ELECTRICAL SYMBOLS

WALL OR CEILING MTD EXIT SIGN WITH SELF CONTAINED BATTERY BACK-UP, SINGLE FACE. ARROW WHEN USED INDICATES DIRECTION.

WALL OR CEILING MTD EXIT SIGN WITH SELF CONTAINED BATTERY BACK-UP, DOUBLE FACE. ARROW WHEN USED INDICATES DIRECTION.

WALL OR CEILING MTD EXIT/EMERGENCY COMBO UNIT WITH SELF CONTAINED BATTERY BACK-UP, SINGLE OR DOUBLE FACE AS DESIGNATED BY ARROW(S)WHEN USED INDICATES DIRECTION.

C NL — CEILING/PENDENT MTD/RECESSED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE, NUMBER DESIGNATES CIRCUIT ON UNSWITCHED NIGHT LIGHT CIRCUIT

C — CEILING/PENDENT MTD/RECESSED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE, NUMBER INDICATES CIRCUIT

H — SUSPENDED OR SURFACE MTD LED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE NUMBER INDICATES CIRCUIT

C — CEILING MTD OR LAY-IN TYPE LED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE NUMBER INDICATES CIRCUIT

R — WALL MOUNTED RECESSED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE NUMBER INDICATES CIRCUIT

EMERGENCY LIGHT BATTERY PACK - TWO HEAD UNIT.

A NL — CEILING MTD OR LAY-IN TYPE LED LIGHTING FIXTURE AND OUTLET, LETTER DESIGNATES FIXTURE TYPE AND NUMBER DESIGNATES CIRCUIT ON UNSWITCHED NIGHT LIGHT CIRCUIT

J — OUTLET BOX WITH BLANK COVER - LOCATE AS REQUIRED TO FOR EQUIPMENT SERVED.

DUPLEX RECEPTACLE AND OUTLET, 20A, 125V, 3W

QUADRUPLEX RECEPTACLE AND OUTLET, 20A, 125V, 3W

DUPLEX RECEPTACLE AND OUTLET 20A, 125V, 3W, INSTALLED HORIZONTALLY 4" ABOVE BACKSPLASH OR COUNTER IF NO BACKSPLASH EXISTS

QUADRUPLEX RECEPTACLE AND OUTLET 20A, 125V, 3W, INSTALLED 4" ABOVE BACKSPLASH OR COUNTER IF NO BACKSPLASH EXISTS.

TV — FLUSH MOUNTED DUPLEX RECEPTACLE AND TELEVISION OUTLET.

NOTE TO ALL RECEPTACLES:
1. SUBSCRIPT SP INDICATES SURGE SUPPRESSION PROTECTED DUPLEX RECEPTACLE.
2. SUBSCRIPT WP INDICATES WEATHER-RESISTANT DEVICE WITH GROUND FAULT TYPE RECEPTACLE WITH STAINLESS STEEL WEATHERPROOF COVER.
3. SUBSCRIPT ISG INDICATES ISOLATED GROUND TYPE RECEPTACLE.
4. SUBSCRIPT GFI INDICATES GROUND FAULT TYPE RECEPTACLE.
5. SUBSCRIPT TV INDICATES RECEPTACLE FOR TV MOUNTED IN BRACKET.
6. SUBSCRIPT S INDICATES SURFACE MOUNTED DEVICE
7. SUBSCRIPT EM INDICATES EMERGENCY DEVICE

S — FLUSH MTD TOGGLE SWITCH, S.P.S.T., 20A, 120/277V

S_3 — FLUSH MTD 3-WAY TOGGLE SWITCH, 20A, 120/277V

S_4 — FLUSH MTD 4-WAY TOGGLE SWITCH, 20A, 120/277V

S_D — FLUSH MTD DIMMER SWITCH, SIZE AS NOTED

S_M — MANUAL MOTOR STARTER SWITCH WITHOUT OVERLOAD HEATERS

S_{OS} — SWITCH TYPE OCCUPANCY SENSOR WITH BUILT-IN OVERRIDE SWITCH

OS — CEILING MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR. PROVIDE W/DRY AUXILIARY CONTACTS

S_R — WALL MOUNTED OVER-RIDE SWITCH FOR MANUAL CONTROL OF CEILING OCCUPANCY SENSOR.

TWO-COMPARTMENT RECESSED FLOOR. BOX SHALL BE SPECIFIED BY NCSU COMTECH.

TELE/COMM OUTLET 4 11/16" SQ. BOX W/2-GANG MUD RING AND 1" EMT WITH PULL STRING TO NEAREST TELECOM RACEWAY. NO MORE THAN 180 DEGREES OF CONDUIT BENDS SHALL BE BETWEEN PULLS.

PANEL BOARD, FLUSH MOUNTED

PANEL BOARD, SURFACE MOUNTED

CONCEALED RACEWAY. INDICATES 2#12 AND 1#12 GROUND IN 3/4" CONDUIT.

4#8, 1#10G 1"C — CONCEALED RACEWAY. ALL RACEWAYS WITH OTHER THAN #12 CONDUCTORS WILL HAVE WIRE AND CONDUIT SIZES

NOTE:
ALL RACEWAYS SHALL CONTAIN A SEPARATE GREEN EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH NEC 250.122.

SURFACE METAL RACEWAY WITH RECEPTACLES, LETTER DESIGNATES TYPE

NF/30 — 30 AMP NON-FUSED DISCONNECT SWITCH. NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.

20/30 — 30 AMP FUSED DISCONNECT SWITCH, FUSED AT 20 AMP. NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.
30 AMP NON-FUSED, WEATHERPROOF DISCONNECT SWITCH.

NF/30 WP — NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.

COMBINATION DISCONNECT SWITCH AND MAGNETIC MOTOR STARTER

MAGNETIC MOTOR STARTER

MANUAL MOTOR STARTER WITH OVERLOAD HEATERS

1 — A.C. MOTOR, NUMERAL INDICATES HP "F" INDICATES FRACTIONAL HP

S — CEILING MOUNTED SPEAKER

CAM — CAMERA 360 DEGREE

DC — DOOR CONTACT

DR — DURESS BUTTON

MD — MOTION DETECTOR

G — GLASS BREAK SENSOR

MP — MONITORED SECURITY POINT ON DOOR

CR — CARD READER

T — TAMPER SWITCH

F — FLOW SWITCH

L — REMOTE INDICATOR LAMP

M — MAGNETIC DOOR HOLDER

F — WALL MTD FIRE ALARM PULL STATION

FACP — WALL MTD FIRE ALARM CONTROL PANEL

ANN — WALL MTD FIRE ALARM REMOTE ANNUNICIATOR

TERM — WALL MTD FIRE ALARM TERMINAL CABINET

NAC — WALL MTD FIRE ALARM NAC PANEL

S — SMOKE DETECTOR, CEILING OR WALL MTD

H — HEAT DETECTOR, CEILING OR WALL MTD

MM — MONITOR MODULE

CM — CONTROL MODULE

IM — ISOLATION MODULE

15cd V — FIRE ALARM STROBE DEVICE

15cd H — FIRE ALARM HORN/STROBE DEVICE

PRINTER — PRINTER

H 15/30/75cd — CEILING MOUNTED FIRE ALARM AUDIO/VISUAL DEVICE

D — SMOKE DETECTOR, DUCT MOUNTED

ELECTRICAL SYMBOL NOTES

1. SYMBOLS AND ABBREVIATIONS MAY NOT ALL BE UTILIZED FOR THIS PROJECT.
2. SYMBOLS NOT LISTED IN THIS ELECTRICAL SYMBOL LEGEND ARE IDENTIFIED ON THE DRAWINGS WHERE THEY OCCUR.
3. MOUNTING HEIGHT GIVEN IN THE ELECTRICAL SPECIFICATIONS IS TO THE CENTERLINE OF THE DEVICE AND SHALL BE FOLLOWED UNLESS OTHERWISE INDICATED AT THE SYMBOL, ON ARCHITECTURAL ELEVATIONS OR CASEWORK DRAWINGS.

ABBREVIATIONS

A	AMPERE, AMMETER
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
BFG	BELOW FINISHED GRADE
C	CONDUIT
CATV	CABLE (COMMUNITY) ANTENNA TELEVISION
CU	COPPER
DISC	DISCONNECT
EC	ELECTRICAL CONTRACTOR
EGC	EQUIPMENT GROUNDING CONDUCTOR
EWC	ELECTRIC WATER COOLER
E	EXISTING
FA, F/A	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
GEC	GROUNDING ELECTRODE CONDUCTOR
GC	GENERAL CONTRACTOR
G,GND	GROUND
GF,GFI	GROUND FAULT INTERRUPTER
HH	HANDHOLE
HP	HORSEPOWER
IG, ISG	ISOLATED GROUND
JB	JUNCTION BOX
KVA	KILOVOLT-AMPERES
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LTG	LIGHTING
LV	LOW VOLTAGE
MB	MAIN BREAKER
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MLO	MAIN LUGS ONLY
NF	NON FUSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
P	POLE, PHASE
PB	PULL BOX
PC	PLUMBING CONTRACTOR
P/BD, PNL	PANELBOARD
PR	PAIR
SN	SOLID NEUTRAL
SW	SWITCH
SWBD	SWITCHBOARD
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
V	VOLT
WP	WEATHERPROOF
XFMR	TRANSFORMER

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE: ENERGY CODE [X] PERFORMANCE [ ] PRESCRIPTIVE
ASHRAE 90.1 [ ] PERFORMANCE [ ] PRESCRIPTIVE

LIGHTING SCHEDULE

LAMP TYPE REQUIRED IN FIXTURE	NOT APPLICABLE
NUMBER OF LAMPS IN FIXTURE	NOT APPLICABLE
BALLAST TYPE USED IN THE FIXTURE	NOT APPLICABLE
NUMBER OF BALLASTS IN FIXTURE	NOT APPLICABLE
TOTAL WATTAGE PER FIXTURE	NOT APPLICABLE
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED	3620W VS 5038W
TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED	135W VS 194W

ADDITIONAL EFFICIENCY PACKAGE OPTIONS
(WHEN USING THE 2018 NCECC; NOT REQUIRED FOR ASHRAE 90.1)

- [X] C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
- [ ] C406.3 REDUCED LIGHTING POWER DENSITY
- [ ] C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
- [ ] C406.5 ON-SITE RENEWABLE ENERGY
- [ ] C406.6 DEDICATED OUTDOOR AIR SYSTEM
- [ ] C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING

DESIGNER STATEMENT:
TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENT OF THE NORTH CAROLINA STATE BUILDING CODE

SIGNED: DocuSigned by: Mr. Reginald D. Adams 61D76000BFA2424...
NAME: REGGIE ADAMS P.E.
TITLE: ELECTRICAL ENGINEER

GENERAL NOTES

1. ALL WORK ON THIS PROJECT SHALL CONFORM TO THE 2020 NEC, ALL LOCAL AND STATE CODES, STATE BUILDING CODE AND REQUIREMENTS BY THE AUTHORITY HAVING JURISDICTION.
2. SYMBOLS AND ABBREVIATIONS MAY NOT ALL BE UTILIZED FOR THIS PROJECT.
3. UNLESS OTHERWISE INDICATED THE CONTRACTOR, IS RESPONSIBLE FOR ALL CUTTING, CORE- DRILLING AND PATCHING REQUIRED TO INSTALL ELECTRICAL RELATED WORK.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ELECTRICAL RELATED WORK WITH OTHER TRADES. THE CONTRACTOR IS CAUTIONED THAT IT IS TOTALLY HIS RESPONSIBILITY TO COORDINATE HANGERS AND SUPPORTS WITH OTHER TRADES. ADDITIONAL REQUIRED HANGERS & SUPPORTS MUST BE IN PLACE PRIOR TO APPLICATION OF FIRE PROOFING MATERIAL. ANY DAMAGE INCURRED ON FIRE PROOFING MATERIAL DUE TO INSTALLATION OF ELECTRICAL HANGERS WILL BE REPAIRED BY FIRE PROOFING SUB-CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5. UTILITIES SERVING AREAS OF THIS PROJECT STILL OCCUPIED BY THE OWNER DURING DEMOLITION AND NEW CONSTRUCTION SHALL BE MAINTAINED UNTIL THE OWNER VACATES THE AREA. UNLESS OTHERWISE NOTED.
6. ALL SHUTDOWNS WILL BE COORDINATED AND APPROVED THROUGH THE OWNER'S PROJECT MANAGER AND THE BUILDING MANAGER AND WILL REQUIRE ADVANCE NOTICE OF 10 WORKING DAYS EXCLUDING WEEKEND. THIS TIME LENGTH MAY BE LONGER OR SHORTER FOR SOME SHUTDOWNS AT THE OWNER'S DISCRETION. THE SCHEDULING OF SUCH SHUTDOWNS MAY TAKE TWO WEEKS OR MORE AND THE CONTRACTOR MUST BE PREPARED TO WORK SECOND OR THIRD SHIFT, SATURDAY OR SUNDAY AS NECESSARY TO PERFORM THE WORK. FURTHERMORE, IN SOME CASES AN ALTERNATE POWER SOURCE MAY BE REQUIRED, THE CONTRACTOR MUST BE PREPARED TO MAKE TAPS, INSTALL CIRCUIT BREAKERS, ETC., WHILE EXISTING EQUIPMENT IS ENERGIZED. ALL SHUTDOWNS WILL BE INITIATED AND CONTROLLED BY OWNER.
7. VISIT THE SITE PRIOR TO BID DATE AND EXAMINE ALL AREAS TO BE DEMOLISHED AND RENOVATED. THOROUGHLY FAMILIARIZE YOURSELF WITH EXISTING CONDITIONS. NO EXTRA COMPENSATION WILL BE GIVEN FOR FAILURE TO THOROUGHLY EXAMINE EXISTING CONDITIONS TO DETERMINE THE EXACT SCOPE OF DEMOLITION WORK. "KEYED" NOTES ON THE DEMOLITION DRAWINGS ARE PROVIDED TO ASSIST BIDDERS TO DETERMINE THE SCOPE OF DEMOLITION WORK.
8. EXISTING AREAS WHETHER WITHIN OR WITHOUT THE "GENERAL LIMITS OF CONSTRUCTION", SHALL BE REPAIRED WHERE ANY DAMAGE HAS OCCURRED DUE TO CONSTRUCTION BY THE CONTRACTOR.
9. ALL AREAS OUTSIDE THE PROJECT LIMITS IN WHICH WORK MUST TAKE PLACE WILL BE CLEANED AND RETURNED TO NORMAL (INCLUSIVE OF CEILING TILE REPLACEMENT) AT THE END OF EACH DAY. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE EACH DAY BEFORE LEAVING THE CONTRACT PROJECT LIMITS REGARDING THE CLEANLINESS OF THE AREA IN WHICH WORK TOOK PLACE OUT SIDE OF THE PROJECT LIMITS.
10. WHERE WORK IS TAKING PLACE OUTSIDE THE PROJECT LIMITS CANNOT ALLOW A RETURN TO NORMAL APPEARANCE OF WALLS, CEILING, ETC., AT THE END OF EACH DAY DUE TO ITS EXTENSIVE NATURE; THE CONTRACTOR SHALL ERECT A BLACK PLASTIC CURTAIN AROUND HIS WORK. SUCH A CURTAIN SHALL REMAIN IN PLACE UNTIL THE WORK IS COMPLETE. SUCH CURTAINS WILL HAVE CAUTIONARY SIGNS AFFIXED INDICATING CONSTRUCTION ACTIVITY WITHIN.
11. DO NOT MOUNT ANY WALL RECEPTACLES OR TELEPHONE/COMPUTER OUTLETS BACK TO BACK.
12. USE 3/4" DEEP MUD RINGS ON BOXES IN 5/8" DRYWALL SO FACE OF RING IS FLUSH WITH FACE OF DRYWALL. PROVIDE CADDY #RLC ADAPTER ON ALL OUTLETS WHERE DRYWALL IS CUT IN EXCESS OF 1/8" LARGER THAN MUD RING OR WHERE THE DEVICE "EARS" ARE NOT SUPPORTED BY THE DRYWALL.
13. 20A BRANCH CIRCUIT WIRE SIZING SHALL BE IN ACCORD WITH THE FOLLOWING TABLE:

VOLTS	DISTANCE	REMAINDER (FIRST DEVICE)	OF CIRCUIT
120/208	0' - 50'	#12	#12
	50' - 100'	#10	#12
	100' - 150'	# 8	#10

14. THE ELECTRICAL CONTRACTOR SHALL VERIFY LOCATION OF LIGHTS, ETC. IN MECHANICAL ROOMS WITH MECHANICAL CONTRACTOR BEFORE ROUGH-IN TO AVOID CONFLICT WITH DUCT WORK.
15. ALL CONDUCTORS SHALL BE COPPER WITH A MINIMUM SIZE OF #12 AWG EXCEPT FOR FIRE ALARM.
16. ALL BRANCH CIRCUIT BREAKERS SHALL BE 20A, 1P, WITH 2 #12 AWG 1#12 GND IN 3/4" MINIMUM CONDUIT, UNLESS OTHERWISE NOTED.
17. ALL WIRING LUGS THROUGHOUT THE PROJECT, INCLUDING BUT NOT LIMITED TO BREAKERS, PANELBOARD/SWITCHBOARD LUGS, SAFETY SWITCH LUGS, AND TRANSFORMER LUGS, SHALL BE RATED FOR USE WITH 75 DEGREE CONDUCTORS SIZED IN ACCORDANCE WITH NEC TABLE 310-15 (B) (16).
18. ALL RACEWAYS SHALL BE METAL UNLESS SPECIFICALLY NOTED OR APPROVED OTHERWISE. ANY RACEWAY IN POURED CONCRETE SHALL BE RIGID METAL (HEAVY WALL). REFER TO SPECIFICATIONS FOR ALL OTHERS.
19. CONTRACTOR SHALL MINIMIZE NUMBER OF HOME RUN CONDUITS. CONTRACTOR MAY COMBINE UP TO THREE CIRCUITS PER HOME RUN IN A SINGLE CONDUIT.
20. IN GENERAL ALL ELECTRICAL CONDUIT WILL BE RUN AT THE ELEVATION JUST BELOW THE BOTTOM OF THE STRUCTURAL BEAMS. THE CONTRACTOR SHALL OFFSET THE ELECTRICAL CONDUIT TO AVOID INTERFERENCE WITH ANY DUCTWORK, SPRINKLER OR MECHANICAL PIPING. THE CONTRACTOR SHALL COORDINATE HIS CONDUIT AND RACEWAY LOCATIONS WITH ALL OTHER TRADES BEFORE INSTALLATION.
21. THE ROUTING FOR THE RACEWAY SHOWN ON THE DWGS. IS DIAGRAMMATIC ONLY, BASED ON CURSORY FIELD SURVEY BY DESIGNER. CONTRACTOR IS CAUTIONED THAT SPACE ABOVE CLG. IS VERY CONGESTED WITH EXISTING MECHANICAL, ELECTRICAL & PLUMBING ITEMS, AND WORK SPACE IS LIMITED. CONTRACTOR IS REQUIRED TO VISIT THE SITE PRIOR TO BID DATE AND LOOK ABOVE THE CLG. OF THE PROPOSED ROUTING TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS. PROVIDE ANY AND ALL ADDITIONAL JB'S, OFFSETS, CONDUITS AND FITTINGS AS REQUIRED TO AVOID ANY EXIST. OBSTRUCTIONS ALONG THE PROPOSED ROUTING. ANY SHUTDOWNS CAUSED BY RELOCATING EXISTING EQUIPMENT SHALL BE COORDINATED WITH OWNER. FAILURE TO EXAMINE EXISTING CONDITIONS AND COORDINATE THE EXACT CONDUIT ROUTING WILL NOT EXCUSE CONTRACTOR FROM PERFORMING ALL DUTIES NECESSARY TO COMPLETE THE WORK. DO NOT ROUTE CONDUIT IN A MANNER THAT WILL BLOCK ACCESS TO EXISTING ITEMS AS JUNCTION BOXES, VALVES, FILTERS OR SERVICE ACCESS TO EQUIPMENT.
22. ELECTRICAL PLANS ARE DIAGRAMMATIC. REFER TO ARCHITECTURAL FOR EXACT LOCATIONS. AT NO TIME SHALL A SMOKE DETECTOR BE LOCATED WITHIN 3'-0" OF A SUPPLY OR RETURN GRILLE.
23. WIRE AND CIRCUIT BREAKERS ARE SIZED FOR SPECIFIC EQUIPMENT. BEFORE ORDERING WIRE, BREAKERS AND CONDUIT FOR THIS PROJECT, THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OTHER CONTRACTORS ON THE JOB AND SHALL VERIFY THE ELECTRICAL DATA FOR EQUIPMENT WHICH WILL ACTUALLY BE INSTALLED BY THE OTHER CONTRACTORS AND RECOMPUTE WIRE AND BREAKER SIZES IF REQUIRED TO COMPLY WITH THE N.E.C.
24. REFER TO MECHANICAL DRAWINGS AND COORDINATE VERTICAL RUNS OF WIRE AND CONDUIT WITH MECHANICAL PIPING. COORDINATE WITH MECHANICAL CONTRACTORS. (NOTE: STACK RUNS OF CONDUIT AND PROVIDE OFFSETS AS NECESSARY.)
25. LABEL ALL CONDUITS TERMINATING IN THE CEILING CAVITIES.
26. ALL CONDUIT (WITH OR WITHOUT WIRES) SHALL BE COLOR CODED WITH 1/2" WIDE TAPE, 10'-0" ON CENTER, IN ACCORDANCE WITH THE FOLLOWING:

120/208 VOLT	BLACK
COMMUNICATION/SOUND	GREEN
FIRE ALARM	RED
TELEPHONE	LIGHT BLUE

27. LIGHTING & POWER PANELS ARE DESIGNED AROUND SQUARE "D" "NQOD" WITH A MAXIMUM DEPTH OF 5 3/4" AND WIDTH OF 20".
28. THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS, JUNCTION BOXES AND DISCONNECT SWITCHES SHALL BE REVIEWED AND COORDINATED WITH CASEWORK DRAWINGS AND ACTUAL EQUIPMENT LOCATION, PRIOR TO INSTALLATION. ANY DIFFERENCES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
29. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND FINISHES BEFORE PURCHASE OF ANY LIGHT FIXTURES SO THAT THE PROPER TRIM WILL BE PROVIDED FOR THE CEILING TO BE INSTALLED. ANY DIFFERENCES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
30. EACH CONTRACTOR SHALL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED BY HIM AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES OR PER APPROVAL OF THE ENGINEER. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT THE REQUEST OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
31. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS. DO NOT SCALE THESE DRAWINGS.
32. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THE PROJECT, PRIOR TO THE INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE. PROVIDE COORDINATION DRAWINGS TO THE ENGINEER FOR APPROVAL. ANY REWORK THAT NEEDS TO BE DONE DO TO CONFLICTS BETWEEN TRADES SHALL BE DONE AT THIS CONTRACTORS EXPENSE.
33. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING SYSTEM. REFER TO THE SPECIFICATIONS FOR MORE DETAILED INFORMATION.
34. WHERE ELECTRICAL EQUIPMENT PENETRATES EXTERIOR WALLS OR THE ROOF, THEY SHALL BE PROPERLY SEALED WITH METHODS APPROVED BY THE ENGINEER. SUBMIT DETAIL OF PROPOSED WORK.
35. IN ALL AREAS WHERE THE FIRE RATED WALLS, FLOORS AND CEILINGS ARE INSTALLED OR ARE EXISTING, ALL PENETRATIONS OF ELECTRICAL CONDUITS OR OTHER RELATED ELECTRICAL MATERIALS SHALL BE PROPERLY SEALED WITH APPROVED FIRE RATED MATERIALS TO MAINTAIN THE RATINGS OF THE BUILDING CONSTRUCTION.
36. ALL FUSES, DISCONNECT SWITCHES AND BREAKER SIZES, SHOWN FOR MECHANICAL EQUIPMENT, SHALL BE VERIFIED BEFORE THE PURCHASE OR INSTALLATION OF SAID EQUIPMENT, WITH THE EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR.
37. UPON COMPLETION OF WORK ALL KEYS TO ELECTRICAL POWER PANELS SHALL BE TURNED OVER TO THE OWNER AND A SIGNED RECEIPT SHALL BE OBTAINED.
38. ALL MULTIWIRE BRANCH CIRCUITS NEED TO HAVE SEPARATE NEUTRAL CONDUCTORS TO COMPLY WITH NEC 2020 ARTICLE 210.4. NO SHARED NEUTRAL CONDUCTORS PERMITTED ON THIS PROJECT.
39. ANY RECEPTACLE WITH-IN 6'-0" OF A SINK SHALL BE A GROUND FAULT TYPE (GFI) RECEPTACLE.
40. ALL WORK ON THIS PROJECT SHALL BE INSTALLED IN COMPLIANCE WITH ANSI A117.1, ADA STANDARDS FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES.

