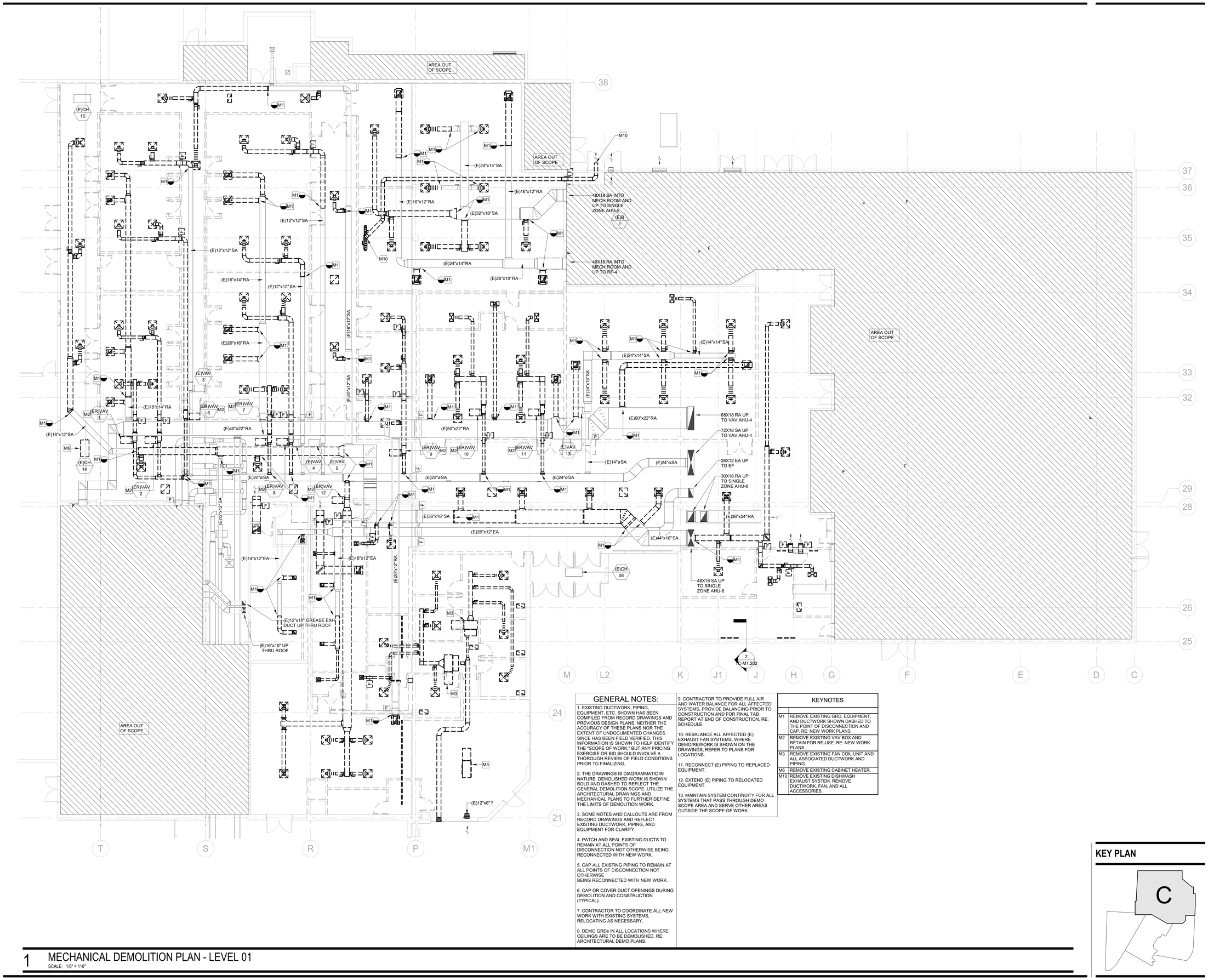

GENERAL NOTES:

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2. THE DRAWINGS IS DIAGRAMMATIC IN NATURE. DEMOLISHED WORK IS SHOWN BOLD AND DASHED TO REFLECT THE GENERAL DEMOLITION SCOPE. UTILIZE THE ARCHITECTURAL DRAWINGS AND MECHANICAL PLANS TO FURTHER DEFINE THE LIMITS OF DEMOLITION WORK.

3. SOME NOTES AND CALLOUTS ARE FROM RECORD DRAWINGS AND REFLECT EXISTING DUCTWORK, PIPING, AND EQUIPMENT FOR CLARITY.

4. PATCH AND SEAL EXISTING DUCTS TO REMAIN AT ALL POINTS OF DISCONNECTION NOT OTHERWISE BEING RECONNECTED WITH NEW WORK.

5. CAP ALL EXISTING PIPING TO REMAIN AT ALL POINTS OF DISCONNECTION NOT OTHERWISE
BEING RECONNECTED WITH NEW WORK.

6. CAP OR COVER DUCT OPENINGS DURING DEMOLITION AND CONSTRUCTION (TYPICAL).

7. CONTRACTOR TO COORDINATE ALL NEW WORK WITH EXISTING SYSTEMS, RELOCATING AS NECESSARY.

8. DEMO GRDs IN ALL LOCATIONS WHERE CEILINGS ARE TO BE DEMOLISHED, RE: ARCHITECTURAL DEMO PLANS.

9. CONTRACTOR TO PROVIDE FULL AIR AND WATER BALANCE FOR ALL AFFECTED SYSTEMS, PROVIDE BALANCING PRIOR TO CONSTRUCTION AND FOR FINAL TAB REPORT AT END OF CONSTRUCTION, RE: SCHEDULE.

10. REBALANCE ALL AFFECTED (E) EXHAUST FAN SYSTEMS, WHERE DEMO/REWORK IS SHOWN ON THE DRAWINGS, REFER TO PLANS FOR LOCATIONS.

11. RECONNECT (E) PIPING TO REPLACED EQUIPMENT.

12. EXTEND (E) PIPING TO RELOCATED EQUIPMENT.

13. MAINTAIN SYSTEM CONTINUITY FOR ALL SYSTEMS THAT PASS THROUGH DEMO SCOPE AREA AND SERVE OTHER AREAS OUTSIDE THE SCOPE OF WORK.

KEYNOTES

M1	REMOVE EXISTING GRD, EQUIPMENT, AND DUCTWORK SHOWN DASHED TO THE POINT OF DISCONNECTION AND CAP. RE: NEW WORK PLANS.
M2	REMOVE EXISTING VAV BOX AND RETAIN FOR RE-USE. RE: NEW WORK PLANS.
M3	REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED DUCTWORK AND PIPING.
M6	REMOVE EXISTING CABINET HEATER.
M10	REMOVE EXISTING DISHWASH EXHAUST SYSTEM. REMOVE DUCTWORK, FAN, AND ALL ACCESSORIES.

KEY PLAN

1 MECHANICAL DEMOLITION PLAN - LEVEL 01
SCALE: 1/8" = 1'-0"

Steamboat
ALTERRA MOUNTAIN COMPANY east west partners

[SET PROJECT ADDRESS PARAMETER & ENERGY SETTINGS IF APPLICABLE]

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△	Date	Description
-	2021.06.04	BP4C - KVC INTERIORS - ISSUE FOR PERMIT AND CONSTRUCTION

Seal / Signature

COLORADO LICENSED
MARSHEN E. EDWARDS
56806
PROFESSIONAL ENGINEER
06/04/2021

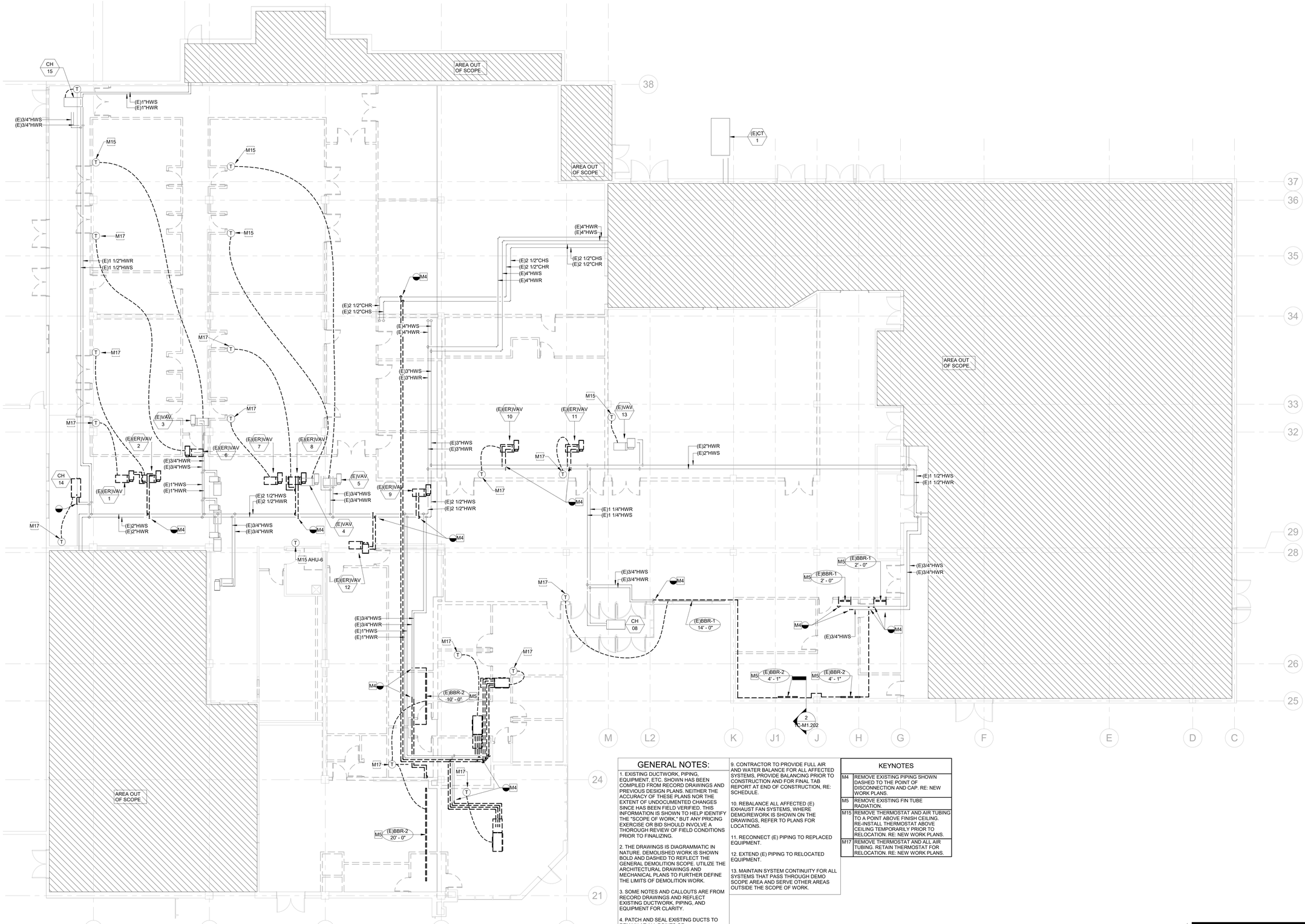
Project Name
Steamboat Base Village Redevelopment

Project Number
003.7835.000

Description
MECHANICAL DEMOLITION PLAN - LEVEL 01

Scale
1/8" = 1'-0"

1C-DM1.101



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KEYNOTES

M4	REMOVE EXISTING PIPING SHOWN DASHED TO THE POINT OF DISCONNECTION AND CAP. RE: NEW WORK PLANS.
M5	REMOVE EXISTING FIN TUBE RADIATION.
M15	REMOVE THERMOSTAT AND AIR TUBING TO A POINT ABOVE FINISH CEILING. RE-INSTALL THERMOSTAT ABOVE CEILING TEMPORARILY PRIOR TO RELOCATION. RE: NEW WORK PLANS.
M17	REMOVE THERMOSTAT AND ALL AIR TUBING. RETAIN THERMOSTAT FOR RELOCATION. RE: NEW WORK PLANS.

1 MECHANICAL PIPING DEMOLITION PLAN - LEVEL 01

SCALE: 1/8" = 1'-0"

Steamboat
ALTERRA MOUNTAIN COMPANY east west partners

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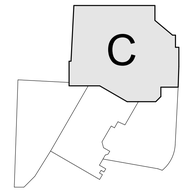
KEY PLAN



Seal / Signature

COLORADO LICENSED
MARSHA E. EDWARDS
56806
PROFESSIONAL ENGINEER
06/04/2021

Project Name
Steamboat Base Village Redevelopment

Project Number
003.7835.000

Description
MECHANICAL PIPING DEMOLITION PLAN - LEVEL 01

Scale
1/8" = 1'-0"

1C-DM1.102

MISCELLANEOUS

SYMBOL	DESCRIPTION
1 / A101 SIM	SECTION NO. / SECTION VIEW SHEET NO.
A / M1-01	DETAIL DESIGNATION
AHU 1.01	POWERED EQUIPMENT DESIGNATION
VAV 1.01	NON POWERED EQUIPMENT DESIGNATION
TYPE / LENGTH	BASEBOARD EQUIPMENT DESIGNATION
2" 1	SHEET KEY NOTES
	POINT OF DISCONNECTION
	ARROW INDICATES DIRECTION OF FLOW
	EXTERIOR WALL LOUVER (UNDER ARCH. SECTION)
UC	UNDERCUT DOOR (UNDER ARCH. SECTION)
DL	DOOR LOUVER (UNDER ARCH. SECTION)
LVR	LOUVER DOOR FULL HEIGHT. (UNDER ARCH. SECTION)

SYMBOL	DESCRIPTION
	SUPPLY DIFFUSER-4-WAY THROW
	SUPPLY DIFFUSER-3-WAY THROW
	SUPPLY DIFFUSER-2-WAY THROW
	SUPPLY DIFFUSER-1-WAY THROW
	CEILING ACCESS PANEL
	RETURN DIFFUSER
	EXHAUST DIFFUSER
H	HUMIDIFIER
	FLEXIBLE DUCT CONNECTION
	SUPPLY AIR FLOW SYMBOL
	RETURN/EXHAUST AIR FLOW SYMBOL
	HEAT TRACE

EQUIPMENT DESIGNATION

LEVEL

01 - LEVEL 01
02 - LEVEL 02
03 - LEVEL 03
04 - LEVEL 04
05 - LEVEL 05
06 - LEVEL 06

FCU 1A-01

- INDICATES TYPE OF EQUIPMENT
- INDICATES UNIT NUMBER WITHIN AREA
- INDICATES AREA (A,B,C,D,E,F,G) ETC.

DUCTWORK

PIPING TYPES

DOUBLE LINE PIPING (2" AND ABOVE)	SINGLE LINE PIPING (UP TO 2")	PIPE TYPE
CHS	CHS	CHILLED WATER SUPPLY
CHR	CHR	CHILLED WATER RETURN
HWS	HWS	HEATING WATER SUPPLY
HWR	HWR	HEATING WATER RETURN
CWS	CWS	CONDENSER WATER SUPPLY
CWR	CWR	CONDENSER WATER RETURN
D	D	CONDENSATE DRAIN
HPS	HPS	HIGH PRESSURE STEAM SUPPLY
MPS	MPS	MEDIUM PRESSURE STEAM SUPPLY
LPS	LPS	LOW PRESSURE STEAM SUPPLY
HPR	HPR	HIGH PRESSURE CONDENSATE RETURN
MPR	MPR	MEDIUM PRESSURE CONDENSATE RETURN
LPR	LPR	LOW PRESSURE CONDENSATE RETURN
RS	RS	REFRIGERANT SUCTION
RL	RL	REFRIGERANT LIQUID
RHG	RHG	REFRIGERANT HOT GAS
A	A	CONTROL AIR (PNEUMATIC)
BD	BD	BOILER BLOW DOWN
BF	BF	BOILER FEED
BO	BO	BLOW OFF
CF	CF	CHEMICAL FEEDER
PCS/R	PCS/R	PROCESS COOLING WATER SUPPLY/RETURN
HTWS/R	HTWS/R	HIGH TEMP. HOT WATER SUPPLY/RETURN
PHWS/R	PHWS/R	PRIMARY OR DISTRICT HEATING WATER SUPPLY/RETURN
PCHS/R	PCHS/R	PRIMARY OR DISTRICT CHILLED WATER SUPPLY/RETURN
PR	PR	PUMPED CONDENSATE RETURN
(E)	(E)	EXISTING PIPING
(E)	(E)	EXISTING PIPING TO BE REMOVED

PIPING SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
FITTINGS:		
	P&T	PRESSURE/TEMPERATURE PORT TAPS
	CR	CONCENTRIC REDUCER
	ER	ECCENTRIC REDUCER
EJ	EJ	EXPANSION JOINT
	U	UNION
	T	THERMOMETER W/ THERMOWELL
	AV	AIR VENT
	FC	FLEXIBLE PIPE CONNECTOR
FS	FS	FLOW SWITCH
PS	PS	PRESSURE SWITCH
	PG	PRESSURE GAUGE W/ GAUGE COCK
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		PIPE CAP OR PLUG
	IV	ISOLATION VALVE, RE: SPECS
	OS&Y	OUTSIDE STEM AND YOKE
	DV	DRAIN VALVE W/ HOSE END CONNECTION
C		BALL VALVE W/ HOSE CONNECTION
F C	FCV	CHECK VALVE WITH INDICATION OF FLOW DIRECTION
	PRV	PRESSURE REDUCING VALVE
S	SV	SOLENOID VALVE
F C	FCV	AUTO FLOW CONTROL VALVE W/ TEST PORTS
CS	CS,BV	CIRCUIT SETTER OR BALANCING VALVE
	GLV	GLOBE VALVE (STRAIGHT PATTERN)
	GLV	GLOBE VALVE (ANGLE PATTERN)
	BFV	BUTTERFLY VALVE
	BV	BALL VALVE
	TCV	AUTOMATIC TEMPERATURE CONTROL VALVE, 2-WAY
	TCV	AUTOMATIC TEMPERATURE CONTROL VALVE, 3-WAY
	BV	BALANCING VALVE
	TMP	TEMPERATURE/PRESSURE RELIEF VALVE
		VALVE IN RISER
STR	STR	STRAINER W/ BLOW-OFF & CAPPED HOSE END CONNECTION
	ST	STEAM TRAP

ABBREVIATIONS:

ABBREVIATION	DESCRIPTION
A	
A	AIR (COMPRESSED)
ABV	ABOVE
A/C	AIR CONDITIONING
AC	ALTERNATING CURRENT
	AIR COMPRESSOR
ACCH	AIR COOLED CHILLER
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
	AREA DRAIN
ADJ	ADJUSTABLE
AF	AIR FILTER
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AL	ALUMINUM
AMB	AMBIENT
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
ARI	AMERICAN REFRIGERANT INSTITUTE
ARCH	ARCHITECT
AS	AIR SEPARATOR
ASHRAE	AMERICAN SOCIETY OF HEATING AND REFRIGERATION ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
AV	ACID VENT
	AIR VENT
AVG	AVERAGE
AW	ACID WASTE
AWS	AMERICAN WELDING SOCIETY
AUX	AUXILIARY
B	
B	BOILER
BC	BELOW COUNTER
BC	BACK OF CURB
BFV	BUTTERFLY VALVE
BH	BOX HYDRANT
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BM	BENCHMARK
BOD	BOTTOM OF DUCT (AFF)
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STRUCTURE
BT	BATH TUB
	BREAK TANK
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BWV	BACK WATER VALVE
C	
C	CELSIUS
CAB	CABINET
CAV	CONSTANT AIR VOLUME
CB	CATCH BASIN
CC	COOLING COIL
CD	CONDENSATE DRAIN LINE
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CIRC	CIRCULATING
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR
CMP	CORRIGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CPI	CAST IRON PIPE INSTITUTE
CPVC	CHLORINATED POLYVINYL CHLORIDE
CO	CLEANOUT
COL	COLUMN
COMB	COMBINATION
COMP	COMPRESSOR
CON	CONVERTER
CONC	CONCRETE
	CONCENTRIC
COND	CONDENSER
	CONDENSATE
CONN	CONNECTION
CONT	CONTINUOUS
	CONTINUATION
CONTR	CONTROLLER
	CONTRACTOR
COP	COEFFICIENT OF PERFORMANCE
CRAC	COMPUTER ROOM A/C UNIT
CRT	CATHODE RAY TUBE
CRU	CONDENSATE RETURN UNIT
CT	COOLING TOWER
CTR	CENTER
CU	COPPER
CW	COLD WATER
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
CV	CONSTANT VOLUME
D	
dB	DECIBEL
DB	DRY-BULB
DC	DOUBLE DUCT CONSTANT VOLUME
	DIRECT CURRENT
DDC	DIRECT DIGITAL CONTROL
DESIG	DESIGNATION
DEFL	DEFLECTION
DTL	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIFF	DIFFUSER
DIM	DIMENSION
DISC	DISCONNECT
DN	DOWN
DP	DISCHARGE PLENUM
DPR	DAMPER
DS	DOUNSPOUT
	DOUBLE SUCTION
DV	DOUBLE DUCT VAV
DW	DISHWASHER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DWP	DOMESTIC WATER PUMP
DX	DIRECT EXPANSION
E	
(E)	EXISTING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ECC	ECCENTRIC
EDB	ENTERING DRY BULB
EDF	ELECTRIC DRINKING FOUNTAIN
EDH	ELECTRIC DUCT HEATER
EDR	EFFECTIVE DIRECT RADIATION
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFF	EFFICIENCY
EJ	EXPANSION JOINT
EL	ELEVATION
EMRG	EMERGENCY
ENCL	ENCLOSURE
ENGR	ENGINEER
ENT	ENTERING
ES	END SUCTION
	EMERGENCY SHOWER
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETR	EXISTING TO REMAIN
EVAP	EVAPORATOR
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EX	EXPLOSION PROOF
EXT	EXTERNAL
EXTG	EXISTING
F	
F	DEGREE FAHRENHEIT
FBO	FURNISHED BY OTHERS
FCO	FLOOR CLEAN OUT
FCS	FLOOR CONTROL SWITCH
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
	FIRE DAMPER
FDS	FIRE DEPARTMENT SIAMESE
FDV	FIRE DEPARTMENT VALVE
FG	FIBERGLASS
FF	FINAL FILTER
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FL	FLOW LINES
FLR	FLOOR
FP	FAN POWERED MIXING BOX
	FIRE PUMP
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FRIC	FRICTION
FRZR	FREEZER
FS	FLOW SWITCH
	FIRE SPRINKLER
FSK	FLOOR SINK
FT	FOOT
	FEET
FT WC	FEET, WATER COLUMN
FUT	FUTURE
G	
G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLV	GLOBE VALVE
GND	GROUND
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GSH	GRAND SENSIBLE HEAT
GV	GATE VALVE
H	
HB	HOSE BIBB
HC	HEATING COIL
HD	HEAD
	HUB DRAIN
HF	HUMIDIFIER
HORIZ	HORIZONTAL
HP	HORSEPOWER
	HALON PANEL
HPU	HEAT PUMP UNIT
HKP	HOUSEKEEPING PAD
HSC	HORIZONTAL SPLIT CASE
HSTAT	HUMIDISTAT
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HU	HUMIDIFIER SECTION
HW	HOT WATER
HWC	HOT WATER CIRCULATOR
HWP	HOT WATER PUMP
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HX	HEAT EXCHANGER
HZ	HERTZ
I	
ID	INSIDE DIAMTER
IE	INVERT ELEVATION
IH	INFRARED HEATER
IN	INCH
IN WC	INCH, WATER COLUMN
INSUL	INSULATION
INT	INTERNAL
	INTERIOR
IW	INDIRECT WASTE
J	
JB	JUNCTION BOX
JP	JOCKEY PUMP
K	
KEC	KITCHEN EQUIPMENT CONTRACTOR
KO	KNOCKOUT
KVA	KILOVOLT AMPS
KW	KILOWATT
L	
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LBS	POUNDS
LBS/HR	POUNDS PER HOUR
LF	LINEAR FEET
LP	LOW PRESSURE
LRA	LOCKED ROTOR AMPS
LVG	LEAVING
LVL	LEVEL
LWB	LEAVING WET BULB
LWCO	LOW WATER CUT OFF
LWT	LEAVING WATER TEMPERATURE
M	
MA	MAKE-UP AIR
MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTUH
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MI	MALLEABLE IRON
MIN	MINIMUM
MOCP	MAXIMUM OVER CURRENT PROTECTION
MP	MEDIUM PRESSURE
MS	MOP SINK
MTD	MOUNTED
MTL	METAL
MU	MAKE-UP
MUA	MAKE-UP AIR UNIT
MVD	MANUAL VOLUME DAMPER
N	
(N)	NEW
NC	NORMALLY CLOSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO	NUMBER
NTS	NOT TO SCALE
O	
OA	OUTSIDE AIR
OAF	OUTSIDE AIR FAN
OAHU	OUTSIDE AIR HANDLING UNIT
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER
	OVERFLOW DRAIN
OFCU	OUTSIDE AIR FAN COIL UNIT
OPG	OPENING
OS&Y	OPEN STEM AND YOLK
P	
P	PUMP
	PLUMBING EQUIPMENT
PC	PLUMBING CONTRACTOR
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP
	PLANTER DRAIN
PF	PRE-FILTER
PH	PHASE
	POST HYDRANT
PIV	POST INDICATOR VALVE
PLBG	PLUMBING
PNEU	PNEUMATIC
PNL	PANEL
PNTH	PENTHOUSE
PP	POLYPROPYLENE
PPM	PARTS PER MILLION
PRESS	PRESSURE
PRI	PRIMARY
PRS	PRIMARY REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PT	PLUMBING TRIM
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PWL	SOUND POWER LEVEL
Q	
QTY	QUANTITY
R	
(R)	REMOVE
	RELOCATE
RA	RETURN AIR
RAD	REFRIGERATED AIR DRYER
RAF	RETURN AIR FAN
RAG	RETURN AIR GRILLE
RAT	RETURN AIR TEMPERATURE
RCP	REFLECTED CEILING PLAN
	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
RE	REFERENCE
	REFER
RECIRC	RECIRCULATE
RED	REDUCER
REFR	REFRIGERATOR
REG	REGISTER
REINF	REINFORCING
REQD	REQUIRED
REV	REVISION
	REVISE
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHG	REFRIGERANT HOT GAS
RKVA	RUNNING KILOVOLT AMPS
RKW	RUNNING KILOWATTS
RL	REFRIGERANT LIQUID
RLA	RUNNING LOAD AMPS
RM	ROOM
	REFRIGERANT MACHINE
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RTU	ROOFTOP UNIT
RV	RELIEF VALVE
S	
SA	SUPPLY AIR
SAF	SUPPLY AIR FAN
SAG	SUPPLY AIR GRILLE
SAN	SANITARY SEWER
SAR	SUPPLY AIR REGISTER
SCHED	SCHEDULE
SCFM	STANDARD AIR CUBIC FEET PER MINUTE
SCR	SILICON CONTROLLED RECTIFIER
SD	STORM DRAIN
SE	SEWAGE EJECTOR
SEC	SECONDARY
SECT	SECTION
SENS	SENSIBLE
SF	SQUARE FEET
SFCS	SPRINKLER FLOOR CONTROL STATION
SH	SHOWER
SHT	SHEET
SIM	SIMILAR
SK	SINK
SKVA	STARTING KILOVOLT AMPS
SKW	STARTING KILOWATTS
SM	SHEET METAL
SP	STATIC PRESSURE
	SUMP PUMP
SPEC	SPECIFICATION
SPR	SPRINKLER
SQ	SQUARE
SS	STAINLESS STEEL
	SERVICE SINK
SSD	SUBSURFACE DRAIN
SSFU	SANITARY SEWER FIXTURE UNITS
SSSC	SOLID STATE SPEED CONTROL
STD	STANDARD
STL	STEEL
STR	STRAINER
SURF	SURFACE
SUSP	SUSPEND
SV	SANITARY VENT
ST	SOUND TRAP
T	
TC	TEMPERATURE CONTROL
TD	TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
TF	TRANSFER FAN
TG	TRANSFER GRILLE
TH BLK	THRUST BLOCK
TOD	TOP OF DUCT (AFF)
TOP	TOP OF PIPE (AFF)
TP	TRAP PRIMER
TPD	TRAP PRIMER DEVICE
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TYP	TYPICAL
U	
U	URINAL
U/F	UNDERFLOOR
U/S	UNDERSLAB
UCD	UNDERCUT DOOR
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UTR	UP THROUGH ROOF
V	
V	VOLT, VENT
VA	VOLT-AMPERE
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VALVE BOX
	VACUUM BREAKER
VCP	VITRIFIED CLAY PIPE
VD	VOLUME DAMPER
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREUENCY DRIVE
VIB	VALVE IN BOX
VOV	VALVE ON VERTICAL
VP	VACUUM PUMP
VR	VARIABLE AIR VOLUME REHEAT
VSD	VARIABLE SPEED DRIVE
VTR	VENT THROUGH ROOF
W	
W	WATT, WASTE, WIDTH
W/	WITH
W/O	WITHOUT
WB	WETBULB
WC	WATER CLOSET
WCO	WALL CLEANOUT
WF	WATER FILTER
WH	WALL HYDRANT
WM	WATER METER
WP	WEATHERPROOF
WPD	WATER PRESSURE DROP
WWF	WELDED WIRE FABRIC
WT	WATER TIGHT
	WEIGHT
Y	
Y	YARD HYDRANT
Z	
Z	ZONE

