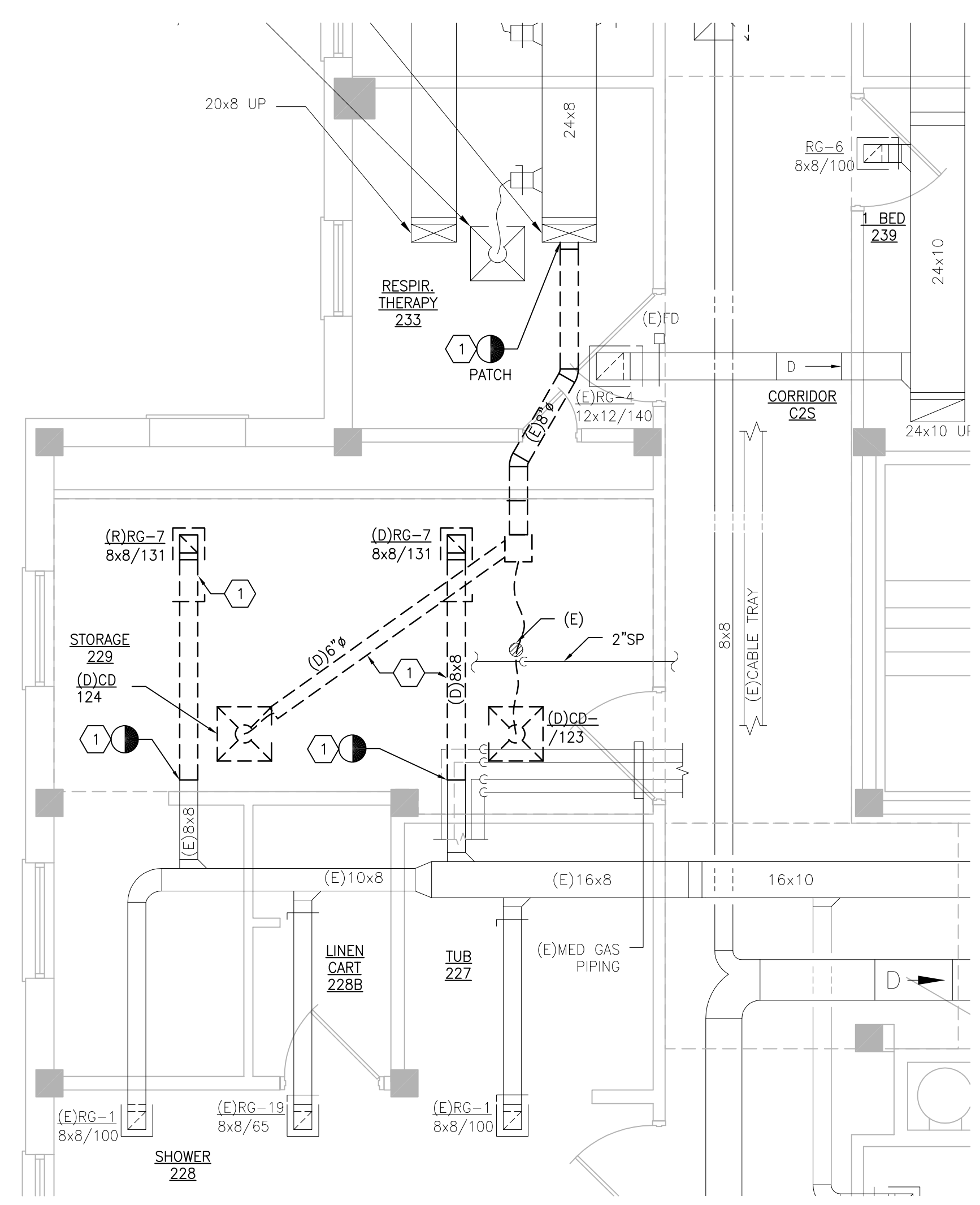


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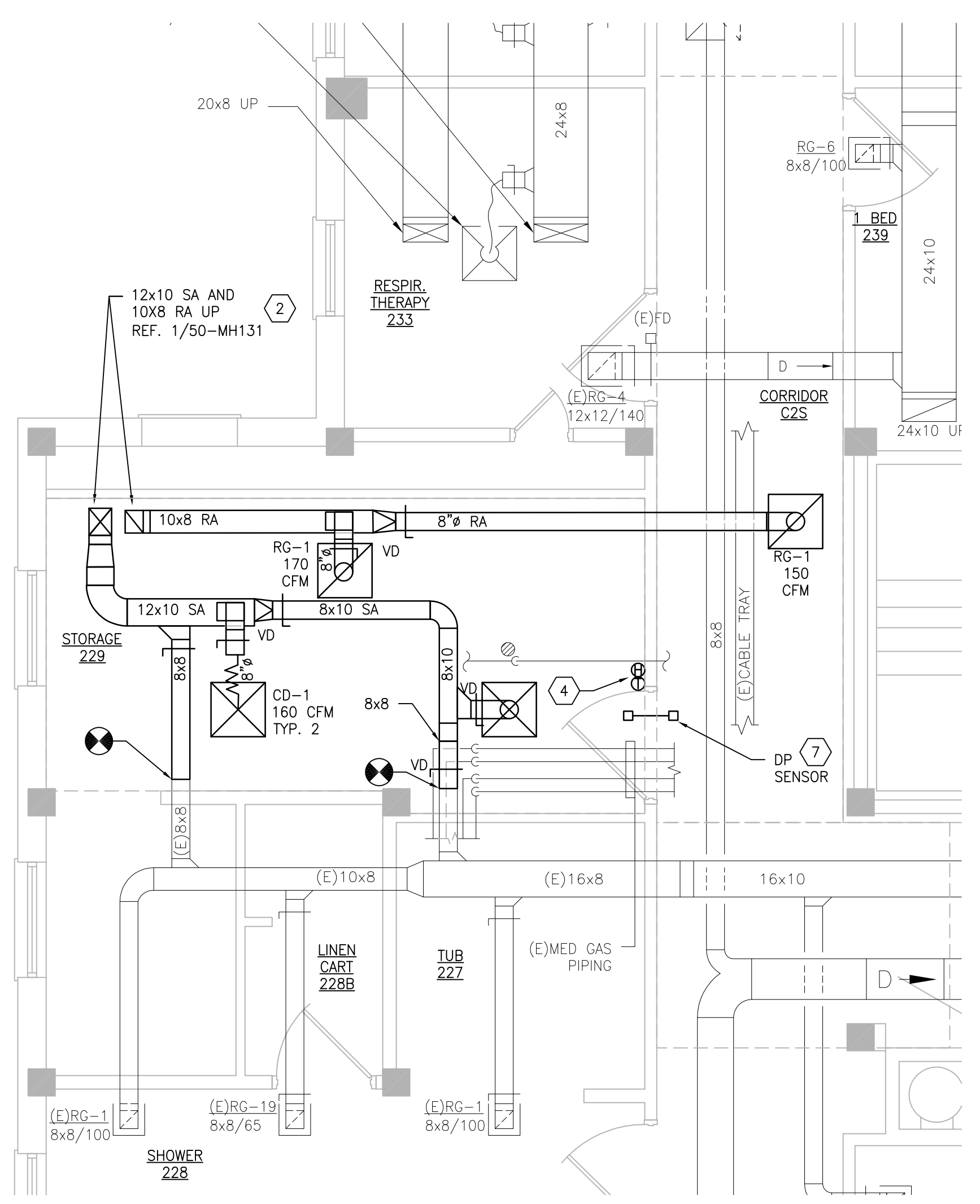
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS 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.

SHEET KEYNOTES:

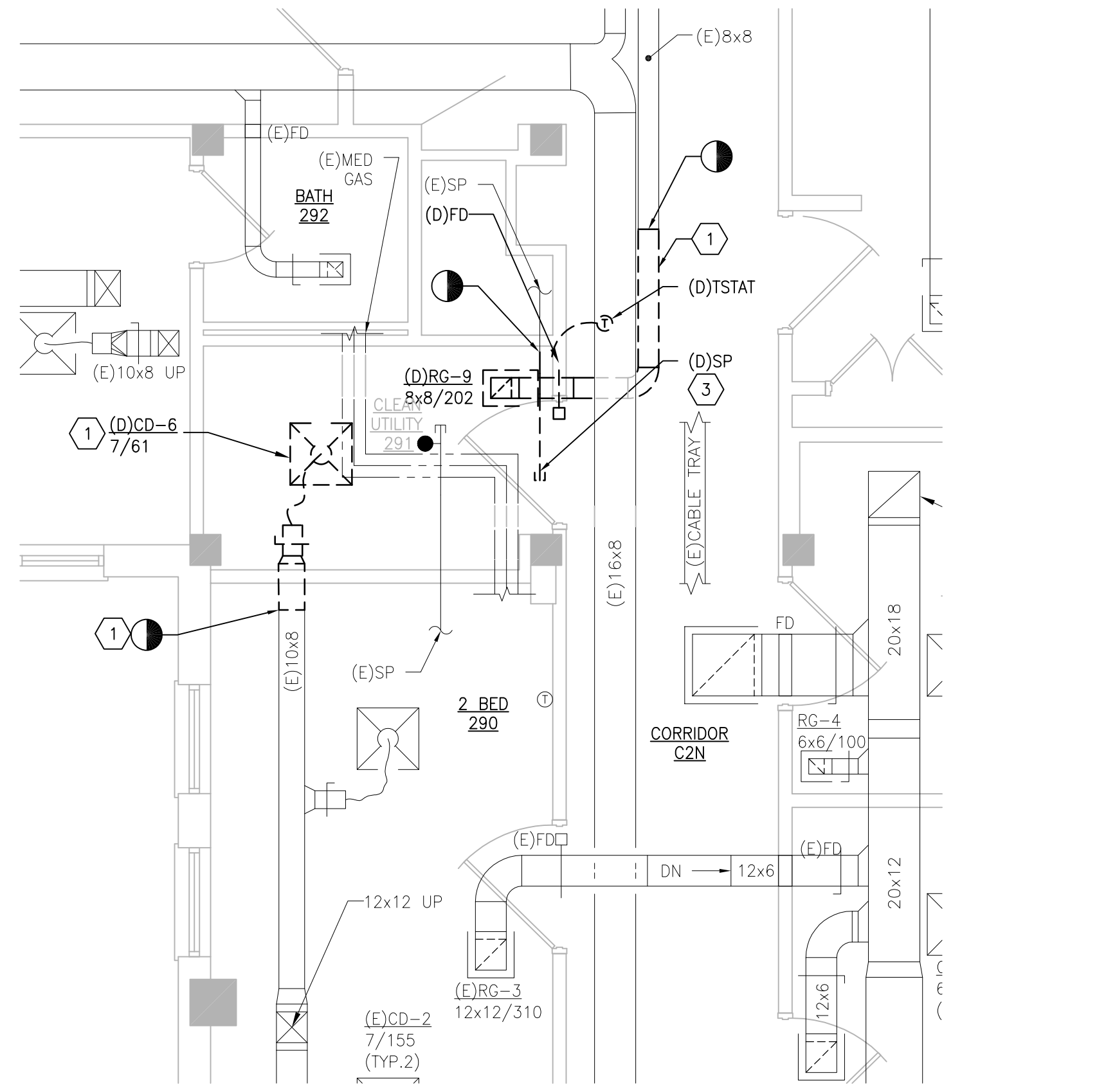
1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
2. FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH NEW WORK PARTICULARLY THE NEW FLOOR PENETRATION. COORDINATE THIS WITH FLOOR ABOVE.
3. DEMOLISH SPRINKLER PIPE BACK TO WALL AND CAP.
4. THERMOSTAT AND HUMIDISTAT TO CONTROL NEW AHU.
5. NOT USED.
6. CEILING DIFFUSER TITUS TLF-SS 48x24 WITH 12" INLET. BALANCE TO 450 CFM.
7. INSTALL DIFFERENTIAL PRESSURE SENSOR THROUGH WALL CENTERED ABOVE DOOR. INSTALL ROOM PRESSURE MONITOR OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.



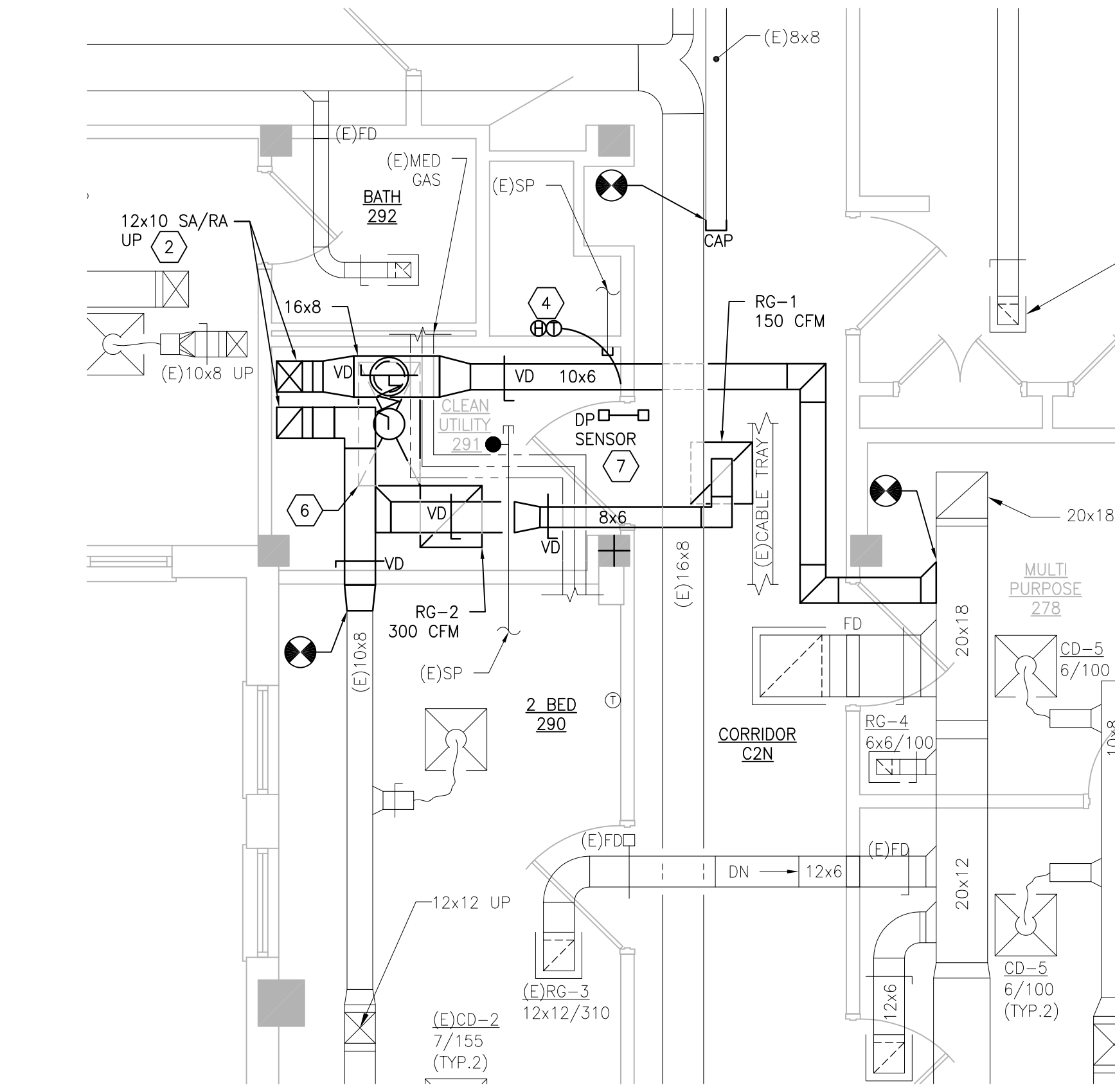
1 BUILDING 50 SECOND FLOOR ROOM 229 – NEW WORK
SCALE: 1/4" = 1'-0"



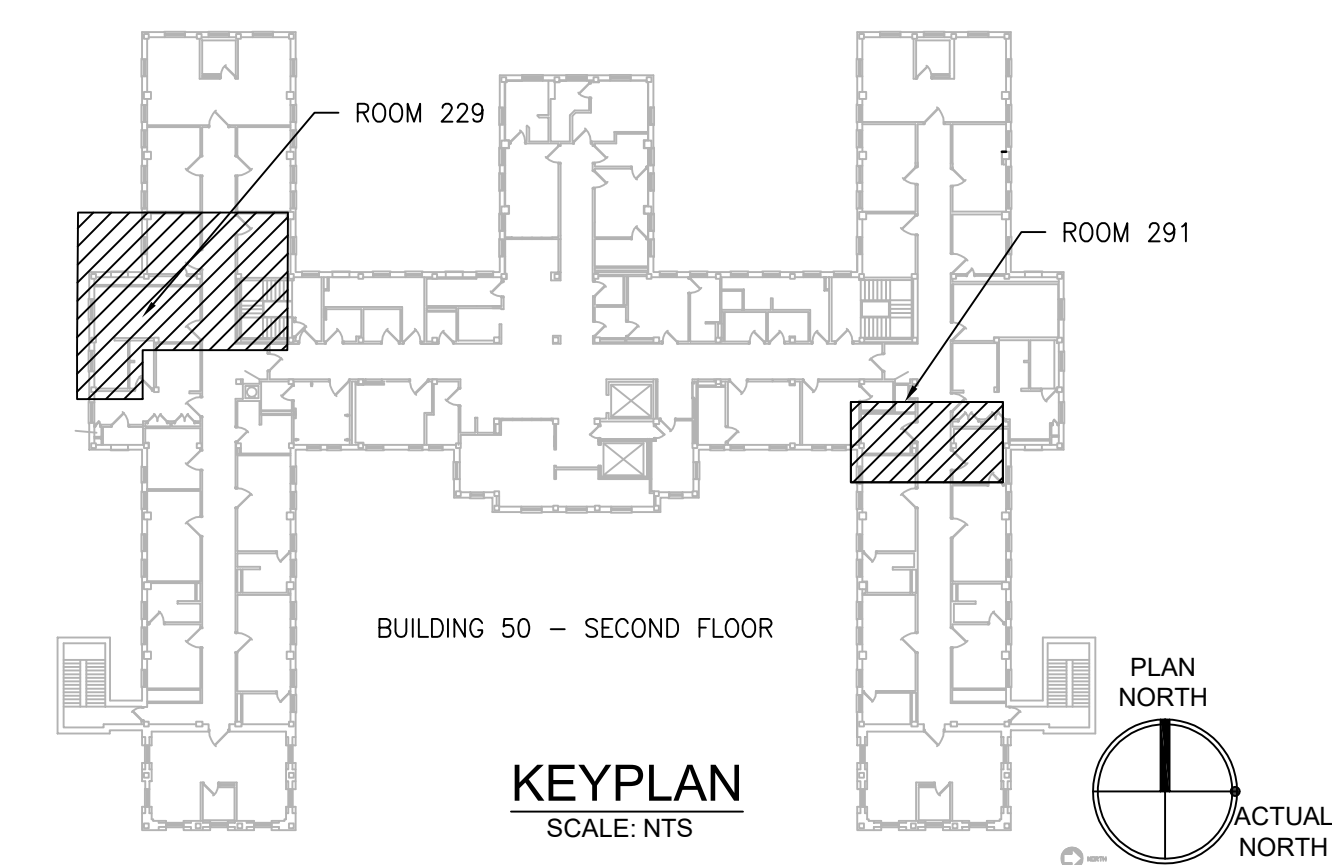
2 BUILDING 50 SECOND FLOOR ROOM 229 – NEW WORK
SCALE: 1/4" = 1'-0"



3 BUILDING 50 SECOND FLOOR ROOM 291–DEMOLITION
SCALE: 1/4" = 1'-0"



4 BUILDING 50 SECOND FLOOR ROOM 291–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

VA U.S. Department of Veterans Affairs

Drawing Title
MECHANICAL DEMOLITION / NEW WORK PLANS SECOND FLOOR - BUILDING 50

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

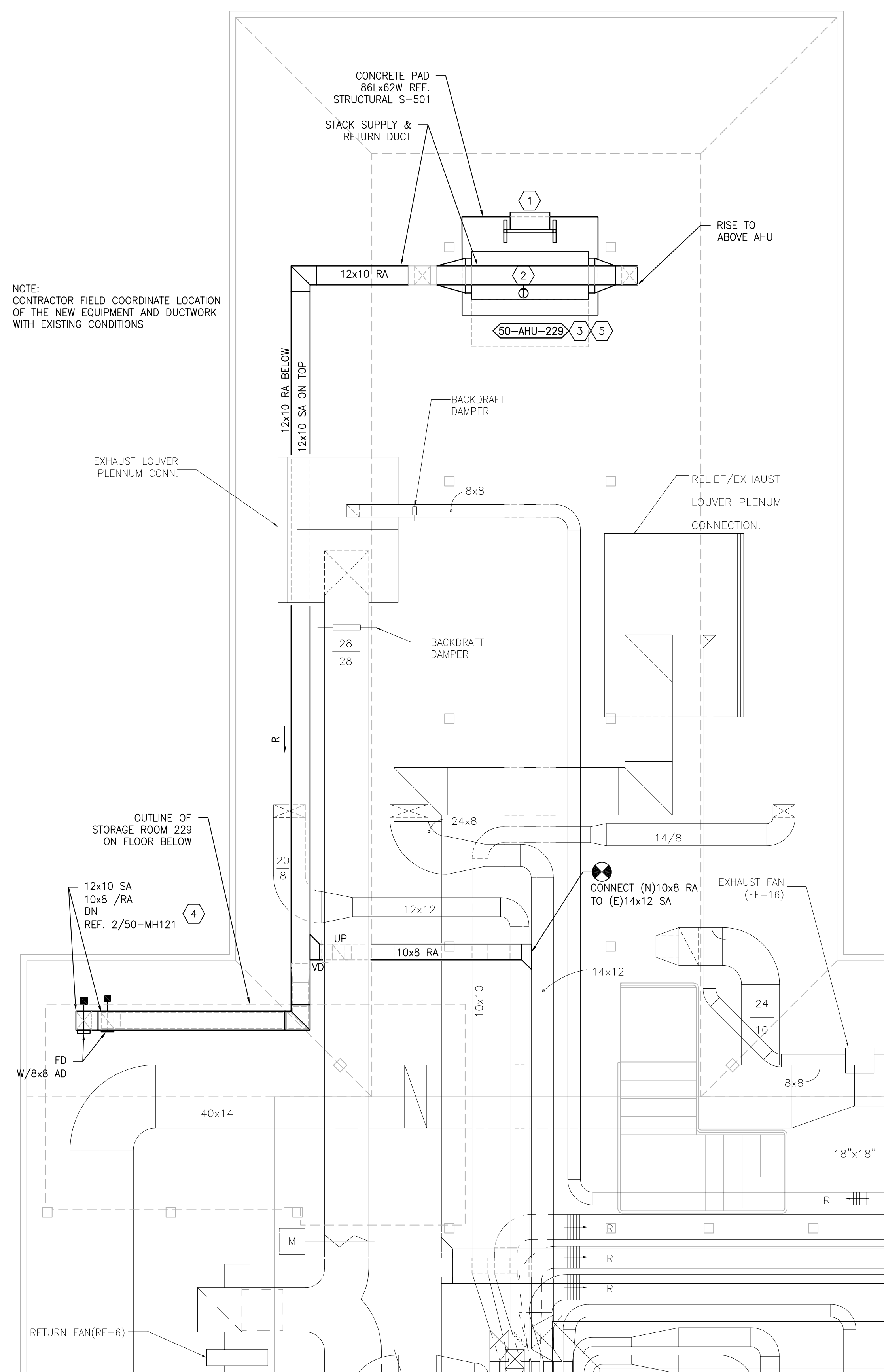
Drawing Number
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GENERAL SHEET NOTES:

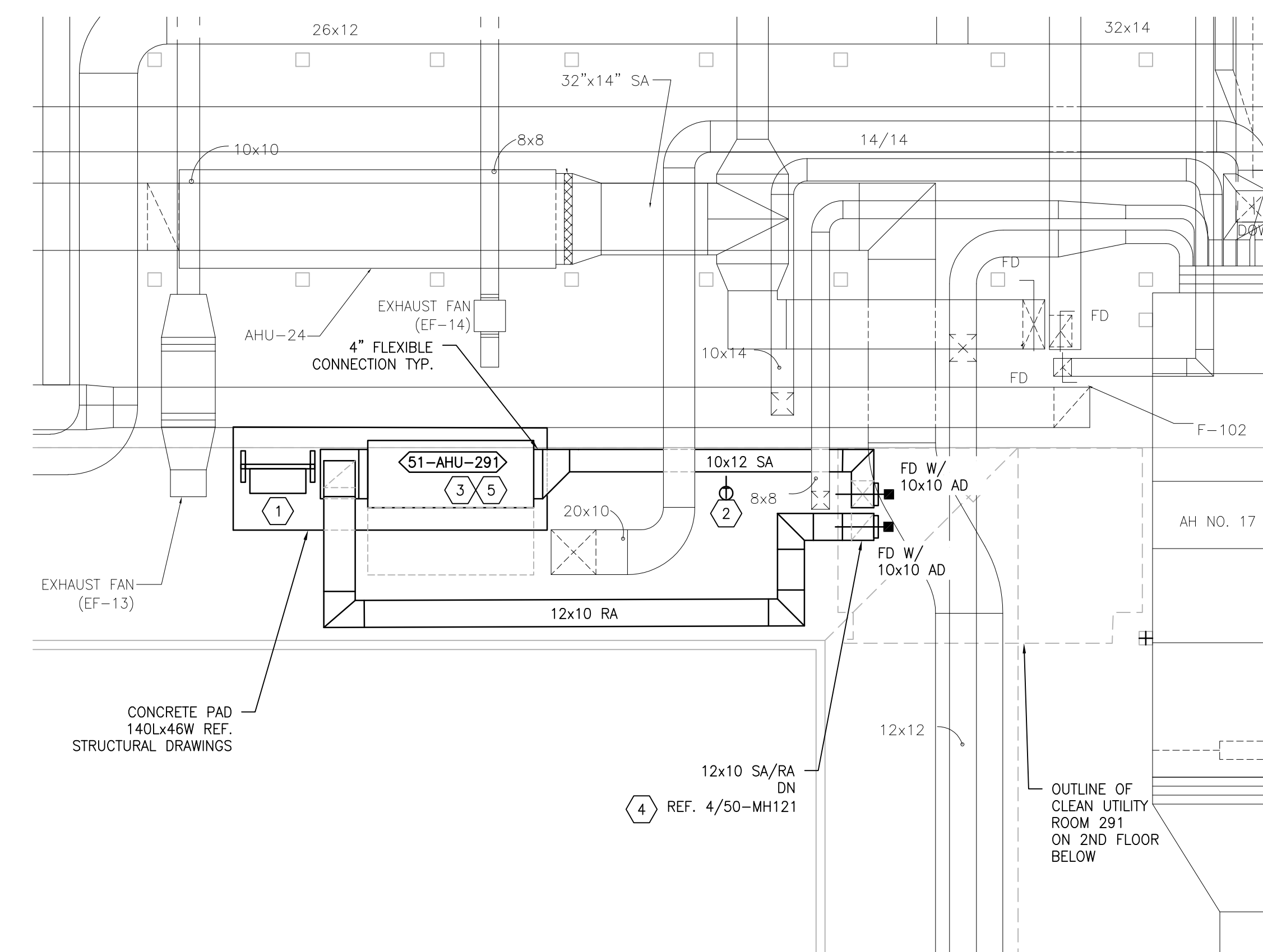
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
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10. ALL DUCTWORK PENETRATIONS SHALL BE SAW CUT. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
11. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

SHEET KEYNOTES:

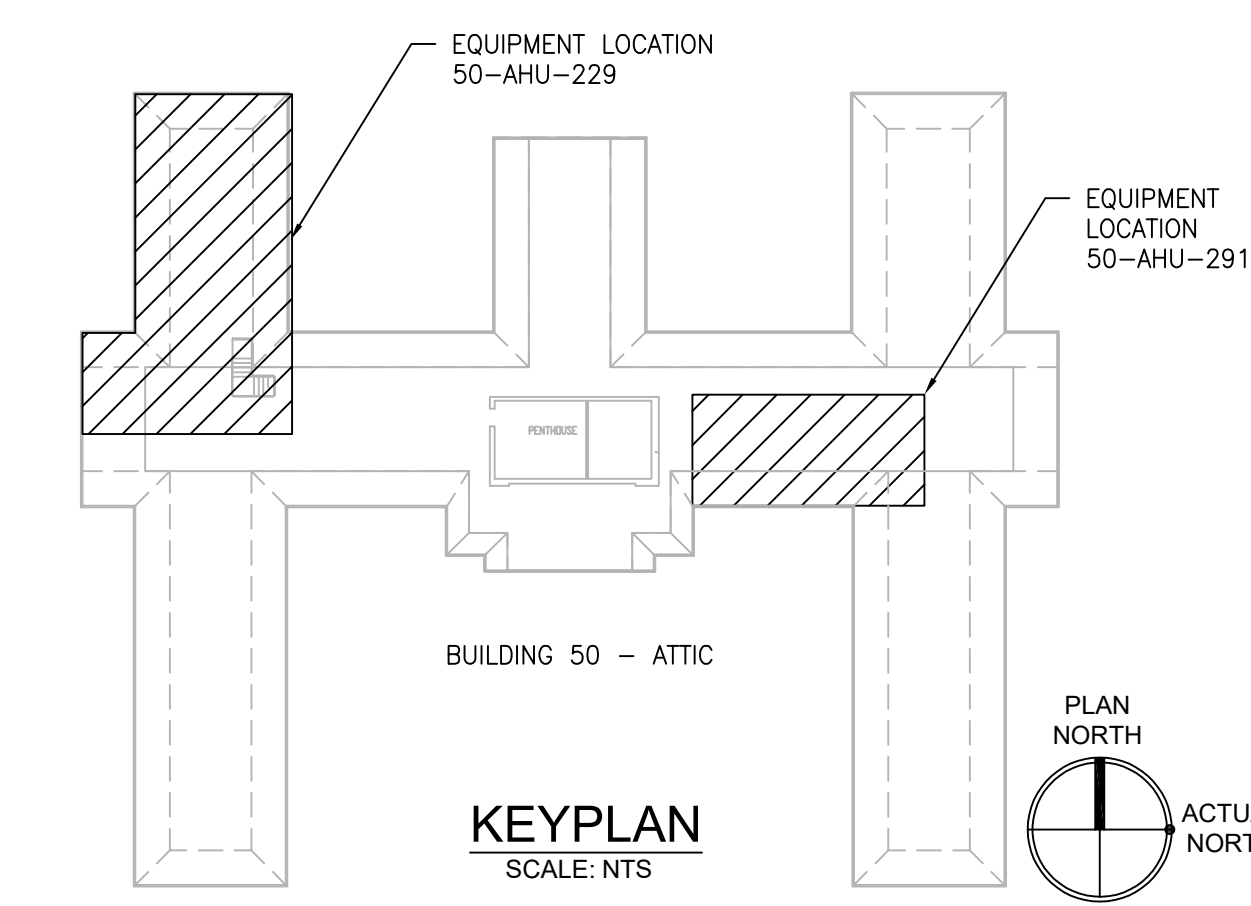
1. MOUNT FACTORY PREWIRED AHU CONTROL PANEL ON UNISTRUT FRAME. COORDINATE THE EXISTING ROOM CONDITIONS FOR FINAL LOCATION. PROVIDE NEW INTERCONNECTING WIRING AND CONDUIT AS REQUIRED IF LENGTH OF FACTORY WIRING 6'-0" IS NOT SUFFICIENT.
2. DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY AHU MANUFACTURER.
3. FIELD VERIFY LOCATION FOR NEW AIR HANDLING UNIT AND ASSOCIATED DUCTWORK. COORDINATE LOCATION WITH EXISTING CONDITIONS. ADJUST LOCATION IF REQUIRED.
4. PROVIDE FIRE DAMPER WITH ACCESS DOORS FOR BOTH DUCTS.
5. REFERENCE 2/M-504 FOR ADDITIONAL AHU INFORMATION.



1 BUILDING 50 ATTIC ROOM 229 - NEW WORK
SCALE: 1/4" = 1'-0"



2 BUILDING 50 ATTIC ROOM 291-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

VA U.S. Department of Veterans Affairs

Drawing Title
MECHANICAL NEW WORK PLANS ATTIC - BUILDING 50

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

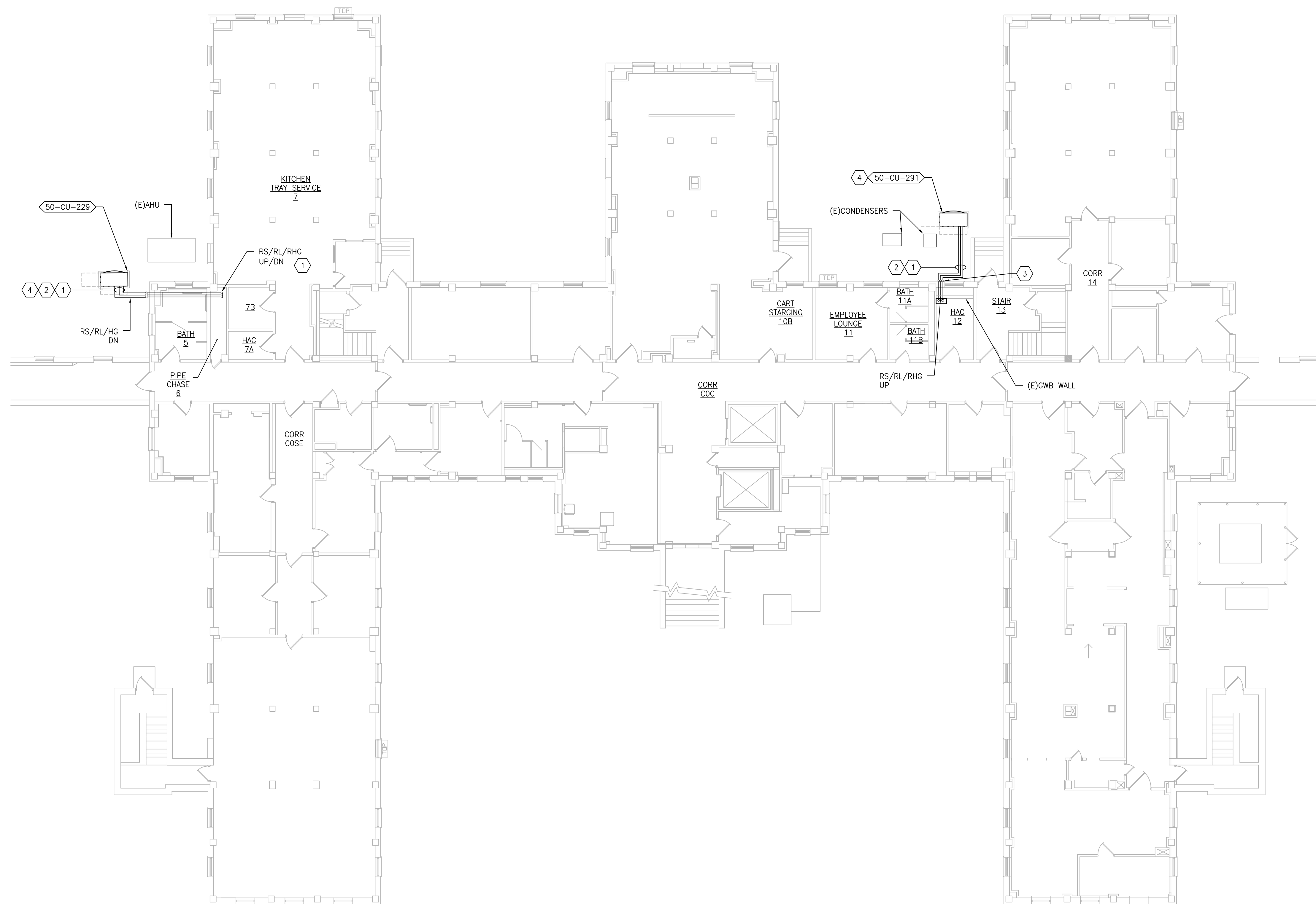
Drawing Number
50-MH131

GENERAL SHEET NOTES:

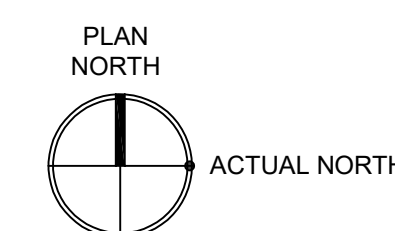
1. REFERENCE SPECIFICATION 02-82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
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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 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. 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.
3. PIPING TO PENETRATE ABOVE THE CEILING THROUGH THE EXTERIOR WALL AND DOWN.
4. MAINTAIN 6'-0" MINIMUM IN ALL DIRECTIONS FROM THE BUILDING TO PROTECT AGAINST FALLING SNOW AND ICE.



1 BUILDING 50 - BASEMENT
SCALE: 3/32" = 1'-0"



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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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(207) 828-4511
wbrinc.com

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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 BASEMENT - BUILDING 50

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

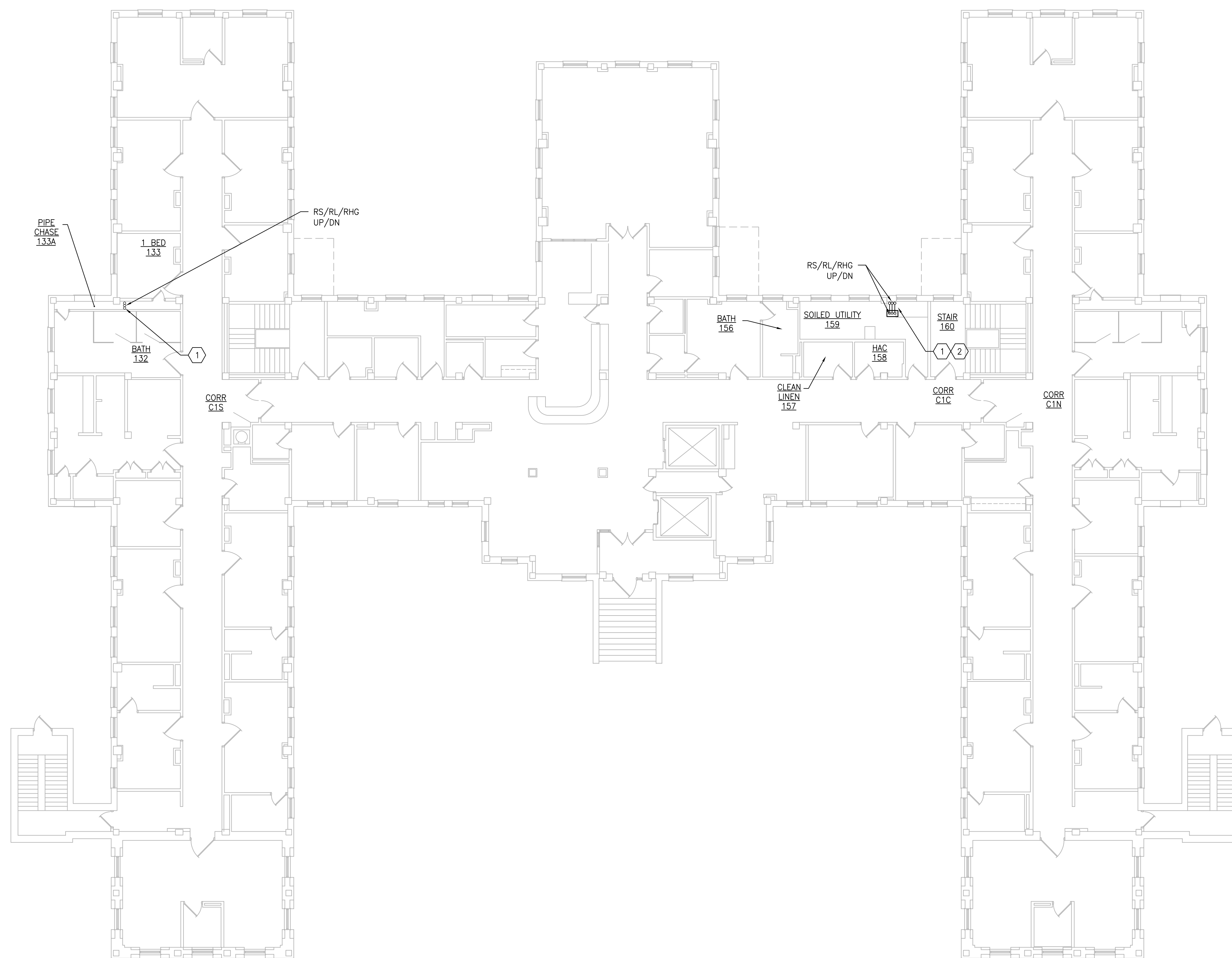
Drawing Number
50-MP101

GENERAL SHEET NOTES:

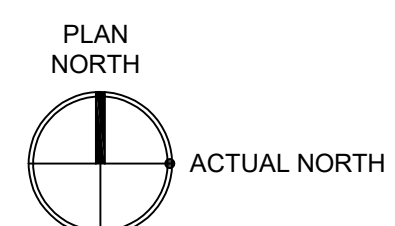
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- COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
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- PIPING TO BE INSULATED PER THE SPECIFICATIONS TO PROTECT THE PIPING FROM DAMAGE IN A HIGH TRAFFIC AREAS.



1 BUILDING 50 – FIRST FLOOR
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



Drawing Title
**MECHANICAL
PIPING PLAN
FIRST FLOOR - BUILDING 50**

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

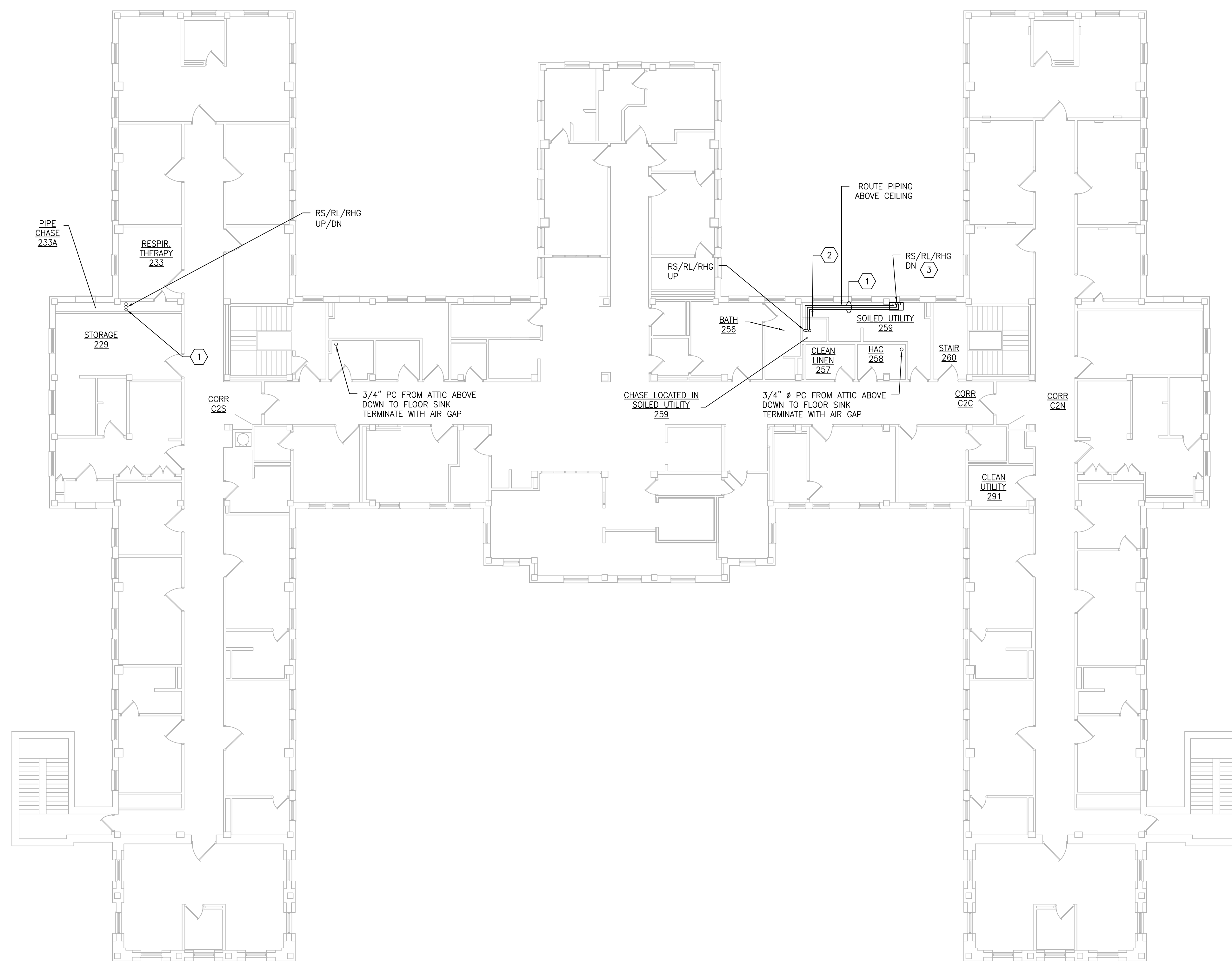
Drawing Number
50-MP111

GENERAL SHEET NOTES:

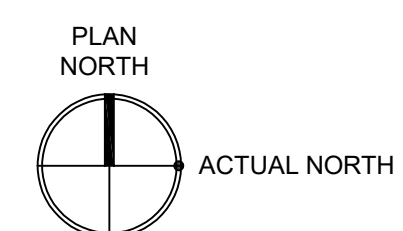
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5. MAINTAIN SERVICE CLEARANCE ON NEW AND EXISTING EQUIPMENT. REFER TO MECHANICAL DRAWINGS AND MANUFACTURER'S INSTALLATION MANUALS FOR ADDITIONAL INFORMATION.
6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN 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.

