

**GENERAL NOTES**

- FABRICATION, INSTALLATION AND TESTING OF ALL HVAC SYSTEMS SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL MECHANICAL CODE (IMC), ALL STATE AND LOCAL CODES, AND ALL MANUFACTURER INSTALLATION GUIDELINES.
- ALL METALLIC AND FLEXIBLE DUCTS SHALL BE CONSTRUCTED AND INSTALLED AS SPECIFIED IN THE IMC AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS. ALL FIRE DAMPERS SHALL HAVE ACCESS FOR INSPECTION.
- PROVIDE AND INSTALL ALL LOW VOLTAGE WIRING FOR MECHANICAL SYSTEMS. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL LINE VOLTAGE WIRING AND CONDUIT. COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ALL CONDUIT FOR LOW VOLTAGE WIRING.
- ANY EXHAUST AIR DISCHARGE SHALL BE 3 FEET HIGHER THAN ANY INTAKE OPENING WITHIN 10 HORIZONTAL FEET.
- ALL DUCTWORK INDICATED WITH TWO DIMENSION <WxD> INDICATES RECTANGULAR DUCT. ALL <D> INDICATES ROUND DUCT. DIMENSIONS ARE INCHES MEASURED INSIDE.
- INSULATION SHALL BE R6 AND MEET THE ASTM E 84 FLAME/SMOKE SPREAD INDEX. SUPPLY AND RETURN DUCT MAY BE INTERNALLY OR EXTERNALLY INSULATED. OUTDOOR AIR DUCT SHALL BE EXTERNALLY INSULATED. RETURN DUCT SERVING THE BASEMENT AND EXISTING OUTDOOR AIR DUCT THAT IS INACCESSIBLE DO NOT REQUIRE INSULATION. EXISTING SUPPLY DUCT SERVING THE BASEMENT IS INTERNALLY INSULATED. DUCT SEAMS SHALL BE TAPE OR MASTIC SEALED.
- PROVIDE STANDARD TURNING VANES OR CURVED ELBOW WITH SQUARE THROAT ON RECTANGULAR DUCTS OF 144 SQUARE INCH AREA OR GREATER IN BULLHEAD TEES AND ELBOWS GREATER THAN 45° UNLESS OTHERWISE MARKED.
- FLEXIBLE DUCT SHALL BE LIMITED TO 5 FEET MAXIMUM LENGTH, BE REASONABLY WELL EXTENDED, AND BE SUPPORTED TO MINIMIZE STATIC PRESSURE DROP. FLEXIBLE DUCT SHALL MAINTAIN A CENTERLINE TURNING RADIUS OF 1.5 X DUCT DIAMETER. SEE DETAIL 3 SHEET M601.
- INSTALL AIR BALANCE DAMPERS FOR ALL SUPPLY, RETURN, AND EXHAUST AIR DEVICES AND AS REQUIRED TO PROPERLY BALANCE SYSTEM TO AIR FLOWS INDICATED. ALL DAMPERS MAY NOT BE SHOWN ON PLAN. TRANSFER GRILLES DO NOT REQUIRE DAMPERS. TEST AND BALANCE ALL AIR FLOW DEVICES TO SPECIFIED VALUES.
- PROVIDE SUITABLE SUPPORTS FOR STABILITY OF ALL HVAC DEVICES AND DUCTS. FURNACES SHALL BE PROVIDED WITH FLEXIBLE SUPPLY AND RETURN AIR DUCT CONNECTORS AT UNITS.
- PROVIDE A TRAPPED CONDENSATE DRAIN PIPE FOR ALL EVAPORATORS. CONDENSATE PIPE SHALL BE 0.75 INCH INSIDE DIAMETER SCHEDULE 40 PVC OR INSULATED COPPER. SEE DETAIL 2 SHEET M601.
- PROVIDE 0.75 INCH WALL THICKNESS (MINIMUM) NITRILE-BASED, ELASTOMERIC, REFRIGERATION-GRADE, CLOSED-CELL, FOAM INSULATION ON ALL REFRIGERANT PIPES. THE REFRIGERANT PIPES SHALL BE SUPPORTED WITH A MAXIMUM SPAN BETWEEN HANGERS OF 5 FEET. PROVIDE 2 TO 4 PERCENT PITCH DOWN IN THE DIRECTION OF REFRIGERANT FLOW FOR HORIZONTAL SUCTION PIPES.
- WEATHER SEAL OUTSIDE WALL REFRIGERANT PIPE PENETRATIONS. INSTALL ALUMINUM JACKET TO ANY EXTERIOR REFRIGERANT PIPE THAT IS EXPOSED TO OUTDOOR CONDITIONS.

