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Construction Documents

LIEBER COLLEGE HVAC RENOVATION



STATE PROJECT NO: H27-Z313

SYMBOLS

	DIMENSION TO FACE OF CONSTRUCTION (AS NOTED)
	DIMENSION TO COLUMN CENTERLINE
	STOREFRONT/CURTAIN WALL
	DOOR NUMBER
	INTERIOR STOREFRONT
	ROOM NUMBER
	COLUMN GRIDLINE
	PARTITION TYPE
	INTERIOR ELEVATION
	DETAIL
	SECTION

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A/E PROJECT TEAM

Architectural: WATSON TATE SAVORY, INC.
Mechanical: MECHANICAL DESIGN, INC.
Electrical: LAND ENGINEERING ASSOCIATES, LLC

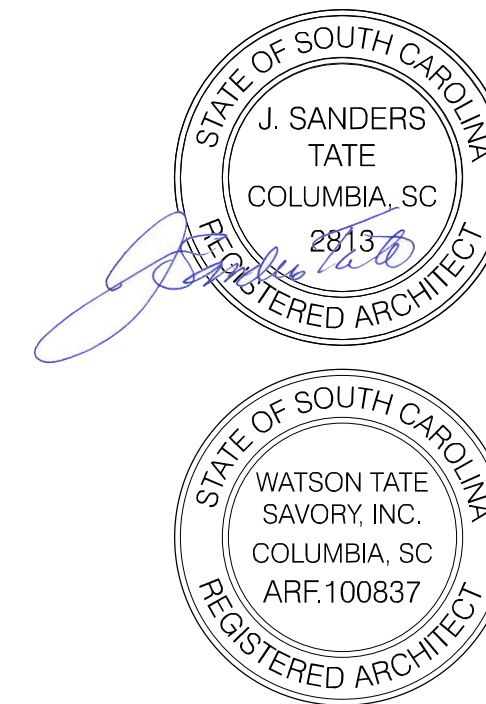
ARCHITECTURE
INTERIORS
PLANNING

WTS
WATSON TATE SAVORY

LIEBER COLLEGE HVAC
RENOVATION

UNIVERSITY OF SOUTH
CAROLINA
COLUMBIA, SC

State Project No: H27-Z313

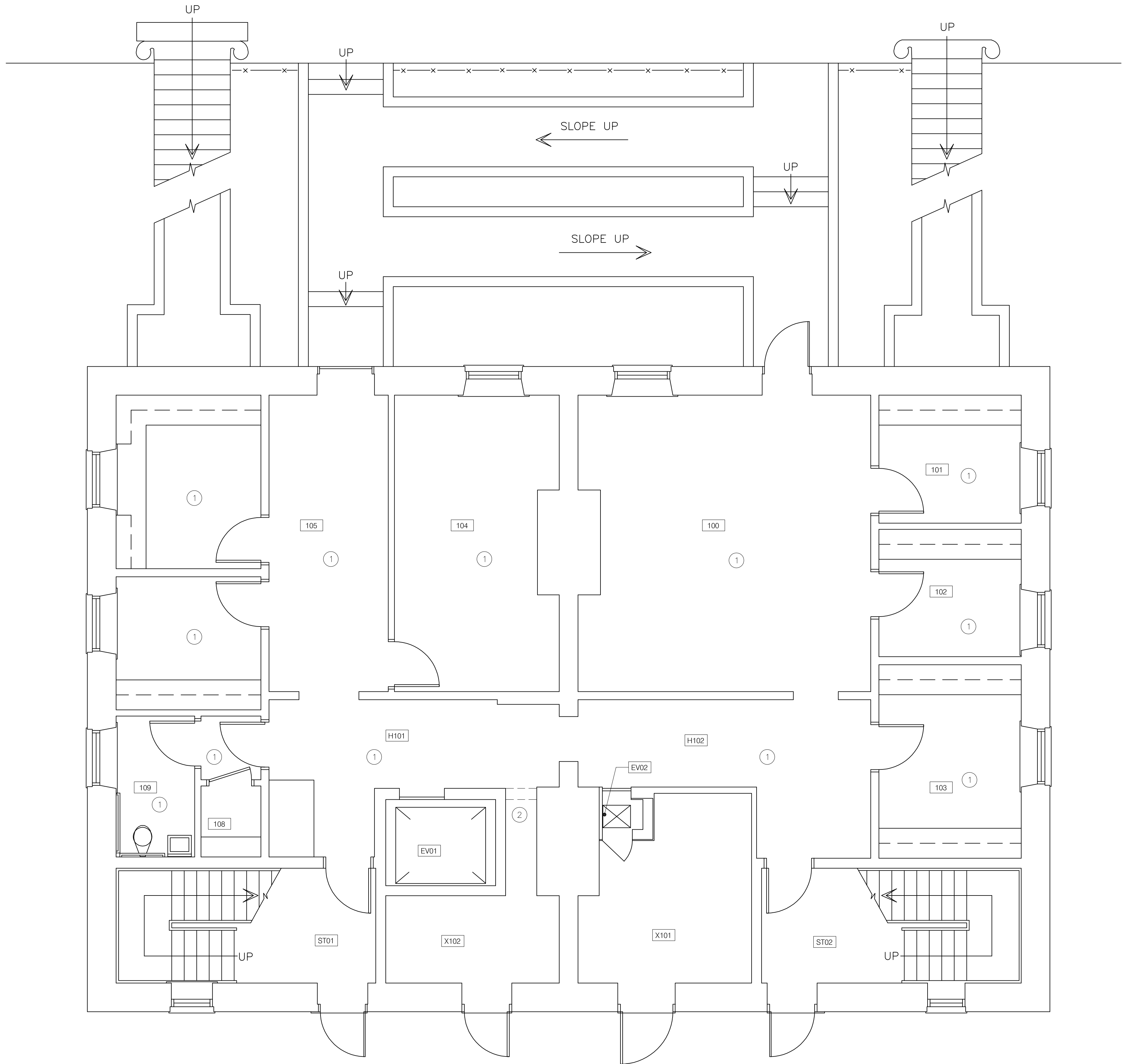


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TITLE SHEET &
INDEX OF
DRAWINGS

T1



1
D1
FIRST FLOOR DEMOLITION PLAN
1/4" = 1'-0"

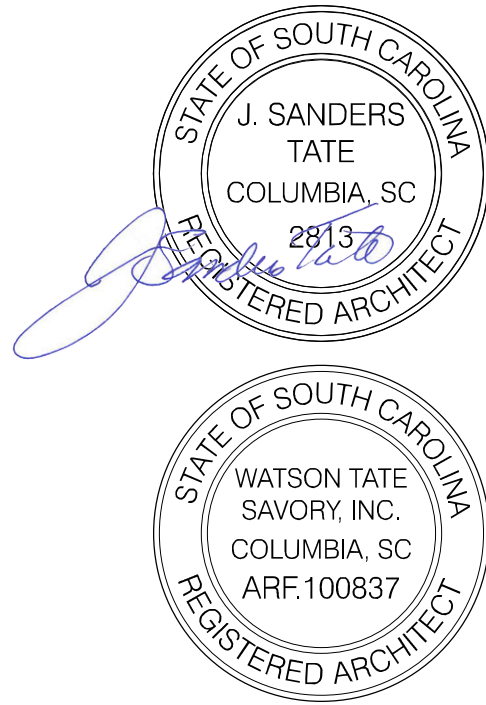
- DEMOLITION NOTES**
- ① REMOVE EXISTING LAY-IN CEILING AND GRID COMPLETELY. PROTECT EXISTING SPRINKLER HEADS TO REMAIN. LIGHTS WILL BE REMOVED UNDER SEPARATE INTERIORS RENOVATION PROJECT. COORDINATE ACTIVITIES.
 - ② REMOVE PORTION OF EXISTING WALL FULL HEIGHT.
 - ③ SEE MECHANICAL DWGS. FOR REMOVAL OF ALL FAN COIL UNITS AND PIPING.
 - ④ SEE ELECTRICAL DRAWINGS FOR REMOVAL OF EXISTING FIRE ALARM SYSTEM.



LIEBER COLLEGE HVAC
RENOVATION

UNIVERSITY OF SOUTH
CAROLINA
COLUMBIA, SC

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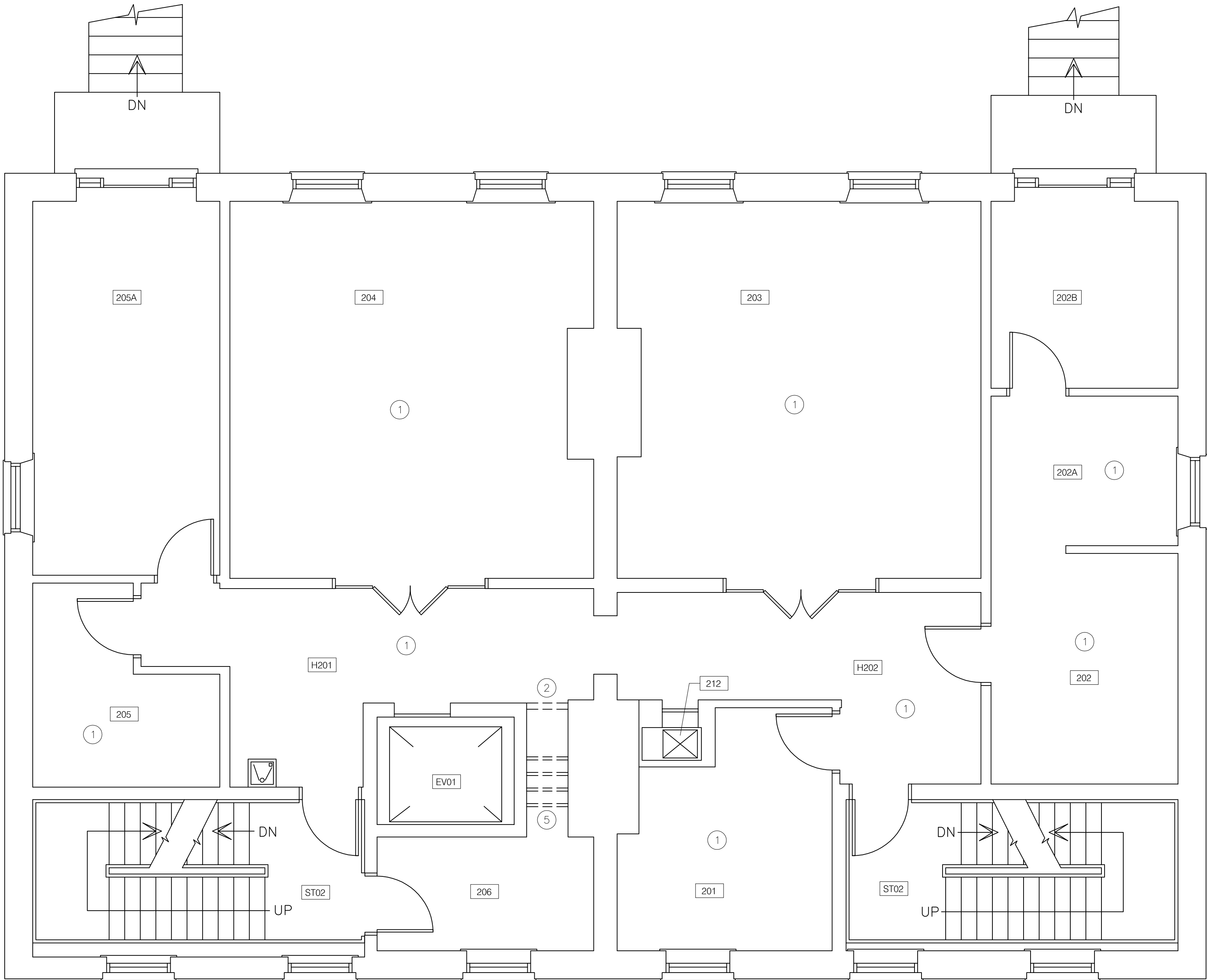
First Floor
Demolition Plan

D1

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1 SECOND FLOOR DEMOLITION PLAN
D2 1/4" = 1'-0"



DEMOLITION NOTES

- 1 REMOVE EXISTING LAY-IN CEILING AND GRID COMPLETELY. PROTECT EXISTING SPRINKLER HEADS TO REMAIN. LIGHTS WILL BE REMOVED UNDER SEPARATE INTERIORS RENOVATION PROJECT. COORDINATE ACTIVITIES.
- 2 REMOVE PORTION OF EXISTING WALL FULL HEIGHT.
- 3 SEE MECHANICAL DWGS. FOR REMOVAL OF ALL FAN COIL UNITS AND PIPING.
- 4 SEE ELECTRICAL DRAWINGS FOR REMOVAL OF EXISTING FIRE ALARM SYSTEM.
- 5 REMOVE +/- FOUR 2X8 OR 2X10 WOOD FRAMING MEMBERS THAT CROSS OPEN SHAFT.

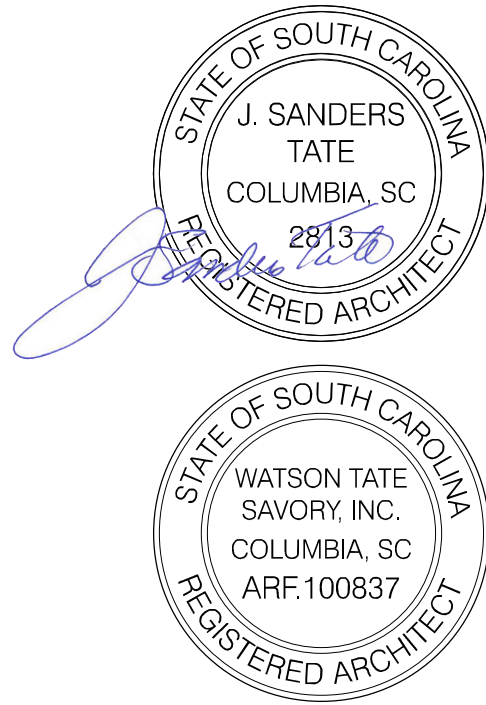
ARCHITECTURE
INTERIORS
PLANNING

WTS
WATSON TATE SAVORY

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RENOVATION

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State Project No: H27-Z313



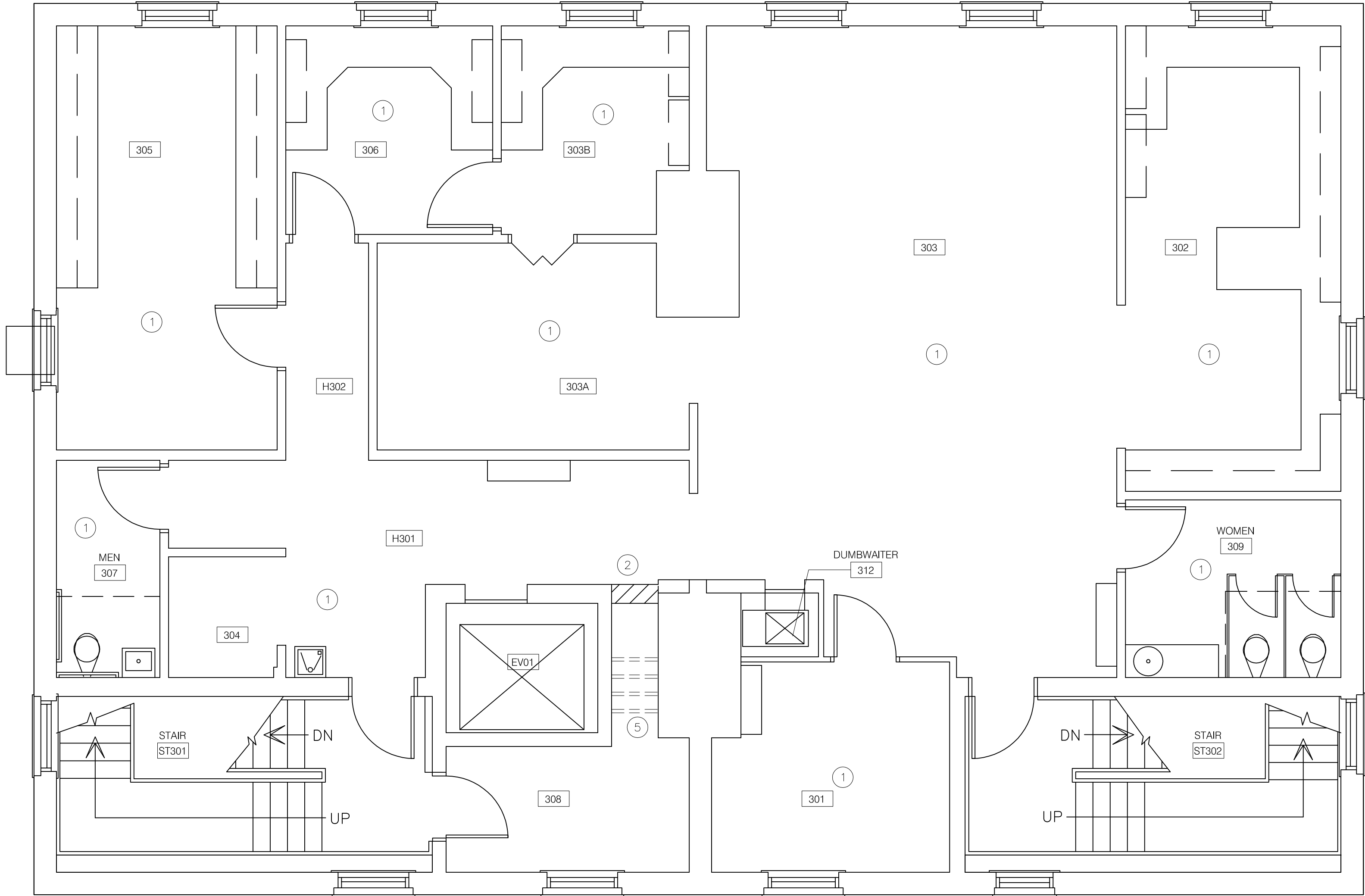
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Second Floor
Demolition Plan

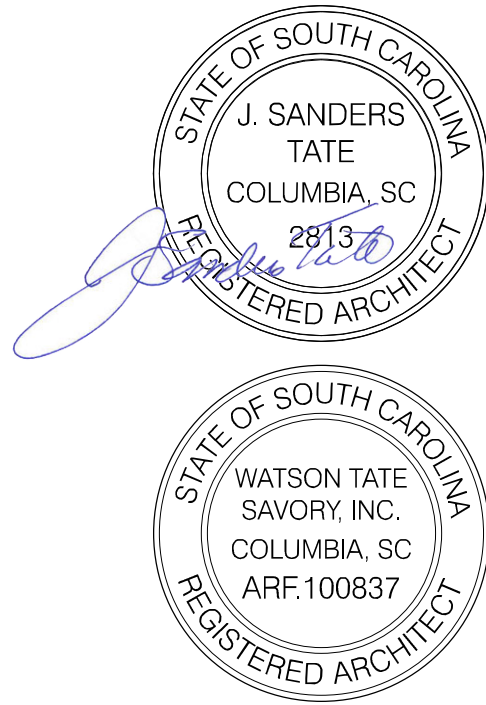
D2

1
D3
THIRD FLOOR DEMOLITION PLAN
1/4" = 1'-0"



DEMOLITION NOTES

- 1 REMOVE EXISTING LAY-IN CEILING AND GRID COMPLETELY. PROTECT EXISTING SPRINKLER HEADS TO REMAIN. LIGHTS WILL BE REMOVED UNDER SEPARATE INTERIORS RENOVATION PROJECT. COORDINATE ACTIVITIES.
- 2 REMOVE PORTION OF EXISTING WALL FULL HEIGHT.
- 3 SEE MECHANICAL DWGS. FOR REMOVAL OF ALL FAN COIL UNITS AND PIPING.
- 4 SEE ELECTRICAL DRAWINGS FOR REMOVAL OF EXISTING FIRE ALARM SYSTEM.
- 5 REMOVE +/- FOUR 2X8 OR 2X10 WOOD FRAMING MEMBERS THAT CROSS OPEN SHAFT.

