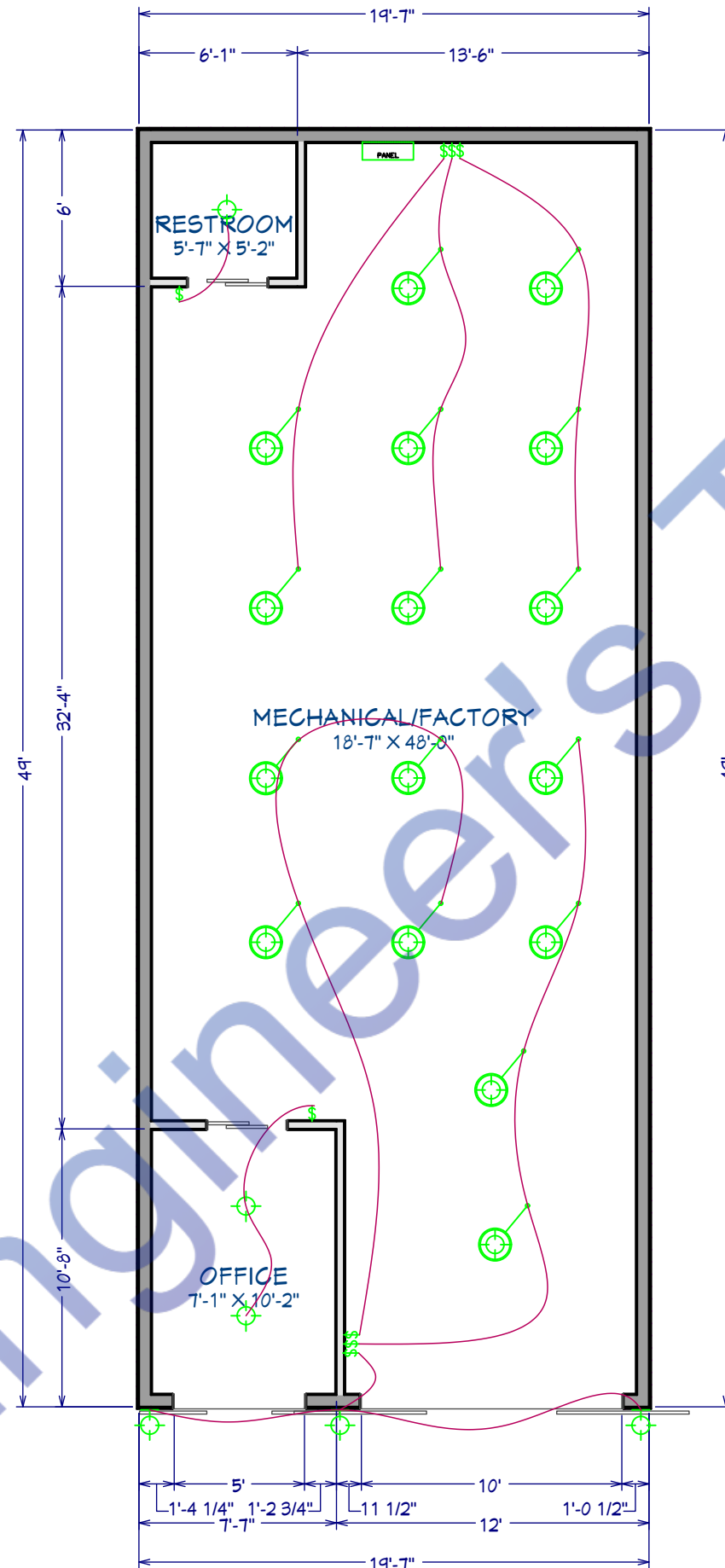




ELECTRICAL LEGEND	
	20W CEILING MOUNT LED LIGHT
	150W HIGH BAY LIGHT
	SMOKE DETECTOR
	40W LED TUBE LIGHT 4 FEET
	40W LED LIGHT 4'X4'
	ONE WAY SWITCH 220V
	MULTI SOCKET OUTLET 220V
	10W WALL MOUNTED LED LIGHT
	60W CEILING FAN 220V
	SUB DISTRIBUTION BOARD
	MAIN DISTRIBUTION BOARD
	40W BATHROOM EXHAUST FAN
	CALLING BELL



ENGINEER'S TEAM

430 E 8TH ST STE 8017
HOLLAND MI 49423

ENGRTEAM.COM

SUPPORT@ENGRTEAM.COM

OWNER:

MC NAB INDUSTRIAL
PARK at 7544 MCNAB LLC
UNIT D03.
Parcel ID: 494111180010.

