

Filename: P:\2020 - Richmond University Medical Center\Drawings\2020 - E-001.GD: Cover Drawing User: Shuman Main Rev Date: 12/22/2023 2:06 PM

GENERAL NOTES

1.

ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS:
A. NATIONAL ELECTRICAL CODE 2008 (WITH NYC 2011 AMENDMENTS)
B. 2022 NYC BUILDING CODE
C. BUILDING RULES AND REGULATIONS.
D. LOCAL FIRE CODE AND FIRE DEPARTMENT REQUIREMENTS.
E. 2020 NYC ENERGY CONSERVATION CODE
F. UTILITY COMPANY STANDARDS AND REQUIREMENTS.
G. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
H. AMERICAN DISABILITIES ACT (ADA)
I. UNDERWRITERS LABORATORIES, INC. (UL)
J. NATIONAL FIRE PROTECTION ASSOCIATION
K. FGI GUIDELINES FOR DESIGN AND CONSTRUCTION OF HEALTH CARE FACILITIES 2018 EDITION.
L. ALL LOCAL JURISDICTION DIRECTIVES AND REQUIREMENTS.
2.

PROVIDE A COMPLETE OPERABLE SYSTEM IN A WORKMANLIKE MANNER. OUTLINE DESCRIPTION AND EQUIPMENT DO NOT LIMIT CONTRACTOR'S LIABILITY FOR THE INSTALLATION OF A COMPLETE OPERABLE SYSTEM.
3.

ALL ELECTRICAL EQUIPMENT SHALL BE THE LATEST OF THE CURRENT YEAR IN DESIGN, MATERIAL AND WORKMANSHIP, AND SHALL BE THE TYPE OR MODEL CALLED FOR IN THESE DRAWINGS AND SPECIFICATIONS
4.

CONTRACTOR TO BE RESPONSIBLE FOR REVIEWING THE FULL SET OF BID DOCUMENTS TO BE AWARE OF THE TOTAL SCOPE PRIOR TO SUBMITTING BID. ALL WORK SHOWN ON THE DRAWINGS NOT SPECIFICALLY CALLED OUT AS EXISTING SHALL BE CONSIDERED WORK TO BE PERFORMED UNDER THIS CONTRACT.
5.

BIDDERS, BEFORE SUBMITTING A PROPOSAL, SHALL VISIT AND CAREFULLY EXAMINE THE SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH EXAMINATION HAS BEEN MADE. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED, NO ALLOWANCE WILL SUBSEQUENTLY BE MADE TO THE CONTRACTOR BY REASON OF ANY ERROR DUE TO THE CONTRACTOR'S NEGLIGENCE TO COMPLY WITH THIS REQUIREMENT. REPORT ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS TO THE ENGINEER.
6.

BEFORE COMMENCING WORK, THE CONTRACTOR SHALL FILE ALL REQUIRED CERTIFICATES OF INSURANCE WITH THE BUILDING DEPARTMENT, FIRE DEPARTMENT AND ALL OTHER GOVERNMENTAL AGENCIES. OBTAIN ALL REQUIRED PERMITS, TEST REPORTS, CERTIFICATIONS FOR T.C.O. AND C.O. AND PAY ALL FEES REQUIRED..
7.

ALL NOTATIONS OF "SCALE" ARE INTENDED AS APPROXIMATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ASCERTAIN THE EXACT DIMENSIONS IN FIELD.
8.

ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, SIZES AND LOCATION OF EQUIPMENT AND WIRING ARE SHOWN TO SCALE WHERE POSSIBLE, BUT MAY BE DISTORTED FOR CLARITY ON THE DRAWINGS.
9.

ELECTRICAL CONTRACTOR SHALL TAKE DELIVERY AND RESPONSIBILITY FOR ALL EQUIPMENT PRE-PURCHASED BY THE OWNER FOR THIS PROJECT. WORK SHALL INCLUDE RECEIVING EQUIPMENT AT STREET- SIDE MOVING IT TO INTERIM ONSITE SECURE STORAGE LOCATION, PROTECTING EQUIPMENT FROM DAMAGE, MOVING THE EQUIPMENT FROM STORAGE TO ITS FINAL POSITION, SETTING IN PLACE, AND COMPLETION OF ALL INSTALLATION, TESTING AND COMMISSIONING PROCEDURES REQUIRED FOR APPLICABLE EQUIPMENT.
10.

UPON COMPLETION OF ALL ELECTRICAL WORK, ELECTRICAL CONTRACTOR SHALL ADJUST AND TEST ALL CIRCUITS, WIRING DEVICES, LIGHTING FIXTURES, MOTORS AND ANY OTHER ELECTRICAL ITEMS INSTALLED. ANY DEFECTIVE ITEMS SHALL BE IMMEDIATELY REPAIRED OR REPLACED WITH NEW EQUIPMENT OR MATERIALS AND THAT PORTION OF THE SYSTEM SHALL BE RE-TESTED. ALL SUCH REMEDIAL WORK SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
11.

UPON COMPLETION OF WORK, ELECTRICAL CONTRACTOR SHALL BALANCE ALL PANELBOARDS AFFECTED TO WITHIN 10% DEVIATION BETWEEN PHASES.
12.

REMOVE ALL DEBRIS RESULTING FROM REMOVAL AND/OR INSTALLATION OF ELECTRICAL WORK FROM THE PREMISES. REMOVAL OF DEBRIS SHALL BE COORDINATED WITH BUILDING MANAGEMENT. DISPOSAL WORK SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE BUILDING CODE AND WITH ALL STATE AND FEDERAL REGULATIONS
13.

UNLESS OTHERWISE NOTED, ELECTRICAL EQUIPMENT INCLUDING BUT NOT LIMITED TO PULL BOXES, JUNCTION BOXES, WIRING DEVICES, PANELBOARDS, LOW VOLTAGE SYSTEMS DEVICES, ETC WHERE INDICATED ON DRAWINGS, SHALL BE CONSIDERED SHOWN AT THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL LOCATE THESE ITEMS AS FIELD CONDITIONS DICTATE AND AS APPROVED BY THE ARCHITECT AND/OR ENGINEER.
14.

ALL CONDUIT RUNS, WHEN SHOWN ON THE DRAWINGS, ARE SHOWN DIAGRAMMATIC ALLY TO OUTLINE THE GENERAL ROUTING OF MAJOR FEEDERS AND BRANCH WIRING. IT IS NOT WITHIN THE SCOPE OF THESE DRAWINGS TO SHOW ALL NECESSARY BENDS, OFFSETS, PULL BOXES, JUNCTION BOXES AND OBSTRUCTIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL HIS WORK TO CONFORM TO THE REQUIREMENTS OF THE ELECTRICAL CODE AND TO PRESERVE HEADROOM.
15.

ADDITIONAL PULL BOXES, JUNCTION BOXES AND WIRE TROUGHS NOT SHOWN ON DRAWINGS SHALL BE PROVIDED WHERE REQUIRED BY APPLICABLE CODE REQUIREMENTS OR WHERE CALLED FOR BY FIELD CONDITIONS. PULL AND JUNCTION BOXES SHALL BE SURFACE TYPE IN UNFINISHED SPACES AND FLUSH TYPE IN FINISHED SPACES. PROVIDE COVERS FOR ALL JUNCTION BOXES, PULL BOXES AND WIRE TROUGHS. COVERS SHALL BE ACCESSIBLE.
16.

CONDUIT RUNS SHALL CLEAR ALL ARCHITECTURAL FEATURES (DOORS, WINDOWS, ETC.) AND STRUCTURAL MEMBERS. CONDUIT INSTALLATION SHALL ALSO BE MADE TO AVOID INTERFERENCE WITH PIPES, DUCTS, OR OTHER EQUIPMENT CORRESPONDING TO OTHER TRADES, INCLUDING BUT NOT LIMITED TO MECHANICAL, PLUMBING AND FIRE PROTECTION. SHALL ANY OF THIS ELEMENTS PREVENT THE INSTALLATION OF RACEWAY AS DELINEATED ON THE CONTRACT DOCUMENTS, DEVIATION MUST BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ANY VARIATION DUE TO FIELD CONDITIONS SHALL NOT REPRESENT AN ADDITIONAL COST TO OWNER.
17.

ALL CONDUIT RUNS SHALL BE CONCEALED WITHIN WALLS OR CEILING. EXPOSED CONDUITS AND BOXES, WHEN REQUIRED, SHALL BE PAINTED. PAINTING SHALL CONSIST OF A PRIME COAT AND A FINISHED COAT, COLOR AS SELECTED BY ARCHITECT OR TO MATCH SURROUNDING SURFACES. FACTORY PAINTING WILL BE ACCEPTED AS A PRIME COAT.
18.

MINIMUM SIZE OF CONDUITS SHALL BE 3/4", UNLESS OTHERWISE NOTED.
19.

INSTALL PULL WIRES IN EMPTY RACEWAYS. USE POLYPROPYLENE OR MONOFILAMENT PLASTIC LINE WITH NOT LESS THAN 200-LB (90-KG) TENSILE STRENGTH. LEAVE AT LEAST 12 INCHES (300 MM) OF SLACK AT EACH END OF PULL WIRE
20.

PROVIDE PIPE SLEEVES WHERE CONDUITS ARE ROUTED THROUGH FOUNDATION WALLS, SLABS AND FIRE RATED PARTITIONS. PIPE SLEEVES SHALL BE GROUTED. SEALANT SHALL BE APPLIED AROUND THE CONDUIT IN THE SLEEVE IN ORDER TO PREVENT INGRESS OF MOISTURE. WALL AND SLAB PENETRATIONS SHALL BE COMPLETELY WATERPROOFED AND/OR FIRE PROOFED.
21.

ALL OPENINGS BETWEEN FLOORS, THROUGH RATED FIRE AND SMOKE WALLS, CREATED BY THE CONTRACTOR FOR CABLE OR CONDUIT PASS THROUGH SHALL BE SEALED WITH A FIRE STOPPING MATERIAL. FIRE STOPPING MATERIAL AND ITS APPLICATION SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT IS ACCEPTABLE TO THE LOCAL FIRE AND BUILDING AUTHORITIES HAVING JURISDICTION OVER THIS WORK. ANY OPENINGS CREATED BY OR FOR THE CONTRACTOR AND LEFT UNUSED SHALL ALSO BE SEALED AS PART OF THIS WORK. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATING OF WALLS AND SLABS.
22.

IN UNFINISHED SPACES OF THE BUILDING SUCH AS FAN ROOMS, PIPE SPACES, ETC., LOCATIONS OF CONDUIT AND OUTLETS ARE APPROXIMATE AND SHALL CLEAR PIPING AND ALL OTHER CONSTRUCTION. ALL OUTLETS MUST BE UNOBSTRUCTED AND EXTENDED AS DIRECTED TO CLEAR ANY INTERFERENCE WITH FIXTURES, PIPING EQUIPMENT, ETC.
23.

SUPPORT ALL ELECTRICAL EQUIPMENT AND CONDUIT FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. ALL ELECTRICAL EQUIPMENT AND RACEWAY SHALL BE SUSPENDED FROM SUPPLEMENTAL SLOTTED CHANNEL FRAME. ALL SUCH MOUNTS, DEVICES, FASTENERS SHALL BE OF SUFFICIENT THICKNESS TO CARRY THE LOAD SUSPENDED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY ADDITIONAL SUPPLEMENTAL STEEL REQUIRED TO SUPPORT THE EQUIPMENT OR DEVICES.
24.

PROVIDE OUTLET BOXES AND ENCLOSURES APPROPRIATE FOR THE PURPOSE AT ALL LOCATIONS WHERE THE DRAWINGS REQUIRE THE INSTALLATION OF ELECTRICAL DEVICES OR ELECTRICAL EQUIPMENT.
25.

ALL EXPOSED NONCURRENT-CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT AND RACEWAYS SHALL BE GROUNDED. FOR FEEDERS AND/OR BRANCH CIRCUITS WHERE GROUNDING CONDUCTOR IS NOT PROVIDED, METAL RACEWAYS AND METAL ENCLOSURES FOR CONDUCTORS SHALL BE TIGHTLY JOINED TO CREATE A CONTINUOUS ELECTRIC CIRCUIT AND SO ASSURE A PROPERLY GROUNDED SYSTEM. FITTINGS FOR JOINTS AND TERMINATIONS SHALL BE LISTED FOR GROUNDING INSTALLATION. PROVIDE BONDING JUMPERS WITH APPROVED FITTINGS OF SIZE REQUIRED FOR EQUIPMENT GROUNDING. THE CONTRACTOR SHALL ENSURE CONTINUITY OF THE GROUNDING CIRCUIT FROM THE SUPPLYING PANELBOARD GROUNDING BUS TO THE LOAD GROUND TERMINAL.
26.

UNLESS OTHERWISE NOTED, CONDUCTORS FOR POWER AND LIGHTING CIRCUITS SHALL BE OF TYPE THHN/THWN AND MINIMUM SIZE SHALL BE #12 AWG. CONDUCTORS #10 AWG AND SMALLER SHALL BE COPPER, SOLID OR STRANDED; #8 AWG AND LARGER SHALL BE COPPER, STRANDED, TYPE.
27.

BRANCH CIRCUIT CONDUCTORS SHALL BE INCREASED IN SIZE TO COMPENSATE FOR VOLTAGE DROP AS FOLLOWS:
A. FOR CIRCUITS RATED AT 120V, 20A THAT RUNS OVER 100'-0", USE No. 10 AWG WIRE SIZE
B. FOR CIRCUITS RATED AT 277V, 20A THAT RUNS OVER 200'-0", USE No. 10 AWG WIRE SIZE
28.

ALL CIRCUITS FEEDING COMPUTERS, DIMMING BALLAST, DIMMING SYSTEMS AND OTHER NONLINEAR LOADS SHALL HAVE A DEDICATED NEUTRAL AND GROUNDING CONDUCTOR.
29.

ELECTRICAL DRAWINGS INDICATE CIRCUIT NUMBERS (#) FOR RECEPTACLES, LIGHTING FIXTURES AND OTHER EQUIPMENT FEEDS. UNLESS OTHERWISE NOTED PROVIDE 2#12, 1#12G IN 3/4" CONDUIT TO 15A OR 20A CIRCUIT BREAKERS IN PANELS INDICATED. CIRCUIT NUMBERS (#) NOTED ON PLANS ARE INTENDED AS A GUIDE. FINAL NUMBERING SYSTEM TO BE NOTED ON AS-BUILT DRAWINGS AND ON TYPED PANELBOARD DIRECTORY CARDS.
30.

LOW VOLTAGE WIRING SHALL NOT BE PERMITTED IN THE SAME RACEWAY AS POWER WIRING.
31.

ALL GROUND WIRES SHALL BE INSTALLED IN CONDUIT.
32.

FURNISH AND INSTALL WIRING FOR EQUIPMENT FURNISHED BY OTHERS, AS SHOWN ON ARCHITECTURAL, HVAC, PLUMBING AND/OR ELECTRICAL DRAWINGS. COORDINATE WITH OTHER TRADES FOR DETAILS OF INSTALLATION AND WIRING REQUIREMENTS. THE TERM "WIRING" AS USED HEREIN SHALL INCLUDE FURNISHING AND INSTALLING CONDUIT, WIRES, JUNCTION/OUTLET BOXES, DISCONNECTS, OVERCURRENT PROTECTION DEVICES AND FINAL CONNECTIONS. COORDINATE FINAL CONDUCTOR SIZES, QUANTITIES, VOLTAGE REQUIREMENTS, AND OVERCURRENT DEVICE AND OUTLET RATINGS WITH ACTUAL EQUIPMENT TO BE FURNISHED TO THE SITE PRIOR TO FINALIZING WIRING INSTALLATION. MINOR ADJUSTMENTS TO WIRING REQUIREMENTS NECESSARY TO ACCOMMODATE ACTUAL FURNISHED EQUIPMENT SHALL BE PROVIDED AT NO ADDITIONAL COST TO OWNER.
33.

FURNISH AND INSTALL ALL COPPER MATERIALS INCLUDING BUT NOT LIMITED TO LUGS, COPPER BUS DETAILS/LUGS KITS, BUS BAR EXTENSIONS, ETC REQUIRED FOR OVER SIZED FEEDERS AND/OR REQUIRED TO ACCEPT INCOMING AND OUTGOING CABLES TO COMPLETE CONTRACT WORK. ALSO PROVIDE LABOR AND MATERIAL REQUIRED TO MODIFY EXISTING OR NEW EQUIPMENT INCLUDING ENCLOSURE MODIFICATIONS. CONTRACTOR TO PROVIDE ALL REQUIRED ELECTRICAL FINAL CONNECTIONS.
34.

VERIFY LOCATIONS OF ALL ELECTRICAL EQUIPMENT WITH ARCHITECTURAL DRAWINGS OR INTERIOR DETAILS. IN CENTERING OUTLETS AND LOCATING BOXES OR OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS, MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILING, ETC., AND CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
35.

REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF WIRING DEVICES SUCH AS RECEPTACLES, LIGHTING SWITCHES, DIMMERS, DATA/TELEPHONE OUTLETS, ETC.
36.

VERIFY SWITCHES, DIMMERS, RECEPTACLES AND COVER PLATES FINISHES WITH THE ARCHITECT AND/OR OWNER REPRESENTATIVE BEFORE PURCHASING AND INSTALLATION OF SUCH DEVICES.
37.

WHERE MULTIPLE SWITCHES AND RECEPTACLES ARE INDICATED AT THE SAME LOCATION, THEY SHALL BE GANGED TOGETHER AND MOUNTED BEHIND A COMMON FACE PLATE UNLESS POWERED FROM AN EMERGENCY POWER SOURCE. PROVIDE SEPARATE OUTLET BOXES FOR NORMAL AND EMERGENCY CIRCUITS
38.

PROVIDE GROUND FAULT CIRCUIT INTERRUPTER FOR EACH RECEPTACLE LOCATED WITHIN 6'-0" OF WATER OR LIQUIDS AND FOR OUTDOORS RECEPTACLES WHETHER INDICATED ON DRAWINGS OR NOT.
39.

MOUNTING HEIGHTS OF EQUIPMENT AND DEVICES SHALL BE COORDINATED WITH ARCHITECT. UTILIZE THE FOLLOWING MOUNTING HEIGHTS UNLESS OTHERWISE NOTED OR DIRECTED BY ARCHITECT (ALL DIMENSIONS TO CENTERLINE OF BOX U.O.N.):
A. RECEPTACLES (WALL MOUNTED) - 18" AFF
B. RECEPTACLES (COUNTERTOPS) - NO MORE THAN 20" ABOVE THE COUNTERTOP
C. VOICE/DATA OUTLETS - 18" AFF
D. WALL MOUNTED TELEPHONES - 48" AFF
E. LIGHTING SWITCHES AND CONTROLS - 48" AFF

GENERAL DEMOLITION NOTES

1.

MOUNTING HEIGHTS OF EQUIPMENT AND DEVICES SHALL BE COORDINATED WITH ARCHITECT. UTILIZE THE FOLLOWING MOUNTING HEIGHTS UNLESS OTHERWISE NOTED OR DIRECTED BY ARCHITECT (ALL DIMENSIONS TO CENTERLINE OF BOX U.O.N.):
A. RECEPTACLES (WALL MOUNTED) - 18" AFF
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C. VOICE/DATA OUTLETS - 18" AFF
D. WALL MOUNTED TELEPHONES - 48" AFF
E. LIGHTING SWITCHES AND CONTROLS - 48" AFF
40.

ALL ELECTRICAL EQUIPMENT AND ACCESSORIES INSTALLED OUTSIDE OR EXPOSED TO WEATHER SHALL HAVE NEMA 3R ENCLOSURES AND SHALL BE TIGHTLY GASKETED FOR A COMPLETE RAIN TIGHT INSTALLATION. ALL BUILDING EXTERIOR MOUNTED RECEPTACLES SHALL BE GFI RATED AND MOUNTED IN WEATHERPROOF ENCLOSURE.
41.

THE AREA ABOVE THE ELECTRICAL EQUIPMENT SUCH AS DISTRIBUTION BOARDS, PANELBOARDS, TRANSFORMERS, ETC., SHALL BE DEDICATED FOR ELECTRICAL INSTALLATION AND SHALL BE CLEAR FROM WORK OF OTHER TRADES (PIPING, DUCTS, ETC.).
42.

FOR ALL RECESSED PANELS A TROUGH SHALL BE PROVIDED IN THE NEAREST ACCESSIBLE CEILING WITH TWO (2) SPARE 2" CONDUITS AND TWO (2) SPARE 1" CONDUITS UNLESS OTHERWISE NOTED TO BE INTERCONNECTED BETWEEN THE TROUGH AND THE RECESSED PANEL FOR FUTURE USE.
43.

PROVIDE AND/OR REVISE THE PANEL DIRECTORY OF EACH AND EVERY NEW AND/OR EXISTING PANELBOARD AFFECTED BY THIS ELECTRICAL WORK.
44.

PROVIDE BLANK COVERS PLATES OVER ALL UNUSED OPENINGS IN NEW AND/OR EXISTING PANELBOARDS.
45.

SHORT CIRCUIT RATING OF ELECTRICAL EQUIPMENT (CIRCUIT BREAKERS, FUSES, DISCONNECT SWITCHES, PANELBOARDS, ETC.) SHALL MEET OR EXCEED THE AVAILABLE FAULT CURRENT AT THEIR POINT OF CONNECTION AS REQUIRED FOR A FULLY RATED SYSTEM.
46.

PROVIDE UNFUSED DISCONNECT SWITCHES FOR ALL MECHANICAL EQUIPMENT UNLESS OTHERWISE NOTED ON CONSTRUCTION DOCUMENTS.
47.

THE MINIMUM RATING OF DISCONNECT SWITCHES SHALL BE EQUAL TO OR GREATER THAN THE RATING OF THE PROTECTIVE DEVICES ON THE SUPPLY SIDE OF THE DISCONNECT SWITCH. MINIMUM DISCONNECT SWITCH SIZE IS 30 AMPERES.
48.

ALL EQUIPMENT SHALL HAVE COPPER CURRENT CARRYING PARTS INCLUDING GROUND BUS AND TERMINALS. ALUMINUM SHALL NOT BE PERMITTED.
49.

ARCHITECTURAL FEATURES AS WELL AS OTHER TRADES EQUIPMENT SHOWN ON ELECTRICAL DRAWINGS ARE FOR BACKGROUND INFORMATION ONLY. COORDINATE WITH OTHER TRADES TO DETERMINE THE EXACT LOCATION OF FANS, A/C UNITS, MOTORS, PUMPS, EQUIPMENT TERMINAL BOXES, AND OTHER EQUIPMENT TO BE INSTALLED BY OTHER TRADES BEFORE CONDUIT WORK IS STARTED.
50.

FOR EXACT LOCATION OF LIGHT FIXTURES, LIGHTING FIXTURE SCHEDULE AND LIGHTING SYMBOLS REFER TO ARCHITECTURAL AND/OR LIGHTING CONSULTANT DRAWINGS. INFORMATION SHOWN IN ELECTRICAL DRAWINGS IS FOR REFERENCE ONLY. FINAL LIGHTING APPROVAL BY ARCHITECT.
51.

MOUNTING ACCESSORIES FOR RECESSED LIGHTING FIXTURES SHALL BE APPROPRIATE TO MEET THE REQUIREMENTS OF THE CEILING CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPE SCHEDULE.
52.

PENDANT MOUNTED FIXTURES IN AREAS WITH NO HUNG CEILING SHOULD BE INSTALLED AFTER DUCTWORK AND PIPING HAVE BEEN INSTALLED. COORDINATE MOUNTING HEIGHT AND LOCATION OF LIGHTING FIXTURES TO CLEAR MECHANICAL, ELECTRICAL, FIRE PROTECTION AND PLUMBING EQUIPMENT AND PIPING.
53.

CONTRACTOR TO BE RESPONSIBLE FOR ALL PENETRATIONS, CORE DRILLING, SEALING, WATERPROOFING, CUTTING, PATCHING, PAINTING AND RESTORATION FOR THE COMPLETE CONTRACT WORK INDICATED. ALL RESTORATION WORK PERFORMED BY THIS CONTRACTOR SHALL RESTORE DISTURBED SURFACES TO ACCURATELY MATCH ALL SURROUNDING CONSTRUCTION USING THE SAME MATERIAL, WORKMANSHIP AND FINISH AS EXISTING SURFACES.
54.

PROVIDE 4-INCH HIGH CONCRETE HOUSING PADS FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT.
55.

CONTRACTOR TO PROVIDE LABOR AND MATERIALS REQUIRED FOR THE INSTALLATION AND MAINTENANCE OF TEMPORARY LIGHTING AND REQUIRED POWER SOURCES.
56.

INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM THE HOSPITAL AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH THE AREAS.
57.

MAINTAIN CONTINUOUS SERVICE ON FEEDERS SERVING THE AREAS AFFECTED DURING ALL THE PERIOD THE AREA IS UNDER CONSTRUCTION. NO OUTAGES WILL BE PERMITTED IN THESE AREAS DUE TO THE CONSTRUCTION PHASE. ALL WORK REQUIRING TEMPORARY SHUTDOWN SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER. ANY REQUEST FOR SHUTDOWNS SHOULD BE BROUGHT TO THE ATTENTION OF OWNER'S REPRESENTATIVE AND BUILDING OPERATING PERSONNEL AND IT MUST BE NOTIFIED 72 (SEVENTY-TWO) HOURS IN ADVANCE. WORK SHALL NOT BE PERFORMED WITHOUT WRITTEN APPROVAL.
58.

ALL WORK REQUIRING ELECTRICAL SHUTDOWN WHICH WILL AFFECT OTHER FLOORS OF THE BUILDING OR EVEN AFFECT THE NORMAL CONTINUATION OF CONSTRUCTION WORK ON THESE & OTHER FLOORS. CONTRACTOR TO PROVIDE A TEMPORARY PROBABLE EMERGENCY GENERATOR, AND SHALL NOT DISTURB CONTINUITY OF ELECTRICAL SERVICE TO THE AFFECTED FLOORS AND SHALL BE COORDINATED WITH THE FACILITY MANAGER.
59.

ALL ELECTRICAL WORK IN ADJOINING AREAS WHICH IS REQUIRED TO FUNCTION BUT IS AFFECTED BY THIS WORK SHALL BE RECONNECTED AND RESTORED TO ITS PRESENT FUNCTION AS PART OF THE ELECTRICAL SYSTEM OF THE BUILDING.
60.

ALL PENETRATIONS THROUGH OR CHOPPING OF FLOOR SLAB FOR ELECTRICAL INSTALLATION SHALL BE COORDINATED WITH FACILITY MANAGER. ALL WORK SHALL BE PERFORMED AFTER NORMAL BUSINESS HOURS. LOCATIONS SHALL BE LAID OUT AND CONFIRMED BY ARCHITECT PRIOR TO START OF PHYSICAL WORK.
61.

ELECTRICAL CONTRACTOR SHALL OBTAIN AN "INFECTION CONTROL RISK ASSESSMENT (ICRA) FROM THE OWNER FOR INFECTION CONTROL CONSTRUCTION STANDARD PROCEDURES.
62.

REFER TO PROJECT MANUAL/BOOK SPECIFICATION DOCUMENTS FOR ADDITIONAL INFORMATION, DETAILS & REQUIREMENTS PERTAINING TO THE SCOPE OF WORK.
63.

