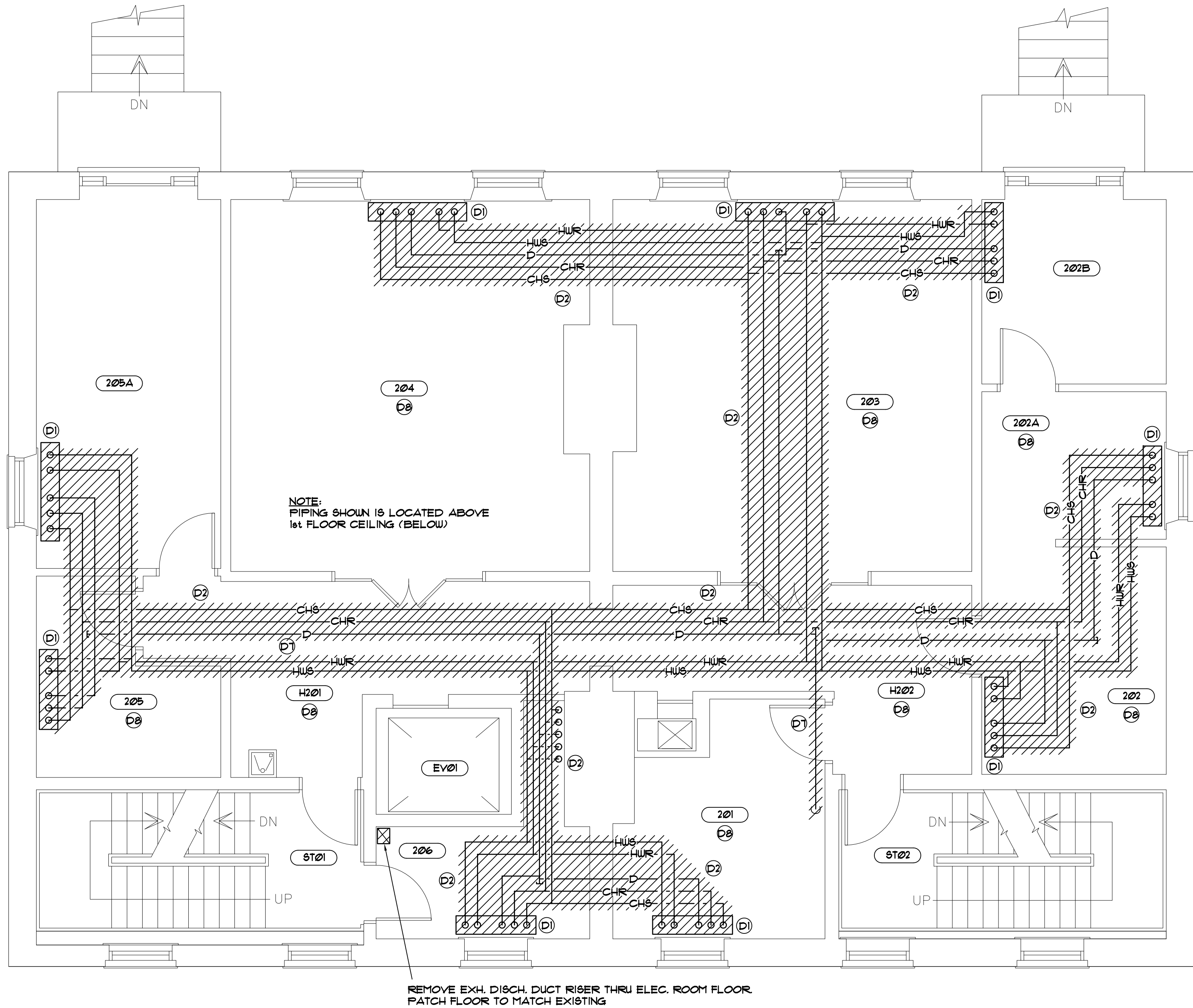
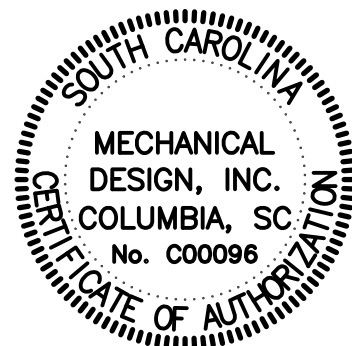


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SECOND FLOOR HVAC DEMOLITION PLAN  
SCALE: 1/4" = 1'-0"



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CONTACT: Danny Wilds  
DATE: 06/16/17 COMM. NO. 163277

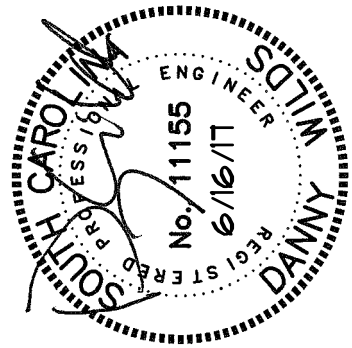
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INTERIORS  
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UNIVERSITY OF SOUTH CAROLINA  
COLUMBIA, SC

State Project No: H27-Z313



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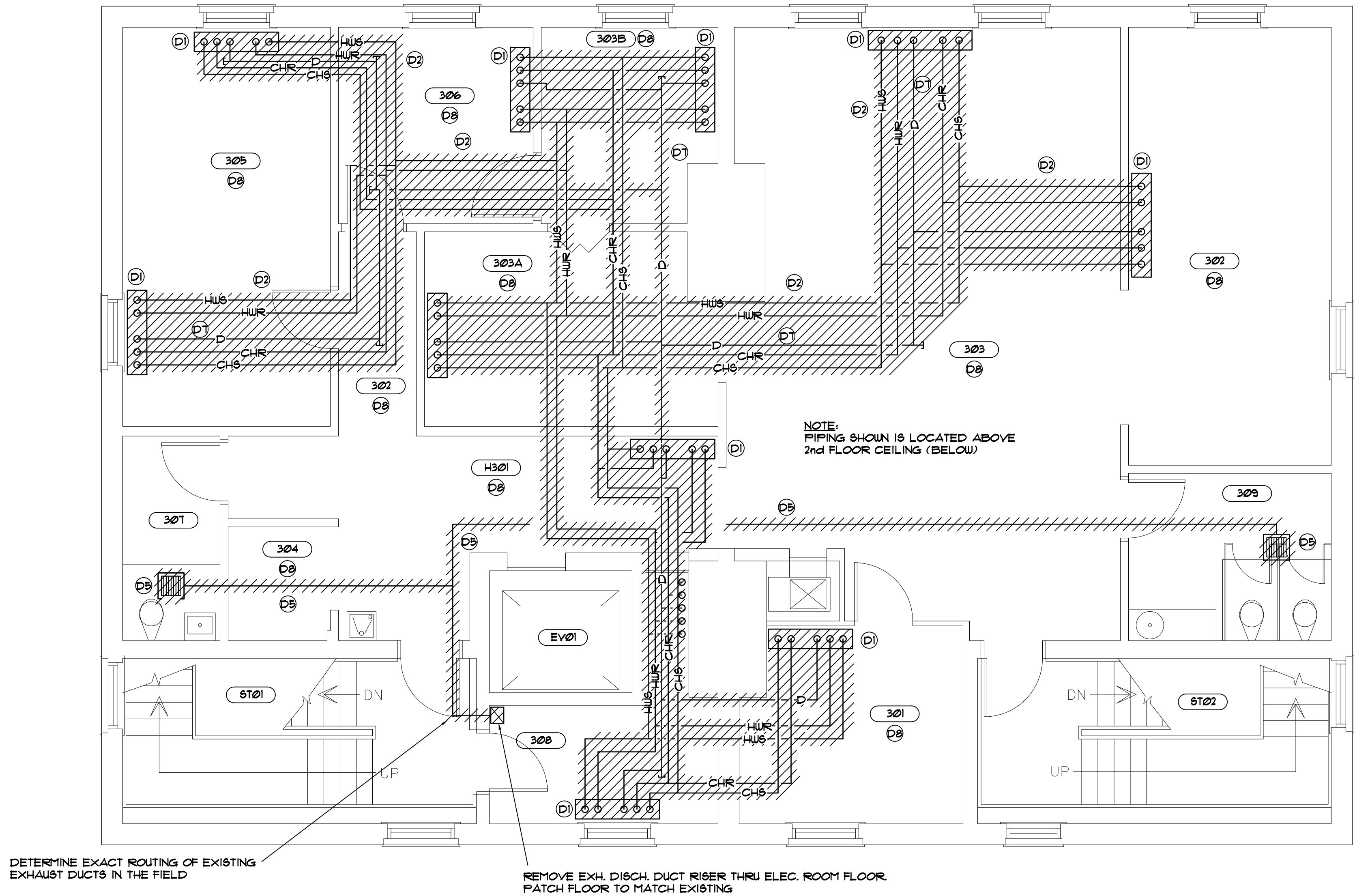
Revisions:		
NO.	ISSUED FOR	DATE

Second Floor  
HVAC Demolition  
Plan

M-2-D

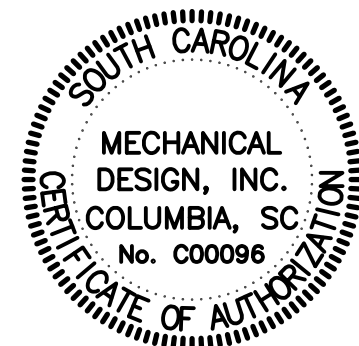
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THIRD FLOOR HVAC DEMOLITION PLAN

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



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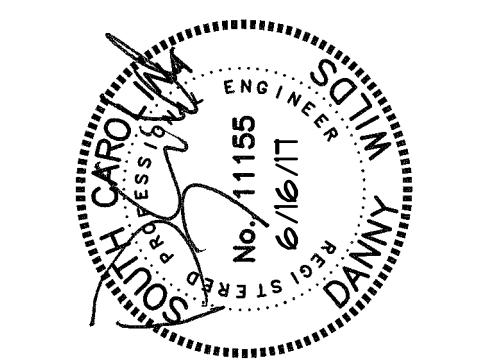
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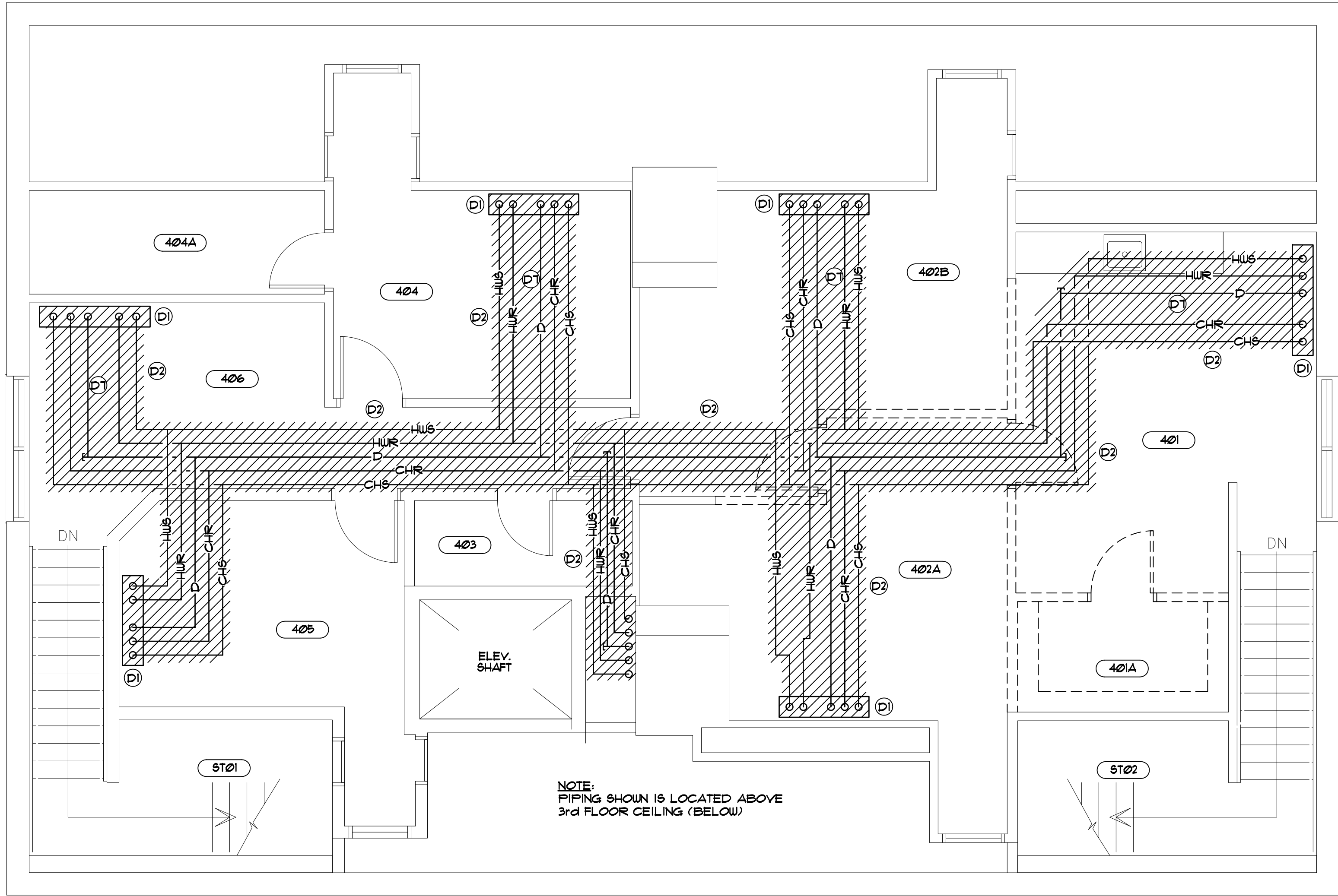
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NO.	ISSUED FOR	DATE

Third Floor  
HVAC Demolition  
Plan

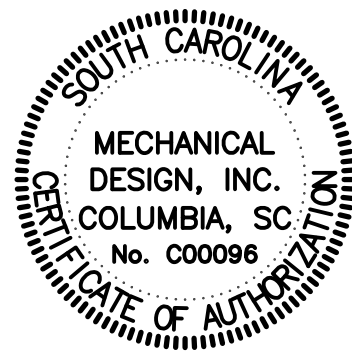
M-3-D

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FOURTH FLOOR HVAC DEMOLITION PLAN  
SCALE: 1/4" = 1'-0"



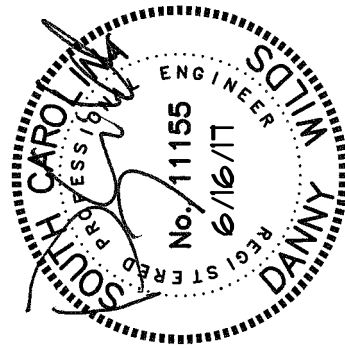
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Fourth Floor  
HVAC Demolition  
Plan

M-4-D

CONSTRUCTION DOCUMENTS



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Date: 15 JULY 2016

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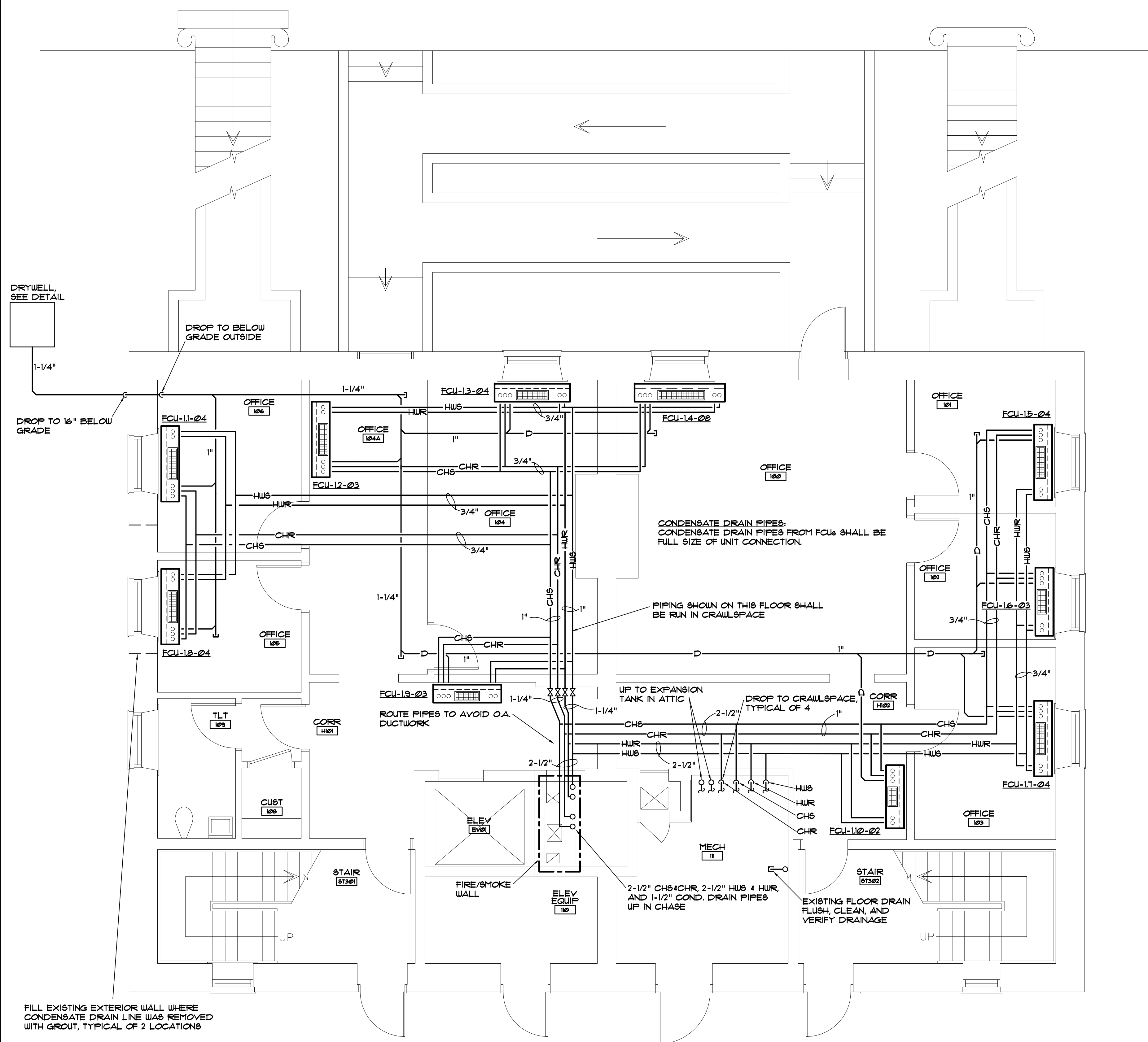
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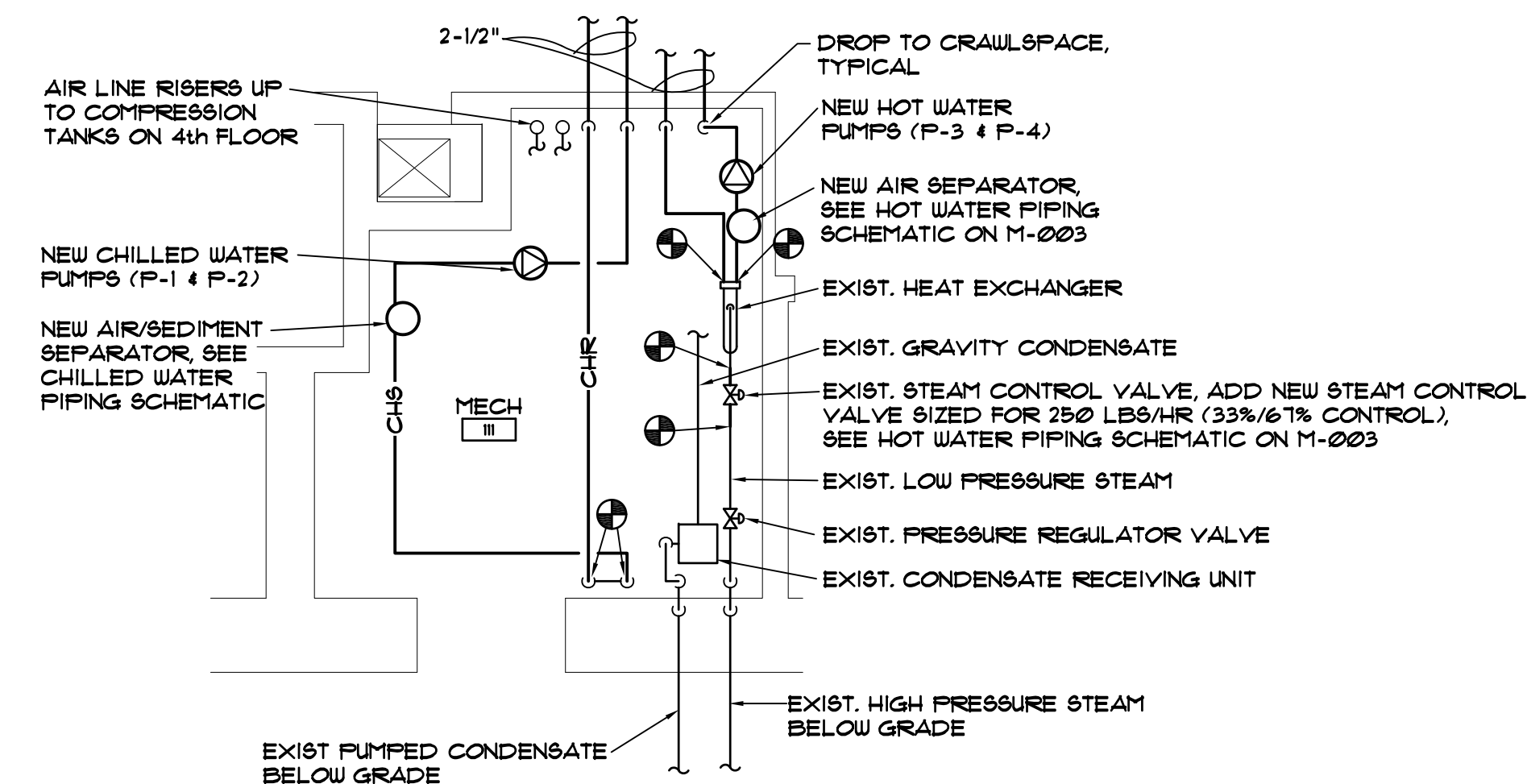
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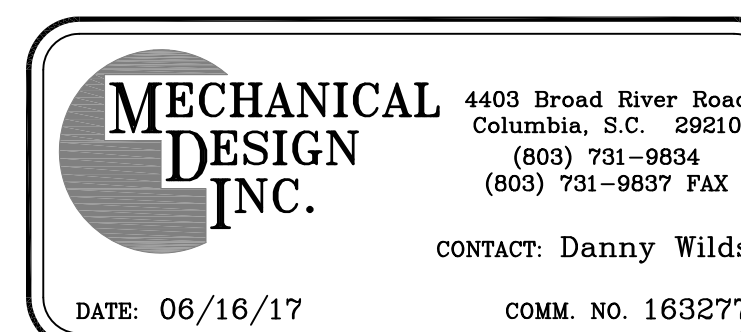
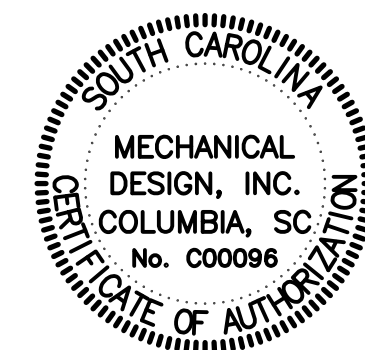
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 FIRST FLOOR HVAC PIPING PLAN  
SCALE: 1/4" = 1'-0"