Steamboat
ALTERRA MOUNTAIN COMPANY east west partners

[SET PROJECT ADDRESS PARAMETER & ENERGY SETTINGS IF APPLICABLE]

Gensler
1225 17th Street
Suite 150
Denver, CO 80202
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Lakewood, CO 80215
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Date	Description
- 2021.06.04	BP4C - KVC INTERIORS - ISSUE FOR PERMIT AND CONSTRUCTION

Seal / Signature

COLORADO LICENSED MARREN E. EDWARDS 56806 PROFESSIONAL ENGINEER

06/04/2021

Project Name

Steamboat Base Village Redevelopment

Project Number

003.7835.000

Description

MECHANICAL LEGEND

Scale

1/8" = 1'-0"

1C-M0.000

GENERAL MECHANICAL CONTRACT REQUIREMENTS:

GENERAL:

1. UNLESS OTHERWISE NOTED, THE WORK DESCRIBED ON THE PLANS AND SPECIFICATIONS SHALL INCLUDE THE FURNISHING AND INSTALLATION OF ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE AND OPERATIONAL HVAC, FIRE PROTECTION AND PLUMBING SYSTEMS. CONTRACTOR SHALL FURNISH THESE EVEN IF ITEMS REQUIRED TO ACHIEVE THIS (I.E. OFFSETS, ISOLATION AND BALANCING DEVICES, MAINTENANCE CLEARANCES, ETC.) ARE NOT SPECIFICALLY SHOWN.

2. DATA GIVEN ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED. ABSOLUTE ACCURACY IS NOT GUARANTEED AND THE CONTRACTOR SHALL OBTAIN AND VERIFY EXACT LOCATIONS, MEASUREMENTS, LEVELS, SPACE REQUIREMENTS, POTENTIAL CONFLICTS WITH OTHER TRADES, ETC. AT THE SITE AND SHALL SATISFACTORILY ADAPT HIS WORK TO THE ACTUAL CONDITIONS OF THE JOB.

3. THE DRAWINGS ARE DIAGRAMMATICAL IN NATURE AND SHALL NOT BE SCALED. THEY SHOW CERTAIN PHYSICAL RELATIONSHIPS WHICH MUST BE ESTABLISHED WITHIN THE DIVISION 21,22 AND 23 WORK AND ITS INTERFACE WITH OTHER WORK. ESTABLISHING THIS RELATIONSHIP IN THE FIELD IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR. THIS DIVISION SHALL COORDINATE ITS WORK WITH ALL DIVISIONS OF THE WORK AND ADJUST ITS WORK AS REQUIRED BY THE ACTUAL CONDITIONS OF THE PROJECT.

   A. THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID TO BECOME THOROUGHLY FAMILIAR WITH THE ACTUAL CONDITIONS OF THE PROJECT. NO EXTRAS WILL BE ALLOWED DUE TO LACK OF KNOWLEDGE OF EXISTING CONDITIONS.

   B. CERTAIN SYSTEMS REQUIRE ENGINEERING OF INSTALLATION DETAILS BY CONTRACTOR. UNLESS FULLY DETAILED IN THE CONTRACT DOCUMENTS, SUCH ENGINEERING IS THE EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR.

   C. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHERE CLEARANCES ARE LIMITED, AND WHERE INSTALLATION DRAWINGS OR SCHEMATICS, "CONSTRUCTION DRAWINGS", OR COORDINATION DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH, OR IN EXCESS OF, THOSE REQUIRED BY THE SPECIFICATIONS. THE CONTRACTOR SHALL PREPARE ALL SUCH COORDINATION DRAWINGS AS PART OF THE BASE CONTRACT. SUCH DRAWINGS MAY BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR RECORD AND COMMENT. ANY WORK INSTALLED WITHOUT APPROVED COORDINATION DRAWINGS IS DONE AT THE CONTRACTOR'S RISK.

4. THESE NOTES ONLY SUPPLEMENT, AND DO NOT REPLACE, THE SPECIFICATIONS.

5. DEFINITIONS AND TERMINOLOGY

   A. THE DEFINITIONS OF DIVISION 1 AND THE GENERAL CONDITIONS OF THIS SPECIFICATION ALSO APPLY TO THE DIVISION 21,22 AND 23 CONTRACT DOCUMENTS.

   B. "CONTRACT DOCUMENTS" CONSTITUTE THE DRAWINGS, SPECIFICATIONS, GENERAL CONDITIONS, PROJECT MANUALS, ETC., PREPARED BY ENGINEER (OR OTHER DESIGN PROFESSIONAL IN ASSOCIATION WITH ENGINEER) FOR CONTRACTOR'S BID OR CONTRACTOR'S NEGOTIATIONS WITH THE OWNER. THE DIVISION 21,22 AND 23 DRAWINGS AND SPECIFICATIONS PREPARED BY THE ENGINEER ARE NOT CONSTRUCTION DOCUMENTS.

   C. "CONSTRUCTION DOCUMENTS", "CONSTRUCTION DRAWINGS", AND SIMILAR TERMS FOR DIVISION 21,22 AND 23 WORK REFER TO INSTALLATION DIAGRAMS, SHOP DRAWINGS AND COORDINATION DRAWINGS PREPARED BY THE CONTRACTOR USING THE DESIGN INTENT INDICATED ON THE ENGINEER'S CONTRACT DOCUMENTS. THESE SPECIFICATIONS DETAIL THE CONTRACTOR'S RESPONSIBILITY FOR "ENGINEERING BY CONTRACTOR" AND FOR PREPARATION OF CONSTRUCTION DOCUMENTS.

   D. "(N)" INDICATES "NEW" EQUIPMENT TO BE PROVIDED UNDER THIS CONTRACT.

   E. "(E)" INDICATES "EXISTING" EQUIPMENT ON SITE WHICH MAY OR MAY NOT NEED TO BE RELOCATED AS A PART OF THIS WORK.

   F. "(R)" INDICATES EXISTING EQUIPMENT TO BE RELOCATED AS PART OF THIS WORK.

   G. "FURNISH" MEANS TO "SUPPLY" AND USUALLY REFERS TO AN ITEM OF EQUIPMENT.

   H. "INSTALL" MEANS TO "SET IN PLACE, CONNECT AND PLACE IN FULL OPERATIONAL ORDER".

   I. "PROVIDE" MEANS TO "FURNISH AND INSTALL".

   J. "EQUIVALENT" MEANS "MEETS THE SPECIFICATIONS OF THE REFERENCE PRODUCT OR ITEM IN ALL SIGNIFICANT ASPECTS." SIGNIFICANT ASPECTS SHALL BE AS DETERMINED BY THE ARCHITECT/ENGINEER.

   K. "WORK BY OTHER(S) DIVISIONS"; "RE: XX DIVISION", AND SIMILAR EXPRESSIONS MEANS WORK TO BE PERFORMED UNDER THE CONTRACT DOCUMENTS, BUT NOT NECESSARILY UNDER THE DIVISION OR SECTION OF THE WORK ON WHICH THE NOTE APPEARS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE THE WORK OF THE CONTRACT BETWEEN HIS/HER SUPPLIERS, SUBCONTRACTORS AND EMPLOYEES. IF CLARIFICATION IS REQUIRED, CONSULT ARCHITECT/ENGINEER BEFORE SUBMITTING BID.

   L. BY INFERENCE, ANY REFERENCE TO A "CONTRACTOR" OR "SUB-CONTRACTOR" MEANS THE ENTITY WHICH HAS CONTRACTED WITH THE OWNER FOR THE WORK OF THE CONTRACT DOCUMENTS.

   M. "ENGINEER" MEANS THE DESIGN PROFESSIONAL FIRM WHICH HAS PREPARED THESE CONTRACT DOCUMENTS. ALL QUESTIONS, SUBMITTALS, ETC. OF THIS DIVISION SHALL BE ROUTED THROUGH THE ARCHITECT TO THE ENGINEER (THROUGH PROPER CONTRACTUAL CHANNELS).

EXISTING BUILDING:

1. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE EXISTING BUILDING WILL BE OCCUPIED BY THE OWNER DURING CONSTRUCTION. CONTINUED OPERATION OF THE FACILITY SHALL NOT BE HINDERED BY THIS WORK. THE CONTRACTOR SHALL ACCOUNT FOR ALL ADDITIONAL COSTS WHICH MAY BE INCURRED BY HIM DUE TO THE DIFFICULTY OF WORKING OVER AND AROUND EMPLOYEES, DESKS, EQUIPMENT, ETC.; AND DUE TO THE HOURS OF THE DAY IN WHICH AN AREA MAY BE AVAILABLE WHEN SUBMITTING HIS BID.

2. MAINTAIN A MARK-UP SET OF DRAWINGS WHICH INDICATE VARIATIONS IN THE ACTUAL INSTALLATION FROM THE ORIGINAL DESIGN. SURRENDER DRAWINGS TO OWNER UPON COMPLETION.

3. ALL CAPACITIES ARE SCHEDULED AT JOBSITE ALTITUDE OF 5300 FT. ABOVE SEA LEVEL.

4. COORDINATE ALL PENETRATIONS OF THE FLOOR SLAB PRIOR TO COMMENCING WORK UTILIZE X-RAY AND VISUAL INVESTIGATION OF EXISTING CONDITIONS AS REQUIRED PRIOR TO DRILLING OR CUTTING. COORDINATE ALL NEW PENETRATIONS WITH OTHER DIVISIONS OF THE WORK. ALL CONTRACTORS ARE INDIVIDUALLY RESPONSIBLE FOR ALL PENETRATIONS REQUIRED BY THEIR DIVISIONS.

ELECTRICAL COORDINATION:

1. VERIFY THE ELECTRICAL SERVICE PROVIDED BY THE ELECTRICAL CONTRACTOR BEFORE ORDERING ANY MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS.

2. PROVIDE PREMIUM EFFICIENCY MOTORS WITH 1.15 SERVICE FACTOR ON ALL EQUIPMENT, MOTORS SHALL BE CAPABLE OF OPERATING CONTINUOUSLY AT 105°F UNDER JOBSITE CONDITIONS AND ALTITUDE.

3. UNLESS NOTED OTHERWISE, ALL MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH HOA SWITCH AND STARTER COMPATIBLE WITH EQUIPMENT AND BMS SYSTEM. STARTERS SHALL BE PROVIDED BY DIVISION 21,22 AND 23 UNLESS IN A MOTOR CONTROL CENTER. ALL DISCONNECTS SHALL BE FURNISHED BY DIVISION 26.

4. THE ELECTRICAL POWER FOR CERTAIN EQUIPMENT PROVIDED UNDER DIVISION 21,22 AND 23 HAS NOT BEEN SPECIFICALLY INDICATED ON THE ELECTRICAL DRAWINGS AND MUST BE PROVIDED BY AND FIELD COORDINATED BY THE DIVISION 21,22 AND 23 TRADE REQUIRING SUCH POWER.

   SUFFICIENT POWER FOR THIS PURPOSE SHALL BE FURNISHED AS "SPARE", DEDICATED CIRCUIT CAPACITY IN DIVISION 26'S PANELBOARDS. ALL WIRING, CONDUIT AND ELECTRICAL DEVICES DOWNSTREAM OF THE PANELBOARDS IS THE RESPONSIBILITY OF THE DIVISION 21,22 AND 23 TRADE REQUIRING THE POWER UNLESS OTHERWISE SHOWN ON THE ELECTRICAL DRAWINGS.

   SUCH EQUIPMENT IS HEREBY DEFINED AS:

   A. ELECTRICAL HEAT TRACE. REQUIRED HEAT TRACE LOCATIONS, CAPACITIES AND SPECIFICATION ARE SHOWN OR INDICATED ON THE DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

   B. FIRE PROTECTION AIR COMPRESSORS, DRY-PIPE CONTROL PANELS AND VALVES. REQUIRED CONNECTIONS ARE INCLUDED IN THE DIVISION 21 WORK, AND WILL BE SHOWN BY THAT CONTRACTOR'S ENGINEERED SYSTEM DESIGN DRAWINGS.

      (1) PRE-ACTION SYSTEM INITIATION SIGNALS (SUCH AS SMOKE DETECTORS, OR GENERAL ALARM CONDITIONS IN A PRE-ACTION ZONE) SHALL BE PROVIDED UNDER DIVISION 28 FIRE-ALARM WORK.

      (2) DIVISION 21 SHALL PROVIDE PRE-ACTION CONTROL PANEL AND INTERCONNECTION BETWEEN NEAREST SUITABLE FIRE ALARM PANEL AND LOCATION OF PRE-ACTION VALVE(S).

      (3) DIVISION 28 SHALL PROVIDE INTERCONNECTION BETWEEN FIRE COMMAND CENTER ALARM PANEL (PROVIDED UNDER DIVISION 28) AND REMOTE COMMUNICATION FIRE ALARM PANEL (PROVIDED UNDER DIVISION 28).

   C. TEMPERATURE CONTROL PANELS, CONTROL AIR COMPRESSORS AND LINE VOLTAGE POWER FOR 24V CONTROL TRANSFORMERS. REQUIRED CONNECTION ARE INCLUDED IN DIVISION 230900 AND WILL BE SHOWN BY THAT CONTRACTOR'S CONTROL SUBMITTAL DRAWINGS.

   D. IT IS NOT PERMISSIBLE TO UTILIZE "SPARE" POWER FROM ADJACENT POWER CIRCUITS TO SERVE ANY OF THE ABOVE LOADS. ALL POWER MUST COME FROM DEDICATED CIRCUITS.

5. SMOKE DETECTORS:

   FOR AIR HANDLING UNITS AND AIR SYSTEMS WITH A CAPACITY EXCEEDING 2000 CFM, PROVIDE UL LISTED SMOKE DETECTORS IN RETURN AIR SYSTEMS IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE AND ELSEWHERE AS SHOWN ON THE DRAWINGS.

   SMOKE DETECTORS WILL BE FURNISHED AND SET IN PLACE UNDER THIS DIVISION. DETECTORS WILL BE WIRED UNDER DIVISION 28. SMOKE DETECTORS MUST BE OF THE SAME MANUFACTURER, AND COMPATIBLE WITH THE FIRE FLARM SYSTEM PROVIDED UNDER DIVISION 28 (IF APPLICABLE).

   CONNECT RELAY(S) TO FAN CONTROL CIRCUIT TO STOP FAN WHEN SMOKE IS DETECTED.

INSTALLATION:

1. SUSPEND EACH TRADE'S WORK SEPARATELY FROM THE STRUCTURE. DUCTWORK SHALL BE HELD TIGHT TO STRUCTURE EXCEPT WHERE OTHERWISE SHOWN.

2. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

3. PROVIDE MANUFACTURER'S RECOMMENDED SERVICE CLEARANCE AROUND ALL EQUIPMENT REQUIRING SAME.

4. PROVIDE FOR SAFE CONDUCT OF THE WORK, CAREFUL REMOVAL AND DISPOSITION OF MATERIALS AND PROTECTION OF PROPERTY WHICH IS TO REMAIN UNDISTURBED.

5. PROVIDE ACCESS DOORS FOR ALL EQUIPMENT, VALVES, CLEANOUTS, ACTUATORS AND CONTROLS WHICH REQUIRE ACCESS FOR ADJUSTMENT OR SERVICING AND WHICH ARE LOCATED IN OTHERWISE INACCESSIBLE LOCATIONS.

   A. FOR EQUIPMENT LOCATED IN "ACCESSIBLE LOCATIONS" SUCH AS LAY-IN CEILINGS: LOCATE EQUIPMENT TO PROVIDE ADEQUATE SERVICE CLEARANCE FOR NORMAL MAINTENANCE WITHOUT REMOVING ARCHITECTURAL, ELECTRICAL OR STRUCTURAL ELEMENTS SUCH AS THE CEILING SUPPORT SYSTEM, ELECTRICAL FIXTURES, ETC. "NORMAL MAINTENANCE" INCLUDES, BUT IS NOT LIMITED TO:FILTER CHANGING; GREASING OF BEARINGS; USING P/T PORTS FOR PRESSURE OR TEMPERATURE MEASUREMENTS; SERVICING CONTROL VALVES AND SERVICING CONTROL PANELS.

6. ISOLATE ALL PRESSURIZED PIPE (WATER, ETC.) AT EACH RISER, BRANCH, PIECE OF EQUIPMENT, AND AREA SERVED.

7. PROVIDE TRAP GAURDS OR PRIMERS FOR ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON DRAWINGS. PRIMERS MAY BE CONNECTED TO FLUSH FIXTURES OR BE STAND ALONE. SEE SPECIFICATIONS.

8. NO DOMESTIC WATER, CHILLED WATER, OR HEATING WATER LINES SHALL BE LOCATED EXPOSED IN FINISHED SPACES OR BELOW THE BUILDING SLAB UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

9. NO GAS LINES SHALL BE LOCATED BELOW BUILDING SLAB.

10. ALL CURBS, ROOF JACKS, ROOF THIMBLES, SANITARY VENTS, ROOF DRAINS, ETC. SHALL BE COMPATIBLE WITH ROOFING SYSTEM TO BE PROVIDED. REFERENCE ARCHITECTURAL DIVISION FOR REQUIRED FLASHING DETAILS.

11. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL CONCRETE EQUIPMENT PAD DIMENSIONS, BASED ON THE FINAL EQUIPMENT SELECTION, TO THE STRUCTURAL AND GENERAL CONTRACTOR FOR INCLUSION IN THOSE CONTRACTOR'S WORK AS DESCRIBED BY THE GENERAL CONTRACTOR.

12. WARRANTY: AT A MINIMUM, THE ENTIRE MECHANICAL SYSTEM SHALL BE WARRANTED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER ACCEPTANCE OF THE SYSTEM BY THE OWNER. REFER TO INDIVIDUAL SPECIFICATION SECTIONS FOR SPECIFIC WARRANTY REQUIREMENTS.

DUCTWORK INSTALLATION:

1. SEAL ALL SEAMS (LONGITUDINAL AND TRANSVERSE) AIR TIGHT WITH SEALANT PER SPECIFICATIONS.

2. DUCT DIMENSIONS ARE INSIDE CLEAR.

3. DIFFUSER NECK SIZE IS SAME AS FLEXIBLE DUCT SIZE.

4. UNLESS OTHERWISE NOTED, ALL CHANGES IN DIRECTION SHALL BE MADE WITH RADIUS ELBOWS WITH RADIUS TO CENTERLINE EQUAL TO 1.5 DUCT WIDTH.

