPACE				31 •	32	ſ				
	SPACE				33 •	34					
	SPACE				35	• 36					
	SPACE				37 •	38					1
	SPACE				39 •	40					
	SPACE				41	• 42					
	LOAD KVA CONNECTED NEC DEMAND AMPS	LT 6. 7.	G 2 8	MTR T 76.5 82.1	OTAL 82.7 89.9 108.2	<u>[</u> 2	Δ		•		
	PHASE KVA PHASE IMBALANCE	(%)	)	A A/B	= 21. = 1.9	3	B = B/C =	= 20.9 = 6.3	9	C = 19 C/A = 8	9.7 .4

				PA	NE	EL	"H	<b>11A</b> "					
	VOLTS: 480/277V,3P MAINS: 400A M.L.O. A.I.C.: 42KA	H,4	W						ſ	ИТС	G: SUR MFG TYP	RFACE R: SEE E: SEE	NEMA SPE( SPE(
	DESCRIPTION	Т	KVA	BKR		CK.	Γ#	BKR	KVA	Т		DESCF	RIPTIC
	LTG HALL & LOBBY	L	3.18	20A1P	1	•	2	20A /	3.05	М			VFD-F
	LTG S LABS	L	3.53	20A1P	3	•	4		3.05	М			
	LTG N LABS	L	3.99	20A1P	5		• 6	3P	3.05	М			
	LTG EXT BLDG MOUNT	L	1.36	20A1P	7	•	8	20A /	3.05	М			VFD-F
^	LTG CENTER STAIR	L	1.05	20A1P	9	•	10		3.05	М			
3	LTG ARTWORK		0.59	_20A1P_	11		• 12	3P	3.05	м			
<b>∧</b> ∗	SHELL SPACE LTG	L	1.24	20A1P	13	$\mathbf{R}^{\dagger}$	14	20A /	3.05	м			VFD-F
4	SPACE				15		16		3.05	м			
	SPACE				17		• 18	3P	3.05	М			
	SPACE				19	•	20	20A /	3.05	м			VFD-F
	SPACE				21		22		3.05	м			
	SPACE				23		• 24	3P	3.05	м			
	SPACE				25	•	26	20A /	3.05	м			VED-F
	SPACE				27		28		3.05	м			
	SPACE				29		• 30	38	3.05	м			
	SPACE				31		32		3.05	M			VED-F
	SPACE				33		34		3.05	M			101
	SPACE				35	+	• 36	30	3.05	M			
	SPACE				37		38		12.00	M			
					30	H	40		2.11	M			
		-			11	H	• 12	30	2.11	M			
	LOAD KVA CONNECTED NEC DEMAND	LT 14 17	G I 4 6	MTR T 61.2 63.5	OT/ 75 81	AL .6 .2	~	Z		<u> </u>	L		
	AMPS Z-3				97	./	<u> </u>						
	PHASE KVA			A	=	24	.9	В	= 25.	0	С	=	24.4
	PHASE IMBALANCE	(%)	)	A/B	=	0.	2	B/C	= 2.4		C/A	. =	2.3
$\Delta$	* PROVIDE NEW CIRCUI	T BF	REAKEF	R FOR NEW	/ LOA	AD A		D AS PART	OF THIS	S PF	ROJECT	}	
									LBA	T	L1C	L2B	L2
												1.20	
												LZO	н
									L1A		L2A		-
												L2D	
													н
											I 1B-IS	L1B	



			PA	NEL	"L3	3A"			
VOLTS: 208/120V,3P MAINS: 200A M.L.O. A.I.C.: 10KA	'H,4	W					٢	лто	G: SURFACE NEMA 1 MFGR: SEE SPECS TYPE: BOLT-ON
DESCRIPTION	Т	KVA	BKR	СКТ	<b>F#</b>	BKR	KVA	Т	DESCRIPTION
			S						
GENERAL RECEP	R	1.80	20A1P	1•	2	20A1P	1.75	0	WIRELESS ACCESS
GENERAL RECEP	R	1.08	20A1P	3 •	4	20A1P	1.73	С	PFPR-10/PFPR-06
CONF RM PROJECTOR	м	1.18	20A1P	5	• 6	20A1P	1.39	С	PFPR-06/PFPR-08
CONF RM RECEP	R	0.54	20A1P	7•	8	20A1P	1.73	С	PFPR-12/PFPR-10
INTERACTION RM	R	0.72	20A1P	9•	10	20A1P	1.73	С	(2) PFPR-12
VAVR-12/VAVR-10	С	1.39	20A1P	11	• 12	20A1P	1.73	С	PFPR-10/PFPR-14
VVE-12/VAVR-14	С	1.56	20A1P	13 •	14	20A1P	1.56	С	PFPR-08/PFPR-10
(2) VAVR-08	С	1.39	20A1P	15 •	16	20A1P	1.56	С	PFPR-08/PFPR-10
VVC-10/VAVR-12	С	1.39	20A1P	17	• 18	20A1P	1.73	С	(2) PFPR-12
VAV-14/VVC-10	С	1.39	20A1P	19 •	20	20A1P	1.73	С	PFPR-12/PFPR-10
VVC-10/VVE-12	С	1.39	20A1P	21 •	22	20A1P	1.39	С	VAVR-08/VAVR-10
CVE-08/VVE-10	С	1.39	20A1P	23	• 24	20A1P	1.39	С	VVE-10/VVE-14
VVE-12/CVE-10	С	1.39	20A1P	25 •	26	20A1P	1.39	С	(2) VVC-10
VAVR-08/VAVR-10	С	1.39	20A1P	27 •	28	20A1P	1.39	С	VVC-10/VAVR-14
(2) VAVR-12	С	1.39	20A1P	29	• 30	20A1P	1.39	С	VAVR-10/VAVR-12
CVE-10/VVE-12	С	1.39	20A1P	31 •	32	20A1P	1.39	С	VVC-10/VAVR-06
VAVR-08/CVC-10	С	1.39	20A1P	33 •	34	20A1P	1.39	С	(2) VVC-10
VVE-08/VVC-10	С	1.39	20A1P	35	• 36	20A1P	1.39	С	VVE-12/VVE-12
(2) VVC-10	С	1.39	20A1P	37 •	38	20A1P	0.70	М	VVC-12
VVE-10/VAVR-08	С	1.39	20A1P	39 •	40	20A1P	1.39	С	VAV-16/VVE-10
VAVR-10/VAVR-12	С	1.39	20A1P	41	• 42	20A1P	1.39	С	VAVR-08/VAVR-12
			S	ECTION	N T W	C			
CONF ROOM RECEP	R	0.54	20A1P	43 •	44	20A1P	0.70	М	FC-303
FC-302	М	0.70	20A1P	45 •	46	20A1P			SPARE
SPARE			20A1P	47	• 48	20A1P			SPARE
SPARE			20A1P	49 •	50	20A1P			SPARE
SPARE			20A1P	51 •	52	20A1P			SPARE
SPARE			20A1P	53	• 54	20A1P			SPARE
SPARE			20A1P	55 •	56	20A1P			SPARE
SPARE			20A1P	57 •	58	20A1P			SPARE
SPARE			20A1P	59	• 60	20A1P			SPARE
SPACE				61 •	62				SPACE
SPACE				63 •	64				SPACE
SPACE				65	• 66				SPACE
SPACE				67 •	68				SPACE
SPACE				69 •	70				SPACE
SPACE				71	• 72				SPACE
SPACE				73 •	74				SPACE
SPACE				15	/6				SPACE
SPACE				70	• 78				SPACE
SPACE				19 •	80				SPACE
SPACE					82				SPACE
SPACE	<u> </u>			03	• 84				SPACE
LOAD KVA CONNECTED NEC DEMAND AMPS	RE 4. 4.	C 1 7 7	MTR O 54.5 54.8	THR 1.8 1.8	TOT 6 6 1	AL 0.9 1.2 70			
PHASE KVA PHASE IMBALANCE	(%)	)	A A/B	= 20 = 4.5	.9 5	B B/C	= 20.0 = 0.5	C	C = 19.9 C/A = 5.0

PAN	NEL	. "L3	3B" (F	[;] OF	RE	NS	IC TF	RACI	Ξ	LAB)
VOLTS: 208/120V,3 MAINS: 100A M.L.C A.I.C.: 10KA	3PH,4 ).	W	•							MTG: FLUSH NEMA 1 MFGR: SEE SPECS TYPE: BOLT-ON
DESCRIPTION	Т	KVA	BKR		СКТ	#	BKR	KVA	Т	DESCRIPTION
FOR TRACE OVEN	Н	1.65	20A1P	1 •	•	2	20A1P	0.27	L	FOR TRC TASK LTG
FOR TRACE HOOD	М	1.18	20A1P	3	•	4	20A1P	1.80	R	FOR TRC RACEWAY
FOR TRACE HOOD	М	1.18	20A1P	5		• 6	20A1P	1.80	R	FOR TRACE RACEWAY
FOR TRACE RECEP	R	0.90	20A1P	7 •	•	8	20A1P	1.07	С	FOR TRACE REC/WAP
FOR TRACE RECEP	R	0.72	20A1P	9	•	10	20A1P	0.36	R	FOR TRACE RECEP
FOR TRACE RECEP	R	0.90	20A1P	11		• 12	20A1P	0.77	С	FOR TRACE CLG PNL
FOR TRACE RECEP	R	0.90	20A1P	13 •	•	14	20A1P	0.77	С	FOR TRACE CLG PNL
SPACE				15	•	16	20A1P	0.77	С	FOR TRACE CLG PNL
SPACE				17		• 18	20A1P	0.77	С	FOR TRACE CLG PNL
SPACE				19 •	•	20	20A1P	0.77	С	FOR TRACE CLG PNL
SPACE				21	•	22	20A1P	0.77	С	FOR TRACE CLG PNL
SPACE				23		• 24	20A1P	0.77	С	FOR TRACE CLG PNL
SPACE				25 •	•	26	20A1P	0.77	С	FOR TRACE CLG PNL
SPACE				27	•	28	20A1P	0.77	С	FOR TRACE CLG PNL
SPACE				29		• 30	20A1P	0.77	С	FOR TRACE CLG PNL
SPACE				31 •	•	32				SPACE
SPACE				33	•	34				SPACE
SPACE				35		• 36				SPACE
SPACE				37 •	•	38				SPACE
SPACE				39	•	40				SPACE
SPACE				41		• 42				SPACE
LOAD KVA CONNECTED NEC DEMAND AMPS	LT( 0. 0.	G I 8 9	REC 15.3 12.7	MTR 2.4 2.6		HTI 1. 1.	R OTH 6 0 6 0	R T .3 .3	ОТ 2 1	AL 0.4 8.2 51
PHASE KVA PHASE IMBALANC	E (%)	)	A A/B	= =	7.1 11	l .5	B B/C	= 6.4 = 9.2		C = 6.9 C/A = 2.1
* PROVIDE COMMON H				JITS V	VITH	H SHA	RED NEUT	FRALS V	VITH	HIN

