GENERAL ELECTRICAL NOTES (APPLICABLE TO ALL ELECTRICAL DRAWINGS)

1. DEFINITIONS:

"FURNISH" MEANS TO "SUPPLY" AND USUALLY REFERS TO DELIVERY OF AN ITEM OF EQUIPMENT TO THE PROJECT SITE, READY FOR INSTALLATION.
"INSTALL" MEANS TO SET IN PLACE, CONNECT AND PLACE IN FULL OPERATIONAL ORDER.
PROVIDE" MEANS TO "FURNISH" AND "INSTALL".
"FUTURE", "BY OTHERS", "REFER (DISCIPLINE) DIVISION" AND SIMILAR EXPRESSIONS INDICATE WORK THAT MAY BE PERFORMED UNDER THE CONTRACT DOCUMENTS BUT, NOT NECESSARILY UNDER THE DIVISION OR DISCIPLINE ON WHICH THE NOTE APPEARS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK WITH SUPPLIERS, SUBCONTRACTORS, EMPLOYEES, ETC. SHOULD CLARIFICATION OF ANY PORTION OF THE WORK BE REQUIRED, CONTACT THE ARCHITECT/ENGINEER PRIOR TO SUBMITTING BID.

2. CODES:

THE WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE. THIS WOULD INCLUDE, BUT IS NOT LIMITED TO, LOCAL CODE AMMENDMENTS, NFPA, ANSI, OSHA, AND ALL OTHER LOCAL OR MUNICIPAL BUREAUS AND DEPARTMENTS WHICH HAVE AUTHORITY OVER THE PROJECT; ANYTHING IN THESE CONTRACT DOCUMENTS NOT WITHSTANDING. THIS SHALL NOT BE CONSTRUED AS WAIVING COMPLIANCE WITH ANY REQUIREMENTS OF THE PLANS AND SPECIFICATIONS WHICH MAY BE IN EXCESS OF ANY REQUIREMENTS OF THESE CODES.

3. INTERPRETATION OF THE DOCUMENTS

THE CONTRACTOR SHALL CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING THE MEASUREMENTS AND CONDITIONS UNDER WHICH CONSTRUCTION IS TO BE IMPLEMENTED. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS AND/OR SPECIFICATIONS, THE DISPUTED ISSUE SHALL BE REFERRED TO THE ENGINEER BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS WORK A COMPLETE AND READY-TO-USE INSTALLATION. IF NOT SO-STATED IN THE CONTRACTOR'S PROPOSAL, ANY SUCH WORK WILL NOT BE CONSIDERED ADDITIONAL.

4. COORDINATION

THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND SHALL NOT BE SCALED. TO THIS EXTENT, DATA GIVEN ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ALL REQUIRED WORK AND EQUIPMENT WITH THAT OF THE OTHER TRADES. WHERE THERE ARE POTENTIAL CONFLICTS, THE CONTRACTOR SHALL OBTAIN AN SYSTRY EXACT LOCATIONS, MEASUREMENTS, LEVELS, SPACE REQUIREMENTS, ETC. AT THE SITE AND SHALL SATISFACTORILY ADAPT HIS WORK TO ACTUAL FIELD CONDITIONS. REFER TO ARCHITECTURAL/MECHANICAL DRAWINGS FOR PLANS, ELEVATIONS AND DETAILS INDICATING THE LOCATIONS OF CEILING ELEMENTS (E.G., LIGHTS, SPRINKLERS, DIFFUSERS, ETC.) AND WALL ELEMENTS. CEILING MOUNTED ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE ARCHITECTURAL REFLECTIVE CEILING PLANS. IF LOCATION FOR AN ITEM IS NOT SHOWN ON THE ARCHITECTURAL DRAWINGS, VERIFY THE EXACT LOCATION OF THE ITEM WITH THE ARCHITECT PRIOR TO INSTALLATION. THESE REQUIREMENTS APPLY TO ALL CEILING TYPES IN ALL AREAS.

5. SITE EXAMINATION

THE CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS, VISIT THE SITE, EXAMINE THE PREMISES, AND MAKE A THOROUGH SURVEY OF THE CONDITIONS UNDER WHICH CONSTRUCTION WILL BE IMPLEMENTED. THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. FAILURE TO DO SO SHALL NOT RELEIVE THE CONTRACTOR OF THE OBLIGATIONS OF THE CONTRACT. ANY LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE, WILL NOT BE RECOGNIZED.

6. PERMITS

THE CONTRACTOR SHALL SECURE, OBTAIN AND PAY FOR ALL PERMITS, INSPECTIONS, TAXES, LICENCES, AND FEES TO ALL GOVERNMENT AGENCIES REQUIRED FOR THE EXECUTION AND COMPLETION OF THE ELECTRICAL WORK. SCHEDULING OF ALL REQUIRED INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL PREPARE AND SUBMIT ALL SHOP DRAWINGS AS REQUIRED TO THE GOVERNMENTAL AGENCIES AND UTILITY COMPANIES FOR THEIR APPROVAL.

7. SAFETY

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE CLIENT'S EMPLOYEES, BUILDING EMPLOYEES AND GUESTS AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CABLE, EQUIPMENT, OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.

8. CONTRACTOR'S DRAWING REVIEW

ALL CONTRACTORS/BIDDERS SHALL HAVE RECEIVED A COMPLETE SET OF CONSTRUCTION DOCUMENTS FOR REVIEW AND REFERENCE TO WORK INDICATED. CONDUIT LOCATE SERVICES SHALL BE REQUESTED AND COMPLETED BEFORE DISTURBANCE OF ANY EXISTING GRADE OR ON-GRADE CONSTRUCTION, SLAB DEMOLITION, OR OTHER ACTIVITIES THAT MAY IMPACT BURIED UTILITIES OR COMMUNICATION CONDUITS. THE CONTRACTOR SHALL CONFIRM THAT CONDUIT LOCATE SERVICES HAVE BEEN COMPLETED AND THAT NO POTENTIAL CONFLICTS EXIST BEFORE EXISTING GRADE IS EXCAVATED OR EXISTING FLOORING DEMOLISHED, REGARDLESS OF THE LOCATION ON THE PROPERTY. THIS SHALL BE REVIEWED WITH THE OWNER'S PROJECT REPRESENTATIVE.

9. STATEMENT OF WORK

THE CONTRACTOR SHALL PROVIDE THE COMPLETE ELECTRICAL INSTALLATION OF WORK AS INDICATED IN THE CONSTRUCTION DOCUMENTS. PRIOR TO COMMENCEMENT, THE CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL, ANY SEQUENCE OF WORK, MOP'S (METHOD OF PROCEEDURE) AND/OR COORDINATION SHOP DRAWINGS FOR THE INTENDED WORK. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY MATERIALS OR APPARATUS BELIEVED TO BE INADEQUATE, UNSUITABLE, VIOLATION OF LAWS, ORDINANCES, RULES OR REGULATIONS OF AUTHORITIES HAVING JURISDICTION

10. WORK PERFORMANCE REQUIREMENTS

ANY PENETRATIONS OR OPENINGS IN FIRE-RATED PARTITIONS (WALLS OR FLOORS) SHALL BE CLOSED AT THE END OF EACH WORK DAY, OR WHENEVER IT IS ANTICIPATED THAT NO FURTHER WORK WILL OCCUR IN THAT OPENING DURING THE DAY. THIS INCLUDES ALL TEMPORARY OPENINGS. CLOSURE SHALL BE IN COMPLIANCE WITH 3M FIREPROOFING PRODUCT SPECIFICATIONS. ALL ROOF PENETRATIONS SHALL BE SEALED WATERTIGHT AT THE END OF EACH WORK DAY. ALL TEMPORARY WALL AND FLOOR OPENINGS SHALL BE PROTECTED AND MARKED AT ALL TIMES. PAINTING SHALL BE SCHEDULED SUCH THAT DRYING TIME OCCURS DURING NON-WORKING HOURS FOR OPERATIONS PERSONNEL COMFORT. NO WELDING SHALL TAKE PLACE INSIDE OF OPERATING FACILITY WITHOUT THE WRITTEN AUTHORIZATION OF THE OWNER'S PROJECT REPRESENTATIVE. WELDING SHALL NOT TAKE PLACE WITHIN 5 FEET OF ANY TELECOM EQUIPMENT RACK WITHOUT ADEQUATE PROTECTIVE MEASURES, AS DEEMED APPROPRIATE BY THE OWNER'S PROJECT REPRESENTATIVE. THE CONTRACTOR SHALL CHECK, VERIFY AND LABEL PHASE ROTATION ANY TIME LEADS ARE CONNECTED TO A NEW OR EXISTING AC SERVICE, GENSET, RECTIFIER OR ANY MOTOR-EQUIPPED, 3-PHASE EQUIPMENT. ALL THREE-PHASE PANELS SERVING SINGLE-PHASE LOADS SHALL BE BALANCED WITHIN 10 PERCENT, USING AMMETER READINGS. MEASUREMENTS SHALL BE TAKEN AT THE END OF CONSTRUCTION AND AGAIN AFTER 30 DAYS IN SERVICE.

11. CUTTING AND PATCHING

ALL CUTTING, DRILLING AND PATCHING OF MASONRY STEEL OR IRON WORK BELONGING TO THE BUILDING MUST BE DONE BY THIS CONTRACTOR IN ORDER THAT HIS WORK MAY BE PROPERLY INSTALLED, BUT UNDER NO CONDITIONS MAY STRUCTURAL WORK BE CUT, EXCEP T AT THE DIRECTIONS OF THE ARCHITECT/ENGINEER OR THEIR REPRESENTATIVE.

12. AS-BUILT DRAWINGS

THE CONTRACTOR SHALL PROVIDE ALL "AS-BUILT" DRAWINGS SCALED 1/4" MINIMUM AND SUBMIT FOR APPROVAL TO THE ARCHITECT/ENGINEER.

13. FIRESTOPPING

ALL PENETRATIONS IN WALLS, FLOORS, OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH A FIRESAFING COMPOUND LISTED IN ANE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. ONLY PRODUCTS MANUFACTURED BY HILTI SHALL BE PREFERRED (NO SUBSTITUTIONS).

14. TEMPORARY POWER AND LIGHTING

THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER AND LIGHTING FOR THIS WORK DURING CONSTRUCTION. TEMPORARY LIGHTING SHALL AT LEAST BE THE EQUAL OF (1)100-WATT FIXTURE EVERY 100 SQUARE FEET, WITH A MINIMUM ONE FIXTURE PER ROOM. TEMPORARY LIGHTING SHALL BE LEFT IN PLACE UNTIL PERMANENT LIGHTING IS COMPLETELy OPERATIONAL. COORDINATE TEMPORARY POWER REQUIREMENTS WITH THE OTHER TRADES AND PROVIDE ADEQUATE PROVISIONS. THE CONTRACTOR SHALL PERFORM ALL COORDINATION WITH THE OWNER AND/OR LANDLORD.

15. SWITCH AND RECEPTACLE IDENTIFICATION

PROVIDE MACHINE-PRINTED, PRESSURE SENSITIVE, ABRASION RESISTANT LABEL TAPE ON FACE OF ALL DEVICE PLATES TO IDENTIFY THE PANELBOARD AND CIRCUIT NUMBER FROM WHICH EACH DEVICE IS SERVED.

16. UTILITY COORDINATION

THE CONTRACTOR SHALL PERFORM ALL COORDINATION AND SCHEDULING OF THE INSTALLATION OF THE NEW ELECTRICAL SERVICE AFTER COORDINATING WITH THE OWNER.

17. EXCAVATION/UNDERGROUND UTILITIES

UNDERGROUND UTILITY LOCATE SERVICES SHALL BE REQUESTED AND COMPLETED BEFORE DISTURBANCE OF ANY EXISTING GRADE OR ON-GRADE CONSTRUCTION, SLAB DEMOLITION, OR OTHER ACTIVITIES THAT MAY IMPACT BURIED UTILITIES OR FIBER-OPTIC CABLE CONDUITS. THE CONTRACTOR SHALL CONFIRM THAT UTILITY LOCATE SERVICES HAVE BEEN COMPLETED BEFORE EXISTING GRADE IS EXCAVATED OR EXISTING FLOORING IS DEMOLISHED, DRILLED, OR CUT, REGARDLESS OF THE LOCATION ON THE PROPERTY.

18. PANELBOARDS

ALL PANELBOARDS IN WHICH WORK OCCURS PER THESE DOCUMENTS, SHALL BE PROVIDED WITH UPDATED-TYPEWRITTEN DIRECTORIES. CIRCUIT NUMBERS ARE GIVEN ONLY FOR CLARITY AND QUANTITY. CIRCUIT NUMBERS SHOWN IN THE PLANS MAY NOT NECESSARILY REPRESENT ACTUAL CIRCUIT NUMBERS IN PANELBOARD. FROM FLUSH-MOUNTED PANELBOARDS, STUB-OUT FOUR 3/4" CONDUITS INTO THE CEILING CAVITY FOR EACH SET OF 3 SPARES AND/OR SPACES OR FRACTION THEREOF.

19. CABLING

UNLESS NOTED OTHERWISE, ALL WIRE AND CABLE SHALL BE 600-VOLT COPPER CONDUCTORS WITH TYPE "THHN/THWN" INSULATION. MINIMUM WIRE SIZE SHALL BE #12 AWG FOR LIGHTING AND POWER CIRCUITS AND #14 AWG FOR CONTROL CIRCUITS. PROVIDE GROUNDING FOR CIRCUITS PER THE NEC. UNLESS SPECIFICALLY NOTED OTHERWISE IN THE PLANS, MINIMUM BRANCH CIRCUIT WIRING SHALL BE (2) #12 AND (1) #12 G IN 3/4" C.

20. CONDUIT/RACEWAY SYSTEMS

THE CONDUIT ROUTINGS INDICATED ARE ONLY DIAGRAMMATIC IN NATURE. FIELD CONDITIONS SHALL DICTATE THE CONTRACTOR'S EXACT CONDUIT ROUTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING AND LOCATING PULL BOXES PER THE NEC AND FOR COORDINATION WITH OTHER DISCIPLINES. ALL EXPOSED RACEWAYS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO WALLS OR STRUCTURAL MEMBERS, SUCH AS TO FOLLOW STRUCTURAL SURFACE CONTOURS AND PLACE IN OBSTRUCT PASSAGEWAYS. MULTIPLE RACEWAYS SHALL BE RUN TOGETHER, IN GROUPING. ALL EXPOSED CONDUIT SHALL BE ROUTED PERPENDICULAR, PARALLEL AND TIGHT TO COLUMNS AND BEAMS. ALL EXPOSED CONDUIT SHALL BE COORDINATED WITH THE RCHITECT/ENGINEER PRIOR TO INSTALLATION. EXTRA TIME SHOULD BE ALLOWED FOR THIS REVIEW AND APPROVAL. NO ADDITIONAL COST TO OWNER WILL BE ALLOWED DUE TO LACK OF COORDINATION. ALL CONDUIT SHALL BE MINIMUM SIZE SHALL BE 3/4" UNLESS NOTED OTHERWISE. CONNECTORS AND COUPLINGS SHALL BE
INSULATED-THROAT COMPRESSION TYPE ONLY. RIGID GALVANIZED-STEEL (RGS) CONDUIT SHALL BE USED WHEN CONDUIT IS INSTALLED IN OUTDOOR AREAS OR WHERE OTHERWISE EXPOSED TO PHYSICAL HARM. EMERGENCY SYSTEMS SHALL BE RUN IN SEPARATE RACEWAY/CONDUIT SYSTEM(S). A SEPARATE INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE PULLED WITH THE CIRCUIT CONDUCTORS, WHETHER OR NOT INDICATED ON THE DRAWINGS. METAL RACEWAY OR CABLE ARMOR/SHEATH SHALL NOT BE USED AS THE PRIMARY EQUIPMENT GROUNDING CONDUCTOR. RACEWAY SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONTINUOUS AND SHALL BE BONDED AT ALL POINTS TO THE INSULATED EQUIPMENT GROUNDING CONDUCTOR IN ACCORDANCE WITH THE APPLICABLE PROVISIONS IN ARTICLE 250 OF THE LATEST NEC.

21. EQUIPMENT

ALL MATERIALS AND EQUIPMENT PROVIDED IN THIS WORK SHALL BE NEW AND SHALL HAVE THE APPROPRIATE UL LISTING AND/OR FM APPROVAL. UNLESS NOTED OTHERWISE, DISCONNECT/SAFETY SWITCHES SHALL BE NON-FUSED HEAVY-DUTY 600-VOLT TYPE. INDOOR ENCLOSURES SHALL BE NEMA 1 AND OUTDOOR ENCLOSURES SHALL BE NEMA 3R.

22. MECHANICAL EQUIPMENT

ALL MECHANICAL EQUIPMENT WILL BE INSTALLED BY THE DIVISION 22 & 23 CONTRACTOR. COORDINATE THE EXACT LOCATION AND NATURE OF ANY REQUIRED ELECTRICAL CONNECTION TO BE PROVIDED FOR MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN. VERIFY THE ELECTRICAL SERVICE REQUIRED FOR EACH ITEM OF MECHANICAL EQUIPMENT WITH THE MECHANICAL CONTRACTOR PRIOR TO FURNISHING SUCH POWER. REFER TO MECHANICAL DRAWING FOR MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. MAKE CONNECTION AND PROVIDE APPROPRIATE WIRE, CONDUIT AND OVERCURRENT PROTECTION FOR EQUIPMENT. THE DISCONNECTING MEANS FOR ALL MECHANICAL EQUIPMENT SHALL BE ACCESSIBLE AND HAVE CLEARANCES AS REQUIRED BY THE NEC. MOTORS SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 22 & 23 WORK, WITH POWER CONNECTED UNDER DIVISION 26 WORK. FINAL CONNECTION SHALL BE MADE WITH SUITABLE LENGTH OF LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT. ALL MOTOR BRANCH CIRCUITS, ETC., SHALL BE FIELD-VERIFIED FOR PROPER SEQUENCE AND MOTOR ROTATION. PHASE SEQUENCE SHALL BE A-B-C (VIEWED FROM FRONT: LEFT TO RIGHT, TOP TO BOTTOM, FRONT TO REAR). REFER TO MECHANICAL DRAWINGS FOR MOTORS THAT ARE TO BE INTERLOCKED.

23. MISCELLANEOUS SUPPORTING MEMBERS

ALL ANGLES, CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, THREADED RODS, ETC., REQUIRED TO SUPPORT LIGHT FIXTURES, LADDER TRAY OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. ALL THREADED RODS SHALL BE A MINIMUM OF 3/8" IN DIAMETER. ALL LIGHTING FIXTURES AT SUSPENDED CEILINGS SHALL BE PROPERLY SUPPORTED IN ACCORDANCE WITH THE LATEST NEC ARTICLES 410, 300-11 ETC.

24. RECEPTACLE LOCATIONS

RECEPTACLES SHALL BE INSTALLED MINIMUM 8" APART (OR IN SEPARATE WALL STUDS) WHEN SHOWN BACK TO BACK.

ABBREVIATIONS

AC	ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
ATS	AUTOMATIC TRANSFER SWITCH
CB	CIRCUIT BREAKER
CCT	CIRCUIT
CO	CONDUIT ONLY
DISC	DISCONNECT
DN	DOWN
E	EXISTING TO REMAIN
EM	EMERGENCY
EPO	EMERGENCY POWER OFF
EWC	ELECTRIC WATER COOLER
FA	FIRE ALARM
FCU	FAN COIL UNIT
FPB	FAN POWERED BOX
GFI	GROUND FAULT INTERRUPTER
G	GROUND
GRD	GROUND
HID	HIGH INTENSITY DISCHARGE
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
JB	JUNCTION BOX
IG	ISOLATED GROUND
kV	KILOVOLT
kW	KILOWATT
LTG	LIGHTING
MCB	MAIN CIRCUIT BREAKER
MMD	MULTI-METERING DEVICE
MLO	MAIN LUGS ONLY
MV	MEDIUM VOLTAGE
NC	NORMALLY CLOSED (CONTACTS)
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN (CONTACTS)
NTS	NOT TO SCALE
OCPD	OVERCURRENT PROTECTION DEVICE
PNL	PANEL
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
R	EXISTING TO BE REMOVED
RCP	REFLECTED CEILING PLAN
SEC	SECONDARY
SW	SWITCH
T	TELEPHONE
TP	TAMPER PROOF
UH	UNIT HEATER
VFD	VARIABLE FREQUENCY CONTROLLER
VP	VAPOR PROOF
WP	WEATHERPROOF

RISER ELECTRICAL DIAGRAM/SYMBOLS

	POLY PHASE TRANSFORMER
3a	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER
	GROUND
	CONTACTOR
	CIRCUIT BREAKER
	OVERLOAD
	SINGLE THROW SWITCH
	FUSE
	3 PHASE, 3 WIRE, UNGROUNDED
	3 PHASE, 4 WIRE, WYE, GROUNDED NEUTRAL
VAR	VARMETER
A	AMMETER
V	VOLTMETER
M	WATTHOUR METER
R	BASIC RELAY SYMBOL

CONDUITS RACEWAYS WIREWAYS & J-BOXES

	TWO CHANNEL COMPARTMENTED MULTI-OUTLET RACEWAY FOR SURFACE MOUNT POWER & TECH OPENINGS. WIREMOLD G5500/ OR APPROVED EQUAL
	CABLE TRAY SEE SPECIFICATION FOR TYPE
	INDICATES GROUND CONDUCTOR IN CONDUIT
	INDICATES GROUND AND TWO UNGROUNDED CONDUCTORS IN CONDUIT
	INDICATES GROUND AND THREE UNGROUNDED CONDUCTORS IN CONDUIT
	INDICATES GROUND, GROUNDED AND ONE UNGROUNDED CONDUCTORS IN CONDUIT
	INDICATES GROUND, GROUNDED AND TWO UNGROUNDED CONDUCTORS IN CONDUIT
	INDICATES GROUND, GROUNDED AND THREE UNGROUNDED CONDUCTORS IN CONDUIT

ELECTRICAL OPTIONS AND MOUNTING CODES

CONNECTION AND ROUTING

ABBRV	DESCRIPTION
CDR	CEILING DROP DOWN ON TO RACK
CPC	CORD AND PLUG CONNECTION POINT
FSR	FLOOR STUB UP ONTO RACK
PDC	PULL DOWN DROP CORD
HWC	HARD WIRE CONNECTION
FWC	FLEXIBLE WHIP CONNECTION

DEVICE OPTIONS

ABBRV	DESCRIPTION
CP	CHILD PROOF TYPE DEVICE
TP	TAMPER PROOF TYPE DEVICE and COVER
WP	WEATHER PROOF TYPE DEVICE and COVER
WG	WIRE GUARD DEVICE and COVER
VR	VANDEL RESISTANT DEVICE and COVER
AFI	ARC FAULT INTERRUPTION AND PROTECTION
GFI	GROUND FAULT INTERRUPTION AND PROTECTION
STI	SHUNT TRIP INTERRUPTION AND PROTECTION
XXX	ARCHITECTURAL EQUIPMENT REFER TO SCHEDULE DWGS FOR EQUIPMENT SCHEDULES FOR CIRCUIT INFORMATION

FIRE DETECTION

S	INTELLIGENT MANUAL PULL STATION
HD	INTELLIGENT HEAT DETECTOR
SD	INTELLIGENT SMOKE DETECTOR
DD	INTELLIGENT DUCT SMOKE DETECTOR
MM	INTELLIGENT MONITOR MODULE
IM	INTELLIGENT INTERFACE MODULE
RM	INTELLIGENT RELAY MODULE
CM	INTELLIGENT CONTROL MODULE
V	VISUAL ALARM ONLY DEVICE
A	AUDIBLE ALARM ONLY DEVICE
AV	AUDIBLE AND VISUAL ALARM DEVICE
B	TROUBLE BELL W/TEST AND SILENCE SWITCH W/LAMP
RA	REMOTE ANNUNCIATOR LAMP FOR SELECTED DEVICES
RTS	REMOTE TEST STATION
EPO	EMERGENCY POWER SHUT-OFF

PANELBOARDS & CONTROLLERS

	FLUSH MOUNTED PANEL - SEE DESCRIPTION FOR TYPE
	SURFACE MOUNTED PANEL - SEE DESCRIPTION FOR TYPE
	FREE STANDING RACK/CABINET/HOUSING

MOTORS & LISTED EQUIPMENT CONTROLLERS

XXX X	MOTOR-LISTED EQUIPMENT REFER TO SCHEDULE DWGS FOR EQUIPMENT SCHEDULES FOR CIRCUIT INFORMATION
X	MOTOR CONNECTION
	ENCLOSED MAGNETIC MOTOR STARTER
STR	COMBO MAGNETIC MOTOR STARTER w/ OCPD & LOCK-OUT TAG-OUT DISCONNECT SWITCH
VFC	COMBINATION VARIABLE FREQUENCY CONTROLLER w/OCPD & LOCK-OUT TAG-OUT DISCONNECT SWITCH
	NON-FUSED LOTO DISCONNECT SWITCH
	FUSED LOTO DISCONNECT SWITCH

RECEPTACLES

CR	INDICATES COMPUTER RECEPTACLE
EM	INDICATES EMERGENCY SYS RECEPTACLE
FF	INDICATES FURNITURE FEED OPENING-REC
GU	INDICATES GENERAL USE RECEPTACLE
IG	INDICATES ISOLATED GROUND RECEPTACLE
	WALL MOUNTED UNIPLEX RECEPTACLE
	WALL MOUNTED DUPLEX RECEPTACLE
	WALL MOUNTED QUAD RECEPTACLE
C/L	CEILING MOUNTED RECEPTACLE WITH RETRACTABLE CORD REEL. CORD LENGTH MINIMUM 12' AS MANUFACTURED BY XXXX
C	CEILING MOUNTED DUPLEX RECEPTACLE
C	CEILING MOUNTED QUAD RECEPTACLE
F	FLOOR MOUNTED UNIPLEX RECEPTACLE
F	FLOOR MOUNTED DUPLEX RECEPTACLE
F	FLOOR MOUNTED QUAD RECEPTACLE
	PEDESTAL MOUNTED POKE-THRU UNIPLEX REC
	PEDESTAL MOUNTED POKE-THRU DUPLEX REC
	PEDESTAL MOUNTED POKE-THRU QUAD REC
	WALL MOUNTED NEMA RECEPTACLE
	CEILING MOUNTED NEMA RECEPTACLE
	RECESSED FLOOR BOX MOUNTED NEMA REC
	FLUSH MOUNTED POKE-THRU NEMA REC
	PEDESTAL MOUNTED POKE-THRU NEMA REC
	120V, 20A DUPLEX RECEPTACLE BACKED UP BY EMERGENCY/UPS SOURCE
	WALL MOUNTED ABOVE COUNTER DUPLEX RECEPTACLE (48" AFF) UNLESS OTHERWISE NOTED
	COMBINATION 120V, 20A DUPLEX RECEPTACLE/2.1 A USB & TABLET CHARGING PORTS
TR	TRANSFORMER FOR SINK SENSORS, LOCATED ABOVE CEILING. EXTEND WIRING & CONDUITS TO EACH SENSOR AS REQUIRED
TCP	TEMPERATURE CONTROL PANEL
	CUSTOM LEGRAND EVOLUTION FLOOR BOX CONTAINING DUPLEX POWER, DATA, AND AUDIO-VIDEO INPUT OUTLETS

LOW VOLTAGE DEVICES

	EMPTY DOUBLE-GANG DEVICE BOX WITH EMPTY CONDUIT CONCEALED UP ALONG WALL AND STUB UP TO CEILING OR CABLE TRAY FOR FUTURE CABLE
	AUDIO-VIDEO INPUT LOCATION
	AUDIO-VIDEO CONTROL
	TELEPHONE/DATA OUTLET
	TELEPHONE OUTLET
W	WALL MOUNTED TELEPHONE OUTLET
C	CEILING MOUNTED OUTLET
F	FLUSH FLOOR BOX MOUNTED OUTLET
F	FLUSH FLOOR BOX MOUNTED AUDIO-VIDEO INPUT LOCATION
F	FLUSH FLOOR BOX MOUNTED AUDIO-VIDEO CONTROL
	PEDESTAL MOUNTED POKE-THROUGH OUTLET
S	EMPTY BACK-BACK FOR FUTURE SPEAKER
S	EMPTY BACK-BACK FOR FUTURE WALL SPEAKER
TV	CABLE TELEVISION OUTLET
WAP	WIFI ACCESS POINT

NOTE:
PROVIDE ROUGH-IN BOXES EMPTY CONDUIT WITH PULL WIRE ETC. AS REQUIRED PER 'T' SERIES DRAWINGS AND DETAILS

LIGHTING LUMINAIRES

F1 3a,b	FLUORESCENT LIGHTING FIXTURE
F13 3a, F21 3a, F11 3a	"F1" INDICATES FIXTURE TYPE REFER TO LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION AND MOUNTING. "3" INDICATES BRANCH CIRCUIT NUMBER "a" INDICATES SWITCH CONTROL LETTER CODE "b" INDICATES SWITCH CONTROL LETTER CODE
F32 3a, F44 3a	INCANDESCENT, FLUORESCENT OR HID RECESSED MOUNTED LIGHTING FIXTURE REFER TO LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION AND
F14 3a	LINEAR SURFACE, UNISTRUT MOUNTED OR PENDANT DIRECT LIGHTING FIXTURE
OR	FLOODLIGHT/FLUORESCENT OR HID ARROW DENOTES AIMING ORIENTATION
UP	ADJUSTABLE INDIRECT LIGHTING FIXTURE UP INDICATES AIMING ORIENTATION
OR	WALL WASHER OR RECESSED WALL STAIRWAY LIGHT
10ft,#,a	SURFACE MOUNTED-TRACKS 120V/20A LENGTH-CIRCUIT No.(S)-SWITCH LEG(S)
EM/F1 4/5 a, EM/F13 4, EM/F21 4, EM/F11 4	FLUORESCENT LIGHTING FIXTURE ON AN EMERGENCY SYSTEM "EM" INDICATES EMERGENCY SYSTEM "F1" INDICATES TWO BALLAST FIXTURE TYPE. "4" INDICATES EMERGENCY CIRCUIT NUMBER "5" INDICATES NORMAL POWER CIRCUIT NUMBER "a" INDICATES NML SWITCH CONTROL LETTER CODE NO LETTER CODE INDICATES A SINGLE BALLAST FIXTURE AND NO SWITCH LEG CONTROL
EM/F32 4, EM/F44 4	INCANDESCENT, FLUORESCENT OR HID LIGHTING FIXTURE ON AN EM SYSTEM
EM/F14 4	LINEAR SURFACE OR PENDANT LIGHTING FIXTURE ON AN EM SYSTEM
E3 4	EM BATTERY PACK FIXTURE WITH 2 OF HEADS SHOWN, WALL MOUNTED, MINIMUM 90 MINUTE BACKUP
E1 4	EM BATTERY PACK FIXTURE WITH No. OF HEADS SHOWN RECESSED CEILING WITH MINIMUM 90 MINUTE BACKUP

NOTE: SYMBOLS BELOW CAN BE ON LTG OR PWR SERIES DRWGS

GU,GFI,WP #	WALL/EQP MOUNTED UTILITY USE LIGHT FIXTURE AND LOCAL CONTROL SWITCH WITH POWER WITH POWER GENERAL USE RECEPT BELOW

EXIT SIGNS

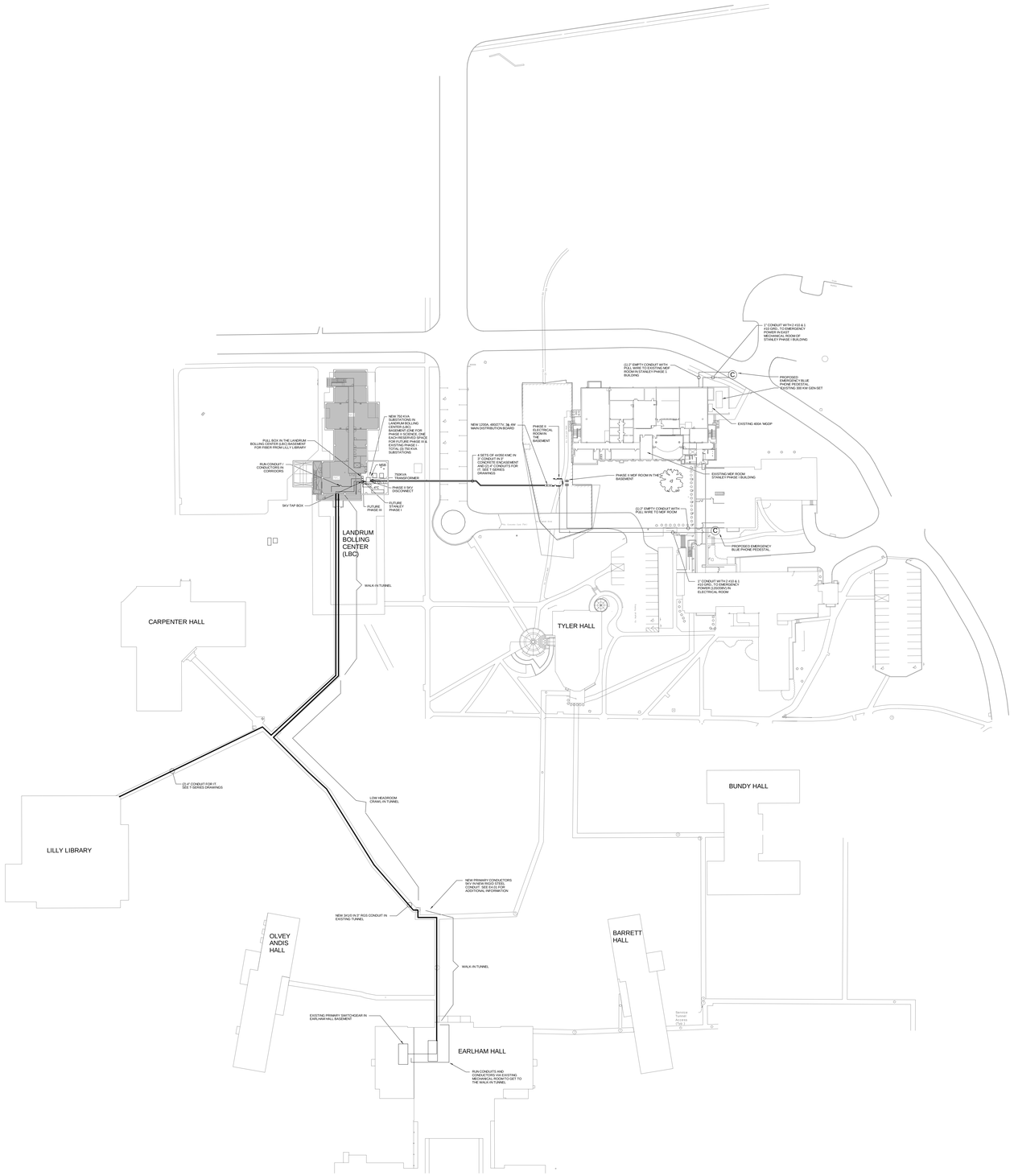
X1 2 #2A	EXIT-STAIR-FIRE ESCAPE LIGHTING FIXTURE
#3	X1 INDICATES EXIT FIXTURE TYPE, REFER TO EXIT LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION, CAT #, AND MOUNTING. "2" INDICATES BRANCH CIRCUIT NUMBER "#3" INDICATES VISUAL SIGNAGE TYPE SEE DESCRIPTION BELOW

EXIT-STAIR-FIRE ESCAPE DIRECTIONAL SIGN No. INDICATE INSCRIPTION, ARROWS AND SINGLE OR DOUBLE FACED AS SHOWN IN THE FOLLOWING SCHEDULE:

NOTES:
1. ALL WORK AND EQUIPMENT SHALL BE NEW
2. ALL CONDUIT SHALL BE 3/4" MINIMUM. ALL CONDUCTORS SHALL BE NEW #10 THHN, MINIMUM.

