

**SYMBOLS LEGEND**

	VOLUME DAMPER		SANITARY PIPE
	FLEXIBLE CONNECTION		VENT PIPE
	TURNING VANES		COLD WATER PIPE
	SUPPLY DUCT DOWN		HOT WATER PIPE
	SUPPLY DUCT UP		REFRIGERANT LIQUID PIPING
	RETURN DUCT DOWN		REFRIGERANT SUCTION PIPING
	RETURN DUCT UP		BALL VALVE
	EXHAUST DUCT DOWN		PIPE DOWN
	EXHAUST DUCT UP		PIPE UP
	AIRTITE FITTING WITH INTEGRAL VOLUME DAMPER		CLEANOUT
	FIRE DAMPER		
	FLEXIBLE DUCT		
	CUBIC FEET PER MINUTE		
	SUPPLY AIR		
	RETURN AIR		
	EXHAUST AIR		
	DIRECTION OF AIR FLOW		
	THERMOSTAT		
	DRAWING NOTE		
	ELECTRONIC DAMPER		
	1" UNDERCUT DOOR		
	FAN DESIGNATION		
	ROOFTOP UNIT		
	FAN COIL UNIT		
	HEAT PUMP UNIT		
	AIR COOLED CONDENSING UNIT		

**GENERAL NOTES:**

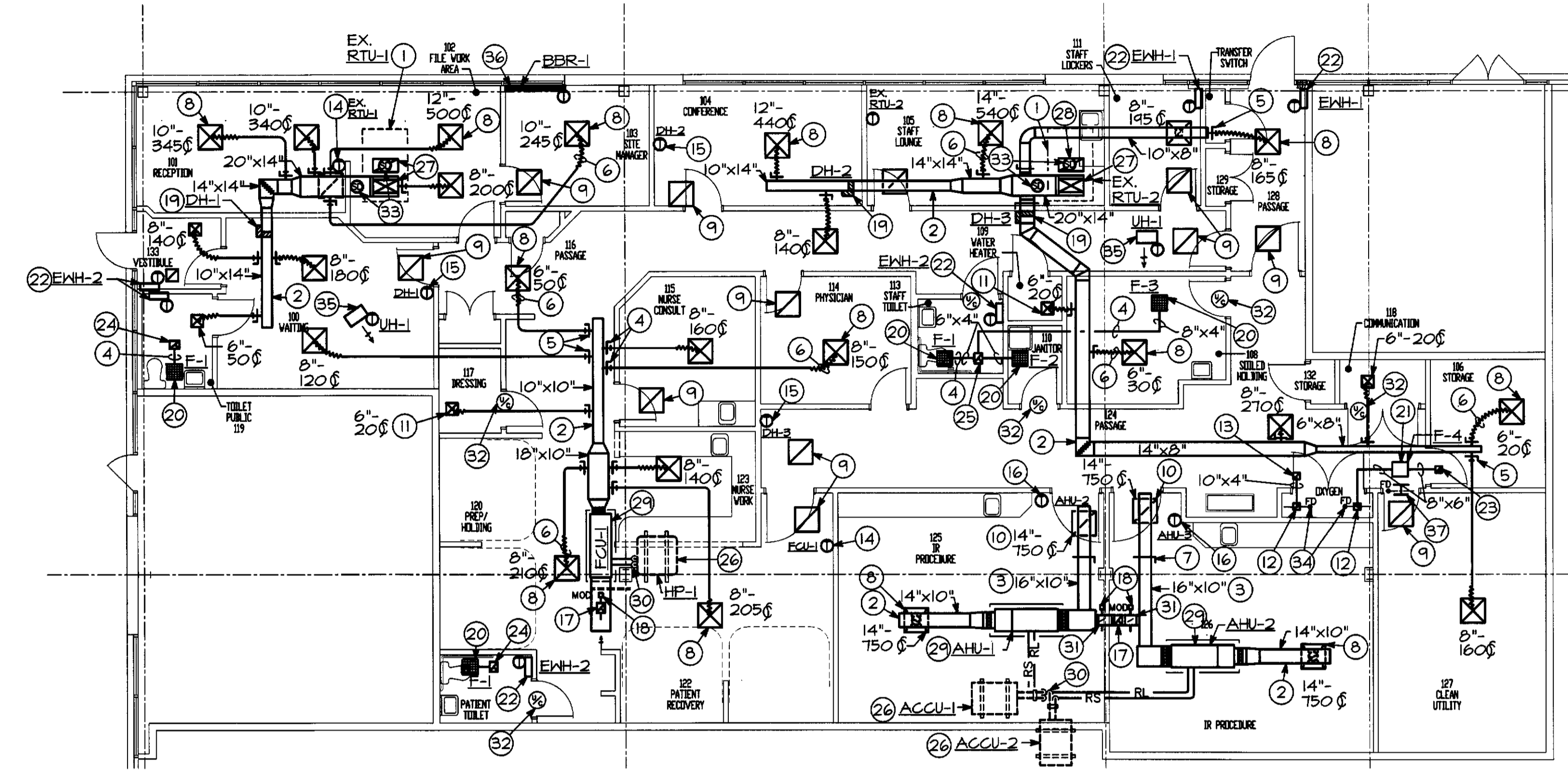
- ALL ITEMS INDICATED BOLD SHALL BE CONSIDERED NEW UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL ENSURE ALL DUCTWORK IS PROPERLY SEALED, PATCHED AND MADE AIRTIGHT WHERE ANY DEMOLITION AND NEW WORK IS DONE. (TYPICAL ALL DUCTWORK).
- ALL EXISTING THERMOSTATS, BEING RELOCATED, TO BE RECALIBRATED.
