



PROFESSIONAL ENGINEER

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Digitally signed by Luis
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Date: 2021.09.28
10:29:25 -06'00'

QC Kinetix

Dates of Record	
Project Start Date: #####	
Issued On	Issued For
31 Aug 2021	Tenant's Review & Approval:
28 Sep 2021	and Construction Plan Review

Sheet Contents	WASTE PLAN AND ISOMETRICS
Project Team	21386
Project Number	
Sheet Mark	P1.2

Provide drains no smaller than allowed
by **2015 IPC 709.1 and 710.1(1)**

The dry vent must rise 6" vertically
above the flood level rim of the highest
trapped fixture being vented.
2015 IPC 905.4



City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: *Bobby McKinzie*
Date: **Oct 03, 2021**
2015 INTERNATIONAL CODES & 2020 NEC

Room Schedule			
300	Elevator Lobby	307	Breakroom
301	Waiting Room	308	Tenant Hallway
302	Reception	309	Exam
303	Tenant Hallway	310	Exam
304	Consultation	311	Exam
305	Exam	312	T.T. Storage
306	Lab / Prep Room		

2 WASTE PIPING ISOMETRIC
P1.2 SCALE: NTS

- WASTE PIPING NOTES:
- (N)2"W/2"V TO SINK.
 - (N)2"W/2"V TO BREAK ROOM SINK.
 - REMOVE (E) SINK. CUT & CAP (E) PIPING.

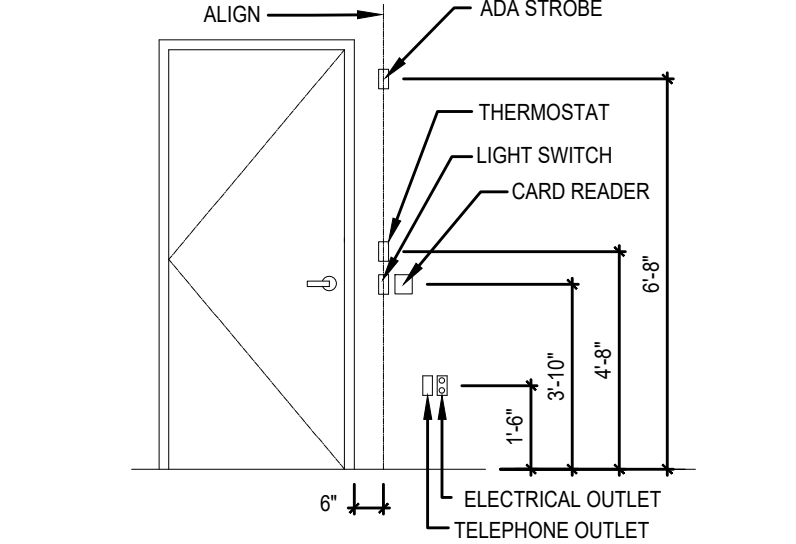
1 WASTE PLAN
P1.2 SCALE: 1/4" = 1'-0"

