

GENERAL NOTES

GENERAL

- WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.

WIRING & RACEWAY:

- THE DRAWINGS SHOW THE GENERAL LAYOUT AND TYPICAL DETAILS. PROVIDE COMPLETE SYSTEMS. DRAWINGS ARE BASED ON THE SPECIFIED EQUIPMENT, RACEWAY LAYOUTS, BOXES, AND WIRING OF THE SYSTEMS ARE SUBJECT TO APPROVED SHOP DRAWINGS.
- ENSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT FINAL INSTALLATION SHALL SATISFY THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.
- LOCATIONS OF OUTLETS, SWITCHES, APPLIANCES, ETC. AS SHOWN ON ELECTRICAL PLANS ARE APPROXIMATE. COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS AND DETAILS, AND WITH JOB CONDITIONS. INSTALL SWITCHES WITH "OFF" POSITION DOWN. INSTALL RECEPTACLES WITH GROUNDING POLE IN THE UP POSITION FOR VERTICAL MOUNTING AND AT RIGHT FOR HORIZONTAL MOUNTING.
- LOCATE AND INSTALL ELECTRICAL EQUIPMENT, JUNCTION AND PULL BOXES, PANELBOARDS, SWITCHES, CONTROLS, AND OTHER APPARATUS REQUIRING MAINTENANCE, INSPECTION, AND OPERATION SO AS TO BE READILY ACCESSIBLE.

RACEWAY INSTALLATION:

- IN ALL ARCHITECTURALLY FINISHED SPACES, CONDUITS AND CABLES SHALL BE RUN CONCEALED IN HUNG OR FURRED CEILINGS, SLABS, MASONRY, AND PARTITIONS UNLESS OTHERWISE INDICATED. SAW CUTTING AND FINISHED PATCHING SHALL BE REQUIRED IN EXISTING SLABS AND MASONRY WALLS. IN UNFINISHED SPACES, RACEWAYS MAY BE RUN EXPOSED.
- UNLESS OTHERWISE INDICATED, EXACT ROUTING OF RACEWAYS SHALL BE DETERMINED BY THE CONTRACTOR TO SUIT PROJECT REQUIREMENTS AND FIELD CONDITIONS.
- PROVIDE SEPARATE RACEWAYS, JUNCTION BOXES, PULL BOXES AND WIREWAYS FOR ALL EMERGENCY SYSTEM WIRING.

WIRING INSTALLATION:

- DO NOT USE WIRE SMALLER THAN NO. 12 AWG FOR ANY POWER OR LIGHTING CIRCUIT. USE LARGER SIZES WHERE INDICATED, AS REQUIRED BY CODES, AND AS FOLLOWS:

30 AMPERE CIRCUIT: NO. 10
40 AMPERE CIRCUIT: NO. 8
50 AMPERE CIRCUIT: NO. 6
60 AMPERE CIRCUIT: NO. 6

- MINIMUM HOMERUN AND BRANCH CIRCUIT WIRING SIZES AND MAXIMUM HOMERUN CONDUIT FILL FOR 120 VOLT, 20 AMPERE CIRCUITS SHALL BE AS FOLLOWS:

LENGTH	CIRCUIT WIRE SIZE	HOMERUN WIRE SIZE	CONDUIT SIZE (Ø WIRE/CONDUIT)
0' TO 50'	#12	#12	3/4"
51' TO 100'	#12	#10	3/4"
101' TO 200'	#12	#8	1"

GREATER THAN 200' - REQUEST DIRECTION FROM ARCHITECT.

NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN CONDUIT.

- HOMERUNS AND BRANCH CIRCUIT WIRING FOR 277 VOLT, 20 AMPERE CIRCUITS SHALL BE AS FOLLOWS:

LENGTH	CIRCUIT WIRE SIZE	HOMERUN WIRE SIZE	CONDUIT SIZE (Ø WIRE/CONDUIT)
0' TO 100'	#12	#12	3/4"
100' TO 200'	#12	#10	3/4"

GREATER THAN 200' - REQUEST DIRECTION FROM ARCHITECT.

NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN CONDUIT.

- WHERE GREATER THAN THREE (3) CURRENT-CARRYING CONDUCTORS ARE INSTALLED IN ANY ONE CONDUIT OR CABLE, CONDUCTORS MUST BE DERATED AND SIZES INCREASED, IF NEEDED, TO ACCOMMODATE CONDUCTOR DERATING AS REQUIRED BY NEC ARTICLE 310.

- CONDUCTORS SHALL BE COMPLETELY INSTALLED AND CONNECTED. PROVIDE ALL TERMINALS, LUGS, AND CONNECTORS TO SUIT THE APPLICATION, AND IN COMPLIANCE WITH EQUIPMENT MANUFACTURERS' RECOMMENDATIONS.

- UNDER NO CIRCUMSTANCES SHALL ANY SWITCH OR CIRCUIT BREAKER BREAK A NEUTRAL CONDUCTOR.

- THE CIRCUIT NUMBERS INDICATED ON THE DRAWINGS ARE INTENDED AS A GUIDE FOR PROPER CONNECTION OF CIRCUITS AT PANELS. HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE FINAL CIRCUITING WORK FULFILLS THE FOLLOWING CONDITIONS:

- LOADS ON PANEL BUSSES SHALL BE PHASE-BALANCED AS EVENLY AS POSSIBLE.
- PROVIDE SEPARATE NEUTRALS FOR EACH CIRCUIT. WHERE MULTIPLE CIRCUITS ARE INSTALLED IN THE SAME RACEWAY OR ENCLOSURE, IDENTIFY NEUTRALS WITH CORRESPONDING BRANCH CIRCUIT PHASE CONDUCTOR NUMBERS.

GROUNDING INSTALLATION:

- EQUIPMENT GROUNDING

- INSTALL AN INSULATED GROUND CONDUCTOR, RUN IN THE RACEWAY WITH THE PHASE CONDUCTORS, FOR EACH FEEDER SERVING PANELBOARDS, LIGHTING DIMMER BOARDS, MOTOR CONTROL CENTERS, MOTORS, EQUIPMENT AND APPLIANCES UNLESS OTHERWISE NOTED.

- INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL CONDUIT RUNS CONTAINING SECTIONS OF FLEXIBLE CONDUIT UNLESS OTHERWISE NOTED.

- INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL BRANCH CIRCUIT RACEWAYS OR CABLES UNLESS OTHERWISE NOTED.

RACEWAYS FOR TELECOMMUNICATION SYSTEMS:

- PROVIDE EMPTY CONDUIT SYSTEMS FOR TELECOMMUNICATION WORK, COMPLETE WITH PULL BOXES, OUTLET BOXES, AND CONDUIT AS INDICATED ON THE DRAWINGS.
- PROVIDE MINIMUM INSIDE BENDING RADIUS OF 10 TIMES CONDUIT INSIDE DIAMETER FOR TELECOMMUNICATIONS RACEWAYS.
- WHEN COMPLETED THE CONDUIT SYSTEMS SHALL BE READY FOR THE INSTALLATION OF WIRING AND EQUIPMENT.
- FROM EACH OUTLET PROVIDE A 1" EMPTY EMT CONDUIT ROUTED INTO THE CEILING CAVITY OR TO THE CLOSEST TELECOMMUNICATIONS CLOSET. PROVIDE A DRAG LINE IN EACH RUN AND TERMINATE IN A BUSHED ELBOW.

MECHANICAL EQUIPMENT WIRING:

- UNLESS OTHERWISE INDICATED OR SPECIFIED HEREIN, ALL MOTORS, MOTOR STARTERS, MOTOR CONTROLLERS, AND ASSOCIATED CONTROL DEVICES ARE FURNISHED UNDER OTHER DIVISIONS AND INSTALLED UNDER THIS DIVISION. COORDINATE INSTALLATION AND LOCATIONS WITH OTHER DIVISION CONTRACTORS.
- POWER WIRING FROM THE INDICATED SOURCE TO THE STARTER/CONTROLLER/DRIVE UNIT, AND FROM THE STARTER/CONTROLLER UNIT TO THE MOTOR, INCLUDING ANY LOCAL DISCONNECT SWITCHES PROVIDED AND INSTALLED BY THIS DIVISION, AND ALL ASSOCIATED LUGS, TERMINALS, AND CONNECTIONS, IS THE WORK OF THIS DIVISION.
- CONTROL CIRCUIT WIRING IS GENERALLY FURNISHED AND INSTALLED UNDER OTHER DIVISIONS, EXCEPT THAT ANY SUCH WIRING SHOWN ON ELECTRICAL DRAWINGS IS WORK OF THIS DIVISION.
- COOPERATE AND COORDINATE WITH THE OTHER TRADES IN THE INSTALLATION, CONNECTION, AND TESTING OF MECHANICAL EQUIPMENT. PERFORM WORK OF THIS SECTION IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS' INSTRUCTIONS.

COORDINATION DRAWINGS:

- DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.
- AFTER SHEET METAL AND PLUMBING SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER "REVIEWED" OR "FURNISH AS CORRECTED" PRIOR TO BEING USED AS BASIS FOR COORDINATION DRAWINGS.

- AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THEIR WORK:

- MECHANICAL SHEET METAL
- PLUMBING PIPING
- MECHANICAL PIPING
- ELECTRICAL WORK

- AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWING AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING IS RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COSTS INCURRED BY OTHER TRADES.

- THE ARCHITECT AND ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT INDIVIDUAL PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.

- SUBMIT FINAL SIGNED COORDINATION DRAWING TO ENGINEER FOR REVIEW. ENGINEER WILL REVIEW COORDINATION DRAWINGS FOR GENERAL ARRANGEMENT AND FOR NOTED CONFLICTS ONLY. SPECIFIC INSTALLATION REQUIREMENTS WILL BE REVIEWED ONLY IN INDIVIDUAL TRADE SHOP DRAWINGS.

- ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES WHICH IS DEEMED TO BE IN CONFLICT WITH COORDINATION DRAWINGS SHALL BE REMOVED AND RE-INSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.

- EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUB-CONTRACTORS.

- THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO CONFLICTS WILL NOT BEAR ADDITIONAL COST.

AS BUILT DRAWINGS

- PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.

- PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:

- INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND WORK INSTALLED.
- EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
- APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
- CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
- SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.
- SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

ELECTRICAL DRAWING LIST

DRAWING NUMBER	DRAWING DESCRIPTION
E-001	COVER SHEET - ELECTRICAL
E-002	LIGHTING FIXTURE SCHEDULE - ELECTRICAL
ED-102	PARTIAL SECOND FLOOR DEMOLITION PLAN - ELECTRICAL
E-101	PARTIAL FIRST FLOOR PLAN - ELECTRICAL
E-102	PARTIAL SECOND FLOOR PLAN - ELECTRICAL
E-202	PARTIAL SECOND FLOOR RCP - LIGHTING
E-501	PANEL SCHEDULES - ELECTRICAL
E-601	DETAILS - ELECTRICAL
E-602	DETAILS - ELECTRICAL
E-701	SPECIFICATIONS - ELECTRICAL

ELECTRICAL ABBREVIATIONS

A	AMPERES
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
C/B	CIRCUIT BREAKER
CKT	CIRCUIT
COP	COPIER
E	EXISTING
E.C.	ELECTRICAL CONTRACTOR
EM	EMERGENCY
ER	EXISTING RELOCATED
ETBR	EXISTING TO BE RELOCATED
ETR	EXISTING TO REMAIN
FBO	FURNISHED BY OTHERS
G	GROUND
HD	HAND DRYER
JB	JUNCTION BOX
MB	MAIN BREAKER
MCB	MAIN CIRCUIT BREAKER
MD	MOTORIZED DOOR
MLO	MAIN LUG ONLY
MTD	MOUNTED
OHD	OVERHEAD
PNL	PANEL
TP	TRAP PRIMER
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLTS
VA	VOLT-AMPERES