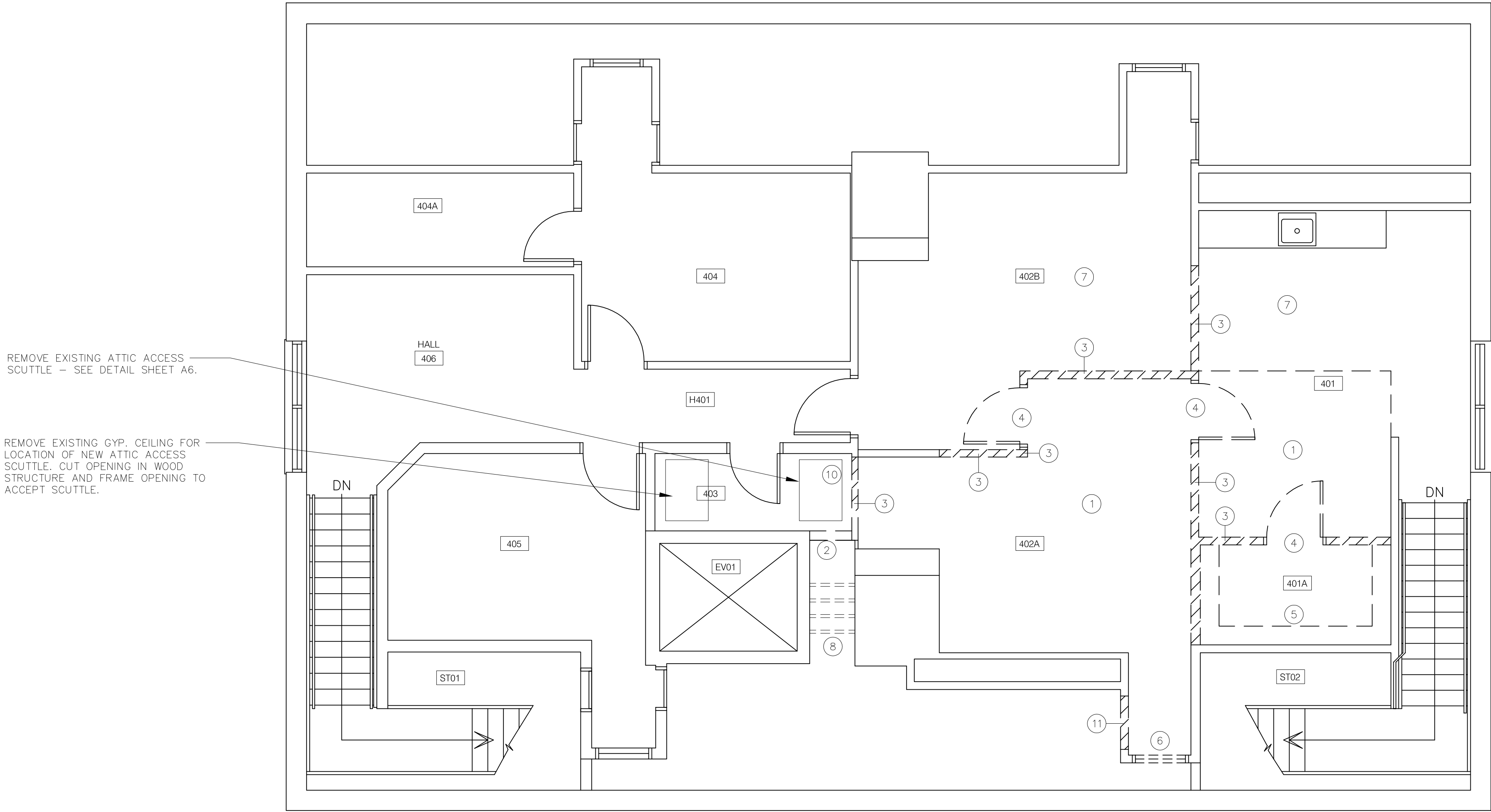


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**Third Floor
Demolition Plan**

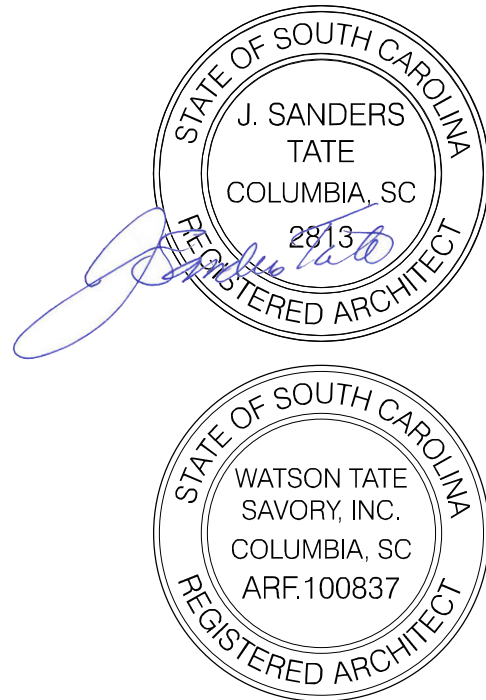
D3



1 FOURTH FLOOR DEMOLITION PLAN
D4 1/4" = 1'-0"

DEMOLITION NOTES

- 1 REMOVE EXISTING FLOORING.
- 2 REMOVE PORTION OF EXISTING WALL FULL HEIGHT.
- 3 REMOVE EXISTING WALL
- 4 REMOVE EXISTING DOOR & FRAME
- 5 REMOVE EXISTING SHELVEING
- 6 REMOVE EXISTING WINDOW SASHES FOR INSTALLATION OF LOUVER - SEE DETAILS 6 & 7 AT DRAWING A5.
- 7 EXISTING VINYL TILE FLOORING TO REMAIN.
- 8 REMOVE +/- FOUR 2X8 OR 2X10 WOOD FRAMING MEMBERS THAT CROSS OPEN SHAFT.
- 9 SEE ELECTRICAL DRAWINGS FOR REMOVAL OF EXISTING FIRE ALARM SYSTEM.
- 10 SEE ELECTRICAL DRAWINGS FOR MOVING OF ELECTRICAL PANEL/EQUIPMENT.
- 11 CUT EXISTING WALL AND WALL SUPPORT AND FRAME AN OPENING TO ACCEPT ACCESS DOOR.

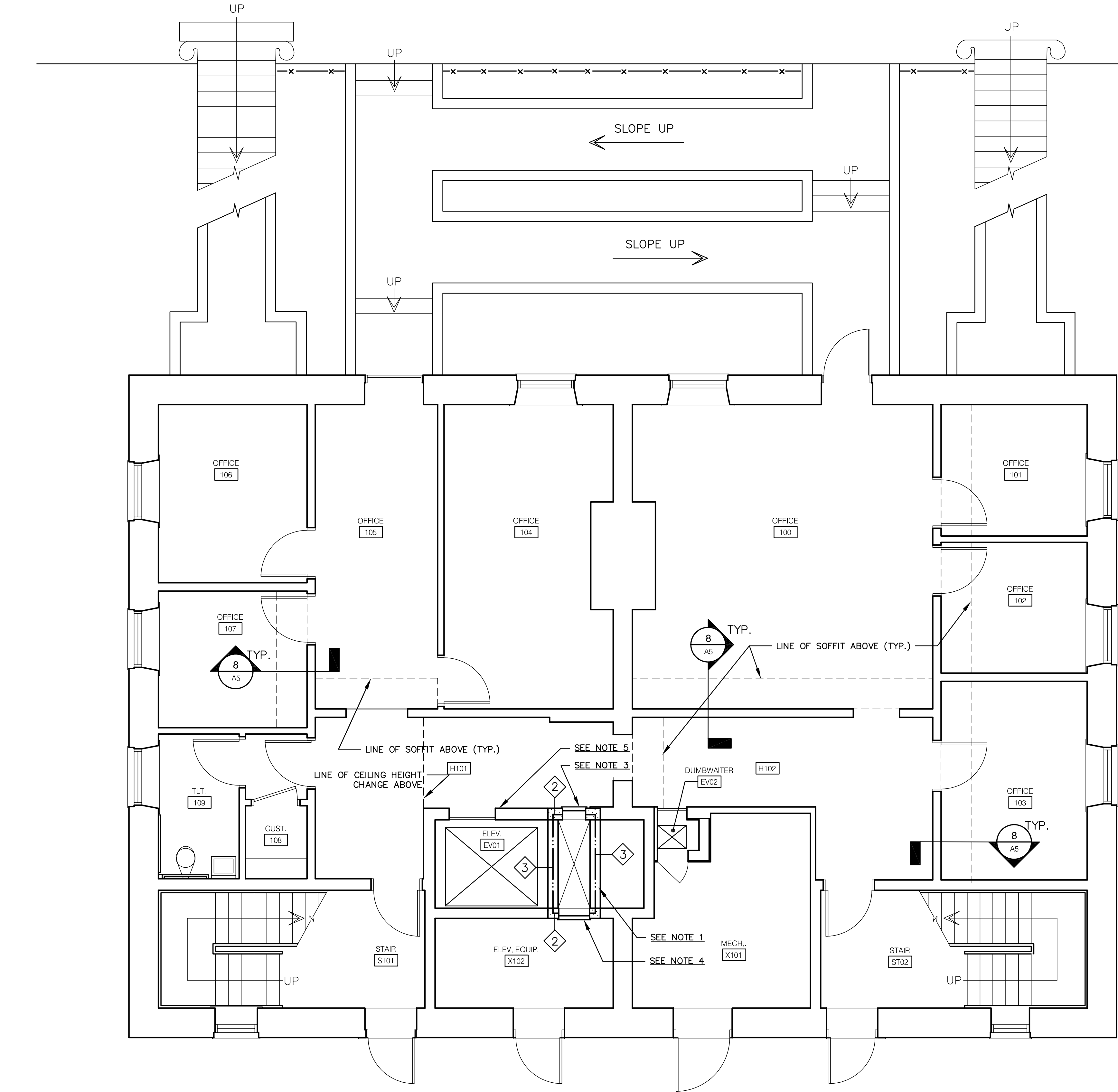


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**Fourth Floor
Demolition Plan**

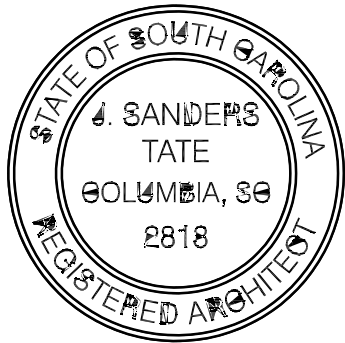
D4



1 FIRST FLOOR RENOVATION PLAN
1/4" = 1'-0"

NOTES

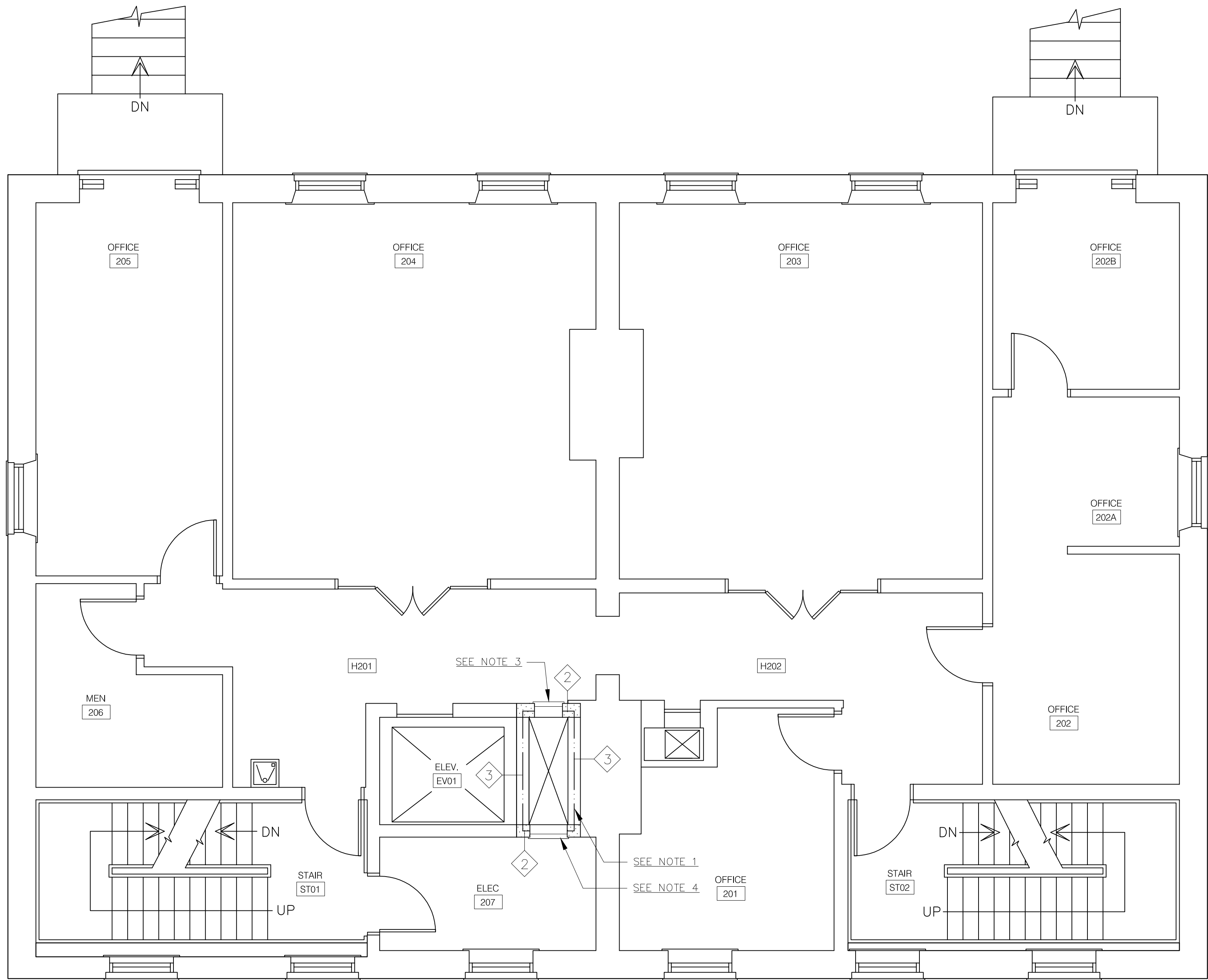
- EXISTING SHAFT. TYPE 3 PARTITION REPRESENTS EXISTING CMU/AT ELEVATOR SHAFT AND EXISTING BRICK AT CHIMNEY. ADD TYPE 2 SHAFTWALL AT BOTH ENDS OF SHAFT TO COMPLETE 2-HOUR FIRE-RATED SHAFT ENCLOSURE. PROVIDE CONTROL JOINT AT EACH END OF INFILL PARTITIONS.
- SEE DRAWING A5 FOR TYPE 2 PARTITION DETAIL.
- PROVIDE 1'-6"x1'-6" 2-HOUR FIRE-RATED ACCESS DOOR. COORDINATE LOCATION TO ACCESS DAMPER.
- PROVIDE 1'-6"W X 3'-0"H 2-HOUR FIRE-RATED ACCESS DOOR. COORDINATE LOCATION TO ACCESS DAMPER.
- DUE TO LOWER CEILING HEIGHT IN THIS SECTION OF CORRIDOR, THE ELEVATOR POSITION INDICATOR LIGHT (4'-/- 4"x12") OVER THE ELEVATOR DOOR NEEDS TO BE RELOCATED TO A SPOT BESIDE THE ELEVATOR DOOR UNDER THE LOWER CEILING. THIS WORK MUST BE PERFORMED BY A LICENSED ELEVATOR CONTRACTOR AND MUST BE COORDINATED WITH USC PERSONNEL. THE CURRENT ELEVATOR MAINTENANCE CONTRACT AT USC IS HELD BY QIIS - CONTACT TERRY GRUBER (803-513-3549). PATCH THE OPENING WHERE EXISTING LIGHT IS REMOVED WITH A UL APPROVED FIRE SEALANT SYSTEM.