PA	N	EL '	'L3F"	(L/	<b>\T</b>	EN	t pri	NT	L	<b>١</b>
VOLTS: 208/120V,3F MAINS: 125A M.L.O. A.I.C.: 10KA	νH,4	W							ſ	TN N
DESCRIPTION	Т	KVA	BKR		СКТ	#	BKR	KVA	Т	
LATENT PRINT HOOD	М	1.18	20A1P	1 •		2	20A1P	0.36	L	
LATENT PRINT HOOD	М	1.18	20A1P	3	•	4	20A1P	0.36	L	
LATENT PRINT HOOD	М	1.18	20A1P	5		• 6	20A1P	0.23	L	
LATENT PRINT HOOD	М	1.18	20A1P	7 (		8	20A1P	1.43	С	
LATENT PRINT HOOD	М	1.18	20A1P	9	•	10	20A1P	0.23	L	
LP LIGHT TABLE	L	1.00	20A1P	11		• 12	20A1P	0.72	R	
LP LIGHT TABLE	L	1.00	20A1P	13 •		14	20A1P	1.08	R	
LP LIGHT TABLE	L	1.00	20A1P	15	•	16	20A1P	1.08	R	
LP LIGHT TABLE	L	1.00	20A1P	17		• 18	20A1P	1.08	R	
ALS/RUFIS REC	R	0.54	20A1P	19 •		20	20A1P	1.08	R	
ALS/RUFIS REC	R	0.54	20A1P	21	•	22	20A1P	1.08	R	
EXAM LIGHTS	L	1.00	20A1P	23		• 24	20A1P	1.08	R	
EXAM RM REC / WAP	С	1.07	20A1P	25 •		26	20A1P	1.08	R	
EXAM ROOM REC	R	0.90	20A1P	27	•	28	20A1P	1.08	R	
CYANACYLIATE CHAMB	R	0.18	20A1P	29		• 30				
SPACE				31 •		32				
SPACE				33	•	34				
SPACE				35		• 36				
LTG S LAB EXAM LTS	L	0.21	20A1P	37 •		38				
LEKITREAVER	0	1.18	20A1P	39	•	40	20A	1.56	0	
SPACE				41		• 42	2P	1.56	0	
LOAD KVA CONNECTED NEC DEMAND AMPS	LT 6. 8.	G 4 0	REC 13.3 11.7	MTR 5.9 6.2		OTH 5 5	R TOT .0 3 .0 3	AL 0.6 0.8 86		
PHASE KVA PHASE IMBALANCE	(%)	)	A A/B	=	10 11	2 .3	B = B/C =	= 11. = 25.	4 9	



PA	۱N	EL '	"L3C"	<b>(</b> C	H	EN	1 TRA	CE	LA	<b>B)</b>
VOLTS: 208/120V,3P MAINS: 125A M.L.O. A.I.C.: 10KA	H,4	W							ſ	MTG: FLUSH NEMA 1 MFGR: SEE SPECS TYPE: BOLT-ON
DESCRIPTION	Т	KVA	BKR	(	CK	T#	BKR	KVA	Т	DESCRIPTION
			S	SECI	10		IE			
CHEM TRC RACEWAY	R	1.80	20A1P	1		2	20A1P	1.18	М	CHEM TRC HOOD
CHEM TRC RACEWAY	R	1.80	20A1P	3	•	4	20A1P	1.18	М	CHEM TRC HOOD
CHEM TRC CLG PNL	С	0.77	20A1P	5		• 6	20A1P	0.77	С	CHEM TRC CLG PNI
CHEM TRC CLG PNL	С	0.77	20A1P	7	$\mathbf{b}$	8	20A1P	0.77	С	CHEM TRC CLG PNI
CHEM TRC CLG PNL	С	0.77	20A1P	9	•	10	20A1P	0.77	С	CHEM TRC CLG PNI
CHEM TRC CLG PNL	С	0.77	20A1P	11		• 12	20A1P	0.77	С	CHEM TRC CLG PNI
CHEM TRC CLG PNL	С	0.77	20A1P	13	•	14	20A1P	0.89	С	CT GEN REC/ WAF
CHEM TRC CLG PNL	С	0.77	20A1P	15	•	16	20A1P	0.18	R	GLASSWARE WASHEF
CHEM TRC CLG PNL	С	0.77	20A1P	17		• 18	20A1P	0.36	R	PRINTER /CENTRIFUG
CHEM TRC CLG PNL	С	0.77	20A1P	19 (		20	20A1P	1.80	R	CHEM TRC RACEWAY
CHEM TRC CLG PNL	С	0.77	20A1P	21	•	22	20A1P	1.80	R	CHEM TRC RACEWAY
CHEM TRC CLG PNL	С	0.77	20A1P	23		• 24	20A1P	1.65	Н	CHEM TRACE OVEN
CHEM TRC CLG PNL	С	0.77	20A1P	25		26	20A1P	1.65	Н	CHEM TRACE OVEN
CHEM TRC CLG PNL	С	0.77	20A1P	27	•	28	20A1P	0.72	R	CHEM TRACE WASH
CHEM TRC CLG PNL	С	0.77	20A1P	29		• 30	20A1P	0.54	R	CHEM TRACE WASH
CHEM TRC CLG PNL	С	0.77	20A1P	31 (	•	32	20A1P	0.32	L	CHEM TRACE TASK
CHEM TRC CLG PNL	С	0.77	20A1P	33	•	34	20A1P	0.14	L	CHEM TRACE TASK
CHEM TRC CLG PNL	R	1.08	20A1P	35		• 36	30A /	2.50	0	GLASS WASHEF
CHEM TRC CLG PNL	С	0.77	20A1P	37 (		38		2.50	0	-
CHEM TRC CLG PNL	С	0.77	20A1P	39	•	40	3F	2.50	0	-
CHEM TRC HOOD	М	1.18	20A1P	41		• 42	20A1P	1.18	М	CENTRIFUGE
			S	ECT	10	ΝΤΝ	10		_	
SPACE				43 •	•	44				SPACE
SPACE				45	•	46				SPACE
SPACE				47		• 48				SPACE
SPACE				49 (		50				SPACE
SPACE				51	•	52				SPACE
SPACE				53		• 54				SPACE
SPACE				55 (		56				SPACE
SPACE				57	•	58				SPACE
SPACE				59		• 60				SPACE
SPACE				61		62				SPACE
SPACE				63	•	64				SPACE
SPACE				65		• 66				SPACE
SPACE				67 (		68				SPACE
SPACE				69	•	70				SPACE
SPACE				71		• 72				SPACE
SPACE				73 •		74				SPACE
SPACE				/5	•	76				SPACE
SPACE				77		• 78				SPACE
SPACE	-			19		80				SPACE
SPACE				81		82				SPACE
SPACE				83		• 84				SPACE
LOAD KVA	LT	G I	REC	MTR		HT	R OTH	IR 1	ΓOΤ	AL
	1.	5	25.7	4.7		3	5.3 7	′.8 7.0	4	3.1
	1.	Ø	17.9	5.0	1	3	. <i>3</i> 1	σ.ŏ	3	0.C
AIVIFO										33
PHASE KVA			А	=	15	5.5	В	= 13.	7	C = 13.9
PHASE IMBALANCE	(%)	)	A/B	=	13	3.3	B/C	= 1.2		C/A = 11.9

* PROVIDE COMMON HANDLE TIE FOR CIRCUITS WITH SHARED NEUTRALS WITHIN FURNITURE SYSTEMS AND LAB WORKBENCHES.

VOLTS: 208/120V,3F	PH,4	W						I	MTG: FLUSH NEMA
MAINS: 125A M.L.O. A.I.C.: 10KA	•								TYPE: BOLT-ON
DESCRIPTION	Т	KVA	BKR	Cł	KT#	BKR	KVA	Т	DESCRIPTION
	-		S	ECTIO	DN ON	Ξ			
FOR CHEM MICROSCP	R	0.36	20A1P	1 •	2	20A1P	0.77	С	FOR CHEM CLG F
FOR CHEM MICROSCP	R	0.36	20A1P	3	• 4	20A1P	0.77	С	FOR CHEM CLG F
FOR CHEM MICROSCP	R	0.36	20A1P	5	• 6	20A1P	0.77	С	FOR CHEM CLG F
FOR CHEM MICROSCP	R	0.36	20A1P	7 •	8	20A1P	0.77	С	FOR CHEM CLG F
FOR CHEM MICROSCP	R	0.36	20A1P	9	• 10	20A1P	0.77	С	FOR CHEM CLG I
FOR CHEM MICROSCP	R	0.36	20A1P	11	• 12	20A1P	0.77	С	FOR CHEM CLG F
FOR CHEM MICROSCP	R	0.36	20A1P	13 •	14	20A1P	0.77	С	FOR CHEM CLG I
FOR CHEM MICROSCP	R	0.36	20A1P	15	• 16	20A1P	0.77	С	FOR CHEM CLG F
FOR CHEM MICROSCP	R	0.36	20A1P	17	• 18	20A1P	0.77	С	FOR CHEM CLG I
FOR CHEM MICROSCP	R	0.36	20A1P	19 •	20	20A1P	0.77	С	FOR CHEM CLG I
FOR CHEM MICROSCP	R	0.36	20A1P	21	• 22	20A1P	0.77	С	FOR CHEM CLG I
FOR CHEM MICROSCP	R	0.36	20A1P	23	• 24	20A1P	0.77	С	FOR CHEM CLG
FOR CHEM CLG PNL	С	0.77	20A1P	25 •	26	20A1P	0.77	С	FOR CHEM CLG
FOR CHEM CLG PNL	С	0.77	20A1P	27	• 28	20A1P	0.77	С	FOR CHEM CLG
FOR CHEM CLG PNL	С	0.77	20A1P	29	• 30	20A1P	0.77	С	FOR CHEM CLG
FOR CHEM CLG PNL	С	0.77	20A1P	31 •	32	20A1P	0.77	С	FOR CHEM CLG
FOR CHEM REC/WAP	С	0.89	20A1P	33	• 34	20A1P	0.77	С	FOR CHEM CLG
XRF EQUIPMENT	0	1.66	20A	35	• 36	20A1P	0.77	С	FOR CHEM CLG
-	0	1.66	2P	37 •	38	20A1P	0.77	С	FOR CHEM CLG
XRF EQUIPMENT	R	0.18	20A1P	39	• 40	20A1P	0.77	С	FOR CHEM CLG
TASK LIGHTS	L	0.23	20A1P	41	• 42	20A1P	1.18	М	FOR CHEM HO
			S	ECTIC	ON TWO	С			
WATER POLISHER	R	0.18	20A1P	43 •	44				SP
SPACE				45	• 46				SP
SPACE				47	• 48				SP
SPACE				49 •	50				SP
SPACE				51	• 52				SP
SPACE				53	• 54				SP
SPACE				55 <b>•</b>	56				SP
SPACE				57	• 58				SP
SPACE				59	• 60				SP
SPACE				61 🛉	62				SP
SPACE				63	• 64				SP
SPACE				65	• 66				SP
SPACE				67 🛉	68				SP.
SPACE				69	• 70				SP
SPACE				71	• 72				SP.
SPACE				73 •	74				SP.
SPACE				75	• 76				SP
SPACE				77	• 78				SP
SPACE				79 🛉	80				SP
SPACE				81	• 82				SP
SPACE				83	• 84				SP.
LOAD KVA CONNECTED NEC DEMAND AMPS	LT( 1. 1.	G 4 7	REC I 22.5 16.2	MTR 1.2 1.5	OTHI 3. 3.	R TO1 7 2 7 2	AL 8.7 3.1 64		
PHASE KVA	- (0/)		A	= 1	0.2	B :	= 8.7		C = 9.9

PROVIDE COMMON HANDLE TIES FOR CIRCUITS WITH SHARED NEUTRALS WITHIN FURNITURE SYSTEMS AND LAB WORKBENCHES.

