

ELECTRICAL LEGEND

ABBREVIATIONS	CCT E.C. EXTG. F.B.O.	CIRCUIT ELECTRICAL (SUB) CONTRACTOR EXISTING FURNISHED BY OTHERS, INSTALLED AND/OR WIRED BY ELECTRICAL CONTRACTOR		WIRE TICKS INDICATE BRANCH CIRCUIT PHASE, NEUTRAL, & GROUND WIRES, RESPECTIVELY CONDUIT-CONCEALED IN CEILING, WALL OR FLOOR OF NEW CONSTRUCTION. CONCEALED WHEREVER POSSIBLE IN EXISTING CONSTRUCTION (1/2" DIA. MIN.)
	G.C. HP L.D. MAX M.C. MH MIN OREQ REV R/M R/L UNO W/ WG WP	GENERAL (SUB) CONTRACTOR HORSEPOWER LOCATE AS DIRECTED MAXIMUM MECHANICAL (HVAC, PLBG, FP, OR TC) (SUB) CONTRACTOR MOUNTING HEIGHT TO BOTTOM OF DEVICE, BOX, OR FIXTURE, UNO MINIMUM OR EQUAL REVIEW REMOVE RELOCATE/RELOCATED UNLESS NOTED OTHERWISE COMPLETE WITH WITH WIRE GUARD WEATHERPROOF DEVICE, ENCLOSURE OR COVER PLATE.		HOMERUN TO PANEL OR LOCATION NOTED
				INDICATES CONCEALED CONDUIT UNDERGROUND/UNDERFLOOR - 3/4" MIN.
				SURFACE MOUNTED RACEWAY-W/MATCHING FITTINGS, BOXES, ACCESSORIES, ETC. WIREMOLD #700 SERIES, HUBBELL #HBL75010W SERIES OREG
				INDICATES LOW VOLT CABLING ROUTED THRU PLENUM OR CEILING SPACE.
				DISCONNECT SWITCH-HP RATED-TOGGLE TYPE-20 AMP-1 TO 3 POLES AS REQUIRED FOR EQP-600 VOLT-NEMA 1 ENCLOSURE U.N.O.-LOCATE ADJACENT TO EQUIPMENT SERVED. (WP=WEATHERPROOF ENCLOSURE) SQUARE D CLASS 2510 SERIES OREG
				MOTOR-FRACTIONAL H.P.-120 VOLT (EF=EXH. FAN; UH=UNIT HEATER; MD=MOTORIZED DAMPER)
				SERVING DOOR FIRE ALARM RELEASE DEVICE, 24V, FOR DOORS TO CLOSE DUE TO FIRE ALARM ACTIVATION- PROVIDED BY DOOR MANUFACTURER; FSCX24V FOR MOTORIZED DOOR/FSPX24V FOR NON-MOTORIZED DOOR WITH REMOTE TEST STATION-M.H. 44"
				FIRE ALARM INDIVIDUALLY ADDRESSABLE RELAY/SIGNAL MODULE-SURFACE MOUNTED ADJACENT TO FIRE ALARM RELEASE DEVICE
				EXISTING FIRE ALARM SYSTEM CONTROL PANEL (FACP)
				EXISTING ITEMS ARE TO REMAIN-UNO
				ALL EXISTING ITEMS "DASHED" ARE TO BE REMOVED-UNO
				INDICATES EXISTING ITEM SHALL BE REMOVED INCLUDING ASSOCIATED CONDUIT AND WIRING NO LONGER IN SERVICE
				DISCONNECT EXISTING MOTOR OR MOTORIZED EQUIPMENT OR APPLIANCE, FOR REMOVAL BY OTHERS.

