

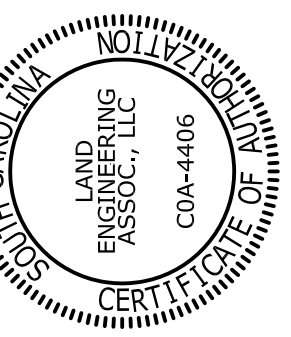
# McCUTCHEN FIRE ALARM UPGRADE

SC STATE PROJECT #H27-I851

UNIVERSITY OF SOUTH CAROLINA

Columbia, South Carolina

OFFICE OF  
FACILITIES MANAGEMENT  
COLUMBIA, SC 29208



REV.	DESCRIPTION	DATE	ORIG. BY	DRAWN BY	CHECKED BY
010	E1	10OCT16	KNJ	JWL	JWL

## DESIGN TEAM

### OWNER

UNIVERSITY OF SOUTH CAROLINA  
743 GREENE STREET  
COLUMBIA, SC 29208

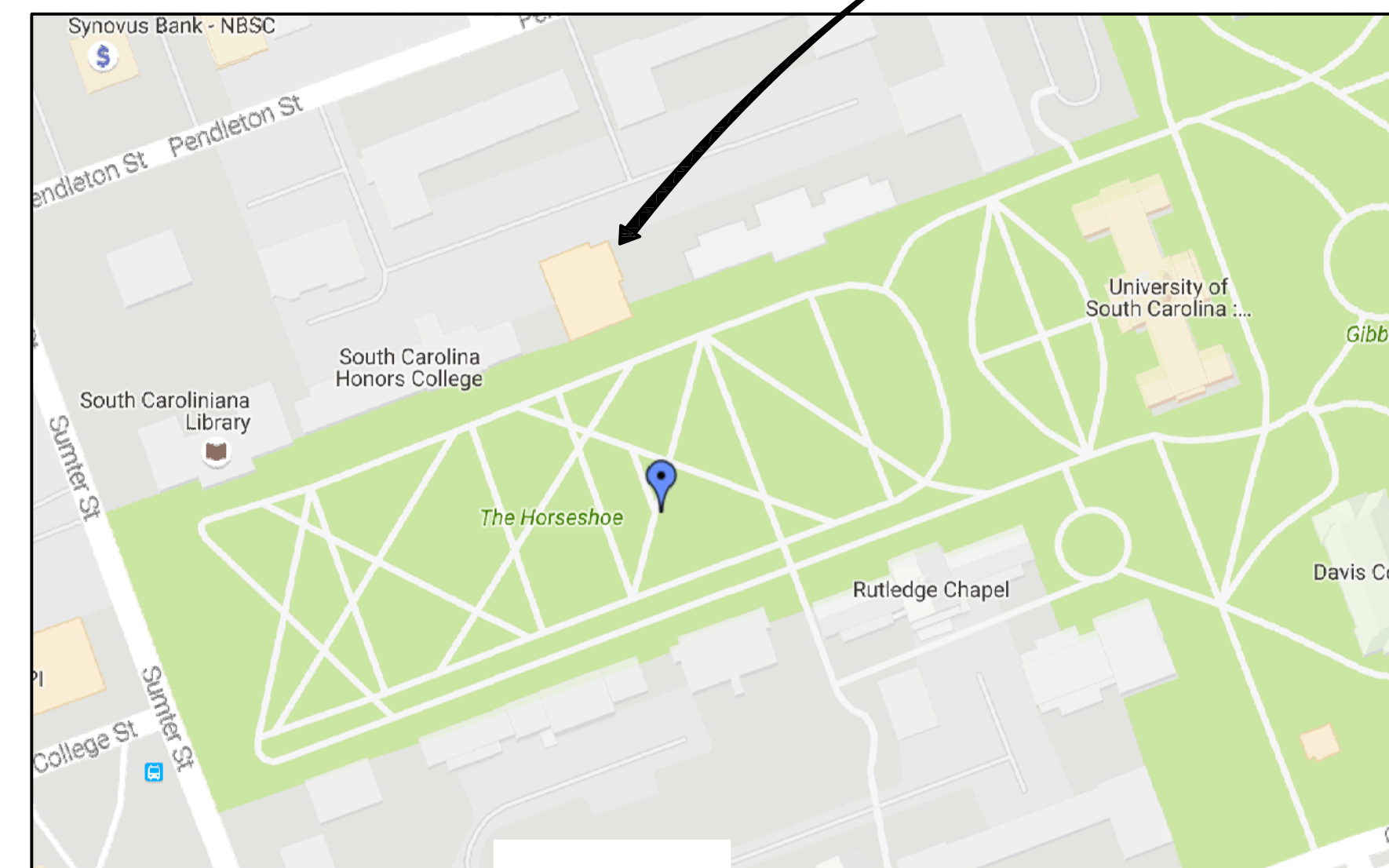
### USC PROJECT MANAGER

PETE FISHER  
PHONE: (803) 777-9346

### ELECTRICAL ENGINEER

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262 SANDHURST ROAD, SUITE 101  
COLUMBIA, SC 29210 (803) 528-1437  
JOSEPH W. LAND, P.E.

McCUTCHEN HOUSE



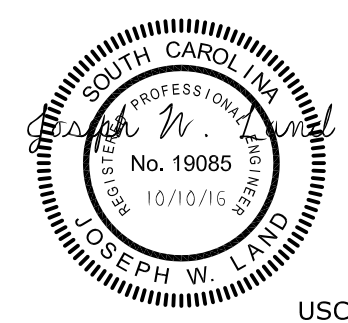
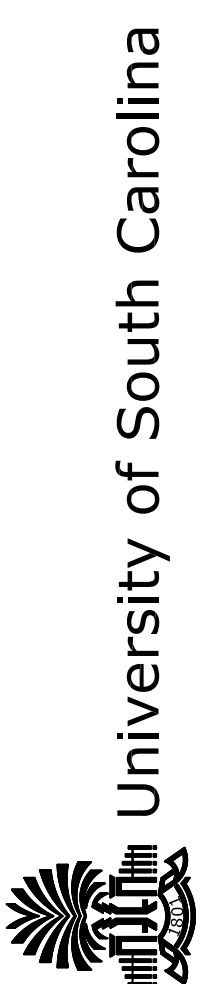
VICINITY MAP

## INDEX OF DRAWINGS

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State Project No. H27-I851

PROJECT TITLE: McCUTCHEN FIRE ALARM UPGRADE



USC-2016-06

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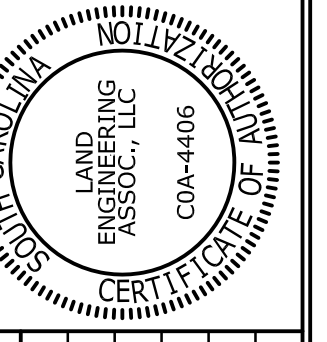
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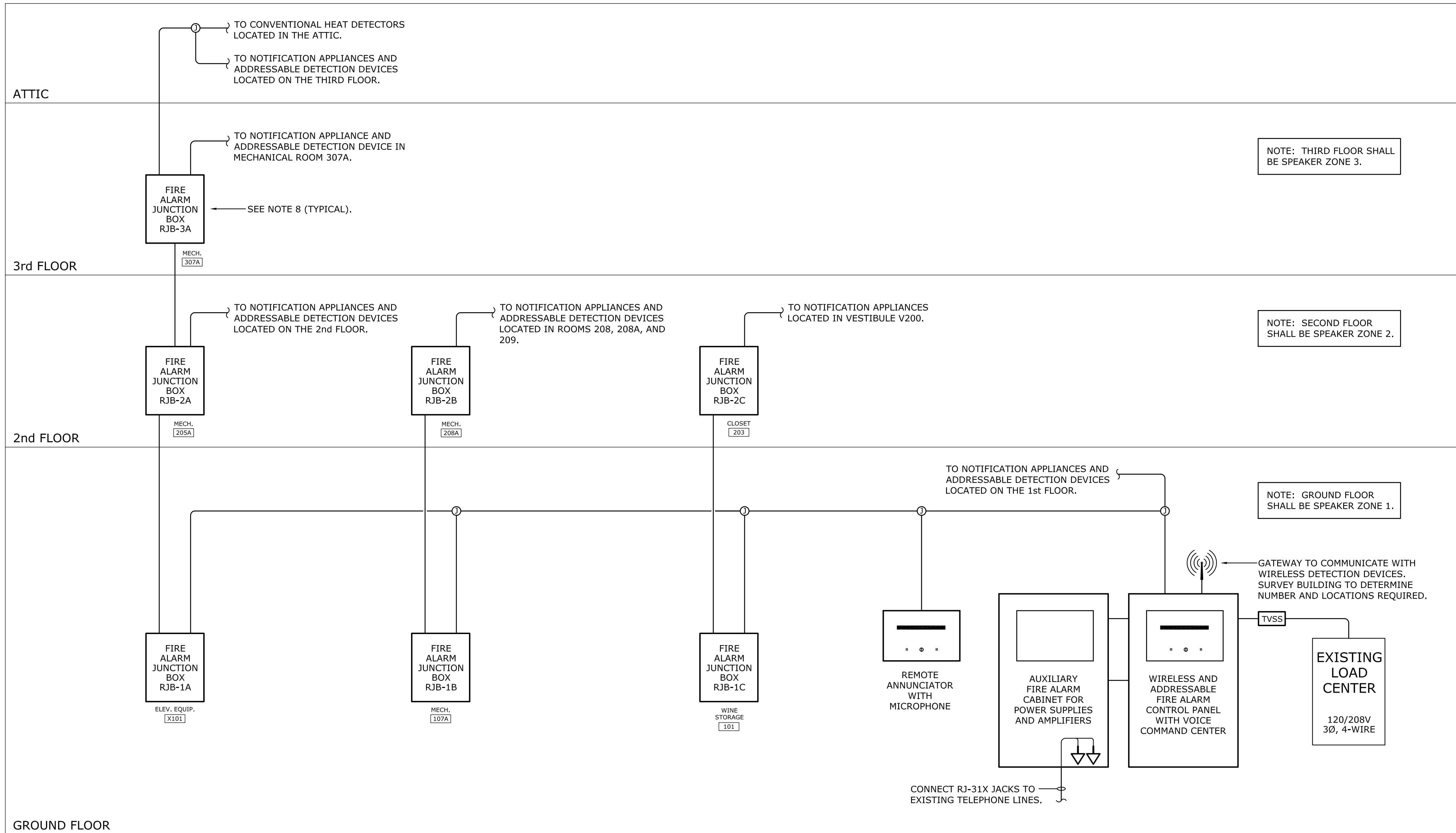