ELECTRICAL SYMBOLS

 #	LIGHTING FIXTURE, LETTER INDICATES TYPE, # INDICATED CIRCUIT (TYPICAL)
 #	LIGHTING FIXTURE WITH EMERGENCY BATTERY
 S ₁	SINGLE POLE SWITCH, LETTER INDICATES LIGHTING ZONE (TYPICAL)
 S _M	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD
 S _{LV}	LOW VOLTAGE SWITCH
 S _D	LOW VOLTAGE DIMMER SWITCH
 S _{OS}	WALL MOUNTED OCCUPANCY SENSOR WITH MANUAL OVERRIDE
 S _{VS}	WALL MOUNTED VACANCY SENSOR WITH MANUAL OVERRIDE
 S _{OSD}	WALL MOUNTED OCCUPANCY SENSOR WITH MANUAL OVERRIDE AND DIMMING
 S _{VSD}	WALL MOUNTED VACANCY SENSOR WITH MANUAL OVERRIDE AND DIMMING
 	CEILING MOUNTED DUAL TECHNOLOGY BI-DIRECTIONAL VACANCY SENSOR
 	CEILING MOUNTED DUAL TECHNOLOGY BI-DIRECTIONAL OCCUPANCY SENSOR
 	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
 	WALL MOUNTED DUAL TECHNOLOGY VACANCY SENSOR
 	BYPASS RELAY
 	DIMMING BYPASS RELAY
 	WALL MOUNTED JUNCTION BOX
 	CEILING MOUNTED QUAD RECEPTACLE
 	CEILING MOUNTED JUNCTION BOX FOR MOTORIZED DOOR OPERATOR
 	DUPLEX CONVENIENCE RECEPTACLE - 18" AFF U.O.N.
 	QUAD CONVENIENCE RECEPTACLE - 18" AFF U.O.N.
 	DUPLEX CONVENIENCE RECEPTACLE - GROUND FAULT INTERRUPTING - 18" AFF U.O.N.
 	DUPLEX CONVENIENCE RECEPTACLE - GROUND FAULT INTERRUPTING - MOUNTED ABOVE COUNTERTOP
 	DUPLEX TELEVISION RECEPTACLE - 72" AFF U.O.N.
 	DUPLEX REFRIGERATOR RECEPTACLE - 48" AFF U.O.N.
 	SPECIAL RECEPTACLE CONFIGURATION - SEE NEMA #
 	PLUG/MOLD SURFACE RACEWAY
 	NON-FUSED DISCONNECT
 	FUSED BUS PLUG, RATING / FUSING
 	EMERGENCY POWER OFF BUTTON
 	FIRE ALARM PULL STATION - 48" AFF U.O.N.
 	FIRE ALARM HORN/STROBE - 80" AFF U.O.N.
 	FIRE ALARM STROBE LIGHT - 80" AFF U.O.N.
 	SMOKE DETECTOR
 	HEAT DETECTOR, NUMBER INDICATES TEMPERATURE IN FAHRENHEIT
 	FIRE ALARM CONTROL PANEL
 	SURFACE MTD PANELBOARD AND CLEARANCE

X/#  --- BRANCH CIRCUIT HOMERUN (X = PANEL BOARD, # = CIRCUIT NO.)

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NUMBER	DATE	DESCRIPTION

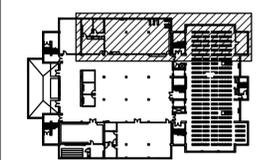

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KEY PLAN
NOT TO SCALE

CCSU PROJECT No.:	22-87
DPW PROJECT No.:	BI-RC-397
DRAWN BY:	RM
DATE:	8/5/2016
CAD FILE:	

COVER SHEET -
ELECTRICAL

BUILDING No.:	DRAWING No.:
22	E-001

DEMOLITION AND REMOVALS

- THE EXISTING FACILITY WILL BE OCCUPIED AND IN OPERATION DURING THE PERFORMANCE OF THE WORK.
- WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING FEEDER OR BRANCH CIRCUIT SUPPLYING OCCUPIED FACILITIES, CONFER WITH THE OWNER, AND SCHEDULE A MUTUALLY AGREEABLE PERIOD OF INTERRUPTION.
- WHERE REPLACEMENT, RELOCATION OR MODIFICATION OF EXISTING EQUIPMENT IS INDICATED, PROVIDE AND MAINTAIN ALL TEMPORARY FEEDERS, CONNECTIONS, CIRCUIT PROTECTION, AND ANY OTHER MATERIALS AND APPURTENANCES REQUIRED TO MAINTAIN SERVICES TO OCCUPIED AREAS.
- NO WORK SHALL BE LEFT INCOMPLETE, NOR ANY HAZARDOUS SITUATION CREATED, WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. AT NO TIME SHALL THE WORK INTERFERE WITH OR CUT OFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S PRIOR WRITTEN PERMISSION.
- THE OWNER RESERVES THE RIGHT TO OPERATE ALL EXISTING ELECTRICAL AND MECHANICAL EQUIPMENT NOT INCLUDED IN THIS WORK, AND TO PERFORM ALL REQUIRED SERVICING AND REPAIRS TO SAME, AT ALL TIMES.
- IT IS REQUIRED THAT THE WORK INDICATED AND/OR SPECIFIED SHALL BE CARRIED OUT WITH A MINIMUM OF INTERFERENCE TO THE ESTABLISHED OPERATIONS OF THE BUILDING.
- REMOVE, ABANDON, REROUTE, OR RELOCATE ANY CONDUIT, WIRING, LIGHTING FIXTURES, OUTLETS, AND OTHER ELECTRICAL ITEMS, WHICH ARE LAID BARE IN THE COURSE OF, OR INTERFERE WITH, THE ALTERATIONS. REMOVE ALL EXPOSED OUTLETS, CONDUIT, AND BRANCH CIRCUIT WORK, WHICH INTERFERE WITH THE ALTERATIONS.
- IT IS THE INTENTION OF THESE SPECIFICATIONS TO PROVIDE FOR THE CONTINUANCE OF ALL ELECTRICAL SERVICES PRESENTLY INSTALLED IN THE UNALTERED AREAS. PROVIDE ALL CONDUIT, WIRING, AND DEVICES NECESSARY TO MAINTAIN SERVICES TO THESE AREAS.
- COMPARE THE PLANS WITH THE EXISTING CONDITIONS TO DETERMINE THE AMOUNT OF WORK AFFECTED. REMOVE ALL UNUSED EXPOSED CIRCUIT WORK, OUTLETS, FIXTURES AND THE LIKE NOT REQUIRED BY THE ALTERATIONS.
- ALL MATERIALS REQUIRED TO BE REMOVED AND NOT REINSTALLED UNDER THIS DIVISION OF THE WORK, UNLESS OTHERWISE INDICATED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE REMOVED FROM THE SITE.
- WHERE FEEDERS AND BRANCH CIRCUITS OR DEVICES AND EQUIPMENT ARE INDICATED TO BE REMOVED, CONDUCTORS AND CABLES SHALL BE COMPLETELY REMOVED BACK TO THEIR SOURCE. EXPOSED OR ACCESSIBLE CONDUITS SHALL BE REMOVED COMPLETELY. CONDUITS EMBEDDED IN CONCRETE OR MASONRY SHALL BE CUT OFF FLUSH AND THE SURFACE PATCHED SMOOTH AND LEVEL.
- REMOVED MATERIALS SHALL BE DISPOSED OF USING LICENSED CARTING SERVICE.
- HAZARDOUS MATERIALS - CONTAINING PCB'S (BALLASTS), AND THE LIKE SHALL BE DISPOSED OF BY AN EPA APPROVED, LICENSED DISPOSAL SERVICE. CONTRACTOR SHALL OBTAIN AND HAVE ON FILE, AFFIDAVIT, AND RECEIPTS STATING HOW AND WHERE THE WASTE WAS DISPOSED OF OR CONVERTED.
- CONTRACTOR SHALL REMOVE ALL ELECTRICAL EQUIPMENT IN OR ON WALLS THAT ARE TO BE REMOVED - MAINTAIN CONTINUITY OF ALL EXISTING BRANCH CIRCUITRY TO EXISTING ROOMS NOT BEING RENOVATED. REWIRE ALL EXISTING BRANCH CIRCUITS (THAT ARE TO REMAIN) AS REQUIRED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR WALLS BEING REMOVED - REFER TO CONSTRUCTION SCHEDULE FOR TIME DELAY.
- CONDUIT IN EXISTING OR NEW CEILINGS THAT IS NOT INTENDED FOR REUSE SHALL BE REMOVED BACK TO THE PANEL FROM WHICH IT ORIGINATES.
- CONDUCTORS THAT ARE NOT DEEMED REUSABLE SHALL BE REMOVED BACK TO THE NEAREST JUNCTION BOX. WHERE THE ENTIRE CIRCUIT IS TO BE REMOVED, THE CONDUCTORS SHALL BE REMOVED BACK TO THE PANELBOARD FROM WHICH THEY ORIGINATE.
- OUTAGES OF EXISTING ELECTRICAL (LIGHTING, POWER, AND SIGNAL) SYSTEMS NECESSITATED BY WORK OF ALL TRADES SHALL BE IN ACCORDANCE WITH FIELD SCHEDULES BY THE GENERAL CONTRACTOR AND OWNER - INCLUDE ALL ELECTRIC WORK OVERTIME AND SUPERVISION TO COMPLY - CONTRACTOR SHALL OBTAIN OWNER'S GENERAL CONTRACTOR'S APPROVAL PRIOR TO DISRUPTING EXISTING ELECTRICAL SYSTEM.
- CONTRACTOR TO MAINTAIN CONTINUITY AND ACCESSIBILITY OF ALL EXISTING SYSTEMS AND SYSTEM EQUIPMENT FEEDERS WHICH MAY BE DISRUPTED FOR WORK OF ANY TRADE.
- CONTRACTOR TO MAINTAIN CONTINUITY AND ACCESSIBILITY OF ALL EXISTING ELECTRICAL (POWER, LIGHTING, AND SIGNAL) SYSTEMS, EQUIPMENT FEEDERS AND BRANCH CIRCUITS ON FLOORS OR AREAS THAT ARE NOT AFFECTED BY DEMOLITION OR NEW CONSTRUCTION - REFER TO CONSTRUCTION SCHEDULE FOR ADDITIONAL INFORMATION.
- ANY EXISTING ELECTRICAL WORK WHICH IS PULLED OUT OR CUT AWAY SHALL BE REMOVED FROM THE SITE AS DIRECTED BY THE GENERAL CONTRACTOR AND THE OWNER.
- EXISTING ELECTRICAL EQUIPMENTS WHICH IS NOT TO BE REUSED SHALL BE REMOVED FROM DRYWALL PARTITIONS. ANY OPENING IN EXISTING PARTITIONS LEFT BY REMOVAL OF EXISTING ELECTRICAL EQUIPMENT SHALL BE PATCHED BY THIS CONTRACTOR WITH MATERIALS TO MATCH EXISTING.
- FOR PURPOSES OF THE CONTRACT, WHAT IS NOTED OR SHOWN ON DRAWINGS INDICATES THE SCOPE OF WORK REQUIRED AND QUALITY OF MATERIALS REQUIRED.
- CONTRACTOR TO EXAMINE ALL CONTRACT DOCUMENTS AND PERFORM ALL DEMOLITION BOTH FOR AREAS BEING RENOVATED AND FOR AREAS WHICH MUST BE REWORKED TO PERMIT THE INSTALLATION OF WORK BY THE VARIOUS TRADES.
- CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE EXTENT OF DEMOLITION AND REMOVALS PRIOR TO THE SUBMISSION OF BIDS. NO CONSIDERATION SHALL BE GIVEN FOR FAILURE TO VISIT THE SITE.
- CONTRACTOR SHALL UTILIZE ALL THE BREAKERS IN THE EXISTING PANELS THAT BECOME AVAILABLE WHEN BRANCH CIRCUITS ASSOCIATED WITH THEM ARE DISCONNECTED AND REMOVED DUE TO DEMOLITION OF THE ELECTRICAL WORK.

LIGHT FIXTURE NOTES

- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS AND INTERIOR ELEVATIONS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHT FIXTURES.
- THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND/OR COORDINATE ALL FIXTURE TRIMS PRIOR TO PURCHASE OF FIXTURES.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL LIGHT FIXTURES COMPLETE WITH MOUNTING HARDWARE AND LAMPS.

LIGHTING CONTROL NOTES

- WHERE MULTIPLE OCCUPANCY/VACANCY SENSORS ARE INDICATED IN A SPACE, THE DETECTION OF PRESENCE BY ANY OCCUPANCY/VACANCY SENSOR SHALL ENERGIZE ALL LIGHTING FIXTURES WITHIN THE GIVEN SPACE U.O.N.

