

ELECTRICAL LEGEND (NOTE: NOT ALL SYMBOLS SHOWN ARE USED ON THESE DRAWINGS)										APPLICABLE CODES				
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	AHJ: UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CENTER				
-- ONE LINE SYMBOLS --		-- GENERAL --		-- SPECIAL SYSTEMS DEVICES --		-- POWER --		-- LIGHTING -- (REFER TO LUMINAIRE SCHEDULE)		-- ABBREVIATIONS --				
	CIRCUIT BREAKER		BRANCH CIRCUIT HOME RUN TO PANELBOARD, DESIGNATION INDICATES PANEL AND CIRCUIT NUMBERS		DATA OUTLET		DUPLEX RECEPTACLE D = DEDICATED CIRCUIT IG = ISOLATED GROUND DEVICE GFI = GROUND FAULT CIRCUIT INTERRUPTER		LUMINAIRES X = FIXTURE DESIGNATION # = BRANCH CIRCUIT NUMBER + = SWITCH LEG IDENTIFIER	(E) EXISTING (N) NEW (PART) PARTIAL CIRCUIT	REMODEL <input checked="" type="checkbox"/> NEW <input type="checkbox"/>			
	DRAW-OUT CIRCUIT BREAKER (MOLDED INSULATED CASE)		CONTROL WIRING		COMBINATION TELEPHONE/DATA OUTLET		FLOOR MOUNTED DUPLEX RECEPTACLE		SHADING INDICATES LUMINAIRE ON LIFE SAFETY	AC AMP AF AMP FRAME, AMP FUSE AFS ABOVE FINISHED FLOOR				
	DRAW-OUT POWER CIRCUIT BREAKER		LIGHTING, ONE-LINE, AND POWER CIRCUITING (UNDERGROUND)		TELEVISION JACK		FLOOR MOUNTED FOURPLEX RECEPTACLE		SHADING INDICATES PORTION OF LUMINAIRE ON LIFE SAFETY	AHJ AUTHORITY HAVING JURISDICTION AIC AMPS INTERRUPTING CAPACITY	YEAR CODE 2018 INTERNATIONAL BUILDING CODE 2018 INTERNATIONAL MECHANICAL CODE 2018 INTERNATIONAL PLUMBING CODE 2018 INTERNATIONAL ENERGY CONSERVATION CODE 2018 INTERNATIONAL FIRE CODE 2017 NATIONAL ELECTRICAL CODE			
	CONTROL FUSE		FLEXIBLE CONDUIT		CEILING MOUNTED DATA OUTLET		CEILING MOUNTED DUPLEX RECEPTACLE		WALL MOUNTED LUMINAIRE	AL ALUMINUM APL APPLIANCE AS AMP SWITCH	IS THE BUILDING FULLY SPRINKLERED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IS THE BUILDING FULLY DETECTED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
	FUSE WITH SWITCH		CONDUIT BREAK SYMBOL		CEILING MOUNTED TELEPHONE/DATA OUTLET		CEILING MOUNTED FOURPLEX RECEPTACLE		STRIP LIGHT	AT AMP TRIP ATS AUTOMATIC TRANSFER SWITCH				
	SWITCH		CONDUIT CAP		CEILING MOUNTED TELEPHONE OUTLET		CEILING MOUNTED SPECIAL PURPOSE RECEPTACLE		STRIP LIGHT WITH LIFE SAFETY	AV AUDIOVISUAL BJ BONDING JUMPER	-- GRAPHIC SYMBOLS --			
	PANELBOARD		CONDUIT CHANGE IN ELEVATION		FLOOR MOUNTED DATA OUTLET		FOURPLEX RECEPTACLE		POLE MOUNTED LUMINAIRE (QUANTITY OF LUMINAIRES PER POLE AS INDICATED ON PLANS)	C CONDUIT CB CIRCUIT BREAKER	KEY NOTE REVISION NUMBER DETAIL NOTE X = DENOTES ALL LUMINAIRES IN THE RESPECTIVE AREA ARE THE TYPE INDICATED, REFER TO LUMINAIRE SCHEDULE LIGHTING CONTROL SEQUENCE INDICATION, SEE LIGHTING CONTROL SEQUENCE OF OPERATION SCHEDULE FOR INFORMATION X = DENOTES ILLUMINATION SET POINT			
	AUTOMATIC TRANSFER SWITCH		CONDUIT STUB DOWN (OUT OF DRAWING LIMITS)		FLOOR MOUNTED TELEPHONE/DATA OUTLET		RANGE RECEPTACLE		DOWNLIGHT LUMINAIRE	CCOT CIRCUIT CCTV CLOSED CIRCUIT T.V. CLG CEILING CU COPPER				
	FEEDER DESIGNATION, SEE FEEDER SCHEDULE		CONDUIT STUB UP (OUT OF DRAWING LIMITS)		FLOOR MOUNTED TELEPHONE OUTLET		SINGLE RECEPTACLE		WALL WASHER LUMINAIRE	DISC DISCONNECT DIST DISTRIBUTION	MECHANICAL EQUIPMENT TAG SHADING INDICATES EQUIPMENT HATCHING INDICATES ITEM(S) TO BE REMOVED ROOM NUMBER NORTH ARROW DETAIL BUBBLE DETAIL NUMBER SHEET NUMBER - WHERE DETAIL IS SHOWN SECTION CUT SECTION NUMBER/LETTER SHEET NUMBER - WHERE SECTION IS SHOWN			
	AUTOMATIC TRANSFER SWITCH WITH BY-PASS		JUNCTION BOX		TELEPHONE TERMINAL BOARD		SPECIAL PURPOSE RECEPTACLE		ADJUSTABLE LUMINAIRE	EM EMERGENCY EQPT EQUIPMENT				