5. WHERE REQUIRED FOR SPACE CONSTRAINTS, PROVIDE MITERED ELBOWS WITH TURNING VANES AS FOLLOWS:

   A. FOR DUCT WIDTHS OF 36" OR LESS, PROVIDE MANUFACTURED SINGLE WIDTH TURNING VANES, WITH NO TRAILING EDGES AND SPACING IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS FOR "STANDARD SPACING".

   B. USE DOUBLE THICKNESS (AIRFOIL) BLADES WITHOUT TRAILING EDGES FOR DUCT WIDTHS GREATER THAN 36".

6. ALL FLEXIBLE DUCTS SHALL NOT BE LESS THAN 4', OR MORE THAN 10' IN LENGTH. INSTALL FLEXIBLE DUCTWORK SUCH THAT:

   A. MINIMUM OVERALL LENGTH OF 3D, STRAIGHT INTO NECK OF DIFFUSER.

   B. MAXIMUM OF 135° OF TOTAL TURNING IN ENTIRE LENGTH OF FLEXIBLE DUCT.

   C. MINIMUM TURNING RADIUM OF R = 1.5D.

   D. WHERE:
      * D = FLEXIBLE DUCT DIAMETER
      * R = RADIUS OF TURN AS MEASURED TO CENTERLINE OF DUCT.

7. RETURN AIR PLENUM: THE HVAC SYSTEM WILL USE THE SPACE ABOVE THE CEILING AS A RETURN AIR PLENUM. CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF NFPA AND LOCAL CODE REQUIREMENTS FOR ALL MATERIAL INSTALLED IN THE RETURN AIR PLENUM.

   A. IN ADDITION, THE CONTRACTOR SHALL PROVIDE A COMPLETE RETURN AIR PATH BETWEEN ALL RETURN AIR DEVICES (GRILLES ETC.) AND THEIR RESPECTIVE HVAC UNIT. MAXIMUM VELOCITY OF RETURN AIR IN PLENUM SHALL GENERALLY NOT EXCEED 250 FEET PER MINUTE, NOR EXCEED 750 FEET PER MINUTE AT ANY CROSS-SECTION OF THE RETURN AIR PATH.

8. BRANCH LINES:

   A. MAKE ALL TAPS TO ROUND DUCTWORK WITH CONICAL TEES.

   B. MAKE ALL TAPS TO RECTANGLE DUCTWORK WITH 45° ENTRY OR CONICAL SPIN IN TO ROUND.

   C. INCLUDE DAMPERS AT ALL BRANCH LINES.

9. GREASE DUCTS:

   A. INSTALL AND SLOPE PER BUILDING CODE REQUIREMENTS. IF PERMITTED BY CODE, PROVIDE COLLECTION RESERVOIRS AS REQUIRED FOR LONG HORIZONTAL RUNS.

   B. WRAP IN TWO HOUR RATED FIRE WRAP. COORDINATE WITH ARCHITECTURAL PLANS.

   C. WRAP MUST BE RATED FOR 1,900° F AND HAVE A MINIMUM R VALUE OF 10.

   D. WRAP MUST BE LISTED FOR ZERO CLEARANCE TO COMBUSTIBLES.

10. DUCT SIZES NOT CALLED OUT SHALL BE DETERMINED BASED ON 0.08" S.P. LOSS OR LESS PER 100 FT. OF LENGTH.

11. ASSUME ROUND OR OVAL DUCTS IN EXPOSED AREAS.

12. INCLUDE DAMPERS AT ALL BRANCH LINES, WHERE SHOWN ON THE DRAWINGS, AND WHERE OTHERWISE REQUIRED FOR BALANCING.

PIPE INSTALLATION:

1. ALL PIPING SHALL BE ADEQUATELY SUPPORTED FROM THE BUILDING STRUCTURE TO PREVENT SAGGING, POCKETING, SWAYING OR DISPLACEMENT BY MEANS OF HANGERS AND SUPPORTS. PIPING IS NOT TO BE SUPPORTED BY EQUIPMENT.

2. PROVIDE DIELECTRIC UNIONS BETWEEN DISSIMILAR MATERIALS.

3. PROVIDE MANUAL AIR VENTS AND CAPPED HOSE-END DRAINS WITH ISOLATION VALVES AT PIPING HIGH AND LOW POINTS.

4. WELD PIPE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS. WELDERS SHALL BE CERTIFIED FOR TYPE OF WORK BEING PERFORMED.

5. FLUSH OUT PIPING AND REMOVE CONTROL DEVICES BEFORE PERFORMING PRESSURE TEST. DO NOT USE PIPING SYSTEM VALVES TO ISOLATE SECTIONS WHERE TEST PRESSURE EXCEEDS VALVE PRESSURE RATING. PRESSURIZE PIPING AT 100 PSIG. IF LEAKAGE IS OBSERVED OR IF TEMPERATURE COMPENSATED PRESSURE DROP EXCEEDS 1% OF TEST PRESSURE, REPAIR LEAKS AND RETEST. DO NOT USE AIR PRESSURE TO TEST PLASTIC PIPE.

6. PROVIDE SUPPORT UNDER ELBOWS ON PUMP SUCTION AND DISCHARGE LINES.

7. ALL STRAINERS SHALL BE FURNISHED WITH A "ROUGHING" SCREEN AND TWO (2) SCREENS FOR NORMAL OPERATION. INSTALL STRAINER WITH ROUGHING SCREEN AND OPERATE SYSTEM FOR 24 HOURS MINIMUM (RUN DOMESTIC WATER SYSTEMS AT MAX FLOW FOR A MINIMUM OF ONE HALF (1/2) HOUR. REMOVE ROUGHING SCREEN AND INSTALL NORMAL SCREEN, AFTER TWO WEEKS OF NORMAL OPERATION INSTALL NEW NORMAL SCREEN.

8. PIPING SIZES SHALL BE BASED ON 2' OR LESS HEAD LOSS PER 100 FEET OF LENGTH. VELOCITIES SHALL NOT EXCEED 10 FEET PER SECOND.

9. INSTALL ALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHIN THE PIPING SYSTEM. ENSURE ALL REQUIRED PIPE EXPANSION WILL OCCUR IN THE PROPER DIRECTION AND SEGMENT OF PIPE. PROPERLY ANCHOR (RE: SPECIFICATIONS) ALL PIPING REQUIRING EXPANSION/CONTRACTION ISOLATION. COORDINATE PIPE EXPANSION/CONTRACTION TO PREVENT DAMAGE TO ANY AND ALL BUILDING COMPONENTS.

10. PROVIDE ISOLATION VALVES AT EVERY HYDRONIC BRANCH LINE.

CONDENSATE DRAINAGE:

1. PROVIDE CONDENSATE DRAINAGE FOR ALL COOLING COILS AND OVERFLOW PANS.

2. ROUTE CONDENSATE PIPING, FULL SIZE OF DRIP PAN CONNECTION, TO NEAREST CODE APPROVED RECEPTACLE. INSULATE WHERE LOCATED ABOVE FINISHED CEILINGS.

3. HEAT TRACE CONDENSATE LINES FROM FOOD SERVICE EQUIPMENT.

LOUVERS:

1. ALL LOUVERS LOCATED ON EXTERIOR WALLS SHALL BE PROVIDED BY ARCHITECTURAL DIVISION. ALL OTHER LOUVERS SHALL BE PROVIDED BY DIVISION 23. REQUIRED LOUVER FREE AREAS ARE INDICATED ON DIVISION 23 AND 23 DRAWINGS. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO CONFIRM THAT THE REQUIRED FREE AREA HAS BEEN PROVIDED, PRIOR TO CONNECTION TO THAT LOUVER. DIVISION 23 SHALL PROVIDE ALL LOUVER PLENUMS.

CUTTING, PATCHING AND DEMOLITION:

1. KEEP DEMOLITION & CUTTING TO MINIMUM REQUIRED FOR PROPER EXECUTION OF WORK.

2. BE RESPONSIBLE FOR ALL CUTTING AND PATCHING NECESSARY FOR THE COMPLETION OF THE WORK.

3. NO CUTTING (NOT SHOWN ON THE CONTRACT DOCUMENTS) SHALL BE DONE WITHOUT THE APPROVAL OF THE ARCHITECT AS TO LOCATIONS, METHOD AND EXTENT OF THE CUTTING.

4. REPAIR ALL ACCIDENTAL OR INTENTIONAL DAMAGE TO MATCH EXISTING CONSTRUCTION WITH NO NOTICEABLE DIFFERENCE IN CONTINUITY, APPEARANCE OR FUNCTION.

5. ALL "CAPPED" SANITARY AND VENT LINES SHALL BE RECONNECTED OR RE-ROUTED AS NECESSARY TO PREVENT "DEAD-ENDS" IN THE PIPING. ALL PIPING SHALL DRAIN TO ACTIVE SANITARY WASTE LINES AND ALL BRANCHES WITH TRAPS SHALL BE ADEQUATELY VENTED.

GENERAL PLUMBING CONTRACT REQUIREMENTS:

1. THE GENERAL MECHANICAL REQUIREMENTS PERTAIN TO THE WORK OF THIS DIVISION.

2. PREPARE SHOP DRAWINGS OF ALL NEW WORK (INCLUDING SLEEVE LOCATIONS) TO VERIFY LOCATIONS AND COORDINATION OF WORK BETWEEN TRADES PRIOR TO INSTALLATION.

3. ALL DRAIN GRATES, CLEANOUT COVERS, AND OTHER FINISHED, EXPOSED COMPONENTS SHALL BE PROTECTED FROM DAMAGE. DAMAGED COMPONENTS SHALL BE REPLACED BY CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

4. COORDINATE ROUTING OF ALL PLUMBING PIPING BELOW SLAB WITH STRUCTURAL GRADE BEAMS, TIE BEAMS, ETC. ALLOW FOR REROUTING OF PIPING AS REQUIRED.

5. ALL REQUIRED OPENINGS IN CONCRETE BEAMS AND STRUCTURAL WALLS ARE TO BE ACCOMPLISHED USING SLEEVES PROPERLY SIZED FOR THE PIPE THEY SERVE. CORE DRILLING IN BEAMS IS NOT ALLOWED. CORE DRILLING IN PANS IS ALLOWED UPON PRIOR APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER.

6. HORIZONTAL STORM AND SANITARY PIPING SHALL RUN AT A SLOPE OF 1/4" PER FOOT MINIMUM FOR 3" AND SMALLER PIPING. 4" AND LARGER PIPING SHALL RUN AT 1/8" PER FOOT MINIMUM.

7. NO DOMESTIC WATER LINES SHALL BE LOCATED EXPOSED IN FINISHED SPACES OR BELOW THE BUILDING SLAB UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

8. WHERE SHOWN, MINIMIZE THE NUMBER OF JOINTS ON ANY PRESSURIZED PIPING BELOW CONCRETE SLABS. ALL BELOW GRADE PIPING TO BE PRESSURE TESTED AND WITNESSED BY ARCHITECT BEFORE BACKFILLING.

9. ALL CLEANOUTS FOR HORIZONTAL STORM DRAINAGE SYSTEM SHALL BE PIPE SIZE OR MAXIMUM 6" FOR LARGER PIPE.

10. IN ADDITION TO THE CLEANOUT LOCATIONS SHOWN ON DRAWINGS, PROVIDE ADDITIONAL CLEANOUTS AT:
   A. ALL UPPER TERMINALS.

   B. EACH RUN OF PIPING WHICH IS MORE THAN 100 FEET IN LENGTH OR FRACTION THEREOF.

   C. HORIZONTAL LINES 5 FEET OR MORE.

   D. HORIZONTAL LINES FOR EACH AGGREGATE CHANGE OF DIRECTION EXCEEDING 135 DEGREES.

   E. AT THE BASE OF ALL WASTE AND VENT RISERS. ALL VERTICAL CLEANOUTS SHALL BE SIZED TO ACCOMMODATE THE LARGEST PIPE ON THAT BRANCH LINE, BUT NEVER LARGER THAN 4".

11. NO GAS LINES SHALL BE LOCATED BELOW BUILDING SLAB. ALL GAS PIPING IN AIR PLENUMS TO BE WELDED.

12. PROVIDE ISOLATION VALVES ON ALL PIPING SERVING HOSE BIBBS.

13. ANY ELECTRICAL SPACE NOT CONSTRUCTED WITH A SUB-ROOF WHICH MAY HAVE PLUMBING PIPING AT THE CEILING OF THESE SPACES SHALL HAVE A DRIP PAN INSTALLED BELOW THE PIPING. DRIP PANS SHALL BE 1.5 TIMES THE WIDTH OF THE PIPING SERVED WITH A MINIMUM OF 2" HIGH SIDES. DRIP PANS SHALL BE SUSPENDED FROM THE PIPING SERVED AND SHALL SLOPE AT A MINIMUM 1/8"/FT. DRIP PANS SHALL DISCHARGE WITH MIN. 1-1/2" DR TO FLOOR DRAINS.

   A. DO NOT LOCATE PIPING DIRECTLY ABOVE ANY ELECTRICAL EQUIPMENT IN ELECTRICAL ROOMS.

14. MAINTAIN DESIGNATED PLUMBING FIXTURE HEADER SIZE FOR FULL BANK OF FIXTURES.

15. PROVIDE GAS VENTS EXTENDING CONTINUOUSLY FROM ALL INTERIOR GAS REGULATORS TO THE EXTERIOR OF THE BUILDING. TERMINATE AT AN APPROVED LOCATION. SIZE VENTS SUCH THAT MINIMUM VENT SIZE (FOR VENT WHICH IS 10 FEET OR LESS IN LENGTH) EQUALS RELIEF OUTLET PIPE SIZE. INCREASE VENT PIPE SIZE ONE PIPE SIZE FOR EVERY ADDITIONAL TEN FEET OF VENT PIPE LENGTH.

   A. PROVIDE AN ISOLATION VALVE DOWNSTREAM OF EVERY INTERIOR GAS REGULATOR.

STRUCTURE:

1. DO NOT PENETRATE STRUCTURAL MEMBERS. ALL EQUIPMENT SUPPORTS SHALL BE ATTACHED TO THE LOAD BEARING MEMBERS OF STRUCTURAL ELEMENTS. DO NOT OVER-STRESS ANY STRUCTURAL MEMBERS. CONTACT STRUCTURAL ENGINEER FOR ALLOWABLE LOADS FOR SPECIFIC MEMBERS.

2. DO NOT UTILIZE POWER DRIVEN ANCHORS FOR ANY LOCATIONS WHICH REQUIRE THE LOAD TO BE HELD IN TENSION. SEE STRUCTURAL DIVISION FOR ADDITIONAL RESTRICTIONS.

3. SEE ALSO STRUCTURAL DIVISION FOR ACCEPTABLE ANCHORING AND SUPPORT MEANS, METHODS, AND LOCATIONS.

4. PROVIDE FLEXIBLE CONNECTORS, EXPANSION LOOPS, EXPANSION JOINTS, ADDITIONAL FITTINGS OR EQUIVALENT TO ACCOMMODATE THE THERMAL EXPANSION OF THE BUILDING THROUGH STRUCTURAL EXPANSION JOINTS. PROVIDE SUCH FITTING AT EVERY PIPE, DUCT, CONDUIT, ETC. CROSSING OF A STRUCTURAL EXPANSION JOINT.

CONSTRUCTION VENTILATION:

1. WHERE EXISTING OR NEW MECHANICAL SYSTEMS ARE USED FOR TEMPORARY VENTILATION OR CLIMATE CONTROL, MECHANICAL EQUIPMENT INSTALLER SHALL PROVIDE CONSTRUCTION FILTERS, MAINTAIN EQUIPMENT, AND CLEAN, ADJUST AND PUT IN NEW CONDITION BEFORE BUILDING OCCUPANCY. PARTS AND LABOR WARRANTY SHALL NOT BE CONSIDERED TO START UNTIL ACCEPTANCE OF SYSTEM BY OWNER.

2. PROVIDE CONSTRUCTION FILTERS INSTALLED AT ALL AIR MOVING DEVICES THROUGHOUT THE CONSTRUCTION. REMOVE FILTERS ONLY FOR BALANCING AND FINAL TURNOVER. INSPECT ALL NON-CONSTRUCTION FILTERS AND REPLACE ALL THOSE DEEMED NECESSARY BY THE ENGINEER PRIOR TO ACCEPTANCE OF THE SYSTEM BY THE OWNER.

GAS FIRED VENTING REQUIREMENTS:

1. ALL FLUES SERVING GAS FIRED EQUIPMENT SHALL BE DOUBLE WALL TYPE "B" BY METALBESTOS CO. OR EQUAL. TERMINATE FLUES A MINIMUM HEIGHT ABOVE ROOF (AS DETERMINED BY CODE) WITH WEATHER CAP. SLOPE HORIZONTAL RUNS TOWARD POINT OF ORIGINATION AT MINIMUM 1/4" PER 1'.

ELECTRIC HEAT FREEZE PROTECTION:

1. PIPE HEAT TRACE CABLE:

   A. HEAT TRACE CABLE SHALL BE INSTALLED BY A LICENSED ELECTRICIAN.

   B. APPLY THE HEAT TRACE CABLE ON THE PIPE AFTER PRESSURE TESTING.

      (1) DO NOT SPIRAL WRAP ON PIPE.

      (2) MAKE ONE WRAP AT VALVES.

      (3) SECURE TO PIPE WITH METHODS APPROVED BY MANUFACTURER.

   C. APPLY "ELECTRICALLY TRACED" SIGNS ON OUTSIDE OF INSULATION.

   D. TEST PER MANUFACTURER'S RECOMMENDATIONS.

   E. APPLY HEAT TRACE TO THE FOLLOWING PIPING SYSTEMS.

      (1) DOMESTIC WATER (COLD, HOT, RECIRC.) EXPOSED TO FREEZING CONDITIONS.

      (2) SANITARY TRAPS AND THE DOWNSTREAM HORIZONTAL PIPE WHERE EXPOSED TO FREEZING CONDITIONS.

      (3) STORM PIPING SUBJECT TO FREEZING CONDITIONS.

   F. ALL HEAT TRACE PIPE SHALL BE INSULATED PER SPECIFICATIONS.

   G. COORDINATE ALL HEAT TRACING AND REQUIRED CIRCUITS WITH ELECTRICAL CONTRACTOR.

FIRE PROTECTION NOTES:

1. FIRE PROTECTION NOTES

   A. SUBMIT SHOP DRAWINGS SHOWING PROPOSED LAYOUT OF FIRE PROTECTION SYSTEM. DRAWINGS SHALL SHOW ACTUAL EQUIPMENT TO BE USED, DIMENSIONS AND HYDRAULIC CALCULATIONS. SHOP DRAWINGS SHALL BE APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION PRIOR TO SUBMITTAL TO ENGINEER OR ARCHITECT.

   B. SHOW THE CONNECTING MAIN AND BRANCH PIPE SIZES FOR ALL RELOCATED EXISTING SPRINKLER HEADS.

   C. CONFORM TO HAZARD OCCUPANCY REQUIREMENTS OF NFPA 13.

2. THE ENTIRE BUILDING SHALL BE SERVED BY A WET PIPE TYPE FIRE SPRINKLER SYSTEM. COORDINATE ELECTRICAL, FIRE PROTECTION AND MECHANICAL SPACE REQUIREMENTS CAREFULLY BEFORE PROCEEDING WITH INSTALLATION.

3. EXTEND THE EXISTING SPRINKLER SYSTEM, RELOCATE EXISTING AND ADD NEW SPRINKLER HEADS IN ACCORDANCE WITH NFPA 13, ALL APPLICABLE CODES AND ORDINANCES AND PROJECT REQUIREMENTS TO COMPLETELY PROTECT THE NEW WORK.

4. SYSTEM SHALL BE INSTALLED COMPLETE AND OPERATIONAL, INCLUDING WATER FLOW INDICATOR, CONNECTIONS TO EXISTING ALARM, DRAIN PIPING, IDENTIFICATION SIGNS, ETC.

5. WORK SHALL BE PERFORMED BY A QUALIFIED FIRE SPRINKLER INSTALLER WITH A MINIMUM OF (5) FIVE YEARS EXPERIENCE IN SIMILAR INSTALLATIONS.

6. COORDINATE ALL WORK WITH ALL OTHER TRADES.

7. SUPPLY OWNER AN EXTRA STOCK OF SIX SPRINKLER HEADS (6), THREE (3) OF EACH TYPE, AND A SPRINKLER WRENCH.

FIRE STOPPING:

1. FIRE STOPPING REQUIREMENT: PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASSES WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR FIRE STOPS ASTM-E-814. ACCEPTANCE MATERIALS NCLUDE: DOW CORNING RTV FIRE STOP FOAM FOR BARE PIPE, METAL CONDUIT, AND ELECTRICAL CABLE; 3M FIRE DAM 21,22 AND 230 CAULK FOR BARE PIPE, METAL CONDUIT, AND BUILDING CONSTRUCTION; GAPS 3M FS-195 INTUMESCENT STRIPS FOR INSULATED PIPES, PLASTIC PIPE OR CONDUIT, AND ELECTRICAL CABLE.

Steamboat

ALTERRA MOUNTAIN COMPANY   east west partners

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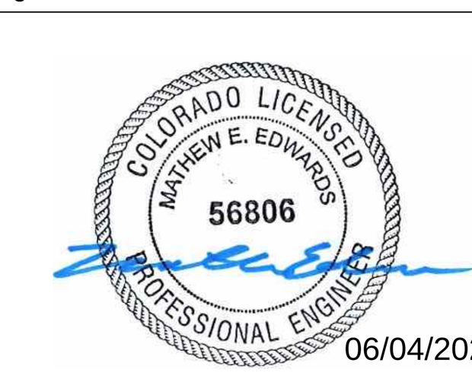
- 2021.06.04	BP4C - KVC INTERIORS - ISSUE FOR PERMIT AND CONSTRUCTION

Seal / Signature



Project Name

Steamboat Base Village Redevelopment

Project Number

003.7835.000

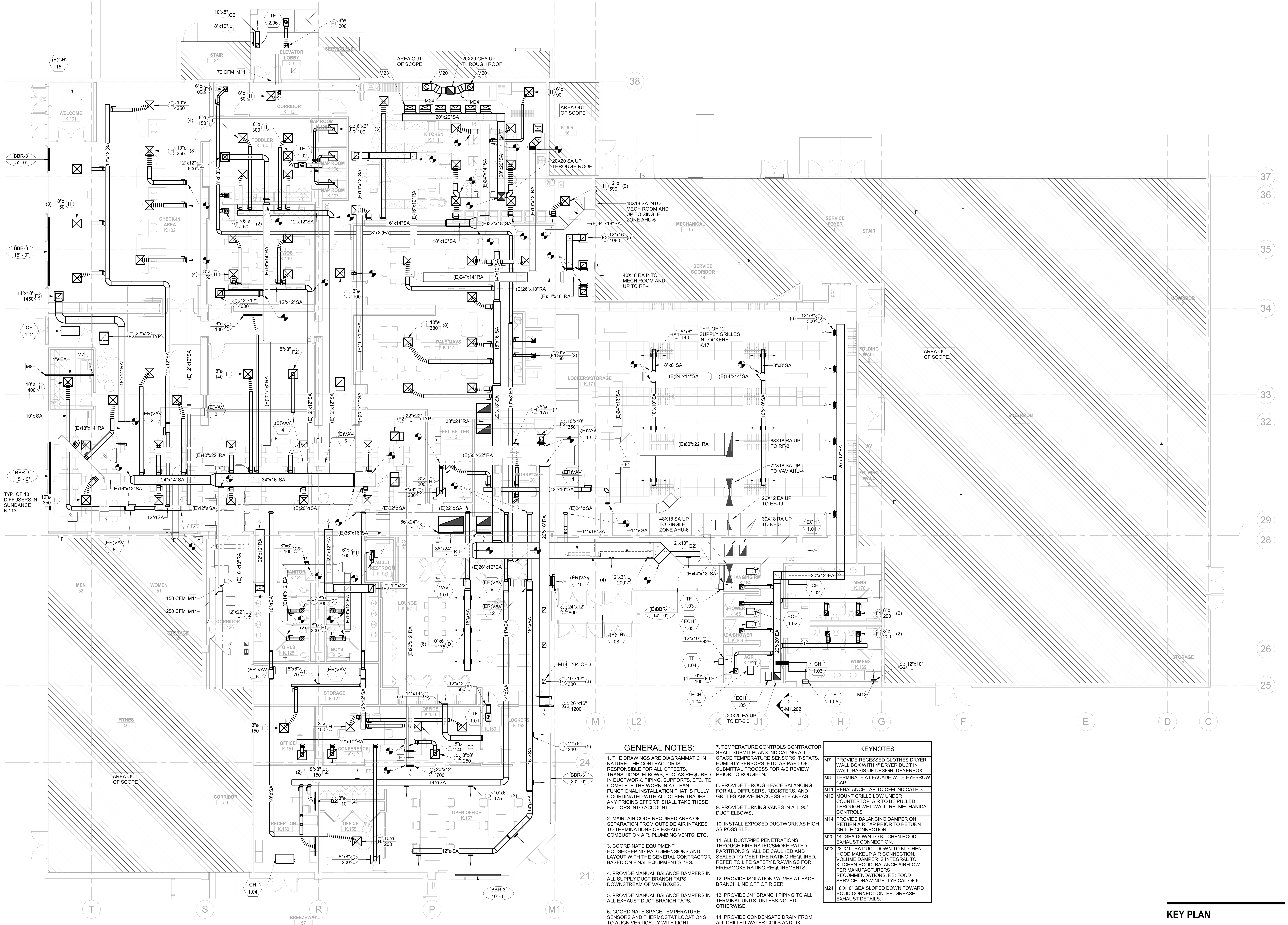
Description

MECHANICAL GENERAL NOTES

Scale

1/8" = 1'-0"

1C-M0.001



GENERAL NOTES:

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2. MAINTAIN CODE REQUIRED AREA OF SEPARATION FROM OUTSIDE AIR INTAKES TO TERMINATIONS OF EXHAUST, COMBUSTION AIR, PLUMBING VENTS, ETC.

