

three inches = one foot
one and one-half inch = one foot
one inch = one foot
three-quarters inch = one foot
one-half inch = one foot
three-eighths inch = one foot
one-quarter inch = one foot
one-eighth inch = one foot

ABBREVIATIONS

(NOT ALL ABBREVIATIONS WILL APPLY TO THIS WORK)

A/E	ARCHITECT / ENGINEER	FD	FLOOR DRAIN	OA	OUTSIDE AIR
AHAX	AIR TO AIR HEAT EXCHANGER	FDX	FIRE DAMPER	OAI	OUTSIDE AIR INTAKE
AS	AIR BLENDER	FF	FLOOR FILTER	OD	OUTSIDE DIAMETER
AAV	AUTOMATIC AIR VENT	FXH	FLUE GAS/FEEDWATER HEAT EXCHANGER	OFM	OUTSIDE FLOWMETER
ACC	AIR COOLED CONDENSER	FM	FUEL OIL PUMP	OR	OPERATING ROOM
ACCH	AIR COOLED CHILLER	FOP	FUEL OIL TANK	P	PUMP
ACCU	AIR-COOLED CONDENSING UNIT	FOT	FUEL OIL TANK EXCHANGER	PA	PASCAL
ACU	AIR CONDITIONING UNIT	FPM	FEET PER MINUTE	PC	PUMPED CONDENSATE
ACD	AUTOMATIC CONTROL DAMPER, MODULATING	FPS	FEET PER SECOND	PCF	POUNDS PER CUBIC FOOT (FEET)
ACD-TP	AUTOMATIC CONTROL DAMPER, TWO POSITION	FTU	FAN POWERED TERMINAL UNIT	PD	PRESSURE DROP
AD	ACCESS DOOR	FR	FLOOR REGISTER	PEF	PROPELLER (TYPE) EXHAUST FAN
AF	AFTER FILTER	FRP	FIBER REINFORCED POLYESTER	PF	PRE-FILTER
AFV	AIR FLOW CONTROL VALVE	FS	FAN SPEED	PG	PRESSURE GAGE
AFF	ABOVE FINISHED FLOOR	FSTAT	FREEZE-STAT	PGW	PROPYLENE GLYCOL-WATER (SOLUTION)
AFMD	AIR FLOW MEASURING DEVICE	FT	FEET	PHC	PREHEAT COIL
AFW	AIR FLOW WHEEL (FAN)	FT-LB	FEET-POUND	PPM	PARTS PER MILLION
AHU	AIR HANDLING UNIT	FT-LB	FEET-POUND	PRV	PRESSURE REGULATING (VALVE) STATION
AMP	AMPERGE	FT	FEET	PSIA	POUNDS PER SQUARE INCH - ABSOLUTE
AP	ACCESS PANEL	FT	FEET	PSIG	POUNDS PER SQUARE INCH - GAGE
APD	AIR PRESSURE DROP	FT	FEET	PS	POUNDS PER SQUARE INCH - GAGE
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE	FT	FEET	PSV	PRESSURE SAFETY VALVE
AS	AIR SEPARATOR	FT	FEET	PTAC	PACKAGED TERMINAL AIR CONDITIONER
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	FT	FEET	R/E	RETURN OR EXHAUST
AW	AIR WASHING UNIT	FT	FEET	RA	REFRIGERANT AIR DRYER
AXF	AXIAL FLOW	FT	FEET	RAD	RADIO FREQUENCY
B	BOILER	FT	FEET	RAHX	ROTARY AIR HEAT EXCHANGER
BAS	BUILDING AUTOMATION SYSTEM	FT	FEET	RAT	RETURN AIR TEMPERATURE
BD	BUTTERFLY DAMPER	FT	FEET	RCCH	REMOTE CONDENSER CHILLER
BDD	BACKDRAFT DAMPER	FT	FEET	RCU	RECIPROCATING CHILLER UNIT
BDR	BASE BOARD RADIATOR	FT	FEET	RD	ROOM DATA SHEETS
BFP	BACKFLOW PREVENTER	FT	FEET	REA	RELIEF AIR
BFT	BOILER PLANT FIRE TUBE	FT	FEET	RF	RETURN FAN
BH	BOTTOM GRILLE	FT	FEET	RH	RELATIVE HUMIDITY
BHP	BRAKE HORSEPOWER	FT	FEET	RHC	REHEAT COIL
BHW	HOT WATER HEATING BOILER	FT	FEET	RHG	REHEAT HOT GAS
BHX	BOILER EXHAUST HEAT EXCHANGER	FT	FEET	RL	REFRIGERANT LIQUID LINE
BIW	BACKWARD INCLINED WHEEL (FAN)	FT	FEET	RLA	RUN LOAD AMPERE
BMS	BUILDING MANAGEMENT SYSTEM	FT	FEET	RPM	REVOLUTIONS PER MINUTE
BOB	BOTTOM OF BEAM	FT	FEET	RR	RETURN REGISTER
BOB	BOTTOM OF DUCT	FT	FEET	RRTU	REFRIGERANT SUCTON
BOP	BOTTOM OF PIPE	FT	FEET	RTU	RELIEF VALVE
BR	BOTTOM REGISTER	FT	FEET	SA	SUPPLY AIR
BSC	BIOLOGICAL SAFETY CABINETS	FT	FEET	SAD	SOUND ATTENUATING DEVICE
BT	BLOWOFF TANK	FT	FEET	SAT	SUPPLY AIR TEMPERATURE
BTIC	BLOWOFF TANK CONTROL VALVE	FT	FEET	SC	SHADING COEFFICIENT
BTU	BRITISH THERMAL UNIT	FT	FEET	SCFM	STANDARD CUBIC FEET PER MINUTE
BTUH	BRITISH THERMAL UNIT PER HOUR	FT	FEET	SCI	SILICON CONTROLLED RECTIFIER
BWT	BOILER PLANT WATER TUBE	FT	FEET	SD	SMOKE DETECTOR
C	CENTIGRADE (CELCIUS)	FT	FEET	SD-1	SUPPLY AIR DIFFUSER
CC	COOLING COIL	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CCD	COOLING COIL CONDENSATE DRAIN	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CD	CEILING DIFFUSER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CD-1	CONSTRUCTION DOCUMENTS (SUBMISSION1)	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CD-2	CONSTRUCTION DOCUMENTS (SUBMISSION2)	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CENT	CENTRIFUGAL	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CFH	CUBIC FEET PER HOUR	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CFM	CUBIC FEET PER MINUTE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CFT	CUBIC FEET	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CFP	CHEMICAL FEED PUMP	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CG	CEILING GRILLE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CH	CHILLER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CHP	CHILLED WATER PUMP	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CHW	CHILLED WATER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CI	CAST IRON	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CM	CARBON MONOXIDE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CM	CUBIC METER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CM/S	CUBIC METER PER SECOND	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CO	CLEAN OUT	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CO2	CARBON DIOXIDE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CO2	COMPRESSION UNIT	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
