MECHANICAL ABBREVIATIONS

SYMBOL	DESCRIPTION
@	AT
A	ANCHOR (PIPING)
AAV	AUTOMATIC AIR VENT
AC	AIR CONDITIONING UNIT
AD	AUTOMATIC DAMPER, ACCESS DOOR
AEX	ACID EXHAUST
AF	AFTER FILTER
AFF	ABOVE FINISH FLOOR
AFMS	AIR FLOW MEASURING STATION
AHU	AIR HANDLING UNIT
AI	ANALOG INPUT
AL	ACOUSTIC LINING
AM	ACTIVITY MONITOR
AO	ANALOG OUTPUT
AP	ACCESS PANEL
APPD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AR	AIR RECEIVER
ARI	AMERICAN REFRIGERATION INSTITUTE
AS	AIR SEPARATOR
AUTO.	AUTOMATIC
AV	AIR VENT (MANUAL)
B	HOT WATER BOILER
BC	BALANCE VALVE / CIRCUIT SETTER
BDCE	BEAM DUMP CONFINEMENT EXHAUST
BDD	BACKDRAFT DAMPER
BFP	BACK FLOW PREVENTOR
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOE	BOTTOM OF EQUIPMENT
BOG	BOTTOM OF GRILLE / DIFFUSER
BOI	BOTTOM OF INSULATION
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
BV	BALL VALVE
BW	BUTT WELD (SHOWN ON PIPING TABLE)
C	AIR COMPRESSOR
CL	CENTER LINE
CA	COMPRESSED AIR (PLANT AIR)
CAP	CAPACITY (SHOWN ON PIPING TABLE)
CB	CATCH BASIN
CC	COOLING COIL
CD	CEILING DIFFUSER
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CABINET HEATER, CHILLER
CHe	CRYOGENIC HELIUM
CHK	CHECK VALVE
CI	CAST IRON
CIR	CIRCULAR
CLG	CEILING
CMU	CONCRETE MASONRY UNITS
CO	CLEANOUT
COL	COLUMN
COMB	COMBUSTION
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CS	CARBON STEEL (SHOWN ON PIPING TABLE)
COTG	CLEANOUT TO GRADE
CT	COOLING TOWER
CU	CONDENSING UNIT
CU YD	CUBIC YARDS
CNDR	CONDENSER WATER RETURN (HVAC)
CNDS	CONDENSER WATER SUPPLY (HVAC)
CHWR	CHILLED WATER RETURN (COOLING)
CHWS	CHILLED WATER SUPPLY (COOLING)
CHWR (1)	CHILLED WATER RETURN, (55F SENSIBLE COOLING LOOP, TARGET)
CHWS (1)	CHILLED WATER SUPPLY (55F SENSIBLE COOLING LOOP, TARGET)