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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 - HOT GAS REHEAT 1/2" Ø
 - 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.
2. CONTRACTOR TO OPEN WALL TO GAIN ACCESS TO THE CHASE. REPAIR TO MATCH EXISTING CONDITIONS.
3. PIPING TO BE INSULATED PER THE SPECIFICATIONS TO PROTECT THE PIPING FROM DAMAGE IN A HIGH TRAFFIC AREAS.



1 BUILDING 50 - SECOND FLOOR
SCALE: 3/32" = 1'-0"



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NO.	DESCRIPTION	DATE

PROJECT TEAM



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1-866-267-6839



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ENGINEER OF RECORD

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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 PIPING PLAN
SECOND FLOOR - BUILDING 50**

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

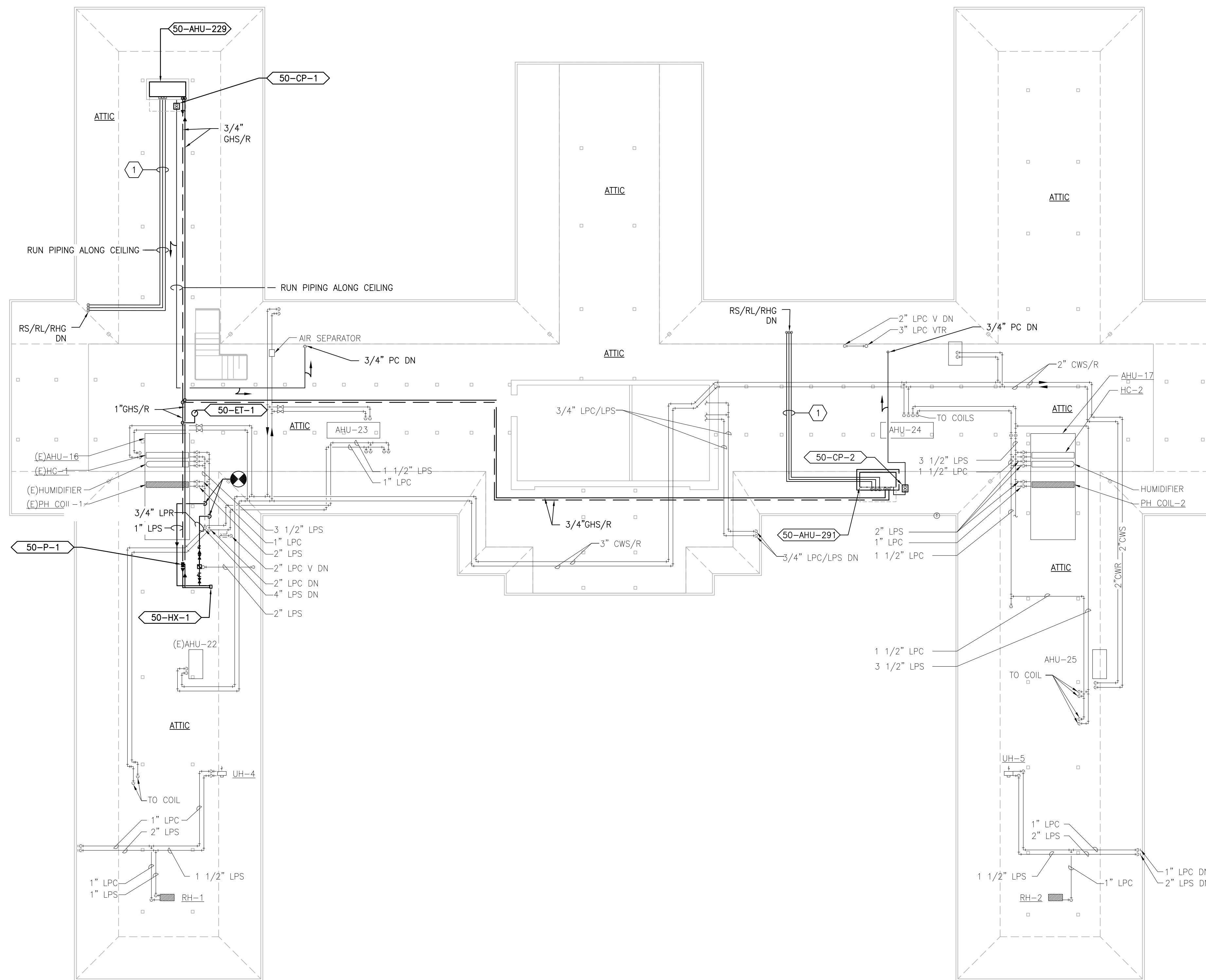
Project Number 656-18-300
Building Number 1, 2, 3, 28, 29, 49, 50, 51, 111, 116
Drawing Number 50-MP121

GENERAL SHEET NOTES:

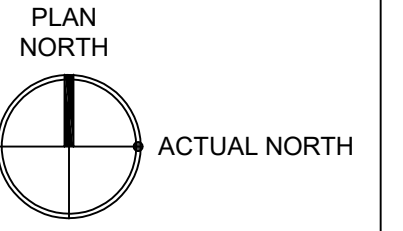
1. REFERENCE SPECIFICATION 02-82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
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.
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8. REMOVE AND REPLACE EXISTING CEILING REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
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SHEET KEYNOTES:

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1 BUILDING 50 - ATTIC
SCALE: 3/32" = 1'-0"



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NO.	DESCRIPTION	DATE

PROJECT TEAM

COMMISSIONER'S OFFICE OF CONTRACT ADMINISTRATION

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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
ATTIC - BUILDING 50

Approved: Project Director

Phase
100% CONSTRUCTION DOCUMENTS
NOT FOR CONSTRUCTION

FULLY SPRINKLERED

Project Title
UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS

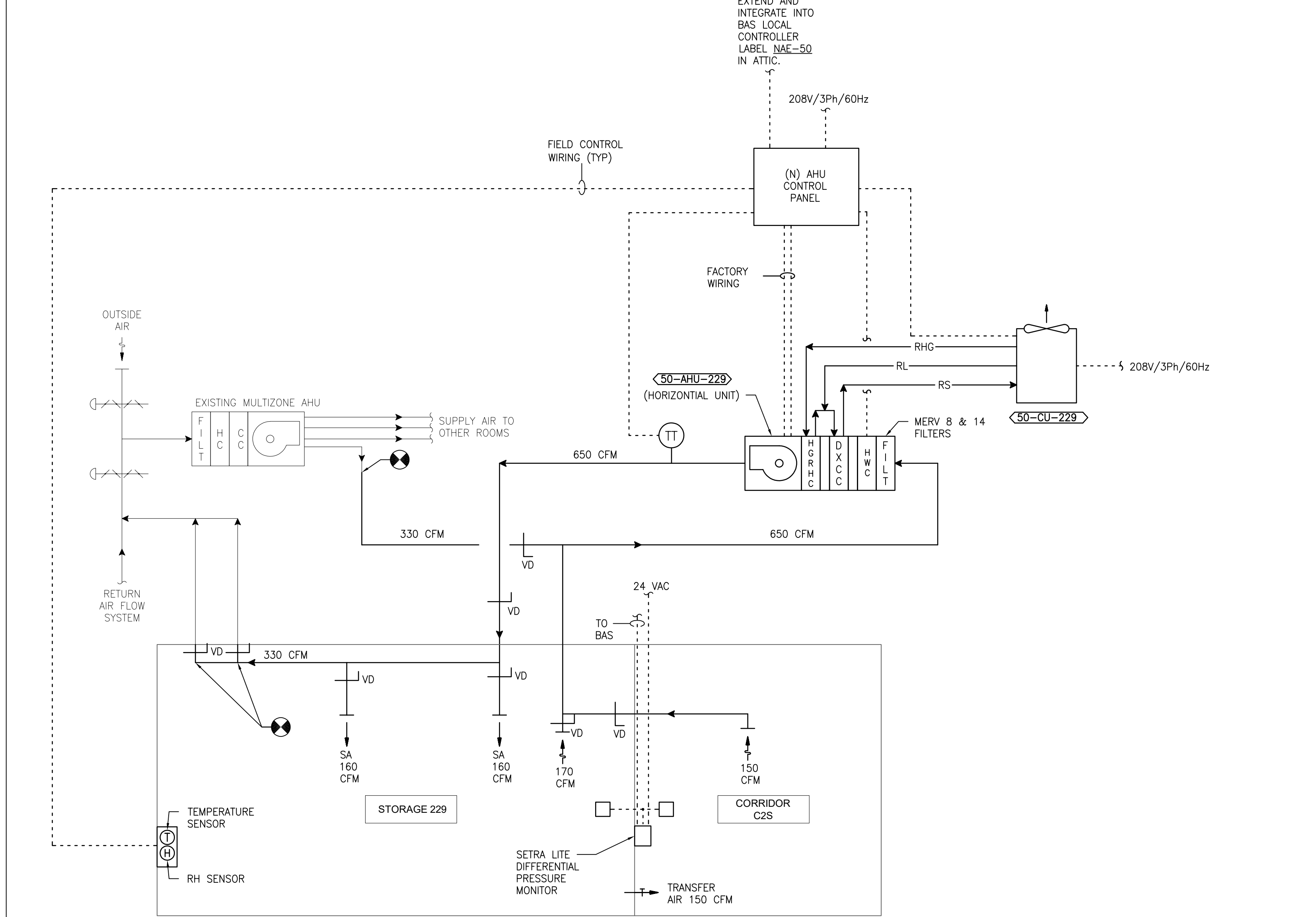
Location
ST. CLOUD VA MEDICAL CENTER, MN

Issue Date	Checked	Drawn
2022-07-15	MR	BJS

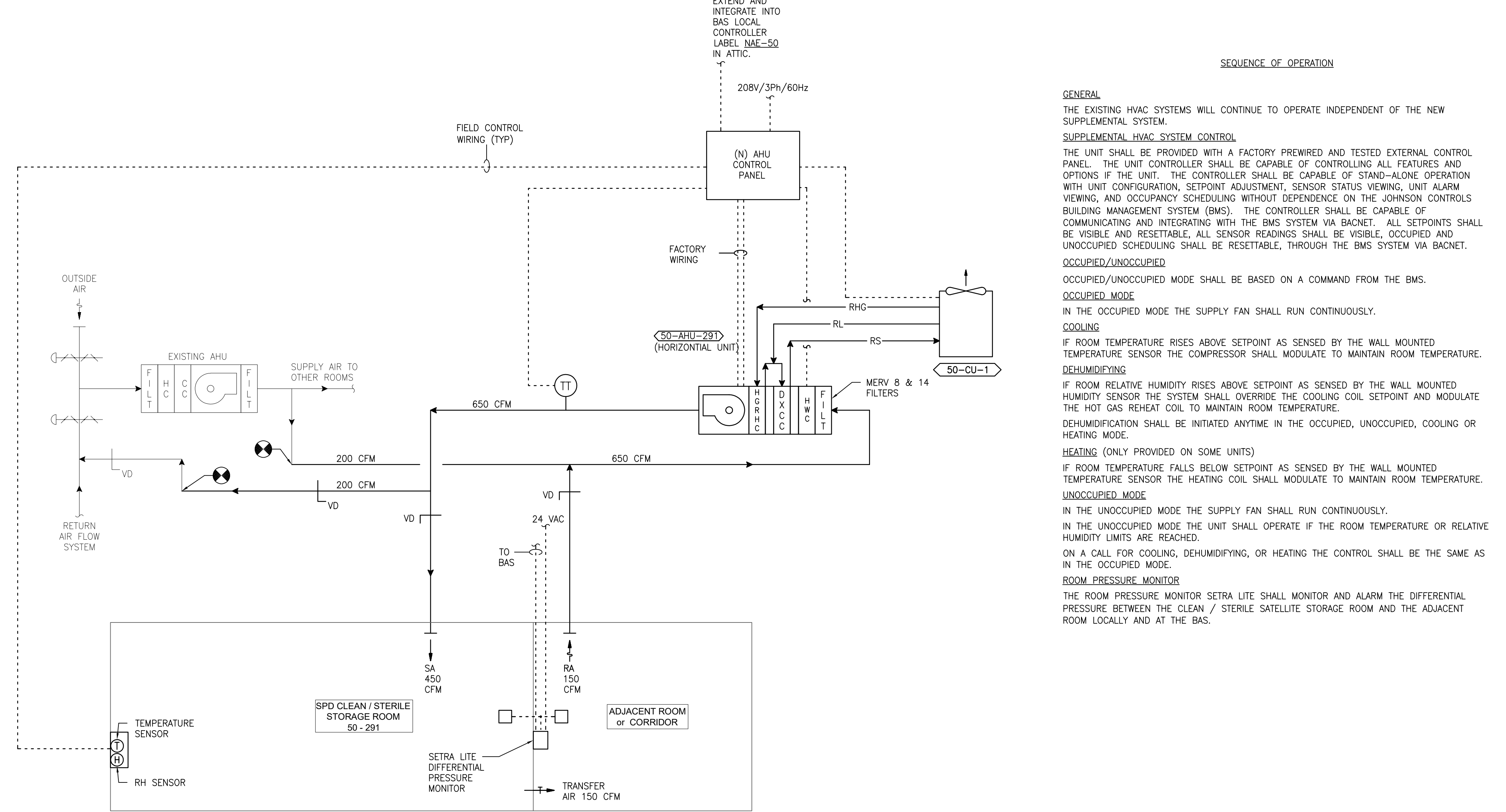
Project Number
656-18-300

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

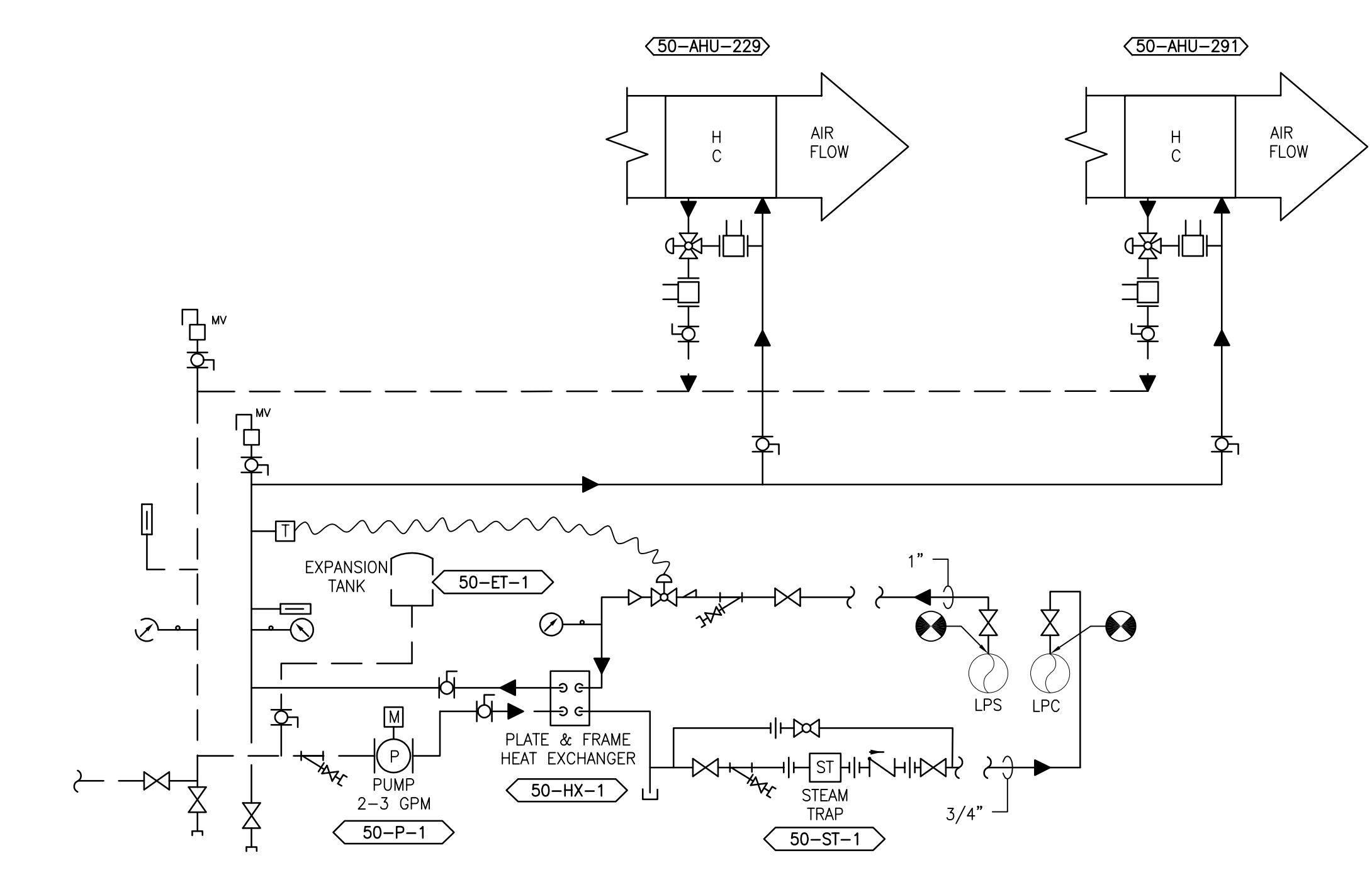
Drawing Number
50-MP131



1 DETAIL - 50 - 229
SCALE: NONE



2 DETAIL - 50 - 291
SCALE: NONE



3 DETAIL - 50 - 229 AND 291
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 IF 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 BE CAPABLE OF COMMUNICATING AND INTEGRATING 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. 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

COMMANDEER'S CONSULTANTS
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ENGINEER OF RECORD

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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 AIRFLOW CONTROL & PIPING DIAGRAM SECOND FLOOR - BUILDING 50

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

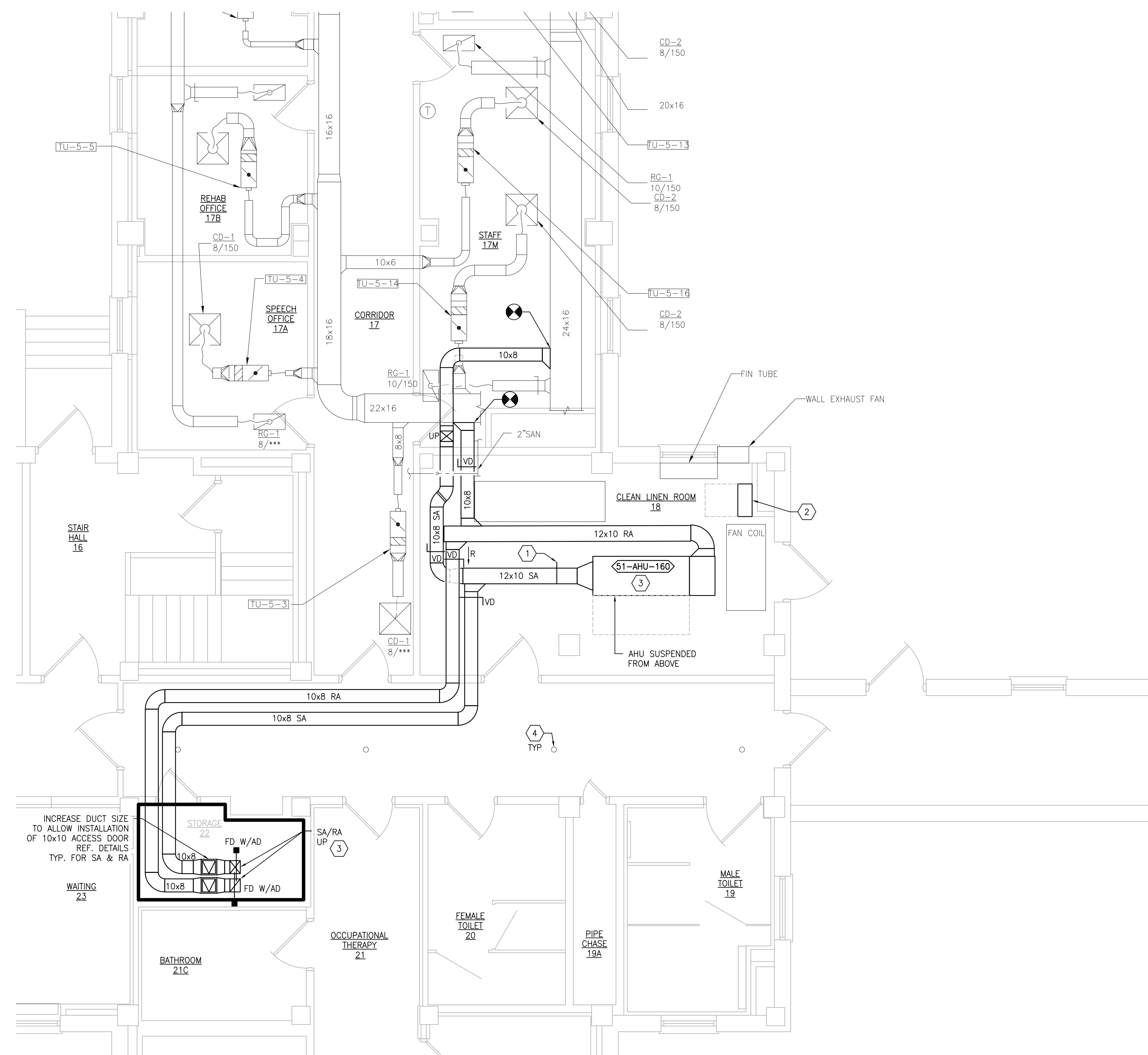
Drawing Number
50-M-821

GENERAL SHEET NOTES:

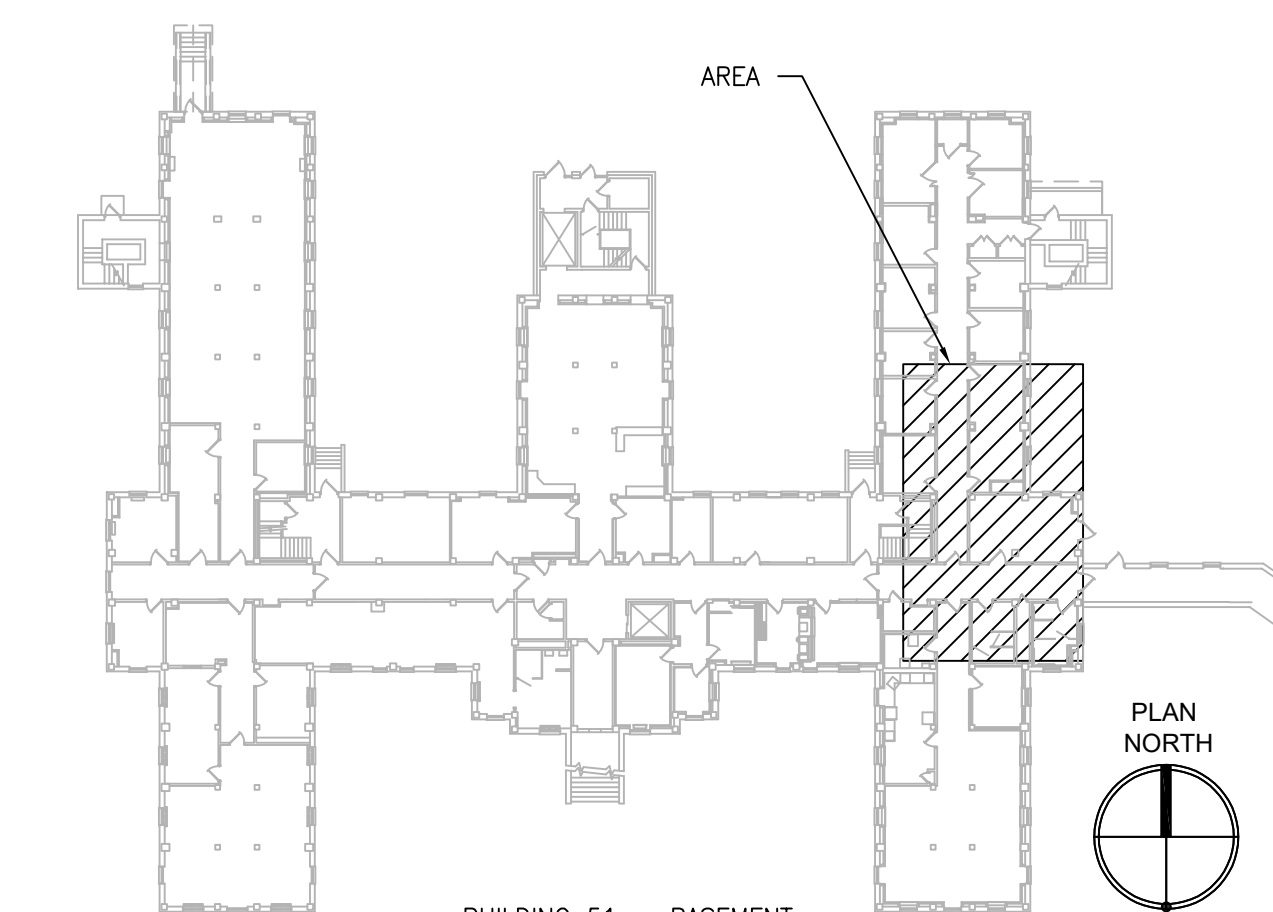
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
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4. MODIFY SPRINKLER PIPING IF REQUIRED TO INSTALL NEW WORK. INSTALL AND SUPPORT PIPING PER NFPA 99, SPECIFICATIONS AND DRAWINGS.
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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. DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY AHU MANUFACTURER.
2. MOUNT FACTORY PREWIRED AHU CONTROL PANEL ON UNISTRUT FRAME TO THE WALL. COORDINATE THE EXISTING ROOM CONDITIONS FOR FINAL LOCATION. PROVIDE NEW INTERCONNECTING WIRING AND CONDUIT AS REQUIRED IF LENGTH OF FACTORY WIRING 6'-0" IS NOT SUFFICIENT.
3. RELOCATE EXISTING LIGHT TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT.
4. EXTEND EXISTING SPRINKLER PIPING DOWN TO RELOCATED SPRINKLER HEAD HEIGHT. TYPICAL (4) HEADS IN CORRIDOR.



1 BUILDING 51 BASEMENT - 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



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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 NEW WORK PLAN BASEMENT - BUILDING 51	Phase 100% CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION
Approved: Project Director	FULLY SPRINKLERED

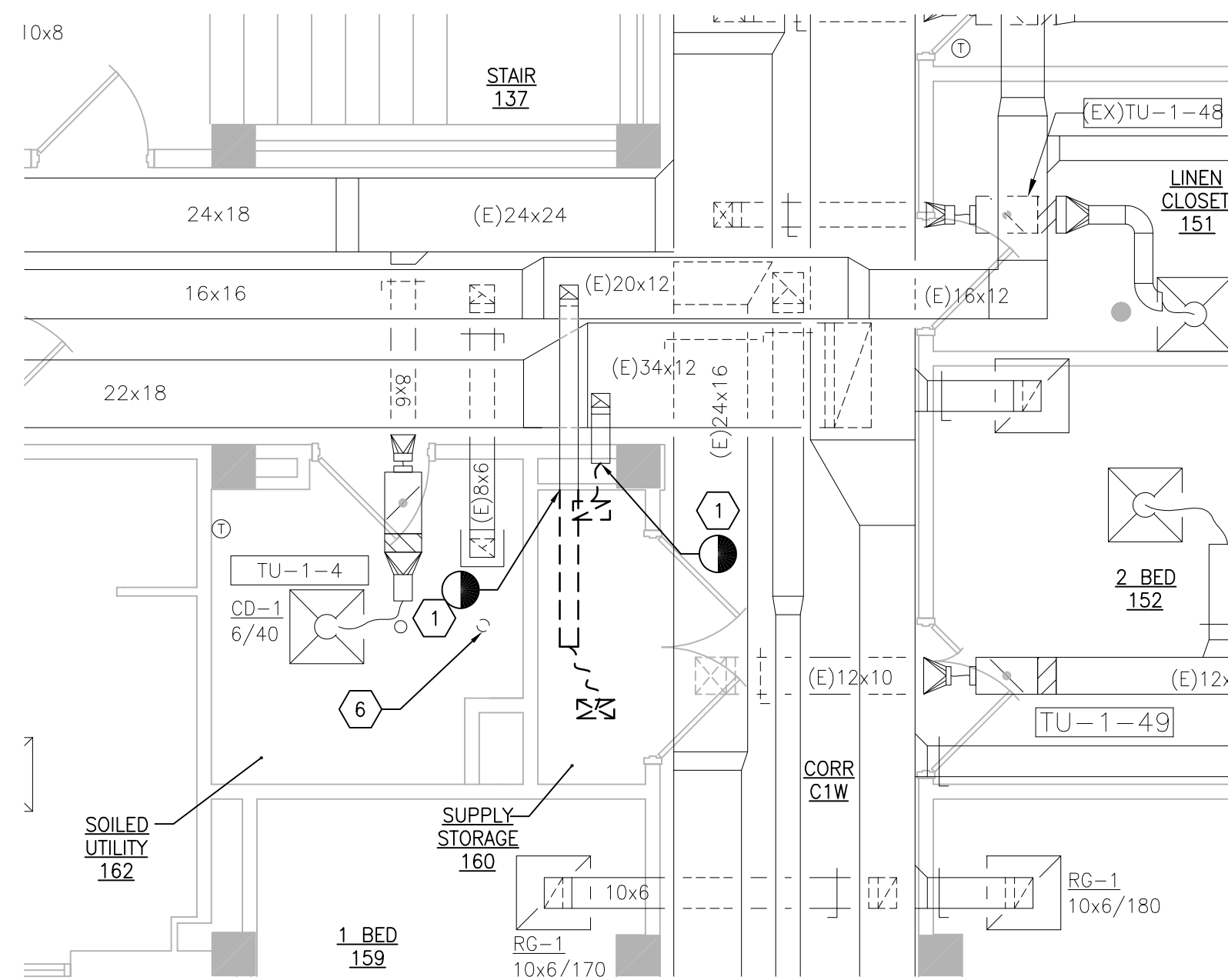
Project Title UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS	Project Number 656-18-300
Location ST. CLOUD VA MEDICAL CENTER, MN	Building Number 1, 2, 3, 28, 29, 49, 50, 51, 111, 116
Issue Date 2022-07-15	Checked MR
Drawn PNL	Drawing Number 51-MH101

GENERAL SHEET NOTES:

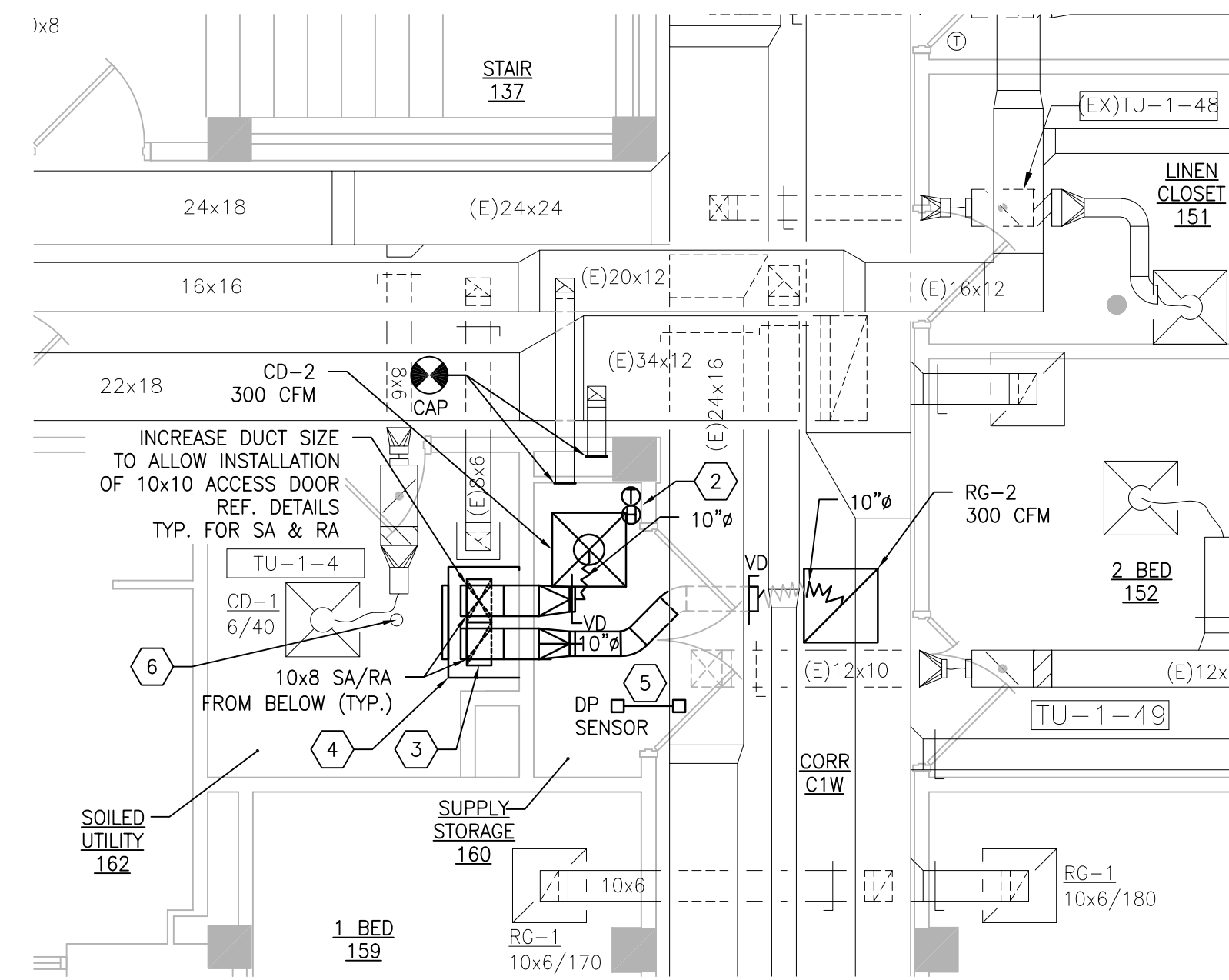
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KEYNOTE:

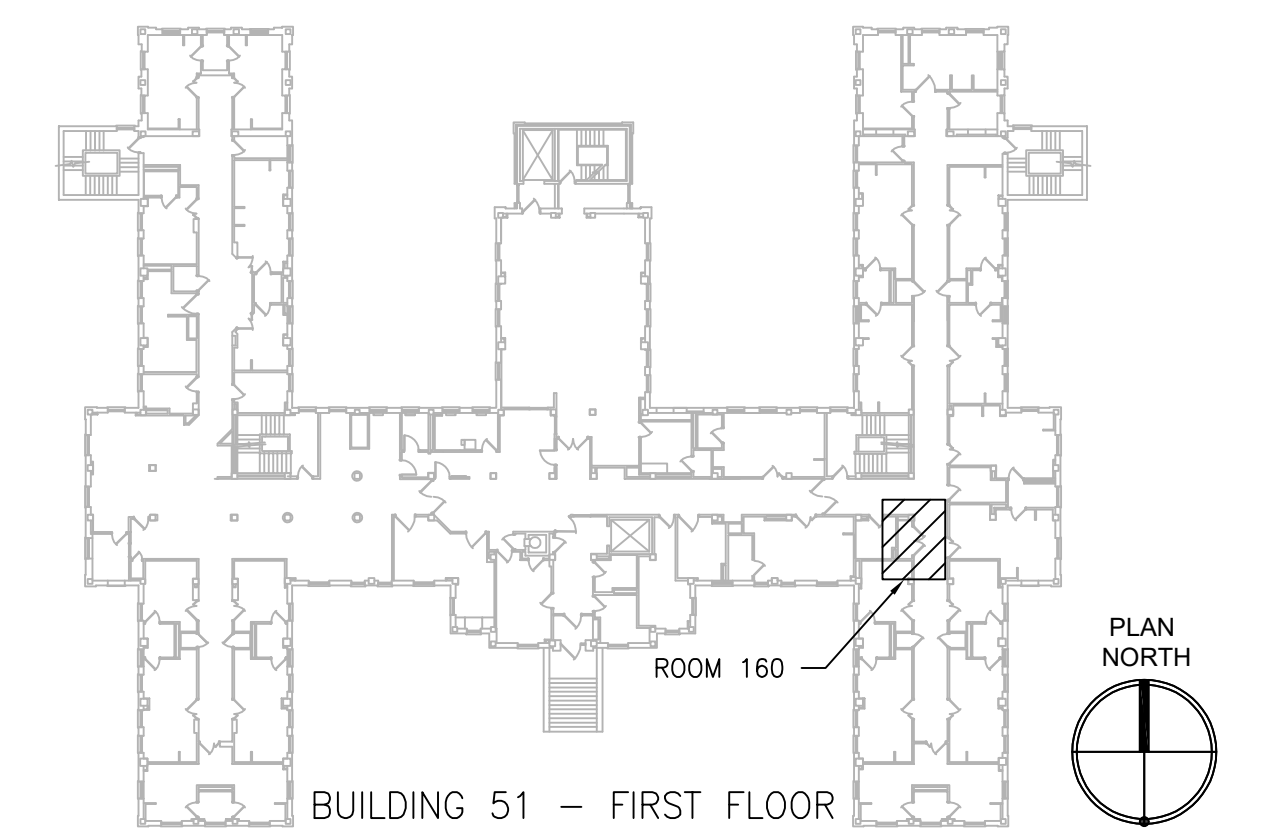
1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
2. THERMOSTAT AND HUMIDISTAT TO CONTROL NEW AHU.
3. FIELD VERIFY LOCATION OF NEW DUCTWORK AND EXISTING CONDITIONS.
4. REFERENCE GENERAL DRAWINGS FOR ENCLOSURE DETAILS. ENCLOSURE TO HAVE A 24"x24" ACCESS PANEL TO ALLOW ACCESS TO FIRE DAMPERS.
5. INSTALL DIFFERENTIAL PRESSURE SENSOR THROUGH WALL CENTERED ABOVE DOOR. INSTALL ROOM PRESSURE MONITOR OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.
6. EXTEND EXISTING SPRINKLER PIPE AND RELOCATE SPRINKLER HEAD TO NEW LOCATION.



1 BUILDING 51 FIRST FLOOR ROOM 160 – DEMOLITION
SCALE: 1/4" = 1'-0"



2 BUILDING 51 FIRST FLOOR ROOM 160 – NEW WORK
SCALE: 1/4" = 1'-0"



KEYPLAN
SCALE: NTS

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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 DEMOLITION / NEW WORK PLANS FIRST FLOOR - BUILDING 51	Phase 100% CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION
Approved: Project Director	FULLY SPRINKLERED

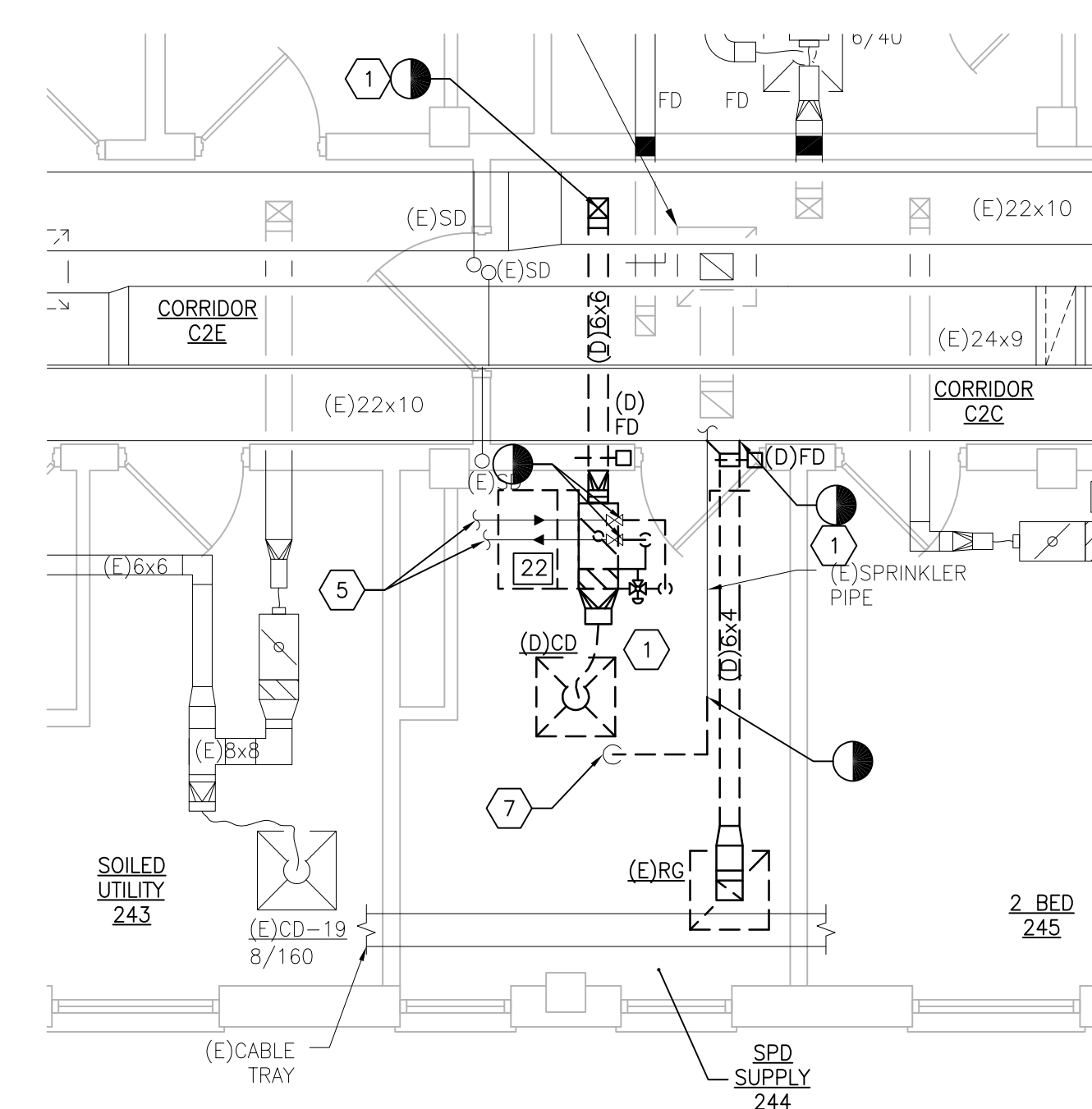
Project Title UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS	Project Number 656-18-300
Location ST. CLOUD VA MEDICAL CENTER, MN	Building Number 1, 2, 3, 28, 29, 49, 50, 51, 111, 116
Issue Date 2022-07-15	Checked MR
Drawn PNL	Drawing Number 51-MH111

GENERAL SHEET NOTES:

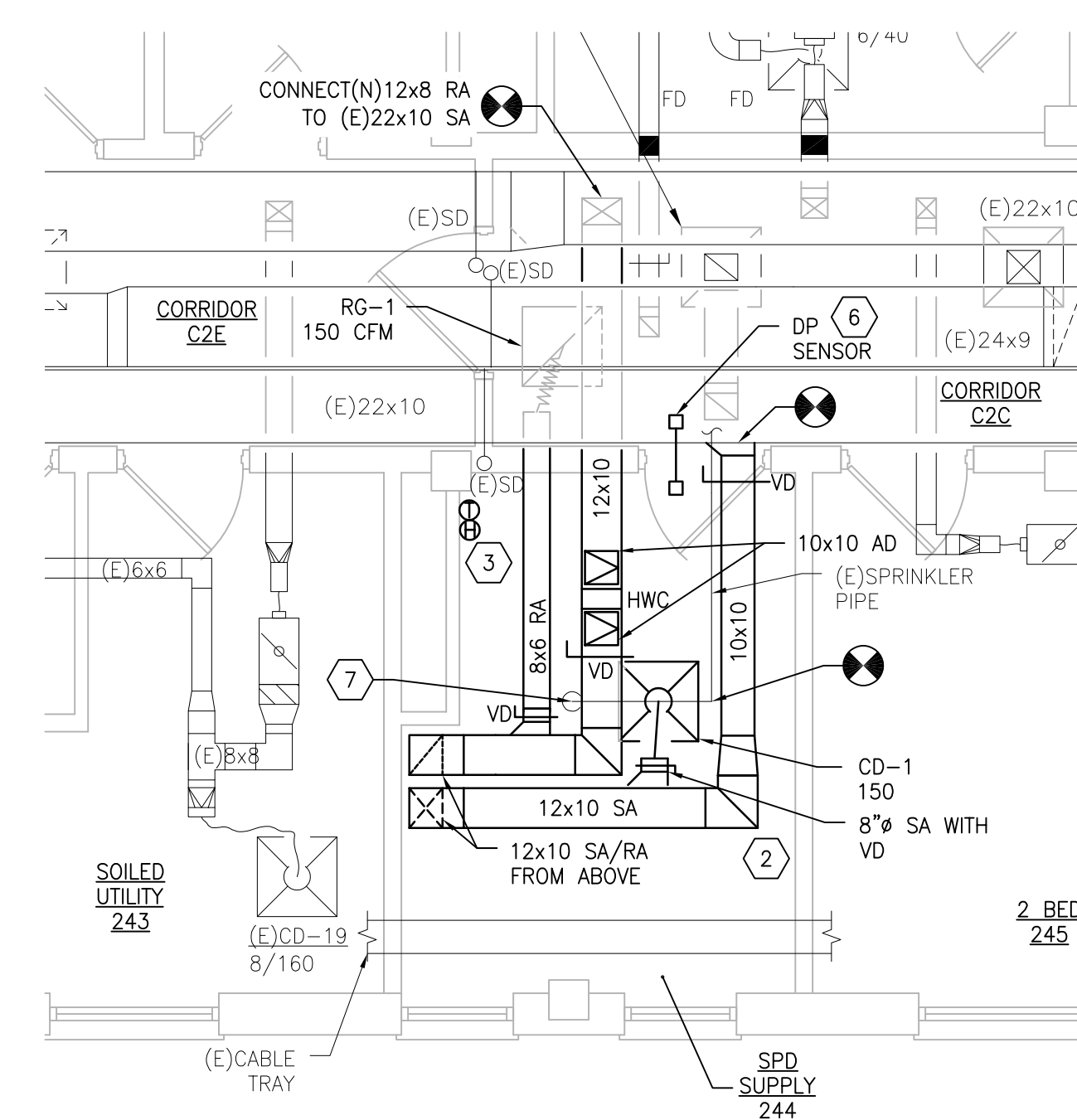
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS 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 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:

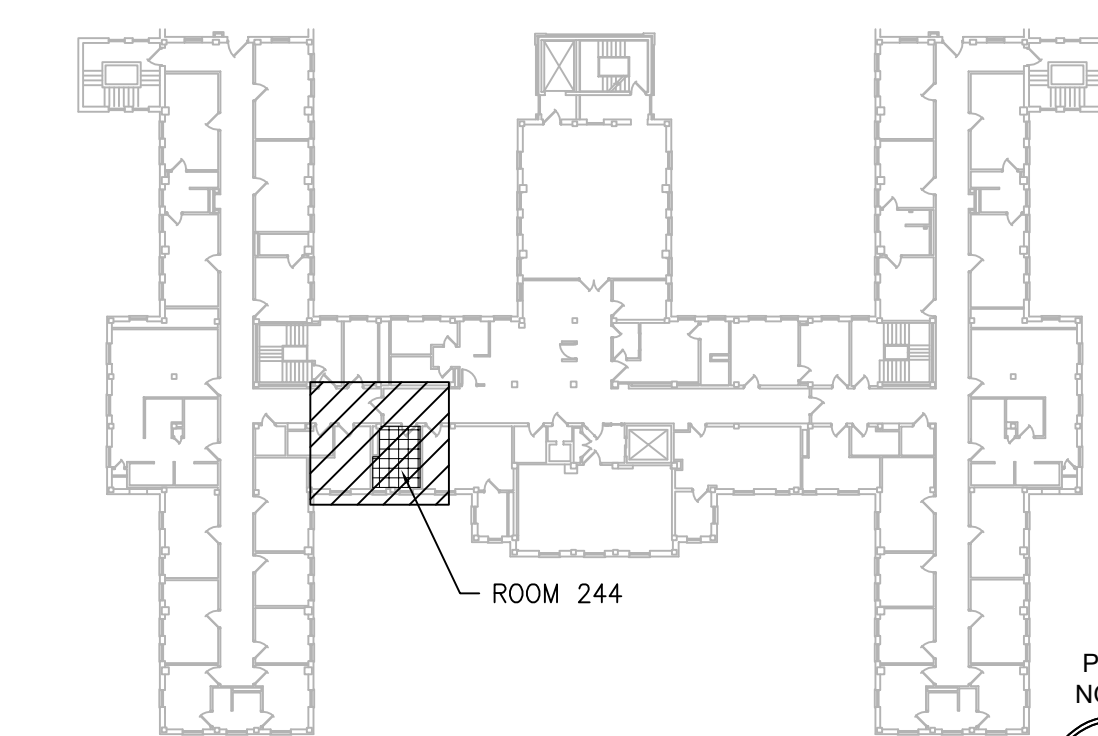
1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
2. FIELD VERIFY LOCATION OF NEW DUCTWORK AND EXISTING CONDITIONS.
3. THERMOSTAT AND HUMIDISTAT TO CONTROL NEW AHU.
4. NOT USED.
5. EXISTING HOT WATER SUPPLY AND RETURN PIPING TO REMAIN. PREPARE EXISTING PIPE FOR CONNECTION TO NEW PIPING. REFERENCE 51-MP121 FOR 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. RELOCATE AND EXTEND EXISTING SPRINKLER PIPE AND SPRINKLER HEAD TO THE NEW LOCATION.



