A	AIR
AAV	AUTOMATIC AIR VENT
ABV	ABOVE
ADA	AMERICANS WITH DISABILITIES ACT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHAP	AS HIGH AS POSSIBLE
AL	ALUMINUM
AMPS	AMPERES
APD	AIR PRESSURE DROP
ARCH	ARCHITECTURAL
BDD	BACKDRAFT DAMPER
BLDG	BUILDING
BI	BACK IRON
BOD	BOTTOM OF DUCT
BTUH	BRITISH THERMAL UNIT/HOUR
CA	COMBUSTION AIR
CD	CONDENSATE
CAP	CAPACITY
CFM	CUBIC FEET PER MINUTE
CIRC	CIRCULATING
CLG	CEILING
CONT	CONTINUED
CO	CLEANOUT
CU	COPPER
CW	COLD WATER
DIA	DIAMETER
dB	DECIBELS
DEG	DEGREE
DIM	DIMENSION
DN	DOWN
DWG	DRAWING
E/A	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EFF	EFFICIENCY
EXH	EXHAUST
EWT	ENTERING WATER TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE
EGT	ENTERING GLYCOL TEMPERATURRE
ENT	ENTERING
FT	FEET
FPM	FEET PER MINUTE
FC	FORWARD CURVE
F	FARENHEIT
FCO	FLOOR CLEANOUT
FD	FIRE DAMPER
FDC	FIRE DEPARTMENT CONNECTION
FLR	FLOOR
GA	GAUGE
GPH	GALLONS PER HOUR
GAL	GALLONS
GPM	GALLONS PER MINUTE
HD	HEAD
HW	HOT WATER
HWC	HOT WATER CIRCULATION
HPS	HIGH PRESSURE STEAM
HP	HORSEPOWER
IN	INCHES

LAV	LAVATORY
LF	LINEAL FEET
MBH	THOUSAND BTUH
MU	BOILER MAKEUP WATER
MOD	MOTOR OPERATED DAMPER
MPG	MEDIUM PRESSURE GAS
MTD	MOUNTED
NC	NOISE CRITERIA
N. C.	NORMALLY CLOSED
NP	NON POTABLE
N. O.	NORMALLY OPEN
NTS	NOT TO SCALE
O/A	OUTSIDE AIR
OC	ON CENTER
OD	OVERFLOW DRAIN
ON	OVERFLOW NOZZLE
OW	OILY WASTE
PD	PRESSURE DROP
PE	POLYETHYLENE PIPE
PG	PROPYLENE GLYCOL
PH	PHASE
PSI	POUND PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
R/A	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
RL	RAIN LEADER
S/A	SUPPLY AIR
SGS	SNOWMELT GLYCOL SUPPLY
SGR	SNOWMELT GLYCOL RETURN
SP	STATIC PRESSURE
SQ	SQUARE
SS	SANITARY SEWER
TEMP	TEMPERATURE
TOD	TOP OF DUCT
TOS	TOP OF SLAB
TP	TRAP PRIMER
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TW	TEMPERED WATER
TWC	TEMPERED WATER CIRCULATED
TYP.	TYPICAL
V	VENT
VEL	VELOCITY
V.T.R.	VENT THRU ROOF
W/	WITH
W/O	WITHOUT
W	WASTE (SANITARY SEWER)
WCO	WALL CLEAN OUT
WG	WATER GAUGE
WHA	WATER HAMMER ARRESTOR
WPD	WATER PRESSURE DROP
YCO	YARD CLEAN OUT

SANITARY SEWER
VENT PIPING
DOMESTIC COLD WATER
DOMESTIC HOT WATER
PIPE UP
PIPE DOWN
TEE UP
TEE DOWN
CAP
UNION
DIRECTION OF FLOW
BALL VALVE
2-WAY CONTROL VALVE
3-WAY CONTROL VALVE
THERMOSTATIC MIXING VALVE
SWING CHECK VALVE
SPRING CHECK VALVE
BALANCE/SHUT-OFF VALVE
PRESSURE REDUCING VALVE
PRESSURE/TEMP RELIEF VALVE
VB
SPILL PROOF VACUUM BREAKER
HOSE BIB
WATER HAMMER ARRESTOR
PUMP
END-OF-LINE CLEANOUT
F
FILTER
M
METER
PIPE GUIDE
PIPE ANCHOR
TH
THERMOMETER
PRESSURE GAUGE W/ ISO COCK
STRAINER WITH BLOWDOWN