ELECTRICAL GENERAL NOTES - APPLICABLE TO ALL ELECTRICAL SHEETS

1. PRIOR TO SUBMITTING BIDS THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS AND DIFFICULTIES. THE CONTRACTOR SHALL AFFECT EXECUTION OF THE WORK, FIELD VERIFY QUANTITIES OF EXISTING LIGHT FIXTURES, ELECTRICAL DEVICES, COMMUNICATION DEVICES, FIRE ALARM DEVICES, AND ELECTRICAL EQUIPMENT. NOTIFY THE ARCHITECT AND ENGINEER OF ANY EXISTING CONDITIONS WHICH MAY AFFECT THE SCOPE OF WORK AS SHOWN ON THE CONSTRUCTION DOCUMENTS. SUBMISSION OF A BID PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR MOBILIZATION, LABOR, EQUIPMENT, AND/OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED.
2. THE ELECTRICAL CONTRACTOR SHALL EXAMINE THE DRAWINGS OF ALL TRADES WHOSE WORK RELATES TO OR IS DEPENDENT ON ELECTRICAL WORK TO BECOME FULLY INFORMED OF THE EXTENT AND CHARACTER OF THEIR SPECIFIED WORK AND BE ABLE TO COORDINATE IT WHILE AVOIDING POSSIBLE INTERFERENCE WITH THE ELECTRICAL WORK.
3. IT IS THE INTENTION OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL COMPLETE AND READY FOR USE." "REPLACE" SHALL MEAN TO PUT NEW IN PLACE OF EXISTING. THE ARCHITECTURAL GENERAL AND SPECIAL CONDITIONS FOR THE WORK OF THIS PROJECT AND BASE BUILDING SPECIFICATIONS SHALL BE PART OF THE ELECTRICAL SPECIFICATIONS. THE ELECTRICAL CONTRACTOR SHALL EXAMINE THE GENERAL AND SPECIAL CONDITIONS BEFORE SUBMITTING A BID.
4. ALONGSIDE SUBMISSION OF THE BID, THE ELECTRICAL CONTRACTOR SHALL GIVE WRITTEN NOTICE TO THE ARCHITECT/ENGINEER OF ANY NECESSARY ITEMS OR WORK THAT HAVE BEEN OMITTED FROM THE DRAWINGS OR SPECIFICATIONS. IN THE ABSENCE OF SUCH WRITTEN NOTICE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ELECTRICAL CONTRACTOR HAS INCLUDED THE COST OF ALL REQUIRED ITEMS IN HIS BID, AND THAT THE ELECTRICAL CONTRACTOR WILL BE RESPONSIBLE FOR THE APPROVED SATISFACTORY FUNCTIONING OF THE ENTIRE SYSTEM WITHOUT EXTRA COMPENSATION.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE AND SATISFACTORY ELECTRICAL INSTALLATION IN ACCORDANCE WITH THE TRUE INTENT OF THE DRAWINGS AND SPECIAL CONDITIONS ASSOCIATED WITH THE PROJECT AND WHERE, ALL INCIDENTAL ITEMS REQUIRED, AS A PART OF THIS ELECTRICAL INSTALLATION, THE INSTALLATION SHALL BE SO MADE THAT ITS SEVERAL COMPONENT PARTS WILL FUNCTION TOGETHER AS A WORKABLE SYSTEM AND SHALL BE LEFT WITH ALL PARTS ADJUSTED AND IN WORKING ORDER.
6. ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LOCAL FEES, PERMITS, AND SERVICES OF INSPECTION AUTHORITIES REQUIRED BY ELECTRICAL WORK FOR ANY ELECTRICAL CONSTRUCTION. FILE ALL NECESSARY PLANS, PERMITS, AND DOCUMENTS, AND OBTAIN ALL NECESSARY APPROVALS REQUIRED BY ALL GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL REMAIN EXPOSED TO VIEW UNTIL APPROVED BY THE INSPECTION AUTHORITY.
7. ELECTRICAL CONTRACTOR SHALL FULLY COORDINATE WITH OWNER REPRESENTATIVES. ALL ELECTRICAL WORK PERFORMED UNDER THIS CONTRACT SHALL CONFORM WITH LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, INTERNATIONAL BUILDING CODE, LOCAL BUILDING AND FIRE DEPARTMENT REQUIREMENTS. PERFORM WORK IN ACCORDANCE WITH REQUIREMENTS OF OWNER REPRESENTATIVE.
8. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF ANY CHANGES REQUIRED BY THE BUILDING MANAGEMENT AND TENANT REPRESENTATIVES.
9. BEFORE STARTING WORK, ELECTRICAL CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ARCHITECT/ENGINEER FIVE (5) SETS OF SHOP DRAWINGS, BROCHURES, INSTALLATION INSTRUCTIONS, AND DESCRIPTIVE EQUIPMENT DATA RELATED TO SPECIFIED EQUIPMENT, WIRING DEVICES, AND ACCESSORIES FOR APPROVAL. ELECTRONIC SUBMITTALS (PDF OR SIMILAR) ARE ACCEPTABLE WITH PRIOR APPROVAL FROM THE ARCHITECT. THE CONTRACTOR SHALL IDENTIFY ANY "LONG LEAD TIME" ITEMS WHICH MAY IMPACT THE OVERALL PROJECT SCHEDULE. ALL BIDS SHALL INCLUDE COSTS ASSOCIATED WITH THE PURCHASE AND DELIVERY OF EQUIPMENT TO MEET THE PROJECT SCHEDULE. NO EQUIPMENT SHALL BE ORDERED, PURCHASED, OR INSTALLED PRIOR TO THE APPROVAL OF SHOP DRAWINGS, BROCHURES, INSTALLATION INSTRUCTIONS, AND SCHEDULES. APPROVAL BY THE ARCHITECT/ENGINEER IS INTENDED TO CONFIRMANCE WITH THE PROJECT DESIGN CONCEPT AND THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS.
10. THE NAMING OF THE MANUFACTURER OR BRAND WITH CATALOG NUMBER OR OTHER PRODUCT IDENTIFICATION WITHOUT THE WORDS "OR EQUAL" IN THE SPECIFICATIONS OR NOTES SHALL INDICATE THAT IT IS THE ONLY PRODUCT APPROVED FOR PURCHASE. IF THE WORDS "OR EQUAL" ARE USED THEY SHALL BE INTERPRETED AS ESTABLISHING A QUALITY OR PERFORMANCE STANDARD FOR THE MATERIAL OR PRODUCT TO BE PURCHASED. THIS SHALL INDICATE THAT THE ELECTRICAL CONTRACTOR IS NOT RESTRICTED TO THE USE OF THE NAMED AND IDENTIFIED PRODUCT IF A SUBSTITUTE APPROVED BY THE ARCHITECT/ENGINEER IS AVAILABLE. HOWEVER, WHERE A SUBSTITUTION IS REQUESTED, IT WILL BE PERMITTED ONLY WITH THE WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER. NO SUBSTITUTE MATERIAL OR PRODUCT SHALL BE ORDERED, FABRICATED, SHIPPED OR PROCESSED IN ANY MATTER PRIOR TO THE APPROVAL OF THE ARCHITECT/ENGINEER. THE ELECTRICAL CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ADDITIONAL EXPENSES AS REQUIRED MAKING CHANGES FROM THE ORIGINAL MATERIAL OR PRODUCT SPECIFIED.
11. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF ELECTRICAL WORK. LOCATIONS ARE APPROXIMATE AND SHALL BE SUBJECT TO MINOR MODIFICATIONS AS DIRECTED BY THE GENERAL CONTRACTOR AND OWNER REPRESENTATIVES. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXACT FITTING OF ALL MATERIALS, EQUIPMENT, ETC., IN THE BUILDING AND TENANT SPACE. ALL DIMENSIONS SHALL BE VERIFIED ON THE JOB.
12. DRAWINGS SHALL NOT BE SCALED FOR ROUGH-IN MEASUREMENTS OR USED AS SHOP DRAWINGS. WHERE DIMENSIONS ARE SHOWN ON DRAWINGS, THESE DIMENSIONS ARE TO BE FIELD-VERIFIED BY THE ELECTRICAL CONTRACTOR AGAINST EXISTING FIELD CONDITIONS, INSTALLATION REQUIREMENTS OF OTHER TRADES, AND THE MANUFACTURER'S SUBMITTALS FOR EQUIPMENT TO BE INSTALLED. SHOULD ANY CONFLICTS ARISE WHICH CANNOT BE EASILY RESOLVED IN THE FIELD WITHOUT CHANGING THE DESIGN INTENT, THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
13. WHILE ALL WORK IS IN PROGRESS, EXCEPT FOR SHORT DESIGNATED INTERVALS DURING WHICH CONNECTIONS ARE TO BE MADE, CONTINUITY OF SERVICE TO ALL EXISTING SYSTEMS SERVING OCCUPIED SPACES SHALL BE MAINTAINED. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH OWNER AT ALL TIMES FOR ALL NEW-TO-EXISTING CONNECTIONS, SYSTEM SHUTDOWNS, AND RESTART-UP.
14. ANY WORK WHICH WILL AFFECT THE BUILDING OCCUPANTS, INCLUDING, BUT NOT LIMITED TO WORK WHICH GENERATES EXCESSIVE NOISE, DUST, SMOKE, OR INCONVENIENCE TO BUILDING OCCUPANTS, SHALL BE PERFORMED AFTER BUSINESS HOURS. UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE BUILDING MANAGER OR OWNER.
15. ELECTRICAL ITEMS AFFECTED BY REMODEL WORK ARE SHOWN ON DRAWINGS ALONG WITH EXISTING ELECTRICAL INSTALLATION SHOWN WITH LIGHT LINE WEIGHT. EXISTING ELECTRICAL INSTALLATION SHOWN IS NOT NECESSARILY ALL-INCLUSIVE. REMOVE CIRCUIT CONTINUITY FOR EXISTING ELECTRICAL EQUIPMENT, MATERIALS, AND DEVICES THAT ARE TO REMAIN. SUCH EQUIPMENT SHALL BE RECONNECTED TO EXISTING CIRCUITS OR CONNECTED TO NEW CIRCUITS(S) AS INDICATED ON DRAWINGS. ENSURE ALL ELECTRICAL DEVICES IN WORK AREA ARE FULLY FUNCTIONAL. FOR DEVICES OR JUNCTION BOXES LOCATED IN WALLS, THAT MUST REMAIN IN PLACE FOR CIRCUIT CONTINUITY, PROVIDE BLANK COVER PLATES TO MATCH WALL PLATES STYLE IN THE AREA OF WORK. FOR ALL OTHER UNUSED JUNCTION BOXES, REMOVE WIRING AND PROVIDE BLANK COVER PLATE, OR COORDINATE WITH GENERAL CONTRACTOR FOR PATCHING OF WALL TO MATCH ADJACENT SURFACE AS DIRECTED BY ARCHITECT. WHERE EXISTING DEVICES CONFLICT WITH NEW WALL CONSTRUCTION, RELOCATE EXISTING DEVICE AND REWORK CIRCUITRY AS REQUIRED TO MAINTAIN CIRCUIT CONTINUITY. DEVICES MAY ONLY BE REMOVED WITH PRIOR APPROVAL FROM THE ARCHITECT AND BUILDING MANAGER. COORDINATE FINAL DIRECTIONS WITH ARCHITECT PRIOR TO DEMOLITION.
16. REPORT ANY EXISTING DAMAGED EQUIPMENT OR SYSTEMS TO THE OWNER PRIOR TO BEGINNING THE PROJECT.
17. BEFORE ANY EQUIPMENT IS INSTALLED, DETERMINE THAT SAID EQUIPMENT WILL PROPERLY FIT WITHIN THE SYSTEM ALLOCATED. INSTALL EQUIPMENT AND MATERIALS IN SUCH A MANNER AS TO PROVIDE REQUIRED ACCESS FOR SERVICING AND MAINTENANCE. ALLOW AMPLE SPACE FOR REMOVAL OF ALL PARTS THAT REQUIRE REPLACEMENT OR SERVICING.
18. MINIMUM WORKING CLEARANCES PER THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE SHALL BE PROVIDED AROUND AND IN FRONT OF ALL ELECTRICAL EQUIPMENT.
19. ALL CIRCUIT BREAKER LUOS SHALL BE RATED FOR A MINIMUM OF 75 DEGREES CELSIUS.
20. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UNMATERIALIZED, BEAR THE UL LABEL, AND BE AS SPECIFIED FOR USE IN EACH SPECIFIC LOCATION. ANY INCIDENTAL ACCESSORIES NECESSARY TO COMPLETE THE WORK IN ALL RESPECTS AND MAKE IT READY FOR OPERATION, EVEN IF NOT SPECIFICALLY SPECIFIED, SHALL BE FURNISHED, DELIVERED, AND INSTALLED BY THE ELECTRICAL CONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE CLIENT.
21. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF A SYSTEM OR EQUIPMENT, SHALL BE INCLUDED IN THE ELECTRICAL CONTRACTOR'S ESTIMATE, AS IF SPECIFIED HEREIN OR SHOWN.
22. ALL NEW, RELOCATED AND EXISTING MATERIALS, IN CEILING PLENUMS NOT FULLY INFORMED OF THE EXTENT AND CHARACTER OF THEIR SPECIFIED WORK AND BE ABLE TO COORDINATE IT WHILE AVOIDING POSSIBLE INTERFERENCE WITH THE ELECTRICAL WORK.
23. COORDINATE THE INSTALLATION OF ELECTRICAL MATERIALS AND EQUIPMENT ABOVE AND BELOW CEILINGS WITH SUSPENSION SYSTEM, MECHANICAL EQUIPMENT, AND OTHER BUILDING COMPONENTS. ALL COMPONENTS SHALL BE LOCATED AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE CEILING CAVITY SPACE CAREFULLY WITH ALL TRADES.
24. NEUTRALS, RACEWAYS, AND NON-CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDING FULLY ACCORDING WITH THE NATIONAL ELECTRICAL CODE. PROVIDE HARD WIRE GROUND CONNECTIONS TO ALL DEVICES AND SEPARATE, CONTINUOUS, INSULATED GROUND WIRE IN EACH CIRCUIT (#12 CU MINIMUM "GREEN" TRACER GROUND). COORDINATE EQUIPMENT GROUNDING CONDUCTOR WIRE SIZE WITH MANUFACTURER REQUIREMENTS.
25. CONDUIT JOINTS SHALL BE CUT SQUARE, THREADED, REAMED SMOOTH, AND DRAWN UP TIGHT. BENDS OR OFFSETS SHALL BE MADE WITH AN APPROVED BENDER OR HOKEY, OR HUB-TYPE CONDUIT FITTINGS. THE NUMBER OF BENDS PER RUN SHALL CONFORM TO THOSE STATED IN CURRENT NEC.
26. WHERE POSSIBLE ALL WIRING SHALL BE RUN CONCEALED. ALL HOME RUNS SHALL BE ENT. CONCEALED CONDUIT SYSTEMS SHALL BE RUN IN A DIRECT LINE WITH LONG SWEEP BENDS AND OFFSETS. EXPOSED CONDUIT RUNS SHALL BE PARALLEL TO AND AT RIGHT ANGLES TO BUILDING LINES, USING CONDUIT WITH ALL TURNS AND OFFSETS. ALL WIRING CONDUITS SHALL BE SUPPLIED WITH PULL WIRES AND BUSHINGS.
27. "MC" AND "AC" TYPE CABLE WITH INTERNAL GROUND WIRES SHALL BE PERMITTED FOR BRANCH CIRCUIT WIRING WHERE APPROVED IN WRITING BY BUILDING MANAGEMENT AND THE LOCAL AHI AND INSTALLED PER NATIONAL ELECTRICAL CODE AND LOCAL BUILDING DEPARTMENT REQUIREMENTS. USE LISTED AND APPROVED TYPE COUPLINGS AND CONNECTORS. PROVIDE CONDUIT SUPPORTS AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AS A MINIMUM.
28. ALL ROOF PENETRATIONS SHALL BE SEALED WATER TIGHT, PROVIDE FLASHING AND COUNTER FLASHING AS REQUIRED. COORDINATE ROOFING WORK WITH THE GENERAL CONTRACTOR.
29. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL JUNCTION AND PULL BOXES TO PROVIDE ACCESS POINTS FOR PULLING AND FEEDING CONDUITS INTO A NEW WIRING SYSTEM. JUNCTION AND PULL BOXES AND THEIR COVERS SHALL BE FORMED FROM SHEET STEEL AND SHALL BE FINISHED IN GRAY ENAMEL PAINT. BOXES SHALL BE IN INDUSTRY STANDARD SIZES. OUTLET BOXES WITH THE CORRECT FITTING FOR THE APPLICATION SHALL BE LOCATED AT EACH CONDUCTOR SPACE POINT, AT EACH OUTLET SWITCH POINT, AT JUNCTION POINT, AND AT EACH PULL POINT FOR THE CONNECTION OF CONDUIT AND OTHER RACEWAYS. OUTLET BOXES FOR CONCEALED WIRING SHALL BE MADE FROM GALVANIZED OR CADIUM-PLATED STEEL SHEET, AND THEY SHALL HAVE A DEPTH OF AT LEAST 1.5 INCHES, WHETHER SINGLE OR GANGED. THE BOXES SHALL BE LARGE ENOUGH SIZE TO ACCOMMODATE THE NUMBER OF WIRING DEVICES AND CONDUCTORS AS SPECIFIED IN THE FILL SCHEDULE OF THE CURRENT NEC. SECURE BOXES WITH MOUNTING BRACKET, BRACES, HANGER OR BOX MOUNTING SUPPORT.
30. ALL NEW SWITCHES, POWER OUTLETS, TELEPHONE OUTLETS, FIRE ALARM DEVICES, AND COMMUNICATIONS OUTLETS SHALL MEET THE REQUIREMENTS FOR AMERICANS WITH DISABILITIES (ADA) MOUNTING HEIGHTS AND ORIENTATIONS, TYPICAL UNLESS OTHERWISE NOTED. RECEPTACLES SHALL BE A MINIMUM OF 15" A.F.F. AND SWITCHES A MAXIMUM OF 48" A.F.F. TO CENTERLINE, TYPICAL UNLESS OTHERWISE NOTED.
31. ALL WALL MOUNTED OUTLETS SHALL BE OFFSET SO THEY ARE NOT BACK TO BACK, FOR SOUND TRANSMISSION PURPOSES. A HORIZONTAL DISTANCE OF AT LEAST 6 INCHES SHALL SEPARATE OUTLET BOXES ON OPPOSITE SIDES OF WALLS AND PARTITIONS. MOUNT ELECTRICAL AND COMMUNICATIONS OUTLETS ON WALLS AS CLOSE TOGETHER AS POSSIBLE.
32. WIRING DEVICES SHALL BE SPECIFICATION GRADE. MINIMUM DEVICE RATING SHALL BE 20 AMPS FOR ALL WIRING DEVICES UNLESS SPECIFICALLY NOTED OTHERWISE. DEVICES WITH DEDICATED CIRCUITS AS REQUIRED BY CIRCUIT LOAD. ISOLATED GROUND RECEPTACLES SHALL BE ORANGE. MATCH COLOR PAINT TO EXISTING BUILDING STANDARD. PROVIDE MATCHING NYLON COVER PLATES FOR ALL OUTLETS. ELECTRICAL CONTRACTOR SHALL VERIFY ALL OUTLETS WITH ARCHITECTURAL PLANS AND TENANT BEFORE ORDERING AND PURCHASING OF MATERIALS.
33. FIRE RESISTIVE WALLS AND PARTITIONS MAY HAVE OPENINGS FOR STEEL ELECTRICAL OUTLET BOXES NOT EXCEEDING 16 SQUARE INCHES IN AREA. PROVIDED THE AGGREGATE AREA OF SUCH OPENINGS IS NOT MORE WITH THAN 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL. A HORIZONTAL DISTANCE OF AT LEAST 24 INCHES SHALL SEPARATE OUTLET BOXES ON OPPOSITE SIDES OF FIRE RESISTIVE WALLS AND PARTITIONS.
34. ALL JUNCTION BOX COVERS SHALL BE INDELIBLY LABELED WITH PANEL DESIGNATION AND BRANCH CIRCUIT NUMBER OF EACH WIRE WITHIN THE JUNCTION BOX. PANELS/DISCONNECTS/TRANSFORMERS AND SIMILAR MUST BE LABELED WITH THEIR SOURCE AND WITH CALCULATED ALC VALUE/DATE.
35. ALL WIRING SHALL BE COPPER. TYPE THIN OR THIN INSULATION, UNLESS SPECIFICALLY NOTED OTHERWISE. MINIMUM SIZE SHALL BE #12 AWG. CONDUCTORS SHALL BE FACTORY COLOR-CODED WITH WIRE COLOR CODING AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AND USING STANDARD CONDUCTOR COLOR CODES:
- | | |
|-------------------------------|----------------|
| 120/208 VOLTS: | 277/480 VOLTS: |
| A: BLACK | A: BROWN |
| B: RED | B: ORANGE |
| C: BLUE | C: YELLOW |
| NEU: WHITE | NEU: GRAY |
| GND: GREEN | GND: GREEN |
| ISO, G: GREEN W/YELLOW STRIPE | |
36. RECEPTACLES FOR COMPUTERS, COPIERS, AND PRINTERS, WHICH ARE SEMI-DEDICATED, DEDICATED, OR ISOLATED, SHALL HAVE A SEPARATE NEUTRAL AND DEDICATED GROUND CONDUCTOR RUN FROM THE BRANCH CIRCUIT PANEL BOARD.
37. ALL JOINTS OR SPLICES FOR 10 AWG. CONDUCTORS OR SMALLER SHALL BE MADE WITH UL-APPROVED WIRE NUTS, OR COMPRESSION-TYPE CONNECTORS.
38. ALL JOINTS OR SPLICES FOR CONDUCTORS 8 AWG AND LARGER SHALL BE MADE WITH A MECHANICAL COMPRESSION OR BOLTED CONNECTOR. AFTER THE CONDUCTORS HAVE BEEN MADE MECHANICALLY AND ELECTRICALLY SECURE, THE ENTIRE JOINT OR SPlice SHALL BE COVERED WITH 3M SCOTCH BRAND NO. 33 TAPE OR APPROVED EQUAL. TO MAKE THE JOINT RESISTANT TO THE JOINT RATED EQUAL TO THE VALUE OF THE CONDUCTOR INSULATION. ALL CONNECTORS SHALL BE UL APPROVED.
39. ALL NEW MULTI-WIRE BRANCH CIRCUITS SHALL INCLUDE SEPARATE NEUTRAL CONDUCTORS OR BREAKER TIES AS REQUIRED BY CURRENT NEC SECTION 210.4 (B).
40. VOLTAGE DROP- THE ELECTRICAL CONTRACTOR SHALL ENSURE THAT VOLTAGE DROP FOR FEEDERS TO DISTRIBUTION EQUIPMENT DOES NOT EXCEED 2% AND VOLTAGE DROP IN BRANCH CIRCUITING DOES NOT EXCEED 3% FOR OVERALL VOLTAGE DROP OF 5% (MAXIMUM). FEEDERS LISTED ON SCHEDULES AND THE ELECTRICAL ONE-LINE DIAGRAM ARE A BASE FEEDER/BRANCH CIRCUIT SIZE AND SHALL BE ADJUSTED AS NEEDED BASED ON ACTUAL LENGTHS OF CONDUCTORS.
41. ELECTRICAL CONTRACTOR SHALL PROVIDE A CU SHARED NEUTRAL CONDUCTOR WITHIN FURNITURE SYSTEMS TO A #10 AWG CU CONDUCTOR. ELECTRICAL CONTRACTOR TO CONSIDER THE NEUTRAL CONDUCTOR AS A CURRENT CARRYING CONDUCTOR WHEN FEEDING ELECTRONIC LOADS.
42. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY FROM STRUCTURE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF LIGHT FIXTURES AND ELECTRICAL DEVICES.
43. FOR ALUMINUM CONDUCTOR TERMINATIONS, ALUMINUM BI-METALLIC PIN CONNECTORS ARE REQUIRED UNLESS COMPACT CONDUCTORS ARE USED. THESE CONNECTORS SHALL BE UL LISTED PER UL 486B AND RATED FOR USE UP TO 600V AND TEMPERATURE UP TO 90°C. CONNECTORS SHALL BE INSTALLED WITH MANUFACTURER'S SPECIFIED CRIMPING TOOLS AND DIES.