3. COORDINATE EQUIPMENT HOUSEKEEPING PAD DIMENSIONS AND LAYOUT WITH THE GENERAL CONTRACTOR BASED ON FINAL EQUIPMENT SIZES.

4. PROVIDE MANUAL BALANCE DAMPERS IN ALL SUPPLY DUCT BRANCH TAPS DOWNSTREAM OF VAV BOXES.

5. PROVIDE MANUAL BALANCE DAMPERS IN ALL EXHAUST DUCT BRANCH TAPS.

6. COORDINATE SPACE TEMPERATURE SENSORS AND THERMOSTAT LOCATIONS TO ALIGN VERTICALLY WITH LIGHT SWITCHES.

7. TEMPERATURE CONTROLS CONTRACTOR SHALL SUBMIT PLANS INDICATING ALL SPACE TEMPERATURE SENSORS, T-STATS, HUMIDITY SENSORS, ETC. AS PART OF SUBMITTAL PROCESS FOR A/E REVIEW PRIOR TO ROUGH-IN.

8. PROVIDE THROUGH FACE BALANCING FOR ALL DIFFUSERS, REGISTERS, AND GRILLES ABOVE INACCESSIBLE AREAS.

9. PROVIDE TURNING VANES IN ALL 90° DUCT ELBOWS.

10. INSTALL EXPOSED DUCTWORK AS HIGH AS POSSIBLE.

11. ALL DUCT/PIPE PENETRATIONS THROUGH FIRE RATED/SMOKE RATED PARTITIONS SHALL BE CAULKED AND SEALED TO MEET THE RATING REQUIRED. REFER TO LIFE SAFETY DRAWINGS FOR FIRE/SMOKE RATING REQUIREMENTS.

12. PROVIDE ISOLATION VALVES AT EACH BRANCH LINE OFF OF RISER.

13. PROVIDE 3/4" BRANCH PIPING TO ALL TERMINAL UNITS, UNLESS NOTED OTHERWISE.

14. PROVIDE CONDENSATE DRAIN FROM ALL CHILLED WATER COILS AND DX EVAPORATOR COILS TO NEAREST MOP SINK OR MECHANICAL ROOM FLOOR DRAIN. PROVIDE CONDENSATE PUMP FOR WALL MOUNTED UNITS AND CONCEALED UNITS THAT CANNOT BE GRAVITY DRAINED TO TERMINATION LOCATION

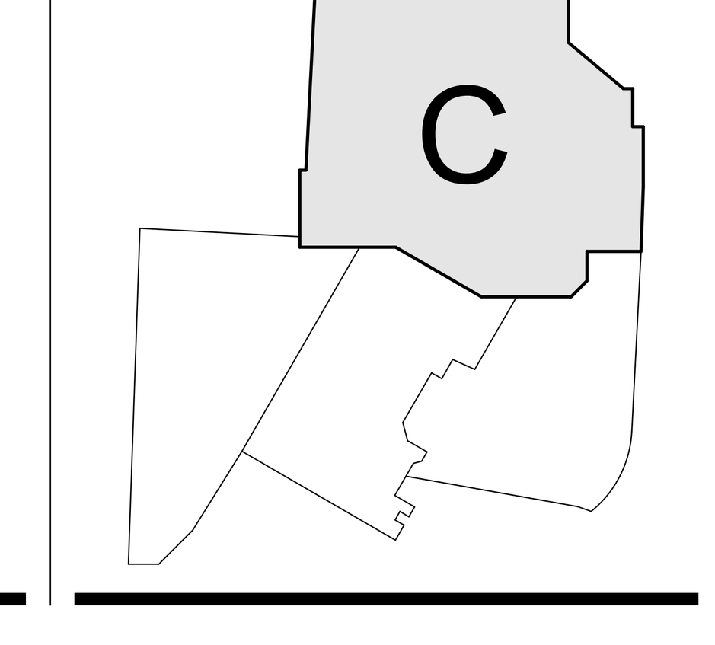
KEYNOTES

M7	PROVIDE RECESSED CLOTHES DRYER WALL BOX WITH 4" DRYER DUCT IN WALL. BASIS OF DESIGN: DRYERBOX.
M8	TERMINATE AT FACADE WITH EYEBROW CAP.
M11	REBALANCE TAP TO CFM INDICATED.
M12	MOUNT GRILLE LOW UNDER COUNTERTOP. AIR TO BE PULLED THROUGH WET WALL. RE: MECHANICAL CONTROLS
M14	PROVIDE BALANCING DAMPER ON RETURN AIR TAP PRIOR TO RETURN GRILLE CONNECTION.
M20	14" GEA DOWN TO KITCHEN HOOD EXHAUST CONNECTION.
M23	28"X10" SA DUCT DOWN TO KITCHEN HOOD MAKEUP AIR CONNECTION. VOLUME DAMPER IS INTEGRAL TO KITCHEN HOOD. BALANCE AIRFLOW PER MANUFACTURERS RECOMMENDATIONS. RE: FOOD SERVICE DRAWINGS. TYPICAL OF 6.
M24	18"X10" GEA SLOPED DOWN TOWARD HOOD CONNECTION. RE: GREASE EXHAUST DETAILS.

1 MECHANICAL PLAN - LEVEL 01

SCALE: 1/8" = 1'-0"

KEY PLAN



Steamboat

ALTERRA MOUNTAIN COMPANY east west partners

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△	Date	Description
-	2021.06.04	BP4C - KVC INTERIORS - ISSUE FOR PERMIT AND CONSTRUCTION

Seal / Signature

COLORADO LICENSED MATHEW E. EDWARDS 56806 PROFESSIONAL ENGINEER

06/04/2021

Project Name

Steamboat Base Village Redevelopment

Project Number

003.7835.000

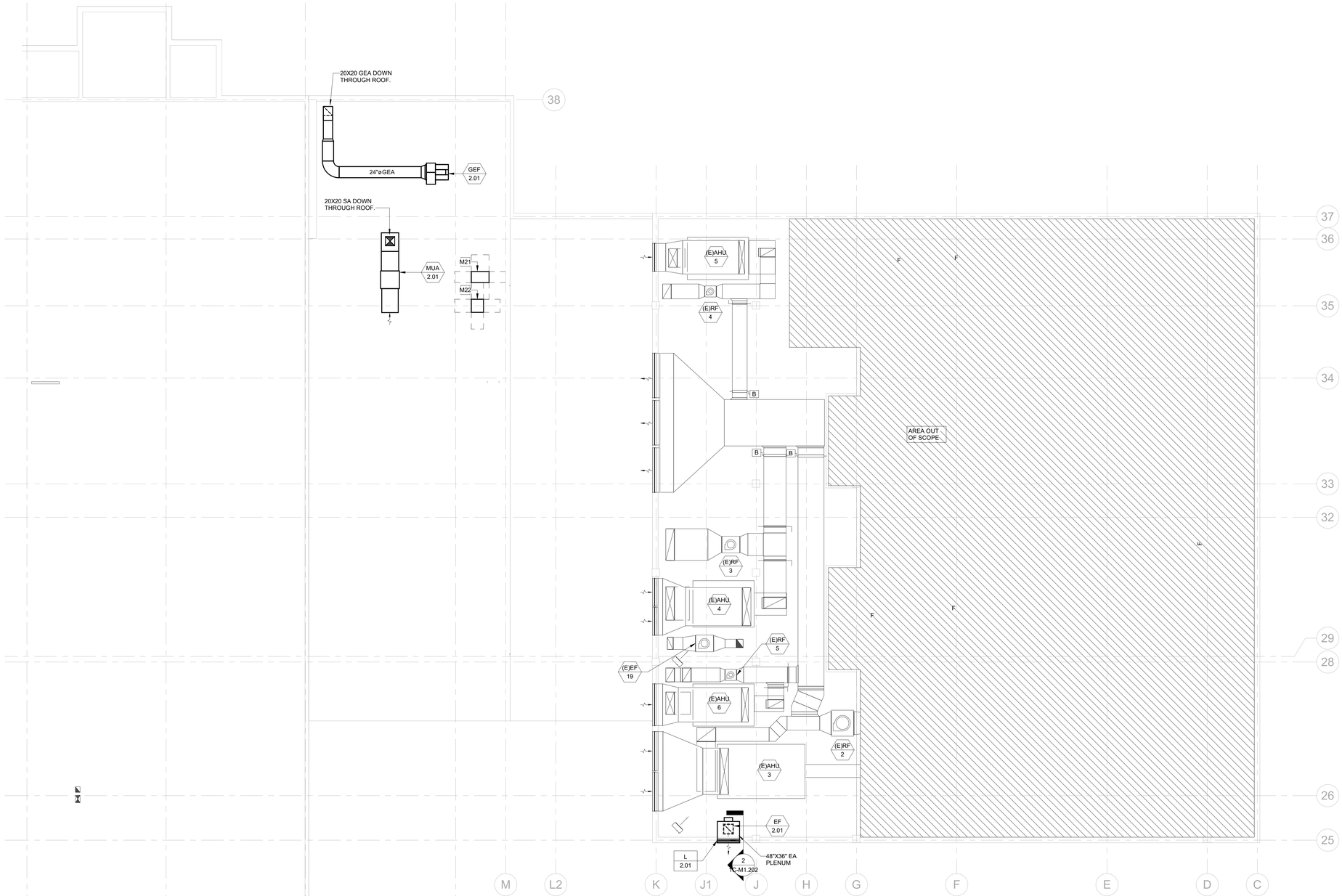
Description

MECHANICAL PLAN - LEVEL 01

Scale

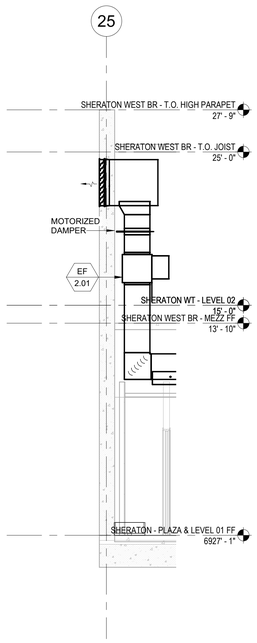
1/8" = 1'-0"

1C-M1.201



1 MECHANICAL PLAN - LEVEL 02

SCALE: 1/8" = 1'-0"



2 Section 15

SCALE: 1/4" = 1'-0"

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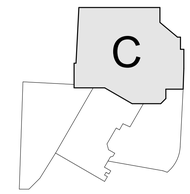
KEYNOTES

M21	WALK-IN FREEZER CONDENSING UNIT BY OTHERS.
M22	WALK-IN COOLER CONDENSING UNIT BY OTHERS.

KEY PLAN



Steamboat

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△	Date	Description
-	2021.06.04	BP4C - KVC INTERIORS - ISSUE FOR PERMIT AND CONSTRUCTION

Seal / Signature

COLORADO LICENSED MARSHA E. EDWARDS 56806 PROFESSIONAL ENGINEER

06/04/2021

Project Name

Steamboat Base Village Redevelopment

Project Number

003.7835.000

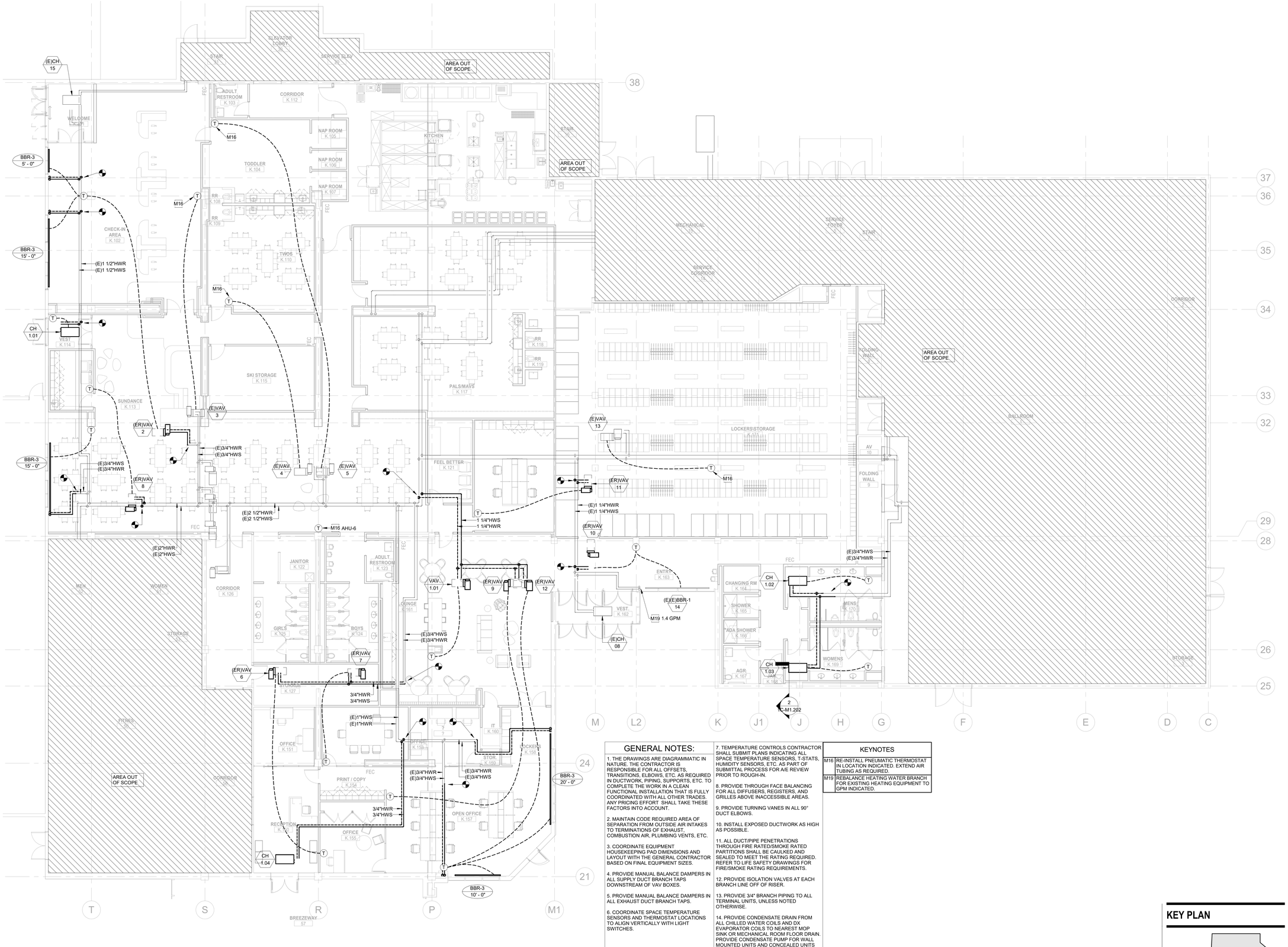
Description

MECHANICAL PLAN - LEVEL 02

Scale

As indicated

1C-M1.202



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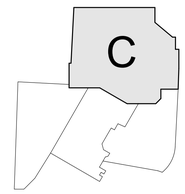
KEYNOTES

M16	RE-INSTALL PNEUMATIC THERMOSTAT IN LOCATION INDICATED. EXTEND AIR TUBING AS REQUIRED.
M19	REBALANCE HEATING WATER BRANCH FOR EXISTING HEATING EQUIPMENT TO GPM INDICATED.

KEY PLAN



1 MECHANICAL PIPING PLAN - LEVEL 01
SCALE: 1/8" = 1'-0"

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ALTERRA MOUNTAIN COMPANY east west partners

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COLORADO LICENSED MARWEN E. EDWARDS 56806 PROFESSIONAL ENGINEER
06/04/2021

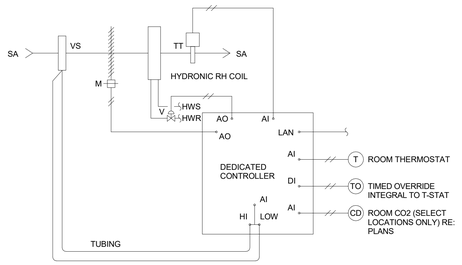
Project Name
Steamboat Base Village Redevelopment

Project Number
003.7835.000

Description
MECHANICAL PIPING PLAN - LEVEL 01

Scale
1/8" = 1'-0"

1C-M1.301



SUPPLY VARIABLE AIR VOLUME (VAV) BOX WITH HOT WATER REHEAT AND DDC CONTROLLER

A NONE

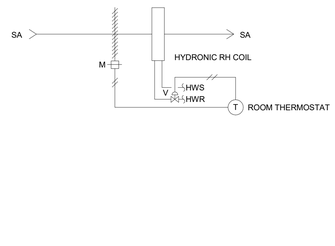
SEQUENCE OF OPERATION:

A. OCCUPIED MODE:
   1. ON A RISE IN SPACE TEMPERATURE ABOVE THE COOLING SETPOINT, THE UNIT SHALL MODULATE UP TO ITS MAXIMUM CFM TO MAINTAIN COOLING SETPOINT. AS SPACE TEMPERATURE DECREASES, THE UNIT SHALL MODULATE DOWN TO ITS MINIMUM COOLING CFM TO MAINTAIN COOLING SETPOINT. UPON A FURTHER DECREASE IN SPACE TEMPERATURE, THE HEATING WATER CONTROL VALVE SHALL MODULATE TO MAINTAIN HEATING SETPOINT.

B. UNOCCUPIED MODE:
   1. SPACE TEMPERATURE SHALL BE SETBACK AND MAINTAINED BELOW A 5F (ADJ.) OFFSET TO OCCUPIED MODE COOLING SETPOINT AND ABOVE A 10F (ADJ.) OFFSET TO OCCUPIED MODE HEATING SETPOINT.
   2. WHEN COOLING OR HEATING IS REQUIRED IN THE SPACE, THE AIR HANDLING SYSTEM SERVING THE UNIT SHALL CYCLE ON AND THE UNIT SHALL OPERATE PER OCCUPIED MODE SEQUENCE TO MAINTAIN SETBACK SPACE TEMPERATURE.
   3. IF THE AIR HANDLING SYSTEM SERVING THE UNIT CYCLES ON AT ANY TIME DURING UNOCCUPIED MODE, THE UNIT CONTROL DAMPER SHALL BE OPEN AND UNIT SHALL MODULATE PER THE SETBACK MODE ABOVE.

C. PRE-OCCUPANCY WARM-UP AND COOL-DOWN MODES:
   1. WHEN THE AIR HANDLING SYSTEM SERVING THE UNIT ENTERS PRE-OCCUPANCY WARM-UP OR PRE-OCCUPANCY COOL-DOWN MODE, UNIT SHALL OPERATE PER OCCUPIED MODE SEQUENCE. UNIT SHALL CONTINUE TO OPERATE IN OCCUPIED MODE AS THE AIR HANDLING SYSTEM TRANSITIONS TO OCCUPIED MODE.

D. FUTURE INTEGRATION:
   1. THE AREA SERVED IS NOT CURRENTLY PROVIDED WITH A BMS. VAV CONTROLLER SHALL BE PROVIDED READY TO BE INTEGRATED WITH FUTURE BUILDING BMS. COORDINATE CONTROLLER REQUIREMENTS WITH BUILDING OWNER (SHERATON).

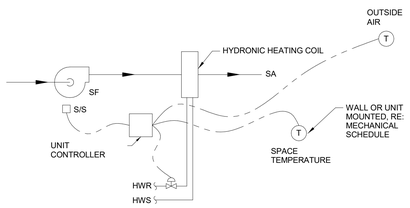


EXISTING/RELOCATED VARIABLE AIR VOLUME (VAV) BOX WITH HOT WATER REHEAT AND PNEUMATIC CONTROL

B NONE

SEQUENCE OF OPERATION:

A. ON A RISE IN SPACE TEMPERATURE ABOVE COOLING SETPOINT, THE UNIT SHALL MODULATE UP TO ITS MAXIMUM CFM TO MAINTAIN COOLING SETPOINT. AS SPACE TEMPERATURE DECRESASES, THE UNIT SHALL MODULATE DOWN TO ITS MINIMUM COOLING CFM TO MAINTAIN COOLING SETPOINT. UPON A FURTHER DECREASE IN SPACE TEMPERATURE, THE HEATING WATER CONTROL VALVE SHALL MODULATE TO MAINTAIN HEATING SETPOINT.



HYDRONIC CABINET UNIT HEATER/ HYDRONIC UNIT HEATER CONTROL

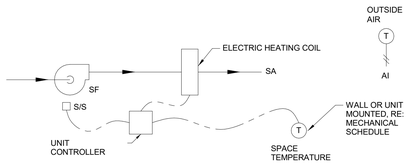
C NONE

A. THERMOSTAT SHALL CYCLE FAN & OPEN HEATING WATER VALVE TO MAINTAIN SPACE SETPOINT.
B. WHERE REMOTE MOUNTED THERMOSTAT IS INDICATED, PROVIDE CONTROL TRANSFORMER AND LOW VOLTAGE THERMOSTAT BY TEMPERATURE CONTROLS CONTRACTOR.
C. ALL HEATERS SERVING BUILDING ENTRY VESTIBULES SHALL BE PROVIDED WITH OUTSIDE AIR TEMPERATURE SENSOR AND RELAY TO INTERRUPT POWER AND PREVENT UNIT OPERATION WHEN OUTSIDE AIR IS ABOVE 45 DEGREES F. EACH VESTIBULE THERMOSTAT SHALL BE CONFIGURED TO HEAT THE VESTIBULE TO NO HIGHER THAN 60 DEGREES F.