DocuSigned by: Mr. Reginald D. Adams 61D76000BFA2424...

NORTH CAROLINA PROFESSIONAL SEAL 19658 ENGINEER REGINALD D. ADAMS

10/24/2024

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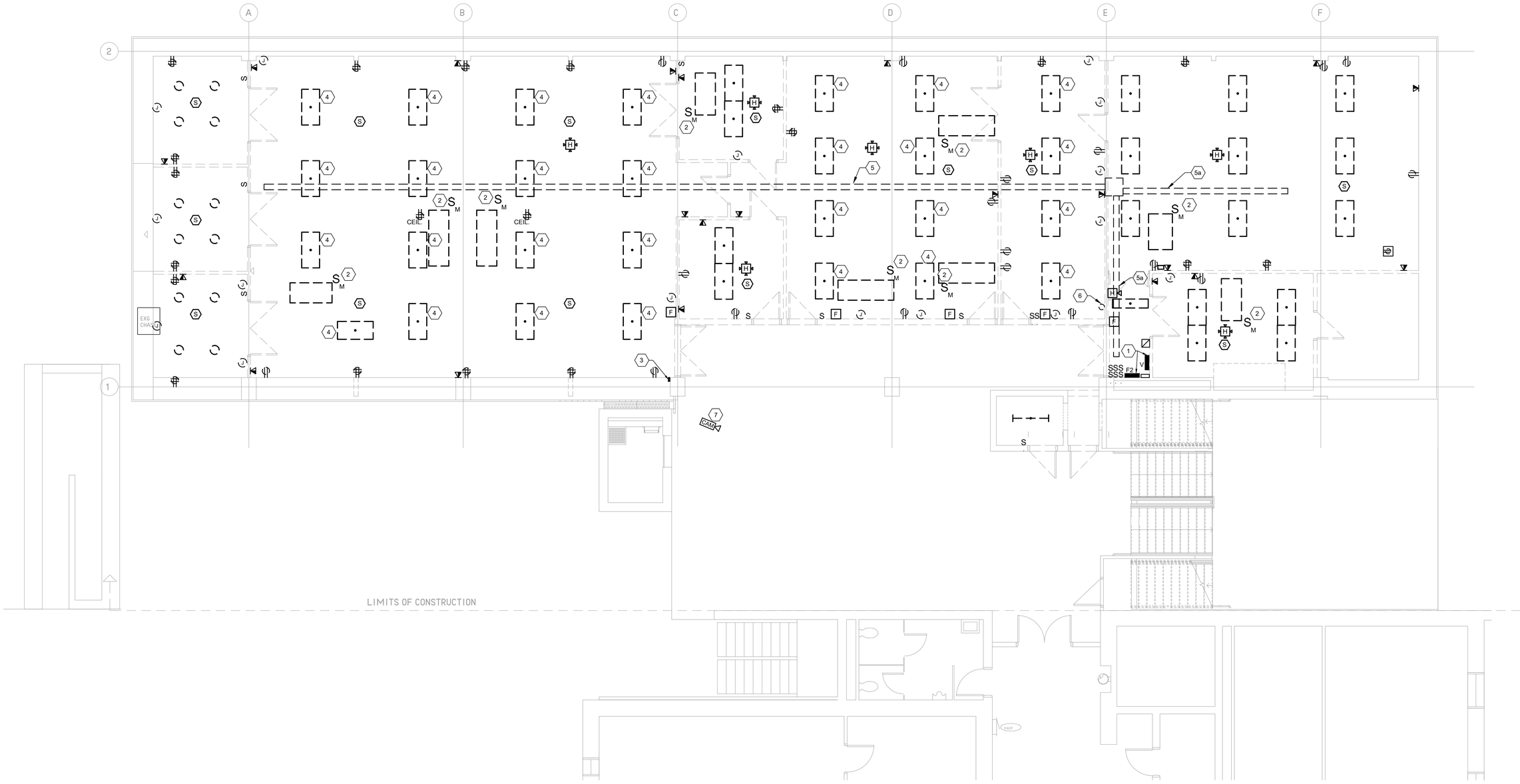
BD

10 24 24
SDR
scale as noted

SCO#22 - 25338-02A
NCSU BROOKS HALL RENOVATIONS - PHASE I
50 PULLEN ROAD
RALEIGH, NC 27605

ELECTRICAL SYMBOLS, ABBREVIATIONS, NOTES

E0.01



01 FLOOR 1 - ELECTRICAL DEMOLITION PLAN

SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET E0.01 FOR ELECTRICAL LEGEND AND ADDITIONAL GENERAL NOTES.
2. REMOVE ALL LIGHT FIXTURES AND ASSOCIATED SWITCHING LOCATED WITHIN THE LIMITS OF CONSTRUCTION. REMOVE CONDUIT AND WIRING BACK TO SOURCE.
3. REMOVE ALL RECEPTACLES, DATA OUTLETS, JUNCTION BOXES, AND TELECOM WIREWAYS LOCATED WITHIN THE LIMITS OF CONSTRUCTION . REMOVE WIRING AND CONDUIT BACK TO SOURCE; UNLESS NOTED OTHERWISE.
4. ELECTRICAL DISTRIBUTION CONDUIT, WIRING, AND PULLBOXES SHALL REMAIN IN PLACE UNLESS NOTED OTHERWISE ON PLANS.
5. COORDINATE WITH NCSU COMTECH FOR REMOVAL OF WIRELESS ACCESS POINTS AND DATA OUTLET CABLING PRIOR TO DEMOLITION.
6. CONTRACTOR SHALL COORDINATE WITH OWNER REGARDING DISPOSAL OF FLUORESCENT LAMPS IN ACCORDANCE WITH OWNER'S FLUORESCENT LAMP RECYCLE PROGRAM OF LAMPS CONTAINING MERCURY. DISPOSAL SHALL BE ONLY TO A LINED LANDFILL IN ACCORDANCE WITH NC GENERAL STATUTE 130A-309.10(m) AND GUIDELINES SET FORTH BY NC DEPT. OF ENVIRONMENTAL QUALITY (DEQ).
7. REMOVE ALL FIRE ALARM DEVICES AND WIRING WITHIN THE LIMITS OF CONSTRUCTION. REMOVE WIRING BACK TO FACP. REMOVE CONDUIT BACK TO NEAREST ENTRY TO CONSTRUCTION AREA. RUN A SENSITIVITY REPORT ON SMOKE DETECTORS PRIOR TO START OF DEMOLITION. CATALOG ALL DEVICES AND STORE IN DUST-PROOF CONTAINER.
8. COORDINATE WITH NCSU WASTE REDUCTION AND RECYCLING REGARDING RECYCLING OF SCRAP METAL AND WIRE RECYCLING.

KEYED NOTES:

1. EXISTING PANELBOARD SHALL BE DEMOLISHED. REMOVE FEEDERS AND CONDUIT BACK TO SOURCE.
2. REMOVE DISCONNECTING MEANS FOR HVAC EQUIPMENT. REMOVE CIRCUIT BACK TO SOURCE.
3. REMOVE LIGHTING CONTROL PANEL.
4. REMOVE NEWLY INSTALLED LED FIXTURES AND SAFELY STORE IN LOCATION DESIGNATED BY OWNER.
5. EXISTING TELECOM RACEWAY AND ASSOCIATED JUNCTION BOXES SHALL BE RELOCATED IN ACCORDANCE WITH NEW CEILING LAYOUT.
5a. TEMPORARY DATA CONNECTIONS FOR UPPER FLOORS SHALL BE INSTALLED PRIOR TO DEMOLITION OF THIS WIREWAY. COORDINATE WITH NCSU COMTECH PRIOR TO BEGINNING DEMOLITION.
6. REMOVE EXISTING CONDUIT AND WIRING TO BELOW SLAB AND REROUTE UP TO NEAREST NEW WALL.
7. REMOVE EXISTING CEILING MOUNTED CAMERA, CONDUIT, AND ASSOCIATED WIRING.

DocuSigned by:
Mr. Reginald D. Adams
61D76000BFA2424...

NORTH CAROLINA PROFESSIONAL SEAL 19658 ENGINEER REGINALD D ADAMS

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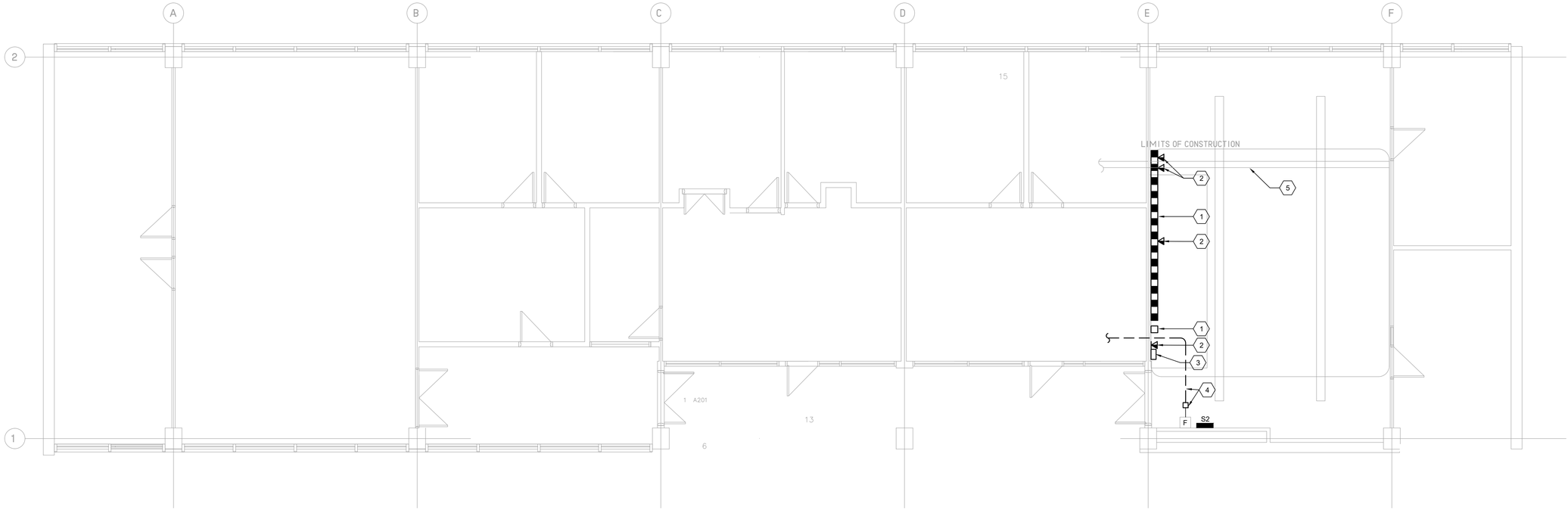
10.24.24
SDR
scale as noted

SCD#22-25338-02A
NCSU BROOKS HALL RENOVATIONS - PHASE I
50 PULLEN ROAD
RALEIGH NC 27695

FLOOR 1 - ELECTRICAL DEMOLITION PLAN

E1.00



01 FLOOR 2 - ELECTRICAL DEMOLITION PLAN

SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET E0.01 FOR ELECTRICAL LEGEND AND ADDITIONAL GENERAL NOTES.
2. PANEL "S2" IS EXISTING TO REMAIN AND SHOWN FOR REFERENCE ONLY. REFER TO PANEL SCHEDULE FOR POWER AND CONTROL CIRCUITS SERVING DEMOLISHED DEVICES.

KEYED NOTES:

1. REMOVE ALL POWER DEVICES, WIREMOLD, AND SURFACE MOUNTED CONDUIT LOCATED ON THIS WALL THAT WOULD OTHERWISE REMAIN INACCESSIBLE AFTER NEW CHASE IS BUILT. REMOVE CIRCUITS BACK TO SOURCE.
2. REMOVE EXISTING DATA OUTLETS, SURFACE MOUNTED CONDUIT AND WIREWAYS. DATE WIRING SHALL BE REMOVED BY NCSU COMTECH. COORDINATE THIS REMOVAL WITH NCSU COMTECH.
3. COORDINATE REMOVAL AND RELOCATION OF DOOR ACCESS CONTROL HARDWARE WITH NCSU. REMOVE ALL ASSOCIATED CONDUIT AND POWER WIRING BACK TO NEAREST ACCESSIBLE JUNCTION BOX OUTSIDE OF NEW CHASE AREA.
4. REMOVE EXISTING FIRE ALARM CONDUIT AND WIRING BACK TO NEAREST UPSTREAM DEVICE. REMOVE CEILING MOUNTED JUNCTION CONDUIT AND KEEP EXISTING JUNCTION BOX IN PLACE.
5. EXISTING TELECOM WIREWAY SHALL REMAIN. SHOWN FOR REFERENCE ONLY.

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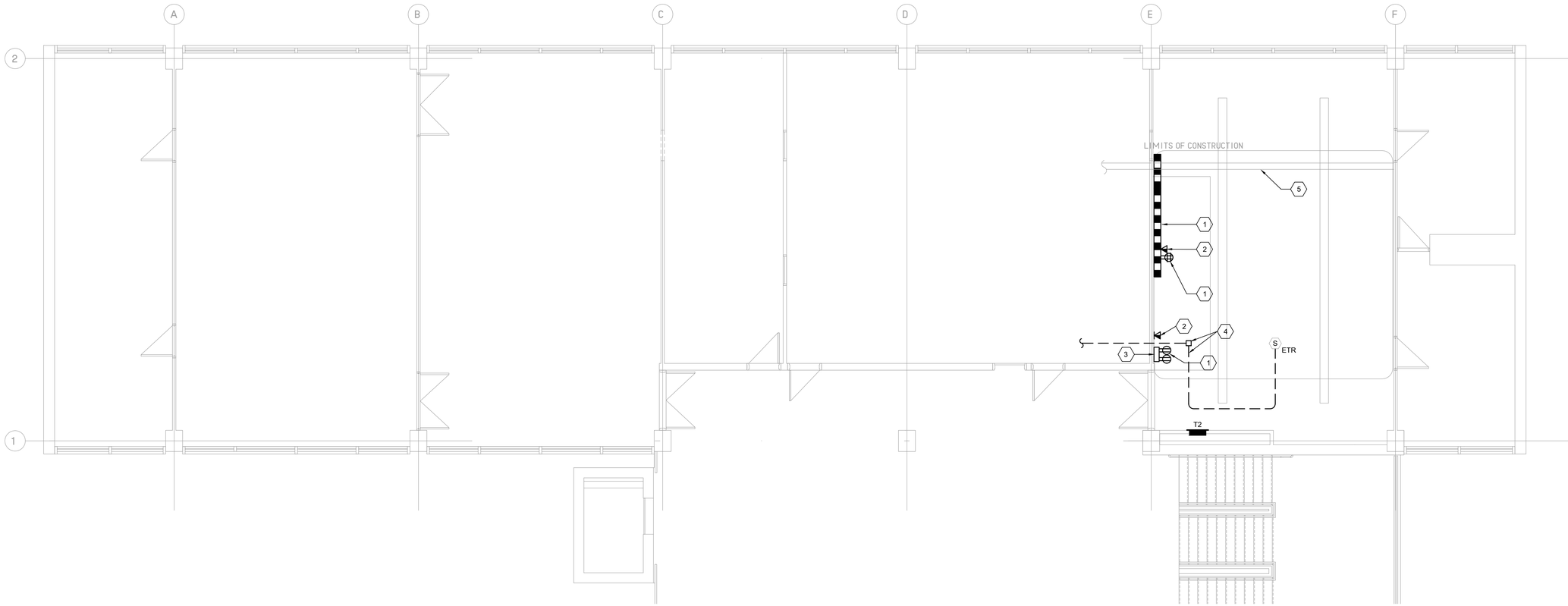
FLOOR 2 - ELECTRICAL DEMOLITION PLAN

E1.01



01 FLOOR 3 - ELECTRICAL DEMOLITION PLAN

SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET E0.01 FOR ELECTRICAL LEGEND AND ADDITIONAL GENERAL NOTES.
2. PANEL "T2" IS EXISTING TO REMAIN AND SHOWN FOR REFERENCE ONLY. REFER TO PANEL SCHEDULE FOR POWER AND CONTROL CIRCUITS SERVING DEMOLISHED DEVICES.

KEYED NOTES:

1. REMOVE ALL POWER DEVICES, WIREMOLD, AND SURFACE MOUNTED CONDUIT LOCATED ON THIS WALL THAT WOULD OTHERWISE REMAIN INACCESSIBLE AFTER NEW CHASE IS BUILT. REMOVE CIRCUITS BACK TO SOURCE.
2. REMOVE EXISTING DATA OUTLETS, SURFACE MOUNTED CONDUIT AND WIREWAYS. DATE WIRING SHALL BE REMOVED BY NCSU COMTECH. COORDINATE THIS REMOVAL WITH NCSU COMTECH.
3. COORDINATE REMOVAL OF EXISTING ADVANTOR ACCESS CONTROL EQUIPMENT AND ALL ASSOCIATED COMPONENTS WITH NCSU. REMOVE ALL ASSOCIATED CONDUIT AND POWER WIRING BACK TO SOURCE.
4. REMOVE EXISTING FIRE ALARM CONDUIT AND WIRING BACK TO NEAREST UPSTREAM DEVICE. REMOVE CEILING MOUNTED JUNCTION BOX AND REMOVE CONDUIT TO EXISTING SMOKE DETECTOR. KEEP DETECTOR IN PLACE. PROTECT DEVICE FROM CONTAMINANTS DURING DEMOLITION PHASE.
5. EXISTING TELECOM WIREWAY SHALL REMAIN. SHOWN FOR REFERENCE ONLY.