TYPICAL DETAIL FOR DEVICES AT DOOR LOCATION

SCALE: NONE



FIRE ALARM SYSTEM

1. GENERAL CONTRACTOR SHALL SOLICIT BIDS FROM BUILDING OWNER'S DESIGNATED FIRE ALARM CONTRACTOR FOR DESIGN AND INSTALLATION OF AN APPROVED FIRE ALARM SYSTEM AND DEVICES WHICH SHALL COMPLY WITH ALL APPLICABLE CODES AND ALL REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. (GENERAL CONTRACTOR SHALL VERIFY WITH BUILDING MANAGEMENT/OWNER CONCERNING DESIGNATED FIRE ALARM CONTRACTOR.)
2. REQUIRED MODIFICATIONS TO EXISTING FIRE ALARM SYSTEM SHALL BE PROVIDED ON A DESIGN/BUILD BASIS BY FIRE ALARM CONTRACTOR. PRIOR TO BIDDING, FIRE ALARM CONTRACTOR SHALL FIELD VERIFY EXISTING FIRE ALARM SYSTEM CAPABILITY AND FIRE ALARM DEVICE LOCATIONS IN THIS SCOPE OF WORK. IF REQUIRED BY LOCAL JURISDICTION, FIRE ALARM SYSTEM SHALL BE UPGRADED TO MEET CURRENT CODES. FIRE ALARM CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS AND EQUIPMENT BROCHURES TO AUTHORITIES HAVING JURISDICTION, SUCH AS FIRE DEPARTMENT, BUILDING DEPARTMENT, ETC., AS REQUIRED, FOR REVIEW AND APPROVAL. CONTRACTOR SHALL ALSO PROVIDE THE ENGINEER WITH ONE (1) SET OF DRAWINGS, CALCULATIONS AND EQUIPMENT SUBMITTALS FOR HIS REVIEW AND RECORD.
3. IF REQUIRED, REPLACE EXISTING SMOKE DETECTORS, REMOTE INDICATOR LIGHTS, FIRE ALARM HORNS, STROBES, SPEAKERS, ETC., BASED ON REMODELED AREA MODIFICATION, AND RECONNECT TO EXISTING SYSTEM AS REQUIRED. NEW FIRE ALARM DEVICES SHALL BE OF THE SAME MANUFACTURER AS THE EXISTING DEVICES AND SHALL BE COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM. PROVIDE ADDITIONAL CONDUCTORS, ZAM'S IWM'S AND OTHER EQUIPMENT NECESSARY IN ORDER TO EXPAND SYSTEM AS REQUIRED. PROVIDE SYNCHRONIZING MODULES FOR EXISTING FIRE ALARM DEVICES. EXISTING FIRE ALARM DEVICES ARE NOT CURRENTLY BUILDING STANDARD OR COMPATIBLE WITH NEW BUILDING STANDARD FIRE ALARM DEVICES. PRIOR TO PURCHASING FIRE ALARM DEVICES, PROVIDE CUT SHEETS, SHOP DRAWINGS, AND SEQUENCE OF OPERATION TO BUILDING MANAGEMENT AND FIRE PREVENTION BUREAU FOR THEIR APPROVAL AND TO ENGINEER FOR HIS REVIEW.
4. PROVIDE NEW BUILDING STANDARD FIRE ALARM STROBES, ADA HIGH INTENSITY, EXISTING FIRE ALARM STROBES, EXISTING FIRE ALARM SYSTEMS REQUIRED. MODIFY EXISTING FIRE ALARM CIRCUIT CONDUCTORS AND FIRE ALARM PANELS PER





























COMMUNICATIONS SYSTEMS

1. ELECTRICAL CONTRACTOR SHALL FULLY FIELD COORDINATE COMMUNICATIONS SYSTEM INSTALLATION (DEVICES AND CABLING) WITH TENANT REPRESENTATIVE PRIOR TO ROUGH IN AND PURCHASING OF MATERIALS.
2. AT TELEPHONE AND DATA SERVICE POINT FOR EACH MODULAR FURNITURE GROUPING, THE ELECTRICAL CONTRACTOR SHALL PROVIDE 4" SQUARE DEEP STEEL JUNCTION BOX WITH TWO 1" CONDUITS (OR AS OTHERWISE SPECIFIED ON PLAN, OR BY DATA/TELECOMMUNICATIONS CONTRACTOR) WITH PULL WIRE. STUB CONDUITS ABOVE CEILING LINE AND PROVIDE PLASTIC BUSHINGS ON CONDUIT ENDS. CABLING SHALL BE PULLED AND WIRED BY OTHERS. COORDINATE ALL WORK WITH DATA/TELECOMMUNICATIONS CONTRACTOR PRIOR TO ROUGH-IN.
3. ALL DATA AND TELECOMMUNICATIONS CABLING SHALL BE INSTALLED BY TENANT'S VENDOR.
4. FOR EACH NEW SINGLE TELEPHONE/DATA OR TV CABLE OUTLET SHOWN MOUNTED IN WALL, ELECTRICAL CONTRACTOR SHALL PROVIDE A 4" SQUARE, DOUBLE-ENDED STEEL JUNCTION BOX WITH SINGLE-ENDED PLASTER RING AND A 3/4" CONDUIT (OR AS OTHERWISE SPECIFIED BY SYSTEM INSTALLER) WITH PULL WIRE. STUB CONDUIT 6" INTO CEILING SPACE AND PROVIDE PLASTIC BUSHINGS. CABLING SHALL BE PULLED BY OTHERS. COORDINATE ALL WORK WITH DATA/TELECOMMUNICATIONS CONTRACTOR PRIOR TO ROUGH-IN.
5. IF REQUESTED, ELECTRICAL CONTRACTOR SHALL REMOVE ALL ABANDONED AND UNUSED DATA/TELECOMMUNICATIONS CABLING, CONDUIT, JUNCTION BOXES, AND

RECORD DOCUMENTS

1. RECORD DOCUMENTS: THE ELECTRICAL CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS OF ALL DEVIATIONS IN WORK AS INSTALLED FROM WORK SPECIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS AND IDENTIFY ORIGIN OF CHANGE.
2. KEEP A COMPLETE SET OF RECORD DOCUMENT PRINTS IN CUSTODY DURING ENTIRE PERIOD OF CONSTRUCTION AT THE CONSTRUCTION SITE. ON COMPLETION OF THE PROJECT, TWO COMPLETE SETS OF MARKED-UP PRINTS SHOWING THESE DEVIATIONS SHALL BE DELIVERED TO GENERAL CONTRACTOR AND ARCHITECT/ENGINEER. THIS CONTRACT WILL NOT BE CONSIDERED COMPLETED UNTIL THESE RECORD DRAWINGS HAVE BEEN RECEIVED AND REVIEWED BY THE ENGINEER.

ELECTRICAL SYMBOLS LEGEND

LIGHTING			
SYMBOL		DESCRIPTION	
<div><div></div><div></div></div>		<div>SHADING INDICATES CONNECTION TO EMERGENCY CIRCUIT OR 90-MINUTE BATTERY BACKUP</div> <div>2'x4" LIGHT FIXTURE</div> <div>2'x2" LIGHT FIXTURE</div> <div>1'x4" LIGHT FIXTURE</div> <div>NARROW 4" FIXTURE</div>	
<div><div></div><div></div></div>			
<div><div></div><div></div></div>			
<div><div></div><div></div></div>			
<div><div></div><div></div></div>			
<div><div></div><div></div></div>		EXIT SIGN	
<div><div></div><div></div></div>		EMERGENCY BATTERY PACK FIXTURE	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	NARROW PENDANT FIXTURE		STRIP FIXTURE
	PENDANT FIXTURE		UNDER CABINET FIXTURE
	WALL BRACKET		PENDANT FIXTURE
	DOWNLIGHT FIXTURE		WALL/WASH FIXTURE
	WALL MOUNTED FIXTURE		POLE MOUNTED OUTDOOR FIXTURE
	TRACK LIGHTING		REMOTE EMERGENCY LIGHT HEAD
	COMBINATION LIGHT AND EXHAUST FAN		
	PHOTOCELL		

SWITCHING	
SYMBOL	DESCRIPTION
	5 SINGLE POLE SWITCH
	5 DOUBLE POLE SWITCH
	5 THREE WAY SWITCH
	5 FOUR WAY SWITCH
	5 DIMMER SWITCH
	5 KEY SWITCH
	5 THERMAL OVERLOAD SWITCH
	5 GANGED SWITCHES

60. UNLESS OTHERWISE INDICATED ON THE PLANS, ELECTRICAL CONTRACTOR SHALL PROVIDE A #6 STRANDING COPPER INSULATED EQUIPMENT GROUNDING CONDUCTOR AT EACH PERMANENTLY INSTALLED SERVER RACK IN THE PROJECT AREA. THIS EQUIPMENT GROUNDING CONDUCTOR SHALL BE BONDED TO THE RACK STRUCTURE, ROUTED IN A NEAT MANNER AWAY FROM THE RACK AND INTO THE ACCESSIBLE CEILING, AND BONDED TO BUILDING STEEL OR THE COPPER WATER SERVICE, WHICHEVER IS CLOSER.
61. CODE REQUIRED MAINTENANCE RECEPTACLES FOR MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE GFL.

ABBREVIATIONS

ABBR.	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
AC	ABOVE COUNTER
GI	GROUND FAULT CIRCUIT INTERRUPTER
GD	GROUND
IG	ISOLATED GROUND
NL	NIGHT LIGHT
RL	RELOCATED DEVICE OR EQUIPMENT
WP	WEATHER PROOF
EM	EMERGENCY
HD	HEAVY DUTY
TR	TAMPER RESISTANT
EG	EGRESS LIGHTING
X	AUTOMATICALLY CONTROLLED DEVICE

MANUFACTURER'S REQUIREMENTS. MOUNT STROBES +80" A.F.F. OR 6" BELOW THE CEILING, WHICHEVER IS LOWER. REPLACE EXISTING STROBE LIGHTS WITH NEW BUILDING STANDARD STROBE LIGHTS, AND ENSURE ALL STROBE LIGHTS ARE SYNCHRONIZED.