PAI	NE	:L "L	-3G		EN		SIKY	UF		
DLTS: 208/120V,3P	H,4	W							Ν	/ITG: FLUSH NEMA 1
AINS: 125A M.L.O.										MFGR: SEE SPECS
I.C.: 10KA				-						TYPE: BOLT-ON
SCRIPTION	Т	KVA	BKR	CI	KT#		BKR	KVA	Т	DESCRIPTION
			S	SECTI	ON (	ONE	Ē			
LESS ACCESS	0	1.75	20A1P	1 •		2	20A1P	1.08	R	OPEN OFFICE FURN
ER	0	0.65	20A1P	3	•	4	20A1P	1.08	R	OPEN OFFICE FURN
OFFICE REC	R	1.62	20A1P	5	•	6	20A1P	1.08	R	OPEN OFFICE FURN
LEAD OFFICE	R	1.08	20A1P	7•		8	20A1P	1.08	R	OPEN OFFICE FURN
LEAD OFFICE	R	0.72	20A1P	9	•	10	20A1P	1.08	R	OPEN OFFICE FURN
LEAD / QA MAN	R	1.08	20A1P	11	•	12	20A1P	1.08	R	OPEN OFFICE FURN
AN OFFICE	R	0.72	20A1P	13 •		14	20A1P	1.08	R	OPEN OFFICE FURN
ERENCE ROOM	R	0.72	20A1P	15	•	16	20A1P	1.08	R	OPEN OFFICE FURN
FFICE	R	0.72	20A1P	17	•	18	20A1P	1.08	R	OPEN OFFICE FURN
FFICE	R	1.08	20A1P	19 •		20	20A1P	1.08	R	OPEN OFFICE FURN
FFICE	R	0.72	20A1P	21	•	22	20A1P	1.08	R	OPEN OFFICE FURN
FFICE	R	1.08	20A1P	23	•	24	20A1P	1.08	R	OPEN OFFICE FURN
DSAL	М	1.18	20A1P	25 •		26	20A1P	0.54	R	DIRECTOR OFFICE RC
EE BAR	R	0.36	20A1P	27	•	28	20A1P	0.72	R	DIRECTOR OFFICE RC
EE BAR	R	0.18	20A1P	29	•	30	20A1P	1.08	R	STORAGE REC
EE BAR	R	0.36	20A1P	31 •		32	20A1P	0.65	0	COPIER
CONF ROOM REC	R	0.72	20A1P	33	•	34	20A1P	1.18	0	LEKITREAVER SYS
CONF ROOM REC	R	0.72	20A1P	35	•	36	20A1P	0.36	R	TV / MONITORS
SCREEN / PROJ	С	1.36	20A1P	37 •		38	20A1P	0.18	R	COPIER
CTOR OFFICE	R	0.72	20A1P	39	•	40	20A1P	0.54	R	TV OUTLETS
CTOR OFFICE	R	1.44	20A1P	41	•	42	20A1P	0.54	R	MONITORS
			S	SECTIO	T NC	ΓWC	2	-		
RIZED SHADES	М	1.18	20A1P	43 •		44	20A1P			SPARE
E			20A1P	45	•	46	20A1P			SPARE
E			20A1P	47	•	48	20A1P			SPARE
E			20A1P	49 •		50	20A1P			SPARE
E			20A1P	51	•	52	20A1P			SPARE
E			20A1P	53	•	54	20A1P			SPARE
Ε			20A1P	55 •		56	20A1P			SPARE
E			20A1P	57	•	58	20A1P			SPARE
E			20A1P	59	•	60	20A1P			SPARE
E				61 •		62				SPACE
E				63	•	64				SPACE
E				65	•	66				SPACE
E				67 •		68				SPACE
E				69	•	70				SPACE
E				71	•	72				SPACE
E				73 🛉		74				SPACE
E				75	•	76				SPACE
E				77	•	78				SPACE
E				79 🛉		80				SPACE
E				81	•	82				SPACE
Ξ				83	•	84				SPACE
AD KVA	RE	C N	MTR 0	THR	Т	OT.	AL			
NNECTED	31.	1	3.5	4.2		38	3.9			
C DEMAND	20.	6	3.8	4.2		28	3.6			
IPS							79			

* PROVIDE COMMON HANDLE TIE FOR CIRCUITS WITH SHARED NEUTRALS WITHIN FURNITURE SYSTEMS AND LAB WORKBENCHES.

MO

PANEL "LPA"													
VOLTS: 208/120V,3F MAINS: 100A MAIN E A.I.C.: 10KA	PH,4 BRE	W AKER							Ν	лто	G: SURF, MFGR: TYF	ACE SEI PE: E	E NEMA 1 E SPECS BOLT-ON
DESCRIPTION	Т	KVA	BKR		CK.	T#	BKR		KVA	Т	D	ESC	RIPTION
MAINTENANCE RECEP	R	1.80	20A1P	1 •		2	20A1F	>	0.86	М			HEF-01
MAINTENANCE RECEP	R	1.62	20A1P	3	•	4	20A1F	>	0.18	R	E	EVA	TOR RECEP
SPACE				5		• 6	20A1F	>	0.72	L	OB	STR	UCTION LTG
SPACE				7 •	,	8							SPACE
SPACE				9	•	10							SPACE
SPACE				11		• 12							SPACE
SPACE				13	,	14							SPACE
SPACE				15	•	16							SPACE
SPACE				17		• 18							SPACE
SPACE				19 •	,	20							SPACE
SPACE				21	•	22							SPACE
SPACE				23		• 24							SPACE
SPACE				25 •	,	26							SPACE
SPACE				27	•	28							SPACE
SPACE				29		• 30							SPACE
SPACE				31 •	,	32							SPACE
SPACE				33	•	34							SPACE
SPACE				35		• 36							SPACE
SPACE				37 •	,	38							SPACE
SPACE				39	•	40							SPACE
SPACE				41		• 42							SPACE
LOAD KVA CONNECTED NEC DEMAND AMPS	LT 0. 0.	G I 7 9	REC 3.6 3.6	MTR 0.9 1.1		TOT	TAL 5.2 5.6 15			•			
PHASE KVA PHASE IMBALANCE	(%)	)	A A/B	= =	2. 48	7 3.0	B B/C	=	1.8 150	.0	C C/A	=	0.7 270.0



			ΡΑ	NE	Ľ	"H	3 <b>A</b> "						
VOLTS: 480/277V,3PF MAINS: 400A M.L.O. A.I.C.: 42KA	⊣,4	W							Μ	ΤG	: SURF MFGR: TYF	ACE SEI PE: E	E NEM E SPE BOLT-
DESCRIPTION	Т	KVA	BKR	(	СКЛ	<b>[</b> #	BKR	H	KVA [	Т	D	ESC	RIPTI
LTG HALL,CONF RM	L	3.75	20A1P	1 •		2							5
LTG S-CENTER LABS	L	3.12	20A1P	3	•	4							5
LTG SW LABS	L	1.30	20A1P	5		• 6							5
LTG NW LABS	L	2.54	20A1P	7 •		8							5
LTG N-CENTER LABS	L	1.43	20A1P	9	•	10							5
LTG OFFICES	L	3.84	20A1P	11		• 12							5
LTG PENTHOUSE	L	1.80	20A1P	13		14							5
LTG ARTWORK	L	0.55	20A1P	15	3•	16							5
SPACE		$\cdots$		17		• 18							5
SPACE				19		20							S
SPACE				21	•	22							S
SPACE				23		• 24							S
SPACE				25 •		26							5
SPACE				27	•	28							5
SPACE				29		• 30							S
SPACE				31 •		32							S
SPACE				33	•	34							S
SPACE				35		• 36							5
SPACE				37 •		38							5
SPACE				39	•	40							5
SPACE				41		• 42							5
LOAD KVA CONNECTED NEC DEMAND AMPS	LT( 17. 22.	G T 8 2	OTAL 17.8 22.2 27										
PHASE KVA PHASE IMBALANCE	(%)	)	A A/B	=	8.′ 77	1 .9	B B/C	=	4.5 13.1		C C/A	=	5.1 57.2

				Ρ	A	NE	∟ "H	PA"				
	VOLTS: 480/277V, MAINS: 400A M.L. A.I.C.: 42KA	,3PH,4 O.	W						٦	ито	G: SURF MFGR: TYF	ACE NEM SEE SPE PE: BOLT-
	DESCRIPTION	Т	KVA	BKF	2	С	KT#	BKR	KVA	Т	D	ESCRIPT
					S	ECTI	ON ON	IE				
	SAF-2A	М	11.6	60A	$\square$	1 🛉	2	60A /	11.6	М		
	-	М	11.6			3	• 4		11.6	М		
	-	М	11.6	$\bigvee$	3P	5	• 6	3P	11.6	М		
	RAF-2A	М	4.21	20A	Δ	7•	8	20A 🦯	4.21	М		F
	-	М	4.21			9	• 10		4.21	М		
	-	М	4.21	$\vee$	3P	11	• 12	3P	4.21	М		
	ERWP-2	М	3.88	25A	$\square$	13 •	14	90A	14.4	М		
	-	М	3.88			15	• 16		14.4	М		
	-	M	3.88	$\swarrow$	3P	17	• 18	3P	14.4	М		
	AC-1	M	7.48	60A	4	19 •	20	90A	14.4	М		
•	-	M	7.48	$\vdash$		21	• 22		14.4	М		
$\Lambda$	-	M	7.48	$\swarrow$	3P	23	• 24	3P	14.4	М		
	SPARE			60A	4	25 •	26	60A	7.48	М		С
	-			$\vdash$		27	• 28		7.48	М		
	-			$\vee$	3P	29	• 30		7.48	М		
	VP-1	M	2.66	15A	4	31 •	32					
	-	M	2.66	$\vdash$		33	• 34					
	-	M	2.66	$\swarrow$	3P	35	• 36			_		
	SPACE					37 •	38	40A	2.66			PANEL
	SPACE					39	• 40		1.80			
	SPACE					41	<u>942</u>		0.72			
			i					1	Í			
	SPACE					43 •	44					
	SPACE					45	• 46					
	SPACE					47	• 48					
	SPACE				_	49 • 51	50					
	SPACE					51	• 52 • 54					
	SPACE				-	55	• 54 56					
	SPACE					57	58					
	SPACE				-	59	• 60					
	SPACE				_	61 •	62					
	SPACE					63	• 64					
	SPACE					65	• 66					
	SPACE					67 •	68					
	SPACE					69	• 70					
	SPACE					71	• 72					
	SPACE					73 •	74					Ś
	SPACE					75	• 76					
	SPACE					77	• 78					
	SPACE					79 🔹	80					
	SPACE					81	• 82					Ś
	SPACE					83	• 84					
	LOAD KVA	LT	G	REC	Ν	ЛТR	TOT	TAL A				
	CONNECTED	0.	7	3.6	24	46.9	25	$_{1.2}$ $2^{2}$				
	NEC DEMAND	0.	9	3.6	25	57.7	26	62.2				
	AMPS						31	5.5				
	PHASE K\/A			Δ		=	92.2	B	= .91 '	3	С	= 90.2
		CE (%`	)	A/F	В	=	0.9	B/C	= 10	-	C/A	= 22
		(70,	,	, , , ,	-				1.4			

RECORD DRAWING

THESE RECORD DOCUMENTS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. SCANLON CONSULTING HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY BE INCORPORATED AS A RESULT OF ERRONEOUS INFORMATION PROVIDED BY OTHERS.

