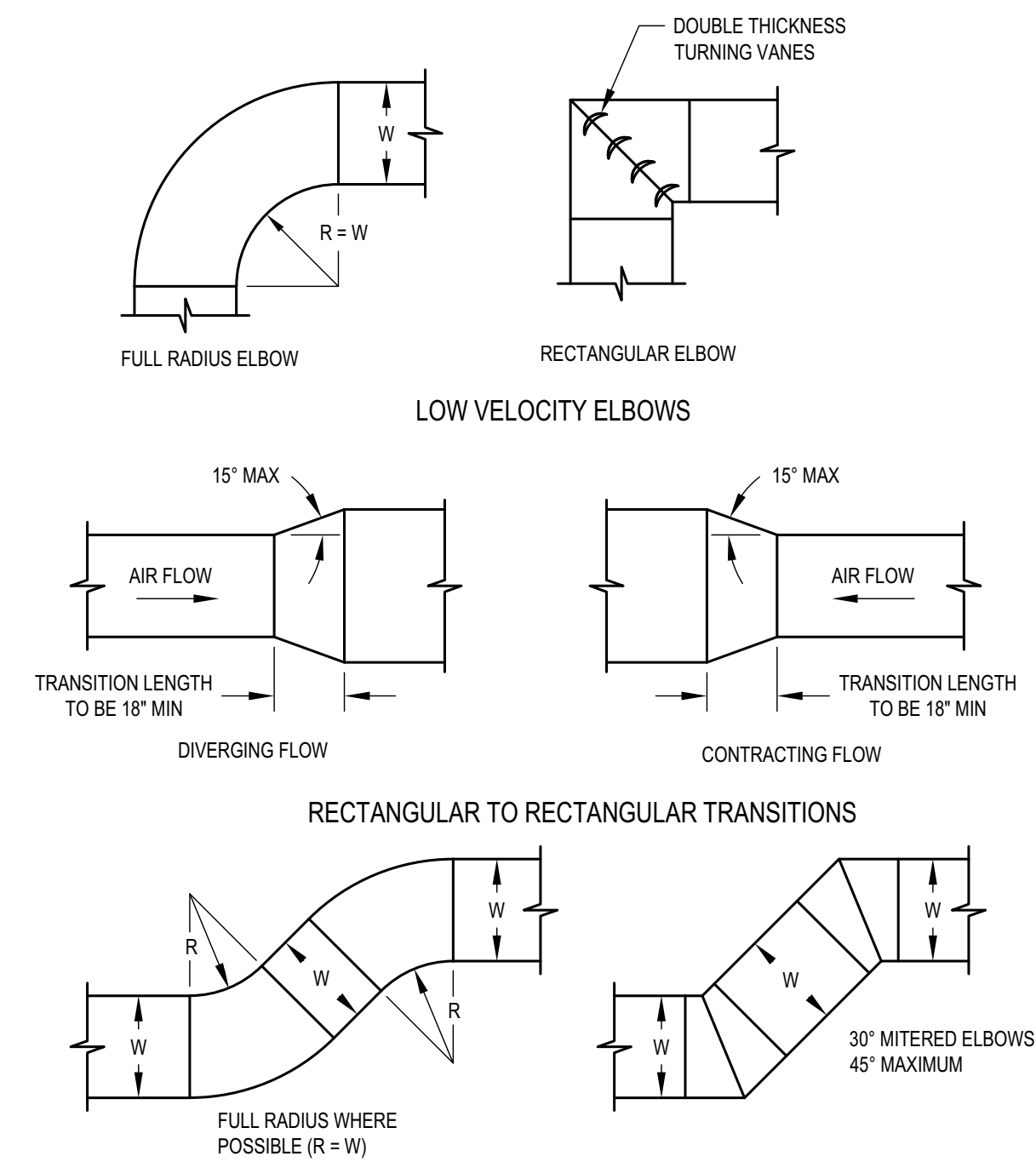


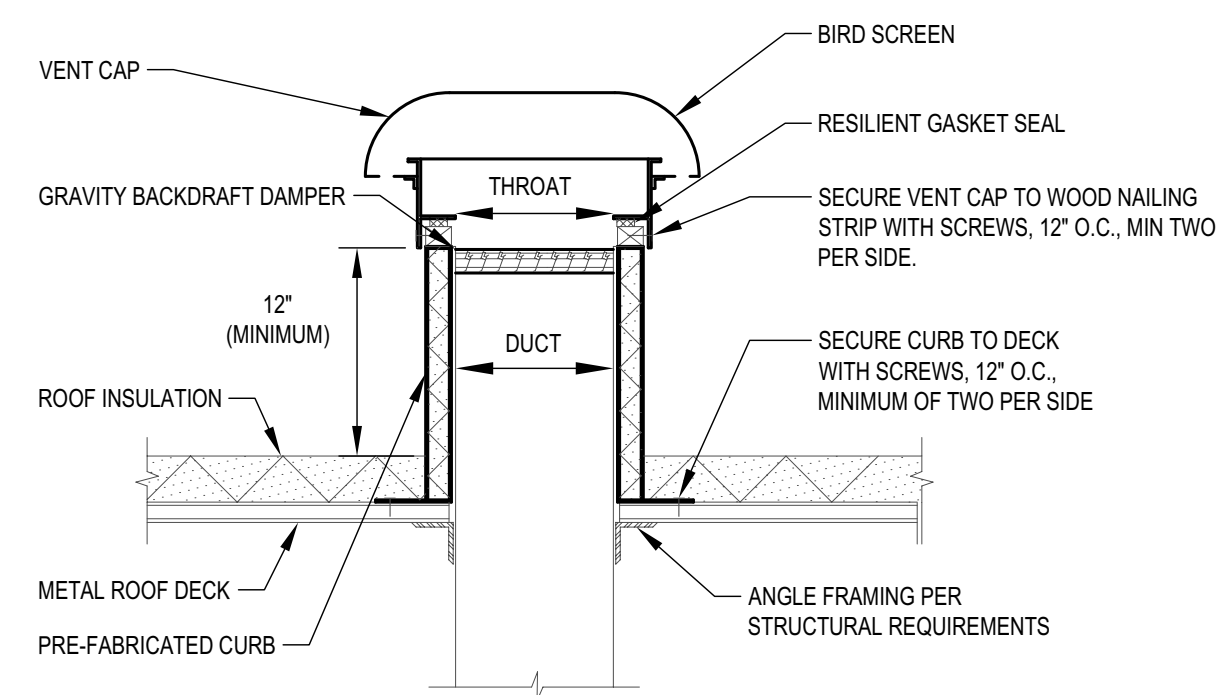
**DETAIL NOTES**

- FURNACE SYSTEMS SHALL BE MOUNTED/SUPPORTED FROM MECHANICAL ROOM/ATTIC FLOOR.
- MC SHALL LOCATE FCU TO MAINTAIN A MINIMUM 24" SERVICE CLEARANCE IN FRONT OF UNIT FOR MOTOR ACCESS PANEL FROM ANY EXISTING BUILDING STRUCTURE OR