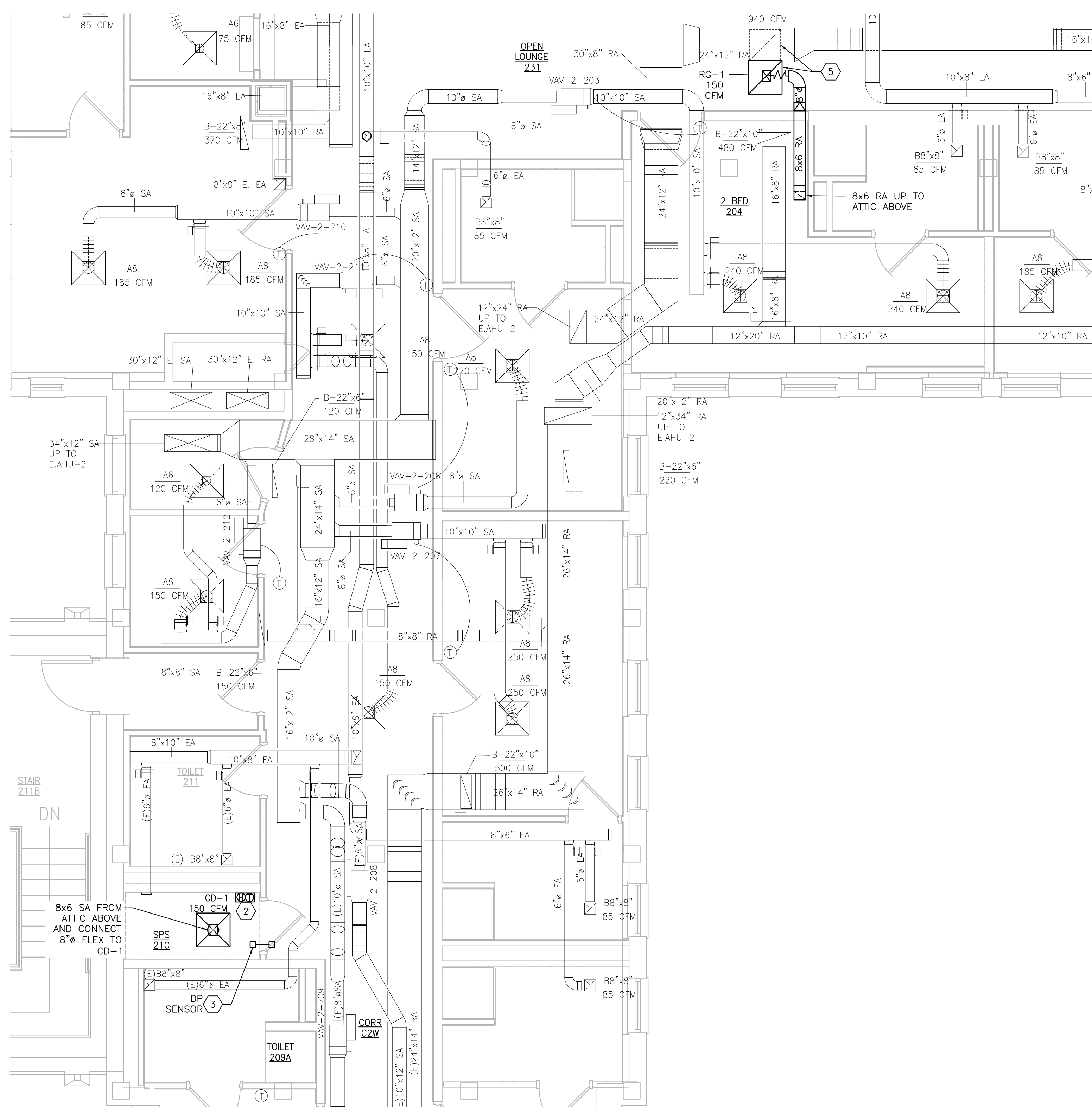


**GENERAL SHEET NOTES:**

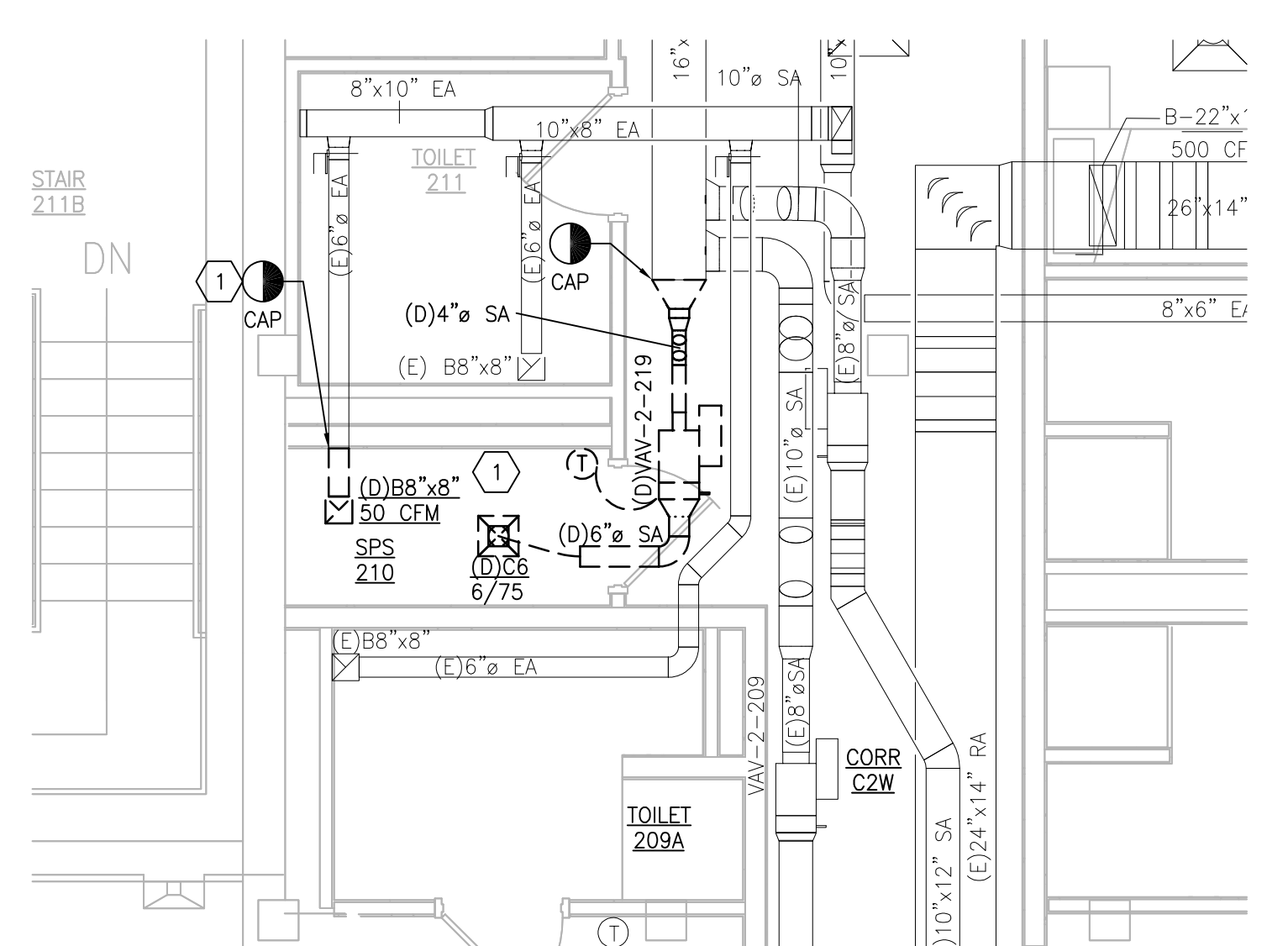
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
3. ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING EQUIPMENT OR INSTALLATION OF NEW WORK.
4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
5. MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. TAKE PREDEMOLITION READINGS OF ALL ROOM AIR INLETS AND OUTLETS OF ANY SYSTEM THE WILL BE MODIFIED AND SUBMIT TO THE VA AND ENGINEER FOR RECORD PRIOR TO STARTING ANY NEW WORK. BALANCE THE NEW SYSTEMS AND REBALANCE THE EXISTING ASSOCIATED AHU SYSTEM TO THE NEW AIR QUANTITIES. AFTER THE NEW WORK IS COMPLETE REBALANCE THE EXISTING SYSTEM, AS REQUIRED, AND MEASURE ALL ROOM AIR INLETS AND OUTLETS TO VERIFY THAT THE PREDEMOLITION AIRFLOWS HAVE BEEN MAINTAINED. SUBMIT FOR APPROVAL. REFERENCE SPECIFICATIONS FOR TESTING AND BALANCING REQUIREMENTS.
10. ALL DUCTWORK PENETRATIONS SHALL BE SAW CUT. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

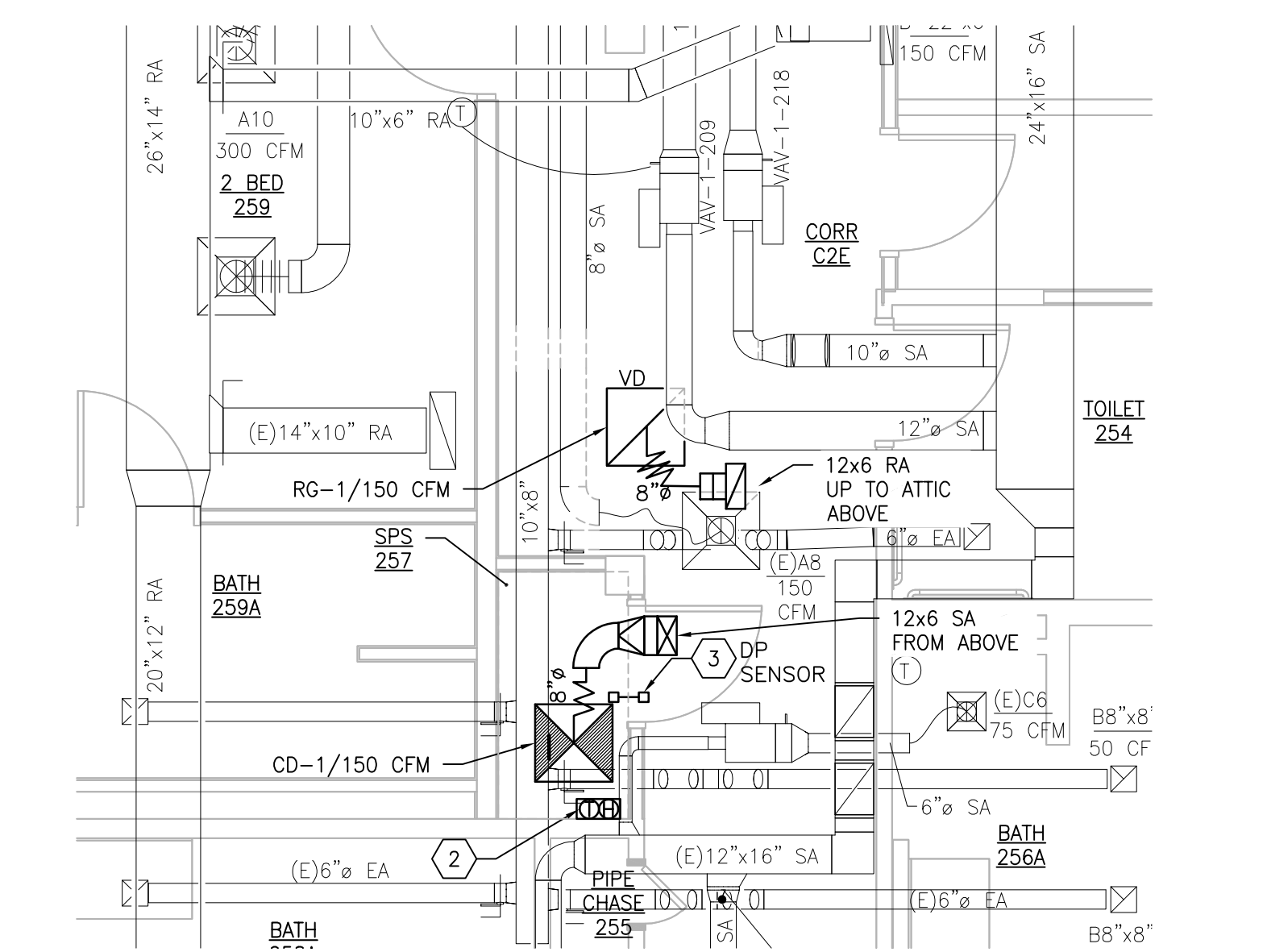
1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL. PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
2. TEMPERATURE AND HUMIDITY SENSOR FURNISHED BY AHU MANUFACTURER.
3. INSTALL DIFFERENTIAL PRESSURE SENSOR THROUGH THE WALL, CENTERED ABOVE THE DOOR. INSTALL ROOM PRESSURE MONITOR OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.
4. DEMOLISH (D)6" SA DUCT BACK TO MAIN OR FIRST TAKE OFF AND CAP. RELOCATE ROOM 257 THERMOSTAT TO ADJACENT SPACE SHARING EXISTING TERMINAL UNIT.
5. PROVIDE NEW RETURN GRILLE TO MATCH EXISTING ADJACENT DEVICE (E)RETURN GRILLE (MFG. PRICE MODEL 530).



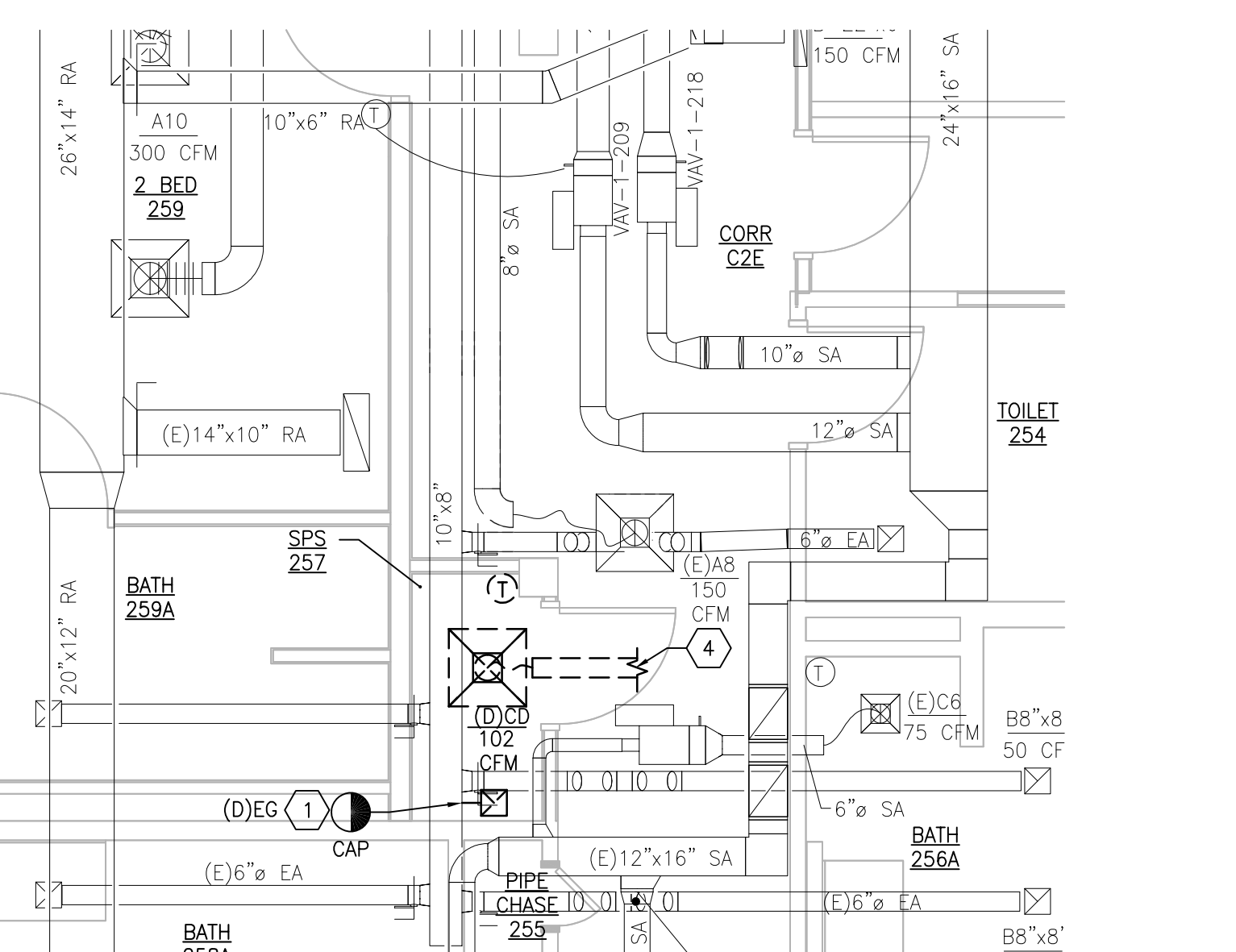
**2 BUILDING 28 SECOND FLOOR ROOM 210 - NEW WORK**  
SCALE: 1/4" = 1'-0"



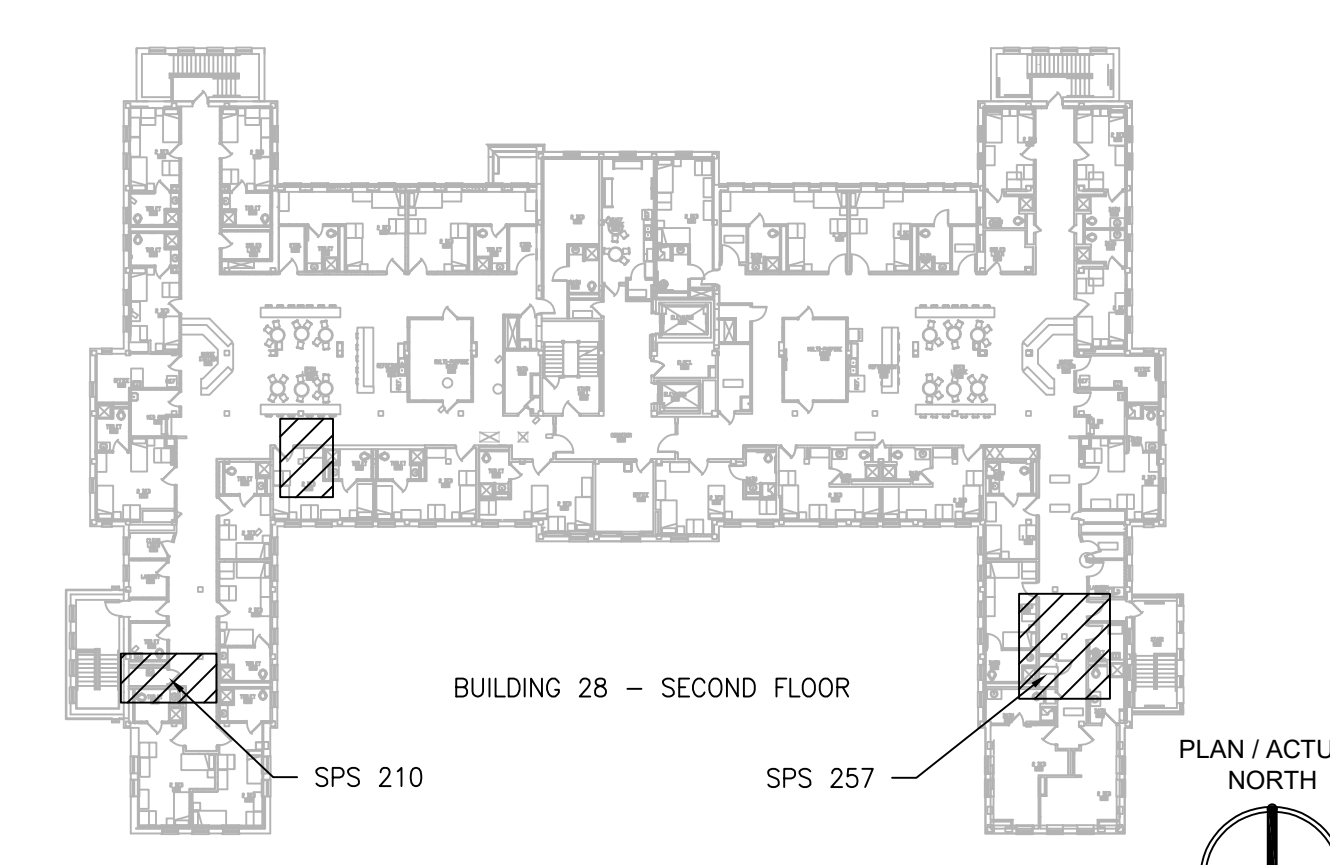
**1 BUILDING 28 SECOND FLOOR ROOM 210 - DEMOLITION**  
SCALE: 1/4" = 1'-0"



**4 BUILDING 28 SECOND FLOOR ROOM 257-NEW WORK**  
SCALE: 1/4" = 1'-0"



**3 BUILDING 28 SECOND FLOOR ROOM 257-DEMOLITION**  
SCALE: 1/4" = 1'-0"



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

PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER.

NO.	DESCRIPTION	DATE

**PROJECT TEAM**

**MEP Engineers + Architects**  
1173 Research Way  
Forest, VA 24551  
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**Miller-Remick LLC**  
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MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

**Drawing Title**  
MECHANICAL DEMOLITION / NEW WORK PLANS SECOND FLOOR - BUILDING 28

**Approved:** Project Director

**Phase**  
100% CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION

**FULLY SPRINKLERED**

**Project Title**  
UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS

**Location**  
ST. CLOUD VA MEDICAL CENTER, MN

**Issue Date**  
2022-07-15

**Checked**  
MR

**Drawn**  
PNL

**Project Number**  
656-18-300

**Building Number**  
1, 2, 3, 28, 49, 50, 51, 111, 116

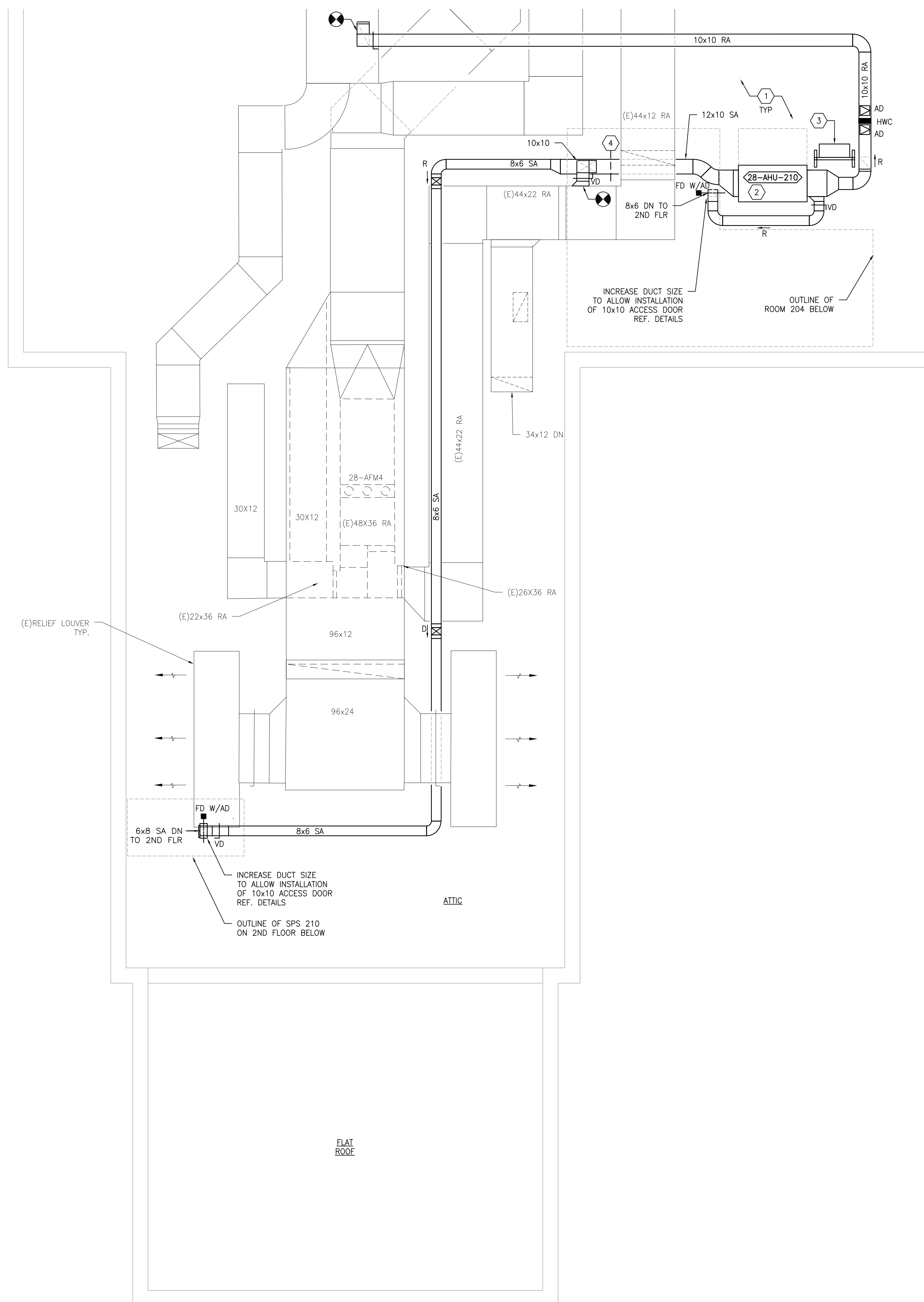
**Drawing Number**  
28-MH121

**GENERAL SHEET NOTES:**

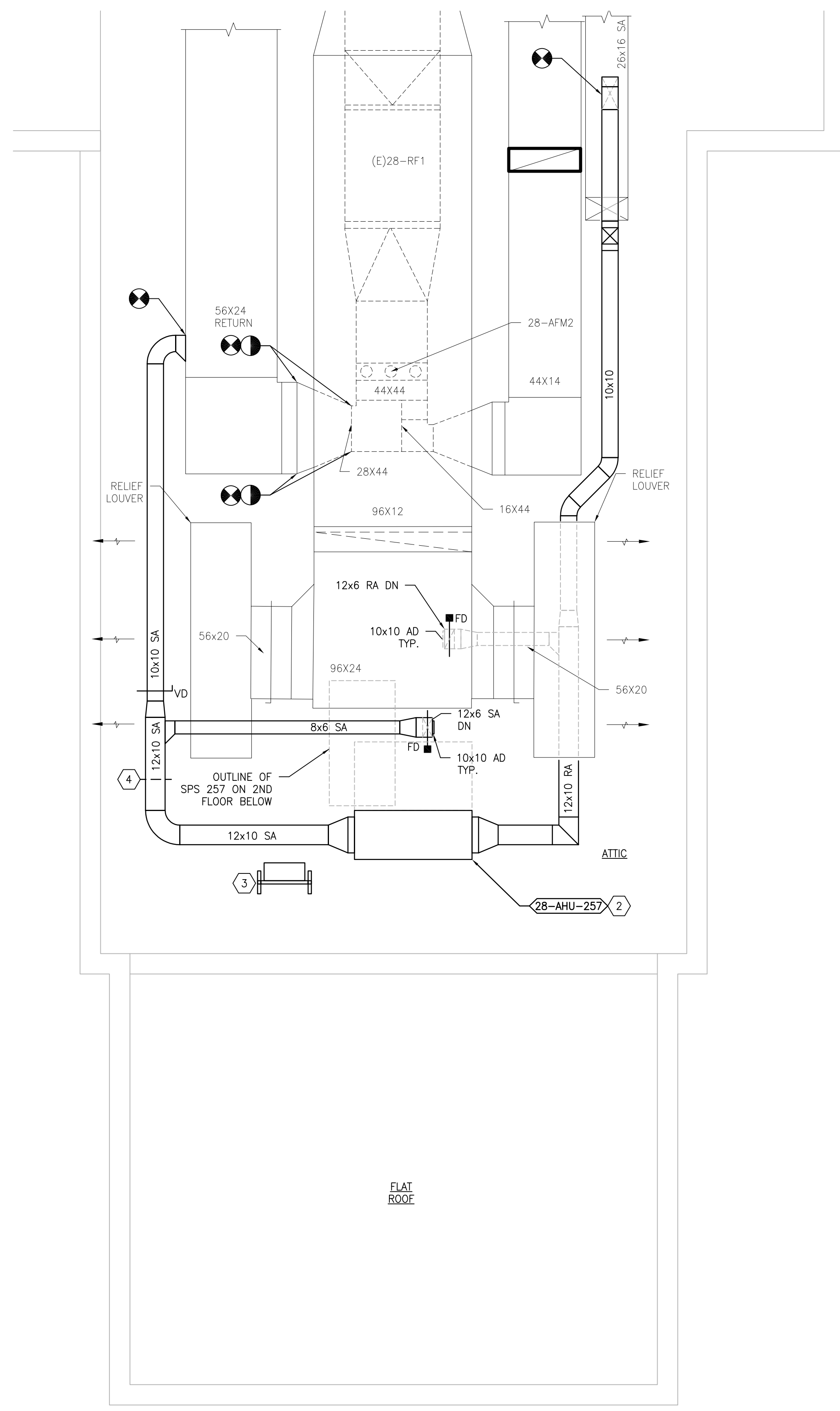
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
3. ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING EQUIPMENT OR INSTALLATION OF NEW WORK.
4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
5. MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. TAKE PREDEMOLITION READINGS OF ALL ROOM AIR INLETS AND OUTLETS OF ANY SYSTEM THE WILL BE MODIFIED AND SUBMIT TO THE VA AND ENGINEER FOR RECORD PRIOR TO STARTING ANY NEW WORK. BALANCE THE NEW SYSTEMS AND REBALANCE THE EXISTING ASSOCIATED AHU SYSTEM TO THE NEW AIR QUANTITIES. AFTER THE NEW WORK IS COMPLETE REBALANCE THE EXISTING SYSTEM, AS REQUIRED, AND MEASURE ALL ROOM AIR INLETS AND OUTLETS TO VERIFY THAT THE PREDEMOLITION AIRFLOWS HAVE BEEN MAINTAINED. SUBMIT FOR APPROVAL. REFERENCE SPECIFICATIONS FOR TESTING AND BALANCING REQUIREMENTS.
10. ALL DUCTWORK PENETRATIONS SHALL BE SAW CUT. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

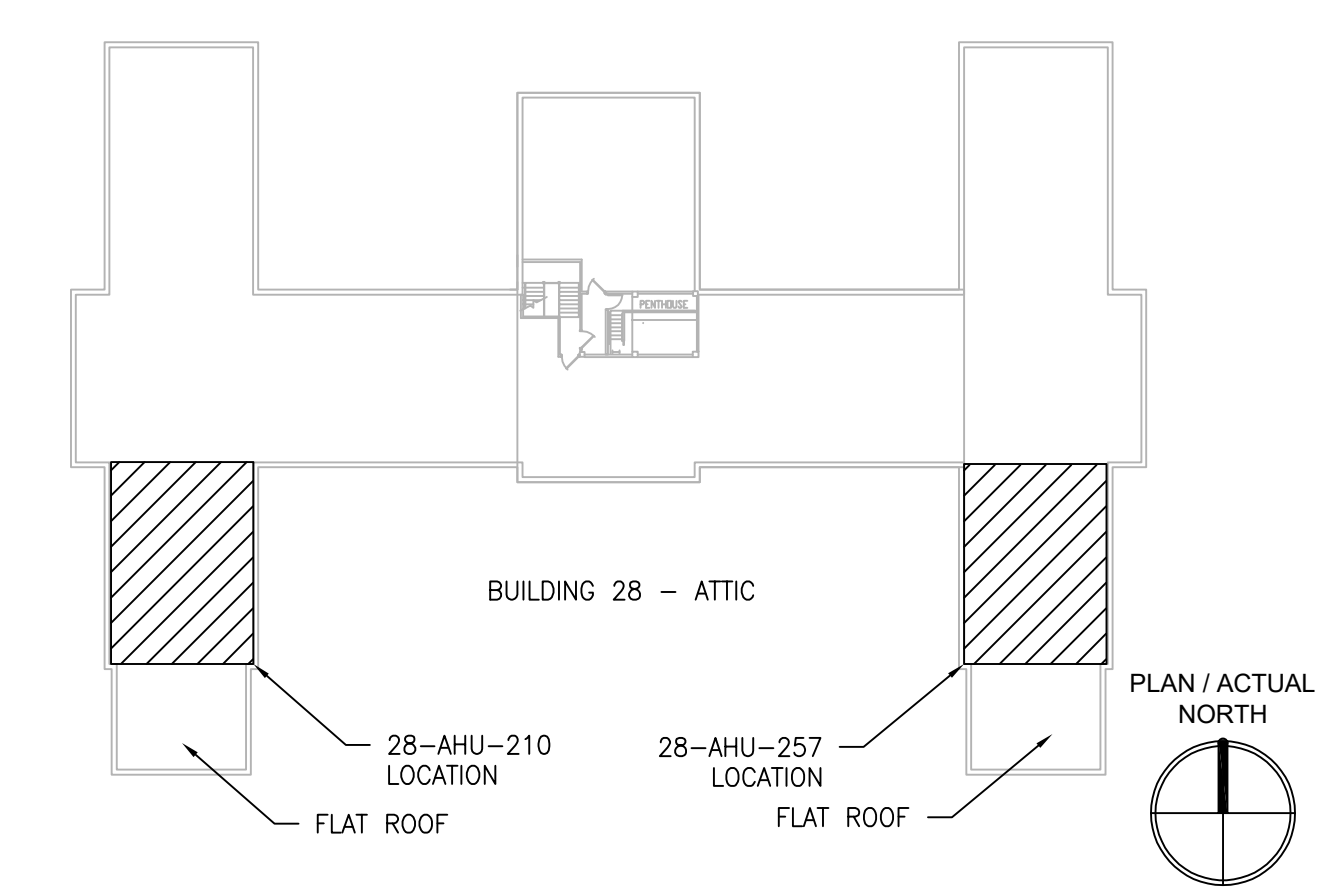
1. MECHANICAL EQUIPMENT IS NOT PERMITTED IN SERVICE CORRIDOR. COORDINATE EQUIPMENT ACCESS WITH STRUCTURAL MEMBERS.
2. FIELD VERIFY LOCATION FOR NEW AIR HANDLING UNIT AND ASSOCIATED DUCTWORK. COORDINATE LOCATION WITH EXISTING CONDITIONS. ADJUST LOCATION IF REQUIRED.
3. MOUNT FACTORY PREWIRED AHU CONTROL PANEL ON UNISTRUT FRAME. COORDINATE WIRING AND CONDUIT AS REQUIRED IF LENGTH OF FACTORY WIRING 6'-0" IS NOT SUFFICIENT. EXTEND AND INTEGRATE INTO BAS LOCAL CONTROLLER LABEL NAE-28 / NAE-28A\_IN ATTIC.
4. DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY AHU MANUFACTURER.



