

Consultant:

HOUSING AUTHORITY OF THE CITY OF LA CROSSE
2026 CAPITAL IMPROVEMENTS PROJECTS
HVAC GENERAL INFO SHEET

1307 BADGER STREET
LA CROSSE, WI 54602

Project Title:
Project Location:
Sheet Title:

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MEP001

MECHANICAL SHEET INDEX

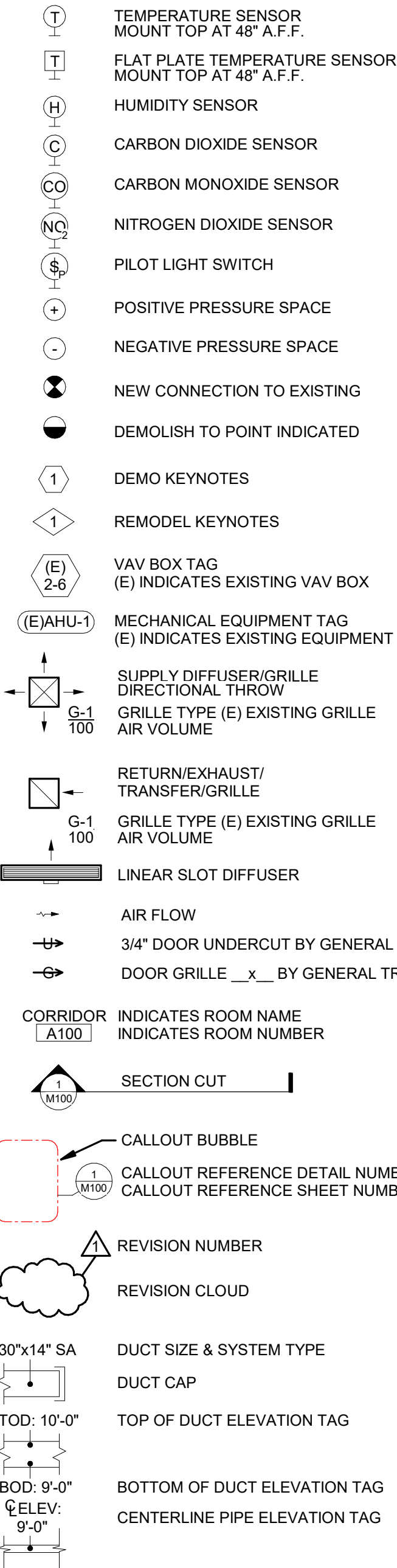
SHEET #	SHEET NAME
MEP001	HVAC GENERAL INFO SHEET
MEP110	FLOOR PLANS
MEP111	FLOOR PLANS, DETAILS, AND SCHEDULES
MEP210	FLOOR PLANS
MEP211	FLOOR PLANS, DETAILS, AND SCHEDULES
MEP309	1ST FLOOR REMOVAL PLAN
MEP310	FLOOR PLANS
MEP311	FLOOR PLANS
MEP312	FLOOR PLANS, DETAILS, AND SCHEDULES
MEP313	ELECTRICAL FLOOR PLANS AND SCHEDULES
MEP410	FLOOR PLANS
MEP411	FLOOR PLANS, DETAILS, AND SCHEDULES
MEP510	FLOOR PLANS
MEP511	FLOOR PLANS, DETAILS, AND SCHEDULES
MEP610	FLOOR PLANS
MEP611	FLOOR PLANS
MEP612	FLOOR PLANS, DETAILS, AND SCHEDULES
MEP710	FLOOR PLANS
MEP711	FLOOR PLANS
MEP712	FLOOR PLANS AND SCHEDULES

HVAC GENERAL NOTES:

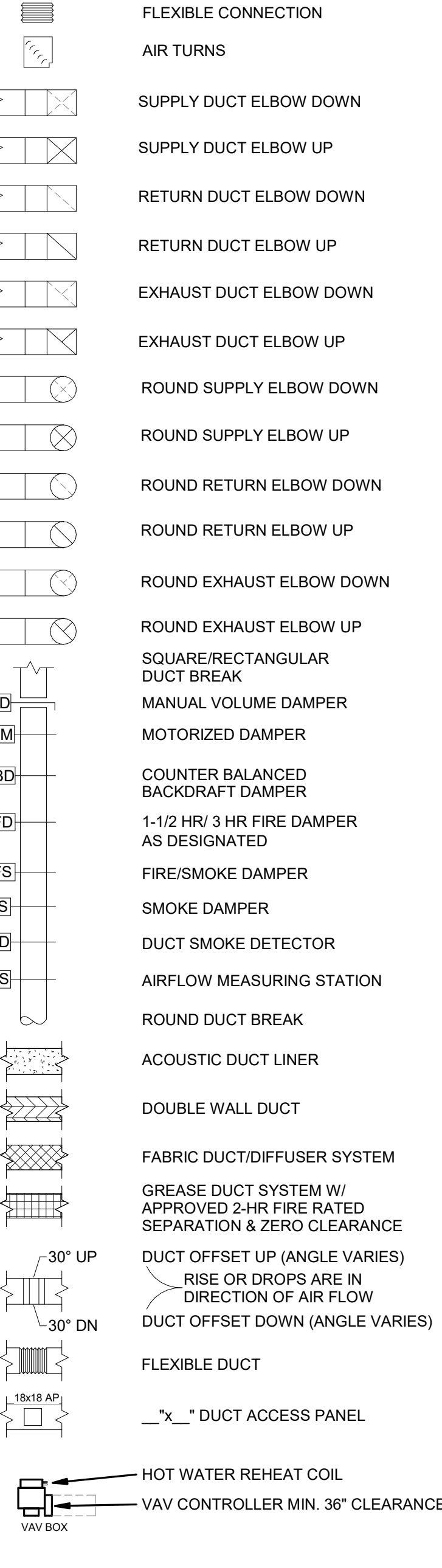
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH NATIONAL, STATE, & CODES; AS WELL AS, THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
- ON MECHANICAL "M" SERIES DRAWINGS, ITEMS THAT ARE DARK LINES SHALL BE NEW WORK & ITEMS THAT ARE LIGHT LINES SHALL BE EXISTING TO REMAIN.
- ON MECHANICAL "M00" SERIES DRAWINGS, ITEMS THAT ARE DARK DASHED LINES SHALL BE REMOVED & ITEMS THAT ARE LIGHT LINES SHALL BE EXISTING TO REMAIN.
- ALL EQUIPMENT, DUCTWORK, & PIPING SHALL BE KEPT CLEAN FROM DIRT & DEBRIS. DO NOT ALLOW THE INSIDE OF DUCT & LINER TO GET DIRTY.
- ALL DUCTWORK SHALL BE CONSTRUCTED TO SMACNA STANDARDS IN ACCORDANCE WITH THE APPROPRIATE PRESSURE CLASSIFICATION.
- DUCTWORK SIZE LISTED ON PLANS ARE INTERNAL, FREE AREA DIMENSIONS. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED.
- PIPING SIZE LISTED ON PLANS ARE I.D. DIMENSIONS.
- COORDINATE GRILLE/DIFFUSER & ACCESS PANEL LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN.
- COORDINATE THE LOCATIONS OF GRILLES/DIFFUSERS WITH ELECTRICAL LIGHT FIXTURES, LIGHT FIXTURE SUPPORT RODS AND FIRE SPRINKLER HEADS FOR FREE INTERFERENCE.
- ARROWS SHOWN ON THE HOT WATER AND CHILLED WATER PIPING INDICATE THE DIRECTION OF FLOW.
- ARROWS ON THE STEAM, CONDENSATE, & DRAIN PIPING INDICATE DOWNWARD PITCH OF THE PIPING.
- AIR VENTS SHALL BE INSTALLED AT ALL HIGH POINTS & DRAINS AT ALL LOW POINTS OF WATER PIPING SYSTEMS.
- PIPING CONNECTIONS WITH UNIONS OR FLANGES SHALL BE MADE TO COILS OR TUBE BUNDLES TO FACILITATE REMOVAL OF THAT ITEM WITHOUT DISTURBING THE BRANCH VALVES AND/OR PIPING.
- WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.
- COOLING COILS STACKED ONE ABOVE ANOTHER SHALL INCORPORATE DRIP TROUGHS ON THE DOWNSTREAM SIDE OF EACH OF THE UPPER COILS TO ELIMINATE DRIP INTO THE AIR STREAM OF THE BOTTOM COIL. DRIP TROUGHS SHALL BE SLOPED TO ALLOW FOR PROPER DRAINAGE.
- ALL ROOF CURBS SHALL BE 18" TALL UNLESS OTHERWISE NOTED ON PLANS.
- MANUAL VOLUME DAMPERS SHALL BE INSTALLED AT EACH BRANCH TAKE-OFF FROM MAIN SUPPLY, RETURN, & EXHAUST DUCTS. DAMPERS SHALL BE LOCATED AS CLOSE TO THE BRANCH TAKE-OFF AS POSSIBLE & INSTALLED TO ALLOW FOR EASY ACCESS. ABOVE HARD CEILINGS, VOLUME DAMPER SHALL BE INSTALLED BEHIND THE GRILLE/DIFFUSER.
- VOLUME DAMPERS INSTALLED IN EXTERNALLY INSULATED DUCTWORK SHALL BE PROVIDED WITH EXTENDED OPERATOR HANDLE TO OUTSIDE OF INSULATION.