LIGHT FIXTURE MOTOR LISTED-EQUIPMENT SWITCHES-OPERATORS

3 a LCC K, 5 b 3W	"a-z" SWITCH LEG CONTROL LETTER CODE(S) "D" DIMMER 1,000W CONTROL SWITCH "2" DOUBLE-POLE TOGGLE SWITCH "3" TRIPPLE POLE TOGGLE SWITCH "3W" THREE WAY SWITCH "4W" FOUR WAY SWITCH "K" KEY OPERATED SWITCH "O" OCCUPANCY SENSOR SWITCH "P" TOGGLE SWITCH WITH PILOT LIGHT "T" ROTARY SWITCH WITH TIMER CONTROL
	"TS" THERMAL SWITCH "WS" WALL SWITCH "TS" TEMP/SENSOR SWITCH "W-STAT" WALL LINE VOLTAGE STAT
	"LV(2)" LOW VOLTAGE SWITCHING SYSTEM # QUANTITY OF LV SWITCHES "LM" MASTER SWITCH FOR LOW VOLTAGE SWITCHING SYSTEM "MC" MOMENTARY CONTACT SWITCH "LCC" SWITCH LEG TO LTG CONTACTOR COIL "LCC"
$	LTG SWITCHES SHOWN ON LTG PLANVIEWS EQP SWITCHES SHOWN ON PWR PLANVIEWS SINGLE POLE TWO-POSITION 20A TOGGLE SWITCH U.N.O. ON THE DWGS WITH SUBSCRIPT CODE(S)
OC	CEILING MOUNTED DUAL TECHNOLOGY 360° OCCUPANCY SENSOR
PC	CEILING MOUNTED PHOTOSENSOR WITH DIMMING MODULE FOR DAYLIGHT HARVESTING
$	WALL SWITCH MOUNTED PASSIVE INFRARED 180° OCCUPANCY SENSOR
DS



1 E010 ELECTRICAL SITE PLAN
1/64" = 1'-0"

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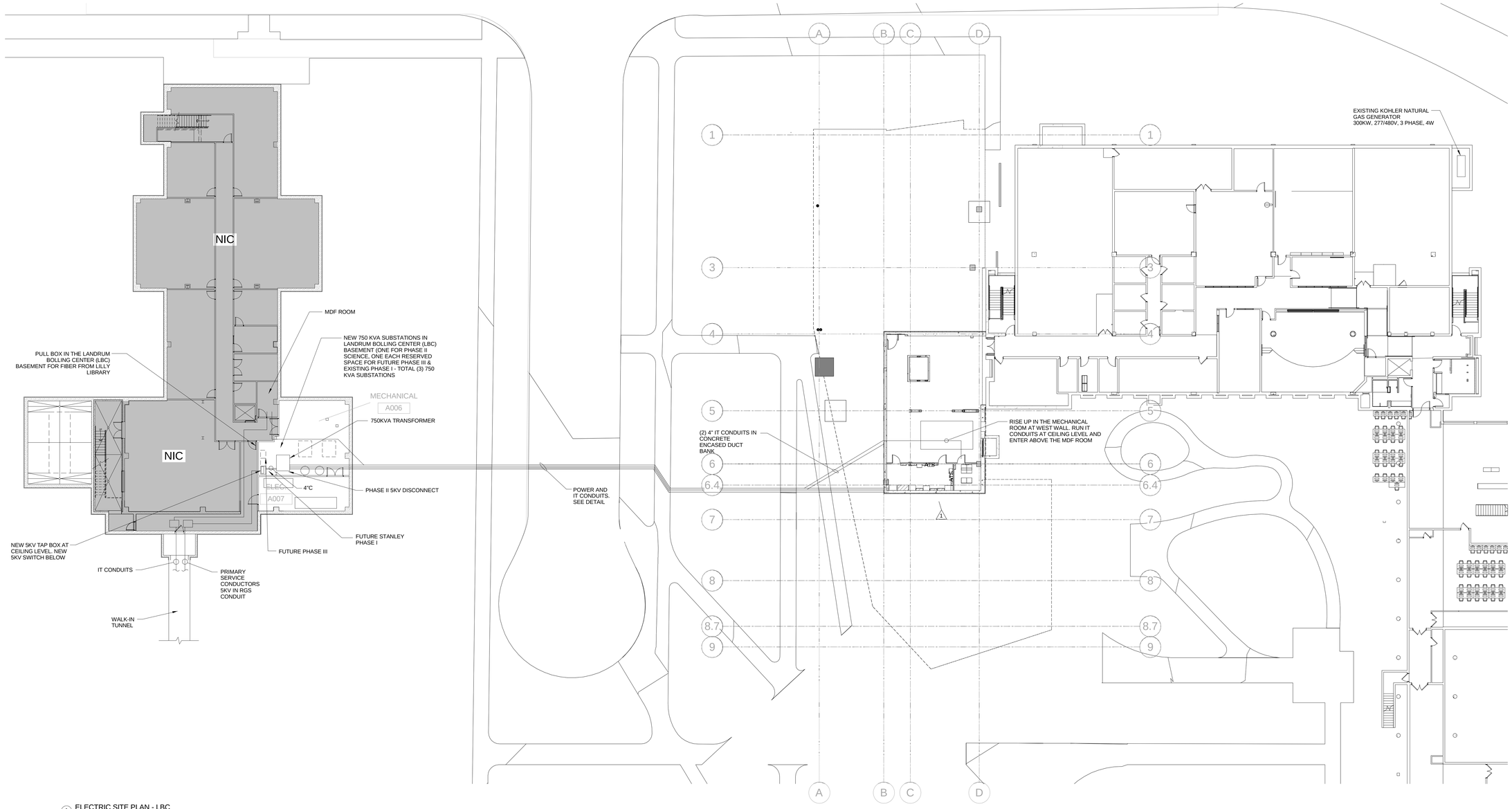
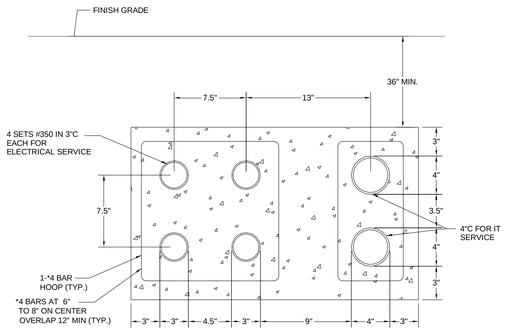
ELECTRICAL SITE PLAN

E010



1 ELECTRIC SITE PLAN - LBC
1/16" = 1'-0"



2 ELECTRICAL AND IT SERVICE DETAIL
NTS

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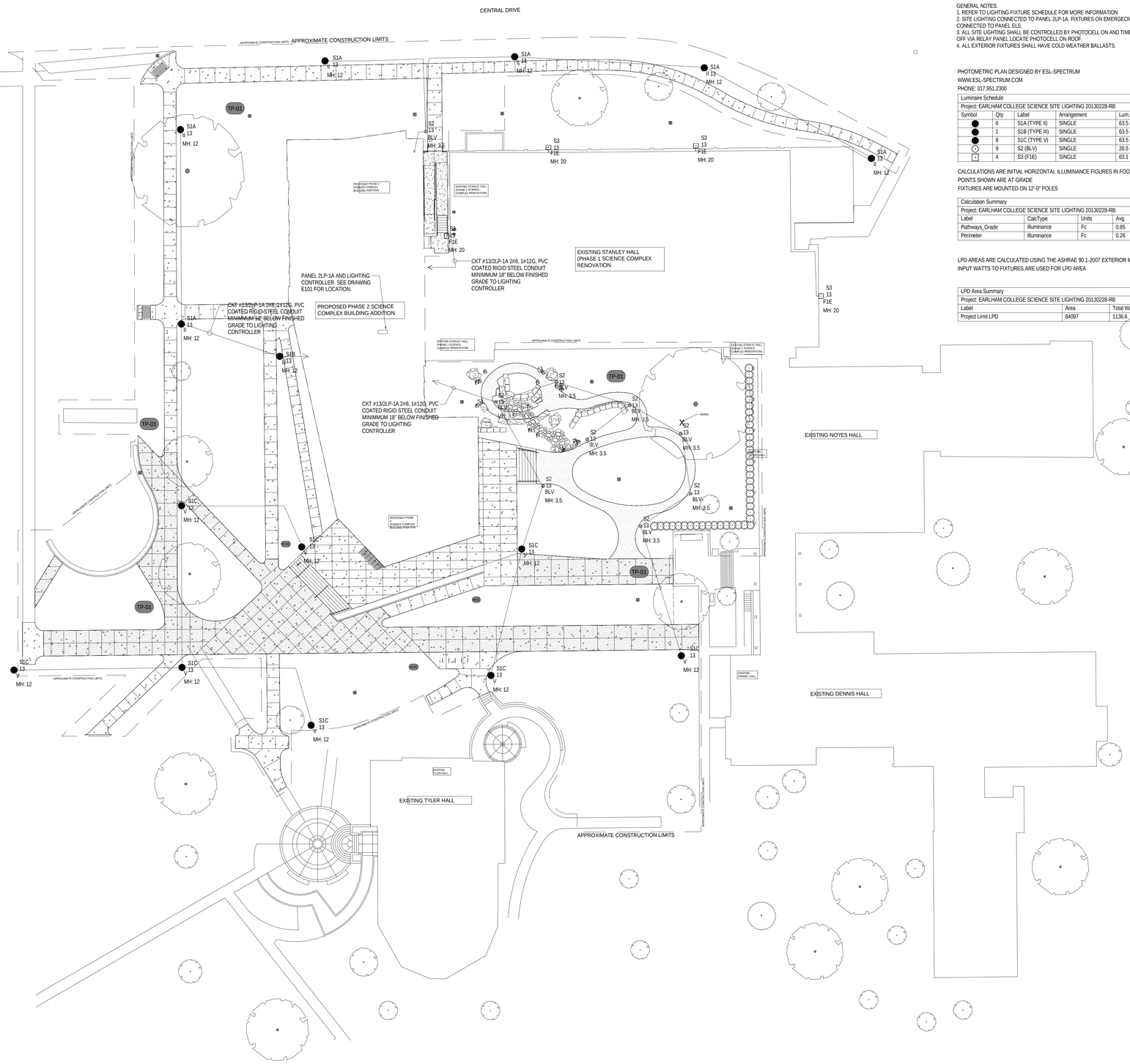
ELECTRICAL SITE PLAN - LBC

E011



GENERAL NOTES:
1. REFER TO LIGHTING FIXTURE SCHEDULE FOR MORE INFORMATION
2. SITE LIGHTING CONNECTED TO PANEL 2LP-1A. FIXTURES ON EMERGECNY CONNECTED TO PANEL ELS.
3. ALL SITE LIGHTING SHALL BE CONTROLLED BY PHOTOCELL ON AND TIMECLOCK OFF VIA RELAY PANEL LOCATE PHOTOCELL ON ROOF.
4. ALL EXTERIOR FIXTURES SHALL HAVE COLD WEATHER BALLASTS.

PHOTOMETRIC PLAN DESIGNED BY ESL-SPECTRUM
WWW.ESL-SPECTRUM.COM
PHONE: 317.951.2300

Luminaire Schedule							
Project: EARLHAM COLLEGE SCIENCE SITE LIGHTING 20130228-RB							
Symbol	Qty	Label	Arrangement	Lum. Watts	Lum. Lumens	LLF	Description
●	6	S1A (TYPE II)	SINGLE	63.5	3434	1.000	LE192-60LED-5100K
●	1	S1B (TYPE III)	SINGLE	63.5	3457	1.000	LE193-60LED-5100K
●	8	S1C (TYPE V)	SINGLE	63.5	3465	1.000	LE195-60LED-5100K
⊙	9	S2 (BLV)	SINGLE	20.5	433	1.000	VRB1-20LED-5100K
▪	4	S3 (F1E)	SINGLE	63.1	4953	1.000	WD1403E35-60LSK

CALCULATIONS ARE INITIAL HORIZONTAL ILLUMINANCE FIGURES IN FOOT-CANDLES
POINTS SHOWN ARE AT GRADE
FIXTURES ARE MOUNTED ON 12'-0" POLES

Calculation Summary							
Project: EARLHAM COLLEGE SCIENCE SITE LIGHTING 20130228-RB							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Pathways_Grade	Illuminance	Fc	0.85	4.44	0.06	14.17	74.00
Perimeter	Illuminance	Fc	0.26	3.29	0.00	N.A.	N.A.

LPD AREAS ARE CALCULATED USING THE ASHRAE 90.1-2007 EXTERIOR METHOD
INPUT WATTS TO FIXTURES ARE USED FOR LPD AREA

LPD Area Summary				
Project: EARLHAM COLLEGE SCIENCE SITE LIGHTING 20130228-RB				
Label	Area	Total Watts	LPD	LPD Units
Project Limit LPD	84097	1136.6	0.014	Watts/Sq.Ft.

1 SITE LIGHTING PLAN
3/64" = 1'-0"

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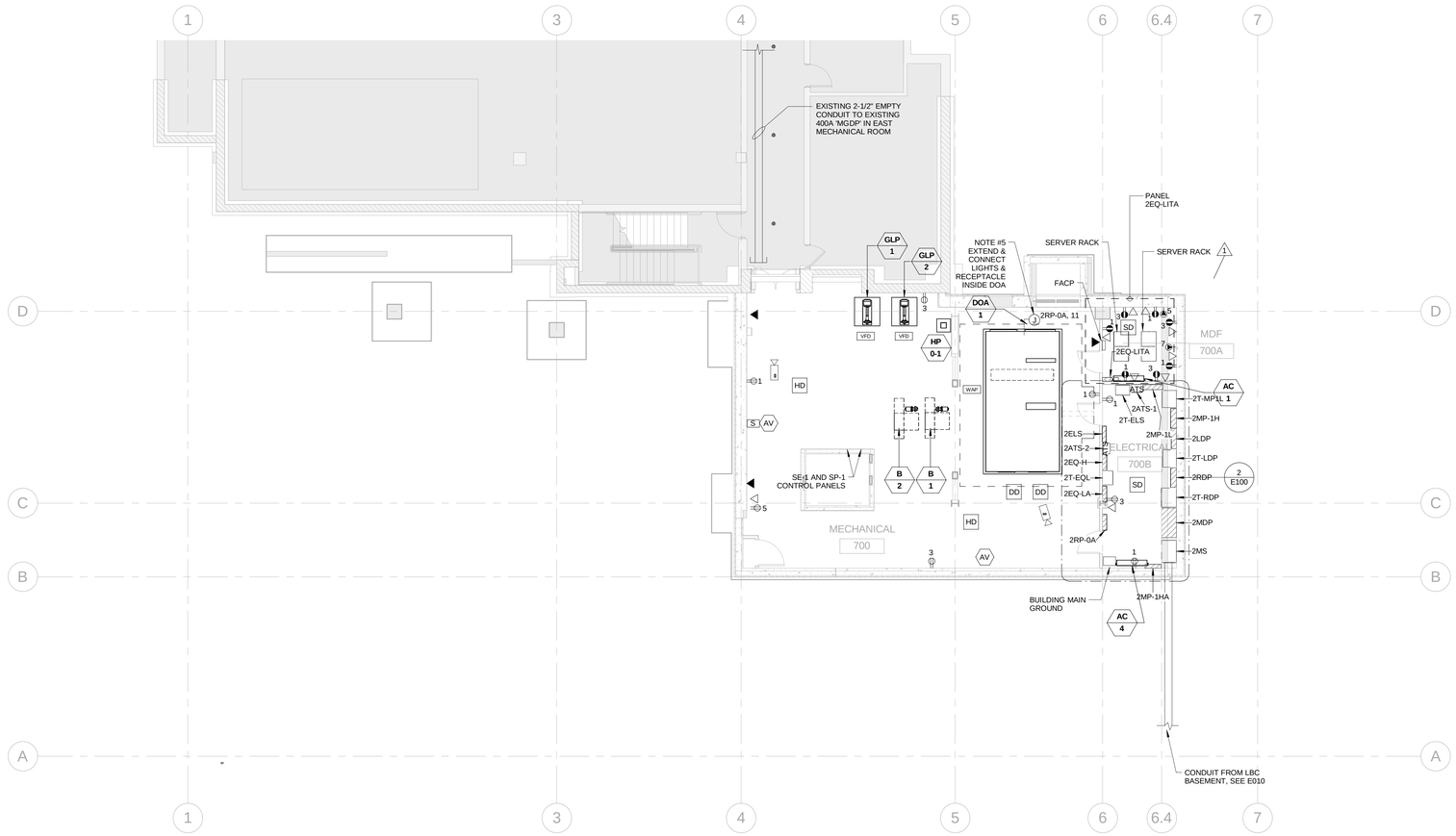
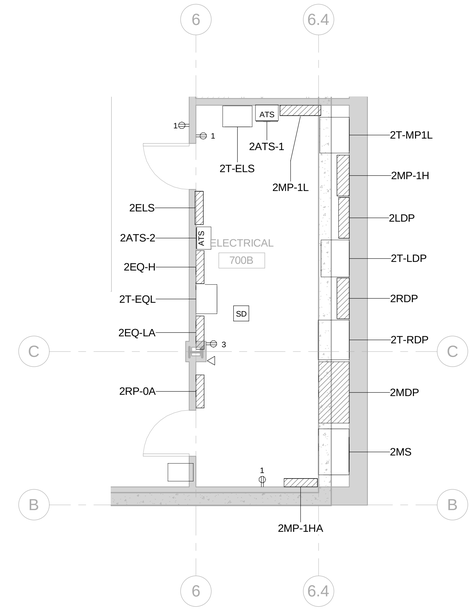
SITE LIGHTING

E012



1 BASEMENT - POWER, DATA & LOW VOLTAGE PLAN
1/8" = 1'-0"



2 ENLARGED BASEMENT ELECTRICAL ROOM
1/4" = 1'-0"

GENERAL NOTES:

1. COORDINATE LOCATION OF HEAT PUMP DISCONNECT SWITCH WITH SHEET METAL TO ALLOW PROPER ACCESS.

2. ALL NORMAL RECEPTACLES SHALL BE CIRCUITED TO PANELBOARD "2RP-0A" UNLESS NOTED OTHERWISE.

3. ALL EMERGENCY RECEPTACLES SHALL BE CIRCUITED TO PANELBOARD "2EQ-LITA" UNLESS NOTED OTHERWISE.

4. SEE 'PUMP MOTOR CONNECTION DETAIL' ON SHEET E604 FOR MOTOR CONTROLLER/DISCONNECT MOUNTING.

5. FOR LIGHTS & RECEPTACLES WITHIN 'DOA-1'. COORDINATE WITH MECHANICAL CONTRACTOR & CONNECT TO LIGHTS & RECEPTACLES INCLUDING ADDITIONAL CONDUITS/WIRES, JUNCTION BOXES IF REQUIRED DUE TO SHIPPING SPLITS. CONNECT TO PANEL 2RP-0A CIRCUIT #11.

6. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION & MOUNTING HEIGHTS OF RECEPTACLES, DATA OUTLETS, TV OUTLETS, ETC.

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BASEMENT POWER PLAN - ELECTRICAL

E100

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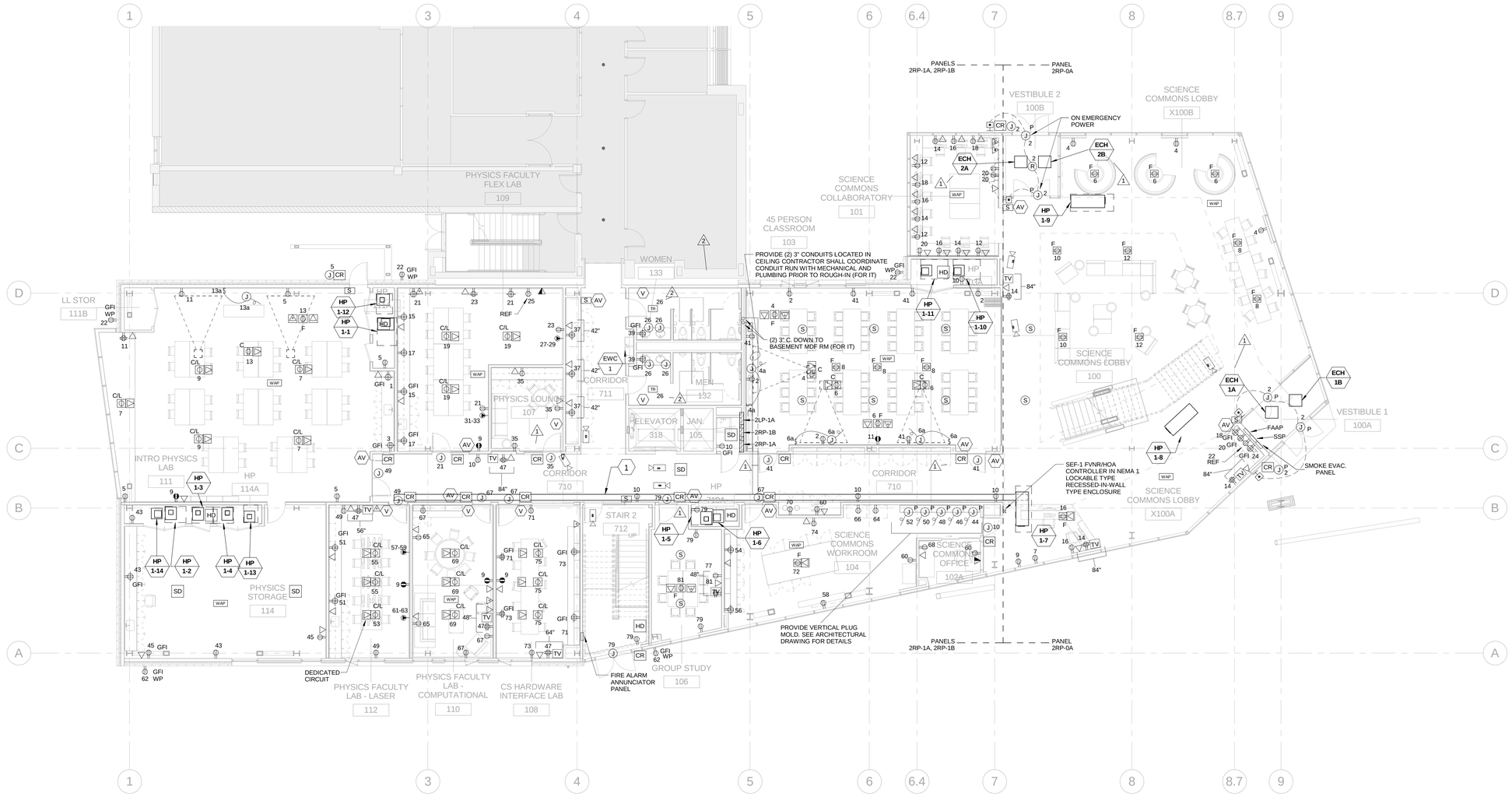

FIRST FLOOR - POWER, DATA & LOW VOLTAGE PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. COORDINATE LOCATION OF HEAT PUMP DISCONNECT SWITCH WITH SHEET METAL TO ALLOW PROPER ACCESS.

2. ALL NORMAL RECEPTACLES SHALL BE CIRCUITED TO PANELBOARDS "2RP-1A" & "2RP-1B" UNLESS NOTED OTHERWISE.

3. ALL EMERGENCY RECEPTACLES SHALL BE CIRCUITED TO PANELBOARD "2EQ-LITA" UNLESS NOTED OTHERWISE.

4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION & MOUNTING HEIGHTS OF RECEPTACLES, DATA OUTLETS, TV OUTLETS, ETC.

5. SEE 'T' SERIES DRAWINGS AND DETAILS FOR ADDITIONAL INFORMATION RELATED TO 'TECHNOLOGY' WORK.

KEY NOTES:

1. PROVIDE CABLE TRAY LOCATED IN CEILING CONTRACTOR SHALL COORDINATE CABLE TRAY RUN WITH MECHANICAL PLUMBING AND LIGHTING PRIOR TO ROUGH-IN (FOR IT). LADDER TYPE, ALUMINUM CABLE TRAY, TRAY HEIGHT 4" MINIMUM, RUNG SPACING NO MORE THAN 12" WIDE WITH NECESSARY TEES, BENDS, RISERS, SUPPORTS AND ACCESSORIES AS REQUIRED AND AS MANUFACTURED BY CHALFANT OR COOPER INDUSTRIES.

NOTE:

PROVIDE POWER TO MOTORIZED WINDOW SHADE CONTROLS FOR ROOMS 103 & 111. REFER TO SHEET E604, DETAIL 1 FOR WIRING.

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FIRST FLOOR POWER PLAN - ELECTRICAL

E101

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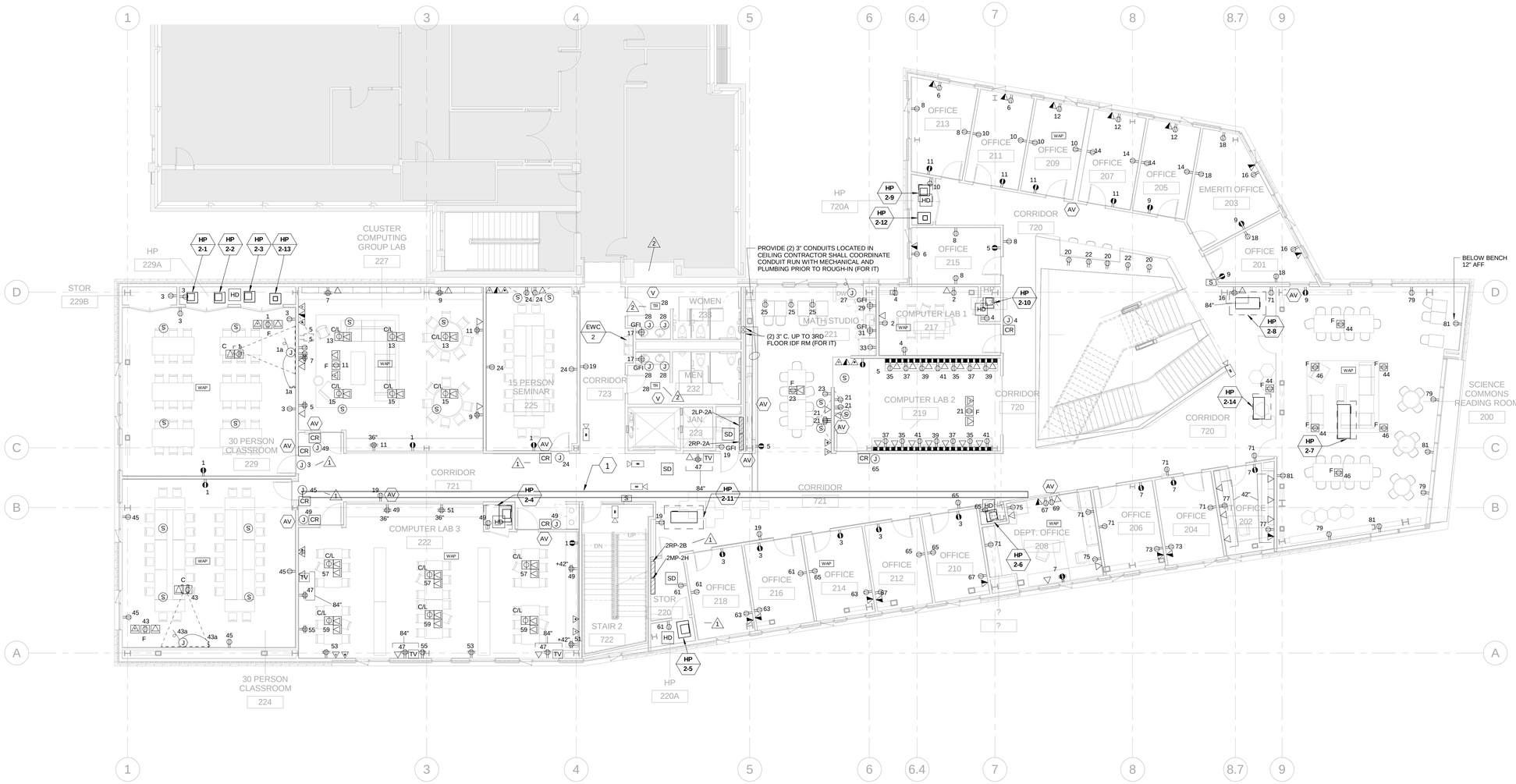

SECOND FLOOR - POWER, DATA & LOW VOLTAGE PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. COORDINATE LOCATION OF HEAT PUMP DISCONNECT SWITCH WITH SHEET METAL TO ALLOW PROPER ACCESS.

2. ALL NORMAL RECEPTACLES SHALL BE CIRCUITED TO PANELBOARDS "2RP-2A" & "2RP-2B" UNLESS NOTED OTHERWISE.

3. ALL EMERGENCY RECEPTACLES SHALL BE CIRCUITED TO PANELBOARD "2EQ-LITB" UNLESS NOTED OTHERWISE.

4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION & MOUNTING HEIGHTS OF RECEPTACLES, DATA OUTLETS, TV OUTLETS, ETC.