LIGHTING FIXTURE SCHEDULE

TYPE	LAMP	VOLTAGE	MOUNTING	DESCRIPTION
⊕	LED	120/277V	CEILING RECESSED	EDGE LIT LED EXIT SIGN WITH ALUMINUM HOUSING, DOUBLE FACE, RED LETTER COLOR ON MIRROR BACKGROUND, AND EMERGENCY BATTERY BACKUP LITHONIA LIGHTING #EDGR
⊕	LED	120/277V	WALL RECESSED	EDGE LIT LED EXIT SIGN WITH ALUMINUM HOUSING, SINGLE FACE, RED LETTER COLOR ON MIRROR BACKGROUND, AND EMERGENCY BATTERY BACKUP LITHONIA LIGHTING #EDGR
A	28W LED	120/277V	CEILING RECESSED	2' X 2' LED TROFFER, 3200 LUMENS, 3500K COLOR TEMPERATURE, 0-10V DIMMING - VISIONEERING #LRTZ
B	28W LED	120/277V	CEILING SURFACE	2' X 2' LED TROFFER, 3200 LUMENS, 3500K COLOR TEMPERATURE, 0-10V DIMMING - VISIONEERING #LSTZ
C	15W LED	120/277V	CEILING RECESSED	4" LED DOWNLIGHT, 1100 LUMENS, 3500K COLOR TEMPERATURE, 0-10V DIMMING, WHITE TRIM, CLEAR REFLECTOR - PRESCOLITE LITEFRAME #L4LED04
D	28W LED	120/277V	CEILING SURFACE	2' X 2' LED TROFFER, 3200 LUMENS, 3500K COLOR TEMPERATURE, 0-10V DIMMING, BLACK PAINTED EXTERIOR HOUSING - VISIONEERING #LSTZ
E	21W LED	120/277V	UNDER CABINET	2' UNDER CABINET FIXTURE, 1200 LUMENS, 3500K COLOR TEMPERATURE, #12 PATTERN FROSTED ACRYLIC SHIELDING, NON-DIMMING DRIVER H.E. WILLIAMS #1SF

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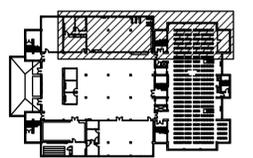
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KEY PLAN
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DPW PROJECT No.: BI-RC-397
DRAWN BY: RM
DATE: 8/5/2016
CAD FILE:

LIGHTING FIXTURE
SCHEDULE -
ELECTRICAL

BUILDING No.:

DRAWING No.:

22

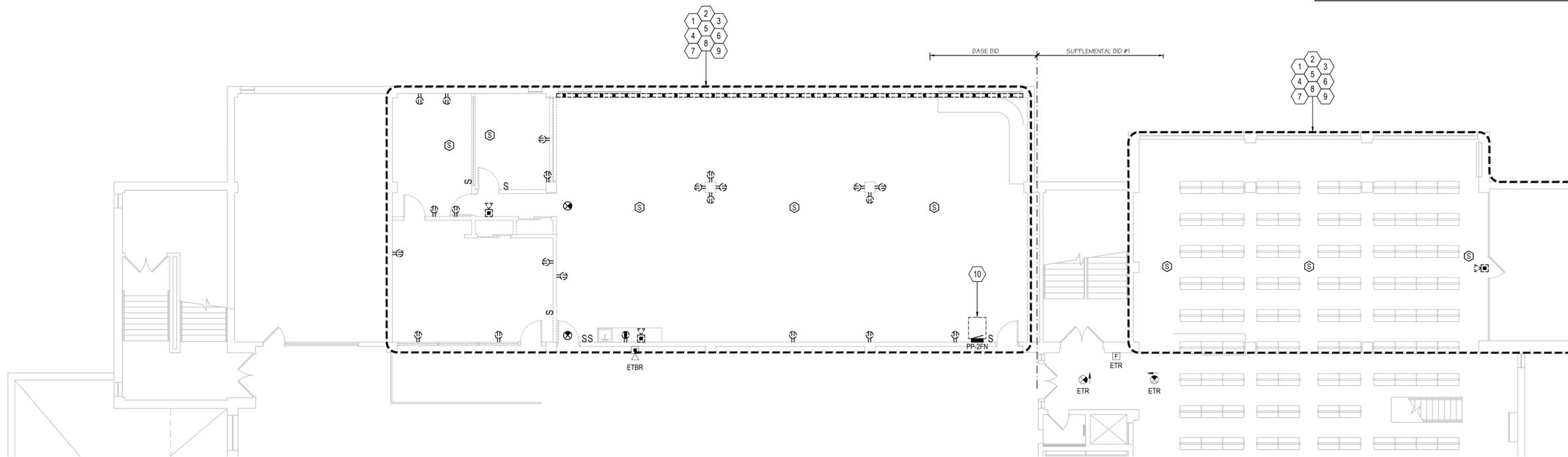
E-002

DEMOLITION NOTES

1. ALL DEVICES SHOWN WITHIN SCOPE BOUNDARY LINES ARE TO BE COMPLETELY REMOVED, U.O.N.
2. EVERY EFFORT HAS BEEN MADE TO IDENTIFY LOCATIONS OF DEVICES TO BE REMOVED, HOWEVER, NOT ALL DEVICES MAY HAVE BEEN LOCATED. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DEVICES WITHIN SCOPE BOUNDARY LINES.

DEMOLITION KEY NOTES

- 1 REFER TO ARCHITECTURAL DRAWINGS FOR EXACT EXTENT OF DEMOLITION WORK.
- 2 DISCONNECT AND REMOVE ALL EXISTING INTERIOR LIGHTING FIXTURES, SWITCHES, BACKBOXES, CONDUIT AND WIRING BACK TO PANEL (TYPICAL FOR ALL AREAS).
- 3 DISCONNECT AND REMOVE ALL EXISTING RECEPTACLES, PLUGMOLD, SURFACE RACEWAY, BACKBOXES, CONDUIT AND WIRING BACK TO PANEL (TYPICAL FOR ALL AREAS).
- 4 DISCONNECT AND REMOVE ALL EXISTING TELEPHONE/DATA OUTLETS, JUNCTION BOXES, RACEWAYS AND WIRING BACK TO TELECOMMUNICATIONS BACKBOARD - ALL TEL/COM WIRING REMOVED BY E.C. (TYPICAL FOR ALL AREAS). COORDINATE CABLE REMOVAL WITH OWNER.
- 5 DISCONNECT AND REMOVE ALL FINAL CONNECTIONS, DISCONNECT SWITCHES, OUTLETS, BACKBOXES, CONDUIT AND WIRING FOR OWNER'S EQUIPMENT BACK TO RESPECTIVE PANEL (TYPICAL FOR ALL EQUIPMENT TO BE REMOVED).
- 6 DISCONNECT AND REMOVE ALL FINAL CONNECTIONS, DISCONNECT SWITCHES, OUTLETS, CONDUIT AND WIRING FOR HVAC EQUIPMENT BACK TO PANEL (TYPICAL FOR ALL EQUIPMENT TO BE REMOVED).
- 7 DISCONNECT AND REMOVE ALL FINAL CONNECTIONS, DISCONNECT SWITCHES, OUTLETS, CONDUIT AND WIRING FOR PLUMBING EQUIPMENT BACK TO PANEL (TYPICAL FOR ALL EQUIPMENT TO BE REMOVED).
- 8 DISCONNECT AND REMOVE ALL EXISTING HARDWIRED FIRE ALARM DEVICES, BACKBOXES, CONDUIT AND WIRING BACK TO RESPECTIVE FIRE ALARM TERMINAL CABINET, U.O.N. (TYPICAL FOR ALL AREAS).
- 9 ELECTRICAL CONTRACTOR SHALL MAINTAIN/RECONNECT ALL EXISTING BRANCH CIRCUIT WIRING DISTURBED DURING CONSTRUCTION BUT OUTSIDE OF NEW CONSTRUCTION AREA.
- 10 DISCONNECT AND REMOVE EXISTING PANELBOARD PP-2FN AND FEEDER CONDUIT AND CABLE BACK TO SOURCE.



1 PARTIAL SECOND FLOOR DEMOLITION PLAN
ED-102 SCALE: 1/8" = 1'-0"

Central Connecticut State University



1615 Stanley Street
New Britain, CT 06050

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NUMBER	DATE	DESCRIPTION

akPark Architects LLC
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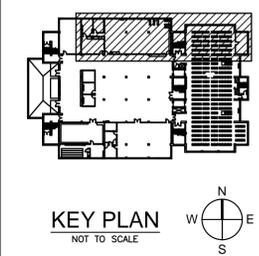
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PARTIAL SECOND FLOOR DEMO PLAN - ELECTRICAL

BUILDING No.:	DRAWING No.:
22	ED-102

Central Connecticut State University



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New Britain, CT 06050

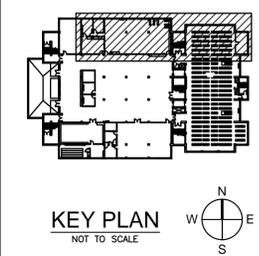
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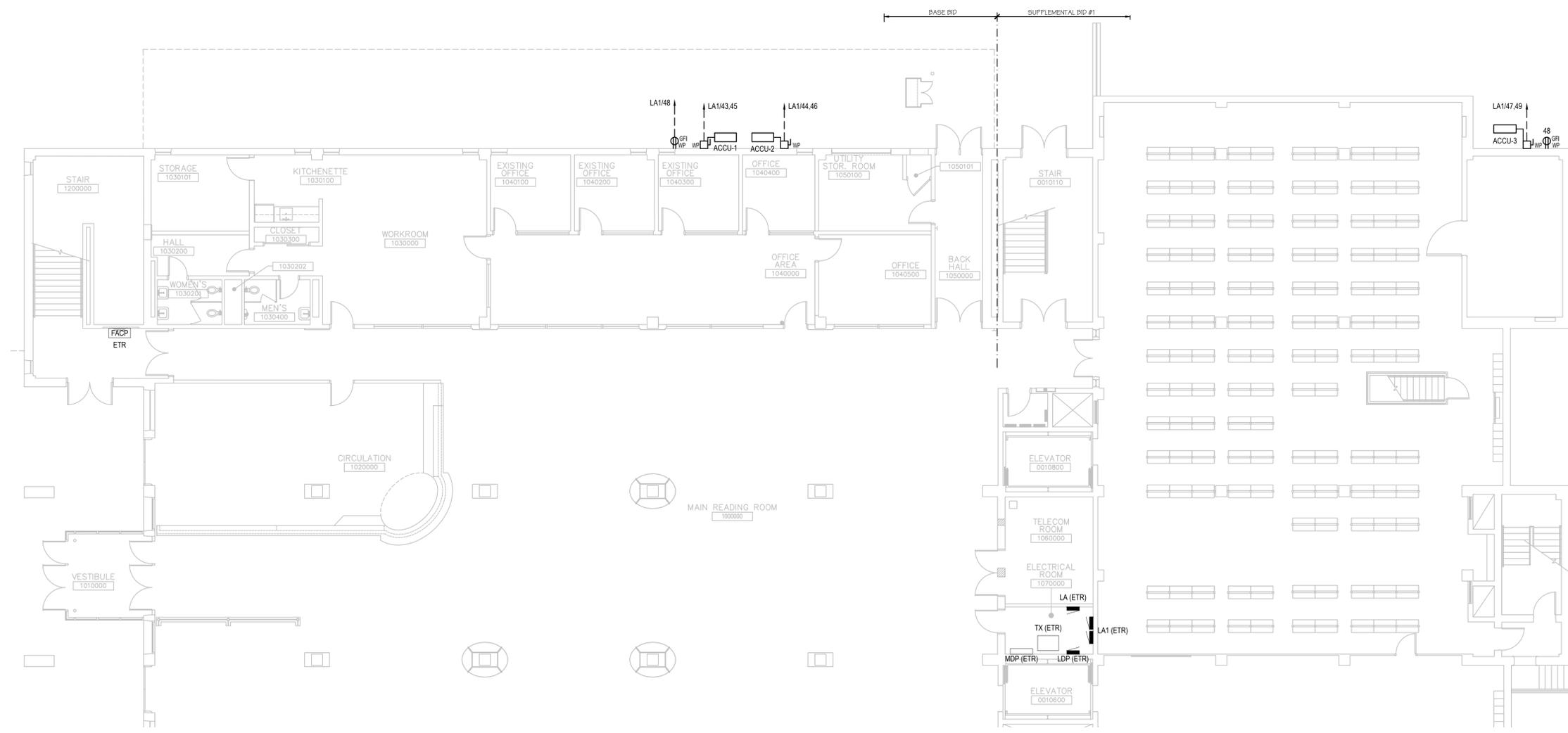
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PARTIAL FIRST FLOOR PLAN - ELECTRICAL

BUILDING No.: 22
DRAWING No.: E-101



1 PARTIAL FIRST FLOOR PLAN
E-101 SCALE: 1/8" = 1'-0"



- NOTES**
- E.C. SHALL MODIFY AND REPROGRAM FIRE ALARM SYSTEM TO ACCEPT NEW DEVICES AS NECESSARY.
 - E.C. SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS WITH "DNR" AND SUPERTECH" VENDORS.
 - PROVIDE DUAL CHANNEL SURFACE RACEWAY FOR POWER AND LOW VOLTAGE WIRING.
 - ALL WORK SHOWN IN PART PLAN SHALL BE PART OF BASE BID.