	ENGINE GENERATOR		WALL MOUNTED JUNCTION BOX		DATA TERMINAL BOARD		DUPLEX EMERGENCY/CRITICAL		PENDANT LUMINAIRE	FLR FLOOR FLUOR FLUORESCENT	SPECIFICATIONS ARE A PART OF THE CONSTRUCTION DOCUMENTS. SHOULD ANY CONFLICT ARISE BETWEEN THE DRAWINGS AND SPECIFICATIONS, BRING SUCH CONFLICT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION, UNLESS OTHERWISE DIRECTED BY ENGINEER, THE MOST STRINGENT REQUIREMENT WILL PREVAIL. INFORMATION ON THE DRAWINGS IS AS EXACT AS COULD BE REASONABLY SECURED. ABSOLUTE ACCURACY IS NOT GUARANTEED. VERIFY EXACT LOCATIONS, MEASUREMENTS, LEVELS, SPACE REQUIREMENTS, POTENTIAL CONFLICTS WITH OTHER TRADES. ADAPT WORK TO ACTUAL CONDITIONS AT THE SITE, BEFORE SUBMITTING COSTS VISIT THE SITE TO BECOME THOROUGHLY FAMILIAR WITH THE ACTUAL CONDITIONS OF THIS PROJECT. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE, DO NOT SCALE. THESE DRAWINGS DO NOT SHOW MATERIALS FOR A COMPLETE INSTALLATION; PLAN THE INSTALLATION AND LAYOUT OF THE WORK AS DIAGRAMMED IN THESE DOCUMENTS. REFER TO FLOOR PLANS, SCHEDULES AND DIAGRAMS OF OTHER TRADES FOR ELECTRICAL REQUIREMENTS, BRANCH CIRCUITS AND OTHER ELECTRICAL CONNECTIONS NOT INDICATED ON THESE DOCUMENTS. FIRE-SEAL ALL PENETRATIONS THROUGH RATED WALLS AND FLOORS WITH MATERIALS CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR FIRE STOPS ASTM E814. JUNCTION BOXES FOR LUMINAIRES AND OUTLETS ARE NOT INDICATED. PROVIDE THE PROPER NUMBER OF JUNCTION BOXES TO MEET LOCAL CODE AND NATIONAL ELECTRICAL CODE. EXECUTE THE WORK IN ACCORDANCE WITH SUPPORTING OBJECTS FOR SEISMIC ZONE REQUIRED BY STATE AND LOCAL CODES ALL CEILING ATTACHED OBJECTS AND FLOOR ATTACHED EQUIPMENT INCLUDING, BUT NOT LIMITED TO: PENDANT LIGHTING FIXTURES, GENERAL LIGHTING, MULTIPLE RACEWAYS, GENERATOR, TRANSFORMER, ELECTRICAL SWITCHGEAR, SWITCHBOARDS AND OTHER ELECTRICAL EQUIPMENT. WHERE DISCONNECTS ARE INDICATED ON DRAWINGS PROVIDE FINAL CONNECTION TO EQUIPMENT BEING SERVED BY DISCONNECT. DISCONNECTING MEANS FOR ALL MECHANICAL EQUIPMENT SHALL BE ACCESSIBLE AND HAVE THE CLEARANCE REQUIRED BY NEC. INFORMATION FOR EXISTING CIRCUITRY IS BASED ON EXISTING PANEL DIRECTORIES, AVAILABLE DRAWINGS, AND ASSUMPTIONS. LOCATIONS AND INFORMATION FOR EXISTING ELECTRICAL DEVICES AND EQUIPMENT SHOWN ON THESE DOCUMENTS ARE APPROXIMATE AND WERE DERIVED FROM FIELD OBSERVATION AND AVAILABLE RECORD DRAWINGS. VERIFY ACTUAL FIELD CONDITIONS PRIOR TO STARTING WORK.			
	TRANSFORMER		PUSH BUTTON A = ABORT DA = DURESS ALARM EPO = EMERGENCY POWER OFF IC = INTERCOM ST = SHUNT TRIP		MICROPHONE OUTLET		DUPLEX EMERGENCY/CRITICAL		TRACK LIGHTING	GEN GENERATOR GFI GROUND FAULT CIRCUIT INTERRUPTER			GENERAL NOTES	
	ENCLOSED BUSWAY		SWITCH SYMBOL (1) SINGLE POLE (IF BLANK) 2 = DOUBLE POLE 3 = THREE-WAY 4 = FOUR-WAY AS = ADJUSTABLE SPEED D = DIMMER K = KEY OPERATED LV = LOW VOLTAGE M = MANUAL MOTOR SWITCH OS = OCCUPANCY SENSOR P = WITH PILOT LIGHT T = TIMER TO = THERMAL OVERLOAD VS = VACANCY SENSOR WP = WEATHERPROOF X = SMALL LETTER = LUMINAIRES CONTROLLED XP = EXPLOSION PROOF		SPEAKER V = WITH INTEGRAL VOLUME CONTROL		DUPLEX 2-PORT USB		PHOTOCELL	HP HORSEPOWER HV HIGH VOLTAGE INCANDESCENT INCANDESCENT IDF INTERMEDIATE DISTRIBUTION FRAME				
	GROUND BUS		WEATHERHEAD		WALL MOUNTED SPEAKER		4-PORT USB		EXIT LIGHT (WITH FACES AND DIRECTION ARROWS INDICATED)	IG ISOLATED GROUND JB JUNCTION BOX LED LIGHTING DIODE	-- EQUIPMENT --			
	MOTOR		DELTA CONNECTION		WALL MOUNTED VOLUME CONTROL		DISCONNECT SWITCH		WALL MOUNTED EXIT LIGHT (WITH FACES AND DIRECTION ARROWS INDICATED)	LV LOW VOLTAGE MATV MASTER ANTENNA T.V. MCB MAIN CIRCUIT BREAKER				
	WYE CONNECTION		GROUNDING WYE CONNECTION		CLOCK RECEPTACLE OUTLET		FUSED DISCONNECT SWITCH		WALL MOUNTED BATTERY PACK EMERGENCY LIGHT	MCC MOTOR CONTROL CENTER MDF MAIN DISTRIBUTION FRAME	DISTRIBUTION PANEL EXISTING DISTRIBUTION PANEL NEW PANEL, FLUSH MOUNTED EXISTING PANEL, FLUSH MOUNTED NEW PANEL, SURFACE MOUNTED EXISTING PANEL, SURFACE TRANSFORMER			
