TYPE	DESCRIPTION	LUMENS	TOTAL FIXTURE	COLOR	BALLAST/	VOLTAGE	MOUNTING		MANUFACTURER/MODEL	NOTES
			WATTS	TEMP	DRIVER	100		RENOVA	· 	
A	2X2 LED FLAT PANEL	4000	29.24	3500K	LED	MVOLT	RECESSED	LIGHTING "OVATION"	RVN22-N-L040-UNV-DM-C35-AF OR PREAPPROVED EQUAL	
С	4' LED CHAIN HUNG STRIP LIGHT	4000	43	3500K	LED	LED	MVOLT	LITHONIA CLX	CLX-L48-3500LM-SEF-MVOLT-40K-80CRI- ZACVH M100 OR PREAPPROVED EQUAL	SET LIGHT TO 3500K. PROVIDE WITH CHAIN HANGARS. MOUNT BOTTOM OF LIGHT AT 9'-0"AFF
D	WET LISTED DECORATIVE LED LIGHTING SCONCE WITH EMERGENCY BATTERY PACK	1700	24	4000	LED	MVOLT	TRACK	SUNLITE	88142-SU LFX/UD/R/12"/24W/BK/SCT OR PREAPPROVED EQUAL	WET LISTED. PROVIDE WITH EMERGENCY BATTERY PACK
F	SUSPENDED NARROW BEAM STRIP LED LIGHT	3000	43	3500K	LED	MVOLT	SUSPENDED	JUNO LIGHTING	T286L35K-90CRI-PDIM-NFL-BL-LSPREAD 469 - BARN DOORS OR PREAPPROVED EQUAL	MOUNT OUT OF PUBLIC VIEW BEHIND CURTAIN. PROVIDE WITH LINEAR BEAM SPREAD OPTION AND BARN DOORS. MOUNT ON JUNO T SERIES TRAC T-6FT BL. PROVIDE WITH 2.5A CURRENT LIMITER.
G1	4" LED SQUARE RECESSED DOWNLIGHT IN GYPBOARD CEILING	1500	13.7	4000K	LED	MVOLT	RECESSED	GOTHAM EVO	EVO4SQ-35/15-AR-LSS-MVOLT-GZ1 OR PREAPPROVED EQUAL	MOUNT IN GYPBOARD CEILINGS AND PROVIDE ALL ACCESSORIES FOR INSTALLATION
G2	4" LED SQUARE RECESSED DOWNLIGHT IN ACT CEILING	1500	13.7	3500K	LED	MVOLT	RECESSED	GOTHAM EVO	EVO4SQ-35/15-AR-LSS-MVOLT-GZ1 OR PREAPPROVED EQUAL	MOUNT IN CEILING GRID AND PROVIDE ALL ACCESSORIES FOR INSTALLATION
G3	4" LED SQUARE RECESSED DOWNLIGHT IN GYPBOARD CEILING	2000	19.5	3500K	LED	MVOLT	RECESSED	GOTHAM EVO	EVO4SQ-35/20-AR-LSS-MVOLT-GZ1 OR PREAPPROVED EQUAL	MOUNT IN GYPBOARD CEILINGS AND PROVIDE ALL ACCESSORIES FOR INSTALLATION
G4	4" LED SQUARE RECESSED DOWNLIGHT IN GYPBOARD CEILING	2000	19.5	3500K	LED	MVOLT	RECESSED	GOTHAM EVO	EVO4SQ-35/20-AR-LSS-MVOLT-GZ1 OR PREAPPROVED EQUAL	MOUNT IN CEILING GRID AND PROVIDE ALL ACCESSORIES FOR INSTALLATION
н	VANITY LIGHT	1500	50 MAX	3500K	LED	MVOLT	WALL		TO BE SPECIFIED BY OTHERS	
К1	LED PENDANT MOUNTED CYLINDER LIGHT FIXTURE	2000	19.7	3500K	LED	MVOLT	SUSPENDED	GOTHAM EVO	EVO6CC-35/20-AR-LSS-MWD-MVOLT-GZ1- CCAN45-CORD LENGTH - BLACK - E15WCP OR PREAPPROVED EQUAL	PROVIDE ACCESSORIES TO MOUNT ON INCLINED CEILING. BLACK FINISH.
K1W	WET LISTED LED PENDANT MOUNTED CYLINDER LIGHT FIXTURE AND EMERGENCY BATTERY PACK	2000	19.7	3500K	LED	MVOLT	SUSPENDED	GOTHAM EVO	EVO6CC-35/20-AR-LSS-MWD-MVOLT-GZ1- CCAN45-CORD LENGTH - BLACK - E15WCP - WL OR PREAPPROVED EQUAL	BLACK FINISH.
K2	LED PENDANT MOUNTED CYLINDER LIGHT FIXTURE	8000	74.9	3500K	LED	MVOLT	SUSPENDED	GOTHAM EVO	EVO6CC-35/80-AR-LSS-MWD-MVOLT-GZ1- CCAN45-CORD LENGTH - E15WCP OR PREAPPROVED EQUAL	PROVIDE ACCESSORIES TO MOUNT ON INCLINED CEILING.
K2E	SAME AS TYPE 'K2', EXCEPT PROVIDE WITH 90 MINUTE EMERGENCY BATTERY PACK	8000	74.9	3500K	LED	MVOLT	SUSPENDED			
SC1W	WET LISTED LED SCONCE WITH UP/DOWNLIGHT	1500	20W MAX	3500K	LED	MVOLT	WALL		TO BE SELECTED BY OTHERS	WET LISTED. BLACK FINISH.
x	THERMOPLASTIC LED EXIT SIGN		5					LITHONIA	LQM SERIES OR PREAPPROVED EQUAL	PROVIDE WITH 90 MINUTE BATTERY PACK. MATCH ARROWS AND NUMBER OF FACES WITH DRAWINGS. COLOR TO BE SPECIFIED BY ARCHITECT.
Y	EMERGENCY DUAL HEAD LED LIGHT FIXTURE		5					LITHONIA	ELM2L SERIES OR PREAPPROVED EQUAL	PROVIDE WITH 90 MINUTE BATTERY PACK
Z	THERMOPLASTIC LED EXIT SIGN WITH DUAL HEAD LED EMERGENCY LIGHT FIXTURE		5					LITHONIA	LHQM SERIES OR PREAPPROVED EQUAL	PROVIDE WITH 90 MINUTE BATTERY PACK. UL924 COMPLIANCE. MATCH ARROWS AND NUMBER OF FACES WITH DRAWINGS. COLOR TO BE SPECIFIED BY ARCHITECT.
			1			sc	HEDULE NOTES	S S		
1	NO SUBSTITUTIONS ARE ALLOWED WITHOUT	APPROVAL B	Y EOR AND O	WNER.					EXIT AND EMERGENCY LIGHTING FIXTURES SHAL	L BE CIRCUITED TO AN UNSWITCHED LEG OF A
2	ALL EXPEDITED COSTS SHALL BE THE RESPON	SIBILITY OF	THE CONTRA	CTOR.		_	4			NOTED). INCLUDE 90 MINUTE BATTERY BACKUP AND
3	BATTERY BALLASTS SHALL PROVIDE 90 MINUT INTEGRAL INDICATOR LIGHT.	ES OF BATTE	RY BACKUP A	and be equ	IPPED WITH					OF ALL PRODUCTS TO BE SUBMITTED AT THE TIME
						1	5			TY THE ARCHITECT AND ENGINEER OF ANY DELIVERY

CHALLENGES.

GENERAL ELECTRICAL NOTES:

1. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT NECESSARILY SHOW EVERY FITTING AND DETAIL. ALL WORK SHALL BE COMPLETED SO THE JUNCTION BOXES AND COMPONENTS WILL BE ACCESSIBLE FOR SERVICING.

ALL ELECTRICAL WORK PERFORMED DURING THIS SCOPE OF WORK SHALL COMPLY WITH ALL LOCAL BUILDING CODES, LAWS, REGULATIONS, ORDINANCES, AND THE REQUIREMENTS OF THE 2020 NATIONAL ELECTRICAL CODE. ALL WORK SHALL COMPLY WITH ANY OWNER SPECIFICATIONS NOT CALLED OUT ON THIS SET OF DRAWINGS.

WHERE ELECTRICAL CONTINUITY TO EXISTING TO REMAIN RECEPTACLES/LIGHTS/EQUIPMENT IS DISRUPTED BY DEMOLITION DURING THIS SCOPE OF WORK, RECONNECT THE DEVICE TO THE CIRCUIT IT WAS CONNECTED TO BEFORE DEMOLITION TOOK PLACE UNLESS THE DRAWINGS SHOW OTHERWISE.

4. ALL CONDUCTORS SHALL BE COPPER WITH TYPE "THHN" OR "THW" INSULATION. USE "THHN" FOR #10 OR SMALLER CONDUCTORS. USE "THW"

5. THE MINIMUM WIRE SIZE SHALL BE #12 A.W.G.

FOR CONDUCTORS #8 OR LARGER.

6. ALL PENETRATIONS THRU RATED WALLS, FLOORS AND CEILINGS SHALL BE FIRE STOPPED PER N.E.C. 300-21 AND NFPA 221.

7. PROVIDE GROUNDING AS REQUIRED BY N.E.C..

B. WHERE MOUNTING HEIGHTS ARE SHOWN ON THE DRAWINGS, THE MEASUREMENT IS TO BE TAKEN FROM THE CENTERLINE OF THE DEVICE.

9. TYPICAL CONDUIT SIZES ARE 3/4" EMT WITH 2#12, 1#12G. AWG UNLESS OTHERWISE NOTED.

10. A #12 GROUND SHALL BE PROVIDED FOR ALL MECHANICAL EQUIPMENT UNLESS NOTED OTHERWISE. ALL EQUIPMENT SHALL BE GROUNDED AT THE PANEL THAT FEEDS THE EQUIPMENT.

11. CONTRACTOR SHALL PROVIDE A PANEL SCHEDULE DIRECTORY LOCATED ON THE INSIDE COVER OF THE ELECTRICAL PANEL. ALL CIRCUITS, SPARES, AND SPACES SHALL BE CORRECTLY LABELED.

12. ALL BRANCH CIRCUIT HOMERUN CONDUCTORS SHALL BE PROVIDED WITH

A SEPERATE INSULATED #12 AWG EQUIPMENT GROUNDING CONDUCTOR.

13. IF THE GENERAL CONTRACTOR DOES ANY WORK THAT CAUSES DISRUPTION TO ANY ELECTRICAL CIRCUITS OR SYSTEMS, THE ELECTRICAL CONTRACTOR SHALL CONNECT ALL REMAINING WORKING DEVICES ON THAT CIRCUIT AS REQUIRED TO ENSURE PROPER WORKING SYSTEM.

14. BUILDING CODE SECTION 705.4 SHALL BE MET WITH ELECTRICAL DEVICES TO BE INSTALLED IN RATED WALLS.

15. ALL ELECTRICAL MATERIALS, DEVICES, AND EQUIPMENT SHALL BE LISTED BY UL OR OTHER STATE APPROVED THIRD PARTY TESTING AGENCY.

16. FIRE RATED SLEEVES SHALL BE PROVIDED AND ALL FIRESTOPPING SHALL BE PROVIDED AS REQUIRED BY CODE WHEN CABLING IS ROUTED THROUGH A FIRE RATED PARTITION. BLANK COVERS SHALL BE INSTALLED ON RINGS.

17. ALL ELECTRICAL EQUIPMENT SHALL BE PROTECTED FROM DAMAGE AFTER BEING INSTALLED. CONTRACTOR SHALL NOT INSTALL TRIM AND COVER PLATES UNTIL AFTER ALL FINISHES TO ARCHITECTURAL ELEMENTS HAVE BEEN COMPLETED.

18. MOUNT ALL DISCONNECT SWITCHES TO STRUCTURE. DISCONNECTS SHALL NOT BE MOUNTED TO DUCTWORK OR MECHANICAL EQUIPMENT.

19. ANY CABLING TO BE INSTALLED DURING THIS SCOPE OF WORK THAT IS ROUTED THROUGH ANOTHER TENANT SPACE OR COMMON AREA SHALL BE ENCLOSED IN CONDUIT.

20. ALL LIGHT FIXTURE SHALL BE CLEANED, AND FULLY FUNCTIONAL AT MOVE-IN. THIS INCLUDES RE-LAMPING.

21. CONTRACTOR SHALL PROVIDE AND INSTALL NAMEPLATE FOR ALL RECEPTACLES AND POWERED DEVICES. INFORMATION ON NAMEPLATE SHALL INCLUDE ELECTRICAL PANEL AND CIRCUIT NUMBER FROM WHICH DEVICE IS POWERED.

22. WHERE TWO SWITCHES OR MORE (INCLUDING DIMMERS) ARE LOCATED NEXT TO EACH OTHER, CONTRACTOR SHALL PROVIDE AND INSTALL A SINGLE SWITCHPLATE TO PROVIDE A NEATER APPEARANCE.

23. NO MC CABLE IS ALLOWED WHERE VISIBLE.

24. ALL CONDUCTORS #1 AND UNDER SHALL BE RATED FOR 60 DEGREES CELSIUS. ALL CONDUCTORS LARGER THAN #1 SHALL BE RATED FOR 75 DEGREES CELSIUS.

25. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED.

MOUNTING HEIGHT NOTES:

1. WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES MUST BE MOUNTED MOUNTED NO LOWER THAN 80" AFF TO BOTTOM OF DEVICE AND NO HIGHER THAN 96" TO TOP OF THE DEVICE. CONTRACTOR SHALL MOUNT THESE DEVICES AT 88" TO THE MIDDLE OF THE DEVICE UNLESS FIELD CONDITIONS DO NOT ALLOW TO MOUNT AT THIS HEIGHT. IF THE DEVICE CAN NOT BE LOCATED BETWEEN 80" AND 96", CONTACT ENGINEER IMMEDIATELY FOR SOLUTION.

2. MOUNT CENTER LINE OF EXIT SIGN 24" ABOVE DOOR WHERE CEILING IS OVER 12'-0"AFF OR TO STRUCTURE WHERE NO CEILING IS PRESENT. IF CEILING IS 12'-0"AFF OR UNDER, CONTRACTOR SHALL MOUNT CENTER LINE OF EXIT SIGN 12" BELOW CEILING.

3. WALL MOUNTED TELEPHONES, FIRE ALARM PULL STATIONS, AND LIGHT SWITCHES SHALL BE MOUNTED AT 48"AFF TO TOP OF THE DEVICE.

4. ALL RECEPTACLES SHALL BE MOUNTED AT 18"AFF TO THE CENTER LINE OF THE DEVICE UNLESS OTHERWISE NOTED.

5. THE NEAREST EDGE OF ALL CEILING MOUNTED SMOKE OR HEAT DETECTORS

SHALL BE LOCATED NO LESS THAN 4" FROM THE WALL.

