ELECTRICAL GENERAL NOTES

- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM AND SPACE CONDITIONS IN ALL
- THE CONTRACTOR SHALL BRING ANY CONFLICTS IN THE DRAWINGS TO THE ATTENTION OF THE ENGINEER DURING THE BIDDING PROCESS. IF NOT BROUGHT UP TO THE ENGINEER DURING THE BIDDING PROCESS THE MORE EXPENSIVE OPTION SHALL BE CHOSEN FOR BIDDING
- PASS RACEWAYS OVER WATER, STEAM OR OTHER PIPING WHEN PULL BOXES ARE NOT REQUIRED. NO RACEWAY SHALL BE INSTALLED WITHIN 6" OF STEAM OR HOT WATER PIPES OR APPLIANCES (EXCEPT PIPE CROSSINGS WHERE RACEWAY SHALL BE AT LEAST 3" FROM PIPE COVERS).

PURPOSES.

- 4. CUT CONDUIT ENDS SQUARE, REAM SMOOTH, PAINT MALE THREAD OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY
- 5. HORIZONTAL OR CROSS RUNS IN PARTITIONS AND WALLS ARE NOT PERMITTED.
- DO NOT RUN CONDUIT IN PRECAST ROOF SLABS, IN 2"
- SLABS OR IN TERRAZZO FLOOR FINISH. 7. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT FINAL
- PROVIDE NYLON FISH WIRE IN ALL EMPTY RACEWAYS OVER 10' LONG.

CONNECTIONS.

- PROVIDE PULL BOXES EVERY 100' AND WHEREVER REQUIRED BY CODE FOR ALL EMPTY RACEWAY RUNS. COORDINATE PULLBOX LOCATIONS WITH OTHER TRADES IN
- 10. VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
- 11. LOCATIONS INDICATED FOR LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS AT OR NEAR DOORS. COORDINATE WITH ARCHITECT AND INSTALL SWITCH ON SIDE OPPOSITE HINGE. VERIFY FINAL HINGE LOCATIONS IN FIELD PRIOR TO SWITCH OUTLET INSTALLATION.
- 12. COVERS OF JUNCTION AND PULLBOXES SHALL BE READILY ACCESSIBLE.
- 13. PROVIDE PULLBOXES WHERE INDICATED, WHERE REQUIRED BY CODE AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE. COORDINATE PULLBOX LOCATIONS WITH OTHER TRADES.
- 14. GENERALLY, DO NOT LOCATE JUNCTION AND PULL BOXES EXPOSED IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT.
- 15. SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE, WITH NO WEIGHT BEARING ON RACEWAYS.
- 16. EC IS RESPONSIBLE TO PROVIDE ACCESS PANELS FOR ANY CONCEALED ELECTRICAL WORK THAT MUST BE ACCESSIBLE EITHER BY CODE OR AS INDICATED IN THE DOCUMENTS. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED AND APPROVED BY ARCHITECT PRIOR TO INSTALLATION OF DEVICE REQUIRING THE ACCESS PANEL. ALL ACCESS DOORS MUST MATCH THE FIRE RATING AND CONSTRUCTION TYPE OF THE CEILING OR WALL PENETRATION AS DESIGNATED ON THE ARCHITECTURAL
- 17. ALL ELECTRICAL FOUIPMENT INCLUDING BUT NOT LIMITED TO RACEWAYS, PULLBOXES, LUMINAIRES, ETC. SHALL BE HUNG FROM THE TOP CORD OR THE TOP OF A STEEL 'I' BEAM ONLY IN A STEEL STRUCTURE BUILDING.
- 18. CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18" AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
- 19. PROVIDE 2#14 INDICATING PILOT LIGHT WIRES FROM PILOT LIGHT IN CONTROLLER TO LOAD SIDE OF DISCONNECT SWITCH. RUN WIRES IN BRANCH CIRCUIT CONDUIT AND INCREASE CONDUIT SIZE AS REQUIRED.
- 20. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES BELOW 32°F. PROVIDE CABLE SUPPORTS FOR WIRE
- 21. IN RISER CONDUITS AS REQUIRED BY CODE., PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS. WHERE COMMON BOXES ARE USED, PROVIDE BARRIERS BETWEEN NORMAL AND EMERGENCY WIRING.
- PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS. WHERE COMMON BOXES ARE USED, PROVIDE BARRIERS BETWEEN NORMAL AND EMERGENCY WIRING.

- 23. WIRE COLOR CODING SHALL BE AS PER CODE AND SPECIFICATION. WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING, AND REQUEST PERMISSION FOR OVERLAP COLOR TAPING OF CONDUCTORS (MINIMUM LENGTH 6") IN ALL ACCESSIBLE LOCATIONS. COLOR CODING MUST BE USED CONSISTENTLY FOR THE ENTIRE PROJECT.
- 24. CONNECT NEW WORK TO EXISTING WORK IN A NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ITS ORIGINAL CONDITION, INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED.
- 25. CONNECT NEW WORK TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS ARE PERMISSIBLE ONLY WITH WRITTEN CONSENT OF THE OWNER. ALARM AND EMERGENCY SYSTEMS ARE NOT TO BE INTERRUPTED.
- 26. ELECTRICAL CONNECTIONS AND DISCONNECTS ARE SHOWN FOR DIAGRAMMATIC PURPOSES AND THE CONTRACTOR SHALL NOT BASE THEIR BID ON THE LOCATION OF THOSE CONNECTIONS AND/OR DISCONNECTS. SUBMISSION OF A BID INDICATES AN UNDERSTANDING THE CONTRACTOR WILL CONNECT THE ELECTRICAL CIRCUIT TO THE EQUIPMENT IN THE LOCATION SPECIFIED BY THE MANUFACTURE OR PER CONSTRUCTION RESTRICTIONS AT NO ADDITIONAL COST TO THE CLIENT.
- 27. FIRESTOPPING SHALL BE INSTALLED WHENEVER WIRING OR RACEWAYS CROSS FIRE RATED PARTITIONS. REFER TO THE ARCHITECTURAL PLANS FOR FIRE RATED PARTITION LOCATIONS. THE FIRESTOPPING SHALL MATCH OR EXCEED THE FIRE RATING OF THE PARTITION PENETRATED. ALL FIRESTOPPING SHALL BE A UL LISTED ASSEMBLY.
- 28. THE CONTRACTOR SHALL NOTE THAT THE BRANCH AND FEEDER CIRCUITS MAY HAVE BEEN INCREASED IN SIZE FOR VOLTAGE DROP AND OTHER REASONS. THIS MAY RESULT IN THE CABLE NOT FITTING IN THE ELECTRICAL EQUIPMENTS LUG OR TERMINAL. IF THIS HAPPENS THE CONTRACTOR SHALL REDUCE THE WIRE SIZE TO THE MAXIMUM SIZE THAT WILL FIT UNDER THE ELECTRICAL EQUIPMENTS LUG OR TERMINAL. PROVIDE AN IRREVERSIBLE SPLICE(S) OR OTHER APPROVED METHOD. THE LENGTH OF CABLE SHALL BE MINIMIZED TO DIRECTLY OUTSIDE THE EQUIPMENT. THE SPLICE(S) SHALL NOT TAKE PLACE INSIDE THE EQUIPMENT UNLESS THE EQUIPMENT IS UL LISTED FOR THAT PURPOSE. FOR EQUIPMENT NOT UL LISTED PROVIDE A SPLICE BOX, SIZED AS REQUIRED, OUTSIDE THE EQUIPMENT FOR THE SPLICE(S). THE NEMA RATING OF THE SPLICE BOX SHALL MATCH THE NEMA RATING OF THE ELECTRICAL EQUIPMENT. AHJ APPROVED REDUCING ADAPTERS SUCH AS THOSE FROM BURNDY ARE ACCEPTABLE ALTERNATES. EC SHALL GET PERMISSION FROM THE AHJ TO USE THIS METHOD.
- 29. ALL DEVICE ELEVATIONS SHALL BE MOUNTED IN ACCORDANCE WITH ANSI A117. ALL CONTROL DEVICES (IE: SWITCHES, ETC.) SHALL BE MOUNTED NO HIGHER THAN 48" AFF TO TOP OF DEVICE. ALL INSERTION DEVICES (IE: POWER, TELEPHONE, DATA RECEPTACLES, ETC.) SHALL BE MOUNTED NO LOWER THAT 15" AFF TO BOTTOM OF JUNCTION BOX. ALL DEVICES MOUNTED ABOVE A COUNTER NOT DEEPER THAN 24" SHALL BE MOUNTED 46" AFF TO TOP DEVICE. OTHER MOUNTING HEIGHTS WILL BE AS NOTED ON THE DRAWINGS.
- 30. PANEL BOARDS SHALL ALL MEET UL67 REQUIREMENTS AND COME WITH SERVICE ENTRANCE BARRIERS.
- 31. UNLESS OTHERWISE NOTED, MOUNTING HEIGHTS FROM FLOOR TO CENTERLINE OF OUTLET:
- RECEPTACLES, DATA AND TELEPHONES:

GENERALLY - 1'-6" OVER WORK BENCHES - 3'-6"

WALL SWITCHES AND WALL TELEPHONES: 4'-0"(TO TOP OF JUNCTION BOX)

WALL FIXTURES - 7'-6"

MOTOR CONTROLLERS - 5'-0"

FA AUDIO DEVICE/ STROBES - 6-8" TO THE BOTTOM OF THE LENSE (OR 6" BELOW CEILING, WHICHEVER IS LOWER)

FA STROBE LIGHTS - 6'-8" TO THE BOTTOM OF THE LENSE (OR 6" BELOW CEILING, WHICHEVER IS LOWER)

FA PULL STATIONS NO LOWER THAN 3'-6"AFF OR HIGHER THAN 4'-0"AFF TO TOP OF DEVICE.

CLOCKS - 7'-6"

EXIT SIGN - MOUNT JUST ABOVE THE DOOR WHEN LOCATED AT A DOOR LOCATION, UNLESS OTHERWISE NOTED. WHEN NOT BY A DOOR 8'-0"AFF, UON.

32. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL FINAL UTILITY CONNECTIONS WITH THE UTILITY COMPANIES. FOR EXAMPLE: IF THE PROJECT HAS AN EXISTING OR NEW SERVICE THE CONTRACTOR SHALL CALL THE UTILITY COMPANY AND TAKE OVER AS THE LEAD CONTACT PERSON FOR THE ADDITIONAL LOAD APPLICATION AND BE THE NEW POINT OF CONTACT FOR ANY CHANGES OR COORDINATION REQUIRED. THIS INTRODUCTION AND CHANGE OF POINT CONTACT SHALL HAPPEN WITHIN THE FIRST TWO WEEKS OF STARTING THE PROJECT. IT IS THE EC'S RESPONSIBILITY TO COMMUNICATE WITH THE UTILITY COMPANY SERVICE START DATES AS TO NOT DELAY THE PROJECT WITH INADEQUATE UTILITY SERVICES.

GENERAL NOTES

THE CONTRACTOR SHALL CONFORM TO THE LATEST BUILDING

2018 NEW JERSEY INTERNATIONAL BUILDING CODE NEC 2017 WITH NEW JERSEY AMENDMENTS

APPLICABLE CODES

NEC 110-16

ALL SWITCHBOARDS (EACH SECTION), PANELBOARDS, ENCLOSED BREAKERS/SWITCHES, ATS'S, TRANSFORMERS, MOTOR STARTES. CONTRACTORS, INDUSTRIAL CONTROL PANELS, AND MOTOR CONTROL CENTERS SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED IN A CLEARLY VISIBLE LOCATION TO QUALIFIED PERSON BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.

POWER DEVICES

- SIMPLEX RECEPTACLE DUPLEX RECEPTACLE
- CEILING MOUNTED RECEPTACLE
- GFCI TYPE RECEPTACLE
- QUAD RECEPTACLE FLOOR MOUNTED RECEPTACLE SPECIAL PURPOSE RECEPTACLE, MATCH EQUIPMENT
- TAMPERPROOF DUPLEX RECEPTACLE

ISOLATED GROUND RECEPTACLE

- EXPLOSION PROOF RECEPTACLE
- SIMPLEX ISOLATED GROUND RECEPTACLE FLOOR OUTLET, PROVIDE DEVICE AS SHOWN ON

DRAWINGS.

- FLOOR OUTLET WITH STUB UP. PROVIDE DEVICE AS SHOWN ON DRAWINGS.
- FIRE RATED FLOOR OUTLET, PROVIDE DEVICE AS P SHOWN ON DRAWINGS.
- INDICATES CIRCUIT NUMBER
- INDICATES DEVICE HAS A WEATHERPROOF WHILE IN USE COVER.
- + INDICATES DEVICE IS MOUNTED ABOVE THE COUNTER.
- ENCLOSED CIRCUIT BREAKER
- INDICATES SIZE/NUMBER OF POLES OR SIZE PER CIRCUIT SIZE FUSED DISCONNECT SWITCH

MOTOR STARTER

✓ MOTOR

- 30A/30A/3P INDICATES SWITCH SIZE/FUSE SIZE/NUMBER OF POLES OR SIZE PER CIRCUIT SIZE
- MOTOR STARTER WITH CIRCUIT BREAKER
- MOTOR STARTER WITH NON-FUSED DISCONNECT
- MOTOR STARTER WITH FUSED DISCONNECT SWITCH
- M DISCONNECT SWITCH BY HVAC CONTRACTOR
- EMERGENCY POWER OFF SWITCH

St MOTOR RATED SWITCH WITH THERMAL OVERLOADS

CEILING MOUNTED DROP CORD, PROVIDE DEVICE AS

HIRED PE NOTES:

FIRE ALARM CONT

(J) CONCEALED JUNCTION BOX J SURFACE MOUNTED JUNCTION BOX

POWER DEVICES

- 208V PANEL, U.O.N.
- 480V PANEL, U.O.N. SYSTEM PANEL FA = FIRE ALARM SEC = SECURITY LIGHT = LIGHTING CONTROL
- LUMINAIRES — FIXTURE TYPE TYPICAL LUMINAIRE, REFER TO THE LUMINIARE OR LIGHTING SCHEDULE FOR ADDITIONAL INFORMATION. XXX-XX - LOWER CASE LETTER INDICATES LOCAL SWITCH DESIGNATION. - CIRCUIT NUMBER, REFER TO THE PANELSCHEDULES FOR ADDITIONAL INFORMATION.

PANEL ID(NAME) UNLESS OTHERWISE NOTED.

- SERVICE LIGHT LUMINAIRE
- FIRE ALARM DEVICES
- DH SINGLE DOOR HOLDERS DH~~DH DOUBLE DOOR HOLDERS
- F FIRE ALARM BELL: SS = SINGLE STROKE T = TROUBLE V = VIBRATING
- G = GONG FIRE ALARM STROBE UNLESS OTHERWISE NOTED, ALL STROBES SHALL BE
- 15CD(CANDELLA) TYPE. C = CEILING MOUNTED. TYPICAL ALL FIRE ALARM DEVICES.
- FIRE ALARM CHIME ELECTRONIC TYPE FIRE ALARM HORN
- FIRE ALARM MINI HORN

15CD(CANDELLA) TYPE.

THE CONTRACTOR SHALL BE AWARE THERE MAY BE NOTES ON THESE PLANS

AND IN THE SPECIFICATIONS THAT REQUIRE THE CONTRACTOR TO HIRE A

PROFESSIONAL ENGINEER TO SIGN AND SEAL VARIOUS STUDIES OR SUBMIT

FINAL SHOP DRAWINGS FOR PERMIT PURPOSES. EXAMPLES ARE FIRE ALARM

SHORT CIRCUIT STUDY, ARC FLASH STUDY, COORDINATION STUDY, ETC. THE

PROFESSIONAL ENGINEER SHALL BE LICENSED TO PROVIDE ENGINEERING

1. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS

ASSOCIATED WITH REMOVALS AND RELOCATIONS OF

WITH ALLOWANCES FOR EXPECTED OR UNFORSEEN

CONSIDERED JUSTIFIABLE BY THE ARCHITECT.

ELECTRICAL WORK AS DESCRIBED IN THE SPECIFICATIONS.

DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED

THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL

NEW ARCHITECTURAL AND ELECTRICAL LAYOUTS IN FULL

ALL SYSTEMS WHICH ARE NO LONGER REQUIRED TO FUNCTION SHALL BE DE-ENERGIZED AND DISCONNECTED AT

3. THE CONTRACTOR SHALL PERFORM DEMOLITION AND

REMOVAL WORK WITH A MINIMUM OF INTERFERENCE TO

DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN

A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR

DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO

OUTLETS, SWITCHES AND OTHER DEVICES, COMPLETE WITH

REMAIN, THE CONTRACTOR SHALL INSTALL JUNCTION BOXES

AND READY FOR OPERATION. OTHERWISE, WIRING SHALL BE

AND OTHER DEVICES AND PROVIDE BYPASS CONNECTIONS

NECESSARY TO MAKE CIRCUITS AFFECTED CONTINUOUS

REMOVED BACK TO THE NEAREST ELECTRICAL JUNCTION

ALL RACEWAYS WHICH BECOME EXPOSED DURING THE

ALTERATION WORK SHALL BE REMOVED AND REROUTED

BOX THAT IS TO REMAIN OR TO PANELBOARD.

CONCEALED BEHIND FINISHED SURFACES.

ASSOCIATED WIRING, CONDUITS, ETC., FROM PARTITIONS

THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF

THESE ITEMS DISRUPTS EXISTING WIRING THAT IS TO

FUNCTIONING ELECTRICAL SYSTEMS. ALL AFFECTED

SYSTEMS SHALL BE RECONNECTED AND RESTORED.

SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY

THE CONTRACTOR SHALL REMOVE ALL ELECTRICAL

THE SOURCE OF POWER SUPPLY.

ITS ORIGINAL CONDITION.

EXISTING ELECTRICAL WORK WHICH INTERFERES WITH THE

COORDINATION WITH THE ARCHITECT'S DEMOLITION PLANS

DEMOLITION WILL BE ACCEPTED, EXCEPT IN CERTAIN CASES

NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH

SERVICES IN THE JURISDICTION THE PROJECT IS LOCATED. THE

CONTRACTOR SHALL PROVIDE THE PROFESSIONAL ENGINEERS

ELECTRICAL DEMOLITION NOTES

QUALIFICATIONS AS PART OF THE BID SUBMISSION.

FIRE ALARM HORN/STROBE UNLESS OTHERWISE NOTED, ALL STROBES SHALL BE

FIRE ALARM SPEAKER/STROBE UNLESS OTHERWISE NOTED, ALL STROBES SHALL BE 15CD(CANDELLA) TYPE.

UNLESS OTHERWISE NOTED WATTAGE SHALL BE SET AT 1W. S FIRE SPEAKER

COMMUNICATION DEVICES

TELEPHONE OUTLET, PROVIDE (1) 3/4"C WITH

VOICE/DATA OUTLET, PROVIDE (1) 3/4"C WITH

NEAREST ACCESSIBLE CEILING SPACE.

NEAREST ACCESSIBLE CEILING SPACE.

ACCESSIBLE CEILING SPACE.

ACCESSIBLE CEILING SPACE.

CEILING MOUNTED SPEAKER

WALL MOUNTED SPEAKER

VOLUME CONTROL

MICROPHONE

WIRING DEVICES

HOMERUN

___/ BUZZER

SECURITY DEVICE

S DS = DOOR SWITCH

CR = CARD READER

MD = MOTION DETECTOR

ML = MAGNETIC LOCK

PB = PANIC BUTTON

KP = KEY PAD

S LUMINAIRE SWITCH

S₃ 3-WAY LUMINAIRE SWITCH

4-WAY LUMINAIRE SWITCH

S_D LUMINAIRE SWITCH WITH A PILOT LIGHT

M_S MOTION SENSOR TYPE LUMINAIRE SWITCH

NOTE: THE MOTION SENSOR SHALL TURN OFF THE

LUMINAIRE WITHIN 30 MINUTES OF AN OCCUPANT

S_D DIMMER TYPE LUMINAIRE SWITCH

S_K CAPTIVE KEY TYPE SWITCH

LEAVING THE SPACE.

LUMINAIRE SWITCH

S_{OR} OVERRIDE SWITCH

KS = KEY SWITCH

CONCEALED CIRCUIT

CIRCUIT UNDER FLOOR OR GROUND

CLOCK - DOTS INDICATE NUMBER OF FACES

PULLSTRING AND PLASTIC BUSHING ON END TO THE

PULLSTRING AND PLASTIC BUSHING ON END TO THE

DATA OUTLET, PROVIDE (1) 3/4"C WITH PULLSTRING

AND PLASTIC BUSHING ON END TO THE NEAREST

TV OUTLET, PROVIDE (1) 3/4"C WITH PULLSTRING AND

PLASTIC BUSHING ON END TO THE NEAREST

LUMINAIRE SWITCHES

ABBREVIATIONS

AFC - AVAILABLE FAULT CURRENT

AIC - AMP INTERRUPTING CURRENT

AHJ - AUTHORITY HAVING JURISDICTION

ATS - AUTOMATIC TRANSFER SWITCH

EC, E.C. - ELECTRICAL CONTRACTOR

EMT - ELECTRICAL METALLIC TUBING

MCC - MOTOR CONTROL CENTER

MDP - MAIN DISTRIBUTION PANEL

PDU - POWER DISTRIBUTION UNIT

PT - POTENTIAL TRANSFORMER

RGC - RIGID GALVANIZED CONDUIT

SPD - SURGE PROTECTIVE DEVICE

STC - STANDARD TEST CONDITIONS

UGT - UNDERGROUND TELECOMMUNICATIONS

DEVICE IS NEMA 4X RATED FOR HOSE DOWN.

POWER WASHER CAPABLE WHILE IN USE SUCH AS

NOT ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS PLAN

WP - WEATHERPROOF, WHILE IN USE **IN AN AREA WHERE

WD - WASHDOWN AREA DEVICES SHALL BE NEMA 4X HOSE

DIRECT WATER HOSE SPRAY WILL OCCUR THIS WILL MEAN THE

U.O.N., UON - UNLESS OTHERWISE NOTED

UGE - UNDERGROUND ELECTRIC

NTS, N.T.S. - NOT TO SCALE

RE - REMOVE EXISTING

SA - SURGE ARRESTER

TYP. - TYPICAL

W - WALL MOUNTED

CALBRITE COVERS.

WG - WIRE GUARD

XFMR - TRANSFORMER

XP -EXPLOSION PROOF

3R - NEMA 3R TYPE ENCLOSURE

4X - NEMA 4X TYPE ENCLOSURE

ARE USED IN THE FOLLOWING DRAWINGS.

3P - THREE(3) POLES

2P - TWO(2) POLES

1P - ONE(1) POLE

REX - RELOCATE EXISTING

RPP - REMOTE POWER PANEL

SLD - SINGLE LINE DIAGRAM

REC - RECEPTACLE

GFCI, GFI - 5MA GROUND FAULT CIRCUIT INTERRUPTER

GFP - 30mA GROUND FAULT PROTECTION DEVICE

AFF - ABOVE FINISHED FLOOR

BFC - BELOW FINISHED CEILING

CB, C/B - CIRCUIT BREAKER

DP - DISTRIBUTION PANEL

EX - EXISTING TO REMAIN

CT - CONTROL TRANSFORMER

A - AMP

AF - AMP FRAME

AT - AMP TRIP

C - CONDUIT

CD - CANDELA

EM - EMERGENCY

G.B. - GLASS BREAK

GND - GROUND

LTG - LIGHTING

NL - NIGHT LIGHT

PNL - PANEL

F - FOOT

LOW VOLTAGE SWITCH FOR MOTION

SENSOR CONTROLLED LIGHTING.

- UNLESS OTHERWISE NOTED WATTAGE SHALL BE SET AT 1W. FIRE ALARM PULLSTATION
- DUCT DETECTOR UNLESS COORDINATED DURING BIDDING WITH THE HVAC CONTRACTOR EC AND/OR FIRE ALARM CONTRACTOR SHALL PROVIDE THE TUBES IN THE DUCTWORK FOR THE DETECTOR. PROVIDE COLD WEATHER/WEATHERPROOF COVER FOR DETECTORS LOCATED OUTSIDE OR IN SPACES LOWER THAN 70 DEGREES FAHRENHEIT.
- REMOTE TEST SWITCH LOCATE IN CEILING RTS SPACE BELOW HVAC UNIT. FIRE SMOKE DETECTOR: PE = PHOTOELECTRIC TYPE

IO = IONIZATION TYPE

- ID = IN DUCT AS = AIR SAMPLING R = RELAY BASE GAS DETECTION DEVICE: CO2 = CARBON DIOXIDE DETECTOR CO = CARBON MONOXIDE DETECTOR HCL = HYDROGEN CHLORIDE DETECTOR CH4 = METHANE DETECTOR
- DISTINCT AND SEPARATE SOUND FROM MAIN SYSTEM . PUSH BUTTON HEAT DETECTION DEVICE: R/F R/F = COMBINATION RATE OF RISE/FIXED TEMPERATURE F = FIXED TEMPERATURE R/C = RATE COMPENSATION R = RATE OF RISE ONLY ** UNLESS OTHERWISE NOTED TEMPERATURE RATINGS
- SHALL BE 135 DEGREES FAHRENHEIT. ADDRESSABLE INPUT MONITOR MODULE
- ADDRESSABLE INPUT MONITOR MODULE, # DENOTES LUMINAIRE SWITCHES NUMBER OF INPUTS AND OUTPUTS

** DETECTORS SHALL HAVE A SOUNDER BASE WITH

WF INTERFACE AND SUPERVISORY DEVICE: WF = FLOW DETECTOR/SWITCH HT = HIGH TEMPERATURE SWITCH LS = LEVEL DETECTOR/SWITCH LT = LOW TEMPERATURE SWITCH

PS = PRESSURE DETECTOR SWITCH

VS = VALVE SUPERVISORY SWITCH

(AOM) ADDRESSABLE OUTPUT CONTROL MODULE

- DRAWING NOTE 'x' DENOTES NOTE NUMBER SHOWN ON PLAN. KEY NOTE - 'x' DENOTES NOTE NUMBER
- SHOWN FOR ALL ELECTRICAL PLANS. DEMOLITION NOTE - 'x' DENOTES NOTE NUMBER SHOWN ON PLAN

PC PHOTOCELL

SYMBOL LEGENDS AND ABBREVIATIONS

PROJECT NOTES:

THE CONTRACTOR SHALL RECEIVE AND REVIEW ALL OF THE PROJECTS DRAWINGS AND SPECIFICATIONS SUCH AS ARCHITECTURAL, STRUCTURAL, HVAC, ELECTRICAL, PLUMBING, FIRE ALARM, SPRINKLER, SITE, ETC. TO UNDERSTAND THE FULL SCOPE OF WORK. FAILURE TO RECEIVE AND REVIEW THOSE PLANS DURING BIDDING WILL RESULT IN THE DENIAL OF EXTRA'S.

CONTRACTOR SHALL PROVIDE SURGE PROTECTION DEVICES(SPD) ON ALL DISTRIBUTION PANELS AND BRANCH CIRCUIT PANELS. CONTRACTOR SHALL FOLLOW THE CHART

9.	THE CONTRACTOR SHALL NOTIFY THE OWNER OF THE		
	PROJECTED DEMOLITION ANS PHASING SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED UTILITIES MAY BE CARRIED OUT IN FULL COORDINATION WITH THE PROJECT	_	SURGE CURF /IEEE C62.41 I
	REQUIREMENTS. THE CONTRACTOR SHALL FOLLOW THE ARCHITECT'S DEMOLITION AND PHASING SCHEDULE, AND PROCEED IN THE APPROPRIATE, SPECIFIED SEQUENCE.	CATEGORY	
10.	ALL EXISTING MATERIAL WHICH IS SPECIFIED TO BE REMOVED UNDER THIS CONTRACT, SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE DISPOSED	С	SERVIO (SWITCHE

OF IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. 11. ALL EXISTING MATERIAL WHICH IS SPECIFIED TO BE REMOVED AND REUSED OR RETURNED TO THE OWNER SHALL BE CAREFULLY REMOVED AND PRESERVED, AND

ALL UNUSED OUTLET BOXES OR CAPPED FLOOR OUTLETS

PORTIONS OF FEEDER RUNS TO BE REMOVED OR

CUT AT CONVENIENT LOCATIONS, REROUTED AND

SHALL BE PROVIDED WITH MATCHING BLANK COVERS.

ABANDONED AS A RESULT OF DEMOLITION WORK, BUT

WHICH ARE REQUIRED TO REMAIN ENERGIZED, SHALL BE

RECONNECTED. NEW FEEDER EXTENSIONS SHALL MATCH

EXISTING IN CABLE TYPE, AMPACITY, CONDUIT SIZE, ETC..

- TURNED OVER TO THE OWNER IN OPERABLE CONDITION. 12. ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVERTIME IF REQUIRED, TO ASSURE THAT SYSTEMS SHUTDOWNS WILL BE MINIMIZED, AND LIMITED TO THE TIME REQUIRED TO MAKE FINAL CONNECTIONS AND PERFORM NECESSARY TESTS TO ASSURE CORRECT INSTALLATION.
- 13. THE SHUTDOWN OF EXISTING BUILDING SERVICES SHALL BE COORDINATED WITH THE OWNER. ARRANGEMENTS SHALL BE MADE, IN WRITING, AT LEAST FIVE (5) BUSINESS DAYS PRIOR TO ANY SCHEDULED SHUTDOWN.

