ELECTRICAL SYMBOLS AND ABBREVIATIONS

NOTES: 1. SYMBOLS INDICATED HERE AND NOT USED IN THE CONTRACT DOCUMENTS DO NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS MAY BE INDICATED IN THE CONTRACT DOCUMENTS.
2. EXISTING TO REMAIN IS SHOWN WITH DASHED LIGHT LINES.
3. NEW WORK IS SHOWN WITH SOLID HEAVY LINES.

LIGHTING

TYPE
CIRCUIT/SWITCH

TYPE	DESCRIPTION	TYPE	DESCRIPTION
A	LINE VOLTAGE INCANDESCCENT/HALOGEN	G	ELECTRODELESS INDUCTION FLUORESCENT
B	LOW VOLTAGE INCANDESCENT/HALOGEN	H	STANDARD HID
C	COMPACT FLUORESCENT	L	LIGHT PIPE/GUIDE/TUBE, FIBER OPTICS
D	DOUBLE ENDED/PIN, SINGLE ENDED	N	NEON/COLD CATHODE
	COMPACT HID	S	SPECIAL PURPOSE
F	STANDARD LINEAR FLUORESCENT	T	TRACK
		X	EXIT LIGHT

SUFFIX	DESCRIPTION
E	BATTERY PACK/INVERTER

- SURFACE MOUNTED LINEAR FLUORESCENT MOUNTING LOCATION: CEILING
- SURFACE MOUNTED LINEAR FLUORESCENT MOUNTING LOCATION: WALL
- PENDANT/SUSPENDED LINEAR FLUORESCENT
- PENDANT/SUSPENDED FLUORESCENT
- RECESSED GRID MOUNTED FLUORESCENT MOUNTING LOCATION: CEILING
- RECESSED FLANGE MOUNTED FLUORESCENT MOUNTING LOCATION: CEILING
- SURFACE MOUNTED FLUORESCENT MOUNTING LOCATION: CEILING
- RECESSED MOUNTED INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: CEILING
- SURFACE MOUNTED INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: CEILING
- RECESSED MOUNTED INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: WALL
- SURFACE MOUNTED INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: WALL
- PENDANT/SUSPENDED INCANDESCENT/COMPACT FLUORESCENT/HID
- RECESSED MOUNTED EMERGENCY/LIFE SAFETY INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: CEILING
- SURFACE MOUNTED EMERGENCY/LIFE SAFETY INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: CEILING
- RECESSED MOUNTED EMERGENCY/LIFE SAFETY INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: WALL
- SURFACE MOUNTED EMERGENCY/LIFE SAFETY INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: WALL
- PENDANT/SUSPENDED EMERGENCY/LIFE SAFETY INCANDESCENT/COMPACT FLUORESCENT/HID
- RECESSED MOUNTED STANDBY EMERGENCY INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: CEILING
- SURFACE MOUNTED STANDBY EMERGENCY INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: CEILING
- RECESSED MOUNTED STANDBY EMERGENCY INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: WALL
- SURFACE MOUNTED STANDBY EMERGENCY INCANDESCENT/COMPACT FLUORESCENT/HID MOUNTING LOCATION: WALL
- DIRECTIONAL INDICATOR ADDED TO FIXTURE SYMBOL TO DESIGNATE AIMING DIRECTION
- EXIT DIRECTIONAL ARROW
- SINGLE FACE EXIT FIXTURE MOUNTING LOCATION: CEILING
- DOUBLE FACE EXIT FIXTURE MOUNTING LOCATION: CEILING
- SINGLE FACE EXIT FIXTURE MOUNTING LOCATION: WALL
- DOUBLE FACE EXIT FIXTURE MOUNTING LOCATION: WALL
- POST TOP LUMINAIRE WITH REFLECTIVE SHADE MOUNTING LOCATION: AS SPECIFIED
- COVE LUMINAIRE MOUNTING LOCATION: AS SPECIFIED
- RECESSED GRID MOUNT DIRECT/INDIRECT FLUORESCENT; MID LINE INDICATES REFLECTOR ORIENTATION. MOUNTING LOCATION: CEILING
- RECESSED GRID MOUNT DIRECT/INDIRECT EMERGENCY FLUORESCENT; MID LINE INDICATES REFLECTOR ORIENTATION. MOUNTING LOCATION: CEILING
- SINGLE HEAD EMERGENCY FIXTURE WITH BATTERY PACK
- DOUBLE HEAD EMERGENCY FIXTURE WITH BATTERY PACK
- PILOT LIGHT MOUNTING LOCATION: AS NOTED
- TRACK MOUNTING LOCATION: AS NOTED