5. SEE 'T' SERIES DRAWINGS AND DETAILS FOR ADDITIONAL INFORMATION RELATED TO 'TECHNOLOGY' WORK.

KEY NOTES:

1. PROVIDE CABLE TRAY LOCATED IN CEILING CONTRACTOR SHALL COORDINATE CABLE TRAY RUN WITH MECHANICAL PLUMBING AND LIGHTING PRIOR TO ROUGH-IN (FOR IT). LADDER TYPE, ALUMINUM CABLE TRAY, TRAY HEIGHT 4" MINIMUM, RUNG SPACING NO MORE THAN 12" WIDE WITH NECESSARY TEES, BENDS, RISERS, SUPPORTS AND ACCESSORIES AS REQUIRED AND AS MANUFACTURED BY CHALFANT OR COOPER INDUSTRIES.

NOTE:

PROVIDE POWER TO MOTORIZED WINDOW SHADE CONTROLS FOR ROOMS 200, 224 & 229. REFER TO SHEET E604, DETAIL 1 FOR WIRING.

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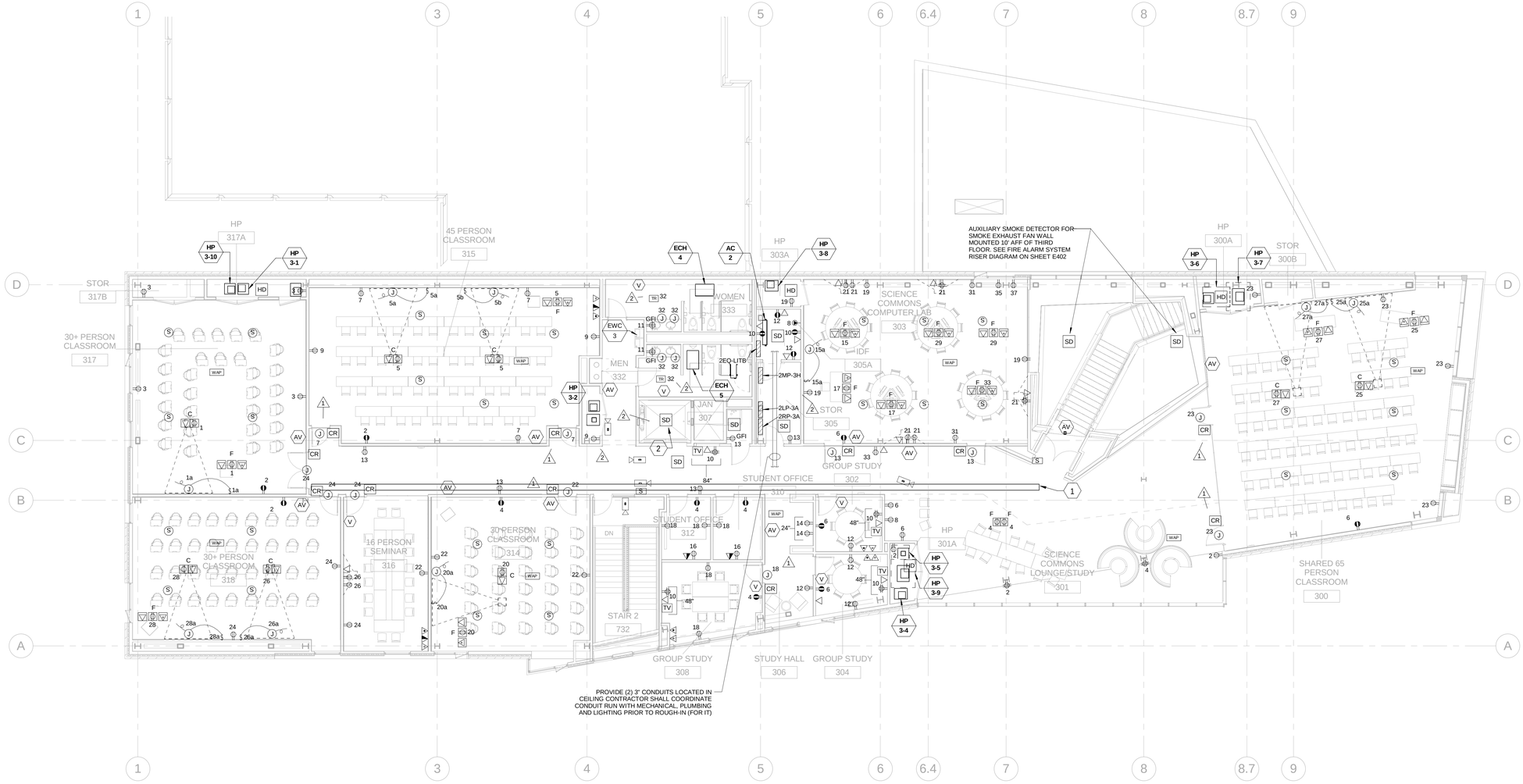
SECOND FLOOR POWER PLAN - ELECTRICAL

E102



1 THIRD FLOOR - POWER, DATA & LOW VOLTAGE PLANS
1/8" = 1'-0"

GENERAL NOTES:

1. COORDINATE LOCATION OF HEAT PUMP DISCONNECT SWITCH WITH SHEET METAL TO ALLOW PROPER ACCESS.
2. ALL NORMAL RECEPTACLES SHALL BE CIRCUITED TO PANELBOARDS "2RP-3A" & "2RP-3B" UNLESS NOTED OTHERWISE.
3. ALL EMERGENCY RECEPTACLES SHALL BE CIRCUITED TO PANELBOARD "2EQ-LITB" UNLESS NOTED OTHERWISE.
4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION & MOUNTING HEIGHTS OF RECEPTACLES, DATA OUTLETS, TV OUTLETS, ETC.
5. SEE 'T' SERIES DRAWINGS AND DETAILS FOR ADDITIONAL INFORMATION RELATED TO 'TECHNOLOGY' WORK.

KEY NOTES:

1. PROVIDE CABLE TRAY LOCATED IN CEILING CONTRACTOR SHALL COORDINATE CABLE TRAY RUN WITH MECHANICAL PLUMBING AND LIGHTING PRIOR TO ROUGH-IN (FOR IT). LADDER TYPE. ALUMINUM CABLE TRAY. TRAY HEIGHT 4" MINIMUM. RUNG SPACING NO MORE THAN 12" WIDE WITH NECESSARY TEES, BENDS, RISERS, SUPPORTS AND ACCESSORIES AS REQUIRED AND AS MANUFACTURED BY CHALFANT OR COOPER INDUSTRIES.
2. PROVIDE SMOKE DETECTOR IN THE HOISTWAY AND CONNECT TO THE FIRE ALARM SYSTEM.

NOTE:

PROVIDE POWER TO MOTORIZED WINDOW SHADE CONTROLS FOR ROOMS 300, 301, 314, 315, 316, 317 & 318. REFER TO SHEET E604, DETAIL 1 FOR WIRING.

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THIRD FLOOR POWER PLAN - ELECTRICAL

E103

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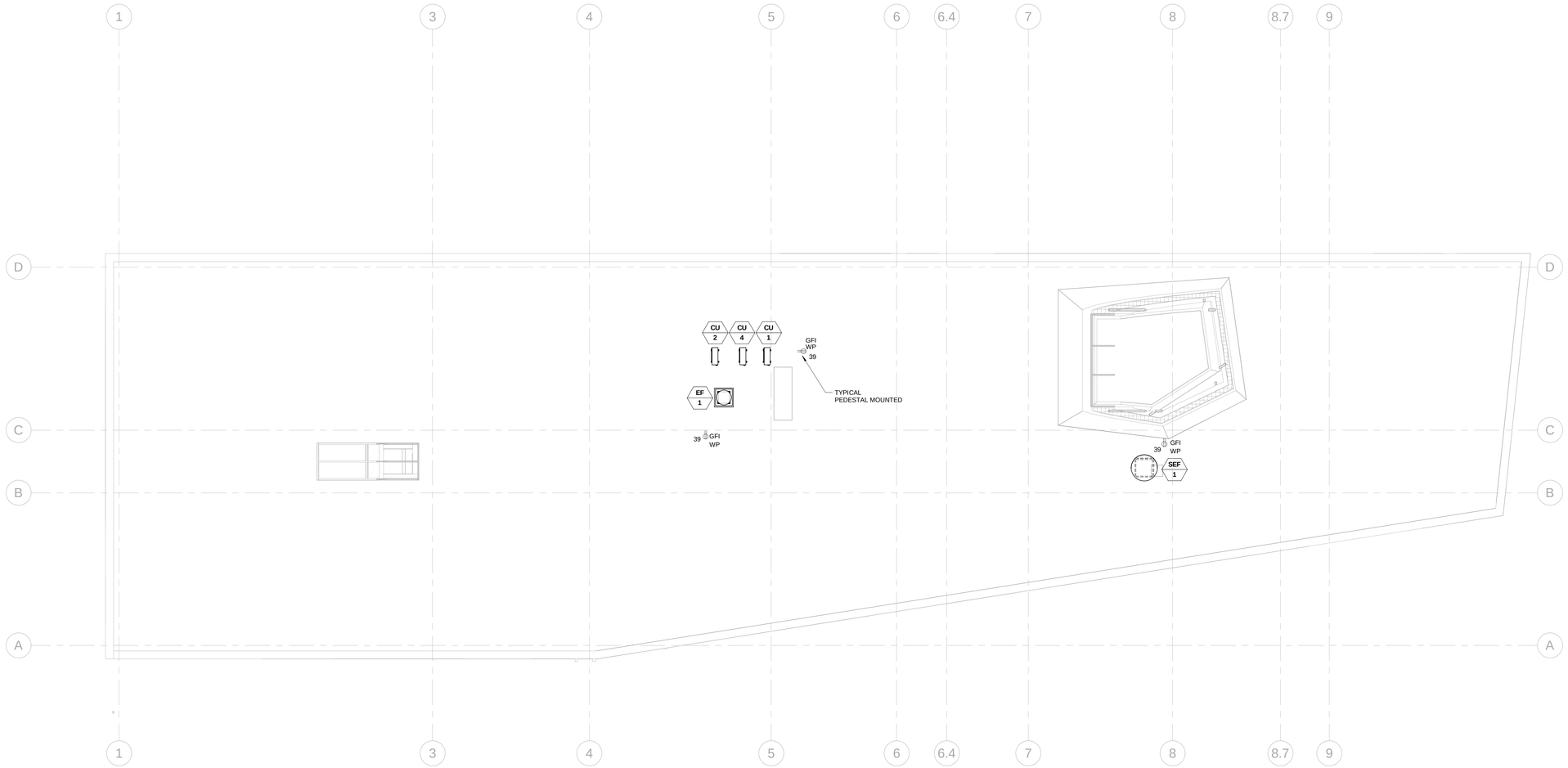

1 ROOF - POWER, DATA & LOW VOLTAGE PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. ALL NORMAL RECEPTACLES SHALL BE CIRCUITED TO PANELBOARD "2RP-3A" UNLESS NOTED OTHERWISE.

ROOF LIGHTNING PROTECTION GENERAL NOTES:

1. PROVIDE A NEW ROOF LIGHTNING PROTECTION SYSTEM FOR THE ENTIRE BUILDING ROOF AREA AND ASSOCIATED STEEPLES. LIGHTNING PROTECTION SYSTEM INSTALLATION SHALL MEET THE REQUIREMENTS OF THE NATIONAL FIRE PROTECTION CODE, NFPA 780, STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS, LATEST EDITION AND THE UNDERWRITERS LABORATORIES UL 96A, STANDARD FOR SAFETY, INSTALLATION REQUIREMENTS FOR LIGHTNING PROTECTION SYSTEMS, 10TH EDITION, 1994. THE MASTER LABEL SHALL BE FURNISHED TO THE OWNER UPON COMPLETION. THE SYSTEM SHALL CONSIST OF CLASS 1 MATERIALS. CONTRACTOR SHALL CONCEAL ALL ALL NEW DOWN CONDUCTORS AS MUCH AS POSSIBLE FROM PLAIN SIGHT. COORDINATE ALL DOWN CONDUCTOR LOCATIONS AND ROUTING WITH ARCHITECT PRIOR TO ROUGH-IN.

2. A COPPER LIGHTNING PROTECTION SYSTEM OR ANY COPPER COMPONENTS SHALL NOT BE MOUNTED ON AN ALUMINUM SURFACE. TO AVOID GALVANIC CORROSION, USE ALUMINUM COMPONENTS ON ALUMINUM SURFACES.

3. ANY GROUNDED METALLIC BODY WITHIN THE DISTANCE SPECIFIED BY NFPA 780, PARAGRAPH 3-24.2 SHALL BE BONDED TO THE LIGHTNING PROTECTION SYSTEM.

4. THE ADHESIVE REQUIRED FOR ADHESIVE MOUNTED BASES AND CABLE FASTENERS SHALL BE COMPATIBLE WITH THE ROOFING MATERIAL. VERIFY THE COMPATIBILITY WITH THE ROOFING CONTRACTOR.

5. AIR TERMINALS MUST BE LOCATED ON ALL ROOF TOP EQUIPMENT AS SPECIFIED IN THE NFPA OR UL CODE. ANY OBJECT WITH A METAL THICKNESS OF 3/16" (4.8MM) OR GREATER NEED NOT HAVE AN AIR TERMINAL IF THE OBJECT IS PROPERLY BONDED TO THE LIGHTNING PROTECTION SYSTEM.

6. ALL DESIGNS SHOWN ARE SCHEMATIC AND INTENDED TO SHOW THE BASIC LIGHTNING PROTECTION SYSTEM. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A 1/4" SCALLED DETAILED ROOF PLAN LIGHTNING PROTECTION SYSTEM SHOP DRAWINGS BASED ON AND SITE CONDITIONS AND SHALL INSTALL A LIGHTNING PROTECTION SYSTEM THAT COMPLIES WITH THE NFPA 780 AND UL 96A CODE REQUIREMENTS.

7. ALL LIGHTING PROTECTION CONDUCTORS SHALL NOT EXCEED 90 DEGREE BENDS AND 8" MINIMUM RADIUS.

8. ALL LIGHTING PROTECTION DOWN CONDUCTORS SHALL BE #4/0 BARE SOLID TINNED COPPER AND SHALL BE BONDED TO BURRIED GROUND ROD.

9. ALL ROOF MOUNTED LIGHTING PROTECTION CONDUCTORS SHALL BE NO 32 CLASS I COPPER LIGHTNING CONDUCTOR (32 STRANDS OF # 14 AWG WIRE - 215 LBS PER 1000').

10. REFER TO SPECIFICATION SECTION 264113 FOR ADDITIONAL INFORMATION.

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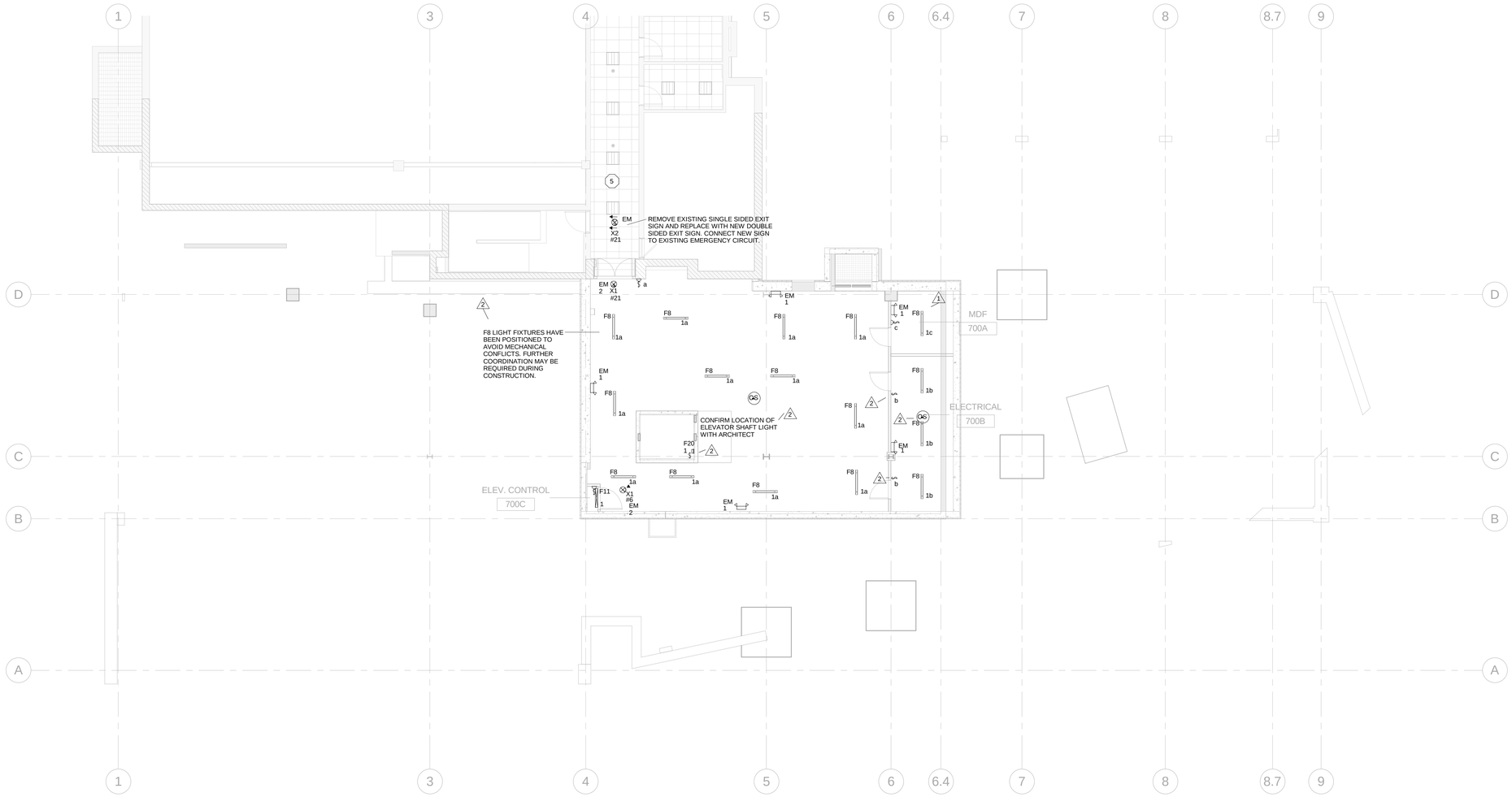
ROOF POWER PLAN - ELECTRICAL

E104



1 BASEMENT - LIGHTING PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INFORMATION.
2. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS AND LOCATION.
3. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING OCCUPANCY SENSOR SETTINGS FOR EACH SPACE.
4. UNLESS NOTED OTHERWISE, ALL OCCUPANCY SENSORS SHALL BE DUAL TECHNOLOGY AND SET TO BE MANUAL ON/AUTOMATIC OFF.
5. UNLESS NOTED OTHERWISE, ALL OCCUPANCY SENSORS IN MULTI-STALL RESTROOMS SHALL BE ULTRASONIC TECHNOLOGY.
6. ALL EM FIXTURES ARE TO BE FED FROM PANEL 2ELS, UNLESS OTHERWISE NOTED.
7. FIXTURES ON FIRST FLOOR AND BASEMENT ARE FED FROM PANEL 2LP-1A
8. FIXTURES ON SECOND FLOOR ARE FED FROM PANEL 2LP-2A
9. FIXTURES ON THIRD FLOOR ARE FED FROM PANEL2LP-3A
10. REFER TO SHEET E605 FOR MORE INFORMATION ON CONTROLS AND SEQUENCE OF OPERATIONS.

KEY NOTES:

1. UNLESS NOTED OTHERWISE, ALL COMMON AREAS ARE TO BE CONTROLLED BY TIMECLOCK VIA RELAY PANEL.
2. RELAY NETWORK WALL SWITCH TO SERVE AS OVERRIDE TO COMMON AREAS CONTROLLED BY TIMECLOCK. CONTRACTOR SHALL COORDINATE FINAL LOCATION WITH ARCHITECT. MAXIMUM TIMEOUT SHALL BE 2 HOURS. TYPICAL OF 2 PER FLOOR ON A KEYED SWITCH
3. UNLESS NOTED OTHERWISE, ALL EXTERIOR FIXTURES SHALL BE CONTROLLED VIA PHOTOCELL ON AND TIMECLOCK OFF VIA RELAY PANEL.
4. STAIR FIXTURES SHALL DIM TO 50% POWER WHEN UNOCCUPIED. AN OCCUPANCY SENSOR WILL PUT THE FIXTURES TO 100% POWER WHEN OCCUPIED.
5. EXISTING STANELY HALL. NOT IN SCOPE.

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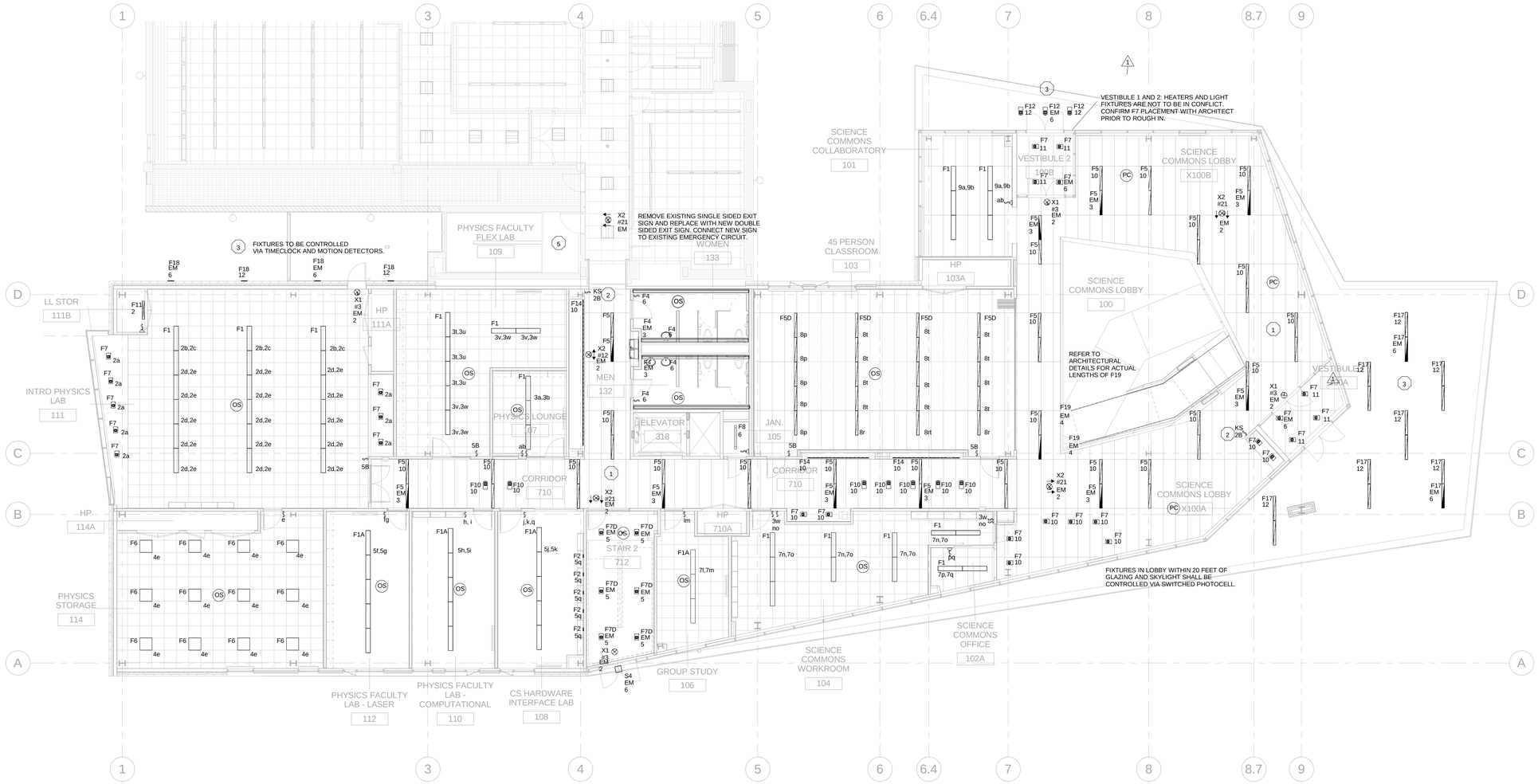
BASEMENT FLOOR PLAN - LIGHTING

E110



1 FIRST FLOOR - LIGHTING PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INFORMATION.
2. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS AND LOCATION.
3. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING OCCUPANCY SENSOR SETTINGS FOR EACH SPACE.
4. UNLESS NOTED OTHERWISE, ALL OCCUPANCY SENSORS SHALL BE DUAL TECHNOLOGY AND SET TO BE MANUAL ON/AUTOMATIC OFF.
5. UNLESS NOTED OTHERWISE, ALL OCCUPANCY SENSORS IN MULTI-STALL RESTROOMS SHALL BE ULTRASONIC TECHNOLOGY.
6. ALL EM FIXTURES ARE TO BE FED FROM PANEL 2ELS
7. FIXTURES ON FIRST FLOOR AND BASEMENT ARE FED FROM PANEL 2LP-1A
8. FIXTURES ON SECOND FLOOR ARE FED FROM PANEL 2LP-2A
9. FIXTURES ON THIRD FLOOR ARE FED FROM PANEL2LP-3A
10. REFER TO SHEET E605 FOR MORE INFORMATION ON CONTROLS AND SEQUENCE OF OPERATIONS.

KEY NOTES:

1. UNLESS NOTED OTHERWISE, ALL COMMON AREAS ARE TO BE CONTROLLED BY TIMECLOCK VIA RELAY PANEL.
2. RELAY NETWORK WALL SWITCH TO SERVE AS OVERRIDE TO COMMON AREAS CONTROLLED BY TIMECLOCK. CONTRACTOR SHALL COORDINATE FINAL LOCATION WITH ARCHITECT. MAXIMUM TIMEOUT SHALL BE 2 HOURS. TYPICAL OF 2 PER FLOOR.
3. UNLESS NOTED OTHERWISE, ALL EXTERIOR FIXTURES SHALL BE CONTROLLED VIA PHOTOCELL ON AND TIMECLOCK OFF VIA RELAY PANEL.
4. STAIR FIXTURES SHALL DIM TO 50% POWER WHEN UNOCCUPIED. AN OCCUPANCY SENSOR WILL PUT THE FIXTURES TO 100% POWER WHEN OCCUPIED.
5. EXISTING STANELY HALL. NOT IN SCOPE.

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Phase 2

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1	01.15.2014	Addendum 2

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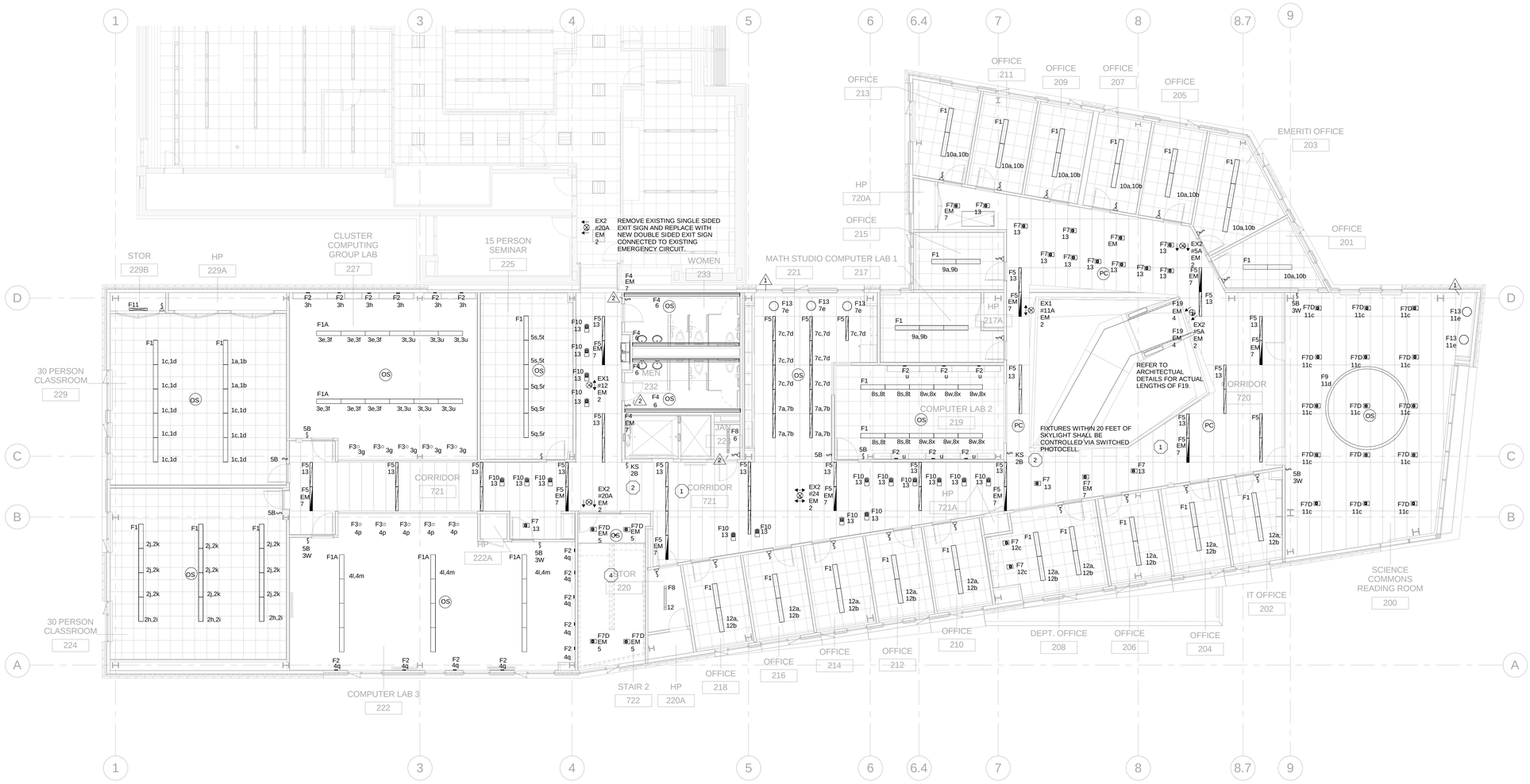
FIRST FLOOR PLAN - LIGHTING

E111



1 SECOND FLOOR - LIGHTING PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INFORMATION.
2. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS AND LOCATION.
3. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING OCCUPANCY SENSOR SETTINGS FOR EACH SPACE.
4. UNLESS NOTED OTHERWISE, ALL OCCUPANCY SENSORS SHALL BE DUAL TECHNOLOGY AND SET TO BE MANUAL ON/AUTOMATIC OFF.
5. UNLESS NOTED OTHERWISE, ALL OCCUPANCY SENSORS IN MULTI-STALL RESTROOMS SHALL BE ULTRASONIC TECHNOLOGY.
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7. FIXTURES ON FIRST FLOOR AND BASEMENT ARE FED FROM PANEL 2LP-1A
8. FIXTURES ON SECOND FLOOR ARE FED FROM PANEL 2LP-2A
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4. STAIR FIXTURES SHALL DIM TO 50% POWER WHEN UNOCCUPIED. AN OCCUPANCY SENSOR WILL PUT THE FIXTURES TO 100% POWER WHEN OCCUPIED.
5. EXISTING STANELY HALL. NOT IN SCOPE.

