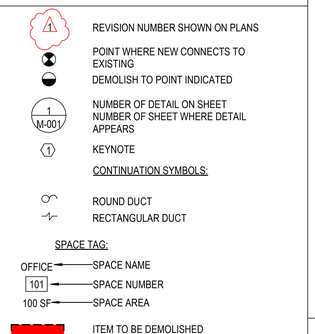
ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MBH	THOUSAND BTUs PER HOUR
AHU	AIR HANDLING UNIT	MCA	MINIMUM CIRCUIT AMPS
BHP	BRAKE HORSE POWER	MOCP	MAXIMUM OVER CURRENT PROTECTION
BTU	BRITISH THERMAL UNIT	NC	NORMALLY CLOSED
CFM	CUBIC FEET PER MINUTE	NO	NORMALLY OPENED
CV	CONSTANT VOLUME	NTS	NOT TO SCALE
CU	CONDENSING UNIT	OA	OUTSIDE AIR
DB	DRY BULB TEMPERATURE (°F)	PSI	POUNDS PER SQUARE INCH
DDC	DIRECT DIGITAL CONTROLS	PSIG	PSI GAUGE
DOAS	DEDICATED OUTSIDE AIR SYSTEM	PVC	POLYVINYL CHLORIDE PIPE
DN	DOWN	RA	RETURN AIR
EAT	ENTERING AIR TEMPERATURE	RH	RELATIVE HUMIDITY
EF	EXHAUST FAN	RHC	REHEAT COIL
ESP	EXTERNAL STATIC PRESSURE	RLA	RUNNING LOAD AMPS
EWT	ENTERING WATER TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
FCU	FAN COIL UNIT	RS/RL	REFRIGERANT SUCTION & LIQUID LINES
FD	FIRE DAMPER	RTU	ROOFTOP AIR HANDLING UNIT
FLA	FULL LOAD AMPS	SA	SUPPLY AIR
FPI	FINS PER INCH	SF	SUPPLY FAN
FPM	FEET PER MINUTE	SP	STATIC PRESSURE
GPM	GALLONS PER MINUTE	TSP	TOTAL STATIC PRESSURE
IV	INTAKE VENTILATOR	VAV	VARIABLE AIR VOLUME
KW	KILOWATT	VRF	VARIABLE REFRIGERANT FLOW
LAT	LEAVING AIR TEMPERATURE	VFD	VARIABLE FREQUENCY DRIVE
LRA	LOCKED ROTOR AMPS	WB	WET BULB TEMPERATURE (°F)
LWT	LEAVING WATER TEMPERATURE		

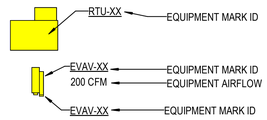
GENERAL MECHANICAL SYMBOLS



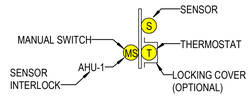
HVAC ENERGY DESIGN CONDITIONS

LOCATION:	BERRYVILLE, AR
OUTDOOR SUMMER (0.4% OCCURRENCE):	95.1°F DB / 74.2°F WB
OUTDOOR WINTER (99.4% OCCURRENCE):	10.9°F DB
INSIDE SETPOINT SUMMER:	72°F DB / 60% MAX RH.
INSIDE SETPOINT WINTER:	70°F DB

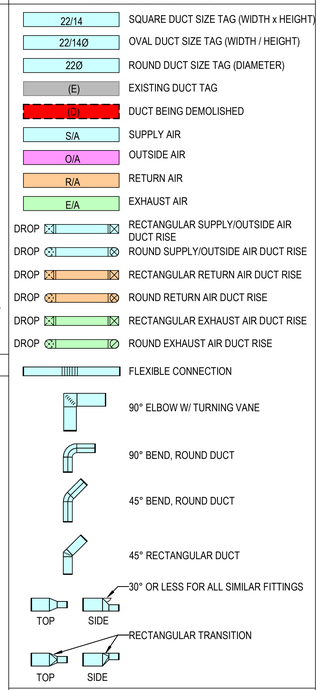
MECHANICAL EQUIPMENT TAGS



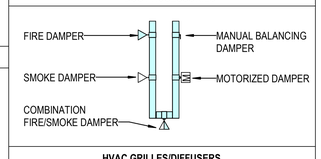
MECHANICAL DATA DEVICES



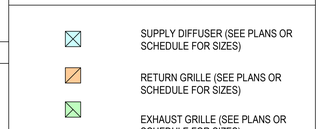
HVAC DUCTWORK LEGEND



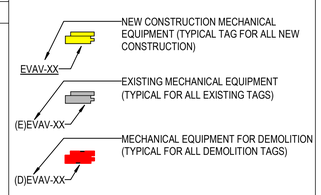
DUCT ACCESSORIES



HVAC GRILLES/DIFFUSERS



MECHANICAL PHASING



MECHANICAL SHEET SET NOTE

* NOTE *
ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET. SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THE CONTAINED REFERENCE DRAWINGS.