COP	COEFFICIENT OF PERFORMANCE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CP	CONDENSATE PUMP	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CR	CEILING REGISTER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CS	CLEAN STEAM	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CSG	CLEAN STEAM GENERATOR	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CT	COOLING TOWER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CU	CONDENSING UNIT	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CUH	CABINET UNIT HEATER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CV	CONSTANT VOLUME	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CW	COLD WATER (POTABLE)	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CWCC	CHILLED WATER COOLING COIL	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CWP	CONDENSER WATER PUMP	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CWR	CHILLED WATER RETURN	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
CWS	CHILLED WATER SUPPLY	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
(D)	EXISTING ITEM TO BE DEMOLISHED AND/OR REMOVED	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
D	DAMPER - AUTOMATIC, OR CONDENSATE DRAIN	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
D-1	OUTDOOR AIR DAMPER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
D-2	RETURN AIR DAMPER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
D-3	RELIEF AIR DAMPER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DB	DEBILIS	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
Dd	DRY-BULB TEMPERATURE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DD-1	DESIGN DEVELOPMENT (SUBMISSION1)	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DD-2	DESIGN DEVELOPMENT (SUBMISSION2)	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DDC	DIRECT DIGITAL CONTROLS	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DE	DEGREE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DF	DIFFUSER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DIA	DIAMETER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DIW	DEIONIZED WATER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DP	DEW POINT TEMPERATURE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DP	DIFFUSER PLATE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DPA	DIFFERENTIAL PRESSURE ASSEMBLY	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DPS	DIFFERENTIAL PRESSURE SENSOR	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DX	DIRECT EXPANSION	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
DXCC	DIRECT EXPANSION COOLING COIL	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
(E)	EXISTING ITEM TO REMAIN	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EA	EXHAUST AIR	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EAT	ENTERING AIR TEMPERATURE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EC	EVAPORATIVE COOLER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
ECC	ENGINEERING CONTROL CENTER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
ECU	EVAPORATIVE CONDENSER UNIT	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EDH	ELECTRIC DUCT HEATER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EE	ENERGY EFFICIENCY RATIO	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EF	EXHAUST FAN	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EG	EXHAUST GRILLE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EGS	EMERGENCY GAS SHUTOFF	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EGT	ENTERING GLYCOL TEMPERATURE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EJ	EXPANSION JOINT	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EMD	END OF MAIN DRIP (STEAM)	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
ENT	ENTERING	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
ER	EXHAUST REGISTER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
ERC	ELECTRIC REHEAT COIL	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
ERP	ELECTRIC RADIANT PANEL	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
ESP	EXTERNAL STATIC PRESSURE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
ET	EXPANSION TANK	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
ETO	ETHYLENE OXIDE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EUH	ELECTRIC UNIT HEATER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EW	EVAPORATIVE WATER COOLER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EW	ENTERING WATER TEMPERATURE	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
EX	EXISTING	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
F	FAHRENHEIT	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
F&T	FLOAT AND THERMOSTATIC COMBINATION FIRE SMOKE DAMPER	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
F	FREE AREA	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
FC	FLEXIBLE CONNECTION	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
FCU	FAN COIL UNIT (4 PIPE)	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
FCUC	FAN COIL UNIT COOLING ONLY	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
FCUH	FAN COIL UNIT HEATING ONLY	FT	FEET	SD-2	SUPPLY AIR DIFFUSER
FCW	FORWARD CURVED WHEEL (FAN)	FT	FEET	SD-2	SUPPLY AIR DIFFUSER