PIPING EXTENDING DOWN TO CEILING PER MANUFACTURERS RECOMMENDATIONS. MC SHALL COORDINATE WITH OTHER TRADES TO KEEP THIS SERVICE AREA CLEAR OF ANY NEW PIPING OR CONDUIT.

<b>1</b>	<b>FURNACE DETAIL</b>
M002	SCALE: NONE



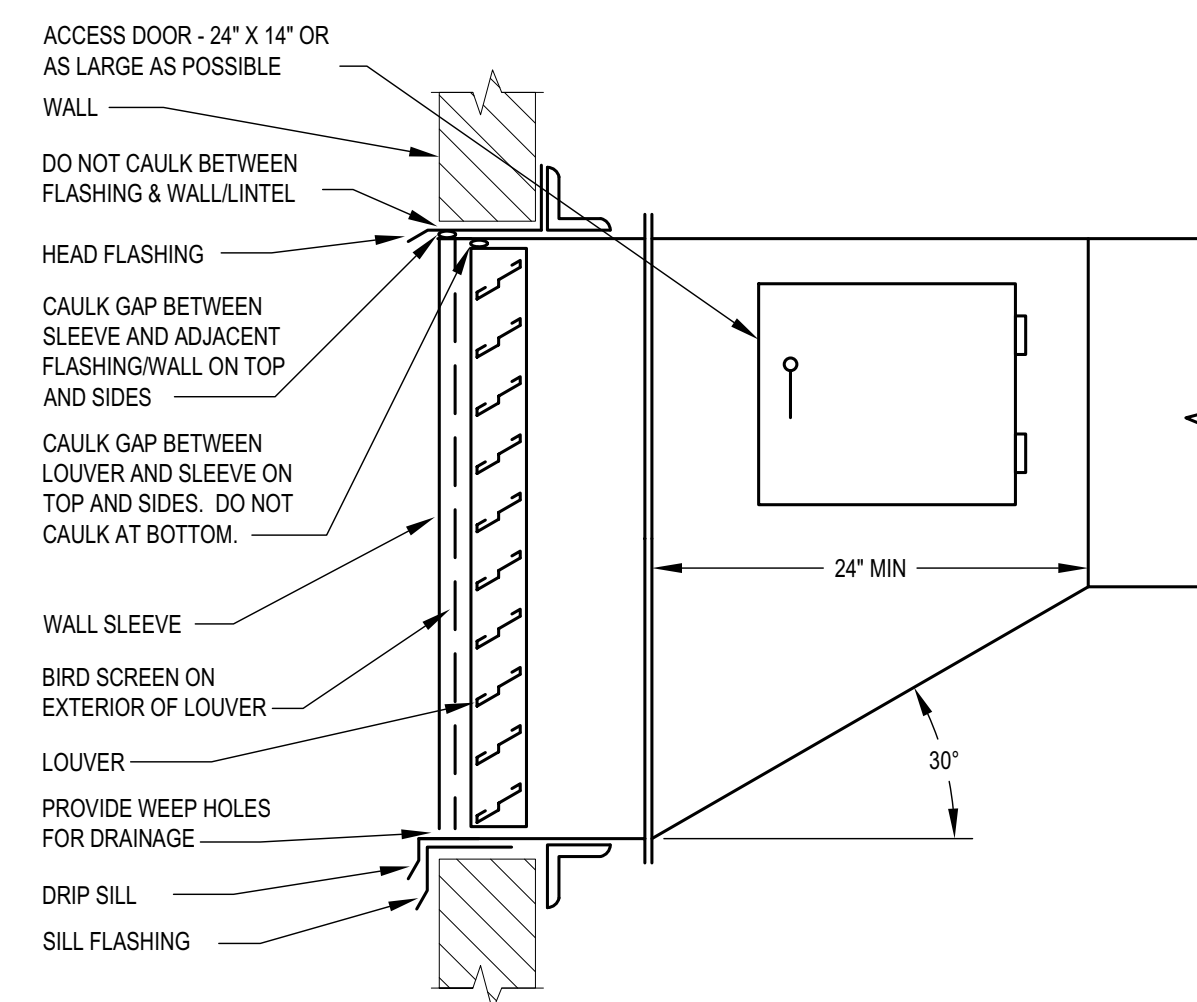
<b>2</b>	<b>LOW VELOCITY TRANSITIONS AND OFFSETS</b>
M002	SCALE: NONE