ELECTRICAL SYMI	ROLLEGEND
①	JUNCTION BOX
<u> </u>	WALL MOUNTED JUNCTION BOX
	CONCEALED CONDUIT
	CONCEALED CONDUIT IN FLOOR OR UNDERGROUND
	CIRCUIT HOMERUN TO PANEL; EACH ARROWHEAD = 1 CIRCUIT
	HASH MARKS ACROSS CONDUIT INDICATE THE NUMBER OF #12 CONDUCTORS (# OF PHASES + NEUTRAL) UNLESS OTHERWISE NOTED. NO HASH MARKS INDICATE TWO #12 CONDUCTORS. EQUIPMENT GROUNDING CONDUCTORS ARE NOT INDICATED BY HASH MARKS.
	120/208V ELECTRICAL PANELBOARD
	277/480V ELECTRICAL PANELBOARD
-	NON-FUSED DISCONNECT SWITCH (FRAME/POLES)
	FUSED DISCONNECT SWITCH (FRAME/POLES/FUSE) - FUSE IF NEEDED AND SIZE PER EQUIPMENT NAMEPLATE
1 2 "1"1"	POWER SYMBOLS
₩P/GFI	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTION AND WEATHERPROOF HOUSI
PGFI	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTION
	5-20R DUPLEX RECEPTACLE
<u> </u>	
#	QUADRAPLEX RECEPTACLE
igoplus	SPECIAL RECEPTACLE. NEMA TYPE NOTED NEXT TO DEVICE OR IN KEYED NOTE
	FLOOR MOUNTED POKE-THRU DEVICE WITH DUPLEX RECEPTACLE FOR NON-SLAB ON GRADE APPLICATIONS. FLOOR MOUNTED RECESSED FLOOR BOX WITH DUPLEX RECEPTACLE FOR SLAB ON GRADE APPLICATIONS.
(FLOOR MOUNTED POKE-THRU DEVICE WITH QUADRAPLEX RECEPTACLE FOR NON-SLAB ON GRADE APPLICATIONS. FLOOR MOUNTED RECESSED FLOOR BOX WITH QUADRAPLEX RECEPTACLE FOR SLAB ON GRADE APPLICATIONS.
00	FLOOR MOUNTED POKE-THRU DEVICE WITH DUPLEX RECEPTACLE AND DATA/COMMUNICATIONS DEVICES FOR NON-SLAB ON GRADE APPLICATIONS. FLOOR MOUNTED RECESSED FLOOR BOX WITH DUPLEX RECEPTACLE AND DATA/COMMUNICATIONS DEVICES FOR SLAB ON GRADE APPLICATIONS.
	FLOOR MOUNTED POKE-THRU DEVICE WITH QUADRAPLEX RECEPTACLE AND DATA/COMMUNICATIONS DEVICES FOR NON-SLAB ON GRADE APPLICATIONS. FLOOR MOUNTED RECESSED FLOOR BOX WITH QUADRAPLEX RECEPTACLE AND DATA/COMMUNICATIONS DEVICES FOR SLAB ON GRADE APPLICATIONS.
Ū © FF	CAST IRON FURNITURE FEED FLOOR BOX. NUMBER NEXT TO DEVICE INDICATES NUMBER OF CUBICLES TO BE SERVED BY THIS DEVICE. BASIS OF DESIGN IS LEGRAND EVOLUTION SERIES FLOOR BOX, FURNITURE SERIES. PROVIDE COVER PLATES AND FLANGES AS REQUIRED. COORDINATE EXACT LOCATION AND COVER FINISH WITH ARCHITECT.
$lackbox{f V}$	TELE/COMMUNICATIONS JACK (CONTRACTOR SHALL PROVIDE AND INSTALL JUNCTION BOX CONNECTED TO PULLSTRING TO UP ABOVE ACCESSIBLE CEILING)
Фиѕв	DUPLEX RECEPTACLE WITH (2) USB PLUGS. BASIS OF DESIGN IS LEGRAND 'TM826USBWCC6'
0	CONDUIT STUB UP
BFH	FURNITURE BASE FEED
<u></u>	CARD READER. PROVIDE JUNCTION BOX WITH PULLSTRING TO UP ABOVE ACCESSIBLE CEILING. TELEVISION. REFER TO DETAIL ON THIS DRAWING SET. MOUNT AT +60"AFF UNLESS
TVH	OTHERWISE NOTED.
	LIGHTING SYMBOLS
	LIGHT FIXTURE (LETTER NEXT TO LIGHT SIGNIFIES LIGHTING TYPE - REFER TO LIGHTING FIXTURE SCHEDULE)
	EMERGENCY OVERHEAD LIGHT FIXTURE (LETTER NEXT TO LIGHT SIGNIFIES LIGHTING TYPE - REFER TO LIGHTING FIXTURE SCHEDULE)
<u>⊗</u> 👿	EXIT SIGN (COORDINATE ARROWS AND FACES WITH DRAWINGS)
4	EMERGENCY "BUG EYE" LIGHT FIXTURE
420	COMBINATION EXIT SIGN / EMERGENCY "BUG EYE" LIGHT FIXTURE
\$	WALL MOUNTED COMMERCIAL GRADE DECORATOR LIGHT SWITCH. GREENGATE 7521 SERIES. VALUE ENGINEERING SUBSTITUTION SHALL BE COMMERCIAL GRADE TOGGLE SWITCH. GREENGATE CS120 SERIES.
\$p	WALL MOUNTED STANDARD 0-10V COMMERCIAL GRADE SLIDE DIMMER LIGHT SWITCH.
\$3	GREENGATE WBSD-010M-C1 WALL MOUNTED STANDARD COMMERCIAL GRADE THREE-WAY TOGGLE LIGHT SWITCH. GREENGAT
Ψ	

	EMERGENCY OVERHEAD LIGHT FIXTURE (LETTER NEXT TO LIGHT SIGNIFIES LIGHTING TYPE - REFER TO LIGHTING FIXTURE SCHEDULE)
⊗ 👿	EXIT SIGN (COORDINATE ARROWS AND FACES WITH DRAWINGS)
\bigoplus	EMERGENCY "BUG EYE" LIGHT FIXTURE
4&⊅	COMBINATION EXIT SIGN / EMERGENCY "BUG EYE" LIGHT FIXTURE
\$	WALL MOUNTED COMMERCIAL GRADE DECORATOR LIGHT SWITCH. GREENGATE 7521 SERIES. VALUE ENGINEERING SUBSTITUTION SHALL BE COMMERCIAL GRADE TOGGLE SWITCH. GREENGATE CS120 SERIES.
\$ ^D	WALL MOUNTED STANDARD 0-10V COMMERCIAL GRADE SLIDE DIMMER LIGHT SWITCH. GREENGATE WBSD-010M-C1
\$3	WALL MOUNTED STANDARD COMMERCIAL GRADE THREE-WAY TOGGLE LIGHT SWITCH. GREENGATE
\$ ^{os}	WALL MOUNTED OCCUPANCY SENSOR / LIGHT SWITCH COMBINATION UNIT. GREENGATE 'ONW-D-1001' WIRED FOR SINGLE POLE OPERATION.
\$ ^{osd}	WALL MOUNTED 0-10V DIMMING LIGHT SWITCH WITH DUAL TECHNOLOGY INTEGRAL OCCUPANCY SENSOR. GREENGATE 'OSW-D-010'.
\$ ^{OS2}	WALL MOUNTED 0-10V RECESSED DUAL RELAY LIGHT SWITCH WITH DUAL TECHNOLOGY INTEGRAL OCCUPANCY SENSOR. GREENGATE 'ONW-D-1001-DMV-N. THIS CONTROL SWITCH SHALL CONTROL TWO ZONES OF LIGHTING.
\$ ^{os3}	WALL MOUNTED OCCUPANCY SENSOR / LIGHT SWITCH COMBINATION UNIT. GREENGATE 'ONW-D-1001' WIRED FOR THREE-WAY OPERATION.
\$ ^{vs}	WALL MOUNTED OCCUPANCY SENSOR / LIGHT SWITCH COMBINATION UNIT. GREENGATE 'VNW-D-1001-MV' WIRED FOR SINGLE POLE OPERATION.
\$ ^{VSD}	WALL MOUNTED 0-10V DIMMING LIGHT SWITCH WITH DUAL TECHNOLOGY INTEGRAL OCCUPANCY SENSOR. GREENGATE 'VSW-D-010'.
\$ ^{VS2}	WALL MOUNTED 0-10V RECESSED DUAL RELAY LIGHT SWITCH WITH DUAL TECHNOLOGY INTEGRAL OCCUPANCY SENSOR. GREENGATE 'VNW-D-1001-DMV-N. THIS CONTROL SWITCH SHALL CONTROL TWO ZONES OF LIGHTING.
\$ ^{VS3}	WALL MOUNTED OCCUPANCY SENSOR / LIGHT SWITCH COMBINATION UNIT. GREENGATE 'VNW-D-1001-MV' WIRED FOR THREE-WAY OPERATION.
© 3	CEILING MOUNTED 0-10V DUAL TECHNOLOGY OCCUPANCY SENSOR. GREENGATE 'OAC-DT-1000 FOR SPACES UP TO 34'X18'. GREENGATE 'OAT-CT-2000' FOR SPACES GREATER THAN 34'X18' AND LESS THAN 46'X25'.
e	ABOVE ACCESSIBLE CEILING MOUNTED 0-10V POWER PACK. GREENGATE 'SP20' SERIES OR EQUAL BY SENSOR SWITCH, WATTSTOPPER, LEVITON, NLIGHT. WHERE THERE ARE TWO POWER PACKS IN A ROOM/AREA, ONE POWER PACK IS TO CONTROL ONE OF THE LIGHTING ZONES AND THE OTHER POWER PACK(S) SHALL CONTROL THE OTHER(S). POWER PACKS SHALL BE PROVIDED WITH DEFAULT MODES TO MATCH DEFAULTS OF SWITCHES THAT ARE TO BE PAIRED WITH SENSORS.

LIGHTING NOTES: TIMEOUTS FOR ALL OCCUPANCY OR VACANCY SENSORS SHALL BE SET TO MAXIMUM LENGTH ALLOWED BY SENSOR MANUFACTURER. MANUFACTURERS ALLOWED ARE GREENGATE (BASIS OF DESIGN), NLIGHT, SENSOR SWITCH, WATTSTOPPER,

LEVITON OR OTHER PREAPPROVED EQUAL. ALL LIGHTING CONTROL PRODUCTS FOR THE PROJECT SHALL BE OF THE SAME MANUFACTURER. PROVIDE AND INSTALL ACCESSORIES REQUIRED FOR FULL OPERATION OF DEVICES. LIGHTING CONTROLS SHALL BE TYPE RECOMMENDED BY LIGHTING MANUFACTURER TO OPERATE THE LIGHTING TYPE WITH FEATURES AS SELECTED/PROVIDED. MANUFACTURER'S RECOMMENDATION SHALL SUPERCEDE ALL

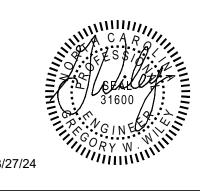
SPECIFICATIONS ON THIS ELECTRICAL SYMBOL LEGEND. ALL CEILING MOUNTED OCCUPANCY OR VACANCY SENSORS SHALL BE CENTRALLY LOCATED IN THE ROOM IT SERVES AND POSITIONED FOR ACCURATE DETECTION. FOR ALL LOW VOLTAGE CEILING MOUNTED OCCUPANCY AND VACANCY SENSORS, THE CONTRACTOR SHALL ALSO PROVIDE AND INSTALL A POWER PACK OF MODEL RECOMMENDED BY MANUFACTURER.

ALL DEVICE COLORS SHALL BE SELECTED BY ARCHITECT/INTERIOR DESIGNER.

FIRE ALARM NOTIFICATION FIRE ALARM PULL STATION WALL MOUNTED HORN/STROBE NOTICATION DEVICE (CANDELA RATING IS LOCATED NEXT TO DEVICE) MATCH EXISTING. WALL MOUNTED VISUAL NOTICATION DEVICE (CANDELA RATING IS LOCATED NEXT TO DEVICE) MATCH EXISTING.
CEILING MOUNTED HORN/STROBE NOTICATION DEVICE (CANDELA RATING IS LOCATED NEXT TO DEVICE). MATCH EXISTING.

CEILING MOUNTED VISUAL NOTICATION DEVICE (CANDELA RATING IS LOCATED NEXT TO DEVICE). MATCH EXISTING. FAAP FIRE ALARM ANNUNCIATION PANEL **FACP** FIRE ALARM CONTROL PANEL **ABBREVIATIONS** # OF INCHES TO MOUNT CENTERLINE OF DEVICE ABOVE FINISHED FLOOR ABOVE COUNTER **BELOW CEILING** BC CM CEILING MOUNTED EMPTY CONDUIT (WITH PULLSTRING) E.C. ELECTRICAL CONTRACTOR GENERAL CONTRACTOR G.C. M.C. MECHANICAL CONTRACTOR WP NEMA 3R RATED

4539 HEDGEMORE DRIVE, SUITE 101 CHARLOTTE NC 28209 704.890.2053 WWW.OSSASTUDIO.COM



PROJECT TEAM

General Contractor ECCLESIA CONSTRUCTION www.ecclesiaconstruction.com 803.327.5670



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 \triangle Date Description

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04/22/2024 PERMIT REVISION 2 10/14/2024 RTAP NO. 1

Project Name



making church come alive 658 GRAHAM ROAD SANFORD NC 27311

3D COMMUNITY CHURCH

Project Number 23024.00

GENERAL NOTES, RISER DIAGRAM & ABBREVIATIONS - ELECTRICAL

E00.01

ELECTRICAL SYSTEMS AS SHOWN ON THE PLANS. B. ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA, STATE BUILDING CODE, AND ANY OTHER LOCAL REQUIREMENTS THAT MAY APPLY. CONTRACTOR SHALL PAY FOR ALL REQUIRED PERMITS, FEES, INSPECTIONS, ETC.

C. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL ELECTRICAL PERMITS AND INSPECTION FEES. D. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY THE UNDERWRITER'S LABORATORIES, INC. OR BY A STATE APPROVED THIRD PARTY TESTING AGENCY FOR THE USE INTENDED WHERE A STANDARD FOR SUCH MATERIALS AND USE EXISTS. ALL ITEMS OF THE SAME TYPE AND RATING SHALL BE

IDENTICAL AND OF THE SAME MANUFACTURER. E. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CATALOG DATA IN ELECTRONIC FORMAT (PDF) FOR ALL ELECTRICAL ITEMS IN THE SCOPE OF WORK, INCLUDING, BUT NOT LIMITED TO, RACEWAYS, BOXES, FITTINGS, CONDUCTORS, LUMINAIRES, LAMPS, BALLASTS, WIRING DEVICES, SAFETY SWITCHES, DISCONNECTS, TRANSFORMERS, PANELBOARDS, FIRE ALARM, TELECOMMUNICATIONS, ETC. FOR APPROVAL AS APPLICABLE FOR THE PROJECT. ONE COMPLETE SET OF APPROVED SUBMITTALS

SHALL BE MAINTAINED AT THE JOB SITE. F. ALL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT TO COMPLY WITH THE BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, CONDUIT, WIRING, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, METHODS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COSTS ASSOCIATED WITH SUBSTITUTED EQUIPMENT WILL BE APPROVED AFTER BIDS HAVE BEEN ACCEPTED AND ALL COSTS WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

CREDITS SHALL BE GIVEN TO THE OWNER WHERE SUCH EQUIPMENT AND METHODS RESULT IN LESS EXPENSE TO THE CONTRACTOR. G. ONE COMPLETE SET OF THE LATEST CONSTRUCTION PLANS OF ALL TRADES SHALL BE MAINTAINED AT THE JOB SITE. IN ADDITION, ALL ADDENDUMS, BULLETINS, AND/OR SKETCHES SHALL BE

INCORPORATED INTO THE ON-SITE CONSTRUCTION PLANS AS THE 10B PROGRESSES H. COMPLETELY ADEQUATE HOUSING SHALL BE PROVIDED FOR ALL MATERIALS STORED ON JOB SITE. ONLY CONDUIT MAY BE STORED

OUTSIDE, BUT NOT IN CONTACT WITH THE GROUND. I. THE CONDUIT AND NEUTRAL SYSTEM SHALL BE GROUNDED AT THE MAIN SERVICE EQUIPMENT. GROUNDING ELECTRODE SYSTEM SHALL BE INSTALLED PER NEC 250. J. PROVIDE AN INTERSYSTEM BONDING TERMINATION DEVICE AT THE

MAIN ELECTRICAL SERVICE PER NEC 250.94. K. WIRING SHALL BE TESTED FOR CONTINUITY AND GROUNDS BEFORE BEING ENERGIZED. FAULTY WIRING SHALL BE REPLACED AT NO ADDITIONAL EXPENSE TO THE OWNER. L. PROVIDE ALL CUTTING AND PATCHING FOR INSTALLATION OF WORK

AND REPAIR ANY DAMAGE DONE. M. THE ELECTRICAL CONTRACTOR SHALL CONNECT ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS (UNLESS OTHERWISE NOTED), EXCEPT FOR CONTROL WIRING FOR EQUIPMENT NOT PROVIDED BY THE ELECTRICAL CONTRACTOR. CONTROL WIRING FOR SUCH EQUIPMENT SHALL BE PROVIDED BY THE RESPECTIVE

DISCIPLINE. N. ALL ELECTRICAL JUNCTION BOXES, SWITCHGEAR, CABLING, VOICE/DATA OUTLETS, LOW VOLTAGE CABINETS, EMERGENCY RECEPTACLES, ETC. SHALL BE LABELED ACCORDING TO PANEL AND CIRCUIT NUMBER.

