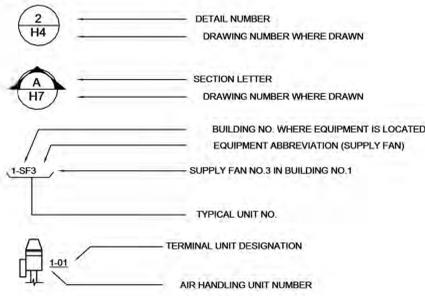
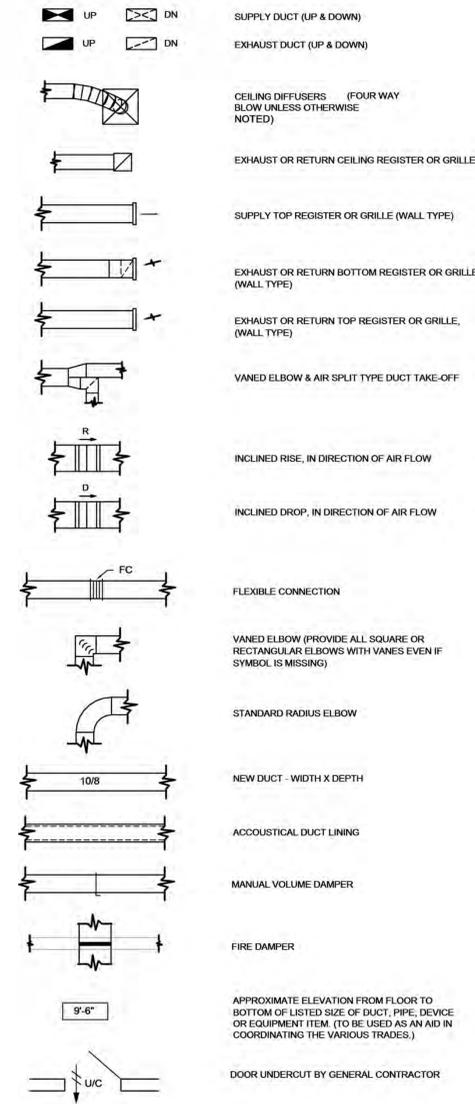


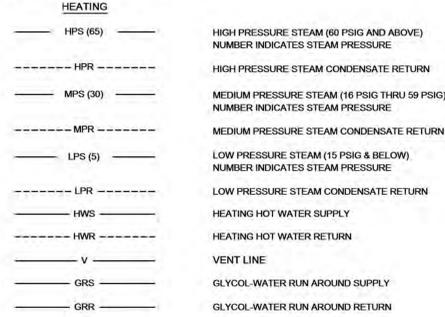
DRAWING SYMBOLS



DUCTWORK SYMBOLS



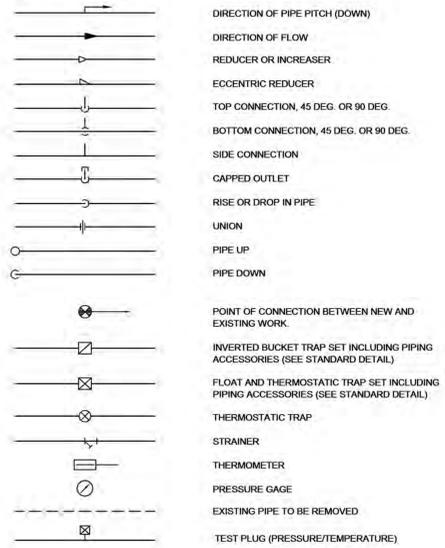
PIPING SYMBOLS



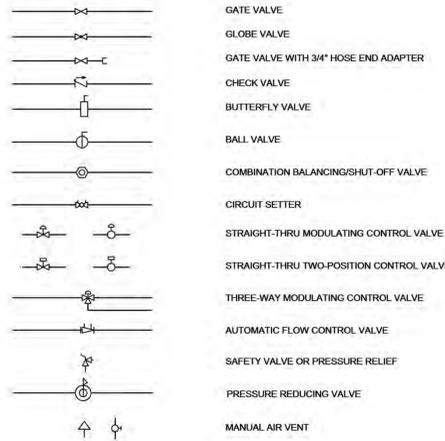
AIR CONDITIONING



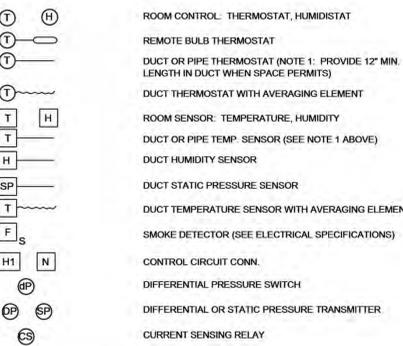
GENERAL



VALVES



CONTROLS



ABBREVIATIONS

Table of abbreviations for HVAC components like AF, AFF, AFMD, AFW, AHU, AI, AO, APD, ATC, BG, BHP, BW, BR, BTU, BTUH, C, CC, CD, CF, CFM, CG, CHR, CHS, CO, CONV, CR, CW, D, Db, DB, DDC, DEG, DI, DIA, DO, DPS, DWD, E, E.C.L., EF, ENT, EX, F, F&T, FLR, FPM, FT, FTR, GH, GPM, HC, HD, HP, etc.

ABBREVIATIONS

Table of abbreviations for HVAC components like HPR, HPS, HRC, HRP, HWR, HWS, IN, IN WC, IN WG, K.E.C., LAT, LBS/HR, LPR, LPS, LTCP, LVG, MAX, MB, MBH, MERV, MIN, MPR, MPS, NC, NOM, O.A., PC, PD, PF, PH, PRV, Rh, RPM, SD, SF, S.P., SPRV, SPS, TG, TR, UIC, UH, V, VAV, VFD, VSD, Wb, W.B.E., etc.

GENERAL NOTES:

- 1. THESE NOTES APPLY EQUALLY TO THE FULL SET OF DOCUMENTS.
2. INCLUDE ALL WORK NECESSARY TO ACCOMMODATE PHASING. REFER TO ARCHITECTURAL DRAWINGS AND GENERAL REQUIREMENTS SECTION 01 00 00.
3. INSULATE DUCTWORK AND PIPING WHERE EXISTING INSULATION HAS BEEN DAMAGED AND/OR REMOVED IN THE PERFORMANCE OF WORK IN THIS PROJECT.
4. PROVIDE ALL ROOFING PENETRATION, REPAIR & REINFORCEMENT IN THE EXISTING BUILDING FOR WORK INDICATED. ENGAGE A ROOFING SUBCONTRACTOR TO PERFORM THE ROOFING WORK WHERE ROOFING WORK IS REQUIRED. THE EXISTING ROOFING MEMBRANE AND INSULATION SHALL BE CUT, REMOVED AND RESTORED AS REQUIRED TO ATTAIN A WATERTIGHT CONDITION. THE ROOFING SUB-CONTRACTOR SHALL BE A CERTIFIED INSTALLER FOR SUCH INSTALLATION TO MAINTAIN THE EXISTING WARRANTY ON THE ROOF.
5. THE CONTRACTOR SHALL REFER TO ALL SPECIFICATION SECTIONS AND THESE DRAWINGS FOR DETAILS OF BUILDING CONSTRUCTION TO ENSURE SPACE AND SATISFACTORY ARRANGEMENT FOR THEIR WORK. THE VARIOUS DRAWINGS COMPRISING THE SET ARE INTERDEPENDENT AND MUST BE USED JOINTLY AT ALL TIMES. EACH CONTRACTOR SHALL REFER TO THE GENERAL REQUIREMENTS OF THE CONTRACT. THE NOTES AND SYMBOLS INDICATED ON THE DRAWINGS ARE FOR THE GUIDANCE OF ALL TRADES INVOLVED IN THE PROJECT AND MUST BE FOLLOWED TO EXECUTE THE WORK AS INTENDED. IF DISCREPANCIES OCCUR, CONTACT THE PROJECT ENGINEER (COR) THRU THE CONTRACTING OFFICER FOR CLARIFICATION BEFORE PROCEEDING.
6. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. SEE SPECIFICATIONS FOR MORE SPECIFIC DETAILS ON RESPONSIBILITIES.
7. ALL WORK MUST BE COORDINATED WITH THE CONTRACTING OFFICER AND PROJECT ENGINEER (COR) TO MAINTAIN OPERATION OF THE EXISTING FACILITY.
8. EACH CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF OTHERS. HE SHALL KEEP HIMSELF INFORMED OF THE PROGRESS AND DETAIL DEVELOPMENT OF THE WORK OF OTHERS AND SHALL BE RESPONSIBLE FOR COORDINATING AND EXPEDITING HIS WORK WITH OTHERS SO THAT THE PROGRESS OF THE TOTAL WORK SHALL BE KEPT ON SCHEDULE.
9. ALL WORK SHALL BE PERFORMED IN COMPLETE COMPLIANCE WITH ALL GOVERNING CODES AND STANDARDS.
10. EXISTING CONDITIONS SHOWN HAVE BEEN BASED UPON AVAILABLE DRAWING INFORMATION, AND MAY BE AT VARIANCE WITH ACTUAL WORK IN PLACE. THE CONTRACTOR SHALL TAKE ALL NECESSARY FIELD MEASUREMENTS AND FIELD VERIFY ALL CONDITIONS AFFECTING THE EXECUTION OF THE WORK. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE WORK SHOWN ON THE CONTRACT DOCUMENTS WHICH MAY IMPACT THE PROGRESS OF THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER IN WRITING FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
11. EACH CONTRACTOR AND/OR TRADE, FITTING OR PLACING HIS WORK INTO OR ON THE WORK OF OTHERS DOES SO WITH THE UNDERSTANDING THAT THE INSTALLATION OF HIS WORK CONSTITUTES HIS ACCEPTANCE OF THE SUITABILITY OF THE WORK IN PLACE. IF THE WORK OF OTHERS IS NOT ACCEPTABLE, HE SHALL NOTIFY THE PROJECT ENGINEER (COR) AND SUCH WORK SHALL BE CORRECTED. ANY NEW WORK INSTALLED IN UNSUITABLE EXISTING WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR TRADE INSTALLING THE NEW WORK. NO CLAIMS FOR ADDITIONAL COMPENSATION FOR CORRECTING WORK INSTALLED IN UNSUITABLE EXISTING CONDITIONS WILL BE CONSIDERED.
12. ABATEMENT, REMOVAL OR ENCAPSULATION OF EXISTING MATERIALS CONTAINING ASBESTOS IS INCLUDED IN THIS CONSTRUCTION CONTRACT. REFER TO DRAWINGS AND/OR SPECIFICATIONS FOR LOCATION OF ASBESTOS. ANY ASBESTOS WORK PERFORMED AS PART OF THIS PROJECT SHALL BE COMPLETED PRIOR TO STARTING ANY OTHER PROJECT SITE WORK. REFER TO SPECIFICATIONS FOR ASBESTOS ABATEMENT.
13. IF, IN THE PERFORMANCE OF THIS WORK, MATERIALS ARE OBSERVED WHICH ARE SUSPECTED TO CONTAIN ASBESTOS, THE CONTRACTOR SHALL IMMEDIATELY INFORM THE CONTRACTING OFFICER AND THE INSULATION WORKERS TO THE INSTALLATION OF ASBESTOS PARTICLES SHALL BE TERMINATED. WORK MAY BE RESUMED ONLY AFTER A DETERMINATION HAS BEEN MADE AND UNSAFE MATERIALS HAVE BEEN REMOVED OR ENCAPSULATED AND THE AREA DECLARED SAFE.
14. SOME AREAS MAY BE NOTED ON FLOOR PLANS THAT ASBESTOS IS PRESENT. CONTRACTORS SHALL TAKE SPECIAL CARE WHILE WORKING ADJACENT TO ASBESTOS MATERIALS AND MUST BE PROPERLY PROTECTED WITH CLOTHING, BREATHING APPARATUS, ETC. VERIFY REQUIREMENTS OF VAMC'S INFECTION CONTROL RISK ASSESSMENT TEAM (ICRA).
15. REFER TO ARCHITECTURAL FIRE-RATED PARTITION PLANS FOR LOCATIONS AND FIRE-RATINGS OF NEW AND EXISTING WALL ASSEMBLIES. ALL PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE PROTECTED AND/OR FIRE-STOPPED AS REQUIRED TO MAINTAIN FIRE-RATINGS INDICATED. COORDINATE WITH ALL TRADES TO ENSURE FIRE-RATED PENETRATION REQUIREMENTS AND DETAILS ARE MET.
16. ANNULAR SPACE OF ALL PIPE, CONDUIT, DUCT & OTHER SIMILAR PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE FIRE STOPPED. IN ADDITION, PENETRATIONS THROUGH 0-HOUR RATED WALLS & FLOORS SHALL BE FIRE STOPPED TO RETARD PASSAGE OF FIRE & SMOKE.
17. ALL PIPING, DUCTS, CONDUITS, ETC. IN FINISHED ROOMS, CORRIDORS, ETC. SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE SUSPENDED CEILING.
18. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED. DUCT SIZES ARE NET INSIDE DIMENSIONS.
19. PROVIDE DUCT ACCESS PANELS AS REQUIRED BY 23 31 00 FOR ACCESS TO FIRE DAMPERS, SMOKE DAMPERS, SMOKE DETECTORS, AUTOMATIC CONTROL DAMPERS, AND HUMIDIFIER DISPERSION TUBES. REFER TO DETAIL ON SHEET 411M502. COORDINATE SIZES AND LOCATIONS WITH ACCESSORIES PROVIDED BY OTHER TRADES.
20. ACCESS PANELS IN NON ACCESSIBLE SUSPENDED CEILINGS SHALL BE PROVIDED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, FLOW METERS, CONTROLS, ETC. COORDINATE SIZES AND LOCATIONS WITH OTHER TRADES.
21. TOTAL STATIC PRESSURE NOTED IN THE SCHEDULES INCLUDES DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
22. FOR TYPICAL STEAM, WATER AND REFRIGERANT PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD DETAILS AND PIPING SCHEMATICS.
23. DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
24. WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.
25. WALL TYPE EXHAUST REGISTERS NOTED AS "BR" ON DRAWINGS ARE TO BE INSTALLED WITH BOTTOM OF REGISTERS SEVEN INCHES ABOVE FINISHED FLOOR.
26. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.
27. WHERE DUCTS OR PIPES ARE REMOVED THRU WALL/FLOOR/ROOF THAT IS TO REMAIN, PATCH WALL/FLOOR/ROOF CONSTRUCTION TO MATCH EXISTING WHERE OPENING IS NOT RE-USED.
28. ALL PRESSURES LISTED ARE GAGE PRESSURE UNLESS OTHERWISE NOTED.
29. ALL CUTTING AND PATCHING REQUIRED FOR THIS PROJECT SHALL BE INCLUDED IN THE CONTRACT. REFINISH ANY SURFACE DISTURBED UNDER THIS WORK TO MATCH EXISTING.
30. IN GENERAL, KEEP DUCT AND PIPING MAINS NEXT TO UNDERSIDE OF STRUCTURE.
31. ANY REMOVED EQUIPMENT SHALL BE TURNED OVER TO THE VA. ITEMS NOT DESIRED BY THE VA SHALL BE REMOVED FROM THE PREMISES AND DISPOSED OF PROPERLY BY THE CONTRACTOR.
32. THE CONTRACT DRAWINGS ARE NOT INTENDED TO SHOW EVERY VERTICAL OR HORIZONTAL OFFSET WHICH MAY BE NECESSARY TO COMPLETE THE SYSTEMS. COORDINATE WORK IN ADVANCE WITH ALL OTHER TRADES AND REPORT IMMEDIATELY ANY DIFFICULTIES WHICH CAN BE ANTICIPATED.
33. FIELD VERIFY EXISTING CONDITIONS, INCLUDING DUCT, PIPE AND EQUIPMENT SIZES, SERVICES AND LOCATIONS PRIOR TO PERFORMING WORK.
34. HEPA FILTERED EXHAUST IS REQUIRED TO MAINTAIN A MINIMUM OF 0.01" W.G. NEGATIVE PRESSURE IN CONSTRUCTION AREAS. COORDINATE WITH GENERAL CONTRACTOR AND THE PROJECT ENGINEER (COR).
35. ALL ABANDONED EXTRANEOUS PIPING, DUCTWORK, SUPPORTS, CONTROLS, ETC. SHALL BE REMOVED.
36. TERMINATE PIPING AND DUCTWORK BELOW FLOORS, ABOVE CEILINGS, ETC., IN CONCEALED SPACES. ALL CUTTING AND PATCHING SHALL MATCH EXISTING FINISHES.
37. WHERE CONTROL DEVICES ARE REMOVED, PNEUMATIC LINES SHALL BE REMOVED BACK TO MAIN AND CAPPED, AND CONTROL WIRING AND CONDUIT SHALL BE REMOVED BACK TO SOURCE.
38. ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, CONTROLS, ETC. SHOWN DASHED SHALL BE REMOVED. THE MAJORITY OF WORK TO BE REMOVED IS SHOWN. REMOVE ALL INCIDENTAL AND/OR ABANDONED DUCTWORK, PIPING, ETC. THAT MAY NOT BE SHOWN BUT IS ASSOCIATED WITH THE REMOVAL WORK.
39. ALL ITEMS THAT REQUIRE ACCESS, SUCH AS FOR OPERATING, CLEANING, SERVICING, MAINTENANCE, AND CALIBRATION, SHALL BE EASILY AND SAFELY ACCESSIBLE BY PERSONS STANDING AT FLOOR LEVEL, OR STANDING ON PERMANENT PLATFORMS, WITHOUT THE USE OF PORTABLE LADDERS. EXAMPLES OF THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO: ALL TYPES OF VALVES, FILTERS AND STRAINER, TRANSMITTERS, CONTROL DEVICES, ETC.
40. WHERE EXISTING HVAC UTILITIES IN SERVICE WILL BE DISRUPTED DURING THE CONSTRUCTION OF THIS PROJECT, THIS WORK SHALL BE PERFORMED ON WEEKENDS OR WEEK NIGHTS, IF REQUIRED BY THE PROJECT ENGINEER (COR). DOWNTIME SHALL BE KEPT TO A MINIMUM, AND SHALL BE COORDINATED AND SCHEDULED WELL IN ADVANCE WITH THE PROJECT ENGINEER (COR).
41. WHEN NEW SUPPLY AND RETURN AIR DUCTS ARE CONNECTED TO EXISTING DUCTWORK, CLEAN BOTH NEW AND EXISTING DUCTWORK BY MOPPING AND VACUUM CLEANING INSIDE AND OUTSIDE BEFORE OPERATION. CLEANING OF EXISTING DUCTWORK SHALL BE LIMITED TO THE IMMEDIATE AREA WITHIN REACH OF THE OPEN END OF THE DUCT.
42. RUNOUT PIPING TO TERMINAL UNITS SHALL BE 0.75" SIZE UNLESS OTHERWISE NOTED.
43. APPROXIMATE ELEVATIONS NOTED ON FLOOR PLANS ARE TO THE BOTTOM OF DUCTS AND EQUIPMENT, AND TO THE CENTER OF PIPES.
44. REFER TO ELECTRICAL DRAWINGS FOR VARIABLE SPEED MOTOR CONTROLLERS ASSOCIATED WITH MECHANICAL EQUIPMENT.
45. CONTRACTOR RESPONSIBILITIES ARE LISTED IN SPECIFICATION SECTION 23 09 23, SECTION 1.1.