- SHUT-OFF VALVES INSTALLED IN INSULATED PIPING SHALL BE PROVIDED WITH EXTENDED OPERATOR HANDLE TO OUTSIDE OF INSULATION.
- INLET DUCT SIZE TO SUPPLY AIR TERMINAL UNITS SHALL BE SAME AS INLET UNLESS OTHERWISE NOTED.
- OUTLET DUCT SIZE FROM EXHAUST AIR TERMINALS SHALL BE THE SAME AS OUTLET UNLESS OTHERWISE NOTED.
- SUPPLY DUCTWORK DOWNSTREAM OF VAV'S SHALL BE INTERNALLY ACOUSTICALLY LINED FOR A MINIMUM OF 6'-0" FOR SOUND ATTENUATION. MAINTAIN INTERNAL FREE AREA.
- ALL MITERED RECTANGULAR/SQUARE ELBOWS SHALL HAVE AIR TURNING VANES.
- CONTRACTOR SHALL FIELD VERIFY LAYOUT AND MANUFACTURER'S INSTALLATION REQUIREMENTS FOR ACTUAL EQUIPMENT PROVIDED.
- CONTRACTOR SHALL COORDINATE LOCATIONS OF HVAC MAINS, BRANCHES PIPING, ETC WITH ALL OTHER TRADES PRIOR TO INSTALLATION.
- PIPING TO TERMINAL HEATING AND COOLING DEVICES SHALL BE 3/4" UNLESS OTHERWISE NOTED.
- NO PIPING SHALL BE INSTALLED ABOVE ELECTRICAL EQUIPMENT, UNLESS OTHERWISE NOTED. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL EQUIPMENT LOCATIONS. COORDINATE WITH ELECTRICAL TRADE FOR EXACT LOCATIONS.
- PROVIDE FLEXIBLE DUCT CONNECTIONS AT ALL DUCTWORK CONNECTIONS TO AIR HANDLING UNITS, RETURN FANS AND EXHAUST FANS.
- PROVIDE MOTOR COVERS FOR ALL BELT-DRIVEN MOTORS & MOTOR SHAFTS.
- MAINTAIN ACCESS TO AIR TERMINAL BOX CONTROLLER AND REHEAT COIL PIPING CONNECTIONS. INSTALL AIR TERMINAL BOXES AT A HEIGHT THAT IS EASILY ACCESSIBLE.
- AIR TERMINAL UNIT ACTUATOR AND CONTROLLER TO BE MOUNTED ON THE SAME SIDE AS REHEAT COIL PIPING. CONTRACTORS SHALL KEEP ALL WORK CLEAR FROM CLEARANCE IN FRONT OF CONTROLLER & ALLOW ACCESS TO ACTUATOR & SERVICEABLE PIPING ACCESSORIES.
- ALL SIDEWALL GRILLES SHALL BE ALIGNED VERTICALLY AND HORIZONTALLY WHEREVER POSSIBLE. FOR DISCREPANCIES, CONTACT THE ARCHITECT/ENGINEER.
- FRESH AIR INTAKE SHALL BE A MINIMUM DISTANCE OF 10'-0" FROM ANY EXHAUST/RELIEF OUTLET, FLUE, GAS OR PLUMBING VENT. COORDINATE WITH RESPECTIVE TRADES.
- ELEVATION OF PIPING & DUCTWORK INDICATED ON THESE DRAWINGS ARE TO BE USED AS GUIDELINES TO ASSIST WITH INSTALLATIONS. MINOR CHANGES TO THESE ELEVATIONS MAY BE NECESSARY TO ELIMINATE UNFORESEEN INTERFERENCES.
- WHERE WORK INTERFERES WITH OWNER'S USE OF PREMISES, SCHEDULE WORK THROUGH OWNER TO MINIMIZE INCONVENIENCE TO OWNER. OWNER MUST APPROVE SCHEDULE IN WRITING BEFORE CONTRACTOR BEGINS ANY SUCH WORK.
- RECORD (AS-BUILT) DRAWING SHALL BE MAINTAINED ON THE JOB SITE AND SHALL BE SUBMITTED PRIOR TO JOB COMPLETION.