RACEWAY SYSTEM FOR THE LIFE SAFETY BRANCH AND CRITICAL BRANCH OF THE EMERGENCY SYSTEM SHALL BE KEPT ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT AND SHALL NOT ENTER THE SAME RACEWAY, BOXES, OR CABINETS WITH EACH OTHER OR OTHER WIRING.

DRAWING LIST

E-001.00	ELECTRICAL GENERAL NOTES AND DRAWING LIST
E-002.00	ELECTRICAL ABBREVIATIONS AND SYMBOL LIST
E-102.00	ELECTRICAL DEMOLITION 1ST FLOOR PLAN
E-200.00	ELECTRICAL SUB-BASEMENT FLOOR PLAN
E-201.00	ELECTRICAL BASEMENT FLOOR PLAN
E-202.00	ELECTRICAL 1ST FLOOR POWER PLAN
E-202A.00	ELECTRICAL 1ST FLOOR MECHANICAL POWER PLAN
E-202B.00	ELECTRICAL 1ST FLOOR CONDUIT ROUTING PLAN
E-202C.00	ELECTRICAL 1ST FLOOR NURSE CALL PLAN
E-203.00	ELECTRICAL 2ND FLOOR POWER PLAN
E-204.00	ELECTRICAL 3RD FLOOR POWER PLAN
E-205.00	ELECTRICAL ROOF POWER PLAN
E-301.00	ELECTRICAL LIGHTING 1ST FLOOR PLAN
E-401.00	ELECTRICAL PART PLANS (SHEET 1 OF 3)
E-402.00	ELECTRICAL PART PLANS (SHEET 2 OF 3)
E-403.00	ELECTRICAL PART PLANS (SHEET 3 OF 3)
E-501.00	ELECTRICAL PANEL SCHEDULES (SHEET 1 OF 2)
E-502.00	ELECTRICAL PANEL SCHEDULES (SHEET 2 OF 2)
E-503.00	ELECTRICAL SINGLE LINE DIAGRAM
E-601.00	ELECTRICAL DETAILS
E-701.00	ELECTRICAL SPECIFICATIONS (SHEET 1 OF 3)
E-702.00	ELECTRICAL SPECIFICATIONS (SHEET 2 OF 3)
E-703.00	ELECTRICAL SPECIFICATIONS (SHEET 3 OF 3)
REFER TO FIRE ALARM DRAWINGS FOR ADDITIONAL SCOPE AND DETAILS ASSOCIATED WITH THE FIRE ALARM SYSTEM	

SCHUNKEWITZ

ARCHITECTURE

INTERIORS

PROJECT MANAGEMENT

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Seal & Signature

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Lilker

MEDICAL EQUIPMENT/SYSTEM COMPONENT REQUIREMENTS

NOT ALL ELECTRICAL EQUIPMENT TO BE PROVIDED ARE INDICATED ON THE ELECTRICAL DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE SIEMENS SITE SPECIFIC DRAWINGS FOR FURTHER DETAILS AND REQUIREMENTS TO BE PROVIDED BY THIS CONTRACTOR. WHEREVER THE SIEMENS-HEALTHCARE SITE SPECIFIC DRAWINGS INDICATE "BY CONTRACTOR OR BY OWNER" IT IS UNDERSTOOD THAT THE ELECTRICAL CONTRACTOR SHALL PROVIDE SUCH EQUIPMENT, DEVICES OR CABLES. INFORMATION ON THE SIEMENS-HEALTHCARE SITE SPECIFIC DRAWINGS SHALL SUPERSEDE INFORMATION ON THESE DRAWINGS. FINAL LOCATION FOR ALL DEVICES, EQUIPMENT RATING, TROUGH AND CONDUIT SIZES SHALL BE COORDINATED WITH SIEMENS-HEALTHCARE REPRESENTATIVE. SHOULD INFORMATION ON THE SITE SPECIFIC MANUFACTURER DRAWINGS CONFLICT WITH INFORMATION ON TRADE DRAWINGS, CONTRACTOR SHALL REQUEST CLARIFICATION FROM ARCHITECT BEFORE PROCEEDING WITH CONSTRUCTION WORK RELATED TO SAID CONFLICT.

RICHMOND UNIVERSITY
MEDICAL CENTER

Project Name & Location:

BI-PLANE EP LAB
355 BARD AVENUE
STATEN ISLAND NY

Drawing Title:

ELECTRICAL GENERAL
NOTES AND DRAWING LIST

Drawn By:	Date:
SSI	05/23/2023
Checked By:	Scale:
MJR	AS NOTED

Issued To: For:
CONSTRUCTION DOCUMENTS

File No.: R2000

Drawing No.:


E-001.00

01 OF 23

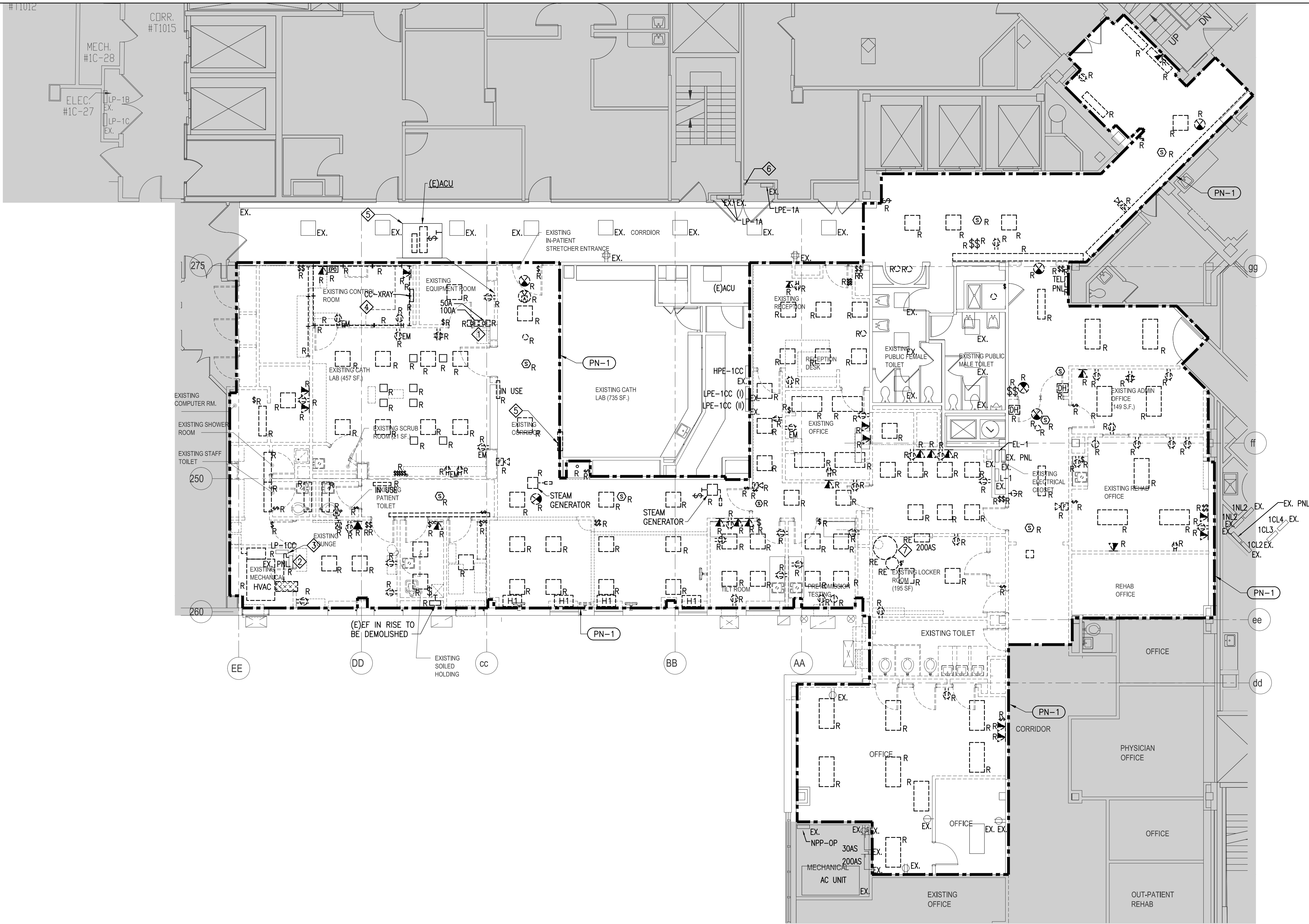
THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON, OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

Revised: 9/2020 - RJM/CJP 0101 Bldg. Mfg/Design/Estimate/2020 - E-001.00 E-002 - Cover Sheet.dwg User: Shuman Main: Rev Date: 9/22/2023 2:06 PM

ABBREVIATIONS			ELECTRICAL SYMBOL LIST		
SYMBOL	DESCRIPTION				
A, AMP	AMPERE	MCB	MAIN CIRCUIT BREAKER		
AC	ALTERNATING CURRENT	MIN	MINIMUM		
A/C	AIR CONDITIONER	MLO	MAIN LUGS ONLY		
AFF	ABOVE FINISHED FLOOR	MP	MECHANICAL PANEL		
AFI	ARC FAULT INTERRUPTER	MTD	MOUNTED		
AF/AT	AMPERE FRAME/AMPERE TRIP	NEC	NATIONAL ELECTRICAL CODE		
AIC	AMPERES INTERRUPTING CAPACITY	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION		
ARCH	ARCHITECTURAL	N	NEW		
AS/AF	AMPERE SWITCH/AMPERE FUSE	NC	NORMALLY CLOSED		
ATS	AUTOMATIC TRANSFER SWITCH	No	NUMBER		
A/V	AUDIO/VISUAL	NIC	NOT IN CONTRACT		
AWG	AMERICAN WIRE GAUGE	NTS	NOT TO SCALE		
BLDG	BUILDING	NO	NORMALLY OPEN		
BLR	BOILER	OCPD	OVER CURRENT PROTECTION DEVICE		
BMS	BUILDING MANAGEMENT SYSTEM	P	POLE(S)		
C, CDT	CONDUIT	PB	PULL BOX		
CB	CIRCUIT BREAKER	PNL	PANEL		
CELL	CELLAR	PWR	POWER		
CKT(S)	CIRCUIT(S)	RE	RELOCATE EXISTING		
CL	CLOSET	REC	RECEPTACLES		
CLG	CEILING	REF	REFRIGERATOR		
CO	CERTIFICATE OF OCCUPANCY	RM.	ROOM		
CONV	CONVENIENCE	RP	RECEPTACLE PANEL		
C/T	CURRENT TRANSFORMER	RUMC	RICHMOND UNIVERSITY MEDICAL CENTER		
CU	COPPER	SCH	SCHEDULE		
DGP	DATA GATHERING PANEL	SP	SPARE		
DISC	DISCONNECT	STD	STANDARD		
DIST	DISTRIBUTION	STOR	STORAGE		
DN	DOWN	SW	SWITCH		
DWG	DRAWING	TCO	TEMPORARY CERTIFICATE OF OCCUPANCY		
EC	EMPTY CONDUIT	TEL	TELEPHONE		
ELEC	ELECTRIC	TYP	TYPICAL		
ELEV	ELEVATOR	UON	UNLESS OTHERWISE NOTED		
EM	EMERGENCY	V	VOLT		
EM/NL	EMERGENCY/NIGHT LIGHT	VA	VOLT-AMPERE		
EMT	ELECTRIC METALLIC TUBING	VDC	DIRECT CURRENT VOLTAGE		
EQUIP	EQUIPMENT	W	WATT, WIRE, WIDTH		
ER	EXISTING TO RELOCATE	W/	WITH		
ETC	ETCETERA	WP	WEATHERPROOF		
EX	EXISTING	ø	PHASE		
FA	FIRE ALARM				
FBO	FURNISHED BY OTHERS				
FL	FLOOR				
FMC	FLEXIBLE METALLIC TUBING				
G, GND	GROUND				
GA	GAUGE				
GFI	GROUND FAULT INTERRUPTER				
GWB	GYPSUM WALL BOARD				
HP	HORSEPOWER				
IG	ISOLATED GROUND				
JB	JUNCTION BOX				
K	x 1000				
KN	KEY NOTE				
KVA	KILOVOLT AMPERE				
KW	KILOWATT				
KWH	KILOWATT HOUR				
L	LINE				
LP	LIGHTING PANEL				
LTG	LIGHTING				
MACH	MACHINE				
MECH.	MECHANICAL				
			LINE TYPES		
				LIGHT CONTINUOUS LINE INDICATES EXISTING TO REMAIN	
				DARK CONTINUOUS LINE INDICATES NEW WORK IN CONTRACT	
				DARK DASHED LINE INDICATES DEMOLITION WORK	
				DARK DASHED "X" LINE INDICATES DEMOLITION WORK	
			WIRING AND CONDUIT		
				CONCEALED HOME RUN TO PANELBOARD OR SWITCHBOARD. NOTATION INDICATES PANEL DESIGNATION AND CIRCUIT(S) NUMBER. No. OF ARROWS DENOTES No. OF CIRCUITS: 2#12, 1#12G, 3/4"C. (U.O.N.).	
				EX: PP#1: PANEL PP, CIRCUIT #1 (SINGLE POLE OCPD) PP#1,3: PANEL PP, CIRCUITS #1 & #3 (SINGLE POLE OCPD) PP#(1,3): PANEL PP, CIRCUITS #1 & #3 (TWO POLE OCPD) PP#1,3,5: PANEL PP, CIRCUITS #1, #3 & #5 (SINGLE POLE OCPD) PP#(1,3,5): PANEL PP, CIRCUITS #1, #3 & #5 (THREE POLE OCPD)	
				CONCEALED WIRING AND CONDUIT RUN. 2#12, 1#12G, 3/4"C. (U.O.N.)	
				CONTINUATION OF WIRING AND CONDUIT RUN. 2#12, 1#12G, 3/4"C. (U.O.N.)	
				EMPTY CONDUIT WITH DRAG LINE. PROVIDE RUBBER GROMMETS AT BOTH ENDS WHEN USED FOR LOW VOLTAGE WIRING (COMMUNICATION, SECURITY, ETC)	
				CONDUIT RUNNING UP	
				CONDUIT RUNNING DOWN	
				JUNCTION BOX AND FINAL CONNECTION TO EQUIPMENT. WHEN SHOWN WITH A SUFFIX, DESCRIPTION AS FOLLOWS: "FSD" INDICATES FOR FIRE SMOKE DAMPER "MD" INDICATES FOR MOTORIZED DAMPER "HT" INDICATES FOR HEAT TRACING "WP" INDICATES WEATHERPROOF (NEMA 3R) "CP" INDICATES FOR CONDENSATE PUMP "BMS" INDICATES FOR BMS "LD" INDICATES FOR LEAK DETECTION AND CONTROLS "SD" INDICATES FOR SMOKE DAMPER "DOOR" INDICATES FOR AUTOMATIC DOORS	
				WALL MOUNTED JUNCTION BOX AND FINAL CONNECTION TO EQUIPMENT. WHEN SHOWN WITH A SUFFIX, DESCRIPTION ABOVE:	
			DISTRIBUTION EQUIPMENT		
				CIRCUIT BREAKER. RATED AS INDICATED IN DRAWINGS (EG. 60/3 INDICATES 60-AMP TRIP, 3-POLE).	
				DISCONNECT SWITCH. RATED AS INDICATED IN DRAWINGS (EG. 60/3 INDICATES 60-AMP TRIP, 3-POLE).	
				FUSIBLE DISCONNECT SWITCH, 30A U.O.N., RATING AS INDICATED IN DRAWINGS (EG. 60/3, 60 INDICATES 60-AMP SWITCH, 3-POLE W/ 60-AMP FUSES).	
				FUSE RATED AS INDICATED IN DRAWINGS (EG. 30 INDICATES 30-AMP).	
				KILOWATT HOUR METER.	
				KILOWATT HOUR METER AND CURRENT TRANSFORMER.	
				GROUND ELECTRODE	
				ELECTRICAL PANELBOARD. FLUSH MOUNTED. RATING AS INDICATED ON DRAWINGS. NOTATION INDICATES PANEL DESIGNATION.	
				ELECTRICAL PANELBOARD. SURFACE MOUNTED. RATING AS INDICATED ON DRAWINGS. NOTATION INDICATES PANEL DESIGNATION.	
				SURGE PROTECTION DEVICE. RATED AS INDICATED IN DRAWINGS (EG. 30/3 INDICATES 30-AMP TRIP, 3-POLE).	
				CIRCUIT BREAKER. RATED AS INDICATED IN DRAWINGS (EG. 30/3 INDICATES 30-AMP TRIP, 3-POLE).	
				NON-FUSIBLE DISCONNECT SWITCH, 30A U.O.N., RATING AS FOLLOWS; (EG. 60/3 INDICATES 60-AMP SWITCH, 3-POLE).	
				FUSIBLE DISCONNECT SWITCH, 30A U.O.N., RATING AS FOLLOWS; (EG. 60/60/3 INDICATES 60-AMP SWITCH, 3-POLE, FUSED AT 60-AMP)	
				COMBINATION FUSIBLE DISCONNECT SWITCH/MOTOR STARTER W/ OVERLOAD PROTECTION AND AUTO/OFF/HAND SELECTOR SWITCH OR START/STOP CONTROL STATION AS SPECIFIED. RATED AS INDICATED IN DRAWINGS (EG. 60/3 INDICATES 60-AMP SWITCH, 3-POLE). STARTER SIZE SHALL BE SELECTED ACCORDING TO MOTOR HORSEPOWER RATING. <u>TO BE FURNISHED BY THE MECHANICAL, PLUMBING AND FIRE PROTECTION TRADES AND INSTALLED BY THE ELECTRICAL CONTRACTOR</u>	
				VARIABLE FREQUENCY DRIVE <u>TO BE FURNISHED BY THE MECHANICAL, PLUMBING AND FIRE PROTECTION TRADES AND INSTALLED BY THE ELECTRICAL CONTRACTOR</u>	
				THERMAL OVERLOAD SWITCH FOR CONTROL OF FRACTIONAL HORSEPOWER SINGLE PHASE MOTORS.	
				SINGLE PHASE MOTOR STARTER W/ OVERLOAD PROTECTION AND AUTO/OFF/HAND SELECTOR SWITCH FOR CONTROL OF FRACTIONAL HORSEPOWER SINGLE PHASE MOTORS.	
				MOTOR, NUMBER INDICATES HORSE POWER RATING.	
				CONTROL PANEL	
				HEADWALL REFER TO DETAIL ON DRAWING E-202.00	
				MED GAS PRESSURE SENSOR	
				DISTRIBUTION TRANSFORMER (RATING AS INDICATED IN DRAWINGS)	
			WIRING DEVICES		
				HOSPITAL-GRADE DUPLEX RECEPTACLE WALL MOUNTED IN A SINGLE GANG OUTLET BOX. 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20. CENTER-SHADE DENOTES EMERGENCY POWER CONNECTION. PROVIDE RED COLOR DEVICE FOR EMERGENCY. 'TR' DENOTES TAMPER-RESISTANT.	
				HOSPITAL-GRADE GFCI DUPLEX RECEPTACLE WALL MOUNTED IN A SINGLE GANG OUTLET BOX. 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20. CENTER-SHADE DENOTES EMERGENCY POWER CONNECTION. PROVIDE RED COLOR DEVICE FOR EMERGENCY. 'TR' DENOTES TAMPER-RESISTANT.	
				HOSPITAL-GRADE QUAD RECEPTACLE. (TWO DUPLEX RECEPTACLES) WALL MOUNTED IN A COMMON TWO GANG OUTLET BOX. 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20 (EACH) CENTER-SHADE DENOTES EMERGENCY POWER CONNECTION. PROVIDE RED COLOR DEVICE FOR EMERGENCY. 'TR' DENOTES TAMPER-RESISTANT.	
				HOSPITAL-GRADE GFCI QUAD RECEPTACLE. (TWO DUPLEX RECEPTACLES) WALL MOUNTED IN A COMMON TWO GANG OUTLET BOX. 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20 (EACH) CENTER-SHADE DENOTES EMERGENCY POWER CONNECTION. PROVIDE RED COLOR DEVICE FOR EMERGENCY. 'TR' DENOTES TAMPER-RESISTANT.	
				HOSPITAL-GRADE SINGLE RECEPTACLE WALL MOUNTED IN A SINGLE GANG OUTLET BOX. 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20.	
				HOSPITAL-GRADE SINGLE RECEPTACLE WALL MOUNTED IN A SINGLE GANG OUTLET BOX. 30-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-30.	
				HOSPITAL-GRADE DUPLEX RECEPTACLE FLUSH MOUNTED IN SLAB FLOOR BOX SYSTEM 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20. CENTER-SHADE DENOTES EMERGENCY POWER CONNECTION. PROVIDE RED COLOR DEVICE FOR EMERGENCY. 'TR' DENOTES TAMPER-RESISTANT.	
				HOSPITAL-GRADE QUAD RECEPTACLE. (TWO DUPLEX RECEPTACLES) FLUSH MOUNTED IN SLAB FLOOR BOX SYSTEM 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20 (EACH) CENTER-SHADE DENOTES EMERGENCY POWER CONNECTION. PROVIDE RED COLOR DEVICE FOR EMERGENCY. 'TR' DENOTES TAMPER-RESISTANT.	
				SPECIAL PURPOSE SINGLE RECEPTACLE WALL MOUNTED IN A SINGLE GANG OUTLET BOX. REFER TO PANEL SCHEDULES FOR NEMA CONFIGURATION "EM" DENOTES EMERGENCY POWER CONNECTION. PROVIDE RED COLOR DEVICE FOR EMERGENCY.	
				AC TOGGLE SWITCH WALL MOUNTED IN A SINGLE GANG OUTLET BOX. 20-AMP, 125/277-VOLT AC. SUBSCRIPT INDICATES LIGHTING FIXTURES TO BE CONTROLLED. SUBSCRIPT 'K' INDICATES KEY SWITCH.	
				MULTIPLE AC TOGGLE SWITCHES WALL MOUNTED IN A COMMON OUTLET BOX. 20-AMP, 125/277-VOLT AC (EACH). SUBSCRIPT INDICATES LIGHTING FIXTURES TO BE CONTROLLED.	
				DIMMER WITH SLIDE CONTROL WALL MOUNTED IN A SINGLE GANG OUTLET BOX. SUBSCRIPT INDICATES LIGHTING FIXTURES TO BE CONTROLLED.	
				AC 3-WAY TOGGLE SWITCH WALL MOUNTED IN A SINGLE GANG OUTLET BOX. 20-AMP, 125/277-VOLT AC. SUBSCRIPT INDICATES LIGHTING FIXTURES TO BE CONTROLLED.	
				WALL SWITCH/OCCUPANCY SENSOR, 125/277-VOLT AC. WALL MOUNTED IN A SINGLE GANG OUTLET BOX. SUBSCRIPT INDICATES LIGHTING FIXTURES TO BE CONTROLLED.	
				LOW VOLTAGE WALL SWITCH. WALL MOUNTED IN A SINGLE GANG OUTLET BOX. SUBSCRIPT INDICATES NUMBER OF ZONES.	
				WALL SWITCH/VACANCY SENSOR, 125/277-VOLT AC. WALL MOUNTED IN A SINGLE GANG OUTLET BOX. SUBSCRIPT INDICATES LIGHTING FIXTURES TO BE CONTROLLED.	
				LINE VOLTAGE KEY WALL SWITCH. WALL MOUNTED IN A SINGLE GANG OUTLET BOX. SUBSCRIPT INDICATES NUMBER OF ZONES.	
				LOW VOLTAGE WALL SWITCH AND DIMMER. WALL MOUNTED IN A SINGLE GANG OUTLET BOX. NUMERAL SUBSCRIPT INDICATES NUMBER OF ZONES.	
				LOW VOLTAGE TOUCH SCREEN. WALL MOUNTED IN A SINGLE GANG OUTLET BOX. SUBSCRIPT INDICATES NUMBER OF ZONES.	
				CEILING MOUNTED OCCUPANCY SENSOR. PROVIDE POWER SUPPLY AND ISOLATION RELAY. SUBSCRIPT INDICATES LIGHTING FIXTURES TO BE CONTROLLED.	
				CEILING MOUNTED VACANCY SENSOR. PROVIDE POWER SUPPLY AND ISOLATION RELAY, SUBSCRIPT INDICATES LIGHTING FIXTURES TO BE CONTROLLED.	
				COMBINATION DUAL-TECH (ULTRASONIC AND PIR) VACANCY SENSOR AND 0-10V DIMMING SWITCH. WALL MOUNTED IN A SINGLE GANG OUTLET BOX. 125/277-VOLT AC SUBSCRIPT INDICATES LIGHTING FIXTURES TO BE CONTROLLED.	
				NORMALLY-OFF CONCEALITE SELF-CONTAINED EMERGENCY LIGHTING FIXTURE PROVIDE WITH 90-MINUTE BACKUP BATTERY AND INTEGRAL TEST SWITCH 120/277V, LED.	
				CEILING MOUNTED EXIT SIGN FIXTURE REFER TO ARCHITECTURAL DRAWINGS FOR SPECS. MOUNTING AND CHEVRONS BY ARCHITECT.	
			TELECOMMUNICATION DEVICES		
				TELEPHONE OUTLET WALL MOUNTED IN A SINGLE GANG OUTLET BOX. WITH 1"C. STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. PROVIDE DRAG WIRE.	
				DATA OUTLET WALL MOUNTED IN A SINGLE GANG OUTLET BOX. WITH 1"C. STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. PROVIDE DRAG WIRE.	
				DATA/VOICE OUTLET WALL MOUNTED IN A SINGLE GANG OUTLET BOX. WITH 1"C. STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. PROVIDE DRAG WIRE.	
				DATA OUTLET FLUSH MOUNTED IN SLAB FLOOR BOX SYSTEM WITH 1"C. STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. PROVIDE DRAG WIRE.	
				DATA/VOICE OUTLET FLUSH MOUNTED IN SLAB FLOOR BOX SYSTEM WITH 1"C. STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. PROVIDE DRAG WIRE.	
				TV OUTLET WALL MOUNTED IN A SINGLE GANG OUTLET BOX. WITH 1"C. STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. PROVIDE DRAG WIRE.	
			SECURITY DEVICES		
				CARD READER WALL MOUNTED IN A SINGLE GANG OUTLET BOX. WITH 1"C. STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. PROVIDE DRAG WIRE.	
				PUSH PAD FOR AUTOMATIC DOORS WALL MOUNTED IN A SINGLE GANG OUTLET BOX. WITH 1"C. STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. PROVIDE DRAG WIRE.	
				ELECTRIC LOCK WALL MOUNTED IN A SINGLE GANG OUTLET BOX. WITH 1"C. STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. PROVIDE DRAG WIRE.	
				MOTION SENSOR WALL MOUNTED IN A SINGLE GANG OUTLET BOX. WITH 1"C. STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. PROVIDE DRAG WIRE.	
			NURSE CALL SYSTEM DEVICES		
				NURSE CALL STAFF CONSOLE. WALL MOUNTED MASTER STATION WITH TOUCH SCREEN. PROVIDE 4-GANG BACKBOX WITH 3-GANG MUD RING RACO 822/952 WITH 1"C STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. MODEL #NV-DPM	
				NURSE CALL POWER SUPPLY, 120VAC. TO BE LOCATED IN IT ROOM OR ELECTRICAL CLOSET. PROVIDE 18/2 WIRING FROM POWER SUPPLY TO NURSE CALL STAFF CONSOLE VIA 3/4"C. MODEL #NV-PSM/1	
				NURSE CALL SINGLE PATIENT STATION. PROVIDE 4" SQUARE BACKBOX WITH 1-GANG PLASTER RING. RACO 190 WITH 768 1-GANG ADAPTER OR EQUAL. PROVIDE WITH 1"C STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. PROVIDE CLASSIC CALL CORDS PER DEVICE AT PATIENT BEDS. EXACT LENGTH OF CALL CORDS TO BE DETERMINED BY RUMC. MODEL #NV-PS2	
				NURSE CALL CODE BLUE CALL (CB) PROVIDE 1-GANG BOX WITH 1"C STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. MODEL #NV-PBE2	
				NURSE CALL STAFF ASSIST DEVICE PROVIDE 1-GANG BOX WITH 1"C STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. MODEL #NV-PBE2	
				NURSE CALL DOME LIGHT. 'C' DENOTES CEILING MOUNTED. 4.7" SQUARE BACK-BOX WITH TWO-GAUGE PLASTER RING. RACO 257 WITH 818 OR EQUIVALENT. MODEL #NV-DOME2/V	
				NURSE CALL DUTY STATION PROVIDE 1-GANG BOX WITH 1"C STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. MODEL #NV-EDUTY	
				NURSE CALL PULL FOR AID DEVICE FOR TOILETS/SHOWER. PROVIDE PULL CORD. PROVIDE 1-GANG BOX WITH 1"C STUB-UP UP TO 4" ABOVE ACCESSIBLE CEILING. MODEL #NV-EP02/AP, NWP02/AP	
			MISCELLANEOUS SYSTEM DEVICES		
				EMERGENCY PUSH OFF BUTTON PROVIDE EACH DEVICE WITH CLEAR PLASTIC COVER. SAFETY TECHNOLOGY INTERNATIONAL OR EQUAL. MFR. MODEL # SS2231PO-EN MUST BE APPROVED BY ARCHITECT AND RUMC	
				INTERLOCKING DOOR SWITCH/CONTACT. SEE MODALITY VENDOR SITE SPECIFICS FOR WIRING REQUIREMENTS. PROVIDE MCMASTER-CARR ROLLER LIMIT SWITCH MODEL# 7076k14 OR EQUIVALENT MOUNTED IN DOOR. COORDINATE WITH ARCHITECT.	
				X-RAY IN USE LIGHT, WALL MOUNTED 120VAC POWERED THRU DOOR CONTACT AND BI-PLANE CONTROLLER NOVA WARNING LIGHT, MODEL NECT-ON, LED	
				X-RAY WARNING LIGHT CONTROLLER - SEE PART PLANS FOR GE SPECS. BEVCO/GE MODEL # E4502RL. TYPICAL FOR ALL	
			THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON, OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.		