DRAWING INDEX - HVAC table with columns for SHEET and DESCRIPTION, listing various drawing sheets and their contents.

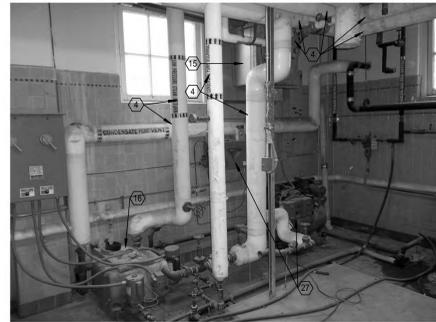
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Project information block including consultants (John Pof Architects, Reitano Design Group, TTP, Kleingers Group), architect/engineer (Heapy Engineering), drawing title (LEGEND, INDEX AND GENERAL NOTES), project title (Correct Deficiencies Patient Kitchen B411), location (Dayton, OH), date (05/30/2014), and drawing number (411M001).

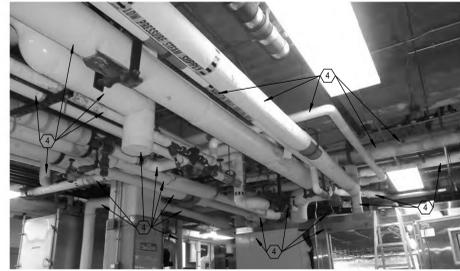
three inches = one foot
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 one inch = one foot
 three-quarters inch = one foot
 one-half inch = one foot
 three-eighths inch = one foot
 one-quarter inch = one foot
 one-eighth inch = one foot



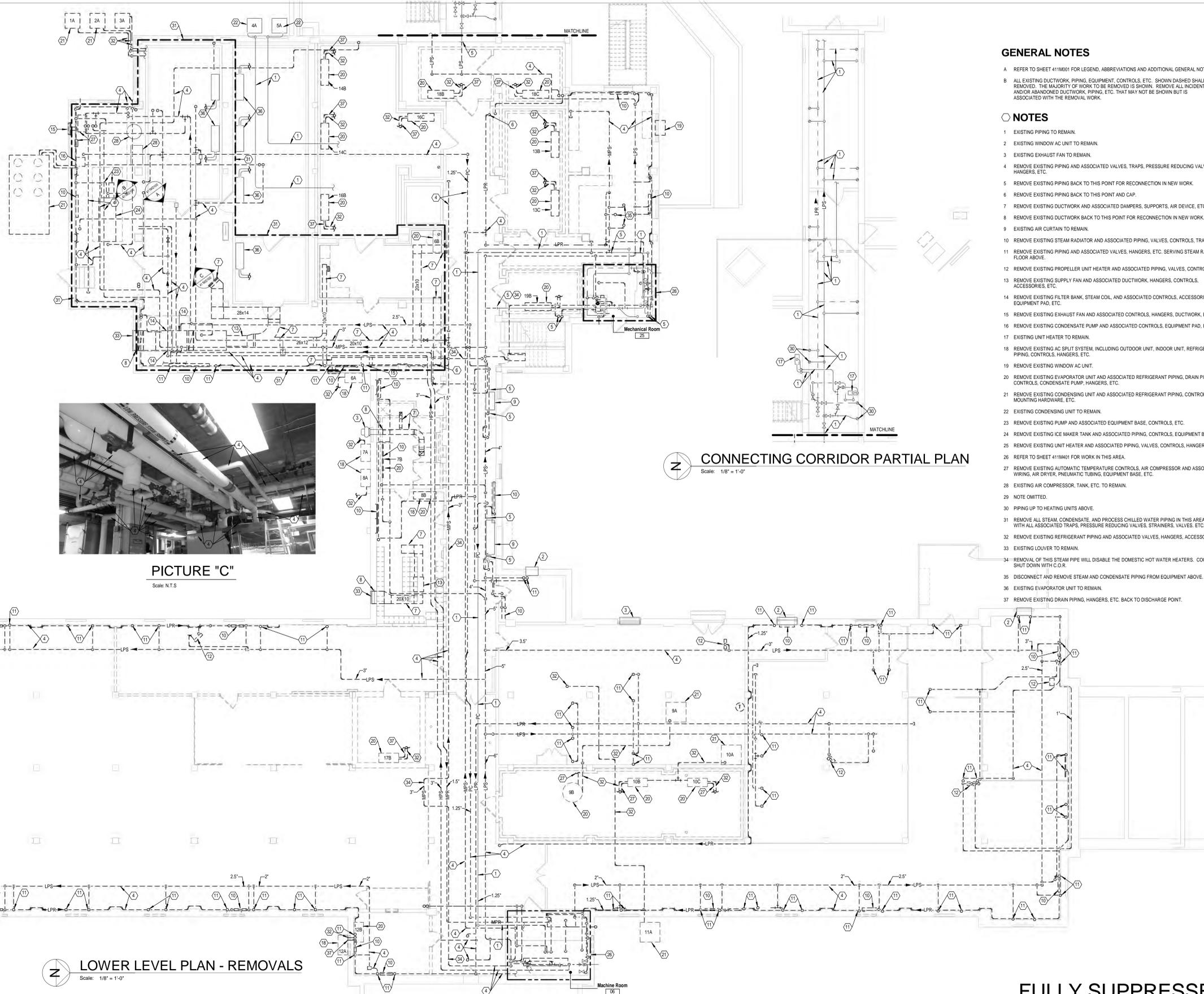
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PICTURE "B"
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PICTURE "C"
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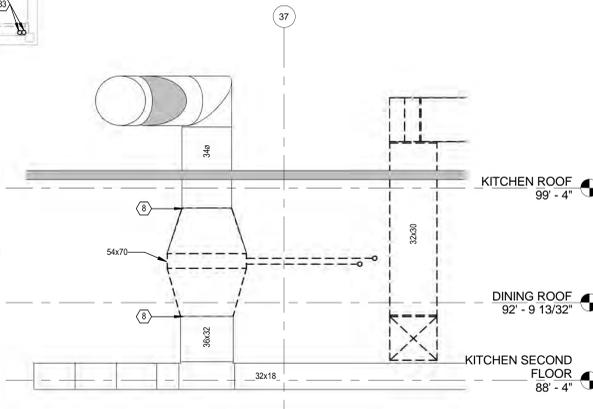
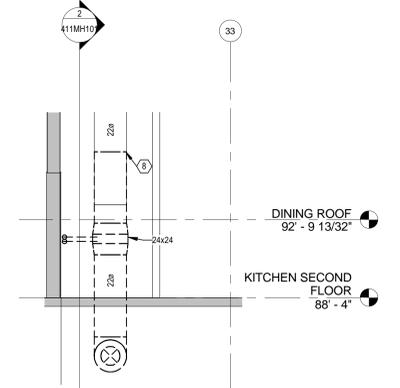
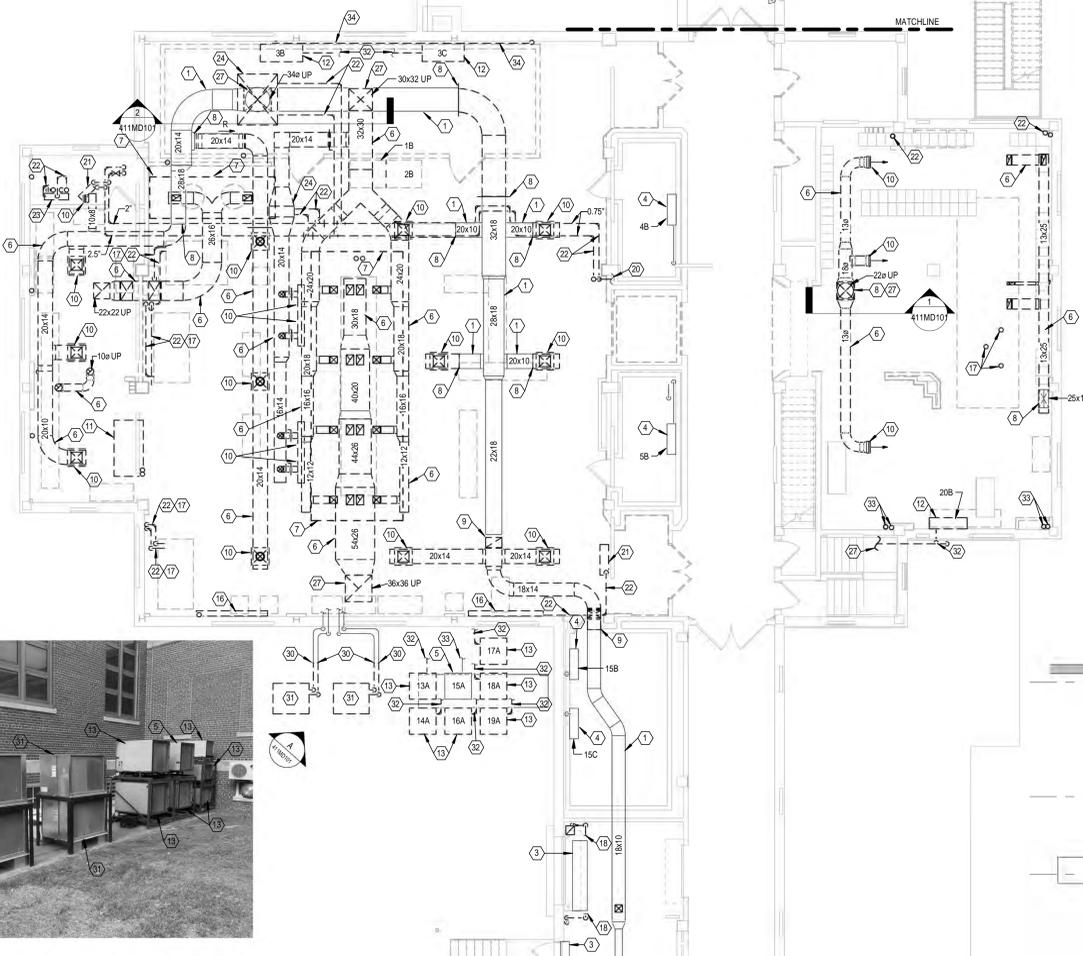