HVAC SYMBOLS

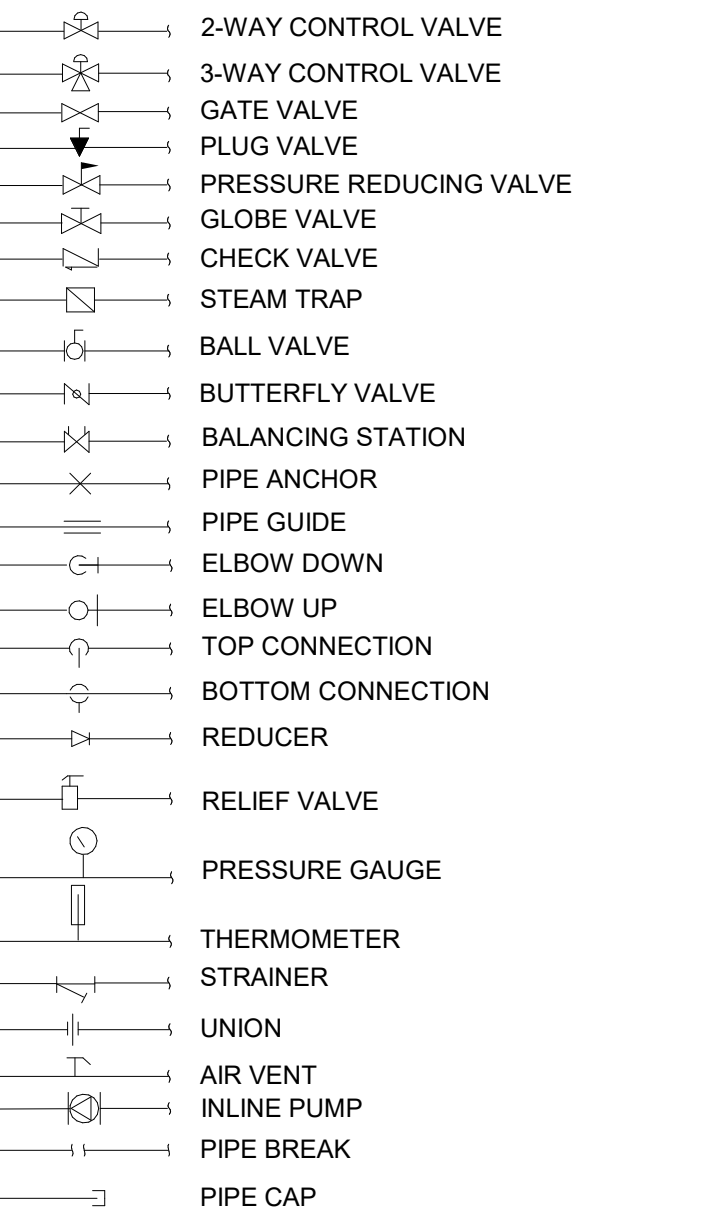
HVAC GENERAL SYMBOLS



HVAC DUCTWORK SYMBOLS



HVAC PIPING SYMBOLS



HVAC PIPING SYSTEM ABBREVIATIONS

SYSTEM ABBREVIATION	SYSTEM TYPE
HWS	HOT WATER HEATING SUPPLY
HWR	HOT WATER HEATING RETURN
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
GTS	GEOTHERMAL WATER SUPPLY
GTR	GEOTHERMAL WATER RETURN
CD	CONDENSATE DRAIN
RS	REFRIGERANT SUCTION
RL	REFRIGERANT LIQUID
RD	REFRIGERANT DISCHARGE
HPS	STEAM HIGH PRESSURE SUPPLY
HPR	STEAM HIGH PRESSURE RETURN
LPS	STEAM LOW PRESSURE SUPPLY
LPR	STEAM LOW PRESSURE RETURN
PD	PUMP DISCHARGE
LPAS	LP GAS
NGAS	NATURAL GAS
HWS	EXISTING HOT WATER HEATING SUPPLY
HWR	EXISTING HOT WATER HEATING RETURN
CWS	EXISTING CHILLED WATER SUPPLY
CWR	EXISTING CHILLED WATER RETURN
GTS	EXISTING GEOTHERMAL WATER SUPPLY
GTR	EXISTING GEOTHERMAL WATER RETURN
CD	EXISTING CONDENSATE DRAIN
RS	EXISTING REFRIGERANT SUCTION
RL	EXISTING REFRIGERANT LIQUID
RD	EXISTING REFRIGERANT DISCHARGE
HPS	EXISTING STEAM HIGH PRESSURE SUPPLY
HPR	EXISTING STEAM HIGH PRESSURE RETURN
LPS	EXISTING STEAM LOW PRESSURE SUPPLY
LPR	EXISTING STEAM LOW PRESSURE RETURN
PD	EXISTING PUMP DISCHARGE
LPAS	EXISTING LP GAS
NGAS	EXISTING NATURAL GAS

HVAC EQUIPMENT ABBREVIATIONS

ACC-1	AIR COOLED CHILLER
AC-1	AIR CURTAIN
AFM-1	AIR FLOW MEASURING STATION
AHU-1	AIR HANDLING UNIT
AS-1	AIR/DIRT SEPARATOR
AV-1	AIR VALVE
B-1	BOILER
BCU-1	BLOWER COIL UNIT