- DEMOLITION KEY NOTES**
- DISCONNECT AND REMOVE EXISTING PANELBOARD PPS4, TRANSFORMER, DISCONNECT SWITCHES, AND ALL ASSOCIATED FEEDER CONDUIT AND CABLE BACK TO EXISTING BUSWAY. EXISTING BRANCH CIRCUITS SHALL BE RECONNECTED TO NEW PANELBOARD PPS4 LOCATED ON DETAIL 4/E-102. ALL WORK ABOVE SHALL BE PART OF BASE BID.

REVISIONS

NUMBER	DATE	DESCRIPTION

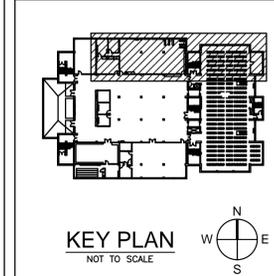
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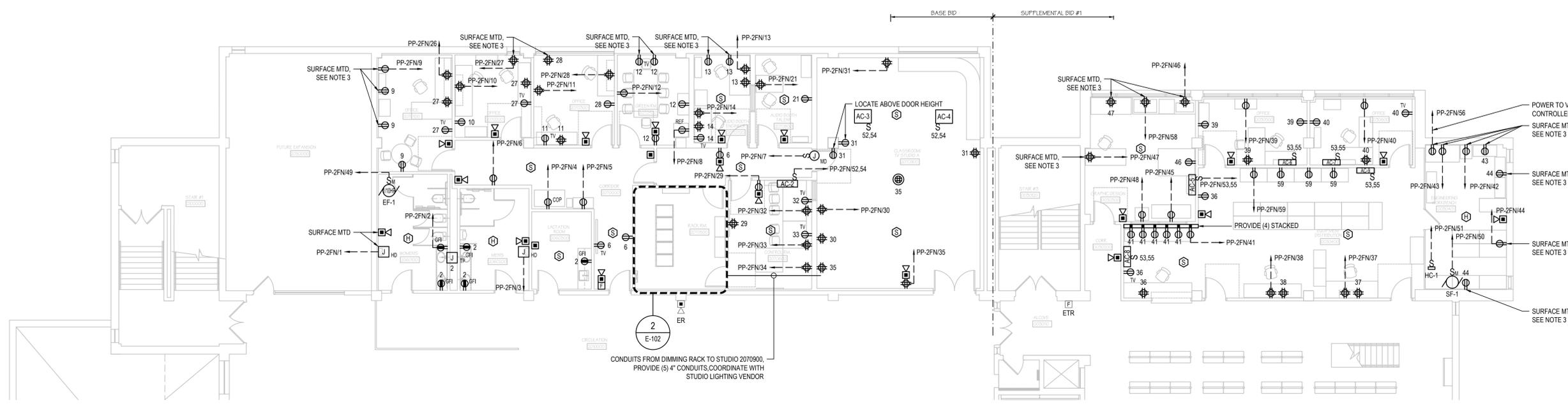
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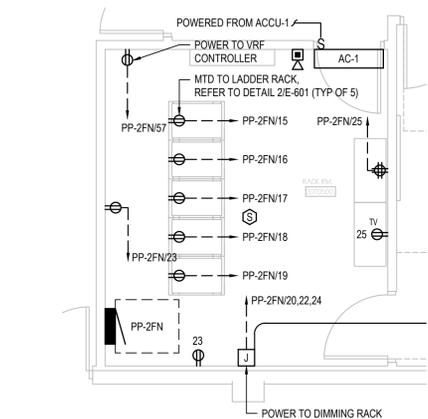
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DPW PROJECT No.: BI-RC-397
DRAWN BY: RM
DATE: 8/5/2016
CAD FILE:

PARTIAL SECOND FLOOR PLAN - ELECTRICAL

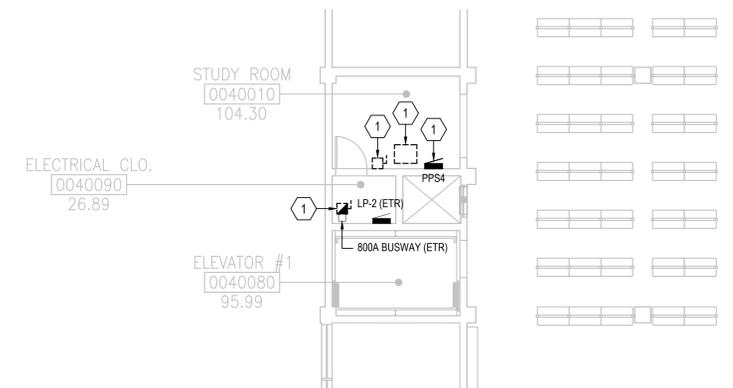
BUILDING No.:	DRAWING No.:
22	E-102



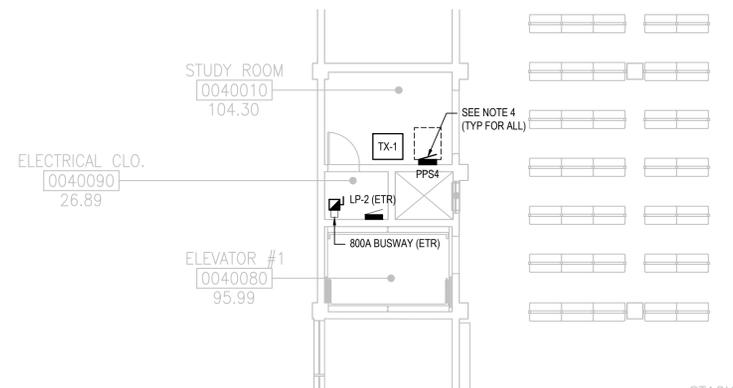
1 PARTIAL SECOND FLOOR PLAN
E-102 SCALE: 1/8" = 1'-0"



2 RACK RM. 2070500 PART PLAN
E-102 SCALE: 1/4" = 1'-0"



3 PARTIAL THIRD FLOOR DEMOLITION PART PLAN
E-102 SCALE: 1/8" = 1'-0"



4 PARTIAL THIRD FLOOR PART PLAN
E-102 SCALE: 1/8" = 1'-0"

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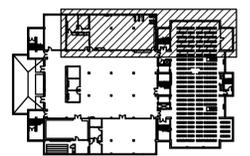
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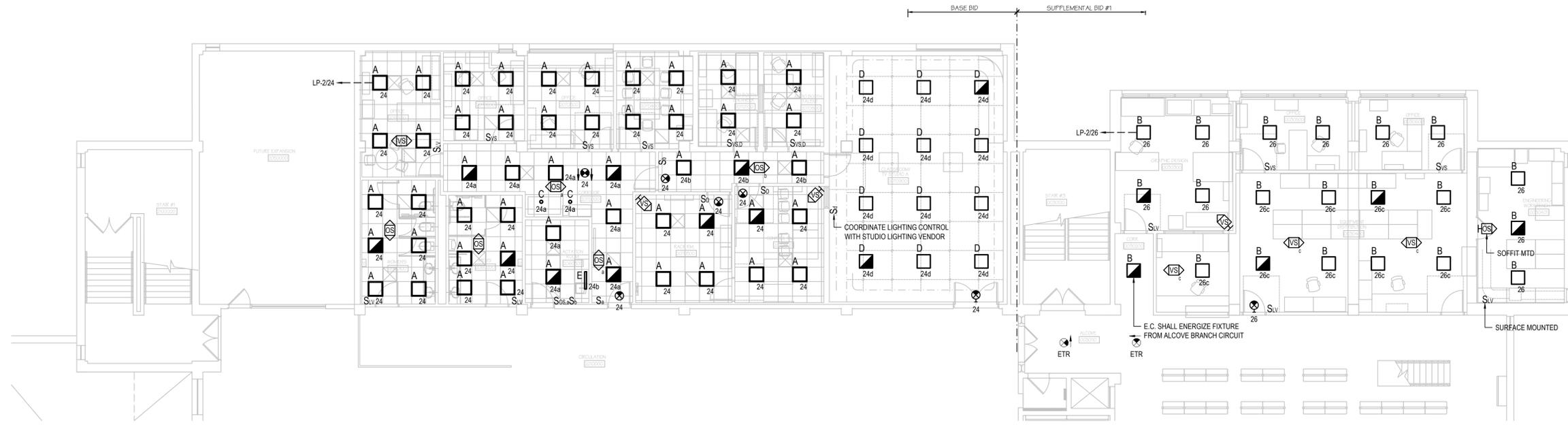
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DPW PROJECT No.:	BI-RC-397
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DATE:	8/5/2016
CAD FILE:	

PARTIAL SECOND
FLOOR RCP
- LIGHTING

BUILDING No.:	DRAWING No.:
22	E-202



1 PARTIAL SECOND FLOOR RCP
E-202 SCALE: 1/8" = 1'-0"

480/277V, 3 PHASE, 4 WIRE												
LP-2 (ETR)												
	LOAD SERVED	WIRE & CONDUIT	TRIP	POLE	LOAD IN VOLT-AMPERES			POLE	TRIP	WIRE & CONDUIT	LOAD SERVED	
					ØA	ØB	ØC					
1	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	2
3	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	4
5	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	6
7	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	8
9	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	10
11	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	12
13	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	14
15	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	16
17	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	18
19	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	20
21	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	22
23	EXISTING LOAD	EXISTING	20	1				1	20	EXISTING	EXISTING LOAD	24
25	EXISTING LOAD	EXISTING	20	1	605			1	20	2 #12-G-3/4"	LIGHTING 2ND FLOOR	26
27	EXISTING LOAD	EXISTING	20	1				1	20		SPACE	28
SURFACE MTD NEMA 1		LOAD PER PHASE			605	#	1,950					
		TOTAL =			2,555 VA							

*PART OF SUPPLEMENTAL BID #1

208/120V, 3 PHASE, 4 WIRE												
14,000 A.I.C.												
PPS4												
500A MCB 600A BUS												
	LOAD SERVED	WIRE & CONDUIT	TRIP	POLE	LOAD IN VOLT-AMPERES			POLE	TRIP	WIRE & CONDUIT	LOAD SERVED	
					ØA	ØB	ØC					
1												2
3	EXISTING LOAD	EXISTING	100	3	32422			3	400	4#600 KCMIL + #3G IN 4" C	PP-2FN	4
5												6
7	EXISTING LOAD	EXISTING	20	2				1	20	EXISTING	EXISTING LOAD	8
9								1	20	EXISTING	EXISTING LOAD	10
11	EXISTING LOAD	EXISTING	20	2				1	20	EXISTING	EXISTING LOAD	12
13								1	20	EXISTING	EXISTING LOAD	14
15	EXISTING LOAD	EXISTING	20	2				1	20	EXISTING	EXISTING LOAD	16
17								1	20	EXISTING	EXISTING LOAD	18
19	SPARE	-	20	1				1	20	EXISTING	EXISTING LOAD	20
21	SPARE	-	20	1				1	20	EXISTING	EXISTING LOAD	22
23	SPARE	-	20	1				1	20	EXISTING	EXISTING LOAD	24
25	SPARE	-	20	1				1	20	-	SPARE	26
27	SPARE	-	20	1				1	20	-	SPARE	28
29	SPARE	-	20	1				1	20	-	SPARE	30
31	SPARE	-	20	1				1	20	-	SPARE	32
33	SPACE	-	-	1				1	-	-	SPACE	34
35	SPACE	-	-	1				1	-	-	SPACE	36
37	SPACE	-	-	1				1	-	-	SPACE	38
39	SPACE	-	-	1				1	-	-	SPACE	40
41	SPACE	-	-	1				1	-	-	SPACE	42
SURFACE MTD NEMA 1		LOAD PER PHASE			32,422	32,422	32,422					
		TOTAL =			97,266 VA							

