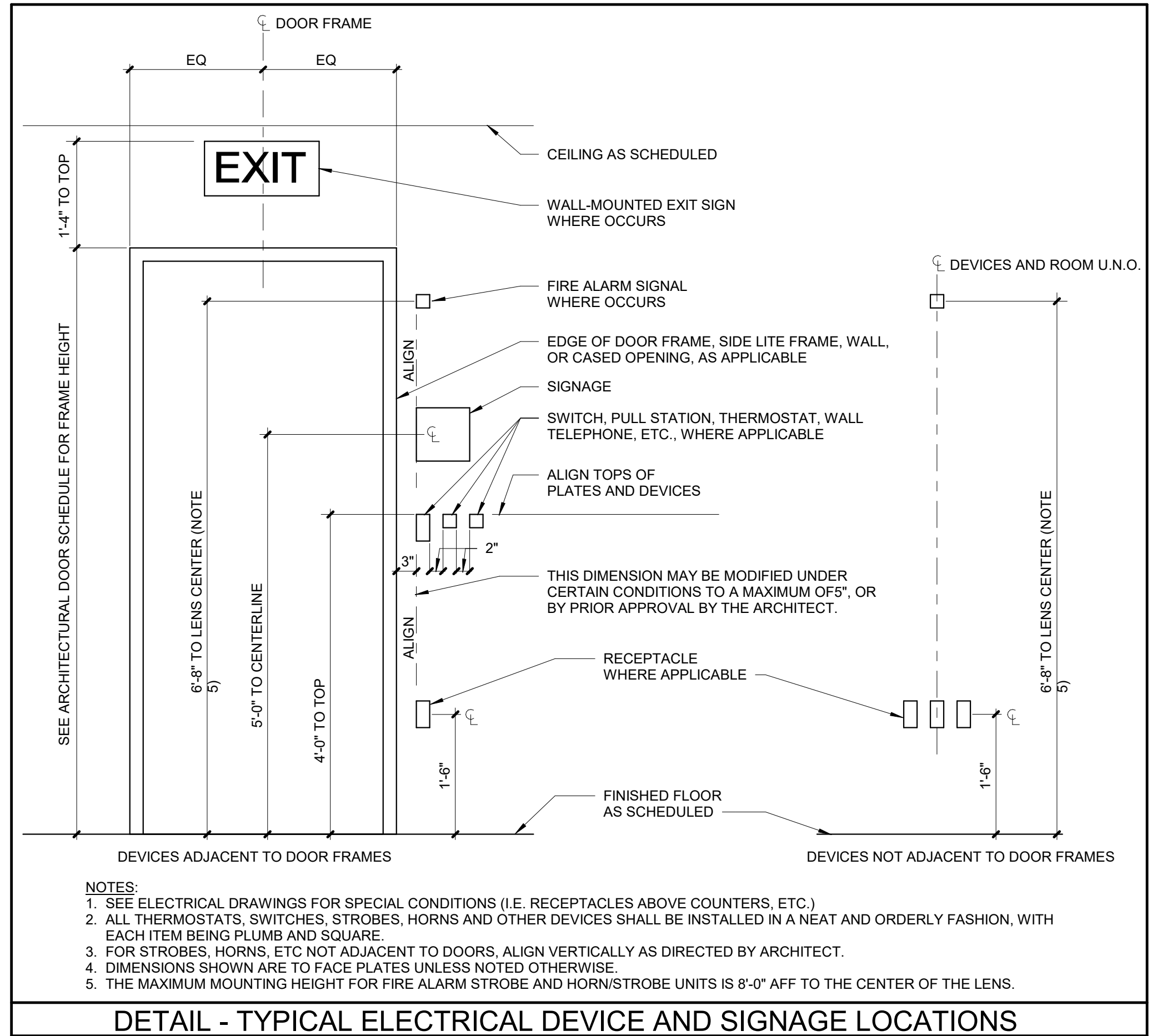


ELECTRICAL SYMBOL SCHEDULE

NOTE: THIS SCHEDULE IS FOR REFERENCE ONLY. SOME SYMBOLS SHOWN HERE DO NOT APPEAR ELSEWHERE IN THE DRAWINGS. ADDITIONAL SYMBOLS MAY BE SHOWN ADJACENT TO RELATED PLAN.

SYMBOL	DESCRIPTION
	CONDUIT, RUN IN WALL, ABOVE CEILING, OR UNDER FLOOR. (DO NOT INSTALL CONDUITS EMBEDDED IN OVERHEAD CONCRETE SLABS ON DECK.) RUN CONDUIT CONCEALED WITHIN WALLS, INCLUDING MASONRY WALLS, TO MAXIMUM EXTENT FEASIBLE. CONDUITS SHALL BE PARALLEL AND PERPENDICULAR TO WALL OR STRUCTURE. EXTERIOR CONDUITS SHALL BE CONCEALED UNDERGROUND AND UNDER SLAB ON GRADE. RUN CONDUITS EXPOSED IN UNFINISHED UTILITY SPACES.
	CIRCUIT HOMERUN TO PANEL - WITH PANEL AND CIRCUIT DESIGNATION
	CONDUIT RUN BELOW GRADE OR BELOW SLAB ON GRADE
	CONDUIT STUB-OUT TERMINATED WITH INSULATED-THROAT BUSHING
	CONDUIT STUB-OUT BELOW GRADE AND CAP. MARK EXACT LOCATION ON RECORD DRAWINGS.
	TYPICAL REPRESENTATION OF 4-WIRE + GROUND FEEDER.
	TYPICAL REPRESENTATION OF 3-WIRE + GROUND FEEDER.
	TYPICAL REPRESENTATION OF GROUNDING ELECTRODE CONDUCTOR.
	THROUGH-THE-WALL METAL CONDUIT SLEEVE OR OTHER EMPTY CONDUIT RUN WITH BOTH ENDS TERMINATED WITH INSULATED-THROAT BUSHINGS. PROVIDE QUANTITY AND SIZE OF CONDUITS AS NOTED.
	JUNCTION OR PULL BOX. SIZE PER N.E.C.
	POWER OUTLET BOX FOR MOTORIZED PROJECTION SCREEN. PROVIDE DISCONNECTING MEANS ABOVE CEILING. INSTALL AND CONNECT TO MOTOR AND CONTROL SWITCH ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
	CONTROL SWITCH FOR MOTORIZED PROJECTION SCREEN. INSTALL AND CONNECT TO SCREEN ACCORDING TO MANUFACTURER'S INSTRUCTIONS. SWITCH IS FURNISHED WITH SCREEN.
	POWER OUTLET BOX AND CONNECTIONS TO MOTORIZED WINDOW SHADES. PROVIDE DISCONNECTING MEANS AND FINAL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS.
	CONTROL SWITCH FOR MOTORIZED WINDOW SHADES. INSTALL AND CONNECT TO SHADES ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
	POWER OUTLET BOX FOR OVERHEAD PROJECTOR. PROVIDE DISCONNECTING MEANS ABOVE CEILING. INSTALL AND MAKE FINAL CONNECTIONS ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
	POWER WALL OUTLET BOX FOR AUTOMATIC PAPER TOWEL DISPENSER. COORDINATE LOCATION AND MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATION AND MANUFACTURER'S INSTRUCTIONS.
	POWER WALL OUTLET BOX FOR ELECTRIC HAND DRYER. COORDINATE LOCATION AND MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATION AND MANUFACTURER'S INSTRUCTIONS.
	LIGHTING FIXTURE, LINEAR TYPE. DRAWN APPROXIMATELY TO SCALE - CEILING OR WALL-MOUNT, SUSPENDED, SURFACE MOUNTED, OR RECESSED AS SCHEDULED. PROVIDE OUTLET BOX TO SUIT CONDITIONS. FIXTURE TYPE AND CIRCUIT NUMBER AS NOTED. SEE LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION.
	LIGHTING FIXTURE, CEILING-MOUNTED POINT TYPE - SUSPENDED, SURFACE MOUNTED, OR RECESSED AS SCHEDULED. PROVIDE OUTLET BOX TO SUIT CONDITIONS. FIXTURE TYPE AND CIRCUIT NUMBER AS NOTED. SEE LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION.
	LIGHTING FIXTURE, WALL-MOUNTED POINT TYPE - SURFACE MOUNTED OR RECESSED AS SCHEDULED. PROVIDE OUTLET BOX TO SUIT CONDITIONS. FIXTURE TYPE AND CIRCUIT NUMBER AS NOTED. SEE LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION.
	LIGHTING FIXTURES ON EMERGENCY POWER SYSTEM (NEC ART. 700)
	LIGHTING FIXTURES ON STANDBY POWER SYSTEM (NEC ART. 701 & 702)
	BOLLARD LIGHT OR POST-TOP AREA LIGHTING FIXTURE WITH CONCRETE BASE.
	DIRECTIONAL LIGHTING FIXTURE AS SCHEDULED. ARROW INDICATES DIRECTION OF MAIN BEAM.
	EXIT SIGN - ELECTRIC, INTERNALLY ILLUMINATED. SEE LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION. PROVIDE SIGNS WITH FACES AND DIRECTIONAL ARROWS AS INDICATED ON LIGHTING PLANS, MOUNTED AS NOTED BELOW. SHADED QUADRANTS INDICATE FACES:
	CEILING-MOUNTED, SINGLE FACE
	CEILING-MOUNTED, DOUBLE FACE
	WALL-MOUNTED, SINGLE FACE
	END WALL-MOUNTED, SINGLE FACE
	END WALL-MOUNTED, DOUBLE FACE
	THIS SYMBOL INDICATES A REQUIREMENT FOR OCCUPANCY SENSING AUTOMATIC LIGHTING CONTROL DEVICES IN THE ROOM. IT IS NOT INTENDED TO SHOW THE LOCATION OF ANY DEVICE. PROVIDE CEILING-MOUNTED SENSORS IN QUANTITY AND LOCATIONS AS REQUIRED TO DETECT SMALL HAND MOTION THROUGHOUT THE ROOM. NOTE: LIGHTING FIXTURES ON EMERGENCY AND/OR NIGHT LIGHT CIRCUITS SHALL NOT BE CONTROLLED BY OCCUPANCY SENSORS. SEE SECTION 260923.
	DAYLIGHT SENSOR, WALL OR CEILING MOUNTED. LOWER CASE SUBSCRIPT(S) INDICATES OUTLETS CONTROLLED.
	PHOTOELECTRIC SWITCH FOR LIGHTING CONTROL SYSTEM
	S SINGLE POLE SWITCH - 20A, 120-277V. REFER TO SECTIONS 262726 AND 262727.
	S2 DOUBLE POLE SWITCH - 20A, 120-277V. REFER TO SECTIONS 262726 AND 262727.
	S3 THREE WAY SWITCH - 20A, 120-277V. REFER TO SECTIONS 262726 AND 262727.
	S4 FOUR WAY SWITCH - 20A, 120-277V. REFER TO SECTIONS 262726 AND 262727.
	Sp SWITCH WITH PILOT LIGHT - 20A. REFER TO SECTIONS 262726 AND 262727.
	Sa (LOWER CASE SUBSCRIPT INDICATES OUTLETS CONTROLLED).
	SLv LOW VOLTAGE SWITCH - MOMENTARY-CONTACT, TWO-BUTTON OR TOGGLE TYPE, SINGLE-POLE, DOUBLE-THROW, WITH NORMALLY OPEN CONTACTS.
	Sd DIMMER SWITCH - SUITABLE FOR TYPE AND QUANTITY OF LIGHTING LOAD. COORDINATE WITH LIGHTING FIXTURE TYPE BEING CONTROLLED (0-10V, ELV, MLV, DMA, ETC.).
	W WALL BOX MOUNTED OCCUPANCY SENSOR/SWITCHES. "S" INDICATES SWITCH SET FOR AUTOMATIC "ON" AND AUTOMATIC "OFF" (OCCUPANCY SENSOR). "V" INDICATES SWITCH SET FOR MANUAL "ON" AND AUTOMATIC "OFF" (VACANCY SENSOR). SET TIME DELAY AS SPECIFIED.
	AGTD AUTOMATIC GENERATOR TRANSFER DEVICE (UL924 LISTED BYPASS RELAY). TO BYPASS LOCAL CONTROLS AND PROVIDE FULL LIGHT FIXTURE OUTPUT FROM EMERGENCY SOURCE UPON LOSS OF NORMAL POWER, WHILE ALLOWING FULL DIMMING CONTROL UNDER NORMAL POWER.
	R CONVENIENCE RECEPTACLE, 120V, NEMA 5-20R DUPLEX, MOUNT 18" AFF TO CENTER UNLESS NOTED OTHERWISE. REFER TO SECTIONS 262726 AND 262727.
	R2 CONVENIENCE RECEPTACLE, 120V, NEMA 5-20R DUPLEX, MOUNT 48" AFF TO TOP OR 2" ABOVE BACKPLASH TO BOTTOM UNLESS NOTED OTHERWISE. REFER TO SECTIONS 262726 AND 262727.
	DR DOUBLE DUPLEX (QUAD) CONVENIENCE RECEPTACLE, 120V - TWO NEMA 5-20R DUPLEX RECEPTACLES IN OUTLET BOX WITH 2-DEVICE PLATE. REFER TO SECTIONS 262726 AND 262727.
	DR2 NEMA 5-20R DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT. USE RED COLOR RECEPTACLE AND PLATE.
	GF "GFI" INDICATES OUTLET PROTECTED BY GROUND FAULT CIRCUIT INTERRUPTER (GFCI). USUALLY THE GFCI IS INSTALLED WITH THE BRANCH CIRCUIT BREAKER. PROVIDE GFCI TYPE RECEPTACLE OR SEPARATE GFCI DEVICE, INSTALLED IN A READILY ACCESSIBLE LOCATION, IN ANY CASE WHERE GFCI IS REQUIRED AND THE CIRCUIT BREAKER DOES NOT INCLUDE INTEGRAL GFCI PROTECTION.
	GF2 TYPICAL NEMA 5-20R DOUBLE DUPLEX (QUAD) RECEPTACLE FOR ELECTRIC WATER COOLER (ELECTRIC WATER COOLERS SHALL BE INSTALLED IN ACCORDANCE WITH WATER COOLER MANUFACTURER'S INSTRUCTIONS. COORDINATE WITH PLUMBING CONTRACTOR. BRANCH CIRCUIT SHALL HAVE GFCI PROTECTION INTEGRAL WITH THE CIRCUIT BREAKER.
	WR WEATHER-RESISTANT, GFCI-PROTECTED, NEMA 5-20R DUPLEX RECEPTACLE. PROVIDE WEATHER-PROOF, WHILE-IN-USE GASKETED METAL COVER. PROVIDE GFCI TYPE RECEPTACLE IF THE CIRCUIT BREAKER DOES NOT INCLUDE INTEGRAL GFCI PROTECTION.
	CR CONVENIENCE RECEPTACLE, 120V, NEMA 5-20R DUPLEX, MOUNT FLUSH IN CEILING.
	TV NEMA 5-20R DUPLEX RECEPTACLE FOR WALL MOUNTED TELEVISION OR VIDEO DISPLAY SCREEN. INSTALL DEVICE CONCEALED BEHIND DISPLAY SCREEN. IN ACCORDANCE WITH TV MOUNTING BRACKET INSTALLATION INSTRUCTIONS. COORDINATE MOUNTING HEIGHT WITH ARCHITECT.
	USB "USB" INDICATES NEMA 5-20R DUPLEX CONVENIENCE OUTLET WITH TWO 3-1A, 5-VOLT DC USB PORTS (ONE USB-A AND ONE USB-C) COMPATIBLE WITH USB 2.0 AND 3.0 DEVICES.
	SC SPECIAL CONFIGURATION OUTLET - TYPE AS SCHEDULED OR NOTED BY NEMA CONFIGURATION. MOUNTING HEIGHT AS SCHEDULED OR NOTED.
	COMBINATION DATA/TELEPHONE (TELECOM) OUTLET - 18" AFF TO CENTER. PROVIDE EMPIRY CONDUIT WITH NYLON PULL CORD FROM OUTLET TO STUB-OUT AS NOTED BELOW. PROVIDE INSULATED-THROAT BUSHING ON EACH END OF CONDUIT.
	NOTES: 1. TYPICAL TELECOM OUTLET SHALL BE PROVIDED WITH 5-INCH SQUARE, DEEP OUTLET BOX WITH TWO-GANG PLASTER RING, READY FOR THE INSTALLATION OF TWO-GANG PLATE. PROVIDE ONE 1 1/4" TO ABOVE ACCESSIBLE CEILING, OR CABLE TRAY OR TELECOM CLOSET ON SAME FLOOR. 2. ALL DATA/TELEPHONE OUTLETS SHALL HAVE THEIR CONDUIT ROUTED TO TERMINATION POINTS ON THE SAME FLOOR WHERE THE OUTLET IS LOCATED WITH A MAXIMUM OF TWO 90 DEGREE BENDS PLUS A 22 DEGREE KICKOUT IF REQUIRED. WHERE CONDUITS ARE ROUTED THROUGH A NON-RATED WALL THAT EXTENDS TO STRUCTURE ABOVE. 3. FOR ELEVATOR SERVICE AND WALL TELEPHONE OUTLETS, PROVIDE ONE DOUBLE GANG BACK BOX WITH A SINGLE GANG PLASTER RING, AND PROVIDE CONDUIT AS SPECIFIED IN NOTE 1 ABOVE. ELEVATOR SERVICE SHALL HAVE 3/4" TO THE ELEVATOR CONTROL EQUIPMENT CABINET.
	TO TYPICAL TELECOM OUTLET - 48" AFF TO TOP OR 2" ABOVE BACKPLASH TO BOTTOM UNLESS NOTED OTHERWISE.
	TO2 TYPICAL TELECOM OUTLET MOUNTED IN FURNITURE.
	W WALL TELEPHONE OUTLET - 54" AFF TO CENTER. SEE TELECOM NOTE 3 ABOVE.
	DATA OUTLET FOR WALL MOUNTED TELEVISION OR VIDEO DISPLAY SCREEN. PROVIDE OUTLET AND CONDUIT AS DESCRIBED FOR TYPICAL TELECOM OUTLET. INSTALL OUTLET CONCEALED BEHIND DISPLAY SCREEN IN ACCORDANCE WITH TV MOUNTING BRACKET INSTALLATION INSTRUCTIONS. COORDINATE MOUNTING HEIGHT WITH ARCHITECT.
	WB WALL OUTLET BOX AND POWER CONNECTION VIA LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT TO ELECTRIC/MODULAR INTERFACE CUBICLE. PROVIDE ONE 120V, 20A CIRCUIT FOR EVERY TWO CUBICLES. FINAL LOCATION OF ROUGH-IN CONNECTIONS SHALL BE AS DIRECTED BY OFFICE CUBICLE SYSTEM SUPPLIER AND THE ARCHITECT.
	WB2 WALL OUTLET BOX AND CONNECTION VIA 1 1/2" LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT TO TELECOMMUNICATION CABLE PATHWAY IN MODULAR OPEN OFFICE CUBICLE "BPP" POINT. PROVIDE 1 1/2" CONDUIT WITH NYLON PULL CORD AND BUSHED ENDS TO ABOVE ACCESSIBLE CEILING. FINAL LOCATION OF ROUGH-IN CONNECTIONS SHALL BE AS DIRECTED BY OFFICE CUBICLE SYSTEM SUPPLIER AND THE ARCHITECT.
	AP CEILING-MOUNTED WIRELESS ACCESS POINT, FURNISHED AND INSTALLED BY CAMPUS DEPARTMENT. PROVIDE 1 1/4" E.C. BUSHED AT BOTH ENDS. W/PULL CORD. FROM CEILING SPACE ABOVE ACCESS POINT LOCATION TO NEAREST CABLE TRAY OR TELECOM ROOM.