SEAL:

Release for construction

ELECTRICAL LIGHTING PLAN

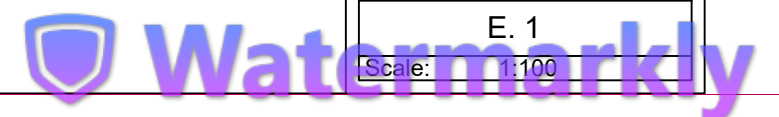
Drawn by: Engr. Al Amin

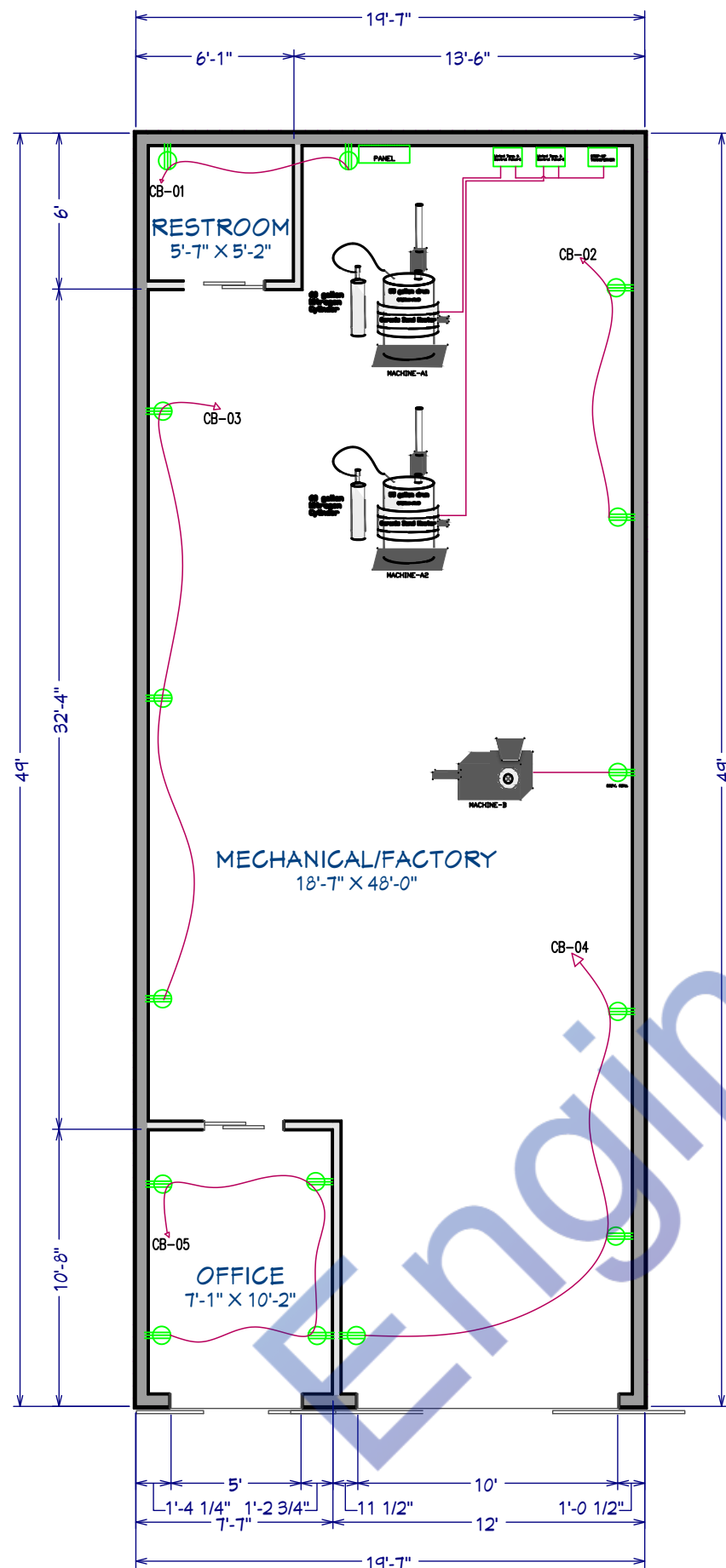
Checked:

Date: NOV, 24.