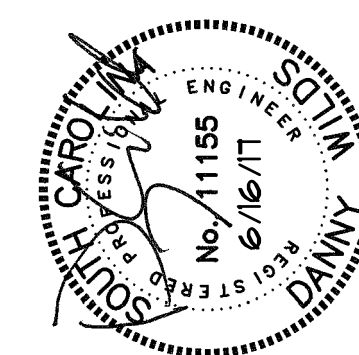
MECHANICAL ROOM



## LIEBER COLLEGE HVAC RENOVATION

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COLUMBIA, SC

State Project No: H27-Z313



Project Number: 1704  
Date: 15 JULY 2016

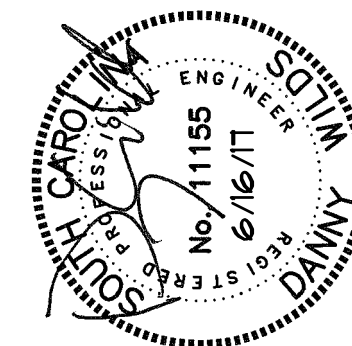
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## FIRST Floor HVAC Piping Plan

M-1-P

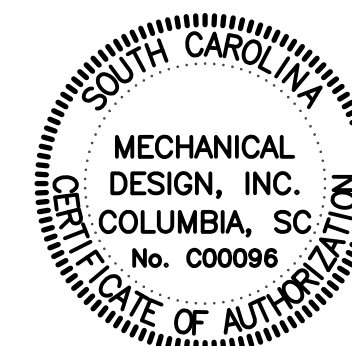
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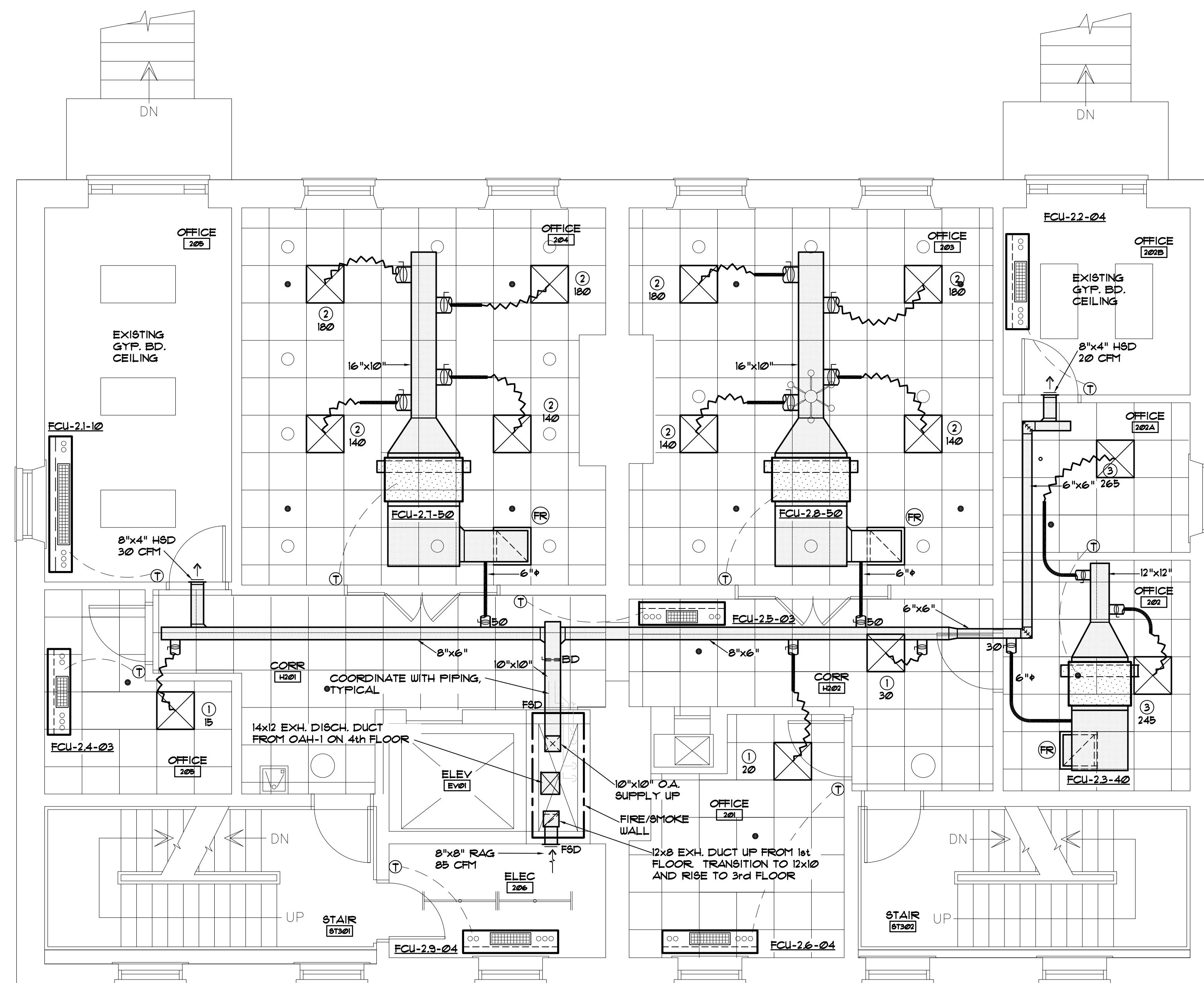
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M-1-R

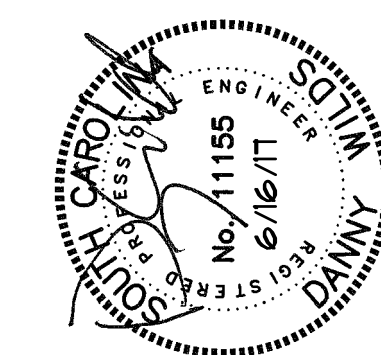
CONSTRUCTION DOCUMENTS







 **SECOND FLOOR RENOVATION PLAN-HVAC DUCT**  
SCALE: 1/4" = 1'-0"

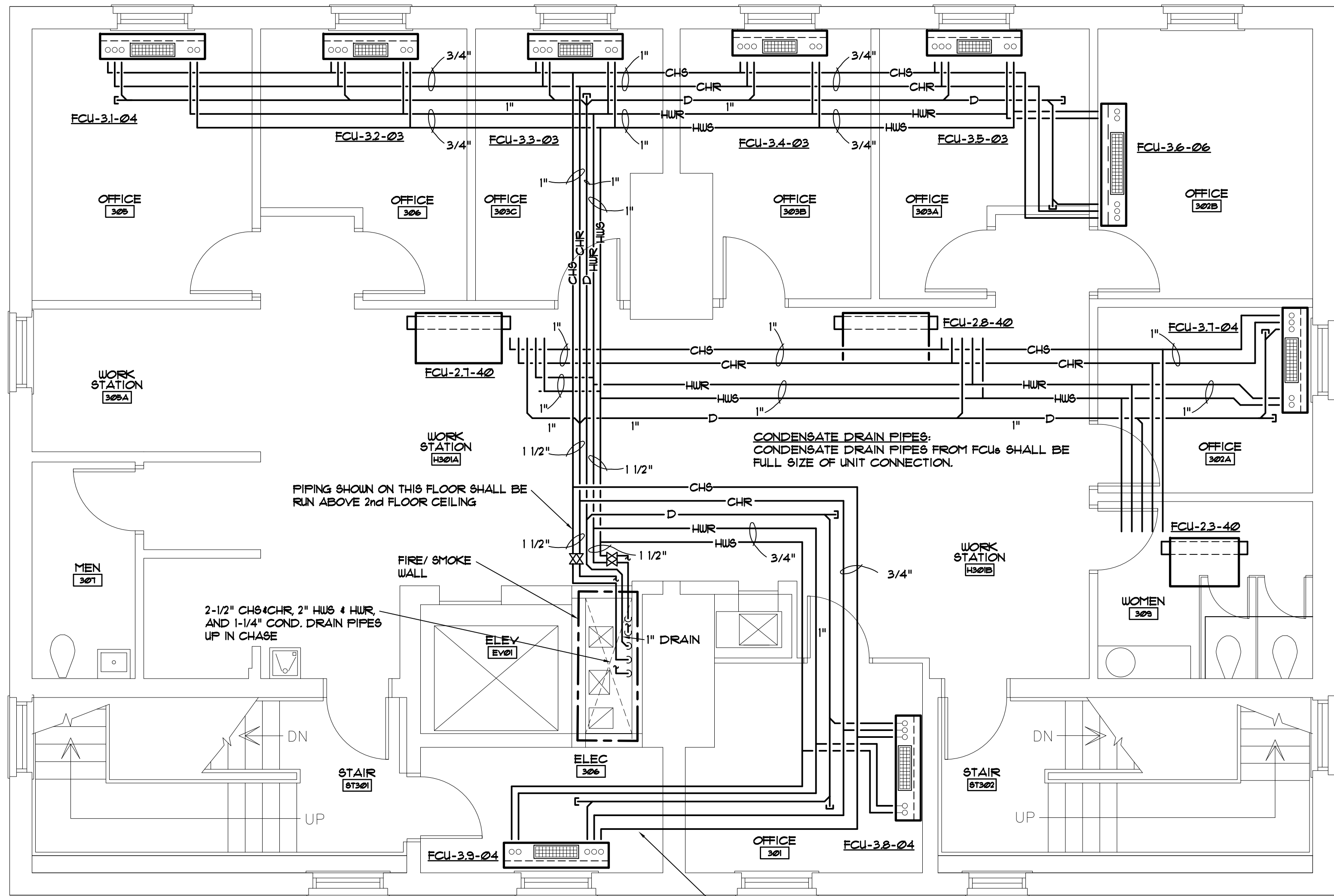


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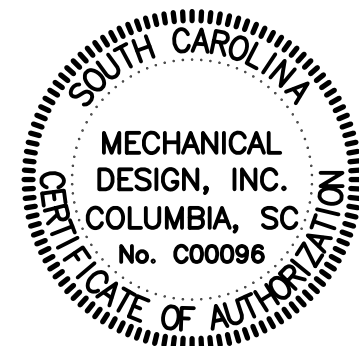
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## SECOND Floor HVAC Ductwork Plan

M-2-R



THIRD FLOOR HVAC PIPING PLAN  
SCALE: 1/4" = 1'-0"



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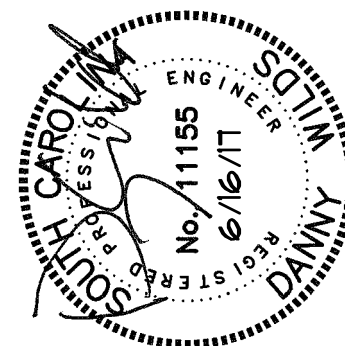
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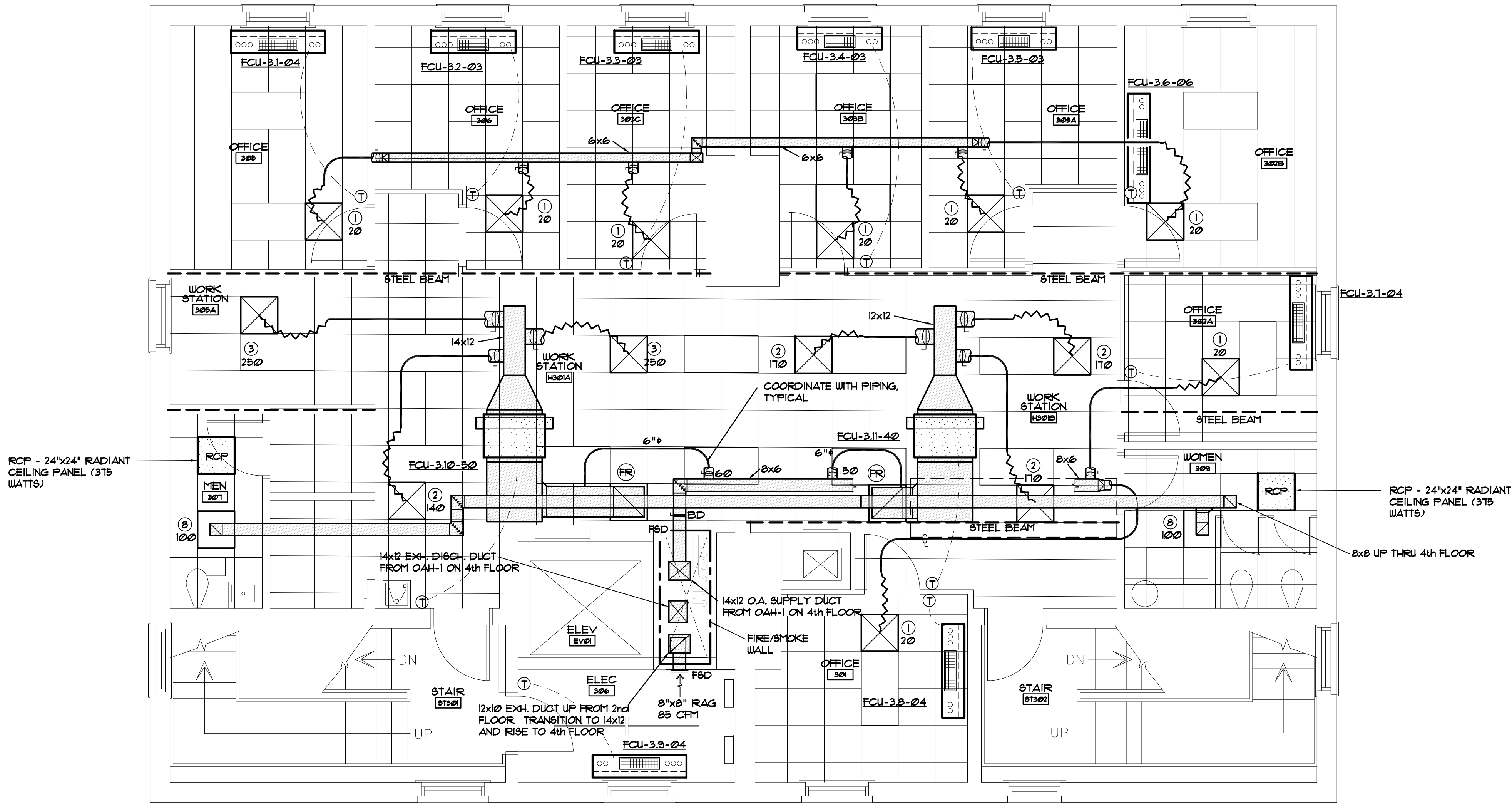


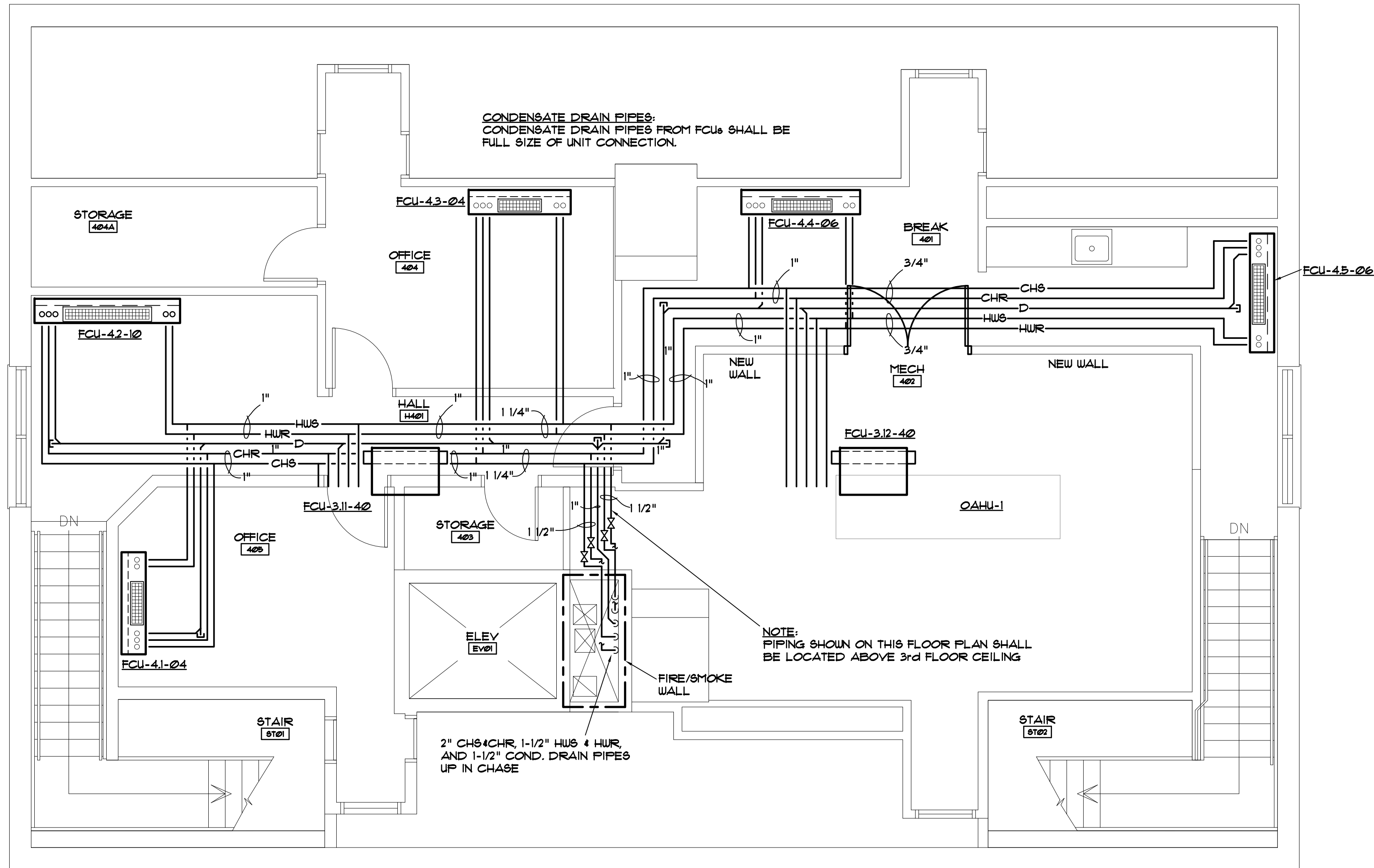
Project Number: 1704  
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Third Floor  
HVAC Piping Plan

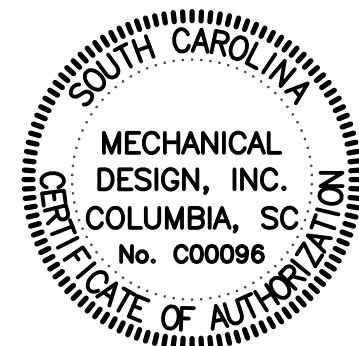
M-3-P





FOURTH FLOOR HVAC PIPING PLAN

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



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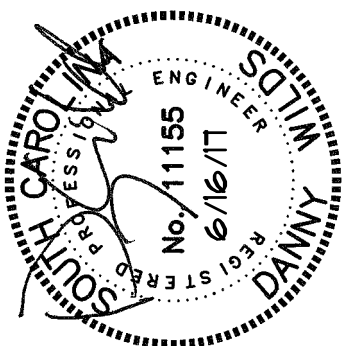
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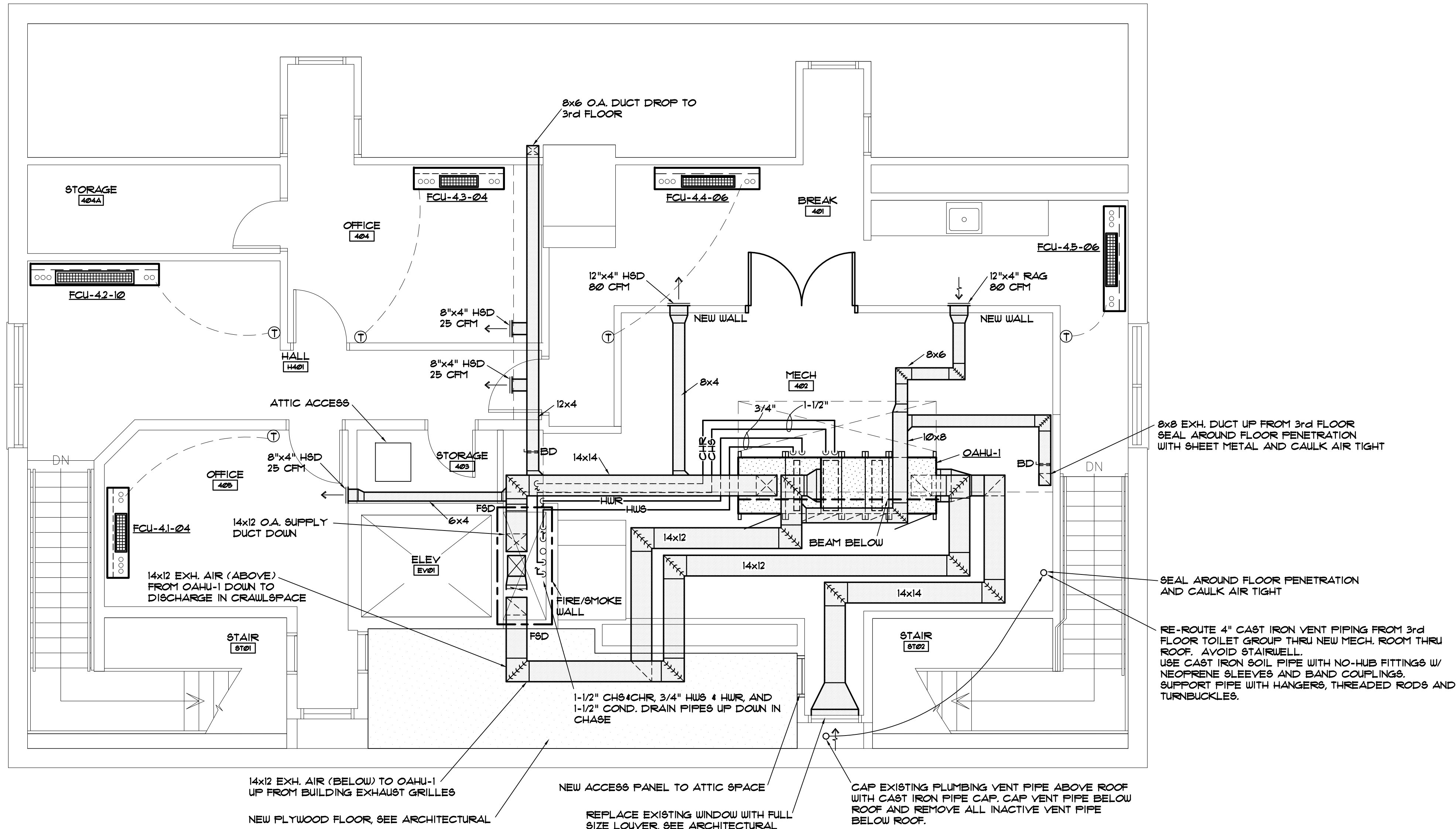
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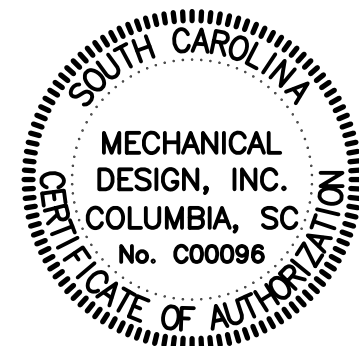
Fourth Floor  
HVAC Piping Plan

M-4-P



FOURTH FLOOR RENOVATION PLAN-HVAC DUCT

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



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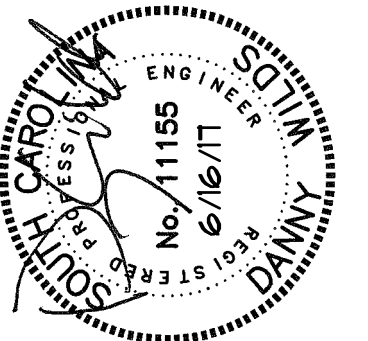
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Fourth Floor  
HVAC Ductwork  
Plan

M-4-R

CONSTRUCTION DOCUMENTS

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LIGHTING FIXTURE SCHEDULE								
SYMBOL	TYPE	DESCRIPTION	MANUFACTURER	MODEL NUMBER	OPTICAL ELEMENT	MOUNTING	VOLTS	LIGHT SOURCE
	A	4-FOOT STRIP L.E.D. LIGHTING FIXTURE WITH A WHITE WIRE-GUARD.	H.E. WILLIAMS	76-4-LS3/840-WG-7614-DRV-UNV with 5-YEAR WARRANTY ON L.E.D. ARRAYS AND DRIVER.	-	THREADED ROD	120/277V UNIVERS.	L.E.D. - 5,300 lumens, 4000K 48 WATTS, 110 LPW, 82 CRI
	-	EDGE-LIT L.E.D. EXIT SIGN WITH SINGLE FACE AND GREEN LETTERING. PROVIDE ARROWS/CHEVRONS AS SHOWN ON PLAN.	EMERGI-LITE	TA-PEN-F-1-GC with 3-YEAR FULL WARRANTY ON ARRAYS AND DRIVER.	GREEN LETTERING ON CLEAR SURFACE	UNIVERSAL WALL OR CEILING	120/277V UNIVERS.	L.E.D. - COMPLY WITH 2015 IBC

NOTE: PROVIDE GRID HOLD-DOWN CLIPS FOR EACH 2'x4' FIXTURE AS REQUIRED TO COMPLY WITH ASTM E-580 AND THE INTERNATIONAL BUILDING CODE.