SYMBOL	DESCRIPTION
	BRANCH CIRCUIT OR DISTRIBUTION PANELBOARD, AS SCHEDULED.
	SPD SURGE PROTECTOR (TVSS), TYPE 1 UNLESS OTHERWISE NOTED. SEE SPECS.
	Δ-Y DRY TYPE TRANSFORMER - THREE PHASE, 480-120/208 VOLTS. NEMA TP-1.
	Δ-Δ DRY TYPE TRANSFORMER - THREE PHASE, 480-120/240 VOLTS.
	□ DRY TYPE TRANSFORMER - SINGLE PHASE, 480-120/240 VOLTS.
	115 OR 230 VOLT, 1 PHASE MOTOR.
	208 OR 230 VOLT, 3 PHASE MOTOR - NUMERAL INDICATES HORSEPOWER.
	460 VOLT, 3 PHASE MOTOR - NUMERAL INDICATES HORSEPOWER.
	□ NONFUSIBLE DISCONNECT SWITCH. SIZE IN AMPERES AS SHOWN, OTHERWISE HORSEPOWER RATED TO MATCH OR EXCEED MOTOR.
	□ FUSIBLE DISCONNECT SWITCH. FUSE SIZE IN AMPERES AS SHOWN.
	□ ENCLOSED CIRCUIT BREAKER.
	□ MAGNETIC STARTER - FVNR, UNLESS NOTED OTHERWISE.
	VFD VFD TYPE MOTOR CONTROLLER FURNISHED WITH DISCONNECT SWITCH AS PART OF DIVISION 23.
	□ COMBINATION MAGNETIC STARTER WITH NONFUSIBLE DISCONNECT.
	Sm MANUAL MOTOR STARTER.
	GR GROUND ROD - 10x 3/4"
	GE GROUNDING ELECTRODE SYSTEM AS REQUIRED BY ARTICLE 250 OF NEC AND DIVISION 26 SPECS. THE ELECTRODES THAT MAKE UP THE SYSTEM ARE: • MAIN METALLIC WATER PIPE • STEEL STRUCTURE • MADE GROUNDING ELECTRODE • REBAR STEEL.
	CONNECT TO THESE ELECTRODES UTILIZING CONDUCTORS SIZED AS NOTED IN ACCORDANCE WITH REQUIREMENTS OF NEC AND AS REQUIRED BY DIVISION 26 SPECIFICATION.
	MPGB TELECOMMUNICATIONS MAIN GROUND BAR.
	TMGB TELECOMMUNICATIONS MAIN GROUND BAR.
	TGB TELECOMMUNICATIONS GROUND BAR.
	MORU MOTOR OPERATED ROLL-UP DOOR OR GATE.
	RAI RESCUE ASSISTANCE INTERCOM. SEE SECTION 285501.
	RAM RESCUE ASSISTANCE MASTER. SEE SECTION 285501.
	GRA GENERATOR REMOTE ANNUNCIATOR.
	WH INSTANTANEOUS ELECTRIC WATER HEATER - PROVIDE 30A, 2P SWITCH AND CONNECT TO ASSIGNED 30A, 208 VOLT, 1 PHASE CIRCUIT.
	CC CEILING MOUNTED SURVEILLANCE TV CAMERA, PROVIDE 34"C FROM CAMERA LOCATION TO ACCESSIBLE CEILING CAVITY, CABLE TRAY, OR TO SECURITY EQUIPMENT RACK, AS APPLICABLE. NO 120 VOLT POWER REQUIRED.
	CC2 CEILING MOUNTED SURVEILLANCE TV CAMERA, PROVIDE FLUSH IN WALL OUTLET BOX 96" AFF AND 34"C FROM CAMERA LOCATION TO ACCESSIBLE CEILING CAVITY, CABLE TRAY, OR TO SECURITY EQUIPMENT RACK, AS APPLICABLE. NO 120 VOLT POWER REQUIRED.
	ACS SECURITY EQUIPMENT RACK. PROVIDE DATA OUTLET AND DOUBLE DUPLEX NEMA 5-20R RECEPTACLE 15" AFF ON BACK SIDE OF EQUIPMENT RACK AND DEDICATED 20A, 120V CIRCUIT.
	RR DOOR RELEASE STATION. PROVIDE RACEWAY AND OUTLET BOXES AT RECEPTION DESK AS DIRECTED BY SECURITY SYSTEM INSTALLER. SEE SECURITY SYSTEM DRAWINGS FOR ADDITIONAL REQUIREMENTS.
	IC INTERCOM STATION.
	DA DURESS ALARM BUTTON PROVIDED AS PART OF SECURITY SYSTEM. PROVIDE BACK BOX AND CONDUIT TO ABOVE ACCESSIBLE CEILING.
	CR INDICATES PROVISIONS FOR CARD READER.
	SDX SECURITY DOOR DETAIL CALLOUT
	FACT FIRE ALARM CONTROL PANEL.
	FAA FIRE ALARM ANNUNCIATOR PANEL-FLUSH MOUNTED IN WALL.
	FAT DIGITAL FIRE ALARM TRANSMITTER
	FATC FIRE ALARM TERMINAL WIRING CABINET
	E FIRE ALARM MANUAL STATION-MOUNT 48" AFF TO TOP OF DEVICE
	SD CEILING MOUNTED SMOKE DETECTOR
	SD2 DUCT SMOKE DETECTOR ASSEMBLY CONSISTING OF SMOKE DETECTORS, SAMPLING TUBES, AND REMOTE ALARM AND KEY-TEST SWITCH STATIONS. IN QUANTITY AS REQUIRED TO SATISFY NFPA 72 REQUIREMENTS. PROVIDE AUXILIARY RELAY MODULE TO ACCOMPLISH EQUIPMENT SHUT-DOWN REQUIREMENTS.
	SD3 FIRE ALARM BEAM TYPE SMOKE DETECTOR (TRANSMITTER & RECEIVER UNITS). INSTALL AT HIGHEST ACCESSIBLE LOCATION IN CENTRAL CIRCULATION SPACE.
	ES SPRINKLER ALARM-FLOP SWITCH
	TS SPRINKLER ALARM-TAMPER SWITCH
	CD CEILING MOUNTED COMBINATION RATE-OF-RISE/FIXED TEMPERATURE FIRE DETECTOR, EXCEPT AS NOTED OTHERWISE.
	W WALL-MOUNTED FIRE ALARM COMBINATION ADA SPEAKER/STROBE APPLIANCE. UNIT SHALL BE RATED 75cd UNLESS HIGHER cd RATING IS REQUIRED BY NFPA 72.
	CEILING-MOUNTED FIRE ALARM COMBINATION ADA SPEAKER/STROBE APPLIANCE. UNIT SHALL BE RATED 75cd UNLESS HIGHER cd RATING IS REQUIRED BY NFPA 72.
	ADA ADA COMPATIBLE WALL MOUNTED FIRE ALARM STROBE LIGHT. UNIT SHALL BE RATED 75cd UNLESS HIGHER cd RATING IS REQUIRED BY NFPA 72.
	CL CEILING MOUNTED FIRE ALARM STROBE LIGHT. UNIT SHALL BE RATED 75cd UNLESS HIGHER cd RATING IS REQUIRED BY NFPA 72.
	KB KNOX BOX WITH SUPERVISORY SWITCH. MOUNT IN WALL 52" AFF.
	RAL REMOTE ALARM INDICATING LIGHTS AND KEY TEST SWITCHES FOR DUCT DETECTORS. MOUNT 60" AFF. PROVIDE AS REQUIRED BY BUILDING CODE OR SPECS, WHETHER SHOWN ON PLANS OR NOT.
	ZAM FIRE ALARM SYSTEM ZONE INTERFACE RELAY MODULE. USE AS REQUIRED TO PROVIDE AUXILIARY RELAYS FOR MOTOR SHUT-DOWN FUNCTIONS AND OTHER CONTROL FUNCTIONS.
	JH JUNCTION BOX FOR DOOR HOLDER. CONNECT TO FIRE ALARM SYSTEM.
	PB HANDICAP DOOR OPERATOR PUSHBUTTON.
	AVT 2-GANG POWER/DATA OUTLET FOR WALL-MOUNTED DIGITAL SIGNAGE OR TELEVISION SCREEN (B.O.D. = LEGRAND 72W/MW). COORDINATE MOUNTING HEIGHT WITH ARCHITECT. OUTLET IS INTENDED TO BE CONCEALED BEHIND TV. PROVIDE 1" E.C. WITH PULL CORD TO BUSHED STUB-OUT IN ACCESSIBLE CEILING SPACE OF SAME ROOM.
	UCW UNDERCARPET WIREWAY SYSTEM. B.O.D. = CONNECTRAC 2.7 UNDER-CARPET. PROVIDE SURFACE-MOUNTED ALUMINUM WIREWAY CHANNEL & COVER, PREWIRED POWER MODULE WITH FOUR NEMA 5-20R RECEPTACLES AND CAPACITY FOR FOUR CAT-6 DATA CABLES. MDF RAMP PANELS, ROUGH-IN BOX, WALL BASE TRIM, AND ALL NECESSARY HARDWARE AND FITTINGS.
	FO INDICATES SURFACE-MOUNTED FLOOR POWER OUTLET WITH FOUR NEMA 5-20R RECEPTACLES (PART OF UNDERCARPET WIREWAY SYSTEM). PROVIDE BLANK COVERS ON UNUSED DATA PORTS.
	FO2 INDICATES SURFACE-MOUNTED FLOOR POWER AND DATA OUTLET WITH FOUR NEMA 5-20R RECEPTACLES AND FOUR KEYSTONE MODULES FOR OWNER-FURNISHED CAT-6 DATA CONNECTORS (MAXIMUM OF TWO CAT-6A CABLES). (PART OF UNDERCARPET WIREWAY SYSTEM)