	GROUNDING WYE CONNECTION WITH RESISTOR GROUND		GROUNDING WYE CONNECTION WITH REACTOR GROUND		SECURITY CAMERA		ENCLOSED CIRCUIT BREAKER		GROUNDING CONDUCTOR	MH MANHOLE MLO MAIN LUX ONLY MCP METHOD OF PROCEDURE				
	METERING DEVICE		DUAL SWITCH		THERMOSTAT		MOTOR STARTER		LIGHTNING PROTECTION AIR TERMINAL	MTD MOUNTED MTG MOUNTING MTR MOTOR	-- EQUIPMENT --			
	CURRENT TRANSFORMER		INTERCOM SWITCH		BELL		CODE BLUE STATION		GROUND BAR				ELECTRICAL GROUND	NC NOT IN CONTRACT NIGHT LIGHT NO NORMALLY OPEN OHE OVERHEAD ELECTRIC P POLE PA PUBLIC ADDRESS PB PULL BOX PH PHASE PNL PANEL PWR POWER RCPT(S) RECEPTACLE(S) SBC STRANDED BARE COPPER SPD SURGE PROTECTIVE DEVICE SW SWITCH TEL TELEPHONE TP TAMPERPROOF TV TELEVISION UF UNDERFLOOR UNO UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY V VOLTAGE VFD VARIABLE FREQUENCY DRIVE VP VAPOR PROOF W WIRE WG WIRE GUARD WP WEATHERPROOF YFMR TRANSFORMER XP EXPLOSION PROOF
	POTENTIAL TRANSFORMER		BELL		CODE PINK STATION		GROUND ROD		GROUND ROD WITH INSPECTION TEST WELL	NEC NATIONAL ELECTRICAL CODE NF NON-FUSED NIC NOT IN CONTRACT	-- EQUIPMENT --			
	LOAD-BREAK CONNECTOR		FIRE FIGHTER'S TELEPHONE JACK		SINGLE PATIENT STATION		PIGTAIL			NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF				
	PROTECTIVE RELAY DEVICE		COMBINATION FIRE HORN/STROBE LIGHT		STAFF ASSIST STATION					NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF	-- EQUIPMENT --			
	KEY INTERLOCK		COMBINATION FIRE SPEAKER/STROBE LIGHT		DUTY STATION					NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF				
	RESISTOR		FIRE ALARM STROBE LIGHT		BED INTERFACE STATION					NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF	-- EQUIPMENT --			
	CONTACT NORMALLY OPEN		FIRE ALARM STROBE/SPEAKER, CEILING MOUNT		TWO BUTTON STATION					NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF				
	CONTACT NORMALLY CLOSED		FIRE ALARM STROBE/SPEAKER, CEILING MOUNT		BED MANAGEMENT STATION					NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF	-- EQUIPMENT --			
	CAPACITOR		FIRE ALARM STROBE/SPEAKER, CEILING MOUNT		DOMELIGHT					NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF				
	SINGLE BATTERY		FIRE ALARM STROBE/SPEAKER, CEILING MOUNT		REMOTE LOCATOR					NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF	-- EQUIPMENT --			
	MULTIPLE BATTERIES		FIRE ALARM STROBE/SPEAKER, CEILING MOUNT		PATIENT MONITOR					NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF				
	LIGHTNING ARRESTOR		FIRE ALARM STROBE/SPEAKER, CEILING MOUNT							NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF	-- EQUIPMENT --			
	THERMAL ELEMENT, OVERLOAD RELAY		FIRE ALARM STROBE/SPEAKER, CEILING MOUNT							NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF				
			FIRE ALARM STROBE/SPEAKER, CEILING MOUNT							NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF	-- EQUIPMENT --			
			FIRE ALARM STROBE/SPEAKER, CEILING MOUNT							NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF				
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			FIRE ALARM STROBE/SPEAKER, CEILING MOUNT							NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF				
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			FIRE ALARM STROBE/SPEAKER, CEILING MOUNT							NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE PUBLIC ADDRESS PULL BOX PHASE PANEL POWER RECEPTACLE(S) STRANDED BARE COPPER SURGE PROTECTIVE DEVICE SWITCH TELEPHONE TAMPERPROOF TELEVISION UNDERFLOOR UNLESS NOTED OTHERWISE UNINTERRUPTIBLE POWER SUPPLY VOLTAGE VARIABLE FREQUENCY DRIVE VAPOR PROOF WIRE WIRE GUARD WEATHERPROOF TRANSFORMER EXPLOSION PROOF				
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			FIRE ALARM STROBE/SPEAKER, CEILING MOUNT							NOT IN CONTRACT NIGHT LIGHT NORMALLY OPEN OVERHEAD ELECTRIC POLE				