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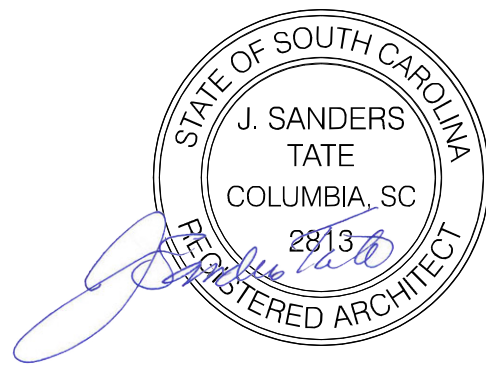
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First Floor
Renovation Plan



1 SECOND FLOOR RENOVATION PLAN
A2 1/4" = 1'-0"

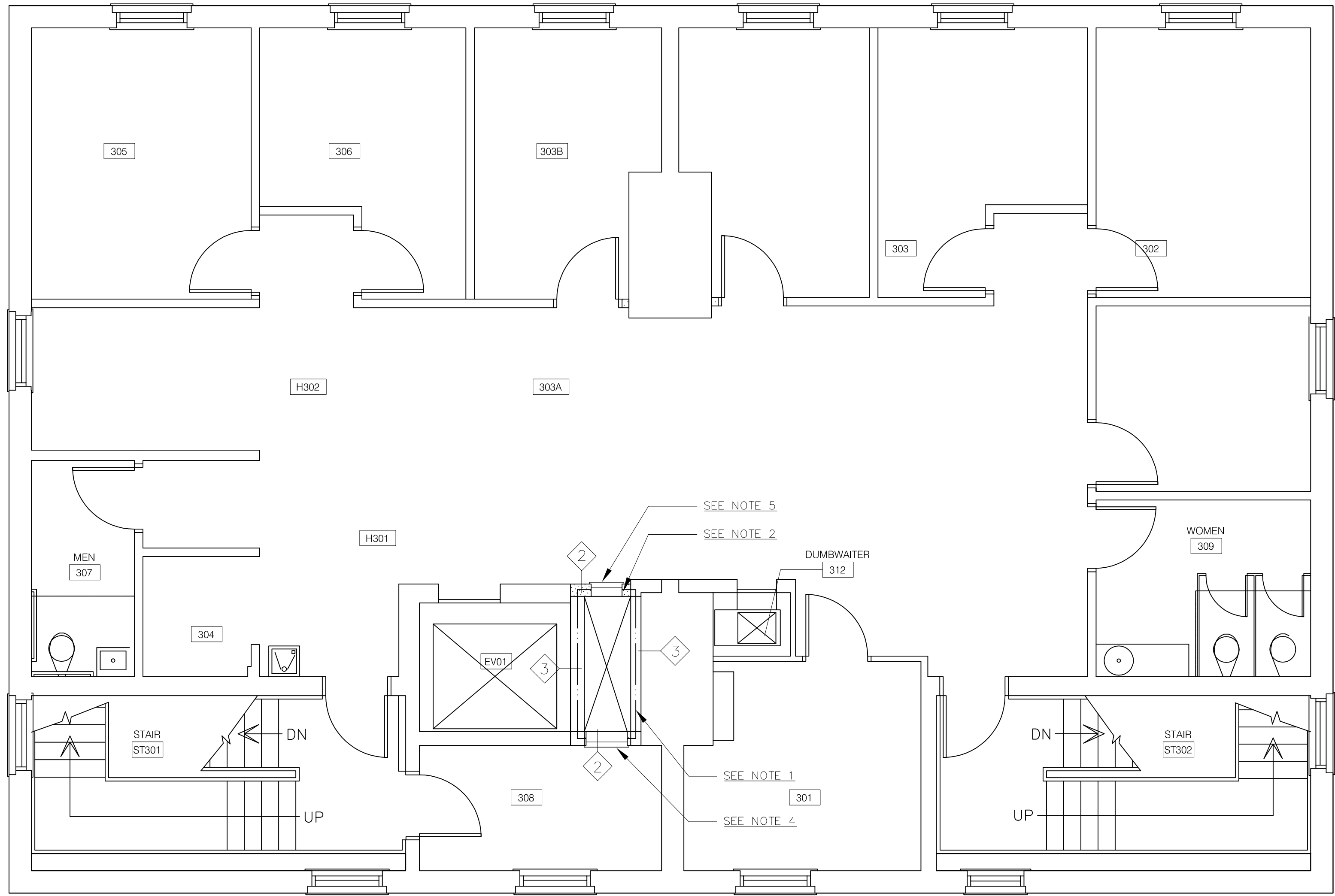
- NOTES**
- EXISTING SHAFT. TYPE 3 PARTITION REPRESENTS EXISTING CMU/AT ELEVATOR SHAFT AND EXISTING BRICK/AT CHIMNEY. ADD TYPE 2 SHAFTWALL AT BOTH ENDS OF SHAFT TO COMPLETE 2-HOUR FIRE-RATED SHAFT ENCLOSURE. PROVIDE CONTROL JOINT AT EACH END OF INFILL PARTITIONS.
 - SEE DRAWING A5 FOR TYPE 2 PARTITION DETAIL.
 - PROVIDE 1'-6"x1'-6" 2-HOUR FIRE-RATED ACCESS DOOR. COORDINATE LOCATION TO ACCESS DAMPER.
 - PROVIDE 1'-6"W X 3'-0"H 2-HOUR FIRE-RATED ACCESS DOOR. COORDINATE LOCATION TO ACCESS DAMPER.



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Second Floor
Renovation Plan



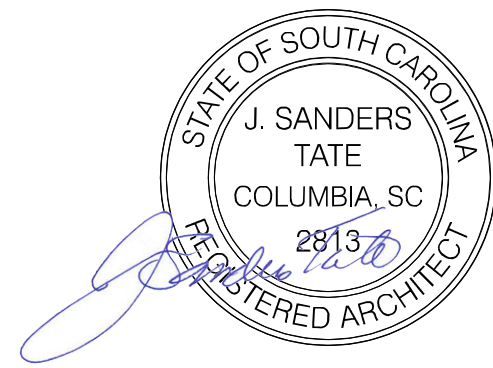
GENERAL NOTE

LAYOUT OF THIRD FLOOR IS DIFFERENT FROM EXISTING. NEW LAYOUT OF WALLS AND DOORS ON THIS (EXCEPT AT HVAC SHAFT) IS UNDER A SEPARATE INTERIOR RENOVATIONS PROJECT. COORDINATE ACTIVITIES.

NOTES

1. EXISTING SHAFT, TYPE 3 PARTITION REPRESENTS EXISTING CMU/AT ELEVATOR SHAFT AND EXISTING BRICK AT CHIMNEY. ADD TYPE 2 SHAFTWALL AT BOTH ENDS OF SHAFT TO COMPLETE 2-HOUR FIRE-RATED SHAFT ENCLOSURE. PROVIDE CONTROL JOINT AT EACH END OF INFILL PARTITIONS.
2. SEE DRAWING A5 FOR TYPE 2 PARTITION DETAIL.
3. PROVIDE 1'-6"x1'-6" 2-HOUR FIRE-RATED ACCESS DOOR. COORDINATE LOCATION TO ACCESS DAMPER.
4. PROVIDE 1'-6"W X 3'-0"H 2-HOUR FIRE-RATED ACCESS DOOR. COORDINATE LOCATION TO ACCESS DAMPER.

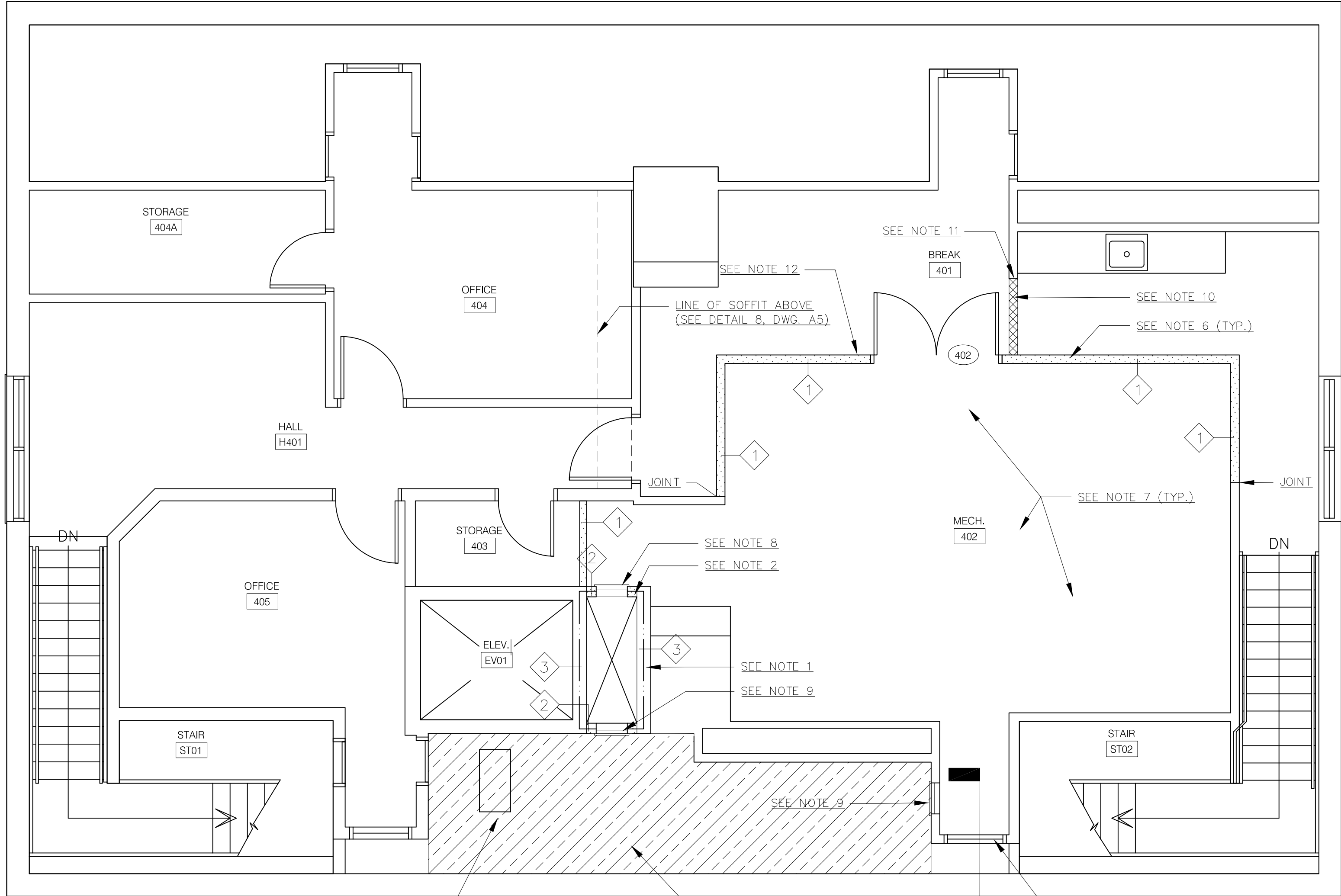
1 THIRD FLOOR RENOVATION PLAN
A3 1/4" = 1'-0"



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Third Floor
Renovation Plan

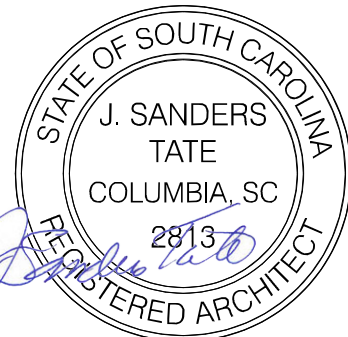


1'-6" X 3'-0" PIECE OF PLYWOOD FLOORING. 3 HINGES ON ONE SIDE OF PANEL SO PANEL CAN BE LIFTED. COORDINATE EXACT LOCATION TO ACCESS EXISTING HVAC TANKS BELOW.

NOTES

- EXISTING SHAFT. TYPE 3 PARTITION REPRESENTS EXISTING CMU AT ELEVATOR SHAFT AND EXISTING BRICK AT CHIMNEY. ADD TYPE 2 SHAFTWALL AT BOTH ENDS OF SHAFT TO COMPLETE 2-HOUR FIRE-RATED SHAFT ENCLOSURE. PROVIDE CONTROL JOINT AT EACH END OF INFILL PARTITIONS.
- SEE DRAWING A5 FOR TYPES 1 & 2 PARTITION DETAILS.
- SEE DRAWING A5 FOR DOOR SCHEDULE.
- PROVIDE 1/2" PLYWOOD OVER EXISTING JOISTS IN KNEEWALL ATTIC SPACE AT SHADED AREA.
- NEW LOUVER SET INTO EXISTING WALL AFTER WINDOW SASH REMOVAL. PROVIDE METAL FRAME TO MIMIC WINDOW MUNTIN PATTERN. SEE DETAILS 6 & 7, DRAWING A5 FOR SECTION & ELEVATION.
- PAINTING OF NEW GYPSUM WALLBOARD PARTITIONS, METAL FRAMES AND DOORS BY OWNER.
- PATCH AREA OF GYPSUM WALLBOARD CEILING WHERE PARTITIONS ARE REMOVED AND SPRINKLER HEADS RELOCATED. PROVIDE INFILL PATCHES AT PLYWOOD FLOOR WHERE ANY SECTIONS ARE MISSING AFTER REMOVAL OF EXISTING PARTITIONS.
- PROVIDE 1'-6"x1'-6" 2-HOUR FIRE-RATED ACCESS DOOR. COORDINATE LOCATION TO ACCESS DAMPER.
- PROVIDE 1'-6"W X 3'-0"H 2-HOUR FIRE-RATED ACCESS DOOR. COORDINATE LOCATION TO ACCESS DAMPER.
- PATCH IN SECTION OF FLOORING WHERE EXISTING WALL IS REMOVED. USE FLOORING SALVAGED FROM DEMOLITION.
- FINISH END OF WALL.
- COORDINATE EXACT LOCATION OF THIS WALL TO MISS EXISTING TO REMAIN CEILING SPRINKLER HEADS.

1
A4
FOURTH FLOOR RENOVATION PLAN
1/4" = 1'-0"



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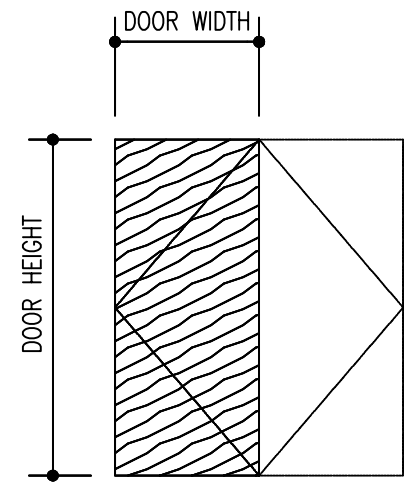
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Fourth Floor
Renovation Plan

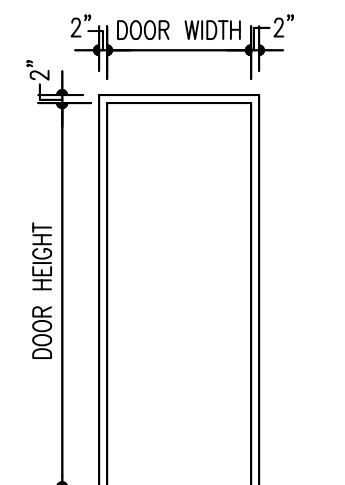
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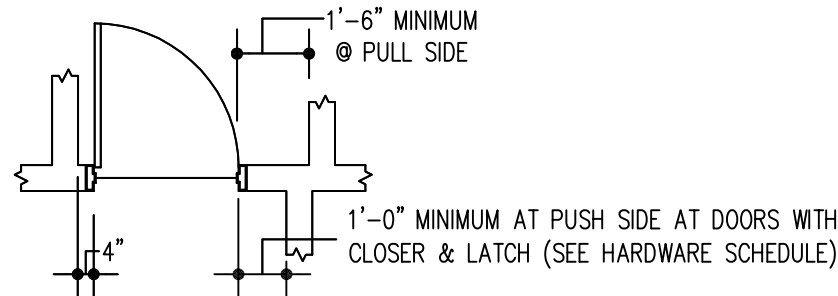
DOOR SCHEDULE											
DOOR MARK	DOOR SIZE	DOOR TYPE	THK.	MATL.	FINISH	RATING	FRAME TYPE	FRAME DETAILS			REMARKS
								HEAD	JAMB	SILL	
402	PAIR (3'-0" X 6'-8")	AA	1 3/4"	WOOD	PAINT BY OWNER	—	1	H1	J1	EXIST.	01



A
(SINGLE)
WOOD INTERIOR
AA
(DOUBLE)
WOOD INTERIOR



1 (HOLLOW METAL)



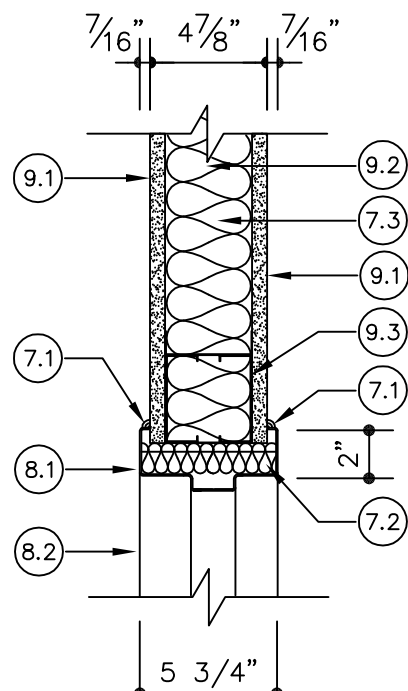
3 TYP. DOOR LOCATION

1 DOOR TYPE

A5 1/4" = 1'-0"

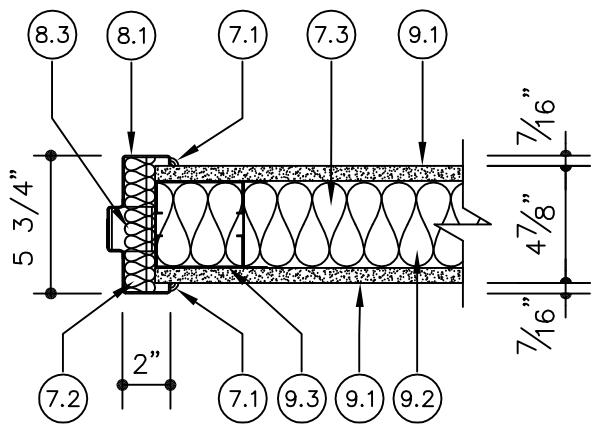
2 FRAME TYPE

A5 1/4" = 1'-0"



H1 HEAD

1 1/2" = 1'-0"

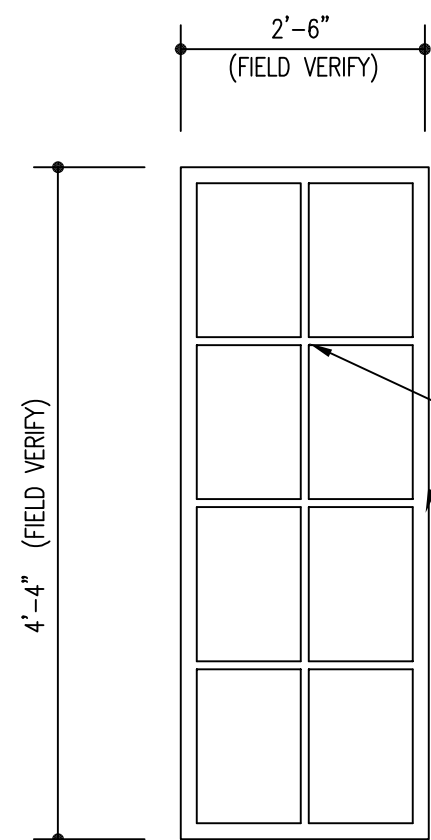


J1 JAMB

1 1/2" = 1'-0"

KEY NOTES:

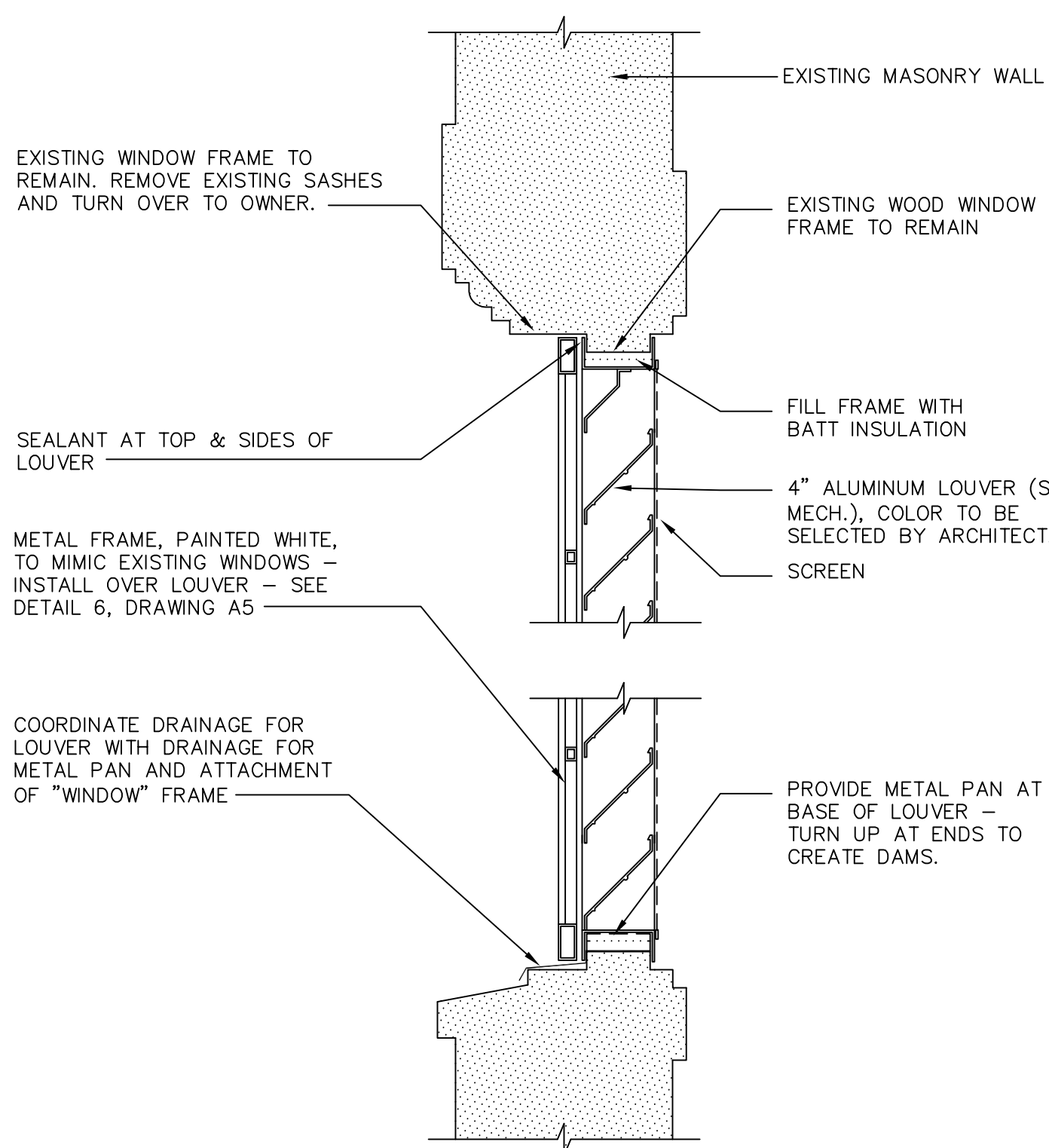
- SEALANT AT FRAME PERIMETER
- FILL FRAME WITH SOUND BATT INSULATION
- SOUND BATT INSULATION
- HOLLOW METAL FRAME
- LINE OF FRAME AT JAMB BEYOND
- JAMB ANCHOR (3 PER JAMB TO 7'-0", 4 PER JAMB ABOVE 7'-0")
- 5/8" GYPSUM WALLBOARD (TYPE AS REQUIRED FOR PARTITION TYPES)
- 3 5/8" METAL STUD FRAMING
- DOUBLE STUD FRAMING AT HEAD & JAMB



NOTE:
CONFIRM SIZE & PATTERNS OF
MUNTINS - TO MATCH EXISTING
WINDOW PATTERN.