SURGE PROTECTION REQUIREMENTS BELOW. SURGE SUPPRESSORS SHALL BE CLOSE COUPLED TO THE PANEL TO ALLOW FOR THE SHORTEST WIRE RUN. IF WALL SPACE DOES NOT ALLOW FOR AN EXTERIOR SPD MANUFACTURE PANEL INTEGRATED SPD'S ARE ACCEPTABLE

ANSI	/IEEE C62.41 LOCATION CATEGORY
CATEGORY	APPLICATION
С	SERVICE ENTRANCE LOCATIONS (SWITCHBOARDS, SWITCHGEAR, MCC, MAIN ENTRANCE)
В	HIGH EXPOSURE ROOF TOP LOCATIONS (DISTRIBUTION PANELBOARDS)
А	BRANCH LOCATIONS (PANELBOARDS, MCCS, BUSWAY)

Sheet Number	Sheet Name
FA-100	FIRE ALARM FLOOR PLAN
FA-101	FIRE ALARM ROOF PLAN
FA-102	FIRE ALARM RISER DIAGRAM

NEC 110-22

SINGLE LINE DIAGRAM

XXXAT

XXXAF

XXXAT

FOR ALL SINGLE LINE

ENCLOSED BY BOX, AS

SHOWN HERE, IS TO BE

INSTALLED WITHIN AN

ENCLOSURE. PROVIDE

NEMA TYPE 1 ENCLOSURE,

DIAGRAM SYMBOLS.

DEVICES SHOWN

U.O.N.

CIRCUIT BREAKER

DRAW OUT TYPE

GF

GFSC

DISCONNECT SWITCH

DISCONNECT SWITCH

FOR 1200A AND GREATER

FOR 1200A AND GREATER

(AER) ARC ENERGY REDUCTION

(PER NEC 240.67)

ENCLOSED FUSED

TRANSFORMER TRANSFORMER

XO = GROUNDING

ELECTRODE

CONDUCTOR

CONTACTOR

DISCONNECT SWITCH

(AER) ARC ENERGY REDUCTION

(PER NEC 240.67)

FUSED DISCONNECT

ENCLOSED

CIRCUIT BREAKER

FOR 1200A AND GREATER

AER ARC ENERGY REDUCTION

/ (PER NEC 240.87)

GFP CIRCUIT BREAKER

SINGLE LINE DIAGRAM

ISOLATED GROUND

TRANSFORMER

ELECTRODE

CONDUCTOR

STARTER

XO = GROUNDING

ENCLOSED MOTOR

ENCLOSED MOTOR

ENCLOSED MOTOR

DOUBLE LUGS

LIGHTNING ARRESTER

RESISTIVE TYPE LOAD

STARTER WITH FUSED

DISCONNECT SWITCH

ATS WITH BYPAS

DISCONNECT SWITCH

STARTER WITH

CONTROL

PANEL

PANEL

M

TO IEEE STANDARDS

GFP FUSED/SWITCH

EACH DISCONNECTING MEANS SHALL BE LEGIBLY MARKED TO INDICATE ITS PURPOSE UNLESS LOCATED AND ARRANGED SO THE PURPOSE IS EVIDENT. THE MARKINGS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.

WHERE CIRCUIT BREAKERS OR FUSES ARE APPLIED IN COMPLIANCE WITH SERIES COMBINATION RATINGS MARKED ON THE EQUIPMENT BY THE MANUFACTURE, THE EQUIPMENT ENCLOSURE(S) SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE THE EQUIPMENT HAS BEEN APPLIED WITH A SERIES COMBINATION RATINGS.

THE MARKINGS SHALL BE READILY VISIBLE AND STATE THE INFORMATION LISTED ABOVE.

CAUTION - SERIES COMBINATION SYSTEM

RATED AMPERES. IDENTIFIED

REPLACEMENT COMPONENTS REQUIRED.

Sheet Number	Sheet Name
E-100	ELECTRICAL COVER SHEET
E-101	ELECTRICAL SPECIFICATION
E-102	ELECTRICAL SPECIFICATION
E-300	ELECTRICAL LIGHTING PLAN
E-301	ELECTRICAL LIGHTING CONTROL PLAN
E-302	ELECTRICAL LIGHTING CONTROL DETAILS
E-303	ELECTRICAL LIGHTING CONTROL DETAILS
E-400	ELECTRICAL FLOOR PLAN
E-500	ELECTRICAL HVAC PLAN
E-501	ELECTRICAL ROOF PLAN
E-600	ELECTRICAL DETAILS
E-700	ELECTRICAL SINGLE LINE DIAGRAM
E-701	ELECTRICAL PANEL SCHEDULES
E-702	ELECTRICAL PANEL SCHEDULES
ED-200	ELECTRICAL DEMOLITION PLAN

<u>ENERAL CONDITIONS NOTE</u> THIS DRAWLING AND THE DESIGN DESCRIBED REKEIN, INCLUDING THE SPECIFICATIONS, ARE THE EXCLUSIVE PROPERTY OF **BD ENGINEERING** WI RESERVE THE RIGHT TO HAVE THIS WORK REPRODUCED, FABRICATED, CONSTRUCTED OR MANUFACTURED. THIS DRAWLING IS PLACED ON LOAN SINGLE LINE DIAGRAM AVE BEEN PROPERLY FILED BY THE COMPANY OR INDIVIDUAL (CONTRACTO WHO HAS BEEN RETAINED TO PERFORM THE WORK DESCRIBED HEREIN, AND THIS DRAWING HAS BEEN ACKNOWLEDGED "FOR CONSTRUCTION". THE CONTRACTOR ASSUMES ALL RESPONSIBILITIES FOR VERIFYING THAT THE DIMENSIONS, AND/OR CONDITIONS AT THE JOB SITE ARE AS REPRESENTED ON THIS DRAWING AND ACCOMPANYING SPECIFICATIONS. IF THERE IS ANY DISCREPANCY BETWEEN WHAT IS DESCRIBED IN THESE DOCUMENTS AND TH CTUAL FIELD CONDITIONS, THE CONTRACTOR SHALL INFORM THE ENGINEE
RIOR TO SIGNING THE CONTRACT. IT IS THE EXCLUSIVE RESPONSIBILITY O PRIOR TO SIGNING THE CONTRACT. IT IS THE EXCLUSIVE RESPONSIBILITHE CONTRACTOR TO VERIFY AND COMPLY WITH ALL BUILDING AND/OR MUNICIPAL AND STATE RULES AND REGULATIONS. FAILURE OF THE **CONTROL PANEL WITH** DISCONNECT SWITCH CONTRACTOR TO EXERCISE THE AFOREMENTIONED PROCEDURES WILL RESU I THE CONTRACTOR CORRECTING AND/OR MODIFYING THE AREAS OR ITEMS IN CONFLICT AT HIS OWN EXPENSE. **NO EXCEPTIONS!!** copyright - BD ENGINEERING CONTROL | CONTROL PANEL CLIENT METER UTILITY METER PANELBOARD AP = APPLIANCE LP = LIGHTING PP = POWER PANEL EL = EMERGENCY LIFESAFETY EC = CRITICAL EMERGENCY EE = ESSENTIAL EQUIPMENT ELECTRIC INTERLOCK KEY INTERLOCK 05/06/22 GENERATOR Revisions FEEDER TAG RELAY - NUMBER TO CORRESPOND

CYBUL CYBUL WILHELM ARCHITECTS 1064 River Rd. Edgewater, NJ 07020

ISSUED FOR 4

Description | # |

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DOB STAMP.

ISSUED FOR PLANNING BOARD BUILDING DEPT CONSTRUCTION ____ នីBRIAN D. TANNENHAUS

NJ PROFESSIONAL ENGINEER NO. GE 45801 DATE: 02/24/2022

ELECTRICAL COVER SHEET

12" = 1'-0" 05/06/22 09/24/2021

E-100.00

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ELECTRICAL WORK SPECIFICATIONS

- A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE
- ARE PART OF THIS CONTRACT. B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE PART OF THESE SPECIFICATIONS, AND THERE PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN COST.
- C. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM THE MANUFACTURE IN SECTIONS OF A SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM THE BUILDING OWNER AND TENANT AT WHAT TIMES OF THE DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS/HER PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.
- E. INSTALL WORK AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM THE DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES, WHICH INVOLVE EXTRA COST, SHALL NOT BE MADE WITHOUT OUR OR OWNER APPROVAL.
- F. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK MAY BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES AND CHARGES IN MAKING UP THE WORK PROPOSED.
- G. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH A MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES, AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF THE OWNER. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. MAINTAIN CONTINUOUS OPERATION OF THE EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION, INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED.
- H. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW
- I. ALL EXISTING MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
- J. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
- K. SEAL OPENING THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL. ALL PENETRATIONS THROUGH NEW AND EXISTING RATED FIRE AND SMOKE PARTITIONS AND/OR FLOORS SHALL BE COMPLETELY SEALED USING MATERIALS AND METHODS DESCRIBED IN SUBSEQUENT "FIRE STOPPING" SPECIFICATIONS SECTIONS.
- .. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF CONDUIT AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AS REQUIRED.
- M. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED. IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- N. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- O. UNLESS OTHERWISE SPECIFICALLY NOTED OF SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO
- ORIGINAL CONDITION.
- P. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS. Q. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF ALL OF THE PLANS APPLICABLE FOR THE PROJECT AND NOT JUST THE HVAC PLANS AND IS FAMILIAR WITH ANY PROPOSED CONDITIONS THAT WILL NEED TO COORDINATED IN THE FIELD. FOR EXISTING BUILDINGS: THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE
- CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT THE CONTRACTOR HAS TOROUGHLY REVIEWED ALL OF THE DOCUMENTATION ASSOCIATED WITH THE PROJECT AND IF AN EXISTING BUILDING REVIEWED ALL OF THE EXISTING CONDITIONS. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION AND REVIEW. THE ON-SITE INSPECTION SHALL VERIFY EXISTING CONDUIT (SIZES, CLEARANCES, ETC.) AND CONDITIONS.
- R. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- S. THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT. TESTED THE VARIOUS SYSTEMS. DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL
- 2. SCOPE OF WORK:
- EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE

A. THE SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS

- INSTALLATION IN CONFORMITY WITH THE NATIONAL ELECTRICAL CODE(NEC) AND ALL OTHER APPLICABLE INDUSTRY, STATE, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON THE DRAWINGS AND HEREIN SPECIFIED.
- B. ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.
- C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OF REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATED OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY THE OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BE DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.
- D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES FOR, AND FURNISH TO THE OWNER BEFORE BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

SHOP DRAWINGS:

- A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT THE CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.
- B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:
- PROJECT NAME AND LOCATION
- 2) NAME OF ARCHITECT AND ENGINEER
- 3) ITEM IDENTIFICATION 4) APPROVAL STAMP OF THE PRIME CONTRACTOR

C. SUBMISSIONS:

- 1) SUBMISSIONS 11 IN X 17 IN OR SMALLER. IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE
- 2) SUBMISSIONS LARGER THAN 11 IN X 17 IN. SUBMIT TWO PRINTS AND ONE PAPER SEPA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPA TO THE ENGINEER.

D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

- CIRCUIT BREAKERS
- 2) PANELBOARDS(INCLUDING DIMENSIONS, SCHEDULES AND CATALOG CUTS).
- 3) RACEWAYS
- 4) WIRE AND CABLE
- 5) WALL SWITCHES
- 6) INSERTION RECEPTACLES
- LUMINAIRES

8) TRANSFORMERS

- 4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS:
- A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THE CONTRACT.
- B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE
- C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE
- NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER. D. REPRODUCIBLE "AS-BUILT" DRAWINGS PREPARED IN COMPUTER AIDED DRAFTED (AUTO CAD) FORMAT SHALL BE PROVIDED TO THE OWNER INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. A COMPLETE "AS-BUILT" DRAWING FILE SHALL BE PROVIDED TO THE OWNER AFTER COMPLETION OF THE INSTALLATION.
- 5. GENERAL PROVISIONS FOR ELECTRICAL WORK:
- A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL", "SHALL BE", "FURNISH", "PROVIDE" "A", "THE", "ALL" HAVE BEEN OMITTED FOR BREVITY.
- B. DEFINITIONS: 1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
- 2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED
- ACCESSORIES
- 3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
- 4) "WORK": LABOR, MATERIALS EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION

- 5) "WIRING": RACEWAY, FITTINGS, WIRE, BOXES AND RELATED ITEMS.
- 6) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION. INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
- 7) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED
- 8) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

- 1) THE DRAWING SHOWS THE APPROXIMATE LOCATIONS OF ALL APPARATUS. THE EXACT LOCATIONS OF WHICH ARE SUBJECT TO THE APPROVAL OF THE OWNER, WHO RESERVES THE RIGHT TO MAKE ANY REASONABLE CHANGES IN THE LOCATION INDICATED WITHOUT EXTRA COST. WHILE THE GENERAL RUN OF CONDUIT AND CABLES ARE INDICATED ON THE DRAWING. IT IS NOT INTENDED THAT THE EXACT ROUTING OR LOCATIONS OF CONDUIT AND CABLES BE DETERMINED THEREFROM.
- 2) THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED ENDS, OFFSETS, PULL BOXES AND OBSTRUCTIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL HIS WORK TO CONFORM TO THE STRUCTURE, MAINTAIN HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR.
- 3) THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH ALL
- 4) WIRE ALL FIXTURES, DEVICES, ETC. TO RESPECTIVE PANEL AND CONTROLS AS SHOWN ON PLANS IN SYMBOL FORM.
- 5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP AND REMOVAL FROM THE SITE OF RESULTING DEBRIS UPON COMPLETION OF WORK UNDER
- 6) PROVIDE SEPARATE SYSTEMS AND ENCLOSURES FOR 120/208 AND 277/480 VOLT POWER AND CONTROL WIRING. COMMON PULL BOXES AND JUNCTION BOXES ARE NOT ACCEPTABLE.
- 7) NEUTRAL SHARING IS NOT ACCEPTABLE. EACH CIRCUIT, IF REQUIRED, SHALL

HAVE A SEPARATE AND DEDICATED NEUTRAL CONDUCTOR.

- 8) LOCATIONS INDICATED FOR LOCAL WALL SWITCHES ARE SUBJECT TO RELOCATIONS. AT OR NEAR DOORS INSTALL SWITCH INSIDE OPPOSITE HINGE, VERIFY FINAL DOOR HINGE. LOCATION IN FIELD PRIOR TO SWITCH
- 9) HEIGHTS OF INSERTION AND CONTROL DEVICES. REFER TO THE ELECTRICAL GENERAL NOTES.
- 10) ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND PROVIDE BARRIERS BETWEEN NORMAL ONLY AND NORMAL/EMERGENCY

SWITCHES INSTALLED WITHIN A COMMON OUTLET BOX.

11) PANEL JUNCTION AND PULL BOXES LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES FROM BUILDING STRUCTURE, INDEPENDENT OF CONDUIT, PROVIDE FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT AND WIRING,

ADD BOX VOLUME WHERE REQUIRED.

D. TEMPORARY LIGHT AND POWER: 1) PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS AT EARLIEST POSSIBLE DATE WITHIN THE CONSTRUCTION AREAS FOR THE REQUIREMENTS OF ALL TRADES AS HEREIN DESCRIBED. EXTEND SYSTEMS TO NEW CONSTRUCTION AS SOON AS PHYSICALLY POSSIBLE. MAINTAIN SYSTEM DURING WORKING HOURS OF ALL TRADES. COST OF ENERGY WILL BE PAID FOR BY OWNER.

PROVIDE ALL REQUIRED MAINTENANCE, INCLUDING LAMPS AND SOCKETS.

- E. QUALITY ASSURANCE: 1) QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, FREE FROM DEFECTS AND LISTED BY UNDERWRITERS LABORATORIES
- INC. OR OTHER NATIONALLY APPROVED TESTING AGENCY AND BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED. 2) ON COMPLETION OF THE WORK, THE ENTIRE WIRING SYSTEM SHALL BE

ENTIRELY FREE FROM GROUNDS, SHORT CIRCUITS, OPENS, OVERLOADS AND IMPROPER VOLTAGES AND THOROUGH TEST SHALL BE MADE. FURNISH ALL

LABOR AND MATERIALS AND INSTRUMENTS. 3) CURRENT CHARACTERISTICS:

- a. SERVICE: 277/480 VOLT (AND 120/208 VOLT), 3 PHASE, 4 WIRE 60 HERTZ WITH GROUNDED NEUTRAL
- b. DISTRIBUTION: 277/480 VOLT (AND 120/208 VOLT) 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.
- 4) HEIGHTS OF OUTLETS:
- a. REFER TO THE ELECTRICAL GENERAL NOTES.
- b. EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE IN VIOLATION OF CODE, OR AS NOTED OR DIRECTED

F. PRODUCT DELIVERY, STORAGE AND HANDLING:

- 1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.
- 2) ACCESSIBILITY: FOR OPERATIONS, MAINTENANCE AND REPAIR, MINOR DEVIATIONS SHALL BE PERMITTED. CHANGE OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW. GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH ACCESS DOORS.

- 1) NAMEPLATES: PROVIDE BLACK LAMINATED SHEET WITH 3/4 IN. WHITE LETTERING, FASTENED EPOXY CEMENT FOR EACH DISCONNECT SWITCH, CIRCUIT BREAKER, PANEL, CABINET, TRANSFORMER, ENCLOSURE MOTOR CONTROLLER AND THE LIKE. NAMEPLATES SHALL DESCRIBE THE NAME AND NUMBER OF EACH COMPONENT.
- 2) CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH SPLICE OR PULLBOX WITH A WHITE LINEN TAG, INDICATING POINT OF ORIGIN AND TERMINATION OF THE CIRCUIT.
- 3) INSERTS AND SUPPORTS:
- a. INSERTS: STEEL, SLOTTED TYPE, FACTORY PAINTED.
- b. USE THREADED RODS AND UNISTRUT TYPE SUPPORTS DESIGNED TO CARRY THE WEIGHT REQUIRED.
- c. SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), CANTILEVER BRACKETS OR VERIFY SUPPORT TYPES WITH OTHER MEANS. THE ARCHITECT AND/OR STRUCTURAL ENGINEER IF A STRUCTURAL ENGINEER IS NOT ON THE PROJECT THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIRING A QUALIFIED LICENSED STRUCTURAL ENGINEER.
- d. GROUPED LINES AND SERVICES: TRAPEZE HANGERS OF BOLTED ANGLES
- e. WHERE BUILDING CONSTRUCTION IS INADEQUATE: PROVIDE ADDITIONAL FRAMING. SUBMIT FOR REVIEW
- SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLORS SHALL BE AS SELECTED BY ARCHITECT OR ENGINEER. UTILIZE GALVANIZED IRON PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPED GALVANIZED OR DIPPED IN ZINC CHROMATE FOR: OUTLET BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. RED LEAD OR ZINC CHROMATE WITH FINISH TO MATCH SURROUNDINGS SHALL BE USED FOR MARKED SURFACES OF STEEL EQUIPMENT AND RACEWAYS. A FIELD-APPLIED ZINC CHROMATE PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRON WORK.

H. PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL

 BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED; CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE

AND OUTSIDE OF MATERIAL AND EQUIPMENT.

- J. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES, RECEPTACLES, AND LIGHT FIXTURES SHALL BE VERIFIED WITH ARCHITECT PRIOR
- TO ROUGH IN. K. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO
- INSTALLATION. DEMOLITION:
- A. "SELECTIVE DEMOLITION" IS HEREBY DEFINED TO INCLUDE BUT IS NOT NECESSARY LIMITED TO THE REMOVAL OF THE FOLLOWING EXISTING MATERIALS,
- 1) REFER TO THE ELECTRICAL PLANS FOR THE EXTENT OF DEMOLITION.
- 2) REFER TO EXISTING DRAWINGS AND SITE CONDITIONS FOR ALL REMOVAL OF WORK NECESSARY FOR COMPLETION OF NEW WORK AS SHOWN. EACH BIDDER SHALL CAREFULLY EXAMINE THE PREMISES AND DOCUMENTS DURING THE BIDDING PERIOD AND ASCERTAIN THE EXTENT OF REMOVAL OF EXISTING WORK. IF ADDITIONAL WORK IS NOTED BY THE CONTRACTOR, CALL IT TO THE ATTENTION OF THE ARCHITECT PRIOR TO SUBMITTING BID. BY SUBMITTING A BID. THE CONTRACTOR WILL HAVE DEEMED TO HAVE MADE

SUCH EXAMINATION TO HAVE ACCEPTED SUCH CONDITIONS AND TO HAVE

8. COORDINATION:

THE EQUIPMENT.

- MADE ALLOWANCES IN PREPARING HIS BID. 7. CUTTING AND PATCHING: A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF THE EXISTING AND NEW CONSTRUCTION WORK, WHICH MAY BE REQUIRED FOR THE PROPER INSTALLATION OF THE ELECTRICAL WORK. ALL PATCHING SHALL BE
- OF THE SAME MATERIALS, WORKMANSHIP, AND FINISH AND SHALL ACCURATELY MATCH ALL SURROUNDING WORK.

RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

B. CORE BORING OF CONCRETE FLOORS AND/OR WALLS IF REQUIRED. IS THE

- A. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EQUIPMENT WITH THE ARCHITECTURAL DRAWINGS, IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, VARIATIONS IN FIRE PROOFING AND PLASTERING. WINDOW AND DOOR TRIM, PANELING HUNG CEILINGS AND THE LIKE AND CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSES TO THE OWNER.
- 9. EQUIPMENT FURNISHED BY OTHERS: A. THE CONTRACTOR SHALL FURNISH AND INSTALL WIRING FOR EQUIPMENT FURNISHED BY OTHERS, AS SHOWN ON DRAWINGS, COORDINATE WITH ALL OTHER TRADES OR DETAILS FOR INSTALLATION. THE TERM "WIRING" AS USED HEREIN, INCLUDES BUT IS NOT LIMITED TO, FURNISHING AND INSTALLING CONDUIT, WIRE, JUNCTION BOXES, DISCONNECTS AND MAKING CONNECTIONS. CONTRACTOR SHALL CHECK ARCHITECTURAL, MECHANICAL AND PLUMBING. DRAWINGS AND SPECIFICATIONS FOR EQUIPMENT TO BE INSTALLED BY OTHERS, CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER WIRING AND NECESSARY ELECTRICAL
- 10. LOW-VOLTAGE DISTRIBUTION EQUIPMENT: A. PROVIDE COMPLETE EQUIPMENT INCLUDING: SWITCHES, FUSES, CIRCUIT BREAKERS, PANELS AND TRANSFORMERS FROM ONE OF THE FOLLOWING

B. ALL EQUIPMENT SHALL CONFORM TO NEMA, ANSI, DOE AND IEEE STANDARDS.

ADJUSTMENTS TO EQUIPMENT TO CONFORM TO SPECIFIED REQUIREMENTS OF

- APPROVED MANUFACTURE'S: SQUARE D, SIEMENS, CUTLER HAMMER, GE AND
- C. DISCONNECT SWITCHES SHALL BE FUSED OR NONFUSED AS NOTED. VOLTAGE SHALL BE AS REQUIRED. SWITCHES SHALL BE HEAVY DUTY, EXCEPT AS NOTED, AND HORSEPOWER RATED FOR MOTOR LOADS. TOGGLE TYPE SWITCHES SHALL BE NONFUSED, LOAD BREAK, HAVING MAXIMUM RATINGS OF 20 AMP AT 600 VOLTS AND 30 AMP AT 240 VOLTS. KNIFE-BLADE TYPE SWITCHES SHALL BE LOAD BREAK, QUICK-MAKE-QUICK-BREAK, UL CLASS R UP TO 600 AMP. MAXIMUM RATING EXCEPT AS NOTED SHALL BE 800 AMP. ARC QUENCHERS SHALL BE PROVIDED. ALL SWITCH ENCLOSURES SHALL BE DEAD FRONT, NEMA, TYPE 1 EXCEPT AS NOTED. ACCEPTABLE MANUFACTURES ARE SQUARE D, SIEMENS, CUTLER HAMMER AND GE.
- D. CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL-MAGNETIC. QUICK-MAKE-QUICK-BREAK, BOLT-ON TYPE, MANUALLY OPERATED WITH INSULATED TRIP-FREE HANDLE, MULTI-POLE TYPE BREAKERS SHALL CONTAIN INTERNAL TRIP BAR. TERMINALS SHALL BE SUITABLE FOR COPPER OR ALUMINUM CABLE. FURNISH AUXILIARY DEVICES WHERE REQUIRED FOR SHUNT-TRIPING,

OPEN AND CLOSE MOTOR OPERATOR AND ALARM INDICATION. ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, AS NOTED. FRAMES IC AND INTERCHANGEABLE TRIPS SHALL BE AS FOLLOWS:

- a. CIRCUIT BREAKERS TO BE INSTALLED IN EXISTING PANEL BOARDS, SHALL BE OF THE SAME MANUFACTURE TYPE AND A.I.C. RATING AS PRESENTLY IN
- E. DISTRIBUTION PANELS: SWITCHING UNITS SHALL BE 3 PHASE, 4 WIRE CIRCUIT-BREAKER TYPE UNLESS OTHERWISE NOTED ON PANEL SCHEDULES. BUS BARS SHALL BE HARD DRAWN COPPER, MINIMUM 98 PERCENT CONDUCTIVITY, SILVER, OR TIN-PLATED JOINTS. PROVIDE A COPPER FULLY RATED GROUND BUS BAR. CABINETS SHALL BE GALVANIZED SHEET STEEL BACK BOX, WITH DOOR AND TRIM AND LAPPED AND WELDED CORNERS. HARDWARE SHALL BE CHROME-PLATED WITH FLUSH LOCK/LATCH HANDLE ASSEMBLY (UP TO 48 IN HIGH DOORS) OR VAULT HANDLE, LOCK AND 3-POINT CATCH (LARGER THAN 48 IN HIGH DOORS). HINGES SHALL BE SEMI-CONCEALED, 5-KNUCKLE STEEL WITH NONFERROUS PINS, 180-DEG OPENING, LOCATED A MAXIMUM 26 IN. ON CENTERS. PROVIDE DOOR-IN-DOOR CONSTRUCTION. MINIMUM GUTTER SPACES FOR LIGHTING PANELS SHALL BE 5-3/4 IN SIDES, TOP AND BOTTOM. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC TRANSPARENT COVER. A TYPEWRITTEN LIST INDICATING FEEDER CABLE AND CONDUIT SIZE, CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED. PANELS SHALL MEET UL 67 REQUIREMENTS FOR SERVICE ENTRANCE BARRIERS.
- F. BALANCE THE LOAD OVER PHASES WHEN NEW CIRCUITS ARE ADDED TO NEW OR EXISTING PANELS. PROVIDE MULTI-CABLE LUGS WHERE REQUIRED. DOUBLE LUGGING SHALL NOT BE PERMITTED, MOUNTING HEIGHT SHALL BE A MAXIMUM OF 6 FT-6 IN FROM FLOOR TO TOP SWITCH UNIT. UPDATE DIRECTORIES ON EXISTING PANELBOARDS WHERE CIRCUITING IS CHANGED.
- G. TESTS: OPEN AND CLOSE LOAD BREAK SWITCHING DEVICES UNDER LOAD.
- H. TRANSFORMERS SHALL MEET THE LATEST DOE(DEPARTMENT OF ENERGY), LOCAL AND/OR STATE REQUIREMENTS.
- A. AN EQUIPMENT GROUNDING CONDUCTOR COMMONLY DESCRIBED AS A "GREEN WIRE" SHALL BE PROVIDED FOR ALL BRANCH CIRCUITS PROTECTED BY OVERCURRENT DEVICES. "GREEN GROUND" WIRE SHALL ALSO BE PROVIDED FOR FLEXIBLE CONDUIT AND MOTOR CIRCUITS. 12. RACEWAYS:
- A. PROVIDE RACEWAYS COMPLETE WITH BOXES, FITTINGS AND ACCESSORIES. CONDUIT OR TUBING SIZES REFERRED TO IN SPECIFICATIONS AND ON DRAWINGS

ARE NOMINAL DIAMETERS. MINIMUM DIAMETER SHALL BE 3/4IN.

B. MATERIALS

- a. RIGID STEEL CONDUIT: FULL-WEIGHT PIPE, GALVANIZED THREADED. b. ELECTROMETALLIC TUBING (EMT) THIN WALL PIPE, GALVANIZED
- THREADLESS. USE EXCLUSIVELY FOR EMERGENCY BRANCH CKT WIRING.
- c. FLEXIBLE STEEL CONDUIT: CONTINUOUS STEEL STRIP, GALVANIZED. d. WIREWAYS: WIRE SHALL BE AS NOTED, MINIMUM NUMBER 16GA STEEL WITH GROUND CONTINUITY. FINISH SHALL BE BAKED ENAMEL. COVERS

SHALL BE SCREW ON.

2) FITTING AND ACCESSORIES:

WITH INSULATED THROAT.

- a. RIGID STEEL: NONSPLIT, THREADED, STEEL OR MALLEABLE IRON. ZINC DIE
- CAST NOT PERMITTED. b. ELECTROMETALLIC TUBING: COMPRESSION TYPE FOR 2" AND UNDER. SET SCREW TYPE FOR 2" AND LARGER, GALVANIZED RIGID STEEL ELBOWS FOR
- c. PROVIDE PLASTIC BUSHINGS AT THE END OF ALL CONDUITS WHERE A WIRE WILL PASS THROUGH.