ALTERNATE E-1

(EXISTING CIRCUITING)

PANELBOARD SCHEDULE

PANEL: EXTG. L-5
 MAINS: 100A M.L.O.
 VOLTS: 120/208V-3ø-4W-SN
 MOUNTING: RECESSED

NOTES:
 GFCI BREAKER
 30 MILLIAMPER EQUIPMENT GROUND FAULT TRIP
 SHUNT TRIP
 ARC FAULT
 SWITCHED NEUTRAL
 MOTOR OPERATED
 RELAY CONTROLLED
 ____ KAIC RATING
 NON-CONSEQUENT LOAD

LOAD DESCRIPTION	NOTES	VOLT AMPS	C.B. AMP P	A	B	C	C.B. P AMP	VOLT AMPS	NOTES	LOAD DESCRIPTION
1 KITCHEN LTS		1000	20	1	1500		1	20	500	RECEPT&FANS-N,S WALL
3 TOL. REFR. STOR RM-REC RM LIG		1000	20	2	1500		1	20	500	UNKNOWN
5 CANOPY - OFFICE LTS		1000	20	2		1000	1	20	0	SPECIAL REFRIG. RECEPT
7 COUNTER LTS		1000	20	1	1500		1	20	500	SINK RECEPT
9 SINK RECEPT		500	20	1	1000		3	20	500	OFFICE & RCVG. RECEPT
11 ICE CREAM MACHINE		1000	20	2		2200	3	20	1200	BAKERY RECEPT-MICRO
13 MILK MACH. & REFRIG.		1000	20	2	1500		3	20	500	N WALL KITCHEN RECEPT
15 STOR. RM EXH. FAN		500	20	1	1500		1	20	1000	DISHWASHER EXH. FAN
17 REFRIG BLOWERS-WALKIN		1000	20	1		2000	1	20	1000	BLODGETT OVEN
19 CANOPY EXH. FAN		500	15	3	1000		1	20	500	UNKNOWN
21 -		500	15	3	1000		1	20	500	UNKNOWN
23 -		500	15	3	1000		1	30	1000	STEAM TABLE
25 UNKNOWN		500	20	2	1000		3	15	500	GARBAGE DISPOSAL
27 -		500	20	2	1000		3	15	500	-
29 UNKNOWN		500	20	1		1000	3	15	500	-
31 SPARE		0	20	1	0		1	20	0	SPARE
33 SPARE		0	20	1	0		1	20	0	SPARE
35 SPARE		0	20	1	0		1	20	0	SPARE
37 SPARE		0	20	1	0		1	20	0	SPARE
39 SPARE		0	20	1	0		1	20	0	SPARE
41 SPACE		0	20	1	0		0	0	0	SPACE

HANDLE TIE
HANDLE LOCK

TOTAL LOAD: 20200 TOTAL AMPS: 56.1

(NEW CIRCUITING)

PANELBOARD SCHEDULE

PANEL: EXTG. L-5
 MAINS: 100A M.L.O.
 VOLTS: 120/208V-3ø-4W-SN
 MOUNTING: RECESSED

NOTES:
 GFCI BREAKER
 30 MILLIAMPER EQUIPMENT GROUND FAULT TRIP
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LOAD DESCRIPTION	NOTES	VOLT AMPS	C.B. AMP P	A	B	C	C.B. P AMP	VOLT AMPS	NOTES	LOAD DESCRIPTION	
1 KITCHEN LTS		1000	20	1	1500		1	20	500	RECEPT&FANS-N,S WALL	
3 TOL. REFR. STOR RM-REC RM LIG		1000	20	2	1500		1	20	500	UNKNOWN	
5 CANOPY - OFFICE LTS		1000	20	2		1000	1	20	0	FUTURE EQUIP. RECEPT	
7 COUNTER LTS		1000	20	1	1500		1	20	500	SINK RECEPT	
9 SINK RECEPT		500	20	1	1000		3	20	500	OFFICE & RCVG. RECEPT	
11 COUNTER RECEPT		180	20	1		1380	3	20	1200	BAKERY RECEPT-MICRO	
13 COOLER		900	15	1	1400		3	20	500	N WALL KITCHEN RECEPT	
15 STOR. RM EXH. FAN		500	20	1	1500		1	20	1000	DISHWASHER EXH. FAN	
17 REFRIG BLOWERS-WALKIN		1000	20	1		2000	1	20	1000	BLODGETT OVEN	
19 CANOPY EXH. FAN		500	15	3	1000		1	20	500	UNKNOWN	
21 -		500	15	3	1000		1	20	500	UNKNOWN	
23 -		500	15	3	1000		1	30	1000	STEAM TABLE	
25 UNKNOWN		500	20	2	1000		3	15	500	GARBAGE DISPOSAL	
27 -		500	20	2	1000		3	15	500	-	
29 UNKNOWN		500	20	1		1000	3	15	500	-	
31 O/H DOOR OPERATOR		1176	20	1	2176		1	20	1000	STEAM TABLE	
33 SPARE		0	20	1	0		1	20	0	SPARE	
35 SPARE		0	20	1	0		0	1	20	0	SPARE
37 SPARE		0	20	1	0		1	20	0	SPARE	
39 SPARE		0	20	1	0		1	20	0	SPARE	
41 SPACE		0	20	1	0		0	0	0	SPACE	