L3A	L3C	L3G	-
L3B		LPA	-
	L3D		
L3F		H2A	





NOTE: LOAD SHOWN IS FOR 480V & 208V LIFE SAFETY RISER. REFER TO THE ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.

PAN	EL '	"EG	HBB"	(0	P	'T	10	NAL	-	GE	N	ERAL)	
VOLTS: 480/277V, MAINS: 100A M.L.( A.I.C.: 42KA	3PH,4 ጋ.	W								Ν	ЛТС	G: SURFACE MFGR: SE TYPE: 1	E NEMA 1 E SPECS BOLT-ON
DESCRIPTION	Т	KVA	BKR		Ck	(T‡	#	BKR		KVA	Т	DESC	RIPTION
HHWP-1	М	7.48	60A /	1	•		2						SPACE
-	М	7.48		3		•	4						SPACE
-	М	7.48	3P	5			• 6						SPACE
SPACE				7	•		8						SPACE
SPACE				9		•	10						SPACE
SPACE				11			• 12						SPACE
SPACE				13	•		14						SPACE
SPACE				15		•	16						SPACE
SPACE				17			• 18						SPACE
SPACE				19	•		20						SPACE
SPACE				21		•	22						SPACE
SPACE				23			• 24						SPACE
SPACE				25	•		26						SPACE
SPACE				27		•	28						SPACE
SPACE				29			• 30						SPACE
SPACE				31	•		32						SPACE
SPACE				33		•	34						SPACE
SPACE				35			• 36						SPACE
SPACE				37	•		38	40A		3.35	Т	Р	ANEL EGLBB
SPACE				39		•	40			1.85	Т		-
SPACE				41			• 42		3P	1.85	Т		-
LOAD KVA CONNECTED NEC DEMAND AMPS	MT 25. 31.	R O 8 4	THR T 3.8 3.8	OT / 29 35	AL .5 .1 42								
PHASE KVA PHASE IMBALANO	CE (%)	)	A A/B	=	1 1	0.8 6.	8 1	B B/C	=	9.3 0.0		C = C/A =	9.3 16.1

F	PA	NEL	"EGł	(LII	IFE SAFETY)								
VOLTS: 480/277V,3P MAINS: 200A M.L.O. A.I.C.: 42KA	H,4	W							Ν	ΛTO	G: SURF/ MFGR: TYP	ACE SEI PE: E	E NEMA 1 E SPECS BOLT-ON
DESCRIPTION	Т	KVA	BKR		СКЛ	Γ#	BKR	k	ΚVA	Т	DE	ESC	RIPTION
EM LTG HALL LOBBY	L	2.33	20A1P	1 •		2							SPACE
EM LTG LABS	L	0.77	20A1P	3	•	4							SPACE
EM LTG EXTERIOR	L	0.15	20A1P	5		• 6							SPACE
EM LTG CEN STAIR	L	1.05	20A1P	7 •	,	8							SPACE
SPACE				9	•	10							SPACE
SPACE				11		• 12							SPACE
SPACE				13 •	,	14							SPACE
SPACE				15	•	16							SPACE
SPACE				17		• 18							SPACE
SPACE				19	•	20							SPACE
SPACE				21	•	22							SPACE
SPACE				23		• 24							SPACE
SPACE				25 •	•	26							SPACE
SPACE				27	•	28							SPACE
SPACE				29		• 30							SPACE
SPACE				31 •	•	32							SPACE
SPACE				33	•	34							SPACE
SPACE				35		• 36							SPACE
SPACE				37 •	,	38							SPACE
SPACE				39	•	40							SPACE
SPACE				41		• 42							SPACE
LOAD KVA CONNECTED NEC DEMAND	LT 4. 5.	G T 3 4	OTAL 4.3 5.4										
AIVIPS			ю										
PHASE KVA PHASE IMBALANCE	(%)	)	A A/B	=	3.4 34	1 2.4	B B/C	=	0.8 403	.3	C C/A	=	0.2 2126.3

	VOLTS: 480/277V, MAINS: 200A M.L.0 A.I.C.: 42KA
	DESCRIPTION
	EM LTG HALL&OFFICE
	EM LTG WEST LABS
Δ	EM LTG M-PRPOSE RM
1	EM LTG PREFUN
	SPACE
	LOAD KVA
	CONNECTED
	NEC DEMAND
	AMPS
	PHASE KVA
	PHASE IMBALANC

VOLTS: 208/120V MAINS: 150A MAII A I C - 10KA
SPACE
LOAD KVA
CONNECTED
NEC DEMAND
AMPS
PHASE KVA
PHASE IMBALAN
* PROVIDE LOCK ON LOAD SHOWN IS FO

PAN	J
VOLTS: 208/120V MAINS: 100A MA A.I.C.: 10KA	/, 
DESCRIPTION	
FC-B01	
-	
-	
FC-B02	
-	
-	
SPACE	
LOAD KVA CONNECTED NEC DEMAND AMPS	
PHASE KVA PHASE IMBALAN	10





DEVICE FOR CIRCUIT BREAKER OR 208V LIFE SAFETY RISER. REFER TO THE ONE-LINE DIAGRAM FOR MORE INFO.





FACP

SPACE

FC-101

FCU-SHELL

SPACE

SPAC

PANEL "EGL1B" (OPTIONAL - GENERAL) VOLTS: 208/120V,3PH,4W MTG: SURFACE NEMA 1 MAINS: 100A M.L.O. MFGR: SEE SPECS A.I.C.: 10KA TYPE: BOLT-ON DESCRIPTION T KVA BKR CKT# | BKR | KVA | ⁻ DESCRIPTION R 0.36 20A1P 1 • 2 20A1P 0.70 **IBIS ROOM REC** 20A1P 0.25 SECURITY CAMERA IBIS ROOM REC R 0.36 20A1P • 4 R 0.36 20A1P **IBIS ROOM REC** •6**(**15A 0.79 IBIS ROOM REC R 0.36 20A1P 0.79 N SPACE 3P 0.79 N SPACE SPACE 13 🛉 SPACE SPACE 18 SPACE 19 🔶 SPACE SPACE SPACE 25 🛉 26 SPACE ♦ | 28 SPACE • 30 SPACE 31 🛉 SPACE SPACE • 36 SPACE 37 🛉 SPACE 39 SPACE ┶╸╸╸╺╘╸╸┶┶┶┶┶ LOAD KVA REC MTR OTHR TOTAL 1.4 3.1 0.2 4.7 🏠 CONNECTED 1.4 3.7 0.2 5.3NEC DEMAND AMPS 14.7 PHASE KVA A = 1.4 B = 0.6 C = 0.4

A/B = 132.1 B/C = 69.4 C/A = 293.3

PHASE IMBALANCE (%)

PANEL "EGL2A" (LIFE SAFETY)															
VOLTS: 208/120V,3F MAINS: 150A M.L.O. A.I.C.: 10KA	VOLTS: 208/120V,3PH,4WMTG: SURFACE NEMA 1MAINS: 150A M.L.O.MFGR: SEE SPECSA.I.C.: 10KATYPE: BOLT-ONDESCRIPTIONT KVA BKRCKT#BKRKVA TDESCRIPTION														
DESCRIPTION	Т	KVA	BKR		СКТ	#	BKR	KVA	Т	DESCRIPTION					
MAG HOLD OPENS	0	1.50	20A1P	1 •	,	2	20A1P	1.50	0	F/S DAMPERS					
FA STROBE PWR SPLY	0	0.50	20A1P	3	•	4	20A1P	1.50	0	F/S DAMPERS					
SPACE				5		• 6	20A1P	1.50	0	F/S DAMPERS					
SPACE				7•	,	8	20A1P	1.50	0	F/S DAMPERS					
SPACE				9	•	10	20A1P	1.00	0	F/S DAMPERS					
SPACE				11		• 12				SPACE					
SPACE				13 •		14				SPACE					
SPACE				15	•	16				SPACE					
SPACE				17		• 18				SPACE					
SPACE				19 •	,	20				SPACE					
SPACE				21	•	22				SPACE					
SPACE				23		• 24				SPACE					
SPACE				25 •	,	26				SPACE					
SPACE				27	•	28				SPACE					
SPACE				29		• 30				SPACE					
SPACE				31 •	,	32				SPACE					
SPACE				33	•	34				SPACE					
SPACE				35		• 36				SPACE					
SPACE				37 •	,	38				SPACE					
SPACE				39	•	40				SPACE					
SPACE				41		• 42				SPACE					
LOAD KVA C CONNECTED NEC DEMAND AMPS	отні 9. 9.	R T 0 0	OTAL 9.0 9.0 25												
PHASE KVA PHASE IMBALANCE	E (%)	)	A A/B	=	4.5 50	0	B B/C	= 3.0 = 100	0.0	C = 1.5 C/A = 200.0					