CONTROLS SYMBOLS

(NOT ALL SYMBOLS WILL APPLY TO THIS WORK)

(T)	ROOM THERMOSTAT/TRANSMITTER - WALL MOUNT
(H)	ROOM HUMIDISTAT (MOISTURE)/TRANSMITTER - WALL MOUNT
(TT)	TEMPERATURE TRANSMITTER
(TT)	TEMPERATURE TRANSMITTER, AVERAGING ELEMENT
(MT)	MOISTURE (HUMIDITY) TRANSMITTER
(PT)	PRESSURE TRANSMITTER
(SPS)	STATIC PRESSURE SENSOR
(FT)	FLOW TRANSMITTER
(IT)	CURRENT TRANSMITTER
(CT)	CONDUCTIVITY TRANSMITTER
(SD)	SMOKE DETECTOR
(PDT)	PRESSURE DIFFERENTIAL TRANSMITTER
(PDS)	PRESSURE DIFFERENTIAL SWITCH
(HS)	HAND SWITCH (HAND-OFF-AUTO SWITCH)
(ZC)	VALVE OR DAMPER POSITION CONTROLLER
(KR)	LOCAL RECORDING TIME CLOCK RUNTIME
(TSL)	TEMPERATURE SWITCH, LOW (FREEZE/STAT)
(TSH)	TEMPERATURE SWITCH, HIGH (FREEZE/STAT)
(LC)	LEVEL CONTROLLER
(LT)	LEVEL TRANSMITTER
(PSH)	PRESSURE SWITCH HIGH
(PSL)	PRESSURE SWITCH LOW
(RAH)	RETURN AIR HUMIDITY SENSOR
(EPT)	ELECTRONIC TO PNEUMATIC TRANSDUCER
(AT) CO2	CARBON DIOXIDE TRANSMITTER
(AT) CO	CARBON MONOXIDE TRANSMITTER
(AT) OC	OCCUPANCY SENSOR
(ECC)	ENGINEERING CONTROL CENTER
(AFMD)	AIR FLOW MEASURING DEVICE
(LTCP)	LOCAL TEMPERATURE CONTROL PANEL
(HVAC)	HVAC CONTROL PANEL
(VSMC)	VARIABLE SPEED MOTOR CONTROLLER
(ECC)	INTEGRATE CONTROL POINT ON REMOTE GRAPHICS WORKSTATION AT ENERGY CONTROL CENTER
(TC)	TEMPERATURE CONTROLLER; SEE SEQUENCE OF OPERATION
(PC)	PRESSURE CONTROLLER; SEE SEQUENCE OF OPERATION
(SC)	SPEED CONTROLLER; SEE SEQUENCE OF OPERATION
(FC)	FLOW CONTROLLER; SEE SEQUENCE OF OPERATION
(FSH)	FLOW SWITCH HIGH
(FSL)	FLOW SWITCH LOW
(KC)	TIME CLOCK CONTROLLING EQUIPMENT ON A SCHEDULE
(MC)	HUMIDIFIER CONTROL VALVE
(FC)	TEMPERATURE SENSING ELEMENT FOR TRANSMITTING TEMPERATURE TO EMCS (PROVIDE 12 INCHES MINIMUM LENGTH IN DUCT WHEN SPACE PERMITS.)
(FC)	SENSOR WITH AVERAGING ELEMENT TO TRANSMIT TEMPERATURE TO EMCS
(M)	MOTOR STARTER
(M)	ELECTRIC OPERATED CONTROL DAMPER/OR VALVE

