

DESIGN CONDITIONS		
WINTER DESIGN TEMPERATURES:	INDOOR:	10 F DB
	OUTDOOR:	-20 F DB
SUMMER DESIGN TEMPERATURES:	INDOOR:	75 F DB
	OUTDOOR:	90 F DB
ELEVATION		8200 FEET
WALL R-VALUE (AVG)		13 (CAV)
		7.5 (CONT)
ROOF R-VALUE (AVG)		49
GLASS U-VALUE (AVG)		0.35
GLASS SHADING COEFFICIENT (AVG)		0.46
ELECTRICAL POWER AVAILABLE		120/1, 208/1, 208/3

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DUCTWORK LEGEND		
SINGLE LINE	DESCRIPTION	DOUBLE LINE
	90° ELBOW DOWN	
	90° ELBOW UP	
	OFFSET TO CHANGE ELEVATION (AT 30° WHEN POSSIBLE. ARROW SLOPES DN.)	
	ROUND RADIUS ELBOW	
	90° STRAIGHT TEE	
	90° CONICAL TEE	
	45° BRANCH	
	45° CONICAL TEE	
	SIZE OR SHAPE TRANSITION	
	ROUND FLEXIBLE DUCT	
	90° ELBOW DOWN	
	90° ELBOW UP	
	OFFSET TO CHANGE ELEVATION (AT 30° WHERE POSSIBLE.) ARROW IN DIRECTION OF AIRFLOW. INDICATE DROP OR RISE.	
	ROUND RADIUS ELBOW	
	RECTANGULAR ELBOW WITH TURNING VANES	
	SPLIT BRANCH TAKE-OFF WITH SQUARE ELBOW & SPLITTER DAMPER	
	SPLIT BRANCH TAKE-OFF WITH RADIUS ELBOW & SPLITTER DAMPER	
	BRANCH TAKE-OFF WITH RADIUS HEEL AND DAMPER	
	BRANCH TAKE-OFF WITH AIR EXTRACTOR	
	LINED DUCTWORK (UNLESS NOTED OTHERWISE)	
	SQUARE NECK CEILING DIFFUSER 4-WAY DIRECTIONAL THROW UNLESS INDICATED OTHERWISE	
	ROUND NECK CEILING DIFFUSER 4-WAY DIRECTIONAL THROW UNLESS INDICATED OTHERWISE	
	SIDEWALL SUPPLY GRILLE OR REGISTER WITH AIR EXTRACTOR	
	HALF ROUND NECK CEILING DIFFUSER	
	SUPPLY DUCT RISER	
	RETURN EXHAUST OR OUTSIDE AIR DUCT RISER	
	CEILING RETURN AIR GRILLE OR REGISTER	
	DOOR GRILLE	
	MANUAL BALANCING DAMPER	
	MOTORIZED DAMPER	
	SMOKE DAMPER	
	FIRE DAMPER	
	COMBINATION FIRE AND SMOKE DAMPER	
	CEILING RADIATION DAMPER	
	GRAVITY BACKDRAFT DAMPER	
	DUCT MOUNTED SMOKE DETECTOR	
	CEILING ACCESS PANEL	
	WALL CAP - BATH OR DRYER EXHAUST WITH INTEGRAL BACKDRAFT DAMPER	

PIPING LEGEND	
	GATE VALVE
	CHECK VALVE
	BALL VALVE
	BUTTERFLY VALVE
	PLUG VALVE
	CIRCUIT SETTER WITH GPM
	GLOBE VALVE
	STRAINER (Y-TYPE) WITH BLOW-DOWN
	TWO-WAY AUTOMATIC CONTROL VALVE
	THREE-WAY AUTOMATIC DIVERTING VALVE
	SOLENOID VALVE
	PRESSURE REGULATOR (OR REDUCING VALVE)
	TWO-WAY MODULATING CONTROL VALVE
	THREE-WAY MODULATING MIXING VALVE
	THERMOSTATIC MIXING VALVE (TMV)
	DIFFERENTIAL PRESSURE VALVE
	PRESSURE RELIEF VALVE
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	VACUUM BREAKER
	PRESSURE GAUGE WITH GAUGE COCK
	PRESSURE SENSOR
	PRESSURE / TEMPERATURE TEST PORT
	TEMPERATURE SENSOR
	THERMOMETER WELL
	THERMOMETER
	BTU METER (FLOW & TEMPERATURE DIFFERENCE)
	FLOW METER
	FLOW SWITCH
	AQUASTAT
	BRAIDED TYPE FLEXIBLE PIPE CONNECTOR
	ELASTOMERIC PIPING ISOLATOR (WITH KEVLAR)
	PIPE UNION
	QUICK CONNECT (GAS) OR HOSE BIB (WATER)
	RADIANT OR SNOWMELT MANIFOLD WITH ACCESS
	PIPE UP OR PIPE UP & DOWN
	PIPE DOWN
	FLOOR DRAIN
	FLOOR SINK
	HORIZONTAL CLEANOUT
	FLOOR CLEAN-OUT
	METER