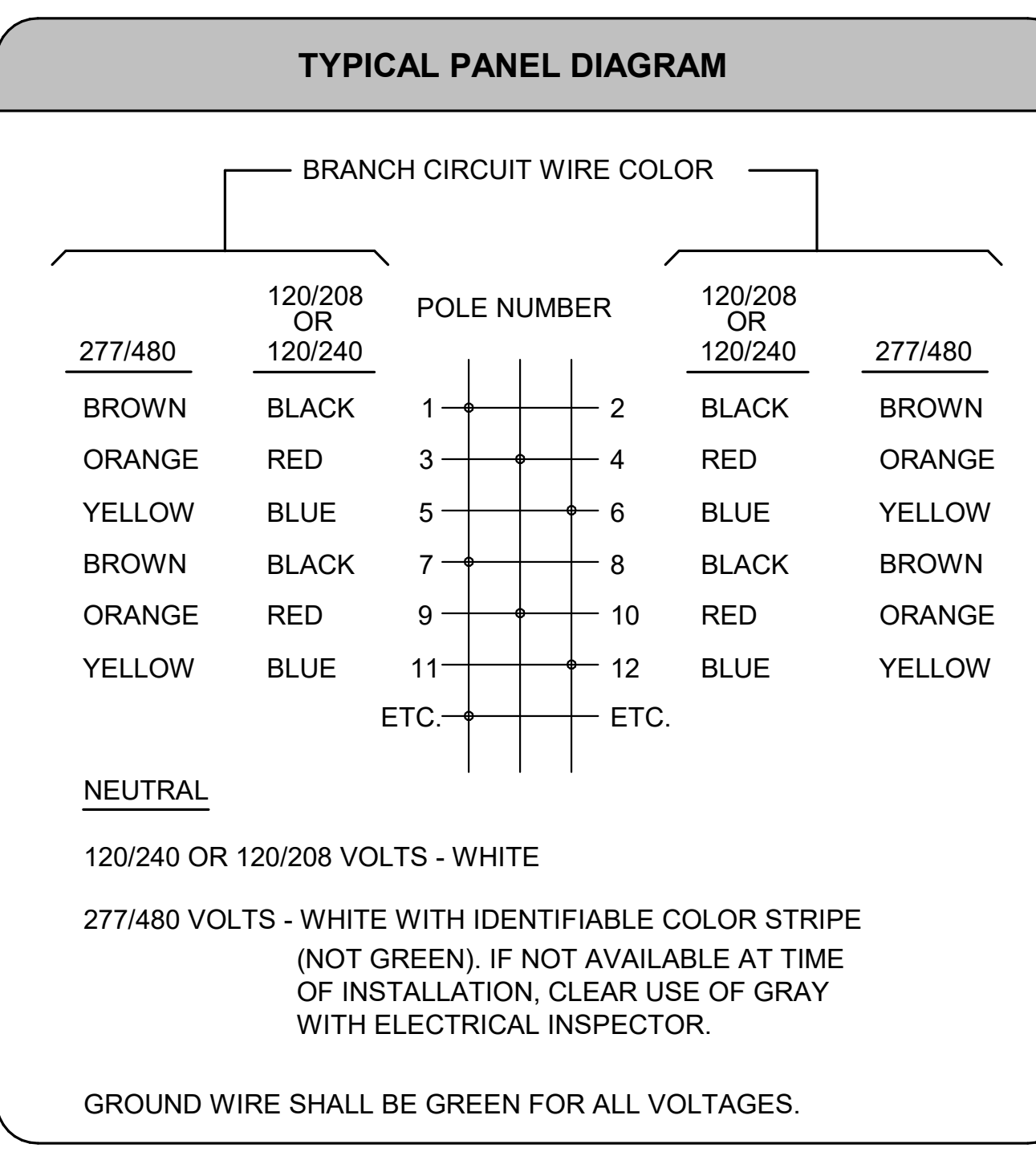


ABBREVIATIONS

A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINAL GRADE
ADA	AMERICANS WITH DISABILITIES ACT
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
AR	AS REQUIRED
BAS	BUILDING AUTOMATION SYSTEM
BFG	BELOW FINAL GRADE
C	CONDUIT
C.B.	CIRCUIT BREAKER
CLB	CURRENT LIMITING CIRCUIT BREAKER
C-FVNR	COMBINATION FVNR AND FUSED SWITCH
C-RVNR	COMBINATION RVNR AND FUSED SWITCH OR CIRCUIT BREAKER, AS INDICATED
CT12	12-INCH WIDE CABLE TRAY ABOVE CEILING. REFER TO SECTION 260536.
EC	EMPTY CONDUIT WITH PULL STRING AND INSULATING BUSHINGS.
F	FUSE
FCU	FAN COIL UNIT
FFN	FUSE PER NAMEPLATE REQUIREMENTS
FFM	FUSE PER MANUFACTURERS RECOMMENDATION
FVNR	FULL VOLTAGE NON-REVERSIBLE MAGNETIC MOTOR STARTER
G	GROUND
GF	INDICATES OUTLET OR CIRCUIT TO HAVE GROUND FAULT PROTECTION. GENERALLY PROTECTION IS PROVIDED BY GFCI TYPE BREAKER (REQUIRES SEPARATE NEUTRAL PER 120V CIRCUIT)
IG	ISOLATED GROUNDING
MCB	MAIN CIRCUIT BREAKER
MCM	Kcmil (THOUSAND CIRCULAR MILS)
MLO	MAIN LUGS ONLY
MTS	MANUAL TRANSFER SWITCH
NEUTRAL	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NO	NORMALLY OPEN
P	POLE
PH	PHASE
RVNR	REDUCED VOLTAGE MAGNETIC STARTER
RWISS	REDUCED VOLTAGE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION
S.C. RATING	BUS BRACE RATING AND SHORT CIRCUIT INTERRUPTING RATING OF BREAKERS WITHIN EQUIPMENT.
SO	SPACE ONLY (WITH PROVISIONS FOR FUTURE OVERCURRENT PROTECTIVE DEVICE)
UON	UNLESS OTHERWISE NOTED
VFD OR VSD	VARIABLE SPEED DRIVE TYPE MOTOR CONTROLLER
WP	INDICATES DEVICE TO HAVE WEATHERPROOF COVER
WT	INDICATES OUTLET OR DEVICE TO HAVE WATERTIGHT GASKETED COVER.