DEMOLITION NOTES

1. PROVIDE MODIFICATIONS TO NEW AND EXISTING SYSTEMS TO FACILITATE THE INSTALLATION AND INTERFACE OF NEW AND EXISTING SYSTEMS.
2. EXISTING SYSTEMS AND INFORMATION SHOWN ON THESE PLANS WERE DEVELOPED USING EXISTING BUILDING DRAWINGS AND SITE SURVEYS. CONTRACTOR SHALL VERIFY AT SITE ALL EXISTING SYSTEMS. REMOVE ALL PORTIONS OF PIPING SYSTEMS BEING REMOVED OR ABANDONED. TERMINATE EXISTING SYSTEMS ABOVE CEILINGS AND BELOW FLOOR SLABS IN A MANNER THAT WILL NOT CONFLICT WITH NEW WORK. CLOSELY COORDINATE NEW WORK WITH EXISTING SYSTEMS. PROVIDE OFFSETS IN EXISTING AND NEW SYSTEMS AS REQUIRED TO AVOID CONFLICTS.
3. COORDINATE AND SCHEDULE ALL CONNECTIONS TO EXISTING SYSTEMS AND SYSTEM SHUT-DOWNS WITH MAINTENANCE PERSONNEL.
4. EXISTING EQUIPMENT BEING REMOVED AND DESIGNATED TO REMAIN THE PROPERTY OF THE OWNER SHALL BE DELIVERED UPON REMOVAL TO LOCATION DESIGNATED BY OWNER. ALL OTHER SYSTEM COMPONENTS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
5. REMOVE AND RELOCATE SMALL CONDUIT, CABLE, PIPE, DUCT, CEILING HANGERS, ETC. AS NECESSARY TO ACHIEVE A COMPLETE INSTALLED MECHANICAL SYSTEM AS SHOWN ON DRAWINGS.
6. PATCH ALL WALLS, FLOORS, ROOFS AND CEILINGS TO MATCH EXISTING AND/OR NEW FINISHES FOR ALL OPENINGS CREATED BY DEMOLITION WORK OF EQUIPMENT AND HVAC SERVICE PENETRATIONS. REUSE OF EXISTING OPENINGS IS ENCOURAGED SO LONG AS IT IS ADVANTAGEOUS TO PROJECT SCHEDULE, COST, OR INTEGRITY.
7. CONTRACTOR SHALL SURVEY EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO:
   * DUCT SIZES AND PENETRATION LOCATIONS.
   * EQUIPMENT CONNECTIONS AND LOCATIONS.
   * CONTROLS.
8. CONTRACTOR TO COORDINATE REMOVAL OF DATA CABLING FOR TEMPORARILY REMOVED CEILING DATA DEVICES (I.E. WIRELESS ACCESS POINTS) FOR REINSTALLATION AT PROJECT COMPLETION. OWNER TO PHYSICALLY REMOVE AND REINSTALL DEVICES. 1
9. CONTRACTOR TO COORDINATE WITH OWNER PERSONNEL AND FIRE ALARM CONTRACTOR TO TEMPORARILY DECOMMISSION SMOKE DETECTORS WITHIN THE PROJECT AREA.