208/120V, 3 PHASE, 4 WIRE														
14,000 A.I.C.														
PP-2FN														
400A MLO 400A BUS														
	LOAD SERVED	WIRE & CONDUIT	TRIP	POLE	LOAD IN VOLT-AMPERES			POLE	TRIP	WIRE & CONDUIT	LOAD SERVED			
					ØA	ØB	ØC							
1	2060100 HAND DRYER	2 #12-G-3/4"	20	1	1500	1500		1	20	2 #12-G-3/4"	2060200 HAND DRYER	2		
3	2060100 RECEP	2 #12-G-3/4"	20	1		900	1200	1	20	2 #12-G-3/4"	2070000 COPIER RECEP	4		
5	2070000 SHEDDER RECEP	2 #12-G-3/4"	20	1			500	720	1	20	2 #12-G-3/4"	2070000 RECEP	6	
7	MOTORIZED DOOR	2 #12-G-3/4"	20	1	1000	1000			1	20	2 #12-G-3/4"	2070400 REFRIGERATOR	8	
9	2070100 RECEP	2 #12-G-3/4"	20	1		720	540		1	20	2 #12-G-3/4"	2070200 RECEP	10	
11	2070300 RECEP	2 #12-G-3/4"	20	1			900	720	1	20	2 #12-G-3/4"	2070400 RECEP	12	
13	2070700 RECEP	2 #12-G-3/4"	20	1	1080	900			1	20	2 #12-G-3/4"	2070700 RECEP	14	
15	2070500 RACK RECEP	2 #12-G-3/4"	20	1		750	750		1	20	2 #12-G-3/4"	2070500 RACK RECEP	16	
17	2070500 RACK RECEP	2 #12-G-3/4"	20	1			750	750	1	20	2 #12-G-3/4"	2070500 RACK RECEP	18	
19	2070500 RACK RECEP	2 #12-G-3/4"	20	1	750	19200						20		
21	2070800 RECEP	2 #12-G-3/4"	20	1		540	19200		3	200	4 #3/0-#6G-2"	2070500 DIMMING RACK	22	
23	2070500 RECEP	2 #12-G-3/4"	20	1			360	19200				24		
25	2070500 RECEP	2 #12-G-3/4"	20	1	540	900			1	20	2 #12-G-3/4"	2070100 RECEP	26	
27	2070200 RECEP	2 #12-G-3/4"	20	1		900	900		1	20	2 #12-G-3/4"	2070300 RECEP	28	
29	2070600 RECEP	2 #12-G-3/4"	20	1			540	540	1	20	2 #12-G-3/4"	2070900 RECEP	30	
31	2070900 RECEP	2 #12-G-3/4"	20	1	1080	540			1	20	2 #12-G-3/4"	2070600 RECEP	32	
33	2070600 RECEP	2 #12-G-3/4"	20	1		540	360		1	20	2 #12-G-3/4"	2070600 RECEP	34	
35	2070900 RECEP	2 #12-G-3/4"	20	1			1080	720	1	20	2 #12-G-3/4"	0030400 RECEP	36	
37	0030400 RECEP	2 #12-G-3/4"	20	1	720	720			1	20	2 #12-G-3/4"	0030400 RECEP	38	
39	0030500 RECEP	2 #12-G-3/4"	20	1		900	900		1	20	2 #12-G-3/4"	0030600 RECEP	40	
41	0030400 RECEP	2 #12-G-3/4"	20	1			540	180	1	20	2 #12-G-3/4"	0030401 RECEP	42	
43	0030401 RECEP	2 #12-G-3/4"	20	1	360	540			1	20	2 #12-G-3/4"	0030401 RECEP	44	
45	0030300 RECEP	2 #12-G-3/4"	20	1		1300	360		1	20	2 #12-G-3/4"	0030300 RECEP	46	
47	0030300 RECEP	2 #12-G-3/4"	20	1			720	720	1	20	2 #12-G-3/4"	0030300 RECEP	48	
49	EF-1	2 #12-G-3/4"	20	1	180	72			1	20	2 #12-G-3/4"	SF-1	50	
51	HC-1	2 #10-G-3/4"	30	1		2500	313		2	20	2 #12-G-3/4"	AC-2 / AC-3 / AC-4	52	
53	AC-5 / AC-6 / AC-7 / AC-8 / AC-9	2 #12-G-3/4"	20	2		208	180	208	313	1	20	2 #12-G-3/4"	VRF CONTROLLER	54
55												56		
57	VRF CONTROLLER	2 #12-G-3/4"	20	1		180	360		1	20	2 #12-G-3/4"	0030300 RECEP	58	
59	0030400 RECEP	2 #12-G-3/4"	20	1			720		1	20	-	SPARE	60	
61	SPARE	-	20	1					1	20	-	SPARE	62	
63	SPARE	-	20	1					1	20	-	SPARE	64	
65	SPARE	-	20	1					1	20	-	SPARE	66	
67	SPARE	-	20	1					1	20	-	SPARE	68	
69	SPARE	-	20	1					1	20	-	SPARE	70	
71	SPARE	-	20	1					1	20	-	SPARE	72	
73	SPARE	-	20	1					1	20	-	SPARE	74	
75	SPACE	-	-	1					1	-	-	SPACE	76	
77	SPACE	-	-	1					1	-	-	SPACE	78	
79	SPACE	-	-	1					1	-	-	SPACE	80	
81	SPACE	-	-	1					1	-	-	SPACE	82	
83	SPACE	-	-	1					1	-	-	SPACE	84	
SURFACE MTD NEMA 1		LOAD PER PHASE			32,970	34,113	30,181							
		TOTAL =			97,264 VA									

*PART OF SUPPLEMENTAL BID #1

208/120V, 3 PHASE, 4 WIRE													
LA1 (ETR)													
	LOAD SERVED	WIRE & CONDUIT	TRIP	POLE	LOAD IN VOLT-AMPERES			POLE	TRIP	WIRE & CONDUIT	LOAD SERVED		
					ØA	ØB	ØC						
43												44	
45	ACCU-1	2 #12-G-3/4"	20	2	1248	2424		2	30	2 #10-G-3/4"	ACCU-2	46	
47	ACCU-3	2 #10-G-3/4"	30	2			2424	360	1	20	2 #12-G-3/4"	EXTERIOR RECEP	48
49					2424				1	20	-	SPARE	50
51	SPARE	-	20	1					1	20	-	SPARE	52
53	SPARE	-	20	1					1	20	-	SPARE	54
55	SPARE	-	20	1					1	20	-	SPARE	56
57	SPARE	-	20	1					1	20	-	SPARE	58
59	SPARE	-	20	1					1	20	-	SPARE	60
61	SPARE	-	20	1					1	20	-	SPARE	62
63	SPARE	-	20	1					1	20	-	SPARE	64
65	SPARE	-	20	1					1	20	-	SPARE	66
67	SPARE	-	20	1					1	20	-	SPARE	68
69	SPARE	-	20	1					1	20	-	SPARE	70
71	SPARE	-	20	1					1	20	-	SPARE	72
73	SPARE	-	20	1					1	20	-	SPARE	74
75	SPARE	-	20	1					1	20	-	SPARE	76
77	SPARE	-	20	1					1	20	-	SPARE	78
79	SPARE	-	20	1					1	20	-	SPARE	80
81	SPARE	-	20	1					1	20	-	SPARE	82
83	SPARE	-	20	1					1	20	-	SPARE	84
SURFACE MTD NEMA 1		LOAD PER PHASE			6,096	3,672	2,784						
		TOTAL =			12,552 VA								

*PART OF SUPPLEMENTAL BID #1

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REVISIONS

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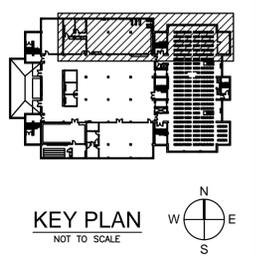
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DPW PROJECT No.: BI-RC-397
DRAWN BY: RM
DATE: 8/5/2016
CAD FILE:

SPECIFICATIONS - ELECTRICAL

BUILDING No.: 22
DRAWING No.: E-501



REVISIONS

NUMBER	DATE	DESCRIPTION

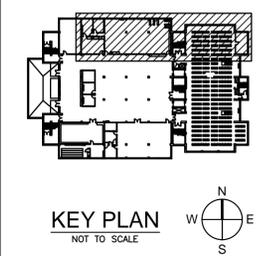
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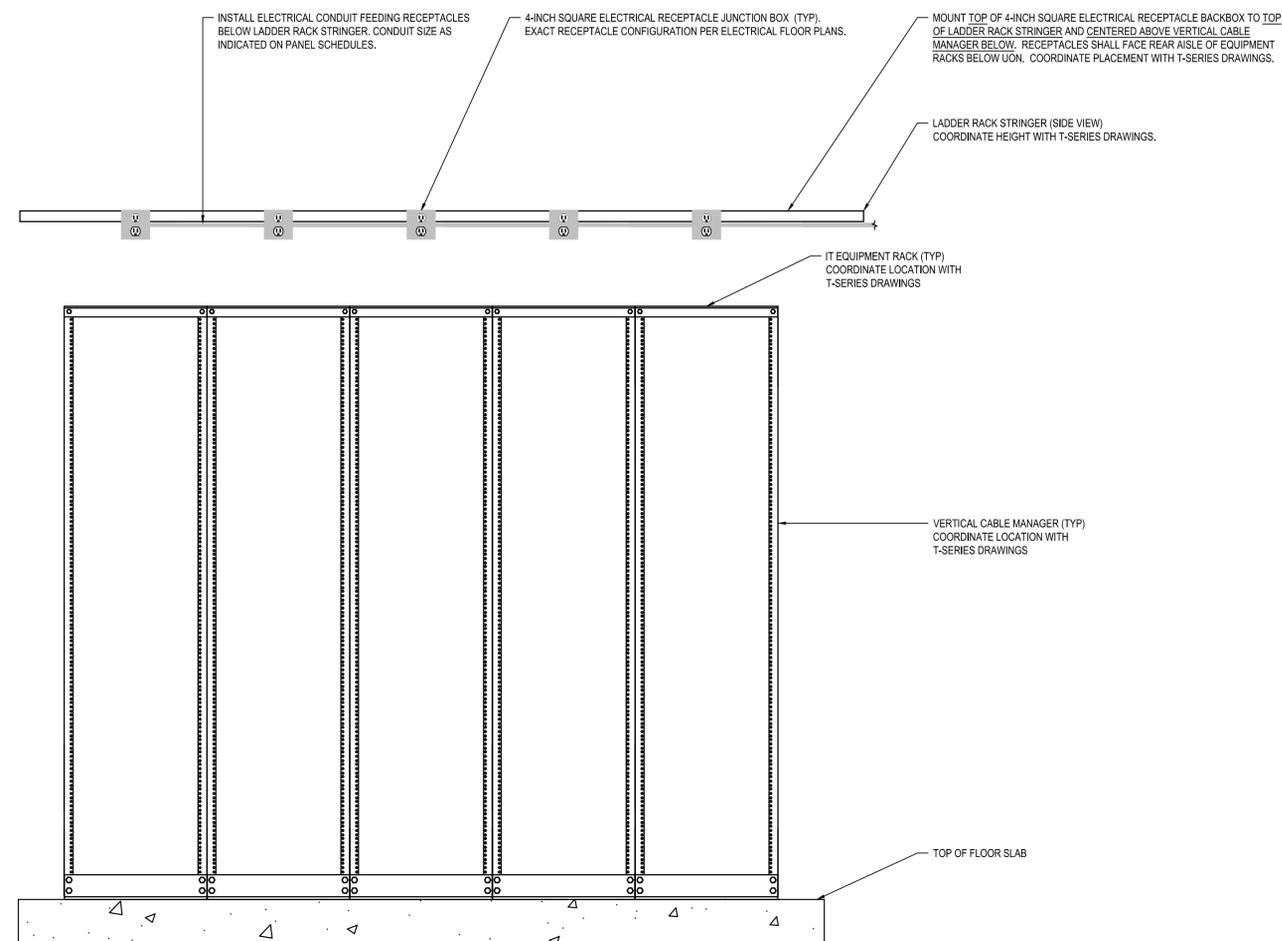
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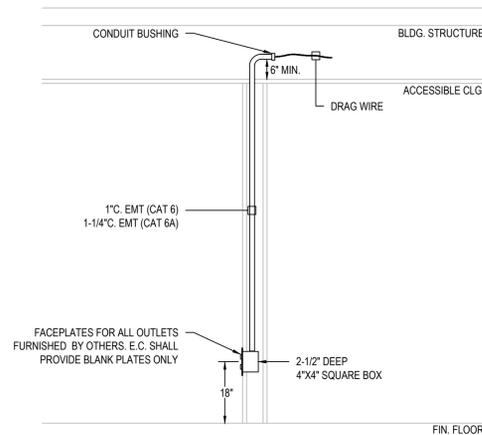
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DRAWN BY: RM
DATE: 8/5/2016
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DETAILS - ELECTRICAL

BUILDING No.:	DRAWING No.:
22	E-601



2 LADDER RACK RECEPTACLE MOUNTING
E-601 SCALE: NONE



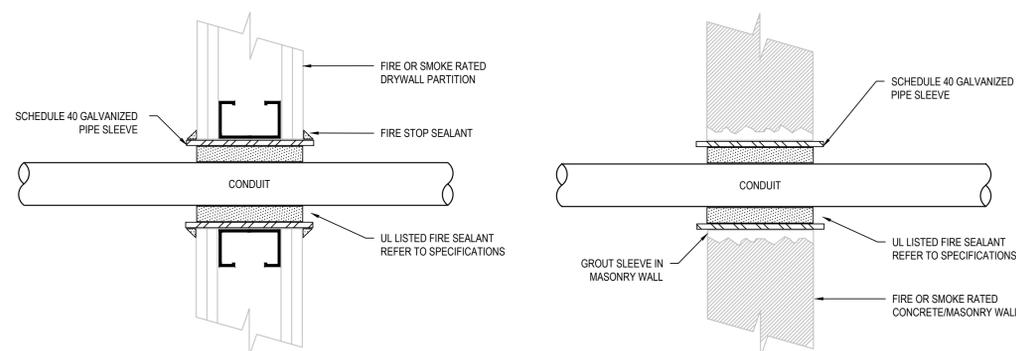
- NOTES:
- REFER TO T-SERIES DRAWINGS FOR ALL BOX LOCATIONS.

