

HVAC SYMBOLS			
	SUPPLY DIFFUSER OR SUPPLY GRILLE (NO AIRFLOW IN SHADED REGION)		INSULATED METAL PANEL
	RETURN DIFFUSER		BOOT TAP OR 45 DEGREE ENTRY FITTING
	EXHAUST DIFFUSER		R (RISE), D (DROP) ARROW IN DIRECTION OF AIR FLOW
	MANUAL VOLUME DAMPER		ACCESS DOOR
	FIRE DAMPER WITH ACCESS DOOR		90 DEGREE ELBOW WITH TURNING VANES
	SMOKE DAMPER WITH ACCESS DOOR		STANDARD RADIUS ELBOW WITH CENTER RADIUS EQUAL TO 1-1/2 TIMES WIDTH OF DUCT
	FIRE/SMOKE DAMPER WITH ACCESS DOOR		
	AUTOMATIC MOTOR OPERATED DAMPER		INTERNALLY INSULATED DUCTWORK
	BACK DRAFT DAMPER		FLAT OVAL SPIRAL DUCT (WIDTH X HEIGHT)
	AIR FLOW MEASURING STATION		ROUND SPIRAL DUCT
	DUCT TURNED UP (SOLID LINES)		RECTANGULAR DUCT (WIDTH X HEIGHT)
	DUCT TURNED DOWN (DASHED LINES)		SPIN-IN FITTING WITH MANUAL VOLUME DAMPER AND FLEXIBLE DUCT CONNECTION
	PLAN VIEW RETURN BRANCH DUCT TO RETURN GRILLE/DIFFUSER		
	SECTION WITH FLEX DUCT		CONICAL FITTING
	PLAN VIEW SUPPLY BRANCH DUCT TO SUPPLY GRILLE/DIFFUSER		SQUARE TO ROUND TRANSITION
	SECTION WITH FLEX DUCT		TYPICAL TERMINAL BOX WITH REHEAT COIL, TWO WAY CONTROL VALVE, BOX DESIGNATION
	PLAN VIEW EXHAUST BRANCH DUCT TO EXHAUST GRILLE/DIFFUSER		TYPICAL TERMINAL BOX WITH REHEAT COIL, THREE WAY CONTROL VALVE, BOX DESIGNATION
	SECTION WITH FLEX DUCT		TYPICAL CHILLED BEAM (24"X48")
	SIDEWALL SUPPLY, RETURN OR EXHAUST GRILLE		90 DEGREE TEE (ROUND OR FLAT OVAL ONLY)
	SUPPLY, RETURN, OR EXHAUST SLOT DIFFUSER		
	STAINLESS WELDED DUCTWORK PER SPECIFICATION		

