

ABBREVIATIONS

A	=	AMP	INSUL	=	INSULATION
AD	=	ABOVE DOOR	INSULD	=	INSULATED
AF	=	AMP FRAME	J	=	JUNCTION BOX
AFC	=	ABOVE FINISHED COUNTER	KAIC	=	KILOAMP INTERRUPTING CAPACITY
AFI	=	ABOVE FINISHED FLOOR	KW	=	KILOWATT
AFG	=	ABOVE FINISHED GRADE	KWH	=	KILOWATT HOUR
AHU	=	AIR HANDLER UNIT	KVA	=	KILOVOLT AMPERS
AL	=	ALUMINUM	KVAR	=	KILOVAR
ANN	=	REMOTE ANNUNCIATOR	LB	=	ELBOW FITTING
AP	=	WIRELESS ACCESS POINT	LF	=	LINEAR FEET
ARC	=	ALUMINUM RIGID CONDUIT	LG	=	LENGTH
ARU	=	AIR ROTATION UNIT	LFG	=	LIQUID-TIGHT FLEXIBLE METAL CONDUIT
AT	=	AMP TRIP	LT	=	LIGHT
ATS	=	AUTOMATIC TRANSFER SWITCH	LTG	=	LIGHTING
AUX	=	AUXILIARY	LP	=	LIGHTNING PROTECTION
AVG	=	AVERAGE	LSIG	=	LT ST INSTANTANEOUS GND
AWG	=	AMERICAN WIRE GAUGE	LV	=	LOW VOLTAGE
BAT	=	BATTERY	MAINT	=	MAINTENANCE
BFC	=	BELOW FINISHED COUNTER	MATL	=	MATERIAL
BOT	=	BOTTOM	MAX	=	MAXIMUM
BHP	=	BREAK HORSEPOWER	MAU	=	MAKE UP AIR UNIT
BTU	=	BRITISH THERMAL UNIT	MCB	=	MAIN CIRCUIT BREAKER
C	=	CENTER LINE	MCB	=	MOLDED CASE CIRCUIT BREAKER
CA	=	CONTACTOR ASSEMBLY	MCM	=	THOUSAND CIRCULAR MILS
CB	=	CIRCUIT BREAKER	MCP	=	MOTOR CIRCUIT PROTECTOR
CD	=	CANDELA	MDF	=	MAIN DISTRIBUTION FRAME
CFM	=	CUBIC FEET PER MINUTE	MDP	=	MAIN DISTRIBUTION PANEL
CH	=	CUBIC FEET PER HOUR	MECH	=	MECHANICAL
CHG	=	CHARGING	MEZZ	=	MEZZANINE
CHGR	=	CHARGER	MFR	=	MANUFACTURER
CHT	=	CIRCUIT	MFG	=	MANUFACTURING
CLS	=	COMBINATION LINE STARTER	MIN	=	MINIMUM
CM	=	CIRCULAR MILS	MLO	=	MAIN LUSS ONLY
COMM	=	COMMUNICATIONS	MOD	=	MOTOR OPERATED DAMPER
COMPR	=	COMPRESSOR	MS	=	MOTOR STARTER
CONC	=	CONCRETE	MSB	=	MAIN SWITCHBOARD
COND	=	CONDUIT	MTR	=	MOTOR
CP	=	CONTROL PANEL	MTS	=	MANUAL TRANSFER SWITCH
CPD	=	CONDUIT PENETRATION DETAIL	NC	=	NORMALLY CLOSED
CPT	=	CONTROL POWER TRANSFORMER	NEC	=	NATIONAL ELECTRICAL CODE
CR	=	CONTROL RELAY	NEMA	=	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
CT	=	CURRENT TRANSFORMER	NPS	=	NATIONAL PIPE STRAIGHT
CTL	=	CONTROL	NPT	=	NATIONAL PIPE TAPERED
CU	=	COPPER	NO	=	NORMALLY OPEN
CUB	=	CUBICLE	NTS	=	NOT TO SCALE
CUFT	=	CUBIC FEET	OC	=	ON CENTER
CU IN	=	CUBIC INCHES	OD	=	OUTSIDE DIAMETER
D	=	DELTA	OS	=	OCCUPANCY SENSOR
DH	=	DAYLIGHT HARVESTING SENSOR	OZ	=	OUNCE
DIA	=	DIAMETER	POE	=	POWER OVER ETHERNET
DISC	=	DISCONNECT	POLE	=	POLE