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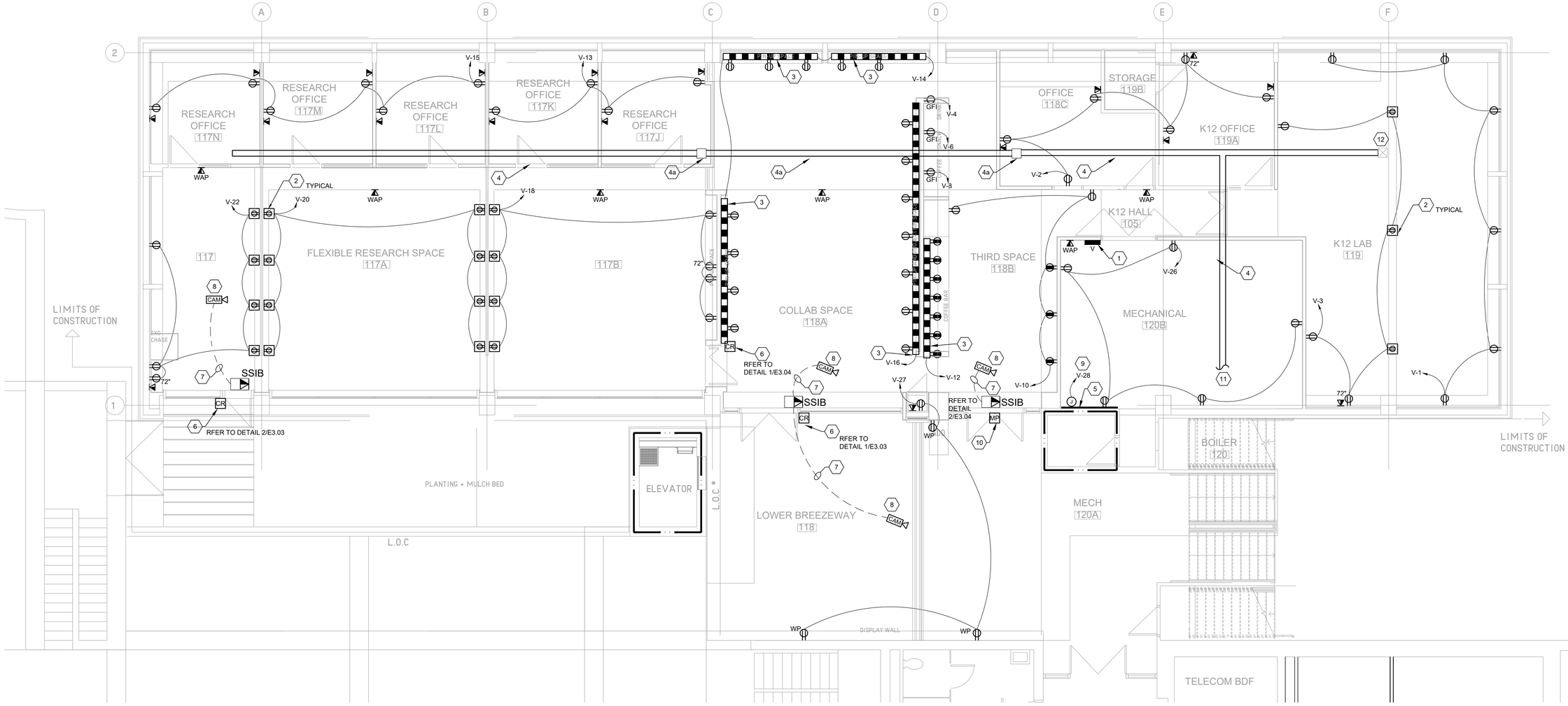
FLOOR 3 - ELECTRICAL DEMOLITION PLAN

E1.02



01 FLOOR 1 - ELECTRICAL NEW WORK PLAN

SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET E001 FOR ELECTRICAL LEGEND AND ADDITIONAL GENERAL NOTES.
2. REFER TO PANELBOARD SCHEDULES ON SHEETS E5.00 AND E5.01
3. PROVIDE NEW RECEPTACLES AND DATA OUTLETS AS SHOWN ON PLANS.
4. PROVIDE DISCONNECTING MEANS FOR NEW HVAC EQUIPMENT.
5. NCSU COMTECH SHALL INSTALL DATA CABLING FOR ALL NEW DATA OUTLETS. COORDINATE WITH COMTECH PRIOR TO MOUNTING DEVICES.
6. REFER TO SHEETS E3.03 AND E3.04 FOR SECURITY AND ACCESS CONTROL DETAILS AND REQUIREMENTS. PROVIDE CONDUIT, BOXES, AND WIRING PER DETAILS.

KEYED NOTES:

1. PROVIDE NEW PANELBOARDS PER PANELBOARD SCHEDULES.
2. PROVIDE RECESSED FLOOR BOX WITH DUPLEX RECEPTACLE.
3. PROVIDE SURFACE MOUNTED RACEWAY WITH RECEPTACLE QUANTITIES AS SHOWN. REFER TO A3.2 AND A3.3 FOR DEVICE PLACEMENT AND MOUNTING HEIGHTS.
4. NEW TELECOM WIREWAY INSTALLED ABOVE ACCESSIBLE CEILING.
4a. PROVIDE 2-4"C ABOVE GYP. BOARD CEILING. DO NOT MOUNT WIREWAY ABOVE INACCESSIBLE CEILING. PROVIDE MINIMUM 12"X12" JUNCTION BOX IN ACCESSIBLE CEILING SPACE ON BOTH SIDE OF HARD CEILINGS.
5. LOCATION OF NEW SECURITY HEADEND UNIT. REFER TO DETAIL 5/E3.04 FOR MOUNTING MOUNTING AND EQUIPMENT REQUIREMENTS.
6. NEW CARD READER. COORDINATE EXACT LOCATION OF J-BOX WITH SECURITY CONTRACTOR PRIOR TO ROUGH-IN.
7. PROVIDE 1/2" CONDUIT FROM CAMERA TO SSIB DROP.
8. NEW CEILING MOUNTED CAMERA. COORDINATE EXACT LOCATION OF J-BOX WITH SECURITY CONTRACTOR PRIOR TO ROUGH-IN.
9. PROVIDE 120V DEDICATED CIRCUIT FOR CONNECTION TO ACCESS CONTROL POWER SUPPLY.
10. SECURITY MONITOR POINT. PROVIDE RACEWAY INFRASTRUCTURE PER SECURITY DETAILS.
11. TIE INTO EXISTING WIREWAY/RACEWAY RUNNING BACK TO TELECOM CLOSET.
12. PROVIDE TRANSITION PIECES NECESSARY TO TIE NEW WIREWAY INTO EXISTING VERTICAL WIREWAY FOR UPPER FLOOR DATA CABLES.

FIRE RATED WALL LEGEND
1 HR FIRE BARRIER
2 HR FIRE BARRIER

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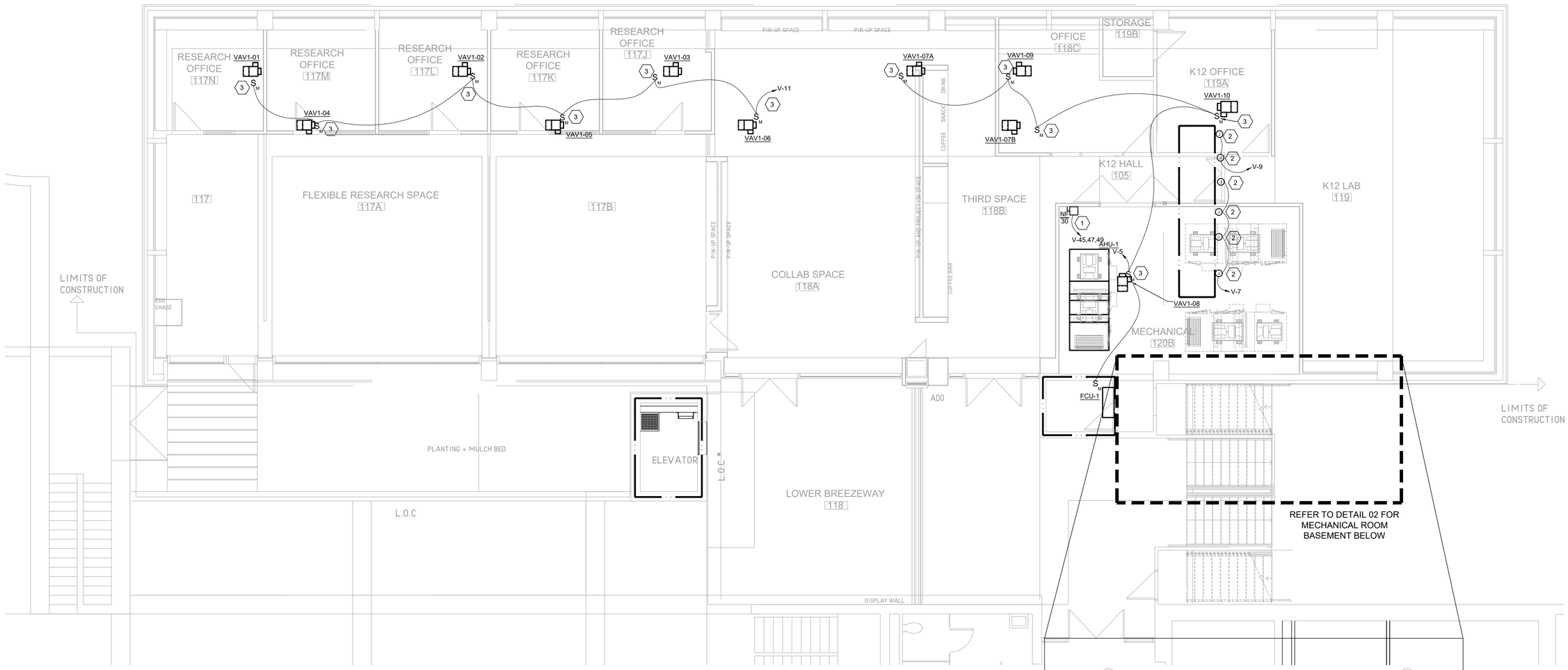
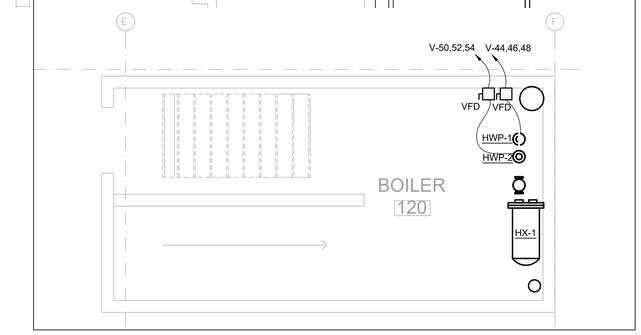
FLOOR 1 - ELECTRICAL NEW WORK PLAN

E2.00



01 FLOOR 1 - MECHANICAL ELECTRICAL NEW WORK PLAN

SCALE: 3/16" = 1'-0"



02 MECHANICAL BASEMENT ELECTRICAL PLAN

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

GENERAL NOTES:

1. REFER TO SHEET E001 FOR ELECTRICAL LEGEND AND ADDITIONAL GENERAL NOTES.
2. REFER TO PANELBOARD SCHEDULES ON SHEETS E5.00 AND E5.01
3. -
4. PROVIDE NEW RECEPTACLES AND DATA OUTLETS AS SHOWN ON PLANS.
5. PROVIDE DISCONNECTING MEANS FOR NEW HVAC EQUIPMENT.
6. NCSU COMTECH SHALL INSTALL DATA CABLING FOR ALL NEW DATA OUTLETS. COORDINATE WITH COMTECH PRIOR TO MOUNTING DEVICES.

KEYED NOTES:

1. PROVIDE DISCONNECTING MEANS FOR HVAC EQUIPMENT. PROVIDE NEW CIRCUIT AS SHOWN.
2. PROVIDE 20A/1P CIRCUIT FOR CONNECTION TO FIRE SMOKE DAMPER CONTROL MODULE . ALL CONDUIT ASSOCIATED WITH DAMPERS SHALL BE ROUTED OUTSIDE OF NEW CHASE. REFER TO FA2.01 FOR FIRE ALARM NOTES REGARDING FIRE SMOKE DAMPER.
3. PROVIDE DISCONNECTING MEANS FOR AHU CONTROL CIRCUIT.

FIRE RATED WALL LEGEND

- 1 HR FIRE BARRIER
- 2 HR FIRE BARRIER

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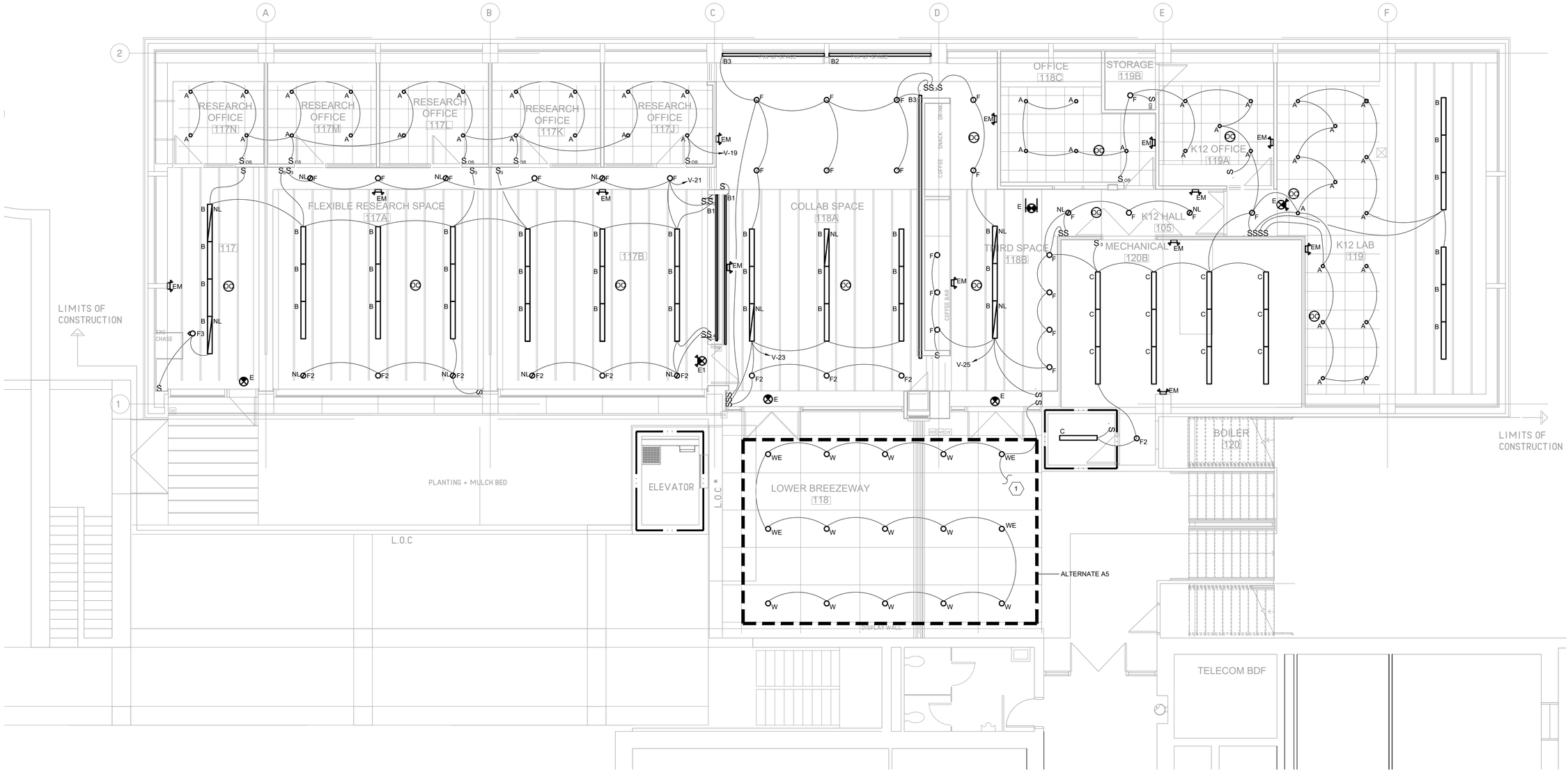
FLOOR 1 - MECHANICAL ELECTRICAL NEW WORK PLAN

E2.01



01 FLOOR 1 - LIGHTING NEW WORK PLAN

SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET E001 FOR ELECTRICAL LEGEND AND ADDITIONAL GENERAL NOTES.
2. PROVIDE NEW FIXTURES PER LIGHTING FIXTURE SCHEDULE. REFER TO SHEET E5.01 FOR SCHEDULE.
3. REFER TO PANELBOARD SCHEDULES ON SHEETS E5.00 AND E5.01
4. EMERGENCY AND EXIT LIGHTING SHALL BE WIRED AHEAD OF SWITCHING AND CONNECTED TO LOCAL CIRCUIT SERVING RESPECTIVE SPACE IN WHICH EMERGENCY FIXTURE IS LOCATED.
5. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LAYOUT, MOUNTING HEIGHTS, AND PRECISE ALIGNMENTS.
6. CEILINGS ARE EXPOSED. ALL CONDUIT SHALL BE RUN NEATLY; PERPENDICULAR AND PARALLEL TO STRUCTURE. RUN CONDUIT IN HIGHEST PART OF CEILING FOR NORTH/SOUTH RUNS.
7. OCCUPANCY SENSORS SHALL BE MOUNTED LEVEL WITH BOTTOM OF LOWEST BEAM.

KEYED NOTES:

1. CONNECT NEW FIXTURES TO EXISTING LIGHTING CIRCUIT FED FROM PANEL "EM". PROVIDE DISCONNECTING MEANS FOR HVAC EQUIPMENT. PROVIDE NEW CIRCUIT.
2. PROVIDE NEW LIGHT SWITCH IN THIS SPACE AND CONNECT TO EXISTING LIGHTS.

FIRE RATED WALL LEGEND

- 1 HR FIRE BARRIER
- 2 HR FIRE BARRIER

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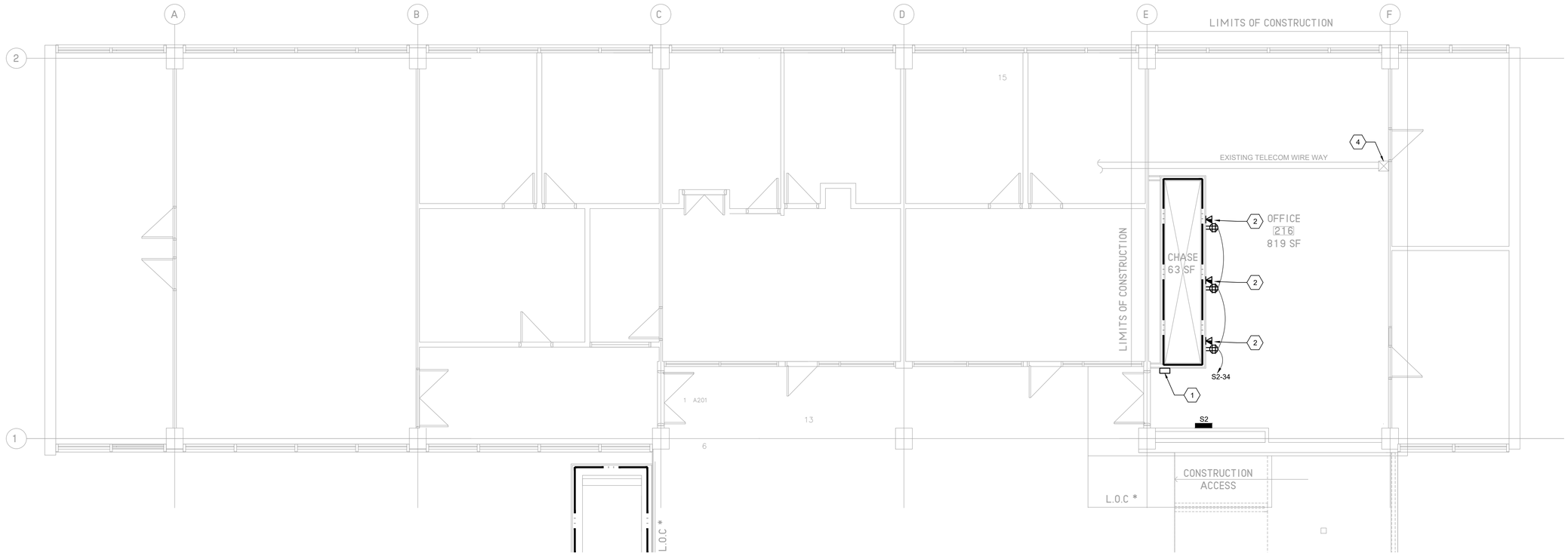
FLOOR 1 - LIGHTING NEW WORK PLAN

E2.02



01 FLOOR 2 - ELECTRICAL NEW WORK PLAN

SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET E001 FOR ELECTRICAL LEGEND AND ADDITIONAL GENERAL NOTES.
2. EXISTING PANELBOARD SHALL REMAIN. SHOWN FOR REFERENCE ONLY.

KEYED NOTES:

1. RELOCATE EXISTING ACCESS CONTROL CIRCUIT TO END OF CHASE. COORDINATE MOUNTING OF EQUIPMENT WITH NCSU ELECTRONICS SHOP.
2. PROVIDE NEW DEVICES RECESSED IN NEW CHASE WALL.
3. REROUTE FIRE ALARM CONDUIT NEXT TO EXISTING COLUMN FROM NEAREST REMAINING DEVICE IN ADJACENT SPACE TO EXISTING JUNCTION BOX RETAINED FROM DEMOLITION PHASE. RECONNECT EXISTING PULL STATION TO EXISTING CIRCUIT.
4. APPROXIMATE LOCATION OF EXISTING VERTICAL WIREWAY.