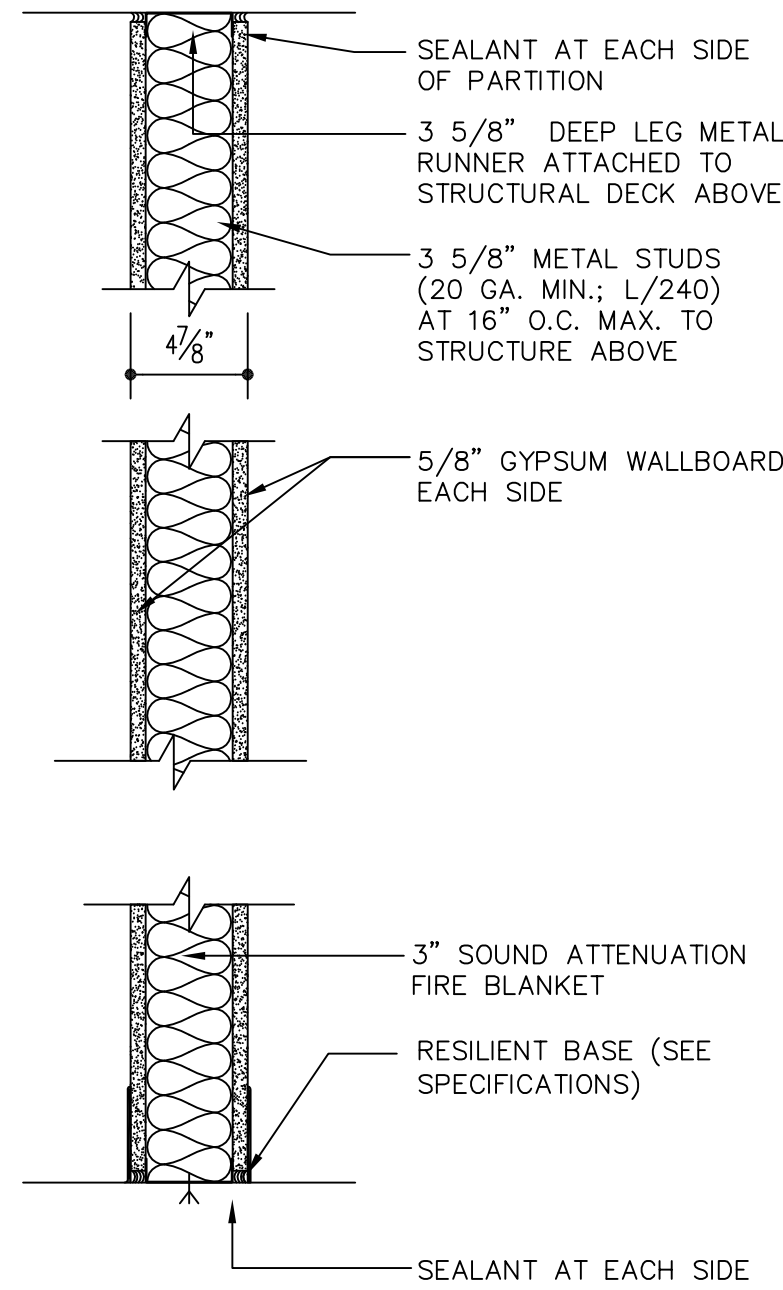
6 METAL FRAME ELEVATION

A5 1/2" = 1'-0"



7 LOUVER / METAL FRAME SECTION

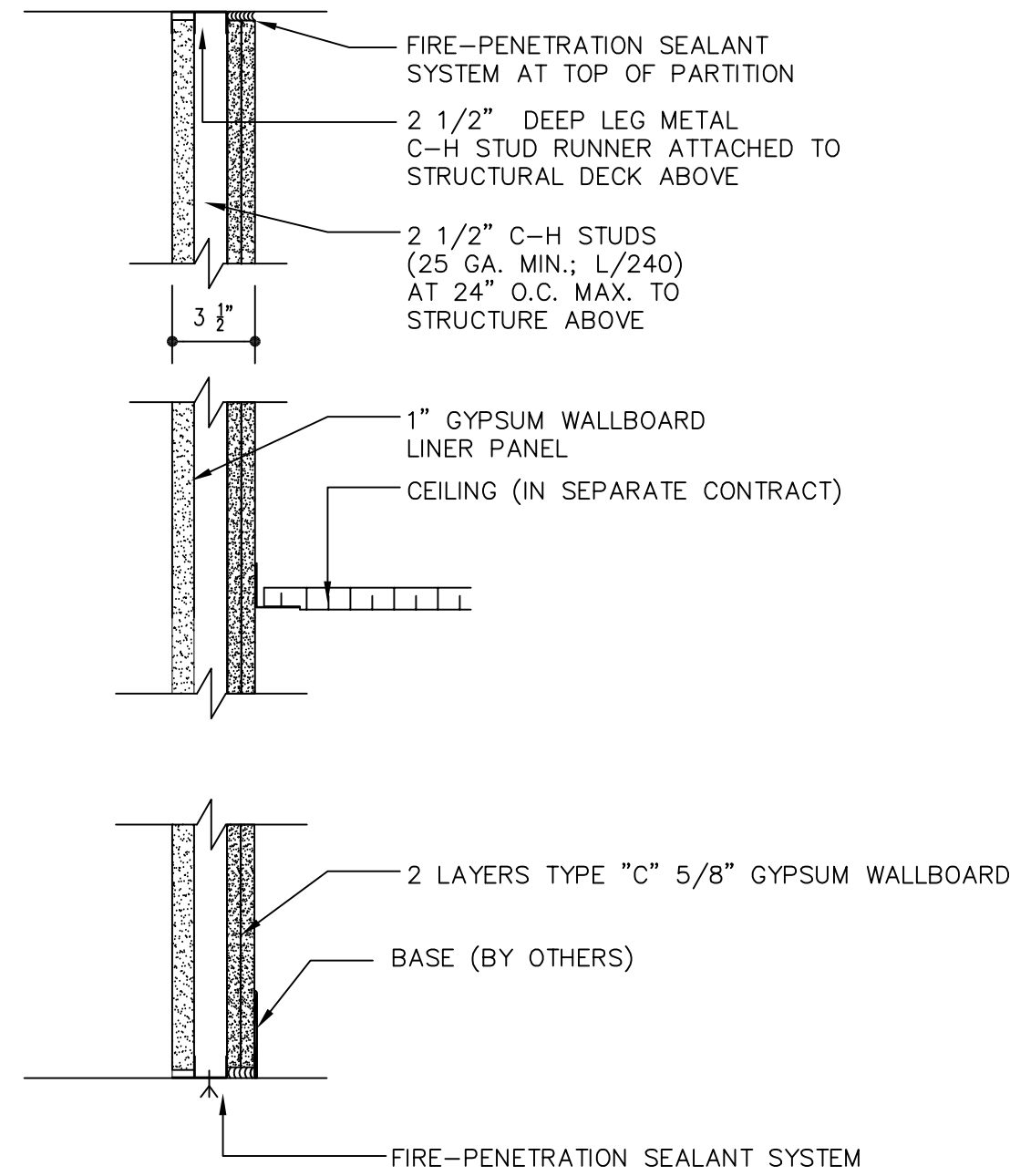
A5 1 1/2" = 1'-0"



4 PARTITION TYPE 1

A5 1 1/2" = 1'-0"

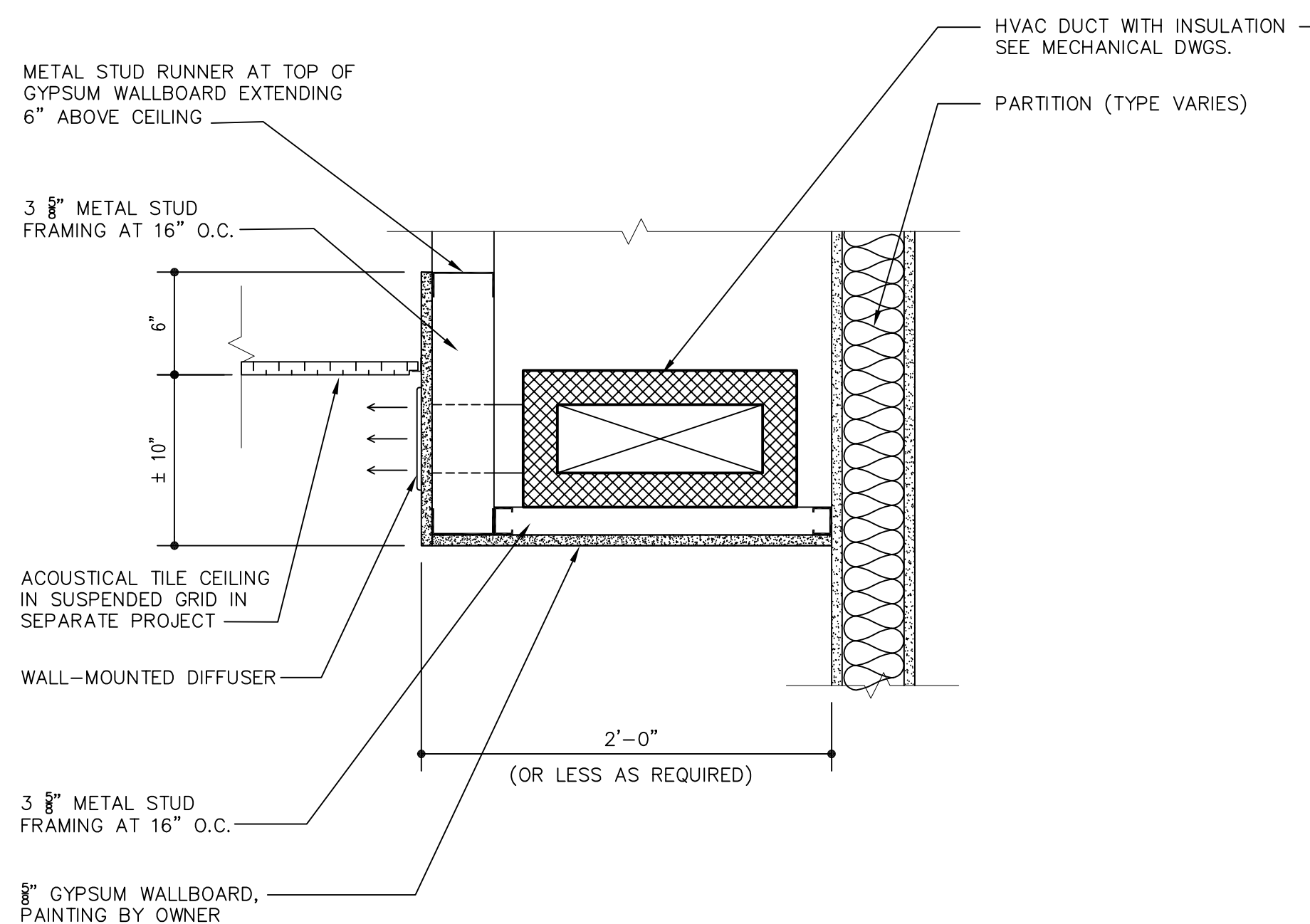
(PAINTING BY OWNER)



5 PARTITION TYPE 2

A5 1 1/2" = 1'-0"

(PAINTING BY OWNER)



8 SOFFIT DETAIL

A5 1 1/2" = 1'-0"

ARCHITECTURE
INTERIORS
PLANNING

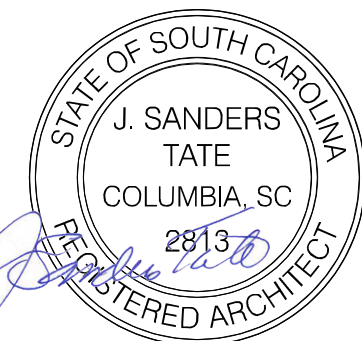
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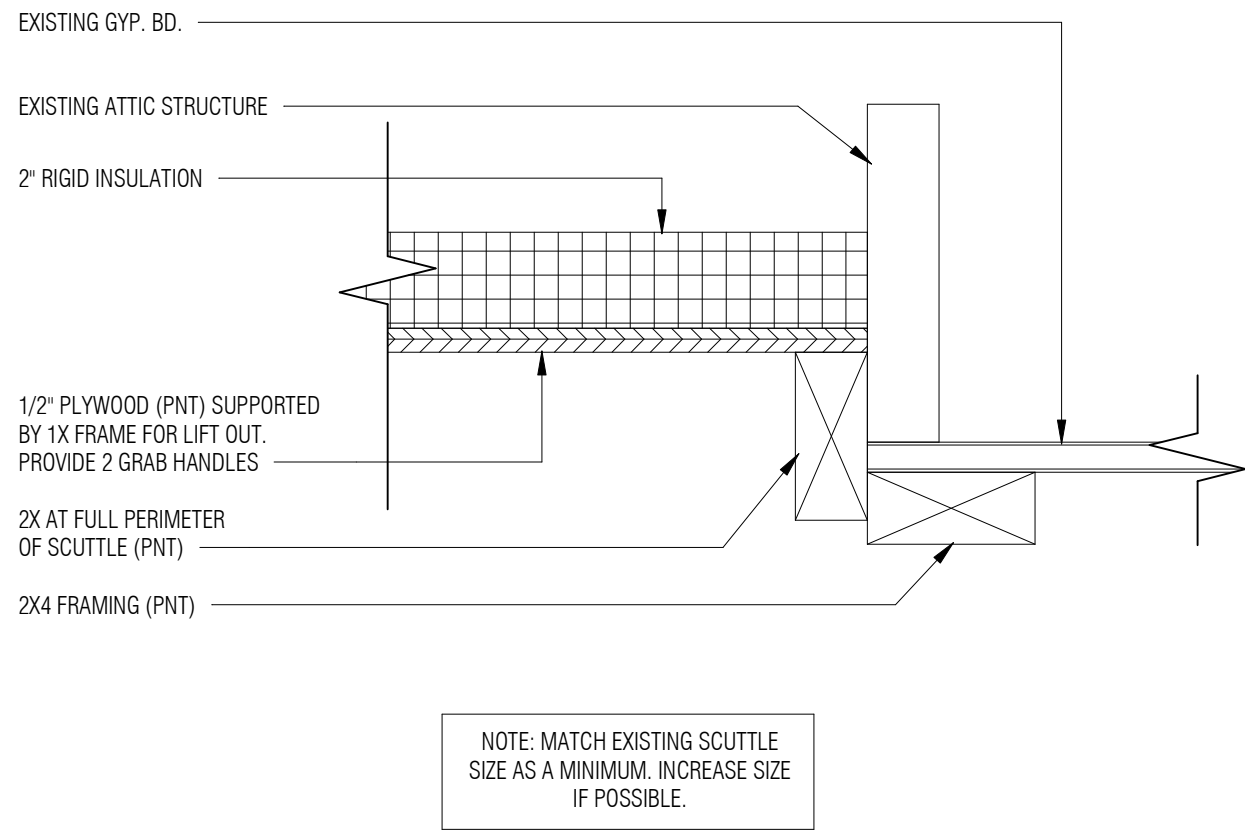
Schedules &
Details