CONTROL SYMBOLS					
	AIR FLOW MEASURING STATION		HUMIDITY TRANSMITTER (PNEUMATIC)		VARIABLE SPEED MOTOR CONTROLLER
	AIR FLOW SWITCH		LOW LIMIT SAFETY THERMOSTAT		VELOCITY PRESSURE SENSOR (ELECTRONIC)
	ALARM		MAGNETIC INDUCTIVE FLOW METER SENSOR		VIBRATION SWITCH
	BACK DRAFT DAMPER		MANUAL SWITCH (ELECTRIC)		VOLUME DAMPER (MANUAL)
	CO ₂ SENSOR		MODEM		VORTEX SHEDDING AIR FLOW TRANSMITTER
	CURRENT SENSOR		MOTOR CONTROL CENTER		VORTEX SHEDDING FLOW METER
	DUCT DETECTOR		MOTOR STARTER		20 PSIG MAIN AIR
	CURRENT TO PNEUMATIC TRANSDUCER		OPERATOR'S WORK STATION		PRESSURE GAUGE
	DAMPER END SWITCH (BINARY)		OUTDOOR AIR DAMPER		HOLDING COIL
	DIFFERENTIAL PRESSURE SENSOR (ANALOG)		OUTDOOR AIR VOLUME PROBE, TRANSDUCER AND MONITOR		HUMIDISTAT (SPACE)
	DIFFERENTIAL PRESSURE SWITCH SENSOR (BINARY)		PNEUMATIC RELAY		SWITCH (PNEUMATIC)
	DIFFERENTIAL PRESSURE SWITCH (HIGH LIMIT) (BINARY)		PRESSURE-ELECTRIC SWITCH		THERMOSTAT (SPACE)
	ELECTRO-PNEUMATIC SWITCH		PRESSURE SENSOR (PNEUMATIC)		THERMOSTAT (SPACE) NIGHT CYCLE
	ELECTRO-PNEUMATIC TRANSDUCER		PRESSURE CONTROLLER (ELECTRONIC)		0-30 PSIG AIR GAUGE
	EXHAUST AIR DAMPER		PRESSURE TRANSMITTER (PNEUMATIC)		LOCAL AREA NETWORK
	FACE & BY-PASS DAMPER		RETURN AIR DAMPER		TEMPERATURE CONTROL CONTRACTOR
	FAN DISCHARGE DAMPER		SMOKE DETECTOR		(NOTE: TCC & ECC ARE USED INTERCHANGEABLY)
	FAN INLET DAMPER		START/STOP SWITCH		ENVIRONMENTAL CONTROL CONTRACTOR
	FAN INLET VORTEX DAMPER		STEAM FLOW MEASUREMENT ORIFICE PLATE & MASS FLOW COMPUTER		ELECTRICAL CONTRACTOR
	FLOW CONTROLLER		OVERRIDE TIMER		PNEUMATIC
	FLOW SENSOR		TEMPERATURE CONTROLLER (PNEUMATIC)		ELECTRICAL WIRING
	HAND-OFF-AUTO SWITCH		TEMPERATURE SENSOR (ELECTRONIC)		ANALOG INPUT (DDC CONTROLLER)
	HUMIDITY CONTROLLER (PNEUMATIC)		TEMPERATURE TRANSMITTER (PNEUMATIC)		ANALOG OUTPUT (DDC CONTROLLER)
	HUMIDITY HIGH LIMIT (ELECTRIC)		TERMINAL BOX ACTUATOR		BINARY INPUT (DDC CONTROLLER)
	HUMIDITY SENSOR (ELECTRONIC)		TURBINE METER		BINARY OUTPUT (DDC CONTROLLER)

HVAC PIPING SYMBOLS	
	HEATING WATER SUPPLY
	HEATING WATER RETURN
	PERIMETER HEATING WATER SUPPLY
	PERIMETER HEATING WATER RETURN
	CHILLED BEAM HEATING WATER SUPPLY
	CHILLED BEAM HEATING WATER RETURN
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	CHILLED BEAM CHILLED WATER SUPPLY
	CHILLED BEAM CHILLED WATER RETURN
	CONDENSER WATER SUPPLY
	CONDENSER WATER RETURN
	LOW PRESSURE STEAM
	LOW PRESSURE CONDENSATE RETURN
	MEDIUM PRESSURE STEAM
	MEDIUM PRESSURE CONDENSATE RETURN
	HIGH PRESSURE STEAM
	HIGH PRESSURE CONDENSATE RETURN
	TRAPPED CONDENSATE IN TUNNEL (SYSTEM PRESSURE)
	STEAM VENT
	CONDENSATE PUMP DISCHARGE
	GLYCOL SUPPLY
	GLYCOL RETURN
	CONDENSATE & EQUIPMENT DRAIN
	BOILER FEED WATER
	BOILER WATER CHEMICAL FEED
	CONDENSER WATER CHEMICAL FEED
	EQUIPMENT COOLING WATER SUPPLY
	EQUIPMENT COOLING WATER RETURN
	HEAT RECOVERY SUPPLY
	HEAT RECOVERY RETURN
	REFRIGERANT HOT GAS
	REFRIGERANT LIQUID
	REFRIGERANT SUCTON
	DIRECTION OF PIPE SLOPE (DOWN)