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② FIRST FLOOR DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

- REFER TO DRAWING E-001.00 AND E-002.00 FOR GENERAL NOTES, ABBREVIATIONS AND ELECTRICAL SYMBOLS.
- ANY EXISTING CIRCUIT DISTURBED DURING DEMOLITION MUST BE TRACED AND PROPERLY IDENTIFIED ON THE PANELBOARD DIRECTORY. ANY PANELBOARD WHICH HAS MORE THAN 50% OF ACTIVE CIRCUITS DISTURBED MUST HAVE ALL ITS CIRCUITS FULLY TRACED AND EACH CIRCUIT IDENTIFIED ON THE PANELBOARD DIRECTORY. CONTRACTOR TO PROVIDE ALL CIRCUIT TRACING AND COORDINATE WITH RUMC FACILITIES.
- ALL WORK SHALL BE AS PER BUILDING STANDARDS AND PHASED IN ACCORDANCE WITH ARCHITECTURAL AND CLIENT REQUIREMENTS.
- COORDINATE WITH MECHANICAL AND PLUMBING CONTRACTOR/DRAWINGS FOR EXACT LOCATIONS, MOUNTING HEIGHTS, CLEARANCES, ETC. OF MECHANICAL AND PLUMBING EQUIPMENT.
- EACH SUB-TRADE WILL BE RESPONSIBLE FOR REVIEWING ENTIRE SET OF DRAWINGS AND NOTING HIS WORK AS APPLICABLE. WORK INDICATED OR INFERRED ON DRAWINGS WILL BE DEEMED UNDERSTOOD AND SHOULD BE INCLUDED IN SUBCONTRACTOR'S COSTS. SAME SHALL APPLY TO G.C.
- COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS BETWEEN INSTALLATION OF DEVICES AND SUPPORTS WITH THE INSTALLATION OF MECHANICAL EQUIPMENT, CEILING STRUCTURES, ETC.

PLAN NOTES

- PN-1** PERFORM A COMPLETE DEMOLITION AND REMOVAL OF THE ELECTRICAL SYSTEMS WITHIN THE LIMITS OF THE GUTTED SPACE AS FOLLOWS (UNLESS OTHERWISE NOTED):
- A. POWER SYSTEM:**
- REMOVE FINAL CONNECTION TO ALL ELECTRICAL EQUIPMENT INCLUDING BUT NOT LIMITED TO A/C UNITS, FANS, MOTORS, ETC.
 - REMOVE ALL POWER EQUIPMENT INCLUDING BUT NOT LIMITED TO SAFETY SWITCHES, MOTOR STARTERS, CONTROL STATIONS, ETC.
 - SURVEY, TRACE, IDENTIFY AND REMOVE FEEDERS INCLUDING BUT NOT LIMITED TO CONDUCTORS, CONDUIT, OUTLET BOXES, JUNCTION AND PULL BOXES, SUPPORTS, ETC.
 - PROVIDE TEMPORARY POWER AND RE-FEED EXISTING POWER BRANCH CIRCUITS TO REMAIN.
- B. LIGHTING SYSTEM:**
- REMOVE ALL LIGHTING FIXTURES AND EXIT SIGNS INCLUDING BUT NOT LIMITED TO FIXTURE HOUSINGS, PLASTER FRAMES, DIFFUSERS, LENSES, LAMPS, FIXTURE SUPPORTS, ETC.
 - REMOVE ALL OUTLET BOXES.
 - SURVEY, TRACE, IDENTIFY AND REMOVE ALL BRANCH WIRING INCLUDING BUT NOT LIMITED TO CONDUCTORS, CONDUIT, OUTLET BOXES, JUNCTION AND PULL BOXES, SUPPORTS, ETC.
 - PROVIDE TEMPORARY POWER AND RE-FEED EXISTING LIGHTING BRANCH CIRCUITS TO REMAIN.
- C. WIRING DEVICES:**
- REMOVE ALL WIRING DEVICES INCLUDING BUT NOT LIMITED TO RECEPTACLES, POWER STRIPS, DATA, PHONE AND A/V DEVICES AND CABLING, ETC.
 - REMOVE ALL OUTLET BOXES AND COVER PLATES.
 - SURVEY, TRACE, IDENTIFY AND REMOVE ALL BRANCH WIRING INCLUDING BUT NOT LIMITED TO CONDUCTORS, CONDUIT, OUTLET BOXES, JUNCTION AND PULL BOXES, SUPPORTS, ETC.
 - PROVIDE TEMPORARY POWER AND RE-FEED EXISTING DEVICES AND EQUIPMENT OUTSIDE AREA OF WORK.
 - REMOVE ALL WIRING DEVICES INCLUDING BUT NOT LIMITED TO LIGHTING SWITCHES, DIMMERS, ETC.
 - REMOVE ALL OUTLET BOXES AND COVER PLATES.
 - SURVEY, TRACE, IDENTIFY AND REMOVE ALL BRANCH WIRING INCLUDING BUT NOT LIMITED TO CONDUCTORS, CONDUIT, OUTLET BOXES, JUNCTION AND PULL BOXES, SUPPORTS, ETC.
- D. FIRE ALARM SYSTEM:**
- REMOVE ALL EXISTING DEVICES ASSOCIATED WITH THE FIRE ALARM SYSTEM INCLUDING BUT NOT LIMITED TO MANUAL PULL STATIONS, SMOKE DETECTORS, HEAT DETECTORS, AUDIOVISUAL NOTIFICATION DEVICES, CONTROL MODULES, LOAD RELAYS, ETC.
 - REMOVE ALL WIRING AND EXPOSED CONDUIT ASSOCIATED WITH THE FIRE ALARM SYSTEM.
 - REMOVAL OF THE EXISTING FIRE ALARM SYSTEM SHALL BE DONE AFTER THE NEW FIRE ALARM SYSTEM DEVICES UNDER THIS CONTRACT HAVE BEEN INSTALLED AND APPROVED BY THE FIRE DEPARTMENT.
 - EXISTING FIRE ALARM SYSTEM SHALL REMAIN IN OPERATION AT ALL TIMES. ALL FIRE ALARM SYSTEM SHUTDOWNS, IF REQUIRED, SHALL BE COORDINATED WITH THE BUILDING MANAGEMENT IN ADVANCE TO ALLOW FOR ADEQUATE TIME FOR ANY TEMPORARY FIRE WATCHES TO BE SCHEDULED.
 - EXISTING FIRE ALARM DEVICES SHALL BE MODIFIED TO ALLOW OPERATION DURING DEMOLITION AND CONSTRUCTION. REMOVE EXISTING CONDUITS AND SUPPORTS AND RE-INSTALL EXISTING DEVICES LOOSELY TO ALLOW NEW CONSTRUCTION TO TAKE PLACE. DEVICES SHALL BE REMOVED AT COMPLETION OF PROJECT.
 - PROVIDE TEMPORARY HEAT DETECTOR COVERAGE WHILE SPRINKLER SYSTEM IS OUT OF COMMISSION AS PER NYCBC. PROVIDE HEAT DETECTORS AT CONSTRUCTION ENTRANCES. CONNECT TO EXISTING ADDRESSABLE LOOP ON THE FLOOR. EXTEND WIRING TO NEW DEVICE LOCATIONS AS NEEDED.

KEY NOTES

- DISCONNECT AND REMOVE EXISTING CIRCUIT BREAKERS AND MAINTAIN EXISTING FEEDER FOR REUSE.
- DISCONNECT AND REMOVE EXISTING PANEL WITH ASSOCIATED WIRING AND CONDUIT BACK TO SOURCE. EXISTING PANEL BRANCH CIRCUIT WIRING SHALL BE COMBINED WITH EXISTING PANEL LP-10C IN NEW PANEL, IN NEW LOCATION. EXTEND BRANCH WIRING AND CONDUIT TO NEW LOCATION AS SHOWN ON POWER DRAWINGS. NEW BRANCH CIRCUIT BREAKERS SHALL MATCH EXISTING. REFER TO PANEL SCHEDULE FOR MORE INFORMATION.
- DISCONNECT AND REMOVE EXISTING PANEL LP-10C. EXISTING FEEDER WIRING SHALL NEW EXTENDED TO NEW LOCATION. FURNISH AND INSTALL NEW PANEL LP-10C AND COMBINE THE TWO EXISTING PANEL IN THE EXISTING MECHANICAL ROOM TO ONE NEW PANEL. EXTEND BRANCH WIRING TO NEW LOCATION. NEW BRANCH CIRCUIT BREAKERS SHALL MATCH EXISTING. COORDINATE POWER SHUT DOWN WITH HOSPITAL.
- DISCONNECT AND REMOVE EXISTING PANEL, BRANCH CIRCUITS AND FEEDER BACK TO SOURCE.
- DISCONNECT AND REMOVE EXISTING ALARM PANEL AND ALL ASSOCIATED CONDUIT, WIRING, SENSORS, ETC.
- INTERCEPT EXISTING FEEDER PREVIOUSLY FED 3RD FLOOR PANEL LP-E3A-2. COORDINATED EXACT CONDUIT LOCATION WITH HOSPITAL ELECTRICIAN.
- CONTRACTOR SHALL PROVIDE CIRCUIT TRACING TO IDENTIFY SOURCE OF POWER FOR 200A/208V/3Ø ELECTRIC HOT WATER AND 20A/120V/1Ø RECIRC PUMP AND LEAK DETECTION SYSTEM. SUBMIT FINDINGS TO DESIGN TEAM. DISCONNECT AND REMOVE POWER FOR HEATER, DISCONNECT SWITCH, PUMP AND LEAK DETECTION AND REMOVE TO ABOVE CEILING. PROVIDE JUNCTION BOX AND EXTEND EXISTING CIRCUITS FOR EQUIPMENT TO NEW WATER HEATER ROOM. PROVIDE ALL NEW WIRING/CONDUIT TO NEW LOCATION. MATCH EXISTING. COORDINATE SHUTDOWNS/PHASING WITH THE FUTURE OR RELOCATION PROJECT AND PLUMBING AND RUMC FACILITIES.

THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON, OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

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3	05/23/2023	Issued for 100% CD's
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1	03/31/2023	DD Review Set
no.	date	description

Client Name:

**RICHMOND UNIVERSITY
MEDICAL CENTER**

Project Name & Location:

BI-PLANE EP LAB
355 BARD AVENUE
STATEN ISLAND NY

Drawing Title:

**ELECTRICAL DEMOLITION
1ST FLOOR PART PLAN**

Drawn By:	Date:
SSI	05/23/2023
Checked By:	Scale:
MJR	AS NOTED

Issued To: For:
CONSTRUCTION DOCUMENTS

File No.: R2000

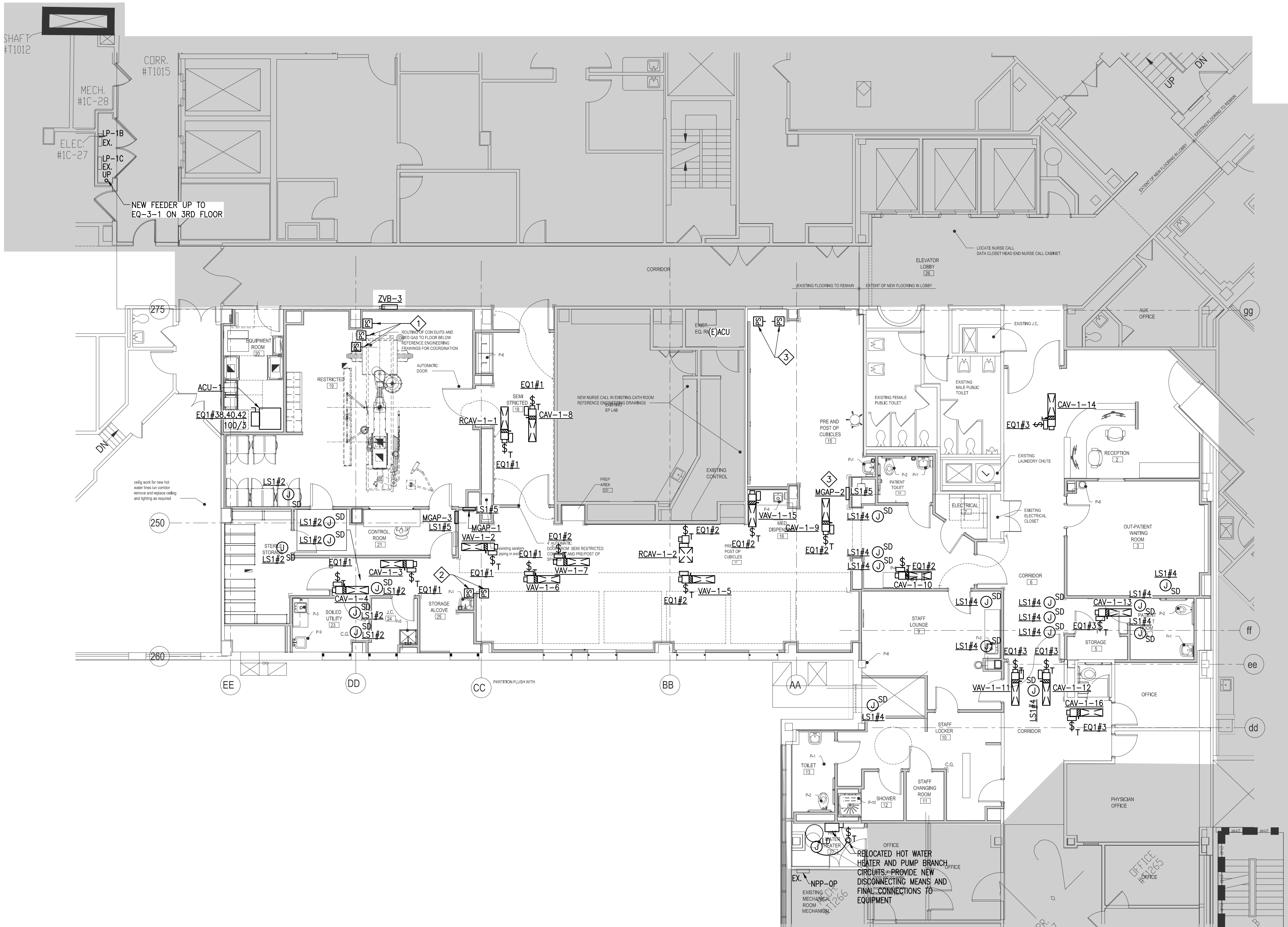
Drawing No.:

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04 OF 23

Filename: P:\2020 - RUMC-EP-01\18-BI-PLANE EP Lab\MECH\Power\1st Floor Mechanical Power.dwg User: Schumacher Date: 5/22/2023 2:07 PM



1 FIRST FLOOR MECHANICAL POWER PLAN
SCALE: 1/8" = 1'-0"

1' 0" 2' 4' 8' 12' 16'
SCALE 1/8" = 1'-0"

GENERAL NOTES

- REFER TO DRAWING E-001.00 AND E-002.00 FOR FOR GENERAL NOTES, ABBREVIATIONS AND ELECTRICAL SYMBOLS.
- REFER TO E-202B.00 FOR ELECTRICAL FIRST FLOOR CONDUIT ROUTING PLAN.
- REFER TO E-202C.00 FOR ELECTRICAL FIRST FLOOR NURSE CALL PLAN.
- REFER TO E-401.00, E-402.00 AND E-403.00 FOR ELECTRICAL BI-PLANE (ROOM 226) PART PLANS.
- REFER TO E-501.00 AND E-502.00 FOR ELECTRICAL PANEL SCHEDULES.
- REFER TO E-503.00 FOR ELECTRICAL SINGLE LINE DIAGRAM.
- REFER TO E-601.00 FOR ELECTRICAL DETAILS.
- ANY EXISTING CIRCUIT DISTURBED DURING DEMOLITION MUST BE TRACED AND PROPERLY IDENTIFIED ON THE PANELBOARD DIRECTORY. ANY PANELBOARD WHICH HAS MORE THAN 50% OF ACTIVE CIRCUITS DISTURBED MUST HAVE ALL ITS CIRCUITS FULLY TRACED AND EACH CIRCUIT IDENTIFIED ON THE PANELBOARD DIRECTORY. CONTRACTOR TO PROVIDE ALL CIRCUIT TRACING AND COORDINATE WITH NYP FACILITIES.
- ALL WORK SHALL BE AS PER BUILDING STANDARDS AND PHASED IN ACCORDANCE WITH ARCHITECTURAL AND CLIENT REQUIREMENTS.
- COORDINATE WITH MECHANICAL AND PLUMBING CONTRACTOR/DRAWINGS FOR EXACT LOCATIONS, MOUNTING HEIGHTS, CLEARANCES, ETC. OF MECHANICAL AND PLUMBING EQUIPMENT.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL RECEPTACLES, NURSE CALL DEVICES, DATA, SECURITY, ETC. INFORMATION SHOWN IN ELECTRICAL DRAWINGS IS APPROXIMATE. COORDINATE LOCATIONS AND COVER PLATES FINISHES WITH THE ARCHITECT AND/OR OWNER REPRESENTATIVE BEFORE PURCHASING AND INSTALLATION OF SUCH DEVICES.
- EACH SUB-TRADE WILL BE RESPONSIBLE FOR REVIEWING ENTIRE SET OF DRAWING AND NOTING HIS WORK AS APPLICABLE. WORK INDICATED OR INFERRED ON DRAWINGS WILL BE DEEMED UNDERSTOOD AND SHOULD BE INCLUDED IN SUBCONTRACTOR'S COSTS. SAME SHALL APPLY TO G.C.
- COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS BETWEEN INSTALLATION OF DEVICES AND SUPPORTS WITH THE INSTALLATION OF MECHANICAL EQUIPMENT, CEILING STRUCTURES, ETC.
- UNLESS OTHERWISE NOTED ALL CONDUITS WITHIN FINISHED SPACES SHALL BE INSTALLED CONCEALED AND ALL CONDUITS INSTALLED WITHIN UTILITY ROOMS (UNFINISHED AREAS) SHALL BE INSTALLED EXPOSED. ALL EXPOSED WIRING AND CABLES SHALL BE RUN IN CONDUITS.
- ALL HOME RUNS FOR NORMAL POWER FROM EXISTING ELECTRIC CLOSET(S) TO THE FIRST JUNCTION BOX SHALL BE IN CONDUIT.
- ALL DEVICES ARE NEW UNLESS OTHERWISE NOTED.
- CIRCUITING NUMBERS ARE DIAGRAMMATIC AND INDICATE CIRCUIT INTENT ONLY. RUN CIRCUITS TO SPARE CIRCUIT BREAKERS IN PANELS INDICATED. FIELD CONDITIONS PREVAIL. UPDATE PANEL SCHEDULE DIRECTORY AFTER COMPLETION OF WORK. ALL CIRCUITS SHALL BE ENERGIZED FROM THE PANELS ACCORDING TO THE FOLLOWING PANEL LEGEND:

EQ1#1 - PANEL EQ-1-2, BRANCH CIRCUIT #1
LS1#1 - PANEL LS1-2, BRANCH CIRCUIT #1

POWER NOTES

- NEW DUPLEX RECEPTACLES SHALL BE PROVIDED AS NECESSARY TO MEET THE POWER REQUIREMENTS OF EACH SPACE AS FOLLOW:
 - DUPLEX RECEPTACLES WILL BE HOSPITAL GRADE, 20-120V, NEMA 5-20R RECEPTACLES UNLESS OTHERWISE INDICATED HEREIN.
 - RECEPTACLES LOCATED WITHIN 6'-0" OF A SINK SHALL HAVE GFCI PROTECTION. WHERE MULTIPLE GFI RECEPTACLES ARE CONNECTED TO THE SAME BRANCH CIRCUIT, CONTRACTOR SHALL PROVIDE (1) GFI RECEPTACLE AND CONNECT ADDITIONAL DEVICES TO THE LOAD-SIDE OF DEVICE IN LIEU OF PROVIDING ADDITIONAL GFI DEVICES.
 - ALL RECEPTACLES IN PUBLIC SPACES SUCH AS CORRIDORS, EXAM ROOMS, RESTROOMS, ETC. SHALL BE TAMPER RESISTANT TYPE.
 - RECEPTACLES LOCATED IN MECHANICAL ROOMS AND ROOF SHALL BE INSTALLED IN A WEATHER-RESISTANT ENCLOSURE.

CIRCUITING NOTES

- MAXIMUM OF 6 CONVENIENCE RECEPTACLE OUTLETS ON A SINGLE 1P-120V-20A CIRCUIT BREAKER.
- CIRCUITING CRITERIA FOR EQUIPMENT WILL BE AS FOLLOWS:
 - BRANCH CIRCUITS SERVING VAVS, RATED FOR 20-AMP, 120-VOLT, 1-PHASE, WILL BE PROVIDED FOR EVERY (6) VAVS WITH LOCAL DISCONNECTING MEANS. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS AND QUANTITIES.
 - BRANCH CIRCUITS SERVING FSDs AND MOTORIZED DAMPERS, RATED FOR 20-AMP, 120-VOLT, 1-PHASE, WILL BE PROVIDED FOR EVERY (8) DAMPERS. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS AND QUANTITIES.
 - BRANCH CIRCUITS SERVING LRCPs, RATED FOR 20-AMP, 120-VOLT, 1-PHASE, WILL BE PROVIDED FOR EVERY (6) LRCP WITH LOCAL DISCONNECTING MEANS. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND QUANTITIES.
 - LARGE HVAC/PLUMBING EQUIPMENT WILL HAVE DEDICATED BRANCH CIRCUITS, RATING AS INDICATED ON PLANS WITH MATCHING OVER-CURRENT PROTECTION DEVICES FOR EACH EQUIPMENT.

KEY NOTES

- PROVIDE 6#18-3/4°C OR (3) PAIRS OF TWISTED SHIELD #18AWG IN 3/4°C FROM MGAP-3 TO (3) PRESSURE SENSORS/TRANSDUCERS.
- PROVIDE 4#18-3/4°C OR (2) PAIRS OF TWISTED SHIELD #18AWG IN 3/4°C FROM MGAP-1 TO (2) PRESSURE SENSORS/TRANSDUCERS.
- PROVIDE 4#18-3/4°C OR (2) PAIRS OF TWISTED SHIELD #18AWG IN 3/4°C FROM MGAP-2 TO (2) PRESSURE SENSORS/TRANSDUCERS.