A5

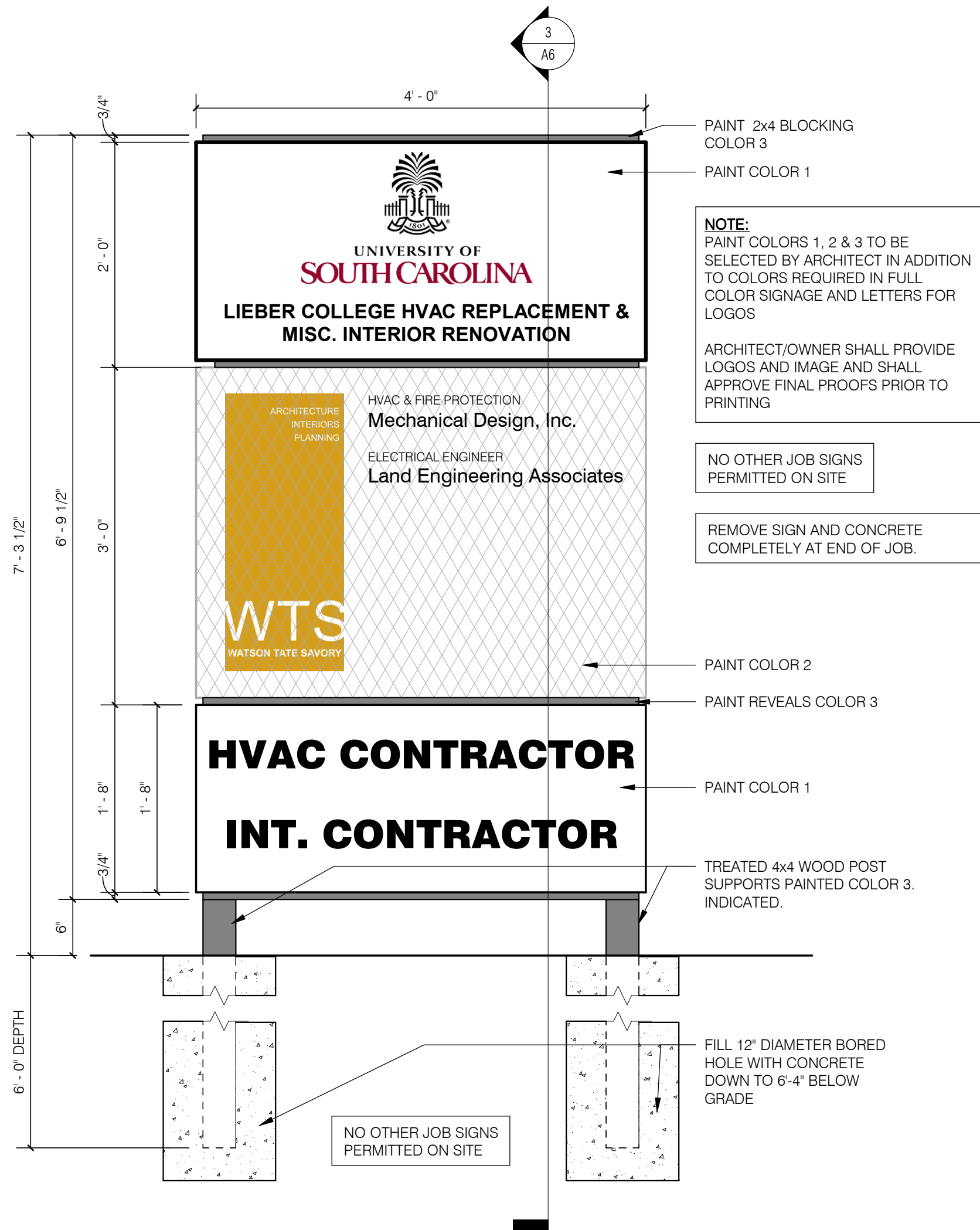
CONSTRUCTION DOCUMENTS

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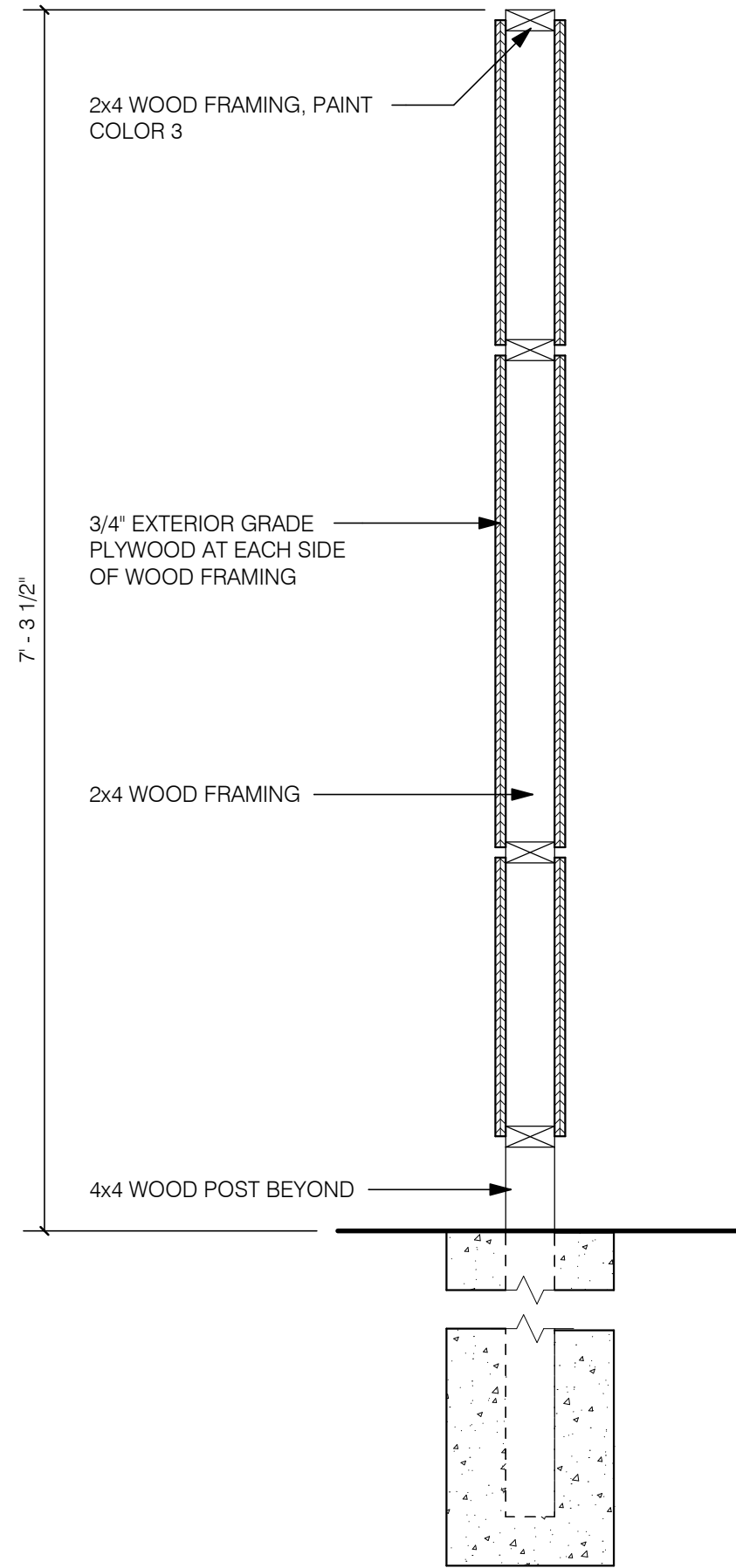
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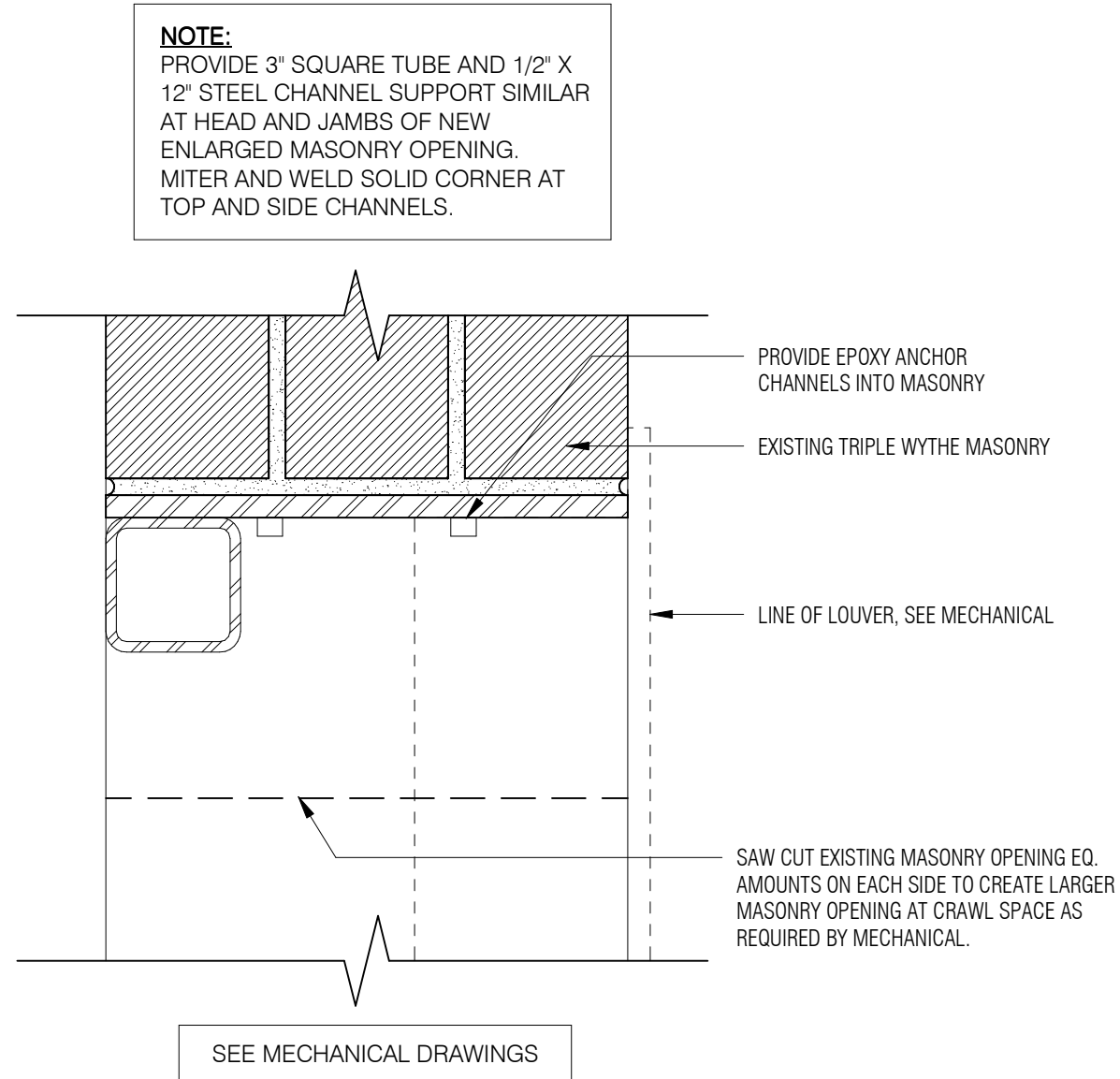
1 ATTIC ACCESS SCUTTLE
3" = 1'-0"



2 JOB SIGN ELEVATION
1" = 1'-0"

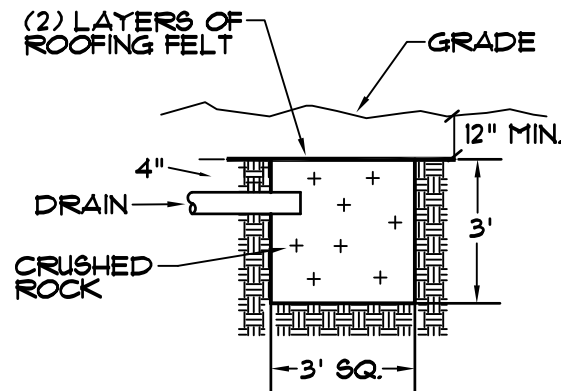


3 JOB SIGN SECTION
1" = 1'-0"



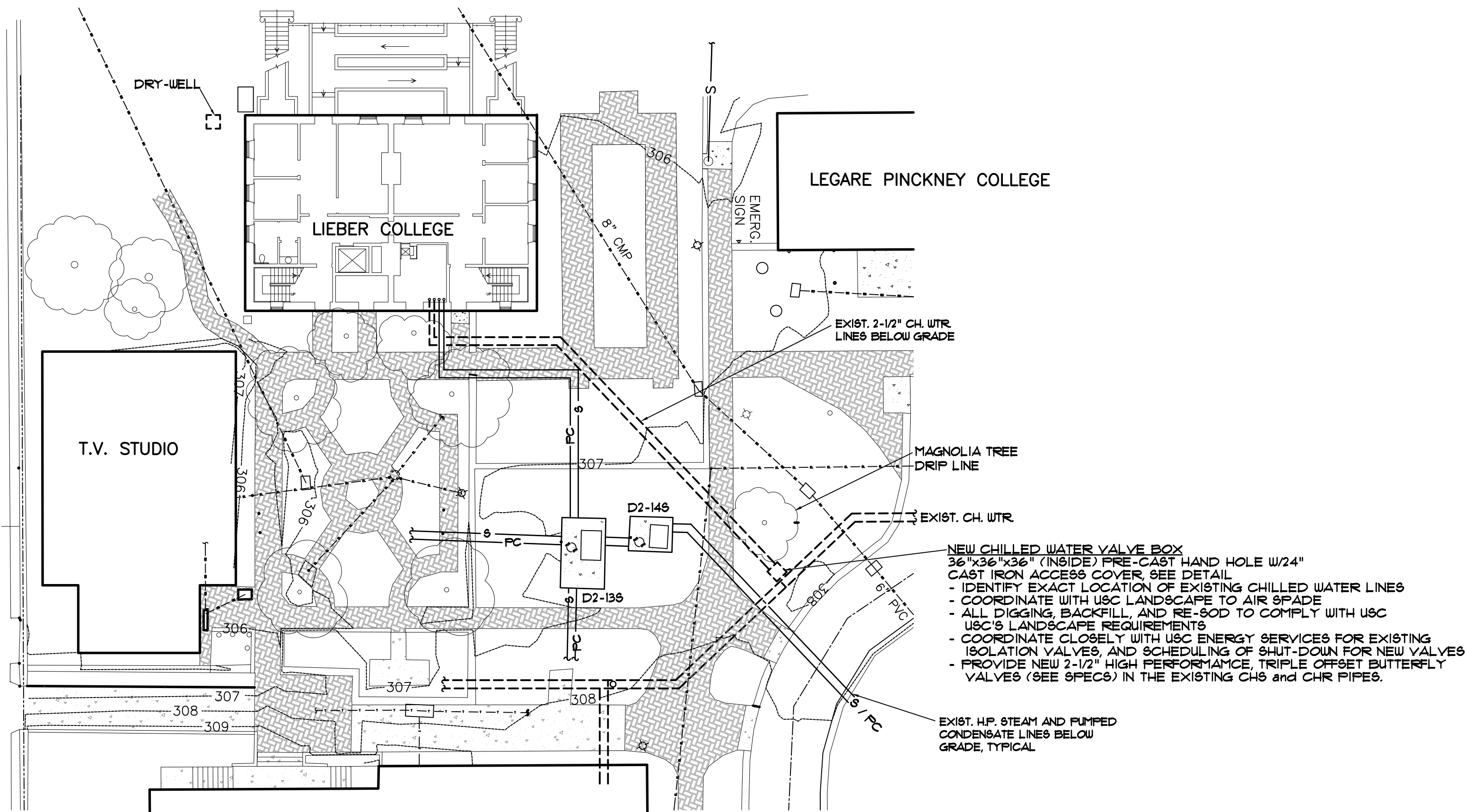
4 SECTION AT ENLARGED LOUVER OPENING
3" = 1'-0"

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DRY WELL
NOT TO SCALE

- DRYWELL DIGGING NOTES:**
- CONTACT PUPS AND COORDINATE LOCATION OF EXISTING UTILITIES
 - CONTACT AND COORDINATE WITH USC IN-HOUSE FACILITIES
 - CONTACT AND COORDINATE WITH USC UTS
 - EXACT LOCATION SHALL BE AS DIRECTED BY USC PROJ. MANAGER



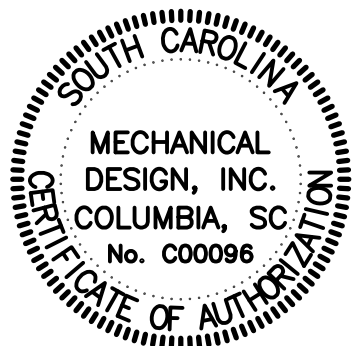
MECHANICAL SITE PLAN
APPROX. SCALE: 1" = 20'

NOTES

1. DO NOT SCALE DRAWINGS. VERIFY ALL REQUIRED INFORMATION IN FIELD BY VISITING SITE PRIOR TO SUBMITTING BID.
2. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED. DUCT SIZES SHOWN ON DRAWINGS ARE INTERIOR DIMENSIONS.
3. WHENEVER THE WORD "PROVIDE" IS USED IT SHALL MEAN FURNISH AND INSTALL COMPLETE AND READY FOR USE.
4. ALL MATERIALS CALLED FOR TO BE REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER. ANY ITEM THE OWNER DOES NOT WISH TO KEEP SHALL BE REMOVED FROM THE SITE OF WORK.
5. PROVIDE ALL ITEMS OF MISCELLANEOUS STEEL AS REQUIRED FOR INSTALLATION OF ALL MECHANICAL ITEMS.
6. PIPING SYSTEMS SHALL BE DRAINED AS REQUIRED FOR INSTALLATION OF WORK.
7. PROVIDE FOR ACCESS TO ALL MECHANICAL ITEMS REQUIRING CLEANING OR ADJUSTMENT.
8. PIPING SHALL BE KEPT CLEAN OF DEBRIS DURING INSTALLATION.
9. PROVIDE GLASSFAB AND MASTIC ON ALL DUCT INSULATION, SEE SPECIFICATIONS. DUCT TAPE WILL NOT BE ACCEPTED.
10. PROVIDE "P" TRAP FOR ALL CONDENSATE DRAINS. PROVIDE INSULATED DRAIN LINES FROM ALL DRAIN CONNECTIONS.
11. INSTALLATION OF EQUIPMENT, DUCTWORK, AND PIPING, INCLUDING VIBRATION ISOLATION SHALL COMPLY WITH 2015 INTERNATIONAL BUILDING CODE FOR SEISMIC PROTECTION. SEE SPECIFICATIONS.

SYMBOLS

	FLEXIBLE DUCT (6 FT. MAX. LENGTH)
	EXISTING MATERIALS
	NEW MATERIALS
	REMOVE MATERIALS
	RIGID ROUND RUNOUT DUCT
CFM	AIR FLOWRATE, CUBIC FEET PER MINUTE
① 100	GRILLE OR DIFFUSER MARK, BALANCING CFM
Ⓣ	THERMOSTAT
—CHS—	EXISTING CHILLED WATER SUPPLY
—CHR—	EXISTING CHILLED WATER RETURN
—HWS—	EXISTING HOT WATER SUPPLY
—HUR—	EXISTING HOT WATER RETURN
—ES—	EXISTING LOW PRESSURE STEAM
—EC—	EXISTING STEAM CONDENSATE
—CHS—	NEW CHILLED WATER SUPPLY
—CHR—	NEW CHILLED WATER RETURN
—HWS—	NEW HOT WATER SUPPLY
—HUR—	NEW HOT WATER RETURN
	BALL VALVE IN PIPES 2" AND SMALLER
	BUTTERFLY VALVE IN PIPES 2-1/2" AND LARGER
	FLOW CONTROL VALVE
	GLOBE VALVE
	PIPE TURNING DOWN
	CONNECT TO EXISTING



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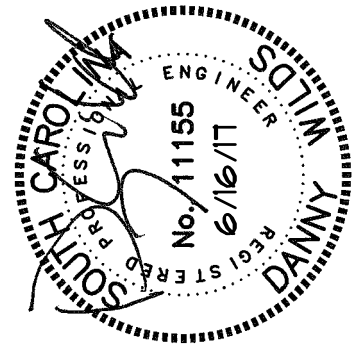
ARCHITECTURE
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LIEBER COLLEGE HVAC RENOVATION

UNIVERSITY OF SOUTH CAROLINA
COLUMBIA, SC

State Project No: H27-Z313



Project Number: 1704
Date: 15 JULY 2016

Revisions:		
NO.	ISSUED FOR	DATE

Mechanical
Site Plan

M-1-S

CONSTRUCTION DOCUMENTS

OUTSIDE AIR / EXHAUST AIR HANDLING UNIT SCHEDULE																																					
PURCHASED BY OWNER, INSTALLED BY CONTRACTOR, SEE SPEC SECTION 23 12 13 OUTDOOR AIR ENERGY RECOVERY UNIT																																					
MARK	MUNTERS MODEL ①	SUPPLY FAN ②			EXHAUST FAN ②			ENTHALPY WHEEL, SUMMER					DEHUMIDIFICATION COIL ③								ENTHALPY WHEEL, WINTER					HOT WATER HEAT COIL ③											
		CFM	E.S.P.	FAN # HP	CFM	E.S.P.	FAN # HP	SUPPLY		EXHAUST											TOTAL EFFICIENCY	SUPPLY		EXHAUST										TOTAL EFFICIENCY			
								ENT. AIR °F DB	LVG. AIR °F WB	ENT. AIR °F DB	LVG. AIR °F WB	TOTAL MBH	ENT. AIR °F DB	LVG. AIR °F WB	ENT. AIR °F DB	LVG. AIR °F WB	EWT °F	LWT °F	GPM	WATER P.D.		ENT. AIR °F DB	LVG. AIR °F DB	ENT. AIR °F DB	LVG. AIR °F DB	TOTAL EFFICIENCY	MBH	ENT. AIR °F DB	LVG. AIR °F DB	EWT °F	LWT °F	GPM	WATER P.D.				
OAH-1	CAH003GDAC	1000	1.0"	1.5	750	1.0"	1.0	95.0	78.0	81.6	69.1	72.0	60.0	90.1	74.5	78.83%	48.15	81.6	69.1	54.0	53.8	48	57.3	10.3	3.0 FT.	20.0	50.9	72.0	30.4	81.03%	20.8	50.9	70.0	18.0	15.0	1.4	1.0 FT.

