

MECHANICAL ABBREVIATIONS

Table of mechanical abbreviations including AD (Area Drain), A.F.F. (Above Finished Floor), AHU (Air Handling Unit), ANB (Acid Neutralizing Basin), etc.

PLUMBING

Table of plumbing symbols including AV (Acid Vent Below Grade), AW (Acid Waste Below Grade), DI (Deionized Water), CW (Clear Water), etc.

PLUMBING / PIPING

Table of plumbing/piping symbols including BF (Boiler Feed), CWS (Chilled Water Supply), CWIR (Chilled Water Return), etc.

MECHANICAL SYMBOLS LEGEND

Main legend table with columns for DUCTWORK, SUPPLY AIR, RETURN AIR, EXHAUST AIR, and CONTROLS, listing various mechanical components and their symbols.

MECHANICAL SHEET LIST

Table listing sheet numbers and titles, including M000 (Mechanical Title Sheet), MD101 (Basement HVAC Demolition Plan), etc.

Vertical scale markers on the left side of the page, ranging from 0 to 10 feet, with corresponding grid lines.

Vertical text on the left side: 9/15/2020 11:41:34 AM, C:\Bent\Projects\VA - St. Cloud BLDG 28 - 1st Floor_R10_ghibolmes7524.rvt

Revision table with columns: Revision#, Description, Date. Contains one revision entry.

CONSULTANT logo for DUNHAM and AST, including address and contact information.

ARCHITECT/ENGINEER OF RECORD logo for ANDERSON, including address and contact information.

STAMP section with a signature line for Jason R. Gottwalt, P.E., dated 05/22/2020.

Project information section including Project Title (Renovate Building 28), Location (Saint Cloud, MN), and Drawing Title (Mechanical Title Sheet).

Project Number (656-19-306), Building Number (28), and Drawing Number (M000) section.

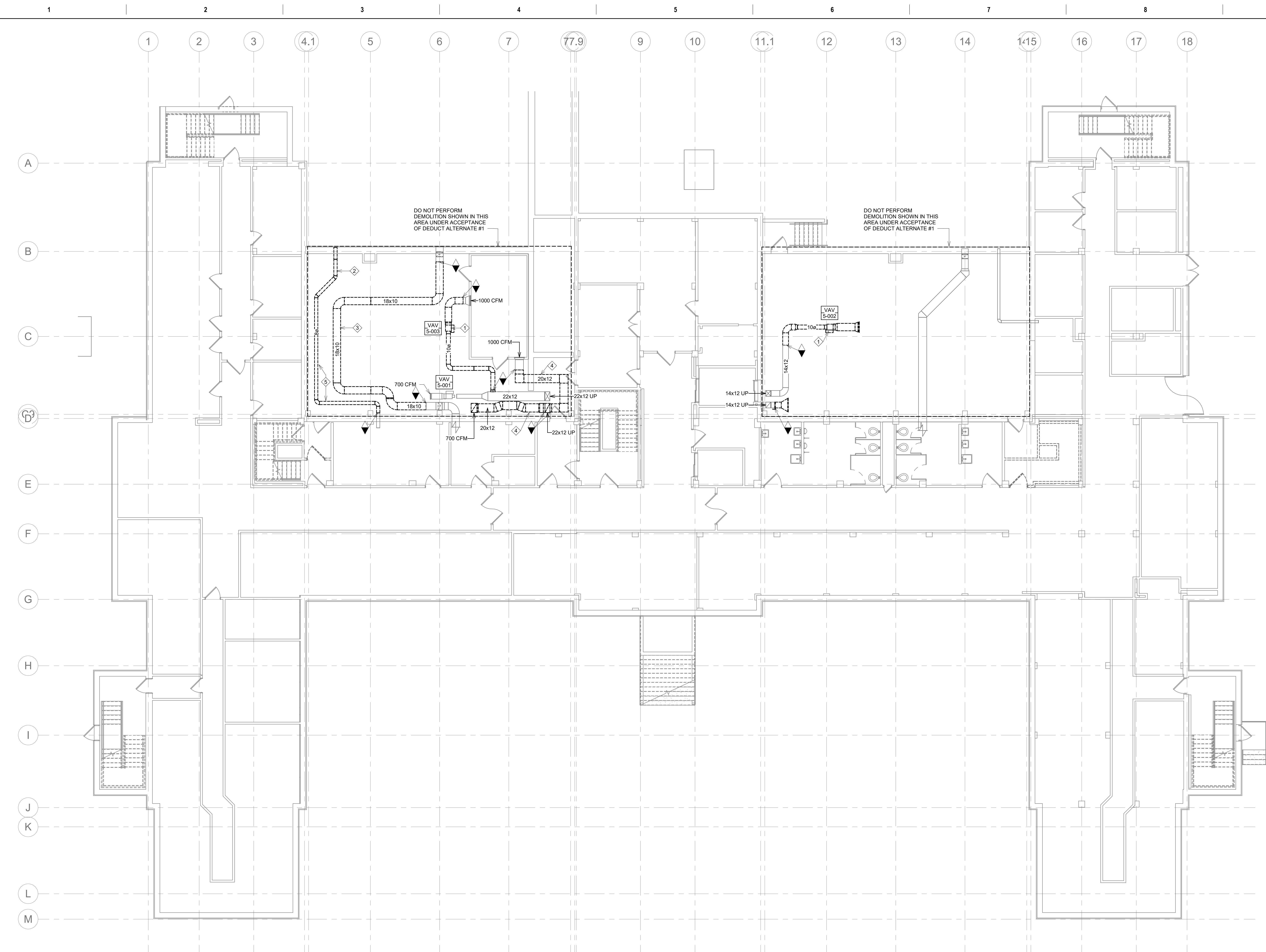
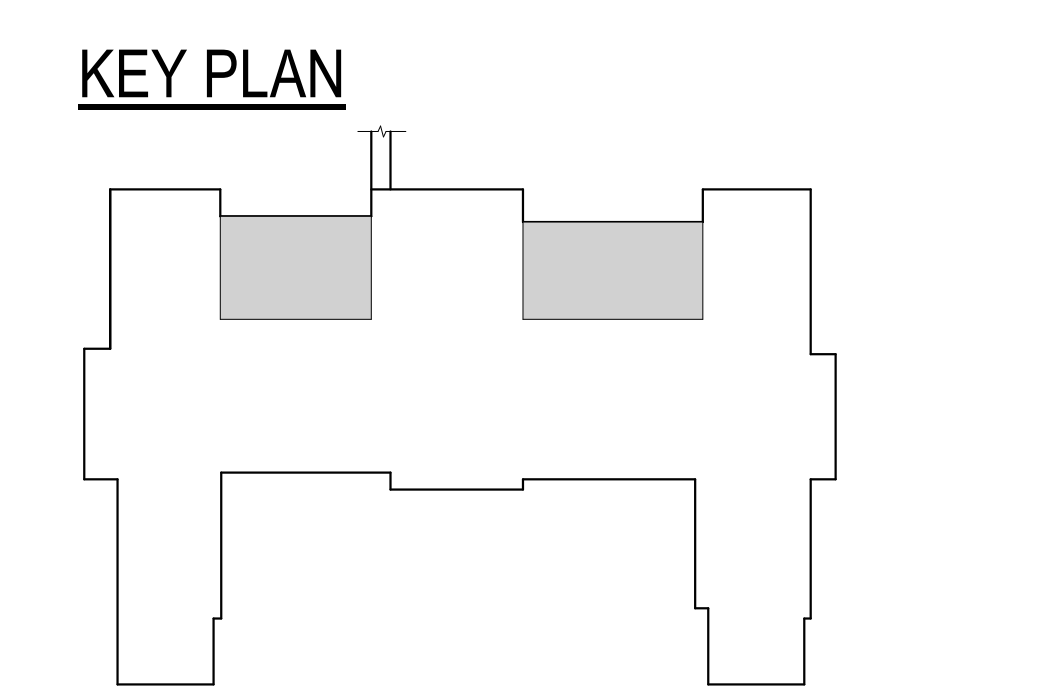
Logos for VA (Veterans Affairs) and U.S. Department of Veterans Affairs, including the text 'Veterans Health Administration St. Cloud VA Health Care System'.

GENERAL NOTES:

- MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REVIEW ACCESSIBILITY TO AREAS OUTSIDE THE CONSTRUCTION LIMITS TO DETERMINE APPROXIMATE AMOUNT OF OVERTIME REQUIRED TO PERFORM ALL MECHANICAL WORK INDICATED. COORDINATION OF SCHEDULES WITH ADJACENT DEPARTMENTS AND CLEANING OF ALL DEBRIS AFTER EACH SHIFT SHOULD BE ASSUMED IN THE BASE BID.
- ANY MAJOR VENTILATION OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.
- WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.
- ALL EXISTING RETURN/EXHAUST DUCTWORK NOT TEMPORARILY CAPPED SHALL BE PROTECTED WITH REMOVABLE FILTER MEDIA TO PROTECT EXISTING DUCT SYSTEMS FROM CONSTRUCTION DEBRIS. ALL NEW DUCTWORK SHALL BE PROTECTED AS REQUIRED AND CLEANED PRIOR TO START-UP. IF CONSTRUCTION DEBRIS IS FOUND INSIDE UNPROTECTED DUCTWORK THEN DUCT CLEANING OF THE ENTIRE SYSTEM SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.

KEY NOTES:

- REMOVE VAV BOX AND STORE FOR RELOCATION. DEMOLISH ASSOCIATED DUCTWORK BETWEEN POINTS OF DISCONNECT.
- DEMOLISH OUTSIDE AIR DUCT BACK TO POINT OF DISCONNECT. PROTECT EXISTING DUCTWORK FOR CONNECTION TO NEW.
- DEMOLISH EXHAUST DUCT BETWEEN POINTS OF DISCONNECTION. PROTECT EXISTING DUCTWORK FOR CONNECTION TO NEW.
- DEMOLISH RETURN DUCT BACK TO POINT OF DISCONNECT IN THE VERTICAL. PROTECT EXISTING DUCTWORK FOR CONNECTION TO NEW.
- CONTRACTOR TO INSTALL TEMPORARY PROVISIONS TO KEEP DISCONNECTED OUTDOOR AIR INTAKE DUCT ACTIVE AND CONNECTED DURING DEMOLITION AND REROUTING OF DUCT.



1 BASEMENT HVAC DEMOLITION PLAN
1/8" = 1'-0"

Revision#	Description	Date:

CONSULTANT

DUNHAM

DUNHAM
50 South Sixth Street / Suite 1100
Minneapolis, Minnesota 55402-1540
Phone: 612.465.7550 Fax: 612.465.7551
www.dunhaminc.com
mechanical + electrical consulting engineering
0420950-007-00

ARCHITECT/ENGINEER OF RECORD

ANDERSON

13605 1st Ave. N. #100 Plymouth, MN 55441
P 763.412.4000 | F 763.412.4090 | ae-mn.com
Anderson Engineering of Minnesota, LLC | Proj # Project Number

STAMP

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Name: Jason R. Gottwalt, P.E.
Date: 05/22/2020 Reg. No. 41360

Project Title RENOVATE BUILDING 28 FIRST FLOOR EAST RTTP			Project Number 656-19-306		
Location SAINT CLOUD, MN			Building Number 28		
Phase CONSTRUCTION DOCUMENTS			Drawing Number MD101		
Drawing Title BASEMENT HVAC DEMOLITION PLAN					
Issue Date MAY 22, 2020	Checked JRG	Drawn TNH			

VA

U.S. Department of Veterans Affairs

Veterans Health Administration
St. Cloud VA Health Care System

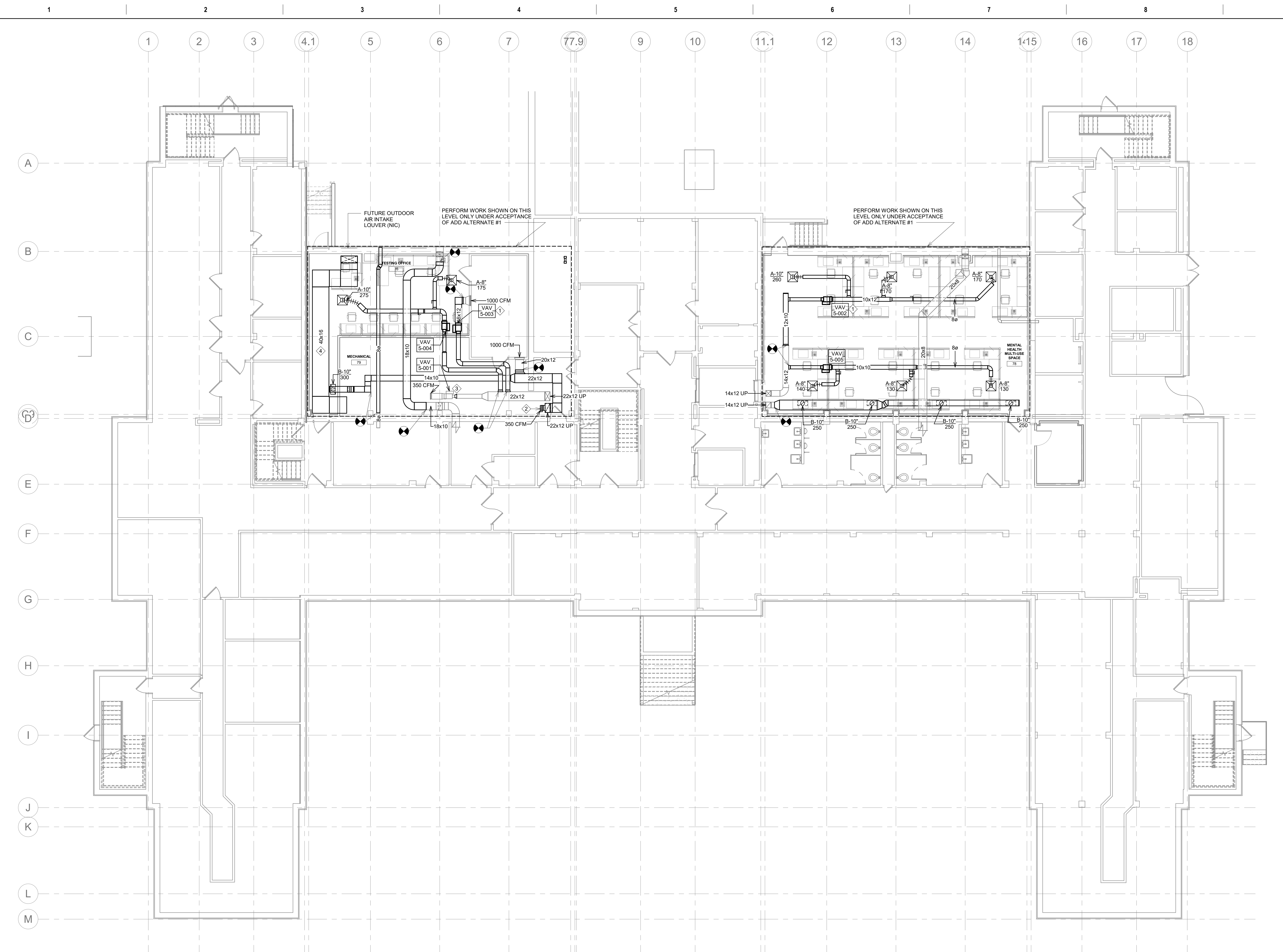
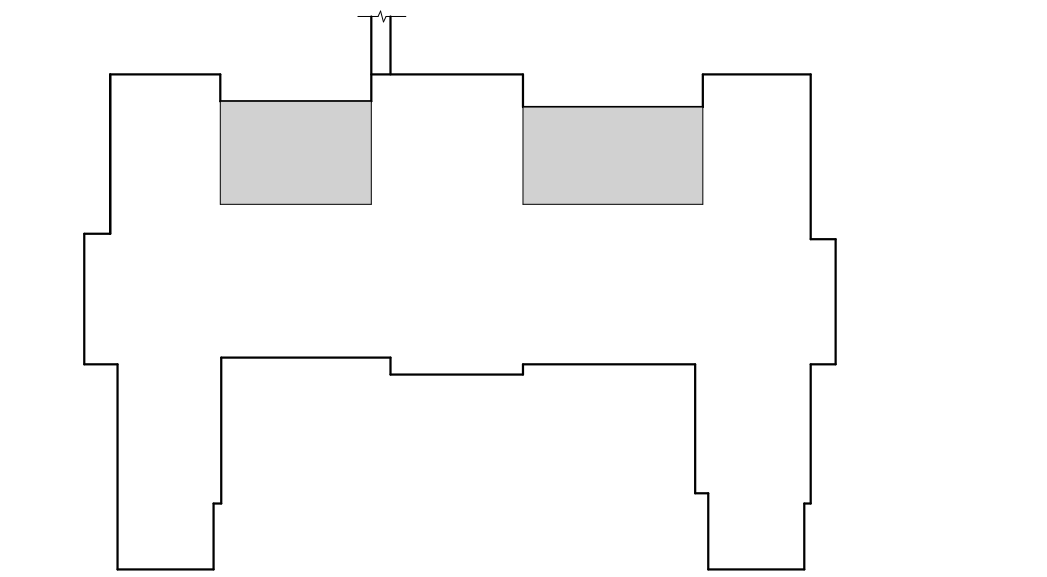
GENERAL NOTES:

