

VA FORM 08-6231

DESCRIPTION

DATE

CONTROLS SYMBOLS CONTROL DEVICE PROVIDED BY ELECTRICAL OR PLUMBING CONTRACTOR BUT INTERFACED TO DDC SYSTEM BY ATC CONTRACTOR ATC CONTRACTOR INTERFACE TO MANUFACTURER'S HARDWARE AIRFLOW MEASURING DEVICE CARBON DIOXIDE TRANSMITTER CARBON MONOXIDE TRANSMITTER OCCUPANCY SENSOR ATC CONTRACTOR PROVIDE DDC POINT AND HARDWARE CURRENT TRANSMITTER COMM BACNET COMMUNICATIONS DISCHARGE AIR TEMPERATURE SENSOR DIFFERENTIAL PRESSURE SWITCH ROOM DIFFERENTIAL PRESSURE MONITOR DIFFERENTIAL PRESSURE TRANSMITTER EXHAUST AIR VALVE ENGINEERING CONTROL CENTER (BAS) ELECTRONIC TO PNEUMATIC TRANSDUCER FLOW TRANSMITTER FLOW CONTROLLER. SEE SEQUENCE OF OPERATION. FLOW SWITCH FLOW SWITCH HIGH FLOW SWITCH LOW FLOW TRANSMITTER

HUMIDITY CONTROL

HIGH HUMIDITY LIMIT SENSOR

CONTROLS SYMBOLS (CONTINUED) HAND SWITCH (HAND-OFF-AUTO SWITCH) or HUMIDITY SWITCH BAS HVAC CONTROL PANEL CURRENT TRANSMITTER TIME CLOCK CONTROLLING EQUIPMENT ON A SCHEDULE LOCAL RECORDING TIME CLOCK (RUNTIME) LEVEL CONTROLLER LIMIT SWITCH LEVEL TRANSMITTER ROOM HUMIDISTAT (MOISTURE)/TRANSMITTER (WALL MOUNTED) MOTOR ACTUATED DAMPER /OR VALVE MOISTURE (HUMIDITY) TRANSMITTER PRESSURE CONTROLLER (SEE SEQUENCE OF OPERATIONS) PNEUMATIC CONTROLLER (SEE SEQUENCE OF OPERATIONS) PRESSURE DIFFERENTIAL SWITCH PRESSURE DIFFERENTIAL TRANSMITTER PRESSURE SWITCH HIGH PRESSURE SWITCH LOW — PRESSURE TRANSMITTER INSTRUMENT OR CONTROL AIR @ 20 PSIG SUPPLY AIR VALVE SPEED CONTROLLER (SEE SEQUENCE OF OPERATION) STEAM COIL CONTROL VALVE SMOKE DETECTOR

SMOKE DETECTOR

CONTROLS SYMBOLS (CONTINUED) STATIC PRESSURE SENSOR START-STOP ROOM THERMOSTAT/TRANSMITTER - WALL MOUNTED TEMPERATURE CONTROLLER. SEE SEQUENCE OF OPERATIONS. TEMPERATURE SWITCH HIGH TEMPERATURE SWITCH LOW (FREEZESTAT) TT >--- TEMPERATURE TRANSMITTER - AVERAGING TYPE — TEMPERATURE TRANSMITTER — SINGLE POINT TEMPERATURE TRANSMITTER - EMERSION TYPE VFD VARIABLE FREQUENCY DRIVE VIBRATION SWITCH VSMC VARIABLE SPEED MOTOR CONTROLLER VALVE OR DAMPER POSITION CONTROLLER END SWITCH MOTOR STARTER UNOCCUPIED MODE OVERRIDE PUSH BUTTON FAN OR PUMP - PIEZOMETER RING IF SHOWN OUTDOOR AIR TEMPERATURE SENSOR -COMBINATION HUMIDITY SENSOR IF SHOWN ON THE DRAWINGS. WITH SOLAR SHADING PNEUMATIC OPERATED DAMPER/OR VALVE

TEMPERATURE SENSING ELEMENT

SENSOR WITH AVERAGING ELEMENT

TO TRANSMIT TEMPERATURE TO EMCS

FOR TRANSMITTING TEMPERATURE TO EMCS

(PROVIDE 12 INCHES [200mm] MINIMUM

LENGTH IN DUCT WHEN SPACE PERMITS.)

CONTROLS GENERAL NOTES 1. THE SEQUENCE OF OPERATIONS OUTLINED SHALL BE PERFORMED BY NEW DIRECT DIGITAL CONTROL, PANELS COMPATIBLE WITH THE EXISTING BUILDING MANAGEMENT SYSTEM (BMS)/ BUILDING AUTOMATION SYSTEM (BAS). NAMES FOR ALL POINTS AND VARIABLES SHALL BE COORDINATED WITH THE VAMC PRIOR TO SHOP DRAWINGS AND PROGRAMMING. 2. THE SEQUENCES OF OPERATIONS OUTLINED SHALL BE PERFORMED IN A STAGGERED/STAGED MANNER DURING INITIAL START-UP AND DURING THE TRANSITION FROM NORMAL TO EMERGENCY POWER OPERATION TO PREVENT OVERLOADING OF THE BUILDING/SITE ELECTRICAL POWER SYSTEMS. DESIGN INTENT IS FOR MECHANICAL EQUIPMENT TO OPERATE CONTINUOUSLY AND TO BE INDEXED/STARTED IN ORDER OF PRIORITY BEGINNING WITH BUILDING CENTRAL HYDRONIC SYSTEMS (REHEAT/HEATING HOT WATER HEAT EXCHANGERS AND PUMPS, ETC.), CENTRAL STATION AIR HANDLING EQUIPMENT (INTERLOCKED SUPPLY RETURN, AND EXHAUST EQUIPMENT), AND ROOM/OCCUPIED SPACE AIR AND HYDRONIC TERMINAL EQUIPMENT. REFER TO CONTROLS DIAGRAMS FOR EACH SPECIFIC SYSTEM/COMPONENT FOR ADDITIONAL INFORMATION, SAFETIES, ETC. SUBMIT THE START/RESTART SEQUENCE WITHIN THE SPECIFIED BAS CONTROLS SUBMITTAL FOR REVIEW BY OWNER AND DESIGN ENGINEERS.

EQUIPMENT SHALL BE CAPABLE OF MANUAL OPERATION THROUGH HOA SWITCHES IN STARTERS. THE POSITIONS OF ALL CONTROL VALVES CONTROLLED BY THE BMS SHALL BE CAPABLE OF MANUAL POSITIONING VIA THE CONTROL CENTER TERMINAL OR BY LAPTOP COMPUTER PLUGGED IN TO THE DIRECT DIGITAL CONTROL FIELD CONTROL PANEL.

4. ALL VALVE AND DAMPER ACTUATORS SHALL BE ELECTRIC/ELECTRONIC.

5. REFER TO MECHANICAL DIAGRAMS AND PLANS FOR SENSOR LOCATIONS. COORDINATE TO INSURE PROPER UPSTREAM AND DOWNSTREAM DIAMETERS FOR EACH SENSOR.

6. PROVIDE CURRENT SENSOR ACROSS EACH FAN OR PUMP (WITH THE EXCEPTION OF VFD'S) TO PROVE STATUS AT BAS. SENSORS SHALL BE CAPABLE OF DIFFERENTIATING BETWEEN NORMAL OPERATION AND FREE WHEELING (I.E. FAN BELT BREAKAGE).

7. BAS CONTROLLERS AND ALL OTHER CONTROL DEVICES AND SENSORS THAT REQUIRE POWER SHALL BE POWERED FROM EMERGENCY POWER PANEL.

8. WHEN SYSTEMS ARE OFF, ALL VALVES AND DAMPERS SHALL GO TO THEIR FAIL-SAFE POSITIONS. FAIL-SAFE POSITIONS ARE POSITIONS THAT DEVICES WILL GO TO WHEN DE-ENERGIZED: NO = NORMALLY OPEN, NC = NORMALLY CLOSED, FL = FAIL LAST.

9. ALL SETPOINTS AND TIME DELAYS MENTIONED AS PART OF THIS SYSTEM SHALL BE ADJUSTABLE AT THE BAS FRONT END BY AN OPERATOR WITHOUT ANY HARDWARE OR SOFTWARE REVISIONS.

10. ALL 2-POSITION DAMPERS SHALL HAVE END SWITCHES (ES). EACH END SWITCH SHALL PROVE DAMPER OPEN AND CLOSED. WHEN COMMANDED TO OPEN OR CLOSE, AFTER 30 SECONDS (ADJ.), THE END SWITCH DOES NOT SWITCH, THE CONTROL SYSTEM SHALL SEND AN ALARM TO THE BAS FRONT END.

11. ALL 2-POSITION VALVES SHALL HAVE LIMIT SWITCHES (LS). EACH LIMIT SWITCH SHALL PROVE VALVE OPEN AND CLOSED. WHEN COMMANDED TO OPEN OR CLOSE, AFTER 30 SECONDS (ADJ.), THE LIMIT SWITCH DOES NOT SWITCH, THE CONTROL SYSTEM SHALL SEND AN ALARM TO THE BAS FRONT END.

12. ALL SETPOINTS DESCRIBED HEREIN SHALL BE ADJUSTABLE AT THE BAS WORKSTATION.

13. THIS DRAWING IS TO BE USED IN CONJUNCTION WITH ALL OTHER DRAWINGS AND SPECIFICATIONS IN THIS

14. COORDINATE WITH TESTING, ADJUSTING, AND BALANCING (TAB) CONTRACTOR FOR ALL OPERATIONAL MODES. REVIEW AND CONFIRM ALL NEW AND EXISTING HVAC EQUIPMENT AND CONTROL SEQUENCES TO ALLOW FOR EACH MODE DESCRIBED HEREIN.

15. COORDINATE AND CONFIRM ALL FINAL SPACES OCCUPIED, UNOCCUPIED PERIODS AND OCCUPANCY SCHEDULES WITH VAMC ENGINEERING PERSONNEL.

16. COORDINATE LOCATIONS OF SPACE DIFFERENTIAL PRESSURE SENSORS, PRESSURE MONITORING PANELS. PRESSURIZATION ALARM OVERRIDE KEYED SWTICHES (AS REQUIRED), ROOM THERMOSTATS AND TEMPERATURE SENSORS, AND OTHER WALL-MOUNTED CONTROLS DEVICES AS PER PLAN DRAWINGS, SPECIFICATIONS AND VAMC SITE ENGINEERING PERSONNEL REVIEW.

COORDINATION NOTES:

SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

NORMAL POWER.

1. COORDINATE WITH TESTING, ADJUSTING, AND BALANCING (TAB) CONTRACTOR FOR ALL OPERATIONAL MODES. REVIEW AND CONFIRM ALL HVAC EQUIPMENT AND CONTROL SEQUENCES TO ALLOW FOR SYSTEM TESTING AND VERIFICATION OF EACH MODE DESCRIBED HEREIN.

2. ALL TEMPERATURE SENSOR, AIRFLOW MEASURING DEVICES, AND MOISTURE TRANSMITTERS, SHALL BE CALIBRATED IN COORDINATION WITH THE TAB CONTRACTOR.

3. VFD STARTUP SHALL MATCH THE MOTOR NAMEPLATE FLA, WHICH MAY EXCEED 60 HZ.

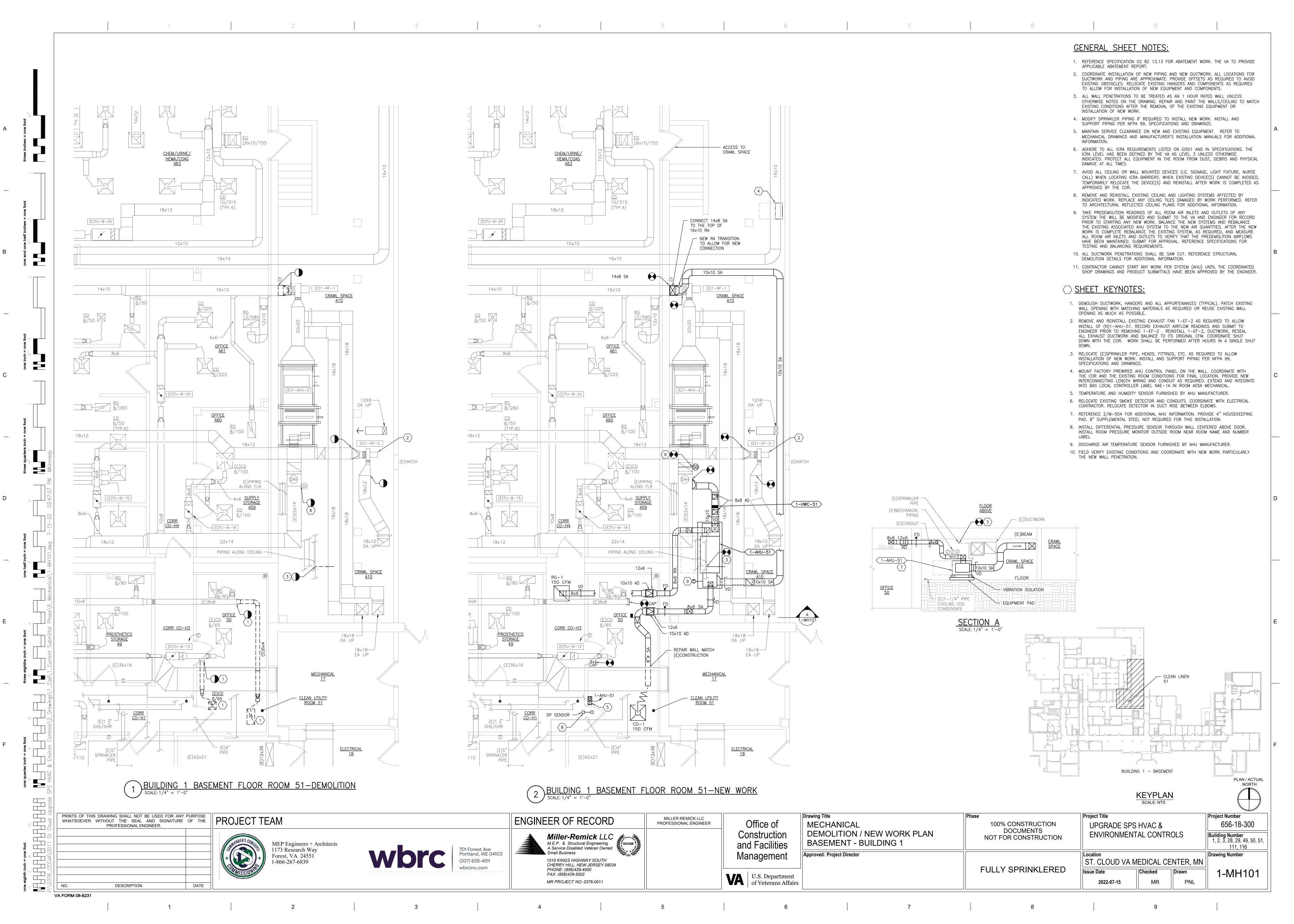
4. REFER TO ELECTRICAL PLANS AND COORDINATE NORMAL POWER SOURCE FOR NEW HVAC EQUIPMENT AND EMERGENCY POWER SOURCE FOR ALL BAS CONTROL PANEL(S) AS REQUIRED TO SUPPORT FINAL BUILDING AUTOMATION SYSTEMS BY BAS CONTRACTOR. DESIGN INTENT IS FOR BAS CONTROL TO REMAIN OPERATIONAL WHILE HVAC SYSTEMS SHUT DOWN DURING LOSS OF NORMAL POWER (EMERGENCY POWER OPERATION) AND FOR HVAC EQUIPMENT TO RE-START AUTOMATICALLY DURING TRANSITION BACK TO

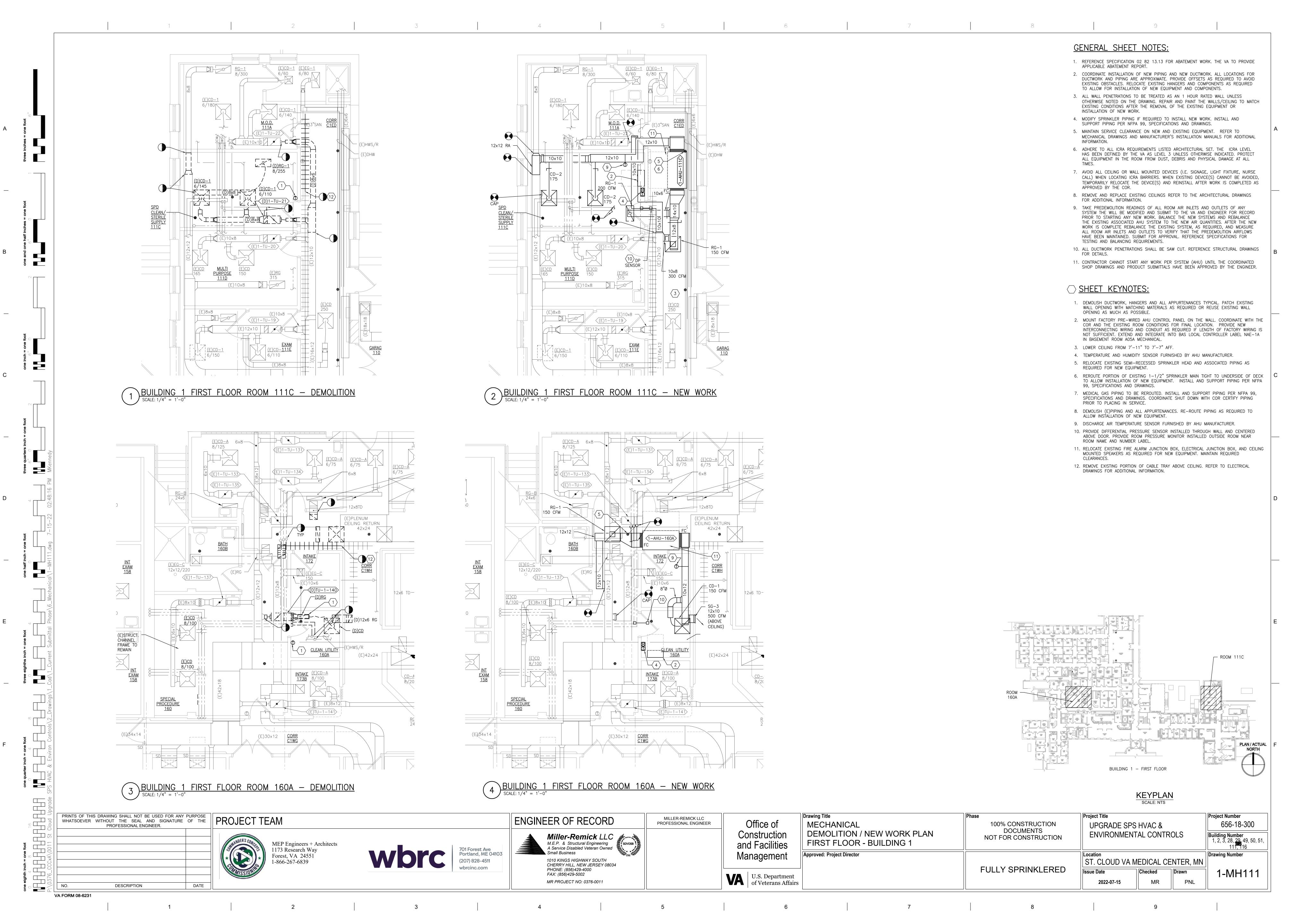
5. BUILDING AUTOMATION SYSTEMS AND CONTROLS SHALL BE FULLY COORDINATED BETWEEN THE CONTROLS CONTRACTOR, EQUIPMENT MANUFACTURERS, AND THE EQUIPMENT COMPONENT MANUFACTURERS. CONTROL DEVICES, HARDWARE, ACTUATORS, CONTROLLERS, ETC. SHALL BE COORDINATED AND SUPPLIED BY THE CONTROLS CONTRACTOR TO EQUIPMENT MANUFACTURERS UNLESS THE SPECIFIC PIECE OF EQUIPMENT OR COMPONENT WITHIN THE RESPECTIVE EQUIPMENT IS SPECIFIED TO INCLUDE ITS OWN CONTROLS (E.G. SUPPLY FAN PIEZOMETERS PROVIDED BY FAN MANUFACTURER, AIRFLOW MONITORING STATIONS WITH INTEGRAL DAMPER ASSEMBLIES, ETC.). CONTROLS CONTRACTOR AND EQUIPMENT MANUFACTURERS SHALL WORK CAREFULLY WITH ALL SUPPLIERS TO ENSURE THAT THE DEVICES INDICATED ON THE CONTROL DIAGRAM AND SEQUENCE OF OPERATION ARE INSTALLED WITHIN THE SYSTEM. CONTROLS CONTRACTOR PROTOCOLS FOR INSTALLATION OF DEVICES AND HARDWARE SHALL BE FOLLOWED CAREFULLY BY EQUIPMENT MANUFACTURER INSTALLERS. CONTROLS CONTRACTOR SHALL PROVIDE FACTORY TESTING AND OVERSIGHT OF THE COMPLETED CONTROLS PRIOR TO AND DURING THE FACTORY ACCEPTANCE TESTING AS WELL AS DURING THE SITE START-UP EFFORTS. SEE