DUCTWORK SYMBOLS

(NOT ALL SYMBOLS WILL APPLY TO THIS WORK)

UP	SUPPLY DUCT (UP & DOWN)
DN	EXHAUST DUCT (UP & DOWN)
UP	RETURN DUCT (UP & DOWN)
UP	EXHAUST OR RETURN CEILING REGISTER OR GRILLE
UP	EXHAUST OR RETURN BOTTOM REGISTER OR GRILLE (WALL TYPE)
UP	EXHAUST OR RETURN REGISTER OR TOP GRILLE (WALL TYPE)
UP	VANED ELBOW & AIR SPLIT TYPE DUCT TAKE-OFF
UP	CONNECT NEW DUCT TO EXISTING DUCT
UP	INCLINED RISE, IN DIRECTION OF AIR FLOW
UP	INCLINED DROP, IN DIRECTION OF AIR FLOW
UP	LIMIT OF DEMOLITION
UP	FLEXIBLE CONNECTION, EQUIPMENT, VIBRATION, OR SEISMIC
UP	VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)
UP	VANED ELBOW (SHORT RADIUS)
UP	STANDARD RADIUS ELBOW (LONG RADIUS)
UP	NEW DUCT (INSIDE DIMENSIONS: WIDTH x DEPTH)
UP	EXISTING DUCT TO REMAIN
UP	EXISTING DUCT TO BE REMOVED
UP	LOUVER (LOUVER SPECIFIED IN ARCHITECTURAL SECTION.)
UP	FLEXIBLE DUCTWORK (INSULATED)
UP	DUCT WITH SOUND LINING
UP	MANUAL VOLUME DAMPER
UP	FIRE DAMPER
UP	BACK DRAFT DAMPER
UP	COMBINATION FIRE/SMOKE DAMPER
UP	POINT OF CHANGE IN DUCT CONSTRUCTION BY STATIC PRESSURE CLASS (IN. OF WATER) WHICH WILL ACCOMMODATE MAXIMUM OPERATING PRESSURE IN THE DUCT SUBSECTION. THE SYMBOL CONTINUES THE ASSIGNMENT UNTIL THE DUCT TERMINATES OR ANOTHER SYMBOL APPEARS. A "N" SUPERScript INDICATES NEGATIVE PRESSURE.
UP	AUTOMATIC CONTROL DAMPER MODULATING
UP	AUTOMATIC CONTROL DAMPER TWO POSITION
UP	STAINLESS STEEL DUCT
UP	MANUAL SPLITTER DAMPER
UP	STANDARD BRANCH SUPPLY NO SPLITTER (45° TAP)
UP	STANDARD BRANCH RETURN NO SPLITTER (45° TAP)
UP	DUCT MOUNTED COIL (HOT WATER OR STEAM COIL)
UP	DUCT MOUNTED COIL

MECHANICAL LEGEND

(REFER TO MECHANICAL DEMOLITION (MD SERIES), NEW WORK (NH SERIES), AND PIPING PLANS (MP SERIES) FOR LOCATIONS)

A1	PHOTO INDICATOR
CWR	EXISTING CHILLED WATER RETURN
CWS	EXISTING CHILLED WATER SUPPLY
D	EXISTING CONDENSATE DRAIN
HWS	EXISTING HOT WATER SUPPLY
HWR	EXISTING HOT WATER RETURN
CWR	NEW CHILLED WATER RETURN
CWS	NEW CHILLED WATER SUPPLY
HWS	NEW HOT WATER SUPPLY
HWR	NEW HOT WATER RETURN
	DIRECTION OF PIPE PITCH (DOWN)
	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
	INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL
	FLOAT & THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL
	THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL
	THERMOMETER
	PRESSURE GAGE
	FLUE ELEMENT
	REFRIGERANT SIGHT GLASS
	TEST PLUG (PRESSURE/TEMPERATURE)
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	QUICK-COUPLE HOSE CONNECTOR

