

ELECTRICAL SYMBOLS - POWER PLAN

	MOTOR, SINGLE-PHASE
	MOTOR, THREE-PHASE
	TRANSFORMER, PLAN
	WYE CONNECTION
	DUCT, CELL FLOOR HEADER
	DUCT, TROLLEY
	DUCT, UNDERFLOOR JUNCTION BOX
	EARTH GROUND
	JUNCTION BOX
	LADDER CABLE TRAY
	BRANCH CIRCUIT HOMERUN. LINES INDICATE NUMBER OF CIRCUITS, NEUTRAL, AND SWITCH LEG CONDUCTORS. ONE SEPARATE GREEN GROUNDING CONDUCTOR SHALL BE PROVIDED FOR EACH HOMERUN; NOT SHOWN
	PULL BOX
	WIREWAY
	RIGID CONDUIT LINE = RC
	DIRECT BURIAL CABLE = DB
	POWER DUCT = P
	SUBSTATION
	HI VOLTAGE SWITCH ON CONCRETE PAD
	LOW VOLTAGE SWITCH ON CONCRETE PAD
	DUAL POWER AND TELECOMMUNICATIONS MANHOLE
	BUSWAY
	FLOOR OUTLET, DATA COMMUNICATION
	OUTLET, DATA COMMUNICATION
	PUSH BUTTON
	DISTRIBUTION PANEL
	LIGHTING PANEL
	PANELBOARD CABINET, FLUSH MOUNTED
	PANELBOARD CABINET, SURFACE MOUNTED
	RECEPTACLE, CLOCK HANGER
	RECEPTACLE, DUPLEX
	RECEPTACLE, DUPLEX ON EMERGENCY POWER
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER
	RECEPTACLE, QUADRAPLEX
	RECEPTACLE, SINGLE
	RECEPTACLE, SINGLE WITH SWITCH
	RECEPTACLE, SPECIAL PURPOSE

ELECTRICAL SYMBOLS - POWER PLAN

	DISCONNECT SWITCH, FUSED
	DISCONNECT SWITCH, UNFUSED
	STARTER, COMBINATION WITH DISCONNECT SWITCH
	STARTER OR MOTOR CONTROLLER
	VARIABLE FREQUENCY DRIVE
	TIME CLOCK
	POTHEAD
	STRESS CONE
	RECTIFIER, CATHODIC PROTECTION SANITARY
	VENTILATOR OR FAN COIL UNIT OUTLET
	CONDUIT TERMINATED 6" [152mm] AFF IN STANDARD BOX FOR EXTENSION TO EQUIPMENT AS DIRECTED.
	CONDUIT TERMINATED W/COUPLING (FLUSH W/FINISHED FLOOR) FOR EXTENSION TO EQUIPMENT AS DIRECTED.
	<p>\$2 SWITCH</p> <p>D = DIMMING</p> <p>F = FUSED SWITCH</p> <p>L = LOCK</p> <p>M = MANUAL MOTOR STARTING</p> <p>MP= MOTOR SNAP WITH PILOT LIGHT (THERMAL TYPE)</p> <p>OS= OCCUPANCY SENSOR</p> <p>OS/D=DUAL PURPOSE OCCUPANCY SENSOR/DIMMER</p> <p>PB= PUSH BUTTON STATION</p> <p>WP= WEATHER PROOF</p> <p>K = KEY OPERATED</p> <p>LM= LOW VOLTAGE MASTER</p> <p>MC= MOMENTARY CONTACT</p> <p>P = WITH PILOT LIGHT</p>
	RECEPTACLE, SWITCHED DUPLEX
	DROP CORD, SINGLE CONVENIENCE OUTLET, 3-WIRE, GROUNDING TYPE, 20A, W/#12 CONDUCTORS IN FLEXIBLE CORD (CENTER LINE OF OUTLET: 6"-6" [1981mm] AFF. MINIMUM).
	ELECTRICAL STRIP MOLD (OUTLETS ON 2'-0" [610mm] CENTERS OR AS DESIGNATED ON DRAWINGS), MTD 3'-6" [1067mm] AFF OR AS INDICATED.
	3-GANG COMPARTMENT BOX IN FLOOR FOR TELEPHONE, DATA & RECEPTACLE.
	ELECTRICAL STRIP MOLD (OUTLETS ON 2'-0" [610mm] CENTERS OR AS DESIGNATED ON DRAWINGS), MTD 3'-6" [1067mm] AFF OR AS INDICATED.
	3-GANG COMPARTMENT BOX IN FLOOR FOR TELEPHONE, DATA & RECEPTACLE.
	<p>RELAY; LETTER INDICATES RELAY TYPE</p> <p>50 = INSTANTANEOUS OVERCURRENT OR RATE-OF-RISE</p> <p>51 = AC-TIME OVERCURRENT</p> <p>67 = AC-DIRECTIONAL OVERCURRENT</p> <p>86 = LOCK OUT</p>
	PANELBOARD
	MECHANICAL EQUIPMENT REFERENCE