E. 1

Scale: 1:100





ELECTRICAL LEGEND	
	MULTI SOCKET OUTLET 120V
	GFCI MULTI SOCKET OUTLET 220V
	GFCI MULTI SOCKET OUTLET 120V
	INSTANT WATER HEATER

Note:

This electrical plan has been developed in strict compliance with all relevant codes, safety rules, and regulations to ensure both operational efficiency and the safety of the facility and its occupants. Key compliance aspects are as follows:

- National Electrical Code (NEC) Compliance:**
The design meets the latest NEC standards, covering all power calculations, wiring diagrams, breaker protection, wire sizing, and grounding requirements. Each component, including the 24kW ceramic band heater, briquette press, packaging machine, and other facility equipment, has been carefully accounted for in the power load distribution.
- City Requirements and Adaptations:**
All design elements have been adapted to meet city-specific requirements, ensuring alignment with local electrical codes. This includes detailed adjustments to satisfy city inspection and approval processes.
- Fire Protection and Hazardous Environment (FPHE) Standards:**
Given the presence of a CO2 off-gas management system, additional FPHE standards have been integrated to mitigate the risk of hazardous conditions. Explosion-proof or intrinsically safe equipment has been specified where required, particularly for the ventilation systems, fans, and CO2 sensors, to manage gas safely.
- Safety Systems Integration:**
To further protect the facility and personnel, the plan includes comprehensive safety systems with appropriate protection mechanisms, ensuring compliance with both NEC and FPHE standards. This includes emergency disconnects, circuit protection, and grounded wiring layouts that meet the specifications for safe operation within the environment.

This plan has been carefully reviewed to ensure it adheres to all national and city codes, supporting approval and the highest standards of safety for the facility.



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HOLLAND MI 49423

ENGRTEAM.COM

SUPPORT@ENGRTEAM.COM

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MC NAB INDUSTRIAL
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UNIT D03.
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ELECTRICAL POWER PLAN

Drawn by: Engr. Al Amin

Checked:

Date: NOV. 24.

E. 2

Scale: 1:100

Watermarkly



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430 E 8TH ST STE 8017
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SUPPORT@ENGRTEAM.COM

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SEAL:

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MECHANICAL, STRUCTURAL & FIRE PLAN

