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HVAC SYMBOL LEGEND

SYMBOL	DESCRIPTION
	-CEILING DIFFUSER, ROUND NECK (CEILING DIFFUSERS ARE 4-WAY THROW UNO)
	-ROUND DIFFUSER
	-CEILING RETURN
	-CEILING EXHAUST
	-CEILING DIFFUSER, RECTANGULAR OR SQUARE NECK (CEILING DIFFUSERS ARE 4-WAY THROW UNO)
	-SUPPLY REGISTER OR GRILLE (VERTICAL MOUNT, SIDEWALL)
	-RETURN/EXHAUST REGISTER OR GRILLE (VERTICAL MOUNT, SIDEWALL)
1	-REVISION REFERENCE
1 / M-1	-DETAIL REFERENCE: TOP-DETAIL#, BOTTOM-DRAWING# SHOWN ON
T	-THERMOSTAT/TEMPERATURE SENSOR
H	-HUMIDISTAT/HUMIDITY SENSOR
	-DUCT SMOKE DETECTOR
	-CONNECT TO EXISTING
	-DEMOLISH TO POINT INDICATED
M	-MOTORIZED CONTROL DAMPER
TS	-TEMPERATURE SENSOR
P	-PRESSURE SENSOR
BD	-BACKDRAFT DAMPER
	-NEUTRAL RELATIVE PRESSURE
	-POSITIVE RELATIVE PRESSURE
	-NEGATIVE RELATIVE PRESSURE
1	-SHEET NOTE CALLOUT
1	-SHEET NOTE CALLOUT
1	-SHEET NOTE CALLOUT
	-CEILING MOUNTED ACCESS DOOR
	-SQUARE THROAT ELBOW W/TURNING VANES
	-RADIUS ELBOW
	-RECTANGULAR/ROUND BRANCH TAKE-OFF OR ROUND/ROUND BRANCH TAKE-OFF
	-EXHAUST DUCT UP THROUGH SLAB W/ FAN ON ROOF ABOVE
	-EXHAUST FAN ON ROOF W/ DUCT DOWN THROUGH ROOF

SYMBOL	DESCRIPTION
	-FIRE DAMPER (WITH ACCESS PANEL)
	-FIRE & SMOKE DAMPER (WITH ACCESS PANEL)
	-EXISTING FIRE DAMPER TO REMAIN
	-EXISTING FIRE & SMOKE DAMPER TO REMAIN
SAE1	-SOUND ATTENUATOR
M	-MOTOR OPERATED CONTROL DAMPER (MOD)
FM	-AIR FLOW MEASURING STATION
	-MANUAL BALANCING DAMPER
	-DOOR GRILLE
1/2	-UNDERCUT DOOR
M	-ACCESS DOORS, VERTICAL OR HORIZONTAL
	-STAINLESS STEEL DUCTWORK
	-FLEXIBLE CONNECTION
12x8Ø	-FLAT OVAL DUCT
24x12	-NEW DUCTWORK, FIRST DIMENSION IS SIDE SHOWN
24x12	-EXISTING DUCTWORK TO REMAIN
24x12	-EXISTING DUCTWORK TO BE REMOVED
24x12	-DUCT ELBOW, POSITIVE PRESSURE (SUPPLY), FIRST
DOWN / UP WIN FLOOR	DIMENSION INDICATES SIDE TO WHICH ARROW IS POINTING
	-DUCT ELBOW, EXHAUST
	-DUCT ELBOW, NEGATIVE PRESSURE, RETURN
	-DUCT ELBOW UP THROUGH ROOF OR SLAB ABOVE
	-RECTANGULAR DUCT SECTION UP, POSITIVE PRESSURE, SUPPLY OR OUTSIDE AIR
	-RECTANGULAR DUCT SECTION UP, NEGATIVE PRESSURE, RETURN
	-RECTANGULAR DUCT SECTION UP, EXHAUST
	-ROUND DUCT SECTION UP
	-FLAT OVAL DUCT SECTION UP