- GENERAL NOTES**
- A REFER TO SHEET 411M001 FOR LEGEND, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
 - B ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, CONTROLS, ETC. SHOWN DASHED SHALL BE REMOVED. THE MAJORITY OF WORK TO BE REMOVED IS SHOWN. REMOVE ALL INCIDENTAL AND/OR ABANDONED DUCTWORK, PIPING, ETC. THAT MAY NOT BE SHOWN BUT IS ASSOCIATED WITH THE REMOVAL WORK.
- NOTES**
- 1 EXISTING PIPING TO REMAIN.
 - 2 EXISTING WINDOW AC UNIT TO REMAIN.
 - 3 EXISTING EXHAUST FAN TO REMAIN.
 - 4 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, PRESSURE REDUCING VALVES, HANGERS, ETC.
 - 5 REMOVE EXISTING PIPING BACK TO THIS POINT FOR RECONNECTION IN NEW WORK.
 - 6 REMOVE EXISTING PIPING BACK TO THIS POINT AND CAP.
 - 7 REMOVE EXISTING DUCTWORK AND ASSOCIATED DAMPERS, SUPPORTS, AIR DEVICE, ETC.
 - 8 REMOVE EXISTING DUCTWORK BACK TO THIS POINT FOR RECONNECTION IN NEW WORK.
 - 9 EXISTING AIR CURTAIN TO REMAIN.
 - 10 REMOVE EXISTING STEAM RADIATOR AND ASSOCIATED PIPING, VALVES, CONTROLS, TRAPS, ETC.
 - 11 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, HANGERS, ETC. SERVING STEAM RADIATOR ON FLOOR ABOVE.
 - 12 REMOVE EXISTING PROPPELLER UNIT HEATER AND ASSOCIATED PIPING, VALVES, CONTROLS, ETC.
 - 13 REMOVE EXISTING SUPPLY FAN AND ASSOCIATED DUCTWORK, HANGERS, CONTROLS, ACCESSORIES, ETC.
 - 14 REMOVE EXISTING FILTER BANK, STEAM COIL, AND ASSOCIATED CONTROLS, ACCESSORIES, EQUIPMENT PAD, ETC.
 - 15 REMOVE EXISTING EXHAUST FAN AND ASSOCIATED CONTROLS, HANGERS, DUCTWORK, ETC.
 - 16 REMOVE EXISTING CONDENSATE PUMP AND ASSOCIATED CONTROLS, EQUIPMENT PAD, ETC.
 - 17 EXISTING UNIT HEATER TO REMAIN.
 - 18 REMOVE EXISTING AC SPLIT SYSTEM, INCLUDING OUTDOOR UNIT, INDOOR UNIT, REFRIGERANT PIPING, CONTROLS, HANGERS, ETC.
 - 19 REMOVE EXISTING WINDOW AC UNIT.
 - 20 REMOVE EXISTING EVAPORATOR UNIT AND ASSOCIATED REFRIGERANT PIPING, DRAIN PIPING, CONTROLS, CONDENSATE PUMP, HANGERS, ETC.
 - 21 REMOVE EXISTING CONDENSING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONTROLS, MOUNTING HARDWARE, ETC.
 - 22 EXISTING CONDENSING UNIT TO REMAIN.
 - 23 REMOVE EXISTING PUMP AND ASSOCIATED EQUIPMENT BASE, CONTROLS, ETC.
 - 24 REMOVE EXISTING ICE MAKER TANK AND ASSOCIATED PIPING, CONTROLS, EQUIPMENT BASE, ETC.
 - 25 REMOVE EXISTING UNIT HEATER AND ASSOCIATED PIPING, VALVES, CONTROLS, HANGERS, ETC.
 - 26 REFER TO SHEET 411M001 FOR WORK IN THIS AREA.
 - 27 REMOVE EXISTING AUTOMATIC TEMPERATURE CONTROLS, AIR COMPRESSOR AND ASSOCIATED WIRING, AIR DRYER, PNEUMATIC TUBING, EQUIPMENT BASE, ETC.
 - 28 EXISTING AIR COMPRESSOR, TANK, ETC. TO REMAIN.
 - 29 NOTE OMITTED.
 - 30 PIPING UP TO HEATING UNITS ABOVE.
 - 31 REMOVE ALL STEAM, CONDENSATE, AND PROCESS CHILLED WATER PIPING IN THIS AREA, ALONG WITH ALL ASSOCIATED TRAPS, PRESSURE REDUCING VALVES, STRAINERS, VALVES, ETC.
 - 32 REMOVE EXISTING REFRIGERANT PIPING AND ASSOCIATED VALVES, HANGERS, ACCESSORIES, ETC.
 - 33 EXISTING LOUVER TO REMAIN.
 - 34 REMOVAL OF THIS STEAM PIPE WILL DISABLE THE DOMESTIC HOT WATER HEATERS. COORDINATE SHUT DOWN WITH C.O.R.
 - 35 DISCONNECT AND REMOVE STEAM AND CONDENSATE PIPING FROM EQUIPMENT ABOVE.
 - 36 EXISTING EVAPORATOR UNIT TO REMAIN.
 - 37 REMOVE EXISTING DRAIN PIPING, HANGERS, ETC. BACK TO DISCHARGE POINT.

FULLY SUPPRESSED

Revisions Date	CONSULTANTS: 	HEAPY PROJECT No.: 2013-04002 	ARCHITECT/ENGINEERS: 1400 W Dorothy Lane, Dayton OH 45409-1310 Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com	Drawing Title: LOWER LEVEL PLAN - REMOVALS	Project Title: Correct Deficiencies Patient Kitchen B411	Project No. VA Project No. 552-14-102 JPA Project No. 13001.00 Building Number B411 Drawing Number 411MD100 Dwg. of	Office of Construction and Facilities Management Department of Veterans Affairs
	Approved: Project Director	Date 05/30/2014	Checker DLE	Drawn PCW	Location Dayton, OH	Date	Dwg. of

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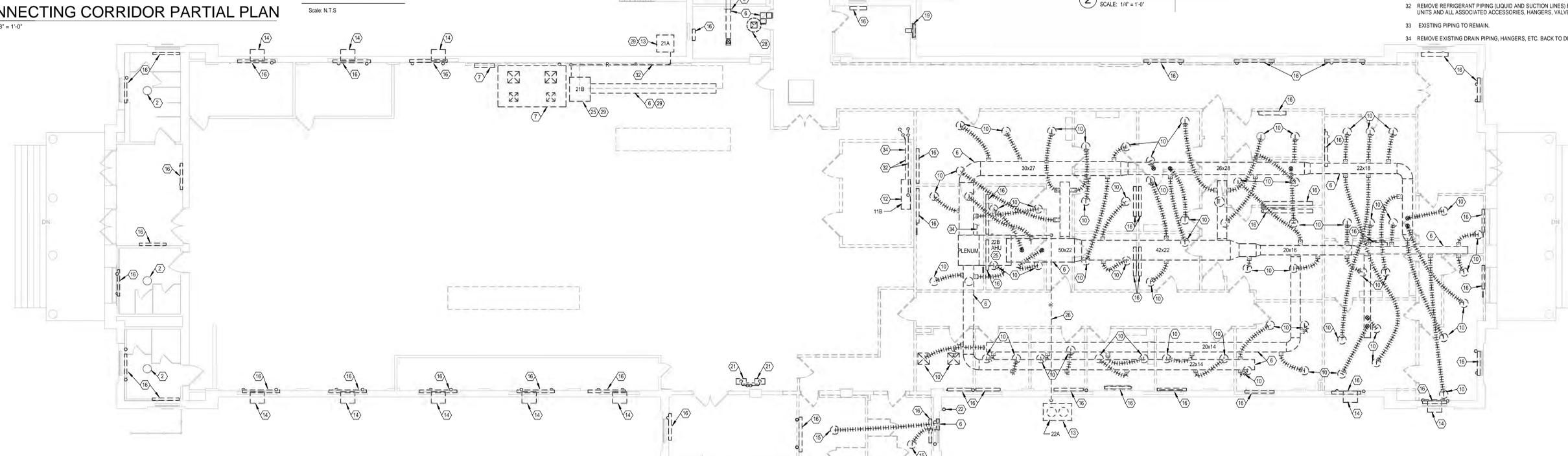
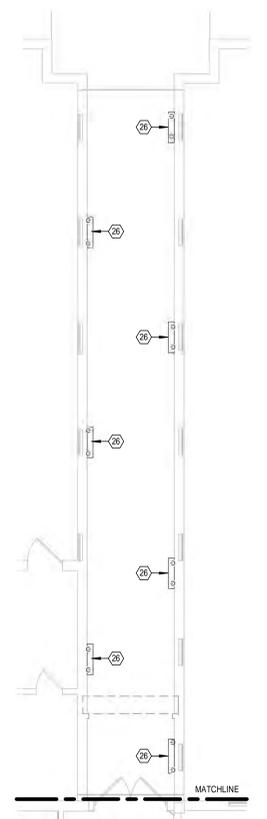


GENERAL NOTES

A REFER TO SHEET 411M001 FOR LEGEND, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.

B ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, CONTROLS, ETC. SHOWN DASHED SHALL BE REMOVED. THE MAJORITY OF WORK TO BE REMOVED IS SHOWN. REMOVE ALL INCIDENTAL AND/OR ABANDONED DUCTWORK, PIPING, ETC. THAT MAY NOT BE SHOWN BUT IS ASSOCIATED WITH THE REMOVAL WORK.

- NOTES**
- EXISTING DUCTWORK TO REMAIN.
 - EXISTING EXHAUST FAN TO REMAIN.
 - EXISTING AIR CURTAIN TO REMAIN.
 - EXISTING EVAPORATOR UNIT TO REMAIN.
 - EXISTING CONDENSING UNIT TO REMAIN.
 - REMOVE EXISTING DUCTWORK AND ASSOCIATED DAMPERS, SUPPORTS, ETC.
 - REMOVE EXISTING KITCHEN HOOD AND ASSOCIATED ACCESSORIES, DUCTWORK, PIPING, HANGERS, CONTROLS, WASH CABINET, ETC. REMOVE STRUCTURAL STEEL SUPPORTS ABOVE CEILING.
 - REMOVE EXISTING DUCTWORK BACK TO THIS POINT FOR RECONNECTION IN NEW WORK.
 - REMOVE EXISTING DUCTWORK TO THIS POINT AND CAP.
 - REMOVE EXISTING AIR DEVICE AND ASSOCIATED DUCTWORK, ETC.
 - REMOVE EXISTING UNIT HEATER AND ASSOCIATED PIPING, HANGERS, CONTROLS, VALVES, ETC.
 - REMOVE EXISTING INDOOR EVAPORATOR UNIT AND ALL ASSOCIATED HANGERS, REFRIGERANT PIPING, DRAIN PIPING, CONTROLS, ETC.
 - REMOVE EXISTING AIR COOLED CONDENSING UNIT AND ASSOCIATED REFRIGERANT PIPING, CONTROLS, CONCRETE BASE, ETC.
 - REMOVE EXISTING WINDOW A/C UNIT.
 - REMOVE EXISTING CEILING MOUNTED EXHAUST FAN AND ASSOCIATED DUCTWORK, CONTROLS, ETC.
 - REMOVE EXISTING STEAM RADIATOR AND ASSOCIATED PIPING, VALVES, TRAP, CONTROLS, ETC.
 - DISCONNECT AND REMOVE STEAM AND CONDENSATE PIPING FROM EQUIPMENT. REMOVE ALL ASSOCIATED STEAM SPECIALTIES, CONTROLS, ETC.
 - REMOVE EXISTING PIPING BACK TO THIS POINT FOR RECONNECTION IN NEW WORK.
 - REMOVE EXISTING EXHAUST FAN AND ASSOCIATED CONTROLS, WIRING, ETC.
 - REFER TO SECOND FLOOR PLAN ON SHEET 411MD102 FOR CONTINUATION.
 - REMOVE EXISTING PROPELLER UNIT HEATER AND ASSOCIATED PIPING, VALVES, CONTROLS, ETC.
 - REMOVE EXISTING PIPING AND ASSOCIATED VALVES, HANGERS, ETC.
 - REMOVE EXISTING STEAM FIRED WATER HEATER AND ALL ASSOCIATED PIPING, VALVES, CONTROLS, ETC.
 - REMOVE EXISTING STEAM HEATING COIL AND ASSOCIATED DUCTWORK, PIPING, HANGERS, VALVES, CONTROLS, ETC.
 - REMOVE EXISTING AIR HANDLING UNIT AND ASSOCIATED FILTERS, COILS, DUCTWORK, PIPING, ETC.
 - EXISTING STEAM RADIATOR TO REMAIN.
 - SEE SHEET 411MD102 FOR CONTINUATION.
 - REMOVE ROOF CURB MOUNTED EXHAUST FAN AND ASSOCIATED AIR DEVICE, DUCTWORK, CONTROLS, ETC. RE-USE ROOF CURB PENETRATION IN NEW WORK.
 - THIS EQUIPMENT IS ASSOCIATED WITH DEDUCT ALTERNATE #1. EQUIPMENT SHALL REMAIN IF DEDUCT IS ACCEPTED. ALL PIPING CONTROLS, SUPPORTS, ETC. ATTACHED TO WEST WALL SHALL BE REMOVED AND RELOCATED TO FACILITATE WALL REMOVAL WINDOW REPLACEMENT.
 - REMOVE REFRIGERANT PIPING (LIQUID AND SUCTION LINES) BACK TO THIS POINT FOR RECONNECTION IN NEW WORK.
 - REMOVE CONDENSING UNIT (4 TOTAL) AND SHIFT WEST APPROXIMATELY 2'-0" TO ACCOMMODATE K.T.G. TRAILERS. COORDINATE EXACT LOCATIONS REQUIRED.
 - REMOVE REFRIGERANT PIPING (LIQUID AND SUCTION LINES) BETWEEN INDOOR AND OUTDOOR UNITS AND ALL ASSOCIATED ACCESSORIES, HANGERS, VALVES, SPECIALTIES, ETC.
 - EXISTING PIPING TO REMAIN.
 - REMOVE EXISTING DRAIN PIPING, HANGERS, ETC. BACK TO DISCHARGE POINT.



FULLY SUPPRESSED

Revisions Date	CONSULTANTS: JOHN DOE ARCHITECTS REITANO DESIGN GROUP TTP THE KLEINGERS GROUP	HEAPY PROJECT No.: 2013-04002 ARCHITECT/ENGINEERS: Heapy Engineering Mechanical Electrical Commissioning Technology Nationally Recognized Leader in Sustainability / LEED 1400 W Dorothy Lane, Dayton OH 45409-1310 Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com	Drawing Title FIRST FLOOR PLAN - REMOVALS	Project Title Correct Deficiencies Patient Kitchen B411	Project No. VA Project No. 552-14-102 JPA Project No. 13001.00 Building Number B411 Drawing Number 411MD101 Dwg. of	Office of Construction and Facilities Management Department of Veterans Affairs
	Approved: Project Director	Date 05/30/2014	Checker DLE	Drawn PCW	Location Dayton, OH	Dwg. of