**SEQUENCE OF OPERATION**

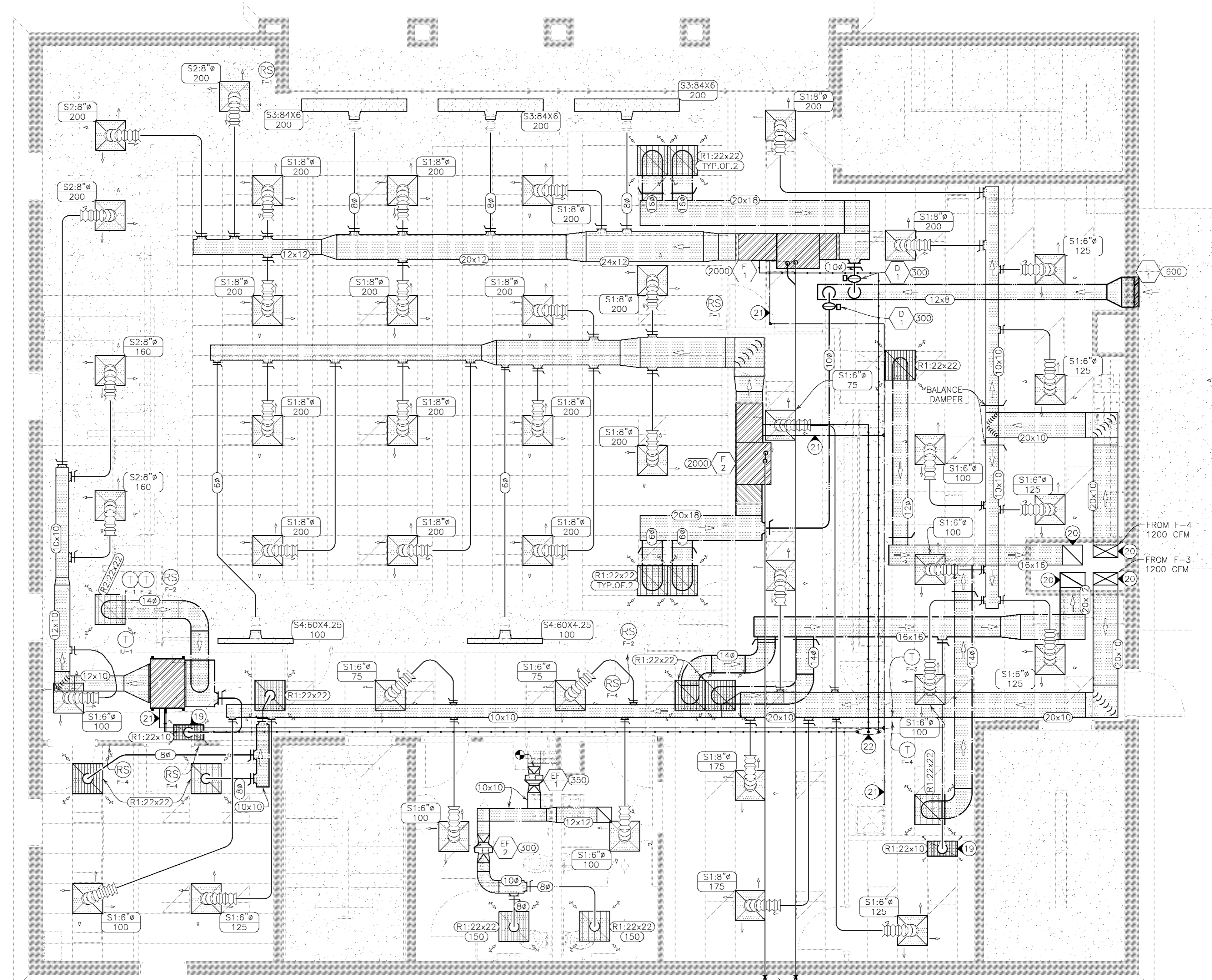
- FORCED AIR HVAC EQUIPMENT SHALL OPERATE CONTINUOUSLY DURING OCCUPIED TIME PERIODS DELIVERING THE SPECIFIED OUTDOOR AIR FLOW WHILE MAINTAINING ROOM TEMPERATURE SETPOINT. THE UNITS SHALL RUN INTERMITTENTLY TO MAINTAIN THE UNOCCUPIED TIME PERIOD ROOM TEMPERATURE SETPOINT. OUTDOOR AIR DAMPERS ARE TO BE CLOSED DURING UNOCCUPIED TIME PERIODS UNLESS A CALL TO OVERRIDE.
- OUTDOOR AIR DAMPERS SHALL BE CONTROLLED BY A 24 VAC SIGNAL FROM THE THERMOSTAT CONTROLLING THE ASSOCIATED FURNACE. DAMPERS SHALL BE OPEN DURING OCCUPIED HOURS.
- EXHAUST FANS SHALL BE ENERGIZED BY WALL MOUNTED SWITCHES. COORDINATE WITH ELECTRICAL CONTRACTOR.
- TEST AND PROGRAM ALL THERMOSTATS FOR PROPER OPERATION. PROVIDE PLASTIC NAMEPLATES CONFORMING TO ASTM D709 TO INDICATE EQUIPMENT CONTROLLED BY THERMOSTAT. NAMEPLATE SHALL HAVE WHITE BACKGROUND WITH BLACK LETTERS. INSTRUCT OWNER IN THE PROPER USE OF THERMOSTATS.
- WHEN REMOTE TEMPERATURE SENSORS ARE INSTALLED, THE THERMOSTAT'S INTERNAL TEMPERATURE SENSOR IS NOT USED. REMOTE SENSORS ARE LOCATED THROUGHOUT THE SPACE AS SHOWN ON THE PLANS. USE 10K OHM OR 20K OHM REMOTE SENSORS AS NEEDED TO PROVIDE THE SENSOR NETWORK SHOWN. THERMOSTATS WITH REMOTE SENSORS SERVE THE FOLLOWING FURNACES: F-1, F-2, F-4, AND F-6.