1 BUILDING 51 SECOND FLOOR ROOM 244 – DEMOLITION
SCALE: 1/4" = 1'-0"



2 BUILDING 51 SECOND FLOOR ROOM 244 – 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
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Forest, VA 24551
1-866-267-6839



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wbrcinc.com

ENGINEER OF RECORD

Miller-Remick LLC
M.E.P. & Structural Engineering
A Service Disabled Veteran Owned Small Business
1010 KINGS HIGHWAY SOUTH
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



Drawing Title
**MECHANICAL
DEMOLITION / NEW WORK PLANS
SECOND FLOOR - BUILDING 51**

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

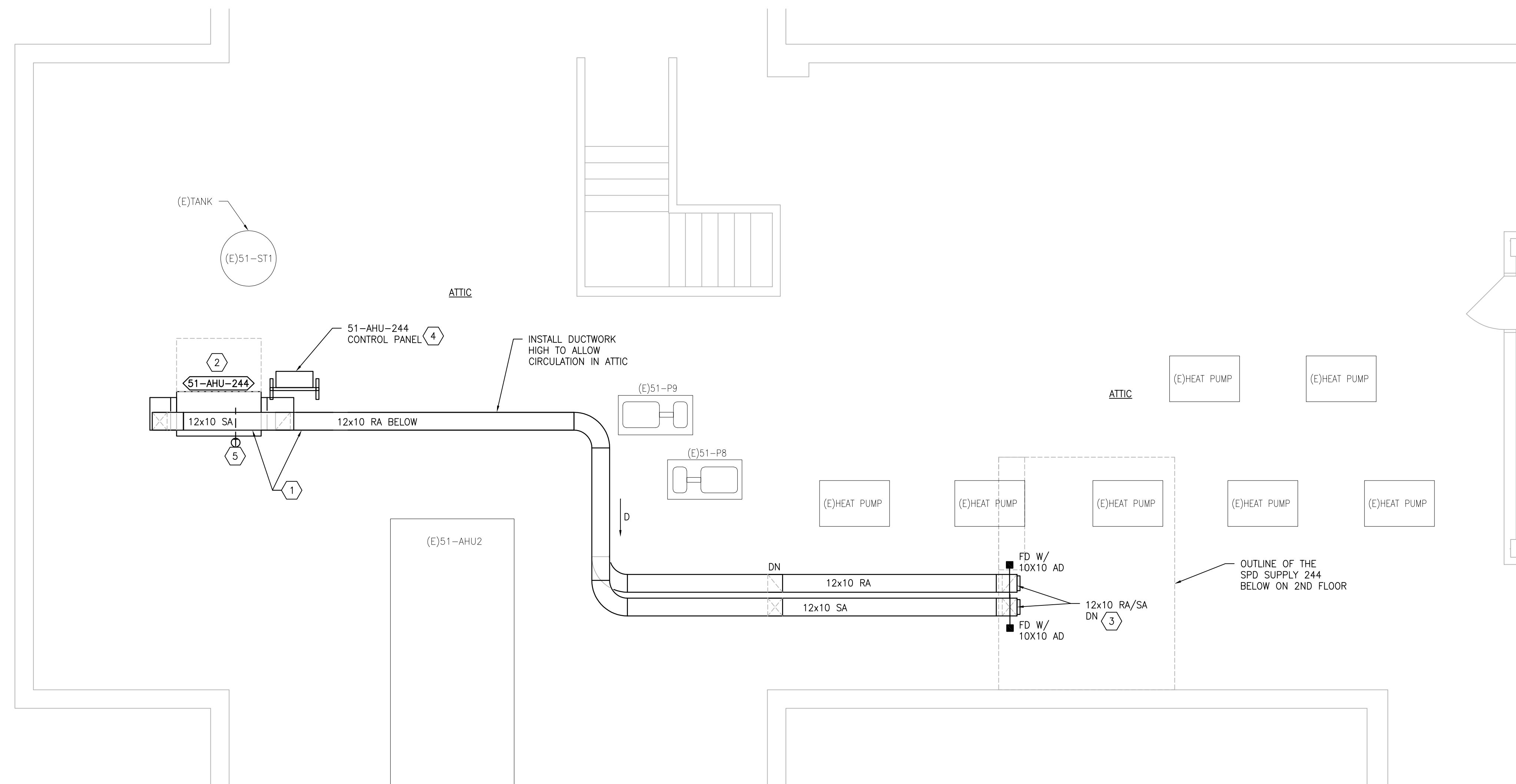
Drawing Number
51-MH121

GENERAL SHEET NOTES:

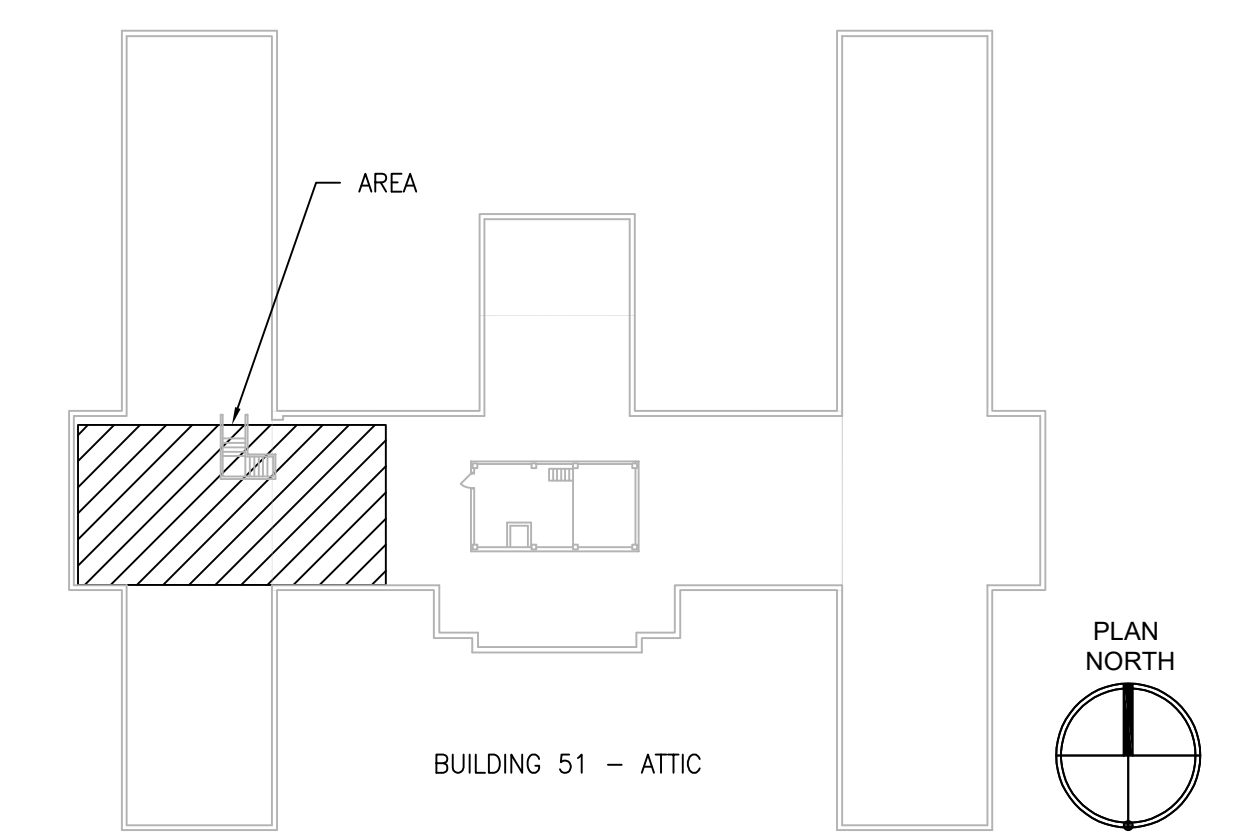
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
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6. ADHERE TO ALL ICRA REQUIREMENTS LISTED IN THE ARCHITECTURAL SET. THE ICRA LEVEL HAS BEEN DEFINED BY THE VA AS LEVEL 3 UNLESS OTHERWISE INDICATED. PROTECT ALL EQUIPMENT IN THE ROOM FROM DUST, DEBRIS AND PHYSICAL DAMAGE AT ALL TIMES.
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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. STACK SUPPLY AIR DUCT ABOVE RETURN AIR DUCT.
2. FIELD VERIFY LOCATION FOR NEW AIR HANDLING UNIT AND ASSOCIATED DUCTWORK. COORDINATE LOCATION WITH EXISTING CONDITIONS. ADJUST LOCATION IF REQUIRED.
3. PROVIDE FIRE DAMPER WITH ADEQUATE SIZE ACCESS DOORS FOR BOTH DUCTS.
4. MOUNT FACTORY PREWIRED AHU CONTROL PANEL ON UNISTRUT FRAME. COORDINATE THE EXISTING ROOM CONDITIONS FOR FINAL LOCATION. PROVIDE NEW INTERCONNECTING WIRING AND CONDUIT AS REQUIRED IF LENGTH OF FACTORY WIRING 6'-0" IS NOT SUFFICIENT.
5. DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY AHU MANUFACTURER.



1 BUILDING 51 ATTIC -- NEW WORK
SCALE: 1/4" = 1'-0"



KEYPLAN
SCALE: NTS

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NO.	DESCRIPTION	DATE

PROJECT TEAM



MEP Engineers + Architects
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wbrinc.com

ENGINEER OF RECORD

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

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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



Drawing Title
**MECHANICAL
PARTIAL NEW WORK PLAN
ATTIC - BUILDING 51**

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
51-MH131

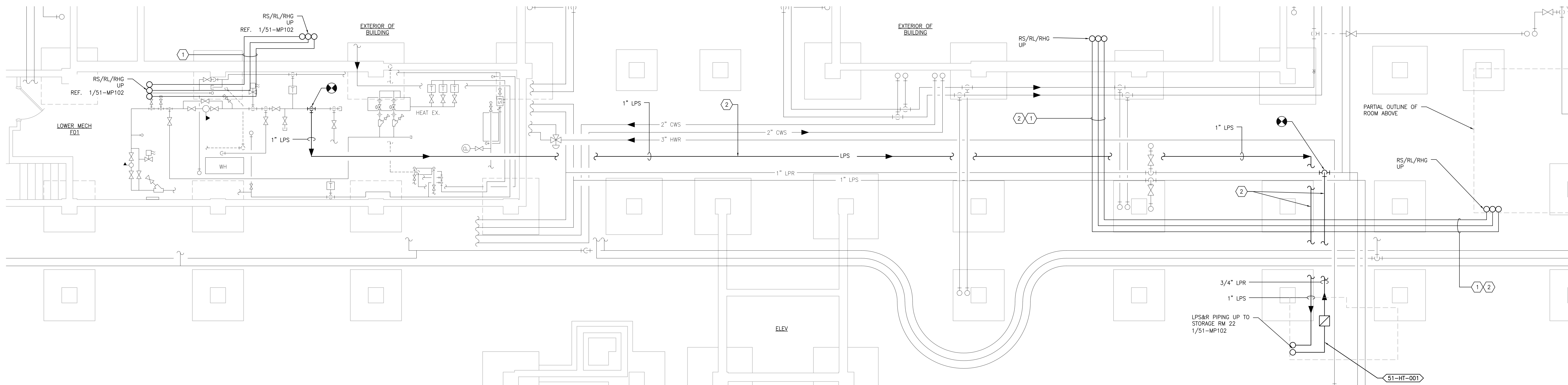
GENERAL SHEET NOTES:

- REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
- 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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- 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.

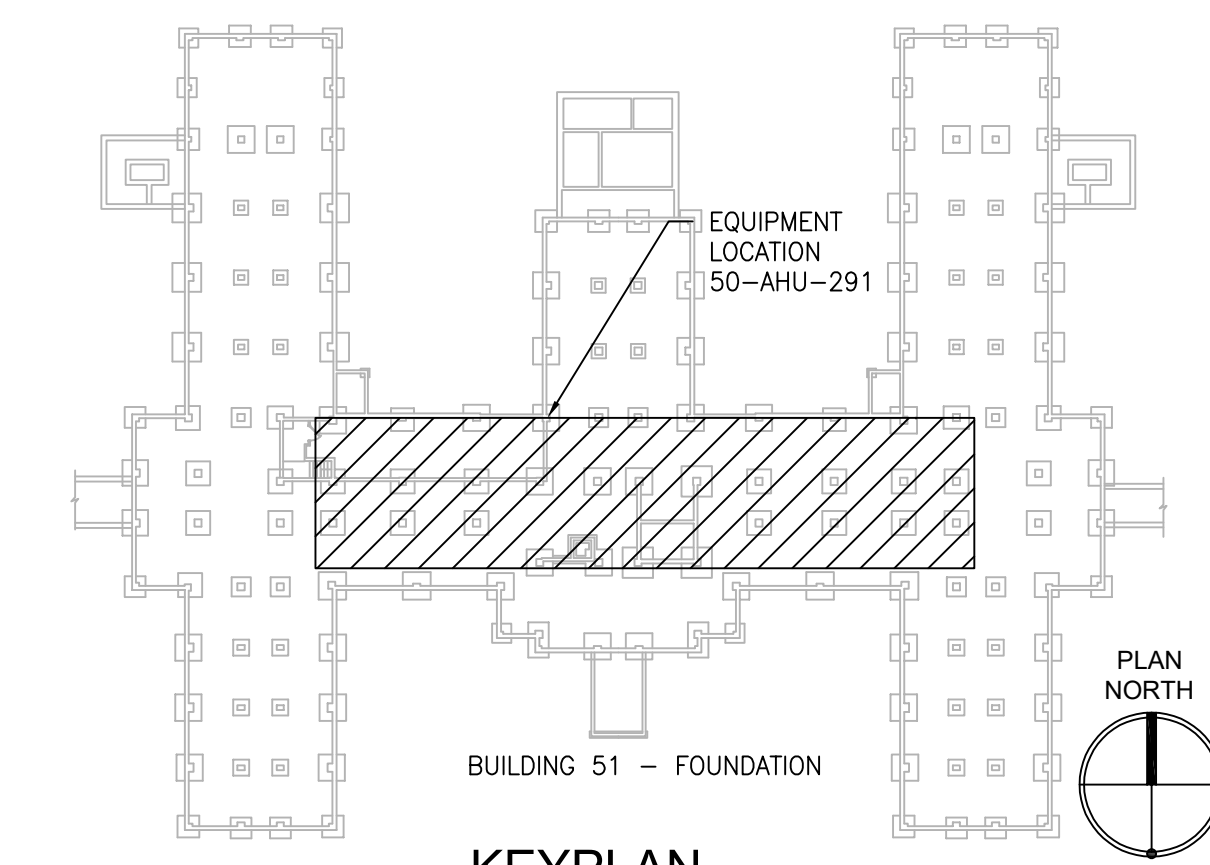
SHEET KEYNOTES:

- 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
 - 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 ALONG UNDER SIDE OF DECK.



1 BUILDING 51 - FOUNDATION PIPING PLAN
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

COMMITTEE OF CHIEFS CONTRACTORS

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



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

ENGINEER OF RECORD

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

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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

VA U.S. Department of Veterans Affairs

Drawing Title
MECHANICAL PIPING PLAN FOUNDATION - BUILDING 51

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

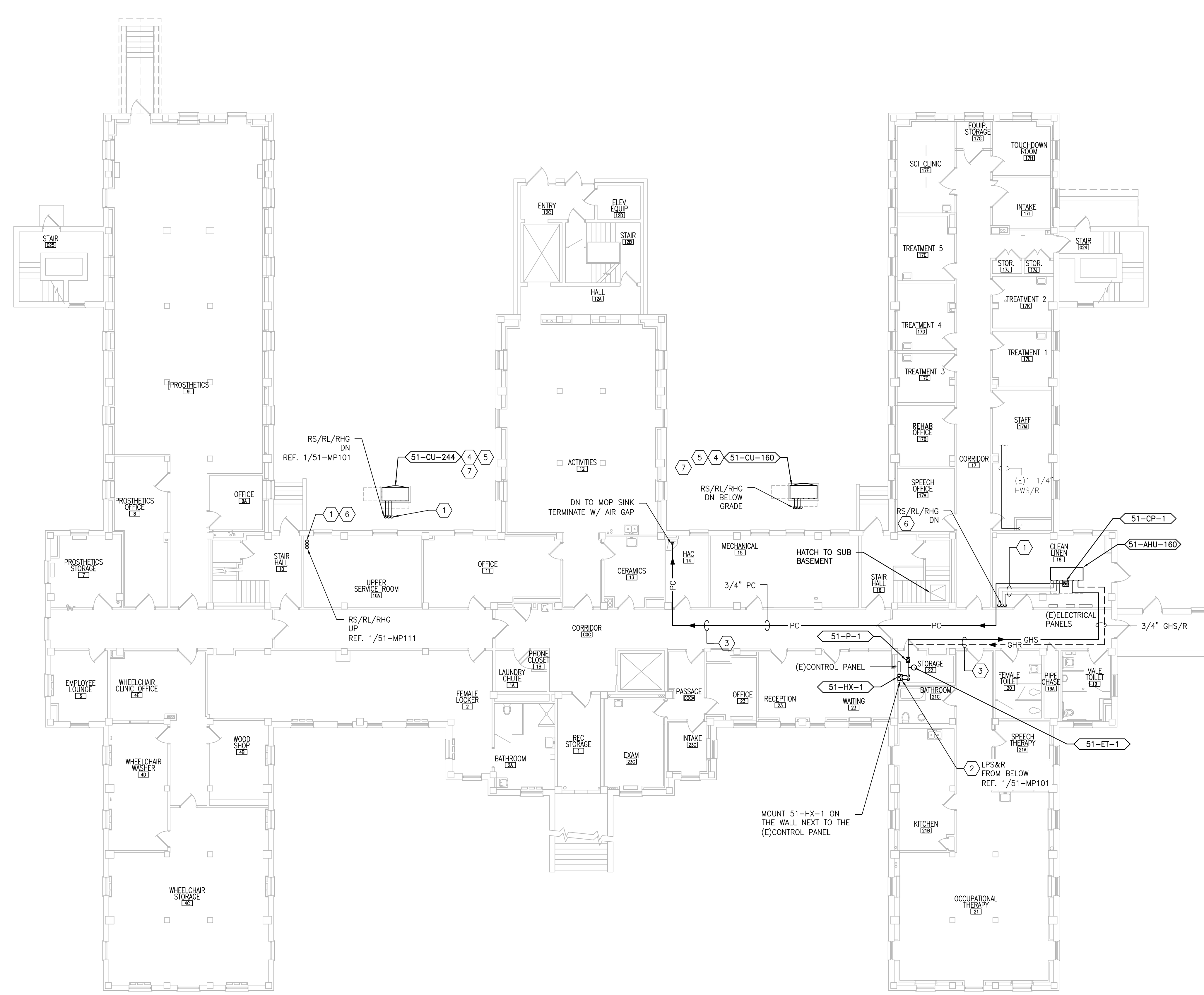
Drawing Number
51-MP101

GENERAL SHEET NOTES:

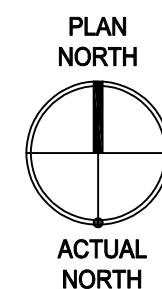
1. REFERENCE SPECIFICATION 02-82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS AND COMPONENTS AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT AND COMPONENTS.
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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
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 - HOT GAS REHEAT 3/8" Ø
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- MINIMUM PIPE SIZES FOR OVER 60 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
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- 1" LPS AND 3/4" LPR STEAM PIPING FROM BELOW. CONNECT PIPING TO NEW 51-HX-1. PIPING NOT SHOWN FOR CLARITY.
- RUN PIPING ABOVE CEILING
- 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.
- PIPING TO BE INSULATED PER THE SPECIFICATIONS TO PROTECT THE PIPING FROM DAMAGE IN A HIGH TRAFFIC AREAS.
- ADJUST CONDENSER LOCATION TO AVOID TREES. TRIM THE TREE BACK TO ALLOW PROPER CLEARANCE FOR UNIT.



1 BUILDING 51 - BASEMENT FLOOR
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

VA U.S. Department of Veterans Affairs

Drawing Title
MECHANICAL PIPING PLAN BASEMENT - BUILDING 51

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
51-MP102

GENERAL SHEET NOTES:

1. REFERENCE SPECIFICATION 02.82.11 APPENDIX A1 FOR ABATEMENT REPORT. CONTRACTOR TO ADHERE TO AND FOLLOW REPORT FOR ALL KNOWN ABATEMENT LOCATIONS.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK.
3. 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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10. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS ETC.
11. ALL PIPING PENETRATIONS SHALL BE CORE DRILLED. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
12. 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 REFRIGERANT 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.
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. 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

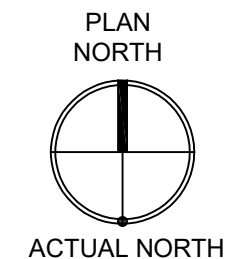
- MINIMUM PIPE SIZES FOR OVER 60 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
 - SUCTION LINE 3/4" ø
 - LIQUID LINE 1/2" ø
 - HOT GAS REHEAT 1/2" ø
 - PUMPED CONDENSATE 3/4" ø

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.

2. REFERENCE ARCHITECTURAL DRAWINGS FOR ENCLOSURE DETAILS.



1 BUILDING 51 - FIRST FLOOR
SCALE: 3/32" = 1'-0"



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

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

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 PIPING PLANS FIRST FLOOR - BUILDING 51

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
51-MP111

GENERAL SHEET NOTES:

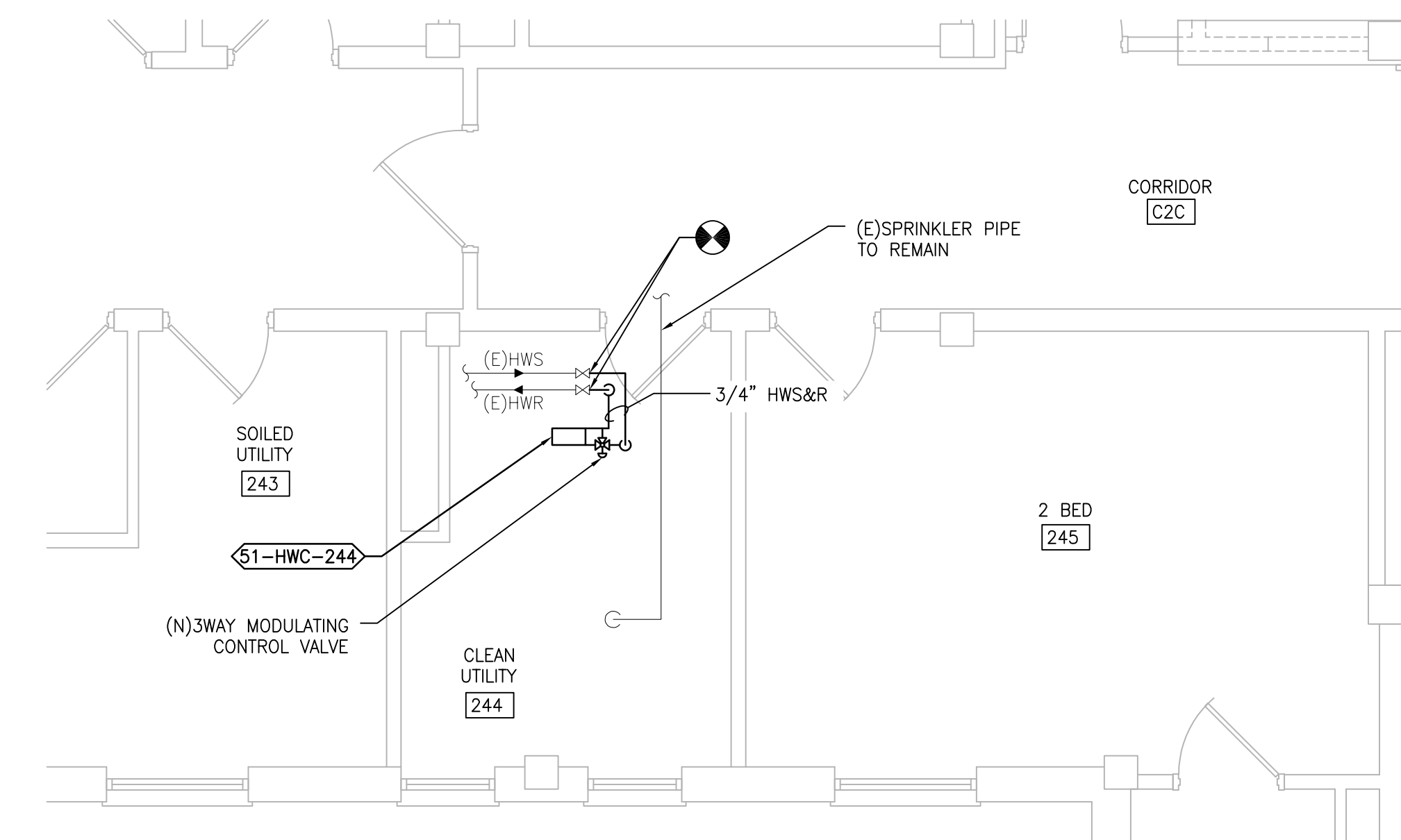
1. REFERENCE SPECIFICATION 02-82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS 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.
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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:

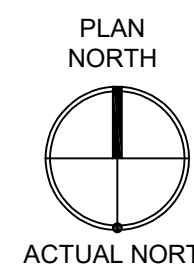
1. MINIMUM PIPE SIZES FOR UP TO 50 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
 - SUCTION LINE 5/8" Ø
 - LIQUID LINE 3/8" Ø
 - HOT GAS REHEAT 3/8" Ø
- MINIMUM PIPE SIZES FOR OVER 60 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
 - 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. REFERENCE ARCHITECTURAL DRAWINGS FOR ENCLOSURE DETAILS.



1 BUILDING 51 -- SECOND FLOOR
SCALE: 3/32" = 1'-0"



2 BUILDING 51 -- SECOND FLOOR-ROOM 244
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

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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 SECOND FLOOR - BUILDING 51

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
51-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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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 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.
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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:

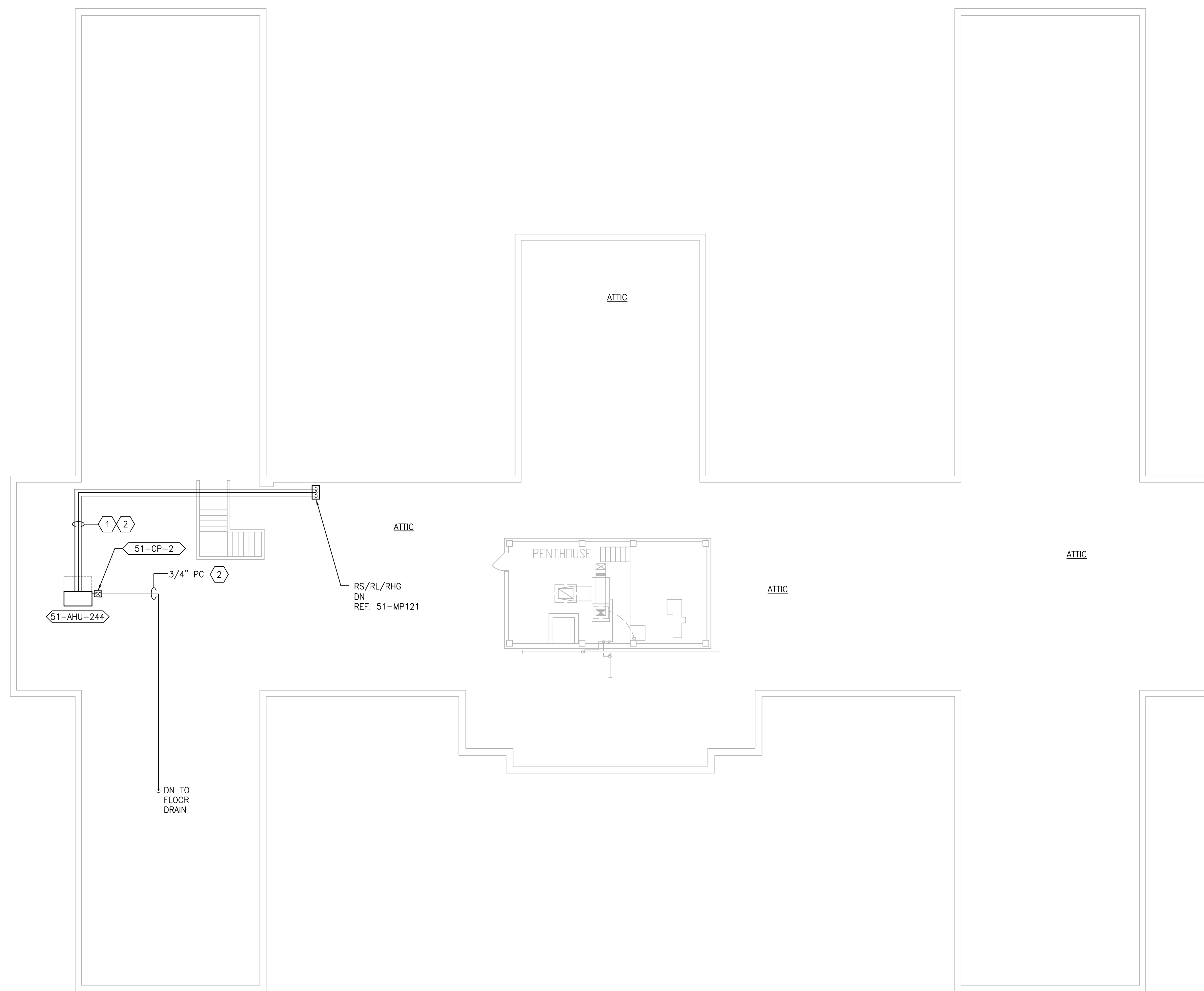
1. MINIMUM PIPE SIZES FOR UP TO 50 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:
 - SUCTION LINE 5/8" Ø
 - LIQUID LINE 3/8" Ø
 - HOT GAS REHEAT 3/8" Ø
 - PUMPED CONDENSATE 3/4" Ø

MINIMUM PIPE SIZES FOR OVER 60 EQUIVALENT FT. INCREASE PIPE SIZES AS REQUIRED TO ACCOMMODATE THE ACTUAL ROUTING:

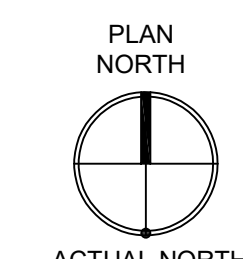
- SUCTION LINE 3/4" Ø
- LIQUID LINE 1/2" Ø
- HOT GAS REHEAT 1/2" Ø
- PUMPED CONDENSATE 3/4" Ø

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.

2. RUN PIPING TIGHT TO STRUCTURE ABOVE TO ALLOW SERVICE OF EQUIPMENT IN ATTIC.



1 BUILDING 51 - ATTIC
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

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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 PIPING PLAN ATTIC - BUILDING 51

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 51-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 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.

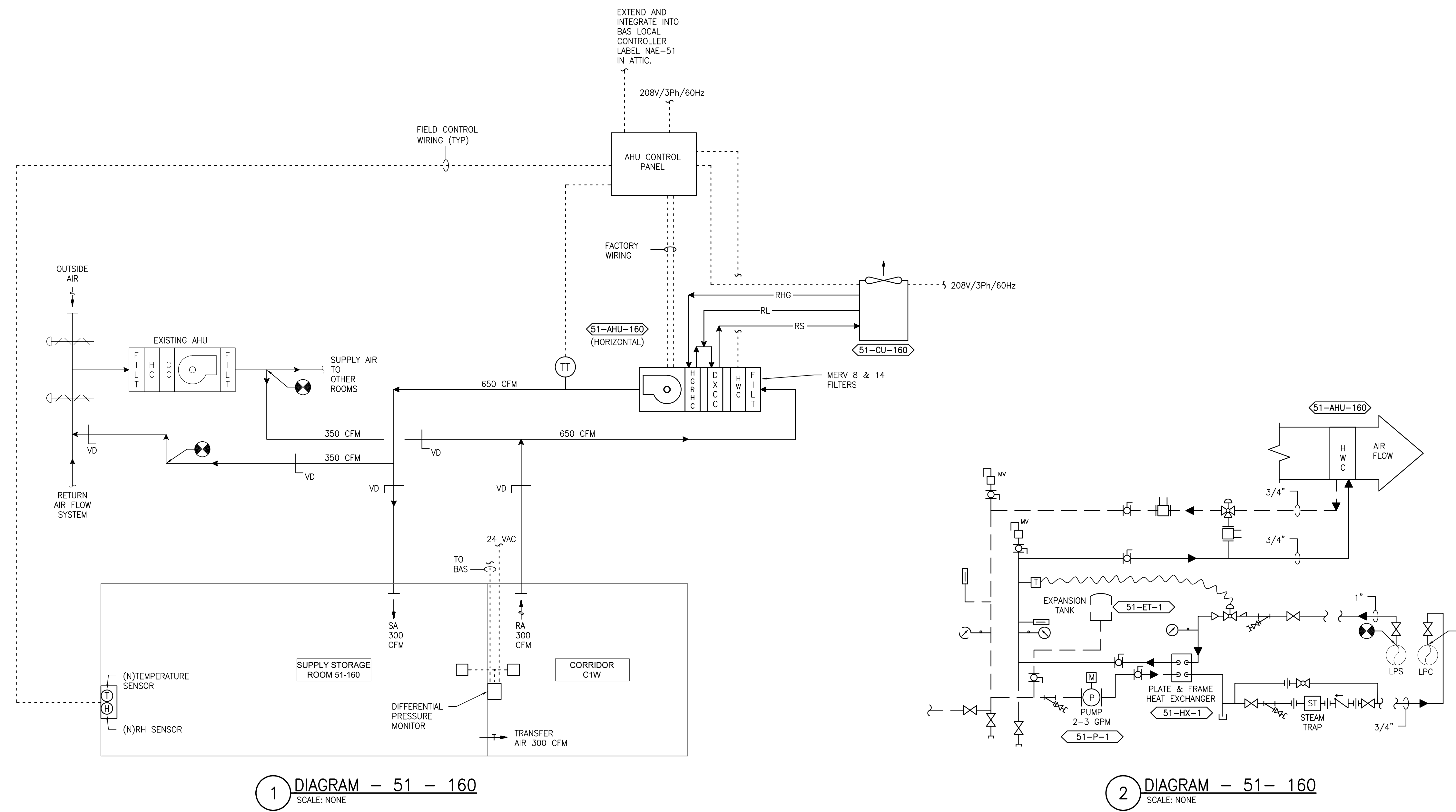
HEATING (ONLY PROVIDED ON SOME UNITS)
 IF ROOM TEMPERATURE FALLS BELOW SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE HEATING COIL SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

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 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

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 1-866-267-6839

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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 FIRST FLOOR - BUILDING 51

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
 51-M-811

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.

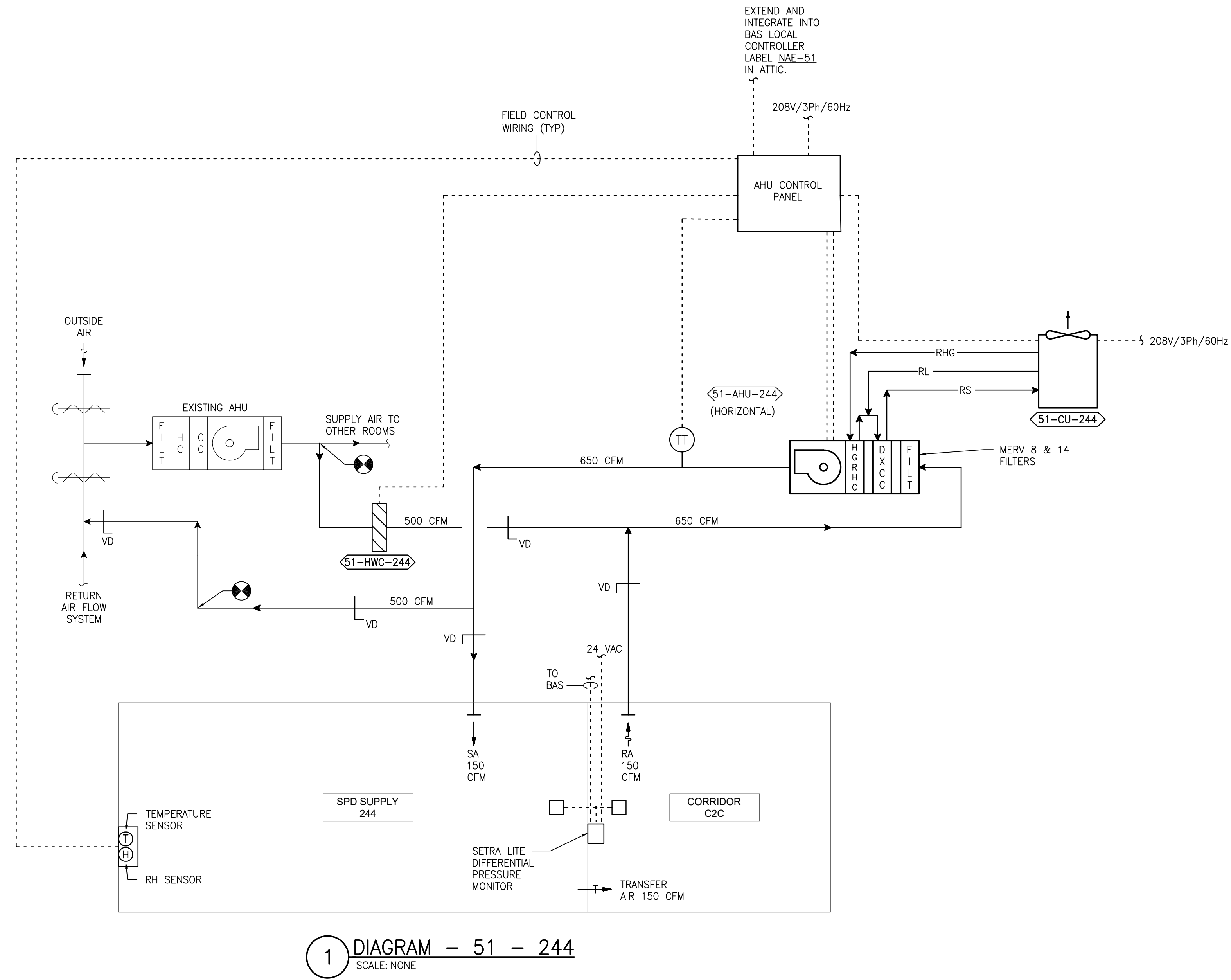
HEATING (ONLY PROVIDED ON SOME UNITS)
 IF ROOM TEMPERATURE FALLS BELOW SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE HEATING COIL SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

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

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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 - 51 - 244
 SCALE: NONE

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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 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 AIRFLOW CONTROL DIAGRAM SECOND FLOOR - BUILDING 51

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

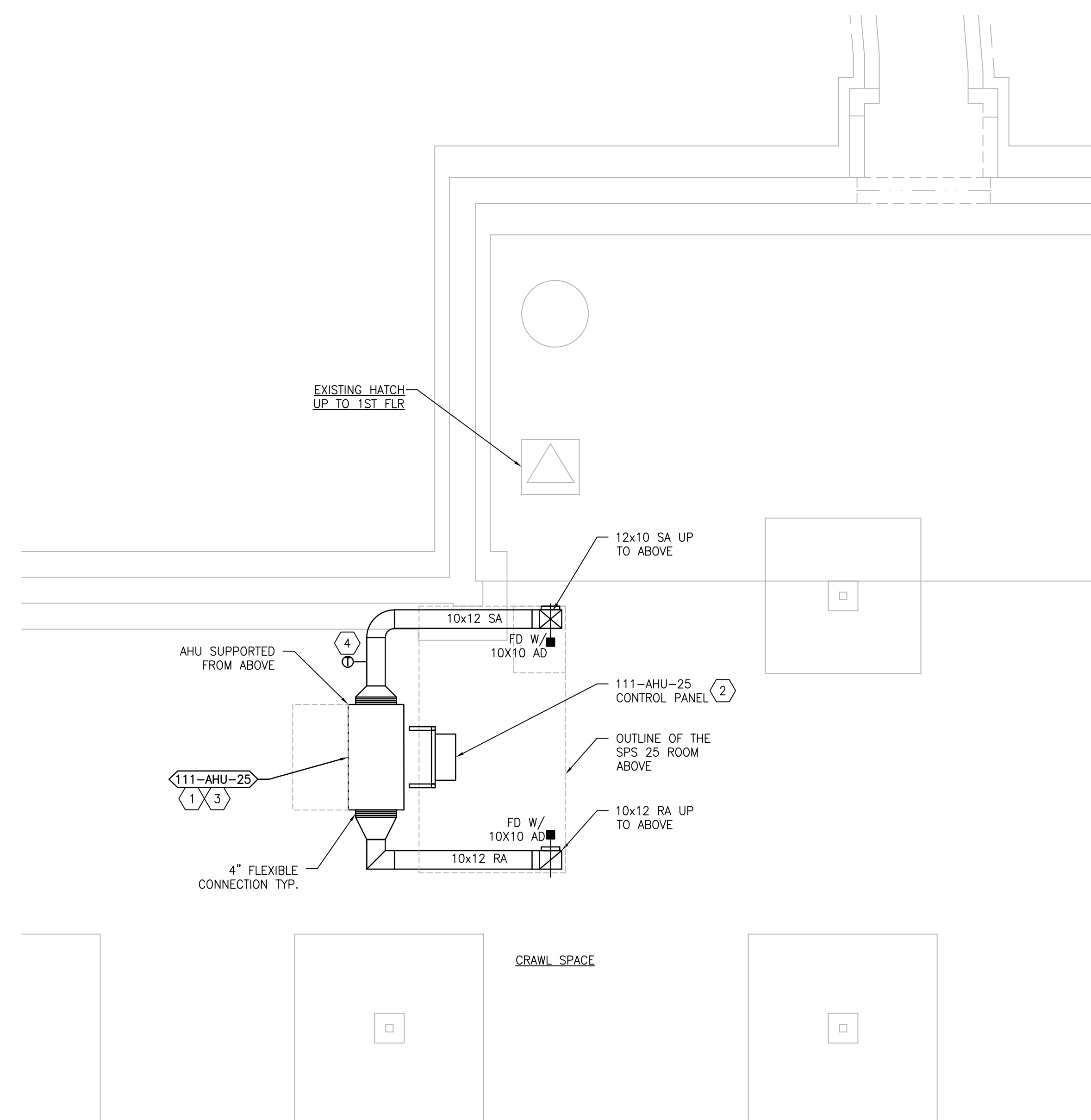
Drawing Number
51-M-821

GENERAL SHEET NOTES:

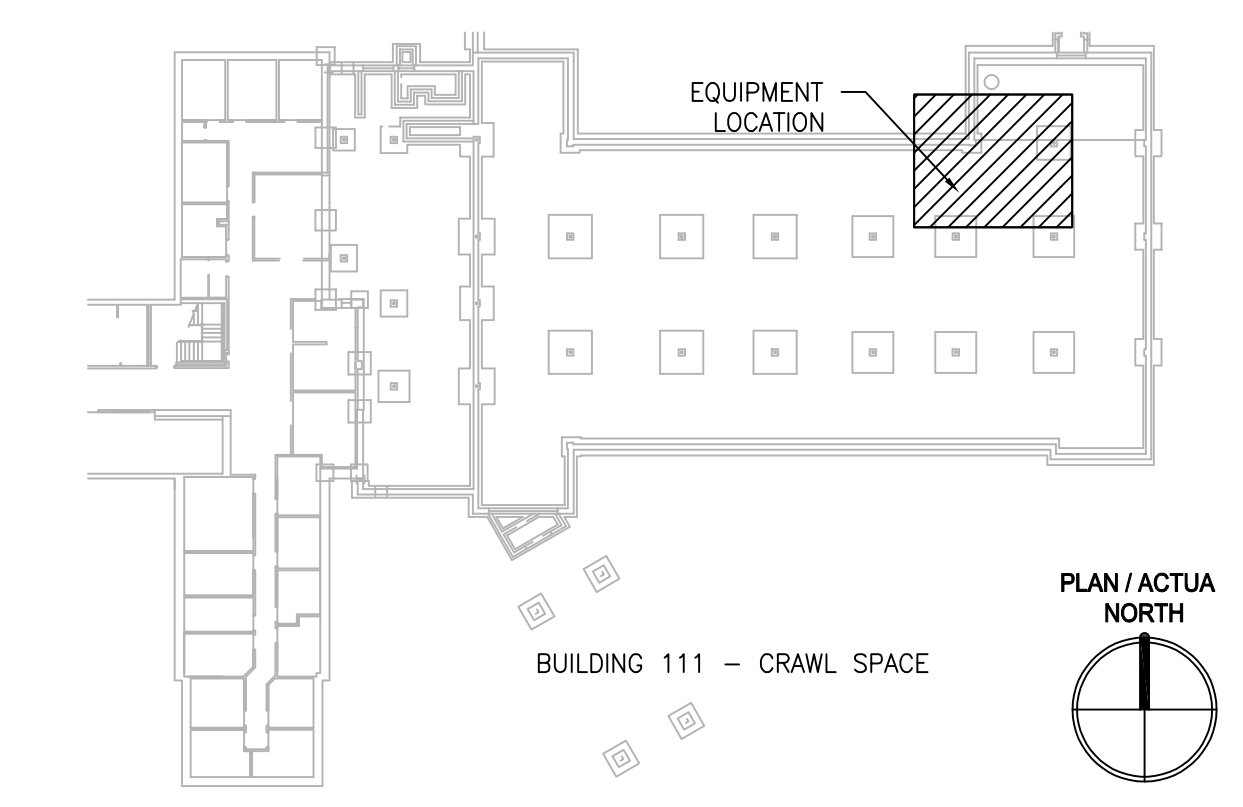
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS 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 SERVICE 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 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.
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. FIELD VERIFY LOCATION FOR NEW AIR HANDLING UNIT AND ASSOCIATED DUCTWORK IN THE CRAWL SPACE. COORDINATE LOCATION WITH SPS 25 ABOVE AND EXISTING CONDITIONS. ADJUST LOCATION IF REQUIRED.
2. MOUNT FACTORY PREWIRED AHU CONTROL PANEL ON UNISTRUT FRAME FROM STRUCTURE ABOVE. COORDINATE THE EXISTING ROOM CONDITIONS FOR FINAL LOCATION. PROVIDE NEW INTERCONNECTING WIRING AND CONDUIT AS REQUIRED IF LENGTH OF FACTORY WIRING 6'-0" IS NOT SUFFICIENT.
3. UNIT IS SUPPORTED FROM DECK ABOVE REFERENCE 1/M-504 FOR DETAILS AND STRUCTURAL DRAWINGS FOR DETAILS.
4. DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY AHU MANUFACTURER.