2" OR LARGER. C. FLEXIBLE METALLIC CONDUIT: ANGLE WEDGE TYPE

BOXES:

- a. OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION. DEVICES OR WIRING, BOXES SHALL BE STAMPED STEEL, 4 IN. SQUARE OR OCTAGON FOR FIXTURES. BOXES ABOVE CEILING SHALL BE 1-1/2 IN. DEEP. BOXES IN CEILING OR SLAB SHALL BE 3" DEEP. BOXES IN WALL FOR FIXTURES SHALL BE 2-3/4" DEEP. BOXES IN WALL FOR RECEPTACLES AND SWITCHES SHALL BE 1-1/2 IN. DEEP. FURNISH WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED. WITHOUT FIXTURE OR DEVICE: FURNISH BLANK COVER. OFFSET BACK-TO-BACK OUTLETS WITH A MINIMUM 6 IN. SEPARATION.
- b. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW-ON COVERS, EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR CABLES. LOCATIONS SHALL BE AS NOTED OR REQUIRED AND ACCESSIBLE PROVIDE BARRIERS IN NEW AND RENOVATED BOXES IN BETWEEN 120/208 VOLT AND 277/480 VOLT WIRING AND BETWEEN EMERGENCY AND NORMAL LIGHTING.
- c. FLOOR BOXES SHALL BE SUITABLE FOR CONDUIT AND DEVICES NOTED. RAISED OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH ABOVE FLOOR FITTING. TELEPHONE: BUSHED HOLE. POWER: DUPLEX RECEPTACLE OR OTHER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY. FLUSH OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH FLUSH FLOOR FITTING FOR TELEPHONE AND FLUSH DUAL FLAP COVER WITH RECEPTACLE FOR POWER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY.
- d. PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED, EXCEPT AS NOTED. RACEWAYS SHALL BE RUN CONCEALED, EXCEPT AS NOTED.
- e. PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE, STRAP HANGERS OR WALL BRACKETS. PROVIDE U-BOLTS AT EACH FLOOR LEVEL OR RISER RACEWAYS AND CONNECTED TO ACCEPTABLE SUPPORTS. PROVIDE RISER CLAMPS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND RESTING ON SLAB. FOR THROUGH-THE-FLOOR SYSTEMS, UTILIZE AN ASSEMBLY SIMILAR TO HUBBELL FIRE RATED POKE-THROUGH -FLOOR BOX SYSTEM. FOR ABOVE FLOOR FITTINGS TELEPHONE SHALL BE BUSHED HOLE AND POWER SHALL BE DUPLEX RECEPTACLE OR OTHER AS NOTED. PROVIDE SEPARATION BARRIER BETWEEN POWER AND TELEPHONE COMPARTMENTS. PROVIDE JUNCTION BOX ON UNDERSIDE OF FLOOR.

PACK FITTING TO RESTORE FIRE RATING OF FLOOR.

f. SECURE ALL RACEWAYS TO SUPPORTS WITH PIPE STRAPS OR U-BOLTS. SPACING OF SUPPORTS SHALL BE A MINIMUM OF 10 FT ON CENTER FOR METALLIC RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. SPACING SHALL BE 5 FT ON CENTER FOR WIREWAYS AND PER CODE AND AS NOTED ON OTHERS. MOUNT SUPPORTS TO STRUCTURE MASONRY WITH TOGGLE BOLTS ON HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK, MACHINE SCREWS ON METAL, BEAM CLAMPS ON FRAMEWORK, WOOD SCREWS ON WOOD, AND PAN THROUGH STRAPS IN METAL DECK. NAILS, RAW PLUGS OR WOOD PLUGS SHALL NOT Revisions ARCHITECTS 1064 River Rd. Edgewater, NJ 07020

<u>ENERAL CONDITIONS NOTE</u>

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TETERBORO, NJ, 07608 DOB STAMP.

25 CENTRAL AVE

REVIEW PLANNING BOARD BUILDING DEPT CONSTRUCTION ____ BRIAN D. TANNENHAUS

> NJ PROFESSIONAL ENGINEER NO. GE 45801 DATE: 02/24/2022

12" = 1'-0"

ELECTRICAL SPECIFICATION

09/24/2021

Total

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E-101.00

- PERMITTED. WHERE REQUIRED BY STRUCTURE, FURNISH THROUGH BOLTS AND FISH PLATES.
- g. EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS. PROVIDE CLEARANCE WITH WATER, STEAM OR OTHER PIPING (MINIMUM 3 IN. SEPARATION FROM STEAM AND HOT WATER PIPES, EXCEPT 1 IN. FROM PIPE COVER AT CROSSINGS AND 18 IN. FOR PARALLEL RUNS). FOR HUNG CEILING OUTLETS, RUN IN HUNG CEILING AND CONNECT TO CEILING SUPPORT CHANNELS. IN MASONRY AND POURED CONCRETE, RUN VERTICALLY ONLY.
- h. MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWAYS WITH GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR TERMINAL CONNECTIONS.
- EMPTY RACEWAYS OVER 10' LONG: PROVIDE FISH OR PULL WIRE,

GALVANIZED OR NYLON PVC.

- RIGID STEEL CONDUIT SHALL BE PERMITTED FOR FEEDERS AND BRANCH CIRCUITS. PAINT THREADS OF FIELD-THREADED CONDUIT WITH GRAPHITE-BASE PIPE COMPOUND AND BUTT CONDUIT ENDS. TOUCH UP MARRED SURFACES AND FIELD-CUT THREADS, CRC-COLD GALVANIZED.
- k. EMT SHALL BE PERMITTED FOR FEEDER AND BRANCH CIRCUITS. IN DRY LOCATIONS, DRY WALLS, HUNG CEILINGS, HOLLOW BLOCK WALLS AND FURRED SPACES. EMT SHALL NOT BE PERMITTED IN RAISED FLOORS OR FOR VERTICLE RISERS THROUGH FLOORS IN A MULTI-STORY BUILDING.
- I. FLEXIBLE STEEL CONDUIT SHALL BE UTILIZED FOR SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICAL- FROM OUTLET BOX TO RECESSED LIGHTING FIXTURE: PROVIDE MINIMUM 4 FT AND MAXIMUM 6 FT LENGTHS. FOR FINAL CONNECTION TO MOTOR TERMINAL BOX, TRANSFORMER AND OTHER VIBRATING EQUIPMENT: PROVIDE WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. MINIMUM LENGTH: 18 IN. WITH SLACK. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END. FOR EXPANSION JOINT CROSSINGS, CROSS AT RIGHT ANGLES AND ANCHOR ENDS.
- m. CUT CONDUIT ENDS SQUARE REAM SMOOTH. PAINT MALE THREADS OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.
- n. ALL COUPLINGS ON EMT RACEWAYS SHALL BE COMPRESSION TYPE UP TO AND INCLUDING 2" CONDUIT. SET SCREW TYPE FITTINGS SHALL BE USED ON EMT CONDUIT LARGER THAN 2".
- o. EXPANSION FITTINGS SHALL BE INSTALLED AT RIGHT ANGLES WITH CLIP JOINT CENTERED N EXPANSION JOINT. PROVIDE A LENGTH OF RUN IN ACCORDANCE MANUFACTURER'S RECOMMENDATIONS. PRESET FITTINGS SHALL ALLOW FOR TEMPERATURE VARIATION.
- p. RACEWAYS PASSING THROUGH FIRE-RATED CONSTRUCTION: SEAL OPENING WITH FIRE SEALANT TO MATCH THE FIRE RATING OF THE PARTITION. COORDINATE WITH THE ARCHITECT.
- q. PROVIDE RACEWAYS PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING I CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS.

13. WIRE AND CABLE:

- A. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE AWG AS NOTED.
- B. CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID (NO. 10 AND SMALLER) OR STRANDED (NO. 8 AND LARGER). GENERAL USE CABLING SHALL BE NO.12 MINIMUM. AT 120 VOLTS AND OVER 100 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM. AT 277 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM.
- C. CONTROL AND ALARM CABLING, EXCEPT AS NOTED, SHALL BE NO. 14 MINIMUM. AT 120 VOLTS INC OVER 200 FT CIRCUIT LENGTH, PROVIDE NO. 12 MINIMUM.
- D. OTHER VOLTAGES AND PHASE: ADJUST CABLE SIZING AS REQUIRED TO MAINTAIN VOLTAGE DROP. INCREASE RACEWAY SIZES FOR LARGER WIRE AS REQUIRED.
- E. INSULATION SHALL BE RUBBER AND THERMOPLASTIC MEETING ASTM AND IPCEA STANDARDS. TYPE THHN/THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED. TYPE XHHW SHALL BE USED FOR SERVICE ENTRANCE FEEDERS AND ALL UNDERGROUND CONDUCTORS. TYPE SFF-2 SHALL BE UTILIZED FOR BRANCH CIRCUITS LOCATED IN WIRING CHANNELS OF CONTINUOUS FLUORESCENT FIXTURES AND IN AMBIENT TEMPERATURES OVER 90
- F. PRE MANUFACTURED METAL CLAD CABLE SHALL BE UTILIZED FOR ALL. NORMAL BRANCH CIRCUITS ONLY IN DRY HOLLOW STUD WALL LOCATIONS, ABOVE ACCESSIBLE CEILING AND WHERE PERMITTED BY ARTICLE 330 & 517 OF THE NATIONAL ELECTRICAL CODE. MINIMUM CONDUCTOR SIZE SHALL BE NO. 12 AWG COPPER WITH BARE BONDING CONDUCTOR IN DIRECT CONTACT WITH THE OUTER METAL JACKET.
- G. THE INSULATION OF ALL CONDUCTORS SHALL BE 90C RATED THERMOPLASTIC WITH COLOR CODING AS FOLLOWS:
- 1) 208/120 VOLT SYSTEM:
- a. BLACK FOR 'A' PHASE
- b. RED FOR 'B' PHASE

c. BLUE FOR 'C' PHASE

- 2) 480/277 VOLT SYSTEM:
- a. BROWN FOR 'A' PHASE
- b. ORANGE FOR 'B' PHASE c. YELLOW FOR 'C' PHASE
- 3) NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT. EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT.
- REQUEST PERMISSION TO OVERLAP CONDUCTORS WITH 6 IN. OF COLOR TAPING IN ACCESSIBLE LOCATIONS. H. PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS. FOR FEEDERS INDICATE FEEDER NUMBER, SIZE, PHASE, POINTS OF ORIGIN AND

4) WHERE COLOR-CODED CABLE IS NOT AVAILABLE. CERTIFY IN WRITING AND

TERMINATIONS, FOR CONTROL AND ALARM WIRING, INDICATE TYPE (CONTROL OR ALARM), SIZE OF WIRE AND POINTS OF ORIGIN AND TERMINATIONS.

- I. TERMINATIONS, SPLICES AND TAPS UNDER 600 VOLTS: COPPER CONDUCTORS NO.10 AND SMALLER SHALL UTILIZE COMPRESSION-TYPE OF TWIST-ON SPRING-LOADED CONNECTORS AND CLEAR NYLON-INSULATED COVERING. COPPER CONDUCTORS NO. 8 AND LARGER SHALL UTILIZE MECHANICAL BOLTED PRESSURE OR HYDRAULIC COMPRESSION TYPE USING MANUFACTURER'S RECOMMENDED TOOLING. CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH A MARKING INDICATING SIZE AND TYPE. COPPER LUG CONNECTIONS TO BUS BARS: USE ANTISEIZE COMPOUND ON TANG.
- J. NOT MORE THAN 3 LIGHTING OR CONVENIENCE OUTLET CIRCUITS SHALL BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32 DEG F. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF 120/208 AND 277/480 VOLT SYSTEMS. EXCEPT 460 VOLT MOTOR BRANCH CIRCUIT WIRING AND RELATED 120 VOLT CONTROL WIRING. THERMOPLASTIC WIRES SHALL NOT BE INSTALLED IN COMPUTER AREA RAISED FLOORS.
- K. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS.
- L. PERFORM CONTINUITY AND INSULATION TESTS. MEGGER TEST 100 PERCENT OF FEEDERS, 10 PERCENT OF BRANCH CIRCUITS AND ALL MOTOR BRANCH CIRCUITS
- M. PERFORM TESTS PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMIT WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE TESTING BELOW MANUFACTURER'S STANDARDS. 14. POWER WIRING:
- A. PROVIDE ALL POWER WIRING TO ALL MOTORS AND EQUIPMENT FURNISHED UNDER ALL CONTRACTS ON THE PROJECT. INCLUDE EXTENSIONS FROM CONTROLLERS TO MOTORS AND MOTOR CONNECTIONS. MOUNT AND WIRE ALL CONTACTORS AND POWER DEVICES FURNISHED UNDER ALL CONTRACTS. 15. CONTROL WIRING:
- B. PROVIDE ALL CONTROL WIRING LINE AND LOW VOLTAGE FOR MOTORS, ACTUATORS AND EQUIPMENT FURNISHED UNDER ALL CONTRACTS AND AS SPECIFICALLY SHOWN ON THE DRAWINGS, EXCEPT AS NOTED. THE ELECTRICAL CONTRACTOR SHALL COORDINATED WITH THE OTHER TRADES DURING THE BIDDING PROCESS AND INDICATION OF THIS COORDINATION SHALL BE STATED ON THE CONTRACTORS PROPOSAL. FAILURE TO COORDINATE WITH THE OTHER CONTRACTORS DURING THE BIDDING PROCESS WILL RESULT IN THE DENIAL OF EXTRA'S FOR PROVIDING ALL NECESSARY CONTROL WIRING.
- C. CONTROL WIRING LESS THAN 120 VOLTS FOR MOTORS, ALARMS FOR EQUIPMENT FURNISHED UNDER MECHANICAL/PLUMBING WILL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS COORDINATED WITH THE MECHANICAL AND PLUMBING CONTRACTOR DURING THE BIDDING PROCESS AND INDICATION OF THIS COORDINATION IS STATED ON THE CONTRACTORS PROPOSAL. FAILURE TO COORDINATE WITH THE MECHANICAL AND PLUMBING CONTRACTOR DURING THE BIDDING PROCESS WILL RESULT IN THE DENIAL OF EXTRA'S FOR PROVIDING ALL NECESSARY CONTROL WIRING.

A. LOCAL SWITCHES:

16. DEVICES:

- 1) CONVENTIONAL QUIET TOGGLE TYPE, RATED AT 20 AMP. 120/277 VOLT AC SIMILAR TO LEVITON 11221-2, 1223-2, 1224-2 OR EQUAL BY HUBBELL OR PASS & SEYMOUR. TOGGLE COLOR SHALL BE SELECTED BY THE OWNER OR
- 2) PILOT LIGHT TOGGLE TYPE WITH NEON LAMP, RATED AT 20 AMP, 120/277 VOLT AC SIMILAR TO LEVITON 11221-PLC.

B. INSERTION RECEPTACLES:

- 1) COMMERCIAL SPECIFICATION GRADE DUPLEX CONVENIENCE 125 VOLT. 2 POLE, 3 WIRE, 20 AMP WITH U GROUND SLOT GROUNDED, EXCEPT AS NOTED. DEVICE SHALL MEET OR EXCEED:
 - a. NEMA WD-1 AND WD-6
 - b. DEVICE SHALL BE SIMILAR TO HUBBELL 5362 DR EQUAL BY LEVITON, PASS & SEYMOUR OR GE. FACE COLOR SHALL BE SELECTED BY OWNER OR ARCHITECT. DEVICES USED ON EMERGENCY BRANCH CIRCUITS SHALL BE RED FACE ONLY.
 - 2) 5MA GROUND FAULT INTERRUPTER WITH SELF-PROTECTION AND LED INDICATOR LIGHT, SIMILAR TO HUBBELL 5362-G OR EQUAL BY LEVITON AND PASS & SEYMOUR.
- 3) SPECIAL RECEPTACLES:
- a. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE SPECIAL RECEPTACLES REQUIRED TO MATCH PROVIDED, EXISTING AND NEW EQUIPMENT PLUGS. COORDINATE RECEPTACLE TYPE PRIOR TO INSTALLATION.
- 4) RECEPTACLE ORIENTATION:
- a. CONTRACTOR SHALL COORDINATE ORIENTATION OF DEVICE WITH ARCHITECT.

C. DEVICE PLATES:

- 1) BRUSHED 302 STAINLESS STEEL. IF IT IS ASSOCIATED WITH AN EMERGENCY BRANCH CIRCUIT DEVICE THE PLATE SHALL BE ENGRAVED WITH THE CIRCUIT IDENTIFICATION FOR THAT DEVICE. 17. LUMINAIRES:
- A. MANUFACTURE AND INSTALL LUMINAIRES IN ACCORDANCE WITH NEC ARTICLE
- B. PROVIDE ALL LUMINAIRES INDICATED, COMPLETE WITH LAMPS. INCLUDE ALL INTERIOR LUMINAIRES, AND ALL EXTERIOR FIXTURES MOUNTED ON THE BUILDING.
- C. FURNISH ALL PLASTER FRAMES OR DRY WALL AND DELIVER TO PROJECT SITE FOR INSTALLATION UNDER FINISHES, COORDINATE WITH THE ARCHITECTURAL
- D. USE FIXTURES CONFORMING TO UL STANDARDS, AND BEARING UL LABEL AND UNION LABEL WHERE A UNION LABEL IS REQUIRED.
- E. ALL LED ELECTRONIC BALLASTS SHALL HAVE BUILT IN 0-10V DIMMING CAPABILITIES AND BE UL LISTED.
- F. ALL FLUORESCENT ELECTRONIC BALLASTS SHALL MEET OR EXCEED THE REQUIREMENTS OF:
- 1) ANSI/IEEE C62.41 (AMERICAN NATIONAL STANDARDS INSTITUTE).
- 2) FCC PART 18 (RFI AND EMI).

- CBM (CERTIFIED BALLAST MANUFACTURERS).
- 4) UL (UNDERWRITERS LABORATORIES).
- 5) PUBLIC LAW #100-357 (MINIMUM EFFICIENCY STANDARDS).
- 6) NAECA (NATIONAL APPLIANCE ENERGY CONSERVATION AMENDMENTS). 7) NEC (NATIONAL ELECTRIC CODE)

G. GENERAL CONSTRUCTION

PLASTICS: 100% VIRGIN ACRYLIC. REFER TO FIXTURE LIST FOR FURTHER DESCRIPTION.

- a. MATERIAL: STEEL, ALUMINUM OR OTHER TYPES MENTIONED.
- b. B & S GAUGE: NO. 22 MINIMUM FOR HOUSINGS, WITH APPROPRIATE CROSS-SECTIONAL CONFIGURATION FOR FIXTURE HOUSING; THINNER SHEET METAL ACCEPTABLE FOR BALLAST ENCLOSURES AND INCIDENTAL PURPOSES.

- a. CORROSION PROTECTION: PLATING. BONDERIZING. PRIMING, ELECTROSTATIC PAINTING, OR OTHER APPROVED MEANS.
- b. FINAL COATING: BAKED PAINT OR ENAMEL ON STEEL AND ALUMINUM; RAKED CLEAR LACQUER OR OTHER DURABLE TRANSPARENT FILM ON POLISHED METAL SURFACES.
- H. EXTERIOR FIXTURES: ENCLOSED AND GASKETED. UNLESS OTHERWISE NOTED. I. FLUORESCENT LAMP SOCKETS: WHITE FINISH, SILVER-PLATED CONTACT
- J. LATCHES: QUICK-OPERATING TYPE WITHOUT NEED FOR TOOLS. UNLESS

FINISHED AREAS UNLESS OTHERWISE NOTED.

- OTHERWISE NOTED; STAINLESS STEEL OR CADMIUM PLATED STEEL. K. EXPOSED HARDWARE: NOT ACCEPTABLE ON VISIBLE SURFACES OF FIXTURES IN
- L. OPERATING TEMPERATURE: NOT TO EXCEED 25 DEGREES C TEMPERATURE RISE OVER 40 DEGREES C A MAXIMUM 90 DEGREES C BALLAST HOT SPOT WHEN FLUORESCENT FIXTURE IS OPERATED IN 25 DEGREES C AMBIENT. MAXIMUM CASE
- TEMPERATURE SHALL NOT EXCEED 85 DEGREES C M. PROVIDE APPROPRIATE MOUNTING ACCESSORIES FOR EACH FIXTURE, COMPATIBLE WITH THE VARIOUS STRUCTURAL CONDITIONS THAT WILL BE ENCOUNTERED. PROVIDE FASTENING CLIPS (EARTHQUAKE CLIPS) AND AT LEAST TWO INDEPENDANT SUPPORT RODS OR WIRES FROM THE STRUCTURE TO A TAB ON THE LIGHTING FIXTURE. WIRE OR ROD SHALL HAVE A BREAKING STRENGTH OF
- ARE SUPPORTED FROM FRAMING MEMBERS OF SUSPENDED CEILINGS. N. ASSEMBLE, WIRE AND INSTALL ALL LUMINAIRES AT THERE RESPECTIVE OUTLETS AS INDICATED AND ASSUME RESPONSIBILITY FOR THEIR CONDITION UNTIL ACCEPTANCE BY OWNER. INSTALL PROPER LAMPS IN EACH FIXTURE.

THE WEIGHT OF THE FIXTURE AT A SAFETY FACTOR OF 3 FOR LUMINAIRES THAT

- O. FIXTURE CONNECTIONS TO BRANCH CIRCUITS SHALL BE MADE USING STRANDED WIRE WITH INSULATION TEMPERATURE RATING EQUAL TO OR HIGHER THAN THAT OR WIRE SUPPLIED WITH THE FIXTURE OR SPECIFIED BY FIXTURE MANUFACTURER. FIXTURES ARE TO BE CONNECTED TO BRANCH CIRCUITS VIA JUNCTION BOX USING FLEXIBLE CONDUIT OF LENGTHS BETWEEN 4 FT MINIMUM AND 6 FT MAXIMUM.
- P. THE USE OF FLEXIBLE CONDUIT. TO FIXTURES IN ANY LENGTH OVER 6FT IS PERMITTED ONLY WHEN A SEPARATE GROUND WIRE IS INSTALLED ALONG WITH THE CONDUCTORS INSIDE THE FLEXIBLE CONDUIT. IN THIS APPLICATION THE GROUND WIRE MUST BOND THE LIGHTING FIXTURE HOUSINGS TO EACH OTHER AND/OR TO THE JUNCTION BOX. ALL FLEXIBLE CONDUIT SHALL BE SUPPORTED AS REQUIRED BY NEC AND SHALL BE INSTALLED IN A WORKMANLIKE MANNER.
- Q. NOTE THAT SPECIFICATIONS FOR RECESSED FIXTURES GENERALLY DO NOT INCLUDE MOUNTING ACCESSORIES. AND THAT EACH FIXTURE TYPE MAY BE USED IN SEVERAL DIFFERENT CEILINGS, SUCH AS LAY-IN EXPOSED GRID, CONCEALED SPUME TILE, OR DRYWALL. VERIFY MOUNTING DETAILS FOR EACH SPACE BEFORE ORDERING FIXTURES SO THAT PROPER QUANTITIES FOR EACH CONDITION WILL BE DELIVERED IN TIME TO AVOID CONSTRUCTION DELAYS.
- R. SECURELY FASTEN LUMINAIRES TO FRAMING MEMBERS OF SUSPENDED CEILINGS WITH FASTENING CLIPS. AS SPECIFIED. CLIP EACH FIXTURE TO ALL ADJOINING FRAMING MEMBERS TO PREVENT MOVEMENT OF THE MEMBERS AWAY FROM THE FIXTURES.
- S. SUPPORT EXIT SIGNS IN TILE CEILINGS WITH RAILS THAT SPAN BETWEEN RUNNERS OF CEILING SUSPENSION SYSTEM. USE FLANGED FIXTURES FOR FINISHED APPEARANCE.
- T. SUPPORT FLUORESCENT FIXTURES IN DRYWALL CEILINGS FROM PLASTER FRAMES, WITH ADJUSTABLE LUGS ON 510E OF FIXTURE OR YOKE MOUNTING AS RECOMMENDED BY FIXTURE MANUFACTURER. USE FLANGED FIXTURES FOR FINISHED APPEARANCE, UNLESS OTHERWISE NOTED.
- U. LOCATE FIXTURE IN CENTER OF PANEL WHERE USED IN MODULAR TILE CEILINGS, UNLESS OTHERWISE NOTED. REFER TO REFLECTED CEILING PLAN.
- V. FLUORESCENT BALLASTS SHALL BE HIGH EFFICIENCY ELECTRONIC TYPE WITH A
- MAXIMUM 10% HARMONIC DISTORTION. W. FLUORESCENT LAMPS SHALL HAVE A COLOR OF 4,100 KELVIN, UNLESS
- OTHERWISE NOTED.
- X. HID(HIGH INTENSITY DISCHARGE) BALLASTS SHALL BE CONSTANT WATTAGE AUTO-TRANSFORMER TYPE.
- Y. THE LUMINAIRES SHALL BE HUNG FROM THE TOP CORD OF THE STRUCTURE ABOVE. PROVIDE UNISTRUT STRATTALED AND SECURED TO THE TOP CORD OF THE STRUCTURE AS REQUIRED TO ENSURE THE LUMINAIRE HANGING DEVICE IS PERPENDICULAR TO THE FIXTURE AND THE ROOF OR FLOOR ABOVE.

18. EMPTY RACEWAY SYSTEMS:

- A. A COMPLETE EMPTY RACEWAY SYSTEM CONSISTING OF BLANK 4-11/16IN. X 2-1/2IN. DEEP OUTLET BOXES WITH SINGLE OR DOUBLE GANG DRYWALL FINISH COLLAR AS NOTED. METALLIC RACEWAY WITH PULL STRING SHALL BE PROVIDED AND INSTALLED WHERE SHOWN FOR THE FOLLOWING SYSTEMS 1) TELEPHONE/DATA (SINGLE GANG) 2) CABLE TELEVISION (SINGLE GANG)
- B. RACEWAY SIZE SHALL BE A MINIMUM OF 3/4IN. OR AS DOCUMENTED IN PLANS AND

- C. ALL METALLIC RACEWAY SYSTEMS SHALL BE STUBBED UP AND TERMINATE IN ACCESSIBLE CEILING. END BUSHINGS AND PULL WIRES SHALL BE PROVIDED. BONDING OF ALL RACEWAY SYSTEMS TO PROVIDE A COMMON GROUND PATH SHALL BE PROVIDED.
- D. ACTUAL DEVICES. CONNECTORS, WIRING COMPLETE WITH TERMINATIONS AND BOX COVERS SHALL BE PROVIDED BY THE OWNER. 19. FIRE STOPPING:
- A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT. INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION.
- B. PROVIDE ALL REQUIRED FIRE-STOPPING. WORK INCLUDES FIRE STOPPING PENETRATIONS OF FIRE-RESISTANCE RATED FLOORS, WALLS AND PARTITIONS IN NEW CONSTRUCTION, AS WELL AS PRE-EXISTING PENETRATIONS IN RENOVATION AREAS OF EXISTING CONSTRUCTION.
- C. PRODUCT DATA. SUBMIT MANUFACTURER'S PRODUCT DATA FOR EACH FIRE-STOPPING PRODUCT REQUIRED, INCLUDING INSTRUCTIONS FOR SUBSTRATE PREPARATION AND FIRE-STOPPING INSTALLATION.
- D. FIRE RESISTANT JOINT SEALERS: PROVIDE MANUFACTURER'S STANDARD FIRE-STOPPING SEALANT WITH ACCESSORY MATERIALS HAVING FIRE RESISTANCE RATINGS INDICATED AS ESTABLISHED BY TESTING IDENTICAL ASSEMBLIES BY UNDERWRITERS LABORATORY, OR OTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
- E. THE RATING OF THE FIRE SEALANT SHALL MEET OR EXCEED THE FIRE RATING OF THE FIRE RATED PARTITION.
- A. BEFORE MAKING TESTS, COMPLETE ALL CONNECTIONS AT PANELS, FIXTURES AND OTHER EQUIPMENT. INSTALL FUSES AND HAVE ALL WIRING CONTINUOUS FROM SERVICE EQUIPMENT TO UTILIZATION OUTLETS. CORRECT ALL UNDESIRABLE GROUND. OPEN AND SHORT CIRCUIT CONDITIONS.
- B. PROVIDE A SOURCE OF TEMPORARY POWER FOR MAKING TESTS IF NORMAL BUILDING POWER IS NOT AVAILABLE AT THE TIME.
- C. TAKE AND RECORD THE FOLLOWING READINGS ON SYSTEMS 600 VOLTS AND
- 1) MEGGER TESTS OF ALL FEEDER CIRCUIT CONDUCTORS, GROUND CONDUCTORS AND CONDUIT GROUND.
- INDICATE BALANCE. 3) AMMETER READINGS ON ALL PHASES OF EACH POLYPHASE MOTOR.

2) AMMETER READINGS ON ALL PHASES AND NEUTRAL OF EACH FEEDER TO

- INCLUDE NAMEPLATE FULL LOAD CURRENT OF EACH MOTOR ON DATA
- WITH DATA SHOWN ON THE DRAWINGS AND/OR MANUFACTURER'S RECOMMENDED SETTING.