HANDLE TIE
HANDLE LOCK

TOTAL LOAD: 21456 TOTAL AMPS: 59.6

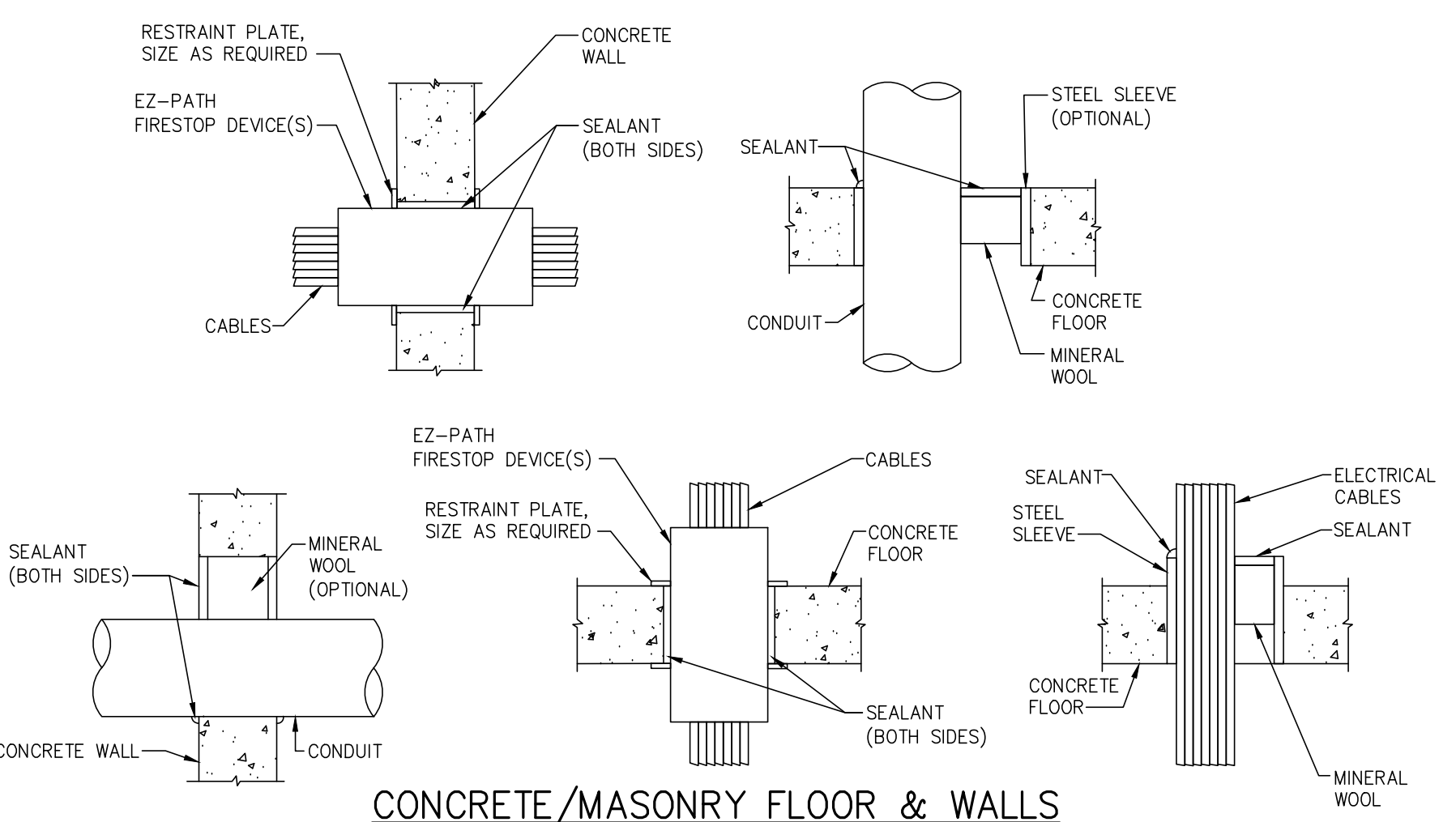
ALTERNATE E-1

PANEL NOTES

- REMOVE EXISTING ITEMS INCLUDING ASSOCIATED WIRING NO LONGER IN SERVICE. TURN OVER SPARE TO OWNER.
- PROVIDE CIRCUIT BREAKER TO MATCH EXISTING IN AVAILABLE SPACE. NEW BREAKER TO MATCH EXISTING IN TYPE, STYLE, MANUFACTURER AND AIC RATING.
- PANEL DIRECTORIES REFLECT INFORMATION OBSERVED FROM FIELD PICTURES. EXISTING BRANCH CIRCUIT LOADS ARE ESTIMATED. FIELD VERIFY CIRCUIT DESIGNATIONS ASSOCIATED WITH RENOVATIONS AND FIELD VERIFY LOAD FOR ANY CIRCUIT MODIFIED OR EXTENDED AS PART OF THIS PROJECT. MAINTAIN BRANCH CIRCUIT WIRING CONTINUITY TO EXISTING DEVICES REMAINING.
- UPDATE PANEL DIRECTORY AT COMPLETION OF PROJECT.

FIXTURE SCHEDULE

MARK	LAMP CATEGORY	LAMP QTY/TYPE	VOLTS	DESCRIPTION	MFR. AND CATALOG SERIES	VA
DA	INCAND		120	DISCONNECT AND REMOVE EXISTING SUSPENDED 6" CYLINDER FIXTURE. EXISTING BRANCH CIRCUIT SHALL REMAIN.		60