SYMBOL	DESCRIPTION
	-TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME WITH ELECTRIC HEAT
	-TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME WITH ELECTRIC HEAT
	-TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME, FAN POWERED
	-TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME, FAN POWERED, WITH ELECTRIC HEAT
	-ELECTRIC DUCT HEATER (W/ PANEL CLEARANCE)
	-HYDRONIC REHEAT COIL
	-INLINE CENTRIFUGAL FAN
	-PACKAGED TERMINAL AIR CONDITIONER (PTAC)
UP DN	-CHANGE OF ELEVATION
	-FLEXIBLE DUCT
	-TRANSITION, CONCENTRIC
	-TRANSITION, ECCENTRIC
10x8 Ø8	-TRANSITION, SQUARE TO ROUND
	-SQUARE THROAT TEE
12x8	-RADIUS TEE
	-RECTANGLE-TO-ROUND TAKE-OFF
	-STANDARD BRANCH TAKE-OFF
	-SPIN-IN TAKE-OFF

HVAC PIPING SYMBOL LEGEND

SYMBOL	DESCRIPTION
CWS	-CONDENSER WATER SUPPLY
CWR	-CONDENSER WATER RETURN
CHWS	-CHILLED WATER SUPPLY
CHWR	-CHILLED WATER RETURN
CD	-CONDENSATE
CR	-CONDENSATE RETURN
PC	-PUMPED CONDENSATE
HWR	-HOT WATER RETURN
HWS	-HOT WATER SUPPLY
HPS	-HIGH PRESSURE STEAM SUPPLY
MPS	-MEDIUM PRESSURE STEAM SUPPLY
LPS	-LOW PRESSURE STEAM SUPPLY
HPR	-HIGH PRESSURE STEAM RETURN
MPR	-MEDIUM PRESSURE STEAM RETURN
LPR	-LOW PRESSURE STEAM RETURN
RL	-REFRIGERANT LIQUID
RS	-REFRIGERANT SUCTION
	-TEE, OUTLET DOWN
	-TEE, OUTLET UP
D D	-45° PIPE RISE (R) / DROP (D)
	-PIPE ANCHORS
	-CONCENTRIC REDUCER
	-ECCENTRIC REDUCER

SYMBOL	DESCRIPTION
	-FLOW DIRECTION
	-GATE VALVE
	-BALL VALVE
	-CALIBRATING BALANCING VALVE
	-BUTTERFLY VALVE
	-GAS COCK
	-UNION
	-STRAINER
	-CONTROL VALVE
	-SOLENOID VALVE
	-PSI REG.
	-CHECK VALVE
	-FLOW SWITCH
	-SLOPE DIRECTION (DOWN)
	-FLEX CONNECTION
	-O.S.&Y. GATE VALVE
	-STEAM TRAP
	-THREE-WAY CONTROL VALVE
	-THERMOMETER

SYMBOL	DESCRIPTION
EQUIP.	- P-TRAP
	-TWO-WAY CHECK VALVE
MV	-MANUAL VENT
	-PRESSURE GAUGE
	-RELIEF VALVE
FM	-FLOW METER
M	-WATER METER
	-INLINE PUMP
	-INLINE PUMP
	-VALVE ON RISER
	-CAP
	-CONNECTION, BOTTOM
	-CONNECTION, TOP
	-COUPLING
	-ELBOW, 90°
	-ELBOW, 45°
	-ELBOW, TURNED DOWN
	-ELBOW, TURNED UP

