

ELECTRICAL SYMBOLS LIGHTING & POWER	
	DOWNLIGHT (RECESSED OR SURFACE) (FIXTURE TYPE A, CIRCUIT NO. 3)
	FLUORESCENT TUBE FIXTURE (FIXTURE TYPE C, CIRCUIT NO. 2)
	FIXTURE ON NIGHT LIGHT OR ENERG. CKT.
	EXIT SIGN (TYPE 'XA')
	JUNCTION BOX, SIZE PER N.E.C.
	JUNCTION BOX (GRID SYSTEM)
	INDICATES WALL OR BRACKET MOUNTED FIXTURE
	DUPLEX RECEPTACLE 20A, 125V, GROUNDING
	DUPLEX RECEPTACLE 20A, 125V, GREY COLOR
	DUPLEX RECEPTACLE 20A, 125V, HALF SWITCHED
	SIMPLEX RECEPTACLE 20A (U.N.O.)
	POWER RECEPTACLE 250 VOLT SINGLE PHASE
	AMPS NOTED (30)
	QUADPLEX RECEPTACLE, 20A, 125V, GROUNDING
	THREE PHASE RECEPTACLE, AMPS NOTED(30)
	TELEPHONE OUTLET, DATA OUTLET, COMBINED OUTLET
	SPEAKER FLUSH MOUNTED IN CEILING UNLESS NOTED OTHERWISE; 'F' INDICATES FIRE ALARM
	MICROPHONE OUTLET
	FLOOR BOX WITH DUPLEX RECEPT. (F=FLUSH)
	FLOOR BOX FOR TELEPHONE (F=FLUSH)
	CONCEALED SERVICE MULTI-USE FLOOR BOX
	TELEVISION OUTLET
	BELL
	F/A HORN, HORN WITH LIGHT ASSEMBLY, LIGHT ONLY
	F/A SMOKE DETECTOR (D=DUCT)
	F/A HEAT DETECTOR
	F/A MANUAL FIRE ALARM PULL STATION
	CLOCK RECEPTACLE
	SINGLE POLE SWITCH
	TWO POLE SWITCH
	THREE WAY SWITCH
	FOUR WAY SWITCH
	DIMMER SWITCH
	SWITCH WITH PILOT LIGHT
	'K' INDICATES KEY OPERATED SWITCH
	SINGLE THROW THERMAL SWITCH
	MAGNETIC MOTOR STARTER
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	THERMOSTAT
	PUSHBUTTON
	START-STOP PUSHBUTTON
	H.O.A. SWITCH
	MOTOR
	WIRING SYMBOLS-SWITCH, HOT, NEUTRAL, GRND
	CONDUIT CONCEALED ABOVE CEILING
	CONDUIT CONCEALED IN OR BELOW FLOOR
	EXPOSED CONDUIT
	MULTIOUTLET ASSEMBLY
	TELEPHONE CONDUIT WITH PULL WIRE
	PANELBOARD (250 VOLT AND BELOW)
	PANELBOARD (480 OR 600 VOLT)
	DRY-TYPE TRANSFORMER
	TELEPHONE CABINET OR BACKBOARD
	DUCT SMOKE DETECTOR FOR SMOKE/FIRE DAMPER
	ABOVE COUNTER, GFI, ABOVE COUNTER GFI

ALL SYMBOLS ON THIS LIST ARE NOT NECESSARILY USED ON THIS JOB.