PIPING DESIGNATIONS	
— CWS/R	CHILLED WATER SUPPLY/RETURN
— CWR	CONDENSER WATER SUPPLY/RETURN
— HWS/R	HEATING WATER SUPPLY/RETURN
— HWS/R/HT	HEATING WATER SUPPLY/RETURN HIGH TEMP
— HWS/R/LT	HEATING WATER SUPPLY/RETURN LOW TEMP
— SWS/R	SNOWMELT SUPPLY/RETURN
— RS & RL	REFRIGERANT SUCTION & REF. LIQUID
— DCW	DOMESTIC COLD WATER (DCW)
— DHW	DOMESTIC HOT WATER (DHW)
— DHR	DOMESTIC HOT WATER RECHRG (DHR)
— DHW-T	DOMESTIC HOT WATER (TEMPERED)
— W	WASTE
— V	VENT
— GW	GREASE WASTE
— FW	PRESSURIZED WASTE
— IW	INDIRECT WASTE
— BD	BUILDING DRAIN
— BS	BUILDING SEWER
— SD	STORM DRAIN
— OD	OVERFLOW DRAIN (STORM)
— SOD	SEDIMENT & OIL DRAIN
— G	NATURAL GAS
— MPG	MEDIUM PRESSURE NATURAL GAS
— LPG	PROPANE GAS
— D	DRAIN
— CD	CONDENSATE DRAIN
— F	FIRE SPRINKLER
— CA	COMPRESSED AIR
— GEO	GEODEXCHANGE SOURCE
— SWS/R	SOLAR WATER SUPPLY/RETURN
— (E)	EXISTING
— (UG)	UNDERGROUND

PUMP SYMBOLS	
	INLINE WET ROTOR PUMP
	INLINE WET ROTOR PUMP (W/ INTEGRAL CHECK)
	INLINE CLOSE-COUPLED PUMP
	BASE MOUNTED END SUCTION PUMP

GENERAL LEGEND	
	CARBON MONOXIDE SENSOR
	CARBON DIOXIDE SENSOR
	HUMIDISTAT
	DEHUMIDISTAT
	NITROGEN DIOXIDE SENSOR
	OCCUPANT SENSOR (RE: ELECTRICAL)
	ERV PUSH BUTTON CONTROLLER (LIGHTED)
	ERV PERCENT TIMER CONTROLLER (LIGHTED)
	SENSOR
	THERMOSTAT
	WALL ON/OFF CONTROL SWITCH

AIR DEVICE DESIGNATION KEY:	
SIZE (INCHES)	NOTE: FOR STANDARD MODULE SIZE REGISTERS, SIZE GIVEN IS NECK SIZE. REFER TO AIR DEVICE SCHEDULE SHEET FOR MODULE SIZE.
	<ul style="list-style-type: none"> A = AIR QUANTITY (CFM) CA = COMB. AIR OSA = OUTSIDE AIR RET = RETURN EXH = EXHAUST MUA = MAKE-UP AIR
	TYPE OF AIR DEVICE, RE: SCHEDULE SHEET

RISER DESIGNATION KEY:	
DUCTING:	PIPING:
OA - OUTSIDE AIR	CH - CHILLED/HEATING WATER
TE - TOILET EXHAUST	DW - DOMESTIC WATER
	G - GAS
GENERAL:	SM - SNOWMELT
US - UTILITY SHAFT	SD - STOREY WATER (SD AND/OR OD)
	WV - WASTE AND/OR VENT