4) CERTIFY THAT ALL OVERLOAD DEVICES HAVE BEEN SET IN ACCORDANCE

 D. SEND FINAL CERTIFIED TEST REPORTS AND CERTIFICATIONS TO THE ARCHITECT FOR APPROVAL AND TRANSMITTAL TO THE OWNER. 21. DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS:

A. SUBMIT WRITTEN CERTIFICATION THAT ELECTRICAL SYSTEMS ARE COMPLETE

- AND OPERATIONAL. SUBMIT CERTIFICATION WITH CONTRACTOR'S REQUEST FOR FINAL REVIEW. 1) AT THE TIME OF FINAL REVIEW OF ELECTRICAL WORK, DEMONSTRATE THE
- OPERATION OF ELECTRICAL SYSTEMS. FURNISH LABOR, APPARATUS AND EQUIPMENT FOR SYSTEMS' DEMONSTRATION. THE VARIOUS TEST SHALL BE WITNESSED BY AND THE OWNER OR HIS REPRESENTATIVE. B. THE CONTRACTOR SHALL FURNISH ALL TEST EQUIPMENT, MATERIALS, LABOR, AND TEMPORARY POWER HOOK-UPS TO PERFORM START-UP AND ALL TESTS AS
- REQUIRED TO OBTAIN FINAL FIELD ACCEPTANCE FROM OWNER. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE. ALL TEST PROCEDURES SHALL CONFORM TO THIS SPECIFICATION AND APPLICABLE STANDARDS THE ANSI, IEEE. NEMA, OSHA, NEPA, ETC.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TESTS AND TEST RECORD. TESTING SHALL BE PERFORMED BY AND UNDER THE IMMEDIATE SUPERVISION OF THE CONTRACTOR. TEST RECORD SHALL BE KEPT FOR EACH PIECE OF EQUIPMENT. COPIES SHALL BE FURNISHED TO THE ENGINEER FOR REVIEW AND/OR APPROVAL.
- D. A VISUAL INSPECTION OF ALL ELECTRICAL EQUIPMENT, TO CHECK FOR THE FOREIGN MATERIAL, TIGHTNESS OR WIRING AND CONNECTION. PROPER GROUNDING, MATCHING NAMEPLATE CHARTS WITH SPECIFICATION, ETC., SHALL BE MADE PRIOR TO ACTUAL TESTING.
- E. A COMPLETE OPERATIONAL TEST SHALL BE MADE ON THE LIFE SAFETY FIRE ALARM SYSTEM. THIS COMPLETER OPERATIONAL TEST SHALL ALSO BE PROVIDED ON ANY EXISTING DEVICES AND SYSTEMS IF THIS IS A RENOVATION PROJECT. THE CONTRACTOR SHALL CONSULT WITH THE EQUIPMENT VENDORS AND THEN SUBMIT FOR APPROVAL A STEP-BY-STEP PROCEDURE DESCRIBING THE METHOD OF MAKING THE TESTS, THE EQUIPMENT TO BE UTILIZED AND THE FEATURE TO BE CHECKED BY THE TEST. ALL INTERLOCKS AND PROTECTIVE FEATURES SHALL BE CHECKED.
- 22. SPECIAL ENGINEERING SERVICES: A. IN THE INSTANCE OF COMPLEX OR SPECIALIZED ELECTRICAL SYSTEMS SUCH AS EMERGENCY SYSTEM FIRE ALARM OR SIMILAR MISCELLANEOUS SYSTEMS. THE INSTALLATION, FINAL CONNECTIONS AND TESTING OF SUCH SYSTEMS SHALL BE MADE UNDER THE DIRECT SUPERVISION OF COMPETENT AUTHORIZED SERVICE ENGINEERS WHO SHALL BE IN THE EMPLOY OF THE RESPECTIVE EQUIPMENT
- B. ANY AND ALL EXPENSES INCURRED BY THE EQUIPMENT MANUFACTURERS' REPRESENTATIVES RELATED TO THIS PROJECT SHALL BE BORNE BY THE ELECTRICAL CONTRACTOR.

23. DESIGN MODIFICATIONS:

MANUFACTURER.

A. THE DRAWINGS SHOW ELECTRICAL SYSTEMS WHICH SUPPLY, CONTROL. AND/OR MONITOR SYSTEMS SPECIFIED ELSEWHERE. THE ELECTRICAL SYSTEM SHOWN HAS BEEN BASED ON SPECIFIC MANUFACTURERS DATA OR INFORMATION CONVEYED TO THE ELECTRICAL DESIGNER. WHERE ANY AGREEMENT OR CHANGE IS MADE TO SUPPLY EQUIPMENT OF LARGER CAPACITY OR DIFFERENT ELECTRICAL CHARACTERISTICS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE ELECTRICAL SYSTEM TO EFFECT SUCH CHANGES WITHIN THE INTENT OF THESE SPECIFICATIONS AND TO INFORM THE ENGINEER, IN WRITING OF SUCH CHANGE. FOR EXAMPLE. IF HVAC COMPRESSORS AND/OR MOTORS ARE ALLOWED TO BE CHANGED TO 230 VOLTS RATHER THAN THE ORIGINALLY SPECIFIED 208 VOLTS. BOOSTING OR BUCKING TRANSFORMERS SHALL BE SUPPLIED. INSTALLED, AND WIRED TO ACCOMMODATE THE CHANGE AT NO ADDITIONAL COST.

Revisions

<u>ENERAL CONDITIONS NOTE</u>

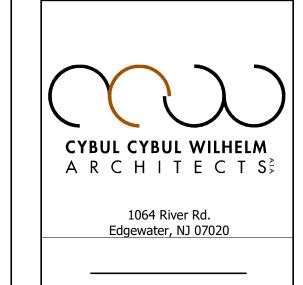
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JONI KACLIOK ASSUMES ALL RESPONSIBILLIES FOR VEKIFIANG ITALLITE DIMENSIONS, AND/OR CONDITIONS AT THE JOB SITE ARE AS REPRESENTED O THIS DRAWING AND ACCOMPANYING SPECIFICATIONS. IF THERE IS ANY DISCREPANCY BETWEEN WHAT IS DESCRIBED IN THESE DOCUMENTS AND TH ACTUAL FIELD CONDITIONS, THE CONTRACTOR SHALL INFORM THE ENGINEE PRIOR TO SIGNING THE CONTRACT. IT IS THE EXCLUSIVE RESPONSIBILITY C THE CONTRACTOR TO VERIEY AND COMPLY WITH ALL BUILDING AND/OI
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CONFLICT AT HIS OWN EXPENSE. NO EXCEPTIONS!!

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Description | # |

KOESTNER ASSOCIATES P.O.BOX 514 Hackensack, NJ 07602 ALLIED ENGINEERING 730 River Road

New Milford, NJ 07646

BD ENGINEERING, LLC.

BD Book Suite 4 30 Park Road, Suite 4 Tinton Falls, NJ 07724



25 CENTRAL AVE TETERBORO, NJ, 07608 DOB STAMP.

Lorenzo Foods Teterboro

REVIEW PLANNING BOARD BUILDING DEPT CONSTRUCTION ____ BRIAN D. TANNENHAUS

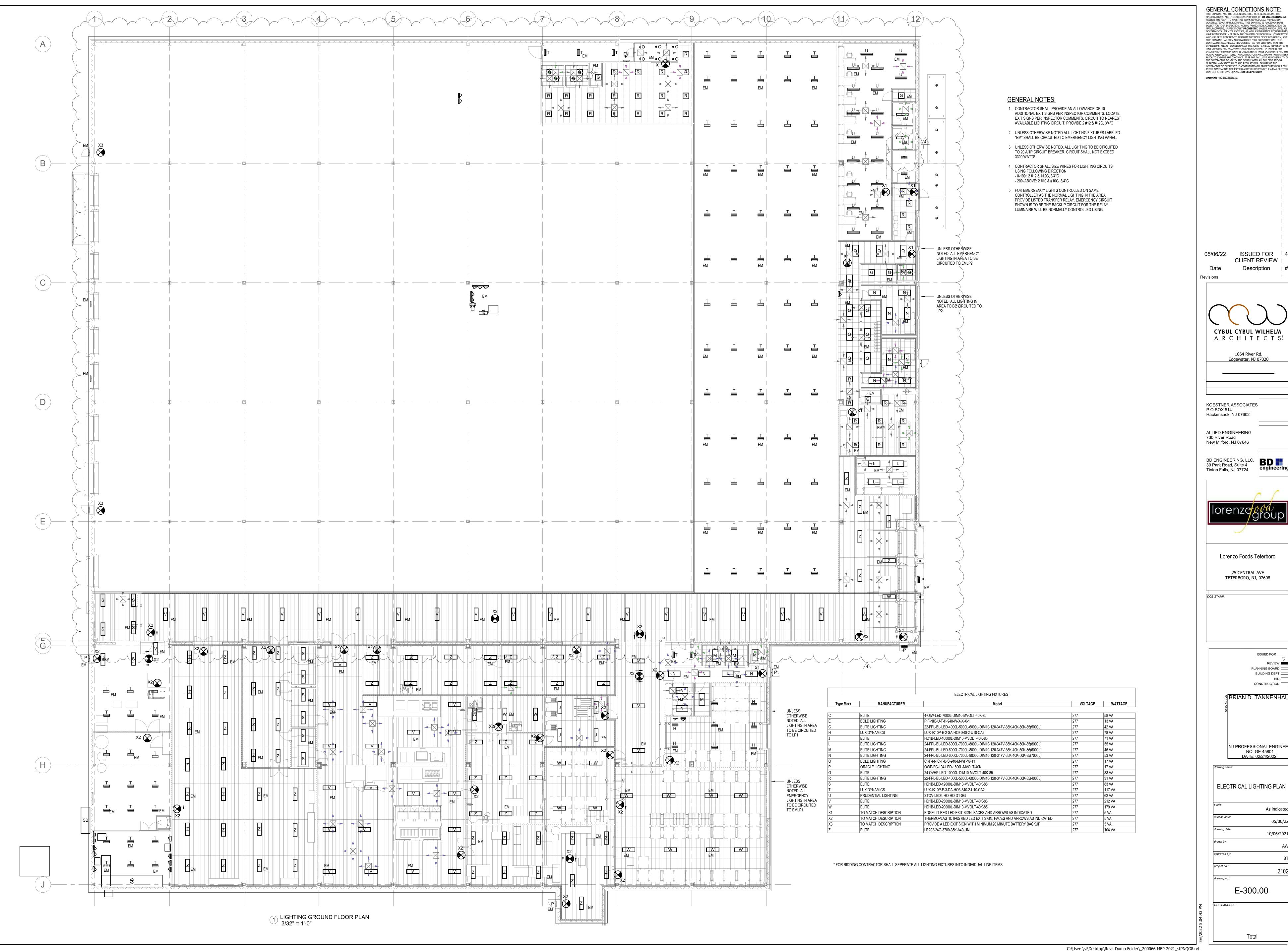
NJ PROFESSIONAL ENGINEER NO. GE 45801 DATE: 02/24/2022

ELECTRICAL SPECIFICATION

12" = 1'-0" 09/24/2021

E-102.00

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ISSUED FOR 4 CLIENT REVIEW Description | # |

CYBUL CYBUL WILHELM A R C H I T E C T S

BD ENGINEERING, LLC. 30 Park Road, Suite 4 Tinton Falls, NJ 07724

Lorenzo Foods Teterboro

25 CENTRAL AVE TETERBORO, NJ, 07608

PLANNING BOARD BUILDING DEPT

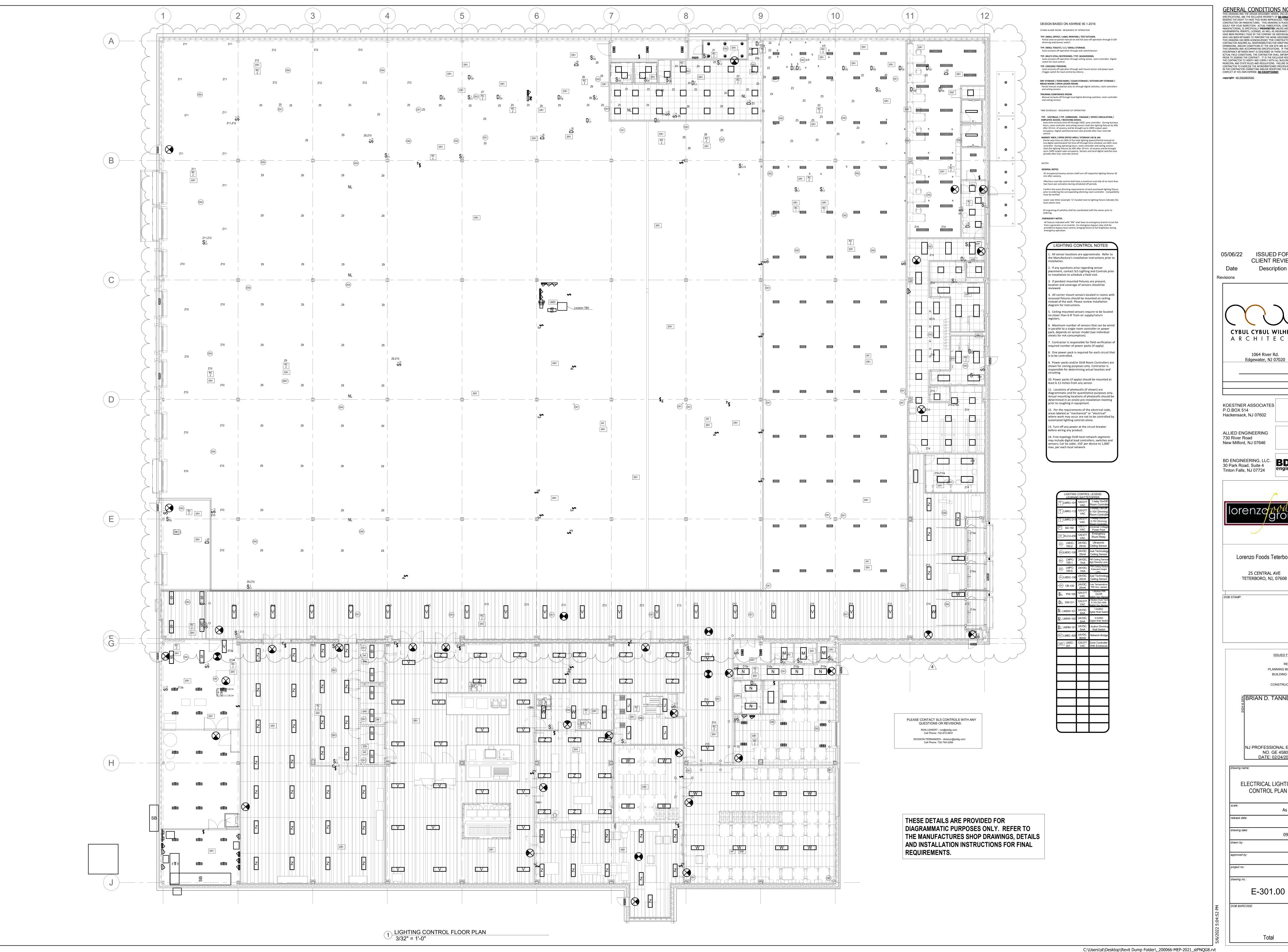
ផ្លីBRIAN D. TANNENHAU NJ PROFESSIONAL ENGINEER

NO. GE 45801 DATE: 02/24/2022

As indicated

05/06/22 10/06/2021

E-300.00



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CYBUL CYBUL WILHELM ARCHITECTS

Hackensack, NJ 07602

New Milford, NJ 07646

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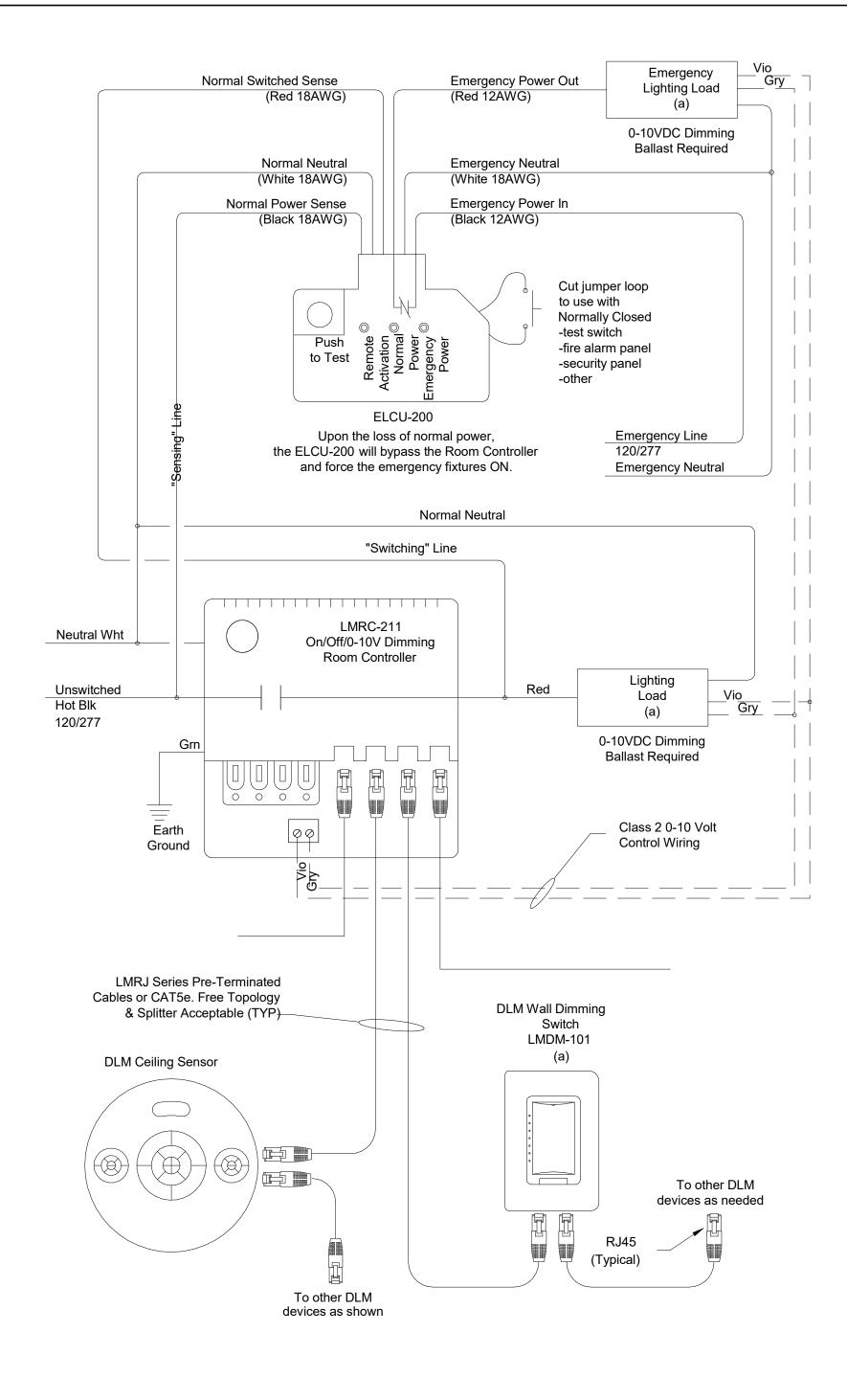
PLANNING BOARD BUILDING DEPT ផ្លីBRIAN D. TANNENHAUS

NJ PROFESSIONAL ENGINEER NO. GE 45801

ELECTRICAL LIGHTING CONTROL PLAN

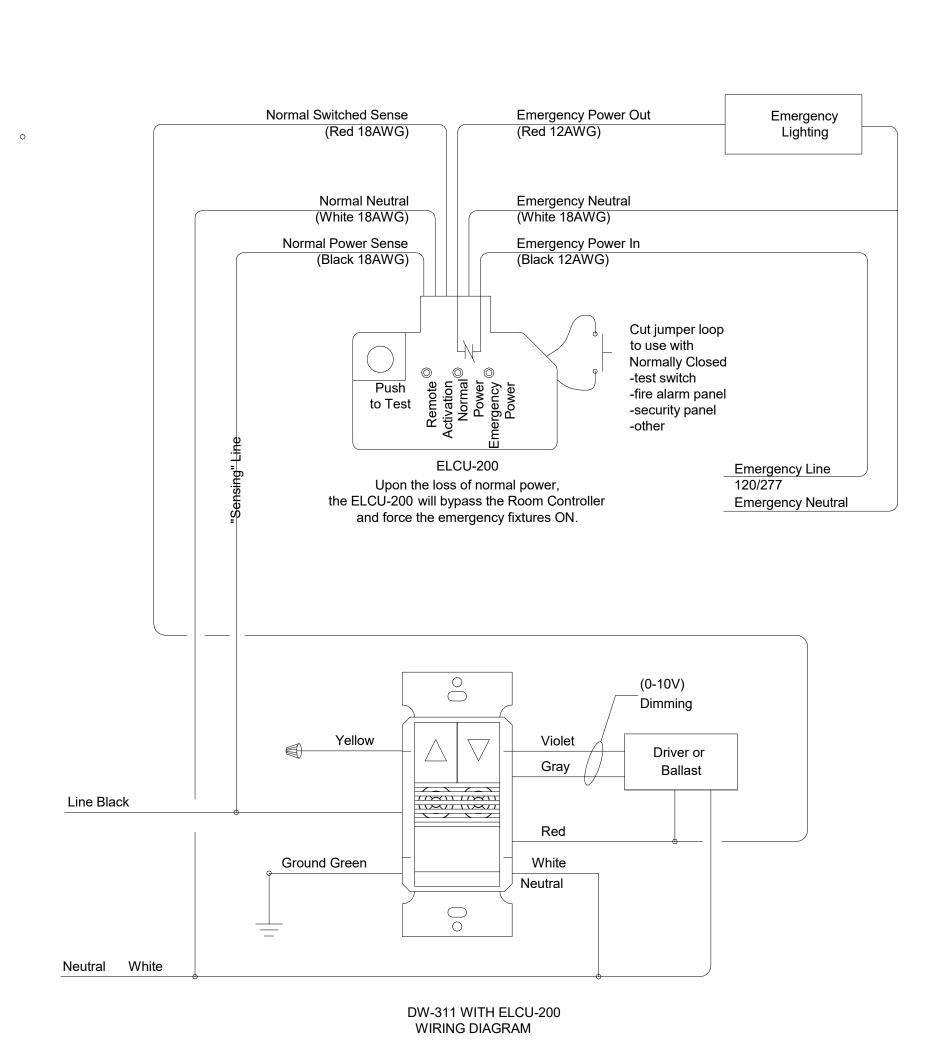
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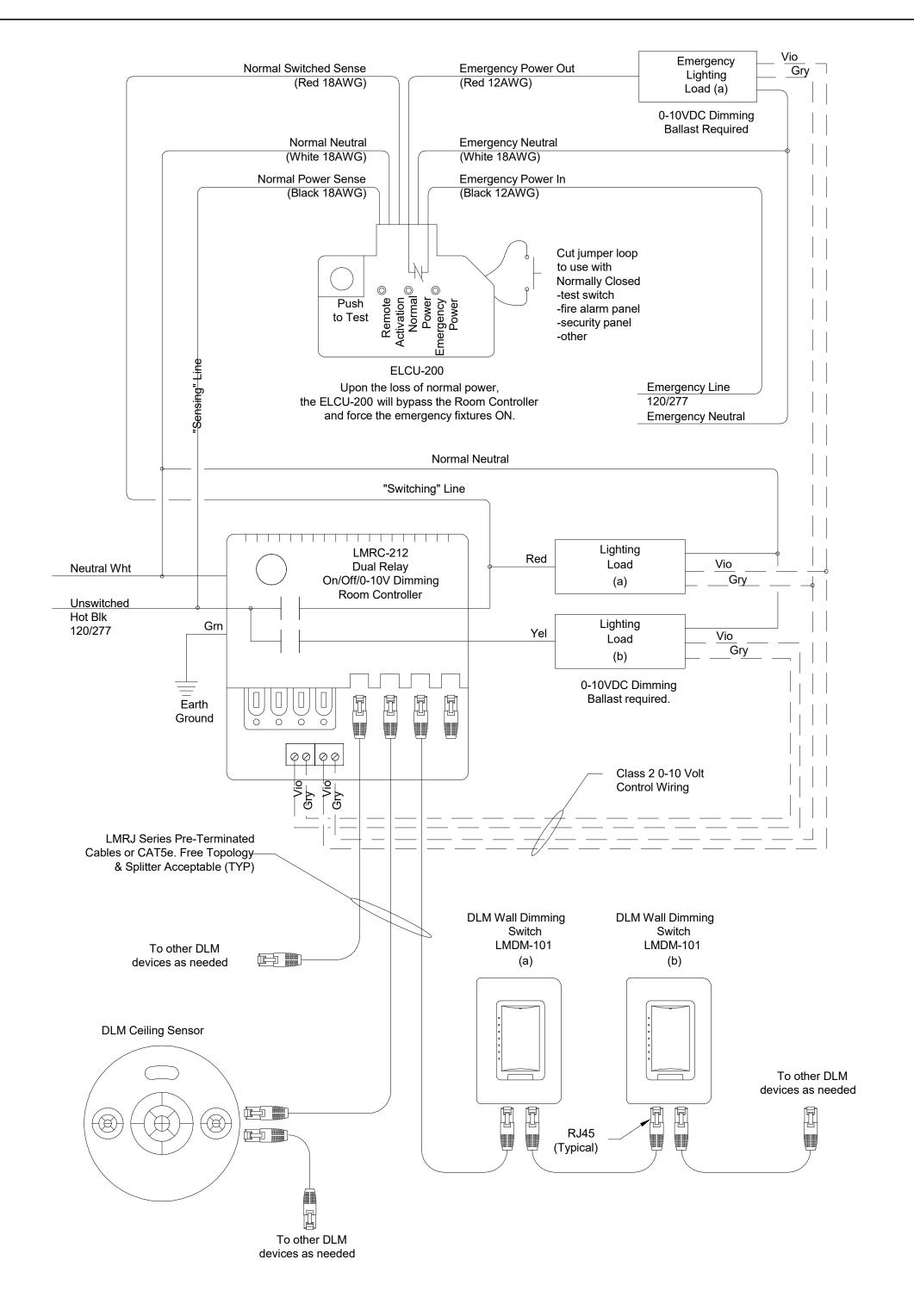
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TYP. LMRC-211 WITH ELCU-200 WIRING DIAGRAM

NOTE: Refer to controls layout for exact quantity and model number of devices.





TYP. LMRC-212 WITH ELCU-200 WIRING DIAGRAM

NOTE: Refer to controls layout for exact quantity and model number of devices. Normal Switched Sense **Emergency Power Out** Emergency (Red 18AWG) (Red 12AWG) Lighting Normal Neutral **Emergency Neutral** (White 18AWG) (White 18AWG) Normal Power Sense Emergency Power In (Black 12AWG) (Black 18AWG) Cut jumper loop to use with Normally Closed -test switch -fire alarm panel -security panel -other ELCU-200 Emergency Line 120/277 Upon the loss of normal power, the ELCU-200 will bypass the Room Controller Emergency Neutral and force the emergency fixtures ON. "Switching" Line Neutral Load Neutral White Line Black **Ground Green**

> PW-100 with ELCU-200 WIRING DIAGRAM

LIGHTING CONTROL NOTES 1. All sensor locations are approximate. Refer to the Manufacture's installation instructions prior to installation. 2. If any questions arise regarding sensor placement, contact SLS Lighting and Controls prior to installation to schedule a field visit. 3. If pendant mounted fixtures are present, location and coverage of sensors should be 4. All corner mount sensors located in rooms with recessed fixtures should be mounted on ceiling instead of the wall. Please review installation diagram for instructions. 5. Ceiling mounted sensors require to be located no closer than 6-8' from air supply/return registers. 6. Maximum number of sensors that can be wired in parallel to a single room controller or power pack, depends on sensor model (see individual sheets for mA consumption). 7. Contractor is responsible for field verification of required number of power packs (if apply). 8. One power pack is required for each circuit that is to be controlled. 9. Power packs and/or DLM Room Controllers are shown for zoning purposes only. Contractor is responsible for determining actual location and circuiting. 10. Power packs (if apply) should be mounted at least 6-12 inches from any sensor. 11. Locations of photocells (if shown) are diagrammatic and for quantitative purposes only. Actual mounting locations of photocells should be determined in an onsite pre-installation meeting prior to roughing in 12. Per the requirements of the electrical code, areas labeled as "mechanical" or "electrical" where work may occur are not to be controlled by automated lighting controls alone. 13. Turn off any power at the circuit breaker before wiring any product. 14. Free-topology DLM local network segments may include digital load controllers, switches and sensors; Cat 5e cable, 150' per device to

THESE DETAILS ARE PROVIDED FOR DIAGRAMMATIC PURPOSES ONLY. REFER TO THE MANUFACTURES SHOP DRAWINGS, DETAILS AND INSTALLATION INSTRUCTIONS FOR FINAL REQUIREMENTS.

1,000' max, per each local network.