**1 BUILDING 28 ATTIC ROOM 210 - NEW WORK DUCTWORK PLAN**  
SCALE: 1/4" = 1'-0"



**2 BUILDING 28 ATTIC ROOM 257- NEW WORK DUCTWORK PLAN**  
SCALE: 1/4" = 1'-0"



**KEYPLAN**  
SCALE: NTS

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NO.	DESCRIPTION	DATE

**PROJECT TEAM**

**COMMISSIONER'S OFFICE**

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1173 Research Way  
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1-866-267-6839

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**ENGINEER OF RECORD**

**Miller-Remick LLC**  
M.E.P. & Structural Engineering  
A Service Disabled Veteran Owned Small Business

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FAX: (856)439-9002  
MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL DUCTWORK PLANS ATTIC - BUILDING 28**

Approved: Project Director

Phase  
100% CONSTRUCTION DOCUMENTS  
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS

Location  
ST. CLOUD VA MEDICAL CENTER, MN

Issue Date  
2022-07-15

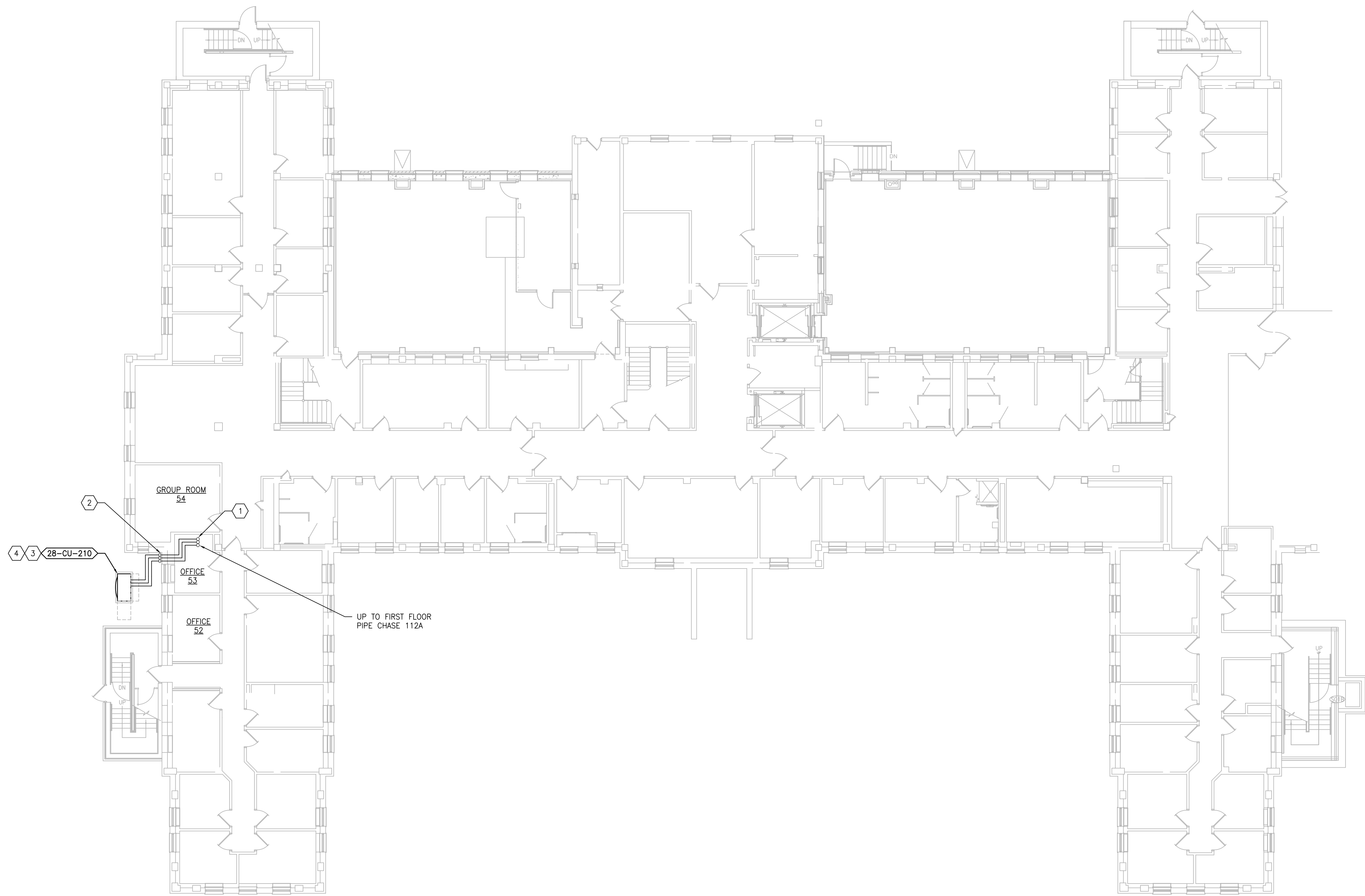
Checked  
MR

Drawn  
PNL

Project Number  
656-18-300

Building Number  
1, 2, 3, 28, 29, 49, 50, 51, 111, 116

Drawing Number  
28-MH131



**1 BUILDING 28 - BASEMENT PIPING PLAN**  
SCALE: 3/32" = 1'-0"

**GENERAL SHEET NOTES:**

1. REFERENCE SPECIFICATION 02-B2 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
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4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
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7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILINGS REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS, ETC.
10. ALL PIPING PENETRATIONS SHALL BE CORE DRILLED. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. INSTALLING CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. THE CONTRACTOR IS TO PROVIDE DETAILED PIPING LAYOUT TO THE MANUFACTURER FOR PIPE SIZING AND OTHER REQUIREMENTS. FINAL SHOP DRAWING APPROVAL IS BY THE ENGINEER. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR LEAK CHECKS, EVACUATION AND INITIAL REFRIGERATION CHARGE. THE INSTALLING CONTRACTOR SHALL PROVIDE EXTRA REFRIGERANT TO THE FACTORY START-UP TECHNICIAN FOR FINAL REFRIGERANT CHARGE. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR WIRING AND COMMUNICATIONS BETWEEN AHU'S AND CONDENSING UNITS.
12. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

1. MINIMUM PIPE SIZES FOR UP TO 50 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
  - SUCTION LINE 5/8" Ø
  - LIQUID LINE 3/8" Ø
  - HOT GAS REHEAT 3/8" Ø
- MINIMUM PIPE SIZES FOR OVER 60 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
  - SUCTION LINE 3/4" Ø
  - LIQUID LINE 1/2" Ø
  - HOT GAS REHEAT 1/2" Ø
- INSTALL AND INSULATE PIPING ACCORDING TO SPECIFICATIONS AND AHU MANUFACTURER RECOMMENDATIONS. VERIFY PIPE SIZING WITH AHU MANUFACTURER. PIPING MUST BE SIZED TO MEET THE ACTUAL INSTALLATION CONDITIONS. INSTALL SUCTION LINE ACCUMULATOR AND 1/8" CAPILLARY TUBING FOR PURGE CIRCUIT. SEE AHU MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. RUN PIPING ABOVE THE (E) CEILING AND OUT THROUGH THE EXTERIOR WALL AND TO 28-CU-210.
3. CONDENSING UNIT IS SUPPORTED BY DUNNAGE 3'-0" ABOVE GRADE. PROVIDE EXTERIOR PIPING STRUCTURAL COVER. REFER TO STRUCTURAL DRAWINGS FOR DUNNAGE AND PIPE COVER DETAILS.
4. MAINTAIN 6'-0" MINIMUM IN ALL DIRECTIONS FROM THE BUILDING TO PROTECT AGAINST FALLING SNOW AND ICE.

three eighths inch = one foot  
 one and one half inches = one foot  
 one inch = one foot  
 one quarter inch = one foot  
 three eighths inch = one foot  
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NO.	DESCRIPTION	DATE

**PROJECT TEAM**

**MEP Engineers + Architects**  
1173 Research Way  
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**Miller-Remick LLC**  
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CHERRY HILL, NEW JERSEY 08034  
PHONE: (856)439-4000  
FAX: (856)439-9002  
MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL PIPING PLAN BASEMENT - BUILDING 28**

Approved: Project Director

Phase  
100% CONSTRUCTION DOCUMENTS  
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date  
2022-07-15

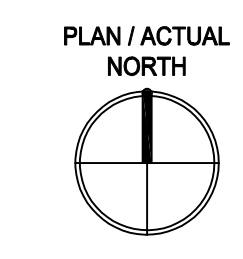
Checked  
MR

Drawn  
BJS

Project Number  
**656-18-300**

Building Number  
1, 2, 3, 28, 29, 49, 50, 51, 111, 116

Drawing Number  
**28-MP101**



**GENERAL SHEET NOTES:**

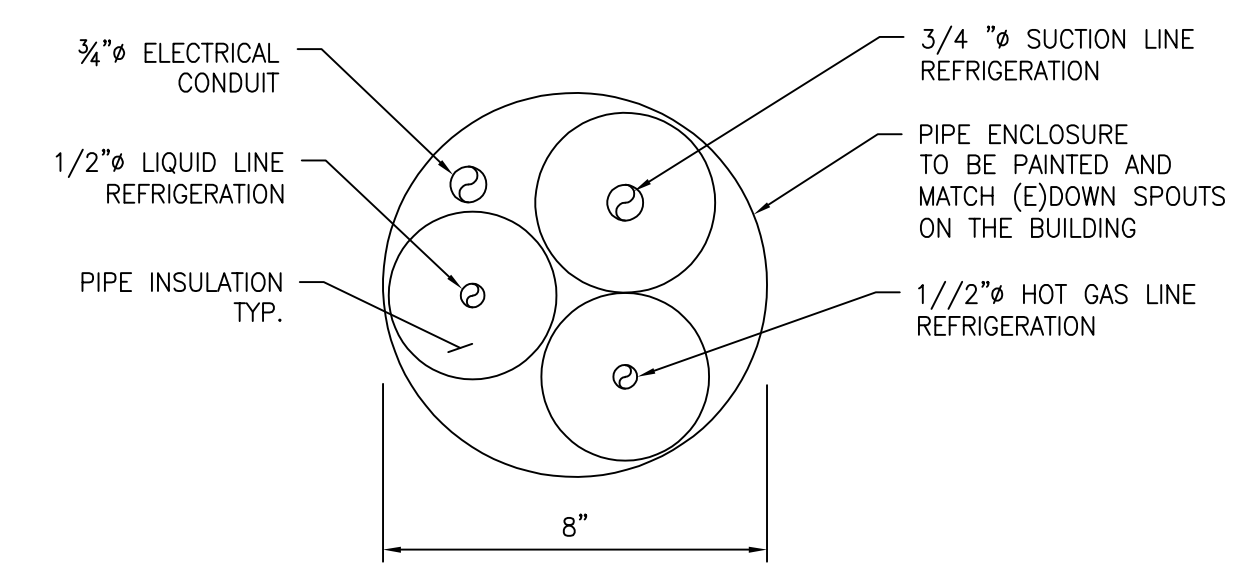
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8. REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS, ETC.
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**SHEET KEYNOTES:**

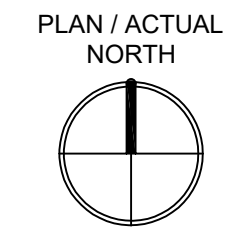
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  - SUCTION LINE 5/8" Ø
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2. PIPING TO BE INSIDE DOWN SPOUT THAT MATCHES (E) BUILDING ARCHITECTURAL APPEARANCE. (SEE DETAIL 2 THIS SHEET)
3. CONDENSING UNIT IS SUPPORTED BY DUNNAGE 3'-0" ABOVE GRADE. PROVIDE EXTERIOR PIPING STRUCTURAL COVER. REFER TO STRUCTURAL DRAWINGS FOR DUNNAGE AND PIPE COVER DETAILS.
4. MAINTAIN 6'-0" MINIMUM IN ALL DIRECTIONS FROM THE BUILDING TO PROTECT AGAINST FALLING SNOW AND ICE.



**1 BUILDING 28 - FIRST FLOOR PIPING PLAN**  
SCALE: 3/32" = 1'-0"



**2 DETAIL 2**  
SCALE: 3" = 1'-0"



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NO.	DESCRIPTION	DATE

**PROJECT TEAM**

**MEP Engineers + Architects**  
1173 Research Way  
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MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

**Drawing Title**  
MECHANICAL PIPING PLAN  
FIRST FLOOR - BUILDING 28

**Approved:** Project Director

**Phase**  
100% CONSTRUCTION DOCUMENTS  
NOT FOR CONSTRUCTION

**FULLY SPRINKLERED**

**Project Title**  
UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS

**Location**  
ST. CLOUD VA MEDICAL CENTER, MN

Issue Date	Checked	Drawn
2022-07-15	MR	BJS

**Project Number**  
656-18-300

**Building Number**  
1, 2, 3, 28, 29, 49, 50, 51, 111, 116

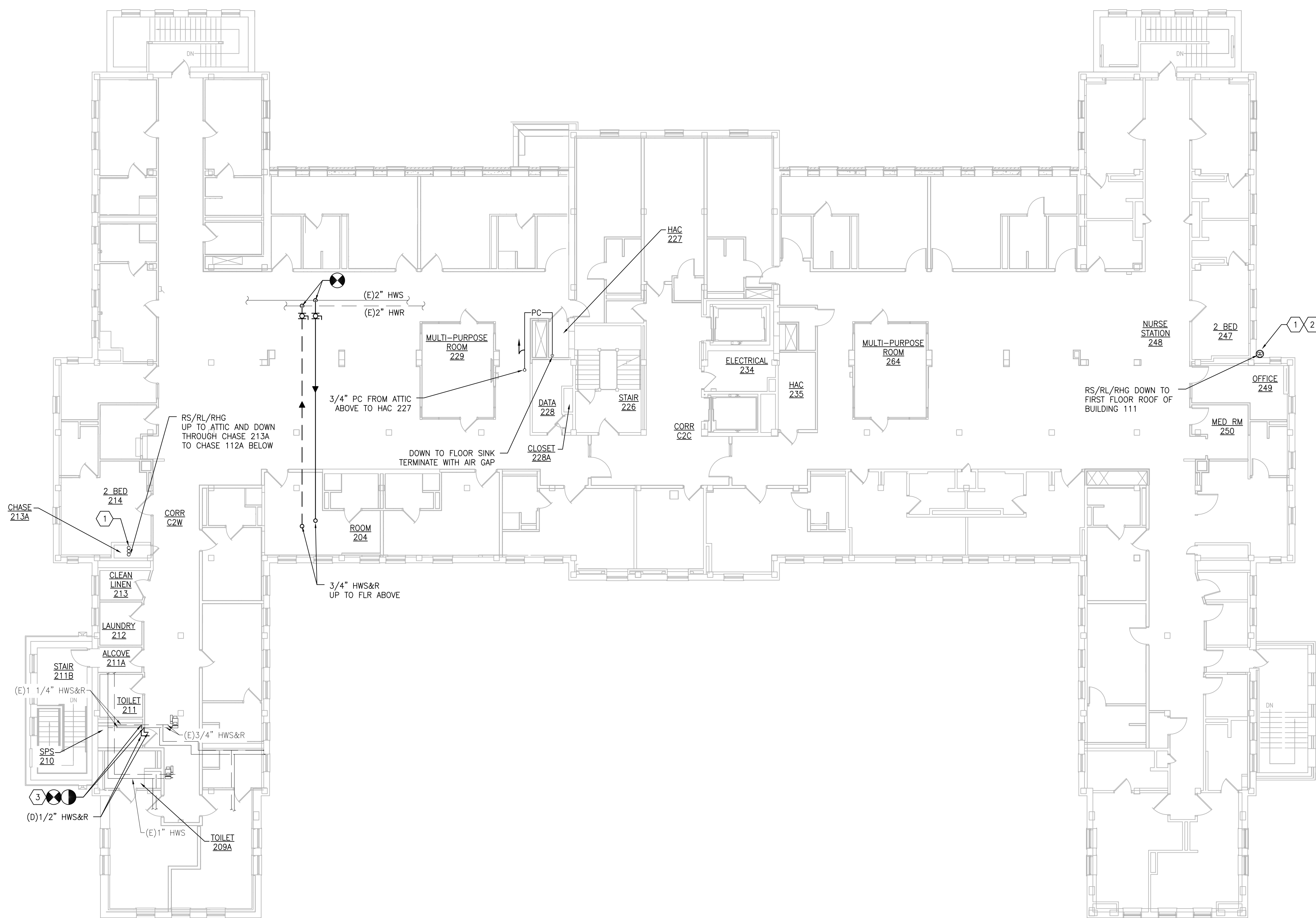
**Drawing Number**  
28-MP111

**GENERAL SHEET NOTES:**

1. REFERENCE SPECIFICATION 02-82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
3. ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING EQUIPMENT OR INSTALLATION OF NEW WORK.
4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
5. MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS, ETC.
10. ALL PIPING PENETRATIONS SHALL BE CORE DRILLED. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. INSTALLING CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. THE CONTRACTOR IS TO PROVIDE DETAILED PIPING LAYOUT TO THE MANUFACTURER FOR PIPE SIZING AND OTHER REQUIREMENTS. FINAL SHOP DRAWING APPROVAL IS BY THE ENGINEER. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR LEAK CHECKS, EVALUATION AND INITIAL REFRIGERATION CHARGE. THE INSTALLING CONTRACTOR SHALL PROVIDE EXTRA REFRIGERANT TO THE FACTORY START-UP TECHNICIAN FOR FINAL REFRIGERANT CHARGE. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR WIRING AND COMMUNICATIONS BETWEEN AHU'S AND CONDENSING UNITS.
12. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

1. MINIMUM PIPE SIZES FOR UP TO 50 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING.
  - SUCTION LINE 5/8"  $\phi$
  - LIQUID LINE 3/8"  $\phi$
  - HOT GAS REHEAT 3/8"  $\phi$
- MINIMUM PIPE SIZES FOR OVER 50 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING.
  - SUCTION LINE 3/4"  $\phi$
  - LIQUID LINE 1/2"  $\phi$
  - HOT GAS REHEAT 1/2"  $\phi$
- INSTALL AND INSULATE PIPING ACCORDING TO SPECIFICATIONS AND AHU MANUFACTURER RECOMMENDATIONS. VERIFY PIPE SIZING WITH AHU MANUFACTURER. PIPING MUST BE SIZED TO MEET THE ACTUAL INSTALLATION CONDITIONS. INSTALL SUCTION LINE ACCUMULATOR AND 1/8" CAPILLARY TUBING FOR PURGE CIRCUIT. SEE AHU MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. PIPING TO BE INSIDE DOWN SPOUT ENCLOSURE THAT MATCHES (E) BUILDING ARCHITECTURAL APPEARANCE. (SEE DETAIL 2/28-MP111)
3. DEMOLISH 1/2" HWS&R PIPING FROM 2--VAV-219 AND ALL APPURTENANCES BACK TO THE EXISTING 1-1/4" MAIN AND CAP.



**1 BUILDING 28 - SECOND FLOOR PIPING PLAN**  
SCALE: 3/32" = 1'-0"

PLAN / ACTUAL NORTH



PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER.

**PROJECT TEAM**



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MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

Office of  
Construction  
and Facilities  
Management



Drawing Title  
**MECHANICAL PIPING PLAN  
SECOND FLOOR - BUILDING 28**

Approved: Project Director

Phase  
100% CONSTRUCTION DOCUMENTS  
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC &  
ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date  
2022-07-15

Checked  
MR

Drawn  
BJS

Project Number  
**656-18-300**

Building Number  
1, 2, 3, 28, 29, 49, 50, 51,  
111, 116

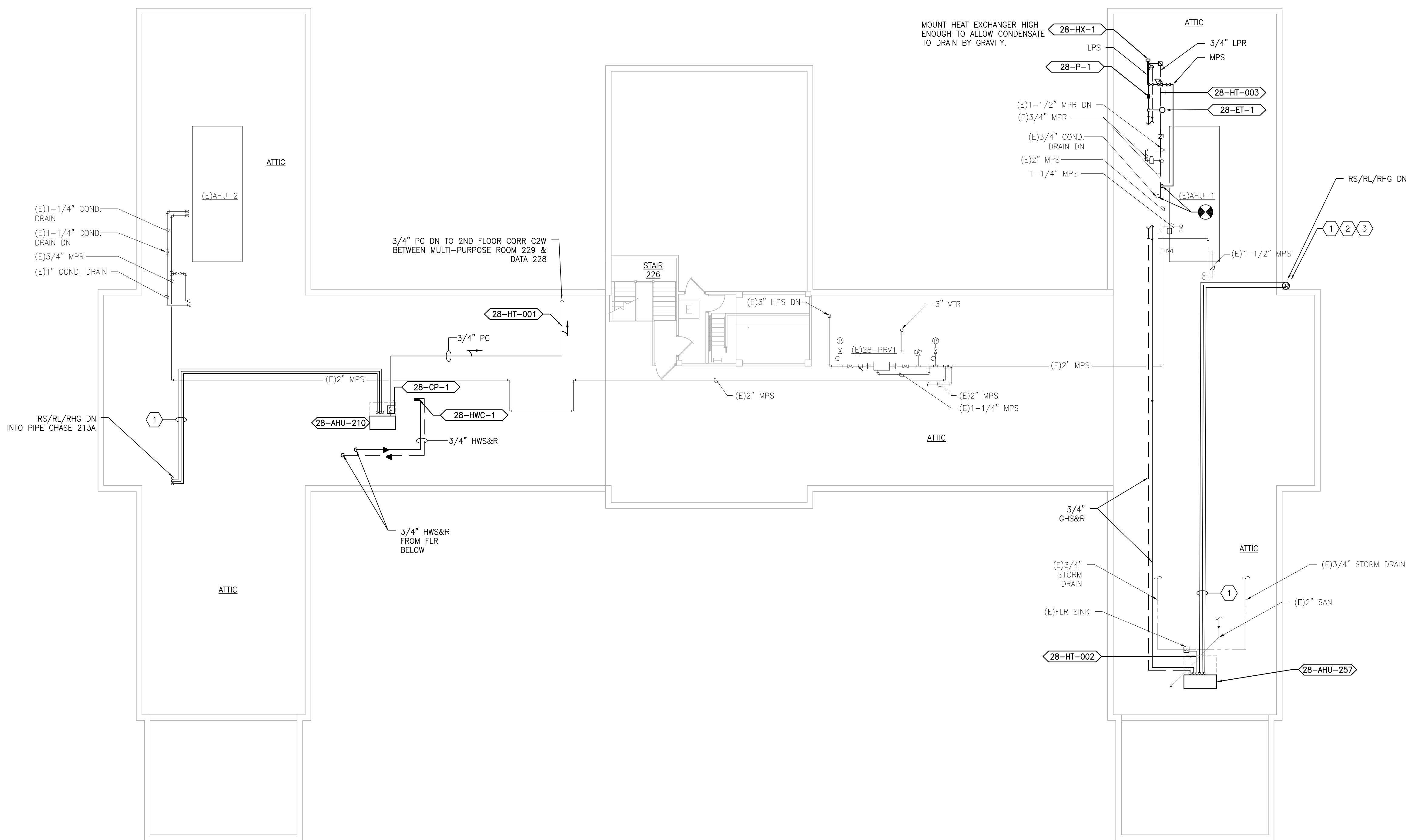
Drawing Number  
**28-MP121**

**GENERAL SHEET NOTES:**

1. REFERENCE SPECIFICATION 02-B2 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
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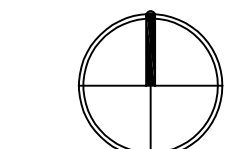
**SHEET KEYNOTES:**

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  - LIQUID LINE 3/8" ø
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3. PIPING TO BE INSIDE DOWN SPOUT THAT MATCHES (E) BUILDING ARCHITECTURAL APPEARANCE. (SEE DETAIL 2/28-MP111)



**1 BUILDING 28 - ATTIC PIPING PLAN**  
SCALE: 3/32" = 1'-0"

PLAN / ACTUAL NORTH



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MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**



Drawing Title  
**MECHANICAL PIPING PLAN  
ATTIC - BUILDING 28**

Approved: Project Director

Phase  
100% CONSTRUCTION DOCUMENTS  
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC &  
ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date  
2022-07-15

Checked  
MR

Drawn  
BJS

Project Number  
**656-18-300**

Building Number  
1, 2, 3, 28, 29, 49, 50, 51,  
111, 116

Drawing Number  
**28-MP131**

SEQUENCE OF OPERATION

**GENERAL**  
 THE EXISTING HVAC SYSTEMS WILL CONTINUE TO OPERATE INDEPENDENT OF THE NEW SUPPLEMENTAL SYSTEM.

**SUPPLEMENTAL HVAC SYSTEM CONTROL**  
 THE UNIT SHALL BE PROVIDED WITH A FACTORY PREWIRED AND TESTED EXTERNAL CONTROL PANEL. THE UNIT CONTROLLER SHALL BE CAPABLE OF CONTROLLING ALL FEATURES AND OPTIONS OF THE UNIT. THE CONTROLLER SHALL BE CAPABLE OF STAND-ALONE OPERATION WITH UNIT CONFIGURATION, SETPOINT ADJUSTMENT, SENSOR STATUS VIEWING, UNIT ALARM VIEWING, AND OCCUPANCY SCHEDULING WITHOUT DEPENDENCE ON THE JOHNSON CONTROLS BUILDING MANAGEMENT SYSTEM (BMS). THE CONTROLLER SHALL COMMUNICATE AND INTEGRATE WITH THE BMS SYSTEM VIA BACNET. ALL SETPOINTS SHALL BE VISIBLE AND RESETTABLE. ALL SENSOR READINGS SHALL BE VISIBLE. OCCUPIED AND UNOCCUPIED SCHEDULING SHALL BE RESETTABLE, THROUGH THE BAS SYSTEM VIA BACNET.

