PLUMBING ABBREVIATIONS

A/E ARCHITECT / ENGINEER
AD AREA DRAIN
AFF ABOVE FINISH FLOOR
AFG ABOVE FINISH GRADE
AG AIR GAP
AP ACCESS PANEL
ASHRAE AMERICAN SOCIETY HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS
ASME AMERICAN SOCIETY MECHANICAL ENGINEERS
ASPE AMERICAN SOCIETY PLUMBING ENGINEERS

BFP REDUCED PRESSURE BACKFLOW PREVENTER
BHP BREAK HORSEPOWER
BTU BRITISH THERMAL UNIT
BTUH BRITISH THERMAL UNIT PER HOUR

C CELSIUS
CGA COMPRESSED GAS ASSOCIATION
CI CAST IRON
CO CLEANOUT

CW DOMESTIC COLD WATER
HW DOMESTIC HOT WATER
DN DOWN
DOE DEPARTMENT OF ENERGY
DS DOWNSPOUT
DWG DRAWING

EL ELEVATION
ESC ESCUTCHEON
ET EXPANSION TANK
EWC ELECTRIC WATER COOLER
EWH ELECTRIC WATER HEATER
EWS EYE WASH STATION

F FAHRENHEIT
FCO FLOOR CLEANOUT
FD FLOOR DRAIN
FS FLOOR SINK
FU FIXTURE UNITS

GAL GALLON
GPM GALLONS PER MINUTE

HB HOSE BIBB
HD HUB DRAIN
HP HORSEPOWER

INV INVERT
IPC INTERNATIONAL PLUMBING CODE
IRW IRRIGATION WATER
IW INDIRECT WASTE
IWH INSTANTANEOUS WATER HEATER

KW KILOWATT
KWHR KILOWATT-HOUR

LAV LAVATORY
LBS/HR POUNDS PER HOUR

M METER
MBH 1000 BTUH
MH MANHOLE
MB MOP BASIN

NC NORMALLY CLOSED
NO NORMALLY OPEN
NOM. NOMINAL
NTC NOT TO SCALE

PD PRESSURE DROP OR DIFFERENCE
PDI PLUMBING AND DRAINAGE INSTITUTE
PG PRESSURE GAGE
PRV PRESSURE REDUCING VALVE
PSI POUNDS PER SQUARE INCH
PSIG POUNDS PER SQUARE INCH GAUGE

SAN SANITARY SEWER
SMACNA SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SCFM STANDARD CUBIC FOOT/MINUTE
SQFT SQUARE FEET
SK SINK

TD TEMPERATURE DIFFERENCE
TEMP TEMPERATURE
TSTAT THERMOSTAT
TYP TYPICAL

UPC UNIFORM PLUMBING CODE

V VENT
VTR VENT THROUGH ROOF

WC WATER CLOSET
WCO WALL CLEANOUT
WH WATER HEATER
WHA WATER HAMMER ARRESTER
WM WATER METER
WPD WATER PRESSURE DROP

YCO YARD CLEANOUT
YH YARD HYDRANT

HVAC ABBREVIATIONS

A/E ARCHITECT / ENGINEER
AB AIR BLENDER
AAV AUTOMATIC AIR VENT
ACC AIR COOLED CONDENSER
AAD ACCESS DOOR
AF AFTER FILTER
AFF ABOVE FINISHED FLOOR
AHU AIR-HANDLING UNIT
AP ACCESS PANEL
APD AIR PRESSURE DROP

BDD BACKDRAFT DAMPER
BFP BACKFLOW PREVENTER
BHP BRAKE HORSEPOWER
BTU BRITISH THERMAL UNIT
BTUH BRITISH THERMAL UNIT PER HOUR

CC COOLING COIL
CFM CUBIC FEET PER MINUTE
CI CAST IRON
CO CLEAN OUT
COMP COMPRESSOR UNIT
COP COEFFICIENT OF PERFORMANCE
CR CEILING REGISTER
CU CONDENSING UNIT
CUH CABINET UNIT HEATER
CW COLD WATER (POTABLE)

D DAMPER – AUTOMATIC
DB DECIBELS
Db DRY-BULB TEMPERATURE
DEG DEGREE
DIA DIAMETER
DP DEW POINT TEMPERATURE
DX DIRECT EXPANSION

EA EXHAUST AIR
EAT ENTERING AIR TEMPERATURE
ECU EVAPORATIVE CONDENSER UNIT
EDH ELECTRIC DUCT HEATER
EER ENERGY EFFICIENCY RATIO
EF EXHAUST FAN
EG EXHAUST GRILLE
EH EXHAUST HOOD
ERC ELECTRIC REHEAT COIL
ESP EXTERNAL STATIC PRESSURE
ET EXPANSION TANK
EUH ELECTRIC UNIT HEATER
EWC EVAPORATIVE WATER COOLER
EWT ENTERING WATER TEMPERATURE

F FAHRENHEIT
F/SDPR COMBINATION FIRE SMOKE DAMPER
FA FREE AREA
FC FLEXIBLE CONNECTION
FD FLOOR DRAIN
FD FIRE DAMPER
FPM FEET PER MINUTE
FPS FEET PER SECOND
FPTU FAN POWERED TERMINAL UNIT
FS FLOW SWITCH
FSTAT FREEZESTAT
FT FEET
FT-LB FOOT-POUND
FV FACE VELOCITY

GA GAUGE
GH GRAVITY HOOD
GPD GALLONS PER DAY
GPM GALLONS PER MINUTE

HW HOT WATER
HAC HOUSEKEEPING AID CLOSET
HB HOSE BIBB
HC HEATING COIL
HOA HAND/OFF/AUTOMATIC
HP HEAT PUMP
HP HORSEPOWER
HPS HIGH PRESSURE SUPPLY (STEAM)
HW HOT WATER
HX HEAT EXCHANGER
HZ HERTZ