SYMBOL	DESCRIPTION
D	DRAIN
DB	DRY BULB / DUCT BRACE
DBL	DOUBLE
DC	DOUBLE CONTAINED
DD	DESICCANT AIR DRYER
DEG	DEGREE
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DH	DUCT HEATER
DI	DIGITAL INPUT
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIR	DEIONIZED WATER RETURN
DIS	DEIONIZED WATER SUPPLY
DISC	DISCONNECT
DIST	DISTRIBUTION
DL	DOOR LOUVER
DN	DOWN
DO	DIGITAL OUTPUT
DP	DIFFERENTIAL PRESSURE
DPS	DIFFERENTIAL PRESSURE SENSOR
DRN	DRAIN
DS	DOWN SPOUT / DUCT SUPPORT
DSD	DUCT SMOKE DETECTOR
DWG	DRAWING
DX	DIRECT EXPANSION
(E)	EXISTING
E	EAST
EA	EACH, EXHAUST AIR
EAD	EXHAUST AIR DAMPER
EAT	ENTERING AIR TEMPERATURE
EBH	ELECTRIC BASEBOARD HEATER
EDH	ELECTRIC DUCT HEATER
EE/SS	EMERGENCY EYEWASH AND SAFETY SHOWER
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EH	ELECTRIC HEATER
EJ	EXPANSION JOINT
EL	ELEVATION
ENCL	ENCLOSURE
ENT	ENTRANCE
EP	EXPLOSION PROOF
EQ	EQUAL
EQUIP.	EQUIPMENT
ES	EMERGENCY EYEWASH AND SHOWER
ESW	EE/SS WATER
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXIST.	EXISTING
EXP	EXPOSED
EXT	EXTERIOR
F	FAHRENHEIT, FIRELINE, FAN
FACP	FIRE ALARM CONTROL PANEL
FBH	FILTER BANK–HOT OFF GAS
FBP	FILTER BANK–PRIMARY CONFINEMENT EXHAUST
FBS	FILTER BANK–SECONDARY CONFINEMENT EXHAUST
FC	FAN COIL, FLEXIBLE CONNECTION, FAIL–CLOSE
FCO	FLOOR CLEANOUT
FCV	FLOW CONTROL VALVE / FAN COIL UNIT (VERTICAL CONFIGURATION)
FD	FIRE DAMPER W/ ACCESS DOOR, FLOOR DRAIN
FF	FINAL FILTER / FLANGE FACE.
FI	FLOW INDICATOR
FIN	FINISH
FL OR FLR	FLOOR
FLG	FLANGE

SYMBOL	DESCRIPTION
FLEX	FLEXIBLE
FM	FORCE MAIN, FLOW METER
FO	FAIL–OPEN
FOB	ECCENTRIC REDUCER (FLAT ON BOTTOM)
FP	FIRE PROTECTION
FPB	FAN POWERED BOX
FPM	FEET PER MINUTE
FPRF	FIRE PROOF
FPS	FEET PER SECOND
FPW	FIRE WATER
FRP	FIBER GLASS REINFORCED PLASTIC
FS	FLOOR SINK
FT	FEET, FLOW TRANSMITTER
FTR	FIN TUBE RADIATION
FWD	FIRE WATER
G	GAS, GUIDE, GEAR OPERATOR
GA	GAGE OR GAUGE
GAL	GALLON
GALV	GALVANIZED
GCO	GROUND CLEANOUT
GEN	GENERAL
GH	GROUND HYDRANT
GI	GALVANIZED IRON
GL	GLASS
GND OR GRND	GROUND
GPM	GALLONS PER MINUTE
GR	GRADE
GYP	GYPSUM
HEV	HOOD EHAUST VALVE
H/V	HEATING/VENTILATING
HB	HOSE BIBB
HC	HEATING COIL (HYDRONIC HOT WATER)
HH OR HF	HEPA FILTER
H/O/A	HAND/OFF/AUTO SWITCH
HOG	HOT OFF GAS
HP	HEAT PUMP, HORSEPOWER
HR	HOUR
HS	HAND SWITCH
HTG	HEATING
HTR	HEATER
HW	HOT WATER
HWH	HOT WATER HEATER
HWP	HOT WATER PUMP
HWR	HOT WATER RETURN (HEATING)
HWS	HOT WATER SUPPLY (HEATING)
HX	HEAT EXCHANGER
HYWS/HYWR	HEAVY WATER SYSTEM
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN.	INCH
INSUL	INSULATION
INT.	INTERIOR
IP	IRON PIPE
JCT	JUNCTION
JMB	JANITORS MOP BASIN
JST	JOIST
JT	JOINT
LAB	LABORATORY
LEX	LABORATORY EXHAUST
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LBS	POUNDS
LD	LINEAR DIFFUSER
LV	LOUVER
LLLW	LOW LEVEL LIQUID WASTE (PROCESS WASTE DRAIN)
LWT	LEAVING WATER TEMPERATURE
M	MOTOR (ELECTRIC)
MAT OR MATL	MATERIAL
MAX	MAXIMUM
MBD	MIXED BED DEIONIZER
MBH	THOUSAND BTUH