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SCHUNKIEWITZ

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MEDICAL CENTER**

Project Name & Location:

BI-PLANE EP LAB
355 BARD AVENUE
STATEN ISLAND NY

Drawing Title:

**ELECTRICAL 1ST FLOOR
MECHANICAL POWER PLAN**

Drawn By:	Date:
SSI	05/23/2023
Checked By:	Scale:
MJR	AS NOTED

Issued To: For:
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E-202A.00

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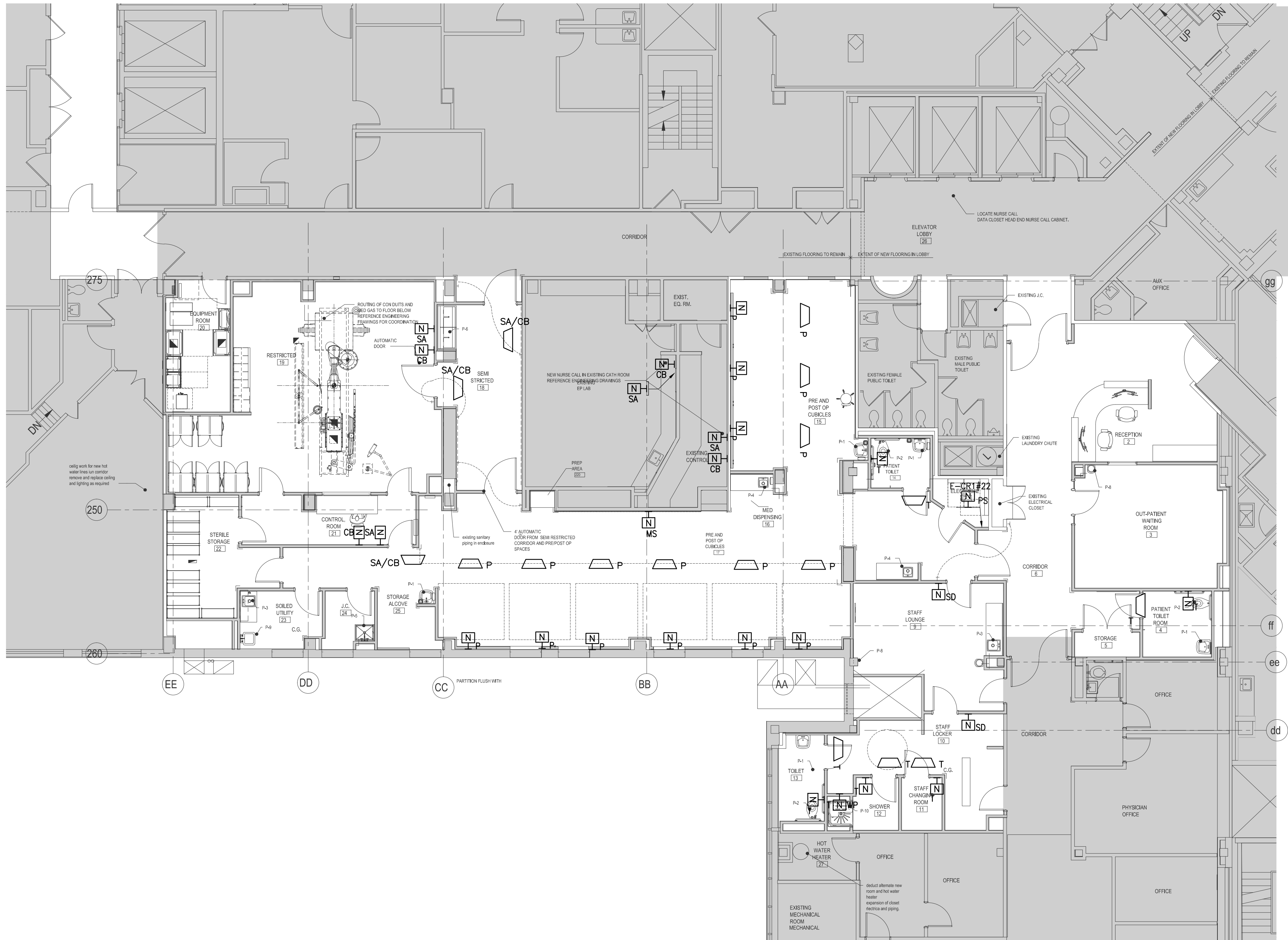
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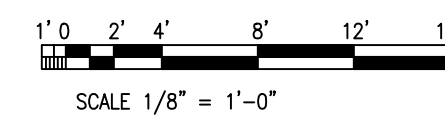


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① FIRST FLOOR NURSE CALL PLAN
SCALE: 1/8" = 1'-0"



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Client Name:

RICHMOND UNIVERSITY
MEDICAL CENTER

Project Name & Location:

BI-PLANE EP LAB
355 BARD AVENUE
STATEN ISLAND NY

Drawing Title:

ELECTRICAL NURSE CALL
1ST FLOOR PLAN

Drawn By: SSI	Date: 05/23/2023
Checked By: MJR	Scale: AS NOTED

ISSUED TO:	ISSUED BY:
DATE:	DATE:
PROJECT:	
CONSTRUCTION DOCUMENTS	

File No.: R2000

Drawing No.:

E-202C.00

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Client Name:

RICHMOND UNIVERSITY
MEDICAL CENTER

Project Name & Location:

BI-PLANE EP LAB
355 BARD AVENUE
STATEN ISLAND NY

Drawing Title:

ELECTRICAL 3RD FLOOR
POWER PLAN

Drawn By:

05/23/2023

Checked By: _____

AS NOTED

Issued To, For:

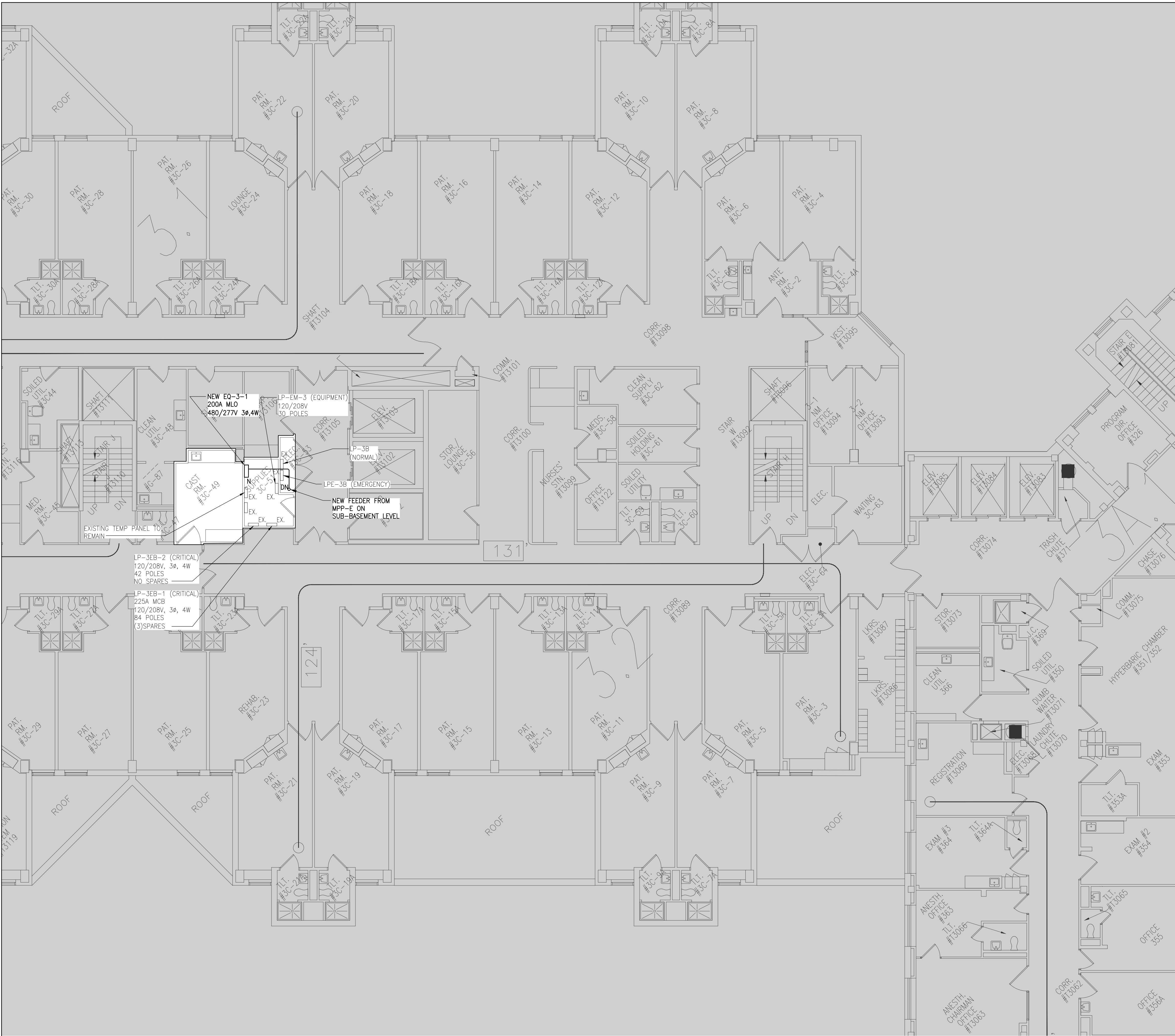
CONSTRUCTION DOCUMENTS

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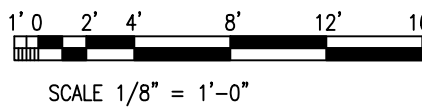
Drawing No.:

E-204.00

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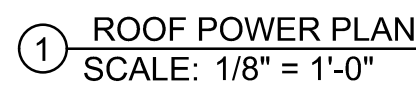
① THIRD FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"



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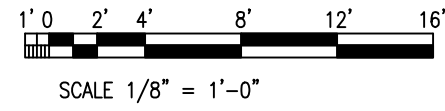
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2 OF 23

Filename: R2000 - RUMC EP Cath Bi-Plane.dwg Date: 05/23/2023 2:07 PM

2 LIGHTING 1ST FLOOR PLAN
SCALE: 1/8" = 1'-0"

Lighting Specification date: 03/14/23					project name: R2000 - RUMC EP Cath Bi-Plane	page 1
Type	Manufacturer	Voltage	Wattage	Dimming	Specification	Description
A	KENALL	120V	100W	0-10V	M4SEDI- SIZE-100-35K8-DCC-VOLT-2F-4H	2' x 4' NON -IC RECESSED CEILING MOUNTING INTO GRD AND FLANGE APPLICATION TYOES
B	KENALL	120-277V	21W	0-10V	MYDL6-NF-DCFV-22L-35K8-M-FW-T-RIS6-DV-DIM1	6" SEALED, RECESSED DOWNLIGHT WITH REGRESSED OR FLUSH LENS TRIM
C	KENALL	120V	38W	0-10V	M4SEDI- SIZE-38-35K8-DCC-VOLT-2F-4H	1' x 4' NON -IC RECESSED CEILING MOUNTING INTO GRD AND FLANGE APPLICATION TYOES
D	KENALL	120V	75W	0-10V	M4SEDI- SIZE-75-35K8-DCC-VOLT-2F-4H	2' x 2' NON -IC RECESSED CEILING MOUNTING INTO GRD AND FLANGE APPLICATION TYOES
E	PHILIPS	120-277V	38W	0-10V	2EVG-3800LH-855-4-D-UNV-DIM-AG	DAYBRIGHT CFI-CESS-ED-EVOGRID 2' X 2' FOR CORRIDORS AND PATIENT CARE AREAS
F	HONYA LIGHTING	120-277V	3W	0-10V	HY-PB-24P-3W3CCT	2' x 4' FLAT LED BACK-LIT LIGHT FOR SUPPORT AREAS
G	COOPER LIGHTING SOLUTIONS	120-277V	15W	0-10V	LD248-15-DIM-EU48-1020-3500-4LBPS	PORTFOLIO RECESSED DOWN LIGHTS IN SOFFIT AREAS AND LAY CEILINGS
H	KENALL	120-277V	45/90W	0-10V	LD248-15-DIM EU48-1020-3500-4LBPS	CEILING MOUNT-RECESSED, RECESSED GRID, RECESSED FLANGE OR SURFACE PATIENT ROOM LIGHT.
I	CONTECH LIGHTING	120-277V	20W	0-10V	ASMR930KCMVD1-W	9-INCH ARCHTHING SURFCE MOUNTED
J	GOTHAM LIGHTING	120-277V	24W	0-10V	TBD	6" EVO SERIES ROUND DOWNLIGHT
K	LIGHTOLOGY	120-277V	57W	0-10V	WAC615613	INTERLACE OVAL PENDANT IS ETERNALLY WAVING BANDS OF LIGHT. DAMP LOCATION RATED. JA8-2016
L	LIGHTOLOGY	120V	33W	0-10V	AFX1084701	ORION LED FLUSH MOUNT CEILING LIGHT
M	JUNO	120V	50W	0-10V	MR16 IC44N	JUNO SPOT PIN LIGHT CEILING RECESSED
N	LITHONIA	120V	42W	0-10V	ZL2N-L48-3000LM-MDD-MVOLT-35K-80CRI-WH-HC36	4' LED INDUSTRIAL STRIP LIGHT
O	LITHONIA	120V	2W	N/A	SIGNATURE LE SERIES	IN USE LIGHT
P	LITHONIA	120V	2W	N/A	EU2 SERIES, TELESIS CML SERIES, LED 90 SERIES	SELF CONTAINED LED EMERGENCY LIGHTING BATTERY UNIT
Q	LITHONIA	120V	2W	N/A	EDGNY/EDGRNY-XX-R-ACCESSORIES	NYC CODE-ILLUMINATED EXIT SIGN - EDGE LIT AC/DC TYPE



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- REFER TO E-503.00 FOR ELECTRICAL SINGLE LINE DIAGRAM.
- REFER TO E-601.00 FOR ELECTRICAL DETAILS.
- REFER TO ARCHITECTURAL DRAWINGS FOR SPECIFICATION OF LIGHT FIXTURES. COORDINATE WITH ARCHITECT FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES, AND LIGHTING CONTROLS. INFORMATION SHOWN IN ELECTRICAL DRAWINGS IS APPROXIMATE.
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- COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS BETWEEN INSTALLATION OF LIGHTING FIXTURES AND SUPPORTS WITH THE INSTALLATION OF MECHANICAL EQUIPMENT, CEILING STRUCTURES, ETC.
- PROVIDE ALL NECESSARY FIXTURE ACCESSORIES REQUIRED TO CONFORM TO CEILING CONSTRUCTION FOR INSTALLATION OF RECESSED AND SEMI RECESSED FIXTURES INCLUDING BUT NOT LIMITED TO PLASTER FRAMES, FLANGES, TRIM RINGS, ETC. CONTRACTOR TO VERIFY THAT THE LIGHT FIXTURE ACCESSORY SPECIFIED IS COMPATIBLE WITH CEILING GRID, CEILING TILE AND CEILING CONSTRUCTION SPECIFIED.
- CONTRACTOR TO BE RESPONSIBLE FOR THE PROPER AND SAFE MOUNTING AND SUPPORT OF ALL LIGHTING FIXTURES. PROVIDE ALL ITEMS (STEMS, HANGERS, RODS, INSERTS, BOXES, BRACKETS, YOKES, CHANNELS, FRAMES, ETC.) REQUIRED TO ADEQUATELY AND SAFELY SUPPORT EACH LIGHTING FIXTURE IN AND APPROVED MANNER.
- ALL NEW LIGHTING FIXTURES SHALL BE IN COMPLIANCE WITH THE 2022 NYC ENERGY CONSERVATION CODE AND LATEST IES STANDARDS. FIXTURE SELECTIONS BY ARCHITECT.
- ALL WORK IN THE CORRIDOR SHALL BE DONE AFTER HOUR BASIS.
- ALL DEVICES ARE NEW UNLESS OTHERWISE NOTED.
- LIGHTING FIXTURES LABELED AS "EM" SHALL BE ON EMERGENCY LIFE SAFETY BRANCH POWER.
- LIGHTING FIXTURES LABELED AS "CR" SHALL BE ON CRITICAL BRANCH POWER.
- LIGHTING FIXTURES LABELED AS "EM-B" SHALL BE PROVIDED WITH BACK-UP BATTERY PACK AND TEST SWITCH. PROVIDE UN-SWITCHED HOT CONDUCTOR TO EACH FIXTURE.
- CIRCUITING NUMBERS ARE DIAGRAMMATIC AND INDICATE CIRCUIT INTENT ONLY. RUN CIRCUITS TO SPARE CIRCUIT BREAKERS IN PANELS INDICATED. FIELD CONDITIONS PREVAIL. UPDATE PANEL SCHEDULE DIRECTORY AFTER COMPLETION OF WORK. ALL CIRCUITS SHALL BE ENERGIZED FROM THE PANELS ACCORDING TO THE FOLLOWING PANEL LEGEND:

CR1#1 - PANEL E-CR1, BRANCH CIRCUIT #1
NP2#1 - PANEL LP-1-2, BRANCH CIRCUIT #1
EQ1#1 - PANEL EQ-1-2, BRANCH CIRCUIT #1
LS1#1 - PANEL LS-1-2, BRANCH CIRCUIT #1
- THE NEW CLEAN CEILING SYSTEM SHALL BE PROVIDED BY CM AND INSTALLED BY MECHANICAL CONTRACTOR. THE SYSTEMS SHALL BE EQUIPPED WITH LAMINAR FLOW DIFFUSERS, HEPA FILTERS, LIGHTING, ETC. REFER TO THE ARCHITECTURAL DRAWINGS FOR DETAILS

LIGHTING CONTROL NOTES

- EXIT LIGHTS AND EM EGRESS LIGHTS SHALL REMAIN UN-SWITCHED AND ON 24 HOURS A DAY, 7 DAYS A WEEK.
- OFFICE, CONFERENCE ROOMS AND STORAGE ROOMS SHALL BE CONTROLLED BY CEILING MOUNTED DUAL TECHNOLOGY VACANCY SENSOR(S) WITH POWER PACK AND OVERRIDE DECORA-STYLE DIMMER SWITCH. SMALLER ROOMS SHALL BE CONTROLLED BY WALL MOUNTED LINE VOLTAGE COMBINATION DIMMER SWITCH WITH INTEGRATED DUAL TECHNOLOGY VACANCY SENSORS.
- CORRIDOR SPACES, AREAS OPEN TO CORRIDORS AND WAITING AREAS SHALL BE CONTROLLED BY CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSORS WITH POWER PACKS AND OVERRIDE DECORA-STYLE SWITCH.
- TOILET ROOMS, RESTROOMS AND LOCKER/CHANGING ROOMS SHALL BE CONTROLLED BY CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSORS WITH POWER PACKS AND OVERRIDE DECORA-STYLE TOGGLE SWITCH. SMALLER ROOMS SHALL BE CONTROLLED BY WALL MOUNTED LINE VOLTAGE COMBINATION DIMMER SWITCH WITH INTEGRATED DUAL TECHNOLOGY OCCUPANCY SENSORS.
- EXAM ROOMS, LABORATORIES, IMAGING ROOMS, CONTROL ROOM, PATIENT BED AREAS AND RECEPTION AREAS SHALL BE CONTROLLED BY LINE VOLTAGE DECORA-STYLE DIMMER SWITCH.
- ARCHITECTURAL ACCENT LIGHTING SHALL BE CONTROLLED BY LINE VOLTAGE DECORA-STYLE DIMMER SWITCH.
- TASK LIGHTING SHALL BE CONTROLLED BY DECORA-STYLE LINE VOLTAGE TOGGLE SWITCH.

LIGHTING CIRCUITING NOTES

- LIGHTING FIXTURES SHALL NOT EXCEED A MAXIMUM OF 1,800VA PER SINGLE 1P-120V-20A CIRCUIT.
- ALL CORRIDOR AND WAITING ROOM LIGHTING BRANCH CIRCUITS AND CONTROLS SHALL BE CONNECTED THRU THE NEW LIGHTING CONTROL PANEL. PROVIDE (16) CIRCUIT RELAY PANEL WITH VOLTAGE OVERRIDE SWITCHES AND SENSORS AS PER DEPARTMENT AS SHOWN ON THE PART PLANS. PANEL SHALL HAVE TIME CLOCK FUNCTIONALITY WITH DIMMING RELAYS FOR EACH ZONE.

LIGHTING KEY NOTES

- 2) REMOTE DRIVER LOCATIONS FOR ULTRASUITE LIGHTING SYSTEM.
- CONTRACTOR SHALL PROVIDE 2#12AWG FOR POWER FROM REMOTE DRIVER TO ULTRASUITE LIGHTING SYSTEM FIXTURE (TYP. FOR EACH ULTRASUITE LIGHTING SYSTEM FIXTURE). (9) IN TOTAL.
- CONTRACTOR SHALL PROVIDE (2) 0-10V WIRES AS PER MANUFACTURERS RECOMMENDATION FROM ULTRASUITE LIGHTING SYSTEM REMOTE DRIVER TO ULTRASUITE LIGHTING SYSTEM FIXTURE (TYP. FOR EACH ULTRASUITE LIGHTING SYSTEM FIXTURE). (9) IN TOTAL.
- CONNECT NEW LIGHTING FIXTURES TO EXISTING LIGHTING CONTROLS.

ADD ALTERNATE NOTES

- CONTRACTOR SHALL PROVIDE ALLOWANCE TO REPLACE LIGHTING FIXTURES IN THIS AREA WITH NEW. FIXTURES SHALL BE REPLACED IN-KIND. CONNECT TO EXISTING LIGHTING CIRCUITS AND CONTROLS.

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Lilker

Client Name:

**RICHMOND UNIVERSITY
MEDICAL CENTER**

Project Name & Location:

BI-PLANE EP LAB
355 BARD AVENUE
STATEN ISLAND NY

Drawing Title:

**ELECTRICAL LIGHTING 1ST
FLOOR PLAN**

Drawn By:	Date:
SSI	05/23/2023
Checked By:	Scale:
MJR	AS NOTED

Issued To, For:

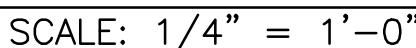
CONSTRUCTION DOCUMENTS








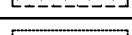
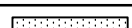






File No.: R2000

Drawing No.:

E-301.00

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SYMBOLS	
ALL MAY NOT APPLY	
	CIRCUIT BREAKER BY CUSTOMER/CONTRACTOR
	OPENING IN RACEWAY OR TRENCH DUCT
	PULLBOX IN (FLOOR/WALL/CEILING)
	OPENING IN ACCESS FLOORING
	WARNING LIGHT (X-RAY ON)
	DOOR SAFETY SWITCH
	(EPO) EMERGENCY POWER OFF BUTTON
	TRENCH DUCT
	CEILING DUCT
	UNDER FLOOR DUCT
	SURFACE DUCT
	VERTICAL DUCT
	ETHERNET CONNECTION TO CUSTOMER'S INFORMATION SYSTEMS NETWORK (VERIFY WITH SMS PROJECT MANAGER).
	110 VOLT, 20 AMP, HOSPITAL GRADE DUPLEX OUTLET
	110 VOLT, 20 AMP, HOSPITAL GRADE QUAD OUTLET

CONDUIT LENGTH CALCULATIONS

IF SITE-SPECIFIC CONDITIONS EXCEED THE FOLLOWING ASSUMED VALUES, THEN ADDITIONAL LENGTH MUST BE SUBTRACTED BY THE ELECTRICAL CONTRACTOR FROM THE MAXIMUM CONDUIT LENGTHS LISTED.

IF DUCT LOCATIONS ARE ALTERED FROM THE SHOWN LAYOUT, IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO RECALCULATE THE MAXIMUM CONDUIT LENGTH.

ASSUMED VALUES USED IN CALCULATING STATED MAXIMUM CONDUIT LENGTHS:

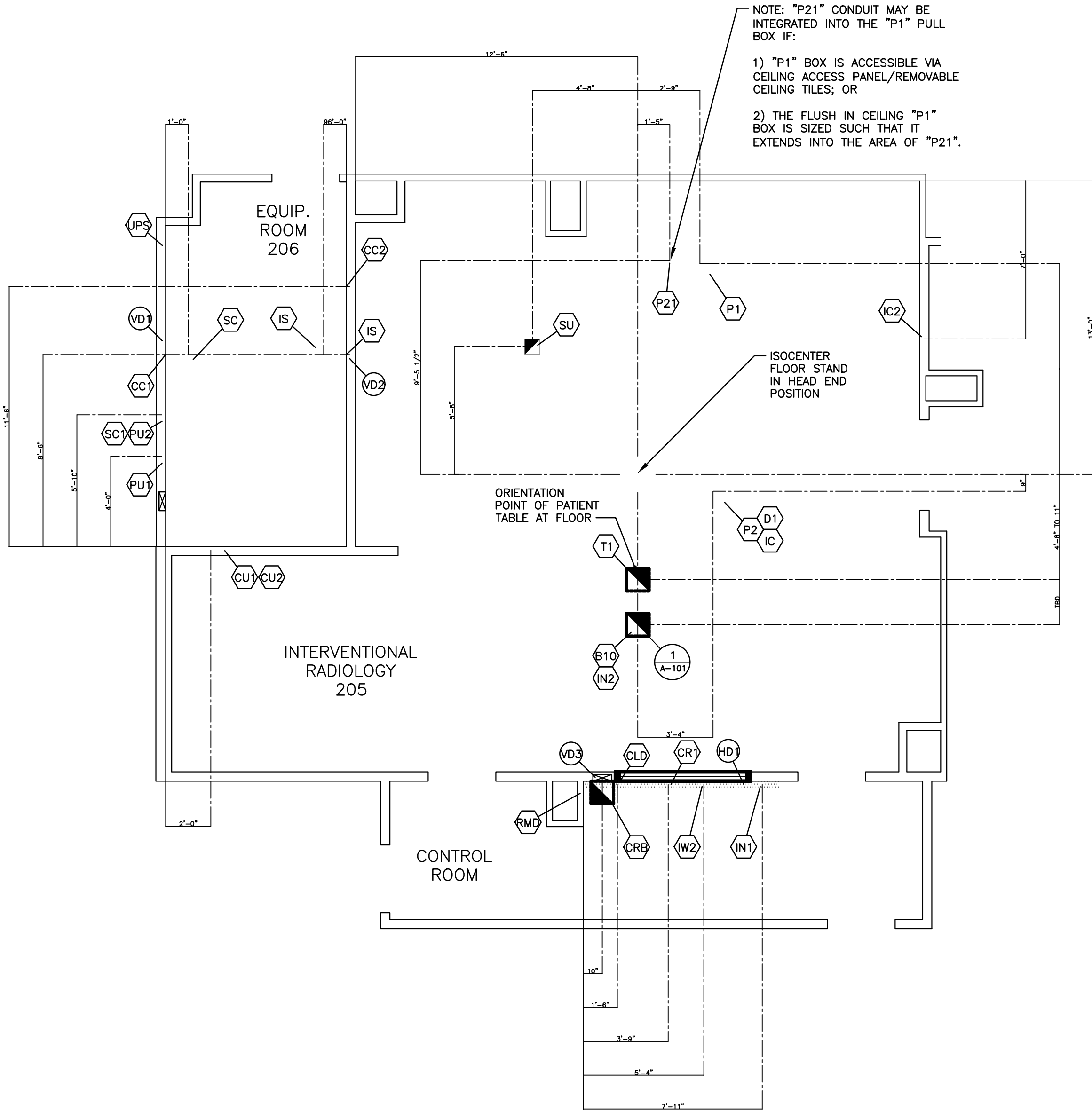
VERTICAL DUCTS – 12'-0"

FLOOR PENETRATIONS – 3'-0"