FLOOR OR YARD CLEANOUT
FLOOR DRAIN
T
THERMOSTAT
TS
DOC TEMPERATURE SENSOR
S
SENSOR
E
EMERGENCY SHUT-OFF SWITCH
SUPPLY/COMBUSTION AIR
EXHAUST AIR
ROUND DUCT
VOLUME DAMPER
MOTORIZED CONTROL DAMPER
ACOUSTIC LINED DUCTWORK
12/24
DUCT SIZE
EXTERNALLY INSULATED DUCT
TURNING VANES
FLEXIBLE DUCT CONNECTION
FLEXIBLE DUCT
ACCESS DOOR
POINT OF CONNECTION

PROJECT DESCRIPTION: VENTILATION FOR ONSITE CONSUMPTION BUSINESS IN KODIAK.

SCOPE
7216 LAKE OTIS PKWY
ANCHORAGE, AK 99507

STATE OF ALASKA
49TH
Ron Thompson
No. ME-9246
REGISTERED PROFESSIONAL ENGINEER
LIC #101702
9/20/2022

WILDFLOWER - VENTILATION
KODIAK, AK 99615

REVISION:
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5.

PROJECT NR:	2022-30
DATE:	9/20/22
DRAWN BY:	RJT
SCALE:	AS NOTED
SHEET NUMBER:	

M-1

GENERAL NOTES

PROJECT SHALL BE CONSTRUCTED TO 2018 INTERNATIONAL MECHANICAL CODE (IMC), 2018 UNIFORM PLUMBING CODE (UPC), 2018 INTERNATIONAL FUEL GAS CODE (IFGC), AS AMENDED BY THE MUNICIPALITY OF ANCHORAGE. SHEET METAL WORK SHALL BE DONE IN ACCORDANCE WITH SMACNA STANDARDS.

ALL PIPING, DUCTWORK AND EQUIPMENT SHALL BE INSTALLED FOR SEISMIC EVENT IN ACCORDANCE WITH THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE AND ASCE 7.

CONTRACTOR SHALL PROVIDE THE OWNER WITH OPERATING AND MAINTENANCE MANUALS, TO INCLUDE MANUFACTURER'S SPECIFICATIONS, OPERATING AND MAINTENANCE INSTRUCTIONS, WARRANTY INFORMATION ON EACH PIECE OF EQUIPMENT, AND SCHEMATIC DIAGRAMS OF CONTROL SYSTEMS AS-BUILT, AS WELL AS A SOURCE OF SUPPLY FOR SPARE PARTS AND SERVICE.

PROVIDE ACCURATE PROJECT RECORD AS-BUILT DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.

PROVIDE CONTROL SYSTEM TO ACCOMPLISH THE SEQUENCE OF OPERATIONS. PROVIDE ALL CONTROLLERS, TEMPERATURE SENSORS, THERMOSTATS, CONTROL VALVES, CONTROL DAMPERS, ELECTRIC ACTUATORS, TRANSFORMERS, WIRING AND ASSOCIATED COMPONENTS. INSTALL ALL WIRING IN ACCORDANCE WITH THE NEC. TEST ALL SYSTEMS, VERIFY ALL SYSTEMS OPERATE AS SPECIFIED IN SEQUENCE OF OPERATIONS, AND RECORD INITIAL SETTING AND OPERATING SET-POINTS IN O&M MANUALS. PROVIDE OPERATOR INTERFACE TO ALLOW FOR LOCAL SCHEDULE ADJUSTMENT, SET-POINT ADJUSTMENT, AND HVAC MONITORING. PROVIDE TAMPERPROOF THERMOSTAT GUARDS IN ALL PUBLIC AREAS. PROVIDE CONTROL SYSTEM DEMONSTRATION TO OWNERS REPRESENTATIVE(S) PRIOR TO SUBSTANTIAL COMPLETION.