A	LED	21 WATT 2,000 LUMENS 4000K CCT	120	6" DIA. RETROFIT RECESSED DOWNLIGHT, SELF-FLANGED, WHITE REFLECTOR AND PRISM LENS, WHITE TRIM, ELECTRONIC LED DRIVER, SELECTABLE LUMENS, E.C. TO SET AT 2000 LUMENS.	COOPER PR6R-FS24-D010-REV OR APPROVED EQUAL BY LITHONIA, CRE, ETC.	25



**CONCRETE/MASONRY FLOOR & WALLS
CONDUIT/CABLE PENETRATIONS THROUGH RATED ASSEMBLIES**

N.T.S.

- GENERAL NOTES**
- CABLE AND CONDUIT PENETRATION DETAILS ARE BASED ON A U.L. LISTED FIRE RATED ASSEMBLY (MINIMUM) UTILIZING STI FIRE STOP PRODUCTS. MANUFACTURER'S SHALL BE STI, HILTI, 3M OR APPROVED EQUAL. REFER TO MANUFACTURER'S SPECIFICATIONS AND INSTALLATION DETAILS FOR EXACT INSTALLATION METHODS.
 - PACKING AND SEALANT DEPTHS SHALL BE PER MANUFACTURER'S SPECIFICATIONS FOR U.L. ASSEMBLY RATING COMPLIANCE.
 - ALL FIRE STOP LOCATIONS SHALL BE LABELED AT POINT OF PENETRATION LABEL SHALL IDENTIFY FIRE STOPPING MATERIAL, U.L. LISTING NUMBER AND HOUR RATING OF WALL/FLOOR.