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE 2021 EDITION OF THE "INTERNATIONAL MECHANICAL CODE", THE 2014 EDITION OF THE "ARKANSAS ENERGY CODE", NFPA 90A, NEC (NATIONAL ELECTRIC CODE), AND ALL CITY, STATE, AND LOCAL REQUIREMENTS.
2. ALL NEW EQUIPMENT SHALL BE EQUAL TO, OR EXCEED, THE PERFORMANCE AND CAPACITY OF THE SCHEDULED EQUIPMENT. THE OWNER AND ARCHITECT ENGINEER HOLD EXCLUSIVE RIGHT TO REJECT SUBSTITUTIONS FOR ANY REASON.
3. ALL DUCTWORK SHALL BE RIGID AND CONSTRUCTED FROM GALVANIZED STEEL IN CONFORMANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION, AND BE INSULATED WITH 2" THICK GLASS FIBER WRAP.
4. U.L. LISTED FLEXIBLE DUCT RUN-OUTS MAY BE USED, BUT SHALL NOT EXCEED 5'-0" IN LENGTH. ALL FLEXIBLE DUCT TO BE PROPERLY SUPPORTED WITH NO KINKS OR HARD BENDS.
5. DUCTWORK TO BE COORDINATED WITH STRUCTURAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION, COMPONENTS AND SYSTEMS. ALL DUCTWORK THAT HAS TO BE OFFSET DUE TO AN OBSTRUCTION SHALL BE SLOPED WITH 2-30° ELBOWS UNLESS OTHERWISE NOTED.
6. CLOSELY COORDINATE LOCATIONS OF INSTALLED EQUIPMENT TO ACHIEVE THE GREATEST ACCESSIBILITY.
7. PROVIDE FLEXIBLE CONNECTIONS AT INLETS AND OUTLETS OF ALL AIR HANDLING UNIT(S).
8. ALL WALL-MOUNTED, OCCUPANT-CONTROLLED HVAC DEVICES, I.E., THERMOSTATS, HUMIDISTAT, CO2 CONTROLLERS, CONTROL PANELS, ETC., SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR. CONTROLS LOCATED IN PUBLIC AREAS SHALL HAVE CLEAR PLASTIC LOCKING COVERS.
9. COORDINATE WORK CLOSELY WITH CONTROL CONTRACTOR. PROVIDE ALL NECESSARY DUCT, PIPE TAPS, TEES, WELLS, CONTROL DAMPERS, AIR MEASURING STATIONS, AND OTHER ACCESSORIES REQUIRED BY CONTROL SYSTEM.
10. SLEEVE AND SEAL ALL PIPE AND DUCT PENETRATIONS THROUGH FIRE RATED AND NON-RATED SLABS AND PARTITIONS.
11. PROVIDE NECESSARY MODIFICATIONS TO EXISTING SYSTEMS TO FACILITATE THE INSTALLATION AND INTERFACE OF NEW AND EXISTING SYSTEMS.
12. THESE PLANS WERE DEVELOPED WITH THE USE OF EXISTING BUILDING UTILITY DRAWINGS DATED 1983, AND MAY BE OUTDATED. CONTRACTOR SHALL VERIFY AT SITE ALL EXISTING SYSTEMS AND REPORT DISCREPANCIES TO ARCHITECT ENGINEER.
13. REMOVE AND RELOCATE SMALL CONDUIT, CABLE, PIPE AND DUCT, PIPE AND CEILING HANGERS ETC. AS NECESSARY TO ACHIEVE A COMPLETE INSTALLED MECHANICAL SYSTEM AS SHOWN ON DRAWINGS.
14. MAINTAIN 25'-0" MINIMUM CLEARANCE BETWEEN OUTSIDE AIR INTAKES AND ALL EXHAUST FANS, FLUES, PLUMBING VENTS, ETC. ALL PLUMBING VENTS WITHIN 25'-0" OF RTU-11 O/A INTAKE THAT ARE NOT CAPABLE OF BEING RELOCATED SHALL BE EQUIPPED WITH AIR ADMITTANCE VALVES. ALL PLUMBING VENTS WITHIN 10'-0 OF RTU-11 O/A INTAKE SHALL BE RELOCATED TO AT LEAST 10'-0" FROM THE O/A INTAKE AND SHALL BE EQUIPPED WITH AN AIR ADMITTANCE VALVES. ALL ABANDONED ROOF PENETRATIONS SHALL BE INFILLED AND MADE WATERTIGHT.
15. TESTING AND BALANCING SHALL BE PERFORMED BY A NEBB CERTIFIED PROFESSIONAL AND SHALL BE CONDUCTED IN ACCORDANCE WITH ASHRAE STANDARD 111 AND NEBB TAB PROCEDURES. A FINAL REPORT INDICATING COMPLIANCE WITH OF ALL MEASURED AIRFLOWS MUST BE PROVIDED. ALL AIR DEVICES WITH AN INDICATED AIRFLOW SHALL BE RE-BALANCED UNLESS OTHERWISE NOTED. ALL DUCT SYSTEMS SHALL BE SEALED AND TESTED FOR AIR LEAKAGE PER SMACNA HVAC AIR DUCT LEAKAGE TEST. REFER TO SPECIFICATIONS FOR MORE INFORMATION.