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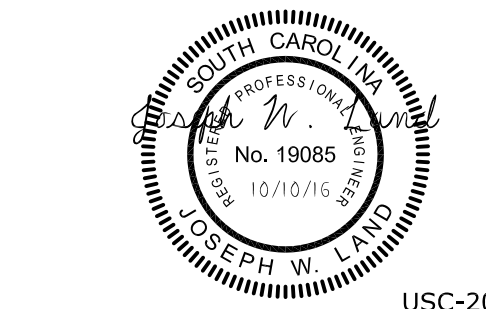
State Project No. HZ7-1851  
PROJECT TITLE: McCUTCHEM FIRE ALARM UPGRADE  
University of South Carolina

SHEET:  
**E-3**  
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- ### SINGLE-LINE DIAGRAM NOTES
- FURNISH SHOP DRAWINGS FROM THE FIRE ALARM MANUFACTURER INDICATING ALL WIRING FOR DETECTION AND NOTIFICATION CIRCUITS. INCLUDE EQUIPMENT TYPES AND LOCATIONS, RACEWAY SIZES, NUMBER AND TYPES OF WIRES/CABLES, DIAMETERS OF CABLES/WIRES AND COLOR CODING FOR EACH CIRCUIT TYPE. SHOP DRAWINGS SHALL BE PROVIDED ON 24" X 36" (D-SIZE) PRINTS.
  - ALL STROBES SHALL BE SYNCHRONIZED. ALL AUDIBLE NOTIFICATION DEVICES SHALL BE SYNCHRONIZED.
  - ALL POWER SUPPLIES AND AMPLIFIERS SHALL BE LOCATED IN THE MAIN FIRE CONTROL PANEL CABINETS. PROVIDE BATTERY CALCULATIONS TO VERIFY THE SECONDARY POWER SUPPLY HAS ADEQUATE CAPACITY IN ACCORDANCE WITH NFPA 72.
  - PROVIDE THREE SETS OF OPERATION AND MAINTENANCE MANUALS FOR THE FIRE ALARM SYSTEM. PROVIDE A 3-RING BINDER FOR EACH SET.
  - PROVIDE A COMPLETE FIRE ALARM TEST IN ACCORDANCE WITH NFPA 72. ALL SMOKE DETECTORS SHALL BE TESTED WITH AN APPROVED AERASOL SMOKE PRODUCT. PROVIDE A WRITTEN RECORD OF THE INSPECTIONS, TESTS, AND DETAILED TEST RESULTS IN THE FORM OF A TEST LOG. SUBMIT LOG UPON THE SATISFACTORY COMPLETION OF TESTS.
  - PROVIDE 8 HOURS OF TRAINING FOR TROUBLE-SHOOTING AND MAINTENANCE OF THE FIRE ALARM SYSTEM. SCHEDULE TRAINING WITH OWNER.
  - PROVIDE FOR THREE SITE VISITS BY A FIRE ALARM SYSTEM TECHNICIAN AFTER PROJECT COMPLETION TO REPROGRAM THE FIRE ALARM SYSTEM AND/OR ADJUST SPEAKER TAP SETTINGS AS REQUESTED BY THE OWNER.
  - FIRE ALARM SYSTEM RISER JUNCTION BOXES SHALL BE 6"h x 6"w x 4"d (MINIMUM) STEEL WITH SCREW COVERS.
    - BOXES SHALL INCLUDE A BACK-PLANE FOR MOUNTING TERMINAL BLOCKS.
    - PROVIDE TERMINAL BLOCKS AS REQUIRED TO SPLICE ALL CABLES/WIRES REQUIRING SPLICE CONNECTIONS (CABLE SHIELDS SHALL ALSO BE SPLICED USING TERMINAL BLOCKS).
    - PAINT BOX COVERS RED AND PROVIDE A LABEL ON COVERS DEPICTING MARK NUMBER.

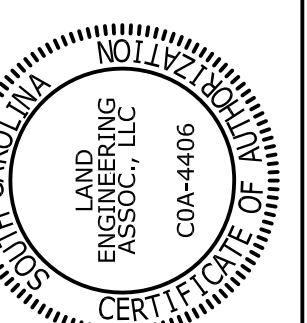


**1** FIRE ALARM SYSTEM SINGLE-LINE DIAGRAM  
E-3 NOT TO SCALE



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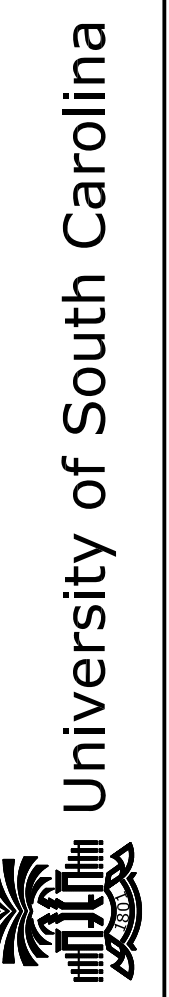
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BUILDING: 010	DRAWING: E-1		
REV.			