1 BUILDING 111 CRAWL SPACE - NEW WORK
SCALE: 1/4" = 1'-0"



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

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

VA U.S. Department of Veterans Affairs

Drawing Title
MECHANICAL NEW WORK PLAN CRAWL SPACE - BUILDING 111

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

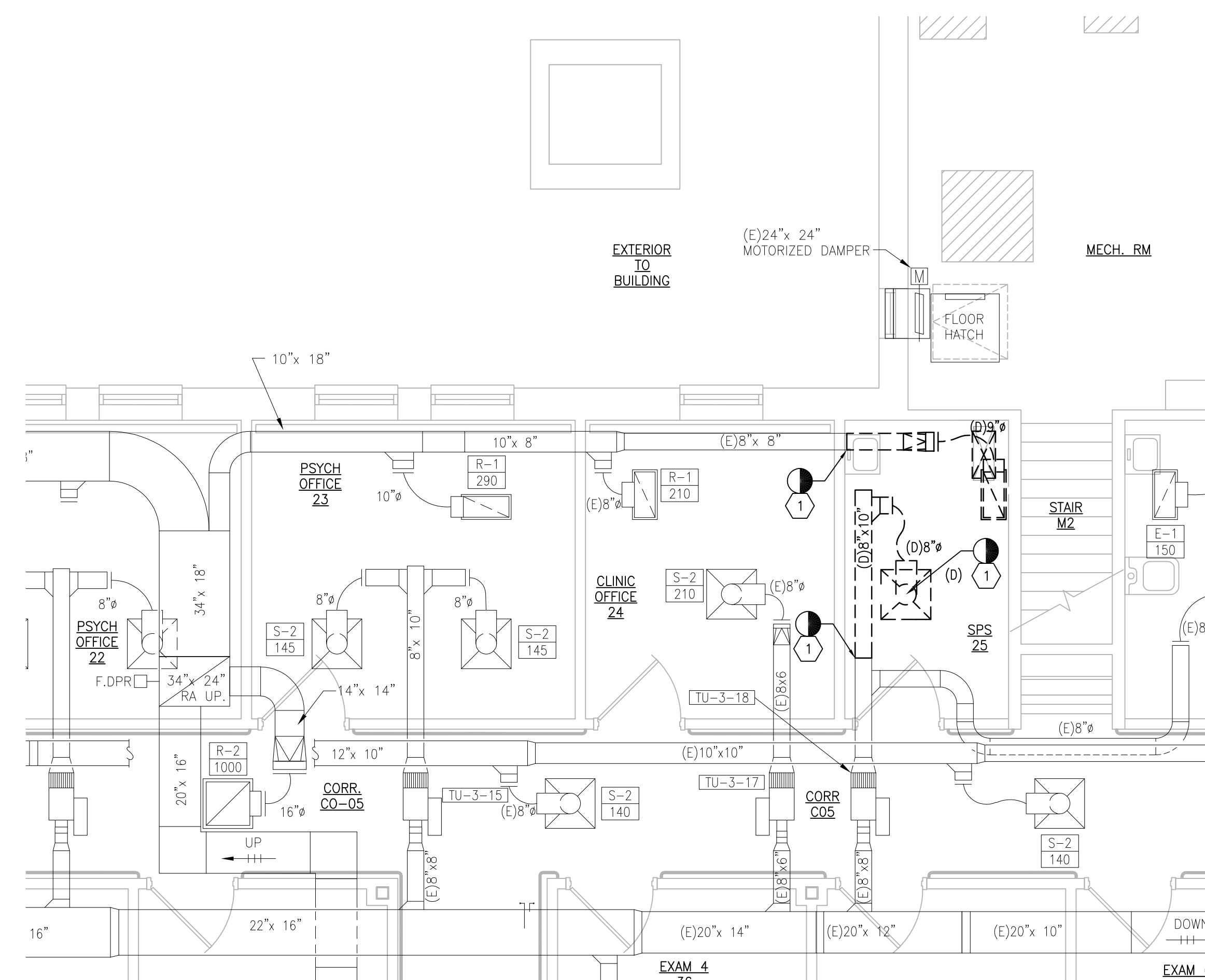
Drawing Number
111-MH101

GENERAL SHEET NOTES:

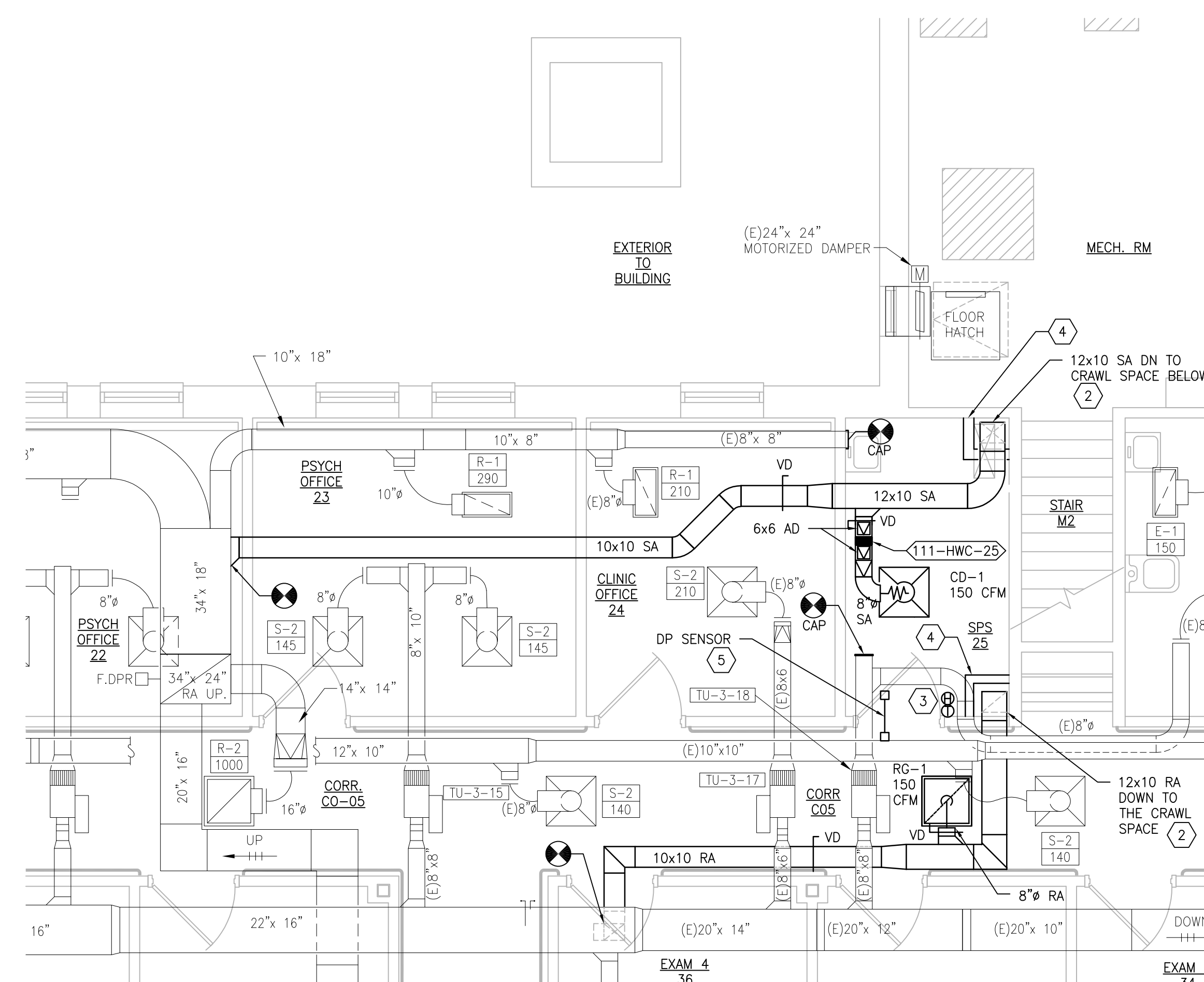
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS 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.
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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 CEILING 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.
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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:

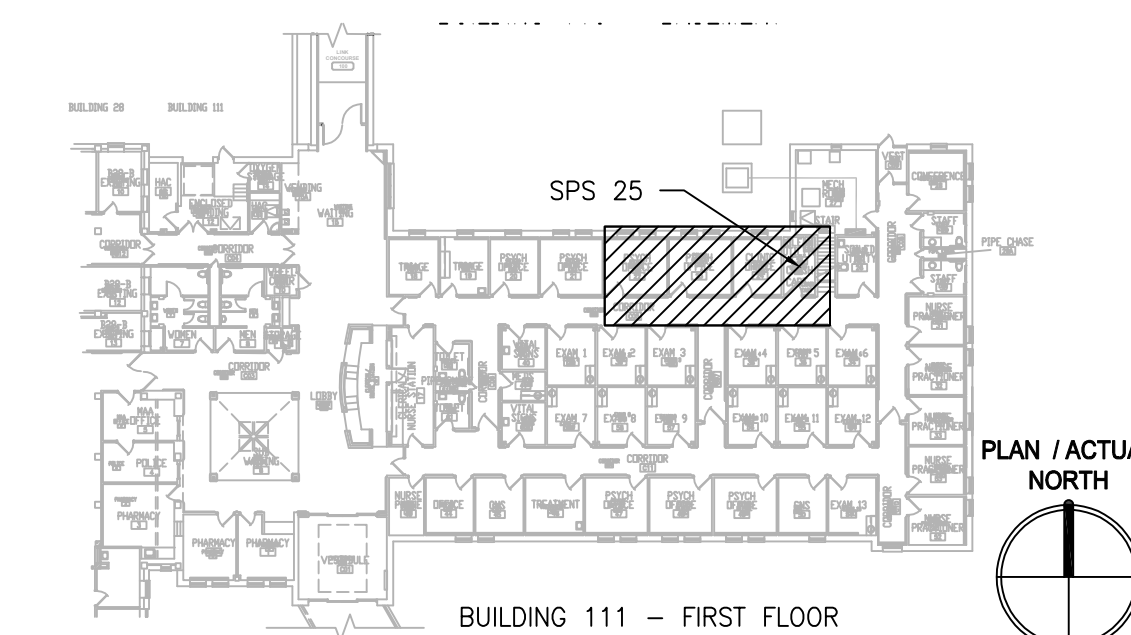
1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL. PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
2. FIELD VERIFY LOCATION FOR NEW AIR HANDLING UNIT AND ASSOCIATED DUCTWORK IN THE CRAWL SPACE. COORDINATE LOCATION WITH SPS 25 ABOVE AND EXISTING CONDITIONS.
3. THERMOSTAT AND HUMIDISTAT TO CONTROL NEW AHU.
4. REFERENCE ARCHITECTURAL DRAWINGS FOR ENCLOSURE DETAILS.
5. INSTALL DIFFERENTIAL PRESSURE SENSOR THROUGH WALL CENTERED ABOVE DOOR. INSTALL ROOM PRESSURE MONITOR OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.



1 BUILDING 111 FIRST FLOOR ROOM 25 - DEMOLITION
SCALE: 1/4" = 1'-0"



2 BUILDING 111 FIRST FLOOR ROOM 25 - NEW WORK
SCALE: 1/4" = 1'-0"



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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 FIRST FLOOR - BUILDING 111

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
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Checked
MR

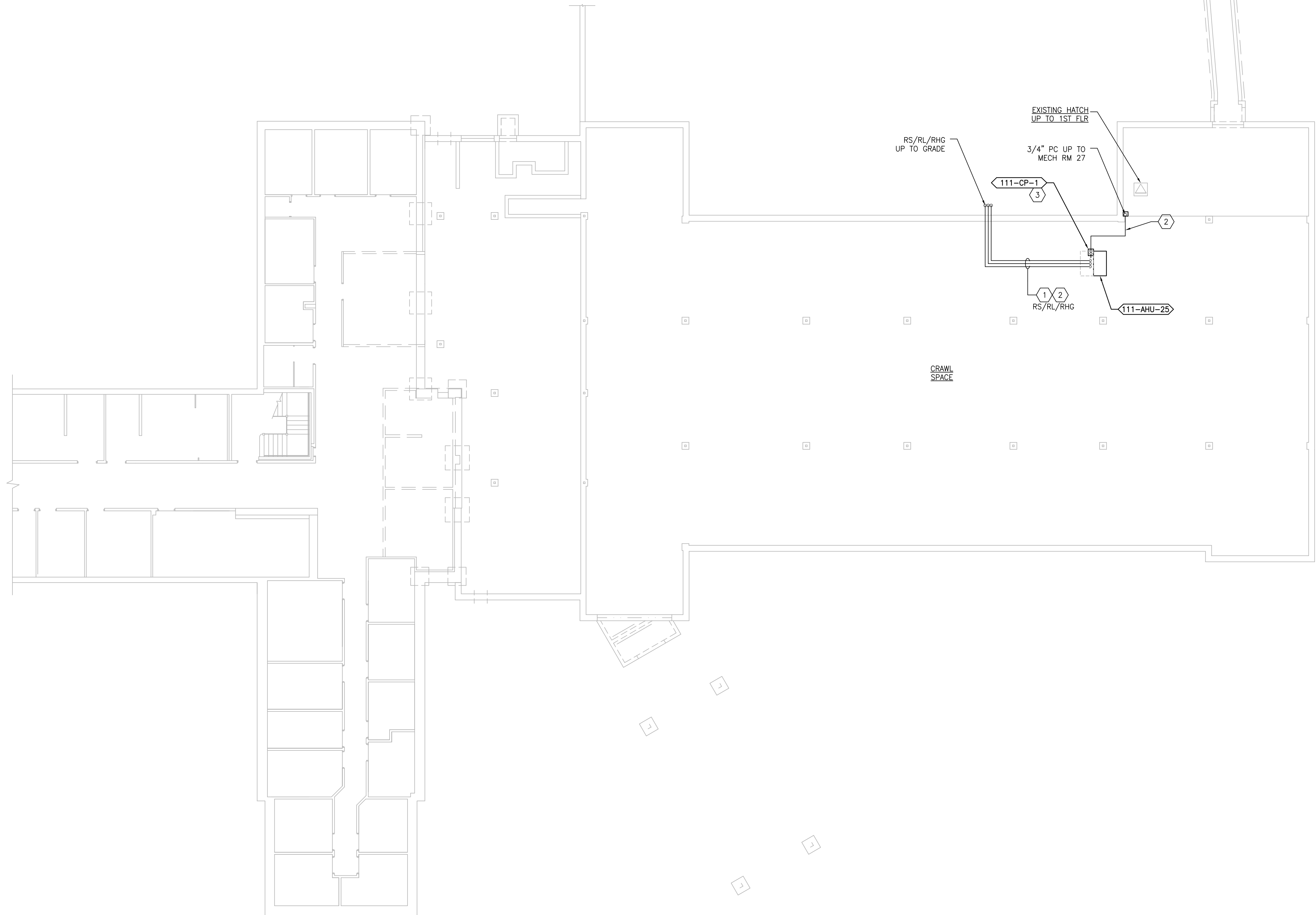
Drawn
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Project Number
656-18-300

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

Drawing Number
111-MH111

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 one and one half inches = one foot
 one inch = one foot
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 one eighth inch = one foot



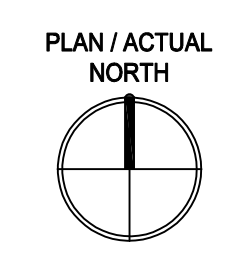
GENERAL SHEET NOTES:

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.
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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 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. RUN PIPING HIGH TO ALLOW ACCESS TO EQUIPMENT.
3. SUPPORT CONDENSATE PUMP FROM ABOVE ON A UNISTRUT FRAME.

1 BUILDING 111 - CRAWL SPACE
SCALE: 3/32" = 1'-0"



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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 PIPING PLAN CRAWL SPACE - BUILDING 111

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
111-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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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
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2. 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.



1 BUILDING 111 - FIRST FLOOR
SCALE: 3/32" = 1'-0"



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NO.	DESCRIPTION	DATE

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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 111
Approved: Project Director

Phase 100% CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION
FULLY SPRINKLERED

Project Title UPGRADE SPS HVAC & ENVIRONMENTAL CONTROLS	Project Number 656-18-300
Location ST. CLOUD VA MEDICAL CENTER, MN	Building Number 1, 2, 3, 28, 29, 49, 50, 51, 111, 116
Issue Date 2022-07-15	Checked MR
Drawn BJS	Drawing Number 111-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 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.

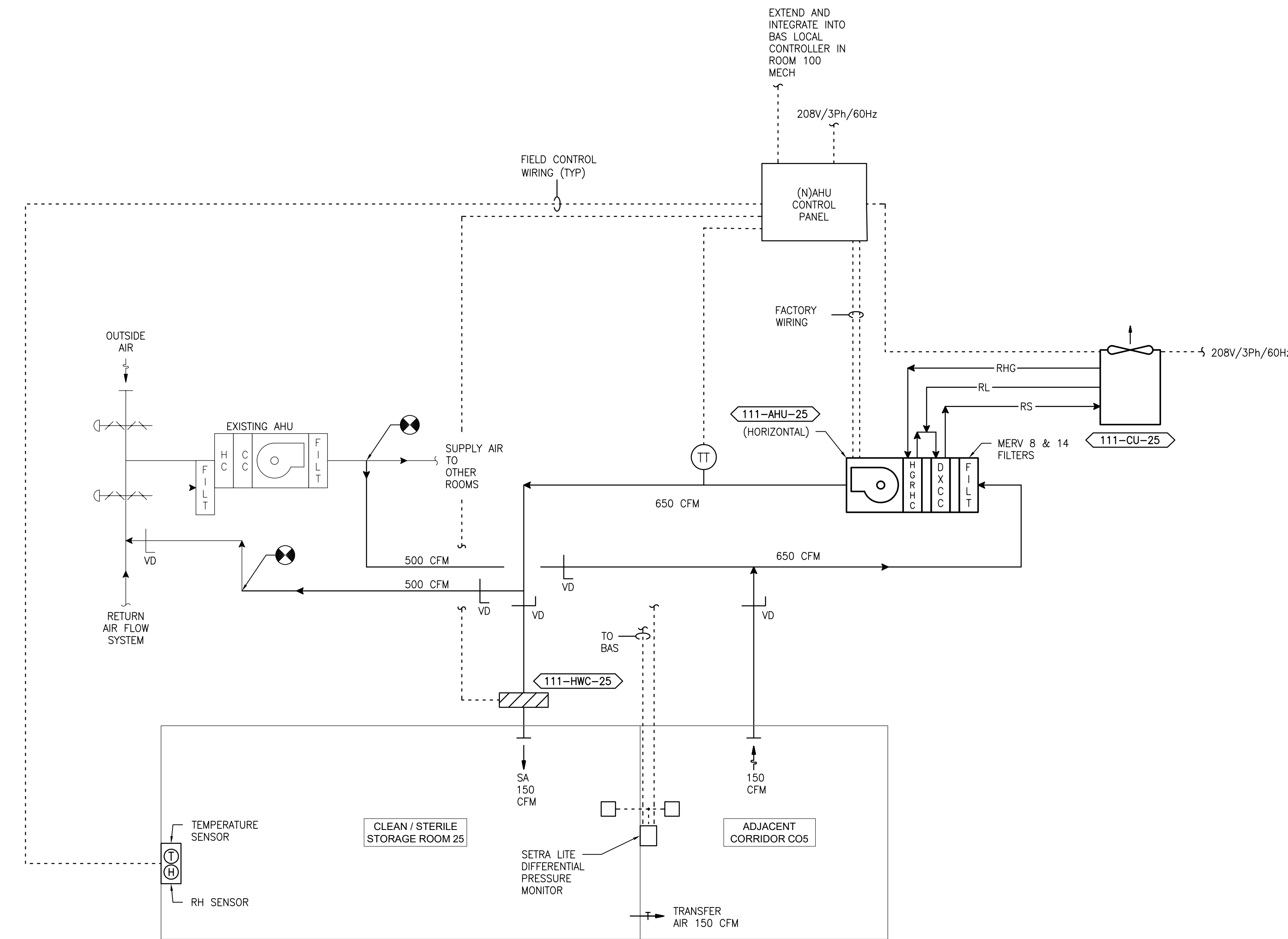
DEHUMIDIFYING
 IF ROOM RELATIVE HUMIDITY RISES ABOVE SETPOINT AS SENSED BY THE WALL MOUNTED HUMIDITY SENSOR THE SYSTEM SHALL OVERRIDE THE COOLING COIL SETPOINT AND MODULATE THE HOT GAS REHEAT COIL TO MAINTAIN ROOM TEMPERATURE AND HUMIDITY SETPOINTS. DEHUMIDIFICATION SHALL BE INITIATED ANYTIME IN THE 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 - 111 - 25
 SCALE: NONE

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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
 BUILDING 111**

Approved: Project Director

Phase
 100% CONSTRUCTION
 DOCUMENTS
 NOT FOR CONSTRUCTION

FULLY SPRINKLERED

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

Location
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 1, 2, 3, 28, 29, 49, 50, 51,
 111, 116

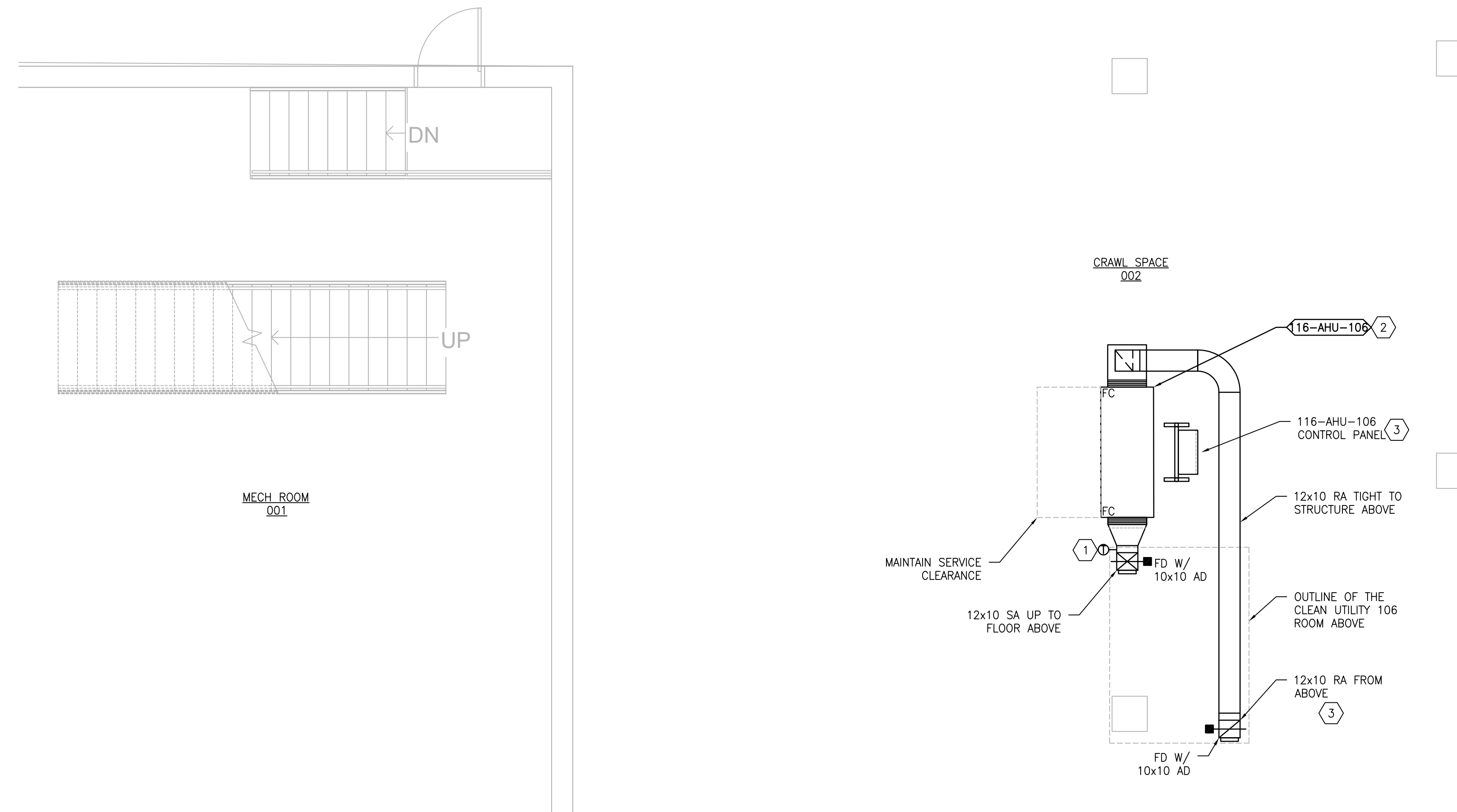
Drawing Number
111-M-811

GENERAL SHEET NOTES:

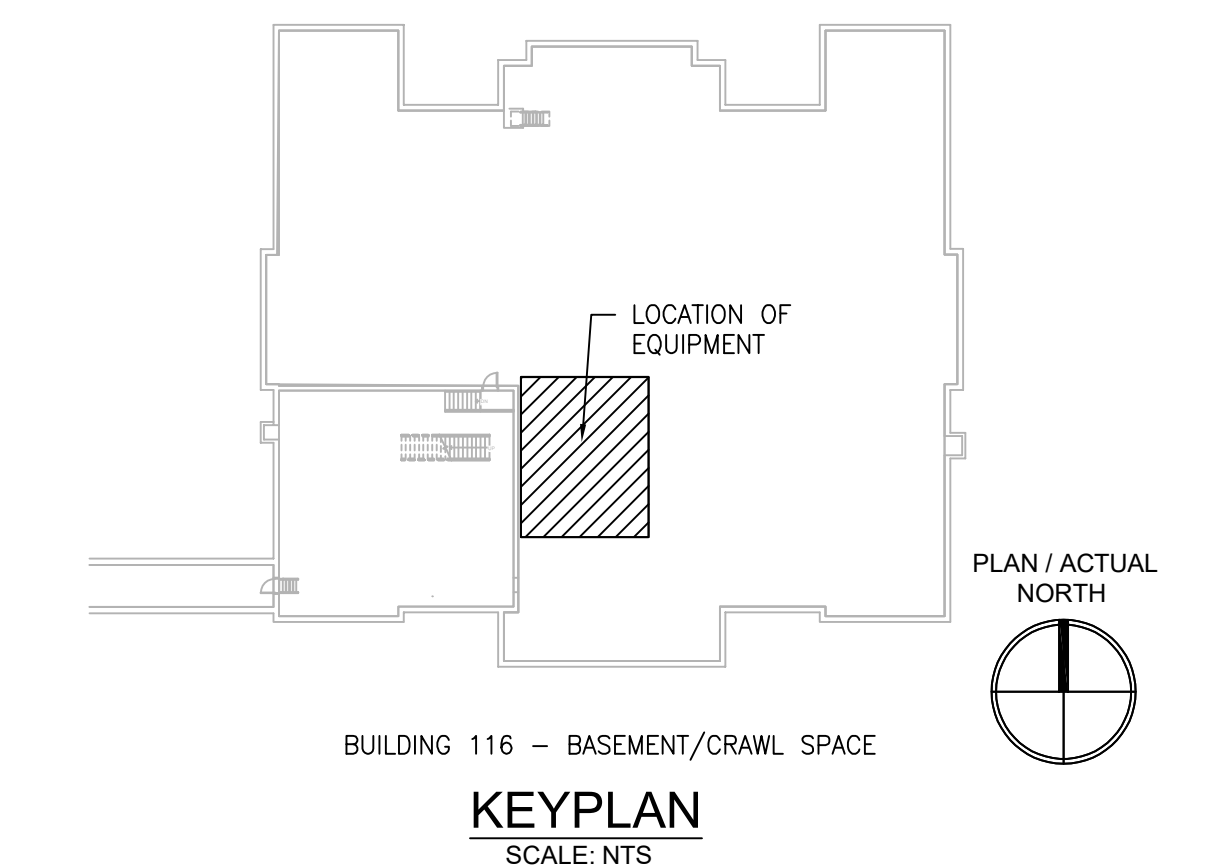
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS 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. INSTALL DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY AHU MANUFACTURER.
2. FIELD VERIFY LOCATION FOR NEW AIR HANDLING UNIT AND ASSOCIATED DUCTWORK IN THE CRAWL SPACE. COORDINATE LOCATION WITH CLEAN UTILITY 106 ABOVE AND EXISTING CONDITIONS. ADJUST LOCATION IF REQUIRED.
3. MOUNT FACTORY PREWIRED AHU CONTROL PANEL ON UNISTRUT FRAME FROM STRUCTURE ABOVE. COORDINATE THE EXISTING ROOM CONDITIONS FOR FINAL LOCATION. PROVIDE NEW INTERCONNECTING WIRING AND CONDUIT AS REQUIRED IF LENGTH OF FACTORY WIRING 6'-0" IS NOT SUFFICIENT.
4. REFERENCE 1/M-504 FOR ADDITIONAL AHU INFORMATION.



1 BUILDING 116 CRAWL SPACE 002
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
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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 NEW WORK PLAN CRAWL SPACE - BUILDING 116

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, 49, 50, 51, 111, 116

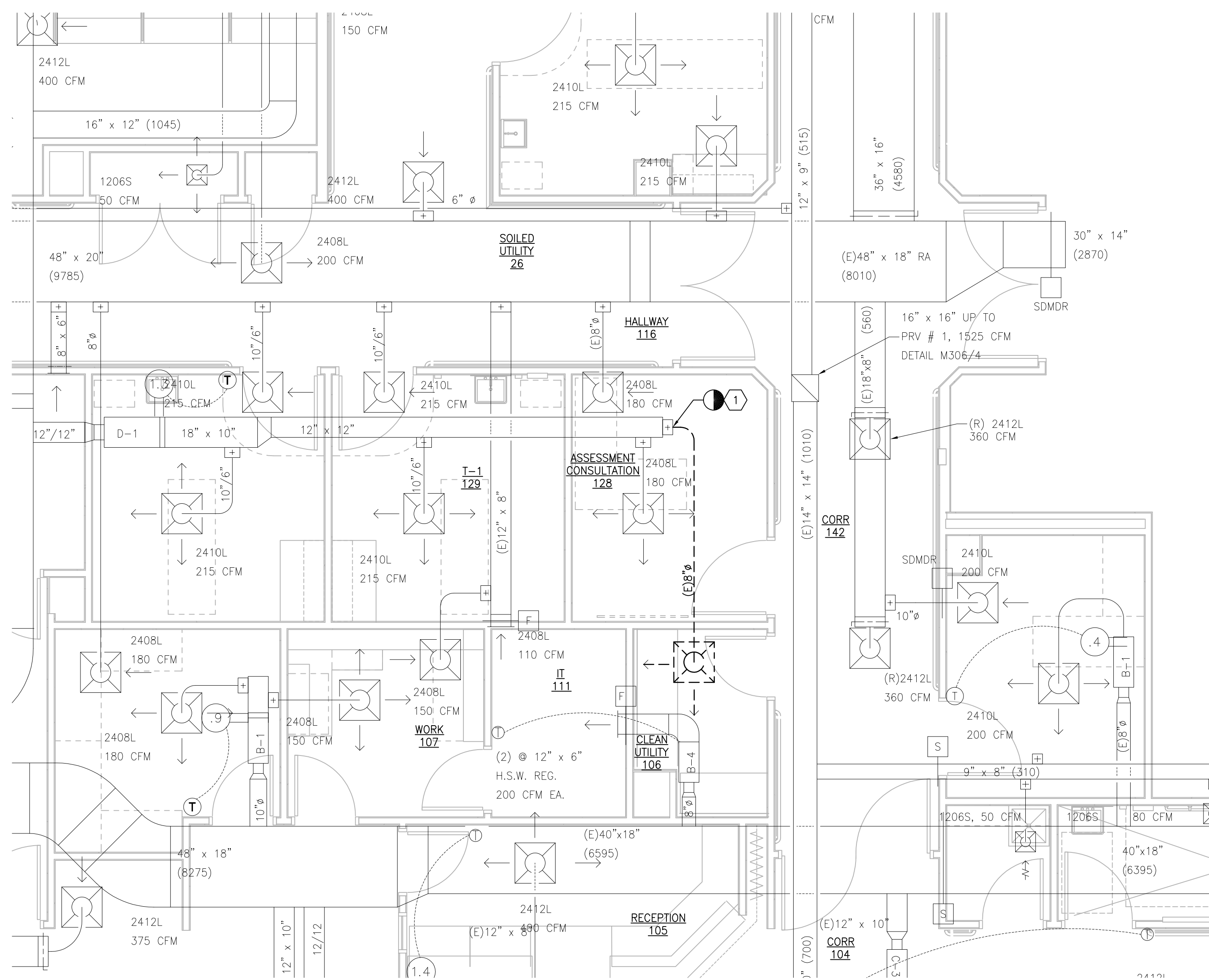
Drawing Number
116-MH101

GENERAL SHEET NOTES:

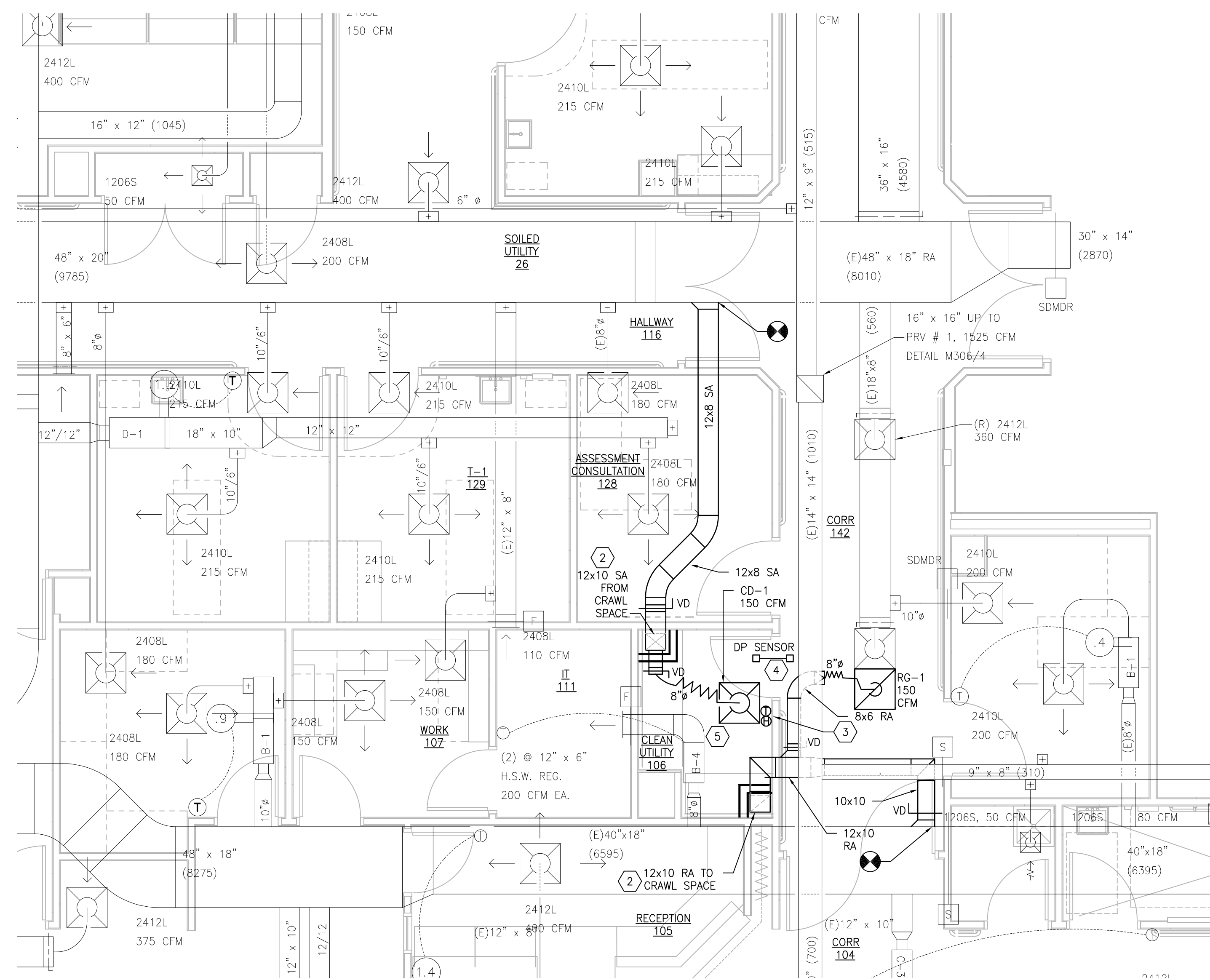
1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
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3. ALL WALL PENETRATIONS TO BE TREATED AS AN 1 HOUR RATED WALL UNLESS OTHERWISE NOTED ON THE DRAWING. REPAIR AND PAINT THE WALLS/CEILING TO MATCH EXISTING CONDITIONS AFTER THE REMOVAL OF THE EXISTING CEILING 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:

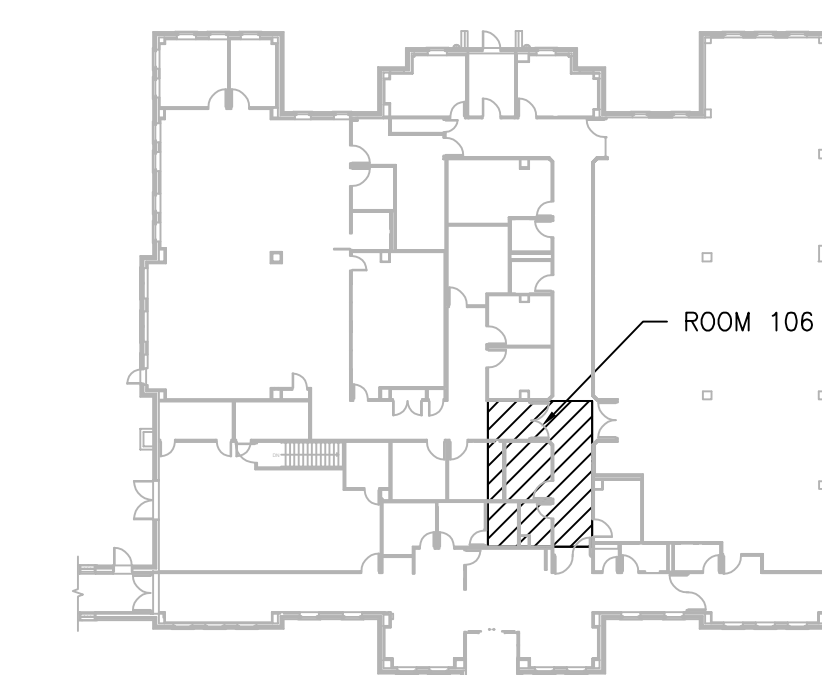
1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
2. FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH NEW WORK PARTICULARLY THE NEW FLOOR PENETRATION. COORDINATE THIS WITH FLOORS ABOVE AND BELOW.
3. THERMOSTAT AND HUMIDISTAT TO CONTROL NEW AHU.
4. INSTALL DIFFERENTIAL PRESSURE SENSOR THROUGH WALL CENTERED ABOVE DOOR. INSTALL ROOM PRESSURE MONITOR OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.
5. RELOCATE SPRINKLER HEAD. ARM OVER FROM EXISTING SPRINKLER PIPING TO NEW HEAD LOCATION. SEE GENERAL DRAWINGS FOR SPRINKLER HEAD LOCATIONS.