NOTE: SOME SYMBOLS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT

HVAC ABBREVIATIONS

SYMBOL	DESCRIPTION
AFD	-ADJUSTABLE FREQUENCY DRIVE
AFF	-ABOVE FINISHED FLOOR
AFR	-ABOVE FINISHED ROOF
AHU	-AIR HANDLING UNIT
AP	-ACCESS PANEL
BOP	-BOTTOM OF PIPE
BHP	-BRAKE HORSEPOWER
BTU	-BRITISH THERMAL UNIT
h	-CENTER LINE
ƒ	-CFM (CUBIC FEET PER MINUTE)
CD	-CEILING DIFFUSER
CT	-COOLING TOWER
CV	-CONSTANT AIR VOLUME
ΔP	-CHANGE IN PRESSURE
ΔT	-CHANGE IN TEMPERATURE
CFM	-CUBIC FEET PER MINUTE
CU	-CONDENSING UNIT
DDC	-DIRECT DIGITAL CONTROLS
DN	-DOWN
EAT	-ENTERING AIR TEMPERATURE
ESP	-EXTERNAL STATIC PRESSURE
EWT	-ENTERING WATER TEMPERATURE
FCU	-FAN COIL UNIT
FD	-FIRE DAMPER
FF	-FINAL FILTERS
FLA	-FULL LOAD AMPS
FPM	-FEET PER MINUTE
GPM	-GALLONS PER MINUTE
KW	-KILOWATT
LAT	-LEAVING AIR TEMPERATURE
LWT	-LEAVING WATER TEMPERATURE
LD	-LINEAR DIFFUSER
MBH	-THOUSAND BTUs PER HOUR
MCA	-MINIMUM CIRCUIT AMPS
MOCP	-MAXIMUM OVER CURRENT PROTECTION
MOD	-MOTOR OPERATED CONTROL DAMPER (MOD)
NC	-NORMALLY CLOSED
NO	-NORMALLY OPEN
NTS	-NOT TO SCALE
OA	-OUTSIDE AIR
OAL	-OUTSIDE AIR LOUVER
PRV	-PRESSURE REDUCING VALVE
PRS	-PRESSURE REDUCING STATION
PSI	-POUNDS PER SQUARE INCH
PSIG	-PSI GAUGE
PTAC	-PACKAGED TERMINAL AIR CONDITIONER
PVC	-POLYVINYL CHLORIDE PIPE
RA	-RETURN AIR
RHC	-REHEAT COIL
RHP	-ROOFTOP HEAT PUMP
RPM	-REVOLUTIONS PER MINUTE
RS/L	-REFRIGERANT SUCTION & LIQUID LINES
RTU	-ROOFTOP AIR HANDLING UNIT
SA	-SUPPLY AIR
SP	-STATIC PRESSURE
TSP	-TOTAL STATIC PRESSURE
UNO	-UNLESS NOTED OTHERWISE
VIPH	-VOLTS/PHASE
VAV	-VARIABLE AIR VOLUME
VFD	-VARIABLE FREQUENCY DRIVE

HVAC EQUIPMENT TAGS

TAG: A 200 CFM — -AIR DISTRIBUTION DEVICE

AHU NUMBER: AHU-1 — -AIR HANDLING UNIT

EF NUMBER: EF-1 — -EXHAUST FAN

VARIABLE/CONSTANT AIR VOLUME TERMINAL UNITS

TERMINAL UNIT TYPE
- VTU - VARIABLE TERMINAL UNIT
- CTU - CONSTANT TERMINAL UNIT
- PTU - PARALLEL TERMINAL UNIT
- STU - SERIES TERMINAL UNIT