FIRE RATED WALL LEGEND
1 HR FIRE BARRIER
2 HR FIRE BARRIER

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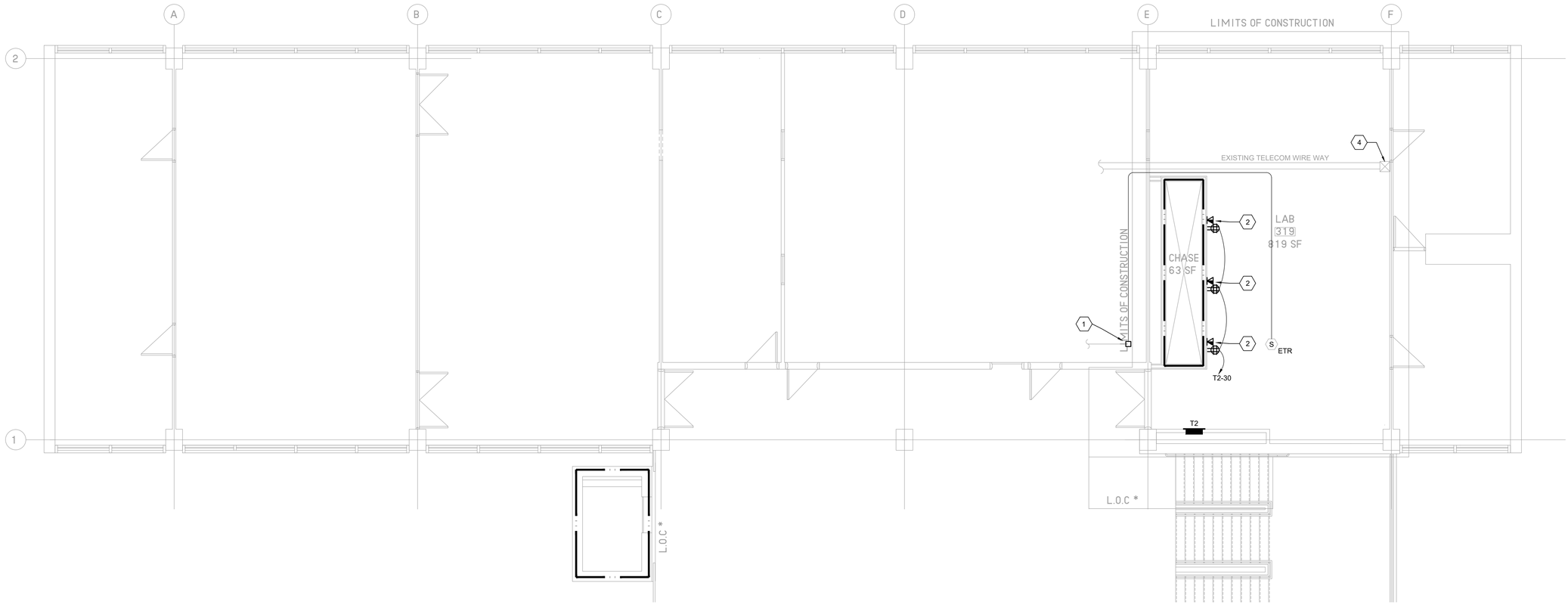
E2.10 FLOOR 2 - ELECTRICAL NEW WORK PLAN



01 FLOOR 3 - ELECTRICAL NEW WORK PLAN

SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET E001 FOR ELECTRICAL LEGEND AND ADDITIONAL GENERAL NOTES.
2. EXISTING PANELBOARD SHALL REMAIN. SHOWN FOR REFERENCE ONLY.

KEYED NOTES:

1. REROUTE FIRE ALARM CONDUIT OUTSIDE NEW CHASE FROM NEAREST REMAINING DEVICE IN ADJACENT SPACE AND RECONNECT EXISTING CIRCUIT TO EXISTING SMOKE DETECTOR.
2. TELECOM WIREWAY SHALL BE RELOCATED OUTSIDE OF CHASE AREA. PROVIDE JUNCTION BOXES AND CONDUIT TO CONNECT TO EXISTING WIREWAY IN ADJACENT SPACES.
3. PROVIDE 2-4" CONDUITS BETWEEN JUNCTION BOX AND WIREWAY. COORDINATE WITH OWNER/COMTECH.
4. APPROXIMATE LOCATION OF EXISTING VERTICAL WIREWAY.

FIRE RATED WALL LEGEND
1 HR FIRE BARRIER
2 HR FIRE BARRIER

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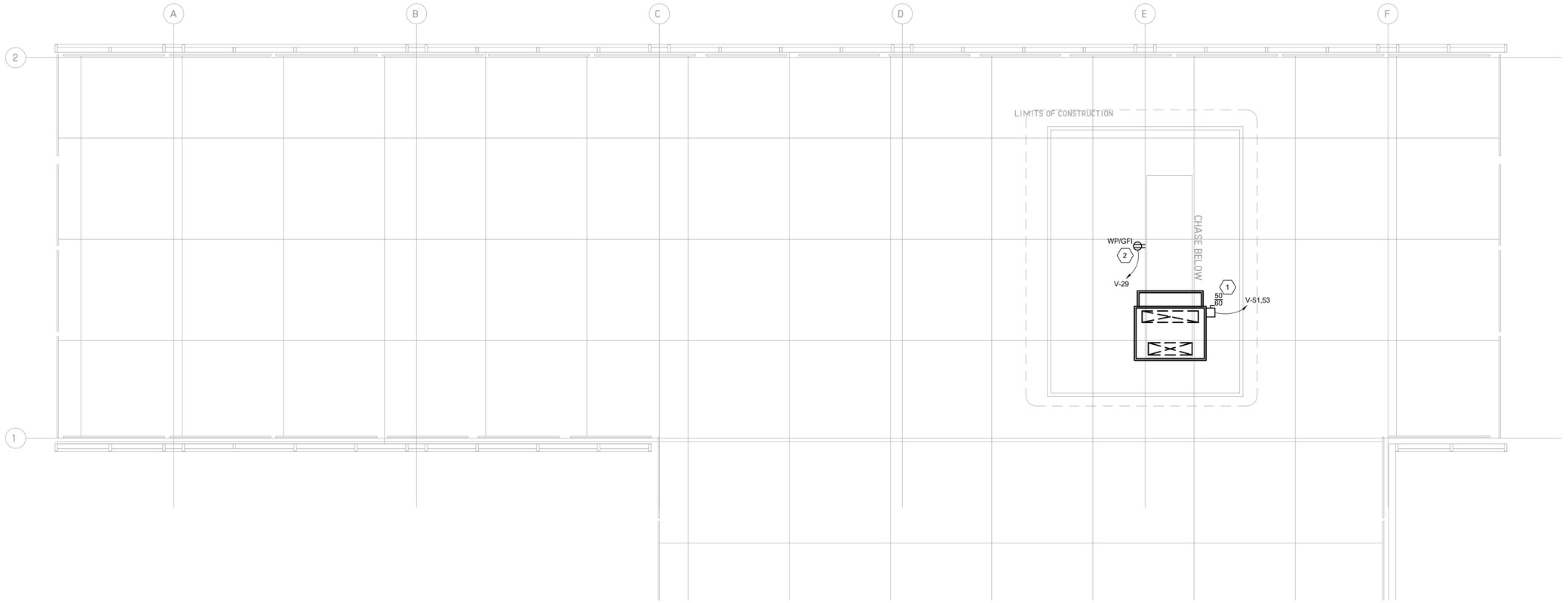
FLOOR 3 - ELECTRICAL NEW WORK PLAN

E2.20



GENERAL NOTES:

1. REFER TO SHEET E001 FOR ELECTRICAL LEGEND AND ADDITIONAL GENERAL NOTES.

KEYED NOTES:

1. PROVIDE DISCONNECTING MEANS FOR ERV-1. PROVIDE NEW CIRCUIT.
2. PROVIDE GFCI RATED WEATHER-PROOF ROOFTOP RECEPTACLE AND CONNECT TO CIRCUIT AS SHOWN.

01 ROOF - ELECTRICAL NEW WORK PLAN

SCALE: 3/16" = 1'-0"

FIRE RATED WALL LEGEND
1 HR FIRE BARRIER
2 HR FIRE BARRIER

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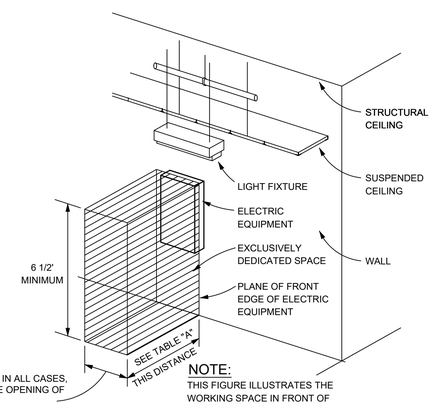
E2.30 ROOF - ELECTRICAL NEW WORK PLAN

TABLE "A" WORKING CLEARANCES				
NOMINAL VOLTAGE TO GROUND	CONDITION: 1	2	3	
	MINIMUM CLEAR DISTANCE (FEET)			
0-150	3	3	3	
151-600	3	3.5	4	

WHERE THE "CONDITIONS" ARE AS FOLLOWS:

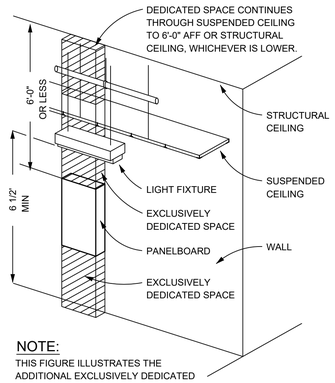
1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300 VOLTS SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE. CONCRETE, BRICK, OR TILE WALLS SHALL BE CONSIDERED AS GROUNDED.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

NOTE:
DEDICATED SPACE CONTINUES THROUGH SUSPENDED CEILING TO A HEIGHT OF 6FT ABOVE THE EQUIPMENT OR TO THE STRUCTURE CEILING, WHICH EVER IS LOWER.



WIDTH OF EQUIPMENT OR 30", WHICHEVER IS GREATER. IN ALL CASES, THE WORK SPACE SHALL PERMIT AT LEAST A 90 DEGREE OPENING OF EQUIPMENT DOORS OR HINGED PANELS.

NOTE:
THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF ELECTRIC EQUIPMENT REQUIRED BY SECTION 110.26 OF THE NATIONAL ELECTRICAL CODE.



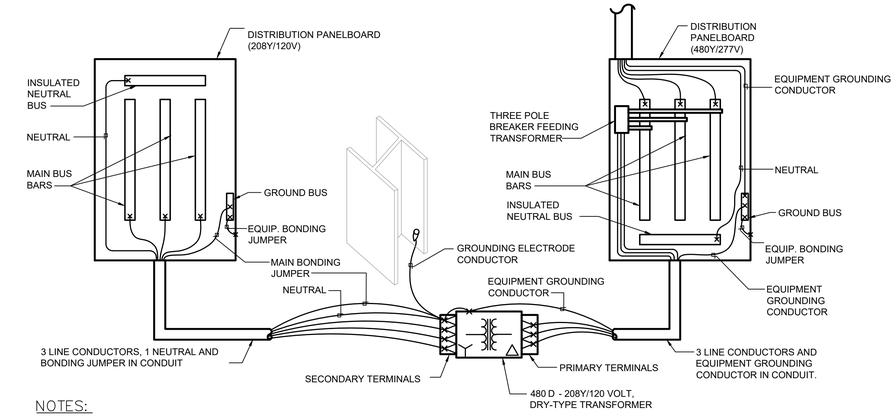
NOTE:
THIS FIGURE ILLUSTRATES THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER AND UNDER PANELBOARDS FOR CABLES, RACEWAYS, ETC. TO AND FROM PANELBOARDS REQUIRED BY SECTION 110.26 OF THE NATIONAL ELECTRICAL CODE.

ALL ELECTRIC EQUIPMENT

PANELBOARDS

1 PANELBOARD CLEARANCE DETAIL
No Scale:

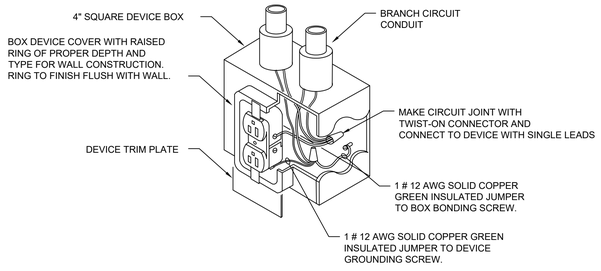
NOTE:
1. THIS INCLUDES BUT IS NOT LIMITED TO PANELBOARDS, SAFETY SWITCHES, MOTOR STARTERS, JUNCTION BOXES AND OTHER ELECTRIC EQUIPMENT.
2. NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT OR ARCHITECTURAL APPURTENANCES SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THROUGH THE DEDICATED SPACES SHOWN ABOVE.



NOTES:

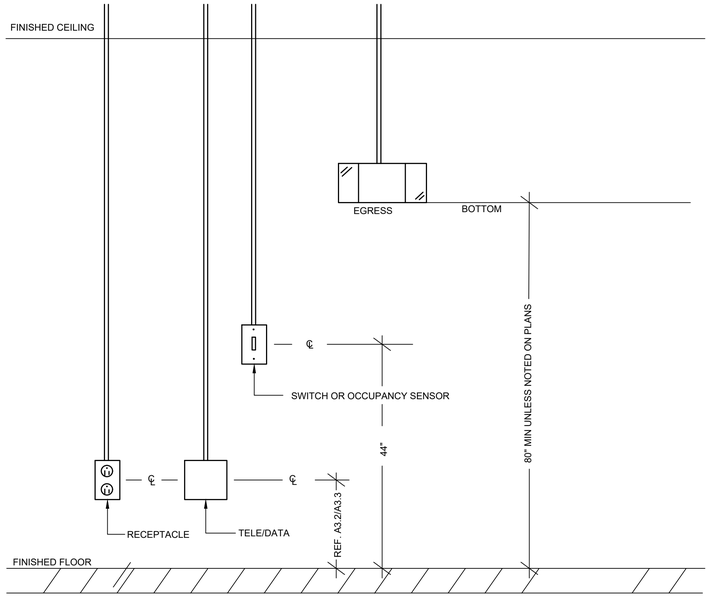
1. ALL GROUNDING AND BONDING CONDUCTORS SHALL BE SIZED PER NEC, TABLE 250.122 OR 250.66. SEE ELECTRICAL RISER AND PANEL SCHEDULES FOR SIZING REQUIREMENTS.
2. SYSTEM GROUND CONDUCTOR SHALL BE CONTINUOUS AND UNBROKEN, AND SHALL BE RUN BETWEEN BONDING POINTS ALONG THE SHORTEST POSSIBLE PATH.
3. THIS DETAIL DIAGRAMS THE PREFERRED METHOD OF ESTABLISHING A SYSTEM GROUND AND BONDING POINTS WITHIN A TYPICAL DISTRIBUTION SYSTEM. THE GROUNDING SYSTEM SHALL COMPLY WITH NEC ARTICLE 250.

2 GROUNDING DETAIL
No Scale:



NOTES:
1. RECEPTACLES ARE TO BE MOUNTED WITH THE GROUND TERMINAL ON THE TOP.

3 RECEPTACLE INSTALLATION DETAIL
No Scale:

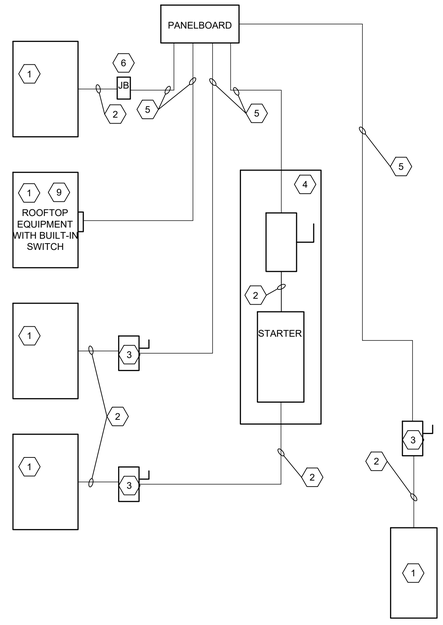


NOTE:
NOT ALL DEVICES MAY BE USED IN CONSTRUCTION.

4 MOUNTING HEIGHT DETAIL
No Scale:

KEYED NOTES:

1. EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.
2. CONDUIT & WIRING BY HVAC, PLUMBING CONTRACTOR OR OTHER TRADES.
3. IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR.
4. A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER. LOCATED ADJACENT TO EQUIPMENT.
5. FEEDER CIRCUIT WIRING AND CONDUIT IN ELECTRICAL WORK. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
6. JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT. IF NO STARTER OR DISCONNECT IS SUPPLIED, A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING WILL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
7. NOT USED.
8. IN ALL CASES THE EQUIPMENT CONTRACTOR SHALL MAKE FINAL CONNECTIONS, START UP, AND TEST EQUIPMENT.
9. IF THE ROOF TOP EQUIPMENT IS NOT PROVIDED WITH BUILT IN SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.



NOTE: DIVISION 23 CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DIRECTION OF ROTATION FOR ALL THREE PHASE EQUIPMENT.
NOTE: DIVISION 26 CONTRACTOR SHALL BE RESPONSIBLE FOR LABELING OF ALL DISCONNECTS.

5 ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT
No Scale:

DocuSigned by:
Mr. Reginald D. Adams
61D76000BFA2424...

NORTH CAROLINA PROFESSIONAL SEAL 19658 ENGINEER REGINALD D. ADAMS
10/24/2024

in situ studio
704 N Person St
Raleigh NC 27604
www.insitustudio.us

NC STATE UNIVERSITY
Sigmon Engineered Solution, PC
5909 Falls of Neuse Rd. Suite 101 Raleigh,NC 27609
919.840.9300 www.sigmaes.com Lic: C-2490

Consultants

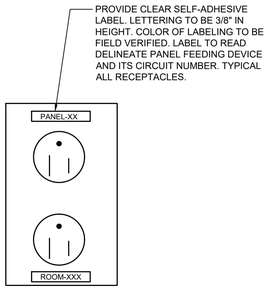
BD

10 24 24
SDR
scale as noted

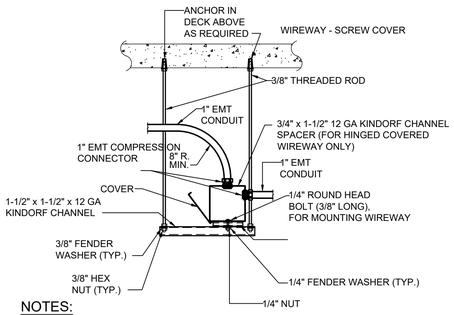
SCI#22-25338-02A
NCSU BROOKS HALL RENOVATIONS - PHASE I
50 PULLEN ROAD
RALEIGH, NC 27695

ELECTRICALDETAILS

E3.00



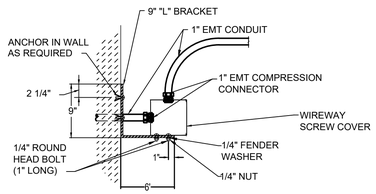
1 DEVICE LABELING DETAILS
No Scale:



NOTES:

1. WIREWAY - SIDE OPENING TOWARDS CENTER OF CORRIDOR, WITH MINIMUM 12" ACCESS.
2. INSTALL COUPLINGS AND FITTINGS FOR WIREWAY WITH SCREW HEADS ON INSIDE OF WIREWAY, NUTS ON EXTERIOR. USE 1/4" ROUND HEAD BOLT (3/8" LONG), AND 1/4" NUT WITHOUT WASHER. INSTALL SIX (6) BOLTS PER COUPLING. DO NOT USE BOLTS PROVIDED WITH AUSTIN WIREWAY.
3. INSTALL ALL 1" EMT CONDUIT USING COMPRESSION COUPLINGS AND CONNECTORS. (NO "LB" TYPE CONNECTORS).
4. 1" CONDUIT TO CONNECT TO WIREWAY ON TOP AND ON SIDE OPPOSITE COVER. IF IT IS NOT POSSIBLE TO CONNECT TO TOP, CONNECT TO COVER AFTER CUTTING AND SECURING COVER SECTION WITH SCREWS.
5. SUPPORT WIREWAY AT MAXIMUM 5'-0" SEPARATIONS.
6. CUT THREADED ROD SO THAT BOTTOM OF ROD DOES NOT PROTRUDE BELOW BOTTOM OF 1-1/2" CHANNEL.
7. INSTALL WITH BOTTOM OF KINDORF CHANNEL AT 8'6" AFF (MIN.) AND 3" (MIN.) ABOVE ACOUSTIC CEILING GRID. (UNLESS OTHERWISE NOTED ON PLANS)
8. COVERS TO BE INSTALLED WITH HAND TIGHTENED SCREWS. NO POWER DRILLS/SCREW DRIVERS TO BE USED.
9. DIMENSIONS GIVEN ON PLANS ARE TYPICALLY TO BOTTOM OF WIREWAY UNLESS OTHERWISE NOTED.

2 TYPICAL TRAPEZE MOUNTED WIREWAY
No Scale:



NOTES:

1. WIREWAY - COVER OPENING WITH MINIMUM 24" ACCESS.
2. INSTALL COUPLINGS AND FITTINGS FOR WIREWAY WITH SCREW HEADS ON INSIDE OF WIREWAY, NUTS ON EXTERIOR. USE 1/4" ROUND HEAD BOLT (3/8" LONG), AND 1/4" NUT WITHOUT WASHER. INSTALL SIX (6) BOLTS PER COUPLING. DO NOT USE BOLTS PROVIDED WITH AUSTIN WIREWAY.
3. INSTALL ALL 1" EMT CONDUIT USING COMPRESSION COUPLINGS AND CONNECTORS. (NO "LB" TYPE CONNECTORS).
4. 1" EMT CONDUIT TO CONNECT TO WIREWAY ON TOP AND ON SIDE OPPOSITE COVER. IF IT IS NOT POSSIBLE TO CONNECT TO TOP, CONNECT TO COVER AFTER CUTTING AND SECURING COVER SECTION WITH SCREWS.
5. SUPPORT WIREWAY AT MAXIMUM 5'-0" SEPARATIONS.
6. INSTALL WITH BOTTOM OF "L" BRACKET AT 8'6" (MIN.) AND 3" (MIN.) ABOVE ACOUSTIC CEILING GRID (UNLESS OTHERWISE NOTED ON PLANS)
7. COVERS TO BE INSTALLED WITH HAND TIGHTENED SCREWS. NO POWER DRILLS/SCREW DRIVERS TO BE USED.
8. EMT CONDUIT SIZE MAY VARY.