Copy of LIGHITNG NOTES
1/4" = 1'-0"

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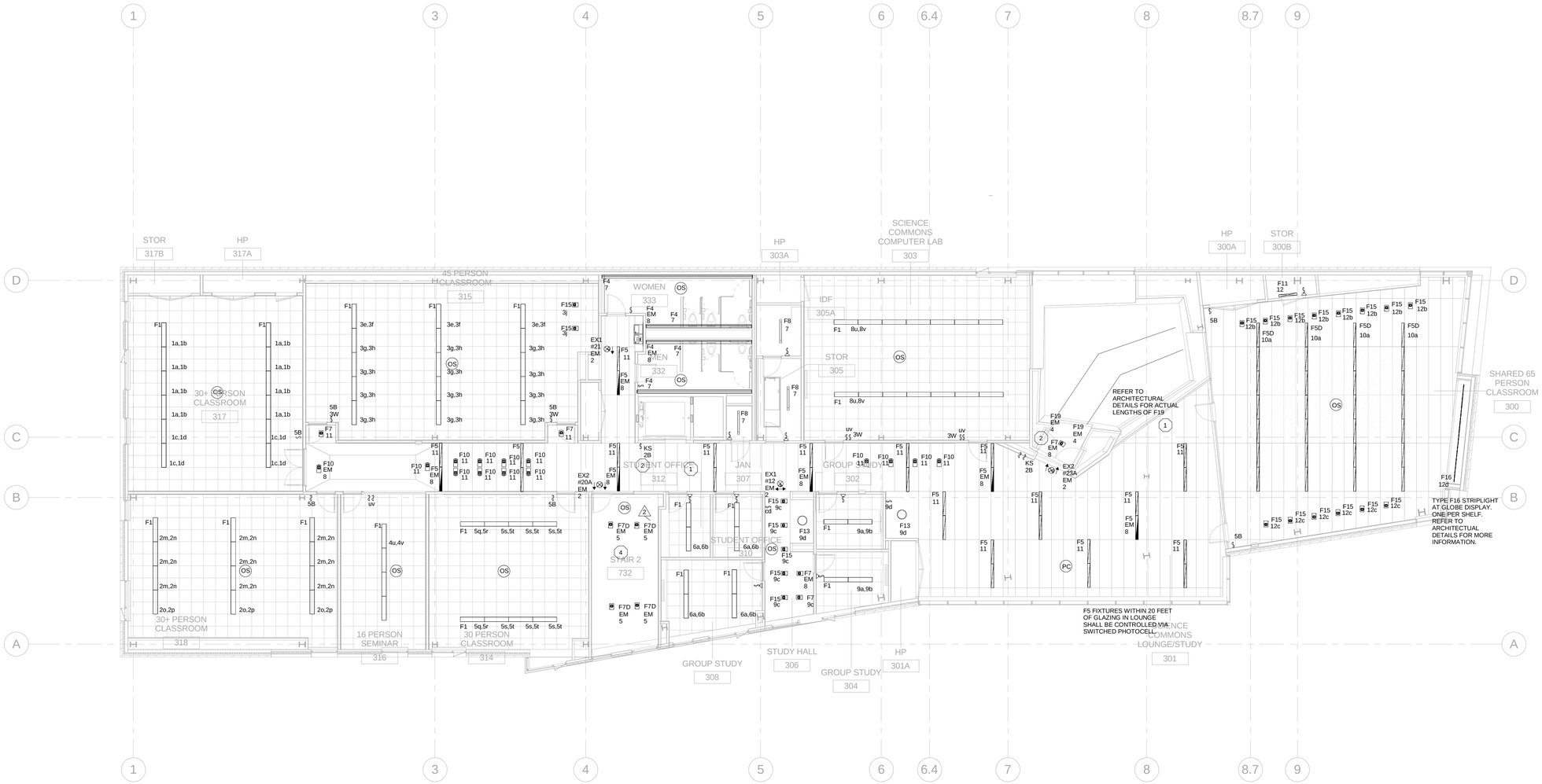
SECOND FLOOR PLAN - LIGHTING

E112



1 THIRD FLOOR - LIGHTING PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INFORMATION.
2. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS AND LOCATION.
3. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING OCCUPANCY SENSOR SETTINGS FOR EACH SPACE.
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5. EXISTING STANELY HALL. NOT IN SCOPE.

Copy of LIGHITNG NOTES
1/4" = 1'-0"

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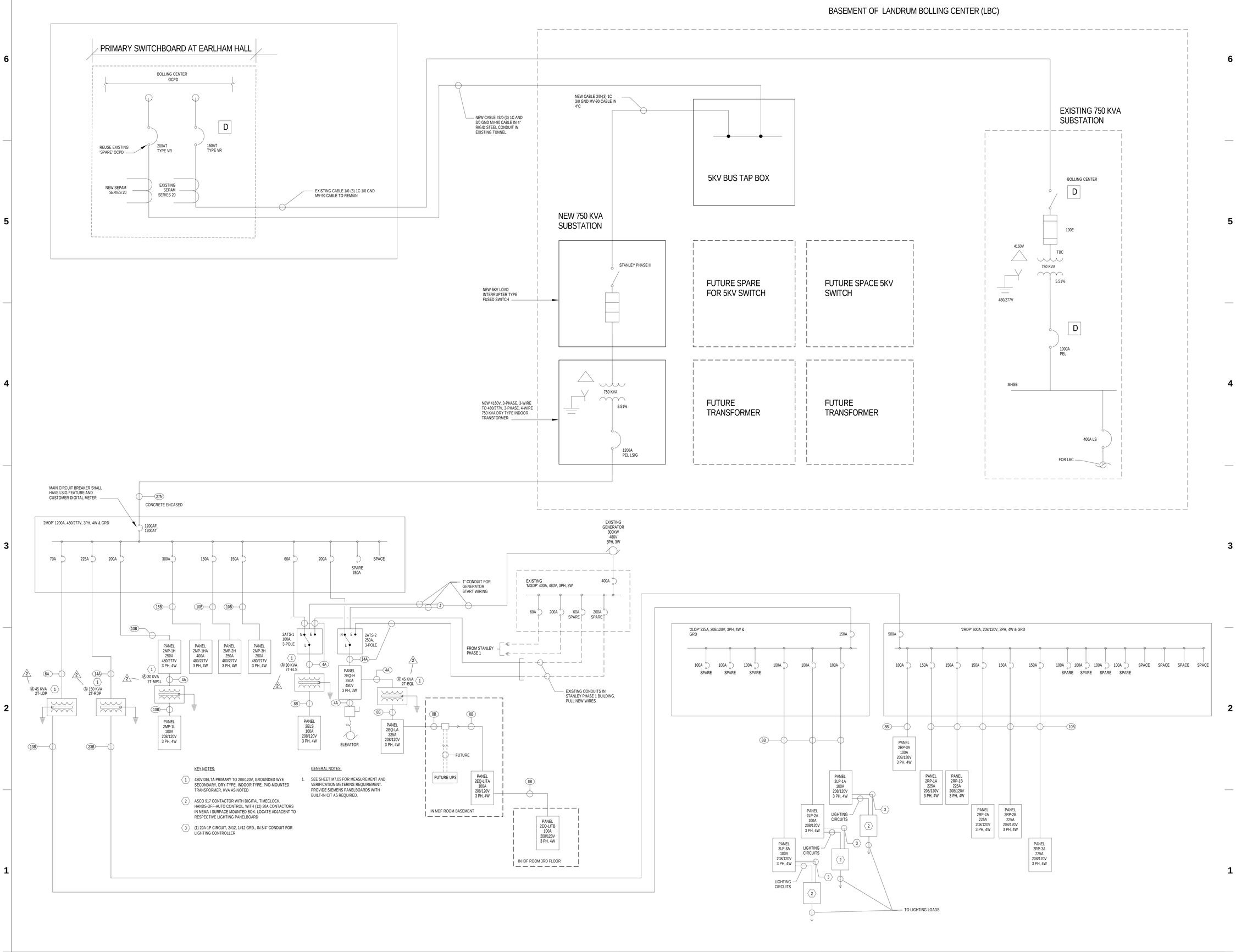
THIRD FLOOR PLAN - LIGHTING

E113



KEY NOTES:

1. 480V DELTA PRIMARY TO 208/120V, GROUNDED WYE SECONDARY, DRY-TYPE, INDOOR TYPE, PAD-MOUNTED TRANSFORMER, KVA AS NOTED
2. ASCO 917 CONTACTOR WITH DIGITAL TIMECLOCK, HANDS-OFF-AUTO CONTROL, WITH (12) 20A CONTACTORS IN NEMA I SURFACE MOUNTED BOX. LOCATE ADJACENT TO RESPECTIVE LIGHTING PANELBOARD
3. (1) 20A-1P CIRCUIT, 2#12, 1#12 GRD., IN 3/4" CONDUIT FOR LIGHTING CONTROLLER

GENERAL NOTES:

1. SEE SHEET M7.05 FOR MEASUREMENT AND VERIFICATION METERING REQUIREMENT. PROVIDE SIEMENS PANELBOARDS WITH BUILT-IN C/T AS REQUIRED.

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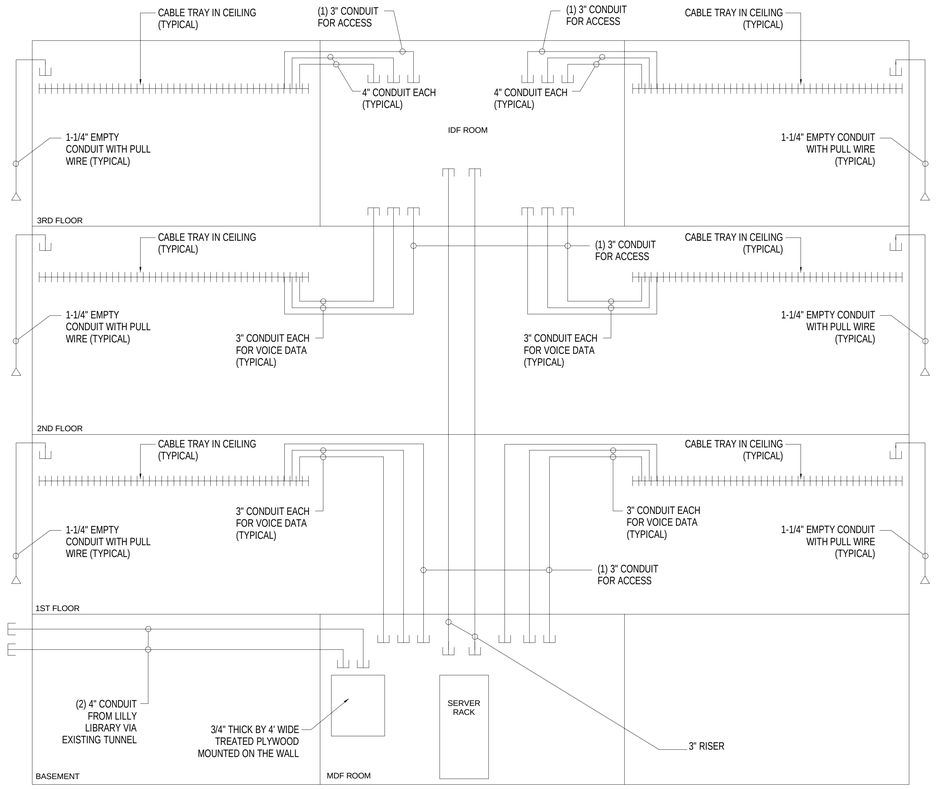
ELECTRICAL RISER DIAGRAM

E401



LOW VOLTAGE SYSTEM RISER DIAGRAM

NOT TO SCALE

NOTES:

1. EACH INFORMATION OUTLET SHALL HAVE DATA CABLES (DATA CABLES BY OTHERS) INSTALLED IN MINIMUM 1-1/4" CONDUIT.

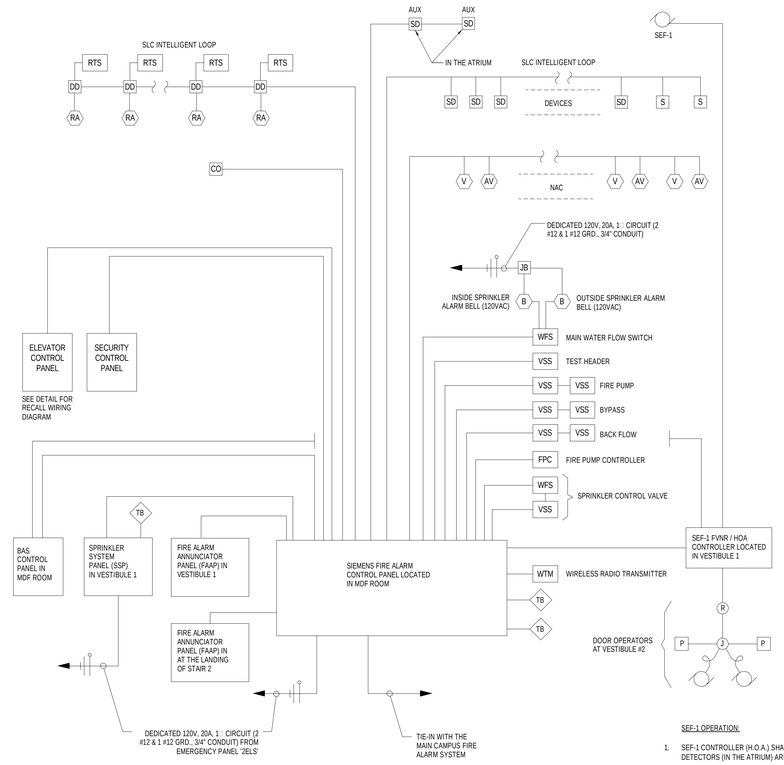
2. EACH INFORMATION OUTLET WIRING (MINIMUM 1-1/4"C) SHALL BE EXTENDED TO NEAREST CEILING MOUNTED CABLE TRAY TO MDF.

3. INFORMATION OUTLET SHALL BE PROVIDED AT FOLLOWING LOCATIONS:

- OFFICES
* COPIER
* FAX
* PRINTER
* CLOSED CIRCUIT TV CAMERAS
* "EMERGENCY" PHONE (WITH FUTURE CCTV CAMERA)
* IP TV
* POINT OF SALE (CASH REGISTER/CAFE)
* ELEVATORS
* WIRELESS ACCESS POINTS
* MISCELLANEOUS SYSTEMS' HEAD-END EQUIPMENT, SUCH AS:

- BUILDING AUTOMATION SYSTEM
- LIGHTING CONTROL
- FIRE ALARM
- MATV
- CCTV
- AREA RESCUE
- A/V SYSTEM (MULTIPLE HEAD-END EQUIPMENT)

4. SEE 'T' SERIES DRAWINGS AND DETAILS FOR ADDITIONAL INFORMATION RELATED TO 'TECHNOLOGY' WORK.



FIRE ALARM SYSTEM RISER DIAGRAM

NOT TO SCALE

FIRE ALARM SYSTEM GENERAL NOTES:

1. ALL FIRE ALARM SYSTEMS (INITIATING, DETECTION, NOTIFICATION, RELAY MODULES, ETC.,) SHALL BE CLASS "A" WIRING.
2. ALL DEVICES AND EQUIPMENT SHOWN ON PLAN ARE FOR GENERAL LOCATION ONLY AND DO NOT NECESSARILY DEPICT ACTUAL LOCATION. FINAL LOCATION AND PLACEMENT OF DEVICES AND EQUIPMENT SHALL BE FULLY COORDINATED WITH ARCHITECT AND ALL TRADES AND LOCAL FIRE MARSHALL. REFER TO ARCH. DWGS FOR AESTETIC INTENT.
3. ALL SIGNALING LINE CIRCUITS (SLC's) SHALL BE CLASS "A" WIRING METHOD. THESE CIRCUITS SHALL BE 2/C #16 AWG IN 3/4" CONDUIT UNLESS OTHERWISE NOTED.
4. ALL NOTIFICATION DEVICE/APPLIANCE CIRCUITS (NAC's) SHALL BE CLASS "A" WIRING METHOD. CONNECT THESE DEVICES WITH 2/C #16 AWG IN 3/4" CONDUIT UNLESS OTHERWISE NOTED.
5. ALL INITIATING DEVICE CIRCUITS (IDC's) SHALL BE CLASS "A" WIRING METHOD. CONNECT THESE DEVICES WITH 2/C #16 AWG IN 3/4" CONDUIT UNLESS OTHERWISE NOTED.
6. FIRE ALARM SYSTEM INSTALLATION SHALL BE IN STRICT CONFORMANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION (LAHJ).
7. INSTALLATION MATERIALS (I.E. CONDUIT, WIRE, FITTINGS, HANGERS, AND STANDARD BOXES) SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.
8. ALL HORN/STROBE AND STROBE DEVICES SHALL BE MOUNTED AT A HEIGHT OF 80" A.F.F. OR 6" BELOW DROPPED CEILING, WHICHEVER IS LESS IN ACCORDANCE WITH ADA (AMERICANS WITH DISSABILITIES ACT). REFER TO ARCH. DWGS FOR LOCATIONS.
9. ALL MANUAL PULL STATIONS SHALL BE MOUNTED 48" A.F.F. TO CENTER OF DEVICE. REFER TO ARCH. DWGS FOR LOCATIONS.
10. FIRE ALARM CONTROL PANEL SHALL BE MOUNTED 6' TO THE TOP OF PANEL A.F.F. REFER TO ARCH. DWGS FOR LOCATIONS.
11. ALL FIRE ALARM SYSTEM CONDUITS SHALL BE FACTORY PAINTED RED AND SHALL BE NOT LESS THAN 3/4" EMT UNLESS OTHERWISE NOTED.
12. FIRE ALARM CONTROL PANEL SHALL BE CAPABLE OF MONITORING ALL DETECTION, INITIATION, NOTIFICATION AND CARBON MONOXIDE DEVICES.
13. ALL FIRE ALARM SYSTEM WIRING SHALL BE IN CONDUIT.
14. MOUNT ALL HVAC DUCT MOUNTED SMOKE DETECTORS WITHIN THE MAIN HEADER DUCT INSIDE THE BUILDING. DUCT DETECTORS MOUNTED ON THE EXTERIOR SIDE OF THE BUILDING SHALL NOT BE ACCEPTABLE.
15. ALL SECURED DOORS AT STAIRWELLS EQUIPPED WITH ELECTRIC DOOR STRIKES SHALL SHALL UNLOCK UPON ACTIVATION OF FIRE ALARM SYSTEM WHERE APPLICABLE. PROVIDE SIGNAL WIRING IN CONDUIT AND ASSOCIATED HARDWARE, SOFTWARE, MODULES AND PROGRAMMING AS REQUIRED.
16. MAIN WATER FLOW SWITCH SHALL ACTIVATE ALARM BELLS.
17. PROVIDE FIRE ALARM MAPS COMPLETE WITH DEVICE ADDRESS TO EACH FIRE ALARM CONTROL PANEL AND FIRE ALARM ANNUNCIATOR PANEL LOCATION.

SEF-1 OPERATION:

1. SEF-1 CONTROLLER (H.O.A.) SHALL BE IN 'AUTO' POSITION NORMALLY IN THE EVENT OF AUXILIARY SMOKE DETECTORS (IN THE ATRIUM) ARE IN THE 'ALARM' CONDITION. THE FOLLOWING ACTIONS SHALL TAKE PLACE:

A. A FIRE ALARM SIGNAL IS SENT TO LOCAL FIRE DEPARTMENT AND EARLHAM CAMPUS
B. SEF-1 START'S RUNNING.
C. ALL FIRE ALARM NOTIFICATION DEVICES ARE ACTIVATED
D. VESTIBULE #2 DOORS 'OPEN' AUTOMATICALLY AND REMAIN 'OPEN' UNTIL FIRE ALARM SYSTEM IS RESET

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ELECTRICAL DIAGRAMS

E402

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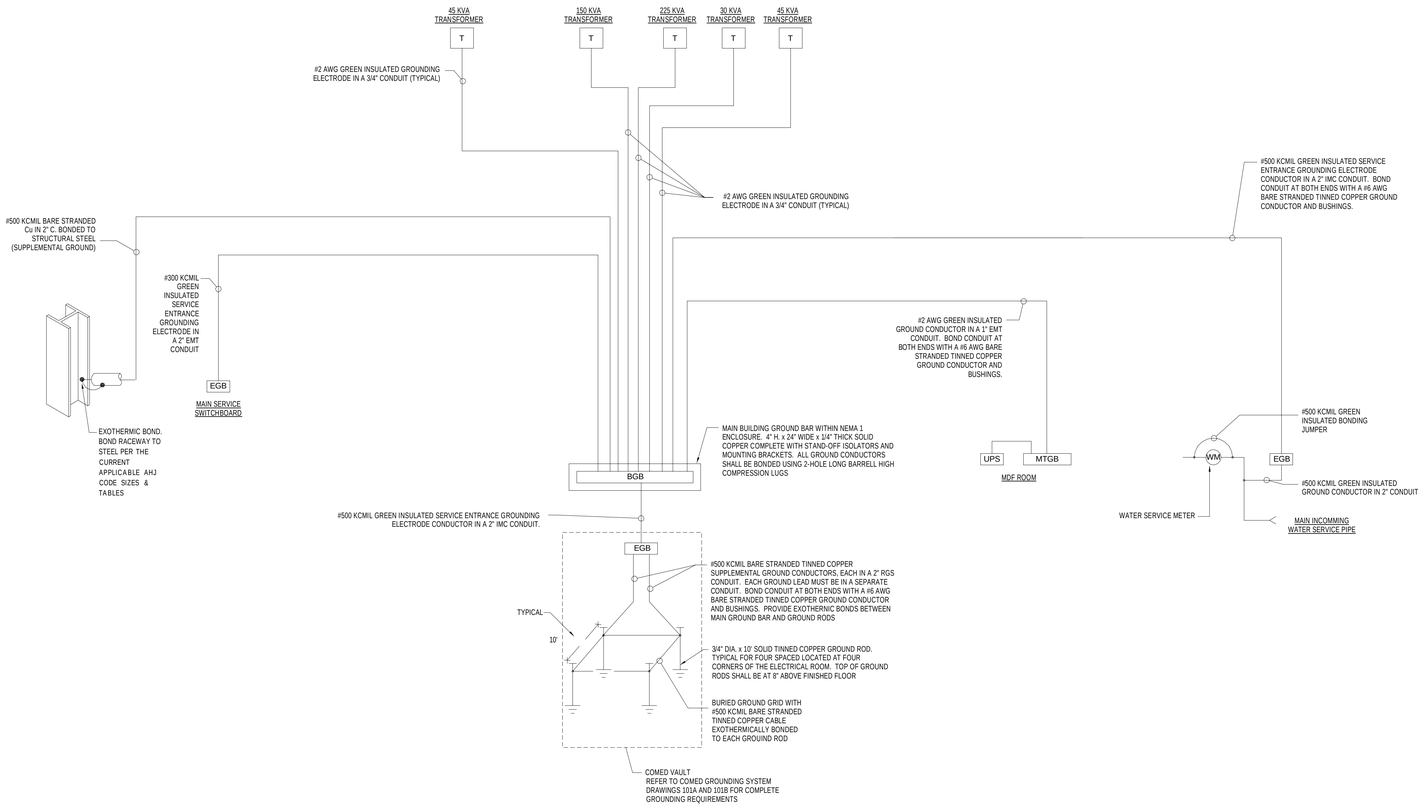


GROUNDING SYSTEM ONE-LINE RISER DIAGRAM

SCALE: N.T.S.

GENERAL GROUNDING NOTES

1. TWO-HOLE LONG BARREL (DOUBLE INDENT) BOLTED-TYPE HYDRAULIC COPPER COMPRESSION CONNECTORS SHALL BE USED FOR CONDUCTORS LARGER THAN #8 AWG. ALL COMPRESSION CONNECTORS FOR CABLE SIZES #1/0 AWG AND LARGER SHALL EMPLOY HEX OR CIRCUMFERENTIAL TYPE CRIMPS, AND SHALL HAVE AN INSPECTION HOLE BETWEEN THE TONGUE AND BARREL. THE CABLE SHALL BE COMPLETELY INSERTED INTO THE CONNECTOR BEFORE THE CRIMPS ARE MADE. CONNECTORS SHALL BE AS MANUFACTURED BY BURNDY, TYPE YA "HYLUG", AND ONLY ON STRANDED WIRE. ALL SOLID WIRE GROUND CONNECTIONS MUST BE EXOTHERMICALLY WELDED OR, IF RUN IN THE INTERIOR, SOLDERED.
2. USE HYDRAULIC COPPER COMPRESSION H-TAP CONNECTORS AS MANUFACTURED BY BURNDY. TYPE YH "H COPPER CRIMPIT". PROVIDE FLAME RETARDANT INSULATING COVERS. PROVIDE THOMAS AND BETT'S HARD COVER TYPE "HTC".
3. ALL COMPRESSION AND MECHANICAL CONNECTIONS SHALL BE COATED WITH THE CORROSION PREVENTATIVE COMPOUND NO-OX-ID "A", AS MANUFACTURED BY DEARBORN CHEMICAL COMPANY.
4. ALL GROUND CONDUCTORS SHALL BE COPPER WITH GREEN (COLOR) INSULATION. GREEN-INSULATED GROUND WIRE FOR ALL SIZES IS AVAILABLE THROUGH QUAD CABLCON (TROY, MI (800) 969-9220) OR RELTEC SERVICES (800-927-2788). GROUND CONDUCTORS LARGER THAN #1 SWG SHALL BE TYPE RHH/RHW (BRAIDED-CLOTH JACKET, SYNTHETIC RUBBER INSULATION).
5. ALL GROUNDING CONDUCTORS SHALL BE IN METALLIC CONDUIT, UNLESS OTHERWISE NOTED. GROUND CONDUCTORS SHALL NOT BE RUN CONCEALED IN SLABS, COLUMNS, OR WALLS. USE RIGID GALVANIZED STEEL CONDUIT SLEEVES WHERE GROUND CONDUCTORS PENETRATE WALLS OR FLOOR SLABS.
6. METALLIC STRAPS SHALL BE USED TO SECURE GROUND CONDUCTOR CONDUITS EVERY 18" HORIZONTALLY AND EVERY 9" VERTICALLY TO THE BUILDING COLUMNS OR WALLS. IF METALLIC STRAPS ARE USED, THEY SHALL BE OF THE TYPE WHICH DO NOT COMPLETELY ENCIRCLE THE CONDUCTOR. PLASTIC "CLIC" CONNECTORS BY LITCHFIELD INTERNATIONAL COMPANY (800-345-CLIC) ARE ACCEPTABLE FOR USE AS CONDUIT AND CONDUCTOR SUPPORTS. DO NOT USE CONDUIT, CABLE TRAY, MECHANICAL DUCT, OR PLASTIC TIE WRAPS TO SECURE GROUND CONDUCTORS.
7. THE MINIMUM BEND RADII ON GROUND CONDUCTORS SHALL BE AS FOLLOWS:

   #12 - #6 6"
   #4 - #4/0 12"
   #250- #750 KCMIL 24

8. PACK OPENINGS AROUND GROUND CONDUCTOR PENETRATIONS OF FLOOR SLABS OR WALLS WITH FIRE RETARDANT MATERIAL. APPROVED FIRE RETARDANT MATERIAL SHALL BE HILTI FIRE BARRIER CAULK (NO SUBSTITUTIONS).
9. TAG ALL GROUND CONDUCTOR TERMINATIONS AT GROUND BAR WITH GRAY OVAL FIBER "FAR-END DESTINATION" 145P TAGS AS MANUFACTURED BY ONE OF THE FOLLOWING:

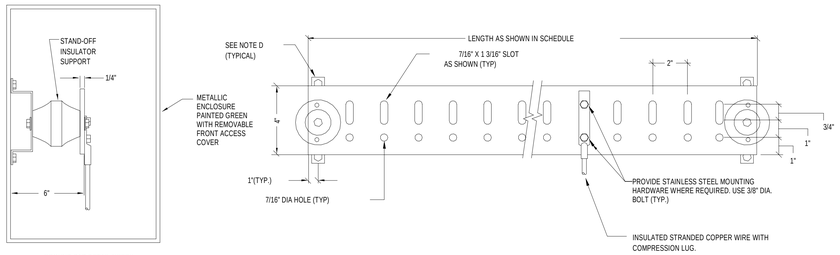
   A. ANIXTER (BLOOMINGTON, ILLINOIS) TEL. # 309/662-5162 OR 800/ANIXTER PART #847755246

   B. MARCONI (OHIO) TEL. # 800/927-2780 PART #847755246

   GROUND SERVICES MAY BE STAMPED, ENGRAVED, OR LEGIBLY/NEATLY HANDWRITTEN ON FIBER TAG. AT GROUND BAR TERMINATIONS ALSO PROVIDE ENGRAVED BRASS "DO NOT DISCONNECT" TAGS MANUFACTURED BY:

   C. ANIXTER (MANUFACTURED BY FLEXTRONICS AND SOLD BY ANIXTER) PART # P0411719

   D. GUS BERTHOLD ELECTRIC COMPANY (CHICAGO ILLINOIS) TEL. # 312/243-5767 (BLANK TAGS PURCHASED BY GBE CO. AND STAMPED)
10. ALL TAGS AT GROUND BAR TERMINATIONS SHALL BE SECURED WITH 9-PLY OR 12-PLY TWINE/CORD MANUFACTURED BY ANIXTER. TIE WRAPS SHALL NOT BE USED.
    9-PLY PART # 095017, 12-PLY PART # 224758.
11. THE MAIN BUILDING GROUND BARS (BGB-1 AND BGB-2) SHALL BE THE EXTENSION OF THE BUILDING GROUNDING SYSTEM AND SHALL SERVE AS THE MAIN POINT OF BONDING WITHIN THE FACILITY AND SHALL COMPLY WITH CHICAGO BUILDING CODE. THE BGB SHALL BE THE COMMON GROUND POINT TO WHICH ALL GROUND POINTS FOR THE FACILITY ARE BONDED.
12. THE ROUTE OF THE BONDING CONDUCTORS FROM THE MGB TO THE FACILITY GROUND RING SHALL BE AS SHORT AND STRAIGHT AS PRACTICALLY POSSIBLE.
13. THE MGB WILL SHALL BE CONFIGURED TO MAINTAIN SEPARATION BETWEEN SURGE PRODUCERS, ABSORBERS, NON-ISOLATED AND ISOLATED GROUNDS. THE MGB SHALL BE PERMANENTLY AND APPROPRIATELY LABELED AND IDENTIFY WITH "P", "A", "N", AND "I" SECTIONS OF THE MGB.
14. BONDING CONDUCTORS BETWEEN THE MGB AND OTHER ANCILLARY GROUND BARS OR EQUIPMENT BAYS SHALL RUN IN THE STRAIGHTEST ROUTE MINIMIZING THE TOTAL LENGTH OF THE CONDUCTOR.
15. ALL GROUNDING SYSTEM CABLE RUNS THAT ARE ROUTED THROUGH WALLS, CEILINGS OR FLOORS SHALL BE PROTECTED BY METALLIC CONDUITS OR SLEEVES.
16. CONNECTIONS TO THE BURIED DELTA GROUND RING SHALL BE EXOTHERMICALLY WELDED BY TECHNICIANS CERTIFIED ON THE PROCESS. CONNECTIONS OTHER THAN EXOTHERMIC WELD SHALL BE LOCATED SO AS TO FACILITATE PERIODIC INSPECTION AND MAINTENANCE.
17. ALL BURIED CONNECTIONS SHALL BE EXOTHERMIC WELDS. ALL EXPOSED MECHANICAL AND/OR HIGH COMPRESSION CONNECTIONS SHALL BE TREATED WITH A PROTECTIVE, ANTI-OXIDANT COATING. ALL EXOTHERMIC WELDS TO GALVANIZING SURFACES SHALL BE SPRAYED WITH GALVANIZING PAINT.



GROUND BAR DETAIL NOTES:

A. BUILDING GROUND BARS SHALL BE MOUNTED WITHIN A NEMA 1 METALLIC ENCLOSURE WITH HINDGED COVER.

B. CLEAN AND BURNISH GROUND BAR AND UTILIZE LIGHT COATING OF ANTI-OXIDATION GREASE PRIOR TO ATTACHING ANY HARDWARE.

C. ATTACH LUGS TO BAR WITH 3/8" DIAMETER STAINLESS STEEL OR CADMIUM-PLATED BOLTS, NUTS AND WASHERS. NICKEL PLATED HARDWARE SHALL NOT BE ACCEPTABLE. UTILIZE TWO FLAT AND ONE LOCK WASHER FOR EACH BOLTED CONNECTION.

D. 5/16" DIA. X 3 1/2" HEX HEAD CS WITH 3/8" DIA. PIPE SPACER 2" LONG AND 5/16" DIA. HS DROP IN ANCHOR.

E. PROVIDE BUS BARS OVER 20" IN LENGTH WITH ADDITIONAL STAND OFF INSULATOR SUPPORTS, AT LEAST TWO OR AS SPECIFIED IN THE GROUND BAR SCHEDULE.

MANUFACTURER: NEWTON INSTRUMENTS COMPANY, INC. TEL. 919-575-6426 (PART NO. A-10389)

PART NO.	DESCRIPTION
A-6065	WALL MTG. BRKT.
3061-4	INSULATORS
3015-1	5/8-11 X 1 HHCS
3015-8	LOCKWASHERS-5/8"

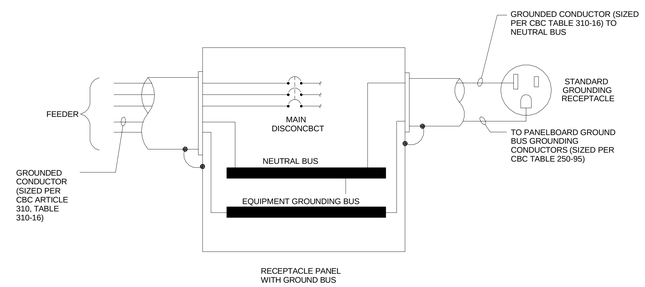
PROVIDE PART QUANTITIES AS REQUIRED FOR EACH GROUND BAR ASSEMBLY.