Shunt Relay VAC 24VDC, Ultrasonic 100-2 20mA Ceiling Senso 24VDC, Dual Technolog 20mA Ceiling Sensor PIR Ceiling Sens 24VDC, 100-1 7mA High Density Lens 24VDC 100-5 7mA 24VDC, 20mA Ceiling Senso 24VDC, Low Temperature PIR Occ. sensor. 20mA 120/277 On/Off VAC VAC 1-button 24VDC, Digital Wall Swite 5mA 24VDC, 2-button Digital Wall Swit 5mA 24VDC, $\prod_{i,v}^{1}$ LMDM-10 5mA Wall Switch 24VDC, W1) LMBC-300 120/277 Zone Controlle VAC With Enclosure

LIGHTING CONTROL LEGEND

120/277

VAC

120/277

VAC

VAC

VAC

120/277

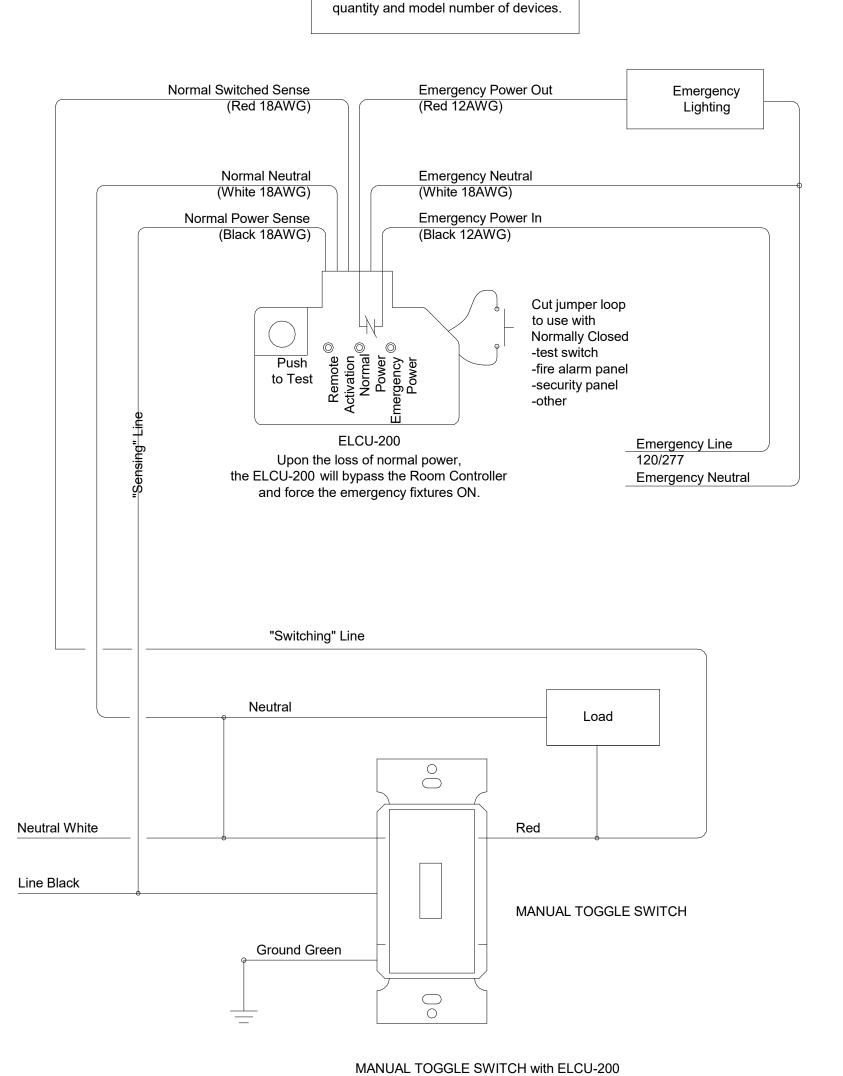
1-relay On/Of

Power Pack

PLEASE CONTACT SLS CONTROLS WITH ANY QUESTIONS OR REVISIONS: RON LEWERT - ron@slsltg.com Cell Phone: 732-815-6931 DICKSON FERNANDES - dickson@slsltg.com

Cell Phone: 732-740-2294

NOTE: Refer to controls layout for exact

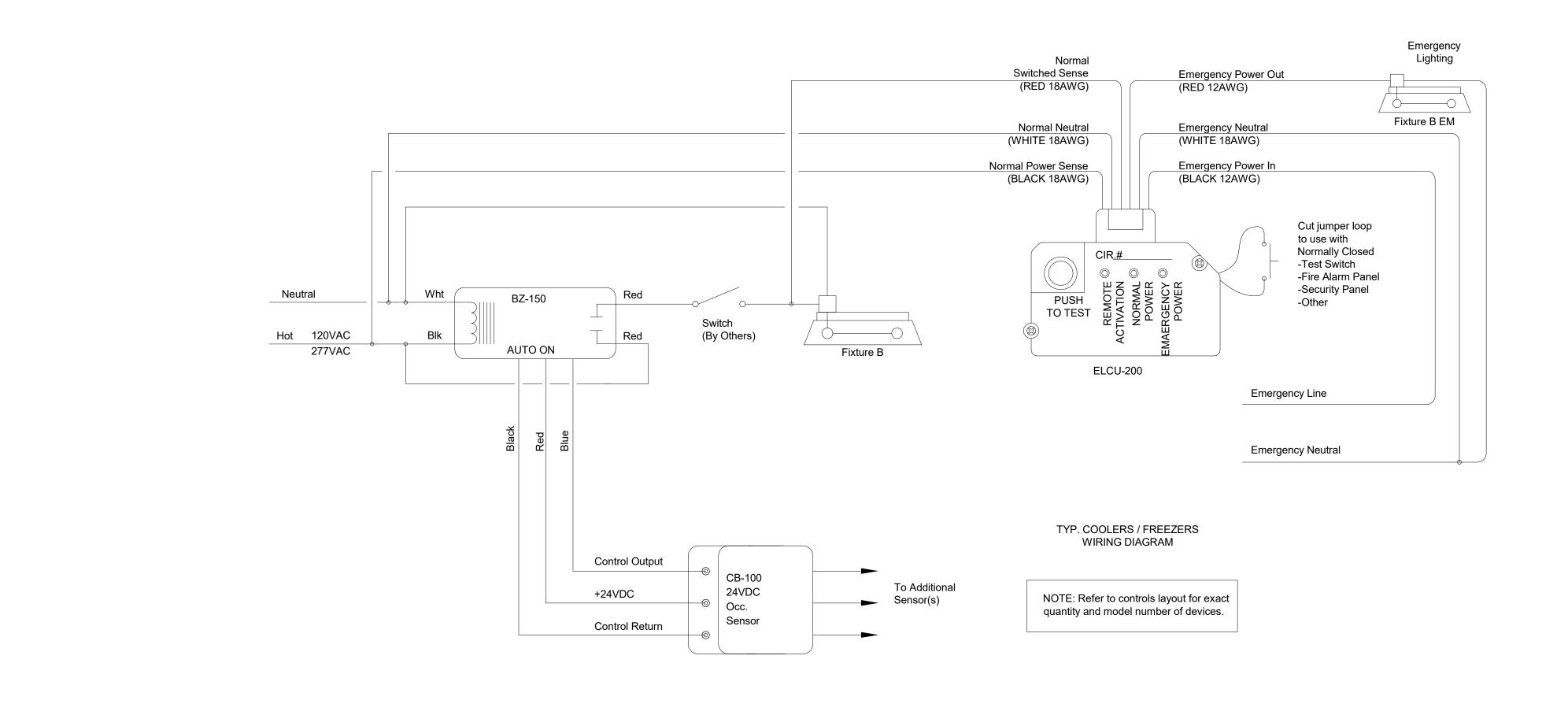


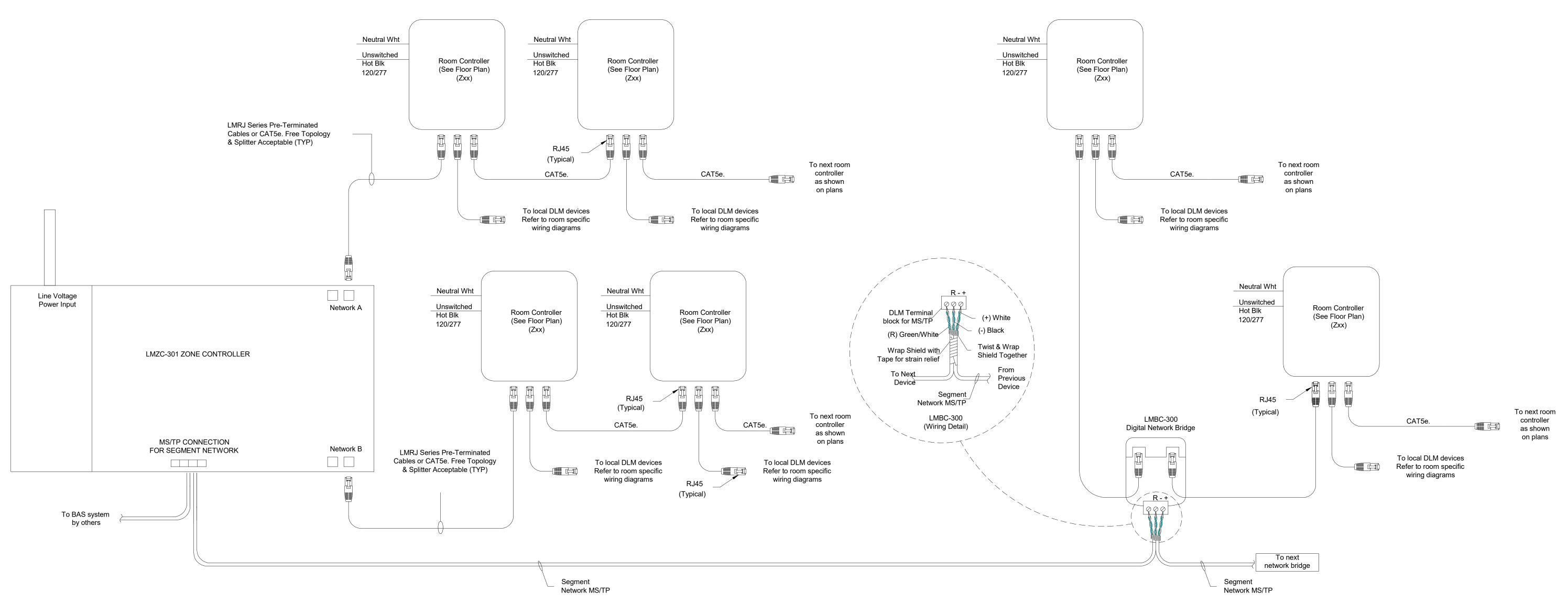
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30 Park Road. Suite 4 30 Park Road, Suite 4 Tinton Falls, NJ 07724 Lorenzo Foods Teterboro 25 CENTRAL AVE TETERBORO, NJ, 07608 DOB STAMP: ISSUED FOR REVIEW PLANNING BOARD BUILDING DEPT BID ____ CONSTRUCTION ____ ផ្លី BRIAN D. TANNENHAUS NJ PROFESSIONAL ENGINEER NO. GE 45801 DATE: 02/24/2022 ELECTRICAL LIGHTING CONTROL DETAILS 12" = 1'-0" 09/24/2021 E-302.00

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Total

WIRING DIAGRAM





EIA/TIA T568B ETHERNET PLUG WIRING

LATCHING TAB FACES AWAY

(ON OPPOSITE SIDE)

CAT5E WIRING DIAGRAM

White/Orange

Orange

White/Blue

TYPICAL LMZC-301 WIRING DIAGRAM

NOTE: Refer to controls layout for exact quantity and model number of devices.

White/Green

White/Brown

PLEASE CONTACT SLS CONTROLS WITH ANY QUESTIONS OR REVISIONS:

RON LEWERT - ron@slsltg.com Cell Phone: 732-815-6931

DICKSON FERNANDES - dickson@slsltg.com Cell Phone: 732-740-2294

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LIGHTING CONTROL NOTES

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14. Free-topology DLM local network segments may include digital load controllers, switches and sensors; Cat 5e cable, 150' per device to 1.000' max, per each local network.

1,000' max, per ea		
LIGHTING	CONTRO	L LEGEND
	D WATTS	TOPPER
LMRC-101	120/277 VAC	1-relay On/C Room Contro
RC LMRC-112	120/277 VAC	2-Relay On/O 0-10V Dimmir Room Contro
LMRC-211	120/277 VAC	1-Relay On/Of 0-10V Dimmin
PP BZ-150	120/277 VAC	Room Controlle Universal Volta Power Pack
ER1 ELCU-200	120/277 VAC	Emergency Shunt Relay
OS1 LMUC- 100-2	24VDC, 20mA	Ultrasonic Ceiling Senso
(082) LMDC-100	24VDC, 20mA	Dual Technolo Ceiling Senso
OS3 LMPC- 100-1	24VDC, 7mA	PIR Ceiling Sen High Density Lei
OS4 LMPC- 100-5	24VDC, 7mA	PIR Ceiling Sens Extended Heigh Lens.
VS1)LMDC-100	24VDC, 20mA	Dual Technolo Ceiling Senso
⊢(051) CB-100	24VDC, 20mA	Low Temperatu PIR Occ. senso
\$ _{0S} PW-100	120/277 VAC	1-Button PIR On/Off Switch Occ Sen
D _{os} DW-311	120/277 VAC	2-Button Dual Te 0-10V Dim Wit Switch Occ Sens
\$1 LMSW-101	24VDC, 5mA	1-button Digital Wall Swi
\$2 LMSW-102	24VDC, 5mA	2-button Digital Wall Swi
D _{LV} LMDM-101	24VDC, 5mA	1-button Dimmi Wall Switch
(NW1) LMBC-300	24VDC, 30mA	Network Brid
LMZC- 301	120/277 VAC	Zone Controll With Enclosu

Description | # | Date Revisions CYBUL CYBUL WILHELM ARCHITECTS 1064 River Rd. Edgewater, NJ 07020 ALLIED ENGINEERING 730 River Road New Milford, NJ 07646 BD ENGINEERING, LLC.
30 Park Road, Suite 4
Tinton Falls, NJ 07724

BD III
engineering Lorenzo Foods Teterboro 25 CENTRAL AVE TETERBORO, NJ, 07608 ISSUED FOR NJ PROFESSIONAL ENGINEER NO. GE 45801 DATE: 02/24/2022 ELECTRICAL LIGHTING CONTROL DETAILS drawing date: E-303.00

GENERAL CONDITIONS NOTE:

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PLANNING BOARD BUILDING DEPT BID 🗀 CONSTRUCTION ____

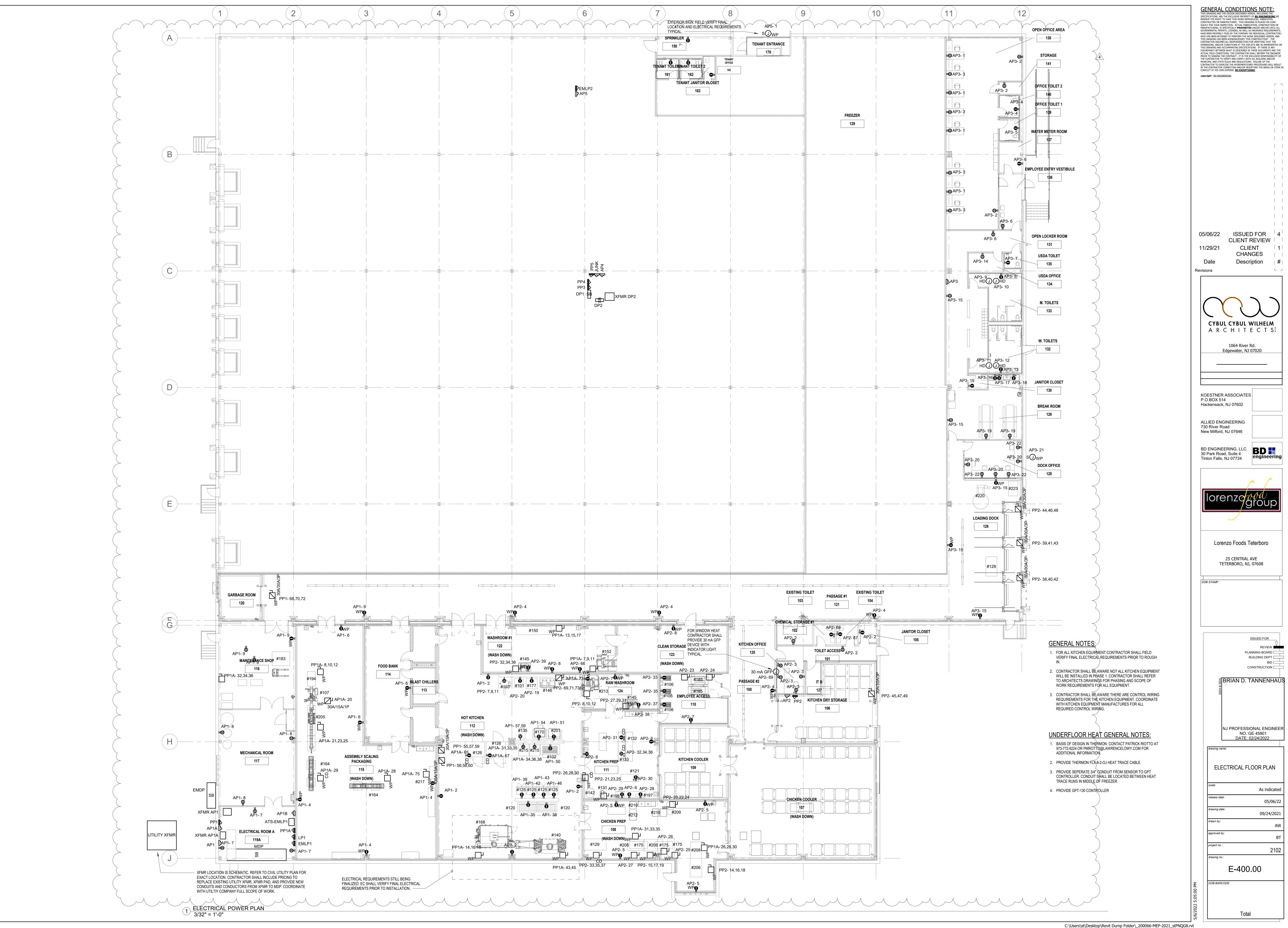
ផ្លីBRIAN D. TANNENHAUS

12" = 1'-0"

09/24/2021

Total

C:\Users\st\Desktop\Revit Dump Folder_200066-MEP-2021_stPNQG8.rvt



ISSUED FOR 4 **CLIENT REVIEW**

CYBUL CYBUL WILHELM A R C H I T E C T S

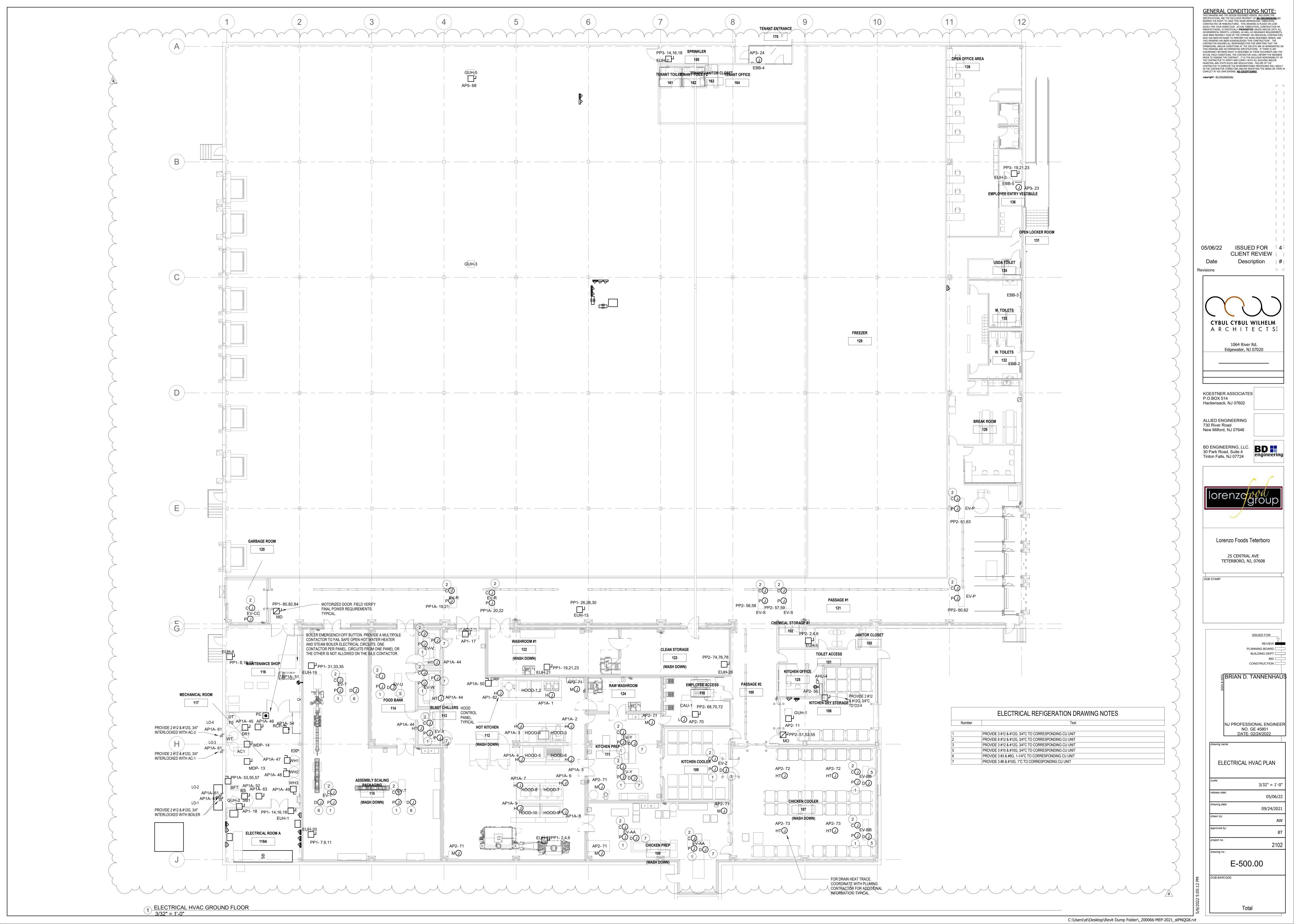
PLANNING BOARD BUILDING DEPT BID ____ CONSTRUCTION ____

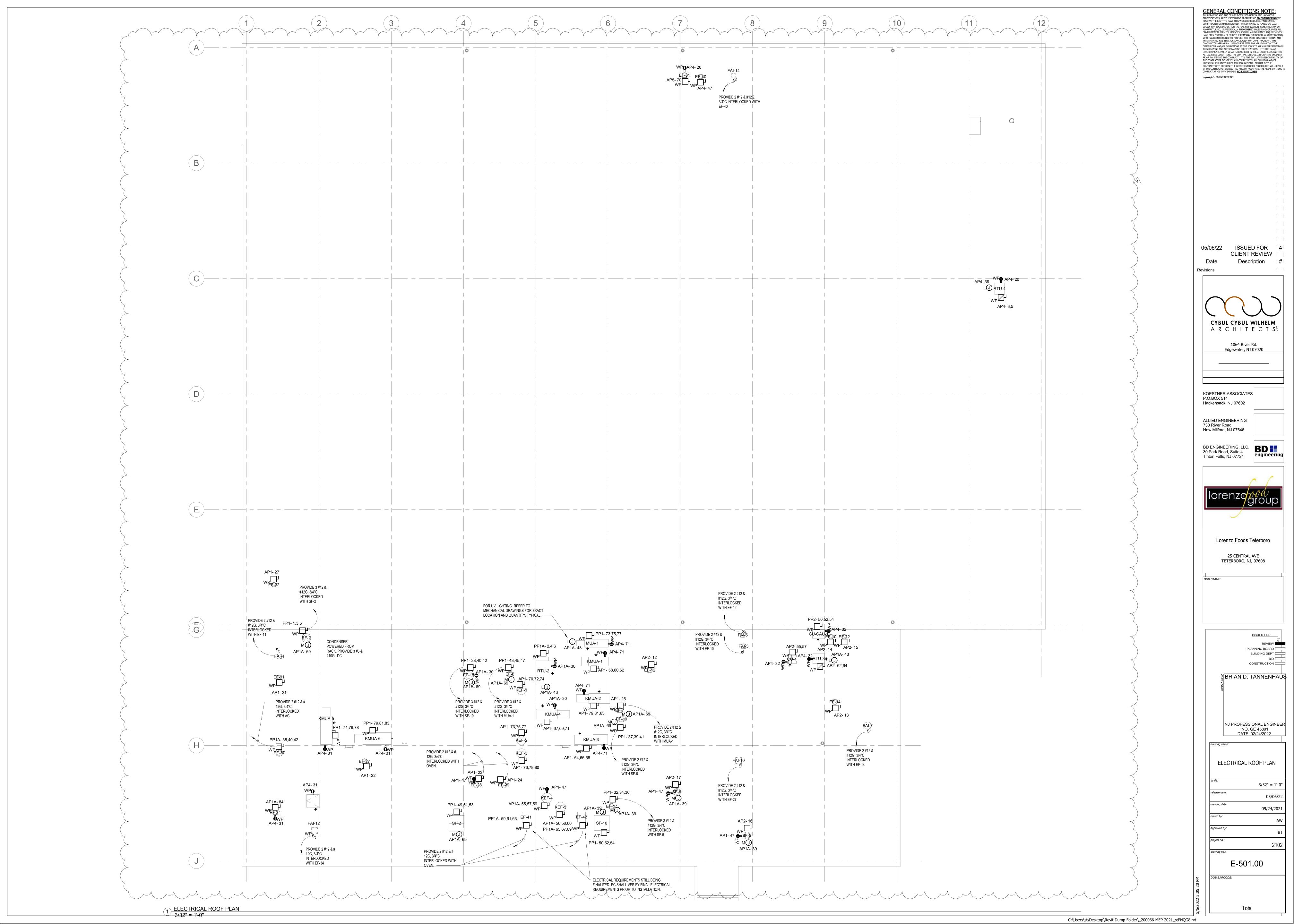
្ឋីBRIAN D. TANNENHAUS NJ PROFESSIONAL ENGINEER NO. GE 45801

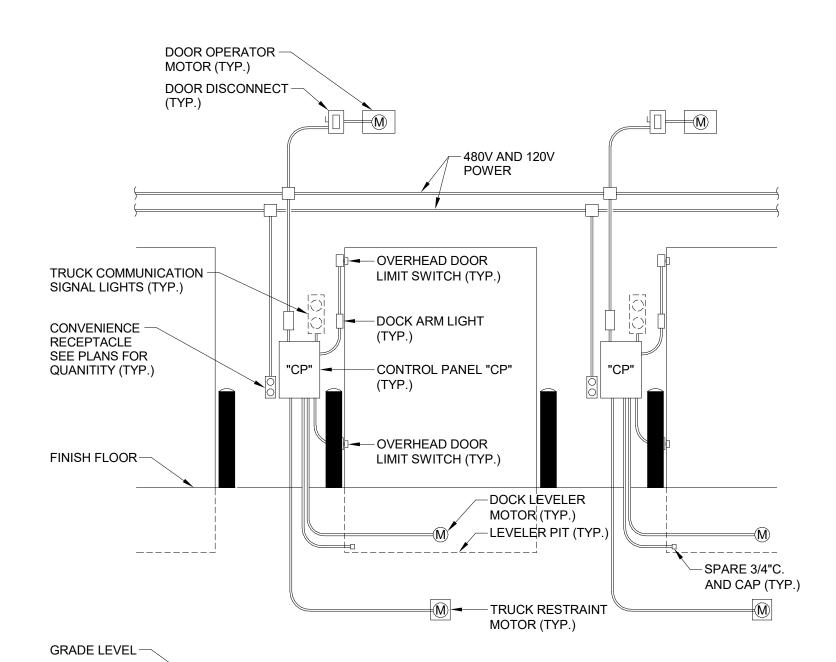
ELECTRICAL FLOOR PLAN

As indicated 05/06/22 09/24/2021

2102





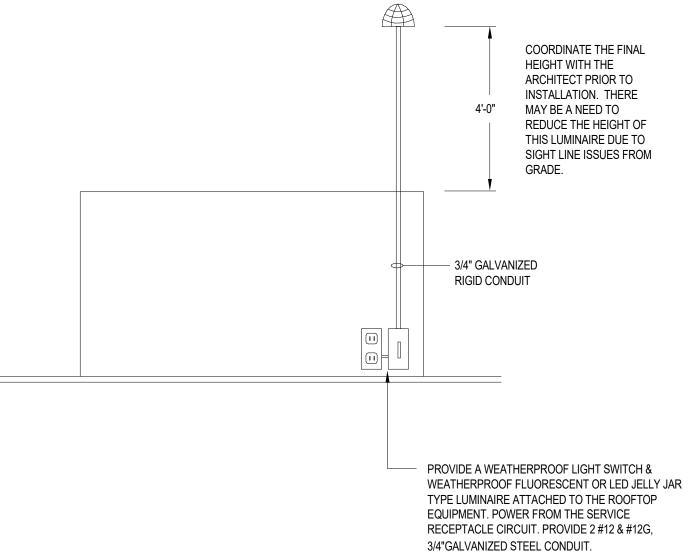


DOCK DOOR EQUIPMENT CONNECTIONS DETAIL SCALE: NONE

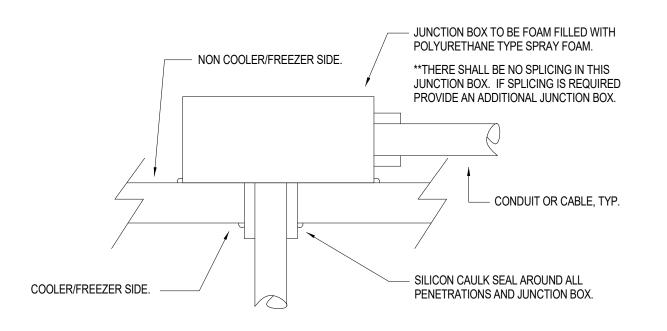
3. PANEL, VERIFY WITH THE SHOP DRAWINGS ALSO.