PROVIDE ACCESS TO ALL SERVICEABLE AND/OR OPERABLE EQUIPMENT. PROVIDE ACCESS DOORS FOR ALL EQUIPMENT INSTALLED IN CONCEALED LOCATIONS.

INSTALL ALL EQUIPMENT WHERE SHOWN IN PLANS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PROVIDE MISCELLANEOUS APPURTENANCES, ACCESSORIES, SUPPORTS AND CONTROL CONNECTIONS REQUIRED FOR COMPLETE AND OPERATING SYSTEMS. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES

PROVIDE ISOLATION VALVES AT EACH FIXTURE, AND GAS ISOLATION VALVE AT EACH GAS APPLIANCE. BRONZE TWO PIECE BODY, FULL PORT, FORGED BRASS, CHROME PLATED BALL, TEFLON SEATS AND STUFFING BOX RING, BLOW-OUT PROOF STEM, LEVER HANDLE,SOLDER OR THREADED ENDS.

ALL HANGERS AND SUPPORTS SHALL BE INSTALLED IN ACCORDANCE WITH 2018 UPC, INSTALLED AS PER THE MANUFACTURES INSTRUCTIONS. PROVIDE SEISMIC SUPPORT FOR ALL PIPING SYSTEMS IN ACCORDANCE WITH IBC 2018.

GENERAL NOTES

THE CONTRACTOR SHALL BALANCE THE AIR DUCT SYSTEMS ACCORDING TO NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) RECOMMENDED PROCEDURES AND CONTRACT DOCUMENTS, AND TO THE SATISFACTION OF THE OWNER. AIR FLOW'S ARE TO BE BALANCED TO WITHIN 10% OF INDICATED FLOWS, PER AMERICAN AIR BALANCING COUNCIL(AABC) RECOMMENDED METHODS, BY USE OF BALANCING DAMPERS AT EACH DIFFUSER

PROVIDE GALVANIZED SHEET METAL WHERE CALLED OUT ON THE PLANS. SEAL ALL DUCT SEAMS AND JOINTS AIR TIGHT. INSTALL VOLUME DAMPERS AT EACH DUCT BRANCH AS NEEDED TO ENSURE PROPER BALANCING. ALL SHEET METAL WORK TO BE CONSTRUCTED, INSTALLED, TESTED, SUPPORTED AND BALANCED IN ACCORDANCE WITH SMACNA STANDARDS. CONSTRUCT T'S, BENDS, AND ELBOWS WITH RADIUS OF NOT LESS THAN 1-1/2 TIMES WIDTH OF DUCT ON CENTERLINE. IF 1-1/2 TIMES WIDTH CANNOT BE ACHEIVED AND WHERE RECTANGULAR ELBOWS ARE USED, CONSTRACTOR SHALL INSTALL AIR FOIL TURNING VANES. WHERE ACOUSTICAL LINING IS REQUIRED , PROVIDE TURNING VANES OF PERFORATED METAL WITH GLASS FIBER INSULATION. WELD IN PLACE. TRANSFORM DUCT SIZE GRADUALLY , NOT EXCEEDINGLY 15" DIVERGENCE AND 30" CONVERGENCE. PROVIDE STANDARD 45 DEGREE LATERAL WYE TAKEOFFS, UNLESS OTHERWISE INDICATED WHERE 90 DEGREE CONICAL TEE CONNECTIONS MAY BE USED. ALL ROUND DUCTWORK SHALL BE SPIRAL, NO EXCEPTIONS.