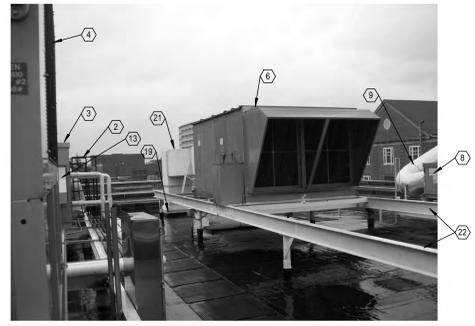
three inches = one foot
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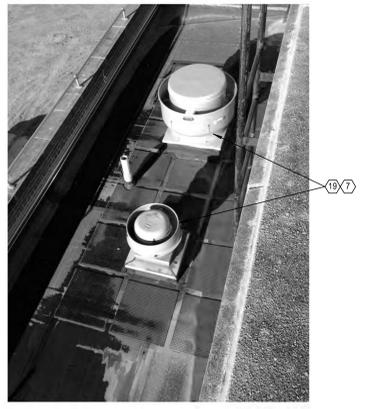
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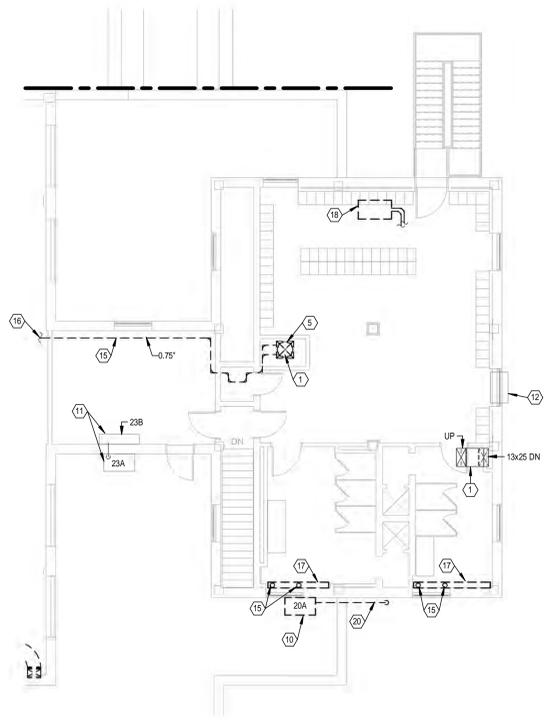
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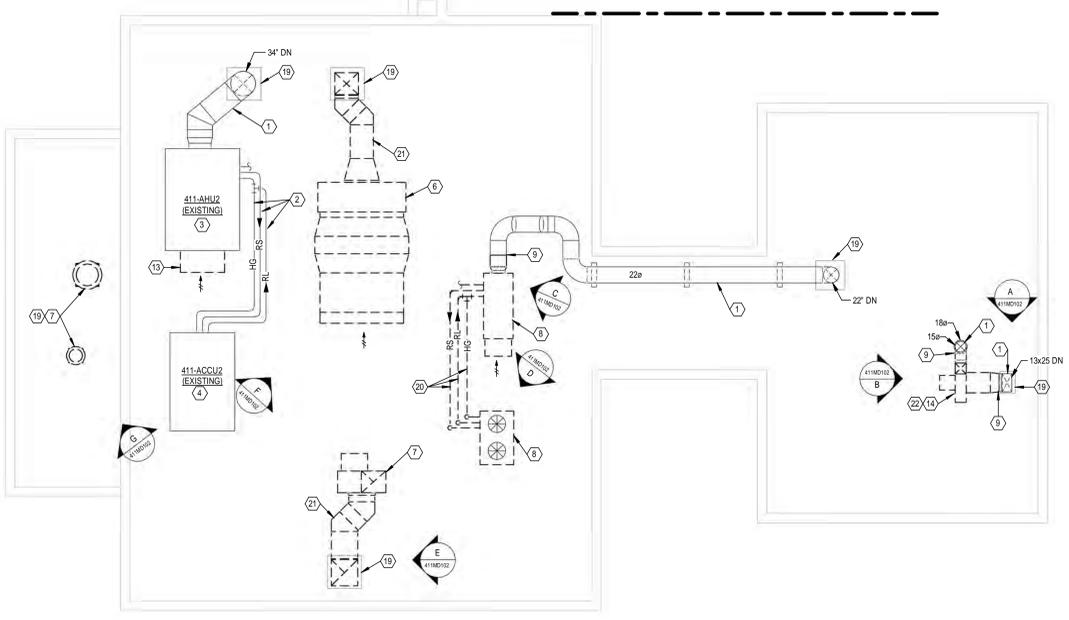
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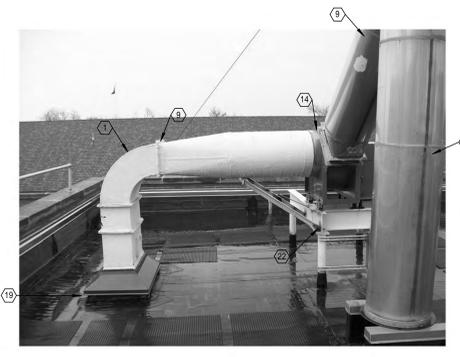
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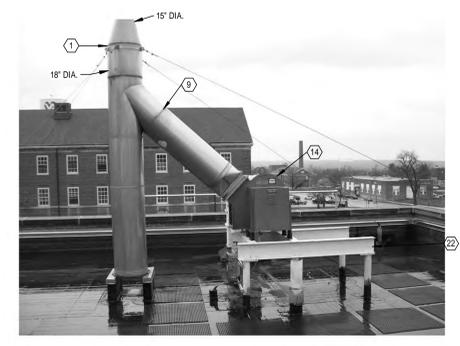
SECOND FLOOR PLAN - REMOVALS
 Scale: 1/8" = 1'-0"



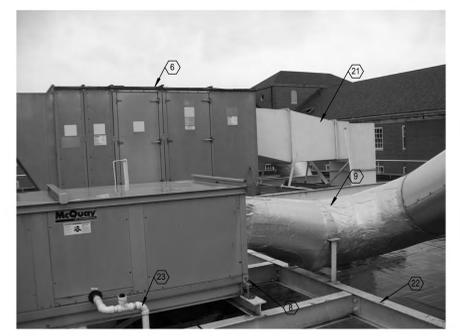
ROOF PLAN - REMOVALS
 Scale: 1/8" = 1'-0"



PICTURE "A"
 Scale: N.T.S.



PICTURE "B"
 Scale: N.T.S.



PICTURE "C"
 Scale: N.T.S.

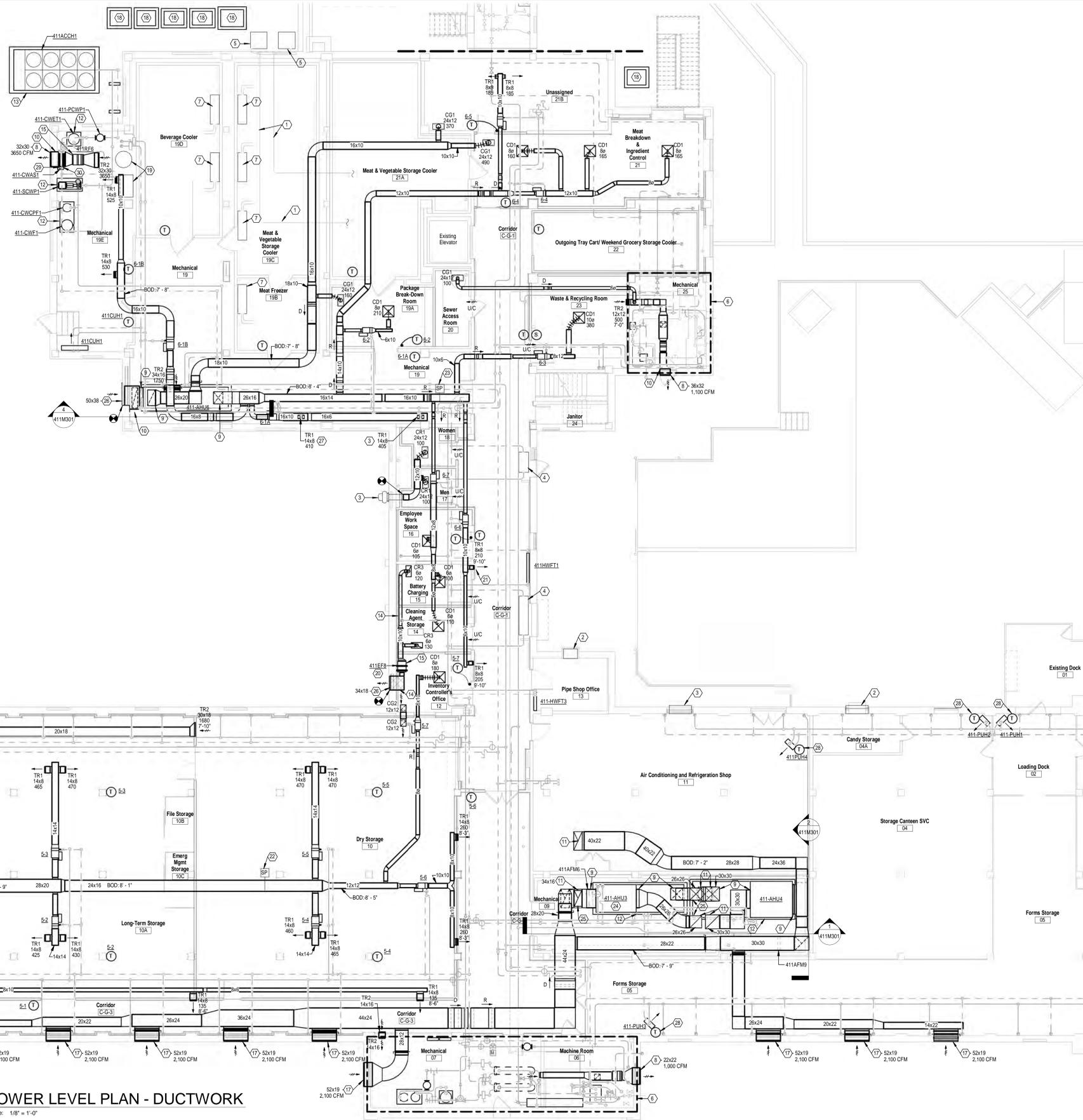
- GENERAL NOTES**
- A REFER TO SHEET 411M001 FOR LEGEND, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
 - B ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, CONTROLS, ETC. SHOWN DASHED SHALL BE REMOVED. THE MAJORITY OF WORK TO BE REMOVED IS SHOWN. REMOVE ALL INCIDENTAL AND/OR ABANDONED DUCTWORK, PIPING, ETC. THAT MAY NOT BE SHOWN BUT IS ASSOCIATED WITH THE REMOVAL WORK.
 - C PROVIDE ALL ROOFING PENETRATION, REPAIR AND REINFORCEMENT IN THE EXISTING BUILDING FOR WORK INDICATED. ENGAGE A ROOFING SUB-CONTRACTOR TO PERFORM THE ROOFING WORK. WHERE ROOFING WORK IS REQUIRED, THE EXISTING ROOF MEMBRANE AND INSULATION SHALL BE CUT, REMOVED AND RESTORED AS REQUIRED TO ATTAIN A WATERTIGHT CONDITION. THE ROOFING SUB-CONTRACTOR SHALL BE A CERTIFIED INSTALLER FOR SUCH INSTALLATION TO MAINTAIN THE EXISTING WARRANTY ON THE ROOF.
- NOTES**
- 1 EXISTING DUCTWORK TO REMAIN.
 - 2 EXISTING PIPING TO REMAIN.
 - 3 EXISTING AIR HANDLING UNIT TO REMAIN.
 - 4 EXISTING AIR COOLED CONDENSING UNIT TO REMAIN.
 - 5 REMOVE EXISTING STEAM REHEAT COIL AND ASSOCIATED DUCT TRANSITIONS, HANGERS, VALVES, CONTROLS, ETC. FOR REPLACEMENT WITH HOT WATER COIL IN NEW WORK.
 - 6 REMOVE EXISTING MAKE-UP AIR UNIT AND ASSOCIATED DUCTWORK, PIPING, CONTROLS ETC. REFER TO KITCHEN EQUIPMENT DRAWINGS FOR NEW WORK.
 - 7 REMOVE EXISTING EXHAUST FAN AND ASSOCIATED DUCTWORK, CONTROLS, ETC. REFER TO SHEET 411M102 FOR ADDITIONAL INFORMATION.
 - 8 REMOVE EXISTING AIR HANDLING UNIT ALONG WITH ASSOCIATED AIR COOLED CONDENSING UNIT, ALL CONTROLS, PIPING, ETC. FOR REPLACEMENT IN NEW WORK.
 - 9 REMOVE EXISTING DUCTWORK TO THIS POINT FOR RECONNECTION IN NEW WORK.
 - 10 REMOVE EXISTING AIR COOLED CONDENSING UNIT AND ASSOCIATED HANGERS, PIPING, CONTROLS, ETC.
 - 11 EXISTING ELEVATOR MACHINE ROOM SPLIT SYSTEM TO REMAIN.
 - 12 EXISTING WINDOW AC UNIT TO REMAIN.
 - 13 REMOVE EXISTING QA HOOD FOR REPLACEMENT WITH MIXING BOX IN NEW WORK.
 - 14 REMOVE EXHAUST FAN AND ASSOCIATED DUCTWORK, CONTROLS, ETC. FOR REPLACEMENT IN NEW WORK.
 - 15 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, HANGERS, ETC.
 - 16 REFER TO FIRST FLOOR PLAN ON SHEET 411MD101 FOR CONTINUATION.
 - 17 REMOVE EXISTING STEAM RADIATOR AND ASSOCIATED PIPING, VALVES, TRAP, CONTROL ETC.
 - 18 REMOVE EXISTING STEAM UNIT HEATER AND ASSOCIATED PIPING, CONTROLS, HANGER ETC.
 - 19 EXISTING ROOF CURB TO REMAIN.
 - 20 REMOVE EXISTING REFRIGERANT PIPING AND ASSOCIATED VALVES, HANGERS, ETC.
 - 21 REMOVE EXISTING DUCTWORK AND ASSOCIATED DAMPERS, SUPPORTS, ETC.
 - 22 STEEL FRAMING TO REMAIN. RE-USE IN NEW WORK.
 - 23 REMOVE EXISTING DRAIN PIPING.

FULLY SUPPRESSED

Revisions 1 Date	CONSULTANTS: JOHN DOE ARCHITECTS 		HEAPY PROJECT No: 2013-04002 FIRM LICENSE No.: 01528		ARCHITECT/ENGINEERS: Mechanical Electrical Commissioning Technology <i>Nationally Recognized Leader in Sustainability / LEED</i> 1400 W Dorothy Lane, Dayton OH 45409-1310 Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com		Drawing Title SECOND FLOOR AND ROOF PLANS - REMOVALS		Project Title Correct Deficiencies Patient Kitchen B411		Project No. VA Project No. 552-14-102 JPA Project No. 13001.00		Building Number B411		Office of Construction and Facilities Management	
	Approved: Project Director		Location Dayton, OH		Drawing Number 411MD102		Date 05/30/2014		Checker DLE		Drawn PCW		Dwg. of			

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 one-quarter inch = one foot
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- GENERAL NOTES**
- A REFER TO SHEET 411M001 FOR LEGEND, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
- NOTES**
- EXISTING PIPING TO REMAIN.
 - EXISTING WINDOW A/C UNIT TO REMAIN.
 - EXISTING EXHAUST FAN TO REMAIN.
 - EXISTING AIR CURTAIN TO REMAIN.
 - EXISTING CONDENSING UNIT TO REMAIN.
 - REFER TO SHEET 411M001 FOR WORK IN THIS AREA.
 - EXISTING EVAPORATOR UNIT TO REMAIN.
 - EXHAUST/RELIEF AIR LOUVER. APPROXIMATE SIZE LISTED. REFER TO ARCHITECTURAL PLANS AND ELEVATION FOR EXACT SIZE AND MOUNTING LOCATIONS.
 - TRANSITION DUCTWORK TO FULL SIZE OF EQUIPMENT CONNECTION.
 - INSULATED PLENUM CASING BEHIND LOUVER.
 - DUCT UP THRU FLOOR. REFER TO SHEET 411M011 FOR CONTINUATION.
 - 5" HIGH CONCRETE BASE.
 - CONCRETE CHILLER PAD. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE EXACT DIMENSIONS WITH CHILLER MANUFACTURER.
 - WELDED STAINLESS STEEL DUCTWORK. SLOPE HORIZONTAL DUCT RUNS TO DRAIN TOWARD AIR DEVICE.
 - SUSPEND FAN FROM STRUCTURE WITH SPRING VIBRATION ISOLATORS. PROVIDE FLEXIBLE DUCT CONNECTION AT INLET AND OUTLET FAN CONNECTION.
 - SEAL AIR TIGHT TO EXISTING OPENING. PROVIDE 20 MESH SCREEN OVER OPENING.
 - OUTSIDE AIR INTAKE LOUVER. APPROXIMATE SIZE LISTED. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT SIZE AND MOUNTING LOCATIONS. BALANCE TO CFM INDICATED. FIELD VERIFY EACH OPENING DIMENSIONS.
 - NEW CONDENSING UNIT BY K.E.C. REFER TO SHEET 411G001 FOR ADDITIONAL INFORMATION. PROVIDE 4" CONCRETE PAD. COORDINATE EXACT DIMENSIONS REQUIRED WITH EQUIPMENT MANUFACTURER.
 - EXISTING AIR COMPRESSOR, TANK, ETC. TO REMAIN.
 - PROVIDE SPARK-PROOF CONSTRUCTION EXHAUST FAN WITH EXPLOSION PROOF MOTOR.
 - PROVIDE LOCAL ALARM FOR FAN STATUS AND AIRFLOW INTERRUPTION FOR 411-EF8.
 - PROVIDE DUCT STATIC PRESSURE SENSOR FOR CONTROL OF 411-SF8. REFER TO SHEET 411M004 FOR ADDITIONAL INFORMATION.
 - PROVIDE DUCT STATIC PRESSURE SENSOR FOR CONTROL OF 411-SF5. REFER TO SHEET 411M004 FOR ADDITIONAL INFORMATION.
 - THIS UNIT IS PART OF DUCTWORK ALTERNATE #1.
 - IF DUCT ALTERNATE #1 IS ACCEPTED, INSTALL DUCTWORK IN VERTICAL CHASE. CAP DUCT BELOW FLOOR LEVEL.
 - EXISTING LOUVER TO REMAIN. APPROXIMATE SIZE INDICATED.
 - MOUNT AIR DEVICE TO BOTTOM OF DUCT.
 - PROVIDE UNIT MOUNTED THERMOSTAT.
 - PROVIDE AUTOMATIC 2-POSITION BACKDRAFT DAMPER.
 - PROVIDE COUNTER BALANCED GRAVITY BACKDRAFT DAMPER.