PANEL "EGL2D" (OPTIONAL - POST AMP)															
VOLTS: 208/120V,3 MAINS: 150A M.L.O A.I.C.: 10KA	VOLTS: 208/120V,3PH,4W       MTG: FLUSH NEMA 1         MAINS: 150A M.L.O.       MFGR: SEE SPECS         A.I.C.: 10KA       TYPE: BOLT-ON         DESCRIPTION       T KVA														
DESCRIPTION	Т	KVA	BKR		CK	(T;	#	BKR	KVA	Т	DESCRIPTION				
REF. / FREEZER	0	0.85	20A1P	1	•		2	20A1P	0.85	0	-80DEG FREEZER				
REF. / FREEZER	0	0.85	20A1P	3			4	20A1P	0.85	0	-80DEG FREEZER				
-20DEG EVAPORATOR	М	1.32	20A 🖊	5			• 6	20A1P	0.85	0	-80DEG FREEZER				
-	М	1.32		7	•		8	20A1P	0.85	0	-80DEG FREEZER				
-	М	1.32	3P	9		•	10	20A1P	0.85	0	-80DEG FREEZER				
-20DEG EVAPORATOR	М	1.32	20A 🖊	11			• 12	20A1P	0.85	0	-80DEG FREEZER				
-	М	1.32		13	•		14				SPACE				
-	М	1.32	ЗР	15		•	16				SPACE				
-20 CONTROL PNL	0	4.33	50A 🖊	17			• 18				SPACE				
-	0	4.33		19	•		20				SPACE				
-	0	4.33	3P	21		•	22				SPACE				
-20DEG EVAPORATOR	М	1.32	20A /	23			• 24				SPACE				
-	М	1.32		25	•		26				SPACE				
-	М	1.32	3P	27		•	28				SPACE				
-20DEG EVAPORATOR	М	1.32	20A /	29			• 30				SPACE				
-	М	1.32		31	•		32				SPACE				
-	М	1.32	J 3P	33		•	34				SPACE				
-20 CONTROL PNL	0	4.67	50A /	35			• 36				SPACE				
-	0	4.67		37	•		38				SPACE				
-	0	4.67	JP 3P	39		•	40				SPACE				
SPACE				41			• 42				SPACE				
LOAD KVA CONNECTED NEC DEMAND AMPS	MTI 15. 16.	R O 9 8	THR T 33.8 33.8	OTA 49 50 14	AL .7 .6 41										
PHASE KVA PHASE IMBALANCE	Ξ (%)	)	A A/B	=	1 0	6 .0	8	B B/C	= 16.8 = 5.3	8	C = 16.0 C/A = 5.3				

# **RECORD DRAWING**





 $\sim$ S đ RM Ш Ω С ō Ш  $\bigcap$ S С Ζ  $\geq$ U  $\Box$ Ζ <u>0</u> M S Ζ O  $\mathbf{O}$ %

5 September 2012

DANEL "EGUQA" (LIEE GAEETV)														
VOLTS: 480/277V,3 MAINS: 200A M.L.O A.I.C.: 22KA	PH,4	W								Ν	ЛТС	G: SURF MFGR: TYF	ACE SE PE: E	E NEMA 1 E SPECS BOLT-ON
DESCRIPTION	Т	KVA	BKR		CK	(T‡	#	BKR		KVA	Т	D	ESC	RIPTION
EM LTG HALL&OFFICE	L	2.76	20A1P	1	•		2							SPACE
EM LTG LABS	L	1.61	20A1P	3	•	•	4							SPACE
EM LTG PENTHOUSE	L	0.62	20A1P	5			• 6							SPACE
SPACE				7	•		8							SPACE
SPACE				9	•	•	10							SPACE
SPACE				11			• 12							SPACE
SPACE				13	•		14							SPACE
SPACE				15	•	•	16							SPACE
SPACE				17			• 18							SPACE
SPACE				19	•		20							SPACE
SPACE				21		•	22							SPACE
SPACE				23			• 24							SPACE
SPACE				25	•		26							SPACE
SPACE				27	•	•	28							SPACE
SPACE				29			• 30							SPACE
SPACE				31	•		32							SPACE
SPACE				33	•	•	34							SPACE
SPACE				35			• 36							SPACE
SPACE				37	•		38							SPACE
SPACE				39	•	•	40							SPACE
SPACE				41			• 42							SPACE
LOAD KVA CONNECTED NEC DEMAND AMPS	LT 5. 6.	G T 0 2	OTAL 5.0 6.2 8											
PHASE KVA PHASE IMBALANCE	Ξ (%)	)	A A/B	=	2 7	.8 1	7	B B/C	= =	1.6 159	.7	C C/A	=	0.6 345.8

PANE	Ξ <b>L</b> '	"EG	HPA	<b>\</b> "	(0	P	ΓΙΟ	)NA	L -	GE	EN	ERAL)
VOLTS: 480/277V,3 MAINS: 600A M.L.O A.I.C.: 42KA	PH,4	W								I	МΤ	G: SURFACE NEMA 1 MFGR: SEE SPECS TYPE: BOLT-ON
		κ\/A	BK	R		<u>CK</u>	Т#	ВИ	(R	K\/A	Т	DESCRIPTION
		КVЛ								IN A		DESCIAI HON
		11.6	604	$\overline{}$						116	М	
		11.0		/	2	H			-	11.0	M	
		11.0	$\vdash$	30	5	H	4	$+ \neq$	30	11.0	M	•
- RΔF-1B		/ 21	204	/			8	204	/	/ 21	M	RAF-1/
		4 21		/	9		10		-	4 21	M	-
-	- M	4.21		3P	11		• 12	$\vdash$	3P	4.21	м	
ERWP-1	M	3.88	25A	1	13	•	14	200A		43.2	M	ERU-2
-	М	3.88		/	15	•	16		/	43.2	м	
-	М	3.88	$\square$	3P	17		• 18	$\checkmark$	3P	43.2	м	-
EF-1	М	14.4	90A	/	19	•	20	60A	/	7.48	М	CHWP-1
-	М	14.4		/	21	•	22		/	7.48	М	-
-	М	14.4	$\checkmark$	3P	23		• 24	$\checkmark$	3P	7.48	М	-
-20 DEG CONDENSING	М	4.43	20A	/	25	•	26	20A	/	4.43	М	-20 DEG CONDENSING
-	М	4.43			27	•	28			4.43	М	-
-	М	4.43	$\vee$	3P	29		• 30		3P	4.43	М	-
-20 DEG CONDENSING	М	4.43	20A		31	•	32	20A		4.43	М	-20 DEG CONDENSING
-	М	4.43			33	•	34		/	4.43	М	-
-	М	4.43	$\vee$	3P	35		• 36		3P	4.43	М	-
SPACE					37	•	38	40A	$\square$	2.89	Т	PANEL EGLPA
SPACE					39	•	40		/	2.94	Т	-
SPACE					41		• 42		3P	2.19	Т	-
				S	ECT	101		/0				
SPACE					43	•	44					SPACE
SPACE					45	•	46					SPACE
SPACE					47		• 48					SPACE
SPACE					49	•	50					SPACE
SPACE					51	•	52					SPACE
SPACE					53		• 54					SPACE
SPACE					55		56					SPACE
SPACE					57		58					SPACE
SPACE					59	$\vdash$	+ 60 60					SPACE
SPACE					63		64					SPACE
SPACE	_				65		• 66					SPACE
SPACE					67		68					SPACE
SPACE					69		70					SPACE
SPACE					71		• 72					SPACE
SPACE	_				73	•	74					SPACE
SPACE	_				75	•	76					SPACE
SPACE					77		• 78					SPACE
SPACE					79	•	80					SPACE
SPACE	_				81	•	82					SPACE
SPACE					83		• 84					SPACE
LOAD KVA CONNECTED NEC DEMAND AMPS	MTF 360.4 392.	R O 4 8	THR 3.0 3.0	Т	OTA 363 395 47	AL .4 .8 76						
PHASE KVA PHASE IMBALANCI	Ξ (%)		A A	/B	=	12 0.0	21.3 0	В В/(	=	= 121 = 0.6	1.4	C = 120.6 C/A = 0.6

PAN	PANEL "EGHPB" (LEGALLY REQUIRED)														
VOLTS: 480/277V, MAINS: 100A MAIN A.I.C.: 14KA	3PH,4 N BRE	W AKER								ſ	ИΤ	G: SURF MFGR TYI	ACE SE PE: I	E NEN E SP BOLT	ЛА 1 ECS ⁻ -ON
DESCRIPTION	Т	KVA	BKR		CK	T#	<b>‡</b>	BKF	२	KVA	Т	D	ESC	RIPT	ION
SMF-1	М	3.88	25A 🖊	1	•		2	15A		0.28	М				SMF-2
-	М	3.88		3		•	4			0.28	М				-
-	М	3.88	3P	5		•	• 6		3P	0.28	М				-
SPACE				7	•		8								SPACE
SPACE				9	•	•	10								SPACE
SPACE				11		•	12								SPACE
SPACE				13	•		14								SPACE
SPACE				15	•		16								SPACE
SPACE				17		•	18								SPACE
SPACE				19	•		20								SPACE
SPACE				21			22								SPACE
SPACE				23		•	• 24								SPACE
LOAD KVA CONNECTED NEC DEMAND AMPS	MTI 12. 15.	R T 5 4	OTAL 12.5 15.4 18												
PHASE KVA PHASE IMBALANO	CE (%)	)	A A/B	=	4 0	.2 .0		B B/C	=	= 4.2 = 0.0		C C/A	=	4.2 0.0	

	ΡΑ	NEL	"EGL	_3/	۲"	<b>(LI</b>	FE SA	\FE ⁻	ΓY	)
VOLTS: 208/120V,3F MAINS: 150A M.L.O. A.I.C.: 10KA	РН,4	W						٦	ИΤ	G: SURFACE NEMA 1 MFGR: SEE SPECS TYPE: BOLT-ON
DESCRIPTION	Т	KVA	BKR	(	CK	T#	BKR	KVA	Т	DESCRIPTION
* MAG HOLD OPENS	0	1.50	20A1P	1 •		2	20A1P	1.50	0	F/S DAMPER
* FA STROBE PWR SPLY	0	0.50	20A1P	3	•	4	20A1P	1.50	0	F/S DAMPER
SPACE				5		• 6	20A1P	1.50	0	F/S DAMPER
SPACE				7 •		8	20A1P	1.50	0	F/S DAMPER
SPACE				9	•	10	20A1P	1.50	0	F/S DAMPER
SPACE				11		• 12	20A1P	0.50	0	F/S DAMPER
SPACE				13 •	•	14				SPACE
SPACE				15	•	16				SPACE
SPACE				17		• 18				SPACE
SPACE				19 •		20				SPACE
SPACE				21	•	22				SPACE
SPACE				23		• 24				SPACE
SPACE				25 •		26				SPACE
SPACE				27	•	28				SPACE
SPACE				29		• 30				SPACE
SPACE				31 •		32				SPACE
SPACE				33	•	34				SPACE
SPACE				35		• 36				SPACE
SPACE				37 •		38				SPACE
SPACE				39	•	40				SPACE
SPACE				41		• 42				SPACE
LOAD KVA C CONNECTED NEC DEMAND AMPS	DTH 10 10	R T .0 .0	OTAL 10.0 10.0 28							
PHASE KVA PHASE IMBALANCE	: (%	)	A A/B	=	4.: 28	5 3.6	B = B/C =	= 3.5 = 75.0	0	C = 2.0 C/A = 125.0
* PROVIDE LOCK ON DE	EVIC	E.								