**OCCUPIED/UNOCCUPIED**  
 OCCUPIED/UNOCCUPIED MODE SHALL BE BASED ON A COMMAND FROM THE BMS.

**OCCUPIED MODE**  
 IN THE OCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

**COOLING**  
 IF ROOM TEMPERATURE RISES ABOVE SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE COMPRESSOR SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

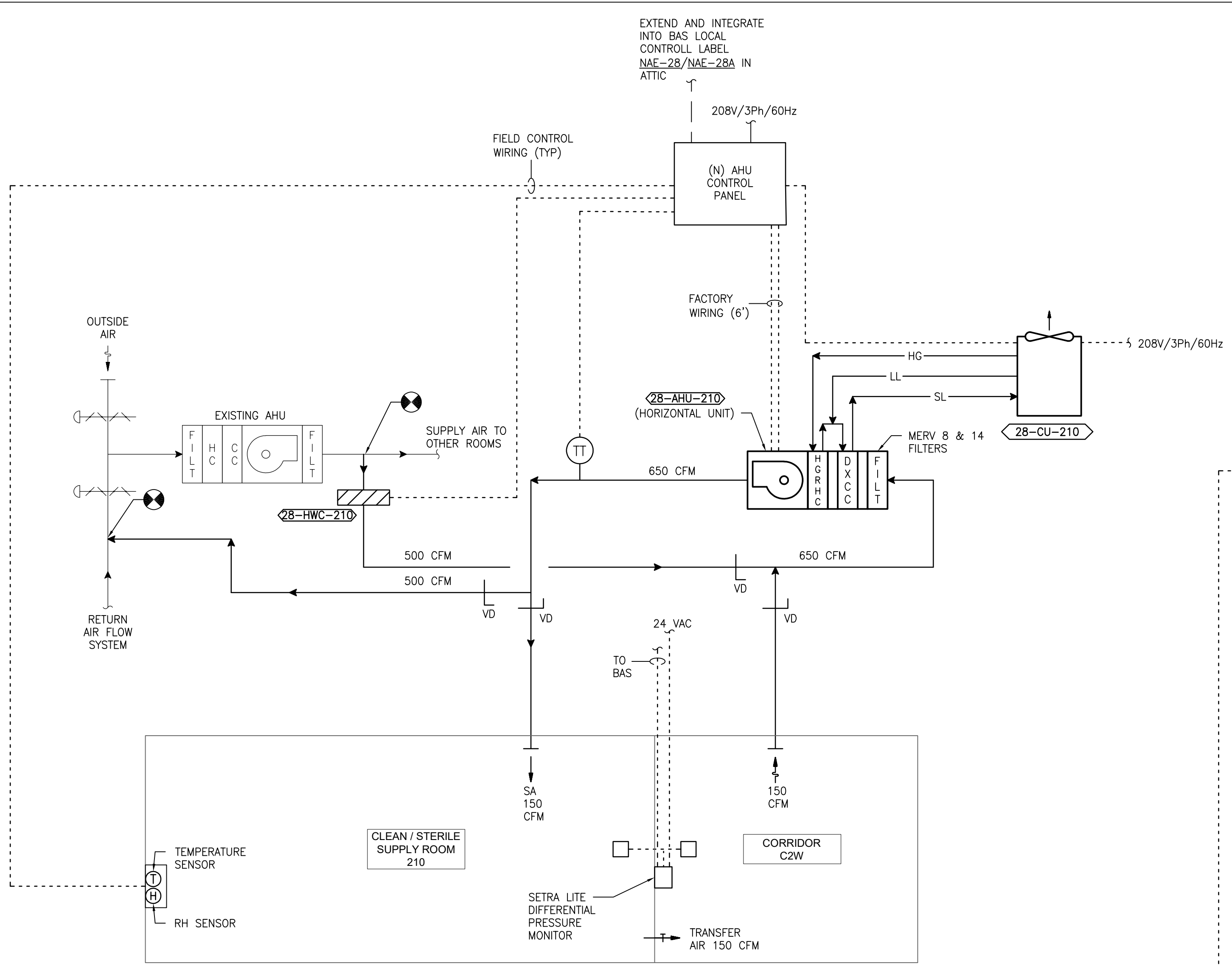
**DEHUMIDIFYING**  
 IF ROOM RELATIVE HUMIDITY RISES ABOVE SETPOINT AS SENSED BY THE WALL MOUNTED HUMIDITY SENSOR THE SYSTEM SHALL OVERRIDE THE COOLING COIL SETPOINT AND MODULATE THE HOT GAS REHEAT COIL TO MAINTAIN ROOM TEMPERATURE AND HUMIDITY SETPOINTS. DEHUMIDIFICATION SHALL BE INITIATED ANYTIME IN THE OCCUPIED, UNOCCUPIED, COOLING OR HEATING MODE.

**HEATING (ONLY PROVIDED ON SOME UNITS)**  
 IF ROOM TEMPERATURE FALLS BELOW SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE HEATING COIL SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

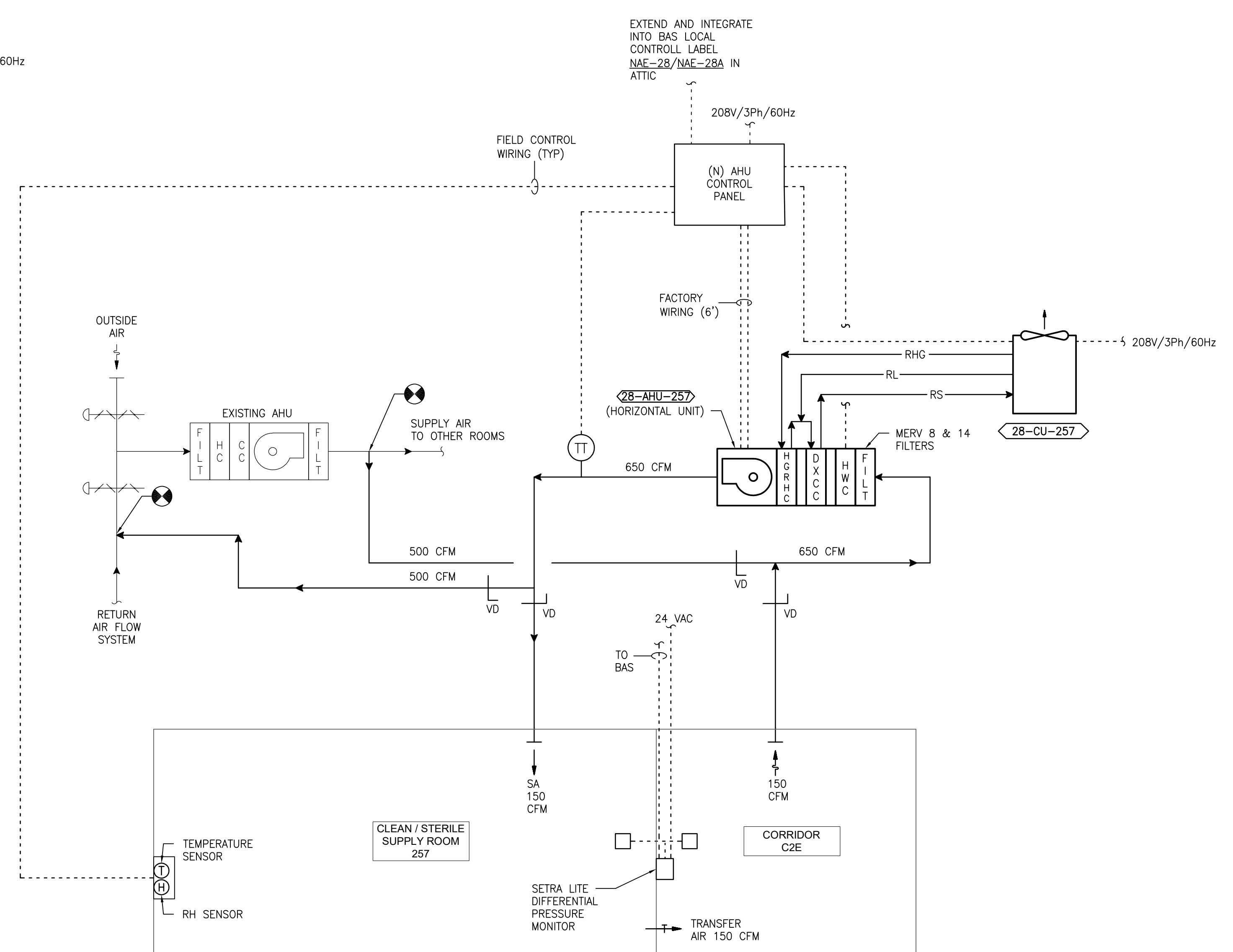
**UNOCCUPIED MODE**  
 IN THE UNOCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY. IN THE UNOCCUPIED MODE THE UNIT SHALL OPERATE IF THE ROOM TEMPERATURE OR RELATIVE HUMIDITY LIMITS ARE REACHED.

**ON A CALL FOR COOLING, DEHUMIDIFYING, OR HEATING THE CONTROL SHALL BE THE SAME AS IN THE OCCUPIED MODE.**

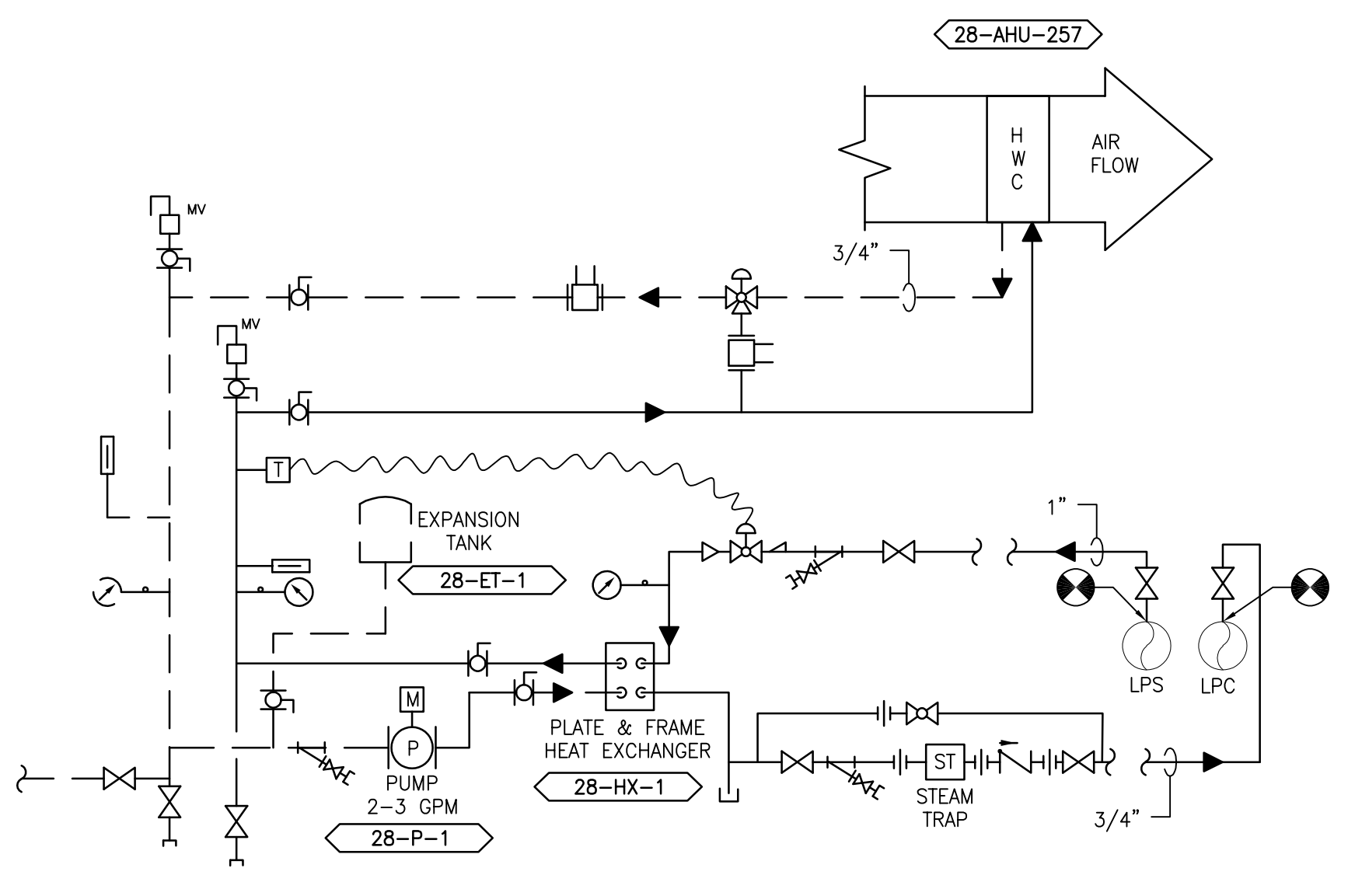
**ROOM PRESSURE MONITOR**  
 THE ROOM PRESSURE MONITOR SETRA LITE SHALL MONITOR AND ALARM THE DIFFERENTIAL PRESSURE BETWEEN THE CLEAN / STERILE SATELLITE STORAGE ROOM AND THE ADJACENT ROOM LOCALLY AND AT THE BAS.



1 DIAGRAM - 28 - 210  
 SCALE: NONE



2 DIAGRAM - 28 - 257  
 SCALE: NONE



3 DIAGRAM - 28 - 257  
 SCALE: NONE

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NO.	DESCRIPTION	DATE

**PROJECT TEAM**

**MEP Engineers + Architects**  
 1173 Research Way  
 Forest, VA 24551  
 1-866-267-6839

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 701 Forest Ave  
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 M.E.P. & Structural Engineering  
 A Service Disabled Veteran Owned  
 Small Business

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 PHONE: (856)429-4000  
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 MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
 PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**

VA U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL AIRFLOW CONTROL & PIPING DIAGRAM BUILDING 28**

Approved: Project Director

Phase  
 100% CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date  
 2022-07-15

Checked  
 MR

Drawn  
 PNL

Project Number  
 656-18-300

Building Number  
 1, 2, 3, 28, 29, 49, 50, 51, 111, 116

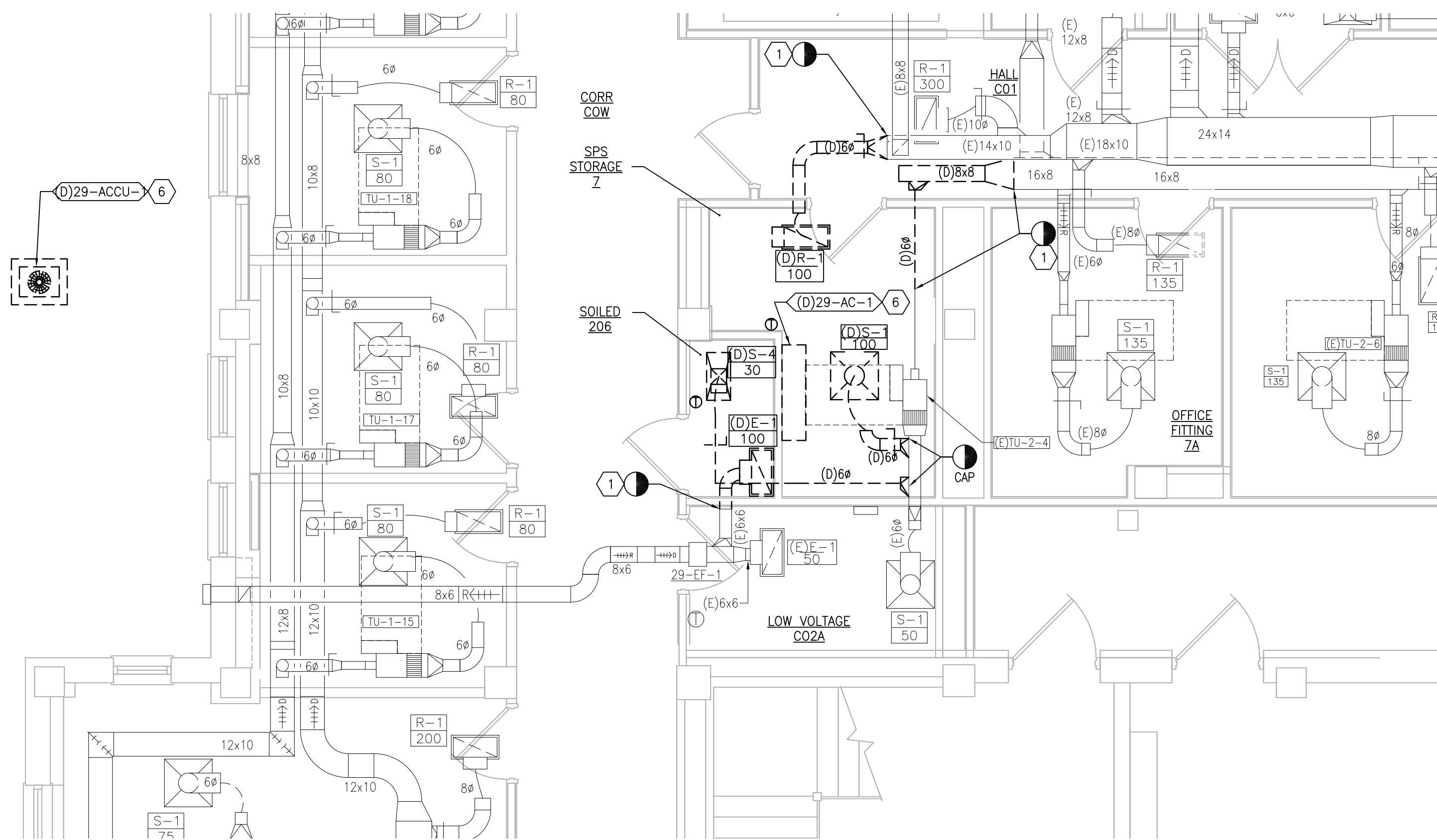
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**GENERAL SHEET NOTES:**

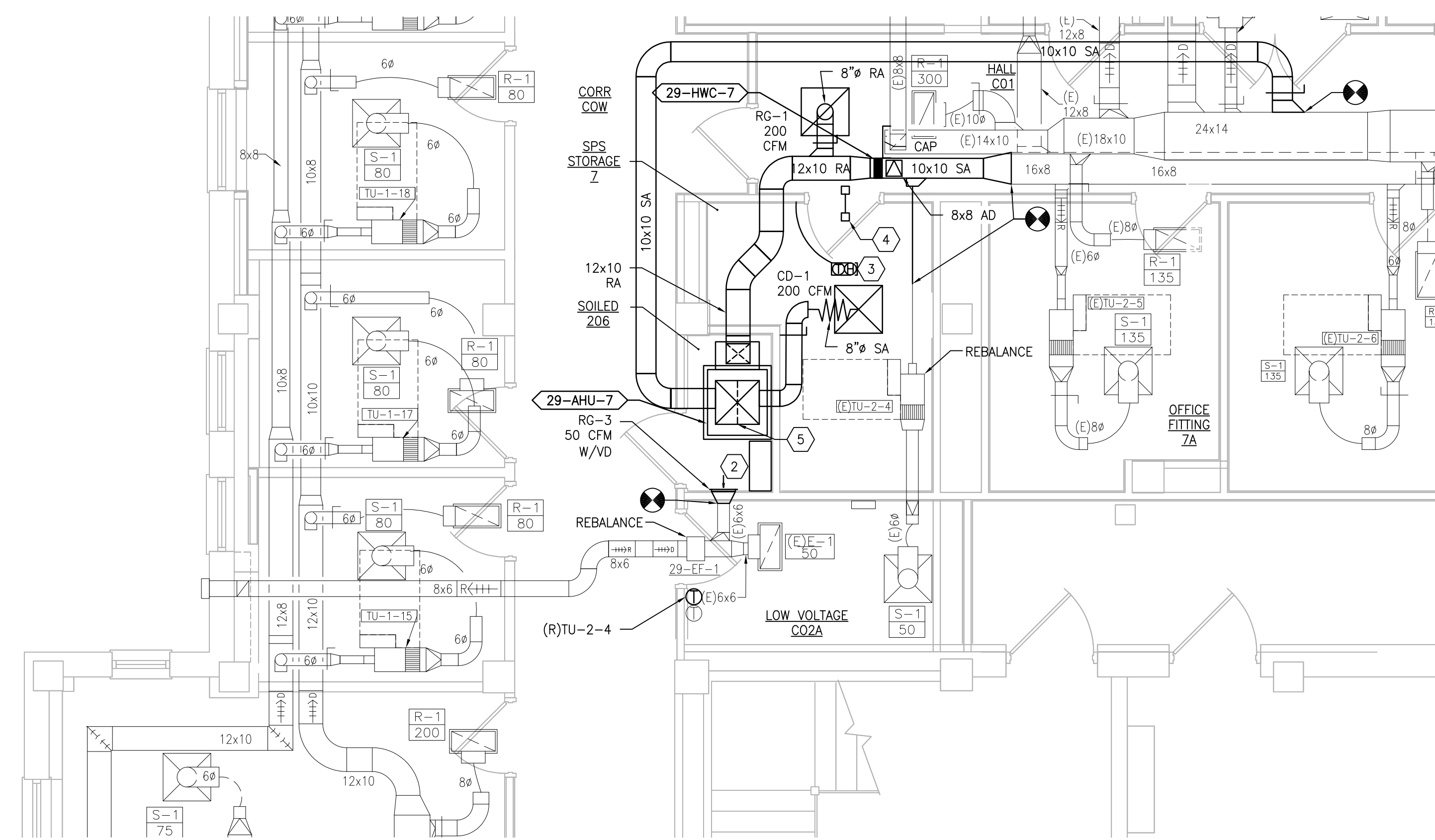
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2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
3. ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING EQUIPMENT OR INSTALLATION OF NEW WORK.
4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
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6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILINGS REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. TAKE PREDEMOLITION READINGS OF ALL ROOM AIR INLETS AND OUTLETS OF ANY SYSTEM THAT WILL BE MODIFIED AND SUBMIT TO THE VA AND ENGINEER FOR RECORD PRIOR TO STARTING ANY NEW WORK. BALANCE THE NEW SYSTEMS AND REBALANCE THE EXISTING ASSOCIATED AHU SYSTEM TO THE NEW AIR QUANTITIES. AFTER THE NEW WORK IS COMPLETE REBALANCE THE EXISTING SYSTEM, AS REQUIRED, AND MEASURE ALL ROOM AIR INLETS AND OUTLETS TO VERIFY THAT THE PREDEMOLITION AIRFLOWS HAVE BEEN MAINTAINED. SUBMIT FOR APPROVAL. REFERENCE SPECIFICATIONS FOR TESTING AND BALANCING REQUIREMENTS.
10. ALL DUCTWORK PENETRATIONS SHALL BE SAW CUT. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

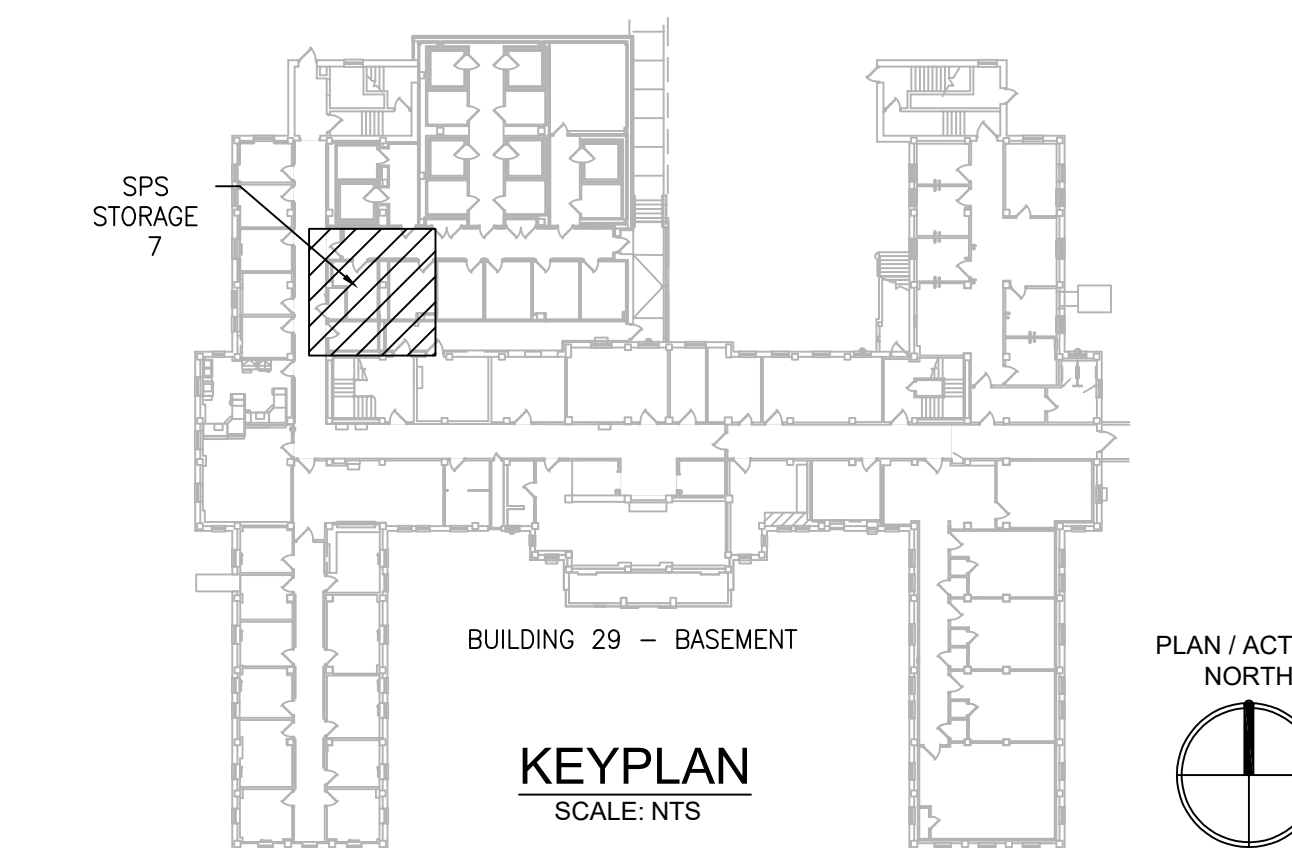
1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL. PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
2. MOUNT FACTORY PREWIRED AHU CONTROL PANEL ON THE WALL. COORDINATE WITH THE COR AND THE EXISTING ROOM CONDITIONS FOR FINAL LOCATION. PROVIDE NEW INTERCONNECTING WIRING AS REQUIRED IF LENGTH OF FACTORY WIRING IS NOT SUFFICIENT. EXTEND AND INTEGRATE INTO GAS LOCAL CONTROLLER LABEL **NAE-29a** IN ROOM 20 MECH.
3. TEMPERATURE AND HUMIDITY SENSOR FURNISHED BY AHU MANUFACTURER.
4. INSTALL DIFFERENTIAL PRESSURE SENSOR THROUGH WALL, CENTERED ABOVE DOOR. INSTALL ROOM PRESSURE MONITOR OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.
5. DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY AHU MANUFACTURER.
6. REMOVE EXISTING WALL MOUNT AIR CONDITIONER (29-AC-1) AND ASSOCIATED CONDENSING UNIT (29-ACU-1) AND TURN OVER TO VA. DEMOLISH ALL APPURTENANCES INCLUDING PIPING, WIRING HANGERS ETC. PATCH AND PAINT WALL TO MATCH EXISTING CONDITIONS.



**1 BUILDING 29 BASEMENT ROOM 7 - DEMOLITION**  
SCALE: 1/4" = 1'-0"



**2 BUILDING 29 BASEMENT 7 - NEW WORK**  
SCALE: 1/4" = 1'-0"



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NO.	DESCRIPTION	DATE

**PROJECT TEAM**



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MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**



U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL DEMOLITION / NEW WORK PLANS BASEMENT - BUILDING 29**

Approved: Project Director

Phase  
100% CONSTRUCTION DOCUMENTS  
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date  
2022-07-15

Checked  
MR

Drawn  
PNL

Project Number  
**656-18-300**

Building Number  
1, 2, 3, 28, 29, 49, 50, 51, 111, 116

Drawing Number  
**29-MH101**

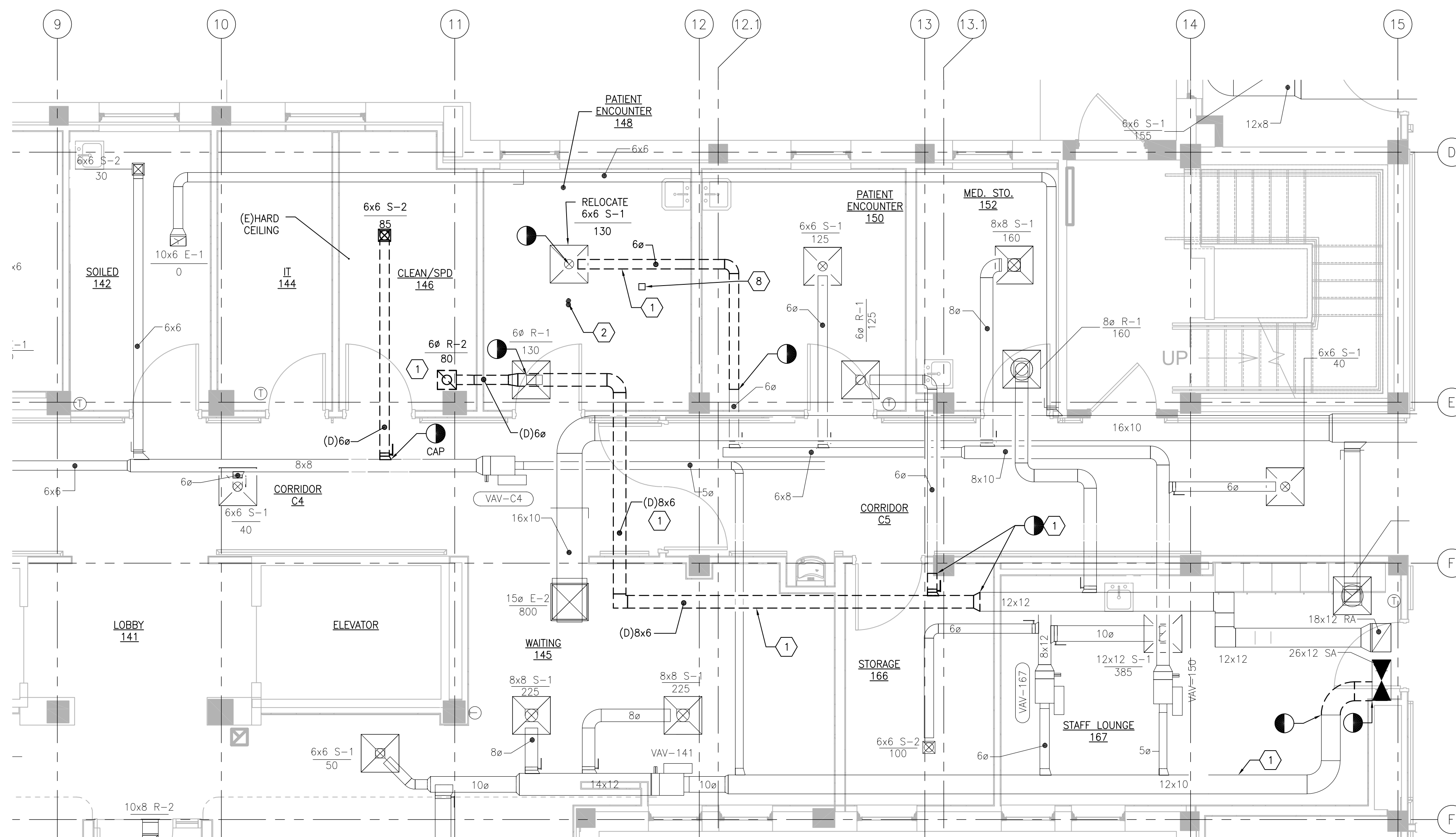


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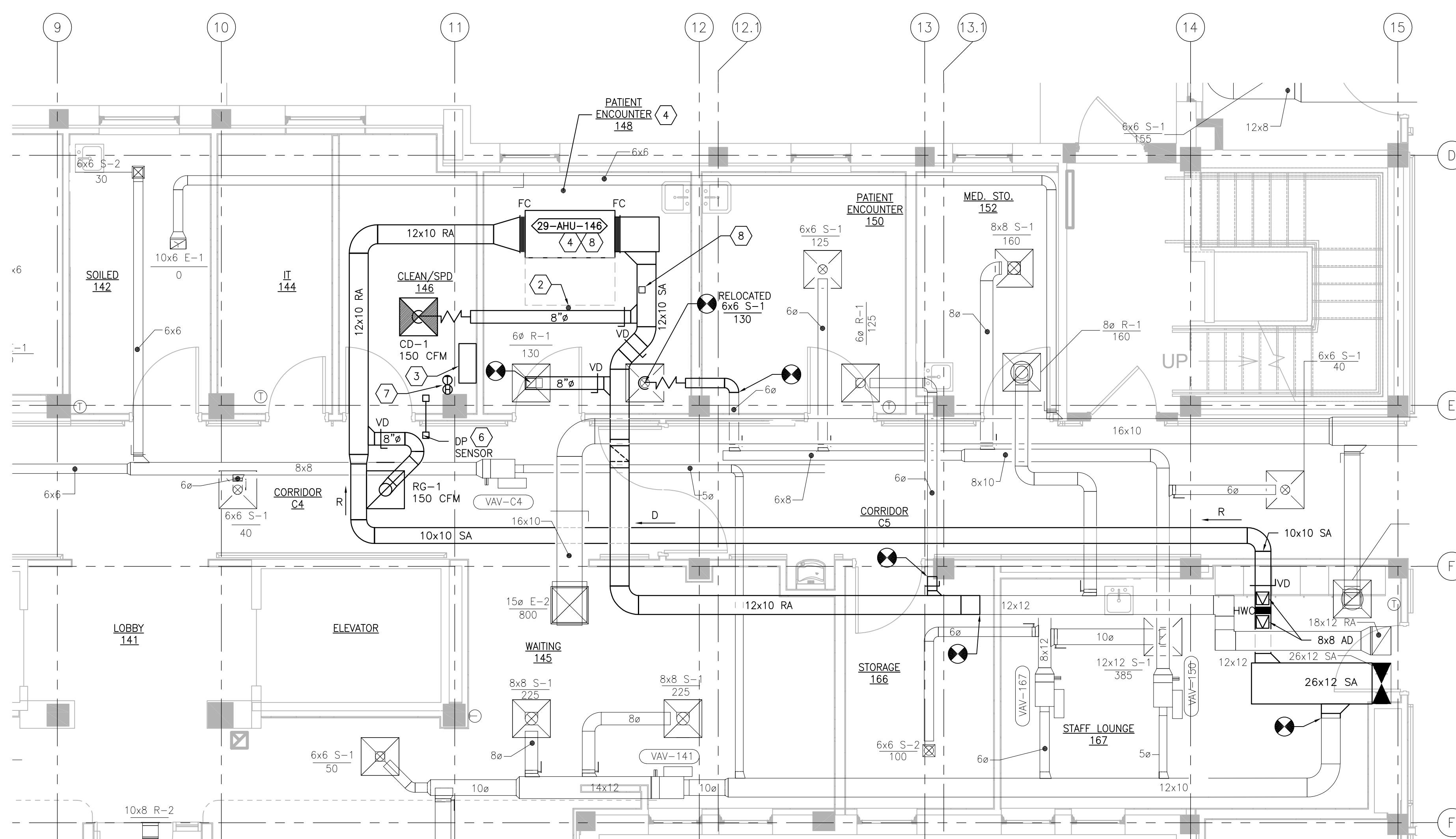
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9. TAKE PREDEMOLITION READINGS OF ALL ROOM AIR INLETS AND OUTLETS OF ANY SYSTEM THE WILL BE MODIFIED AND SUBMIT TO THE VA AND ENGINEER FOR RECORD PRIOR TO STARTING ANY NEW WORK. BALANCE THE NEW SYSTEMS AND REBALANCE THE EXISTING ASSOCIATED AHU SYSTEM TO THE NEW AIR QUANTITIES. AFTER THE NEW WORK IS COMPLETE REBALANCE THE EXISTING SYSTEM, AS REQUIRED, AND MEASURE ALL ROOM AIR INLETS AND OUTLETS TO VERIFY THAT THE PREDEMOLITION AIRFLOWS HAVE BEEN MAINTAINED. SUBMIT FOR APPROVAL. REFERENCE SPECIFICATIONS FOR TESTING AND BALANCING REQUIREMENTS.
10. ALL DUCTWORK PENETRATIONS SHALL BE SAW CUT. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