HYDRONIC FIN TUBE CONTROL

D NONE

A. 2-WAY MODULATING CONTROL VALVE SHALL OPEN TO MAINTAIN SPACE TEMPERATURE HEATING SETPOINT. MULTIPLE SECTIONS MAY BE CONTROLLED VIA THE SAME VALVE WITHIN THE SAME TEMPERATURE ZONE (EXPOSURE). UP TO 50 LINEAL FEET OF FIN TUBE MAY BE CONNECTED TO A SINGLE HEATING WATER CONTROL VALVE. WHERE LOCATED IN SAME ZONE WITH A VAV BOX, HEATING WATER CONTROL VALVES SHALL OPERATE AS THE FIRST STAGE OF HEATING FOR ASSOCIATED ZONE.



ELECTRIC CABINET UNIT HEATER/ ELECTRIC UNIT HEATER CONTROL

E NONE

A. THERMOSTAT SHALL CYCLE FAN & ENERGIZE ELECTRIC HEAT TO MAINTAIN SPACE SETPOINT.
B. WHERE REMOTE MOUNTED THERMOSTAT IS INDICATED, PROVIDE CONTROL TRANSFORMER AND LOW VOLTAGE THERMOSTAT BY TEMPERATURE CONTROLS CONTRACTOR.
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CONTROL LEGEND

ABBR	DESCRIPTION	ABBR	DESCRIPTION	ABBR	DESCRIPTION
AI	ANALOG INPUT	FR	FREEZESTAT	PHC	PREHEAT COIL
AO	ANALOG OUTPUT	FRN	FURNACE	PT	PRESSURE TRANSMITTER
BDD	BACKDRAFT DAMPER	FS	FLOW SWITCH	PZ	PIEZOMETER RING
BTU	BTU METER	FSCP	FIREFIGHTER SMOKE CONTROL PANEL	RA	RETURN AIR
C	CONTROLLER	FSPD	FAN SPEED	RF	RETURN FAN
CC	COOLING COIL	FT	FLOW TRANSMITTER	S	SPACE TEMPERATURE SENSOR
CD	CONTROL DAMPER	H	HUMIDITY OR HIGH	S/S	START/STOP
CFM	AIRFLOW MEASURING SENSOR	HC	HEATING COIL	SA	SUPPLY AIR
CHR	CHILLED WATER RETURN	H/L	HIGH/LOW	SC	SPEED CONTROL
CHS	CHILLED WATER SUPPLY	HH	HIGH LIMIT HUMIDITY SWITCH	SD	SMOKE DETECTOR
CO2	CARBON DIOXIDE	HS	HUMIDITY SENSOR	SF	SUPPLY FAN
COND	CONDENSATE OVERFLOW	HT	HUMIDITY TRANSMITTER	SPT	STATIC PRESSURE TRANSMITTER
COV	CHANGE OF VALUE	HWR	HOT WATER RETURN	SR	SWITCHING RELAY
CSEN	CURRENT SENSOR	HWS	HOT WATER SUPPLY	T	THERMOSTAT
DI	DIGITAL INPUT	IR	INTERLOCK RELAY	TM	THERMAL MASS METER
DO	DIGITAL OUTPUT	L	LEVEL OR LOW	TO	TIMED OVERRIDE SWITCH
DP	DIFFERENTIAL PRESSURE	LAN	LOCAL AREA NETWORK CONNECTION	TS	TEMPERATURE SENSOR
EA	EXHAUST AIR	M	MOTORIZED CONTROL	TT	TEMPERATURE TRANSMITTER
ES	END SWITCH	MIN	MINIMUM	TTAB	TEMPERATURE TRANSMITTER W/AVERAGING BULB
F	FILTER ASSEMBLY OR FAIL	ND	NITROGEN DIOXIDE	V	VALVE
FACP	FIRE ALARM CONTROL PANEL	OA	OUTSIDE AIR	VFD	VARIABLE FREQUENCY DRIVE
FAS	FIRE ALARM SYSTEM	OS	OCCUPANCY SENSOR	VP	VIRTUAL POINT
FC	FAIL CLOSED	P	SPACE STATIC PRESSURE	VS	VELOCITY SENSOR
FCU	FAN COIL UNIT	P-E	PNEUMATIC ELECTRIC SWITCH	WBT	WET BULB TEMPERATURE TRANSMITTER
FM	FLOW METER				
FO	FAIL OPEN				

CONTROL SYSTEM GENERAL NOTES:

DESIGN INTENT:

A. THE CONTROL DRAWINGS AND SEQUENCES ARE PROVIDED TO COMMUNICATE A DESIGN INTENT FOR CONTROL OF INDICATED SYSTEMS. ALTERNATIVE CONTROL METHODS MAY BE USED WHERE PRACTICAL OR WHERE NECESSARY TO MEET REQUIRED SYSTEM PERFORMANCE. WHERE ALTERNATIVE CONTROL METHODS ARE USED TO MEET THE DESIGN INTENT, THESE METHODS SHALL BE INDICATED IN SUBMITTAL TO ENGINEER FOR EVALUATION. ENGINEER SHALL DETERMINE IF A SUBMITTED ALTERNATIVE CONTROL METHOD MEETS THE DESIGN INTENT.

B. ALTHOUGH THE MECHANICAL DRAWINGS MAY INDICATE A PRODUCT AS BASIS OF DESIGN, THE CONTROL DRAWINGS AND SEQUENCES ARE PROVIDED TO INDICATE A DESIGN INTENT FOR THE COMPLETE SYSTEM THAT IS APPLICABLE TO MULTIPLE POTENTIAL PRODUCTS OR MANUFACTURERS. CONTROL METHODS SHALL BE DEVELOPED BY THE TEMPERATURE CONTROLS CONTRACTOR AND/OR EQUIPMENT PROVIDER IN ORDER TO ACHIEVE THE REQUIRED SYSTEM PERFORMANCE.

REQUIRED COORDINATION:

A. THE DIVISION 23 CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN EQUIPMENT PROVIDERS AND TEMPERATURE CONTROLS CONTRACTOR IN ORDER TO FULLY SATISFY THE DESIGN INTENT. INTERFACE BETWEEN THE BMS AND CONTROLLED EQUIPMENT, INCLUDING ITEMS PROVIDED BY EACH ENTITY, COMMUNICATION PROTOCOL, SIGNAL TYPE, ETC., SHALL BE COORDINATED PRIOR TO RELEASE OF EQUIPMENT FOR PRODUCTION. NOTE: THE PROJECT SCOPE AREA IS NOT CURRENTLY PROVIDED WITH A BMS, HOWEVER A PLANNED UPGRADE TO DDC CONTROLS IS ANTICIPATED. COORDINATE COMMUNICATION PROTOCOL AND CONTROLLER REQUIREMENTS WITH BUILDING OWNER (SHERATON).

B. THE TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE SUBMITTAL DRAWINGS AND PRODUCT DATA FOR THE ENTIRE CONTROL SYSTEM TO ENGINEER FOR REVIEW. THE TEMPERATURE CONTROLS SUBMITTAL SHALL DISTINGUISH WHERE SPECIFIC SEQUENCE ELEMENTS ARE PROVIDED WITHIN THE BUILDING MANAGEMENT SYSTEM OR WITHIN PACKAGED EQUIPMENT CONTROLLERS. RE: SPECIFICATIONS FOR REQUIREMENTS.

C. REFER TO SPECIFICATION SECTION 23 05 01 MECHANICAL AND ELECTRICAL COORDINATION.

SEQUENCE OF OPERATION GENERAL NOTES:

INITIAL SPACE THERMOSTAT SETPOINTS

A. INITIAL SPACE THERMOSTAT SETPOINTS SHALL BE AS FOLLOWS:
   1. OCCUPIED OFFICE AND CONFERENCE ROOM SPACES:
      COOLING: 76F
      HEATING: 70F
   2. MECHANICAL AND ELECTRICAL ROOMS:
      COOLING: 80F
      HEATING: 65F
   3. BUILDING ENTRY VESTIBULES:
      COOLING: 85F (WHERE COOLING IS PROVIDED)
      HEATING: 60F
   4. MISCELLANEOUS HEATING-ONLY AREAS:
      HEATING: 65F

ALL SPACE THERMOSTAT SETPOINTS CORRESPONDING TO EQUIPMENT CONTROLLED BY THE BMS SHALL BE ADJUSTABLE FROM THE BMS OPERATOR STATION.

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Date	Description
- 2021.06.04	BP4C - KVC INTERIORS - ISSUE FOR PERMIT AND CONSTRUCTION

Seal / Signature

COLORADO LICENSED MARION E. EDWARDS 56806 PROFESSIONAL ENGINEER

06/04/2021

Project Name

Steamboat Base Village Redevelopment

Project Number

003.7835.000

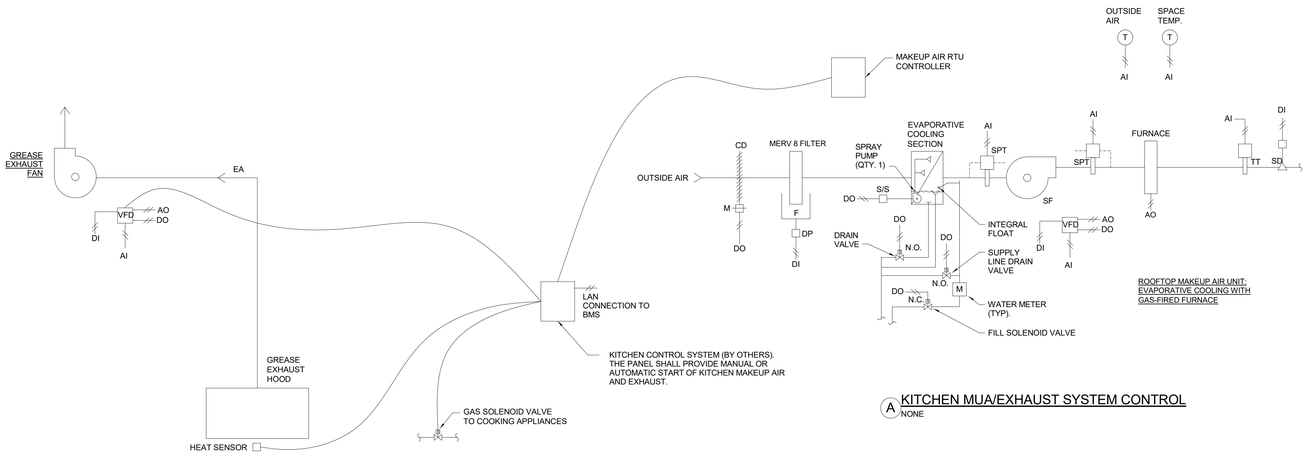
Description

MECHANICAL CONTROLS

Scale

1/8" = 1'-0"

1C-M7.000



A KITCHEN MUA/EXHAUST SYSTEM CONTROL

NONE

KITCHEN MAKEUP AIR AND KITCHEN EXHAUST FAN SYSTEM:

A. CONFIGURATION, RE: SCHEDULE

B. GENERAL:
1. THE KITCHEN MAKEUP AIR UNIT AND GREASE EXHAUST FAN SHALL BE CONTROLLED BY THE KITCHEN CONTROL SYSTEM (BY OTHERS).
2. THE FOLLOWING SEQUENCE SHALL BE EXECUTED BY THE KITCHEN CONTROL SYSTEM.
3. REFER TO FOOD SERVICE PLANS AND SPECIFICATIONS.

C. OCCUPIED MODE:
1. THE MUA UNIT AND GREASE EXHAUST FAN SHALL ENTER OCCUPIED MODE UPON REMOTE SIGNAL FROM KITCHEN CONTROL SYSTEM OR UPON HIGH TEMPERATURE AT ANY EXHAUST HOOD. THE MUA SUPPLY FAN SHALL OPERATE CONTINUOUSLY AND THE OA DAMPER SHALL BE OPEN 100%. COOLING AND HEATING SHALL MODULATE IN SEQUENCE TO MAINTAIN DISCHARGE AIR TEMPERATURE. MUA SUPPLY FAN SHALL MAINTAIN CONSTANT SUPPLY AIRFLOW IN ORDER TO MAINTAIN CONSTANT KITCHEN AIRFLOW OFFSET.
2. WHEN KITCHEN IS IN OCCUPIED MODE, THE GREASE EXHAUST FAN SHALL MODULATE EXHAUST AIRFLOW BASED ON COOKING ACTIVITY UNDER THE HOOD. WHEN THE HEAT SENSOR MOUNTED WITHIN A HOOD INDICATES THAT COOKING ACTIVITY IS PRESENT, THE GREASE EXHAUST FAN SHALL RAMP TO 100% AIRFLOW. WHEN THE HEAT SENSOR MOUNTED WITHIN A HOOD INDICATES THAT COOKING ACTIVITY IS NOT PRESENT, THE GREASE EXHAUST FAN SHALL RAMP TO 50% AIRFLOW.
3. KITCHEN OCCUPIED MODE SHALL RUN FOR A MINIMUM RUN-TIME OF 15 MINUTES (ADJ.) UNDER ALL OPERATING CONDITIONS. KITCHEN OCCUPIED MODE SHALL CONTINUE TO RUN FOR A MINIMUM RUN-TIME OF 30 MINUTES (ADJ.) AFTER BEING ACTIVATED BY TEMPERATURE RISE WITHIN THE HOOD.

D. UNOCCUPIED MODE:
1. THE MUA UNIT AND GREASE EXHAUST FAN SHALL ENTER UNOCCUPIED MODE UPON REMOTE SIGNAL FROM KITCHEN CONTROL SYSTEM. IF ANY HEAT DETECTOR IN THE KITCHEN INDICATES THAT COOKING ACTIVITY IS PRESENT, THE SYSTEM SHALL NOT ENTER UNOCCUPIED MODE AND SHALL REMAIN IN OCCUPIED MODE.
2. WHEN KITCHEN IS IN UNOCCUPIED MODE, THE MUA SUPPLY FAN SHALL BE OFF, THE MUA OUTSIDE AIR DAMPER SHALL BE CLOSED, COOLING SHALL BE DISABLED, AND HEATING SHALL BE DISABLED.
3. WHEN KITCHEN IS IN UNOCCUPIED MODE, THE GREASE EXHAUST FAN SHALL BE DISABLED.

E. FAN SAFETY CONTROLS:
1. DE-ENERGIZE THE MUA SUPPLY FAN AND CLOSE THE MUA OUTSIDE AIR DAMPER WHENEVER THE MUA SUPPLY DUCT SMOKE DETECTOR HAS TRIPPED. SMOKE DETECTOR SHALL REQUIRE A MANUAL RESET. GREASE EXHAUST FAN SHALL CONTINUE TO RUN IF OPERATING.
2. DE-ENERGIZE THE MUA SUPPLY FAN AND CLOSE THE MUA OUTSIDE AIR DAMPER WHENEVER THE MUA SUPPLY FAN HAS FAILED (AFTER A TWO-MINUTE DELAY). FAN FAILURE SHALL REQUIRE A MANUAL RESET. GREASE EXHAUST FAN SHALL CONTINUE TO RUN IF OPERATING.
3. PROVIDE SUCTION STATIC PRESSURE SWITCH AT INLET OF MUA SUPPLY FAN. SWITCH TO BE TIED TO SUPPLY FAN START CIRCUIT. DE-ENERGIZE THE MUA SUPPLY FAN AND CLOSE THE MUA OUTSIDE AIR DAMPER WHEN SUCTION STATIC PRESSURE HIGH-LIMIT REACHES 2.0 INCHES WC (ADJ.). GREASE EXHAUST FAN SHALL CONTINUE TO RUN IF OPERATING.

F. KITCHEN SAFETY CONTROLS:
1. NORMALLY CLOSED GAS SOLENOID VALVE(S) SHALL BE INTERLOCKED WITH KITCHEN HOOD CONTROL SYSTEM, MUA SUPPLY FAN, AND GREASE EXHAUST FAN.

G. VFD CONTROL:
1. WHEN THE MUA SUPPLY FAN IS ENABLED IN OCCUPIED MODE, THE VFD SHALL SLOWLY RAMP UP TO SETPOINT AND MODULATE TO MAINTAIN THE PROPER AIRFLOW OFFSET BETWEEN KITCHEN MAKEUP AIR AND EXHAUST. AIRFLOW OFFSET SHALL REMAIN CONSTANT DURING ALL OPERATING CONDITIONS.
2. WHEN THE GREASE EXHAUST FAN IS ENABLED IN OCCUPIED MODE, THE VFD SHALL SLOWLY RAMP UP TO SETPOINT AND MODULATE TO MAINTAIN PROPER AIRFLOW BASED ON COOKING ACTIVITY UNDER THE CORRESPONDING HOOD.

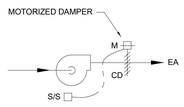
H. DISCHARGE AIR TEMPERATURE:
1. WHEN SYSTEM IS IN OCCUPIED MODE, COOLING AND HEATING SHALL BE ENABLED IN SEQUENCE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT. DISCHARGE AIR TEMPERATURE COOLING SETPOINT SHALL BE 70F (ADJ.). DISCHARGE AIR TEMPERATURE HEATING SETPOINT SHALL BE 65F (ADJ.).

I. HEATING CONTROL:
1. THE UNIT SHALL MODULATE HEATING THROUGH ITS INTERNAL CONTROLS TO MAINTAIN THE DAT. HEATING SHALL BE DISABLED IF THE SUPPLY FAN IS OFF OR IF THE SYSTEM IS IN COOLING MODE.

J. COOLING CONTROL:
1. THE UNIT SHALL MODULATE COOLING THROUGH ITS INTERNAL CONTROLS TO MAINTAIN THE DAT. COOLING SHALL BE DISABLED IF THE SUPPLY FAN IS OFF, THE SYSTEM IS IN HEATING MODE, OR THE DISCHARGE AIR SENSOR HAS FAILED.

K. HOOD FIRE PROTECTION SYSTEM:
1. IN THE EVENT OF A FIRE, THE HOOD FIRE PROTECTION SYSTEM, BY OTHER DIVISION, SHALL SEND A SIGNAL THROUGH THE FIRE PROTECTION SYSTEM TO SHUT DOWN THE MUA SUPPLY FAN. GREASE EXHAUST FAN TO BREAK STANDARD OPERATING INTERLOCK WITH MUA AND CONTINUE IN EXHAUST MODE.
2. UPON ACTIVATION OF THE HOOD FIRE PROTECTION SYSTEM, POWER SHALL BE CUT OFF TO THE GAS SOLENOID VALVE AND THE VALVE SHALL CLOSE.

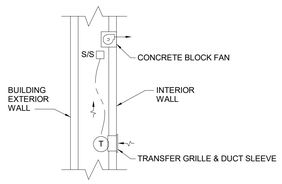
L. EVAPORATIVE COOLING SYSTEM:
1. WHEN OUTSIDE AIR IS ABOVE 60F (ADJ.) AND THE SYSTEM IS IN OCCUPIED MODE, THE SUMP SHALL FILL AND COOLING SHALL BE ENABLED.
2. WHEN OUTSIDE AIR IS BELOW 60F (ADJ.) AND THE SYSTEM IS IN OCCUPIED MODE, THE SUMP SHALL FULLY DRAIN AND THE SPRAY PUMP SHALL BE LOCKED OUT.
3. WHEN UNIT ENTERS UNOCCUPIED MODE, THE SUMP SHALL FULLY DRAIN AND THE SPRAY PUMP SHALL BE LOCKED OUT.
4. WHEN SIGNAL TO DRAIN SUMP IS INITIATED, SUMP FILL VALVE SHALL BE CLOSED, SUMP DRAIN VALVE SHALL OPEN, AND FILL LINE DRAIN VALVE SHALL OPEN. DRAIN SYSTEM SHALL FULLY DRAIN ALL SUPPLY LINES THAT ARE EXPOSED TO FREEZING CONDITIONS.
5. WHEN SIGNAL TO FILL SUMP IS INITIATED, SUMP DRAIN VALVE SHALL CLOSE, FILL LINE DRAIN VALVE SHALL CLOSE, AND SUMP FILL VALVE SHALL OPEN UNTIL SUMP LEVEL SWITCH IS MADE. SUMP FILL VALVE SHALL OPEN AS REQUIRED TO MAINTAIN SUMP WATER LEVEL.



B ENVIRONMENTAL FAN CONTROL - TYPE I

NONE

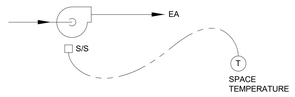
A. MOTORIZED DAMPER SHALL OPEN AND FAN SHALL BE ENERGIZED WHENEVER AIR HANDLING SYSTEM SERVING SAME AREA IS OPERATING. INTERLOCK FAN WITH CORRESPONDING SUPPLY



WET WALL FREEZE PROTECTION
C ENVIRONMENTAL FAN CONTROL - TYPE II

NONE

A. CONCRETE BLOCK FANS SHALL BE ENABLED WHENEVER TEMPERATURE INSIDE THE WALL CAVITY IS AT OR BELOW 50F (ADJ.) AND SHALL DISABLE WHENEVER THE WALL CAVITY RISES ABOVE 50F.



D1 ENVIRONMENTAL FAN CONTROL - TYPE III

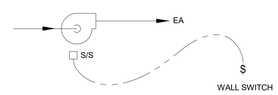
NONE

A. WHEN SPACE TEMPERATURE RISES ABOVE SETPOINT, ENERGIZE FAN AND OPERATE CONTINUOUSLY UNTIL SPACE TEMPERATURE FALLS BELOW SETPOINT. INITIAL SETPOINT SHALL BE 75F (ADJ.).
B. PROVIDE CONTROL TRANSFORMER AND LOW VOLTAGE THERMOSTAT BY TEMPERATURE CONTROLS CONTRACTOR.

D2 ENVIRONMENTAL FAN CONTROL - TYPE VI

NONE

A. WHEN SPACE TEMPERATURE RISES ABOVE OR FALLS BELOW SETPOINT, ENERGIZE FAN AND OPERATE CONTINUOUSLY UNTIL SPACE TEMPERATURE IS SATISFIED. INITIAL SETPOINT SHALL BE 80F HIGH TEMPERATURE, 60F LOW TEMPERATURE (ADJ.).
B. PROVIDE CONTROL TRANSFORMER AND LOW VOLTAGE THERMOSTAT BY TEMPERATURE CONTROLS CONTRACTOR.