**DETAIL NOTES**

- HVAC CONTRACTOR TO COORDINATE INSTALLATION WITH LANDLORD APPROVED ROOFING CONTRACTOR FOR PROPER SEQUENCE TO PERMIT FLASHING AND COUNTERFLASHING INSTALLATION.
- GOOSENECK TERMINATION NOT PERMITTED.

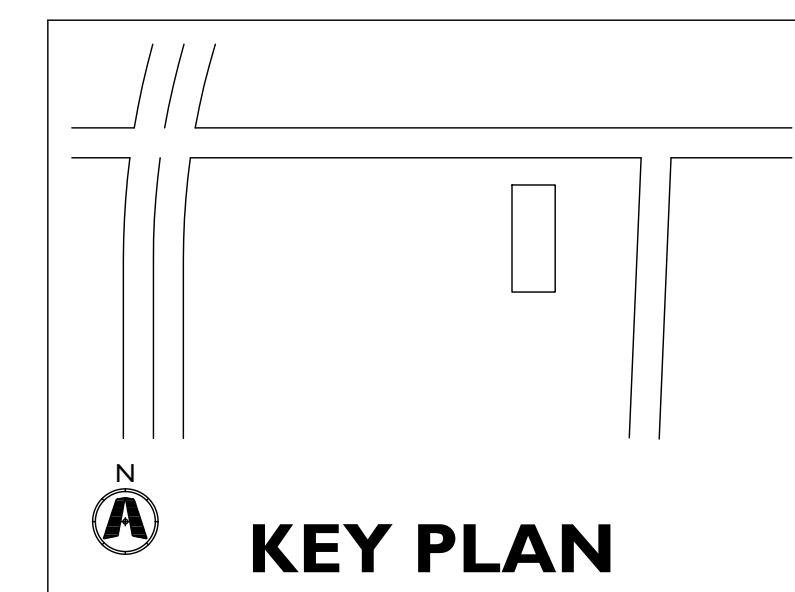
<b>3</b>	<b>EXHAUST AIR VENT CAP DETAIL</b>
M002	SCALE: NONE



**DETAIL NOTES**

- DO NOT ATTACH DUCT TO TOP OF LOWER LOUVER BLADE AS TYPICAL. THIS CREATES SEALING PROBLEMS AT MULLIANS AND OTHER VERTICAL MEMBERS.
- CONSTRUCT SLEEVE AND DUCTWORK TO SUPPORT WEIGHT OF SERVICE TECHNICIAN.
- SEAL JOINT BETWEEN DUCT AND SLEEVE WATER TIGHT ALL AROUND.
- INSULATE DUCT AND SLEEVE AS SPECIFIED.

