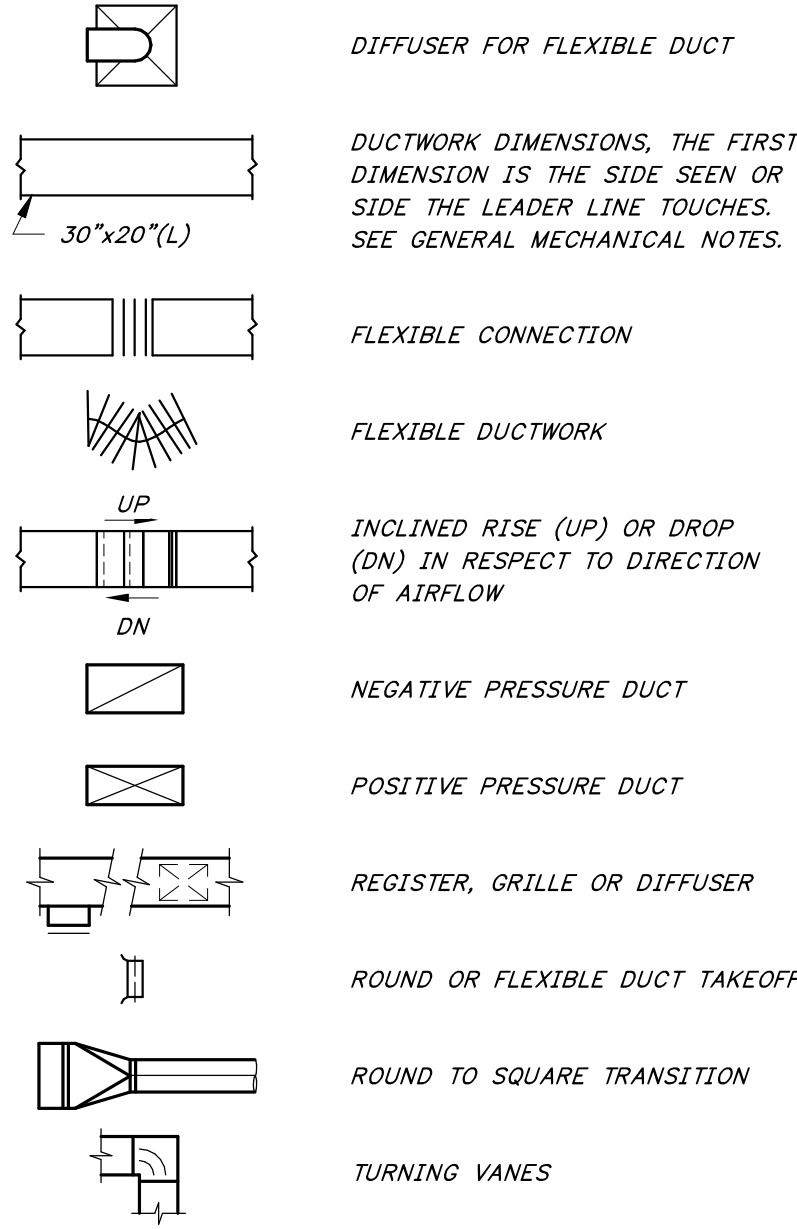


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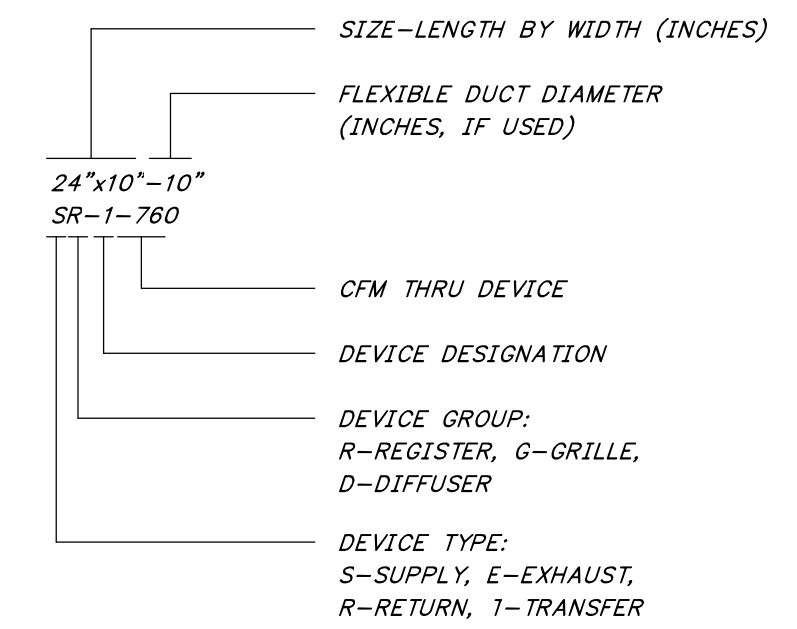
SYSTEM ABBREVIATIONS

CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
C	CONDENSATE DRAIN
CDWR	CONDENSER WATER RETURN
CDWS	CONDENSER WATER SUPPLY
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM (<15 PSIG)
R	REFRIGERANT

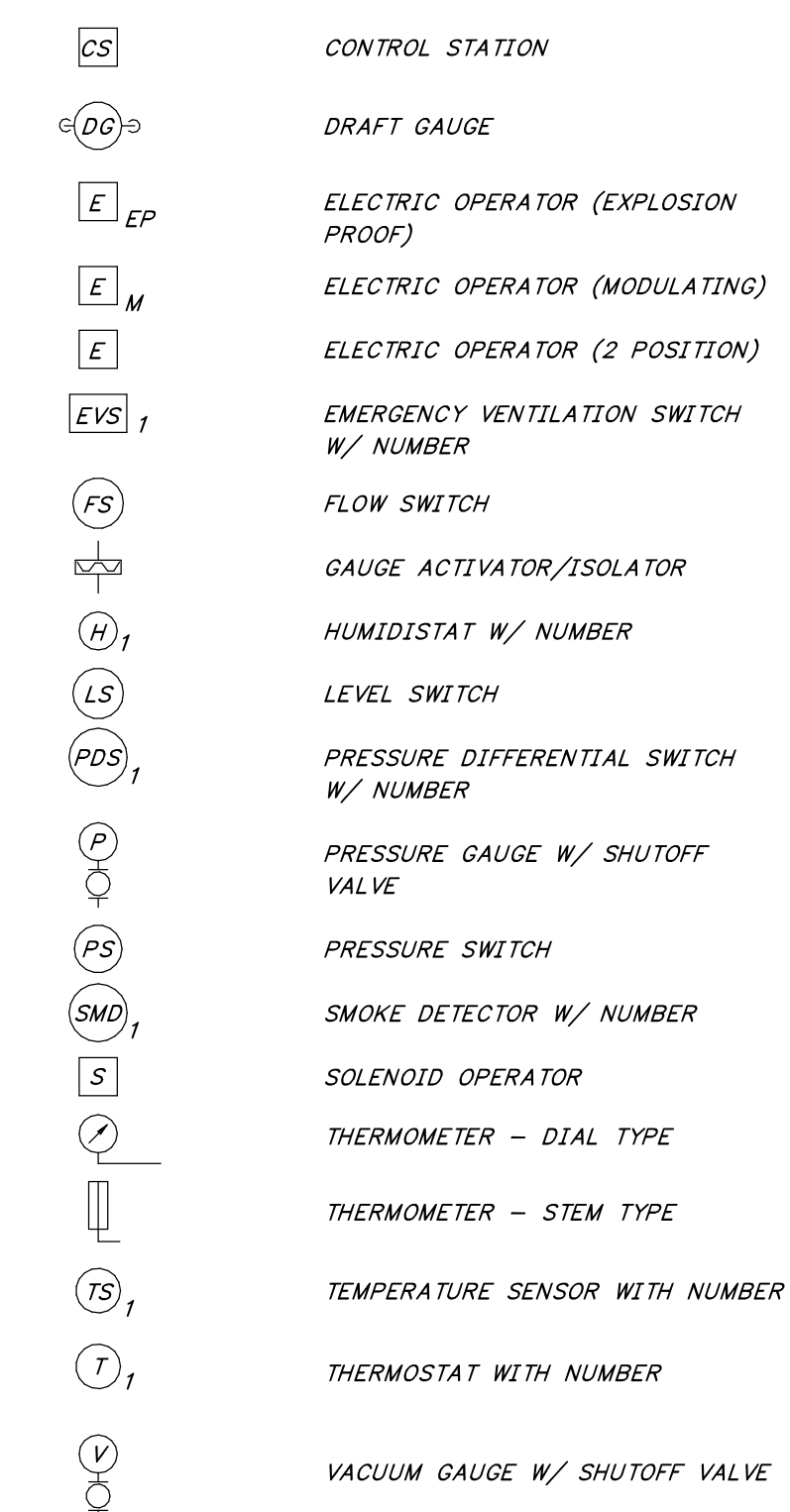
HVAC LEGEND



AIR INLET & OUTLET IDENTIFICATIONS



CONTROLS & INSTRUMENTATION LEGEND

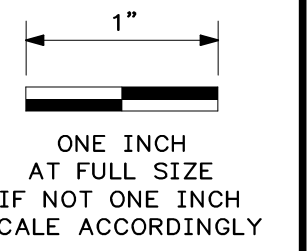


MECHANICAL ABBREVIATIONS

A		E		P	
A	ALARM	F	DEGREES FAHRENHEIT	P	PNEUMATIC
AC	AIR COMPRESSOR	FBD	FACE AND BYPASS DAMPER	PD	PRESSURE DROP (INCHES OF WATER FOR AIR, FEET OF WATER FOR FLUIDS)
AD	ACCESS DOOR	FC	FORWARD CURVE, FAN COIL		
AF	AIR FLOW, AIRFOIL	FD	FIRE DAMPER		
AFD	ADJUSTABLE FREQUENCY DRIVE	FDB	DEGREES FAHRENHEIT DRY BULB	PAC	PACKAGED AIR CONDITIONING UNIT
AFF	ABOVE FINISH FLOOR	FEF	FUME EXHAUST FAN	PAH	PACKAGED AIR HANDLING UNIT
AFM	AIR FLOW MONITOR	FLEX	FLEXIBLE	PDS	PRESSURE DIFFERENTIAL SWITCH
AHU	AIR HANDLING UNIT	FM	FLOW METER	PF	PROPPELLER FAN
ALUM	ALUMINUM	FPM	FEET PER MINUTE	PHP	PACKAGED HEAT PUMP
AP	ACCESS PANEL	FR	FUNNEL RECEPTOR	PL	PLATE
APPROX	APPROXIMATE	FRP	FIBERGLASS REINFORCED PLASTIC PIPE	POS	POSITION
AS	AIR SEPARATOR			PPM	PARTS PER MILLION
ATU	AIR TERMINAL UNIT	FS	FLOW SWITCH	PROP	PROPELLER
AUTO	AUTOMATIC	FSD	COMBINATION FIRE/SMOKE DAMPER	PRS	PRESSURE REDUCING STATION
AVG	AVERAGE	FT	FEET, FIN TUBE HEATER	PRV	POWER ROOF VENTILATOR, PRESSURE REDUCING VALVE
		FUR	FURNACE		
		FWB	DEGREES FAHRENHEIT WET BULB	PS	PRESSURE SWITCH
B				PSI	POUNDS PER SQUARE INCH
B	BELT DRIVE, BLOW THROUGH	G		PSIA	POUNDS PER SQUARE INCH ABSOLUTE
BDD	BACKDRAFT DAMPER	GA	GAUGE	PSIG	POUNDS PER SQUARE INCH GAUGE