BCP-1	BOILER CIRCULATING PUMP
CC-1	CEILING FAN
CF-1	CONDENSATE PUMP
CT-1	COOLING TOWER
CU-1	CONDENSING UNIT
CUH-1	CABINET UNIT HEATER
CWP-1	CHILLED WATER PUMP
CX-1	CEILING EXHAUSTER
DC-1	DUCT COIL
DF-1	DESTRATIFICATION FAN
DH-1	DUCT HEATER
DOAS-1	DEDICATED OUTDOOR AIR SYSTEM
EF-1	EXHAUST FAN
ERC-1	ENERGY RECOVERY COIL
ERCP-1	ENERGY RECOVERY COIL PUMP
ERV-1	ENERGY RECOVERY VENTILATOR
ET-1	EXPANSION TANK
F-1	FURNACE
FCU-1	FAN COIL UNIT
FFU-1	FAN FILTER UNIT
FM-1	FLOW METER
G-1	GRILLES, REGISTERS, AND DIFFUSERS
GH-1	GAS FIRED UNIT HEATER
GX-1	GRAVITY EXHAUSTER
H-1	HUMIDIFIER
HCU-1	HEATING COIL
HCP-1	HEATING COIL PUMP
HP-1	HEAT PUMP
HW-1	HEAT WHEEL
HWP-1	HEATING WATER PUMP
HX-1	HEAT EXCHANGER
RH-1	REHEAT HEATER
KX-1	KITCHEN EXHAUST HOOD
L-1	LOUVER
MAU-1	MAKE-UP AIR UNIT
MS-1	MINI-SPLIT UNIT
P-1	PUMP
PF-1	PROPELLER FAN
PRV-1	PRESSURE REDUCING VALVE
PTAC-1	PACKAGED TERMINAL AIR CONDITIONING UNIT
RF-1	RETURN/RELIEF FAN
RFP-1	RADIANT FLOOR PUMP
RH-1	ROOF HOOD
RHC-1	REHEAT COIL
RP-1	RADIANT PANEL
RTU-1	ROOFTOP UNIT
RFM	FEET PER MINUTE
FPS	FEET PER SECOND
SC-1	SELF CONTAINED UNIT
SF-1	SUPPLY FEEDER UNIT
SFU-1	SYSTEM FEEDER UNIT
ST-1	SOUND TRAP
TCP-1	TEMPERATURE CONTROL PANEL
UB-1	UTILITY BLOWER
UH-1	UNIT HEATER
UV-1	UNIT VENTILATOR
VAV-1	VARIABLE AIR VOLUME BOX
VFD-1	VARIABLE FREQUENCY DRIVE
WC-1	WATER CHILLER
WF-1	WALL FIN
WFLU-1	WATER FILLER UNIT
WX-1	WALL EXHAUSTER
WV-1	WALL VENT