O. UPON COMPLETION OF WORK, CONTRACTOR SHALL PRESENT ENGINEER WITH CERTIFICATE OF APPROVAL FROM LOCAL INSPECTOR AND/OR AUTHORITY HAVING JURISDICTION BEFORE WORK WILL BE APPROVED FOR FINAL PAYMENT.

P. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF ONE YEAR EFFECTIVE THE DATE THE PROJECT IS ACCEPTED BY THE OWNER. ANY IMPERFECT MATERIALS OR WORKMANSHIP SHALL BE REPLACED WITHOUT ADDED COST TO THE PROJECT.

Q. IT SHALL NOT BE THE INTENT OF ISSUED PLANS AND/OR SPECIFICATIONS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION, THE FLECTRICAL CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL NECESSARY ITEMS FOR A COMPLETE AND OPERATING SYSTEM.

R. THE WORD "PROVIDE" MEANS THAT THIS CONTRACTOR SHALL FURNISH, FABRICATE, ERECT, CONNECT, AND COMPLETELY INSTALL SYSTEMS IN PROPER OPERATING CONDITION. ALL LABOR, PRODUCT OPTIONS, ACCESSORIES AND INCIDENTAL MATERIALS REQUIRED SHALL BE INCLUDED AS PART OF THIS WORK TO COMPLETE THE

S. THE WORD "CONNECT" MEANS THAT THIS CONTRACTOR SHALL PROVIDE (SEE DEFINITION ABOVE) ALL DISCONNECTING MEANS. OVERCURRENT PROTECTION AND WIRING REQUIRED TO PLACE THE EQUIPMENT AND SYSTEMS IN PROPER OPERATING CONDITION AND TO COMPLY WITH CODE REQUIREMENTS. T. CONTRACTOR SHALL COORDINATE THE ROUGH-IN OF ALL OUTLET

LOCATIONS WITH ARCHITECTURAL FLOOR PLANS, ELEVATIONS, AND MILLWORK SHOP DRAWINGS PRIOR TO ROUGH-IN. U. ELECTRICAL CONTRACTOR SHALL NOT SCALE PLANS. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, UNLESS OTHERWISE NOTED.

V. IF DURING THE COURSE OF WORK, THE CONTRACTOR DISCOVERS A PROBLEM WITH THE PERFORMANCE OF THE INSTALLATION RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC, OR OTHER CODES OR REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY BRING THE PROBLEM TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE

W. WHERE THERE ARE CONFLICTS BETWEEN THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL BRING THE ISSUE TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK OR ORDERING ANY MATERIALS. NO ADDITIONAL COSTS SHALL BE WARRANTED WITHOUT A CHANGE TO THE PROJECT SCOPE

X. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PROVIDING TEMPORARY POWER AND LIGHTING FOR ALL TRADES. AT NO TIME SHALL EXISTING BUILDING POWER SYSTEMS BE UTILIZED WITHOUT WRITTEN PERMISSION FROM THE

Y. COORDINATE LOCATION AND REQUIREMENTS FOR ELECTRICAL SERVICE WITH THE POWER COMPANY. WHERE MORE THAN ONE SERVICE IS SUPPLIED TO A BUILDING, PROVIDE IDENTIFICATION AT

EACH SERVICE PER NEC 230-2(E). Z. COORDINATE LOCATION AND REQUIREMENTS FOR TELEPHONE SERVICE WITH THE TELEPHONE COMPANY.

CONDUCTORS PART 1 GENERAL

A. CONDUCTORS SHALL BE MANUFACTURED BY SOUTHWIRE (SIMPULL), ENCORE (SUPERSLICK), UNITED COPPER (SLK), CERRO (SLP), OR APPROVED EQUAL, "PRE-LUBRICATED" BY THE MANUFACTURER. B. ALL CONDUCTORS SHALL BE COPPER, RATED 75° C WET/DRY EXCEPT

WHERE OTHERWISE NOTED OR REQUIRED BY U.L. OR OTHER CODES. C. ALL CONDUCTORS SHALL BE SINGLE INSULATED CONDUCTOR. THHN/THWN-2. SIZES #10 AWG AND SMALLER SHALL BE SOLID. SIZES #8 AWG AND LARGER SHALL BE STRANDED.

D. BRANCH CIRCUITS SHALL NOT BE SMALLER THAN #12 AWG. CONTROL WIRING MAY BE #14 AWG.

E. CONDUCTORS SHALL BE COLOR CODED BLACK/RED/BLUE FOR 120/208 VOLT SYSTEMS AND BROWN/ORANGE/YELLOW FOR 277/480 VOLT SYSTEMS FOR A, B, AND C PHASES, RESPECTIVELY. NEUTRAL SHALL BE WHITE FOR 120/208 VOLT SYSTEMS AND NATURAL GRAY FOR 277/480 VOLT SYSTEMS. GROUND CONDUCTOR SHALL BE GREEN ON ALL SYSTEMS. ALL CONDUCTOR SIZES SHALL HAVE COLOR-CODED INSULATION. THE USE OF COLORED TAPE ON

ARGER WIRE SIZES SHALL NOT BE ALLOWED. INSULATION SHALL BE DUAL RATED TYPE THHN/THWN-2 FOR FEEDERS AND BRANCH CIRCUITS. FIXTURE TAPS SHALL BE #12 THHN/THWN-2 IN FLEX WITH GREEN #12 AWG GROUNDING CONDUCTOR.

G. ALL CONDUCTORS SHALL BE IN CONDUIT. H. WIRING TO LIGHTING FIXTURES SHALL BE AS REQUIRED BY UL

MULTI-WIRE BRANCH CIRCUITS SHALL NOT BE ALLOWED, UNLESS EXPLICITLY INDICATED ON THE DRAWINGS OR WHEN POWERING MODULAR SYSTEMS FURNITURE. WHERE EXPLICITLY INDICATED ON THE DRAWINGS:

1) ALL 20A MULTI-WIRE RECEPTACLE CIRCUITS SHALL UTILIZE A #10 AWG NEUTRAL CONDUCTOR.

2) WHERE MULTI-WIRE BRANCH CIRCUITS ARE EXPLICITLY INDICATED ON THE DRAWINGS, THEY SHALL BE INSTALLED PER NEC 210.4. MEANS SHALL BE PROVIDED TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES IN ADDITION TO OTHER REQUIREMENTS PER NEC

J. JOINTS IN #10 AWG AND SMALLER SHALL BE MADE UP WITH CRIMPED CONNECTORS WITH INSULATING CAPS (NO TAPE) OR WIRENUTS (MAXIMUM OF 3 CONDUCTORS UNDER ANY CONNECTOR OR WIRENUT). LARGER WIRE SHALL USE SPLIT BOLTS OR BOLTED

K. ALL WIRING LUGS THROUGHOUT THE PROJECT, INCLUDING, BUT NOT LIMITED TO, BREAKERS, PANELBOARD/SWITCHBOARD LUGS, SAFETY SWITCH LUGS, MOTOR STARTER LUGS, TRANSFORMERS LUGS, WIRING DEVICE TERMINALS, AND ALL EQUIPMENT LUGS/TERMINALS SHALL BE RATED FOR USE WITH 75 DEGREE INSULATED CONDUCTORS AT THEIR 75 DEGREE AMPACITY AND SHALL BE SIZED AND SELECTED TO MATCH THE CONDUCTOR SIZE

AND MATERIAL

L. CIRCUIT JOINTS SHALL NOT BE MADE ON DEVICE TERMINALS.

M. WIRE WITHIN PANELBOARDS SHALL BE NEATLY TRAINED, SQUARED, BUNCHED, AND TAGGED

N. ALL SYSTEM FURNITURE CONNECTIONS SHALL COMPLY WITH NEC O. GROUND ALL EQUIPMENT PER NEC ARTICLE 250. BOND WHERE CONDUITS ENTER ENCLOSURES THROUGH CONCENTRIC KNOCKOUTS. ALL FLEX, INCLUDING FIXTURE TAPS, SHALL INCLUDE GREEN GROUNDING CONDUCTOR, #12 AWG MINIMUM. PROVIDE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT, SIZED PER NEC 250-122.

P. ALL CONDUCTORS INSTALLED IN VERTICAL RACEWAYS SHALL BE SUPPORTED AT INTERVALS AS REQUIRED PER NEC 300-19. Q. THE ELECTRICAL CONTRACTOR SHALL FOLLOW AND APPLY THE TABLE BELOW, REGARDLESS WHAT THE PANEL SCHEDULE INDICATES, FOR SIZING ALL 120V & 277V, 20 AMP BRANCH CIRCUITS (COPPER CONDUCTORS) TO ALLOW A MAXIMUM OF 3% VOLTAGE DROP FROM THE CIRCUIT BREAKER TO THE FIRST DEVICE

ON THE BRANCH CIRCUIT AND ACHIEVE A MAXIMUM OF 5%

VOLTAGE DROP ACROSS THE ENTIRE BRANCH CIRCUIT: CONDUCTOR LENGTH * BRANCH CIRCUIT 51' - 90' #10 91' - 140' 141' - 225'

* - THE LENGTH IS MEASURED FROM THE CIRCUIT BREAKER TO

THE FIRST DEVICE WHICH THE BRANCH CIRCUIT SERVES. WHERE

THE DISTANCE EXCEEDS ABOVE, CONSULT WITH THE ENGINEER.

PART 1 GENERAL A. SUITABLE FINISH COAT SHALL BE PROVIDED FOR ALL EQUIPMENT. PANEL TUBS, COVERS, ETC. SHALL BE PRIMED AND ENAMELED TO BLEND WITH ADJACENT SURFACES, OR SHALL BE MANUFACTURER'S STANDARD COLOR BAKED ENAMEL FINISH, OR AS DIRECTED BY THE ARCHITECT.

<u>TELECOMMUNICATIONS</u>

A. CONTRACTOR SHALL UTILIZE EXISTING TELEPHONE CONDUIT SYSTEM. CONTRACTOR SHALL COORDINATE ANY NEW CONDUIT REQUIREMENTS WITH TELEPHONE PROVIDER AND FURNISH ACCORDINGLY

B. TELECOMMUNICATION OUTLETS SHALL CONSIST OF A 4" SQUARE DEEP BOX WITH SINGLE GANG PLASTER RING. PROVIDE BLANK PLATE WITH KNOCKOUTS FOR OUTLETS, AS PERMANENT COVERS WILL BE PROVIDED BY A SEPARATE INSTALLER.

C. PROVIDE MINIMUM 210# TEST NYLON PULL CORD AND NYLON BUSHINGS IN ALL EMPTY RACEWAYS. D. PROVIDE GROUNDING FOR ALL TELEPHONE/DATA SYSTEMS AND EQUIPMENT PER REQUIREMENTS AND SPECIFICATIONS PROVIDED BY

THE OWNERS DESIGNATED VENDOR. E. ALL LOW-VOLTAGE CABLING SHALL BE PLENUM-RATED. F. VERIFY SITE LOCATION OF TELEPHONE SERVICES WITH APPROPRIATE VENDOR, PRIOR TO SUBMITTING BID.

<u>GROUNDING AND BONDING</u>

1.01 SECTION INCLUDES A. GROUNDING AND BONDING COMPONENTS. B. PROVIDE ALL COMPONENTS NECESSARY TO COMPLETE THE

GROUNDING SYSTEM(S) CONSISTING OF: 1. EXISTING METAL UNDERGROUND WATER PIPE. 2. METAL UNDERGROUND WATER PIPE. 3. METAL FRAME OF THE BUILDING.

4. STEEL WATER STORAGE TANK AND SUPPORTS. 5. CONCRETE-ENCASED ELECTRODE. 6. ROD ELECTRODES. 7. PLATE ELECTRODES

PART 1 GENERAL

8. ACTIVE ELECTRODES. 1.02 REFERENCES A. NETA STD ATS - ACCEPTANCE TESTING SPECIFICATIONS FOR ELECTRICAL POWER DISTRIBUTION EQUIPMENT AND SYSTEMS: INTERNATIONAL ELECTRICAL TESTING ASSOCIATION; 2007.

B. NFPA 70 - NATIONAL ELECTRICAL CODE: NATIONAL FIRE PROTECTION ASSOCIATION: 2005 C. NFPA 99 - STANDARD FOR HEALTH CARE FACILITIES; NATIONAL FIRE PROTECTION ASSOCIATION; 2005.

1.03 PERFORMANCE REQUIREMENTS A. GROUNDING SYSTEM RESISTANCE: 5 OHMS.

1.04 QUALITY ASSURANCE A. CONFORM TO REQUIREMENTS OF NFPA 70.

B. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING THE PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE WITH SERVICE FACILITIES WITHIN 100 MILES OF PROJECT. C. PRODUCTS: LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR THE PURPOSE SPECIFIED AND

PART 2 PRODUCTS

2.01 MANUFACTURERS A. COOPER POWER SYSTEMS: B. FRAMATOME CONNECTORS INTERNATIONAL:

C. LIGHTNING MASTER CORPORATION:

2.02 ELECTRODES A. ROD ELECTRODES: COPPER. DIAMETER: 3/4 INCH (19 MM).

2. LENGTH: 5 FEET (1500 MM). B. ACTIVE ELECTRODES: METALLIC-SALT-FILLED COPPER-TUBE ELECTRODE.

1. SHAPE: STRAIGHT. 2. LENGTH: 8 FEET (2400 MM). 3. CONNECTOR: U-BOLT PRESSURE PLATE.

C. FOUNDATION ELECTRODES: 2/0 AWG. 2.03 CONNECTORS AND ACCESSORIES A. MECHANICAL CONNECTORS: BRONZE.

B. WIRE: STRANDED COPPER. C. GROUNDING ELECTRODE CONDUCTOR: SIZE TO MEET NFPA 70

REOUIREMENTS.

D. GROUNDING WELL: 1. WELL PIPE: 8 INCH (200 MM) BY 24 INCH (600 MM) LONG CLAY TILE PIPE WITH BELLED END.

2. WELL COVER: CAST IRON WITH LEGEND "GROUND" EMBOSSED ON

PART 3 EXECUTION

3.01 EXAMINATION A. VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING WORK. B. VERIFY THAT FINAL BACKFILL AND COMPACTION HAS BEEN COMPLETED BEFORE DRIVING ROD ELECTRODES.