- ① OR EQUAL BY VENMAR, SEMCO OR APPROVED EQUAL. HORIZONTAL UNIT WITH VERTICAL DISCHARGE, FLAT FILTER SECTION W/ 2" MERV 8 FLEATED MEDIA FILTERS, ENTHALPY WHEEL, CHILLED WATER DEHUMIDIFICATION COIL, AND HOT WATER HEAT COIL AND ACCESS SECTIONS. EXHAUST AIR SECTION SHALL BE HORIZONTAL (ON TOP OF O.A. SECTION) WITH HORIZONTAL DISCHARGE. PROVIDE FAN MOUNTS WITH INTERNAL SPRING VIBRATION ISOLATORS.
- ② UNITS TO MATCH AVAILABLE ELECTRICAL SERVICE (208v/3ph). PROVIDE SUPPLY AIR AND EXHAUST AIR FANS WITH VFD/DISCONNECT
- ③ MAX. FACE VELOCITY FOR ALL COILS SHALL BE 500 FPM MAX. ALL COILS SHALL HAVE EQUAL FACE AREAS. SERVICE SPACE BETWEEN LEAVING FINS OF UPSTREAM COIL TO THE ENTERING FINS OF THE NEXT DOWNSTREAM COIL SHALL NOT EXCEED 18"
- ALL COIL SECTIONS SHALL HAVE REMOVABLE ACCESS PANELS.
- * MAXIMUM BRAKE H.P. SHALL NOT EXCEED 90% OF FAN H.P. LISTED

FOUR PIPE FAN COIL UNIT SCHEDULE																					
PURCHASED BY OWNER, INSTALLED BY CONTRACTOR, SEE SPEC SECTION 23 82 19 FAN COIL UNITS																					
MARK	ENVIRO-TEC MODEL ②	FAN			COOLING COIL								HEATING COIL								
		CFM	E.S.P.	WATTS ①	TOTAL MBH	SENS. MBH	ENT. AIR °F DB	°F WB	EWT °F	LWT °F	GPM	WATER P.D.	PIPE RUNOUT SIZE	TOTAL MBH	ENT. AIR °F DB	LVG. AIR °F DB	EWT °F	LWT °F	GPM	WATER P.D.	PIPE RUNOUT SIZE
1st FLOOR																					
FCU-11-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-12-03	VFE-C03	300	N/A	60	4.6	4.4	75	63	48	60	0.8	6.0	3/4"	11.7	60	97	180	150	0.8	6.0	1/2"
FCU-13-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-14-08	VFE-C08	560	N/A	115	8.8	8.4	75	63	48	60	15	6.0	3/4"	23.9	60	99	180	150	1.60	6.0	3/4"
FCU-15-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-16-03	VFE-C03	300	N/A	60	4.6	4.4	75	63	48	60	0.8	6.0	3/4"	11.7	60	97	180	150	0.8	6.0	1/2"
FCU-17-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-18-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-19--03	VFE-C03	300	N/A	60	4.6	4.4	75	63	48	60	0.8	6.0	3/4"	11.7	60	97	180	150	0.8	6.0	1/2"
FCU-110-02	VFE-C02	220	N/A	45	2.9	2.8	75	63	48	60	0.5	6.0	3/4"	8.7	60	97	180	150	0.6	6.0	1/2"
2nd FLOOR																					
FCU-21-10	VFE-C010	745	N/A	135	13.1	11.9	75	63	48	60	2.2	6.0	3/4"	31.9	60	99	180	150	2.20	6.0	3/4"
FCU-22-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-23-40	HLP-40	510	0.25"	125	12.6	10.7	75	63	48	60	2.2	6.0	3/4"	25.5	60	106	180	150	1.7	6.0	3/4"
FCU-24-03	VFE-C03	300	N/A	60	4.6	4.4	75	63	48	60	0.8	6.0	3/4"	11.7	60	97	180	150	0.8	6.0	1/2"
FCU-25-03	VFE-C03	300	N/A	60	4.6	4.4	75	63	48	60	0.8	6.0	3/4"	11.7	60	97	180	150	0.8	6.0	1/2"
FCU-26-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-27-50	HLP-50	640	0.25"	185	14.4	12.7	75	63	48	60	2.5	6.0	3/4"	32.1	60	105	180	150	2.2	6.0	3/4"
FCU-28-50	HLP-50	640	0.25"	185	14.4	12.7	75	63	48	60	2.5	6.0	3/4"	32.1	60	105	180	150	2.2	6.0	3/4"
FCU-29-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
3rd FLOOR																					
FCU-31-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-32-03	VFE-C03	300	N/A	60	4.6	4.4	75	63	48	60	0.8	6.0	3/4"	11.7	60	97	180	150	0.8	6.0	1/2"
FCU-33-03	VFE-C03	300	N/A	60	4.6	4.4	75	63	48	60	0.8	6.0	3/4"	11.7	60	97	180	150	0.8	6.0	1/2"
FCU-34-03	VFE-C03	300	N/A	60	4.6	4.4	75	63	48	60	0.8	6.0	3/4"	11.7	60	97	180	150	0.8	6.0	1/2"
FCU-35-03	VFE-C03	300	N/A	60	4.6	4.4	75	63	48	60	0.8	6.0	3/4"	11.7	60	97	180	150	0.8	6.0	1/2"
FCU-36-06	VFE-C06	515	N/A	80	8.0	7.7	75	63	48	60	1.4	6.0	3/4"	22.1	60	99	180	150	1.50	6.0	3/4"
FCU-37-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-38-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-39-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-310-50	HLP-50	640	0.25"	185	14.4	12.7	75	63	48	60	2.5	6.0	3/4"	32.1	60	105	180	150	2.2	6.0	3/4"
FCU-311-40	HLP-40	510	0.25"	125	12.6	10.7	75	63	48	60	2.2	6.0	3/4"	25.5	60	106	180	150	1.7	6.0	3/4"
4th FLOOR																					
FCU-41-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-42-10	VFE-C010	745	N/A	135	13.1	11.9	75	63	48	60	2.2	6.0	3/4"	31.9	60	99	180	150	2.20	6.0	3/4"
FCU-43-04	VFE-C04	400	N/A	70	7.2	6.5	75	63	48	60	12	6.0	3/4"	16.5	60	98	180	150	1.1	6.0	1/2"
FCU-44-06	VFE-C06	515	N/A	80	8.0	7.7	75	63	48	60	1.4	6.0	3/4"	22.1	60	99	180	150	1.50	6.0	3/4"
FCU-45-06	VFE-C06	515	N/A	80	8.0	7.7	75	63	48	60	1.4	6.0	3/4"	22.1	60	99	180	150	1.50	6.0	3/4"

- ① FAN COIL UNIT TO MATCH AVAILABLE ELECTRICAL SERVICE (120V/1PH). PROVIDE WITH ETI BC-06 CONTROL BOARD WITH TRANSFORMER AND 3-SPEED SOLID STATE RELAYS. PROVIDE JOHNSON CONTROLS INC. DIGITAL FIELD EQUIPMENT CONTROLLER (FEC) FACTORY INSTALLED AND WIRED. PROVIDE WITH DISCONNECT SWITCH (120V/1PH).
- ② OR EQUAL BY TRANE, RITTLING, OR APPROVED EQUAL.
- ③ CONTRACTOR SHALL ENSURE ANY FAN COIL UNIT SUBSTITUTED FOR THOSE SPECIFIED SHALL BE COORDINATED WITH ELECTRICAL AND PHYSICAL DIFFERENCES.
- ④ FLOOR MOUNTED EXPOSED UNITS SHALL INCLUDE 18 GA. REMOVABLE FRONT PANELS, EXTENDED POCKETS, SUB-BASE, FALSE BACK FOR ELECTRICAL, 304 STAINLESS STEEL DRAIN PANS, 3-ROW CHILLED WATER COOLING COIL, 1-ROW HOT WATER HEATING COIL (RE-HEAT), REMOVABLE RETURN GRILLE, LINEAR BAR SUPPLY GRILLE, COILS SHALL HAVE 1/2" COPPER TUBES WITH 0.025" WALL THICKNESS, COILS SHALL HAVE AIR VENT AND DRAIN CONNECTIONS, OVERSIZED AUXILIARY DRIP TRAY UNDER CHILLED WATER CONTROL VALVES, MERV 8 FLEATED MEDIA FILTERS, AND FACTORY MOUNTED FLOAT SWITCHES IN THE DRAIN PANS. ALL COILS SHALL HAVE THREADED CONNECTIONS. CHILLED WATER CONTROL VALVES SHALL BE 2-WAY, PRESSURE INDEPENDENT CONTROL VALVES. ALL CONTACTORS (SWITCHES) SHALL BE TOTALLY SILENT.

PUMP SCHEDULE									
MARK	B & G MODEL ②	GPM	HEAD	RPM	MIN. EFFICIENCY	MAX B.H.P.	MOTOR H.P.	SERVICE	
P-1 ③	SERIES 60	57.0 ④	50 FT.	1750	54%	1.5	2.0 ①	PRIMARY CHILLED WATER	
P-2 ③	SERIES 60	57.0 ④	50 FT.	1750	54%	1.5	2.0 ①	STAND-BY CHILLED WATER	
P-3 ③	SERIES 60	48.0 ④	45 FT.	1750	52%	1.5	2.0 ①	PRIMARY HOT WATER	
P-4 ③	SERIES 60	48.0 ④	45 FT.	1750	52%	1.5	2.0 ①	STAND-BY HOT WATER	

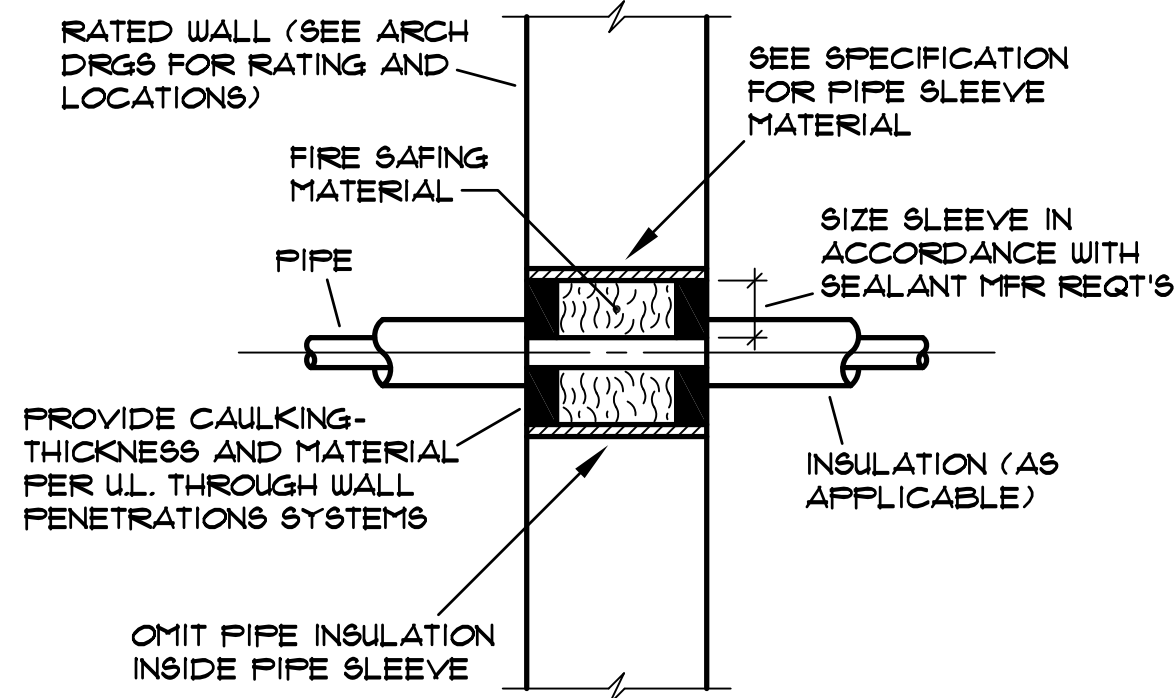
- ① PUMP TO MATCH AVAILABLE ELECTRICAL SERVICE, SEE ELECTRICAL
- ② OR EQUAL BY TACO, PATTERSON, ARMSTRONG OR APPROVED EQUAL, SEE SPECIFICATIONS
- ③ PROVIDE WITH VARIABLE SPEED DRIVE, SEE SPECIFICATIONS.

GRILLE AND DIFFUSER SCHEDULE					
MARK	SERVICE	NECK SIZE	MAX CFM	RUNOUT SIZE	REMARKS
①	SUPPLY	6"x6"	110	6"x6"	W/ BUTTERFLY DPR
②	SUPPLY	8"x6"	230	8"x6"	W/ BUTTERFLY DPR
③	SUPPLY	10"x6"	375	10"x6"	W/ BUTTERFLY DPR
④	EXHAUST	8"x8"	250	8"x8"	W/ OFF. BL. DPR
FR	RETURN	22"x22"	1800	22"x14"	HINGED FILTER RETURN GRILLE
GRILLE/ DIFFUSER		CEILING TYPE	PRICE # MODEL NO.		MATERIAL
SQUARE SUPPLY		LAY-IN	SPD-31 (PLAQUE)		POWDER COATED STEEL
SQUARE SUPPLY		GYP. BD.	SPD-31 (PLAQUE)		POWDER COATED STEEL
SQUARE EXHAUST		LAY-IN	81-TB (EGGCRATE 1/2"x1/2"x1")		ALUMINUM (NOTE 4)
SQUARE EXHAUST		GYP. BD.	81-F-A (EGGCRATE 1/2"x1/2"x1")		ALUMINUM (NOTE 4)
HSD		GYP. BD.	LBMR (REVERSIBLE CORE) W/ OBD		ALUMINUM</

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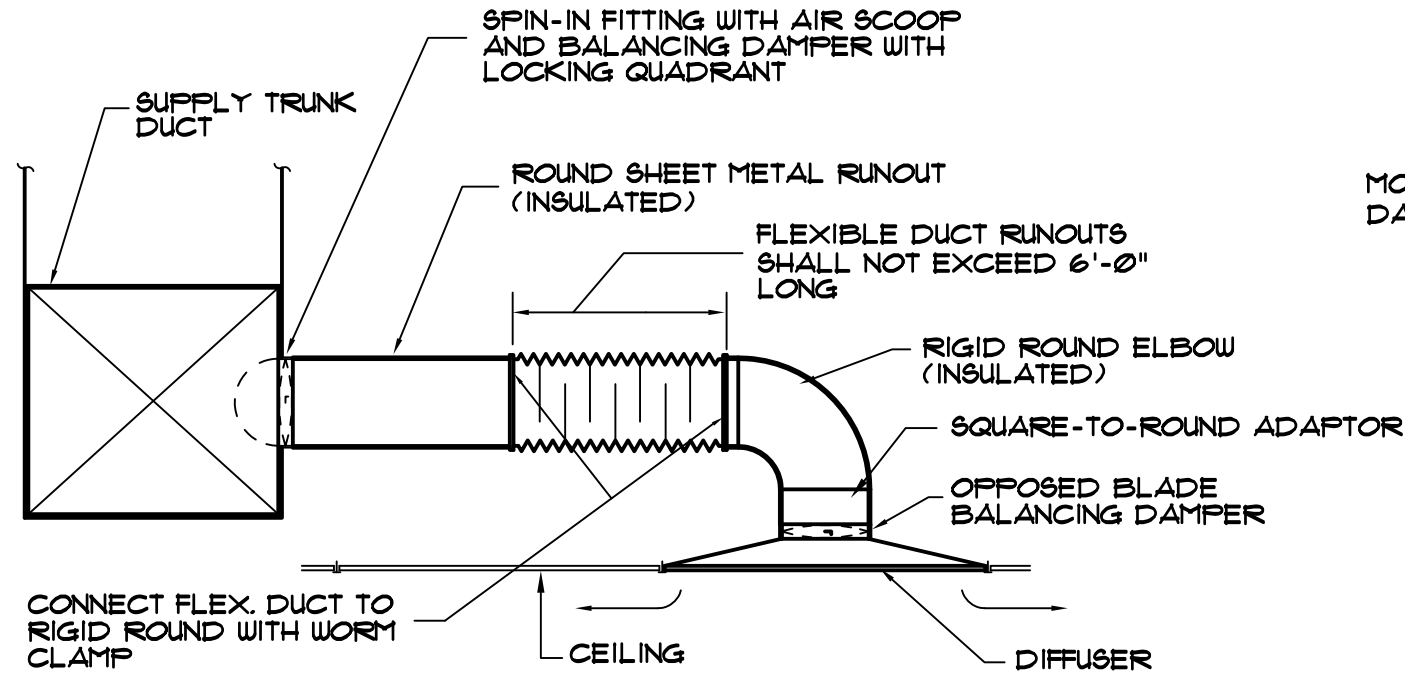
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PIPE THRU FIRE RATED ASSEMBLY DETAIL