3 "L" BRACKET MOUNTED WIREWAY
No Scale:

DocuSigned by:
Mr. Reginald D. Adams
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scale as noted

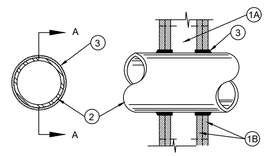
SCO#22-25338-02A
NCSU BROOKS HALL RENOVATIONS - PHASE I
501 PULLEN ROAD
RALEIGH, NC 27695

ELECTRICALDETAILS

E3.01

SYSTEM NO. W-L-1001

JUNE 15 2005
F RATINGS-1, 2, 3 AND 4 HR (SEE ITEM 2 AND 3)
T RATING-0, 1, 2, 3, AND 4 HR. (SEE ITEM 3)
L RATING AT AMBIENT - LESS THAN 1 CFM PER SQ. FT.
L RATING AT 400°F - LESS THAN 1 CFM PER SQ. FT.



SECTION A-A

1. THE 1, 2, 3 OR 4 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE WALL ASSEMBLY-CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

   A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX 2 H FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.

   B. GYPSUM BOARD* - NOM 1/2 OR 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 26 IN.

2. THROUGH - PENETRANT - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (POINT CONTACT) TO MAX MAX. 2 IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED.

   A. STEEL PIPE - NOM 24 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

   B. IRON PIPE - NOM 24 IN. DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN DIAM (OR SMALLER) OR CLASS 50 (OR HEAVIER) DUCTILE LINE PRESSURE PIPE.

   C. CONDUIT - NOM 6 IN. DIAM. (OR SMALLER) STEEL CONDUIT OR NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.

   D. COPPER TUBING - NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

   E. COPPER PIPE - NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

   F. THROUGH PENETRATING PRODUCT* - FLEXIBLE METAL PIPING THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE USED:

1. NOM 2 IN. DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

   OMEGA FLEX INC

2. NOM 1 IN. DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

   GASTILE, DIV OF TILEFLEX

3. NOM 1 IN. DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

   WARD MFG INC

3. FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - MIN 5/8. 1-1/4, 1-7/8 AND 2-1/2 IN THICKNESS OF CAULK FOR 1, 2, 3, 4 HR RATED ASSEMBLIES, RESPECTIVELY, APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OR WALL. MIN 1/4 IN DIAM BEAD OF CAULK APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIZE OF WALL. THE HOURLY F RATING OF THE FIRESTOP IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW.

MAX PIPE OR CONDUIT DIAM, IN	F RATING HR	T RATING HR
1	1 or 2	0+, 1 or 2
1	3 or 4	3 or 4
4	1 or 2	0
6	3 or 4	0
12	1 or 2	0

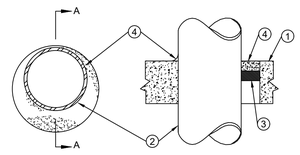
+WHEN COPPER PIPE IS USED, T RATING IS 0 H.

3M COMPANY - CP 25WB+ or FB-3000 WT.

*BEARING THE UL CLASSIFICATION MARKING.

SYSTEM NO. C-AJ-1001

MARCH 05 2007
F RATINGS-3 4 HR
T RATING-0 HR.
W RATING - CLASS 1 (SEE ITEM 4)



SECTION A-A

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF CIRCULAR THROUGH OPENING IS 32-1/2 IN.

SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2 IN. FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL. AS AN ALTERNATE, NOM 12 IN DAIM (OR SMALLER) SLEEVE FABRICATED FROM NOM 0.019 IN THICK GALV STEEL CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY FLUSH WITH FLOOR OR WALL SURFACE.

2. THROUGH-PENETRANT- ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (POINT CONTACT) TO MAX 1-3/8" IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

   A. STEEL PIPE-NOM 30 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   A1. IRON PIPE-NOM 30 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   B. CONDUIT-NOM 6 IN. DIAM (OR SMALLER) RIGID STEEL CONDUIT.
   C. CONDUIT- NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.

3. PACKING MATERIAL - POLYETHYLENE BACKER ROD OR NOM 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET, MINERAL WOOL BATT OR GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF SOLID CONCRETE OR CONCRETE BLOCK WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM 4). AS AN ALTERNATE WHEN MAX PIPE SIZE IS 10 IN. DIAM AND WHEN MAX ANNULAR SPACE IS 1 IN. OR, A MIN 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC FIBER BLANKET OF MINERAL WOOL BATT PACKING MATERIAL MAY BE RECESSED MIN 1/2 IN. FROM BOTTOM SURFACE OF FLOOR OR FROM EITHER SIDE OF SOLID CONCRETE WALL.

4. FILL, VOID OR CAVITY MATERIALS* - CAULK - APPLIED TO FILL THE ANNULAR SPACE TO THE MIN THICKNESS SHOWN IN THE FOLLOWING TABLE:

MAX PIPE DIAM IN	MAX ANNULAR SPACE IN.	PACKING MATERIAL TYPE (A)	MIN. CAULK THKNS IN
10	1	BR, CF, GF OR MW	1/2 (B)
10	1	CF OR MW	1/2 (C)
30	2-1/2	BR, CF, GF OR MW	1 (B)

(A) BR= POLYETHYLENE BACKER ROD.

CF= CERAMIC FIBER BLANKET.

GF= GLASS FIBER INSULATION.

MW= MINERAL WOOL BATT

(B) CAULK INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL

(C) CAULK INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR OR ONE SURFACE OF SOLID (NON-CONCRETE BLOCK) WALL.

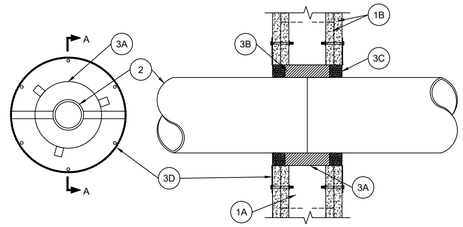
3M COMPANY- TYPE CP 25WB+ OR FB-3000 WT

(NOTE - W RATING APPLIES ONLY WHEN FB-3000 WT IS USED ON TOP SURFACE OR FLOOR AND WHEN IT LAPS ONTO CONCRETE FOR SLEEVED OPENING.)

* BEARING THE UL CLASSIFICATION MARKING.

SYSTEM NO. W-L-1005

F Ratings - 1 T
Rating - 0



SECTION A-A

1. WALL ASSEMBLY - THE FIRE-RATED GYPSUM/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

   A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC.

   B. GYPSUM BOARD* - TWO LAYERS OF NOM 5/8 IN. THICK GYPSUM WALLBOARD, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX DIAM OF OPENING IS 6 IN.

2. THROUGH PENETRATES - ONE METALLIC PIPE OR TUBING TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:

   A. STEEL PIPE - NOM 4 IN. DIAM (OR SMALLER) SCHEDULE 5 (OR HEAVIER) STEEL PIPE. A NOM ANNULAR SPACE OF 3/4 IN. IS REQUIRED WITHIN THE FIRESTOP SYSTEM.

   B. CONDUIT - NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR STEEL CONDUIT. A NOM ANNULAR SPACE OF 3/4 IN IS REQUIRED WITHIN THE FIRESTOP.

3. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

   A. METALLIC SLEEVE - NOM 6" IN DIAM (OR SMALLER) STEEL SLEEVE WITH NOM 3/4 IN BY 3/4 IN LONG TABS TO RETAIN PUTTY (ITEM C) IN POSITION. SLEEVE FABRICATED FROM 0.016 IN THICK GALV SHEET STEEL AVAILABLE FROM PUTTY MANUFACTURER. LENGTH OF STEEL SLEEVE TO BE EQUAL TO THICKNESS OF WALL. SLEEVE INSTALLED BY COILING THE SHEET STEEL TO A DIAM SMALLER THAN THE THROUGH OPENING, INSERTING THE COIL THROUGH THE OPENING AND RELEASING THE COIL TO LET IT UNCOIL AGAINST THE CIRCULAR CUTOUTS IN THE WALL ASSEMBLY. AS AN ALTERNATE, THE STEEL SLEEVE MAYBE FIELD FABRICATED FROM 0.016 IN THICK GALV SHEET STEEL IN ACCORDANCE WITH INSTRUCTION SHEET SUPPLIED BY PUTTY MANUFACTURER.

   B. PACKING MATERIAL - MIN 3 IN. THICKNESS OF MIN 6 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FROM. PACKING MATERIAL TO BE RECESSED FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

   C. FILL, VOID OR CAVITY MATERIAL* - PUTTY-MIN 1 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, ON BOTH SURFACES OF WALL. ADDITIONAL MATERIAL TO BE INSTALLED SUCH THAT A MIN 1/8 IN. CROWN IS FORMED AROUND PENETRATING ITEM.

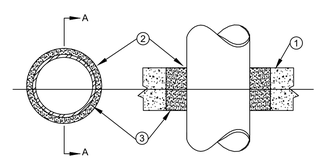
      EGS NELSON FIRESTOP - TYPE FSP PUTTY

   D. TRIM RING - NOM 8 IN. DIAM BY 0.016 IN (NO 30 GAUGE) THICK GALV SHEET RING AVAILABLE FROM PUTTY MANUFACTURER. RING SUPPLIED IN TWO SECTIONS AND POSITIONED TOGETHER WITH A 1/2 IN OVERLAP. RING SECURED TO SURFACE OF WALL ASSEMBLY BY SIX 5/16 IN DIAM BY 2 IN ;ONG STEEL WALL ANCHORS, EQUALLY SPACED.

      * BEARING THE U L CLASSIFICATION MARK

SYSTEM NO. C-AJ-1041

NOVEMBER 05, 2010
F RATINGS-2 HR
T RATING-0 HR.



SECTION A-A

1. FLOOR OR WALL ASSEMBLY - Min 3-1/4 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any ul classified concrete blocks*. Max diam of opening is 6 in.

SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2. THROUGH-PENETRANTS- One metallic pipe, conduit or tubing to be centered within the firestop system. A nom annular space of 3/4 in. is required within the firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduit or tubing may be used:

   A. STEEL PIPE - Nom 4 in. diam (or smaller) schedule 5 (or heavier) steel pipe.

   B. CONDUIT-Nom 4 in. diam (or smaller) steel electrical tubing or steel conduit.

3. FILL, VOID OR CAVITY MATERIALS* - Putty - Min 3-1/4 in. thickness of fill material applied within the annulus, flush with both surfaces of floor or wall.

EGS NELSON FIRESTOP - TYPE FSP PUTTY

* BEARING THE UL CLASSIFICATION MARK

1 FIRE RATED PENETRATION DETAILS
NO SCALE

DocuSigned by:
Mr. Reginald D. Adams
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NORTH CAROLINA PROFESSIONAL SEAL 19658 ENGINEER REGINALD D. ADAMS

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scale as noted

SCO#22-25338-02A
NCSU BROOKS HALL RENOVATIONS - PHASE I
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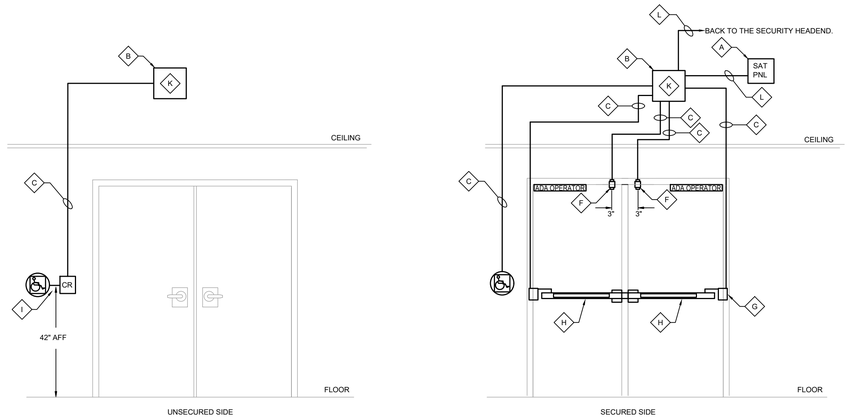
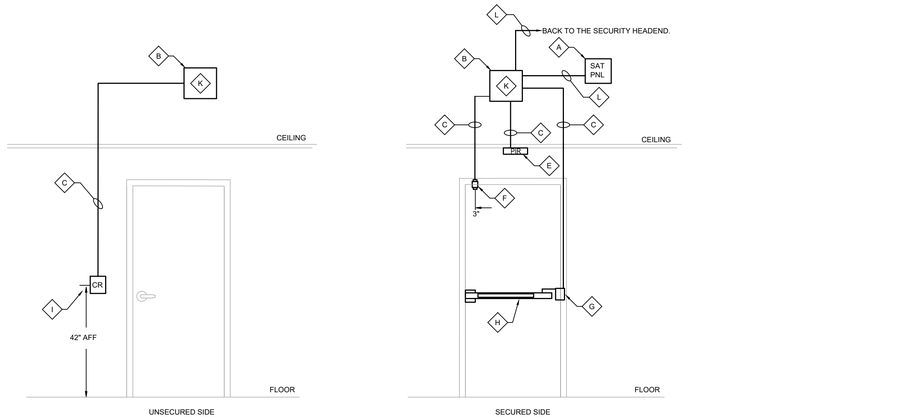
RALEIGH, NC 27695

ELECTRICALDETAILS

E3.02



1 SECURITY DOOR WITH (1) CARD READER & ADA OPERATOR
No Scale:



2 SECURITY DOOR WITH (1) CARD READER/KEYPAD DETAIL
No Scale:

SYMBOL

SSI A

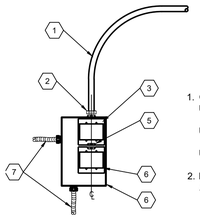
ABOVE CEILING

SSI A

BELOW CEILING

KEYNOTES:

1. 1 1/2" EMT CONDUIT WITH PULL STRING TO TELECOM WIREWAY.
2. 1 1/2" EMT COMPRESSION TYPE CONNECTOR. ATTACH IN CENTER OF WIREMOLD BOX AS SHOWN.
3. WIREMOLD V-2444-2 TWO-GANG SURFACE MOUNTED OUTLET BOX. PROVIDE PULLSTRING FROM OUTLET TO WIREWAY. SECURE AT BOTH ENDS.
4. WIREMOLD V-2444-2 TWO-GANG SURFACE MOUNTED OUTLET BOX.
5. 1" CONDUIT CHASE NIPPLE AND LOCKNUT.
6. 12" X12" X 6" JUNCTION BOX WITH SCREW COVER.
7. FLEX CONDUIT TO SECURITY SYSTEM ENDPOINT DEVICES (BY OTHERS).



NOTES:

1. CABLING SUPPORTED
   UWS 1.2 BUILDINGS - 4 IP CONNECTIONS
   UWS 2.0 BUILDINGS - 3 IP CONNECTIONS
   UWS 3.0 BUILDINGS - 1 TO 3 IP CONNECTIONS
2. INSTALL BOX BETWEEN 9FT AND 14FT ABOVE FINISHED FLOOR (AFF) UNLESS APPROVED BY NCSU COMTECH OR NCSU SAT OFFICE.

3 SECURITY INTERFACE OUTLET - SS1 A
No Scale:

SYMBOL

SSI B

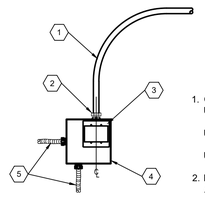
ABOVE CEILING

SSI B

BELOW CEILING

KEYNOTES:

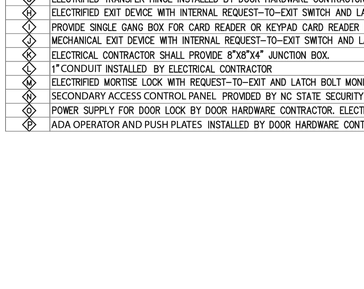
1. 1" EMT CONDUIT WITH PULL STRING TO TELECOM WIREWAY.
2. 1" EMT COMPRESSION TYPE CONNECTOR. ATTACH IN CENTER OF WIREMOLD BOX AS SHOWN.
3. WIREMOLD V-2444-2 TWO-GANG SURFACE MOUNTED OUTLET BOX. PROVIDE PULLSTRING FROM OUTLET TO WIREWAY. SECURE AT BOTH ENDS.
4. 8" X 8" X 6" JUNCTION BOX WITH SCREW COVER.
5. FLEX CONDUIT TO SECURITY SYSTEM ENDPOINT DEVICES (BY OTHERS).



NOTES:

1. CABLING SUPPORTED
   UWS 1.2 BUILDINGS - 4 IP CONNECTIONS
   UWS 2.0 BUILDINGS - 3 IP CONNECTIONS
   UWS 3.0 BUILDINGS - 1 TO 3 IP CONNECTIONS
2. INSTALL BOX BETWEEN 9FT AND 14FT ABOVE FINISHED FLOOR (AFF) UNLESS APPROVED BY NCSU COMTECH OR NCSU SAT OFFICE.

4 SECURITY INTERFACE OUTLET - SS1 B
No Scale:



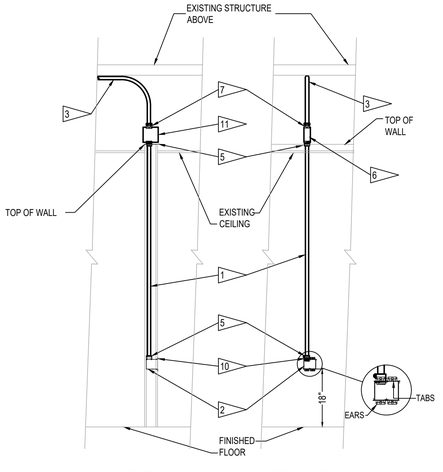
KEYNOTES:

1. RACO #258 J-BOX W/ RACO #832 BLANK COVER PLATE.
2. 1" EMT CONDUIT TO NEW WIREWAY LOCATED IN HALLWAY CEILING SPACE. ROUTE ABOVE EXISTING ACOUSTIC CEILING TILE OR TIGHT TO FIXED TILE CEILING AND SUPPORT AS REQUIRED.
3. RACO #2084 ONE HOLE EMT STRAP AS REQUIRED (TYPICAL).
4. WIREMOLD V-2444-2 TWO GANG SURFACE MOUNTED OUTLET BOX. PROVIDE PULL STRING FROM OUTLET TO WIREWAY. SECURE AT BOTH ENDS.
5. 1" EMT CONDUIT SURFACE MOUNTED. RUN CONDUIT TIGHT TO WALL WITH BOX OFFSETS AT JUNCTION BOXES AND OUTLET BOX.
6. RACO #2904 1" EMT COMPRESSION TYPE CONNECTOR.

GENERAL NOTES:

1. CEILING HEIGHT MAY VARY FROM ROOM TO ROOM.
2. USE COMPRESSION COUPLINGS AND CONNECTORS FOR EMT CONDUIT.
3. ALL BOXES TO BE MOUNTED SUCH THAT SCREW HOLES FOR INSTALL KITS ARE AT TOP AND BOTTOM OF BOX IN ORDER FOR INSTALL KITS TO BE MOUNTED VERTICALLY. THIS MAY REQUIRE DRILLING A NEW HOLE IN OUTLET BOX FOR CONDUIT PENETRATION.
4. NO MORE THAN TWO (2) 90 DEGREE TURNS SHALL EXIST BETWEEN BOXES OR BETWEEN JUNCTION BOXES AND END OF CONDUIT. NO "LB" TYPE JOINTS WILL BE ALLOWED.
5. FIRESTOP FIRE-RATED CONSTRUCTION IN ACCORDANCE WITH THE UL-LISTED THROUGH PENETRATION FIRESTOP DETAILS SHOWN ON THE DRAWINGS. FIRESTOP NON-FIRE-RATED CONSTRUCTION IN ACCORDANCE WITH THE N.C. STATE BUILDING CODE. SEE UL PENETRATION DETAILS, FIRESTOPPING DETAIL SHEET.
6. PROVIDE PULL STRINGS BETWEEN PULLING POINTS. SECURE AT BOTH ENDS.

5 SURFACE MOUNTED DATA OUTLET
No Scale:



KEYED NOTES:

1. 1" FLEX CONDUIT INSIDE GYPSUM BOARD AND METAL STUD WALLS.
2. STEEL CITY #CY-3/4", 2ea. 3-1/2" DEEP OUTLET BOX W/ 3/4" K.O. (TWO BOXES TO BE GANGED TOGETHER, AND 3/4" K.O. TO BE DRILLED OUT TO A 1" K.O. IN BACK HOLE ON TOP OF BOX). BOX MUST BE MOUNTED LEVEL, AS THE FACEPLATE MOUNTING CANNOT BE ADJUSTED TO COMPENSATE. PROVIDE PULL STRING FROM OUTLET TO WIREWAY. SECURE AT BOTH ENDS.
3. ALLIED 1" EMT CONDUIT TO NEW WIREWAY LOCATED IN HALLWAY CEILING SPACE, ROUTE ABOVE EXISTING ACOUSTIC CEILING TILE OR TIGHT TO FIXED TILE CEILING AND SUPPORT AS REQUIRED.
4. RACO #2084 ONE HOLE EMT STRAP AS REQUIRED (TYPICAL).
5. MADISON ML-42-3 1" STRAIGHT SQUEEZE TYPE BOX CONNECTOR FOR 1" FLEX CONDUIT.
6. 1" RIGID CONDUIT COUPLING (2" LONG).
7. RACO #2904 1" EMT COMPRESSION TYPE CONNECTOR.
8. CUT HOLE IN GYPSUM BOARD ABOVE CEILING AS REQUIRED FOR CONDUIT/FLEX INSTALLATION. FIRESTOP FIRE-RATED CONSTRUCTION IN ACCORDANCE WITH THE UL-LISTED THROUGH PENETRATION FIRESTOP DETAILS SHOWN ON THE DRAWINGS. FIRESTOP NON-FIRE-RATED CONSTRUCTION IN ACCORDANCE WITH THE N.C. STATE BUILDING CODE. SEE UL PENETRATION DETAILS, FIRESTOPPING DETAIL SHEET.
9. FLEX CONDUIT MUST BE ATTACHED TO WALL WITH CONDUIT STRAP BEFORE FLEX ENTERS THE WALL.
10. THE FRONT SURFACE OF THE BOX IS TO SET BACK NO MORE THAN 1/8" FROM THE SURFACE OF THE WALL. THE GAP IN THE WALL AROUND THE BOX IS NOT TO EXCEED 1/8".
11. RACO #258 J-BOX W/ RACO #832 BLANK COVER PLATE. ANCHOR J-BOX SECURELY TO TOP OF WALL.