LOWER LEVEL PLAN - DUCTWORK
 Scale: 1/8" = 1'-0"

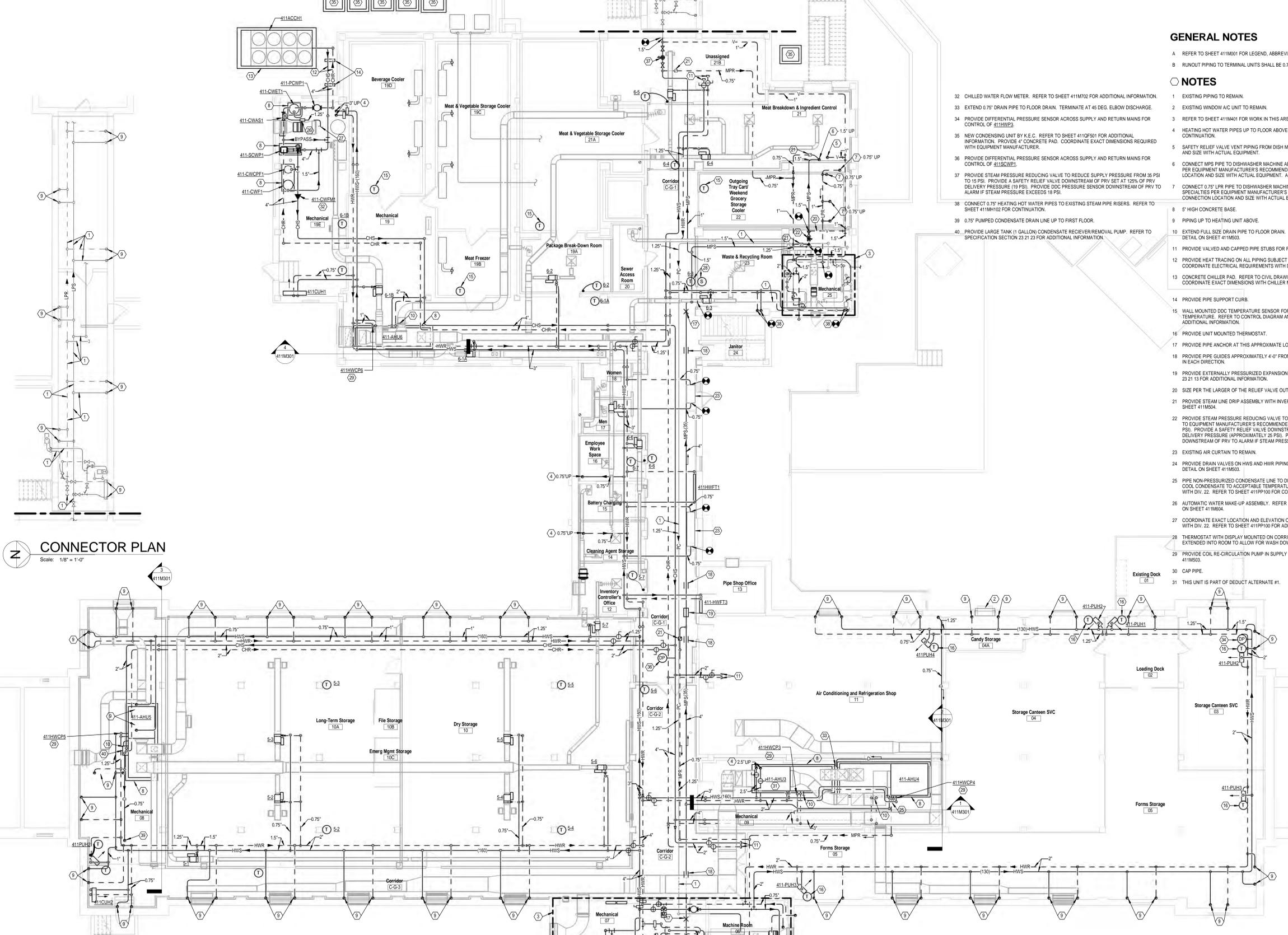
FULLY SUPPRESSED

Revisions Date	CONSULTANTS: JOHN POE ARCHITECTS REITANO DESIGN GROUP TTP THE KLEINGERS GROUP	HEAPY PROJECT No.: 2013-04002 ARCHITECT/ENGINEERS: Heapy Engineering Mechanical Electrical Commissioning Technology Nationally Recognized Leader in Sustainability / LEED 1400 W Dorothy Lane, Dayton OH 45409-1310 Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com	Drawing Title: LOWER LEVEL PLAN - DUCTWORK	Project Title: Correct Deficiencies Patient Kitchen B411	Project No.: 552-14-102 VA Project No.: 13001.00 Building Number: B411 Drawing Number: 411MH100 Dwg. of:	Office of Construction and Facilities Management Department of Veterans Affairs
	Approved: Project Director	Date: 05/30/2014 Checker: DLE Drawn: PCW	Drawing Title: LOWER LEVEL PLAN - DUCTWORK	Project Title: Correct Deficiencies Patient Kitchen B411	Project No.: 552-14-102 VA Project No.: 13001.00 Building Number: B411 Drawing Number: 411MH100 Dwg. of:	Office of Construction and Facilities Management Department of Veterans Affairs

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1 2 3 4 5 6 7 8 9

A
 B
 C
 D
 E
 F



CONNECTOR PLAN
 Scale: 1/8" = 1'-0"

LOWER LEVEL PLAN - PIPING
 Scale: 1/8" = 1'-0"

- GENERAL NOTES**
- A REFER TO SHEET 411M001 FOR LEGEND, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
 - B RUNOUT PIPING TO TERMINAL UNITS SHALL BE 0.75" SIZE UNLESS OTHERWISE NOTED.
- NOTES**
- 1 EXISTING PIPING TO REMAIN.
 - 2 EXISTING WINDOW A/C UNIT TO REMAIN.
 - 3 REFER TO SHEET 411M401 FOR WORK IN THIS AREA.
 - 4 HEATING HOT WATER PIPES UP TO FLOOR ABOVE. REFER TO SHEET 411MP101 FOR CONTINUATION.
 - 5 SAFETY RELIEF VALVE PIPING FROM DISH MACHINE ABOVE. COORDINATE LOCATION AND SIZE WITH ACTUAL EQUIPMENT.
 - 6 CONNECT MPS PIPE TO DISHWASHER MACHINE ABOVE. PROVIDE ALL STEAM SPECIALTIES PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. COORDINATE EXACT CONNECTION LOCATION AND SIZE WITH ACTUAL EQUIPMENT. APPROXIMATE SIZE INDICATED.
 - 7 CONNECT 0.75" LPR PIPE TO DISHWASHER MACHINE ABOVE. PROVIDE ALL STEAM SPECIALTIES PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. COORDINATE EXACT CONNECTION LOCATION AND SIZE WITH ACTUAL EQUIPMENT.
 - 8 5" HIGH CONCRETE BASE.
 - 9 PIPING UP TO HEATING UNIT ABOVE.
 - 10 EXTEND FILL SIZE DRAIN PIPE TO FLOOR DRAIN. REFER TO AIR HANDLING UNIT TRAP DETAIL ON SHEET 411M603.
 - 11 PROVIDE VALVED AND CAPPED PIPE STUBS FOR FUTURE EXTENSION.
 - 12 PROVIDE HEAT TRACING ON ALL PIPING SUBJECT TO FREEZING TEMPERATURES. COORDINATE ELECTRICAL REQUIREMENTS WITH DIV. 26.
 - 13 CONCRETE CHILLER PAD. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE EXACT DIMENSIONS WITH CHILLER MANUFACTURER.
 - 14 PROVIDE PIPE SUPPORT CURB.
 - 15 WALL MOUNTED DDC TEMPERATURE SENSOR FOR MONITORING AND ALARM OF ROOM TEMPERATURE. REFER TO CONTROL DIAGRAM AND SEQUENCES ON SHEET 411M701 FOR ADDITIONAL INFORMATION.
 - 16 PROVIDE UNIT MOUNTED THERMOSTAT.
 - 17 PROVIDE PIPE ANCHOR AT THIS APPROXIMATE LOCATION.
 - 18 PROVIDE PIPE GUIDES APPROXIMATELY 4'-0" FROM EXPANSION JOINT AND 48'-0" AFTER THAT IN EACH DIRECTION.
 - 19 PROVIDE EXTERNALLY PRESSURIZED EXPANSION JOINT. REFER TO SPECIFICATION SECTION 23 21 13 FOR ADDITIONAL INFORMATION.
 - 20 SIZE PER THE LARGER OF THE RELIEF VALVE OUTLET OR 1.5"
 - 21 PROVIDE STEAM LINE DRIP ASSEMBLY WITH INVERTED BUCKET TRAP. REFER TO DETAIL ON SHEET 411M504.
 - 22 PROVIDE STEAM PRESSURE REDUCING VALVE TO REDUCE SUPPLY PRESSURE FROM 35 PSI TO EQUIPMENT MANUFACTURER'S RECOMMENDED INLET PRESSURE (APPROXIMATELY 20 PSI). PROVIDE A SAFETY RELIEF VALVE DOWNSTREAM OF PRV SET AT 125% OF PRV DELIVERY PRESSURE (APPROXIMATELY 24 PSI). PROVIDE DDC PRESSURE SENSOR DOWNSTREAM OF PRV TO ALARM IF STEAM PRESSURE EXCEEDS 24 PSI.
 - 23 EXISTING AIR CURTAIN TO REMAIN.
 - 24 PROVIDE DRAIN VALVES ON HWS AND HWR PIPING AT THIS APPROXIMATE LOCATION PER DETAIL ON SHEET 411M603.
 - 25 PIPE NON-PRESSURIZED CONDENSATE LINE TO DRAIN. PROVIDE CONDENSATE COOLER TO COOL CONDENSATE TO ACCEPTABLE TEMPERATURE. COORDINATE WATER CONNECTION WITH DIV. 22. REFER TO SHEET 411PP100 FOR COLD WATER STUB LOCATION.
 - 26 AUTOMATIC WATER MAKE-UP ASSEMBLY. REFER TO CHILLED WATER SYSTEM SCHEMATIC ON SHEET 411M804.
 - 27 COORDINATE EXACT LOCATION AND ELEVATION OF MAKE-UP WATER CONNECTION POINT WITH DIV. 22. REFER TO SHEET 411PP100 FOR ADDITIONAL INFORMATION.
 - 28 THERMOSTAT WITH DISPLAY MOUNTED ON CORRIDOR WALL WITH SENSING ELEMENT EXTENDED INTO ROOM TO ALLOW FOR WASH DOWN OF ROOM.
 - 29 PROVIDE COIL RE-CIRCULATION PUMP IN SUPPLY HOT WATER PIPING PER DETAIL ON SHEET 411M503.
 - 30 CAP PIPE.
 - 31 THIS UNIT IS PART OF DEDUCT ALTERNATE #1.

- 32 CHILLED WATER FLOW METER. REFER TO SHEET 411M702 FOR ADDITIONAL INFORMATION.
- 33 EXTEND 0.75" DRAIN PIPE TO FLOOR DRAIN. TERMINATE AT 45 DEG. ELBOW DISCHARGE.
- 34 PROVIDE DIFFERENTIAL PRESSURE SENSOR ACROSS SUPPLY AND RETURN MAINS FOR CONTROL OF 411HWPS.
- 35 NEW CONDENSING UNIT BY K.E.C. REFER TO SHEET 411Q201 FOR ADDITIONAL INFORMATION. PROVIDE 4" CONCRETE PAD. COORDINATE EXACT DIMENSIONS REQUIRED WITH EQUIPMENT MANUFACTURER.
- 36 PROVIDE DIFFERENTIAL PRESSURE SENSOR ACROSS SUPPLY AND RETURN MAINS FOR CONTROL OF 411SCWP1.
- 37 PROVIDE STEAM PRESSURE REDUCING VALVE TO REDUCE SUPPLY PRESSURE FROM 35 PSI TO 15 PSI. PROVIDE A SAFETY RELIEF VALVE DOWNSTREAM OF PRV SET AT 125% OF PRV DELIVERY PRESSURE (19 PSI). PROVIDE DDC PRESSURE SENSOR DOWNSTREAM OF PRV TO ALARM IF STEAM PRESSURE EXCEEDS 18 PSI.
- 38 CONNECT 0.75" HEATING HOT WATER PIPES TO EXISTING STEAM PIPE RISERS. REFER TO SHEET 411M102 FOR CONTINUATION.
- 39 0.75" PUMPER CONDENSATE DRAIN LINE UP TO FIRST FLOOR.
- 40 PROVIDE LARGE TANK (1 GALLON) CONDENSATE RECEIVER/REMOVAL PUMP. REFER TO SPECIFICATION SECTION 23 21 23 FOR ADDITIONAL INFORMATION.

FULLY SUPPRESSED

Revisions Date	CONSULTANTS: 	HEAPY PROJECT No: 2013-04002 	ARCHITECT/ENGINEERS: Nationally Recognized Leader in Sustainability / LEED 1400 W Dorothy Lane, Dayton OH 45409-1310 Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com	Drawing Title LOWER LEVEL PLAN - PIPING	Project Title Correct Deficiencies Patient Kitchen B411	Project No. VA Project No. 652-14-102 JPA Project No. 13001.00 Building Number B411 Drawing Number 411MP100 Dwg. of	Office of Construction and Facilities Management Department of Veterans Affairs
	Approved: Project Director	Date 05/30/2014	Checker DLE	Drawn PCW	Location Dayton, OH	Date	Dwg. of

1 2 3 4 5 6 7 8 9

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- GENERAL NOTES**
- A REFER TO SHEET 411M001 FOR LEGEND, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
 - B RUNOUT PIPING TO TERMINAL UNITS SHALL BE 0.75" SIZE UNLESS OTHERWISE NOTED.
- NOTES**
- 1 EXISTING EVAPORATIVE UNIT TO REMAIN.
 - 2 EXISTING CONDENSING UNIT TO REMAIN.
 - 3 EXISTING AIR CURTAIN UNIT TO REMAIN.
 - 4 HEATING HOT WATER PIPES FROM FLOOR BELOW. REFER TO SHEET 411MP100 FOR CONTINUATION.
 - 5 REFER TO SHEET 411MH102 FOR CONTINUATION.
 - 6 INTEGRATE CONTROL OF HOT WATER PANEL RADIATOR INTO THE ASSOCIATED AIR TERMINAL UNIT CONTROL. REFER TO CONTROL DIAGRAM/SEQUENCE ON SHEET 411M701 FOR ADDITIONAL INFORMATION.
 - 7 REFRIGERANT PIPING (LIQUID & SUCTION) TO 411VRE2. SIZE PIPING AND PROVIDE ALL REFRIGERATION SPECIALTIES REQUIRED PER MANUFACTURER'S RECOMMENDATIONS.
 - 8 REFRIGERANT PIPING (LIQUID & SUCTION) UP TO ROOF MOUNTED HEAT PUMP UNIT. SIZE AND PROVIDE ACCESSORIES PER MANUFACTURER'S REQUIREMENTS.
 - 9 EXISTING HEATING UNIT TO REMAIN.
 - 10 WALL MOUNTED DDC TEMPERATURE SENSOR FOR MONITORING AND ALARM OF ROOM TEMPERATURE. REFER TO CONTROL DIAGRAM AND SEQUENCES ON SHEET 411M701 FOR ADDITIONAL INFORMATION.
 - 11 PROVIDE COIL RE-CIRCULATION PUMP IN SUPPLY HOT WATER PIPING PER DETAIL ON SHEET 411M503.
 - 12 0.75" DRAIN PIPING DOWN TO FLOOR BELOW. REFER TO SHEET 411MP100 FOR CONTINUATION.
 - 13 DROP 0.75" DRAIN PIPING DOWN TO LOW ROOF BELOW. DISCHARGE 6" ABOVE ROOF LEVEL. PROVIDE SPLASH BLOCK AT DISCHARGE.
 - 14 EXTEND VENT PIPING UP TO 6'-0" ABOVE NEAREST OPERABLE WINDOW.
 - 15 CONNECTION TO DISH MACHINE FROM BELOW. COORDINATE EXACT CONNECTION REQUIREMENTS (SIZE, SERVICE, LOCATION, ETC.) WITH ACTUAL EQUIPMENT MANUFACTURER.
 - 16 DISCHARGE DRAIN LINE INTO FUNNEL DRAIN. COORDINATE EXACT LOCATION WITH DIV. 22.
 - 17 PROVIDE DDC DIFFERENTIAL PRESSURE SENSOR (2 TOTAL) ACROSS HEATING HOT WATER SUPPLY AND RETURN MAINS FOR CONTROL OF 411-HWP1 AND 411-HWP2.