- ANY ITEM NOT BEING REUSED SHALL BE TURNED OVER TO A BUILDING COORDINATOR FOR BUILDING STOCKPILE.
- CONTRACTOR IS TO INSPECT EXISTING ROOFTOP EQUIPMENT SERVING THE REVISED TENANT LAYOUT AND CLEAN FILTERS, LUBRICATE MOTORS AND RECHARGE REFRIGERANT (AS NEEDED) TO OBTAIN MAXIMUM PERFORMANCE.
- ALL MANUFACTURES SHALL BE EQUAL TO THOSE INDICATED.
- CONTRACTOR TO FIELD INSPECT EXISTING ROOFTOP EQUIPMENT SERVING THE REVISED TENANT LAYOUT FOR PROPER OPERATION AND REPORT ANY COSTLY DEFICIENCIES TO THE OWNER.
- ANY CUTTING OR PATCHING OF THE ROOF TO BE DONE BY THE OWNER'S ROOFING CONTRACTOR SO NOT TO VOID ANY ORIGINAL WARRANTIES.
- CONTRACTOR TO INSTALL/SIZE AND TRAP REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.

**NOTICE TO CONTRACTORS:**

ALL CONTRACTORS PRIOR TO BID SUBMISSION PROCESS SHALL VISIT PROPOSED WORK SITE AND FIELD VERIFY ALL EXISTING CONDITIONS. ANY CONDITIONS THAT DIFFERS FROM THAT SHOWN ON THIS PLAN SHALL BE REPORTED TO ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULTS FROM CONTRACTORS NEGLIGENCE TO VISIT THE SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.