PLUMBING SYMBOL LEGEND	
	SANITARY SEWER (SS)
	SANITARY VENT (V)
	STORM DRAIN (SD)
	STORM OVERFLOW DRAIN (OD)
	GREASE WASTE (GW)
	ACID WASTE (AW)
	ACID VENT (AV)
	DOMESTIC COLD WATER (CW)
	DOMESTIC HOT WATER (107° H4)
	DOMESTIC HOT WATER (107° H4)
	DOMESTIC HOT WATER RETURN (RECIRC)
	DOMESTIC HOT WATER RETURN (107° RECIRC)
	FIRE LINE (F)
	NATURAL GAS (G)
	COMPRESSED AIR (A)
	OXYGEN
	VACUUM
	NITROGEN (N)
	NITROGEN OXIDE (NO)
	RISER DOWN (ELBOW)
	RISER UP (ELBOW)
	BRANCH-BOTTOM CONNECTION
	BRANCH-TOP CONNECTION
	TEE CONNECTION
	90° ELBOW
	CAP ON END OF PIPE
	UNION
	FLOOR CLEANOUT
	CLEANOUT PLUG
	BALL VALVE
	PRESSURE REDUCING VALVE
	CHECK VALVE
	FLOW CONTROL VALVE
	GAS COCK
	TEMPERATURE-PRESSURE RELIEF VALVE
	THERMOMETER
	PRESSURE GAUGE WITH GAUGE COCK
	DIRECTION OF FLOW
	OUTLET (SPECIFY TYPE)
	COMPRESSED AIR OUTLET
	NON-FREEZE WALL HYDRANT
	HOSE BIBB
	FLOOR SINK
	FLOOR DRAIN
	HUB DRAIN
	ROOF DRAIN
	OVERFLOW DRAIN
	EXISTING PIPING TO BE REMOVED
	NEW CONNECTION TO EXISTING

NOTE: NOT ALL SYMBOLS SHOWN ARE NECESSARILY USED.

HVAC LEGEND		
SINGLE LINE	DESCRIPTION	DOUBLE LINE
	90° ELBOW DOWN	
	90° ELBOW UP	
	OFFSET TO CHANGE ELEVATION (AT 30° WHEN POSSIBLE ARROW SLOPES DN.)	
	ROUND RADIUS ELBOW	
	45° ELBOW	
	90° STRAIGHT TEE	
	90° CONICAL TEE	
	45° BRANCH	
	45° CONICAL TEE	
	SIZE TRANSITION	
	SHAPE TRANSITION	
	ROUND FLEXIBLE DUCT	
	90° ELBOW DOWN W/ TURNING VANES (U.N.O.)	
	90° ELBOW UP W/ TURNING VANES (U.N.O.)	
	TEE WITH SPLITTER & TURNING VANES IN VERTICAL	
	OFFSET TO CHANGE ELEVATION (AT 30° WHEN POSSIBLE ARROW SLOPES DN.)	
	RECTANGULAR RADIUS ELBOW	
	RECTANGULAR ELBOW WITH TURNING VANES	
	SPLIT BRANCH TAKE-OFF WITH SQUARE ELBOW AND SPLITTER DAMPER	
	SPLIT BRANCH TAKE-OFF WITH RADIUS ELBOW AND SPLITTER DAMPER	
	BRANCH TAKE-OFF WITHOUT AIR BALANCING DAMPER	
	BRANCH TAKE-OFF WITH AIR BALANCING DAMPER (SCOOP DAMPER)	
	TEE WITH SPLITTER DAMPER	
	SPIN-IN TAP WITH DAMPER	
	SQUARE NECK CLG. DIFFUSER 4-WAY DIRECTIONAL THROW UNLESS INDICATED OTHERWISE.	
	SQUARE NECK CLG. DIFFUSER 4-WAY DIRECTIONAL THROW UNLESS INDICATED OTHERWISE.	
	SIDEWALL SUPPLY GRILLE OR REGISTER WITH O.B.D.	
	SUPPLY DUCT RISER	
	RETURN, EXHAUST OR OUTSIDE AIR DUCT RISER.	
	CEILING RETURN AIR GRILLE OR REGISTER	
	DOOR GRILLE	
	VOLUME DAMPER	
	FIRE DAMPER	
	MOTORIZED DAMPER	
	GRAVITY BACKDRAFT DAMPER	
	AUTO SMOKE DAMPER	
	DUCT MOUNTED SMOKE DETECTOR	
	SMOKE/FIRE DAMPERS (CLASS II MIN.)	
	THERMOSTAT OR TEMPERATURE SENSOR	
	ROOM HUMIDISTAT / CARBON DIOXIDE SENSOR	