VALVE SYMBOLS

(NOT ALL SYMBOLS WILL APPLY TO THIS WORK)

	GATE VALVE
	GATE VALVE WITH 3/4" HOSE ADAPTER
	BALL VALVE
	BUTTERFLY VALVE
	PRV
	PWG VALVE

ARCHITECTURAL LEGEND

(REFER ARCHITECTURAL DRAWINGS FOR LOCATIONS AND DETAILS)

	FIRE RESISTIVE RATED LINE, 2 HOUR
	NON-RATED SMOKE RESISTIVE
	AREA NOT IN CONTRACT

GENERAL NOTES

- COORDINATE ALL WORK WITH EXISTING CONDITIONS, ALL OTHER TRADES, AND IN ACCORDANCE WITH ALL STATE, LOCAL AND NATIONAL CODES, AS WELL AS WITH ALL FEDERAL HEALTHCARE REGULATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES, PERMITS AND LICENSES FOR THE COMPLETE INSTALLATION OF THEIR WORK.
- BEFORE ANY WORK IS STARTED, THE CONTRACTOR SHALL MAKE A THOROUGH SURVEY WITH THE COR IN WHICH ALTERATIONS OCCUR AND AREAS WHICH ARE ANTICIPATED ROUTES OF ACCESS, AND FURNISH A REPORT. REPORT SHALL BE SIGNED BY BOTH COR AND CONTRACTOR, AND SHALL BE PROVIDED TO THE CONTRACTING OFFICER.
- ALL NEW HVAC EQUIPMENT AND DDC CONTROLS SHALL BE TIED BACK INTO EXISTING CONTROL SYSTEM AT NEAREST ETHERNET HUB.
- ALL EXISTING SPRINKLER HEADS, PIPES, ALARMS, ETC. ARE TO REMAIN INTACT FOR USE AFTER RENOVATION. SPRINKLER SYSTEM SHALL REMAIN IN OPERATION THROUGHOUT PERIOD OF WORK. CONTRACTOR SHALL ENSURE THAT NO DAMAGE IS DONE TO EXISTING SPRINKLER SYSTEM - I.E. PROTECTIVE CAGES SHALL BE INSTALLED OVER SPRINKLER HEADS DURING RENOVATION, ETC.
- CARE SHOULD BE TAKEN BY ALL CONTRACTORS TO AVOID DAMAGING OR DISTURBING EXISTING CONSTRUCTION WHICH IS TO REMAIN. CONTRACTORS SHALL BE RESPONSIBLE FOR MAKING ANY REPAIRS NECESSARY TO RECTIFY DAMAGED AND RESTORE EXISTING CONSTRUCTION TO UNDAMAGED STATE UPON COMPLETION OF WORK AT NO EXPENSE TO OWNER.
- ALL ELBOWS IN DUCTWORK SHALL BE LONG RADIUS. RECTANGULAR ELBOWS SHALL BE SUPPLIED WITH TURNING VANES.
- ALL NEW DEVICES, EQUIPMENT, CONTROLS, ETC. (INCLUDING BUT NOT LIMITED TO: VAV'S, COILS, GRILLES, REGISTERS, AND DIFFUSERS, HOT WATER PIPING, ETC.) SHALL BE INSTALLED AND BALANCED AS PART OF THIS WORK. EXISTING EQUIPMENT TO REMAIN SHALL BE TESTED AND BALANCED AS NOTED ON DRAWINGS.
- ALL EQUIPMENT, PIPING, THERMOMETERS, GAGES, VALVES, ETC. THAT ARE LOCATED OUTSIDE SHALL BE OF OUTDOOR-USE QUALITY. THE WINTER ENVIRONMENT CAN BE COLD, ICY, AND THE PRESENCE OF SALT DURING PERIODS OF SNOW RENDERS IT CORROSIVE - CONTRACTOR SHALL SEEK APPROVAL FROM VA ENGINEERING STAFF AND PARADIGM ENGINEERS AND CONSTRUCTORS BEFORE PURCHASING ANY EQUIPMENT.
- ALL DUCT WORK RUNS SHOWN ARE REPRESENTATIVE ONLY. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF HVAC PIPING AND DUCTS COORDINATED WITH EXISTING CONDITIONS COORDINATED WITH ALL OTHER BUILDING TRADES IN THE FIELD (EXISTING, OR PREDICATED BY LOCATION OF NEW EQUIPMENT) THAT MAKE NECESSARY OFFSETS OF DUCTWORK AND PIPING.