VALVE AND FITTING SYMBOLS	
	SINGLE LINE
	PIPING FLEXIBLE CONNECTION
	PIPE TURNED UP (UNLESS NOTED OTHERWISE)
	PIPE TURNED DOWN
	PIPE OUT TOP
	PIPE OUT BOTTOM
	THREADED NIPPLE WCAP
	PIPE WITH BLIND FLANGE
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	ISOLATION VALVE (PLUMBING SCHEMATIC)
	CHECK VALVE
	UNION
	GATE VALVE
	BALL VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	TEMPERATURE CONTROL - 2 WAY MODULATING VALVE
	TEMPERATURE CONTROL - 2 WAY 2 POSITION ISOLATION VALVE
	TEMPERATURE CONTROL - 3 WAY MODULATING VALVE
	TEMPERATURE CONTROL - 3 WAY 2 POSITION ISOLATION VALVE
	CALIBRATED BALANCE VALVE
	SAFETY RELIEF VALVE
	STRAINER
	FLOW METER
	FLOOR DRAIN
	AUTOMATIC FLOW CONTROL VALVE
	FLOW MEASURING DEVICE
	MANUAL AIR RELIEF VENT
	AUTOMATIC AIR RELIEF VENT
	LUBRICATED PLUG VALVE
	STEAM PRESSURE REDUCING VALVE
	ANGLE VALVE
	REFRIGERANT HOT GAS BY-PASS VALVE
	SHUT-OFF COCK (HYDRONICS)
	SOLENOID VALVE
	REFRIGERANT EXPANSION VALVE
	WATER PRESSURE REDUCING/REGULATING VALVE
	STEAM TRAP
	DIELECTRIC UNION BETWEEN STEEL AND COPPER
	STRAINER (STEAM)
	PRESSURE AND TEMPERATURE PLUG
	REFRIGERANT SIGHT GLASS
	THERMOMETER
	(P=PRESS V=VAC T=TEMP) GAUGE
	SENSOR (T=TEMP H=HUMIDITY)
	FLOW SWITCH
	CLEAN OUT
	INDICATED EXPANSION LOOP (COLD SPRUNG)
	ANCHOR
	GUIDE
	REFRIGERANT SHUT-OFF VALVE
	EXPANSION JOINT
	DIFFERENTIAL SWITCH

RISER DIAGRAM SYMBOLS	
SYMBOL	DESCRIPTION
	MOLDED CASE CIRCUIT BREAKER
	CURRENT TRANSFORMER
	GROUND CONNECTION
	GROUND POINT
	GROUND ROD
	PAD MOUNTED TRANSFORMER (*X DENOTES KVA SIZE)
	BRANCH PANELBOARD AND CABINET - RECESSED MOUNT
	BRANCH PANELBOARD AND CABINET - SURFACE MOUNT
	ELECTRIC THERMOSTAT
	MOTOR
	GENERATOR/ALTERNATOR
	AUTOMATIC TRANSFER SWITCH
	GROUND BUS

MOTOR, FRACTIONAL MOTOR SWITCHES, EQUIPMENT POWER CONTROLLERS, AND DISCONNECT SWITCHES.	
SYMBOL	DESCRIPTION
	DISCONNECT SWITCH - FUSED
	DISCONNECT SWITCH - NON-FUSED
	MOTOR CONTROLLER
	COMBINATION MOTOR CONTROLLER
	MANUAL MOTOR STARTER TOGGLE SWITCH W/ THERMAL OVERLOAD PROTECTION

RECEPTACLES	
	DUPLEX RECEPTACLE, NORMAL / EMERGENCY / NORMAL MOUNTED 8" ABOVE COUNTER / EMERGENCY MOUNTED 8" ABOVE COUNTER, U.N.O.
	QUADPLEX RECEPTACLE, NORMAL / EMERGENCY / NORMAL MOUNTED 8" ABOVE COUNTER / EMERGENCY MOUNTED 8" ABOVE COUNTER, U.N.O.
	SIMPLEX RECEPTACLE, NORMAL / EMERGENCY / NORMAL MOUNTED 8" ABOVE COUNTER / EMERGENCY MOUNTED 8" ABOVE COUNTER, U.N.O.
	SPECIAL RECEPTACLE, NORMAL / EMERGENCY / NORMAL MOUNTED 8" ABOVE COUNTER / EMERGENCY MOUNTED 8" ABOVE COUNTER, U.N.O.
	DUPLEX - CEILING MOUNTED, NORMAL / EMERGENCY
	QUADPLEX - CEILING MOUNTED, NORMAL / EMERGENCY
	FLOOR BOX (DUPLEX), NORMAL / EMERGENCY / NORMAL FLUSH / EMERGENCY FLUSH
	FLOOR BOX (QUADPLEX), NORMAL / EMERGENCY / NORMAL FLUSH / EMERGENCY FLUSH
	FLOOR BOX (BLANK) / FLOOR BOX (BLANK) FLUSH
	FLOOR BOX (POWER AND DATA) / FLOOR BOX (POWER AND DATA) FLUSH
	DUPLEX RECEPTACLE - AUTOMATIC RECEPTACLE CONTROLLED ONE/TWO
	QUADPLEX RECEPTACLE - AUTOMATIC RECEPTACLE CONTROLLED ONE/TWO/THREE/FOUR