DN	=	DOWN	RC	=	REFRIGERATION COMPRESSOR
DPDT	=	DOUBLE POLE / DOUBLE THROW	RCP	=	REFRIGERATION CONTROL PANEL
DWG	=	DRAWING	RECEP	=	RECEPTACLE
E	=	EXTERIOR	REV	=	REVIEW, REVISE, REVISION
EC	=	ELECTRICAL CONTRACTOR	RHS	=	RIGID GALVANIZED STEEL
EF	=	EXHAUST FAN	RH	=	RELATIVE HUMIDITY
ELP	=	EMERGENCY LIGHTING PANEL	RM	=	ROOM
EMERG	=	EMERGENCY	RMS	=	ROOM SOURCE
EMT	=	ELECTRICAL METALLIC TUBING	RPM	=	REVOLUTIONS PER MINUTE
ENCL	=	ENCLOSURE	RTU	=	ROOF TOP UNIT
ENT	=	ENTERING	SCH	=	SCHEDULE
ETR	=	EXISTING TO REMAIN	S.E.	=	SERVICE ENTRANCE
ENC	=	ELECTRIC WATER COOLER	SN	=	SOCKET WELD
EWI	=	ELECTRIC WATER HEATER	STL	=	STEEL
EXIST	=	EXISTING	SS	=	STAINLESS STEEL
F	=	FAHRENHEIT	SPST	=	SINGLE POLE / SINGLE THROW
FA	=	FIRE ALARM	SP	=	SUMP PUMP
FACP	=	FIRE ALARM CONTROL PANEL	ST	=	SHUNT TRIP
FAU	=	FORCED AIR UNIT	SHT	=	SHORT TIME
FC	=	FOOT-CANDLE	SPD	=	SURGE PROTECTIVE DEVICE
FD	=	FIRE DAMPER	SUBST	=	SUBSTATION
FLA	=	FULL LOAD AMPS	SWGR	=	SWITCHGEAR
FDS	=	FUSIBLE DISCONNECT SWITCH	SYS	=	SYSTEM
FAT	=	FUTURE	T	=	THERMOSTAT
FT	=	FEET	T-D-P	=	TELE-DATA-POWER
FMC	=	FLEXIBLE METAL CONDUIT	TEMP	=	TEMPERATURE
FRM	=	FEET PER MINUTE	TC	=	THERMOCOUPLE
FPS	=	FEET PER SECOND	TG	=	TOP OF GATE
FU	=	FUSE	THK	=	THICKNESS
FUT	=	FUTURE	TODB	=	TOP OF DUCT BANK
FVNR	=	FULL VOLTAGE NON-REVERSING	TOT	=	TOP OF TRAPEZE
G	=	GROUNDING	TS	=	TEMPERATURE SENSOR
GA	=	GAUGE	TW	=	TEST WELL
GAL	=	GALLON	TYP	=	TYPICAL
GALV	=	GALVANIZED	UF	=	UNDERFLOOR
GEN	=	GENERATOR	UH	=	UNIT HEATER
GFCI	=	GROUND FAULT CIRCUIT INTERRUPTING	UNO	=	UNLESS NOTED OTHERWISE
GPOD	=	GROUND FAULT PROTECTIVE DEVICE	UPS	=	UNINTERRUPTABLE POWER SUPPLY
GH	=	GUARD HOUSE	VEL	=	VELOCITY
GND	=	GROUND	VERT	=	VERTICAL
GPM	=	GALLONS PER MINUTE	V	=	VOLT
GPH	=	GALLONS PER HOUR	VOL	=	VOLUME
GPD	=	GALLONS PER DAY	W	=	WATT
GRC	=	GALVANIZED RIGID CONDUIT	WP	=	WATER PROOF
H-O-A	=	HAND-OFF-AUTOMATIC SWITCH	W	=	WITH
HH	=	HAND-HOLE	Y	=	WYE
HP	=	HORSEPOWER	XFMR	=	TRANSFORMER
HR	=	HOUR			
HT	=	HEAT TRACE			
HTG	=	HEATING			
HTR	=	HEATER			
HV	=	HIGH VOLTAGE			
HZ	=	HERTZ			
I	=	INTERIOR			
ID	=	INSIDE DIAMETER			
IDF	=	INTERMEDIATE DISTRIBUTION FRAME			
IEF	=	INTERSTITIAL EXHAUST FAN			
INFO	=	INFORMATION			
IMC	=	INTERMEDIATE METAL CONDUIT			