3.02 INSTALLATION A. INSTALL GROUND ELECTRODES AT LOCATIONS INDICATED. INSTALL ADDITIONAL ROD ELECTRODES AS REQUIRED TO ACHIEVE SPECIFIED RESISTANCE TO GROUND

B. PROVIDE GROUNDING WELL PIPE WITH COVER AT EACH ROD LOCATION. INSTALL WELL PIPE TOP FLUSH WITH FINISHED GRADE. C. INSTALL 4 AWG BARE COPPER WIRE IN FOUNDATION FOOTING

WHERE INDICATED D. PROVIDE GROUNDING ELECTRODE CONDUCTOR AND CONNECT TO REINFORCING STEEL IN FOUNDATION FOOTING WHERE INDICATED.

BOND STEEL TOGETHER. E. PROVIDE BONDING TO MEET REQUIREMENTS DESCRIBED IN **OUALITY ASSURANCE.**

F. BOND TOGETHER METAL SIDING NOT ATTACHED TO GROUNDED STRUCTURE; BOND TO GROUND.

G. EQUIPMENT GROUNDING CONDUCTOR: PROVIDE SEPARATE, INSULATED CONDUCTOR WITHIN EACH FEEDER AND BRANCH CIRCUIT RACEWAY. TERMINATE EACH END ON SUITABLE LUG, BUS, OR BUSHING.

HANGERS AND SUPPORTS

PART 1 GENERAL 1.01 SECTION INCLUDES A. CONDUIT AND EQUIPMENT SUPPORTS.

B. ANCHORS AND FASTENERS. 1.02 QUALITY ASSURANCE A. CONFORM TO REQUIREMENTS OF NFPA 70. B. PRODUCTS: LISTED AND CLASSIFIED BY UNDERWRITERS

PART 2 EXECUTION

2.01 INSTALLATION A. INSTALL HANGERS AND SUPPORTS AS REQUIRED TO ADEQUATELY AND SECURELY SUPPORT ELECTRICAL SYSTEM COMPONENTS, IN A NEAT AND WORKMANLIKE MANNER, AS SPECIFIED IN NECA 1.

LABORATORIES INC. AS SUITABLE FOR THE PURPOSE SPECIFIED AND

1. DO NOT FASTEN SUPPORTS TO PIPES, DUCTS, MECHANICAL EQUIPMENT, OR CONDUIT. 2. OBTAIN PERMISSION FROM ARCHITECT BEFORE DRILLING OR

CUTTING STRUCTURAL MEMBERS. B. RIGIDLY WELD SUPPORT MEMBERS OR USE HEXAGON-HEAD BOLTS TO PRESENT NEAT APPEARANCE WITH ADEQUATE STRENGTH AND RIGIDITY. USE SPRING LOCK WASHERS UNDER ALL NUTS. C. INSTALL SURFACE-MOUNTED CABINETS AND PANELBOARDS WITH

MINIMUM OF FOUR ANCHORS

D. IN WET AND DAMP LOCATIONS USE STEEL CHANNEL SUPPORTS TO STAND CABINETS AND PANELBOARDS 1 INCH (25 MM) OFF WALL. E. USE SHEET METAL CHANNEL TO BRIDGE STUDS ABOVE AND BELOW

CABINETS AND PANELBOARDS RECESSED IN HOLLOW PARTITIONS. **ELECTRICAL IDENTIFICATION**

PART 1 GENERAL 1.01 SECTION INCLUDES

A. NAMEPLATES AND LABELS. B. WIRE AND CABLE MARKERS. C. CONDUIT MARKERS. D. FIELD-PAINTED IDENTIFICATION OF CONDUIT

1.02 QUALITY ASSURANCE A. CONFORM TO REQUIREMENTS OF NFPA 70. B. PRODUCTS: LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR PURPOSE SPECIFIED AND

PART 2 PRODUCTS

2.01 NAMEPLATES AND LABELS A. NAMEPLATES: ENGRAVED THREE-LAYER LAMINATED PLASTIC, BLACK LETTERS ON WHITE BACKGROUND. B. LOCATIONS:

1. EACH ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT ENCLOSURE: 2.02 CONDUIT MARKERS

A. LOCATION: FURNISH MARKERS FOR EACH CONDUIT LONGER THAN 6 FEET (2 M). B. SPACING: 20 FEET (6 M) ON CENTER. 2.03 UNDERGROUND WARNING TAPE

A. DESCRIPTION: 4 INCH (100 MM) WIDE PLASTIC TAPE, DETECTABLE TYPE COLORED RED WITH SUITABLE WARNING LEGEND DESCRIBING BURIED ELECTRICAL LINES.

PART 3 EXECUTION

3.01 INSTALLATION A. INSTALL NAMEPLATES AND LABELS PARALLEL TO EQUIPMENT LINES. B. SECURE NAMEPLATES TO EQUIPMENT FRONT USING SCREWS. C. SECURE NAMEPLATES TO INSIDE SURFACE OF DOOR ON

PANELBOARD THAT IS RECESSED IN FINISHED LOCATIONS. D. IDENTIFY UNDERGROUND CONDUITS USING UNDERGROUND WARNING TAPE. INSTALL ONE TAPE PER TRENCH AT 3 INCHES (75 MM) BELOW FINISHED GRADE.

CONDUIT

PART 1 GENERAL 1.01 SECTION INCLUDES A. CONDUIT, FITTINGS AND CONDUIT BODIES.

1.02 QUALITY ASSURANCE CONFORM TO REQUIREMENTS OF NFPA 70. PRODUCTS: LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR PURPOSE SPECIFIED AND

1.04 DELIVERY, STORAGE, AND HANDLING A. ACCEPT CONDUIT ON SITE. INSPECT FOR DAMAGE.

B. PROTECT CONDUIT FROM CORROSION AND ENTRANCE OF DEBRIS BY STORING ABOVE GRADE. PROVIDE APPROPRIATE COVERING. C. PROTECT PVC CONDUIT FROM SUNLIGHT.

PART 2 PRODUCTS

2.01 CONDUIT REQUIREMENTS A. CONDUIT SIZE: COMPLY WITH NFPA 70.

1. MINIMUM SIZE: 3/4 INCH (13 MM) UNLESS OTHERWISE SPECIFIED B. UNDERGROUND INSTALLATIONS 1. MORE THAN 5 FEET (1.5 METERS) FROM FOUNDATION WALL: USE RIGID STEEL CONDUIT, INTERMEDIATE METAL CONDUIT, OR PLASTIC

2. WITHIN 5 FEET (1.5 METERS) FROM FOUNDATION WALL: USE RIGID STEEL CONDUIT, INTERMEDIATE METAL CONDUIT, PLASTIC COATED CONDUIT, OR THICKWALL NONMETALLIC CONDUIT 3. IN OR UNDER SLAB ON GRADE: USE RIGID STEEL CONDUIT

INTERMEDIATE METAL CONDUIT, OR PLASTIC COATED CONDUIT. 4. MINIMUM SIZE: 3/4 INCH (19 MM). C. OUTDOOR LOCATIONS ABOVE GRADE: USE RIGID STEEL CONDUIT

RIGID ALUMINUM CONDUIT, INTERMEDIATE METAL CONDUIT, OR ELECTRICAL METALLIC TUBING. D. IN SLAB ABOVE GRADE: 1. USE RIGID STEEL CONDUIT, INTERMEDIATE METAL CONDUIT, ELECTRICAL METALLIC TUBING, OR THICKWALL NONMETALLIC

2. MAXIMUM SIZE CONDUIT IN SLAB: 3/4 INCH (19 MM); 1/2 INCH (13 MM) FOR CONDUITS CROSSING EACH OTHER . WET AND DAMP LOCATIONS: USE RIGID STEEL CONDUIT, RIGID

ALUMINUM CONDUIT, INTERMEDIATE METAL CONDUIT, ELECTRICAL METALLIC TUBING, THICKWALL NONMETALLIC CONDUIT, OR NONMETALLIC TUBING F. DRY LOCATIONS: 1. CONCEALED: USE RIGID STEEL CONDUIT, RIGID ALUMINUM

CONDUIT, INTERMEDIATE METAL CONDUIT, ELECTRICAL METALLIC TUBING, THICKWALL NONMETALLIC CONDUIT, OR NONMETALLIC 2. EXPOSED: USE RIGID STEEL CONDUIT, RIGID ALUMINUM CONDUIT

INTERMEDIATE METAL CONDUIT, ELECTRICAL METALLIC TUBING, OR THICKWALL NONMETALLIC CONDUIT. 2.02 METAL CONDUIT

A. RIGID STEEL CONDUIT: ANSI C80.1. B. RIGID ALUMINUM CONDUIT: ANSI C80.5. C. INTERMEDIATE METAL CONDUIT (IMC): RIGID STEEL.

D. FITTINGS AND CONDUIT BODIES: NEMA FB 1; MATERIAL TO MATCH CONDUIT 2.03 ELECTRICAL METALLIC TUBING (EMT) A. DESCRIPTION: ANSI C80.3; GALVANIZED TUBING.

B. FITTINGS AND CONDUIT BODIES: NEMA FB 1; STEEL OR MALLEABLE IRON COMPRESSION TYPE. PART 3 EXECUTION

3.01 EXAMINATION A. VERIFY THAT FIELD MEASUREMENTS ARE AS SHOWN ON DRAWINGS. B. VERIFY ROUTING AND TERMINATION LOCATIONS OF CONDUIT PRIOR TO ROUGH-IN.

C. CONDUIT ROUTING IS SHOWN ON DRAWINGS IN APPROXIMATE LOCATIONS UNL 3.02 INSTALLATION

A. INSTALL CONDUIT SECURELY, IN A NEAT AND WORKMANLIKE MANNER, AS SPECIFIED IN B. INSTALL STEEL CONDUIT AS SPECIFIED IN NECA 101.

C. ARRANGE SUPPORTS TO PREVENT MISALIGNMENT DURING WIRING INSTALLATION D. SUPPORT CONDUIT USING COATED STEEL OR MALLEABLE IRON STRAPS, LAY-IN ADJUSTABLE HANGERS, CLEVIS HANGERS, AND SPLIT HANGERS

E. GROUP RELATED CONDUITS; SUPPORT USING CONDUIT RACK. CONSTRUCT RACK USING STEEL CHANNEL; PROVIDE SPACE ON EACH FOR 25 PERCENT ADDITIONAL CONDUITS. F. FASTEN CONDUIT SUPPORTS TO BUILDING STRUCTURE AND

SURFACES UNDER PROVISIONS OF SECTION 16070. G. DO NOT SUPPORT CONDUIT WITH WIRE OR PERFORATED PIPE STRAPS. REMOVE WIRE USED FOR TEMPORARY SUPPORTS. H. DO NOT ATTACH CONDUIT TO CEILING SUPPORT WIRES.

I. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND PRESENT NEAT APPEARANCE. J. ROUTE EXPOSED CONDUIT PARALLEL AND PERPENDICULAR TO

K. ROUTE CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO WALLS. L. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT-TO-POINT. M. MAINTAIN ADEQUATE CLEARANCE BETWEEN CONDUIT AND PIPING. N. CUT CONDUIT SQUARE USING SAW OR PIPECUTTER; DE-BURR CUT

BRING CONDUIT TO SHOULDER OF FITTINGS; FASTEN SECURELY P. INSTALL NO MORE THAN EQUIVALENT OF THREE 90 DEGREE BENDS BETWEEN BOXES. USE CONDUIT BODIES TO MAKE SHARP CHANGES IN DIRECTION, AS AROUND BEAMS. USE HYDRAULIC ONE SHOT BENDER TO FABRICATE BENDS IN METAL CONDUIT LARGER THAN 2 INCH (50 MM) SIZE.

O. AVOID MOISTURE TRAPS; PROVIDE JUNCTION BOX WITH DRAIN FITTING AT LOW POINTS IN CONDUIT SYSTEM. R. PROVIDE SUITABLE FITTINGS TO ACCOMMODATE EXPANSION AND DEFLECTION WHERE CONDUIT CROSSES SEISMIC. S. PROVIDE SUITABLE PULL STRING IN EACH EMPTY CONDUIT EXCEPT SLEEVES AND NIPPLES

T. USE SUITABLE CAPS TO PROTECT INSTALLED CONDUIT AGAINST

C. NAILS OR POWDER ACTUATED FASTENERS SHALL NOT BE USED.

D. EMT/IMC/RGS SUPPORTS SHALL BE A MAXIMUM OF 8'-0" APART AND

ENTRANCE OF DIRT AND MOISTURE.

A MAXIMUM OF 3'-0" FROM BOXES.

OR CAST IN PLACE.

<u>SUPPORTS</u> A. ALL EQUIPMENT SHALL BE ADEQUATELY SUPPORTED FROM STRUCTURE. B. INSERTS IN MASONRY SHALL BE LEAD OR FIBER IN DRILLED HOLES, E. LIGHTING FIXTURES MOUNTED IN OR ON CEILING SHALL BE SUPPORTED FROM STRUCTURE VIA 12 GAUGE STEEL WIRE. PROVIDE A MINIMUM OF FOUR WIRES, ONE ATTACHED TO EACH CORNER OF LAY-IN FIXTURES. RECESSED DOWNLIGHT FIXTURES SHALL BE SUPPORTED THE SAME. DO NOT SUPPORT RACEWAY OR FIXTURES FROM CEILING GRID OR DUCT WORK. USE U.L. LISTED GRID CLIPS ON ALL LAY-IN FIXTURES.

PART 1 GENERAL 1.01 SECTION INCLUDES

A. PULL AND JUNCTION BOXES.

PART 2 EXECUTION

2.01 INSTALLATION A. INSTALL BOXES SECURELY, IN A NEAT AND WORKMANLIKE MANNER, AS SPECIFIED IN NECA 1. B. INSTALL IN LOCATIONS AS SHOWN ON DRAWINGS, AND AS

REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT

CONNECTIONS, AND AS REQUIRED BY NFPA 70. C. ORIENT BOXES TO ACCOMMODATE WIRING DEVICES ORIENTED AS SPECIFIED IN SECTION 16140. D. MAINTAIN HEADROOM AND PRESENT NEAT MECHANICAL

THERMOSTATS, AND SIMILAR DEVICES. F. SUPPORT BOXES INDEPENDENTLY OF CONDUIT, EXCEPT CAST BOX THAT IS CONNECTED TO TWO RIGID METAL CONDUITS BOTH SUPPORTED WITHIN 12 INCHES (305 MM) OF BOX. G. USE GANG BOX WHERE MORE THAN ONE DEVICE IS MOUNTED

E. ALIGN ADJACENT WALL MOUNTED OUTLET BOXES FOR SWITCHES,

WIRING DEVICES

PART 1 GENERAL 1.01 SECTION INCLUDES

APPEARANCE.

A. WALL SWITCHES. B. RECEPTACLES. C. DEVICE PLATES AND DECORATIVE BOX COVERS.

TOGETHER. DO NOT USE SECTIONAL BOX.

1.02 QUALITY ASSURANCE A. CONFORM TO REQUIREMENTS OF NFPA 70. B. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING THE PRODUCTS SPECIFIED IN THIS SECTION WITH

MINIMUM THREE YEARS DOCUMENTED EXPERIENCE. C. PRODUCTS: PROVIDE PRODUCTS LISTED AND CLASSIFIED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR THE PURPOSE SPECIFIED AND INDICATED.

PART 2 PRODUCTS

REQUIREMENTS.

PART 3 EXECUTION

3.01 EXAMINATION

3.03 INSTALLATION

2.01 MANUFACTURERS A. COOPER WIRING DEVICES:

B. GE INDUSTRIAL: C. LEVITON MANUFACTURING, INC:

2.02 WALL SWITCHES A. WALL SWITCHES: HEAVY DUTY, AC ONLY GENERAL-USE SNAP SWITCH, COMPLYING WITH NEMA WD 6 AND WD 1. 1. BODY AND HANDLE: FINISH/COLOR SHALL BE SELECTED BY ARCHITECT. PROVIDE PLASTIC WITH TOGGLE HANDLE.