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MEP ABBREVIATIONS	
ABV.	ABOVE
AC	ALTERNATING CURRENT
A/C	AIR CONDITIONER
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AG	ABOVE GRADE AND GFI
AHAP	AS HIGH AS POSSIBLE
AHU	AIR HANDLING UNIT
ALT.	ALTERNATE
AMB.	AMBIENT TEMPERATURE (°F)
AMP	AMPERE
APPROX.	APPROXIMATELY
ARCHT.	ARCHITECTURAL
AVG.	AVERAGE
B	BOILER
B.G.	BELOW GRADE
BMS	BUILDING MANAGEMENT SYSTEM
BRD	BAROMETRIC RELIEF DAMPER
BTU	BRITISH THERMAL UNIT
CD	CONSTRUCTION DOCUMENTS
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHM	CHEMICAL
CHP	CHILLED WATER PUMP
CKT.	CIRCUIT
CLG.	CEILING
COMP.	COMPRESSOR
CT	COOLING TOWER
CWP	CONDENSER WATER PUMP
CU	CONDENSING UNIT
DB	DRY BULB
DEFL.	DEFLECTION
DEG. F	DEGREES FAHRENHEIT
DET.	DETAIL
DEV.	DESIGN DEVELOPMENT
DIA.	DIAMETER
DISC.	DISCONNECT SWITCH
DIS.	DISCONNECT SWITCH
DM.	DIMENSION
EA	EXHAUST AIR
EDB	ENTERING DRY BULB
EF	EXHAUST FAN
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EMCS	ENERGY MGMT. CONTROL SYSTEM
E.S.P.	EXTERNAL STATIC PRESS. (IN. W.G.)
EMB	ENTERING MET BULB
ENT	ENTERING WATER TEMPERATURE
EXH.	EXHAUST
EXIST.	EXISTING
F/A	FREE AREA OPENING (SQ. FT.)
FAN	FAN COIL UNIT
FHP	FRACTIONAL HORSE POWER
FLR.	FLOOR
FPI	COIL PINS PER INCH
FFM	FEET PER MINUTE
FFS	FEET PER SECOND
FT.	FOOT OR FEET
GFI	GROUND FAULT INTERRUPTER
GPM	GALLONS PER MINUTE
HEADS	HANDS/OFF/AUTO. MOTOR STARTER
HP	HORSE POWER
HPU	HEAT PUMP UNIT
HR.	HOURS (P)
HT.	HEIGHT
HTG.	HEATING
HTR.	HEATER
HVAC	HOT VENT AND AIR CONDITIONING
HWP	HOT WATER PUMP
HX	HEAT EXCHANGER
HZ.	FREQUENCY (HERTZ)
ID	INSIDE DIAMETER OR DIMENSION
INCHES	INCHES
KH	KILOWATT
KWH	KILOWATT HOUR
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MAX.	MAXIMUM
MCA	MINIMUM CURRENT AMPS.
MOCP	MAX. OVER CURRENT PROTECTION
MOE	1000 BTU PER HOUR
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MVD	MANUAL VOLUME DAMPER
N/A	NOT APPLICABLE
NC	NOISE CRITERIA
NIC	NOT IN CONSTRUCTION
NK	NEARBY DIMENSION
NO.	NUMBER
OA	OUTSIDE AIR
OAR	OWNER AUTHORIZED REPRESENTATIVE
OPD	OPPOSED BLADE DAMPER
ORIG.	ORIGINAL
P.D.	PRESSURE DROP (FT)
PH	PHASE
PMB	POWERED MIXING BOX
PLB.	PLUMBING
PNE.	PANEL
PRESS.	PRESSURE
RA	RETURN AIR
RAG	RETURN AIR GRILLE
RD.	RADIUS
REF.	REFERENCE
REM	REVOLUTIONS PER MINUTE
RTU	ROOF TOP UNIT
S/S	SINGLE SPEED MOTOR
S/S/S	START/STOP/STATUS
SA	SUPPLY AIR
SAG	SUPPLY AIR GRILLE
SDC	STAND ALONE DIGITAL CONTROLLER
SEER	SEASON ENERGY EFFICIENCY RATIO
SENS.	SENSIBLE
SP	STATIC PRESSURE
SQ.	SQUARE
ST	MOTOR STARTER
TEMP.	TEMPERATURE
T.S.P.	TOTAL STATIC PRESSURE (IN. W.G.)
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
V	VOLUME
VAV	VARIABLE AIR VALVE
VEL.	VELOCITY
V	VENT
W/O	WITHOUT
M.G.	METER GAUGE
WB	WET BULB
WP	WEATHERPROOF
WPD	WATER PRESSURE DROP
WPG	WEATHERPROOF GFI
XFMR.	TRANSFORMER