POWER SYMBOLS

	WALL MOUNTED DUPLEX OUTLET
	WALL MOUNTED QUAD OUTLET
	CEILING OR FLUSH-IN-FLOOR MOUNTED DUPLEX OUTLET
	CEILING OR FLUSH-IN-FLOOR MOUNTED QUAD OUTLET
	WALL MOUNTED DUPLEX OUTLET WITH TWO USB PORTS
	WALL MOUNTED QUAD OUTLET WITH FOUR USB PORTS
	CEILING OR FLUSH-IN-FLOOR MOUNTED DUPLEX OUTLET WITH TWO USB PORTS
	CEILING OR FLUSH-IN-FLOOR MOUNTED QUAD OUTLET WITH FOUR USB PORTS
	SPECIALTY OUTLET
	LIGHTNING PROTECTION
	LT ST INSTANTANEOUS GND
	LOW VOLTAGE
	MAINTENANCE
	MATERIAL
	MAXIMUM
	MAKE UP AIR UNIT
	MAIN CIRCUIT BREAKER
	MOLDED CASE CIRCUIT BREAKER
	THOUSAND CIRCULAR MILS
	MOTOR CIRCUIT PROTECTOR
	MAIN DISTRIBUTION FRAME
	MAIN DISTRIBUTION PANEL
	MECHANICAL
	MEZZANINE
	MANUFACTURER
	MANUFACTURING
	MINIMUM
	MAIN LUSS ONLY
	MOTOR OPERATED DAMPER
	MOTOR STARTER
	MAIN SWITCHBOARD
	MOTOR
	MANUAL TRANSFER SWITCH
	NORMALLY CLOSED
	NATIONAL ELECTRICAL CODE
	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
	NATIONAL PIPE STRAIGHT
	NATIONAL PIPE TAPERED
	NORMALLY OPEN
	NOT TO SCALE
	ON CENTER
	OUTSIDE DIAMETER
	OCCUPANCY SENSOR
	OUNCE
	POWER OVER ETHERNET
	POLE
	REFRIGERATION COMPRESSOR
	REFRIGERATION CONTROL PANEL
	RECEPTACLE
	REVIEW, REVISE, REVISION
	RIGID GALVANIZED STEEL
	RELATIVE HUMIDITY
	ROOM
	ROOM SOURCE
	REVOLUTIONS PER MINUTE
	ROOF TOP UNIT
	SCHEDULE
	SERVICE ENTRANCE
	SOCKET WELD
	STEEL
	STAINLESS STEEL
	SINGLE POLE / SINGLE THROW
	SUMP PUMP
	SHUNT TRIP
	SHORT TIME
	SURGE PROTECTIVE DEVICE
	SUBSTATION
	SWITCHGEAR
	SYSTEM
	THERMOSTAT
	TELE-DATA-POWER
	TEMPERATURE
	THERMOCOUPLE
	TOP OF GATE
	THICKNESS
	TOP OF DUCT BANK
	TOP OF TRAPEZE
	TEMPERATURE SENSOR
	TEST WELL
	TYPICAL
	UNDERFLOOR
	UNIT HEATER
	UNLESS NOTED OTHERWISE
	UNINTERRUPTABLE POWER SUPPLY
	VELOCITY
	VERTICAL
	VOLT
	VOLUME
	WATT
	WATER PROOF
	WITH
	WYE
	TRANSFORMER