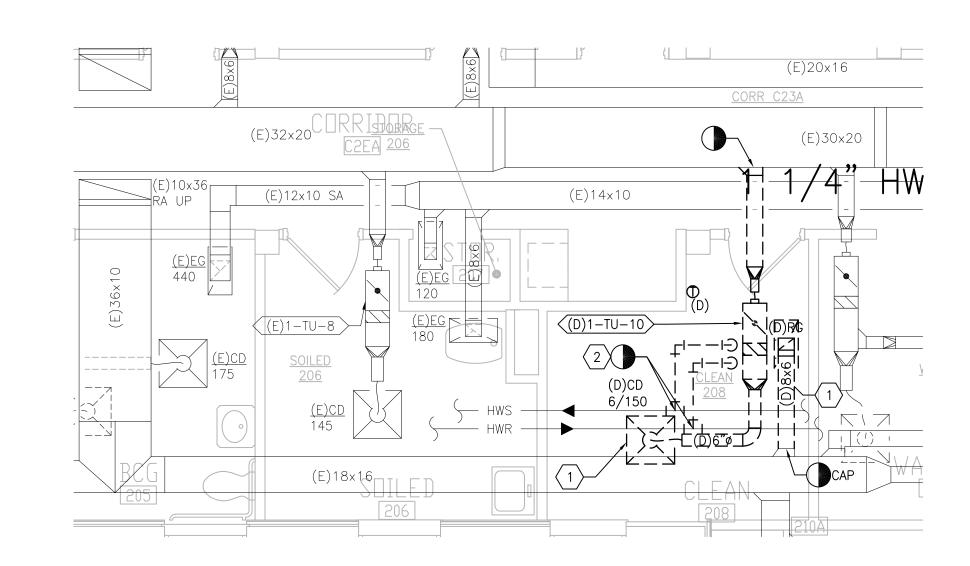
6. AHU CONTROLLER AND ALL AHU CONTROLS SHALL MATCH VAMC SITE STANDARD AND SHALL BE PROVIDED BY BAS CONTRACTOR. AHU MANUFACTURER SHALL COORDINATE WITH BAS CONTROLS CONTRACTOR FOR INSTALLATION OF EXACT MAKE AND MODEL OF AHU CONTROLLER THAT WILL CONTROL AHU FUNCTIONS, INCLUDING INTEGRATION TO SITE CONTROLS AND WITH SENSORS/INPUTS EXTERNAL TO AHU/DUCT-MOUNTED/SPACE MOUNTED, AS DOCUMENTED BY CONTROLS DIAGRAM, DDC POINTS LIST AND SPECIFICATIONS.

7. FINAL BAS NETWORK EXTENSION/INTERCONNECTION TO EXISTING SITE/BLDG LEVEL CONTROLS SHALL BE CONFIRMED BY BAS CONTRACTOR AND REVIEWED WITH VAMC BASED ON DESIGN INTENT OF MINIMIZING WIRING DISTANCE/NETWORK CABLING TO THE NEAREST BLDG/SITE BAS CONTROLS INTEGRATION POINT WITH OPTIMAL EXISTING BANDWIDTH/NETWORK CAPACITY BASED ON LATEST EXPANSION TO EXISTING SITE BAS SYSTEM. BAS CONTRACTOR SHALL INTEGRATE ALL NEW PROJECT BAS POINTS TO EXISTING SITE/BLDG/CENTRAL CONTROLS SYSTEM (EXPANDING EXISTING SYSTEM AS REQUIRED). SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE **Project Title Project Number Drawing Title** ENGINEER OF RECORD MILLER-REMICK LLC WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE Office of 656-18-300 **MECHANICAL** PROFESSIONAL ENGINEER 100% CONSTRUCTION **UPGRADE SPS HVAC &** PROFESSIONAL ENGINEER. Miller-Remick LLC DOCUMENTS CONTROL SYMBOLS & ABBREVIATIONS **ENVIRONMENTAL CONTROLS** Construction **Building Number** 1, 2, 3, 28, 29, 49, 50, 51 NOT FOR CONSTRUCTION and Facilities MEP Engineers + Architects 111, 116 A Service Disabled Veteran Owned 701 Forest Ave 1173 Research Way Portland, ME 04103 Approved: Project Director **Drawing Number** Management Forest, VA 24551 ST. CLOUD VA MEDICAL CENTER, MN (207) 828-4511 1010 KINGS HIGHWAY SOUTH 1-866-267-6839 CHERRY HILL, NEW JERSEY 08034 **FULLY SPRINKLERED** PHONE: (856)429-4000 M-002 Checked FAX: (856)429-5002 U.S. Department of Veterans Affairs PNL MR PROJECT NO: 0376-0011 MR

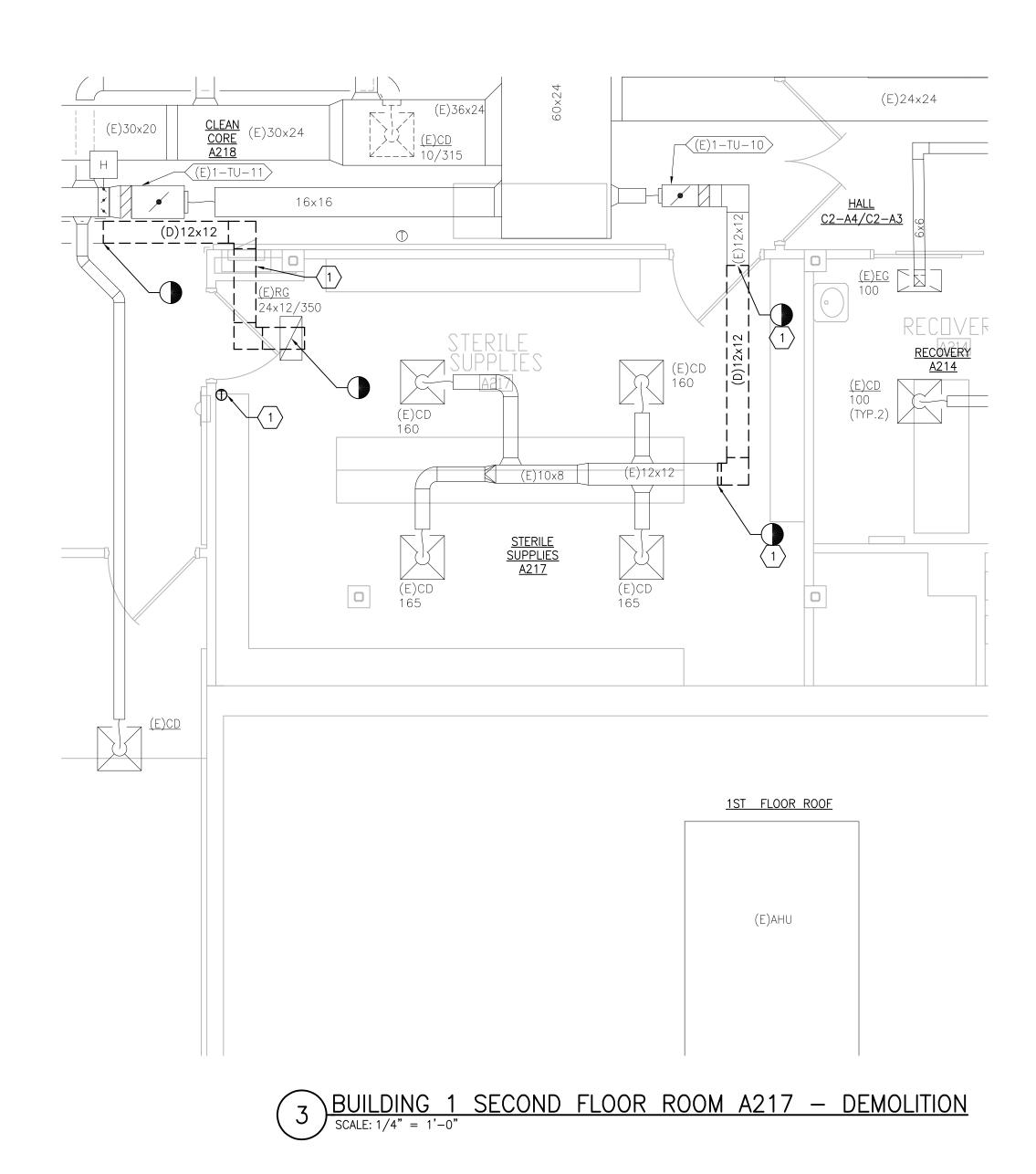




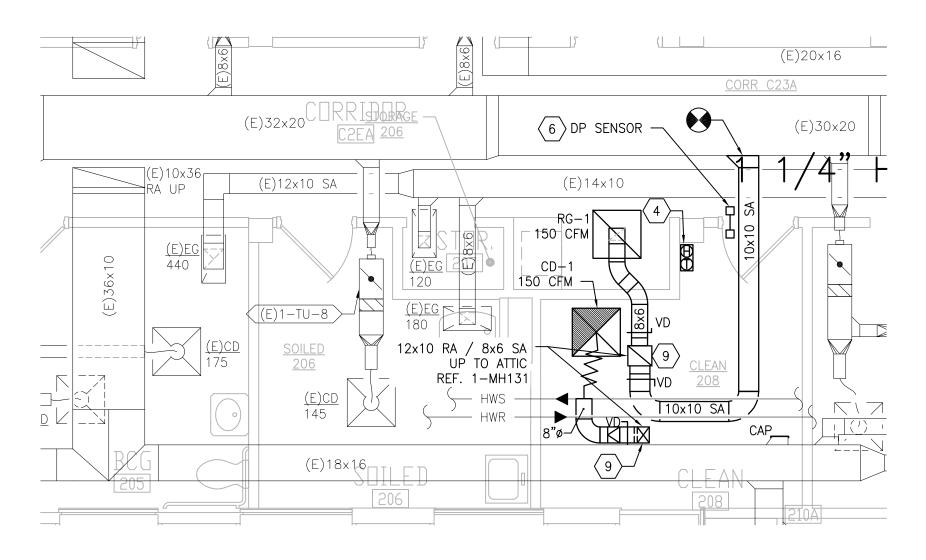


BUILDING 1 SECOND FLOOR ROOM 208 — DEMOLITION SCALE: 1/4" = 1'-0"

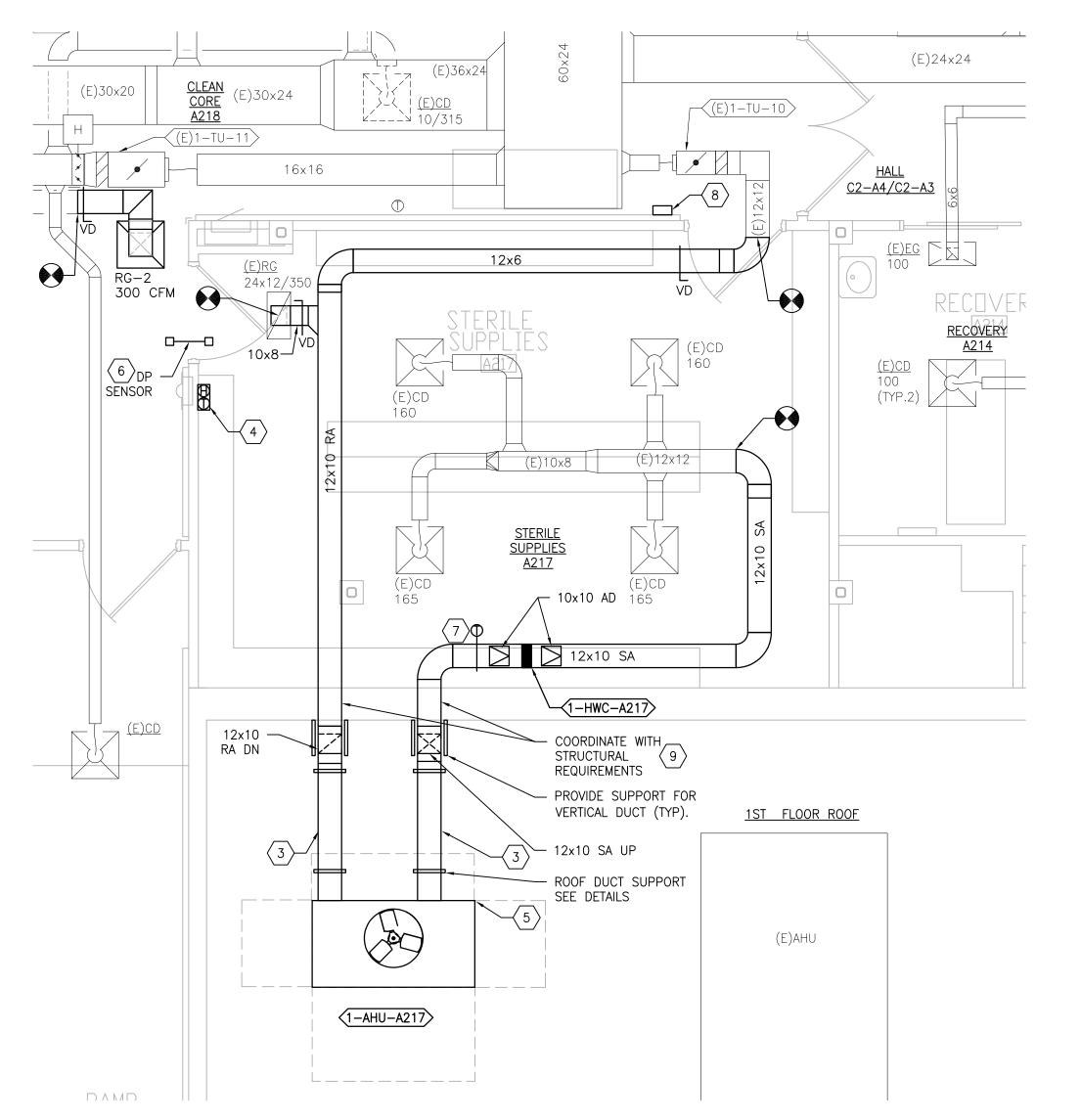
VA FORM 08-6231



3



2 BUILDING 1 SECOND FLOOR ROOM 208 - NEW WORK SCALE: 1/4" = 1'-0"



BUILDING 1 SECOND FLOOR ROOM A217 - NEW WORK

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

6

GENERAL SHEET NOTES:

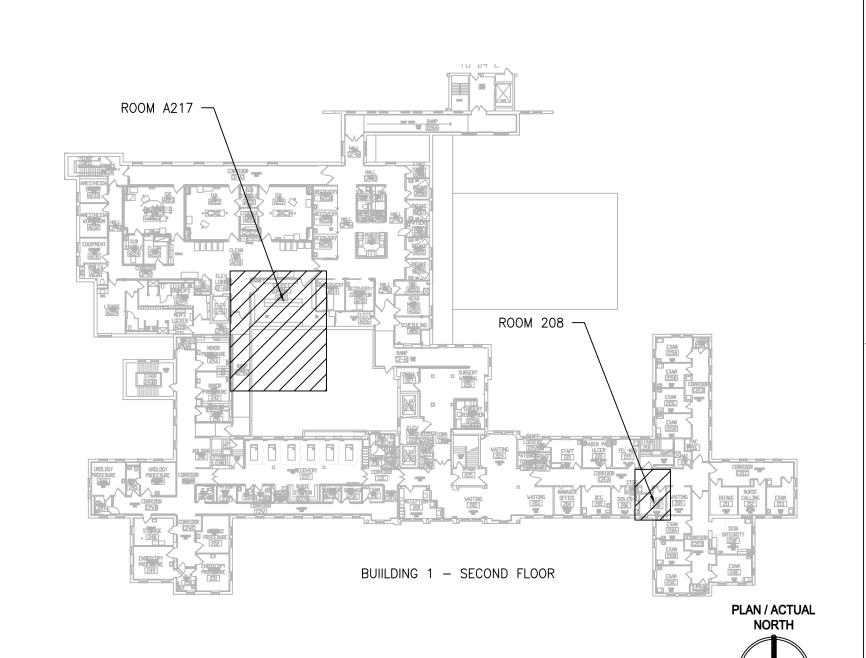
INSTALLATION OF NEW WORK.

APPROVED BY THE COR.

- 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
 - 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
- 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:

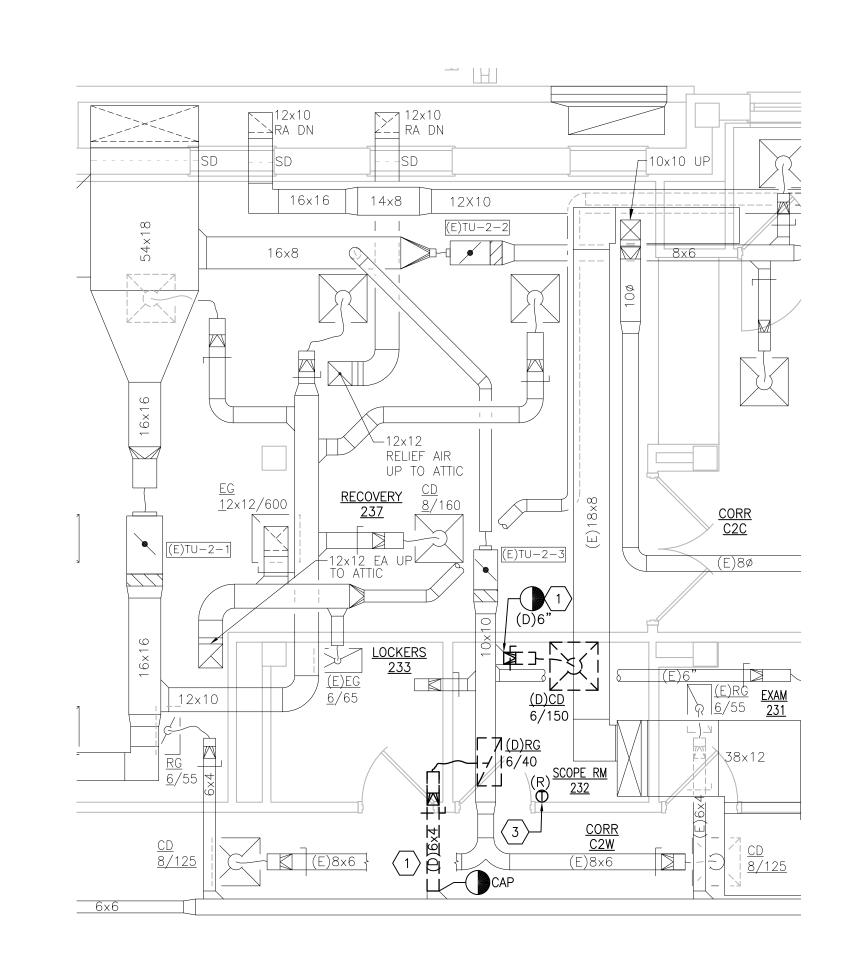
- 1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL. PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL OPENING AS MUCH AS POSSIBLE.
- 2. DEMOLISH PIPING, HANGERS AND ALL APPURTENANCES TYPICAL. REFERENCE 1-MP121
- 3. SUPPLY AND RETURN DUCT LOCATED OUTDOORS MUST BE DOUBLE-WALL INSULATED AND MADE WEATHER TIGHT.
- 4. TEMPERATURE AND HUMIDITY SENSOR FURNISHED BY AHU MANUFACTURER.
- 5. PROVIDE CUSTOM INSULATED CURB TO SUPPORT AHU AND TO ALLOW SIDE DUCT CONNECTIONS THROUGH THE CURB. REFERENCE 5/M-504 FOR ADDITIONAL INFORMATION.
- 6. PROVIDE DIFFERENTIAL PRESSURE SENSOR INSTALLED THROUGH WALL AND CENTERED ABOVE DOOR. PROVIDE ROOM PRESSURE MONITOR INSTALLED OUTSIDE ROOM NEAR
- ROOM NAME AND NUMBER LABEL. 7. DISCHARGE AIR TEMPERATURE SENSOR FURNISHED BY AHU MANUFACTURER.
- 8. PROVIDE AUXILIARY DIFFERENTIAL PRESSURE MONITORING PANEL INSTALLED OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.
- 9. FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH NEW WORK PARTICULARLY THE NEW FLOOR AND WALL PENETRATIONS. COORDINATE THIS WITH FLOORS ABOVE AND BELOW AND ROOF CONDITIONS.