E ENVIRONMENTAL FAN CONTROL - TYPE IV

NONE

A. WHEN WALL SWITCH IS TOGGLED TO ON POSITION, FAN SHALL ENERGIZE.

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Seal / Signature

COLORADO LICENSED MARNER E. EDWARDS 56806 PROFESSIONAL ENGINEER

06/04/2021

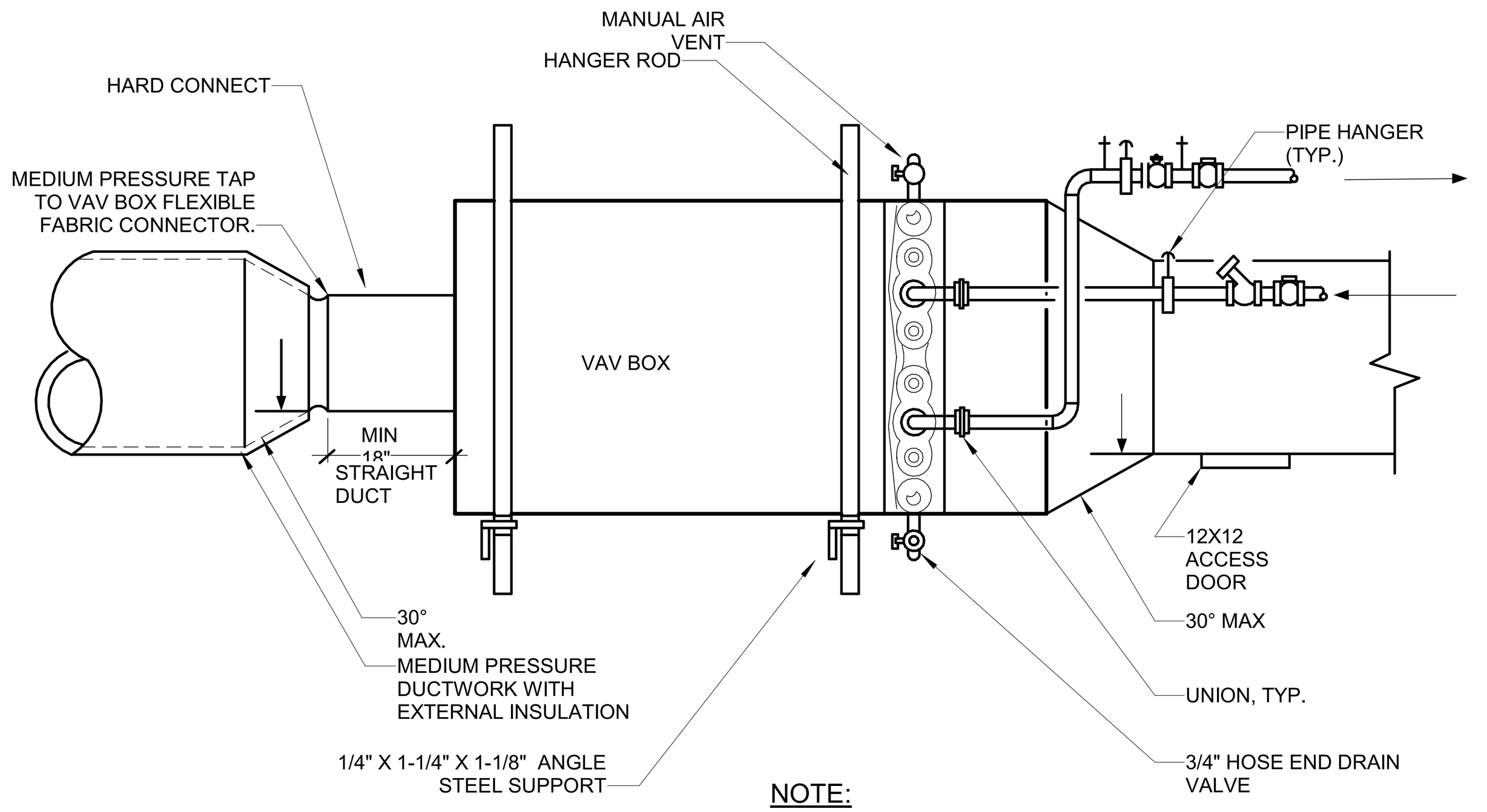
Project Name
Steamboat Base Village Redevelopment

Project Number
003.7835.000

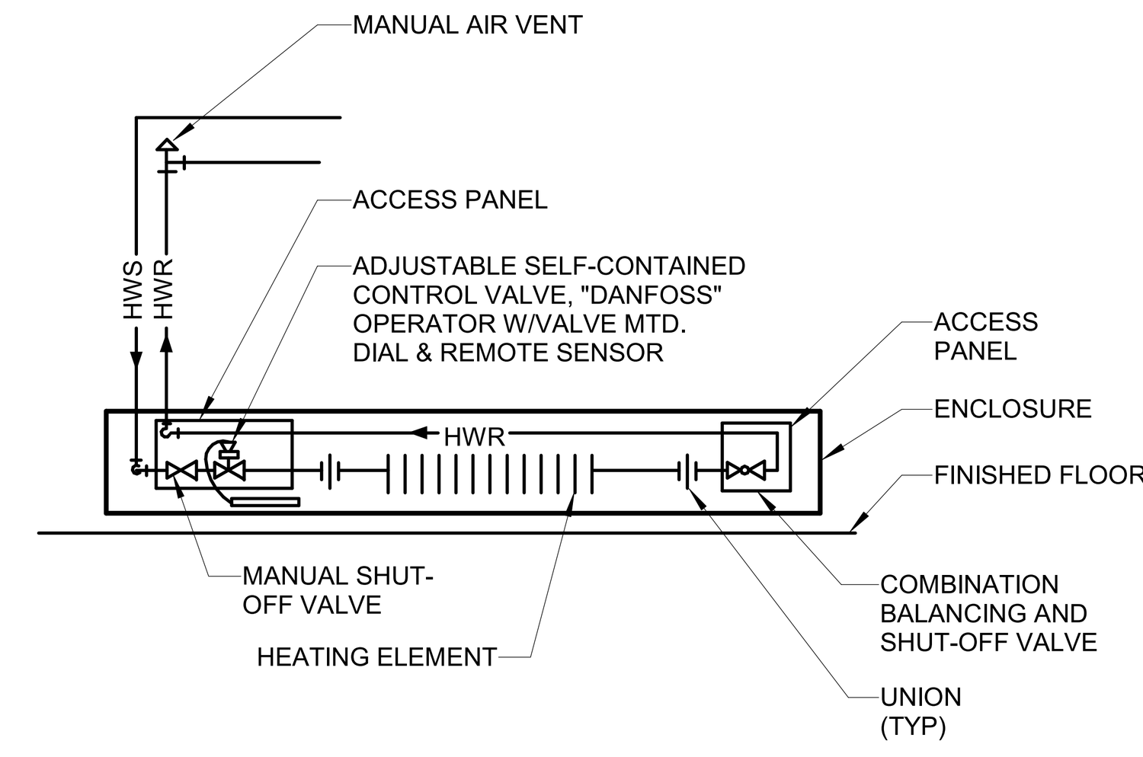
Description
MECHANICAL CONTROLS

Scale
NOT TO SCALE

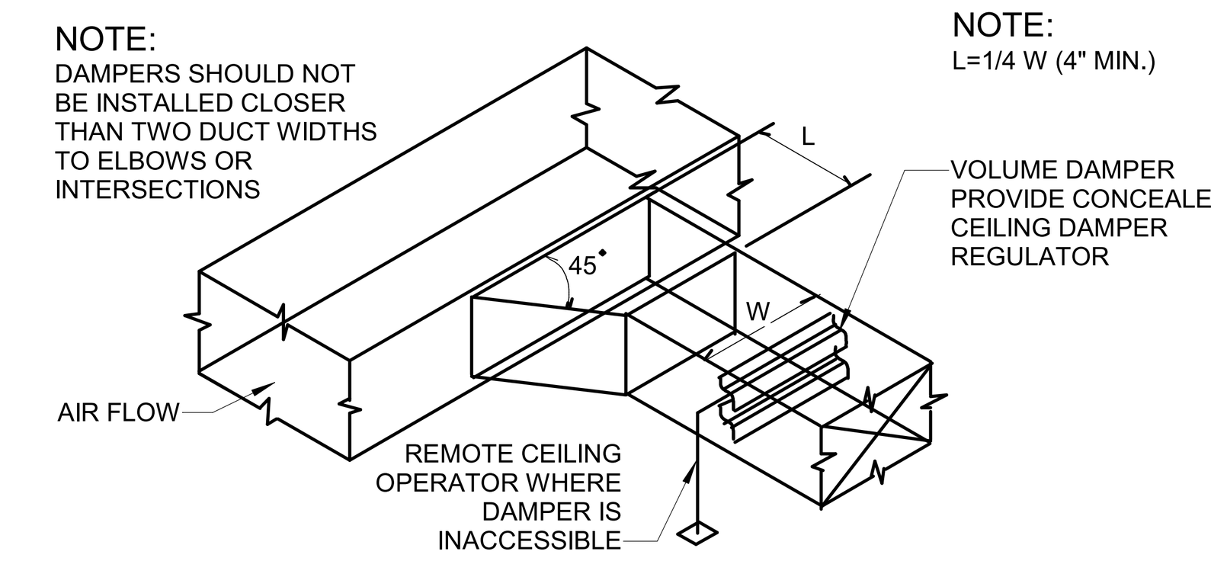
1C-M7.001



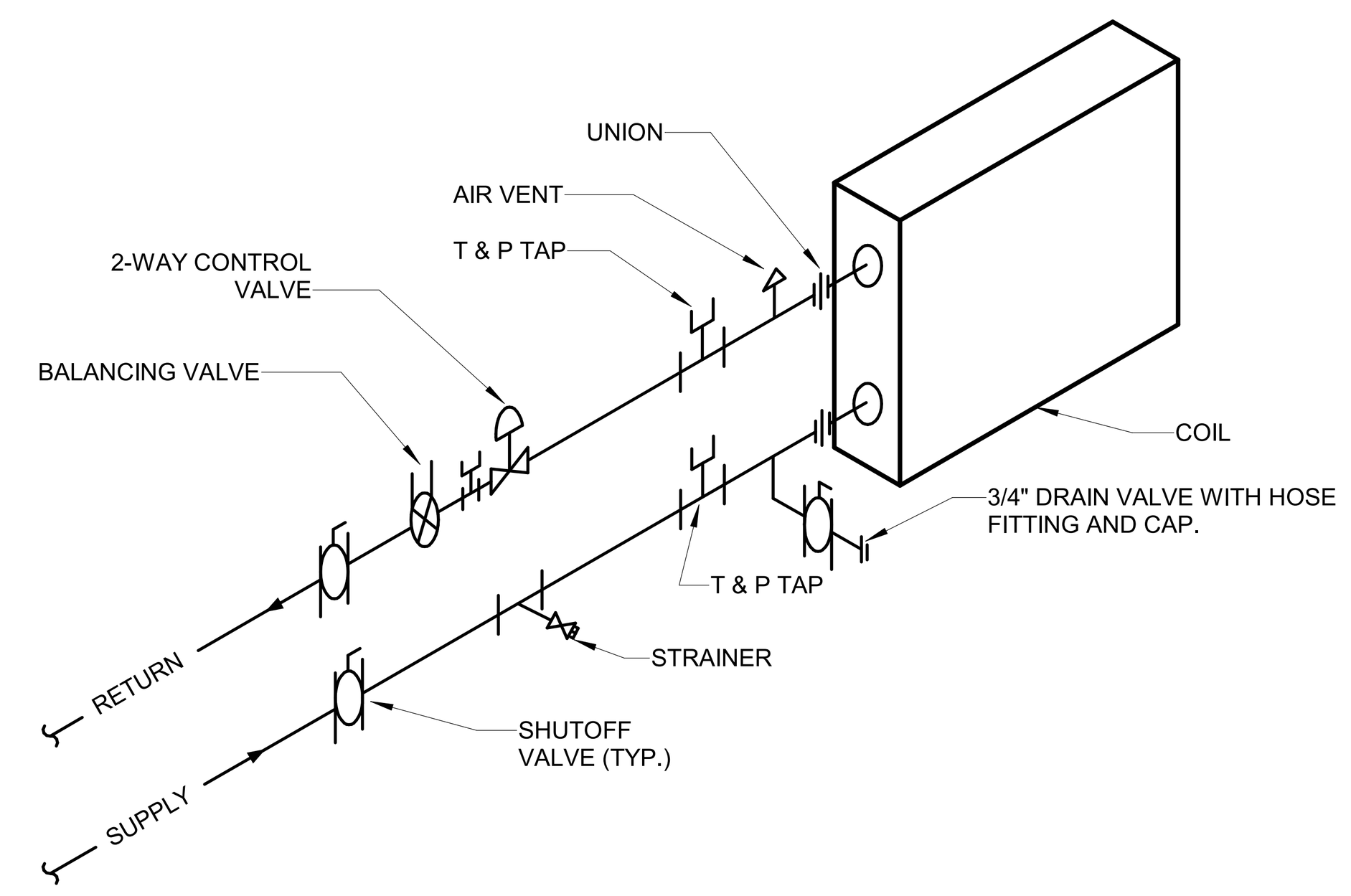
9 VAV BOX WITH COIL DETAIL
NO SCALE



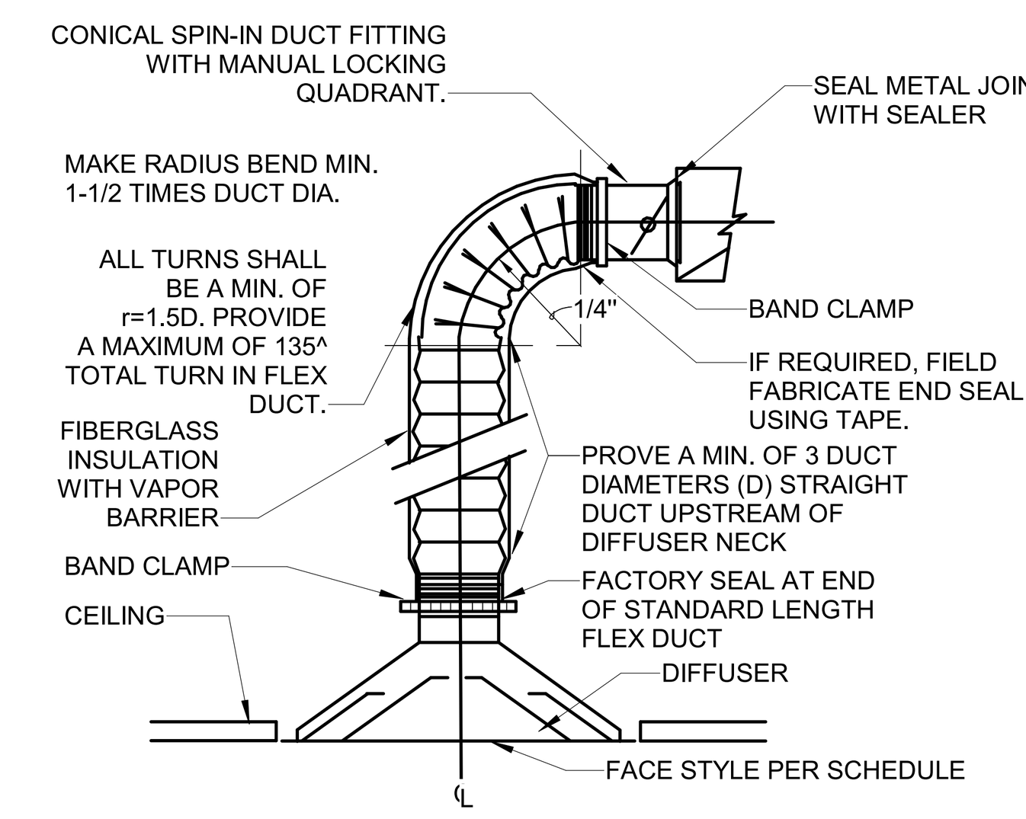
5 HOT WATER BASEBOARD DETAIL
NO SCALE



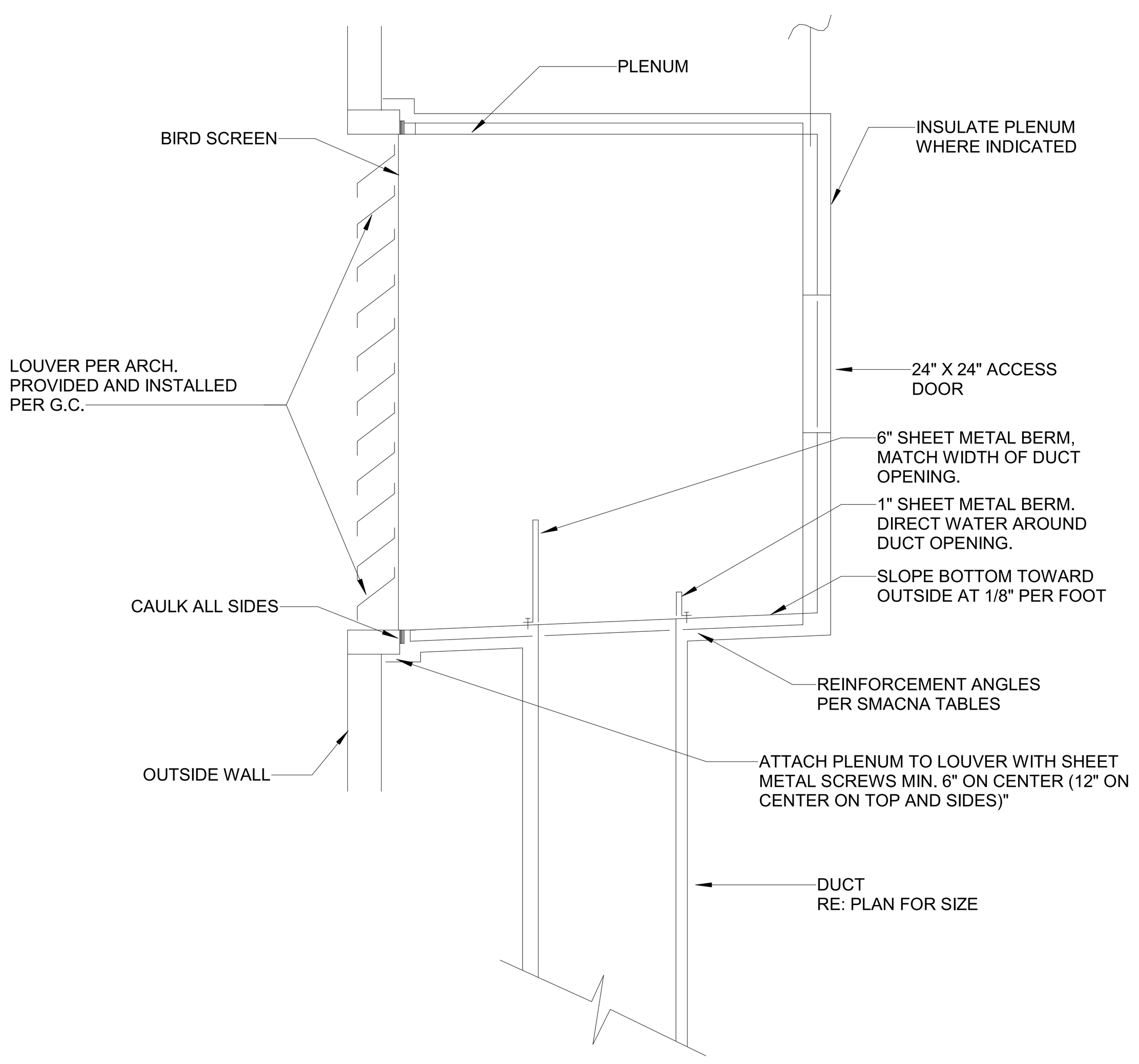
1 BRANCH DUCT TAKE-OFF DETAIL
NO SCALE



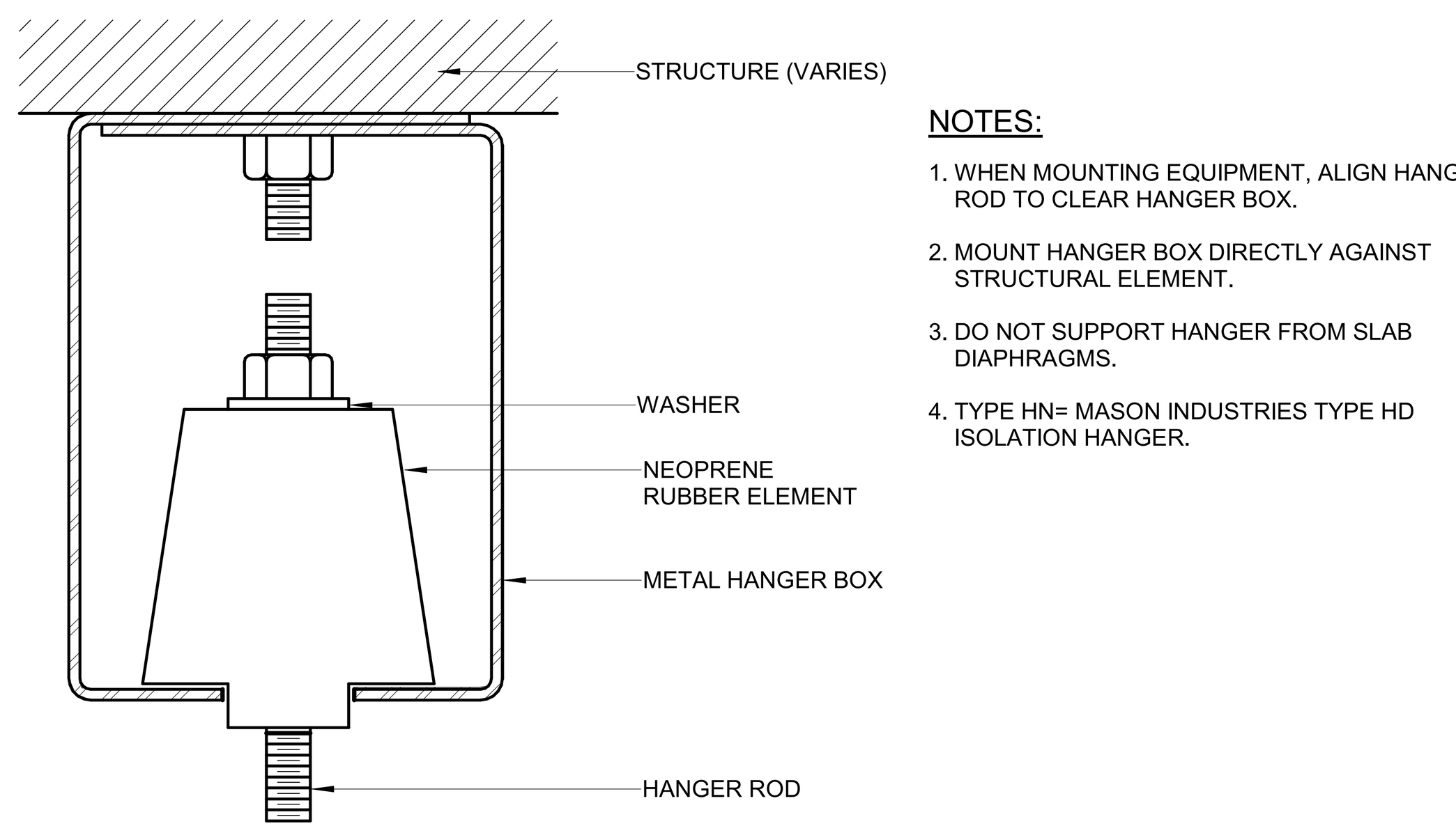
6 TYPICAL WATER COIL CONNECTION DETAIL (2 WAY CONTROL)
NO SCALE