5. FIRE ALARM CONTRACTOR SHALL FURNISH DUCT DETECTORS (120V OR 24V), WITH REMOTE INDICATING LIGHT AND TEST SWITCH, FOR ALL MECHANICAL AIR-MOVING SYSTEMS WHERE REQUIRED BY CODE OR LOCAL AUTHORITIES. DETECTORS SHALL BE OF THE SAME MANUFACTURER AS EXISTING OR NEW FIRE ALARM SYSTEM. MECHANICAL CONTRACTOR SHALL INSTALL DETECTORS IN THE MECHANICAL DUCTWORK, AS REQUIRED BY CODE, TO FACILITATE MOTOR SHUTDOWN UPON DETECTION OF SMOKE. ELECTRICAL CONTRACTOR SHALL HARBORING DETECTION OF THE FAN MOTOR (THROUGH A POWER-INTERRUPTING RELAY) FOR SHUTDOWN UPON DETECTION OF SMOKE; AND IF REQUIRED BY CODE, THE FIRE ALARM CONTRACTOR SHALL CONNECT TO FIRE ALARM SYSTEM AS TROUBLE ALARM. COORDINATE ALL REQUIREMENTS AND SPECIFICATIONS WITH BUILDING ENGINEER OR BUILDING FIRE ALARM REPRESENTATIVE. SUBMIT DRAWINGS AND EQUIPMENT CUT SHEETS FOR ENGINEERS' REVIEW AND FIRE DEPARTMENT APPROVAL.
6. IF A PRE-ACTION DRY PIPE SPRINKLER SYSTEM IS REQUIRED FOR THIS PROJECT, THE PRE-ACTION FIRE ALARM SYSTEM CONTROL PANEL SHALL BE ANNOUNCED ON THE BUILDING MAIN FIRE ALARM CONTROL PANEL (FACP) IN THE FIRE COMMAND CENTER (FCC).
7. IF THE PROJECT REQUIRES A UPS SYSTEM AND COMPUTER ROOM AIR CONDITIONING (CRAC) UNITS, THE UPS SYSTEM AND CRAC UNITS SHALL BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM AND TO THE PRE-ACTION FIRE ALARM CONTROL PANEL. THE UPS SYSTEM, CRAC UNITS, AND FIRE/SMOKE DAMPERS SERVING THE COMPUTER ROOM SHALL BE SHUT DOWN UPON ACTIVATION OF FIRE ALARM SYSTEM. PROVIDE INTERFACE WIRING AS REQUIRED. PROVIDE WIRING FROM CRAC UNIT TO MOUTURE SENSORS OR SITE MONITORING SYSTEM IF IT IS PROVIDED UNDER MECHANICAL CONTROL AND ALARM SECTION. THE CRAC UNITS SHALL SHUT DOWN AND ALARM UPON DUCT DETECTOR ACTIVATION AS PART OF UL SYSTEM. COORDINATE ALL OF THE ABOVE WITH APPROPRIATE UPS, PDU AND CRAC UNIT MANUFACTURERS.

ASSOCIATED WIRING LOCATED IN THE CEILING SPACE BACK TO POINT OF ORIGIN, UNLESS THE TENANT DATA/TELECOMMUNICATIONS CONTRACTOR IS CONTRACTED TO REMOVE THE DATA/TELECOMMUNICATIONS CABLING UNDER A SEPARATE CONTRACT. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE CONTRACTOR FOR THE REMOVAL OF THE PHONE/DATA CABLING. PRIOR TO DISCONNECTING AND REMOVING ANY EQUIPMENT, DEVICES OR CABLING, THE APPROPRIATE CONTRACTOR SHALL COORDINATE WITH OWNER AND ARCHITECT TO ENSURE EQUIPMENT SHALL BE REMOVED.

6. ELECTRICAL CONTRACTOR SHALL VERIFY QUANTITY AND TYPE OF DATA/PHONE/ALARM/VIDEO PORTS TO BE INCLUDED IN FLOOR POKE-THRU DEVICES WITH DATA/TELECOMMUNICATIONS CONTRACTOR PRIOR TO ORDERING.
7. VERIFY ALL SPECIFIC COMPUTER AND COMMUNICATIONS EQUIPMENT REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH IN. COORDINATION SHALL INCLUDE MOUNTING HEIGHTS, CONNECTION TYPE AND POWER REQUIREMENTS. ALL CONNECTIONS FOR COMPUTER AND COMMUNICATIONS EQUIPMENT SHALL BE IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S AND SUPPLIER'S RECOMMENDATIONS

MECHANICAL SYSTEM

1. ELECTRICAL CONTRACTOR SHALL REVIEW MECHANICAL AND PLUMBING DRAWINGS AND SCHEDULES FOR VERIFICATION OF THE EQUIPMENT USED, WIRING AND ADDITIONAL INSTALLATION REQUIREMENTS PRIOR TO PROVIDING REQUIRED ROUGH-INS. STARTERS/DISCONNECT SWITCHES, WHEN EQUIPMENT DELIVERED TO JOB SITE, ELECTRICAL CONTRACTOR SHALL VERIFY THIS DATA WITH EQUIPMENT NAMEPLATES OR MANUALS IF SIGNIFICANT DISCREPANCIES OCCUR CONTACT ELECTRICAL ENGINEER FOR REVISION OF THE CONSTRUCTION DOCUMENTS.
2. PROVIDE ALL REQUIRED OUTLETS; HEAVY-DUTY SAFETY DISCONNECT SWITCHES, FUSES AND CONNECTIONS FOR ALL MECHANICAL EQUIPMENT UNLESS PROVIDED BY MECHANICAL CONTRACTOR AS SPECIFICALLY DIRECTED ON MECHANICAL DRAWING OR SPECIFICATION REQUIREMENTS.
3. ELECTRICAL POWER WIRING IN CONNECTION WITH THE AUTOMATIC TEMPERATURE CONTROL SYSTEM, WHERE SHOWN ON THE ELECTRICAL DIVISION DRAWINGS, SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR. ALL OTHER WIRING, INCLUDING LOW VOLTAGE REQUIRED FOR PROPER OPERATION OF THE AUTOMATIC TEMPERATURE CONTROL SYSTEM, SHALL BE PERFORMED BY THE MECHANICAL CONTRACTOR.

DEMOLITION

1. DURING THE DEMOLITION PHASE OF THIS CONTRACT, IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO VERIFY DEMOLITION SCOPE AND ITEMS WITH ARCHITECTURAL AND ELECTRICAL DRAWINGS. EXISTING LIGHT FIXTURES, ELECTRICAL DEVICES, EQUIPMENT AND RELATED MATERIALS SHALL BE CAREFULLY REMOVED UNTIL ONLY DEMOLITION DRAWINGS AS BEING REMOVED, OR AS REQUIRED FOR THE WORK UNDER THIS CONTRACT. THESE ITEMS SHALL BE TAGGED, PROTECTED FROM DAMAGE, AND STORED AS DIRECTED BY THE BUILDING MANAGEMENT/OWNER, ARCHITECT OR ENGINEER.
2. DEMOLITION OR ABANDONING ANY ELECTRICAL AND COMMUNICATIONS CONDUIT, WIRING, CABLING, OR DEVICE MEANS TO REMOVE IN ITS ENTIRETY. REMOVE UNUSED CONDUITS FROM CEILING SPACES IN AREAS OF WORK. REMOVE UNUSED JUNCTION BOXES THAT ARE TO BE REMOVED AND COVERED WITH NEW GYPSUM BOARD. ABANDONED POKE THRU OUTLETS SHALL HAVE COVER PLATES AND BE FILLED WITH FIRE RATED FOAM SEALANT TO MAINTAIN FIRE RATING OF FLOOR.
3. EXISTING LIGHT FIXTURES IN WORK AREA, NOTED ON DRAWINGS TO BE RE-USED SHALL BE THOROUGHLY CLEANED AND/OR REFINISHED TO MATCH NEW.
4. CONTRACTOR SHALL REMOVE SWITCHES, DATA/TELEPHONE OUTLETS, AND ELECTRICAL OUTLETS SCHEDULED FOR DEMOLITION. ALL UNUSED POWER WIRING SHALL BE REMOVED BACK TO JUNCTION BOX IN CEILING SPACE OR TO THE ELECTRICAL PANEL FEEDING THE CIRCUIT. THE SPARE CIRCUIT BREAKER SHALL BE SWITCHED TO THE "OFF" POSITION AND NOTED ON PANEL DIRECTORY AS SPARE WITH THE JUNCTION BOX LOCATION IF APPLICABLE.
5. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR RINGING OUT ALL CIRCUITS WHICH ARE TO BE AFFECTED BY THIS PROJECT TO ENSURE CIRCUIT CONTINUITY AND TO PREVENT OVERLOADING OF ANY SINGLE CIRCUIT. CONTRACTOR SHALL ENSURE THAT CIRCUITS SHARED BETWEEN PROJECT AREA AND EXISTING TENANT SPACES REMAIN INTACT PER ORIGINAL DESIGN INTENT. CORRECT ANY MISLABELED J-BOX COVER WITH ACCURATE PANEL/BRANCH CIRCUIT IDENTIFICATION. REFER TO DETAIL NOTES ON PLANS THAT APPLY TO WORK TO BE PERFORMED UNDER THIS CONTRACT. CIRCUIT BREAKERS FOR ALL UNUSED CIRCUITS SHALL BE TURNED TO THE "OFF" POSITION AND LABELED AS SPARE ON REVISED PANEL DIRECTORIES.
6. PROVIDE NEW JUNCTION BOXES, NEW CONDUIT AND WIRING AS REQUIRED TO REPAIR, REROUTE AND RECONNECT CONDUCTORS THAT ARE DAMAGED, DISTURBED OR OTHERWISE ADVERSELY AFFECTED BY THE DEMOLITION AND REMODEL WORK.
7. THE LOCATIONS OF EXISTING LIGHTING FIXTURES, POWER DEVICES AND WIRING, ETC., SHOWN ON THE DRAWINGS HAS BEEN TAKEN FROM EXISTING DRAWINGS AND ARE, THEREFORE, ONLY AS ACCURATE AS THAT INFORMATION. ALL EXISTING CONDITIONS SHALL BE VERIFIED AT THE FIELD WITH NECESSARY ADJUSTMENT BEING MADE TO THE DRAWING INFORMATION.
8. ALL FLOOR AND WALL PENETRATIONS WHERE ELECTRICAL DEVICES AND RACEWAY HAVE BEEN REMOVED MUST BE REPAIRED AND SEALED TO MAINTAIN THE REQUIRED FIRE RATING. ALL LUMINAIRES PENETRATING A ONE HOUR FIRE RESISTIVE ENCLASURE SHALL BE PROPERLY TENTED TO MAINTAIN FIRE RATING OF THE ENCLOSURE. ALL CONDUITS PENETRATING A ONE HOUR FIRE RATED WALL OR CEILING SHALL BE FIRE STOPPED WITH A U.L. LISTED FIRE STOPPING COMPOUND SEALANT.
9. MAINTAIN LIGHTING CIRCUIT AND SWITCHING CONTROL CONTINUITY IN VACANT AND NON-VACANT SUITES THAT ARE ADJACENT TO PROJECT.
10. MAINTAIN RECEPTACLE CIRCUIT CONTINUITY THROUGH WALLS WHICH ARE TO BE DEMOLISHED AND THROUGH RECEPTACLES WHICH ARE TO BE REMOVED.
11. OWNER HAS RIGHT OF FIRST REFUSAL FOR ALL REMOVED EQUIPMENT, FIXTURES, DEVICES, AND CONDUCTORS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE STORAGE AND/OR DISPOSAL OF ALL SUCH ITEMS WITH OWNER/PROPERTY MANAGEMENT PRIOR TO REMOVAL FROM SITE.