- A. ANY MAJOR VENTILATION OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.
- B. COORDINATE ALL NEW DUCTWORK ROUTING WITH ALL OTHER TRADES TO INSURE ADEQUATE CLEARANCES FOR PLUMBING, ELECTRICAL CONDUIT, STRUCTURAL SUPPORTS, PIPING, ETC. ANY UNAVOIDABLE CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OF RECORD. PROVIDE ALL OFFSETS AND TRANSITIONS AS REQUIRED FOR A CLEAN INSTALLATION.
- C. SUPPORT ALL DUCTWORK DIRECTLY TO STRUCTURE. DO NOT SUPPORT ANY DUCTS FROM DUCTWORK, CONDUIT, OR OTHER PIPING ENCOUNTERED.
- D. WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.
- E. ALL EXISTING DUCTWORK THROUGH NEW FIRE RATED WALLS SHALL BE ADEQUATELY FIRE SEALED AS REQUIRED.
- F. ALL EXISTING RETURN/EXHAUST DUCTWORK NOT TEMPORARILY CAPPED SHALL BE PROTECTED WITH REMOVABLE FILTER MEDIA TO PROTECT EXISTING DUCT SYSTEMS FROM CONSTRUCTION DEBRIS. ALL NEW DUCTWORK SHALL BE PROTECTED AS REQUIRED AND CLEANED PRIOR TO START-UP. IF CONSTRUCTION DEBRIS IS FOUND INSIDE UNPROTECTED DUCTWORK THEN DUCT CLEANING OF THE ENTIRE SYSTEM SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.
- G. UNLESS NOTED OTHERWISE, ALL TAKE-OFFS TO VAV BOXES SHALL BE THE SAME SIZE AS THE VAV INLET CONNECTION.
- H. UNLESS NOTED OTHERWISE, ALL TAKE-OFFS TO DIFFUSERS, GRILLES AND REGISTERS SHALL BE THE SAME SIZE AS THE DIFFUSER NECK OR GRILLE/REGISTER CONNECTION.
- I. ALL NEW FIRE, SMOKE, AND COMBINATION FIRE/SMOKE DAMPERS INSTALLED IN SHAFT WALLS SHALL BE INSTALLED TO ALLOW FOR SERVICE OF THEIR FUSIBLE LINKACTUATOR PER FACILITY STANDARDS. ANY CONFLICTS WHICH WILL PREVENT ACCESS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER OF RECORD.
- K. MECHANICAL CONTRACTOR SHALL REVIEW ARCHITECTURAL CEILING PLANS FOR LOCATIONS OF GYPSUM BOARD. DO NOT INSTALL VALVES, VAV BOXES, SENSOR, OR DAMPERS ABOVE GYPSUM BOARD CEILINGS.
- L. MECHANICAL CONTRACTOR SHALL REVIEW ARCHITECTURAL CEILING PLANS FOR LOCATIONS OF GYPSUM BOARD CEILINGS AND BULKHEADS. ADJUST PIPE AND DUCT THAT RUN PARALLEL TO BULKHEAD FRAMING TO BE EITHER OUTSIDE OF FRAMING OR BETWEEN FRAMING. MECHANICAL CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR FOR MODIFIED BULKHEAD FRAMING WHERE EXISTING AND NEW PIPING AND DUCT WILL CAUSE INTERFERENCE.
- M. PROVIDE EACH NEW SUPPLY DIFFUSER/GRILLES WITH A SINGLE BLADE TAKE-OFF DAMPER WITH QUADRANT LOCKING DEVICE. PERFORM ALL BALANCING OF NEW DIFFUSERS THROUGH THOSE TAKE-OFF DAMPERS. ALL NEW RETURN/EXHAUST GRILLES WILL BE PROVIDED WITH OPPOSED BLADE BALANCING DAMPERS POSITIONED UPSTREAM PAST A MINIMUM OF ONE TRANSITION FOR SOUND ABATEMENT. BALANCING ANY DIFFUSERS/GRILLES USING INTEGRAL DAMPERS WILL NOT BE AN APPROVED METHOD OF BALANCING.

KEY NOTES:

- ◊ RELOCATED VAV BOX.
- ◊ 12/12 OPEN ENDED RETURN DUCT WITH SCREEN. BALANCE TO CFM SHOWN.
- ◊ EXISTING VAV TO REMAIN. RELOCATE AND CONFIGURE THERMOSTAT/CONTROLS WITHIN UNFINISHED MECHANICAL ROOM.
- ◊ INSTALL INSULATED DUCT FOR FUTURE OUTDOOR AIR INTAKE TO LOWER LEVEL MECHANICAL ROOM. TEMPORARILY CAP DUCT ON BOTH ENDS TO KEEP CLEAN AND LABEL AS FUTURE OUTTAKE. REMOVE OR RELOCATE ALL EXISTING DUCTWORK AND PIPING TO ACCOMMODATE SPACE REQUIRED FOR INSTALLATION OF DUCT UP TIGHT TO STRUCTURE. DUCT TRANSITION DOWN TO WINDOW, AND INSTALLATION OF ASSOCIATED LOUVER, ARE NOT INCLUDED IN THIS CONTRACT (FUTURE).

KEY PLAN



1 BASEMENT HVAC FLOOR PLAN
1/8" = 1'-0"

Revision#	Description	Date:

CONSULTANT

DUNHAM

50 South Sixth Street / Suite 1100
 Minneapolis, Minnesota 55402-1540
 Phone: 612.465.7550 Fax: 612.465.7551
 www.dunhaminc.com
 mechanical + electrical consulting engineering
 0420950-007-00

ARCHITECT/ENGINEER OF RECORD

ANDERSON

13605 1st Ave. N. #100 Plymouth, MN 55441
 P 763.412.4000 | F 763.412.4090 | ae-mn.com
 Anderson Engineering of Minnesota, LLC | Proj # Project Number

STAMP

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Name: Jason R. Gottwalt, P.E.
 Date: 05/22/2020 Reg. No. 41360

Project Title
 RENOVATE BUILDING 28
 FIRST FLOOR EAST RTTP

Location
 SAINT CLOUD, MN

Phase
 CONSTRUCTION DOCUMENTS

Drawing Title
 BASEMENT HVAC FLOOR PLAN

Issue Date
 MAY 22, 2020

Checked
 JRG

Drawn
 TNH

Project Number
 656-19-306

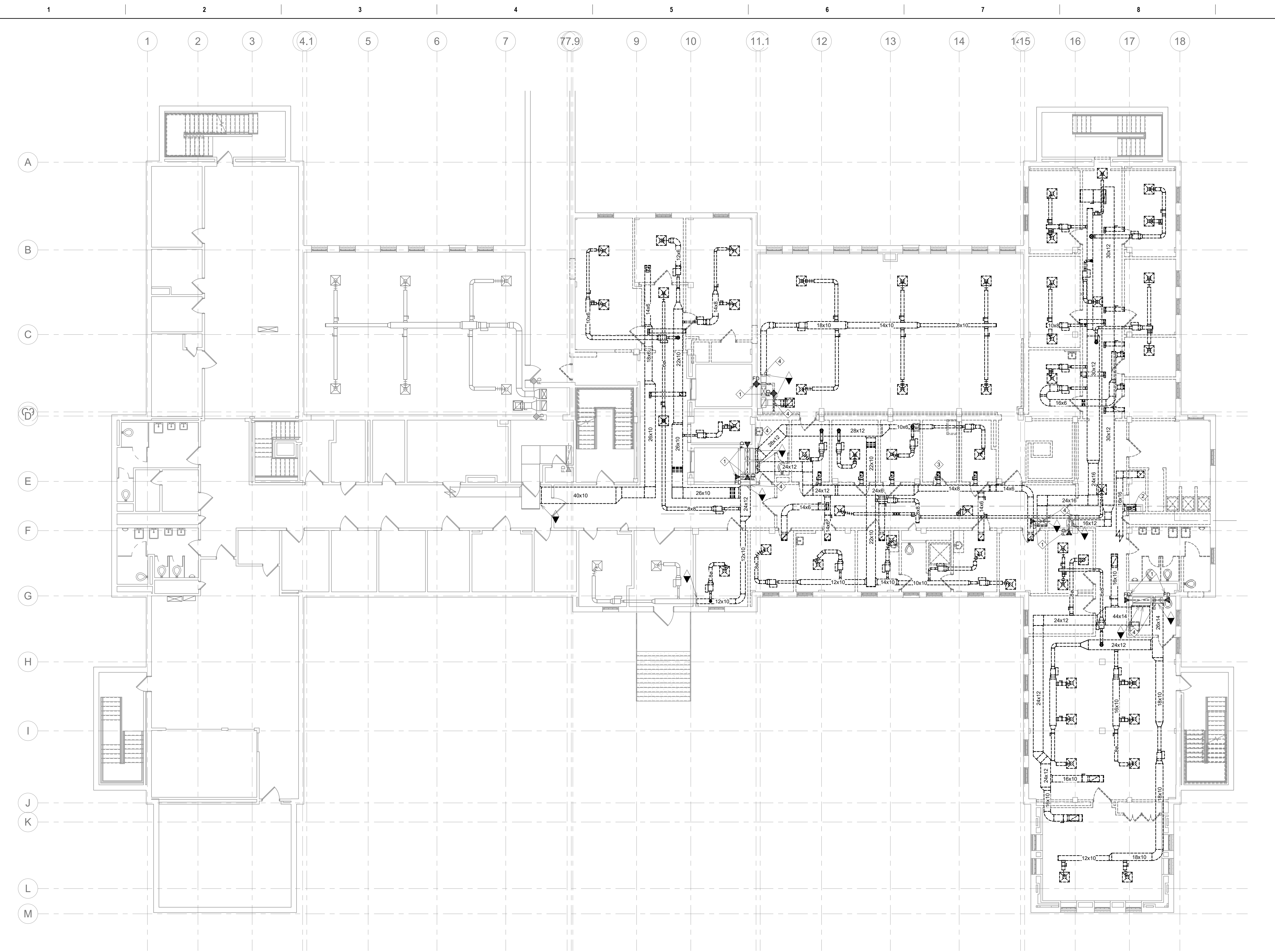
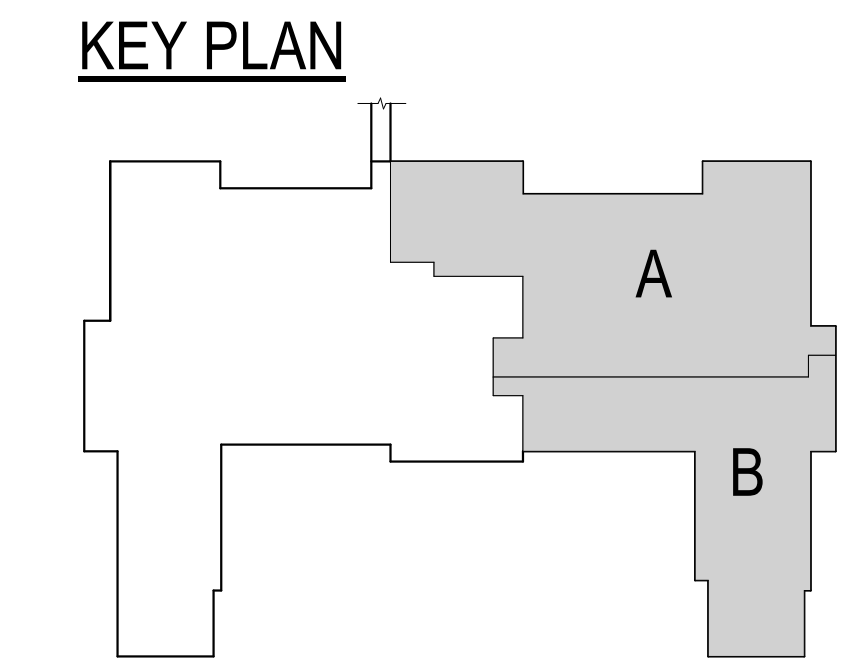
Building Number
 28

Drawing Number
 MH101

U.S. Department of Veterans Affairs
 Veterans Health Administration
 St. Cloud VA Health Care System

- GENERAL NOTES:**
- MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REVIEW ACCESSIBILITY TO AREAS OUTSIDE THE CONSTRUCTION LIMITS TO DETERMINE APPROXIMATE AMOUNT OF OVERTIME REQUIRED TO PERFORM ALL MECHANICAL WORK INDICATED. COORDINATION OF SCHEDULES WITH ADJACENT DEPARTMENTS AND CLEANING OF ALL DEBRIS AFTER EACH SHIFT SHOULD BE ASSUMED IN THE BASE BID.
 - ANY MAJOR VENTILATION OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.
 - WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.
 - ALL EXISTING RETURN/EXHAUST DUCTWORK NOT TEMPORARILY CAPPED SHALL BE PROTECTED WITH REMOVABLE FILTER MEDIA TO PROTECT EXISTING DUCT SYSTEMS FROM CONSTRUCTION DEBRIS. ALL NEW DUCTWORK SHALL BE PROTECTED AS REQUIRED AND CLEANED PRIOR TO START-UP. IF CONSTRUCTION DEBRIS IS FOUND INSIDE UNPROTECTED DUCTWORK THEN DUCT CLEANING OF THE ENTIRE SYSTEM SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.

- KEY NOTES:**
- DEMOLISH FIRE DAMPERS. SEE HVAC PLAN FOR REINSTALL.
 - DEMOLISH 18x6 EXHAUST DUCT UP AND CAP AT SECOND FLOOR SLAB.
 - DEMOLISH ALL EXISTING SUPPLY, RETURN, AND EXHAUST DUCTWORK INDICATED AND ASSOCIATED VAV BOXES, HANGER SUPPORTS, INSULATION, DAMPERS, FLEXIBLE DUCTS, DIFFUSERS AND GRILLES BACK TO POINTS OF DISCONNECT WITHIN THE CONSTRUCTION AREA. NOTE THAT MANY AREAS HAVE A PLASTER CEILING ABOVE LAY-IN TILE CEILING THAT SHOULD ALSO BE FULLY DEMOLISHED, REFER TO ARCHITECTURAL DEMOLITION PLANS.
 - PROTECT EXISTING DUCTWORK FOR CONNECTION TO NEW.



1 FIRST FLOOR HVAC DEMOLITION PLAN
1/8" = 1'-0"

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

Revision#	Description	Date:

CONSULTANT

DUNHAM

DUNHAM
50 South Sixth Street / Suite 1100
Minneapolis, Minnesota 55402-1540
PHONE: 612.465.7550 FAX: 612.465.7551
www.dunhaminc.com
mechanical + electrical consulting engineering
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Name: Jason R. Gottwalt, P.E.
Date: 05/22/2020 Reg. No. 41360

Project Title
RENOVATE BUILDING 28
FIRST FLOOR EAST RTTP

Location
SAINT CLOUD, MN

Phase
CONSTRUCTION DOCUMENTS

Drawing Title
FIRST FLOOR HVAC DEMOLITION
PLAN

Issue Date
MAY 22, 2020

Checked
JRG

Drawn
TNH

Project Number
656-19-306

Building Number
28

Drawing Number
MD111

VA

U.S. Department of Veterans Affairs

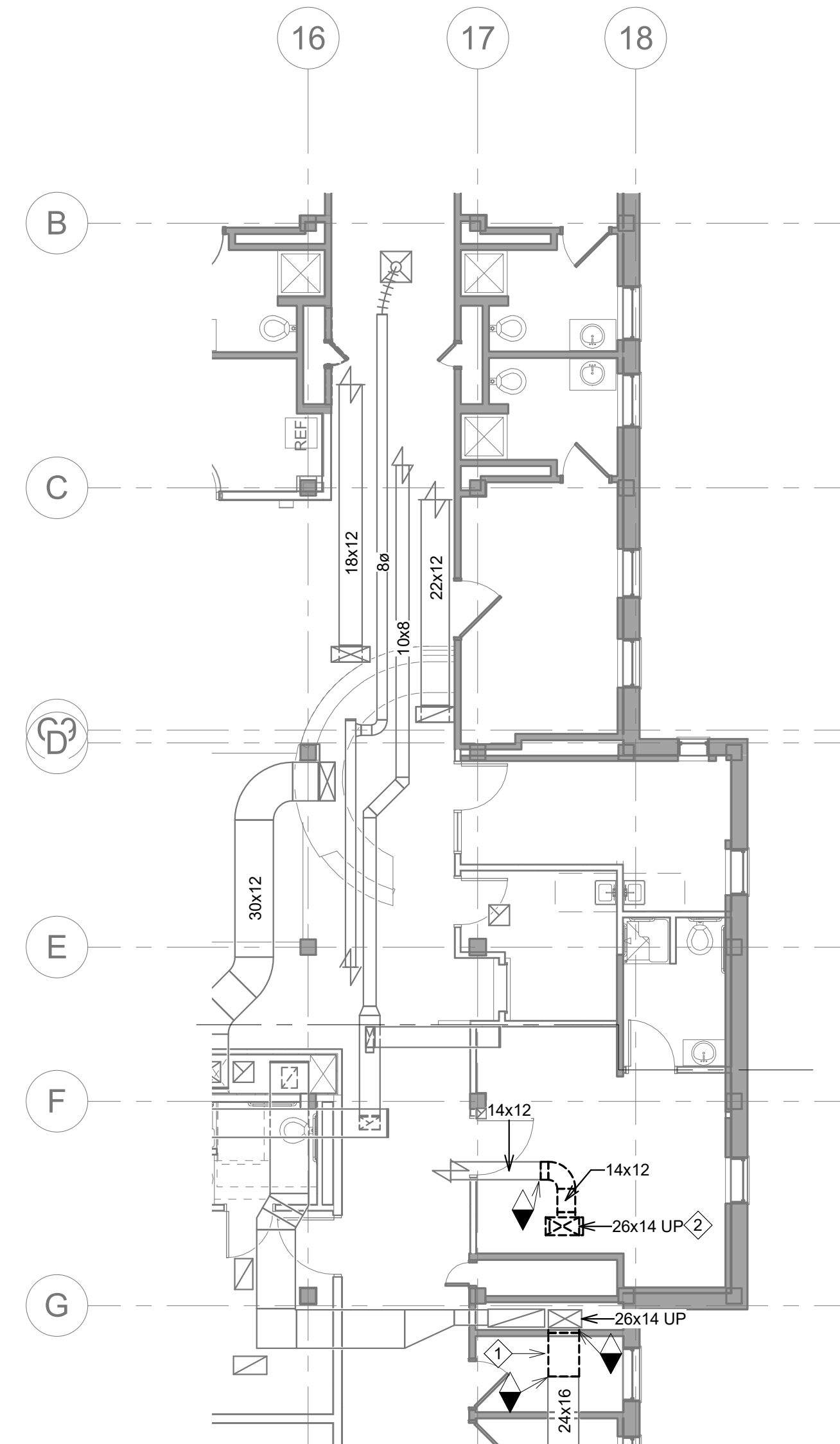
Veterans Health Administration
St. Cloud VA Health Care System

GENERAL NOTES:

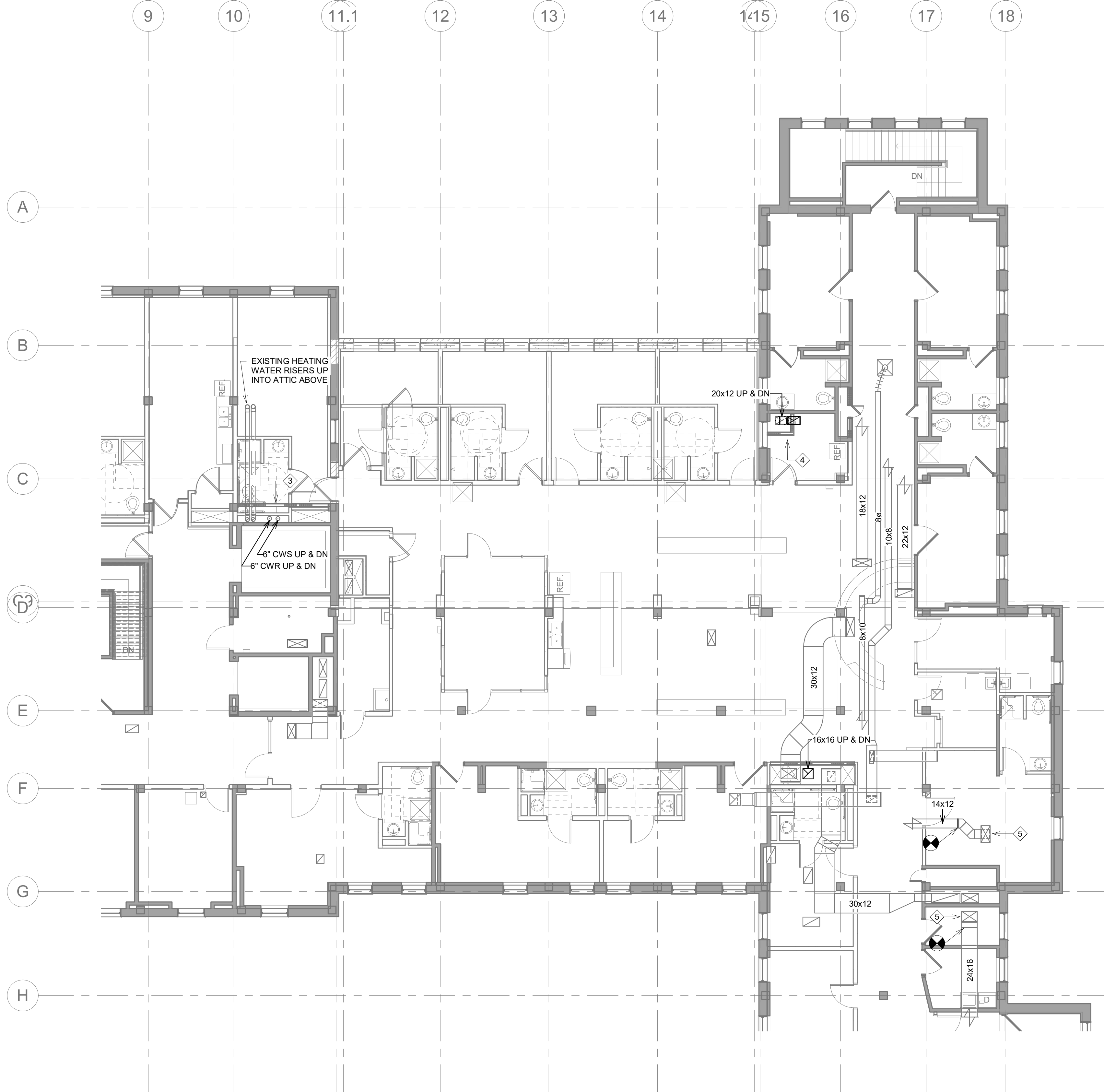
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- C. SUPPORT ALL DUCTWORK DIRECTLY TO STRUCTURE. DO NOT SUPPORT ANY DUCTS FROM DUCTWORK, CONDUIT, OR OTHER PIPING ENCOUNTERED.
- D. WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.
- E. ALL EXISTING DUCTWORK THROUGH NEW FIRE RATED WALLS SHALL BE ADEQUATELY FIRE SEALED AS REQUIRED.
- F. ALL EXISTING RETURN/EXHAUST DUCTWORK NOT TEMPORARILY CAPPED SHALL BE PROTECTED WITH REMOVABLE FILTER MEDIA TO PROTECT EXISTING DUCT SYSTEMS FROM CONSTRUCTION DEBRIS. ALL NEW DUCTWORK SHALL BE PROTECTED AS REQUIRED AND CLEANED PRIOR TO START-UP. IF CONSTRUCTION DEBRIS IS FOUND INSIDE UNPROTECTED DUCTWORK THAN DUCT CLEANING OF THE ENTIRE SYSTEM SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.
- G. ALL NEW FIRE, SMOKE, AND COMBINATION FIRE/SMOKE DAMPERS INSTALLED IN SHaft WALLS SHALL BE INSTALLED TO ALLOW FOR SERVICE OF THEIR FUSIBLE LINK/ACTUATOR PER FACILITY STANDARDS. ANY CONFLICTS WHICH WILL PREVENT ACCESS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER OF RECORD.

KEY NOTES:

1. DEMOLISH DUCT BETWEEN POINTS OF DISCONNECT. PATCH DUCTWORK RISER AN SEAL TO A 3" PRESSURE CLASSIFICATION. INFILL PENETRATION TO SHAFt WALL AS REQUIRED FOR 2-HOUR RATING AND REMOVE ANY ASSOCIATED FIRE DAMPERS. PROTECT DUCTWORK FROM DEBRIS UNTIL CONNECTION TO NEW.
2. DEMOLISH DUCTWORK UP THROUGH SLAB AND BACK TO POINT OF DISCONNECT. INFILL FLOOR PENETRATION AS REQUIRED TO MAINTAIN FIRE SEPARATION TO ATTIC SPACE. PROTECT DUCTWORK FROM DEBRIS UNTIL CONNECTION TO NEW.
3. CONTRACTOR TO REMOVE SECTION OF EXISTING SHAFt WALL IN ORDER TO GAIN ACCESS NEEDED TO INSTALL 6" CHILLED WATER PIPING RISERS INDICATED. CONFIRM EXACT LAYOUT WITHIN PIPING SHAFt TO DETERMINE ARRANGEMENT OF PIPING AND AMOUNT OF WALL DEMOLITION REQUIRED. REFER TO ARCHITECTURAL PLANS FOR REINSTALLATION OF ANY ASSOCIATED WALL TILE OR FINISHES TO MATCH EXISTING CONDITION. INSTALL PIPE SLEEVES AT ALL FLOOR PENETRATIONS AND SEAL AS REQUIRED.
4. TRANSITION NEW EXHAUST DUCT RISER AS REQUIRED TO ALIGN FLOOR PENETRATION BETWEEN STRUCTURAL JOISTS WITHIN PAN SPACE. REFER TO ARCHITECTURAL PLAN FOR NEW SHAFt WALL INSTALLATION AND ROOM FINISH MODIFICATIONS TO MATCH EXISTING.
5. REVISED (OR NEW) LOCATION OF DUCT PENETRATION UP INTO ATTIC SPACE ABOVE. COORDINATE PENETRATION WITH STRUCTURE AND WORKING CLEARANCES IN ATTIC ABOVE.

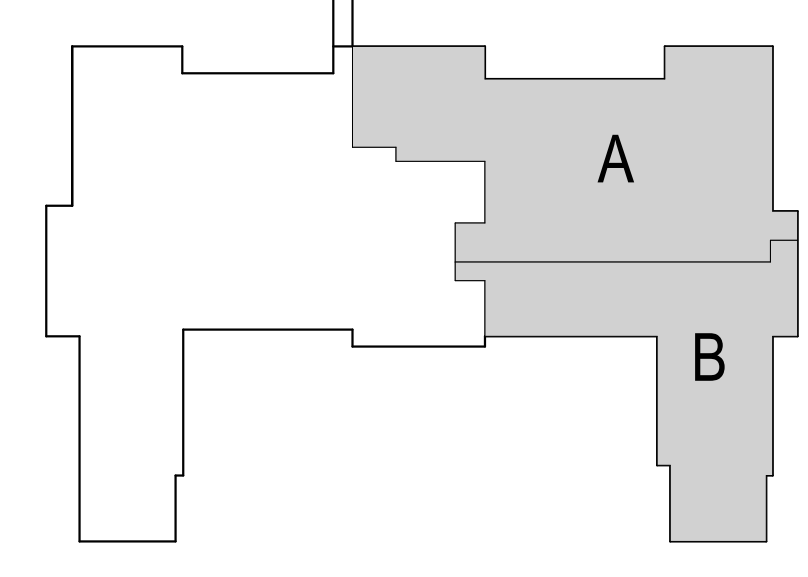


1 SECOND FLOOR HVAC DEMOLITION PLAN - PHASE 1
1/8" = 1'-0"



2 SECOND FLOOR MECHANICAL PLAN
1/8" = 1'-0"

KEY PLAN



Revision#	Description	Date:

CONSULTANT

DUNHAM
50 South Sixth Street / Suite 1100
Minneapolis, Minnesota 55402-1540
PHONE 612.465.7550 FAX 612.465.7551
www.dunhaminc.com
mechanical + electrical consulting engineering
652950-007-00

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Name Jason R. Gottwalt, P.E.
Date 05/22/2020 Reg. No. 41360

Project Title
RENOVATE BUILDING 28
FIRST FLOOR EAST RTTP

Location
SAINT CLOUD, MN

Phase
CONSTRUCTION DOCUMENTS

Drawing Title
SECOND FLOOR MECHANICAL PLAN

Issue Date
MAY 22, 2020

Project Number
656-19-306

Building Number
28

Drawing Number
MH121

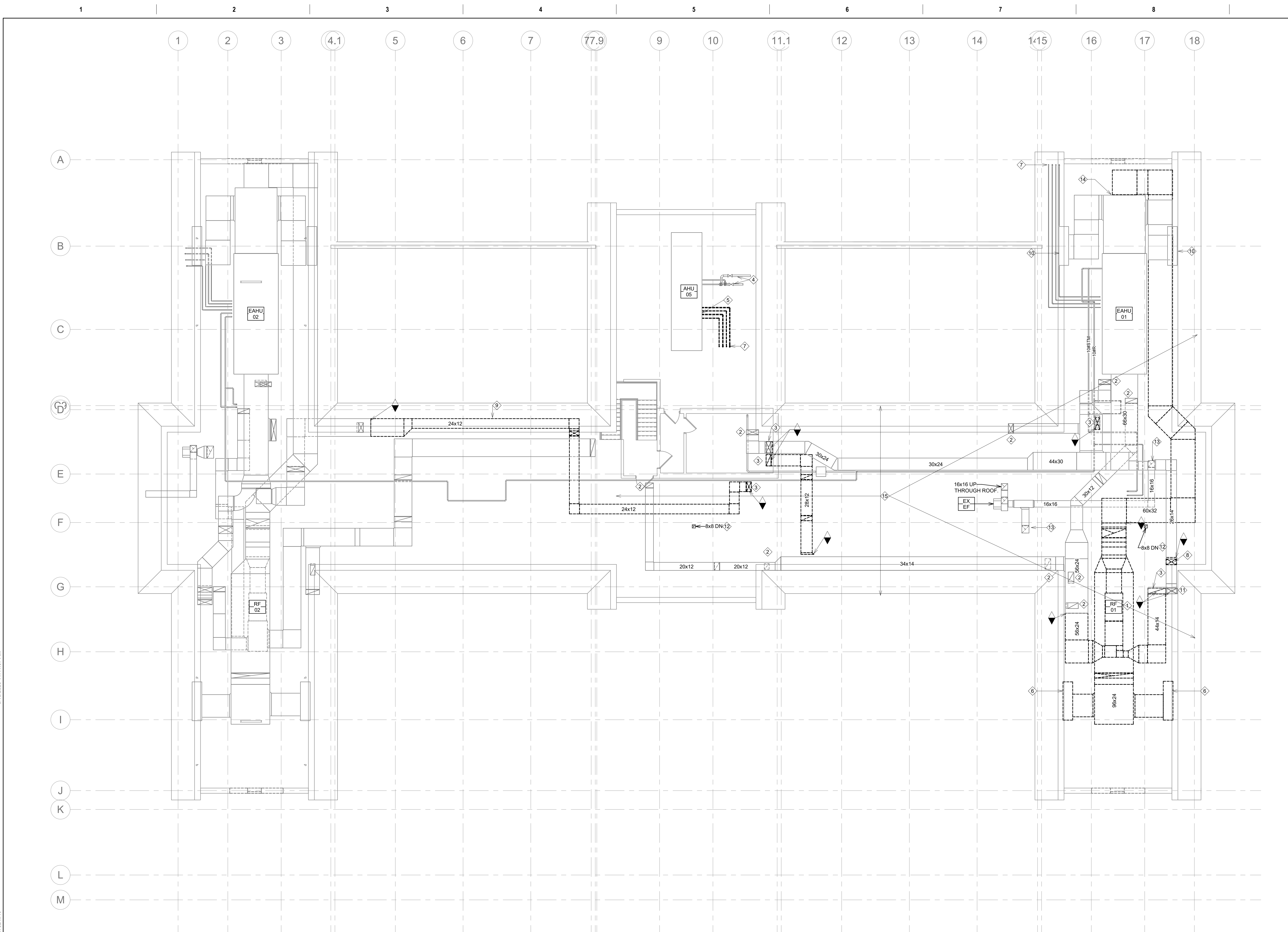
U.S. Department of Veterans Affairs

Veterans Health Administration
St. Cloud VA Health Care System

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 VA FORM 08 - 6231

- GENERAL NOTES:**
- A. MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REVIEW ACCESSIBILITY TO AREAS OUTSIDE THE CONSTRUCTION LIMITS TO DETERMINE APPROXIMATE AMOUNT OF OVERTIME REQUIRED TO PERFORM ALL MECHANICAL WORK INDICATED. COORDINATION OF SCHEDULES WITH ADJACENT DEPARTMENTS AND CLEANING OF ALL DEBRIS AFTER EACH SHIFT SHOULD BE ASSUMED IN THE BASE BID.
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- KEY NOTES:**
- 1 REMOVE EXISTING RETURN FAN, RF-01. SALVAGE FAN TO REINSTALL FOR TEMPORARY FAN IN NEXT PHASE OF CONSTRUCTION. SEE DRAWINGS FOR NEW LOCATION AND DUCT ROUTING.
 - 2 DUCT SERVES SECOND FLOOR. DUCT THROUGH SLAB TO REMAIN. REFER TO PHASE 1 DRAWINGS FOR IMMEDIATE RECONNECTION TO TEMPORARY SERVICES TO OCCUPIED FLOOR.
 - 3 DEMOLISH DUCT SERVING FIRST FLOOR DOWN TO SLAB. CAP DUCT AT SLAB AND PROTECT DUCT FROM DEBRIS UNTIL CONNECTION TO NEW IN PHASE 2. DUCT SERVES UNOCCUPIED CONSTRUCTION AREA AND WILL NOT REQUIRE TEMPORARY VENTILATION SERVICES.
 - 4 EXISTING 4" HEATING WATER SUPPLY AND RETURN CAPPED AND VALVED FOR FUTURE.
 - 5 DEMOLISH DX COIL IN AHU-05 AND ASSOCIATED REFRIGERANT PIPING COMPLETELY BACK TO CONDENSING UNIT ON GRADE. CONTRACTOR TO PATCH/REPAIR ALL FLOOR AND EXTERIOR WALL PENETRATIONS AS REQUIRED. DO NOT ABANDON PIPING IN VERTICAL SHAFTS/CHASES. COMPLETELY REMOVE AND REPAIR WALLS AS REQUIRED TO MATCH EXISTING FINISHES.
 - 6 EXISTING LOUVERS TO REMAIN. REMOVE EXISTING SHEET METAL PLENUM, ALONG WITH RELATED BIRD SCREEN/DRAINS/INSULATION, FOR INSTALLATION OF NEW PLENUM.
 - 7 REFRIGERANT PIPING FROM BELOW.
 - 8 DEMOLISH DUCT DOWN THROUGH SLAB TO SECOND FLOOR CEILING. REFER TO SHEET MH121 FOR CONTINUATION. PATCH SLAB WITH SAME/SIMILAR MATERIAL.
 - 9 DEMOLISH DUCTWORK BACK TO POINT OF DISCONNECT AND CAP.
 - 10 EXISTING LOUVERS, SHEET METAL PLENUM, BIRD SCREEN, DRAINS AND INSULATION TO REMAIN DURING PHASE 1 OF CONSTRUCTION.
 - 11 DUCT THROUGH SLAB TO REMAIN. DUCT SERVES FIRST FLOOR AND SECOND FLOOR.
 - 12 MECHANICAL CONTRACTOR TO VERIFY 8" EXHAUST DUCT IS ABANDONED. DEMOLISH ABANDONED 8" EXHAUST DUCT DOWN TO SLAB. CAP AND LABEL AS ABANDONED.
 - 13 MECHANICAL CONTRACTOR TO ENGAGE A TEST AND BALANCE CONTRACTOR TO MEASURE THE EXISTING EXHAUST AIRFLOW ON SECOND FLOOR (EAST) PRIOR TO CONSTRUCTION AND SUBMIT REPORT TO SIGNING ENGINEER.
 - 14 CAP RETURN DUCT CONNECTION TO EXISTING AHU AND CONVERT TO PROVIDE 100% OUTDOOR AIR TO SECOND FLOOR DURING FIRST PHASE OF CONSTRUCTION. NOTE THAT FIRST PHASE WILL NEED TO BE PERFORMED DURING MILD WEATHER (SPRING/FALL) TO NOT OVERWHELM EXISTING HEATING/COOLING COILS.
 - 15 DEMOLISH UNIT HEATER(S), ALL ASSOCIATED STEAM PIPING, AND THERMOSTAT LOCATED IN THE CENTER AND/OR EAST SIDE OF ATTIC. CAP STEAM PIPING AT MAIN.