## GENERAL DEMOLITION NOTES

- REMOVE AND LEGALLY DISPOSE OF ALL EXISTING CONTROLS, DEVICES, LIGHTING FIXTURES, EXIT SIGNS, AND ALL ASSOCIATED RACEWAY AND WIRING NOTED ON PLANS. PROVIDE 2-HOUR RATED FIRESTOPPING COMPOUND IN HOLES WHERE EXISTING RACEWAYS ARE REMOVED.
- THE CONTRACTOR SHALL VISIT THE SITE/ BUILDING TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID AND SHALL INCLUDE ALL WORK REQUIRED FOR COMPLETE DEMOLITION AND RENOVATION IN HIS BID.

## GENERAL CONSTRUCTION NOTES

- PROVIDE ALL WORK IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS:

INTERNATIONAL EXISTING BUILDING CODE	2015 EDITION
NFPA 70 - NATIONAL ELECTRICAL CODE	2014 EDITION
NFPA 72 - NATIONAL FIRE ALARM CODE	2013 EDITION
ANSI A117.1 - ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES	2009 EDITION
- PROVIDE NEW RACEWAY AND WIRING TO ALL DEVICES, FIXTURES, AND EQUIPMENT INDICATED ON THE CONTRACT DRAWINGS. THE DRAWINGS INDICATE PARTIAL RACEWAY AND WIRING REQUIREMENTS TO HELP CLARIFY DESIGN INTENT. WHERE RACEWAY AND/OR WIRING IS NOT INDICATED FOR DEVICES, FIXTURES, OR EQUIPMENT THE ARRANGEMENT, GROUPING, AND ROUTING SHALL BE PROVIDED IN ACCORDANCE WITH THE 2014 EDITION OF THE NATIONAL ELECTRICAL CODE.
- PROVIDE FIXTURES AS SHOWN IN THE LIGHTING FIXTURE SCHEDULE OR PRIOR-APPROVED EQUALS BY COOPER OR LITHONIA.
- ALL FIXTURES AND ELECTRICAL MATERIALS SHALL BE U.L. TESTED & LISTED OR BE TESTED & LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
- ALL CONDUIT PENETRATIONS THROUGH WALLS AND CEILINGS SHALL BE 2-HOUR FIRESTOPPED - HILTI OR EQUAL.
- RACEWAYS SHALL BE EMT WITH COMPRESSION TYPE FITTINGS UNLESS NOTED OR DETAILED OTHERWISE. PROVIDE FIXTURE WHIPS THAT COMPLY WITH THE NATIONAL ELECTRICAL CODE.
- CIRCUITS SHALL BE TWO #12 AWG COPPER THHN CONDUCTORS WITH ONE #12 AWG COPPER GREEN-INSULATED GROUND WIRE IN 3/4" EMT RACEWAY UNLESS NOTED OTHERWISE ON PLAN.
- JUNCTION BOXES SHALL BE STEEL TYPE WITH SCREW COVER, SIZED AND SUPPORTED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. PROVIDE JUNCTION BOXES AS REQUIRED FOR POWER AND CONTROL WIRING RENOVATIONS.
- INSTALL ELECTRICAL SYSTEMS WITHOUT INTERFERING WITH DUCTS, PIPES, STRUCTURAL MEMBERS, OR OTHER SYSTEMS.
- PROVIDE SEISMIC WIRE SUPPORTS TO SUPPORT ALL NEW LIGHTING FIXTURES - ENSURE INSTALLATION COMPLIES WITH ASTM E-580 AND THE INTERNATIONAL BUILDING CODE (ONE WIRE FOR EACH DOWNLIGHT & EXIT SIGN AND TWO WIRES FOR ALL OTHER LIGHTING FIXTURES).
- THOROUGHLY CLEAN ALL EQUIPMENT AND SYSTEMS BEFORE PLACING IN OPERATION. RESTORE FINISHED SURFACES IF DAMAGED AND DELIVER THE ENTIRE INSTALLATION IN AN APPROVED CONDITION. THE CONTRACTOR SHALL INSTRUCT THE OWNER'S PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF ALL FIXTURES AND SYSTEMS. FURNISH 3 SETS OF OPERATION AND MAINTENANCE MANUALS TO THE OWNER FOR THE INSTALLED LIGHTING SYSTEM.
- THE CONTRACTOR SHALL GUARANTEE THE WORK INSTALLED UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR AFTER DATE OF FINAL ACCEPTANCE. DEFECTS WHICH APPEAR AS A RESULT OF NORMAL USAGE SHALL BE REMEDIED BY THE CONTRACTOR TO THE COMPLETE SATISFACTION OF THE OWNER WITHOUT COST TO THE OWNER. SEE SPECIAL LIGHTING WARRANTY REQUIREMENTS IN LIGHTING FIXTURE SCHEDULE.
- CUTTING, DRILLING, AND PATCHING: PROVIDE CHASES, SLOTS, AND OPENINGS IN EXISTING BUILDING COMPONENTS TO ALLOW FOR ELECTRICAL INSTALLATIONS. PERFORM CUTTING, DRILLING, FITTING, AND PATCHING REQUIRED TO:





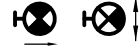



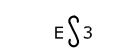



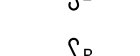

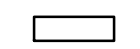















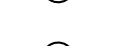

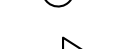

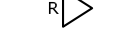





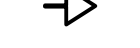


A) INSTALL EQUIPMENT, MATERIALS, AND RACEWAYS IN EXISTING STRUCTURES.
B) REMOVE AND REPLACE DEFECTIVE WORK THAT DOES NOT CONFORM TO REQUIREMENTS OF THE CONTRACT DOCUMENTS.
C) UPON WRITTEN INSTRUCTIONS FROM THE ARCHITECT/ENGINEER, UNCOVER AND RESTORE WORK TO PROVIDE FOR ARCHITECT/ENGINEER OBSERVATION OF CONCEALED WORK.

PROTECT EXISTING STRUCTURES, FURNISHINGS, FINISHES, MECHANICAL SYSTEMS, AND ELECTRICAL SYSTEMS WHILE PERFORMING CUTTING, DRILLING, FITTING, AND PATCHING.
- PATCH AND PAINT EXISTING SURFACES AND BUILDING COMPONENTS USING NEW MATERIALS THAT MATCH EXISTING MATERIALS. PATCHING AND PAINTING SHALL BE PERFORMED BY EXPERIENCED INSTALLERS.

### ELECTRICAL DRAWING INDEX

E1	GENERAL NOTES, LEGEND, AND SCHEDULES
E2	FIRE ALARM SYSTEM SINGLE-LINE DIAGRAM
E3	FIRE ALARM SYSTEM DEMOLITION PLANS
E4	FIRE ALARM SYSTEM RENOVATION PLANS
E5	4th FLOOR LIGHTING PLANS
E6	ELECTRICAL DEMOLITION PLANS
E7	ELECTRICAL RENOVATION PANS
E8	ENLARGED ELECTRICAL PLANS

## ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	LIGHTING FIXTURE; TYPE, CIRCUIT NUMBER, AND SWITCHLEG AS INDICATED. SEE THE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL SYMBOLS AND TYPES.		ADDRESSABLE 200 DEGREE HEAT DETECTOR, FIXED TEMPERATURE ONLY. MOUNT DETECTOR ON CEILING. MAINTAIN U.L. LISTED SPACING WHEN DETERMINING EXACT DETECTOR MOUNTING LOCATION. PROVIDE DETECTOR MANUFACTURER'S CUSTOM SURFACE BACKBOX WHERE CONCRETE OR INACCESSIBLE CEILINGS ARE ENCOUNTERED.
	SINGLE OR DOUBLE FACE EXIT SIGN, CEILING MOUNTED. PROVIDE DIRECTIONAL ARROWS/CHEVRONS AS INDICATED ON PLAN.		ADDRESSABLE DUCT-TYPE PHOTOELECTRIC SMOKE DETECTOR WITH SAMPLING TUBE AND AN INTEGRAL RELAY TO SHUTDOWN HVAC EQUIPMENT FAN MOTOR. MOUNT TO RETURN-AIR DUCTWORK.
	SINGLE OR DOUBLE FACE EXIT SIGN, WALL OR BACK MOUNTED. PROVIDE DIRECTIONAL CHEVRONS (ARROWS) AS INDICATED ON PLAN.		REMOTE TEST SWITCH AND ALARM INDICATING STATION FOR DUCT-TYPE SMOKE DETECTOR. SURFACE MOUNT STATION AT 60 INCHES ABOVE FINISHED FLOOR.
	DUAL TECHNOLOGY OCCUPANCY SENSOR, CEILING MOUNTED. PROVIDE WATTSTOPPER #DT300 WITH #BZ-50 UNIVERSAL VOLTAGE POWER PACK OR EQUAL. PROVIDE CONTROL AND LOW-VOLTAGE WIRING AS RECOMMENDED BY THE SENSOR MANUFACTURER.		SAME AS INDICATING STATION DESCRIBED ABOVE EXCEPT THAT STATION SHALL BE MOUNTED IN AN ACOUSTICAL CEILING TILE. PROVIDE A CEILING-GRID SUPPORT BRACKET TO SUPPORT STATION BACKBOX INDEPENDENT OF CEILING TILE.
	EXISTING WALL MOUNTED 3-WAY SWITCH - TO REMAIN IN PLACE UNLES NOTED OTHERWISE ON PLAN.		FIRE ALARM SYSTEM ADDRESSABLE MONITOR INTERFACE MODULE WITH CLASS "B" TYPE MONITOR WIRING IN ACCORDANCE WITH NFPA 72. MOUNT MODULE IN A STEEL NEMA-1 ENCLOSURE.
	EXISTING WALL MOUNTED SINGLE-POLE SWITCH - TO REMAIN IN PLACE.		FIRE ALARM SYSTEM ADDRESSABLE RELAY INTERFACE CONTROL MODULE. MOUNT MODULE IN A STEEL NEMA-1 ENCLOSURE.
	EXISTING WALL MOUNTED SINGLE-POLE SWITCH - TO REMOVE.		AUDIBLE (SPEAKER) NOTIFICATION APPLIANCE. SEMI-FLUSH MOUNT DETECTOR IN CEILING. PROVIDE A CEILING-GRID SUPPORT BRACKET TO SUPPORT DETECTOR BACKBOX INDEPENDENT OF CEILING TILE.
	EXISTING 120/208 VOLT PANELBOARD - TO REMAIN IN PLACE.		VISIBLE (STROBE) NOTIFICATION APPLIANCE. SEMI-FLUSH MOUNT APPLIANCE IN CEILING. PROVIDE CEILING-GRID SUPPORT BRACKET TO SUPPORT APPLIANCE BACKBOX. PROVIDE STROBE MANUFACTURER'S CUSTOM SURFACE BACKBOX WHERE STROBE IS MOUNTED ON INACCESSIBLE CEILINGS. PROVIDE STROBE WITH CANDELA RATING NOTED ON PLAN.
	ELECTRICAL CONNECTIONS TO A MOTOR OR TO MOTOR DRIVEN EQUIPMENT.		COMBINATION AUDIBLE/VISIBLE (SPEAKER & STROBE) NOTIFICATION APPLIANCE. SEMI-FLUSH MOUNT APPLIANCE IN ACCESSIBLE CEILINGS. PROVIDE CEILING-GRID SUPPORT BRACKET TO SUPPORT APPLIANCE BACKBOX INDEPENDENT OF ACOUSTICAL CEILING TILE. PROVIDE APPLIANCE MANUFACTURER'S CUSTOM SURFACE BACKBOX WHERE APPLIANCE IS MOUNTED ON INACCESSIBLE CEILINGS. PROVIDE APPLIANCE WITH STROBE CANDELA RATING NOTED ON PLAN.
	SAFETY DISCONNECT SWITCH - TYPE AND RATINGS AS INDICATED ON PLAN. COORDINATE MOUNTING LOCATION WITH MECHANICAL CONTRACTOR TO ENSURE PROPER WORKING CLEARANCES PER THE NEC.		COMBINATION AUDIBLE/VISIBLE (SPEAKER & STROBE) NOTIFICATION APPLIANCE. SEMI-FLUSH MOUNT APPLIANCE IN WALL WITH BOTTOM OF APPLIANCE A MINIMUM OF 80 INCHES ABOVE FINISHED FLOOR AND/OR TOP OF APPLIANCE A MAXIMUM OF 96 INCHES ABOVE FINISHED FLOOR. PROVIDE APPLIANCE MANUFACTURER'S CUSTOM SURFACE BACKBOX WHERE APPLIANCE IS MOUNTED ON INACCESSIBLE WALL. PROVIDE APPLIANCE WITH STROBE CANDELA RATING NOTED ON PLAN.
	STEEL JUNCTION BOX, WALL MOUNTED.		EXISTING CONTROL PANEL - TYPE AS NOTED ON PLAN.
	STEEL JUNCTION BOX, UNIT OR CEILING MOUNTED UNLESS NOTED OTHERWISE.		EXISTING FIRE ALARM PULL STATION - REMOVE.
	DUPLEX RECPTACLE, NEMA 5-20R. FLUSH MOUNT DEVICE IN WALL AT 18" AFF UNLESS NOTED OTHERWISE.		EXISTING SMOKE DETECTOR - REMOVE.
	EXISTING ELECTRICAL CONNECTION TO A MOTOR OR TO MOTOR-DRIVEN EQUIPMENT - DISCONNECT AND REMOVE EXISTING WIRING AND RACEWAY UNLESS NOTED OTHERWISE.		EXISTING SPRINKLER VALVE TAMPER SUPERVISORY SWITCH - TO REMAIN IN PLACE AND BE MONITORED BY THE NEW FIRE ALARM SYSTEM.
	EXISTING WALL MOUNTED 120-VOLT DUPLEX RECEPTACLE - TO REMAIN IN PLACE. MAINTAIN INTEGRITY OF EXISTING CIRCUIT.		EXISTING SPRINKLER FLOW ALARM SWITCH - TO REMAIN IN PLACE AND BE MONITORED BY THE NEW FIRE ALARM SYSTEM.
	EXISTING WALL MOUNTED 120-VOLT DUPLEX RECEPTACLE -REMOVE.		EXISTING DRY SPRINKLER PRESSURE ALARM SWITCH - TO REMAIN IN PLACE AND BE MONITORED BY THE NEW FIRE ALARM SYSTEM.
	EXISTING VOICE/DATA COMMUNICATION OUTLET - REMOVE.		EXISTING DRY SPRINKLERLOW AIR SUPERVISORY SWITCH - TO REMAIN IN PLACE AND BE MONITORED BY THE NEW FIRE ALARM SYSTEM.
	EXISTING WALL MOUNTED OUTLET - TO REMAIN IN PLACE.		EXISTING COBINATION HORN/STROBE NOTIFICATION DEVICE - REMOVE.
	SURFACE MOUNTED CONTROL PANEL, TYPE AS NOTED ON PLAN.		VOICE/DATA COMMUNICATIONS OUTLET. PROVIDE A 4" SQUARE STEEL BOX WITH SINGLE-GANG PLASTER RING MOUNTED IN WALL AT 18" AFF UNLESS NOTED OTHERWISE. PROVIDE A ONE INCH EMT RACEWAY WITH PULL STRING CONCEALED IN WALL FROM OUTLET TO CEILING SPACE ABOVE ACOUSTICAL DROP CEILING. PROVIDE A FIBER BUSHING ON BOTH ENDS OF RACEWAY.
	FLUSH MOUNTED CONTROL PANEL, TYPE AS NOTED ON PLAN.		
	RJ-31X COMMUNICATIONS PHONE JACK. MOUNT IN FIRE ALARM CABINET.		
	FIRE ALARM MANUAL PULL STATION. SURFACE MOUNT STATION ON WALL WITH TOP OF STATION AT 48 INCHES ABOVE FINISHED FLOOR. PROVIDE STATION MANUFACTURER'S CUSTOM SURFACE BACKBOX TO MOUNT STATION.		
	ADDRESSABLE PHOTO-ELECTRIC SMOKE DETECTOR. SEMI-FLUSH MOUNT DETECTOR IN CEILING. PROVIDE A CEILING-GRID SUPPORT BRACKET TO SUPPORT DETECTOR BACKBOX INDEPENDENT OF CEILING TILE WHERE APPLICABLE. MAINTAIN U.L. LISTED SPACING WHEN DETERMINING EXACT DETECTOR MOUNTING LOCATION. PROVIDE DETECTOR MANUFACTURER'S CUSTOM SURFACE BACKBOX WHERE CONCRETE OR INACCESSIBLE CEILINGS ARE ENCOUNTERED.		
	ADDRESSABLE 135 DEGREE HEAT DETECTOR, FIXED TEMPERATURE ONLY. SEMI-FLUSH MOUNT DETECTOR IN CEILING. PROVIDE A CEILING-GRID SUPPORT BRACKET TO SUPPORT DETECTOR BACKBOX INDEPENDENT OF CEILING TILE WHERE APPLICABLE. MAINTAIN U.L. LISTED SPACING WHEN DETERMINING EXACT DETECTOR MOUNTING LOCATION. PROVIDE DETECTOR MANUFACTURER'S CUSTOM SURFACE BACKBOX WHERE CONCRETE OR INACCESSIBLE CEILINGS ARE ENCOUNTERED.		

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LIEBER COLLEGE HVAC RENOVATION



UNIVERSITY OF  
SOUTH CAROLINA

COLUMBIA, SC  
State Project No: H27-2313

Project Number: 1610

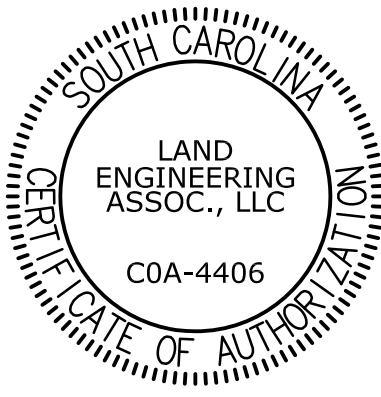
Date: 16 JUNE 2017

Revisions:

NO.	ISSUED FOR	DATE

GENERAL NOTES,  
LEGEND, AND  
SCHEDULES

E1

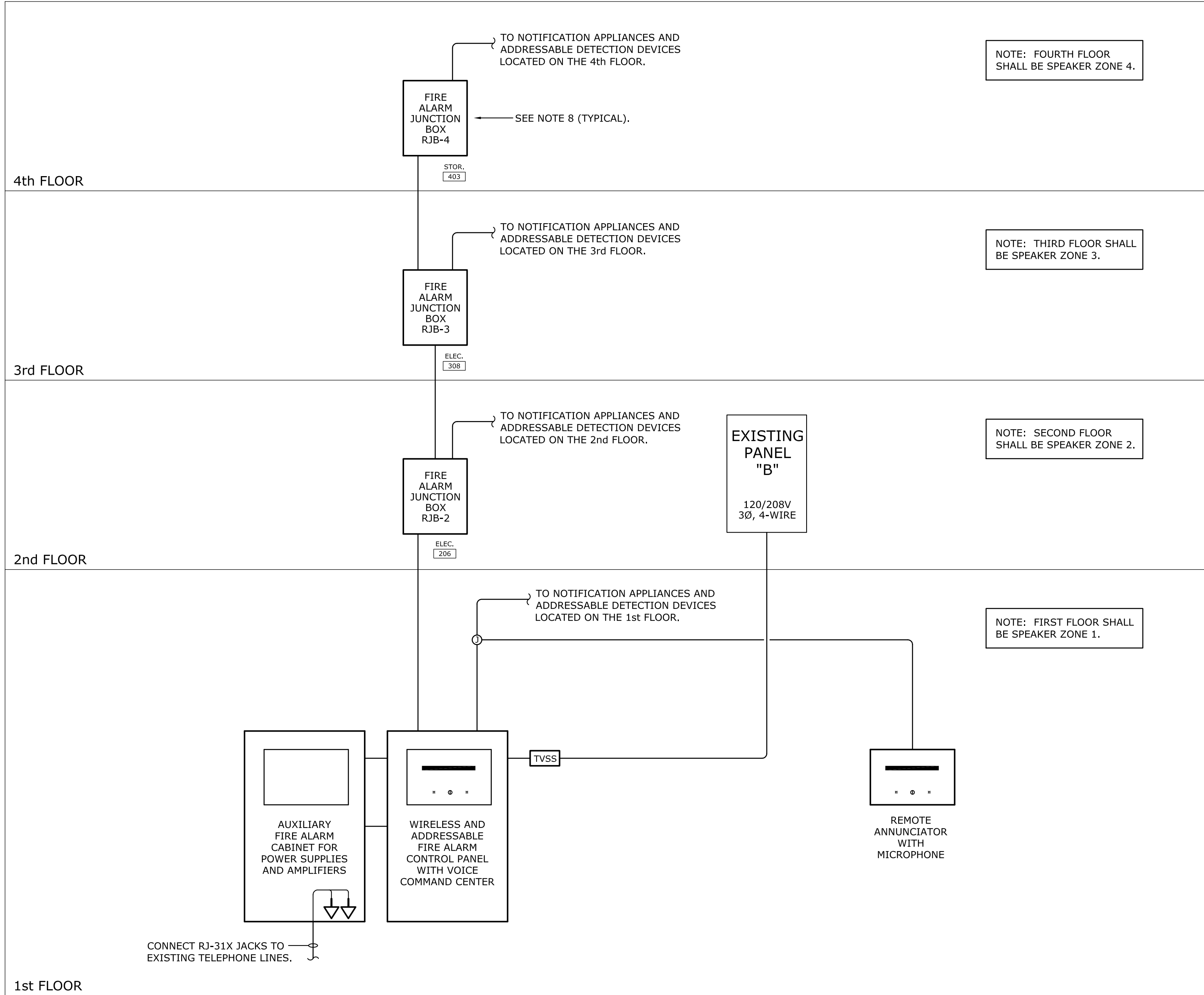


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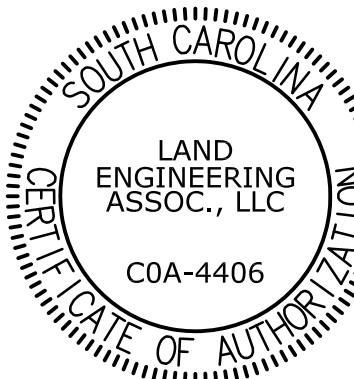
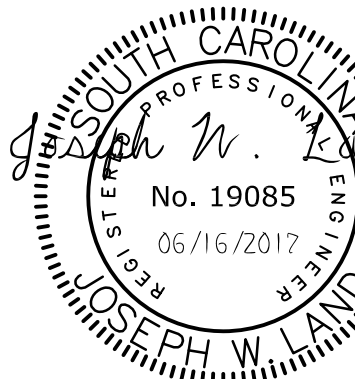
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1 FIRE ALARM SYSTEM SINGLE-LINE DIAGRAM  
E2 NOT TO SCALE

SIINGLE-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 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.