ANY PENETRATIONS OF A ONE OR TWO HOUR FIRE RATED WALL BY ANY MECHANICAL AND PLUMBING PIPING, DUCTWORK (WITHOUT F.D.B.), CONTROLS CONDUIT OR CONDUIT OR WATER MUST BE FIRE SEALED PER U.L. DETAILS ON THIS SHEET. REFER TO ARCH CODE REVIEW PL SHEET FOR EXACT LOCATIONS OF FIRE RATED WALLS.

**PRODUCT SUBSTITUTIONS TRADE COORDINATION NOTE.**  
MECHANICAL CONTRACTOR SHALL BEAR ALL EXPENSES THAT OTHER TRADES INCUR AS A RESULT OF PHYSICAL MODIFICATIONS REQUIRED BY APPROVED ALTERNATE MECHANICAL EQUIPMENT OTHER THAN ORIGINALLY SPECIFIED OR SCHEDULED.

HVAC & PLUMBING, VALVE & FITTINGS SYMBOLS	
	SOIL OR WASTE
	STORM
	VENT
	COLD WATER
	HOT WATER
	HOT WATER RECIRCULATION
	GAS
	CHILLED WATER SUPPLY/RETURN
	PRODUCTION CHILLED WATER SUPPLY/RETURN
	HOT WATER SUPPLY/RETURN
	CONDENSER WATER SUPPLY/RETURN
	REFRIGERANT SUCTION AND LIQUID LINES
	CONDENSATE DRAIN LINE
	LOW PRESSURE STEAM CONDENSATE
	MEDIUM PRESSURE STEAM CONDENSATE
	HIGH PRESSURE STEAM CONDENSATE
	LOW PRESSURE STEAM SUPPLY (0 TO 15 PSIG)
	MEDIUM PRESSURE STEAM SUPPLY (15 TO 100 PSIG)
	HIGH PRESSURE STEAM (ABOVE 100 PSIG)
	FLOAT AND THERM. TRAP
	BUCKET STEAM TRAP
	GATE VALVE
	BALANCING VALVE (WITH PETE'S PLUG EITHER SIDE)
	FLOOR CLEAN OUT
	CLEAN OUT
	FIRE LINE
	BRANCH LINE WITH SPRINKLER HEADS
	FLOOR DRAIN
	HUB DRAIN
	DOWN SPOUT
	FIRE HOSE CABINET
	VENT THRU ROOF
	ROOF DRAIN
	CHECK VALVE
	OS & Y VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	BALL VALVE
	SOLENOID VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	CONTROL, 2 WAY VALVE
	CONTROL, 3 WAY VALVE
	STRAINER & BLOW OFF VALVE
	PRESSURE GAUGE & COCK
	UNION OR COMPANION FLANGES
	PLUG VALVE
	THERMOMETER
	PRESSURE & TEMPERATURE TAP (PETE'S PLUG)
	THERMOSTAT
	HUMIDISTAT
	FLOW METER
	ANCHOR (PIPE)
	EXPANSION JOINT
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	HOSE END DRAIN
	HOSE BIBB
	THERMOMETER & WELL
	TEMPERATURE SENSOR
	FLOW SWITCH
	PRESSURE SENSOR