HVAC DUCTWORK SYSTEM ABBREVIATIONS

SYSTEM ABBREVIATION	SYSTEM TYPE
SA	SUPPLY AIR
RA	RETURN AIR
EA	EXHAUST AIR
OA	OUTSIDE AIR
TA	TRANSFER AIR
SA	EXISTING SUPPLY AIR
RA	EXISTING RETURN AIR
EA	EXISTING EXHAUST AIR
OA	EXISTING OUTSIDE AIR
TA	EXISTING TRANSFER AIR

GENERAL ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
A/C	AIR CONDITIONING
AF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AFR	ABOVE FINISHED ROOF
AMPS	AMPERES
AP	ACCESS PANEL
AUX	AUXILIARY
AVG	AVERAGE
BD	BACKDRAFT DAMPER
BOB	BOTTOM OF BEAM
BOD	BOTTOM OF DUCT
BOJ	BOTTOM OF JOIST
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STEEL
BHP	BRAKE HORSEPOWER
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
CAP	CAPACITY
CFM	CUBIC FEET PER MINUTE
CLG	CENTERLINE
CNG	CLEANOUT
CO	CONTINUE
CU FT	CUBIC FEET
CU IN	CUBIC INCHES
ΔP	CHANGE IN PRESSURE
ΔT	CHANGE IN TEMPERATURE
ΔT	DEGREE
DB	DRY BULB
DIRC	DIRECT CURRENT
DDC	DIRECT DIGITAL CONTROLS
DIA	DIAMETER
DISC	DISCONNECT
DN	DOWN
DP	DEWPOINT
DWG	DRAWING
DX	DIRECT EXPANSION (REFRIGERATION)
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EFF	EFFICIENCY
EWB	ENTERING WET BULB TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE
ETR	EXISTING TO REMAIN
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
EXH	EXHAUST
F	DEGREES FAHRENHEIT
FD	FIRE DAMPER
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FLA	FULL LOAD AMPS
FLR	FLOOR
FPI	FINS PER INCH
FFM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FIRE/SMOKE
FT	FEET
GAL	GALLONS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HD	HEAD (FEET)
HP	HORSEPOWER
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HOT WATER
HZ	FREQUENCY

HVAC GRILLES, REGISTERS & DIFFUSERS ABBREVIATIONS

ABBREVIATION	SYSTEM TYPE
E-1	EXHAUST GRILLE
R-1	RETURN GRILLE
S-1	SUPPLY GRILLE
T-1	TRANSFER GRILLE
(E)	EXISTING GRILLE

FIRESTOP LEGEND:

—	SMOKE PARTITION (LIMIT TRANSFER OF SMOKE)
---	1 HOUR RATED FIRE PARTITION (20 MIN DOORS)
----	1 HOUR RATED WALL (45 MIN DOORS)
----	2 HOUR RATED WALL (90 MIN DOORS)

HVAC PIPE SIZING CHART

REQUIRED PIPE SIZE	COPPER PIPE GPM	IRON PIPE GPM
1/2"	0 - 1.1	
3/4"	1.2 - 3.0	
1"	3.1 - 6.6	
1-1/4"	6.7 - 11.3	6.8 - 14.0
1-1/2"	11.4 - 18.0	14.1 - 21.0
2"	18.1 - 38.0	21.1 - 41.0
2-1/2"	38.1 - 69.0	41.1 - 66.0
3"	69.1 - 109.0	66.1 - 119.0
4"		119.1 - 242.0
5"		242.1 - 440.0
6"		440.1 - 710.0