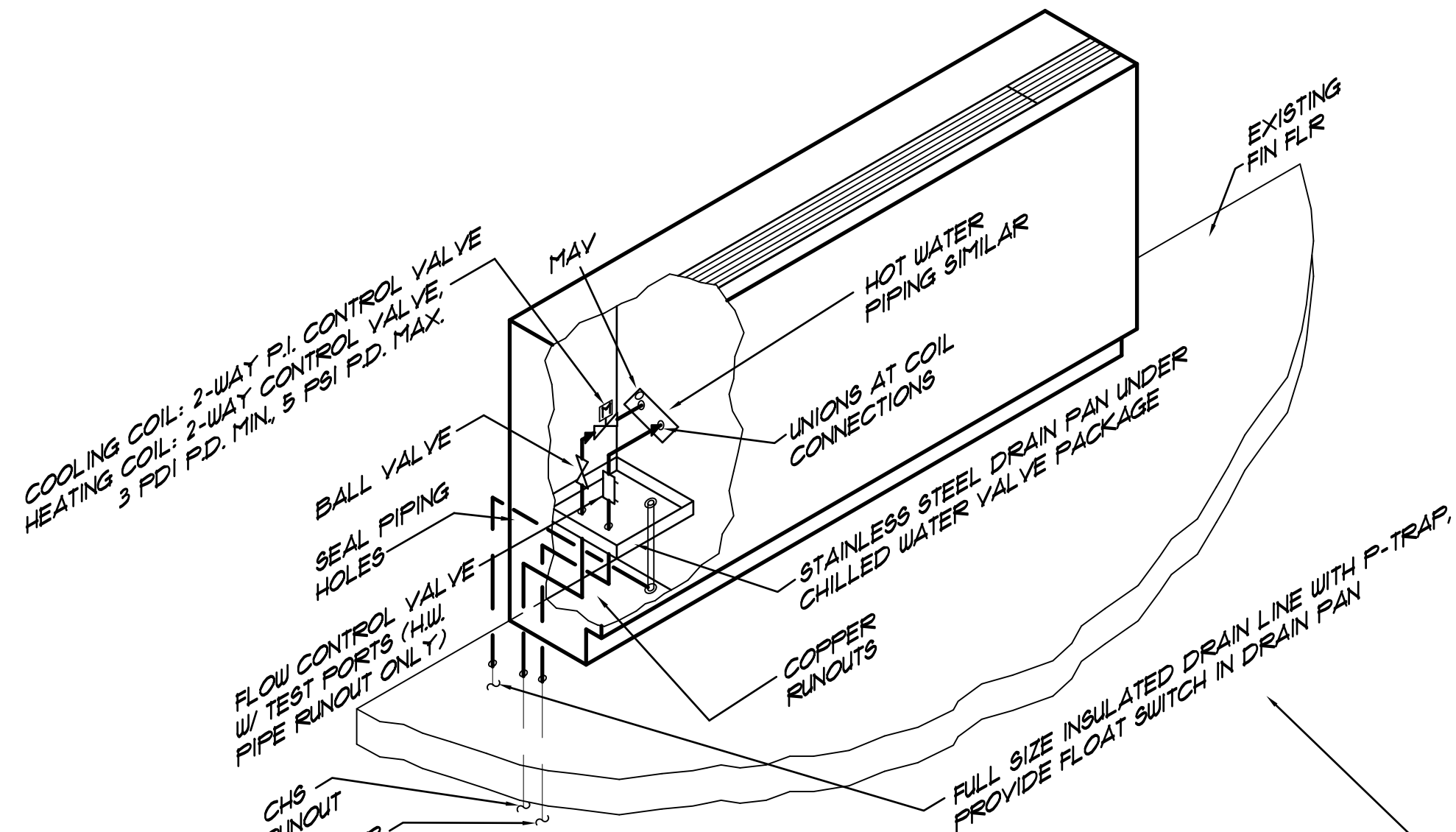
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NOTE:
CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS/DATA SHEETS FOR U.L. RATED PIPE PENETRATIONS FOR REVIEW. FAILURE TO COMPLY PRIOR TO INSTALLATION OF CAULKING MATERIALS SHALL REQUIRE THE REMOVAL AND REPLACEMENT OF MATERIALS WITH SPECIFIED PRODUCTS.



CEILING DIFFUSER INSTALLATION - PLAQUE

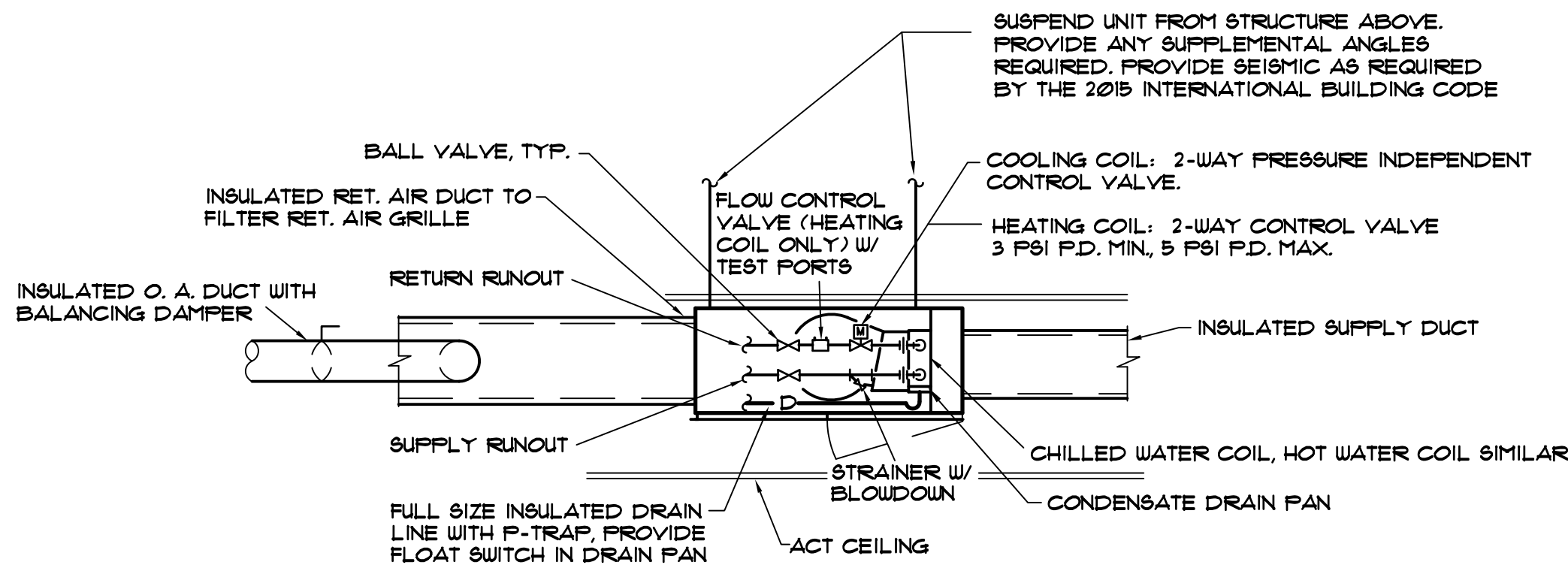
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ROOM FAN COIL UNIT (VERTICAL) DETAIL

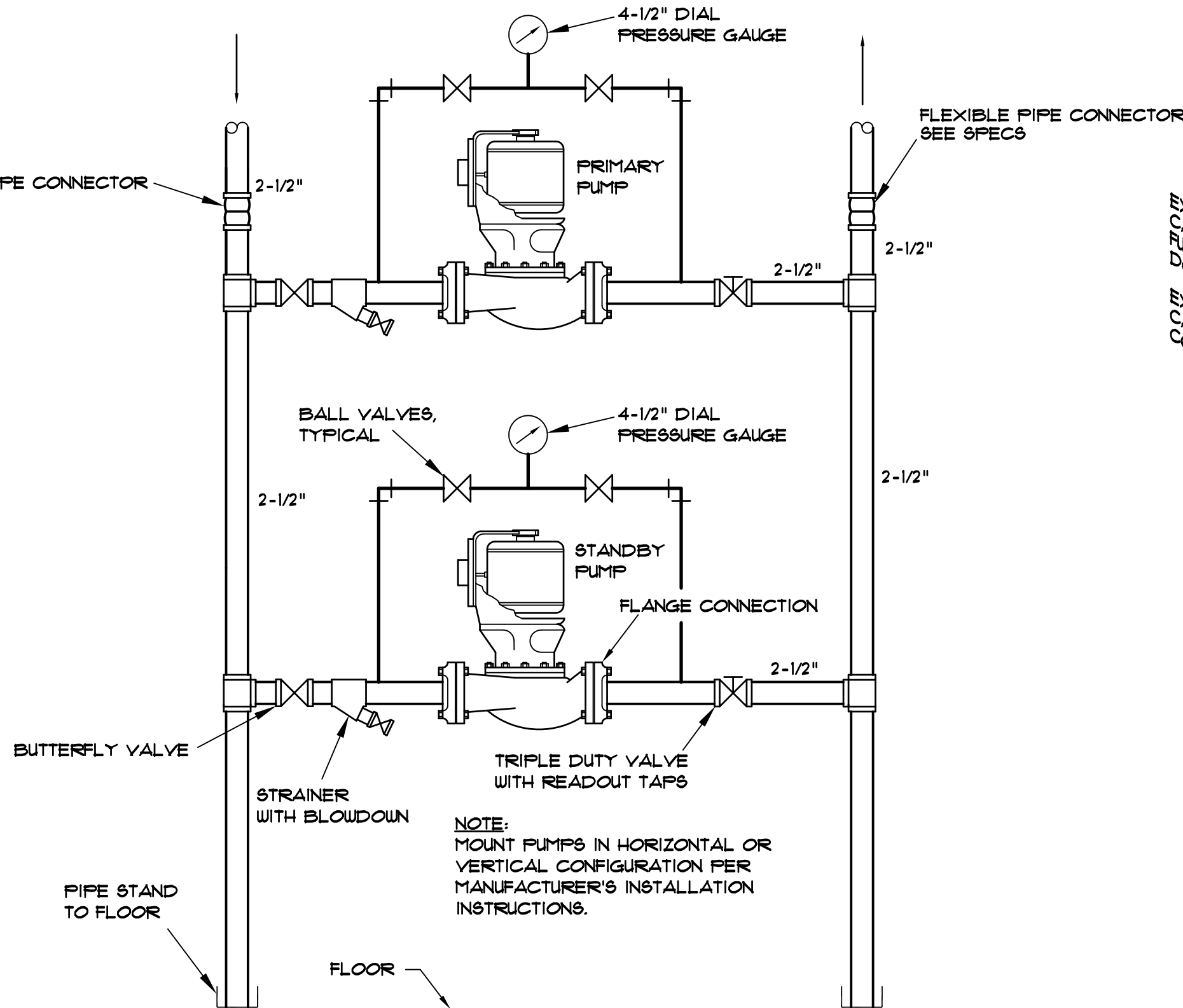
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NOTE:
SEE FAN COIL UNIT SCHEDULE AND SPECIFICATIONS FOR UNIT ACCESSORIES



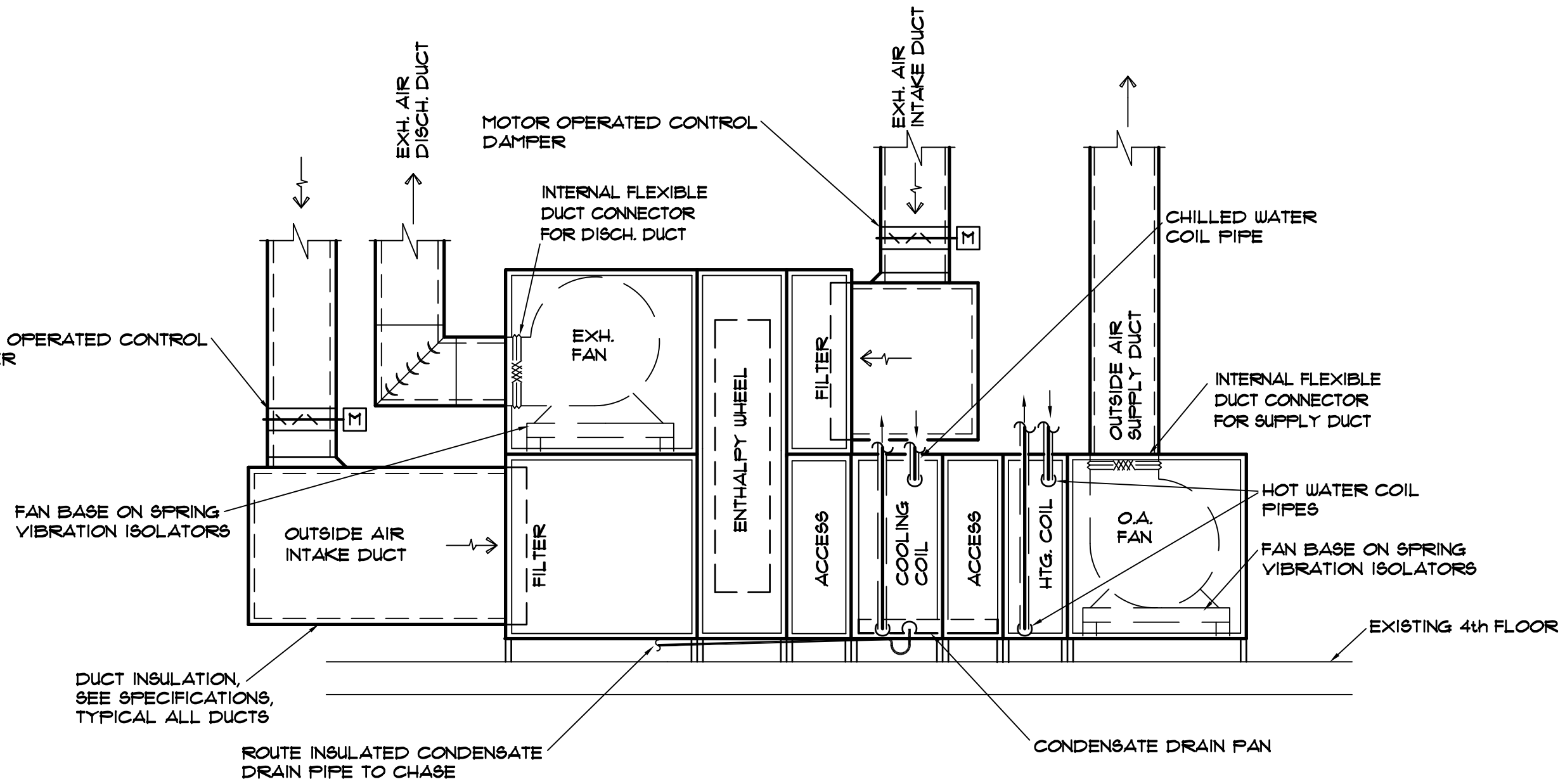
FAN COIL UNIT (HORIZONTAL) DETAIL

NOT TO SCALE



PUMP DETAIL

NOT TO SCALE



OUTSIDE AIR HANDLING UNIT DETAIL

NOT TO SCALE

ACCESS DOORS:

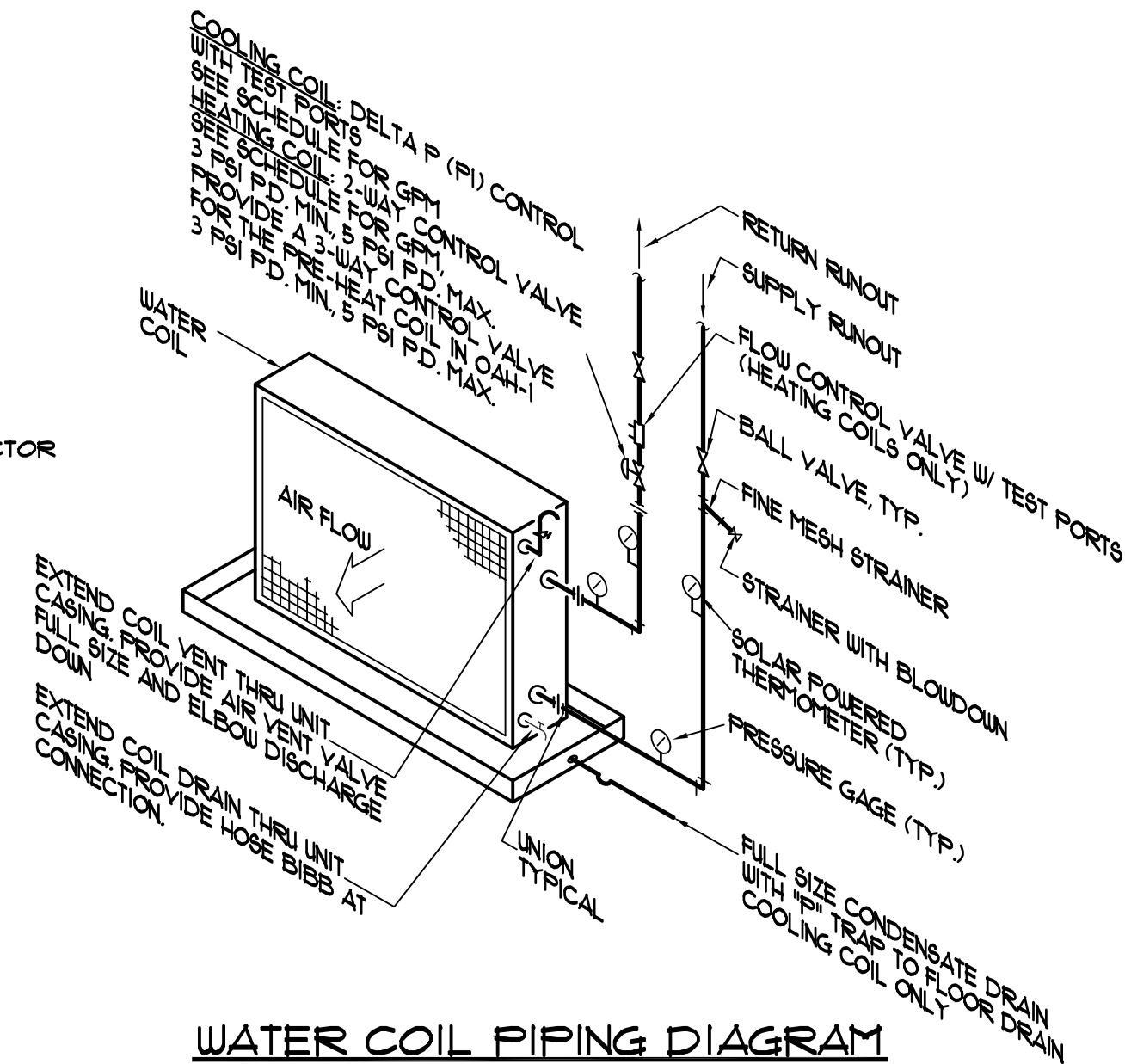
BOTTOM DECK:
FAN SECTION - 16"x22"
ACCESS SECTIONS - 12"x22"
ENTHALPY WHEEL - 12"x48"
FILTER SECTION - 10"x22"

TOP DECK:
FAN SECTION - 16"x22"
FILTER SECTION - 10"x22"

NOTE:
BOLT AHU TO EXISTING FLOOR IN COMPLIANCE WITH THE SEISMIC REQUIREMENTS OF THE 2015 INTERNATIONAL BUILDING CODE

NOTE:
HOT WATER COIL AND CHILLED WATER COIL SHALL INCLUDE VENT AND DRAIN CONNECTIONS

FAN SHALL HAVE EXTENDED LUBE LINES TO A BRACKET JUST INSIDE FAN MODULE DOORS



WATER COIL PIPING DIAGRAM

NOT TO SCALE

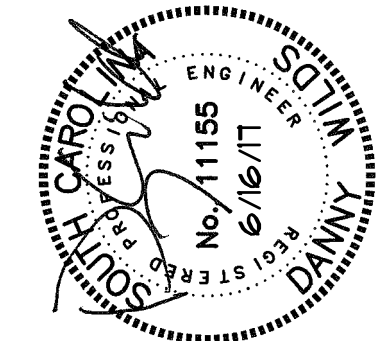
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LIEBER COLLEGE HVAC RENOVATION