AHU NUMBER / TERMINAL NUMBER: VTU-1-1

HVAC GENERAL NOTES

1. CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. TRANSITIONS TO ALL EQUIPMENT SHALL BE VERIFIED AND PROVIDED FOR EQUIPMENT FURNISHED.
2. DIMENSIONS SHALL BE FIELD-VERIFIED AND COORDINATED PRIOR TO PROCUREMENT OR FABRICATION. COORDINATE THE WORK WITH OTHER TRADES INVOLVED. FIELD MODIFICATIONS SUCH AS OFFSETS IN PIPING OR DUCTWORK (INCLUDING DIVIDED DUCTWORK) NEEDED DUE TO OBSTRUCTIONS OR INTERFERENCES SHALL BE PROVIDED AT NO ADDITIONAL COST. FOR PROJECTS INVOLVING RENOVATION, COORDINATE NEW WORK WITH EXISTING ELEMENTS SUCH AS THE BUILDING STRUCTURE AND ARCHITECTURAL FEATURES, SPRINKLER PIPING, LIGHTS, PLUMBING, AND ELECTRICAL CONDUIT.
3. DUCT CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA HVAC DUCT CONSTRUCTION STANDARD.
4. SEE SPECIFICATIONS FOR GAUGES, THICKNESS, BRACING, REQUIREMENTS, ETC., OF DUCTWORK.
5. PROVIDE AIR TURNING VANES IN ALL 90 DEGREE RECTANGULAR DUCT ELBOWS IN LOW PRESSURE SUPPLY, RETURN OR EXHAUST DUCTWORK..
6. DUCT SIZES AND ALL OPENINGS THROUGH BUILDING CONSTRUCTION SHALL SUIT EQUIPMENT FURNISHED.
7. COORDINATE DIFFUSER, GRILLE AND REGISTER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS AND EQUIPMENT OF ALL TRADES.
8. LOCATE THERMOSTATS, TEMPERATURE SENSORS, HUMIDISTATS, AND HUMIDITY SENSORS AT 48" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE. COORDINATE LOCATIONS WITH OTHER EQUIPMENT, FURNITURE, AND DOOR SWINGS.
9. ALL EQUIPMENT, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED AND/OR SPECIFIED. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO PROVIDE A VIBRATION-FREE, RIGID INSTALLATION.
10. ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
11. DAMPERS AND INSIDES OF DUCTS VISIBLE THROUGH GRILLES, REGISTERS AND DIFFUSERS SHALL BE PAINTED FLAT BLACK.
12. REFER TO TYPICAL DETAILS FOR PIPING AND INSTALLATION OF EQUIPMENT.
13. TRAPPED CONDENSATE DRAINS FROM ALL MECHANICAL EQUIPMENT SHALL BE PROVIDED FOR PROPER DRAINAGE TO SUIT EQUIPMENT FURNISHED.
14. ACCESS PANELS IN DUCTWORK AND CEILINGS SHALL BE PROVIDED WHERE REQUIRED FOR OPERATION, BALANCING OR MAINTENANCE OF ALL MECHANICAL EQUIPMENT.
15. ALL DUCTWORK AND PIPING IS SHOWN SCHEMATICALLY. PROVIDE ALL TRANSITIONS, TURNING VANES, ELBOWS, FITTINGS, ETC., TO ALLOW SMOOTH FLOWS. ALL SPLIT DUCT FITTINGS SHALL TRANSITION TO FULL SIZE OF THE SUM OF BOTH BRANCHES, UPSTREAM OF SPLIT.
16. VERIFY FINISH WITH ARCHITECT PRIOR TO PURCHASING GRILLES, REGISTERS, DIFFUSERS, LOUVERS AND OTHER AIR DISTRIBUTION DEVICES.
17. PROVIDE FLEXIBLE DUCT CONNECTIONS ON ALL DUCTWORK CONNECTING TO EACH FAN, ROOF TOP UNIT, AND FAN COIL UNIT.
18. PROVIDE TRANSITIONS AT DIFFUSER NECKS AS REQUIRED TO MATCH SIZES OF FLEX DUCTS TO BE CONNECTED.
19. INTERRUPTIONS TO EXISTING SERVICES SHALL BE SCHEDULED FOR TIMES OTHER THAN NORMAL OPERATING HOURS (SUCH AS NIGHTS AND WEEKENDS). SUCH INTERRUPTIONS TO SERVICES SHALL NOT BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF THE OWNER'S REPRESENTATIVE AND PROPER COORDINATION WITH OTHER TRADES. PRE-WORK SHALL BE PERFORMED TO MAKE THE SHUTDOWN PERIOD AS BRIEF AS POSSIBLE.
20. ALL EQUIPMENT, DUCTWORK, ETC., TO BE REMOVED SHALL REMAIN PROPERTY OF THE OWNER OR DISPOSED OF LEGALLY, AS DIRECTED BY OWNER.
21. MAINTAIN CLEARANCE OF A MINIMUM OF 6" BETWEEN DUCTWORK, PIPING, EQUIPMENT, ETC., AND ALL FIRE RATED AND FIRE/SMOKE RATED PARTITIONS, TO ALLOW FOR INSPECTIONS OF RATED WALLS.
22. LOCATE ALL OUTSIDE AIR INTAKES A MINIMUM OF 25' CLEAR FROM ALL PLUMBING VENTS AND EXHAUST AIR DISCHARGE LOCATIONS.
23. DUCT RUNOUTS TO DIFFUSERS SHALL MATCH THE SIZE OF THE DIFFUSER NECK.
24. UNLESS OTHERWISE NOTED, ALL EQUIPMENT AND VALVE DRAINS SHALL BE INDEPENDENTLY PIPED FULL SIZE TO THE NEAREST PLUMBING DRAIN.
25. PIPING, DUCTWORK, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL SWITCHBOARDS, PANELBOARDS, DISTRIBUTION BOARDS, OR MOTOR CONTROL CENTERS SHALL NOT BE INSTALLED WITHIN THE REQUIRED SPACE FOR WORKING CLEARANCES OR DEDICATED SPACES OF THE ELECTRICAL EQUIPMENT, EXTENDING IN FRONT OF AND FROM FLOOR TO STRUCTURAL CEILING WITH A WIDTH AND DEPTH OF THE ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC-110.26.

M - Mechanical Drawing List

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HVAC LEGEND, GENERAL NOTES & SHEET INDEX

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