KEYPLAN SCALE: NTS

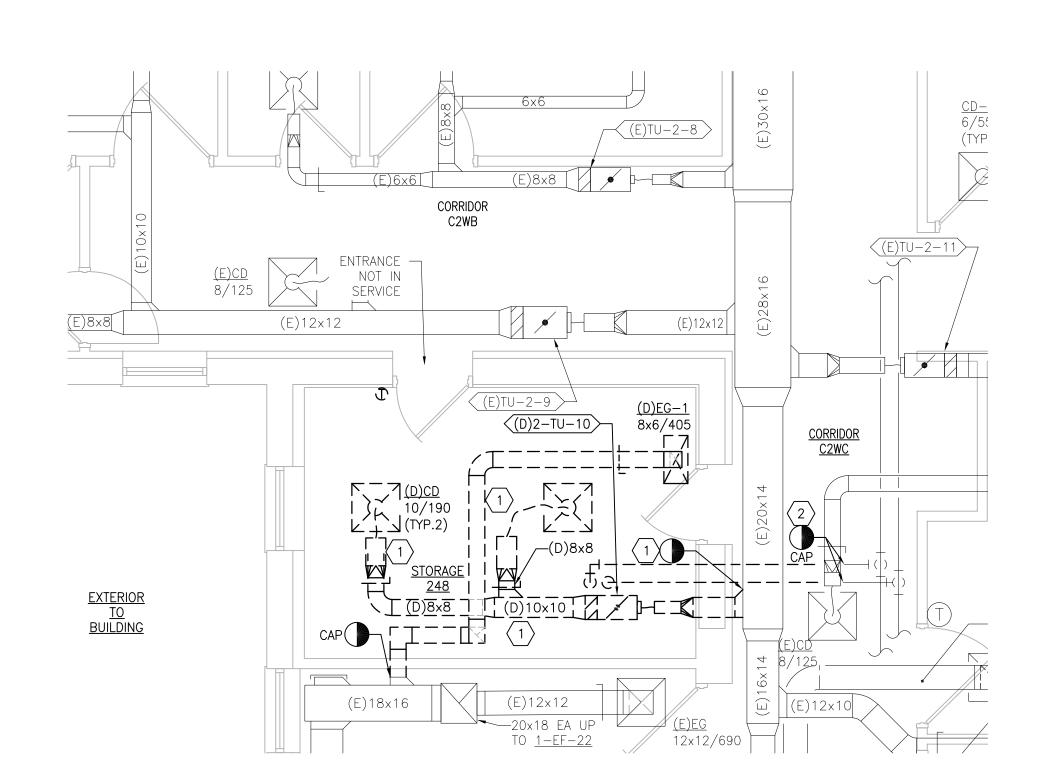
PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE Project Number Drawing Title Project Title PROJECT TEAM ENGINEER OF RECORD MILLER-REMICK LLC Office of 656-18-300 **MECHANICAL** PROFESSIONAL ENGINEER 100% CONSTRUCTION **UPGRADE SPS HVAC &** PROFESSIONAL ENGINEER. Building Number
1, 2, 3, 28, 29, 49, 50, 51,
111, 116 DOCUMENTS DEMOLITION / NEW WORK PLAN Construction **ENVIRONMENTAL CONTROLS** Miller-Remick LLC

M.E.P. & Structural Engineering
A Service Disabled Veteran Owned
Small Business NOT FOR CONSTRUCTION SECOND FLOOR - BUILDING 1 and Facilities MEP Engineers + Architects 701 Forest Ave Portland, ME 04103 1173 Research Way **Approved: Project Director** Management Drawing Number Forest, VA 24551 1-866-267-6839 1010 KINGS HIGHWAY SOUTH CHERRY HILL, NEW JERSEY 08034 ST. CLOUD VA MEDICAL CENTER, MN **FULLY SPRINKLERED** PHONE: (856)429-4000 1-MH121 Checked U.S. Department of Veterans Affairs FAX: (856)429-5002 2022-07-15 PNL MR PROJECT NO: 0376-0011 MR DESCRIPTION DATE



BUILDING 1 SECOND FLOOR ROOM 232 — DEMOLITION

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



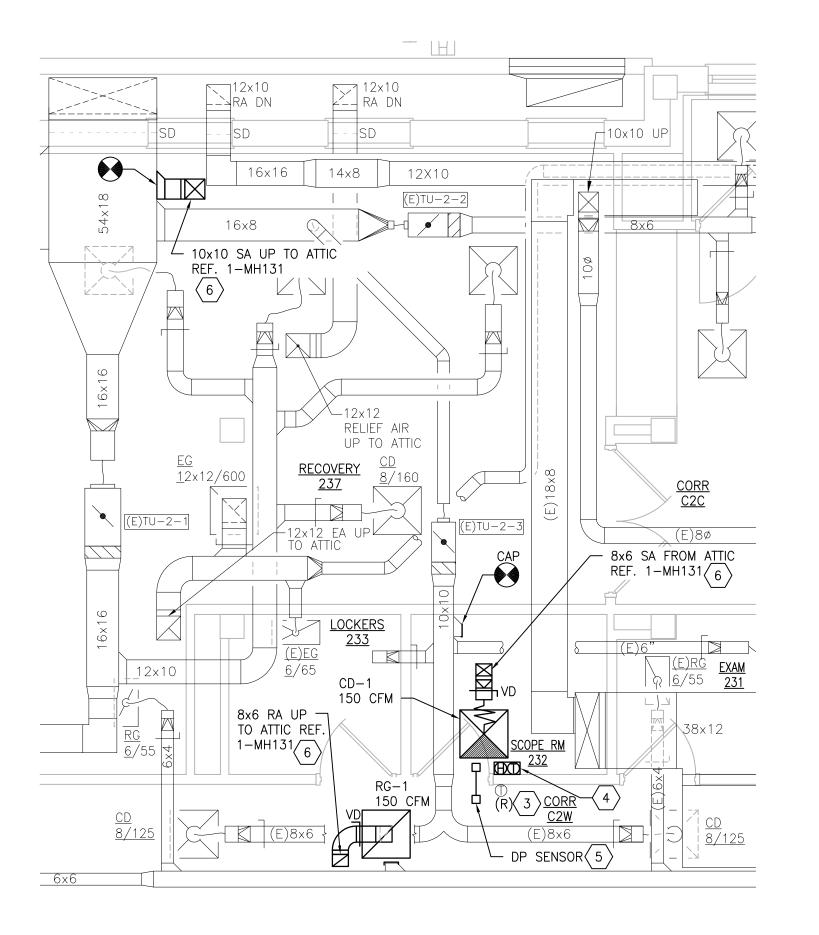
BUILDING 1 SECOND FLOOR ROOM 248 — DEMOLITION

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

VA FORM 08-6231

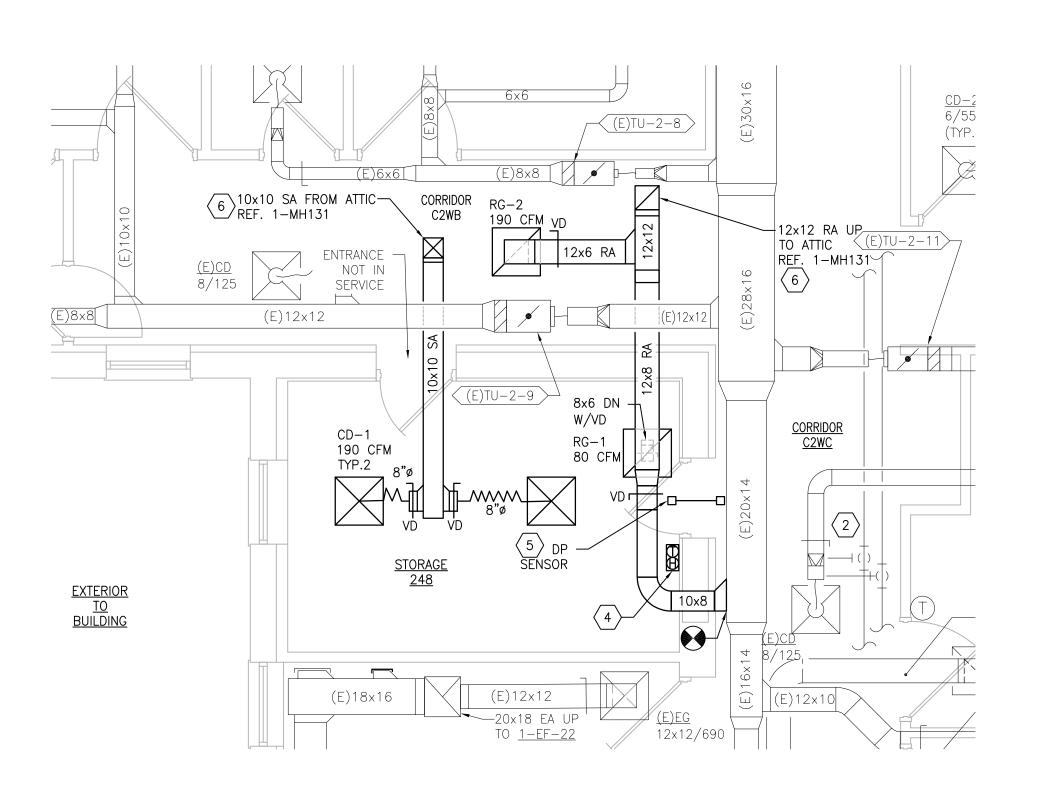
DESCRIPTION

DATE



2 BUILDING 1 SECOND FLOOR ROOM 232 - NEW WORK

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



4 BUILDING 1 SECOND FLOOR ROOM 248 - NEW WORK

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

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
 - 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
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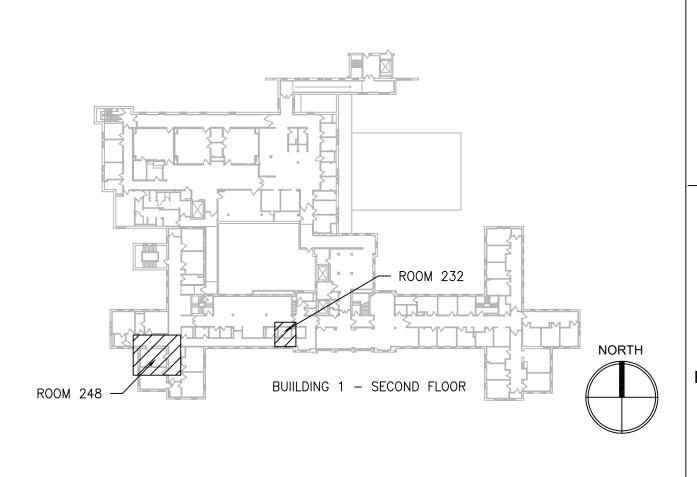
HAVE BEEN MAINTAINED. SUBMIT FOR APPROVAL. REFERENCE SPECIFICATIONS FOR

11. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

OPENING AS MUCH AS POSSIBLE.

TESTING AND BALANCING REQUIREMENTS.

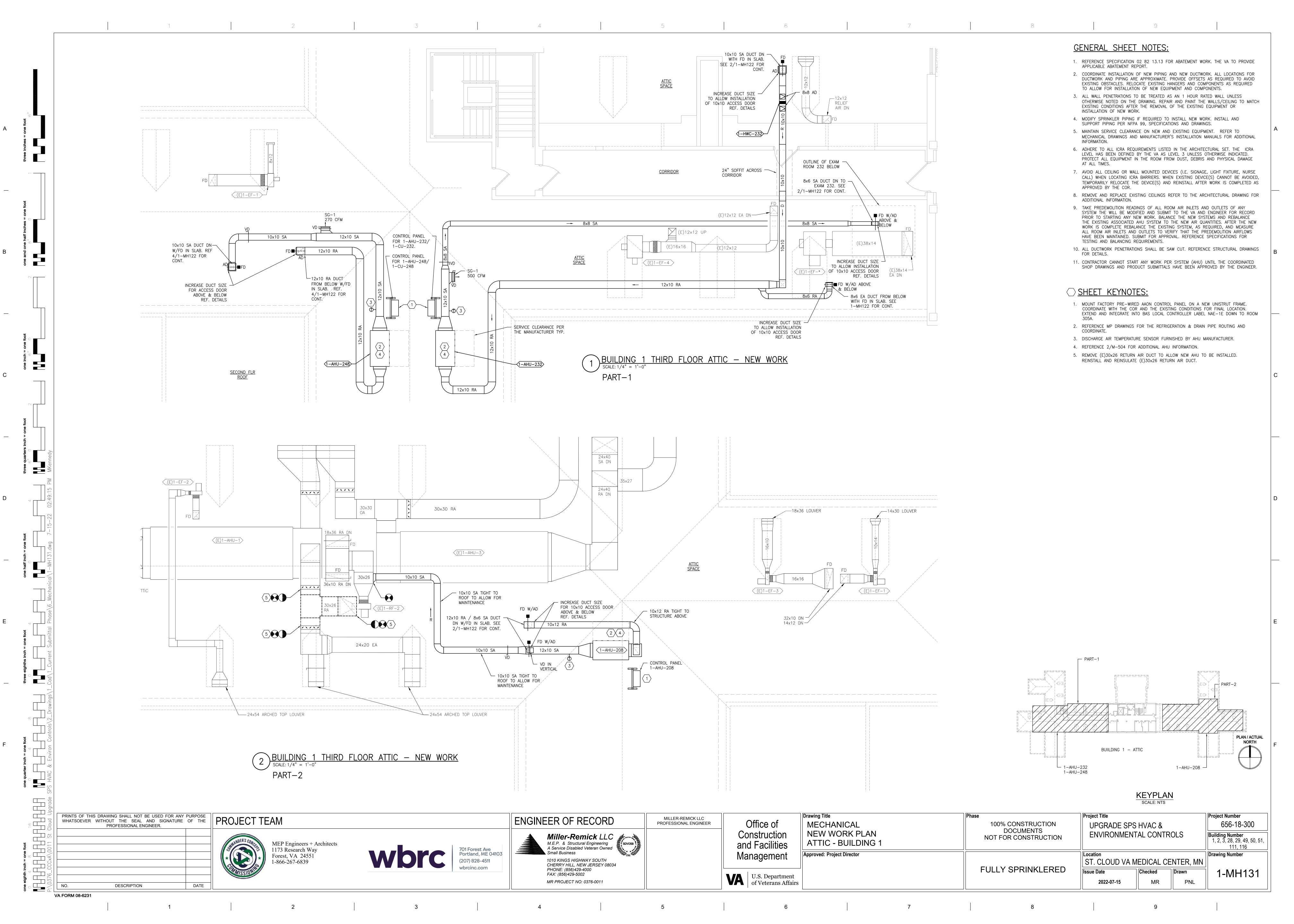
- 1. DEMOLISH DUCTWORK, HANGERS AND ALL APPURTENANCES TYPICAL. PATCH EXISTING WALL OPENING WITH MATCHING MATERIALS AS REQUIRED OR REUSE EXISTING WALL
- 2. DEMOLISH PIPING, HANGERS AND ALL APPURTENANCES TYPICAL. REFERENCE DRAWING 1-MP121 FOR NEW WORK.
- 3. RELOCATE EXISTING THERMOSTAT TO CORRIDOR C2W TO CONTROL (E)TU-2-3.
- 4. TEMPERATURE AND HUMIDITY SENSOR FURNISHED BY AHU MANUFACTURER. 5. PROVIDE DIFFERENTIAL PRESSURE SENSOR INSTALLED THROUGH WALL AND CENTERED
- ABOVE DOOR. PROVIDE ROOM PRESSURE MONITOR INSTALLED OUTSIDE ROOM NEAR ROOM NAME AND NUMBER LABEL.
- 6. FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH NEW WORK PARTICULARLY THE NEW FLOOR PENETRATIONS. COORDINATE THIS WITH FLOORS ABOVE.

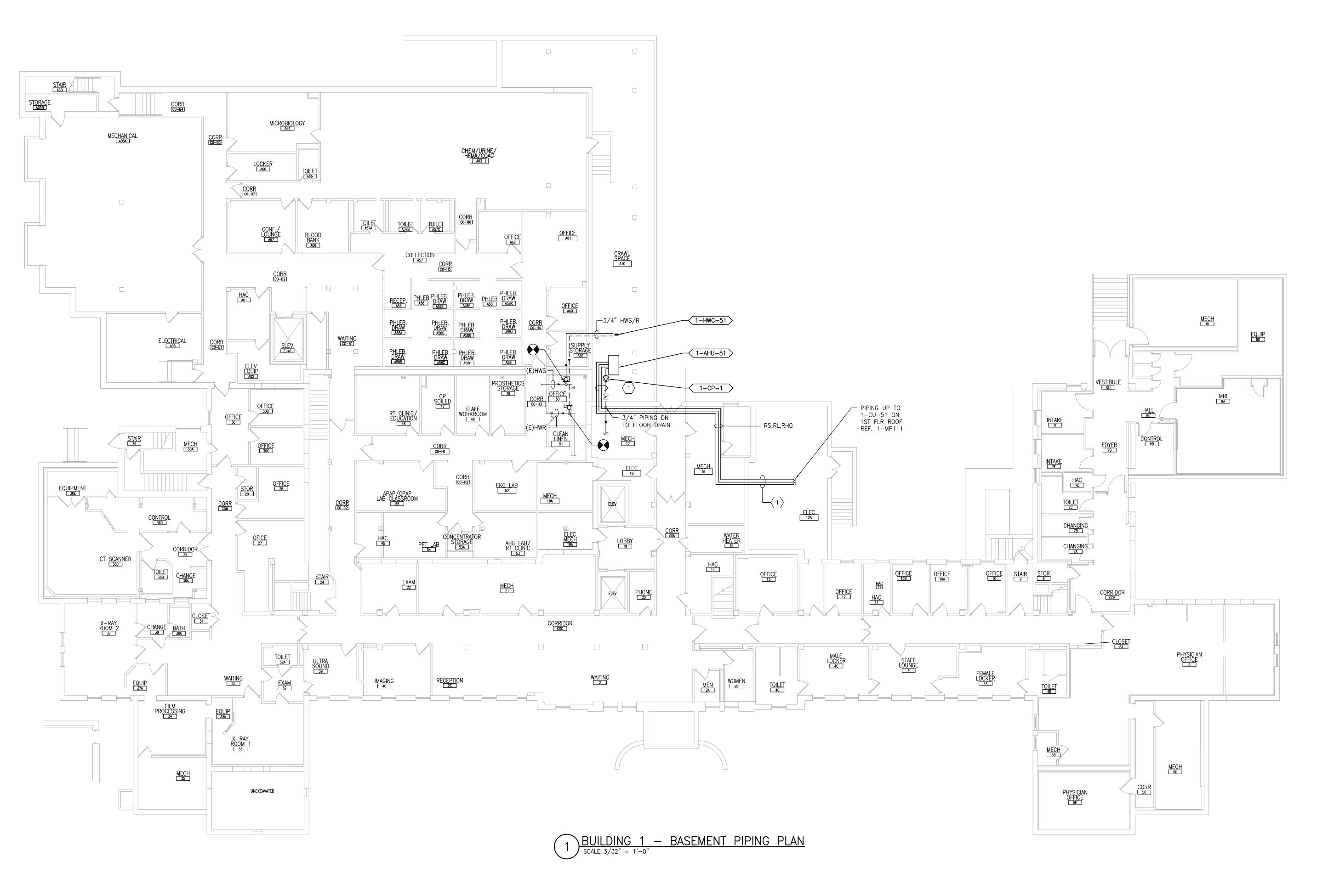


KEYPLAN SCALE: NTS

PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE Project Number Drawing Title Project Title ENGINEER OF RECORD MILLER-REMICK LLC Office of 656-18-300 **MECHANICAL** UPGRADE SPS HVAC & 100% CONSTRUCTION PROFESSIONAL ENGINEER PROFESSIONAL ENGINEER. DOCUMENTS DEMOLITION / NEW WORK PLAN Miller-Remick LLC

M.E.P. & Structural Engineering
A Service Disabled Veteran Owned
Small Business Construction **ENVIRONMENTAL CONTROLS** Building Number 1, 2, 3, 28, 29, 49, 50, 51, NOT FOR CONSTRUCTION **SECOND FLOOR - BUILDING 1** and Facilities MEP Engineers + Architects 111, 116 1173 Research Way 701 Forest Ave Portland, ME 04103 Approved: Project Director Management Drawing Number Forest, VA 24551 1-866-267-6839 1010 KINGS HIGHWAY SOUTH CHERRY HILL, NEW JERSEY 08034 (207) 828-4511 ST. CLOUD VA MEDICAL CENTER, MN **FULLY SPRINKLERED** PHONE: (856)429-4000 Checked 1-MH122 Drawn FAX: (856)429-5002 U.S. Department of Veterans Affairs PNL MR PROJECT NO: 0376-0011 MR 2022-07-15





GENERAL SHEET NOTES:

COMPLETED AS APPROVED BY THE COR.

