

M-19 Mechanical 2020-02-21

# MECHANICAL SYMBOLS

PLUMBING			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---AV---	ACID VENT	---H2O---	HOT WATER 140'
---AW---	ACID WASTE (ABOVE FLOOR)	---H2O---	HOT WATER CIRCULATING 140'
---AW---	ACID WASTE (BELOW FLOOR)	---G---	NATURAL GAS
---	COLD WATER (CW)	---OF---	OVERFLOW STORM DRAIN (ABOVE FLOOR)
---S---	COLD SOFT WATER	---OF---	OVERFLOW STORM DRAIN (BELOW FLOOR)
---A---	COMPRESSED AIR	---	SANITARY DRAIN (ABOVE FLOOR)
---	EXISTING SANITARY DRAIN (ABOVE FLOOR)	---	SANITARY SEWER (BELOW FLOOR)
---	EXISTING SANITARY SEWER (BELOW FLOOR)	---SS---	SITE STORM SEWER
---S---	EXISTING STORM DRAIN (ABOVE FLOOR)	---S---	STORM DRAIN (ABOVE FLOOR)
---S---	EXISTING STORM DRAIN (BELOW FLOOR)	---S---	STORM DRAIN (BELOW FLOOR)
---SS---	EXISTING SUB SOIL DRAIN	---SS---	SUB SOIL DRAIN
---AW---	EXISTING ACID WASTE (ABOVE FLOOR)	---V---	VENT
---AW---	EXISTING ACID WASTE (BELOW FLOOR)	---W---	SITE WATER PIPING
---	HOT WATER (HW)	---V---	VACUUM BREAKER
---	HOT WATER CIRCULATING (HWC)	---	GAS COCK
---S---	HOT SOFT WATER	---	RUNNING TRAP
---S---	HOT SOFT WATER RECIRCULATING	CO OR CO	CLEAN OUT

## HEATING - VENTILATING - AIR-CONDITIONING

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---CWS---	CHILLED WATER SUPPLY	---	AUTOMATIC CONTROL VALVE, 2-WAY	---	TURNING VANES
---CWR---	CHILLED WATER RETURN	---	AUTOMATIC CONTROL VALVE, 3-WAY	---	SUPPLY, OUTDOOR, OR MIXED AIR DUCT END OR RISER (SA) (OA) (MA)
---PC---	CONDENSATE OR BOILER FEED PUMP DISCHARGE	---	PRESSURE REGULATING VALVE (PRV)	---	RETURN EXHAUST OR RELIEF AIR DUCT END OR RISER (RA) (EA) (REA)
---CS---	CONDENSER WATER SUPPLY FROM TOWER	---	PIPE IN SLEEVE	XX	RECTANGULAR DUCTWORK (FIRST NUMBER IS SIDE SHOWN)
---CR---	CONDENSER WATER RETURN TO TOWER	---	VALVE IN VERTICAL PIPE	NO	ROUND DUCT
---CD---	COIL OR EQUIPMENT DRAIN	---	F AND T TRAP CAP LBS/HR	XX φ	FLAT OVAL (FIRST NUMBER IS THE SIDE SHOWN)
---THW---	THERMAL HOT WATER	---	BUCKET TRAP CAP LBS/HR	---	VOLUME DAMPER
---TCW---	THERMAL COLD WATER	---	AIR QUALITY SENSOR	---	MOTORIZED DAMPER
---FOS---	FUEL OIL SUPPLY	---	AQUASTAT	---	FIRE DAMPER WITH ACCESS DOOR
---FOR---	FUEL OIL RETURN	---	CO2 SENSOR	---	COMBINATION FIRE AND SMOKE DAMPER WITH ACCESS DOOR
---FOV---	FUEL OIL VENT	---	HUMIDISTAT	---	SMOKE DAMPER WITH ACCESS DOOR
---G---	NATURAL GAS	---	REMOTE SENSOR	---	SOUND ATTENUATOR
---HPWS---	HEAT PUMP WATER SUPPLY	---	THERMOSTAT	---	FLEX CONNECTION
---HPWR---	HEAT PUMP WATER RETURN	---	THERMOSTAT WITH REMOTE SENSOR	---	SUPPLY REGISTER OR GRILLE
---HPR---	HIGH PRESSURE CONDENSATE RETURN	---	SOLENOID VALVE (REFRIGERANT)	---	RETURN REGISTER OR GRILLE
---HPS---	HIGH PRESSURE STEAM	---	THERMOSTATIC EXPANSION VALVE (REFRIGERANT)	---	TYP DIFFUSER
---HWS---	HOT WATER SUPPLY	---	SIGHT GLASS	---	TYP EXHAUST/RETURN GRILLE
---HWR---	HOT WATER RETURN	---	MANUAL AIR VENT	---	MECHANICAL EQUIPMENT WITH ELEC CONNECTION SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE
---LPR---	LOW PRESSURE CONDENSATE RETURN	---	PRESSURE OR TEMPERATURE MEASURING POINTS	---	BREAK / CONTINUATION
---LPS---	LOW PRESSURE STEAM	---	FLOW SWITCH	---	
---MPR---	MEDIUM PRESSURE CONDENSATE RETURN	---	HEATING RISER	---	
---MPS---	MEDIUM PRESSURE STEAM	---	ACCESS DOOR - SIZE AS SHOWN OR PER SPEC.	---	
---RL---	REFRIGERANT LIQUID	---	EXPANSION LOOP, LENGTH AND DEPTH	---	
---RS---	REFRIGERANT SUCTION	---	FRTUBE-TYPE CAPACITY MBH (SHADED AREA INDICATES ELEMENT LOCATION)	---	
---RD---	REFRIGERANT HOT GAS DISCHARGE	---	POINT OF DISCONNECT	---	
B.D.D.	BACK-DRAFT DAMPER (COUNTER BALANCED)	---		---	

# MECHANICAL SYMBOLS

PIPING			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---	TEE	---	GLOBE VALVE
---	ELBOW	---	PRESS / TEMP TEST PORT
---	UNION	---	GATE VALVE
---	STRAINER WITH DRAIN VALVE AND HOSE END	---	CHECK VALVE (ARROW INDICATES FLOW)
---	BALANCING VALVE	---	FLEXIBLE PIPING
---	ISOLATION VALVE (BALL OR BUTTERFLY)	---	AUTOMATIC AIR VENT
---	PRESSURE RELIEF VALVE	---	MANUAL AIR VENT WITH ISOLATION VALVE
---	ELBOW UP	---	
---	ELBOW DOWN	---	

## FIRE PROTECTION

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---	FIRE LINE	---	PRE-ACTION RELEASING PANEL	---	FIRE DEPARTMENT HOSE VALVE
---	SPRINKLER MAIN	---	CEILING CLEAN AGENT NOZZLE	---	FLUSH FIRE PUMP TEST HEADER
---	CLEAN AGENT	---	SUB-FLOOR CLEAN AGENT NOZZLE	---	FREE-STANDING FIRE PUMP TEST HEADER
---	SPRINKLER BRANCH AND HEADS	---	CEILING DETECTOR	---	FREE-STANDING FIRE DEPARTMENT CONNECTION
---	RECESSED PENDANT SPRINKLER	---	SUB-FLOOR DETECTOR	---	FLUSH FIRE DEPARTMENT CONNECTION
---	CONCEALED PENDANT SPRINKLER	---	CLEAN AGENT ALARM BELL	---	FIRE DEPARTMENT CONNECTION
---	UPRIGHT SPRINKLER	---	CLEAN AGENT HORN WITH STROBE	---	FIRE HOSE CABINET
---	DRY PENDANT SPRINKLER	---	ELECTRIC PULL STATION	---	FIRE HOSE VALVE CABINET
---	HORIZONTAL SIDEWALL SPRINKLER	---	ABORT PULL STATION	---	POST INDICATOR VALVE
---	DRY HORIZONTAL SIDEWALL SPRINKLER	---	CLEAN AGENT PRESSURE SWITCH	---	ISOLATION VALVE WITH TAMPER SWITCH
---	PRE-ACTION HEAT DETECTOR	---	WARNING LIGHT	---	ALARM CHECK VALVE
---	PRE-ACTION PULL STATION	---	CLEAN AGENT PANEL	---	DRY PIPE VALVE
---	PRE-ACTION ALARM BELL	---	FIRE HYDRANT	---	FLOW SWITCH
---	PRE-ACTION TROUBLE STROBE	---	ALARM BELL	---	WATER FLOW SWITCH
---	DELUGE VALVE FOR PRE-ACTION SYSTEM	---	ALARM STROBE	---	

## ABBREVIATIONS

AFF ABOVE FINISHED FLOOR	DIA DIAMETER	GW GARAGE WASTE	OFCI OWNER FURNISHED CONTRACTOR INSTALLED	STD STANDARD TEMPERATURE
AHJ AUTHORITY HAVING JURISDICTION	DISC DISCONNECT	HGT HEIGHT	PERP PERPENDICULAR	TEMP TEMPERATURE
ASHRAE AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS	DIST DISTRIBUTION	HP HORSEPOWER	PIV POST INDICATOR VALVE	TYP TYPICAL
ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS	DN DOWN	HTG HEATING	PVB POLYBUTYLENE VALVE	UG UNDERGROUND
ASTM STANDARD SPECIFICATIONS OF THE AMERICAN SOCIETY FOR TESTING MATERIALS	DPAC DRY PIPE AIR COMPRESSOR	HVAC HEATING, VENTILATING AND AIR CONDITIONING	PNG PLUMBING	UL UNDERWRITERS LABORATORY
AUX AUXILIARY	DPV DRY PIPE VALVE	HZ HERTZ, HIGH ZONE WET STANDPIPE	PNL PANEL	UNO UNLESS NOTED OTHERWISE
AV ACID VENT	DX DIRECT EXPANSION	IE INVERT ELEVATION	PS PLASTER SINK	UPS UNINTERRUPTIBLE POWER SUPPLY
AVG AVERAGE	EA EXHAUST AIR	IP INTERNET PROTOCOL	PSF POUNDS PER SQUARE FOOT	VA VOLT-AMPS
AW ACID WASTE	EHC ELECTRIC HEATING COIL	KW KILOWATT	PSI POUNDS PER SQUARE INCH	VERT VERTICAL
AWG AMERICAN WIRE GAUGE	EL ELEVATION	LZ LOW ZONE WET STANDPIPE	PVC POLYVINYL CHLORIDE	VFC VARIABLE FREQUENCY CONTROL
BMCS BUILDING MANAGEMENT CONTROL SYSTEM	ELEC ELECTRICAL	MA MIXED AIR	PWR POWER	VTR VENT THROUGH ROOF
BFP DOUBLE CHECK BACKFLOW PREVENTER	EOM ENERGY MANAGEMENT SYSTEM	MAX MAXIMUM	REQD REQUIRED	W WATT
BLDG BUILDING	EOA ECONOMIZER OUTDOOR AIR	MBH 1000 BTU/HOUR	RCS RIGID GALVANIZED STEEL	WG WATER GAUGE
BTU BRITISH THERMAL UNIT	EPO EMERGENCY POWER OFF	MECH MECHANICAL	RLFA RELIEF AIR	WP WEATHERPROOF
BTUH BRITISH THERMAL UNIT PER HOUR	EQU EQUIPMENT	MERV MINIMUM EFFICIENCY REPORTING VALUE	RM ROOM	XFMR TRANSFORMER
CFH CUBIC FEET PER HOUR	EXH EXHAUST	MIN MINIMUM	RO REVERSE OSMOSIS WATER	
CFM CUBIC FEET PER MINUTE	EXIST EXISTING	MISC MISCELLANEOUS	RZ REDUCED PRESSURE ZONE	
CL CENTER LINE	F FIRE WATER	MOA MINIMUM OUTDOOR AIR	SA SUPPLY AIR	
CLG CEILING	FA FIRE ALARM	MTD MOUNTED	SAN SANITARY	
CLR CLEAR	FCO FLOOR CLEAN OUT	NC NORMALLY CLOSED	SCHD SCHEDULE	
CPVC CHLORINATED POLYVINYL CHLORIDE	FDC FIRE DEPARTMENT CONNECTION	NFPA NATIONAL FIRE PROTECTION ASSOCIATION	SCW SOFT COLD WATER	
CRAC COMPUTER ROOM AIR CONDITIONER	FHC FIRE HOSE CABINET	NC NOT IN CONTRACT	SHW SOFT HOT WATER	
CV CONSTANT VOLUME	FL FLOOR	NO NORMALLY OPEN	SIM SIMILAR	
DDCV DOUBLE DETECTOR CHECK VALVE ASSEMBLY BACKFLOW PREVENTER	FT FEET	NOM NOMINAL	SM SPRINKLER MAIN	
	FW FILTERED WATER	NPW NON-POTABLE WATER	SMACNA SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION	
	GA GAUGE	NTS NOT TO SCALE	SPECIFICATIONS	
	GALV GALVANIZED	OA OUTDOOR AIR	SS STAINLESS STEEL	
	GC GENERAL CONTRACTOR	OC ON CENTER		
	GEN GENERATOR			
	GPM GALLONS PER MINUTE			

SYMBOLS INDICATED HERE AND NOT USED IN THE CONTRACT DOCUMENTS DO NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS AND ABBREVIATIONS MAY BE INDICATED IN THE CONTRACT DOCUMENTS.

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FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. <b>M0-0</b>	TITLE OF SHEET <b>MECHANICAL SYMBOLS AND ABBREVIATIONS</b> BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 12 OF 60
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