"EXISTING 1200AMP SERVICE" LOAD SUMMARY

LOAD TYPE	CONNECTED VA	DEMAND FACTOR	DEMAND VA
EXISTING ***	NEC 220.87	85298	125% 106623
REMOVED LOAD		-2940	100% -2940
LIGHTING LOAD	NEC 220.42	125	100% 125
GENERAL RECEPTACLE	NEC 220.141	180	100% 180
DEDICATED LOAD	NEC 220.14A	3076	100% 3076
TOTAL LOAD IN VA		85739	107064
TOTAL AMPS @ 208VOLT-3PHASE		238	297

*** EXISTING LOAD CONSIST OF HIGHEST ELECTRICAL DEMAND RECORDED IN DECEMBER, 2022.



KOHLER ARCHITECTURE
 1110 WEST FRONT STREET
 MONROE, MICHIGAN 46161
 WWW.KOHLERARCHITECT.NET



Mechanical, Electrical, Plumbing, Fire Protection
 415 Conant St. - Maumee, OH 43551 - 419.891.0022

03/11/2024
 STATE OF MICHIGAN
 ROBERT T. BRANNAN
 ENGINEER
 NO. 35872

DATE: 03.18.2024
 DESCRIPTION: BIDDING & STATE REVIEW

KITCHEN SERVING COUNTER ALTERATIONS & RELATED WORK
RAISINVILLE ELEMENTARY SCHOOL
 2300 NORTH RAISINVILLE ROAD, MONROE, MI 48162
MONROE PUBLIC SCHOOLS
 1275 N. MACOMB STREET, MONROE, MI 48162

JOB # 24102

ELECTRICAL DRAWING LIST

DWG NO.	TITLE	FILE NO.
E1.01	ELECTRICAL LEGEND, FIXTURE AND PANEL SCHEDULES & DETAILS	24003611E1.01.dwg
E3.01	ELECTRICAL POWER & SYSTEMS PLANS	24003611E3.01.dwg

ALTERNATES

ALTERNATE E-1: STATE THE AMOUNT TO BE ADDED TO THE BASE BID TO FURNISH ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF THE FOLLOWING.

- FURNISH MOTORS, CONTROLS, AND FIRE ALARM TIE-INS FOR MOTOR OPERATED OVERHEAD DOOR.

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY ROBERT TIMOTHY BRANNAN, P.E. USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED. AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

ELECTRICAL LEGEND,
 FIXTURE AND PANEL
 SCHEDULES & DETAILS
E1.01



KOHLER
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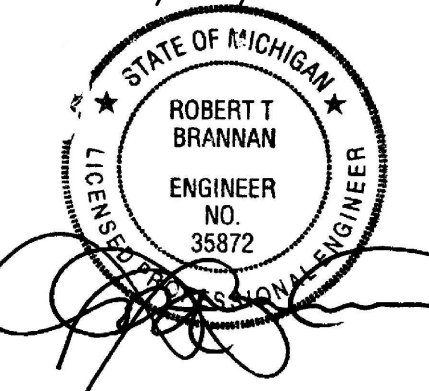
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03/11/2024