GENERAL NOTES:

1. CEILING HEIGHT MAY VARY FROM ROOM TO ROOM.
2. USE COMPRESSION COUPLINGS AND CONNECTORS FOR EMT CONDUIT.
3. ALL BOXES TO BE MOUNTED SUCH THAT SCREW HOLES FOR INSTALL KITS ARE AT TOP AND BOTTOM OF BOX IN ORDER FOR INSTALL KITS TO BE MOUNTED VERTICALLY. THIS MAY REQUIRE DRILLING A NEW HOLE IN OUTLET BOX FOR CONDUIT PENETRATION.
4. NO MORE THAN TWO (2) 90 DEGREE TURNS SHALL EXIST BETWEEN BOXES OR BETWEEN JUNCTION BOXES AND END OF CONDUIT. NO "LB" TYPE JOINTS WILL BE ALLOWED.
5. FOR FLUSH MOUNTED OUTLETS - ADJUST "EARS" OF BOTH BOXES SO THAT BOX WILL SET BACK FROM SURFACE OF WALL. WHEN CUTTING GYP. BOARD FOR BOX, CUT OUT FOR BOX AND NOTCH FOR TABS SO THAT BOX WILL SET BACK FROM SURFACE OF WALL. MAINTAIN NEC 370-21 EQUIREMENT.
6. PROVIDE PULL STRINGS BETWEEN PULLING POINTS. SECURE AT BOTH ENDS.

6 FLUSH MOUNTED DATA OUTLET
No Scale:

SECURITY LEGEND	
MARK	DESCRIPTION
A	PRIMARY ACCESS CONTROL PANEL INSTALLED AND PROVIDED BY NC STATE SECURTIY CONTRACTOR
B	SEE SSI DETAIL ON LISTED ON THIS DRAWING
C	1/2" CONDUIT INSTALLED BY ELECTRICAL CONTRACTOR
D	LOCAL SOUNDER PROVIDED AND INSTALLED BY NC STATE SECURITY CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE INCLUDING SINGLE GANG BOX.
E	PIR REQUEST TO EXIT PROVIDED AND INSTALLED BY NC STATE SECURITY CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE SINGLE GANG BOX THAT IS CENTERED ON DOOR
F	DOOR POSITION SWITCH PROVIDED AND INSTALLED BY NC STATE SECURITY CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT PREP AND FRAME PREP BY DOOR HARDWARE CONTRACTOR.
G	ELECTRIFIED TRANSFER HINGE INSTALLED BY DOOR HARDWARE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE.
H	ELECTRIFIED EXIT DEVICE WITH INTERNAL REQUEST-TO-EXIT SWITCH AND LATCH BOLT MONITOR INSTALLED BY DOOR HARDWARE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE.
I	PROVIDE SINGLE GANG BOX FOR CARD READER OR KEYPAD CARD READER PROVIDED BY NC STATE SECURITY CONTRACTOR. MOUNT SINGLE GANG BOX 6"-10" FROM DOOR FRAME.
J	MECHANICAL EXIT DEVICE WITH INTERNAL REQUEST-TO-EXIT SWITCH AND LATCH BOLT MONITOR INSTALLED BY DOOR HARDWARE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE.
K	ELECTRICAL CONTRACTOR SHALL PROVIDE 8"X8"X4" JUNCTION BOX.
L	1"CONDUIT INSTALLED BY ELECTRICAL CONTRACTOR
M	ELECTRIFIED MORTISE LOCK WITH REQUEST-TO-EXIT AND LATCH BOLT MONITOR INSTALLED BY DOOR HARDWARE CONTRACTOR.
N	SECONDARY ACCESS CONTROL PANEL PROVIDED BY NC STATE SECURITY CONTRACTOR.
O	POWER SUPPLY FOR DOOR LOCK BY DOOR HARDWARE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE DEDICATED 120VAC CIRCUIT AND CONNECTIVITY.
P	ADA OPERATOR AND PUSH PLATES INSTALLED BY DOOR HARDWARE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE.

DocuSigned by:
Mr. Reginald D. Adams
61D7600D8F4A4...

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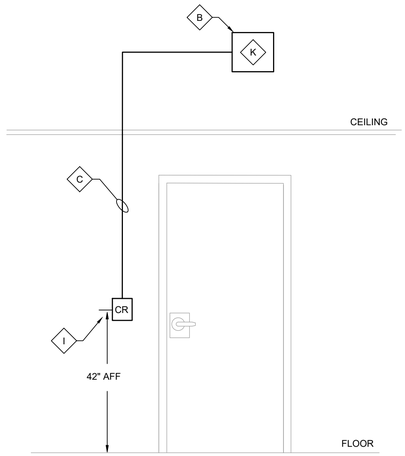
BD

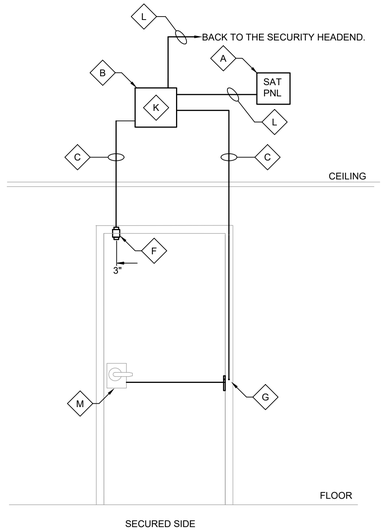
10 24 24
SDR
scale as noted

SCI#22-25338-02A
NCSU BROOKS HALL RENOVATIONS - PHASE I
50 PULLEN ROAD
RALEIGH, NC 27695

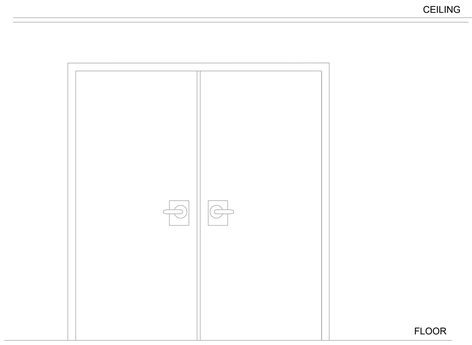
ELECTRICALDETAILS

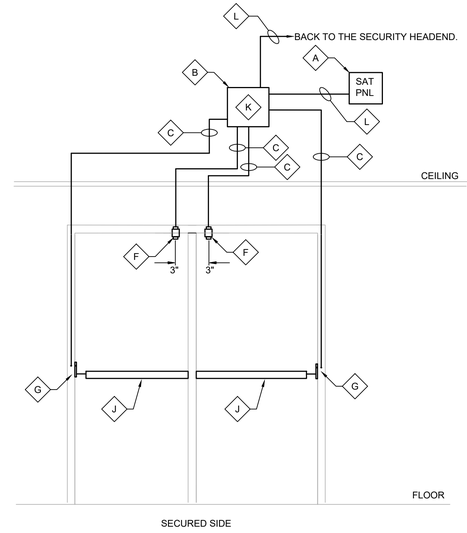
E3.03





1 SECURITY DOOR WITH (1) CARD READER/KEYPAD DEATAIL
No Scale:





2 SECURITY MONITORED LEAF DETAIL
No Scale:

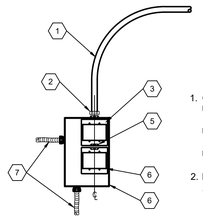
SYMBOL

SSI A
ABOVE CEILING

SSI A
BELOW CEILING

KEYNOTES:

1. 1 1/2" EMT CONDUIT WITH PULL STRING TO TELECOM WIREWAY.
2. 1 1/2" EMT COMPRESSION TYPE CONNECTOR. ATTACH IN CENTER OF WIREMOLD BOX AS SHOWN.
3. WIREMOLD V-2444-2 TWO-GANG SURFACE MOUNTED OUTLET BOX. PROVIDE PULLSTRING FROM OUTLET TO WIREWAY. SECURE AT BOTH ENDS.
4. WIREMOLD V-2444-2 TWO-GANG SURFACE MOUNTED OUTLET BOX.
5. 1" CONDUIT CHASE NIPPLE AND LOCKNUT.
6. 12" X12" X 6" JUNCTION BOX WITH SCREW COVER.
7. FLEX CONDUIT TO SECURITY SYSTEM ENDPOINT DEVICES (BY OTHERS).



NOTES:

1. CABLING SUPPORTED
   UWS 1.2 BUILDINGS - 4 IP CONNECTIONS
   UWS 2.0 BUILDINGS - 3 IP CONNECTIONS
   UWS 3.0 BUILDINGS - 1 TO 3 IP CONNECTIONS
2. INSTALL BOX BETWEEN 9FT AND 14FT ABOVE FINISHED FLOOR (AFF) UNLESS APPROVED BY NCSU COMTECH OR NCSU SAT OFFICE.

3 SECURITY INTERFACE OUTLET - SS1 A
No Scale:

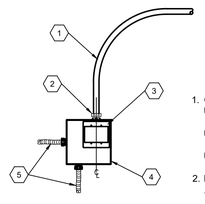
SYMBOL

SSI B
ABOVE CEILING

SSI B
BELOW CEILING

KEYNOTES:

1. 1" EMT CONDUIT WITH PULL STRING TO TELECOM WIREWAY.
2. 1" EMT COMPRESSION TYPE CONNECTOR. ATTACH IN CENTER OF WIREMOLD BOX AS SHOWN.
3. WIREMOLD V-2444-2 TWO-GANG SURFACE MOUNTED OUTLET BOX. PROVIDE PULLSTRING FROM OUTLET TO WIREWAY. SECURE AT BOTH ENDS.
4. 8" X 8" X 6" JUNCTION BOX WITH SCREW COVER.
5. FLEX CONDUIT TO SECURITY SYSTEM ENDPOINT DEVICES (BY OTHERS).



NOTES:

1. CABLING SUPPORTED
   UWS 1.2 BUILDINGS - 4 IP CONNECTIONS
   UWS 2.0 BUILDINGS - 3 IP CONNECTIONS
   UWS 3.0 BUILDINGS - 1 TO 3 IP CONNECTIONS
2. INSTALL BOX BETWEEN 9FT AND 14FT ABOVE FINISHED FLOOR (AFF) UNLESS APPROVED BY NCSU COMTECH OR NCSU SAT OFFICE.

4 SECURITY INTERFACE OUTLET - SS1 B
No Scale:

5 ACCESS CONTROL HEAD END MOUNTING DETAIL
No Scale:

SECURITY LEGEND	
MARK	DESCRIPTION
A	PRIMARY ACCESS CONTROL PANEL INSTALLED AND PROVIDED BY NC STATE SECURTIY CONTRACTOR
B	SEE SSI DETAIL ON LISTED ON THIS DRAWING
C	1/2" CONDUIT INSTALLED BY ELECTRICAL CONTRACTOR
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P	ADA OPERATOR AND PUSH PLATES INSTALLED BY DOOR HARDWARE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE INFRASTRUCTURE.

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Consultants
Sigma

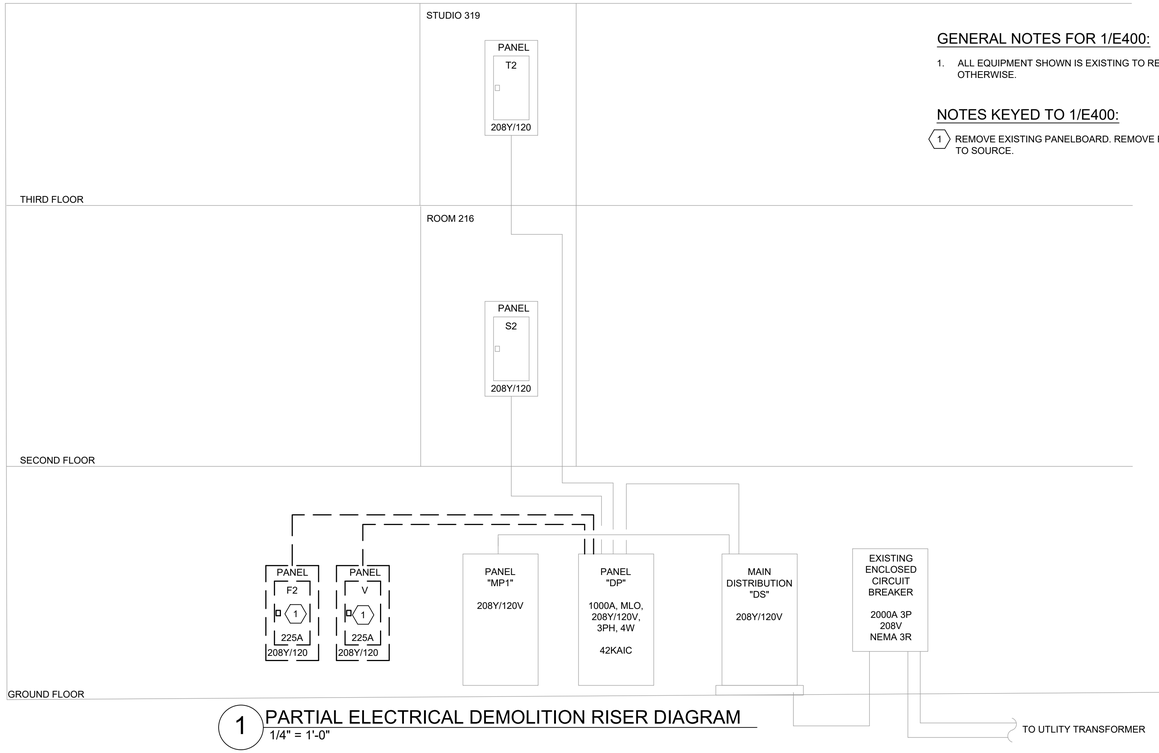
BD

10 24 24
SDR
scale as noted

SCI#22-25338-02A
NCSU BROOKS HALL RENOVATIONS - PHASE I
50 PULLEN ROAD
RALEIGH, NC 27695

ELECTRICALDETAILS

E3.04



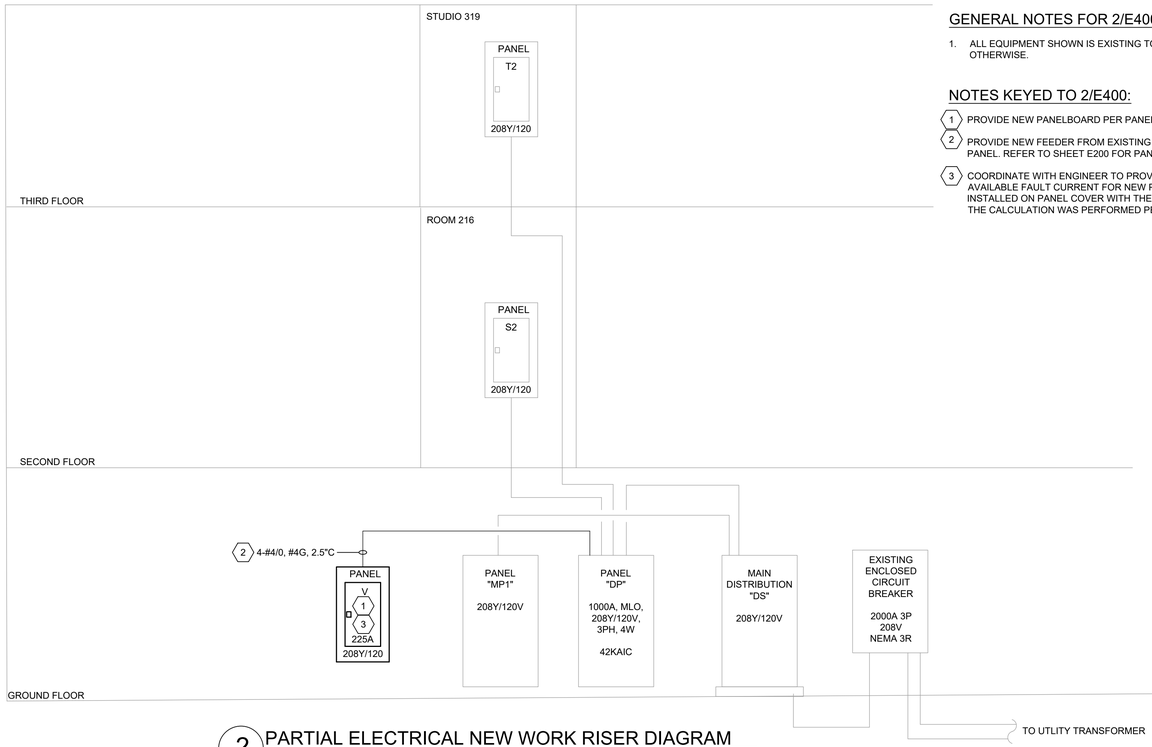
1 PARTIAL ELECTRICAL DEMOLITION RISER DIAGRAM
1/4" = 1'-0"

GENERAL NOTES FOR 1/E400:

1. ALL EQUIPMENT SHOWN IS EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

NOTES KEYED TO 1/E400:

1. REMOVE EXISTING PANELBOARD. REMOVE FEEDER AND CONDUIT BACK TO SOURCE.



2 PARTIAL ELECTRICAL NEW WORK RISER DIAGRAM
1/4" = 1'-0"

GENERAL NOTES FOR 2/E400:

1. ALL EQUIPMENT SHOWN IS EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

NOTES KEYED TO 2/E400:

1. PROVIDE NEW PANELBOARD PER PANEL SCHEDULE.
2. PROVIDE NEW FEEDER FROM EXISTING BREAKER TO NEW LOCATION PANEL. REFER TO SHEET E200 FOR PANEL LOCATION.
3. COORDINATE WITH ENGINEER TO PROVIDE CALCULATIONS FOR AVAILABLE FAULT CURRENT FOR NEW PANEL. LABEL SHALL BE INSTALLED ON PANEL COVER WITH THE CALCULATION AND THE DATE THE CALCULATION WAS PERFORMED PER NEC 408.6.

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SDR
scale as noted

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NCSU BROOKS HALL RENOVATIONS - PHASE I
50 POLLEN ROAD
RALEIGH, NC 27695

E4.00 ELECTRICAL RISERS

EXISTING PANEL "DP"

FED FROM PANEL DS

PANEL TYPE: NQOB **MCB or MLO:** MLO
BUS SIZE: 1000A **MOUNTING:** SURFACE
VOLTAGE: 208Y/120V **MINIMUM AIC:** 42,000

CKT	LOAD SERVED	TRIP	POLE	WIRE SIZE	GND SIZE	CONDUIT SIZE	KVA	KVA PER PHASE A	KVA PER PHASE B	KVA PER PHASE C	KVA	CONDUIT SIZE	GND SIZE	WIRE SIZE	POLE	TRIP	LOAD SERVED	CKT
1								0.00									SPACE	2
3	PANEL F2	225*	3						0.00								SPACE	4
5										0.00							SPACE	6
7								0.00										8
9	PANEL F3 & A	225	3						0.00						3	200	PANEL S4	10
11										0.00								12
13								0.00										14
15	PANEL S5	225	3						0.00						3	100	PANEL 1	16
17										0.00								18
19								0.00										20
21	PANEL V	100**	3						0.00						3	70	SPARE	22
23										0.00								24
25										0.00								26
27	AC UNIT- 0011 HACC001	100	3					0.00							3	30	AHU-5	28
29									0.00									30
31										0.00								32
33	PANEL T3	225	3					0.00							3	100	SPARE	34
35									0.00									36
37										0.00								38
39	PANEL S3	225	3					0.00							3	30	AIR COMP RM 120	40
41									0.00									42
43	SPACE									0.00								44
45	SPACE							0.00							3	200	PANELS S2 & T2	46
47	SPACE								0.00									48

TOTALS: 0.00 | 0.00 | 0.00

	CONNECTED LOAD (KVA)	DF	DEMAND LOAD (KVA)
EXISTING LOAD PER RECORD DOCUMENTS	345.00	100%	345.00
DEMOLITION	0.00	100%	0.00
MISC.	0.00	100%	0.00
FIRST 10K RECEPTS	0.00	100%	0.00
REMAINDER RECEPT	0.00	50%	0.00
LIGHTS	0.00	125%	0.00
HVAC	0.00	100%	0.00
TOTAL (KVA)	345.00		-0.17
TOTAL AMPS	958		0

L DENOTES LOCK-ON DEVICE

NOTES:
ALL CIRCUITS ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
* EXISTING BREAKER TO REMAIN. REMOVE EXISTING CIRCUIT.
** REMOVE EXISTING CIRCUIT FROM BREAKER AND RELABEL BREAKER AS SPARE.