FEEDER SCHEDULE		
KEY	DESCRIPTION	NOTES
A1	(3 #12 & 1 #12G) 1/2".	
B1	(3 #10 & 1 #12G) 1/2".	
B2	(4 #8 & 1 #12G) 3/4".	
C1	(3 #10 & 1 #10G) 3/4".	
C2	(4 #8 & 1 #10G) 1".	
D1	(3 #6 & 1 #10G) 1".	
D2	(4 #6 & 1 #10G) 1-1/2".	
D3	(4 #6 & 1 #8G) 1".	
E1	(3 #4 & 1 #8G) 1-1/2".	
E2	(4 #4 & 1 #8G) 1-1/4".	
E3	(3#4, 1#1/8" & 1#8G) 1-1/4".	
F1	(3 #2 & 1 #8G) 1-1/2".	
F2	(4 #2 & 1 #8G) 1-1/2".	
G1	(3 #1 & 1 #6G) 1-1/2".	
G2	(4 #1 & 1 #6G) 1-1/2".	
G3	(4#1 & 1#6G) 1-1/2".	
H1	(3 #1/0 & 1 #2G) 2".	
H2	(4 #1/0 & 1 #2G) 2".	
H3	(4#1/0 & 1#6G)2"	
J1	(3 #2/0 & 1 #2G) 2-1/2".	
J2	(4 #2/0 & 1 #2G) 2-1/2".	
K1	(3#3/0 & 1#6G)2".	
L1	(3 #4/0 & 1 #2G) 2-1/2".	
L2	(4 #4/0 & 1 #2G) 2-1/2".	
L3	2[(4 #4/0 & 1 #2G) 2-1/2".]	
L4	(4#4/0 & 1#4G)2-1/2"	
L5	2[(4#4/0 & 1#3G)2-1/2"]	
L6	(4#4/0 & 1#6G)2-1/2"	
M1	(3 #250KCMIL & 1 #2G) 3".	
M2	(4 #250KCMIL & 1 #2G) 3".	
M3	2[(4 #250KCMIL & 1 #2G) 3".]	
O1	(3 #350KCMIL & 1 #1G) 3-1/2".	
O2	(4 #350KCMIL & 1 #1/0G) 3-1/2".	
O3	2[(4 #350KCMIL & 1 #1G) 3-1/2".]	
P1	(3 #500KCMIL & 1 #1/0G) 4".	
P2	(4 #500KCMIL & 1 #1/0G) 4".	
P3	2[(4 #500KCMIL & 1 #1/0G) 4".]	
P4	3[(4 #500KCMIL & 1 #1/0G) 4".]	
P5	4[(4 #500KCMIL & 1 #1/0G) 4".]	
P,S,G	REFER TO TRANSFORMER SCHEDULE	