AIR TERMINAL UNIT DESIGNATION KEY:	
TERMINAL TYPE:	
CV - CONSTANT VOLUME BOX (SERIES)	
FP - FAN POWERED BOX (PARALLEL)	
VV - VARIABLE VOLUME	
VR - VARIABLE VOLUME w/ REHEAT	

REMODEL LEGEND	
	POINT OF DISCONNECTION
	POINT OF NEW CONNECTION
(D)	DEMO
(E)	EXISTING
(N)	NEW
(R)	RELOCATE

PLAN ABBREVIATIONS	
AAV	AIR ADMITTANCE VALVE (STUDOR OR EQUAL)
AFF	ABOVE FINISHED FLOOR
ABV	ABOVE
BLW	BELOW
CFM	CUBIC FEET PER MINUTE (AIR QUANTITY)
CLG	CEILING
CO	CLEANOUT
CONC	CONCRETE
COTG	CLEAN-OUT TO GRADE
DN	DOWN
DMFR	DAMPER
EA	EACH
EC	ELECTRICAL CONTRACTOR
ER / EG	EXHAUST REGISTER / EXHAUST GRILLE
ETR	EXISTING TO REMAIN
EXH	EXHAUST
FCO	FLOOR CLEAN-OUT
FD	FIRE DAMPER OR FLOOR DRAIN
FPC	FIRE PROTECTION CONTRACTOR
GPM	GALLONS PER MINUTE (WATER FLOW RATE)
LD	SUPPLY DIFFUSER (LINEAR)
MC	MECHANICAL CONTRACTOR
MOD	MOTOR OPERATED DAMPER
OA (OR OSA)	OUTSIDE AIR
PC	PLUMBING CONTRACTOR
PLNM	PLENUM
PR	PIPE RISER
RA (OR R/A)	RETURN AIR
RR	RETURN REGISTER
RG (RAG)	RETURN AIR GRILLE
SA (OR S/A)	SUPPLY AIR
S. DMFR	SMOKE DAMPER
SR	SUPPLY REGISTER (SIDEWALL OR DUCT MOUNTED)
SV	STUDOR VENT (SIZED BY CONTRACTOR)
TYP	TYPICAL
TRANS	TRANSITION
T/A	THROW AWAY
UNO	UNLESS NOTED OTHERWISE
US	UTILITY SHAFT
VTR	VENT THROUGH ROOF
W/	WITH
WCO	WALL CLEAN-OUT
XFR	TRANSFER

EQUIPMENT ABBREVIATIONS	
AHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
B	BOILER (HOT WATER)
CH	CHILLER
CC	COILING COIL
CH	CABINET HEATER
CT	COOLING TOWER CELL
CV	CONSTANT VOLUME BOX
DEF	DISHWASHER EXHAUST FAN
EBH	ELECTRIC BASEBOARD HEATER
ECU	EVAPORATIVE COOLING UNIT
EF	EXHAUST FAN
ERV	ENERGY RECOVERY VENTILATOR (AIR TO AIR HX)
ET	EXPANSION TANK
FC	FAN COIL
FP	FAN POWERED BOX
GF	GLYCOL FEEDER
HC	HEATING COIL
HP	HEAT PUMP
HX	HEAT EXCHANGER
H	HUMIDIFIER
KEF	KITCHEN EXHAUST FAN
MV	MIXING VALVE
P	PUMP (SEE PIPING LEGEND FOR DETAILS)
RF	RETURN/RELIEF AIR FAN
SF	SUPPLY FAN
TEF	TOILET EXHAUST FAN
TMV	THERMOSTATIC MIXING VALVE
UH	UNIT HEATER
VV	VARIABLE VOLUME BOX
VR	VARIABLE VOLUME BOX w/ REHEAT
WH	WATER HEATER

Town of Vail Stamp

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Issued For		
No.	Date	Comment
3	5/1/15	PERMIT
4	6/12/15	PERMIT REVISION
5	7/24/15	COORDINATION
6	7/30/15	PERMIT REVISION 1
7	8/31/15	REVISION 3
8	9/28/15	REVISION 4
9	3/2/16	REVISION 5

MECHANICAL COVER SHEET

Project No.	Scale:
15011.00	N/A
Drawn By:	Checked By:
JAH	JDR

M0.0

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