MODIFIED PANEL "DP"

FED FROM PANEL DS

PANEL TYPE: NQOB **MCB or MLO:** MLO
BUS SIZE: 1000A **MOUNTING:** SURFACE
VOLTAGE: 208Y/120V **MINIMUM AIC:** 42,000

CKT	LOAD SERVED	TRIP	POLE	WIRE SIZE	GND SIZE	CONDUIT SIZE	KVA	KVA PER PHASE A	KVA PER PHASE B	KVA PER PHASE C	KVA	CONDUIT SIZE	GND SIZE	WIRE SIZE	POLE	TRIP	LOAD SERVED	CKT
1							19.32	19.32									SPACE	2
3	PANEL V	225*	3	REFER TO RISER DIAGRAM			17.68		17.68								SPACE	4
5							14.24			14.24							SPACE	6
7								0.00										8
9	PANEL F3 & A	225	3						0.00						3	200	PANEL S4	10
11										0.00								12
13								0.00										14
15	PANEL S5	225	3						0.00						3	100	PANEL 1	16
17										0.00								18
19								0.00										20
21	SPARE	100**	3						0.00						3	70	SPARE	22
23										0.00								24
25										0.00								26
27	AC UNIT- 0011 HACC001	100	3					0.00							3	30	AHU-5	28
29									0.00									30
31										0.00								32
33	PANEL T3	225	3					0.00							3	100	SPARE	34
35									0.00									36
37										0.00								38
39	PANEL S3	225	3					0.00							3	30	AIR COMP RM 120	40
41									0.00									42
43	SPACE									0.00								44
45	SPACE							0.00							3	200	PANELS S2 & T2	46
47	SPACE								0.00									48

TOTALS: 19.32 | 17.68 | 14.24

	CONNECTED LOAD (KVA)	DF	DEMAND LOAD (KVA)
EXISTING LOAD PER RECORD DOCUMENTS	325.00	100%	325.00
DEMOLITION	-45.00	100%	-45.00
MISC.	3.80	100%	3.80
FIRST 10K RECEPTS	10.00	100%	10.00
REMAINDER RECEPT	7.10	50%	3.55
LIGHTS	3.62	125%	4.53
HVAC	26.72	100%	26.72
TOTAL (KVA)	331.24		328.60
TOTAL AMPS	919		912

L DENOTES LOCK-ON DEVICE

NOTES:
ALL CIRCUITS ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
* RELABEL EXISTING BREAKER AS "PANEL V" IN PANEL DIRECTORY AND PROVIDE NEW FEEDER PER RISER DIAGRAM.
** RELABLE EXISTING BREAKER AS SPARE.

DEMOLITION PANEL "F2"

FED FROM SWITCHBOARD DS

PANEL TYPE: NQOD **MCB or MLO:** MLO
BUS SIZE: 225A **MOUNTING:** SURFACE
VOLTAGE: 208Y/120V **MINIMUM AIC:** 10,000

CKT		TRIP	POLE	WIRE SIZE	GND SIZE	CONDUIT SIZE	KVA	KVA PER PHASE A	KVA PER PHASE B	KVA PER PHASE C	KVA	CONDUIT SIZE	GND SIZE	WIRE SIZE	POLE	TRIP	LOAD SERVED	CKT
1	LIGHTS PAINT SHOP	20	1					2.00							1	20	LIGHTS METAL SHOP	2
3	LIGHTS PAINT SHOP	20	1						2.00						1	20	LIGHTS RM 118, 118B	4
5	LIGHTS STORAGE RM	20	1							2.00					1	20	LIGHTS METAL SHOP	6
7	LIGHTS RM 117	20	1					2.00							1	20	LIGHTS CHRIS'S OFFICE	8
9	SPARE	20	1						0.00						1	20	SPARE	10
11	LIGHTS JACK'S OFFICE	20	1							2.00					1	20	LIGHTS RM 117	12
13	LIGHTS METAL SHOP	20	1					1.60							1	20	EXHAUST WELDING SHOP	14
15	LIGHTS METAL SHOP	20	1						1.50						1	20	REC 117G	16
17	LIGHTS RM 120	20	1							1.00					1	20	SPARE	18
19	REC METAL SHOP	20	1					1.36							1	20	REC BREEZEWAY	20
21	REC SHOP & STORAGE	20	1						1.80						1	20	COMPRESSED AIR DRYER	22
23	LIGHTS WOOD SHOP	20	1							1.00					1	20	SPARE	24
25		20	1							1.20								26
27	DWH-2	20	2					2.40							3	20	EDH-1	28
29									2.40									30
31	REC METAL SHOP	20	1							1.44					1	20	REC 117 GYPSUM WALL	32
33	REC METAL SHOP	20	1					1.44							1	20	REC 118 AB GYP WALL	34
35	FCU-1	20	1						0.80						1	20	SPARE	36
37	VACU FORM	100	3							0.00								38
39								0.00							3	60	WELDERS	40
41									0.00									42

TOTALS: 10.80 | 8.50 | 8.64

	CONNECTED LOAD (KVA)	DF	DEMAND LOAD (KVA)
EXISTING LOAD PER RECORD DOCUMENTS	30.00	100%	30.00
DEMOLITION	0.00	100%	0.00
MISC.	0.00	100%	0.00
FIRST 10K RECEPTS	0.00	100%	0.00
REMAINDER RECEPT	0.00	50%	0.00
LIGHTS	0.00	125%	0.00
HVAC	0.00	100%	0.00
TOTAL (KVA)	30.00		-0.17
TOTAL AMPS	83		0

L DENOTES LOCK-ON DEVICE

NOTES:
REMOVE ALL CIRCUIT SHOWN UNLESS NOTED OTHERWISE.

EXISTING PANEL "EM"

LOCATED IN RM 100, FED FROM SWITCHBOARD DS

PANEL TYPE: NQOD **MCB or MLO:** MLO
BUS SIZE: 100A **MOUNTING:** SURFACE
VOLTAGE: 208Y/120V **MINIMUM AIC:** 42,000

CKT	LOAD SERVED	TRIP	POLE	WIRE SIZE	GND SIZE	CONDUIT SIZE	KVA	KVA PER PHASE A	KVA PER PHASE B	KVA PER PHASE C	KVA	CONDUIT SIZE	GND SIZE	WIRE SIZE	POLE	TRIP	LOAD SERVED	CKT
1	LTS-SW STAIR,EXIT 2ND S. END	20	1					0.00							1	20	LTS-SW EXT STAIR 3RD	2
3	HALL LTS 2ND S. END	20	1						0.00						1	20	LTS SE EXT STAIR 3RD	4
5	EXIT LIGHTS, RM 203	20	1							0.00					1	20	EXIT LTS 3RD S. HALL, 305	6
7	BREEZEWAY LIGHTS	20	1					0.00							1	20	EXIT LT 1ST S. END/JANITOR	8
9	SE STAIRCASE, 2ND FLR	20	1						0.00						1	20	LTS OVER VENDING MACH	10
11	EXIT LTS, FIRST FLR	20	1							0.00					1	20	SPARE	12
13	HALL LTS , 3RD S. END	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								0.00							1	20	SPACE	20
21									0.50		0.50				1	20	SPACE	22
23										0.00					1	20	SPACE	24
25										0.00					1	20	SPACE	26
27								0.00							1	20	SPACE	28
29									0.00						1	20	SPACE	30
31																		32
33																		34
35																		36
37																		38
39																		40
41																		42
43																		44
45																		46
47																		48
49																		50
51																		52
53																		54

TOTALS: 0.00 | 0.50 | 0.00

	CONNECTED LOAD (KVA)	DF	DEMAND LOAD (KVA)
EXISTING LOAD PER RECORD DOCUMENTS	17.00	100%	17.00
DEMOLITION	0.00	100%	0.00
MISC.	0.00	100%	0.00
FIRST 10K RECEPTS	0.00	100%	0.00
REMAINDER RECEPT	0.00	50%	0.00
LIGHTS	0.00	125%	0.00
HVAC	0.00	100%	0.00
TOTAL (KVA)	17.00		17.00
TOTAL AMPS	47		47

L DENOTES LOCK-ON DEVICE

NOTES:
ALL CIRCUITS ARE EXISTING TO REMAIN. SCHEDULE IS SHOWN FOR REFERENCE ONLY.

EXISTING PANEL "S2"

LOCATED IN OFFICE 216

PANEL TYPE: NQOD **MCB or MLO:** MLO
BUS SIZE: 225A **MOUNTING:** SURFACE
VOLTAGE: 208Y/120V **MINIMUM AIC:** 10,000

CKT	LOAD SERVED	TRIP	POLE	WIRE SIZE	GND SIZE	CONDUIT SIZE	KVA	KVA PER PHASE A	KVA PER PHASE B	KVA PER PHASE C	KVA	CONDUIT SIZE	GND SIZE	WIRE SIZE	POLE	TRIP	LOAD SERVED	CKT
1	LIGHTS 216A	20	1					0.00							1	20	LIGHTS RM 214	2
3	FRONT FLOOD LIGHTS	20	1						0.00						1	20	LIGHTS RM 212	4
5	REC RM 214	20	1							0.00					1	20	LIGHTS & REC RM 213	6
7	REC RM 214	20	1					0.00							1	20	LIGHTS RM 212	8
9	LIGHTS RM 215	20	1						0.00						1	20	LIGHTS RM 211 & 212	10
11	LIGHTS 215	20	1							0.00					1	20	LIGHTS RM 212	12
13	LTS BRZWAY/RESTRM 211	20	1					0.00							1	20	FAN COIL RM 214 & 216	14
15	LIGHTS RM 216	20	1						0.00						1	20	LIGHTS IN BREEZEWAY	16
17	LIGHTS BREEZEWAY	20	1							0.00					1	20	LIGHTS RM 216	18
19	REC 214,215,216,216C	20	1					0.00							1	20	REC IN BREEZEWAY	20
21	REC RM 215,216,216A	20	1						0.00						1	20	REC RM 212,212C,213	22
23	FAN COIL RM 212	20	1							0.00					1	20	REC RM 212,212B,213	24
25	LIGHTS RM 212C & C	20	1					0.00							1	20	SPARE	26
27	SPARE	20	1						0.00						1	20	SPARE	28
29	SPARE	20	1							0.00					1	20	PMRM 216	30
31	PMRM 216	20	1					0.00							1	20	PMRM 216	32
33	REC RM 216A	20	1						0.00						1	20	RECEPT. 216 CHASE WALL	34
35	PMRM 216	20	1							0.00					1	20	POWER POLE 216	36
37	PMRM 316	20	1					0.00							1	20	POWER POLE 216	38
39	PMRM 216B	20	1						0.00						1	20	POWER POLE 216	40
41	SPARE	20	1							0.00					1	20	POWER POLE 216	42

TOTALS: 0.00 | 0.00 | 0.00

	CONNECTED LOAD (KVA)	DF	DEMAND LOAD (KVA)
EXISTING LOAD PER RECORD DOCUMENTS	65.00	100%	65.00
DEMOLITION	0.00	100%	0.00
MISC.	0.00	100%	0.00
FIRST 10K RECEPTS	0.00	100%	0.00
REMAINDER RECEPT	0.00	50%	0.00
LIGHTS	0.00	125%	0.00
HVAC	0.00	100%	0.00
TOTAL (KVA)	65.00		65.00
TOTAL AMPS	180		180

L DENOTES LOCK-ON DEVICE

NOTES:
ALL CIRCUITS ARE EXISTING TO REMAIN. SCHEDULE IS SHOWN FOR REFERENCE ONLY.

EXISTING PANEL "T2"

LOCATED IN LAB 319

PANEL TYPE: NQOD **MCB or MLO:** MLO
BUS SIZE: 225A **MOUNTING:** SURFACE
VOLTAGE: 208Y/120V **MINIMUM AIC:** 10,000

CKT	LOAD SERVED	TRIP	POLE	WIRE SIZE	GND SIZE	CONDUIT SIZE	KVA	KVA PER PHASE A	KVA PER PHASE B	KVA PER PHASE C	KVA	CONDUIT SIZE	GND SIZE	WIRE SIZE	POLE	TRIP	LOAD SERVED	CKT
1	LIGHTS RM 318	20	1					0.00							1	20	REC 319ALARM 319	2
3	LIGHTS RM 318	20	1						0.00						1	20	LIGHTS RM 316	4
5	LIGHTS RM 318 & 319C	20	1							0.00					1	20	LIGHTS 317 & REC 317	6
7	LIGHTS RM 316	20	1					0.00							1	20	LIGHTS RM 319	8
9	LIGHTS RM 316	20	1						0.00						1	20	LIGHTS RM 319	10
11	LIGHTS RM 318	20	1							0.00					1	20	LIGHTS RM 316	12
13	LTS BREEZEWAY 3RD FLR	20	1					0.00							1	20	LTS BRZWAY 3RD FLR	14
15	LTS BREEZEWAY 3RD FLR	20	1						0.00						1	20	REC RM 316, 317, 318	16
17	REC RM 319 & 319C	20	1							0.00					1	20	REC-BRZWAY 3RD FLR	18
19	REC RM 318	20	1					0.00							1	20	REC-316,316B,316C,317	20
21	FAN COIL RM 319	20	1						0.00						1	20	LIGHTS RM 316B & 316C	22
23	FAN COIL RM 316	20	1							0.00					1	20	REC RM 318	24
25	SPARE	30	3					0.00									SPACE	26
27									0.00								SPACE	28
29										0.00					1	20	RECEPT. - 319 CHASE WALL	30
31	PMRM 319	20	1					0.00							1	20	PMRM 319	32
33	QUAD REC RM 319B	20	1						0.00						1	20	PMRM 319	34
35	PMRM 319	20	1							0.00					1	20	POWER POLE 319	36
37	PMRM 319	20	1					0.00							1	20	POWER POLE 319	38
39	QUAD REC RM 319C	20	1						0.00						1	20	POWER POLE 319	40
41	SPACE									0.00					1	20	POWER POLE 319	42

TOTALS: 0.00 | 0.00 | 0.00

	CONNECTED LOAD (KVA)	DF	DEMAND LOAD (KVA)
EXISTING LOAD PER RECORD DOCUMENTS	60.00	100%	60.00
DEMOLITION	0.00	100%	0.00
MISC.	0.00	100%	0.00
FIRST 10K RECEPTS	0.00	100%	0.00
REMAINDER RECEPT	0.00	50%	0.00
LIGHTS	0.00	125%	0.00
HVAC	0.00	100%	0.00
TOTAL (KVA)	60.00		60.00
TOTAL AMPS	167		167

L DENOTES LOCK-ON DEVICE

NOTES:
ALL CIRCUITS ARE EXISTING TO REMAIN. SCHEDULE IS SHOWN FOR REFERENCE ONLY.

DocuSigned by:
Mr. Reginald D. Adams
61D760008F A2424...

NORTH CAROLINA PROFESSIONAL SEAL 19658 ENGINEER REGINALD D. ADAMS
10/24/2024

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scale as noted

SCU#22-25338-02A
NCSU BROOKS HALL RENOVATIONS - PHASE I
50 PULLEN ROAD
RALEIGH NC 27695

E5.00 ELECTRICAL SCHEDULES

EXISTING PANEL "T2"

LOCATED IN LAB 319

PANEL TYPE: NQOD | MCB or MLO: MLO
BUS SIZE: 225A | MOUNTING: SURFACE
VOLTAGE: 208Y/120V | MINIMUM AIC: 10,000

CKT	LOAD SERVED	TRIP	POLE	WIRE SIZE	GND SIZE	CONDUIT SIZE	KVA	KVA PER PHASE A	B	C	KVA	CONDUIT SIZE	GND SIZE	WIRE SIZE	POLE	TRIP	LOAD SERVED	CKT
1	LIGHTS RM 318	20	1					0.00							1	20	REC 319/ALARM 319	2
3	LIGHTS RM 318	20	1						0.00						1	20	LIGHTS RM 316	4
5	LIGHTS RM 318 & 319C	20	1							0.00					1	20	LIGHTS 317 & REC 317	6
7	LIGHTS RM 316	20	1					0.00							1	20	LIGHTS RM 319	8
9	LIGHTS RM 316	20	1						0.00						1	20	LIGHTS RM 319	10
11	LIGHTS RM 318	20	1							0.00					1	20	LIGHTS RM 316	12
13	LTS BREEZEWAY 3RD FLR	20	1					0.00							1	20	LTS BRZWAY 3RD FLR	14
15	LTS BREEZEWAY 3RD FLR	20	1						0.00						1	20	REC RM 316, 317, 318	16
17	REC RM 319 & 319C	20	1							0.00					1	20	REC-BRZWAY 3RD FLR	18
19	REC RM 318	20	1					0.00							1	20	REC-316,316B,316C,317	20
21	FAN COIL RM 319	20	1						0.00						1	20	LIGHTS RM 316B & 316C	22
23	FAN COIL RM 316	20	1							0.00					1	20	REC RM 318	24
25								0.00									SPACE	26
27	SPACE	30	3						0.00								SPACE	28
29										0.00					1	20	RECEPT. - 319 CHASE WALL	30
31	PMRM 319	20	1					0.00							1	20	PMRM 319	32
33	QUAD REC RM 319B	20	1						0.00						1	20	PMRM 319	34
35	PMRM 319	20	1							0.00					1	20	POWER POLE 319	36
37	PMRM 319	20	1					0.00							1	20	POWER POLE 319	38
39	QUAD REC RM 319C	20	1						0.00						1	20	POWER POLE 319	40
41	SPACE									0.00					1	20	POWER POLE 319	42

TOTALS: 0.00 | 0.00 | 0.00

	CONNECTED LOAD (KVA)	DF	DEMAND LOAD (KVA)
EXISTING LOAD PER RECORD DOCUMENTS	60.00	100%	60.00
DEMOLITION	0.00	100%	0.00
MISC.	0.00	100%	0.00
FIRST 10K RECEPTS	0.00	100%	0.00
REMAINDER RECEPT	0.00	50%	0.00
LIGHTS	0.00	125%	0.00
HVAC	0.00	100%	0.00
TOTAL (KVA)	60.00		60.00
TOTAL AMPS	167		167

L DENOTES LOCK-ON DEVICE

NOTES:
ALL CIRCUITS ARE EXISTING TO REMAIN. SCHEDULE IS SHOWN FOR REFERENCE ONLY.

DEMOLITION PANEL "V"

FED FROM PANEL DP

PANEL TYPE: NQOB | MCB or MLO: MLO
BUS SIZE: 225A | MOUNTING: SURFACE
VOLTAGE: 208Y/120V | MINIMUM AIC: 10,000

CKT	LOAD SERVED	TRIP	POLE	WIRE SIZE	GND SIZE	CONDUIT SIZE	KVA	KVA PER PHASE A	B	C	KVA	CONDUIT SIZE	GND SIZE	WIRE SIZE	POLE	TRIP	LOAD SERVED	CKT
1								2.00							1	20	NEW PRINTER	2
3	AC UNIT	20	3						1.50						1	20	SPARE	4
5										2.50					2	20	RECEPT. A/C UNIT RM 118B	6
7	RECEPT. 118B	20	1					1.72										8
9	RECEPT. 118B	20	1						0.72						3	20	SPARE	10
11	CUBICLES 214/215	20*	1															12
13	HEAT TRACE	20*	1					1.00										14
15	FCU-4B, FCU-5, FCU-6	20	1						1.80									16
17										0.00					3	20	SPARE	18
19	SPARE	20	3					0.00										20
21									0.00						1	20	SPARE	22
23	SPARE	20	1							0.00					1	20	SPARE	24
25	SPARE	20	1							0.00					2	20	SPARE	26
27	SPARE	20	2					0.00										28
29									0.00						2	20	SPARE	30
31	SPARE	20	1							0.00								32
33	SPARE	20	2					0.00							2	20	SPARE	34
35									0.00									36
37										0.00					2	60	SPARE	38
39	SPARE	20	3					0.00										40
41									0.00						1	20	SPARE	42

TOTALS: 4.72 | 4.02 | 2.50

	CONNECTED LOAD (KVA)	DF	DEMAND LOAD (KVA)
EXISTING LOAD PER RECORD DOCUMENTS	15.00	100%	15.00
DEMOLITION	0.00	100%	0.00
MISC.	0.00	100%	0.00
FIRST 10K RECEPTS	0.00	100%	0.00
REMAINDER RECEPT	0.00	50%	0.00
LIGHTS	0.00	125%	0.00
HVAC	0.00	100%	0.00
TOTAL (KVA)	15.00		-0.17
TOTAL AMPS	42		0

L DENOTES LOCK-ON DEVICE

NOTES:
REMOVE ALL CIRCUIT SHOWN UNLESS NOTED OTHERWISE.
*REMOVE CIRCUIT BACK TO NEAREST JUNCTION BOX ENTERING SPACE AND REFEED EXISTING EQUIPMENT FROM NEW CIRCUIT IN NEW PANEL "V".