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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

- 8. REMOVE AND REPLACE EXISTING CEILINGS REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
- 9. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS ETC.
- 10. ALL PIPING PENETRATIONS SHALL BE CORE DRILLED. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
- 11. INSTALLING CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. THE CONTRACTOR IS TO PROVIDE DETAILED PIPING LAYOUT TO THE MANUFACTURER FOR PIPE SIZING AND OTHER REQUIREMENTS. FINAL SHOP DRAWING APPROVAL IS BY THE ENGINEER. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR LEAK CHECKS, EVACUATION AND INITIAL REFRIGERATION CHARGE. THE INSTALLING CONTRACTOR SHALL PROVIDE EXTRA REFRIGERANT TO THE FACTORY START—UP TECHNICIAN FOR FINAL REFRIGERANT CHARGE. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR WIRING AND COMMUNICATIONS BETWEEN AHU'S AND CONDENSING UNITS.
- 12. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

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

 PHANES CONSENSATE 7/4
- 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.

PLAN / ACTUAL NORTH

PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE Drawing Title Project Title Project Number ENGINEER OF RECORD MILLER-REMICK LLC Office of 656-18-300 **MECHANICAL** PROFESSIONAL ENGINEER 100% CONSTRUCTION UPGRADE SPS HVAC & PROFESSIONAL ENGINEER. DOCUMENTS Miller-Remick LLC

M.E.P. & Structural Engineering

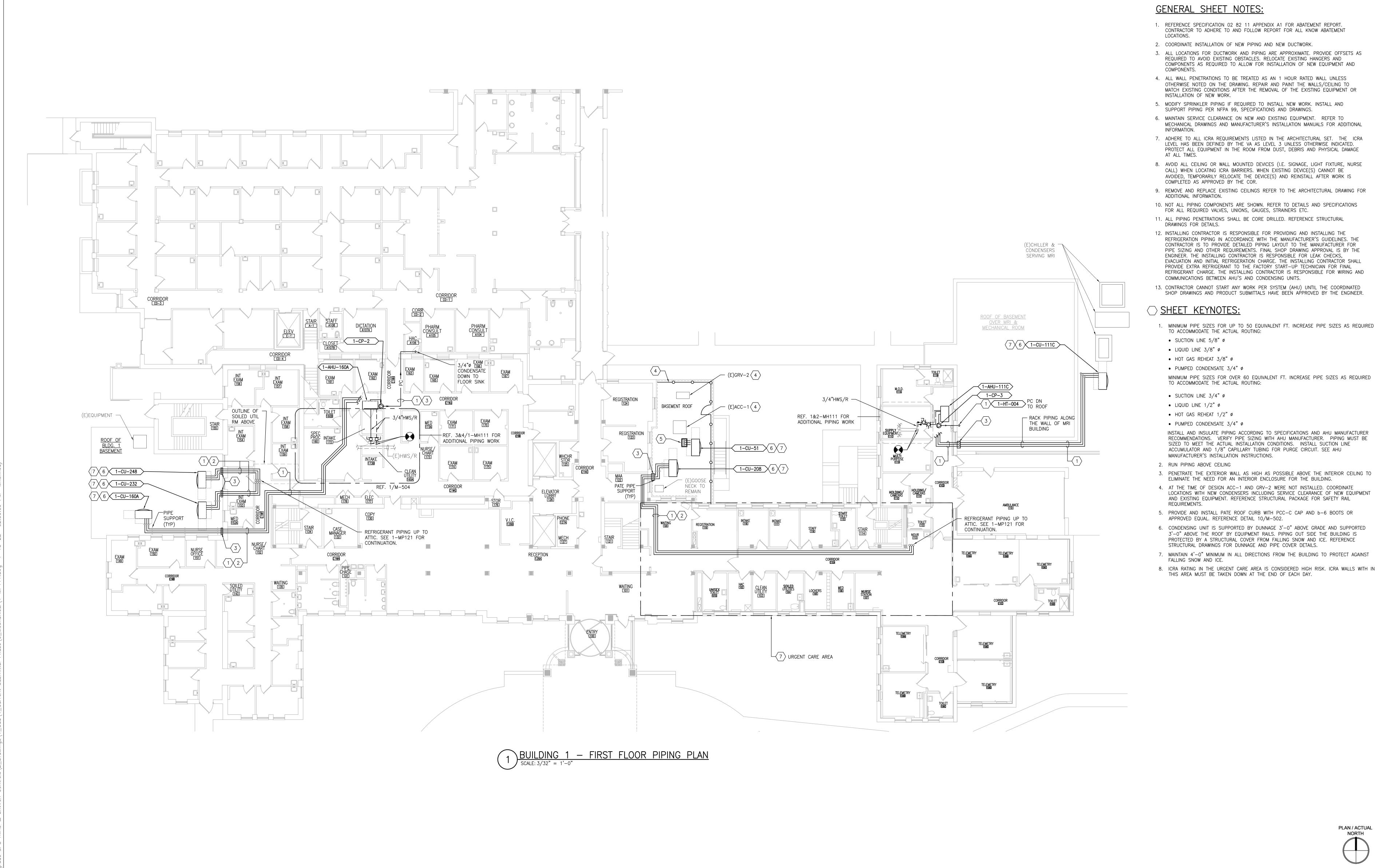
A Service Disabled Veteran Owned

Small Rusiness PIPING PLAN Construction **ENVIRONMENTAL CONTROLS** Building Number 1, 2, 3, 28, 29, 49, 50, 51, NOT FOR CONSTRUCTION **BASEMENT - BUILDING 1** and Facilities MEP Engineers + Architects 111, 116 1173 Research Way 701 Forest Ave Portland, ME 04103 Management Approved: Project Director Drawing Number Forest, VA 24551 1-866-267-6839 1010 KINGS HIGHWAY SOUTH CHERRY HILL, NEW JERSEY 08034 ST. CLOUD VA MEDICAL CENTER, MN (207) 828-4511 **FULLY SPRINKLERED** PHONE: (856)429-4000 Checked 1-MP101 Drawn FAX: (856)429-5002 U.S. Department of Veterans Affairs MR BJS MR PROJECT NO: 0376-0011 2022-07-15 DESCRIPTION DATE

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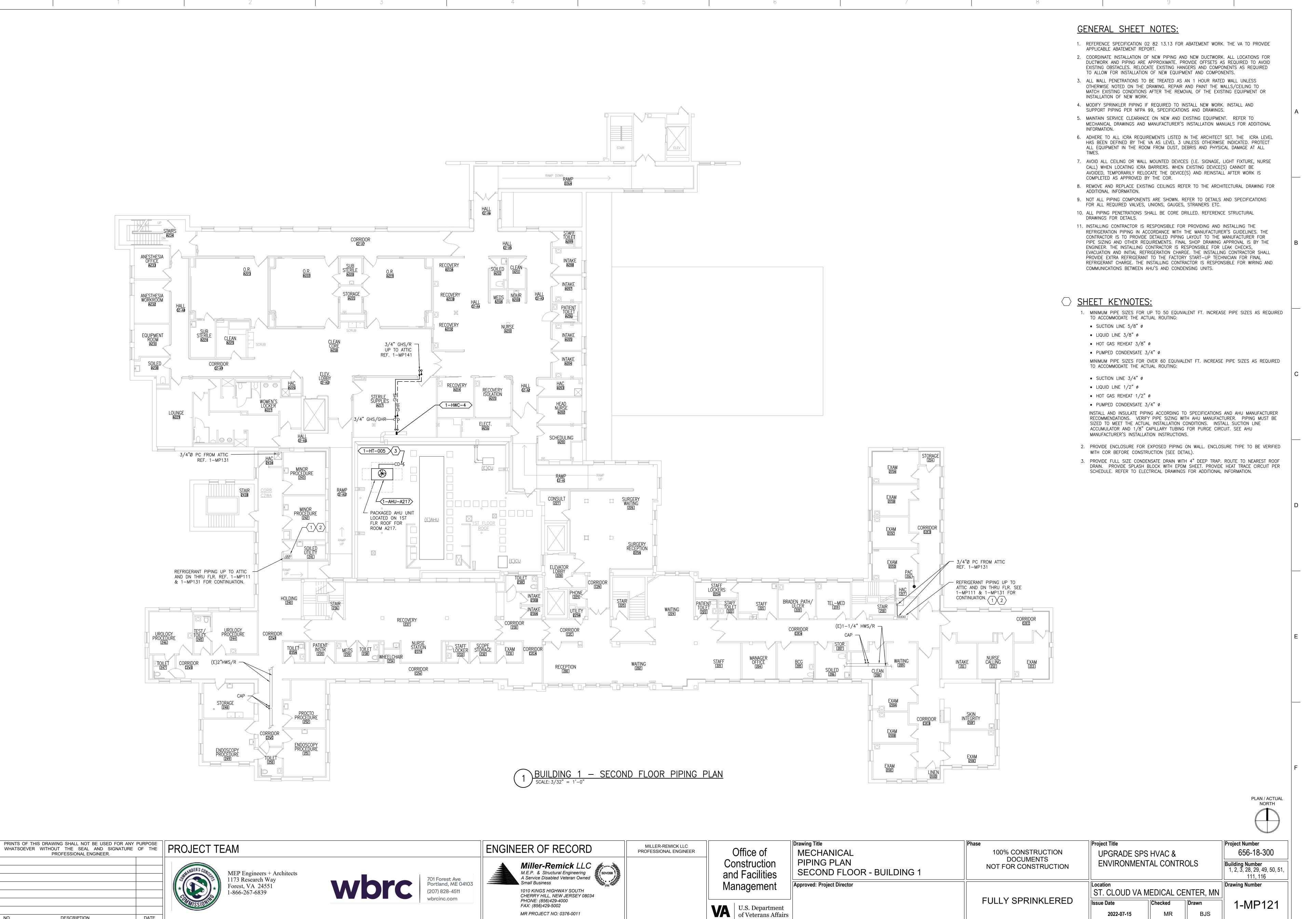
VA FORM 08-6231



PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE Drawing Title Project Title **Project Number** ENGINEER OF RECORD MILLER-REMICK LLC Office of 656-18-300 **MECHANICAL** PROFESSIONAL ENGINEER 100% CONSTRUCTION UPGRADE SPS HVAC & PROFESSIONAL ENGINEER. DOCUMENTS PIPING PLAN Miller-Remick LLC

M.E.P. & Structural Engineering
A Service Disabled Veteran Owned
Small Business Construction **ENVIRONMENTAL CONTROLS** Building Number 1, 2, 3, 28, 29, 49, 50, 51, NOT FOR CONSTRUCTION FIRST FLOOR - BUILDING 1 and Facilities MEP Engineers + Architects 111, 116 701 Forest Ave Portland, ME 04103 1173 Research Way Management Approved: Project Director Drawing Number Forest, VA 24551 1-866-267-6839 1010 KINGS HIGHWAY SOUTH CHERRY HILL, NEW JERSEY 08034 (207) 828-4511 ST. CLOUD VA MEDICAL CENTER, MN **FULLY SPRINKLERED** PHONE: (856)429-4000 1-MP111 Checked Drawn FAX: (856)429-5002 U.S. Department of Veterans Affairs BJS MR PROJECT NO: 0376-0011 MR 2022-07-15 DESCRIPTION DATE VA FORM 08-6231

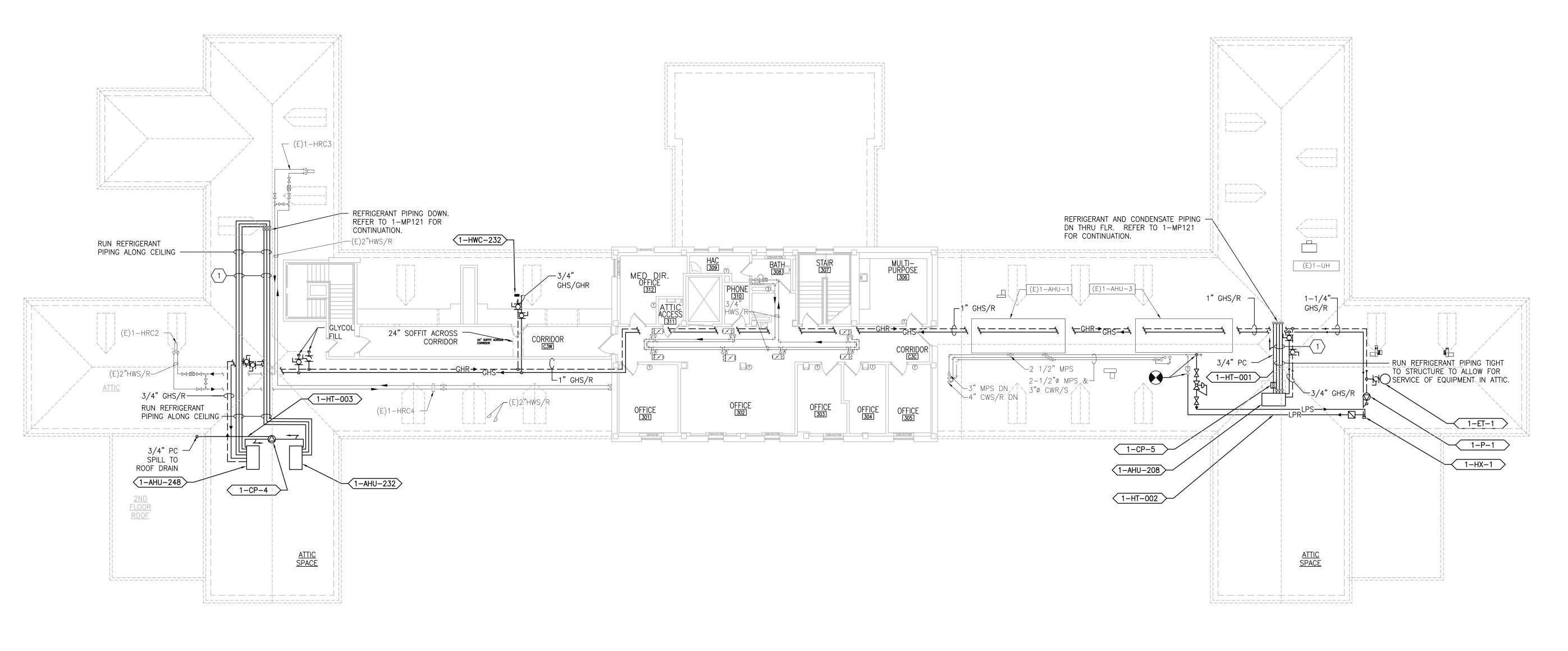
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VA FORM 08-6231

DESCRIPTION

DATE



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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- 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
- 8. REMOVE AND REPLACE EXISTING CEILINGS REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.

CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS

- 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.

COMPLETED AS APPROVED BY THE COR.

- 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.

- 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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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.

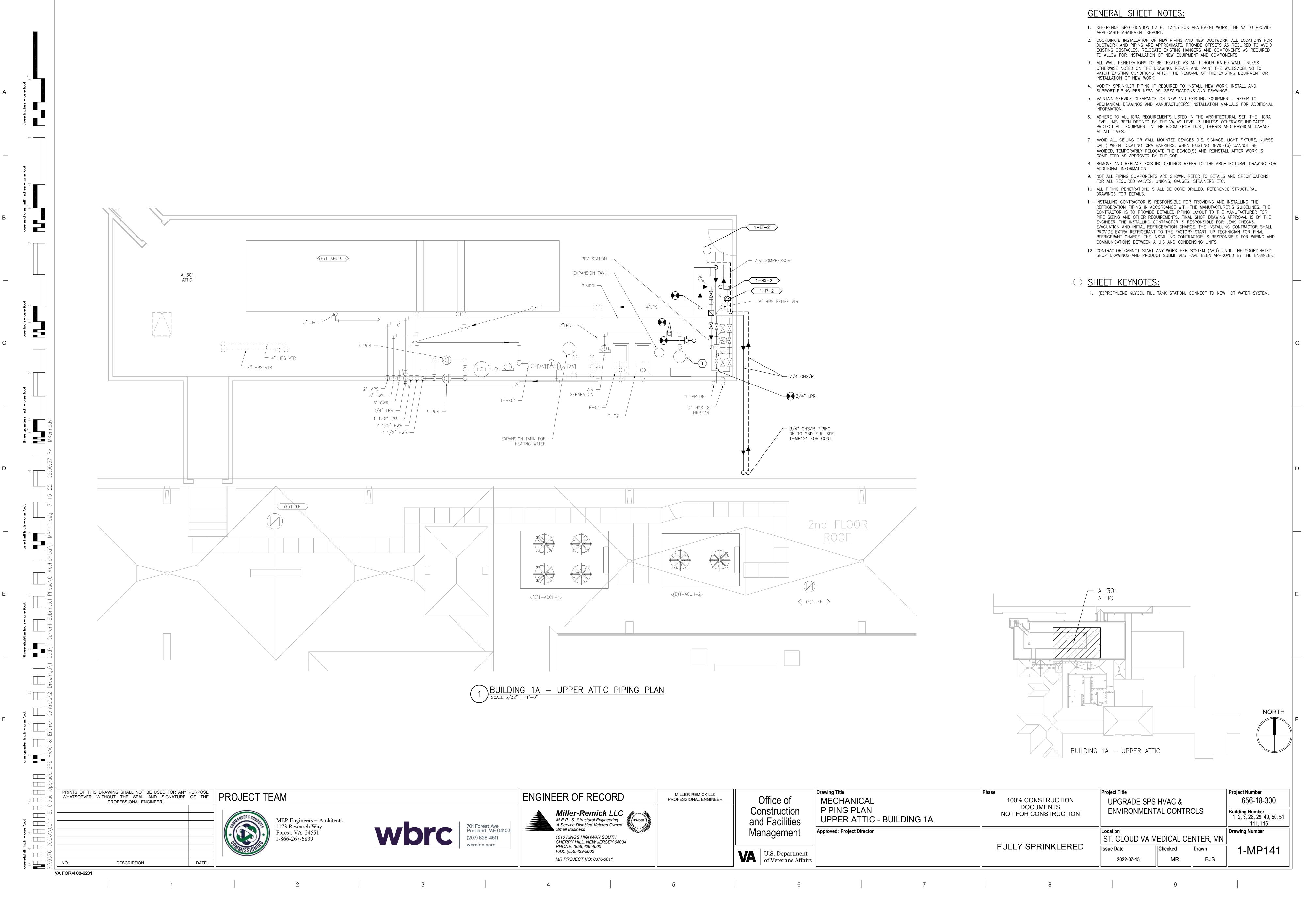
1 BUILDING 1 - ATTIC PIPING PLAN
SCALE: 3/32" = 1'-0"

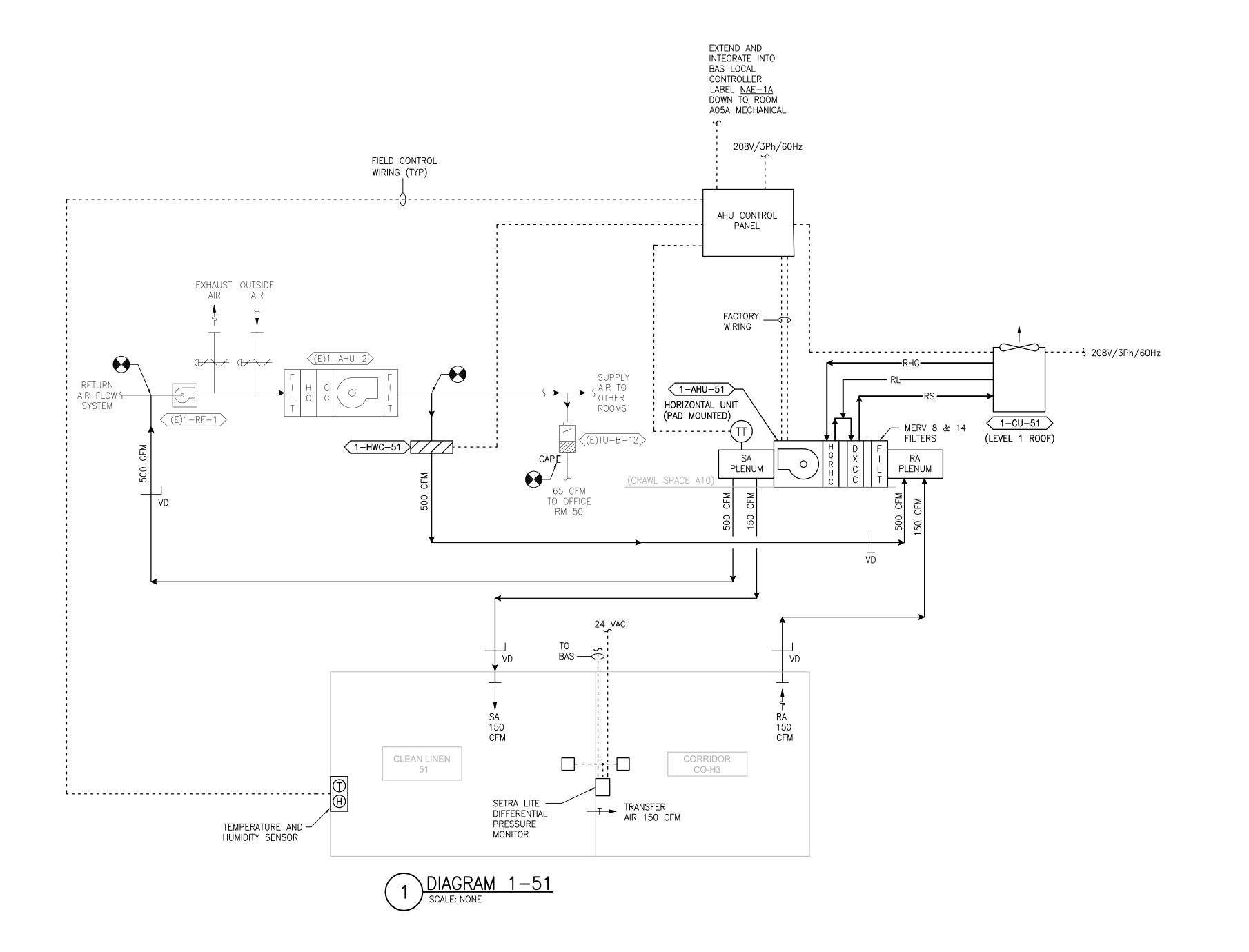
VA FORM 08-6231



PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE Drawing Title Project Title Project Number PROJECT TEAM ENGINEER OF RECORD MILLER-REMICK LLC Office of 656-18-300 **MECHANICAL** PROFESSIONAL ENGINEER 100% CONSTRUCTION UPGRADE SPS HVAC & PROFESSIONAL ENGINEER. DOCUMENTS NOT FOR CONSTRUCTION PIPING PLAN Miller-Remick LLC

M.E.P. & Structural Engineering
A Service Disabled Veteran Owned
Small Business Construction **ENVIRONMENTAL CONTROLS** Building Number 1, 2, 3, 28, 29, 49, 50, 51, ATTIC - BUILDING 1 and Facilities MEP Engineers + Architects 111, 116 701 Forest Ave Portland, ME 04103 1173 Research Way Management Approved: Project Director Drawing Number Forest, VA 24551 1-866-267-6839 (207) 828-4511 1010 KINGS HIGHWAY SOUTH CHERRY HILL, NEW JERSEY 08034 ST. CLOUD VA MEDICAL CENTER, MN **FULLY SPRINKLERED** PHONE: (856)429-4000 1-MP131 Checked Drawn U.S. Department of Veterans Affairs FAX: (856)429-5002 MR BJS MR PROJECT NO: 0376-0011 2022-07-15 DESCRIPTION DATE





SEQUENCE OF OPERATION

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 (BAS). THE CONTROLLER SHALL COMMUNICATE AND INTEGRATE WITH THE BAS SYSTEM VIA BACNET. ALL SETPOINTS SHALL BE VISIBLE AND RESETTABLE, ALL SENSOR READINGS SHALL BE VISIBLE, OCCUPIED AND UNOCCUPIED SCHEDULING SHALL BE RESETTABLE, THROUGH THE BAS SYSTEM VIA BACNET.

OCCUPIED/UNOCCUPIED

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

IN THE OCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

IF ROOM TEMPERATURE RISES ABOVE SETPOINT 72°F (ADJ.) AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE COMPRESSOR SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

IF ROOM RELATIVE HUMIDITY RISES ABOVE SETPOINT (55% RH) 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

DEHUMIDIFICATION SHALL BE INITIATED ANYTIME IN THE OCCUPIED, UNOCCUPIED, COOLING OR

HEATING MODE.

<u>HEATING</u> (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

CONTROL SHALL BE THE SAME AS IN THE OCCUPIED MODE.

ROOM PRESSURE MONITOR

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

NEW TERMINAL UNIT CONTROL THE BAS CONTRACTOR SHALL PROVIDE CONTROL DEVICES AND SENSORS AS REQUIRED TO INCORPORATE THE NEW TERMINAL UNIT INTO THE EXISTING BAS. AIRFLOW SHALL BE CONTROLLED AT CONSTANT AS INDICATED. HOT WATER CONTROL VALVE SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE SETPOINT (69°F)

PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER. Project Title Project Number Drawing Title ENGINEER OF RECORD MILLER-REMICK LLC Office of 656-18-300 **MECHANICAL** 100% CONSTRUCTION PROFESSIONAL ENGINEER UPGRADE SPS HVAC & DOCUMENTS NOT FOR CONSTRUCTION AIRFLOW CONTROL DIAGRAM Miller-Remick LLC

M.E.P. & Structural Engineering

A Service Disabled Veteran Owned

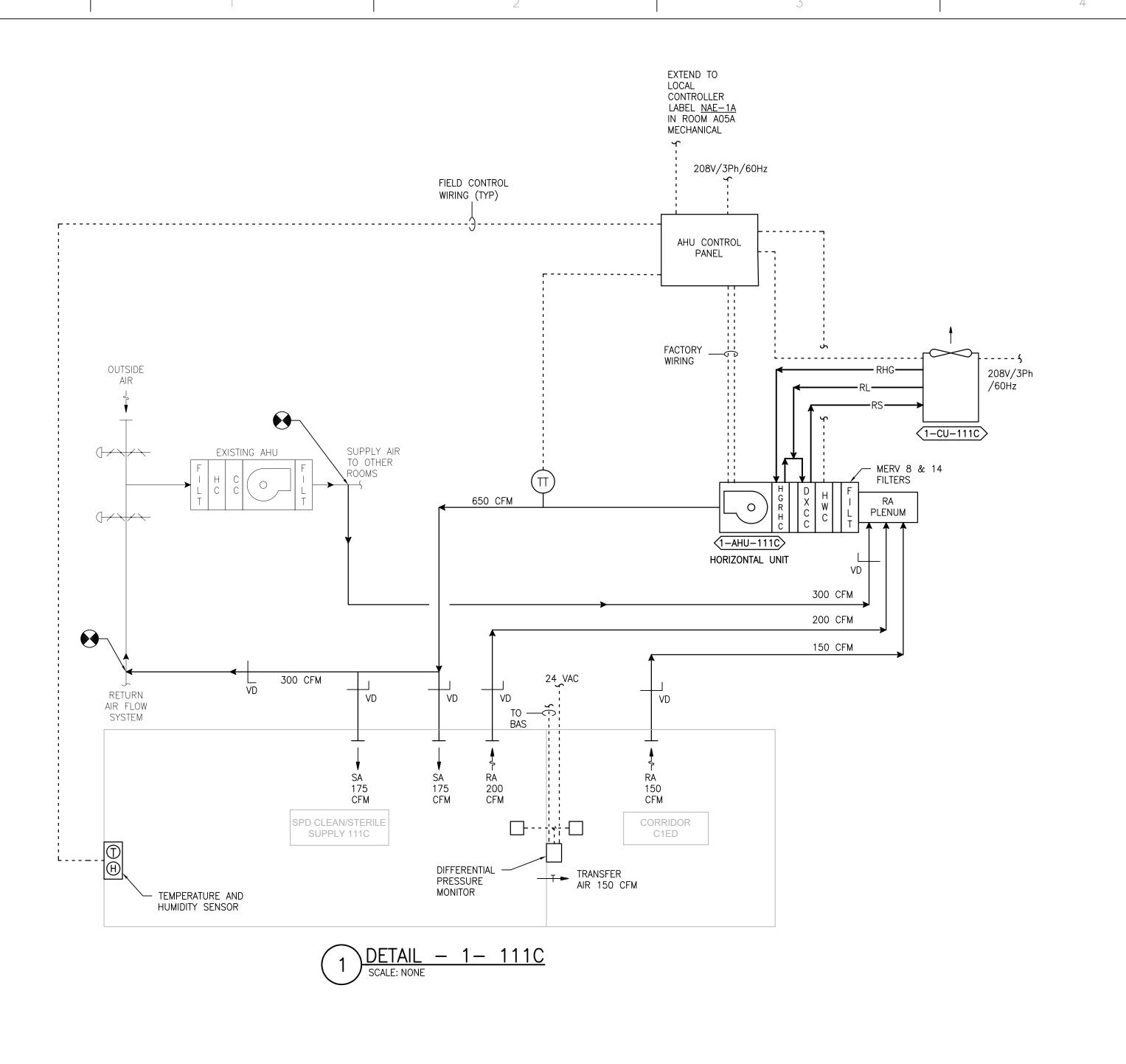
Small Business **ENVIRONMENTAL CONTROLS** Construction Building Number 1, 2, 3, 28, 29, 49, 50, 51, **BASEMENT - BUILDING 1** and Facilities MEP Engineers + Architects 111, 116 701 Forest Ave Portland, ME 04103 1173 Research Way Management Approved: Project Director Drawing Number Forest, VA 24551 1-866-267-6839 (207) 828-4511 1010 KINGS HIGHWAY SOUTH CHERRY HILL, NEW JERSEY 08034 ST. CLOUD VA MEDICAL CENTER, MN **FULLY SPRINKLERED** PHONE: (856)429-4000 Checked 1-M-801 Drawn U.S. Department of Veterans Affairs FAX: (856)429-5002 PNL MR PROJECT NO: 0376-0011 MR 2022-07-15

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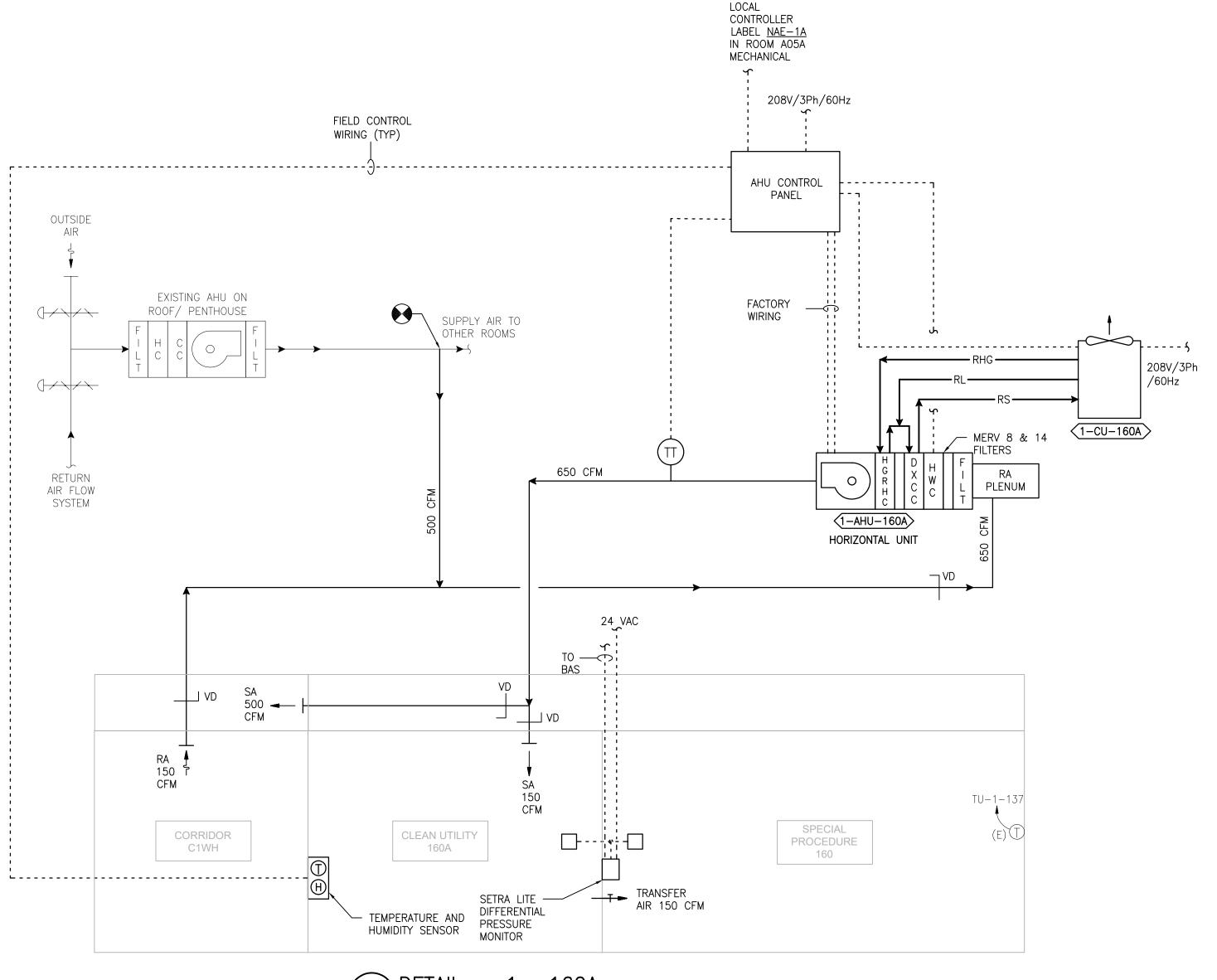
VA FORM 08-6231

DESCRIPTION

DATE



VA FORM 08-6231



EXTEND TO

SEQUENCE OF OPERATION

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 (BAS). THE CONTROLLER SHALL COMMUNICATE AND INTEGRATE WITH THE BAS SYSTEM VIA BACNET. ALL SETPOINTS SHALL BE VISIBLE AND RESETTABLE, ALL SENSOR READINGS SHALL BE VISIBLE, OCCUPIED AND UNOCCUPIED SCHEDULING SHALL BE RESETTABLE, THROUGH THE BAS SYSTEM VIA BACNET.

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

IN THE OCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

IF ROOM TEMPERATURE RISES ABOVE SETPOINT (72°F) AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE COMPRESSOR SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE.

IF ROOM RELATIVE HUMIDITY RISES ABOVE SETPOINT (55% RH) 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

DEHUMIDIFICATION SHALL BE INITIATED ANYTIME IN THE OCCUPIED, UNOCCUPIED, COOLING OR HEATING MODE.

<u>HEATING</u> (ONLY PROVIDED ON SOME UNITS)

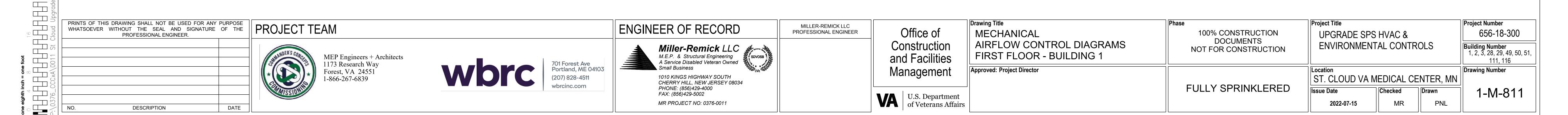
AUXILIARY DRAIN PAN ALARM

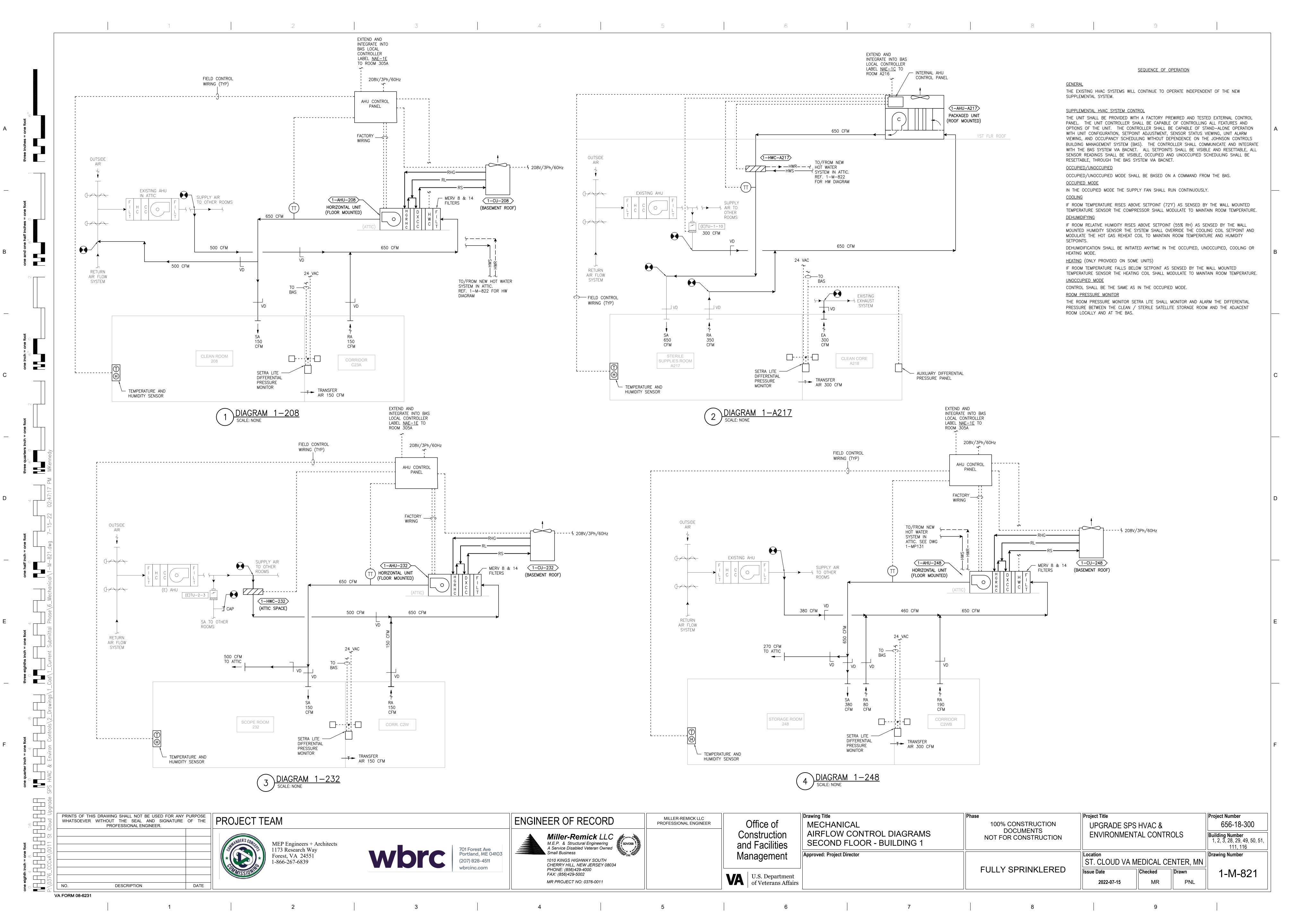
IF ROOM TEMPERATURE FALLS BELOW SETPOINT AS SENSED BY THE WALL MOUNTED TEMPERATURE SENSOR THE HEATING COIL SHALL MODULATE TO MAINTAIN ROOM TEMPERATURE. UNOCCUPIED MODE

CONTROL SHALL BE THE SAME AS IN OCCUPIED MODE.

ROOM PRESSURE MONITOR THE ROOM PRESSURE MONITOR BY 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.