INSULATED FLEXIBLE DUCTS: FABRIC SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE OR FLAT STEEL BANDS; RATED TO 2 INCHES WG POSITIVE AND 1.5 INCHES WG NEGATIVE FOR LOW PRESSURE DUCTS AND 15 INCH WG POSITIVE OR NEGATIVE FOR MEDIUM HIGH PRESSURE DUCTS WRAPPED WITH FLEXIBLE GLASS FIBER INSULATION, ENCLOSED BY SEAMLESS ALUMINUM PIGMENTED PLASTIC VAPOR BARRIER JACKET; MAXIMUM 0.23 K VALUE AT 75 DEG F.

CONTROL DAMPERS - MULTI-BLADE, OPPOSED BLADE ACTION, CONTROL DAMPERS OF EXTRUDED ALUMINUM, WITH AIR FOIL TYPE BLADES OF MAXIMUM SIX INCH WIDTH, BLADES POSITIONED ACROSS SHORT AIR OPENING DIMENSION ACROSS SHORT AIR OPENING DIMENSIONS, FIELD REPLACEABLE EXTRUDED VINYL SEALED EDGES, LINKED TOGETHER IN RATTLE FREE MANNER, NON-CORROSIVE MOLDED SYNTHETIC BEARINGS, SQUARE OR HEXAGONAL AXLES FOR POSITIVE LOCKING CONNECTION TO BLADES AND LINKAGE, DOCUMENTED LEAKAGE RATE NOT TO EXCEED 6 CFM/SQ. FT. AT 4 INCH W.G.

DUCT SOUND LINING - FLEXIBLE GLASS FIBER; ANSI/ASTM C1071; K' VALUE OR 0.24 AT 75 DEG F; COATED AIR SIDE FOR MAXIMUM 5,00 FT./MIN AIR VELOCITY, UL LISTED ADHESIVE GALVANIZED STEEL PINS.

ALL DUCTWORK MUST BE INSULATED TO A MINIMUM OF 10' INSIDE OF EXTERIOR WALL IF DUCT IS CONNECTED WITH OUTSIDE AIR OPENING.

DUCTWORK - 1" THICK FLEXIBLE INSULATION; AVERAGE THERMAL CONDUCTIVITY K EQUALS 0.24 AT 75 DEGREES F MEAN TEMPERATURE AT 1.5 PCF DENSITY. ATSM. FACTORY APPLIED VAPOR BARRIER FLAME RETARDENT FOIL-SCRIM-KRAFT (FSK) OR ALL SERVICE JACKET AND TAPE WITH PERMEABILITY RATING EQUALS 0.02 PERMS. ASTM 96. PROVIDE 1" FIBERGLASS INSULATION WITH A COMPLETE FACTORY APPLIED VAPOR BARRIER JACKET ON ALL EXHAUST DUCTWORK WITHIN 10' OF EXTERIOR OPENINGS AND MEDIUM PRESSURE SUPPLY DUCTWORK. INSULATE OUTSIDE AIR DUCTWORK WITH 2" RIGID EXTERIOR FSK DUCT WRAP AND CANVAS FINISH.

CONTRACTOR TO BALANCE THE SUPPLY AND RETURN SOTH AT 260 CFM IS MATCHING TO ALLOW FOR NEUTRAL PRESSURE.

COOLING SEQUENCE OF OPERATION

EF-1/SF-1	-	PROVIDE SUFFICIENT CONTROLS TO MAINTAIN 12 AC/HR WHEN OCCUPIED. 260 MIN CFM SUPPLY AND EXHAUST.

EXHAUST FAN SCHEDULE

SYMBOL	MANUFACTURER	MODEL	ESP (IN WC)	CFM	VOLTS/HZ/PHASE	SPECIFICATIONS
EF-1	FANTECH	FG 8XL	0.5	260	120V/60HZ/1Ø	FG 8XL CENTRIFUGAL INLINE FAN 8" INLINE DUCT FAN WITH METAL HOUSING, OR APPROVED EQUAL
SF-1	FANTECH	FG 8XL	0.5	260	120V/60HZ/1Ø	FG 8XL CENTRIFUGAL INLINE FAN 8" INLINE DUCT FAN WITH METAL HOUSING, OR APPROVED EQUAL