LINE WEIGHT LEGEND

	EXISTING WORK
	NEW WORK
	EXISTING TO BE DEMOLISHED
	EXISTING TO BE DEMOLISHED

1PH	SINGLE-PHASE
1P	SINGLE POLE
2/C	TWO-CONDUCTOR
3/C	THREE-CONDUCTOR
3PH	THREE-PHASE
4/C	FOUR-CONDUCTOR
4W	FOUR-WIRE
A/C UNIT	AIR CONDITIONING UNIT
A/E	ARCHITECT/ENGINEER
AAP	ALARM ANNUNCIATOR PANEL
AC	ALTERNATING CURRENT OR ARMORED CABLE
ACC	ACCESSIBLE
ADDL	ADDITIONAL
ADJ	ADJACENT, ADJOINING
ADO	AUTOMATIC DOOR OPENER
AF	AMPERE FRAME OR AMP FUSE
AFC	ABOVE FINISHED COUNTER, AUTOMATIC FREQUENCY CONTROL, OR AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AH	AMPERE HOUR
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
ALT	ALTERNATE
AMB OR A	AMBIENT
AMP	AMPERE
ARCH	ARCHITECT
ASC	AMPS SHORT CIRCUIT
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AV	AUDIO VISUAL
BAT	BATTERY
BC	BARE COPPER
BD	BOARD
BFF	BELOW FINISH FLOOR
BIL	BASIC INSULATION LEVEL
BLDG	BUILDING
BPIP	BOILER PLANT INSTRUMENTATION PANEL
BRKR	BREAKER
BYP	BY PASS
C	CONDUIT
CAB	CABINET
CALC	CALCULATE
CAP	CAPACITY
CAT	CATALOG
CATV	COMMUNITY ANTENNA TELEVISION
CCR	CONTROL CONTACTOR
CCTV	CLOSED CIRCUIT TELEVISION
cd	CANDELA
CD	CONSTRUCTION DOCUMENTS
CF	CONTRACTOR FURNISHED
CF/CI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED
CF/OI	CONTRACTOR FURNISHED/OWNER INSTALLED
CFE	CONTRACTOR FURNISHED EQUIPMENT
CHW	CHILLED WATER
CHWP	CHILLED WATER PUMP
CKT	CIRCUIT
CKT BRKR	CIRCUIT BREAKER
CLF	CURRENT LIMITING FUSE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COAX	COAX CABLE
COMM	COMMUNICATION
COMPT	COMPARTMENT
CONC	CONCRETE
CONT	CONTINUE
CONTR	CONTRACTOR
COORD	COORDINATE
CPT	CONTROL POWER TRANSFORMER
CRI	COLOR RENDERING INDEX
CT	CURRENT TRANSFORMER
CTV	CABLE TELEVISION
CU	COPPER
CU FT	CUBIC FEET
CUR	CURRENT
DB	DECIBEL OR DIRECT BURIAL
DC	DIRECT CURRENT
DCP	DIMMER CONTROL PANEL
DEG C	DEGREES CELSIUS
DEG F	DEGREES FAHRENHEIT
DEMO	DEMOLITION
DIAG	DIAGRAM
DISC	DISCONNECT
DISTR	DISTRIBUTION
DISTR PNL	DISTRIBUTION PANEL
DMR SW	DIMMER SWITCH
DN	DOWN

DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
DRSW	DOOR SWITCH
DS	DISCONNECT SWITCH
DWG	DRAWING
EC	EMPTY CONDUIT
EG	EQUIPMENT GROUND
EL	ELEVATION
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATOR
EMCP	EMERGENCY MONITORING CONTROL PANEL
EMER	EMERGENCY
EMI	ELECTROMAGNETIC INTERFERENCE
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EPO	EMERGENCY POWER OFF
EPRF	EXPLOSION PROOF
ESMT	EASEMENT
EWC	ELECTRIC WATER COOLER
EWI	ELECTRIC WATER HEATER
EXIST	EXISTING
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FABL	FIRE ALARM BELL
FABX	FIRE ALARM BOX
FACP	FIRE ALARM CONTROL PANEL
FC	FOOTCANDLE
FI	FILM ILLUMINATOR
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE METALLIC CONDUIT
FLT	FLOODLIGHT
FLUOR	FLUORESCENT
FLUOR FIX	FLUORESCENT FIXTURE
FOUTT	TELEPHONE FLOOR OUTLET
FP	FIRE PROTECTION
FT	FEET OR FOOT
FU SW	FUSED SWITCH
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
G OR GND	GROUND OR GENERATOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GTB	GROUND TERMINAL BOX
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HT	HEIGHT
HZ	HERTZ
IESNA	ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICA
IMC	INTERMEDIATE METAL CONDUIT
INCAND	INCANDESCENT
IR	INFRARED
IWH	INSTANTANEOUS WATER HEATER
J-BOX	JUNCTION BOX
KV	KILOVOLT
kVA	KILOVOLT AMPERE
kVAH	KILOVOLT AMPERE PER HOUR
kVAR	KILOVOLT AMPERE REACTIVE
kW	KILOWATT
kWH	KILOWATT HOUR
kWHM	KILOWATT HOUR METER
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET (FOOT)
LM	LUMEN
LP	LIGHT POLE
LPS	LOW PRESSURE SODIUM
LRA	LOCKED ROTOR AMPS
LTCP	LOCAL TEMPERATURE CONTROL PANEL
LT	LIGHT
LTG	LIGHTING
LTG PNL	LIGHTING PANEL
LTNG	LIGHTNING
LV	LOW VOLTAGE
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX	MAXIMUM
MC	METAL-CLAD
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MG	MOTOR GENERATOR
MH	MANHOLE

MIN	MINIMUM
MLO	MAXIMUM OVERCURRENT PROTECTION
MT	MAIN LUGS ONLY
MTD	MOUNT
MTG	MOUNTED
MTS	MOUNTING
MV	MANUAL TRANSFER SWITCH
MVA	MEDIUM VOLTAGE
MW	MEGAVOLT-AMPERE
	MEGAWATT MICROWAVE
NA	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT OR N	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NS	NO SCALE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OL	OVERLOAD
P	POLE
PA	PUBLIC ADDRESS
PB	PANELBOARD, PULL BOX, OR PUSHBUTTON
PBPU	PREFABRICATED BEDSIDE PATIENT UNIT
PBCB	POLYCHLORINATED BIPHENYL
PEC	PHOTOELECTRIC CELL
PED	PEDESTAL
PEND	PENDANT
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
POD	POWER OPERATED DAMPER
PT	POTENTIAL TRANSFORMER
PTRV	POWER TYPE ROOF VENTILATION
PVC	POLYVINYL CHLORIDE (PLASTIC)
PWR	POWER
RCP	REFLECTED CEILING PLAN
REC	RECESSED
RECPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RMS	ROOT MEAN SQUARE
REQD	REQUIRED
CC	SHORT CIRCUIT CAPACITY
SEAS	SERVICE ENTRANCE SECTION
SD	SMOKE DETECTOR
SF	SQUARE FOOT (FEET)
SHT	SHEET
SI	INTERNATIONAL SYSTEM OF UNITS
SPEC	SPECIFICATION
SPST	SINGLE POLE, SINGLE THROW
SURF	SURFACE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME CLOCK
TEL	TELEPHONE
TP	TWISTED PAIR
TPS	TWISTED PAIR SHIELDED
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TYP	TYPICAL
UFD	UNDERFLOOR DUCT
UGND	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTIL	UTILITY
V	VOLT
VA	VOLT AMPERE
VAR	VOLT AMPERE REACTIVE
VFD	VARIABLE FREQUENCY DRIVE
VOLT	VOLTAGE
W	WATT
WH	WATER HEATER
WP	WEATHERPROOF
XFER	TRANSFER
XFMR	TRANSFORMER

[illegible]

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Approved: Chief, Maintenance and Operations
Approved: Chief, Engineer

Approved: Utility Management Supervisor
Approved: Safety Manager
Approved: Environment of Care Manager
Approved: Facilities Service Line Manager

Drawing Title	
ELECTRICAL SYMBOLS & ABBREVIATIONS	
Project No.	Contract No.
671-11-712	VA257-P-
Building No.	AutoCAD File Name
-	671-11-712 E-10

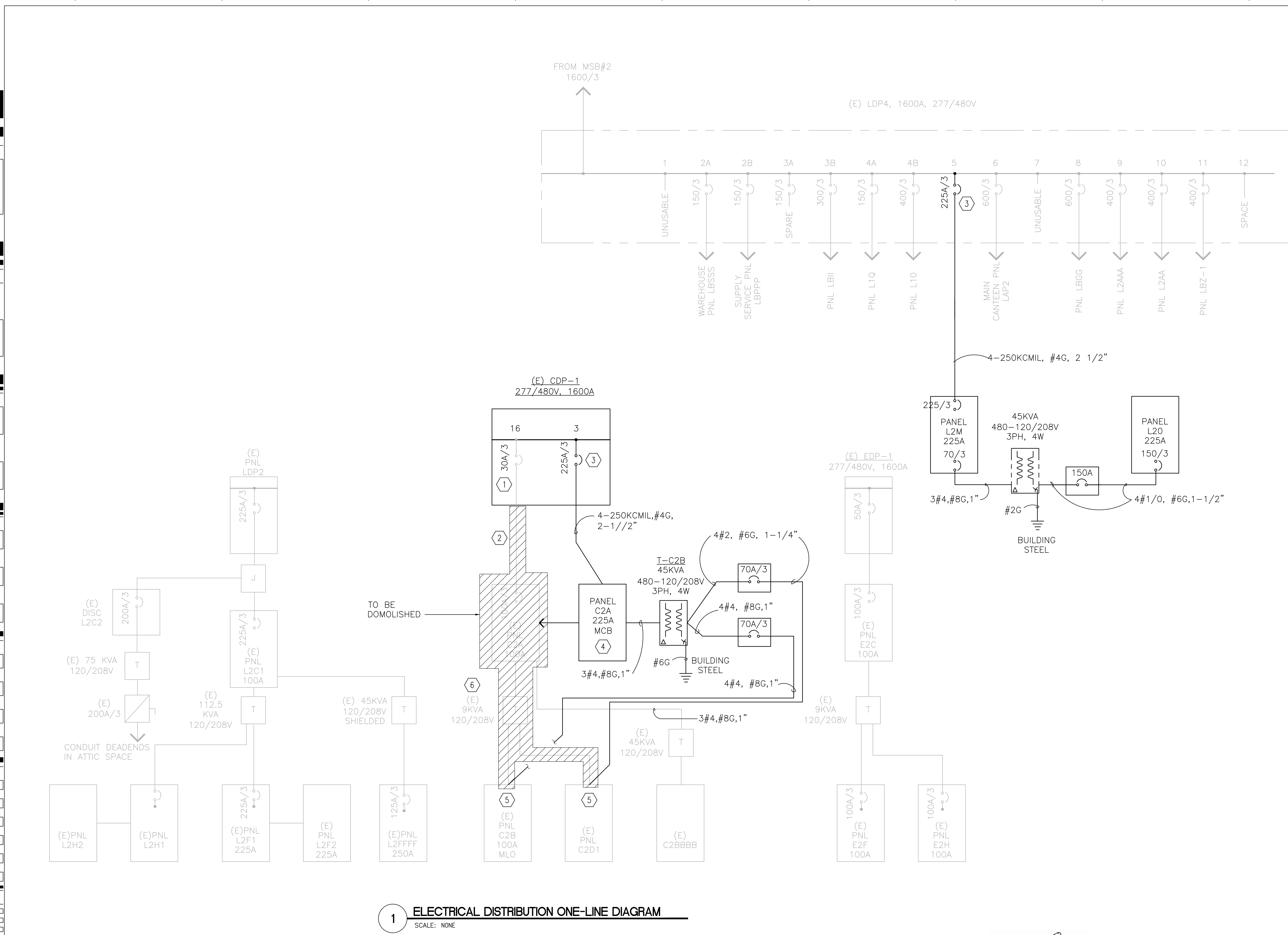
	Project Title NUCLEAR MEDICINE RELOCATION		
99	Designed By DS	Checked By MZ	Drawn By D
WG	Location SAN ANTONIO, TEXAS		

Date	01/04/2013
Scale:	AS SHOWN
Drawing No.	E-101

Veterans Administration

[illegible]

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



1 ELECTRICAL DISTRIBUTION ONE-LINE DIAGRAM
SCALE: NONE

- GENERAL NOTES:**
- ELECTRICAL CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO PROJECT START-UP.
 - PRIOR TO CONSTRUCTION, CIRCUIT TRACE EXISTING PANELBOARDS. VERIFY EXISTING PANELBOARD DEMAND LOADS, AND ACCURACY OF SCHEDULES. PROVIDE NEW ASBUILT PANEL SCHEDULE. PROVIDE REPORT TO ENGINEER WITH CIRCUIT TRACING FINDINGS.

- KEYED NOTES:**
- DISCONNECT EXISTING CIRCUIT FROM EXISTING CIRCUIT BREAKER. PROVIDE NEW LABEL INDICATING "SPARE"
 - DEMOLISH EXISTING CONDUCTORS. CONDUIT TO REMAIN AS SPARE.
 - PROVIDE NEW 225A/3 CIRCUIT BREAKER W/ KAIC RATING MATCHING EXISTING. MODIFY SWITCHBOARD AS NECESSARY FOR INSTALLATION OF NEW CIRCUIT BREAKER. PROVIDE LABEL.
 - PROVIDE NEW PANELBOARD C2A TO REPLACE EXISTING PANELBOARD C2A. NEW PANELBOARD SHALL BE MOUNTED AT SAME LOCATION. RECONNECT ALL EXISTING CIRCUITS TO REMAIN. PROVIDE ADDITIONAL WIRE/CONDUIT, BOXES AS NECESSARY FOR CONNECTION.
 - DEMOLISH EXISTING FEEDERS TO EXISTING PANELS AND REPLACE W/ NEWFEEDERS TO EXISTING PANELS.
 - DEMOLISH EXISTING TRANSFORMER AND REPLACE W/ NEW TRANSFORMER AND SECONDARY CIRCUIT BREAKERS