- 1. THIS CONTRACTOR IS RESPONSIBLE FOR POWER AND CONTROL CIRCUIT WIRING OF THE DOCK EQUIPMENT SYSTEM AS REQUIRED PER THE MANUFACTURER'S SHOP DRAWINGS. ALL DOCK EQUIPMENT LISTED ARE FURNISHED BY OTHERS UNLESS NOTED OTHERWISE. A COMPLETE COPY OF THIS SHOP DRAWING SHALL BE OBTAINED FROM OTHERS WHEN PACKAGE IS PURCHASED. CONNECTIONS INCLUDE DOCK ARM LIGHT, DOOR OPERATOR, DOCK LEVELER CONTROL PANEL, LIMIT SWITCHES, DOCK LEVELER MOTOR, TRUCK RESTRAINT MOTOR, COMMUNICATION SIGNAL LIGHTS AND CONTROL WIRES FROM DOOR OPERATOR TO THE DOCK LEVELER CONTROL PANEL. PROVIDE #12 AWG. WIRE FOR ALL POWER CIRCUITS AS A MINIMUM ON THE LOAD SIDE OF THE CONTROL PANEL.
- THE DOCK LEVELER CONTROL PANEL MAY BE FURNISHED WITH A MAIN FUSED DISCONNECT SWITCH OR MAIN BREAKER. FOR PRICING PURPOSES 2. ASSUME EC IS PROVIDING A FUSED/SWITCH.
- THE DOOR IS OPERATED BY THE DOCK LEVELER CONTROL PANEL AND POWERED BY THE SAME 480V, 3 CIRCUIT, BUT OUTSIDE THE CONTROL
- THIS IS A GENERIC LAYOUT FOR ESTIMATING PURPOSES. THE ELECTRICAL CONTRACTOR SHALL NOT PROVIDE ANY INSTALLATION WITHOUT THE 4. REVIEW OF THE MANUFACTURER'S SHOP DRAWINGS. CONDUITS SHOWN SHALL BE 3/4" AND PROVIDED AS A MINIMUM. APPROVAL FROM THE

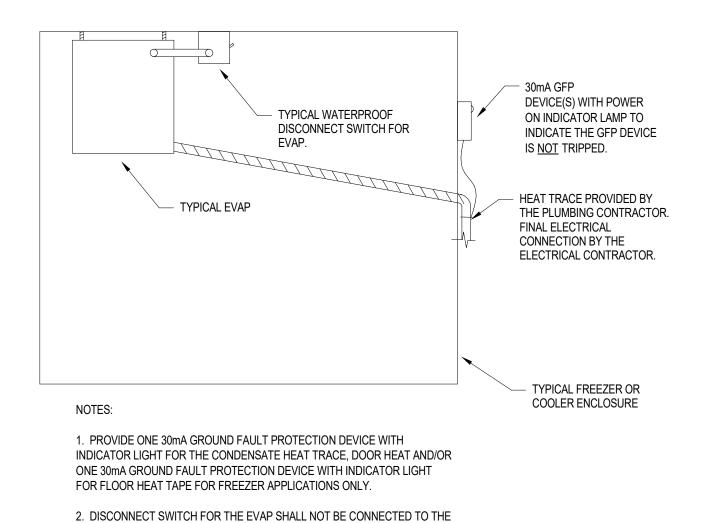




ROOFTOP EQUIPMENT SERVICE LUMINAIRE SCALE: NONE

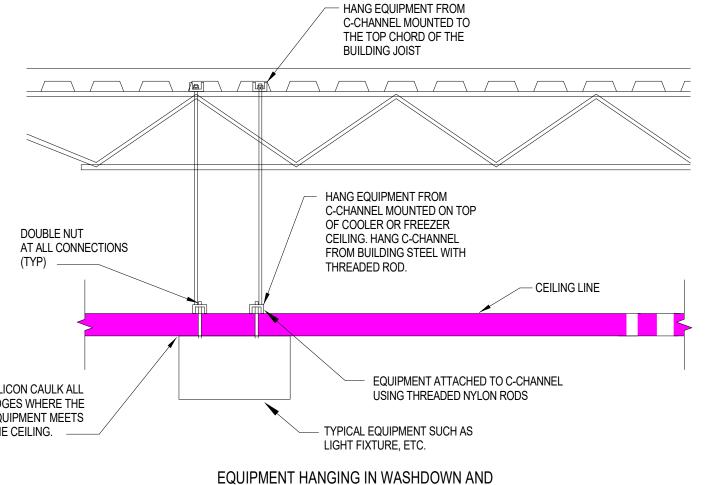


COOLER/FREEZER PENETRATION DETAIL SCALE: NONE



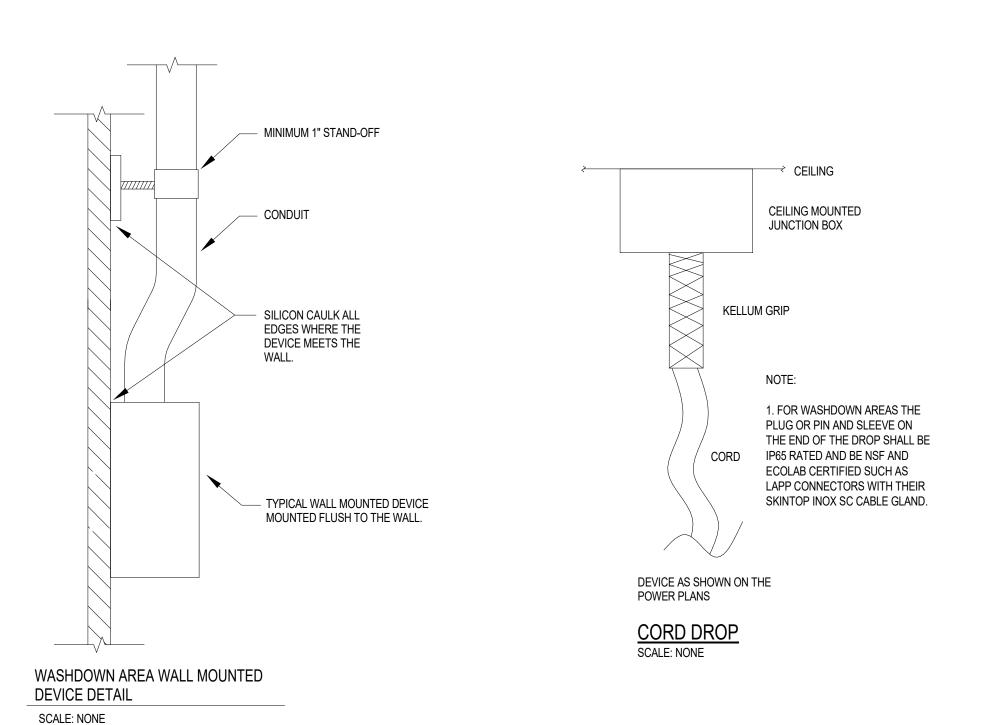
COOLER/FREEZER ELECTRICAL CONNECTION DETAIL SCALE: NONE

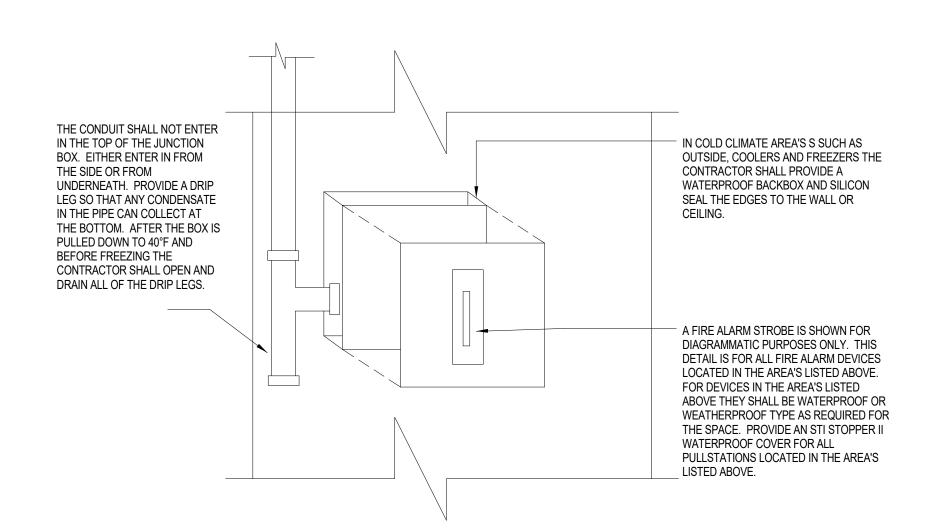
EVAP. IT SHALL EITHER BE WALL OR CEILING MOUNTED WITHIN REACH OF

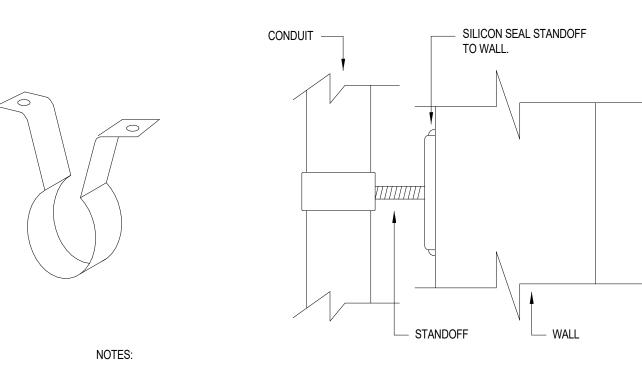


REFRIGERATED SPACE DETAIL

SCALE: NONE







1. ALL EXPOSED PIPE SHALL BE SECURED USING A STAINLESS STEEL OR BRASS STANDOFF TYPE PIPE BRACKET. BRACKET SHALL PROVIDE A MINIMUM CLEARANCE OF 1" BETWEEN PIPE AND WALL OR CEILING. 2. THE BRACKETS SHOWN ARE FOR DIAGRAMMATIC PURPOSES ONLY. THE

CONTRACTOR SHALL HAVE THE OPTION TO SUBMIT ALTERNATE

STANDOFFS FOR APPROVAL PRIOR TO BID.

WASHDOWN(FOOD PROCESSING) CONDUIT STAND-OFF DETAIL SCALE: NONE

WASH DOWN ROOM(FOOD PROCESSING) CONDUIT INSTALLATION REQUIREMENTS

1. THE CONTRACTOR SHALL USE SCHEDULE STAINLESS STEEL OR PVC COATED RIDGID STEEL CONDUIT IN ALL OF THE FOOD PROCESSING AND OPEN FOOD STORAGE AREA'S. WHERE ALLOWED BY THE AHJ SCHEDULE 80 PVC SHOULD BE PROVIDED IN THE BID AS AN ALTERNATE PRICE, NYC DOES NOT ALLOW THIS OPTION. 2. THE CONTRACTOR SHALL PROVIDE 1" STAND-OFFS FOR ALL SURFACE MOUNTED PIPING LOCATED IN THE FOOD PROCESSING AND OPEN FOOD STORAGE AREA'S. REFER TO THE STAND-OFF DETAIL FOR ADDITIONAL INFORMATION. 3. IT SHOULD ALSO BE NOTED THAT ALL ELECTRICAL DEVICES PROVIDED IN THE PRODUCTION AND STORAGE AREA'S WHERE WASHDOWN OF EQUIPMENT OCCURS SHALL BE NEMA 4X RATED. REFER TO THE ARCHITECTS PLANS FOR A COMPLETE UNDERSTANDING OF WASHDOWN AREA'S.

4. UNLESS OTHERWISE NOTED ON OUR PLANS OR THE ARCHITECTS, FOR BIDDING PURPOSES ANY AREA WITH FOOD PREPERATION(PROCESS) EQUIPMENT AND/OR HOSE STATIONS AND/OR A FLOOR DRAIN IN THE ROOM OR AT THE DOOR ENTRANCE SHALL BE CONSIDERED A FOOD PROCESSING AREA. PLEASE NOTE THAT DRAINS AT DOOR ENTRANCES MAY INDICATE THAT THE ROOMS ON BOTH SIDES OF THE DOOR ARE WASH DOWN ROOMS. IF UNSURE PROVIDE SEPARATE PRICING IN YOUR BID INDICATING YOUR ASSUMPTIONS BUT THE BREAK OUT PRICE SHOULD BE THE INCREASED PRICING FOR THE WASH DOWN EQUIPMENT REQUIREMENTS AS OUTLINED ABOVE.

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GENERAL CONDITIONS NOTE:

Description | # | Revisions

CYBUL CYBUL WILHELM ARCHITECTS 1064 River Rd. Edgewater, NJ 07020

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20 Bark Road, Suite 4 30 Park Road, Suite 4

Tinton Falls, NJ 07724



Lorenzo Foods Teterboro 25 CENTRAL AVE TETERBORO, NJ, 07608

DOB STAMP:

PLANNING BOARD BUILDING DEPT BID ____ CONSTRUCTION ្ឋីBRIAN D. TANNENHAUS

NJ PROFESSIONAL ENGINEER NO. GE 45801 DATE: 02/24/2022

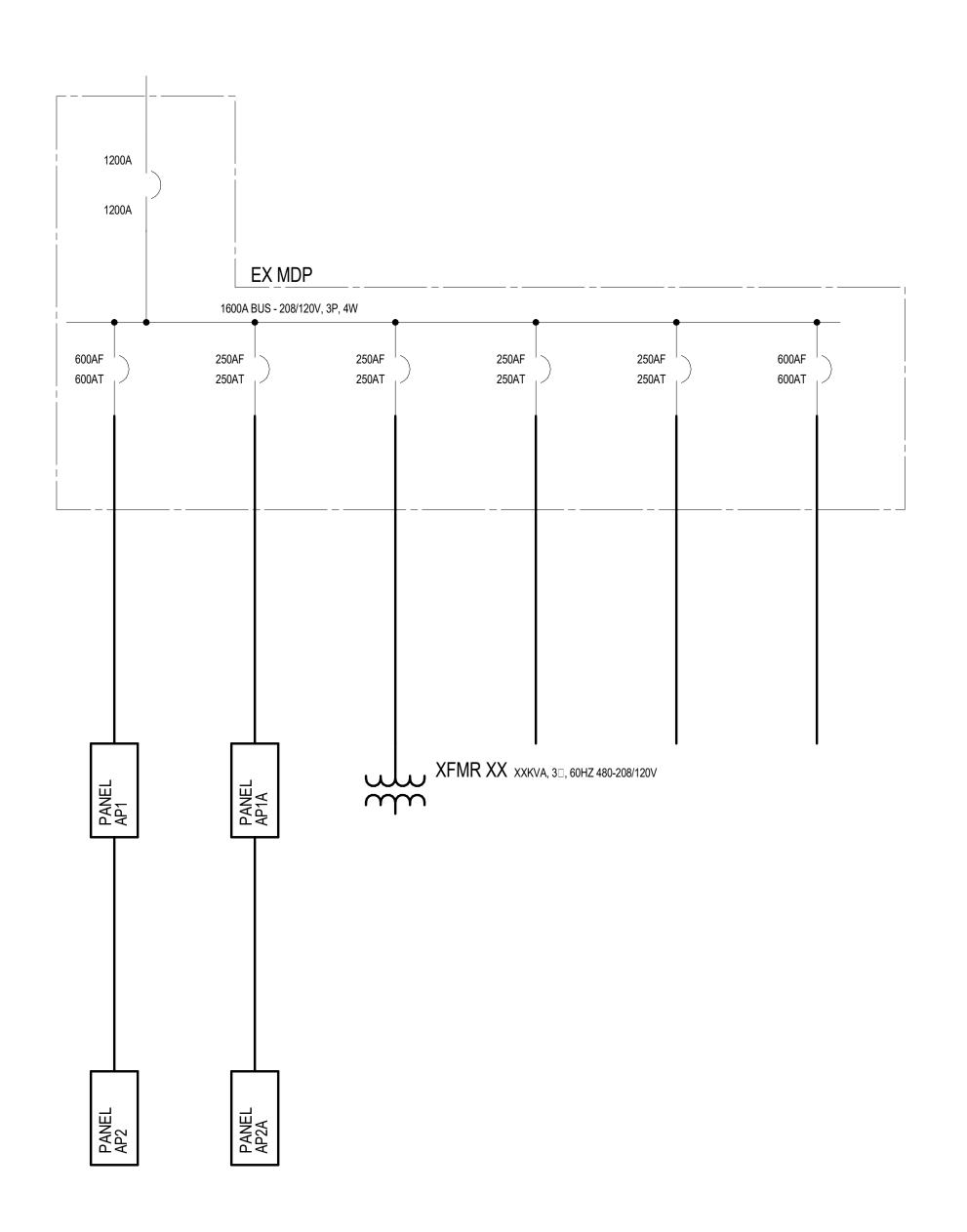
ELECTRICAL DETAILS

12" = 1'-0"

09/24/2021

E-600.00

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MAIN BUILDING SINGLE LINE DIAGRAM SCALE: NONE

DRAWING NOTES:

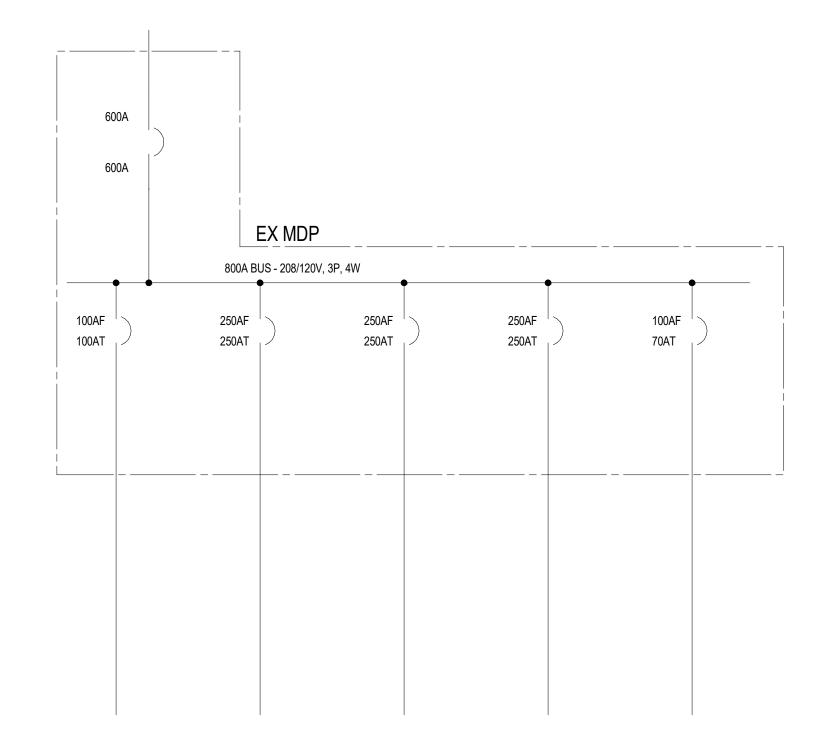
1 PROVIDE A CENTRAL LIGHTING INVERTER. THE INVERTER SHALL BE SIZED TO PICK UP THE LOAD INDICATED IN THE PANEL SCHEDULE.

GENERAL NOTES:

- 1. UNLESS OTHERWISE NOTED, ALL CIRCUIT BREAKERS AND/OR FUSED/SWITCHES SHOWN ARE 3 POLE TYPE.
- 2. UNLESS OTHERWISE NOTED, THE AVAILABLE FAULT CURRENT (AFC) SHOWN IS THE MINIMUM RATING FOR THAT EQUIPMENT. THE CONTRACTOR SHALL ENSURE THE FAULT CURRENT RATING OF THE EQUIPMENT PROVIDED IS EQUAL

OR GREATER THAN THE AVAILABLE FAULT CURRENT (AFC).

- 3. THE CONTRACTOR SHALL ASSUME FOR MULTI-SECTION PANELS THERE WILL BE FEED-THROUGH LUGS FROM ONE SECTION TO THE OTHER SECTION AND CONNECTED WITH A FEEDER THE SAME SIZE AS THE FEEDER CONDUCTORS AND CONDUIT(S) FROM THE UPSTREAM OVER CURRENT PROTECTION DEVICE.
- 4. UNLESS OTHERWISE NOTED, ALL CONDUCTOR SIZES SHOWN ARE COPPER
- 5. UNLESS OTHERWISE NOTED ALL ELECTRICAL PANELS WILL BE REQUIRED TO HAVE SURGE PROTECTION. REFER TO COVER SHEET FOR ADDITIONAL INFORMATION.



FUTURE TENANT SINGLE LINE DIAGRAM

1P, 2W WIRE SIZE

SCALE: NONE

OD OILT OOL	SI , TVV VVIICE SIZE	SI , SW WIILE SIZE	II , ZW WIILL SIZE
SIZE	OR SETS OF WIRE	OR SETS OF WIRE	OR SETS OF WIRE
15	4 #12 & #12G, 3/4"C	3 #12 & #12G, 3/4"C	2 #12 & #12G, 3/4"C
20	4 #12 & #12G, 3/4"C	3 #12 & #12G, 3/4"C	2 #12 & #12G, 3/4"C
25	4 #10 & #10G, 3/4"C	3 #10 & #10G, 3/4"C	2 #10 & #10G, 3/4"C
30	4 #10 & #10G, 3/4"C	3 #10 & #10G, 3/4"C	2 #10 & #10G, 3/4"C
40	4 #8 & #10G, 3/4"C	3 #8 & #10G, 3/4"C	2 #8 & #10G, 3/4"C
45	4 #6 & #10G, 1"C	3 #6 & #10G, 3/4"C	2 #6 & #10G, 3/4"C
50	4 #6 & #10G, 1"C	3 #6 & #10G, 3/4"C	2 #6 & #10G, 3/4"C
60	4 #4 & #10G, 1-1/4"C	3 #4 & #10G, 1-1/4"C	2 #4 & #10G, 1-1/4"C
70	4 #4 & #8G, 1-1/4"C	3 #4 & #8G, 1"C	2 #4 & #8G, 1"C
80	4 #3 & #8G, 1-1/4"C	3 #3 & #8G, 1-1/4"C	2 #3 & #8G, 1-1/4"C
90	4 #2 & #8G, 1-1/4"C	3 #2 & #8G, 1-1/4"C	2 #2 & #8G, 1-1/4"C
100	4 #1 & #8G, 1-1/2"C	3 #1 & #8G, 1-1/2"C	2 #1 & #8G, 1-1/2"C
110	4 #1 & #6G, 1-1/2"C	3 #1 & #6G, 1-1/4"C	
125	4 #1 & #6G, 2"C	3 #1 & #6G, 1-1/2"C	
150	4 #1/0 & #6G, 2"C	3 #1/0 & #6G, 1-1/2"C	
175	4 #2/0 & #6G, 2"C	3 #2/0 & #6G, 2"C	
200	4 #3/0 & #6G, 2"C	3 #3/0 & #6G, 2"C	
225	4 #4/0 & #4G, 2-1/2"C	3 #4/0 & #4G, 2-1/2"C	
250	4 250KCMIL & #4G, 2-1/2"C	3 250KCMIL & #4G, 2-1/2"C	
300	4 350KCMIL & #4G, 3"C	3 350KCMIL & #4G, 3"C	
350	4 500KCMIL & #3G, 4"C	3 500KCMIL & #3G, 4"C	
400	4 600KCMIL & #3G, 4"C	3 600KCMIL & #3G, 4"C	
450	2 [4 #4/0 & 2G, 3"C]	2 [3 #4/0 & #2G, 3"C]	
500	2 [4 250KCMIL & #2G, 2-1/2"C]	2 [3 250KCMIL & #2G, 3"C]	
600	2 [4 350KCMIL & #1G, 3"C]	2 [3 350KCMIL & #1G, 3"C]	
700	2 [4 500KCMIL & #1/0G, 4"C]	2 [4 500KCMIL & #1/0G, 4"C]	
800	2 [4 600KCMIL & #1/0G, 4"C]	2 [3 600KCMIL & #1/0G, 4"C]	
1000	3 [4 400KCMIL & #2/0G, 4"C]	3 [3 400KCMIL & #2/0G, 4"C]	
1200	3 [4 600KCMIL & #3/0G, 4"C]	3 [3 600KCMIL & #3/0G, 4"C]	
1600	4 [4 600KCMIL & #4/0G, 4"C]	4 [3 600KCMIL & #4/0G, 4"C]	
1800	5 [4 500KCMIL & 250KCMILG, 4"C]	5 [3 500KCMIL & 250KCMILG, 4"C]	
2000	5 [4 600KCMIL & 250KCMILG, 4"C]	5 [3 600KCMIL & 250KCMILG, 4"C]	
2500	6 [4 600KCMIL & 350KCMILG, 4"C]	6 [3 600KCMIL & 350KCMILG, 4"C]	
3000	8 [4 500KCMIL & 400KCMILG, 4"C]	8 [3 500KCMIL & 400KCMILG, 4"C]	
4000	10 [4 600KCMIL & 500KCMILG, 4"C]	10 [3 600KCMIL & 500KCMILG, 4"C]	
5000	13 [4 600KCMIL & 700KCMILG, 4"C]	13 [3 600KCMIL & 700KCMILG, 4"C]	
6000	15 [4 600KCMIL & 800KCMILG, 4"C]	15 [3 600KCMIL & 800KCMILG, 4"C]	

3P, 3W WIRE SIZE

3P, 4W WIRE SIZE

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Description | # |

ISSUED FOR 4 05/06/22 CLIENT REVIEW CLIENT 1 11/29/21 CHANGES | |

Revisions

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Lorenzo Foods Teterboro

25 CENTRAL AVE TETERBORO, NJ, 07608

PLANNING BOARD BUILDING DEPT BID ____ CONSTRUCTION ____

NO. GE 45801

្ធីBRIAN D. TANNENHAUS NJ PROFESSIONAL ENGINEER

DATE: 02/24/2022

ELECTRICAL SINGLE LINE

E-700.00

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		Mounting: Surface Enclosure: Type 1					Wires:	4					Mains Rating: 600.0 MCB Rating: 1.0		
Notes:															
Wire Size	CK T	Circuit Description	Trip	Poles		A		В		c	Poles	Trip	Circuit Description	CK T	Wire Size
	1	Circuit Description	Пір	rules		2491					roles	тпр	Circuit Description	2	
3-#12, 1-#12, 1-#12	3 5	EF-2	20.0	3	000		609	2491	609	2491	3	20.0	EUH-22	4	3-#12, 1-#12, 1-#12
-#12, 1-#12, 1-#12		EUH-20	20.0	3	2491	996	2491	996			3	20.0	EUH-6	8	3-#12, 1-#12, 1-#12
	11					1661			2491	996				12	
	15 17							1661		1661	3	20.0	EUH-1	16 18	3-#12, 1-#12, 1-#12
-#12, 1-#12, 1-#12	19 2 21	EUH-21	20.0	3	2491		2491							20 22	
	23								2491					24	
	25 27					2491		2491			3	20.0	EUH-13		3-#12, 1-#12, 1-#12
	29 31			_	2491	424				2491				30	
-#12, 1-#12, 1-#12	35	EUH-19	20.0	3			2491	424	2491	424	3	20.0	EF-17	34 36	3-#12, 1-#12, 1-#12
-#12, 1-#12, 1-#12	37 39 41	EF-19	20.0	3	304	941	304	941	304	941	3	20.0	EF-18	38 40 42	3-#12, 1-#12, 1-#12
	43			_	304				304	941				44	
#12, 1-#12, 1-#12	45	EF-6	20.0	3			304		304					46 48	
-#12, 1-#12, 1-#12		SF-2	20.0	3	443	581	443	581	110	504	3	20.0	SF-10	50 52	3-#12, 1-#12, 1-#12
#40 4 #40 4 #4C	53 55	4400	45.0	2	1384	1384	. 4204	4204	443	581		45.0	#400	54 56	0 440 4 440 4 440
-#12, 1-#12, 1-#12	59	#126	15.0	3			1384	1384	1384	1384	3	15.0	#126	60	3-#12, 1-#12, 1-#12
	61 63													62 64	
	65													66	
	67 69					6643		6643			3	30.0	MOTORIZED DOOR	68 70	3-#10, 1-#10, 1-#10
	71 73				969	1633				6643				72 74	-
-#12, 1-#12, 1-#12	77	MUA-1	20.0	3	465-	0=0=	969	1633	969	1633	3	15.0	KMAU-5	78	3-#12, 1-#12, 1-#12
-#12, 1-#12, 1-#12	79 81 83	KMUA-6	15.0	3	1633	2768	1633	2768	1632	2768	3	20.0	MOTORIZED DOOR	80 82 84	3-#12, 1-#12, 1-#12
	US		Tota	l Il Load:	3513	 35 VA	3513	 		35 VA		1		04	
				Amps:		6.8		6.8		6.8	J				
oad Classificatio	n			nected			nand Fa			nated De	emand		Panel To	tals	
Power				05405 \			100.00%			05405 V			Total Conn. Load: 10		4
													Total Est. Demand: 10		4
			T									1	Total Conn : 10	26.0	