GROUND BAR SCHEDULE

TAG	QTY.	LENGTH (INCHES)	THICKNESS (INCHES)	MOUNTING HEIGHT (IN)
BGB-1	1	24"	1/4"	18" A.F.F.
BGB-2	1	24"	1/4"	18" A.F.F.
MTGB	1	24"	1/4"	18" A.F.F.
TGB-1	1	12"	1/4"	18" A.F.F.
TGB-2	1	12"	1/4"	18" A.F.F.
TGB-3	1	12"	1/4"	18" A.F.F.
TGB-4	1	12"	1/4"	18" A.F.F.

TYPICAL GROUND BAR DETAIL

SCALE: N.T.S.



RECEPTACLE PANEL GROUNDING DIAGRAM

SCALE: N.T.S.

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BENJAMIN RUBACH REGISTERED No. PE11100371 STATE OF INDIANA PROFESSIONAL ENGINEER

Earlham College Science Complex
Phase 2
801 National Road West
Richmond, IN 47374-4095

MARK	DATE	DESCRIPTION
1	01.15.2014	Addendum 2

Issued: February 28, 2014
Scale: NTS

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ELECTRICAL DIAGRAMS

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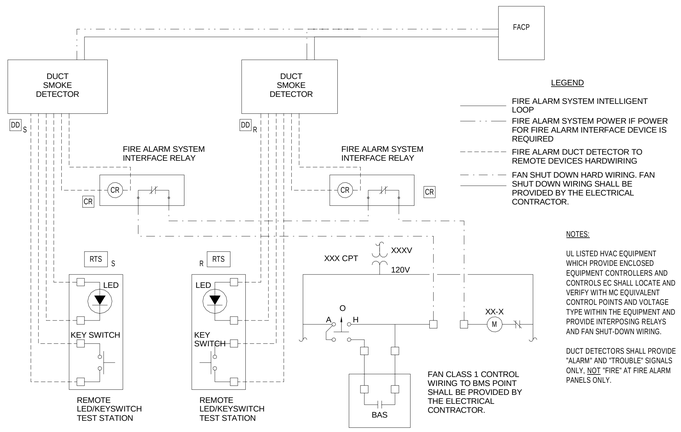
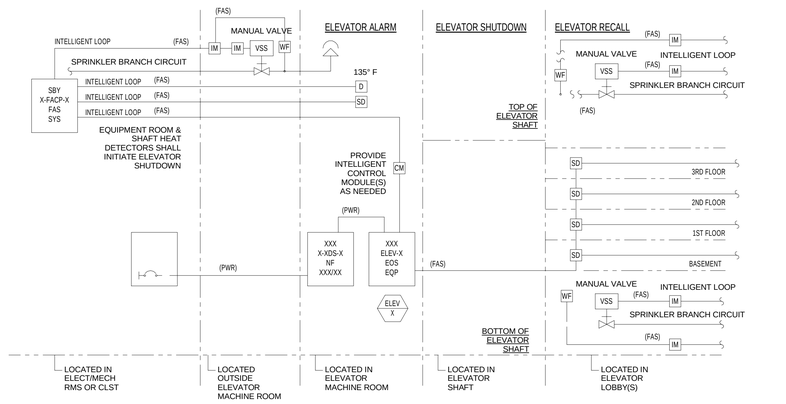


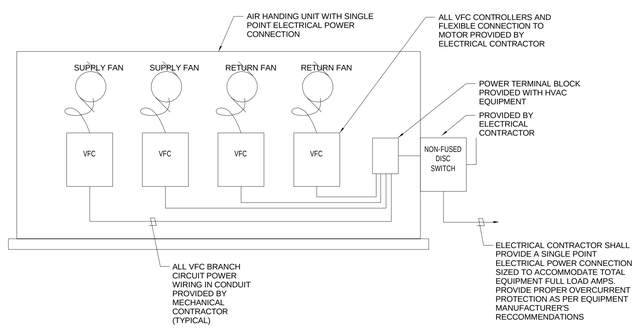
TYP FAS DUCT-SMOKE-DETECTORS INTERFACE

SCALE: N.T.S.



ELEVATOR SHUT-DOWN RECALL OVERRIDE SYSTEM EOS

SCALE: N.T.S.



TYPICAL AHU EQUIPMENT WITH MULTIPLE MOTORS DIAGRAM

SCALE: N.T.S.

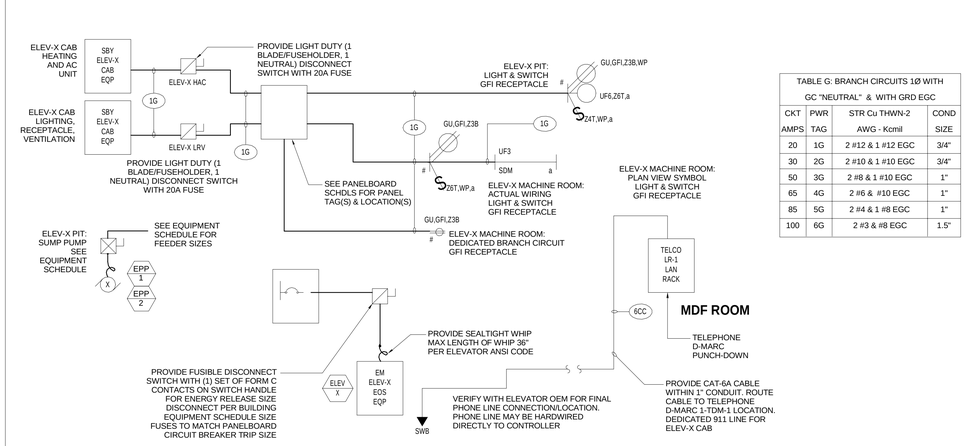


TABLE G: BRANCH CIRCUITS 1Ø WITH GC "NEUTRAL" & WITH GRD EGC			
CKT AMPS	PWR TAG	STR Cu THWN-2 AWG - Kcmil	COND SIZE
20	1G	2 #12 & 1 #12 EGC	3/4"
30	2G	2 #10 & 1 #10 EGC	3/4"
50	3G	2 #8 & 1 #10 EGC	1"
65	4G	2 #6 & #10 EGC	1"
85	5G	2 #4 & 1 #8 EGC	1"
100	6G	2 #3 & #8 EGC	1.5"

2 E5.02

ELEVATOR ANCILLARY POWER/CONTROL WIRING DETAIL

SCALE: N.T.S.

2

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MARK	DATE	DESCRIPTION
2	01.28.2014	Addendum 3
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THREE PHASE (Ø) AND SINGLE PHASE (Ø) POWER FEEDERS - BRANCH CIRCUITS - SERVICE ENTRANCE SCHEDULE

TABLE A: FEEDER-BRANCH CIRCUITS 3Ø 3W NO GC "NEUTRAL" AND WITH "GROUND" EGC				TABLE B: FEEDER-BRANCH CIRCUITS 3Ø 4W WITH GC "NEUTRAL" & "GROUND" EGC				TABLE C: FEEDER-BRANCH CIRCUITS 1Ø 2W NO GC "NEUTRAL" AND WITH GRD EGC				TABLE D: FEEDER-BRANCH CIRCUITS 1Ø 3W WITH GC "NEUTRAL" AND WITH GRD EGC				TABLE E: FEEDER/BRANCH CIRCUITS 3Ø 4W WITH 200% GC "NEUTRAL" & WITH GRD EGC				TABLE F: FEEDER/BRANCH CIRCUITS 1Ø 3W WITH 200% GC "NEUTRAL" & WITH "GRD" EGC				TABLE M: SERVICE ENTRANCE 3Ø 3W NO GC "NEUTRAL"			TABLE N: SERVICE ENTRANCE 3Ø 4W WITH GC "NEUTRAL"			TABLE O: SERVICE ENT 1Ø 3W WITH GC "NEUTRAL"		
CKT AMPS	PWR TAG	STR Cu THWN-2 OR XHHW-2 AWG - Kcmil	COND SIZE

MECHANICAL EQUIPMENT DIVISIONS 21-25 SCHEDULE No 1

CSI

STEP 1 CONFIRM FINAL LOCATION OF EQUIP WITH THE MECH DRWGS & OEM'S SHOPS PRIOR TO INSTALLING CONDUIT. SEE PWR DRWGS FOR EQUIP TAG LOCATIONS
STEP 2 REVIEW ARCH, KIT, MECH, PLBG, FIRE PROT SUBMITTALS-SHOP DRWGS FINAL EQP LOCATION, ELEVATION, & PWR REQUIREMENTS PRIOR TO INSTALLING CONDUIT
STEP 3 CONFIRM LOAD REQUIREMENTS WITH MECH'S OEM PRIOR TO INSTALLING CONDUIT SEE SCHDLE DRWGS FOR PANELBOARD FEEDER-BRANCH CIRCUIT NUMBERS
STEP 4 CONFIRM IN THE FIELD PNLBD-SWBD RATINGS WITH MECH'S OEM PRIOR TO INSTALLING CONDUITS. SEE PWR DRWGS FOR PNLBD-SWBD LOCATIONS
STEP 5 CONFIRM IN THE FIELD OCPD REQUIREMENTS WITH MECH'S OEM PRIOR TO INSTALLING CONDUIT. OCPD RATINGS DERIVED FROM MECH'S OEM'S SPECS OR MOTOR SIZING PER THE NEC
STEP 6 CONFIRM IN THE FIELD FEEDER-BRANCH CIRCUIT SIZING WITH MECH'S OEM PRIOR TO INSTALLING CONDUIT
STEP 7 SEE FEEDER-BRANCH CIRCUIT SCHDLE FOR TAG-WIRE SIZE
STEP 8 CONFIRM IN THE FIELD CONTACTOR-STARTER-VFC-PRMS-DS SW RATINGS WITH MECH'S OEM PRIOR TO INSTALLING CONDUIT
STEP 9 CONFIRM IN THE FIELD THERMAL OVERLOAD RATINGS WITH OEM PROVIDE OVERLOADS PER OEM SPECS
STEP 10 CONFIRM IN THE FIELD WITH OEM PRIOR TO INSTALLING CONDUIT LOCATE DISC SW SWITCH WITHIN 5FT & WITHIN SIGHT OF THE MOTOR-LISTED EQUIP
STEP 11 PROVIDE CONN TO MOTOR-LISTED EQUIP PROVIDE A Cu EQUIP GROUND (EGC) FROM DISC SW SWITCH TO MOTOR LE-EQUIP CONNECTION POINT-JUNCTION BOX.

FVNR FULL VOLT NON-REVERSING MAGNETIC STARTER
FVR FULL VOLT REVERSING MAGNETIC STARTER
VFC VARIABLE FREQUENCY CONTROLLER
PRMS PWR RELAY-MANUAL STRTR W- OVERLOADS
2SP1W TWO SPEED SINGLE WINDING FVNR MAG STRTR
2SP2W TWO SPEED TWO WINDING FVNR MAG STRTR
CPT CONTROL POWER TRANSFORMER
IMUC INTERNAL MOUNTED UNIT CONTROLLER
RMUC REMOTE MOUNTED UNIT CONTROLLER

PR POWER RELAY
TC TIME CLOCK CNTRLER
T-S TEMP-SENSOR SW
W-STAT WALL LINE VOLT STAT
WS WALL LINE VOLT SW
FB FURNISHED BY
IB INSTALLED BY
PB PROVIDED BY
FDR FEEDER CIRCUIT

EM EMERGENCY POWER
NML NORMAL POWER
SBY STANDBY POWER
NA NOT APPLICABLE
BRNCH BRANCH CIRCUIT
GC GENERAL CONTRACTOR
KC KITCHEN CONTRACTOR
MC MECHANICAL CONTRACTOR
PC PLUMBING CONTRACTOR

FPC FIRE PROTECT CONTRACTOR
OWN OWNER
CPC CORD-PLUG CONNECTION
FWC FLEXIBLE WHIP CONDUIT
HWC HARD WIRED CONN
ENC NEMA ENCLOSURE
LOC LOCKING
REC RECEPTACLE
OCPD OVERCURRENT PROTECT DEVICE
OEM ORIGINAL EQP MANUFACTURER

NOTES

1 PROVIDE RACKING FOR STRTR TYPES (FVNR, FVR, PRMS, 2SP1W, & 2SP2W)
PROVIDE THERMAL OVERLOADS PER OEM-FIELD VERIFICATION
PROVIDE TWO SETS FORM "C" AUX CONTACTS WITH STARTER
PROVIDE 120Vac CONTROL COILS FOR (FVNR, FVR, 2SP1W, & 2SP2W)
PROVIDE 24Vac CONTROL COIL FOR POWER RELAYS-MANUAL STRTR "PRMS"

2 PROVIDE RACKING FOR VARIABLE FEQUENCY CONTROLLER "VFC"
CALIBRATE OVERLOADS PER OEM-FIELD VERIFICATION RESULTS
PROVIDE FOUR SETS FORM "C" CONTACTS WITH VFC
PROVIDE OEM START-UP & COMMISSIONING PRIOR TO PUNCHLIST
PROVIDE WRITTEN VFC FIELD PROGRAMMED SETTINGS

3 DISC SW SHALL BE IN SIGHT OF MOTOR-EQP & SHALL NOT EXCEED MAX DIST OF 5FT FROM MOTOR-EQUIP MAX HEIGHT OF DISC SW SW HANDLE SHALL NOT EXCEED 6'-3"
PROVIDE SIX POLE DISC SW FOR TWO SPEED, ONE-TWO WINDING MOTORS
VERIFY WITH OEM IF MAX FUSE SIZE IS MARKED ON NAME PLATE IF SO THEN EC SHALL PROVIDE FUSE DS SWITCH WITH TD FUSE TRIP SIZE TO 150% OF THE FLA OF MOTOR - EQP

4 CONFIRM MOTOR ROTATION-OPERATION WITH OEM REP PRIOR TO ENERGIZING MOTOR
EQUIP PROVIDE GROUNDING-BONDING PER OEM SPECS EQP FLEX SHALL NOT EXCEED 72" MAX LENGTH CONFIRM CPC NEMA CONN WITH OEM

5 PROVIDE A 120VAC CIRCUIT TO EACH MECHANICAL EQUIPMENT (AHU,RTU, ERV, MAU, ETC.) FOR INTERNAL FAN HOUSING LIGHTING AND RECEPTACLE DEVICE CIRCUIT.

6 FED FROM LBC - EXISTING PANELBOARD IN EXISTING ELECTRICAL ROOM

7 EXHAUST FAN CONTROLLED VIA LIGHTING OCCUPANCY SENSOR WITH TIMING CONTROL

STEPS	1				2	3								4A	4B	5					6 & 7	8 & 9										10						11												12
ITEM	EQUIPMENT LOCATION - TAG - QUANTITY				EQUIPMENT UNIT NAME	EQUIPMENT POWER CHARACTERISTICS & LOAD SPECIFICATIONS								FEED PWR	FEED FROM	OCPD: SW-CB FRAME:FR FUSE-CB TRIP:TR					FDR BRNCH	MOTOR-LISTED EQP - CONTROLLER-STARTER TYPES & LOCATIONS MTR CONTROLLER - SWITCH RATING - OCPD TRIP SIZE										LOCAL DISCONNECT SWITCH FOR LOCAL LOCK-OUT & TAG-OUT						MOTOR-LISTED EQUIP CONN & OEM REQUIREMENTS CORD & PLUG REC OR FLEX WHIP FOR MOTOR OR SINGLE POINT CONN												REMARKS
No.	AREA #	NAME	TAG	No.	NAME - TAG - AREA - AREA #	V	Ø	N	G	PIN	W	HP	MCA	FLA	KW	SYS	PANEL	SW FR	FU TR	CB FR	CB TR	P	TAG	PB	FB	IB	ROOM	SIZE	TYPE	ENC	CPT	DS-SW	OCPD	P	NOTE	PB	FB	IB	SIZE	ENC	P	NOTE	PB	FB	IB	REC	LOC	NEMA	GFI	REC No	CPC	HWC	FWC	NOTE	
1		FIRST FLOOR	HP	1-1	HEAT PUMP HP-1-1 FIRST FLOOR	480	3	1	1	4	5	-	15.0	-	12.46	NML	2MP-1H	NA	NA	30	20	3	2B	EC	-	-		NA	RMUC	NA	NA	30	20	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
2		FIRST FLOOR	HP	1-2	HEAT PUMP HP-1-2 FIRST FLOOR	277	1	1	1	2	3	-	14.4	-	3.99	NML	2MP-1H	NA	NA	30	20	1	2G	EC	-	-		NA	RMUC	NA	NA	30	20	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
3		FIRST FLOOR	HP	1-3	HEAT PUMP HP-1-3 FIRST FLOOR	277	1	1	1	2	3	-	14.4	-	3.99	NML	2MP-1H	NA	NA	30	20	1	2G	EC	-	-		NA	RMUC	NA	NA	30	20	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
4		FIRST FLOOR	HP	1-4	HEAT PUMP HP-1-4 FIRST FLOOR	277	1	1	1	2	3	-	14.4	-	3.99	NML	2MP-1H	NA	NA	30	20	1	2G	EC	-	-		NA	RMUC	NA	NA	30	20	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
5		FIRST FLOOR	HP	1-5	HEAT PUMP HP-1-5 FIRST FLOOR	277	1	1	1	2	3	-	14.4	-	3.99	NML	2MP-1H	NA	NA	30	20	1	2G	EC	-	-		NA	RMUC	NA	NA	30	20	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
6		FIRST FLOOR	HP	1-6	HEAT PUMP HP-1-6 FIRST FLOOR	480	3	1	1	4	5	-	10.3	-	8.55	NML	2MP-1H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
7		FIRST FLOOR	HP	1-7	HEAT PUMP HP-1-7 FIRST FLOOR	480	3	1	1	4	5	-	10.3	-	8.55	NML	2MP-1H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
8		FIRST FLOOR	HP	1-8	HEAT PUMP HP-1-8 FIRST FLOOR	480	3	1	1	4	5	-	10.3	-	8.55	NML	2MP-1H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
9		FIRST FLOOR	HP	1-9	HEAT PUMP HP-1-9 FIRST FLOOR	480	3	1	1	4	5	-	15.0	-	12.46	NML	2MP-1H	NA	NA	30	20	3	2B	EC	-	-		NA	RMUC	NA	NA	30	20	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
10		FIRST FLOOR	HP	1-10	HEAT PUMP HP-1-10 FIRST FLOOR	480	3	1	1	4	5	-	8.6	-	7.14	NML	2MP-1H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
11		FIRST FLOOR	HP	1-11	HEAT PUMP HP-1-11 FIRST FLOOR	480	3	1	1	4	5	-	8.6	-	7.14	NML	2MP-1H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
12		FIRST FLOOR	HP	1-12	HEAT PUMP HP-1-12 FIRST FLOOR	480	3	1	1	4	5	-	8.9	-	7.39	NML	2MP-1H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
13		FIRST FLOOR	HP	1-13	HEAT PUMP HP-1-13 FIRST FLOOR	277	1	1	1	2	3	-	4.3	-	1.19	NML	2MP-1H	NA	NA	30	15	1	1G	EC	-	-		NA	RMUC	NA	NA	30	15	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
14		FIRST FLOOR	HP	1-14	HEAT PUMP HP-1-14 FIRST FLOOR	480	3	1	1	4	5	-	8.6	-	7.14	NML	2MP-1H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
15		SECOND FLOOR	HP	2-1	HEAT PUMP HP-2-1 SECOND FLOOR	480	3	1	1	4	5	-	8.6	-	7.14	NML	2MP-2H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
16		SECOND FLOOR	HP	2-2	HEAT PUMP HP-2-2 SECOND FLOOR	480	3	1	1	4	5	-	8.6	-	7.14	NML	2MP-2H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
17		SECOND FLOOR	HP	2-3	HEAT PUMP HP-2-3 SECOND FLOOR	277	1	1	1	2	3	-	14.4	-	3.99	NML	2MP-2H	NA	NA	30	20	1	2G	EC	-	-		NA	RMUC	NA	NA	30	20	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
18		SECOND FLOOR	HP	2-4	HEAT PUMP HP-2-4 SECOND FLOOR	480	3	1	1	4	5	-	12.7	-	10.55	NML	2MP-2H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
19		SECOND FLOOR	HP	2-5	HEAT PUMP HP-2-5 SECOND FLOOR	480	3	1	1	4	5	-	8.6	-	7.14	NML	2MP-2H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
20		SECOND FLOOR	HP	2-6	HEAT PUMP HP-2-6 SECOND FLOOR	480	3	1	1	4	5	-	7.6	-	6.31	NML	2MP-2H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
21		SECOND FLOOR	HP	2-7	HEAT PUMP HP-2-7 SECOND FLOOR	480	3	1	1	4	5	-	15.0	-	12.46	NML	2MP-2H	NA	NA	30	20	3	2B	EC	-	-		NA	RMUC	NA	NA	30	20	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
22		SECOND FLOOR	HP	2-8	HEAT PUMP HP-2-8 SECOND FLOOR	480	3	1	1	4	5	-	7.6	-	6.31	NML	2MP-2H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
23		SECOND FLOOR	HP	2-9	HEAT PUMP HP-2-9 SECOND FLOOR	480	3	1	1	4	5	-	7.6	-	6.31	NML	2MP-2H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
24		SECOND FLOOR	HP	2-10	HEAT PUMP HP-2-10 SECOND FLOOR	480	3	1	1	4	5	-	7.6	-	6.31	NML	2MP-2H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
25		SECOND FLOOR	HP	2-11	HEAT PUMP HP-2-11 SECOND FLOOR	480	3	1	1	4	5	-	10.3	-	8.55	NML	2MP-2H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
26		SECOND FLOOR	HP	2-12	HEAT PUMP HP-2-12 SECOND FLOOR	277	1	1	1	2	3	-	14.4	-	3.99	NML	2MP-2H	NA	NA	30	20	1	2G	EC	-	-		NA	RMUC	NA	NA	30	20	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
27		SECOND FLOOR	HP	2-13	HEAT PUMP HP-2-13 SECOND FLOOR	277	1	1	1	2	3	-	7.4	-	2.05	NML	2MP-2H	NA	NA	30	15	1	1G	EC	-	-		NA	RMUC	NA	NA	30	15	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
28		SECOND FLOOR	HP	2-14	HEAT PUMP HP-2-14 SECOND FLOOR	277	1	1	1	2	3	-	4.3	-	1.19	NML	2MP-2H	NA	NA	30	15	1	1G	EC	-	-		NA	RMUC	NA	NA	30	15	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
29		THIRD FLOOR	HP	3-1	HEAT PUMP HP-3-1 THIRD FLOOR	480	3	1	1	4	5	-	8.6	-	7.14	NML	2MP-3H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
30		THIRD FLOOR	HP	3-2	HEAT PUMP HP-3-2 THIRD FLOOR	277	1	1	1	2	3	-	14.4	-	3.99	NML	2MP-3H	NA	NA	30	20	1	2G	EC	-	-		NA	RMUC	NA	NA	30	20	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
31		THIRD FLOOR	HP	3-3	HEAT PUMP HP-3-3 THIRD FLOOR	480	3	1	1	4	5	-	10.3	-	8.55	NML	2MP-3H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
32		THIRD FLOOR	HP	3-4	HEAT PUMP HP-3-4 THIRD FLOOR	480	3	1	1	4	5	-	7.6	-	6.31	NML	2MP-3H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
33		THIRD FLOOR	HP	3-5	HEAT PUMP HP-3-5 THIRD FLOOR	277	1	1	1	2	3	-	4.3	-	1.19	NML	2MP-3H	NA	NA	30	15	1	1G	EC	-	-		NA	RMUC	NA	NA	30	15	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
34		THIRD FLOOR	HP	3-6	HEAT PUMP HP-3-6 THIRD FLOOR	480	3	1	1	4	5	-	15.0	-	12.46	NML	2MP-3H	NA	NA	30	20	3	2B	EC	-	-		NA	RMUC	NA	NA	30	20	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
35		THIRD FLOOR	HP	3-7	HEAT PUMP HP-3-7 THIRD FLOOR	480	3	1	1	4	5	-	15.0	-	12.46	NML	2MP-3H	NA	NA	30	20	3	2B	EC	-	-		NA	RMUC	NA	NA	30	20	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
36		THIRD FLOOR	HP	3-8	HEAT PUMP HP-3-8 THIRD FLOOR	480	3	1	1	4	5	-	10.3	-	8.55	NML	2MP-3H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
37		THIRD FLOOR	HP	3-9	HEAT PUMP HP-3-9 THIRD FLOOR	480	3	1	1	4	5	-	10.3	-	8.55	NML	2MP-3H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
38		THIRD FLOOR	HP	3-10	HEAT PUMP HP-3-10 THIRD FLOOR	480	3	1	1	4	5	-	8.6	-	7.14	NML	2MP-3H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
39		THIRD FLOOR	HP	3-11	HEAT PUMP HP-3-11 THIRD FLOOR	480	3	1	1	4	5	-	8.6	-	7.14	NML	2MP-3H	NA	NA	30	15	3	2B	EC	-	-		NA	RMUC	NA	NA	30	15	3	1	EC	-	-	30	1	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
40		BASEMENT	HP	0-1	HEAT PUMP HP-0-1 BASEMENT	277	1	1	1	2	3	-	4.3	-	1.19	NML	2MP-1H	NA	NA	30	15	1	1G	EC	-	-		NA	RMUC	NA	NA	30	15	1	1	EC	-	-	30	1	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	1
41		MECH 700	BWP	1	BOILER WATER PUMP BWP-1 MECH 700	480	3	1	1	4	5	3/4	-	1.6	1.33	NML	2MP-1HA	NA	NA	30	15	3	2B	EC	-	-		1	FVNR	3R	100	30	15	3	1	EC	-	-	30	3R	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
42		MECH 700	BWP	2	BOILER WATER PUMP BWP-2 MECH 700	480	3	1	1	4	5	3/4	-	1.6	1.33	NML	2MP-1HA	NA	NA	30	15	3	2B	EC	-	-		1	FVNR	3R	100	30	15	3	1	EC	-	-	30	3R	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
43		MECH 700	GLP	1	GROUND LOOP PUMP GLP-1 MECH 700	480	3	1	1	4	5	20	-	27.0	22.42	NML	2MP-1HA	NA	NA	60	60	3	4B	EC	-	-		2	VFC	3R	150	60	60	3	2	EC	-	-	60	3R	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
44		MECH 700	GLP	2	GROUND LOOP PUMP GLP-2 MECH 700	480	3	1	1	4	5	20	-	27.0	22.42	NML	2MP-1HA	NA	NA	60	60	3	4B	EC	-	-		2	VFC	3R	150	60	60	3	2	EC	-	-	60	3R	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
45		BASEMENT	B	1	BOILER B-1 BASEMENT	120	1	1	1	2	3	-	8.8	-	1.06	NML	2MP-1L	NA	NA	30	15	1	1G	EC	-	-		NA	PRMS	NA	NA	30	15	1	1	EC	-	-	30	3R	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
46		BASEMENT	B	2	BOILER B-2 BASEMENT	120	1	1	1	2	3	-	8.8	-	1.06	NML	2MP-1L	NA	NA	30	15	1	1G	EC	-	-		NA	PRMS	NA	NA	30	15	1	1	EC	-	-	30	3R	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
47		ROOF	EF	1	EXHAUST FAN EF-1 ROOF	120	1	1	1	2	3	1/2	-	9.8	1.18	NML	2MP-1L	NA	NA	30	20	1	2G	EC	-	-		1	PRMS	3R	NA	30	20	1	1	EC	-	-	30	3R	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
48		ROOF	SEF	1	SMOKE EXHAUST FAN SEF-1 ROOF	480	3	1	1	4	5	2	-	3.4	2.82	EM	2EQ-H	NA	NA	30	15	3	2B	EC	-	-		1	FVNR	3R	NA	30	15	3	1	EC	-	-	30	3R	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
49		FIRST FLOOR	EWC	1	ELECT WATER COOLER EWC-1 FIRST FLOOR	120	1	1	1	2	3	-	4.6	-	0.55	NML	2RP-1A	NA	NA	30	20	1	2G	EC	-	-		NA	IMUC	NA	NA	30	20	1	-	EC	-	-	30	1	1	3	EC	-	-	YES	NA	5-20R	YES	DUPLEX	YES	NA	NA	4	
50		SECOND FLOOR	EWC	2	ELECT WATER COOLER EWC-2 SECOND FLOOR	120	1	1	1	2	3	-	4.6	-	0.55	NML	2RP-2A	NA	NA	30	20	1	2G	EC	-	-		NA	IMUC	NA	NA	30	20	1	-	EC	-	-	30	1	1	3	EC	-	-	YES	NA	5-20R	YES	DUPLEX	YES	NA	NA	4	
51		THIRD FLOOR	EWC	3	ELECT WATER COOLER EWC-3 THIRD FLOOR	120	1	1	1	2	3	-	4.6	-	0.55	NML	2RP-3A	NA	NA	30	20	1	2G	EC	-	-		NA	IMUC	NA	NA	30	20	1	-	EC	-	-	30	1	1	3	EC	-	-	YES	NA	5-20R	YES	DUPLEX	YES	NA	NA	4	
52		MECH 700	WH	1	WATER HEATER WH-1 MECH 700	120	1	1	1	2	3	-	5.0	-	0.60	NML	2MP-1L	NA	NA	30	15	1	1G	EC	-	-		NA	IMUC	NA	NA	30	15	1	-	EC	-	-	30	3R	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
53		MECH 700	WH	2	WATER HEATER WH-2 MECH 700	120	1	1	1	2	3	-	5.0	-	0.60	NML	2MP-1L	NA	NA	30	15	1	1G	EC	-	-		NA	IMUC	NA	NA	30	15	1	-	EC	-	-	30	3R	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
54		MECH 700	SE	1	SEWAGE EJECTOR PUMP SE-1 MECH 700	120	1	1	1	2	3	-	32.0	-	3.84	EM	2EQ-LA	NA	NA	60	45	1	3G	EC	-	-		NA	RMUC	3R	NA	60	45	1	1	EC	-	-	60	3R	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
55		BASEMENT	SP	1	SUMP PUMP SP-1 BASEMENT	208	3	1	1	4	5	-	19.2	-	6.91	EM	2EQ-LA	NA	NA	30	30	3	2B	EC	-	-		NA	RMUC	4	NA	30	30	3	1	EC	-	-	30	3R	3	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	1
56		BASEMENT	GFS	1	GLYCOL FILL STATION GFS-1 BASEMENT	120	1	1	1	2	3	1/3	-	7.2	0.86	NML	2MP-1L	NA	NA	30	15	1	1G	EC	-	-		1	RMUC	3R	100	30	15	1	1	EC	-	-	30	3R	1	3	EC	-	-	NA	-	NA	NA	NA	NA	YES	YES	4	
57		BASEMENT	DOA	1	AIR HANDLING UNIT DOA-1 BASEMENT	480	3	1	1	4	5	-	103.0	-	85.53	NML	2MP-1HA	NA	NA	200	125	3	8B	EC	-	-		NA	VFC	3R	150	200	125	3	2	EC	-	-	200	3R	3	3	EC	-

PANELBOARD SCHEDULE 2EQ-H

LOCATION: ELECTRICAL ROOM
SERVICE: 277/480V-3PH-3W — 480 V
MAIN CIRCUIT BREAKER: 200A
MAIN BUS RATING AND TYPE: 250A COPPER
INTERRUPT RATING: 42,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

	DESCRIPTION	CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.		DESCRIPTION
M	PANEL "2EQ-LA" VIA T-2EQL	1	70A-3P	15318	26391			11073	100A-3P	2	M	ELEV-1
M	-	3	-	9778		20851		11073	-	4	M	-
M	-	5	-	9873			20946	11073	-	6	M	-
	SPARE	7	20A-1P		940			940	15A-3P	8	M	SEF-1
	SPARE	9	20A-1P			940		940	-	10	M	-
	SPARE	11	20A-1P				940	940	-	12	M	-
	SPARE	13	20A-1P		0				20A-1P	14		SPARE
	SPARE	15	20A-1P			0			20A-1P	16		SPARE
	SPARE	17	20A-1P				0		20A-1P	18		SPARE
	SPARE	19	20A-1P		0				20A-1P	20		SPARE
	SPARE	21	20A-1P			0			20A-1P	22		SPARE
	SPARE	23	20A-1P				0		20A-1P	24		SPARE
					27331	21791	21886					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	0.00	KVA	0.50	0.00	KVA
M	MOTOR / EQUIP.	71.01	KVA	0.80	56.81	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA

TOTAL CONNECTED LOAD: 71.01 KVA
TOTAL DEMAND LOAD: 56.8 KVA
TOTAL DEMAND CURRENT: 68.33 AMPS

PANELBOARD SCHEDULE 2ELS

LOCATION: ELECTRICAL ROOM
SERVICE: 120/208V-3PH-4W — 208 V
MAIN CIRCUIT BREAKER: 100A
MAIN BUS RATING AND TYPE: 100A COPPER
INTERRUPT RATING: 42,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