NEW PANEL "V"

FED FROM PANEL DP

PANEL TYPE: NQOB | MCB or MLO: MLO
BUS SIZE: 225A | MOUNTING: SURFACE
VOLTAGE: 208Y/120V | MINIMUM AIC: 10,000

CKT	LOAD SERVED	TRIP	POLE	WIRE SIZE	GND SIZE	CONDUIT SIZE	KVA	KVA PER PHASE A	B	C	KVA	CONDUIT SIZE	GND SIZE	WIRE SIZE	POLE	TRIP	LOAD SERVED	CKT
1	RECEPT- K12 LAB	20	1	#12	#12	3/4"	1.08	2.16			1.08	3/4"	#12	#12	1	20	RECEPT-118C,119A,119B	2
3	RECEPT- K12 LAB	20	1	#12	#12	3/4"	1.08		1.88		0.80	3/4"	#12	#12	1	20	DRINK MACHINE	4
5	HVAC CTRLS-118,119,120/FCU-1	20	1	#12	#12	3/4"	1.00			1.80	0.80	3/4"	#12	#12	1	20	SNACK MACHINE	6
7	SMOKE DAMPERS CTRL	20	1	#12	#12	3/4"	1.00	2.00			1.00	3/4"	#12	#12	1	20	COFFEE MAKER	8
9	SMOKE DAMPERS CTRL	20	1	#12	#12	3/4"	0.50		1.40		0.90	3/4"	#12	#12	1	20	RECEPT-118B, HALL 105	10
11	HVAC CTRL-117 J-N	20	1	#12	#12	3/4"	1.00			2.26	1.26	3/4"	#12	#12	1	20	WIREMOLD-118B WEST	12
13	RECEPT-OFFICE 117 J-K	20	1	#12	#12	3/4"	0.72	2.34			1.62	3/4"	#12	#12	1	20	WIREMOLD- 118A NORTH/W.	14
15	RECEPT-OFFICE 117 L,M,N	20	1	#12	#12	3/4"	1.08		2.34		1.26	3/4"	#12	#12	1	20	WIREMOLD-118A EAST	16
17	SPARE	20	1							1.44	1.44	3/4"	#12	#12	1	20	RECEPT-117B	18
19	LIGHTS-117 J-N	20	1	#12	#12	3/4"	0.22	1.66			1.44	3/4"	#12	#12	1	20	RECEPT-117A	20
21	LIGHTS-117, 117A/B	20	1	#12	#12	3/4"	1.20		2.46		1.26	3/4"	#12	#12	1	20	RECEPT-117	22
23	LIGHTS-118A	20	1	#12	#12	3/4"	0.90			0.90					1	20	SPARE	24
25	LIGHTS-105, 118-120	20	1	#12	#12	3/4"	1.30			2.20	0.90	3/4"	#12	#12	1	20	RECEPT-MECH 120B	26
27	RECEPT-PROJECTOR 118	20	1	#12	#12	3/4"	0.72	1.12			0.40	3/4"	#12	#12	1	20	SEC. HEAD END-MECH 120B	28
29	ROOFTOP RECEPT	20	1	#12	#12	3/4"	0.36		0.36						1	20	SPARE	30
31	CUBICLES 214/215	20*	1	#12	#12	3/4"	0.90			0.90					1	20	SPARE	32
33	HEAT TRACE	20*	1	#12	#12	3/4"	0.80	0.80							1	20	SPARE	34
35	SPARE	20	1						0.00						1	20	SPARE	36
37	SPARE	20	1							0.00					1	20	SPARE	38
39	SPARE	20	1					0.00							1	20	SPARE	40
41	SPARE	20	1						0.00						1	20	SPARE	42
43	SPARE	20	1							1.12	1.12			#12				44
45				#10				2.50	3.62		1.12	3/4"	#10	#12	3	20	HWP-1 (2HP)	46
47	AHU-1 (5HP) - MECH 120B	25	3	#10	#10	3/4"		2.50		3.62	1.12			#12				48
49				#10				2.50			1.12			#12				50
51	ERV-1 ON ROOF	50	2	#6	#10	1"		4.50	5.62		1.12	3/4"	#10	#12	3	20	HWP-2 (2HP)	52
53				#6				4.50		5.62	1.12			#12				54

TOTALS: 19.32 | 17.68 | 14.24

	CONNECTED LOAD (KVA)	DF	DEMAND LOAD (KVA)
MISC.	3.80	80%	3.04
FIRST 10K RECEPTS	10.00	100%	10.00
REMAINDER RECEPT	7.10	50%	3.55
LIGHTS	3.62	125%	4.53
HVAC (LARGEST LOAD)	9.00	125%	11.25
HVAC (REMAINING LOAD)	17.72	100%	17.72
TOTAL (KVA)	51.24		50.09
TOTAL AMPS	142		139

L DENOTES LOCK-ON DEVICE

NOTES:
*RECONNECT EXISTING CIRCUITS REMOVED FROM DEMOLISHED PANEL, BUT RETAINED TO SERVE AREAS OUTSIDE OF THIS PROJECTS CONSTRUCTION LIMITS.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURE NAME	MANUFACTURE CATALOG MUNBER	LAMPS	NO. OF BALLASTS	INPUT WATTS	VOLT	REMARKS
A	4 INCH PENDANT MOUNTED LED CYLINDER DOWNLIGHT. MATTE WHITE FINISH.	LITHONIA	LDN4CYL-35-10-L04-WR-LSS-120-GZ10-PM-DWHG	35K LED	LED DRIVER	11	120	PENDANT MOUNTED ABOVE OPEN CELL CEILING
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
B	4' LED LINEAR PENDANT SUSPENDED FROM CEILING.	LITHONIA	LL4-4000LM-80CRI-35K-EPD-MIN10-ZT-MVOLT-F3/120A-WH	35K LED	LED DRIVER	41	120	PROVIDE WITH JOINER BRACKET TO MOUNT RUNS AS SHOWN ON PLAN.
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
B1	LED LINEAR PENDANT SUSPENDED FROM CEILING.	LLI ARCH LIGHTING	LLI-LCCW7.0W-20-R30-24V-80-192"	35K LED	LED DRIVER	112	120	WIRED AS WHITE LED ONLY. DO WE NEED EXTRUSION??
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
B2	LED LINEAR PENDANT SUSPENDED FROM CEILING.	LLI ARCH LIGHTING	LLI-LCCW7.0W-20-R30-24V-80-120"	35K LED	LED DRIVER	84	120	WIRED AS WHITE LED ONLY. DO WE NEED EXTRUSION??
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
B3	LED LINEAR PENDANT SUSPENDED FROM CEILING.	LLI ARCH LIGHTING	LLI-LCCW7.0W-20-R30-24V-80-336"	35K LED	LED DRIVER	84	120	WIRED AS WHITE LED ONLY. DO WE NEED EXTRUSION??
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
C	4' LED LINEAR STRIP LIGHT	LITHONIA	CSS-L48-4000LM-40K-80CRI	40K LED	LED DRIVER	36	120	
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
E	LED EDGE-LIT EXIT SIGN	LITHONIA	EGD-*-R-RMR-EL	RED LED	LED DRIVER	4	120	PROVIDE SINGLE OR DOUBLE FACE PER PLANS.
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
EM	SURFACE MOUNTED DUAL HEAD EMERGENCY LIGHT. WHITE HOUSING	LITHONIA	EU2C M6	2-LED	LED DRIVER	1	MVOLT	
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
F	6" LED WAFER DOWNLIGHT. MATTE WHITE FINISH	JUNO	WF6-DEE5-910VTI-MW-WF6 PAN R12	RED LED	LED DRIVER	13	120	
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
F2	6 INCH PENDANT MOUNTED LED CYLINDER DOWNLIGHT. MATTE WHITE FINISH.	LITHONIA	LDN64CYL-35-10-L06-WR-LSS-120-GZ10-PM-DWHG	35K LED	LED DRIVER	11	120	
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
F3	6 INCH PENDANT MOUNTED LED CYLINDER WALL WASH. MATTE WHITE FINISH.	LITHONIA	LDN64CYL-35-10-LW6-WR-LSS-120-GZ10-PM-DWHG	35K LED	LED DRIVER	11	120	
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
W	6" ROUND SHALLOW RECESSED LED DOWNLIGHT. UL LISTED FOR WET LOCATIONS	GOTHAM	IV06S-D-10LM-35-80CRI-WDMIN10-MVOLT-ZT-NCH-PWMR-LSS-F	35K LED	LED DRIVER	9	MVOLT	
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					
WE	6" ROUND SHALLOW RECESSED LED DOWNLIGHT. UL LISTED FOR WET LOCATIONS	GOTHAM	IV06S-D-10LM-35-80CRI-WDMIN10-MVOLT-ZT-E6WR-NCH-PWMR-LSS-F	35K LED	LED DRIVER	9	MVOLT	PROVIDE WINTEGRAL EMERGENCY BATTERY
		METALUX	APPROVED EQUAL					
		DAYBRIGHT	APPROVED EQUAL					

NOTES:
MODEL NUMBERS SHOWN ARE BASIS OF DESIGN. EQUAL MANUFACTURER'S SHALL BE SUBMITTED PER NC GC 133.

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NORTH CAROLINA PROFESSIONAL SEAL 19658 ENGINEER REGINALD D. ADAMS

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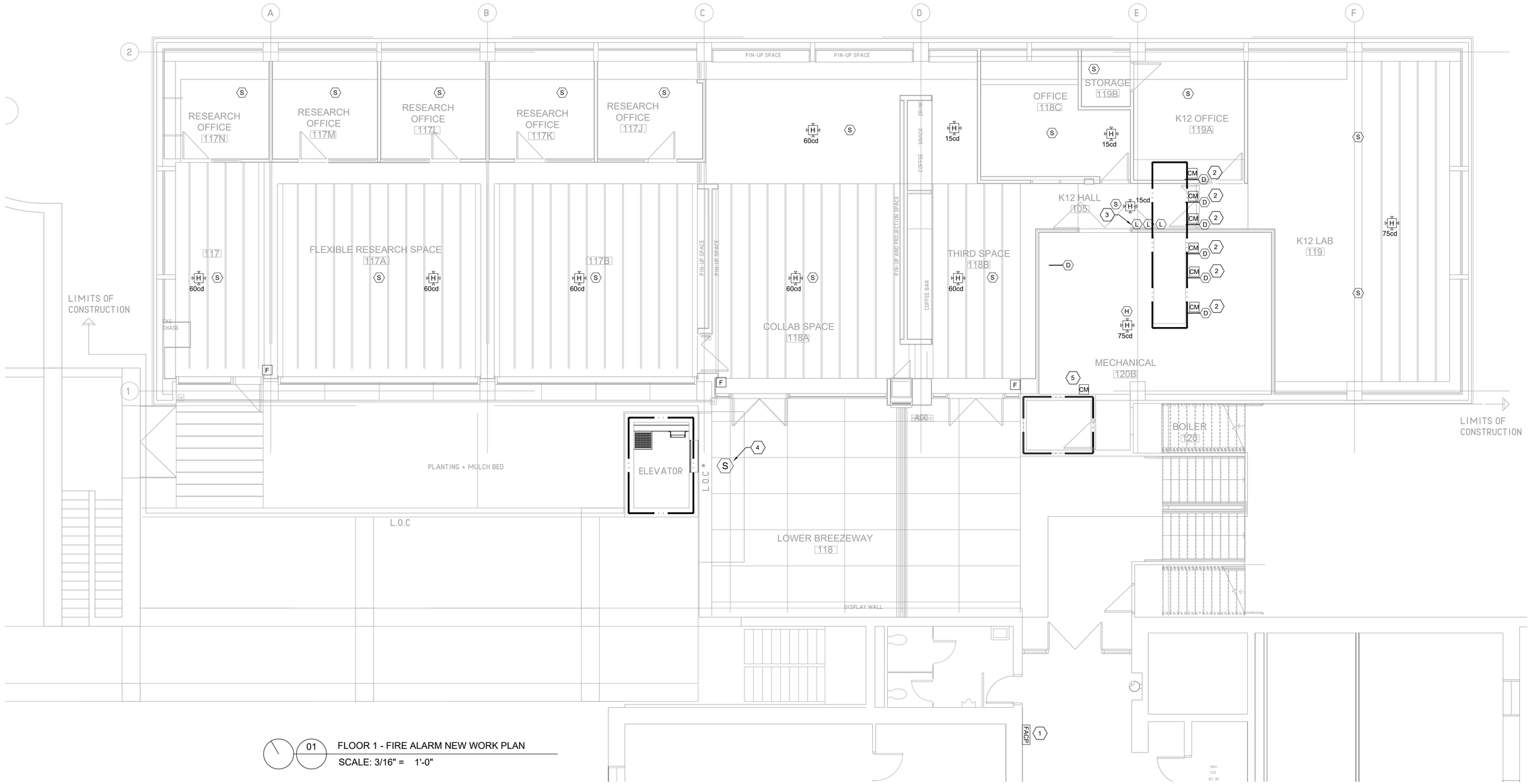
ELECTRICAL SCHEDULES

E5.01



01 FLOOR 1 - FIRE ALARM NEW WORK PLAN

SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET E001 FOR ELECTRICAL LEGEND AND ADDITIONAL GENERAL NOTES.
2. PROVIDE NEW FIRE ALARM DEVICES AS SHOWN ON PLANS UNLESS NOTED OTHERWISE.
3. INSTALL EXISTING SMOKE DETECTORS RETAINED FROM DEMOLITION AT LOCATIONS NOTED ON PLANS. ANY REMAINING SMOKE DETECTORS SHALL BE TURNED OVER TO OWNER.

KEYED NOTES:

1. LOCATION OF EXISTING FIRE ALARM CONTROL PANEL SHOWN FOR REFERENCE. EXISTING FACP IS AN FCI BY HONEYWELL E3. LABEL AND RETURN ALL REMOVED SMOKE DETECTORS TO NCSU FIRE SYSTEM SHOP.
2. PROVIDE NEW DUCT MOUNTED SMOKE DETECTOR AND CONTROL MODULE. CONNECT CONTROL MODULE AND SMOKE DETECTOR TO NEAREST FIRE ALARM CIRCUIT. REFER TO SHEET E2.00 FOR POWER REQUIREMENT FOR SMOKE DAMPER.
3. PROVIDE REMOTE INDICATOR LOCATED IN CORRIDOR TO INDICATE STATUS OF DETECTOR. TYPICAL OF DETECTORS LOCATED IN MECHANICAL ROOM.
4. ELEVATOR SMOKE DETECTOR SHALL REMAIN IN PLACE AND PROTECTED DURING RENOVATION. IF ALTERNATE A5 IS ACCEPTED, SMOKE DETECTOR SHALL BE REMOVED AND REINSTALLED IN NEW CEILING SURFACE PER SHEET A2.4.
5. PROVIDE A CONTROL MODULE NEXT TO DOOR SECURITY CONTROLLER. DOOR CONTROLLER SHALL BE PROGRAMMED TO UNLOCK DOORS UPON ACTIVATION OF FIRE ALARM SYSTEM AND DOORS SHALL REMAIN UNLOCKED UNTIL FIRE ALARM PANEL IS RESET.

FIRE RATED WALL LEGEND
1 HR FIRE BARRIER
2 HR FIRE BARRIER

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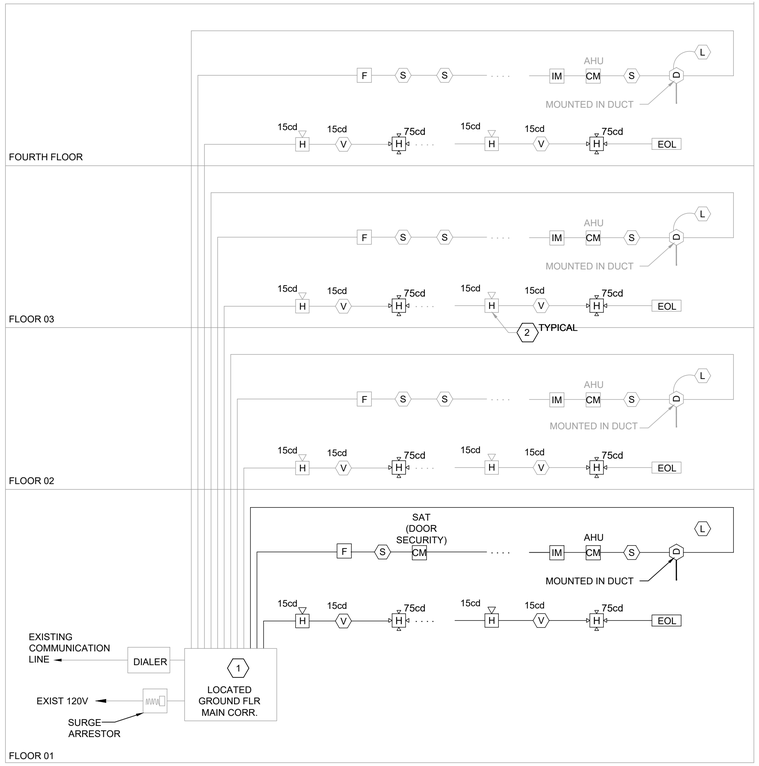
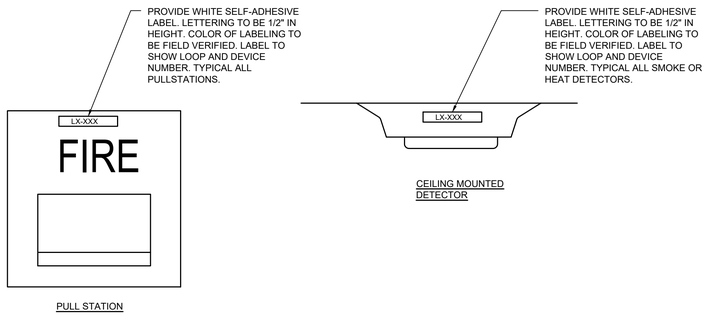
FA2.01 FLOOR 1 - FIRE ALARM NEW WORK PLAN



1 FIRE ALARM RISER DIAGRAM
No Scale:



2 FIRE ALARM LABELING DETAILS
No Scale:

GENERAL NOTES:

1. THIS DRAWING IS INTENDED TO SHOW ONLY WHICH DEVICES ARE CONNECTED TO WHICH CIRCUIT. THIS DRAWING DOES NOT SHOW THE OPTIMUM PATH FOR THE CIRCUITS. REFER TO FLOOR PLAN FOR SPECIFIC QUANTITIES AND LOCATIONS OF FIRE ALARM DEVICES. REFER TO FIRE PROTECTION FLOOR PLANS FOR EXACT QUANTITIES OF TAMPER, FLOW, AND SUPERVISORY VALVES. REFER TO MECHANICAL FLOOR PLANS FOR EXACT QUANTITIES AND LOCATIONS OF DUCT DETECTORS.
2. PROVIDE WIRING PER THE MANUFACTURER'S RECOMMENDATIONS AND SPEC. SECTION 283111.
3. ALL NEW FIRE ALARM CABLE SHALL BE IN MINIMUM 3/4" CONDUIT. RACEWAYS CONTAINING FIRE ALARM CONDUCTORS SHALL BE MARKED IN RED FOR READY IDENTIFICATION. UNLESS OTHERWISE NOTED ON THIS RISER.
4. ALL STROBES SHALL BE SYNCHRONIZED.
5. ALL SMOKE DETECTORS SHALL BE PHOTOELECTRIC.
6. PROVIDE ISOLATION MODULES AT THE BEGINNING AND END OF EACH LOOP (IN/AT THE FIRE ALARM PANEL) AND AFTER EVERY TWENTY (20) DEVICES.
7. ALL ADDRESSABLE LOOP CONTROLLER (INITIATING) CIRCUITS SHALL BE WIRED IN A CLASS 'A' CONFIGURATION WITH NO 'T' TAPS MADE. PROVIDE 20% SPARE ADDRESSES PER LOOP.
8. NOTIFICATION APPLIANCE CIRCUITS (Nachos) SHALL BE WIRED CLASS 'B', AND ZONED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, NOT TO EXCEED 80% OF ZONE MODULE RATED OUTPUT. ALL NAC'S SHALL BE EQUIPPED WITH E.O.L. SUPERVISORY RELAYS.
9. MAINTAIN CONDUIT AND WIRING SEPARATION ON ALL CLASS 'A' LOOPS PER NAPA 72.
10. ADDITIONAL POWER AMPLIFICATION DEVICES THAT MAY BE NEEDED TO DRIVE NOTIFICATION DEVICES ARE COMPLETELY THE DUTY OF THE E.C./FIRE ALARM VENDOR TO PROVIDE. ANY POWER CIRCUITRY OR ADDITIONAL WIRING NEEDED FOR THIS SYSTEM SHALL BE PROVIDED AS PART OF THE BASE BID ON BID DAY.
11. FIRE ALARM NOTIFICATION DEVICES SHALL HAVE NOMINAL MOUNTING HEIGHT OF 80" AFF TO BOTTOM OF DEVICE. COORDINATE WITH REFLECTED CEILING PLAN AND ARCHITECT PRIOR TO ROUGH-IN. UNLESS NOTED OTHERWISE ON THE FLOOR PLANS, LIGHT LEVEL AND SOUND OUTPUT LEVELS FOR NEW DEVICES SHALL BE AS FOLLOWS:

    -STROBES 75 c.d.
    -HORNS 85 dB

12. ALL DEVICES SHALL BE ADA COMPLIANT.
13. INSTALLATION SHALL MEET REQUIREMENTS OF THE LATEST REVISION OF THE NFPA 72, NFPA 70 (NEC), AND THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
14. CONTRACTOR SHALL PROVIDE A FRAMED, PROTECTED ZONE MAP INDICATING LOCATION AND ADDRESS OF ALL INSTALLED DEVICES.
15. UPON COMPLETION, CONTRACTOR SHALL TEST AND INSPECT THE SYSTEM IN ACCORDANCE WITH NFPA 72, 2013 REVISION. SUBMIT BATTERY CALCULATIONS TO THE ENGINEER FOR REVIEW. A COMPLETED "RECORD OF COMPLETION" FORM (TIP. 1-7, NFPA 72, 2013), A COPY OF BATTERY CALCULATIONS, AND DEVICE INFORMATION SHEETS SHALL BE SUBMITTED TO THE APPROVING AGENCY PRIOR TO FINAL INSPECTION OR ENTIRE SYSTEM MUST BE RECTIFIED.
16. REFER TO FIRE SUPPRESSION SHOP DRAWING BY SPRINKLER SUBCONTRACTOR FOR EXACT NUMBER AND LOCATION OF ALL TAMPER, FLOW, AND ALARM DEVICES.
17. REFER TO CONTRACT DOCUMENT FOR ADDITIONAL INFORMATION REQUIRED FOR SUBMITTALS.

KEYED NOTES:

1. EXISTING HONEYWELL FCI E3 ADDRESSABLE FIRE ALARM CONTROL PANEL SHALL REMAIN IN PLACE AND OPERATIONAL.
2. PROVIDE ALL NEW DEVICES COMPATIBLE WITH EXISTING FACP. REFER TO PLANS FOR QUANTITIES AND LOCATIONS OF DEVICES. SMOKE DETECTOR MODEL ASD-PL3-IV IS CURRENTLY COMPATIBLE, BUT IS SCHEDULED TO BE PHASED OUT BY HONEYWELL. IF THESE ARE NOT AVAILABLE AT TIME OF BID, CONTRACTOR SHALL REPLACE ALL SMOKE DETECTORS CONNECTED TO EXISTING SLC LOOP(S) SERVING AREAS OF CONSTRUCTION WITH NEW SMOKE DETECTOR MODEL ASD-PL3.

FIRE RATED WALL LEGEND
1 HR FIRE BARRIER
2 HR FIRE BARRIER

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FA2.02 FLOOR 1 - FIRE ALARM NEW WORK PLAN