2 CEILING DIFFUSER DETAIL
NO SCALE

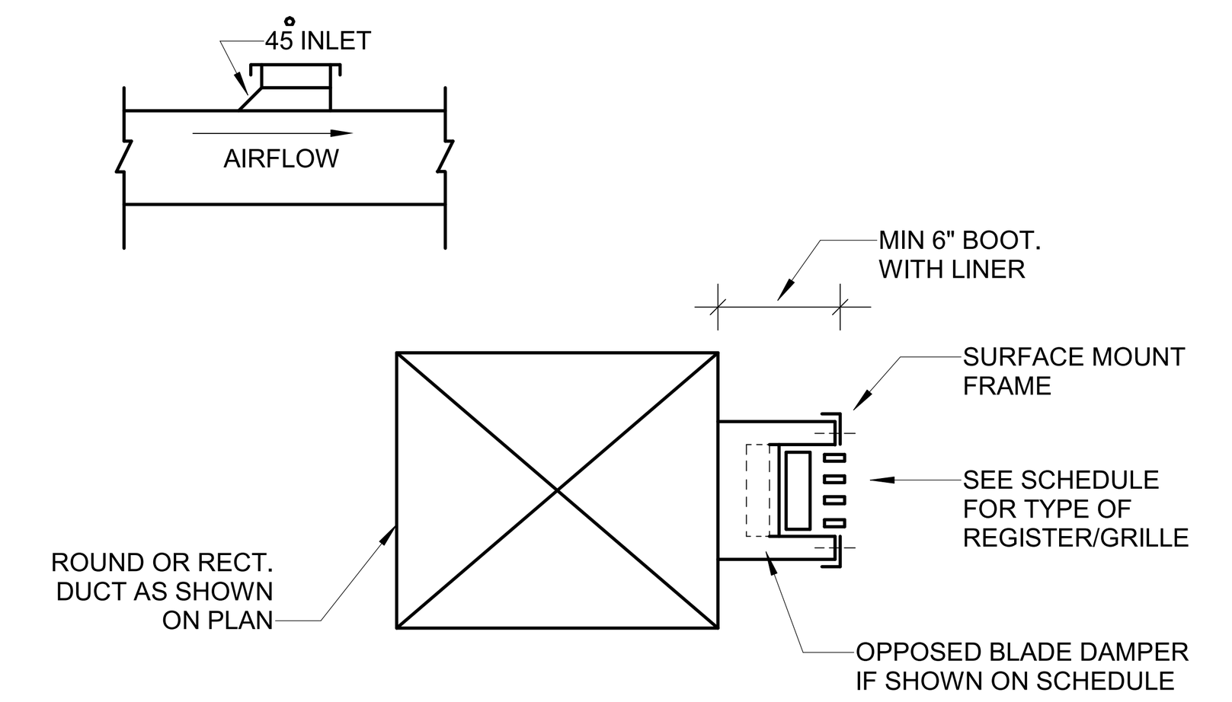


10 EXTERIOR LOUVER PLENUM BOX DETAIL
NO SCALE

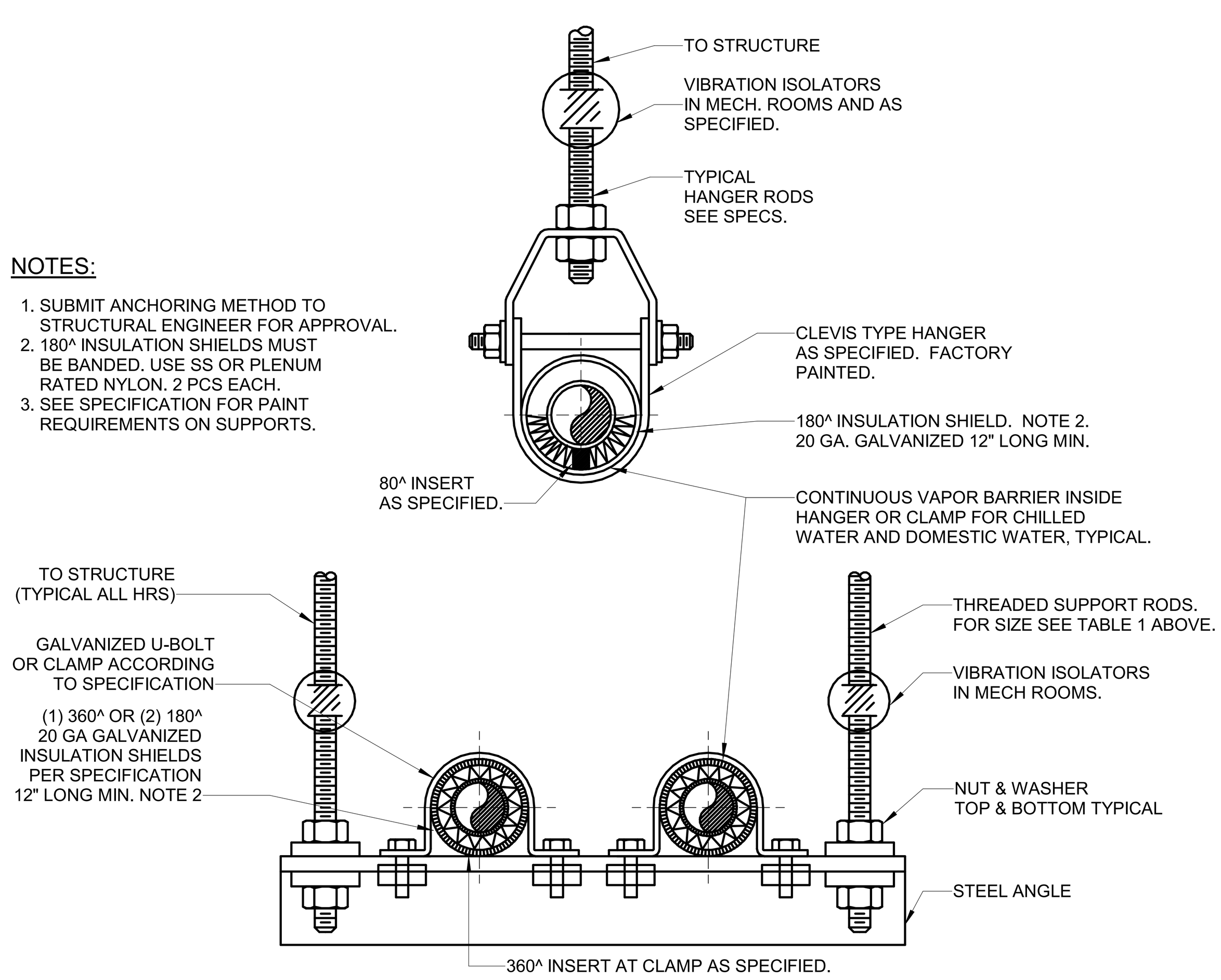


NOTES:
1. WHEN MOUNTING EQUIPMENT, ALIGN HANGER ROD TO CLEAR HANGER BOX.
2. MOUNT HANGER BOX DIRECTLY AGAINST STRUCTURAL ELEMENT.
3. DO NOT SUPPORT HANGER FROM SLAB DIAPHRAGMS.
4. TYPE HN= MASON INDUSTRIES TYPE HD ISOLATION HANGER.

7 ISOLATOR TYPE HN-NEOPRENE HANGER
NO SCALE

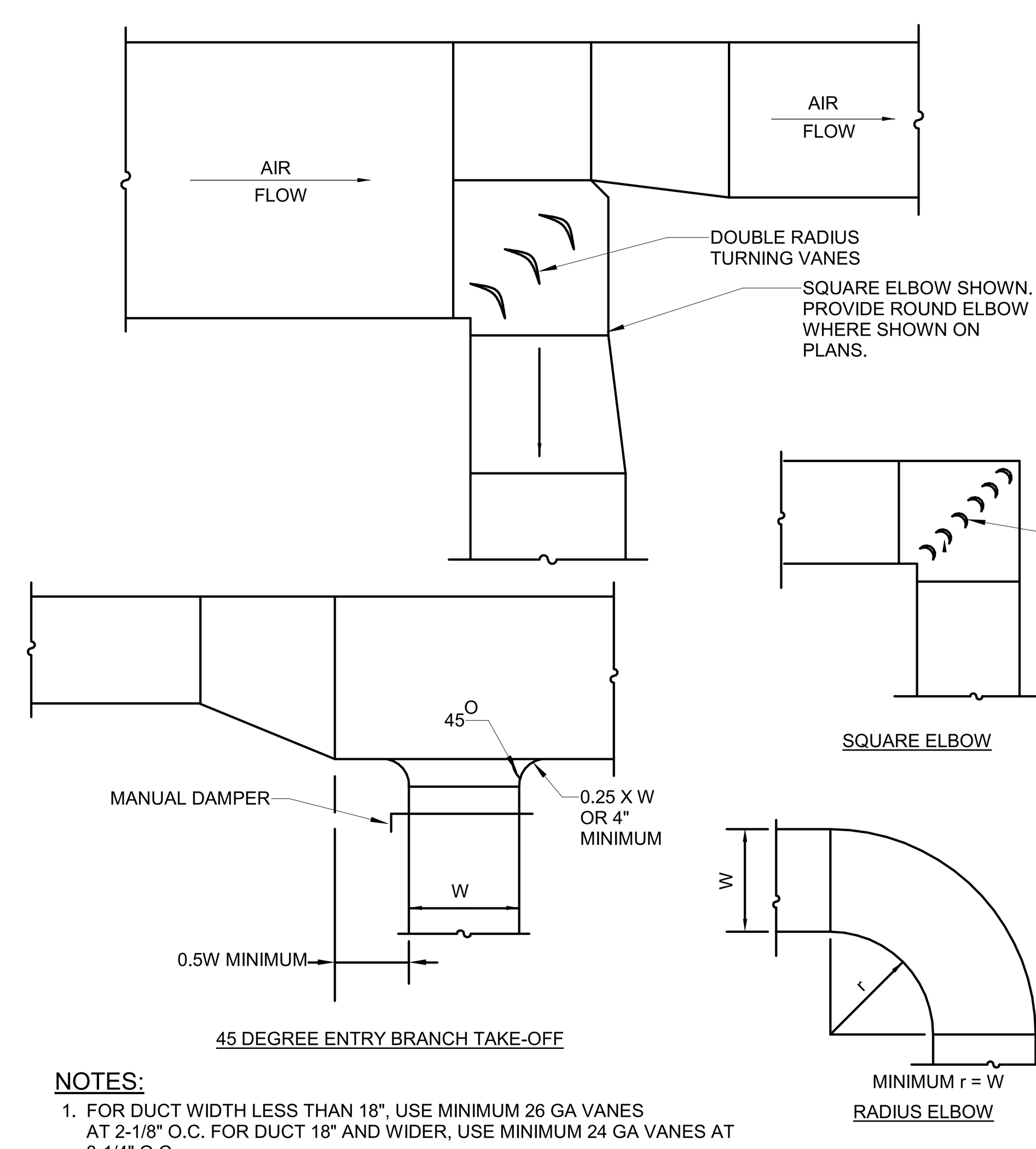


3 DUCT MOUNTED AIR DEVICE DETAIL
NO SCALE



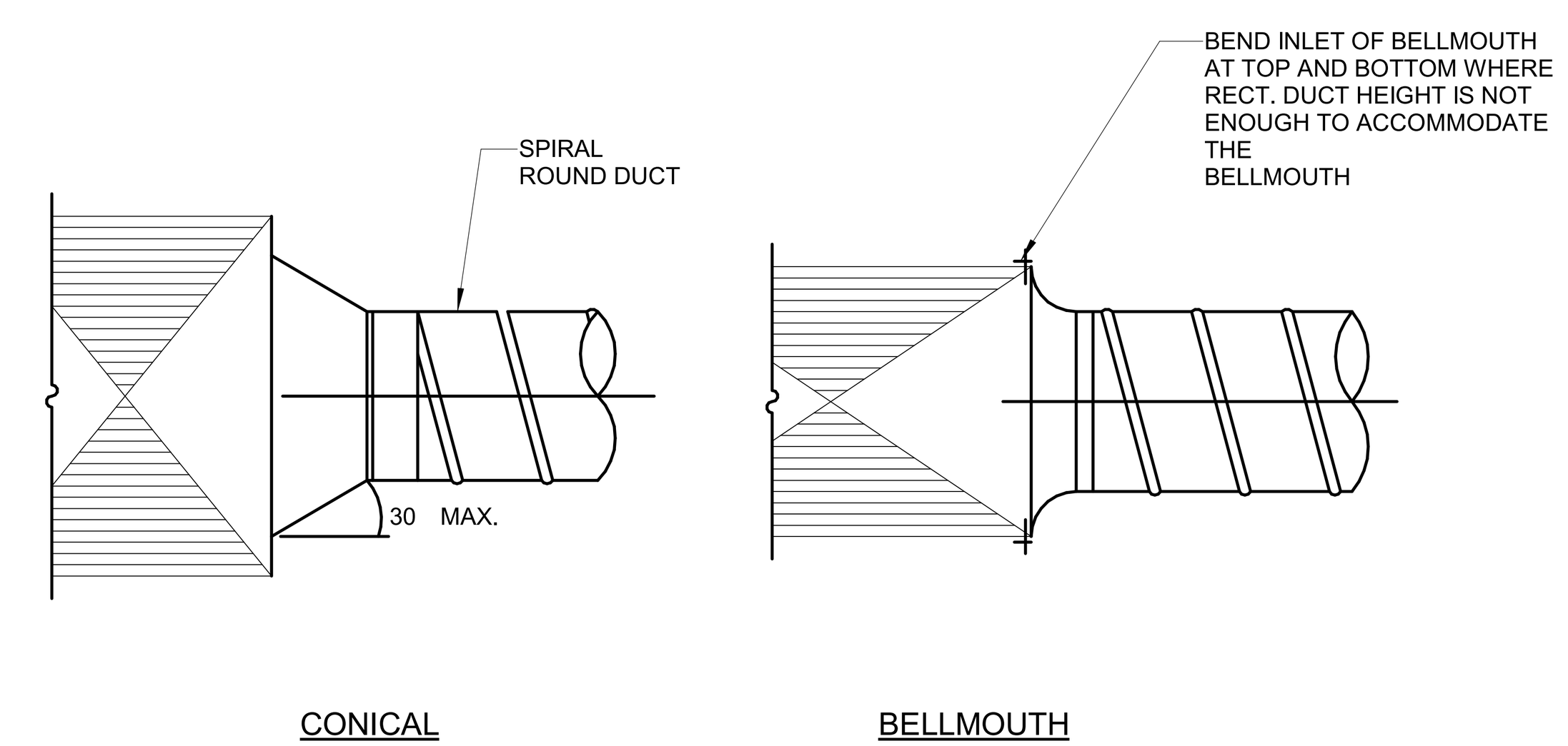
NOTES:
1. SUBMIT ANCHORING METHOD TO STRUCTURAL ENGINEER FOR APPROVAL.
2. 180^ INSULATION SHIELDS MUST BE BANDED, USE SS OR PLENUM RATED NYLON. 2 PCS EACH.
3. SEE SPECIFICATION FOR PAINT REQUIREMENTS ON SUPPORTS.

11 TYPICAL PIPE HANGER DETAIL
NO SCALE



NOTES:
1. FOR DUCT WIDTH LESS THAN 18", USE MINIMUM 26 GA VANES AT 2-1/8" O.C. FOR DUCT 18" AND WIDER, USE MINIMUM 24 GA VANES AT 3-1/4" O.C.
2. FITTINGS TO BE 2 GAGES HEAVIER THAN CONNECTED DUCT.

8 RECTANGULAR DUCT FITTINGS AND TAKE-OFF
NO SCALE



NOTES:
1. SECURE ALL CONNECTIONS TO COMPLY WITH THE REQUIREMENTS OF THE PRESSURE CLASS SPECIFIED.
2. SUPPLY ROUND DUCT TAKE-OFF IS SHOWN. RETURN/EXHAUST SIMILAR.
3. "SPIN-INS" PERMITTED ONLY W/DUCT CONSTRUCTION OF 2" W.C. OR LESS.

4 ROUND DUCT TAKE OFF CONNECTIONS TO RECTANGULAR DUCT
NO SCALE

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COLORADO LICENSED PROFESSIONAL ENGINEER MATHEW E. EDWARDS 56806
06/04/2021

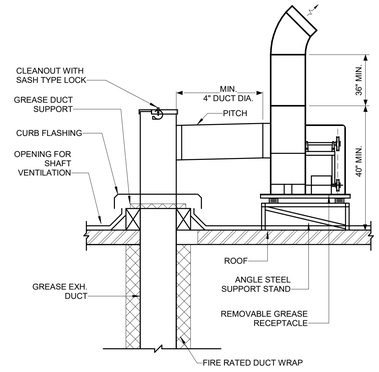
Project Name
Steamboat Base Village Redevelopment

Project Number
003.7835.000

Description
MECHANICAL DETAILS

Scale
NO SCALE

1C-M8.000

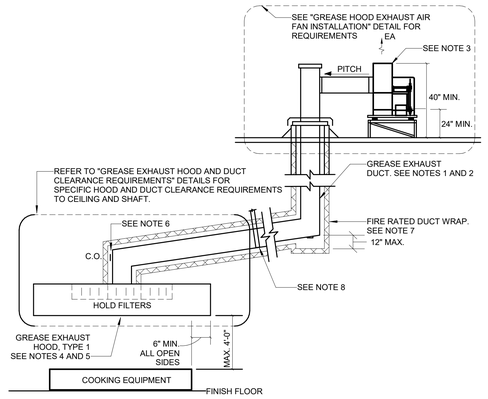


UTILITY

NOTE:

1. PROVIDE GREASE RECEPTACLE AND DRAIN LINE PER NFPA 96.
2. PROVIDE DUCT EXTENSION AT FAN OUTLET TO DIRECT AIR AWAY FROM ADJACENT BALCONY AREAS.

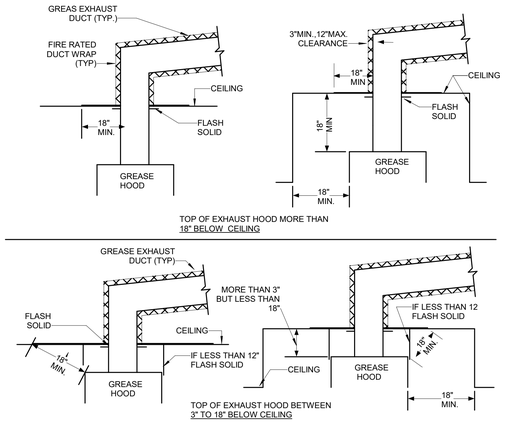
1 GREASE HOOD EXHAUST AIR FAN INSTALLATION
NO SCALE



NOTES:

1. GREASE DUCT SHALL HAVE VELOCITY NOT TO EXCEED 1500 FPM MINIMUM AND 2500 FPM MAXIMUM. DUCT SHALL BE CONSTRUCTED OF MINIMUM 16 GAUGE, 0.055 INCH THICK GALVANIZED, BLACK OR STAINLESS STEEL. ALL JOINTS AND SEAMS TO BE CONTINUOUS WELD.
2. DUCT SYSTEM SHALL HAVE A SLOPE NOT LESS THAN 1/4 INCH PER LINEAR FOOT TOWARD THE HOOD OR TOWARD AN APPROVED GREASE RESERVOIR. WHEN HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 1 INCH LINEAR FOOT.
3. DISCHARGE OUTLET SHALL BE 10' FROM ADJACENT BUILDING, PROPERTY LINE OR AIR INTAKE OPENING, AND 10"ABOVE THE ADJOINING GRADE LEVEL AND 10' FROM ANY VERTICAL BUILDING CONSTRUCTION
4. "ANSUL" EXTINGUISHING SYSTEM SHALL BE PROVIDED FOR EXHAUST HOOD.
5. THE FIRE EXTINGUISHING SYSTEM SHALL BE INTERCONNECTED TO THE FUEL OR CURRENT SUPPLY SO THAT THE FUEL OR CURRENT IS AUTOMATICALLY SHUT OFF TO ALL EQUIPMENT UNDER THE HOOD WHEN THE SYSTEM IS ACTUATED.
6. PROVIDE CLEANOUTS IN DUCTWORK AT EACH CHANGE OF DIRECTION AND NOT TO EXCEED 15FEET APART. LOCATED IN THE SIDE OR TOP OF A HORIZONTAL DUCT, THE LOWER EDGE OF A SIDE OPENING SHALL BE NOT LESS THAN 1 1/2" FROM THE BOTTOM OF THE DUCT. THE ACCESS DOOR IN THE RATED ENCLOSURE SHALL HAVE A SUBSTANTIAL METHOD OF LATCHING WHICH WILL OPEN WITHOUT THE USE OF TOOLS AND SHALL HAVE A PROPOSED NONCOMBUSTIBLE GASKET MATERIAL.
7. DUCT SHALL BE FULLY WRAPPED WITH 2HR FIRE RATED DUCT WRAP WITH ZERO CLEARANCE TO COMBUSTIBLES.
8. GREASE DUCT SUPPORTS AND BRACING SHALL BE NONCOMBUSTIBLE MATERIAL. BOLTS,SCREWS, AND RIVETS SHALL NOT PENETRATE GREASE DUCT.

3 GREASE HOOD AND DUCT SYSTEM
1/8" = 1'-0"



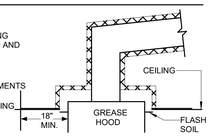
NOTES:

1. COORDINATE WITH ARCHITECTURAL DRAWING REGARDING CEILING FINISHES AND APPLY THE APPROXIMATE GREASE EXHAUST HOOD AND DUCT INSTALLATION METHOD AS REQUIRED.

LEGEND:

FIRE RATED SHAFT/ ENCLOSURE PER BUILDING CODE REQUIREMENTS

1 HOUR FIRE RESISTIVE CONSTRUCTION ON HOOD SIDE OF CEILING ONLY (NOT REQUIRED IS CEILING IS OF NON-COMBUSTION MATERIAL)



TOP OF EXHAUST HOOD LESS THAN 3" FROM CEILING OR PENETRATING CEILING

2 GREASE EXHAUST HOOD AND DUCT CLEARANCE REQUIREMENTS
NO SCALE

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△	Date	Description
-	2021.06.04	BP4C - KVC INTERIORS - ISSUE FOR PERMIT AND CONSTRUCTION

Seal / Signature

COLORADO LICENSED MATHEW E. EDWARDS 56806 PROFESSIONAL ENGINEER
06/04/2021

Project Name
Steamboat Base Village Redevelopment

Project Number
003.7835.000

Description
MECHANICAL DETAILS

Scale
NOT TO SCALE

1C-M8.001

GRILLE REGISTER DIFFUSER SCHEDULE

CODE	MANUFACTURER/ MODEL NO.	SERVICE	TYPE	ACCESSORIES	FACE SIZE	REMARKS
A1	PRICE / 520L	SUPPLY	LOUVERED		NECK +2"	B
A2	PRICE / 620L	SUPPLY	LOUVERED		NECK +2"	A
B1	PRICE / SDS	SUPPLY	LINEAR SLOT	48" FACTORY PLENUM	(1) 1" SLOT, 48" LENGTH	
B2	PRICE / SDS	SUPPLY	LINEAR SLOT	48" FACTORY PLENUM	(2) 1" SLOT, 48" LENGTH	
B3	PRICE / SDS	SUPPLY	LINEAR SLOT	48" FACTORY PLENUM	(3) 1" SLOT, 48" LENGTH	
C1	PRICE / SDS	SUPPLY	LINEAR SLOT	60" FACTORY PLENUM	(1) 1" SLOT, 60" LENGTH	
C2	PRICE / SDS	SUPPLY	LINEAR SLOT	60" FACTORY PLENUM	(2) 1" SLOT, 60" LENGTH	
C3	PRICE / SDS	SUPPLY	LINEAR SLOT	60" FACTORY PLENUM	(3) 1" SLOT, 60" LENGTH	
D	PRICE / SDGE	SUPPLY	SPIRAL MOUNT	AIR SCOOP		A
E	PRICE / SDGE	EXHAUST/RETURN	SPIRAL MOUNT	PERFORATED		A
F1	PRICE / PDDR	EXHAUST/RETURN	PERFORATED		12"x12"	
F2	PRICE / PDDR	EXHAUST/RETURN	PERFORATED		24"x24"	
G1	PRICE / 510L	EXHAUST/RETURN	LOUVERED		SEE PLANS	
G2	PRICE / 530L	EXHAUST/RETURN	LOUVERED		SEE PLANS	
H	PRICE / SPD	SUPPLY	SQUARE CEILING		24"x24"	
J1	PRICE / SDR	RETURN	LINEAR SLOT	48" FACTORY PLENUM	(1) 1" SLOT, 48" LENGTH	
J2	PRICE / SDR	RETURN	LINEAR SLOT	48" FACTORY PLENUM	(2) 1" SLOT, 48" LENGTH	
J3	PRICE / SDR	RETURN	LINEAR SLOT	48" FACTORY PLENUM	(3) 1" SLOT, 48" LENGTH	
K	PRICE / 80	RETURN	EGG CRATE		SEE PLANS	

GENERAL NOTES:
1. NOT ALL GRD TYPES LISTED ON SCHEDULE MAY APPLY.
2. SEE PLANS FOR CFM AND NECK SIZE.
3. MAXIMUM NOISE CRITERIA (NC) SHALL BE 30 UNLESS OTHERWISE NOTED.
4. COLOR TO BE COORDINATED WITH ARCHITECT.
5. MATERIAL IS STEEL UNLESS OTHERWISE NOTED.
6. PROVIDE A REMOTE, THROUGH FACE, CABLE OPERATED BALANCING DAMPER WHEN INSTALLED IN AN INACCESSIBLE CEILING.
7. PROVIDE FRAME AND TRIM COMPATIBLE WITH CEILING SYSTEM. RE: ARCHITECTURAL RCP DRAWINGS.
8. PROVIDE SQUARE TO ROUND ADAPTER FOR RECTANGULAR FACE GRILLES CONNECTED TO ROUND BRANCH DUCTS.