Volts: 480/277 Wye

Phases: 3

A.I.C. Rating: 82961

Mains Type: MAIN LUG ONLY

Total Conn.: 126.8

Total Est. Demand: 126.8

Branch Panel: PP1

Supply From: MDP

Location: ELECTRICAL ROOM A 119A

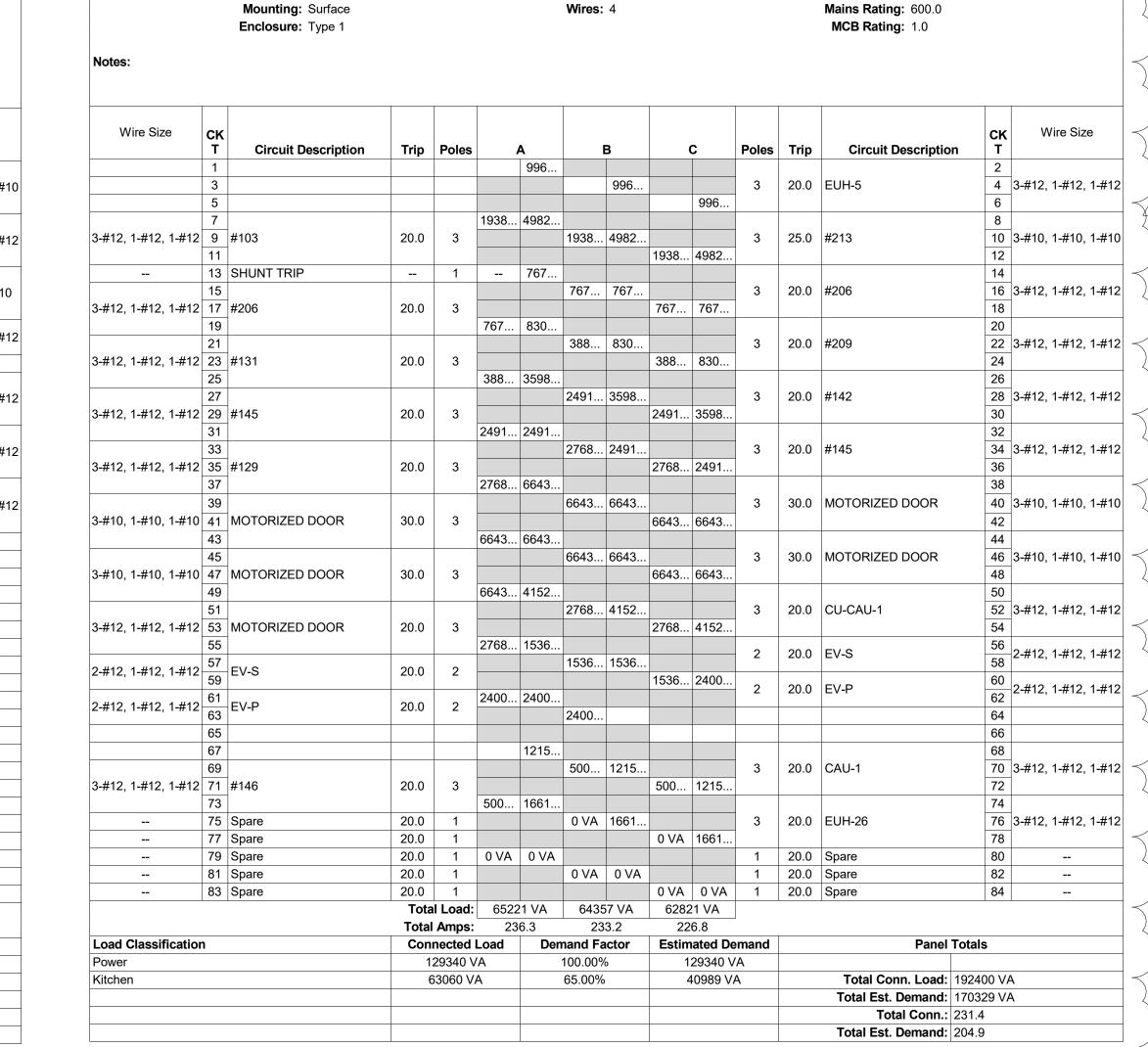
	•	Supply From: MDP Mounting: Surface Enclosure: Type 1				•	Phases: Wires:						Mains Type: MAIN I Mains Rating: 250.0 MCB Rating: 1.0	LUG ONLY	
Notes:															
Wire Size	CK T	Circuit Description	Trip	Poles		A		В		C	Poles	Trip	Circuit Description	CK on T	Wire Size
	1					6090		2000				0.5.0		2	
	5							6090		6090	3	25.0	RTU-2	6	3-#10, 1-#10, 1-#
	7				8027	2768				0000				8	
3-#8, 1-#8, 1-#10	9	#152	40.0	3			8027	2768	8027	2768	3	20.0	#194	10 12	3-#12, 1-#12, 1-#
	13				2823	1660			0027	2100				14	
3-#12, 1-#12, 1-#12		#150	15.0	3	2020	1000	2823	1660			3	60.0	#168	16	3-#4, 1-#4, 1-#1
	17								2823	1660				18	
2-#12, 1-#12, 1-#12	19	EV-R	20.0	2	1536	1536					- 2	20.0	EV-R	20	2-#12, 1-#12, 1-#
Z-#1Z, 1-#1Z, 1-#1Z	21	L V -1 (20.0				1536	1536				20.0	L V -1 (22	2-#12, 1-#12, 1-#
	23					000								24	
	25 27					830		830			3	20.0	#208	26] 3-#12, 1-#12, 1-#
	29							030		830		20.0	#200	30	J-#12, 1-#12, 1-#
	31				830	1772				000				32	
3-#12, 1-#12, 1-#12		#208	20.0	3			830	1772			3	20.0	#104		3-#12, 1-#12, 1-#
	35								830	1772				36	
	37					941								38	
	39							941			3	20.0	EF-37		3-#12, 1-#12, 1-#
	41									941				42	
2-#8, 1-#8, 1-#10	43 45	#140	40.0	2	1660		1000				1		Space	44	
	17						1660		384		1		Space Space	46 48	
2-#12, 1-#12, 1-#12	49	EV-CC	20.0	2	384				304		1		Space	50	
	51				00 1111						1		Space	52	
	53								941		1		Space	54	
3-#12, 1-#12, 1-#12	55	BFT	20.0	3	941						1	-	Space	56	
	57						941				1	-	Space	58	
	59								1107		1		Space	60	
3-#6, 1-#6, 1-#10		EF-41	50.0	3	1107		1107				1		Space	62	
	63 65						1107		1107		1		Space	64 66	
3-#6, 1-#6, 1-#10		EF-42	50.0	3	1107				1107		1		Space Space	68	
0 110, 1 110, 1 1110	69	L1 72	00.0		1107	•	1107				1		Space	70	
		Spare	20.0	1					0 VA		1	-	Space	72	
		Spare	20.0	1	0 VA						1		Space	74	
	75	Spare	20.0	1			0 VA				1	-	Space	76	
	77	Spare	20.0	1					0 VA		1		Space	78	
		Spare	20.0	1	0 VA						1		Space	80	
		Spare	20.0	1			0 VA		0.1/4		1		Space	82	
	83	Spare	20.0	1 al Load:	8384	39 VA	8346	55 VA	0 VA	 59 VA	1		Space	84	
				Amps:		13.4		2.0		1.6					
Load Classificatio	n			nected			nand Fa			ated De	emand		Panel	Totals	
Power			_	02574 V			100.00%			02574 \					
Kitchen			1	28878 V	Ά		65.00%	<u> </u>		33771 V	Α		Total Conn. Load:		
													Total Est. Demand:		A
													Total Conn.:		
						1							Total Est. Demand:	224 1	

Volts: 480/277 Wye

A.I.C. Rating: 65623

Branch Panel: PP1A

Location: ELECTRICAL ROOM A 119A



Volts: 480/277 Wye

Phases: 3

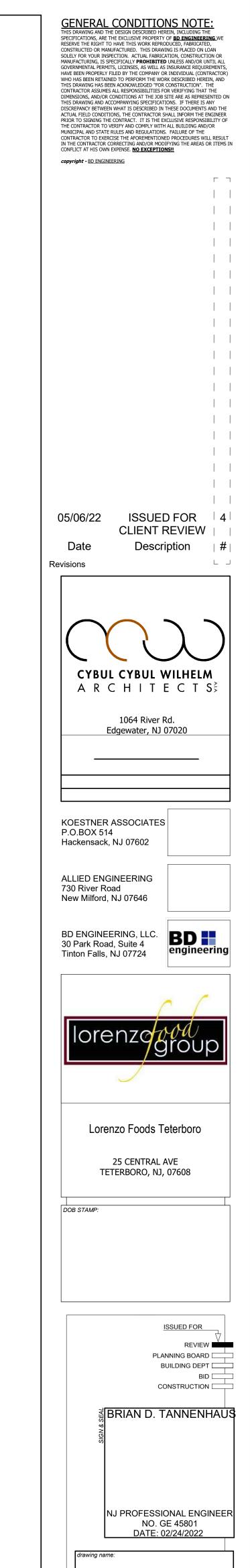
A.I.C. Rating:

Mains Type: MAIN LUG ONLY

Branch Panel: PP2

Supply From: MDP

Location: KITCHEN DRY STORAGE 106



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E-701.00 C:\Users\st\Desktop\Revit Dump Folder_200066-MEP-2021_stPNQG8.rvt

ELECTRICAL PANEL SCHEDULES

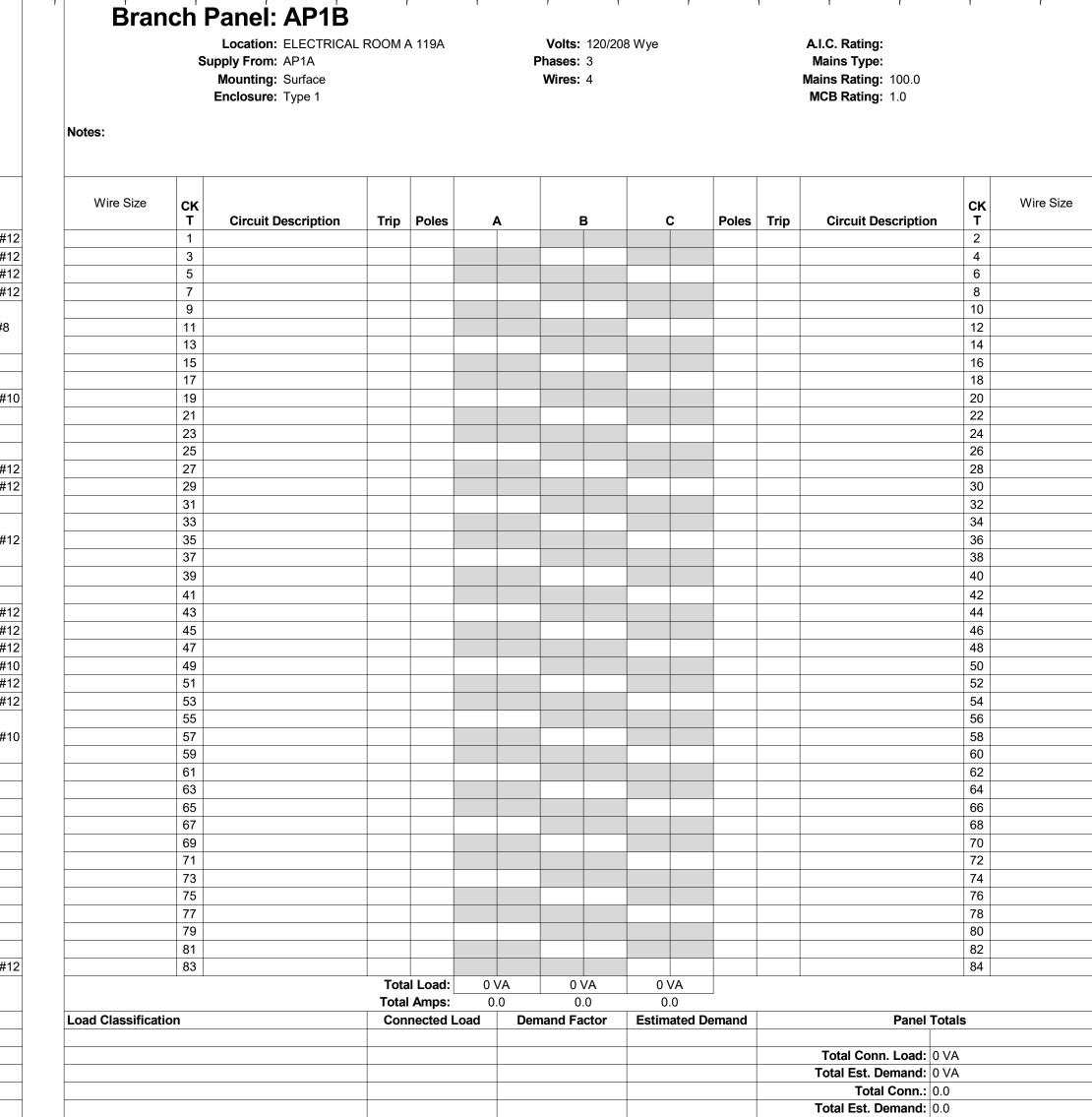
BID ____

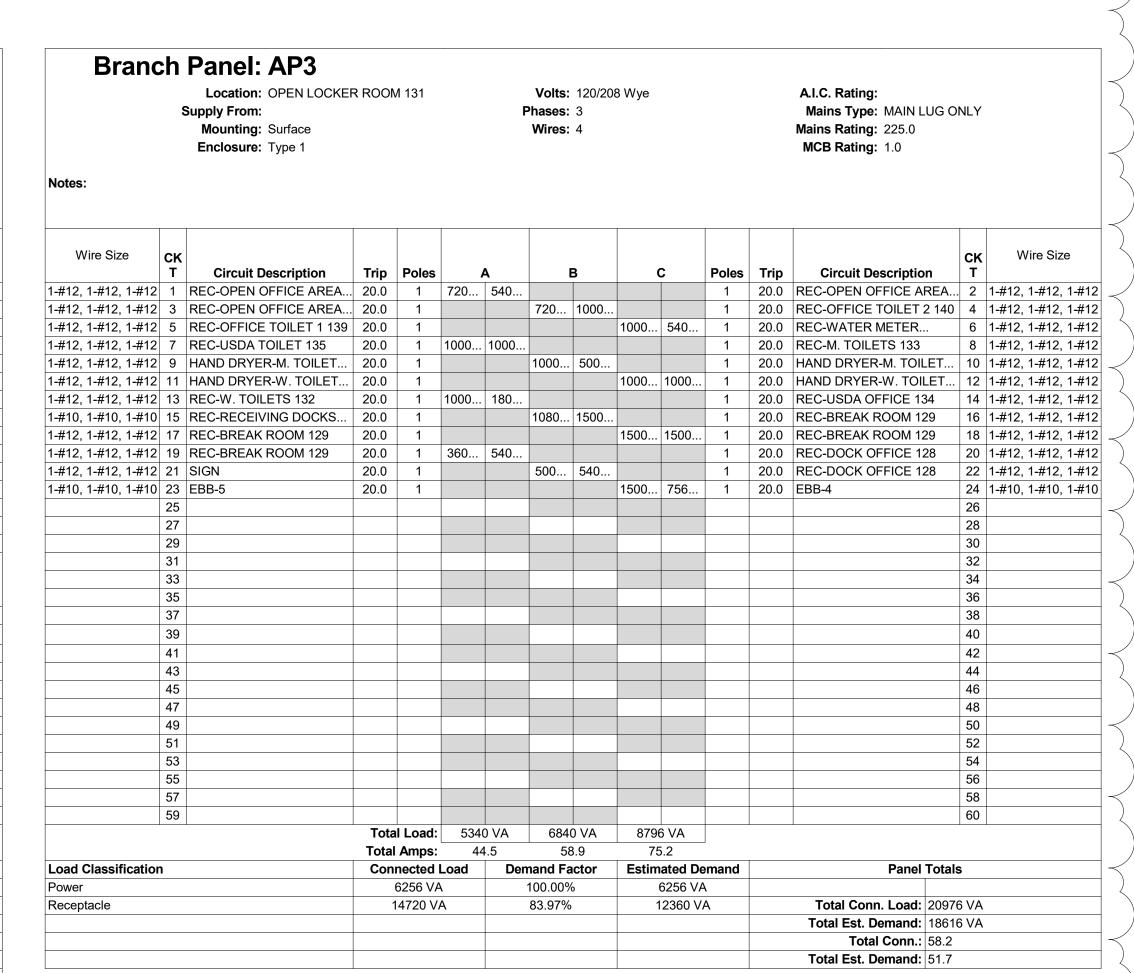
Diane		Location: ELECTRICAL Supply From: XFMR AP1 Mounting: Surface Enclosure: Type 1	ROOM A	\ 119A		F	Volts: Phases: Wires:		8 Wye				A.I.C. Rating: 13098 Mains Type: MAIN C Mains Rating: 600.0 MCB Rating: 600.0	IRCUIT BE	REAKER
Notes: PROVIDE FEED TH	HROL	JGH LUGS													
Wire Size	CK T	Circuit Description	Trip	Poles		Δ.	E	3		3	Poles	Trip	Circuit Descriptio	CK n T	Wire Size
0 11050 4 11050	1	•			1575	720					1		REC HOT	2	1-#10, 1-#10, 1-#10
3-#350, 1-#350, 1-#4	3	AP2	250.0	3			1225	540			1	20.0	REC ASSEM	4	1-#12, 1-#12, 1-#12
	5								1039	540	1	20.0	REC ASSEM	6	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12		REC ELEC	20.0	1	540	720					1	20.0	REC MECH	8	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12		REC-GENERAL	20.0	1			540							10	
	11													12	
	13													14	
	15													16	
1-#12, 1-#12, 1-#12	1	AC-2	20.0	1					312	228	1	15.0	GUH-2	18	1-#12, 1-#12, 1-#12
	19													20	
1-#12, 1-#12, 1-#12			20.0	1			156	264	65-	00-	1		EF-27	22	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12			20.0	1					696	696	1	20.0	EF-29	24	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12			20.0	1	180									26	
I-#12, 1-#12, 1-#12		EF-32	20.0	1			180							28	
	29													30	
	31													32	
	33	****												34	
I-#12, 1-#12, 1-#12	+		20.0	1		400			180		1		SHUNT TRIP	36	
		SHUNT TRIP		1		180					1		#120	38	1-#12, 1-#12, 1-#12
1-#8, 1-#8, 1-#8		#125	20.0	1			1728				1		SHUNT TRIP	40	
		SHUNT TRIP		1						1728	1	20.0	#125	42	1-#8, 1-#8, 1-#8
1-#8, 1-#8, 1-#8		#125	20.0	1	1728			4700			1		SHUNT TRIP	44	
		SHUNT TRIP		1				1728			1		#125	46	1-#8, 1-#8, 1-#8
1-#10, 1-#10, 1-#10			20.0	1		400			720		1		SHUNT TRIP	48	
		SHUNT TRIP		1		480	000				1		#102	50	1-#12, 1-#12, 1-#12
1-#12, 1-#12, 1-#12			20.0	1			200			4000	1		SHUNT TRIP	52	
		SHUNT TRIP		1						1080	1		#170	54	1-#10, 1-#10, 1-#10
	55						000	700			1		SHUNT TRIP	56	
2-#12, 1-#12, 1-#12	57 59	#135	20.0	2			600	792	600	792	3	15.0	MALIA 1	58	2 #42 4 #42 4 #42
		SHUNT TRIP		1		702			600	792	3	15.0	KMUA-1	62	3-#12, 1-#12, 1-#12
	63	SHUNT TRIP		- '		792		2375						64	
	65							2313		2375	3	35.0	KMUA-3	66	3-#8, 1-#8, 1-#10
	67				4198	2375				2010	J	55.0	NIVIOA-U	68	 0-#0, 1-#0, 1-#10
3-#4, 1-#4, 1-#10		KMUA-4	60.0	3	7100	2010	4198	792						70	
0 11-1, 1 11-1, 1 11-10	71	THINOT LA	00.0				+100	702	4198	792	3	20.0	KEF-1		3-#12, 1-#12, 1-#12
	73			<u> </u>	1139	792				. 52		_0.0		74	,,2
3-#12, 1-#12, 1-#12		KEF-2	20.0	3		. 02	1139	1139						76	
· ·· · · · · · · · · · · · · · · · · ·	77	· =· =					1.30		1139	1139	3	20.0	KEF-3		3-#12, 1-#12, 1-#12
	79				2375	1139						_0.0		80	
3-#8, 1-#8, 1-#10		KMUA-2	35.0	3			2375	500			1	20.0	HOOD 1	82	1-#12, 1-#12, 1-#12
, ,	83								2375		-			84	
	· ·	1	Tota	l Load:	3311	6 VA	3149	9 VA		1 VA		<u> </u>	1		1
				Amps:		7.9		4.4		9.8	1				
Load Classification	n			nected			nand Fa			ated De	mand		Panel	Totals	
				55367 V			100.00%			5367 V				 	
Power									Total Conn. Load: 94596 VA						
Power Receptacle				8820 VA	4		100.00%	Ď		8820 VA	١ ا		Total Conn. Load:	94596 VA	
				8820 VA 30409 V			100.00% 65.00%		+	8820 VA 19766 V			Total Conn. Load: Total Est. Demand:		
Receptacle									+					83953 VA	

Branch Panel: AP1

2.6		Panel: AP1A Location: ELECTRICAL Supply From: XFMR AP1A Mounting: Surface Enclosure: Type 1	ROOM /	A 119A		F	Volts: Phases: Wires:		8 Wye				A.I.C. Rating: 6574 Mains Type: MAIN 0 Mains Rating: 250.0 MCB Rating: 250.0	CIRCUIT BI	REAKER
Notes:															
Wire Size	CK T	Circuit Description	Trip	Poles		Α		В		C	Poles	Trip	Circuit Description	CK on T	Wire Size
1-#12, 1-#12, 1-#12	1	HOOD 2	20.0	1	500	500					1	20.0	HOOD 3	2	1-#12, 1-#12, 1-#1
1-#12, 1-#12, 1-#12	3	HOOD 4	20.0	1			500	500			1	20.0	HOOD 5	4	1-#12, 1-#12, 1-#1
1-#12, 1-#12, 1-#12	5	HOOD 6	20.0	1					500	500	1	20.0	HOOD 7	6	1-#12, 1-#12, 1-#1
1-#12, 1-#12, 1-#12	7	HOOD 8	20.0	1	500	500					1	20.0	HOOD 9	8	1-#12, 1-#12, 1-#1
1-#12, 1-#12, 1-#12	9	HOOD 10	20.0	1			500	0 VA						10	
	11									0 VA	3	100.0	AP1B	12	
	13					0 VA								14	
	15													16	
	17													18	
	19					1764					1	20.0	#107		1-#10, 1-#10, 1-#1
	21						2879							22	
3-#10, 1-#10, 1-#10	23	#205	30.0	3					2879					24	
	25				2879									26	
	27							1200			1	20.0	#164	28	1-#12, 1-#12, 1-#1
1-#12, 1-#12, 1-#12	29	#164	20.0	1					1200	540	1	20.0	REC-ROOF	30	1-#12, 1-#12, 1-#1
	31				484									32	
3-#12, 1-#12, 1-#12	33	#215	15.0	3			484	484						34	
	35								484	484	3	15.0	#215	36	3-#12, 1-#12, 1-#1
	37	SHUNT TRIP	20.0	1	0 VA	484								38	
1-#12, 1-#12, 1-#12	39	MOTORIZED DAMPER	20.0	1			480	0 VA			1	20.0	SHUNT TRIP	40	
	41													42	
1-#10, 1-#10, 1-#10	43	UV LIGHT	20.0	1	468	360					1	20.0	Power BLAST CHILLE	RS 44	1-#12, 1-#12, 1-#1
1-#12, 1-#12, 1-#12	45	DR1	20.0	1			240	240			1	20.0	DR2	46	1-#12, 1-#12, 1-#1
1-#12, 1-#12, 1-#12	47	WH1	20.0	1					600	600	1	20.0	WH2	48	1-#12, 1-#12, 1-#1
1-#12, 1-#12, 1-#12	49	WH3	20.0	1	600	900					1	20.0	CRP	50	1-#10, 1-#10, 1-#1
1-#12, 1-#12, 1-#12	51	REC-CHEM STORAGE	20.0	1			180	500			1	20.0	SB1	52	1-#12, 1-#12, 1-#1
	53									228	1	20.0	RCP	54	1-#12, 1-#12, 1-#1
	55				1895	1895								56	
3-#10, 1-#10, 1-#10	57	KEF-4	20.0	3			1895	1895			3	20.0	KEF-5	58	3-#10, 1-#10, 1-#1
	59								1895	1895				60	
1-#12, 1-#12, 1-#12	61	LO-1,2,3,4	20.0	1	720									62	
1-#12, 1-#12, 1-#12	63	SB2	20.0	1			500							64	
1-#12, 1-#12, 1-#12	65	#126	20.0	1					180					66	
1-#12, 1-#12, 1-#12	67	#126	20.0	1	180									68	
1-#10, 1-#10, 1-#10	69	MOTORIZED DAMPER	20.0	1			720							70	
	71													72	
1-#12, 1-#12, 1-#12	73	#213	20.0	1	180									74	
1-#10, 1-#10, 1-#10	75	#217	20.0	1			1176	0 VA			1	20.0	Spare	76	
	77	Spare	20.0	1					0 VA	0 VA	1	20.0	Spare	78	
	79	Spare	20.0	1	0 VA	0 VA					1	20.0	Spare	80	
	81	Spare	20.0	1			0 VA	0 VA			1	20.0	Spare	82	
		Spare	20.0	1					0 VA	100	1		EF-34	84	1-#12, 1-#12, 1-#1
		1	Tota	Load:	1480)9 VA	1437	73 VA	1208	85 VA		1	1	1	
				Amps:		26.3		2.7		0.7	_				
Load Classification	1			nected			nand Fa			ated De	emand		Panel	Totals	
Power				22407 V			100.00%			22407 V					
Receptacle							100.00%			1980 V		Total Conn. Load: 41267 VA			
Kitchen				16880 V			65.00%			10972 V			Total Est. Demand:		
													Total Conn.:		

	\$	Location: KITCHEN DR Supply From: AP1 Mounting: Surface Enclosure: Type 1	Y STORA	NGE 106	3	F	Volts: Phases: Wires:	-	8 Wye				A.I.C. Rating: Mains Type: MAIN L Mains Rating: 250.0 MCB Rating: 1.0	UG ONL	Y		
lotes:																	
Wire Size	CK T	Circuit Description	Trip	Poles		Δ		 B			Poles	Trip	Circuit Descriptio	c n 1			
	1	•				540					1	20.0	REC-GENERAL	2	1-#12, 1-#12, 1-#12		
#12, 1-#12, 1-#12		REC OFFICE	20.0	1			720	720			1	20.0	REC-HALLWAY	4	1-#12, 1-#12, 1-#12		
#12, 1-#12, 1-#12			20.0	1					720	540	1	20.0	REC PREP	6	· · ·		
#12, 1-#12, 1-#12	7	REC GENERALL	20.0	1	360	360					1	20.0	REC-GENERAL	8			
	9													1			
#12, 1-#12, 1-#12			15.0	1					228	168	1	20.0	EF-12		2 1-#12, 1-#12, 1-#12		
#12, 1-#12, 1-#12			20.0	1	168	168					1	20.0	EF-10		4 1-#12, 1-#12, 1-#12		
#12, 1-#12, 1-#12			20.0	1			168	1176			1	20.0	SF-5		6 1-#10, 1-#10, 1-#10		
#12, 1-#12, 1-#12			20.0	1	000	4000			696			00.0	W404	1			
4 12, 1-#12, 1-#12			20.0	1	600	1200					1	20.0	#101		0 1-#10, 1-#10, 1-#10		
		SHUNT TRIP		1					4200	4200	1		SHUNT TRIP	2			
#12, 1-#12, 1-#12 #10, 1, #10, 1, #10			20.0	1	1440	1440			1300	1300	1	20.0	#185 #175		4 1-#12, 1-#12, 1-#12		
#10, 1-#10, 1-#10 #10, 1-#10, 1-#10			20.0	1	1440	1440	1440	180			1	20.0	#197		6 1-#10, 1-#10, 1-#10 8 1-#12, 1-#12, 1-#12		
#10, 1-#10, 1-#10 #12, 1-#12, 1-#12			20.0	1			1440	100	180	720	1	15.0	#121		0 1-#12, 1-#12, 1-#12		
#10, 1-#10, 1-#10			20.0	1	1920	1919			160	720	'	15.0	#121	3			
#12, 1-#12, 1-#12			20.0	1	1920	1919	300	1919			3	20.0	#133		2 4 3-#12, 1-#12, 1-#12		
#12, 1-#12, 1-#12 #12, 1-#12, 1-#12			20.0	1			300	1919	300	1919	3	20.0	#133	3			
#12, 1-#12, 1-#12 #12, 1-#12, 1-#12			20.0	1	300	600			300	1919	1	20.0	#145		8 1-#12, 1-#12, 1-#12		
#12, 1-#12, 1-#12			20.0	1	300	000	600				'	20.0	# 1 4 0	4			
r12, 1 m12, 1 m12	41	W 140	20.0	•			000							4			
	43													4			
	45													4			
	47													4			
	49													5			
	51													5			
	53													5			
			1	_	1976	180					1	20.0	CONDENSATE PUMP		6 1-#12, 1-#12, 1-#12		
#10, 1-#10, 1-#10	55 57	CU-4	25.0	2			1976							5			
	59													6	0		
	61					1986						20.0	DTIL 2	6	2 2 #10 1 #10 1 #10		
	63							1986			2	30.0	RTU-3	6	2-#10, 1-#10, 1-#10		
	65									600	1	20.0	#152		6 1-#12, 1-#12, 1-#12		
		REC BATHROOM	20.0	1	180	180					1	20.0	REC BATHROOM		8 1-#12, 1-#12, 1-#12		
#12, 1-#12, 1-#12			20.0	1			1000	67 VA			1	20.0	UV LIGHT		0 1-#12, 1-#12, 1-#12		
		MOTORIZED DAMPER	20.0	1					720	1000	1	20.0	HEAT TRACE		2 1-#12, 1-#12, 1-#12		
#12, 1-#12, 1-#12		HEAT TRACE	20.0	1	240									7-			
	75													7			
	77													7			
	79							6.1.						8			
	81	0	00.0					0 VA	0.111	0.111	1	20.0	Spare	8			
	83	Spare	20.0	1	4575	0 \ / ^	4005	2 \ / ^		0 VA	1	20.0	Spare	8	4		
				I Load: Amps:		3.7	1225	3 VA 4.5		91 VA 6.6							
ad Classification			_	Amps: nected			nand Fa			o.6 nated De	amand		Donal	Totals			
wer	•			nectea 1 13724 V			nand Fa 100.00%			13724 V			Panel	าบเสเร			
eceptacle			A \		100.00%			4500 V			Total Conn. Load:	38401 \	Δ				
itchen					65.00%												
IOI IOI I				20177 V	_		00.00%		13115 VA			Total Est. Demand: 3					
													Total Conn.:	106.6			





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Revisions

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Lorenzo Foods Teterboro 25 CENTRAL AVE TETERBORO, NJ, 07608