<b>4</b>	<b>LOUVER INSTALLATION DETAIL</b>
M002	SCALE: NONE

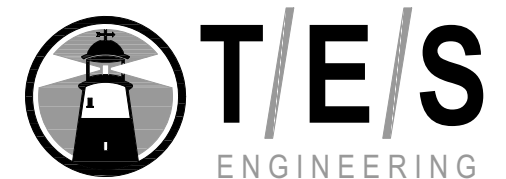


**KEY PLAN**

**CURRAN ARCHITECTURE**

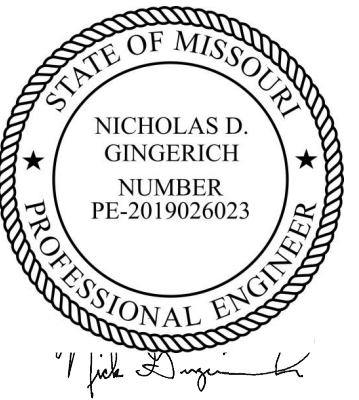
5719 LAWTON LOOP E. DR. #212  
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 F :: 317 . 288 . 0753

DRAWN BY: JES CHECKED BY: JMZ



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PROJECT INFORMATION

GRANT ANIMAL HOSPITAL

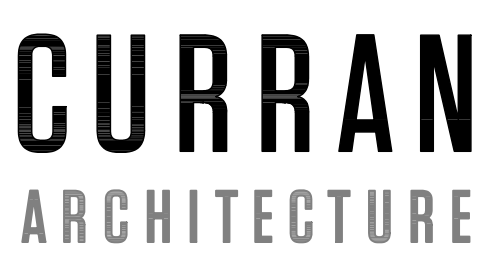
1706 W. GRAND ST  
 SPRINGFIELD, MO 65802

ISSUE DATES

PERMIT SET 09.02.21

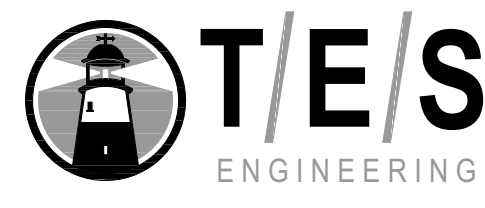
200400  
 MECHANICAL DETAILS

**M002**



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PROJECT INFORMATION

GRANT ANIMAL HOSPITAL

1706 W. GRAND ST SPRINGFIELD, MO 65802

ISSUE DATES

Table with 2 columns: PERMIT SET, DATE (09.02.21)

200400 MECHANICAL SCHEDULES

M003

GAS FURNACE SCHEDULE table with columns: TAG, MFR, MODEL No., NOMINAL TONS, MIN OA (CFM), SUPPLY FAN DATA, DX COOLING COIL DATA, HEATING CAPACITY, UNIT CHARACTERISTICS, NOTES/ACCESSORIES

- NOTES/ACCESSORIES: 1. REFRIGERANT - R410A, 2. VENT TERMINATION KIT, 3. MERV 8 FILTERS, 4. CASED COIL DESIGN TO FIT TOP OF FURNACE, 5. CONDENSATE PUMP (LITTLE GIANT VCM), 6. 7-DAY PROGRAMMABLE THERMOSTAT WITH REMOTE SENSOR.

AIR DISTRIBUTION SCHEDULE table with columns: TAG, SERVICE, MOUNTING, MFR, MODEL No., MODULE/DIFFUSER SIZE, FRAME/BORDER, NOTES/ACCESSORIES

- NOTES/ACCESSORIES: 1. FINISH - WHITE POWDER COAT, 2. SECTORIZING BAFFLE (SB) AS REQUIRED BY DIRECTIONAL ARROWS ON PLAN, OTHERWISE FOUR (4) WAY BLOW, 3. SQUARE TO ROUND NECK ADAPTER. REFER TO PLANS FOR NECK SIZE AND DUCT SIZE, 4. RAPID MOUNT FRAME, 5. AG-15 DAMPER

AIR BALANCE SCHEDULE

AIR BALANCE SCHEDULE table with columns: EQUIPMENT TAG, SUPPLY AIR (CFM), OUTSIDE AIR (CFM), RETURN AIR (CFM), EXHAUST AIR (CFM), PRESSURE (CFM)

OUTSIDE AIR SCHEDULE

OUTSIDE AIR SCHEDULE table with columns: ZONE DATA, SYSTEM DATA, ZONE NAME, FLOOR AREA (SF), REQUIRED OUTSIDE AIR (CFM/SF), OCCUPANCY, REQUIRED OUTSIDE AIR (CFM/PERSON), BREATHING ZONE OUTSIDE AIR (CFM), ZONE AIR DISTRIBUTION EFFECTIVENESS, REQUIRED OUTSIDE AIR (CFM), SUPPLY AIR (CFM), OUTDOOR AIR FRACTION, SYSTEM NAME, SYSTEM VENTILATION EFFICIENCY, REQUIRED OUTSIDE AIR (CFM), DELIVERED OUTSIDE AIR (CFM)

- NOTES: 1. SPACE OUTSIDE AIR REQUIREMENTS BASED ON IMC 2018

CONDENSING UNIT SCHEDULE

CONDENSING UNIT SCHEDULE table with columns: TAG, SERVICE, LOCATION, MFR, MODEL No., SEER, NOMINAL TONS, NOMINAL COOLING CAPACITY (MBH), ELECTRICAL DATA, WEIGHT (LBS), NOTES/ACCESSORIES