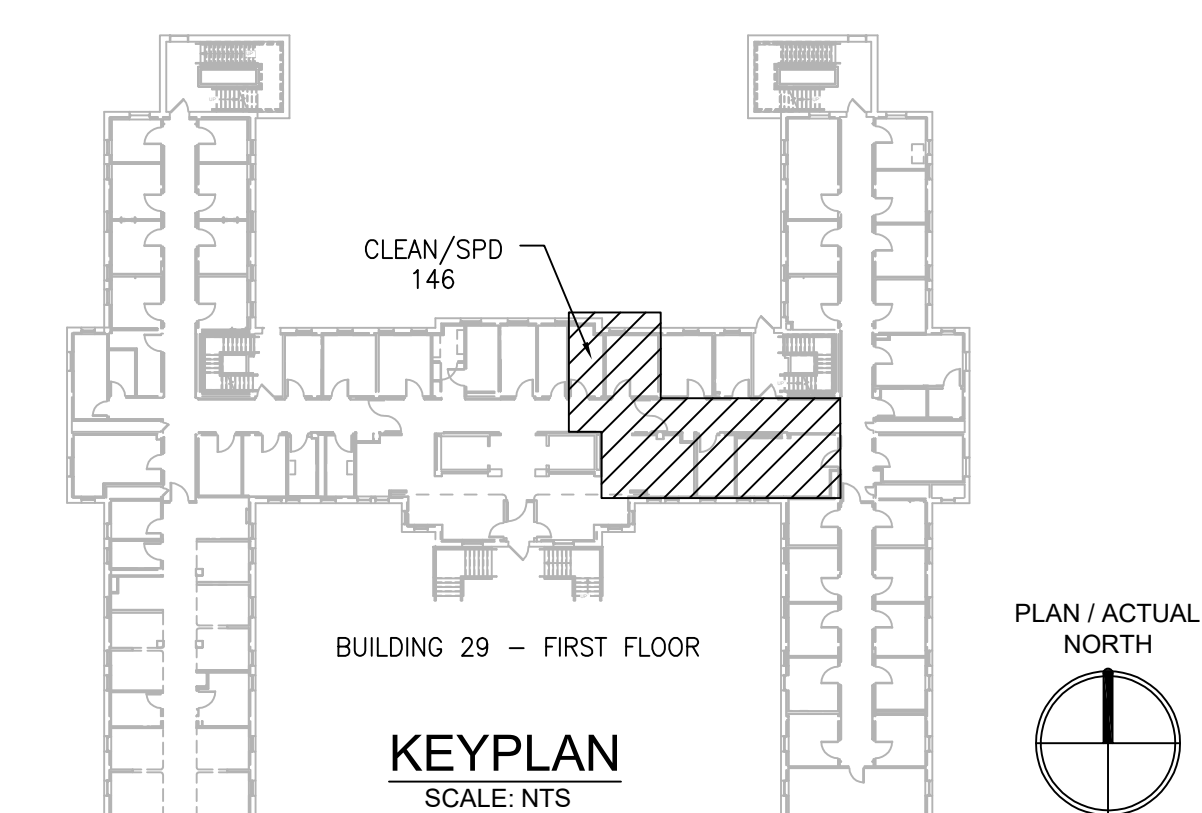
1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
2. RELOCATE EXISTING SPRINKLER PIPE AS REQUIRED TO CLEAR SPACE FOR NEW AHU SERVICE AREA.
3. MOUNT FACTORY PRE-WIRED AHU CONTROL PANEL ON THE WALL. COORDINATE WITH THE COR AND THE EXISTING ROOM CONDITIONS FOR FINAL LOCATION. PROVIDE NEW INTERCONNECTING WIRING AS REQUIRED IF LENGTH OF FACTORY WIRING IS NOT SUFFICIENT. EXTEND AND INTEGRATE INTO BAS LOCAL CONTROLLER LABEL NAE-29B IN ROOM 140 MCH.
4. REFERENCE MP DRAWINGS FOR REFRIGERATION & DRAIN PIPE ROUTING AND COORDINATE.
5. LOWER CEILING TO 7'-6" AFF FOR INSTALLATION OF NEW WORK.
6. INSTALL DIFFERENTIAL PRESSURE SENSOR THROUGH WALL CENTERED ABOVE DOOR. INSTALL ROOM PRESSURE MONITOR OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.
7. TEMPERATURE AND HUMIDITY SENSOR FURNISHED BY AHU MANUFACTURER.
8. AVOID ELECTRICAL JUNCTION IF POSSIBLE. IF DUCTWORK CAN'T BE ADJUSTED SO AS NOT TO HINDER THE ACCESS PER CODE THAN RELOCATE 29-L1-1 CKT #40 TO AVOID BEING BLOCKED.



**1 BUILDING 29 FIRST FLOOR ROOM 146 - DEMOLITION**  
SCALE: 1/4" = 1'-0"



**2 BUILDING 29 FIRST FLOOR ROOM 146 - NEW WORK**  
SCALE: 1/4" = 1'-0"



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NO.	DESCRIPTION	DATE

**PROJECT TEAM**



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MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

Office of  
Construction  
and Facilities  
Management



Drawing Title  
**MECHANICAL  
DEMOLITION / NEW WORK PLANS  
FIRST FLOOR - BUILDING 29**

Approved: Project Director

Phase  
100% CONSTRUCTION  
DOCUMENTS  
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC &  
ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date	Checked	Drawn
2022-07-15	MR	PNL

Project Number  
**656-18-300**

Building Number  
1, 2, 3, 28, 29, 49, 50, 51,  
111, 116

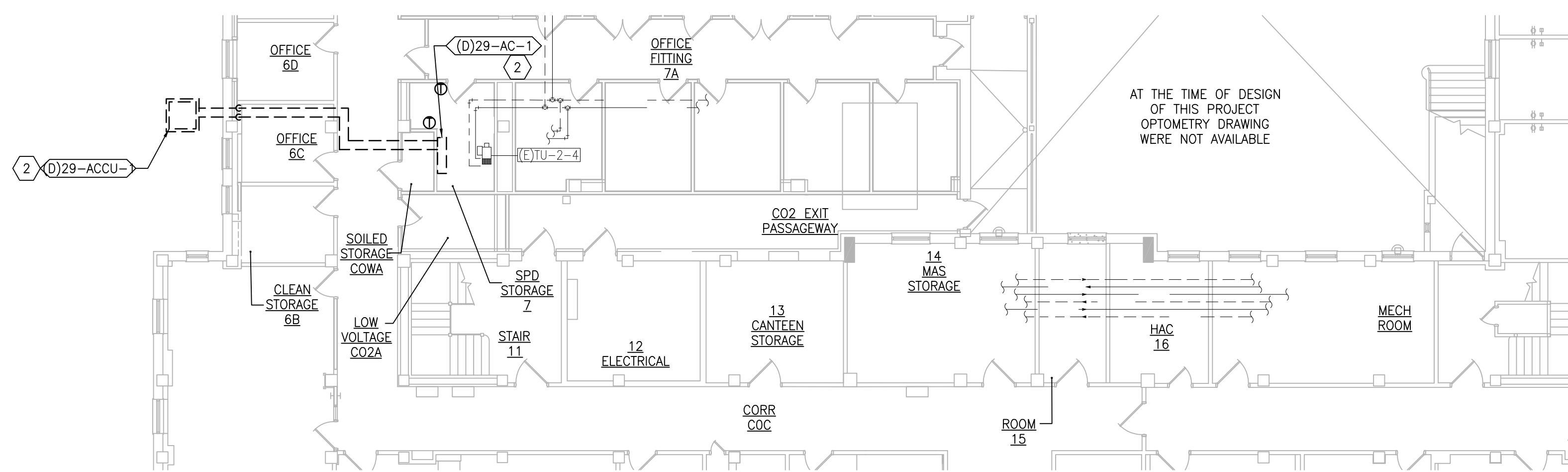
Drawing Number  
**29-MH111**

**GENERAL SHEET NOTES:**

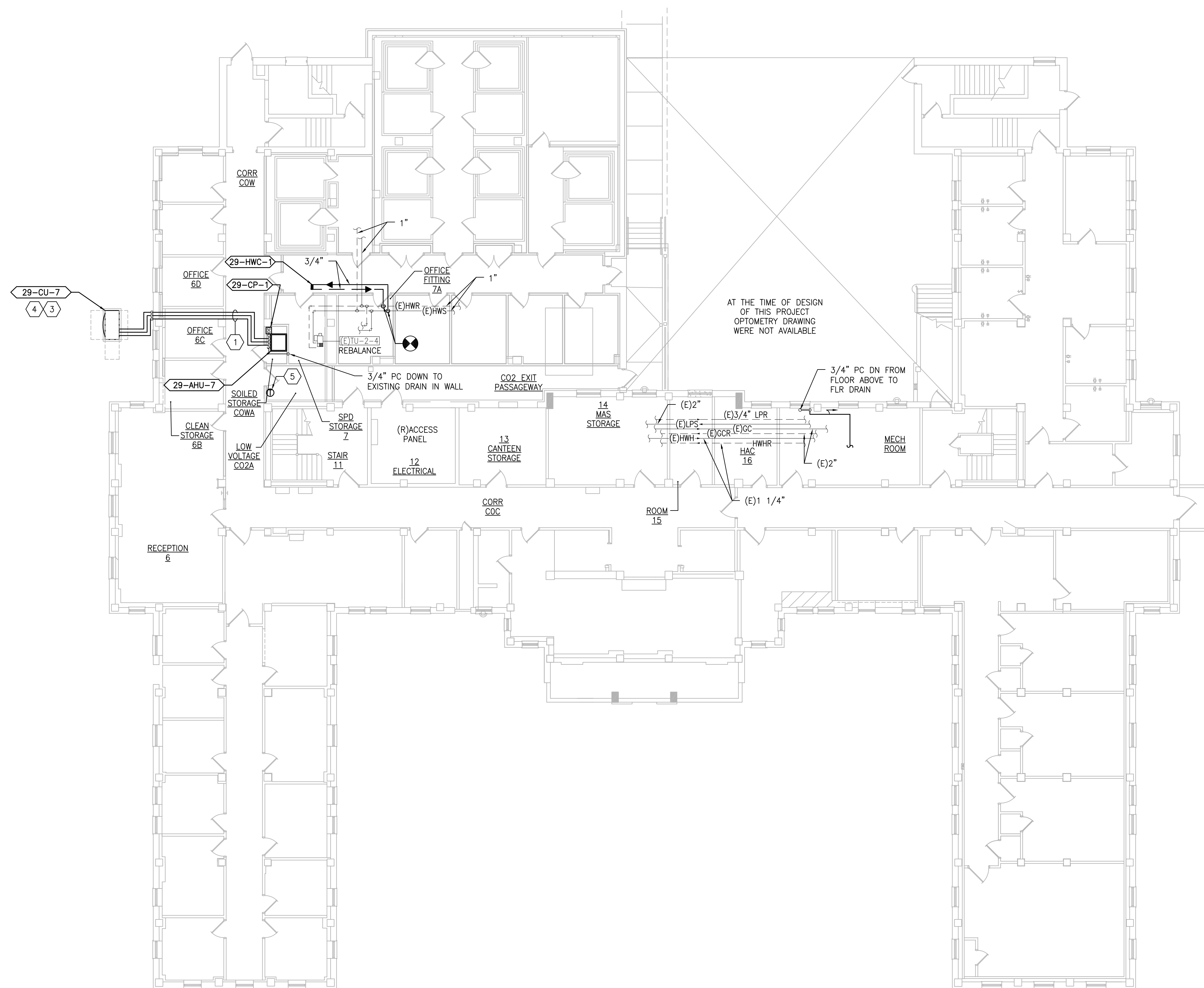
- REFERENCE SPECIFICATION 02-B2 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
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- MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
- MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
- ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
- AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
- REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
- NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS, ETC.
- ALL PIPING PENETRATIONS SHALL BE CORE DRILLED. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
- INSTALLING CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. THE CONTRACTOR IS TO PROVIDE DETAILED PIPING LAYOUT TO THE MANUFACTURER FOR PIPE SIZING AND OTHER REQUIREMENTS. FINAL SHOP DRAWING APPROVAL IS BY THE ENGINEER. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR LEAK CHECKS, EVACUATION AND INITIAL REFRIGERATION CHARGE. THE INSTALLING CONTRACTOR SHALL PROVIDE EXTRA REFRIGERANT TO THE FACTORY START-UP TECHNICIAN FOR FINAL REFRIGERANT CHARGE. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR WIRING AND COMMUNICATIONS BETWEEN AHU'S AND CONDENSING UNITS.
- CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

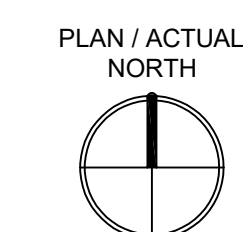
- MINIMUM PIPE SIZES FOR UP TO 50 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
  - SUCTION LINE 5/8" ø
  - LIQUID LINE 3/8" ø
  - HOT GAS REHEAT 3/8" ø
  - PUMPED CONDENSATE 3/4" ø
- MINIMUM PIPE SIZES FOR OVER 60 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
  - SUCTION LINE 3/4" ø
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  - PUMPED CONDENSATE 3/4" ø
- INSTALL AND INSULATE PIPING ACCORDING TO SPECIFICATIONS AND AHU MANUFACTURER RECOMMENDATIONS. VERIFY PIPE SIZING WITH AHU MANUFACTURER. PIPING MUST BE SIZED TO MEET THE ACTUAL INSTALLATION CONDITIONS. INSTALL SUCTION LINE ACCUMULATOR AND 1/8" CAPILLARY TUBING FOR PURGE CIRCUIT. SEE AHU MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- REMOVE EXISTING WALL MOUNT AIR CONDITIONER (29-AC-1) AND ASSOCIATED CONDENSING UNIT (29-ACU-1) AND TURN OVER TO VA. DEMOLISH ALL APPURTENANCES INCLUDING PIPING, WIRING HANGERS ETC. PATCH AND PAINT WALL TO MATCH EXISTING CONDITIONS.
- CONDENSING UNIT IS SUPPORTED BY DUNNAGE 3'-0" ABOVE GRADE. PROVIDE EXTERIOR PIPING STRUCTURAL COVER. REFER TO STRUCTURAL DRAWINGS FOR DUNNAGE AND PIPE COVER DETAILS.
- MAINTAIN 6'-0" MINIMUM IN ALL DIRECTIONS FROM THE BUILDING TO PROTECT AGAINST FALLING SNOW AND ICE.
- RELOCATE EXISTING THERMOSTAT FROM ROOM 7 TO ROOM CO2A. EXTEND CONTROL WIRING AS REQUIRED.
- ADJUST EXISTING SPRINKLER HEAD AND SPRINKLER PIPING TO ALLOW INSTALLATION OF NEW WORK. ADJUST TWO EXISTING 3/4" PIPES TO ALLOW INSTALLATION OF NEW WORK.
- REMOVE ABANDONED PIPES TO FACILITATE INSTALLATION OF NEW WORK.



**1 BUILDING 29 - BASEMENT-DEMOLITION PIPING PLAN**  
SCALE: 1/4" = 1'-0"



**2 BUILDING 29 - BASEMENT NEW WORK PIPING PLAN**  
SCALE: 3/32" = 1'-0"



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NO.	DESCRIPTION	DATE

**PROJECT TEAM**

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MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**

U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL PIPING PLANS BASEMENT - BUILDING 29**

Approved: Project Director

Phase  
100% CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS**

Location  
ST. CLOUD VA MEDICAL CENTER, MN

Issue Date	Checked	Drawn
2022-07-15	MR	BJS

Project Number  
**656-18-300**

Building Number  
1, 2, 3, 28, 29, 49, 50, 51, 111, 116

Drawing Number  
**29-MP101**



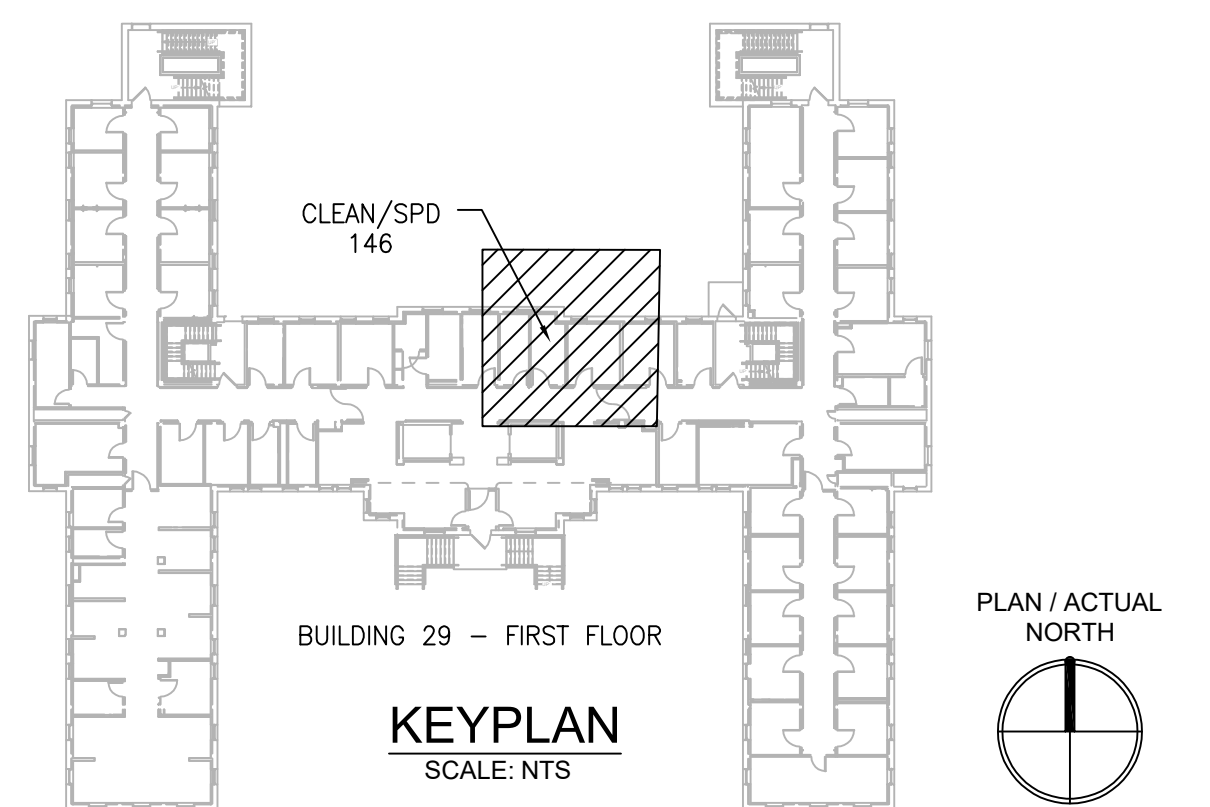
1 BUILDING 29 - FIRST FLOOR  
SCALE: 3/32" = 1'-0"

**GENERAL SHEET NOTES:**

1. REFERENCE SPECIFICATION 02-B2 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
3. ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING EQUIPMENT OR INSTALLATION OF NEW WORK.
4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
5. MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS, ETC.
10. ALL PIPING PENETRATIONS SHALL BE CORE DRILLED. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. INSTALLING CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. THE CONTRACTOR IS TO PROVIDE DETAILED PIPING LAYOUT TO THE MANUFACTURER FOR PIPE SIZING AND OTHER REQUIREMENTS. FINAL SHOP DRAWING APPROVAL IS BY THE ENGINEER. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR LEAK CHECKS, EVACUATION AND INITIAL REFRIGERATION CHARGE. THE INSTALLING CONTRACTOR SHALL PROVIDE EXTRA REFRIGERANT TO THE FACTORY START-UP TECHNICIAN FOR FINAL REFRIGERANT CHARGE. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR WIRING AND COMMUNICATIONS BETWEEN AHU'S AND CONDENSING UNITS.
12. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

1. MINIMUM PIPE SIZES FOR UP TO 50 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
  - SUCTION LINE 5/8" Ø
  - LIQUID LINE 3/8" Ø
  - HOT GAS REHEAT 3/8" Ø
  - PUMPED CONDENSATE 3/4" Ø
- MINIMUM PIPE SIZES FOR OVER 60 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
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2. REFERENCE ARCHITECTURAL DRAWINGS FOR PIPING ENCLOSURE DETAILS.
3. SUPPORT CONDENSATE PUMP FROM ABOVE ON A UNISTRUT FRAME.
4. AHU IS SUPPORTED FROM ABOVE. REFERENCE DETAILS AND STRUCTURAL DETAILS.
5. CONDENSING UNIT IS SUPPORTED BY DUNNAGE 3'-0" ABOVE GRADE. PROVIDE EXTERIOR PIPING STRUCTURAL COVER. REFER TO STRUCTURAL DRAWINGS FOR DUNNAGE AND PIPE COVER DETAILS.
6. MAINTAIN 6'-0" MINIMUM IN ALL DIRECTIONS FROM THE BUILDING TO PROTECT AGAINST FALLING SNOW AND ICE.



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NO.	DESCRIPTION	DATE

**PROJECT TEAM**

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 MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
 PROFESSIONAL ENGINEER

Office of  
 Construction  
 and Facilities  
 Management  
  
 U.S. Department  
 of Veterans Affairs

Drawing Title  
**MECHANICAL  
 PIPING PLAN  
 FIRST FLOOR - BUILDING 29**

Approved: Project Director

Phase  
 100% CONSTRUCTION  
 DOCUMENTS  
 NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC &  
 ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date	Checked	Drawn
2022-07-15	MR	BJS

Project Number  
**656-18-300**

Building Number  
 1, 2, 3, 28, 29, 49, 50, 51,  
 111, 116

Drawing Number  
**29-MP111**

SEQUENCE OF OPERATION

**GENERAL**  
 THE EXISTING HVAC SYSTEMS WILL CONTINUE TO OPERATE INDEPENDENT OF THE NEW SUPPLEMENTAL SYSTEM.

**SUPPLEMENTAL HVAC SYSTEM CONTROL**  
 THE UNIT SHALL BE PROVIDED WITH A FACTORY PREWIRED AND TESTED EXTERNAL CONTROL PANEL. THE UNIT CONTROLLER SHALL BE CAPABLE OF CONTROLLING ALL FEATURES AND OPTIONS OF THE UNIT. THE CONTROLLER SHALL BE CAPABLE OF STAND-ALONE OPERATION WITH UNIT CONFIGURATION, SETPOINT ADJUSTMENT, SENSOR STATUS VIEWING, UNIT ALARM VIEWING, AND OCCUPANCY SCHEDULING WITHOUT DEPENDENCE ON THE JOHNSON CONTROLS BUILDING MANAGEMENT SYSTEM (BMS). THE CONTROLLER SHALL COMMUNICATE AND INTEGRATE WITH THE BMS SYSTEM VIA BACNET. ALL SETPOINTS SHALL BE VISIBLE AND RESETTABLE, ALL SENSOR READINGS SHALL BE VISIBLE, OCCUPIED AND UNOCCUPIED SCHEDULING SHALL BE RESETTABLE, THROUGH THE BMS SYSTEM VIA BACNET.

**OCCUPIED/UNOCCUPIED**  
 OCCUPIED/UNOCCUPIED MODE SHALL BE BASED ON A COMMAND FROM THE BMS.

**OCCUPIED MODE**  
 IN THE OCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

**COOLING**  
 IF ROOM TEMPERATURE RISES ABOVE SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE COMPRESSOR SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

**DEHUMIDIFYING**  
 IF ROOM RELATIVE HUMIDITY RISES ABOVE SETPOINT AS SENSED BY THE WALL MOUNTED HUMIDITY SENSOR THE SYSTEM SHALL OVERRIDE THE COOLING COIL SETPOINT AND MODULATE THE HOT GAS REHEAT COIL TO MAINTAIN ROOM TEMPERATURE AND HUMIDITY SETPOINTS. DEHUMIDIFICATION SHALL BE INITIATED ANYTIME IN THE OCCUPIED, UNOCCUPIED, COOLING OR HEATING MODE.