UNIVERSITY OF SOUTH CAROLINA
COLUMBIA, SC

State Project No: H27-2313



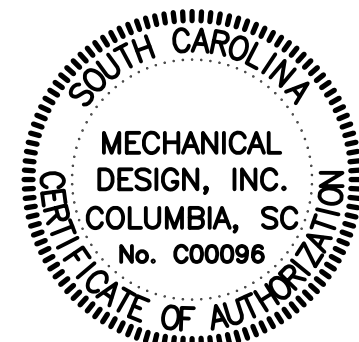
Project Number: 1704
Date: 15 JULY 2016

Revisions:		
NO.	ISSUED FOR	DATE

HVAC Details

M-002

CONSTRUCTION DOCUMENTS



MECHANICAL
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DATE: 06/16/17
COMM. NO. 163277

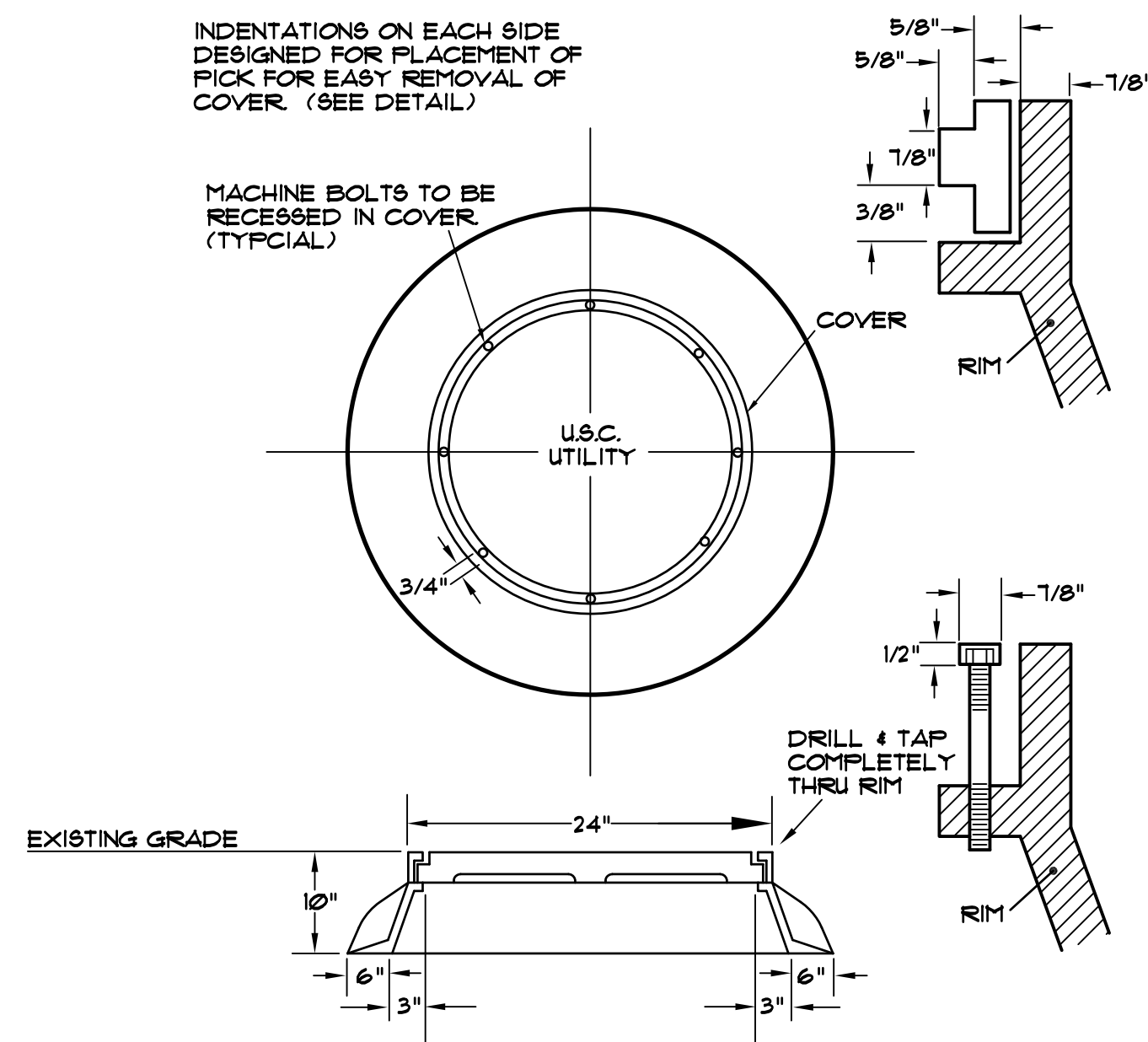
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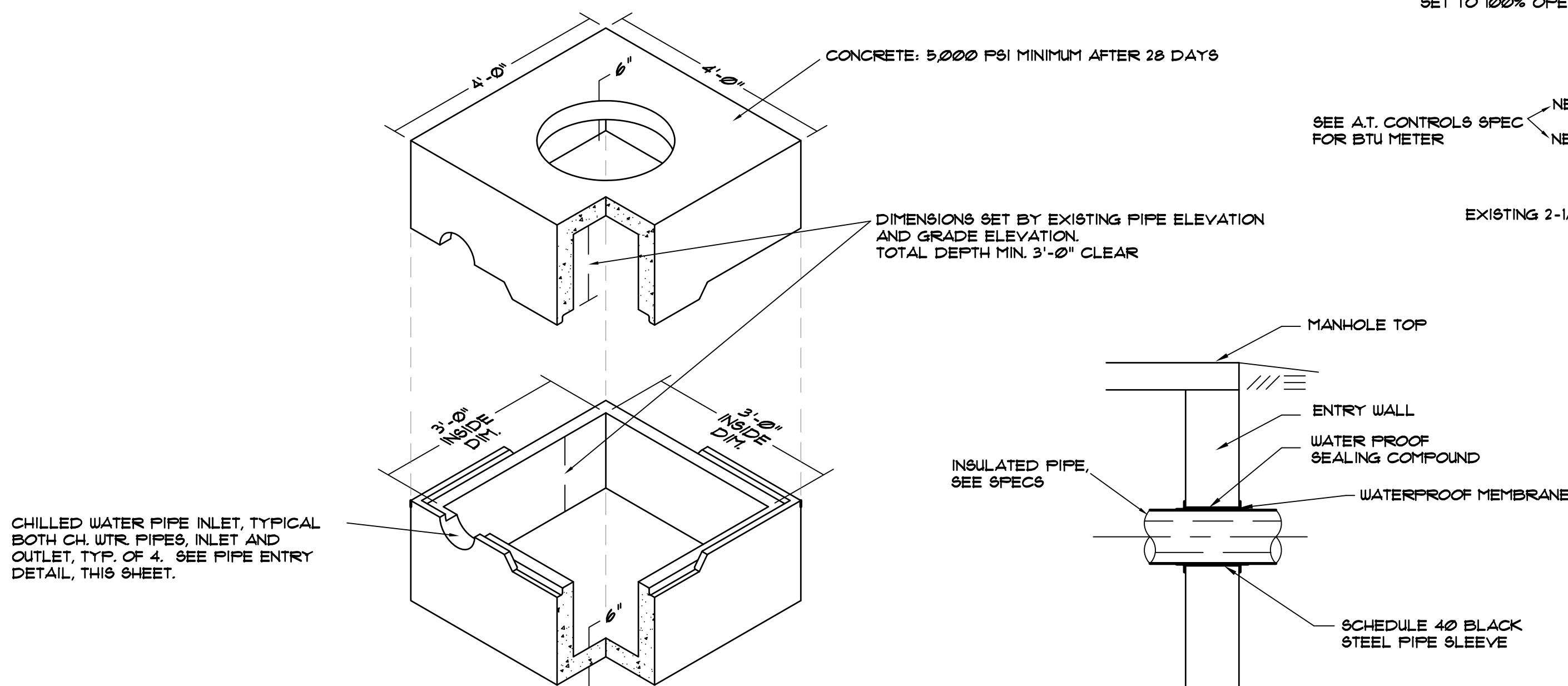
HAND HOLE RING NOTES

1. RING AND COVER SHALL BE KEYED FOR ALIGNMENT.
2. SECURE TOP WITH 6 3/4"x REQUIRED LENGTH BRASS MACHINE BOLTS.
3. MINIMUM WEIGHT 115 POUNDS, RING & COVER.
4. EAST JORDAN IRON WORKS CAT. #825.
5. ACCESS COVER ELEVATION SHALL BE ADJUSTABLE.



HAND HOLE RING & COVER

NOT TO SCALE

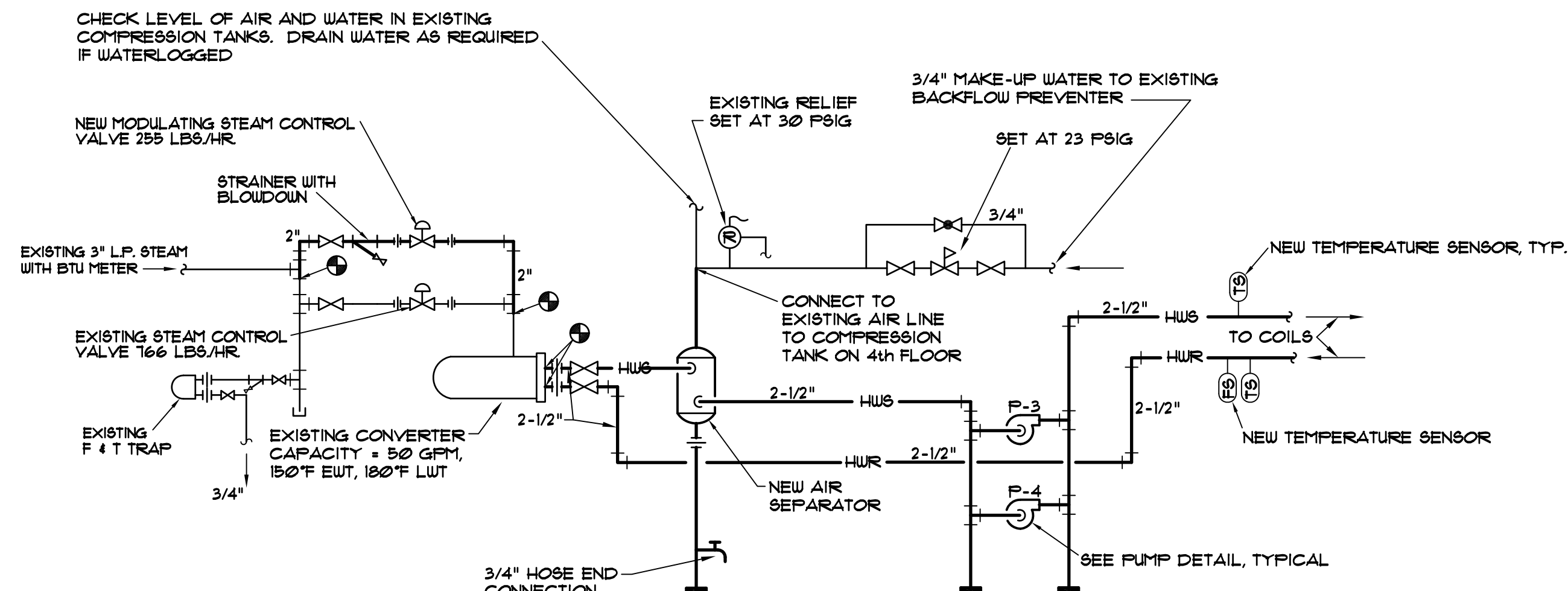


CHILLED WATER VALVE HAND HOLE DETAIL

NOT TO SCALE

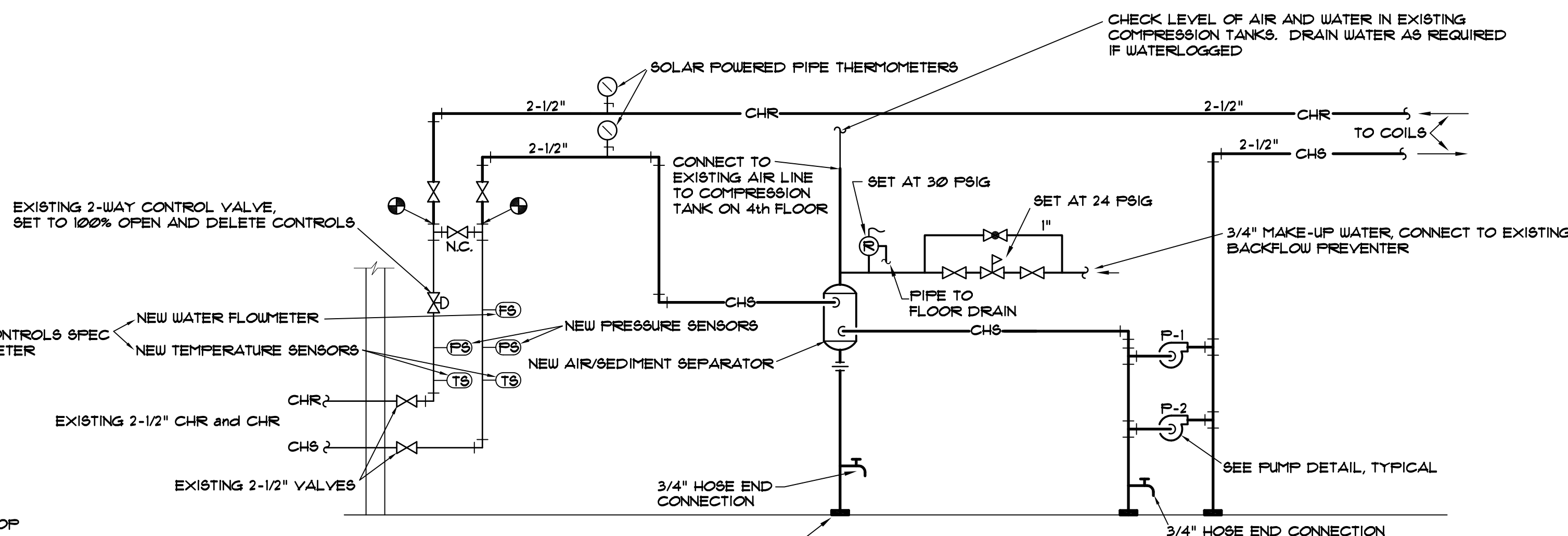
PIPE ENTRY DETAIL

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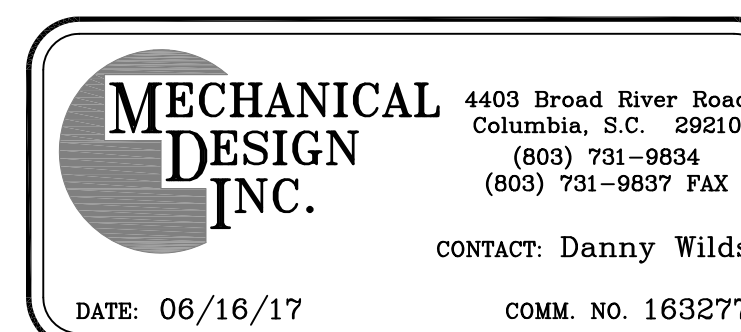
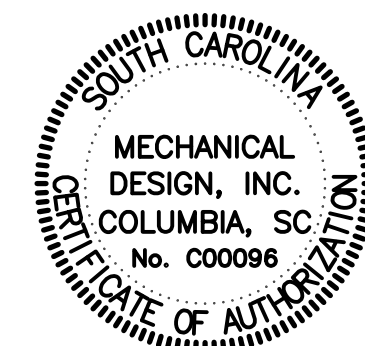
HOT WATER PIPING SCHEMATIC

NO SCALE



CHILLED WATER PIPING SCHEMATIC

NO SCALE



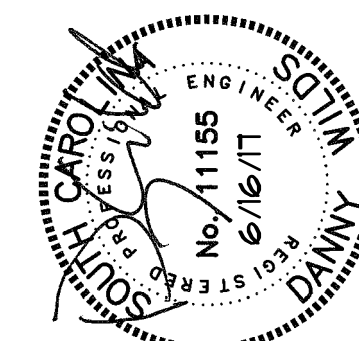
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COLUMBIA, SC

State Project No: H27-Z313



Project Number: 1704
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HVAC Details

M-003

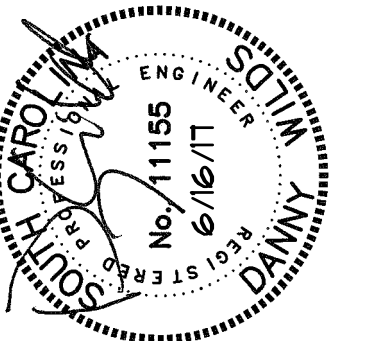
CONSTRUCTION DOCUMENTS



- D1 REMOVE FAN COIL UNIT SHOWN AS HATCHED COMPLETE INCLUDING ASSOCIATED HOT AND CHILLED WATER PIPE RUNOUTS, POWER (SEE ELECTRICAL), CONTROLS, AND SUPPORTS. PATCH HOLES IN FLOOR REPAIR WALLS AND FLOORS, SEE ARCHITECTURAL.
- D2 REMOVE HOT AND CHILLED WATER PIPING SHOWN HATCHED COMPLETE INCLUDING HANGERS AND SUPPORTS.
- D3 REMOVE HOT AND CHILLED WATER PUMPS COMPLETE INCLUDING POWER WIRING, CONTROLS, AND SUPPORTS. (TYP. OF 4 PUMPS).
- D4 REMOVE EXH. DUCT FROM LOUVER COMPLETE INCLUDING HANGERS AND SUPPORTS. REMOVE LOUVER AND REPLACE AS NOTED ON RENOVATION PLAN AND SPECIFICATIONS.
- D5 REMOVE EXH. FAN COMPLETE COMPLETE INCLUDING POWER, CONTROLS, AND HANGERS. REMOVE EXH. DUCT INDICATED BY HATCHING.
- D6 REMOVE CEILING MOUNTED HEAT LAMP COMPLETE INCLUDING WALL MOUNTED TIMER SWITCH. REPLACE CEILING TILE.
- D7 REMOVE CCONDENSATE DRAIN LINES COMPLETE INCLUDING HANGERS AND SUPPORTS
- D8 REMOVE ACOUSTICAL TILE CEILINGS COMPLETE INCLUDING HANGERS, GRID, AND WALL MOUNTED COORDINATE WITH ELECTRICAL SCHEDULE. INTERIOR RENOVATIONS PROJECT FOR HANDLING OF LIGHT FIXTURES, EXIT LIGHTS, SPEAKERS, SMOKE DETECTORS, AND ALL OTHER CEILING MOUNTED DEVICES PRIOR TO BEGINNING RENOVATION.

WTS
WATSON TATE SAVORY

State Project NO. HZ17-Z313

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CONSTRUCTION DOCUMENTS