- NOTES/ACCESSORIES: 1. UNIT CAPACITY SHALL BE BASED ON AHRI CONDITIONS, 2. R410A REFRIGERANT, 3. 2-STAGE COMPRESSORS, 4. 1 YEAR PARTS & LABOR WARRANTY, 5. 5 YEAR EXTENDED COMPRESSOR PARTS & LABOR WARRANTY, 6. TXV VALVE, 7. HARD START KIT

EXHAUST FAN SCHEDULE

EXHAUST FAN SCHEDULE table with columns: TAG, SERVICE, MFR, MODEL No., AIRFLOW (CFM), ESP (IN WC), MOTOR (W), SONES, VOLTAGE (V-φ-Hz), OPERATING WEIGHT (LBS), NOTES/ACCESSORIES

- NOTES/ACCESSORIES: 1. DISCONNECT SWITCH - NEMA 1- FACTORY MOUNTED & WIRED, 2. AMCA SEAL & U.L. LISTED, 3. FAN SPEED CONTROLLER - FACTORY MOUNTED & WIRED, 4. HANGING VIBRATION ISOLATORS, 5. LINE VOLTAGE REVERSE ACTING COOLING THERMOSTAT WITH REMOTE TEMP SENSOR - WIRED TO STAT FAN ON TEMP. RISE ABOVE 80°F, 6. CONTROLLED BY WALL SWITCH

ELECTRIC UNIT HEATER SCHEDULE

ELECTRIC UNIT HEATER SCHEDULE table with columns: TAG, SERVICE, MFR, MODEL No., MOUNTING, ELECTRIC HEATING DATA, FAN DATA, UNIT CHARACTERISTICS, NOTES/ACCESSORIES

- NOTES/ACCESSORIES: 1. ELECTRIC DISCONNECT, 2. INTEGRAL THERMOSTAT, 3. HIGH LIMIT SWITCH, 4. WALL RECESSED MOUNTING BRACKET, 5. MARKEL, BERKO, TRANE ACCEPTABLE ALTERNATE MANUFACTURES

ENERGY RECOVERY VENTILATOR SCHEDULE

ENERGY RECOVERY VENTILATOR SCHEDULE table with columns: TAG, SERVICE, MFR, MODEL No., FAN DATA, SUMMER PERFORMANCE DATA, WINTER PERFORMANCE DATA, UNIT CHARACTERISTICS, NOTES/ACCESSORIES

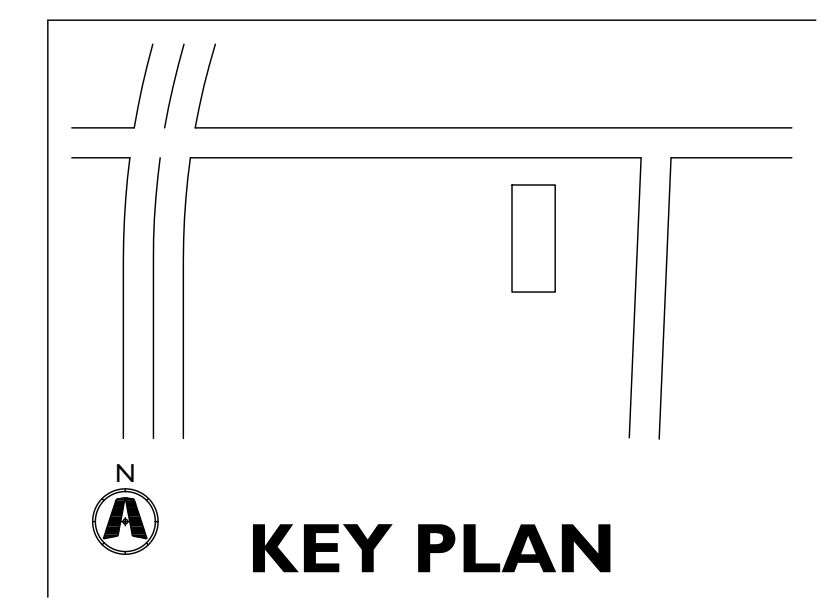
- NOTES/ACCESSORIES: 1. UL LISTED, 2. INDOOR INSTALLATION, 3. POLYMER WHEEL WITH SILICA GEL DESICCANT, 4. HINGED ACCESS PANELS, 5. DIRECT DRIVE SUPPLY AND EXHAUST FAN, 6. SINGLE POINT POWER, 7. NON-FUSED DISCONNECT SWITCH, 8. ENERGY WHEEL ECONOMIZER CONTROL - STOP WHEEL, ENTHALPY BASED (18 BTU/LB), 9. ROTATION SENSOR, 10. SUSPENDED ISOLATION KIT, 11. MOTORIZED OUTSIDE AIR DAMPER, 12. ALTERNATES APPROVED BY ENGINEER, 13. MERV 8 SUPPLY FILTERS, MERV 13 EXHAUST FILTERS, 14. ERV CONTROL - ELECTRIC HEATER, 15. PROGRAMMABLE THERMOSTAT FOR UNIT ON/OFF OPERATION