AIR INLET/ OUTLET SCHEDULE

SYMBOL	MANUFACTURER	MODEL	SIZE	USE	SPECIFICATIONS
A	TITUS	TND-AA	8"	S/A	SURFACE OR DUCT-MOUNTED ALUMINUM EYEBALL-TYPE NOZZLE DIFFUSERS OR APPROVED EQUAL
B	TITUS	45F	SIZE PER PLAN	R/A	SIGHT-PROOF EGGCRATE RETURN GRILLE CEILING MOUNTED, OR APPROVED EQUAL

CARBON FILTER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	SIZE (IN)	SPECIFICATIONS
CF-1	AIRBOX	STEALTH 1	4"	CARBON INLINE FILTER, MODEL OR APPROVED EQUAL

HEPA FILTER SCHEDULE

SYMBOL	MANUFACTURER	MODEL	SIZE (IN)	SPECIFICATIONS
HF-1	ANY	-----	8"	HEPA FILTER TO MATCH AIR FLOW AND DUCT SIZE, OR APPROVED EQUAL

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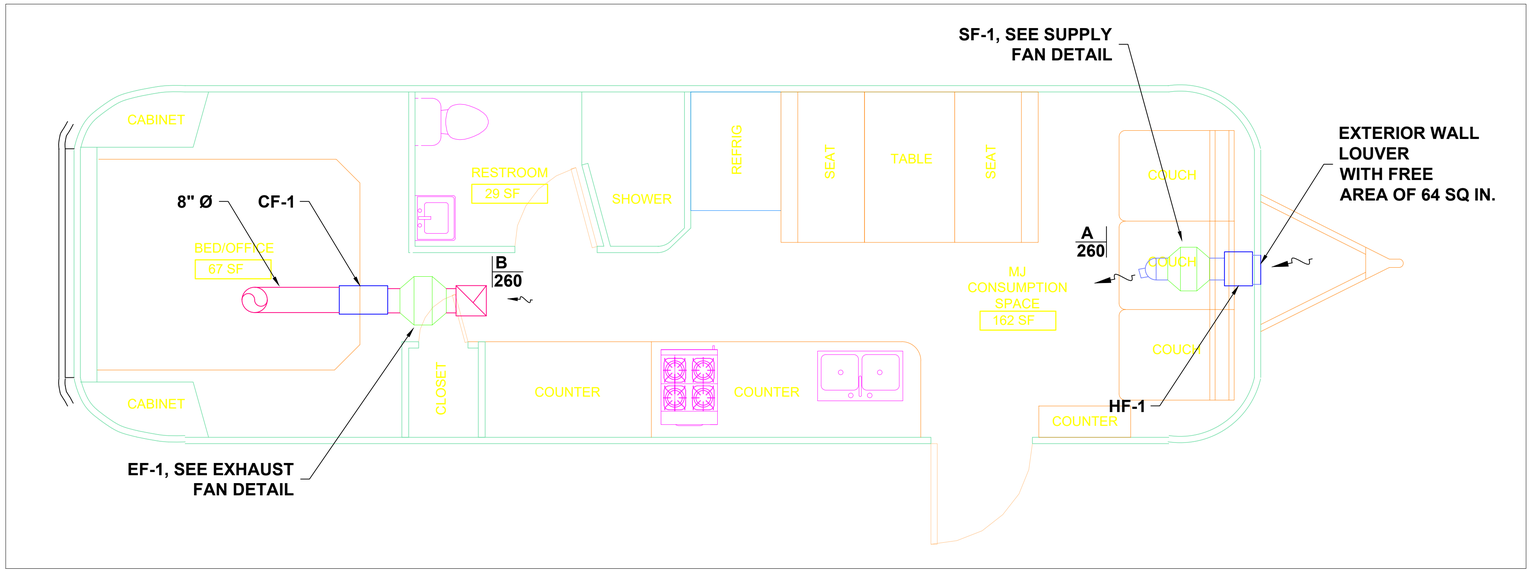
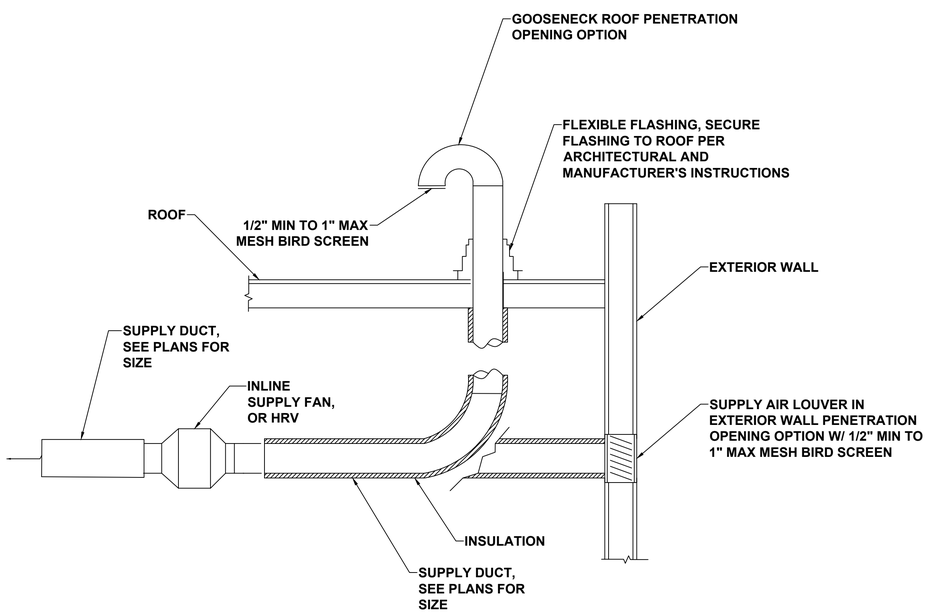
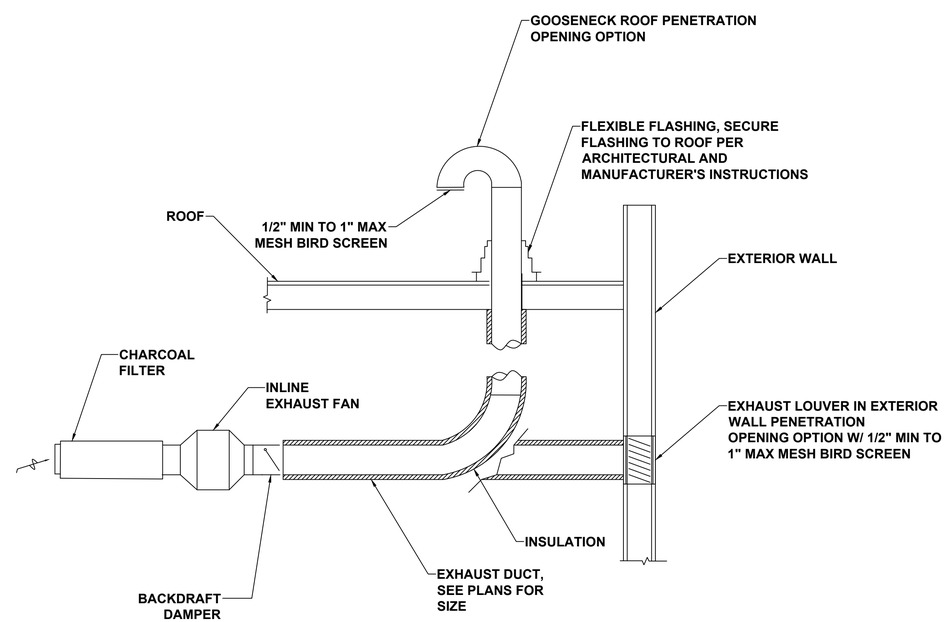
SHEET NUMBER:	M-2



1 VENTILATION PLAN
1/2" = 1' - 0"



2 SUPPLY FAN DETAIL
NTS



3 EXHAUST FAN DETAIL
NTS

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