REMARK NOTES:
A. ALUMINUM CONSTRUCTION.
B. PROVIDE INTEGRAL OPPOSED BLADE DAMPER.

MECHANICAL LOUVER SCHEDULE

CODE (L)	MANUFACTURER / MODEL	SERVICE	LOCATION	AIRFLOW	VELOCITY	MINIMUM FREE AREA (SF)	FACE SIZE WIDTH (IN)	FACE SIZE HEIGHT (IN)	PLENUM BOX DEPTH	REMARKS
2.01	RUSKIN / ELF6375DX	EF 2.01	LEVEL 2 MECH ROOM	3000	500	6.0	48	36	3'-0"	A,B

GENERAL NOTES
1. LOUVERS SCHEDULED HERE ARE CONNECTED TO MECHANICAL SYSTEMS.

REMARK NOTES
A. PROVIDE INSULATED PLENUM. SLOPE BASE OF PLENUM TO DRAIN WATER OUT THROUGH LOUVER FACE. RE: MECHANICAL DETAILS.
B. PROVIDE BIRD SCREEN.

EXISTING AIR HANDLING UNIT SCHEDULE

CODE ((E)AHU)	AREA SERVED	LOCATION	SUPPLY FAN CFM	SUPPLY FAN MIN. OSA (CFM)	RELIEF FAN CODE ((E)RF)	RELIEF FAN CFM	COOLING CAPACITY (CHILLED WATER) EAT (°F) DB	EAT (°F) WB	LAT (°F) DB	CAP MBH	HEATING CAPACITY (HEATING WATER) EAT (°F)	LAT (°F)	CAP MBH	REMARKS
4	SEE PLANS	LEVEL 2 MEZ	14500	2300	3	13500	80	61	55	TBD	46.7	46.7	--	A,D
5	KITCHEN	LEVEL 2 MEZ	5400	600	4	5400	80	61	55	TBD	61.1	86.6	116.4	A,C,D
6	SUNDANCE, PALS/MAVS	LEVEL 2 MEZ	8400	2200	5	8000	80	61	63	TBD	49.0	70.7	153.2	A,B,D

GENERAL NOTES:
1. ALL UNITS LISTED ARE EXISTING TO REMAIN.
2. SCHEDULE IS PROVIDED TO INDICATE SUPPLY AIRFLOW, RELIEF AIRFLOW, AND REQUIRED OA FLOW. REBALANCE OA DAMPER TO MIN OSA INDICATED.
3. UNIT CAPACITIES ARE APPROXIMATE AND ARE CALCULATED FROM FIELD MEASUREMENTS. REFER TO BALANCING REPORT.
4. HEATING COIL EAT IS CALCULATED FROM THE MIXED AIR TEMPERATURE AT DESIGN WINTER OA CONDITIONS.
5. DESIGN CONDITIONS:
WINTER DB: -10F
SUMMER DB: 88F
SUMMER WB: 56.2F
6. ALL UNITS ARE ANTICIPATED TO INCLUDE AIR-SIDE ECONOMIZER FUNCTIONALITY. CONFIRM ECONOMIZER IS OPERATIONAL AT EACH UNIT PRIOR TO TURNOVER.
7. AT TIME OF THE PERMIT SET, CHILLED WATER WAS NOT AVAILABLE AT THE UNITS INDICATED. PROVIDE BALANCING OF EACH CHILLED WATER COIL AND INDICATE PERFORMANCE CHARACTERISTICS IN BALANCING REPORT. NOTIFY ENGINEER IN WRITING IF LEAVING AIR TEMPERATURES INDICATED ABOVE CANNOT BE ACHIEVED.

REMARK NOTES:
A. RELIEF FAN IS EXTERNAL TO UNIT.
B. RE-BALANCE HEATING COIL WATER FLOWS TO INCREASE LAT TO MINIMUM 75F AT WINTER DESIGN CONDITIONS WITH REQUIRED MINIMUM OUTSIDE AIRFLOW. PROVIDE TEST REPORT INDICATING UNIT LAT WITH MEASUREMENTS TAKEN WHEN OUTSIDE AIR IS AT OR BELOW 10 DEGREES F. INDICATE CURRENT OUTSIDE AIR TEMPERATURE, MIXED AIR TEMPERATURE, AND UNIT LEAVING AIR TEMPERATURE IN BALANCING REPORT. UNIT SHALL BE CONTROLLED TO MAINTAIN SPACE TEMPERATURE SETPOINT. REFER TO PLANS FOR THERMOSTAT LOCATION.
C. RE-BALANCE HEATING COIL WATER FLOWS TO INCREASE LAT TO MINIMUM 85F AT WINTER DESIGN CONDITIONS WITH REQUIRED MINIMUM OUTSIDE AIRFLOW. PROVIDE TEST REPORT INDICATING UNIT LAT WITH MEASUREMENTS TAKEN WHEN OUTSIDE AIR IS AT OR BELOW 10 DEGREES F. INDICATE CURRENT OUTSIDE AIR TEMPERATURE, MIXED AIR TEMPERATURE, AND UNIT LEAVING AIR TEMPERATURE IN BALANCING REPORT. UNIT SHALL BE CONTROLLED TO MAINTAIN SPACE TEMPERATURE SETPOINT. REFER TO PLANS FOR THERMOSTAT LOCATION.
D. RE-BALANCE COOLING COIL WATER FLOWS TO DELIVER 55F SUPPLY AIR AT SUMMER DESIGN CONDITIONS WITH REQUIRED MINIMUM OUTSIDE AIRFLOW. PROVIDE TEST REPORT INDICATING UNIT LAT WITH MEASUREMENTS TAKEN WHEN OUTSIDE AIR IS AT OR ABOVE 85 DEGREES F. INDICATE CURRENT OUTSIDE AIR TEMPERATURE, MIXED AIR TEMPERATURE, AND UNIT LEAVING AIR TEMPERATURE IN BALANCING REPORT.

CEILING HEATER SCHEDULE (ELECTRIC)

CODE (ECH)	MANUFACTURER/ MODEL NO.	AREA SERVED	CONFIG	CFM	KW	ELECTRICAL VOLT	PH	FLA	FUSE	DISC	FEEDER	REMARKS
1-01	INDEECO/CCI SERIES	CHANGING ROOM	CEILING SURFACE MOUNT	160	1.5	120	1	12.5	-	S.T.O.	(2#12, #12G) 3/4"C	A
1-02	INDEECO/CCI SERIES	SHOWER ROOM	CEILING SURFACE MOUNT	160	1.5	120	1	12.5	-	S.T.O.	(2#12, #12G) 3/4"C	A
1-03	INDEECO/CCI SERIES	SHOWER ROOM	CEILING SURFACE MOUNT	160	1.5	120	1	12.5	-	S.T.O.	(2#12, #12G) 3/4"C	A
1-04	INDEECO/CCI SERIES	RESTROOM	CEILING SURFACE MOUNT	160	1.5	120	1	12.5	-	S.T.O.	(2#12, #12G) 3/4"C	A
1-05	INDEECO/CCI SERIES	JANITOR CLOSET	CEILING SURFACE MOUNT	160	1.5	120	1	12.5	-	S.T.O.	(2#12, #12G) 3/4"C	A

GENERAL NOTES:
1. PROVIDE DISCONNECT BY UNIT MANUFACTURER.
2. SUBMIT COLOR PALETTE FOR SELECTION BY ARCHITECT.

REMARK NOTES:
A. PROVIDE REMOTE WALL MOUNTED THERMOSTAT.

BASEBOARD RADIATION SCHEDULE (HYDRONIC)

CODE (BBR)	MANUFACTURER/ MODEL NO.	CAPACITY (BTUH/LF)	GPM/ FT	ROWS	ENCLOSU... HEIGHT (IN)	REMARKS
BBR-3	ZEHNDER RITTLING / FTR	627.1	0.05	1	14	A,B

GENERAL NOTES:
1. EWT= 180˚F
2. MINIMUM FLOW FOR CIRCUIT IS 1 GPM.
3. PROVIDE WALL TO WALL ENCLOSURE UNLESS OTHERWISE NOTED.
4. ENCLOSURE COLOR SELECTED BY ARCHITECT.
5. TUBE MATERIAL IS COPPER, FIN MATERIAL ALUMINUM UNLESS OTHERWISE NOTED.

REMARK NOTES:
A. PROVIDE ZEHNDER RITTLING TYPE PIBGS BAR GRILLE ENCLOSURE, 16GA CONSTRUCTION WITH BOTTOM OPEN... TOP OUTLET, SURFACE MOUNTED, AND ENCLOSED BACK.
B. INTERLOCK CONTROL WITH HVAC ZONE SERVING SAME SPACE. BASEBOARD SHALL ACT AS FIRST STAGE HEATING.

MAKE-UP AIR UNIT

CODE (MUA)	AREA SERVED	LOCATION	MANUFACTURER/ MODEL NO.	SUPPLY FAN CFM MIN	SUPPLY FAN CFM MAX	SUPPLY FAN TYPE	SUPPLY FAN ESP "W.C. (ALT.)	SUPPLY FAN HP	COOLING CAPACITY (EVAP) EAT (°F) DB	EAT (°F) WB	LAT (°F) DB	LAT (°F) WB	WATER FLOW (GPM)	HEATING CAPACITY (DIRECT GAS) EAT (°F)	LAT (°F)	INPUT MBH	OUTPUT MBH	FUEL TYPE	EFF %	FILTERS TYPE (PRE/FINAL)	FILTERS APD ("W.C.)	ELECTRICAL (FAN) VOLT	PH	MCA	FUSE	DISC	FEEDER SIZE	WEIGHT LBS	REMARKS
2.01	KITCHEN MUA	LEVEL 2	CAPTIVEAIRE	2000	3163	VFD	0.50	2	90	55	69	55	0.1	1	86	237.8	218.8	NG	92	2" ALUMINUM MESH	0	208	3	7.7	15A FRN-R	30A/3P	(4#12, #12G) 3/4"C	932	A,B,C,D,E,F

GENERAL NOTES:
1. PROVIDE PREMIUM EFFICIENCY MOTORS FOR MOTORS 1 HP AND OVER PER MENA STANDARD MG1-2003, TABLES 12-12 AND 12-13.
2. PROVIDE FACTORY MOUNTED COMBINATION STARTER/DISCONNECT WIRED TO MOTORS WITH AUXILIARY CONTACTS AND HOA SWITCH ON ALL THREE PHASE MOTORS.
3. INSTALL UNITS WITH ADEQUATE CLEARANCE FOR COIL PULL , FILTER REPLACEMENT AND TO FULLY OPEN ACCESS DOORS.
PROVIDE A MINIMUM OF 3 FEET CLEARANCE IN FRONT OF DISCONNECTS SWITCHES AND CONTROL PANELS. COMPLY FULLY WITH NEC.
4. UNIT STATIC PRESSURE CAPABILITY SHALL INCLUDE SCHEDULED EXTERNAL STATIC PRESSURE PLUS ALL INTERNAL PRESSURE DROPS. INCLUDE VALVES FOR WETTED COILS AND DIRTY FILTERS.
5. SCHEDULED FAN VALUES (CFM, SP AND HP) ARE ACTUAL AT ALTITUDE. MOTOR HP HAS BEEN ADJUSTED FROM SEA LEVEL CONDITIONS FOR
OPERATION AT JOBSITE ELEVATION. JOB SITE ELEVATION = 6700 FT.
6. PROVIDE DUCT SMOKE DETECTORS IN THE SUPPLY AIR OF ALL UNITS 2000 CFM OR GREATER. RE: MECHANICAL CONTROLS DIAGRAMS.
7. UNIT SHALL HAVE STAND-ALONE CONTROLS CAPABLE OF ACHIEVING ALL SPECIFIED SEQUENCES.

REMARK NOTES:
A. PROVIDE UNIT WITH DOUBLE WALL CONSTRUCTION, DIRECT EVAPORATIVE COOLING SECTION, AND DIRECT-FIRED NATURAL GAS HEATING SECTION.
B. REFER TO MECHANICAL CONTROLS DIAGRAMS FOR REQUIRED CONTROL FUNCTIONS.
C. PROVIDE INTERNAL VIBRATION ISOLATION.
D. PROVIDE SINGLE POINT ELECTRICAL CONNECTION.
E. PROVIDE UNIT WITH BOTTOM DISCHARGE CONFIGURATION.
F. UNIT SHALL HAVE ACCESS AND PIPING CONNECTIONS ON THE LEFT-HAND SIDE WHEN LOOKING INTO THE UNIT OUTSIDE AIR INTAKE.

VAV BOX SCHEDULE

CODE	MANUFACTURER/ MODEL NO.	DESIGN CFM COOLING MAX	DESIGN CFM DESIGN MIN	CAPACITY (CFM) MAX.	HEATING COIL CAP. BTUH	HEATING COIL EAT	HEATING COIL LAT	HEATING COIL GPM	HEATING COIL WPD FT	HEATING COIL ROWS	MAX. NC @ DESIGN MAX.	INLET SIZE	OUTLET SIZE	REMARKS
VAV-1.01	PRICE SDV 12	1050	735	1350	33417	46.7	90	3.2	10	1	27	12	16 X 15	C
VAV-02	EXISTING/RELOCATED	700	210	800	9548	46.7	90	0.5	0.2	1	36	8		B
VAV-03	EXISTING	750	225	800	10230	46.7	90	0.6	0.3	1	36	8		A
VAV-04	EXISTING	600	360	800	16367	46.7	90	1.7	1.9	1	36	8		A
VAV-05	EXISTING	600	300	800	13640	46.7	90	1.0	0.8	1	36	8		A
VAV-06	EXISTING/RELOCATED	200	125	800	5683	46.7	90	0.3	0.1	1	36	8		B
VAV-07	EXISTING/RELOCATED	650	325	800	14776	46.7	90	1.3	1.1	1	36	8		B
VAV-08	EXISTING/RELOCATED	400	125	800	5683	46.7	90	0.3	0.1	1	36	8		B
VAV-09	EXISTING/RELOCATED	750	375	800	17049	46.7	90	2.0	2.5	1	36	8		B
VAV-10	EXISTING/RELOCATED	800	240	800	10912	46.7	90	0.7	0.3	1	36	8		B
VAV-11	EXISTING/RELOCATED	550	330	800	15003	46.7	90	1.3	1.2	1	36	8		B
VAV-12	EXISTING/RELOCATED	1200	480	2000	21823	46.7	90	1.3	1.9	1	44	12		B
VAV-13	EXISTING	1650	1650	2800	52495	46.7	77	3.0	11	1	44	14		A

GENERAL NOTES
1. MOUNT WITH 3 STRAIGHT DUCT DIAMETERS UPSTREAM OF THE BOX.
2. PRIMARY AIR: 55F, INLET S.P. = 1.0" W.C., 0.25" W.C. UNIT DOWNSTREAM S.P. UNLESS NOTED OTHERWISE.
3. MAXIMUM NC LEVELS ARE RADIATED SOUND DATA AND BASED ON THE MAXIMUM BOX CFM LISTED.
4. EWT= 180F
5. ELEVATION = 6700FT.
6. CONTROLS SHALL BE BY MANUFACTURER OR BY TEMPERATURE CONTROL CONTRACTOR AND MOUNTED AT THE FACTORY. SEE SPECIFICATIONS.
TEMPERATURE CONTROL CONTRACTOR TO PROVIDE 2-WAY CONTROL VALVE PACKAGE UNLESS NOTED OTHERWISE.
7. HEATING COIL EAT IS CALCULATED FROM THE MIXED AIR TEMPERATURE COMING FROM AHU-4 WITH DESIGN WINTER OA CONDITIONS OF -10F.
8. FLUID FLOW AND PRESSURE DROP ARE APPROXIMATE. BALANCE SYSTEM AS NEEDED TO ACHIEVE LEAVING AIR TEMPERATURE SCHEDULED.

REMARK NOTES
A. VAV IS EXISTING TO REMAIN. REBALANCE AIRFLOWS TO SETPOINTS INDICATED IN SCHEDULE.
B. EXISTING VAV TO BE RELOCATED AND REBALANCED TO SETPOINTS INDICATED IN SCHEDULE.
C. PROVIDE STAND-ALONE CONTROL. VAV SHALL HAVE THE CAPABILITY TO CONNECT TO FUTURE BMS SYSTEM.

ENVIRONMENTAL FAN SCHEDULE

CODE	MANUFACTURER/ MODEL NO.	SERVICE	LOCATION	TYPE	CFM	ESP "W.C. (ALT.)	DRIVE	ELECTRICAL HP	VOLT	PH	FLA	DISC.	FEEDER	FUSE	MTG	CTRL	REMARKS
TF-1.01	GREENHECK / CSP-A780	IT	LEVEL 1	TRANSFER	500	0.5	D	.17	115	1	4.4	S.T.O.	(2#12, #12G) 3/4"C	-	1	III	C
TF-1.02	GREENHECK / CSP-A390	NAP ROOMS	LEVEL 1	TRANSFER	300	0.5	D	.06	115	1	1.4	S.T.O.	(2#12, #12G) 3/4"C	-	1	IV	C
TF-1.03	GREENHECK / CBF	WET WALL	LEVEL 1	CONCRETE BLOCK	300	0.2	D	0.2	115	1	5.8	S.T.O.	(2#12, #12G) 3/4"C	-	3	II	
TF-1.04	GREENHECK / CBF	WET WALL	LEVEL 1	CONCRETE BLOCK	300	0.2	D	0.2	115	1	5.8	S.T.O.	(2#12, #12G) 3/4"C	-	3	II	
TF-1.05	GREENHECK / CBF	WET WALL	LEVEL 1	CONCRETE BLOCK	300	0.2	D	0.2	115	1	5.8	S.T.O.	(2#12, #12G) 3/4"C	-	3	II	
TF-1.06	GREENHECK / CSP-A290	NORTH ELEC	LEVEL 1	TRANSFER	200	0.5	D	.06	115	1	1.4	S.T.O.	(2#12, #12G) 3/4"C	-	1	VI	C
EF-2.01	GREENHECK / BSQ-140	TOILET/LOCKERS	LEVEL 2	INLINE	3000	1	B	1.5	208	3	6	30A/3P	(4#12, #12G) 3/4"C	15A FRN-R	1	I	A,B
GEF-2.01	CAPTIVEAIRE / USBI24DD-RM	KITCHEN	LEVEL 2	GREASE EXHAUST	3910	2.5	B	5	208	3	17	30A/3P	(4#10, #10G) 3/4"C	25A FRN-R	2	V	D

GENERAL NOTES:
1. DRIVE TYPE: D = DIRECT-PROVIDE RHEOSTAT SPEED CONTROLLER IN FAN HOUSING UNLESS OTHERWISE NOTED.
B = BELT-PROVIDE ADJUSTABLE SHEAVE UNLESS OTHERWISE NOTED.
2. SCHEDULED FAN VALUES (CFM, SP AND HP) ARE ACTUAL AT ALTITUDE. JOB SITE ELEVATION = 6700 FT.
3. PROVIDE MAGNETIC STARTER WITH AUXILARY CONTACTS AND HOA SWITCH ON ALL THREE PHASE UNITS EXCEPT WHEN
SERVED FROM MOTOR CONTROL CENTER.
4. PROVIDE PREMIUM EFFICIENCY MOTORS FOR MOTORS 1 HP AND OVER PER NEMA STANDARD MG1-2003, TABLES 12-12 AND 12-13.

MOUNTING (MTG):
1. INSTALL FAN WITH FLEXIBLE CONNECTIONS AT DUCT INLET AND OUTLET AND WITH HANGING VIBRATION ISOLATORS.
2. PROVIDE WITH FACTORY MANUFACTURED ROOF CURB SUITABLE FOR ROOFING SYSTEM BEING USED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
3. WALL MOUNTED.

CONTROL (CTRL):
I. INTERLOCK WITH HVAC UNIT WHICH SERVES SAME SYSTEM (VIA DDC SYSTEM).
II. CONTROL WALL CAVITY TEMPERATURE SENSOR-ENERGIZE AT 50˚F AND LOWER (ADJUSTABLE). RE: CONTROL DIAGRAM.
III. CONTROL VIA WALL SENSOR. ENERGIZE AT 75˚F (ADJUSTABLE).
IV. CONTROL VIA WALL SWITCH.
V. RE: MECHANICAL CONTROLS DRAWINGS FOR KITCHEN MUA/EXHAUST SYSTEM CONTROL.
VI. CONTROL VIA WALL SENSOR. ENERGIZE AT 80˚F HIGH TEMPERATURE AND 60˚F LOW LOW TEMPERATURE (ADJUSTABLE).

REMARK NOTES:
A. PROVIDE BELT AND MOTOR GUARD.
B. PROVIDE MOTORIZED BACKDRAFT DAMPER.
C. PROVIDE SPEED CONTROL SWITCH.
D. UL762 RESTAURANT EXHAUST FAN WITH HINGED ACCESS DOOR, STEEL FLANGED INLET, FLANGED DISCHARGE, OSHA WEATHER COVER, HEAT SHIELD, SHAFT COOLER, RUB RING, EXTENDED LUBE LINES, ROTARY BELT TENSIONER, AND ISOLATION RAILS.

CABINET UNIT HEATER SCHEDULE (HYDRONIC)

CODE (CH)	MANUFACTURER/ MODEL NO.	AREA SERVED	CONFIG	CAP. (MBH)	CFM	GPM	ROW	WPD (FT)	ELECTRICAL WATTS	VOLT	PH	FLA	DISC	FUSE	FEEDER	CONN. SIZE	REMARKS
1.01	TRANE/FORCEFLO	SEE PLANS	HORIZONTAL RECESSED	27.1	284	1.8	4	5.3	85	120	1	1	S.T.O.	-	(2#12, #12G) 3/4"C	3/4"	A,B,C
1.02	TRANE/FORCEFLO	SEE PLANS	HORIZONTAL RECESSED	15.9	240	1.1	2	4.8	60	120	1	1	S.T.O.	-	(2#12, #12G) 3/4"C	3/4"	A,B,C
1.03	TRANE/FORCEFLO	SEE PLANS	HORIZONTAL RECESSED	15.9	240	1.1	2	4.8	60	120	1	1	S.T.O.	-	(2#12, #12G) 3/4"C	3/4"	A,B,C
1.04	TRANE/FORCEFLO	SEE PLANS	HORIZONTAL RECESSED	27.1	284	1.8	4	5.3	85	120	1	1	S.T.O.	-	(2#12, #12G) 3/4"C	3/4"	A,B,C
8	--	SEE PLANS	--	--	--	--	--	--		120	1	2.6				--	D
15	--	SEE PLANS	--	--	--	--	--	--		120	1	1.3				--	D

GENERAL NOTES:
1. EAT = 65˚F, LAT = 95˚F.
2. HEATING WATER: EWT = 180˚F
3. JOB SITE ELEVATION = 6,700 FT.

REMARK NOTES:
A. PROVIDE UNIT MOUNTED DISCONNECT SWITCH.
B. PROVIDE BOTTOM STAMPED INLET AND BOTTOM STAMPED OUTLET LOUVERS.
C. PROVIDE WALL MOUNTED THERMOSTAT.
D. CH IS EXISTING TO REMAIN.

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ALTERRA MOUNTAIN COMPANY east west partners

[SET PROJECT ADDRESS PARAMETER & ENERGY SETTINGS IF APPLICABLE]

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△	Date	Description
-	2021.06.04	BP4C - KVC INTERIORS - ISSUE FOR PERMIT AND CONSTRUCTION

Seal / Signature

COLORADO LICENSED MATTHEW E. EDWARDS 56806 PROFESSIONAL ENGINEER
06/04/2021

Project Name
Steamboat Base Village Redevelopment

Project Number
003.7835.000

Description
MECHANICAL SCHEDULES

Scale

1C-MEP0.000