PANEL "EGL3B" (OPTIONAL - GENERAL)														
VOLTS: 208/120V, MAINS: 100A M.L.C A.I.C.: 10KA	3PH,4 ጋ.	W							ſ	ИΤС	G: SURF MFGR: TYF	ACE SEI PE I	E NEN E SPI BOLT	/IA 1 ECS F-ON
DESCRIPTION	Т	KVA	BKR		CK	T#	Bł	٢R	KVA	Т	D	ESC	RIPT	ION
SPACE				1		2	15A	/	0.38	М				FC-301
SPACE				3	•	4		/	0.38	М				-
SPACE				5		• 6	$\bigvee$	3P	0.38	М				-
SPACE				7	•	8								SPACE
SPACE				9	•	10								SPACE
SPACE				11		• 12								SPACE
SPACE				13	•	14								SPACE
SPACE				15	•	16								SPACE
SPACE				17		• 18								SPACE
SPACE				19	•	20								SPACE
SPACE				21	•	22								SPACE
SPACE				23		• 24								SPACE
SPACE				25		26								SPACE
SPACE				27	•	28								SPACE
SPACE				29		• 30								SPACE
SPACE				31	•	32								SPACE
SPACE				33		34								SPACE
SPACE				35		• 36								SPACE
SPACE				37	•	38								SPACE
SPACE				39	•	40								SPACE
SPACE				41		• 42								SPACE
	MTI		ΟΤΑΙ	-			•							
CONNECTED	1	2	12											
NEC DEMAND	1	_ 4	1.4											
AMPS		•	4											
PHASE KVA			A	=	0.	4	В	=	0.4		С	=	0.4	
PHASE IMBALANC	E (%)	)	A/B	=	0.	0	B/0	с =	= 0.0		C/A	=	0.0	

		00"					•			TC	
PANEL E	<u>-GL</u>	.30			<b>N</b>			- CH			
VOLTS: 208/120V,3 MAINS: 100A M.L.C A.I.C.: 10KA	3PH,4 ).	W								I	MTG: FLUSH NEMA 1 MFGR: SEE SPECS TYPE: BOLT-ON
DESCRIPTION	Т	KVA	BKR		CK	T#		BKR	KVA	Т	DESCRIPTION
FRIDGE FREEZER	0	0.85	20A1P	1	•		2	20A1P	0.75	0	FTIR GENERATOR
FRIDGE FREEZER	0	0.85	20A1P	3	•	,	4	20A1P	0.75	0	FTIR GENERATOR
FRIDGE FREEZER	0	0.85	20A1P	5		•	6	20A1P	0.75	0	NITROGEN GENERATOR
SPACE				7	•		8	20A1P	0.75	0	NITROGEN GENERATOR
SPACE				9	•	,	10	20A1P	0.75	0	ZERO AIR GENERATOR
SPACE				11		•	12	20A1P	0.75	0	ZERO AIR GENERATOR
SPACE				13	•		14				SPACE
SPACE				15	•	,	16				SPACE
SPACE				17		•	18				SPACE
SPACE				19	•		20				SPACE
SPACE				21	•	,	22				SPACE
SPACE				23		•	24				SPACE
SPACE				25	•		26				SPACE
SPACE				27	•	,	28				SPACE
SPACE				29		•	30				SPACE
SPACE				31	•		32				SPACE
SPACE				33	•	,	34				SPACE
SPACE				35		•	36				SPACE
SPACE				37	•		38				SPACE
SPACE				39	•	,	40				SPACE
SPACE				41		•	42				SPACE
LOAD KVA CONNECTED NEC DEMAND AMPS	OTHI 7. 7.	R Т 0 0	OTAL 7.0 7.0 20								
PHASE KVA PHASE IMBALANC	E (%)	)	A A/B	=	2. 0.	.4 .0		B = B/C =	= 2.4 = 0.0		C = 2.4 C/A = 0.0

PANE	L	"EG	LPA" (	(0	P	T		NAL		GE	EN	ERAL	_)	
VOLTS: 208/120V,3P MAINS: 100A MAIN E A.I.C.: 10KA	H,4 BRE	W AKER									MT	G: SURF MFGR TYI	ACE SEI PE [	E NE E SI BOL
DESCRIPTION	Т	KVA	BKR	(	CK	T#	‡	BK	R	KVA	.   T	D	ESC	RIP
FC-P01	М	0.70	20A1P	1	•		2	15A	$\land$	0.72	М			
PC-P02	М	0.72	15A	3		•	4			0.72	М			
-	М	0.72		5		•	• 6		3P	0.72	М			
-	М	0.72	J 3P	7	•		8							
BMS PANEL	0	0.75	20A1P	9	•	•	10							
BMS PANEL	0	0.75	20A1P	11		•	• 12							
BMS PANEL	0	0.75	20A1P	13	•		14							
BMS PANEL	0	0.75	20A1P	15	•	,	16							
SPACE				17		•	• 18							
SPACE				19	•		20							
SPACE				21	•	•	22						-	
SPACE				23		•	• 24						-	
SPACE				25	•		26						-	
SPACE				27	•	•	28							
SPACE				29			• 30						-	
SPACE				31	•		32						-	
SPACE				33	•	,	34							
SPACE				35			• 36							
SPACE				37	•		38							
SPACE				39	•	,	40							
SPACE				41		•	• 42							
LOAD KVA CONNECTED NEC DEMAND AMPS	MT 5. 5.	R O 0 6	THR T 3.0 3.0	OTA 8 8 2	AL .0 .6 24									
PHASE KVA PHASE IMBALANCE	(%)	)	A A/B	=	2 1	.9 .9		B B/C	=	= 2.9 ≡ 34	) .2	C C/A	=	2.2 31

# RECORD DRAWING

THESE RECORD DOCUMENTS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. SCANLON CONSULTING HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY BE INCORPORATED AS A RESULT OF ERRONEOUS INFORMATION PROVIDED BY OTHERS.







NE	EW F	PAN	EL "C	L-l	-11	" (F	PAD	)F		2	LAB)			
VOLTS: 480/277V MAINS: 100A M.L.	,3PH,4 .0.	W							Ν	ЛΤΟ	G: SURF	ACE SEE	NEMA 1 SPECS	
A.I.C 14KA								_		_		'E. D'		
DESCRIPTION		ΚVA	BKR		KT	#	BK	R	KVA	Т	D	ESCF	RIPTION	
LTG CL GARAGE	L	3.01	20A1P	1 •		2	20A	$\square$	3.40	н			HU	-4
AC-2	М	2.11	20A /	3		4			3.40	н			-	
-	М	2.11		5	7	• 6	$\swarrow$	3P	3.40	н			-	
	М	2.11	3P	7 •	<u>)</u>	8	20A	$\square$	3.40	н			HU	-5
SPACE				9	•	10			3.40	н			-	
SPACE				11		• 12	$\sim$	3P	3.40	н			-	
SPACE				13 •		14	20A	$\square$	3.40	н			HU	-6
SPACE				15	•	16			3.40	Н			-	
SPACE				17		• 18	$\checkmark$	3P	3.40	Н			-	
SPACE				19 🛉		20							SPAC	СE
SPACE				21	•	22							SPAC	Έ
SPACE				23		• 24							SPAC	ЭE
SPACE				25 🔹		26							SPAC	ЭE
SPACE				27	•	28							SPAC	ЭE
SPACE				29		• 30							SPAC	ЭE
SPACE				31 •		32							SPAC	ЭE
SPACE				33	•	34							SPAC	СE
SPACE				35		• 36							SPAC	E
SPACE				37 •		38	70A		12.0	Т		P	ANEL CL-L	L1
SPACE				39	•	40			10.4	Т			-	
SPACE				41		• 42		3P	8.83	Т			-	
LOAD KVA CONNECTED NEC DEMAND AMPS	LT( 3. 4.	G 9 8	REC 1 4.7 4.7	MTR 26.9 27.9	~	HT 30. 30.	R C 6 6	DTHI 5. 5.	З Т 0 0	ОТ 7 7:	AL 2 1.1 3.1 88			
PHASE KVA PHASE IMBALAN	CE (%)	1	A A/B	=	25. 22.	2 5	B B/C	=	20.0 8.0	6	C C/A	=	19.0 32.3	

NEW	/	PAN	EL "C	;L-	Lť	" <b>(</b> F	PADF	CAF	2	LAB)		
VOLTS: 208/120V,3PI MAINS: 150A MAIN B A.I.C.: 10KA	⊣,4 RE	W AKER						٢	ИТ	G: SURFACE NEMA 1 MFGR: SEE SPECS TYPE: BOLT-ON		
DESCRIPTION	Т	KVA	BKR		СКТ	#	BKR	KVA	Т	DESCRIPTION		
			S	ECT	101	I ON	E					
CAR LAB RECEP	R	0.18	20A1P	1 •	,	2	30A	2.04	М	VEHICLE LIFT		
CAR LAB RECEP	R	0.18	20A1P	3	•	4	2P	2.04	М	-		
CAR LAB RECEP	R	0.18	20A1P	5		• 6	20A	1.25	0	GEN RECEP IN LAB		
CAR LAB RECEP	R	0.18	20A1P	7 •	,	8	2P	1.25	0	-		
CAR LAB RECEP	R	0.18	20A1P	9	•	10	20A1P	0.50	L	CAR LAB LIGHTS		
CAR LAB RECEP	R	0.18	20A1P	11		• 12	20A	1.25	0	GEN RECEP IN LAB		
MOTORIZED DOOR	М	0.58	15A	13 •	•	14	2P	1.25	0	-		
-	М	0.58	2P	15	+	16	15A	0.49	М	FC-B04		
COMPUTER	R	0.36	20A1P	17		• 18		0.49	М	-		
GENERAL RECEP	R	1.08	20A1P	19	<u> </u>	20	3P	0.49	M	-		
CAR LAB LTG / REC	С	0.72	20A1P	21	•	22	20A1P	0.70	M	FC-B07		
CAR LAB LTG / REC	С	0.90	20A1P	23		• 24	20A1P	0.70	M	FC-B06		
CHEM LUM ROOM REC	R	0.54	20A1P	25	<u> </u>	26	15A	0.49	M	FC-B03		
MOTORIZED DOOR	M	0.58	15A	27	-	28		0.49		-		
	IVI NA	0.58		29	+	• 30	3P	0.49		-		
MUTURIZED DOUR		0.58		31	<u> </u>	32		1.92		5P-3		
		0.00	200.10	33 25	Ť	04	200.10	1.92				
	м М	0.30	20ATP	35	-	+ 30 20	20ATP	1.39				
	IVI	0.70	20ATF	30		40	20ATP	1.39				
SPARE			20A11 20A1P	<u> </u>	-	• 42	20A11 20A1P	0.70	м	FC-B05		
SPARE         2041P         41         42         2041P         0.70         M         FC-B05           SECTION TWO         SEC												
SPARE			2041P							SPARE		
SPARE			20A1P	45		46	20A1P			SPARE		
SPARE			20A1P	47		• 48	20A1P			SPARE		
SPARE			20A1P	49	,	50	20A1P			SPARE		
SPARE			20A1P	51	•	52	20A1P			SPARE		
SPARE			20A1P	53		• 54	20A1P			SPARE		
SPARE			20A1P	55 •	,	56	20A1P			SPARE		
SPARE			20A1P	57	•	58	20A1P			SPARE		
SPARE			20A1P	59		• 60	20A1P			SPARE		
SPACE				61 •	,	62				SPACE		
SPACE				63	•	64				SPACE		
SPACE				65		• 66				SPACE		
SPACE				67 •	,	68				SPACE		
SPACE				69	•	70				SPACE		
SPACE				71		• 72				SPACE		
SPACE				73 •	<u> </u>	74				SPACE		
SPACE				75	•	76				SPACE		
SPACE				77		• 78				SPACE		
SPACE				79 •	•	80				SPACE		
SPACE				81	•	82				SPACE		
SPACE				83		• 84				SPACE		
LOAD KVA	LT	G I	REC I	MTR		отн	r tot	AL				
CONNECTED	0.	9	4.7	21.3		5.	0 3	1.9				
	1.	1	4.7	22.3		5.	0 33	3.1				
AMPS								92				
PHASE KVA			А	=	12	.7	в =	10.4	4	C = 8.8		
PHASE IMBALANCE	(%)		A/B	=	22	.4	B/C =	17	3	C/A = 43.5		

* PROVIDE GFCI CIRCUIT BREAKER.