What is the programming schedule for the ERV system

LOUVER SCHEDULE

LOUVER SCHEDULE table with columns: TAG, SERVICE, MFR, MODEL No., AIR FLOW (CFM), SIZE W/H/D (IN), FREE AREA (SQ. FT.), FREE AREA VELOCITY (FPM), PRESSURE DROP (IN WC), NOTES/ACCESSORIES

- NOTES/ACCESSORIES: 1. INSECT SCREEN, 2. ALUMINUM CONSTRUCTION, 3. FINISH: STANDARD MILL, 4. EXTENDED SILL, 5. DRIP CAP, 6. FRAME: STANDARD FLANGE, 7. INSTALLATION ANGLES



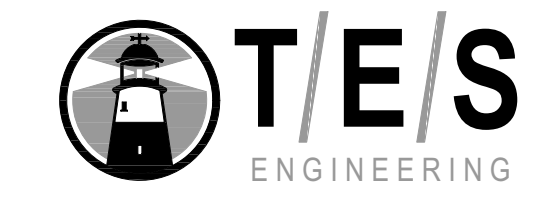
KEY PLAN





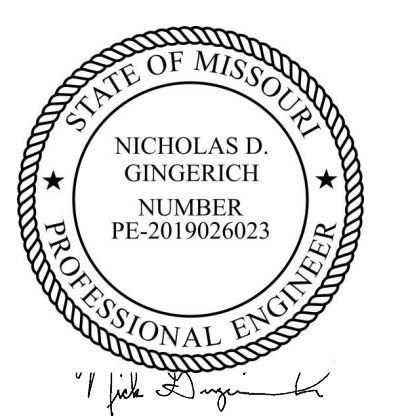
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PROJECT INFORMATION

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1706 W. GRAND ST  
SPRINGFIELD, MO 65802