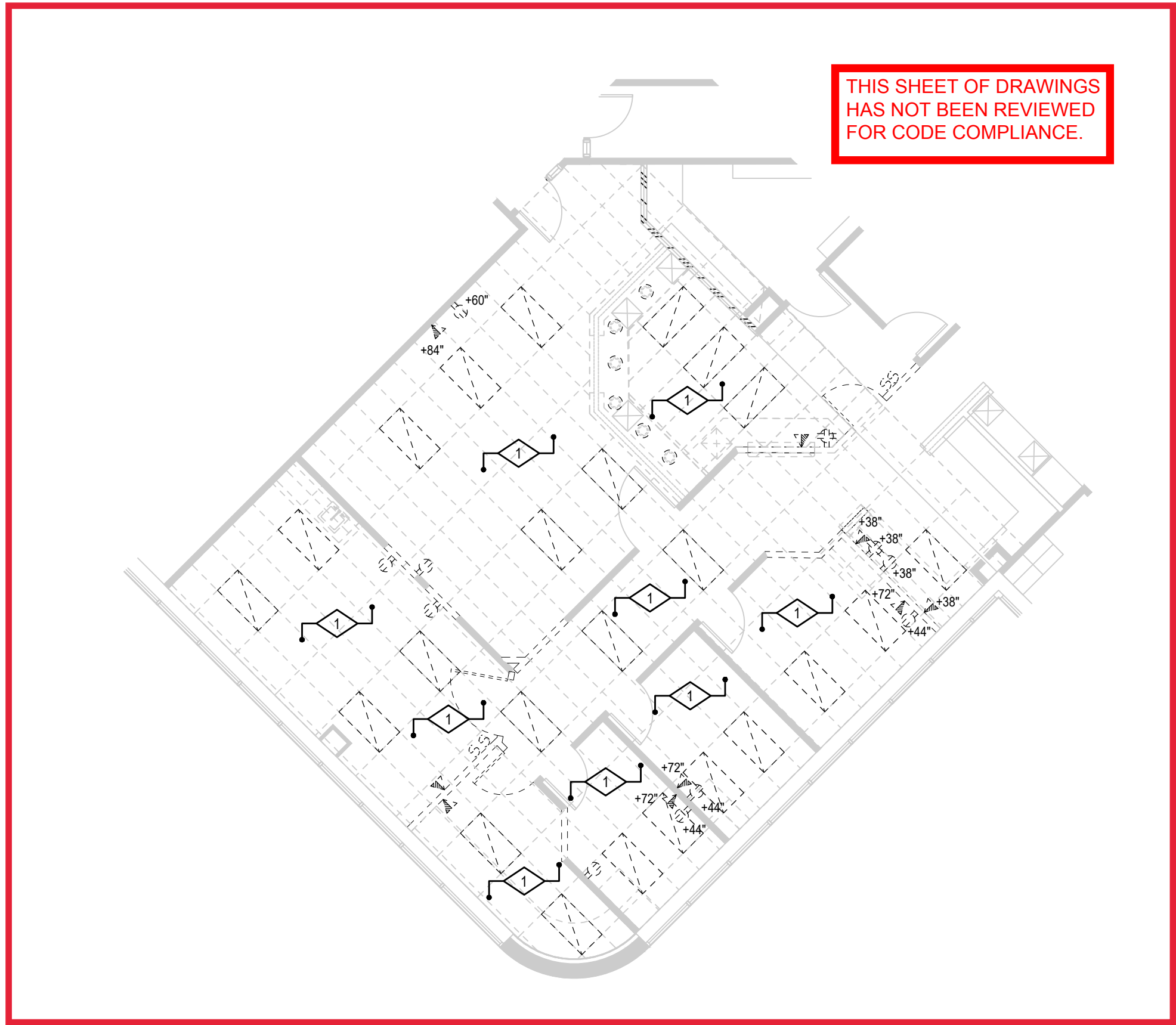
WARRANTY

1. PROVIDE COMPLETE WARRANTY INFORMATION FOR EACH ITEM, WHICH SHALL INCLUDE NAME OF PRODUCT OR EQUIPMENT; DATE OF BEGINNING OF WARRANTY OR BOND; DURATION OF WARRANTY OR BOND; AND NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF MANUFACTURING/SERVICING PERSONNEL, AS WELL AS PROCEDURES FOR FILING A CLAIM AND OBTAINING WARRANTY SERVICES.
2. THE CONTRACTOR SHALL WARRANT ALL MATERIALS, WORKMANSHIP AND THE SUCCESSFUL OPERATION OF ALL EQUIPMENT AND APPARATUS INSTALLED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE ENTIRE WORK AS IDENTIFIED IN THE GENERAL CONDITIONS.

ONE-LINE			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PANEL BOARD		FUSED DISCONNECT WITHIN SWITCHBOARD
	NON-FUSED DISCONNECT SWITCH		TRANSFER SWITCH
	FUSED DISCONNECT SWITCH		GENERATOR
	EXTERIOR PAD-MOUNTED TRANSFORMER		METER
	INTERIOR TRANSFORMER		WEATHER HEAD
	CURRENT TRANSFORMER		CURRENT TRANSFORMER
	PULL BOX		GROUNDING CONDUCTOR
	SPACE SWITCH WITHIN SWITCHBOARD		MOTOR
	SPACE WITHIN SWITCHBOARD		CIRCUIT BREAKER

OCCUPANCY/VACANCY/DAYLIGHT SENSOR SCHEDULE			
SYMBOL	MANUFACTURER (OR APPROVED EQUAL)	DESCRIPTION	NOTES
	WATTS/TOPPER, SENSORSWITCH COOPER/GREENGATE, LEVITON	DUAL TECHNOLOGY. WALL-MOUNTED SINGLE-LEVEL 120V/277V OCCUPANCY SENSOR SWITCH; COLOR TO MATCH BUILDING-STANDARD. WHERE DENOTED, ADDITIONAL "D" INDICATES DIMMING. MODIFY PART AS REQUIRED.	14,5,7,9
	PASSIVE-INFRARED, WALL-MOUNTED SINGLE-LEVEL 120V/277V OCCUPANCY SENSOR SWITCH; COLOR TO MATCH BUILDING-STANDARD. WHERE DENOTED, ADDITIONAL "D" INDICATES DIMMING. MODIFY PART AS REQUIRED.		14,5,7,9
	WATTS/TOPPER, SENSORSWITCH COOPER/GREENGATE, LEVITON	DUAL TECHNOLOGY. WALL-MOUNTED DUAL-LEVEL 120V/277V OCCUPANCY SENSOR SWITCH; COLOR TO MATCH BUILDING-STANDARD. SEE PLAN NOTES FOR CONNECTION INFORMATION FOR EACH OF (D) SWITCHES. WHERE DENOTED, ADDITIONAL "D" INDICATES DIMMING. MODIFY PART AS REQUIRED.	14,5,7,9
	WATTS/TOPPER, SENSORSWITCH COOPER/GREENGATE, LEVITON	DUAL TECHNOLOGY. CEILING MOUNTED OCCUPANCY SENSOR WITH BUILT-IN 120V/277V SWITCHING RELAY FOR STANDALONE OPERATION. STANDARD 1000 SQ. FT. COVERAGE. RATED FOR 800W MINIMUM LOAD AT 120V, 1200W AT 277V.	13,4,9
	WATTS/TOPPER, SENSORSWITCH COOPER/GREENGATE, LEVITON	DUAL TECHNOLOGY. CEILING MOUNTED OCCUPANCY SENSOR. STANDARD 1000 SQ. FT. COVERAGE. SEPARATE POWER PACK/ROOM CONTROLLER (SPECIFIED) REQUIRED FOR OPERATION.	1,2,3,4,6,7,9
	WATTS/TOPPER, SENSORSWITCH COOPER/GREENGATE, LEVITON	EXTENDED-RANGE (2000 SQ. FT.) CEILING MOUNTED OCCUPANCY SENSOR. ULTRASONIC OR DUAL TECHNOLOGY. SEPARATE POWER PACK (SPECIFIED) REQUIRED FOR OPERATION.	1,2,3,4,7,9
	WATTS/TOPPER, SENSORSWITCH COOPER/GREENGATE, CRESTON	WEATHER-PROOF, EXTREME-TEMPERATURE OCCUPANCY SENSOR. SEPARATE POWER PACK REQUIRED, DEPENDING ON MANUFACTURER.	1,2,3,4,9
	WATTS/TOPPER, SENSORSWITCH COOPER/GREENGATE, LEVITON	LOW VOLTAGE COMBO DIMMING AND ON/OFF STAND ALONE DAYLIGHT PHOTOSENSOR. SET POINT TO BE LIGHT LEVEL WITHOUT DAYLIGHT. NOTE: DIRECTIONAL ARROW.	1,2,3,4,7,9
	AS SPECIFIED ON PLAN	OTHER WALL-MOUNTED OCCUPANCY SENSOR SWITCH, AS SPECIFIED IN PLAN NOTES. WHERE DENOTED, "D" INDICATES DIMMING. MODIFY PART AS REQUIRED.	14,5,6,7,9
	MATCH SYSTEM	LOW VOLTAGE WALL MNT SWITCH, MOMENTARY OR MAINTAINED. WHERE DENOTED, "D" INDICATES DIMMING. MODIFY PART AS REQUIRED.	14,5,6,7,9
	MATCH SYSTEM / DEVICE	AUTOMATICALLY CONTROLLED DEVICE. HALF DUPLEX OR HALF QUADRUPLEX. PROVIDE COMPATIBLE PLUG LOAD CONTROLLER OR INTEGRAL TO DEVICE TIED TO OCCUPANCY/VACANCY SENSORS. PROVIDE WITH REQUIRED NEC LABELING. SEE CONTROL MATRIX FOR FUNCTION WHERE APPLIES.	14,9

- NOTES:
- INSTALL ALL SENSORS, POWER PACKS, ROOM CONTROLLERS, PLUG CONTROL DEVICES, AND ACCESSORIES PER MANUFACTURER'S INSTRUCTIONS. PROVIDE ALL ACCESSORIES REQUIRED FOR COMPLETE SYSTEM. REFER TO DETAIL NOTES AND CONTROL MATRIX AS PROVIDED FOR ANY ADDITIONAL REQUIREMENTS.
 - REFER TO THE MANUFACTURER'S SPECIFICATIONS FOR MAXIMUM QUANTITY OF SENSORS PER POWER PACK AND PROVIDE ADDITIONAL POWER PACKS AS REQUIRED.
 - CONTRACTOR TO FIELD-ADJUST SENSOR PLACEMENT AND AIM IN EACH LOCATION IN THE FIELD, FOR OPTIMUM COVERAGE.
 - ALL DEVICES AND ACCESSORIES FOR THE PROJECT SHALL BE SUP



DEMOLITION PLAN

SCALE: 1/8"=1'-0"

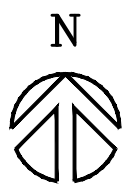
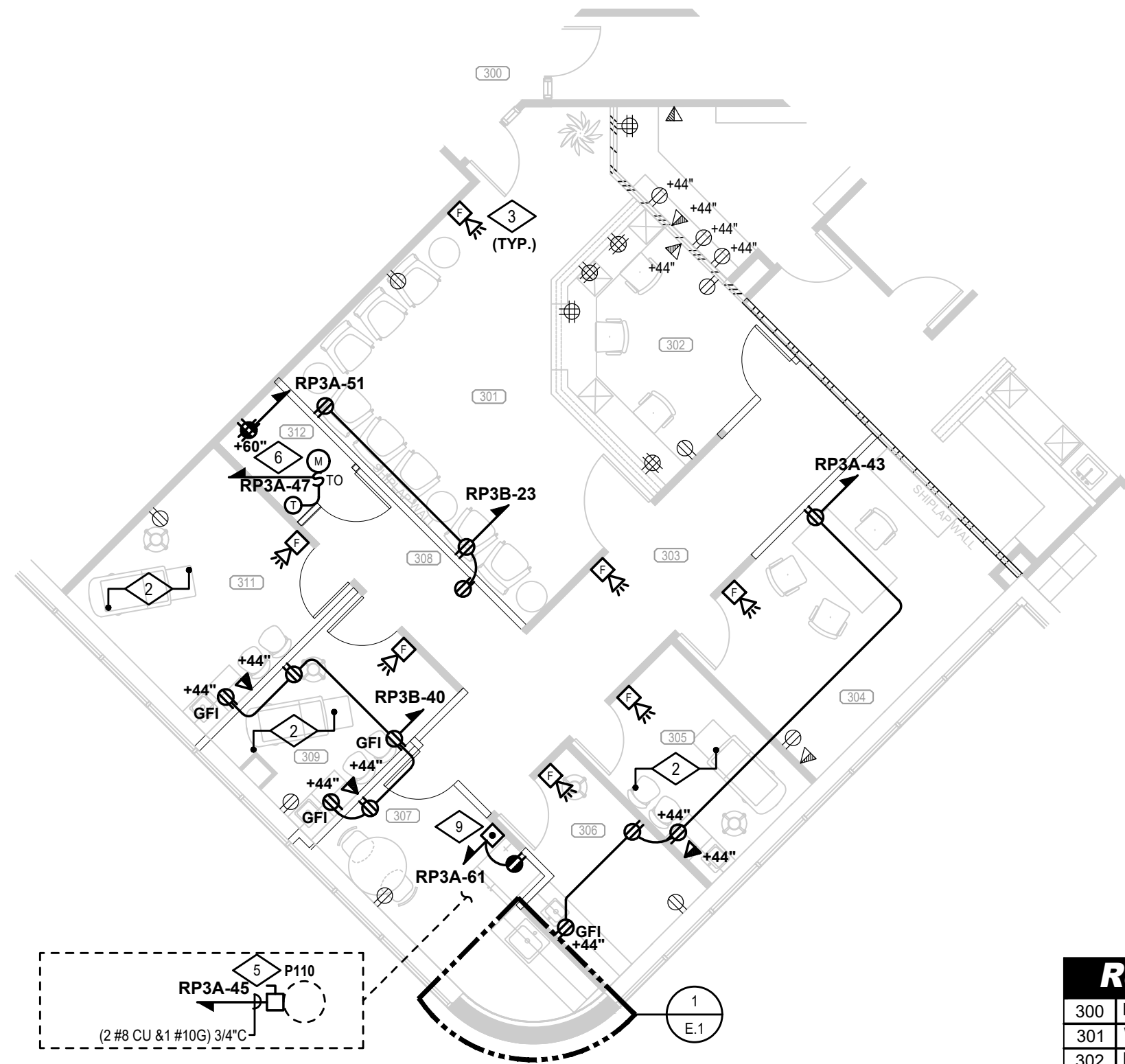
GENERAL NOTES:

- REMOVED ITEMS SHOWN AS DASHED AND LIGHT.
- E.C. TO REMOVE ALL ABANDONED CONDUIT/CABLING/WIRING FROM SPACE INCLUDING ABOVE THE CEILING BACK TO SOURCE. ANY CIRCUITS MADE SPARE TO BE TURNED OFF AND LABELED AS SUCH WITH NEW TYPED PANEL SCHEDULES.
- RETURN LIGHTING FIXTURES NOT REUSED TO PROPERTY MANAGEMENT STOCK.
- PROTECT CIRCUITS AFFECTED BY DEMOLITION THAT HAVE DEVICES REMAINING AFTER DEMOLITION.
- PROTECT ANY DEMOLISHED FIRE ALARM DEVICES AND EXIT SIGNS FOR RELOCATION. RETURN ANY UNUSED DEVICES TO BUILDING MANAGEMENT.