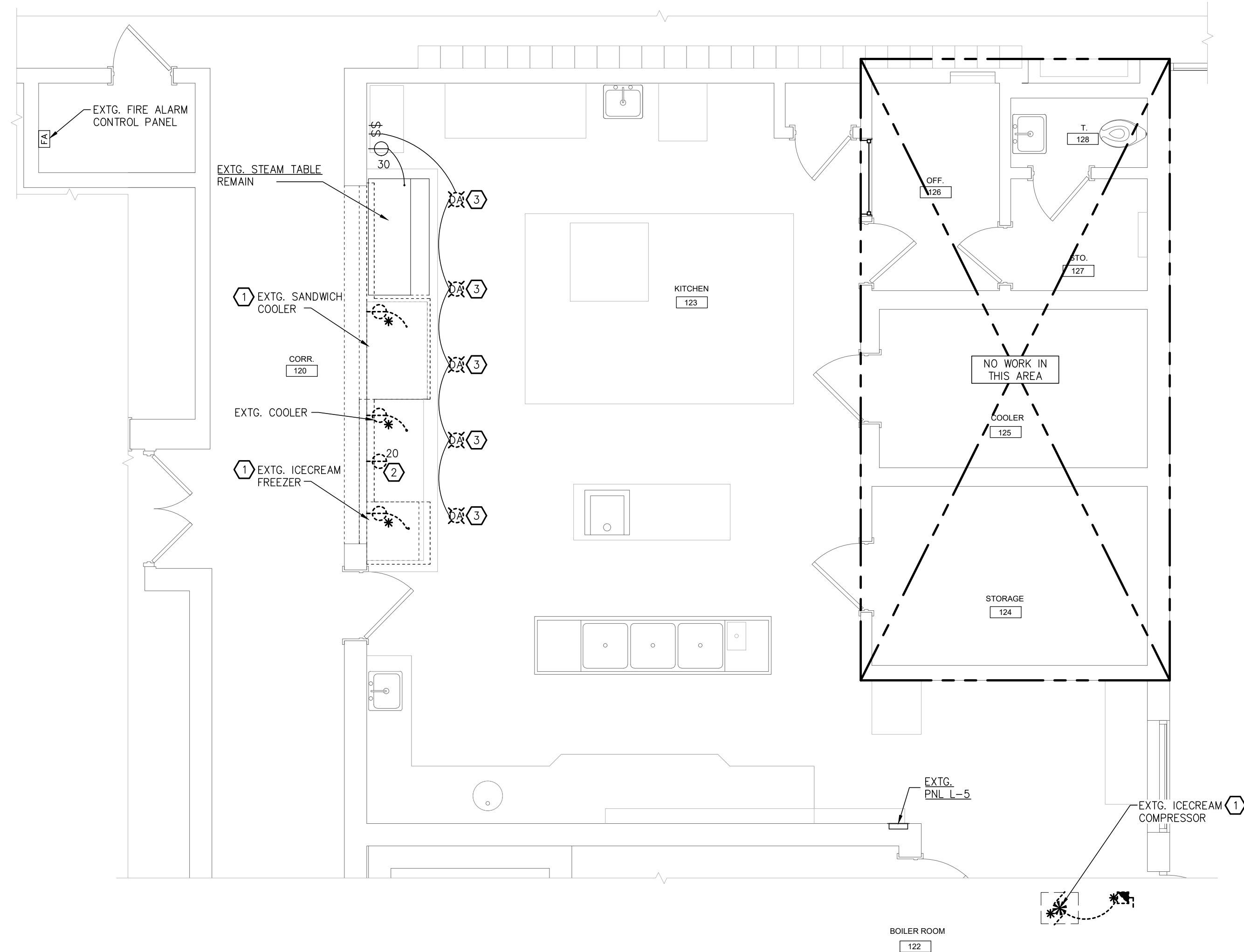
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JOB # 24102