1. REUSE EXISTING CONDUIT. PROVIDE NEW WIRES.

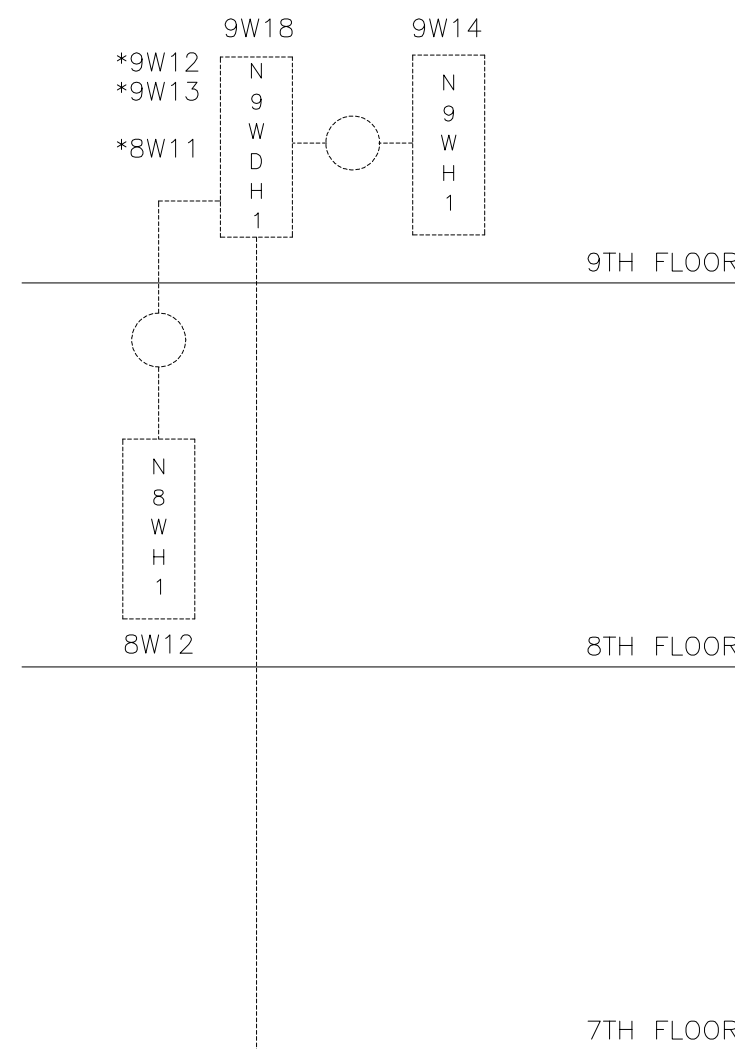
# RISER DESIGNATION

FIRST CHARACTER:  
R = RISER




SECOND CHARACTER: SUBSTATION NO.  
6 = SUBSTATION NO. 6  
7 = SUBSTATION NO. 7  
8 = SUBSTATION NO. 8

THIRD CHARACTER: FLOOR  
0 = GROUND  
1-9 = FLOOR ONE THRU 9

FOURTH CHARACTER: RISER NUMBER  
1 - 9 = RISER ONE, ... RISER NINE

[illegible]

NORMAL SYSTEM ELECTRICAL ONE-LINE DIAGRAM – LC6  
NO SCALE

DATE: JUNE 20, 2022 SCALE: NONE DESIGN BY: CPB DRAWN BY: CPB APPROVED BY: MJB PRJ. NO.: 20720		FITZSIMONS BUILDING 3rd FLOOR ELEV LOBBY LIGHTING ELECTRICAL ONE-LINE DIAGRAM		 University of Colorado Anschutz Medical Campus		 <b>RMH GROUP</b> engineering a greener future™ <b>Mechanical and Electrical Engineering</b> <b>Energy Consulting    Sustainable Design</b>		12800 West Colfax Ave Lakewood, CO 80215 Phone: 303-985-0000 Fax: 303-985-5418 www.rmhgroup.com © 2022				0 6/20/22 CONSTRUCTION DOCUMENTS REV. DATE DESCRIPTION	
SHEET NO. <b>E1.0</b>													
REVISION <b>0</b>													

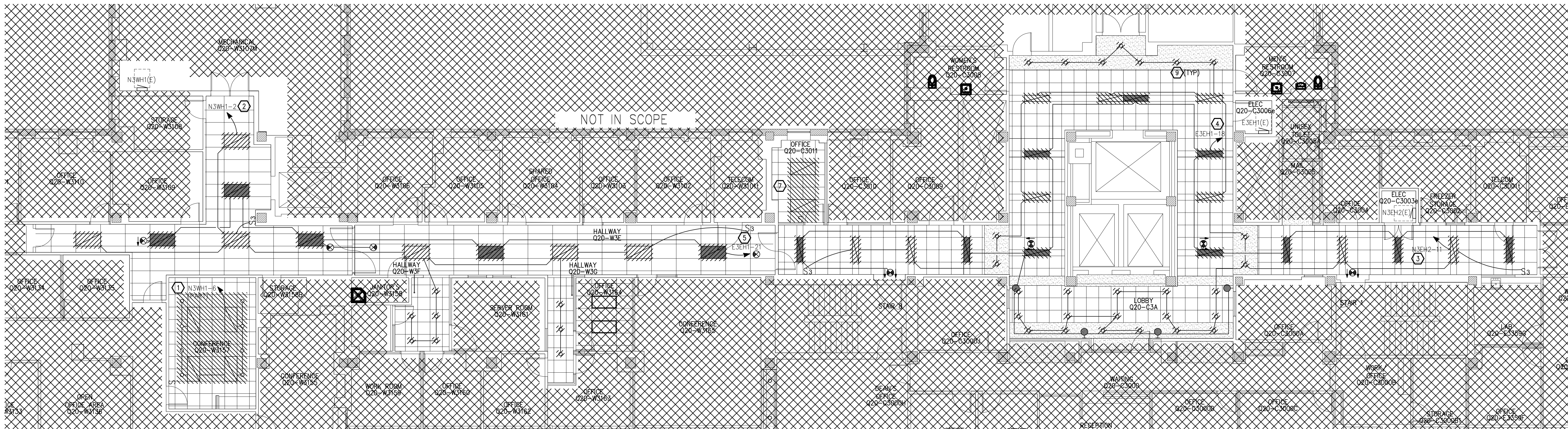


1. ONE-LINE DIAGRAM SHOWN FOR REFERENCE ONLY. NO NEW WORK ON THIS SHEET.
2. ASTERISK (\*) INDICATES 120/208V PANEL FED VIA DRY TYPE TRANSFORMER. NO ASTERISK INDICATES 120/208V PANEL SAME VOLTAGE AS DISTRIBUTION PANELS.
3. FORMER PANEL DESIGNATION SHOWN OUTSIDE PANEL BOX IN LIGHT TEXT. NEW PANEL DESIGNATION SHOWN INSIDE PANEL BOX IN HEAVY TEXT, TYPICAL.