DETAIL NOTES

- ALL LIGHTING TO BE DEMOLISHED. RETURN LIGHTING FIXTURES TO BUILDING MANAGEMENT.
- ALL EXISTING LOW VOLTAGE WIRING TO BE REMOVED AND PROVIDED WITH BLANK COVER PLATE.

SEPARATE FIRE ALARM PERMIT REQUIRED:
Due to the proposed work the general contractor is required to obtain the services of a fire alarm contractor to determine if a separate alarm permit is required. If it is determined that the spacing of the fire alarm devices is not in compliance, then a separate fire alarm permit is required. Approval of the documents is required prior to system installation or any request for inspection. A certificate of occupancy or final approval cannot be issued by the Building Division without this fire protection system. **2015 IFC, Section 105.7.6.**



POWER PLAN

SCALE: 1/8"=1'-0"

GENERAL NOTES:

- NEW AND RELOCATED ITEMS SHOWN AS BOLD
- EXISTING ITEMS SHOWN AS LIGHT

DETAIL NOTES

- PROVIDE ADHESIVE LABEL WITH CIRCUIT NUMBER ON RECEPTACLES.** COORDINATE STYLE OF LABEL WITH PROPERTY MANAGEMENT PRIOR TO INSTALLING. SEE TYPICAL DEVICE LABELING DETAIL.
- PROVIDE/ENSURE HOSPITAL-GRADE RECEPTACLES FOR ALL DEVICES IN THIS ROOM.** ALL BRANCH CIRCUITS IN THIS AREA SHALL BE RUN ENTIRELY IN EMT CONDUIT IN ORDER TO UTILIZE CONDUIT AS **REDUNDANT GROUND (PER NEC 517.13)** OR PROVIDE GREEN HOSPITAL-GRADE AC/MC CABLE FOR REDUNDANT GROUND. PROVIDE GFCI DEVICES THROUGHOUT. PROVIDE EQUIPMENT GROUNDING CONDUCTOR THROUGHOUT.
- NEW/RELOCATED FIRE ALARM DEVICE.** SEE FIRE ALARM GENERAL NOTES. UTILISE DEMOLISHED DEVICES AND COORDINATE WITH BUILDING ENGINEER FOR DEVICES IN BUILDING STOCKPILE PRIOR TO ORDERING NEW.
- E.C. TO PROVIDE TAMPER RESISTANT RECEPTACLES IN ALL OFFICES, WAITING ROOMS, PATIENT CARE SPACE, AND CORRIDORS** THROUGHOUT PER NEC 406.12.
- NEW 3000W WATER HEATER, 120V. CONNECT THROUGH NEW DISCONNECT SWITCH. SEE MECHANICAL PLANS FOR DETAILS.
- TRANSFER FAN CONNECTED TO M.C. SUPPLIED LINE VOLTAGE THERMOSTAT. THERMOSTAT WIRED/INSTALLED BY E.C. CONNECT FAN THROUGH THERMAL SWITCH USING 2-#12 CU AND #12 GND IN 3/4\"/>

Room Schedule

300	Elevator Lobby	307	Breakroom
301	Waiting Room	308	Tenant Hallway
302	Reception	309	Exam
303	Tenant Hallway	310	Exam
304	Consultation	311	Exam
305	Exam	312	I.T. Storage
306	Lab / Prep Room		



LIGHTING PLAN

SCALE: 1/8"=1'-0"

GENERAL NOTES:

- NEW AND RELOCATED ITEMS SHOWN AS BOLD
- EXISTING ITEMS SHOWN AS LIGHT
- LOWER CASE LETTERING INDICATED ON SWITCHES AND FIXTURES IF SHOWN, WHICH SWITCHES CONTROL WHICH FIXTURES.

DETAIL NOTES

- CONNECT TO LOCAL LIGHTING CIRCUIT (AND CONTROLS, AS APPLICABLE). E.C. TO VERIFY NO MORE THAN 70% LOAD ON A SINGLE 277V LIGHTING CIRCUIT.
- DAYLIGHT DIMMING NOT APPLIED. FIXTURES IN DAYLIGHT ZONE ARE LESS THAN 150W TOTAL PER SPACE.
- PROVIDE HOSPITAL-GRADE DEVICES IN THIS ROOM. ALL BRANCH CIRCUITS IN THIS AREA SHALL BE RUN ENTIRELY IN EMT CONDUIT IN ORDER TO UTILIZE CONDUIT AS REDUNDANT GROUND PER CODE REQUIREMENTS OR PROVIDE GREEN HOSPITAL-GRADE AC/MC CABLE FOR REDUNDANT GROUND. PROVIDE EQUIPMENT GROUNDING CONDUCTOR THROUGHOUT.
- NEW SPEAKER LOCATION. COORDINATE WITH LOW VOLTAGE CONTRACTOR.

ID	TYPE	SIZE	DESCRIPTION	MANUFACTURER	MODEL	CATALOG NUMBER	MOUNTING	DIMMING	LUMEN S (LM)	TEMP (K)	CRI	VOLTS (V)	WATTS (W)	NOTES
A	LED	2' X 4'	RECESSED TROFFER	H.E. WILLIAMS	LT-24	LT-24-L40B35-AF	RECESSED	10% (0-10V)	4000	3500	80+	277	33.7	
B	LED	d = 5"	DOWNLIGHT	SYLVANIA	65474	LEDRT56/R3C/900UD/9SC8	RECESSED	10% (0-10V)	900	3500	80+	277	12	
X	LED	-	EXIT SIGN, GREEN WITH WHITE	LITHONIA LIGHTING	UNIVERSAL MOUNT EXIT SIGN	LITHONIA EDG-W-#-GW-EL	UNIVERSAL	-	-	-	-	277	-	[EX]

PROVIDE ALL PARTS AND PIECES AS NEEDED FOR COMPLETE INSTALLATION. COORDINATE FINAL LOCATIONS, MOUNTING HEIGHTS, AND FIXTURE OPTIONS WITH ARCHITECT AND/OR TENANT. FIXTURES ON SCHEDULE MAY BE SHOWN FOR REFERENCE ONLY. VERIFY FIXTURE QUANTITIES WITH DRAWINGS PRIOR TO ORDERING.

* COORDINATE OPTION WITH ARCHITECT/TENANT.

PROVIDE EG FIXTURES WITH 90-MIN UL924 SWITCHABLE BATTERY BACKUP AND TEST SWITCH AND CIRCUIT TO LOCAL LIGHTING CIRCUIT AHEAD OF MANUAL CONTROL, BUT NOT SENSORS.

EG CONNECT SWITCH LEADS SO POWER FAILURE OVERRIDES SENSOR CONTROL.

[EX] PROVIDE EXIT SIGNS WITH 90-MIN BATTERY BACKUP AND CONNECT TO LOCAL LIGHTING CIRCUIT AHEAD OF CONTROL.

2015 IECC CONTROL MATRIX

SPACE TYPE	MAN. ON	MAN. OFF	MAN. DIM	OVRD. SW. (TC)	TC ON	TC OFF	OCC. SENS. ON	OCC. SENS. OFF	12PM-6AM DIM 30% DOWN	DAY- LGT. DIM	90-MIN BATT./ GENRTR.	EXT. PHOTO CELL	REMARKS:
PRIVATE OFFICE/EXAM ROOM	X	X	*	**	**	**	X	X					DUAL LEVEL CONTROL THIS AREA. ONLY 50% TO BE AUTO ON. SEPARATE SWITCH FROM OTHER ZONES
OPEN OFFICE AREA	X	X	*	**	**	**	X	X					
DAYLIGHT ZONES	X	X	*	**	**	**	X	X					
WALK IN COOLER/FREEZER	X	X	*	**	**	**	X	X		X			
TRAINING/CLASS/CONFERENCE/BREAK/COPYWORK/LAB/LOCKER	X	X	*	**	**	**	X	X					
STORAGE/CLOSETS/DATA	X	X	*	**	**	**	X	X					
HALLWAY/ST. LOBBIES	X	X	*	**	**	**	X	X					
ENTRY VESTIBULES/STAIRWELLS													NIGHTLIGHT BASED ON SAFETY/SECURITY EXCEPTION
RESTROOMS	X	X	*	**	**	**	X	X					
ELECTRICAL/MECHANICAL ROOMS	X	X	*	**	**	**	X	X					PROVIDE OVERRIDE SWITCH FOR SENSOR CONTROL
COMMERCIAL KITCHEN	X	X	*	**	**	**	X	X					
PHARMACY/PHIL. BINARY	X	X	*	**	**	**	X	X					DUAL LEVEL CONTROL THIS AREA. ONLY 50% TO BE AUTO ON. EACH AISLE INDEPENDENT
WAREHOUSE - AISLES	X	X	*	**	**	**	X	X					
WAREHOUSE - OPEN AREA	X	X	*	**	**	**	X	X					DUAL LEVEL CONTROL THIS AREA. ONLY 50% TO BE AUTO ON.
RETAIL/RESTAURANT SEATING	X	X	*	**	**	**	X	X					DUAL LEVEL CONTROL MINIMUM, UNLESS DIMMED
SPECIFIC APPLICATION CONTROL	X	X	*	**	**	**	X	X					MANUAL ONLY PER IECC
FACTORY/INDUSTRIAL	X	X	*	**	**	**	X	X					DUAL LEVEL CONTROL THIS AREA. ONLY 50% TO BE AUTO ON.
EXTERIOR SITE LIGHTING									X			X	
EXTERIOR FACADE/WALL PACKS							X	X				X	
LOADING DOCK							X	X				X	
EXTERIOR EG WALL PACKS							X	X			X	X	UL924/SWITCHED LEADS
INTERIOR EG NON-AL							X	X			X	X	UL924/SWITCHED LEADS. SENSOR IN PARALLEL WITH TC
INTERIOR EG NL (EXIT SIGNS / FIXTURES DESIGNATED NL)				**	**	**	X**	X**					NIGHTLIGHT BASED ON SAFETY/SECURITY EXCEPTION

NOTE: E.C. TO PROVIDE SHOP DRAWINGS AND SUBMITTALS THROUGH THE APPROPRIATE LIGHTING CONTROLS MANUFACTURER REPRESENTATIVE TO MEET THE ABOVE CONTROL INTENT.

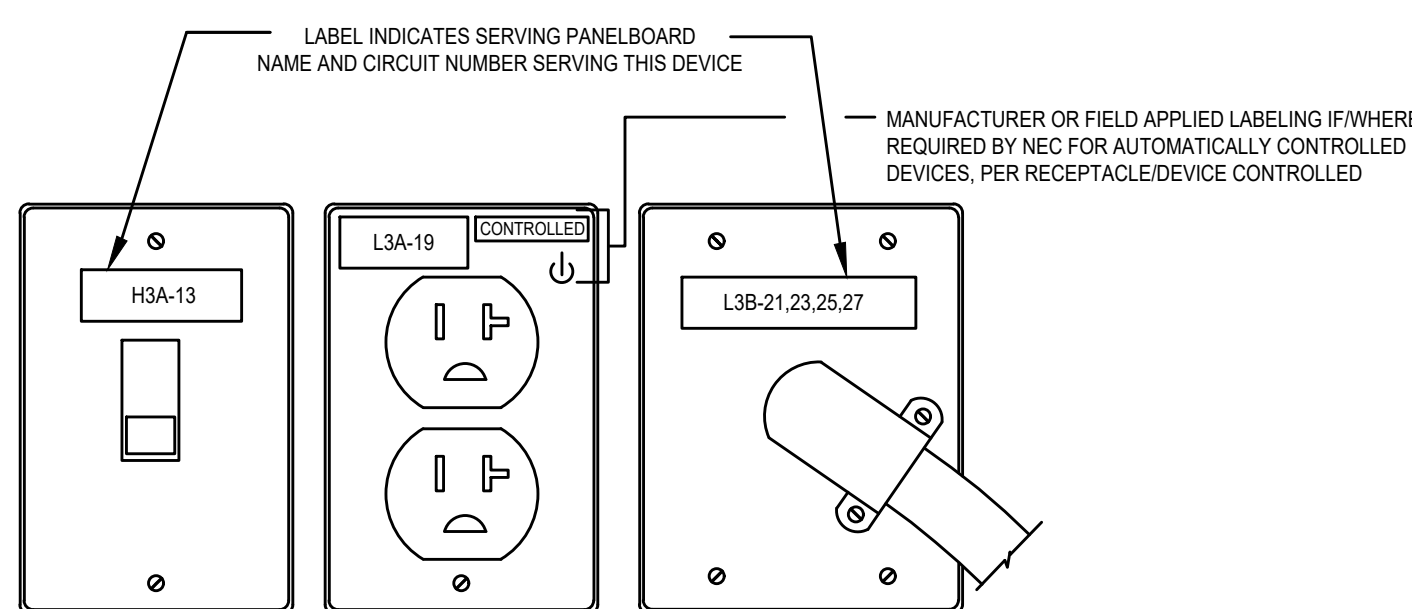
SEE OCCUPANCY/VACANCY/DAYLIGHT SENSOR SCHEDULE ON COVERSHEET FOR MORE DETAILS. PROVIDE ADDITIONAL POWER PACKS WHERE CONTROLLING MULTIPLE/ADDITIONAL VOLTAGES.