ELECTRICAL
POWER & SYSTEMS
PLANS

E3.01

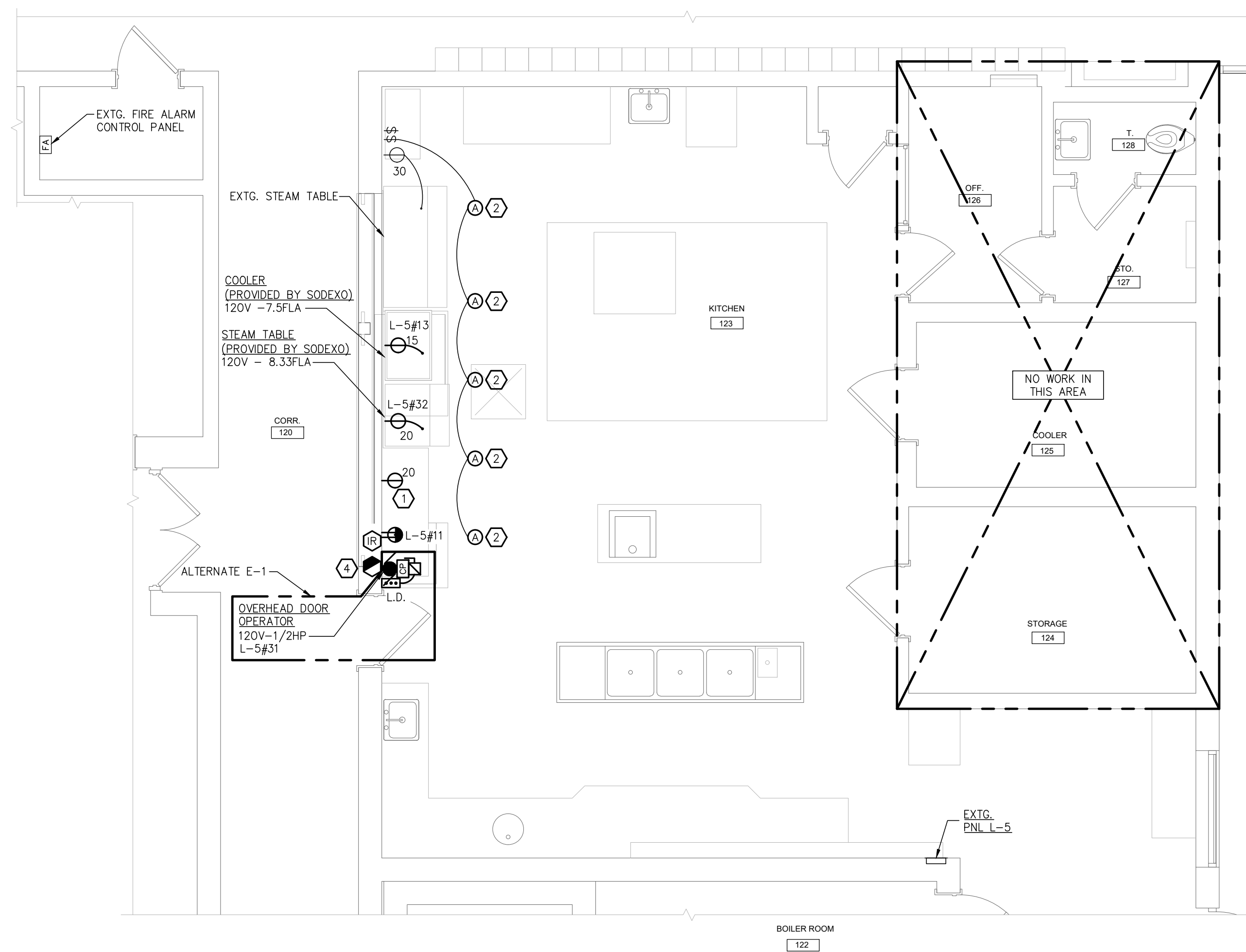


ELECTRICAL POWER & SYSTEMS PLAN – DEMOLITION

SCALE: 1/4" = 1'-0"

PLAN NOTES

- EQUIPMENT INDICATED FOR REMOVAL SHALL BE REMOVED WITH CARE. EXISTING BRANCH CIRCUIT WIRING SHALL BE REMOVED BACK TO SOURCE. ASSUMED SOURCE IS EXISTING PANEL L-5.
- EQUIPMENT INDICATED FOR REMOVAL SHALL BE REMOVED WITH CARE. EXISTING BRANCH CIRCUIT SHALL BE REWORKED AS NECESSARY. SEE THIS SHEET FOR POWER LAYOUT. ASSUMED SOURCE IS EXISTING PANEL, L-5, CCT#6.
- FIELD VERIFY EXISTING CIRCUIT FOR LIGHTS FED FROM PANEL L-5 FOR RE-USE. REWORK EXISTING CIRCUIT AS NECESSARY. SEE THIS SHEET FOR LIGHTING LAYOUT.



