

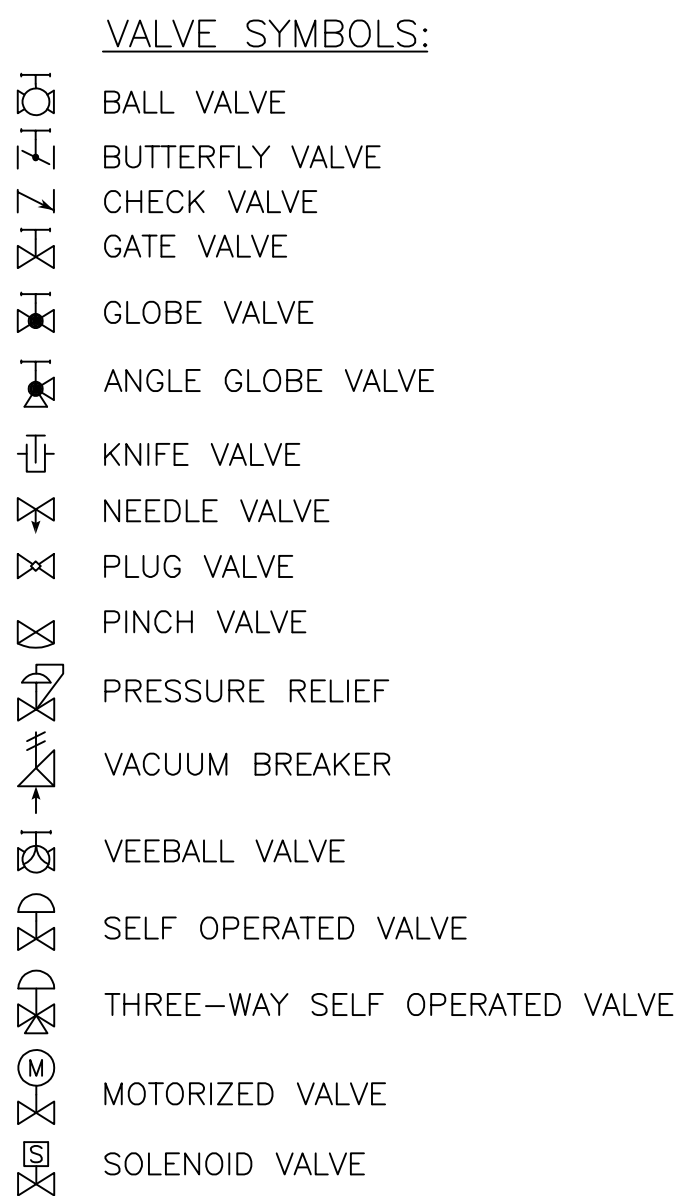
- HVAC NOTES:
1. PROVIDE ACCESS DOORS TO ALL FIRE DAMPERS, SMOKE DAMPERS, EQUIPMENT, COILS, ETC. WHERE NOT DIRECTLY ACCESSIBLE THOROUGH AIR DEVICES OR REMOVABLE CEILING GRID. MINIMUM SIZE SHALL BE 18" X 10" UNLESS NOTED OTHERWISE.
 2. INSTALL FIRE OR SMOKE DAMPERS IN THE RATED WALLS AS INDICATED. SEAL AROUND ALL PENETRATIONS OF RATED WALLS, CHASES, CEILINGS, FLOORS, ETC. TO MAINTAIN THE FIRE/SMOKE RATING OF THE ASSEMBLY.
 3. ALL EQUIPMENT AND MATERIAL SHALL BE SUITABLE FOR ELEVATED TEMPERATURES INDICATED.
 4. ALL HVAC WORK TO BE PER SMACNA AND ALL APPLICABLE CODES.
 5. ALL DUCTS SHALL BE MOUNTED HIGH AS POSSIBLE AGAINST BOTTOM OF BEAMS EXCEPT AS REQUIRED TO AVOID CONFLICTS WITH INTERSECTING DUCTS. DIAGONALLY OFFSET DUCTS IMMEDIATELY BEFORE AND AFTER PASSING UNDER INTERSECTING DUCTS OR LARGE STRUCTURAL MEMBERS TO MAINTAIN DUCT TIGHT TO STRUCTURE.
 6. PROVIDE TURNING VANES AT ALL ELBOWS GREATER THAN 45°. TURNING VANES SHALL BE SINGLE THICKNESS.
 7. MAXIMUM 3'-0" FLEX DUCT ON ALL DIFFUSER RUNOUTS. FLEX DUCT SHALL BE USED FOR STRAIGHT, VERTICAL RUNS (ABOVE CEILING ONLY); ELBOWS SHALL NOT BE CONSTRUCTED OF FLEX DUCT.
 8. PROVIDE AIR TIGHT FITTING AND DAMPER AT EACH CONNECTION OF ROUND BRANCH DUCTS TO A RECTANGULAR DUCT.
 9. SEE ARCH REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING MOUNTED AIR DEVICES.
 10. ALL SUPPLY, RETURN, AND EXHAUST DUCTS SHALL BE EXTERNALLY INSULATED WITH 2" THICK FOIL BACKED FIBERGLASS INSULATION UNLESS SHOWN OTHERWISE. SEE SPECIFICATIONS FOR DETAILED INSULATION REQUIREMENTS.
 11. INSULATE TOP OF ALL SUPPLY DIFFUSERS.
 12. DUCT SIZES SHOWN ON PLANS INDICATE NET FREE AREA.
 13. FURNISH AND INSTALL MANUAL BALANCING DAMPER FOR ALL NEW DUCT RUNOUTS TO DIFFUSERS AND GRILLES.
 14. BALANCE AIR SYSTEM TO PROVIDE INDICATED AIR FLOWS. SEE SPECIFICATIONS FOR OTHER TEST AND BALANCE REQUIREMENTS. SUBMIT FINAL BALANCE OF AIR FOR REVIEW.
 15. THE CONTRACTOR SHALL COORDINATE AND VERIFY THE FOLLOWING WITH DIVISIONS 15 AND 16 PRIOR TO BID:

DISCONNECTS:
WHERE NOT FURNISHED WITH EQUIPMENT: FURNISHED UNDER DIVISION 16, INSTALLED UNDER DIVISION 16. WHERE FURNISHED WITH EQUIPMENT: FURNISHED UNDER DIVISION 15, INSTALLED UNDER DIVISION 16.

- GENERAL MECHANICAL NOTES:
1. REFER TO SPECIFICATIONS AND PROJECT MANUAL FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
 2. REFER TO ALL PROJECT DRAWINGS FOR DETAILS OF CONSTRUCTION AND INSTALLATION REQUIREMENTS.
 3. REFER TO GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS FOR THE CONTRACT. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR FULL COORDINATION OF PROJECT INCLUDING THE EQUIPMENT AND INSTALLATION OF THE MECHANICAL WORK.
 4. CONTRACTOR SHALL BECOME, PRIOR TO BID, THOROUGHLY FAMILIAR WITH THE REQUIREMENTS OF THESE NOTES AS WELL AS OTHER REQUIREMENTS SHOWN ON THE CONTRACT DOCUMENTS.
 5. ALL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENTS OR GEOMETRICAL RELATIONSHIPS OF EQUIPMENT AND SERVICES. THEY ARE NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, SEQUENCE, DEVICE, OPTION, FITTING, OR COMPONENT.
 6. INFORMATION AND COMPONENTS SHOWN ON RISER DIAGRAMS OR DETAILS, BUT NOT SHOWN ON PLANS, AND VICE VERSA, SHALL BE PROVIDED AS IF EXPRESSLY REQUIRED BY BOTH.
 7. CONTRACTOR SHALL NOT SCALE DRAWINGS. DRAWINGS SPECIFIC TO THIS DISCIPLINE DO NOT LIMIT THE RESPONSIBILITY OF WORK REQUIRED BY THE CONTRACT DOCUMENTS.
 8. UNLESS NOTED OTHERWISE, THE INDICATION AND/OR DESCRIPTION OF ANY ITEM, IN THE DRAWINGS OR SPECIFICATIONS CARRIES WITH IT THE INSTRUCTION TO FURNISH AND INSTALL THE ITEM.
 9. EXACT LOCATIONS OF ALL EQUIPMENT, THERMOSTATS, VAV BOXES, DUCTS, DIFFUSERS, ETC. SHALL BE COORDINATED WITH OTHER TRADES. CEILING MOUNTED SPRINKLER, LIGHTING, AND ELECTRICAL REQUIREMENTS TAKE PRECEDENCE OVER CEILING MOUNTED MECHANICAL REQUIREMENTS. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING GRID AND LIGHTING LAYOUT FOR COORDINATION OF FINAL DIFFUSER LOCATIONS. ALL SPRINKLER HEADS MUST BE CENTERED IN CEILING GRID PANELS AND MUST PROVIDE FOR A SYMMETRICAL LAYOUT. SEE FIRE PROTECTION NOTES.
 10. SEE ARCHITECTURAL DRAWINGS FOR BUILDING DETAILS AND DIMENSIONS. COORDINATE PLACEMENT OF ALL THERMOSTATS, EQUIPMENT, ETC. WITH ARCHITECTURAL.
 11. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH THAT OF OTHER TRADES. REFER TO ARCHITECTURAL, ELECTRICAL, AND OTHER DRAWINGS FOR COMPLETE INFORMATION PRIOR TO BID.
 12. ALL MECHANICAL CONSTRUCTION DETAILS SHALL BE AS SHOWN AND AS REQUIRED TO MAINTAIN "UL" ASSEMBLY RATINGS AS SHOWN ON ARCHITECTURAL SHEETS. SEAL AROUND ALL PENETRATIONS THOROUGH UL RATED ASSEMBLIES, FIRE AND SMOKE WALLS. COORDINATE WITH GENERAL CONTRACTOR.
 13. NO OTHER TRADES, I.E., ELECTRICAL, CEILING, PLUMBING, ETC., SHALL BE SUSPENDED, HUNG, OR SUPPORTED FROM DUCTWORK OR PIPING.
 14. REPLACE ALL ARCHITECTURAL FEATURES REMOVED OR DAMAGED DURING THE COURSE OF THE WORK.
 15. ALL WORK MUST COMPLY WITH THE REQUIREMENTS OF LOCAL CODES AND ORDINANCES. WHERE INSPECTIONS ARE REQUIRED BY AUTHORITIES HAVING JURISDICTION, WORK MUST NOT BE CONCEALED UNTIL INSPECTIONS AND TESTING ARE COMPLETED AND ACCEPTED.
 16. ALL WIRING INSTALLED FOR CONTROLS, POWER, INTERLOCKS, ETC. SHALL BE INSTALLED IN CONDUIT. ALL SUCH INSTALLATIONS MUST MEET NFPA AND NEC REQUIREMENTS AND LOCAL CODES.
 17. COORDINATE FINAL PLACEMENT OF ALL THERMOSTATS WITH WALL MOUNTED DEVICES AND OWNER'S REPRESENTATIVE. MOUNT THERMOSTATS AT 48" A.F.F. ANY THERMOSTAT THAT IS REQUIRED TO BE MOUNTED ON AN EXTERIOR WALL MUST BE MOUNTED ON AN INSULATED BASE.
 18. ALL RECYCLABLE ITEMS THAT ARE REMOVED SHALL BE TURNED OVER TO THE OWNER. OTHER ITEMS THAT ARE REMOVED SHALL BE PROPERLY DISPOSED OF. SEE DIVISION 1 SPECIFICATIONS FOR LIST OF RECYCLABLES.