ELECTRICAL SWITCH SYMBOLS

	SINGLE POLE SWITCH
	SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR
	SINGLE POLE SWITCH WITH INTEGRAL DIMMER
	SINGLE POLE SWITCH WITH INTEGRAL DIMMER AND OCCUPANCY SENSOR
	THREE-WAY SWITCH
	THREE-WAY SWITCH WITH INTEGRAL DIMMER
	FOUR-WAY SWITCH
	FOUR-WAY SWITCH WITH INTEGRAL DIMMER
	MOTOR RATED SWITCH
	SINGLE POLE SWITCH WITH PILOT LIGHT (RED WHILE ON)

DATA / LOW VOLTAGE SYMBOLS

	WALL MOUNTED TELEPHONE PORT
	WALL MOUNTED DATA PORT
	WALL MOUNTED TELEPHONE / DATA COMBINATION PORT
	FLOOR/CEILING MOUNTED TELEPHONE PORT
	FLOOR/CEILING MOUNTED DATA PORT
	FLOOR/CEILING MOUNTED TELEPHONE / DATA COMBINATION PORT
	WIRELESS ACCESS POINT
	INTERMEDIATE DISTRIBUTION FRAME
	MAIN DISTRIBUTION FRAME
	WALL MOUNTED COAXIAL TERMINAL
	THERMOSTAT

NOTE: DATA / TELEPHONE PORT QUANTITIES INDICATED BY [#]D[#]T INDICATED AT EACH PORT LOCATION.

PAGING SYSTEM SYMBOLS

	PAGING AND VOICE EVACUATION SYSTEM CABINET
	MESSAGE PLAYER
	EMERGENCY PUSHBUTTON - AMMONIA LEAK - BLUE
	EMERGENCY PUSHBUTTON - BOMB THREAT - GREEN
	EMERGENCY PUSHBUTTON - SEVERE WEATHER - YELLOW
	BLUE DOUBLE FLASH STROBE - AMMONIA SPILL - TIED TO REFRIGERATION SYSTEM
	BLUE DOUBLE FLASH STROBE - AMMONIA SPILL - TIED TO PAGING SYSTEM
	HORN/LOUD SPEAKER
	ROUND 8\"/>
	POWER SUPPLY

FIRE ALARM SYMBOLS

	FIRE ALARM CONTROL PANEL
	FIRE ALARM REMOTE ANNUNCIATOR
	CEILING MOUNTED HORN/STROBE COMBO
	WALL MOUNTED HORN/STROBE COMBO
	WALL/CEILING MOUNTED STROBE
	MANUAL FIRE ALARM CALL STATION
	HEAT DETECTOR
	SMOKE DETECTOR
	ADDRESSABLE INPUT MODULE
	ADDRESSABLE RELAY MODULE
	CLEAN AGENT ALARM
	CLEAN AGENT RELEASE
	CLEAN AGENT TROUBLE
	FIRE PUMP CONTROLLER MAIN SWITCH IN HAND OR OFF
	FIRE PUMP CONTROLLER TROUBLE
	FLASH HAT
	FLOW SWITCH
	HOOD WET CHEMICAL UNIT
	REFRIGERANT LEAK DETECTION
	MAG-LOCK FIRE ALARM INTERFACE
	QUELL PRE-ACTION PANEL
	POST INDICATOR VALVE
	FIRE PUMP ENGINE RUNNING
	AIR PRESSURE SWITCH
	FIRE PUMP ENGINE TROUBLE
	ELEVATOR RECALL TO ALTERNATE
	ELEVATOR RECALL TO MAIN
	FIRE PUMP REMOTE AUTO START FROM FACP
	REFRIGERATION SYSTEM REMOTE AUTO SHUTDOWN FROM FACP
	SHUNT TRIP ELEVATOR POWER FAILURE
	SHUNT TRIP ELEVATOR POWER
	TEMPERATURE SENSOR
	TAMPER SWITCH
	WATER DETECTION - FLOOR
	DUCT SMOKE DETECTOR

LIGHTNING PROTECTION / GROUNDING SYMBOLS

	LIGHTNING PROTECTION AIR TERMINAL
	LIGHTNING PROTECTION / GROUNDING CONDUCTOR
	GROUND ROD
	GROUND ROD WITH TEST WELL

NOTE: REFER TO SPECBOOK FOR FURTHER DETAILS.