1 VOICE / DATA / AV OUTLET INSTALLATION DETAIL
E-601 SCALE: NONE

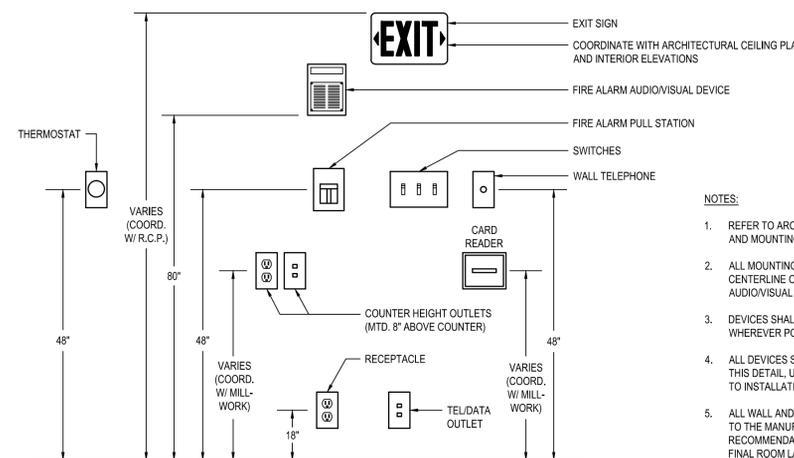
GENERAL NOTES:

PROVIDE UL LISTED FIRE/SMOKE PENETRATION ASSEMBLY IN ACCORDANCE W/ UL1479, ASTM E814 REQUIREMENTS FOR WALL TYPE, RATING, PIPE SIZE INSTALLED.

FIRE STOPPING SHALL HAVE A RATING EQUAL TO OR GREATER THAN THE WALL BEING PENETRATED - SEE SPECIFICATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR WALL RATINGS AND LOCATIONS.



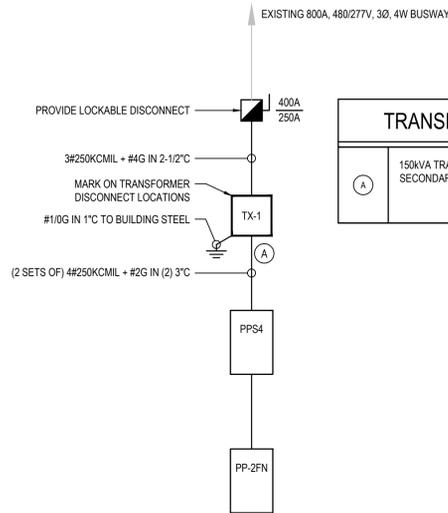
3 WALL PENETRATION W/ FIRE/SMOKE SEAL DETAIL
E-601 SCALE: NONE



NOTES:

- REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION AND MOUNTING HEIGHT OF ALL DEVICES.
- ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FIN. FLOOR TO CENTERLINE OF DEVICE (EXCEPT FOR EXIT SIGNS AND FIRE ALARM AUDIO/VISUAL DEVICES).
- DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
- ALL DEVICES SHALL BE INSTALLED AT THE MOUNTING HEIGHTS INDICATED ON THIS DETAIL, UNLESS OTHERWISE NOTED. VERIFY ADA REQUIREMENTS PRIOR TO INSTALLATION OF ALL DEVICES.
- ALL WALL AND CEILING MOUNTED DEVICES SHALL BE LOCATED ACCORDING TO THE MANUFACTURERS INSTALLATION REQUIREMENTS AND RECOMMENDATIONS. THE OWNER AND THE ARCHITECT SHALL REVIEW THE FINAL ROOM LAYOUT FOR APPROVAL.

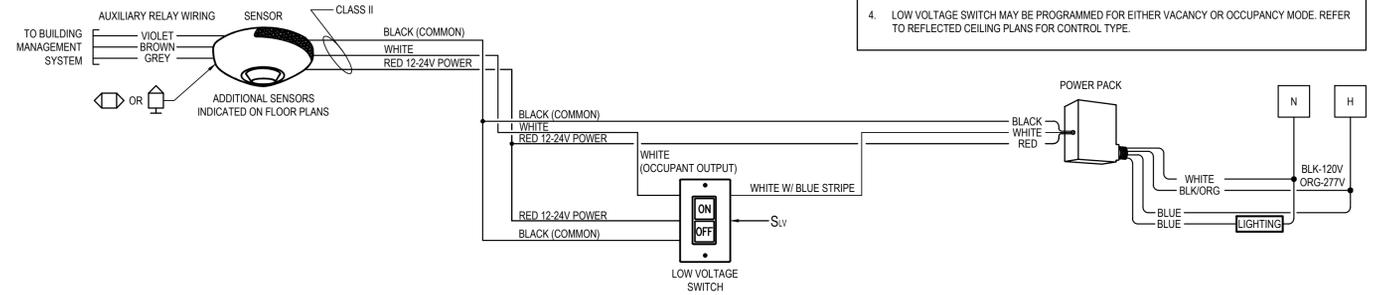
4 TYPICAL DEVICE MOUNTING HEIGHT DETAIL
E-601 SCALE: NONE



TRANSFORMER NOTES

A 150KVA TRANSFORMER 480V PRIMARY 208Y/120V. SECONDARY 115° TEMP. RISE

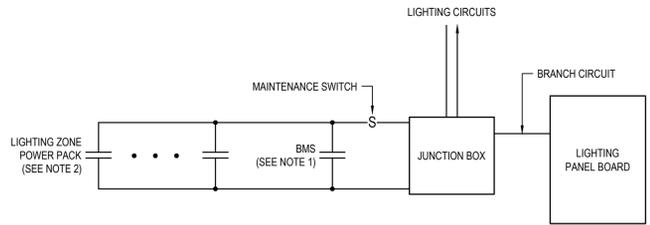
1 SINGLE LINE DIAGRAM
E-602 SCALE: NONE



NOTES

- ELECTRICAL CONTRACTOR SHALL VERIFY QUANTITIES OF ALL DEVICES. ADDITIONAL DEVICES MAY BE NECESSARY. REFER TO REFLECTED CEILING PLANS FOR ADDITIONAL DEVICES.
- A MAXIMUM OF 10 SENSORS SHALL BE ENERGIZED PER POWER PACK. SUPPLEMENT WITH ADDITIONAL POWER PACKS IF OVER 10 SENSORS.
- AUXILIARY RELAY REQUIRES SENSOR POWER TO FUNCTION. AUXILIARY RELAY CHANGES STATE WHEN ALL CONNECTED SENSORS REGISTER UNOCCUPIED. GREY AND BROWN WIRES ARE CONNECTED DURING OCCUPIED STATE. VIOLET AND BROWN WIRES ARE CONNECTED DURING UNOCCUPIED STATE.
- LOW VOLTAGE SWITCH MAY BE PROGRAMMED FOR EITHER VACANCY OR OCCUPANCY MODE. REFER TO REFLECTED CEILING PLANS FOR CONTROL TYPE.

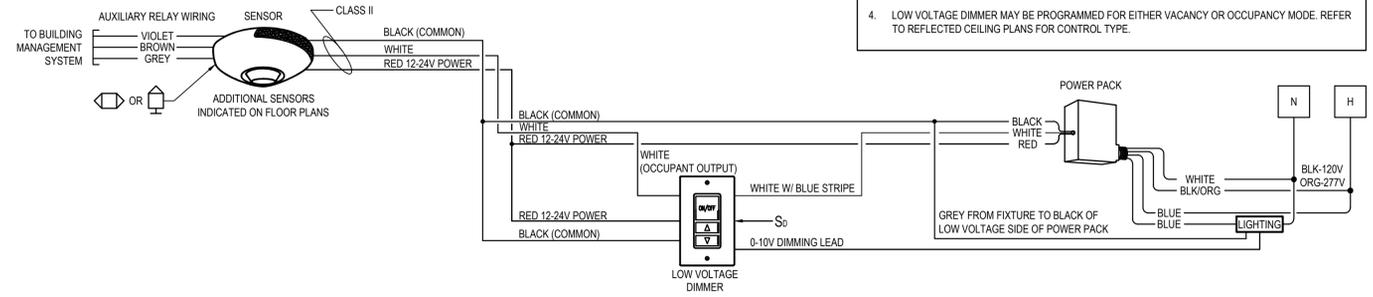
2 TYPICAL SWITCHED LIGHTING CONTROL WIRING DIAGRAM
E-602 SCALE: NONE



NOTES:

- EACH CORRIDOR LIGHTING ZONE SHALL HAVE AN ASSOCIATED BMS RELAY MODULE FOR SCHEDULED CONTROL OF BUILDING LIGHTING VIA THE BMS SYSTEM. COORDINATE WITH DIVISION 23 FOR INTERFACE REQUIREMENTS.
- CORRIDOR LIGHTING ZONE FIXTURES ARE CONTROLLED AFTER HOURS VIA OCCUPANCY SENSORS. ADDITIONAL POWER PACKS MAY BE NECESSARY.

3 TYPICAL CORRIDOR LIGHTING CONTROL DIAGRAM
E-602 SCALE: NONE



NOTES

- ELECTRICAL CONTRACTOR SHALL VERIFY QUANTITIES OF ALL DEVICES. ADDITIONAL DEVICES MAY BE NECESSARY. REFER TO REFLECTED CEILING PLANS FOR ADDITIONAL DEVICES.
- A MAXIMUM OF 10 SENSORS SHALL BE ENERGIZED PER POWER PACK. SUPPLEMENT WITH ADDITIONAL POWER PACKS IF OVER 10 SENSORS.
- AUXILIARY RELAY REQUIRES SENSOR POWER TO FUNCTION. AUXILIARY RELAY CHANGES STATE WHEN ALL CONNECTED SENSORS REGISTER UNOCCUPIED. GREY AND BROWN WIRES ARE CONNECTED DURING OCCUPIED STATE. VIOLET AND BROWN WIRES ARE CONNECTED DURING UNOCCUPIED STATE.
- LOW VOLTAGE DIMMER MAY BE PROGRAMMED FOR EITHER VACANCY OR OCCUPANCY MODE. REFER TO REFLECTED CEILING PLANS FOR CONTROL TYPE.

4 TYPICAL DIMMED LIGHTING CONTROL WIRING DIAGRAM
E-602 SCALE: NONE

Central Connecticut State University



1615 Stanley Street
New Britain, CT 06050

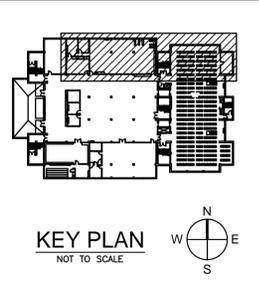
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MEDIA CENTER RELOCATION TO ELIHU BURRITT LIBRARY



CCSU PROJECT No.: 22-87
DPW PROJECT No.: BI-RC-397
DRAWN BY: RM
DATE: 8/5/2016
CAD FILE:

DETAILS - ELECTRICAL

BUILDING No.:	DRAWING No.:
22	E-602

ELECTRICAL SPECIFICATIONS

GENERAL:

PROVIDE LABOR, MATERIALS, EQUIPMENT AND SERVICES FOR COMPLETE ELECTRICAL SYSTEMS FOR EXISTING AND NEW SYSTEMS AND AS REQUIRED BY APPLICABLE BUILDING CODES, NATIONAL ELECTRICAL CODES, INCLUDING OSHA. PAY ALL FEES, OBTAIN ALL PERMITS, CERTIFICATES AND ALL CONTROLLED INSPECTIONS. USE NEW U.L. APPROVED EQUIPMENT. INCLUDE ALL TEMPORARY LIGHT AND POWER DURING CONSTRUCTION.

PROVIDE ALL LABOR MATERIAL AND EQUIPMENT TO ACCOMPLISH ANY REQUIRED DEMOLITION OR REMOVAL WORK.

ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. ALL MATERIALS SHALL BE OF THE BEST QUALITY FOR THE PURPOSE INTENDED. TRADE NAMES AND CATALOG NUMBERS ARE INTENDED TO INDICATE THIS GRADE AND QUALITY.

RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK OF CONTRACTOR WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES. THE CONTRACTOR SHALL ASSIST IN WORKING OUT SPACE CONDITIONS. VERIFY POWER REQUIREMENTS WITH ALL OTHER TRADES.