SYMBOL	DESCRIPTION
MD	MECHANICAL DECK / MOTORIZED DAMPER
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MHZ	MEGA HERTZ
MIN	MINIMUM
MISC	MISCELLANEOUS
MS	MOISTURE SEPARATOR, MOTOR STARTER
MTD	MOUNTED
MUA	MAKE UP AIR HANDLING UNIT
N	NITROGEN, NORTH
NC	NORMALLY CLOSED
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO.	NUMBER
NO	NORMALLY OPEN
NR	NOT REQUIRED
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAD	OUTSIDE AIR DAMPER
OAV	OXYGEN, AIR, VACUUM
OC	ON CENTER
OD	OVERFLOW DRAIN, OUTSIDE DIAMETER
OFL	OVER FLOW LEADER
OPNG	OPENING
OX	OXYGEN
P	PUMP
PB	PIPE BRACE
PCBP	PRESSURE CONTROL BYPASS
PCE	PRIMARY CONFINEMENT EXHAUST
PD	PROCESS DRAIN (HVAC COOLING DRAIN)
PF	PRE FILTER
PH	PENTHOUSE (EXHAUST & INTAKE)
PHW	PROCESS HOT WATER
PI	PRESSURE INDICATOR
PIV	POST INDICATING VALVE
PL	PLATE
PLBG	PLUMBING
PLY WD	PLYWOOD
PNL	PANEL
POW	POLISHED WATER
PPM	PARTS PER MILLION
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PROJ	PROJECT, PROJECTION
PRV	PRESSURE RELIEF VALVE
PSCW	PROCESS SECONDARY CONFINEMENT WASTE
PSD	PUMP SUCTION DIFFUSER
PSF	POUNDS/SQUARE FOOT
PSI	POUNDS/SQUARE INCH
PV	PROCESS WASTE VENT THROUGH ROOF
PW	PROCESS WATER (NON–POTABLE)
QT	QUENCH TANK
RE	DI WATER RESISTIVITY
RA	RETURN AIR
RF	RETURN FAN
RAD	RETURN AIR DAMPER
RAG	RETURN AIR GRILLE
RAR	RETURN AIR REGISTER
RC	REHEAT COIL, REMOTE CONTROL
RD	ROOF DRAIN
REF	REFERENCE
REFR	REFRIGERATION
REG	REGISTER
REINF	REINFORCEMENT
REM	REMOVABLE
REQD	REQUIRED
RESIL	RESILIENT
REV	REVISIONS. ROOM EXHAUST VALVE.
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL

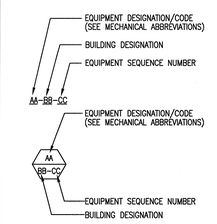
SYMBOL	DESCRIPTION
RID	RING INJECTION DUMP
RO	REVERSE OSMOSIS
RM	ROOM
RPBP	REDUCED PRESSURE BACK FLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT LEAK SENSOR
RV	RELIEVE VENT
RWL	RAIN WATER LEADER
S	SINK, SOUTH
SA	SUPPLY AIR
SAN	SANITARY
SB	SCRUBBER
SC	FIRE SCREEN
SCC	SENSIBLE COOLING COIL
SCR	SOLID STATE POWER CONTROLLER
SCH	SCHEDULE
SD	SMOKE DETECTOR, STORM DRAIN
SECT	SECTION
SEF	SMOKE EXHAUST FAN
SF	SUPPLY FAN / SAND FILTER
SFD	SMOKE/FIRE DAMPER
SFWR	SAND FILTER WATER RETURN
SFWS	SAND FILTER WATER SUPPLY
SH	STEAM HUMIDIFIER
SHT	SHEET
SK	SINK
SM	SHEET METAL
SMF	SMOKE MAKEUP FAN
SIM	SIMILAR
SOV	SHUTOFF VALVE
SP	STATIC PRESSURE
SPEC	SPECIFICATIONS
SQ	SQUARE
SQ FT	SQUARE FEET
SS	SANITARY SEWER, STAINLESS STEEL, SERVICE SINK
STA	STATION
ST	STEAM, SOUND TRAP
STD	STANDARD
STL	STEEL
STOR	STORAGE
STR	STRAINER
STWY	STAIRWAY
SUSP	SUSPENDED
SV	SOLENOID VALVE
SW	SOCKET WELD
SWC	SANITARY WATER COLD (POTABLE DOMESTIC WATER)
SWHS	SANITARY WATER HOT (SUPPLY)
SWHR	SANITARY WATER HOT (RETURN)
T	THERMOSTAT
TB	THERMAL UNIT
TCV	TEMPERATURE CONTROL VALVE
TCBP	TEMPERATURE CONTROL BYPASS
TE	THREADED END CONDITION, TEMP. SENSING ELEMENT
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
THK	THICK
TI	TEMPERATURE INDICATOR
TK	TANK
TOD	TOP OF DUCT
TOIL	TOILET
TOP	TOP OF PIPE
TOS	TOP OF STEEL SUPPORT
TP	TRAP PRIMER
TPV	TRAP PRIMER VALVE
TS	TEMPERATURE SENSOR
TT	TEMPERATURE TRANSMITTER
TWR	TOWER WATER RETURN (TECH. EQUIP. COOLING)
TWS	TOWER WATER SUPPLY (TECH. EQUIP. COOLING)
TYP	TYPICAL
UC	UNIT COOLER