1 ATTIC FLOOR MECHANICAL DEMOLITION PLAN - PHASE 1
1/8" = 1'-0"

Revision#	Description	Date:

CONSULTANT

DUNHAM

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 Phone: 612.465.7550 Fax: 612.465.7551
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Name: Jason R. Gottwalt, P.E.
 Date: 05/22/2020 Reg. No. 41360

Project Title
 RENOVATE BUILDING 28
 FIRST FLOOR EAST RTFP

Location
 SAINT CLOUD, MN

Phase
 CONSTRUCTION DOCUMENTS

Drawing Title
 ATTIC FLOOR MECHANICAL
 DEMOLITION PLAN - PHASE 1

Issue Date
 MAY 22, 2020

Checked
 JRG

Drawn
 TNH

Project Number
 656-19-306

Building Number
 28

Drawing Number
 MD131

VA

U.S. Department of Veterans Affairs

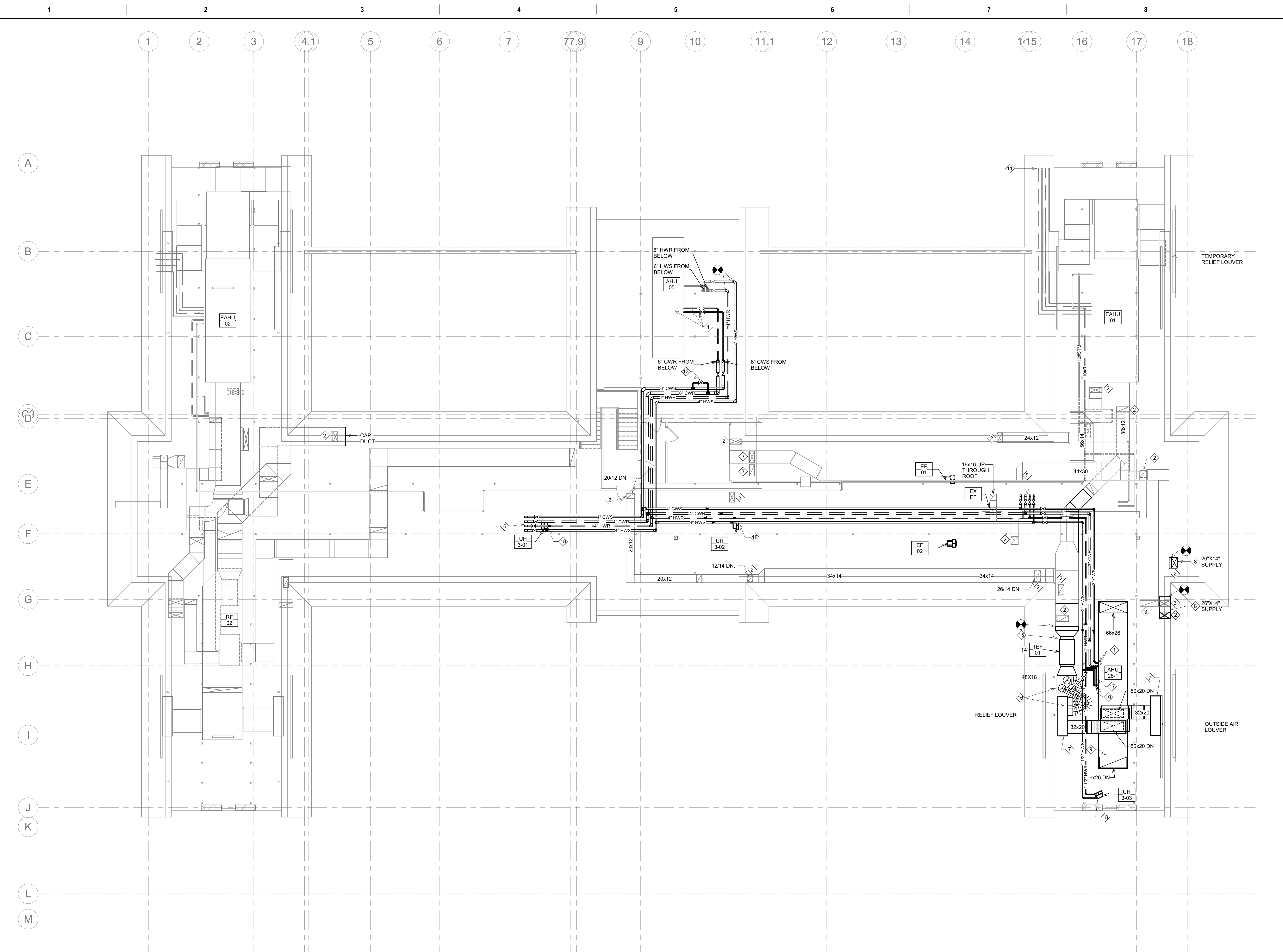
Veterans Health Administration
 St. Cloud VA Health Care System

GENERAL NOTES:

- A. ANY MAJOR VENTILATION OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.
- B. COORDINATE ALL NEW DUCTWORK ROUTING WITH ALL OTHER TRADES TO INSURE ADEQUATE CLEARANCES FOR PLUMBING, ELECTRICAL CONDUIT, STRUCTURAL SUPPORTS, PIPING, ETC. ANY UNAVOIDABLE CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OF RECORD. PROVIDE ALL OFFSETS AND TRANSITIONS AS REQUIRED FOR A CLEAN INSTALLATION.
- C. SUPPORT ALL DUCTWORK DIRECTLY TO STRUCTURE. DO NOT SUPPORT ANY DUCTS FROM DUCTWORK, CONDUIT, OR OTHER PIPING ENCOUNTERED.
- D. WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.
- E. ALL EXISTING DUCTWORK THROUGH NEW FIRE RATED WALLS SHALL BE ADEQUATELY FIRE SEALED AS REQUIRED.
- F. ALL EXISTING RETURN/EXHAUST DUCTWORK NOT TEMPORARILY CAPPED SHALL BE PROTECTED WITH REMOVABLE FILTER MEDIA TO PROTECT EXISTING DUCT SYSTEMS FROM CONSTRUCTION DEBRIS. ALL NEW DUCTWORK SHALL BE PROTECTED AS REQUIRED AND CLEANED PRIOR TO START-UP. IF CONSTRUCTION DEBRIS IS FOUND INSIDE UNPROTECTED DUCTWORK THEN DUCT CLEANING OF THE ENTIRE SYSTEM SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.
- G. ALL NEW FIRE, SMOKE, AND COMBINATION FIRE/SMOKE DAMPERS INSTALLED IN SHAF T WALLS SHALL BE INSTALLED TO ALLOW FOR SERVICE OF THEIR FUSABLE LINK/ACTUATOR PER FACILITY STANDARDS. ANY CONFLICTS WHICH REQUIRE ACCESS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER OF RECORD.

KEY NOTES:

- 1. CONNECT 3" CHILLED SUPPLY AND RETURN PIPING TO COOLING COIL. REFER TO DETAIL 61MHS00 FOR ADDITIONAL PIPING AND COMPONENTS REQUIRED THAT ARE NOT DIRECTLY SHOWN ON FLOOR PLAN, INCLUDING THE 2" PIPING BULKHEAD FITTING AND CHECK VALVE TO SUPPLY DUCT FOR OFF-SEASON COIL DRYING.
- 2. DUCT SERVES SECOND FLOOR. DUCT THROUGH SLAB TO REMAIN.
- 3. DUCT SERVES FIRST FLOOR. DUCT THROUGH SLAB TO REMAIN. TEMPORARILY CAP THIS DUCT DURING THIS PHASE. SINCE IT SERVES CONSTRUCTION AREA FOR THIS PROJECT AND OUT OF SERVICE, IT WILL NOT REQUIRE TEMPORARY HVAC CONNECTIONS.
- 4. PROVIDE/RETROFIT NEW CHILLED WATER COIL INTO EXISTING UNIT. COORDINATE OUTAGE WITH OCCUPANT TO PERFORM DURING PREMIUM HOURS. ROUTE 2" CHILLED WATER SUPPLY AND RETURN TO NEW COIL AND INSTALL ALL PIPING COMPONENTS PER 61MHS00.
- 5. 3" CHILLED WATER SUPPLY AND RETURN AND 2" HEATING WATER SUPPLY AND RETURN CAPPED AND VALVED FOR FUTURE PHASE 2.
- 6. 4" CHILLED WATER SUPPLY AND RETURN AND 4" HEATING WATER SUPPLY AND RETURN CAPPED AND VALVED FOR FUTURE PHASE 3 AND 4. INSTALL VALVES EVEN UNDER REJECTION OF ALTERNATE. FOR FUTURE INSTALLATION OF AHUS.
- 7. INSTALL NEW SHEET METAL PLENUM BEHIND EXISTING TRIANGULAR LOUVER AT ROOF GABLE. PLENUM SHALL BE A MINIMUM OF 96" WIDE X 48" HIGH X 24" DEEP TO MAXIMIZE FREE AREA. REMAINING CORNERS OF LOUVER TO HAVE BLANK-OFF PANELS WITH RIGID INSULATION PER SPECIFICATION REQS. PROVIDE PLENUM, AND OUTDOOR AIR OR RELIEF DUCT UP TO AHU WITH SAME 2" RIGID INSULATION. INCLUDE 1" COPPER DRAIN PIPING CONNECTION ON BOTTOM OF LOUVER PLENUM. ROUTE TO NEAREST FLOOR DRAIN.
- 8. PROVIDE TEMPORARY DUCTWORK DURING PHASE 1 TO PROVIDE VENTILATION TO SECOND FLOOR. FIELD VERIFY EXACT SIZE AND LOCATION OF DUCT DROP AND PROVIDE TEMPORARY BALANCING DAMPER TO ADJUST AIRFLOW (SEE BALANCING PLANS).
- 9. CAP 6626 RETURN DUCT FOR FUTURE PHASE 2.
- 10. CONNECT 2" HEATING SUPPLY AND RETURN PIPING TO HEATING COIL. REFER TO DETAIL 71MHS00 FOR ADDITIONAL PIPING COMPONENTS REQUIRED. KEEP ALL PIPING IN SERVICE WALKWAY AS HIGH AS POSSIBLE FOR ACCESSIBILITY (TYP).
- 11. REFRIGERANT PIPING FROM BELOW.
- 12. CAP 6626 SUPPLY DUCT FOR FUTURE PHASE 2.
- 13. PROVIDE A 2" BYPASS PIPE, AND FULL PORT 2" CONTROL VALVE, FOR MAINTAINING MINIMUM FLOW TO AIR COOLED CHILLER SYSTEM. REFER TO SEQUENCE OF OPERATION.
- 14. REINSTALL PREVIOUSLY REMOVED RETURN FAN (RF-01) TO LOCATION INDICATED TO PROVIDE TEMPORARY EXHAUST/RELIEF TO SECOND FLOOR AREA DURING PHASED AHU INSTALLATION. CONTRACTOR MAY NEED TO PROVIDE A DIFFERENT FAN IF EXISTING FAN CANNOT BE SALVAGED FOR THIS PURPOSE.
- 15. TRANSITION TEMPORARY DUCT BETWEEN FAN AND EXISTING 56"x24" RETURN MAIN. FIELD VERIFY EXACT ELEVATION FOR TRANSITION FABRICATION.
- 16. CUT THREE(3) 18" ROUND DUCT CONNECTIONS INTO EXISTING RELIEF LOUVER PLENUM. CONNECT TO TEMPORARY RELIEF/EXHAUST FAN BY UTILIZING 3 PIECES OF 18" ROUND FLEX DUCT TO TEMPORARILY CONNECT. DEMOLISH ALL UPON COMPLETION OF PHASE 2 AND PATCH/SEAL/INSULATE RELIEF LOUVER PLENUM AS REQUIRED.
- 17. HEATING WATER PIPING WILL NEED TO GET OFFSET DOWN AWAY FROM COIL CONNECTIONS TO PROVIDE CLEARANCE REQUIRED FOR RETURN DUCT INSTALLATION IN PHASE 2. SEE PHASE 2 DRAWING.
- 18. ROUTE 1-1/2" HEATING WATER SUPPLY AND RETURN DOWN TO NEW UNIT HEATER. CONTROL CONTRACTOR TO PROVIDE DOC THERMOSTAT MOUNTED IN A LOCATION COORDINATED WITH ENGINEER TO CONFIRM CLEAR AIRFLOW PATH FOR ACCURATE SENSING AROUND DUCT/STRUCTURAL OBSTRUCTIONS.



1 ATTIC FLOOR MECHANICAL PLAN - PHASE 1
1/8" = 1'-0"

Revision#	Description	Date:

CONSULTANT

DUNHAM

50 South Sixth Street / Suite 1100
 Minneapolis, Minnesota 55402-1540
 Phone: 612.465.7550 Fax: 612.465.7551
 Website: dunhameng.com
 mechanical + electrical consulting engineering
 652.959.007.00

ARCHITECT/ENGINEER OF RECORD

ANDERSON

13605 1st Ave. N. #100 Plymouth, MN 55441
 P 763.412.4000 | F 763.412.4090 | ae-mn.com
 Anderson Engineering of Minnesota, LLC | Proj # Project Number

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I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Name: Jason R. Gottwalt, P.E.
 Date: 05/22/2020 Reg. No. 41360

Project Title
 RENOVATE BUILDING 28
 FIRST FLOOR EAST RRTP

Location
 SAINT CLOUD, MN

Phase
 CONSTRUCTION DOCUMENTS

Drawing Title
 ATTIC FLOOR MECHANICAL PLAN - PHASE 1

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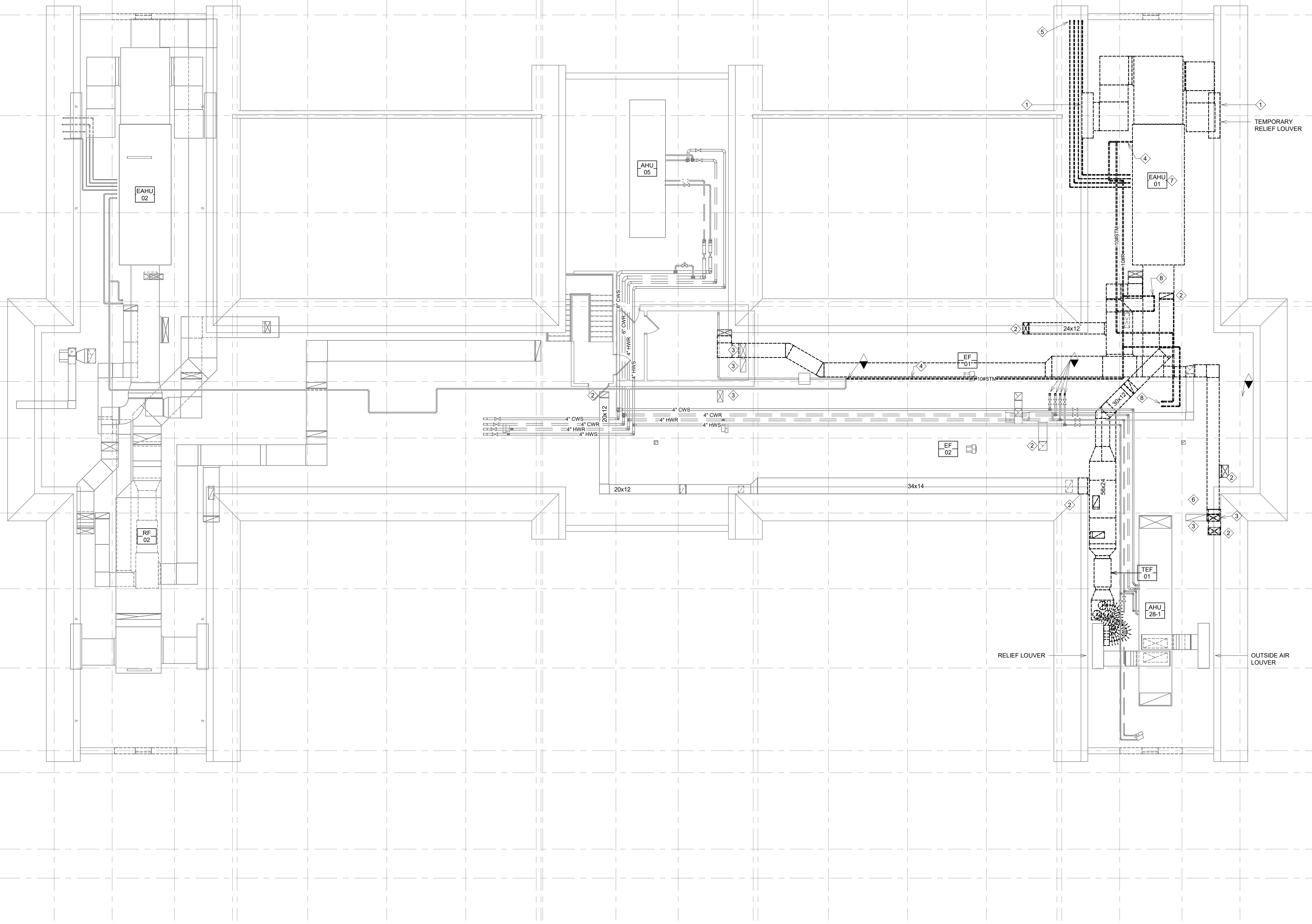
U.S. Department of Veterans Affairs

Veterans Health Administration

St. Cloud VA Health Care System

- GENERAL NOTES:**
- MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REVIEW ACCESSIBILITY TO AREAS OUTSIDE THE CONSTRUCTION LIMITS TO DETERMINE APPROXIMATE AMOUNT OF OVERTIME REQUIRED TO PERFORM ALL MECHANICAL WORK INDICATED. COORDINATION OF SCHEDULES WITH ADJACENT DEPARTMENTS AND CLEANING OF ALL DEBRIS AFTER EACH SHIFT SHOULD BE ASSUMED IN THE BASE BID.
 - ANY MAJOR VENTILATION OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.
 - WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.
 - ALL EXISTING RETURN/EXHAUST DUCTWORK NOT TEMPORARILY CAPPED SHALL BE PROTECTED WITH REMOVABLE FILTER MEDIA TO PROTECT EXISTING DUCT SYSTEMS FROM CONSTRUCTION DEBRIS. ALL NEW DUCTWORK SHALL BE PROTECTED AS REQUIRED AND CLEANED PRIOR TO START-UP. IF CONSTRUCTION DEBRIS IS FOUND INSIDE UNPROTECTED DUCTWORK THEN DUCT CLEANING OF THE ENTIRE SYSTEM SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.