1 BUILDING 116 FIRST FLOOR ROOM 106 – DEMOLITION
SCALE: 1/4" = 1'-0"



2 BUILDING 116 FIRST FLOOR ROOM 106 – NEW WORK
SCALE: 1/4" = 1'-0"



KEYPLAN
SCALE: NTS

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PROJECT TEAM



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MR PROJECT NO: 0376-0011

MILLER-REMIK LLC
PROFESSIONAL ENGINEER

Office of
Construction
and Facilities
Management



Drawing Title
**MECHANICAL
DEMOLITION / NEW WORK PLANS
FIRST FLOOR - BUILDINGS 116**

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

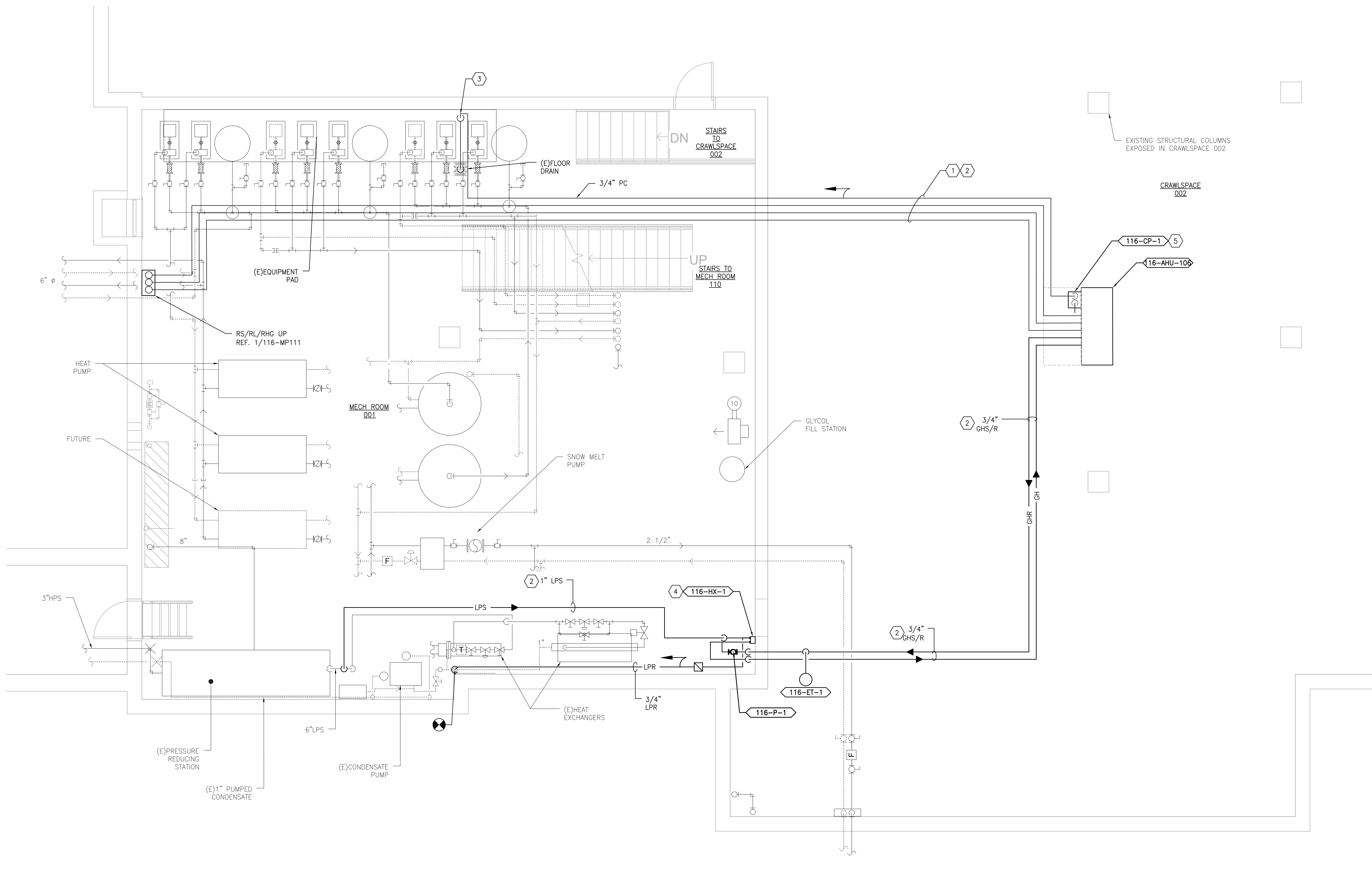
Drawing Number
116-MH111

GENERAL SHEET NOTES:

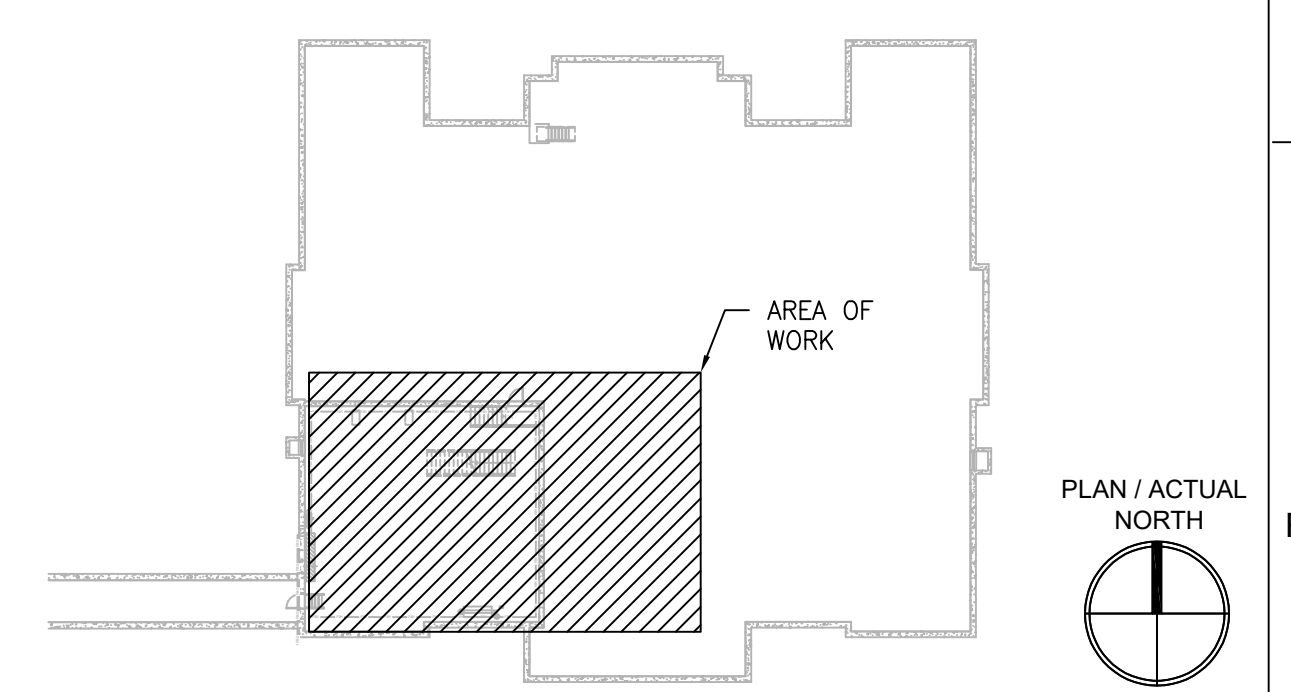
1. REFERENCE SPECIFICATION 02-B2 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE APPLICABLE ABATEMENT REPORT.
2. COORDINATE INSTALLATION OF NEW PIPING AND NEW DUCTWORK. ALL LOCATIONS FOR DUCTWORK AND PIPING ARE APPROXIMATE. PROVIDE OFFSETS AS REQUIRED TO AVOID EXISTING OBSTACLES. RELOCATE EXISTING HANGERS 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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6. ADHERE TO ALL ICRAs 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:
 - SUCTION LINE 3/4" Ø
 - LIQUID LINE 1/2" Ø
 - HOT GAS REHEAT 1/2" Ø
 - 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.
2. RUN PIPING ALONG UNDER SIDE OF STRUCTURER.
3. RUN CONDENSATE PIPE DOWN WALL TO EQUIPMENT PAD ALONG SIDE OF INERTIA PAD AND DOWN TO FLOOR DRAIN.
4. MOUNT HEAT EXCHANGER HIGH ENOUGH TO ALLOW CONDENSATE TO DRAIN BY GRAVITY BACK TO EXISTING CONDENSATE SYSTEM. INSTALL PIPING ALONG THE WALL AND BELOW THE EXISTING PANELS.
5. SUPPORT CONDENSATE PUMP FROM ABOVE WITH UNISTRUT FRAME.



1 BUILDING 116 - BASEMENT/CRAWL SPACE
SCALE: 1/4" = 1'-0"



KEYPLAN

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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ENGINEER OF RECORD

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

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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 BASEMENT - BUILDING 116

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

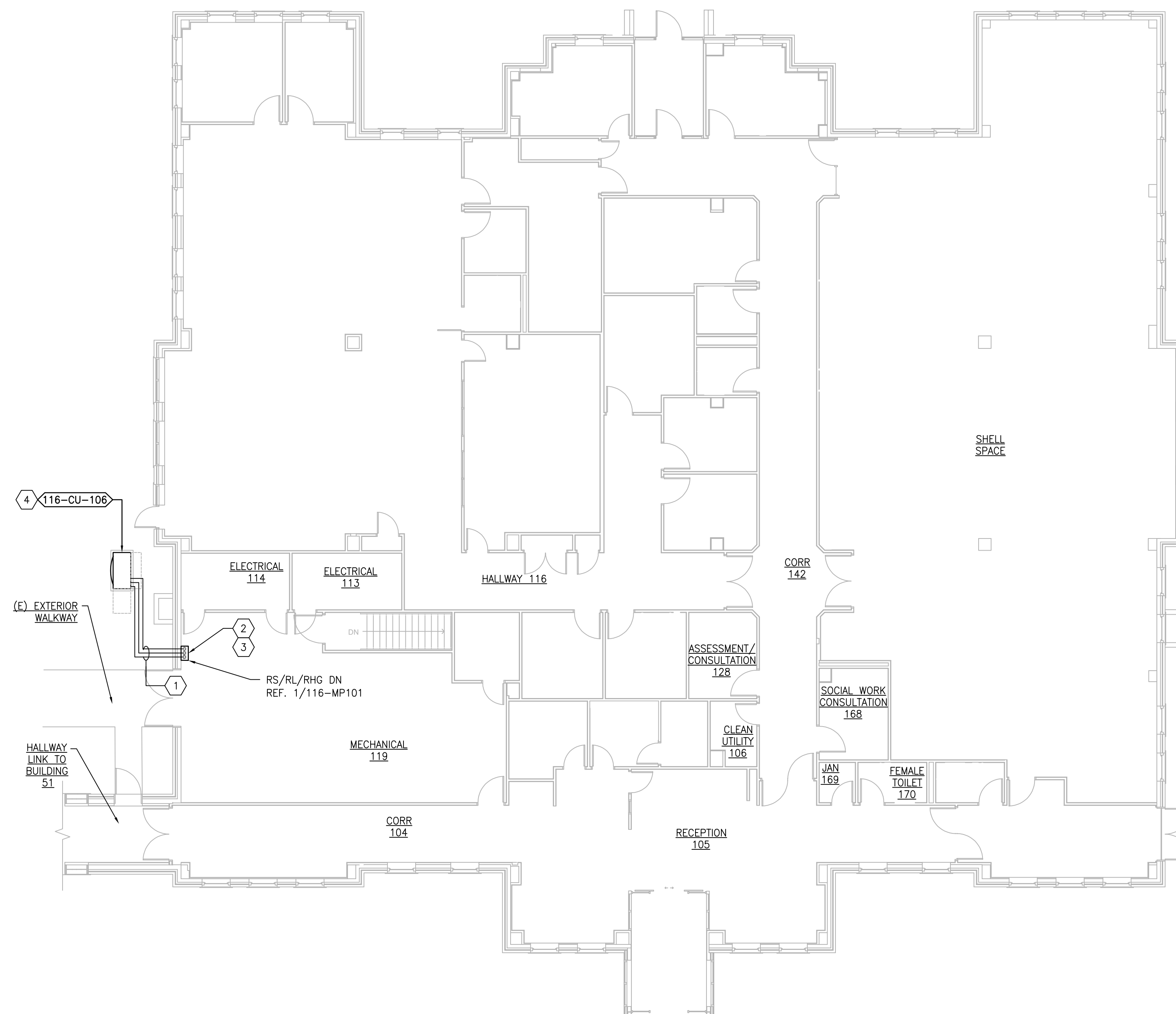
Drawing Number
116-MP101

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.
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9. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS, ETC.
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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
2. 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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4. PIPING TO BE INSULATED PER THE SPECIFICATIONS TO PROTECT THE PIPING FROM DAMAGE IN A HIGH TRAFFIC AREAS.
5. PIPING FROM BELOW AND OUT THROUGH THE WALL TO 116-CU-106. MAKE ALL PIPING PENETRATIONS WEATHER TIGHT.
6. 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. COORDINATE LOCATION OF CONDENSER WITH EXISTING CONDITIONS. CONDENSER IS NOT TO IMPEDE ON THE EXISTING WALKWAY OR SERVICES FOR THE BUILDING, HOSE BIB, OUTLETS, AIR WAY AND PIPING CONNECTIONS.



1 BUILDING 116 -- FIRST 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



Drawing Title
**MECHANICAL
PIPING PLAN
FIRST FLOOR - BUILDING 116**

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
116-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.

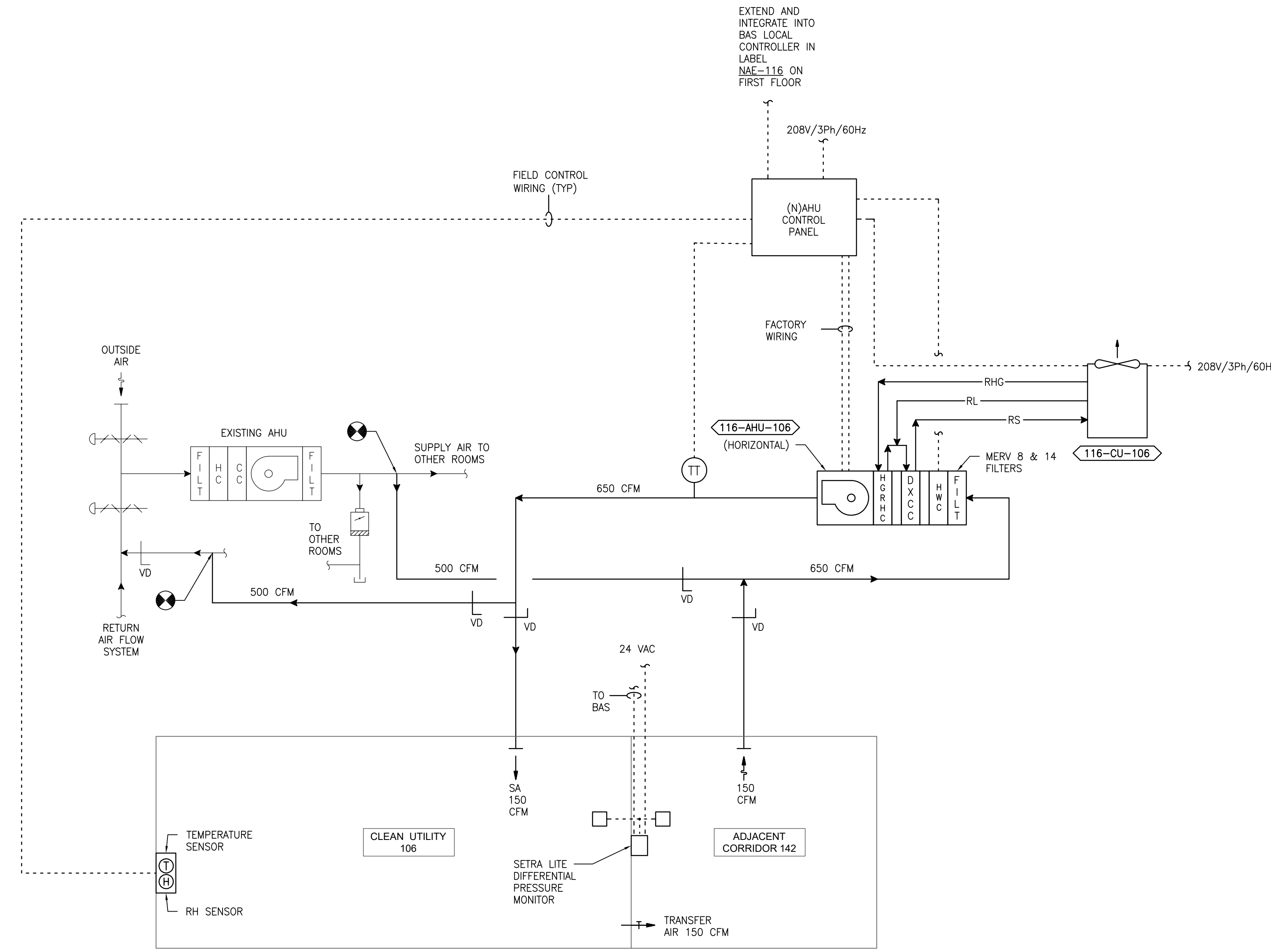
COOLING
 IF ROOM TEMPERATURE RISES ABOVE SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE COMPRESSOR SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

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.

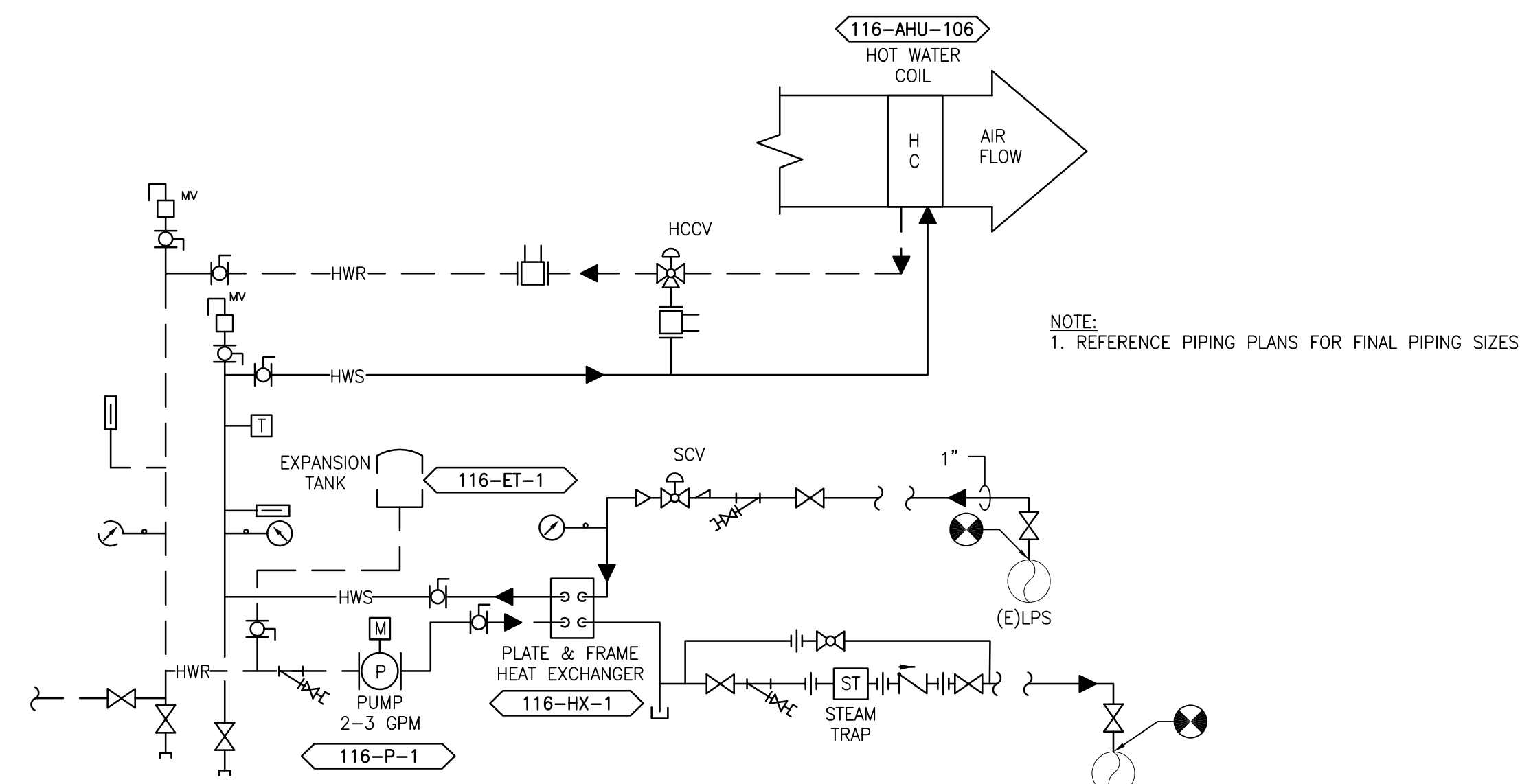
HEATING
 (THE EXISTING JOHNSON CONTROLS BAS SHALL BE MODIFIED AND EXPANDED AS REQUIRED TO INCLUDE THE CONTROL AND MONITORING FUNCTIONS AS DESCRIBED BELOW.)
 PUMP P-1 SHALL BE MANUALLY STARTED AND STOPPED THROUGH BAS. THE PUMP SHALL RUN CONTINUOUSLY. THE BAS SHALL MONITOR PUMP STATUS, AND ALARM IF THE PUMP FAILS TO RUN.
 STEAM CONTROL VALVE (SCV-1) SHALL MODULATE STEAM FLOW THROUGH THE PLATE AND FRAME HEAT EXCHANGER, THROUGH THE BAS, TO MAINTAIN A CONSTANT HEATING HOT WATER SUPPLY TEMPERATURE OF 180 DEGREES F. THE BAS SHALL MONITOR AND ALARM THE HEATING HOT WATER SUPPLY TEMPERATURE.
 HEATING COIL CONTROL VALVE (HCCV-1) SHALL MODULATE THROUGH THE NEW AHU CONTROL SYSTEM 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 - 116 - 106
 SCALE: NONE



2 DIAGRAM - 116 - 106
 SCALE: NONE

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

NO.	DESCRIPTION	DATE

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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 116

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

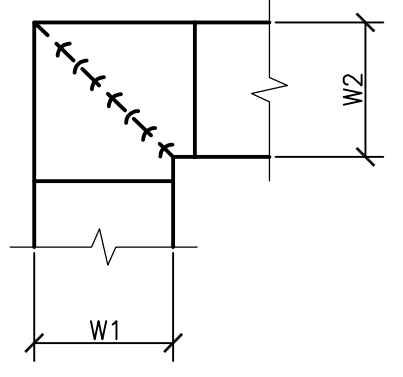
Checked
 MR

Drawn
 PNL

Project Number
 656-18-300

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

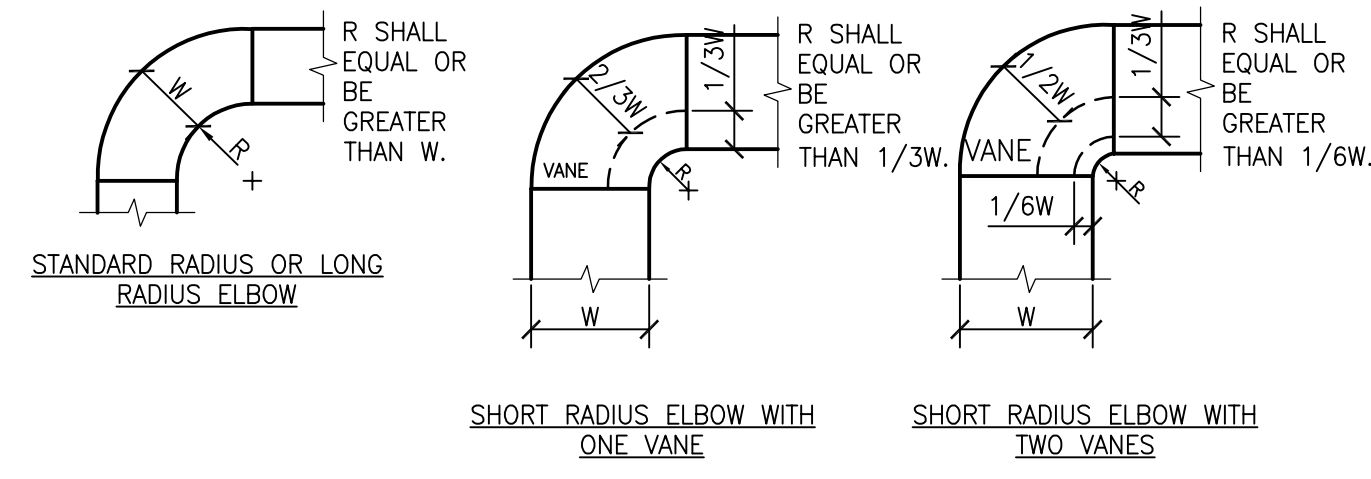
Drawing Number
116-M-811



NOTES:

1. ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
2. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF W DIMENSION.
3. ALL SINGLE THICKNESS VANES SHALL HAVE A 2" [50mm] RADIUS, 1 1/2" [40mm] MAXIMUM SPACE BETWEEN VANES AND A 3/4" [20mm] TRAILING EDGE.
4. WHEN W EQUALS W2 AND W1 IS GREATER THAN 20" [500mm] VANES SHALL BE DOUBLE VANE TYPE.
5. TURNING VANES ARE NOT PERMITTED FOR RETURN AIR OR NON-FILTERED SUPPLY AIR.

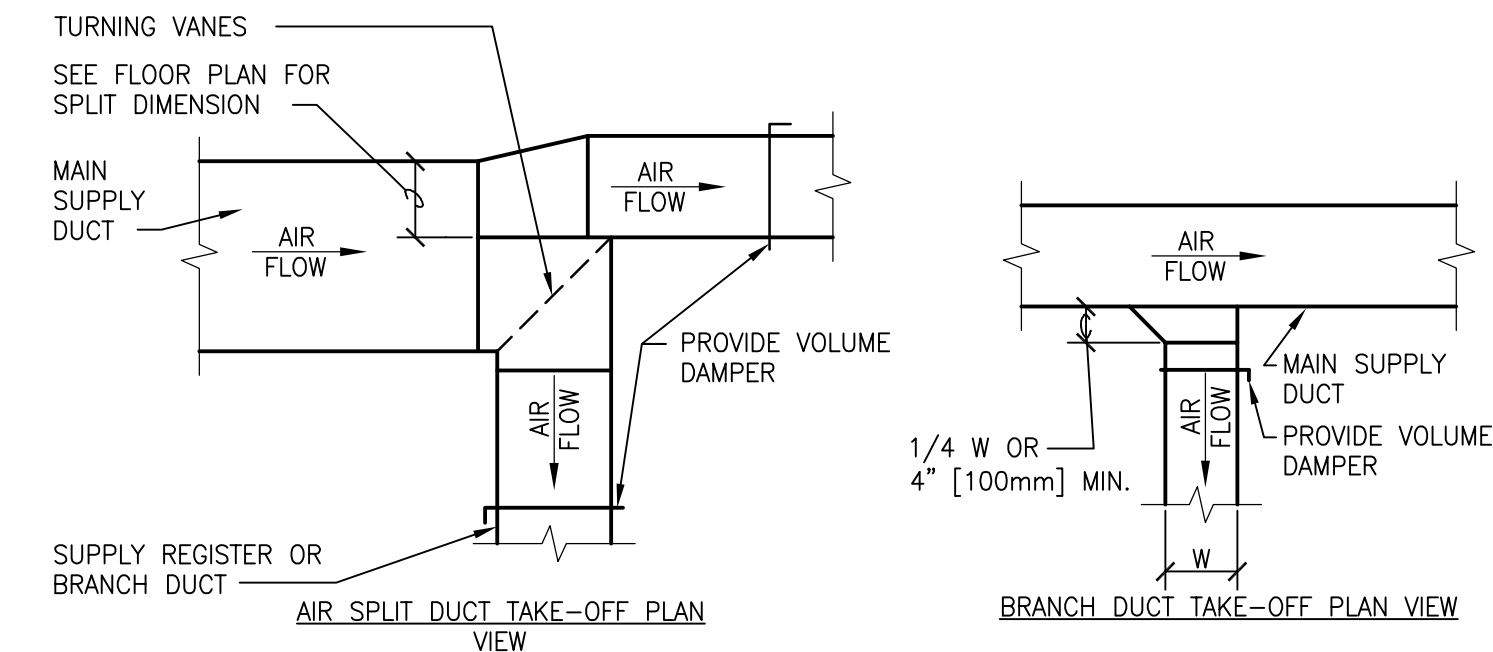
1 DUCTWORK SQUARE VANE ELBOWS
SCALE: NTS



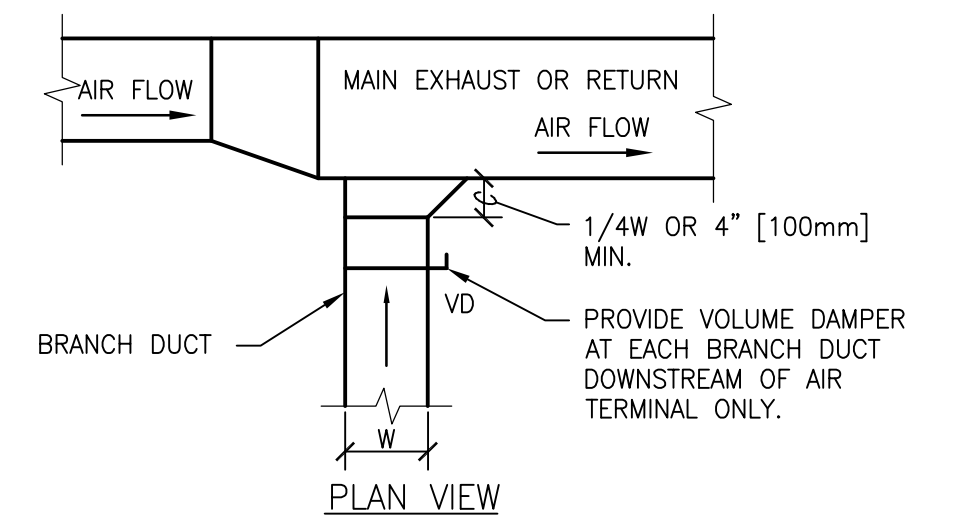
NOTES:

1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.
3. TURNING VANES ARE NOT PERMITTED FOR RETURN AIR OR NON-FILTERED SUPPLY AIR.

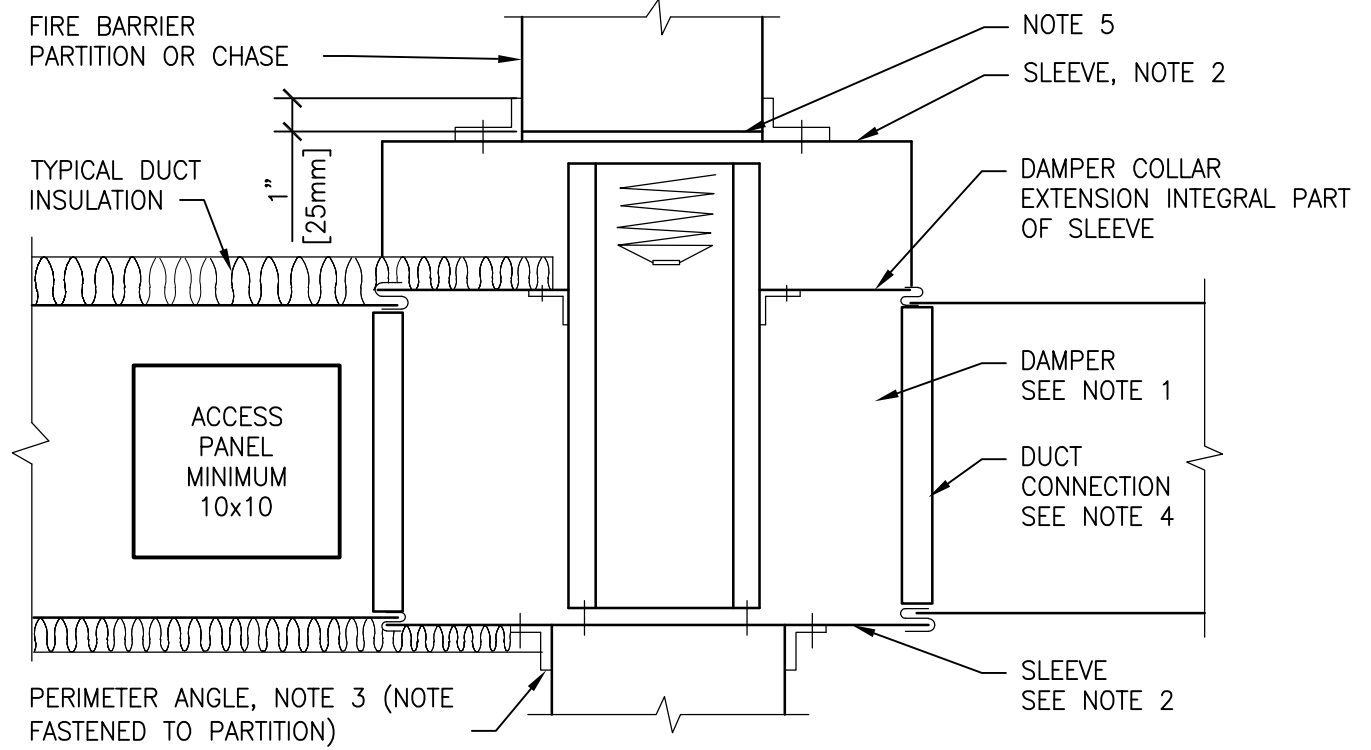
2 DUCTWORK RADIUS ELBOWS
SCALE: NTS



3 SUPPLY DUCTWORK TAKE-OFFS
SCALE: NTS



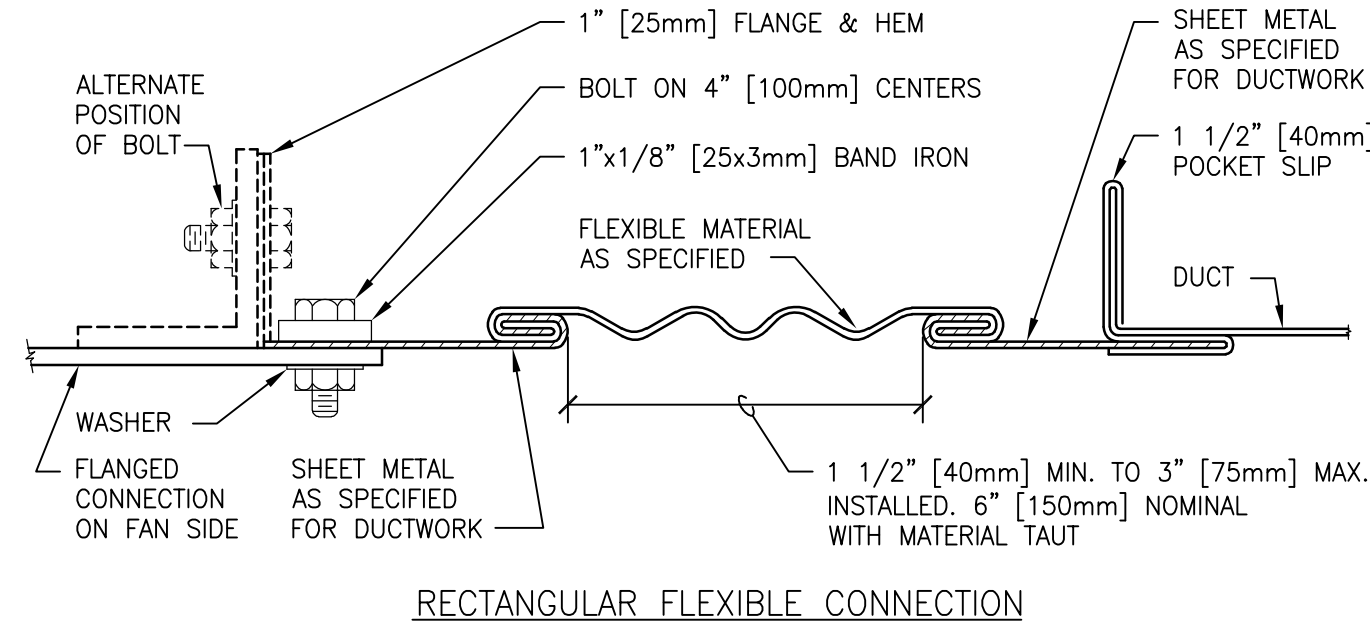
4 EXHAUST OR RETURN BRANCH DUCTWORK
SCALE: NTS



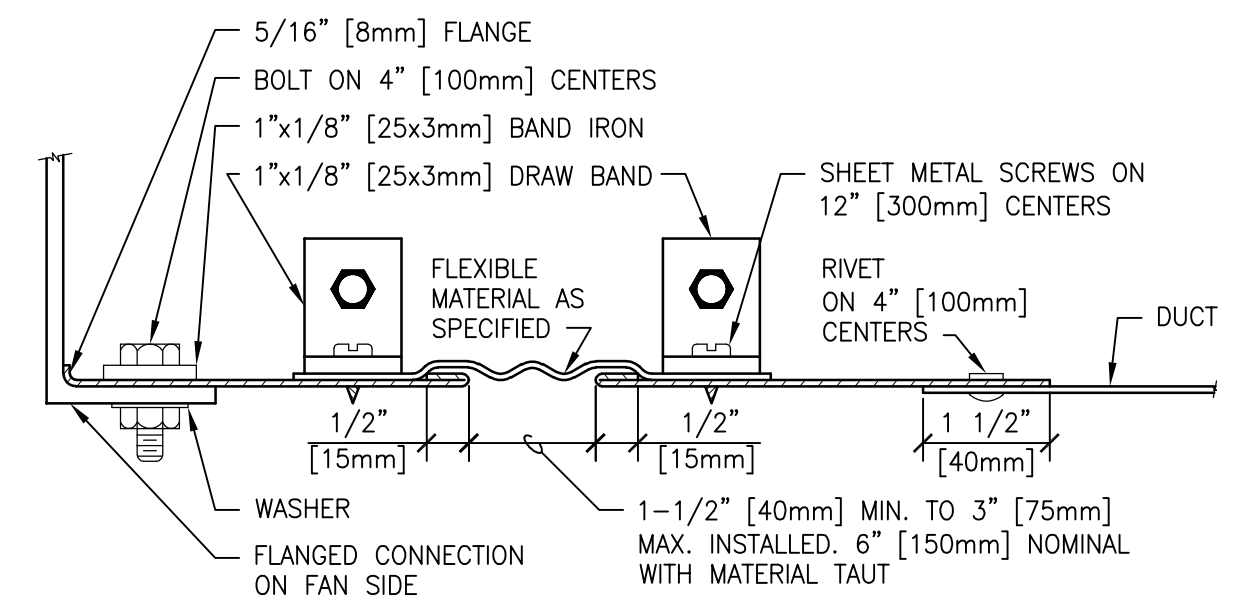
NOTES:

1. A VERTICAL DAMPER IS SHOWN. HORIZONTAL DAMPER INSTALLATION IS SIMILAR. FOLLOW DAMPER MANUFACTURER'S INSTRUCTIONS, INCLUDING FASTENER OPTIONS AND GAGES FOR SLEEVE AND PERIMETER ANGLES. FIRE DAMPERS MUST BE INSTALLED IN THE PARTITION OR FLOOR AND NOT OUTSIDE THE PENETRATION.
2. GALVANIZED SLEEVE; GAGE NOT LESS THAN CONNECTING DUCT. FASTEN SLEEVE TO DAMPER FRAME AND TO PERIMETER ANGLES.
3. PERIMETER ANGLES: GALVANIZED STEEL, NOT LESS THAN 1 1/2"x1 1/2" [40x40mm], 14 GAGE, TO PROVIDE 1" [25mm] MINIMUM OVERLAP ON ALL 4 SIDES.
4. BREAKAWAY DUCT CONNECTION: CONTRACTOR'S OPTION OF TYPES SHOWN IN SMACNA. ACCESS PANELS: SIZE AND LOCATION TO PERMIT SERVICING THE FUSIBLE LINK OR LINKS. PROVIDE 1/4" TO 1/2" [6 TO 15mm] CLEARANCE ON HEIGHT AND WIDTH.
5. ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND MECHANICAL ROOM FLOORS, SHALL BE PROVIDED WITH 3" [75mm] HIGH CONCRETE CURB AROUND OPENING FOR DUCT.
6. ALL DETAILS MUST COMPLY WITH FIRE DAMPER MANUFACTURER'S UL MOUNTING REQUIREMENTS.
7. MINIMUM ACCESS DOOR SIZE IS 10x10. INCREASE DUCT SIZE TO ALLOW INSTALLATION OF DOOR.

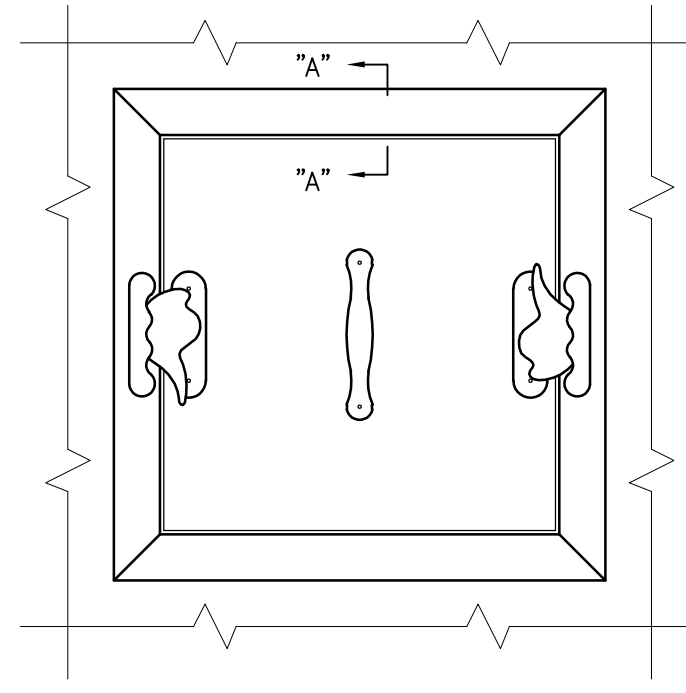
5 SECTION THRU FIRE DAMPER INSTALLATION
SCALE: NTS



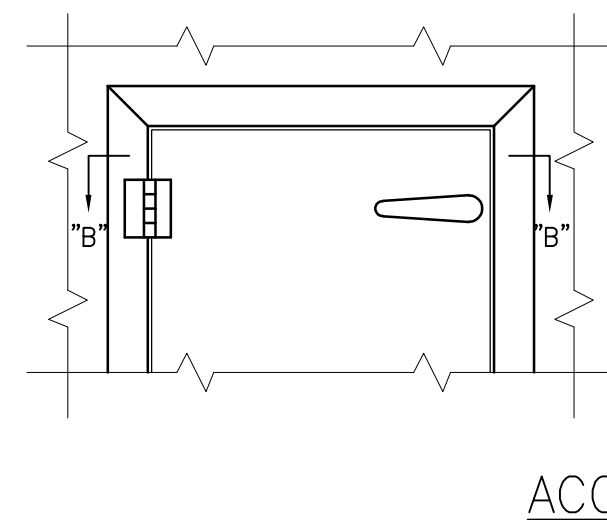
RECTANGULAR FLEXIBLE CONNECTION



ROUND FLEXIBLE CONNECTION



ACCESS PANEL

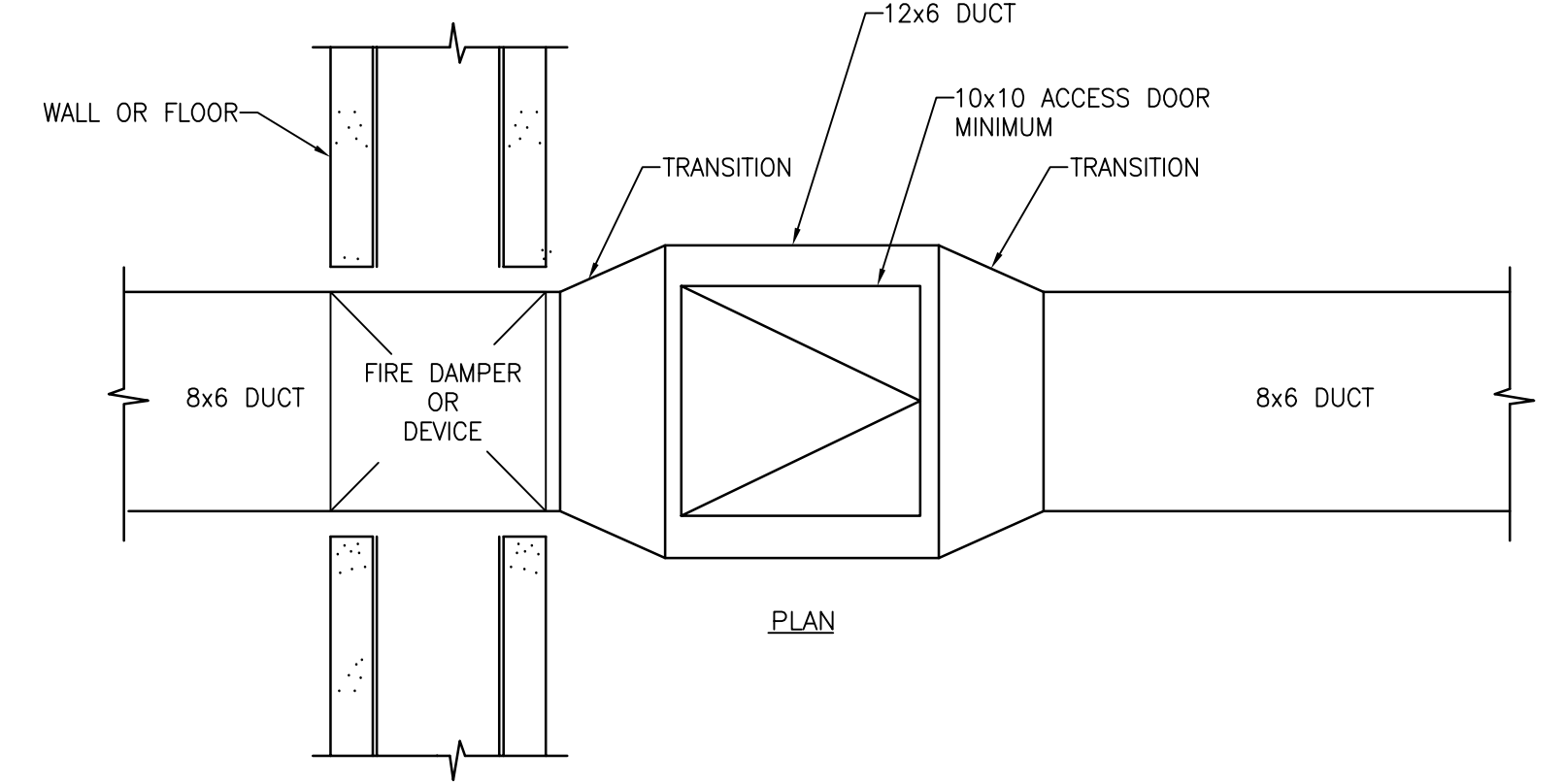


ACCESS DOOR

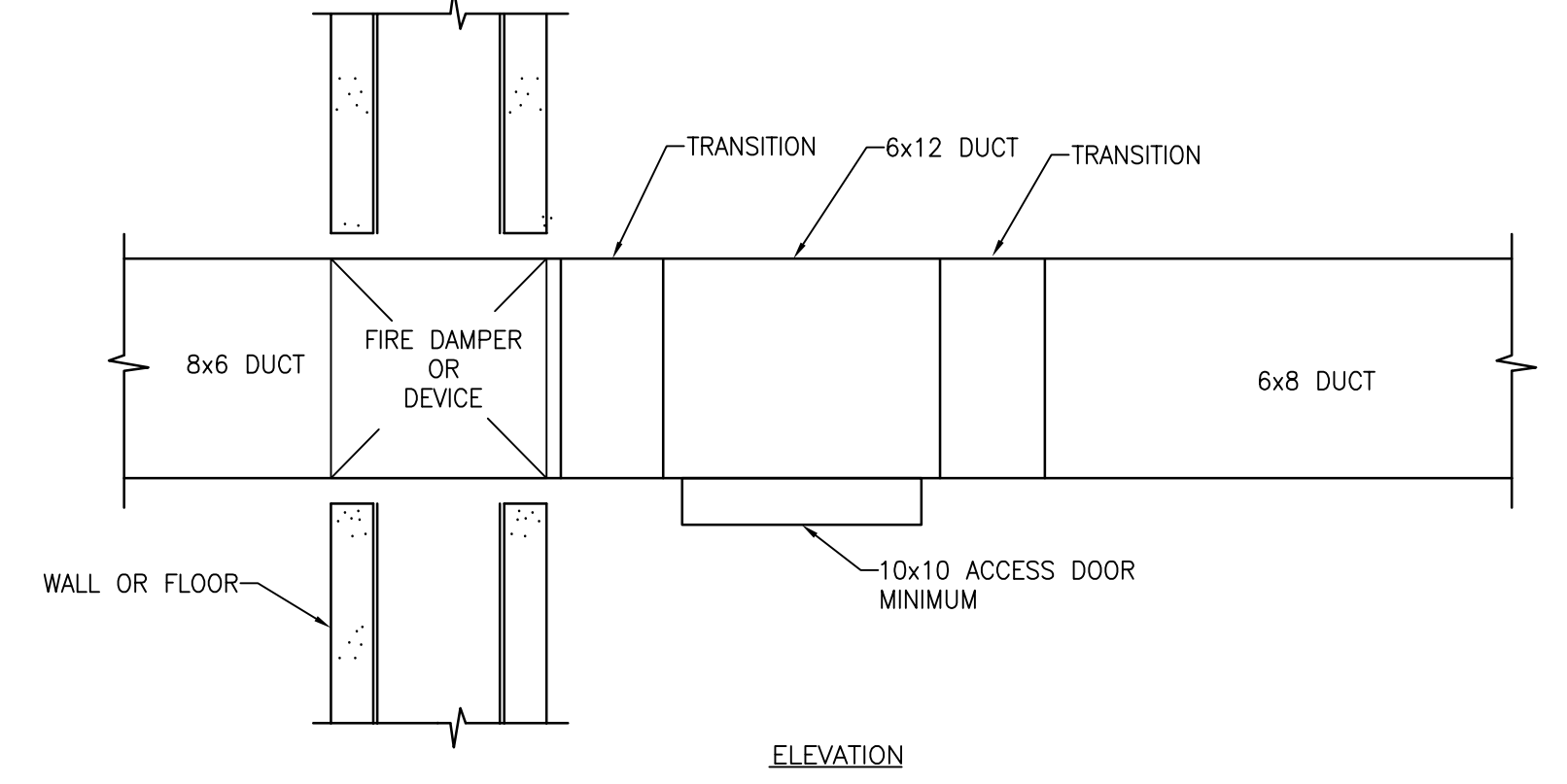
NOTES:

1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
2. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS.
3. SEE SMACNA 2005, FIGURE 9-15.
4. MINIMUM ACCESS DOOR SIZE IS 10x10. INCREASE DUCT SIZE TO ALLOW INSTALLATION OF DOOR.