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COLUMBIA, SC

State Project No: H27-2313



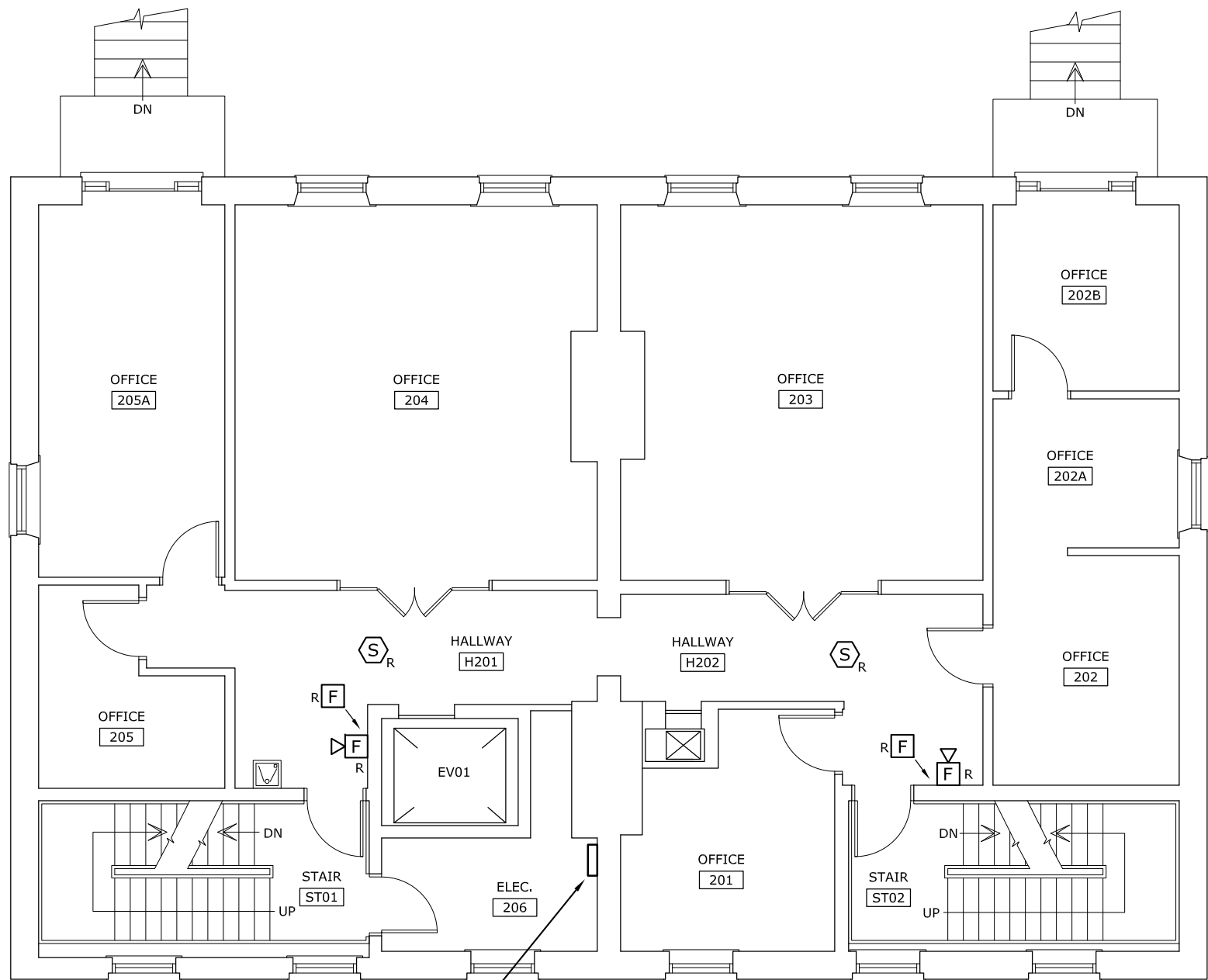
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FIRE ALARM  
SINGLE-LINE  
DIAGRAM

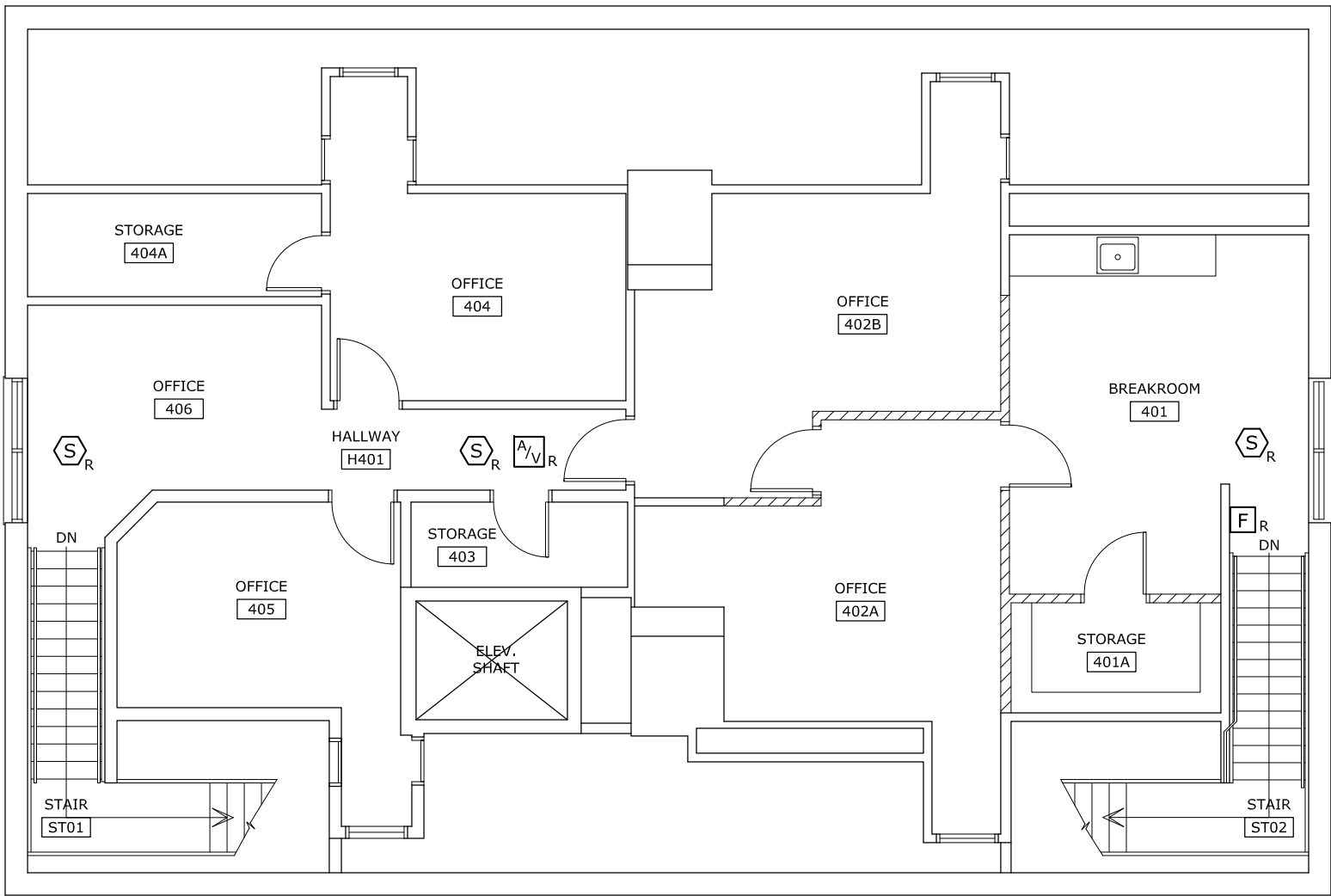
E2

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EXISTING PANELBOARD "B" - SERVES FIRE ALARM PANELS (BREAKERS 13 AND 15).

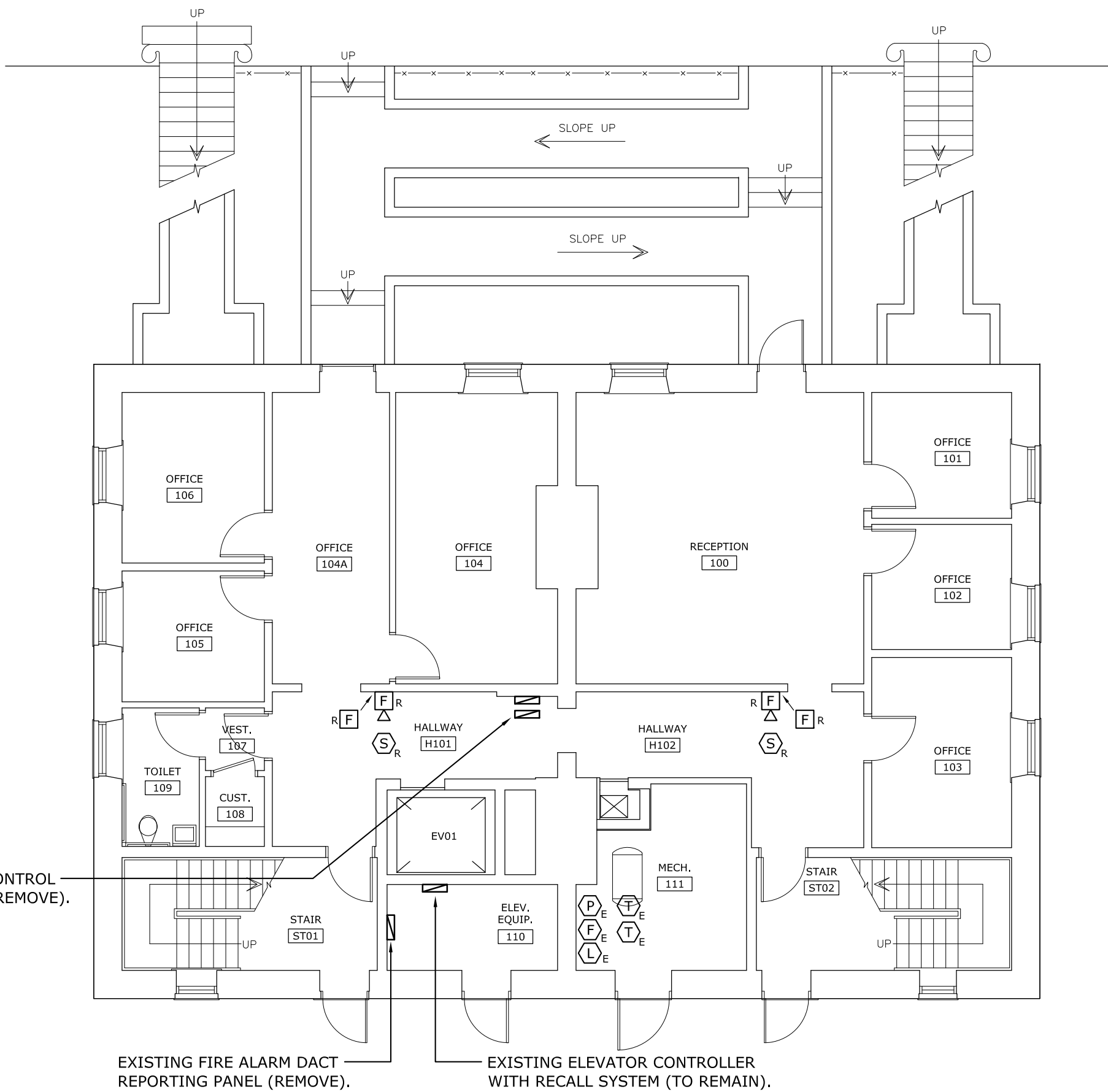
2 2nd FLOOR FIRE ALARM DEMOLITION PLAN  
E3 SCALE: 1/8" = 1'-0"



4 4th FLOOR FIRE ALARM DEMOLITION PLAN  
E3 SCALE: 1/8" = 1'-0"

DEMOLITION NOTES

1. TURNOVER ALL EXISTING FIRE ALARM DETECTION DEVICES, NOTIFICATION APPLIANCES, AND CONTROL PANELS TO TODD GRIFFIN, USC FIRE MARSHAL.

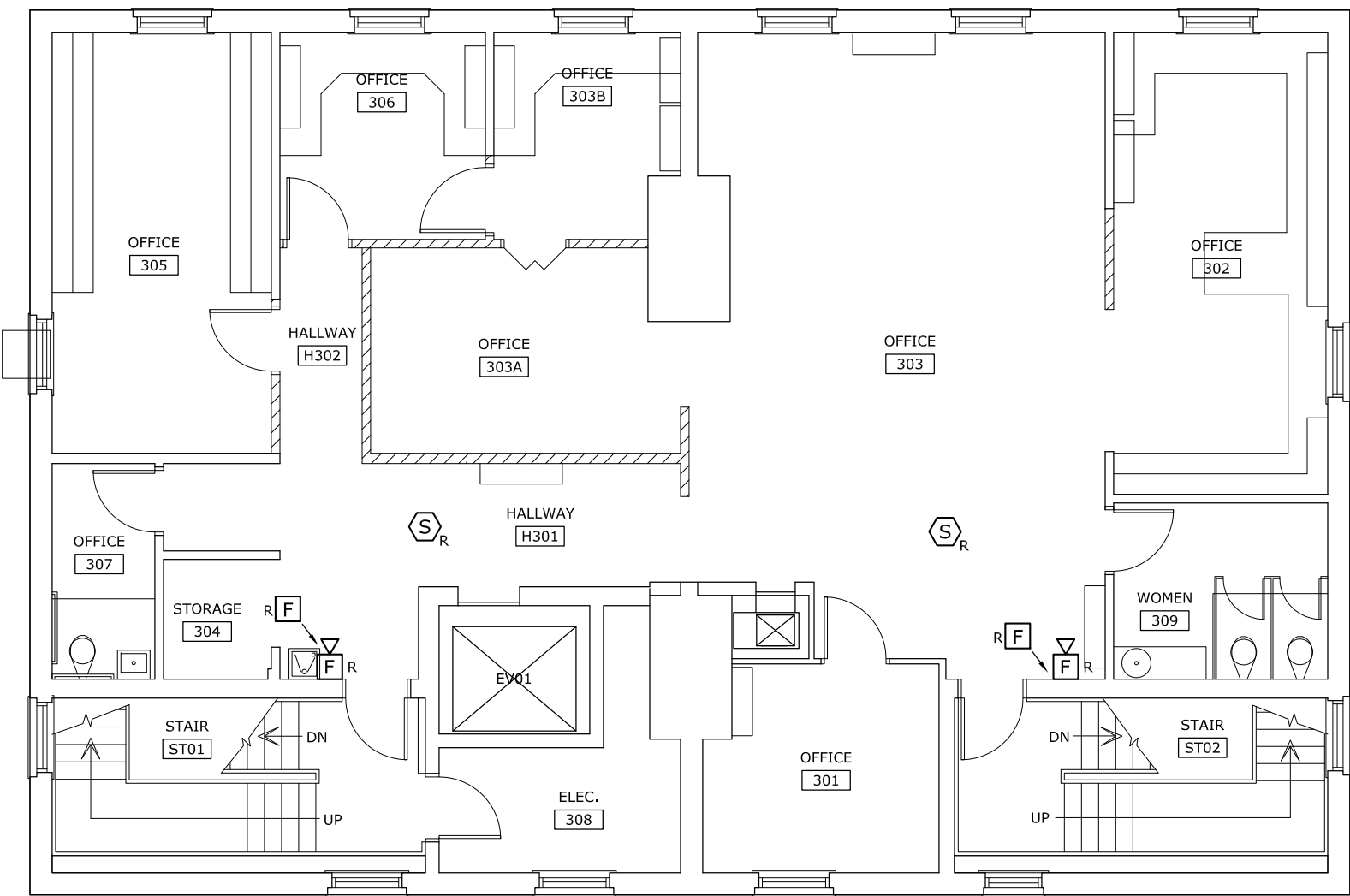


EXISTING FIRE ALARM CONTROL PANEL AND NAC PANEL (REMOVE).

EXISTING FIRE ALARM DACT REPORTING PANEL (REMOVE).

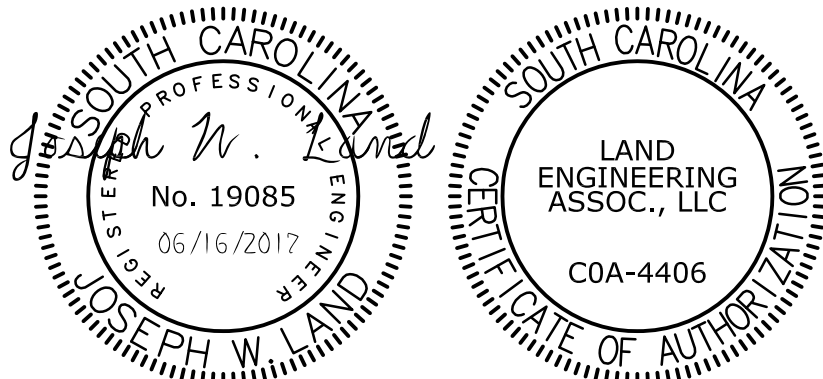
EXISTING ELEVATOR CONTROLLER WITH RECALL SYSTEM (TO REMAIN).