I/O INPUT/OUTPUT
IAQ INDOOR AIR QUALITY
IN WC INCH WATER COLUMN

KW KILOWATT

LAT LEAVING AIR TEMPERATURE
LB/HR POUNDS PER HOUR
LSD LINEAR SLOT DIFFUSER
LVR LOUVER
LWT LEAVING WATER TEMPERATURE

M METER
MA MIXED AIR
MAT MIXED AIR TEMPERATURE
MAU MAKE-UP AIR UNIT
MBH 1000 BTUH
MERV MINIMUM EFFICIENCY REPORTING VALUE
MHP MOTOR HORSEPOWER
MIN MINIMUM
MVD MANUAL VOLUME DAMPER

NA NOT APPLICABLE
NC NOISE CRITERIA
NC NORMALLY CLOSED
NO NORMALLY OPEN
NOM NOMINAL
NTS NOT TO SCALE

OA OUTSIDE AIR

PD PRESSURE DROP
PF PRE-FILTER
PG PRESSURE GAGE
PHC PREHEAT COIL
PSI POUNDS PER SQUARE INCH

RA RETURN AIR
RG RETURN GRILLE
RH RELATIVE HUMIDITY

SA SUPPLY AIR
SAT SUPPLY AIR TEMPERATURE
SD SUPPLY AIR DIFFUSER
SEN SENSIBLE HEAT
SF SUPPLY FAN
SG SUPPLY AIR GRILLE
SI SQUARE INCHES
SP STATIC PRESSURE

TAB TESTING, ADJUSTING, BALANCE
TD TEMPERATURE DIFFERENCE
TSP TOTAL STATIC PRESSURE
TSTAT THERMOSTAT

GENERAL NOTES

1. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING.
2. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED. DUCT SIZES ARE NET INSIDE DIMENSIONS.
3. ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.
4. EXTERNAL STATIC PRESSURE NOTED IN THE SCHEDULES INCLUDES DUCT SYSTEM, AND FILTER LOADING. IT DOES NOT INCLUDE INTERNAL EQUIPMENT COMPONETS. TERMINAL
5. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.

DRAWING SYMBOLS

2 / H4 — DETAIL NUMBER / DRAWING NUMBER WHERE DRAWN
A / H7 — SECTION LETTER / DRAWING NUMBER WHERE SHOWN
26-SF 3 — BUILDING NO. WHERE EQUIPMENT IS LOCATED. / EQUIPMENT ABBREVIATION (SUPPLY FAN) / SUPPLY FAN NO. 3 IN BUILDING NO. 26 / TYPICAL UNIT NO.

PIPING SYMBOLS

CW — DOMESTIC COLD WATER, COLD WATER
HW — DOMESTIC HOT WATER, HOT WATER
CA — COMPRESSED AIR
D — DRAIN
SAN — SANITARY SEWER
SAN — SANITARY SEWER, BELOW GRADE (HIDDEN LINE)
DIRECTION OF PIPE PITCH (DOWN)
DIRECTION OF FLOW
ANCHOR
REDUCER OR INCREASER
ECCENTRIC REDUCER
TOP CONNECTION, 45° OR 90°
BOTTOM CONNECTION, 45° OR 90°
SIDE CONNECTION
CAPPED OUTLET
RISE OR DROP IN PIPE
UNION
PIPE UP
PIPE DOWN
STRAINER
THERMOMETER
PRESSURE GAGE
CO — CLEAN OUT
HOSE BIB
GATE VALVE
GLOBE VALVE
GATE VALVE WITH 3/4 " HOSE ADAPTER
CHECK VALVE
ANGLE GLOBE VALVE
BUTTERFLY VALVE
BALL VALVE
WATER HAMMER ARRESTOR

DUCTWORK SYMBOLS

FC — FLEXIBLE CONNECTION, EQUIPMENT, VIBRATION, OR SEISMIC
VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)
VANED ELBOW (SHORT RADIUS)
STANDARD RADIUS ELBOW (LONG RADIUS)
10x8 — NEW DUCT (INSIDE DIMENSIONS: WIDTH x DEPTH)
LOUVER (LOUVER SPECIFIED IN ARCHITECTURAL SECTION.)
VD — MANUAL VOLUME DAMPER
FD — FIRE DAMPER
45° SUPPLY — STANDARD BRANCH SUPPLY OR RETURN, NO SPLITTER (45° TAP)
45° RETURN
UP / DN — SUPPLY DUCT (UP & DOWN)
UP / DN — EXHAUST DUCT (UP & DOWN)
UP / DN — RETURN DUCT (UP & DOWN)
UP / DN — SUPPLY DUCT (UP & DOWN)
UP / DN — EXHAUST DUCT (UP & DOWN)
UP / DN — RETURN DUCT (UP & DOWN)
T — THERMOSTAT
CD-1 / 6/115 — AIR TERMINAL PROPERTIES; SYMBOL: CD-1; NECK SIZE/CFM: 6/115

BID DOCUMENTS 7/1/2011

Revisions	Date

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I hearby certify that this Plan, Specification, or Report was prepared by me, or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Oregon.
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NATIONAL CEMETERY ADMINISTRATION

Drawing Title: MECHANICAL GENERAL NOTES - MAINTENANCE	Project Title: REPLACE ADMINISTRATION AND MAINTENANCE BUILDING AND SITE IMPROVEMENTS		Date: 7-1-2011
Approved: Director, Office of Construction Management	Building Number: 3002	Checked: DavBod / Drawn: JamTho	Project No. 906CM3009
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