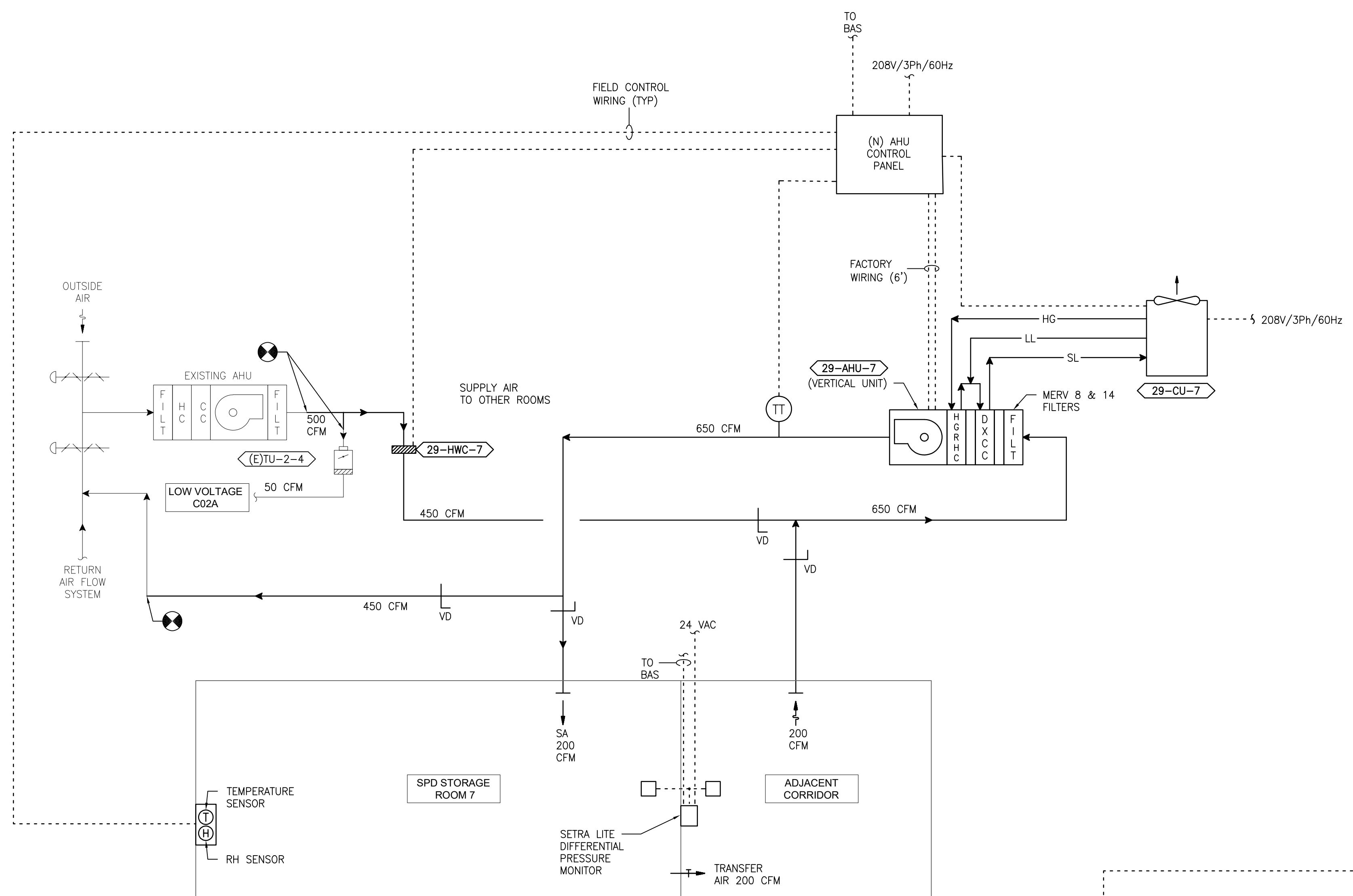
**HEATING (ONLY PROVIDED ON SOME UNITS)**  
 IF ROOM TEMPERATURE FALLS BELOW SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE HEATING COIL SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

**UNOCCUPIED MODE**  
 IN THE UNOCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

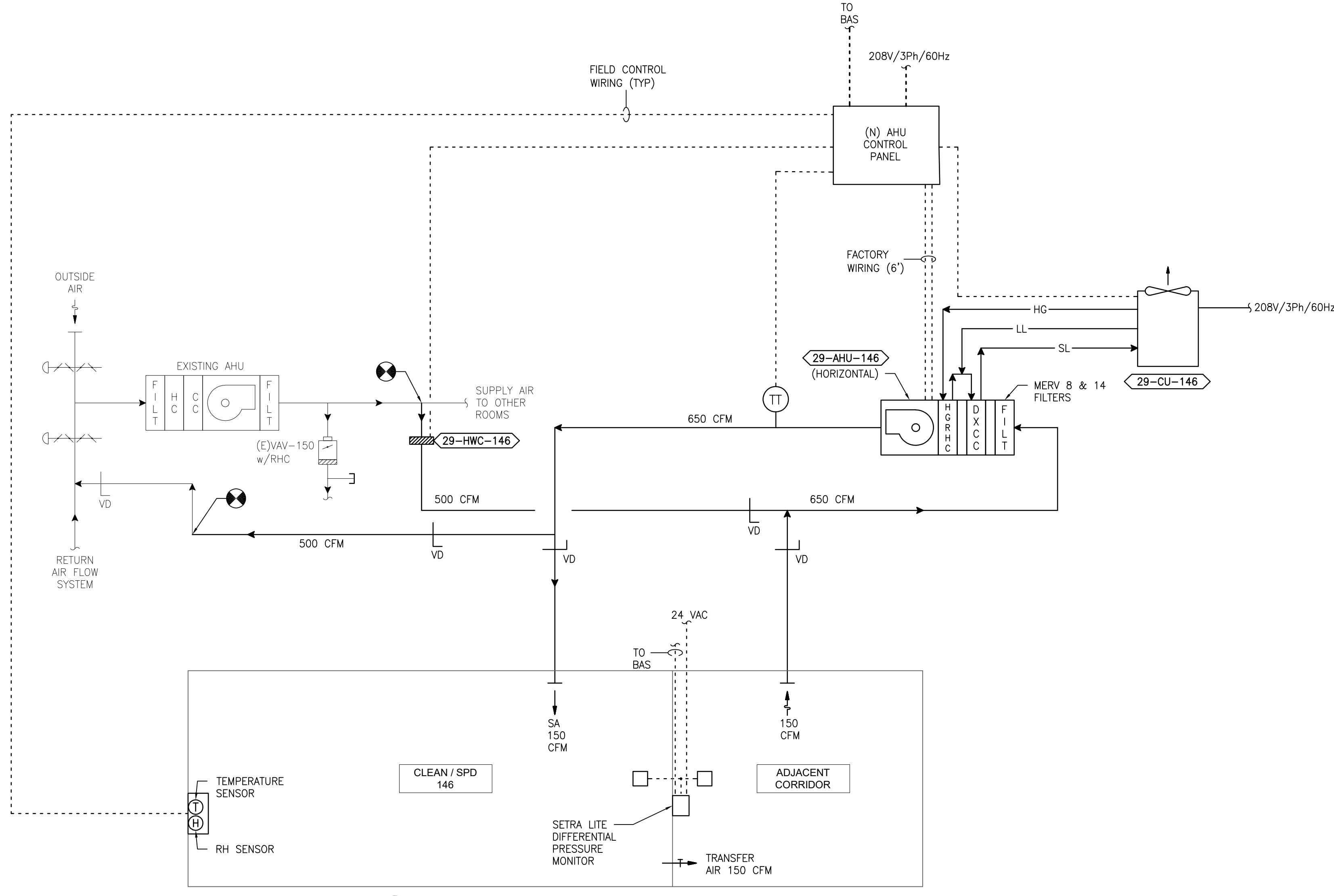
**IN THE UNOCCUPIED MODE THE UNIT SHALL OPERATE IF THE ROOM TEMPERATURE OR RELATIVE HUMIDITY LIMITS ARE REACHED.**

**ON A CALL FOR COOLING, DEHUMIDIFYING, OR HEATING THE CONTROL SHALL BE THE SAME AS IN THE OCCUPIED MODE.**

**ROOM PRESSURE MONITOR**  
 THE ROOM PRESSURE MONITOR SETRA LITE SHALL MONITOR AND ALARM THE DIFFERENTIAL PRESSURE BETWEEN THE CLEAN / STERILE SATELLITE STORAGE ROOM AND THE ADJACENT ROOM LOCALLY AND AT THE BAS.



1 DIAGRAM - 29 - 7  
 SCALE: NONE



1 DIAGRAM - 29 - 146  
 SCALE: NONE

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NO.	DESCRIPTION	DATE

**PROJECT TEAM**

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 MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
 PROFESSIONAL ENGINEER

Office of  
 Construction  
 and Facilities  
 Management

VA U.S. Department  
 of Veterans Affairs

Drawing Title  
**MECHANICAL  
 AIRFLOW CONTROL DIAGRAMS  
 BUILDING 29**

Approved: Project Director

Phase  
 100% CONSTRUCTION  
 DOCUMENTS  
 NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC &  
 ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date  
 2022-07-15

Checked  
 MR

Drawn  
 PNL

Project Number  
 656-18-300

Building Number  
 1, 2, 3, 28, 29, 49, 50, 51,  
 111, 116

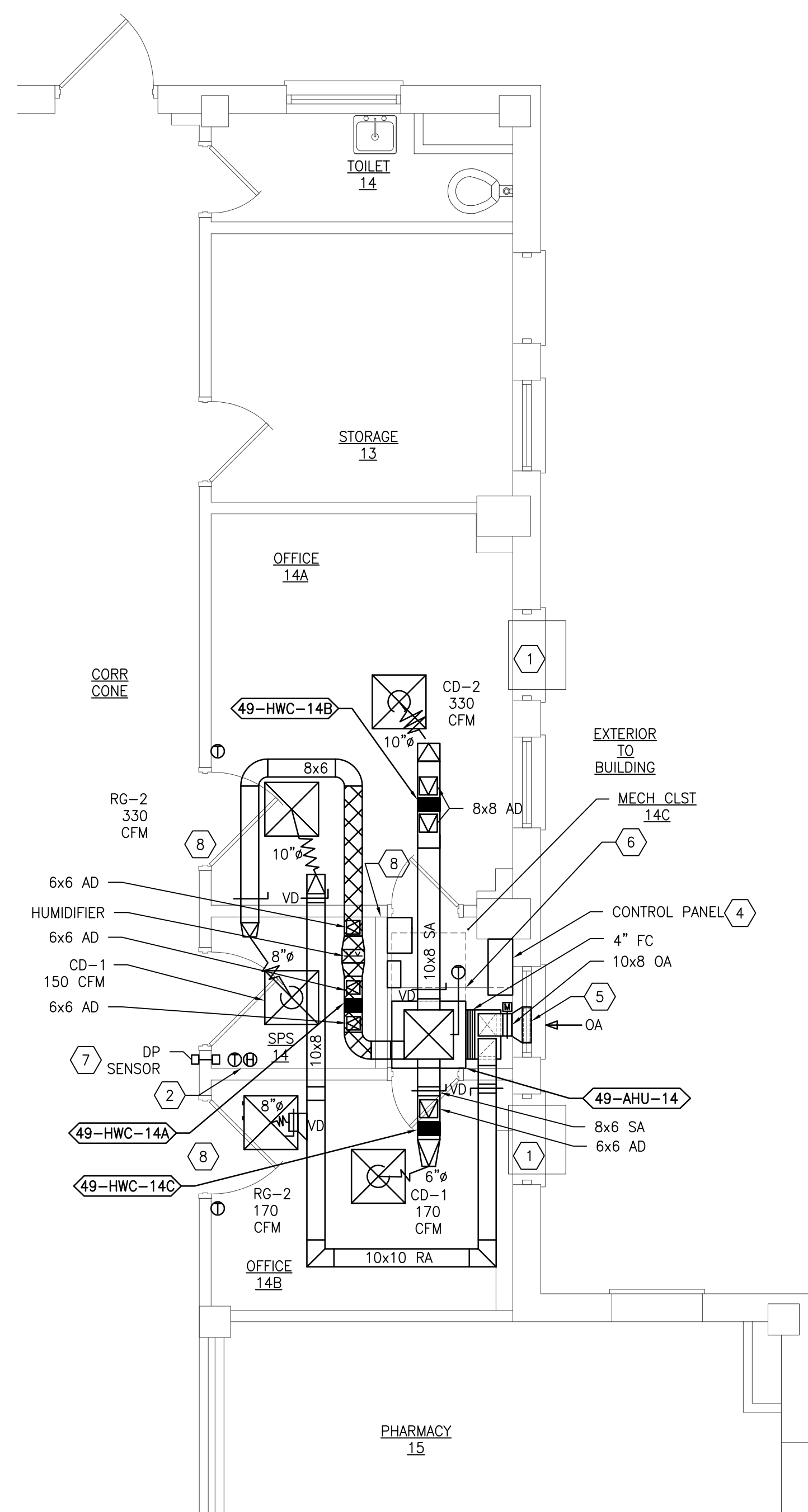
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**29-M-801**

**GENERAL SHEET NOTES:**

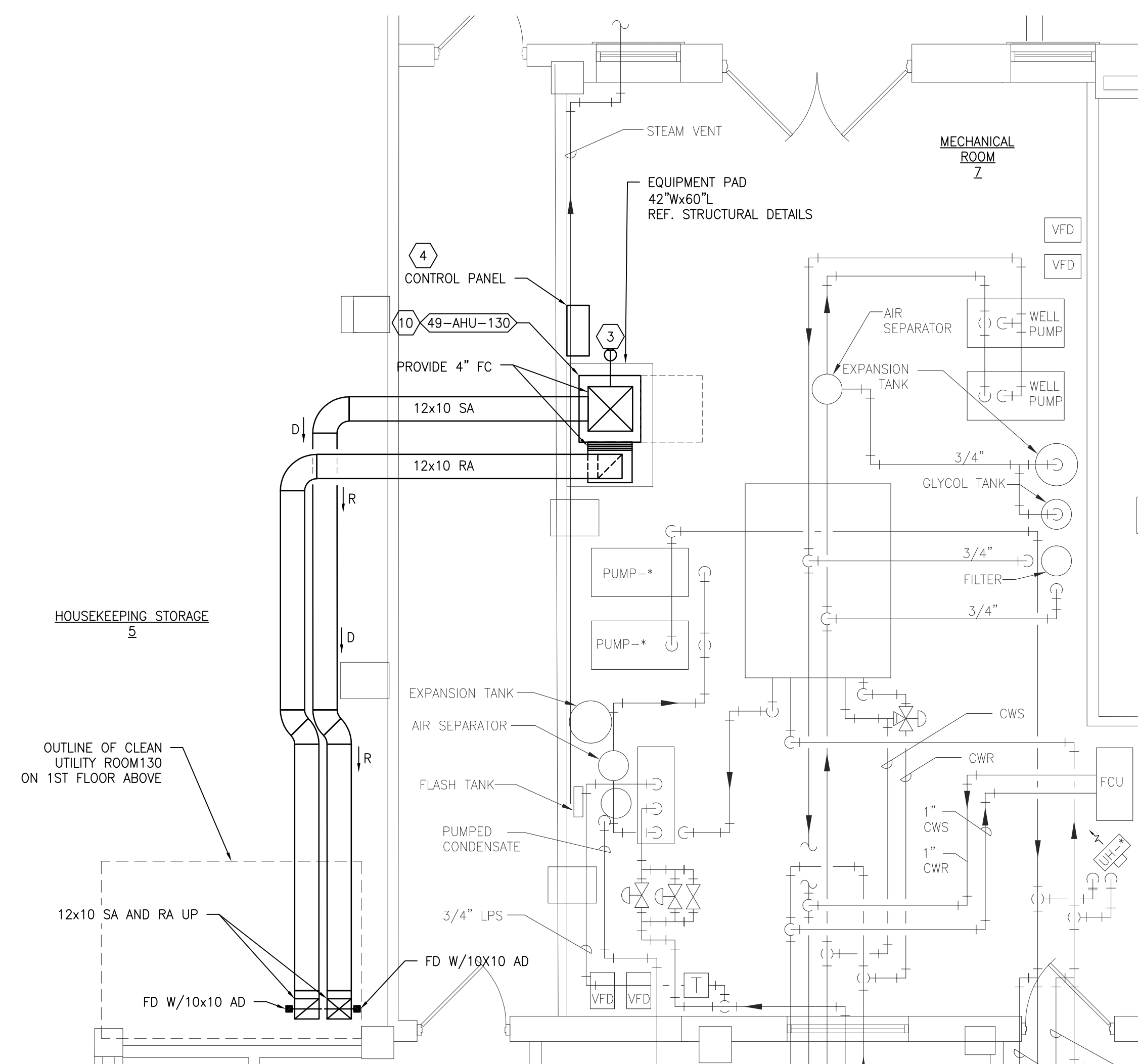
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9. TAKE PREDEMOLITION READINGS OF ALL ROOM AIR INLETS AND OUTLETS OF ANY SYSTEM THE WILL BE MODIFIED AND SUBMIT TO THE VA AND ENGINEER FOR RECORD PRIOR TO STARTING ANY NEW WORK. BALANCE THE NEW SYSTEMS AND REBALANCE THE EXISTING ASSOCIATED AHU SYSTEM TO THE NEW AIR QUANTITIES. AFTER THE NEW WORK IS COMPLETE REBALANCE THE EXISTING SYSTEM, AS REQUIRED, AND MEASURE ALL ROOM AIR INLETS AND OUTLETS TO VERIFY THAT THE PREDEMOLITION AIRFLOWS HAVE BEEN MAINTAINED. SUBMIT FOR APPROVAL. REFERENCE SPECIFICATIONS FOR TESTING AND BALANCING REQUIREMENTS.
10. ALL DUCTWORK PENETRATIONS SHALL BE SAW CUT. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

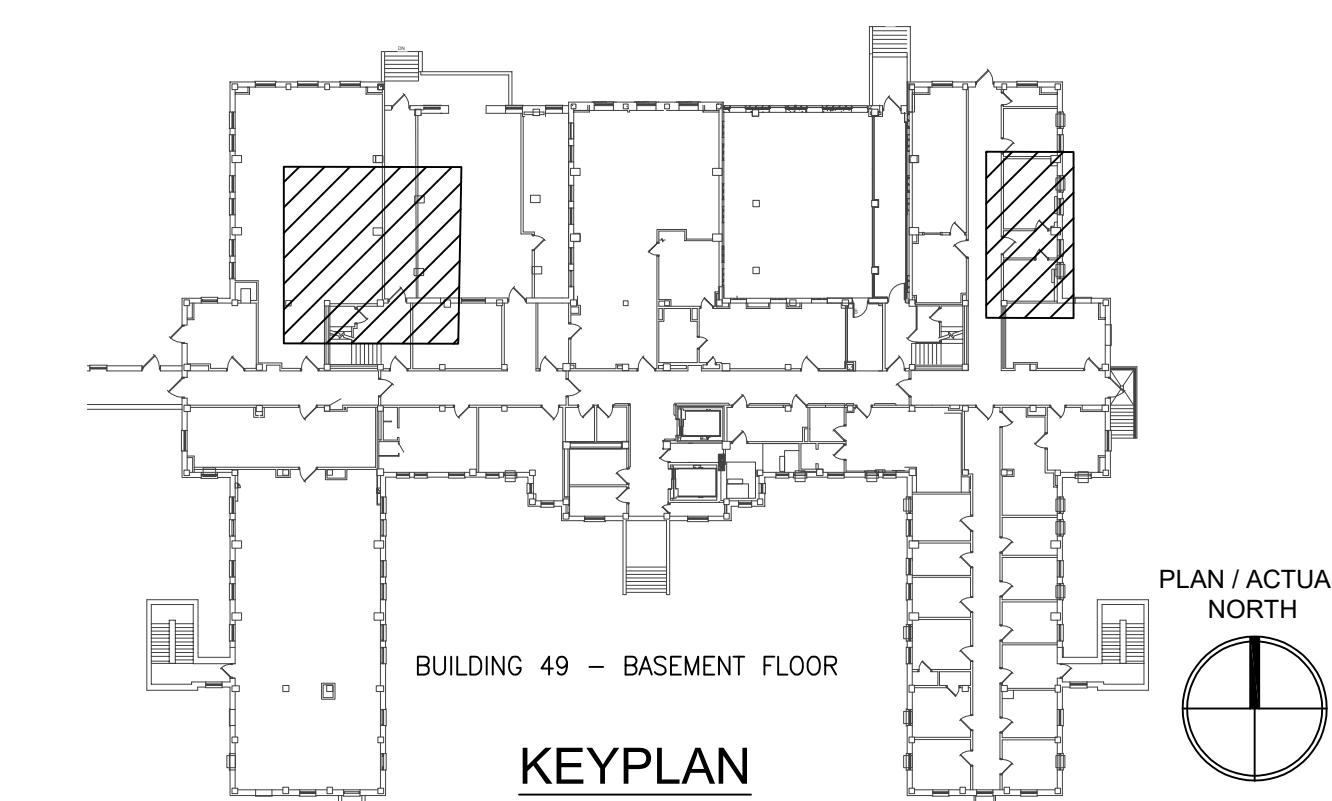
1. EXISTING WINDOW AC UNIT TO REMAIN.
2. THERMOSTAT AND HUMIDISTAT TO CONTROL NEW SPS CLOSET AHU.
3. DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY AHU MANUFACTURER.
4. MOUNT A/C CONTROL PANEL ON THE WALL. COORDINATE WITH THE COR AND THE EXISTING ROOM CONDITIONS FOR FINAL LOCATION. EXTEND AND INTEGRATE INTO BAS LOCAL CONTROLLER LABEL **NAE-49**.
5. PROVIDE NEW 16x12 OUTDOOR AIR INTAKE LOUVER BOD: GREENECK ESD-635 IN UPPER WINDOW SASH. PROVIDE INSULATED METAL PANEL FOR UNUSED WINDOW PORTION. 24V MOTORIZED DAMPER ACTUATOR AND BIRDSCREEN.
6. EQUIPMENT PAD 36"Wx54"L. REFERENCE STRUCTURAL DETAILS FOR ADDITIONAL INFORMATION.
7. INSTALL DIFFERENTIAL PRESSURE SENSOR THROUGH WALL CENTERED ABOVE DOOR. INSTALL ROOM PRESSURE MONITOR OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.
8. REFERENCE ARCHITECTURAL DRAWINGS FOR NEW WALLS AND DOORS AND INFILL.



**1 BUILDING 49 BASEMENT FLOOR ROOM 14 - NEW WORK**  
SCALE: 1/4" = 1'-0"



**2 BUILDING 49 BASEMENT ROOM 7 - NEW WORK**  
SCALE: 1/4" = 1'-0"



**KEYPLAN**  
SCALE: NTS

PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER.

NO.	DESCRIPTION	DATE

**PROJECT TEAM**

**MEP Engineers + Architects**  
1173 Research Way  
Forest, VA 24551  
1-866-267-6839



701 Forest Ave  
Portland, ME 04103  
(207) 828-4511  
wbrcinc.com

**ENGINEER OF RECORD**

**Miller-Remick LLC**  
M.E.P. & Structural Engineering  
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PHONE: (856)429-4000  
FAX: (856)429-9002  
MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL NEW WORK PLANS BASEMENT - BUILDING 49**

Approved: Project Director

Phase  
100% CONSTRUCTION DOCUMENTS  
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date  
2022-07-15

Checked  
MR

Drawn  
PNL

Project Number  
**656-18-300**

Building Number  
1, 2, 3, 28, 29, 49, 50, 51, 111, 116

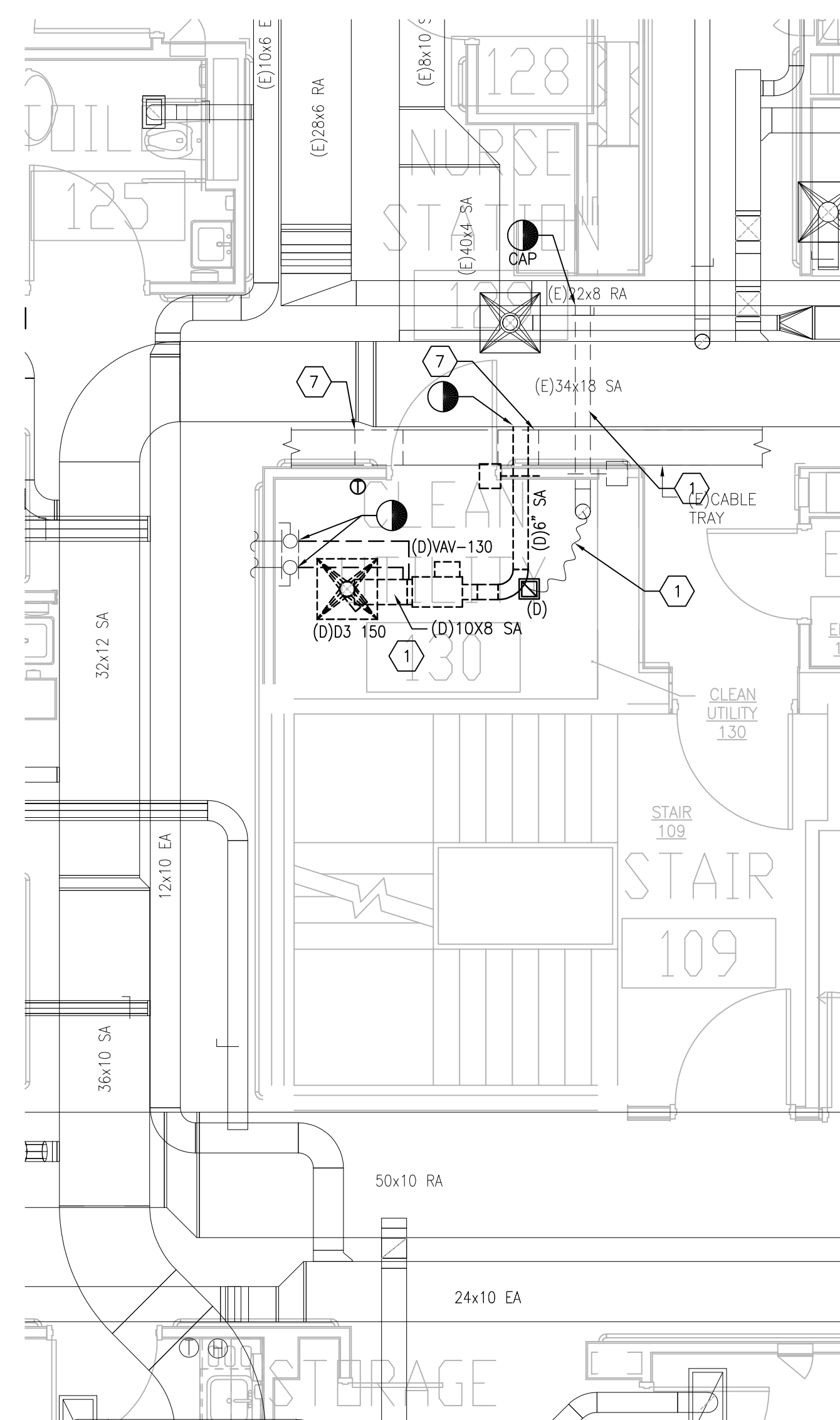
Drawing Number  
**49-MH101**

**GENERAL SHEET NOTES:**

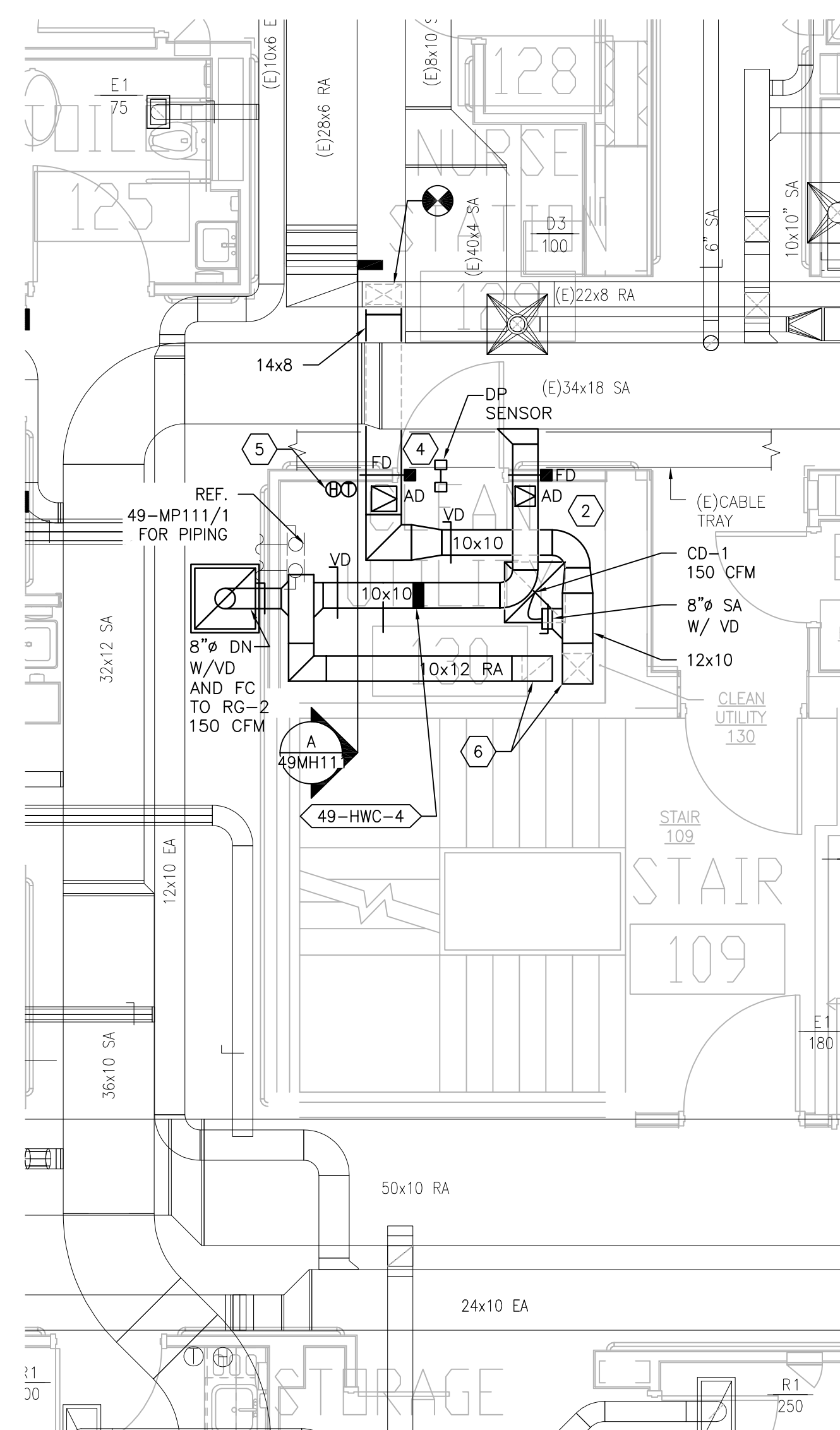
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
3. ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING EQUIPMENT OR INSTALLATION OF NEW WORK.
4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
5. MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. TAKE PREDEMOLITION READINGS OF ALL ROOM AIR INLETS AND OUTLETS OF ANY SYSTEM THE WILL BE MODIFIED AND SUBMIT TO THE VA AND ENGINEER FOR RECORD PRIOR TO STARTING ANY NEW WORK. BALANCE THE NEW SYSTEMS AND REBALANCE THE EXISTING ASSOCIATED AHU SYSTEM TO THE NEW AIR QUANTITIES. AFTER THE NEW WORK IS COMPLETE REBALANCE THE EXISTING SYSTEM, AS REQUIRED, AND MEASURE ALL ROOM AIR INLETS AND OUTLETS TO VERIFY THAT THE PREDEMOLITION AIRFLOWS HAVE BEEN MAINTAINED. SUBMIT FOR APPROVAL. REFERENCE SPECIFICATIONS FOR TESTING AND BALANCING REQUIREMENTS.
10. ALL DUCTWORK PENETRATIONS SHALL BE SAW CUT. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
13. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

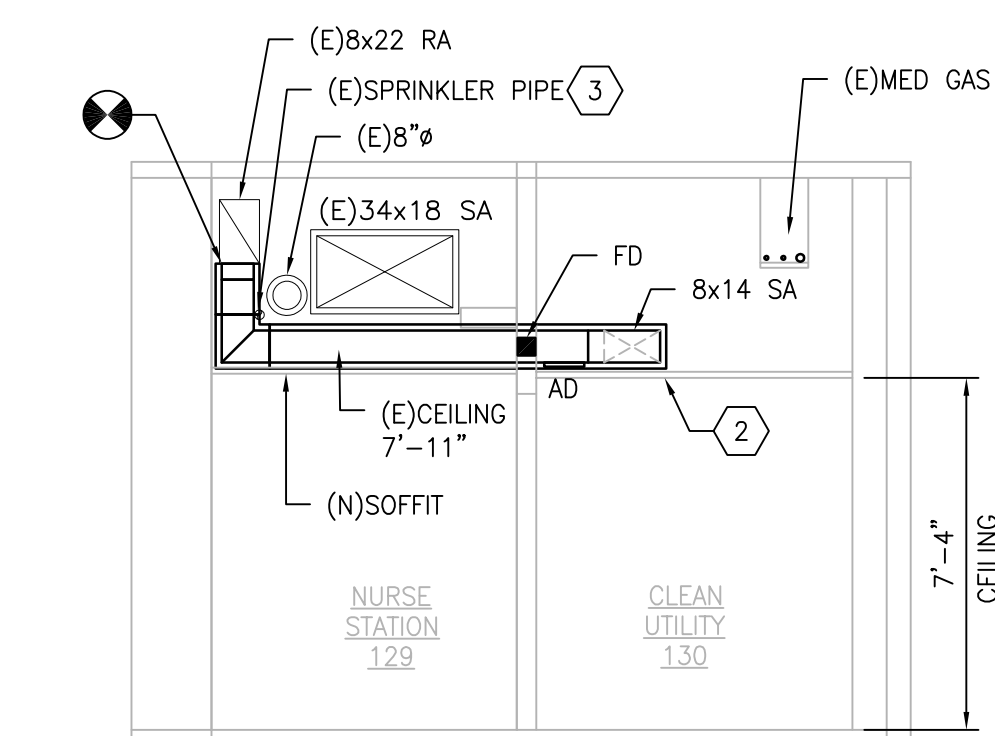
1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL. PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
2. LOWER CEILING TO 7'-4" AFF IF REQUIRED FOR INSTALLATION OF NEW WORK. IF LOWER CEILING IS REQUIRED THAN LOWER SPRINKLER HEADS AND EXTEND WIRING TO EXISTING DEVICES.
3. RELOCATE EXISTING SPRINKLER PIPE AS REQUIRED TO CLEAR SPACE FOR NEW RETURN DUCTWORK.
4. INSTALL DIFFERENTIAL PRESSURE SENSOR THROUGH WALL CENTERED ABOVE DOOR. INSTALL ROOM PRESSURE MONITOR OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.
5. TEMPERATURE AND HUMIDITY SENSOR FURNISHED BY AHU MANUFACTURER.
6. NEW 12x10 SUPPLY AND RETURN DUCT FROM BELOW. REFERENCE DRAWING 29-MH111 FOR ADDITIONAL INFORMATION.
7. CABLE TRAY TO BE DEMOLISHED AT THIS LOCATION. REFERENCE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.