- KEY NOTES:**
- EXISTING LOUVERS TO REMAIN. REMOVE EXISTING SHEET METAL PLENUM ALONG WITH RELATED BIRD SCREEN/DRAIN/INSULATION, FOR INSTALLATION OF NEW PLENUM.
 - DUCT SERVES SECOND FLOOR. DUCT THROUGH SLAB TO REMAIN.
 - DUCT SERVES FIRST FLOOR. DUCT THROUGH SLAB TO REMAIN.
 - DEMOLISH LOW PRESSURE STEAM AND CONDENSATE PIPING FROM EAHU-01 TO POINT OF DISCONNECT. CAP AT POINT OF DISCONNECT.
 - DEMOLISH DX COIL AND REFRIGERANT PIPING FROM EXISTING EAHU-01 AND DOWN TO BASEMENT.
 - REMOVE TEMPORARY EXHAUST FAN.
 - DEMOLISH EXISTING EAHU-01 AND ASSOCIATED DUCTWORK, PIPING CONNECTIONS, AND CONTROLS. CONTRACTOR WILL BE RESPONSIBLE TO DEVELOP PLAN WITH INFECTION CONTROL REPRESENTATIVE TO SAFELY TRANSPORTING ALL MATERIAL AWAY FROM SITE.
 - REMOVE ALL STEAM PIPING AND CORRESPONDING UNIT HEATERS. PROVIDE TEMPORARY HEAT IF PERFORMING IN WINTER MONTHS AND REFER TO NEW PHASE 2 PLANS FOR INSTALLATION OF NEW HYDRONIC UNIT HEATERS.



1 ATTIC FLOOR MECHANICAL DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

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CONSULTANT

DUNHAM

DUNHAM
50 South Sixth Street / Suite 1100
Minneapolis, Minnesota 55402-1540
Phone: 612.465.7550 Fax: 612.465.7551
www.dunhaminc.com
mechanical + electrical consulting engineering
652959-007-00

ARCHITECT/ENGINEER OF RECORD

ANDERSON

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Name: Jason R. Gottwalt, P.E.
Date: 05/22/2020 Reg. No. 41360

Project Title RENOVATE BUILDING 28 FIRST FLOOR EAST RRTP		Project Number 656-19-306
Location SAINT CLOUD, MN		Building Number 28
Phase CONSTRUCTION DOCUMENTS		Drawing Number MD132
Drawing Title ATTIC FLOOR MECHANICAL DEMOLITION PLAN - PHASE 2		
Issue Date MAY 22, 2020	Checked JRG	Drawn TNH

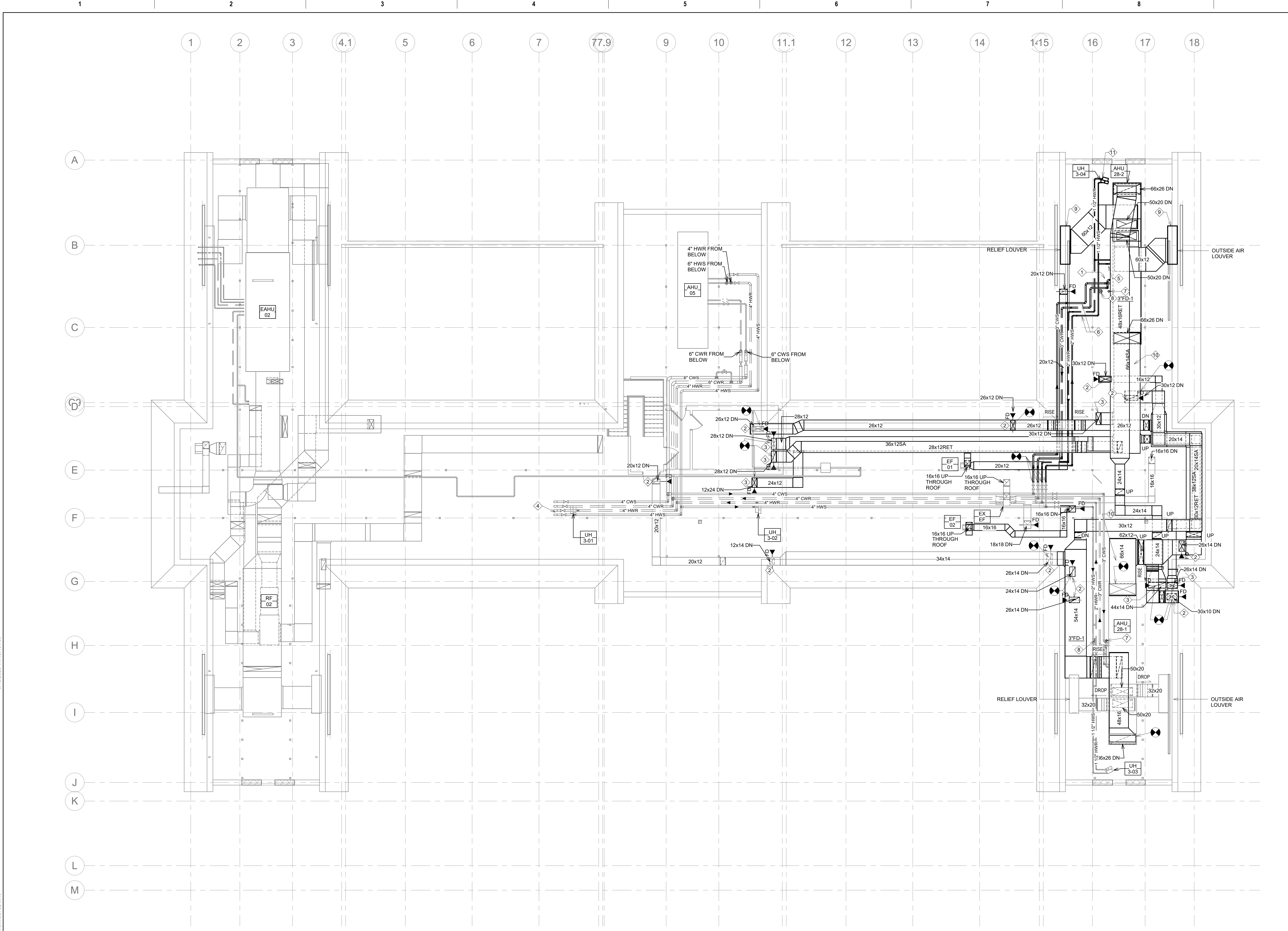
VA

U.S. Department of Veterans Affairs

Veterans Health Administration
St. Cloud VA Health Care System

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 - SUPPORT ALL DUCTWORK DIRECTLY TO STRUCTURE. DO NOT SUPPORT ANY DUCTS FROM DUCTWORK, CONDUIT, OR OTHER PIPING ENCOUNTERED.
 - WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.
 - ALL EXISTING DUCTWORK THROUGH NEW FIRE RATED WALLS SHALL BE ADEQUATELY FIRE SEALED AS REQUIRED.
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 - ALL NEW FIRE, SMOKE, AND COMBINATION FIRE/SMOKE DAMPERS INSTALLED IN SHAF T WALLS SHALL BE INSTALLED TO ALLOW FOR SERVICE OF THEIR FUSIBLE LINK/ACTUATOR PER FACILITY STANDARDS. ANY CONFLICTS WHICH WILL PREVENT ACCESS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER OF RECORD.

- KEY NOTES:**
- 1 CONNECT 3" CHILLED SUPPLY AND RETURN PIPING TO COOLING COIL. REFER TO DETAIL 7H1500 FOR ADDITIONAL PIPING AND COMPONENTS REQUIRED THAT ARE NOT DIRECTLY SHOWN ON FLOOR PLAN, INCLUDING THE 2" PIPING BULKHEAD FITTING AND CHECK VALVE TO SUPPLY DUCT FOR OFF-SEASON COIL DRYING.
 - 2 DUCT THROUGH SLAB TO REMAIN. DUCT SERVES SECOND FLOOR. PROVIDE FIRE DAMPER AT FLOOR PENETRATION WHERE SHOWN.
 - 3 DUCT THROUGH SLAB TO REMAIN. DUCT SERVES FIRST FLOOR. PROVIDE FIRE DAMPER AT FLOOR PENETRATION WHERE SHOWN.
 - 4 4" CHILLED WATER SUPPLY AND RETURN AND 4" HEATING WATER SUPPLY AND RETURN CAPPED AND VALVED FOR FUTURE PHASE.
 - 5 CONNECT 2" HEATING SUPPLY AND RETURN PIPING TO HEATING COIL. REFER TO DETAIL 7H1500 FOR ADDITIONAL PIPING COMPONENTS REQUIRED. KEEP ALL PIPING IN SERVICE WALKWAY AS HIGH AS POSSIBLE FOR ACCESSIBILITY (TYP).
 - 6 CHILLED WATER AND HEATING PIPING TO ANGLE UPWARD ALONG ROOF RAFTER TO AN ELEVATION HIGH ENOUGH TO WALK UNDER. REFER TO SECTIONS AND SERVICE ACCESS PLAN.
 - 7 SUPPORT 2" VENT AGAINST AIR HANDLING UNIT. COORDINATE LOCATION WITH AIR HANDLING UNIT ACCESS DOORS. ROUTE VENT UP THROUGH ROOF. TERMINATE WITH 4" VENT THROUGH ROOF.
 - 8 ROUTE 1" CONDENSATE PIPE TO 3" FLOOR DRAIN.
 - 9 INSTALL NEW SHEET METAL PLENUM BEHIND EXISTING TRIANGULAR LOUVER AT ROOF GABLE. PLENUM SHALL BE A MINIMUM OF 96" WIDE X 48" HIGH X 24" DEEP TO MAXIMIZE LOUVER FREE AREA. REMAINING CORNERS OF LOUVER TO HAVE BLANK-OFF PANELS WITH RIGID INSULATION PER SPECIFICATION REQS. PROVIDE PLENUM AND OUTDOOR AIR OR RELIEF DUCT UP TO AHU WITH SAME 3" RIGID INSULATION. INCLUDE 1" COPPER DRAIN PIPING CONNECTION ON BOTTOM OF LOUVER PLENUM. ROUTE TO NEAREST FLOOR DRAIN.
 - 10 INSTALL DUCT SMOKE DETECTOR ON SUPPLY DUCT MAIN AT APPROXIMATE LOCATION INDICATED. CONNECT MOTOR CONTROLLER INTO FIRE ALARM SYSTEM TO SHUT-DOWN UNIT ON DETECTION OF SMOKE.
 - 11 ROUTE 1-1/2" HEATING WATER SUPPLY AND RETURN DOWN TO NEW UNIT HEATER. CONTRACTOR TO PROVIDE DDC THERMOSTAT MOUNTED IN A LOCATION COORDINATED WITH ENGINEER TO CONFIRM CLEAR AIRFLOW PATH FOR ACCURATE SENSING AROUND DUCT/STRUCTURAL OBSTRUCTIONS.



1 ATTIC FLOOR MECHANICAL PLAN - PHASE 2
1/8" = 1'-0"

Revision#	Description	Date:

CONSULTANT

DUNHAM

50 South Sixth Street / Suite 1100
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Name: Jason R. Gottwalt, P.E.
 Date: 05/22/2020 Reg. No. 45914

Project Title RENOVATE BUILDING 28 FIRST FLOOR EAST RRTP	Project Number 656-19-306
Location SAINT CLOUD, MN	Building Number 28
Phase CONSTRUCTION DOCUMENTS	Drawing Number MH132
Drawing Title ATTIC FLOOR MECHANICAL PLAN - PHASE 2	Issue Date MAY 22, 2020
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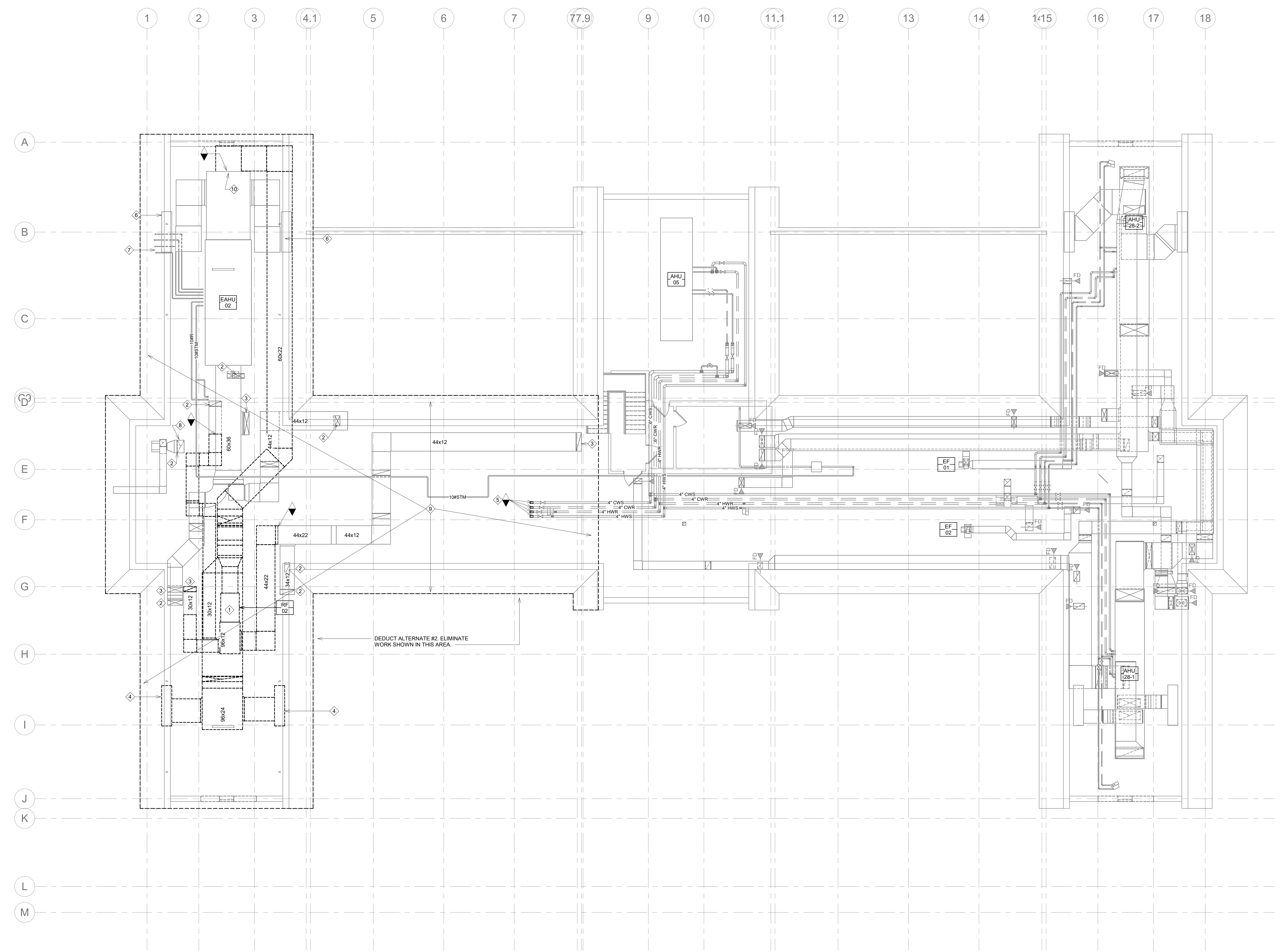
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GENERAL NOTES:

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- B. ANY MAJOR VENTILATION OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.
- C. WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.
- D. ALL EXISTING RETURN/EXHAUST DUCTWORK NOT TEMPORARILY CAPPED SHALL BE PROTECTED WITH REMOVABLE FILTER MEDIA TO PROTECT EXISTING DUCT SYSTEMS FROM CONSTRUCTION DEBRIS. ALL NEW DUCTWORK SHALL BE PROTECTED AS REQUIRED AND CLEANED PRIOR TO START-UP. IF CONSTRUCTION DEBRIS IS FOUND INSIDE UNPROTECTED DUCTWORK THEN DUCT CLEANING OF THE ENTIRE SYSTEM SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.

KEY NOTES:

- ① REMOVE EXISTING RETURN FAN, RF-01. SALVAGE FAN TO REINSTALL FOR TEMPORARY FAN IN NEXT PHASE OF CONSTRUCTION. SEE DRAWINGS FOR NEW LOCATION AND DUCT ROUTING.
- ② DUCT SERVES SECOND FLOOR. DUCT THROUGH SLAB TO REMAIN. REFER TO PHASE 3 MECHANICAL PLANS FOR RECONNECTION TO TEMPORARY SERVICE VIA EXISTING AHU AND RELOCATED RELIEF/EXHAUST FAN. LIMIT OUTAGES BY INSTALLING TEMP DUCT CONNECTIONS DURING OVERTIME HOURS AND DOUBLE SHIFTS.
- ③ DUCT SERVES FIRST FLOOR. DUCT THROUGH SLAB TO REMAIN. REFER TO PHASE 3 MECHANICAL PLANS FOR RECONNECTION TO TEMPORARY SERVICE VIA EXISTING AHU AND RELOCATED RELIEF/EXHAUST FAN. LIMIT OUTAGES BY INSTALLING TEMP DUCT CONNECTIONS DURING OVERTIME HOURS AND DOUBLE SHIFTS.
- ④ EXISTING LOUVERS TO REMAIN. REMOVE EXISTING SHEET METAL PLENUM, ALONG WITH RELATED BIRD SCREEN/DRAIN/INSULATION, FOR INSTALLATION OF NEW PLENUM.
- ⑤ PROTECT PIPING FOR CONNECTION TO NEW.
- ⑥ EXISTING LOUVERS, SHEET METAL PLENUM, BIRD SCREEN, DRAINS AND INSULATION TO REMAIN DURING PHASE 3 OF CONSTRUCTION.
- ⑦ REFRIGERANT PIPING FROM BELOW.
- ⑧ MECHANICAL CONTRACTOR TO ENGAGE A TEST AND BALANCE CONTRACTOR TO MEASURE THE EXISTING EXHAUST AIRFLOW ON FIRST AND SECOND FLOOR (WEST) PRIOR TO CONSTRUCTION AND SUBMIT REPORT TO SIGNING ENGINEER.
- ⑨ DEMOLISH UNIT HEATER(S), ALL ASSOCIATED STEAM PIPING, AND THERMOSTAT LOCATED IN THE CENTER AND/OR WEST SIDE OF ATTIC. CAP STEAM PIPING AT MAIN.
- ⑩ CAP RETURN DUCT CONNECTION TO EXISTING AHU AND CONVERT TO PROVIDE 100% OUTDOOR AIR TO SECOND FLOOR DURING FIRST PHASE OF CONSTRUCTION. NOTE THAT FIRST PHASE WILL NEED TO BE PERFORMED DURING MILD WEATHER (SPRING/FALL) TO NOT OVERWHELM EXISTING HEATING/COOLING COILS.