State Project No. HZ7-1851

PROJECT TITLE: McCUTCHEM FIRE ALARM UPGRADE



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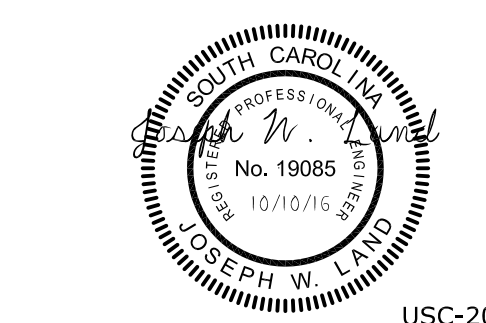
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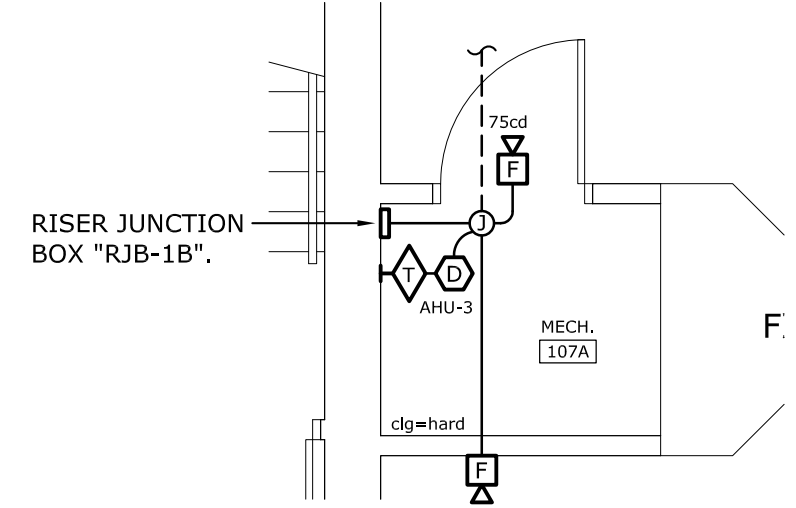
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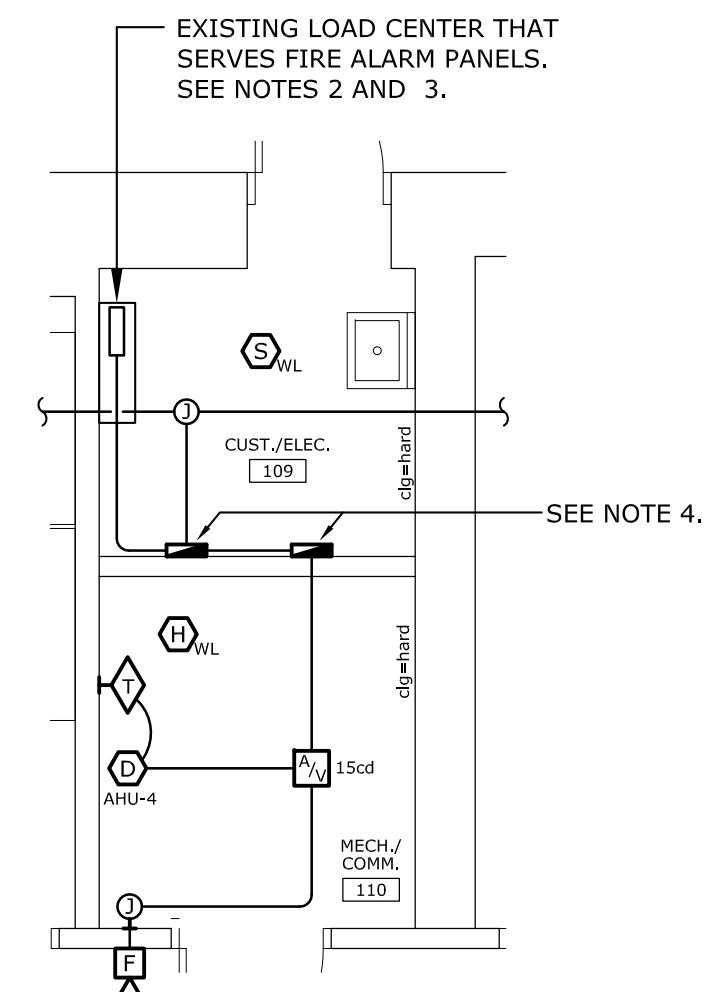
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**NOTES**

- ELEVATOR: EXISTING ELEVATOR AND ASSOCIATED CONTROLLER DO NOT CURRENTLY HAVE PROVISIONS FOR CONNECTION OF ELEVATOR RECALL, HAT/LIGHT INDICATOR IN ELEVATOR CAB, AND SHUNT-TRIP FOR POWER DISCONNECT. THESE FEATURES WILL BE ADDED UNDER A FUTURE PROJECT. PROVIDE PROGRAMMING FOR ELEVATOR RELAYS IN ACCORDANCE WITH ANSI 17.1 AND LLR REQUIREMENTS (EVEN THOUGH THE DEVICES WILL NOT BE EMPLOYED AT THIS TIME).
- PROVIDE ONE ADDITIONAL 120 VOLT, 20-AMP RATED CIRCUIT FROM THE EXISTING SQUARE-D QO LOAD-CENTER TO NEW FIRE ALARM CONTROL PANELS. CIRCUIT SHALL BE TWO #12 AWG THHN COPPER CONDUCTORS WITH ONE GREEN INSULATED #12 AWG COPPER GROUND WIRE (CIRCUIT SHALL HAVE DEDICATED NEUTRAL AND GROUND CONDUCTOR). WIRING SHALL BE PROVIDED IN EMT RACEWAY WITH COMPRESSION FITTINGS; 3/4" MINIMUM SIZE. EXTEND EXISTING 120V FIRE ALARM CIRCUIT TO NEW PANELS ONCE THE EXISTING PANELS HAVE BEEN DEMOLISHED.
- EXISTING PANELBOARD IS A SQUARE-D #QO-6-12, SERIES L5 LOAD-CENTER. PROVIDE ONE 20-AMP RATED, SINGLE-POLE CIRCUIT BREAKER IN BLANK SPACE OF LOAD CENTER TO SERVE AN ADDITIONAL 120V CIRCUIT FOR FIRE ALARM SYSTEM. UPDATE LOAD SCHEDULE TO REFLECT ADDED LOADS. PAINT CIRCUIT BREAKER HANDLES "RED".
- CONTROL PANELS REFERENCED TO THIS NOTE ARE THE NEW FIRE ALARM CONTROL PANELS. TEMPORARILY MOUNT NEW FIRE ALARM PANELS LOW ON WALL UNTIL DEMOLITION OF EXISTING FIRE ALARM PANELS CAN BE PERFORMED. RELOCATE PANELS AFTER DEMOLITION SUCH THAT THEIR TOPS ARE 66" ABOVE FINISHED FLOOR.
- ROOM RACEWAY SCHEDULE: WHERE RACEWAY IS INDICATED TO BE CONCEALED (YES) ON THE ROOM RACEWAY SCHEDULE, CUT EXISTING GYPSUM/PLASTER CEILINGS AS REQUIRED TO CONCEAL MC CABLES SERVING FIRE ALARM DEVICES. PATCH AND PAINT CEILINGS AFTER INSTALLATION OF CABLES. PAINT SHALL MATCH EXISTING CEILING COLOR - COORDINATE WITH OWNER TO VERIFY PAINT MANUFACTURER, TYPE, AND COLOR TO BE PROVIDED. APPLY TWO COATS OF PAINT TO EACH AREA WHERE CUTTING AND PATCHING IS REQUIRED.



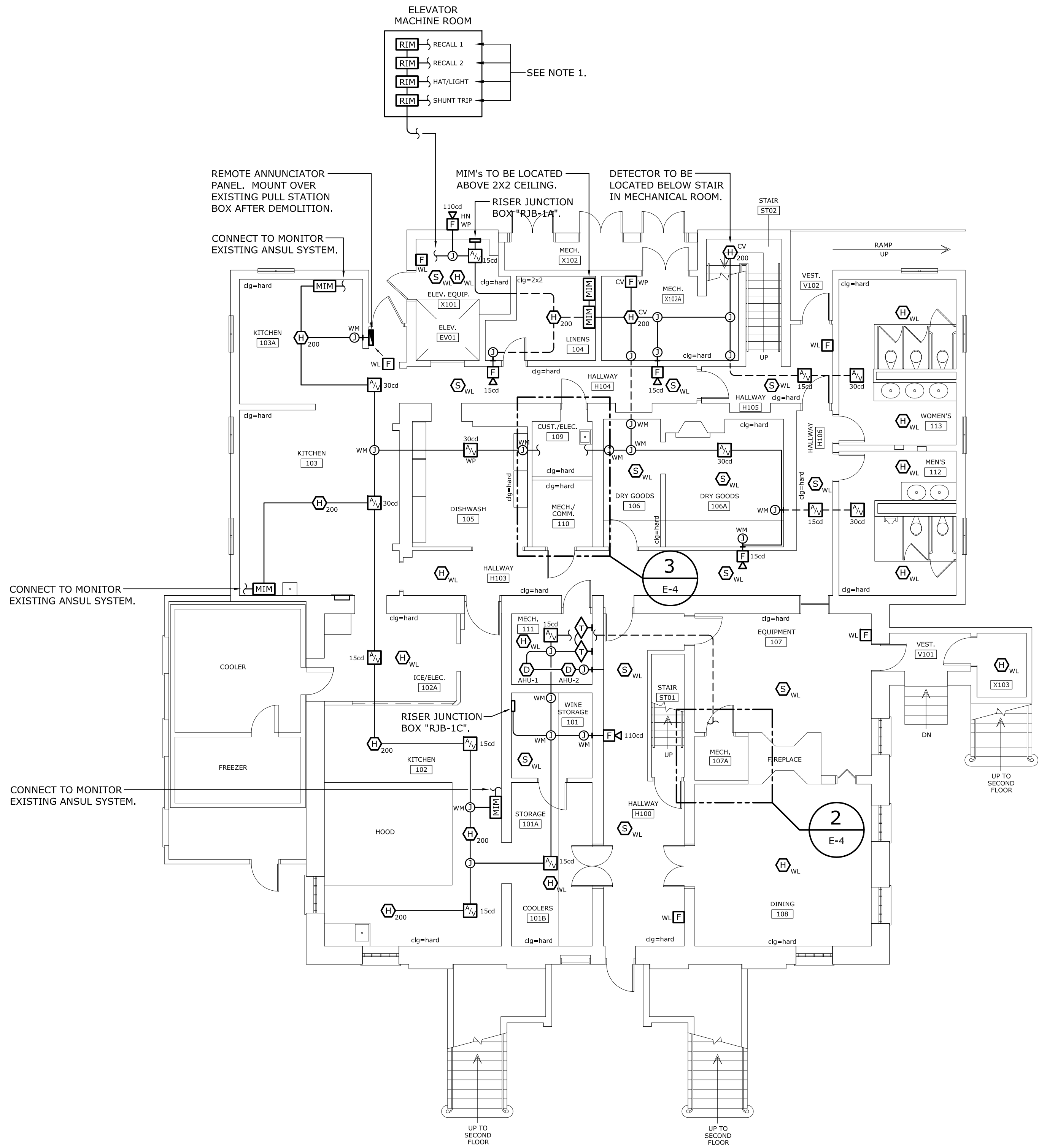
**ENLARGED PLAN:  
ROOM 107A**  
SCALE: 1/4" = 1'-0"