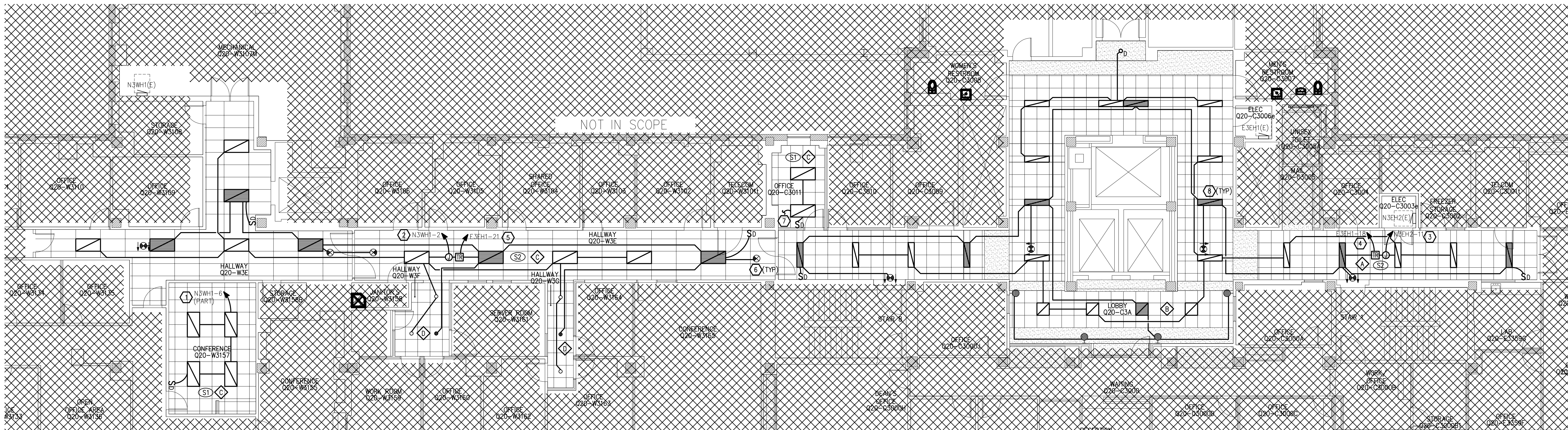








1 3RD FLOOR LOBBY LIGHTING PLAN - DEMO  
SCALE: 1/8"=1'-0"



2 3RD FLOOR LOBBY LIGHTING PLAN  
SCALE: 1/8"=1'-0"

#### SHEET NOTES

1. LIGHT LINE WEIGHT INDICATES EXISTING. HEAVY LINE WEIGHT INDICATES NEW CONSTRUCTION. HATCHING INDICATES DEMOLITION.
2. PATCH AND PAINT ANY DAMAGED SURFACES DUE TO DEMOLITION AND CONSTRUCTION TO MATCH EXISTING CONDITIONS.
3. COORDINATE CEILING CONDUIT ROUGH-IN WITH MECHANICAL CONTRACTOR TO ENSURE NO CONFLICTS IN LIMITED ABOVE CEILING SPACE.
5. UPDATE PANEL SCHEDULES TO REFLECT INSTALLED CONDITIONS AFTER CONSTRUCTION IS COMPLETE.
6. EXISTING CIRCUIT INFORMATION SHOWN ON THE PLANS IS FOR REFERENCE ONLY. TRACE ALL EXISTING CIRCUITS AFFECTED BY THIS WORK TO CONFIRM SOURCE PANEL AND CIRCUIT NUMBERS.
7. UPPERCASE LETTER DENOTES LUMINAIRE TYPE. LOWERCASE LETTER INDICATES CONTROL ZONE.
8. CONNECT EMERGENCY LUMINAIRES AND EXIT SIGNS AHEAD OF SWITCHING AND RELAY PANEL CONTROL UNLESS SPECIFICALLY NOTED OTHERWISE.
9. PROVIDE EMERGENCY TRANSFER RELAYS FOR ALL EMERGENCY LIGHTING THAT ARE SWITCHED OR DIMMED.
10. TO ACHIEVE THE INDICATED SEQUENCE OF OPERATION, PROVIDE ALL COMPONENTS REQUIRED FOR THE LIGHTING CONTROL SYSTEM, WHETHER INDICATED OR NOT.
11. PROVIDE DIMMERS COMPATIBLE WITH LED DRIVERS AND POWER SUPPLIES PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE COMPONENTS AND ACCESSORIES TO ACCOMPLISH COMPLETE DIMMING FUNCTIONALITY AS SHOWN ON PLANS AND NOTED IN THE LUMINAIRE SCHEDULE.