1 1st FLOOR FIRE ALARM DEMOLITION PLAN  
E3 SCALE: 1/8" = 1'-0"



3 3rd FLOOR FIRE ALARM DEMOLITION PLAN  
E3 SCALE: 1/8" = 1'-0"

1/8"=1'-0"  
scale 4 0 4 8 16 feet



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LIEBER COLLEGE HVAC RENOVATION



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State Project No: H27-Z313

Project Number: 1610  
Date: 16 JUNE 2017

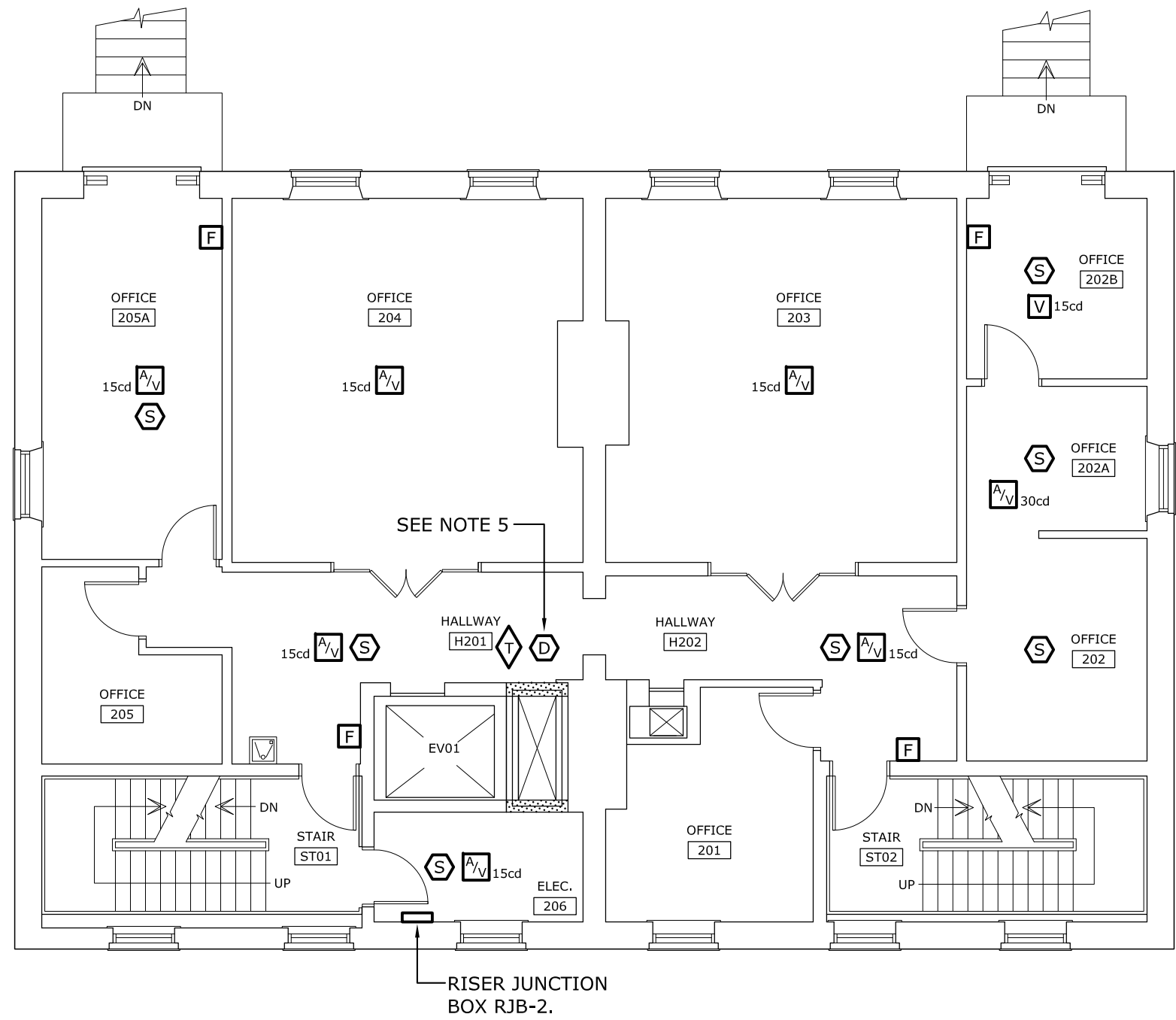
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FIRE ALARM  
DEMOLITION  
PLANS

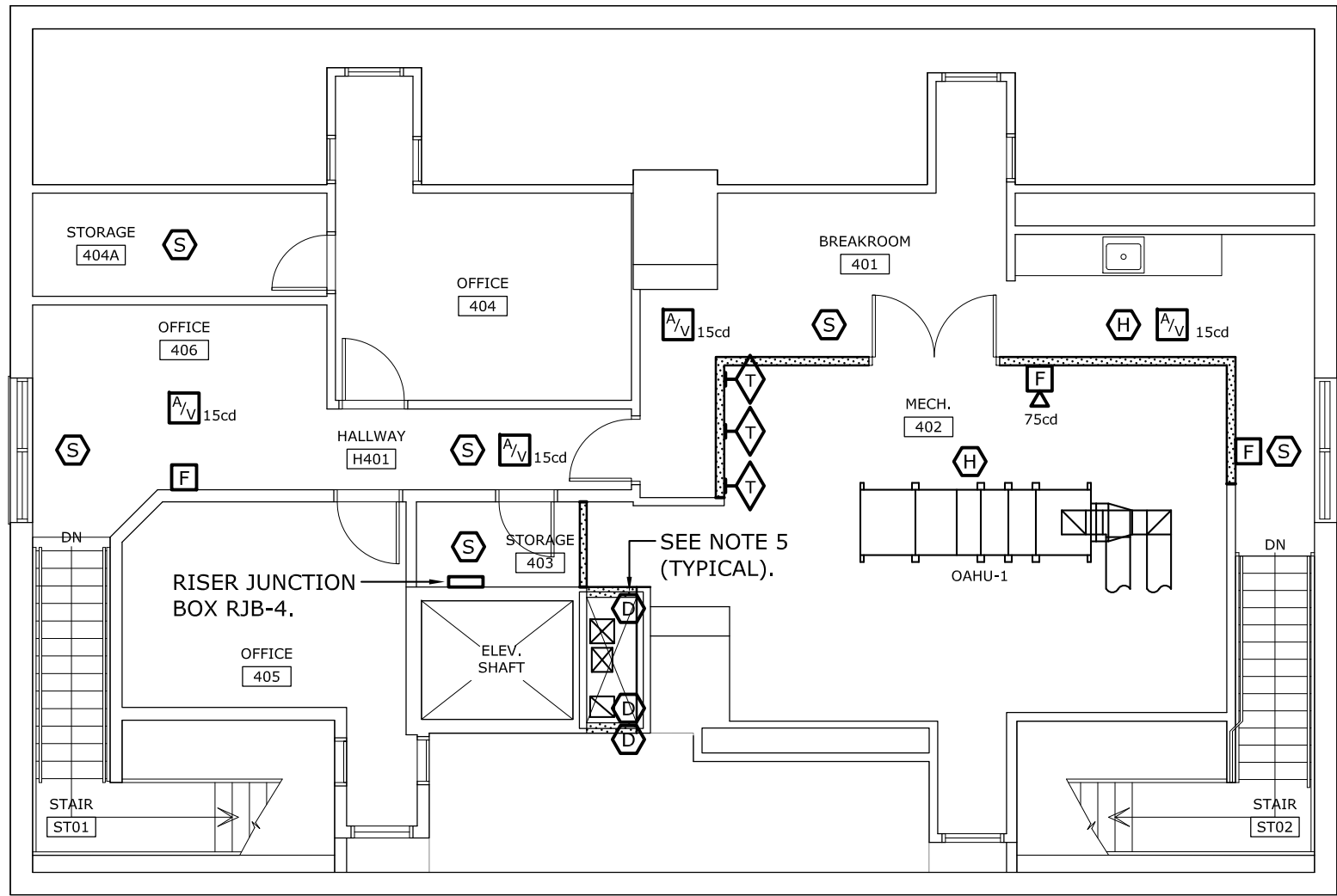
E3

CONSTRUCTION DOCUMENTS

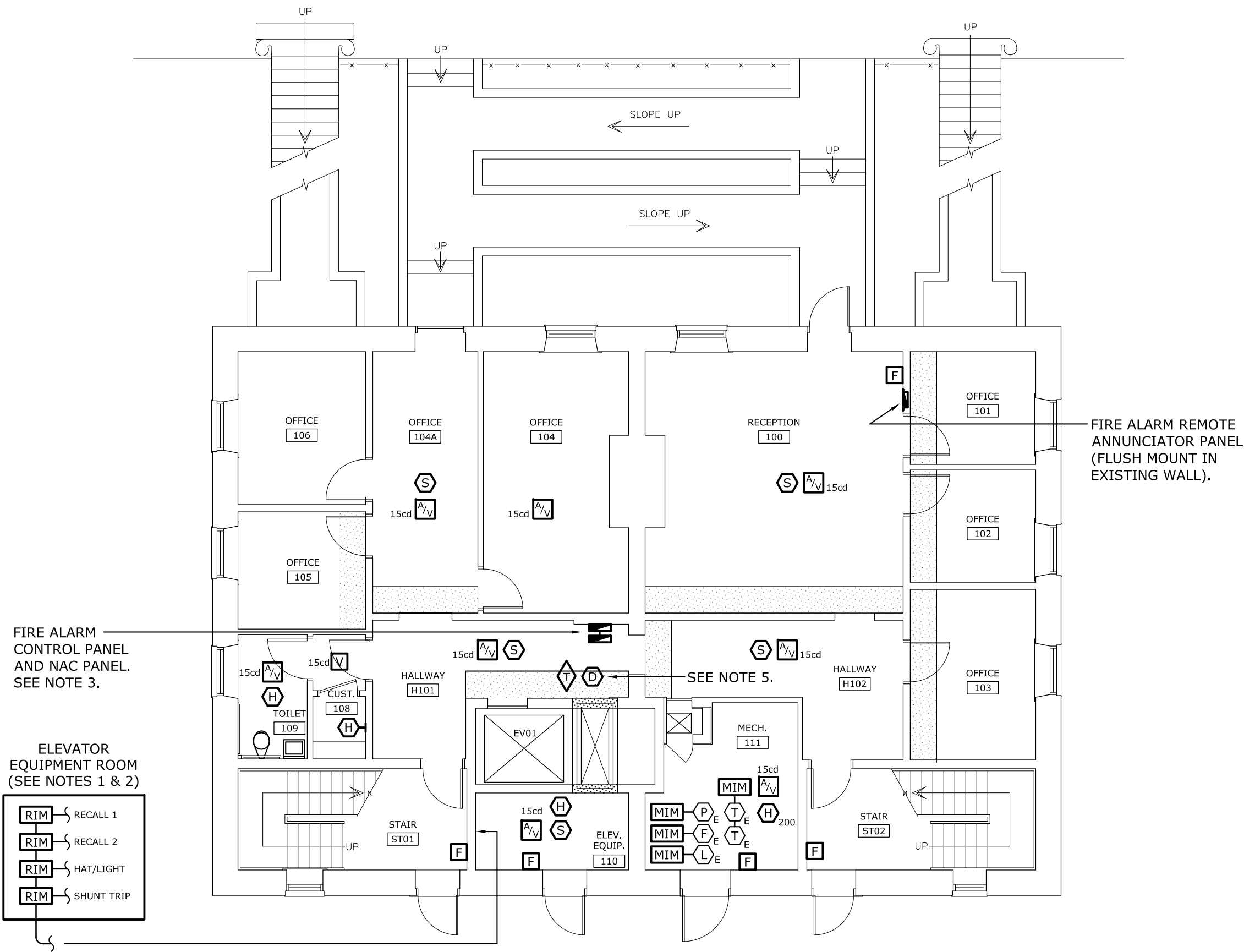
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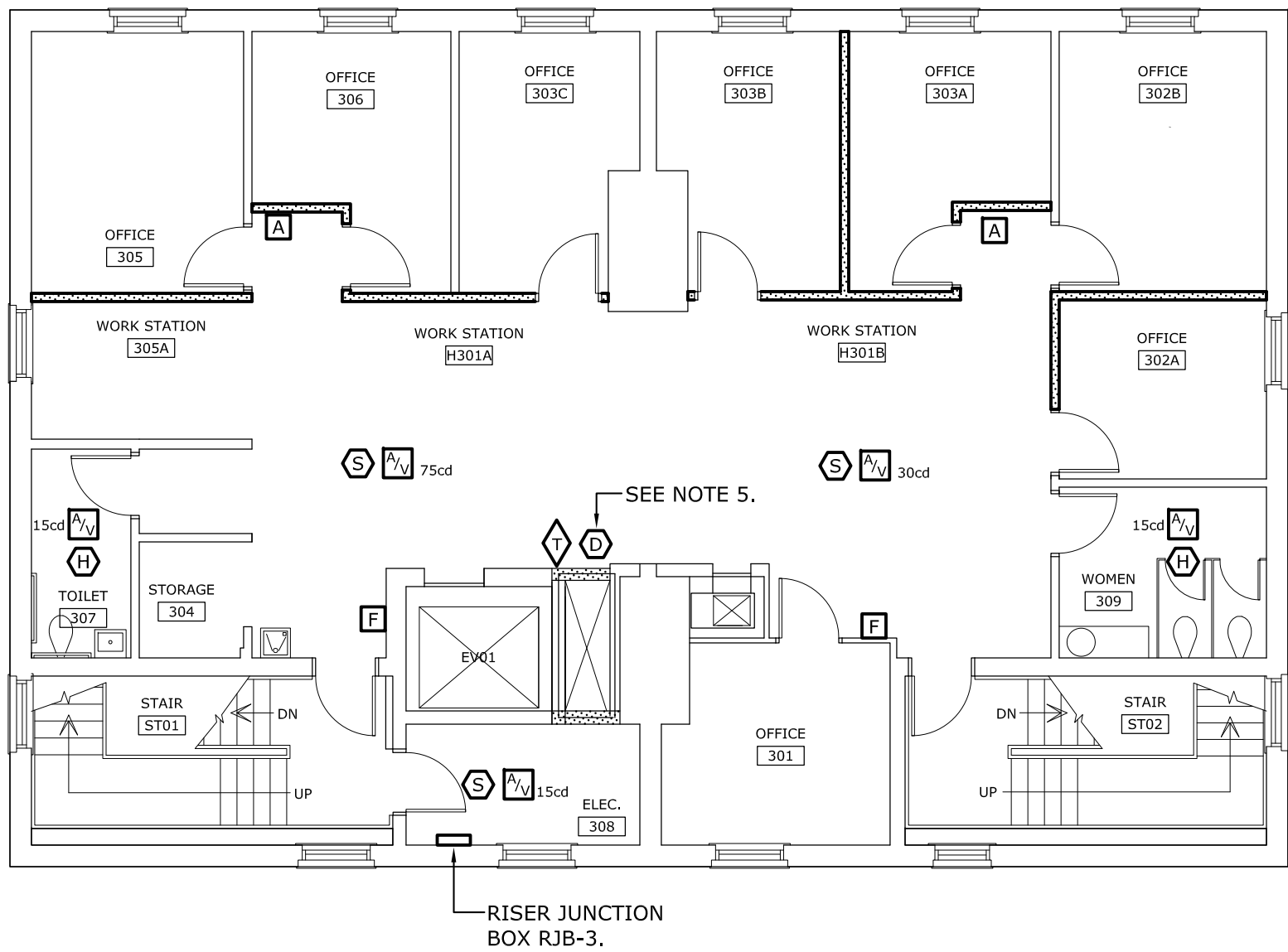
2 2nd FLOOR FIRE ALARM RENOVATION PLAN  
E4 SCALE: 1/8" = 1'-0"



4 4th FLOOR FIRE ALARM RENOVATION PLAN  
E4 SCALE: 1/8" = 1'-0"

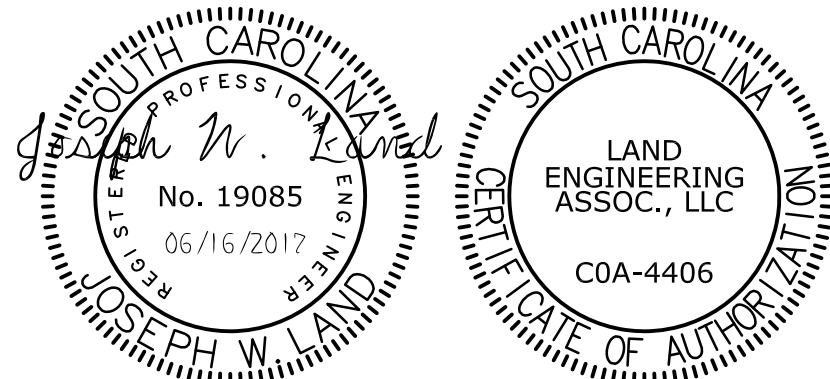
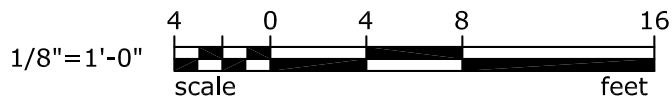


1 1st FLOOR FIRE ALARM RENOVATION PLAN  
E4 SCALE: 1/8" = 1'-0"



3 3rd FLOOR FIRE ALARM RENOVATION PLAN  
E4 SCALE: 1/8" = 1'-0"

- RENOVATION NOTES
- EXISTING ELEVATOR AND ASSOCIATED CONTROLLER HAS RECALL FEATURES, WITH THE 1st FLOOR DESIGNATED AS THE PRIMARY FLOOR. PROVIDE PROGRAMMING FOR ELEVATOR LOBBY SMOKE DETECTORS, MACHINE ROOM SMOKE DETECTOR, AND RECALL RELAYS IN ACCORDANCE WITH ANSI 17.1 AND LLR REQUIREMENTS.
  - EXISTING ELEVATOR AND ASSOCIATED CONTROLLER DO NOT CURRENTLY HAVE PROVISIONS FOR CONNECTION OF HAT/LIGHT INDICATOR IN ELEVATOR CAB AND SHUNT-TRIP FOR POWER DISCONNECT. THESE FEATURES WILL BE ADDED UNDER A FUTURE PROJECT. PROVIDE PROGRAMMING FOR MACHINE ROOM HEAT DETECTOR AND ELEVATOR RELAYS IN ACCORDANCE WITH ANSI 17.1 AND LLR REQUIREMENTS (EVEN THOUGH THE DEVICES WILL NOT BE EMPLOYED AT THIS TIME).
  - RECONNECT EXISTING FIRE ALARM 120-VOLT CIRCUITS B-13 AND B-15 TO NEW FIRE ALARM AND NAC PANELS. PANELBOARD "B" IS LOCATED ON THE 2nd FLOOR IN ROOM 206.
  - 4th FLOOR RACEWAYS: RE-USE EXISTING CONCEALED FIRE ALARM SYSTEM RACEWAYS WHERE PRACTICAL. WHERE IT IS NOT POSSIBLE TO CONCEAL NEW RACEWAYS ABOVE EXISTING HARD CEILINGS, PROVIDE WIREMOLD #500 AND/OR #700 SURFACE METAL RACEWAYS, BOXES, AND FITTINGS (OR EQUAL) TO ROUTE DETECTION AND NOTIFICATION CIRCUITS.
  - DUCT TYPE SMOKE DETECTORS: INSTALL/WIRE DUCT TYPE SMOKE DETECTORS TO CONTROL 120-VOLT FIRE-SMOKE DAMPERS.



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LIEBER COLLEGE HVAC RENOVATION



UNIVERSITY OF SOUTH CAROLINA  
COLUMBIA, SC

State Project No: H27-2313

Project Number: 1610  
Date: 16 JUNE 2017

Revisions:		
NO.	ISSUED FOR	DATE

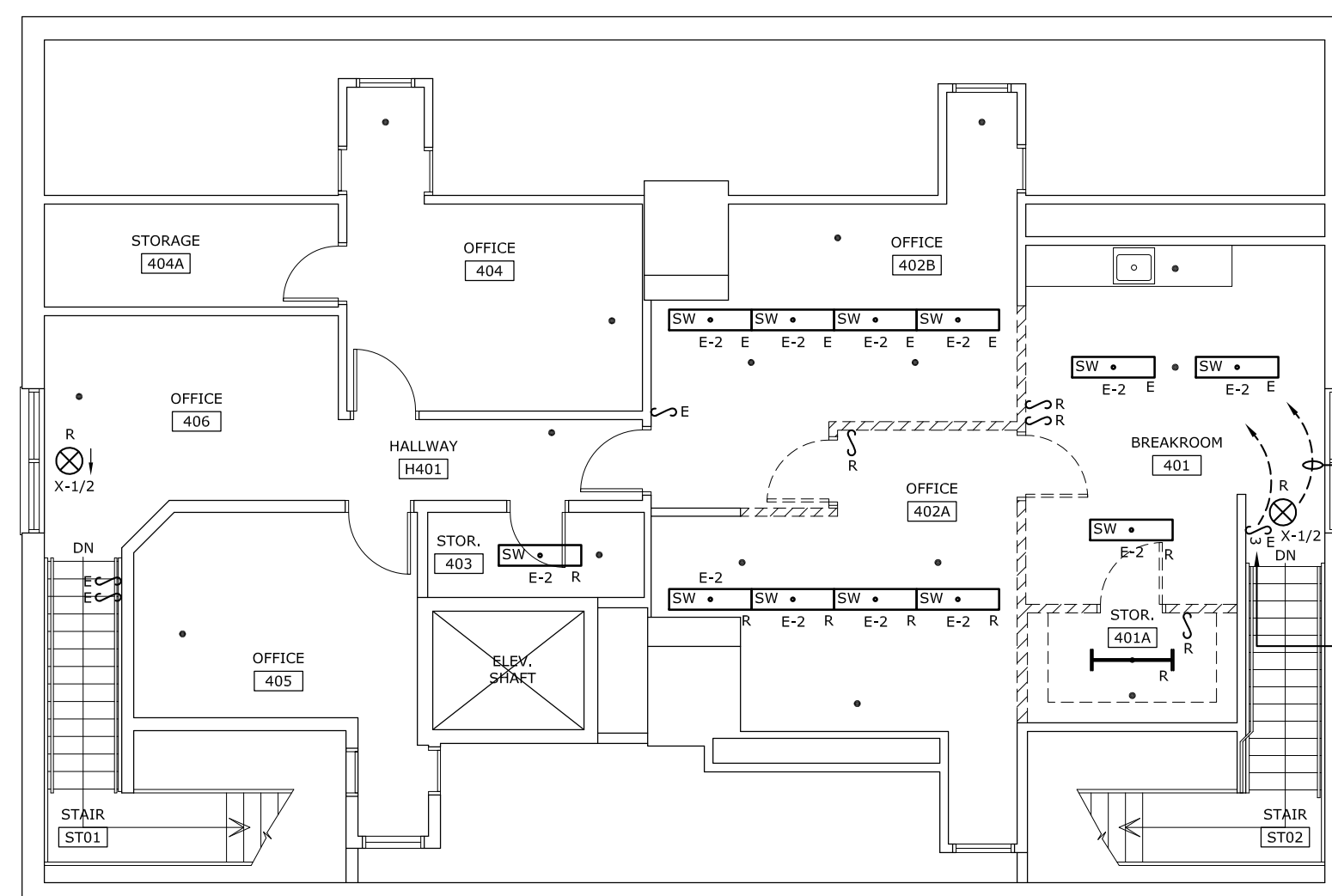
FIRE ALARM  
RENOVATION  
PLANS

E4

CONSTRUCTION DOCUMENTS

## DEMOLITION NOTES

1. CIRCUIT NUMBERS SHOWN ON PLAN WERE COPIED FROM DRAWINGS OF A 1984 RENOVATION PROJECT FOR THE BUILDING - FIELD VERIFY SOURCE OF CIRCUITS PRIOR TO WORKING ON EXISTING CIRCUIT WIRING.
2. WHERE LIGHTING FIXTURES ARE INDICATED TO BE REMOVED, REMOVE ALL ASSOCIATED RACEWAYS AND CONDUCTORS/CABLES THAT SERVE THEM BACK TO THEIR ORIGIN. WHERE EXISTING RACEWAYS WILL BE CONCEALED BY NEW CONSTRUCTION, THEY MAY BE ABANDONED IN PLACE.