BF	BLIND FLANGE	GAZ	GALVANIZED	PTAC	PACKAGED TERMINAL AIR CONDITIONER
BFF	BELOW FINISH FLOOR				
BFP	BACKFLOW PREVENTER	GIH	GAS INFRARED HEATER		
BH	BASEBOARD HEATER	GPM	GALLONS PER MINUTE		
BI	BACKWARD INCLINED, BUILT-IN THERMOSTAT	GUH	GAS UNIT HEATER		
		GV	GATE VALVE		
BL	BOTTOM LEVEL			RA	REACTIVATION AIR, RETURN AIR ROOM AIR CONDITIONER
BLDG	BUILDING			RAC	REMOTE CONTROL STATION
BLR	BLOWER	H		REQD	REQUIRED
BOD	BOTTOM OF DUCT ELEVATION	H	HAND OPERATOR, HEATING, HEATING (MAKE ON FALL), HEIGHT, HORIZONTAL, HUMIDISTAT	RH	RELATIVE HUMIDITY, ROOF HOOD
BOT	BOTTOM			RSF	ROOF SUPPLY FAN
BTUH	BRITISH THERMAL UNITS PER HOUR	HC	HEATING COIL		
BU	BELL-UP	HCH	HEATING WATER CABINET HEATER		
BV	BALL VALVE	HE	HEAT EXCHANGER	SA	SUPPLY AIR
		HO	HAND-OFF	SCD	SMOKE CONTROL DAMPER
		HOA	HAND-OFF-AUTO	SCFM	STANDARD CUBIC FEET PER MINUTE
		HP	HEAT PUMP, HORSEPOWER		
		HR	HEAT RECOVERY UNIT	SH	SQUARE FEET, SUPPLY FAN SHEET
CB	CHANNEL, CONVECTOR, COOLING, COOLING (MAKE ON RISE)	HUH	HEATING WATER UNIT HEATER	SI	SIMILAR
CBD	COUNTERBALANCE BACKDRAFT DAMPER	HUM	HUMIDIFIER	SMD	SMOKE DETECTOR
CC	COOLING COIL	HWB	HEATING WATER BOILER	SP	STATIC PRESSURE (INCHES OF WATER)
CD	CONTROL DAMPER	HZ	HERTZ	SPS	STATIC PRESSURE SENSOR
CDWP	CONDENSER WATER PUMP			SS	STAINLESS STEEL
CENTR	CENTRIFUGAL			STD	STANDARD
CF	CABINET FAN	I		SV	SERVICE VALVE, SHUTOFF VALVE, SOLENOID VALVE
CFM	CUBIC FEET PER MINUTE	I	INTAKE		
CH	CONVECTION HEATER	ID	INSIDE DIAMETER		
C/L	CENTERLINE	IN	INCHES		
CO	CLEANOUT	INV	INVERT		
CONC	CONCRETE			I	
CONN	CONNECTION			T	THERMOSTAT
CONT	CONTINUATION	K		TOP	TEMPERATURE CONTROL PANEL
CS	CONTROL STATION			TCV	TEMPERATURE CONTROL VALVE