ALL AHU'S SUSPENDED ABOVE FINISHED CEILINGS SHALL BE INSTALLED WITH AN AUXILIARY DRAIN PAN AND MOISTURE SENSOR. PROVIDE AN ALARM AT THE BAS TO INDICATE WATER IS DETECTED IN THE AUXILIARY DRAIN PAN AS A RESULT OF A BLOCKAGE IN THE PRIMARY COOLING COIL DRAIN.





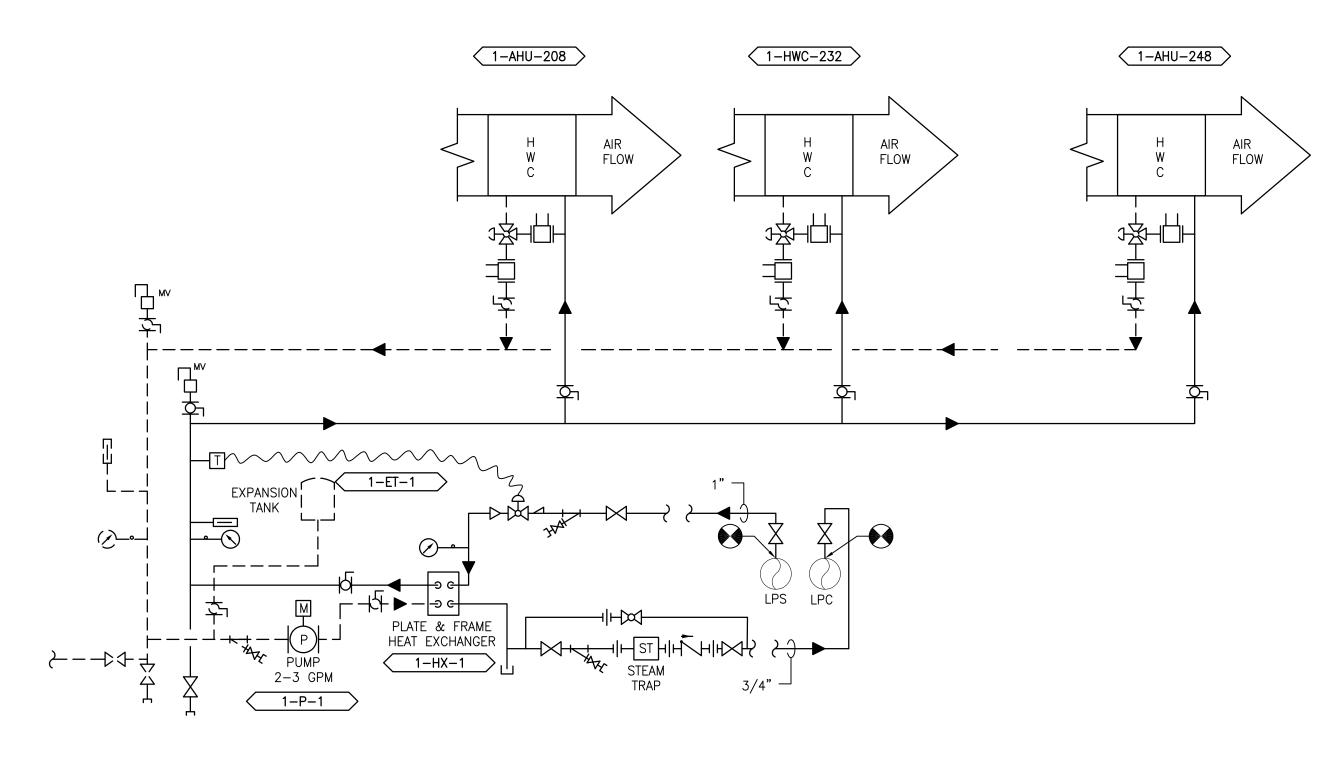
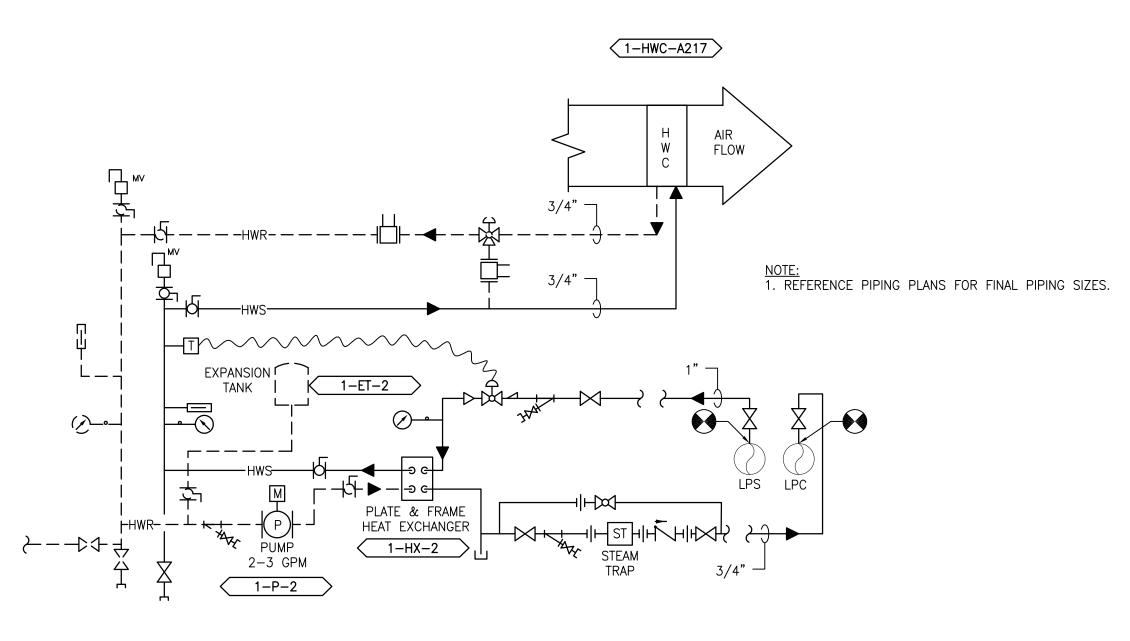


DIAGRAM 1-208 & 232 & 248

SCALE: NONE



PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER. Project Title Project Number Drawing Title PROJECT TEAM MILLER-REMICK LLC PROFESSIONAL ENGINEER ENGINEER OF RECORD Office of 656-18-300 **MECHANICAL** 100% CONSTRUCTION UPGRADE SPS HVAC & DOCUMENTS NOT FOR CONSTRUCTION Miller-Remick LLC

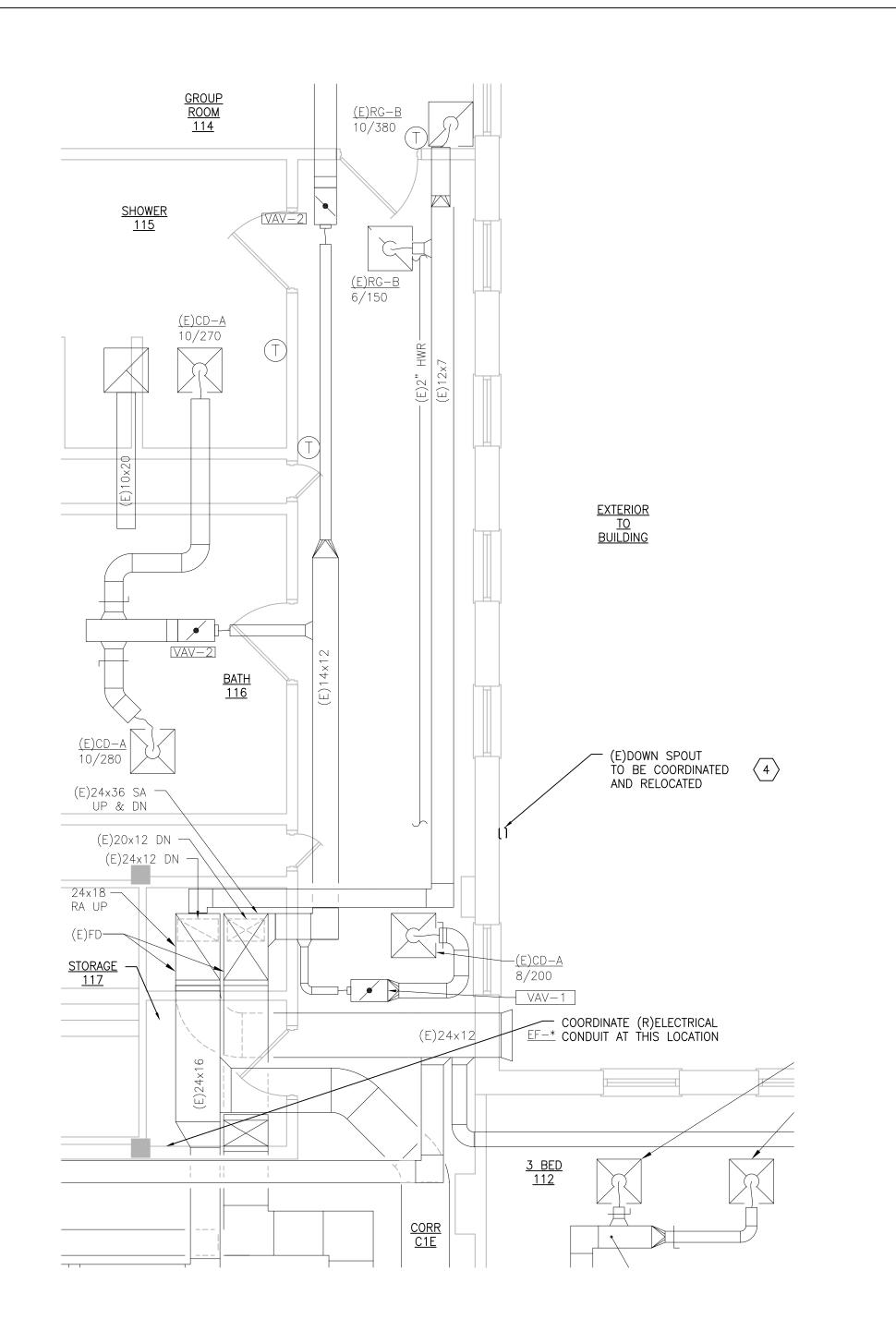
M.E.P. & Structural Engineering
A Service Disabled Veteran Owned
Small Business PIPING DIAGRAMS Construction **ENVIRONMENTAL CONTROLS** Building Number 1, 2, 3, 28, 29, 49, 50, 51, SECOND FLOOR - BUILDING 1 MEP Engineers + Architects 1173 Research Way Forest, VA 24551 1-866-267-6839 and Facilities 111, 116 701 Forest Ave Portland, ME 04103 Management Approved: Project Director Drawing Number 1010 KINGS HIGHWAY SOUTH CHERRY HILL, NEW JERSEY 08034 PHONE: (856)429-4000 FAX: (856)429-5002 (207) 828-4511 ST. CLOUD VA MEDICAL CENTER, MN wbrcinc.com **FULLY SPRINKLERED** Checked Drawn U.S. Department of Veterans Affairs PNL MR PROJECT NO: 0376-0011 2022-07-15 MR DESCRIPTION DATE

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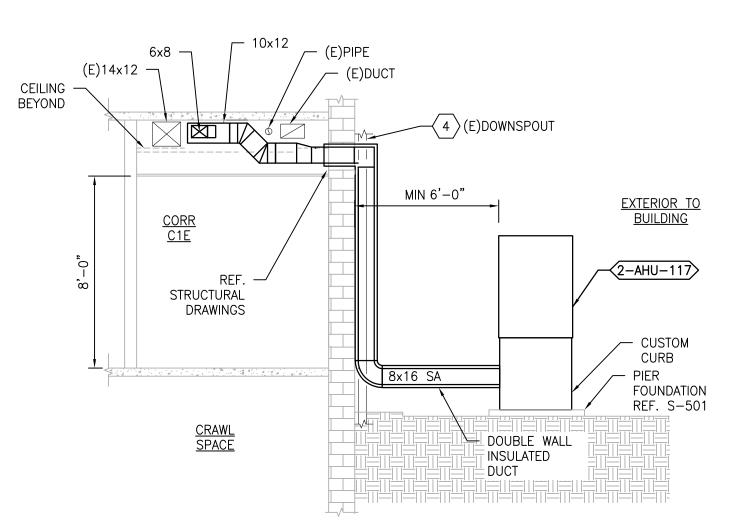
VA FORM 08-6231

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1-M-822



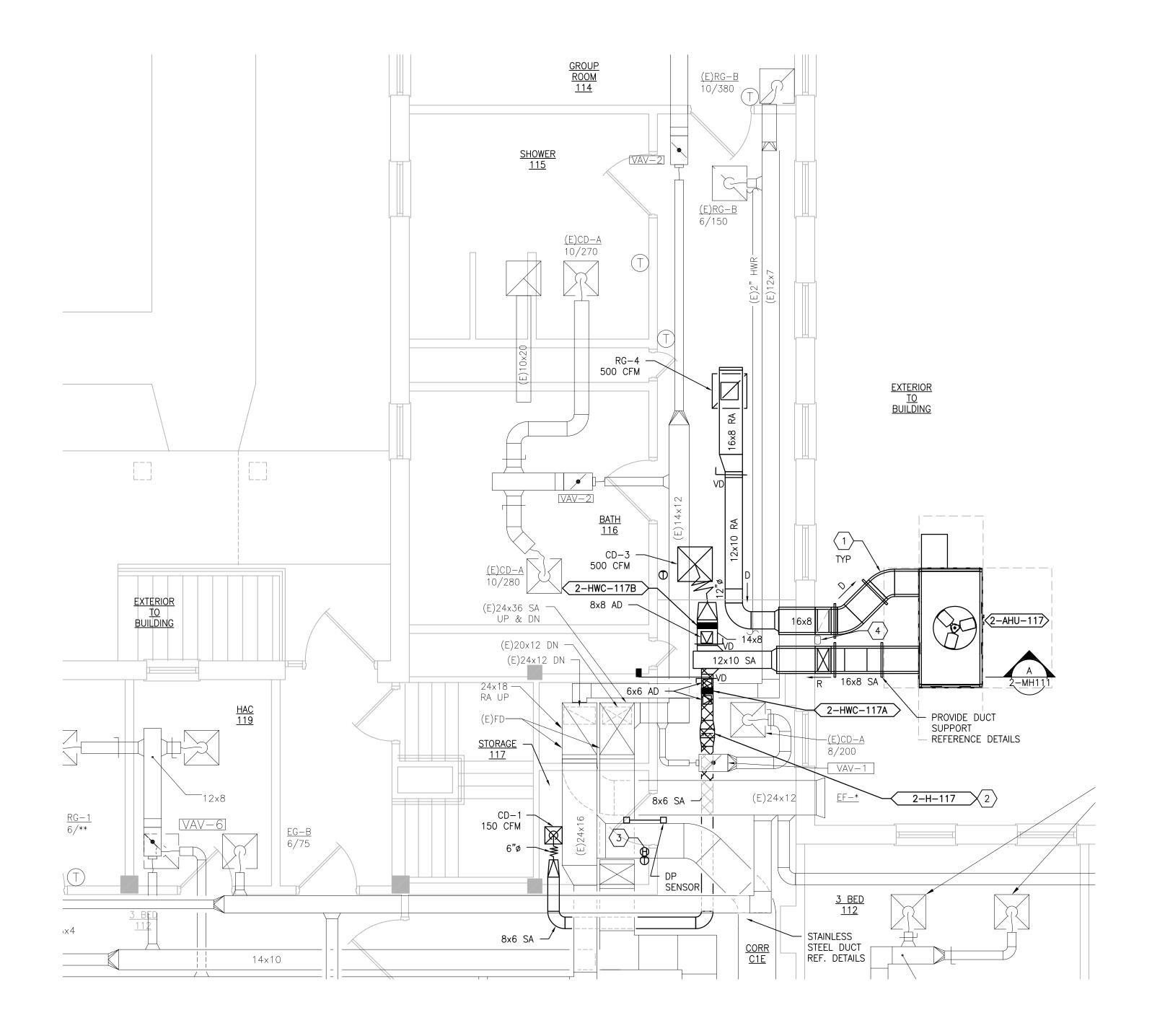




SECTION
SCALE: 1/4" = 1'-0"

PROJECT TEAM

Forest, VA 24551 1-866-267-6839



BUILDING 2 FIRST FLOOR ROOM 117 - NEW WORK

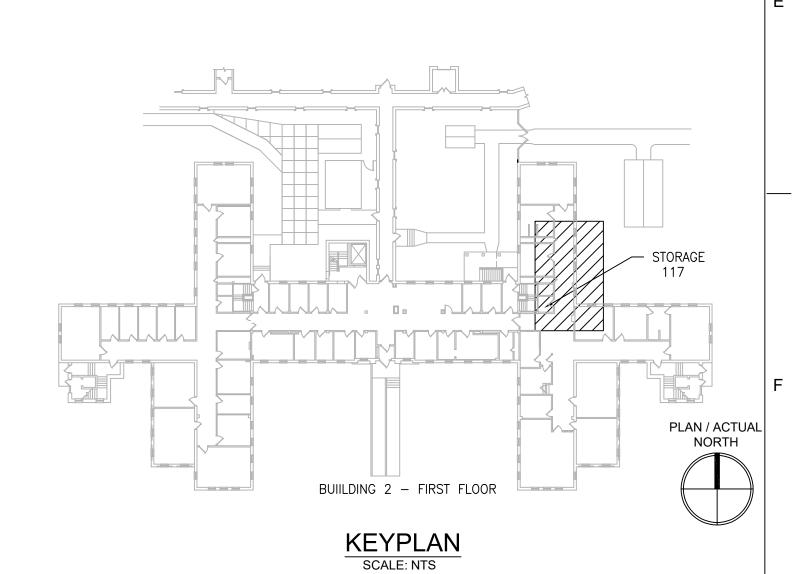
SCALE: 1/4" = 1'-0"

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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- 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. INSULATED DOUBLE WALL DUCT ON THE EXTERIOR OF THE BUILDING WITH DOUBLE WALL FLEXIBLE CONNECTION.
- 2. INSTALL HUMIDIFIER AND DUCT/PIPE AS INDICATED ON THE DRAWING DRAWING 2-MP111 AND 2-M-811. PROVIDE DRAINABLE STAINLESS STEEL DUCTWORK FOR PORTION SHOWN.
- 3. TEMPERATURE AND HUMIDITY SENSOR FURNISHED BY AHU MANUFACTURER.
- 4. RE-ROUTE (E)DOWNSPOUT TO INSTALL NEW DUCTWORK.