**CONSTRUCTION NOTES (THIS SHEET ONLY)**

- COORDINATE WITH GENERAL CONTRACTOR TO PROVIDE CEILING GRID CROSS "T" FOR 1/2 SIZE GRILLE AND 1/2 SIZE CEILING TILE.
- ROUTE DUCT FROM BASEMENT THROUGH EXISTING CHASE TO CEILING ABOVE 1ST FLOOR.
- ROUTE CONDENSATE DRAIN TO SINK IN JANITOR CLOSET. COORDINATE WITH PLUMBING CONTRACTOR.
- ROUTE REFRIGERANT PIPES FOR F-1, F-2, AND IU-1 THROUGH FLOOR TO ABOVE BASEMENT CEILING. SEE SHEET M104 FOR CONTINUATION.

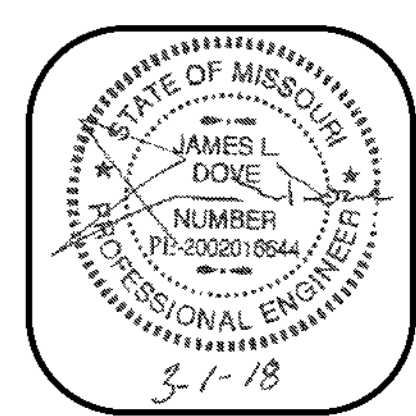
**HVAC LEGEND**

	THERMOSTAT
	REMOTE TEMPERATURE SENSOR
	DIRECTION OF FLOW
	DEVICE SCHEDULE TAG
	SUPPLY AIR DEVICE: SIZE/CFM
	RETURN AIR DEVICE: SIZE
	DUCT SIZE
	AIR FLOW: CUBIC FEET PER MINUTE
	TYPICAL OF 2 LIKE DEVICES THIS GROUP
	HVAC EQUIPMENT
	SUPPLY AIR
	RETURN AIR
	EXHAUST AIR
	EXISTING EXHAUST AIR TO REMAIN
	OUTSIDE AIR
	REFRIGERANT PIPE
	CONDENSATE DRAIN PIPE
	CONNECTION TO EXISTING EQUIPMENT
	BALANCE DAMPER



ROUTE FURNACE VENT TO PENETRATE OUTSIDE WALL WITH CONCENTRIC VENT

**1 FIRST FLOOR MECHANICAL RENOVATION PLAN**  
SCALE: 1/4\"=1'-0"



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MECHANICAL/ELECTRICAL/PLUMBING ENGINEER

**The Architects Alliance inc.**  
JEFFERSON CITY, MISSOURI

FIRST FLOOR MECHANICAL RENOVATION PLAN

**JEFFERSON CITY MUNICIPAL COURT RELOCATION**  
427 MONROE STREET  
JEFFERSON CITY, MISSOURI

PROJECT NO. 1637  
DATE: 03-01-2016  
**M103**  
SHEET 6 OF 15