ISSUED FOR PLANNING BOARD BUILDING DEPT BID ____ CONSTRUCTION ____

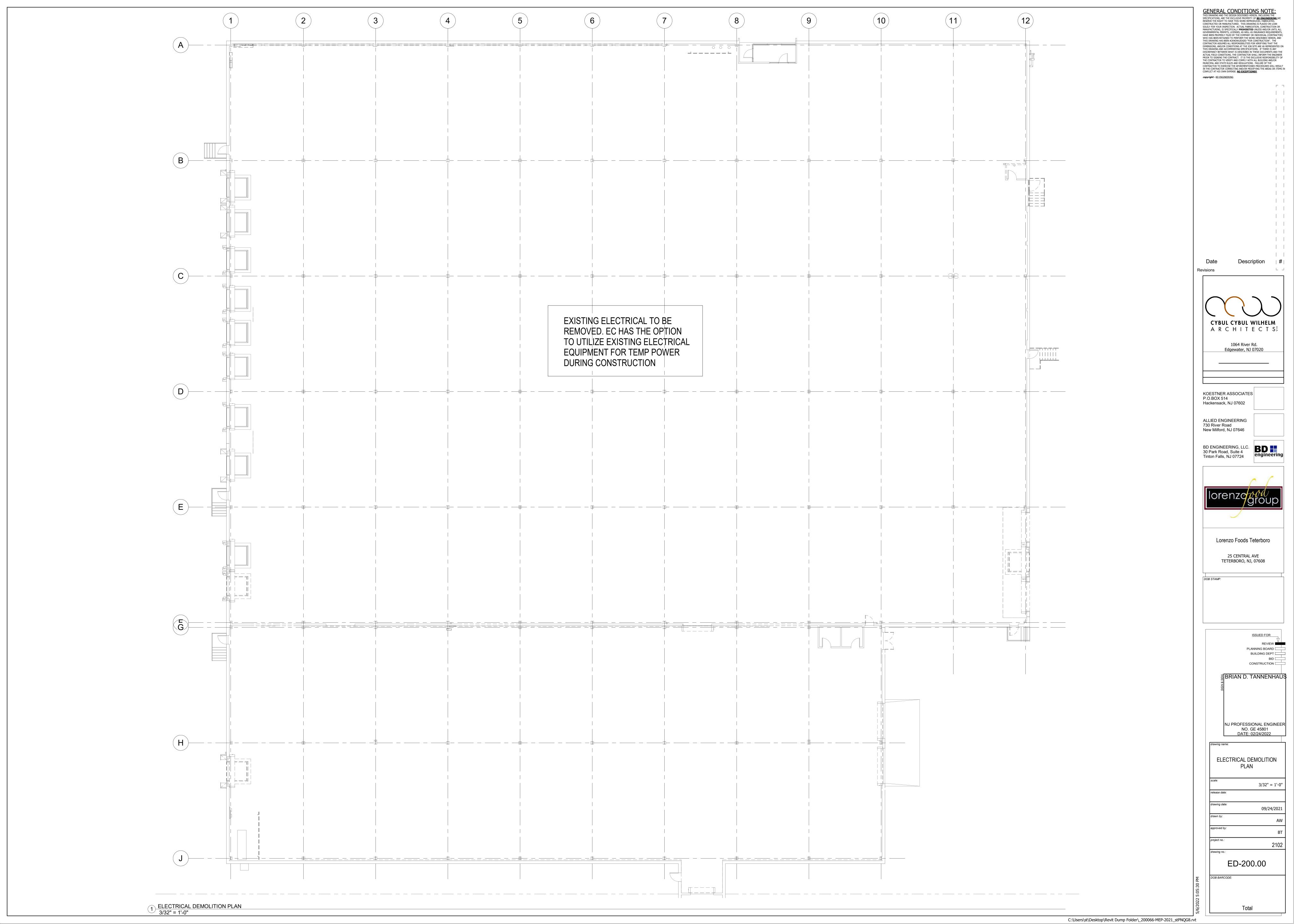
្ធីBRIAN D. TANNENHAUS NJ PROFESSIONAL ENGINEER NO. GE 45801 DATE: 02/24/2022

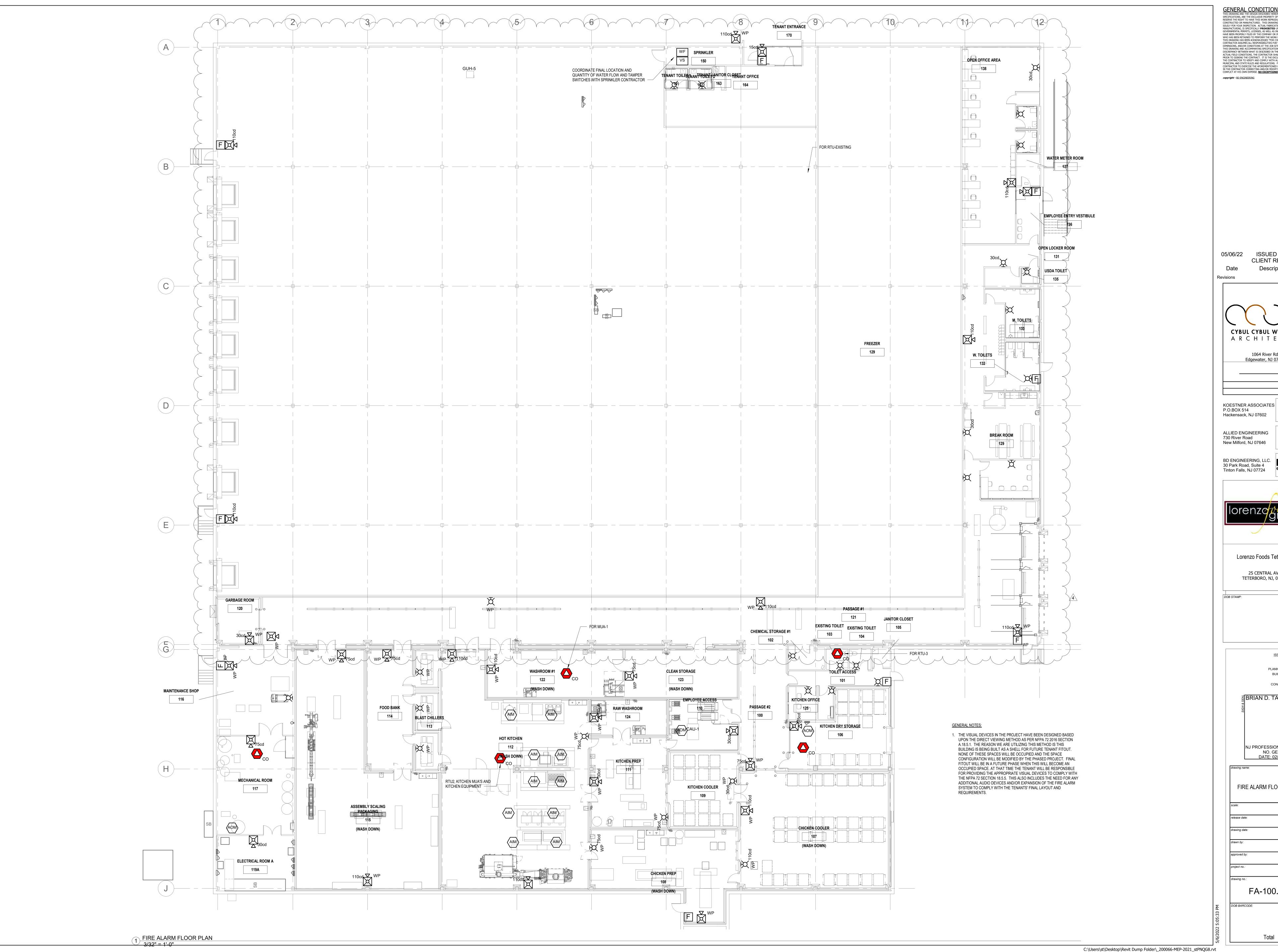
ELECTRICAL PANEL SCHEDULES

09/24/2021

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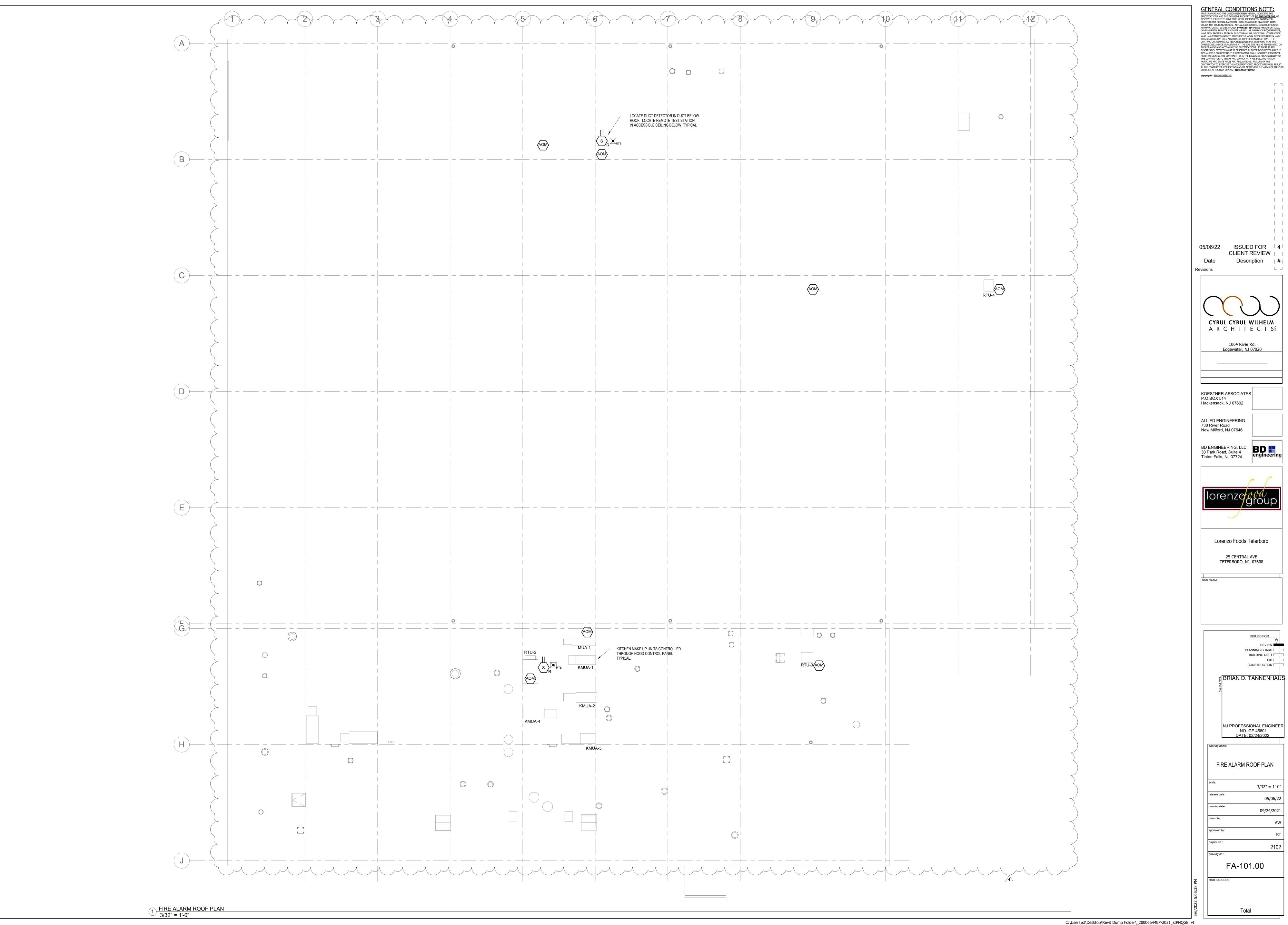
PLANNING BOARD BUILDING DEPT ្ធBRIAN D. TANNENHAUS

NJ PROFESSIONAL ENGINEER NO. GE 45801 DATE: 02/24/2022

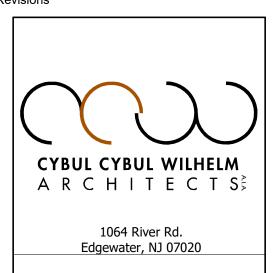
FIRE ALARM FLOOR PLAN

3/32" = 1'-0" 05/06/22 09/24/2021

FA-100.00



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PLANNING BOARD BUILDING DEPT CONSTRUCTION

ផ្លុំ BRIAN D. TANNENHAUS NJ PROFESSIONAL ENGINEER NO. GE 45801 DATE: 02/24/2022

FIRE ALARM ROOF PLAN

3/32" = 1'-0" 05/06/22 09/24/2021

GENERAL FIRE ALARM SYSTEM NOTES

- 1. FIRE ALARM SYSTEM EQUIPMENT & INSTALLATION SHALL BE IN ACCORDANCE WITH THE APPLICABLE STATE BUILDING AND FIRE CODE. REFER TO THE ARCHITECTS DRAWINGS FOR THE BUILDING CLASSIFICATIONS.
- 2. FIRE ALARM SYSTEM SHALL BE INSTALLED BY A NICET CERTIFIED FIRE ALARM INSTALLER. FIRE ALARM SYSTEM SHALL BE U.L., N.F.P.A., F.M. AND LOCALLY APPROVED. THE SYSTEM SHALL COMPLY WITH THE ABOVE MENTIONED BUILDING CODE, AMERICAN DISABILITY ACT (ADA) AND ALL OTHER APPLICABLE STATE AND LOCAL CODES &
- 3. THE FIRE ALARM CONTRACTOR SHALL COORDINATE WITH THE FIRE ALARM EQUIPMENT MANUFACTURER FOR THE EXACT NUMBER AND SIZE OF ALL SYSTEM WIRING. ALL FIRE ALARM SYSTEM WIRING SHALL BE INSTALLED IN CONDUIT, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- 4. THE FIRE ALARM RISER DIAGRAM IS DIAGRAMMATIC AND SERVES TO INDICATE THE ALARM DEVICE INTERCONNECTIONS AS CLEARLY AS POSSIBLE. IT DOES NOT SHOW QUANTITY OF DEVICES, ROUTING OR OFFSETS OF INTERCONNECTIONS OR QUANTITY. THE CONTRACTOR SHALL DETERMINE DEVICE LOCATIONS FROM THE DRAWING AND SELECT OPTIMUM ROUTING. PROVIDE OFFSETS AS MAY BE REQUIRED.
- 5. ALL JUNCTION BOXES ASSOCIATED WITH THE FIRE ALARM SYSTEM SHALL BE PAINTED RED.
- 6. SEE FLOOR PLANS FOR LOCATIONS OF ALL DEVICES. COORDINATE WITH THE SPRINKLER CONTRACTOR FOR ALL FLOW AND TAMPER SWITCH LOCATIONS AND QUANTITY.
- TAMPER AND FLOW SWITCHES SHALL BE SUPPLIED AND INSTALLED BY THE MECHANICAL/PLUMBING CONTRACTOR AND WIRED BY THE FIRE ALARM INSTALLER.
- 8. DEVICE MOUNTING HEIGHT SHALL COMPLY WITH ALL ANSI A117 AND NFPA REQUIREMENTS.
- 9. THE FIRE ALARM PANEL SHALL NOTIFY THE LOCAL FIRE STATION HAVING JURISDICTION AND/OR CENTRAL MONITORING STATION. THE INSTALLATION CONTRACTOR SHALL COORDINATE WITH THE LOCAL INSPECTOR FOR AN AUTO DIALER APPROVED LOCAL STATION.
- 10. THE FIRE ALARM INSTALLER SHALL GUARANTEE ALL WORK, MATERIAL, AND EQUIPMENT FOR A PERIOD OF ONE (1) YEAR FROM DATE OF EQUIPMENT TURN OVER TO THE OWNER.
- 11. THE FIRE ALARM INSTALLER SHALL FURNISH AND INSTALL A COMPLETE FIRE ALARM SYSTEM INCLUDING ALL PANELS, WIRING, ASSOCIATED BOXES, CONDUITS, FITTINGS, CONNECTORS AND ALL NECESSARY APPLIANCES FOR AN APPROVED FIRE ALARM INSTALLATION.
- 12. ALL CONDUCTORS SHALL BE MINIMUM #14 THWN SOLID COPPER 90 DEGREES C. FPLP CABLE SHALL HAVE A MINIMUM RATING OF 150°C.
- 13. ALL 120V SUPPLY POWER CONDUCTORS TO THE FIRE COMMAND STATION AND/OR FIRE ALARM CONTROL UNIT AND/OR TO OUTLYING CONTROL CABINETS, SHALL CONTAIN A GREEN INSULATED GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH THE ADOPTED ELECTRICAL CODE WITH A MINIMUM OF #10 AWG.
- 14. THE FIRE ALARM INSTALLER SHALL SUBMIT IBC SECTION 907 SIGNED AND SEALED SHOP DRAWINGS TO THE AUTHORITY HAVING JURISDICTION THAT INCLUDE BUT ARE NOT LIMITED TO ALL BATTERY CALCULATIONS, EQUIPMENT SPECIFICATIONS, NUMBER OF DEVICES, VOLTAGE DROP CALCULATIONS AND ROUTING OF CABLES. THE FIRE ALARM INSTALLER SHALL BE STATE APPROVED AND SHALL ATTEND ALL INSPECTIONS. THE PLANS ARE TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE THIS PROJECT IS LOCATED OR IF ACCEPTABLE BY THE AUTHORITY HAVING JURISDICTION BE A MINIMUM NICET LEVEL III CERTIFIED DESIGNER.

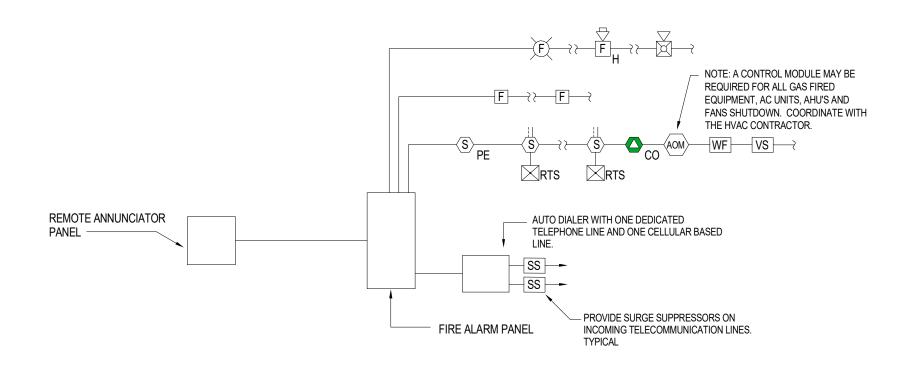
15. ALL STROBES SHALL BE SYNCHRONIZED TYPE.

- 16. SMOKE DETECTORS SHALL BE A MINIMUM OF 3(THREE) FEET FROM ANY AIR SUPPLY OR AIR RETURN DIFFUSERS FOR ANY HVAC AND EXHAUST SYSTEMS.
- 17. THE CONTRACTOR SHALL BE MADE AWARE THAT THE ANNUNCIATION DEVICES ARE SHOWN WIRED DIAGRAMMATICALLY. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY POWER SUPPLIES AS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM. PROVIDE A SMOKE DETECTOR ABOVE THE POWER SUPPLY(S). IF THE POWER SUPPLIES ARE TO BE REMOTE FROM THE MAIN FIRE ALARM PANEL THE CONTRACTOR SHALL INFORM THE ELECTRICIAN OF THESE ADDITIONAL CIRCUIT REQUIREMENTS, FAILURE TO INFORM THE ELECTRICIAN OF THESE REQUIREMENTS WILL RESULT IN THE DENIAL OF ANY
- 18. FOR THE SYSTEM CONTROL PANELS AND/OR POWER SUPPLIES THE CONTRACTOR SHALL INSTALL THE CONDUITS FROM THE SIDE OR BOTTOM PORTION OF THE PANEL ONLY. THE CONTRACTOR SHALL ENSURE THAT NO CONDUITS ARE INSTALLED IN THE TOP OF THE(SE) PANEL(S).
- 19. PROVIDE SURGE SUPPRESSION DEVICES ON ALL INCOMING TELECOMMUNICATION LINES AND POWER LINES FOR MAIN PANEL AND AUXILIARY PANELS.

FIRE ALARM SEQUENCE OF OPERATIONS

		ACTIVATION OF KITCHEN HOOD FIRE SUPPRESSION	ACTIVATION OF CARBON MONOXIDE DETECTOR	ACTIVATION OF MANUAL PULL STATION	ACTIVATION OF AREA SMOKE DETECTOR	ACTIVATION OF DUCT SMOKE DETECTOR	ACTIVATION OF WATER FLOW SWITCH	ACTIVATION OF SUPERVISORY TAMPER SWITCH	TROUBLE CONDITION AT PANEL	1. FIRE DEPARTMENT AND CENTRAL OFFICE COMPANY TO RECEIVE SEPARATE & DISTINCT SIGNALS. a) MANUAL ALARM b) SPRINKLER ALARM c) AUTOMATIC ALARM (ie., SMOKE & DUCT DETECTORS.) d) TROUBLE & SUPERVISORY SIGNAL 2. ALL FANS TO BE MANUALLY RESTARTED. AUTOMATIC RESTART IS NOT PERMITTED 3. ALL SIGNALS TO FIRE ALARM PANEL TO BE DUPLICATED AT REMOTE ANNUNCIATOR PANEL LOCATED BY ENTRANCE. FINAL LOCATION TO BE DETERMINED BY THE FIRE MARSHAL.
		X	X	Х	Х	Х	Х	Х	Х	ACTIVATES ZONE ANNUNCIATION ON PANEL AND L.C.D.
		Х		Х	Х	Х	Х			ACTIVATES AUDIO DEVICES
		Х		Х	Х	Х	Х			ACTIVATES STROBE LIGHTS THROUGHOUT
		Х	Х	Х	Х	Х	Х	Х	Х	TRANSMITS SIGNAL TO CENTRAL OFFICE COMPANY
		X	Х	Х	Х	Х	Х			ACTIVATES RELAY TO SHUT OFF AC UNITS, AHU'S, AND FANS. COORDINATE WITH THE LOCAL FIRE MARSHALL IF ALL AC UNITS, AHU'S AND FANS NEED TO SHUT DOWN IF ONE DUCT DETECTOR IS ACTIVATED. SYSTEM SHALL BE CAPABLE OF THIS FEATURE. FOR CARBON MONOXIDE IT IS TO SHUT DOWN ALL FUEL BURNING APPLIANCES SUCH AS BOILERS.
		X	Х	Х	Х	Х	Х	Х	Х	ACTIVATES SPECIFIC SIGNAL AT REMOTE ANNUCIATOR
			Х							ACTIVATE SOUNDER BASE
				Х	Х	Х	Х			RELEASE ALL SECURITY DOORS

* SEQUENCE OF OPERATION MUST COMPLY WITH AHJ AND LOCAL FIRE DEPARTMENT.



FIRE ALARM SUMMARY:

THE FIRE ALARM FOR THE BUILDING SHALL BE A HORN/STROBE PROJECT TYPE TO PROVIDE THE REQUIRED AUDIO AND VISUAL NOTIFICATION TO EVACUATE THE ENTIRE BUILDING UPON A FIRE CALL, THERE WILL BE NO OCCUPANT RELOCATION DURING A FIRE CALL. THE BUILDING WILL BE FULLY SPRINKLERED WITH AN ELECTRIC FIRE PUMP. REMOTE ANNUNCIATOR WILL BE PROVIDED.

ALARM INITIATION: MANUAL INITIATION: PULLSTATIONS SHALL BE PROVIDED AT ALL EXITS . FLOW SWITCHES: FLOW SWITCHES SHALL BE PROVIDED ON THE SPRINKLER SYSTEM AT THE MAIN AND AT EACH FLOOR CONTROL VALVE. DUCT SMOKE DETECTION: DUCT SMOKE DETECTION SHALL BE LOCATED ON THE SUPPLY

AND RETURN OF THE BUILDINGS MAIN HVAC ROOFTOP UNITS. DUCT SMOKE DETECTION SHALL BE ADDED AT EACH FLOOR TAKEOFF FROM THE SUPPLY AND RETURN MAINS. SMOKE DETECTORS: AREA SMOKE DETECTORS SHALL BE PROVIDED ABOVE EACH FIRE

ALARM PANEL AND/OR POWER SUPPLY, IT CLOSETS/ROOMS. HEAT DETECTORS: AREA HEAT DETECTORS ARE TO BE PROVIDED IN THE FIRE PUMP ROOM,

, MECHANICAL ROOM. CARBON MONOXIDE: CARBON MONOXIDE DETECTION WITH SOUNDER BASES SHALL BE PROVIDED FOR ALL FUEL BURNING EQUIPMENT, THE FIRST ROOM FROM THE FIRST DUCT TAKEOFF FROM EACH GAS FIRED HVAC UNIT . UPON DETECTION OF CARBON MONOXIDE

THE FUEL BURNING SYSTEM(S) IN THE AREA THE CARBON MONOXIDE DETECTOR IS PROTECTING SHALL SHUT DOWN THOSE FUEL BURNING EQUIPMENT AND INITIATE TROUBLE

DOOR RELEASE: SMOKE DOOR HOLD OPENS, SECURITY DOORS AND APPLICABLE FIRE/SMOKE DAMPERS SHALL BE RELEASED UPON A FIRE CALL. **(REMOVE IF NO DOOR

OCCUPANT NOTIFICATION:
VISUAL: PUBLIC MODE STROBES WILL BE PROVIDED THROUGHOUT THE FACILITY

VISUAL: PUBLIC MODE STROBES WILL BE PROVIDED THROUGHOUT THE FACILITY

VISUAL: PUBLIC MODE STROBES WILL BE PROVIDED THROUGHOUT THE FACILITY THROUGHOUT THRO AUDIO: HORN APPLIANCES SHALL BE UTILIZED TO PROVIDE BOTH AUDIBILITY THROUGHOUT THE BUILDING INCLUDING THE STAIRWELLS. HORN SPACING SHALL BE AS SUCH TO PROVIDE THE CODE REQUIRED AUDIBILITY 15DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5DBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF NOT LESS THAN 60 SECONDS. PER ANNEX A OF NFPA 72 THE ASSUMED AVERAGE AMBIENT SOUND LEVELS SHALL BE THE FOLLOWING: OFFICE AREA'S: 55DBA MECHANICAL ROOMS: 85DBA

ASSEMBLY TYPE OCCUPANCIES: 55DBA CAFETERIA: 55DBA

STORAGE AREAS: 30DBA INDUSTRIAL EQUIPMENT AREAS(F OCCUPANCY): 80DBA

TAMPER SWITCHES: TAMPER SWITCHES WILL BE PROVIDED ON ALL SPRINKLER VALVES. POWER SUPPLIES: THE POWER SUPPLIES SHALL BE SUPERVISED TO VERIFY POWER IS STILL AVAILABLE.

OFF NORMAL: ALL DEVICE OFF NORMAL SIGNALS WILL BE MONITORED SUCH AS OTHER FIRE ALARM COMPONENTS, THE FIRE PUMP OR GENERATOR. GENERATOR: ANY TROUBLE SIGNALS FROM THE GENERATOR OR LIFE SAFETY ATS(S) WILL BE MONITORED. FIRE ALARM ITEMS ARE BROKEN: FIRE ALARM DEVICES THAT ARE NOT OPERATIONAL WILL

POWER SUPPLIES: POWER SHALL BE BACKED UP BY THE EMERGENCY GENERATOR ALONG WITH HAVING INTERNAL BATTERIES TO PROVIDE A MINIMUM OF 24 HOURS OF STANDBY POWER AND AFTER THAT 24 HOUR PERIOD A MINIMUM OF 5 MINUTES OF ALARM AT MAXIMUM LOAD. CIRCUIT AND PATHWAY:

BE MONITORED FOR TROUBLE SIGNALS.

PATHWAY CLASS DESIGNATION: NFPA 72 APPLICABLE CLASS B PATHWAY'S SHALL BE PROVIDED FOR FOR BOTH NOTIFICATION CIRCUITS AND INITIATION CIRCUITS. PATHWAY SURVIVABILITY: NFPA 72 LEVEL 2 AND LEVEL 3 PATHWAY SURVIVABILITY SHALL BE PROVIDED FOR ALL VERTICAL WIRING FROM THE MAIN PANEL TO EACH DATA AND CONTROL LOOP, POWER SUPPLY INTERCONNECTION, EXPANSION PANEL INTERCONNECTION, ETC. THE WIRING ARRANGEMENT SHALL BE AS SUCH THAT A FIRE IN ONE FIRE COMPARTMENT OR FLOOR WILL NOT AFFECT THE PATHWAY INTEGRITY ON ANOTHER FIRE COMPARTMENT OR FLOOR SUCH AS THE FIRE PUMP ROOM, MINIMUM 2-HOUR FIRE RATED FIRE ALARM CABLE SHALL BE UTILIZED. CENTRAL MONITORING:
COMMUNICATION WITH A CENTRAL MONITORING STATION WILL SHALL BE PROVIDED. TWO

LINES WILL BE UTILIZED. ONE WILL BE CELLULAR BASED SYSTEM AND THE OTHER WILL

ZONING SHALL BE PER FLOOR THEN PER SMOKE OR FIRE PARTION NO MORE THAN 22,500

UTILIZE A LANDLINE, COPPER PAIR POTS LINE IF AVAILABLE.

SQUARE FEET,

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11/29/21

Revisions

CHANGES | | Description | # |

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Lorenzo Foods Teterboro 25 CENTRAL AVE

TETERBORO, NJ, 07608

DOB STAMP.

PLANNING BOARD BUILDING DEPT

BID ____

CONSTRUCTION ____

ផ្លី BRIAN D. TANNENHAUS NJ PROFESSIONAL ENGINEER NO. GE 45801

DATE: 02/24/2022

FIRE ALARM RISER DIAGRAM

12" = 1'-0" 11/29/21 09/24/2021

FA-102.00

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