RACEWAYS	
	JUNCTION BOX - WALL MOUNTED / CEILING MOUNTED
	EQUIPMENT CONNECTION BOX
	WIREMOLD
	MANHOLE
	HANDHOLE
	PULL BOX

LIGHTING AND CONTROLS	
SYMBOL	DESCRIPTION
	TOGGLE SWITCH - 20 AMP, 120/277VAC
	LOW VOLTAGE
	DIGITAL ROOM CONTROLLER
	TOGGLE SWITCH - 3-WAY
	TOGGLE SWITCH - 4-WAY
	TOGGLE SWITCH - PILOT LIGHT
	TOGGLE SWITCH - KEY OPERATED
	INDIVIDUAL LIGHT DIMMER
	LETTER DESIGNATION INDICATES SWITCH LEG
	VACANCY SENSOR WITH LIGHT SWITCH (WALL MOUNTED)
	TIMER SWITCH
	MOTION DETECTOR (LIGHT SWITCH)
	OCCUPANCY SENSOR (CEILING MOUNTED)
	OCCUPANCY SENSOR WITH LIGHT SWITCH (WALL MOUNTED)
	VACANCY SENSOR (CEILING MOUNTED)
	LIGHTING CONTROLLER
	PHOTO CELL

AUDIO/CLOCK/PAGING SYSTEM	
	AUDIO/VISUAL CONTROLLER
	WALL MOUNTED CLOCK (ANALOG)
	DIGITAL TIME CLOCK/ELAPSED TIME SYSTEM OUTLET
	MICROPHONE INPUT RECEPTACLE - WALL MOUNTED
	MICROPHONE INPUT RECEPTACLE - FLOOR MOUNTED
	MICROPHONE INPUT RECEPTACLE - CEILING MOUNTED
	WALL MOUNTED PAGING HORN SPEAKER (ROUGH-IN)
	LOUDSPEAKER - CEILING MOUNTED
	LOUDSPEAKER - CEILING MOUNTED WITH VOLUME CONTROL
	LOUDSPEAKER - WALL MOUNTED
	VOLUME CONTROL

FIRE ALARM SYSTEM	
SYMBOL	DESCRIPTION
	SMOKE DETECTOR (CEILING / WALL MOUNTED)
	HEAT DETECTOR (CEILING / WALL MOUNTED)
	FLAME DETECTOR (CEILING / WALL MOUNTED)
	DUCT SMOKE DETECTOR
	ADDRESSABLE RELAY (CEILING / WALL MOUNTED)
	REMOTE INDICATOR STATION (CEILING / WALL MOUNTED)
	REMOTE TEST STATION (CEILING / WALL MOUNTED)
	BEAM DETECTOR (CEILING / WALL MOUNTED)
	MANUAL PULL STATION
	FLOW SWITCH
	TAMPER SWITCH
	HORN ONLY
	HORN STROBE
	CHIME ONLY
	CHIME STROBE
	SPEAKER ONLY
	SPEAKER STROBE
	BELL ONLY
	BELL STROBE
	VISUAL ONLY
	DOOR HOLD OPEN
	ADDRESSABLE MODULE
	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR PANEL
	FIRE ALARM NOTIFICATION APPLIANCE PANEL
	FIRE ALARM POWER SUPPLY
	FIRE ALARM TERMINAL CABINET
	FIRE ALARM GRAPHICS COMMAND CENTER
	FIREMEN'S TELEPHONE
	RESCUE ASSISTANCE STATION (AREA OF REFUGE)
	VALVE SUPERVISORY SWITCH