PANEL	. "E	EUL	BA" (	BA	S	EM	ENT	GEN	IE	RAL)	*	,
VOLTS: 208/120V,3I MAINS: 100A M.L.O. A.I.C.: 10KA	PH,4	W			_				ИТС	G: SURF MFGR TYI	ACE SE	E NEMA 1 E SPECS BOLT-ON
DESCRIPTION	Т	KVA	BKR		СК	Γ#	BKR	KVA	Т	D	ESC	RIPTION
TELECOM B100 RECEP	R	0.18	20A1P	1	•	2	20A1P	0.45	0			BAS PANEL
TELECOM B100 RECEP	R	0.18	20A1P	3	•	4	20A1P	0.18	R		ľ	T RACK B100
TELECOM B100 RECEP	R	0.18	20A1P	5		• 6	20A1P	0.18	R		ľ	T RACK B100
SECURITY B103 REC	R	0.18	20A1P	7	•	8						SPACE
SECURITY B103 REC	R	0.18	20A1P	9	•	10						SPACE
SECURITY B103 REC	R	0.18	20A1P	11		• 12						SPACE
SECURITY B103 REC	R	0.18	20A1P	13	•	14						SPACE
SECURITY B103 REC	R	0.18	20A1P	15	•	16						SPACE
SPACE				17		• 18						SPACE
SPACE				19	•	20						SPACE
SPACE				21	•	22						SPACE
SPACE				23		• 24						SPACE
SPACE				25	•	26						SPACE
SPACE				27	•	28						SPACE
SPACE				29		• 30						SPACE
SPACE				31		32						SPACE
SPACE				33	•	34						SPACE
SPACE				35		• 36						SPACE
SPACE				37	•	38						SPACE
SPACE				39	•	40						SPACE
SPACE				41		• 42						SPACE
LOAD KVA CONNECTED NEC DEMAND AMPS	RE 1. 1.	C O 8 8	THR 1 0.5 0.5	TOT / 2 2	L .2 .2 6							
PHASE KVA PHASE IMBALANCE	E (%)	)	A A/B	= =	1.0 37	0 7.5	B B/C	= 0.7 = 33.	3	C C/A	=	0.5 83.3

VOLTS: 208/120V MAINS: 200A M.L. A.I.C.: 10KA	,3PH,4 O.	W							1	MTG: FLUSH NEMA 1 MFGR: SEE SPECS TYPE: BOLT-ON	
DESCRIPTION	Т	KVA	BKR	(	CK.	Γ#	BKR	KVA	Т	DESCRIPTION	
7500 PCR SYSTEM	R	1.08	20A1P	1 •	•	2	20A1P	0.36	R	THERMAL CYCLER	
7500 PCR SYSTEM	R	1.08	20A1P	3	•	4	20A1P	0.36	R	THERMAL CYCLER	
7500 PCR SYSTEM	R	1.08	20A1P	5		• 6	20A1P	0.36	R	THERMAL CYCLER	
3130 SYSTEM	С	0.77	20A1P	7 •	•	8	20A1P	0.36	R	THERMAL CYCLER	
3130 SYSTEM	С	0.77	20A1P	9	•	10	20A1P	0.36	R	THERMAL CYCLER	
3130 SYSTEM	0	2.50	30A	11		• 12	20A1P	0.77	С	3130 SYSTEM	
-	0	2.50	2P	13 •	•	14	20A1P	0.77	С	3130 SYSTEM	
3130 SYSTEM	0	2.50	30A	15	٠	16	30A	2.50	0	3130 SYSTEM	
-	0	2.50	2P	17		• 18	2P	2.50	0	-	
3130 SYSTEM	С	0.77	20A1P	19 •	•	20	30A	2.50	0	3130 SYSTEM	
3130 SYSTEM	С	0.77	20A1P	21	٠	22	2P	2.50	0	-	
3130 SYSTEM	0	2.50	30A	23		• 24				SPACE	
-	0	2.50	2P	25 •	•	26				SPACE	
3130 SYSTEM	0	2.50	30A	27	٠	28				SPACE	
-	0	2.50	2P	29		• 30				SPACE	
3130 SYSTEM	С	0.77	20A1P	31 •	•	32				SPACE	
3130 SYSTEM	С	0.77	20A1P	33	٠	34				SPACE	
3130 SYSTEM	0	2.50	30A	35		• 36				SPACE	
-	0	2.50	2P	37 •	•	38				SPACE	
3130 SYSTEM	0	2.50	30A 🦯	39	•	40				SPACE	
-	0	2.50	2P	41		• 42				SPACE	
LOAD KVA         LTG         REC         OTHR         TOTAL           CONNECTED         0.4         10.8         39.9         51.1           NEC DEMAND         0.5         10.4         39.9         50.8           AMPS         141         141         141											
PHASE KVA         A         =         14.9         B         =         16.6         C         =         19.7           PHASE IMBALANCE (%)         A/B         =         11.6         B/C         =         18.7         C/A         =         32.5											

F	PA	NEL	. "E
VOLTS: 208/120V,3P MAINS: 100A M.L.O. A.I.C.: 10KA	H,4	W	
DESCRIPTION	Т	KVA	BK
LARGE EXTRACTION	С	0.77	20A
LARGE EXTRACTION	С	0.77	20A
LARGE EXTRACTION	С	0.77	20A
LARGE EXTRACTION	С	0.77	20A
LARGE EXTRACTION	С	0.77	20A
LARGE EXTRACTION	С	0.77	20A
LARGE EXTRACTION	С	0.77	20A
LARGE EXTRACTION	С	0.77	20A
LARGE EXTRACTION	С	0.77	20A
LARGE EXTRACTION	С	0.77	20A
LARGE EXTRACTION	С	0.77	20A
LARGE EXTRACTION	С	0.77	20A
PCR STATION	С	0.77	20A
PCR STATION	С	0.77	20A
PCR STATION	С	0.77	20A
PCR STATION	С	0.77	20A
PCR STATION	С	0.77	20A
PCR STATION	С	0.77	20A
PCR STATION	С	0.77	20A
PCR STATION	С	0.77	20A
SPACE			
LOAD KVA	LT	G	REC
	1.	4	21.6
NEC DEMAND AMPS	1.	8	15.8
PHASE KVA			A
PHASE IMBALANCE	(%)	)	А

**

PHASE IMBALANCE (%) * PROVIDE AND INSTALL 200% RATED NEUTRAL.

** PROVIDE COMMON HANDLE TIE FOR CIRCUITS WITH SHARED NEUTRAL WITHIN FURNITURE SYSTEMS AND LAB WORKBENCHES.

PANEL "EUL2D" (FORENSIC BIOLOGY) *													
VOLTS: 208/120V,3F MAINS: 100A M.L.O. A.I.C.: 10KA	РН,4	W							ſ	MTG: FLUSH NEMA 1 MFGR: SEE SPECS TYPE: BOLT-ON			
DESCRIPTION	Т	KVA	BKR	(	СКТ	#	BKR	KVA	Т	DESCRIPTION			
PCR MICROSCOPES	R	0.72	20A1P	1 •		2	20A1P	0.18	R	CHEM TRACE			
PCR MICROSCOPES	R	0.72	20A1P	3	•	4	20A1P	0.72	R	CHEM TRACE			
PCR MICROSCOPES	R	0.54	20A1P	5		• 6	20A1P	0.18	R	CHEM			
PCR MICROSCOPES	R	0.54	20A1P	7 •	•	8	20A1P	0.18	R	CHEM			
SPACE				9	•	10	20A1P	1.18	М	CHEM			
SPACE				11		• 12	20A1P	0.54	R	CHEM			
SPACE				13 •	•	14	20A1P	1.02	0	CHEM			
SPACE				15	•	16				CHEM TRACE			
SPACE				17		• 18				CHEM TRACE			
SPACE				19 •	•	20				CHEM TRACE			
SPACE				21	•	22				CHEM TRACE			
SPACE				23		• 24				CHEM TRACE			
SPACE				25 •		26				SPACE			
SPACE				27	•	28				SPACE			
SPACE				29		• 30				SPACE			
SPACE				31 •		32				SPACE			
SPACE				33	•	34				SPACE			
SPACE				35		• 36				SPACE			
SPACE				37 •	•	38				SPACE			
SPACE				39	•	40				SPACE			
SPACE				41		• 42				SPACE			
LOAD KVA CONNECTED NEC DEMAND AMPS	RE 4. 4.	C I 3 3	MTR O 1.2 1.5	THR 1.0 1.0		тот	AL 6.5 6.8 19						
PHASE KVA PHASE IMBALANCE	E (%)	)	A A/B	=	2.6 0.9		B B/C	= 2.6 = 107	<i>.</i> 6	C = 1.3 C/A = 109.5			

* PROVIDE AND INSTALL 200% RATED NEUTRAL.

* PROVIDE AND INSTALL 200% RATED NEUTRAL.

PANEL "EUL1A" (FIRST FLOOR GENERAL) *											
VOLTS: 208/120V,3PH,4WMTG: SURFACE NEMA 1MAINS: 100A M.L.O.MFGR: SEE SPECSA.I.C.: 10KATYPE: BOLT-ON											
DESCRIPTION	Т	KVA	BKR	(	CK	T#		BKR	KVA	Т	DESCRIPTION
VIDEO ANAL EQUIP	С	0.77	20A1P	1 •		2	2	20A1P	0.77	С	VIDEO ANAL EQUIP
VIDEO ANAL EQUIP	С	0.77	20A1P	3	•	- 4	ł	20A1P	0.77	С	VIDEO ANAL EQUIP
VIDEO ANAL EQUIP	С	0.77	20A1P	5		• 6	3	20A1P	0.77	С	VIDEO ANAL EQUIP
VIDEO ANAL EQUIP	С	0.77	20A1P	7 (		8	3	20A1P	0.77	С	VIDEO ANAL EQUIP
VIDEO ANAL EQUIP	С	0.77	20A1P	9	•	1	0	20A1P	0.77	С	VIDEO ANAL EQUIP
VIDEO ANAL EQUIP	С	0.77	20A1P	11		• 1	2	20A1P	0.77	С	VIDEO ANAL EQUIP
SECURITY RECEP	R	0.36	20A1P	13 (	•	1	4	20A1P	0.36	R	GENERATOR RECEP
TELECOM RECEP	R	0.36	20A1P	15	•	1	6				SPACE
TELECOM RACK	R	0.18	20A1P	17		• 1	8				SPACE
TELECOM RACK	R	0.18	20A1P	19 (		2	20				SPACE
TELECOM RECEP	R	0.36	20A1P	21	•	2	22				SPACE
TELECOM RECEP	R	0.36	20A1P	23		• 2	24				SPACE
SECURITY RECEP	R	0.18	20A1P	25 •		2	26				SPACE
SECURITY RECEP	R	0.36	20A1P	27	•	2	28				SPACE
SPACE				29		• 3	30				SPACE
SPACE				31 (		3	32				SPACE
SPACE				33	•	. 3	34				SPACE
SPACE				35		• 3	36				SPACE
SPACE				37 (	•	3	38				SPACE
SPACE				39	•	- 4	10				SPACE
SPACE				41		• 4	12				SPACE
LOAD KVA LTG REC TOTAL CONNECTED 0.6 11.3 11.9 NEC DEMAND 0.7 10.7 11.4 AMPS 32											
PHASE KVA PHASE IMBALANCE	(%)	)	A A/B	=	4. 0.	.2 .0		B = B/C =	= 4.2 = 15.0	D	C = 3.6 C/A = 15.0