SWITCHES

- LIGHTING CONTACTOR MOUNTING LOCATION:WALL MOUNTING HEIGHT: AS NOTED
- WALL BOX DIMMER MOUNTING LOCATION:WALL MOUNTING HEIGHT: 3'-6"
- CU — PRE-SET DIMMING SYSTEM CONTROL UNIT MOUNTING LOCATION:WALL MOUNTING HEIGHT: 3'-6"
- PB — PRE-SET DIMMING SYSTEM 2 BUTTON PRE-SET SCENE SELECTION SWITCH MOUNTING LOCATION:WALL MOUNTING HEIGHT: 3'-6"
- TS — TIME SWITCH MOUNTING LOCATION:WALL MOUNTING HEIGHT: 3'-6"
- PC — PHOTO CELL MOUNTING LOCATION:WALL MOUNTING HEIGHT: AS NOTED
- AMBIENT LIGHT SENSOR MOUNTING LOCATION:CEILING AL-S - PHOTO DIODE DIMMING CONTROL SENSOR AL-O - DAYLIGHTING PHOTO SENSOR s# - DENOTES DEVICE NUMBER
- OCCUPANCY SENSOR FOR LIGHTING CONTROL, DUAL TECHNOLOGY DT-A = CEILING MOUNTED SENSOR 1 WAY (180°) DT-B = CEILING MOUNTED SENSOR 1 WAY (120°) DT-C = CEILING MOUNTED SENSOR (360°) DT-E = CEILING MOUNTED SENSOR (WET LOCATION) (360°)
- OCCUPANCY SENSOR FOR LIGHTING CONTROL, DUAL TECHNOLOGY DT-D =WALL MOUNTED SENSOR MOUNTING LOCATION:WALL MOUNTING HEIGHT: 3'-6" (OR AS NOTED)
- LV-A — LOW VOLTAGE SWITCH LV-A = DEVICE LABEL (REFER TO CONTROL DIAGRAMS) a = SINGLE BUTTON CONFIGURATION b = TWO BUTTON CONFIGURATION c = THREE BUTTON CONFIGURATION MOUNTING LOCATION: WALL MOUNTING HEIGHT: 3'-6"
- THREE WAY SWITCH MOUNTING LOCATION:WALL MOUNTING HEIGHT: 3'-6"
- FOUR WAY SWITCH MOUNTING LOCATION:WALL MOUNTING HEIGHT: 3'-6"
- SINGLE POLE SWITCH MOUNTING LOCATION:WALL MOUNTING HEIGHT: 3'-6" a = SWITCH DESIGNATION
- KEY SWITCH MOUNTING LOCATION:WALL MOUNTING HEIGHT: 3'-6"
- SWITCH WITH PILOT LIGHT MOUNTING LOCATION: WALL MOUNTING HEIGHT: 3'-6"
- REMOTE CONTROL FOR MOTORIZED DAMPER MOUNTING LOCATION:WALL MOUNTING HEIGHT: 3'-6"
- SWITCH FOR PROJECTION SCREEN, BACKBOX AND CONDUIT ONLY. MOUNTING LOCATION:WALL MOUNTING HEIGHT: 3'-6"
- PROGRAM OVERRIDE SWITCH AT ANIMAL HOLDING MOUNTING LOCATION: WALL MOUNTING HEIGHT: 3'-6"
- EMERGENCY LIGHTING SWITCH WITH BODINE STD-20 MOUNTING LOCATION: WALL MOUNTING HEIGHT: 3'-6"