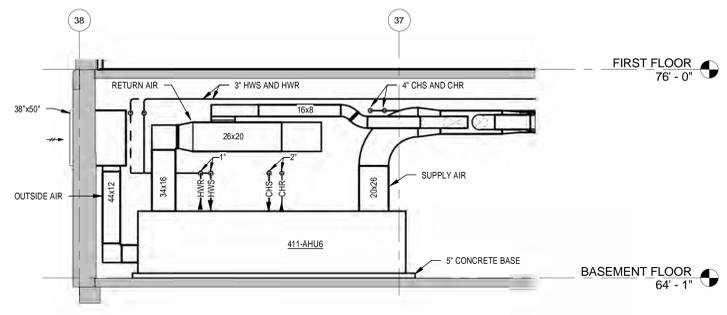
2 Copy (3) of FIRST FLOOR PLAN - PIPING
 SCALE: 1/8" = 1'-0"

FIRST FLOOR PLAN - PIPING
 Scale: 1/8" = 1'-0"

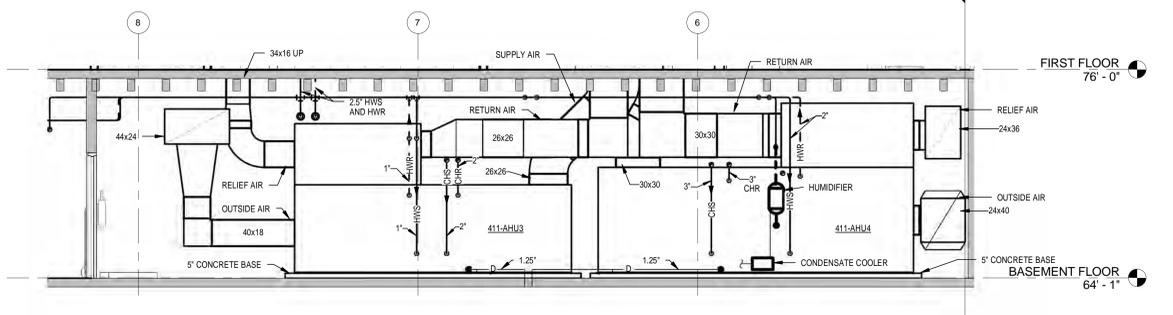
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								FIRST FLOOR PLAN - PIPING		Correct Deficiencies Patient Kitchen B411		VA Project No. 552-14-102 JPA Project No. 13001.00 Building Number B411 Drawing Number 411MP101 Dwg. of		
						1400 W Dorothy Lane, Dayton OH 45409-1310 Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com		Approved: Project Director		Location Dayton, OH Date 05/30/2014 Checker DLE Drawn PCW				

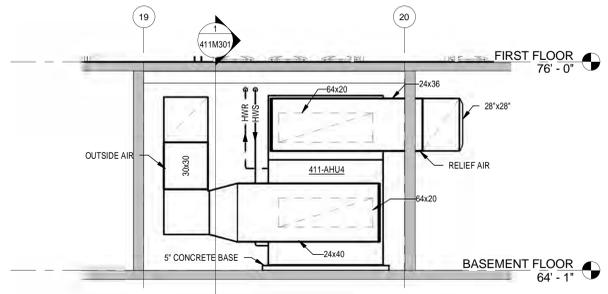
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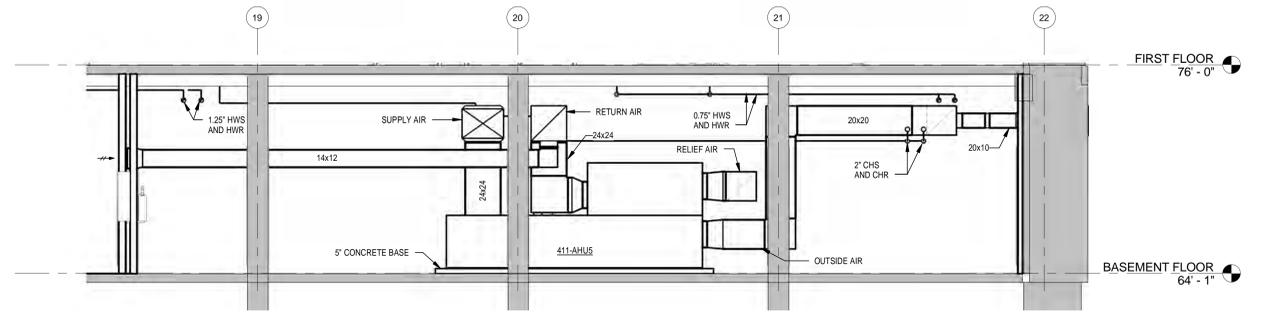
4 411-AHU6 - SOUTH ELEVATION
 SCALE: 1/4" = 1'-0"



1 411-AHU3 & 411-AHU4 - WEST ELEVATION
 SCALE: 1/4" = 1'-0"



2 411-AHU3 & 411-AHU4 - SOUTH ELEVATION
 SCALE: 1/4" = 1'-0"

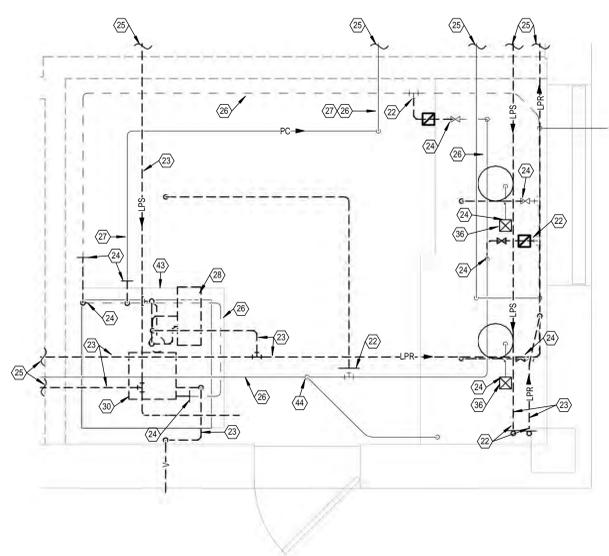


3 411-AHU5 - SOUTH ELEVATION
 SCALE: 1/4" = 1'-0"

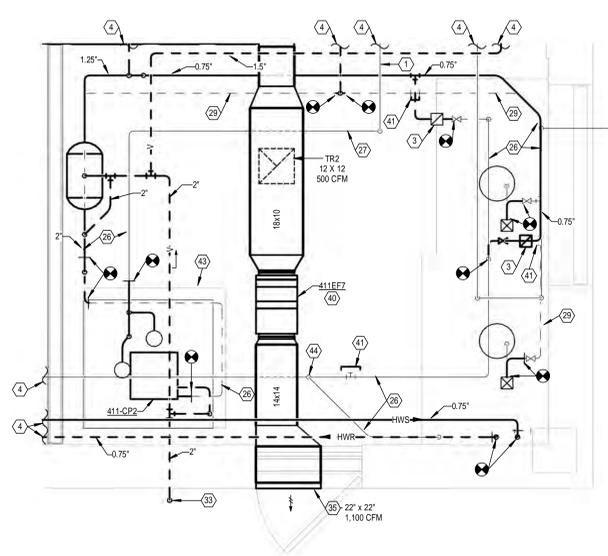
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	Approved: Project Director		Date 05/30/2014		Checker DLE		Drawn PCW		Location Dayton, OH		Location Dayton, OH		Location Dayton, OH		Location Dayton, OH

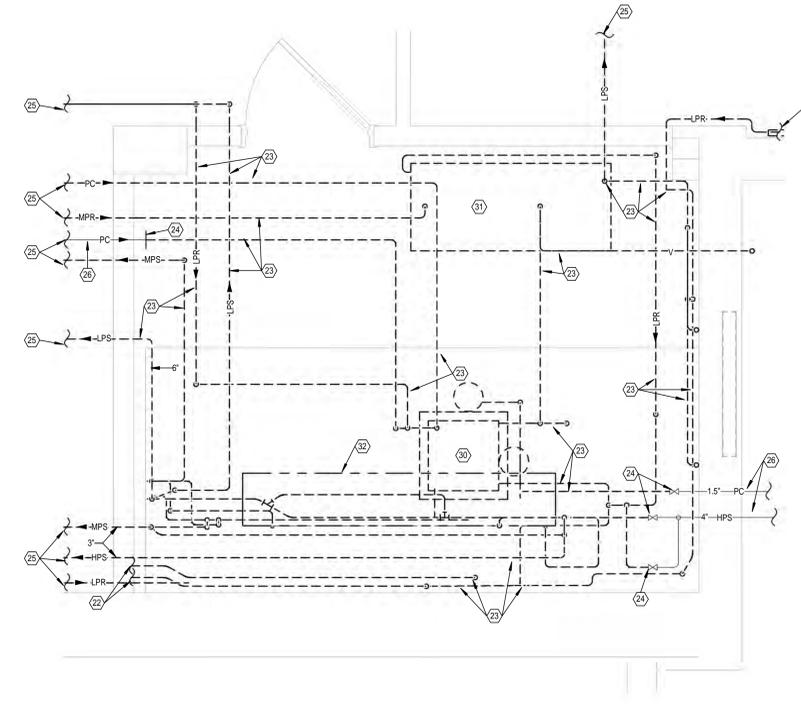
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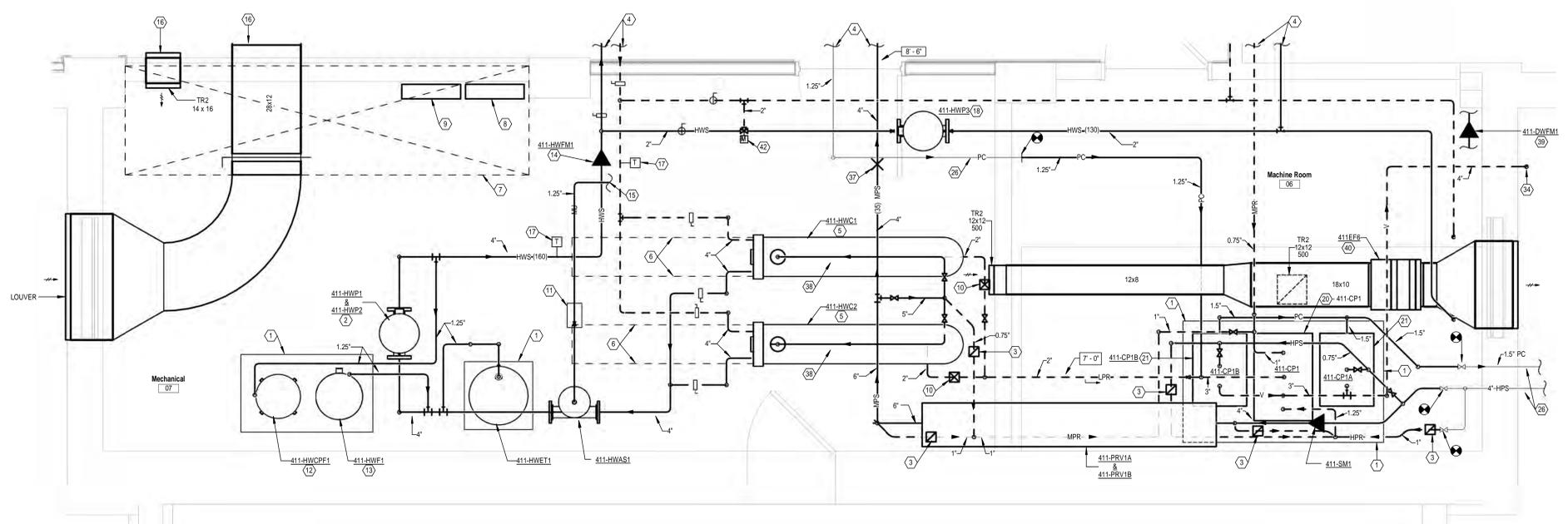
ENLARGED MECHANICAL ROOM 25 - REMOVALS
 Scale: 1/2" = 1'-0"



ENLARGED MECHANICAL ROOM 25 - NEW WORK
 Scale: 1/2" = 1'-0"



ENLARGED MACHINE ROOM 06 - REMOVALS
 Scale: 1/2" = 1'-0"



ENLARGED MECHANICAL ROOM 07 AND MACHINE ROOM 06 - NEW WORK
 Scale: 1/2" = 1'-0"

GENERAL NOTES

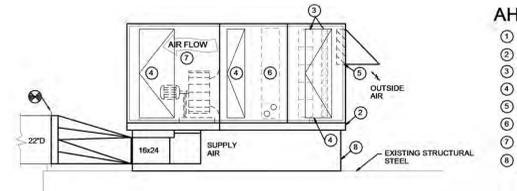
- REFER TO SHEET 411M001 FOR LEGEND, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
- REFER TO SHEETS 411M603 AND 411M604 STEAM, HOT AND CHILLED WATER SYSTEM SCHEMATICS, FOR REQUIRED VALVING AND ACCESSORIES.