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ELECTRICAL DIMENSION PLAN



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

ELECTRICAL LEGEND

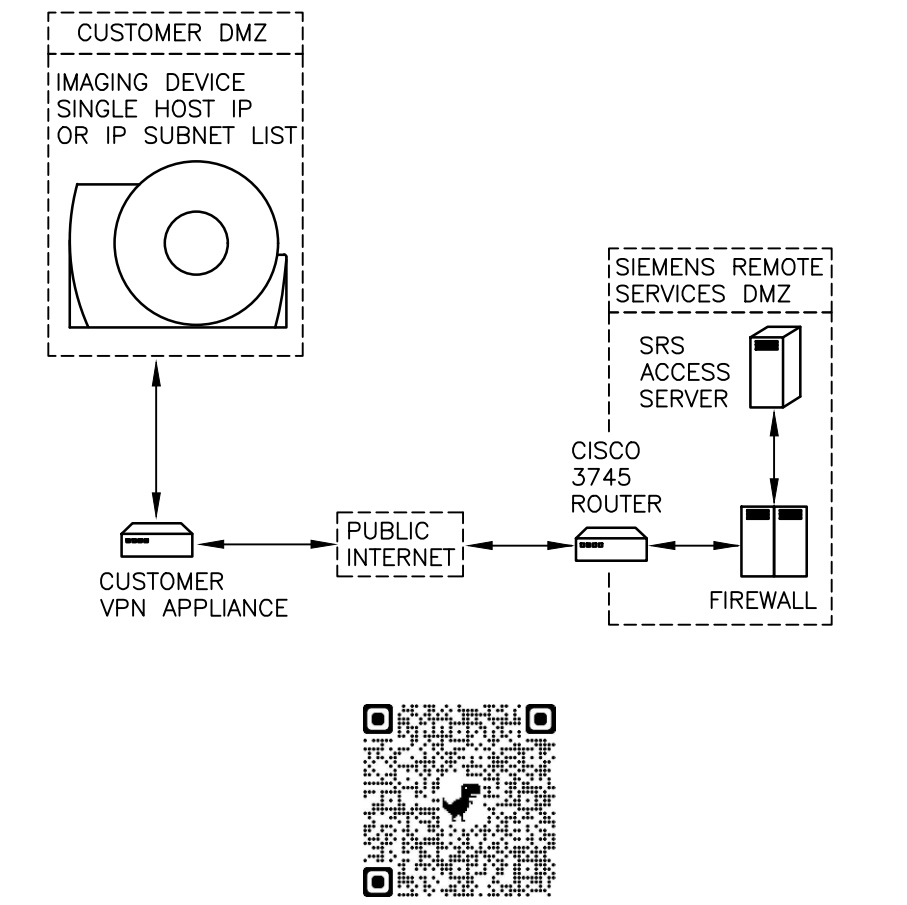
SYM	SIZE	DESCRIPTION	REMARKS
Ⓢ	AS REQUIRED	PULL BOX MOUNTED BELOW FINISHED FLOOR WITH REMOVABLE BOTTOM COVER. PROVIDE 3" CONDUIT FROM BOX TO FLUSH WITH FINISHED FLOOR. PROVIDE STAINLESS STEEL WATERPROOF PLATE ON TOP OF CORED OPENING IN FLOOR.	TABLE ACCESSORIES
Ⓢ	18" X 8"	BUSHED OPENING IN VERTICAL DUCT "VD1" COVER AT FLOOR LINE.	CABLE CABINET
Ⓢ	3"ø	BUSHED OPENING IN TOP OF HORIZONTAL DUCT "HD1".	C-ROOM LD INPUTS
Ⓢ	3"ø	BUSHED OPENING IN TOP OF HORIZONTAL DUCT "HD1".	CONTROL ROOM DISTRIBUTOR
Ⓢ	AS REQUIRED	PULL BOX MOUNTED BELOW FINISHED FLOOR WITH REMOVABLE BOTTOM COVER. FOR A SINGLE CONDUIT CONNECTION TO THIS BOX, PROVIDE A 3" CONDUIT THRU FLOOR. FOR MULTIPLE CONDUIT CONNECTIONS, PROVIDE (2) 4" CONDUITS THRU FLOOR. E.C. TO DESIGN TRANSITION TO SURFACE FLOOR DUCT AS REQUIRED.	CONTROL ROOM BOX
Ⓢ	AS REQUIRED	PULL BOX MOUNTED FLUSH IN FINISHED WALL AT FLOOR LINE. PROVIDE BOX WITH REMOVABLE FRONT COVER AND (1) 4"ø BUSHING IN CENTER OF REMOVABLE COVER FOR CABLE EXIT. SEE PLAN FOR LOCATION.	TUBE COOLING UNITS
Ⓢ	---	FIXPOINT DESIGNATION, SAME PULL BOX / OPENING AS "P2".	DCS
Ⓢ	---	EMERGENCY OFF BUTTONS FOR CIRCUIT BREAKERS. EPO'S MUST PREVENT RESETTING OF CIRCUIT BREAKERS WHEN IN OFF POSITION. EPO'S MUST BE RECESSED OR SHIELDED. FINAL LOCATION DETERMINED BY CUSTOMER.	EMERGENCY POWER OFF
Ⓢ	---	FIXPOINT DESIGNATION, SAME PULL BOX / OPENING AS "D1".	INTERCOM COMFORT MIC
Ⓢ	AS REQUIRED	PULL BOX MOUNTED FLUSH IN FINISHED WALL AT A RECOMMENDED HEIGHT OF 6' AFF.	INTERCOM COMFORT SPEAKER
Ⓢ	3"ø	BUSHED OPENING IN TOP OF HORIZONTAL DUCT "HD1".	INJECTOR ELECTRONICS
Ⓢ	---	FIXED POINT DESIGNATION, SAME PULL BOX AS "B10".	TABLE INJECTOR
Ⓢ	3"ø	BUSHED OPENING IN TOP OF HORIZONTAL DUCT "HD1".	OPERATION IN CONTROL RM
Ⓢ	---	MAIN PANEL WITH MAIN BREAKER. LOCATION DETERMINED BY CUSTOMER/CONTRACTOR. SEE "POWER SCHEDULE"	BREAKER PANEL
Ⓢ	AS REQUIRED	PULL BOX MOUNTED ABOVE FINISHED CEILING. PROVIDE REMOVABLE BOTTOM COVER WITH 8"ø BUSHED OPENING. PROVIDE CORRESPONDING OPENING AT CEILING LINE.	FLOOR AND CEILING MOUNTED C-ARMS
Ⓢ	2 1/2"ø	CONDUIT STUB LOCATION FLUSH WITH FINISHED CEILING	CEILING STAND MOTOR
Ⓢ	AS REQUIRED	PULL BOX MOUNTED FLUSH IN FINISHED WALL AT FLOOR LINE. PROVIDE BOX WITH REMOVABLE FRONT COVER WITH 4"ø BUSHED OPENING AT BOTTOM OF COVER.	GENERATORS
Ⓢ	AS REQUIRED	SINGLE-GANG RJ45 JACK	UPS REMOTE DISPLAY
Ⓢ	AS REQUIRED	PULL BOX MOUNTED FLUSH IN FINISHED WALL AT FLOOR LINE. PROVIDE BOX WITH REMOVABLE FRONT COVER WITH 4"ø BUSHED OPENING AT BOTTOM OF COVER.	SYSTEM CABINET
Ⓢ	AS REQUIRED	PULL BOX MOUNTED BELOW FINISHED FLOOR WITH REMOVABLE BOTTOM COVER. PROVIDE 6"ø CONDUIT FROM BOX TO FLUSH WITH FINISHED FLOOR WITH BUSHING AT FLOOR LINE.	SYSTEM CABINET
Ⓢ	30A	3-PHASE (PLUS N,G) 30A, 600V HD FUSIBLE SERVICE DISCONNECT LOCATED AT EYE-LEVEL, WITHIN 10' OF SIEMENS SYSTEM CABINET (SC1) AND 30A RK5 FUSES. SEE POWER SCHEDULE.	UPS SERVICE DISCONNECT
Ⓢ	AS REQUIRED	PULL BOX MOUNTED ABOVE FINISHED CEILING. CONNECT 6 FOOT LONG FIXTURE WHIP, (EITHER 1/2" OR 3/8" GREENFIELD) TO BOX FOR TERMINATION TO SIEMENS EQUIPMENT AT CEILING LINE.	MAVIG LAMP
Ⓢ	AS REQUIRED	PULL BOX MOUNTED BELOW FINISHED FLOOR WITH REMOVABLE BOTTOM COVER. PROVIDE 6"ø CONDUIT FROM BOX TO FLUSH WITH FINISHED FLOOR WITH BUSHING AT FLOOR LINE.	TABLE
Ⓢ	AS REQUIRED	PULL BOX MOUNTED FLUSH IN FINISHED WALL AT FLOOR LINE. PROVIDE BOX WITH REMOVABLE FRONT COVER WITH 4"ø BUSHED OPENING.	15KVA UPS
Ⓢ	1.5KVA	STEP-DOWN TRANSFORMER. SEE POWER SCHEDULE.	XFMR FOR TABLE OUTLET
Ⓢ	3 1/2" X 10"	HORIZONTAL DUCT MOUNTED ON FINISHED WALL AT FLOOR LINE. PROVIDE DUCT WITH REMOVABLE FRONT COVER. CONNECT TO VERTICAL DUCT "VD3" AS SHOWN.	HORIZONTAL WALL DUCT
Ⓢ	3 1/2" X 10"	HORIZONTAL DUCT MOUNTED ON FINISHED WALL AT FLOOR LINE. PROVIDE DUCT WITH REMOVABLE FRONT COVER. CONNECT TO SIDE PANELS OF "SC1" AND "IS" CABINETS AS SHOWN.	HORIZONTAL WALL DUCT
Ⓢ	3 1/2" X 18"	VERTICAL DUCT MOUNTED FLUSH IN FINISHED WALL. BEGIN DUCT AT FLOOR LINE AND EXTEND UP WALL ABOVE FINISHED CEILING. PROVIDE JUNCTION BOX (SIZED BY E.C.) AT TOP OF DUCT FOR CONDUIT TRANSITIONS.	VERTICAL DUCT
Ⓢ	3 1/2" X 10"	VERTICAL DUCT MOUNTED FLUSH IN FINISHED WALL. BEGIN DUCT AT FLOOR LINE AND EXTEND UP WALL ABOVE FINISHED CEILING. PROVIDE JUNCTION BOX (SIZED BY E.C.) AT TOP OF DUCT FOR CONDUIT TRANSITIONS.	VERTICAL DUCT
Ⓢ	3 1/2" X 10"	VERTICAL DUCT MOUNTED FLUSH IN FINISHED WALL. BEGIN DUCT AT FLOOR LINE AND EXTEND UP WALL ABOVE FINISHED CEILING. PROVIDE JUNCTION BOX (SIZED BY E.C.) AT TOP OF DUCT FOR CONDUIT TRANSITIONS.	VERTICAL DUCT

SIEMENS SMART REMOTE SERVICE

TO ENSURE THE UPTIME OF YOUR SYSTEM DURING THE WARRANTY PERIOD (AND BEYOND WITH A SERVICE AGREEMENT), SIEMENS REMOTE SERVICES (SRS) REQUIRES REMOTE LOCAL AREA NETWORK ACCESS TO SIEMENS SYSTEMS.

THE PREFERRED CONNECTION METHOD IS (VPN) VIRTUAL PRIVATE NETWORK (WHERE THE CUSTOMER HAS AVAILABLE A VPN CAPABLE FIREWALL OR OTHER VPN APPLIANCE). THIS METHOD PROVIDES THE POSSIBILITY FOR REMOTE SYSTEM DIAGNOSTICS WITHOUT ADDITIONAL HARDWARE. PLEASE CONTACT SIEMENS SMART REMOTE SERVICES TO DETERMINE BEST IMPLEMENTATION FOR YOUR SITE. CONTACT:

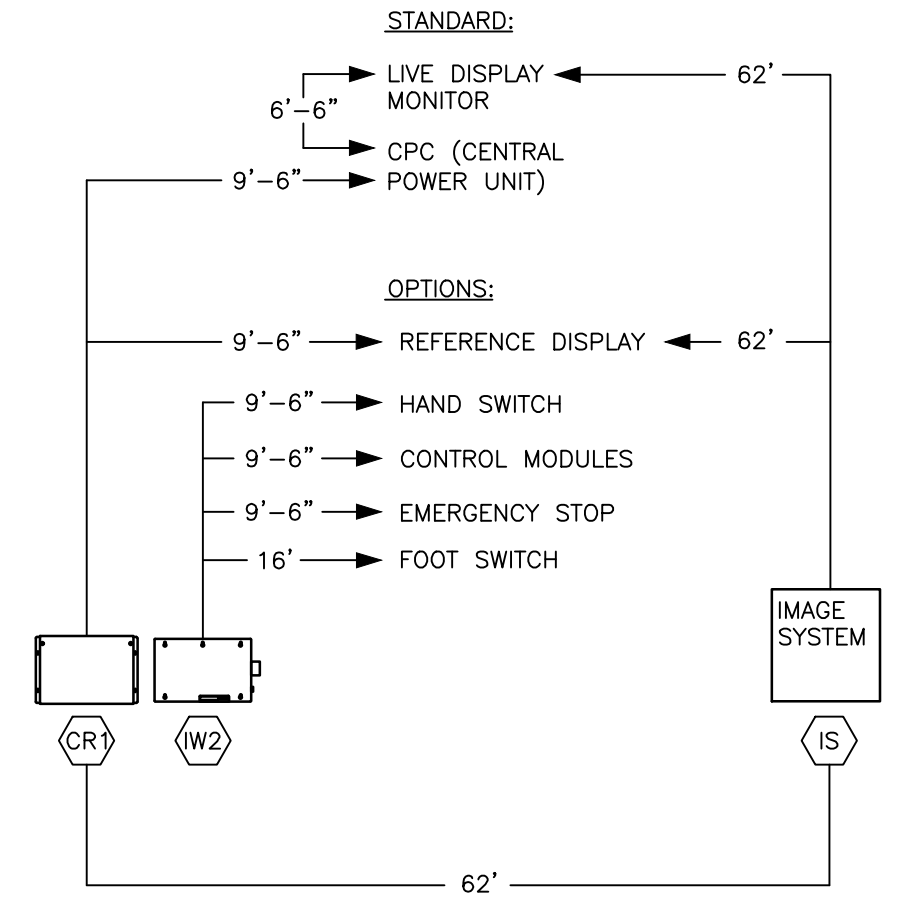
IMCPTSCSRS.DL@SIEMENS-HEALTHINEERS.COM.



NETWORK REQUIREMENT

A GIGABIT NETWORK IS REQUIRED FOR ADEQUATE IMAGE DATA TRANSFER SPEED BETWEEN THE IMAGER AND 3D RECONSTRUCTION WORKSTATION. WORKFLOW AND CLINICAL NEEDS DEMAND 3D IMAGES BE AVAILABLE FOR REVIEW BY CLINICAL STAFF IMMEDIATELY UPON ACQUISITION.

IMAGE SYSTEM IN EQUIPMENT ROOM



CONTROL ROOM SYSTEM CONNECTIONS

SCALE: NONE

CABLE PROTECTION

CABLES ARE NOT PLENUM RATED. ALL CABLES MUST BE ROUTED IN CABLE DUCTS OR CABLE CONDUITS.

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Lilker

3	05/23/2023	Issued for 100% CD's
2	04/28/2023	Issued for 50% CD's
1	03/31/2023	DD Review Set
no.	date	description

Client Name:

RICHMOND UNIVERSITY
MEDICAL CENTER

Project Name & Location:

BI-PLANE EP LAB
355 BARD AVENUE
STATEN ISLAND NY

Drawing Title:

ELECTRICAL PART PLANS
SHEET (2 OF 3)

Drawn By:	Date:
SSI	05/23/2023
Checked By:	Scale:
MJR	AS NOTED

Issued To: For:
CONSTRUCTION DOCUMENTS

File No.: R2000

Drawing No.:

E-402.00

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ALL CONDUITS AND WIRES SIZES MUST BE DETERMINED BY THE ELECTRICAL ENGINEER OF RECORD PER N.E.C. AND TO MAINTAIN SIEMENS IMPEDANCE REQUIREMENTS.

MAIN BREAKER
EPO CIRCUIT
POWER SOURCE

NOTE #1

NOTE #2

REFER TO EATON INFORMATION FOR UPS INPUT/OUTPUT WIRE SIZE REQUIREMENTS. OBTAIN EATON PLANNING GUIDE FROM SIEMENS PROJECT MANAGER.

PROVIDE ADDITIONAL EPO NEAR UPS IF UPS IS LOCATED REMOTELY FROM SIEMENS EQUIPMENT ROOM.

EPO

NC

EPO

NC

EPO

NC

M (175A)

A (100A)

B (100A)

C (30A)

D (15A)

MP

OPTIONAL TABLE
OUTLET POWER FEED.
CONTACT SIEMENS
PROJECT MANAGER.

9355 15KVA
UPS/BATT/
INPUT XFMR
CABINET

CUT 3 NETWORK
CABLE UP TO 328'

REMOTE
MONITORING
DEVICE

ONLY REQUIRED IF THE
SUPPLIED UPS WIRING
HARNESS IS TOO SHORT
FOR CONNECTION TO
OUTPUT XFMR CABINET.

OUTLET FOR CHARGING
THE RMD BATTERY MUST
BE ON EMERGENCY
POWER. LOCATE WITHIN 6'
OF "RMD" BOX.

3/4" AWG

UPS

9355 UPS
OUTPUT
XFMR
CABINET

E

SYSTEM
CABINET

SIEMENS-SUPPLIED
POWER CABLE
FOR TABLE OUTLET, E.C.
TO CONNECT TO GFCI.

POLYDOROS
A100
CABINET

POLYDOROS
A100
CABINET

XF1

GFCI

MAXIMUM WIRE SIZE FOR
TERMINAL LUGS IS #3/0
AWG "PULL" CABLE.

SC1

PW1

PW2

1) PHASE AND NEUTRAL TO BE THE SAME SIZE. GROUND SIZED PER NEC.
NOTES: UNLESS OTHERWISE NOTED, ALL BREAKERS WILL BE 80% RATED
MAIN AND FEEDER CIRCUIT BREAKERS SHALL BE SELECTIVELY
COORDINATED ABOVE 0.10 SECONDS IN ACCORDANCE WITH NEC
ARTICLES 517.3(C)(7), 700.28 AND 701.27

XF1	1	1.5kVA, 480V PRIMARY, 120V GROUNDED SECONDARY STEP-DOWN SINGLE-PHASE TRANSFORMER WITH PRIMARY AND SECONDARY FUSE PROTECTION FOR TABLE OUTLET POWER, CONNECTED TO AN ADJACENT FLUSH WALL-MOUNTED 15A, 125VAC UL 943 GFCI WITH BLANK FACE (NO CONTACT OPENINGS OR NEMA CONFIGURATION) WITH LED INDICATION, PUSH-TO-TEST AND PUSH-TO-RESET BUTTONS, AND A CLEAR LEXAN HINGED COVER TO AVOID INADVERTENT MANUAL TRIP.
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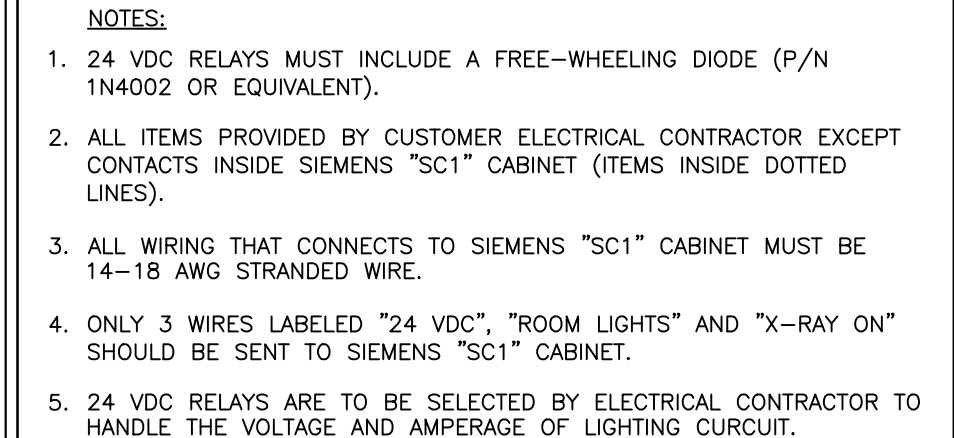
NOTE 2 - EPO CIRCUIT #2

EPO CONTACTS TO BE NORMALLY CLOSED, WIRED IN SERIES, CONNECTED TO 9355 UPS ONLY.

THE EPOs MUST BE INSTALLED BY A QUALIFIED ELECTRICAL CONTRACTOR ACCORDING TO NATIONAL ELECTRICAL CODE, STATE AND LOCAL REGULATIONS. MEASURES SHOULD BE TAKEN TO DESIGN THE CIRCUIT IN SUCH A WAY THAT IT WILL ALWAYS WORK WHEN THE MEDICAL EQUIPMENT IS POWERED. THE CUSTOMER IS SOLELY RESPONSIBLE FOR THE IMPLEMENTATION OF THE EPOs AND THEIR ASSOCIATED RISKS AND MUST MAKE THE FINAL DETERMINATION CONSIDERING ALL SITE CONDITIONS AND REGULATORY FACTORS.



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PANEL:

MDP-EBP1

SERVICE VOLTAGE:

480/277V, 3ø, 4W

MAIN BUS RATING:

225 A

AIC RATING:

22 KA

PANEL FEEDER:

REFER TO SINGLE LINE DIAGRAM

ENCLOSURE:

NEMA 1

MOUNTING:

RECESSED

LOCATION:

CT CONTROL ROOM

EQUIPMENT

MAIN RATING:

MCB: 175 A

OPTIONS:

☒ DOOR-IN-DOOR TRIM

☒ BONDED GROUND BUS

☐ ISOLATED GROUND BUS

☐ 200% NEUTRAL BUS

☐ FEED THROUGH LUGS

NEW

NOTE	BRANCH FEEDER	LOAD DESCRIPTION	PROT. DEVICE			LOAD (VA)			POLES		LOAD (VA)			PROT. DEVICE			LOAD DESCRIPTION	BRANCH FEEDER	NOTE			
			POLE	FRAME	TRIP	øA	øB	øC	1	2	øA	øB	øC	POLE	FRAME	TRIP						
	3#2,#2G-1-1/4"C	FU-1	3P	100A	100A				3	4				1P	100A	20A	SPARE					
									5	6				1P	100A	20A	SPARE					
									7	8				1P	100A	20A	SPARE					
	3#2,#2G-1-1/4"C	FU-2	3P	100A	100A				9	10				1P	100A	20A	SPARE					
									11	12				1P	100A	20A	SPARE					
									13	14				1P	100A	20A	SPARE					
	4#10,#10G-3/4"C	SC-1	3P	100A	100A				15	16				1P	-	-	SPACE					
									17	18				1P	-	-	SPACE					
									19	20				1P	-	-	SPACE					
	2#12,#12G-3/4"C	XF-1	2P	100A	15A				21	22				1P	-	-	SPACE					
		SPACE	1P	-	-				23	24				1P	-	-	SPACE					
		SPACE	1P	-	-				25	26				1P	-	-	SPACE					
		SPACE	1P	-	-				27	28				1P	-	-	SPACE					
		SPACE	1P	-	-				29	30				1P	-	-	SPACE					
		SPACE	1P	-	-				31	32				1P	-	-	SPACE					
		SPACE	1P	-	-				33	34				1P	-	-	SPACE					
		SPACE	1P	-	-				35	36				1P	-	-	SPACE					
		SPACE	1P	-	-				37	38				1P	-	-	SPACE					
		SPACE	1P	-	-				39	40				1P	-	-	SPACE					
		SPACE	1P	-	-				41	42				1P	-	-	SPACE					

NOTES: PROVIDE SHUNT TRIP MAIN CIRCUIT BREAKER. POWER FROM 120VAC CRITICAL BRANCH EPO CIRCUIT.

TOTAL CONNECTED LOAD:

TOTAL DEMAND LOAD:

TOTAL AMPS:

PANEL:

EQ-3-1

SERVICE VOLTAGE:

480/277V, 3ø, 4W

MAIN BUS RATING:

400 A

AIC RATING:

22 KA

PANEL FEEDER:

REFER TO RISER LINE DIAGRAM

ENCLOSURE:

NEMA 1

MOUNTING:

SURFACE

LOCATION:

ELECTRIC ROOM

EQUIPMENT

MAIN RATING:

M.L.O.

OPTIONS:

☒ DOOR-IN-DOOR TRIM

☒ BONDED GROUND BUS

☐ ISOLATED GROUND BUS

☐ 200% NEUTRAL BUS

☐ FEED THROUGH LUGS

NEW

NOTE	BRANCH FEEDER	LOAD DESCRIPTION	PROT. DEVICE			LOAD (VA)			POLES		LOAD (VA)			PROT. DEVICE			LOAD DESCRIPTION	BRANCH FEEDER	NOTE			
			POLE	FRAME	TRIP	øA	øB	øC	1	2	øA	øB	øC	POLE	FRAME	TRIP						
	2#10,#10G-3/4"C	HEAT TRACE RF	1P	100A	30A	500			3	4				1P	100A	20A	SPARE	2#12-1#12G-3/4"C.				
		SPARE	1P	100A	20A				5	6				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				7	8				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				9	10				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				11	12				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				13	14				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				15	16				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				17	18				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				19	20				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				21	22				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				23	24				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				25	26				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				27	28				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				29	30				1P	100A	20A	SPARE					
		SPARE	1P	100A	20A				31	32	487			3P	100A	20A	EF-1	3#12,#12G-3/4"C				
		SPARE	1P	100A	20A				33	34		487										
		SPARE	1P	100A	20A				35	36		487										
						387			37	38	19,279			3P	100A	100A	AHU-1 ROOF	3#1,#8G-1 1/2"C				
						387			39	40		19,279										
	3#12,#12G-3/4"C	AOCU-1	3P	100A	20A			387	41	42			19,279									

NOTES:

TOTAL CONNECTED LOAD:

TOTAL DEMAND LOAD:

TOTAL AMPS:

60,959 VA

51,815 VA

62.3 A

PANEL:

LP-EM-3

SERVICE VOLTAGE:

208/120V, 3ø, 4W

MAIN BUS RATING:

100A

AIC RATING:

22 KA

PANEL FEEDER:

REFER TO RISER LINE DIAGRAM

ENCLOSURE:

NEMA 1

MOUNTING:

SURFACE

LOCATION:

ELECTRIC ROOM

EMERGENCY

MAIN RATING:

M.L.O.