SECURITY SYSTEM	
SYMBOL	DESCRIPTION
	CCTV MONITOR OUTLET
	DOOR BUZZER
	ELECTRIC DOOR RELEASE BUTTON
	ELECTRIC DOOR STRIKE
	INTERCOM UNIT FLUSH MTD.
	MASTER INTERCOM AND DIRECTORY UNIT
	SECURITY CONTROL PANEL
	SECURITY MAGNETIC DOOR LOCK
	SECURITY CARD READER
	MOTION DETECTOR
	SECURITY DOOR CONTACTS
	SECURITY EXIT PUSH BUTTON
	SECURITY MONITOR
	SECURITY DOOR REQUEST TO EXIT MOTION DETECTOR
	SECURITY KEYPAD
	BIOSCAN ACCESS PAD
	DURESS ALARM (HOLD UP BUTTON)
	ELECTRIC POWER TRANSFER
	PUSH PLATE
	TOUCHLESS ACTUATOR
	DOOR RELEASE PUSH BUTTON
	DOOR POWER SUPPLY
	COMBINATION CARD READER WITH KEYPAD
	CAMERA
	CAMERA - EXTERIOR
	CAMERA - PAN/TILT/ZOOM

LIGHTING	
	HALF SHADED INDICATES EMERGENCY/EGRESS LIGHTING
	12x48 LIGHTING FIXTURE
	24x24 LIGHTING FIXTURE
	STRIP LIGHTS
	STEM MOUNTED WALL LIGHTS
	WALL MOUNTED SCONCE
	DOWN LIGHT
	WALL MOUNTED EMERGENCY BATTERY LIGHT
	CEILING MOUNTED EMERGENCY BATTERY LIGHT
	GROUND FLOOD LIGHT
	EXTERIOR FLOOD LIGHT
	EXTERIOR WALL MOUNT FIXTURE

EXIT SIGNS	
	CEILING MOUNTED EXIT LIGHT (DUAL FACED)
	CEILING MOUNTED EXIT LIGHT (SINGLE FACE)
	WALL MOUNTED EXIT LIGHT (DUAL FACED)
	EXIT LIGHT DIRECTIONAL ARROWS
	WALL MOUNTED EXIT LIGHT (SINGLE FACE)

SITE FIXTURES AND POLES	
	EXTERIOR POLE LIGHTS (SINGLE HEADS)
	EXTERIOR POLE LIGHTS (DOUBLE HEADS)
	EXTERIOR POLE LIGHTS (THREE HEADS)
	EXTERIOR POLE LIGHTS (FOUR HEADS)
	EXTERIOR POLE LIGHTS (POLE TOP MOUNT)
	EXTERIOR LIGHTS (BOLLARDS)

TELECOMMUNICATION SYSTEM	
	VOICE ONLY OUTLET
	VOICE AND DATA OUTLET
	DATA ONLY OUTLET
	WIRELESS ACCESS POINT
	FLOOR BOX (VOICE, DATA, VOICE/DATA)
	CEILING MOUNTED (DATA, VOICE/DATA)
	WALL MOUNTED INTERCOM STATION
	VOICE AND DATA / DATA ONLY OUTLET, MOUNTED AT 8" ABOVE THE COUNTER, U.N.O.
	TELECOMMUNICATIONS EQUIPMENT RACK
	TV OUTLET - 2 DATA, 1 COAX
	ANTENNA PUBLIC SAFETY
	ANTENNA CELLULAR
	AUDIO / VISUAL CONTROLLER

FLOOR PLAN SYMBOLS	
	SECTION WITH TOP NUMBER INDICATING SECTION DESIGNATION AND BOTTOM NUMBER INDICATING DRAWING THAT SECTION IS CUT ON OR DRAWING THAT SECTION IS DRAWN ON
	DETAIL WITH TOP LETTER INDICATING DETAIL DESIGNATION AND BOTTOM NUMBER INDICATING DRAWING THAT DETAIL IS REFERENCED ON OR DRAWING THAT DETAIL IS DRAWN ON
	GENERAL NOTE
	PLAN NOTE LIST
	PLAN NOTE
	MEDICAL GAS OUTLET NOTE
	CONNECT NEW WORK TO EXISTING

LINE SYMBOLS	
	LIGHT/SCREENED SOLID OR DASHED LINES INDICATE EXISTING TO REMAIN
	LIGHT DASHED LINES INDICATE BELOW/BEHIND WORK
	HEAVY DASHED LINES INDICATE EXISTING TO BE REMOVED
	HEAVY CONTINUOUS LINES INDICATE NEW WORK
	LIGHT DOT LINES INDICATE FUTURE WORK

SYMBOL NOTES	
1.	NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED ON THIS PROJECT.
2.	NOT ALL PLAN NOTE MAY BE USED ON