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Name: Jason R. Gottwalt, P.E.
 Date: 05/22/2020 Reg. No. 41360

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Location SAINT CLOUD, MN		Building Number 28
Phase CONSTRUCTION DOCUMENTS		Drawing Number MD133
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VA

U.S. Department of Veterans Affairs

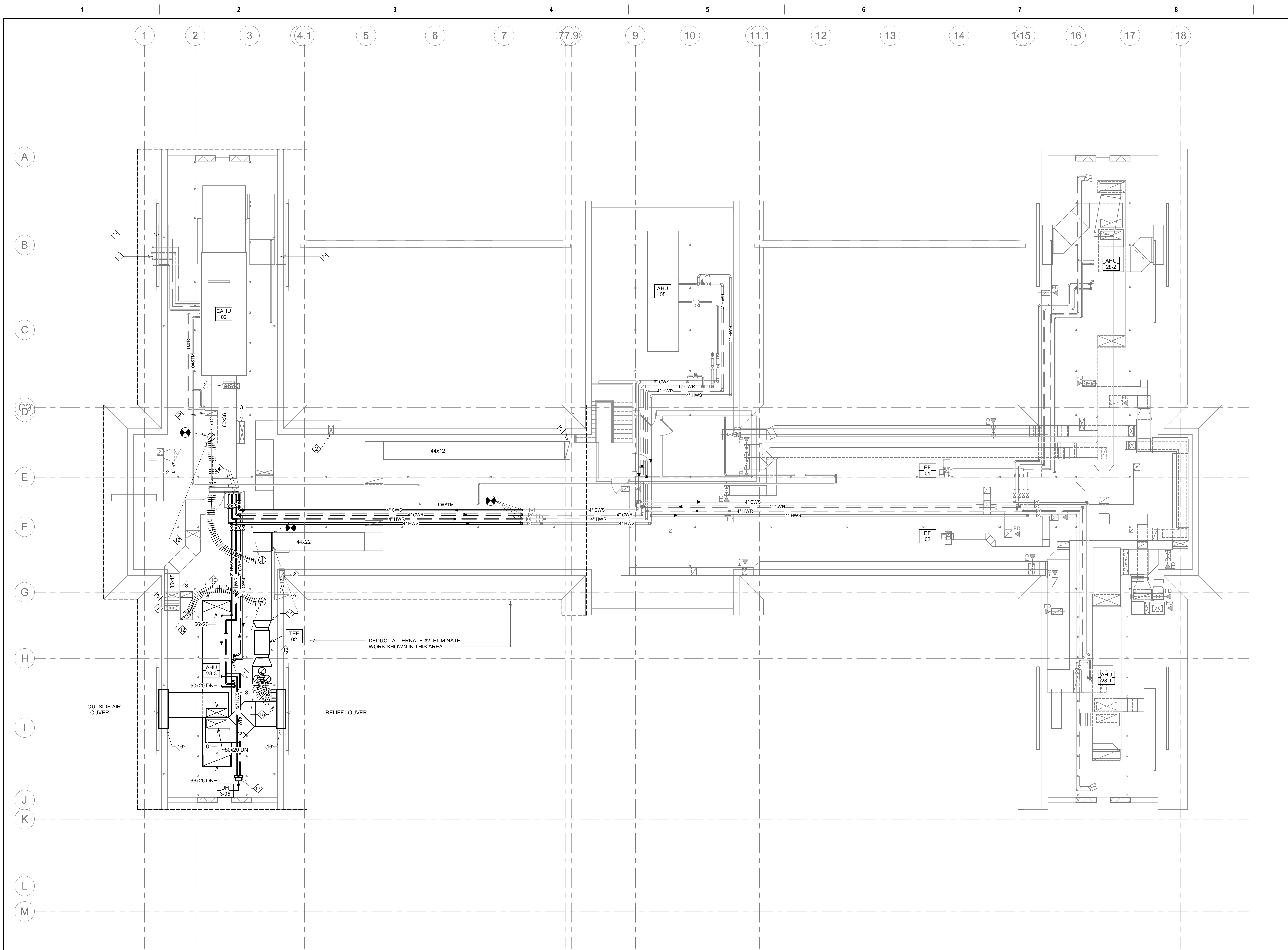
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- E. ALL EXISTING DUCTWORK THROUGH NEW FIRE RATED WALLS SHALL BE ADEQUATELY FIRE SEALED AS REQUIRED.
- F. ALL EXISTING RETURN/EXHAUST DUCTWORK NOT TEMPORARILY CAPPED SHALL BE PROTECTED WITH REMOVABLE FILTER MEDIA TO PROTECT EXISTING DUCT SYSTEMS FROM CONSTRUCTION DEBRIS. ALL NEW DUCTWORK SHALL BE PROTECTED AS REQUIRED AND CLEANED PRIOR TO START UP. IF CONSTRUCTION DEBRIS IS FOUND INSIDE UNPROTECTED DUCTWORK THEN DUCT CLEANING OF THE ENTIRE SYSTEM SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.
- G. ALL NEW FIRE, SMOKE, AND COMBINATION FIRE/SMOKE DAMPERS INSTALLED IN SHAFT WALLS SHALL BE INSTALLED TO ALLOW FOR SERVICE OF THEIR FUSIBLE LINK/ACTUATOR PER FACILITY STANDARDS. ANY CONFLICTS WHICH WILL PREVENT ACCESS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER OF RECORD.

KEY NOTES:

- 1 PROVIDE TEMPORARY EXHAUST FAN. VENT THROUGH RELIEF LOUVER.
- 2 DUCT SERVES SECOND FLOOR. DUCT THROUGH SLAB TO REMAIN.
- 3 DUCT SERVES FIRST FLOOR. DUCT THROUGH SLAB TO REMAIN.
- 4 3" CHILLED WATER SUPPLY AND RETURN AND 2" HEATING WATER SUPPLY AND RETURN CAPPED AND VALVED FOR FUTURE PHASE 4.
- 5 PROVIDE TEMPORARY DUCTWORK DURING PHASE 3 TO PROVIDE VENTILATION TO FIRST AND SECOND FLOOR.
- 6 CAP 66/26 RETURN DUCT FOR FUTURE PHASE 4.
- 7 CONNECT 3" CHILLED SUPPLY AND RETURN PIPING TO COOLING COIL. REFER TO DETAIL 6M/H500 FOR ADDITIONAL PIPING AND COMPONENTS REQUIRED THAT ARE NOT DIRECTLY SHOWN ON FLOOR PLAN, INCLUDING THE 2" PIPING BULKHEAD FITTING AND CHECK VALVE TO SUPPLY DUCT FOR OFF-SEASON COIL DRYING.
- 8 CONNECT 2" HEATING SUPPLY AND RETURN PIPING TO HEATING COIL. REFER TO DETAIL 7M/H500 FOR ADDITIONAL PIPING COMPONENTS REQUIRED. KEEP ALL PIPING IN SERVICE WALKWAY AS HIGH AS POSSIBLE FOR ACCESSIBILITY (TYP).
- 9 REFRIGERANT PIPING FROM BELOW.
- 10 CAP 66/26 SUPPLY DUCT FOR FUTURE PHASE 4.
- 11 EXISTING LOUVERS, SHEET METAL PLENUM, BIRD SCREEN, DRAINS AND INSULATION TO REMAIN DURING PHASE 3 OF CONSTRUCTION.
- 12 UTILIZE 18" ROUND FLEXIBLE DUCTWORK TO CONNECT REMOTELY LOCATED RETURN DUCT RISERS TO TEMPORARY EXHAUST/RELIEF FAN. PROVIDE ENOUGH EXTRA SLACK IN FLEX DUCT TO MANIPULATE AND SHIFT DURING NEW DUCTWORK INSTALLATION.
- 13 REINSTALL PREVIOUSLY REMOVED RETURN FAN (RF-02) TO LOCATION INDICATED TO PROVIDE TEMPORARY EXHAUST/RELIEF TO BOTH FIRST AND SECOND FLOOR AREAS DURING PHASE 4 AHU INSTALLATION. CONTRACTOR MAY NEED TO PROVIDE A DIFFERENT FAN IF EXISTING FAN CANNOT BE SALVAGED FOR THIS PURPOSE.
- 14 TRANSITION TEMPORARY DUCT BETWEEN FAN AND EXISTING 44"x22" RETURN MAIN. FIELD VERIFY EXACT ELEVATION FOR TRANSITION FABRICATION.
- 15 CUT THREE(3) 18" ROUND DUCT CONNECTIONS INTO EXISTING RELIEF LOUVER PLENUM. CONNECT TO TEMPORARY RELIEF/EXHAUST FAN BY UTILIZING 3 PIECES OF 18" ROUND FLEX DUCT TO TEMPORARILY CONNECT. DEMOLISH ALL UPON COMPLETION OF PHASE 2 AND PATCH/SEAL/INSULATE RELIEF LOUVER PLENUM AS REQUIRED.
- 16 INSTALL NEW SHEET METAL PLENUM BEHIND EXISTING TRIANGULAR LOUVER AT ROOF GABLE. PLENUM SHALL BE A MINIMUM OF 96" WIDE X 48" HIGH X 24" DEEP TO MAXIMIZE LOUVER FREE AREA. REMAINING CORNERS OF LOUVER TO HAVE BLANK-OFF PANELS WITH RIGID INSULATION PER SPECIFICATION REQS. PROVIDE PLENUM, AND OUTDOOR AIR OR RELIEF DUCT UP TO AHU, WITH SAME 3" RIGID INSULATION. INCLUDE 1" COPPER DRAIN PIPING CONNECTION ON BOTTOM OF LOUVER PLENUM, ROUTE TO NEAREST FLOOR DRAIN.
- 17 ROUTE 1-1/2" HEATING WATER SUPPLY AND RETURN DOWN TO NEW UNIT HEATER. CONTROLS CONTRACTOR TO PROVIDE DDC THERMOSTAT MOUNTED IN A LOCATION COORDINATED WITH ENGINEER TO CONFIRM CLEAR AIRFLOW PATH FOR ACCURATE SENSING AROUND DUCT/STRUCTURAL OBSTRUCTIONS.



1 ATTIC FLOOR MECHANICAL PLAN - PHASE 3
1/8" = 1'-0"

Revision#	Description	Date:

CONSULTANT

DUNHAM

50 South Sixth Street / Suite 1100
 Minneapolis, Minnesota 55402-1540
 Phone: 612.465.7550 Fax: 612.465.7551
 Website: dunhameng.com
 mechanical + electrical consulting engineering
 042959-007-00

ARCHITECT/ENGINEER OF RECORD

ANDERSON

13605 1st Ave. N. #100 Plymouth, MN 55441
 P 763.412.4000 | F 763.412.4090 | ae-mn.com
 Anderson Engineering of Minnesota, LLC | Proj # Project Number

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I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Name: Jason R. Gottwalt, P.E.
 Date: 05/22/2020 Reg. No. 41360

Project Title
 RENOVATE BUILDING 28
 FIRST FLOOR EAST RTTP

Location
 SAINT CLOUD, MN

Phase
 CONSTRUCTION DOCUMENTS

Drawing Title
 ATTIC FLOOR MECHANICAL PLAN -
 PHASE 3

Issue Date
 MAY 22, 2020

Checked
 JRG

Drawn
 TNH

Project Number
 656-19-306

Building Number
 28

Drawing Number
 MH133

VA

U.S. Department of Veterans Affairs

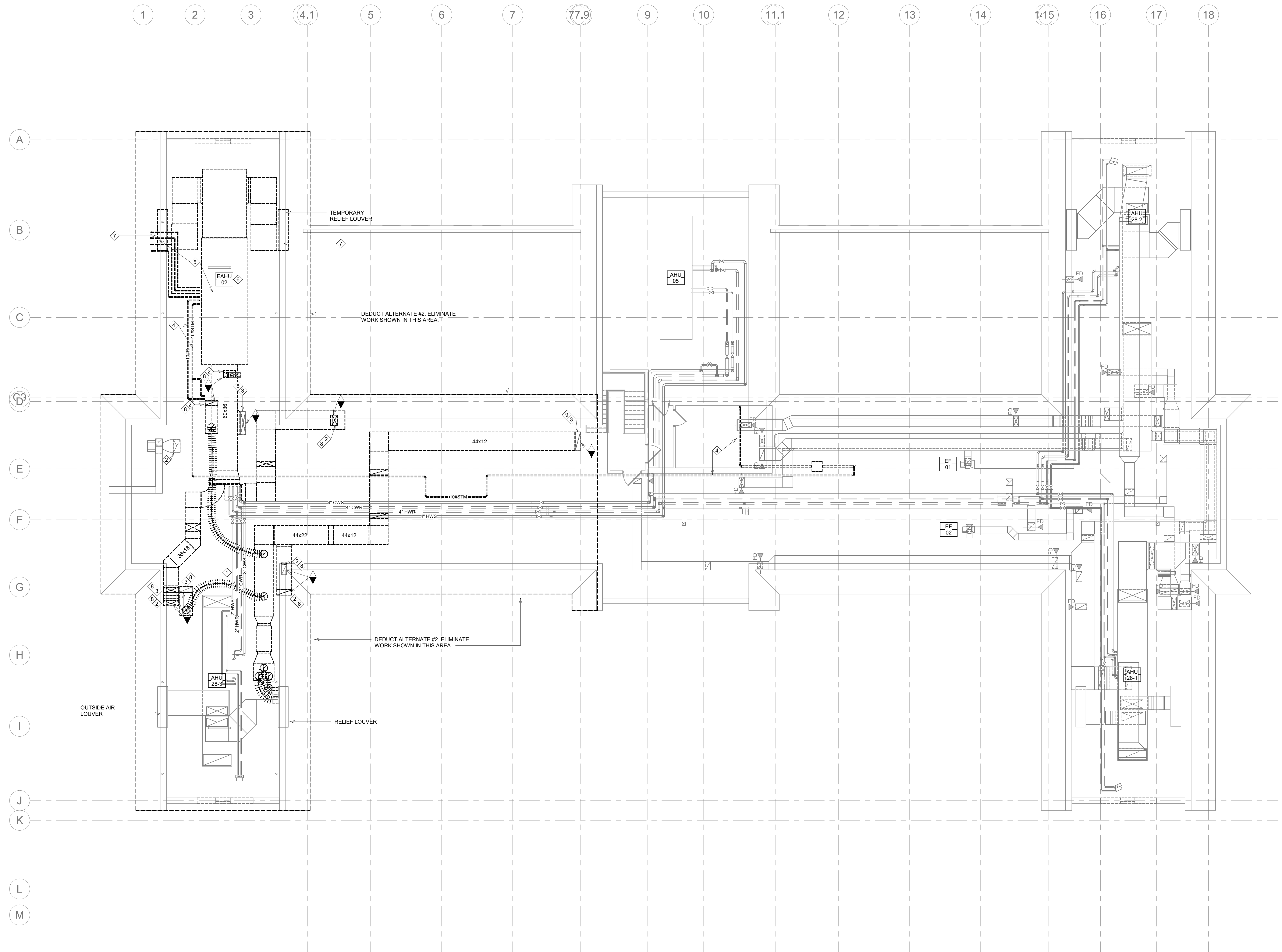
Veterans Health Administration
 St. Cloud VA Health Care System

GENERAL NOTES:

- MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REVIEW ACCESSIBILITY TO AREAS OUTSIDE THE CONSTRUCTION LIMITS TO DETERMINE APPROXIMATE AMOUNT OF OVERTIME REQUIRED TO PERFORM ALL MECHANICAL WORK INDICATED. COORDINATION OF SCHEDULES WITH ADJACENT DEPARTMENTS AND CLEANING OF ALL DEBRIS AFTER EACH SHIFT SHOULD BE ASSUMED IN THE BASE BID.
- ANY MAJOR VENTILATION OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.
- WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.
- ALL EXISTING RETURN/EXHAUST DUCTWORK NOT TEMPORARILY CAPPED SHALL BE PROTECTED WITH REMOVABLE FILTER MEDIA TO PROTECT EXISTING DUCT SYSTEMS FROM CONSTRUCTION DEBRIS. ALL NEW DUCTWORK SHALL BE PROTECTED AS REQUIRED AND CLEANED PRIOR TO START-UP. IF CONSTRUCTION DEBRIS IS FOUND INSIDE UNPROTECTED DUCTWORK THEN DUCT CLEANING OF THE ENTIRE SYSTEM SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.

KEY NOTES:

- REMOVE TEMPORARY EXHAUST FAN.
- DUCT SERVES SECOND FLOOR. DUCT THROUGH SLAB TO REMAIN.
- DUCT SERVES FIRST FLOOR. DUCT THROUGH SLAB TO REMAIN.
- DEMOLISH LOW PRESSURE STEAM AND CONDENSATE PIPING FROM EAHU-02 DOWN TO BASEMENT. CAP AT MAIN IN BASEMENT.
- DEMOLISH DX COIL AND ASSOCIATED REFRIGERANT PIPING FROM EXISTING EAHU-02 AND DOWN TO BASEMENT. EXISTING CONDENSATE UNIT (ECU-02) ON GRADE TO BE DEMOLISHED DURING PHASE 4.
- DEMOLISH EXISTING EAHU-02 AND ASSOCIATED DUCTWORK.
- EXISTING LOUVERS TO REMAIN. REMOVE EXISTING SHEET METAL PLENUM, ALONG WITH RELATED BIRD SCREEN/DRAINS/INSULATION, FOR INSTALLATION OF NEW PLENUM.
- DEMOLISH DUCT SERVING FIRST OR SECOND FLOOR DOWN TO SLAB. CAP DUCT AT SLAB AND PROTECT DUCT FOR CONNECTION TO NEW.