B. SWITCH TYPES: SINGLE POLE, DOUBLE POLE, AND 3-WAY. 2.03 RECEPTACLES A. RECEPTACLES: HEAVY DUTY, COMPLYING WITH NEMA WD 6 AND WD

2. RATINGS: MATCH BRANCH CIRCUIT AND LOAD CHARACTERISTICS.

1. DEVICE BODY: FINISH/COLOR TO BE SELECTED BY ARCHITECT. DEVICE SHALL BE MADE OF PLASTIC. 2. CONFIGURATION: NEMA WD 6, TYPE AS SPECIFIED AND INDICATED. B. CONVENIENCE RECEPTACLES: TYPE 5 TO 20.

C. SINGLE CONVENIENCE RECEPTACLES. D. DUPLEX CONVENIENCE RECEPTACLES. E. GFCI RECEPTACLES: CONVENIENCE RECEPTACLE WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER TO MEET REGULATORY

2.04 WALL PLATES A. DECORATIVE COVER PLATES: FINISH/COLOR TO BE SELECTED BY ARCHITECT, SMOOTH PLASTIC B. JUMBO COVER PLATES: COORDAINTE DEVICE COLOR WITH

ARCHITECT, SMOOTH PLASTIC. C. WEATHERPROOF COVER PLATES: GASKETED CAST METAL WITH

A. VERIFY THAT OUTLET BOXES ARE INSTALLED AT PROPER HEIGHT. B. VERIFY THAT WALL OPENINGS ARE NEATLY CUT AND WILL BE COMPLETELY COVERED BY WALL PLATES. C. VERIFY THAT BRANCH CIRCUIT WIRING INSTALLATION IS

B. CLEAN DEBRIS FROM OUTLET BOXES.

COMPLETED, TESTED, AND READY FOR CONNECTION TO WIRING DEVICES 3.02 PREPARATION A. PROVIDE EXTENSION RINGS TO BRING OUTLET BOXES FLUSH WITH FINISHED SURFACE.

A. INSTALL SECURELY, IN A NEAT AND WORKMANLIKE MANNER, AS SPECIFIED IN NECA 1. B. INSTALL DEVICES PLUMB AND LEVEL. C. INSTALL SWITCHES WITH OFF POSITION DOWN. D. INSTALL RECEPTACLES WITH GROUNDING POLE ON TOP.

E. CONNECT WIRING DEVICE GROUNDING TERMINAL TO OUTLET BOX WITH BONDING JUMPER F. INSTALL DECORATIVE PLATES ON SWITCH, RECEPTACLE, AND BLANK OUTLETS IN FINISHED AREAS.

SCREW TERMINAL H. INSTALL PROTECTIVE RINGS ON ACTIVE FLUSH COVER SERVICE FITTINGS. 3.04 INTERFACE WITH OTHER PRODUCTS A. INSTALL WALL SWITCH 48 INCHES (1.2 M) ABOVE FINISHED FLOOR

G. CONNECT WIRING DEVICES BY WRAPPING CONDUCTOR AROUND

UNLESS OTHERWISE NOTED ON DRAWINGS. B. INSTALL CONVENIENCE RECEPTACLE 18 INCHES (450 MM) ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS. C. INSTALL CONVENIENCE RECEPTACLE 6 INCHES (150 MM) ABOVE COUNTER UNLESS OTHERWISE NOTED ON DRAWINGS. D. INSTALL TELEPHONE JACK 18 INCHES (450 MM) ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS.

E. INSTALL TELEPHONE JACK FOR SIDE-REACH WALL TELEPHONE TO POSITION TOP OF TELEPHONE AT 54 INCHES (1.4 M) ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS. F. INSTALL TELEPHONE JACK FOR FORWARD-REACH WALL TELEPHONE TO POSITION TOP OF TELEPHONE AT 48 INCHES (1.2 M) ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS.

A. INSPECT EACH WIRING DEVICE FOR DEFECTS. B. OPERATE EACH WALL SWITCH WITH CIRCUIT ENERGIZED AND VERIFY PROPER OPERATION. C. VERIFY THAT EACH RECEPTACLE DEVICE IS ENERGIZED. D. TEST EACH RECEPTACLE DEVICE FOR PROPER POLARITY. E. TEST EACH GFCI RECEPTACLE DEVICE FOR PROPER OPERATION. F. VERIFY THAT EACH TELEPHONE JACK IS PROPERLY CONNECTED AND

CIRCUIT IS OPERATIONAL. A. ADJUST DEVICES AND WALL PLATES TO BE FLUSH AND LEVEL. CLEAN EXPOSED SURFACES TO REMOVE SPLATTERS AND RESTORE FINISH.

EQUIPMENT WIRING PART 1 GENERAL 1.01 SECTION INCLUDES

PART 2 PRODUCTS 2.01 MATERIALS A. CORDS AND CAPS: NEMA WD 6; MATCH RECEPTACLE

1. COLORS: CONFORM TO NEMA WD 1.

MANUFACTURER'S INSTRUCTIONS.

A. ELECTRICAL CONNECTIONS TO EQUIPMENT

CONDUCTOR, SUITABLE FOR USE IN DAMP LOCATIONS. PART 3 EXECUTION

3.05 FIELD QUALITY CONTROL

3.01 EXAMINATION A. VERIFY THAT EQUIPMENT IS READY FOR ELECTRICAL CONNECTION, WIRING, AND ENERGIZATION. 3.02 ELECTRICAL CONNECTIONS A. MAKE ELECTRICAL CONNECTIONS IN ACCORDANCE WITH EQUIPMENT

B. MAKE CONDUIT CONNECTIONS TO EQUIPMENT USING FLEXIBLE

CONFIGURATION AT OUTLET PROVIDED FOR EQUIPMENT.

2. CORD CONSTRUCTION: NFPA 70, TYPE SO, MULTICONDUCTOR

FLEXIBLE CORD WITH IDENTIFIED EQUIPMENT GROUNDING

CONDUIT. USE LIQUIDTIGHT FLEXIBLE CONDUIT WITH WATERTIGHT CONNECTORS IN DAMP OR WET LOCATIONS. C. CONNECT HEAT PRODUCING EQUIPMENT USING WIRE AND CABLE WITH INSULATION SUITABLE FOR TEMPERATURES ENCOUNTERED.

D. PROVIDE RECEPTACLE OUTLET TO ACCOMMODATE CONNECTION WITH ATTACHMENT PLUG.

E. PROVIDE CORD AND CAP WHERE FIELD-SUPPLIED ATTACHMENT PLUG 1.07 LIGHTING AND APPLIANCE PANELS (100A-600A) SHALL HAVE FRONT F. INSTALL SUITABLE STRAIN-RELIEF CLAMPS AND FITTINGS FOR CORD CONNECTIONS AT OUTLET BOXES AND EQUIPMENT CONNECTION

G. INSTALL DISCONNECT SWITCHES, CONTROLLERS, CONTROL STATIONS, AND CONTROL DEVICES TO COMPLETE EQUIPMENT WIRING REQUIREMENTS.

H. INSTALL TERMINAL BLOCK JUMPERS TO COMPLETE EQUIPMENT WIRING REQUIREMENTS. I. INSTALL INTERCONNECTING CONDUIT AND WIRING BETWEEN DEVICES AND EQUIPMENT TO COMPLETE EQUIPMENT WIRING

INTERIOR LUMINAIRES

PART 1 GENERAL 1.01 SECTION INCLUDES A. INTERIOR LUMINAIRES AND ACCESSORIES. B. BALLASTS. C. LAMPS.

REQUIREMENTS.

D. LUMINAIRE ACCESSORIES. 1.02 SUBMITTALS A. SHOP DRAWINGS: INDICATE DIMENSIONS AND COMPONENTS FOR

EACH LUMINAIRE THAT IS NOT A STANDARD PRODUCT OF THE MANUFACTURER. B. PRODUCT DATA: PROVIDE DIMENSIONS, RATINGS, AND PERFORMANCE DATA.

A. CONFORM TO REQUIREMENTS OF NFPA 70 AND NFPA 101. B. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING THE PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE.

LABORATORIES INC. AS SUITABLE FOR THE PURPOSE SPECIFIED AND

PART 2 PRODUCTS

INDICATED.

1.03 QUALITY ASSURANCE

A. FURNISH PRODUCTS AS INDICATED IN SCHEDULE INCLUDED ON THE

C. PRODUCTS: LISTED AND CLASSIFIED BY UNDERWRITERS

2.02 BALLASTS AND CONTROL UNITS A. FLUORESCENT BALLASTS: ANSI C82.1, HIGH POWER FACTOR TYPE ELECTROMAGNETIC BALLAST, SUITABLE FOR LAMPS SPECIFIED. VOLTAGE: AS INDICATED ON LIGHTING FIXTURE SCHEDULE.

2.03 LAMPS A. MANUFACTURERS: GE LIGHTING MODEL

PHILIPS LIGHTING CO

FOR FIRE RATING.

DELETERIOUS MATERIALS

TIME-DELAY WITH INDICATION.

3.05 PROTECTION

PART 3 EXECUTION 3.01 INSTALLATION

A. INSTALL FIXTURES SECURELY, IN A NEAT AND WORKMANLIKE MANNER, AS SPECIFIED IN NECA 500 (COMMERCIAL LIGHTING). B. INSTALL SUSPENDED LUMINAIRES AND EXIT SIGNS USING PENDANTS SUPPORTED FROM SWIVEL HANGERS. PROVIDE PENDANT LENGTH REQUIRED TO SUSPEND LUMINAIRE AT INDICATED HEIGHT. C. SUPPORT LUMINAIRES LARGER THAN 2 X 4 FOOT (600 X 1200 MM)

D. LOCATE RECESSED CEILING LUMINAIRES AS INDICATED ON REFLECTED CEILING PLAN. E. INSTALL RECESSED LUMINAIRES USING ACCESSORIES AND FIRESTOPPING MATERIALS TO MEET REGULATORY REQUIREMENTS

F. INSTALL CLIPS TO SECURE RECESSED GRID-SUPPORTED

SIZE INDEPENDENT OF CEILING FRAMING.

LUMINAIRES IN PLACE. G. INSTALL ACCESSORIES FURNISHED WITH EACH LUMINAIRE H. CONNECT LUMINAIRES AND EXIT SIGNS TO BRANCH CIRCUIT OUTLETS PROVIDED UNDER SECTION 16138 USING FLEXIBLE

I. MAKE WIRING CONNECTIONS TO BRANCH CIRCUIT USING BUILDING

WIRE WITH INSULATION SUITABLE FOR TEMPERATURE CONDITIONS

WITHIN LUMINAIRE J. BOND PRODUCTS AND METAL ACCESSORIES TO BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR. K. INSTALL SPECIFIED LAMPS IN EACH EMERGENCY LIGHTING UNIT, EXIT SIGN, AND LUMINAIRE.

3.02 FIELD QUALITY CONTROL A. OPERATE EACH LUMINAIRE AFTER INSTALLATION AND CONNECTION. INSPECT FOR PROPER CONNECTION AND OPERATION.

 C. CLEAN FINISHES AND TOUCH UP DAMAGE 3.04 DEMONSTRATION AND INSTRUCTIONS A. DEMONSTRATE LUMINAIRE OPERATION FOR MINIMUM OF TWO

A. CLEAN ELECTRICAL PARTS TO REMOVE CONDUCTIVE AND

A. RELAMP LUMINAIRES THAT HAVE FAILED LAMPS AT SUBSTANTIAL

B. REMOVE DIRT AND DEBRIS FROM ENCLOSURES.

COMPLETION. 3.06 SCHEDULE - SEE DRAWINGS DISCONNECTS 1.1 DISCONNECT SWITCHES SHALL BE HEAVY-DUTY TYPE IN NEMA 1 ENCLOSURES, UNLESS OTHERWISE NOTED, FUSED OR NON-FUSED AS INDICATED. SWITCHES SHALL HAVE REJECTION-TYPE FUSE CLIPS. SWITCHES SHALL BE BY EATON, SQUARE-D, GENERAL ELECTRIC, OR APPROVED EQUAL. WHERE FED FROM A LOAD CENTER, GENERAL-DUTY

SWITCHES SHALL BE PERMITTED. 1.2 FUSES LESS THAN 60A SHALL BE CLASS RK5, DUAL-ELEMENT, TIME-DELAY WITH INDICATION 1.3 FUSES GREATER THAN 60A SHALL BE CLASS J, DUAL-ELEMENT,

FIRE STOPPING 1.01 ALL PENETRATIONS OF RATED ASSEMBLIES SHALL BE SEALED WITH RATED MATERIALS MEETING ASTM E-814. 1.02 PROVIDE FIRESTOPPING DEVICE(S) OR SYSTEM(S) WHICH HAVE BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E-814. INSTALL THE DEVICE(S) OR SYSTEM(S) IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING. PROVIDE THE APPROPRIATE DEVICE(S) OR SYSTEM(S)

WITH AN 'F' RATING EQUAL TO THE RATING OF THE ASSEMBLY BEING

1.03 DEVICE(S) AND/OR SYSTEM(S) SHALL BE BY HILTI, 3M OR EQUIVALENT **ELECTRICAL COORDINATION WITH OTHER TRADES**

THE PROJECT, INCLUDING BUT NOT LIMITED TO, MECHANICAL PLUMBING, FIRE PROTECTION AND SUPPRESSION, OWNER FURNISHED, KITCHEN, LABORATORY, ETC. UNLESS OTHERWISE NOTED. 1.02 THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONNECTIONS PRIOR TO ROUGH-IN USING APPROVED CATALOG SHEETS AND SHOP DRAWINGS. 1.03 THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL

RECEPTACLES, ETC. TO MECHANICAL AND PLUMBING EQUIPMENT. ALL

CONNECTIONS TO ALL EOUIPMENT SUPPLIED BY OTHERS APPLICABLE TO

1.01 THE ELECTRICAL CONTRACTOR SHALL CONNECT AND/OR PROVIDE FINAL

STARTERS, OTHER THAN MANUAL STARTER SWITCHES, SHALL BE PROVIDED BY OTHERS, BUT INSTALLED BY THE ELECTRICAL CONTRACTOR 1.04 ALL DISCONNECT SWITCHES AND FUSE SIZES SHALL BE COORDINATED WITH SHOP DRAWINGS PRIOR TO ORDERING OR INSTALLING. ANY EQUIPMENT INSTALLED INCORRECTLY BECAUSE OF LACK OF

MANUAL MOTOR STARTER SWITCHES, DISCONNECT SWITCHES,

COORDINATION WILL BE REMOVED AND INSTALLED CORRECTLY AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR. 1.05 THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT RUNS AND LIGHT FIXTURE LOCATIONS ABOVE THE CEILING WITH OTHER

1.06 ALL DUCT SMOKE DETECTORS SHALL BE PROVIDED AND CONNECTED BY

TRADES PRIOR TO INSTALLATION.

1.07 THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY OUTLETS FOR HEAT TAPE CONNECTIONS FOR MECHANICAL SYSTEMS. PROVIDE CLASS B (30mA) GFCI PROTECTION ON THE BREAKER SUPPLYING THE HEAT TAPE. 1.08 THE ELECTRICAL CONTRACTOR SHALL PROVIDE 120V POWER AT EACH HVAC UNIT HAVING A CONTROLS POWER SUPPLY. CIRCUIT(S) SHALL BE

DEDICATED 20A SERVING A MAXIMUM OF 10 HVAC UNITS PER CIRCUIT.