NOTES

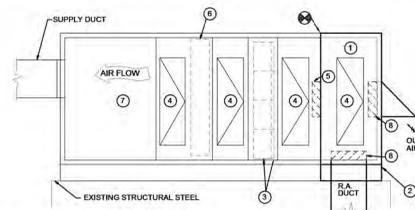
- 5" HIGH CONCRETE BASE.
- PROVIDE AN ANGLE FRAME TO SUPPORT PUMPS AND PIPING OFF FLOOR. PUMPS TO BE STACKED VERTICALLY. REFER TO HOT WATER SYSTEM SCHEMATIC ON SHEET 411M604.
- STEAM LINE DRIP ASSEMBLY WITH INVERTED BUCKET TRAP. REFER TO DETAIL ON SHEET 411M604, AND STEAM SYSTEM SCHEMATIC ON SHEET 411M603.
- REFER TO SHEET 411MP100 FOR CONTINUATION.
- PROVIDE SADDLE SUPPORTS AND ANGLE FRAME TO SUPPORT HEAT EXCHANGER OFF FLOOR. MOUNT BOTTOM OF HEAT EXCHANGER APPROXIMATELY 5'-0" ABOVE FLOOR TO ALLOW GRAVITY DRAINAGE TO FLASH TANK.
- MAINTAIN CLEAR AREA FOR TUBE PULL SPACE.
- SPACE DEDICATED FOR ELECTRICAL. DO NOT LOCATE ANY PIPING IN THIS AREA.
- PROVIDE NEW MECHANICAL ROOM DDC CONTROL PANEL. REFER TO SHEET 411M701 AND SPECIFICATION SECTION 23 09 23 FOR ADDITIONAL INFORMATION.
- PROVIDE NEW BUILDING NETWORK AREA CONTROLLER. REFER TO SPECIFICATION SECTION 23 09 23 FOR ADDITIONAL INFORMATION.
- F & T TRAP ASSEMBLY. REFER TO DETAIL ON SHEET 411M604 AND SCHEMATIC ON SHEET 411M603.
- AUTOMATIC WATER MAKE UP ASSEMBLY. REFER TO HOT WATER SYSTEM SCHEMATIC ON SHEET 411M604.
- INSTALL TOP OF CHEMICAL POT FEEDER TANK NO MORE THAN 3'-0" ABOVE FLOOR.
- PROVIDE ROOM FOR INSULATING FILTER AND PIPING.
- HOT WATER FLOW METER. REFER TO HOT WATER CONVERTOR CONTROLS ON SHEET 411M701.
- COORDINATE EXACT LOCATION AND ELEVATION OF MAKE UP WATER CONNECTION POINT WITH P.C. REFER TO SHEET 411-PP100 FOR ADDITIONAL INFORMATION.
- REFER TO SHEET 411MH100 FOR CONTINUATION.
- DDC TEMPERATURE SENSOR. REFER TO FLOW METERING CONTROLS ON SHEET 411M701.
- SUSPEND PUMP FROM STRUCTURE WITH TYPE HN VIBRATION ISOLATION.
- CONNECT FULL SIZE DRAIN PIPES FROM CONDENSATE RECEIVER AND BOTH CONDENSATE PUMPS, AND COMBINE INTO SINGLE HEADER. PROVIDE SHUT OFF VALVE ON DRAIN HEADER WITH HOSE CONNECTION AND SCREW ON CAP.
- CONDENSATE RESERVOIR/FLASH TANK SIZED AND PROVIDED WITH PRESSURE POWERED CONDENSATE PUMP MANUFACTURER AS PART OF PRE-PIPED, SKID-MOUNTED DUPLEX PUMP PACKAGE. REFER TO SCHEDULE ON SHEET 411M602, SPECIFICATIONS, AND STEAM SYSTEM SCHEMATIC ON SHEET 411M603.
- PROVIDE PRESSURE POWERED CONDENSATE PUMP AS PART OF PRE-PIPED, SKID-MOUNTED, DUPLEX PUMP PACKAGE. REFER TO SCHEDULE ON SHEET 411M602, SPECIFICATIONS, AND STEAM SYSTEM SCHEMATIC ON SHEET 411M603.
- REMOVE EXISTING PIPING BACK TO THIS POINT AND CAP.
- REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, HANGERS, ETC.
- REMOVE EXISTING PIPING BACK TO THIS POINT FOR RECONNECTION IN NEW WORK.
- REFER TO SHEET 411MD100 FOR CONTINUATION.
- EXISTING PIPING TO REMAIN.
- RE-INSULATE PUMPED CONDENSATE LINE IN THIS ROOM.
- REMOVE EXISTING UNIT HEATER AND ASSOCIATED PIPING, VALVES, CONTROLS, ETC.
- LOWER PIPE APPROXIMATELY 4"
- REMOVE CONDENSATE RECEIVER AND ASSOCIATED PUMPS, CONTROLS, ETC.
- REMOVE EXISTING FLASH TANK AND ASSOCIATED, PIPING, SUPPORTS, ETC.
- REMOVE EXISTING STEAM PRESSURE REDUCING STATIONS AND ALL ASSOCIATED CONTROLS, HANGERS, ETC. THE PWS THAT SERVES THE EXISTING DOMESTIC HOT WATER HEATERS MUST STAY IN SERVICE WHILE NEW EQUIPMENT AND PIPING IS INSTALLED. DOWNTIME SHALL BE LIMITED TO ONE WEEKEND.
- RISE PIPE UP WALL THROUGH LOW ROOF. TERMINATE AT 6'-0" ABOVE LOW ROOF.
- RISE PIPE UP WALL. TERMINATE AT 6'-0" ABOVE GRADE.
- EXHAUST AIR LOUVER. APPROXIMATE SIZE LISTED. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT SIZE AND MOUNTING LOCATIONS. BALANCE TO CFM INDICATED.
- EXISTING STEAM TRAP TO REMAIN.
- PIPE ANCHOR.
- REFER TO STEAM SYSTEM SCHEMATIC ON SHEET 411M603 FOR CONTROL VALVES AND PIPE SIZES.
- DOMESTIC WATER FLOW METER. COORDINATE EXACT INSTALLATION LOCATION WITH DIVISION 22. REFER TO SHEET 411M701 FOR ADDITIONAL INFORMATION.
- SUSPEND EXHAUST FAN FROM STRUCTURE WITH SPRING VIBRATION ISOLATORS.
- CAP PIPING.
- AUTOMATIC 3-WAY MODULATING MIXING VALVE.
- CONCRETE BASE TO REMAIN.
- EXISTING SAFETY RELIEF VALVE TO REMAIN.

FULLY SUPPRESSED

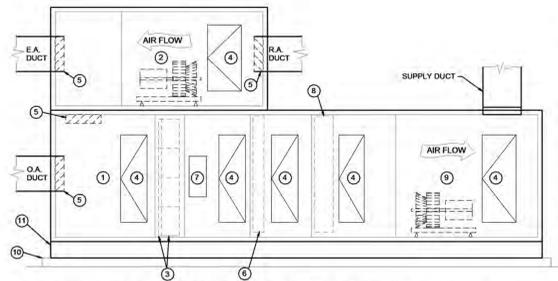
Revisions Date	CONSULTANTS: JOHN DOE ARCHITECTS REITANO DESIGN GROUP TTP THE KLEINGERS GROUP	HEAPY PROJECT No.: 2013-04002 GARY S. EODICE E-52755 REGISTERED PROFESSIONAL ENGINEER FIRM LICENSE No.: 01528	ARCHITECT/ENGINEERS: Heapy Engineering Mechanical Electrical Commissioning Technology <i>Nationally Recognized Leader in Sustainability / LEED</i> 1400 W Dorothy Lane, Dayton OH 45409-1310 Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com	Drawing Title ENLARGED MECHANICAL ROOM PLAN - REMOVALS AND NEW WORK Approved: Project Director	Project Title Correct Deficiencies Patient Kitchen B411 Location Dayton, OH	Project No. VA Project No. 552-14-102 JPA Project No. 13001.00 Building Number B411 Drawing Number 411M401 Dwg. of	Office of Construction and Facilities Management Department of Veterans Affairs
	Date 05/30/2014	Checked DLE	Drawn PCW				



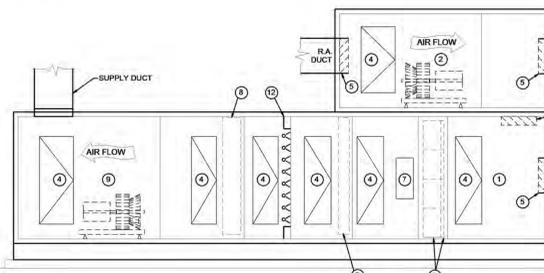
AIR HANDLING UNIT 411-AHU1 SECTION
SCALE: NONE



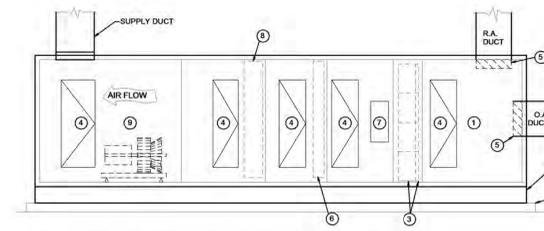
AIR HANDLING UNIT 411-AHU2 SECTION
SCALE: NONE



AIR HANDLING UNIT 411-AHU3 & 5 SECTION
SCALE: NONE



AIR HANDLING UNIT 411-AHU4 SECTION
SCALE: NONE



AIR HANDLING UNIT 411-AHU6 SECTION
SCALE: NONE

AHU SECTION NOTES

- 1 ECONOMIZER SECTION
 - 2 BASE RAIL
 - 3 PRE AND FINAL FILTERS
 - 4 ACCESS DOOR
 - 5 AUTOMATIC DAMPER
 - 6 DX COOLING COIL
 - 7 SUPPLY FAN
- PROVIDE SUPPLEMENTAL UNIT SUPPORT TO ALLOW VERTICAL DISCHARGE SUPPLY AIR DUCTWORK TO CONNECT TO EXISTING BASE UNIT APPROXIMATELY 2"

AHU SECTION NOTES

- 1 NEW ECONOMIZER SECTION
- 2 BASE RAIL
- 3 PRE AND FINAL FILTERS
- 4 ACCESS DOOR
- 5 EXISTING AUTOMATIC DAMPER
- 6 COOLING COIL
- 7 SUPPLY FAN
- 8 AUTOMATIC DAMPER WITH INTEGRAL AIRFLOW MEASURING

AHU SECTION NOTES

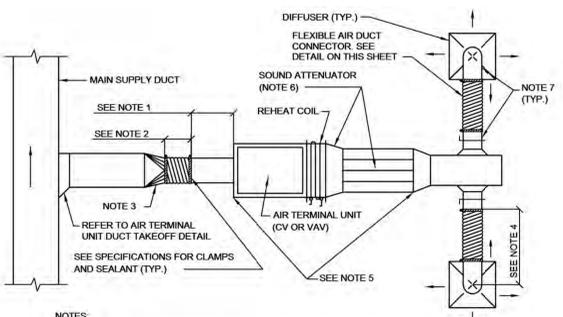
- 1 ECONOMIZER SECTION
- 2 RETURN FAN
- 3 PRE AND FINAL FILTERS
- 4 ACCESS DOOR
- 5 AUTOMATIC DAMPER (WITH INTEGRAL AIRFLOW MEASURING (AHU3 R.A.))
- 6 PREHEAT COIL
- 7 AIR BLENDER
- 8 COOLING COIL
- 9 SUPPLY FAN
- 10 5" HIGH CONCRETE HOUSEKEEPING PAD
- 11 BASE RAIL SIZE TO ACCOMMODATE COOLING COIL CONDENSATE TRAP MINIMUM 6" HIGH

AHU SECTION NOTES

- 1 ECONOMIZER SECTION
- 2 RETURN FAN
- 3 PRE AND FINAL FILTERS
- 4 ACCESS DOOR
- 5 AUTOMATIC DAMPER
- 6 PREHEAT COIL
- 7 AIR BLENDER
- 8 COOLING COIL
- 9 SUPPLY FAN
- 10 5" HIGH CONCRETE HOUSEKEEPING PAD
- 11 BASE RAIL SIZE TO ACCOMMODATE COOLING COIL CONDENSATE TRAP MINIMUM 6" HIGH
- 12 HUMIDIFIER WITH BLANK OFF PANEL

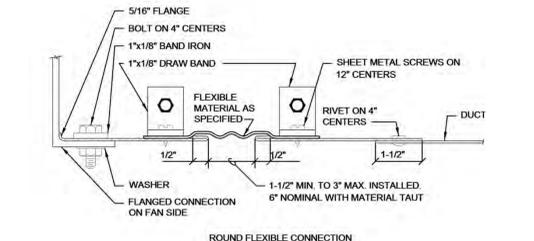
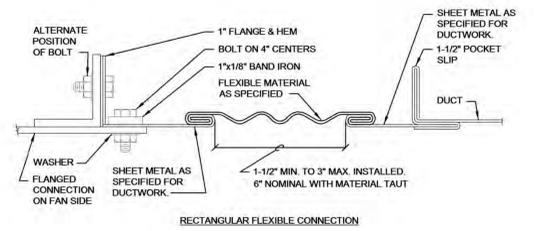
AHU SECTION NOTES

- 1 ECONOMIZER SECTION
- 2 BASE RAIL SIZE TO ACCOMMODATE COOLING COIL CONDENSATE TRAP MINIMUM 6" HIGH
- 3 PRE AND FINAL FILTERS
- 4 ACCESS DOOR
- 5 AUTOMATIC DAMPER WITH INTEGRAL AIRFLOW MEASURING
- 6 PREHEAT COIL
- 7 AIR BLENDER
- 8 COOLING COIL
- 9 SUPPLY FAN
- 10 5" HIGH CONCRETE HOUSEKEEPING PAD

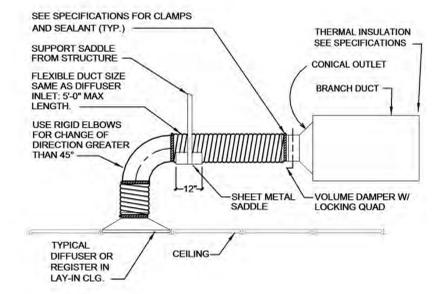


- NOTES:**
- RIGID STRAIGHT TERMINAL UNIT INLET LENGTH SHALL BE A MINIMUM OF 3 TIMES THE DIAMETER OF INLET SO AS TO ACHIEVE ACCURATE AIRFLOW SENSOR READINGS.
 - A FLEXIBLE AIR DUCT CONNECTOR IS NOT MANDATORY FOR INLET TO THIS BOX, BUT ALLOWED TO ACCOMMODATE MINOR OFFSETS, MAXIMUM LENGTH 3'-0".
 - PROVIDE DUCT TRANSITION WHERE SCHEDULED DUCT RUNOUT SIZE TO UNIT IS DIFFERENT THAN TERMINAL UNIT INLET SIZE.
 - FLEXIBLE AIR DUCT CONNECTORS, WHEN USED FROM TERMINAL UNIT SUPPLY AIR DUCT TO DIFFUSER, SHALL NOT EXCEED 5'-0". USE RIGID ELBOWS FOR CHANGE OF DIRECTION GREATER THAN 45°.
 - COMPONENT ARRANGEMENT MAY VARY BY MANUFACTURER, PROVIDE INSULATION W/VAPOR BARRIER FOR CONNECTING DUCT SECTIONS.
 - PROVIDE SOUND ATTENUATOR IF REQUIRED TO MEET DESIGN ROOM NC. PROVIDE DUCT TRANSITION BETWEEN TERMINAL UNIT AND SOUND ATTENUATOR WHERE ATTENUATOR SIZE DIFFERS FROM TERMINAL UNIT OUTLET SIZE.
 - DUCT RUNOUT TO DIFFUSERS SHALL BE SAME SIZE AS THE DIFFUSER NECK SIZE UNLESS OTHERWISE NOTED.