ABBREVIATIONS:		ABBREVIATIONS:	
ABV	ABOVE	GRND	GROUND
A/C	AIR CONDITIONER, AIR CONDITIONING	GA	GAUGE
ACC	AIR COOLED CHILLER	GAL	GALLON
ACCU	AIR COOLED CONDENSING UNIT	GALV	GALVANIZED
AFF	ABOVE FINISHED FLOOR	GFI, GFCI	GROUND FAULT INTERRUPTER
AMP	AMPERES	GPD	GALLONS PER DAY
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	GPH	GALLONS PER HOUR
APD	AIR PRESSURE DROP	GPM	GALLONS PER MINUTE
ARI	AIR CONDITIONING & REFRIDGERATION INSTITUTE		
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIDGERATION AND AIR CONDITIONING ENGINEERS	H	HEIGHT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	HD	HEAD, HUB DRAIN
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	HOA	HAND-OFF-AUTOMATIC
AUX	AUXILIARY	HORIZ	HORIZONTAL
AWW	AMERICAN WATER WORKS ASSOCIATION	HP	HORSE POWER
		HSTAT	HUMIDISTAT
BD	BACKDRAFT DAMPER	HTG	HEATING
BFW	BOILER FEED WATER	HTR	HEATER
BKR	BREAKER	HW	HOT WATER
BOD	BOTTOM OF DUCT	HYD	HYDRANT
BOP	BOTTOM OF PIPE	HZ	HERTZ
BOS	BOTTOM OF STRUCTURE		
BTU	BRITISH THERMAL UNIT	ID	INSIDE DIAMETER
		IE	INVERT ELEVATION
		IN WC	INCHES OF WATER COLUMN
CFH	CUBIC FEET PER HOUR	KVA	KILOVOLT-AMPERES
CFM	CUBIC FEET PER MINUTE	KW	KILOWATTS
CFS	CUBIC FEET PER SECOND	KWH	KILOWATT-HOUR
CIRC	CIRCULATING		
CKT	CIRCUIT	L	LENGTH
CL	CENTERLINE	LAT	LEAVING AIR TEMPERATURE
CLG	CEILING	LBS, #	POUNDS
CMU	CONCRETE MASONARY UNIT	LDB	LEAVING DRY BULB
COL	COLUMN	LF	LINEAR FEET
CPVC	CHLORINATED POLYVINYL CHLORIDE	LP	LOW PRESSURE
CU	COPPER	LRA	LOCKED ROTOR AMPERES
CW	COLD WATER	LTG	LIGHTING
°C	DEGREES CELSIUS	LWB	LEAVING WET BULB
		LWT	LEAVING WATER TEMPERATURE
DB	DRY BULB		
dB	DECIBEL	MBTU, MBH	1000 BTU PER HOUR
DDC	DIRECT DIGITAL CONTROL(S)	MCA	MINIMUM CIRCUIT AMPACITY
DISC	DISCONNECT	MCB	MINIMUM CIRCUIT BREAKER
DX	DIRECT EXPANSION	MD	MOTORIZED DAMPER
		MFR	MANUFACTURER
EAT	ENTERING AIR TEMPERATURE	MOC	MAXIMUM OVER CURRENT PROTECTION
ECC	ECCENTRIC	MH	MANHOLE, METAL HALIDE
EDB	ENTERING DRY BULB		
EA	EXHAUST AIR	N/A	NOT APPLICABLE
ELEV	ELEVATION	NC	NOISE CRITERIA, NORMALLY CLOSED
ELEC	ELECTRICAL	NEC	NATIONAL ELECTRICAL CODE
ENCL	ENCLOSURE	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
EQUIP	EQUIPMENT		
ESP	EXTERNAL STATIC PRESSURE	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
EWB	ENTERING WET BULB	NIC	NOT IN CONTRACT
EW	ELECTRICAL WATER COOLER	N.O.	NORMALLY OPEN
EW	ENTERING WATER TEMPERATURE	NTS	NOT TO SCALE
EXH	EXHAUST		
		OA	OUTSIDE AIR
FA	FIRE ALARM	OBD	OPPOSED BLADE DAMPER
FACP	FIRE ALARM CONTROL PANEL	OD	OUTSIDE DIAMETER
FL	FLOW LINE	OH	OVERHEAD
FLA	FULL LOAD AMPERES	OS&Y	OUTSIDE STEM AND YOKE
FLEX	FLEXIBLE	OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
FOB	FLAT ON BOTTOM	OF	OWNER FURNISHED/ CONTRACTOR INSTALLED
FOT	FLAT ON TOP		
FPM	FEET PER MINUTE		
°F	DEGREES FAHRENHEIT		

PD	PRESSURE DROP	SA	SUPPLY AIR
PH (ORØ)	PHASE	SD	SMOKE DAMPER, STORM DRAIN
PIV	POST INDICATOR VLAVE	SEC	SECTION
PNL	PANEL	SF	SQUARE FEET, SQUARE FOOT
PSF	POUNDS PER SQUARE FOOT	SP	STATIC PRESSURE
PSI	POUNDS PER SQUARE INCH	SQ	SQUARE
PSIA	POUNDS PER SQUARE INCH ABSOLUTE	SS	STAINLESS STEEL, SANITARY SEWER
PSIG	POUNDS PER SQUARE INCH GAUGE	ST	SOUND TRAP, STEAM TRAP
PRV	PRESSURE RELIEF VALVE	STD	STANDARD
PVC	POLYVINYL CHLORIDE	SURF	SURFACE
		SUSP	SUSPEND, SUSPENDED
RA	RETURN AIR	THRU	THROUGH
RCP	REFLECTED CEILING PLAN	TOD	TOP OF DUCT
RD	ROOF DRAIN	TP	TOTAL PRESSURE
RE:	REFERENCE, REFER	TSP	TOTAL STATIC PRESSURE
RECIRC	RECIRCULATE	TSTAT	THERMOSTAT
REINF	REINFORCING, REINFORCED		
REQ'D	REQUIRED	U/F	UNDER FLOOR
RH	RELATIVE HUMIDITY	U/G	UNDERGROUND
RHG	REFRIGERANT HOT GAS	U/S	UNDER SLAB
RL	REFRIGERANT LIQUID	UL	UNDERWRITERS LABORATORIES, INC.
RLA	RUNNING LOAD AMPERES		
RM	ROOM	V	VOLT
RPM	REVOLUTIONS PER MINUTE	VA	VOLT-AMPERE
RS	REFRIGERANT SUCTION	VAC	VACUUM
		VAV	VARIABLE AIR VOLUME
		VD	VOLUME DAMPER
		VERT	VERTICAL
		VTR	VENT THROUGH ROOF
		W	WATT, WIDTH
		W/	WITH
		W/O	WITHOUT
		WB	WET BULB
		WC	WATER COLUMN
		WPD	WATER PRESSURE DROP
		WT	WATERTIGHT, WEIGHT
		XFMR	TRANSFORMER



LITTLE ROCK A.F.B.
ARKANSAS

GARVER ENGINEERS

1010 BATTERY STREET
LITTLE ROCK, ARKANSAS 72202
www.garverengineers.com
(501) 376-3633

CROMWELL
ARCHITECTS ENGINEERS

101 SOUTH SPRING ST
LITTLE ROCK AR 72201
TELEPHONE 501-372-2900
FACSIMILE 501-372-0482

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