GENERAL NOTES

- ELECTRICAL DEVICES AND EQUIPMENT SHALL BE U.L. APPROVED FOR USE WITH CONDUCTORS THAT HAVE INSULATION RATED FOR 75°C OR HIGHER. DERATING OF CONDUCTORS IS NOT ALLOWED.
- ELECTRICAL CONDUCTORS SHALL BE COPPER, THW/THHN, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
- MINIMUM BRANCH CIRCUIT CONDUCTOR SIZE SHALL BE #12 AWG. REFER TO SPECIFICATIONS FOR MINIMUM ACCEPTABLE CONDUIT SIZE.
- AN INDIVIDUAL GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED WITH EACH 120-VOLT OR HIGHER VOLTAGE CIRCUIT. SIZE CONDUCTOR AS SHOWN, OR IF SIZE IS NOT GIVEN, PER NEC TABLES 250.122 AND 250.66, AS APPLICABLE. GROUNDING CONDUCTOR SHALL BE BONDED TO EACH METALLIC CONDUIT, EACH OUTLET BOX, AND TO TERMINATION EQUIPMENT.
- PROVIDE CONDUITS AS SPECIFIED FOR ALL POWER CIRCUITS. SIZED PER NEC, NOT TO EXCEED 40% FILL.
- RUN CONDUITS AS HIGH AS POSSIBLE, CONCEALED IN WALLS, ABOVE CEILING, BELOW GRADE OR UNDER SLAB BELOW VAPOR BARRIER, OR HIDDEN IN OVERHEAD STRUCTURE TO MAXIMUM EXTENT FEASIBLE. COORDINATE ROUTING WITH OTHER TRADES TO AVOID CONFLICTS.
- ALL WALL OUTLETS SHALL BE LOCATED CAREFULLY TO ASSURE CORRECT MOUNTING HEIGHT AND ALIGNMENT. DEVICE PLATES SHALL BE INSTALLED LEVEL, PLUMB, AND FLUSH AGAINST WALL, WITH EDGES ALIGNED WITH NEIGHBORING DEVICE PLATES. OUTLETS INSTALLED IN A CARELESS OR HAZARDOUS MANNER SHALL BE REMOVED AND REINSTALLED PROPERLY TO THE SATISFACTION OF THE A.E. AND AT THE CONTRACTOR'S EXPENSE. MOUNTING HEIGHTS OF OUTLETS IN MASONRY MAY BE ADJUSTED SLIGHTLY TO CORRESPOND WITH COLORS, COORDINATE WITH ARCHITECTURAL WALL PANELS AND TRIMS.
- ALL WORK SHALL COMPLY WITH 2017 NEC.
- ALL EQUIPMENT, FIXTURES AND MATERIALS USED IN THIS PROJECT SHALL BE LISTED BY AN INDEPENDENT TESTING LABORATORY ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
- ALL NON-ENERGIZED CONDUCTIVE SURFACES OF MATERIALS THAT ARE PART OF THE ELECTRICAL SYSTEM SHALL BE BONDED TO INSULATED GROUNDING CONDUCTOR RUN WITH PHASE CONDUCTORS.
- EACH 120 VOLT AND 277 VOLT BRANCH CIRCUIT SHALL BE PROVIDED WITH A SEPARATE, DEDICATED NEUTRAL CONDUCTOR WHETHER CIRCUIT IS RUN SINGLY OR GROUPED IN CONDUIT WITH OTHER CIRCUITS. NO MORE THAN THREE 120 VOLT OR 277 VOLT CIRCUITS MAY BE RUN TOGETHER IN A SINGLE CONDUIT.
- PRIOR TO STARTING ANY ELECTRICAL WORK ASSOCIATED WITH AUDIO-VISUAL SYSTEMS THE INSTALLERS SHALL COORDINATE FINAL LOCATION OF ALL AUDIO-VISUAL ROUGH-IN.
- PROVIDE CONDUIT PENETRATION OF RATED WALLS AND FLOOR IN ACCORDANCE WITH DETAILS AND SECTION 260536.
- ELECTRICAL CIRCUITING SHOWN ON THESE DRAWINGS IS DIAGRAMMATIC AND IS NOT INTENDED TO DEPICT ACTUAL CONDUIT ROUTES. RUN CONDUITS PER SPECIFICATIONS, AND IN ACCORDANCE WITH N.E.C. REQUIREMENTS. CIRCUIT RUNS OTHER THAN THOSE NECESSARY FOR THE OPERATION OF EGRESS STAIRS AND PASSAGES ARE NOT PERMITTED TO PENETRATE THE RATED STAIR ENCLOSURE OR THE ASSOCIATED EXIT PASSAGEWAY.
- DO NOT RUN ANY UNRELATED POWER CONDUCTORS THROUGH TELECOM ROOM.
- THE LOCATION OF ALL ABOVE CEILING LIGHTING CONTROLS INCLUDING OCCUPANCY SENSOR POWER PACKS/RELAYS AND EMERGENCY TRANSFER RELAYS SHALL HAVE THEIR LOCATION IDENTIFIED ON THE CEILING WITH PHENOLIC LABELS PER SPECIFICATION SECTION 260553.



NEUTRAL
120/240 OR 120/208 VOLTS - WHITE
277/480 VOLTS - WHITE WITH IDENTIFIABLE COLOR STRIPE (NOT GREEN), IF NOT AVAILABLE AT TIME OF INSTALLATION, CLEAR USE OF GRAY WITH ELECTRICAL INSPECTOR.
GROUND WIRE SHALL BE GREEN FOR ALL VOLTAGES.

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

Method of Compliance: Energy Code Performance Prescriptive
ASHRAE 90.1 Performance Prescriptive

Lighting schedule (each fixture type)
lamp type required in fixture Refer to Lighting Fixture Schedule, Sheet E004
number of lamps in fixture Refer to Lighting Fixture Schedule, Sheet E004
ballast type used in the fixture Refer to Lighting Fixture Schedule, Sheet E004
number of ballasts in fixture Refer to Lighting Fixture Schedule, Sheet E004
total wattage per fixture Refer to Lighting Fixture Schedule, Sheet E004
total interior wattage specified vs. allowed (whole building or space by space)
6177 watts specified 8446 watts allowed
total exterior wattage specified vs. allowed

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)

- C406.2 More Efficient HVAC Equipment Performance
- C406.3 Reduced Lighting Power Density
- C406.4 Enhanced Digital Lighting Controls
- C406.5 On-Site Renewable Energy
- C406.6 Dedicated Outdoor Air System
- C406.7 Reduced Energy Use in Service Water Heating

ELECTRICAL SHEET LIST

SHEET NUMBER	SHEET NAME	REVISION	REVISION DATE
E001	ELECTRICAL SYMBOLS AND NOTES		
E002	EXISTING POWER RISER DIAGRAM		
E003	ELECTRICAL SCHEDULES AND DETAILS		
E004	LIGHTING FIXTURE SCHEDULE AND DETAILS		
E111	LEVEL 2 FLOOR PLAN - POWER & SPECIAL SYSTEMS		
E121	LEVEL 2 FLOOR PLAN - LIGHTING		
ED111	LEVEL 2 FLOOR PLANS - DEMOLITION		

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UNC CHARLOTTE

PROJECT TEAM
PRINCIPAL IN CHARGE
SR
PROJECT MANAGER
AS
DESIGN TEAM
JCT/GFC
PROJECT NAME
UNCC-SGO RENOVATIONS

SCO PROJECT #18-18336-01A
PROJECT NO.
113-1001-00
SHEET TITLE
ELECTRICAL SYMBOLS AND NOTES

SHEET NUMBER
E001

LOAD (KVA)										DESCRIPTION										LOAD (KVA)									
A	B	C	DESCRIPTION		COND (N)	GRND SIZE	WIRE SIZE	BRKR RATG	OCT NO.	OCT NO.	BRKR RATG	WIRE SIZE	GRND SIZE	COND (N)	DESCRIPTION		A	B	C										
1.1			RECEPTACLES	3/4"	12	12	201	1	2	201	12	12	3/4"	RECEPTACLES			0.4												
	0.7		RECEPTACLES	3/4"	12	12	201	3	4	201	12	12	3/4"	RECEPTACLES			0.7												
		0.7	RECEPTACLES	3/4"	12	12	201	5	6	201	12	12	3/4"	RECEPTACLES			1.1												
1.1			RECEPTACLES	3/4"	12	12	201	7	8	201	12	12	3/4"	RECEPTACLES			0.9												
	0.5		RECEPTACLES	3/4"	12	12	201	9	10	201	12	12	3/4"	RECEPTACLES			0.9												
		0.5	RECEPTACLES	3/4"	12	12	201	11	12	201	12	12	3/4"	RECEPTACLES			0.4												
0.7			RECEPTACLES	3/4"	12	10	201	13	14	201				SPARE			0.0												
	0.7		RECEPTACLES	3/4"	12	12	201	15	16	201				SPARE			0.0												
		0.5	RECEPTACLES	3/4"	12	12	201	17	18	201				SPARE			0.0												
0.4			RECEPTACLES	3/4"	12	12	201	19	20	201				SPARE			0.0												
	0.0		RECEPTACLES	3/4"	12	12	201	21	22	201				SPARE			0.0												
		0.5	RECEPTACLES	3/4"	12	12	201	23	24	201				S.O.			0.0												
0.0			SPARE				201	25	26	201				S.O.			0.0												
	0.0		SPARE				201	27	28	201				S.O.			0.0												
		0.0	SPARE				201	29	30	201				S.O.			0.0												
0.0			S.O.				201	31	32	201				S.O.			0.0												
	0.0		S.O.				201	33	34	201				S.O.			0.0												
		0.0	S.O.				201	35	36	201				S.O.			0.0												
14.5			PANEL 2B	2 1/2"	4	4/0	225/3	37	38	225/3	4/0	4	2 1/2"	PANEL 2C			4.5												
	14.2						SUB	39	40	SUB				FEED			2.3												
		12.4					FEED	41	42	FEED							2.9												

TYPE: BRANCH CIRCUIT										GROSS PHASE TOTALS										CONNECTED LOAD										NEC CALCULATED DEMAND LOAD									
MOUNTING SURFACE										A= 23.5 KVA										LIGHTING										2.4 KVA									
SUPPLY: 200/120V, 3-PH, 4W										B= 20.1 KVA										HEATING										0.5 KVA									
MAINS: 400 AMP MAIN CIRCUIT BREAKER										C= 19.0 KVA										AC & HEAT PUMPS										0.0 KVA									
SCIR: 10,000 AMPERES																				AIR HANDLING & FANS										0.0 KVA									
NOTES:																				RECEPTACLES										55.0 KVA									
FOR REFERENCE ONLY. NO WORK REQUIRED.																				ELECTRIC WATER HEATING										0.0 KVA									
																				ELEVATORS										0.0 KVA									
																				FOOD PROCESSING										0.0 KVA									
																				PROCESS										0.0 KVA									
																				MISCELLANEOUS										4.9 KVA									
																														25% OF LARGEST MOTOR: 0.0 KVA									
																														TOTAL CONNECTED LOAD: 62.6 KVA									
																														TOTAL NEC DEMAND LOAD: 40.7 KVA									
																														WORST PHASE (W.D.F.): 132.0 AMPS									
																														DEMAND LOAD CURRENT: 113.1 AMPS									

TYPE: BRANCH CIRCUIT										GROSS PHASE TOTALS										CONNECTED LOAD										NEC CALCULATED DEMAND LOAD									
MOUNTING SURFACE										A= 14.5 KVA										LIGHTING										0.1 KVA									
SUPPLY: 200/120V, 3-PH, 4W										B= 15.2 KVA										HEATING AND COOLING										0.0 KVA									
MAINS: 225 AMP MAIN LUGS ONLY										C= 12.4 KVA										AC & HEAT PUMPS										0.0 KVA									
SCIR: 10,000 AMPERES																				AIR HANDLING & FANS										0.0 KVA									
NOTES:																				RECEPTACLES										41.9 KVA									
FOR REFERENCE ONLY. NO WORK REQUIRED.																				ELECTRIC WATER HEATING										0.0 KVA									
																				ELEVATORS										0.0 KVA									
																				FOOD PROCESSING										0.0 KVA									
																				PROCESS										0.0 KVA									
																				MISCELLANEOUS										0.1 KVA									
																														25% OF LARGEST MOTOR: 0.0 KVA									
																														TOTAL CONNECTED LOAD: 42.1 KVA									
																														TOTAL NEC DEMAND LOAD: 26.2 KVA									
																														WORST PHASE (W.D.F.): 79.1 AMPS									
																														DEMAND LOAD CURRENT: 72.6 AMPS									

TYPE: BRANCH CIRCUIT										GROSS PHASE TOTALS										CONNECTED LOAD										NEC CALCULATED DEMAND LOAD									
MOUNTING SURFACE										A= 38.7 KVA										LIGHTING										35.5 KVA									
SUPPLY: 480/277V, 3-PH, 4W										B= 33.2 KVA										HEATING										0.5 KVA									
MAINS: 250 AMP MAIN LUGS ONLY										C= 31.4 KVA										AC & HEAT PUMPS										0.0 KVA									
SCIR: 42,000 AMPERES																				AIR HANDLING & FANS										8.5 KVA									
NOTES:																				RECEPTACLES										55.0 KVA									
FOR REFERENCE ONLY. NO WORK REQUIRED.																				ELECTRIC WATER HEATING										0.0 KVA									
																				ELEVATORS										0.0 KVA									
																				FOOD PROCESSING										0.0 KVA									
																				PROCESS										0.0 KVA									
																				MISCELLANEOUS										4.9 KVA									
																														25% OF LARGEST MOTOR: 0.0 KVA									
																														TOTAL CONNECTED LOAD: 104.3 KVA									
																														TOTAL NEC DEMAND LOAD: 90.7 KVA									
																														WORST PHASE (W.D.F.): 127.2 AMPS									
																														DEMAND LOAD CURRENT: 109.1 AMPS									

TYPE: BRANCH CIRCUIT										GROSS PHASE TOTALS										CONNECTED LOAD										NEC CALCULATED DEMAND LOAD									
MOUNTING SURFACE										A= 38.7 KVA										LIGHTING										35.5 KVA									
SUPPLY: 480/277V, 3-PH, 4W										B= 33.2 KVA										HEATING										0.5 KVA									
MAINS: 250 AMP MAIN LUGS ONLY										C= 31.4 KVA										AC & HEAT PUMPS										0.0 KVA									
SCIR: 42,000 AMPERES																				AIR HANDLING & FANS										8.5 KVA									
NOTES:																				RECEPTACLES										55.0 KVA									
FOR REFERENCE ONLY. NO WORK REQUIRED.																				ELECTRIC WATER HEATING										0.0 KVA									
																				ELEVATORS										0.0 KVA									
																				FOOD PROCESSING										0.0 KVA									
																				PROCESS										0.0 KVA									
																				MISCELLANEOUS										4.9 KVA									
																														25% OF LARGEST MOTOR: 0.0 KVA									
																														TOTAL CONNECTED LOAD: 104.3 KVA									
																														TOTAL NEC DEMAND LOAD: 90.7 KVA									
																														WORST PHASE (W.D.F.): 127.2 AMPS									
																														DEMAND LOAD CURRENT: 109.1 AMPS									

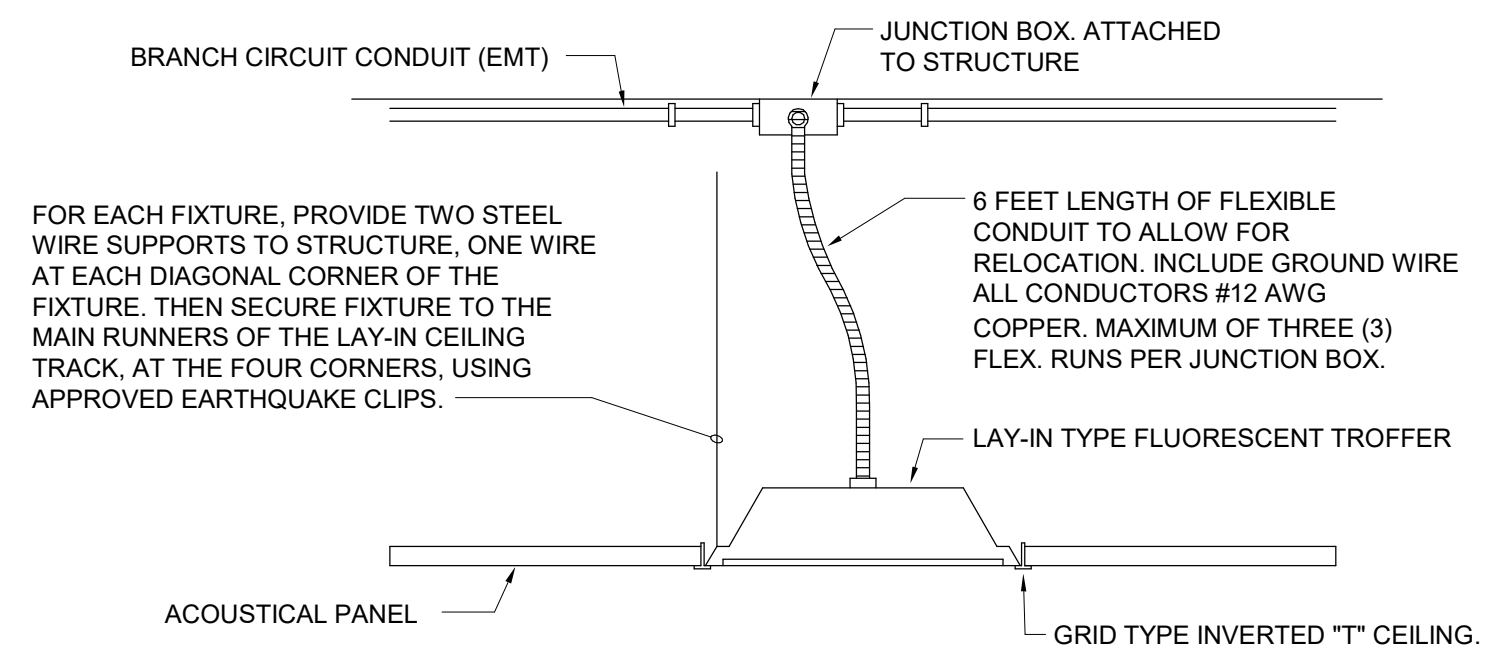
TYPE: BRANCH CIRCUIT										GROSS PHASE TOTALS										CONNECTED LOAD										NEC CALCULATED DEMAND LOAD									
MOUNTING SURFACE										A= 38.7 KVA										LIGHTING										35.5 KVA									
SUPPLY: 480/277V, 3-PH, 4W										B= 33.2 KVA										HEATING										0.5 KVA									
MAINS: 250 AMP MAIN LUGS ONLY										C= 31.4 KVA										AC & HEAT PUMPS										0.0 KVA									
SCIR: 42,000 AMPERES																				AIR HANDLING & FANS										8.5 KVA									
NOTES:																				RECEPTACLES										55.0 KVA									
FOR REFERENCE ONLY. NO WORK REQUIRED.																				ELECTRIC WATER HEATING										0.0 KVA									
																				ELEVATORS										0.0 KVA									
																				FOOD PROCESSING										0.0 KVA									
																				PROCESS										0.0 KVA									
																				MISCELLANEOUS										4.9 KVA									
																														25% OF LARGEST MOTOR: 0.0 KVA									
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																														WORST PHASE (W.D.F.): 127.2 AMPS									
																														DEMAND LOAD CURRENT: 109.1 AMPS									

TYPE: BRANCH CIRCUIT										GROSS PHASE TOTALS										CONNECTED LOAD										NEC CALCULATED DEMAND LOAD									
MOUNTING SURFACE										A= 38.7 KVA										LIGHTING										35.5 KVA									
SUPPLY: 480/277V, 3-PH, 4W										B= 33.2 KVA										HEATING										0.5 KVA									
MAINS: 250 AMP MAIN LUGS ONLY										C= 31.4 KVA										AC & HEAT PUMPS										0.0 KVA									
SCIR: 42,000 AMPERES																				AIR HANDLING & FANS										8.5 KVA									
NOTES:																				RECEPTACLES										55.0 KVA									
FOR REFERENCE ONLY. NO WORK REQUIRED.																				ELECTRIC WATER HEATING										0.0 KVA									
																				ELEVATORS										0.0 KVA									
																				FOOD PROCESSING										0.0 KVA									
																				PROCESS										0.0 KVA									
																				MISCELLANEOUS										4.9 KVA									
																														25% OF LARGEST MOTOR: 0.0 KVA									
																														TOTAL CONNECTED LOAD: 104.3 KVA									
																														TOTAL NEC DEMAND LOAD: 90.7 KVA									
																														WORST PHASE (W.D.F.): 127.2 AMPS									
																														DEMAND LOAD CURRENT: 109.1 AMPS									

TYPE: BRANCH CIRCUIT										GROSS PHASE TOTALS										CONNECTED LOAD										NEC CALCULATED DEMAND LOAD									
MOUNTING SURFACE										A= 38.7 KVA										LIGHTING										35.5 KVA									
SUPPLY: 480/277V, 3-PH, 4W										B= 33.2 KVA										HEATING										0.5 KVA									
MAINS: 250 AMP MAIN LUGS ONLY										C= 31.4 KVA										AC & HEAT PUMPS										0.0 KVA									
SCIR: 42,000 AMPERES																				AIR HANDLING & FANS										8.5 KVA									
NOTES:																				RECEPTACLES										55.0 KVA									
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																														WORST PHASE (W.D.F.): 127.2 AMPS									
																														DEMAND LOAD CURRENT: 109.1 AMPS									

TYPE: BRANCH CIRCUIT										GROSS PHASE TOTALS										CONNECTED LOAD										NEC CALCULATED DEMAND LOAD									
MOUNTING SURFACE										A= 38.7 KVA										LIGHTING										35.5 KVA									
SUPPLY: 480/277V, 3-PH, 4W										B= 33.2 KVA										HEATING										0.5 KVA									
MAINS: 250 AMP MAIN LUGS ONLY										C= 31.4 KVA										AC & HEAT PUMPS										0.0 KVA									
SCIR: 42,000 AMPERES																				AIR HANDLING & FANS										8.5 KVA									
NOTES:																				RECEPTACLES										55.0 KVA									
FOR REFERENCE ONLY. NO WORK REQUIRED.																				ELECTRIC WATER HEATING										0.0 KVA									
																				ELEVATORS										0.0 KVA									
																				FOOD PROCESSING										0.0 KVA									
																				PROCESS										0.0 KVA									
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																														WORST PHASE (W.D.F.): 127.2 AMPS									
																														DEMAND LOAD CURRENT: 109.1 AMPS									

TYPE: BRANCH CIRCUIT										GROSS PHASE TOTALS										CONNECTED LOAD										NEC CALCULATED DEMAND LOAD									
MOUNTING SURFACE										A= 38.7 KVA										LIGHTING										35.5 KVA									
SUPPLY: 480/277V, 3-PH, 4W										B= 33.2 KVA										HEATING										0.5 KVA									
MAINS: 250 AMP MAIN LUGS ONLY										C= 31.4 KVA										AC & HEAT PUMPS										0.0 KVA									
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																														TOTAL CONNECTED LOAD: 104.3 KVA									
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																														WORST PHASE (W.D.F.): 127.2 AMPS									



1
E004
DETAIL - TROFFER LIGHTING FIXTURE MOUNTING
1/8" = 1'-0"



LIGHTING FIXTURE IMAGES
NOT TO SCALE

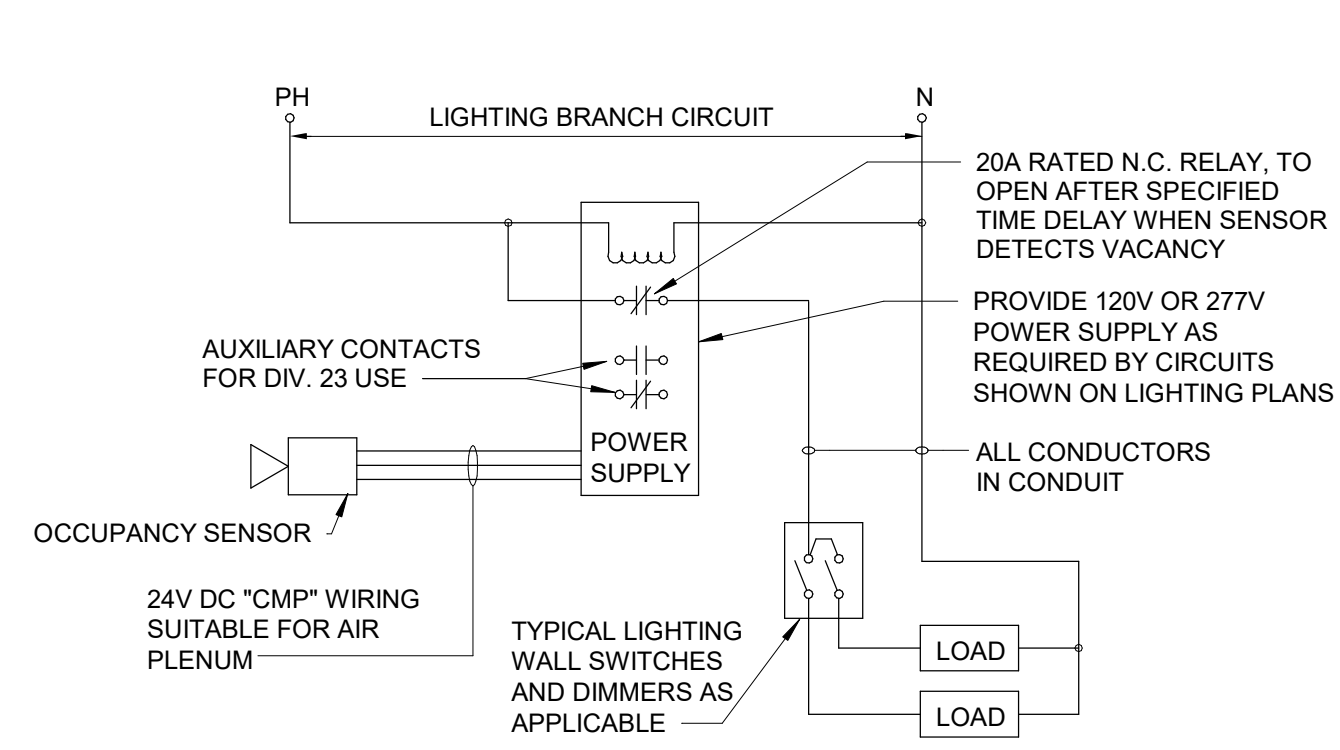
LIGHTING FIXTURE SCHEDULE NOTES

- EXACT LOCATION OF LIGHTING FIXTURES SHALL BE AS SHOWN ON THE ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS. FIXTURES NOT SHOWN ON THE REFLECTED CEILING PLANS OR ELEVATIONS SHALL BE LOCATED AS SHOWN ON THE ELECTRICAL DRAWINGS.
- CATALOG NUMBERS SHOWN IN THE LIGHTING FIXTURE SCHEDULE DO NOT NECESSARILY INCLUDE ALL REQUIRED ACCESSORIES AND FEATURES SPECIFIED IN THE FIXTURE DESCRIPTION. THE CONTRACTOR SHALL PROVIDE ALL ACCESSORIES AND FEATURES INDICATED BY THE FIXTURE DESCRIPTION.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT THE LIGHTING FIXTURES FURNISHED ARE SUITABLE FOR THE PROPOSED INSTALLATION PRIOR TO SUBMITTING SHOP DRAWINGS. THE CONTRACTOR SHALL VERIFY THAT THE FIXTURES SPECIFIED ARE SUITABLE FOR THE ACTUAL MOUNTING CONDITIONS, AND THAT THE FIXTURES ARE OF THE PROPER VOLTAGE FOR THE CIRCUITING SHOWN ON THE DRAWINGS.
- CONTRACTOR SHALL PROVIDE A COMPLETE LIST OF ALL REPLACEABLE LAMPS THAT WILL BE FURNISHED ON THE PROJECT. THIS LIST SHALL BE ORGANIZED ALPHABETICALLY BY LUMINAIRE TYPE INDICATED ON THE LIGHTING FIXTURE SCHEDULE, AND INCLUDE THE MANUFACTURER AND EXACT MODEL, ORDERING CODE OF EACH LAMP.
- PROVIDE AN ADDITIONAL 10% OF ALL REPLACEABLE LAMPS LISTED AT PROJECT TURN OVER. LAMPS ARE FOR SPARE REPLACEMENT LAMPS.
- CONTRACTOR MAY BE REQUIRED TO PROVIDE UNIT PRICING TO THE ARCHITECT FOR EACH FIXTURE TYPE, COMPLETE WITH ALL ACCESSORIES AND LAMPS, FOR THE COST OF ADDITIONAL FIXTURES AND/OR DELETED FIXTURES. SEE PROJECT GENERAL PROVISIONS.

ABBREVIATIONS

- AR = AS REQUIRED
- BF = BALLAST FACTOR
- CFI = COMPACT FLUORESCENT LAMP
- CMH = CERAMIC METAL HALIDE LAMP
- CWA = CONSTANT WATTAGE AUTOTRANSFORMER
- DDT = DOUBLE TWIN TUBE (QUAD) COMPACT FLUORESCENT LAMP
- HAL = HALOGEN
- HPF = HIGH POWER FACTOR
- IF = INSIDE FROSTED
- LED = LIGHT EMITTING DIODE
- LTT = LONG TWIN TUBE (BIAK) COMPACT FLUORESCENT LAMP
- N/A = NOT APPLICABLE
- MH = METAL HALIDE LAMP
- OH = OVERALL HEIGHT
- T-H = TUNGSTEN-HALOGEN LAMP
- TT = TWIN TUBE COMPACT FLUORESCENT LAMP
- TTT = TRIPLE TWIN TUBE COMPACT FLUORESCENT LAMP
- TS = 5/8" DIAMETER FLUORESCENT LAMP
- T8 = 1" DIAMETER FLUORESCENT LAMP

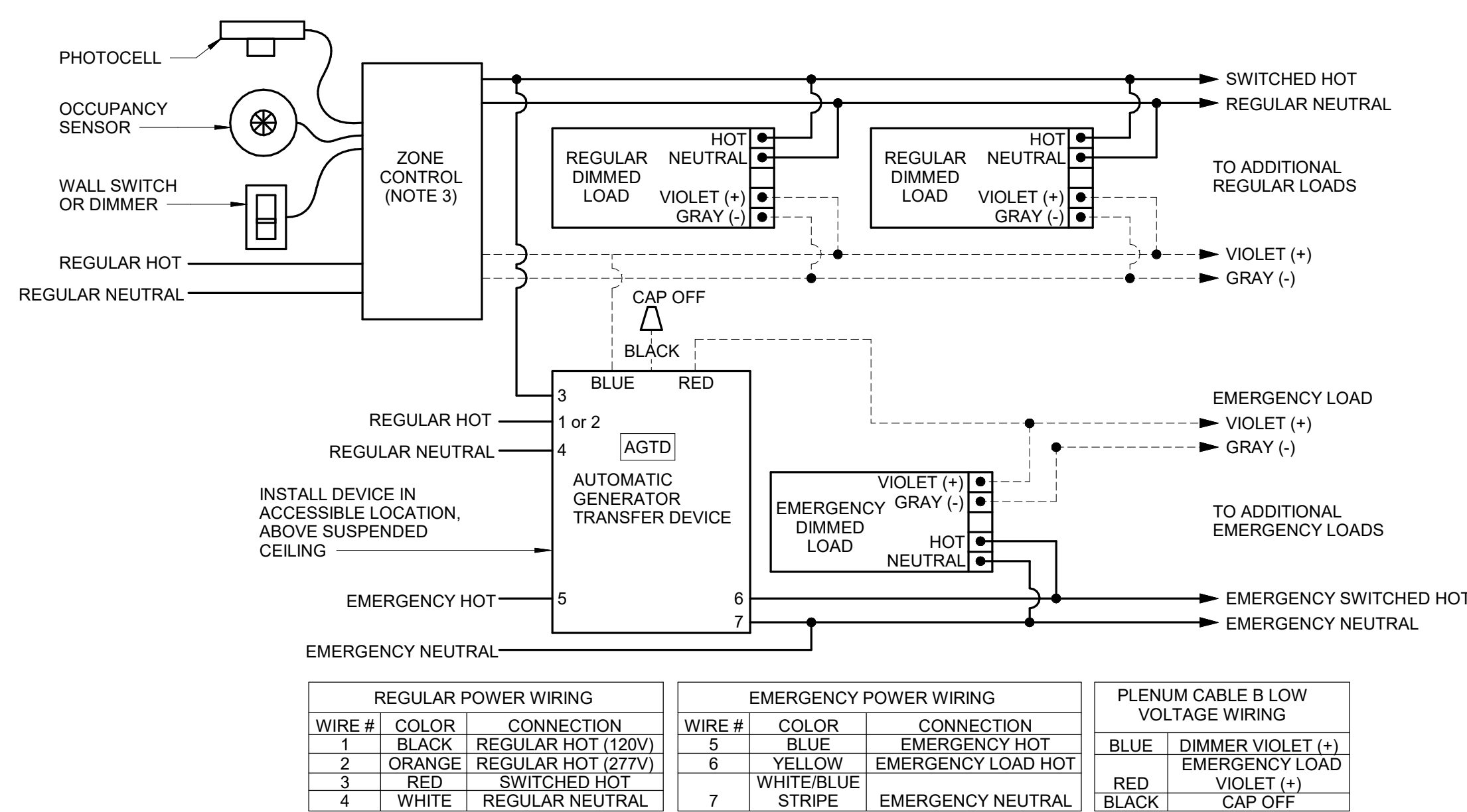
FIXTURE TYPE	DESCRIPTION	QTY	LAMP		BALLAST/DRIVER		TOTAL WATTS
			TYPE	WATTS	QTY	TYPE	
A1	LED VOLUMETRIC 2'x2' LAY-IN GRID STATIC TROFFER, NOMINAL 3300 LUMENS, B.O.D = LITHONIA 2VTL2 33L ADP GZ10 LP840, OTHER ACCEPTABLE MANUFACTURERS INCLUDE DAY-BRITE, WILLIAMS...	AR	LED 4000K	AR	1	ELECTRONIC DIMMING DRIVER	26.3
A2	LED VOLUMETRIC 2'x2' LAY-IN GRID STATIC TROFFER, NOMINAL 6000 LUMENS, B.O.D = LITHONIA 2VTL2 60L ADP E21 LP840, OTHER ACCEPTABLE MANUFACTURERS INCLUDE DAY-BRITE, WILLIAMS...	AR	LED 4000K	AR	1	ELECTRONIC 0-10V DIMMING DRIVER (100%-1%)	49
A3	LED VOLUMETRIC 2'x2' LAY-IN GRID STATIC TROFFER, NOMINAL 7200 LUMENS, B.O.D = LITHONIA 2VTL2 72L ADP E21 LP840, OTHER ACCEPTABLE MANUFACTURERS INCLUDE DAY-BRITE, WILLIAMS...	AR	LED 4000K	AR	1	ELECTRONIC 0-10V DIMMING DRIVER (100%-1%)	58.6
C1	LED RECESSED DOWNLIGHT, 6" ROUND APERTURE, ALUMINUM TRIM, WHITE FINISH, NOMINAL 2500 LUMENS, MEDIUM DISTRIBUTION, B.O.D = GOTHAM EV06 4025 WR MD MVOLT GZ1 TRW, OTHER ACCEPTABLE MANUFACTURERS INCLUDE PHILIPS, COOPER, WILLIAMS.	AR	LED 4000K	AR	1	ELECTRONIC 0-10V DIMMING DRIVER (100%-1%)	24.7
EXC	EXIT SIGN, CEILING-MOUNTED, RELOCATED EXISTING UNIT SALVAGED FROM RENOVATED AREA.	AR	LED	AR	1	ELECTRONIC DRIVER	2.7
UC	LED UNDERCABINET STRIP, NOMINAL 1" X 11" X LENGTH SHOWN, 2 WATTS/FT, WITH EXTRUDED ALUMINUM CORNER-MOUNT HOUSING, NATURAL ALUMINUM FINISH AND FROSTED ACRYLIC DIFFUSER. MOUNTING HARDWARE AND REMOTE POWER SUPPLY AS REQUIRED. B.O.D = CALI LLED2000-CMC-F-2W-10V-LED-4.0K-DRY-NA, OTHER ACCEPTABLE MANUFACTURERS INCLUDE MCSLED, LUMENPULSE.	AR	LED 4000K	AR	1	ELECTRONIC DIMMING DRIVER	2W/FT



- NOTES**
- USE DUAL TECHNOLOGY (INFARED/ULTRASONIC) SENSORS FOR CLASSROOMS AND LARGE MEETING ROOMS.
 - LOCATE OCCUPANCY SENSORS AS RECOMMENDED BY MANUFACTURER.
 - USE MULTIPLE SENSORS AND ADDITIONAL AUXILIARY RELAYS AND POWER SUPPLIES, AS REQUIRED BY ROOM SIZE AND CONFIGURATION.
 - PROVIDE ADDITIONAL SLAVE POWER PACKS TO CONTROL ADDITIONAL LIGHTING CIRCUITS IN SAME ROOM WHERE APPLICABLE.