THE ELECTRICAL CONTRACTOR, BUT INSTALLED BY THE MECHANICAL

COORDINATE ALL LOCATIONS WITH THE MECHANICAL CONTRACTOR. **PANELBOARDS**

1.01 PANELBOARDS SHALL BE PROVIDED AS MANUFACTURED BY EATON, SQUARE-D, GENERAL ELECTRIC, SIEMENS, OR APPROVED EQUAL. ALL NEW EQUIPMENT FOR THE PROJECT SHALL BE BY THE SAME MANUFACTURER. LOAD CENTER TYPE PANELBOARDS SHALL BE USED WHERE THE PANELBOARD SERVES A DWELLING UNIT ONLY. 1.02 ALL BUSSING, INCLUDING NEUTRAL AND GROUND, SHALL BE COPPER. 1.03 ALL BREAKERS SHALL BE AUTOMATIC THERMAL-MAGNETIC TYPE

MOLDED CASE BOLT-ON TYPE, CALIBRATED FOR 40 DEGREE C, OR

1.04 PANELS SHALL BE FULLY RATED (AIC). NO SERIES AIC RATINGS ARE ALLOWED. 1.05 PANELS SHALL HAVE FULL SIZE EQUIPMENT GROUNDING BARS AND NEUTRAL BARS, EXCEPT WHERE INDICATED TO BE 200%.

AMBIENT COMPENSATION, UNLESS OTHERWISE NOTED.

1.06 ALL PANELBOARD AND BREAKER LUGS SHALL BE SIZED AND RATED PER

ACCESSIBLE HINGED DOOR-IN-DOOR COVERS WITH DEAD FRONT.

CONNECTED TO EMERGENCY, EXIT, NIGHT LIGHTING, FIRE ALARM,

PERSONNEL SHALL BE PROVIDED IN ALL LOCATIONS PER NEC 210.8.

PROTECTION SHALL BE PROVIDED WITH THE BREAKER SERVING THE

1.13 ALL OVERCURRENT DEVICES WHICH COMPRISE THE EMERGENCY SYSTEM

OR LEGALLY REQUIRED STANDBY SYSTEM SHALL BE SELECTIVELY

COORDINATED. THE ELECTRICAL CONTRACTOR SHALL PROVIDE

COMPLIANCE WITH THE SELECTIVE COORDINATION REQUIREMENTS PER

SHALL BE 20" WIDE MINIMUM WITH MINIMUM 4" WIDE WIRING

1.08 DISTRIBUTION PANELS (600A-1200A) SHALL HAVE FRONT ACCESSIBLE

1.10 BREAKERS USED FOR SWITCHING SHALL BE SWITCHING DUTY (SWD)

1.09 PROVIDE HANDLE LOCK-ON DEVICES FOR ALL CIRCUIT BREAKERS

TELEPHONE BOARDS, AND SECURITY SYSTEMS.

REFRIGERATION SHALL BE HACR RATED

MANUFACTURER DOCUMENTATION INDICATING

1.11 BREAKERS USED FOR HEATING, AIR-CONDITIONING AND/OR

1.12 GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR

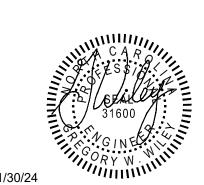
WHERE A DEVICE LOCATION IS NOT ACCESSIBLE, THE GFCI

THE CONDUCTOR SIZE AND MATERIAL.

DEAD FRONT COVERS.

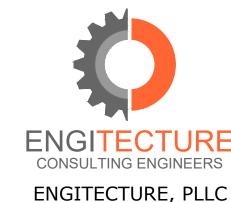
THE NEC.

4539 HEDGEMORE DRIVE, SUITE 101 CHARLOTTE NC 28209 704.890.2053 WWW.OSSASTUDIO.COM



PROJECT TEAM

General Contractor ECCLESIA CONSTRUCTION www.ecclesiaconstruction.com 803.327.5670



NC License No. P-1625

4539 Hedgemore Drive, Suite 102

Charlotte, NC 28209 704-287-2193 PROJ# 23253

Description

01/24/2024 REVIEW DWGS. 01/30/2024 ISSUED FOR CONSTRUCTION.

12/15/2023 DESIGN DEVELOPMENT DWGS.

12/22/2023 DESIGN DEVELOPMENT DWGS.

Project Name



SANFORD NC 27311

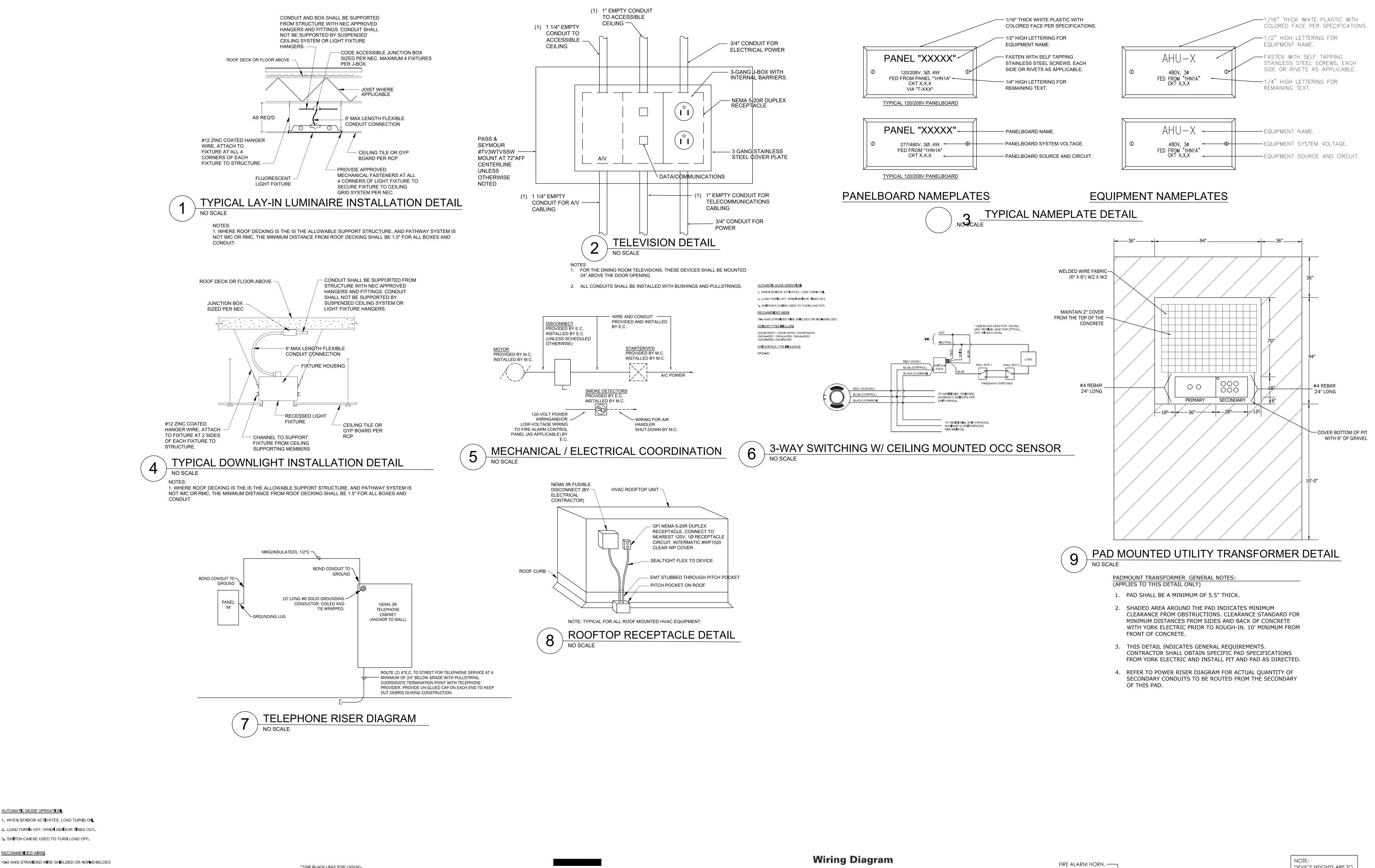
Project Number 23024.00

Description SPECIFICATIONS - ELECTRICAL

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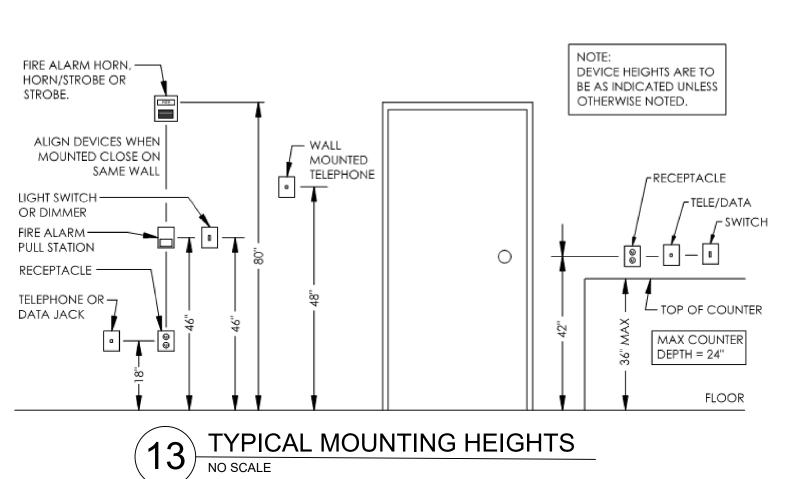
making church come alive 658 GRAHAM ROAD

3D COMMUNITY CHURCH



Single Level Switching

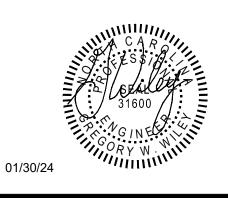
12 STANDARD SWITCHING DETAIL NO SCALE



1. WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES MUST BE MOUNTED MOUNTED NO LOWER THAN 80" AFF TO BOTTOM OF DEVICE AND NO HIGHER THAN 96" TO TOP OF THE DEVICE. CONTRACTOR SHALL MOUNT THESE DEVICES AT 88" TO THE MIDDLE OF THE DEVICE UNLESS FIELD CONDITIONS DO NOT ALLOW TO MOUNT AT THIS HEIGHT. IF THE DEVICE CAN NOT BE LOCATED BETWEEN 80" AND 96", CONTACT ENGINEER IMMEDIATELY FOR SOLUTION.

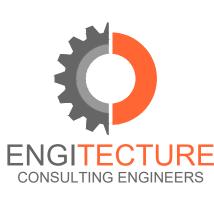
2. MOUNT CENTER LINE OF EXIT SIGN 24" ABOVE DOOR WHERE CEILING IS OVER 12'-0"AFF OR TO STRUCTURE WHERE NO CEILING IS PRESENT. IF CEILING IS 12'-0"AFF OR UNDER, CONTRACTOR SHALL MOUNT CENTER LINE OF EXIT SIGN 12" BELOW CEILING.

4539 HEDGEMORE DRIVE, SUITE 101 CHARLOTTE NC 28209 704.890.2053 WWW.OSSASTUDIO.COM



PROJECT TEAM

General Contractor ECCLESIA CONSTRUCTION www.ecclesiaconstruction.com 803.327.5670



ENGITECTURE, PLLC NC License No. P-1625 4539 Hedgemore Drive, Suite 102 Charlotte, NC 28209

704-287-2193

PROJ# 23253 Description

12/15/2023 DESIGN DEVELOPMENT DWGS. 12/22/2023 DESIGN DEVELOPMENT DWGS. 01/24/2024 REVIEW DWGS.

01/30/2024 ISSUED FOR CONSTRUCTION.

Project Name



making church come alive 658 GRAHAM ROAD SANFORD NC 27311

3D COMMUNITY CHURCH

Project Number 23024.00

Description DETAILS - ELECTRICAL

Scale

E00.03

AUTOMATIC MODE OPERATION

RECOMMENDED WIRE

SENSOR TYPES INCLUDE:

OAC P 0500, OAC P 1500

SP20-MV

SWITCHPACK TYPE INCLUDES:

1. WHEN SENSOR ACTIVATES, LOAD TURNS ON 2. LOAD TURNS OFF, WHEN SENSOR TIMES OUT.

3. SWITCH CAN BE USED TO TURN LOAD OFF.

OAC-DT-0501, OAC-DT-1000, OAC-DT-2000 OAC-U-0501, OAC-U-1000, OAC-U-2000

USE ORANGE LEAD FOR 277VAC

BLACK

NO SCALE

PURPLE (+)

PURPLE (+)

STANDARD OCCUPANCY SENSOR / WALL SWITCH DETAIL

0-10V DIMMABLE

FIXTURE

0-10V DIMMABLE FIXTURE

AP UNUSED LEAD

TO ADDITIONAL SENSORS.

MAXIMUM 5 SENSORS PER

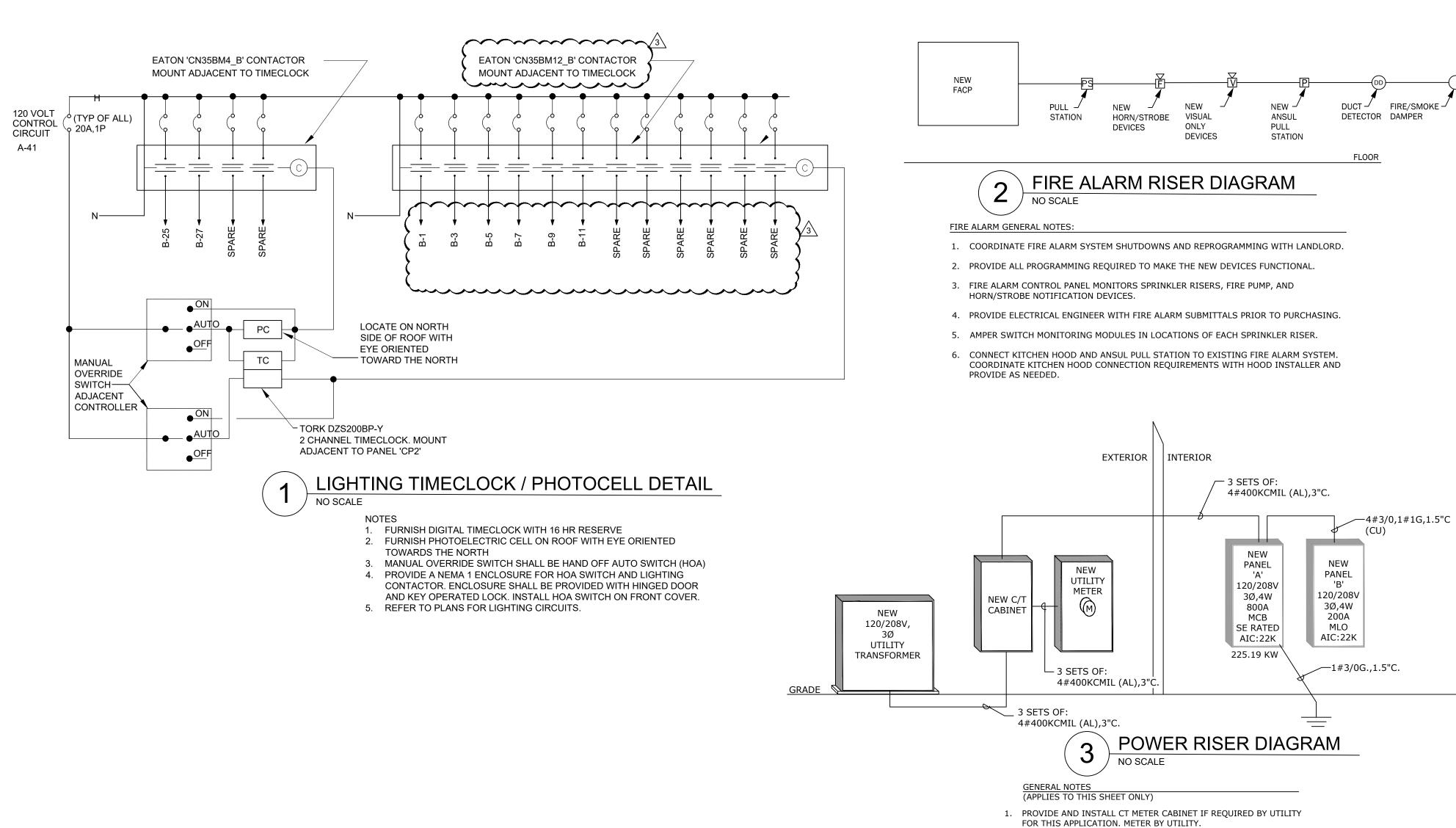
PER SENSOR.