* MANUAL DIMMING WHERE REQUIRED BY PLANS.

** OVERRIDE SWITCH AND TIME CLOCK CONTROL WHERE/IF NOTED ON PLANS.

*** PROVIDE SECOND OCCUPANCY POWER PACK WHERE CONTROLLED IN ROOMS WITH VACANCY SENSORS.

Every circuit and circuit modification shall be legibly Identified as to it's clear, evident and specific purpose or use. The identification shall include an approved degree of detail that allows each circuit to be distinguished from all others. 2020 NEC 408.4



TYPICAL DEVICE LABELING DETAIL

SCALE: NONE

GENERAL NOTES:

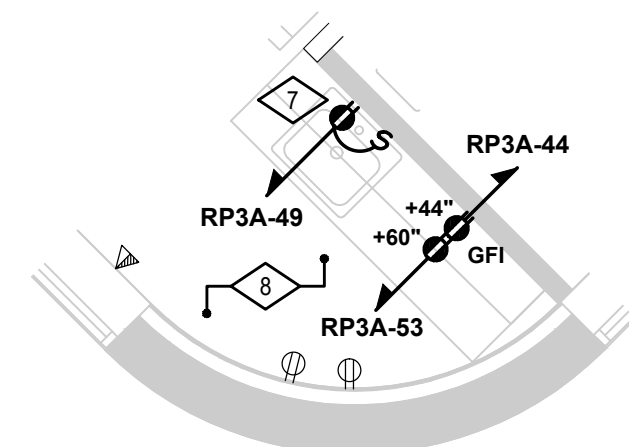
- E.C. TO PROVIDE DESCRIPTION OF USE/FUNCTION OF ANY/ALL CONTROLLED RECEPTACLES TO TENANT.

Install electrical connections per 2020 NEC 110.14, Identify disconnects per 2020 NEC 110.22 and provide working space around Electrical equipment per 2020 NEC 110.26

Provide Emergency Illumination Equipment That complies with 2020 NEC 700.12(F) or NEC 700.

Suspended Ceiling Systems and the Luminaires They support shall meet the requirements of 410.36(B) 2020 NEC

Wiring in air handling space must comply with 2020 NEC 300.22. Firestop penetrations per 2020 NEC 300.21. Secure and support equipment per 2020 NEC 300.11.



ENLARGED BREAK AREA

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



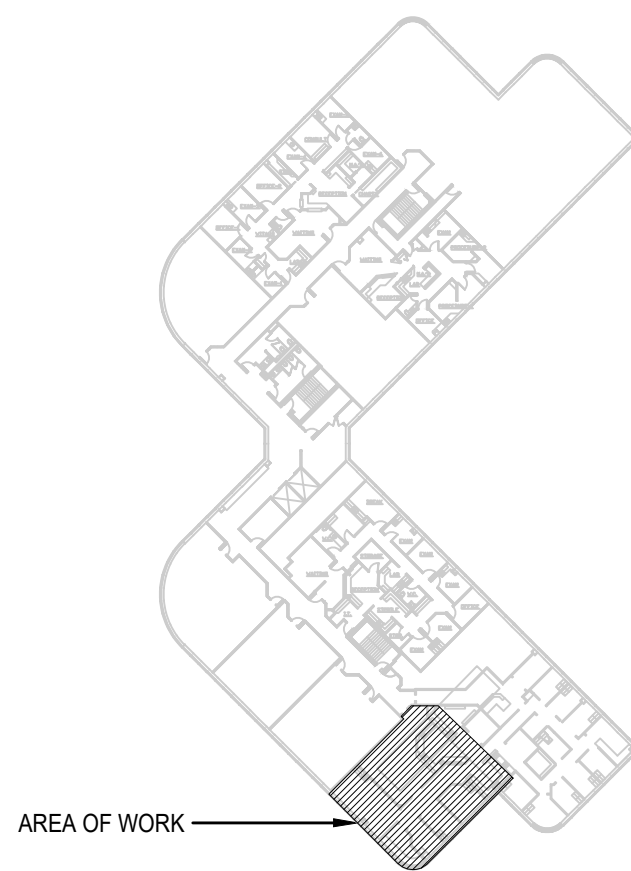
City of Aurora Building Division

Reviewed for Code Compliance

Approved as Noted: **Bobby McKinzie**

Date: **Sep 19, 2021**

2015 INTERNATIONAL CODES & 2020 NEC



KEY PLAN

POTOMAC MEDICAL PLAZA

1550 S Potomac Street
Aurora, CO 80012
Suite 320



QC Kinetix

Dates of Record

Project Start Date: 21 Jun 2021

Issued On: Issued For:

05 August 2021 Tenant's Review & Approval, and Construction

Sheet Contents

Project Team
Project Number
Sheet Mark

ELECTRICAL PLANS

RC.AW
21273

E.1

SUPPLIED FROM: PANEL "RP3"													
PANEL "RP3A" (EXISTING)				VOLTAGE 120		208 V		3 0		4 W			
FLUSH SURFACE		M.C.B. BUS		MLO		I.G. BAR		A.I.C.		MANF. FFE			
X		225 A CU				10 K				C.B. BOLTON			
TYPE	DESCRIPTION	BKR	CIR	LOAD (VOLT AMPS) / PHASE			CIR	BKR	DESCRIPTION	TYPE			
				A	B	C							
2	R RECEPTS-320B	20	43	540	1000		44	20	MICROWAVE-320B	K			
2	G WATER HEATER-320B	35	48		3000	540	46	20	RECEPTS-360	R			
2	M TRANSFER FAN-320B	20	47			80	48	20	RECEPT-RTU	R			
2	K DISPOSAL-320B	20	49	850	720		50	20	RECEPTS-350	R			
2	G SERVER-320B	20	51		800	720	52	20	RECEPTS-350	R			
2	K MICROWAVE-320B	20	53			1000	54	20	RECEPTS-360	R			
	R RECEPT-COMPUTER	20	58	360	360		56	20	RECEPTS-360	R			
	R RECEPTS-320	20	57		720	540	58	20	RECEPTS-360	R			
	R RECEPTS-360	20	59			720	500	60	EXISTING LOAD	G			
1	K REFRIGERATOR-320B	20	61	1000	1200		62	20	WATER HEATER-360	G			
	R RECEPTS-390	20	63		720	500	64	20	EXISTING LOAD	G			
	R RECEPTS-340	20	65			720	720	66	20	RECEPTS-300	R		
	R RECEPTS-300	20	67	720	540		68	20	RECEPTS-300	R			
	R RECEPTS-300	20	69		540	720	70	20	RECEPTS-300	R			
	R RECEPTS-340	20	71			540	720	72	20	RECEPTS-300	R		
	R RECEPTS-340	20	73	720	540		74	20	RECEPTS-330	R			
	R RECEPTS-390	20	75		540	500	76	20	EXISTING LOAD	G			
	R RECEPTS-320	20	77			360	390	78	20	RECEPTS-330	R		
	R RECEPTS-370	20	79	900	8020		80	70	PANEL RP3B	LRMG			
	R RECEPTS-370	20	81		540	8180	82	/		LRMG			
	R RECEPTS-370	20	83			720	7780	84	3P	LRG			
				17470	18560	14920							
	LOAD TYPE	CONNECTED KVA			TOTAL ALL PHASES			DEMAND KVA			TOTAL ALL PHASES		
		A	B	C	A	B	C	A	B	C			
	LIGHTING / EV CHARGERS	1.1	1.1	0.5	2.7	125%	1.4	1.4	0.6	3			
	RECEPTACLE (10KVA OR LESS)	3.3	3.3	3.3	10.0	100%	3.3	3.3	3.3	10			
	RECEPTACLE (OVER 10KVA)	7.3	7.8	8.4	23.5	50%	3.6	3.9	4.2	12			
	HVAC/MOTOR	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0			
	MOTOR (LARGEST)	0.5	0.5	0.1	1.1	125%	0.6	0.6	0.1	1			
	KITCHEN EQUIPMENT	2.9	0.0	1.0	3.9	80%	2.3	0.0	0.8	3			
	MISCELLANEOUS	2.4	5.8	1.7	9.9	160%	2.4	5.8	1.7	10			
		TOTAL KVA			17.5	18.6	14.9	51.0	TOTAL KVA	13.7	15.0	10.7	39
									TOTAL AMPS	113.8	125.4	88.9	109
	WITH GROUND BUS												
	LEGEND	L = LTG / EV R = RECEPTACLE M = HVAC / MOTOR K = KITCHEN G = MISCELLANEOUS											
		MAX PERCENT DIFFERENCE BETWEEN PHASES (A,B,C): 20%											
1	CIRCUIT REVISED THIS CONTRACT, LOAD ADDED TO PREVIOUSLY SPARE BREAKER.												
2	PROVIDE AND INSTALL NEW BREAKER TO MATCH PANEL MANUFACTURER AND AIC RATING, COORDINATE WITH MANUFACTURER'S REP.												

SUPPLIED FROM: BUSSED GUTTER VIA 200A FUSE											
PANEL "RP3" (EXISTING)				VOLTAGE 120 / 208 V		3 Ø		MANF. FFE		C.B. BOLTON	
FLUSH SURFACE X		M.C.B. BUS 225 A CU		FEED THRU RP3A		IG BAR A.I.C. 10 K					
TYPE	DESCRIPTION	BKR	CIR	LOAD (VOLT AMPS) / PHASE			CIR	BKR	DESCRIPTION	TYPE	
				A	B	C					
L	LOUNGE LIGHTING	20	1	640	360		2	20	RECEPTS-RESTROOM	R	
L	LOUNGE LIGHTING	20	3		640	360	4	20	RECEPTS	R	
L	LOBBY LIGHTING	20	5			640 360	6	20	RECEPTS-RESTROOM	R	
R	LOUNGE RECEPTS	20	7	360	320		8	20	LIGHTING-RESTROOM	L	
R	LOUNGE RECEPTS	20	9		360 320		10	20	LIGHTING-RESTROOM	L	
R	LOUNGE RECEPTS	20	11			360 180	12	20	RECEPT-HVAC	R	
R	LOUNGE RECEPTS	20	13	360	640		14	20	LIGHTING-ELECTRICAL RM	L	
R	LOUNGE RECEPTS	20	15		360 360		16	20	RECEPT-PHONE BOARD	R	
R	LOUNGE RECEPTS	20	17			360 720	18	20	RECEPTS-340	R	
G	EXISTING LOAD	20	19	500	500		20	20	RECEPTS-340	G	
R	RECEPTS-SOUTH HALL	20	21		540 540		22	20	RECEPTS-340	R	
R	RECEPTS-320	20	23			720 540	24	20	RECEPTS-340	R	
L	LIGHTING-370	20	25	640	500		26	20	RECEPTS-340	G	
G	RECEPTS-370	20	27		500 720		28	20	EXISTING LOAD	R	
L	LIGHTING-370	20	29			640 720	30	20	RECEPTS-320	R	
G	EXISTING LOAD	20	31	500	360		32	20	RECEPTS-370	R	
G	WATER HEATER	30	33		1200 600		34	20	EXISTING LOAD	G	
G	-	2P	35			1200 720	36	20	RECEPTS-370	R	
R	RECEPTS-310	20	37	720	720		38	20	RECEPTS-370	R	
R	RECEPTS-310	20	39		720 360		40	20	RECEPTS-370	R	
R	RECEPTS-310	20	41			720 500	42	20	EXISTING LOAD	G	
				RP3	7120	7480	6360				
				RP3A	17470	18560	14920				
				TOTAL	24590	26040	23300				
LOAD TYPE		CONNECTED KVA			TOTAL ALL PHASES		FACTOR	DEMAND KVA			TOTAL ALL PHASES
		A	B	C				A	B	C	
LIGHTING / EV CHARGERS		3.3	2.1	1.7	7.1	125%		4.2	2.6	2.2	9
RECEPTACLE (10KVA OR LESS)		3.3	3.3	3.3	10.0	100%		3.3	3.3	3.3	10
RECEPTACLE (OVER 10KVA)		10.2	12.2	13.8	36.1	50%		5.1	6.1	6.9	18
HVAC/MOTOR		0.0	0.0	0.0	0.0	100%		0.0	0.0	0.0	0
MOTOR (LARGEST)		0.5	0.5	0.1	1.1	125%		0.6	0.6	0.1	1
KITCHEN EQUIPMENT		2.9	0.0	1.0	3.9	80%		2.3	0.0	0.8	3
MISCELLANEOUS		4.4	8.0	3.4	15.8	100%		4.4	8.0	3.4	16
	TOTAL KVA	24.6	26.0	23.3	73.9			19.9	20.6	16.7	57
								TOTAL AMPS	165.8	171.7	138.9
											159
WITH GROUND BUS											
LEGEND		L = LTG / EV		R = RECEPTACLE		M = HVAC / MOTOR		K = KITCHEN		G = MISCELLANEOUS	
MAX PERCENT DIFFERENCE BETWEEN PHASES (A,B,C): 11%											
PANEL SHOWN FOR REFERENCE ONLY.											