ELECTRICAL POWER & SYSTEMS PLAN

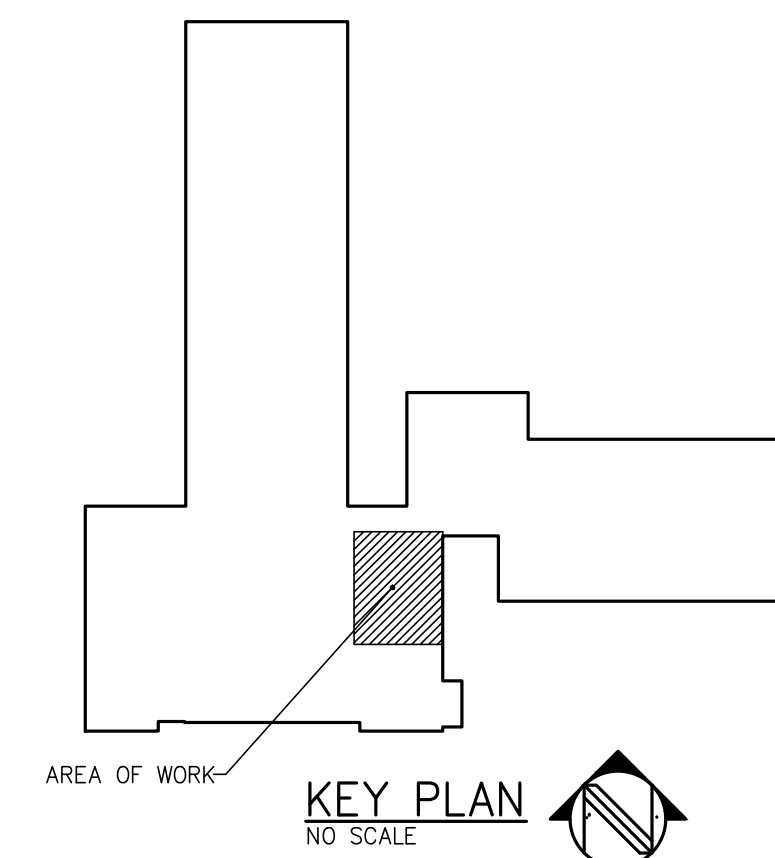
SCALE: 1/4" = 1'-0"

PLAN NOTES

- UTILIZE EXISTING BRANCH CIRCUIT FROM REMOVED EQUIPMENT ON DEMO PLAN, SHOWN ON THIS SHEET. INTERCEPT AND REWORK CIRCUIT FOR NEW DEVICES.
- UTILIZE EXISTING BRANCH CIRCUIT FROM REMOVED FIXTURES ON DEMO PLAN, SHOWN ON THIS SHEET. INTERCEPT AND REWORK CIRCUIT FOR NEW LIGHTING.
- ALL RECEPTACLES SHALL BE REPLACED AND REWORKED TO NEW WALL EXTENSION. MATCH EXISTING RECEPTACLES LOCATION BASED ON EQUIPMENT LOCATIONS. PROVIDE NEW WIRING, BOXES AND CONDUIT AS SEE FITS.
- SERVING DOOR FIRE ALARM RELEASE DEVICE FOR DOOR TO CLOSE DUE TO FIRE ALARM ACTIVATION - PROVIDED BY DOOR MANUFACTURER WITH REMOTE TEST STATION. LOCATION SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS AND CONTRACTORS, E.C. SHALL INSTALL WIRING AND CONNECT TO EXISTING FIRE ALARM CONTROL PANEL (SHOWN THIS SHEET). EXTEND DETECTOR LOOP CIRCUIT FROM EXISTING FIRE ALARM SYSTEM IN AREA. COORDINATE WITH JOHNSON CONTROLS BEFORE ROUGH IN. CONTRACT WITH JOHNSON CONTROLS TO INCORPORATE DEVICES INTO EXISTING FIRE ALARM SYSTEM. CONTACT INFORMATION: JOHNSON CONTROLS, BILL EARP (419)460-0590.

ALTERNATES

- ALTERNATE E-1: STATE THE AMOUNT TO BE ADDED TO THE BASE BID TO FURNISH ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF THE FOLLOWING.
- FURNISH MOTORS, CONTROLS, AND FIRE ALARM TIE-INS FOR MOTOR OPERATED OVERHEAD DOOR.



KEY PLAN

NO SCALE

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