12. FOR LIGHT DIMMING BRANCH CIRCUITS, PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT CURRENT CARRYING CONDUCTOR. CIRCUITS MAY BE COMBINED INTO HOMERUNS OF UP TO SIX CURRENT CARRYING CONDUCTORS WITH PROPER DE-RATING AS REQUIRED BY NEC. PROVIDE FULL LENGTH STRIPPING FOR DEDICATED NEUTRALS TO MATCH ASSOCIATED CURRENT CARRYING CONDUCTOR COLOR.
13. THESE DRAWINGS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. DATA PRESENTED ON THIS DRAWING IS AS ACCURATE AS CAN BE DETERMINED, BUT ACCURACY IS NOT GUARANTEED. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER IS NEITHER RESPONSIBLE FOR ITS ACCURACY, NOR ERRORS NOR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE DOCUMENTS. FIELD VERIFICATION OF ALL AFFECTED COMPONENTS IS REQUIRED.
14. UNLESS OTHERWISE INDICATED, ALL CONDUCTORS FOR BRANCH CIRCUITS SHALL BE #12 AWG PROTECTED BY 20-AMPERE CIRCUIT BREAKERS. INCREASE CONDUCTOR SIZE TO ACCOUNT FOR VOLTAGE DROP FOR ALL 120-VOLT CIRCUITS OVER 75 FEET, AND ALL 277-VOLT CIRCUITS OVER 150 FEET TO THE FIRST OUTLET. CONDUCTOR SIZE SHALL BE UNIFORM FOR THE ENTIRE LENGTH OF THE CIRCUIT UNLESS NOTED OTHERWISE. HOMERUNS WHICH INDICATE UPSHOOTING CIRCUIT CONDUCTORS FOR VOLTAGE DROP, E.G., #10AWG WIRE ON 20-AMPERE CIRCUIT, SHALL HAVE THE CONDUCTOR SIZE INDICATED CARRIED THROUGHOUT THE CIRCUIT TO ALL JUNCTION BOXES UP TO AND INCLUDING THE J-BOX NEAREST THE LAST DEVICE OR LUMINAIRE.
15. TO ACHIEVE THE INDICATED SEQUENCE OF OPERATION, PROVIDE ALL COMPONENTS REQUIRED FOR THE LIGHTING CONTROL SYSTEM, WHETHER INDICATED OR NOT. REFER TO LIGHTING CONTROL SEQUENCE OF OPERATION SCHEDULE FOR ADDITIONAL INFORMATION.

#### KEY NOTES

- ① REUSE EXISTING BRANCH CIRCUIT. A TOTAL OF 568VA OF LOAD REMOVED, 100VA OF LOAD ADDED. TOTAL LOAD ON THE BRACH CIRCUIT REDUCED.
- ② REUSE EXISTING BRANCH CIRCUIT. A TOTAL OF 1198VA OF LOAD REMOVED, 335VA OF LOAD ADDED. TOTAL LOAD ON THE BRACH CIRCUIT REDUCED.
- ③ REUSE EXISTING BRANCH CIRCUIT. A TOTAL OF 1790VA OF LOAD REMOVED, 696VA OF LOAD ADDED. TOTAL LOAD ON THE BRACH CIRCUIT REDUCED.
- ④ REUSE EXISTING BRANCH CIRCUIT. A TOTAL OF 600VA OF LOAD REMOVED, 239VA OF LOAD ADDED. TOTAL LOAD ON THE BRACH CIRCUIT REDUCED.
- ⑤ REUSE EXISTING BRANCH CIRCUIT. A TOTAL OF 450VA OF LOAD REMOVED, 170VA OF LOAD ADDED. TOTAL LOAD ON THE BRACH CIRCUIT REDUCED.
- ⑥ CONNECT ALL EXISTING EXIT SIGNS TO EMERGENCY BRANCH CIRCUIT AHEAD OF ANY LIGHTING CONTROLS.
- ⑦ REUSE EXISTING BRANCH CIRCUIT. A TOTAL OF 180VA OF LOAD REMOVED, 60VA OF LOAD ADDED. TOTAL LOAD ON THE BRACH CIRCUIT REDUCED.
- ⑧ EMERGENCY LIGHTING SHALL BE CONTROLLED WITH THE NORMAL LIGHTING WHEN THE SPACE IS OCCUPIED AND ACT AS A NIGHTLIGHT WHEN THE SPACE IS UNOCCUPIED. SEE LIGHTING CONTROL DETAILS ON SHEET E3.0 FOR ADDITIONAL INFORMATION.
- ⑨ REMOVE EXISTING RECESSED LIGHTING IN THE DRYWALLED SECTIONS OF THE CEILING. PATCH AND PAINT THE CEILING TO MATCH.

## FITZSIMONS BUILDING 3rd FLOOR ELEV LOBBY LIGHTING ELECTRICAL LIGHTING PLANS

University of Colorado  
Anschutz Medical Campus

**RMH GROUP**  
engineering a greener future™  
Mechanical and Electrical Engineering  
Energy Consulting Sustainable Design



REV.	DATE	CONSTRUCTION DOCUMENTS	DESCRIPTION
0	6/20/22		

DATE: JUNE 20, 2022	SHEET NO. E2.0	REVISION 0
SCALE: 1/8"=1'-0"	DESIGN BY: CPB	
DRAWN BY: CPB	APPROVED BY: MGB	
PROJ. NO.: 20720		



COMcheck Software Version 4.1.5.2  
Interior Lighting Compliance Certificate

Project Information  
Energy Code: 2018 IECC  
Project Title: New Construction  
Construction Site: Owner/Agent: Designer/Contractor:

Additional Efficiency Package(s)  
Credits: 1.0 Required 0.0 Proposed

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft <sup>2</sup> )	C Allowed Watts / ft <sup>2</sup>	D Allowed Watts (B X C)
1-Common Space Types:Corridor/Transition >=8 ft wide	3643	0.66	2404
Total Allowed Watts =			2404

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamp/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Common Space Types:Corridor/Transition >=8 ft wide				
LED 1: A: Other:	1	19	30	570
LED 1: B: Other:	1	4	29	116
LED 1: C: Other:	1	17	25	425
LED 1: D: Other:	1	7	10	73
Total Proposed Watts =				1184

Interior Lighting PASSES: Design 51% better than code

Interior Lighting Compliance Statement  
Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.2 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Charles Basil - Electrical Engineer  
Name ~ Title Signature Date 6/30/2022