1 ATTIC FLOOR MECHANICAL DEMOLITION PLAN - PHASE 4
1/8" = 1'-0"

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CONSULTANT

DUNHAM

50 South Sixth Street / Suite 1100
 Minneapolis, Minnesota 55402-1540
 Phone: 612.465.7550 Fax: 612.465.7551
 Website: dunhameng.com
 mechanical + electrical consulting engineering
 652959-007-00

ARCHITECT/ENGINEER OF RECORD

ANDERSON

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 P 763.412.4000 | F 763.412.4090 | ae-mn.com
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Name: Jason R. Gottwalt, P.E.
 Date: 05/22/2020 Reg. No. 41360

Project Title RENOVATE BUILDING 28 FIRST FLOOR EAST RTTP		Project Number 656-19-306
Location SAINT CLOUD, MN		Building Number 28
Phase CONSTRUCTION DOCUMENTS		Drawing Number MD134
Drawing Title ATTIC FLOOR MECHANICAL DEMOLITION PLAN - PHASE 4	Issue Date MAY 22, 2020	Checked JRG
	Drawn TNH	

VA

U.S. Department of Veterans Affairs

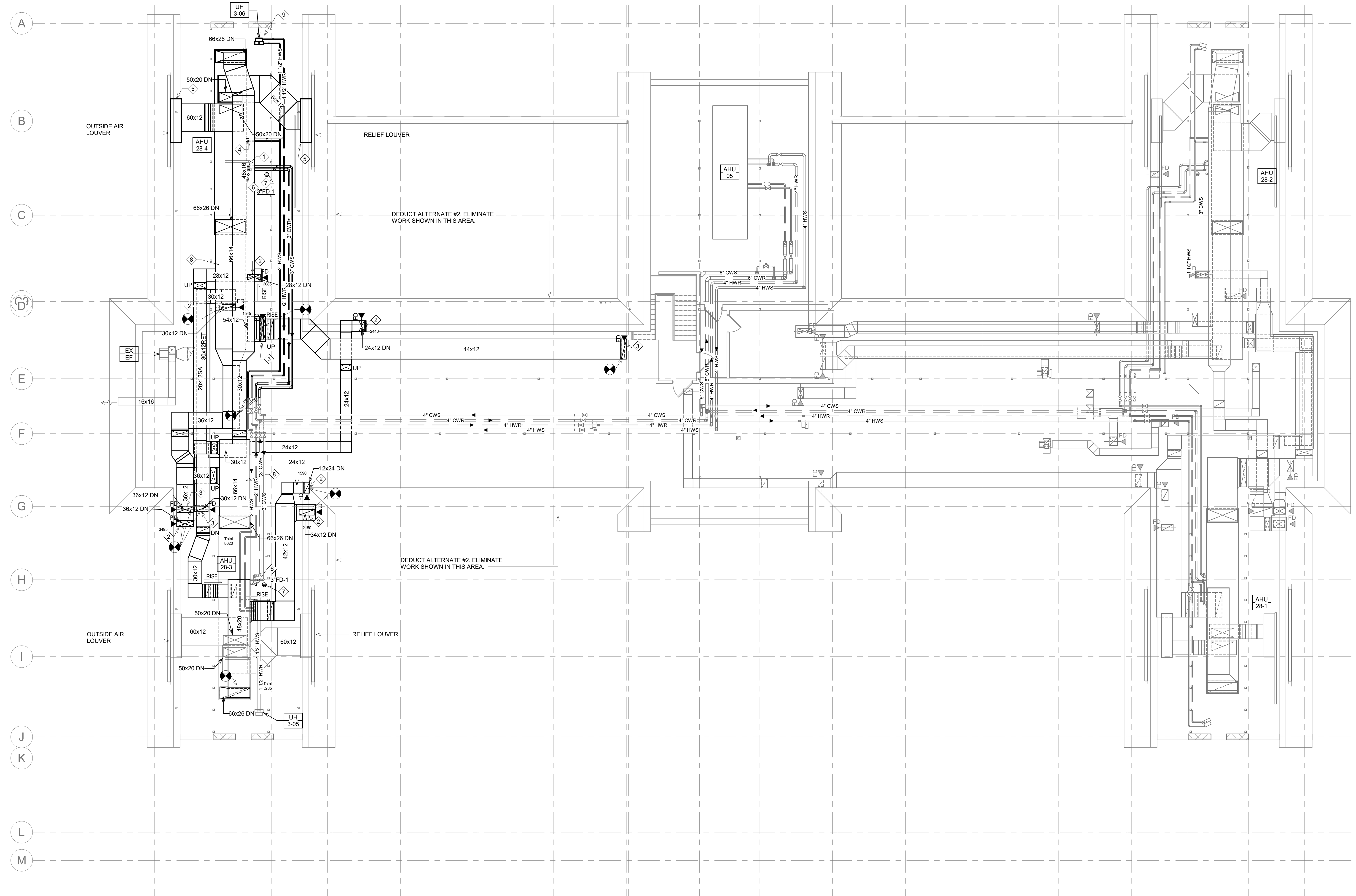
Veterans Health Administration
 St. Cloud VA Health Care System

GENERAL NOTES:

- A. ANY MAJOR VENTILATION OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.
- B. COORDINATE ALL NEW DUCTWORK ROUTING WITH ALL OTHER TRADES TO INSURE ADEQUATE CLEARANCES FOR PLUMBING, ELECTRICAL CONDUIT, STRUCTURAL SUPPORTS, PIPING, ETC. ANY UNAVOIDABLE CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OF RECORD. PROVIDE ALL OFFSETS AND TRANSITIONS AS REQUIRED FOR A CLEAN INSTALLATION.
- C. SUPPORT ALL DUCTWORK DIRECTLY TO STRUCTURE. DO NOT SUPPORT ANY DUCTS FROM DUCTWORK, CONDUIT, OR OTHER PIPING ENCOUNTERED.
- D. WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.
- E. ALL EXISTING DUCTWORK THROUGH NEW FIRE RATED WALLS SHALL BE ADEQUATELY FIRE SEALED AS REQUIRED.
- F. ALL EXISTING RETURN/EXHAUST DUCTWORK NOT TEMPORARILY CAPPED SHALL BE PROTECTED WITH REMOVABLE FILTER MEDIA TO PROTECT EXISTING DUCT SYSTEMS FROM CONSTRUCTION DEBRIS. ALL NEW DUCTWORK SHALL BE PROTECTED AS REQUIRED AND CLEANED PRIOR TO START-UP. IF CONSTRUCTION DEBRIS IS FOUND INSIDE UNPROTECTED DUCTWORK THEN DUCT CLEANING OF THE ENTIRE SYSTEM SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.
- G. ALL NEW FIRE, SMOKE, AND COMBINATION FIRE/SMOKE DAMPERS INSTALLED IN SHAFT WALLS SHALL BE INSTALLED TO ALLOW FOR SERVICE OF THEIR FUSIBLE LINK/ACTUATOR PER FACILITY STANDARDS. ANY CONFLICTS WHICH PREVENT ACCESS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER OF RECORD.

KEY NOTES:

- 1. CONNECT 3" CHILLED SUPPLY AND RETURN PIPING TO COOLING COIL. REFER TO DETAIL 6/MH500 FOR ADDITIONAL PIPING AND COMPONENTS REQUIRED THAT ARE NOT DIRECTLY SHOWN ON FLOOR PLAN, INCLUDING THE 2" PIPING BULKHEAD FITTING AND CHECK VALVE TO SUPPLY DUCT FOR OFF-SEASON COIL DRYING.
- 2. DUCT THROUGH SLAB TO REMAIN. DUCT SERVES SECOND FLOOR. PROVIDE FIRE DAMPER AT FLOOR PENETRATION WHERE SHOWN.
- 3. DUCT THROUGH SLAB TO REMAIN. DUCT SERVES FIRST FLOOR. PROVIDE FIRE DAMPER AT FLOOR PENETRATION WHERE SHOWN.
- 4. CONNECT 2" HEATING SUPPLY AND RETURN PIPING TO HEATING COIL. REFER TO DETAIL 7/MH500 FOR ADDITIONAL PIPING COMPONENTS REQUIRED. KEEP ALL PIPING IN SERVICE WALKWAY AS HIGH AS POSSIBLE FOR ACCESSIBILITY (TYP).
- 5. INSTALL NEW SHEET METAL PLENUM BEHIND EXISTING TRIANGULAR LOUVER AT ROOF GABLE. PLENUM SHALL BE A MINIMUM OF 96" WIDE X 48" HIGH X 24" DEEP TO MAXIMIZE LOUVER FREE AREA. REMAINING CORNERS OF LOUVER TO HAVE BLANK-OFF PANELS WITH RIGID INSULATION PER SPECIFICATION REQS. PROVIDE PLENUM AND OUTDOOR AIR OR RELIEF DUCT UP TO AHU, WITH SAME 3" RIGID INSULATION. INCLUDE 1" COPPER DRAIN PIPING CONNECTION ON BOTTOM OF LOUVER PLENUM. ROUTE TO NEAREST FLOOR DRAIN.
- 6. SUPPORT 2" VENT AGAINST AIR HANDLING UNIT. COORDINATE LOCATION WITH AIR HANDLING UNIT ACCESS DOORS. ROUTE VENT UP THROUGH ROOF. TERMINATE WITH 4" VENT THROUGH ROOF.
- 7. ROUTE 1" CONDENSATE PIPE TO 3" FLOOR DRAIN.
- 8. INSTALL DUCT SMOKE DETECTOR ON SUPPLY DUCT MAIN AT APPROXIMATE LOCATION INDICATED. CONNECT MOTOR CONTROLLER INTO FIRE ALARM SYSTEM TO SHUT-DOWN UNIT ON DETECTION OF SMOKE.
- 9. ROUTE 1-1/2" HEATING WATER SUPPLY AND RETURN DOWN TO NEW UNIT HEATER. CONTROLS CONTRACTOR TO PROVIDE DDC THERMOSTAT MOUNTED IN A LOCATION COORDINATED WITH ENGINEER TO CONFIRM CLEAR AIRFLOW PATH FOR ACCURATE SENSING AROUND DUCT'S STRUCTURAL OBSTRUCTIONS.



1 ATTIC FLOOR MECHANICAL PLAN - PHASE 4
1/8" = 1'-0"

Revision#	Description	Date:

CONSULTANT

DUNHAM

DUNHAM
50 South Sixth Street / Suite 1100
Minneapolis, Minnesota 55402-1540
Phone: 612.465.7550 FAX: 612.465.7551
www.dunhaminc.com
mechanical + electrical consulting engineering
652950.007.00

ARCHITECT/ENGINEER OF RECORD

ANDERSON

13605 1st Ave. N. #100 Plymouth, MN 55441
P 763.412.4000 | F 763.412.4090 | ae-mn.com
Anderson Engineering of Minnesota, LLC | Proj # Project Number

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Name: Jason R. Gottwalt, P.E.
Date: 05/22/2020 Reg. No. 41360

Project Title RENOVATE BUILDING 28 FIRST FLOOR EAST RTTP	Project Number 656-19-306
Location SAINT CLOUD, MN	Building Number 28
Phase CONSTRUCTION DOCUMENTS	Drawing Number MH134
Drawing Title ATTIC FLOOR MECHANICAL PLAN - PHASE 4	
Issue Date MAY 22, 2020	Checked JRG
Drawn TNH	Drawn TNH

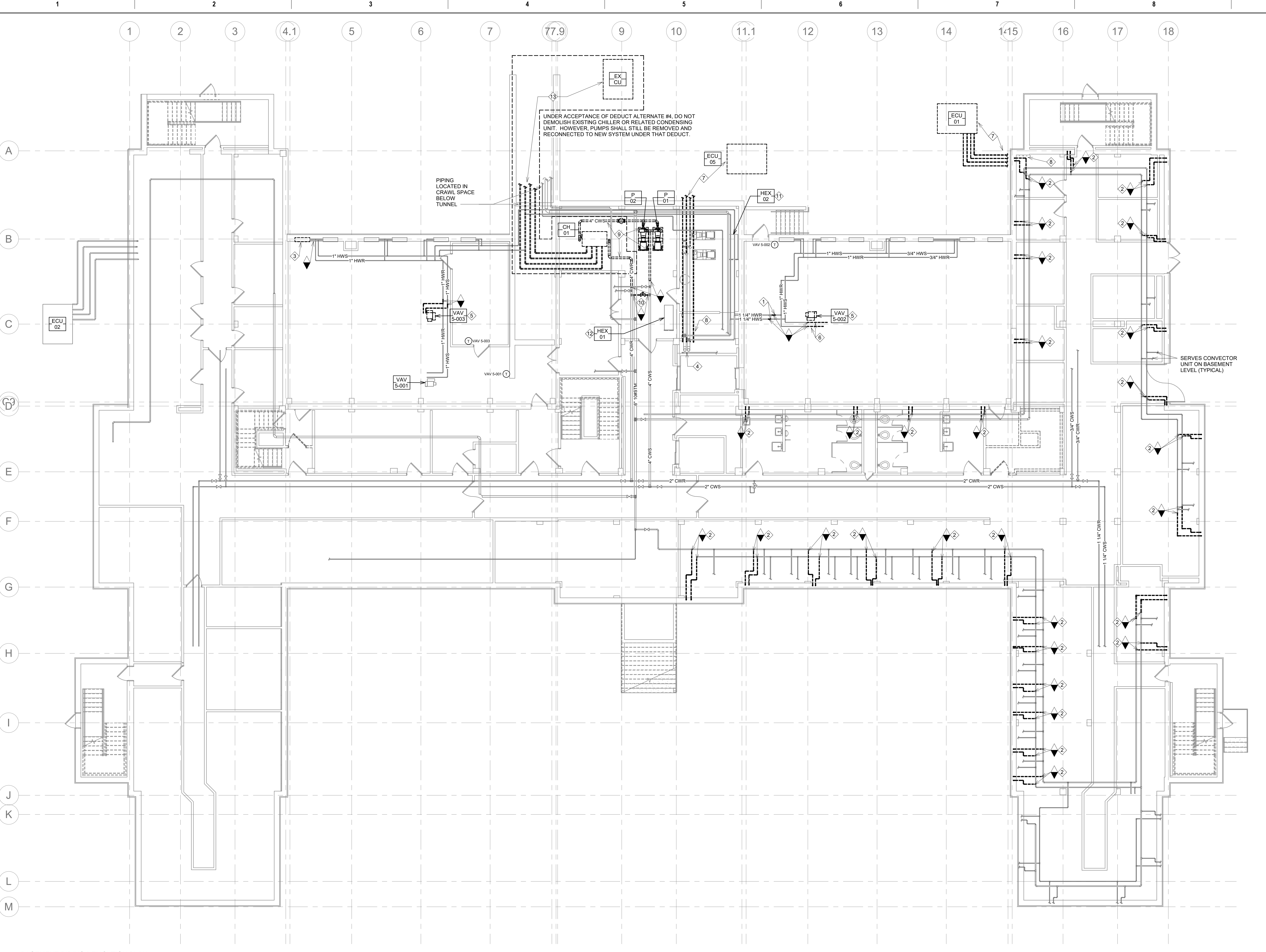
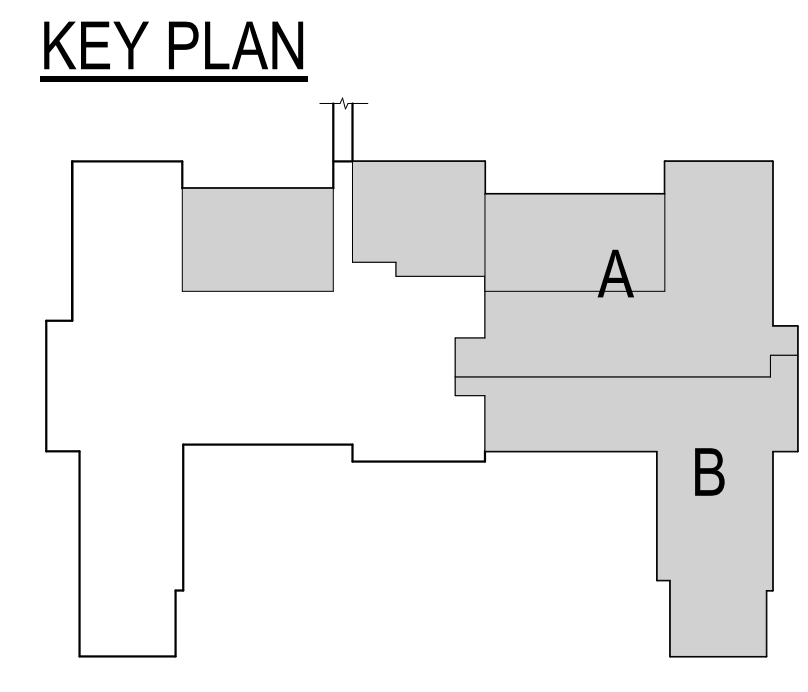
U.S. Department of Veterans Affairs
Veterans Health Administration
St. Cloud VA Health Care System

GENERAL NOTES:

- MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REVIEW ACCESSIBILITY TO AREAS OUTSIDE THE CONSTRUCTION LIMITS TO DETERMINE APPROXIMATE AMOUNT OF OVERTIME REQUIRED TO PERFORM ALL MECHANICAL WORK INDICATED. COORDINATION OF SCHEDULES WITH ADJACENT DEPARTMENTS AND CLEANING OF ALL DEBRIS AFTER EACH WORK SHIFT SHOULD BE ASSUMED IN THE BASE BID SCOPE.
- ANY MAJOR OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.
- WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.

KEY NOTES:

- PROTECT EXISTING PIPING FOR CONNECTION TO NEW.
- DEMOLISH LOW PRESSURE STEAM AND CONDENSATE PIPING FROM POINT OF DISCONNECT AND UP TO FLOOR ABOVE. CAP PIPING AT POINT OF DISCONNECT. SCOPE OF REMOVAL INVOLVES STEAM RISERS IN EXTERIOR WALL UP THROUGH SECOND FLOOR. SEE FIRST FLOOR DEMOLITION PLANS FOR CONTINUATION.
- DEMOLISH CONVECTOR UNIT AND ALL ASSOCIATED VALVES, CONTROLS AND HEATING WATER SUPPLY AND RETURN BACK TO POINT OF DISCONNECT. CAP PIPING AT POINT OF DISCONNECT.
- EXISTING 6" HEATING WATER SUPPLY AND RETURN AND 2" LOW PRESSURE STEAM UP.
- REMOVE AND STORE VAV BOX AND ASSOCIATED THERMOSTAT FOR RELOCATION. (DELETE ACCEPTANCE OF DEDUCT ALTERNATE #1)
- DEMOLISH HEATING WATER SUPPLY AND RETURN PIPING BACK TO POINT OF DISCONNECT. PROTECT EXISTING PIPING FOR CONNECTION TO NEW.
- DEMOLISH CONDENSING UNIT AND ASSOCIATED REFRIGERANT PIPING FROM CONDENSING UNIT TO BUILDING AND UP TO EAHU DURING PHASE 1 OR 2.
- DEMOLISH REFRIGERANT PIPING FROM BASEMENT LEVEL UP TO ATTIC DURING PHASES 1 OR 2.
- DEMOLISH CHILLER, PUMPS AND CHILLED WATER SUPPLY AND RETURN PIPING TO POINTS OF DISCONNECT SHOWN. UNDER ACCEPTANCE OF DEDUCT ALTERNATE #4 ONLY DEMOLISH PUMPS AND ALLOW CHILLER AND OTHER COMPONENTS TO REMAIN FOR RECONNECTION INTO NEW CHILLED WATER PIPING SYSTEM.
- DEMOLISH CHILLED WATER PIPING AND CONTROL VALVE BETWEEN POINT OF DISCONNECT.
- DOMESTIC WATER HEAT EXCHANGER TO REMAIN.
- HEATING WATER HEAT EXCHANGER TO REMAIN.
- EXISTING HEAT REJECTION PIPING AND CONDENSING UNIT TO BE FULLY REMOVED WITH EXISTING CONCRETE PAD DEMOLISHED, OR MODIFIED, FOR INSTALLATION OF NEW FLUID COOLER EQUIPMENT. DO NOT PERFORM THIS DEMOLITION UNDER ACCEPTANCE OF DEDUCT ALTERNATE #4.