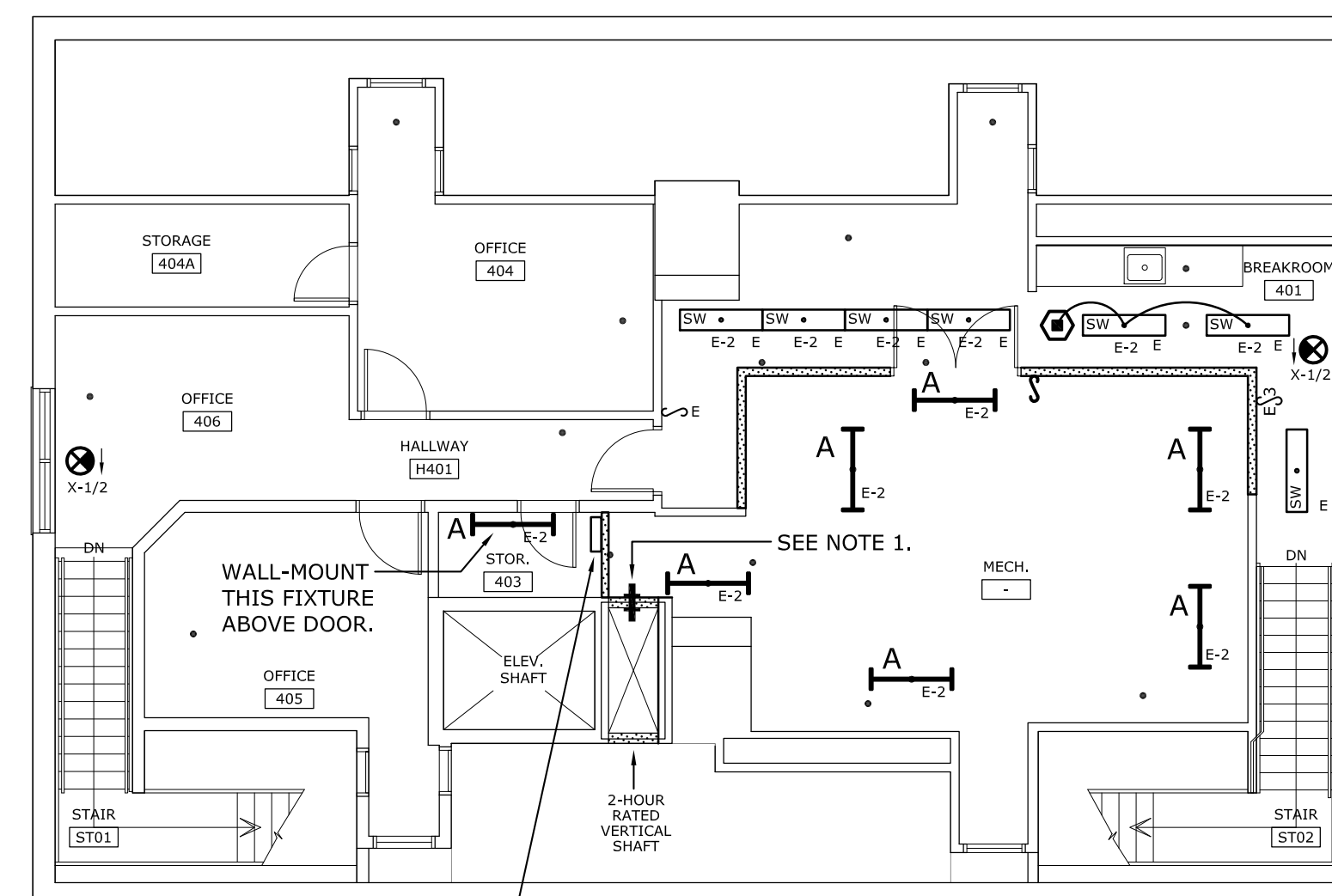
CUT, PATCH, AND PAINT CEILING AS REQUIRED TO RELOCATE EXIT SIGN BACKBOX SUCH THAT THE NEW EXIT SIGN CALLED FOR ON THE RENOVATION PLAN WILL BE VISIBLE IN ROOM 401. EXTEND RACEWAY AND WIRING TO NEW LOCATION.

CUT, PATCH, AND PAINT WALL AS REQUIRED TO RELOCATE STAIRWELL LIGHT SWITCH TO NEW LOCATION (SEE DRAWING E6). EXTEND RACEWAY AND WIRING TO NEW LOCATION.

# 4th FLOOR LIGHTING DEMOLITION PLAN

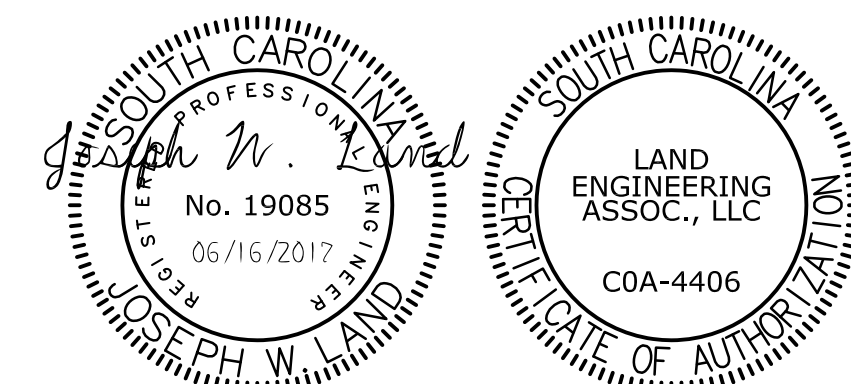
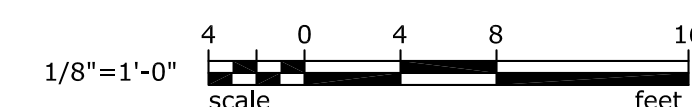
SCALE: 1/8" = 1'-0"

EXISTING FIXTURE SCHEDULE	
SYMBOL	DESCRIPTION
	SIZE: 1' X 4' MOUNTING: SURFACE MOUNTED TYPE: WRAP REMOVE AND DISPOSE OF.
	SIZE: 1' X 4' MOUNTING: SURFACE MOUNTED TYPE: WRAP EXISTING TO REMAIN IN PLACE.
	SIZE: 4' MOUNTING: SURFACE MOUNTED TYPE: FLUORESCENT STRIP REMOVE AND DISPOSE OF.
	SIZE: N/A MOUNTING: CEILING OR WALL TYPE: EXIT SIGN REMOVE AND DISPOSE OF.
	CEILING MOUNTED SPRINKLER HEAD



— EXISTING PANELBOARD "E"  
(SHOWN AT NEW LOCATION).

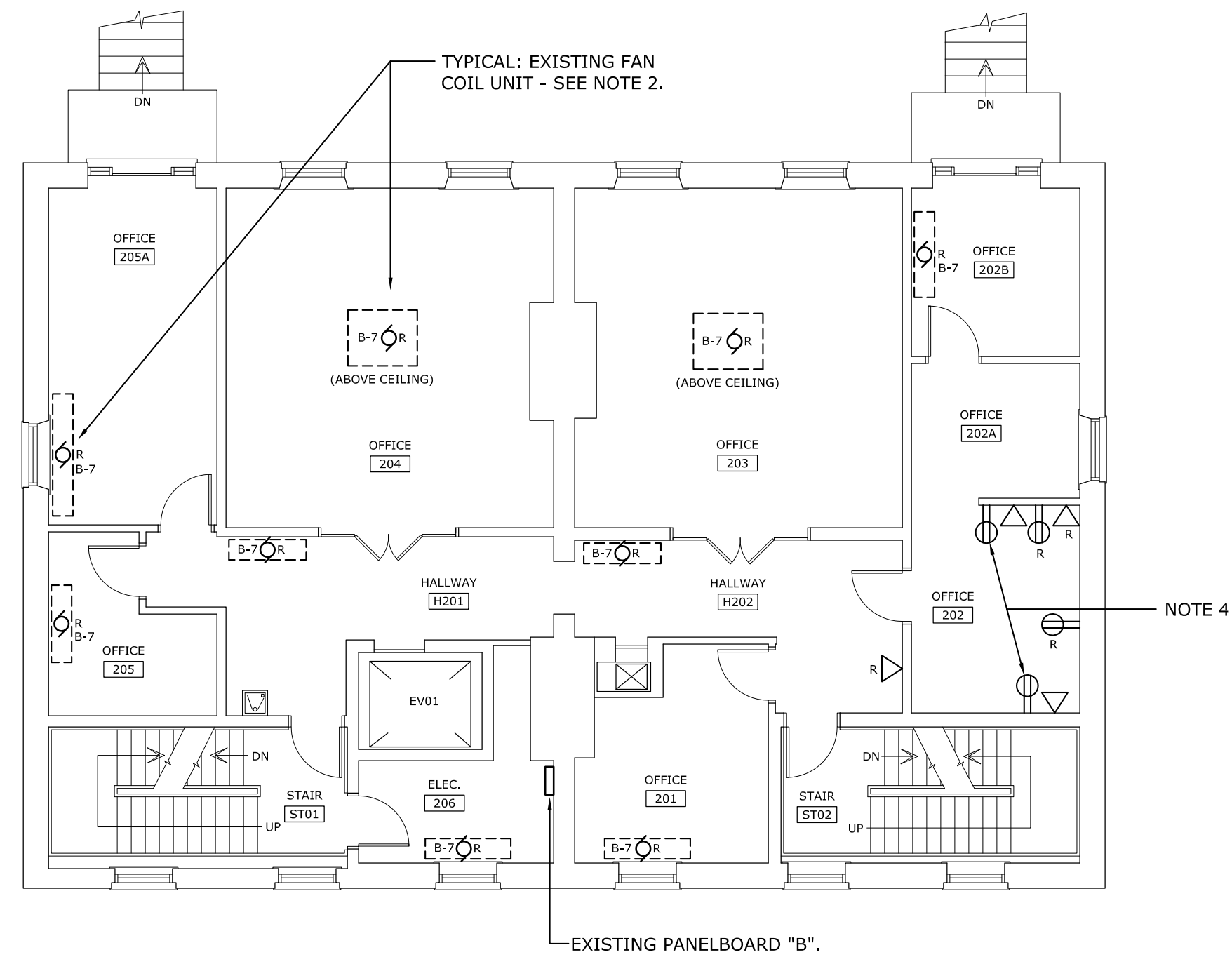
## 2 E5 4th FLOOR LIGHTING RENOVATION PLAN SCALE: 1/8" = 1'-0"



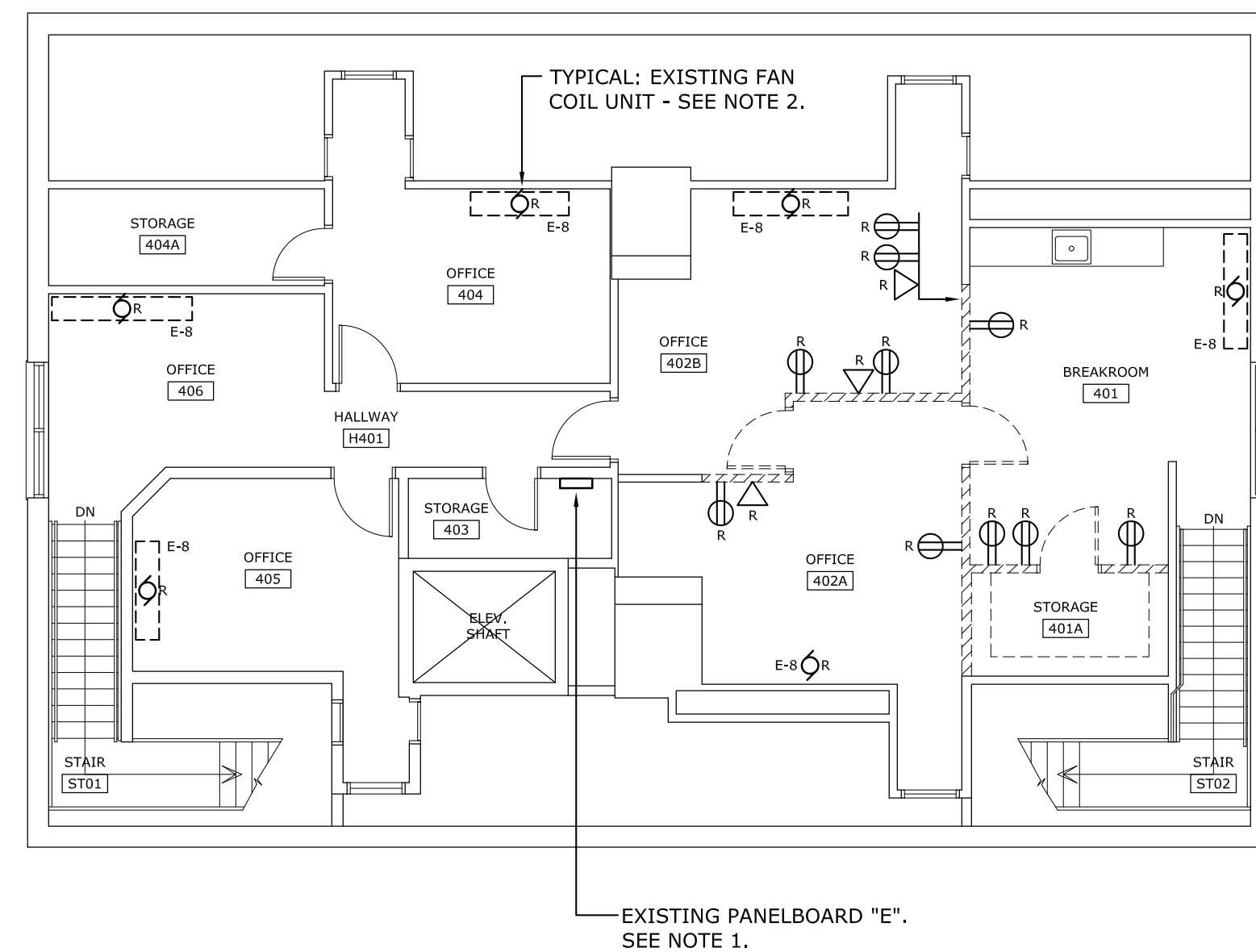
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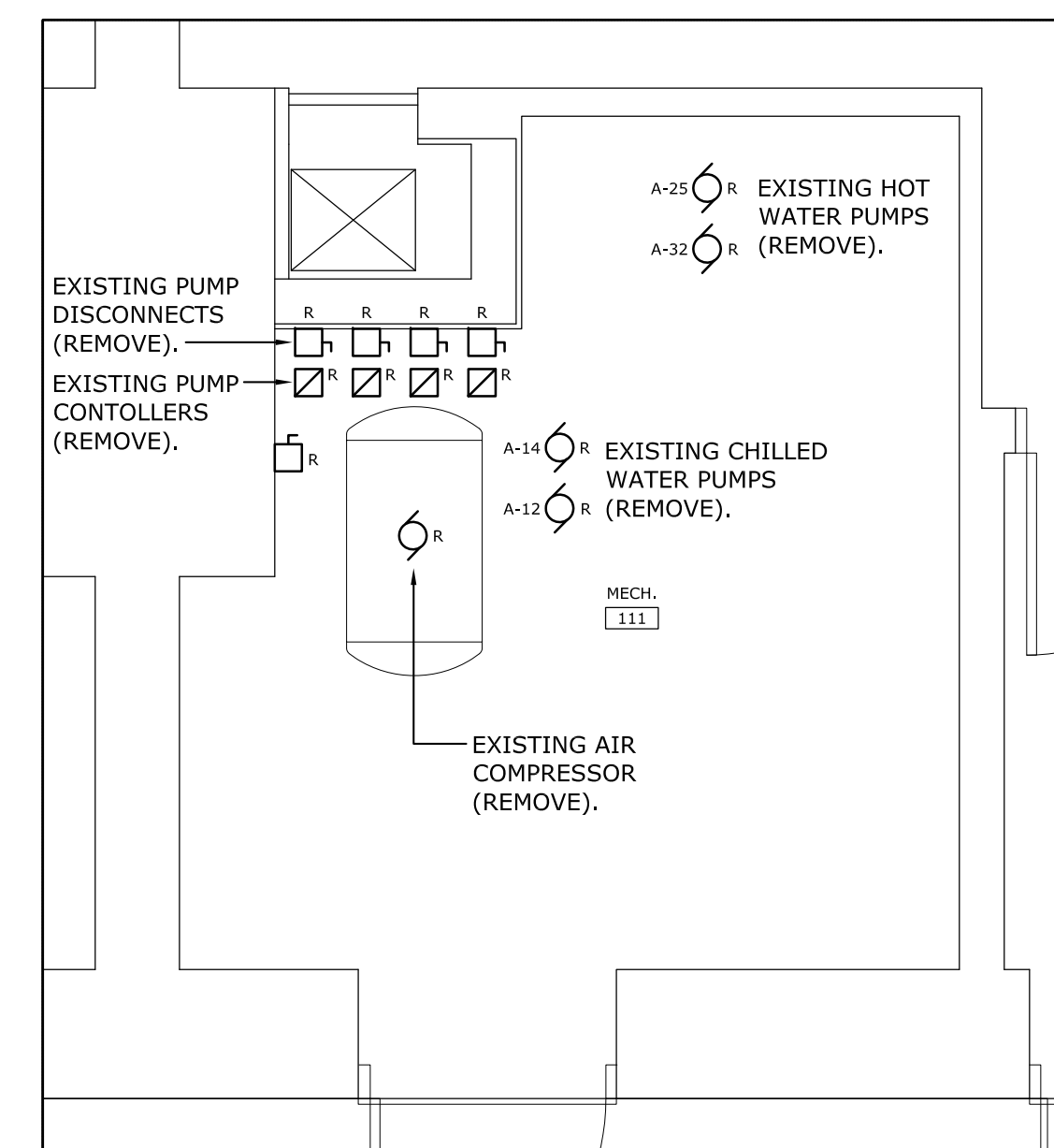


2 2nd FLOOR ELECTRICAL DEMOLITION PLAN  
E6 SCALE: 1/8" = 1'-0"

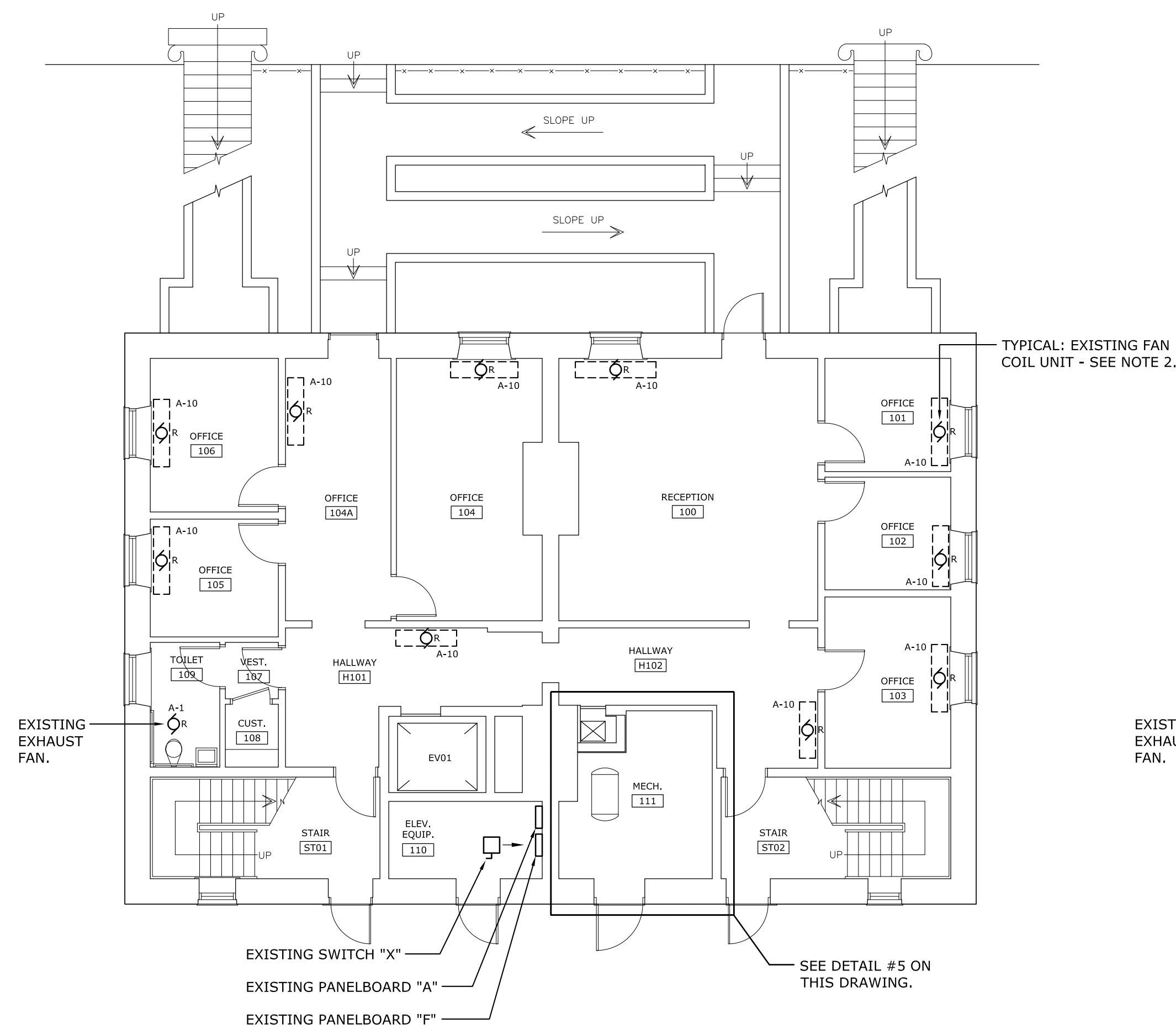


4 4th FLOOR ELECTRICAL DEMOLITION PLAN  
E6 SCALE: 1/8" = 1'-0"

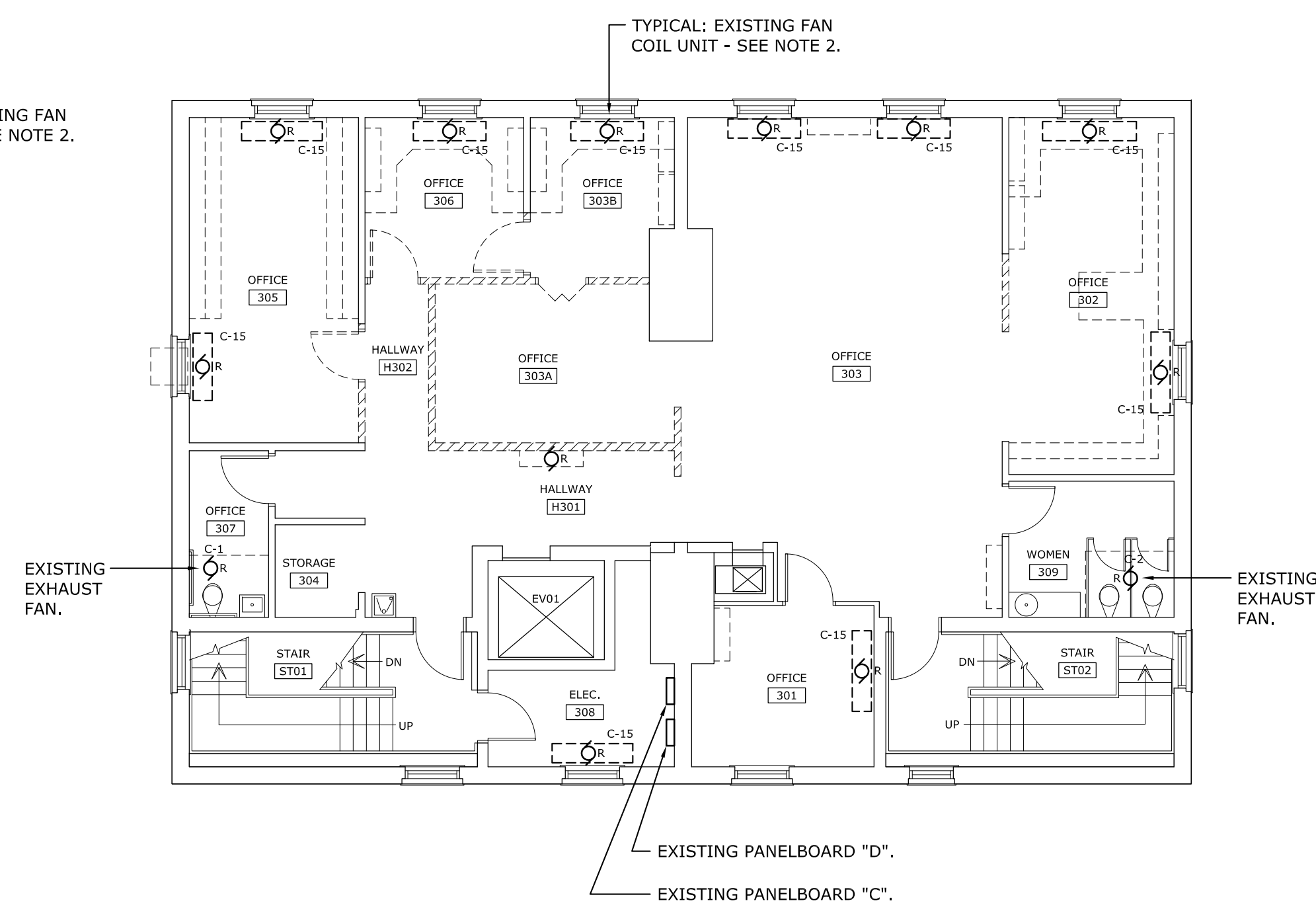
- ## DEMOLITION NOTES
1. **EXISTING PANELBOARD "E":** EXISTING PANEL IS A FEDERAL PACIFIC TYPE "NQLP" MAIN-LUGS-ONLY PANELBOARD RATED 120/208 VOLTS, 100 AMPS, 3-PHASE, 4-WIRE WITH 24 CIRCUIT BREAKER SPACES. RELOCATE EXISTING PANELBOARD "E" AND ALL ASSOCIATED RACEWAYS AND WIRING TO NEW LOCATION SHOWN ON THE RENOVATION PLAN. PROVIDE JUNCTION BOXES, RACEWAYS & CONDUCTORS AS REQUIRED TO EXTEND EXISTING 100-AMP FEEDER AND ALL BRANCH CIRCUIT RACEWAYS & CONDUCTORS TO NEW PANELBOARD LOCATION.
  2. **EXISTING FAN COIL UNITS:** DISCONNECT EXISTING 120-VOLT POWER CIRCUIT SERVING FAN COIL UNITS. CIRCUITS SHALL BE RECONNECTED TO REPLACEMENT FAN COIL UNITS AS A PART OF THIS PROJECT.
  3. **CIRCUIT NUMBERS SHOWN ON PLAN** WERE COPIED FROM DRAWINGS OF A 1984 RENOVATION PROJECT FOR THE BUILDING - FIELD VERIFY SOURCE OF CIRCUITS PRIOR TO WORKING ON EXISTING CIRCUIT WIRING.
  4. **RECEPTACLES REFERENCED TO THIS NOTE** ARE MOUNTED APPROXIMATELY 42 INCHES ABOVE FINISHED FLOOR. REMOVE EXISTING RECEPTACLES FROM BACKBOX. TRENCH WALL AND EXTEND A 3/4" EMT RACEWAY FROM THE BOTTOM OF EACH EXISTING BOX, DOWN TO A NEW RECEPTACLE BOX AT 18 INCHES ABOVE FINISHED FLOOR. PROVIDE A 20 AMP RATED DUPLEX RECEPTACLE AND IVORY WALLPLATE IN NEW BOX. PROVIDE NEW CIRCUIT WIRING TO NEW RECEPTACLE, SPLICED IN THE EXISTING RECEPTACLE BOX. PROVIDE A BLANK WALLPLATE OVER EXISTING RECEPTACLE BOX.