ISSUE DATES

PERMIT SET	09.02.21

200400  
MECHANICAL PLAN

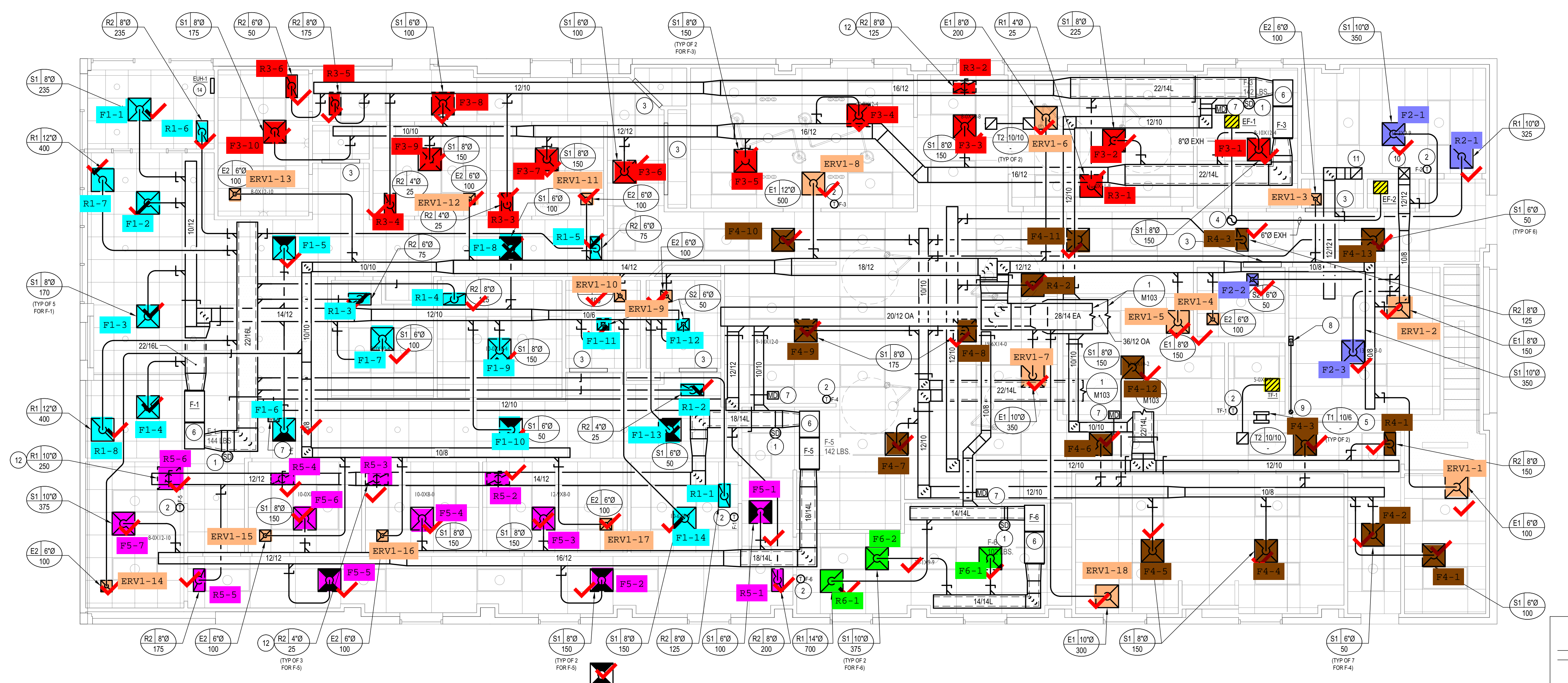
**M101**

**SHEET KEYNOTES**

- 1 SMOKE DETECTOR PROVIDE IN RETURN DUCT, FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR, MOUNTED BY MECHANICAL CONTRACTOR. COORDINATE REQUIRED LENGTH OF SAMPLING TUBE WITH ELECTRICAL CONTRACTOR.
- 2 THERMOSTAT MOUNTED ON WALL AT 48" AFF TO BOTTOM. COORDINATE EXACT LOCATION WITH FURNITURE LAYOUT AND ARCHITECTURAL PLANS. THERMOSTAT SHALL BE WIRED TO CONTROL INTERFACE ON ASSOCIATED ROOF TOP UNIT.
- 3 COORDINATE WITH G.C. TO PROVIDE 1" DOOR UNDERCUT FOR TRANSFER AIR.
- 4 10" EXHAUST UP THROUGH ROOF TO CURB AND CAP.
- 5 MOUNT TRANSFER GRILLE ON BOTH SIDE OF WALL AS HIGH AS POSSIBLE BELOW CEILING. GRILLE IS TO BE LOCATED IN THE SPACE BETWEEN 2 WALL STUDS WITH TRANSFER DUCT SIZE TO MATCH. FIELD COORDINATE THE EXACT LOCATION OF THE GRILLE AND ENSURE THAT THERE IS TO BE NO HORIZONTAL FRAMING, OR OTHER OBSTRUCTIONS IN THE STUD SPACE.
- 6 FURNACE SUSPENDED FROM STRUCTURE. CONNECT SUPPLY AND RETURN DUCTS TO FULL SIZE OF FURNACE SUPPLY AND RETURN CONNECTIONS WITH FLEX CONNECTION AT UNIT. TRANSITION AS REQUIRED PER SPECIFICATIONS. REFER TO DETAIL 4 ON SHEET M001 FOR PIPING CONNECTIONS TO THE UNIT.
- 7 OPPOSED BLADE MANUAL BALANCING DAMPER AND 2-POSITION MOTORIZED DAMPER MOUNTED IN OUTSIDE AIR DUCT. SET MANUAL BALANCING DAMPER TO MINIMUM OUTSIDE AIRFLOW LISTED FOR ASSOCIATED UNIT PER SHEET M003. MOTORIZED DAMPER SHALL BE FULLY OPEN DURING OCCUPIED HOURS AND FULLY CLOSED DURING UNOCCUPIED HOURS. DAMPER SHALL CLOSE UPON LOSS IN POWER, OR UPON LOW MIXED AIR TEMPERATURE DETECTION.
- 8 PROVIDE DRYER VENT WALL BOX. TRANSITION FROM DRYER BOX CONNECTION IN WALL AND ROUTE 4"Ø UP THROUGH ROOF. REFER TO TERMINATION DETAIL FOR ADDITIONAL INFORMATION.
- 9 4"Ø DRYER EXHAUST UP TO MEZZANINE LEVEL. REFER TO SHEET M103 FOR CONTINUATION.
- 10 12"Ø SUPPLY DUCT UP TO F-2 ON MEZZANINE LEVEL. REFER TO SHEET M103 FOR CONTINUATION.
- 11 12"Ø RETURN DUCT UP TO F-2 ON MEZZANINE LEVEL. REFER TO SHEET M103 FOR CONTINUATION.
- 12 CONNECT BRANCH DUCTWORK FROM RETURN GRILLE TO BOTTOM OF MAIN.
- 13 CONDENSING UNITS MOUNTED ON PAD OUTSIDE OF BUILDING. ROUTE AND SIZE ALL REFRIGERANT PIPING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. COORDINATE EXACT ROUTING IN FIELD. CONTRACTOR TO CONFIRM PROPOSED LOCATION IS WITHIN EQUIPMENT MANUFACTURER'S LIMITATIONS FOR REFRIGERANT LINE LENGTH. CONTRACTOR SHALL NOTIFY OWNER IF PLACEMENT IS BEYOND MANUFACTURER'S GUIDELINES.
- 14 WALL MOUNTED ELECTRIC HEATER 1" AFF FROM BOTTOM OF HEATER. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS.