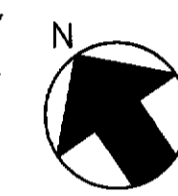
**MECHANICAL H.V.A.C DESIGN CRITERIA**

- OUTSIDE CONDITIONS
  - 43 DEGREES F. DB., SUMMER @ 14 DEGREES WB.
  - 5 DEGREES F. DB., WINTER @ 31 DEGREES WB.
- INSIDE CONDITIONS
  - 75 DEGREES F. DB., SUMMER (2 DEGREE F. DB.) @ 50% RELATIVE HUMIDITY
  - 70 DEGREES F. DB., WINTER (2 DEGREE F. DB.)
  - 60 DEGREES F. DB., WINTER/SUMMER (2 DEGREE F. DB.) FOR PROCEDURE ROOM
- OCCUPANCY RATE
  - ONE PERSON PER OFFICE/EXAM ROOM
- VENTILATION RATE
  - 20 C.F.M. PER PERSON
- ELECTRICAL LOADS
  - 350 WATTS PER P/C (1 PERSON/1 PC)
  - LIGHTING 2 WATTS PER SQ. FOOT
- BUILDING "U" VALVES
  - ROOF - .01
  - EXTERIOR WALL - .08
  - GLASS - 54 "U" VALUE  
- .75 SHADING COEFFICIENT



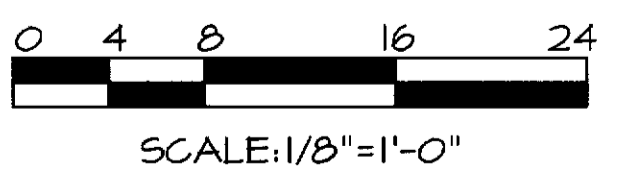
**FLOOR PLAN-EXISTING CONDITIONS/  
NEW WORK (HVAC)**

SCALE: 1/8"=1'-0"