	DESCRIPTION	CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.		DESCRIPTION
L	BASEMENT-BATTERY PACKS	1	20A-1P	125	275			150	20A-1P	2	L	EXIT SIGNS
L	FIRST FLOOR CORRIDOR: LOBBY	3	20A-1P	358		1158		800	20A-1P	4	L	STAIR ONE-ALL FLOORS
L	STAIR 2-ALL FLOORS	5	20A-1P	320			580	260	20A-1P	6	L	EXTERIOR EM
L	SECOND FLOOR CORRIDORS	7	20A-1P	340	588			248	20A-1P	8	L	THIRD FLOOR CORRIDORS
	SPARE	9	20A-1P			0			20A-1P	10		SPARE
	SPARE	11	20A-1P				0		20A-1P	12		SPARE
	SPARE	13	20A-1P		0				20A-1P	14		SPARE
	SPARE	15	20A-1P			0			20A-1P	16		SPARE
	SPARE	17	20A-1P				0		20A-1P	18		SPARE
	SPARE	19	20A-1P		0				20A-1P	20		SPARE
	SPARE	21	20A-1P			0			20A-1P	22		SPARE
	SPARE	23	20A-1P				0		20A-1P	24		SPARE
					863	1158	580					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	2.60	KVA	1.00	2.60	KVA
R	RECEPTACLES	0.00	KVA	0.50	0.00	KVA
M	MOTOR / EQUIP.	0.00	KVA	1.00	0.00	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA

TOTAL CONNECTED LOAD: 2.60 KVA
TOTAL DEMAND LOAD: 2.6 KVA
TOTAL DEMAND CURRENT: 7.22 AMPS

PANELBOARD SCHEDULE 2EQ-LA

LOCATION: ELECTRICAL ROOM
SERVICE: 120/208V-3PH-4W — 208 V
MAIN CIRCUIT BREAKER: 150A
MAIN BUS RATING AND TYPE: 225A COPPER
INTERRUPT RATING: 22,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

	DESCRIPTION	CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.		DESCRIPTION
M	SE-1	1	45A-1P	3840	12080			8240	100A-3P	2	R	2EQ-LITA
	SPARE	3	20A-1P			4140		4140	-	4	R	-
M	SP-1	5	30A-3P	2303			7323	5020	-	6	R	-
M	-	7	-	2303	2303				20A-1P	8		SPARE
M	-	9	-	2303		2303			20A-1P	10		SPARE
M	AC-1	11	15A-2P	75			75		20A-1P	12		SPARE
M	-	13	-	75	75				20A-1P	14		SPARE
M	CU-1	15	40A-2P	2475		2475			20A-1P	16		SPARE
M	-	17	-	2475			2475		20A-1P	18		SPARE
M	DV-1	19	15A-1P	860	860				20A-1P	20		SPARE
M	RCP-1	21	15A-1P	860		860			20A-1P	22		SPARE
	SPARE	23	20A-1P				0		20A-1P	24		SPARE
	SPARE	25	20A-1P		0				20A-1P	26		SPARE
	SPARE	27	20A-1P			0			20A-1P	28		SPARE
	SPARE	29	20A-1P				0		20A-1P	30		SPARE
	SPARE	31	20A-1P		0				20A-1P	32		SPARE
	SPARE	33	20A-1P			0			20A-1P	34		SPARE
	SPARE	35	20A-1P				0		20A-1P	36		SPARE
	SPARE	37	20A-1P		0				20A-1P	38		SPARE
	SPARE	39	20A-1P			0			20A-1P	40		SPARE
	SPARE	41	20A-1P				0		20A-1P	42		SPARE
					15318	9778	9873					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	17.40	KVA	0.50	8.70	KVA
M	MOTOR / EQUIP.	17.57	KVA	0.80	14.06	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA

TOTAL CONNECTED LOAD: 34.97 KVA
TOTAL DEMAND LOAD: 22.8 KVA
TOTAL DEMAND CURRENT: 63.16 AMPS

PANELBOARD SCHEDULE 2MP-1H

LOCATION: ELECTRICAL ROOM
SERVICE: 277/480V-3PH-4W — 480 V
MAIN CIRCUIT BREAKER: MAIN LUGS ONLY
MAIN BUS RATING AND TYPE: 250A COPPER
INTERRUPT RATING: 42,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

	DESCRIPTION	CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.		DESCRIPTION
H	HP-1-1	1	20A-3P	4153	6533			2380	15A-3P	2	H	HP-1-10
H	-	3	-	4153		6533		2380	-	4	H	-
H	-	5	-	4153			6533	2380	-	6	H	-
H	HP-1-2	7	20A-1P	4000	6380			2380	15A-3P	8	H	HP-1-11
H	HP-1-3	9	20A-1P	4000		6380		2380	-	10	H	-
H	HP-1-4	11	20A-1P	4000			6380	2380	-	12	H	-
H	HP-1-5	13	20A-1P	4000	6463			2463	15A-3P	14	H	HP-1-12
H	HP-1-6	15	15A-3P	2850		5313		2463	-	16	H	-
H	-	17	-	2850			5313	2463	-	18	H	-
H	-	19	-	2850	5230			2380	15A-3P	20	H	HP-1-14
H	HP-1-7	21	15A-3P	2850		5230		2380	-	22	H	-
H	-	23	-	2850			5230	2380	-	24	H	-
H	-	25	-	2850	4040			1190	15A-1P	26	H	HP-1-15
H	HP-1-8	27	15A-3P	2850		2850			20A-1P	28		SPARE
H	-	29	-	2850			2850		20A-1P	30		SPARE
H	-	31	-	2850	2850				20A-1P	32		SPARE
H	HP-1-9	33	20A-3P	4153		4153			20A-1P	34		SPARE
H	-	35	-	4153			4153		20A-1P	36		SPARE
H	-	37	-	4153	8438			4285	45A-3P	38	M	PANEL "2MP-1L" VIA T-2MP1L
H	HP-1-13	39	15A-1P	1190		7145		5955	-	40	M	-
H	HP-0-1	41	15A-1P	1190			5230	4040	-	42	M	-
					39934	37604	35689					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	0.00	KVA	0.50	0.00	KVA
M	MOTOR / EQUIP.	14.28	KVA	0.80	11.42	KVA
H	ELECTRIC HEAT	98.95	KVA	1.00	98.95	KVA

TOTAL CONNECTED LOAD: 113.23 KVA
TOTAL DEMAND LOAD: 110.4 KVA
TOTAL DEMAND CURRENT: 132.76 AMPS

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Scale: NTS

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ELECTRICAL SCHEDULES

E503

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PANELBOARD SCHEDULE 2MP-2H

LOCATION: SECOND FLOOR
SERVICE: 277/480V-3PH-4W — 480 V — NEUTRAL BUS: STANDARD, COPPER
MAIN CIRCUIT BREAKER: MAIN LUGS ONLY — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 250A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 42,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
H	HP-2-1	1	15A-3P	2380	4483			2103	15A-3P	2	H	HP-2-8
H	-	3	-	2380		4483		2103	-	4	H	-
H	-	5	-	2380			4483	2103	-	6	H	-
H	HP-2-2	7	15A-3P	2380	4483			2103	15A-3P	8	H	HP-2-9
H	-	9	-	2380		4483		2103	-	10	H	-
H	-	11	-	2380			4483	2103	-	12	H	-
H	HP-2-3	13	20A-1P	4000	6103			2103	15A-3P	14	H	HP-2-10
H	HP-2-4	15	15A-3P	3517		5620		2103	-	16	H	-
H	-	17	-	3517			5620	2103	-	18	H	-
H	-	19	-	3517	6367			2850	15A-3P	20	H	HP-2-11
H	HP-2-5	21	15A-3P	2380		5230		2850	-	22	H	-
H	-	23	-	2380			5230	2850	-	24	H	-
H	-	25	-	2380	6380			4000	20A-1P	26	H	HP-2-12
H	HP-2-6	27	15A-3P	2103		4153		2050	15A-1P	28	H	HP-2-13
H	-	29	-	2103			3293	1190	15A-1P	30	H	HP-2-14
H	-	31	-	2103	2103				20A-1P	32		SPARE
H	HP-2-7	33	20A-3P	4153		4153			20A-1P	34		SPARE
H	-	35	-	4153			4153		20A-1P	36		SPARE
H	-	37	-	4153	4153				20A-1P	38		SPARE
	SPARE	39	20A-1P			0			20A-1P	40		SPARE
	SPARE	41	20A-1P				0		20A-1P	42		SPARE
					34072	28122	27262					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	0.00	KVA	0.50	0.00	KVA
M	MOTOR / EQUIP.	0.00	KVA	0.80	0.00	KVA
H	ELECTRIC HEAT	89.46	KVA	1.00	89.46	KVA

TOTAL CONNECTED LOAD: 89.46 KVA — TOTAL DEMAND LOAD: 89.5 KVA
TOTAL DEMAND CURRENT: 107.60 AMPS

PANELBOARD SCHEDULE 2RDP

LOCATION: ELECTRICAL ROOM
SERVICE: 120/208V-3PH-4W — 208 V — NEUTRAL BUS: STANDARD, COPPER
MAIN CIRCUIT BREAKER: 500A — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 600A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 42,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
R	2RP-1A	1	150A-3P	8130	17100			8970	150A-3P	2	R	2RP-1B
R	-	3	-	8620		18360		9740	-	4	R	-
R	-	5	-	6775			14145	7370	-	6	R	-
R	2RP-2A	7	150A-3P	8315	13595			5280	150A-3P	8	R	2RP-2B
R	-	9	-	7920		13160		5240	-	10	R	-
R	-	11	-	8880			13520	4640	-	12	R	-
R	2RP-3A	13	150A-3P	7460	7460				100A-3P	14		SPARE
R	-	15	-	6680		6680			-	16		-
R	-	17	-	7335			7335		-	18		-
R	2RP-0A	19	100A-3P	4880	4880					20		3P SPACE
R	-	21	-	4000		4000				22		-
R	-	23	-	5280			5280			24		-
	SPARE	25	100A-3P		0					26		3P SPACE
	-	27	-			0				28		-
	-	29	-				0			30		-
	SPARE	31	100A-3P		0					32		3P SPACE
	-	33	-			0				34		-
	-	35	-				0			36		-
	SPARE	37	100A-3P		0					38		3P SPACE
	-	39	-			0				40		-
	-	41	-				0			42		-
					43035	42200	40280					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	125.52	KVA	0.50	62.76	KVA
M	MOTOR / EQUIP.	0.00	KVA	0.80	0.00	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA

TOTAL CONNECTED LOAD: 125.52 KVA — TOTAL DEMAND LOAD: 62.8 KVA
TOTAL DEMAND CURRENT: 174.20 AMPS

PANELBOARD SCHEDULE 2MP-3H

LOCATION: THIRD FLOOR
SERVICE: 277/480V-3PH-4W — 480 V — NEUTRAL BUS: STANDARD, COPPER
MAIN CIRCUIT BREAKER: MAIN LUGS ONLY — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 250A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 42,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
H	HP-3-1	1	15A-3P	2380	5230			2850	15A-3P	2	H	HP-3-9
H	-	3	-	2380		5230		2850	-	4	H	-
H	-	5	-	2380			5230	2850	-	6	H	-
H	HP-3-2	7	20A-1P	4000	6380			2380	15A-3P	8	H	HP-3-10
H	HP-3-3	9	15A-3P	2850		5230		2380	-	10	H	-
H	-	11	-	2850			5230	2380	-	12	H	-
H	-	13	-	2850	5230			2380	15A-3P	14	H	HP-3-11
H	HP-3-4	15	15A-3P	2103		4483		2380	-	16	H	-
H	-	17	-	2103			4483	2380	-	18	H	-
H	-	19	-	2103	2770			667	15A-3P	20	H	ECH-4
H	HP-3-5	21	15A-1P	1190		1857		667	-	22	H	-
H	HP-3-6	23	20A-3P	4153			4820	667	-	24	H	-
H	-	25	-	4153	4820			667	15A-3P	26	H	ECH-5
H	-	27	-	4153		4820		667	-	28	H	-
H	HP-3-7	29	20A-3P	4153			4820	667	-	30	H	-
H	-	31	-	4153	4153				20A-1P	32		SPARE
H	-	33	-	4153		4153			20A-1P	34		SPARE
H	HP-3-8	35	15A-3P	2850			2850		20A-1P	36		SPARE
H	-	37	-	2850	2850				20A-1P	38		SPARE
H	-	39	-	2850		2850			20A-1P	40		SPARE
	SPARE	41	20A-1P				0		20A-1P	42		SPARE
					31433	28623	27433					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	0.00	KVA	0.50	0.00	KVA
M	MOTOR / EQUIP.	0.00	KVA	0.80	0.00	KVA
H	ELECTRIC HEAT	87.49	KVA	1.00	87.49	KVA

TOTAL CONNECTED LOAD: 87.49 KVA — TOTAL DEMAND LOAD: 87.5 KVA
TOTAL DEMAND CURRENT: 105.24 AMPS

PANELBOARD SCHEDULE 2LP-1A

LOCATION: 1ST FLOOR
SERVICE: 120/208V-3PH-4W — 208 V — NEUTRAL BUS: STANDARD, COPPER
MAIN LUGS ONLY: 100A — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 100A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 22,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
L	BASEMENT	1	20A-1P	1056	2256			1200	20A-1P	2	L	ROOM 109
L	ROOMS 107A, 107B	3	20A-1P	560		1070		510	20A-1P	4	L	ROOM 111
L	ROOMS 112,110,108	5	20A-1P	955			1167	212	20A-1P	6	L	ROOMS 132,133, 105
L	ROOMS 106,104,102A	7	20A-1P	784	1344			560	20A-1P	8	L	ROOM 103
L	ROOM 101	9	20A-1P	336		1768		1432	20A-1P	10	L	CORRIDORS AND LOBBY VIA ASCO RELAY PANEL
L	VESTIBULES VIA ASCO RELAY PANEL	11	20A-1P	120			548	428	20A-1P	12	L	CANOPY AND BUILDING MOUNTED VIA ASCO RELAY PANEL
L	SITE LIGHTING VIA ASCO RELAY PANEL	13	20A-1P	1401	1401				20A-1P	14		SPARE
	SPARE	15	20A-1P			0			20A-1P	16		SPARE
	SPARE	17	20A-1P				0		20A-1P	18		SPARE
	SPARE	19	20A-1P		0				20A-1P	20		SPARE
	SPARE	21	20A-1P			0			20A-1P	22		SPARE
L	ASCO 917 CONTACTOR	23	20A-1P	1000			1000		20A-1P	24		SPARE
					5001	2838	2715					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	10.13	KVA	1.00	10.13	KVA
R	RECEPTACLES	0.00	KVA	0.50	0.00	KVA
M	MOTOR / EQUIP.	0.00	KVA	1.00	0.00	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA

TOTAL CONNECTED LOAD: 10.13 KVA — TOTAL DEMAND LOAD: 10.1 KVA
TOTAL DEMAND CURRENT: 28.11 AMPS

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ELECTRICAL SCHEDULES

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PANELBOARD SCHEDULE 2LP-2A

LOCATION: 2ND FLOOR
SERVICE: 120/208V-3PH-4W — 208 V — NEUTRAL BUS: STANDARD, COPPER
MAIN LUGS ONLY: 100A — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 100A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 22,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
L	ROOM 229	1	20A-1P	560	1232			672	20A-1P	2	L	ROOM 224
L	ROOM 227	3	20A-1P	910		1889		979	20A-1P	4	L	ROOM 222
L	ROOM 225	5	20A-1P	280			492	212	20A-1P	6	L	ROOM 232,233,223
L	ROOM 221	7	20A-1P	616	1314			698	20A-1P	8	L	ROOM 219
L	ROOM 217,215	9	20A-1P	280		1120		840	20A-1P	10	L	ROOM 213,211,209,207,205,203,201
L	ROOM 200	11	20A-1P	400			1592	1192	20A-1P	12	L	ROOM 202,204,206,208,210,212,214,216,218,220
L	CORRIDORS VIA ASCO RELAY PANEL	13	20A-1P	1324	1324				20A-1P	14		SPARE
	SPARE	15	20A-1P			0			20A-1P	16		SPARE
	SPARE	17	20A-1P				0		20A-1P	18		SPARE
	SPARE	19	20A-1P		0				20A-1P	20		SPARE
	SPARE	21	20A-1P			0			20A-1P	22		SPARE
L	ASCO 917 CONTACTOR	23	20A-1P	1000			1000		20A-1P	24		SPARE
					3870	3009	3084					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	9.96	KVA	1.00	9.96	KVA
R	RECEPTACLES	0.00	KVA	0.50	0.00	KVA
M	MOTOR / EQUIP.	0.00	KVA	1.00	0.00	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
	TOTAL CONNECTED LOAD:	9.96	KVA	TOTAL DEMAND LOAD:	10.0	KVA
				TOTAL DEMAND CURRENT:	27.66	AMPS

PANELBOARD SCHEDULE 2LP-3A

LOCATION: 3RD FLOOR
SERVICE: 120/208V-3PH-4W — 208 V — NEUTRAL BUS: STANDARD, COPPER
MAIN LUGS ONLY: 100A — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 100A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 22,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
L	ROOM 317	1	20A-1P	672	1344			672	20A-1P	2	L	ROOM 318
L	ROOM 315	3	20A-1P	880		1104		224	20A-1P	4	L	ROOM 316
L	ROOM 314	5	20A-1P	448			896	448	20A-1P	6	L	ROOM 308,310,312
L	ROOM 332,333	7	20A-1P	244	1028			784	20A-1P	8	L	ROOM 303
L	ROOM 306,304,731	9	20A-1P	424		1208		784	20A-1P	10	L	ROOM 300
L	CORRIDOR VIA ASCO RELAY PANEL	11	20A-1P				300	300	20A-1P	12	L	ROOM 300
	SPARE	13	20A-1P		0				20A-1P	14		SPARE
	SPARE	15	20A-1P			0			20A-1P	16		SPARE
	SPARE	17	20A-1P				0		20A-1P	18		SPARE
	SPARE	19	20A-1P		0				20A-1P	20		SPARE
	SPARE	21	20A-1P			0			20A-1P	22		SPARE
L	ASCO 917 CONTACTOR	23	20A-1P	1000			1000		20A-1P	24		SPARE
					2372	2312	2196					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	6.88	KVA	1.00	6.88	KVA
R	RECEPTACLES	0.00	KVA	0.50	0.00	KVA
M	MOTOR / EQUIP.	0.00	KVA	1.00	0.00	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
	TOTAL CONNECTED LOAD:	6.88	KVA	TOTAL DEMAND LOAD:	6.9	KVA
				TOTAL DEMAND CURRENT:	19.10	AMPS

PANELBOARD SCHEDULE 2LDP

LOCATION: ELECTRICAL ROOM
SERVICE: 120/208V-3PH-4W — 208 V — NEUTRAL BUS: STANDARD, COPPER
MAIN CIRCUIT BREAKER: 150A — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 225A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 42,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
L	2LP-1A	1	100A-3P	5001	7373			2372	100A-3P	2	L	2LP-3A
L	-	3	-	2838		5150		2312	-	4	L	-
L	-	5	-	2715			4911	2196	-	6	L	-
L	2LP-2A	7	100A-3P	3870	3870				100A-3P	8		SPARE
L	-	9	-	3009		3009			-	10		-
L	-	11	-	3084			3084		-	12		-
	SPARE	13	100A-3P		0				100A-3P	14		SPARE
	-	15	-			0			-	16		-
	-	17	-				0		-	18		-
					11243	8159	7995					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	27.40	KVA	1.00	27.40	KVA
R	RECEPTACLES	0.00	KVA	0.50	0.00	KVA
M	MOTOR / EQUIP.	0.00	KVA	1.00	0.00	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
	TOTAL CONNECTED LOAD:	27.40	KVA	TOTAL DEMAND LOAD:	27.4	KVA
				TOTAL DEMAND CURRENT:	76.05	AMPS

PANELBOARD SCHEDULE 2RP-1A

LOCATION: 1ST FLOOR
SERVICE: 120/208V-3PH-4W — 208 V — NEUTRAL BUS: STANDARD, COPPER
MAIN LUGS ONLY: 225A — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 225A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 22,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
R	GFI RECEPTACLE 109	1	20A-1P	1200	1920			720	20A-1P	2	R	RECEPTACLES 103
R	GFI RECEPTACLE 109	3	20A-1P	1200		1700		500	20A-1P	4	R	RECEPTACLES 103
R	RECEPTACLES 109	5	20A-1P	800			1550	750	20A-1P	6	R	RECEPTACLES 103
R	RECEPTACLES 109	7	20A-1P	540	1080			540	20A-1P	8	R	RECEPTACLES 103
R	RECEPTACLES 109	9	20A-1P	360		1440		1080	20A-1P	10	R	RECEPTACLES 103A, 105, CORR. 710
R	RECEPTACLE 109	11	20A-1P	360			900	540	20A-1P	12	R	RECEPTACLES 101
R	RECEPTACLES 109	13	20A-1P	500	1040			540	20A-1P	14	R	RECEPTACLES 101
R	RECEPTACLES 107B	15	20A-1P	360		900		540	20A-1P	16	R	RECEPTACLES 101
R	RECEPTACLES 107B	17	20A-1P	360			720	360	20A-1P	18	R	RECEPTACLES 101
R	RECEPTACLES 107B	19	20A-1P	540	1400			860	20A-1P	20	R	RECEPTACLES 101
R	RECEPTACLES 107B	21	20A-1P	540		1080		540	20A-1P	22	R	EXTERIOR RECEPTACLE
R	RECEPTACLES 107B	23	20A-1P	540			1095	555	20A-1P	24	R	EWC-1
R	RECEPTACLES 107B	25	20A-1P	1000	1400			400	20A-1P	26	R	PLUMBING FIXTURES POWER
R	RECEPTACLE 107B	27	30A-2P	1250		1250			20A-1P	28		SPARE
R	-	29	-	1250			1250		20A-1P	30		SPARE
R	RECEPTACLE 107B	31	20A-2P	750	750				20A-1P	32		SPARE
R	-	33	-	750		750			20A-1P	34		SPARE
R	RECEPTACLES 107A	35	20A-1P	540			540		20A-1P	36		SPARE
R	RECEPTACLES CORRIDOR 711	37	20A-1P	540	540				20A-1P	38		SPARE
R	GFI RECEPTACLES 132, 133	39	20A-1P	1500		1500			20A-1P	40		SPARE
R	RECEPTACLES 103	41	20A-1P	720			720		20A-1P	42		SPARE
					8130	8620	6775					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	23.53	KVA	0.50	11.76	KVA
M	MOTOR / EQUIP.	0.00	KVA	0.80	0.00	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
	TOTAL CONNECTED LOAD:	23.53	KVA	TOTAL DEMAND LOAD:	11.8	KVA
				TOTAL DEMAND CURRENT:	32.65	AMPS

PANELBOARD SCHEDULE 2RP-1B

LOCATION: 1ST FLOOR
SERVICE: 120/208V-3PH-4W — 208 V — NEUTRAL BUS: STANDARD, COPPER
MAIN LUGS ONLY: 225A — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 225A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 22,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
R	RECEPTACLES 111	43	20A-1P	540	1540			1000	20A-1P	44	R	WORK ROOM 104
R	RECEPTACLES 111	45	20A-1P	360		1360		1000	20A-1P	46	R	WORK ROOM 104
R	RECEPTACLES 108, 110, 112, CORR. 710	47	20A-1P	1200			2200	1000	20A-1P	48	R	WORK ROOM 104
R	RECEPTACLES 112	49	20A-1P	500	1500			1000	20A-1P	50	R	WORK ROOM 104
R	RECEPTACLES 112	51	20A-1P	360		1360		1000	20A-1P	52	R	RECEPTACLE 104
R	RECEPTACLES 112	53	20A-1P	1000			1180	180	20A-1P	54	R	RECEPTACLES 104
R	RECEPTACLES 112	55	20A-1P	360	540			180	20A-1P	56	R	RECEPTACLES 104
R	RECEPTACLE 112	57	20A-2P	750		1950		1200	20A-1P	58	R	PLOTTER
R	-	59	-	750			1150	400	20A-1P	60	R	RECEPTACLES 104
R	RECEPTACLE 112	61	30A-2P	1250	1610			360	20A-1P	62	R	EXTERIOR RECEPTACLE
R	-	63	-	1250		2450		1200	20A-1P	64	R	LOPTOP CART
R	RECEPTACLES 110	65	20A-1P	360			1560	1200	20A-1P	66	R	LOPTOP CART
R	RECEPTACLES 110	67	20A-1P	540	1540			1000	20A-1P	68	R	COLOR PRINTER
R	RECEPTACLES 110	69	20A-1P	540		1540		1000	20A-1P	70	R	PRINTER
R	RECEPTACLES 108	71	20A-1P	720			920	200	20A-1P	72	R	RECEPTACLES 104
R	RECEPTACLES 108	73	20A-1P	720	1320			600	20A-1P	74	R	RECEPTACLE 104
R	RECEPTACLES 108	75	20A-1P	540		540			20A-1P	76		SPARE
R	RECEPTACLES 106	77	20A-1P	360			360		20A-1P	78		SPARE
R	RECEPTACLES 106, 106A, 710A	79	20A-1P	920	920				20A-1P	80		SPARE
R	RECEPTACLES 106	81	20A-1P	540		540			20A-1P	82		SPARE
	SPARE	83	20A-1P				0		20A-1P	84		SPARE
					8970	9740	7370					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	26.08	KVA	0.50	13.04	KVA
M	MOTOR / EQUIP.	0.00	KVA	0.80	0.00	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
	TOTAL CONNECTED LOAD:	26.08	KVA	TOTAL DEMAND LOAD:	13.0	KVA
				TOTAL DEMAND CURRENT:	36.20	AMPS

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Richmond, IN 47374-4095

MARK	DATE	DESCRIPTION
1	01.15.2014	Addendum 2

Issued: February 28, 2014
Scale: NTS

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CONFORMED SET

ELECTRICAL SCHEDULES

E505

2/26/2014 11:56:52 AM

PANELBOARD SCHEDULE 2RP-2A

LOCATION: 2ND FLOOR
SERVICE: 120/208V-3PH-4W — 208 V — NEUTRAL BUS: STANDARD, COPPER
MAIN LUGS ONLY: 225A — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 225A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 22,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
R	RECEPTACLES 229	1	20A-1P	500	860			360	20A-1P	2	R	RECEPTACLES 217
R	RECEPTACLES 229, 229A, 229B	3	20A-1P	540		1260		720	20A-1P	4	R	RECEPTACLES 217, 217A
R	RECEPTACLES 227	5	20A-1P	720			1320	600	20A-1P	6	R	RECEPTACLES 211, 213, 215
R	RECEPTACLES 227	7	20A-1P	720	1440			720	20A-1P	8	R	RECEPTACLES 213, 215
R	RECEPTACLES 227	9	20A-1P	720		1440		720	20A-1P	10	R	RECEPTACLES 209, 211
R	RECEPTACLES 227	11	20A-1P	900			1500	600	20A-1P	12	R	RECEPTACLES 205, 207, 209
R	RECEPTACLES 227	13	20A-1P	540	1260			720	20A-1P	14	R	RECEPTACLES 205, 207
R	RECEPTACLES 227	15	20A-1P	540		1140		600	20A-1P	16	R	RECEPTACLES 201, 203, CORR. 720
R	GFI RECEPTACLES 232, 233	17	20A-1P	1500			2220	720	20A-1P	18	R	RECEPTACLES 201, 203
R	RECEPTACLES CORR. 721 & 723, JAN 223	19	20A-1P	900	1440			540	20A-1P	20	R	RECEPTACLES DESKS (CORR. 720)
R	RECEPTACLES 219, 221	21	20A-1P	720		1080		360	20A-1P	22	R	RECEPTACLES DESKS (CORR. 720)
R	RECEPTACLES 221	23	20A-1P	360			1080	720	20A-1P	24	R	RECEPTACLES 225
R	RECEPTACLES 221	25	20A-1P	540	1095			555	20A-1P	26	R	EWC-2
R	DISHWASHER	27	20A-1P	1200		1600		400	20A-1P	28	R	PLUMBING FIXTURES POWER
R	GFI RECEPTACLE 221	29	20A-1P	1500			1500		20A-1P	30		SPARE
R	GFI RECEPTACLE 221	31	20A-1P	1500	1500				20A-1P	32		SPARE
R	REFRIGERATOR	33	20A-1P	860		860			20A-1P	34		SPARE
R	RECEPTACLES 219	35	20A-1P	720			720		20A-1P	36		SPARE
R	RECEPTACLES 219	37	20A-1P	720	720				20A-1P	38		SPARE
R	RECEPTACLES 219	39	20A-1P	540		540			20A-1P	40		SPARE
R	RECEPTACLES 219	41	20A-1P	540			540		20A-1P	42		SPARE
					8315	7920	8880					

TOTAL VA PER PHASE

CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L LIGHTING	0.00	KVA	1.00	0.00	KVA
R RECEPTACLES	25.12	KVA	0.50	12.56	KVA
M MOTOR / EQUIP.	0.00	KVA	0.80	0.00	KVA
H ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
TOTAL CONNECTED LOAD:	25.12	KVA	TOTAL DEMAND LOAD:	12.6	KVA
			TOTAL DEMAND CURRENT:	34.86	AMPS

PANELBOARD SCHEDULE 2RP-3A

LOCATION: 3RD FLOOR
SERVICE: 120/208V-3PH-4W — 208 V — NEUTRAL BUS: STANDARD, COPPER
MAIN LUGS ONLY: 225A — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 225A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 22,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
R	RECEPTACLES 319	1	20A-1P	500	1220			720	20A-1P	2	R	RECEPTACLES 302, 302A
R	RECEPTACLES 319	3	20A-1P	540		1260		720	20A-1P	4	R	RECEPTACLES 302
R	RECEPTACLES 315	5	20A-1P	500			860	360	20A-1P	6	R	RECEPTACLES 302
R	RECEPTACLES 315	7	20A-1P	540	720			180	20A-1P	8	R	RECEPTACLES 302
R	RECEPTACLES 315	9	20A-1P	360		1560		1200	20A-1P	10	R	RECEPTACLES 304, 306, 308
R	GFI RECEPTACLES 332, 333	11	20A-1P	1500			2220	720	20A-1P	12	R	RECEPTACLES 304, 306, 732
R	RECEPTACLES 305, 307, CORR.	13	20A-1P	1080	1440			360	20A-1P	14	R	RECEPTACLES 732
R	RECEPTACLES 303	15	20A-1P	300		700		400	20A-1P	16	R	RECEPTACLES 310, 312
R	RECEPTACLES 303	17	20A-1P	360			1260	900	20A-1P	18	R	RECEPTACLES 308, 310, 312
R	RECEPTACLES 303	19	20A-1P	720	1220			500	20A-1P	20	R	RECEPTACLES 314
R	RECEPTACLES 303	21	20A-1P	720		1260		540	20A-1P	22	R	RECEPTACLES 314, 316
R	RECEPTACLES 300	23	20A-1P	540			1080	540	20A-1P	24	R	RECEPTACLES 316, 318
R	RECEPTACLES 300	25	20A-1P	500	1100			600	20A-1P	26	R	RECEPTACLES 316, 318
R	RECEPTACLES 300	27	20A-1P	500		1000		500	20A-1P	28	R	RECEPTACLES 318
R	RECEPTACLES 303	29	20A-1P	360			915	555	20A-1P	30	R	EWC-3
R	RECEPTACLES 303	31	20A-1P	360	760			400	20A-1P	32	R	PLUMBING FIXTURES POWER
R	RECEPTACLES 303, CORR.	33	20A-1P	360		360			20A-1P	34		SPARE
R	RECEPTACLES 303	35	20A-1P	1000			1000		20A-1P	36		SPARE
R	RECEPTACLES 303	37	20A-1P	1000	1000				20A-1P	38		SPARE
R	ROOF RECEPTACLES	39	20A-1P	540		540			20A-1P	40		SPARE
	SPARE	41	20A-1P				0		20A-1P	42		SPARE
					7460	6680	7335					

TOTAL VA PER PHASE

CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L LIGHTING	0.00	KVA	1.00	0.00	KVA
R RECEPTACLES	21.48	KVA	0.50	10.74	KVA
M MOTOR / EQUIP.	0.00	KVA	0.80	0.00	KVA
H ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
TOTAL CONNECTED LOAD:	21.48	KVA	TOTAL DEMAND LOAD:	10.7	KVA
			TOTAL DEMAND CURRENT:	29.81	AMPS

