

ABBREVIATIONS:

AFF	MOUNTING HEIGHT ABOVE FINISHED FLOOR OR GRADE TO CENTERLINE
AIC	AVAILABLE INTERRUPTING CURRENT RATING
C	CONDUIT
CW	CASEWORK
DETD	DUAL ELEMENT TIME DELAY
EC	EMPTY CONDUIT
EX	EXISTING
EXP	EXPLOSION PROOF – SEE THE ROOM THE DEVICE MOUNTS IN FOR CLASS, DIVISION AND GROUP
EXR	EXISTING, REMOVE
EXX	EXISTING, RECONNECT
FATC	FIRE ALARM TERMINATING CABINET
GND	GROUND
IDS	INTRUSION DETECTION SYSTEM
ISP	INSIDE PLANT CABLE
MNT	MOUNT
NL	NIGHT LIGHT
OSP	OUTSIDE PLANT CABLE
PH	PHASE
PM	MOUNTED IN PEDESTAL
PR	PAIR
RAF	RETURN AIR FAN
REF	REFRIGERATOR
RL	EXISTING RELOCATED AS SHOWN ON NEW WORK PLAN
RLX	EXISTING DEVICE SHOWN IN RELOCATED POSITION, RECONNECT
SAF	SUPPLY AIR FAN
SHLD	SHIELDED
UDN	UNLESS OTHERWISE NOTED
VFP	VARIABLE FREQUENCY DRIVE
WP	RAINTIGHT (NEMA 3R CLASSIFICATION)
WPP	WEATHER PROOF, POLE MOUNTED

SWITCHES:

S	1–POLE, 20A, 120/277V AC ONLY, QUIET TYPE
S ₃	3 WAY, 20A, 120/277V AC ONLY, QUIET TYPE
S ₄	4 WAY, 20A, 120/277V AC ONLY, QUIET TYPE
S _o	CONTROLS OUTLET "o" ETC.
S _p	WITH RED PILOT LIGHT, "ON" WHEN SWITCH IS "ON". ENGRAVE PLATE TO CLEARLY INDICATE EQUIPMENT CONTROLLED (AND LOCATION IF NOT OBVIOUS).
S ₀	SOLID STATE DIMMER, INCANDESCENT OR FLUORESCENT AS REQUIRED FOR LIGHTS PROVIDED. WATTAGE TO BE MINIMUM OF 125% OF TOTAL FIXTURE WATTAGE CONTROLLED OR AS INDICATED ON DRAWING.
S _{sl}	NARROW LINE 20A, 120/277V AC ONLY, QUIET TYPE MOUNT IN WINDOW FRAME.
S _{slc}	OCCUPANT SENSOR SWITCH WITH SENSOR CONTROLS.

BRANCH CIRCUITS:

	CONCEALED IN OR BELOW FLOOR SLAB. SEE SPECIFICATIONS FOR RESTRICTIONS.
	EXPOSED CONDUIT (SURFACE MOUNT)
	WITH EXPLOSION PROOF CONDUIT SEAL
	FLEXIBLE CONDUIT TO EQUIPMENT
	NORMAL SYSTEM, CONCEALED OVERHEAD OR IN WALLS
	INDICATES HOMERUN WITH 2 #12 & 1 #12 GND. – 16mm C. TO 20 AMP, 1 POLE BREAKER ON CIRCUIT NUMBER 3, IN PANEL "N21A".
	INDICATES HOMERUN WITH 2 #12, 1 #10 NEUTRAL & 1 #12 GND. 16mm C. TO TWO, 20 AMP, 1 POLE CIRCUIT BREAKERS ON CIRCUIT NUMBERS 2 & 4 IN PANEL "N21A". ON LIGHTING PLANS A #12 NEUTRAL SHALL BE UTILIZED RATHER THAN A #10 NEUTRAL.
	INDICATES HOMERUN WITH 3 #12, 1 #10 NEUTRAL & 1 #12 GND. 16mm C. TO THREE 20 AMP, 1 POLE CIRCUIT BREAKERS ON CIRCUIT NUMBERS 2, 4, 6 IN PANEL "N21A". ON LIGHTING PLANS A #12 NEUTRAL SHALL BE UTILIZED RATHER THAN A #10 NEUTRAL.
	INDICATES ALL CONDUCTORS ARE TO BE MINIMUM #10 GAUGE. SIZE CONDUIT PER NEC OR AS INDICATED.
	HOMERUN THROUGH CONTACTS OF STARTER.
	CIRCUITING TO EMERGENCY POWER PANEL

POWER, PANELS & POWER EQUIPMENT:

	PANELBOARD – SURFACE – SEE PANELBOARD SCHEDULE
	PANELBOARD – RECESSED – SEE PANELBOARD SCHEDULE
	DISTRIBUTION PANELBOARD OR SWITCHBOARD – SEE PANEL SCHEDULE
	DISCONNECT SWITCH, FUSIBLE, IF DISCONNECT SIZE AND FUSING IS NOT SHOWN ON PLAN, REFER TO POWER SINGLE LINE DIAGRAM ON SHEET EP4–2.
	FUSE SIZE, (NF–NON FUSED, FM–FUSE PER MANUFACTURER'S RECOMMENDATION) DISCONNECT AMP RATING # OF POLES
	TRANSFORMER–DRY KVA RATING SHOWN ON SINGLE LINE DIAGRAM
	CIRCUIT BREAKER IN NEMA 1 ENCLOSURE – SURFACE MOUNTED, 22,000AIC SHOWN

MISCELLANEOUS EQUIPMENT:

	TIME CLOCK
	SURFACE METAL RACEWAY WITH ALTERNATE PHASE DUPLEX RECEPTACLES, 458mm ON CENTER HG
	ELEVATOR CONTROLLER
	CONTACTOR (ELECTRICALLY OPERATED, MECHANICALLY HELD) IN NEMA 1 ENCLOSURE.
	ELECTRIC POWER METER
	PUSH BUTTON
	SURFACE MOUNTED FIXTURE, SHOWN FIXTURE MARK "A1", CIRCUIT No. 8, CONTROLLED BY SWITCH "b" TYPICAL. WHERE 2 SUBSCRIPT LETTERS ARE SHOWN BY FIXTURE SUCH AS "a" & "b", THE INBOARD LAMPS SHALL BE CONTROLLED BY SWITCH "a" AND THE OUTBOARD LAMPS BY SWITCH "b".
	LIGHTING FIXTURE – MOUNTING AND TYPE AS SHOWN IN FIXTURE SCHEDULE
	EXIT LIGHT – NUMBER AND DIRECTION OF FACES AS SHOWN BY SHADED SECTION. SHOWN SINGLE FACE. PROVIDE ARROWS AS INDICATED ON ELECTRICAL PLANS.
	EXIT LIGHT, WALL MOUNTED, MINIMUM 2032mm TO BOTTOM OF FIXTURE
	LIGHTING FIXTURE WITH EMERGENCY BATTERY PACK
	BRACKET TYPE LIGHTING FIXTURE – MOUNTING HEIGHT SHOWN ON FIXTURE SCHEDULE
	EXIT LIGHT

LIGHTING:

FLOOR RECEPTACLES:

	BASIC RECEPTACLE TYPES WITH SUBSCRIPT MODIFIERS SHOWN UNDER WALL RECEPTACLES.
	HAND ACCESS FLUSH FLOOR MOUNTED DOUBLE DUPLEX RECEPTACLE
	HAND ACCESS FLUSH FLOOR MOUNTED DUPLEX RECEPTACLE, 20A, 125V, 2P–3 WIRE, NEMA 5–20R.

WALL RECEPTACLE:

	(ALL RECEPTACLES SHALL BE SPECIFICATION GRADE UNLESS NOTED OTHERWISE)
	BASIC RECEPTACLE TYPES WITH SUBSCRIPT MODIFIERS SHOWN BELOW
	DUPLEX RECEPTACLE, 20A, 125V, 2P–3 WIRE, NEMA 5–20R.
	DOUBLE DUPLEX RECEPTACLE, 20A, 125V, 2P–3 WIRE, NEMA 5–20R.
	EMERGENCY POWER DUPLEX RECEPTACLE, 20A, 125V, 2P–3 WIRE, NEMA 5–20R.
	SPECIAL RECEPTACLE – NEMA CONFIGURATION AS SHOWN BELOW WHERE 'X' EQUALS ONE OF THE SINGLE SUBSCRIPT LETTERS BELOW.
	A – 120V, 30A (NEMA L5–30R) LOCKING
	B – 230V, 20A, 1ø (NEMA 6–20R)
	E – 208V, 30A, 1ø (NEMA 6–30R)
	F – 208V, 30A, 3ø (NEMA L15–30R)

SUBSCRIPT MODIFIER LEGEND FOR BASIC RECEPTACLE TYPES	
*** NOTE: VERIFY WITH CONTRACTING OFFICER THE HEIGHT OF ALL COUNTER TOPS, BACKSPASHES, TABLE TOPS OR SINKS WHICH AFFECT THE MOUNTING HEIGHT OF RECEPTACLES.	
HG	– HOSPITAL GRADE RECEPTACLE,
HGF	– HOSPITAL GRADE GFI RECEPTACLE,
WPG	– WEATHERPROOF GFI RECEPTACLE WITH TWO HINGED FLAPS
GFI	– GROUND FAULT INTERRUPTING RECEPTACLE
CTG	– GFI RECEPTACLE MOUNTED 102mm ABOVE COUNTER TOP, BACKSPASH OR SINK TO CENTER OF RECEPTACLE.
CT	– RECEPTACLE MOUNTED 102mm ABOVE COUNTER TOP, BACKSPASH, TABLE TOP OR SINK TO CENTER OF RECEPTACLE
SR	– SAFETY TYPE – TAMPER RESISTANT
TVH	– TELEVISION RECEPTACLE MOUNTED 304mm BELOW FINISHED CEILING AND ADJACENT TO TV ANTENNA OUTLET UNLESS NOTED OTHERWISE.
TVL	– TELEVISION RECEPTACLE MOUNTED 457mm AFF UNLESS NOTED OTHERWISE
EWG	– ELECTRIC WATER COOLER. COORDINATE LOCATION AND HEIGHT WITH PLUMBING. RECEPTACLE WILL BE CONCEALED BEHIND WATER COOLER.