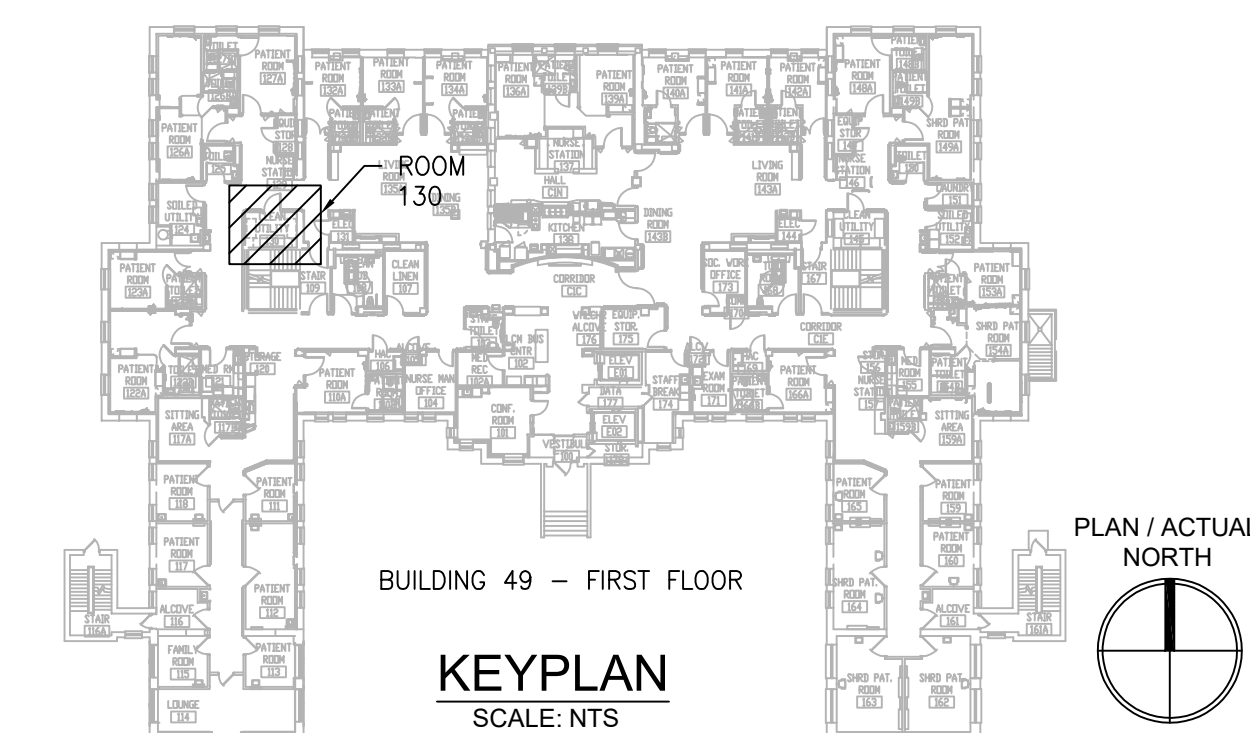
**1 BUILDING 49 FIRST FLOOR ROOM 130 -- DEMOLITION**  
SCALE: 1/4" = 1'-0"



**2 BUILDING 49 FIRST FLOOR ROOM 130 -- NEW WORK**  
SCALE: 1/4" = 1'-0"



**A SECTION A**  
SCALE: 1/4" = 1'-0"



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NO.	DESCRIPTION	DATE

**PROJECT TEAM**



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**ENGINEER OF RECORD**

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MR PROJECT NO: 0376-0011

**MILLER-REMICK LLC**  
PROFESSIONAL ENGINEER

Office of  
Construction  
and Facilities  
Management



Drawing Title  
**MECHANICAL  
DEMOLITION / NEW WORK PLANS  
FIRST FLOOR - BUILDING 49**

Approved: Project Director

Phase  
100% CONSTRUCTION  
DOCUMENTS  
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC &  
ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date	Checked	Drawn
2022-07-15	MR	PNL

Project Number  
**656-18-300**

Building Number  
1, 2, 3, 28, 29, 49, 50, 51,  
111, 116

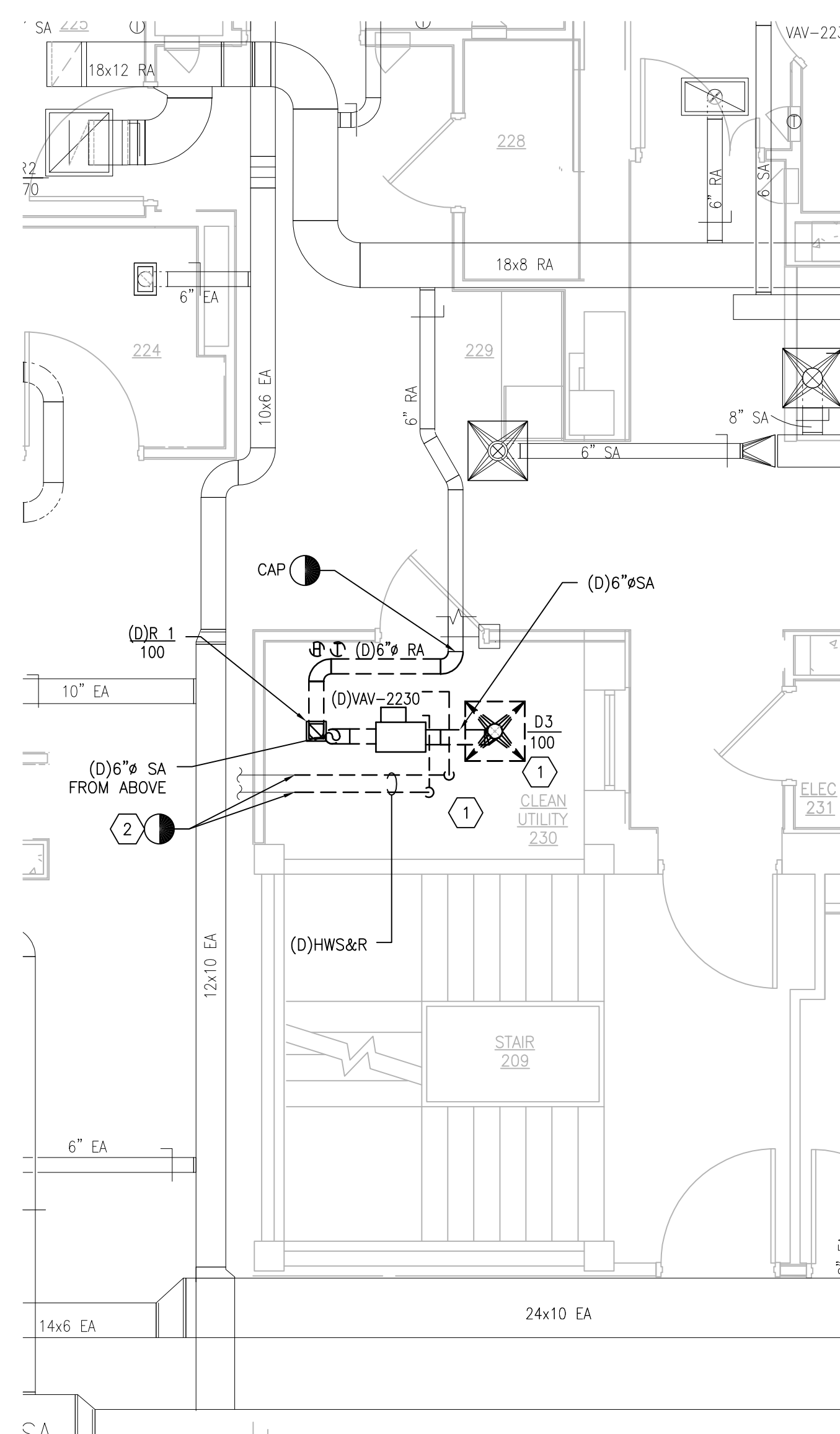
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**49-MH111**

**GENERAL SHEET NOTES:**

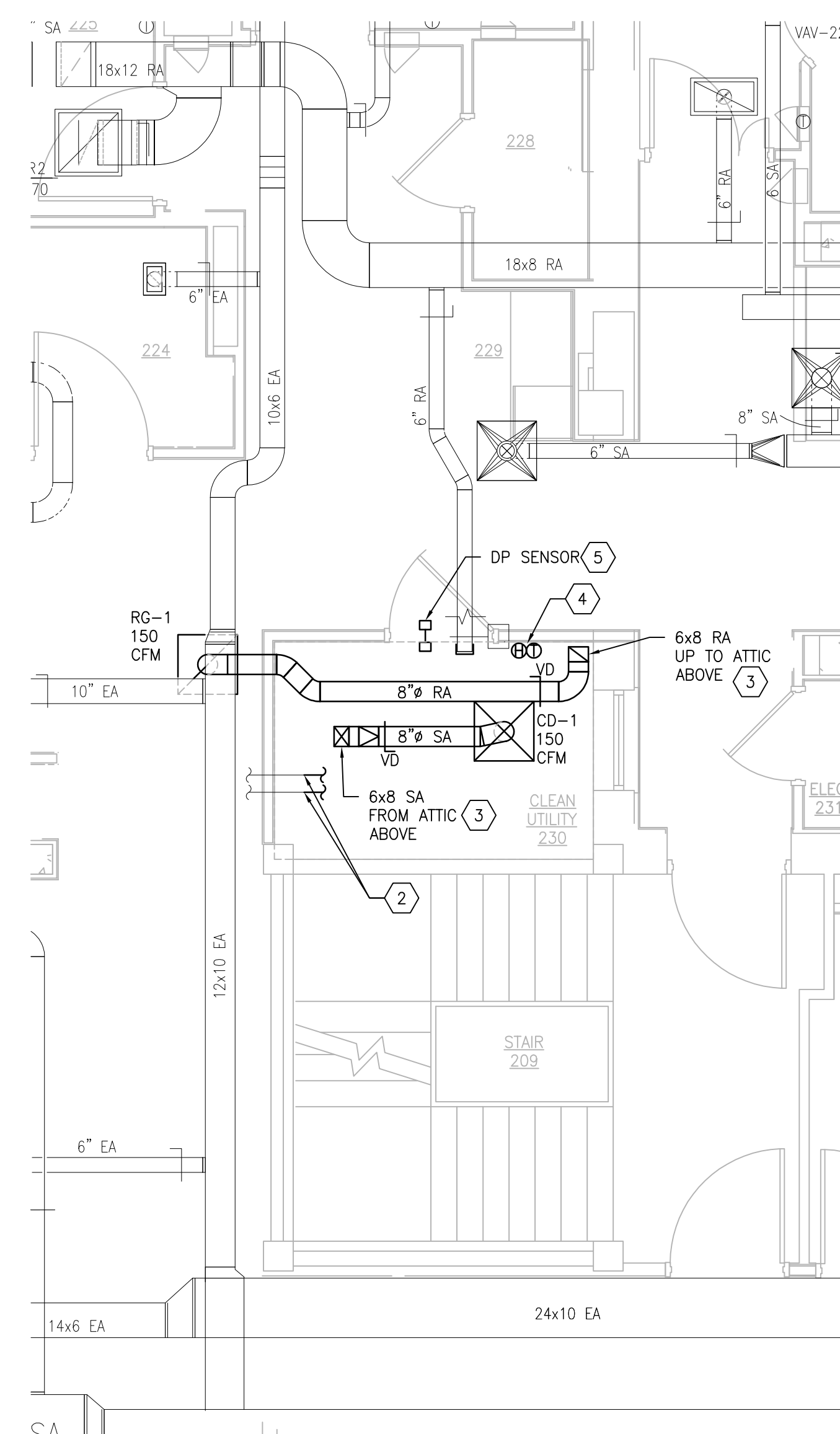
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
3. ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING EQUIPMENT OR INSTALLATION OF NEW WORK.
4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
5. MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILINGS REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. TAKE PREDEMOLITION READINGS OF ALL ROOM AIR INLETS AND OUTLETS OF ANY SYSTEM THE WILL BE MODIFIED AND SUBMIT TO THE VA AND ENGINEER FOR RECORD PRIOR TO STARTING ANY NEW WORK. BALANCE THE NEW SYSTEMS AND REBALANCE THE EXISTING ASSOCIATED AHU SYSTEM TO THE NEW AIR QUANTITIES. AFTER THE NEW WORK IS COMPLETE REBALANCE THE EXISTING SYSTEM, AS REQUIRED, AND MEASURE ALL ROOM AIR INLETS AND OUTLETS TO VERIFY THAT THE PREDEMOLITION AIRFLOWS HAVE BEEN MAINTAINED. SUBMIT FOR APPROVAL. REFERENCE SPECIFICATIONS FOR TESTING AND BALANCING REQUIREMENTS.
10. ALL DUCTWORK PENETRATIONS SHALL BE SAW CUT. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

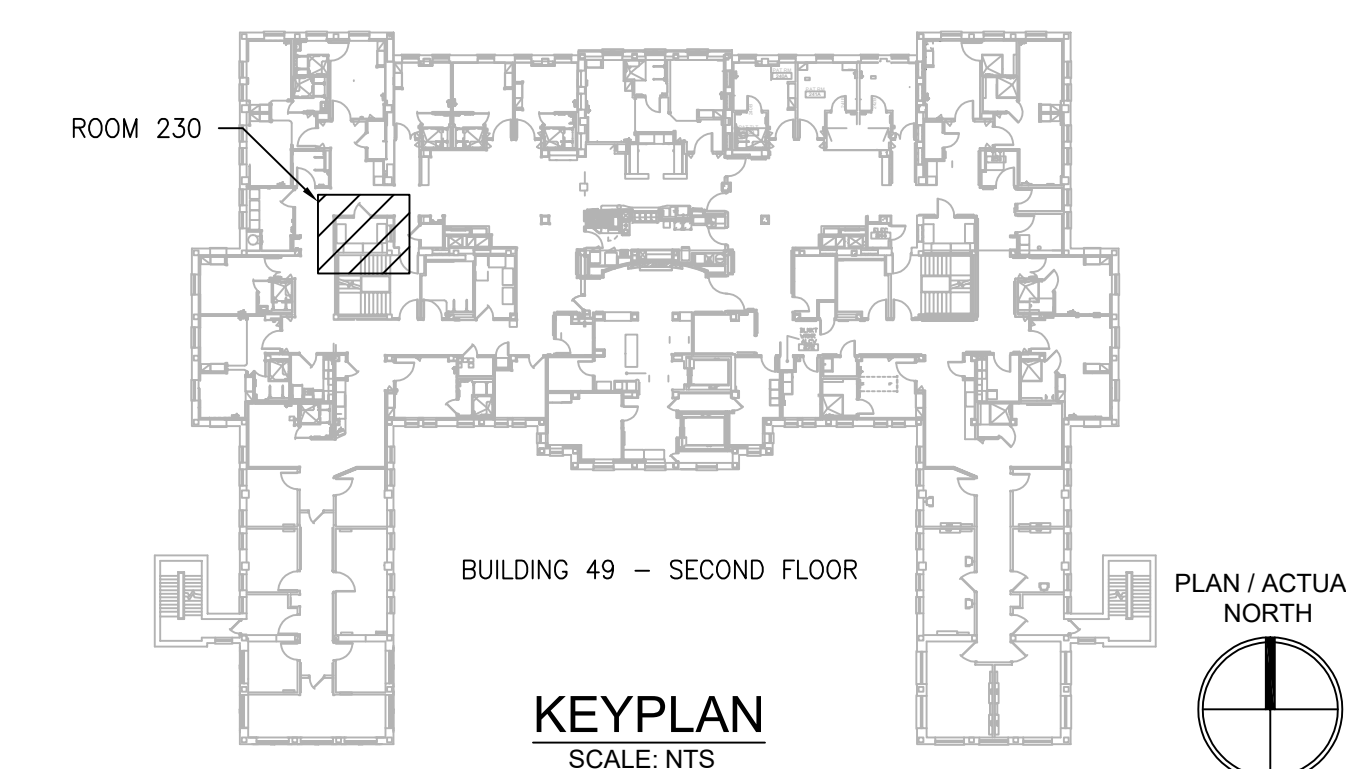
1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL. PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
2. DISCONNECT (E)HOT WATER SUPPLY AND RETURN PIPING FROM TERMINAL UNIT. PREPARE (C)PIPING TO BE CONNECTED TO (N)PIPING. REFERENCE DRAWING 49-MP121 & 49-MP131 FOR (N)PIPING.
3. FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH NEW WORK PARTICULARLY THE NEW DECK PENETRATION ABOVE.
4. THERMOSTAT AND HUMIDISTAT TO CONTROL NEW AHU.
5. INSTALL DIFFERENTIAL PRESSURE SENSOR THROUGH WALL CENTERED ABOVE DOOR. INSTALL ROOM PRESSURE MONITOR OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.



**1 BUILDING 49 SECOND FLOOR ROOM 230 - DEMOLITION**  
SCALE: 1/4" = 1'-0"



**2 BUILDING 49 SECOND FLOOR ROOM 230 - NEW WORK**  
SCALE: 1/4" = 1'-0"



PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER.

NO.	DESCRIPTION	DATE

**PROJECT TEAM**



MEP Engineers + Architects  
1173 Research Way  
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701 Forest Ave  
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**ENGINEER OF RECORD**

**Miller-Remick LLC**  
M.E.P. & Structural Engineering  
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CHERRY HILL, NEW JERSEY 08034  
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FAX: (856)439-9002  
MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

Office of  
Construction  
and Facilities  
Management



Drawing Title  
**MECHANICAL  
DEMOLITION / NEW WORK PLANS  
SECOND FLOOR - BUILDING 49**

Approved: Project Director

Phase  
100% CONSTRUCTION  
DOCUMENTS  
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC &  
ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date	Checked	Drawn
2022-07-15	MR	PNL

Project Number  
**656-18-300**

Building Number  
1, 2, 3, 28, 29, 49, 50, 51,  
111, 116

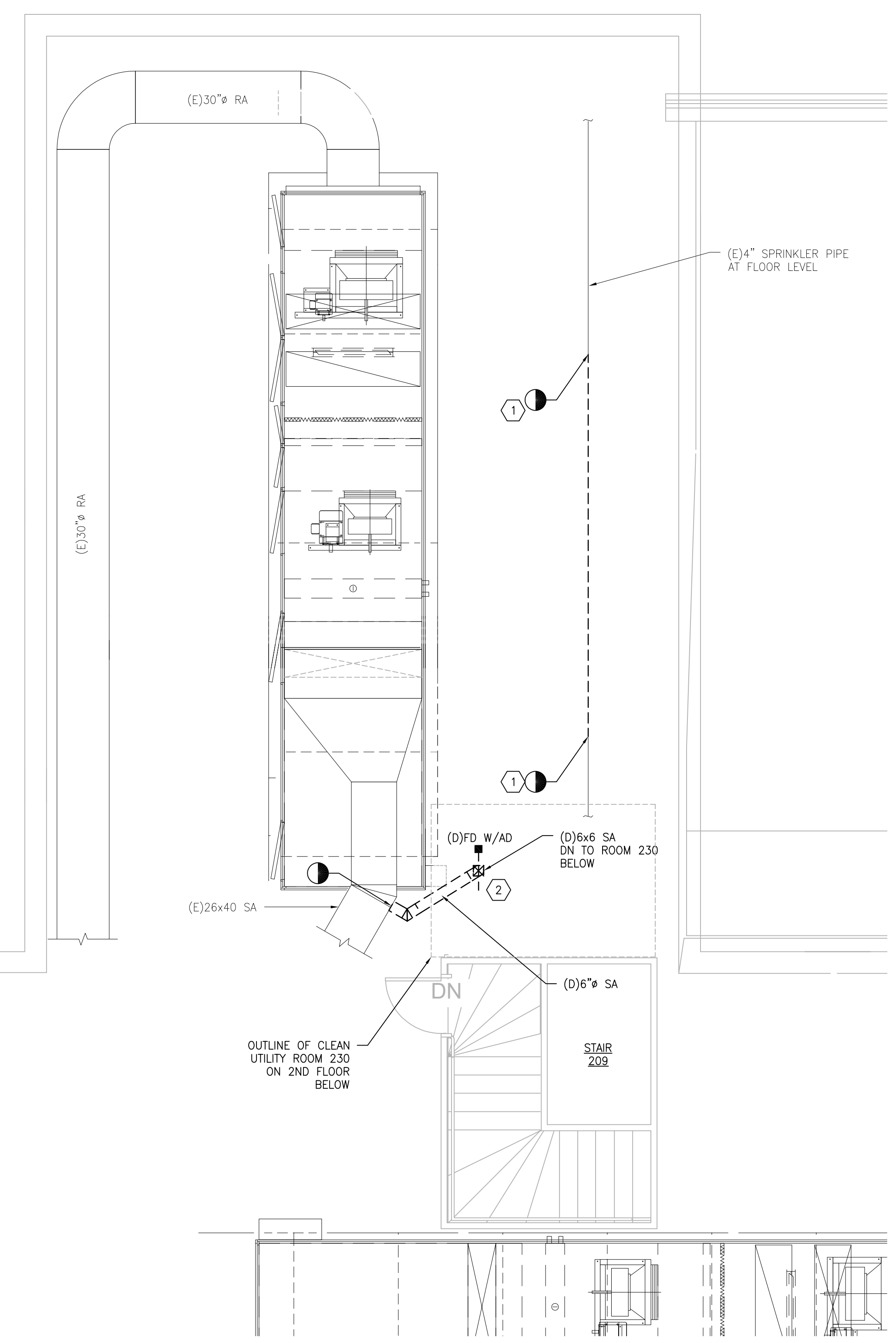
Drawing Number  
**49-MH121**

**GENERAL SHEET NOTES:**

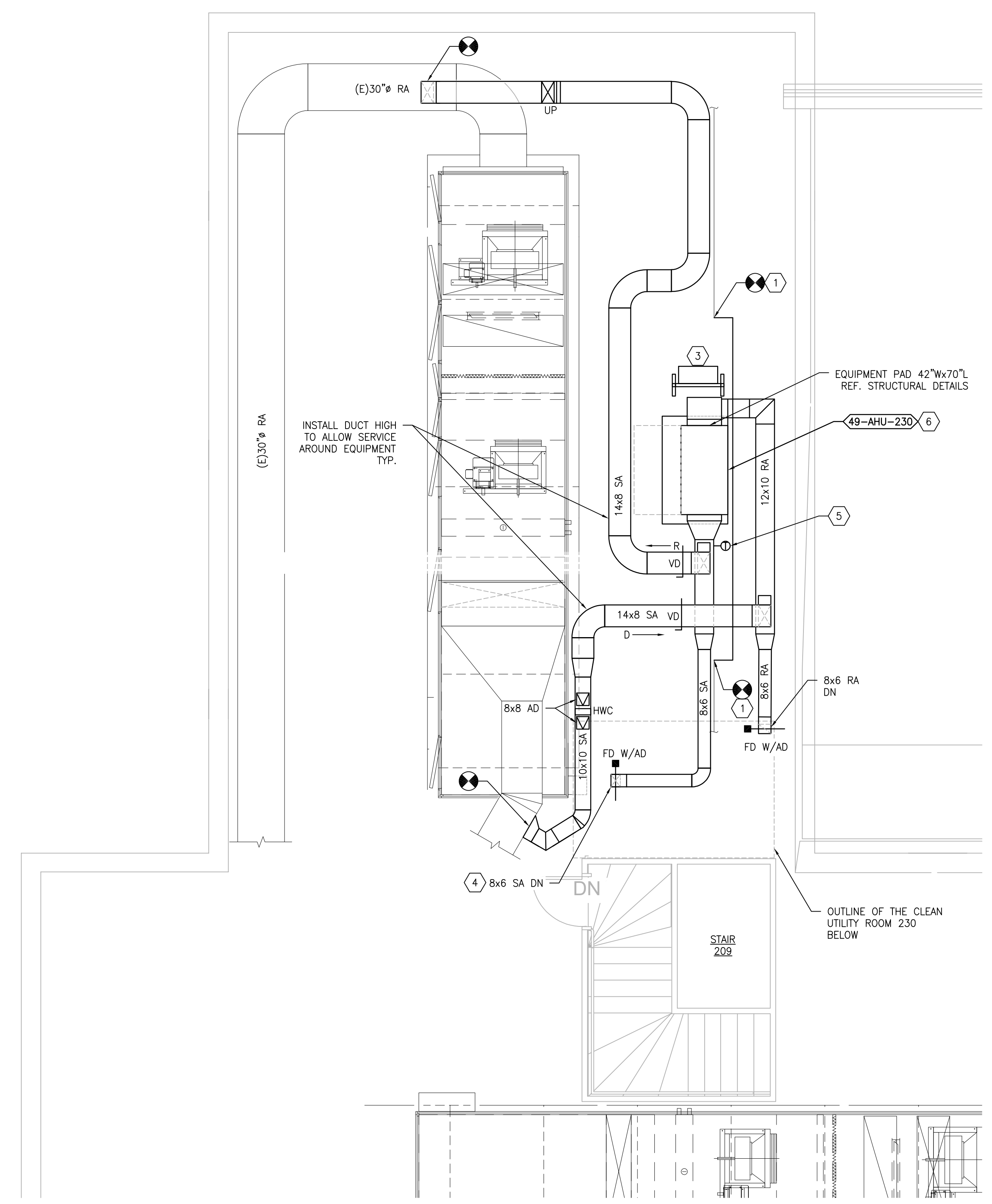
- REFERENCE SPECIFICATION 02 82 11 APPENDIX A1 FOR ABATEMENT REPORT. CONTRACTOR TO ADHERE TO AND FOLLOW REPORT FOR ALL KNOWN ABATEMENT LOCATIONS.
- COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK.
- ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
- ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING EQUIPMENT OR INSTALLATION OF NEW WORK.
- MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
- MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
- ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
- AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
- REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
- TAKE PREDEMOLITION READINGS OF ALL ROOM AIR INLETS AND OUTLETS OF ANY SYSTEM THE WILL BE MODIFIED AND SUBMIT TO THE VA AND ENGINEER FOR RECORD PRIOR TO STARTING ANY NEW WORK. BALANCE THE NEW SYSTEMS AND REBALANCE THE EXISTING ASSOCIATED AHU SYSTEM TO THE NEW AIR QUANTITIES. AFTER THE NEW WORK IS COMPLETE REBALANCE THE EXISTING SYSTEM, AS REQUIRED, AND MEASURE ALL ROOM AIR INLETS AND OUTLETS TO VERIFY THAT THE PREDEMOLITION AIRFLOWS HAVE BEEN MAINTAINED. SUBMIT FOR APPROVAL. REFERENCE SPECIFICATIONS FOR TESTING AND BALANCING REQUIREMENTS.
- ALL DUCTWORK PENETRATIONS SHALL BE SAW CUT. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
- CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

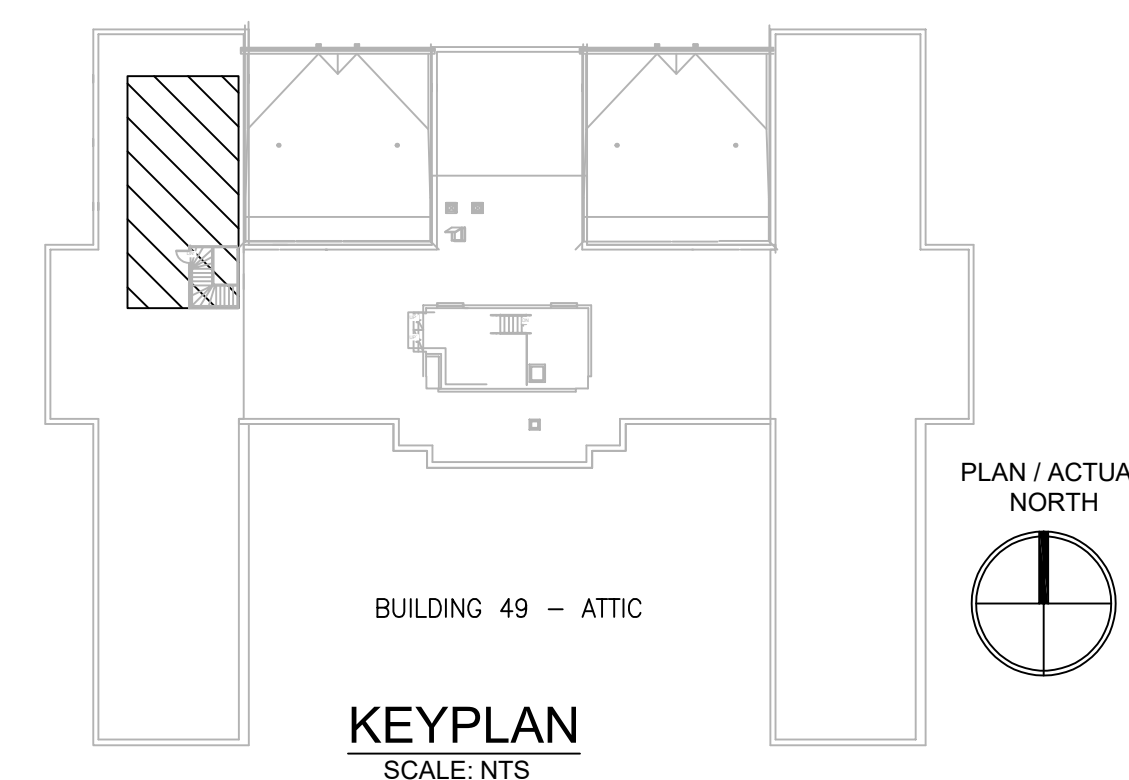
- DEMOLISH SPRINKLER PIPE AND REROUTE TO ALLOW INSTALLATION OF (N)AHU's, PIPING, DUCTWORK AND CONTROL PANELS. REFERENCE DRAWING 49-MP131 FOR ADDITIONAL INFORMATION AND COORDINATION.
- DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL. PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
- MOUNT CONTROL PANEL ON UNISTRUT FRAME. COORDINATE WITH (E)ROOM CONDITIONS FOR FINAL LOCATION.
- ENLARGE THE EXISTING OPENING TO ALLOW INSTALLATION OF NEW SUPPLY DUCT AND FIRE DAMPER. COORDINATE WITH CLEAN UTILITY ROOM 230 BELOW.
- DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY AHU MANUFACTURER.
- REFERENCE 2/M-504 FOR ADDITIONAL AHU INFORMATION. 8" SUPPLEMENTAL STEEL NOT REQUIRED FOR THIS INSTALLATION.



**1 BUILDING 49 ATTIC - DEMOLITION**  
SCALE: 1/4" = 1'-0"



**2 BUILDING 49 ATTIC - NEW WORK**  
SCALE: 1/4" = 1'-0"



PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER.