2
E004
DIAGRAM - TYPICAL ROOM AUTOMATIC OCCUPANCY SENSOR LIGHTING CONTROL WIRING
NOT TO SCALE

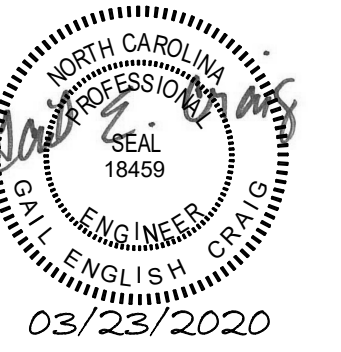
OCCUPANCY SENSOR DELAY SETTINGS	
CLASSROOMS	15 MINUTES
CONFERENCE ROOMS	15 MINUTES
LABORATORIES	20 MINUTES
CORRIDORS	20 MINUTES
OPEN/GROUP OFFICES	15 MINUTES
PRIVATE OFFICES	10 MINUTES
LOBBIES	20 MINUTES
LOUNGES	15 MINUTES
TOILETS	30 MINUTES
WORK/COPY ROOMS	15 MINUTES

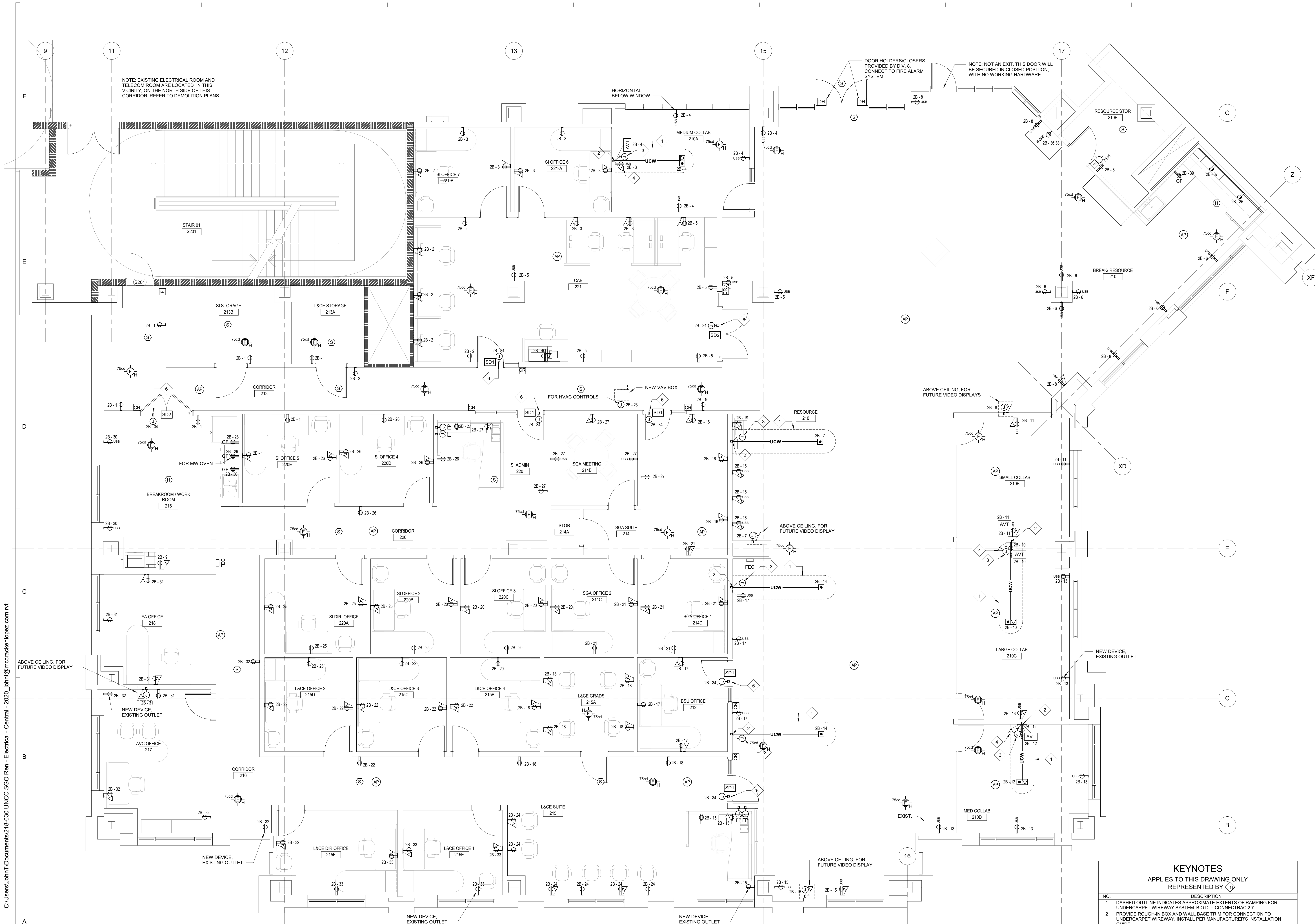


REGULAR POWER WIRING			EMERGENCY POWER WIRING			PLENUM CABLE B LOW VOLTAGE WIRING		
WIRE #	COLOR	CONNECTION	WIRE #	COLOR	CONNECTION	WIRE #	COLOR	CONNECTION
1	BLACK	REGULAR HOT (120V)	5	BLUE	EMERGENCY HOT	1	BLUE	DIMMER VIOLET (+)
2	ORANGE	REGULAR HOT (277V)	6	YELLOW	EMERGENCY LOAD HOT	2	EMERGENCY VIOLET (+)	
3	RED	SWITCHED HOT	7	WHITE/BLUE STRIPE	EMERGENCY NEUTRAL	3	VIOLET (+)	
4	WHITE	REGULAR NEUTRAL				4	BLACK	CAP OFF

- NOTES**
- DEVICE IS INTENDED TO CREATE DUAL POWER SOURCE EMERGENCY FIXTURES AS ORDINARY DIMMED FIXTURES THAT WILL AUTOMATICALLY COME ON AT 100% BRIGHTNESS WHEN NORMAL POWER IS LOST AND EMERGENCY GENERATOR POWER IS ACTIVATED.
 - ZONE CONTROL DEVICE CAN BE ANY COMBINATION OF THE FOLLOWING:
 - INTELLIGENT ZONE CONTROLLER INCLUDING BOTH LOW VOLTAGE DIMMING OUTPUT & LINE VOLTAGE SWITCHING OUTPUT
 - LINE VOLTAGE SWITCHING DEVICES (SUCH AS OCCUPANCY SENSOR CONTACT, TIME CLOCK, RELAY PANEL) & LOW VOLTAGE DIMMING DEVICES INCLUDING PHOTOCELLS, WALL DIMMERS, AND OTHER LOW VOLTAGE DIMMING SIGNALS (0-10V OR DIGITAL).
 - TYPICAL WIRING DIAGRAM IS SHOWN. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR ALTERNATE WIRING DIAGRAMS, PROVIDED RESISTORS, AND OTHER ADDITIONAL COMPONENTS AND CONNECTIONS REQUIRED FOR THE LIGHTING CONTROLS AND LUMINAIRES BEING USED.

3
E004
DIAGRAM - AUTOMATIC GENERATOR TRANSFER DEVICE WIRING
NOT TO SCALE





1 LEVEL 2 FLOOR PLAN - POWER & SPECIAL SYSTEMS
E111 1/4" = 1'-0"

KEYNOTES	
APPLIES TO THIS DRAWING ONLY	
REPRESENTED BY	
NO.	DESCRIPTION
1	DASHED OUTLINE INDICATES APPROXIMATE EXTENTS OF RAMPING FOR UNDERCARPET WIREWAY SYSTEM. B.O.D. = CONNECTRAC 2.7.
2	PROVIDE ROUGH-IN BOX AND WALL BASE TRIM FOR CONNECTION TO UNDERCARPET WIREWAY. INSTALL PER MANUFACTURER'S INSTALLATION GUIDE.
3	SINGLE-GANG JUNCTION BOX WITH BLANK COVER, 6" AFF TO BOTTOM, FOR 120V CONNECTION TO UNDERCARPET WIREWAY SYSTEM.
4	TELECOM OUTLET WITH BLANK COVER, 6" AFF TO BOTTOM, WITH 1 1/4" DIAMETER BUSHED HOLE IN BOTTOM, FOR TELECOM CABLE TO BE RUN IN UNDERCARPET WIREWAY. PROVIDE 1 1/4" EMPTY CONDUIT WITH PULL CORD TO BUSHED STUB-OUT ABOVE LAY-IN CEILING. IF 'AVT' OUTLET IS SHOWN AT THIS LOCATION, THE 1 1/4" CONDUIT SHALL CONNECT TO THE AVT OUTLET, THEN CONTINUE TO THE CEILING SPACE.
6	4" x 4" JUNCTION BOX WITH BLANK COVER ABOVE CEILING, FOR 120V POWER TO LOW VOLTAGE POWER SUPPLY SERVING CARD READER AND ELECTRIC LOCK OR STRIKE. LEAVE 12" SLACK CONDUCTORS, ELECTRICALLY AND MECHANICALLY SECURED, COILED IN BOX, FOR USE BY ACCESS CONTROLS INSTALLER.



ISSUE FOR
BID SET

ISSUE DATE
03/23/2020

REVISIONS

NO.	REASON	DATE

PROJECT TEAM
PRINCIPAL IN CHARGE
SR
PROJECT MANAGER
AS
DESIGN TEAM
JCT/GEC
PROJECT NAME
UNCC-SGO RENOVATIONS

SCO PROJECT #18-18336-01A

PROJECT NO.

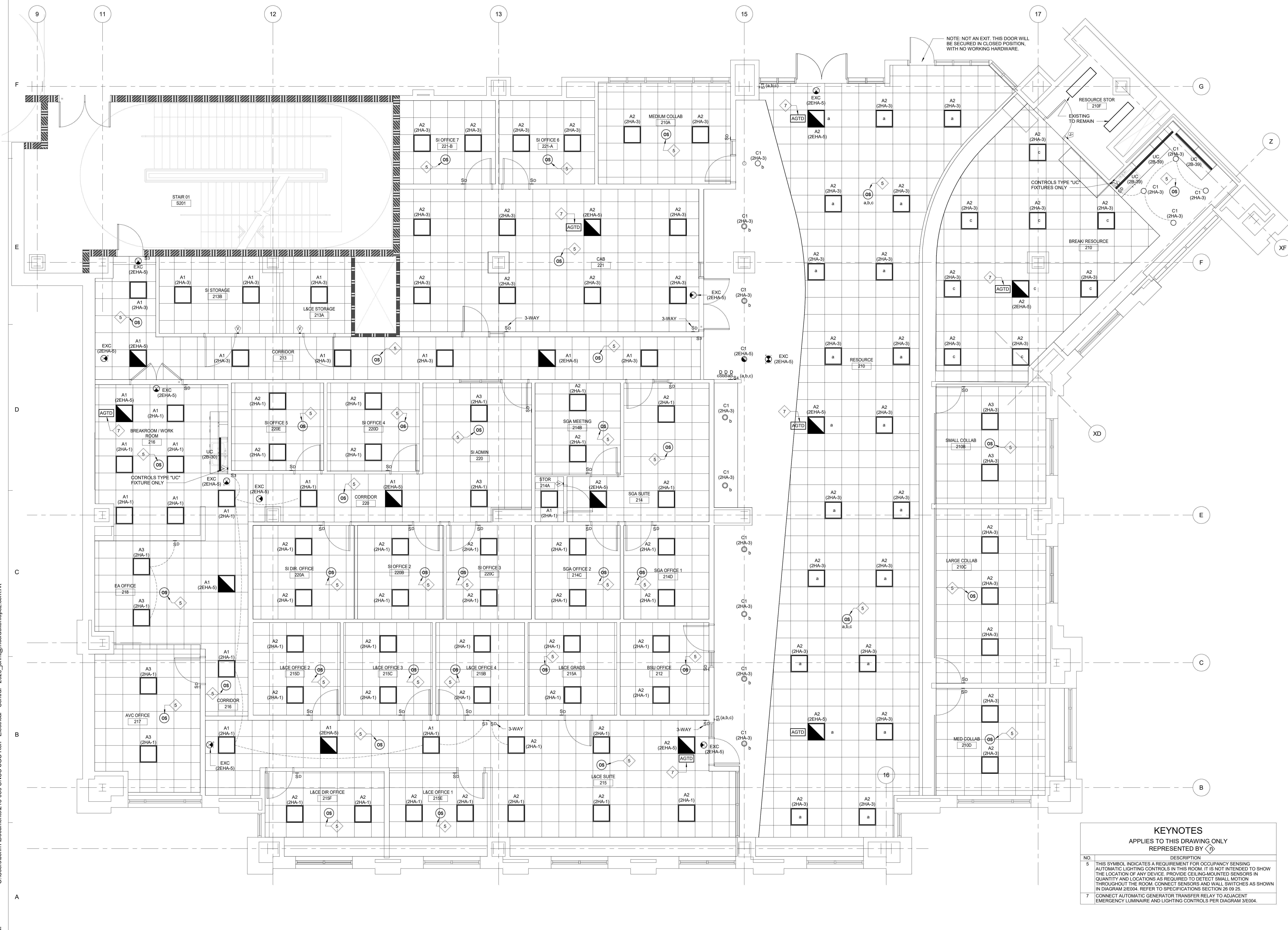
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SHEET TITLE
LEVEL 2 FLOOR PLAN - POWER & SPECIAL SYSTEMS

SHEET NUMBER

E111

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KEYNOTES
APPLIES TO THIS DRAWING ONLY
REPRESENTED BY

NO.	DESCRIPTION
5	THIS SYMBOL INDICATES A REQUIREMENT FOR OCCUPANCY SENSING AUTOMATIC LIGHTING CONTROLS IN THIS ROOM. IT IS NOT INTENDED TO SHOW THE LOCATION OF ANY DEVICE. PROVIDE CEILING-MOUNTED SENSORS IN QUANTITY AND LOCATIONS AS REQUIRED TO DETECT SMALL MOTION THROUGHOUT THE ROOM. CONNECT SENSORS AND WALL SWITCHES AS SHOWN IN DIAGRAM 2/E004. REFER TO SPECIFICATIONS SECTION 26 09 25.
7	CONNECT AUTOMATIC GENERATOR TRANSFER RELAY TO ADJACENT EMERGENCY LUMINAIRE AND LIGHTING CONTROLS PER DIAGRAM 3/E004.