Drawing Title Project Number Project Title 656-18-300 **MECHANICAL** 100% CONSTRUCTION UPGRADE SPS HVAC & DOCUMENTS NOT FOR CONSTRUCTION DEMOLITION / NEW WORK PLANS **ENVIRONMENTAL CONTROLS** Building Number 1, 2, 3, 28, 29, 49, 50, 51, FIRST FLOOR - BUILDING 2 111, 116 Approved: Project Director Drawing Number ST. CLOUD VA MEDICAL CENTER, MN **FULLY SPRINKLERED** Checked 2-MH111 Drawn

MEP Engineers + Architects 1173 Research Way 701 Forest Ave Portland, ME 04103 (207) 828-4511



Office of PROFESSIONAL ENGINEER Construction and Facilities Management

U.S. Department of Veterans Affairs

DESCRIPTION DATE VA FORM 08-6231

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

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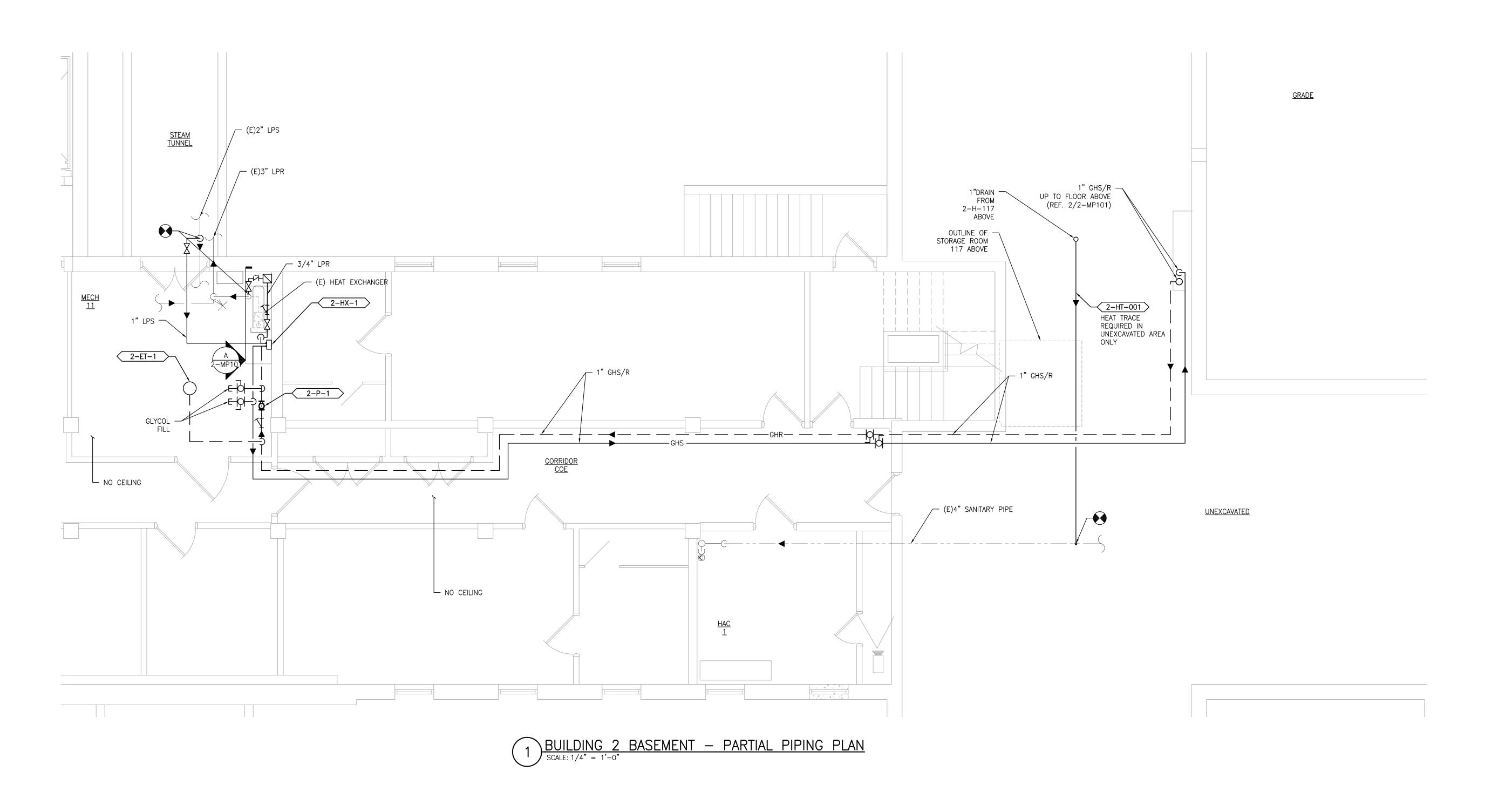
MILLER-REMICK LLC

2022-07-15

PNL MR



SECTION A—A



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.

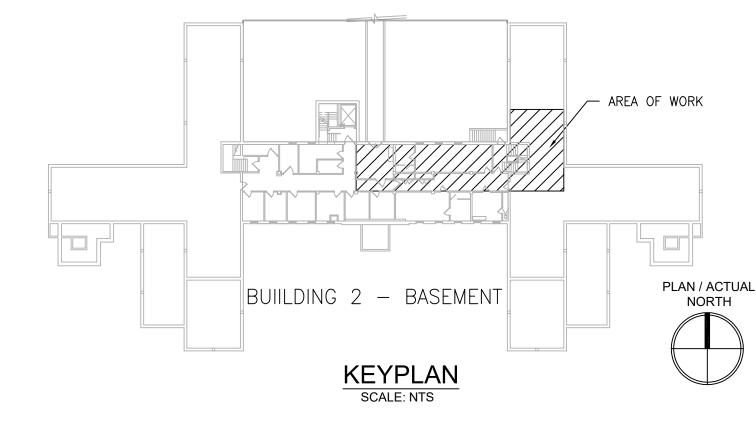
 7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE

AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS

- COMPLETED AS APPROVED BY THE COR.

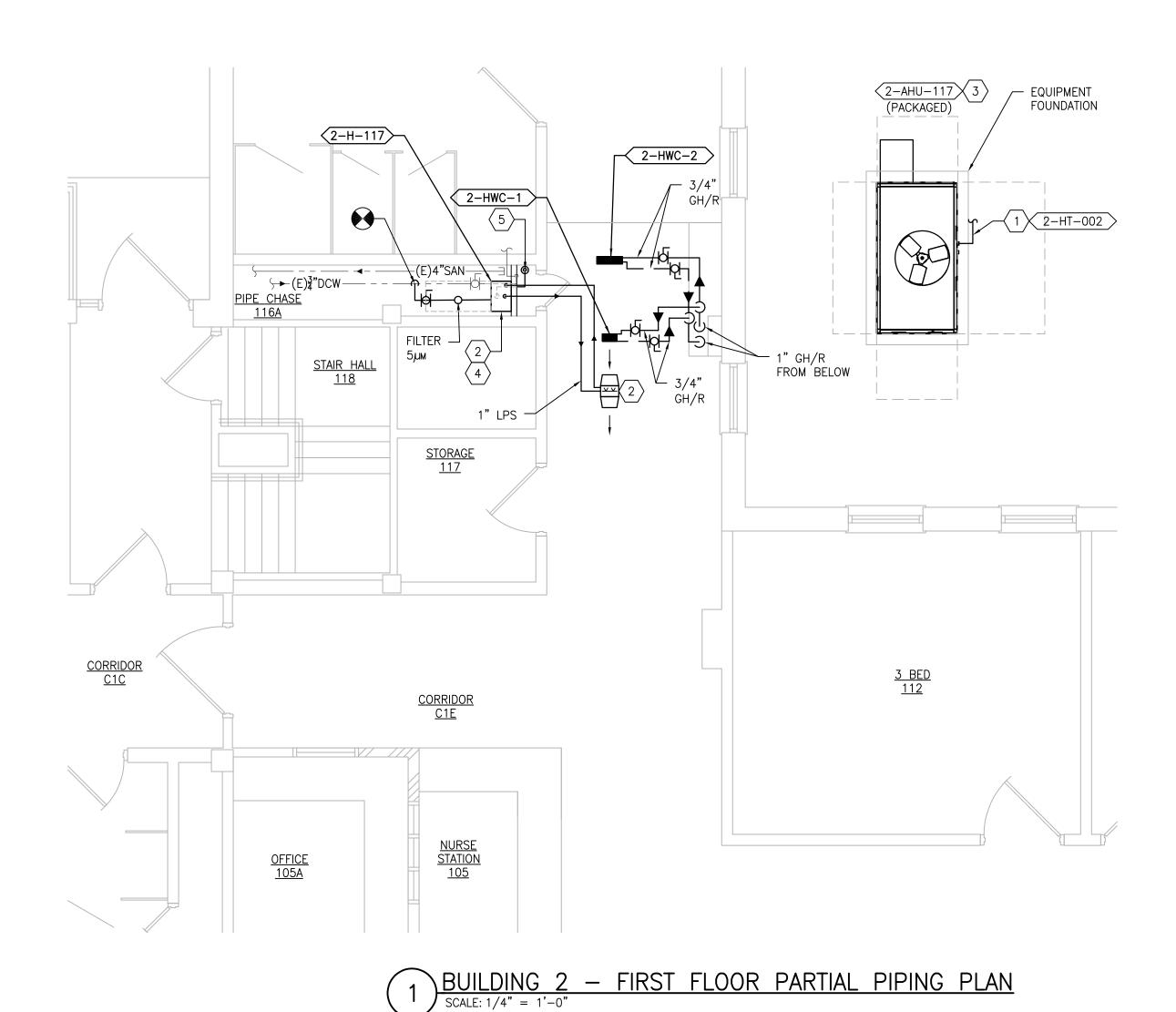
 8. REMOVE AND REPLACE EXISTING CEILINGS REFER TO THE ARCHITECTURAL DRAWING FOR
- ADDITIONAL INFORMATION.

 9. 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.



PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER. Project Title Drawing Title Project Number ENGINEER OF RECORD MILLER-REMICK LLC Office of 656-18-300 **MECHANICAL** 100% CONSTRUCTION UPGRADE SPS HVAC & PROFESSIONAL ENGINEER DOCUMENTS NOT FOR CONSTRUCTION PARTIAL PIPING PLAN Miller-Remick LLC

M.E.P. & Structural Engineering
A Service Disabled Veteran Owned
Small Business Construction **ENVIRONMENTAL CONTROLS** Building Number 1, 2, 3, 28, 29, 49, 50, 51, BASEMENT - BUILDING 2 and Facilities MEP Engineers + Architects 1173 Research Way 111, 116 701 Forest Ave Portland, ME 04103 Management Approved: Project Director Drawing Number Forest, VA 24551 1-866-267-6839 (207) 828-4511 1010 KINGS HIGHWAY SOUTH CHERRY HILL, NEW JERSEY 08034 ST. CLOUD VA MEDICAL CENTER, MN **FULLY SPRINKLERED** PHONE: (856)429-4000 Checked 2-MP101 Drawn U.S. Department of Veterans Affairs FAX: (856)429-5002 PNL MR PROJECT NO: 0376-0011 MR 2022-07-15 DESCRIPTION DATE VA FORM 08-6231



GENERAL SHEET NOTES:

INSTALLATION OF NEW WORK.

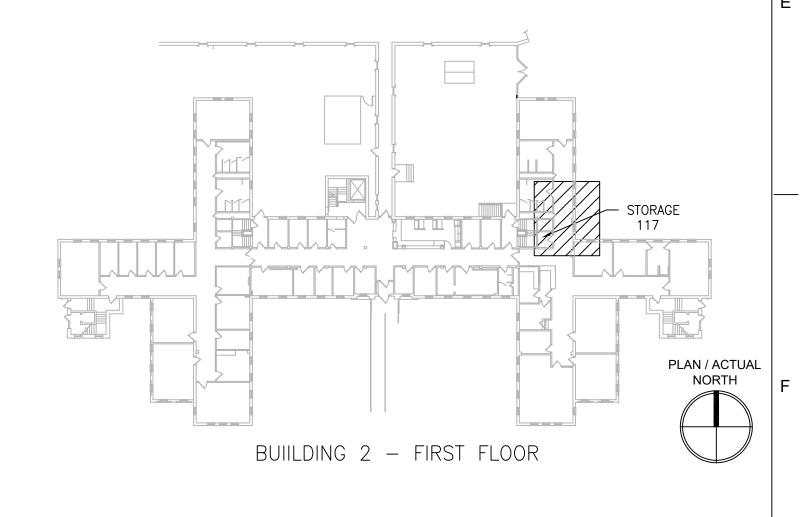
COMPLETED AS APPROVED BY THE COR.

- 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
 - 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
- 8. REMOVE AND REPLACE EXISTING CEILINGS REFER TO THE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION.
- 9. NOT ALL PIPING COMPONENTS ARE SHOWN. REFER TO DETAILS AND SPECIFICATIONS FOR ALL REQUIRED VALVES, UNIONS, GAUGES, STRAINERS ETC.
- 10. ALL PIPING PENETRATIONS SHALL BE CORE DRILLED. REFERENCE STRUCTURAL DRAWINGS FOR DETAILS.
- 11. INSTALLING CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES. THE CONTRACTOR IS TO PROVIDE DETAILED PIPING LAYOUT TO THE MANUFACTURER FOR PIPE SIZING AND OTHER REQUIREMENTS. FINAL SHOP DRAWING APPROVAL IS BY THE ENGINEER. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR LEAK CHECKS, EVACUATION AND INITIAL REFRIGERATION CHARGE. THE INSTALLING CONTRACTOR SHALL PROVIDE EXTRA REFRIGERANT TO THE FACTORY START—UP TECHNICIAN FOR FINAL REFRIGERANT CHARGE. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR WIRING AND COMMUNICATIONS BETWEEN AHU'S AND CONDENSING UNITS.
- 12. CONTRACTOR CANNOT START ANY WORK PER SYSTEM (AHU) UNTIL THE COORDINATED SHOP DRAWINGS AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE ENGINEER.

SHEET KEYNOTES:

- PROVIDE FULL SIZED CONDENSATE DRAIN WITH 4" DEEP TRAP. PROVIDE HEAT TRACE PER SCHEDULE. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- 2. INSTALL HUMIDIFIER PIPE/DUCT AS INDICATED ON THE DETAILS DRAWING M-503/8 AND DRAWING 2-MH111.
- 3. MAINTAIN 6'-0" MINIMUM IN ALL DIRECTIONS FROM THE BUILDING TO PROTECT AGAINST FALLING SNOW AND ICE.
- 4. HANG HUMIDIFIER WITH UNI-STRUT HIGH IN CHASE. ALLOW 3' CLEAR SPACE IN FRONT OF HUMIDIFIER FOR SERVICE CLEARANCE.
- 5. 1" CONDENSATE TO FUNNEL DRAIN WITH AIR GAP DOWN TO FLOOR BELOW. ROUTE PER



KEYPLAN SCALE: NTS

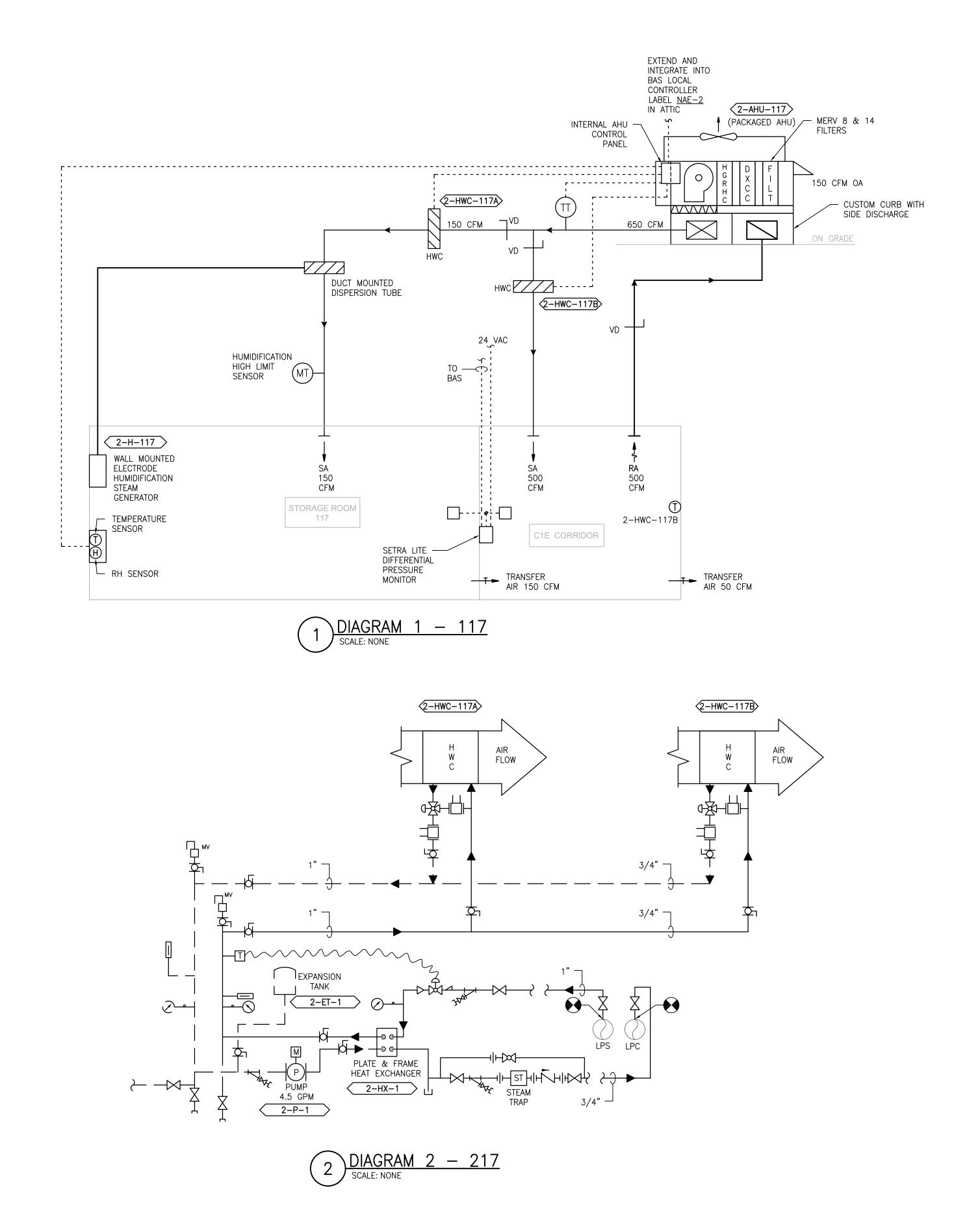
PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER. Project Title Drawing Title Project Number ENGINEER OF RECORD MILLER-REMICK LLC Office of 656-18-300 **MECHANICAL** 100% CONSTRUCTION **UPGRADE SPS HVAC &** PROFESSIONAL ENGINEER DOCUMENTS PARTIAL PIPING PLAN Miller-Remick LLC

M.E.P. & Structural Engineering
A Service Disabled Veteran Owned
Small Business Construction **ENVIRONMENTAL CONTROLS** Building Number 1, 2, 3, 28, 29, 49, 50, 51, NOT FOR CONSTRUCTION FIRST FLOOR - BUILDING 2 and Facilities MEP Engineers + Architects 111, 116 701 Forest Ave Portland, ME 04103 1173 Research Way Management Approved: Project Director Drawing Number Forest, VA 24551 1-866-267-6839 1010 KINGS HIGHWAY SOUTH CHERRY HILL, NEW JERSEY 08034 (207) 828-4511 ST. CLOUD VA MEDICAL CENTER, MN **FULLY SPRINKLERED** PHONE: (856)429-4000 2-MP111 Checked Drawn U.S. Department of Veterans Affairs FAX: (856)429-5002 MR PROJECT NO: 0376-0011 MR PNL 2022-07-15 DESCRIPTION DATE

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3

VA FORM 08-6231



MILLER-REMICK LLC

PROFESSIONAL ENGINEER

5

Office of

Construction

and Facilities

Management

U.S. Department of Veterans Affairs

ENGINEER OF RECORD

701 Forest Ave Portland, ME 04103

(207) 828-4511

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)429-4000

MR PROJECT NO: 0376-0011

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VA FORM 08-6231

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DESCRIPTION

DATE

MEP Engineers + Architects

1173 Research Way

Forest, VA 24551 1-866-267-6839

SEQUENCE OF OPERATION

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.

IN THE OCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

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

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 (ONLY PROVIDED ON SOME UNITS)

ROOM LOCALLY AND AT THE BAS.

HEATING MODE.