**DRAWING NOTES**

- OUTLINE OF EXISTING ROOFTOP UNIT MOUNTED ON THE ROOF TO REMAIN. REFER TO SHEET M-4 FOR NEW AIRFLOW.
- SUPPLY AIR DUCTWORK SUPPORTED ABOVE CEILING (TYPICAL).
- RETURN AIR DUCTWORK SUPPORTED ABOVE CEILING (TYPICAL).
- EXHAUST AIR DUCTWORK SUPPORTED ABOVE CEILING (TYPICAL).
- AIR-TITE FITTING WITH DAMPER AND ADHESIVE GASKET (TYPICAL).
- INSULATED FLEXIBLE DUCTWORK SUPPORTED ABOVE CEILING (TYPICAL).
- VOLUME DAMPER (TYPICAL).
- 24"x24" LOUVERED SUPPLY AIR DIFFUSER MOUNTED IN ACOUSTICAL TILE CEILING WITH NECK SIZE AND AIR VOLUME INDICATED (TYPICAL).
- 24"x24" RETURN AIR GRILLE (TTUS-25R) MOUNTED IN ACOUSTICAL TILE CEILING (TYPICAL).
- 24"x24" RETURN AIR REGISTER (TTUS-25R) MOUNTED IN ACOUSTICAL TILE CEILING WITH NECK SIZE AND AIR VOLUME INDICATED (TYPICAL).
- 12"x12" LOUVERED SUPPLY AIR DIFFUSER MOUNTED IN ACOUSTICAL TILE/DRYWALL CEILING WITH NECK SIZE AND AIR VOLUME INDICATED. PROVIDE TRIM PANELS FOR DRYWALL INSTALLATION (TYPICAL).
- 12"x12" PERFORATED AIR DEVICE WITH 8" NECK SIZE DUCT CONNECTION ABOVE CEILING AND RADIATION FIRE DAMPER.
- 12"x12" AIR AIR TRANSFER GRILLE MOUNTED IN ACOUSTICAL CEILING TILE.
- THERMOSTAT TO BE MOUNTED 45'-0" ABOVE FINISHED FLOOR ON WALL TO CONTROL EXISTING ROOFTOP/FAN COIL UNIT (TYPICAL).
- THERMOSTAT TO BE MOUNTED 45'-0" ABOVE FINISHED FLOOR ON WALL TO CONTROL ELECTRIC DUCT HEATER.
- THERMOSTAT (MICROPROCESSOR) WITH HUMIDITY CONTROL MOUNTED ON WALL 45'-0" ABOVE FINISHED FLOOR.
- 8"x6" OUTSIDE AIR DUCTWORK UP TO GOOSENECK ON ROOF (TYPICAL).
- MOTOR OPERATED DAMPER (TYPICAL).
- ELECTRIC SLIP-IN DUCT HEATER. REFER TO SHEET M-4 FOR SIZE AND CAPACITY (TYPICAL). VERIFY PROPER NEC CLEARANCE IS MAINTAINED.
- CEILING MOUNTED EXHAUST FAN MOUNTED IN ACOUSTICAL TILE CEILING. REFER TO SHEET M-4 FOR SIZE AND CAPACITY (TYPICAL).
- IN-LINE EXHAUST FAN SUPPORTED ABOVE CEILING. REFER TO SHEET M-2 FOR SIZE AND CAPACITY.
- ELECTRIC WALL MOUNTED HEATER WITH INTEGRAL THERMOSTAT. REFER TO SHEET M-4 FOR SIZE AND CAPACITY (TYPICAL).
- 8"x6" EXHAUST AIR DUCTWORK UP TO GOOSENECK ON ROOF.
- 10"x4" EXHAUST AIR DUCTWORK UP TO GOOSENECK ON ROOF.
- 10"x8" EXHAUST AIR DUCTWORK UP TO GOOSENECK ON ROOF.
- HEAT PUMP/AIR COOLED CONDENSING UNIT SECURELY MOUNTED ON THE CURBS ON ROOF. REFER TO SHEET M-4 FOR SIZE AND CAPACITY.
- CONTRACTOR TO ROUTE SUPPLY/RETURN AIR DUCTWORK UP TO EXISTING ROOFTOP UNIT DUCT TAPS JUST BELOW ROOF LINE AND MAKE CONNECTION. TRANSITION DUCTWORK AS REQUIRED TO UNIT CONNECTIONS. PROVIDE FLEXIBLE CONNECTION AT DUCTWORK CONNECTION TO UNIT.
- CONTRACTOR TO EXTEND RETURN AIR DUCTWORK DOWN FROM OPEN STRUCTURE ABOVE 48'-0". PROVIDE A 1/2" X 1/2" WIRE MESH SCREEN OVER OPEN END DUCTWORK.
- FAN COIL/AIR HANDLING UNIT SUPPORTED FROM STRUCTURE ABOVE CEILING. REFER TO SHEET M-4 FOR SIZE AND CAPACITY.
- ROUTE REFRIGERANT PIPING UP THROUGH PITCH POCKET FROM FAN COIL/AIR HANDLING UNIT TO AIR COOLED CONDENSING/HEAT PUMP UNITS MOUNTED ON ROOF.
- 6"x4" OUTSIDE AIR DUCTWORK MOUNTED FROM STRUCTURE ABOVE CEILING. EXTEND 6"x4" OUTSIDE AIR DUCTWORK FROM RETURN AIR PLENUM TO DUCT EXTENSION FROM GOOSENECK AS INDICATED (TYPICAL).
- 1" DOOR UNDERCUT. COORDINATE WITH ARCHITECT (TYPICAL).
- SMOKE DETECTOR PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR (TYPICAL).
- RADIATION TYPE FIRE DAMPER IN DRYWALL CEILING (TYPICAL).
- HORIZONTAL ELECTRIC HEATER SUPPORTED ABOVE CEILING WITH INTEGRAL THERMOSTAT. REFER TO SHEET M-4 FOR SIZE AND CAPACITY.
- ELECTRIC WALL MOUNTED BASEBOARD WITH INTEGRAL THERMOSTAT. REFER TO SHEET M-4 FOR SIZE AND CAPACITY (TYPICAL).
- 12"x12" THROUGH THE WALL AIR TRANSFER DUCT ABOVE THE CEILING WITH FIRE DAMPER AT WALL PENETRATION.



REV#	DATE	DESCRIPTION

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TENANT RENOVATIONS FOR:  
**RMS LIFE LINE**  
WALL STREET AND WESLEY AVENUE  
NORWOOD, OHIO

DATE	9/26/01	DRAWING NO.	M
SCALE	AS NOTED		
DESIGNED BY	DLI	SHEET 1 OF 5	
DRAWN BY	DLI	DATE	2011215.00