- PIPING RUNS SHOWN ARE REPRESENTATIVE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CONDITIONS IN THE FIELD (EXISTING, OR PREDICATED BY LOCATION OF NEW EQUIPMENT) THAT MAKE NECESSARY ALTERNATE ROUTING OF PIPING.
- MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE POWER CONNECTIONS FOR ALL EQUIPMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING (PATCHING, SEALING, FIRE-STOPPING) ALL ABANDONED WALL PENETRATIONS AND ANY NEW PENETRATIONS CREATED FOR DUCT, PIPE, AND CONDUIT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY ARCHITECTURAL WORK CONDITION THEY WERE FOUND. ASSOCIATED CONTROL POINTS FOR DEVICES AND EQUIPMENT SHALL BE DECOMMISSIONED AND REMOVED FROM LON WORKS ENGINEERING CONTROL CENTER COMPLETE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL ASBESTOS ABATEMENT ASSOCIATED WITH NEW AND DEMOLITION WORK.
- ALL CONTROL DEVICES DEMOLISHED SHALL BE TURNED OVER TO OWNER IN THE CONDITION THEY WERE FOUND. ASSOCIATED CONTROL POINTS FOR DEVICES AND EQUIPMENT SHALL BE DECOMMISSIONED AND REMOVED FROM LON WORKS ENGINEERING CONTROL CENTER COMPLETE.
- ALL FIRE AND SMOKE DAMPERS SHALL BE SUPPLIED WITH END SWITCHES THAT REPORT BACK TO EXISTING CENTRAL LOCATION TO INDICATE DAMPER POSITION.
- ALL CONTROLS COMPONENTS, SWITCHES, CONTROLLERS MOTORIZED DAMPERS VALVES SHALL BE OPERATED AND VISIBLE ON THE EXISTING CONTROLS SYSTEM. ANY DEVIATION SHALL BE EXPLAINED AND PRE-APPROVED BY THE HOSPITAL UTILITIES DEPARTMENT.
- CONTROL VALVES SHALL BE 0-10 VOLT.
- CONTROL PANELS SHALL BE CONNECTED TO EMERGENCY POWER.
- WATER COILS SHALL BE 100% DRAINABLE.
- CHEMICALLY CLEAN AND FLUSH ALL NEW HVAC WATER LINES PRIOR TO FINAL CONNECTIONS TO EXISTING SYSTEMS. PROVIDE TAP-INS AND TEMPORARY PUMPS TO FACILITATE CIRCULATION OF CLEANING AGENT. REMOVE TEMPORARY PUMPS ONCE LINES HAVE BEEN TESTED AND APPROVED FOR CLEANLINESS.
- MAINTAIN COMPLETE ACCESS TO ALL ASSOCIATED HVAC, ELECTRICAL AND PLUMBING CONTROLS, VALVES, SWITCHES, DISCONNECTS, ACCESS DOORS AND ACCESS PANELS. COMPLETED CONSTRUCTION SHALL ALLOW ACCESS TO THESE COMPONENTS FOR USE, MAINTENANCE, REPAIR AND REPLACEMENT.
- DOCUMENTATION: CONTRACTOR SHALL PROVIDE A MINIMUM OF (3) HARD COPIES OF TECHNICAL MANUALS, AS-BUILT DRAWINGS, AND MANUFACTURER'S OPERATION AND MAINTENANCE MANUALS. ALSO PROVIDE SAME INFORMATION ON COMPACT DISK.
- ALL PIPING ABOVE GRADE SHALL HAVE AN EXPOSED TAG TO IDENTIFY THE PIPE. EACH PIECE OF EQUIPMENT SHALL BE INSTALLED AS FREE FROM NOISE AND VIBRATION AS POSSIBLE.
- EACH PIECE OF EQUIPMENT SHALL BE INSTALLED AS FREE FROM NOISE AND VIBRATION AS POSSIBLE.

FULLY SPRINKLERED
BID DOCUMENTS
FOR CONSTRUCTION