CT	COOLING TOWER	KW	KILOWATT	TE	TEMPERATURE ELEMENT
CU	CONDENSING UNIT			TL	TOP LEVEL
CV	CHECK VALVE, CONTROL VALVE	L		TS	TIP SPEED
CWP	CHILLED WATER PUMP	L	LINED DUCT, LOUVER	TYP	TYPICAL
		LAT	LEAVING AIR TEMPERATURE		
D		LBS	POUNDS	V	
D	DIRECT DRIVE, DRAW-THRU	LD	COMBINATION LOUVER/DAMPER	V	VERTICAL
DB	DRY BULB	LI	LEVEL INDICATOR	VAC	VACUUM OUTLET
DDC	DIRECT DIGITAL CONTROL	LS	LEVEL SWITCH	VANE	VANEAXIAL
DEH	DEHUMIDIFIER	LWT	LEAVING WATER TEMPERATURE	VAV	VARIABLE AIR VOLUME
DF	DUCT FAN			VCD	VOLUME CONTROL DAMPER
DIA	DIAMETER	M		VF	VANEAXIAL FAN
DM	DUCT MOUNTED				
DN	DOWN	MAU	MAKEUP AIR UNIT		
DX	DIRECT EXPANSION	MAX	MAXIMUM	W	
		MCA	MINIMUM CIRCUIT AMPS	WB	WIDE FLANGE, WIDTH
		ME	MIST ELIMINATOR	WC	WATER CHILLER
		MFR	MANUFACTURER	WCN	WATER COLUMN
E	ELECTRIC, ELECTRIC OPERATOR, EXHAUST	MOC	MAXIMUM OVERCURRENT PROTECTION	WF	WALL FAN
EA	EACH, EXHAUST AIR	MIN	MINIMUM	WG	WATER GAUGE
EAT	ENTERING AIR TEMPERATURE	MOD	MODULATING	WH	WALL MOUNTED
EC	ECONOMIZER, EVAPORATIVE COOLER			WM	WALL MOUNTED
ECH	ELECTRIC CABINET HEATER			WST	WATER STORAGE TANK
ECP	EQUIPMENT CONTROL PANEL	NC	NORMALLY CLOSED	WT	WEIGHT
EDH	ELECTRIC DUCT HEATER	NO	NORMALLY OPEN, NUMBER	WV	WATER CONTROL VALVE
EF	EXHAUST FAN	NPSHR	NET POSITIVE SUCTION HEAD REQUIRED		
EFF	EFFICIENCY			Z	
EGS	EMERGENCY GAS SCRUBBER			ZD	ZONE DAMPER
EIH	ELECTRIC INFRARED HEATER	Q			
EL	ELEVATION				
EP	EXPLOSION PROOF	OA	OUTSIDE AIR		
EQUIP	EQUIPMENT	OD	OUTSIDE DIAMETER		
ES	EMERGENCY SWITCH				
ESP	EXTERNAL STATIC PRESSURE				
ET	EXPANSION TANK				
EUH	ELECTRIC UNIT HEATER				
EV	EXHAUST VALVE				
EVS	EMERGENCY VENTILATION SWITCH				
EWT	ENTERING WATER TEMPERATURE				
EXIST	EXISTING				