SECURITY SYMBOLS

	AUTO LOCK
	CARD READER
	DOOR CONTACT
	DOOR OPENER
	EMERGENCY EGRESS PUSHBUTTON
	ELECTRIC HINGE
	ELECTRIC LATCH
	ELECTRIC STRIKE
	SYSTEM ACTIVATE / DEACTIVATE KEYPAD
	DOOR MAG-LOCK
	CEILING MOUNTED MOTION SENSOR
	SILENT ALARM PUSHBUTTON
	DOOR TIMER / SCHEDULER
	VIDEO DOOR STATION
	SECURITY CAMERA

ELECTRICAL DIAGRAM SYMBOLS

	TRANSFER SWITCH
	CIRCUIT BREAKER
	DISTRIBUTION TRANSFORMER
	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER
	WYE CONFIGURATION
	DELTA CONFIGURATION
	GROUNDING
	BONDED NEUTRAL
	GENERATOR
	MOTOR
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	TWISTED PAIR GROUNDED SHIELD
	TERMINAL POINT
	GREEN LIGHT
	FUSE
	ON / OFF SWITCH
	CONTROL RELAY / COIL
	MOTOR
	SWITCH
	PHOTOCELL

ELECTRICAL DISCONNECT SCHEDULE

LEFT NOTATION	RIGHT NOTATION
A	30 A RATING / 5 A FUSE
B	30 A RATING / 10 A FUSE
C	30 A RATING / 15 A FUSE
D	30 A RATING / 20 A FUSE
E	30 A RATING / 25 A FUSE
F	30 A RATING / 30 A FUSE
G	60 A RATING / 35 A FUSE
H	60 A RATING / 40 A FUSE
I	60 A RATING / 45 A FUSE
J	60 A RATING / 50 A FUSE
K	60 A RATING / 55 A FUSE
L	60 A RATING / 60 A FUSE
M	100 A RATING / 65 A FUSE
N	100 A RATING / 70 A FUSE
O	100 A RATING / 75 A FUSE
P	100 A RATING / 80 A FUSE
R	100 A RATING / 85 A FUSE
S	100 A RATING / 90 A FUSE
T	100 A RATING / 95 A FUSE
V	100 A RATING / 100 A FUSE
W	200 A RATING / 125 A FUSE
X	200 A RATING / 150 A FUSE
Y	200 A RATING / 175 A FUSE
Z	200 A RATING / 200 A FUSE

PANELBOARD IDENTIFICATION		
PANEL TYPE	VOLTAGE	CODE
DISTRIBUTION PANEL	480Y/208V (800A - 1200A)	DP
POWER PANEL	480Y/208V (100A - 600A)	PP
LIGHTING PANEL	480Y/208V (100A - 600A)	LP
RECEPTACLE PANEL	208Y/120V (50A - 400A)	RP
RECEPTACLE LOAD CENTER	120/208V (60A - 200A)	RL1
	120/240V (50A - 200A)	RL2
	PER SCHEDULE	AP
A-TYPICAL VOLTAGE PANEL		
SYSTEM DESIGNATION	CODE	
NORMAL POWER	[BLANK]	
EMERGENCY POWER	E	
UNINTERRUPTIBLE POWER	U	

PANEL TYPE

SYSTEM DESIGNATION

AREA NUMBER

PANEL NUMBER

SUB-PANEL NUMBER

E

DP

1

2

A

**NOTE:**

NUMBERING SYSTEMS FOR EXISTING FACILITIES ARE NOT SUBJECT TO THE ABOVE REQUIREMENTS IF AN EXISTING NUMBER SYSTEM IS IN USE. IN SUCH INSTANCES, USE THE EXISTING NUMBERING SYSTEM.