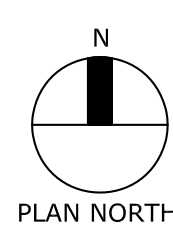
**ENLARGED PLAN:  
ROOMS 109 AND 110**  
SCALE: 1/4" = 1'-0"

**ROOM RACEWAY SCHEDULE**

ROOM NUMBER	ROOM NAME	RACEWAY TYPE	J-BOX TYPE	CONCEAL RACEWAY?
101	WINE STORAGE	WIREMOLD	WIREMOLD	NO
101A	STORAGE	WIREMOLD	WIREMOLD	NO
101B	COOLERS	WIREMOLD	WIREMOLD	NO
102	KITCHEN	WIREMOLD	WIREMOLD	NO
102A	ICE/ELECTRICAL	WIREMOLD	WIREMOLD	NO
103	KITCHEN	WIREMOLD	WIREMOLD	NO
103A	KITCHEN	WIREMOLD	WIREMOLD	NO
104	LINENS	EMT	STEEL	YES
105	DISHWASH	WIREMOLD	WIREMOLD	NO
106	DRY GOODS	WIREMOLD	WIREMOLD	NO
106A	DRY GOODS	WIREMOLD	WIREMOLD	NO
107	EQUIPMENT	MC CABLE	STEEL	YES - SEE NOTE 5.
108	DINING	MC CABLE	STEEL	YES - SEE NOTE 5.
109	CUST./ELECT.	EMT	STEEL	NO
110	MECH./COMM.	EMT	STEEL	NO
111	MECHANICAL	EMT	STEEL	NO
112	MEN'S	MC CABLE	STEEL	YES - SEE NOTE 5.
113	WOMEN'S	MC CABLE	STEEL	YES - SEE NOTE 5.
H100	HALLWAY	MC CABLE	STEEL	YES - SEE NOTE 5.
H101	HALLWAY	WIREMOLD	WIREMOLD	NO
H102	HALLWAY	WIREMOLD	WIREMOLD	NO
H103	HALLWAY	WIREMOLD	WIREMOLD	NO
H104	HALLWAY	MC CABLE	STEEL	YES - SEE NOTE 5.
H105	HALLWAY	MC CABLE	STEEL	YES - SEE NOTE 5.
H106	HALLWAY	MC CABLE	STEEL	YES - SEE NOTE 5.
V101	VESTIBULE	EMT	STEEL	NO
X101	ELEV. EQUIP.	EMT	STEEL	NO
X102A	MECHANICAL	EMT	STEEL	NO
X103	STORAGE	EMT	STEEL	NO

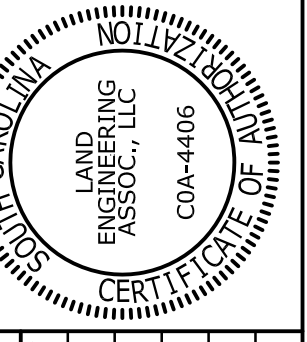


**GROUND FLOOR FIRE ALARM RENOVATION PLAN**  
SCALE: 1/8" = 1'-0"



PLAN NORTH

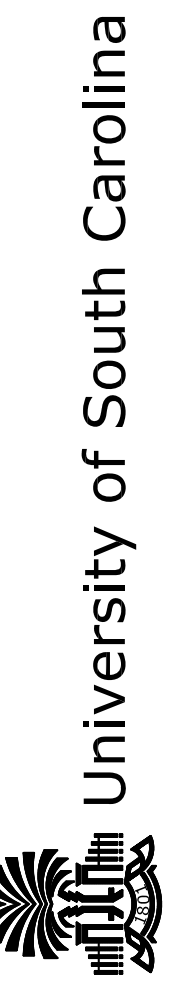




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State Project No. HZ7-1851

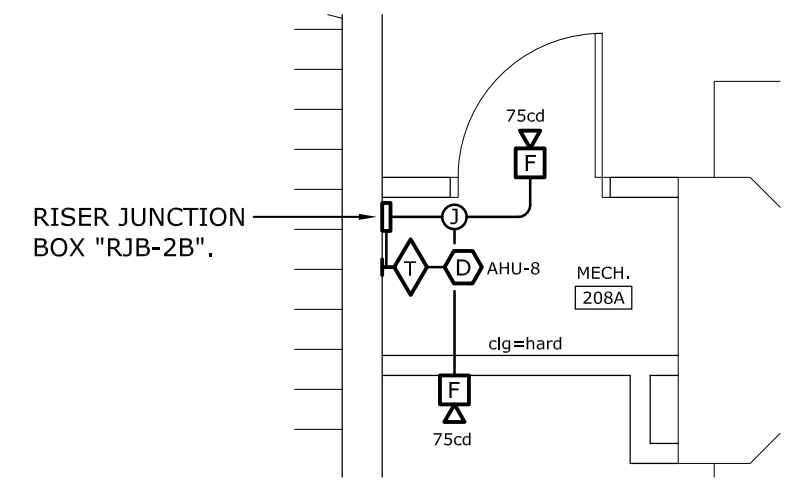
PROJECT TITLE: McCUTCHEM FIRE ALARM UPGRADE



SHEET:  
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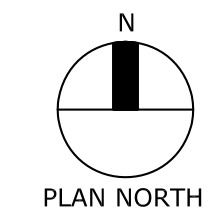
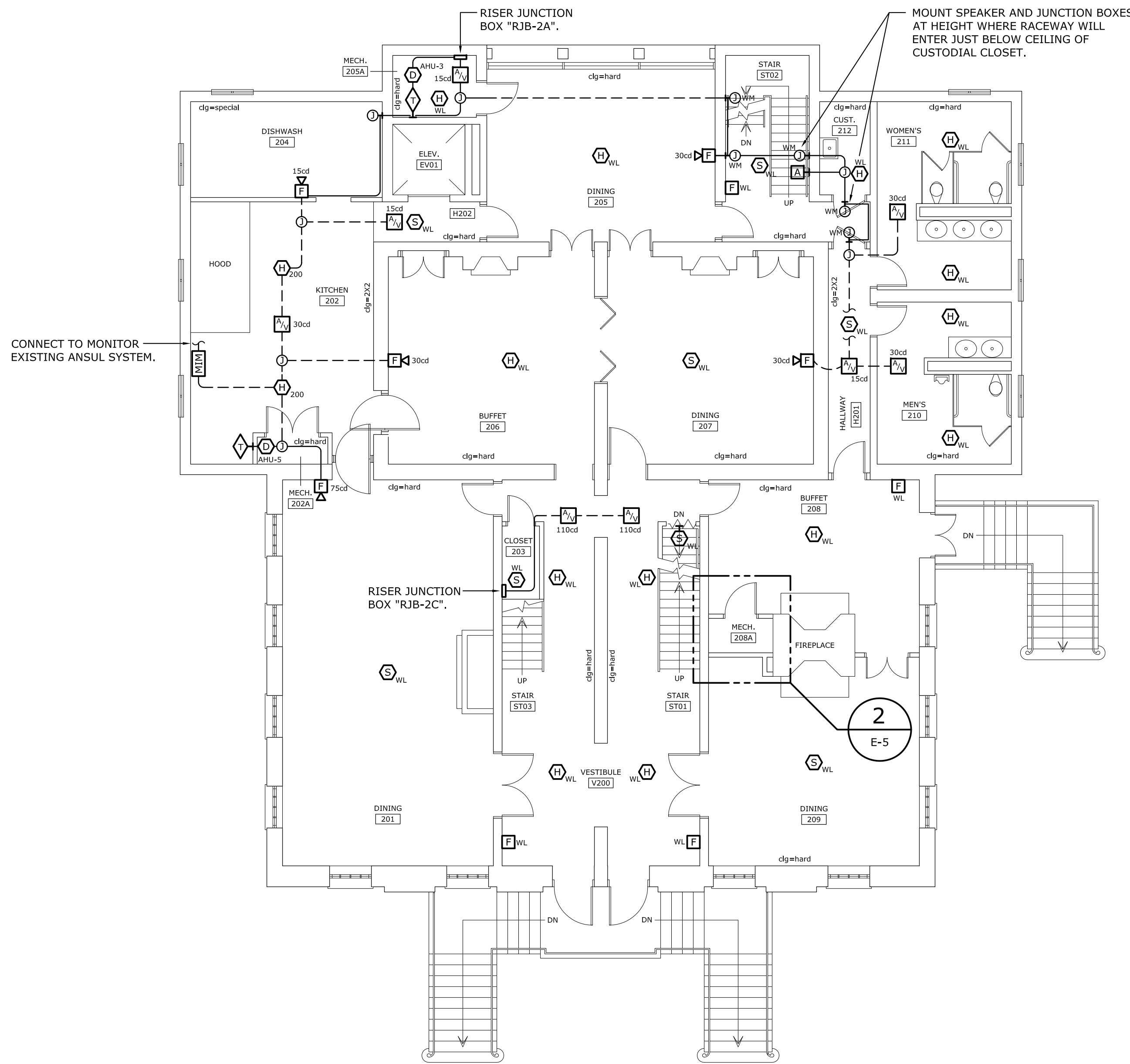
**NOTES**