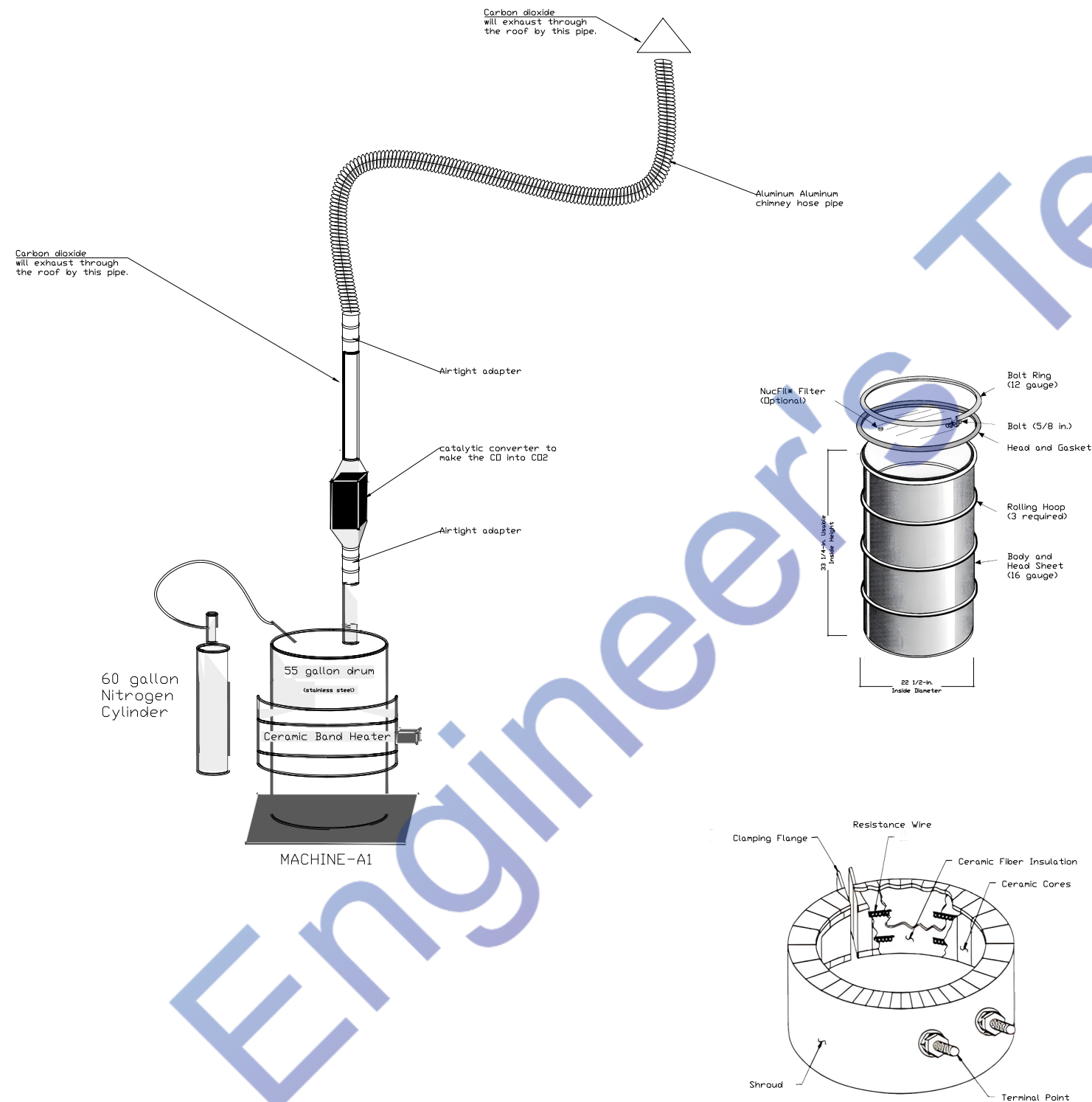
Drawn by: Engr. Al Amin

Checked:

Date: NOV, 24.

E. 3

Scale: 1:100





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HOLLAND MI 49423

ENGRTEAM.COM

SUPPORT@ENGRTEAM.COM

OWNER:

MC NAB INDUSTRIAL
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UNIT D03.
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SEAL:

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ELECTRICAL LOAD SHEDULE PLAN

Drawn by: Engr. Al Amin

Checked:

Date: NOV, 24.

E. 4

Scale: 1:100

120/240 VOLT SINGLE PHASE 2 WIRE ELECTRICAL SERVICE

ITEM	CONN. LOAD (VA)	DEMAND F.	DEMAND LOAD (WATTS)	TOTAL (AMPS)
LIGHTING	2600	125%	3250	
WATER HEATERS	6000	100%	6000	
EQUIPMENT	52000	100%	52000	
HVAC LOADS	2400	100%	2400	
SUB-TOTAL			63650	
LARGEST MOTOR	0	125%	0	
TOTAL @ 120/208 V	27503		63650	177~200

PANEL SCHEDULE & SERVICE CALCULATION

Note:

Machine A: Ceramic Band Heater

Specifications:

- Dimensions: 22.5" Diameter x 10.5" Width, 2-piece ceramic band construction
- Insulation: 3/4" thickness for efficient heat retention
- Electrical: 480V, 24kW total (12kW per half)
- Features:
 - Equipped with a terminal box and a 10 ft stainless steel (S/S) braided cable
 - Includes a Bayonet Adapter with a Mineral Insulated (MI) Type K thermocouple (also with a 10 ft S/S braid) for precise temperature measurement

Control Panel:

- Specifications: 480V, 1 Phase, 70A, with CSA (Canadian Standards Association) certification
- Components:
 - PID Temperature Controller with Ramp/Soak functionality for enhanced control
 - Relay, disconnect switch, fuses, and a temperature control panel for reliable operation and safety

Additional Notes:

- The actual installation will use a two-piece heater configuration due to the large diameter (22.5"), though the sample image provided shows a one-piece unit.
- Not to scale; the final setup will follow these specifications for accuracy and operational safety.

Machine B: Briquette Making Machine

Specifications:

- Type: Automatic briquette making machine
- Electrical: 3 Phase, 220V, 60Hz, 4kW
- Weight: Approximately 700 lbs
- Certification: CE rated, ensuring compliance with EU safety, health, and environmental requirements
- Power Source: Machine B will draw power from the existing panel on site.