SYMBOL	DESCRIPTION
UCP	UNIT CONTROL PANEL
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNFIN	UNFINISHED
UT	UTILITY
UR	URINAL
V	VALVE, VENT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER (MANUAL)
VENT.	VENTILATION
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VTR	VENT THRU ROOF
W	WASTE, WEST, WIDTH
W/	WITH
W/O	WITHOUT
WB	WET BULB
WC	WATER CLOSET, WATER COLUMN
WCO	WALL CLEANOUT
WF	WALL FAUCET
WG	WATER GAGE
WH	WATER HEATER, WALL HYDRANT
WHA	WATER HAMMER ARRESTOR
WP	WASTE PIPE, WEATHER PROOF
WPF	WATER PROOF
WS	WATER SUPPLY
WT	WEIGHT
YD	YARD

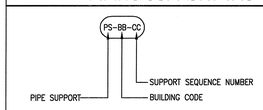
BUILDING DESIGNATION

SYMBOL	DESCRIPTION
CL	CENTRAL LAB OFFICE BUILDING
CU	CENTRAL UTILITY BUILDING
CE	CENTRAL EXHAUST BUILDING
CY	CRYOGENICS BUILDING
FE	FRONT END BUILDING
HE	HEBT
HS	HEBT SERVICE AREA
KL	KLYSTRON BUILDING
LN	LINAC
RG	RING
RN	RING SERVICE BUILDING
RT	RTBT
RS	RTBT SERVICE BUILDING
ST	SITE
TA	TARGET
TB	TARGET SERVICE BUILDING
TS	TECHNICAL SERVICE SUPPORT SHOPS

EQUIPMENT NAMING CONVENTION



PIPING SUPPORT TAG



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REV	CHANGE TYPE	CHANGE CONTROL SYSTEM	CHANGE REQUEST NUMBER	DESCRIPTION	DATE	PE	DATE	PJ	DATE	REQ	DATE	UTB	DATE	RPE	RPE NO	DATE	ST	CV	EC	EE	EM	IE	M	PD	SE	AR
0				CERTIFIED FOR CONSTRUCTION – 12/9/02	JG	BWJ							BWJ	105869	12/9/02	BZ	AW	BWJ	AK	IM	DM	–	BWJ	–	TW
REVISION OR ISSUE PURPOSE							REVISION APPROVALS									SQUAD CHECK									

RPE
REV. 0 DATE 12/9/02

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PE CLG 12/9/02
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DRAWING APPROVALS

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CENTER FOR NANOPHASE MATERIALS SCIENCES
MECHANICAL ABBREVIATIONS

1	48	49	50	PLANT	BLDG	FL	SH.	OF	TYPE	CLASS
3	H	X	X	8	8610		1	1	g	U
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