3PH FAULT CALCULATION

POINT #1, AT THE 750KVA UTILITY TRANSFORMER;

$$Isc = 16,900 \text{ A}$$

POINT #2, AT THE MAIN DISCONNECT;

$$f = 1.73 \times \text{Length} \times Isc (\text{source}) / \text{L-L Volts} \times \text{Wire Factor}$$
$$f = 1.73 \times 125 \times 16900 \text{ A} / 480 \times 186942$$
$$f = 0.04$$

$$M = 1 / 1 + f = 1 / 1 + 0.04 = 0.96$$

$$Isc = M \times Isc (\text{source}) = 0.96 \times 16900 \text{ A} = 16,239 \text{ A}$$

POINT #3, THROUGH THE 225 KVA TRANSFORMER;

$$f = [I_p \times V_p \times 73 \times \%Z / 100,000 \times \text{KVA}]$$
$$f = [16239 \text{ A} \times 480 \text{ V} \times 1.73 \times 5.60]$$
$$f = 3.09$$

$$M = 1 / 1 + f = 1 / 1 + 3.09 = 0.24$$

$$Is = (V_p / V_s) \times M \times I_t = 480 \text{ V} / 208 \text{ V} \times 0.24 \times 16239 \text{ A}$$
$$Is = 9,151 \text{ A}$$

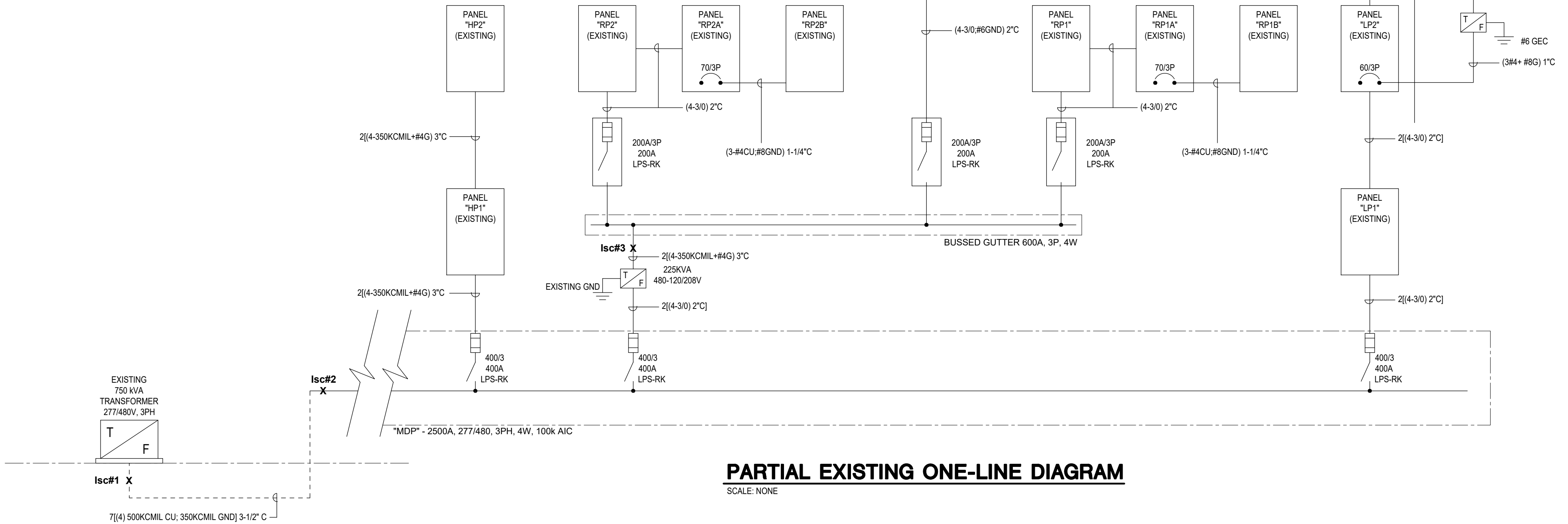
Every circuit and circuit modification shall be legibly identified as to it's clear, evident and specific purpose or use. The identification shall include an approved degree of detail that allows each circuit to be distinguished from all others. 2020 NEC 408.4

Service Equipment shall be permanently And legibly marked to show the available Fault current and date. 2020 NEC 110.24(A)(B)

SUPPLIED FROM: RP3A

PANEL "RP3B" (EXISTING)		VOLTAGE 120 / 208 V 3 0		MLO I.G. BAR A.I.C. 10 K		MANF. FFB C.B. BOLTON	
FLUSH SURFACE X		M.C.B. BUS 225 A CU					

TYPE	DESCRIPTION	BKR	CIR	LOAD (VOLT AMPS) / PHASE			CIR	BKR	DESCRIPTION	TYPE		
				A	B	C						
M	TREADMILL-360	20	1	500	360		2	20	RECEPTS-330 BREAK	R		
M	TREADMILL-360	20	3		500	360	4	20	RECEPTS-330 BREAK	R		
R	RECEPTS-360	20	5				6	20	RECEPTS-330	R		
L	LIGHTS- ROOF	20	7	460	720		8	20	RECEPTS-330	R		
L	LIGHTS- ROOF	20	9		460	540	10	20	RECEPTS-330	R		
L	LIGHTS- ROOF	20	11				12	20	RECEPTS-330	R		
L	LIGHTS- S. CORRIDOR	20	13	640	540		14	20	RECEPTS-330	R		
L	LIGHTS- N. CORRIDOR	20	15		640	720	16	20	RECEPTS-330	R		
R	RECEPTS-340	20	17				18	20	RECEPTS-330	R		
R	RECEPTS-360	20	19	360	540		20	20	RECEPTS-330	R		
R	RECEPTS-360	20	21		360	720	22	20	RECEPTS-330	R		
R	RECEPTS-320B	20	23				24	30	WATER HEATER-330	G		
R	RECEPTS-375	20	25	540	1200		26	2P	EXISTING LOAD	G		
R	RECEPTS-375	20	27		540	500	28	20	EXISTING LOAD	G		
R	RECEPTS-375	20	29				30	20	RECEPTS-365	R		
R	RECEPTS-375	20	31	720	720		32	20	RECEPTS-330	R		
R	RECEPTS-375	20	33		720	500	34	20	EXISTING LOAD	G		
R	RECEPTS-375	20	35				36	20	RECEPTS-360	R		
R	RECEPTS-380	20	37	360	360		38	20	RECEPTS-380	R		
R	RECEPTS-380	20	39		720	900	40	20	RECEPTS-320B	R		
R	RECEPTS-380	20	41				42	20	RECEPTS-380	R		
				8020	8180	7780						
LOAD TYPE				CONNECTED KVA			TOTAL ALL PHASES	DEMAND KVA			TOTAL ALL PHASES	
				A	B	C		A	B	C		
LIGHTING / EV CHARGERS				1.1	1.1	0.5	2.7	125%	1.4	1.4	0.6	3
RECEPTACLE (10KVA OR LESS)				3.3	3.3	3.3	10.0	100%	3.3	3.3	3.3	10
RECEPTACLE (OVER 10KVA)				1.9	2.3	2.8	6.9	50%	0.9	1.1	1.4	3
HVAC/MOTOR				0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0
MOTOR (LARGEST)				0.5	0.5	0.0	1.0	125%	0.6	0.6	0.0	1
KITCHEN EQUIPMENT				0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0
MISCELLANEOUS				1.2	1.0	1.2	3.4	100%	1.2	1.0	1.2	3
TOTAL KVA				8.0	8.2	7.8	24.0	TOTAL KVA	7.5	6.5	6.5	21
								TOTAL AMPS	62.3	62.1	54.2	59
WITH GROUND BUS												
LEGEND				L = LTG / EV R = RECEPTACLE M = HVAC / MOTOR K = KITCHEN G = MISCELLANEOUS								
				MAX PERCENT DIFFERENCE BETWEEN PHASES (A,B,C): 5%								
1 CIRCUIT REVISED THIS CONTRACT, LOAD ADDED TO PREVIOUSLY SPARE BREAKER.												
2 PROVIDE AND INSTALL NEW BREAKER TO MATCH PANEL MANUFACTURER AND AIC RATING, COORDINATE WITH MANUFACTURER'S REP.												



PARTIAL EXISTING ONE-LINE DIAGRAM

SCALE: NONE

POTOMAC MEDICAL PLAZA

1550 S Potomac Street
Aurora, CO 80012
Suite 320



QC Kinetix

Dates of Record

Project Start Date: 21 Jun 2021

Issued On: 05 August 2021
Issued For: Tenant's Review & Approval, and Construction

Sheet Contents ONE-LINE DIAGRAM

Project Team: RC,AW
Project Number: 21273
Sheet Mark: E.2



COMcheck Software Version 4.1.5.1

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2015 IECC
Project Title: QC Kinetix
Project Type: Alteration

Construction Site:
1550 S. Potomac St.
Suite 320
Aurora, CO 80012

Owner/Agent:
Tenant Planning Services
1660 Lincoln St.
Suite 100
Denver, CO 80264
303.861.4800

Designer/Contractor:
Robert Clark
Corey Electrical Engineering Inc.
7822 S. Wheeling Ct.
Suite B
Englewood, CO 80112
303.696.1257
rclark@coreyeng.com

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts (B X C)
1-Common Space Types:Office - Open Plan	1672	0.98	1639
Total Allowed Watts =			1639

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Common Space Types:Office - Open Plan (1672 sq.ft.)				
LED 1: LED Linear 33W:	1	25	32	792
LED 2: LED A Lamp 12W	1	7	12	84
Total Proposed Watts =				876

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2015 IECC requirements in COMcheck Version 4.1.5.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Robert Clark, Project Engineer
Name - Title Signature Date 08/27/2021

Project Title: QC Kinetix
Data filename: F:\DATA\ACAD\21 Archives\21200 - 21299\21273 QC Kinetix Suite 320\Design\IECC-Comcheck\21273.cck
Report date: 09/01/21
Page 1 of 5



COMcheck Software Version 4.1.5.1

Inspection Checklist

Energy Code: 2015 IECC

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: QC Kinetix
Data filename: F:\DATA\ACAD\21 Archives\21200 - 21299\21273 QC Kinetix Suite 320\Design\IECC-Comcheck\21273.cck
Report date: 09/01/21
Page 2 of 5

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.1 [EL15] ¹	Lighting controls installed to uniformly reduce the lighting load by at least 50%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.1 [EL18] ¹	Occupancy sensors installed in required spaces.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.1, C405.2.2, 3 [EL23] ²	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.2, 1 [EL22] ²	Automatic controls to shut off all building lighting installed in all buildings.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.3 [EL16] ²	Daylight zones provided with individual controls that control the lights independent of general area lighting.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.3, 1, C405.2.3, 2 [EL20] ¹	Primary sidelighted areas are equipped with required lighting controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.3, C405.2.3, 1, C405.2.3, 3 [EL21] ¹	Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.4 [EL4] ¹	Separate lighting control devices for specific uses installed per approved lighting plans.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.4 [EL8] ¹	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.3 [EL6] ¹	Exit signs do not exceed 5 watts per face.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: QC Kinetix
Data filename: F:\DATA\ACAD\21 Archives\21200 - 21299\21273 QC Kinetix Suite 320\Design\IECC-Comcheck\21273.cck
Report date: 09/01/21
Page 3 of 5

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5, 2 [F117] ³	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.4.1 [F118] ¹	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Interior Lighting fixture schedule for values.
C408.2.5, 1 [F116] ³	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C408.3 [F133] ¹	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: QC Kinetix
Data filename: F:\DATA\ACAD\21 Archives\21200 - 21299\21273 QC Kinetix Suite 320\Design\IECC-Comcheck\21273.cck
Report date: 09/01/21
Page 4 of 5



City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Bobby McKinzie
Date: Sep 19, 2021
2015 INTERNATIONAL CODES & 2020 NEC



NEC: 2020
IECC: 2015

POTOMAC MEDICAL

PLAZA

1550 S Potomac Street
Aurora, CO 80012

Suite 320



QC Kinetix

Dates of Record
Project Start Date: 21 Jun 2021

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05 August 2021 Tenant's Review & Approval;
and Construction

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Contents

COMCHECK

Project Team
Project Number
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21273

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