MAXIMUM 10 SWITCHPACKS

SWITCHPACK.

LUE (CONTROL)

10 STANDARD SWITCHING WITH CEILING MOUNTED OCCUPANCY SENSOR DETAIL



mille and the commence and the commence

PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.

6. PROVIDE METAL DIRECTORY FRAME.

SEQUENCE OF OPERATION:	BUILDING SYSTEM OUTPUTS																CENTRAL COMM				
UPON CHANGE IN STATUS OF ANY DEVICE ON THE SYSTEM INDICATED IN THIS CHART, THE FIRE ALARM CONTROL PANEL SHALL ACTIVATE AUDIBLE CHANGE INDICATORS AND DISPLAY THE SYSTEM POINT NUMBER, POINT DESCRIPTION, AND MESSAGE ASSOCIATED WITH THE POINT. ACTIVATION OF ANY WATERFLOW DEVICE, SMOKE DETECTOR, OR OTHER INITIATING DEVICE WILL CAUSE THE FUNCTION TO OCCUR NOTED IN THIS CHART.		ACTIVATE AUDIBLE ALARM SIGNAL	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTIVATE AUDIBLE SUPERVISORY INDICATOR	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR	ACTIVATE AUDIBLE TROUBLE SIGNAL	ACTIVATE GENERAL EVACUATION SIGNAL	DISPLAY CHANGE OF STATUS	ACTIVATE EXTERNAL HORNS/STROBES	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION	RETURN ELEVATOR TO ALTERNATE FLOOR	RETURN ELEVATOR TO FIRST FLOOR	SHUNT TRIP AFTER ELEV. REACHES DESIGNATED FLOOR	SHUT DOWN RESPECTIVE HVAC	SHOW CHANGE OF STATUS ON ANNUNCIATOR	SHOW CHANGE OF STATUS ON CENTRAL PANEL	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION
MANUAL FIRE ALARM PULL BOXES	Х	Х					Χ	Χ	Х	Х							Χ	X	X		
BUILDING SMOKE DETECTOR	Х	X		ļ , .			Х	Х	Х	X	L.,					, .	Х	X	X		
DUCT SMOKE DETECTOR	.	ļ.,	Х	X				X	,,	ļ.,	X					Χ	X	X	l	X	
SPRINKLER WATER FLOW	Х	X	.,				Χ	X	Х	X							Х	X	X		
SPRINKLER TAMPER			Χ	X				Х			X						Х	X		X	L.
NOTIFICATION DEVICE SHORT CIRCUIT					X	X		X				X					X	X			X
OPEN CIRCUIT					X	X		X				X					X	X			X
GROUND FAULT	_				X	X		X				X					X	X			<u> </u>
FIRE ALARM A.C. POWER FAILURE	_				X	X		X				X					X	X	_	_	X
FIRE ALARM SYSTEM LOW BATTERY			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		X			Х			<u>, , </u>	X					Х	X			X
FIRE PUMP RUNNING			X								X						ऻ—	—			
FIRE PUMP COMMON TROUBLE FIRE PUMP POWER FAILURE/PHASE REVER.	<u> </u>		X								X						Щ	Щ.		<u> </u>	

ENERGY STATEMENT

6. PROVIDE METAL DIRECTORY FRAME.

5. PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.

CODE SUMMARY PER THE REQUIREMENTS OF THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE

ELECTRICAL DESIGN

(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SYSTEM AND EQUIPMENT

GRADE	4#400KCMIL (AL),3°C.	ELECTRICAL SYSTEM AND EQUIPMENT
	3 SETS OF:	METHOD OF COMPLIANCE: PERSCRIPTIVE
	4#400KCMIL (AL),3"C.	LIGHTING SCHEDULE (EACH FIXTURE TYPE)
	POWER RISER DIAGRAM	LAMP TYPE REQUIRED IN FIXTURE REFER TO LIGHTING FIXTURE SCHEDULE
	1	NUMBER OF LAMPS IN FIXTURE REFER TO LIGHTING FIXTURE SCHEDULE
	NO SCALE	BALLAST TYPE USED IN THE FIXTURE REFER TO LIGHTING FIXTURE SCHEDULE
	GENERAL NOTES	NUMBER OF BALLASTS IN FIXTURE REFER TO LIGHTING FIXTURE SCHEDULE
	(APPLIES TO THIS SHEET ONLY)	TOTAL WATTAGE PER FIXTURE REFER TO LIGHTING FIXTURE SCHEDULE
	PROVIDE AND INSTALL CT METER CABINET IF REQUIRED BY UTILITY	TOTAL INTERIOR WATTAGE * 7388 SPECIFIED 10170 ALLOWED
	FOR THIS APPLICATION. METER BY UTILITY.	TOTAL EXTERIOR WATTAGE 237 SPECIFIED 650 ALLOWED
	2. PROVIDE PLACARD INDICATING AVAILABLE AIC FAULT CURRENT PER	ADDITIONAL EFFICIENCY PACKAGE OPTIONS
	NEC 110.24.	(WHEN USING THE 2018 NCECC; NOT REQUIRED FOR ASHRAE 90.1)
	3. UTILITY TRANSFORMER SPECIFICATIONS UNKNOWN AT TIME OF	C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
	DESIGN. DESIGN IS BASED ON 20,800AIC. E.C. TO VERIFY TRANSFORMER PROPERTIES WITH WITH UTILITY PRIOR TO	X C406.3 REDUCED LIGHTING POWER DENSITY
	PURCHASING EQUIPMENT. IF TRANSFORMER AIC IS HIGHER THAN	C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
	INDICATED, CONTACT ENGINEER FOR FAULT CURRENT FOR ELECTRICAL PANEL(S).	C406.5 ON-SITE RENEWABLE ENERGY
	· · ·	C406.6 DEDICATED OUTDOOR AIR SYSTEM
	 PROVIDE PLACARD INDICATING ARC-FLASH HAZARD AT PANEL(S)/DISCONNECT(S) PER NEC 110.26. 	C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING
	5. ELECTRICAL PANEL(S) SHALL BE INSTALLED PER NEC 110.26.	* WHOLE BUILDING OR SPACE BY SPACE
NEW PANEL A		
VOLTAGE: 120/ 208 AMPS: 800 MCB MOUNTING: SURFACE		NEW PANEL B
3 PHASE, 4 WIRE TOTAL LOAD: 217.1 KVA AIC RATING: 22,000	VOLTAGE: 120/ 208 AMPS: 200 MG	
LOAD (KVA) BREAKER DHASE BREAKER LOAD (KVA)	3 PHASE, 4 WIRE TOTAL LOAD: 23.0 KV	RDEAVED DUACE RDEAVED LOAD (V/A)
No. CIRCUIT DESCRIPTION CONT RCPT MTR A/C KITCH MISC TRIP P A B C P TRIP MISC KITCH A/C MTR RCPT CONT CIRCUIT DESCRIPTION	No. No. CIRCUIT DESCRIPTION LOAD (KVA) CONT RCPT MTR A/C KITCH M	
1 5.20 2.52 0.00 0.00 5.00 1.60 15.98 1.66	2 1 SANCTUARY LTG 0.61	20 1 0.61 1 20
3 PANEL 'B' 5.00 3.06 0.00 0.00 2.50 0.00 200 3 12.22 3 30 1.66 EUH-1		
3 PANEL 'B' 5.00 3.06 0.00 0.00 2.50 0.00 200 3 12.22 3 3 10 1.66 EUH-1 5 4.00 2.88 0.20 0.00 2.50 0.00 11.24 11.66	3 NARTHEX/CORR. LTG 0.90	20 1 0.90 1 20 SPARE
4.00 2.88 0.20 0.00 2.50 0.00 11.24 1.66 7 14.69 14.69 15.00 16.19 1.50 FWH-1		20 1 0.90 1 20 SPARE
5 4.00 2.88 0.20 0.00 2.50 0.00 11.24 1.66	4 3 NARTHEX/CORR. LTG 0.90 5 NURSERY/CLASSRM LTG 0.13	20 1 20 1 20 1 20 1 20 1 20 1 20 5 20 5 20 5 20 5 20 5 20 5 20 5 20 5 20 5 20 5 20 5 20 6 20 6 20 6 20 7 20 7 20 8 20

									N	EW P	ANEL	Α										
	VOLTAGE:	120/	208	F	AMPS:	800	MCB					М	IOUN	TING:	SURF	ACE						
	3 PHASE, 4	1 WIRE		TOTAL L	_OAD:	217.1	KVA					ΑI	C RA	TING:	22,0	000						
No	CIDCUIT DECCRIPTION			LOAD (KVA)				BREA	KER		BRE	AKER			LOAD ((KVA)			CIRCUIT DESCRIPTION	N		
No.	CIRCUIT DESCRIPTION	CONT	RCPT	MTR	A/C	KITCH	MISC	TRIP	Р	Α	В	С	Р	TRIP	MISC	KITCH	A/C	MTR	RCPT	CONT	CIRCUIT DESCRIPTION	
1		5.20	2.52	0.00	0.00	5.00	1.60			15.98					1.66							
3	PANEL 'B'	5.00	3.06	0.00	0.00	2.50	0.00	200	3		12.22		3	30	1.66						EUH-1	
5		4.00	2.88	0.20	0.00	2.50	0.00]				11.24			1.66							
7				1	4.69					16.19				20	1.50						EWH-1	
9	RTU-1			1	4.69			175	3		16.19		_	20	1.50						EAAL-I	1
11				1	4.69							15.05	1	20					0.36		BACKSTAGE REC	1
13				1	.5.74					16.28			1	20					0.54		STORAGE/JAN REC	1
15	RTU-2			1	5.74			175	3		16.64		1	20					0.90		CLASSROOM 134 REC	1
17				1	5.74							16.64	1	20					0.90		CLASSROOM 133 REC	
19				1	5.74					16.82			1	20					1.08		CLASSROOM 132 REC	1
21	RTU-3			1	5.74			175	3		16.82		1	20					1.08		NURSERY 131 REC	- 2
23				1	5.74							16.10	1	20					0.36		BACK STAGE QUAD	2
25										0.36			1						0.36		BACK STAGE QUAD	2
27	SPARE							70	3		0.36		1	20					0.36		BACK STAGE QUAD	2
29												0.50	1	20	0.50						A/V POWER FUTURE	17
31					6.62					7.12			1	20	0.50						A/V POWER FUTURE	2
33 35	RTU-5				6.62			70	3		7.12		1	20	0.50						A/V POWER FUTURE	3
35					6.62							7.12	1	20				0.50			RP-1	17
37	IT QUAD		0.72					20	1	3.72					3.00							3
39	FACP (RED BREAKER)						0.50	20	1		3.50		3	35	3.00						WH-1	4
41	TIMECLOCK						0.50	20	1			3.50			3.00							
								TOT	Δ1	76.47	72.85	70.15			21.08	10.00	158.38	0.70	15.12	14.20	CONNECTED KVA 219.476	
L		CONT			15.00 1.60 1.60 1.60 1.22 1.22 1.50 1.66																	
	A PHASE														TORS					PAN	IEL NOTES	
										4							-				-	
										1						L						
ıL	TOTALS FOR PANEL	17.75	12.56	0.83 1	58.38	6.50	21.08] М					100% REMA	AINING	3.	ALL BU	SSING,	INCL GND	AND NEUTRAL, SHALL BE COPPE	R.
			DES	SIGN LOA	AD (KI	VA)		76.	02		A/C:	100% l	LOAD)		ľ	4.	ALL IN	COMING	PANEL &	BRKR LUGS SHALL MATCH FEEDE	RS.

KITCHEN: 65% LOAD

MISC: 100% LOAD

633.05 A

FOR LARGEST PHASE

DESIGN LOAD (KVA) FOR PANEL

+	_					1				1										-	
7	BATH/SHELL LTG	0.45						20 1	0.45]	1	20						SPARE	8	
9	STAGE LTG	1.50						20 1		1.50		1	20						SPARE	10	
11	BACK STAGE LIGHTING	0.24						20 1			0.24	1	20						SPARE	12	
13	SPARE							20 1	0.00			1	20						SPARE	14	
15	SPARE							20 1		0.00		1	20						SPARE	16	
17	SPARE							20 1			0.00	1	20						SPARE	18	
19	SPARE							20 1	0.00			2	50						SPARE	20	
21	SPARE							20 1		0.00			30						SFARL	22	
23	SPARE							20 1			0.00	2	50						SPARE	24	
25	SIGNAGE	1.20						20 1	1.20				30						SPARE	26	
27	EXTERIOR LTG	0.24						20 1		1.68		1	20				1.44		STORAGE/BATH REC	28	
29	FIRE/SMOKE DAMPER						0.30	20 1			1.10	1	20	0.80					HAND DRYER	30	
31	STAGE REC		0.54					20 1	1.34			1	20	0.80					HAND DRYER	32	
33	STAGE FLOOR REC		0.36					20 1		0.54		1	20				0.18		EWC GFI	34	
35	STAGE FLOOR REC		0.36					20 1			0.72	1	20				0.36		MERCH REC	36	
37	STAGE FLOOR REC		0.36					20 1	1.08			1	20				0.72		GREEN ROOM REC	38	
39	STAGE FLOOR REC		0.36					20 1		0.36		1	20						SPARE	40	
41	STAGE FLOOR REC		0.36					20 1			1.40	1	20	0.50			0.54		SANCTUARY REC/TV'S	42	
43	FIRE/SMOKE DAMPER						0.20	20 1	0.74			1	20				0.54		CHECK-IN REC	44	
45	FIRE/SMOKE DAMPER						0.20	20 1		0.70		1	20	0.50					SANCTUARY PROJECTOR	46	
47	SPARE							20 1]	0.72	1	20				0.72		SOUNDBOOTH REC	48	
49	SPARE							20 1	0.72			1	20				0.72		SOUNDBOOTH REC	50	
51	SPARE							20 1		0.54		1	20				0.54		SOUNDBOOTH REC	52	
53	SPARE							20 1			0.00	1	20						SPARE	54	
55	SPARE							20 1	1.66					1.66						56	
57	SPARE							20 1		1.66		3	30	1.66					EUH-2	58	
59	SPARE							20 1			1.66			1.66						60	
					EMAND I	FACTOR	S (KVA)	TOTAL	7.80	7.88	5.97			8.28	0.00	0.00	0.00 8.10	5.27	CONNECTED KVA 21.65		
L			RCPT	MTR	A/C	KITCH	MISC		7.00	/.00	J.97										
	A PHASE	2.83	2.88		0.00			8.37			20 DEM			TORS				PA	NEL NOTES		
	B PHASE	3.30	2.88	0.00	0.00	0.00		8.54	CONTI	NUOUS:	125% l	OAD)			1.	BREAKER FRAM	E SHALI	BE AS REQUIRED PER PANEL AIC F	ATING.	
	C PHASE	0.46	2.34	0.00	0.00	0.00		6.06	RECEP	TACLES:	100% 15	ST 10	KW +	50% REM	1AINING	2.	SHALL BE FULL	Y RATED	- SERIES RATINGS NOT ALLOWED	.	
L	TOTALS FOR PANEL	6.59	8.10	0.00	0.00	0.00	8.28	22.97	М		125% LARC			100% REM	AINING	3.	ALL BUSSING,	NCL GN	D AND NEUTRAL, SHALL BE COPPEI	₹.	
			DES	IGN L	OAD (F	(VA)		8.54	A/C: 100% LOAD							4. ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.					
ı		I	E0.5		COT C	LACE			1		C = 0 () C					I _				ا	

MISC: 100% LOAD

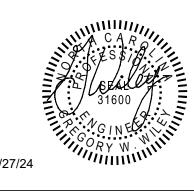
KITCHEN: 65% LOAD

71.11 A

FOR LARGEST PHASE

DESIGN LOAD (KVA) FOR PANEL

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PROJECT TEAM

General Contractor ECCLESIA CONSTRUCTION www.ecclesiaconstruction.com 803.327.5670



NC License No. P-1625 4539 Hedgemore Drive, Suite 102

Charlotte, NC 28209 704-287-2193 PROJ# 23253

12/15/2023 DESIGN DEVELOPMENT DWGS. 12/22/2023 DESIGN DEVELOPMENT DWGS.