1. ROOM RACEWAY SCHEDULE: WHERE RACEWAY IS INDICATED TO BE CONCEALED (YES) ON THE ROOM RACEWAY SCHEDULE, CUT EXISTING GYPSUM/PLASTER CEILINGS AS REQUIRED TO CONCEAL MC CABLES SERVING FIRE ALARM DEVICES. PATCH AND PAINT CEILINGS AFTER INSTALLATION OF CABLES. PAINT SHALL MATCH EXISTING CEILING COLOR - COORDINATE WITH OWNER TO VERIFY PAINT MANUFACTURER, TYPE, AND COLOR TO BE PROVIDED. APPLY TWO COATS OF PAINT TO EACH AREA WHERE CUTTING AND PATCHING IS REQUIRED.

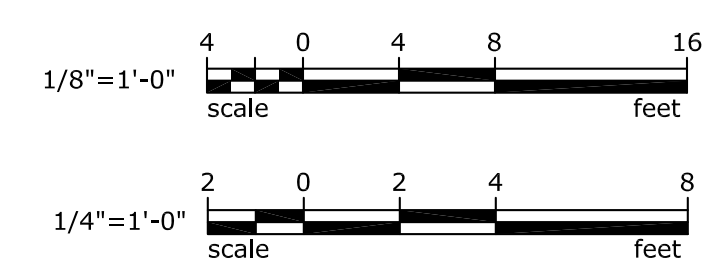


**ENLARGED PLAN:  
ROOM 208A**  
SCALE: 1/4" = 1'-0"

ROOM NUMBER	ROOM NAME	RACEWAY TYPE	J-BOX TYPE	CONCEAL RACEWAY
201	DINING	EMT	STEEL	YES
202	KITCHEN	EMT	STEEL	YES
202A	MECHANICAL	EMT/FMC	STEEL	NO
203	CLOSET	EMT	STEEL	NO
204	DISHWASH	EMT	STEEL	NO
205	DINING	MC CABLE	STEEL	YES ← SEE NOTE 1.
205A	MECHANICAL	EMT/FMC	STEEL	NO
206	DINING	EMT/FMC	STEEL	YES
207	DINING	EMT/FMC	STEEL	YES
208	BUFFET	EMT/FMC	STEEL	YES
208A	MECHANICAL	EMT/FMC	STEEL	NO
209	DINING	EMT/FMC	STEEL	YES
210	MEN'S	MC CABLE	STEEL	YES ← SEE NOTE 1.
211	WOMEN'S	MC CABLE	STEEL	YES ← SEE NOTE 1.
H201	HALLWAY	EMT/FMC	STEEL	YES
H202	HALLWAY	MC CABLE	STEEL	YES ← SEE NOTE 1.
ST01	STAIR	N/A	N/A	N/A
ST02	STAIR	WIREMOLD	WIREMOLD	NO
ST03	STAIR	N/A	N/A	N/A
V200	VESTIBULE	AC CABLE	STEEL	YES



**1 2nd FLOOR FIRE ALARM RENOVATION PLAN**  
SCALE: 1/8" = 1'-0"

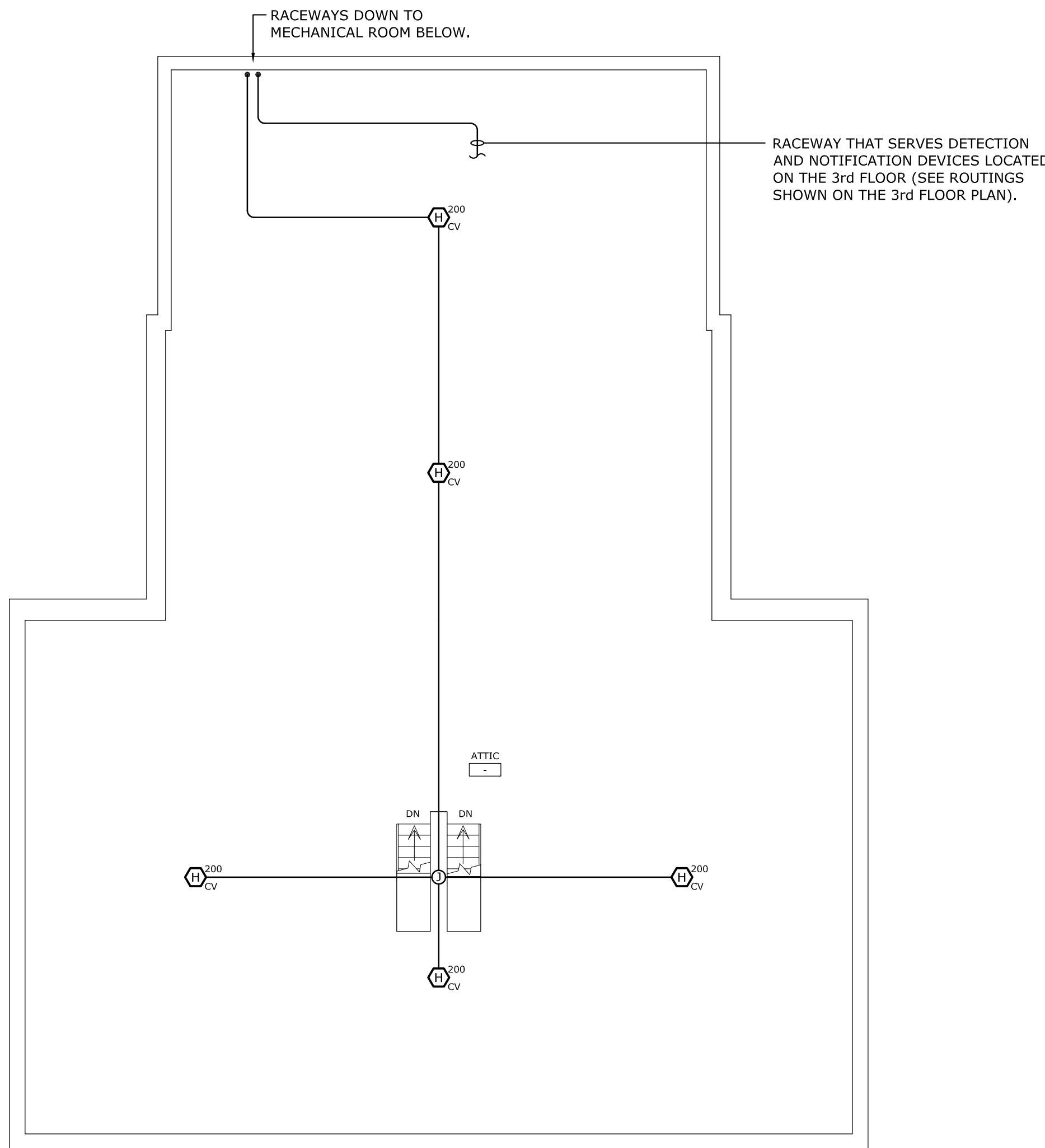
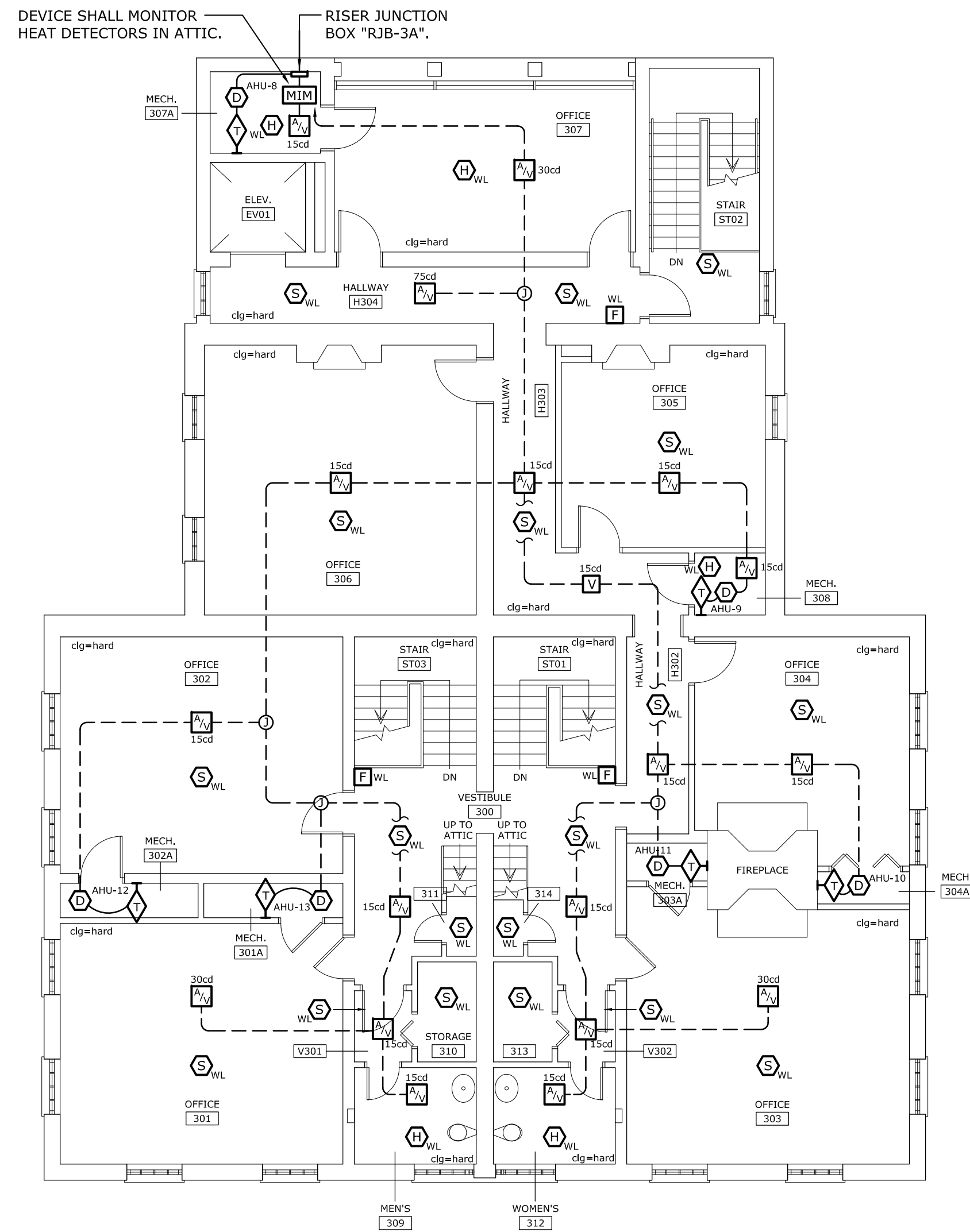