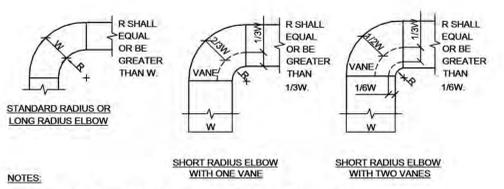
DUCT CONNECTIONS-AIR TERMINAL UNITS



FLEXIBLE DUCT CONNECTIONS

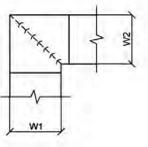


FLEXIBLE AIR DUCT CONNECTOR



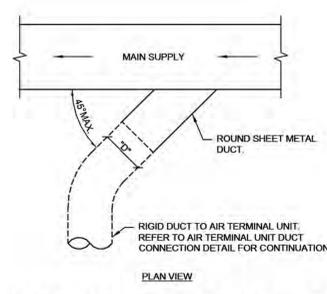
- NOTES:**
- THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
 - ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

DUCTWORK RADIUS ELBOWS

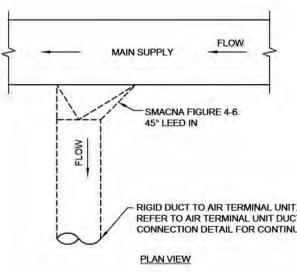


- NOTES:**
- ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
 - WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF W DIMENSION.
 - ALL SINGLE THICKNESS VANES SHALL HAVE A 2" RADIUS, 1 1/2" MAXIMUM SPACE BETWEEN VANES AND A 3/4" TRAILING EDGE.
 - WHEN W EQUALS W2 AND W1 IS GREATER THAN 20", VANES SHALL BE DOUBLE VANE TYPE.

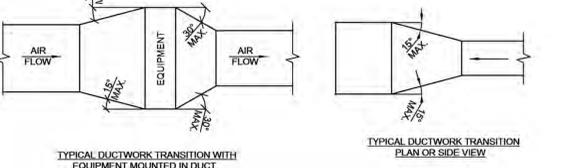
DUCTWORK SQUARE VANE ELBOWS



SUPPLY DUCT TAKEOFF - AIR TERMINAL UNITS

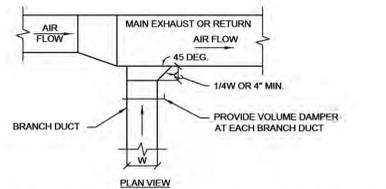


ALTERNATE SUPPLY DUCT TAKEOFF - AIR TERMINAL UNITS

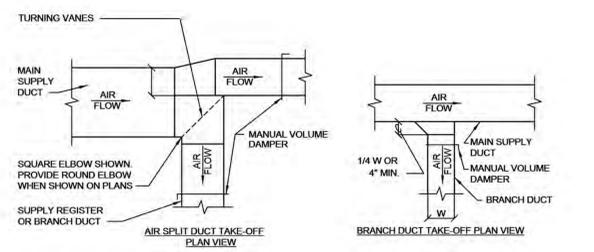


NOTE: UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

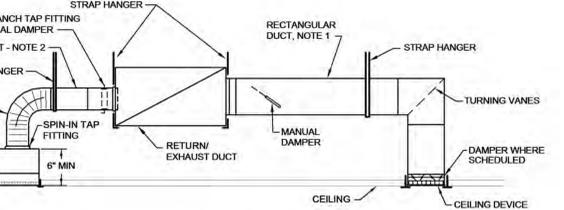
DUCTWORK TRANSITIONS



EXHAUST OR RETURN BRANCH DUCTWORK



SUPPLY DUCTWORK TAKE-OFFS

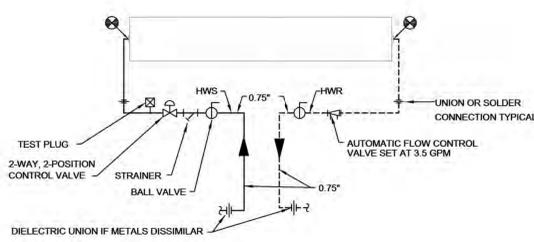


- NOTES:**
- BRANCH DUCT TAKE-OFF WITH MANUAL DAMPER.
 - BRANCH DUCT SIZES, UNLESS NOTED ON PLANS ARE TO BE SIZED AS FOLLOWS:
100 CFM AND LESS - 8" DIA.
101 CFM TO 250 CFM - 8" DIA.
251 CFM TO 400 CFM - 10" DIA.
401 CFM TO 700 CFM - 12" DIA.

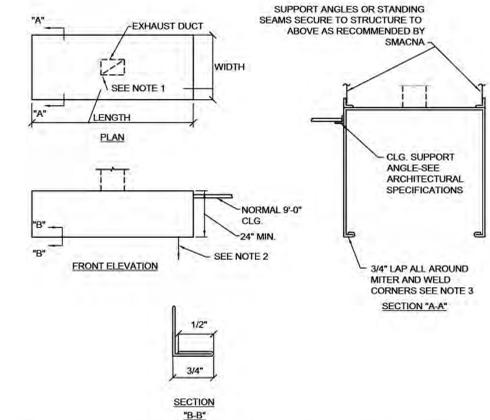
RETURN OR EXHAUST GRILLE/REGISTER CONNECTION

FULLY SUPPRESSED

Revisions Date	CONSULTANTS: 		HEAPY PROJECT No.: 2013-04002 		ARCHITECT/ENGINEERS: Mechanical Electrical Commissioning Technology Nationally Recognized Leader in Sustainability / LEED 1400 W Dorothy Lane, Dayton OH 45409-1310 Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com		Drawing Title DETAILS		Project Title Correct Deficiencies Patient Kitchen B411		Project No. VA Project No. 552-14-102 JPA Project No. 13001.00		Office of Construction and Facilities Management Department of Veterans Affairs	
	Approved: Project Director		FIRM LICENSE No.: 01528		Date 05/30/2014		Checked DLE		Drawing PCW		Building Number B411		Drawing Number 411M501	

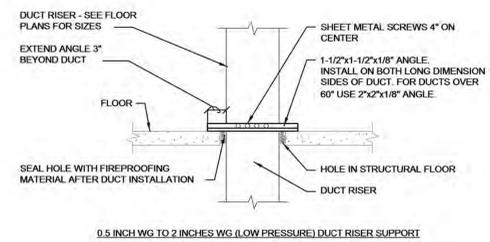


TYPICAL WATER PIPING CONNECTIONS TO EXISTING AIR CURTAIN

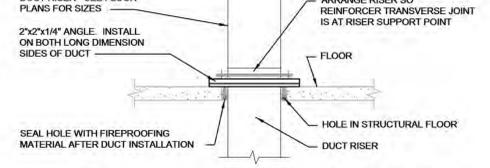


NOTES:
 1. HOODS SHALL BE 18 GAUGE TYPE 304 STAINLESS STEEL POLISHED TO A #3 FINISH ON ALL EXPOSED SURFACES. FOR HOOD SIZE, LOCATION AND, EXHAUST DUCT CONNECTIONS - SEE FLOOR PLANS.
 2. HOOD SHALL BE 8'-0" MINIMUM ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.

CANOPY HOOD TYPE "A"



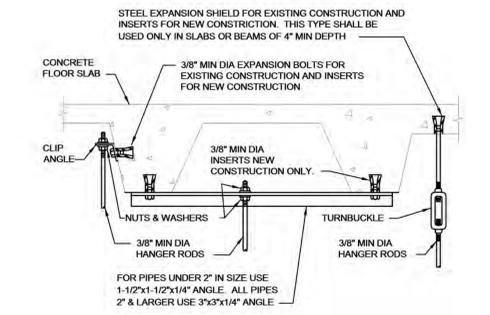
0.5 INCH WG TO 2 INCHES WG (LOW PRESSURE) DUCT RISER SUPPORT



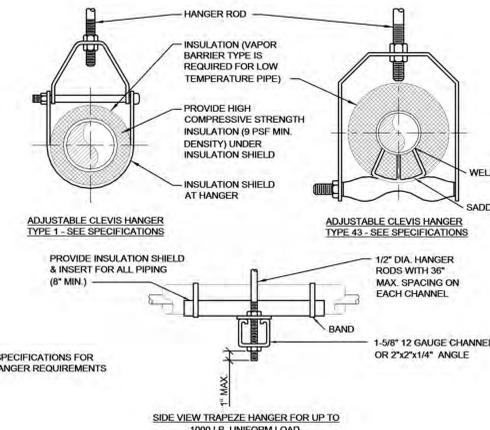
2 INCHES WG TO 4 INCHES WG (HIGH AND MEDIUM PRESSURE) DUCT RISER SUPPORT

NOTE:
 ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND MECHANICAL ROOM FLOORS SHALL BE PROVIDED WITH A 3" HIGH CONCRETE CURB AROUND OPENING FOR DUCT.

DUCT RISER SUPPORTS



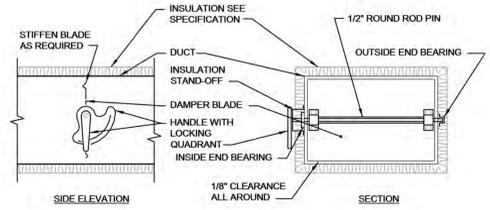
SECURING HANGER RODS IN CONCRETE



MAXIMUM PIPE/TUBING SUPPORT SPACING																			
NOM. SIZE	IN.	THRU 3/4"	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
PIPE	FT.	7	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32
TUBING	FT.	5	6	7	8	8	9	10	12	13	14	16	-	-	-	-	-	-	-

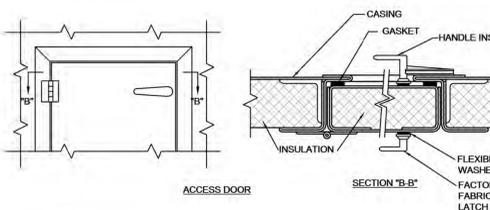
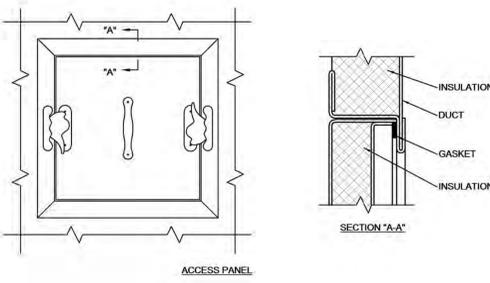
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.

PIPE HANGERS



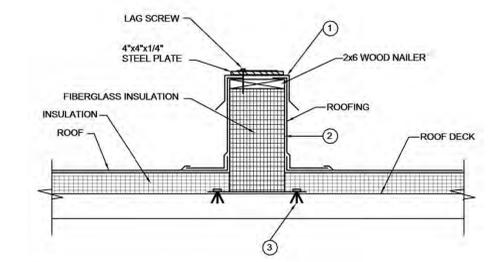
NOTES:
 1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
 2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

VOLUME DAMPER DETAIL



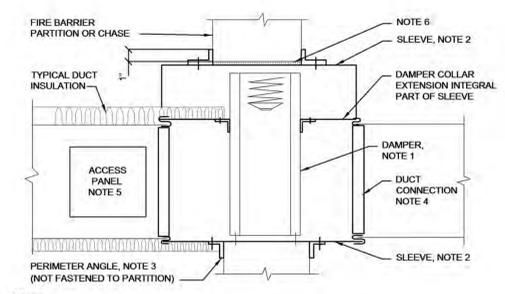
NOTES:
 1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
 2. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PIN.
 3. SEE SMACNA 2005, FIGURE 9-15

ACCESS PANEL AND DOOR DETAIL



① 18 GAUGE GALVANIZED STEEL COUNTER-FLASHING.
 ② WELDED 14 GAUGE EQUIPMENT SUPPORT CURB, MEETING ASTM A-446, 525, 526 AND 527 REQUIREMENTS, WITH WELDED CORNERS WITH SEAMS JOINED BY CONTINUOUS WELDS. CURB SHALL BE INTERNALLY REINFORCED WITH BULKHEADS AND SPREADERS, 24" ON CENTER TO MEET LOAD RATING OF EQUIPMENT. CURB TO EXTEND 6" BEYOND EQUIPMENT. REFER TO FLOOR PLANS FOR HEIGHT.
 ③ SECURE CURB TO ROOF WITH EXPANSION BOLTS (CONCRETE ROOF) OR RUST RESISTANT BOLTS (METAL DECK AND BAR JOIST ROOF), 12" O.C.

EQUIPMENT/DUCT SUPPORT ROOF CURB



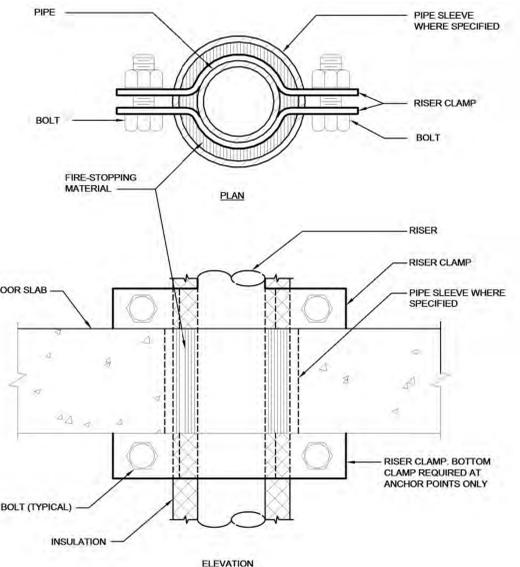
NOTES:
 1. A VERTICAL DAMPER IS SHOWN. HORIZONTAL DAMPER INSTALLATION IS SIMILAR. FOLLOW DAMPER MANUFACTURER'S INSTRUCTIONS, INCLUDING FASTENER OPTIONS AND GAGES FOR SLEEVE AND PERIMETER ANGLES. FIRE DAMPERS MUST BE INSTALLED IN THE PARTITION OR FLOOR AND NOT OUTSIDE THE PENETRATION.
 2. GALVANIZED SLEEVE: GAGE NOT LESS THAN CONNECTING DUCT. FASTEN SLEEVE TO DAMPER FRAME AND TO PERIMETER ANGLES.
 3. PERIMETER ANGLES: GALVANIZED STEEL, NOT LESS THAN 1-1/2"x1-1/2", 14 GAGE, TO PROVIDE 1" MINIMUM OVERLAP OF OPENING ON ALL 4 SIDES.
 4. BREAKAWAY DUCT CONNECTION: CONTRACTOR'S OPTION OF TYPES SHOWN IN SMACNA.
 5. ACCESS PANELS: SIZE AND LOCATION TO PERMIT SERVICING THE FUSIBLE LINK OR LINKS.
 6. PROVIDE 1/4" TO 1/2" CLEARANCE ON HEIGHT AND WIDTH IN ORDER TO MAINTAIN U.L. RATING FOR FIRE DAMPER, DO NOT FILL THIS OPEN SPACE WITH FIRESTOP MATERIAL.
 7. ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND MECHANICAL ROOM FLOORS, SHALL BE PROVIDED WITH 3" HIGH CONCRETE CURB AROUND OPENING FOR DUCT.

SECTION THRU FIRE DAMPER INSTALLATION

HANGER STRAPS OR RODS			
MAX. DUCT DIA. - IN.	QUANTITY/SIZE IN.	MAX. LOAD LBS.	MAX. SPACING IN.
26	ONE 1 x 22 GA. STRAP	260	144
36	ONE 1 x 18 GA. STRAP	420	144
50	ONE 1 x 18 GA. STRAP	700	144
60	TWO 3/8 DIA. RODS	1320	144
84	TWO 1/2 DIA. RODS	2500	144

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

ROUND DUCT HANGERS



SUPPORT/ANCHOR FOR PIPE RISERS

FULLY SUPPRESSED

Revisions Date	CONSULTANTS: 	HEAPY PROJECT No.: 2013-04002 	ARCHITECT/ENGINEERS: 	Drawing Title DETAILS	Project Title Correct Deficiencies Patient Kitchen B411	Project No. VA Project No. 552-14-102 JPA Project No. 13001.00
	Approved: Project Director	Location Dayton, OH	ARCHITECT/ENGINEERS: Heapy Engineering Mechanical Electrical Commissioning Technology <i>Nationally Recognized Leader in Sustainability / LEED</i> 1400 W Dorothy Lane, Dayton OH 45409-1310 Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com	Building Number B411	Drawing Number 411M502	Office of Construction and Facilities Management Department of Veterans Affairs