* PROVIDE AND INSTALL 200% RATED NEUTRAL. ** PROVIDE COMMON HANDLE TIE FOR CIRCUITS WITH SHARED NEUTRAL WITHIN FURNITURE / LAB WORKBENCHES

PANEL "EUL2A" (2ND FLOOR GENERAL) *											
VOLTS: 208/120V,3F MAINS: 100A M.L.O. A.I.C.: 10KA	РН,4	W								ΜT	G: SURFACE NEMA 1 MFGR: SEE SPECS TYPE: BOLT-ON
DESCRIPTION	Т	KVA	BKR		CK	(T‡	<b>‡</b>	BKR	KVA	Т	DESCRIPTION
CODIS ROOM REC	R	0.36	20A1P	1	•		2	20A1P	0.18	R	IT ROOM RACK
CODIS ROOM REC	R	0.36	20A1P	3		•	4	20A1P	0.18	R	IT ROOM RACK
CODIS ROOM REC	R	0.36	20A1P	5			• 6	20A1P	0.72	R	DATA ROOM REC
CODIS ROOM REC	R	0.36	20A1P	7	•		8	20A1P	0.72	R	DATA ROOM REC
SPACE				9		•	10	20A1P	0.72	R	DATA ROOM REC
SPACE				11		•	• 12	20A1P	0.72	R	SECURITY ROOM REC
SPACE				13	•		14	20A1P	0.72	R	SECURITY ROOM REC
SPACE				15		•	16	20A1P	0.36	R	SECURITY ROOM REC
SPACE				17		•	• 18				SPACE
SPACE				19	•		20				SPACE
SPACE				21		•	22				SPACE
SPACE				23		•	• 24				SPACE
SPACE				25	•		26				SPACE
SPACE				27		•	28				SPACE
SPACE				29			• 30				SPACE
SPACE				31	•		32				SPACE
SPACE				33		•	34				SPACE
SPACE				35			• 36				SPACE
SPACE				37	•		38				SPACE
SPACE				39		•	40				SPACE
SPACE				41		•	• 42				SPACE
LOAD KVA CONNECTED NEC DEMAND AMPS	RE 5. 5.	С Т 8 8	OTAL 5.8 5.8 16								
PHASE KVA PHASE IMBALANCE	E (%)	)	A A/B	=	2 4	.3 4 4	4	B B/C	= 1.6 = 11.	1	C = 1.8 C/A = 30.0
* PROVIDE AND INSTALL 200% RATED NEUTRAL.											

SPARE SPARE SPARE



PANEL "EUL3A" (THIRD FLR GENERAL) * VOLTS: 208/120V,3PH,4W MTG: SURFACE NEMA 1 MAINS: 100A M.L.O. MFGR: SEE SPECS A.I.C.: 10KA TYPE: BOLT-ON T KVA BKR CKT# BKR KVA T DESCRIPTION DESCRIPTION SERVER ROOM REC R 0.54 20A1P 1 • 2 IT ROOM RACK 20A1P 0.18 F SERVER ROOM REC R 0.54 20A1P 20A1P 0.18 IT ROOM RACK • 4 SERVER ROOM REC R 0.72 20A1P •6 20A1P IT ROOM REC 0.72 R 0.54 20A1P SERVER ROOM REC IT ROOM REC 7 🛉 📔 8 20A1P R 0.18 20A1P IT ROOM REC SERVER 10 20A1P SERVER R 0.18 20A1P 11 • 12 20A1P SECURITY ROOM REC R 0.18 20A1P SERVER 14 20A1P SECURITY ROOM REC | 13 🔶 🛛 SECURITY ROOM REC SPACE 16 20A1P 0.36 SPACE SPACE 18 SPACE SPACE 19 🔶 SPACE SPACE 1 22 SPACE SPACE • 24 SPACE SPACE 25 🔹 SPACE SPACE 28 SPACE SPACE • 30 SPACE SPACE 31 🔹 SPACE SPACE 33 | SPACE SPACE • 36 SPACE SPACE 37 🛉 SPACE SPACE 39 SPACE SPACE • 42 41 LTG REC OTHR TOTAL LOAD KVA 0.6 26.1 0.5 27.1 CONNECTED NEC DEMAND 0.7 18.0 0.5 19.2 AMPS 53 PHASE KVA A = 10.4 B = 8.5 C = 8.3 PHASE IMBALANCE (%) A/B = 22.3 B/C = 2.2 C/A = 25.0

* PROVIDE AND INSTALL 200% RATED NEUTRAL. LOAD SHOWN IS FOR 208V RISER. REFER TO THE ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.

PANEL "EUL3B" (CHEM / TRACE) *											
VOLTS: 208/120V,3P MAINS: 150A M.L.O. A.I.C.: 10KA	H,4	W									MTG: FLUSH NEMA 1 MFGR: SEE SPECS TYPE: BOLT-ON
DESCRIPTION	Т	KVA	BKR		СК	(T;	#	BKR	KVA	Т	DESCRIPTION
FORENSIC RACEWAY	R	1.80	20A1P	1	•		2	20A1P	0.86	M	CHEM TRACE
FORENSIC RACEWAY	R	1.80	20A1P	3	•	•	4	20A1P	0.86	M	CHEM TRACE
HYDROGEN GENERATOR	0	0.75	20A1P	5			•6	20A1P	1.44	R	FORENSIC RACEWAY
HYDROGEN GENERATOR	0	0.75	20A1P	7	•		8	20A1P	1.44	R	FORENSIC RACEWAY
SEM EQUIPMENT	0	1.66	20A	9	•		10	20A1P	0.77	C	FORENSIC CLG PNL
-	0	1.66	2P	11			• 12	20A1P	0.77	C	FORENSIC CLG PNL
SEM EQUIPMENT	0	1.66	20A	13	•		14	20A1P	0.18	R	CHEM TRACE
-	0	1.66	2P	15	•		16				CHEM TRACE
SEM EQUIPMENT	0	2.50	30A	17			• 18				CHEM TRACE
-	0	2.50	2P	19	•		20				CHEM TRACE
SEM ROOM RECEP	R	0.72	20A1P	21	•		22				CHEM TRACE
SEM EQUIPMENT	0	1.66	20A	23			• 24				CHEM TRACE
-	0	1.66	2P	25	•		26				CHEM TRACE
SEM EQUIPMENT	0	1.66	20A	27	•		28				CHEM TRACE
-	0	1.66	2P	29			• 30				CHEM TRACE
SEM EQUIPMENT	0	2.50	30A	31	•		32				CHEM TRACE
-	0	2.50	2P	33	•	•	34				SPACE
SPACE				35			• 36				SPACE
SPACE				37	•		38				SPACE
SPACE				39	•	•	40				SPACE
SPACE				41			• 42				SPACE
LOAD KVA CONNECTED NEC DEMAND AMPS	LT( 0. 0.	G 1 1	REC I 8.8 8.8	MTF 1.7 1.9	2 7 )	(	OTHI 24. 24.	R TO 8 3 8 3	TAL 35.4 35.7 99		
PHASE KVA PHASE IMBALANCE	(%)	)	A A/B	=	1	3. 4.	4 7	B B/C	= 11 = 11	.6	C = 10.4 C/A = 27.8

* PROVIDE AND INSTALL 200% RATED NEUTRAL. ** PROVIDE COMMON HANDLE TIE FOR CIRCUITS WITH SHARED NEUTRALS IN FURNITURE SYSTEMS AND LAB WORKBENCHES.

	P	ANE	EL "	EUL3	D"	<b>(</b> L	ATE	ENT	Pl	RINT	)*			
	VOLTS: 208/120V, MAINS: 100A M.L. A.I.C.: 10KA	3PH,4 O.	W								MTG: FL MFGR TY	USH SE PE	I NEI E SP BOLI	MA 1 ECS Γ-ON
	DESCRIPTION	Т	KVA	BKR		СКТ	⁻ #	BKR	ŀ	KVA T		ESC	CRIP	ΓΙΟΝ
**	IAFIS STATION	R	0.18	20A1P	1 •		2							SPACE
**	IAFIS STATION	R	0.18	20A1P	3	٠	4							SPACE
**	IAFIS STATION	R	0.18	20A1P	5		• 6							SPACE
**	IAFIS STATION	R	0.18	20A1P	7•		8							SPACE
**	AFIS STATION	С	0.77	20A1P	9	٠	10							SPACE
**	AFIS STATION	С	0.77	20A1P	11		• 12							SPACE
**	AFIS STATION	С	0.77	20A1P	13 •		14							SPACE
**	AFIS STATION	С	0.77	20A1P	15	٠	16							SPACE
**	AFIX STATION	С	0.77	20A1P	17		• 18							SPACE
**	AFIX STATION	С	0.77	20A1P	19 •		20							SPACE
**	ADAMS STATION	С	0.77	20A1P	21	•	22							SPACE
**	ADAMS STATION	С	0.77	20A1P	23		• 24							SPACE
**	AFIX STATION	С	0.77	20A1P	25 •		26							SPACE
**	AFIX STATION	С	0.77	20A1P	27	•	28							SPACE
**	ADAMS STATION	С	0.77	20A1P	29		• 30							SPACE
**	ADAMS STATION	С	0.77	20A1P	31 •		32							SPACE
	SPACE				33	•	34							SPACE
	SPACE				35		• 36							SPACE
	SPACE				37 •		38							SPACE
	SPACE				39	•	40							SPACE
	SPACE				41		• 42							SPACE
	LOAD KVA CONNECTED NEC DEMAND AMPS	LT( 0. 0.	G   6 7	REC 1 9.4 9.4	FOTA 9. 10. 2	L 9 1 8								
	PHASE KVA PHASE IMBALANO	CE (%)		A A/B	=	3.4 5.5	ļ 5	B B/C	=	3.3 0.0	C C/A	=	3.3 5.5	

** PROVIDE COMMON HANDLE TIES FOR CIRCUITS WITH SHARED NEUTRALS WITHIN FURNITURE SYSTEMS AND LAB WORKBENCHES.

# RECORD DRAWING

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CL-L1	EUL1A	EUL20
	EUL2A	EUL2

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