7 ACCESS PANEL AND DOOR DETAIL
SCALE: NTS



PLAN

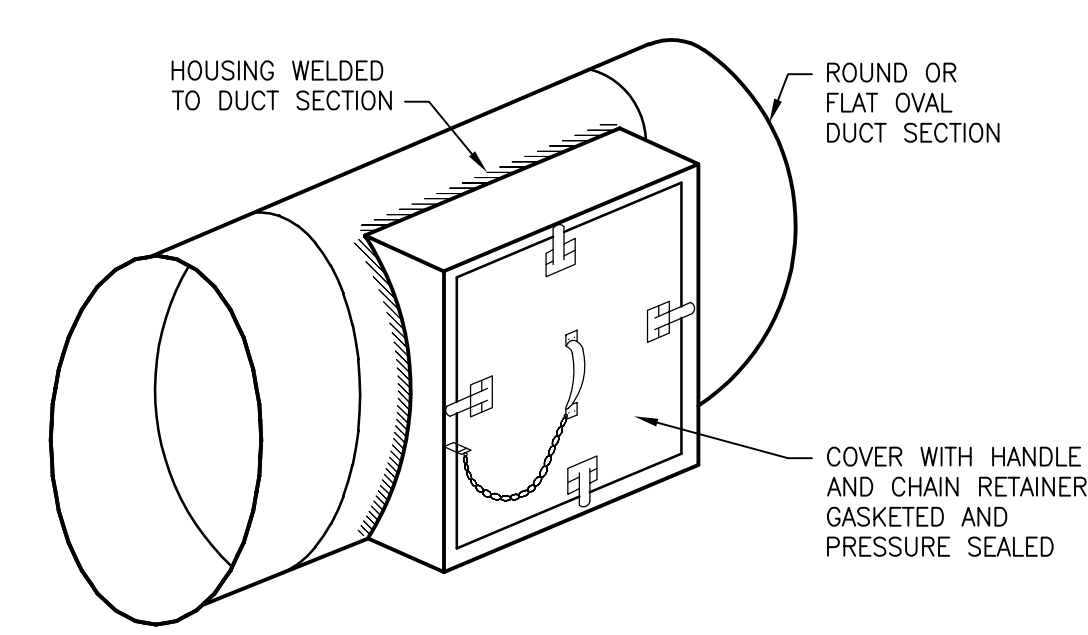


ELEVATION

NOTES:

1. INCREASE DUCT SIZE PER SMACNA STANDARDS TO ALLOW INSTALLATION OF DUCT ACCESS DOOR. MINIMUM ACCESS DOOR SIZE IS 10x10.
2. DETAIL IS SIMILAR FOR RECTANGULAR OR ROUND.
3. ACCESS IS SIMILAR FOR FIRE DAMPERS OR DUCT MOUNTED DEVICES. REFERENCE FIRE DAMPER DETAIL FOR REQUIRED WALL PENETRATION COMPONENTS AND REQUIREMENTS.

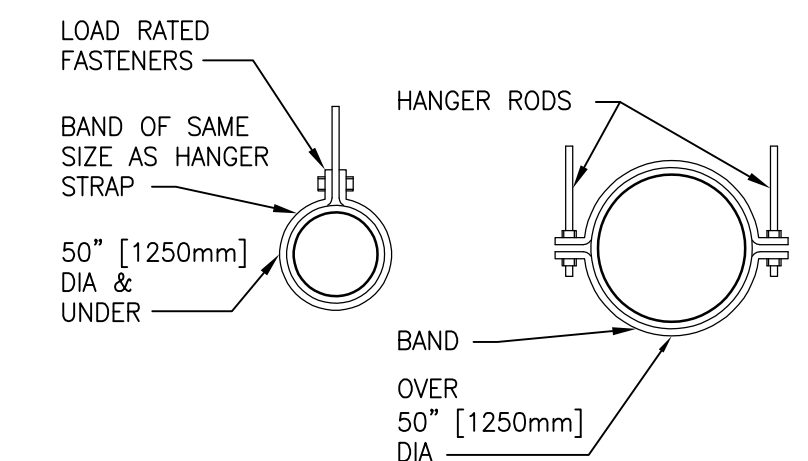
12 DUCT ACCESS PANEL DETAIL
SCALE: NTS



NOTES:

1. MINIMUM ACCESS DOOR SIZE IS 10x10. INCREASE DUCT SIZE TO ALLOW INSTALLATION OF DOOR.

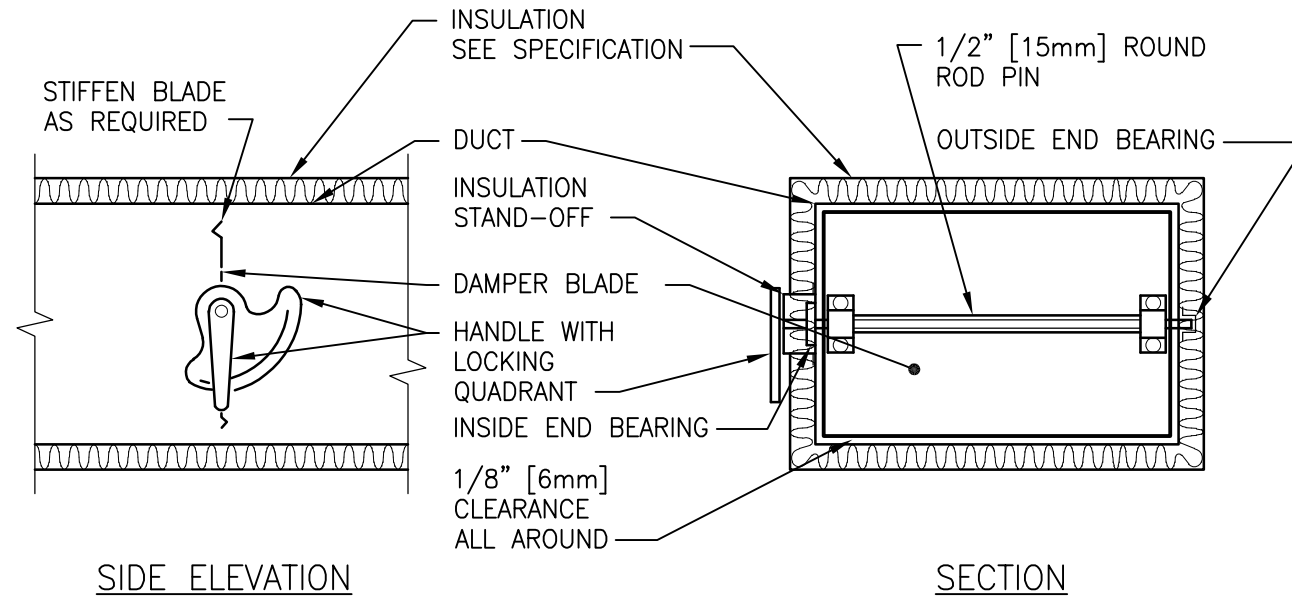
9 ACCESS SECTION FOR ROUND/OVAL DUCT
SCALE: NTS



HANGER STRAPS OR RODS			
MAX. DUCT #	QUANTITY/SIZE	MAX. LOAD	MAX. SPACING
IN. [mm]	IN. [mm]	LB. [kg]	IN. [mm]
26 [650]	ONE 1 [25] x 22 GA STRAP	260 [119]	144 [3600]
36 [900]	ONE 1 [25] x 18 GA STRAP	420 [190]	144 [3600]
50 [1250]	ONE 1 [25] x 16 GA STRAP	700 [317]	144 [3600]
60 [1500]	TWO 3/8 [10]x RODS	1320 [598]	144 [3600]
84 [2100]	TWO 1/2 [13]x RODS	2500 [1133]	144 [3600]

NOTE: TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.

10 ROUND DUCT HANGERS
SCALE: NTS



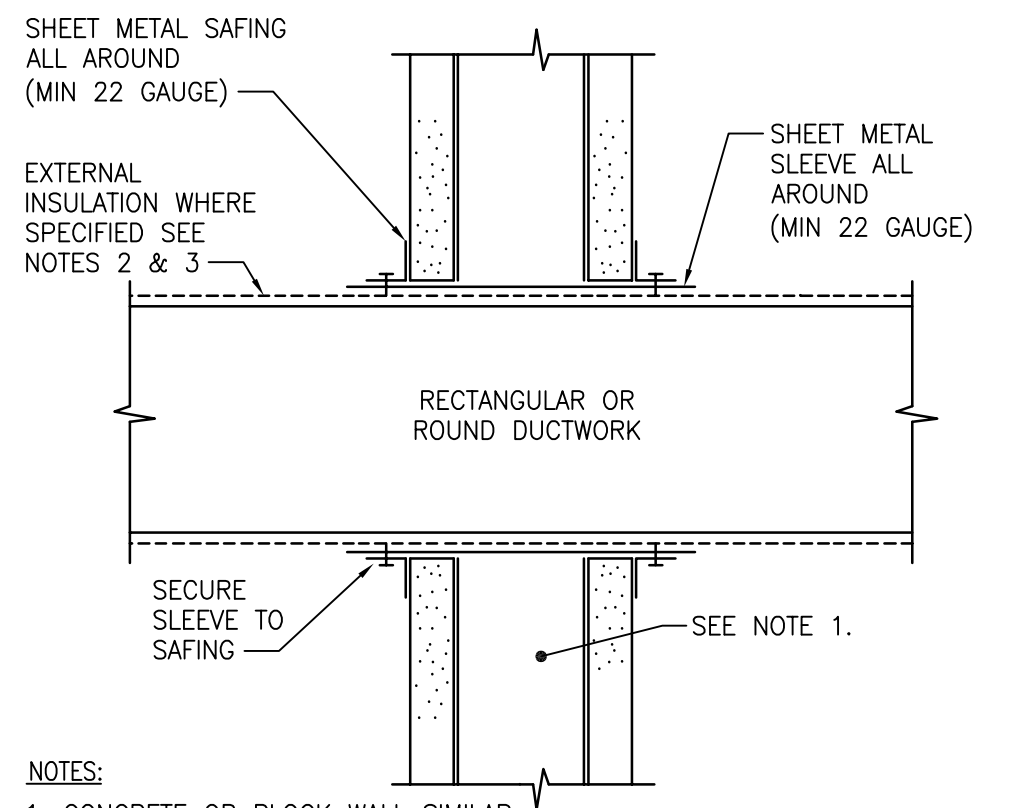
SIDE ELEVATION

SECTION

NOTES:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

11 VOLUME DAMPER DETAIL
SCALE: NTS



NOTES:

1. CONCRETE OR BLOCK WALL SIMILAR.
2. PROVIDE UL LISTED THROUGH PENETRATION FIRE STOP SEAL FOR RATED WALL WHERE DUCT DOES NOT REQUIRE A FIRE DAMPER.
3. INSULATION TIGHT TO SLEEVE FOR INSULATED DUCT. CAULK CLEAR SPACE AIR TIGHT FOR INSULATED AND NON-INSULATED DUCT.

12 DUCT THROUGH WALL DETAIL
SCALE: NTS

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MILLER-REMICK LLC
PROFESSIONAL ENGINEER

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

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MECHANICAL DETAILS

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Project Title
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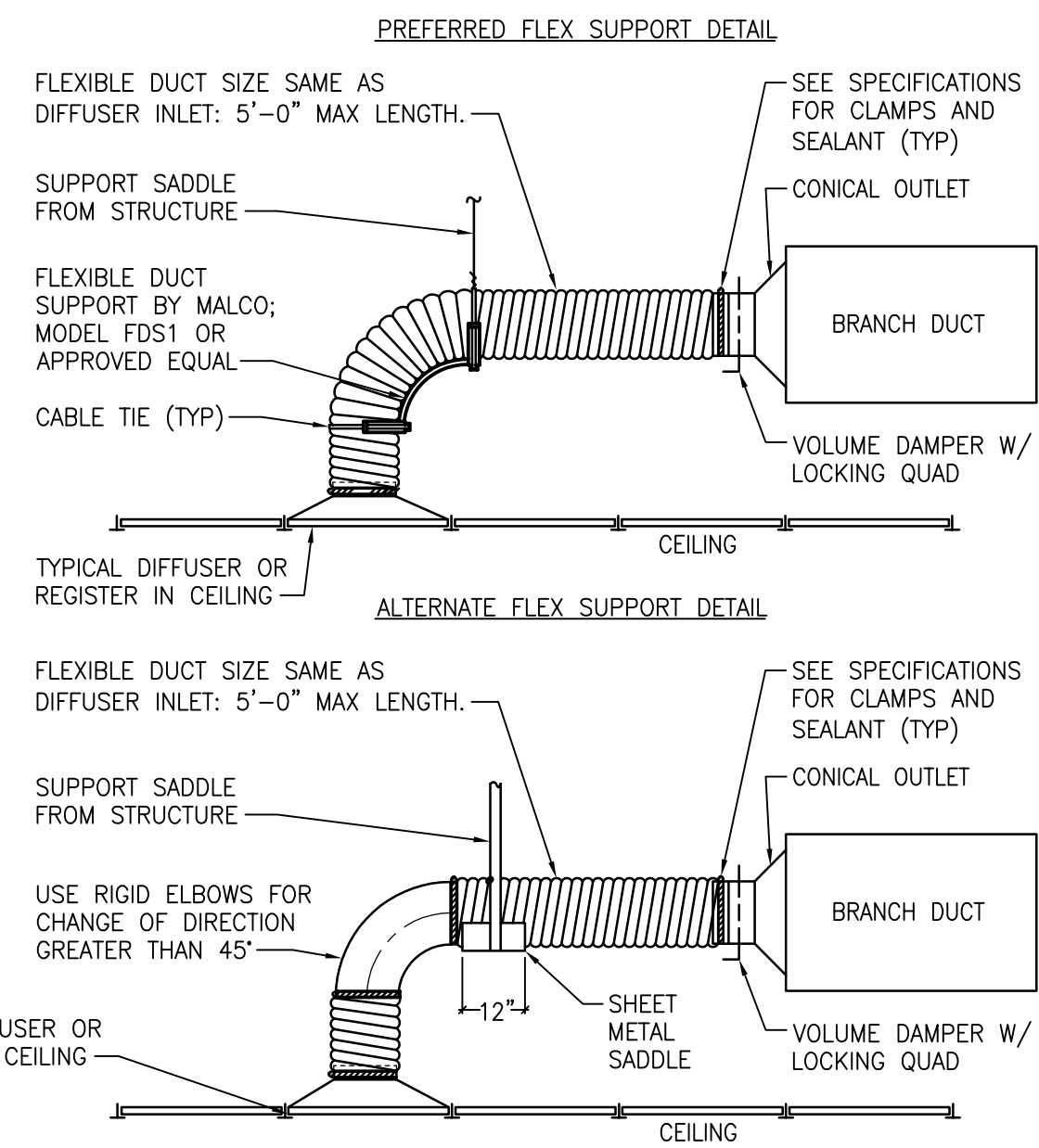
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Drawn
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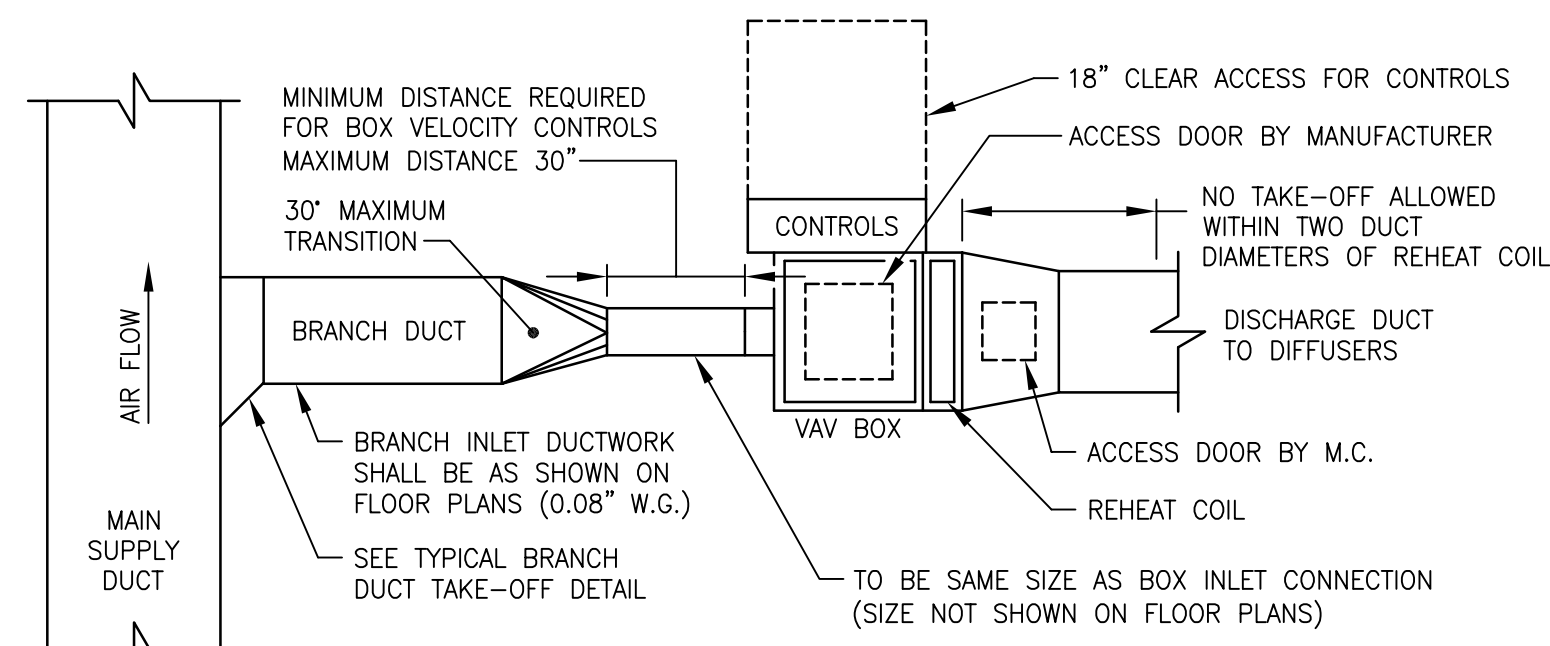
Project Number
656-18-300

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

Drawing Number
M-501

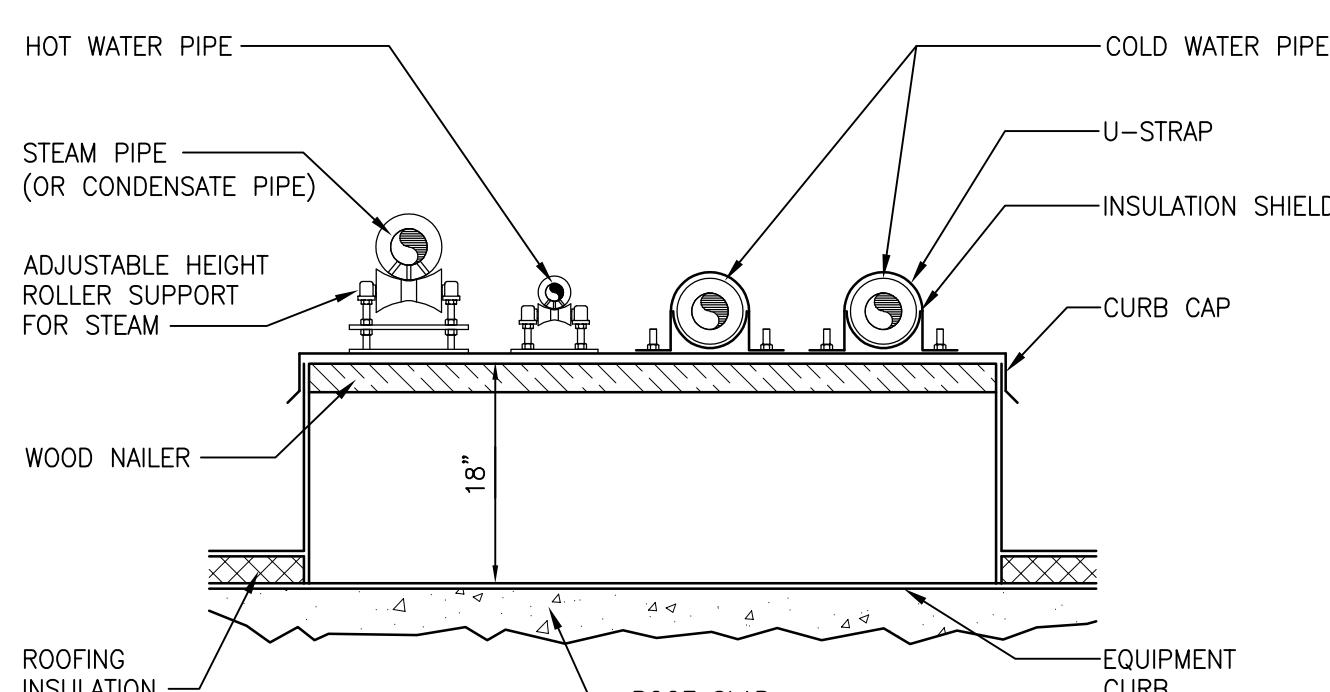


1 FLEXIBLE AIR DUCT CONNECTOR
SCALE: NTS

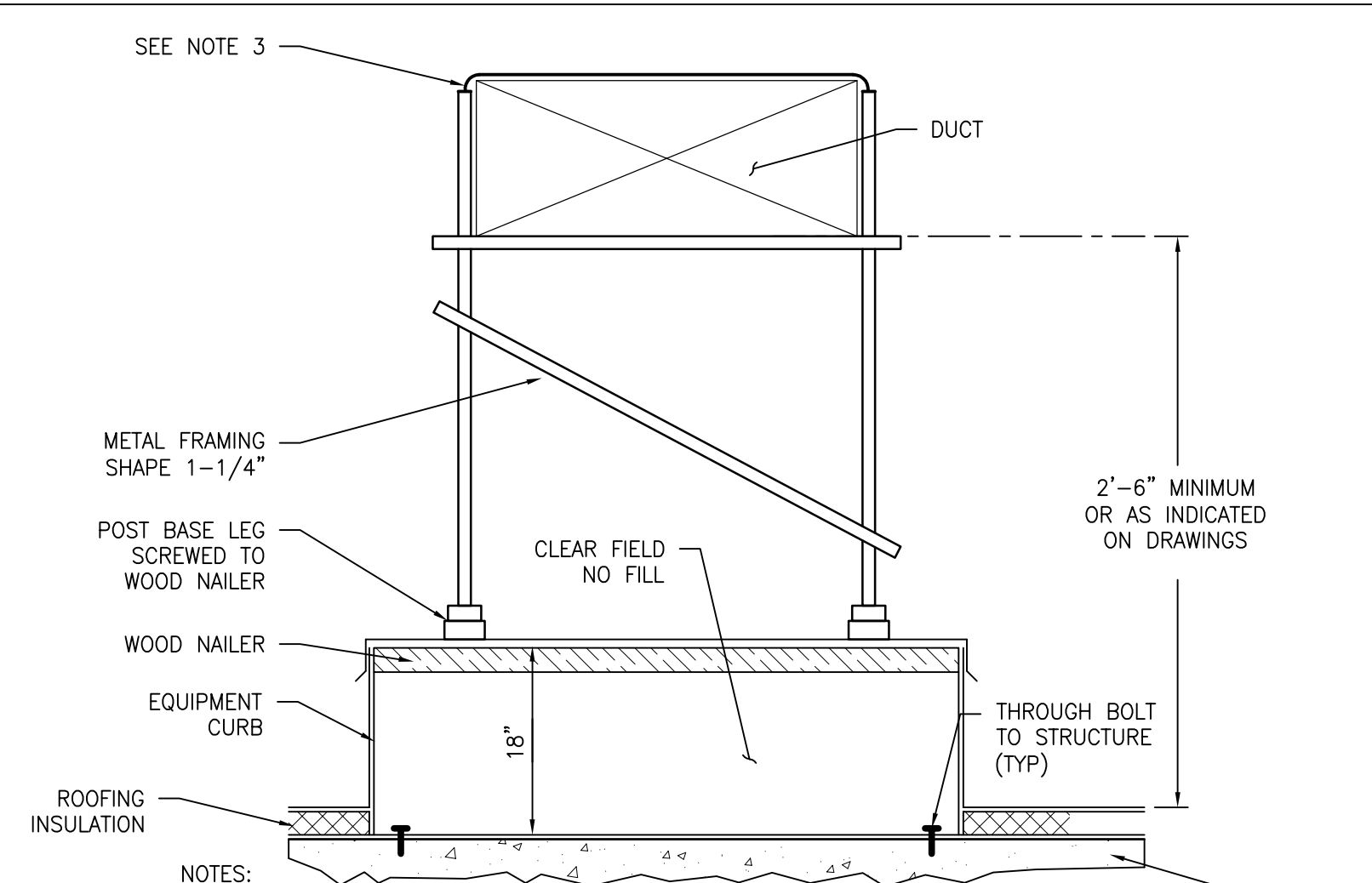


2 EXISTING AIR VOLUME BOX DUCT CONNECTION DETAIL
SCALE: NTS

- NOTES:**
1. STEAM, CONDENSATE AND HOT WATER PIPES ARE TO HAVE PIPE ROLL STANDS.
 2. STEAM AND CONDENSATE ROLL STANDS ARE TO BE ADJUSTABLE HEIGHT.
 3. MINIMUM CURB HEIGHT IS TO BE 18 INCHES. HIGHER CURBS MAY BE REQUIRED TO PROVIDE PROPER PIPE SLOPE.

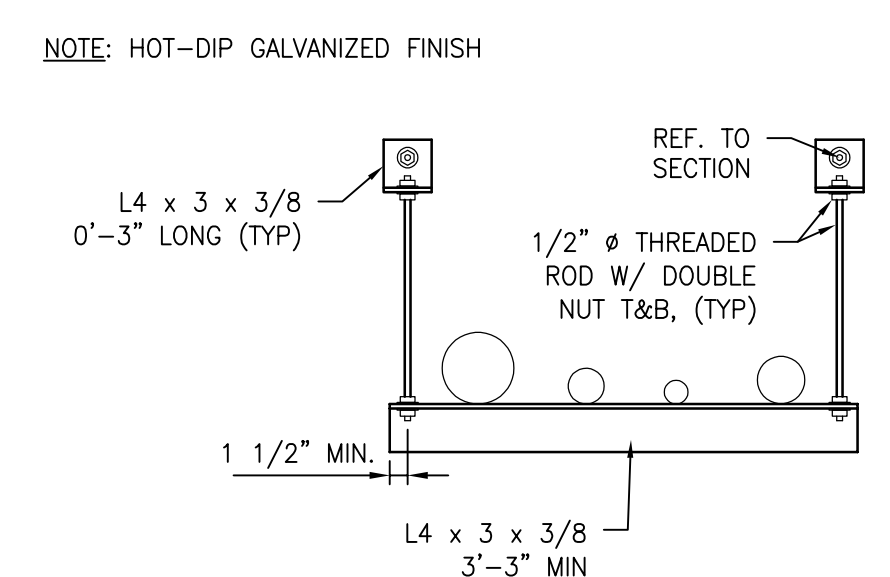


6 DETAIL FOR PIPE SUPPORT ON ROOF
SCALE: NTS

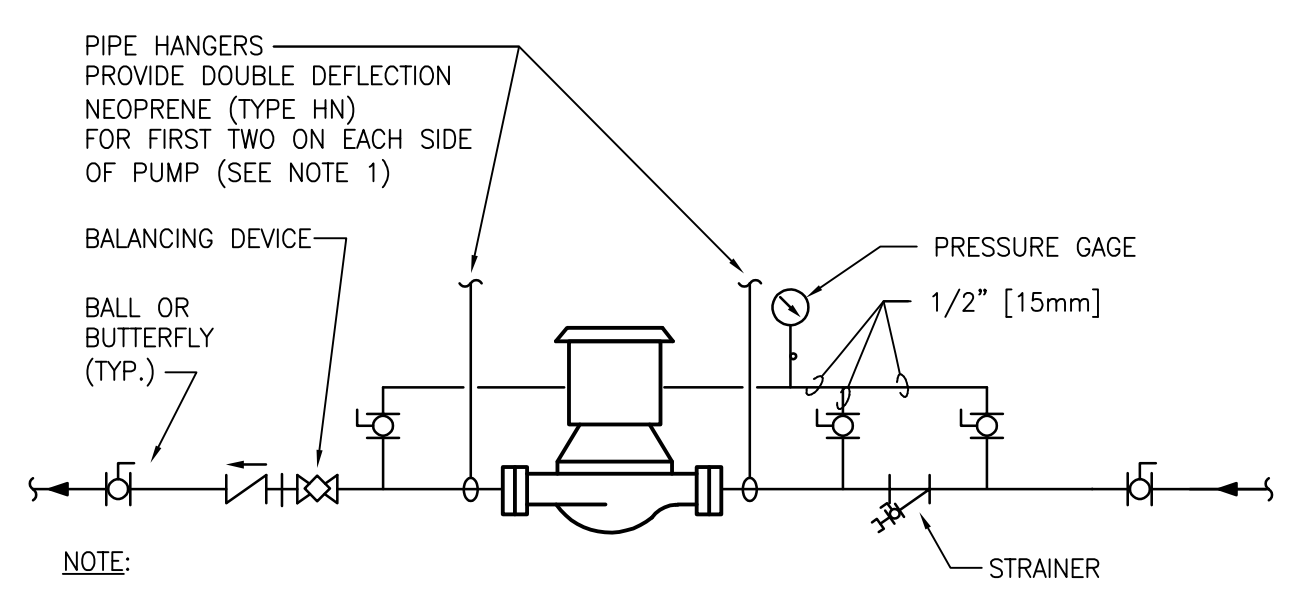


3 ROOFTOP DUCT SUPPORT DETAIL
SCALE: NTS

- NOTES:**
1. MINIMUM CURB HEIGHT IS TO BE 12 INCHES.
 2. METAL FRAMING SHAPE TO BE 1-1/4" UNISTRUT OR EQUAL FOR INSTALLATIONS WITH TOP OF DUCT LESS THAN 60". HIGHER TOP OF DUCT INSTALLATIONS TO BE 1 5/8".
 3. STAINLESS STEEL STRAP DOWN DUCT TO SUPPORT, PER SMACNA.

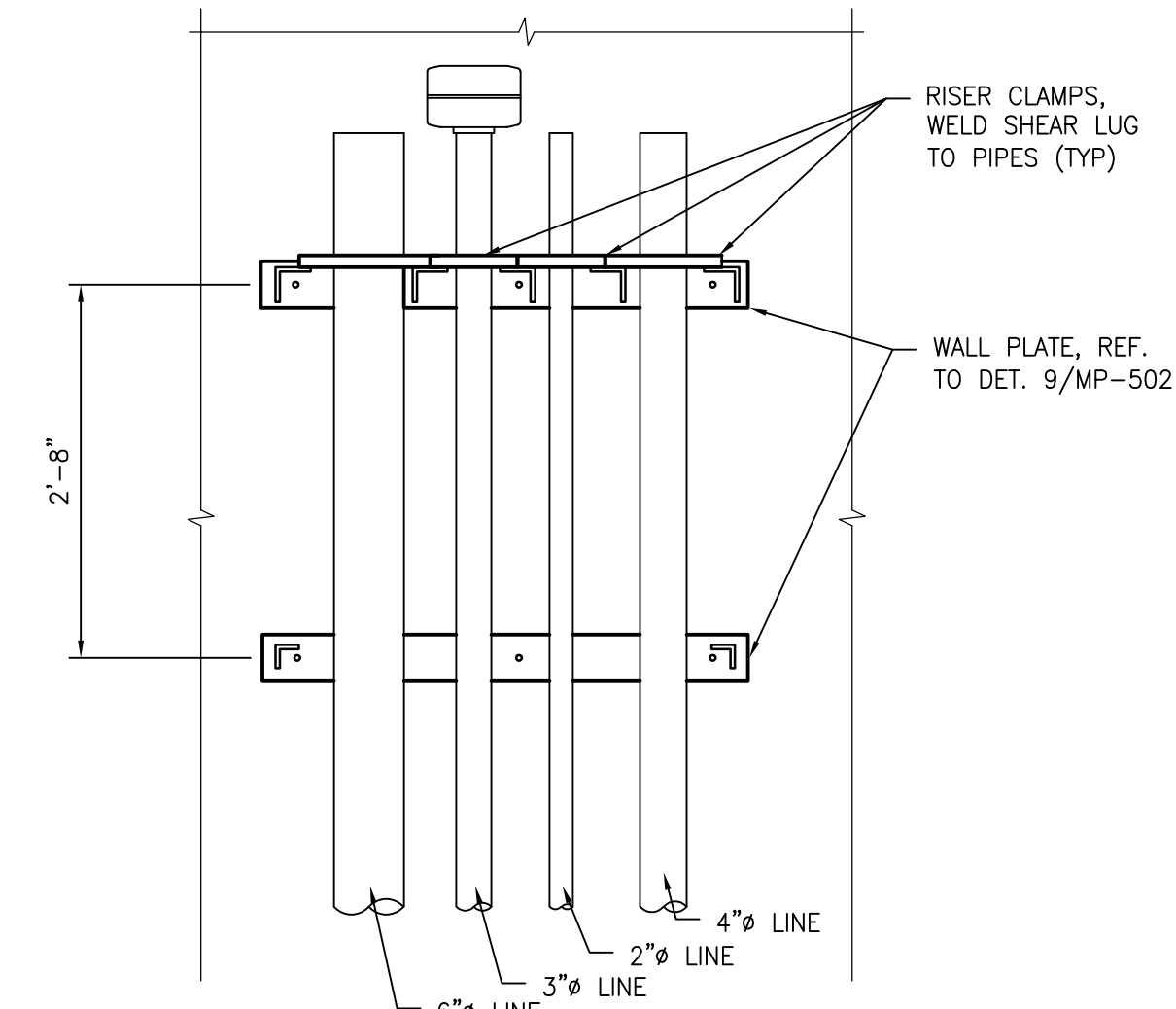


7 INTERIOR PIPE WALL PIPE HANGER DETAIL
SCALE: NTS



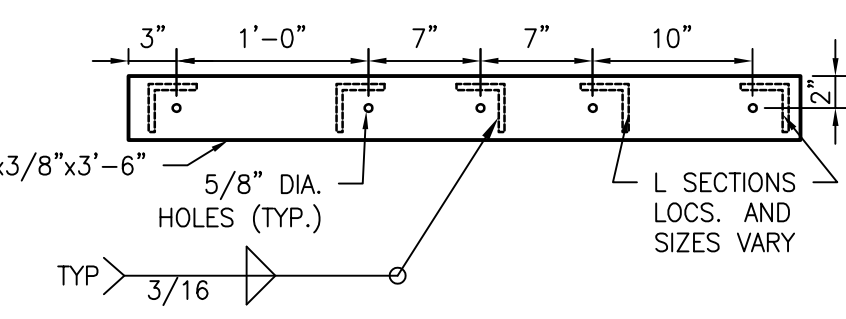
4 IN-LINE PUMP CONNECTIONS
SCALE: NTS

- NOTE:**
1. SUPPORT PUMP FROM PIPING ONLY. DO NOT SUPPORT PUMP FROM MOTOR.

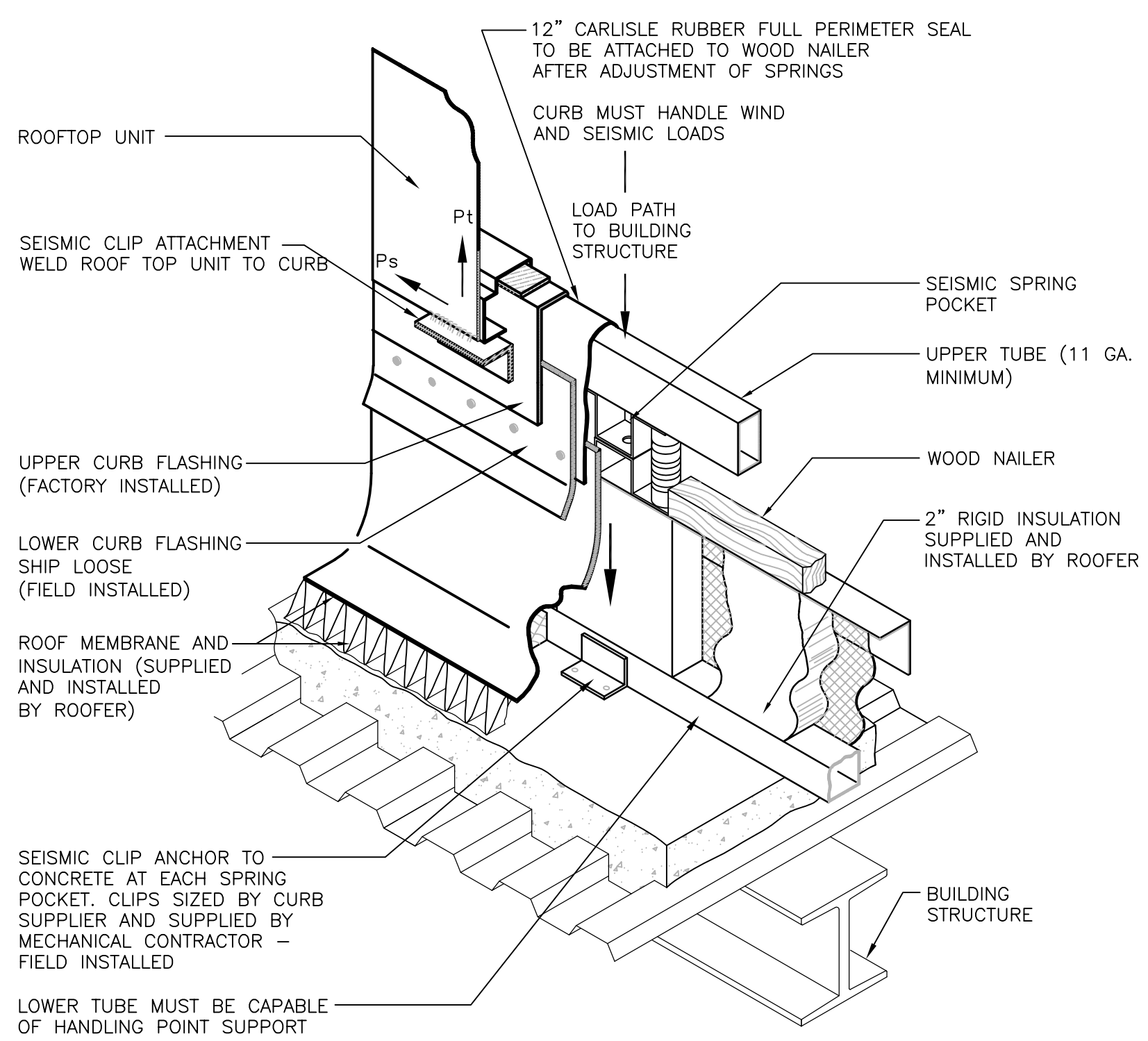


- NOTES:**
1. PIPES, HARDWARE, AND BRACKETS SHALL BE HOT-DIP GALVANIZED AND FIELD-PAINTED TO MATCH EXISTING ARCHITECTURAL FEATURES (BRICK, STONE, ETC.) REFER TO STRUCTURAL GENERAL NOTES FOR PAINTING MATERIALS.
 2. ALL PLATES AND ANGLES SHALL BE ASTM A36, REFER TO STRUCTURAL GENERAL NOTES.
 3. MASONRY WALL ANCHOR SHALL BE 1/2" SST RODS W/ HILTI HIT-HY 10 PLUS, EMBEDMENT SHOWN.
 4. REFER TO ELEVATIONS FOR LOCATION AND ORIENTATION.