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**PRODUCT SUBMITTAL DATA NOTE.**  
THIS CONTRACTOR SHALL PREPARE AND PROVIDE ALL EQUIPMENT SUBMITTALS 30 DAYS AFTER PROJECT CONTRACT IS AWARDED.  
UPON RECEIPT OF THE SUBMITTAL DATA (THROUGH NORMAL CHANNELS), THE ENGINEER SHALL HAVE TEN (10) WORKING DAYS TO REVIEW THE DATA FOR CONFORMANCE. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL MOUNTING AND SERVICE CLEARANCES WITH ARCHITECTURAL/ENGINEER DOCUMENTS PRIOR TO SUBMISSION OF ANY PRODUCT SUBMITTED OTHER THAN SCHEDULED MANUFACTURER.

**PRODUCT SUBSTITUTIONS NOTE.**  
REQUEST FOR SUBSTITUTIONS OF PRODUCTS NOT LISTED IN THE SCHEDULES OR SPECIFICATIONS WILL ONLY BE CONSIDERED DURING THE PERIOD OF PRIOR TO TEN (10) DAYS BEFORE THE BID DATE. SUBSEQUENT REQUESTS WILL BE CONSIDERED ONLY IN CASE OF PRODUCT UNAVAILABILITY. OTHER CONDITIONS BEYOND CONTROL OF THE CONTRACTOR. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL MOUNTING AND SERVICE CLEARANCES WITH ARCHITECTURAL/ENGINEER DOCUMENTS PRIOR TO SUBMISSION OF ANY PRODUCT SUBSTITUTION REQUEST.

**MEP GENERAL NOTES: (TYPICAL FOR PROJECT)**

- THE CONTRACTOR SHALL VISIT THE PREMISES TO THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL DETAILS OF THE WORK, WORKING CONDITIONS, AND VERIFY ALL DIMENSIONS IN THE FIELD. ALSO, THE CONTRACTOR SHALL ADVISE THE ARCHITECT, ENGINEER AND THE OWNER OF ANY DISCREPANCY BEFORE PERFORMING ANY WORK.
- MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE CONTRACT DOCUMENTS AND APPLICABLE CODES AND STANDARDS AS DICTATED BY THE AUTHORITY HAVING JURISDICTION. SHOULD THE CONTRACTOR PERFORM ANY WORK THAT DOES NOT COMPLY WITH THE REQUIREMENTS OF APPLICABLE CODES AND STANDARDS, THE CONTRACTOR SHALL BEAR ALL COSTS ARISING IN CORRECTING SUCH DEFECT. APPLICABLE CODES AND STANDARDS SHALL INCLUDE ALL ORDINANCES, UTILITY COMPANY REGULATIONS, AND APPLICABLE REQUIREMENTS OF NATIONAL, STATE, LOCAL CODES, AND STANDARDS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL CONTROLS THAT WILL COMPLETELY ACCOMPLISH THE IMPLIED OR INTENDED FUNCTIONS OF THE CONTROL SYSTEM AS SHOWN ON PLANS OR INDICATED IN THE SPECIFICATIONS.
- CONNECTIONS TO AND SHUTDOWNS ON EXISTING SYSTEMS SHALL BE COORDINATED WITH OWNER TO ALLOW MINIMUM INTERFERENCE WITH OWNER'S OPERATION AND DOWNTIME OF EXISTING SERVICES. CONTRACTOR SHALL SUBMIT TO OWNER FOR REVIEW AND APPROVAL THE PROPOSED PHASING PLAN FOR CONNECTING NEW SERVICES TO EXISTING SERVICES.
- ALL EXISTING SYSTEMS EQUIPMENT AND MATERIALS WITHIN REMODEL AREA OF BUILDING, EXCEPT WHERE NOTED ON MEP DOCUMENTS TO CHANGE, SHALL BE LEFT INTACT AND OPERATIONAL.
- PATCH FLOORS, WALLS, CEILINGS, ETC. TO MATCH EXISTING CONDITIONS WHERE CUTTING IS REQUIRED.