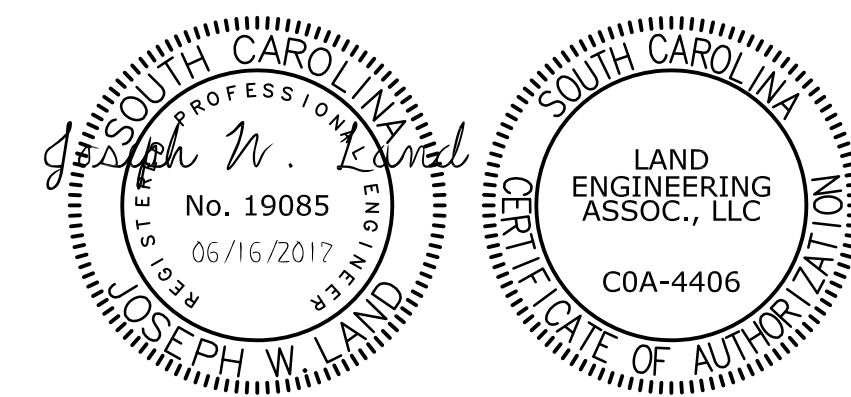
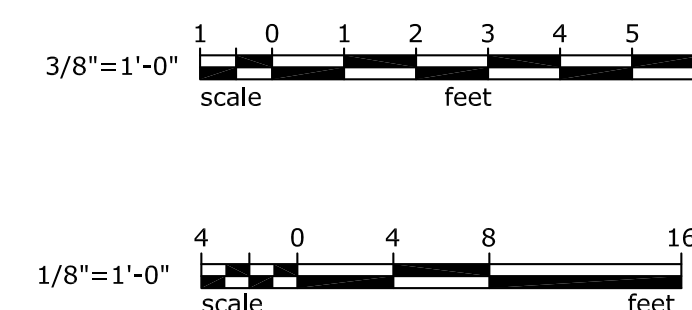
5 MECH. ROOM DEMOLITION PLAN  
E6 SCALE: 3/8" = 1'-0"



1 1st FLOOR ELECTRICAL DEMOLITION PLAN  
E6 SCALE: 1/8" = 1'-0"



3 3rd FLOOR ELECTRICAL DEMOLITION PLAN  
E6 SCALE: 1/8" = 1'-0"



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**WATSON TATE SAVORY**

LIEBER COLLEGE HVAC RENOVATION

UNIVERSITY OF SOUTH CAROLINA  
COLUMBIA, SC

State Project No: H27-Z313



Project Number: 1610  
Date: 16 JUNE 2017

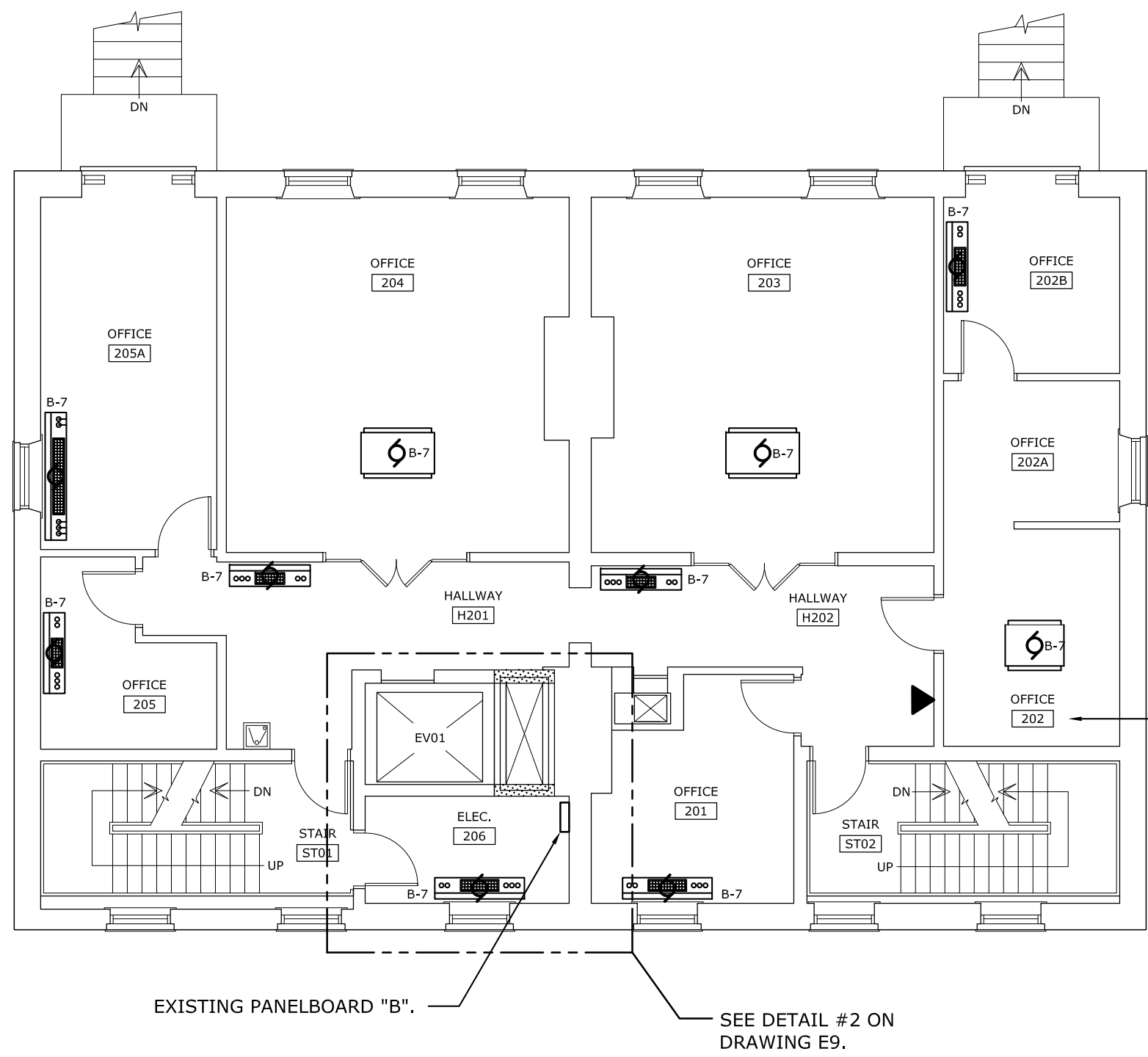
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# ELECTRICAL DEMOLITION PLANS

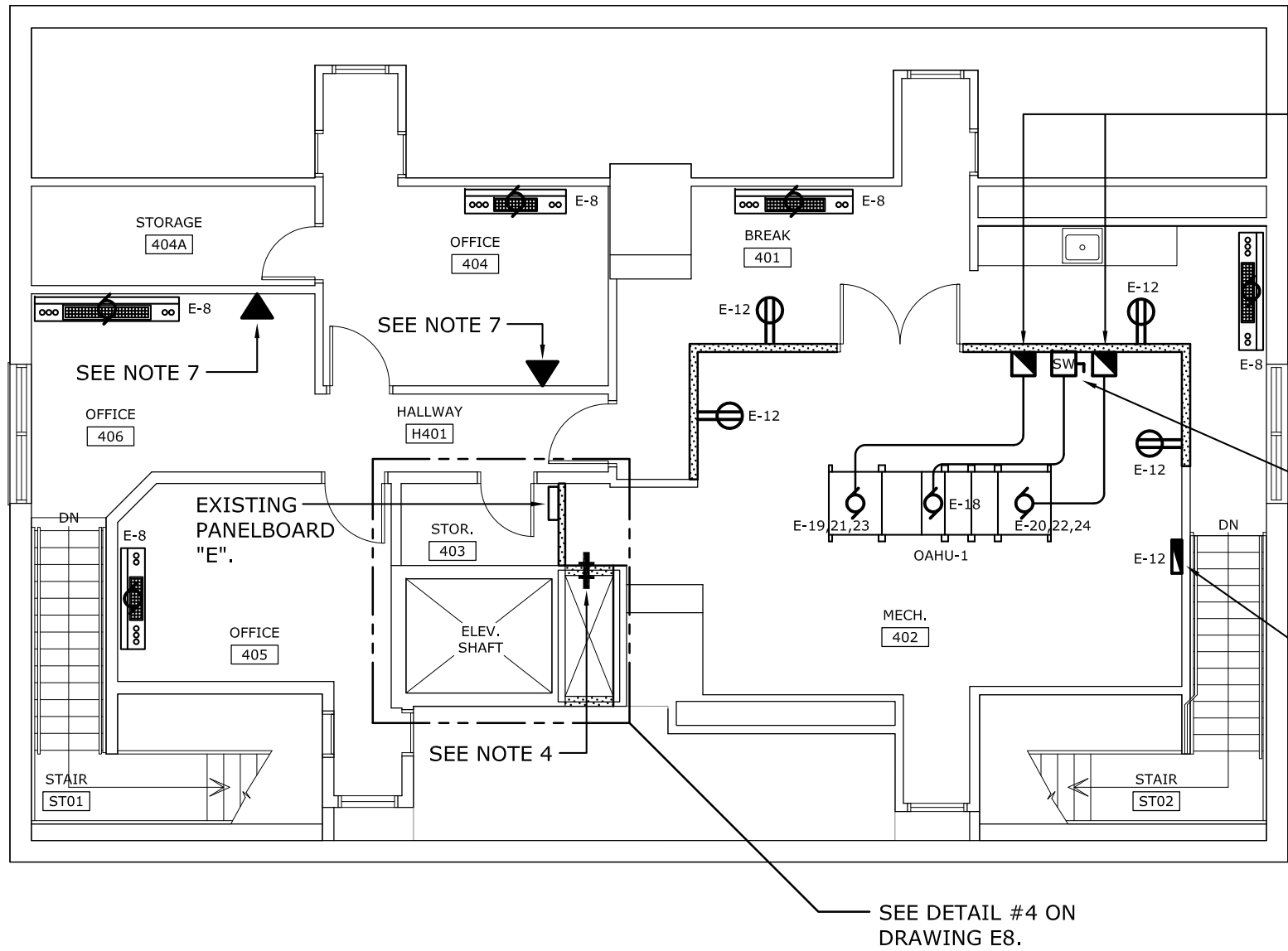
# E6

CONSTRUCTION DOCUMENTS

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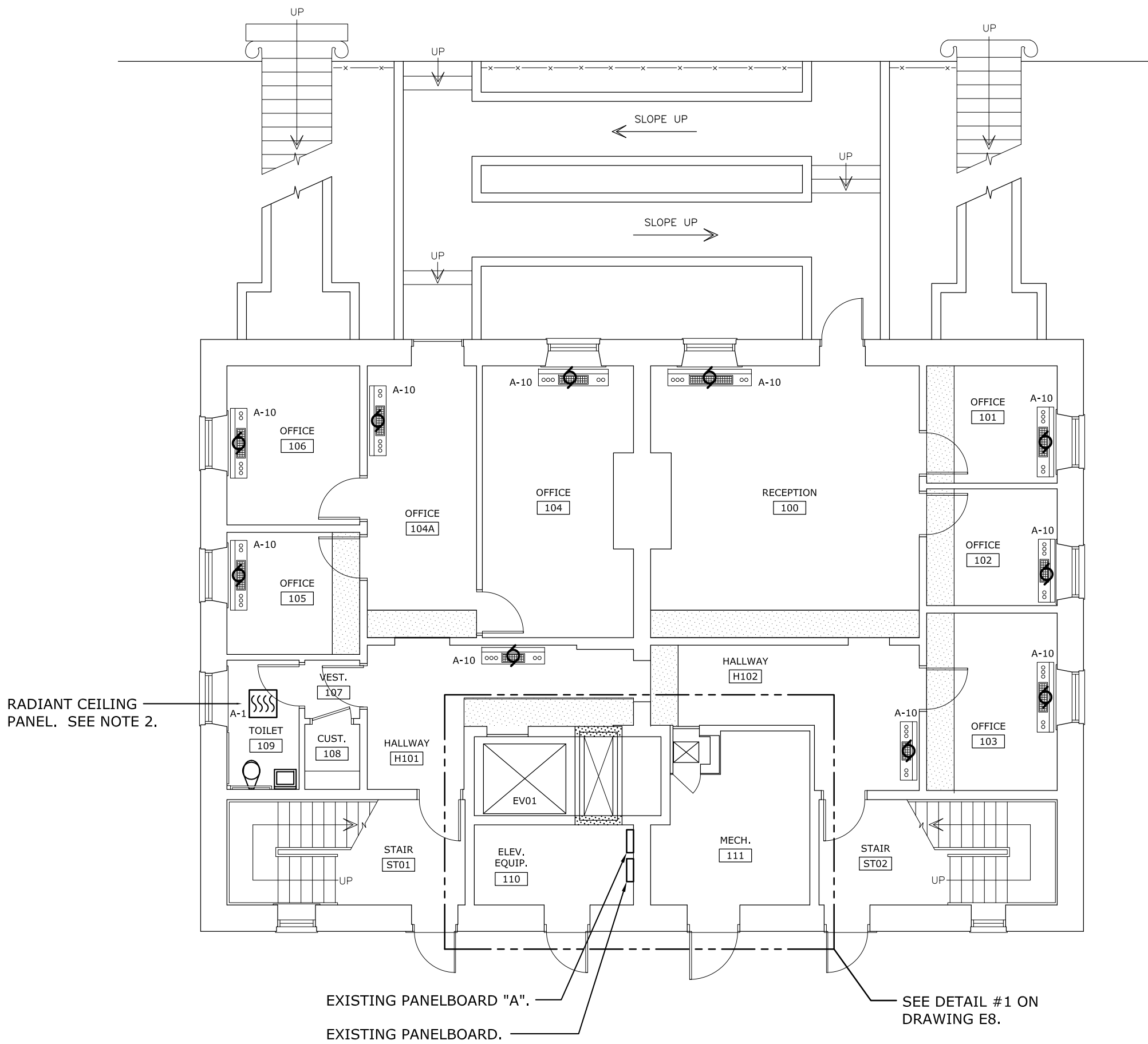


**2** 2nd FLOOR ELECTRICAL RENOVATION PLAN  
E7 SCALE: 1/8" = 1'-0"

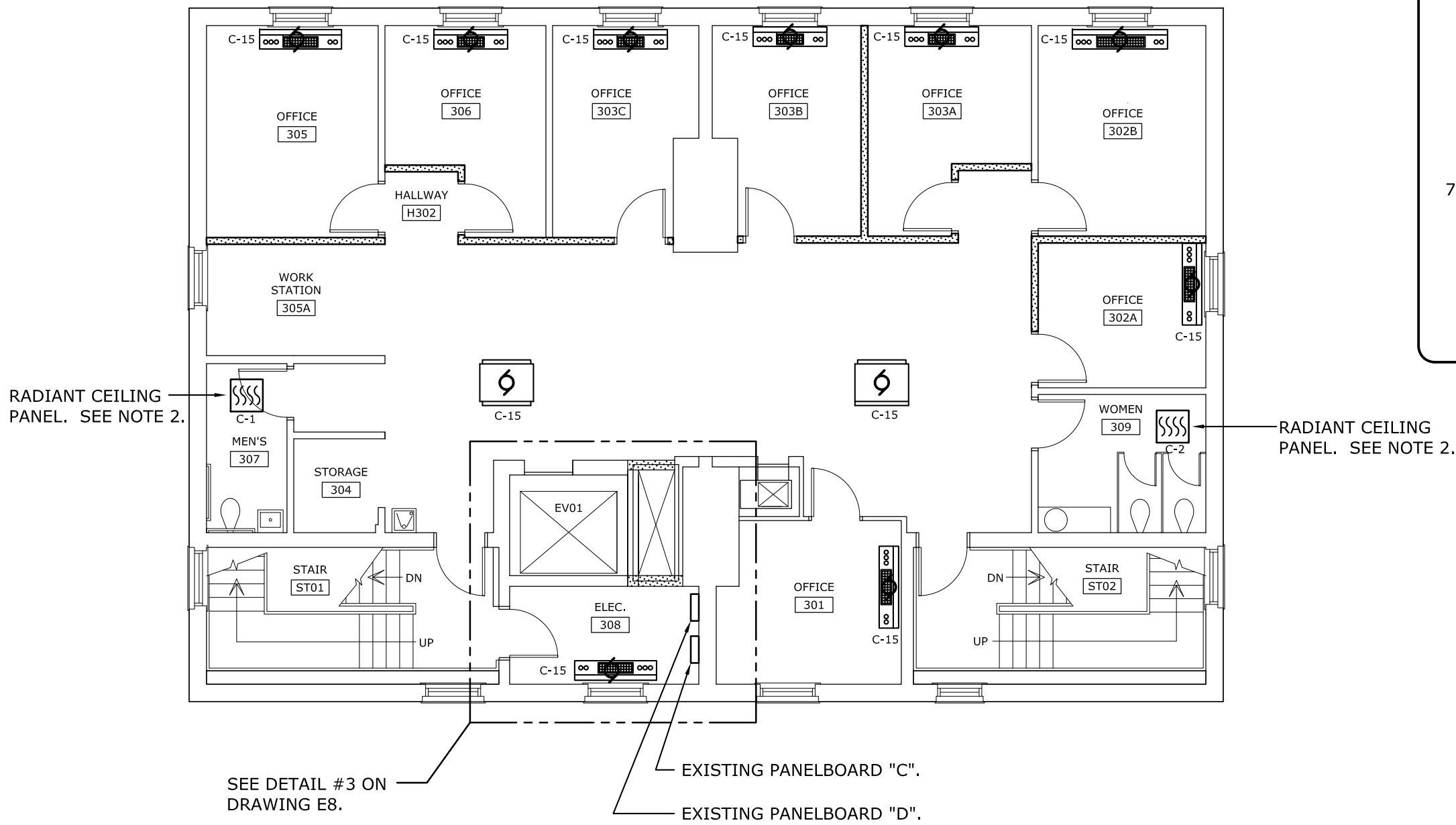


**4** 4th FLOOR ELECTRICAL RENOVATION PLAN  
E7 SCALE: 1/8" = 1'-0"

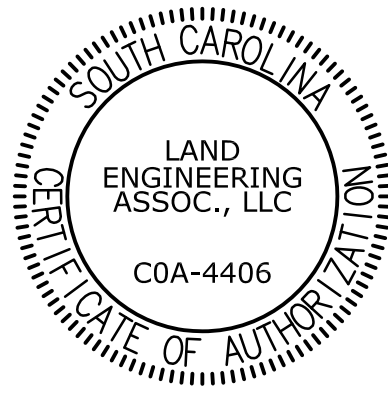
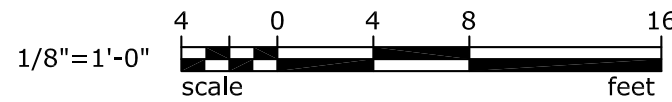
- ### RENOVATION NOTES
1. RECONNECT EXISTING FAN COIL UNIT CIRCUITS TO NEW FAN COIL UNITS. EXTEND RACEWAYS AND CONDUCTORS AS REQUIRED TO RECONNECT CIRCUITS TO NEW UNITS.
  2. **RADIANT CEILING PANELS:** PANELS IN RESTROOMS REFERENCED TO THIS NOTE SHALL BE WIRED THROUGH A LINE-VOLTAGE THERMOSTAT (THERMOSTAT WILL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR).
  3. COORDINATE MOUNTING LOCATION OF DISCONNECT SWITCH AND VARIABLE SPEED DRIVES TO ENSURE PROPER WORKING CLEARANCES IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
  4. **ROOM 402:** PROVIDE ONE EZ-PATH #33 SERIES 3"x3"x10.5" FIRE-RATED PATHWAY DEVICE (OR EQUAL) AT THE 2-HOUR RATED VERTICAL SHAFT. THIS PATHWAY WILL BE UTILIZED BY USC INFORMATION TECHNOLOGY STAFF TO ROUTE DATA OUTLET COMMUNICATIONS CABLES DOWN TO THE SECOND FLOOR ELECTRICAL ROOM. COORDINATE INSTALLATION OF PATHWAY DEVICE WITH THE MECHANICAL CONTRACTOR.
  5. **EXISTING PANELBOARD "E":** EXISTING PANEL IS A FEDERAL PACIFIC TYPE "NQLP" MAIN-LUGS-ONLY PANELBOARD RATED 120/208 VOLTS, 100 AMPS, 3-PHASE, 4-WIRE. PROVIDE ONE SINGLE-POLE 20-AMP RATED CIRCUIT BREAKER IN SPACE 12, IN SPACE 16, AND IN SPACE 18 TO SERVE NEW RECEPTACLE, FIRE-SMOKE DAMPER, AND HVAC LOADS. PROVIDE ONE 3-POLE 15-AMP RATED CIRCUIT BREAKER IN SPACES 19, 21, 23 AND IN SPACES 20, 22, 24 TO SERVE HVAC LOADS ASSOCIATED WITH "OAHU-1".
  6. VARIABLE FREQUENCY DRIVES WILL BE FURNISHED BY THE MECHANICAL CONTRACTOR TO SERVE TWO OF THE MOTORS ASSOCIATED WITH "OAHU-1". THE ELECTRICAL CONTRACTOR SHALL MOUNT THE DRIVES IN A CODE COMPLIANT LOCATION AND PROVIDE RACEWAY AND POWER WIRING AS REQUIRED TO SERVE EACH FAN MOTOR FROM PANELBOARD "E", THROUGH A DRIVE, THEN TO THE MOTOR. WIRING FOR EACH MOTOR SHALL BE THREE #12 AWG COPPER THIN CONDUCTORS WITH ONE #12 AWG COPPER GREEN-INSULATED GROUND WIRE IN 3/4" EMT & FMC RACEWAY. ALL CONTROL WIRING WILL BE PROVIDED BY THE MECHANICAL CONTRACTOR.  
NOTE: IT IS NOT KNOWN WHETHER THE HVAC UNIT WILL HAVE A SINGLE-POINT CONNECTION, OR A 3-POINT CONNECTION AS SHOWN ON PLAN. INCLUDE MATERIAL AND LABOR IN THE BASE BID AS REQUIRED TO ACCOMMODATE A SINGLE-POINT CONNECTION FOR THE HVAC UNIT.
  7. FOR DATA OUTLETS REFERENCED TO THIS NOTE, PROVIDE A HUBBELL-RACO #6300 (OR EQUAL) SERVICE PEDESTAL FRAM HOUSING WITH A 3/4" CHASE NIPPLE. PROVIDE A BLANK STAINLESS-STEEL COVER PLATE ON THE BACK OF THE HOUSING AND A 2-PORT DATA STAINLESS-STEEL COVER PLATE ON THE FRONT OF THE HOUSING. PROVIDE A 3/4" RMC CONDUIT FROM THE BOTTOM OF THE HOUSING, STUBBED DOWN INTO THE CEILING SPACE ON THE 3RD FLOOR. PROVIDE A FIBER BUSHING ON CONDUIT ENDS.