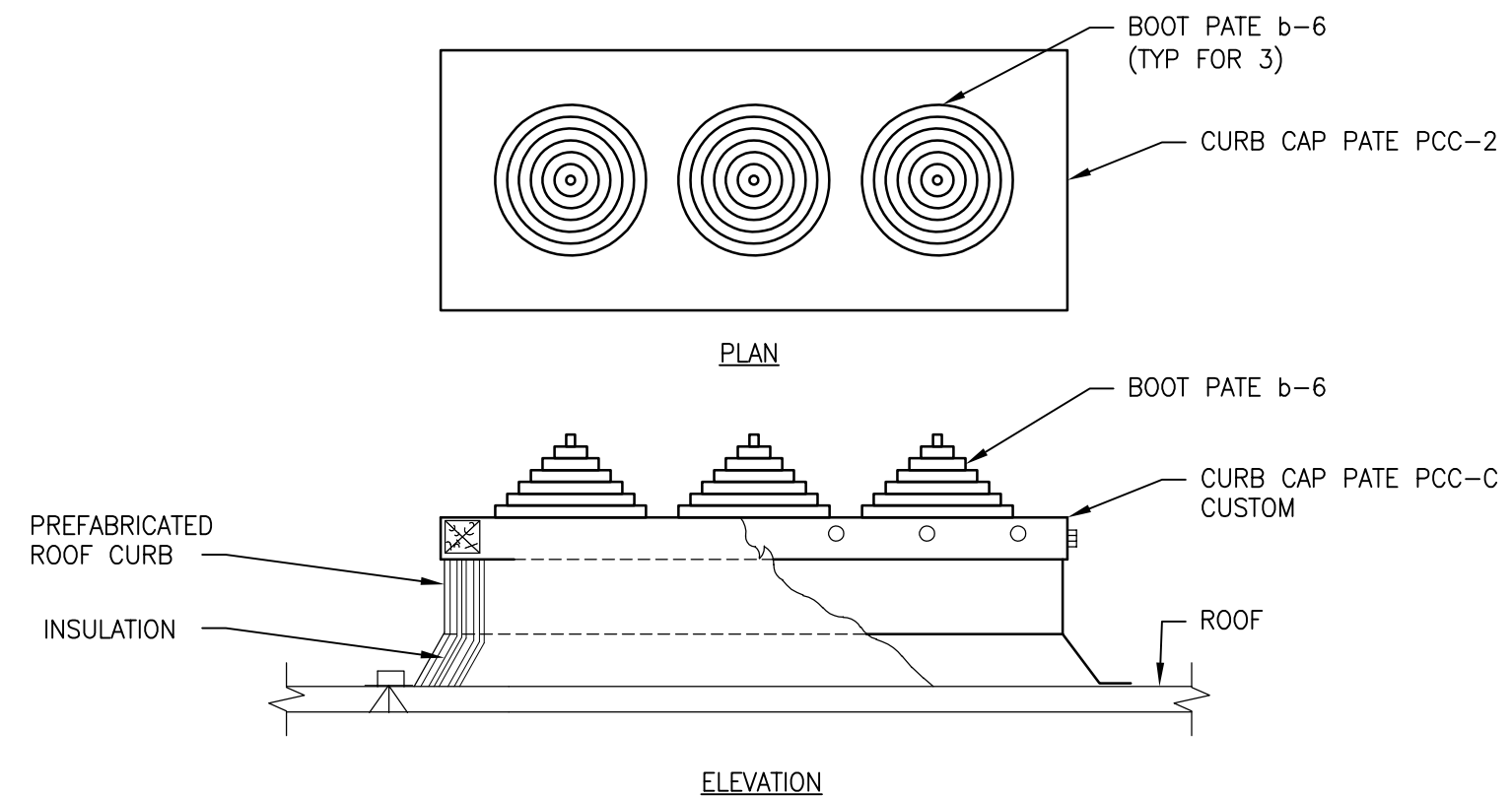
8 EXTERIOR PIPE BRACKET
SCALE: NTS



12 EXTERIOR PIPE BRACKET WALL PLATE
SCALE: NTS

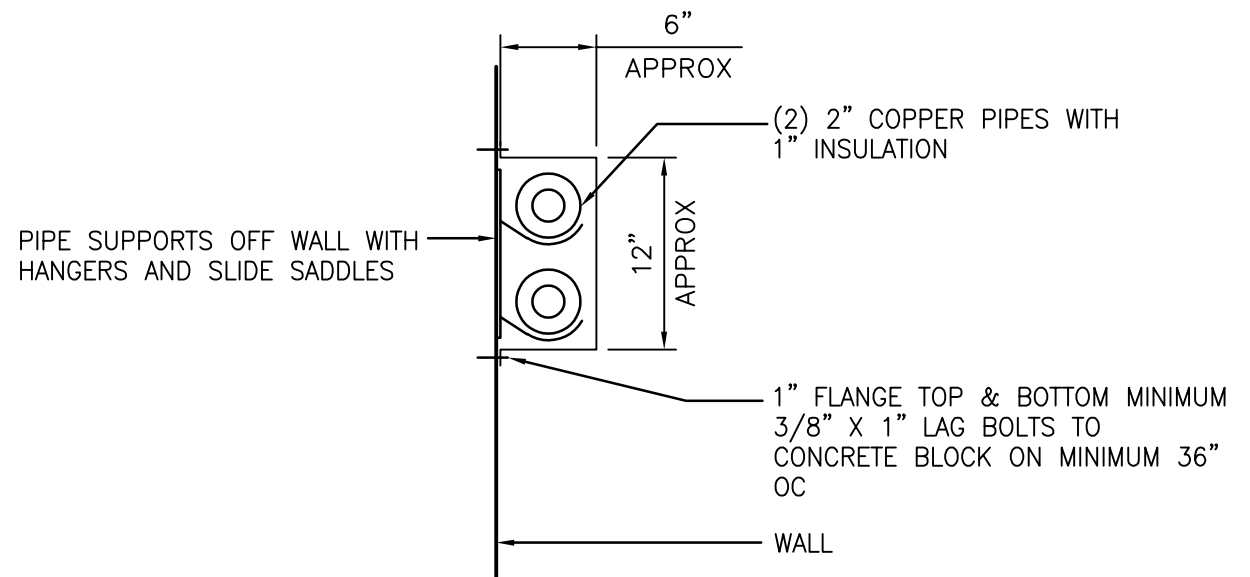


9 ATTACHMENT OF ISOLATED WIND ROOF CURB ON CONCRETE ROOF
SCALE: NTS



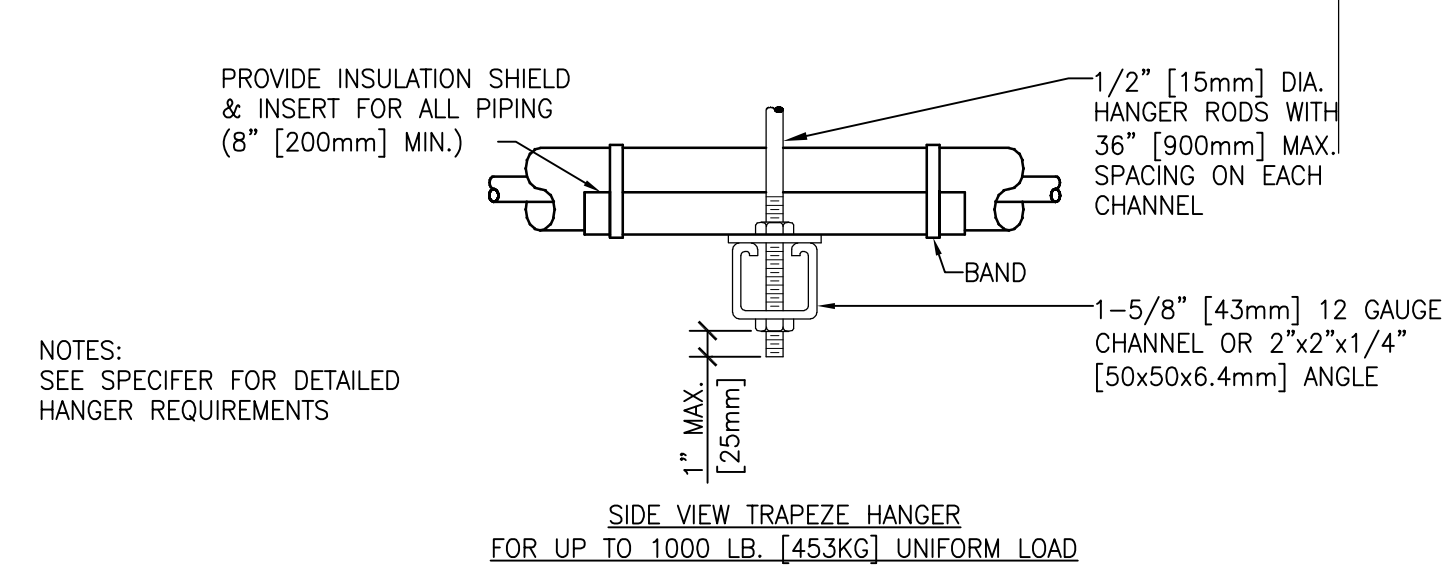
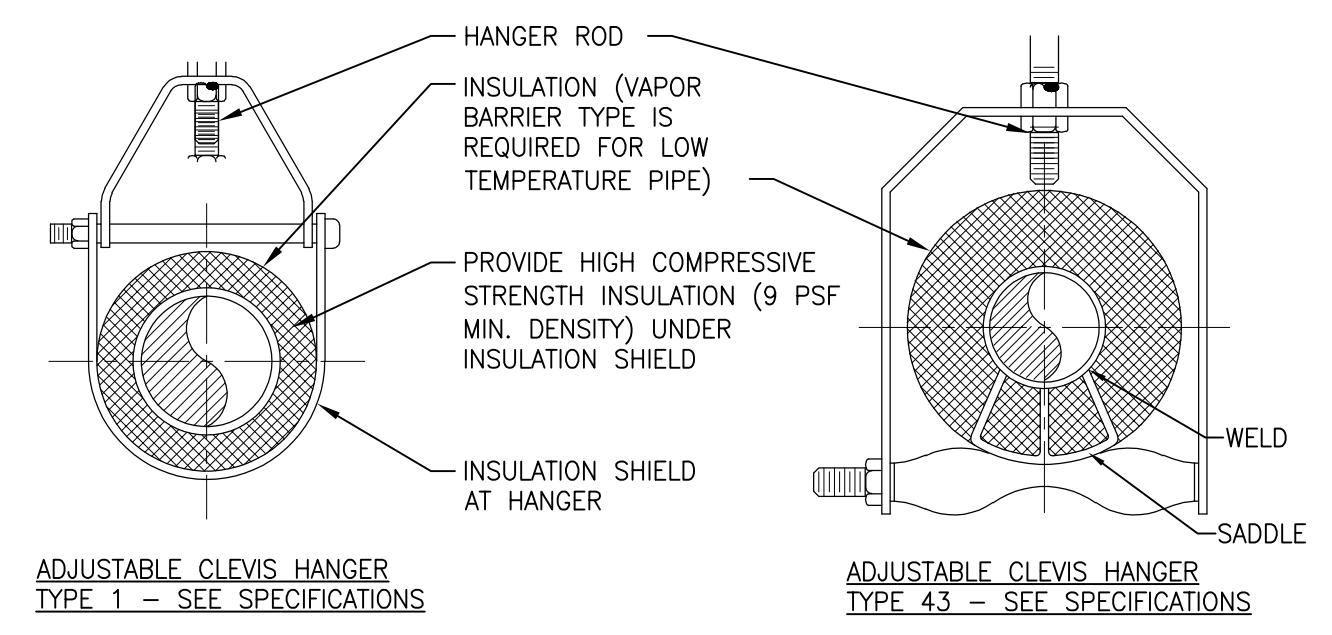
- NOTES:**
1. INSTALL CURB CAP PCC-C PER PATE INSTALLATION INSTRUCTIONS.
 2. INSTALL PATE b-6 BOOTS PER PATE INSTALLATION INSTRUCTIONS.

10 ROOF CURB WITH PIPING CAP
SCALE: NTS



- NOTES:**
1. COORDINATE FINAL ENCLOSURE DIMENSIONS TO SUIT WALL SUPPORTED PIPE HANGERS, EXPANSION DEVICES, GUIDES AND ANCHORS.
 2. FABRICATE FROM G-60 GALVANIZED SHEET STEEL MINIMUM 18 GAUGE WITH PAINTABLE FINISH.
 3. PAINT ENCLOSURE TO MATCH EXISTING ADJACENT WALL FINISH.
 4. PROVIDE WALL MOUNTED PIPE SUPPORTS WITH SADDLES TO PROTECT PIPE INSULATION.

13 PIPE ENCLOSURE
SCALE: NTS

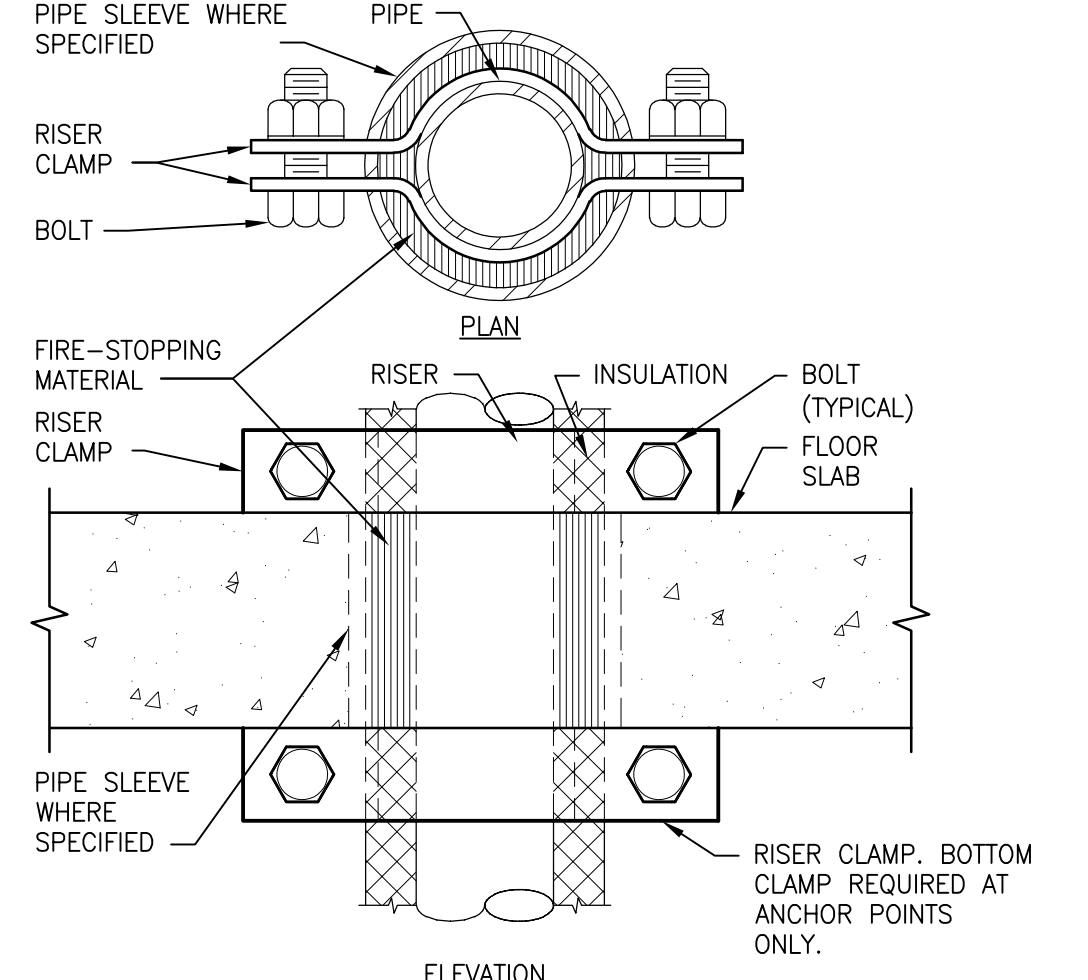


MAXIMUM PIPE/TUBING SUPPORT SPACING

NOM. SIZE	IN.	THRU	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
PIPE	FT.	[2100]	[2100]	[2700]	[3000]	[3400]	[3700]	[4100]	[4900]	[5200]	[5800]	[6700]	[7000]	[7600]	[8200]	[8500]	[9100]	[9600]	
TUBING	FT.	[1500]	[1800]	[2100]	[2400]	[2700]	[3000]	[3700]	[4000]	[4100]	[4900]								

NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.

11 PIPE HANGERS
SCALE: NTS



- NOTES:**
1. PROVIDE ANCHORS ONLY WHERE SHOWN ON DRAWINGS.
 2. EXTEND SLEEVE ABOVE FLOOR WHERE SPECIFIED.

14 SUPPORT/ANCHOR FOR PIPE RISERS
SCALE: NTS

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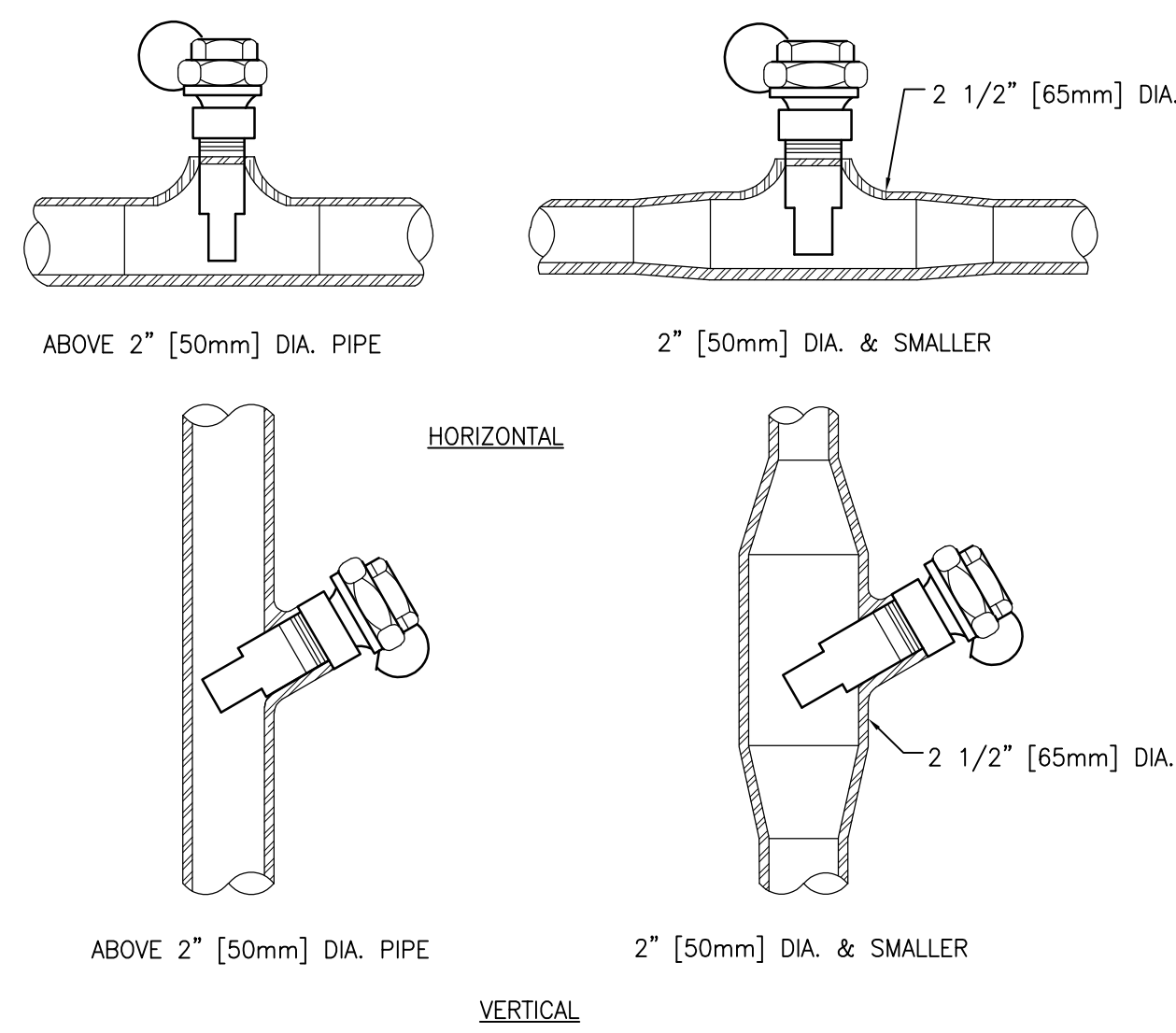
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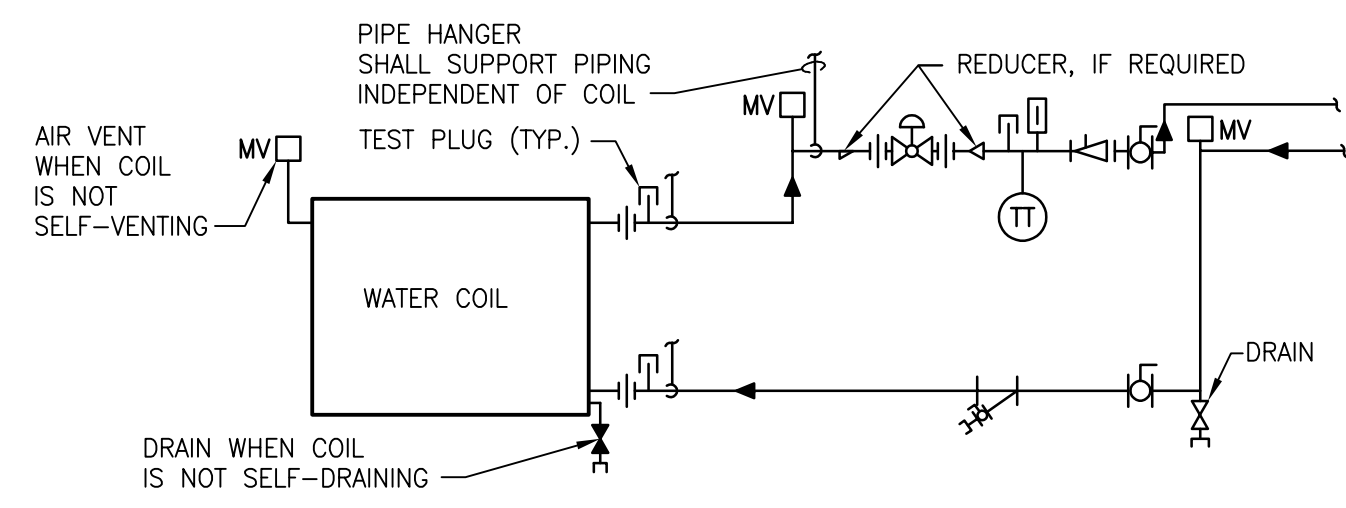
Project Number
656-18-300

Building Number
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Drawing Number
M-502

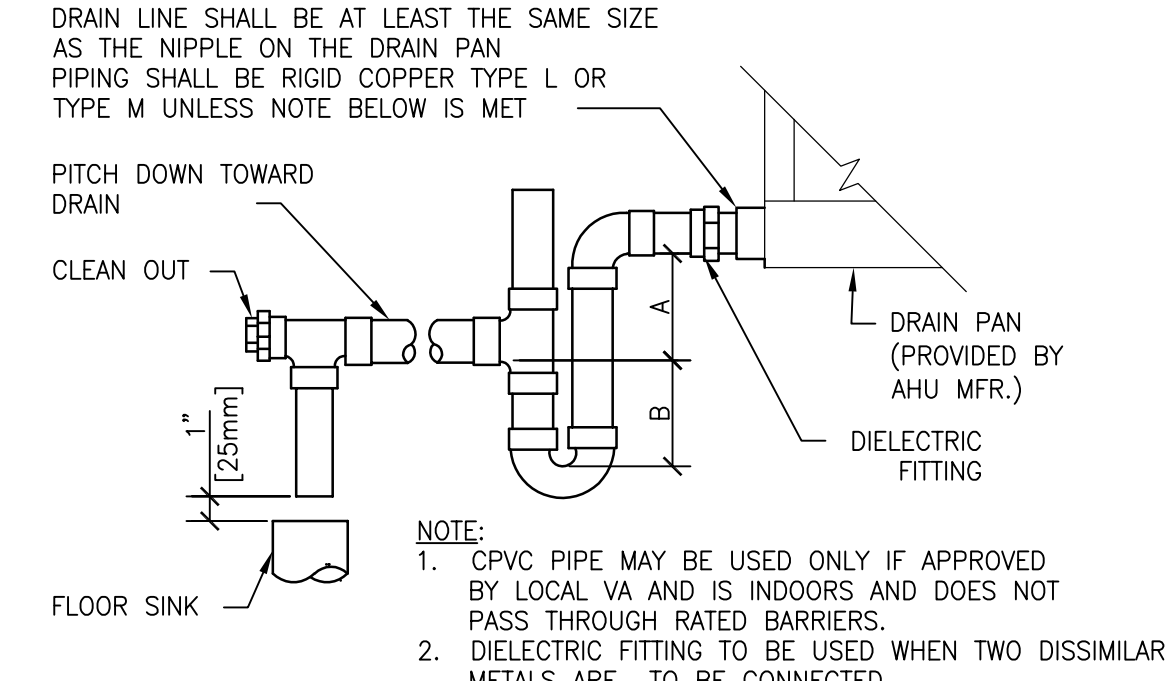


1 INSTALLATION OF THERMOMETER WELLS
SCALE: NTS



- 2 WATER COILS - PIPING CONNECTIONS**
SCALE: NTS
- WHEN COIL IS INCLUDED IN CASING MOUNTED ON VIBRATION ISOLATORS THE FIRST 2 HANGERS FOR EACH PIPE SHALL BE SPRING & NEOPRENE TYPE. TYPE "H" FOR 4" [100mm] PIPE & SMALLER. TYPE "H-P" FOR 5" [125mm] PIPE & LARGER.
 - PIPING SHALL BE INSTALLED IN SUCH MANNER THAT IT WILL NOT BLOCK THE SWING OR USE OF ACCESS DOORS OR PANELS; NEITHER SHALL IT BLOCK THE SERVICING OF FILTERS, VALVES, OR EQUIPMENT.

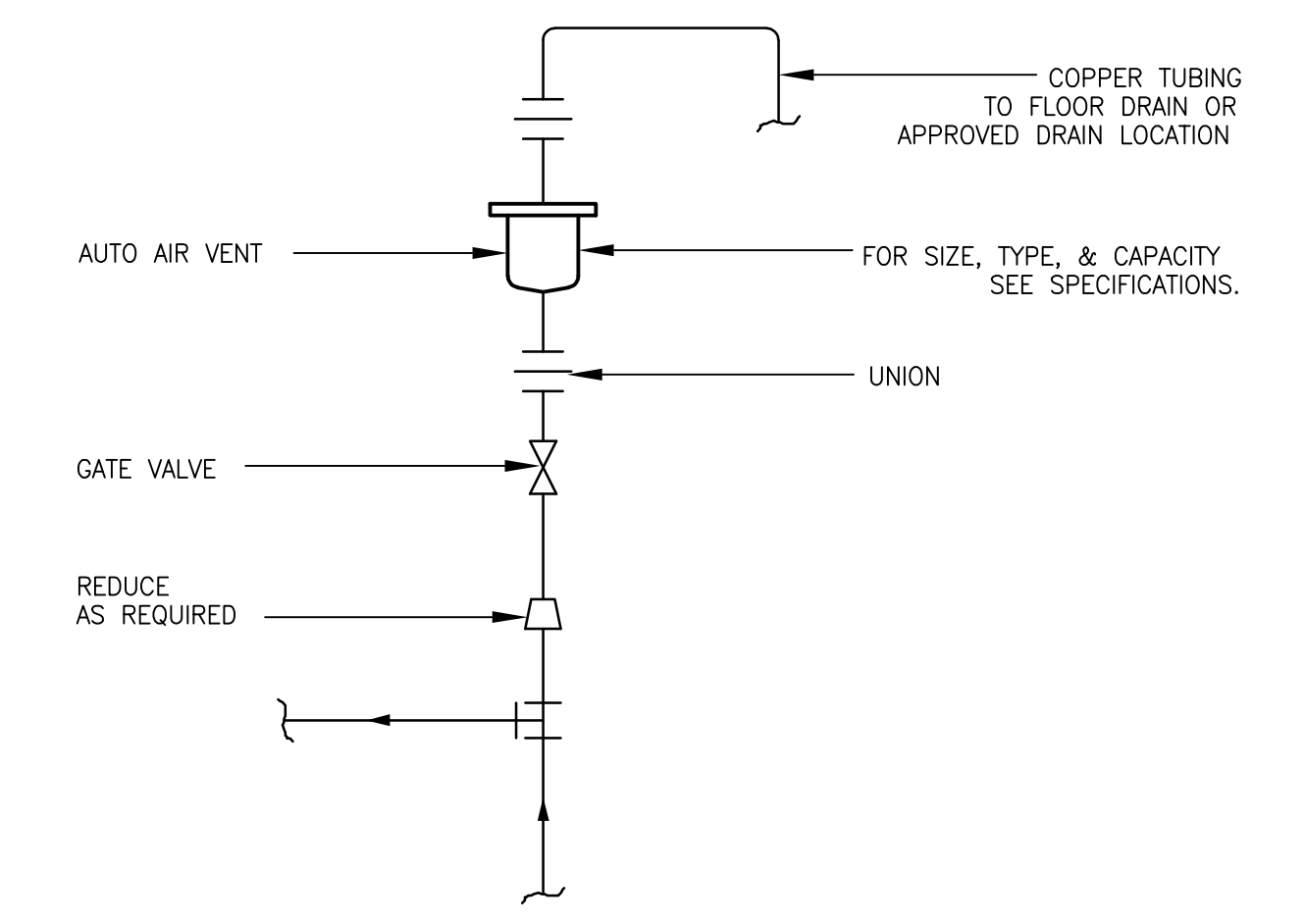
2 WATER COILS - PIPING CONNECTIONS
SCALE: NTS



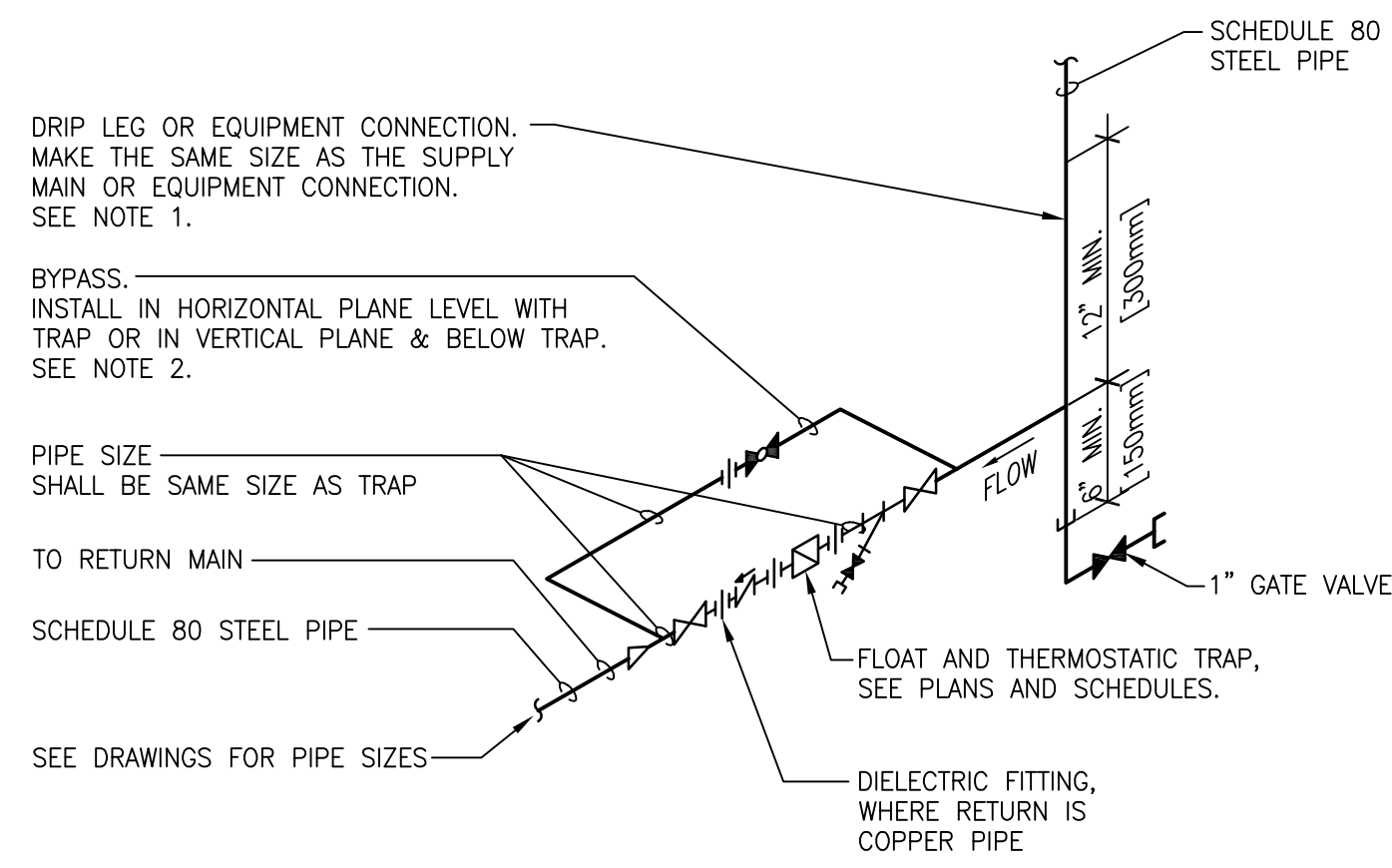
UNIT TYPE	A	B
DRAW THRU	2" [50mm] PLUS X	X
BLOW THRU	1" [25mm] MINIMUM	2X

WHERE X = STATIC PRESSURE IN PAN (PROVIDED BY AHU MANUFACTURER)

3 AIR HANDLING UNIT DRAIN TRAP DETAIL
SCALE: NTS

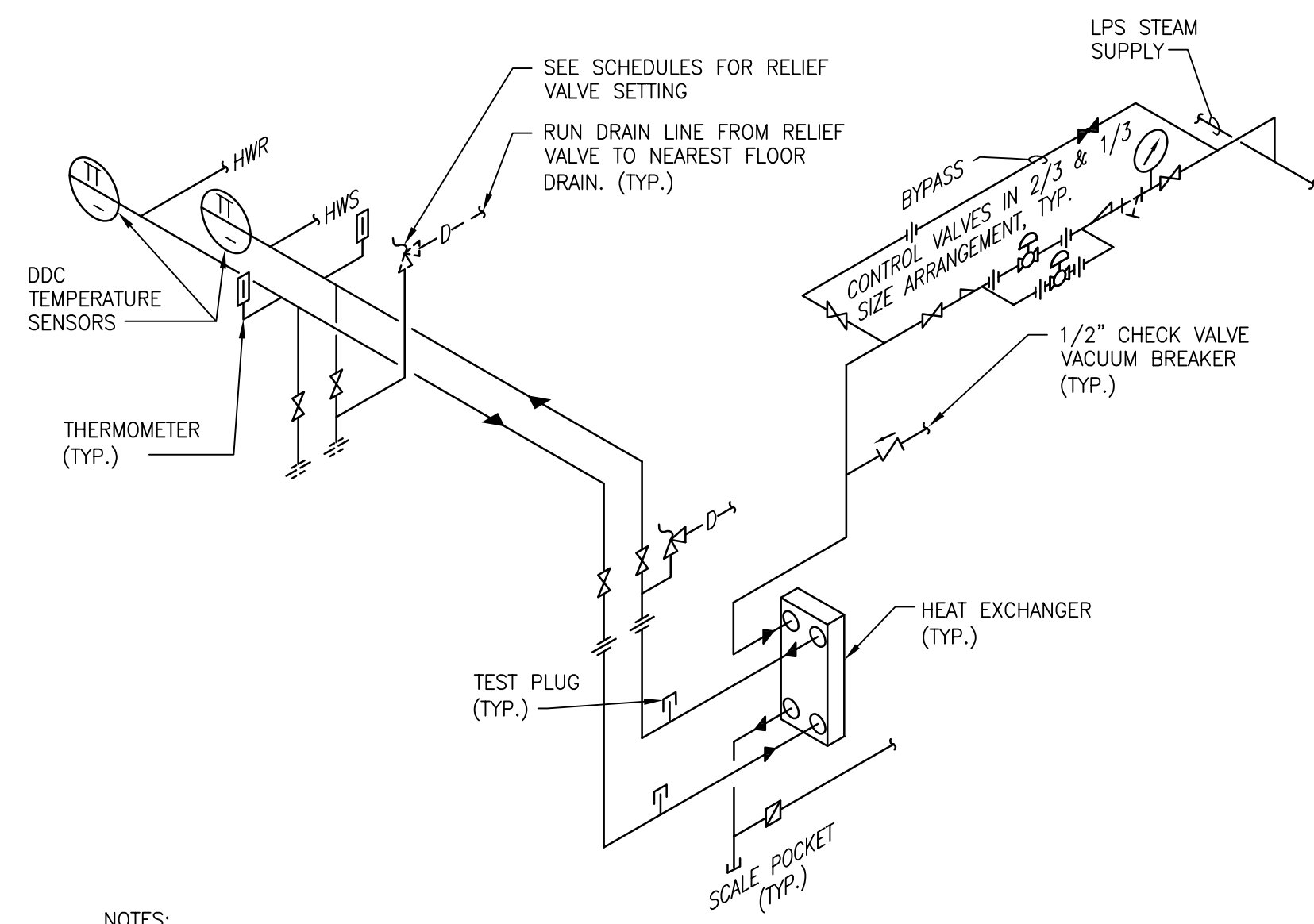


4 AUTOMATIC AIR VENT ASSEMBLY
SCALE: NTS



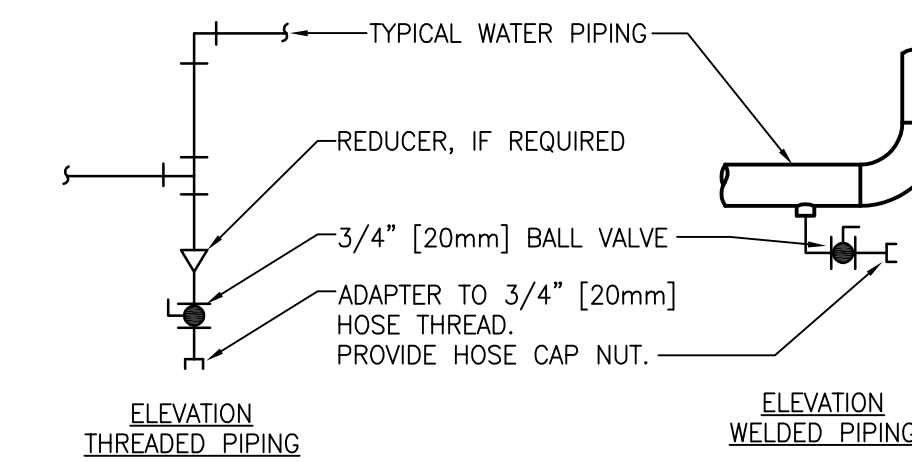
- 5 FLOAT AND THERMOSTATIC STEAM TRAP ASSEMBLY**
SCALE: NTS
- ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A 12" MINIMUM HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE POCKET BELOW TRAP INLET.
 - PROVIDE BYPASS PIPING FOR ALL TRAPS 1" AND LARGER.

5 FLOAT AND THERMOSTATIC STEAM TRAP ASSEMBLY
SCALE: NTS



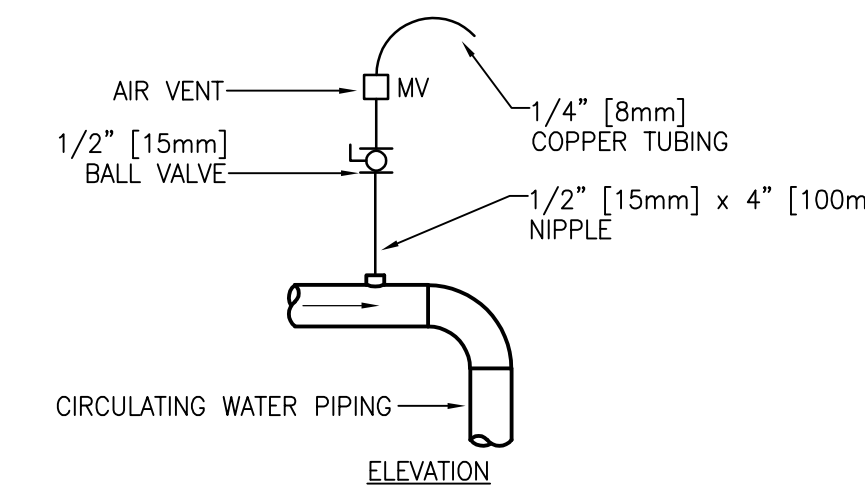
- 6 HEAT EXCHANGER - STEAM TO HOT WATER**
SCALE: NTS
- THE ABOVE DETAIL SHOWS REQUIRED PIPING FOR A BRAZED PLATE AND FRAME HEAT EXCHANGER.
 - PROVIDE SADDLE SUPPORTS AND LEGS OR HANGERS FOR HEAT EXCHANGER. MOUNTING HEIGHT SHALL BE ADJUSTED TO FACILITATE GRAVITY RETURN OF STEAM CONDENSATE.
 - MAKE THE BYPASS THE SAME SIZE AS THE CONNECTIONS TO THE CONTROL VALVES.
 - CONTROL VALVES SHALL BE IN A 1/2" & 3/4" SIZE ARRANGEMENT.

6 HEAT EXCHANGER - STEAM TO HOT WATER
SCALE: NTS



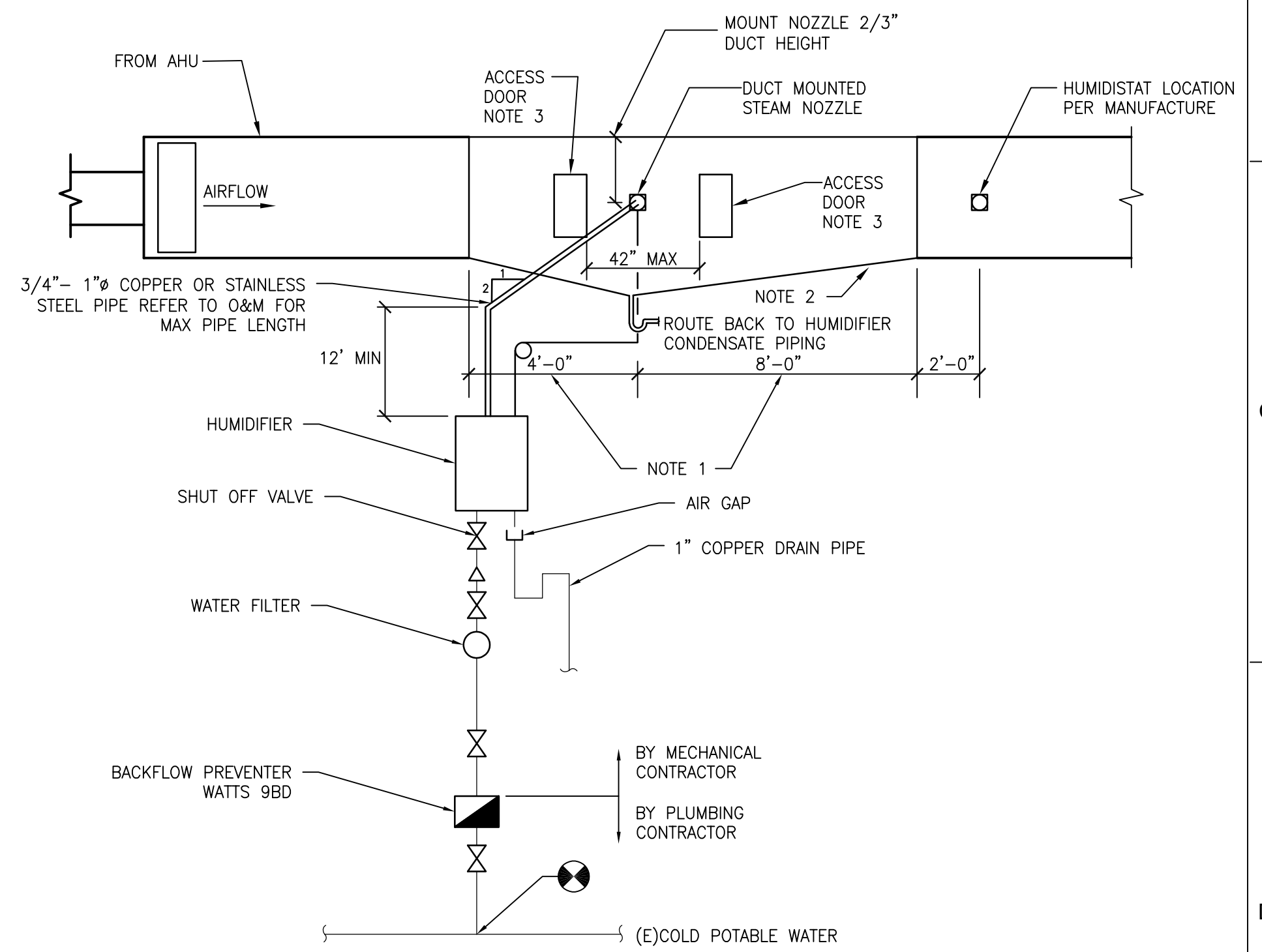
- 7 DRAIN VALVE AND AIR VENT CONNECTIONS (HYDRONIC SYSTEMS)**
SCALE: NTS
- DRAIN ALL LOW POINTS AS INDICATED ABOVE.
 - WHERE SCALE POCKETS ARE SHOWN ON PIPE RISER DIAGRAMS AND/OR PLANS LOCATE DRAIN AT BOTTOM OF SCALE POCKET.

7 DRAIN VALVE AND AIR VENT CONNECTIONS (HYDRONIC SYSTEMS)
SCALE: NTS



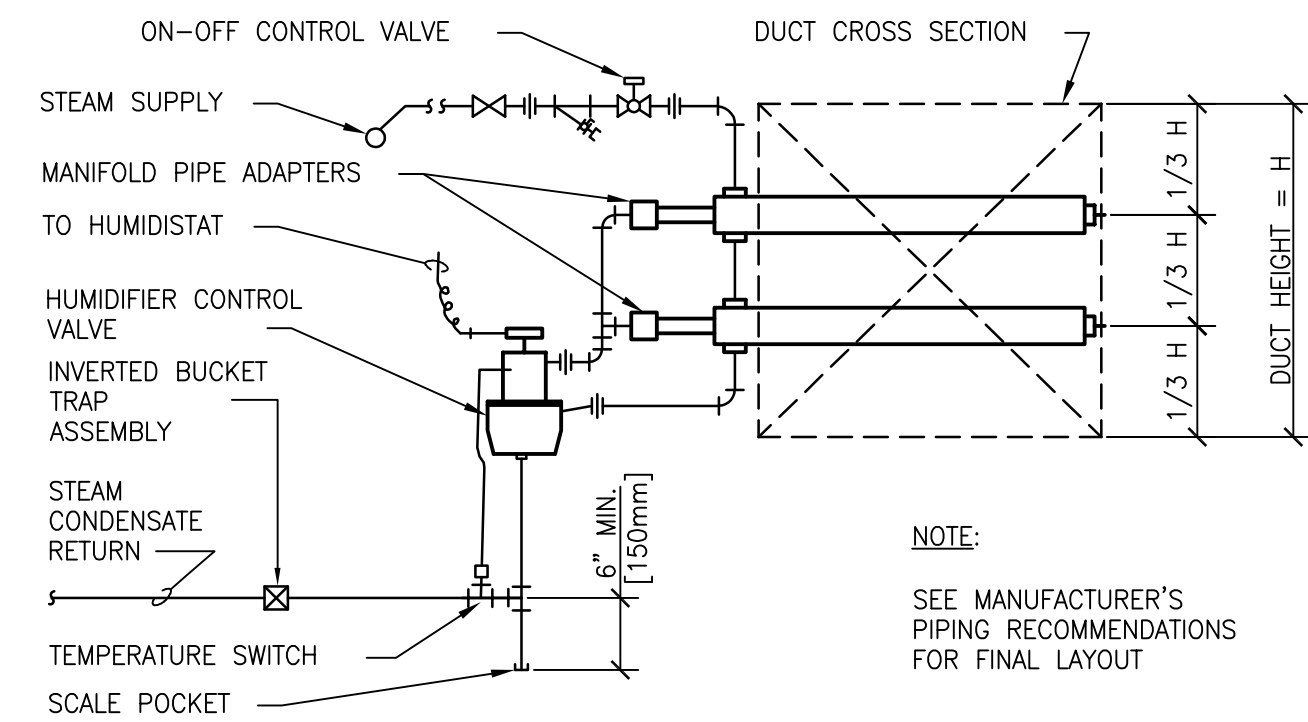
TYPICAL MANUAL AIR VENT

- 8 DUCT MOUNTED HUMIDIFIER**
SCALE: NTS
- VENT ALL HIGH POINTS INDICATED ABOVE.

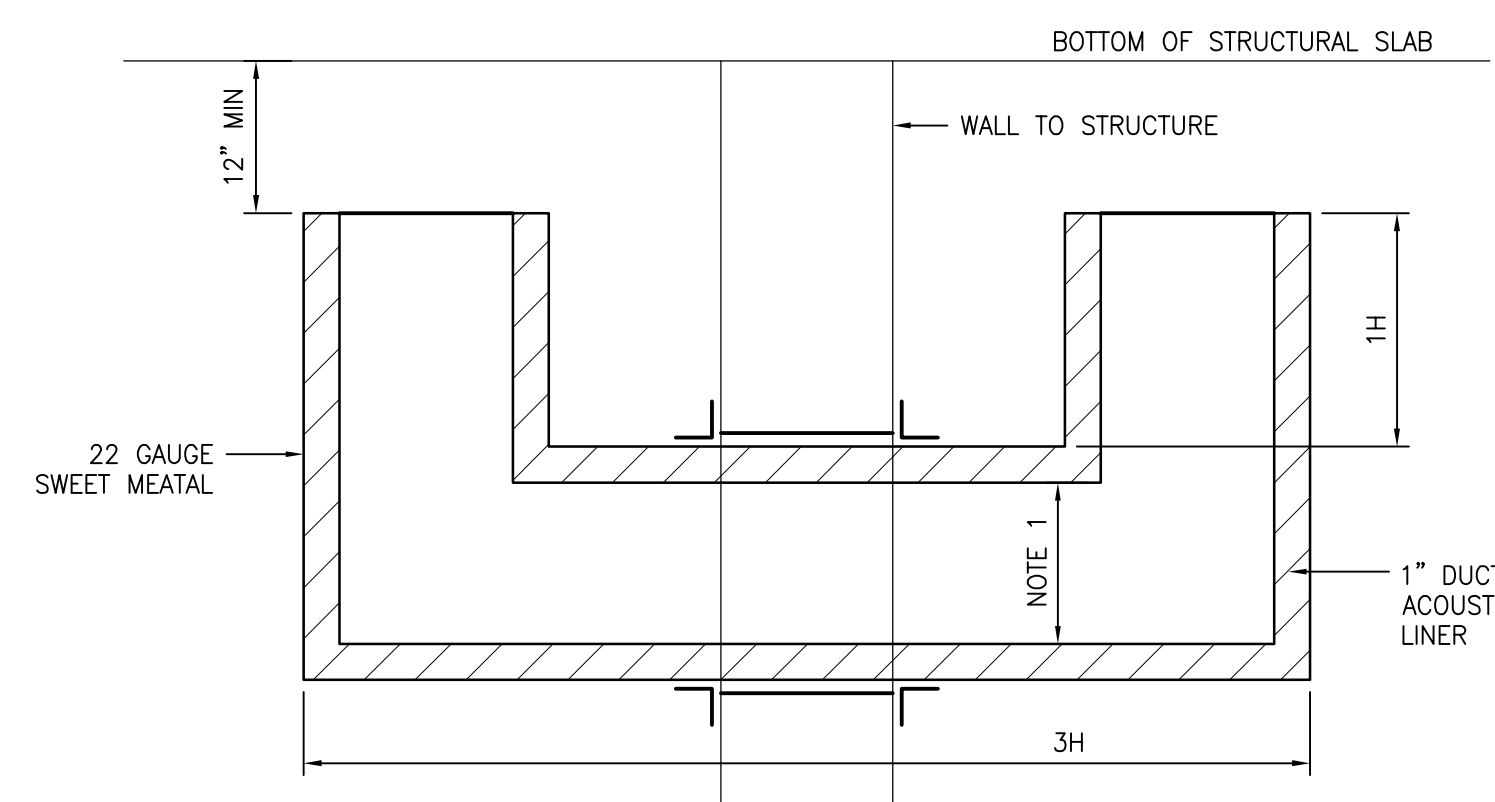


- 8 DUCT MOUNTED HUMIDIFIER**
SCALE: NTS
- TRANSITION WELDED STAINLESS STEEL 4' UPSTREAM OF HUMIDIFIER AND 8' DOWNSTREAM OF HUMIDIFIER WHERE POSSIBLE.
 - INTEGRAL STAINLESS STEEL DRAIN PAN SLOPE FROM ALL DIRECTIONS TO DRAIN CONNECTION. SLOPE 0.125" PER 1'-0".
 - PROVIDE WIDE ACCESS DOOR, DIRECTLY UPSTREAM AND DOWNSTREAM OF HUMIDIFIER.
 - PER THE MANUFACTURER THE STEAM PIPING FROM THE HUMIDIFIER TO THE NOZZLE PIPING NOT TO EXCEED 10'-0" MAX LENGTH AND 1" PIPING NOT TO EXCEED 12'-0" MAX LENGTH.
 - INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION MANUAL AND THE DESIGN DOCUMENTS.

8 DUCT MOUNTED HUMIDIFIER
SCALE: NTS

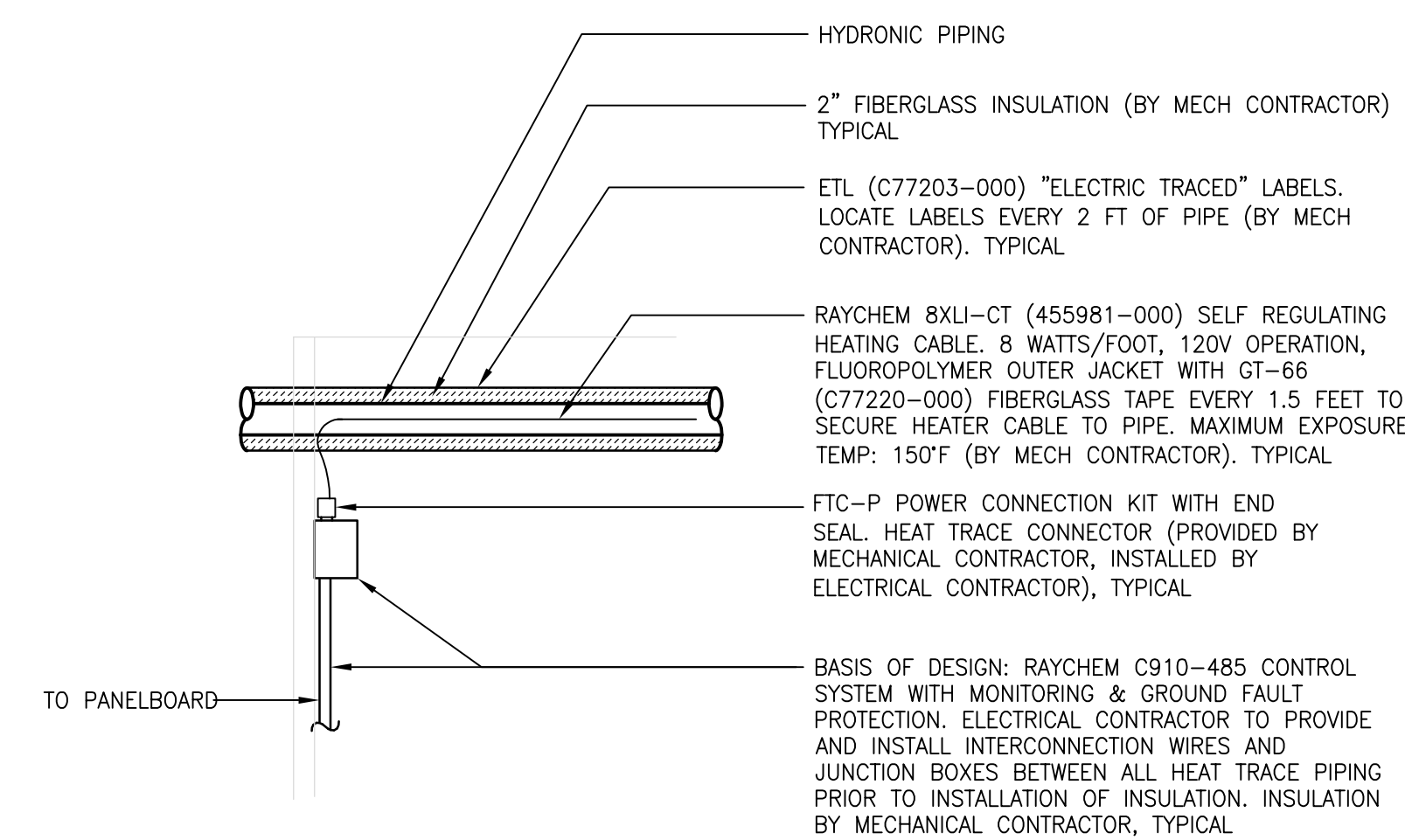


9 STEAM HUMIDIFIER PIPING CONNECTIONS (MULTIPLE DISPERSION TUBES)
SCALE: NTS

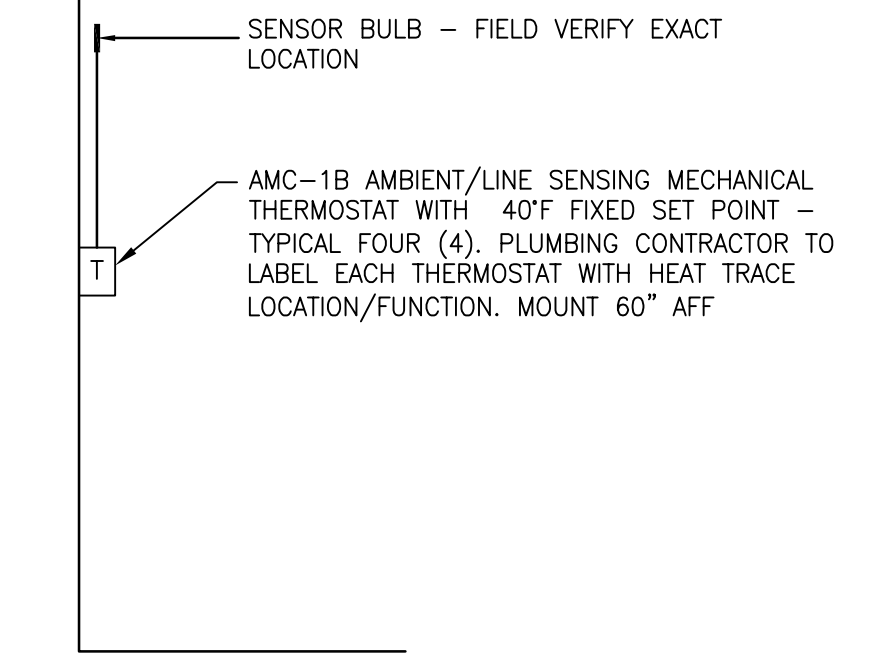


- 10 ACOUSTICAL AIR TRANSFER DETAIL**
SCALE: NTS
- SEE PLANS FOR DUCT HEIGHT (H) AND WIDTH. DIMENSIONS ARE INSIDE CLEAR OF LINER.
 - ELBOWS ARE TO BE WITHOUT TURNING VANES.
 - PROVIDE SHEET METAL CLOSURE FULL PERIMETER OF TRANSFER AND SEAL WITH LATEX JOINT SEALANT SPECIFIED IN SECTION 072000. SHEET METAL SCREW.
 - TRANSFER DUCT MAY REQUIRE FIRE DAMPER. REFER TO PLANS FOR LOCATIONS/REQUIREMENTS.

10 ACOUSTICAL AIR TRANSFER DETAIL
SCALE: NTS



11 HEAT TRACE THRU EXTERIOR WALL
SCALE: NTS



12 HEAT TRACE THERMOSTAT W/SENSOR BULB
SCALE: NTS

BASIS OF DESIGN: NVENT THERMAL CONTROLS. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

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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
U.S. Department of Veterans Affairs

Drawing Title
MECHANICAL DETAILS

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

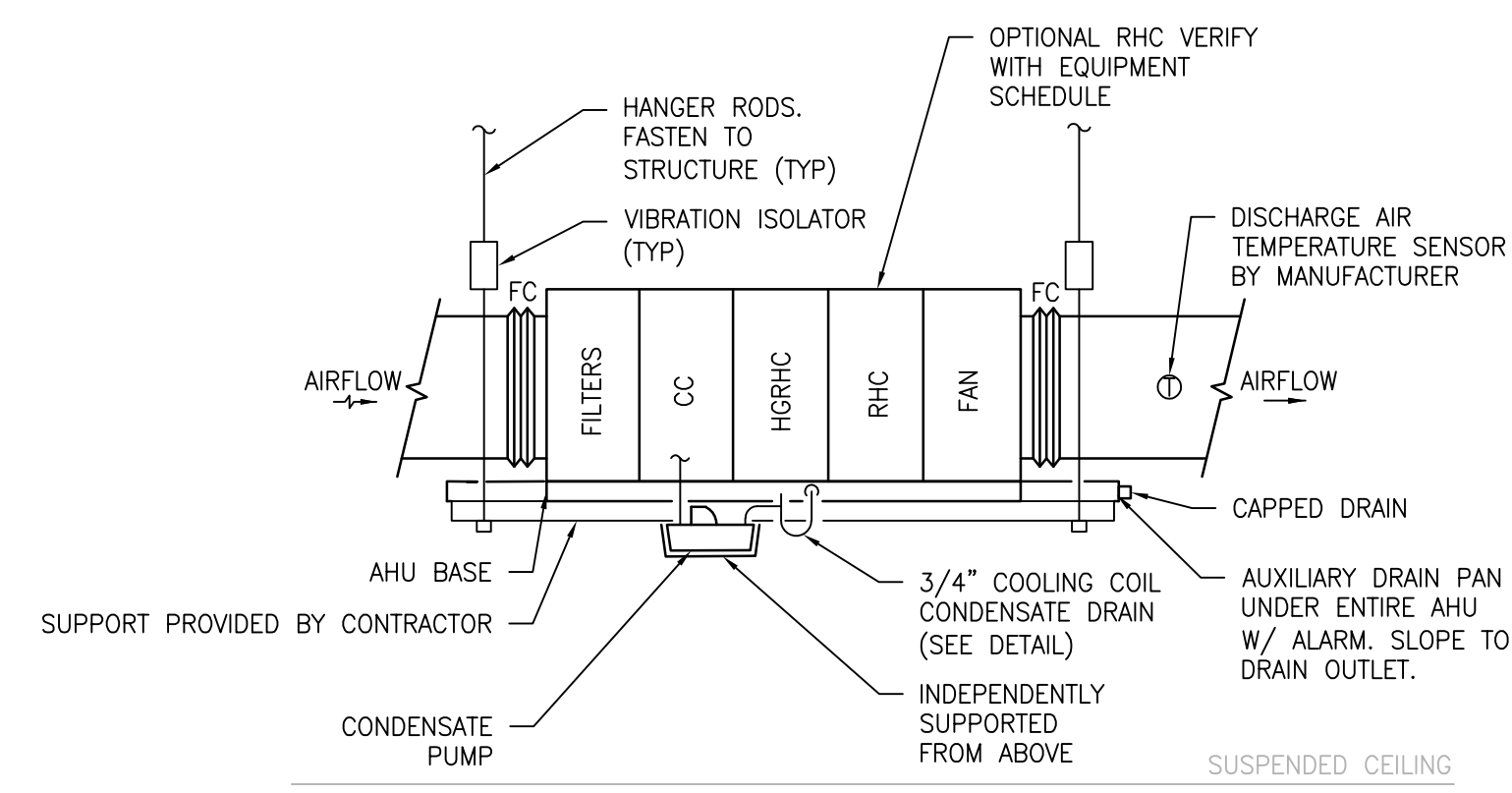
Checked
MR

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PNL

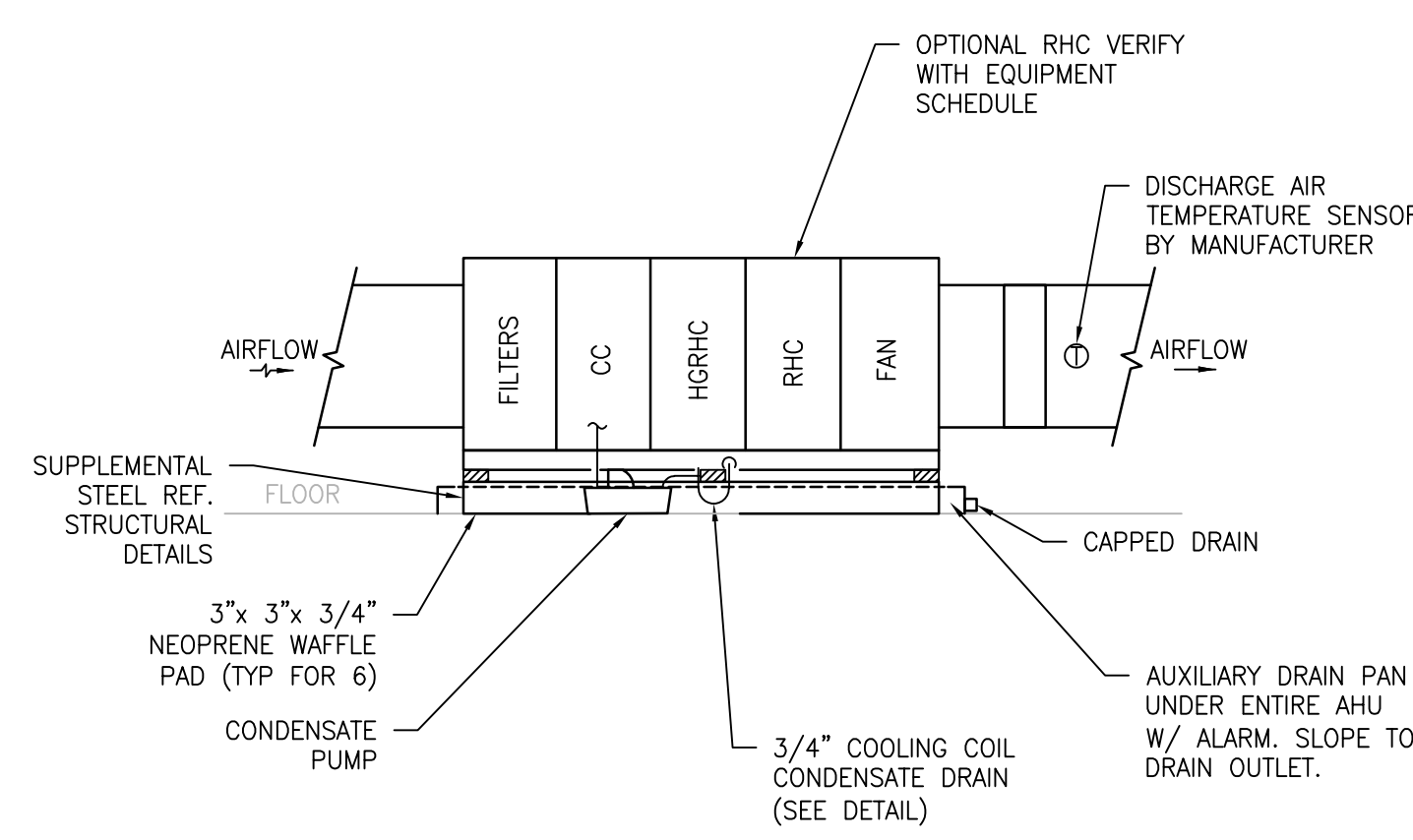
Project Number
656-18-300

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

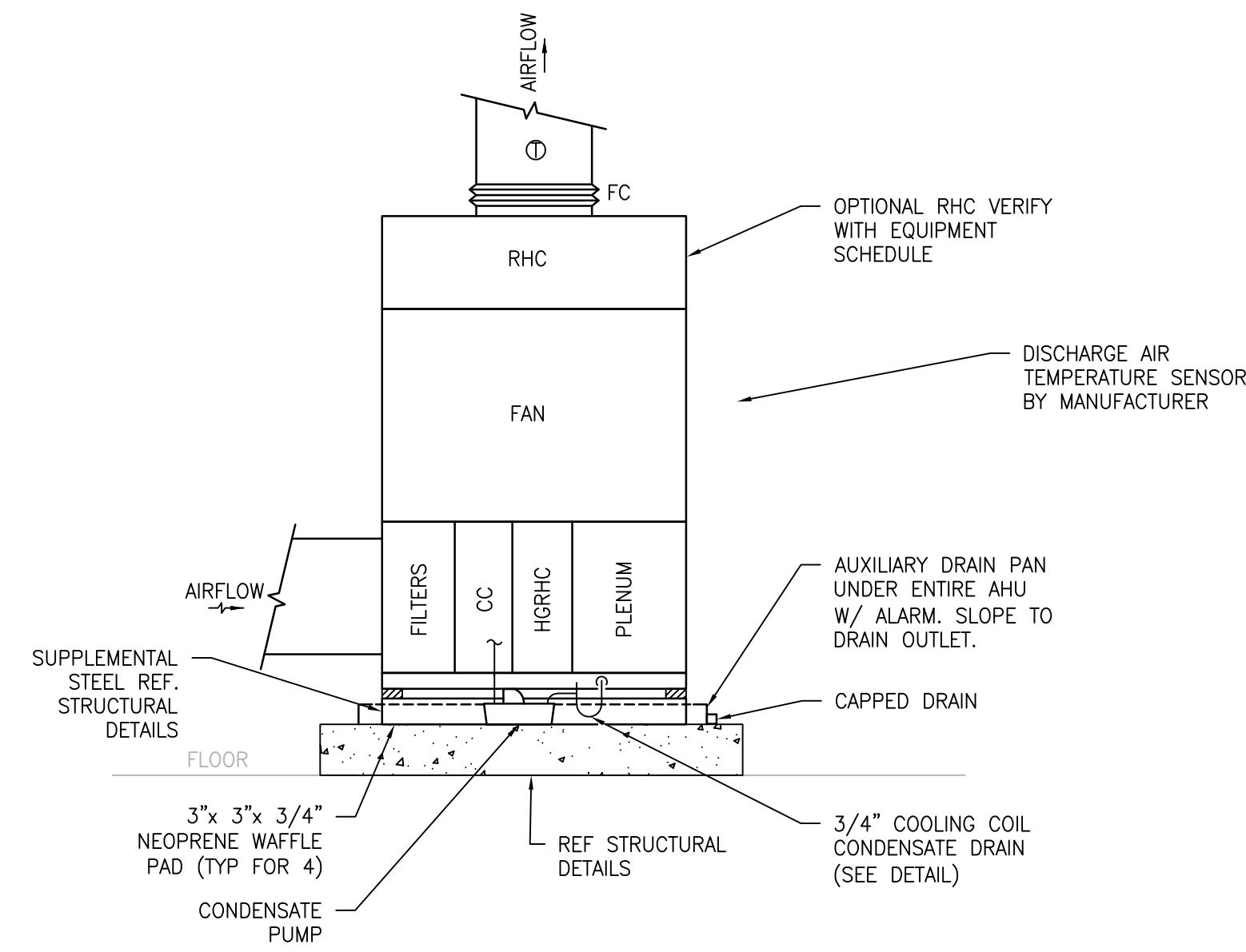
Drawing Number
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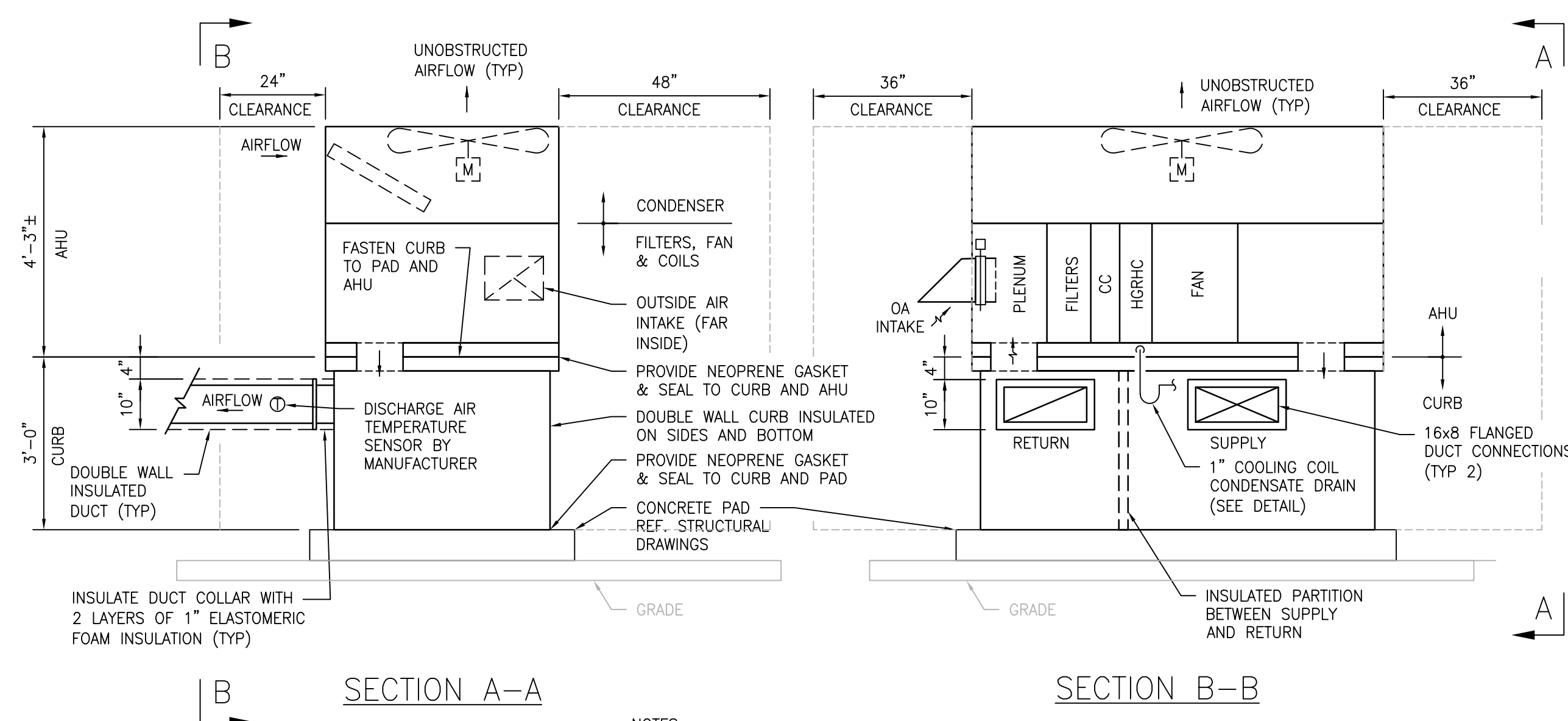
1 TYPICAL SUSPENDED AHU DETAIL
SCALE: NTS



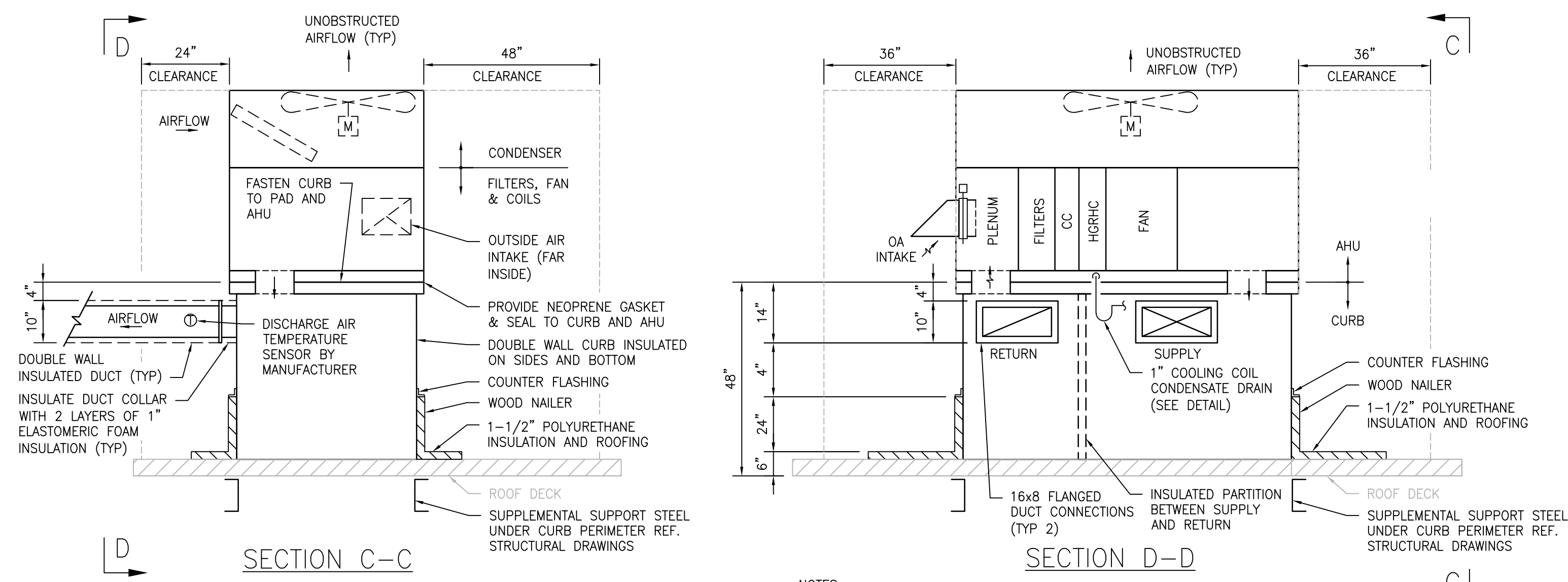
2 TYPICAL FLOOR MOUNTED AHU DETAIL
SCALE: NTS



3 TYPICAL VERTICAL AHU DETAIL
SCALE: NTS



4 TYPICAL AHU ON GRADE DETAIL
SCALE: NTS



5 TYPICAL AHU ROOF MOUNTED DETAIL
SCALE: NTS

NOTES:
1. HEAT TRACE AND INSULATE CONDENSATE PIPING AS INDICATED ON FLOOR PLANS. REFER TO ELECTRICAL DRAWINGS FOR DETAILS AND SPECS.

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MILLER-REMICK LLC
PROFESSIONAL ENGINEER

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

Drawing Title MECHANICAL DETAILS
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 SP

Project Number 656-18-300
Building Number 1, 2, 3, 28, 29, 49, 50, 51, 111, 116
Drawing Number M-504

DX PACKAGED AND SPLIT SYSTEM AIR CONDITIONER SCHEDULE																																				
MARK	LOCATION	AREA AND/OR BLDG SERVED	TYPE	TOTAL SUPPLY AIR FLOW	OUTSIDE AIR FLOW	EXT. STATIC PRESSURE	COOLING COIL												(IN-UNIT) HOT WATER HEATING COIL												ELECTRICAL DATA					REMARKS
							MN TOTAL CAPACITY	MN SENS CAPACITY	AFRI MN ENR	EVAP. COIL EAT		EVAP. COIL LAT		HGRH COIL EAT		HGRH COIL LAT		OAS DESIGN TEMP Db / Wb	EAT Db	LAT Db	MINIMUM CAPACITY	FLOW RATE	EWT	LWT	MAX WPD	PROPYLENE GLYCOL	VOLTAGE / PHASE / HERTZ	AHU		CONDENSING UNIT			BOD OR APPROVED EQUAL			
										Db	Wb	Db	Wb	Db	Wb	Db	Wb											MCA	MCP	MARK	MCA	MCP		CONTROL	AAON	
1-AHU-51	CORRIDOR CO41	BLDG 1 ROOM 51	HORIZONTAL SPLIT	650	0	0.5	32.5	20.4	12.5	72	62	44.04	43.88	44.04	43.88	66	53.7	95 / 75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	208/3/60	4	15	1-CU-51	17	25	LOW AMBIENT	H3	SEE NOTES	
1-AHU-111C	ROOM 111C	BLDG 1 ROOM 111C	HORIZONTAL SPLIT	650	0	0.5	32.5	20.4	12.5	72	62	44.04	43.88	44.04	43.88	66	53.7	95 / 75	56	90	23.9	2.6	180	160	10	N/A	208/3/60	4	15	1-CU-111C	17	25	LOW AMBIENT	H3	SEE NOTES	
1-AHU-160A	ROOM 160	BLDG 1 ROOM 160A	HORIZONTAL SPLIT	650	0	0.5	32.5	20.4	12.5	72	62	44.04	43.88	44.04	43.88	66	53.7	95 / 75	56	90	23.9	2.6	180	160	10	N/A	208/3/60	4	15	1-CU-160A	17	25	LOW AMBIENT	H3	SEE NOTES	
1-AHU-208	ROOM 208	BLDG 1 ROOM 208	VERTICAL SPLIT	650	0	0.5	32.5	20.4	12.5	72	62	44.04	43.88	44.04	43.88	66	53.7	95 / 75	53	90	26	2.8	180	160	10	40	208/3/60	4	15	1-CU-208	17	25	LOW AMBIENT	V3	SEE NOTES	
1-AHU-A217	ROOF	BLDG 1 ROOM A217	PACKAGED	650	0	0.5	32.5	20.4	13.5	72	62	44.04	43.88	44.04	43.88	66	53.7	95 / 75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	208/3/60	22	30	N/A	NOTE 8	NOTE 9	LOW AMBIENT	RQ	SEE NOTES		

- NOTES:**
- INTEGRATE WITH EXISTING JOHNSON CONTROLS METASYS SYSTEM VIA BACNET.
 - PROVIDE FACTORY NON-FUSED DISCONNECT MINIMUM SCOR RATING = 10K.
 - PROVIDE DIRECT DRIVE ECM SUPPLY FAN, HGRH AND LIQUID LINE CHECK VALVE, MODULATING 3-WAY REHEAT VALVE, LIQUID LINE RECEIVER, HOT GAS CONTROLLER, AND ACCUMULATOR.
 - PROVIDE ORION MODEL OE217-03 E-BUS LCD ROOM SENSOR WITH BUILT IN SPACE TEMPERATURE AND HUMIDITY SENSORS.
 - AHU CONTROL PANELS ARE FACTORY PREWIRED WITH 6 FEET OF CABLE AND FLEXIBLE CONDUIT. IF THE WIRING LENGTH IS INSUFFICIENT THE CONTRACTOR SHALL MODIFY THE WIRING AND CONDUIT AS REQUIRED TO CONNECT THE CONTROL PANEL TO THE AHU.
 - CONTRACTOR MUST DETERMINE RIGHT HAND OR LEFT HAND PIPING CONNECTION AND ACCESS LOCATIONS.
 - PROVIDE LOW AMBIENT OPERATION TO (20) DEGREES FAHRENHEIT.
 - SINGLE-POINT CONNECTION PACKAGED UNIT. REFER TO DRAWINGS FOR CURB HEIGHT. PROVIDE LOW LEAKAGE DAMPERS, STAINLESS STEEL DRAIN PAN WITH OVERFLOW LEAK DETECTION. INTEGRATE WITH BAS.
 - PROVIDE UNIT WITH 2" DEEP MERV 8 PREFILTERS, 4" DEEP MERV 14 SECONDARY FILTERS, FACTORY MOUNTED MAGNETIC GAUGE, AND CLOGGED FILTER SWITCH.
 - REFER TO UNIT ASSOCIATED DUCTED HOT WATER HEATING COIL SCHEDULE FOR ADDITIONAL INFORMATION.
 - PROVIDE ALL OUTDOOR UNITS WITH LOUVREDD CONDENSING COIL GUARDS, COATED COILS, AND FACTORY PRE-WIRED CONVENIENCE OUTLET.

STEAM HUMIDIFIER SCHEDULE																				
MARK	LOCATION	SYSTEM AND/OR SERVICE	HUMIDIFIER TYPE	AIR FLOW	# OF MANIFOLDS	DESIGN ROOM RELATIVE HUMIDITY	EAT				LAT		WATER SOURCE	STEAM OUTPUT	CONTROL TYPE	ELECTRIC		BASIS OF DESIGN	REMARKS	
							Db	Wb	DEWPOINT	HUMIDITY RATIO	DEWPOINT	HUMIDITY RATIO				VOLT / PH / HZ	KW			
2H-117	117 STORAGE	2-AHU-117	ELECTRODE TYPE (DUOT MOUNTED) DISPERSION TUBE	150	1	35	72	55.2	28	22.1	58.1	45.5	POTABLE WATER	1	MODULATING	120 / 1 / 60	1.9	NORTEC EL-005 BY CONDAIR	SEE NOTES	
49H-14	ROOM 14 MER	49-AHU-14	ELECTRODE TYPE (DUOT MOUNTED) DISPERSION TUBE	150	1	35	72	55.2	28	22.1	58.1	45.5	POTABLE WATER	1	MODULATING	120 / 1 / 60	1.9	NORTEC EL-005 BY CONDAIR	SEE NOTES	

- NOTES:**
- PROVIDE 5 MICRON WATER FILTER ON UNIT INLET.
 - PROVIDE DRAIN COOLER.
 - PROVIDE BACNET INTERFACE AND DISPLAY SCREEN. INTEGRATE WITH EXISTING BAS.
 - MOUNT UNIT PER MANUFACTURER'S RECOMMENDATIONS.

HEAT-TRACE SCHEDULE													
MARK	DRAWING	PIPE OD (IN)	SERVICE	SCALE PIPE LENGTH (FT)	APPROXIMATE CABLE LENGTH (FT)	MAINTAIN TEMP. (F)	MAX. EXPOSURE TEMP. (F)	CABLE CLASS	CONTROL METHOD	CABLE TYPE	POWER CONNECTIONS	CONTROL PANEL	BACNET CONVERTER
1HT-001	1-MP131	3/4	PC (1-AHU-208)	43	52	40	330	SRM/E	LINE SENSING	SRM/E 5-ICT	2	CTC2-000	MBC
1HT-002	1-MP131	3/4	LPR (1-HX-1)	42	51	40	250	SRM/E	LINE SENSING	SRM/E 5-ICT	1	CTC2-000	MBC
1HT-003	1-MP131	3/4	PC (1-AHU-232/248)	38	38	40	330	SRM/E	LINE SENSING	SRM/E 5-ICT	2	CTC2-000	MBC
1HT-004	1-MP111	3/4	PC (1-AHU-111C)	12	18	40	330	SRM/E	LINE SENSING	SRM/E 5-ICT	1	CTC2-000	MBC
1HT-005	1-MP121	3/4	CD (1-AHU-A217)	10	16	40	330	SRM/E	LINE SENSING	SRM/E 5-ICT	1	CTC2-000	MBC
2HT-001	2-MP101	3/4	CD (2-H-117)	35	44	40	250	SRM/E	LINE SENSING	SRM/E 5-ICT	1	CTC1-300	INTEGRAL W/ CONTROL PANEL
2HT-002	2-MP111	3/4	CD (2-AHU-117)	8	14	40	330	SRM/E	LINE SENSING	SRM/E 5-ICT	1	CTC2-000	MBC
3HT-001	3-MH101	3/4	CD (3-AHU-113)	8	14	40	330	SRM/E	LINE SENSING	SRM/E 5-ICT	1	CTC2-000	MBC
28HT-001	28-MP131	3/4	PC (28-AHU-210)	72	84	40	330	SRM/E	LINE SENSING	SRM/E 5-ICT	2	CTC2-000	MBC
28HT-002	28-MP131	3/4	CD (28-AHU-257)	10	16	40	250	SRM/E	LINE SENSING	SRM/E 5-ICT	1	CTC2-000	MBC
28HT-003	28-MP131	3/4	LPR (28-HX-1)	30	38	40	250	SRM/E	LINE SENSING	SRM/E 5-ICT	1	CTC1-300	INTEGRAL W/ CONTROL PANEL
49HT-001	49-MP-131	3/4	PC (49-AHU-230)	20	27	40	330	SRM/E	LINE SENSING	SRM/E 5-ICT	1	CTC1-300	INTEGRAL W/ CONTROL PANEL
51HT-001	51-MP101	1.0 3/4	LPR (51-HX-1)	50	60	40	250	SRM/E	LINE SENSING	SRM/E 5-ICT	2	CTC2-000	MBC

- NOTES:**
- PROVIDE HEAT-TRACING FOR FREEZE-PROTECTION OF PIPING AS INDICATED. ALL COMPONENTS (CABLE, CONTROLS, SPICES/CONNECTORS, FASTENERS).
 - BASIS OF DESIGN IS CHROMALOX; ALTERNATES ARE ACCEPTABLE PROVIDED THEY ARE OF SIMILAR SYSTEM MONITORING CAPABILITY.

EXPANSION TANK SCHEDULE														
MARK	LOCATION	SYSTEM AND/OR SERVICE	TYPE	APPROX SYSTEM VOLUME	SYSTEM TEMPERATURE RANGE		INITIAL PRESSURE IN TANK	MAX OPERATING PRESSURE	RELIEF VALVE SET PRESSURE	FILL PRESSURE AT TANK	MIN VOLUME TANK	MIN ACCEPTANCE VOLUME	PIPE SIZE TO TANK	BASIS OF DESIGN OR APPROVED EQUAL
					MIN	MAX								
1-ET-1	EAST ATTIC	VARIOUS	VERTICAL DIAPHRAGM	100	50	180	12 PSIG	100 PSIG	125	12	10	10	1/2	BELL & GOSSETT MODEL B-35LA OR EQUAL
1-ET-2	ATTIC A301	1-AHU-A217	VERTICAL DIAPHRAGM	100	50	180	12 PSIG	100 PSIG	125	12	10	10	1/2	BELL & GOSSETT MODEL B-35LA OR EQUAL
2-ET-1	MECH 11	2-AHU-117	VERTICAL DIAPHRAGM	100	50	180	12 PSIG	100 PSIG	125	12	10	10	1/2	BELL & GOSSETT MODEL B-35LA OR EQUAL
28-ET-1	ATTIC	28-AHU-257	VERTICAL DIAPHRAGM	100	50	180	12 PSIG	100 PSIG	125	12	10	10	1/2	BELL & GOSSETT MODEL B-35LA OR EQUAL
49-ET-1	BASEMENT	49-AHU-14	VERTICAL DIAPHRAGM	100	50	180	12 PSIG	100 PSIG	125	12	10	10	1/2	BELL & GOSSETT MODEL B-35LA OR EQUAL
50-ET-1	ATTIC	50-AHU-229 & 50-AHU-291	VERTICAL DIAPHRAGM	100	50	180	12 PSIG	100 PSIG	125	12	10	10	1/2	BELL & GOSSETT MODEL B-35LA OR EQUAL
51-ET-1	STORAGE 22	51-AHU-160	VERTICAL DIAPHRAGM	100	50	180	12 PSIG	100 PSIG	125	12	10	10	1/2	BELL & GOSSETT MODEL B-35LA OR EQUAL
116-ET-1	CRAWL SPACE 002	116-AHU-106	VERTICAL DIAPHRAGM	100	50	180	12 PSIG	100 PSIG	125	12	10	10	1/2	BELL & GOSSETT MODEL B-35LA OR EQUAL

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Location
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Issue Date
2022-07-15

Checked
MR

Drawn
BS

Drawing Number
M-701