OPTIONS:

☒ DOOR-IN-DOOR TRIM

☒ BONDED GROUND BUS

☐ ISOLATED GROUND BUS

☐ 200% NEUTRAL BUS

☐ FEED THROUGH LUGS

EXISTING

NOTE	BRANCH FEEDER	LOAD DESCRIPTION	PROT. DEVICE			LOAD (VA)			POLES		LOAD (VA)			PROT. DEVICE			LOAD DESCRIPTION	BRANCH FEEDER	NOTE			
			POLE	FRAME	TRIP	øA	øB	øC	1	2	øA	øB	øC	POLE	FRAME	TRIP						
	EXISTING	E-C38 EM RECEP	1P	100A	20A				1P	100A	20A			1P	100A	20A	MCU DOOR SETON	EXISTING				
	EXISTING	EXISTING LOAD	1P	100A	20A				3	4				1P	100A	20A	EXISTING LOAD	EXISTING				
	EXISTING	EXISTING LOAD	1P	100A	20A				5	6				1P	100A	20A	EXISTING LOAD	EXISTING				
	EXISTING	EXISTING LOAD	1P	100A	20A				7	8				1P	100A	20A	EXISTING LOAD	EXISTING				
	EXISTING	EXISTING LOAD	1P	100A	20A				9	10				1P	100A	20A	SPARE					
	2#12,#12G-3/4"C	AHU-1 RECEP	1P	100A	20A			500	11	12				1P	100A	20A	SPARE					
	2#12,#12G-3/4"C	AHU-1 LTG,CTRLS	1P	100A	20A	500			13	14				1P	100A	20A	SPARE					
									15	16				1P	100A	20A	NURSE CALL PANELS	EXISTING				
		SPARE	1P	100A	60A				17	18				1P	100A	20A	EXISTING LOAD					
									19	20				1P	100A	20A	EXISTING LOAD					
		SPACE	1P	100A	-				21	22				1P	100A	20A	EXISTING LOAD					
		SPACE	1P	100A	-				23	24				1P	100A	-	SPACE					
		SPACE	1P	100A	-				25	26	487			1P	100A	-	SPACE					
		SPACE	1P	100A	-				27	28		487		1P	100A	-	SPACE					
		SPACE	1P	100A	-				29	30			487	1P	100A	-	SPACE					

NOTES:

BOLD INDICATES NEW CIRCUIT BREAKER AND WIRE

TOTAL CONNECTED LOAD:

TOTAL DEMAND LOAD:

TOTAL AMPS:

2,461 VA

2,461 VA

6.8 A

SCHUNKKEWITZ

ARCHITECTURE

INTERIORS

PROJECT MANAGEMENT

DANIEL SCHUNKKEWITZ, ARCHITECT

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Lilker

3	05/23/2023	Issued for 100% CD's
2	04/28/2023	Issued for 50% CD's
1	03/31/2023	DD Review Set
no.	date	description

Client Name:

RICHMOND UNIVERSITY

MEDICAL CENTER

Project Name & Location:

BI-PLANE EP LAB

355 BARD AVENUE

STATEN ISLAND NY

Drawing Title:

ELECTRICAL PANEL

SCHEDULE

(SHEET 2 OF 2)

Drawn By:

SSI

Date:

05/23/2023

Checked By:

MJR

Scale:

AS NOTED

Issued To, For:

CONSTRUCTION DOCUMENTS

File No.:

R2000

Drawing No.:

E-502.00

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18

OF 23

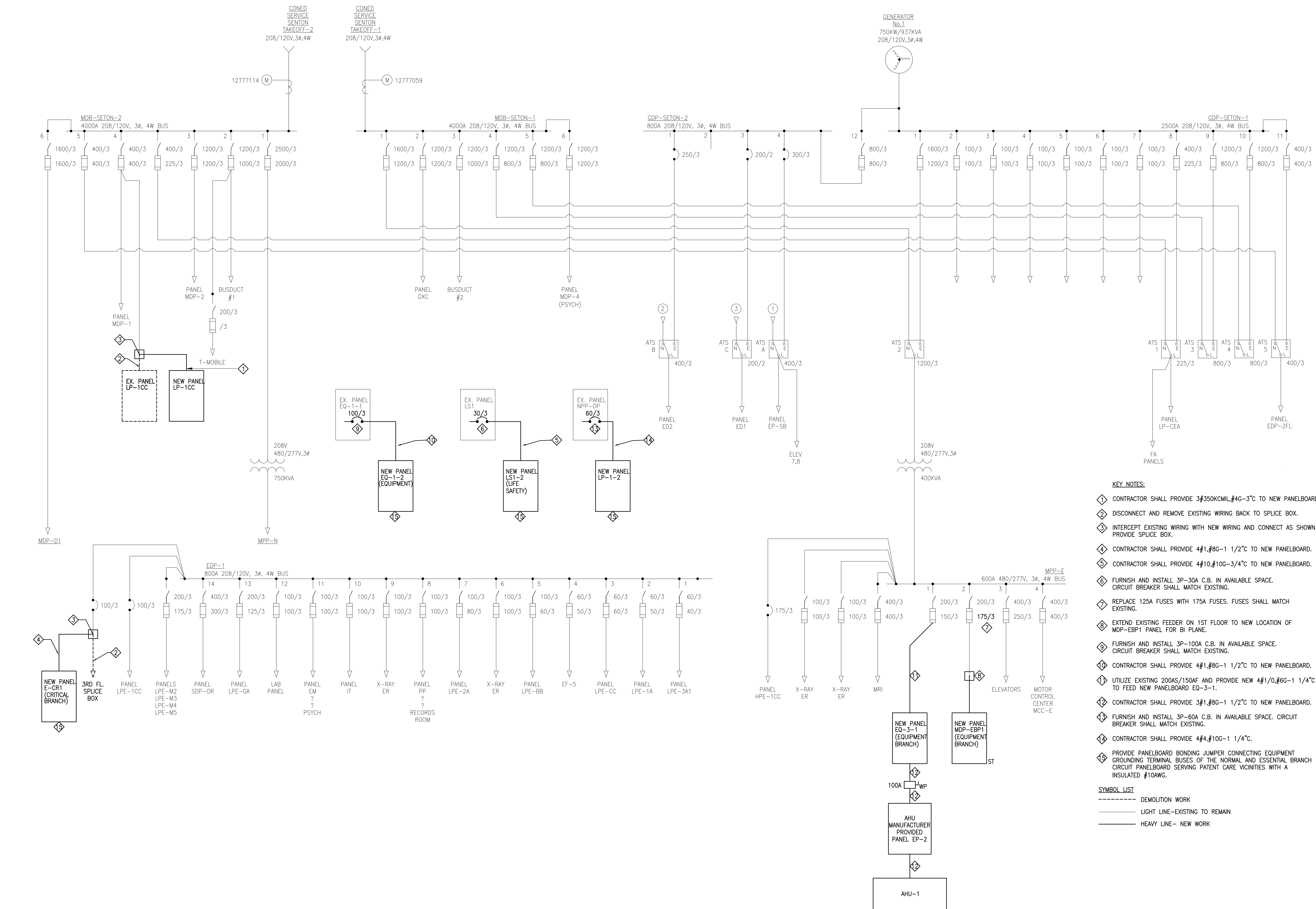
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KEY NOTES:

- ② CONTRACTOR SHALL PROVIDE 3#350KCMIL, #4G-3°C TO NEW PANELBOARD.
- ③ DISCONNECT AND REMOVE EXISTING WIRING BACK TO SPLICE BOX.
- ④ INTERCEPT EXISTING WIRING WITH NEW WIRING AND CONNECT AS SHOWN. PROVIDE SPLICE BOX.
- ⑤ CONTRACTOR SHALL PROVIDE 4#1, #8G-1 1/2°C TO NEW PANELBOARD.
- ⑥ CONTRACTOR SHALL PROVIDE 4#10, #10G-3/4°C TO NEW PANELBOARD.
- ⑦ FURNISH AND INSTALL 3P-30A C.B. IN AVAILABLE SPACE. CIRCUIT BREAKER SHALL MATCH EXISTING.
- ⑧ REPLACE 125A FUSES WITH 175A FUSES. FUSES SHALL MATCH EXISTING.
- ⑨ EXTEND EXISTING FEEDER ON 1ST FLOOR TO NEW LOCATION OF MDP-EBP1 PANEL FOR B1 C.B.
- ⑩ FURNISH AND INSTALL 3P-100A C.B. IN AVAILABLE SPACE. CIRCUIT BREAKER SHALL MATCH EXISTING.
- ⑪ CONTRACTOR SHALL PROVIDE 4#1, #8G-1 1/2°C TO NEW PANELBOARD.
- ⑫ UTILIZE EXISTING 200AS/150AF AND PROVIDE NEW 4#1/0, #6G-1 1/4°C TO FEED NEW PANELBOARD Q3-3-1.
- ⑬ CONTRACTOR SHALL PROVIDE 3#1, #8G-1 1/2°C TO NEW PANELBOARD.
- ⑭ FURNISH AND INSTALL 3P-60A C.B. IN AVAILABLE SPACE. CIRCUIT BREAKER SHALL MATCH EXISTING.
- ⑮ CONTRACTOR SHALL PROVIDE 4#4, #10G-1 1/4°C.
- ⑯ PROVIDE PANELBOARD BONDING JUMPER CONNECTING EARTH GROUNDING TERMINAL BUSES OF THE NORMAL AND ESSENTIAL BRANCH CIRCUIT PANELBOARD SERVING PATENT CARE VICINITIES WITH A INSULATED #10AWG.

SYMBOL LIST

----- DEMOLITION WORK
 _____ LIGHT LINE-EXISTING TO REMAIN
 _____ HEAVY LINE- NEW WORK

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no.	date	description

Client Name: _____

RICHMOND UNIVERSITY
MEDICAL CENTER

Project Name & Location:

BI-PLANE EP LAB
355 BARD AVENUE
STATEN ISLAND NY

Drawing Title:

ELECTRICAL SINGLE LINE DIAGRAM

Drawn By: SSI	Date: 05/23/2023
Checked By: MJR	Scale: AS NOTED

CONSTRUCTION DOCUMENTS

File No.: R2000

Drawing No.:

E-503.00

9 OF 23

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SCHUNKKEWITZ

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Lilker

ELECTRICAL SPECIFICATIONS

1. GENERAL

A. THE WORK UNDER THIS DIVISION INCLUDES PROVIDING ALL LABOR, MATERIALS, SUPERVISION, SUPPLIES, TOOLS, SCAFFOLDING, MACHINERY, EQUIPMENT, APPLIANCES, AND SERVICES (INCLUDING TRANSPORTATION, RIGGING, STORAGE UTILITIES, ETC.) PLUS ALL REQUIRED PERMITS AND LICENSES NECESSARY TO COMPLETE THE WORK UNDER THIS CONTRACT. ALL SYSTEMS AND EQUIPMENT SHALL BE COMPLETE IN EVERY RESPECT AND ALL ITEMS OF MATERIAL, EQUIPMENT AND LABOR SHALL BE FURNISHED, INSTALLED, TESTED AND COMMISSIONED FOR A FULLY OPERATIONAL SYSTEM.

B. ALL LABOR, MATERIALS, APPARATUS AND APPLIANCES REQUIRED FOR THE COMPLETE AND PROPER FUNCTIONING OF THE SYSTEMS DESCRIBED AND/OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL, WHETHER MENTIONED/INDICATED IN THE CONTRACT DOCUMENTS OR NOT, SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. THE ENTIRE INSTALLATION SHALL BE READY IN EVERY RESPECT FOR SATISFACTORY AND EFFICIENT OPERATION WHEN COMPLETED.

C. BIDDERS, BEFORE SUBMITTING PROPOSALS, SHALL EXAMINE ALL DRAWINGS, SPECIFICATIONS, ADDENDA, ALTERNATES, SPECIAL CONDITIONS, AND ALL OTHER CONTRACT DOCUMENTS OF ALL DIVISION AND SECTIONS OF THIS PROJECT, SHALL VISIT THE SITE AND CAREFULLY EXAMINE THE AREAS AFFECTED BY THE WORK IN THIS CONTRACT AND SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS, BUILDING RULES AND ANY DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THIS WORK. SUBMITTAL OF A BID IS AN AGREEMENT TO ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND NO CONSIDERATION WILL BE GRANTED FOR ANY CLAIMED MISUNDERSTANDING THEREOF.

D. THIS CONTRACTOR SHALL PROVIDE TEMPORARY LIGHT AND POWER FOR ALL TRADES FROM THE EXISTING OR TEMPORARY ELECTRIC SERVICE AS REQUIRED BY FIELD CONDITIONS. TEMPORARY POWER PROVISIONS SHALL COMPLY WITH ALL LOCAL AUTHORITY HAVING JURISDICTION REQUIREMENTS AS WELL AS OSHA REQUIREMENTS FOR GFCI PROTECTION FOR RECEPTACLE CIRCUITS. PROVIDE TEMPORARY POWER FOR ALL WELDER HOOKUPS, TEMPORARY HEATING, ETC. AS REQUIRED.

2. CODES, STANDARDS ORDINANCES, PERMITS, FEES, ETC.

A. THE ENTIRE INSTALLATION AND ALL EQUIPMENT, MATERIALS AND METHODS SHALL COMPLY WITH THE CURRENTLY STATE ENFORCED VERSIONS OF THE FOLLOWING CODES AND ORDINANCES:

UNDERWRITERS LABORATORIES, INC. (UL)

ELECTRICAL CODE

NFPA 70E

BUILDING CODE

ENERGY CONSTRUCTION CODE

HOSPITAL RULES AND REGULATIONS

HOSPITAL INFECTION CONTROL STANDARDS

NFPA 99

FGI DESING GUIDELINES FOR HOSPITALS AND OUTPATIENT FACILITIES.

ALL LOCAL JURISDICTION DIRECTIVES AND REQUIREMENTS

B. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE REQUIREMENTS OF ALL LOCAL AUTHORITIES HAVING JURISDICTION AND NOTIFY THE ENGINEER IF, IN HIS OPINION, ANY WORK OR MATERIAL SPECIFIED IS NOT PERMITTED.

C. WHERE CONTRACT DOCUMENT REQUIREMENTS ARE IN EXCESS OF RULES, REGULATIONS AND CODE REQUIREMENTS, AND ARE PERMITTED UNDER THE CODE, THE CONTRACT DOCUMENTS SHALL GOVERN. IN THE EVENT OF A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND THE APPLICABLE LAWS, RULES, REGULATIONS, CODES, AND ORDINANCES OF FEDERAL, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION, THE LATTER SHALL GOVERN.

D. WHERE ALTERATIONS TO AND/OR DEVIATIONS FROM THE CONTRACT DOCUMENTS ARE REQUIRED BY THE AUTHORITIES HAVING JURISDICTION, REPORT THE REQUIREMENTS TO THE ARCHITECT AND ENGINEER AND SECURE THEIR WRITTEN APPROVAL BEFORE STARTING THE REQUIRED MODIFICATIONS.

E. THE CONTRACTOR SHALL SECURE WRITTEN APPROVAL OF ALL WORK FROM ALL AUTHORITIES HAVING JURISDICTION BEFORE REQUESTING FINAL PAYMENT.

F. THE CONTRACTOR SHALL PAY ALL FEES REQUIRED TO PERFORM THE WORK AND OBTAIN ELECTRICAL AND FIRE DEPARTMENT INSPECTIONS.

3. SHOP DRAWINGS AND CATALOG CUTS

A. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ARCHITECT AND ENGINEER FOR APPROVAL, DETAILED SHOP DRAWINGS, CATALOG CUTS AND WIRING DIAGRAMS FOR THE FOLLOWING:

PANELBOARDS
SWITCHBOARD MODIFICATIONS – ADVISORY BOARD DRAWINGS
SHORT CIRCUIT, COORDINATION AND ARC FLASH STUDY
DISCONNECT SWITCHES
LIGHTING FIXTURES
BALLASTS
LIGHTING CONTROLS
WIRING DEVICES AND DEVICE PLATES
WIRING
FIRE ALARM
NURSE CALL
ANY OTHER SYSTEM OR EQUIPMENT INSTALLED

B. SUBMIT FOUR SETS AS A MINIMUM, UNLESS OTHERWISE REQUIRED BY THE OWNER, ARCHITECT, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER.

C. ENGINEER'S SHOP DRAWING REVIEW IS FOR GENERAL COMPLIANCE WITH THE DESIGN CONCEPT AND CONTRACT DOCUMENTS AND DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR DEVIATIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS OR FROM THE NECESSITY OF FURNISHING ANY WORK REQUIRED BY THE CONTRACT DOCUMENTS WHICH MAY HAVE BEEN OMITTED FROM THE SHOP DRAWING SUBMITTALS.

D. ENGINEER'S SHOP DRAWING MARKINGS OR COMMENTS OR THE LACK THEREOF SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM COMPLIANCE WITH THE PROJECT CONTRACT DOCUMENTS. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR DETAILS AND ACCURACY, FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF CONSTRUCTION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

E. NO PART OF THE WORK SHALL BE STARTED IN THE SHOP OR IN THE FIELD AND NO MATERIAL SHALL BE DELIVERED OR INSTALL UNTIL THE ENGINEER HAVE REVIEWED AND APPROVED THE ASSOCIATED SHOP DRAWINGS AND SAMPLES.

F. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS IN A MANNER AS TO ALLOW ADEQUATE TIME FOR REVIEW AND ALL NECESSARY RESUBMISSIONS. DELAYS DUE TO SHOP DRAWING REJECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

4. SUBSTITUTIONS

A. ANY SUBSTITUTIONS FOR ELECTRICAL ITEMS DESCRIBED IN THIS SPECIFICATION WILL ONLY BE PERMITTED UPON WRITTEN PRIOR APPROVAL BY THE ENGINEER.

B. PROPOSED EQUIPMENT SUBSTITUTIONS SHALL BE SUBMITTED FOR PRIOR APPROVAL AND SHALL INCLUDE A COMPLETE DETAILED LIST INDICATING ALL DEVIATIONS ITEM BY ITEM. SUBMISSIONS SHALL INCLUDE A LIST OF LOCAL INSTALLATIONS NOT LESS THAN FIVE YEARS OLD.

C. REQUESTS FOR APPROVAL OF SUBSTITUTIONS FOR ITEMS OF LESSER MATERIAL AND/OR LABOR COSTS THAN THOSE SPECIFIED MUST BE ACCOMPANIED BY AN ITEMIZED COST SAVINGS BREAKDOWN TO BE CONSIDERED.

D. ALL MATERIALS FOR USE ON THIS PROJECT SHALL BE THE SAME PRODUCT LINE OF THE SAME MANUFACTURER FOR EACH PHASE OF THE WORK. WHERE PREVIOUS PHASES OF WORK HAVE ALREADY BEEN COMPLETED, CONTRACTOR SHALL MATCH EQUIPMENT PROVIDED UNDER THESE PREVIOUS PHASES. SUBSTITUTIONS SHALL NOT BE ACCEPTABLE DURING LATER PHASES OF WORK EXCEPT UNDER EXTENUATING CIRCUMSTANCES AND ONLY WITH THE PRIOR APPROVAL OF THE OWNER AND ENGINEER.

E. EQUIPMENT SHOWN ON THE DRAWINGS WITH PARTICULAR MANUFACTURERS IDENTIFIED HAS BEEN COORDINATED FOR STRUCTURAL PENETRATIONS, UTILITY CONNECTIONS, OPERATING AND SERVICE (MAINTENANCE) REQUIREMENTS, AND PHYSICAL SIZE WITH REGARD TO THE SPACE WHERE THE EQUIPMENT IS SHOWN. SUBSTITUTIONS WILL BE ACCEPTABLE CONTINGENT ON THE CONTRACTOR PROVIDING A COMPLETE INSTALLATION AND MAINTAINING FULL RESPONSIBILITY TO PROVIDE, AT NO ADDITIONAL COST, ANY MODIFICATIONS TO THE STRUCTURE, MECHANICAL CONNECTIONS OR ELECTRICAL SERVICE THAT ARE REQUIRED TO PROPERLY INSTALL, OPERATE, AND SERVICE THE EQUIPMENT BEING USED. THESE MODIFICATIONS SHALL NOT INCLUDE ADDITIONAL AREA FOR EQUIPMENT UNLESS APPROVED BY THE ARCHITECT.

5. QUALITY ASSURANCE

A. MANUFACTURERS SHALL BE FIRMS REGULARLY ENGAGED IN MANUFACTURE OF ELECTRICAL CONSTRUCTION PRODUCTS OF TYPES REQUIRED FOR THIS PROJECT, WHOSE PRODUCTS HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR NOT LESS THAN FIVE (5) YEARS.

B. THE CONTRACTOR SHALL HAVE HAD EXPERIENCE ON AT LEAST FIVE PROJECTS INVOLVING QUANTITIES AND COMPLEXITIES AT LEAST EQUAL TO THOSE REQUIRED FOR THIS PROJECT.

C. ALL WORKMEN PERFORMING WORK UNDER THIS DIVISION SHALL BE SKILLED WORKMEN OF THE TRADE INVOLVED UNDER THE SUPERVISION OF A LICENSED ELECTRICIAN.

6. INSPECTION

A. ALL STAGES OF THE INSTALLATION MAY BE INSPECTED FOR COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS. REPLACE ANY PORTION OF THE CONSTRUCTION THAT DOES NOT MEET SUCH REQUIREMENTS TO THE SATISFACTION OF THE ENGINEER.

B. PROVIDE PROPER FACILITIES AS THE ENGINEER AND INSPECTORS MAY REQUIRE FOR ACCESS AND FOR INSPECTION AT THE CONSTRUCTION SITE.

7. CUTTING AND PATCHING AND PAINTING

A. ALL CUTTING, PATCHING AND PAINTING REQUIRED FOR THE INSTALLATION OF EQUIPMENT SHALL BE DONE BY THIS CONTRACTOR. IF CUTTING IS DONE DUE TO FAILURE TO PERFORM PRELIMINARY ROUGHING WORK, THIS CONTRACTOR WILL BE RESPONSIBLE FOR THE COST OF THE ADDITIONAL PATCHING AND PAINTING.

B. CONTRACTOR SHALL COORDINATE TIME OF WORK WITH OWNER FOR CUTTING HOLES AND INSTALLING CONDUITS, BOXES, ETC. WHERE HUNG CEILINGS ARE INSTALLED, CONTRACTOR SHALL REMOVE AND REINSTALL ALL CEILING TILES AS REQUIRED. TILES DAMAGED DUE TO INSTALLATION OF ELECTRICAL WORK SHALL BE REPLACED TO MATCH EXISTING AT NO ADDITIONAL COST TO OWNER.

C. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED SLEEVES IN NEW AND EXISTING FLOORS, WALLS OR PARTITIONS. SLEEVES SHALL BE MINIMUM ONE TRADE SIZE LARGER THAN THE CONDUIT AND SHALL BE OF THE RIGID GALVANIZED CONDUIT TYPE WITH UL LISTED FIRE STOPPING MATERIAL. WHERE SLEEVES AND INSERTS WERE NOT INSTALLED, OR WHERE SLEEVES AND INSERTS WHERE INCORRECTLY LOCATED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ANY REQUIRED RELOCATION, CUTTING AND PATCHING.

D. THIS CONTRACTOR SHALL NOT DO ANY CUTTING THAT MAY IMPAIR THE STRENGTH OF BUILDING CONSTRUCTION. NO HOLES ARE TO BE DRILLED INTO THE TENSION SIDE OF STRUCTURAL MEMBERS. CLAMPS AND OTHER APPROVED HOLDING DEVICES ARE TO BE USED. ALL WORK SHALL BE DONE IN A NEAT MANNER BY WORKERS SKILLED IN THEIR TRADE AND AS APPROVED BY BUILDING MANAGEMENT AND/OR BUILDING RULES AND REGULATIONS.

E. AT THE END OF THE WORKING DAY, THE CONTRACTOR SHALL MAINTAIN TEMPORARY FIRE BARRIERS TO PROTECT THE BUILDING.

F. MAINTAIN ALL CONSTRUCTION FIRE RATINGS USING FIRE STOPPING AND OTHER NECESSARY MATERIALS AS REQUIRED AND/OR LISTED BY LOCAL AUTHORITY HAVING JURISDICTION.

G. RESTORE EXPOSED FINISHES OF PATCHED AREAS AND EXTEND FINISH RESTORATION INTO RETAINED ADJOINING CONSTRUCTION IN A MANNER THAT WILL ELIMINATE EVIDENCE OF PATCHING AND REFINISHING WHENEVER EXISTING BUILDING SURFACES ARE DISTURBED. NEW PAINTING AND FINISHES SHALL MATCH EXISTING.

H. WHENEVER EXCAVATION OR CUTTING OF SLABS ARE PERFORMED, THE CONTRACTOR SHALL HIRE A SPECIALIST TO PERFORM SUBSURFACE SCANS TO IDENTIFY AND FLAG UTILITIES, SO THEY ARE NOT DAMAGED.

8. EQUIPMENT MOUNTING

A. FURNISH AND INSTALL A COMPLETE SUPPORT SYSTEM AS REQUIRED FOR PROPER DISTRIBUTION, PROTECTION AND SUPPORT OF ALL ELECTRICAL EQUIPMENT THROUGHOUT THE PROJECT AS INDICATED ON AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND APPLICABLE CONSTRUCTION CODES.

B. WHEN REQUIRED BY CODE OR SPECIFIED IN THE CONTRACT DOCUMENTS, INCLUDE SEISMIC CONSTRAINTS. SEISMIC BRACING CALCULATIONS MUST BE PROVIDED FOR ALL CONNECTIONS OF EQUIPMENT TO THE STRUCTURE. CALCULATIONS MUST BE STAMPED BY THE CONTRACTOR'S REGISTERED PROFESSIONAL ENGINEER WITH AT LEAST FIVE YEARS OF SEISMIC DESIGN EXPERIENCE, LICENSED AND INSURED IN THE STATE

C. PROVIDE INSERTS, EXPANSION SLIDG LUGS, ANCHORS, BOLTS WITH NUTS AND WASHERS SHIMS OR ANY OTHER TYPE OF FASTENING DEVICES REQUIRED TO FASTEN PANELS OR OTHER EQUIPMENT, TO FOUNDATIONS, FLOORS, WALLS OR CEILINGS. UNLESS OTHERWISE SPECIFIED HEREIN OR SHOWN ON THE CONTRACT DRAWINGS,

D. FASTENERS FOR DRY LOCATIONS SHALL BE ZINC PLATED. HANGERS FOR DAMP AND WET LOCATIONS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.

E. HANGER RODS SHALL BE THREADED EITHER ENDS, OR CONTINUOUS THREADED RODS OF CIRCUIT CROSS SECTION. USE ADJUSTING LOCKNUTS AT UPPER ATTACHMENTS AND HANGERS. NO WIRE, CHAIN, OR PERFORATED STRAPS ARE ALLOWED.

F. MANUFACTURERS SHALL BE THOMAS & BETTS-KINDORF, THOMAS & BETTS-SUPERSTRUT, UNISTRUT OR APPROVED EQUAL.

G. ALL ANCHORS MUST BE ICC-ES APPROVED.

H. ALL CEILING HUNG EQUIPMENT ANCHORS SHALL BE IN COMPLIANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND CONFORM TO APPLICABLE CONSTRUCTION CODES.

I. FASTEN JUNCTION, PULL AND DEVICES BOXES SECURELY TO THE BUILDING CONSTRUCTION, INDEPENDENT OF RACEWAY SYSTEM.

J. INSTALL THROUGH-STUD CABLE AND RACEWAY SUPPORT CLIPS WHERE CABLES OR RACEWAYS RUN HORIZONTALLY THROUGH METAL STUDS.

K. INSTALL TEE BAR GRID BOX HANGER SUPPORTED BETWEEN TWO CEILING GRID TEE BARS WHERE DEVICES BOXES ARE LOCATED FLUSH IN RECESSED SUSPENDED CEILING. INSTALL AT LEAST ONE INDEPENDENT SUPPORT ROD FROM BOX HANGER TO STRUCTURE.

L. INSTALL ROOF-MOUNTED RACEWAY SUPPORT BLOCKING WHERE RACEWAYS RUN ON ACROSS ROOFING. COORDINATE INSTALLATION OF ROOF SUPPORTS WITH "ROOF ACCESSORIES." PROVIDE PRODUCTS COMPATIBLE WITH ROOFTOP MATERIALS INCLUDED IN THE WORK.

M. PROVIDE MINIMUM OF TWO LOCK NUTS PER THREADED SUPPORT ROD EXCEPT WHERE LOCK NUT TIGHTENS AGAINST A THREADED SOCKET, ONE LOCKNUT MAY BE USED.

N. WHERE NOT INDICATED, SELECT SIZES OF COMPONENTS SO STRENGTH WILL BE ADEQUATE TO CARRY PRESENT AND FUTURE STATIC LOADS WITHIN SPECIFIED LOADING LIMITS. MINIMUM STATIC DESIGN LOAD USED FOR STRENGTH DETERMINATION SHALL BE WEIGHT OF SUPPORTED COMPONENTS PLUS 200 LB.

9. GROUNDING AND BONDING

A. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AND BONDED TO PROVIDE AN ELECTRICAL GROUNDING PATH TO EARTH IN A CODE-APPROVED MANNER.

B. ALL HARDWARE REQUIRED FOR A COMPLETE GROUNDING SYSTEM SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND INDUSTRY STANDARDS.

C. ALL GROUNDING AND BONDING MATERIALS SHALL COMPLY WITH UL 467 AND SHALL BE LISTED AND LABELED ACCORDINGLY.

D. MANUFACTURERS SHALL BE ABB/ THOMAS & BETTS-BLACKBURN, BURNDY A DIVISION OF HUBBELL INC. OR APPROVED EQUAL.

E. EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSULATED, 600V, THHN-THWN COPPER CONDUCTORS, WITH GREEN-COLORED INSULATION SIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ELECTRICAL CODE AND THE LOCAL AUTHORITY HAVING JURISDICTION.

F. UNDERGROUND GROUNDING CONDUCTORS SHALL BE BARE TINNED-COPPER CONDUCTOR, #2/0 AWG MINIMUM. BURY AT LEAST 24 INCHES BELOW GRADE.

G. BONDING CONDUCTORS SHALL BE BARE COPPER CONDUCTORS. BONDING CONDUCTORS SHALL BE STRANDED FOR FINAL CONNECTION TO MOTORS, TRANSFORMERS, AND VIBRATING EQUIPMENT.

H. MAIN BUILDING GROUNDING BUS BARS SHALL BE PREDRILLED RECTANGULAR BARS OF ANNEALED COPPER, 1/4 BY 4 INCHES IN CROSS SECTION MOUNTED ON INSULATED SPACERS MINIMUM 2 INCHES FROM THE WALL AND 6 INCHES ABOVE FINISHED FLOOR.

I. TELCOM GROUNDING BUS BARS SHALL BE PREDRILLED RECTANGULAR BARS OF ANNEALED COPPER, 1/4 BY 2 INCHES IN CROSS SECTION MOUNTED ON INSULATED SPACERS MINIMUM 2 INCHES FROM THE WALL AND 6 INCHES ABOVE FINISHED FLOOR.

J. GROUNDING BUSBAR CONNECTORS SHALL BE MECHANICAL TYPE, CAST SILICON BRONZE, SOLDERLESS COMPRESSION-TYPE WIRE TERMINALS, AND LONG-BARREL, TWO-BOLT CONNECTION TO GROUND BUS BAR.

K. USE MECHANICAL CONNECTORS FOR PIPE AND EQUIPMENT GROUNDING CONDUCTOR TERMINATIONS. MECHANICAL CONNECTORS SHALL BE COPPER OR COPPER ALLOY CONNECTORS, BOLTED-PRESSURE TYPE WITH AT LEAST TWO BOLTS. WASHERS AND STOP NUTS SHALL BE OF HIGH COPPER ALLOY OVERDUR, DURILUM, DURONIZE OR SILICON BRONZE. FERROUS HARDWARE WILL NOT BE ACCEPTABLE.

L. USE COMPRESSION CONNECTORS FOR ALL GROUNDING TERMINALS. COMPRESSION CONNECTORS SHALL BE COPPER CONNECTORS, FACTORY FILLED WITH AN OXIDE INHIBITOR AND INSTALLED WITH MANUFACTURERS COMPRESSION DIES.

M. USE WELDED CONNECTORS FOR UNDERGROUND CONNECTIONS, INACCESSIBLE LOCATIONS AND CONNECTIONS TO STRUCTURAL STEEL. USE EXOTHERMIC-WELDING KITS OF TYPES RECOMMENDED BY KIT MANUFACTURER FOR MATERIALS BEING JOINED AND INSTALLATION CONDITIONS.

N. APPROVED GROUNDING ELECTRODES ARE UNDERGROUND METAL WATER PIPING, BUILDING STEEL AND GROUND RODS. GROUND RODS SHALL BE COPPER-CLAD STEEL, SECTIONAL TYPE; 3/4 INCH BY 10 FEET AND SHALL BE DRIVEN UNTIL TOPS ARE 2 INCHES BELOW FINISHED FLOOR OR FINAL GRADE.

O. ROUTE GROUNDING CONDUCTORS ALONG SHORTEST AND STRAIGHTEST PATHS POSSIBLE, UNLESS OTHERWISE INDICATED. AVOID OBSTRUCTING ACCESS OR PLACING CONDUCTORS WHERE THEY MAY BE SUBJECTED TO STRAIN, IMPACT, OR DAMAGE.

P. FURNISH AND INSTALL A TELCOM GROUNDING BUS BAR AT EACH TELCOM/MDF ROOM. ALL METALLIC RACEWAY, EQUIPMENT RACKS AND EQUIPMENT CABINETS SHALL BE BONDED TO THE GROUNDING BUS BAR USING A MIN #6 AWG CONDUCTOR.

Q. FURNISH AND INSTALL AN INSULATED EQUIPMENT GROUNDING CONDUCTOR WITH ALL FEEDERS AND BRANCH CIRCUITS.

R. METALLIC CONDUIT THAT ONLY CONTAINS A GROUNDING CONDUCTOR, AND IS PROVIDED FOR ITS MECHANICAL PROTECTION, SHALL BE BONDED TO THAT CONDUCTOR AT THE ENTRANCE AND EXIT FROM THE CONDUIT.

T. METALLIC CONDUITS WHICH TERMINATE WITHOUT MECHANICAL CONNECTION TO ELECTRICAL EQUIPMENT HOUSING BY MEANS OF LOCKOUT AND BUSHINGS OR ADAPTERS, SHALL BE PROVIDED WITH GROUNDING BUSHINGS. CONNECT BUSHINGS WITH AN EQUIPMENT GROUNDING CONDUCTOR TO THE EQUIPMENT GROUND BUS.

U. BOND THE EQUIPMENT GROUNDING CONDUCTOR TO EACH PULLBOX, JUNCTION BOX, OUTLET BOX, DEVICE BOX, CABINETS, AND OTHER ENCLOSURES THROUGH WHICH THE CONDUCTOR PASSES. PROVIDE LUGS IN EACH BOX AND ENCLOSURE FOR EQUIPMENT GROUNDING CONDUCTOR TERMINATION.

V. FURNISH AND INSTALL AN INSULATED EQUIPMENT GROUNDING CONDUCTOR TO DUCT-MOUNTED ELECTRICAL DEVICES OPERATING AT 120V OR GREATER, INCLUDING AIR CLEANERS, HEATERS, DAMPERS, HUMIDIFIERS, AND OTHER DUCT-MOUNTED ELECTRICAL EQUIPMENT. BOND CONDUCTOR TO EACH UNIT AND TO AIR DUCT AND CONNECTED METALLIC PIPING.

W. FURNISH AND INSTALL AN INSULATED EQUIPMENT GROUNDING CONDUCTOR TO EACH ELECTRIC WATER HEATER AND HEAT-TRACING CABLE. BOND CONDUCTOR TO HEATER UNITS, PIPING, CONNECTED EQUIPMENT, AND COMPONENTS.

X. GROUND RECEPTACLES WITH A JUMPER FROM THE RECEPTACLE GREEN GROUND TERMINAL TO THE DEVICE BOX AND GROUND SCREW AND A JUMPER TO THE BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR. RECEPTACLES SHALL NOT BE GROUNDED THROUGH THEIR MOUNTING SCREWS.

Y. GROUND LIGHTING FIXTURES TO THE EQUIPMENT GROUNDING CONDUCTOR OF THE WIRING SYSTEM. FIXTURES CONNECTED WITH FLEXIBLE CONDUIT SHALL HAVE A GREEN GROUND WIRE INCLUDED WITH THE POWER WIRES FROM THE FIXTURE THROUGH THE FLEXIBLE CONDUIT TO THE FIRST OUTLET BOX.

CC. GROUND BUSES IN NORMAL AND EMERGENCY PANELS SERVING COMMON AREAS SHALL BE BONDED TOGETHER WITH A MINIMUM #6 AWG CONTINUOUS BONDING JUMPER AS PER NEC 517 CODE REQUIREMENTS.

DD. ALL BRANCH CIRCUITS (NEW AND EXISTING) SHALL BE PROVIDED WITH A #12 AWG SOLID GREEN GROUND CONDUCTOR UNLESS CODE REQUIRES A LARGER SIZE.

EE. TEST COMPLETED GROUNDING SYSTEM AT EACH LOCATION WHERE A MAXIMUM GROUND-RESISTANCE LEVEL IS SPECIFIED BELOW. IF RESISTANCE TO GROUND EXCEEDS SPECIFIED VALUES, NOTIFY ENGINEER PROMPTLY AND INCLUDE RECOMMENDATIONS TO REDUCE GROUND RESISTANCE:

POWER AND LIGHTING EQUIPMENT OR SYSTEM WITH CAPACITY OF 500 KVA AND LESS: 10 OHMS.

POWER AND LIGHTING EQUIPMENT OR SYSTEM WITH CAPACITY OF 500 TO 1000 KVA: 5 OHMS.

POWER AND LIGHTING EQUIPMENT OR SYSTEM WITH CAPACITY MORE THAN 1000 KVA: 3 OHMS.

POWER DISTRIBUTION UNITS OR PANELBOARDS SERVING ELECTRONIC EQUIPMENT: 1 OHM.

PAD-MOUNTED EQUIPMENT: 5 OHMS.

10. WIRING

A. UNLESS OTHERWISE SPECIFIED OR SPECIFICALLY INDICATED ON THE DRAWINGS, SINGLE CONDUCTORS SHALL BE SOFT-DRAWN, ANNEALED, UNCOATED, COPPER BUILDING WIRES OF MINIMUM 98X CONDUCTIVITY, TYPE THHN/THWN, RATED FOR 600 VOLT, COMPLYING WITH UL STANDARD 83, WITH DISTINCTIVE COLOR MARKING AS SPECIFIED HEREINAFTER. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID COMPLYING WITH ASTM B 3, CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED COMPLYING WITH ASTM B 8. MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED. MANUFACTURERS SHALL BE AMERICAN INSULATED WIRE, COLONIAL WIRE & CABLE CO, REPUBLIC WIRE INC, SOUTHWIRE OR APPROVED EQUAL.

B. TYPE USE/RHW CONDUCTORS SHALL HAVE 75°C, ABRASION, MOISTURE, HEAT, AND SUNLIGHT RESISTANT BLACK CROSS-LINKED POLYETHYLENE INSULATION, IN COMPLIANCE WITH UL STANDARD 854 AND 44.

C. HOSPITAL GRADE ARMORED CABLE (TYPE HCF) SHALL BE A FACTORY ASSEMBLY OF MULTIPLE SOFT-DRAWN COPPER, CURRENT-CARRYING CONDUCTORS, TYPE THHN/THWN RATED FOR 600V, COMPLYING WITH UL STANDARD 83, NEC 517.13, WITH A GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR IN A OVERALL GALVANIZED STEEL INTERLOCKED ARMOR. MINIMUM WIRE SIZE SHALL BE #12 AWG. THE WHOLE ASSEMBLY SHALL COMPLY WITH UL STANDARD 44. MANUFACTURERS SHALL BE AFC, SOUTHWIRE OR APPROVED EQUAL.

D. MINERAL INSULATED CABLE (TYPE MI) SHALL CONSIST OF ONE OR MORE SOLID COPPER CONDUCTORS INSULATED WITH HIGHLY COMPRESSED MAGNESIUM OXIDE AND ENCLOSED IN A CONTINUOUS COPPER SHEATH. THE MI CABLE SHALL BE RATED AT 600V. THE MI CABLE SHEATH SHALL BE GROUNDED. MI CABLE SHALL BE 2 HOURS FIRE RATED AND SHALL MEET UL 2159.

E. USE TYPE SE OR USE CABLE IN RACEWAY FOR SERVICE ENTRANCE FEEDERS.

F. USE TYPE THHN/THWN SINGLE CONDUCTORS IN RACEWAY FOR ALL FEEDERS AND BRANCH WIRING UNLESS OTHERWISE NOTED.

G. UNLESS OTHERWISE NOTED, USE MINERAL-INSULATED, METAL-SHEATHED CABLE, TYPE MI FOR FIRE PUMP FEEDERS.

H. HOSPITAL GRADE HCF-90 TYPE AC-CABLE WILL BE PERMITTED FOR NORMAL BRANCH CIRCUITS IN DRYWALLS AND CEILINGS IN DRY LOCATIONS AS PERMITTED BY CODE.

I. USE WIRE WITH FOLLOWING TYPES OF INSULATION AT THE SPECIFIED LOCATIONS:

DRY LOCATIONS: TYPE THHN/THWN OR XHHW
WET LOCATIONS: TYPE XHHW-2

J. BRANCH WIRING FOR LIGHTING, CONTROLS AND POWER SHALL BE #12AWG MINIMUM, UNLESS OTHERWISE INDICATED OR REQUIRED PER CODE.

K. ALL WIRES AND CABLES SHALL BE PHASED OUT AND CONNECTED IN SUCH MANNER THAT CABLES HAVING INSULATION OF THE SAME COLOR WILL BE CONNECTED TO THE SAME PHASE THROUGHOUT. THE CONTRACTOR SHALL MATCH THE COLOR-CODING THAT IS BEING USED IN THE BUILDING, IF APPLICABLE, OR AS FOLLOWS:

SYSTEM VOLTAGE
PHASE 277/480V 120/208V

A BROWN BLACK
B RED
C YELLOW BLUE
NEUTRAL GRAY WHITE
GROUND GREEN GREEN
ISOLATED GROUND GREEN/YELLOW
STRIP YELLOW STRIP

L. CONDUCTORS FROM LIFE SAFETY, CRITICAL EMERGENCY, FIRE ALARM POWER OR OTHER EM LOADS IDENTIFIED BY CODE SHALL NOT BE MIXED IN THE SAME RACEWAY, PULL BOX OR CABINET WITH OTHER BUILDING WIRING.

M. BRANCH CIRCUIT CONDUCTORS FOR LIGHTING AND RECEPTACLES SHALL BE INCREASED IN SIZE TO COMPENSATE FOR VOLTAGE DROPS AS FOLLOWS:

FOR 120V, 20A BRANCH CIRCUITS WITH A LENGTH OF 100' OR MORE PROVIDE MINIMUM NO. 10 AWG CONDUCTORS FOR THE ENTIRE LENGTH OF THE CIRCUIT

FOR 277V, 20A BRANCH CIRCUITS WITH A LENGTH OF 200' OR MORE PROVIDE MINIMUM NO. 10 AWG CONDUCTORS FOR THE ENTIRE LENGTH OF THE CIRCUIT.

N. PROVIDE DEDICATED NEUTRALS (ONE NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR) FOR CIRCUITS FED FROM SINGLE-POLE OVERCURRENT PROTECTIVE DEVICES, GROUND FAULT-PROTECTED CIRCUITS WHERE A GFCI OR GFIPE BREAKER IS USED IN A PANELBOARD, CIRCUITS FEEDING DAMPER CONTROLLED LOADS, AND CIRCUITS FEEDING ELECTRONIC EQUIPMENT WHICH PRODUCES A HIGH LEVEL OF HARMONIC DISTORTION INCLUDING, BUT NOT LIMITED TO, COMPUTERS, PRINTERS, PLOTTERS, COPY MACHINES, AND FAX MACHINES.

O. WHERE MULTI-WIRE BRANCH CIRCUITS (TWO OR THREE CIRCUITS THAT SHARE A NEUTRAL) ARE USED, ALL CONDUCTORS SHALL ORIGINATE FROM THE SAME PANELBOARD. CONTINUITY OF THE NEUTRAL CONDUCTOR MUST NOT BE INTERRUPTED BY THE REMOVAL OF A WIRING DEVICE. IN THESE APPLICATIONS, THE NEUTRAL CONDUCTORS MUST BE SPLICED TOGETHER AT EVERY DEVICE PROVIDING A PIGTAIL TO TERMINATE TO THE WIRING DEVICE. MULTI-WIRE BRANCH CIRCUIT BREAKERS SHALL BE TWO OR THREE POLE WITH COMMON TRIP AND ONE HANDLE.

P. CONDUCTORS SMALLER THAN #1/0 AWG, COPPER SHALL NOT BE INSTALLED AS PARALLEL SETS.

Q. CONDUCTORS IN VERTICAL RACEWAY SHALL BE SUPPORTED IF THE VERTICAL

RISE EXCEEDS THE VALUES IN TABLE 300.19 (A) OF THE ADOPTED NEC BY THE AUTHORITY HAVING JURISDICTION.

R. ALLOW FOR A MINIMUM OF 6 INCHES OF FREE CONDUCTOR, MEASURED FROM THE POINT IN THE BOX WHERE IT EMERGES FROM ITS RACEWAY OR CABLE SHEATH AT EACH SHE

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FMC FITTINGS SHALL BE CLAMP-TYPE, WITH INSULATED THROAT.

LPMC FITTINGS MUST INCORPORATE A THREADED GROUNDING CONE, A STEEL OR PLASTIC COMPRESSION RING, AND A GLAND FOR TIGHTENING.

I. PROVIDE INSULATED THROAT METAL BUSHINGS IN CONDUITS 1-1/2" TRADE SIZE AND LARGER AND IN ALL CONDUIT SIZES WHEN TERMINATED AT LOCATIONS SUBJECT TO MOISTURE OR VIBRATION AND WHEN USED FOR LOW VOLTAGE CABLING. USE METALLIC INSULATING TYPE BUSHINGS CONSISTING OF AN INSULATING INSERT, MOLDED OR LOCKED INTO THE METALLIC BODY OF THE FITTING. BUSHINGS MADE ENTIRELY OF METAL OR NONMETALLIC MATERIAL ARE NOT PERMITTED.

J. INSTALL PULL WIRES IN EMPTY RACEWAYS. USE POLYPROPYLENE OR MONOPOLAMENT PLASTIC LINE WITH NOT LESS THAN 200-LB TENSILE STRENGTH. LEAVE AT LEAST 24 INCHES OF SLACK AT EACH END OF PULL WIRE.

K. INSTALL NO MORE THAN THE EQUIVALENT OF THREE 90-DEGREE BENDS IN ANY CONDUIT RUN. WITH THE EXCEPTION OF CONTROL WIRING CONDUITS, SUPPORT RACEWAY WITHIN 12 INCHES OF CHANGES IN DIRECTION. WHERE MORE BENDS ARE NECESSARY, PROVIDE SUITABLE CODE SIZE PULL BOXES OR FITTINGS.

L. ALL CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONTINUOUS. RACEWAY ENCLOSURES AND BOXES SHALL BE MECHANICALLY JOINED AND BONDED TO FORM A CONTINUOUS ELECTRICAL CONDUCTOR.

M. UNLESS OTHERWISE SPECIFIED, ALL CONDUIT AND TUBING IN FINISHED AREAS SHALL BE INSTALLED CONCEALED. IN GENERAL, ALL CONDUIT AND TUBING SHALL BE RUN IN HUNG CEILINGS AND FURRED SPACES, WHERE THEY EXIST.

N. CAP UNDERGROUND RACEWAYS DESIGNATED AS SPARE ABOVE GRADE ALONGSIDE RACEWAYS IN USE.

O. INSTALL CONDUITS PARALLEL OR PERPENDICULAR TO BUILDING LINES.

P. INSTALL HORIZONTAL RUNS AS CLOSE TO THE CEILING OR BEAMS TO ALLOW FOR THE MAXIMUM PERMISSIBLE CROWDING. ASSURE CONDUIT INSTALLATION DOES NOT ENCROACH INTO THE CEILING HEIGHT HEAD ROOM, WALKWAYS, OR DOORWAYS.

Q. KEEP RACEWAYS AT LEAST 6 INCHES AWAY FROM PARALLEL RUNS OF FLUES AND STEAM OR HOT-WATER PIPES. INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER AND STEAM PIPING.

R. CONDUIT INSTALLED ON EQUIPMENT OR TO SERVE EQUIPMENT SHALL NOT OBSTRUCT ANY REMOVABLE PANEL, ACCESS DOOR, CONTROL PANEL OR EQUIPMENT MAINTENANCE CLEARANCES.

S. PROVIDE CONDUIT EXPANSION FITTINGS TOGETHER WITH BONDING JUMPER AND SUITABLE SLEEVES ON ALL CONDUITS PASSING THROUGH STRUCTURAL EXPANSION JOINTS AND WHERE ELSE REQUIRED BY CODE. LENGTH OF BONDING JUMPER TO BE AT LEAST THREE TIMES THE WIDTH OF THE JOINT.

T. COMPLETE RACEWAY INSTALLATION BEFORE STARTING CONDUIT INSTALLATION. FLATTENED, DENTED, OR DEFORMED CONDUIT IS NOT PERMITTED. REMOVE AND REPLACE THE DAMAGED CONDUITS WITH NEW UNDMAGED MATERIAL. WIRE PULLING LUBRICANTS, WHEN UTILIZED, SHALL BE IN ACCORDANCE WITH UL REQUIREMENTS REGARDING THE SPECIFIC CONDUCTOR OR CABLE INSULATION AND RACEWAY MATERIAL.

U. SEAL THE INTERIOR OF ALL RACEWAYS WHERE CONDUITS PASS FROM WARM TO COLD LOCATIONS, SUCH AS BOUNDARIES OF REFRIGERATED SPACES AND WHERE AN UNDERGROUND SERVICE RACEWAY ENTERS A BUILDING OR STRUCTURE.

V. INSTALL RACEWAY SEALING FITTINGS AT ACCESSIBLE LOCATIONS ACCORDING TO NFPA 70 AND FILL THEM WITH USTED SEALING COMPOUND, FOR CONCEALED RACEWAYS, INSTALL EACH FITTING IN A FLUSH STEEL BOX WITH A BLANK COVER PLATE HAVING A FINISH SIMILAR TO THAT OF ADJACENT PLATES OR SURFACES. INSTALL RACEWAY SEALING FITTINGS ACCORDING TO NFPA 70.

W. ALL CONDUIT AND TUBING SHALL BE CUT SQUARE AND REAMED AT THE ENDS. CUT AND LAZER. USE ROLL CUTTER OR A GUIDE TO MAKE CUT STRAIGHT AND PERPENDICULAR TO THE LENGTH. FOR CONDUITS 2-INCH TRADE SIZE AND LARGER, USE ROLL CUTTER OR A GUIDE TO MAKE CUT STRAIGHT AND PERPENDICULAR TO THE LENGTH.

X. MAKE CONDUIT BENDS WITH STANDARD CONDUIT BENDING MACHINES. BENDING CONDUITS WITH A PIPE TEE OR VISE IS NOT ACCEPTABLE.

Y. SECURE CONDUITS TO CABINETS, JUNCTION BOXES, PULL BOXES AND OUTLET BOXES WITH BONDING TYPE LOCKNUTS. FOR RIGID CONDUIT INSTALLATIONS, PROVIDE A LOCKNUT ON THE INSIDE OF THE ENCLOSURE, MADE UP WRENCH TIGHT. DO NOT MAKE CONDUIT CONNECTIONS TO JUNCTION BOX COVERS. DO NOT RELY ON LOCKNUTS TO PENETRATE NONCONDUCTIVE COATINGS ON ENCLOSURES. REMOVE COATINGS IN THE LOCKNUT AREA PRIOR TO ASSEMBLING CONDUIT TO ENCLOSURE TO ASSURE A CONTINUOUS GROUND PATH.

Z. INSTALL RACEWAYS SQUARE TO THE ENCLOSURE AND TERMINATE AT ENCLOSURES WITH LOCKNUTS. INSTALL LOCKNUTS HAND TIGHT PLUS 1/4 TURN MORE.

AA. ALL VERTICAL RUNS OF CONDUIT OR TUBING TERMINATING IN THE BOTTOMS OF WALL BOXES OR CABINETS, OR SIMILAR LOCATIONS, SHALL BE PROTECTED FROM THE ENTRANCE OF FOREIGN MATERIAL PRIOR TO THE INSTALLATION OF CONDUCTORS.

BB. CONDUIT FITTINGS FOR HAZARDOUS (CLASSIFIED) LOCATIONS SHALL COMPLY WITH UL 886 AND NFPA 70. EXPANSION FITTINGS SHALL BE STEEL TO MATCH CONDUIT TYPE, COMPLYING WITH UL 651, RATED FOR ENVIRONMENTAL CONDITIONS WHERE INSTALLED, AND INCLUDING FLEXIBLE EXTERNAL BONDING JUMPER. FURNISH EXPANSION FITTINGS ON ALL CONDUITS PASSING THROUGH STRUCTURAL EXPANSION JOINTS, WHERE REQUIRED TO COMPENSATE FOR ENVIRONMENTAL TEMPERATURE CHANGE, AND WHERE ELSE REQUIRED BY CODE.

CC. ALL SWITCHBOARD FEEDERS, DISTRIBUTION BOARD FEEDERS, PANELBOARD FEEDERS, MOTOR CIRCUIT FEEDERS AND ALL MULTIPLE CIRCUIT WIRING HOMERUNS SHALL BE INSTALLED IN CONDUIT.

DD. ALL LOW-VOLTAGE SYSTEMS WIRING STRUT-UPS TO ABOVE THE ACCESSIBLE CEILINGS SHALL USE EMT.

EE. ALL EMERGENCY LIFE SAFETY AND CRITICAL BRANCH CIRCUITS SHALL BE INSTALLED IN CONDUIT. NORMAL BRANCH CIRCUITS ARE PERMITTED TO BE RUN IN HOSPITAL GRADE TYPE HCF-90 CABLE WHEN PERMITTED BY CODE AND HOSPITAL STANDARDS. ONLY.

14. OUTLET BOXES

A. BOXES SHALL CONFORM TO THE UL STANDARDS AND BE FURNISHED WITH COVERS OR EXTENSION RINGS AS REQUIRED TO COMPLY WITH ALL APPLICABLE CODES.

B. MANUFACTURERS SHALL BE APPLETON, COOPER CROUSE-HINDS, O-2/GEDNEY, RACO/HUBBELL, STEEL CITY/THOMAS & BETTS OR APPROVED EQUAL.

C. USE GALVANIZED SHEET METAL BOXES FOR INTERIOR DRY APPLICATIONS. SHEET METAL BOXES SHALL COMPLY WITH NEMA OS 1 AND UL 514.

D. USE CAST METAL BOXES WITH WEATHERPROOF COVERS FOR INTERIOR WET LOCATIONS AND OUTDOOR APPLICATIONS. CAST TYPE OUTLET BOXES SHALL BE MADE OF ANODIZED CAST ALUMINUM WHERE NOT IN CONTACT WITH CONCRETE OR GALVANIZED CAST IRON WITH THREADED HUBS. IN COMPLIANCE WITH NEMA FB 1.

E. BOX EXTENSIONS USED TO ACCOMMODATE NEW BUILDING FINISHES SHALL BE OF SAME MATERIAL AS RECESSED BOX.

F. CONCRETE BOXES (FOR INSTALLATION IN SLAB) SHALL HAVE REMOVABLE BACK PLATES WITH DEPTHS ALLOWED FOR A MINIMUM OF ONE INCH OF CONCRETE TO BE POURED ABOVE BACK PLATE.

G. THERE SHALL BE NO MORE HOLES IN ANY OUTLET BOX THAN REQUIRED FOR THE RACEWAYS ENTERING. ALL CAST TYPE BOXES SHALL BE EQUIPPED WITH THREADED HUBS. CLOSE UP ALL UNUSED OPENINGS IN BOXES WITH APPROVED FITTINGS.

H. BOXES SHALL BE OF SIZES AND TYPES TO ACCOMMODATE STRUCTURAL CONDITIONS, SIZE AND NUMBER OF RACEWAYS AND CONDUCTORS ENTERING AND EQUIPMENT OR FIXTURE FOR WHICH REQUIRED.

I. EACH WIRING DEVICE OR GROUP OF WIRING DEVICES AND EACH LIGHTING FIXTURE OR CONTINUOUS GROUPING OF FIXTURES SHALL HAVE AT LEAST ONE OUTLET BOX.

J. ALL OUTLET BOXES SHALL BE SET FLUSH WITH THE SURFACE OF THE WALL, FLOOR OR CEILING IN CONCEALED INSTALLATION. PLASTER, DRYWALL OR PLASTERBOARD SURFACES THAT ARE BROKEN OR INCOMPLETE SHALL BE REPAIRED SO THERE WILL BE NO GAPS OR OPEN SPACES GREATER THAN 1/8 IN. AT THE EDGE OF THE BOX OR FITTING.