COMcheck Software Version 4.1.5.2  
Inspection Checklist  
Energy Code: 2018 IECC

Requirements: 0.0% were addressed directly in the COMcheck software  
Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req. ID	Plan Review	Complies?	Comments/Assumptions
C103.2 (PRA)1	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C406 (PRA)1	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

Section # & Req. ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2 (EL22)1	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.1 (EL18)1	Occupancy sensors installed in classrooms/meeting/training rooms, rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.1 (EL19)1	Occupancy sensors control function in warehouses: In warehouses, the lighting in aislesways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.1 (EL20)1	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq. ft. have controls: 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq. ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight-responsive control will activate space general lighting or control zone general lighting only when occupancy for the same area is detected.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C405.2.2 (EL21)1	Each area not served by occupancy sensors (per C405.2.1) have time-switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

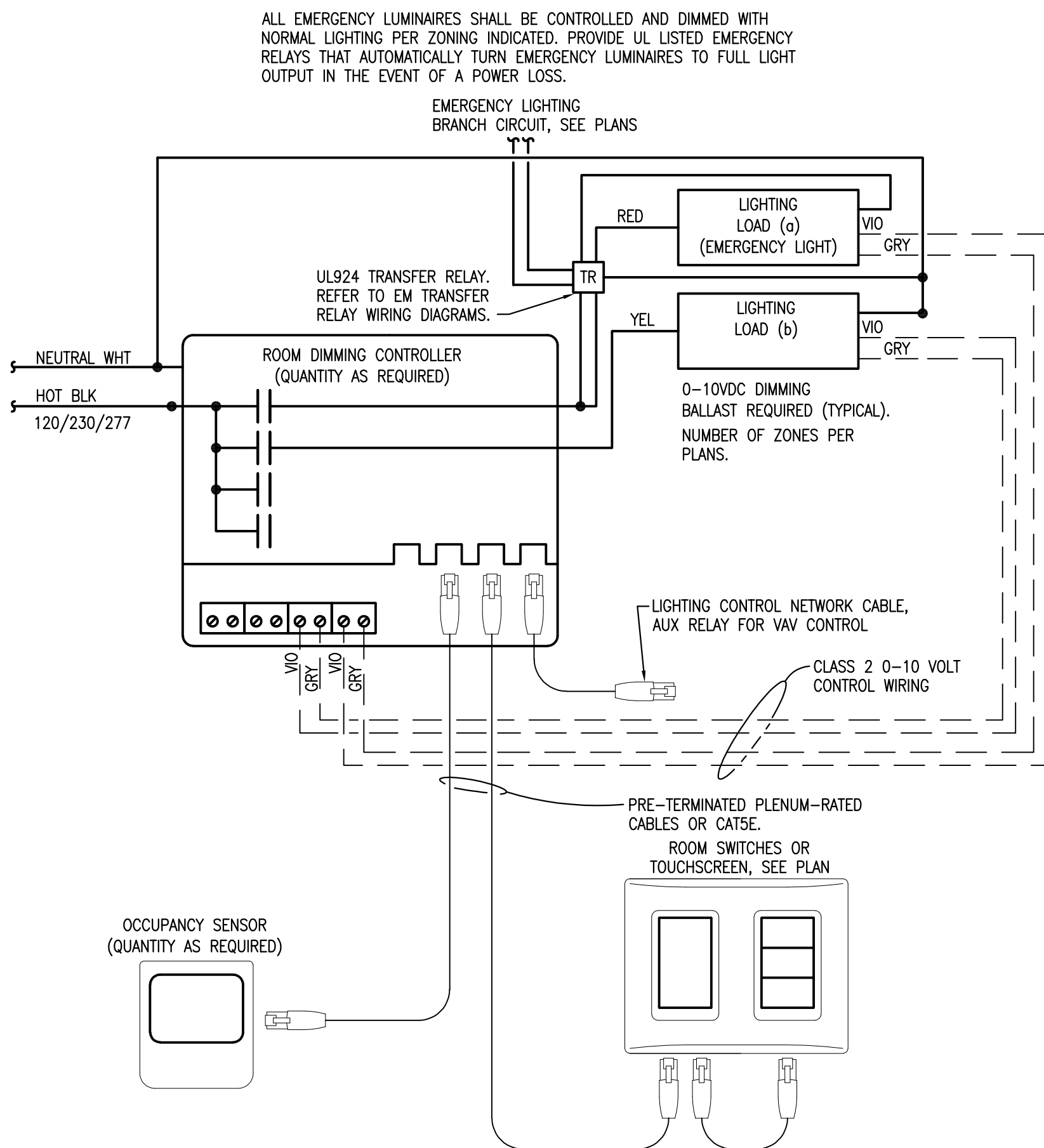
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Project Title: Report date: 06/20/22  
Data filename: W:\jobs20\20720\Calcs\Elec\comcheck.cck Page 2 of 6

Project Title: Report date: 06/20/22  
Data filename: W:\jobs20\20720\Calcs\Elec\comcheck.cck Page 3 of 6

Project Title: Report date: 06/20/22  
Data filename: W:\jobs20\20720\Calcs\Elec\comcheck.cck Page 4 of 6

Project Title: Report date: 06/20/22  
Data filename: W:\jobs20\20720\Calcs\Elec\comcheck.cck Page 5 of 6



ROOM LIGHTING CONTROL WIRING DIAGRAM  
SCALE: NONE  
Rev.Date 11/16/2017