1 BASEMENT PIPING DEMOLITION PLAN
1/8" = 1'-0"

Revision#	Description	Date:

CONSULTANT
DUNHAM
 50 South Sixth Street / Suite 1100
 Minneapolis, Minnesota 55402-1540
 Phone: 612.465.7550 Fax: 612.465.7551
 Website: dunhameng.com
 mechanical + electrical consulting engineering
 0420950-007-00

ARCHITECT/ENGINEER OF RECORD
ANDERSON
 13605 1st Ave. N., #100 Plymouth, MN 55441
 P 763.412.4000 | F 763.412.4090 | ae-mn.com
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 Name: Jason R. Gottwalt, P.E.
 Date: 05/22/2020 Reg. No. 41360

Project Title: RENOVATE BUILDING 28 FIRST FLOOR EAST RTTP
 Location: SAINT CLOUD, MN
 Phase: CONSTRUCTION DOCUMENTS
 Drawing Title: BASEMENT PIPING DEMOLITION PLAN
 Issue Date: MAY 22, 2020
 Checked: JRG
 Drawn: TNH

Project Number: 656-19-306
 Building Number: 28
 Drawing Number: MDP101

VA U.S. Department of Veterans Affairs
 Veterans Health Administration
 St. Cloud VA Health Care System

Scale indicators on the left margin:
 Three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 one quarter inch = one foot
 three eighths inch = one foot
 one eighth inch = one foot

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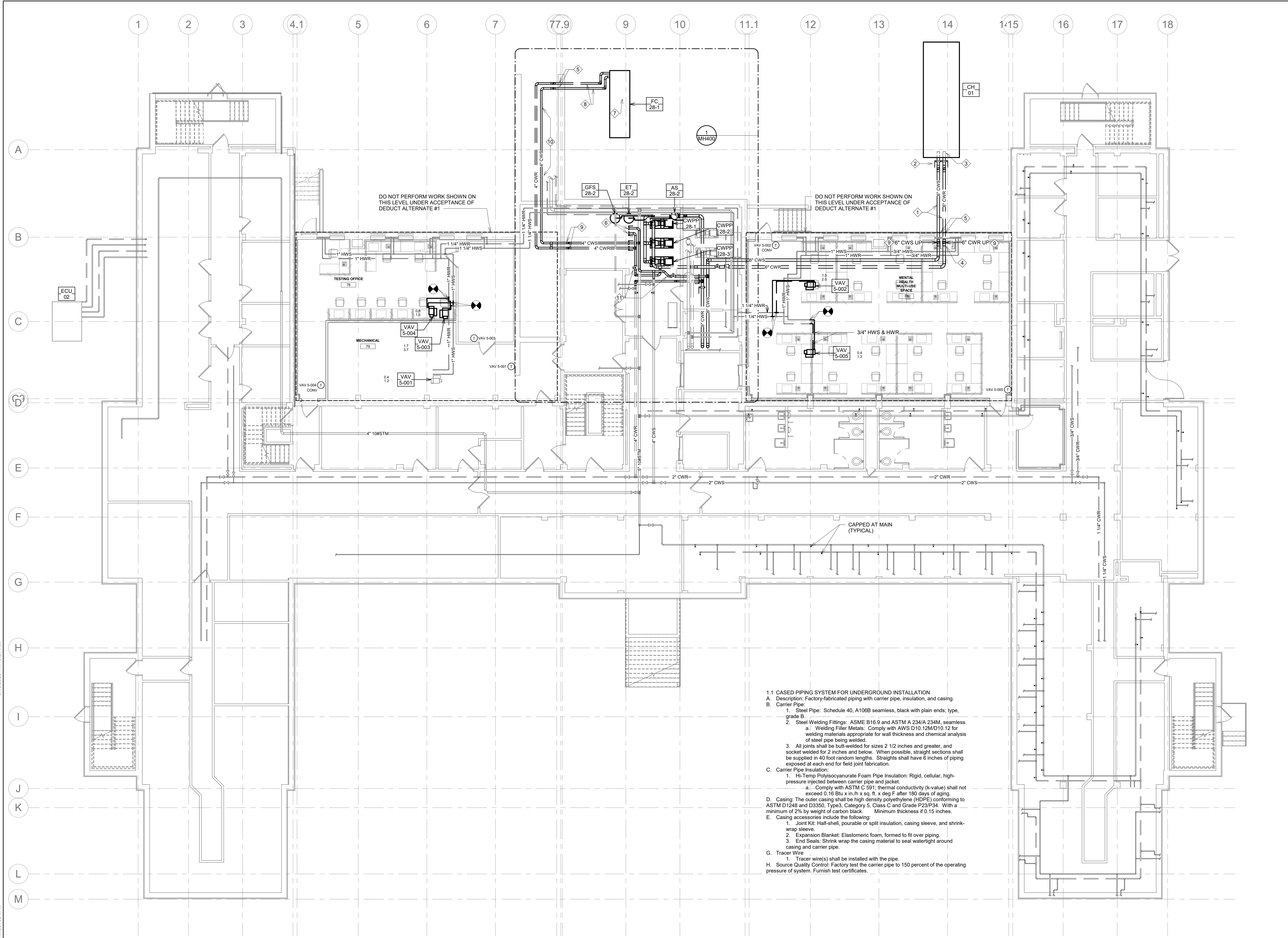
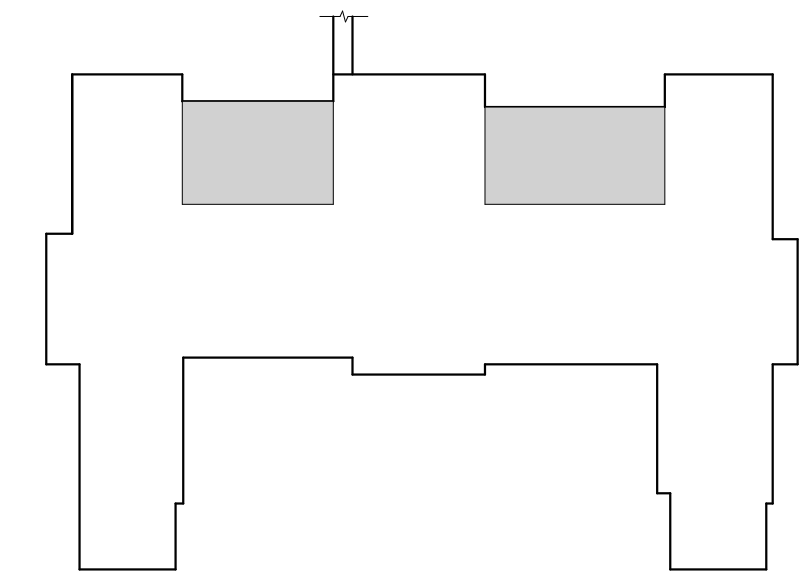
GENERAL NOTES:

- A. MECHANICAL CONTRACTOR WILL BE RESPONSIBLE TO REVIEW ACCESSIBILITY TO AREAS OUTSIDE THE CONSTRUCTION LIMITS TO DETERMINE APPROXIMATE AMOUNT OF OVERTIME REQUIRED TO PERFORM ALL MECHANICAL WORK INDICATED. COORDINATION OF SCHEDULES WITH ADJACENT DEPARTMENTS AND CLEANING OF ALL DEBRIS AFTER EACH WORK SHIFT SHOULD BE ASSUMED IN THE BASE BID SCOPE.
- B. ANY MAJOR OUTAGES INDICATED ON THESE DRAWINGS SHALL BE SCHEDULED TO BE PERFORMED AFTER NORMAL BUSINESS HOURS OR DURING WEEKEND PERIODS TO MINIMIZE DISRUPTION.
- C. COORDINATE ALL NEW PIPE ROUTING WITH ALL OTHER TRADES TO ENSURE ADEQUATE CLEARANCES FOR DUCTWORK, ELECTRICAL CONDUIT, STRUCTURAL SUPPORTS, PIPING, ETC. ANY UNAVOIDABLE CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OF RECORD. PROVIDE ALL OFFSETS AND TRANSITIONS AS REQUIRED FOR A CLEAN INSTALLATION.
- D. SUPPORT ALL PIPING DIRECTLY TO STRUCTURE. DO NOT SUPPORT ANY PIPING FROM DUCTWORK, CONDUIT, OR OTHER PIPING ENCOUNTERED.
- E. WHERE MECHANICAL SYSTEMS TO REMAIN ARE DAMAGED, OR DISTURBED, DURING THE COURSE OF CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE TO REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL QUALITY AND FUNCTIONALITY.
- F. ALL EXISTING PIPING THROUGH NEW FIRE RATED WALLS SHALL BE ADEQUATELY FIRE SEALED AS REQUIRED.
- G. THE MECHANICAL CONTRACTOR SHALL MAINTAIN ACCURATE RECORD DRAWINGS SHOWING ALL DISCREPANCIES WITH ANY EXISTING PIPING INDICATED OR REVISIONS TO THE NEW PIPING LAYOUTS. ALL CHANGES WILL BE UPDATED WITHIN THE FINAL RECORD DRAWING SET.
- H. THE SMALLEST ALLOWABLE PIPE SIZE FOR HEATING WATER SUPPLY AND RETURN WILL BE 3/4".
- I. UNLESS NOTED OTHERWISE, HEATING WATER SUPPLY AND RETURN PIPING TAKE-OFFS TO REHEAT COILS SHALL BE 3/4" DIAMETER.
- J. HEATING WATER SUPPLY AND RETURN PIPING TAKE-OFFS SHALL BE OFF THE TOP OF MAIN.
- K. PROVIDE 1/2" DRAIN VALVE AT NEW HEATING WATER SUPPLY AND RETURN PIPE LOW POINTS, DOWNSTREAM OF ISOLATION VALVES.
- L. ALL VALVES TO BE LOCATED ABOVE LAY-IN CEILING FOR ACCESSIBILITY. WHERE VALVES MUST BE LOCATED ABOVE GYPSUM BOARD CEILINGS, MECHANICAL CONTRACTOR SHALL COORDINATE LOCATIONS OF 2'x2' ACCESS PANELS WITH GENERAL CONTRACTOR.

KEY NOTES:

- 1. CHILLED WATER SUPPLY AND RETURN PIPING BURIED BENEATH GRADE. REFER TO SPECIFICATION REQUIREMENTS ON THIS DRAWING FOR STEEL PIPING CASED WITH HDPE FOR UNDERGROUND INSTALLATION. CONTRACTOR TO EITHER BURY PIPE UNDER FROST LINE OR COVER WITH 2" FIBERGLASS INSULATION TO PROTECT PER DETAIL (PROVIDED UPON REQUEST TO NOT BURY UNDER FROST LEVEL).
- 2. PROVIDE DOUBLE OFFSET HIGH PERFORMANCE BUTTERFLY VALVES WITH WEATHER RESISTANT GEAR DRIVEN ACTUATOR, BRAY VALVE MODEL OR EQUAL. INSTALL VALVES ON BOTH CHILLER CONNECTIONS WITHIN FENCE ENCLOSURE.
- 3. INSTALL FLOW SWITCH FURNISHED BY CHILLER MANUFACTURER. COORDINATE INTEGRATION WITH PACKAGED CHILLER CONTROLLER AND BUILDING AUTOMATION. SEE SEQUENCE OF OPERATION.
- 4. REFER TO ARCHITECTURAL PLAN FOR CHASE WALLS AROUND CHILLED WATER PIPING DROPS. SAWCUT FLOOR IF REQUIRED AND EXCAVATE TO PENETRATE WALL APPROXIMATELY 48" BELOW GRADE (coordinate with existing wall footings). PENETRATE WALL USING LINKSEAL ASSEMBLY AND INFILL WITH DRAINABLE FILL MATERIAL ON COMPLETION PRIOR TO PATCHING FLOOR TO ORIGINAL CONDITION.
- 5. CORE DRILL FOUNDATION WALL PENETRATIONS FOR CHILLED WATER PIPING A MINIMUM OF 48" BELOW GRADE (OR PROVIDE INSULATION REQUIREMENTS FROM KEY NOTE #1 ABOVE). INSTALL LINKSEAL ASSEMBLY AT WALL PENETRATIONS TO SEAL WATER TIGHT.
- 6. UNDER REJECTION OF ADD ALTERNATE #4 THE INDICATED DRYCOOLER, AND ASSOCIATED PIPING AND CONTROLS, WILL NOT BE INSTALLED. INSTEAD EXISTING CONDENSING UNIT AND CHILLER WILL REMAIN. THE CHILLER SUPPLY/RETURN WATER CONNECTIONS INTO NEW ISOLATION VALVES INDICATED. COORDINATE ALL PIPING INSTALLATION TO ALLOW FOR MINIMAL OUTAGE TO THIS SYSTEM THAT PROVIDES YEAR-ROUND COOLING TO LOWER LEVEL.
- 7. PROVIDE DRYCOOLER ON EXISTING CONCRETE PAD. CONTRACTOR TO VERIFY PAD SIZE WITH SHOP DRAWINGS AND EXTEND, OR MODIFY, CONCRETE PAD AS REQUIRED FOR DIMENSIONS OF DRYCOOLER FURNISHED WITHIN THEIR CONTRACT. DO NOT PROVIDE UNDER ACCEPTANCE OF DEDUCT ALTERNATE #4.
- 8. ROUTE 4" PIPING UNDERGROUND WITHIN CASED PIPING SYSTEM (REFER TO SPECIFICATION REQUIREMENTS ON THIS DRAWING). CONTRACTOR TO PROVIDE MINIMUM OF 48" BURY ABOVE PIPING AND TERMINATE UP THROUGH GROUND NEAR EXISTING EQUIPMENT PAD.
- 9. PROVIDE LOW POINT DRAIN WITH THREADED CONNECTION (TYPICAL OF ALL LOW SPOTS WITHIN CHILLED WATER SYSTEM FOR COMPLETE DRAINAGE WHEN REQUIRED).
- 10. PIPING SHOWN IN THIS AREA IS WITHIN CONFINED SPACE. STEAM TUNNEL UNDER WALKWAY ABOVE IS VERY CONGESTED AND SHOULD BE REVIEWED PRIOR TO BID.
- 11. PROVIDE 2-WAY CONTROL VALVE TO AUTOMATICALLY ISOLATE LOWER LEVEL CHILLER, OR FLUID COOLER (UNDER ALTERNATE) FROM REMAINDER OF CENTRAL SYSTEM FOR COOLING LOWER LEVEL DURING WINTER MONTHS. REFER TO SEQUENCE OF OPERATION.

KEY PLAN



- 1.1 CASED PIPING SYSTEM FOR UNDERGROUND INSTALLATION
- A. Description: Factory-fabricated piping with carrier pipe, insulation, and casing.
 - B. Carrier Pipe:
 - 1. Steel Pipe: Schedule 40, A106B seamless, black with plain ends; type, grade B.
 - 2. Steel Welding Fittings: ASME B16.9 and ASTM A 234/A 234M, seamless.
 - a. Welding Filler Metals: Comply with AWS D10.12/D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
 - 3. All joints shall be butt-welded for sizes 2 1/2 inches and greater, and socket welded for 2 inches and below. When possible, straight sections shall be supplied in 40 foot random lengths. Straights shall have 6 inches of piping exposed at each end for field joint fabrication.
 - C. Carrier Pipe Insulation:
 - 1. Hi-Temp Polyisocyanurate Foam Pipe Insulation: Rigid, cellular, high-pressure injected between carrier pipe and jacket.
 - a. Comply with ASTM C 591; thermal conductivity (k-value) shall not exceed 0.16 Btu x in/h x sq. ft. x deg F after 180 days of aging.
 - 2. Casing: The outer casing shall be high density polyethylene (HDPE) conforming to ASTM D1248 and D3550, Type3, Category 5, Class C and Grade P23P34. With a minimum of 2% by weight of carbon black. Minimum thickness if 0.15 inches.
 - D. Casing accessories include the following:
 - 1. Joint Kit: Half-shell, pourable or split insulation, casing sleeve, and shrink-wrap sleeve.
 - 2. Expansion Blanket: Elastomeric foam, formed to fit over piping.
 - 3. End Seals: Shrink wrap the casing material to seal watertight around casing and carrier pipe.
 - E. Tracer Wire:
 - 1. Tracer wire(s) shall be installed with the pipe.
 - F. Source Quality Control: Factory test the carrier pipe to 150 percent of the operating pressure of system. Furnish test certificates.

1 BASEMENT PIPING PLAN
1/8" = 1'-0"

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STAMP

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Name: Jason R. Gottwalt, P.E.
 Date: 05/22/2020 Reg. No. 41360

Project Title
 RENOVATE BUILDING 28
 FIRST FLOOR EAST RRTP

Location
 SAINT CLOUD, MN

Phase
 CONSTRUCTION DOCUMENTS

Drawing Title
 BASEMENT PIPING PLAN

Issue Date
 MAY 22, 2020

Checked
 JRG

Drawn
 TNH

Project Number
 656-19-306

Building Number
 28

Drawing Number
 MP101

VA

U.S. Department of Veterans Affairs

Veterans Health Administration
 St. Cloud VA Health Care System