EQUIPMENT AND WIRING

- TRANSFORMER
- GROUNDING BUS
- GROUND CONNECTION
- NON FUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- BREAKER DISCONNECT SWITCH
- MAGNETIC MOTOR STARTER
- COMBINATION MOTOR STARTER
- MANUAL STARTER W/OVERLOAD PROTECTION
- SURFACE JUNCTION BOX
- SURFACE JUNCTION BOX - WALL
- FLUSH JUNCTION BOX - CEILING
- FLUSH JUNCTION BOX - WALL
- FLUSH JUNCTION BOX - FLOOR
- HAIR OR HAND DRYER OUTLET
- MOTOR
- ELECTRIC HEATER
- RELAY - TYPE AS NOTED
- TIMING RELAY
- RELAY PANEL - MOUNTING LOCATION: SURFACE
- PANEL BOARD - MOUNTING LOCATION: SURFACE
- PANEL BOARD - MOUNTING LOCATION: FLUSH
- DISTRIBUTION PANELBOARD
- MOTOR CONTROL CENTER
- VFD — VARIABLE FREQUENCY DRIVE PROVIDED AND INSTALLED BY MC, EC TO MAKE LINE AND LOAD CONNECTIONS.
- GEN — REMOTE GENERATOR ANNUNCIATOR
- PUSH BUTTON
- KIRK KEY INTERLOCK
- TELEPHONE TERMINAL CABINET
- PANEL DIVISION ARROW
- LINE VOLTAGE THERMOSTAT
- BUZZER
- GROUND CONNECTION - PLUG-IN
- EGS — ENGINE GENERATOR SET
- TRANSFORMER - ONE LINE DIAGRAM
- POTENTIAL TRANSFORMER
- CABLE TAP BOX
- BUSWAY PLUG-IN UNIT
- VOLTMETER & SELECTOR SWITCH
- AMMETER, SELECTOR SWITCH, & CT'S
- GFR — GROUND FAULT RELAY
- REVENUE METER, kWh/D
- METER WITH CURRENT TRANSFORMER
- MOLDED CASE CIRCUIT BREAKER
- LOW VOLTAGE DRAW-OUT AIR CIRCUIT BREAKER
- SWITCH - ONE LINE DIAGRAM
- FUSE
- GROUNDED "Y" SYSTEM
- SM — RAISED FLOOR SERVICE MODULE P = POWER, D = DATA, T = TEL
- AUTOMATIC TRANSFER SWITCH
- PANEL DIVISION LINE
- CONTACTOR
- WIRING CONCEALED IN FLOOR
- WIRING IN CEILING/WALLS
- HOMERUN
- PNL, A1– INDICATES PANEL AND CIRCUIT
- INDICATES NUMBER OF CONDUCTORS
- INDICATES NEUTRAL
- INDICATES GROUND CONDUCTOR

A-1,3,5 PANEL AND CIRCUITS: PANEL A, CIRCUITS 1,3,5
9(11) 2-POLE, SINGLE PHASE CIRCUIT SPACES 9 AND 11
9(11,13) 3-POLE, THREE PHASE CIRCUIT SPACES 9, 11, AND 13

COMMUNICATION

- AV — AUDIO VISUAL, FLUSH J-BOX MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6"
- AV — AUDIO VISUAL, FLUSH J-BOX MOUNTING LOCATION: CEILING
- W — TELE/DATA WALL TELEPHONE OUTLET MOUNTING LOCATION: FLUSH WALL MOUNTING HEIGHT: 4'-0"
- TELE/DATA OUTLET MOUNTING LOCATION: FLUSH WALL MOUNTING HEIGHT: 1'-6"
- TELE/DATA OUTLET MOUNTING LOCATION: CASEWORK OR 2" ABOVE BACKSPLASH MOUNTING HEIGHT: FIELD VERIFY
- BUILDING AUTOMATION SYSTEM OUTLETS MOUNTING LOCATION: FLUSH WALL MOUNTING HEIGHT: AS NOTED
- CABLE TRAY DEPTH: 4" EXCEPT WHERE AS NOTED WIDTH: AS MEASURED ON PLANS MOUNTING HEIGHT: ABOVE CEILINGS OR AS NOTED ON PLANS
- WORKSTATION OUTLETS - FLOOR MOUNTED MOUNTING LOCATION: FLUSH FLOOR MOUNTING HEIGHT: F/FC
- WORKSTATION OUTLETS - CEILING MOUNTED MOUNTING LOCATION: FLUSH CEILING MOUNTING HEIGHT: F/FC
- AR — AREA OF RESCUE ASSISTANCE STATION MOUNTING LOCATION: WALL MOUNTING HEIGHT: 42" AFF TO CENTER.
- ARM — AREA OF RESCUE MASTER STATION MOUNTING LOCATION: WALL MOUNTING HEIGHT: 42" AFF TO CENTER.
- AP — WIRELESS ACCESS POINT OUTLETS - CEILING MOUNTED MOUNTING LOCATION: FLUSH CEILING MOUNTING HEIGHT: F/FC
- TELE/DATA OUTLET IN SURFACE MOUNTED RACEWAY

NOTES:
1. MAXIMUM (2) 90 DEGREE BENDS BETWEEN BOX AND CABLE TRAY WITH CONDUIT RUN IN STRAIGHTEST LINE POSSIBLE
2. PROVIDE 4"X4"X2-1/8" BOX WITH TWO GANG PLASTER RING FOR EACH OUTLET. WALL PHONE SHALL BE SINGLE GANG RING.
3. REFER TO SPECIFICATIONS ON USE, LOCATION, AND ROUTING.
4. MINIMUM CONDUIT SIZE (1) 1".

RECEPTACLES

- SWITCH/RECEPTACLE MOUNTING LOCATION: WALL MOUNTING HEIGHT: 3'-6"
- DUPLEX RECEPTACLE MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6"
- D — DUPLEX RECEPTACLE ON DEDICATED CIRCUIT MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6"
- HK — HOUSEKEEPING SPLIT WIRED (SEPARATE CIRCUIT FOR TOP AND BOTTOM) #10AWG CONDUCTORS AND EQUIPMENT GROUND WIRE MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6"
- EMERGENCY DUPLEX RECEPTACLE MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6"
- SINGLE RECEPTACLE MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6" (OR AS SHOWN)
- SINGLE RECEPTACLE - ABOVE CASEWORK OR 2" ABOVE COUNTERTOP BACKSPLASH MOUNTING LOCATION: WALL MOUNTING HEIGHT: FIELD VERIFY
- E — EMERGENCY SINGLE RECEPTACLE MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6" (OR AS SHOWN)
- EMERGENCY SINGLE RECEPTACLE - ABOVE CASEWORK OR 2" ABOVE COUNTERTOP BACKSPLASH MOUNTING LOCATION: WALL MOUNTING HEIGHT: FIELD VERIFY
- DOUBLE DUPLEX RECEPTACLE MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6"
- EMERGENCY DOUBLE DUPLEX RECEPTACLE MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6"
- DUPLEX RECEPTACLE - ABOVE CASEWORK OR 2" ABOVE COUNTERTOP BACKSPLASH MOUNTING LOCATION: WALL MOUNTING HEIGHT: FIELD VERIFY
- EMERGENCY DUPLEX RECEPTACLE - ABOVE CASEWORK OR 2" ABOVE COUNTERTOP BACKSPLASH MOUNTING LOCATION: WALL MOUNTING HEIGHT: FIELD VERIFY
- LOCKING RECEPTACLE (FILLED IN - EMERGENCY) MOUNTING LOCATION: WALL OR CEILING MOUNTING HEIGHT: 1'-6"
- DOUBLE DUPLEX RECEPTACLE - ABOVE CASEWORK OR 2" ABOVE COUNTERTOP BACKSPLASH MOUNTING LOCATION: WALL MOUNTING HEIGHT: FIELD VERIFY
- EMERGENCY DOUBLE DUPLEX RECEPTACLE - ABOVE CASEWORK OR 2" ABOVE COUNTERTOP BACKSPLASH MOUNTING LOCATION: WALL MOUNTING HEIGHT: FIELD VERIFY
- EMERGENCY DUPLEX RECEPTACLE LOCATED IN SURFACE MOUNTED RACEWAY
- EMERGENCY POWER OUTLET IN SURFACE MOUNTED RACEWAY VOLTAGE AND AMPERAGE AS INDICATED
- OUTLETS INSTALLED IN SURFACE MOUNTED RACEWAY EVEN SPACING WITH CUSTOM COVERS TO ACCOMMODATE DEVICES INDICATED
- DUPLEX RECEPTACLE MOUNTING LOCATION: CEILING
- EMERGENCY DUPLEX RECEPTACLE MOUNTING LOCATION: CEILING
- FLOOR BOX - FLOOR MOUNTED MOUNTING LOCATION: FLOOR
- FIXED EQUIPMENT CONNECTION MOUNTING LOCATION COORDINATE WITH EQUIPMENT SUPPLIER
- FIXED EQUIPMENT CONNECTION - WALL MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6"
- POWER OUTLET MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6" (OR AS SHOWN)
- A — POWER OUTLET MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6" (OR AS SHOWN) A = NEMA 6-20R (#10AWG CONDUCTORS AND GROUND) B = NEMA 6-30R (#10AWG CONDUCTORS AND GROUND) C = NEMA 15-30R (#10AWG CONDUCTORS AND GROUND) GP = ISOLATED ROOM INSTRUMENT GROUND POINT IG = ISOLATED GROUND DUPLEX RECEPTACLE SERVED FROM CLEAN POWER (CP) PANEL
- POWER OUTLET, EMERGENCY CIRCUIT MOUNTING LOCATION: WALL MOUNTING HEIGHT: 1'-6" (OR AS SHOWN)
- DUPLEX RECEPTACLE LOCATED IN SURFACE MOUNTED RACEWAY
- DUPLEX RECEPTACLE ON DEDICATED CIRCUIT LOCATED IN SURFACE MOUNTED RACEWAY
- SPECIAL POWER OR GROUNDING OUTLET IN SURFACE MOUNTED RACEWAY VOLTAGE AND AMPERAGE AS INDICATED A = NEMA 6-20R (#10AWG CONDUCTORS AND GROUND) B = NEMA 6-30R (#10AWG CONDUCTORS AND GROUND) C = NEMA 15-30R (#10AWG CONDUCTORS AND GROUND) GP = ISOLATED ROOM INSTRUMENT GROUND POINT IG = ISOLATED GROUND DUPLEX RECEPTACLE SERVED FROM CLEAN POWER (CP) PANEL
- a — DUPLEX RECEPTACLE, UPPER HALF SWITCHED, LOWER HALF HOT MOUNTING LOCATION MOUNTING HEIGHT: 1'-6" WALL

FIRE

- FIRE ALARM COMBINATION VOICE/STROBE MOUNTING LOCATION: WALL MOUNTING HEIGHT: SEE NOTE 1
- CLG — FIRE ALARM COMBINATION VOICE/STROBE MOUNTING LOCATION: CEILING
- FIRE ALARM STROBE ONLY MOUNTING LOCATION: WALL MOUNTING HEIGHT: SEE NOTE 1
- FIRE ALARM LOUDSPEAKER MOUNTING LOCATION: SURFACE MOUNTING HEIGHT: SEE NOTE 1
- F — FIRE ALARM PULL STATION MOUNTING LOCATION: WALL MOUNTING HEIGHT: 4'-0"
- S — FIRE ALARM SMOKE DETECTOR MOUNTING LOCATION: CEILING
- SD — FIRE ALARM DUCT SMOKE DETECTOR MOUNTING LOCATION: DUCT
- H — FIRE ALARM HEAT DETECTOR MOUNTING LOCATION: CEILING
- D — FIRE ALARM DOOR HOLDER MOUNTING LOCATION: WALL MOUNTING HEIGHT: FIELD VERIFY
- DGP — FIRE ALARM DATA GATHERING PANEL MOUNTING LOCATION: WALL MOUNTING HEIGHT: AS NOTED
- NAC — FIRE ALARM NAC PANEL MOUNTING LOCATION: WALL MOUNTING HEIGHT: AS NOTED
- PS — FIRE ALARM PRESSURE SWITCH MOUNTING LOCATION: FIELD VERIFY
- DS — FIRE ALARM DOOR HOLDER WITH SMOKE DETECTOR MOUNTING LOCATION: WALL MOUNTING HEIGHT: FIELD VERIFY
- WT — FIRE ALARM WATERFLOW SWITCH MOUNTING LOCATION: SPRINKLER PIPE MOUNTING HEIGHT: FIELD VERIFY
- TS — FIRE ALARM TAMPER SWITCH MOUNTING LOCATION: SPRINKLER PIPE MOUNTING HEIGHT: FIELD VERIFY
- CP — FIRE ALARM CONTROL PANEL MOUNTING LOCATION: WALL MOUNTING HEIGHT: AS NOTED
- AP — FIRE ALARM ANNUNCIATOR PANEL MOUNTING LOCATION: WALL MOUNTING HEIGHT: AS NOTED
- RIS — REMOTE INDICATOR TEST SWITCH FOR AHU'S MOUNTING LOCATION: WALL MOUNTING HEIGHT: AS NOTED
- CM — FIRE ALARM CONTROL MODULE (1) N.O. & (1) N.C. RELAY CONTACT ADDRESSABLE / INTELLIGENT
- MM — FIRE ALARM MONITOR MODULE ADDRESSABLE / INTELLIGENT

NOTES:
1. 80" AFF TO BOTTOM OF FACEPLATE OR 6" FROM TOP OF FACEPLATE TO CEILING, WHICH EVER IS LOWER
2. NUMBER ADJACENT TO VISUAL FIRE ALARM DEVICES IS STROBE CANDELA. DEVICES SHALL BE 15CD OR HIGHER LEVELS AS NOTED.

SECURITY

- SECURITY DEVICE MOUNTING LOCATION: WALL MOUNTING HEIGHT: AS NOTED
- BM — SECURITY BIOMETRIC DEVICE MOUNTING LOCATION: WALL MOUNTING HEIGHT: VERIFY W/OWNER
- KP — SECURITY KEYPAD DEVICE MOUNTING LOCATION: WALL MOUNTING HEIGHT: VERIFY W/OWNER
- CR — SECURITY CARD READER MOUNTING LOCATION: WALL OR DOOR MOUNTING HEIGHT@6"AFF TO CENTER
- CP — SECURITY SYSTEM CONTROL PANEL MOUNTING LOCATION: WALL MOUNTING HEIGHT: AS NOTED
- CCTV — CLOSED CIRCUIT CAMERA MOUNTING LOCATION: WALL MOUNTING HEIGHT: CEILING
- WS — SECURITY WATCHMAN'S STATION MOUNTING LOCATION: WALL MOUNTING HEIGHT: AS NOTED
- MD — SECURITY MOTION DETECTOR MOUNTING LOCATION: WALL MOUNTING HEIGHT: AS NOTED
- S — SECURITY ELECTRIC STRIKE MOUNTING LOCATION: WALL MOUNTING HEIGHT: AS NOTED
- DS — SECURITY DOOR PUSH BUTTON MOUNTING LOCATION: WALL MOUNTING HEIGHT: AS NOTED
- DPS — DOOR POSITION SWITCH MOUNTING LOCATION: DOOR FRAME MOUNTING HEIGHT: AS NOTED

ELECTRICAL ABBREVIATIONS

A	-	AMPERES	JB	-	JUNCTION BOX
AC	-	ABOVE CEILING/ALTERNATING CURRENT	KO	-	KNOCK-OUT
ADO	-	AUTOMATIC DOOR OPENER	KV	-	KILOVOLT
AF	-	AMPERE FRAME	KVA	-	KILOVOLT-AMPERES
AFF	-	ABOVE FINISHED FLOOR	KW	-	KILOWATTS
AIC	-	AMP INTERRUPTING CAPACITY	KWH	-	KILOWATT HOURS
ALT	-	ALTERNATE	LAN	-	LOCAL AREA NETWORK
ARCH	-	ARCHITECTURAL	LGB	-	LAB GROUNDING BUSBAR
ASC	-	ABOVE SUSPENDED CEILING	LGT	-	LIGHT
AT	-	AMPERE TRIP	LTCP	-	LOCAL TEMPERATURE CONTROL PANEL
ATS	-	AUTOMATIC TRANSFER SWITCH	LTG	-	LIGHTING
AUTO	-	AUTOMATIC	LTS	-	LIGHTS
BATS	-	BYPASS AUTOMATIC TRANSFER SWITCH	LV	-	LOW VOLTAGE
BC	-	BARE COPPER	LVS	-	LOW VOLTAGE SWITCH
BFC	-	BELOW FINISH CEILING	MATV	-	MASTER ANTENNA TELEVISION
BFL	-	BELOW FLOOR LEVEL	MC	-	MECHANICAL CONTRACTOR
BLDG	-	BUILDING	MCB	-	MAIN CIRCUIT BREAKER
BOL	-	BOTTOM OF LUMINAIRE	MCC	-	MOTOR CONTROL CENTER
BPIP	-	BOILER PLANT INSTRUMENTATION PANEL	MCP	-	MOTOR CIRCUIT PROTECTOR
BRKR	-	BREAKER	MDP	-	MAIN DISTRIBUTION PANEL
C	-	CONDUIT	MER	-	MECHANICAL EQUIPMENT ROOM
CB	-	CIRCUIT BREAKER	MGB	-	MAIN GROUNDING BUSBAR
CCTV	-	CLOSED CIRCUIT TELEVISION	MLO	-	MAIN LUGS ONLY
CCT	-	CIRCUIT	MH	-	MANHOLE
CCT BKR	-	CIRCUIT BREAKER	MPTB	-	MUSIC & PAGE TERMINAL BOX
CFCI	-	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	MTD	-	MOUNTED
			MTG	-	MOUNTING
CLG	-	CEILING	MTG HGT	-	MOUNTING HEIGHT
CO	-	CONDUIT ONLY	MTR	-	MOTOR/METER
CONTR	-	CONTRACTOR	NA	-	NOT APPLICABLE
CORR	-	CORRIDOR	NC	-	NEW CONNECTION/NORMALLY CLOSED
CR	-	CONTROL RELAY	NFD	-	NON-FUSED DISCONNECT
CT	-	CURRENT TRANSFORMER	NFSS	-	NON-FUSED SAFETY SWITCH
DB	-	DIRECT BURIAL	NIC	-	NOT IN CONTRACT
DC	-	DIRECT CURRENT	NO	-	NORMALLY OPEN
DED	-	DEDICATED	NTS	-	NOT TO SCALE
DET	-	DETAIL	OC	-	ON CENTER
DIA	-	DIAMETER	OFCI	-	OWNER FURNISHED CONTRACTOR INSTALLED
DISC	-	DISCONNECT	OFOI	-	OWNER FURNISHED OWNER INSTALLED
DN	-	DOWN	P	-	POLE
DP	-	DISTRIBUTION PANEL	PA	-	PUBLIC ADDRESS
DS	-	DISCONNECT SWITCH	PB	-	PULL BOX/PUSHBUTTON
EC	-	EMPTY CONDUIT/ELECTRICAL CONTRACTOR	PBPU	-	PREFABRICATED BEDSIDE PATIENT POWER UNIT
ECL	-	EMERGENCY CRITICAL LIGHTING	PC	-	PLUMBING CONTRACTOR/PHOTOCELL
ECP	-	EMERGENCY CRITICAL POWER	PDU	-	POWER DISTRIBUTION UNIT
EDB	-	ELECTRIC DUCT BANK	PF	-	POWER FACTOR
EG	-	EQUIPMENT GROUND	PH	-	PHASE
EGS	-	ENGINE GENERATOR SET	PLBG	-	PLUMBING
EJ	-	EXPANSION JOINT	PNL	-	PANEL
ELEC	-	ELECTRIC/ELECTRICAL	POD	-	POWER OPERATED DAMPER
ELL	-	EMERGENCY LIFE SAFETY LIGHTING	PT	-	POTENTIAL TRANSFORMER
ELP	-	EMERGENCY LIFE SAFETY POWER	PTRV	-	POWER TYPE ROOF VENTILATOR
EMER	-	EMERGENCY	PWR	-	POWER
EMI	-	ELECTROMAGNETIC INTERFERENCE	REC	-	RECESSED
EMT	-	ELECTRICAL METALLIC TUBING	RECEP	-	RECEPTACLE
EQUIP	-	EQUIPMENT	REL	-	RELOCATE
ESM	-	ELECTRIC STRIP MOLD	REQD	-	REQUIRED
ETR	-	EXISTING TO REMAIN	RGIP	-	REMOTE GROUND INDICATOR PANEL
EWC	-	ELECTRIC WATER COOLER	RVAT	-	REDUCED VOLTAGE AUTO TRANSFORMER
EXST	-	EXISTING	SHT	-	SHEET
F/FC	-	FLUSH WITH FINISHED CEILING	SIG	-	SIGNAL
F/FF	-	FLUSH WITH FINISHED FLOOR	SIM	-	SIMILAR
F/FW	-	FLUSH WITH FINISHED WALL	SPEC	-	SPECIFICATION
FA	-	FIRE ALARM	SS	-	SAFETY SWITCH
FAAP	-	FIRE ALARM ANNUNCIATOR PANEL	STA	-	STATION
FACP	-	FIRE ALARM CONTROL PANEL	STR	-	STARTER
FCU	-	FAN COIL UNIT	SW	-	SWITCH
FDR	-	FEEDER	SWBD	-	SWITCHBOARD
FDS	-	FUSED DISCONNECT SWITCH	SWGR	-	SWITCHGEAR
FI	-	FILM ILLUMINATOR	TEL	-	TELEPHONE
FIXT	-	FIXTURE	TFA	-	TO FLOOR ABOVE
FL	-	AT FLOOR LINE	TFB	-	TO FLOOR BELOW
FLA	-	FULL LOAD AMPERES	TGB	-	TELEPHONE GROUNDING BUSBARBAR
FLEX	-	FLEXIBLE	TMGB	-	TELEPHONE MAIN GROUNDING BUSBAR
FLR	-	FLOOR	TS	-	TAMPER SWITCH/TIME SWITCH
FLUOR	-	FLUORESCENT	TV	-	TELEVISION
FS	-	FLOW SWITCH	TVSS	-	TRANSIENT VOLTAGE SURGE SUPPRESSION
FSS	-	FUSED SAFETY SWITCH	TVTC	-	TELEVISION TERMINAL CABINET
FSCP	-	FLAME SAFEGUARD CONTROL PANEL	TYP	-	TYPICAL
FVNR	-	FULL VOLTAGE NON-REVERSING	UC	-	UNDER COUNTER
GB	-	GROUNDING BUSBAR	UG	-	UNDERGROUND
GC	-	GENERAL CONTRACTOR	UH	-	UNIT HEATER
GFCI	-	GROUND FAULT CIRCUIT INTERRUPTER	UNO	-	UNLESS NOTED OTHERWISE
GFP	-	GROUND FAULT PROTECTION	UPS	-	UNINTERRUPTED POWER SUPPLY
GND	-	GROUND	V	-	VOLTAGE
GEN	-	GENERATOR	VFD	-	VARIABLE FREQUENCY DRIVE
GFI	-	GROUND FAULT INTERRUPTER	VP	-	VAPOR PROOF
GRS/GRC	-	GALVANIZED RIGID STEEL CONDUIT	W	-	WIRE
GTB	-	GROUND TERMINAL BOX	W/	-	WITH
HG	-	HOSPITAL GRADE	WP	-	WEATHERPROOF
HH	-	HANDHOLE	WS	-	WALL SURFACE
HOA	-	HAND OFF AUTOMATIC	WT	-	WATER TIGHT
HP	-	HORSE POWER	X	-	EXISTING
HT	-	HEIGHT/HEAT TRACE	XFMR	-	TRANSFORMER
HV	-	HEATING/VENTILATION CONTRACTOR	XP	-	EXPLOSION PROOF
IMC	-	INTERMEDIATE METAL CONDUIT			
INCAND	-	INCANDESCENT			

SITE SYMBOLS

TYPE — CIRCUIT / SWITCH

- BOLLARD OR GROUND MOUNTED FIXTURE
- EXTERIOR WALL MOUNTED FIXTURE
- POLE FIXTURE, ONE HEAD
- E — UG — E = ELECTRIC POWER T = TELEPHONE UG = UNDERGROUND OH = OVERHEAD D = DATA
- POLE FIXTURE, TWO HEAD
- POLE FIXTURE, FOUR HEAD
- MH — MH = MANHOLE HH = HANDHOLE
- POST TOP LUMINAIRE MOUNTING LOCATION: AS SPECIFIED
- POST TOP LUMINAIRE WITH REFLECTIVE SHADE MOUNTING LOCATION: AS SPECIFIED

SHEET SYMBOLS

- LINE CONTINUE BREAK
- ELEVATION DESIGNATION
- # — DETAILS AND SECTIONS DESIGNATION
- EQ # — EQUIPMENT DESIGNATION TOP DESIGNATES EQUIPMENT ABBREVIATION BOTTOM DESIGNATES EQUIPMENT NUMBER
- NEW WORK CONNECTION TO EXISTING WORK DESIGNATION
- REFER XD,D — PLAN CONTINUATION DESIGNATION
- # XD,D — DETAIL REFERENCE TOP DESIGNATES DETAIL NUMBER BOTTOM DESIGNATES ON WHICH SHEET DETAIL APPEARS
- 1 — REVISION NUMBER DESIGNATION
- NOTE DESIGNATION
- # — ROOM NUMBER DESIGNATION
- # XD,D — SECTION REFERENCE TOP DESIGNATES SECTION NUMBER BOTTOM DESIGNATES ON WHICH SHEET SECTION APPEARS

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I hereby certify that this plan or drawing was prepared by me or under my direct supervision and that I am a duly licensed ENGINEER under the laws of the State of Minnesota.

For AFFILIATED ENGINEERS, INC.

By

Name

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Project

Physics and Nanotechnology Building

U of M Project # 01-155-08-1718

UNIVERSITY OF MINNESOTA
Driven to Discover℠

ELECTRICAL SYMBOLS AND ABBREVIATIONS

11-04-2011
Preliminary
Not For Construction

e0.01