16. RTU-11 SERVES SPACES THAT ARE REQUIRED TO MAINTAIN A PRESSURE RELATIONSHIP WITH ADJACENT ROOMS. THE EXISTING PRESSURE RELATIONSHIP SHALL BE MAINTAINED UNLESS NOTED OTHERWISE.
17. NEW WORK IS TO BE COMPLETED ON AN EXISTING ROOF SURFACE. ALL WORK SHALL BE PERFORMED IN A MANNER THAN MAINTAINS THE EXISTING ROOF WARRANTY. COORDINATE ROOF WORK WITH OWNER. REFER ROOFING MODIFICATION SPECIFICATION FOR ALL REQUIREMENTS.
18. ALL ELECTRICAL DEVICES, WIRING, INSTALLATION, ETC. SHALL BE IN ACCORDANCE WITH NEC, NFPA, ADA, AND ALL APPLICABLE STATE LAWS AND CODES.
19. ALL WIRING SHALL BE IN CONDUITS. PROVIDE GROUND WIRE IN ALL CONDUITS. THE CONDUIT SHALL NOT BE USED AS GROUND. ALL CONDUIT USED IN DAMP LOCATIONS SHALL BE GALVANIZED RIGID CONDUIT (GRC) OR INTERMEDIATE METAL CONDUIT (IMC), USING ONLY THREADED COUPLINGS
20. CONDUCTORS: SOFT-DRAWN COPPER WITH INSULATION OF 60-DEGREES C OR HIGHER FOR NO. 12 AND NO. 10 AND 75-DEGREES C OR HIGHER FOR NO. 8 AND LARGER. CONDUCTORS NO. 8 AND LARGER SHALL BE STRANDED. CONDUCTORS NO. 10 AND SMALLER SHALL BE SOLID.
21. CIRCUIT BREAKERS: MOLDED-CASE, QUICK-MAKE AND QUICK-BREAK THERMAL-MAGNETIC TYPE. BREAKERS SHALL HAVE A TRIP INDICATION INDEPENDENT OF THE "ON"OR "OFF" POSITIONS. BREAKERS SHALL HAVE AN INTERRUPTING CAPACITY EQUAL TO THE PANEL BEING INSTALLED IN.
22. DISCONNECT SWITCHES: HEAVY-DUTY TYPE, QUICK-MAKE QUICK-BREAK OR AS SHOWN ON THE DRAWINGS. DISCONNECTS FOR MOTOR CIRCUITS SHALL BE MOTOR RATED. PROVIDE DISCONNECT SWITCHES IN NEMA 1 ENCLOSURES; EXCEPT NEMA 3R OR NEMA 12 SHALL BE USED IN DAMP/WET LOCATIONS. PROVIDE OTHER ENCLOSURE RATINGS AS INDICATED. DISCONNECT SWITCHES SHALL HAVE A COVER INTERLOCK, WITH DEFEAT DEVICE, TO PREVENT UNAUTHORIZED PERSONNEL FROM OPENING THE DOOR WHEN THE SWITCH IS ON.
23. ELECTRICAL METALLIC TUBING (EMT) SHALL BE USED IN ALL AREAS WHERE GRC OR IMC IS NOT REQUIRED BY THESE DRAWINGS OR THE NATIONAL ELECTRIC CODE. COUPLINGS AND CONNECTIONS SHALL BE COMPRESSION TYPE. INDENTER TYPE FITTING SHALL NOT BE USED. FLEXIBLE STEEL CONDUIT SHALL BE USED TO CONNECT ALL MOTORS AND OTHER MOVING ELECTRICAL EQUIPMENT.
24. LABEL ALL NEW ROOFTOP EQUIPMENT WITH CIRCUIT AND PANEL LOCATION FEEDING EQUIPMENT. VERIFY EXISTING ROOFTOP SERVICE WP/GFI RECEPTACLES MEET THE NEC 210.63 25' RULE. IF NECESSARY ADD ADDITIONAL WP/GFI RECEPTACLES NEAR NEW EQUIPMENT. EXTEND EXISTING RECEPTACLE CIRCUIT FOR NEW RECEPTACLES

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Project

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Design Phase

CONSTRUCTION DOCUMENTS

Revisions

No.	Date	Description
1	07-28-2025	ADD 001

Stamp

CROMWELL ARCHITECTS/ ENGINEERS #5 CERTIFICATE OF AUTHORIZATION ARKANSAS ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 22271 SHAWN B. CORNACK

07-14-2025

Notes

1. **CROMWELL ARCHITECTS ENGINEERS, INC. ALL RIGHTS RESERVED**
2. **THIS SHEET DESIGNED FOR COLOR PRINTING. CRITICAL INFORMATION MAY BE LOST WITH BLACK AND WHITE PRINTING.**

Project Number **2025-020**

Issue Date **07-14-2025**

Sheet Title

MECHANICAL/ELECTRICAL LEGEND AND SYMBOLS

Sheet Number

ME001