## LIGHTING

- 2x4 FLUORESCENT FIXTURE
- ASSOCIATED CONTROL DEVICE
- FIXTURE TYPE (SEE LIGHT FIXTURE SCHEDULE)
- 1x4 FLUORESCENT FIXTURE
- 2x2 FLUORESCENT FIXTURE
- FIXTURE WIRED TO UNSWITCHED NORMAL CIRCUIT
- FIXTURE WIRED TO UNSWITCHED EMERGENCY CIRCUIT
- FIXTURE WIRED TO SWITCHED EMERGENCY CIRCUIT
- DOWN LIGHT
- FLUORESCENT STRIP
- WALL MOUNTED FIXTURES
- TRACK LIGHTING
- POLE MOUNTED SITE LIGHTING FIXTURE
- FIXTURE TYPE (SEE LIGHT FIXTURE SCHEDULE)
- FLOOD LIGHT
- WALL WASH LIGHT FIXTURE
- EXIT SIGN, CEILING MOUNTED ARROW INDICATES EGRESS DIRECTION SHADING INDICATES SIGN FACE
- EXIT SIGN, WALL MOUNTED SHADING INDICATES SIGN FACE
- DUAL HEAD EMERGENCY LIGHT BATTERY PACK TD – TIME DELAY RESET
- REMOTE EMERGENCY LIGHTING HEAD
- WALL PACK
- $S_3$ 3–WAY TOGGLE SWITCH
- $S_a$ SINGLE POLE TOGGLE SWITCH INDICATES CONTROLLED FIXTURE
- $S_4$ 4–WAY TOGGLE SWITCH
- $S_{II}$ DUAL LEVEL SWITCHING
- $S_D$ DIMMER SWITCH. INCANDESCENT OR FLUORESCENT AS REQUIRED.
- $S_P$ TOGGLE SWITCH WITH PILOT LIGHT
- $S_T$ TIMER SWITCH, SPRING WOUND
- $S_{DT}$ SINGLE POLE DOUBLE THROW TOGGLE SWITCH, CENTER POSITION OFF
- $S_{WP}$ WEATHER PROOF
- $S_{XP}$ EXPLOSION PROOF
- UNSWITCHED CONTINUATION OF BRANCH CIRCUIT
- HOME RUN
- OCCUPANCY SENSOR a. INDICATES CONTROLLED FIXTURE INDICATES AIMING DIRECTION
- OSR OCCUPANCY SENSOR RELAY
- DS DAYLIGHT SENSOR LIGHTS CONTROLLED BY SENSOR

## COMMUNICATION & DATA SYSTEMS

- TELEPHONE SYSTEM WALL JACK W–INDICATES WALL MOUNTED AT 60" AFF P–INDICATES PAYPHONE (2)–INDICATES 2 OUTLETS, SINGLE BOX
- DATA SYSTEM OUTLET
- COMBINATION VOICE/DATA SYSTEM OUTLET
- UNDERFLOOR TELEPHONE SYSTEM OUTLET
- UNDERFLOOR DATA SYSTEM OUTLET
- UNDERFLOOR VOICE & DATA OUTLET
- CATV CABLE TELEVISION SYSTEM OUTLET. MOUNT 18"AFF UNLESS OTHERWISE NOTED
- CCTV CLOSED CIRCUIT TELEVISION OUTLET. MOUNT 18" AFF UNLESS OTHERWISE NOTED
- PA PAGING SYSTEM CONTROL PANEL AND PAGING AMPLIFIER
- PAGING SYSTEM SPEAKER. CEILING MOUNTED
- PAGING SYSTEM SPEAKER. WALL MOUNT AT 7'–6" AFF 1. FLUSH, 2. SURFACE, 3. HORN, 4. DUAL HORN
- VC VOLUME CONTROL
- HC INTERCOM SYSTEM HAND KEY
- CS CLOCK SPEAKER
- HS INTERCOM SYSTEM HAND SET
- WALL MOUNTED CLOCK
- CEILING MOUNTED TELEPHONE SYSTEM OUTLET
- CEILING MOUNTED DATA SYSTEM OUTLET
- CEILING MOUNTED VOICE & DATA OUTLET

## POWER

- (4) J 30A NON–FUSED SAFETY SWITCH AMPERE RATING; NEMA ENCLOSURE RATING
- (4) F J 60AS 40AF FUSED SAFETY SWITCH. TOP NUMBER INDICATES SWITCH AMPERE RATING. LOWER NUMBER INDICATES FUSE RATING; NEMA ENCLOSURE
- 1 (4) MAGNETIC MOTOR STARTER. FVNR UNLESS INDICATED OTHERWISE; NEMA ENCLOSURE RATING; NEMA SIZE (TYPICAL)
- L CB 20/1 COMBINATION CIRCUIT BREAKER/MAGNETIC MOTOR STARTER FIRST NUMBER INDICATES CIRCUIT BREAKER AMPERE RATING SECOND NUMBER INDICATES NEMA STARTER SIZE
- L F 60/40/1 COMBINATION FUSED DISCONNECT/MAGNETIC MOTOR STARTER NUMBERS INDICATE DISCONNECT AMPERE RATING/FUSE RATING/NEMA STARTER SIZE
- L 30/1 NON–FUSED DISCONNECT/MAGNETIC MOTOR STARTER FIRST NUMBER INDICATES CIRCUIT BREAKER AMPERE RATING SECOND NUMBER INDICATES NEMA STARTER SIZE
- M OL MANUAL MOTOR STARTER. TOGGLE OPERATED, 1,2 OR 3 POLE AS REQUIRED. OVERLOAD PROTECTION
- M MANUAL MOTOR SWITCH, TOGGLE OPERATED, SINBLE PHASE. 1 OR 2 POLE AS REQUIRED (NO OVERLOAD PROTECTION)
- CB 100A ENCLOSED CIRCUIT BREAKER AMPERE RATING
- 5 ELECTRIC MOTOR, NUMBER INDICATES HORSEPOWER RATING
- 5 EXPLOSION PROOF MOTOR
- VAV VARIABLE AIR VOLUME CONTROL ACTUATORS
- HS H/O/A LOCAL SELECTOR SWITCH H/O/A – HAND/OFF/AUTO
- EMO EMERGENCY OFF BREAK GLASS STATION
- PB PUSHBUTTON STATION
- J JUNCTION BOX
- T TRANSFORMER
- P POWER POLE
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- EY CONDUIT SEAL
- E DUPLEX RECEPTACLE, NEMA 5–20R. INSTALLED ON EMERGENCY CIRCUIT (TYPICAL) GFI DUPLEX RECEPTACLE, NEMA 5–20R
- HOSPITAL GRADE DUPLEX RECEPTACLE, NEMA 5–20R
- HOSPITAL GRADE GFCI DUPLEX RECEPTACLE, NEMA 5–20R
- IG HOSPITAL GRADE ISOLATED GROUND DUPLEX RECEPTACLE, NEMA 5–20R
- SINGLE RECEPTACLE, NEMA 5–20R
- DOUBLE DUPLEX (QUADRUPLEX) RECEPTACLE, NEMA 5–20R
- HOSPITAL GRADE DOUBLE DUPLEX RECEPTACLE NEMA 5–20R
- S SWITCHED RECEPTACLE
- FLOOR OUTLET, DUPLEX RECEPTACLE, NEMA 5–20R
- POWER RECEPTACLE, 480 VOLT NEMA CONFIGURATION AS NOTED.
- POWER RECEPTACLE, 240 VOLT NEMA CONFIGURATION AS NOTED.
- PANELBOARD, NORMAL POWER
- PANELBOARD, EMERGENCY POWER
- MULTI OUTLET ASSEMBLY

## GROUNDING

- GROUND ROD
- EXOTHERMIC WELD CONNECTION
- BOLTED CONNECTION
- G BARE COPPER CONDUCTOR RUN EXPOSED
- G BARE COPPER CONDUCTOR EMBEDDED IN CONCRETE OR BURIED

## NURSE CALL SYSTEM

- CL NURSE CALL CALL LIGHT
- PATIENT CALL BUTTON
- NURSE CALL PULL CORD
- N M NURSE CALL MASTER STATION

## LINE TYPES

- EXISTING
- NEW
- DEMOLITION

## FIRE ALARM

- FACP FIRE ALARM CONTROL PANEL
- FAA FIRE ALARM ANNUNCIATOR
- M FIRE ALARM MASTER BOX
- F FIRE ALARM MANUAL PULL STATION
- F FIRE ALARM SPEAKER/STROBE UNIT
- F FIRE ALARM AUDIBLE/VISIBLE NOTIFICATION APPLIANCE (GENERAL EVACUATION)
- FIRE ALARM AUDIBLE/VISIBLE NOTIFICATION APPLIANCE CLEAN ROOM NOTIFICATION (LOCAL)
- F (110) C FIRE ALARM VISIBLE ONLY NOTIFICATION APPLIANCE CANDELA INTENSITY–15/75 UNLESS OTHERWISE NOTED CEILING MOUNTED
- P A PHOTOELECTRIC SMOKE DETECTOR. CEILING MOUNTED INDICATES AUXILIARY CONTACT.
- H <TPP–1> FIXED TEMPERATURE HEAT DETECTOR. CEILING MOUNTED. INDICATES EQUIPMENT INTERLOCKED WITH THE DETECTOR
- P1 <RC–1> CLEAN ROOM SMOKE DETECTOR INDICATES EQUIPMENT INTERLOCKED WITH THE SMOKE DETECTOR
- H R COMBINATION RATE–OF–RISE/FIXED TEMPERATURE HEAT DETECTOR. CEILING MOUNTED
- D DUCT SMOKE DETECTOR, PHOTOELECTRIC WITH AUXILIARY CONTACT.
- FS SPRINKLER SYSTEM FLOW SWITCH
- TS SPRINKLER SYSTEM TAMPER SWITCH
- DH FIRE ALARM SYSTEM MAGNETIC DOOR HOLDER
- INTERLOCK RELAY
- SD SMOKE DAMPER
- RTI DUCT SMOKE DETECTOR REMOTE TEST INDICATOR
- K KNOX BOX

## SECURITY SYSTEMS

- S 2–WAY 2–WAY CEILING MOUNTED INTERCOM SPEAKER
- S CEILING MOUNTED PAGING SPEAKER
- WALL MOUNTED PAGING HORN
- C CEILING OR WALL MOUNTED FIXED CAMERA
- P CEILING OR WALL MOUNTED PTZ CAMERA
- PAGE PAGING CONTROL EQUIPMENT
- INT INTERCOM MASTER STATION
- DOOR DOOR CONTROL EQUIPMENT
- DC MONITORED DOOR POSITION SWITCH AND CONTROLLED DOOR HARDWARE
- DPS MONITORED DOOR POSITION SWITCH
- I STANDARD INTERCOM STATION
- VISITATION TELEPHONE
- WALL MOUNTED DURESS BUTTON
- GP GRAPHIC CONTROL PANEL
- TS TOUCH SCREEN WORKSTATION
- TV CCTV CONTROL OR DISPLAY EQUIPMENT
- ZONE PERIMETER CONTROL EQUIPMENT
- DUR DURESS CONTROL EQUIPMENT
- DURESS ALARM RECEIVER
- TEL OFFICER CONTROLLED COLLECT–ONLY PUBLIC TELEPHONE
- DEL OFFICER CONTROLLED FIRE SPRINKLER (DELUGE) HEAD
- MW+I DUAL TECHNOLOGY VOLUMETRIC SENSOR
- DR LOCAL DOOR RELEASE BUTTON
- WAT OFFICER CONTROLLED SHOWER WATER SUPPLY
- L&E OFFICER CONTROLLED LIGHTING AND ELECTRICAL OUTLETS
- D DOOR CONTACT
- CR CARD READER
- KP KEY PAD
- CCTV CLOSED CIRCUIT TELEVISION CAMERA
- ES ELECTRIC STRIKE