ON ACCEPTANCE OF CONTRACT, CONTRACTOR AGREES TO GUARANTEE ALL OF HIS WORK AND EQUIPMENT FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF INITIAL OPERATION. MANUFACTURED EQUIPMENT SHALL CARRY FULL PERIOD OF MANUFACTURER'S GUARANTEE, AND SHALL NOT BE LESS THAN ONE (1) YEAR.

THE CONTRACTOR SHALL PERFORM ALL CUTTING NECESSARY FOR THE PROPER INSTALLATION OF ELECTRICAL WORK.

KEEP CONDUITS AND OTHER OPENINGS CLOSED TO PREVENT ENTRY OF FOREIGN MATTER. COVER FIXTURES, EQUIPMENT AND APPARATUS AND PROTECT AGAINST DIRT, WATER, CHEMICAL OR MECHANICAL DAMAGE BEFORE AND DURING THE CONSTRUCTION PERIOD UNTIL THE FINAL ACCEPTANCE. EQUIPMENT SHALL BE DELIVERED AND STORED AT SITE, PROPERLY PACKED AND CREATED UNTIL FINALLY INSTALLED.

FURNISH, INSTALL, SET AND LAMP NEW LIGHTING FIXTURES. INCLUDE ALL NECESSARY SUPPORTS AND HANGERS WHERE REQUIRED. ALL FIXTURES SHALL HAVE U.L. LABEL. LIGHTING FIXTURES SHALL BE AS INDICATED ON ARCHITECTURAL DRAWINGS AND SHALL BE MADE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

IT IS THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL ON THE DRAWINGS AND IN THE SPECIFICATION. IF AN ITEM OF WORK IS SHOWN ON THE DRAWINGS, IT SHALL BE CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION, WHERE SPECIFICALLY MENTIONED OR NOT.

SHOP DRAWINGS AND OTHER INFORMATION REQUIRED: PRIOR TO PURCHASING ANY EQUIPMENT OR MATERIALS, A MANUFACTURER'S LIST SHALL BE SUBMITTED FOR REVIEW. PRIOR TO ASSEMBLING OR INSTALLING THE WORK, THE FOLLOWING SHALL BE SUBMITTED FOR REVIEW:

CATALOG INFORMATION, FACTORY ASSEMBLY DRAWINGS AND FIELD INSTALLATION DRAWINGS AS REQUIRED FOR A COMPLETE EXPLANATION AND DESCRIPTION OF ALL ITEMS OR EQUIPMENT. THE PURPOSE FOR REVIEW SHOP DRAWINGS IS TO MAINTAIN INTEGRITY OF THE DESIGN, UNLESS THE CONTRACTOR CLEARLY INDICATED IN WRITING AND ON HIS LETTERHEAD, ANY CHANGES, SUBSTITUTIONS, DELETIONS OR ANY OTHER DIFFERENCES BETWEEN THE SUBMISSION AND CONTRACT DOCUMENTS. APPROVAL BY THE ENGINEER DOES NOT CONSTITUTE ACCEPTANCE. IT IS NOT TO BE ASSUMED THAT THE ENGINEER HAS READ THE TEXT NOR REVIEWED THE TECHNICAL DATA OF A MANUFACTURED ITEM AND ITS COMPONENTS EXCEPT WHERE THE VENDOR HAS POINTED OUT DIFFERENCES BETWEEN HIS PRODUCT AND THE SPECIFIED MODEL.

THE CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE CONSTRAINTS OF THE EXISTING AVAILABLE SPACE PERTAINING TO EQUIPMENT SIZE AND CONFIGURATION AND TO EXAMINE THE CONDITIONS UNDER WHICH THE EQUIPMENT WILL BE INSTALLED. CONTRACTOR SHALL AT THIS TIME REPORT ANY DISCREPANCIES OR QUESTIONS TO THE ARCHITECT/ENGINEER.

WHERE CONFLICTS OCCUR BETWEEN DRAWINGS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT, THE CONTRACTOR SHALL ASK FOR AND OBTAIN A WRITTEN CLARIFICATION FROM THE ENGINEER PRIOR TO SUBMITTING HIS BID. OTHERWISE, THE ITEMS OR ARRANGEMENTS OF SUPERIOR QUALITY, GREATER QUANTITY OR HIGHER COST SHALL PREVAIL AND BE INCLUDED IN THE CONTRACT PRICE.

LIGHTING AND POWER PANELS:

LIGHTING AND POWER PANELS SHALL BE WALL-MOUNTED, 208Y/120 VOLTS, 3 PHASE AS INDICATED IN SCHEDULES WITH NEUTRAL AND GROUND BUSES. ALL MAIN BUS BARS AND BRANCH CONNECTORS SHALL BE COPPER, SIZED IN ACCORDANCE WITH UL STANDARDS. PANELS SHALL UTILIZE BOLT-ON CIRCUIT BREAKERS ONLY AND SHALL BE MANUFACTURED BY SQUARE D, G.E., SIEMENS, OR CUTLER-HAMMER.

DRY TYPE TRANSFORMERS:

COMPLY WITH NEMA STANDARD ST 20 AND LIST LABEL.

COMPLY WITH NEMA CLASS 1 EFFICIENCY LEVELS OF DRY TYPE DISTRIBUTION TRANSFORMERS AS TESTED AND RATED IN ACCORDANCE WITH NEMA STANDARD TP 1.

TRANSFORMER IS 2 COPPER WINDING TYPE, 3-PHASE UNIT USING 1 COIL PER PHASE IN PRIMARY AND SECONDARY.

SOUND LEVELS SHALL BE A MINIMUM OF 3DBA LESS THAN NEMA ST 20 STANDARD C57.12.91, "TEST CODE FOR DRY TYPE DISTRIBUTION AND POWER TRANSFORMERS."

ENCLOSURE WILL BE INDOOR, VENTILATED.

INSULATION TEMPERATURE RISE 115 DEGREES C MAXIMUM RISE ABOVE 40 DEGREES C.

TRANSFORMER WILL HAVE FULL CAPACITY TAPS IN HIGH-VOLTAGE WINDING ARE SIX 2.5% TAPS, 2 ABOVE AND 4 BELOW RATED HIGH VOLTAGE.

WIRING DEVICES:

WIRING DEVICES WILL BE "PREMIUM SPECIFICATION GRADE" MANUFACTURED BY LEVITON, HUBBELL, OR G.E.

RECEPTACLES SHALL BE NEMA 5-20R, TWO-POLE, THREE-WIRE GROUNDING TYPE, WITH MOLDED NYLON BODY AND FACE. PREMIUM SPECIFICATION GRADE, RATED 20 AMPS AT 125 VOLTS. RECEPTACLES SHALL COME WITH A 10 YEAR LIMITED WARRANTY FROM THE MANUFACTURER. GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLES SHALL BE 15 AMP, 125 VOLT DUPLEX, NEMA 5-15R, WITH 20 AMP, 125 VOLT FEED-THROUGH AND TRIP INDICATOR. HUBBELL OR LEVITON RECEPTACLES MARKED "WP" SHALL BE WEATHER RESISTANT TYPE.

OCCUPANCY AND VACANCY SENSOR SHALL BE DUAL TECHNOLOGY TYPE. ALL SENSORS SHALL BE CAPABLE OF CONTROLLING 120/277 VOLT LED LOADS.

SWITCHED WALL VACANCY OR OCCUPANCY SENSORS SHALL BE MODEL #WSX-PDT-SA AS MANUFACTURED BY SENSOR SWITCH (S_{OS} OR S_{VS}).

DIMMED VACANCY OR OCCUPANCY WALL SENSORS SHALL BE MODEL #WSX-PDT-D-SA AS MANUFACTURED BY SENSOR SWITCH (S_{OSD} OR S_{VSD}).

LOW VOLTAGE SWITCH SHALL BE MODEL #SPDM AS MANUFACTURED BY SENSOR SWITCH (S_{LV}).

LOW VOLTAGE DIMMING SWITCH SHALL BE MODEL #SPDM-D AS MANUFACTURED BY SENSOR SWITCH (S_D).

CEILING MOUNTED SENSORS SHALL BE MODEL #CM-PDT-9 AS MANUFACTURED BY SENSOR SWITCH.

CORNER MOUNTED SENSORS SHALL BE MODEL #W-PDT-16 AS MANUFACTURED BY SENSOR SWITCH.

POWER PACKS SHALL BE MODEL #PP20 AS MANUFACTURED BY SENSOR SWITCH.

DEVICE COLOR: WIRING DEVICE CATALOG NUMBERS IN SECTION TEXT DO NOT DESIGNATE DEVICE COLOR.

1. WIRING DEVICES CONNECTED TO NORMAL POWER SYSTEM: AS SELECTED BY ARCHITECT, UNLESS OTHERWISE INDICATED OR REQUIRED BY NFPA 70 OR DEVICE LISTING.

COVERPLATES SHALL BE SATIN-FINISHED STAINLESS STEEL OR AS SELECTED BY ARCHITECT.

RECEPTACLES: IDENTIFY PANELBOARD AND CIRCUIT NUMBER FROM WHICH SERVED. USE PRESS ON LABEL, BLACK LETTERING ON WHITE BACKGROUND ON FACE OF PLATE AND IN EASILY READABLE LOCATION INSIDE DEVICE BACKBOX, AND DURABLE WIRE MARKERS OR TAGS ON CONDUCTORS INSIDE OUTLET BOXES.

SURFACE RACEWAY SHALL BE MODEL #4000 SERIES AS MANUFACTURED BY LEGRAND.

OUTLET BOXES:

PROVIDE GALVANIZED PRESSED STEEL OUTLET BOXES OF PROPER SIZE AND TYPE AS REQUIRED BY THE BUILDING CONDITIONS TO SERVE ALL INTERIOR OUTLETS FOR MOTOR CIRCUITS, LIGHTING, SWITCHES, RECEPTACLES, SIGNALS, AND THE LIKE.

PROVIDE GALVANIZED CAST STEEL OUTLET BOXES OF PROPER SIZE AND TYPE AS REQUIRED BY THE BUILDING CONDITIONS TO SERVE ALL EXTERIOR OUTLETS FOR MOTOR CIRCUITS, LIGHTING, SWITCHES, RECEPTACLES, SIGNALS, AND THE LIKE.

LIGHTING:

REFER TO LIGHTING FIXTURES SCHEDULE OR LIGHTING FIXTURE SPECIFICATIONS.

TELECOMMUNICATIONS SERVICE AND RACEWAY SYSTEMS:

EMPTY CONDUIT SYSTEMS SHALL BE PROVIDED FOR TELECOMMUNICATIONS AND CABLE TELEVISION SYSTEMS. OUTLET DEVICES AND WIRING SHALL BE PROVIDED AND INSTALLED BY OTHERS.

THE EMPTY CONDUIT SYSTEM SHALL CONSIST OF ALL INTERIOR CONDUIT, PULL BOXES, OUTLET BOXES, BUSHED COVER PLATES AND OTHER MATERIALS TO LEAVE THE SYSTEM READY FOR INSTALLATION OF DEVICES.

FIRE ALARM AND SMOKE DETECTION SYSTEM:

PRIOR TO STARTING WORK, ESTABLISH THAT SYSTEM IS IN PROPER WORKING ORDER. IF CONDITION EXISTS WHICH PREVENTS NORMAL OPERATION OF SPECIFIED ADDITIONS AND EXTENSIONS, BRING THIS FACT TO ARCHITECT'S ATTENTION PRIOR TO DOING WORK AFFECTING EXISTING SYSTEM.

WHERE WORK IS DONE WITHOUT SUCH NOTIFICATION, IT SHALL BE ASSUMED THAT CONNECTIONS HAVE BEEN MADE TO A WORKING SYSTEM, AND PERFORMANCE REQUIREMENTS AND GUARANTEE WILL APPLY TO ENTIRE SYSTEM.

ALL FIRE ALARM AND DETECTION SYSTEM WIRING SHALL MATCH EXISTING.

THE EXISTING FIRE ALARM AND SMOKE DETECTION SYSTEM CONSISTS OF A CENTRAL CONTROL PANEL FOR MONITORING AND CONTROL OF SMOKE DETECTING DEVICES, MANUAL ALARM SYSTEMS, WATER FLOW AND TAMPER SWITCHES, AUDIBLE AND VISUAL ALARM SYSTEMS, DOOR RELEASE, AND FAN SHUTDOWN SYSTEMS. PROVIDE ALL MODIFICATIONS AS REQUIRED TO ACCOMMODATE NEW DEVICES SHOWN ON PLANS OR INDICATED IN SPECIFICATION.