GROUNDING:

	GROUND ROD(S)
	GROUND HOMERUN 1#12, 16mm C.

JUNCTION BOXES:

	IN OR ABOVE CEILING
	IN WALL – MOUNT 457mm UNLESS NOTED OTHERWISE
	WITH FLEXIBLE CONNECTION TO EQUIPMENT

CONTROLS & MECHANICAL EQUIPMENT:

	MOTOR CONTROLLER (STARTER) – MAGNETIC WITH THERMAL OVERLOAD PROTECTION – MOUNTS IN SEPARATE ENCLOSURE. COORDINATE LOCATION WITH MECHANICAL. SUBSCRIPT INDICATES NEMA TYPE (E.G. 00 WILL BE NEMA 00)
	MOTOR DISCONNECT SWITCH, MAXIMUM 1.1KW RATING, 120V, 1 POLE UNLESS NOTED OTHERWISE.
	MOTOR – ELECTRICAL CHARACTERISTICS AS NOTED
	WATER HEATER
	DIGITAL CONTROL PANEL (FURNISHED BY MECHANICAL)
	EQUIPMENT CONNECTION AS NOTED

MOUNTING/MOUNTING HEIGHTS:

NOTE: ALL DEVICES ARE TO BE FLUSH MOUNTED UNLESS OTHERWISE NOTED

DEVICE	HEIGHT
RECEPTACLES	457mm AFF UNLESS OTHERWISE NOTED
LIGHT SWITCHES	1220mm AFF UNLESS OTHERWISE NOTED

	GENERIC SHAPE FOR RECESSED ENCLOSURE
	GENERIC SHAPE FOR SURFACE MOUNTED ENCLOSURE

SINGLE LINE DIAGRAM:

	MOLDED CASE CIRCUIT BREAKER
	MOLDED CASE CIRCUIT BREAKER WITH ELECTRONIC (SOLID STATE) TRIP WITH ADJUSTABLE LONG–TIME SHORT TIME/INSTANTENOUS PICKUP. ADJUSTABLE LONG–TIME AND SHORT TIME DELAY.
	MOLDED CASE CIRCUIT BREAKER WITH ELECTRONIC (SOLID STATE) TRIP WITH SAME ADJUSTABLE SETTINGS AS BREAKER ABOVE AND ALSO GROUND FAULT PROTECTION.
	DRAW OUT AIR CIRCUIT BREAKERS
	MANUAL TRANSFER SWITCH
	MOTOR STARTER
	MOTOR
	TRANSFORMER, XXX = KVA
	PANEL BOARD
	SWITCHBOARD OR DISTRIBUTION PANELBOARD
	VARIABLE SPEED DRIVE WITH DISCONNECT
	FUSE SIZE (NF–NON–FUSED)
	DISCONNECT SWITCH–FUSED
	DISCONNECT BUS RATING, AMPS
	# OF POLES
	FEEDER SIZE; SEE SHEET EP4–1 FOR SCHEDULE
	TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS)
	ENCLOSED MOLDED CASE CIRCUIT BREAKER
	WATT HOUR METER (PROVIDE FUSING AS RECOMMENDED BY METER MANUFACTURER.)

	KEY TO PANEL DESIGNATIONS: ① SERVICE: E–EMERGENCY N–NORMAL ② VOLTAGE: 2–208Y/120VOLTS 4–480Y/277VOLTS ③ ELECTRICAL ROOM NUMBER
	PANELBOARD SHOWN: PANEL E22A
	EXAMPLE: E 2 2 A EMERGENCY 208Y/120V SECOND FLOOR ELECTRICAL ROOM '2A' SECOND FLOOR

NEMA APPROVED METRIC SIZE DESIGNATIONS (ELECTRICAL CONDUIT)	
USA TRADE SIZE	METRIC SIZE DESIGNATIONS
1/2"	16 mm
3/4"	21 mm
1"	27 mm
1–1/4"	35 mm
1–1/2"	41 mm
2"	53 mm
2–1/2"	63 mm
3"	78 mm
3–1/2"	91 mm
4"	103 mm
5"	129 mm
6"	155 mm

IF SHEET IS LESS THAN 28"x42", IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

E-1

MEDICAL/DENTAL CLINIC

ELECTRICAL LEGEND

SIZE	CODE IDENT. NO.	DRAWING NO.
F	XXXXX	8144756
CONST. CONTR. NO.		
SPEC.	11996048	SHEET 251 OF 316