GENERAL HVAC NOTES

- THIS IS GENERAL LEGEND AND ABBREVIATION SHEET FOR HVAC DRAWINGS. SOME ITEMS CONTAINED ON THIS SHEET MAY NOT BE USED ON THIS SPECIFIC PROJECT.
- ALL MECHANICAL HVAC WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING APPLICABLE CODES:
2021 ARKANSAS FIRE PREVENTION CODE VOL. I (2021 INTERNATIONAL FIRE CODE WITH ARKANSAS AMENDMENTS)
2021 ARKANSAS FIRE PREVENTION CODE VOL. II (2021 INTERNATIONAL BUILDING CODE WITH ARKANSAS AMENDMENTS)
2021 INTERNATIONAL EXISTING BUILDING CODE
2021 INTERNATIONAL MECHANICAL CODE
2014 ARKANSAS ENERGY CODE (2009 INTERNATIONAL ENERGY CONSERVATION CODE WITH ARKANSAS AMENDMENTS)
- FOR ROOFTOP EQUIPMENT CURBS, FLUES, AND FLASHING DETAILS, SEE ARCHITECTURAL DRAWINGS.
- SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL EQUIPMENT BASE DETAILS.
- "SCREENED" DELINEATION DENOTES EXISTING AND NEW FACILITIES AND IS FOR REFERENCE ONLY. "LIGHT" LINE DELINEATION DENOTES EXISTING MECHANICAL EQUIPMENT AND SYSTEMS. EXISTING FACILITY AND MECHANICAL SYSTEMS INFORMATION WAS TAKEN FROM PREVIOUS DRAWINGS, CONSTRUCTION RECORDS, DATA, AND FIELD SURVEY INFORMATION. ACTUAL LOCATION, ARRANGEMENT, AND DIMENSIONS SHALL BE FIELD VERIFIED AND NEW WORK INSTALLED TO MEET ACTUAL CONDITIONS AND LOCATIONS ENCOUNTERED. "BOLD" (DARK) DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
- ALL MATERIALS, FITTINGS, COVERS, AND EQUIPMENT INSTALLED IN RETURN AIR PLENUMS SHALL BE NONCOMBUSTIBLE AND UL LISTED FOR USE IN RETURN AIR PLENUMS.
- ALL PIPE AND DUCT PENETRATIONS THROUGH FIRE RESISTANCE RATED ASSEMBLIES SHALL BE PROVIDED WITH FIRESTOP SYSTEMS, EQUIPMENT AND ACCESSORIES TO RESIST THE PASSAGE OF FIRE, SMOKE AND OTHER GASES. THE ORIGINAL FIRE RESISTANCE RATING OF THE ASSEMBLY PENETRATED SHALL BE MAINTAINED FOR ALL TYPES OF PENETRATIONS. SEE ARCHITECTURAL DRAWINGS FOR RATED ASSEMBLY LOCATIONS.
- METAL ROOF DECKING OR BOTTOM CHORD OF BAR JOISTS SHALL NOT BE USED FOR THE SUPPORT OF EQUIPMENT, PIPING, OR DUCTWORK.
- ALL HANGERS, BRACKETS, OR BRACES FOR PIPING, DUCTWORK AND EQUIPMENT ARE NOT INDICATED ON THE DRAWINGS. REFER TO THE SPECIFICATIONS FOR SUPPORT REQUIREMENTS NOT SHOWN ON THE PLANS.
- OUTSIDE AIR INLETS SHALL BE LOCATED A MINIMUM OF 10'-0" AWAY FROM ANY EXHAUST AIR OR PLUMBING VENT OUTLET.
- ALL EQUIPMENT, PIPING AND DUCTWORK FINAL LOCATIONS SHALL BE COORDINATED TO AVOID INTERFERENCES WITH STRUCTURE, OTHER PIPING, EQUIPMENT, DUCTWORK, AND CONDUIT. UNLESS SPECIFICALLY DIMENSIONED, THE PIPE AND DUCTWORK ROUTING SHOWN IS INTENDED TO INDICATE GENERAL LOCATION ONLY. INSTALL DUCTWORK TO ALLOW FOR PIPING TO BE ROUTED NEAR WALLS.