PANELBOARD SCHEDULE 2RP-2B

LOCATION: 2ND FLOOR
SERVICE: 120/208V-3PH-4W — 208 V — NEUTRAL BUS: STANDARD, COPPER
MAIN LUGS ONLY: 225A — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 225A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 22,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
R	RECEPTACLES 224	43	20A-1P	500	1220			720	20A-1P	44	R	RECEPTACLES 220
R	RECEPTACLES 224	45	20A-1P	720		1260		540	20A-1P	46	R	RECEPTACLES 220, CORR 720
R	RECEPTACLES 222, 721	47	20A-1P	1000			1000		20A-1P	48		SPARE
R	RECEPTACLES 222	49	20A-1P	900	900				20A-1P	50		SPARE
R	RECEPTACLES 222	51	20A-1P	720		720			20A-1P	52		SPARE
R	RECEPTACLES 222	53	20A-1P	720			720		20A-1P	54		SPARE
R	RECEPTACLES 222	55	20A-1P	720	720				20A-1P	56		SPARE
R	RECEPTACLES 222	57	20A-1P	540		540			20A-1P	58		SPARE
R	RECEPTACLES 222	59	20A-1P	540			540		20A-1P	60		SPARE
R	RECEPTACLES 216, 218, 220, 220A	61	20A-1P	720	720				20A-1P	62		SPARE
R	RECEPTACLES 214, 216, 218	63	20A-1P	600		600			20A-1P	64		SPARE
R	RECEPTACLES 210, 212, 214	65	20A-1P	900			900		20A-1P	66		SPARE
R	RECEPTACLES 208, 210, 212	67	20A-1P	600	600				20A-1P	68		SPARE
R	RECEPTACLES 204, 206, 208, 721, 721A	69	20A-1P	1000		1000			20A-1P	70		SPARE
R	RECEPTACLES 204, 206, 208	71	20A-1P	1080			1080		20A-1P	72		SPARE
R	RECEPTACLES 204, 206	73	20A-1P	400	400				20A-1P	74		SPARE
R	RECEPTACLES 208	75	20A-1P	400		400			20A-1P	76		SPARE
R	RECEPTACLES 202	77	20A-1P	400			400		20A-1P	78		SPARE
R	RECEPTACLES 220	79	20A-1P	720	720				20A-1P	80		SPARE
R	RECEPTACLES 220	81	20A-1P	720		720			20A-1P	82		SPARE
R	SPARE	83	20A-1P				0		20A-1P	84		SPARE
					5280	5240	4640					

TOTAL VA PER PHASE

CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L LIGHTING	0.00	KVA	1.00	0.00	KVA
R RECEPTACLES	15.16	KVA	0.50	7.58	KVA
M MOTOR / EQUIP.	0.00	KVA	0.80	0.00	KVA
H ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
TOTAL CONNECTED LOAD:	15.16	KVA	TOTAL DEMAND LOAD:	7.6	KVA
			TOTAL DEMAND CURRENT:	21.04	AMPS

PANELBOARD SCHEDULE 2RP-0A

LOCATION: BASEMENT
SERVICE: 120/208V-3PH-4W — 208 V — NEUTRAL BUS: STANDARD, COPPER
MAIN LUGS ONLY: 100A — GROUND BUS: STANDARD, COPPER
MAIN BUS RATING AND TYPE: 100A COPPER — MOUNTING: SURFACE
INTERRUPT RATING: 22,000 AIC — ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
R	RECEPTACLES MECH 700, ELEC 700B	1	20A-1P	720	920			200	20A-1P	2	R	POWER DOOR
R	RECEPTACLES MECH 700, ELEC 700B	3	20A-1P	540		1080		540	20A-1P	4	R	RECEPTACLES 100B
R	RECEPTACLE ELEVATOR CONTROL	5	20A-1P	180			720	540	20A-1P	6	R	RECEPTACLES 100B
R	LAPTOP CART	7	20A-1P	1200	1560			360	20A-1P	8	R	RECEPTACLES 100B
R	LAPTOP CART	9	20A-1P	1200		1560		360	20A-1P	10	R	RECEPTACLES 100
L	DOA-1 LIGHTS & RECEPTACLES	11	20A-1P	1200			1560	360	20A-1P	12	R	RECEPTACLES 100
	SPARE	13	20A-1P		900			900	20A-1P	14	R	RECEPTACLES 100, 100A
	SPARE	15	20A-1P			360		360	20A-1P	16	R	RECEPTACLES 100A
	SPARE	17	20A-1P				1500	1500	20A-1P	18	R	GFI RECEPTACLE 100A
	SPARE	19	20A-1P		1500			1500	20A-1P	20	R	GFI RECEPTACLE 100A
	SPARE	21	20A-1P			1000		1000	20A-1P	22	R	REFRIGERATOR
	SPARE	23	20A-1P				1500	1500	20A-1P	24	R	GFI RECEPTACLE 100A
	SPARE	25	20A-1P		0				20A-1P	26		SPARE
	SPARE	27	20A-1P			0			20A-1P	28		SPARE
	SPARE	29	20A-1P				0		20A-1P	30		SPARE
					4880	4000	5280					

TOTAL VA PER PHASE

CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L LIGHTING	1.20	KVA	1.00	1.20	KVA
R RECEPTACLES	12.96	KVA	0.50	6.48	KVA
M MOTOR / EQUIP.	0.00	KVA	0.80	0.00	KVA
H ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
TOTAL CONNECTED LOAD:	14.16	KVA	TOTAL DEMAND LOAD:	7.7	KVA
			TOTAL DEMAND CURRENT:	21.32	AMPS

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MARK	DATE	DESCRIPTION
1	01.15.2014	Addendum 2

Issued: February 28, 2014
Scale: NTS

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ELECTRICAL SCHEDULES

E506

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PANELBOARD SCHEDULE 2MP-1HA

LOCATION: ELECTRICAL ROOM
SERVICE: 277/480V-3PH-4W — 480 V
MAIN CIRCUIT BREAKER: MAIN LUGS ONLY
MAIN BUS RATING AND TYPE: 400A COPPER
INTERRUPT RATING: 42,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
M	BWP-1	1	15A-3P	444	28954			28510	125-3P	2	M	DOA-1
M	-	3	-	444		28954		28510	-	4	M	-
M	-	5	-	444			28954	28510	-	6	M	-
M	BWP-2	7	15A-3P	444	444				20A-1P	8		SPARE
M	-	9	-	444		444			20A-1P	10		SPARE
M	-	11	-	444			444		20A-1P	12		SPARE
M	GLP-1	13	60A-3P	7473	7473				20A-1P	14		SPARE
M	-	15	-	7473		7473			20A-1P	16		SPARE
M	-	17	-	7473			7473		20A-1P	18		SPARE
M	GLP-2	19	60A-3P	7473	7473				20A-1P	20		SPARE
M	-	21	-	7473		7473			20A-1P	22		SPARE
M	-	23	-	7473			7473		20A-1P	24		SPARE
M	ECH-1A	25	25A-1P	5000	5000				20A-1P	26		SPARE
M	ECH-1B	27	25A-1P	5000		5000			20A-1P	28		SPARE
M	ECH-2A	29	25A-1P	5000			5000		20A-1P	30		SPARE
M	ECH-2B	31	25A-1P	5000	5000				20A-1P	32		SPARE
		33	20A-1P			0			20A-1P	34		SPARE
		35	20A-1P				0		20A-1P	36		SPARE
M	ECH-3	37	20A-3P	3333	3333				20A-1P	38		SPARE
M	-	39	-	3333		3333			20A-1P	40		SPARE
M	-	41	-	3333			3333		20A-1P	42		SPARE
					57677	52677	52677					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	0.00	KVA	0.50	0.00	KVA
M	MOTOR / EQUIP.	163.03	KVA	0.80	130.42	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
	TOTAL CONNECTED LOAD:	163.03	KVA	TOTAL DEMAND LOAD:	130.4	KVA
				TOTAL DEMAND CURRENT:	156.88	AMPS

PANELBOARD SCHEDULE 2MP-1L

LOCATION: ELECTRICAL ROOM
SERVICE: 120/208V-3PH-4W — 208 V
MAIN CIRCUIT BREAKER: 100A
MAIN BUS RATING AND TYPE: 100A COPPER
INTERRUPT RATING: 22,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
M	B-1	1	15A-1P	1060	1060				20A-1P	2		SPARE
M	B-2	3	15A-1P	1060		1060			20A-1P	4		SPARE
M	EF-1	5	20A-1P	1180			1180		20A-1P	6		SPARE
M	WH-1	7	15A-1P	600	600				20A-1P	8		SPARE
M	WH-2	9	15A-1P	600		600			20A-1P	10		SPARE
M	GFS-1	11	15A-1P	860			860		20A-1P	12		SPARE
M	AC-2	13	15A-2P	75	75				20A-1P	14		SPARE
M	-	15	-	75		75			20A-1P	16		SPARE
M	AC-4	17	15A-2P	75			75		20A-1P	18		SPARE
M	-	19	-	75	75				20A-1P	20		SPARE
M	CU-2	21	25A-2P	1745		1745			20A-1P	22		SPARE
M	-	23	-	1745			1745		20A-1P	24		SPARE
M	CU-4	25	40A-2P	2475	2475				20A-1P	26		SPARE
M	-	27	-	2475		2475			20A-1P	28		SPARE
M	EF-2	29	15A-1P	180			180		20A-1P	30		SPARE
	SPARE	31	20A-1P		0				20A-1P	32		SPARE
	SPARE	33	20A-1P			0			20A-1P	34		SPARE
	SPARE	35	20A-1P				0		20A-1P	36		SPARE
	SPARE	37	20A-1P		0				20A-1P	38		SPARE
	SPARE	39	20A-1P			0			20A-1P	40		SPARE
	SPARE	41	20A-1P				0		20A-1P	42		SPARE
					4285	5955	4040					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	0.00	KVA	0.50	0.00	KVA
M	MOTOR / EQUIP.	14.28	KVA	0.80	11.42	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
	TOTAL CONNECTED LOAD:	14.28	KVA	TOTAL DEMAND LOAD:	11.4	KVA
				TOTAL DEMAND CURRENT:	31.71	AMPS

PANELBOARD SCHEDULE 2EQ-LITA

LOCATION: MDF ROOM
SERVICE: 120/208V-3PH-4W — 208 V
MAIN CIRCUIT BREAKER: 100A
MAIN BUS RATING AND TYPE: 100A COPPER
INTERRUPT RATING: 22,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
R	RECEPTACLES MDF 700A	1	20A-1P	720	5740			5020	80A-3P	2	R	2EQ-LITB
R	RECEPTACLES MDF 700A	3	20A-1P	540		3240		2700	-	4	R	-
R	RECEPTACLE MDF 700A	5	30A-1P	2500			4840	2340	-	6	R	-
R	RECEPTACLE MDF 700A	7	30A-1P	2500	2500				20A-1P	8		SPARE
R	RECEPTACLES 107B, 108, 109, 110, 111, 112	9	20A-1P	900		900			20A-1P	10		SPARE
R	RECEPTACLE 103	11	20A-1P	180			180		20A-1P	12		SPARE
	SPARE	13	20A-1P		0				20A-1P	14		SPARE
	SPARE	15	20A-1P			0			20A-1P	16		SPARE
	SPARE	17	20A-1P				0		20A-1P	18		SPARE
	SPARE	19	20A-1P		0				20A-1P	20		SPARE
	SPARE	21	20A-1P			0			20A-1P	22		SPARE
	SPARE	23	20A-1P				0		20A-1P	24		SPARE
					8240	4140	5020					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	17.40	KVA	0.50	8.70	KVA
M	MOTOR / EQUIP.	0.00	KVA	0.80	0.00	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
	TOTAL CONNECTED LOAD:	17.40	KVA	TOTAL DEMAND LOAD:	8.7	KVA
				TOTAL DEMAND CURRENT:	24.15	AMPS

PANELBOARD SCHEDULE 2EQ-LITB

LOCATION: IDF ROOM 3RD FLOOR
SERVICE: 120/208V-3PH-4W — 208 V
MAIN CIRCUIT BREAKER: 100A
MAIN BUS RATING AND TYPE: 100A COPPER
INTERRUPT RATING: 22,000 AIC
NEUTRAL BUS: STANDARD, COPPER
GROUND BUS: STANDARD, COPPER
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

DESCRIPTION		CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA) A	B	C	CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	
R	RECEPTACLES 222, 224, 225, 227, 229	1	20A-1P	900	1620			720	20A-1P	2	R	RECEPTACLES 315, 316, 318, 319
R	RECEPTACLES 210, 212, 214, 216, 218	3	20A-1P	900		1620		720	20A-1P	4	R	RECEPTACLES 308, 310, 312, 314
R	RECEPTACLES215, 219, 221	5	20A-1P	540			1260	720	20A-1P	6	R	RECEPTACLES 300, 303, 304, 306
R	RECEPTACLES 202, 204, 206, 208	7	20A-1P	900	3400			2500	30A-1P	8	R	RECEPTACLE IDF ROOM 305A
R	RECEPTACLES 200, 201, 203, 205	9	20A-1P	720		1080		360	20A-1P	10	R	RECEPTACLES IDF ROOM 305A
R	RECEPTACLES 207, 209, 211, 213	11	20A-1P	720			1080	360	20A-1P	12	R	RECEPTACLES IDF ROOM 305A
	SPARE	13	20A-1P		0				20A-1P	14		SPARE
	SPARE	15	20A-1P			0			20A-1P	16		SPARE
	SPARE	17	20A-1P				0		20A-1P	18		SPARE
	SPARE	19	20A-1P		0				20A-1P	20		SPARE
	SPARE	21	20A-1P			0			20A-1P	22		SPARE
	SPARE	23	20A-1P				0		20A-1P	24		SPARE
					5020	2700	2340					

TOTAL VA PER PHASE

	CONNECTED LOAD			DEMAND FACTOR	DEMAND LOAD	
L	LIGHTING	0.00	KVA	1.00	0.00	KVA
R	RECEPTACLES	10.06	KVA	0.50	5.03	KVA
M	MOTOR / EQUIP.	0.00	KVA	0.80	0.00	KVA
H	ELECTRIC HEAT	0.00	KVA	1.00	0.00	KVA
	TOTAL CONNECTED LOAD:	10.06	KVA	TOTAL DEMAND LOAD:	5.0	KVA
				TOTAL DEMAND CURRENT:	13.96	AMPS

SWITCHBOARD SCHEDULE — 2MDP

LOCATION: ELECTRICAL ROOM
SERVICE: 277/480V 3-PHASE 4-WIRE — 480 V
MAIN BUS RATING: 1,200A COPPER
INTERRUPT RATING: 65,000 RMS AIC (VERIFY WITH COMED)
FED FROM: PAD MOUNTED UTILITY TRANSFORMER
NEUTRAL BUS: 100% RATED FULL COPPER
GROUND BUS: 100% RATED FULL COPPER
MOUNTING: FLOOR (FRONT ACCESSIBLE ONLY)
ENCLOSURE: NEMA 1, SERVICE ENTRANCE-RATED
OTHER: PROVIDE 4" HIGN CONCRETE PAD

FEEDER/ BREAKER NO.	DESCRIPTION	LOAD (KVA) TOTAL CONNECTED	TOTAL DEMAND	CIRCUIT BREAKER FRAME SIZE	TRIP SETTING	BRKR. TYPE	BRKR. RATING	POLES	NOTES
UNMETERED SECTION									
1	PANEL '2LDP' VIA T-2LDP	27.4	27.4	150A	70A	TM	80%	3	1, 4
2	PANEL '2RDP' VIA T-2RDP	125.5	62.8	250A	225A	TM	80%	3	1, 4
3	PANEL '2MP-1H'	113.2	110.4	250A	200A	TM	80%	3	1, 4
4	PANEL '2MP-1HA'	163.0	130.4	400A	300A	TM	80%	3	1, 4
5	PANEL '2MP-2H'	89.5	89.5	150A	150A	TM	80%	3	1, 4
6	PANEL '2MP-3H'	87.5	87.5	150A	150A	TM	80%	3	1
7	PANEL '2ELS' VIA T-2ELS	2.6	2.6	150A	60A	TM	80%	3	1, 4
8	PANEL '2EQ-H'	71.0	56.8	250A	200A	TM	80%	3	1, 4
9	SPARE			250A	250A	TM	80%	3	1, 4
10	SPACE					TM	80%	3	1, 4
	TOTAL KVA =	679.7	567.3						
	TOTAL AMPS=	817.6	682.4						

NOTES:

1. 65K AIC BREAKER RATING AT 208 VOLTS.
2. PROVIDE ONE 4" EMPTY SPARE CONDUIT.
3. BREAKER EQUIPPED WITH GROUND FAULT PROTECTION.
4. REFER TO ELECTRICAL ONE-LINE RISER DIAGRAM FOR FEEDER SIZE.

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MARK	DATE	DESCRIPTION
2	01.28.2014	Addendum 3
1	01.15.2014	Addendum 2

Issued: February 28, 2014
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ELECTRICAL SCHEDULES

E507

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LIGHT FIXTURE SCHEDULE

FIXTURE NO.	DESCRIPTION	LAMP TYPE	LAMP	BALLAST	VOLTAGE	MOUNTING	MANUFACTURER	CATALOG NUMBER	LOCATION / NOTES
F1	T5 LINEAR FLUORESCENT PENDANT MOUNTED INDIRECT WITH CURVED STEEL HOUSING WITH PARTIAL PERFORATIONS, WHITE REFLECTOR, LOW GLOSS WHITE FINISH, DUST COVER, AND INETGRAL ELECTRONIC PROGRAM START BALLAST	FL	(2) 28W T5	ELEC	120V	PENDANT	PEERLESS	7CRM7-2-28T5-WHR-X-XX-120-GEB10PS-SCT-LP841 -F1/24-C2D-ACG-DU	CLASSROOMS/OFFICES REFER TO DRAWINGS FOR RUN LENGTHS AND CIRCUITING REQUIREMENTS. PENDANTS MOUNTED AT 8'-6" AFF TYPICAL.
F1A	SAME AS F1 EXCEPT DIFFERENT MOUNTING CONDITION. USE IN ROOMS WITHOUT DROP CEILING.	FL	(2) 28W T5	ELEC	120V	PENDANT	PEERLESS	7CRM7-2-28T5-WHR-X-XX-120-GEB10PS-SCT-LP841 -F2/XX-C2D-ACG-DU	CLASSROOMS/OFFICES REFER TO DRAWINGS FOR RUN LENGTHS AND CIRCUITING REQUIREMENTS
F2	WALL MOUNTED TASK LIGHT WITH INTEGRAL SWITCH	CFL	23W		120V	WALL	LUXO	MLS100S-SP-2PB	SCIENCE LABS REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING HEIGHT AND LOCATIONS.
F3	4" DIAMETER PENDANT MOUNTED CYLINDER DOWNLIGHT WITH NOMINAL 1000 LUMENS	LED	20W LED	ELEC	120V	PENDANT	ALW WILA	REG-ST-CZEN20-120-FINISH-SOL P608-6-4-4-SSA40-80-FINISH	LABS BOTTOM OF FIXTURE TO BE MOUNTED EVEN WITH BOTTOM OF BEAMS
1 F3 - BILD ALT (FLU)	PENDANT MOUNTED CFL CYLINDER DOWNLIGHT	CFL	32W TRT	ELEC	120V	PENDANT	LIGHTOLIER JUNO-INDY	CS6132VUCCL-FACSA36 12P-32TW-CL-120-PENDANT LENGTH	LABS THIS IS A BID ALTERNATE FOR F3 BOTTOM OF FIXTURE TO BE MOUNTED EVEN WITH BOTTOM OF BEAMS.
F4	RECESSED PERIMETER LED WALL GRAZER, REFER TO PLAN FOR RUN LENGTHS.	FLU	32WT8	ELEC	120V	RECESSED	FOCAL POINT LITECONTROL	FTRL-AC-LL1-L35-1C-1204-LD1-XF-SS-WH-XX WS-L60-XX-MO-35K-CWM-DP-120-LCD	RESTROOMS REFER TO DRAWINGS FOR RUN LENGTHS. PROVIDE ONE SECTION OF EMERGENCY AS SHOWN ON DRAWINGS. MANUFACTURER TO PROVIDE SHOP DRAWINGS SHOWING RUNS AND EMERGENCY FOR REVIEW.
1 F4 - BID ALT (FLU)	RECESSED PERIMETER FLUORESCENT WALL GRAZER WITH FROSTED LENS, REFER TO PLAN FOR RUN LENGTHS.	LED	5W/LF	ELEC	120V	RECESSED	FOCAL POINT LITECONTROL	FW3-NS-1T8-1C-120-S-RC-XX-SS-WH-XX 21-1-X-T8-CWM-ELB/PS-G-120	RESTROOMS THIS IS A BID ALTERNATE FOR TYPE F4. REFER TO DRAWINGS FOR RUN LENGTHS. PROVIDE ONE SECTION OF EMERGENCY AS SHOWN ON DRAWINGS. MANUFACTURER TO PROVIDE SHOP DRAWINGS SHOWING RUNS AND EMERGENCY FOR REVIEW.
F5	RECESSED LED LINEAR SLOT FIXTURE WITH FROSTED LENS	LED	11W/FT	ELEC	120V	RECESSED	AXIS	BBRLED-B1-800-4000-SO-S#-W-120-D-1-CEILING	COMMON AREAS, MATH STUDIO, SHARED CLASSROOM REFER TO DRAWINGS FOR RUN LENGTHS AND CIRCUITING REQUIREMENTS
F5 - BID ALT (FLU)	RECESSED LINEAR FLUORESCENT SLOT FIXTURE WITH FROSTED LENS	FLU	28WT5	ELEC	120V	RECESSED	AXIS	BBR-S-FL-S#-EX-T8-1-W-120-EPS-1-CEILING	COMMON AREAS, MATH STUDIO, SHARED CLASSROOM REFER TO DRAWINGS FOR RUN LENGTHS AND CIRCUITING REQUIREMENTS THIS TYPE IS A BID ALTERNATE FOR F5
F5D	SAME AS F5 EXCEPT DIMMING	LED		ELEC DIM	120V	RECESSED	AXIS	BBRLED-B1-800-4000-SO-S#-W-120-D-1-CEILING	COMMON AREAS, MATH STUDIO, SHARED CLASSROOM REFER TO DRAWINGS FOR RUN LENGTHS AND CIRCUITING REQUIREMENTS
F5D - BID ALT (FLU)	SAME AS F5 - ALT FLU EXCEPT DIMMING	FLU	28WT5	ELEC DIM	120V	RECESSED	AXIS	BBR-S-FL-S#-EX-T5-1-W-120-D-1-CEILING	REFER TO DRAWINGS FOR RUN LENGTHS AND CIRCUITING REQUIREMENTS THIS IS A BID ALTERNATE TO TYPE F5
F6	2'X2' STATIC GRID TROFFER	FL	(3) 17W T8	ELEC	120V	RECESSED	LITHONIA HEW DAYBRITE	2SP8-G-3-17-A12125-120-GEB10PS 50-G-S-2-2-3-17-S-A12125-EB3-120 2-DP-G-3-17-FS-21-120	PHYSICS STORAGE
F7	RECESSED SQUARE LED DOWNLIGHT WITH NOMINAL 1000 LUMEN OUTPUT	LED	20W	ELEC	120V	RECESSED	USAI KURT VERSON	3310-10-LSLD4-9020-C1-4000-30-NC-120 B1236-11-40-120-SS	COMMON AREAS TYPES F7, F10, AND F15 MUST BE BY THE SAME MANUFACTURER.
1 F7 - BID ALT (FLU)	RECESSED SQUARE CFL DOWNLIGHT	CFL	32W TRT	ELEC	120V	RECESSED	USAI KURT VERSON	4510-10-S-FL12S-A-120V-MOUNTING 8443-SC	COMMON AREAS THIS TYPE IS A BID ALTERNATE FOR F7. TYPES F7, F10, AND F15 MUST BE BY THE SAME MANUFACTURER.
F7D	RECESSED SQUARE LED DOWNLIGHT WITH NOMINAL 1000 LUMEN OUTPUT	LED	20W	ELEC	120V	RECESSED	USAI KURT VERSON	3310-10-LSLD4-9020-C1-4000-30-NC-120-DIML2 B1236-11-40-120-SS-D1	READING ROOM, STAIRS TYPES F7, F10, AND F15 MUST BE BY THE SAME MANUFACTURER.
F8	4' INDUSTRIAL FIXTURE WITH 10% UPLIGHT	FL	(2) 32W T8	ELEC	120V	SUSPENDED	LITHONIA COLUMBIA METALUX	EJA-2-28-MVOLT CSR4-228-U IA-228	BASEMENT
F9	DECORATIVE PENDANT	LED	39W	ELEC	120V	SUSPENDED	ARTEMIDE NET	LED NET CIRCLE	2ND FLOOR READING ROOM FINAL CONFIGURATION PENDING. ARCHITECT AND MANUFACTURER TO COORDINATE CUSTOM CONFIGURATION.
F10	LED RECESSED ADJUSTABLE ACCENT WITH 4" SQUARE APERTURE	LED	20W	ELEC	120V	RECESSED	USAI KURT VERSON	3130-10-S-LST44-8230-C1-4000-30-NC-120 B2248-11-40-120-SS	READING ROOM, CORRIDORS TYPES F7, F10, AND F15 MUST BE BY THE SAME MANUFACTURER.
F11	WALL MOUNTED CLOSET LIGHT	FL	(1) 32W T8	ELEC	120V	SURFACE WALL	LITHONIA HEW DAYBRITE	WC-1-T8-120-GEB10PS	CLOSETS
F12	EXTERIOR RATED LED DOWNLIGHT WITH 4" SQUARE APERTURE AND LENS	LED	20W	ELEC	120V	RECESSED	USAI KURT VERSON	3310-10-LSLD4-9020-C1-4000-30-NC-120-LENS FOR WET RATING WB1536-11-40-120-SS	EXTERIOR CANOPY
1 F13	DECORATIVE PENDANT - GREGG LARGE	CFL	TBD	ELEC	120V	PENDANT	FOSCARINI	GREGG LARGE	STUDY NOOKS REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS AND PENDANT LENGTHS.
F14	LINEAR DISPLAY LIGHT	LED	4W/FT	ELEC	120V	SURFACE MILLWORK	IO LIGHTING	09-I-4K-MOUNTING-FINISH-LENGTH-FEED-120V	3D DISPLAYS REFER TO ARCHITECTURAL DETAILS FOR MORE INFORMATION
F15	LED RECESSED WALLWASHER WITH 4" SQUARE APERTURE	LED	20W	ELEC	120V	RECESSED	USAI KURT VERSON	3450-10-LSLW4-6020-C1-4000-NC-120 B1255-11-40-120-SS	READING ROOM TYPES F7, F10, AND F15 MUST BE BY THE SAME MANUFACTURER.
1 F15 - BID ALT (FLU)	CFL RECESSED WALLWASHER WITH 4" SQUARE APERTURE	CFL	32W TRT	ELEC	120V	RECESSED	USAI KURT VERSON	4580-10-S-FL18S-A-120V-MOUNTING H8453-SC	READING ROOM TYPES F7, F10, AND F15 MUST BE BY THE SAME MANUFACTURER.
F16	INTEGRAL MILLWORK LIGHTING	LED	2W/FT	ELEC	120/12	MILLWORK	ELEMENTAL LED	EL-12V-WTR-IN-T-1-4000K	3RD FLOOR GLOBE DISPLAY COORDINATE LENGTHS WITH ARCHITECTURAL DETAILS. PROVIDE DRIVERS AS REQUIRED.
F17	EXTERIOR RATED LED SLOT	LED	11W/FT	ELEC	120V	RECESSED	AXIS	WBRLED-B1-700-4000-S-S#-FINISH-120-D-1	EXTERIOR CANOPY REFER TO DRAWINGS FOR RUN LENGTHS AND CIRCUITING REQUIREMENTS
F17 - ALT FLU	EXTERIOR RATED LINEAR FLUORESCENT SLOT	FL	28WT5	ELEC	120V	RECESSED	AXIS	WBR-S-8-T5-1-FINISH-120-EPS-1	REFER TO DRAWINGS FOR RUN LENGTHS AND CIRCUITING REQUIREMENTS
F18	EXTERIOR WALL SCONCE	LED	26W	ELEC	120V	SURFACE WALL	BEGA	3136 LED	EXIT ONLY AREA REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS
F19	LED HANDRAIL	LED	4W/FT	ELEC	120V	RAIL SYSTEM	INTENSE LIGHTING	IVR2-SPI-FINISH-HEIGHT-HO-40-30AS-EM	HANDRAIL AT FEATURE STAIR MANUFACTURER TO PROVIDE SHOP DRAWINGS SHOWING RUN LENGTH AND MOUNTING DETAILS.
F20	SURFACE MOUNTED JELLY JAR	CFL	42W TRT	ELEC	120V	SURFACE WALL	LITHONIA HEW DAYBRITE	VW42LM6	ELEVATOR PIT CONFIRM FIXTURE WILL FIT PRIOR TO ORDERING.
S1A	LED POLE LIGHT WITH TYPE II DISTRIBUTION. FIXTURE HEADS MOUNTED ON 12 FOOT POLE. MATCH NEW POLE AND BASES WITH EXISTING POLES ON SITE	LED	64W LED	ELEC	120V	GROUND	KIM LIGHTING	LE192-60LED-5100K	REFER TO E012 FOR LOCATIONS AND QTYS. MATCH COLOR TEMPERATURE OF NEW LIGHTS TO EXISTING SITE LIGHTS.
S1B	LED POLE LIGHT WITH TYPE III DISTRIBUTION. FIXTURE HEADS MOUNTED ON 12 FOOT POLE. MATCH NEW POLE AND BASES WITH EXISTING POLES ON SITE	LED	64W LED	ELEC	120V	GROUND	KIM LIGHTING	LE193-60LED-5100K	REFER TO E012 FOR LOCATIONS AND QTYS. MATCH COLOR TEMPERATURE OF NEW LIGHTS TO EXISTING SITE LIGHTS.
S1C	LED POLE LIGHT WITH TYPE V DISTRIBUTION. FIXTURE HEADS MOUNTED ON 12 FOOT POLE. MATCH NEW POLE AND BASES WITH EXISTING POLES ON SITE	LED	64W LED	ELEC	120V	GROUND	KIM LIGHTING	LE195-60LED-5100K	REFER TO E012 FOR LOCATIONS AND QTYS. MATCH COLOR TEMPERATURE OF NEW LIGHTS TO EXISTING SITE LIGHTS.
S2	LED BOLLARD	LED	20W LED	ELEC	120V	GROUND	KIM LIGHTING	VRB1-20LED-5100K	REFER TO E012 FOR LOCATIONS AND QTYS. MATCH COLOR TEMPERATURE OF NEW LIGHTS TO EXISTING SITE LIGHTS.
S3	LED WALLPACK	LED	64W LED	ELEC	120V	SURFACE WALL	KIM LIGHTING	WD14D3E35-60L5K	REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS. MATCH COLOR TEMPERATURE OF NEW LIGHTS TO OTHER EXISTING LIGHTS ON CAMPUS.
S4	LED WALLPACK	LED	24W LED	ELEC	120V	SURFACE WALL	LITHONIA	WSTLED-1-10A700/40K-SR2-MVOLT-FINISH	REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS. MATCH COLOR TEMPERATURE OF NEW LIGHTS TO OTHER EXISTING LIGHTS ON CAMPUS.
EM	EMERGENCY BATTERY PACK	INC	24W	EM	120V	SURFACE WALL	SURE LITE DECO HEW	AA8-SD-MOUNTING AS REQUIRED DCX-650-WH EMERWHD12-50-WHT	SURFACE MOUNTED BATTERY PACK - BASEMENT ONLY
X1	EDGE GLOW SINGLE FACED LED EXIT SIGN WITH RED LETTERS	LED	3.3W LED	EM	120V	RECESSED/ CEILING	ALKCO EDGE	ALKCO EDGE-RGLO-LED1-PGLO1	EXIT SIGN TO MATCH STANLEY
X2	EDGE GLOW DOUBLE FACED LED EXIT SIGN WITH RED LETTERS	LED	5W LED	EM	120V	RECESSED/ CEILING	ALKCO EDGE	ALKCO EDGE-RGLO-LED2-PGLO1	EXIT SIGN TO MATCH STANLEY

FIXTURE SCHEDULE NOTES:

1. ELECTRICAL CONTRACTOR SHALL PROVIDE SUBMITTAL ON FULL LIGHTING FIXTURE PURCHASE FOR ARCHITECT'S REVIEW PRIOR TO ORDER. SUBMIT OF CATALOG CUTS TO ARCHITECT/ENGINEER FOR REVIEW PRIOR TO ORDERING LIGHTING FIXTURES.
2. UNLESS NOTED OTHERWISE, ALL BALLASTS SHALL BE PROGRAMMABLE RAPID START, ELECTRONIC ENERGY SAVING TYPE. FIXTURES SHALL BE ORDERED WITH THE APPROPRIATE BALLASTS THAT HAVE UL AND CBM LABELS. BALLASTS SHALL CONFORM TO LOCAL CODE REQUIREMENTS FOR PERFORMANCE, SWITCHING, AND WIRING (I.E. TANDEM).
3. ALL LIGHTING FIXTURES SHALL INCLUDE, BULBS/LAMPS.
4. FIXTURES SHALL HAVE APPROPRIATE UL LABEL, DAMP, OR WET AS REQUIRED BY LOCAL CODES.
5. WALLS DIRECTLY ILLUMINATED SHALL BE INSTALLED AND FINISHED IN A MANNER TO ELIMINATE SHADOWS OR BLEMISHES (I.E. HANG DRY WALL VERTICALLY).
6. THE ARCHITECT AND ENGINEER SHALL APPROVE FIXTURE SUBSTITUTIONS PRIOR TO BID. CONTRACTOR SHALL SUPPLY A SAMPLE AND/OR PHOTOMETRIC DATA IF REQUESTED. IF SUBSTITUTION IS REJECTED, CONTRACTOR SHALL PROVIDE SPECIFIED PRODUCT.
7. FIXTURES SHALL INCLUDE ACCESSORIES FOR INSTALLATION ACCORDING TO LOCAL AND NATIONAL CODES.
8. PRIOR TO ORDERING LIGHTING EQUIPMENT, THE CONTRACTOR SHALL VERIFY LOCATIONS AND RECESS DEPTHS.
9. LAMPS SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE ATTACHED FIXTURE SCHEDULE.
10. VERIFY EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES WITH ARCHITECT PRIOR TO ROUGH-IN.
11. UNLESS NOTED OTHERWISE, PROVIDE 4100 KELVIN LAMPS FOR ALL FLUORESCENT FIXTURES FROM: OSRAM SYLVANIA OR PHILIPS.
12. CONTRACTOR SHALL VERIFY CEILING TRIM COMPATIBILITY PRIOR TO ORDERING FIXTURES.
13. CEILING THICKNESS IN EXCESS OF 3/4" SHALL BE IDENTIFIED IN WRITING BY CONTRACTOR/ARCHITECT.
14. FIXTURES LOCATED IN AN INSULATED CEILING AREA, SHALL HAVE AN IC HOUSING (ELECTRICAL CONTRACTOR TO COORDINATE).
15. PROVIDE APPROVED FIRE-RATED ENCLOSURES FOR LIGHTING FIXTURES LOCATED IN A FIRE-RATED CEILING.
16. PROVIDE COLD WEATHER BALLASTS FOR ALL EXTERIOR FIXTURES.
17. FINISH PER ARCHITECT
18. PROVIDE EXIT SIGN FACES (SINGLE OR DOUBLE) AND ARROW AS DIRECTED ON FLOOR PLANS AND EXIT SIGN SCHEDULE.

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MARK	DATE	DESCRIPTION
1	01.15.2014	Addendum 2

Issued: February 28, 2014
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LIGHTING SCHEDULE

E508

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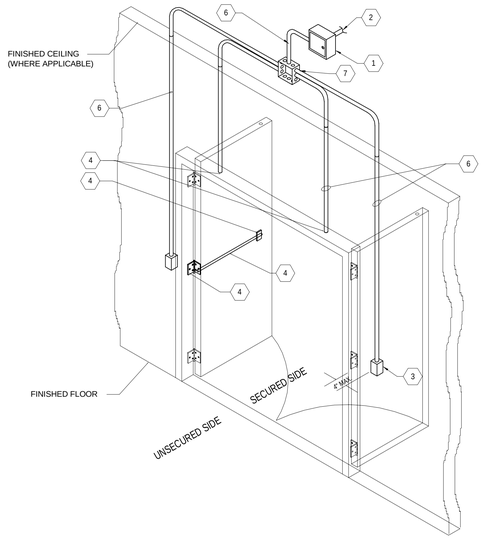
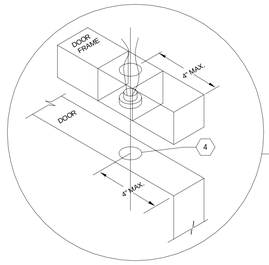
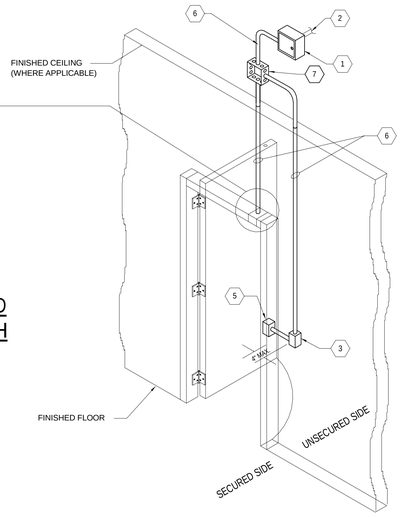






TYPICAL RECESSED MOUNTED DOOR POSITION SWITCH

1 / E601 SCALE: N.T.S.

GENERAL NOTES:

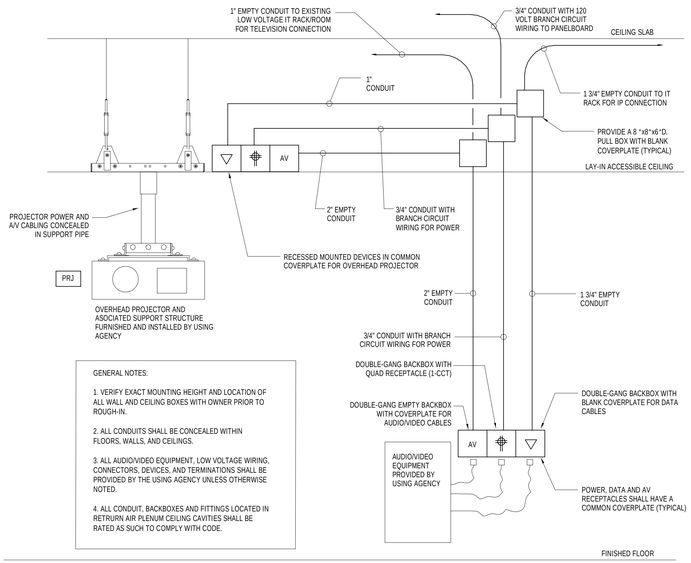
1. DETAILS ARE TO BE UTILIZED TO SHOW ELEVATIONS AND SPECIFIC DOOR REQUIREMENTS AND ARE NOT INTENDED TO SHOW EVERY ASPECT OF THE DOOR. THEREFORE, THE FOLLOWING, BUT NOT LIMITED TO THE ARCHITECTURAL SWING OF THE DOOR, STYLE OF THE DOOR, HARDWARE REPRESENTED MAY NOT REPRESENT ACTUAL FIELD CONDITIONS.
2. SECURITY ENCLOSURES SHALL BE LOCATED ON THE SECURE SIDE OF THE DOOR IN A DISCREET LOCATION.
3. THE CONTRACTOR SHALL NOT PENETRATE ANY LABELED FIRE RATED DOOR. A TAC WELDED DUST BOX SHALL BE FURNISHED AND INSTALLED INSIDE THE FRAME.
4. ALL CONDUITS SHALL BE CONCEALED WHEN POSSIBLE. WHEN CONCEALED CONDUITS CAN NO BE UTILIZED, CABLE SHALL BE PASSED WITHIN FRAME, SEAMS OR OTHER THROUGHWAYS TO CONCEAL THE CABLE.
5. ALL DOORS AFFECTED BY SECURITY ENHANCEMENTS SHALL HAVE THE DOOR, DOOR FRAME AND HARDWARE COORDINATED WITH THE DOOR DETAILS, AND DOOR SCHEDULE FOUND HEREIN.
6. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL EMPTY RACEWAYS AND BACKBOXES FOR FUTURE CARD READER SYSTEM. ALL SECURITY AND CARD READER SYSTEM EQUIPMENT, DEVICES, CARD READERS, CONTROLLERS, WIRING, ETC., SHALL BE PROVIDED BY USING AGENCY.

KEYED NOTES:

1. 6"X6"X4" JUNCTION BOXES LOCATED ON THE SECURE SIDE OF THE DOOR THAT SHALL BE MOUNTED IN A DISCREET LOCATION AND SHALL BE PROVIDED WITH A TAMPER SWITCH.
2. 1" EMT EMPTY CONDUIT TO ACCESS CONTROL PANEL LOCATED IN MDF ROOM.
3. SINGLE GANG RECESSED MOUNTED JUNCTION BOX, LOCATED ON THE UN-SECURED SIDE OF THE DOOR. BACK BOX SHALL BE MOUNTED AT 42" AFF.
4. RECESSED MOUNTED DOOR POSITION SWITCH.
5. 24V ELECTRIC STRIKE. REFER TO ARCHITECTURAL DOOR HARDWARE SCHEDULE.
6. 3/4" EMT EMPTY CONDUIT WITH NYLON PULL ROPE.
7. DOUBLE GANG 4 11/16" BOX WITH COVERPLATE.

DOUBLE & SINGLE ACCESS CONTROL DOOR DETAIL

1 / E601 SCALE: N.T.S.

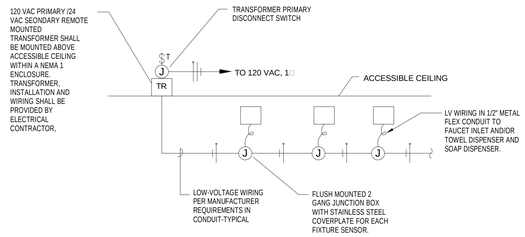


GENERAL NOTES:

1. VERIFY EXACT MOUNTING HEIGHT AND LOCATION OF ALL WALL AND CEILING BOXES WITH OWNER PRIOR TO ROUGH-IN.
2. ALL CONDUITS SHALL BE CONCEALED WITHIN FLOORS, WALLS, AND CEILINGS.
3. ALL AUDIO/VIDEO EQUIPMENT, LOW VOLTAGE WIRING, CONNECTORS, DEVICES, AND TERMINATIONS SHALL BE PROVIDED BY THE USING AGENCY UNLESS OTHERWISE NOTED.
4. ALL CONDUIT, BACKBOXES AND FITTINGS LOCATED IN RETRURN AIR PLENUM CEILING CAVITIES SHALL BE RATED AS SUCH TO COMPLY WITH CODE.

TYPICAL OVERHEAD PROJECTOR A/V SCHEMATIC DIAGRAM

2 / E601 SCALE: N.T.S.



NOTES:

1. PLUMBING FIXTURE SENSOR SCHEMATIC WIRING DIAGRAM IS DIAGRAMMATIC ONLY.
2. ABOVE DIAGRAM APPLIES TO ALL FAUCET SENSORS INCLUDING BUT NOT LIMITED TO, TOILET FLUSH VALVES, URINALS, SINK VALVES, TOWEL DISPENSERS, AND SOAP DISPENSERS. SEE ARCHITECTURAL AND PLUMBING DRAWINGS FOR LOCATIONS AND QUANTITIES.
3. PROVIDE ALL HARDWARE, WIRING AND FINAL CONNECTIONS AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.
4. VERIFY EXACT REQUIREMENTS IN THE FIELD WITH THE PLUMBING CONTRACTOR.
5. ALL TRANSFORMERS SHALL BE ACCESSIBLE COORDINATE ACCESS PANELS, IF REQUIRED WITH THE GENERAL CONTRACTOR,

AUTOMATIC PLUMBING FIXTURE SENSOR SCHEMATIC WIRING DIAGRAM

3 / E601 SCALE: N.T.S.

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E601

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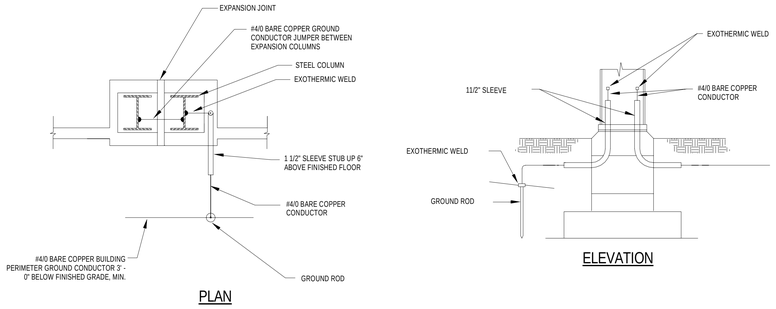
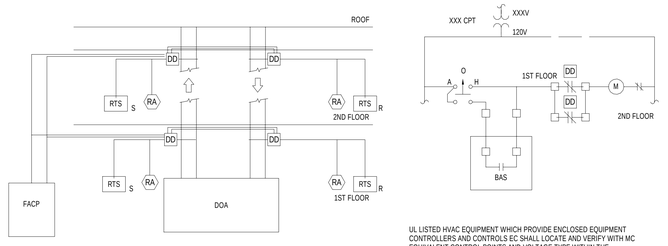


1 / E602 TYP COLUMN GROUND LOOP BOND AND CECO VAULT LOOP

SCALE: N.T.S.



UL LISTED HVAC EQUIPMENT WHICH PROVIDE ENCLOSED EQUIPMENT CONTROLLERS AND CONTROLS EC SHALL LOCATE AND VERIFY WITH MC EQUIVALENT CONTROL POINTS AND VOLTAGE TYPE WITHIN THE EQUIPMENT AND PROVIDE INTERPOSING RELAYS AND FAN SHUT-DOWN WIRING

FAN CLASS 1 CONTROL WIRING TO BMS POINT SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

TYPICAL FOR AHU-# PROVIDE DUPLICATED CONTROL DIAGRAMS FOR BOTH SUPPLY AND RETURN FANS

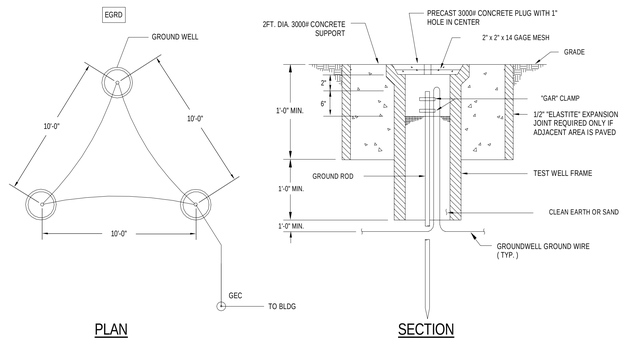
NOTES:

1. LOCATED REMOTE ALARM INDICATING LAMPS IN CORRIDORS CLOSET AND PROVIDE DUCT SMOKE DETECTOR ADDRESS.

2. LOCATE DUCT SMOKE DETECTORS IN A READILY ACCESSABLE LOCATION. PROVIDE AN ACCESS COVER IF DUCT SMOKE DETECTOR IS MOUNTED BEHIND OR WITHIN WALL/CEILING CAVITY.

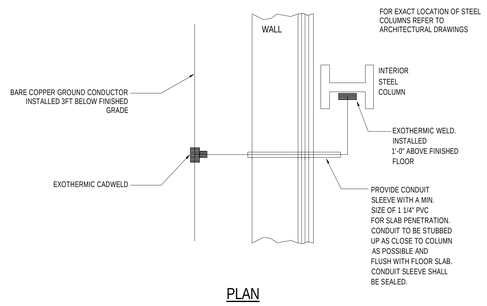
2 / E602 TYPICAL DOA RISER DSD CONTROL DIAGRAM

SCALE: N.T.S.



3 / E602 ELECTRICAL GROUND ROD/FIELD AND TEST WELLS

SCALE: N.T.S.



4 / E602 TYP COLUMN GROUND LOOP BOND

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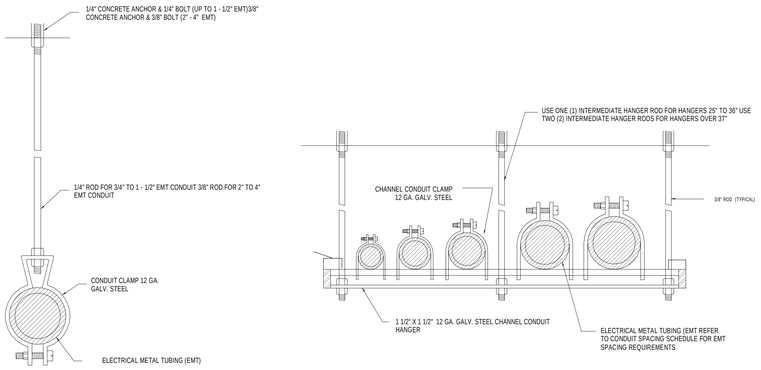
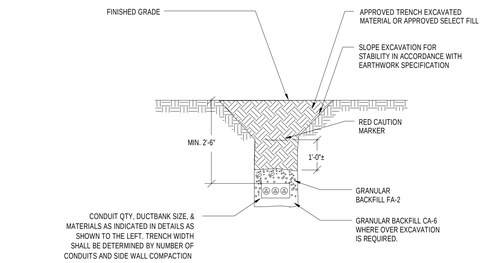
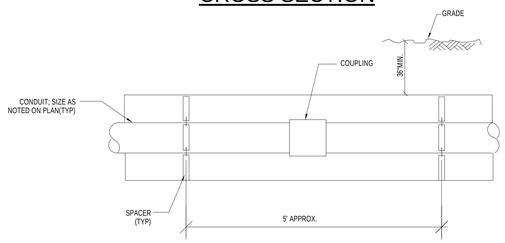


1 / E603 TYPICAL SINGLE & MULTIPLE SINGLE ROW CONDUIT HANGER

SCALE: N.T.S.



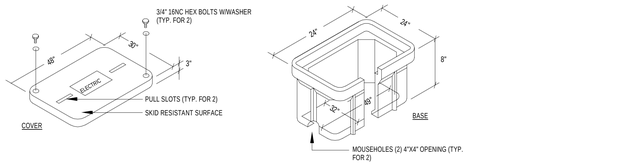
CROSS SECTION

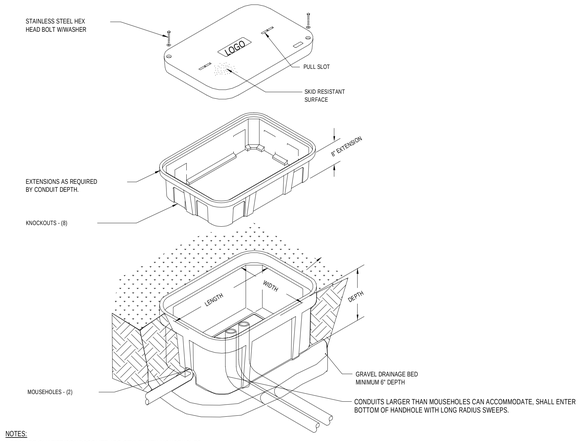


SECTION

2 / E603 NON CONCRETE UNDERGROUND CONDUITS

SCALE: N.T.S.





NOTES:

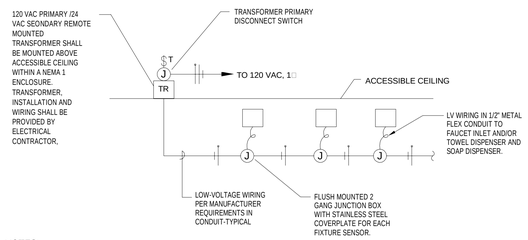
1 PROVIDE QUAZITE/COMPOSOLITE #PG STYLE WITH MOUSEHOLES.

2 COORDINATE DEPTH OF HANDHOLES WITH EXISTING CONDITIONS IN THE FIELD. CONTRACTOR SHALL PROVIDE EXTENSION BOXES AS REQUIRED.

3 PROVIDE CRUSHED STONE BELOW HANDHOLE FOR DRAINAGE.

3 / E603 SITE HAND-HOLES

SCALE: N.T.S.



NOTES:

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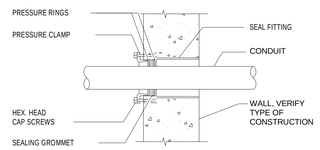
3. PROVIDE ALL HARDWARE, WIRING AND FINAL CONNECTIONS AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.

4. VERIFY EXACT REQUIREMENTS IN THE FIELD WITH THE PLUMBING CONTRACTOR.

5. ALL TRANSFORMERS SHALL BE ACCESSIBLE COORDINATE ACCESS PANELS, IF REQUIRED WITH THE GENERAL CONTRACTOR,

5 / E603 AUTOMATIC PLUMBING FIXTURE SENSOR SCHEMATIC WIRING DIAGRAM

SCALE: N.T.S.



4 / E603 FOUNDATION CONDUIT PENETRATION

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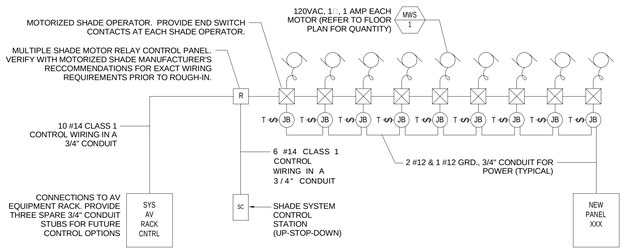
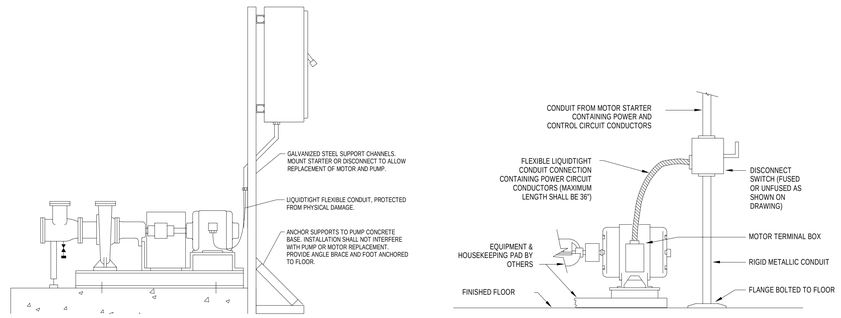


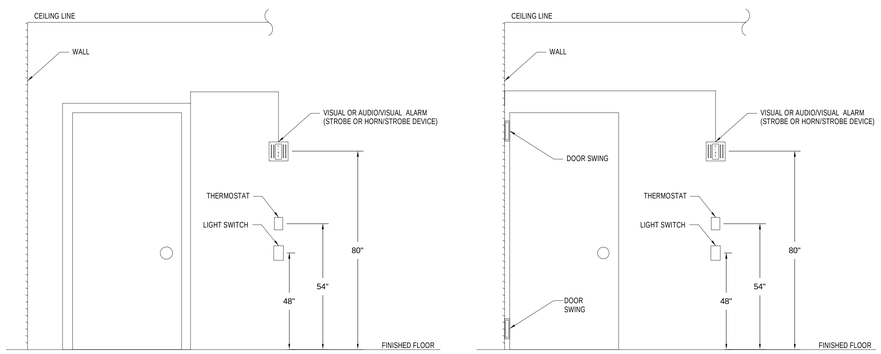
1 E604 MOTORIZED WINDOW SHADES DETAIL

SCALE: N.T.S.



2 E604 PUMP MOTOR CONNECTION DETAILS

SCALE: N.T.S.



4 E604 FIRE ALARM, SWITCH AND THERMOSTAT MOUNTING DIAGRAM

SCALE: N.T.S.

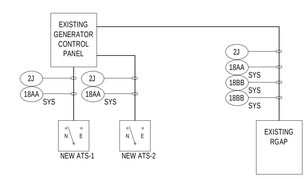


TABLE-AA CLASS 1 CONTROL		
SYS TAG	SOLID Cu THHN - THWN	COND SIZE
18AA	18 #12	1"

TABLE-BB COMM & CLASS 2-3 CONTROL		
SYS TAG	SOLID Cu CMP - MPP AWG	COND SIZE
18BB	6C #16 STP CABLE	3/4"

EMPTY CONDUIT		
TABLE-J		
TAG	SETS	SIZE
1J	1	3/4"
2J	1	1"

3 E604 ATS CONTROL WIRING

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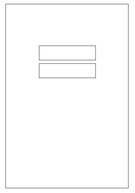
COMMON AREA CONTROLS

SEQUENCE OF OPERATIONS:

-PROVIDE A KEYED SWITCH TO OVERRIDE THE TIMECLOCK. CONFIRM WALLSTATION OVERRIDE LOCATIONS WITH OWNER PRIOR TO INSTALLATION.
-ALL COMMON AREA LIGHTING SHALL OPERATE ON A TIMECLOCK BASIS. CONFIRM SCHEDULE WITH OWNER PRIOR TO COMMISSIONING.
-PROVIDE OVERRIDE STATIONS FOR TIMECLOCK RELAY FOR NO MORE THAN 2 HOURS.

OVERRIDE STATION TYPICAL OF 2 PER FLOOR



EXTERIOR LIGHTING

SEQUENCE OF OPERATIONS:

-EXTERIOR LIGHTING SHALL BE CONTROLLED VIA ROOF MOUNTED PHOTOCELL AND ON A TIMECLOCK BASIS.

GENERAL NOTES:

1. CONTROLS SHOWN AS ADVISORY. CONTROLS MANUFACTURER TO CONFIRM OPTIMAL SENSOR PLACEMENT AND REQUIREMENTS FOR OPTIMAL COVERAGE.
2. CONTROLS MANUFACTURER SHALL SUBMIT ONE-LINES AND BILL OF MATERIALS FOR REVIEW.
3. PHOTOCELLS LOCATIONS SHOWN AS ADVISORY. PHOTOCELLS TO CONTROLS FIXTURES AS CALLED OUT ON THE DRAWINGS.
4. CONTROLS SHALL BE TIED BACK TO A BAS SYSTEM AS REQUIRED BY OWNER.
5. CONFIRM ALL SWITCH LOCATIONS WITH ARCHITECT AND OWNER.
6. REFER TO A661 TO CONFIRM LIST OF ROOMS WITH MOTORIZED SHADES.

2

TYPICAL CLASSROOM CONTROLS

SEQUENCE OF OPERATIONS:

-PENDANT MOUNTED FIXTURES HAVE 2 ZONES, TYPICAL.
-REFER TO DRAWINGS FOR ADDITIONAL ZONING INFORMATION.
-LIGHTING SHALL BE MANUAL ON, AUTOMATIC OFF WITHIN 30 MINUTES OF ALL OCCUPANTS LEAVING A SPACE.
-PROVIDE OVERRIDE OF OCCUPANCY SENSOR FOR NO MORE THAN 2 HOURS.

5 BUTTON STATION

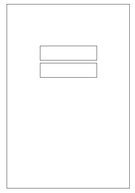
VACANCY SENSOR

RESTROOM CONTROLS

SEQUENCE OF OPERATIONS:

-LIGHTING SHALL BE AUTOMATIC ON, AUTOMATIC OFF WITHIN 30 MINUTES OF ALL OCCUPANTS LEAVING A SPACE.
-PROVIDE OVERRIDE OF OCCUPANCY SENSOR FOR NO MORE THAN 30 MINUTES.

OVERRIDE STATION



OCCUPANCY SENSOR

OFFICE AND SMALL CLASSROOM CONTROLS

SEQUENCE OF OPERATIONS:

-PENDANT MOUNTED FIXTURES HAVE 2 ZONES, TYPICAL.
-LIGHTING SHALL BE MANUAL ON, AUTOMATIC OFF WITHIN 30 MINUTES OF ALL OCCUPANTS LEAVING A SPACE.
-PROVIDE OVERRIDE OF VACANCY SENSOR FOR NO MORE THAN 2 HOURS.

2 BUTTON STATION

ROOM 103

SEQUENCE OF OPERATIONS:

-RECESSED FIXTURES ARE DIMMABLE AND ZONED TO ALLOW THE FIXTURES CLOSEST TO THE SCREENS TO BE TURNED OFF OR DIMMED INDEPENDENTLY FROM THE OTHER FIXTURES.
-REFER TO DRAWINGS FOR ADDITIONAL ZONING INFORMATION.
-LIGHTING SHALL BE MANUAL ON, AUTOMATIC OFF WITHIN 30 MINUTES OF ALL OCCUPANTS LEAVING A SPACE.
-PROVIDE OVERRIDE OF OCCUPANCY SENSOR FOR NO MORE THAN 2 HOURS.

5 BUTTON PRESET STATION WITH MANUAL RAISE/LOWER

VACANCY SENSOR

ROOM 200

SEQUENCE OF OPERATIONS:

-ALL FIXTURES ARE DIMMABLE.
-REFER TO DRAWINGS FOR ADDITIONAL ZONING INFORMATION.
-LIGHTING SHALL BE MANUAL ON, AUTOMATIC OFF WITHIN 30 MINUTES OF ALL OCCUPANTS LEAVING A SPACE.
-PROVIDE OVERRIDE OF OCCUPANCY SENSOR FOR NO MORE THAN 2 HOURS.

5 BUTTON PRESET STATION WITH MANUAL RAISE/LOWER

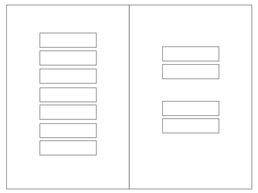
VACANCY SENSOR

ROOMS 103, 200, 300

SEQUENCE OF OPERATIONS:

-RECESSED LINEARS ARE DIMMABLE.
-ALL OTHER FIXTURES ARE SWITCHED.
-REFER TO DRAWINGS FOR ADDITIONAL ZONING INFORMATION.
-LIGHTING SHALL BE MANUAL ON, AUTOMATIC OFF WITHIN 30 MINUTES OF ALL OCCUPANTS LEAVING A SPACE.
-PROVIDE OVERRIDE OF OCCUPANCY SENSOR FOR NO MORE THAN 2 HOURS.

5 BUTTON PRESET STATION WITH MANUAL RAISE/LOWER AND TWO ZONES OF OPEN/CLOSED SHADE CONTROL.



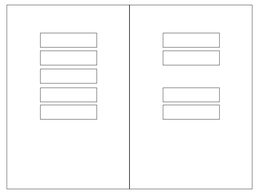
VACANCY SENSOR

ROOMS 111, 314, 315, 316, 318

SEQUENCE OF OPERATIONS:

-PENDANT MOUNTED FIXTURES HAVE 2 ZONES, TYPICAL.
-REFER TO DRAWINGS FOR ADDITIONAL ZONING INFORMATION.
-LIGHTING SHALL BE MANUAL ON, AUTOMATIC OFF WITHIN 30 MINUTES OF ALL OCCUPANTS LEAVING A SPACE.
-PROVIDE OVERRIDE OF OCCUPANCY SENSOR FOR NO MORE THAN 2 HOURS.

5 BUTTON PRESET STATION WITH TWO ZONES OF OPEN/CLOSED SHADE CONTROL.



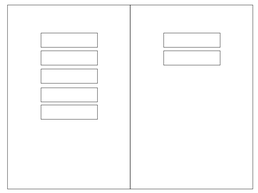
VACANCY SENSOR

ROOMS 224, 229, 317

SEQUENCE OF OPERATIONS:

-PENDANT MOUNTED FIXTURES HAVE 2 ZONES, TYPICAL.
-REFER TO DRAWINGS FOR ADDITIONAL ZONING INFORMATION.
-LIGHTING SHALL BE MANUAL ON, AUTOMATIC OFF WITHIN 30 MINUTES OF ALL OCCUPANTS LEAVING A SPACE.
-PROVIDE OVERRIDE OF OCCUPANCY SENSOR FOR NO MORE THAN 2 HOURS.

5 BUTTON PRESET STATION WITH ONE ZONE OF OPEN/CLOSED SHADE CONTROL.



VACANCY SENSOR

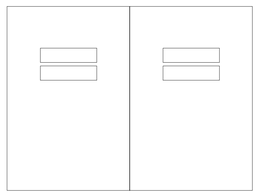
ROOM 301

2

SEQUENCE OF OPERATIONS:

-PROVIDE A KEYED SWITCH TO OVERRIDE THE TIMECLOCK. CONFIRM WALLSTATION OVERRIDE LOCATIONS WITH OWNER PRIOR TO INSTALLATION.
-ALL COMMON AREA LIGHTING SHALL OPERATE ON A TIMECLOCK BASIS. CONFIRM SCHEDULE WITH OWNER PRIOR TO COMMISSIONING.
-PROVIDE OVERRIDE STATIONS FOR TIMECLOCK RELAY FOR NO MORE THAN 2 HOURS.

OVERRIDE STATION WITH ONE ZONE OF SHADE CONTROL



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LIGHTING CONTROLS

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