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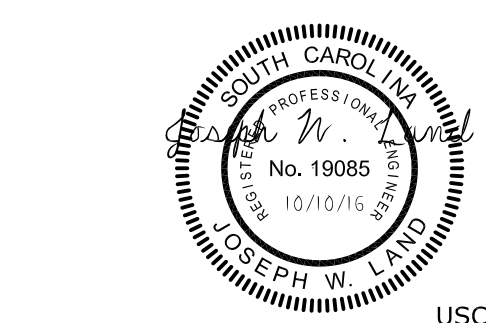
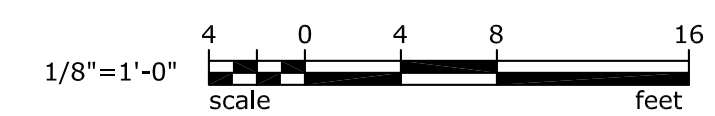
NOTE: ALL RACEWAYS SERVING DETECTION AND NOTIFICATION DEVICES ON THE THIRD FLOOR SHALL BE ROUTED IN THE ATTIC SPACE OF THE BUILDING. THERE IS NO FLOOR AND THERE ARE NO CATWALKS IN THE ATTIC SPACE - THE CONTRACTOR SHALL PROVIDE TEMPORARY PLYWOOD FLOORING AS REQUIRED TO WORK IN THE ATTIC SPACE.

NOTE: ALL RACEWAYS SERVING DETECTION DEVICES IN THE ATTIC SHALL BE RUN EXPOSED - TIGHT TO JOISTS. SEE NOTE TO LEFT REGARDING FLOORING IN THE ATTIC SPACE.



1 3rd FLOOR FIRE ALARM RENOVATION PLAN  
SCALE: 1/8" = 1'-0"

2 ATTIC FIRE ALARM RENOVATION PLAN  
SCALE: 1/8" = 1'-0"



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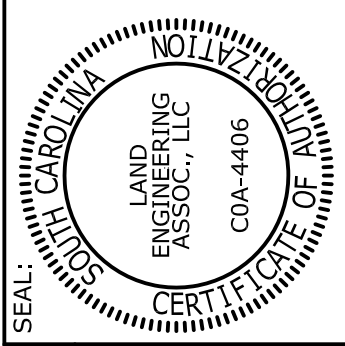
PROJECT TITLE: McCUTCHEM FIRE ALARM UPGRADE

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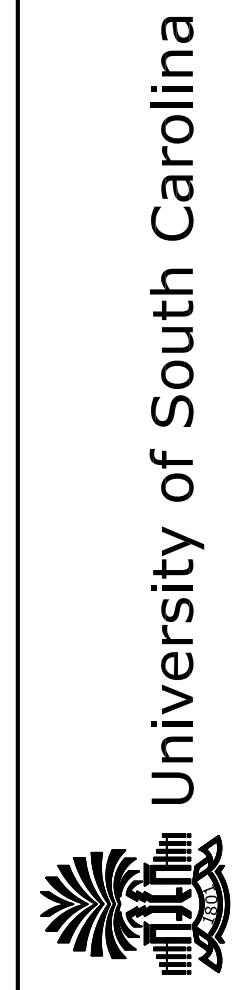
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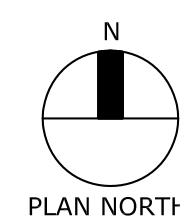
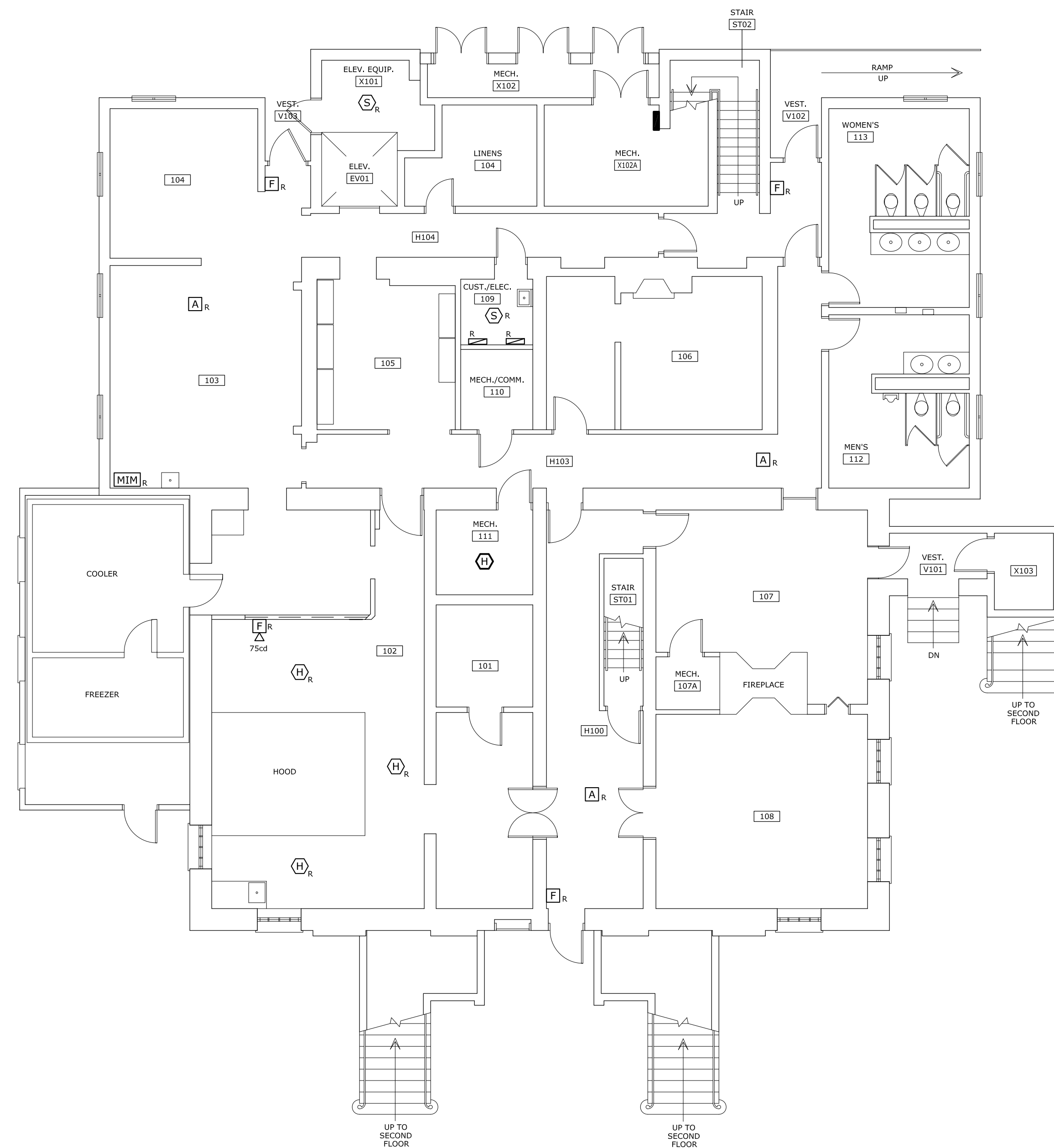
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COLUMBIA, SC 29208