1 LEVEL 2 FLOOR PLAN - LIGHTING
E121 1/4" = 1'-0"



ISSUE FOR: **BID SET**

ISSUE DATE: **03/23/2020**

REVISIONS NO.	REASON	DATE

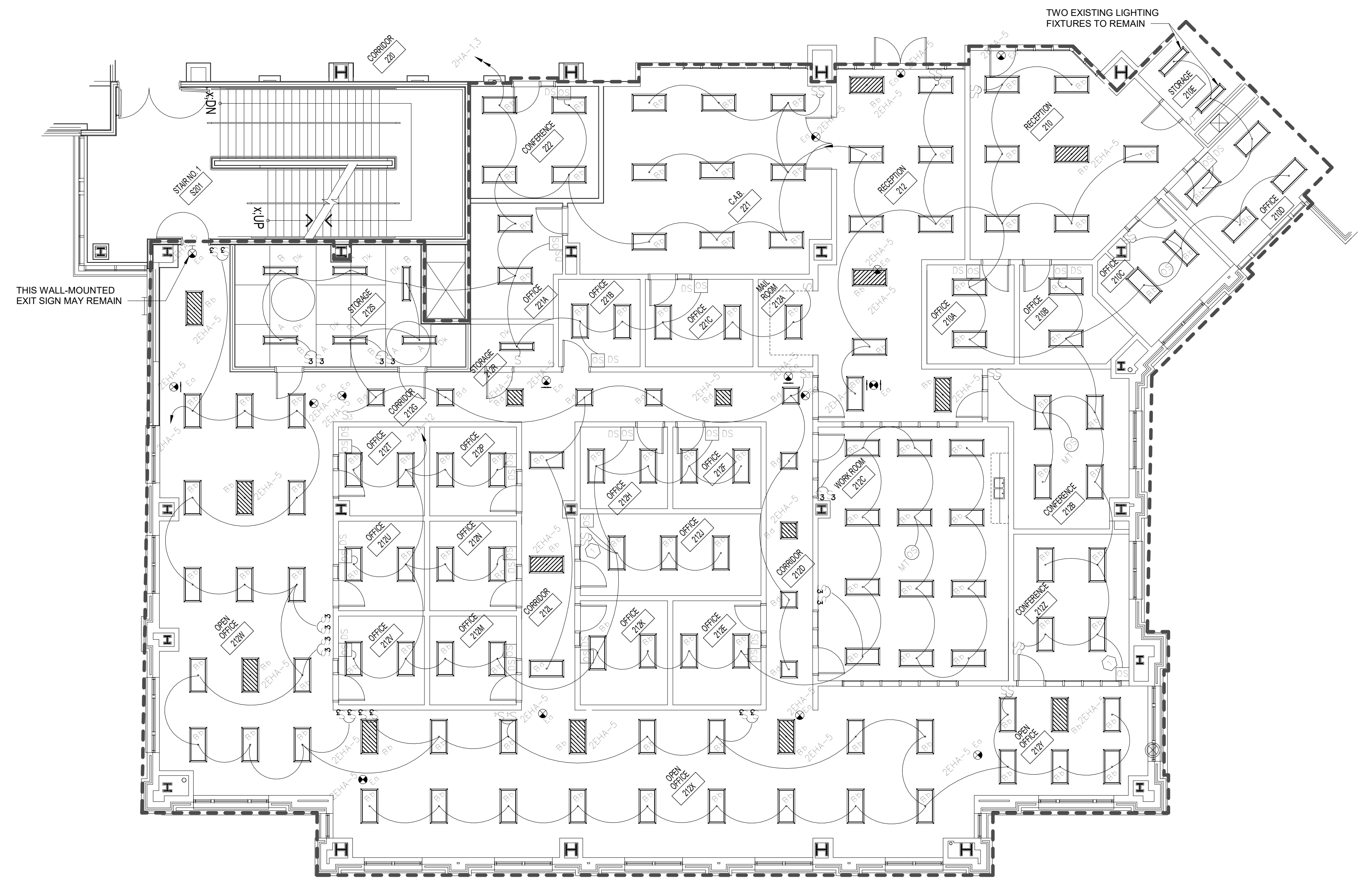
PROJECT TEAM
PRINCIPAL IN CHARGE: **SR**
PROJECT MANAGER: **AS**
DESIGN TEAM: **JCT/GEC**
PROJECT NAME: **UNCC-SGO RENOVATIONS**

SCO PROJECT #18-18336-01A
PROJECT NO.: **113-1001-00**

SHEET TITLE: **LEVEL 2 FLOOR PLAN - LIGHTING**

SHEET NUMBER: **E121**

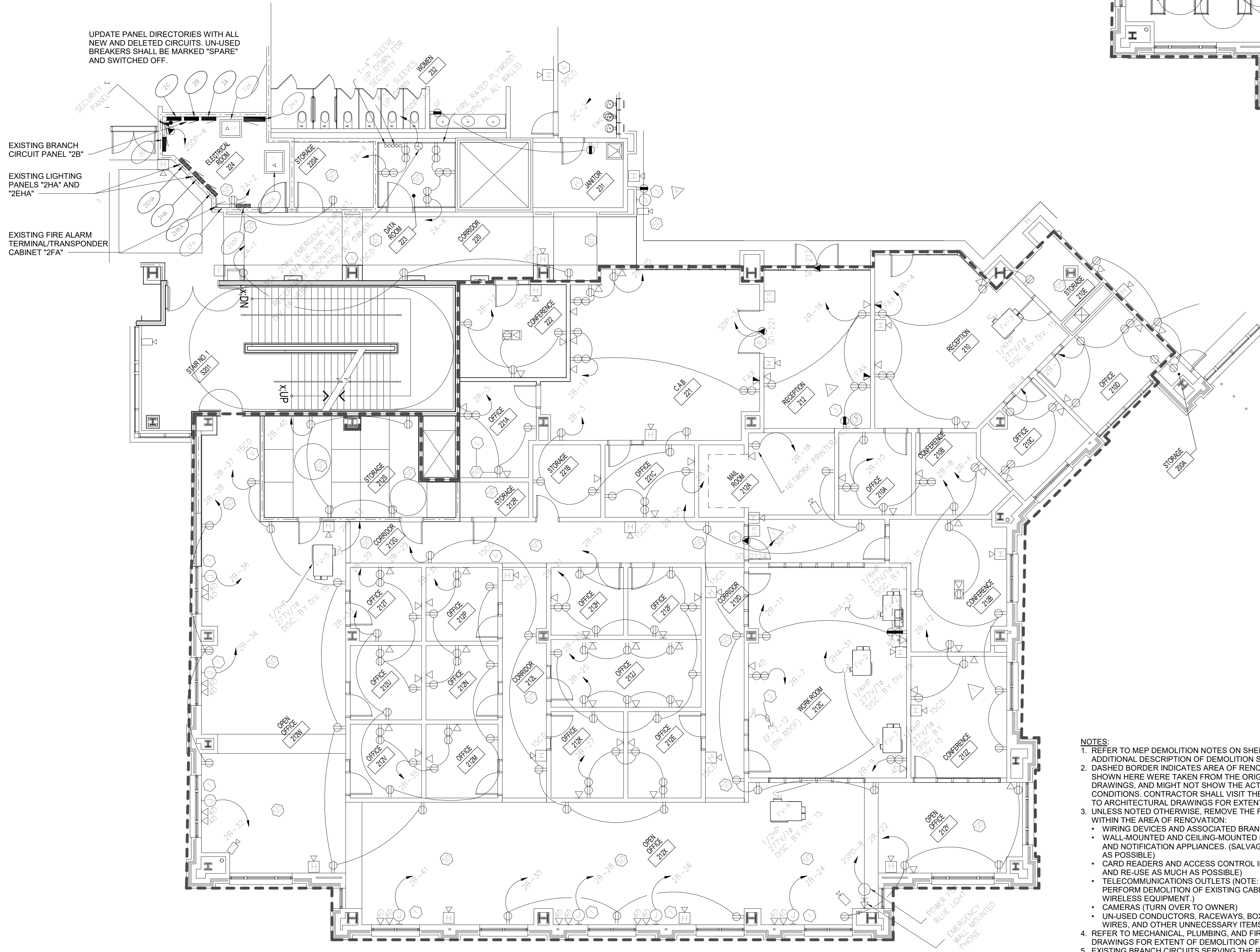
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NOTES:

1. REFER TO MEP DEMOLITION NOTES ON SHEET AD111 FOR ADDITIONAL DESCRIPTION OF DEMOLITION SCOPE.
2. DASHED BORDER INDICATES AREA OF RENOVATION. EXISTING ITEMS SHOWN HERE WERE TAKEN FROM THE ORIGINAL DESIGN DRAWINGS, AND MIGHT NOT SHOW THE ACTUAL CURRENT CONDITIONS. CONTRACTOR SHALL VISIT THE SITE TO VERIFY. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF DEMOLITION.
3. UNLESS NOTED OTHERWISE, REMOVE THE FOLLOWING ITEMS WITHIN THE AREA OF RENOVATION:
 - EXIT SIGNS, (TO BE CLEANED, MODIFIED AS NECESSARY, AND RE-USED IN NEW CONSTRUCTION)
 - LIGHTING FIXTURES, LIGHT SWITCHES, SENSORS, AND ASSOCIATED BRANCH CIRCUITS. (CEILING-MOUNTED OCCUPANCY SENSORS MAY BE SALVAGED AND RE-USED AS APPLICABLE.)
 - UN-USED CONDUCTORS, RACEWAYS, BOXES, HANGER RODS AND WIRES, AND OTHER UNNECESSARY ITEMS.
4. EXISTING LIGHTING BRANCH CIRCUITS SERVING THE RENOVATED AREA WILL BE RE-USED. EXISTING RACEWAYS MAY BE REUSED AT CONTRACTOR'S DISCRETION. NEW LIGHTING CONNECTED LOAD WILL BE LESS THAN EXISTING.

2 LEVEL 2 PLAN - DEMOLITION - LIGHTING
1/8" = 1'-0"



NOTES:

1. REFER TO MEP DEMOLITION NOTES ON SHEET AD111 FOR ADDITIONAL DESCRIPTION OF DEMOLITION SCOPE.
2. DASHED BORDER INDICATES AREA OF RENOVATION. EXISTING ITEMS SHOWN HERE WERE TAKEN FROM THE ORIGINAL DESIGN DRAWINGS, AND MIGHT NOT SHOW THE ACTUAL CURRENT CONDITIONS. CONTRACTOR SHALL VISIT THE SITE TO VERIFY. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF DEMOLITION.
3. UNLESS NOTED OTHERWISE, REMOVE THE FOLLOWING ITEMS WITHIN THE AREA OF RENOVATION:
 - WIRING DEVICES AND ASSOCIATED BRANCH CIRCUITS
 - WALL-MOUNTED AND CEILING-MOUNTED FIRE ALARM DEVICES AND NOTIFICATION APPLIANCES, (SALVAGE AND RE-USE AS MUCH AS POSSIBLE)
 - CARD READERS AND ACCESS CONTROL INTERFACES, (SALVAGE AND RE-USE AS MUCH AS POSSIBLE)
 - TELECOMMUNICATIONS OUTLETS (NOTE: CAMPUS IT WILL PERFORM DEMOLITION OF EXISTING CABLING, DEVICES, AND WIRELESS EQUIPMENT.)
 - CAMERAS (TURN OVER TO OWNER)
 - UN-USED CONDUCTORS, RACEWAYS, BOXES, HANGER RODS AND WIRES, AND OTHER UNNECESSARY ITEMS.
4. REFER TO MECHANICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR EXTENT OF DEMOLITION OF THOSE ITEMS.
5. EXISTING BRANCH CIRCUITS SERVING THE RENOVATED AREA WILL BE RE-USED. EXISTING RACEWAYS MAY BE REUSED AT CONTRACTOR'S DISCRETION. NEW CONNECTED LOAD WILL BE APPROXIMATELY EQUAL TO EXISTING.
6. ANY EXISTING TELECOMMUNICATIONS CABLE TRAY RUNNING THROUGH THE RENOVATED AREA SHALL REMAIN. ANY CABLING THAT SERVES OUTLETS OUTSIDE THE RENOVATED AREA SHALL REMAIN.

1 LEVEL 2 PLAN - DEMOLITION - POWER
1/8" = 1'-0"



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PROJECT MANAGER
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SCO PROJECT #18-18336-01A

PROJECT NO.
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SHEET TITLE
LEVEL 2 FLOOR PLANS - DEMOLITION

SHEET NUMBER
ED111