01/24/2024 REVIEW DWGS. 01/30/2024 ISSUED FOR CONSTRUCTION.

2 05/03/2024 ARCHITECTURAL REVISION 1 3 10/14/2024 RTAP NO. 1

Project Name



community **church** making church come **alive**

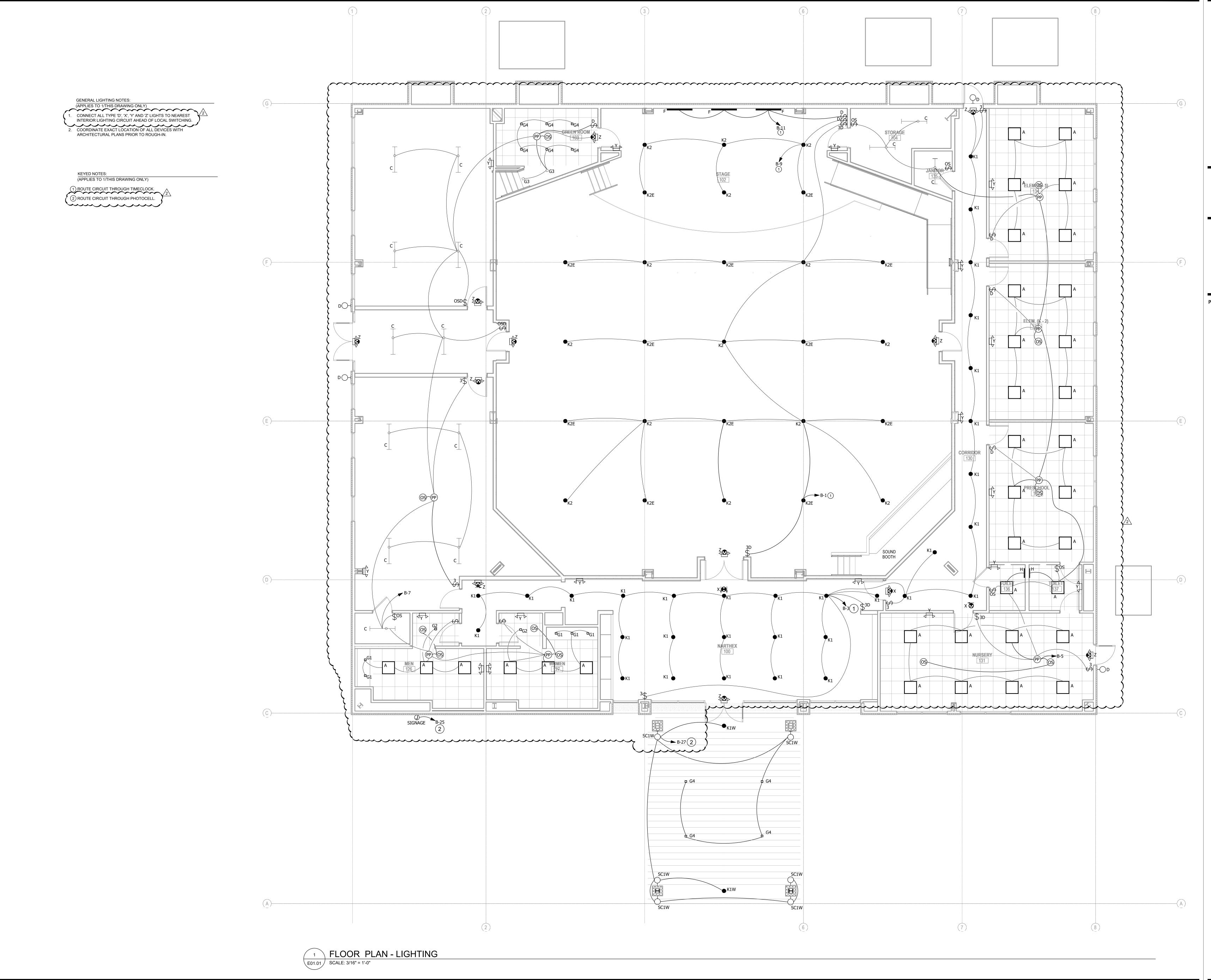
658 GRAHAM ROAD

SANFORD NC 27311

3D COMMUNITY CHURCH

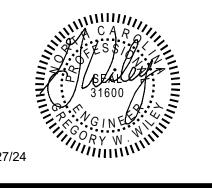
23024.00

SCHEDULES & DIAGRAMS -ELECTRICAL





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3D COMMUNITY CHURCH

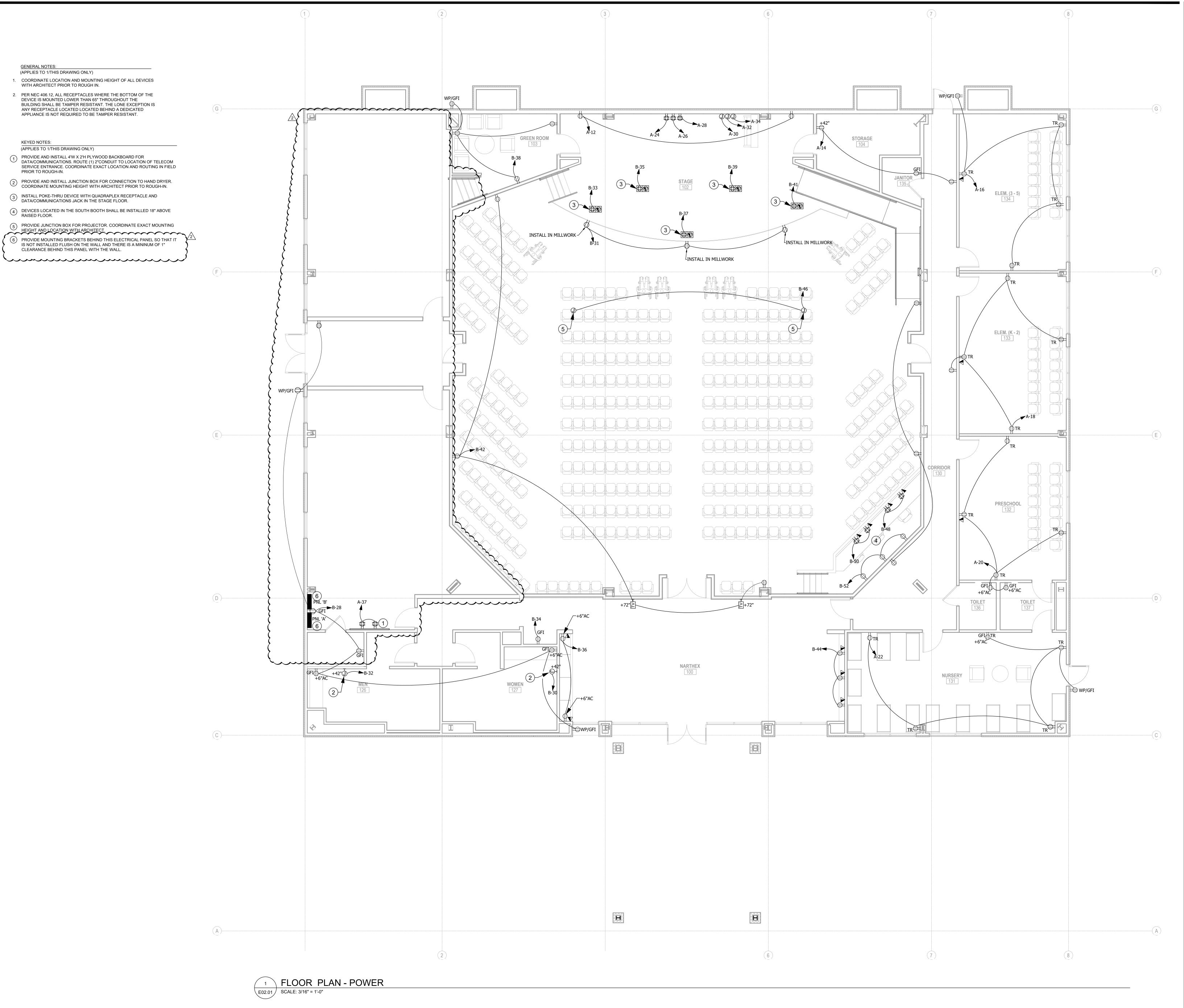
Project Number

23024.00

FLOOR PLAN - LIGHTING

SEE PLANS

E01.01



GENERAL NOTES:

KEYED NOTES:

PRIOR TO ROUGH-IN.

(APPLIES TO 1/THIS DRAWING ONLY)

(APPLIES TO 1/THIS DRAWING ONLY)

WITH ARCHITECT PRIOR TO ROUGH IN.

1. COORDINATE LOCATION AND MOUNTING HEIGHT OF ALL DEVICES

PER NEC 406.12, ALL RECEPTACLES WHERE THE BOTTOM OF THE

DEVICE IS MOUNTED LOWER THAN 65" THROUGHOUT THE BUILDING SHALL BE TAMPER RESISTANT. THE LONE EXCEPTION IS

APPLIANCE IS NOT REQUIRED TO BE TAMPER RESISTANT.

PROVIDE AND INSTALL 4'W X 2'H PLYWOOD BACKBOARD FOR

DATA/COMMUNICATIONS. ROUTE (1) 2"CONDUIT TO LOCATION OF TELECOM SERVICE ENTRANCE. COORDINATE EXACT LOCATION AND ROUTING IN FIELD

PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO HAND DRYER. COORDINATE MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.

DEVICES LOCATED IN THE SOUTH BOOTH SHALL BE INSTALLED 18" ABOVE RAISED FLOOR.

(6) PROVIDE MOUNTING BRACKETS BEHIND THIS ELECTRICAL PANEL SO THAT IT

IS NOT INSTALLED FLUSH ON THE WALL AND THERE IS A MININUM OF 1"

3 INSTALL POKE-THRU DEVICE WITH QUADRAPLEX RECEPTACLE AND

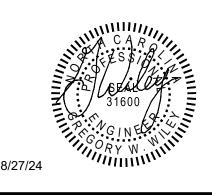
DATA/COMMUNICATIONS JACK IN THE STAGE FLOOR.

CLEARANCE BEHIND THIS PANEL WITH THE WALL.

ANY RECEPTACLE LOCATED LOCATED BEHIND A DEDICATED



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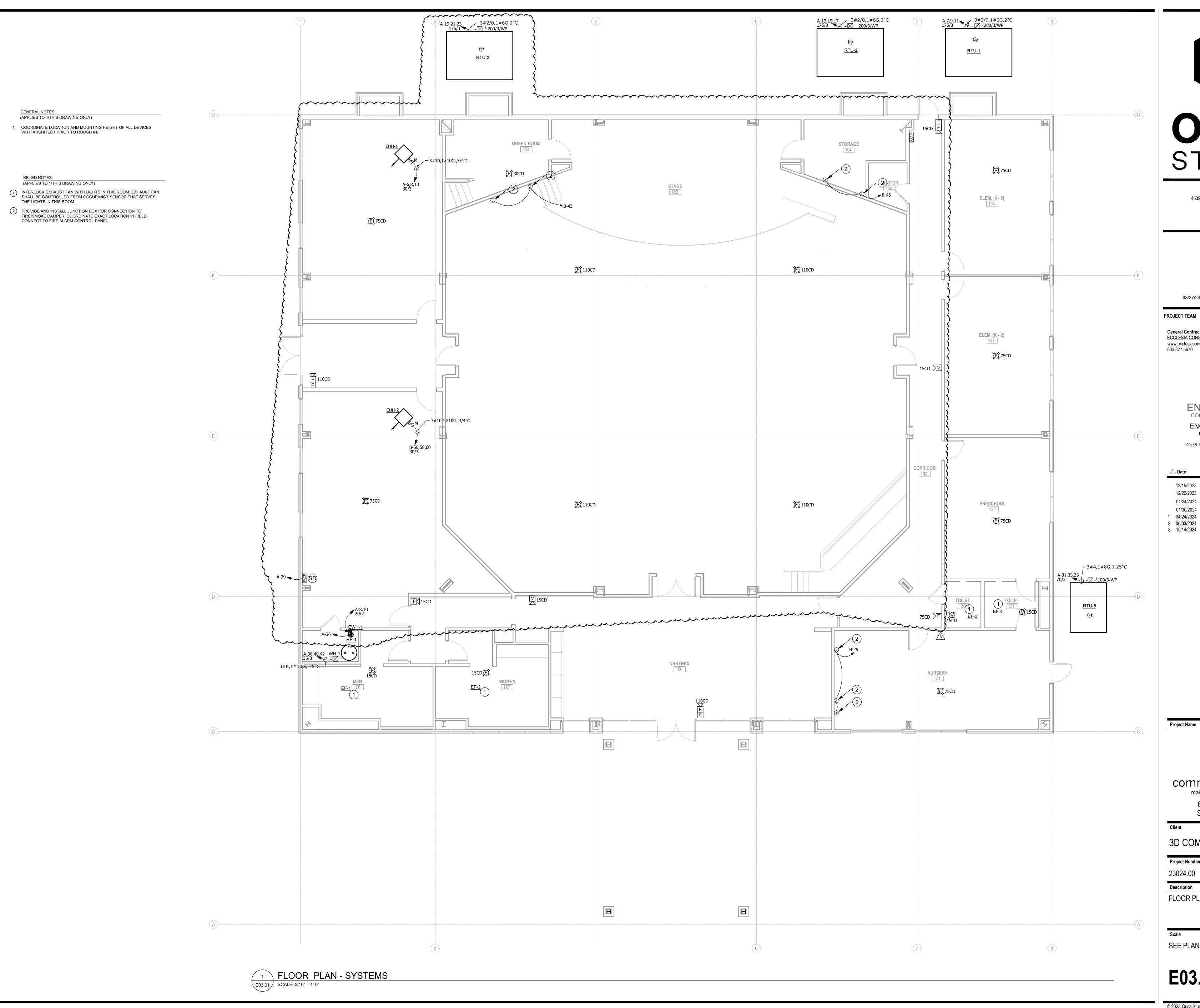
Project Number

23024.00

FLOOR PLAN - POWER

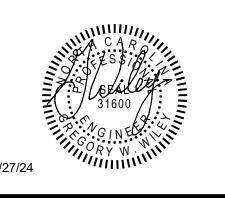
SEE PLANS

E02.01



OSSA STUDIO

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Project Number 23024.00

FLOOR PLAN - SYSTEMS

SEE PLANS

E03.01