K. ALL BOXES SHALL BE INSTALLED IN ACCESSIBLE AREAS WITH REMOVABLE COVERS. CEILING OUTLET BOXES MUST BE ACCESSIBLE FROM FIXTURE SERVED.

L. ALL BOXES SHALL BE FIRMLY SUPPORTED FROM THE BUILDING STRUCTURE.

M. KEEP OUTLET BOXES FREE OF PLASTER, DRYWALL JOINT COMPOUND, MORTAR, CEMENT, CONCRETE, DUST, PAINT, AND OTHER MATERIAL THAT MAY CONTAMINATE THE RACEWAY SYSTEM, CONDUCTORS, AND CABLES.

N. THE MOUNTING HEIGHTS OF THE VARIOUS OUTLETS SHALL BE AS SHOWN ON ARCHITECTURAL DRAWINGS AND TO CONFORM TO CODE REQUIREMENTS. IN CERTAIN LOCATIONS, THE REQUIRED HEIGHTS WILL VARY TO ACCOMMODATE EQUIPMENT TO BE LOCATED PROPERLY IN THE ARCHITECTURAL DRAWINGS, OR SHALL BE DETERMINED AT THE CONSTRUCTION SITE BY THE ARCHITECT'S REPRESENTATIVE.

1. WIRING DEVICES

A. ALL WIRING DEVICES SHALL BE UL LISTED, COMPLIANT WITH LOCAL ELECTRICAL AND BUILDING CODES, NEMA WD-1, NEC, AND ANSI STANDARDS WHERE APPLICABLE.

B. WIRING DEVICES SHALL BE OF THE MOLDED COMPOSITION TYPE, CONSTRUCTED FROM 100% IMPACT-RESISTANT THERMOPLASTIC.

C. WIRING DEVICES SHALL BE WHITE IN GENERAL UNLESS OTHERWISE SELECTED BY ARCHITECT OR OTHERWISE INDICATED IN CONTRACT DOCUMENTS FOR SPECIFIC FUNCTIONS. WIRING DEVICES SUPPLIED BY THE EMERGENCY POWER SYSTEM SHALL BE RED IN COLOR WITH RED COVER PLATES.

D. WIRING DEVICES MUST BE DESIGNED FOR SIDE WIRING WITH CONDUCTORS TERMINATED AT SCREW TERMINALS OR UNDER PNEUMATIC PLATES. AND MUST ACCEPT #12 AND #10 AWG SOLID OR STRANDED WIRE. PUSH IN WIRING WILL NOT BE PERMITTED.

E. INSTALL WIRING DEVICES AFTER ALL WALL PREPARATION, INCLUDING PAINTING, IS COMPLETE.

F. DO NOT STRIP INSULATION FROM CONDUCTORS UNTIL JUST BEFORE THEY ARE SPliced OR TERMINATED ON DEVICES. STRIP INSULATION EVENLY AROUND THE CONDUCTOR USING TOOLS DESIGNED FOR THE PURPOSE. AVOID SCORING OR NICKING OF SOLID WIRE OR CUTTING STRANDS FROM STRANDED WIRE.

G. DO NOT REMOVE SURFACE PROTECTION, SUCH AS PLASTIC FILM AND SMUDGE COVERS, UNTIL THE LAST POSSIBLE MOMENT.

H. CONNECT DEVICES TO BRANCH CIRCUITS USING PIGTAILS IN LENGTH THAT ARE NOT LESS THAN 6 INCHES.

I. WHERE TIGHTENING TORQUE VALUES ARE INDICATED ON EQUIPMENT OR INSTALLATION INSTRUCTIONS, A CALIBRATED TORQUE TOOL MUST BE USED TO ACHIEVE THE INDICATED TORQUE VALUE, UNLESS THE EQUIPMENT MANUFACTURER PROVIDES AN ALTERNATIVE METHOD OF ACHIEVING THE REQUIRED TORQUE.

J. DO NOT USE OVERSIZED OR EXTRA-DEEP PLATES. REPAIR WALL FINISHES AND REMOUNT OUTLET BOXES WHEN STANDARD DEVICE PLATES DO NOT FIT FLUSH OR DO NOT COVER ROUGH WALL OPENING.

K. UNLESS OTHERWISE INDICATED, MOUNT DEVICES FLUSH, WITH LONG DIMENSION VERTICAL AND WITH GROUNDING TERMINAL OF RECEPTACLES ON TOP. GROUP ADJACENT DEVICES UNDER SINGLE, MULTIGANG WALL PLATES.

L. GANG ALL DEVICES SHOWN ADJACENT TO EACH OTHER ON THE PLANS IN MULTI-GANG OUTLET BOXES. PROVIDE MULTI-GANG FACE PLATES.

M. STRAIGHT BLADE RECEPTACLES

RECEPTACLES SHALL BE HOSPITAL GRADE, DECORATOR STYLE AS

MANUFACTURED BY LEGRAND, HUBBELL OR LEVITON. IN COMPLIANCE WITH UL 498, NEMA WD 1, NEMA WD 6 (NEMA STANDARD CONFIGURATION FOR EACH RECEPTACLE SHALL MATCH APPLICATION).

DEVICE PLATES FOR WALL DEVICES SHALL BE DECORATOR STYLE OPENING, SNAP-ON TYPE WITH SEPARATE SUBPLATE, AS MANUFACTURED BY LEGRAND, HUBBELL OR LEVITON. FINISH AS DIRECTED BY ARCHITECT.

CONVENIENCE HOSPITAL GRADE RECEPTACLES:

• DUPLEX RECEPTACLE, GROUNDING TYPE, 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20:
LEGRAND #26352
HUBBELL #R020WHI
LEVITON #16342-W

• SINGLE RECEPTACLE, HOSPITAL GRADE GROUNDING TYPE, 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20:
LEGRAND #26361W
HUBBELL #HBL5361W
LEVITON #16341-W

GFCI HOSPITAL GRADE RECEPTACLES:

• DUPLEX RECEPTACLE, GROUNDING TYPE, 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20 WITH CLASS 'A' GROUND FAULT CIRCUIT INTERRUPTER, IN COMPLIANCE WITH UL 943
LEGRAND #2097W
HUBBELL #GFRST20W
LEVITON #GFNT2-W

TAMPER-RESISTANT HOSPITAL GRADE RECEPTACLES:

• TAMPER DUPLEX RECEPTACLE, GROUNDING TYPE, 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20:
LEGRAND #T63636W
HUBBELL #R020WTHR
LEVITON #TDR20-W

USB CHARGER HOSPITAL GRADE RECEPTACLES:

• DUPLEX RECEPTACLE, GROUNDING TYPE, 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20 W/ TWO TYPE-O PORT CONFIGURATION, HIGH POWER 5A, 5V USB OUTPUT, USB PORT RATED FOR 10,000 CYCLES:
LEGRAND #TFS362USW
HUBBELL #USB20C5W
LEVITON #T5832-W

CONTROLLED HOSPITAL GRADE RECEPTACLES:

• DUPLEX RECEPTACLE, GROUNDING TYPE, 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20, PERMANENTLY MARKED WITH THE UNIVERSALLY RECOGNIZED POWER SYMBOL AND THE WORD "CONTROLLED":
LEGRAND #26352CDW
HUBBELL #R020C2WHI
LEVITON #16352-2PW

ISOLATED GROUND HOSPITAL GRADE RECEPTACLES:

• DUPLEX RECEPTACLE, GROUNDING TYPE, 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20 W/ POWER INDICATING LED:
LEGRAND #G5362WSP
HUBBELL #G5362
LEVITON #16362-WIG

SURGE-PROTECTION GROUND HOSPITAL GRADE RECEPTACLES:

• DUPLEX RECEPTACLE, GROUNDING TYPE, 20-AMP, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20 WITH INTEGRAL TVSS UNIT. IN COMPLIANCE WITH UL 1449:
LEGRAND #5362WSP
HUBBELL #HBL5362WSA
LEVITON #5360-W

N. WALL SWITCHES

LIGHTING SWITCHES SHALL BE COMMERCIAL GRADE, DECORATOR STYLE AS MANUFACTURED BY LEGRAND, HUBBELL OR LEVITON. IN COMPLIANCE WITH UL 20, NEMA WD 1

WALL SWITCHES SHALL HAVE FULL-RATED CURRENT CAPACITY WITH LED, TUNGSTEN, FLUORESCENT OR RESISTIVE LOADS. MOTOR CAPACITY IS 80% OF SWITCH RATING.

SWITCHES SHALL BE AVAILABLE IN SINGLE-POLE, DOUBLE-POLE, 3-WAY, AND 4-WAY CONFIGURATIONS. SHALL BE RATED 20A, 120/277VAC AND ACCOMMODATE UP TO 1500W LED, FLUORESCENT, TUNGSTEN AND RESISTIVE LOADS.

DEVICE PLATES FOR WALL DEVICES SHALL BE DECORATOR STYLE OPENING, SNAP-ON TYPE WITH SEPARATE SUBPLATE, AS MANUFACTURED BY LEGRAND, HUBBELL OR LEVITON. FINISH AS DIRECTED BY ARCHITECT.

SINGLE POLE SWITCHES:

• AC TOGGLE SWITCH, 20-AMP, 125-VOLT AC.
LEGRAND #2621W
HUBBELL #DS120W
LEVITON #5621-2-W

THREE WAY SWITCHES:

• AC TOGGLE SWITCH, 20-AMP, 125-VOLT AC.
LEGRAND #2623W
HUBBELL #DS320W
LEVITON #5623-2-W

O. WALL BOX DIMMERS

DIMMER SWITCHES SHALL BE MODULAR, FULL-WAVE, SOLID-STATE UNITS WITH INTEGRAL, QUIET ON-OFF SWITCHES, WITH AUDIOBLE FREQUENCY AND EMI/RFI SUPPRESSION FILTERS.

DIMMER CONTROL SHALL BE CONTINUOUSLY ADJUSTABLE WITH SINGLE-POLE OR THREE-WAY SWITCHING. IN COMPLIANCE WITH UL 1472.

INCANDESCENT LAMP DIMMERS SHALL FOLLOW SQUARE-LAW DIMMING CURVE AND ON-OFF SWITCH POSITIONS SHALL BYPASS DIMMER MODULE. INCANDESCENT WALL BOX LUTRON, NOVA-T SERIES WITH WATGAGE AS REQUIRED FOR THE PARTICULAR LOADING OF EACH CIRCUIT.

FLUORESCENT LAMP DIMMER SWITCHES SHALL BE COMPATIBLE WITH DIMMING BALLASTS AND HAVE TRIM POTENTIOMETER TO ADJUST LOW-END DIMMING. DIMMER-BALLAST COMBINATION CAPABLE OF CONSISTENT DIMMING WITH LOW END NOT GREATER THAN 20 PERCENT OF FULL BRIGHTNESS. FLUORESCENT WALL BOX DIMMERS SHALL BE LUTRON, NOVA-T SERIES. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WIRING CONNECTIONS FOR DIMMING BALLAST AND PROVIDE CORRECT CONDUCTOR QUANTITY.

LED LAMP DIMMER SWITCHES SHALL BE COMPATIBLE WITH LED LAMPS; TRIM POTENTIOMETER TO ADJUST LOW-END DIMMING; CAPABLE OF CONSISTENT DIMMING WITH LOW END NOT GREATER THAN 20 PERCENT OF FULL BRIGHTNESS. LED WALL BOX DIMMERS SHALL BE LUTRON, NOVA-T SERIES. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WIRING CONNECTIONS FOR LED DRIVER AND PROVIDE CORRECT CONDUCTOR QUANTITY.

DIMMERS SHALL BE INSTALLED UTILIZING MANUFACTURER'S RECOMMENDED APPLICATION, WIRING, AND INSTALLATION INSTRUCTIONS. PROVIDE ANY INTERFACE MODULES REQUIRED FOR PROPER OPERATION OF DIMMERS, SWITCHES AND LOADS.

FURNISH ALL DEVICES, ACCESSORIES, & WALLPLATE KITS, LABOR AND OTHER SERVICES NECESSARY FOR THE PROPER INSTALLATION OF THE DEVICES

PROVIDE NEUTRAL CONNECTION AT ALL DEVICES REQUIRING ONE. PROVIDE SEPARATE, DEDICATED NEUTRAL BACK TO PANELBOARD FOR EACH CIRCUIT WITH DIMMED LOADS.

HEAT SINK DEVICES SHALL BE MOUNTED WITH FINS VERTICAL. DEVICES SHALL NOT BE LOADED ABOVE 80% OF ITS RATING.

GANG ALL DEVICES SHOWN ADJACENT TO EACH OTHER ON THE PLANS IN MULTI-GANG OUTLET BOXES. PROVIDE SEAMLESS WALLPLATE COVERS PER MANUFACTURER RECOMMENDATIONS FOR ALL DEVICES GANGED IN THE COMMON BOX.

ALL DIMMERS GANGED TOGETHER IN A COMMON OUTLET BOX SHALL BE INSTALLED WITH HEAT SINKS INTACT (NO BROKEN HEAT SINKS). DERATE DIMMER CAPACITY IF ANY OF THE SIDE SECTIONS OF THE HEAT SINK IS REMOVED TO ALLOW FOR GANGED INSTALLATIONS. FOLLOW MANUFACTURER RECOMMENDATIONS.

INSTALL APPROPRIATE WRING BETWEEN DEVICES TO PROVIDE CONTROL INTENT. DIFFERENT MANUFACTURERS PROVIDE SIMILAR PERFORMANCE UTILIZING DIFFERENT WIRING METHODS.

PROVIDE POWER BOOSTERS AS REQUIRED TO ACCOMMODATE LOADS IN EXCESS OF INDIVIDUAL WALLBOX DIMMER CAPACITY. COORDINATE WITH LOAD SCHEDULES ON DRAWINGS. TOTAL LOAD ON SYSTEM CANNOT EXCEED BRANCH CIRCUIT FEED CAPACITY UNLESS POWER BOOSTERS ARE USED.

LOCATE ALL POWER BOOSTERS IN ELECTRIC CLOSETS IF OVER 2 KW RATED. ALL 2 KW BOOSTERS MAY BE LOCATED IN ACCESSIBLE HUNG CEILINGS. ONLY IF EQUIPMENT IS PLENUM RATED. IF POWER BOOSTER HAS FINED HEAT SINK, FOR HEAT DISSIPATION, FINS MUST BE MOUNTED VERTICALLY.

P. STANDALONE OCCUPANCY & VACANCY SENSORS

ALL SENSORS SHALL USE SELF-ADJUST TECHNOLOGY FOR SENSITIVITY AND TIME-DELAY ADJUSTMENT BASED ON ENVIRONMENTAL HISTORY.

WALL TYPE VACANCY SENSORS

• DUAL TECHNOLOGY PIR/ULTRASONIC SENSOR, LINE-VOLTAGE 120/277V, MANUAL/ON, AUTOMATIC/OFF WALL SWITCH, WITH ADJUSTABLE TIME-OFF DELAY (5 TO 30MIN), 180° RANGE AND COVERAGE AREA OF 1000 SQUARE-FEET (U.O.N).
EATON/GREENGATE NEOSWITCH VNW-0-1001 SERIES.
SENSORSWITCH WSX-POT-VA SERIES.
HUBBELL H-MOSS A02001 SERIES.

CEILING MOUNTED VACANCY SENSORS

• DUAL TECHNOLOGY PIR/ULTRASONIC SENSOR, LOW-VOLTAGE, MANUAL/ON, AUTOMATIC/OFF WITH ADJUSTABLE TIME-OFF DELAY (1-30MIN), 360° RANGE AND MINIMUM COVERAGE AREA OF 2000 SQUARE-FEET (U.O.N).
EATON/GREENGATE MAC-DT-2000 SERIES.
HUGHT HCM-POT-RIB SERIES.
HUBBELL H-MOSS A02000C.

WALL TYPE OCCUPANCY SENSORS

• DUAL TECHNOLOGY PIR/ULTRASONIC SNSPR, LINE-VOLTAGE 120/277V, AUTOMATIC/ON/OFF WALL SWITCH WITH ADJUSTABLE TIME-OFF DELAY (5 TO 30MIN), 180° RANGE AND COVERAGE AREA OF 1000 SQUARE-FEET (U.O.N).
EATON/GREENGATE NEOSWITCH ONW-0-1001 SENSORSWITCH WSX-POT SERIES.
HUBBELL H-MOSS A02000 SERIES.

WALL TYPE OCCUPANCY SENSORS (RESTROOMS ONLY)

• ULTRASONIC SENSOR, LINE-VOLTAGE 120/277V, AUTOMATIC/ON/OFF WALL SWITCH WITH ADJUSTABLE TIME-OFF DELAY (5 TO 30MIN), 180° RANGE AND COVERAGE AREA OF 1000 SQUARE-FEET (U.O.N).
EATON/GREENGATE NEOSWITCH OSW-U-0721 SERIES.
HUBBELL H-MOSS A02000 SERIES.

CEILING MOUNTED OCCUPANCY SENSORS

• DUAL TECHNOLOGY PIR/ULTRASONIC SENSOR, LOW-VOLTAGE, AUTOMATIC/ON/OFF WITH ADJUSTABLE TIME-OFF DELAY (1-30MIN), 360° RANGE AND MINIMUM COVERAGE AREA OF 2000 SQUARE-FEET (U.O.N).
EATON/GREENGATE DAC-DT SERIES
HUGHT HCM-POT-RIB
HUBBELL H-MOSS A02000C SERIES.

ALL CEILING MOUNTED SENSORS SHALL BE PROVIDED WITH WALL MOUNTED LOW-VOLTAGE, MOMENTARY SWITCHES FOR MANUAL/ON OR MANUAL/OFF INPUT AND POWER SWITCH PACKS FOR LINE-VOLTAGE (120/277V) LOAD CONNECTION. QUANTITY OF LOW-VOLTAGE SWITCHES AND POWER SWITCH PACKS SHALL BE DETERMINED BASED ON NUMBER OF CONTROL ZONES, UNLESS OTHERWISE INDICATED ON DRAWINGS.

LOW-VOLTAGE, MOMENTARY SWITCHES

• EATON/GREENGATE QMSD SERIES, HUGHT #PQMSA SERIES
HUBBELL DSM30 SERIES (VACANCY SENSORS) OR DSL30 SERIES (OCCUPANCY SENSORS).

POWER SWITCH PACKS

• EATON/GREENGATE SP20 HUGHT #PP16 SERIES
HUBBELL CUJ300M (VACANCY SENSORS) OR CUJ300A (OCCUPANCY SENSORS).

FOR CEILING SENSORS, CONTRACTOR SHALL PROVIDE CONTROL WIRING PER SELECTED MANUFACTURER SPECIFICATIONS. CONTROL WIRING SHALL BE KEPT SEPARATED FROM LINE-VOLTAGE WIRING.

ALL SENSORS SHALL BE PROGRAMMED TO AUTOMATICALLY TURN-OFF THE LIGHTING WITHIN 15-MIN OF ALL OCCUPANTS LEAVING THE SPACE

ALL SENSOR FINISHES TO BE DETERMINED BY THE ARCHITECT AND APPROVED BY THE ENGINEERS.

CONTRACTOR SHALL COORDINATE LAYOUT AND INSTALLATION OF CEILING-MOUNTED DEVICES WITH OTHER CONSTRUCTION THAT PENETRATES CEILINGS OR IS SUPPORTED BY THEM, INCLUDING LIGHT FIXTURES, HVAC EQUIPMENT, SMOKE DETECTORS, FIRE-SUPPRESSION SYSTEMS, AND PARTITION ASSEMBLIES.

CONTRACTOR SHALL VERIFY ADEQUATE COVERAGE OF AREA WHEN SELECTING CEILING MOTION SENSORS AND PROVIDE ADDITIONAL SENSORS AS REQUIRED. (ALLOW 10% BEYOND QUANTITY INDICATED ON PLANS.)

16. ARCHITECTURAL DIMMING SYSTEMS

A. DIMMERS WITH PRESETS AND ADJACENT SWITCHES SHALL BE LUTRON "NOVA-T" SERIES.

B. STAND ALONE WALL BOX PRESET DIMMING SYSTEMS SHALL BE LUTRON "GRAPHIC EYE 3000" SERIES UNLESS OTHERWISE NOTED.

C. SUBMISSIONS: CONTRACTOR MUST SUBMIT ALL DEVICES, PANELS, WIRING DIAGRAMS, ETC. FOR APPROVAL TO ENABLE THE LIGHTING DESIGNER AND ENGINEER TO ASSESS CONTRACT COMPLIANCE. THE SUBMISSIONS SHOULD INCLUDE THE FOLLOWING:

STAND-ALONE PRESET DIMMING SYSTEMS - FACTORY PREPARED SHOP DRAWINGS INDICATING PROPOSED EQUIPMENT, LOAD SCHEDULES, CONTROL INTENT AND COMPLIANCE WITH DRAWINGS. SUBMISSION SHOULD CLEARLY BE MARKED TO REPRESENT WHICH COMPONENTS ARE BEING SUBMITTED TO SATISFY THE PARTICULAR SYMBOLS AS SHOWN ON THE DRAWINGS.

DIMMERS WITH PRESET - CATALOG CUTS INDICATING ALL DEVICES, FACE PLATES, VOLTAGE, GANGING INFORMATION, ETC. TO INDICATE COMPLIANCE. SUBMISSION SHOULD CLEARLY BE MARKED TO REPRESENT WHICH COMPONENTS ARE BEING SUBMITTED TO SATISFY THE PARTICULAR SYMBOLS AS SHOWN ON THE DRAWINGS.

- SYSTEM STARTUP/COMMISSIONING - PROVIDE MANUFACTURER'S REPRESENTATIVE TO STARTUP, INITIALLY COMMISSION AND SET UP EQUIPMENT. THE CONTRACTOR SHALL PROVIDE TRAINING OF OWNER'S REPRESENTATIVES.

D. A/V INTERFACE - CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND INSTALLING A/V INTERFACE WIRING TO A POINT OF CONNECTION TO A/V EQUIPMENT.

E. ALL CONTROLS SHALL BE COMPATIBLE WITH "LUMINAIRE'S", SPECIFICALLY, LED DIMMING DRIVER, FLUORESCENT DIMMING BALLASTS AND ELECTRONIC TRANSFORMERS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WIRING REQUIREMENTS FOR DIMMING DRIVERS AND BALLASTS AND PROVIDE CORRECT CONDUCTOR QUANTITY, INCLUDING SEPARATE NEUTRAL FOR EACH PHASE CONDUCTOR.

17. SAFETY SWITCHES

A. SAFETY TYPE DISCONNECTING SWITCHES SHALL BE RATED AT 250 OR 600 VOLTS AS REQUIRED FOR THE UTILIZATION VOLTAGE AND SHALL BE QUICK-MAKE, QUICK-BREAK TYPE, HORSEPOWER RATED.

B. MANUFACTURERS SHALL BE SCHNEIDER ELECTRIC, SIEMENS, EATON OR APPROVED EQUAL.

C. FUSIBLE SWITCHES SHALL BE HEAVY DUTY TYPE, NEMA KS 1, WITH CLIPS OR BOLT PADS TO ACCOMMODATE SPECIFIED FUSES. LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT TWO PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.

D. NONFUSIBLE SWITCHES SHALL BE HEAVY DUTY TYPE, NEMA KS 1, WITH LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT TWO PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.

E. SWITCHES SHALL BE PROVIDED WITH EQUIPMENT GROUND KIT INTERNALLY MOUNTED AND LABELED FOR COPPER GROUND CONDUCTORS.

F. ALL PARTS OF THE SWITCH SHALL BE MOUNTED ON INSULATED BASES TO PERMIT REPLACEMENT OF ANY PARTS FROM THE FRONT OF THE SWITCH. ALL CURRENT CARRYING PARTS SHALL BE OF HIGH CONDUCTIVITY COPPER, DESIGNED TO CARRY RATED LOAD WITHOUT EXCESSIVE HEATING. SWITCH CONTACTS SHALL BE SILVER TUNGSTEN TYPE OR PLATED TO PREVENT CORROSION, PITTING AND OXIDATION AND TO ASSURE SUITABLE CONDUCTIVITY. FUSE CLIPS, WHERE REQUIRED, SHALL BE OF THE POSITIVE PRESSURE REJECTION TYPE.

G. SWITCHES SHALL BE CAPABLE OF WITHSTANDING THE AVAILABLE FAULT CURRENT OR LET-THROUGH CURRENT BEFORE THE FUSE OPERATES WITHOUT DAMAGE OR CHANGE IN RATING.

H. LUGS SHALL BE RATED FOR THE USE OF CABLES WITH EITHER 75 DEG. C OR 90 DEG. C INSULATION WITHOUT DERATING. MULTI-BARREL LUGS SHALL BE PROVIDED TO ACCOMMODATE PARALLEL FEEDER CABLES AND/OR TAPS AS REQUIRED. "DOUBLE LUGGING" WILL NOT BE PERMITTED.

I. SWITCH ENCLOSURES FOR OUTDOOR OR WET APPLICATIONS SHALL BE NEMA 3R TYPE. INDOOR ENCLOSURES SHALL BE NEMA 1 TYPE. ENCLOSURES FOR COMMERCIAL KITCHENS OR CORROSIVE AREAS SHALL BE NEMA 4X TYPE.

J. INSTALL SWITCHES SO THAT THE MAXIMUM HEIGHT ABOVE THE FLOOR TO THE CENTER OF THE OPERATING HANDLE DOES NOT EXCEED 6'-6". WHEN SHOWN AS WALL MOUNTED, SWITCHES SHALL BE MOUNTED TO HORIZONTAL STRUT SUPPORTS. FREE STANDING UNITS SHALL BE MOUNTED ON A FREE-STANDING STRUT SYSTEM ANCHORED TO THE FLOOR, CEILING, AND WALLS.

18. FUSES

A. FUSES SHALL BE OF THE RATINGS SHOWN ON THE DRAWINGS AND THEY SHALL BE UL LISTED. WHERE SIZES ARE NOT SHOWN, THEY SHALL BE OF REQUIRED SIZE FOR PROPER OPERATION OF EQUIPMENT PROTECTED.

B. MANUFACTURERS SHALL BE THE EQUAL OF COOPER/BUSSMANN OR GOULD SHAWMUT.

C. ALL FUSES SHALL HAVE A MINIMUM INTERRUPTING RATING OF 200,000 AMPS RMS. CURRENT LIMITING FUSES SHALL BE PROVIDED WITH BLOWN FUSE

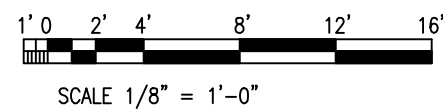
19. PANELBOARDS

A. PANELBOARDS SHALL BE DESIGNED FOR THE SPECIFIED VOLTAGES AND NUMBER OF CIRCUIT BREAKERS AS SHOWN IN THE SCHEDULES.

B. MANUFACTURERS SHALL BE SQUARE D, SIEMENS,



1 FIRE ALARM DEMOLITION 1ST FLOOR PART PLAN
SCALE: 1/8" = 1'-0"



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MEDICAL CENTER

Project Name & Location:

BI-PLANE EP LAB
355 BARD AVENUE
STATEN ISLAND NY

Drawing Title:

FIRE ALARM DEMOLITION
1ST FLOOR PART PLAN

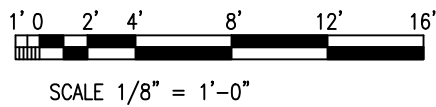
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1 FIRE ALARM ROOF PLAN
SCALE: 1/8" = 1'-0"



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