**1** 1st FLOOR ELECTRICAL RENOVATION PLAN  
E7 SCALE: 1/8" = 1'-0"



**3** 3rd FLOOR ELECTRICAL RENOVATION PLAN  
E7 SCALE: 1/8" = 1'-0"



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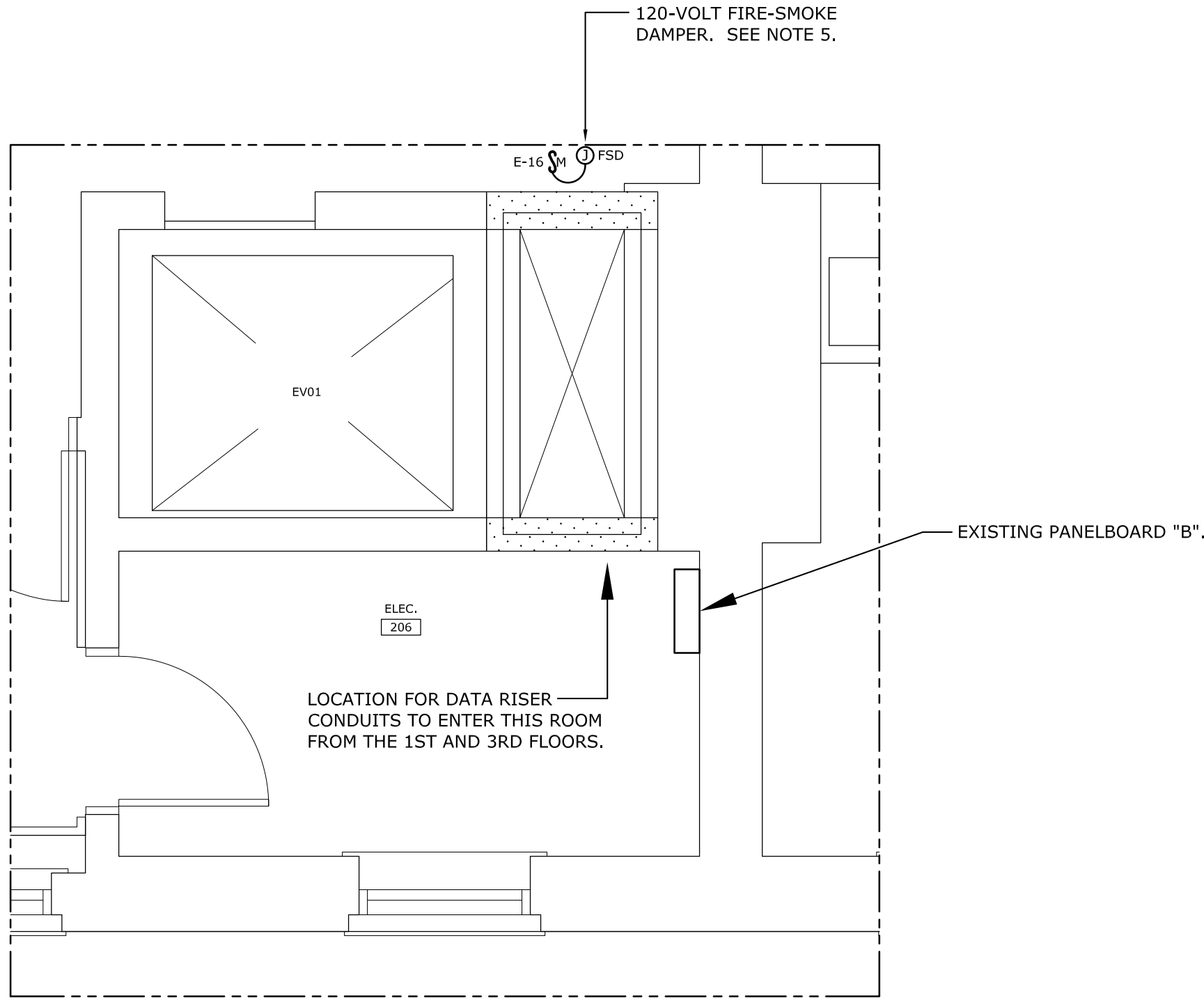
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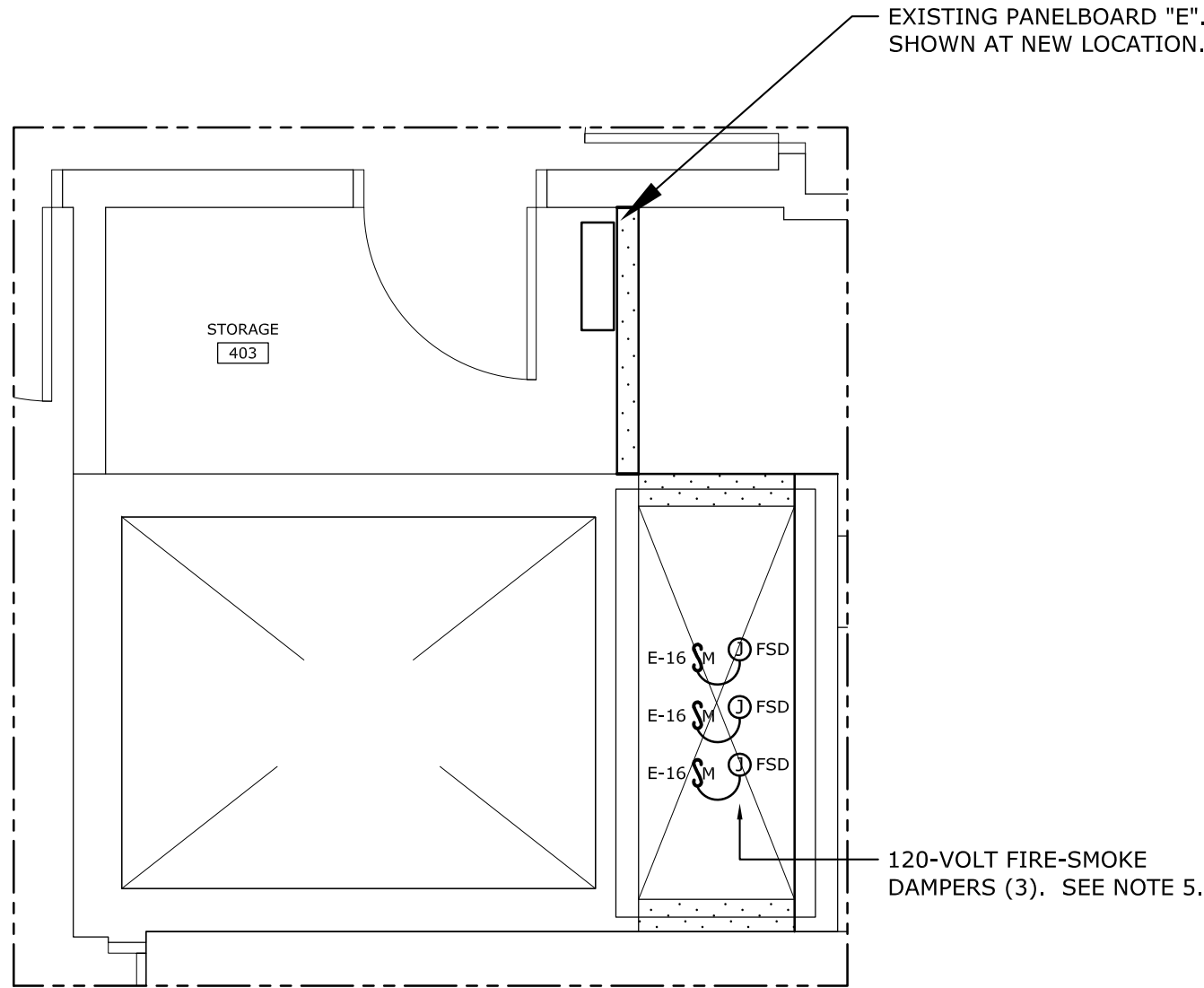
ELECTRICAL  
RENOVATION  
PLANS

**E7**

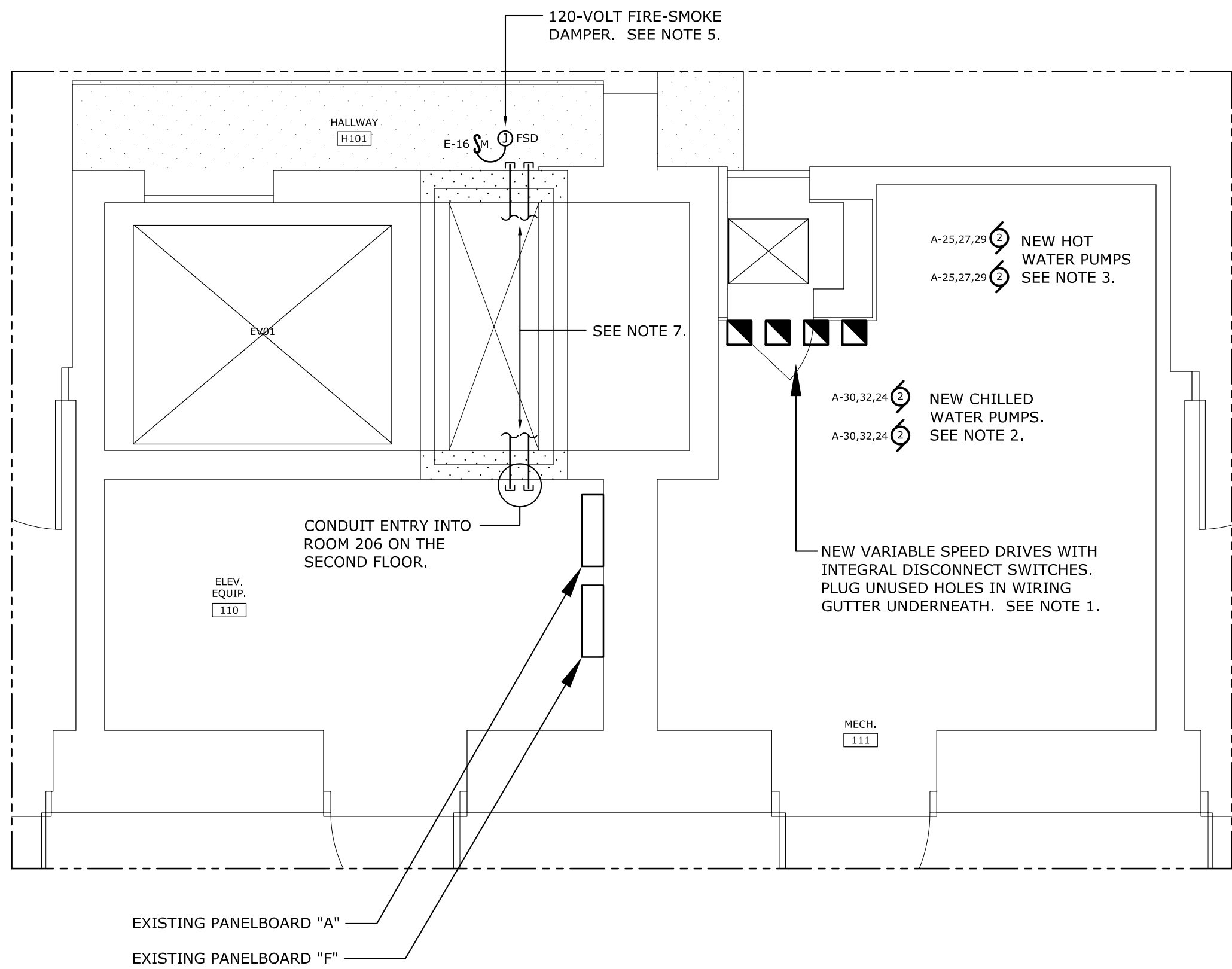
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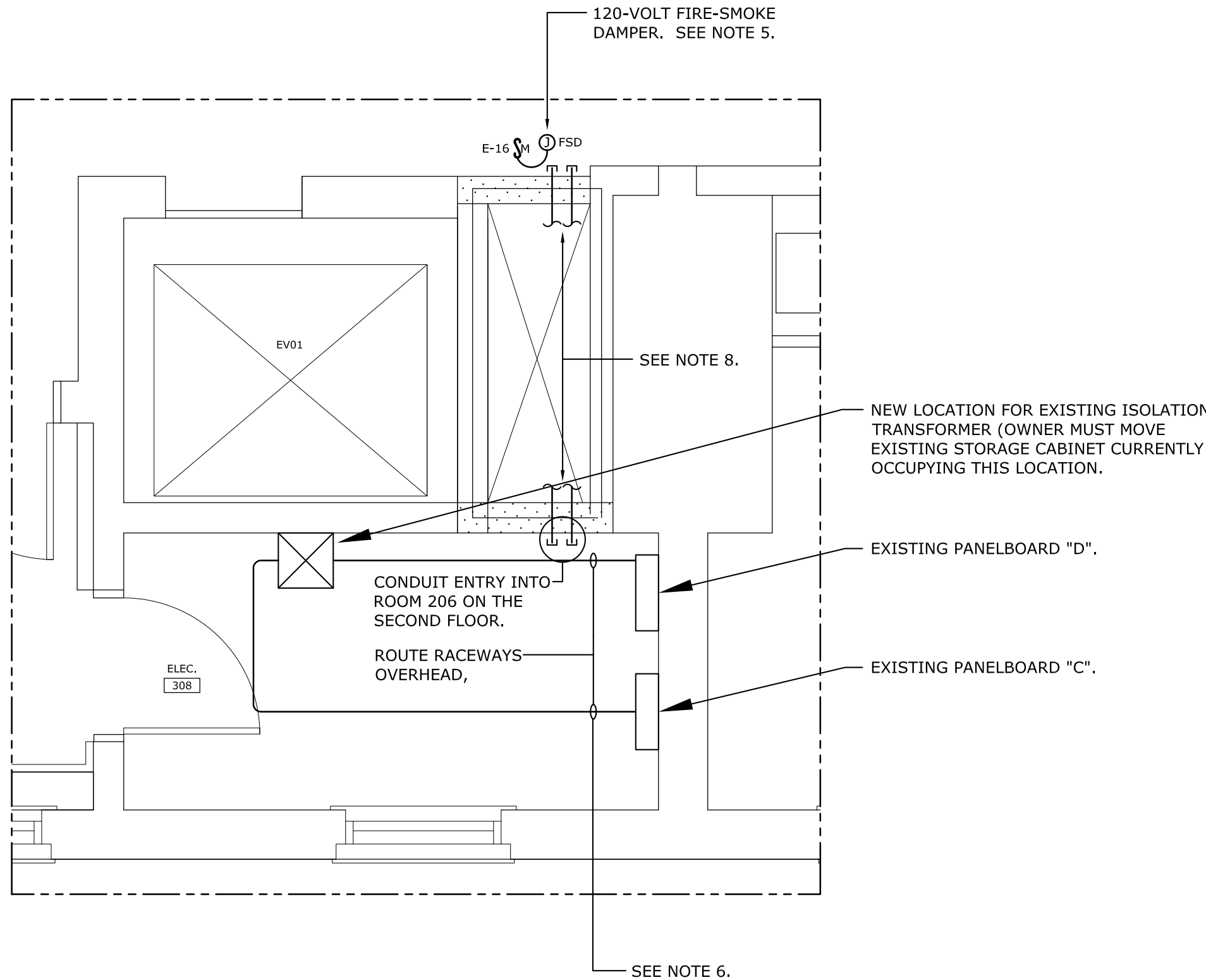
2 2nd FLOOR ELEC. ROOM RENOVATION PLAN  
E8 SCALE: 3/8" = 1'-0"



4 4th FLOOR STOR. ROOM RENOVATION PLAN  
E8 SCALE: 3/8" = 1'-0"



1 1st FLOOR MECHANICAL ROOM RENOVATION PLAN  
E8 SCALE: 3/8" = 1'-0"

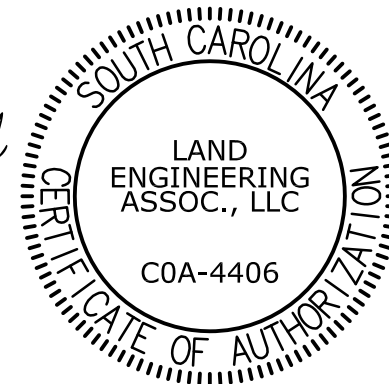


3 3rd FLOOR ELEC. ROOM RENOVATION PLAN  
E8 SCALE: 3/8" = 1'-0"

#### RENOVATION NOTES

- VARIABLE FREQUENCY DRIVES WILL BE FURNISHED BY THE MECHANICAL CONTRACTOR TO SERVE THE NEW HOT WATER AND CHILLED WATER PUMPS. THE ELECTRICAL CONTRACTOR SHALL MOUNT THE DRIVES IN A CODE COMPLIANT LOCATION AND PROVIDE RACEWAY AND POWER WIRING AS REQUIRED TO SERVE EACH NEW PUMP MOTOR WITH POWER FROM PANELBOARD "A", TO A DRIVE, THEN TO A MOTOR. ALL CONTROL WIRING WILL BE PROVIDED BY THE MECHANICAL CONTRACTOR.
- HOT WATER PUMPS: PROVIDE RACEWAY, WIRING, AND FITTINGS AS REQUIRED TO CONNECT EXISTING HOT WATER PUMPS TO THEIR NEW VARIABLE FREQUENCY DRIVES. WIRING SHALL BE THREE #12 AWG COPPER THHN CONDUCTORS WITH ONE GREEN-INSULATED #12 AWG COPPER GROUND WIRE IN 3/4" EMT.
- CHILLED WATER PUMPS: PROVIDE RACEWAY, WIRING, AND FITTINGS AS REQUIRED TO CONNECT EXISTING CHILLED WATER PUMPS TO THEIR NEW VARIABLE FREQUENCY DRIVES. WIRING SHALL BE THREE #12 AWG COPPER THHN CONDUCTORS WITH ONE GREEN-INSULATED #12 AWG COPPER GROUND WIRE IN 3/4" EMT.
- ROOM 206: PROVIDE FOUR EZ-PATH #33 SERIES 3"x3"x10.5" FIRE-RATED PATHWAY DEVICE (OR EQUAL) STACKED VERTICALLY AND MOUNTED AS CLOSE AS PRACTICAL TO THE HINGED ACCESS DOOR PROVIDED BY OTHERS. THESE PATHWAYS WILL BE UTILIZED BY USC INFORMATION TECHNOLOGY STAFF TO ROUTE DATA OUTLET COMMUNICATIONS CABLES FROM OTHER FLOORS TO THE SECOND FLOOR. COORDINATE INSTALLATION OF PATHWAY DEVICES WITH THE MECHANICAL CONTRACTOR.
- FIRE-SMOKE DAMPERS: PROVIDE A MOTOR-RATED SNAP SWITCH IN A HANDY BOX TO SERVE AS LOCAL MEANS OF DISCONNECT FOR EACH MOTOR-OPERATED FIRE-SMOKE DAMPER. ROUTE 120-VOLT PHASE CONDUCTOR FOR EACH MOTOR THROUGH A SWITCH, THROUGH ALARM CONTACTS IN ASSOCIATED FIRE ALARM DUCT SMOKE DETECTOR, THEN TO DAMPER MOTOR.
- PROVIDE FOUR #6 AWG COPPER THHN CONDUCTORS WITH ONE #10 AWG COPPER GREEN-INSULATED GROUND WIRE IN 3/4" EMT & FMC RACEWAYS TO RE-SERVE THE PRIMARY AND SECONDARY FEEDERS FOR THE EXISTING ISOLATION TRANSFORMER.
- DATA RISER CONDUITS - 1st FLOOR: PROVIDE TWO 2" EMT RACEWAYS WITH PULL STRINGS FROM THE CEILING SPACE IN HALLWAY H101, STUBBED INTO ELECTRICAL ROOM 206 ON THE SECOND FLOOR. PROVIDE A FIBER BUSHING ON ALL CONDUIT ENDS. PROVIDE A 2" FIRESTOP PLUG FOR EACH CONDUIT END.
- DATA RISER CONDUITS - 3rd FLOOR: PROVIDE TWO 2" EMT RACEWAYS WITH PULL STRINGS FROM THE CEILING SPACE IN OF THE 3RD FLOOR ELEVATOR LOBBY, STUBBED INTO ELECTRICAL ROOM 206 ON THE SECOND FLOOR. PROVIDE A FIBER BUSHING ON ALL CONDUIT ENDS. PROVIDE A 2" FIRESTOP PLUG FOR EACH CONDUIT END.

3/8"=1'-0" 1 0 1 2 3 4 5 6  
scale feet



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Revisions:		
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