**GENERAL SHEET NOTES**

- 1. EXISTING MECHANICAL INFORMATION IS BASED ON LIMITED EXISTING BUILDING DRAWINGS AND FIELD WORK. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING CONDITIONS FOR ACCURACY. CONTRACTOR SHALL NOTIFY OWNER, ARCHITECT AND ENGINEER OF ANY SITUATIONS THAT MODIFY OR INCREASE THE SCOPE OF WORK FROM THAT IS DESCRIBED IN THE DOCUMENTS.
- 3. REFER TO DRAWINGS AND PROJECT SPECIFICATIONS OF OTHER DISCIPLINES FOR ADDITIONAL PROJECT INFORMATION AND REQUIREMENTS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN THE INFORMATION PRESENTED AND FIELD CONDITIONS.
- 4. PRIOR TO ANY ISOLATION OF SYSTEMS, SHUTDOWNS OR DEMOLITION THE CONTRACTOR SHALL PROVIDE NECESSARY INVESTIGATION AND NOTIFY THE FACILITIES ENGINEERING/MAINTENANCE PERSONNEL OF WORK TO BE PERFORMED SO AS TO AVOID ANY DETRIMENTAL SHUTDOWN OF SYSTEMS TO ADJACENT SPACES.
- 8. MECHANICAL SYSTEMS INSTALLATION MUST MAINTAIN INTEGRITY OF WALLS, PARTITIONS AND FLOORS DESIGNATED AS EITHER FIRE RATED OR "SMOKE TIGHT". SEAL AROUND ALL PENETRATIONS THROUGH RATED OR SMOKE TIGHT ASSEMBLIES. COORDINATE WITH ARCHITECTURAL PLANS AND GENERAL CONTRACTOR.
- 9. LIMITED ABOVE CEILING CLEARANCES EXIST. COORDINATE LOCATION AND ELEVATION OF MECHANICAL WORK WITH ALL DUCTWORK, SPRINKLERS, LIGHT FIXTURES, AND OTHER CEILING BUILT-IN FIXTURES. CONTACT ENGINEER OR ARCHITECT IMMEDIATELY SHOULD ANY CONFLICT ARISE.
- 10. ALL ROOF PENETRATIONS, PATCHING AND FLASHING SHALL BE PERFORMED BY A LANDLORD APPROVED ROOFING CONTRACTOR AT THIS CONTRACTOR'S EXPENSE. COORDINATE ROOF PENETRATIONS AND ROOFTOP EQUIPMENT LOCATIONS WITH LANDLORD AND GENERAL CONTRACTOR.
- 11. NOTHING IS PERMITTED TO BE ATTACHED TO, SUSPENDED FROM, OR PENETRATE THE ROOF DECK. CONTRACTOR MAY ATTACH TO OR SUSPEND FROM THE TOP CHORD OF THE JOIST OR THE STRUCTURAL STEEL WHICH EXISTS ABOVE THE SPACE.
- 12. GENERAL CONTRACTOR TO LABEL ALL EQUIPMENT WITH TENANT NAME, SPACE NUMBER AND EQUIPMENT IDENTIFICATION (CU-1, ETC.), PER MALL SPECIFICATIONS AND STANDARDS.
- 13. COORDINATE ALL THERMOSTAT AND SENSOR LOCATIONS WITH FURNITURE LAYOUT AND ARCHITECTURAL PLANS. DEVICES ARE TO BE INSTALLED AND WIRED BY THE HVAC CONTRACTOR, MOUNT PER ADA REQUIREMENTS.
- 14. CHANGES IN DUCT SIZES SHALL BE MADE BY UNIFORM TAPER SECTION WITH A MAXIMUM INCLUDE ANGLE OF DIVERGENCE OF 15 DEGREE.
- 15. DUCT SIZES INDICATED REPRESENT EXTERNAL SHEET METAL DIMENSIONS AND INCLUDE ALLOWANCE FOR INTERNAL INSULATION.
- 16. ALL SUPPLY AND MAKE-UP AIR DUCTWORK NOT EXPOSED SHALL BE EXTERNALLY INSULATED.
- 17. BRANCH DUCTS SERVING DIFFUSERS SHALL BE SIZED TO MATCH DIFFUSER NECK SIZE INDICATED UNLESS NOTED OTHERWISE.
- 18. PITCH POCKETS ARE NOT PERMITTED ON THE ROOF FOR CONDENSATE DRAINS, POWER OR CONTROL WIRING. ALL CONNECTIONS ARE TO BE MADE INSIDE THE EQUIPMENT CURB OR THROUGH PRE-MANUFACTURED PIPING CURB.
- 19. CONTRACTOR MUST REPLACE ALL AIR FILTERS IN FURNACES WITH NEW CLEAN FILTERS BEFORE AIR BALANCING AND PRIOR TO FINAL TURNOVER TO TENANT.



**1 MECHANICAL PLAN**  
M101 SCALE: 3/16"=1'-0"