## ONE LINE DIAGRAM

- 52 MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER
- LOW VOLTAGE DRAWOUT CIRCUIT BREAKER; AF – AMP FRAME; AT – AMP TRIP; EO – ELECTICALLY OPERATED
- MOLDED CASE CIRCUIT BREAKER
- ST ST – SHUNT TRIP; GF – GROUND FAULT; EO – ELECTRICALLY OPERATED
- DISCONNECT, ISOLATION OR SAFETY SWITCH
- FUSED CUTOUT
- FUSED LOAD BREAK SWITCH
- MEDIUM VOLTAGE MOTOR STARTER
- 1 MAGNETIC MOTOR STARTER. NUMERAL INDICATES NEMA SIZE. FVNR UNLESS OTHERWISE NOTED. FVR – FULL VOLTAGE REVERSING; RVAT – REDUCING VOLTAGE AUTO TRANSFORMER; 2S – TWO SPEED
- CAPACITOR
- VFD VARIABLE FREQUENCY DRIVE
- 0A POWER TRANSFORMER; OA – LIQUID TYPE SELF COOLED; AA – DRY TYPE SELF COOLED; FA – FAN COOLED; CONNECTION
- SHIELDED ISOLATION TRANSFORMER
- 2 480/120 POTENTIAL TRANSFORMER RATIO; NUMBER REQUIRED
- 3 600/5 CURRENT TRANSFORMER RATIO; NUMBER REQUIRED
- GROUND FAULT CURRENT TRANSFORMER
- 5 MOTOR, NUMBER INDICATES HORSEPOWER
- GENERATOR
- N S L ATS ATS – AUTOMATIC TRANSFER SWITCH; MTS – MANUAL TRANSFER SWITCH
- A METER; A – AMMETER; V – VOLTMETER; W – WATTMETER; WH – WATT HOURMETER; KWH – KILOWATT HOUR; KVAR – KILOVAR METER; VAR – VAR METER; HZ – FREQUENCY METER; PF – POWER FACTOR METER
- DPM DIGITAL POWER METER
- AS METER TRANSFER SWITCH; AS – AMMETER SWITCH; VS – VOLTMETER SWITCH
- TVSS TRANSIENT VOLTAGE SURGE SUPPRESSOR
- LA LIGHTNING ARRESTOR
- K KEY INTERLOCK
- FUSE
- E F ELECTRONIC POWER FUSE
- DRAWOUT DEVICE
- GROUND

## ABBREVIATIONS

| | |
|---|---|
| A,AMP | AMPERE |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AHJ | AUTHORITY HAVING JURISDICTION |
| AIC | AMPERE INTERRUPTING CAPACITY |
| AWG | AMERICAN WIRE GAUGE |
| BFG | BELOW FINISHED GRADE |
| BOS | BOTTOM OF STEEL |
| C | CONDUIT, CONDUCTOR |
| CATV | CABLE TELEVISION |
| CB | CIRCUIT BREAKER |
| CCTV | CLOSED CIRCUIT TELEVISION |
| CPT | CONTROL POWER TRANSFORMER |
| CT | CURRENT TRANSFORMER |
| CU | COPPER |
| DACT | DIGITAL ALARM COMMUNICATOR TRANSMITTER |
| DB | DIRECT BURRIED |
| DISC | DISCONNECT |
| DN | DOWN |
| EMT | ELECTRICAL METALLIC TUBING |
| EWC | ELECTRIC WATER COOLER |
| FAA | FIRE ALARM ANNUNCIATOR |
| FACP | FIRE ALARM CONTROL PANEL |
| FBO | FURNISHED BY OTHERS |
| FU | FUSE |
| FWE | FURNISHED WITH EQUIPMENT |
| GEN | GENERATOR |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER |
| GND | GROUND |
| HP | HORSEPOWER |
| HTR | HEATER |
| IG | ISOLATED GROUND |
| IMC | INTERMEDIATE METAL CONDUIT |
| K | KILO |
| KCMIL | THOUSAND CIRCULAR MILS |
| KV | KILOVOLT |
| KVA | KILOVOLT–AMPERE |
| KVAR | KILOVOLT AMPERE REACTIVE |
| KW | KILOWATT |
| KWH | KILOWATT–HOUR |
| LA | LIGHTNING ARRESTER |
| LTG | LIGHTING |
| MC | METAL CLAD |
| MCB | MAIN CIRCUIT BREAKER |
| MFR | MANUFACTURER |
| MI | MINERAL INSULATED |
| MLO | MAIN LUG ONLY |
| MTD | MOUNTED |
| MV | MEDIUM VOLTAGE |
| NC | NORMALLY CLOSED |
| NEC | NATIONAL ELECTRICAL CODE |
| NEG | NEGATIVE |
| NEUT | NEUTRAL |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN |
| NTS | NOT TO SCALE |
| PF | POWER FACTOR |
| PH | PHASE |
| PVC | POLYVINYL CHLORIDE |
| RGS | RIGID STEEL CONDUIT |
| RSC | RIGID STEEL CONDUIT |
| RTD | RESISTANCE TEMPERATURE DETECTOR |
| SN | SOLID NEUTRAL |
| STP | SHIELDED TWISTED PAIR |
| STT | SHIELDED TWISTED TRIPLET |
| SWBD | SWITCHBOARD |
| SWGR | SWITCHGEAR |
| TOS | TOP OF STEEL |
| TRANSF | TRANSFORMER |
| TVSS | TRANSIENT VOLTAGE SURGE SUPPRESSOR |
| V | VOLT |
| VA | VOLT–AMPERE |
| VAR | VOLT–AMPERE REACTIVE |
| WM | WATT METER |
| WP | WEATHER PROOF |
| XFMR | TRANSFORMER |
| XP | EXPLOSION PROOF |

## GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NFPA–70, NATIONAL ELECTRICAL CODE (NEC).
2. ALL MOTOR SAFETY SWITCHES, DISCONNECTS AND MOTOR STARTERS ARE PROVIDED BY DIVISION 16000 UNLESS NOTED AS FURNISHED WITH EQUIPMENT (FWE).
3. UNLESS OTHERWISE NOTED CONVENIENCE RECEPTACLES SHALL BE MOUNTED 18–INCHES AFF, LIGHTING TOGGLE SWITCHES 48–INCHES AFF, DATA SYSTEM OUTLETS 18–INCHES AFF, FIRE ALARM NOTIFICATION DEVICES 80–INCHES AFF OR 6–INCHES BELOW CEILING, WHICHEVER IS LOWER, AND FIRE ALARM MANUAL PULL STATIONS 48–INCHES AFF TO TOP OF DEVICE.
4. ALL PENETRATIONS THROUGH FLOORS, RATED WALLS AND PARTITIONS SHALL BE SEALED WITH UL APPROVED FIRE SEALANT MATERIAL TO MAINTAIN THE RATING OF THE SEPARATION.
5. ALL ENCLOSURES, CONDUIT BODIES AND THEIR COVERS CONTAINING FIRE ALARM SYSTEM CONDUCTORS SHALL BE PAINTED RED.
6. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED WITH EVERY FEEDER AND BRANCH CIRCUIT.
7. UNLESS OTHERWISE NOTED WIRING SHALL BE 2 #12 AWG CONDUCTORS & #12 GND. HOME RUNS FED FROM 20A–1P CIRCUITS IN EXCESS OF 100 FEET SHALL BE #10 AWG.
8. FLEXIBLE CONNECTIONS TO MOTORS SHALL BE LIQUID TIGHT FLEXIBLE METAL CONDUIT, UNLESS OTHERWISE NOTES.
9. LIGHTING TOGGLE SWITCHES SHALL BE COMMERCIAL SPECIFICATION GRADE 120 VOLT, SIDE WIRED AND PROVIDED WITH GROUNDING SCREW. LEVITON, PASS AND SEYMOUR OR APPROVED EQUAL. COORDINATE COLOR WITH ARCHITECT.
10. CONVENIENCE RECEPTACLES SHALL BE COMMERCIAL SPECIFICATIONS GRADE GROUNDING TYPE NEMA 5–20R, SIDE WIRED. LEVITON, PASS AND SEYMOUR OR APPROVED EQUAL. COORDINATE COLOR WITH ARCHITECT.
11. PROVIDE WALL PLATES FOR ALL WIRING DEVICES, NYLON SMOOTH TYPE IN FINISHED AREAS AND GALVANIZED IN UNFINISHED AREAS.
12. ALL WIRING SHALL BE 600V, COPPER WITH THHN/THWN INSULATION. SERVICE ENTRANCE CONDUCTORS SHALL HAVE XHHW INSULATION.

## GENERAL NOTE

1. ALL GENERAL NOTES, SYMBOL LISTS, AND DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL ELECTRICAL DRAWINGS FOR THIS PROJECT. SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION IN THE DESIGN.

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# LEGEND AND GENERAL NOTES

| | | | |
|---|---|---|---|
| SHEET TITLE: | | | |
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| PROJECT MANAGER: | DJT | GRAPHIC SCALE: | 0" 1" |
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