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

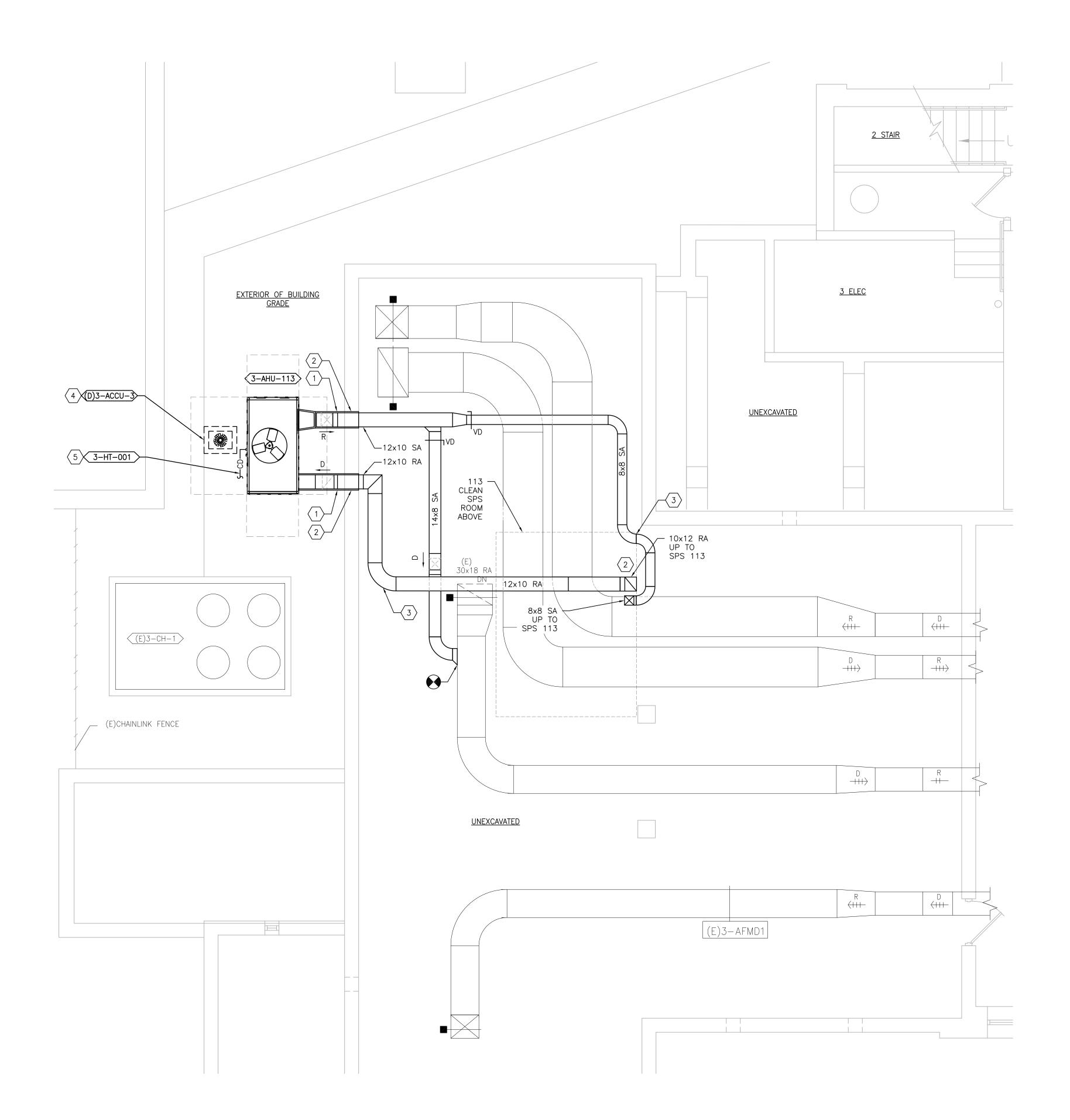
IN THE UNOCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

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

Project Title Drawing Title Project Number 656-18-300 **MECHANICAL** 100% CONSTRUCTION UPGRADE SPS HVAC & DOCUMENTS NOT FOR CONSTRUCTION AIRFLOW CONTROL & PIPING DIAGRAM **ENVIRONMENTAL CONTROLS** Building Number 1, 2, 3, 28, 29, 49, 50, 51, FIRST FLOOR - BUILDING 2 111, 116 Approved: Project Director Drawing Number ST. CLOUD VA MEDICAL CENTER, MN **FULLY SPRINKLERED** Checked 2-M-811 Drawn MR PNL 2022-07-15



1 BUILDING 3 BASEMENT — DEMOLITION / NEW WORK PLAN

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

VA FORM 08-6231

DESCRIPTION

DATE

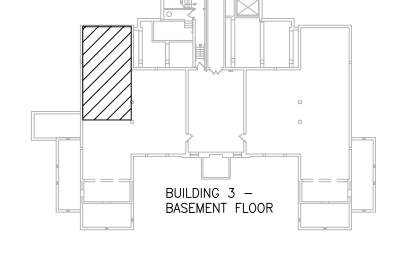
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- AT ALL TIMES. 7. AVOID ALL CEILING OR WALL MOUNTED DEVICES (I.E. SIGNAGE, LIGHT FIXTURE, NURSE CALL) WHEN LOCATING ICRA BARRIERS. WHEN EXISTING DEVICE(S) CANNOT BE AVOIDED, TEMPORARILY RELOCATE THE DEVICE(S) AND REINSTALL AFTER WORK IS COMPLETED AS
- 8. REMOVE AND REPLACE EXISTING CEILINGS REFER TO THE ARRCHITECTURAL 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:

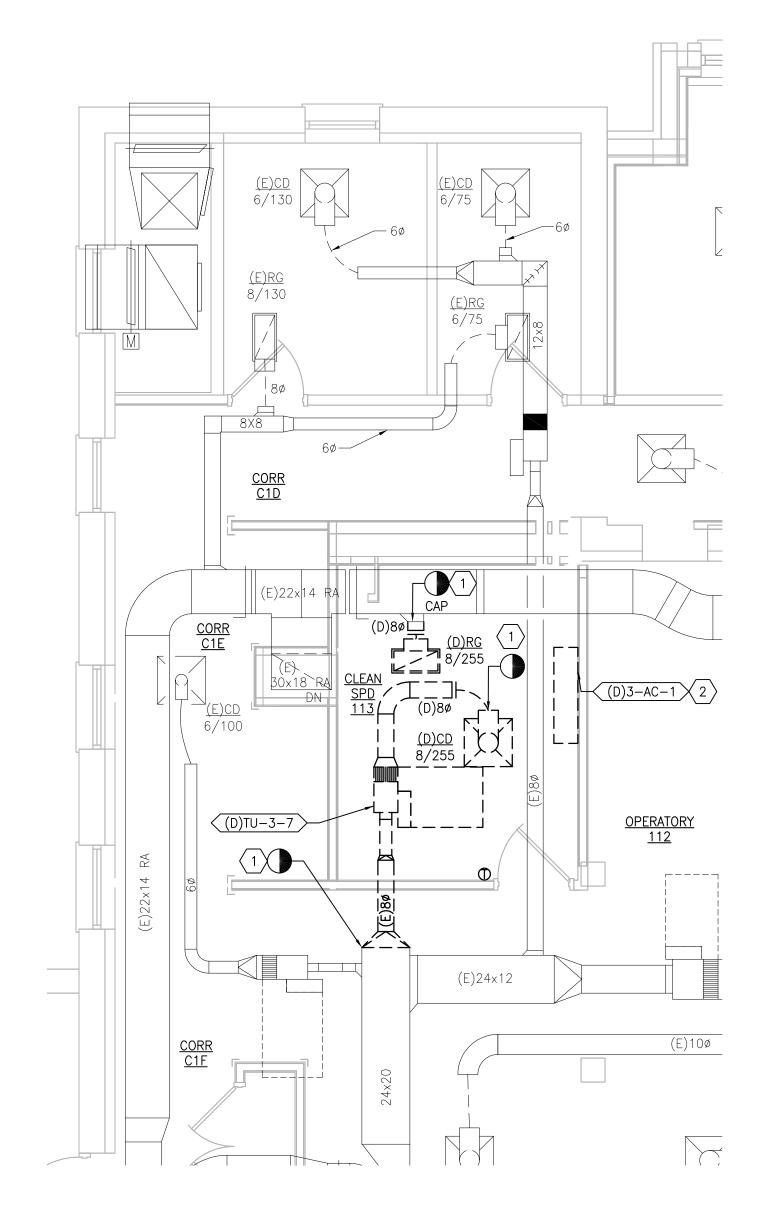
APPROVED BY THE COR.

- 1. EXTERIOR DUCTWORK SHALL BE DOUBLE WALLED INSULATED CONSTRUCTION.
- 2. REFERENCE STRUCTURAL DRAWINGS FOR WALL AND FLOOR PENETRATIONS. 3. OFFSET NEW SUPPLY AND RETURN DUCTWORK AS REQUIRED TO FACILITATE INSTALLATION OF NEW WORK. RELOCATE EXISTING HANGERS AND SUPPORTS AS REQUIRED.
- 4. REMOVE EXISTING CONDENSING UNIT 3-ACCU-3 INCLUDING PIPING, EQUIPMENT PAD,
- HANGERS AND ALL APPURTENANCES.
- 5. PROVIDE FULL SIZED CONDENSATE DRAIN WITH 4" DEEP TRAP. PROVIDE HEAT TRACE PER SCHEDULE. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

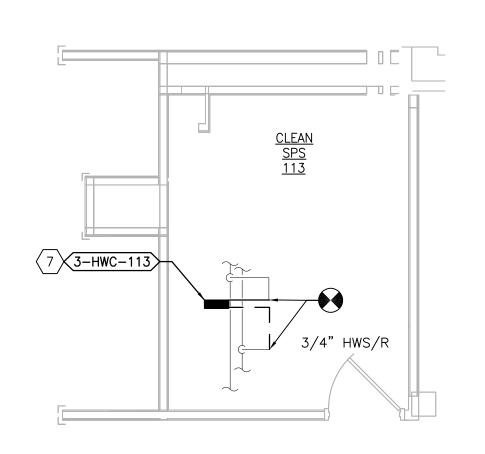


KEYPLAN SCALE: NTS PRINTS OF THIS DRAWING SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER. Drawing Title Project Number Project Title ENGINEER OF RECORD MILLER-REMICK LLC Office of 656-18-300 **MECHANICAL** 100% CONSTRUCTION PROFESSIONAL ENGINEER UPGRADE SPS HVAC & DOCUMENTS NOT FOR CONSTRUCTION DEMOLITION / NEW WORK PLAN Miller-Remick LLC

M.E.P. & Structural Engineering
A Service Disabled Veteran Owned
Small Business Construction **ENVIRONMENTAL CONTROLS** Building Number 1, 2, 3, 28, 29, 49, 50, 51, BASEMENT - BUILDING 3 and Facilities MEP Engineers + Architects 1173 Research Way 111, 116 701 Forest Ave Portland, ME 04103 Approved: Project Director Management Drawing Number Forest, VA 24551 1-866-267-6839 (207) 828-4511 1010 KINGS HIGHWAY SOUTH CHERRY HILL, NEW JERSEY 08034 ST. CLOUD VA MEDICAL CENTER, MN **FULLY SPRINKLERED** PHONE: (856)429-4000 Checked 3-MH101 Drawn U.S. Department of Veterans Affairs FAX: (856)429-5002 PNL MR PROJECT NO: 0376-0011 MR 2022-07-15

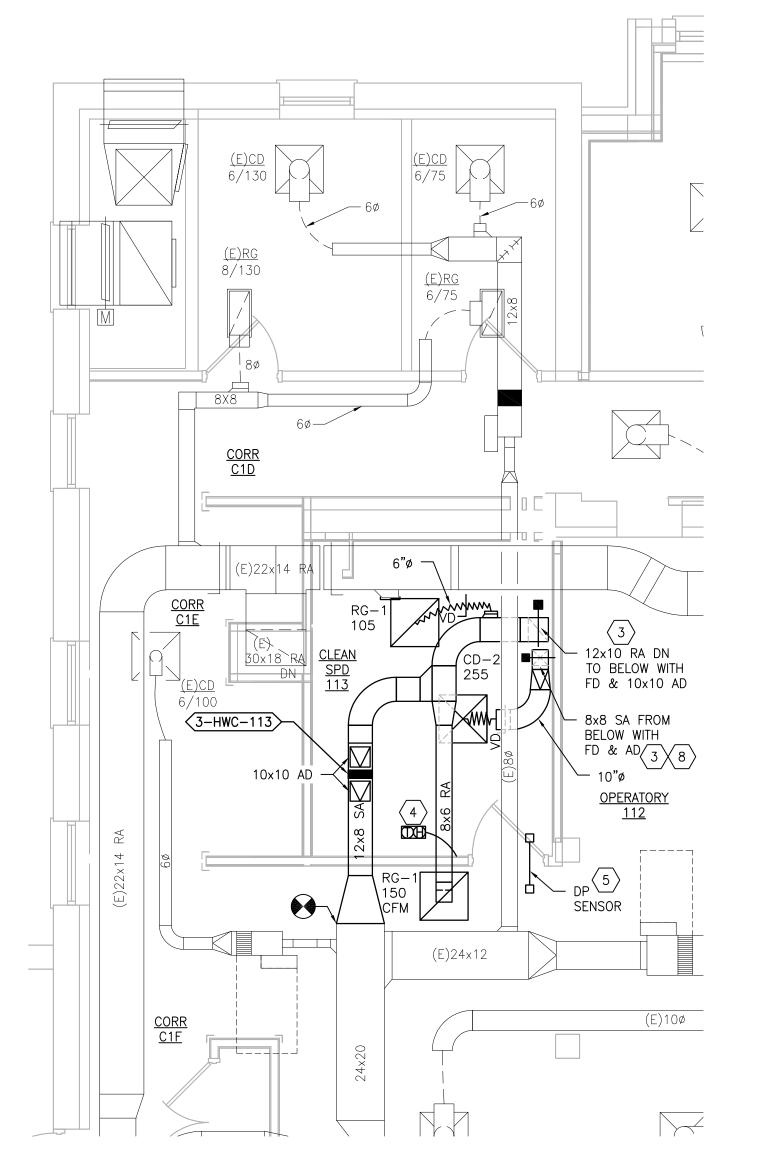






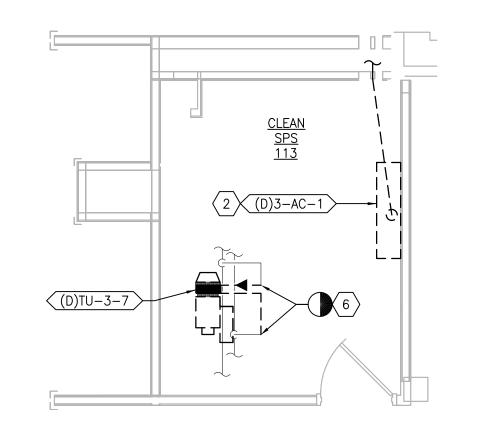
BUILDING 3 FIRST FLOOR ROOM 113 -PIPING NEW WORK PLAN

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



BUILDING 3 FIRST FLOOR ROOM 113 -2 DUCTWORK NEW WORK PLAN

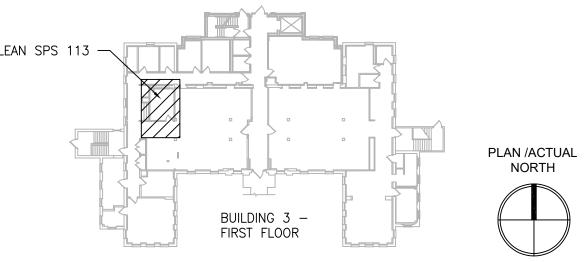
SCALE: 1/4" = 1'-0"



BUILDING 3 FIRST FLOOR ROOM 113 -PIPING DEMOLITION PLAN

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

VA FORM 08-6231



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KEYPLAN

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GENERAL SHEET NOTES:

APPLICABLE ABATEMENT REPORT.

- 1. REFERENCE SPECIFICATION 02 82 13.13 FOR ABATEMENT WORK. THE VA TO PROVIDE
- 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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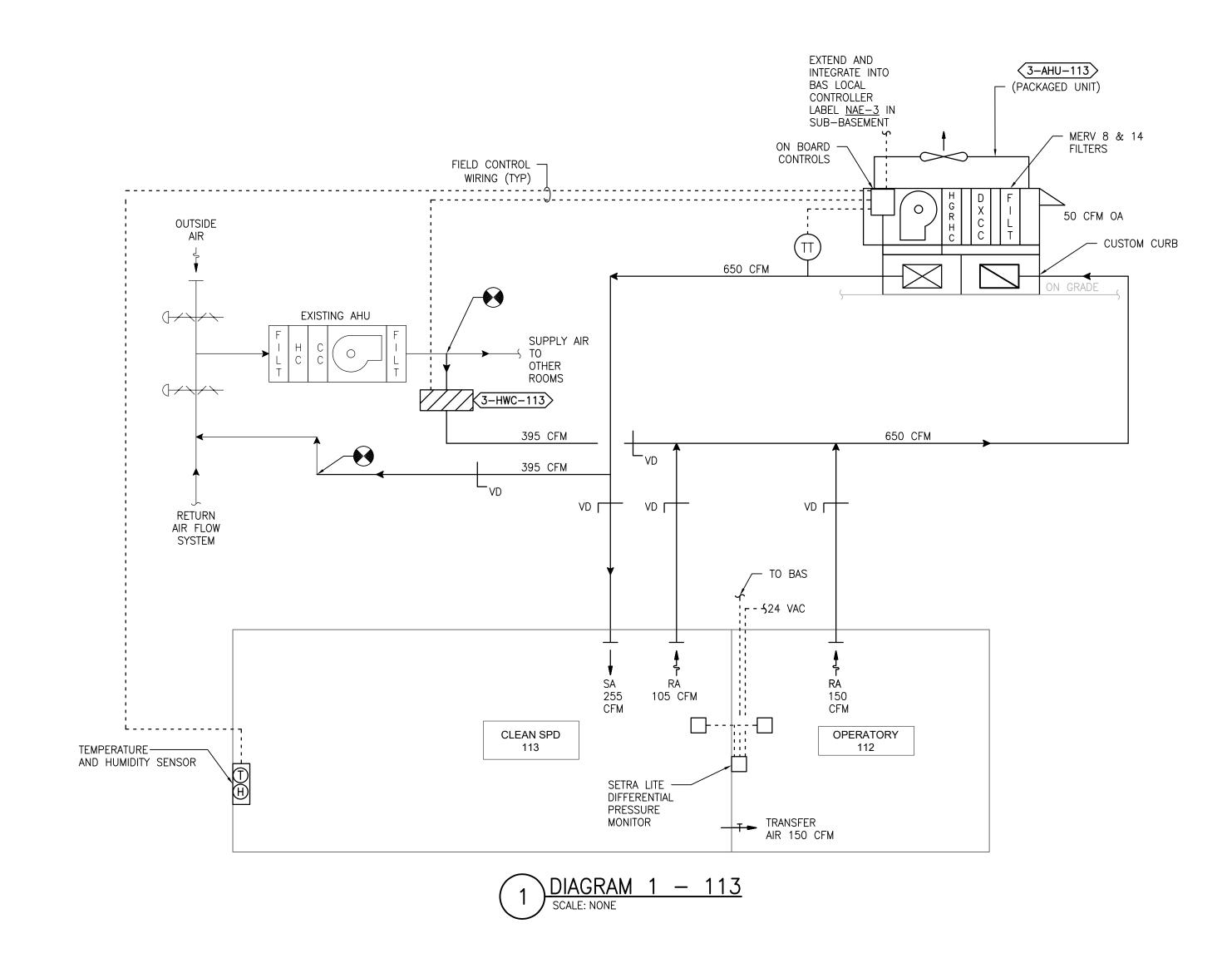
SHEET KEYNOTES:

ADDITIONAL INFORMATION.

- 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. REMOVE EXISTING WALL MOUNT AIR CONDITIONER (3-AC-1) AND ASSOCIATED CONDENSING UNIT (3-ACCU-1) AND TURN OVER TO VA. DEMOLISH ALL APPURTENANCES INCLUDING PIPING, WIRING HANGERS ETC. PATCH AND PAINT WALL TO MATCH EXISTING CONDITIONS.
- 3. REFERENCE STRUCTURAL DRAWINGS FOR WALL AND FLOOR PENETRATIONS.
- 4. TEMPERATURE AND HUMIDITY SENSOR FURNISHED BY AHU MANUFACTURER. 5. INSTALL DIFFERENTIAL PRESSURE SENSOR THROUGH THE WALL, CENTERED ABOVE THE
- DOOR. INSTALL ROOM PRESSURE MONITOR OUTSIDE ROOM NEAR ROOM NAME AND
- 6. DEMOLISH (E)3/4" HWS&R PIPING INCLUDING CONTROL VALVE, STRAINER AND COMPONENTS FOR DEMOLISHED TERMINAL UNIT.
- 7. CONNECT (N)3-HWC-113 TO (E)3/4"PIPING. REFERENCE DETAILS FOR REQUIRED PIPING COMPONENTS NOT SHOWN.

8. INCREASE DUCT SIZE TO ALLOW INSTALLATION OF 10x10 ACCESS DOOR. REFER TO

DRAWING M-501 DETAIL 7 FOR MORE INFORMATION.



SEQUENCE OF OPERATION

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.

IN THE OCCUPIED MODE THE SUPPLY FAN SHALL RUN CONTINUOUSLY.

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

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 (ONLY PROVIDED ON SOME UNITS)

ROOM LOCALLY AND AT THE BAS.

HEATING MODE.

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

Project Title Project Number Drawing Title 656-18-300 **MECHANICAL** 100% CONSTRUCTION UPGRADE SPS HVAC & DOCUMENTS NOT FOR CONSTRUCTION AIRFLOW CONTROL DIAGRAM **ENVIRONMENTAL CONTROLS** Building Number 1, 2, 3, 28, 29, 49, 50, 51, BUILDING 3 111, 116 Approved: Project Director Drawing Number ST. CLOUD VA MEDICAL CENTER, MN **FULLY SPRINKLERED** Checked 3-M-811 Drawn PNL MR 2022-07-15

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

VA FORM 08-6231

DESCRIPTION

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ENGINEER OF RECORD

Construction and Facilities Management

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PROFESSIONAL ENGINEER

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