ALL NEW INITIATING DEVICES SHALL BE MULTIPLEXED ADDRESSABLE TYPES, COMPATIBLE WITH EXISTING SYSTEM.

HORNSTROBE ALARM UNITS SHALL BE PROVIDED AND SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 101, NFPA 72, AND THE AMERICANS WITH DISABILITIES ACT (ADA), AND SHALL THEREFORE HAVE A MINIMUM STROBE OUTPUT OF 15.75 CANDELA.

AFTER DATE OF SUBSTANTIAL COMPLETION, CONTRACTOR SHALL TEST THE FIRE ALARM SYSTEM COMPLYING WITH TESTING AND VISUAL INSPECTION REQUIREMENTS IN NFPA 72. CONTRACTOR SHALL SUPPLEMENT AUDIBLE DEVICES TO MEET CODE SOUND LEVELS.

MECHANICAL EQUIPMENT CONNECTIONS:

ALL POWER CONNECTIONS TO HEATING, AIR CONDITIONING, AND PLUMBING EQUIPMENT, WHICH SHALL INCLUDE SUPPLYING AND MOUNTING OF SAFETY DISCONNECT SWITCHES, SHALL BE PROVIDED. INCLUDE THE MOUNTING OF MOTOR STARTERS, WHICH SHALL BE FURNISHED BY THE SUPPLIERS OF MECHANICAL EQUIPMENT.

SAFETY SWITCHES SHALL BE PROVIDED AND SHALL CONSIST OF METAL ENCLOSED, EXTERNALLY OPERATED FUSED, OR UNFUSED SAFETY SWITCHES OF SUCH TYPE AND SIZE AS REQUIRED TO PROTECT AND DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED.

WHERE WEATHERPROOF SWITCHES ARE INDICATED OR REQUIRED, NEMA 3R RAIN-TIGHT ENCLOSURES SHALL BE PROVIDED.

SUPPORTS:

PROVIDE SUPPORTS, BRANCHES AND HANGERS FOR THE INSTALLATION OF OUTLETS, CONDUITS, PANELS, STARTING AND CONTROL EQUIPMENT.

600 VOLT CABLE:

ALL WIRE NO. 10, 12, AND 14 AWG SHALL BE SOLID CONDUCTOR TYPE THIN/THIN; NO. 8 AWG THROUGH NO. 1 AWG SHALL BE STRANDED CONDUCTOR TYPE THHN/THWN; NO. 1/0 AWG AND LARGER SHALL BE STRANDED CONDUCTOR TYPE XHHW.

TYPE MC CABLE SHALL CONFORM TO UL AND NEC ARTICLE 330, AND SHALL BE CONSTRUCTED OF MINIMUM NO. 12 AWG STRANDED COPPER CONDUCTORS, WITH THHN INSULATION.

CONDUIT:

ALL WIRING WILL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING:

ALL FEEDERS TO PANELBOARDS AND MECHANICAL EQUIPMENT AND HOMERUNS SHALL BE INSTALLED IN EMT, FINAL CONNECTIONS TO MECHANICAL EQUIPMENT SHALL BE IN FLEXIBLE METALLIC CONDUIT.

ALL BRANCH CIRCUIT WORK RUN CONCEALED ABOVE INACCESSIBLE CEILINGS AND WITHIN STUD PARTITIONS OF FINISHED AREAS SHALL BE INSTALLED IN MC CABLE.

ALL BRANCH CIRCUIT WORK RUN ABOVE ACCESSIBLE CEILINGS OR IN AREAS WITHOUT CEILINGS SHALL BE INSTALLED IN EMT.

BRANCH CIRCUIT HOMERUNS FROM LAST J-BOX TO PANELBOARD SHALL BE EMT CONDUIT. J-BOX SHALL BE LOCATED IN AREA SERVED BY BRANCH CIRCUIT. DOWNSTREAM FROM J-BOX SHALL BE MC CABLE.

ELECTRICAL METALLIC TUBING (EMT) SHALL BE GALVANIZED STEEL, CONFORMING TO ANSI C80.3, UL 797, AND NEC ARTICLE 358. PROVIDE WITH COMPRESSION TYPE FITTINGS, COUPLINGS, AND CONNECTORS.

CONNECTORS FOR METAL CONDUIT SHALL BE INSULATED THROAT TYPE, PROVIDE GROUNDING BUSHINGS OR LOCKNUTS AT ALL METALLIC RACEWAY CONNECTIONS TO SHEET STEEL BOXES AND ENCLOSURES.

EXTERIOR CONDUIT SHALL BE LIQUIDTIGHT FLEXIBLE METAL CONDUIT.

GROUNDING:

A COMPLETE CONTINUOUS GROUNDING SYSTEM TO THOROUGHLY GROUND THE NON-CURRENT CARRYING METAL PARTS OF EVERY NEW PIECE OF INSTALLED EQUIPMENT SHALL BE PROVIDED. THE SYSTEM SHALL BE CONNECTED TO PROVIDE AN INDEPENDENT FAULT RETURN TO SOURCE.

ENCLOSED CIRCUIT BREAKER:

THERMAL-MAGNETIC CIRCUIT BREAKERS: INVERSE TIME-CURRENT ELEMENT FOR LOW-LEVEL OVERLOADS AND INSTANTANEOUS MAGNETIC TRIP ELEMENT FOR SHORT CIRCUITS. ADJUSTABLE MAGNETIC TRIP SETTING FOR CIRCUIT-BREAKER FRAME SIZES 400A AND LARGER.

CIRCUIT BREAKER COMPLY WITH UL 489, NEMA AB 1, AND NEMA AB 3, WITH INTERRUPTING CAPACITY TO COMPLY WITH AVAILABLE FAULT CURRENTS.

CIRCUIT BREAKER SHALL BE MANUFACTURED BY EATON ELECTRICAL INC, CUTLER-HAMMER BUSINESS UNIT, GENERAL ELECTRIC COMPANY, GE CONSUMER & INDUSTRIAL - ELECTRICAL DISTRIBUTION, SIEMENS ENERGY & AUTOMATION, INC, AND SQUARE D, A BRAND OF SCHNEIDER ELECTRIC.

FIRE-STOPPING:

FIRE STOPPING SHALL BE PROVIDED FOR ALL PENETRATIONS OF CONDUIT, WIREWAYS, ETC., THROUGH FIRE-RATED WALLS AND FLOORS AND OTHER FIRE-RATED SEPARATIONS AS FOLLOWS:

CONDUIT PENETRATION THROUGH POURED CONCRETE OR MANSORY WALLS SHALL BE GROUTED IN WITH CONCRETE AND PROVIDED WITH TIGHT FITTING ESCUTCHEON PLATES ON BOTH SIDES. CONDUIT PENETRATIONS THROUGH FIRE-RATED DRY WALLS SHALL BE WITH SLEEVES THROUGH THE WALL FITTED WITH ESCUTCHEON PLATES ON BOTH SIDES WITH EXCESS OPENINGS FILLED WITH FIRE STOP MATERIAL SPECIFICALLY MANUFACTURED FOR THE PURPOSE.

EXCESS SPACE WITHIN CONDUIT SLEEVES OR STUBS THROUGH FLOOR SLAB OR WALLS WHERE LOW VOLTAGE CABLES PASS THROUGH SHALL BE FILLED WITH FIRESTOPPING MATERIAL SPECIFICALLY MANUFACTURED FOR THE PURPOSE.

ALL MATERIALS USED FOR FIRESTOPPING SHALL BE APPROVED FOR THE PURPOSE AND THE RATING OF THE WALL OR FLOOR AND ALL METHODS EMPLOYED SHALL MEET WITH THE APPROVAL OF THE LOCAL AUTHORITIES.

SLEEVE AND SLEEVE SEALS:

PROVIDE STEEL PIPE SLEEVES ASTM A 53/A 53M, TYPE E, GRADE B, SCHEDULE 40, ZINC COATED, PLAIN ENDS. PROVIDE SLEEVES FOR CONDUITS PENETRATING NON-FIRE-RATED GYPSUM BOARD ASSEMBLIES WITH GALVANIZED-STEEL SHEET.

PROVIDE SLEEVE-SEAL SYSTEMS MODULAR SEALING DEVICE, DESIGNED FOR FIELD ASSEMBLY, TO FILL ANNULAR SPACE BETWEEN SLEEVE AND RACEWAY OR CABLE.

PROVIDE MODULAR SEALING DEVICE, DESIGNED FOR FIELD ASSEMBLY, TO FILL ANNULAR SPACE BETWEEN SLEEVE AND RACEWAY OR CABLE, PROVIDE SEALING ELEMENTS (EDPM), PRESSURE PLATES (CARBON STEEL) AND CONNECTING BOLTS AND NUTS (CARBON STEEL).

PROVIDE SLEEVE-SEAL FITTINGS MANUFACTURED PLASTIC, SLEEVE-TYPE, WATERSTOP ASSEMBLY MADE FOR EMBEDDING IN CONCRETE SLAB OR WALL. UNIT SHALL HAVE PLASTIC OR RUBBER WATERSTOP COLLAR WITH CENTER OPENING TO MATCH PIPEING OD.

PROVIDE SILICONE SEALANTS WITH SINGLE COMPONENT, SILICONE-BASED, NEUTRAL-CURING ELASTOMETRIC SEALANTS. SILICON FOAMS SHALL BE PROVIDED MULTICOMPONENT, SILICONE-BASED LIQUID ELASTOMERS.

INSTALLATION:

INSTALL WORK IN A NEAT AND WORKMAN LIKE MANNER.

CONTRACTOR SHALL BALANCE THE LOAD CONNECTED ON THE PANELBOARDS EQUALLY AMONG THE PHASES. MEASURED PHASE IMBALANCE SHALL NOT EXCEED 10%. AS INSTALLED CIRCUIT NUMBERS SHALL BE REFLECTED ON THE PANEL DIRECTORIES.

CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH PARTITIONS OR SLABS WITH A U.L. APPROVED SMOKE STOP TO MAINTAIN THE INTEGRITY OF THE RESPECTIVE FIRE RATING.

FOR EXACT LOCATIONS OF LIGHTING FIXTURES, RECEPTACLES, DATA AND TELEPHONE OUTLETS, REFER TO ARCHITECT'S DRAWINGS. COORDINATE ALL WORK WITH DATA AND TELEPHONE CONTRACTORS.

PRIOR TO FINAL ACCEPTANCE, CLEAN ALL LIGHTING FIXTURES, GLASSWARE, PANELBOARDS, CABINETS, DEVICE PLATES AND OTHER ITEMS FURNISHED UNDER THIS CONTRACT.

AS-BUILT DRAWINGS:

PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.

TESTS:

TEST ALL WIRING, LIGHTING FIXTURES, SWITCHES, CONTROLLERS, STARTERS, MOTORS, ETC., WIRED UNDER THIS DIVISION. LEAVE FREE FROM GROUNDS, CROSSES, SHORTS, OPENS, ETC., AND LEAVE MATERIALS AND APPARATUS IN PROPER AND SATISFACTORY WORKING CONDITION.

PERFORM ADDITIONAL TESTS REQUIRED BY OWNER, ARCHITECT OR ANY OTHER AUTHORITIES HAVING JURISDICTION.

CORRECT OR REPLACE ANY CIRCUIT, MATERIAL OR EQUIPMENT WHICH IS FOUND TO BE DEFECTIVE BY THESE TESTS. CORRECT DEFECTS, WHETHER DUE TO FAULTY WORKMANSHIP OR MATERIAL FURNISHED, IN A MANNER ACCEPTABLE TO ENGINEER WITHOUT ADDITIONAL COST.

TEST FOR PROPER OPERATION OF EMERGENCY LIGHTING EQUIPMENT UNDER SIMULATED EMERGENCY CONDITIONS.

COORDINATION AND SHORT CIRCUIT STUDY

ELECTRICAL CONTRACTOR SHALL PERFORM A SHORT CIRCUIT AND COORDINATION STUDY AND SUBMIT WITH PANELBOARD SUBMITTAL FOR ENGINEER'S REVIEW. STUDY SHALL MODEL FROM TRANSFORMER TX-1 AND DOWNSTREAM.

Central
Connecticut
State
University



1615 Stanley Street
New Britain, CT 06050

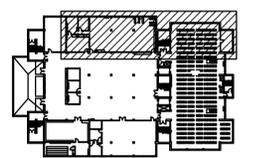
REVISIONS

NUMBER	DATE	DESCRIPTION


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MEDIA CENTER
RELOCATION TO
ELIHU BURRITT
LIBRARY



KEY PLAN
NOT TO SCALE

CCSU PROJECT No.: 22-87

DPW PROJECT No.: BI-RC-397

DRAWN BY: RM

DATE: 8/5/2016

CAD FILE:

SPECIFICATIONS -
ELECTRICAL

BUILDING No.: DRAWING No.:

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