NO.	DESCRIPTION	DATE

**PROJECT TEAM**


**MEP Engineers + Architects**  
 1173 Research Way  
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 1-866-267-6839


**wbrc**  
 701 Forest Ave  
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 wbrcinc.com

**ENGINEER OF RECORD**


**Miller-Remick LLC**  
 M.E.P. & Structural Engineering  
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 CHERRY HILL, NEW JERSEY 08034  
 PHONE: (856)429-4000  
 FAX: (856)429-9002  
 MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
 PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**  
 U.S. Department of Veterans Affairs

**Drawing Title**  
 MECHANICAL DEMOLITION / NEW WORK PLAN  
 ATTIC - BUILDING 49  
**Approved:** Project Director

**Phase**  
 100% CONSTRUCTION DOCUMENTS  
 NOT FOR CONSTRUCTION  
  
**FULLY SPRINKLERED**

**Project Title**  
 UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS  
  
**Location**  
 ST. CLOUD VA MEDICAL CENTER, MN  
**Issue Date** 2022-07-15  
**Checked** MR  
**Drawn** PNL

**Project Number** 656-18-300  
**Building Number** 1, 2, 3, 28, 29, 49, 50, 51, 111, 116  
**Drawing Number** 49-MH131



**GENERAL SHEET NOTES:**

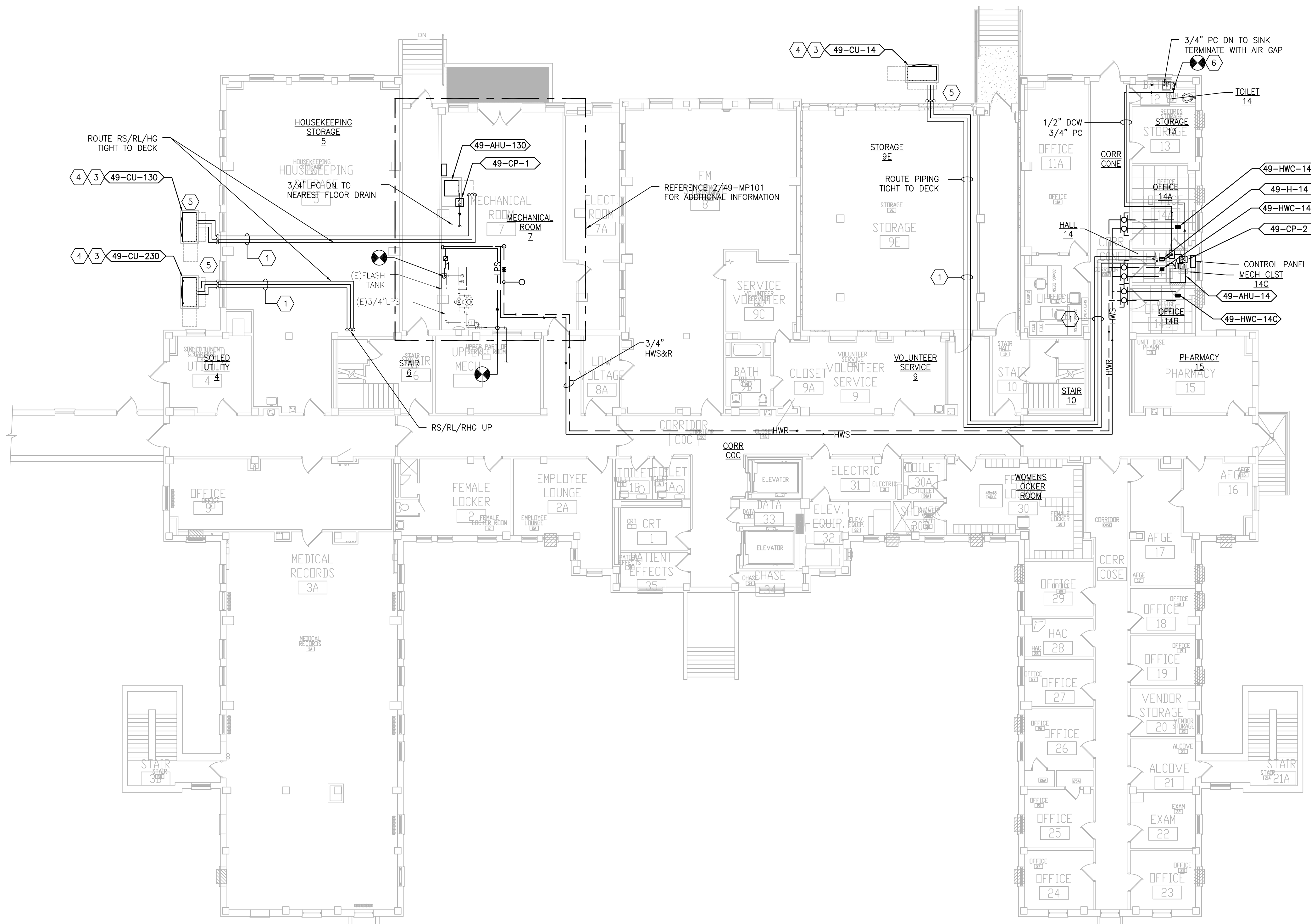
1. REFERENCE SPECIFICATION 02-82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
3. ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING EQUIPMENT OR INSTALLATION OF NEW WORK.
4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
5. MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS, ETC.
10. ALL PIPING PENETRATIONS SHALL BE CORE DRILLED. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. INSTALLING CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. THE CONTRACTOR IS TO PROVIDE DETAILED LAYOUT TO THE MANUFACTURER FOR PIPE SIZING AND OTHER REQUIREMENTS. FINAL SHOP DRAWING APPROVAL IS BY THE ENGINEER. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR LEAK CHECKS, EVACUATION AND INITIAL REFRIGERATION CHARGE. THE INSTALLING CONTRACTOR SHALL PROVIDE EXTRA REFRIGERANT TO THE FACTORY START-UP TECHNICIAN FOR FINAL REFRIGERANT CHARGE. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR WIRING AND COMMUNICATIONS BETWEEN AHU'S AND CONDENSING UNITS.
12. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

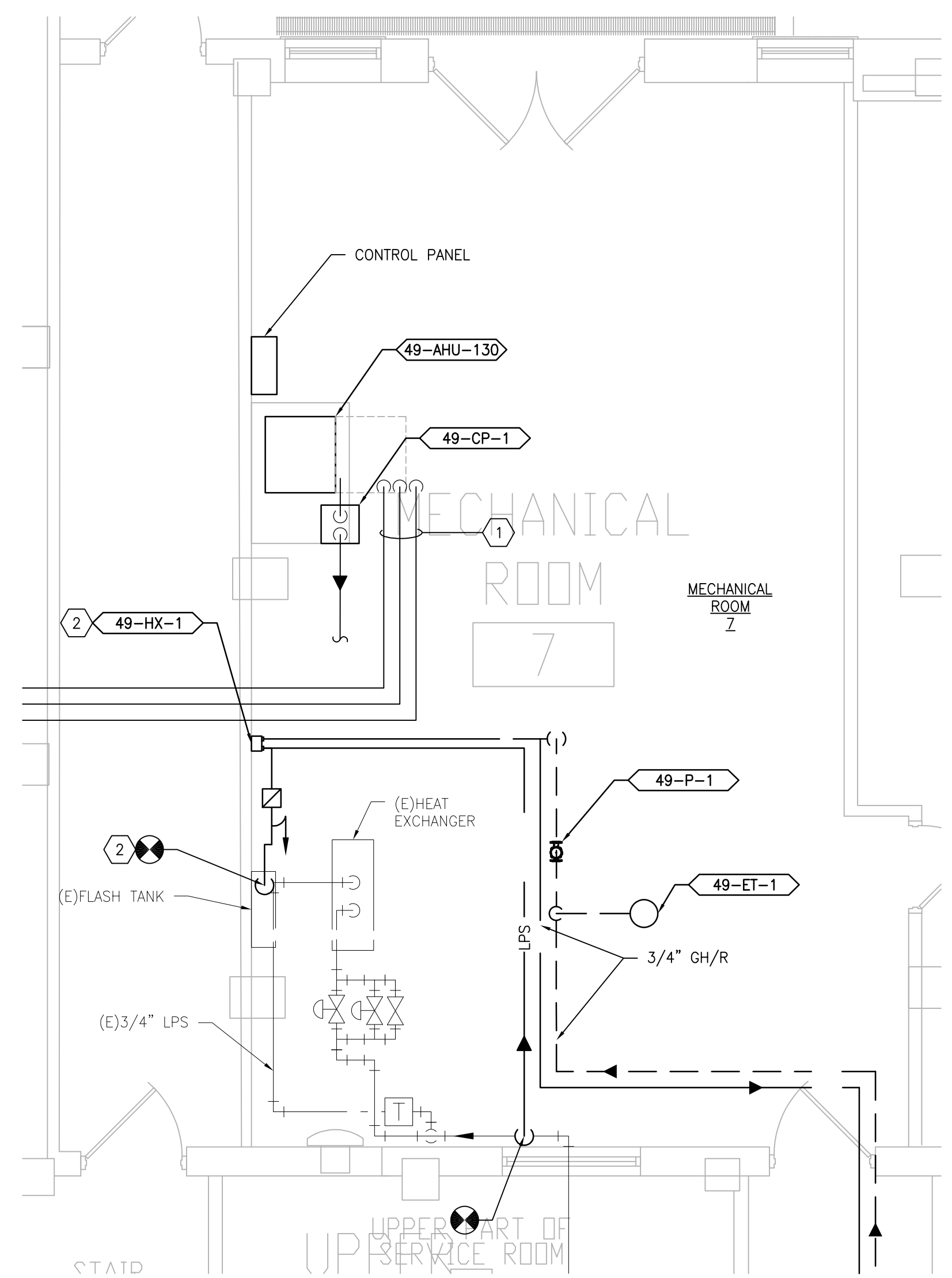
1. MINIMUM PIPE SIZES FOR UP TO 50 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
  - SUCTION LINE 5/8"  $\phi$
  - LIQUID LINE 3/8"  $\phi$
  - HOT GAS REHEAT 3/8"  $\phi$
  - PUMPED CONDENSATE 3/4"  $\phi$
2. MINIMUM PIPE SIZES FOR OVER 60 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
  - SUCTION LINE 3/4"  $\phi$
  - LIQUID LINE 1/2"  $\phi$
  - HOT GAS REHEAT 1/2"  $\phi$
  - PUMPED CONDENSATE 3/4"  $\phi$

INSTALL AND INSULATE PIPING ACCORDING TO SPECIFICATIONS AND AHU MANUFACTURER RECOMMENDATIONS. VERIFY PIPE SIZING WITH AHU MANUFACTURER. PIPING MUST BE SIZED TO MEET THE ACTUAL INSTALLATION CONDITIONS. INSTALL SUCTION LINE ACCUMULATOR AND 1/8" CAPILLARY TUBING FOR PURGE CIRCUIT. SEE AHU MANUFACTURER'S INSTALLATION INSTRUCTIONS.

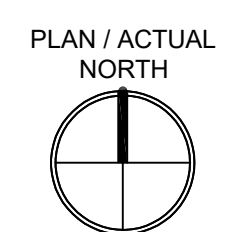
2. MOUNT HEAT EXCHANGER HIGH ON WALL TO ALLOW CONDENSATE TO DRAIN BY GRAVITY BACK TO EXISTING FLASH TANK.
3. MAINTAIN 6"-0" MINIMUM IN ALL DIRECTIONS FROM THE BUILDING TO PROTECT AGAINST FALLING SNOW AND ICE.
4. CONDENSING UNIT IS SUPPORTED BY DUNNAGE 3"-0" ABOVE GRADE. PROVIDE EXTERIOR PIPING STRUCTURAL COVER. REFER TO STRUCTURAL DRAWINGS FOR DUNNAGE AND PIPE COVER DETAILS.
5. PIPING TO PENETRATE WALL HIGH AND DROP DOWN THE EXTERIOR WALL AND EXTEND ABOVE GRADE TO THE CONDENSING UNIT. PENETRATION TO BE WEATHER TIGHT.
6. FOLLOW DETAIL 8/M-503 FOR PIPING REQUIREMENTS.



**1 BUILDING 49 - BASEMENT**  
SCALE: 3/32" = 1'-0"



**2 BUILDING 49 - BASEMENT ENLARGED PLAN**  
SCALE: 1/4" = 1'-0"



PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER.

NO.	DESCRIPTION	DATE

**PROJECT TEAM**

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1173 Research Way  
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**Miller-Remick LLC**  
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MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**

VA U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL PIPING PLANS BASEMENT - BUILDING 49**

Approved: Project Director

Phase  
100% CONSTRUCTION DOCUMENTS  
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS**

Location  
ST. CLOUD VA MEDICAL CENTER, MN

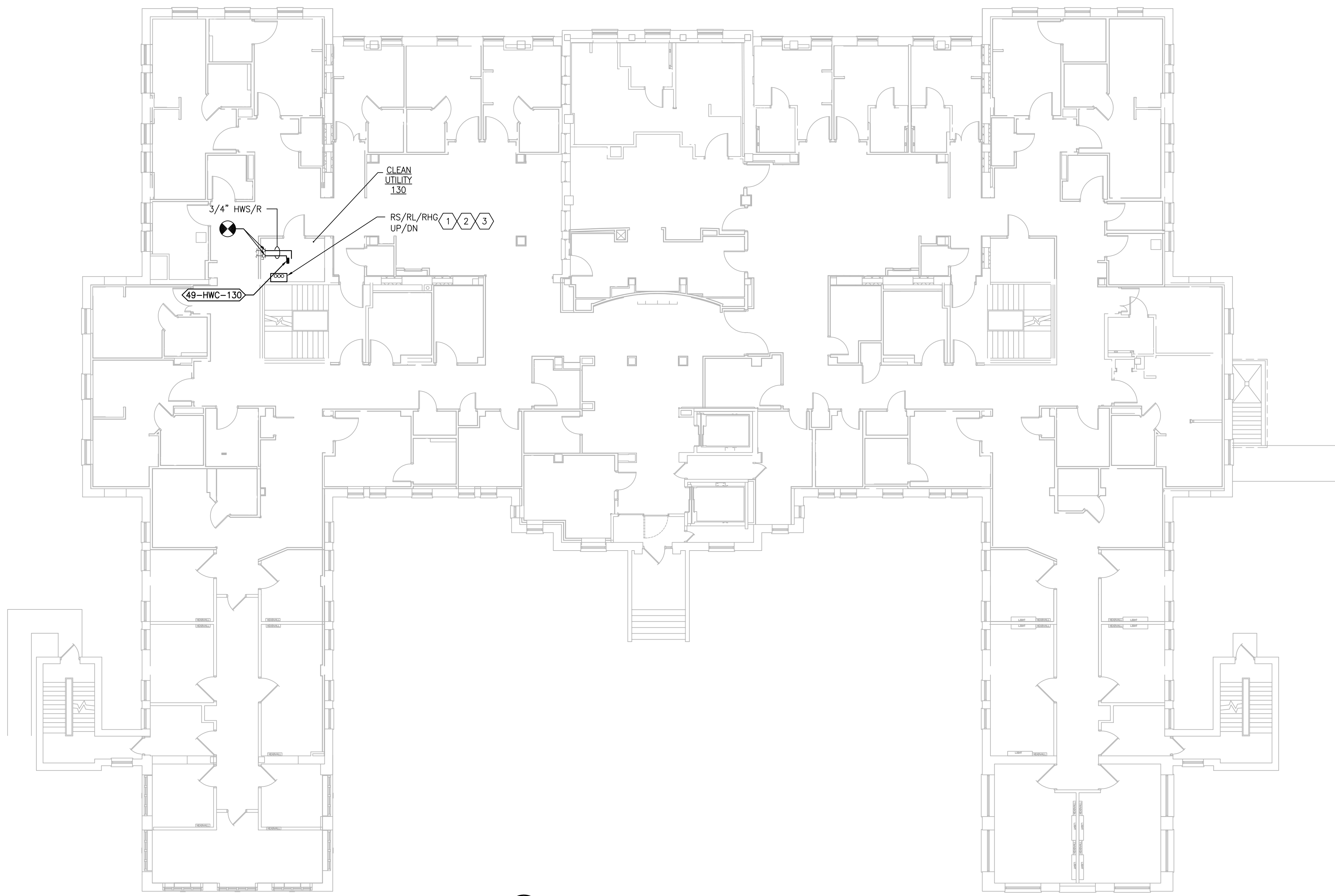
Issue Date	Checked	Drawn
2022-07-15	MR	BJS

Project Number  
**656-18-300**

Building Number  
1, 2, 3, 28, 29, 49, 50, 51, 111, 116

Drawing Number  
**49-MP101**

three inches = one foot  
 one and one half inches = one foot  
 one inch = one foot  
 three quarters inch = one foot  
 one half inch = one foot  
 three eighths inch = one foot  
 one quarter inch = one foot  
 one eighth inch = one foot



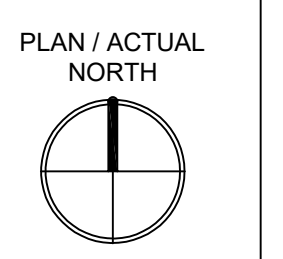
**1 BUILDING 49 -- FIRST FLOOR**  
 SCALE: 3/32" = 1'-0"

**GENERAL SHEET NOTES:**

1. REFERENCE SPECIFICATION 02-B2 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
3. ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING EQUIPMENT OR INSTALLATION OF NEW WORK.
4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
5. MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS, ETC.
10. ALL PIPING PENETRATIONS SHALL BE CORE DRILLED. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. INSTALLING CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. THE CONTRACTOR IS TO PROVIDE DETAILED PIPING LAYOUT TO THE MANUFACTURER FOR PIPE SIZING AND OTHER REQUIREMENTS. FINAL SHOP DRAWING APPROVAL IS BY THE ENGINEER. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR LEAK CHECKS, EVACUATION AND INITIAL REFRIGERATION CHARGE. THE INSTALLING CONTRACTOR SHALL PROVIDE EXTRA REFRIGERANT TO THE FACTORY START-UP TECHNICIAN FOR FINAL REFRIGERANT CHARGE. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR WIRING AND COMMUNICATIONS BETWEEN AHU'S AND CONDENSING UNITS.
12. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**○ SHEET KEYNOTES:**

1. MINIMUM PIPE SIZES FOR UP TO 50 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
  - SUCTION LINE 5/8" Ø
  - LIQUID LINE 3/8" Ø
  - HOT GAS REHEAT 3/8" Ø
 MINIMUM PIPE SIZES FOR OVER 60 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
  - SUCTION LINE 3/4" Ø
  - LIQUID LINE 1/2" Ø
  - HOT GAS REHEAT 1/2" Ø
 INSTALL AND INSULATE PIPING ACCORDING TO SPECIFICATIONS AND AHU MANUFACTURER RECOMMENDATIONS. VERIFY PIPE SIZING WITH AHU MANUFACTURER. PIPING MUST BE SIZED TO MEET THE ACTUAL INSTALLATION CONDITIONS. INSTALL SUCTION LINE ACCUMULATOR AND 1/8" CAPILLARY TUBING FOR PURGE CIRCUIT. SEE AHU MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. COORDINATE (N) PIPING WITH (E) WALL BUMP OUT AND (E) PIPING. (N) PIPING WILL BE REQUIRED TO OFFSET IN CEILING TO PASS THROUGH UNOBSTRUCTED.
3. REFERENCE ARCHITECTURAL DRAWINGS FOR ENCLOSURE DETAILS.



PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER.

NO.	DESCRIPTION	DATE

**PROJECT TEAM**



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 MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
 PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**



U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL PIPING PLAN FIRST FLOOR - BUILDING 49**

Approved: Project Director

Phase  
 100% CONSTRUCTION DOCUMENTS  
 NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date  
 2022-07-15

Checked  
 MR

Drawn  
 BJS

Project Number  
**656-18-300**

Building Number  
 1, 2, 3, 28, 29, 49, 50, 51, 111, 116

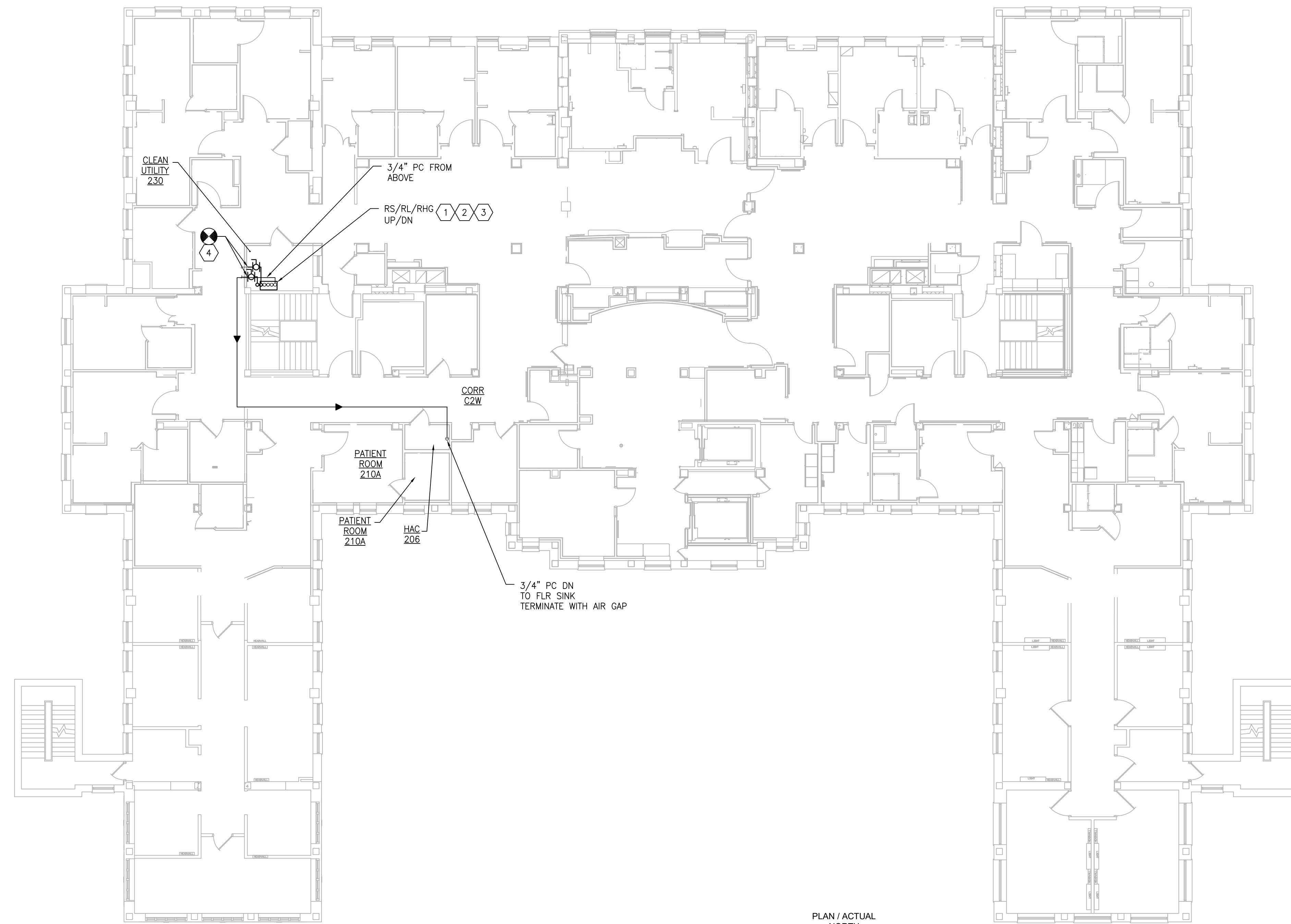
Drawing Number  
**49-MP111**

**GENERAL SHEET NOTES:**

1. REFERENCE SPECIFICATION 02-B2 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
3. ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING EQUIPMENT OR INSTALLATION OF NEW WORK.
4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
5. MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS, ETC.
10. ALL PIPING PENETRATIONS SHALL BE CORE DRILLED. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. INSTALLING CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. THE CONTRACTOR IS TO PROVIDE DETAILED PIPING LAYOUT TO THE MANUFACTURER FOR PIPE SIZING AND OTHER REQUIREMENTS. FINAL SHOP DRAWING APPROVAL IS BY THE ENGINEER. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR LEAK CHECKS, EVACUATION AND INITIAL REFRIGERATION CHARGE. THE INSTALLING CONTRACTOR SHALL PROVIDE EXTRA REFRIGERANT TO THE FACTORY START-UP TECHNICIAN FOR FINAL REFRIGERANT CHARGE. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR WIRING AND COMMUNICATIONS BETWEEN AHU'S AND CONDENSING UNITS.
12. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

1. MINIMUM PIPE SIZES FOR UP TO 50 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
    - SUCTION LINE 5/8" Ø
    - LIQUID LINE 3/8" Ø
    - HOT GAS REHEAT 3/8" Ø
    - PUMPED CONDENSATE 3/4" Ø
  - MINIMUM PIPE SIZES FOR OVER 60 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
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2. COORDINATE (N)PIPING WITH (E)PIPING AND CONDUIT.
  3. REFERENCE ARCHITECTURAL DRAWINGS FOR ENCLOSURE DETAILS.
  4. CONNECT (E)HWS&R PIPING TO (N)3/4" HWS&R PIPING. RUN PIPING UP TO ATTIC ABOVE AND CONNECT TO (N)49-HWC-5 HOT WATER COIL.




**1 BUILDING 49 - SECOND FLOOR**  
SCALE: 3/32" = 1'-0"



PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER.

NO.	DESCRIPTION	DATE

**PROJECT TEAM**



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MR PROJECT NO: 0376-0011

MILLER-REMIK LLC  
PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**



U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL PIPING PLANS SECOND FLOOR - BUILDING 49**

Approved: Project Director

Phase  
100% CONSTRUCTION DOCUMENTS  
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS**

Location  
ST. CLOUD VA MEDICAL CENTER, MN

Issue Date	Checked	Drawn
2022-07-15	MR	BJS

Project Number  
656-18-300

Building Number  
1, 2, 3, 28, 29, 49, 50, 51, 111, 116

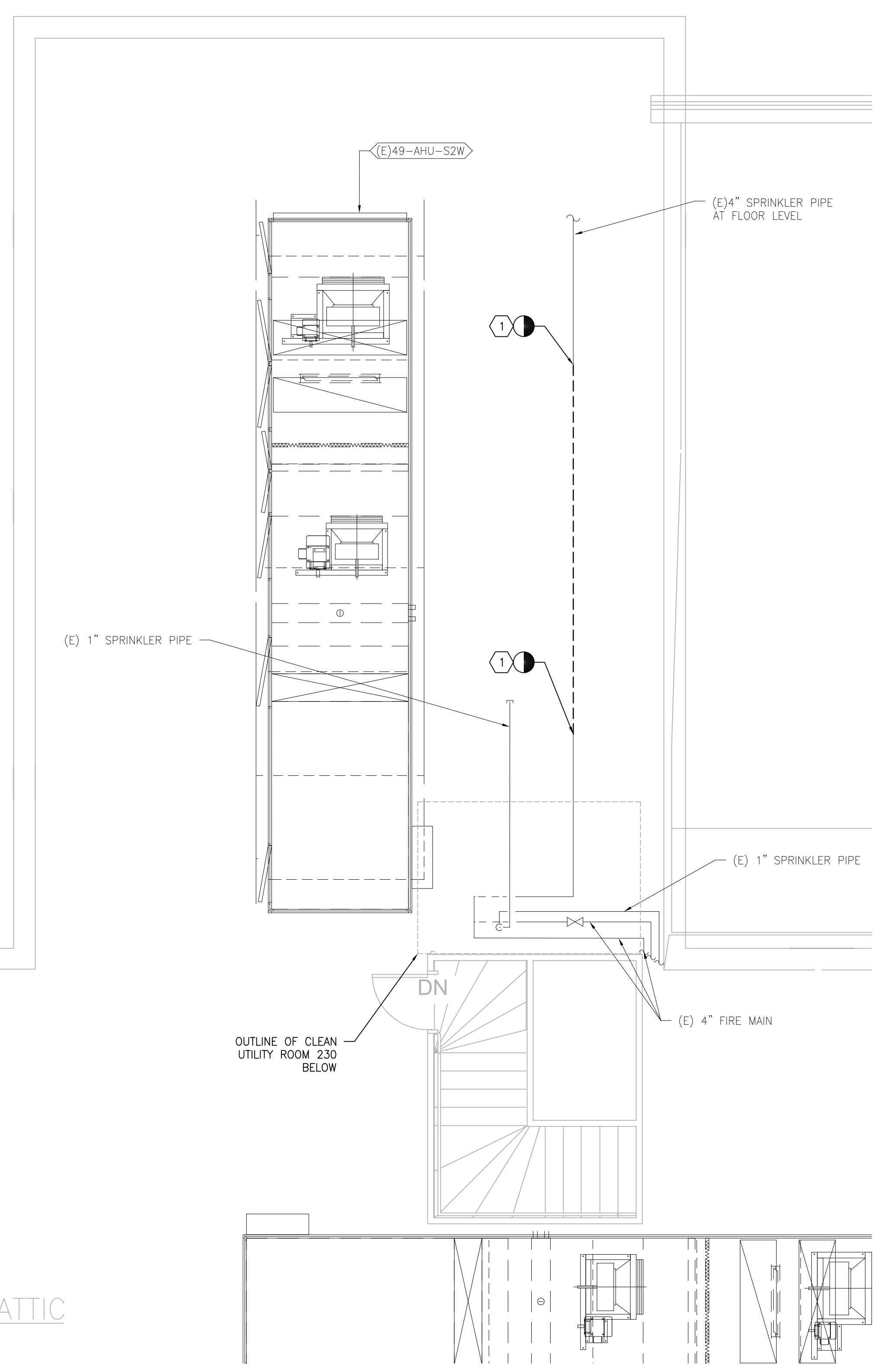
Drawing Number  
**49-MP121**

**GENERAL SHEET NOTES:**

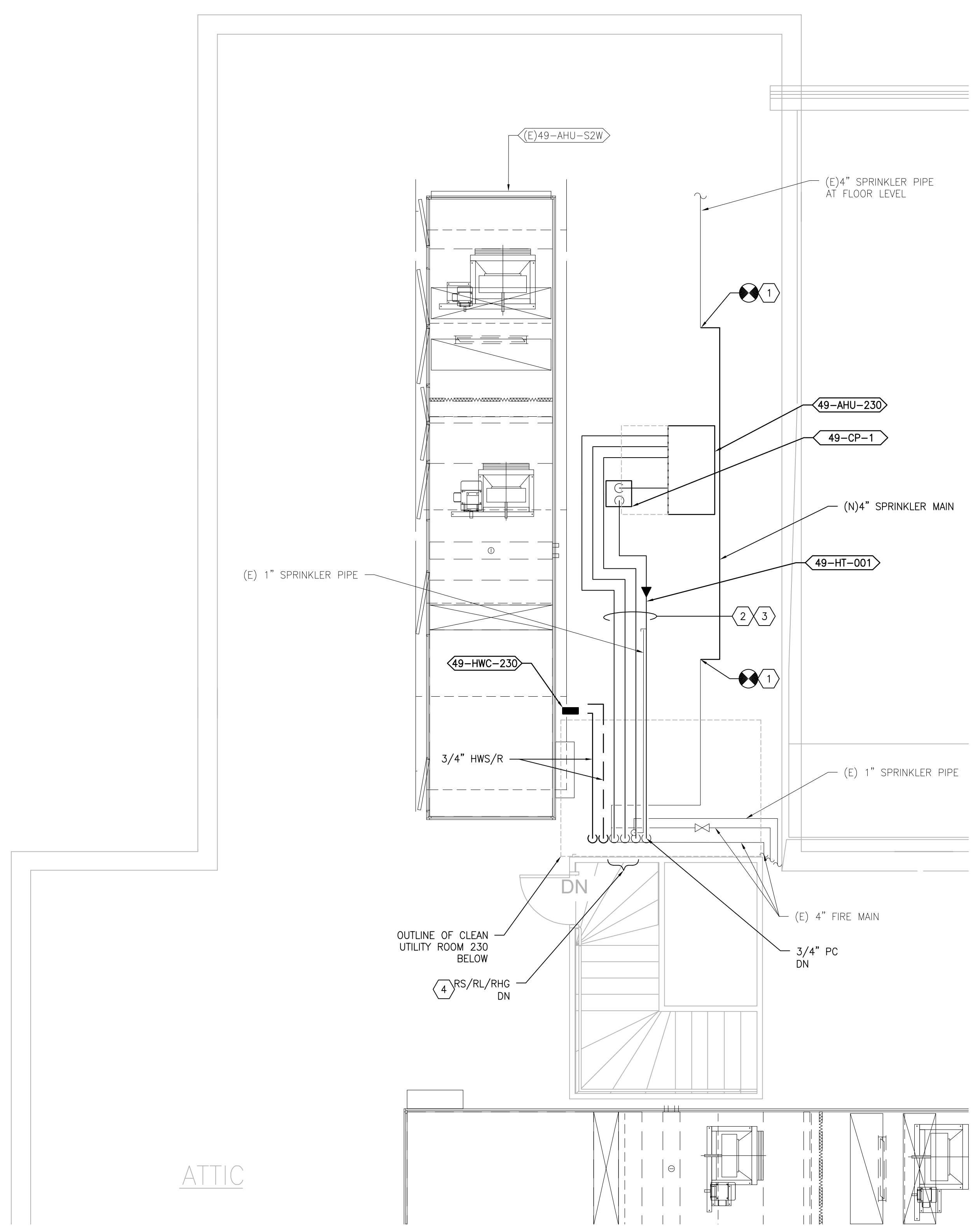
1. REFERENCE SPECIFICATION 02-82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
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6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS APPROVED BY THE COR.
8. REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
9. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS, ETC.
10. ALL PIPING PENETRATIONS SHALL BE CORE DRILLED. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. INSTALLING CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. THE CONTRACTOR IS TO PROVIDE DETAILED PIPING LAYOUT TO THE MANUFACTURER FOR PIPE SIZING AND OTHER REQUIREMENTS. FINAL SHOP DRAWING APPROVAL IS BY THE ENGINEER. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR LEAK CHECKS, EVACUATION AND INITIAL REFRIGERATION CHARGE. THE INSTALLING CONTRACTOR SHALL PROVIDE EXTRA REFRIGERANT TO THE FACTORY START-UP TECHNICIAN FOR FINAL REFRIGERANT CHARGE. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR WIRING AND COMMUNICATIONS BETWEEN AHU'S AND CONDENSING UNITS.
12. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