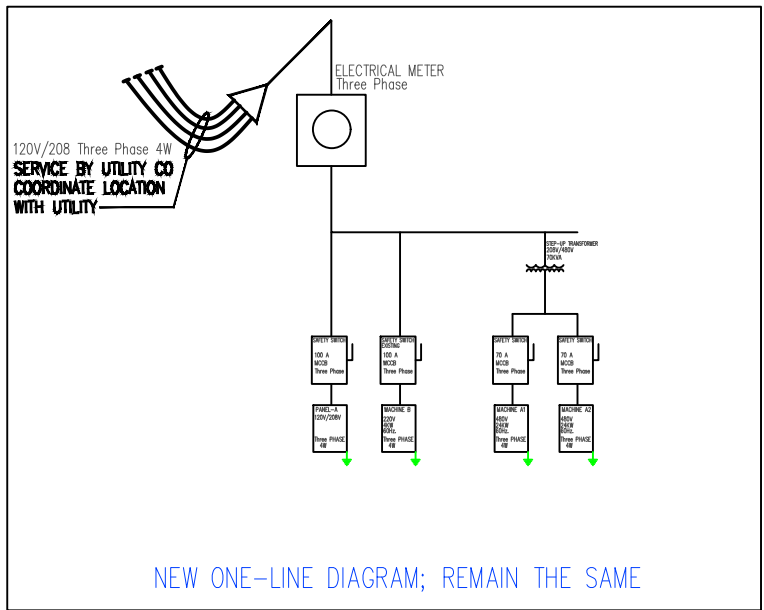
ELECTRICAL PANEL -MAIN

LOAD SERVED	CKT #	TYPE	BKR TRIP	WIRE SIZE	PHASE A	PHASE B	PHASE C	PHASE C	PHASE B	PHASE A	BKR TRIP	WIRE SIZE	TYPE	CKT #	LOAD SERVED
EXISTING EXHAUST FAN/LGT.	1		20	#14	500						20	#14		2	EXISTING GENERAL RECEPT AFCE
EXISTING EXIT EXHAUST FAN	3		20	#14		500			500		20	#14		4	EXISTING GENERAL LIGHTING
EXISTING WALL A/C UNIT	5		20	#12			2400			500	20	#14		6	EXISTING GENERAL LIGHTING
EXISTING GENERAL RECEPT AFCE	7		20	#14	500						20	#14		8	EXISTING GENERAL RECEPT AFCE
EXISTING OUTLET	9		30	#10		3000			3000		30	#10		10	EXIST. INSTANT HOT WATER HEATER
	11		30	#10			3000			3000	30	#10		12	
	13		30	#10	3000			3000			30	#10		14	EXISTING OUTLET
EXISTING OUTLET	15		20	#12		2000			3000		20	#14		16	NEW LIGHTING
	15		20	#12			2000			500	20	#14		16	NEW LIGHTING
NEW LIGHTING	15		20	#14	500				500		20	#12		16	CB1
CB3	15		20	#12		500			300		20	#12		16	CB2
CB5	15		20	#12			500			500	20	#12		16	CB4
SPARE	15		0	#12	0			0			0	0		16	SPARE

TOTAL VA PHASE A			4500			4500				9000		
TOTAL VA PHASE A				6000			6800			12800		
TOTAL VA PHASE A					7900			4500		12400		
TOTAL VOLT-AMPS										26100		
DIVIDE TOTAL VOLT-AMPS BY SYSTEM VOLTAGE (PHASE TO PHASE)										208	AMPS	126
DIVIDE THREE PHASE MULTIPLIER										1.732		73
TOTAL CONNECTED LOAD (AMPS) @ 125%										92		
MAIN TYPE AND AMPERE RATING										100 AMP MCCB		
PANEL FEEDER SIZE - SEE RISER DIAGRAM												

Material

Name	Watt
CEILING MOUNT ROUND LED LIGHT	20W
WALL MOUNT LED LIGHT	10W
HIGH BAY LIGHT	150W
MACHINE A	24KW
MACHINE B	4KW



NEW ONE-LINE DIAGRAM; REMAIN THE SAME

2
E200

SINGLE LINE DIAGRAM