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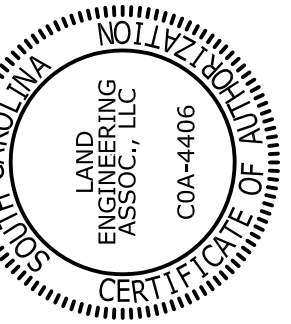
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### GROUND FLOOR FIRE ALARM DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

### DEMOLITION LEGEND

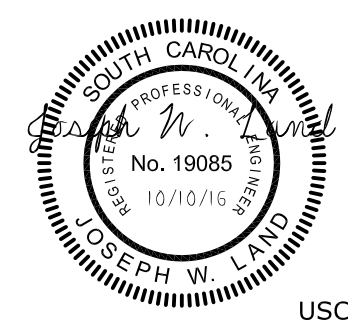
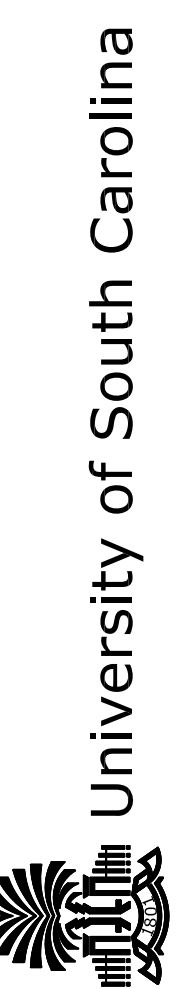
- EXISTING FIRE ALARM SYSTEM PANEL - REMOVE PANEL AND ALL ASSOCIATED RACEWAY AND WIRING.
- EXISTING FIRE ALARM SYSTEM ADDRESSABLE MONITOR INTERFACE MODULE - REMOVE MODULE ALL ASSOCIATED RACEWAY AND WIRING.
- EXISTING FIRE ALARM MANUAL PULL STATION - REMOVE STATION AND ALL ASSOCIATED RACEWAY AND WIRING. PROVIDE A CUSTOM-SIZE BLANK, WHITE, PHENOLIC COVERPLATE TO FULLY COVER EXISTING OPENING IN WALL. MOUNTING SCREWS SHALL BE PAINTED MATCH COLOR OF COVERPLATE.
- EXISTING FIRE ALARM SMOKE DETECTOR - REMOVE DETECTOR AND ALL ASSOCIATED RACEWAY AND WIRING. PROVIDE A CUSTOM-SIZE BLANK, ROUND, WHITE, PHENOLIC COVERPLATE TO FULLY COVER EXISTING OPENING IN CEILING. MOUNTING SCREWS SHALL BE PAINTED MATCH COLOR OF COVERPLATE.
- EXISTING FIRE ALARM HEAT DETECTOR - REMOVE DETECTOR AND ALL ASSOCIATED RACEWAY AND WIRING. PROVIDE A CUSTOM-SIZE BLANK, ROUND, WHITE, PHENOLIC COVERPLATE TO FULLY COVER EXISTING OPENING IN CEILING. MOUNTING SCREWS SHALL BE PAINTED MATCH COLOR OF COVERPLATE.
- EXISTING CEILING MOUNTED FIRE ALARM HORN NOTIFICATION APPLIANCE - REMOVE APPLIANCE AND ALL ASSOCIATED RACEWAY AND WIRING. PROVIDE A CUSTOM-SIZE BLANK, WHITE, PHENOLIC COVERPLATE TO FULLY COVER EXISTING OPENING IN CEILING. MOUNTING SCREWS SHALL BE PAINTED MATCH COLOR OF COVERPLATE.
- EXISTING CEILING MOUNTED FIRE ALARM COMBINATION HORN/STROBE NOTIFICATION APPLIANCE - REMOVE APPLIANCE AND ALL ASSOCIATED RACEWAY AND WIRING. PROVIDE A CUSTOM-SIZE BLANK, WHITE, PHENOLIC COVERPLATE TO FULLY COVER EXISTING OPENING IN CEILING. MOUNTING SCREWS SHALL BE PAINTED MATCH COLOR OF COVERPLATE.
- EXISTING WALL MOUNTED FIRE ALARM HORN/STROBE NOTIFICATION APPLIANCE - REMOVE APPLIANCE AND ALL ASSOCIATED RACEWAY AND WIRING. PROVIDE A CUSTOM-SIZE BLANK, WHITE, PHENOLIC WALLPLATE TO FULLY COVER EXISTING OPENING IN WALL. MOUNTING SCREWS SHALL BE PAINTED MATCH COLOR OF WALLPLATE.



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	REV.		

State Project No. HZ7-1851

PROJECT TITLE:  
McCUTCHEM FIRE ALARM UPGRADE



USC-2016-06

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SHEET:

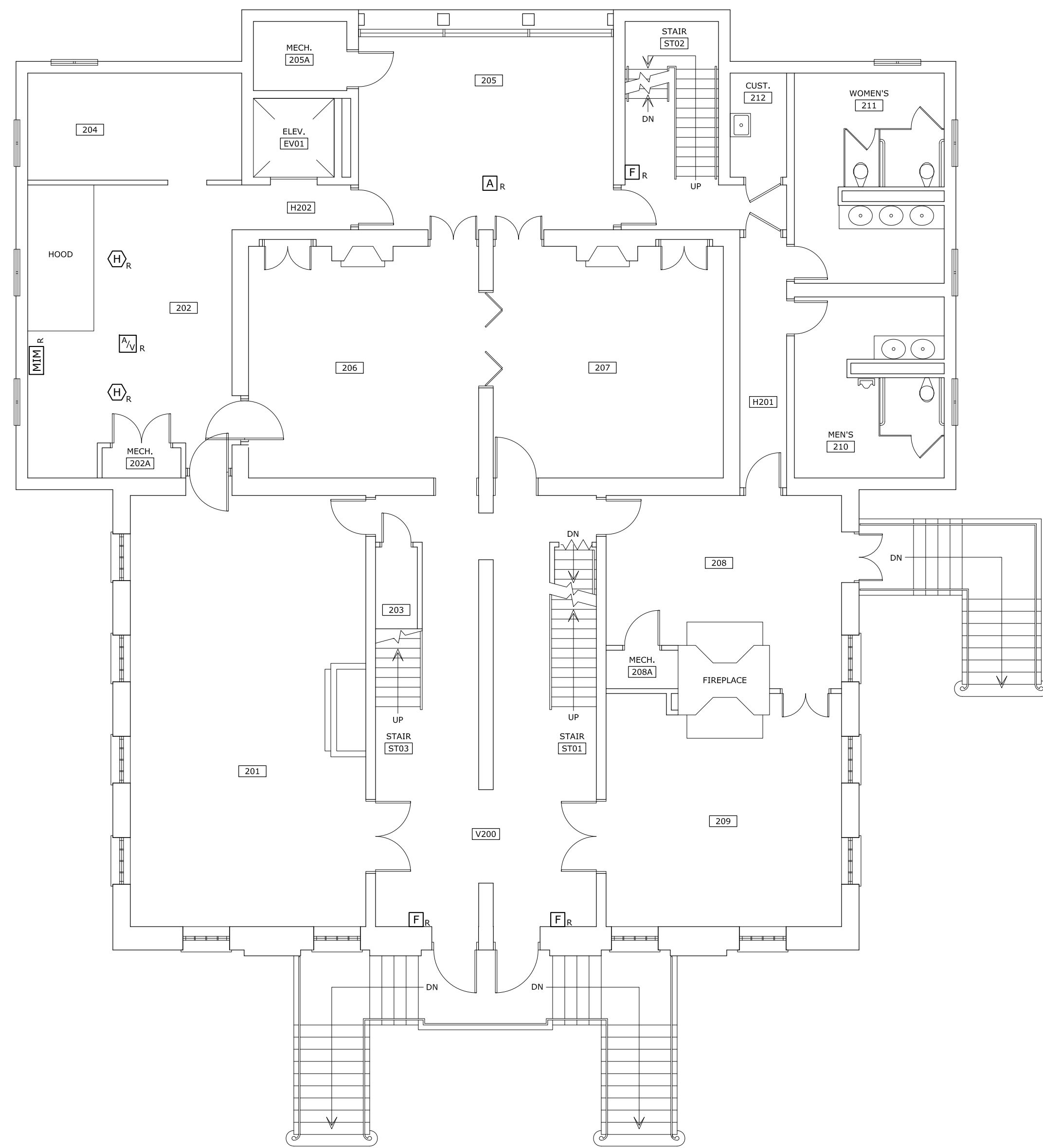
**E-7**

8 OF 9

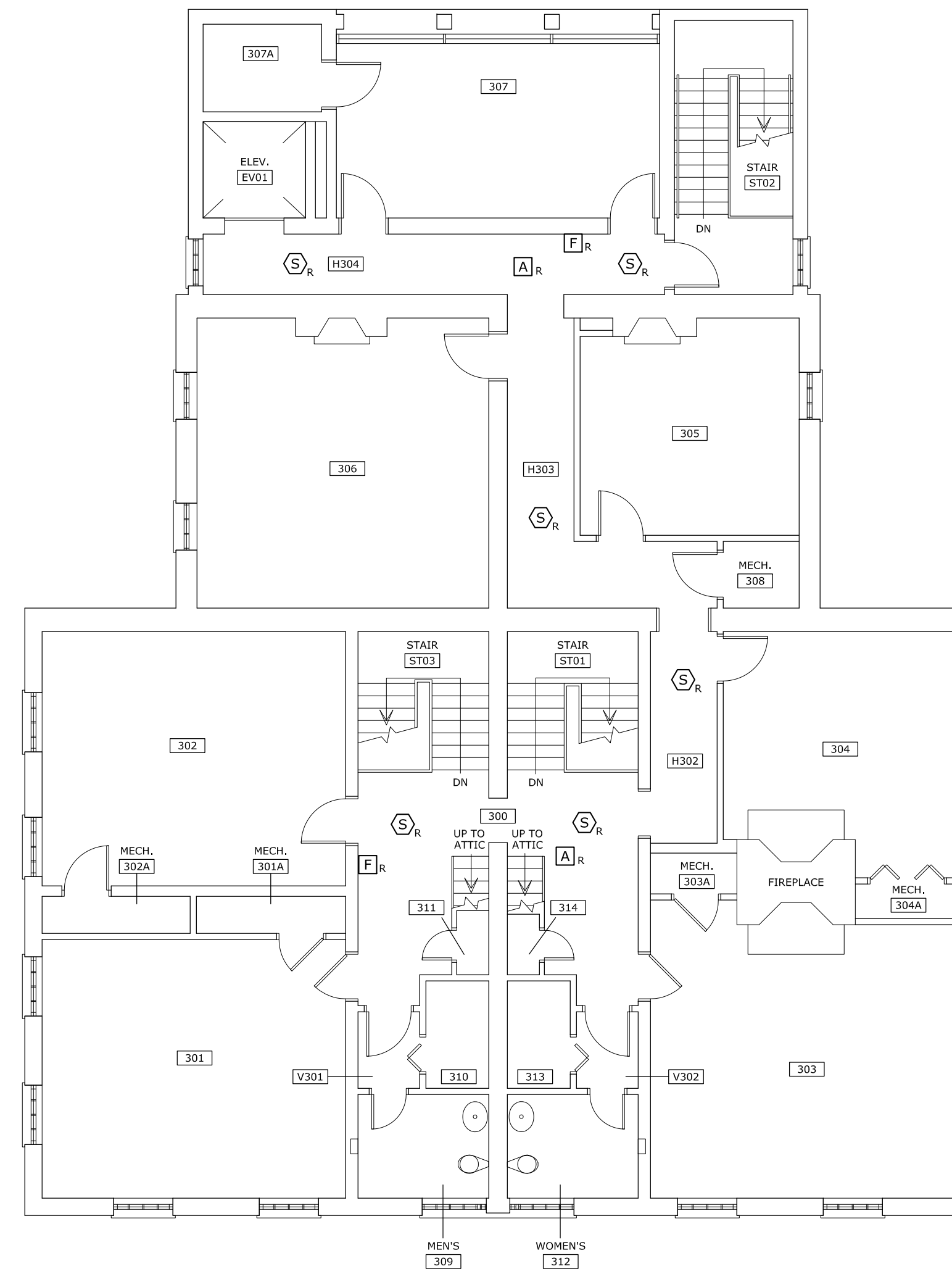
SHEET IN SET:

8 OF 9

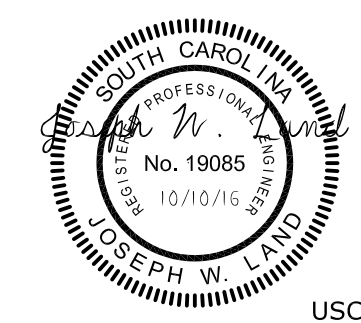




1 2nd FLOOR FIRE ALARM DEMOLITION PLAN  
 E-8 SCALE: 1/8" = 1'-0"



2 3rd FLOOR FIRE ALARM DEMOLITION PLAN  
 E-8 SCALE: 1/8" = 1'-0"



USC-2016-06

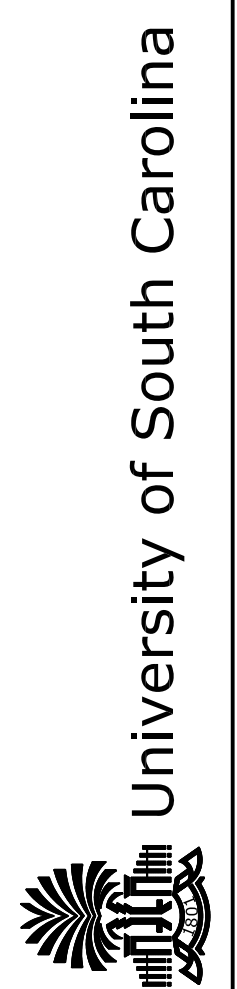
**LEA** LAND ENGINEERING ASSOCIATES, LLC  
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State Project No. H27-1851

PROJECT TITLE: McCUTCHEM FIRE ALARM UPGRADE

PROJECT TITLE: USC-2016-06

SHEET:

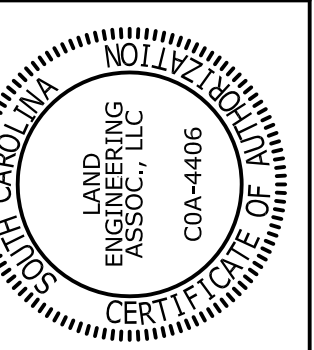


**E-8**  
 9 OF 9  
 SHEET IN SET:  
 9 OF 9

BUILDING: 010  
 DRAWING: E-2  
 DATE: 10OCT16  
 DESCRIPTION:

DRAWN BY: KNJ  
 DATE:

CHECKED BY: JWL  
 ORIG. BY: [ ]  
 DATE:



OFFICE OF  
 FACILITIES MANAGEMENT  
 COLUMBIA, SC 29208