**SHEET KEYNOTES:**

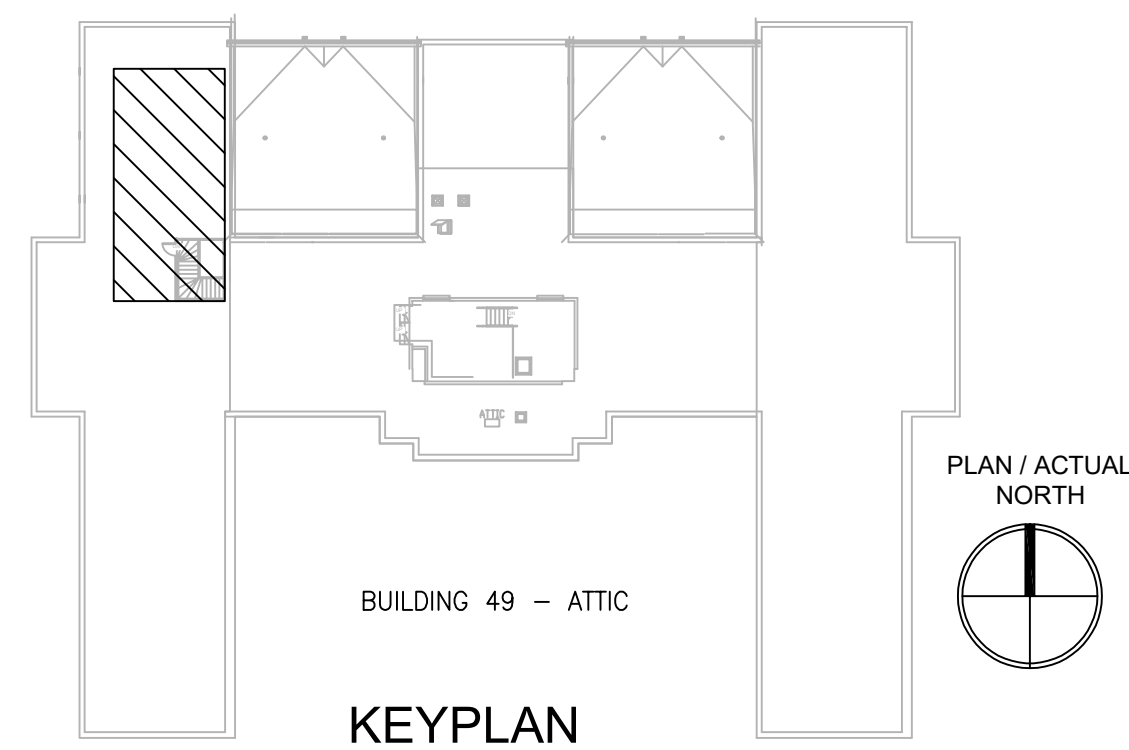
1. DEMOLISH SPRINKLER PIPE AND REROUTE TO ALLOW INSTALLATION OF (N)AHU'S, PIPING, DUCTWORK AND CONTROL PANELS. REFERENCE DRAWING 49-MH131 FOR ADDITIONAL INFORMATION AND COORDINATION.
  - MINIMUM PIPE SIZES FOR UP TO 50 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
    - SUCTION LINE 5/8" Ø
    - LIQUID LINE 3/8" Ø
    - HOT GAS REHEAT 3/8" Ø
    - PUMPED CONDENSATE 3/4" Ø
  - MINIMUM PIPE SIZES FOR OVER 60 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
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    - LIQUID LINE 1/2" Ø
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2. INSTALL AND INSULATE PIPING ACCORDING TO SPECIFICATIONS AND AHU MANUFACTURER RECOMMENDATIONS. VERIFY PIPE SIZING WITH AHU MANUFACTURER. PIPING MUST BE SIZED TO MEET THE ACTUAL INSTALLATION CONDITIONS. INSTALL SUCTION LINE ACCUMULATOR AND 1/8" CAPILLARY TUBING FOR PURGE CIRCUIT. SEE AHU MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. RUN PIPING HIGH TO UNDERSIDE OF DECK.
4. COORDINATE (N)PIPING WITH (E)SPRINKLER PIPING AND ROOM BELOW. ADJUST (N) PIPING TO FACILITATE INSTALLATION TO ROOM BELOW.



**1 BUILDING 49 ATTIC - DEMOLITION**  
SCALE: 1/4" = 1'-0"



**2 BUILDING 49 ATTIC - NEW WORK**  
SCALE: 1/4" = 1'-0"



PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER.

NO.	DESCRIPTION	DATE

**PROJECT TEAM**

**MEP Engineers + Architects**  
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**ENGINEER OF RECORD**

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MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**

VA U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL PIPING PLANS ATTIC - BUILDING 49**

Approved: Project Director

Phase  
100% CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS**

Location  
ST. CLOUD VA MEDICAL CENTER, MN

Issue Date  
2022-07-15

Checked  
MR

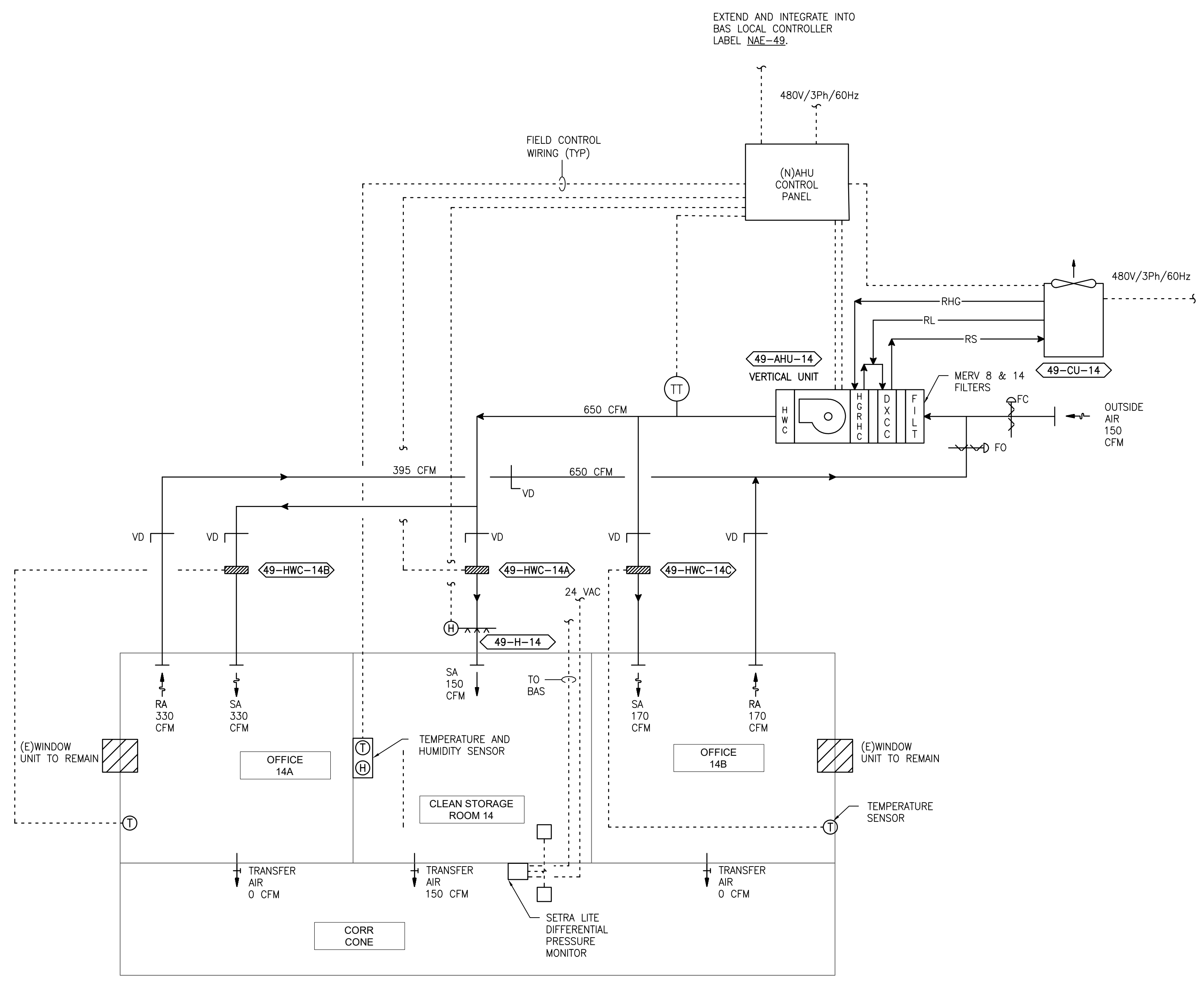
Drawn  
BJS

Project Number  
**656-18-300**

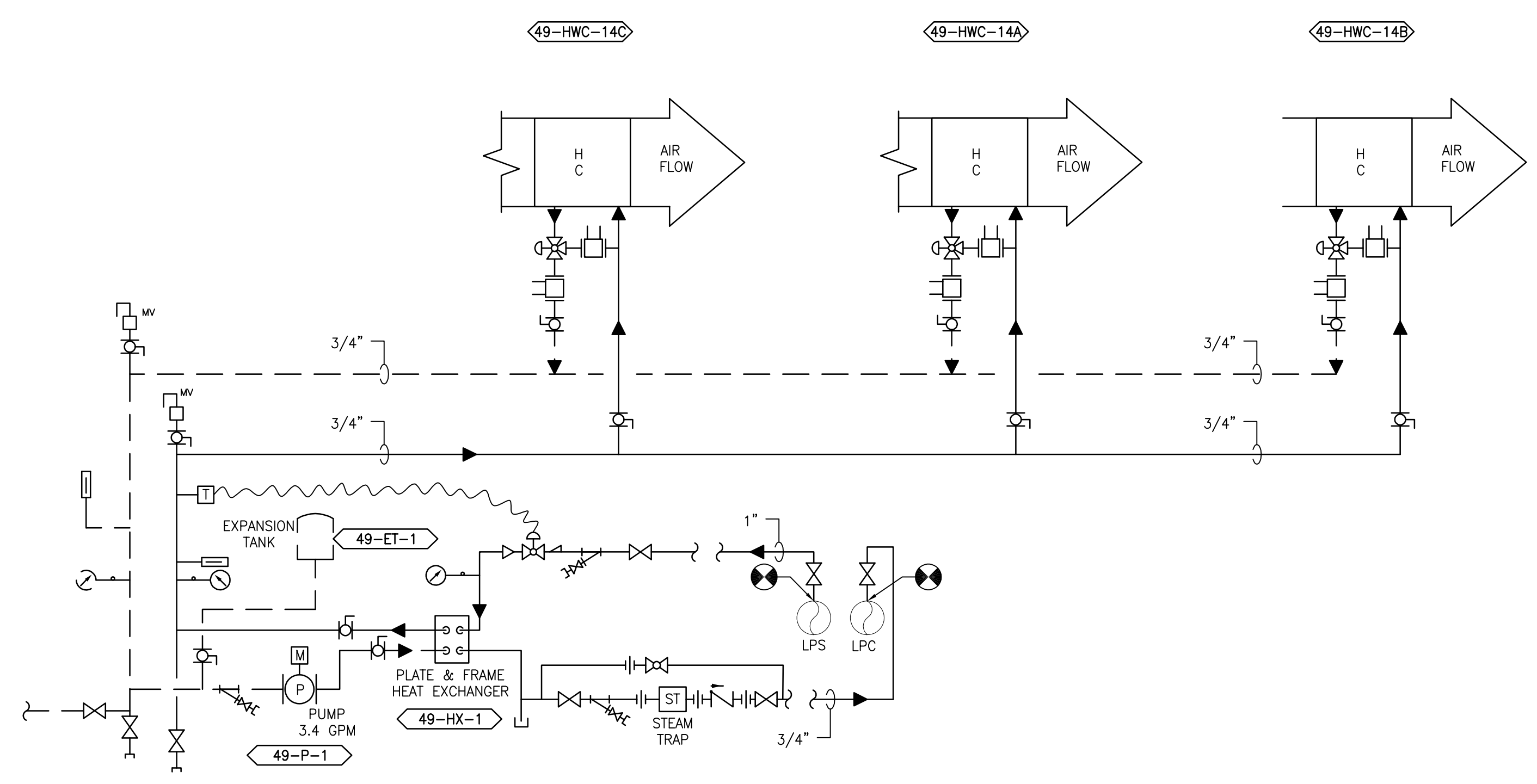
Building Number  
1, 2, 3, 28, 29, 49, 50, 51, 111, 116

Drawing Number  
**49-MP131**

three inches = one foot  
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 one inch = one foot  
 three quarters inch = one foot  
 one half inch = one foot  
 three eighths inch = one foot  
 one quarter inch = one foot  
 one eighth inch = one foot



1 DIAGRAM -- 49 -- 14  
SCALE: NONE



2 DIAGRAM -- 49 -- 14A/14B/14C  
SCALE: NONE

SEQUENCE OF OPERATION

**GENERAL**  
 THE EXISTING HVAC SYSTEMS WILL CONTINUE TO OPERATE INDEPENDENT OF THE NEW SUPPLEMENTAL SYSTEM.

**SUPPLEMENTAL HVAC SYSTEM CONTROL**  
 THE UNIT SHALL BE PROVIDED WITH A FACTORY PREWIRED AND TESTED EXTERNAL CONTROL PANEL. THE UNIT CONTROLLER SHALL BE CAPABLE OF CONTROLLING ALL FEATURES AND OPTIONS OF THE UNIT. THE CONTROLLER SHALL BE CAPABLE OF STAND-ALONE OPERATION WITH UNIT CONFIGURATION, SETPOINT ADJUSTMENT, SENSOR STATUS VIEWING, UNIT ALARM VIEWING, AND OCCUPANCY SCHEDULING WITHOUT DEPENDENCE ON THE JOHNSON CONTROLS BUILDING MANAGEMENT SYSTEM (BMS). THE CONTROLLER SHALL COMMUNICATE AND INTEGRATE WITH THE BMS SYSTEM VIA BACNET. ALL SETPOINTS SHALL BE VISIBLE AND RESETTABLE, ALL SENSOR READINGS SHALL BE VISIBLE, OCCUPIED AND UNOCCUPIED SCHEDULING SHALL BE RESETTABLE, THROUGH THE BMS SYSTEM VIA BACNET.

**OCCUPIED/UNOCCUPIED**  
 OCCUPIED/UNOCCUPIED MODE SHALL BE BASED ON A COMMAND FROM THE BMS.

**OCCUPIED MODE**  
 IN THE OCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

**COOLING**  
 IF ROOM TEMPERATURE RISES ABOVE SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE COMPRESSOR SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

**DEHUMIDIFYING**  
 IF ROOM RELATIVE HUMIDITY RISES ABOVE SETPOINT AS SENSED BY THE WALL MOUNTED HUMIDITY SENSOR THE SYSTEM SHALL OVERRIDE THE COOLING COIL SETPOINT AND MODULATE THE HOT GAS REHEAT COIL TO MAINTAIN ROOM TEMPERATURE AND HUMIDITY SETPOINTS. DEHUMIDIFICATION SHALL BE INITIATED ANYTIME IN THE OCCUPIED, UNOCCUPIED, COOLING OR HEATING MODE.

**HEATING (ONLY PROVIDED ON SOME UNITS)**  
 IF ROOM TEMPERATURE FALLS BELOW SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE HEATING COIL SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

**UNOCCUPIED MODE**  
 IN THE UNOCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

IN THE UNOCCUPIED MODE THE UNIT SHALL OPERATE IF THE ROOM TEMPERATURE OR RELATIVE HUMIDITY LIMITS ARE REACHED.

ON A CALL FOR COOLING, DEHUMIDIFYING, OR HEATING THE CONTROL SHALL BE THE SAME AS IN THE OCCUPIED MODE.

**ROOM PRESSURE MONITOR**  
 THE ROOM PRESSURE MONITOR SETRA LITE SHALL MONITOR AND ALARM THE DIFFERENTIAL PRESSURE BETWEEN THE CLEAN / STERILE SATELLITE STORAGE ROOM AND THE ADJACENT ROOM LOCALLY AND AT THE BAS.

PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER.

NO.	DESCRIPTION	DATE

**PROJECT TEAM**

**COMMANDER'S CHOICE CONSULTING**  
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 1173 Research Way  
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 MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
 PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL AIRFLOW CONTROL & PIPING DIAGRAM BASEMENT - BUILDING 49**

Approved: Project Director

Phase  
 100% CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date  
 2022-07-15

Checked  
 MR

Drawn  
 PNL

Project Number  
 656-18-300

Building Number  
 1, 2, 3, 28, 29, 49, 50, 51, 111, 116

Drawing Number  
**49-M-801**

SEQUENCE OF OPERATION

**GENERAL**  
 THE EXISTING HVAC SYSTEMS WILL CONTINUE TO OPERATE INDEPENDENT OF THE NEW SUPPLEMENTAL SYSTEM.

**SUPPLEMENTAL HVAC SYSTEM CONTROL**  
 THE UNIT SHALL BE PROVIDED WITH A FACTORY PREWIRED AND TESTED EXTERNAL CONTROL PANEL. THE UNIT CONTROLLER SHALL BE CAPABLE OF CONTROLLING ALL FEATURES AND OPTIONS OF THE UNIT. THE CONTROLLER SHALL BE CAPABLE OF STAND-ALONE OPERATION WITH UNIT CONFIGURATION, SETPOINT ADJUSTMENT, SENSOR STATUS VIEWING, UNIT ALARM VIEWING, AND OCCUPANCY SCHEDULING WITHOUT DEPENDENCE ON THE JOHNSON CONTROLS BUILDING MANAGEMENT SYSTEM (BMS). THE CONTROLLER SHALL COMMUNICATE AND INTEGRATE WITH THE BMS SYSTEM VIA BACNET. ALL SETPOINTS SHALL BE VISIBLE AND RESETTABLE. ALL SENSOR READINGS SHALL BE VISIBLE. OCCUPIED AND UNOCCUPIED SCHEDULING SHALL BE RESETTABLE, THROUGH THE BMS SYSTEM VIA BACNET.

**OCCUPIED/UNOCCUPIED**  
 OCCUPIED/UNOCCUPIED MODE SHALL BE BASED ON A COMMAND FROM THE BMS.

**OCCUPIED MODE**  
 IN THE OCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

**COOLING**  
 IF ROOM TEMPERATURE RISES ABOVE SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE COMPRESSOR SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

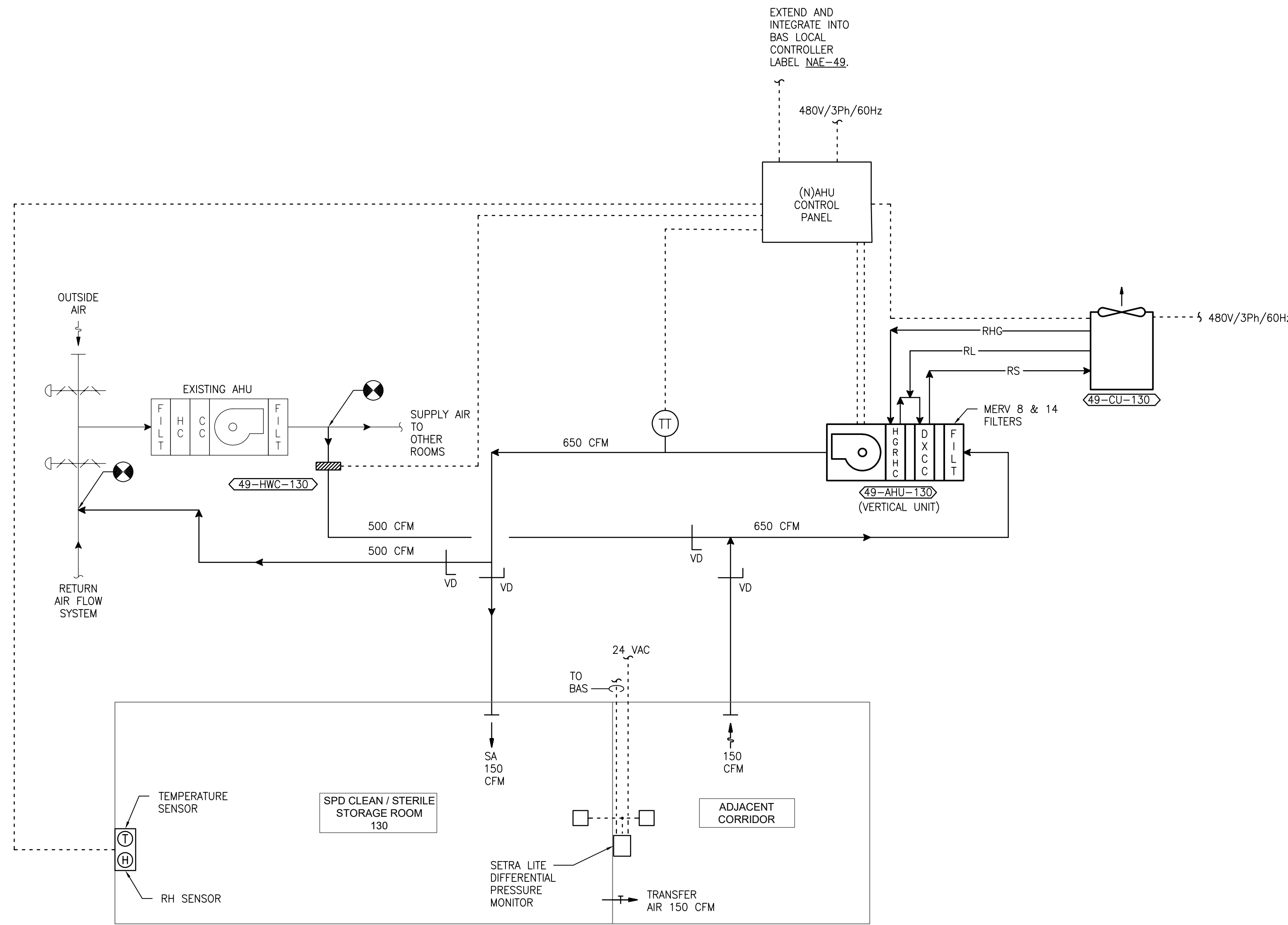
**DEHUMIDIFYING**  
 IF ROOM RELATIVE HUMIDITY RISES ABOVE SETPOINT AS SENSED BY THE WALL MOUNTED HUMIDITY SENSOR THE SYSTEM SHALL OVERRIDE THE COOLING COIL SETPOINT AND MODULATE THE HOT GAS REHEAT COIL TO MAINTAIN ROOM TEMPERATURE AND HUMIDITY SETPOINTS. DEHUMIDIFICATION SHALL BE INITIATED ANYTIME IN THE OCCUPIED, UNOCCUPIED, COOLING OR HEATING MODE.

**HEATING (ONLY PROVIDED ON SOME UNITS)**  
 IF ROOM TEMPERATURE FALLS BELOW SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE HEATING COIL SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

**UNOCCUPIED MODE**  
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1 DIAGRAM - 49 - 130  
 SCALE: NONE

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NO.	DESCRIPTION	DATE

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 MR PROJECT NO: 0376-0011

MILLER-REMICK LLC  
 PROFESSIONAL ENGINEER

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

Drawing Title  
**MECHANICAL AIRFLOW CONTROL DIAGRAM FIRST FLOOR - BUILDING 49**

Approved: Project Director

Phase  
 100% CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date  
 2022-07-15

Checked  
 MR

Drawn  
 PNL

Project Number  
 656-18-300

Building Number  
 1, 2, 3, 28, 29, 49, 50, 51, 111, 116

Drawing Number  
**49-M-811**

SEQUENCE OF OPERATION

**GENERAL**  
 THE EXISTING HVAC SYSTEMS WILL CONTINUE TO OPERATE INDEPENDENT OF THE NEW SUPPLEMENTAL SYSTEM.

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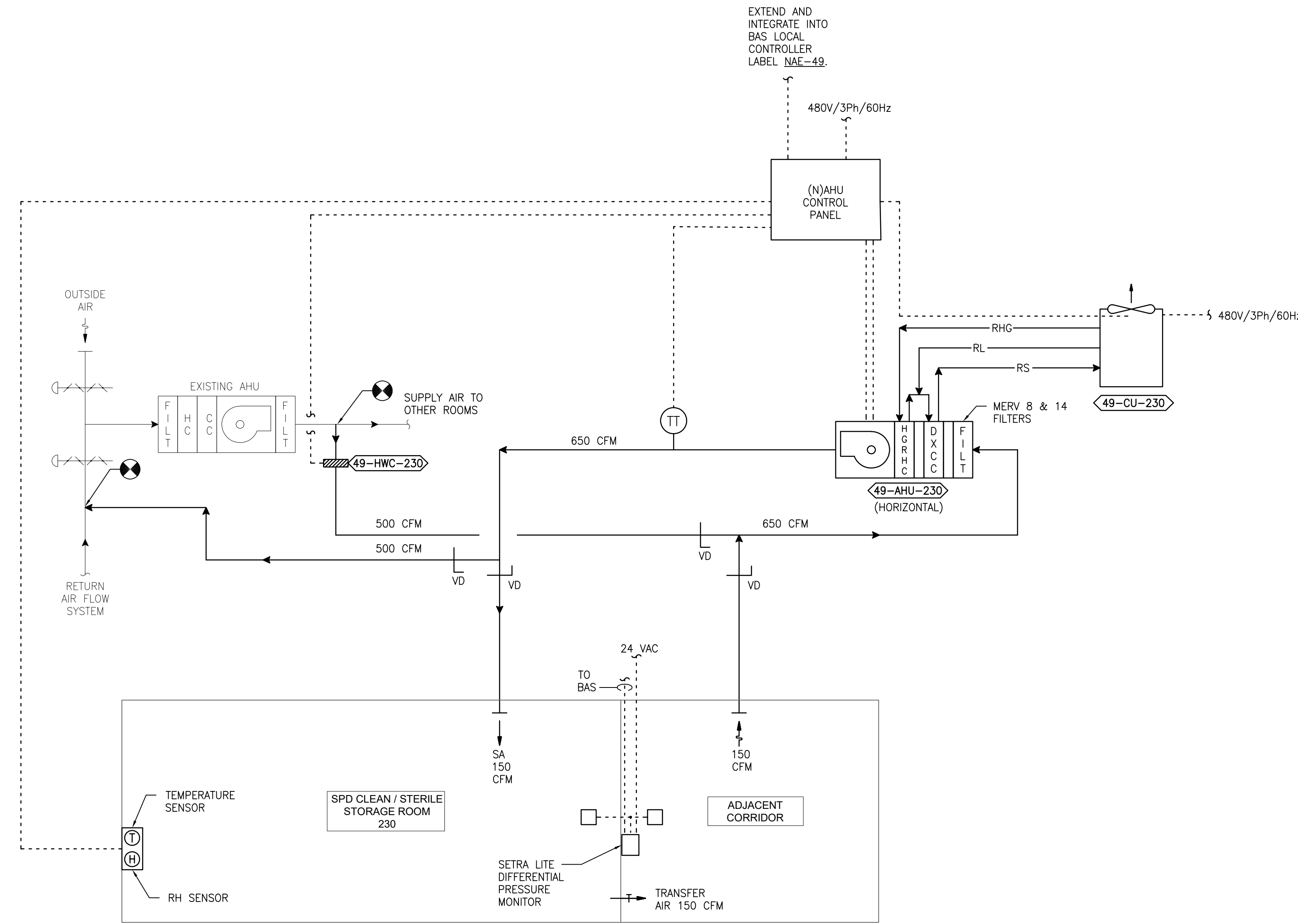
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1 DIAGRAM - 49 - 230  
 SCALE: NONE

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NO.	DESCRIPTION	DATE

PROJECT TEAM



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MILLER-REMICK LLC  
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Office of  
 Construction  
 and Facilities  
 Management

VA U.S. Department  
 of Veterans Affairs

Drawing Title  
**MECHANICAL  
 AIRFLOW CONTROL DIAGRAM  
 SECOND FLOOR - BUILDING 49**

Approved: Project Director

Phase  
 100% CONSTRUCTION  
 DOCUMENTS  
 NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title  
**UPGRADE SPS HVAC &  
 ENVIRONMENTAL CONTROLS**

Location  
**ST. CLOUD VA MEDICAL CENTER, MN**

Issue Date	Checked	Drawn
2022-07-15	MR	PNL

Project Number 656-18-300
Building Number 1, 2, 3, 28, 29, 49, 50, 51, 111, 116
Drawing Number 49-M-821