- ALL PIPING AND DUCTWORK SHALL BE ROUTED AS HIGH AS POSSIBLE WITH A MINIMUM HEIGHT OF 8'-0" ABOVE THE WALKING SURFACE UNLESS OTHERWISE INDICATED BY A CENTERLINE OR BOTTOM OF DUCT ELEVATION.
- PIPING AND DUCTWORK INSTALLED ABOVE SUSPENDED CEILINGS SHALL BE INSTALLED TO ALLOW A MINIMUM INCH CLEARANCE BETWEEN THE CEILING AND PIPING OR BOTTOM OF DUCT.
- DUCTWORK SHALL BE FABRICATED, REINFORCED, SUPPORTED AND SEALED FOR OPERATING PRESSURES INDICATED IN THE SCHEDULES FOR THE EQUIPMENT IT SERVES. ALL DUCTWORK SHALL HAVE A MINIMUM SMACNA PRESSURE CLASSIFICATION OF ONE INCH.
- DUCT SIZES INDICATED ARE CLEAR DIMENSIONS INSIDE THE DUCT OR DUCT LINING. SHEET METAL SIZES ARE LARGER FOR INTERNALLY LINED DUCTWORK.
- MINIMUM INSULATION THICKNESSES FOR DUCTWORK SHALL BE AS INDICATED IN THE SPECIFICATIONS UNLESS OTHERWISE INDICATED ON THE PLANS WITH A "L" DESIGNATION. WHERE AN INSULATION THICKNESS IS INDICATED ON THE DRAWINGS, IT SHALL GOVERN. THE FOLLOWING DENOTES THE DIFFERENT INSULATION THICKNESSES INDICATED ON THE DRAWINGS:
L1 - 1 INCH INTERNALLY LINED L2 - 2 INCH INTERNALLY LINED
- DUCT CONNECTIONS TO EQUIPMENT, PIPING SIZES TO EQUIPMENT, AND EQUIPMENT SUPPORTS SHALL BE VERIFIED AND ADJUSTED TO MATCH ACTUAL EQUIPMENT FURNISHED.
- SHEET METAL DUCTWORK, DAMPERS, REGISTERS, GRILLES, AND EQUIPMENT LOCATED IN SHALL BE GIVEN A PROTECTIVE COATING SUITABLE FOR INSTALLATION IN AN ENVIRONMENT.
- THE LOCATION OF PIPING AND VALVES TO THE AIR HANDLING EQUIPMENT SHALL NOT INTERFERE WITH FILTER REMOVAL OR AIR HANDLING EQUIPMENT SERVICING.
- ROOFTOP EQUIPMENT SHALL NOT BE LOCATED SUCH THAT ACCESS TO CONTROLS AND TO PERFORM SERVICE FOR EQUIPMENT IS LOCATED WITHIN 10'-0" OF THE BUILDING EDGE.
- CONTROL DAMPER SIZES SHALL MATCH DIMENSIONS OF ASSOCIATED LOUVER UNLESS OTHERWISE INDICATED.
- ALL RELIEF VALVES SHALL BE PIPED TO 12" AFF.
- SEISMIC RESTRAINTS/BRACING SHALL BE PROVIDED FOR ALL EQUIPMENT, DUCTWORK, AND ACCESSORIES IN ACCORDANCE WITH THE LATEST SMACNA SEISMIC RESTRAINT MANUAL AND LOCAL BUILDING CODES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SEISMIC SUPPORTS AND ADDITIONAL/MISCELLANEOUS STEEL REQUIRED FOR PROPER INSTALLATION OF SUPPORTS, SUPPORTS AND SEISMIC RESTRAINTS DESIGN SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF A LICENSED ENGINEER.
- INSULATION SHALL BE PROVIDED FOR EQUIPMENT, PIPING AND DUCT SYSTEMS AS INDICATED IN THE SPECIFICATIONS.



DATE	
REVISION	



HAWKINS-WEIR ENGINEERS, INC.
BLACK & VEATCH

ROGERS, ARKANSAS
ROGERS POLLUTION CONTROL FACILITY (PCF) SOLIDS HANDLING IMPROVEMENTS, PHASE II
HVAC LEGENDS, ABBREVIATIONS, AND GENERAL NOTES
FOR: ROGERS WATER UTILITIES
DATE: AUGUST 2024
SCALE: NONE
DESIGNED BY: APC
DRAWN BY: RLG
HWEI NO.: 2020043
FILENAME: