

ABBREVIATIONS			
AC	AIR CONDITION (-ING, -ED)	INV	INVERT
AFF	ABOVE FINISHED FLOOR	KW	KILOWATT
AMP	AMPERE (AMP. AMPS)	LAT	LEAVING AIR TEMPERATURE
AP	ACCESS PANEL	LBS	POUNDS
BTU	BRITISH THERMAL UNIT	LWB	LEAVING WET BULB
CBV	CIRCUIT BALANCING VALVE	LWT	LEAVING WATER TEMPERATURE
CFM	CUBIC FEET PER HOUR	MA	MIXED AIR
CFM	CUBIC FEET PER MINUTE	MAX	MAXIMUM
CHW	CIRCULATING HOT WATER	MBH	THOUSAND BTU'S/HR
CHWR	CHILLED WATER RETURN	MIN	MINIMUM
CHWS	CHILLED WATER SUPPLY	MISC	MISCELLANEOUS
CLG	CEILING	NA	NOT APPLICABLE
CO	CLEANOUT	NC	NOISE CRITERIA
CR	CONDENSATE RETURN	NIC	NOT IN CONTRACT
CW	COLD WATER	NTS	NOT TO SCALE
DB	DECIBEL	OA	OUTSIDE AIR
DEMO	DEMOLITION	OB	OPPOSED BLADE DAMPER
DIA	DIAMETER	ORD	OVERFLOW ROOF DRAIN
DIFF	DIFFUSER	PH	PHASE (ELECTRICAL)
DWG	DRAWING	PVC	POLYVINYL CHLORIDE
DX	DIRECT EXPANSION	RA	RETURN AIR
EAT	ENTERING AIR TEMPERATURE	RD	ROOF DRAIN
ELEC	ELECTRICAL	REC	RECESSED
ELEV	ELEVATION	REL	RELIEF
EMS	ENERGY MANAGEMENT SYSTEM	RH	RELATIVE HUMIDITY
ESP	EXTERNAL STATIC PRESSURE	RM	ROOM
EWB	ENTERING WET BULB	RPM	REVOLUTIONS PER MINUTE
EWI	ENTERING WATER TEMPERATURE	SA	SUPPLY AIR
EXH	EXHAUST	SAN	SANITARY
EXIST	EXISTING	SD	SMOKE DAMPER
F	FAHRENHEIT	SF	SQUARE FEET
FSD	COMBINATION FIRE/SMOKE DAMPER	SP	STATIC PRESSURE
FCO	FLOOR CLEANOUT	SPEC	SPECIFICATION
FD	FIRE DAMPER	ST	STORM
FD	FLOOR DRAIN	STD	STANDARD
FDC	FIRE DEPARTMENT CONNECTION	TD	TEMPERATURE DIFFERENCE
FFE	FINISHED FLOOR ELEVATION	TSP	TOTAL STATIC PRESSURE
FLR	FLOOR	TYP	TYPICAL
FPM	FEET PER MINUTE	V	VOLTS
FT	FOOT OR FEET	VFD	VARIABLE FREQUENCY DRIVE
GA	GAGE OR GAUGE	VSD	VARIABLE SPEED DRIVE
GAL	GALLONS	VOL	VOLUME
GC	GENERAL CONTRACTOR	VTR	VENT THROUGH ROOF
GPH	GALLONS PER HOUR	W	WATTS
HP	HORSEPOWER	W/O	WITHOUT
HW	HEATING, VENTILATING, AIR CONDITIONING	WC	WATER CLOSET
HZ	HERTZ	WCO	WALL CLEANOUT
ID	INSIDE DIAMETER	WT	WEIGHT

HVAC SYMBOL LEGEND	
DUCTWORK	
SUPPLY DUCT UP	
SUPPLY DUCT DOWN	
SUPPLY DUCT UP THROUGH ROOF	
RETURN/RELIEF DUCT UP	
RETURN/RELIEF DUCT DOWN	
RETURN/RELIEF DUCT UP THROUGH ROOF	
EXHAUST DUCT UP	
EXHAUST DUCT DOWN	
EXHAUST DUCT UP THROUGH ROOF	
MANUAL VOLUME DAMPER	
MOTORIZED DAMPER	
REMOTELY ACCESSIBLE VOLUME DAMPER	
FIRE DAMPER W/ACCESS PANEL	
FIRE/SMOKE DAMPER W/ACCESS PANEL	
SMOKE DAMPER W/ACCESS PANEL	
DUCT RISE (OR DROP)	
EXISTING DUCTWORK TO REMAIN	
EXISTING DUCTWORK TO BE REMOVED	
SUPPLY AIR TERMINAL	
RETURN/EXHAUST/TRANSFER AIR TERMINAL	
VAV BOX	
ACCESS PANEL	
THERMOSTAT	
TEMPERATURE SENSOR	
SMOKE DETECTOR	
CO2 SENSOR	
LONG RADIUS ELBOW	
SHORT RADIUS ELBOW WITH VANES	
DIFFUSER TYPE   NECK SIZE	
AIRFLOW QUANTITY	

PLUMBING SYMBOL LEGEND			
	FLOOR DRAIN		ANCHOR
	FLOOR SINK W/HALF GRATE		PIPE FLANGE
	FLOOR SINK W/FULL GRATE		PIPE GUIDE
	BALL VALVE		AIR CHAMBER
	GATE VALVE		WATER HAMMER ARRESTER
	CHECK VALVE		WALL HYDRANT/HOSE BIBB
	DRAIN VALVE		EXPANSION TANK
	2-WAY VALVE		WATER METER
	SOLENOID VALVE		FLOW METER
	MOTORIZED VALVE		THERMOMETER
	EMERGENCY GAS SHUT-OFF VALVE		PRESSURE GAGE
	THERMOSTATIC/PRESSURE BALANCE MIXING VALVE		STRAINER
	TRAP PRIMING VALVE		PUMP
	PRESSURE RELIEF VALVE		PLUMBING FIXTURE TAG
	BUTTERFLY VALVE		FLOOR RECEPTOR TAG
	GLOBE VALVE		FLOW SWITCH
	CIRCUIT BALANCING VALVE		3-WAY VALVE
	PLUG VALVE		BACKFLOW PREVENTER
	REDUCER		FLOW ARROW
	STEAM TRAP (F&T)		THERMOSTAT WELL
	EXPANSION JOINT		FLEXIBLE CONNECTOR
	TEST PLUG		STEAM TRAP (THERMOSTATIC)
	VACUUM RELIEF VALVE		AQUASTAT
	PRESSURE REGULATOR		PIPE DOWN
	PIPE UP		PIPE CAP
	TEE DOWN		PIPE BREAK
	UNION		

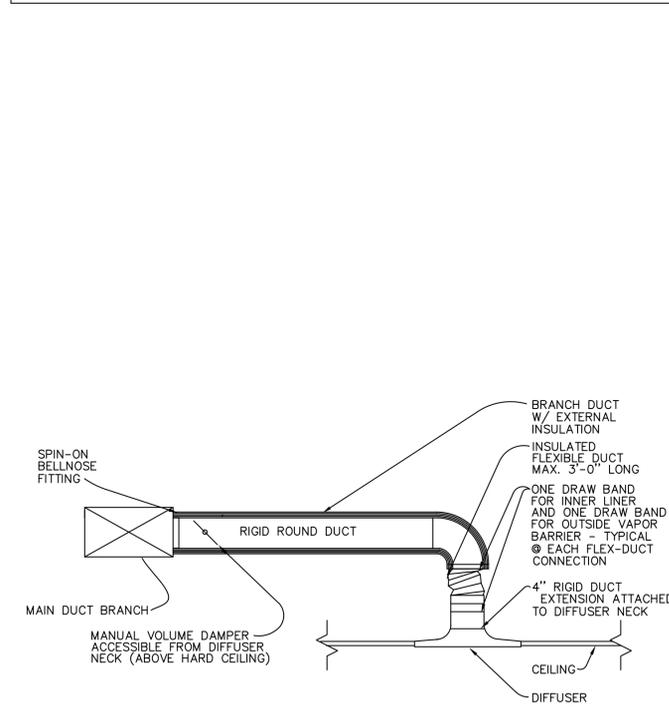
PLUMBING LINETYPE LEGEND	
	DOMESTIC COLD WATER
	DOMESTIC COLD WATER (BELOW FLOOR/GRADE)
	DOMESTIC COLD WATER (EXISTING)
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER (EXISTING)
	GAS
	GAS (ON ROOF)
	GAS (EXISTING)
	GAS (EXISTING ON ROOF)
	SANITARY SEWER (ABOVE FLOOR/GRADE)
	SANITARY SEWER (BELOW FLOOR/GRADE)
	SANITARY SEWER (EXISTING)
	VENT
	VENT (UNDERFLOOR/GRADE)
	VENT (EXISTING)

HVAC PIPING LINETYPE LEGEND	
	CONDENSATE DRAIN
	CONDENSATE DRAIN (EXISTING)

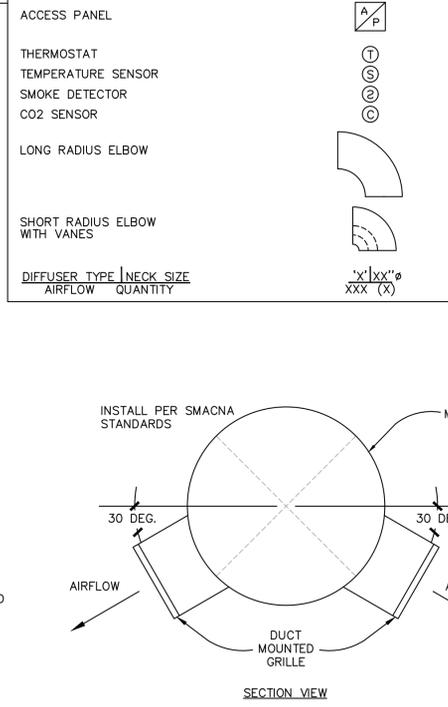
MISC. SYMBOL LEGEND	
	EQUIPMENT TAG
	REVISION TRIANGLE
	CONNECTION TO EXISTING
	KEY NOTE

SHEET INDEX	
<b>M0.0</b>	<b>MECHANICAL TITLE SHEET AND DETAILS</b>
<b>M1.0</b>	<b>MAIN LEVEL HVAC PLAN</b>
<b>M1.1</b>	<b>MEZZANINE HVAC PLAN</b>
<b>M2.0</b>	<b>MECHANICAL SPECIFICATIONS</b>
<b>P1.0</b>	<b>PLUMBING PLANS</b>
<b>P2.0</b>	<b>PLUMBING RISERS, SCHEDULES AND DETAILS</b>

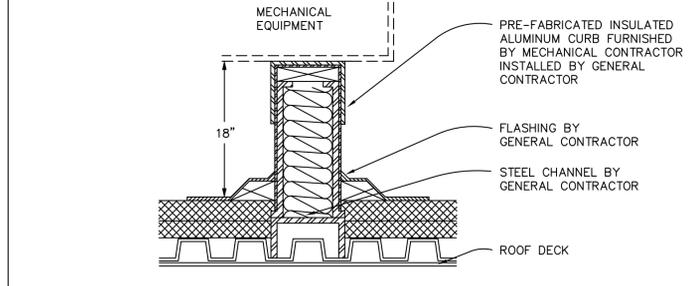
EQUIPMENT TAGS			
ACCU	AIR COOLED CONDENSING UNIT	GWH	GAS WATER HEATER
AHU	AIR HANDLING UNIT	HU	HUMIDIFIER
AHUP	AIR HANDLING UNIT PUMP	HUH	HORIZONTAL UNIT HEATER
BP	BOOSTER PUMP	HWP	HEATING WATER PUMP
CDWP	CONDENSER WATER PUMP	IH	INTAKE HOOD
CEF	CEILING EXHAUST FAN	MAU	MAKE-UP AIR UNIT
CHWP	CHILLED WATER PUMP	PCWP	PRIMARY CHILLED WATER PUMP
CP	CIRCUATING PUMP	PHWP	PRIMARY HEATING WATER PUMP
CPR	CONDENSATE PUMP AND RECEIVER	PRV	POWER ROOF VENTILATOR
CRP	CONDENSATE RETURN PUMP	REF	RELIEF EXHAUST FAN
CUH	CABINET UNIT HEATER	RF	RETURN FAN
DHC	DUCT HEATING COIL	RH	RELIEF HOOD
ECH	ELECTRIC CABINET HEATER	RTU	ROOFTOP UNIT
EF	EXHAUST FAN	SCWP	SECONDARY CHILLED WATER PUMP
EHC	ELECTRIC HEATING COIL	SEP	SEWAGE EJECTOR PUMP
ES	ELECTRONIC SENSOR	SHWP	SECONDARY HEATING WATER PUMP
EUH	ELECTRIC UNIT HEATER	SP	SUMP PUMP
EW	ELECTRIC WATER COOLER	TF	TRANSFER FAN
EWI	ELECTRIC WATER HEATER	USF	UTILITY SET FAN
FCU	FAN COIL UNIT	VAV	VARIABLE AIR VOLUME BOX
FPB	FAN POWERED VARIABLE AIR VOLUME BOX	VUH	VERTICAL UNIT HEATER
		WS	WATER SOFTENER



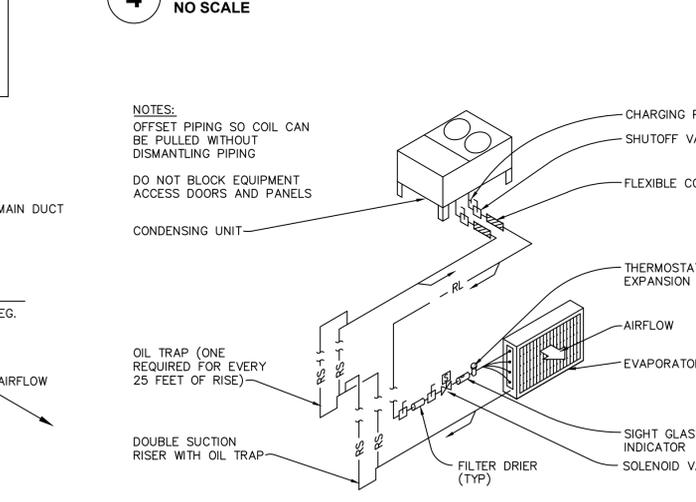
**1 TYP. DIFFUSER/DUCT CONNECTIONS**  
NO SCALE  
SURFACE MOUNT DIFFUSER



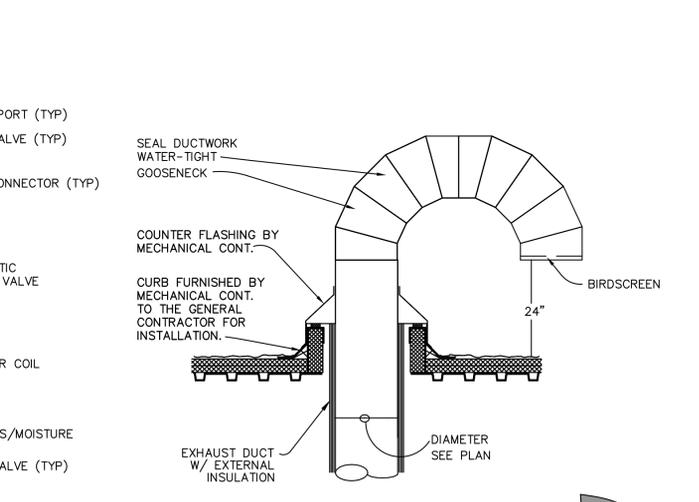
**2 DUCT MOUNTED GRILLE**  
NO SCALE



**4 MECH EQUIPMENT CURB DETAIL**  
NO SCALE



**3 REFRIGERANT PIPING**  
NO SCALE

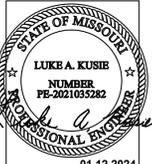


**5 GOOSENECK VENT THRU ROOF**  
NO SCALE



**DAMIAN FARRELL DESIGN GROUP**

359 METTY DRIVE, SUITE 4A  
ANN ARBOR, MI 48103  
tel: 734.998.1331



**FOR PERMIT ISSUE**

C3 - BRANSON MO  
3125 GREEN MOUNTAIN DRIVE  
BRANSON, MO 65616

DATE	DESCRIPTION
12.28.2023	REVIEW SET
01.12.2024	PERMIT SET

CHECKED	LAK
DRAWN	TMS
HEI PROJECT NO.	R23-4590.006

**MECHANICAL TITLE SHEET AND DETAILS**

**Mo.o**

HALLBERG ENGINEERING  
Mechanical/Electrical Consulting Engineers  
1790 Commerce Court  
White Bear Lake, MN 55110  
Phone (651) 748-1100 • Fax (651) 748-3370