

ABBREVIATIONS

Table of abbreviations including terms like APPX, AFF, AFG, AF, AT, AWG, ATS, BC, BLDG, BOD, C, CB, CKT, CLG, CI, CM, CMFE, CMFE/CI, CMU, CO, CONT, CPT, CT, CU, COMM, COM, CPB, CTR, DET, DIST, DP, DN, DS, DWG, (E), EA, EGB, EMB, EMT, EP, EXT, FACP, FU, FL, FA, FLA, FO, FNR, GEN, GFE, GFE/CI, GFI, GND/G, HD, H-O-A, HH, HP, HPS, HZ, INST, JB, JF, JMC, KVA, Kcmil, LICU, LK, LTO, M, MCC, MCP, MDF, MH, MEZZ, MIN, MLO, MS, MTD, N, NC, NF, N/P, NTS, OC, OD, OH, OS & Y, P, P, PNL, PA, PV, PLC, PSC, PT, PPS, PVC, PW, PWR, RECP, RSC, RSG, SBC, SECP, SHT, SUB, SIM, SIMRD, SW, S/NLL, SP, SQ, SWGR/SO, TB, TEL, TDM, TVSS, TYP, UG, UON, UPS, UTP, V, VA, VFD, KV, KVA, KW, W, WP, W/P, W/P, W/P, W/P, Z.

COMMUNICATION, LIFE SAFETY & SECURITY

TELEPHONE OUTLET BOX, WALL MOUNT, FOR WALL MOUNTED TELEPHONE, +48" AFF, WITH ONE RJ-11, 4-PIN CATEGORY 3 MODULAR JACK. COMBINATION DATA/PHONE OUTLET BOX, WALL MOUNT, 18" AFF WITH ONE RJ-45 8-PIN CATEGORY 5 ENHANCED MODULAR JACK AND ONE RJ-11, 4 PIN CATEGORY 3 JACK. PAY TELEPHONE AT 48" AFF. TELEPHONE AND DATA/COMPUTER OUTLET IN COMMON BOX AND CONDUIT WHEN SHOWN TOGETHER, FLOOR MOUNTED M-MODIFIER. PAGING SPEAKER, CEILING OR WALL MOUNTED, WALL MOUNT AT 10'-0" AFF UON. INSTRUMENT PPS INTERLOCK SYSTEM, WALL MTD TYPE. SECURITY SET CAMERA, CCTV, WP = WEATHERPROOF. MAGNETIC DOOR SWITCH. MAGNETIC DOOR SWITCH, OVERHEAD ROLL-UP DOOR. MAGNETIC DOOR SWITCH, DOUBLE DOOR. ALARMED PANIC BAR, DOOR, WITH POWER SUPPLY. CARD READER, PROXIMITY TYPE. CHIPMUNKS DEVICE, WALL MTD TYPE. CARD READER, NIC, CONDUIT ONLY. PPS INTERLOCK DOOR-EMERGENCY EXIT DOOR DEVICE, WALL MTD TYPE. PPS INTERLOCK DOOR-SHUTTER DRIVE DOOR DEVICE, WALL MTD TYPE. ELECTRIC STRIKE WITH POWER SUPPLY AND CONTROL RELAY AS REQUIRED. PAGING HORN, WALL MOUNTED. RADIATION DETECTOR-WALL MTD TYPE WITH LOCAL LITS AND HORN. PAGING SPEAKER VOLUME CONTROL DIAL WALL MOUNTED.

GROUNDING

LIGHTNING CONDUCTOR, 28 STRANDS #14 GA BC. GROUND CONDUCTOR, #4/D BC, 24" BELOW GRADE, UON, WHERE INSULATED CONDUCTOR IS INDICATED, INSULATION COLOR SHALL BE SOLID GREEN. GROUND PLATE- FLUSH MOUNTED IN CONCRETE FLOOR. MACHINE GROUND (CONTINUOUS 1/4" X 1 1/2" GROUND BAR IN TUNNEL). INSTRUMENT GROUND EXTRA LOW LEVEL SIGNAL (#2 INSULATED GROUND CONDUCTOR ROUTED IN S/ELL TRAY). INSTRUMENT GROUND NORMAL LOW LEVEL SIGNAL (#2 INSULATED GROUND CONDUCTOR ROUTED IN S/ALL TRAY). EXOTHERMIC GROUND CONNECTION. GROUND ROD. GROUND ROD WITH TEST WELL. AIR TERMINAL / PREMIUM DIE CAST POINT BASE FOR ADHESIVE MITG. ON FLAT ROOFS. GROUND PLATE - EMBEDDED IN CONC. WALL. GROUND BAR - SURFACE MTD. DIGITAL - 5' LONG, FOR FUTURE GROUND CONNECTION. GROUND CABLE TO BUILDING STEEL COLUMN. AIR TERMINAL/CABLE FOR SIDE MITG. AT PARAPET. GROUND CONDUCTOR - DOWN TO NEXT LEVEL FOR CONTINUATION. GROUND CONDUCTOR - UP TO NEXT LEVEL FOR CONTINUATION.

FIRE ALARM

FIRE ANNUNCIATION AND ALARM STROBE LIGHT. FIRE ALARM CONTROL PANEL. FIRE ALARM ANNUNCIATOR PANEL. FIRE PUMP CONTROLLER.

RISER DIAGRAMS

SINGLE LINE DIAGRAM EQUIPMENT PROVIDED BY OTHERS. MOTOR CONTROL CENTER. K RATED TRANSFORMER. GENERAL PURPOSE TRANSFORMER. DISTRIBUTION PANEL. LIGHTING OR RECEPTACLE PANEL. EMERGENCY PANEL. DIESEL GENERATOR. AUTOMATIC TRANSFER SWITCH.

CABLE DESIGNATIONS

(MC) DESIGNATION USED IN CABLE SIZE DESCRIPTIONS INDICATES MULTI CONDUCTOR CABLES CONSISTING OF PHASE, NEUTRAL & GROUND CONDUCTORS. CABLE SIZE DESCRIPTIONS WITHOUT (MC) DESIGNATOR DENOTE FEEDS MADE UP OF THE QUANTITY OF SINGLE CONDUCTORS SHOWN.

PLAN DRAWINGS

HOMERUN, LETTER/NUMBER DESIGNATION INDICATES PANEL AND CIRCUIT WHERE RACEWAY WILL BE TERMINATED. 'SLASH' MARKS INDICATE THE NUMBER OF CONDUCTORS IF MORE THAN TWO. NUMBER INDICATES CONDUIT SIZE IF OTHER THAN #12 AND PROVIDE #12 EQUIPMENT GROUND CONDUCTOR, EVEN THOUGH NOT INDICATED. CONDUIT SIZE IS 3/4" UON. CONDUIT 3/4" UON & WIRE SIZE DESIGNATION AS SHOWN: CONDUIT 3 #6 PHASE CONDUCTORS, GROUND CONDUCTOR, SIZE PER NEC. IF NO DESIGNATION SHOWN, IT IS 3/4"; 2 #12 AND 1 #10. CONDUIT EXPOSED. CONDUIT CONCEALED IN FLOOR SLAB, UNDERSLAB, OR BELOW GRADE. CONDUIT CAPPED. CONDUIT STUBBED UP. CONDUIT STUBBED DOWN. CONDUIT CHANGE IN ELEVATION WITH UPPER PART AT LEFT AND LOWER PART AT RIGHT. ELECTRICAL UG DUCTBANK. TELEPHONE/COMMUNICATION UG DUCTBANK. SURFACE MOUNTED RACEWAY WITH DEVICES AS SHOWN. BUSWAY Z= # TYPE OF BUSWAY. BUSWAY (PLUS-IN TYPE) WITH TAP OFF UNIT AND BUS DUCT END TAP CABLE BOX. BUSWAY (FEEDER TYPE), LETTER INDICATES PHASE CONDUCTOR. ELECTRICAL OR TELEPHONE HANDHOLE, AS INDICATED, PROVIDE TRAFFIC RATED COVER. PUSHBUTTON CONTROL, WALL MOUNT, FLUSH IN FINISHED AREAS, +48" AFF. NON-FUSED DISCONNECT SWITCH, MOTOR RATED, X=SWITCH AMPERES; 600V, 3P UON, MOUNT +60" AFF, UON. FUSED DISCONNECT SWITCH; X= SWITCH AMPERES; Y= FUSE SIZE, 600V, 3P UON, MOUNT +60" AFF, UON. MAGNETIC MOTOR STARTER WITH OVERLOAD, 3 POLE, 600V/NEMA SIZED AS INDICATED, PUSHBUTTON TYPE, WALL MOUNTED, 60" AFF, UON. MCP, COMBINATION STARTER AND NEMA STARTER SIZE NOTED. PROVIDE WITH OVERLOADS. EQUIP. TAG. PANELBOARD SURFACE MOUNTED, 120/208V. DISTRIBUTION/SWGR - GROUP MOUNTED FEEDERS, FLOOR, 480V/277V. PANELBOARD SURFACE MOUNTED, 277/480V. MOTOR (HORSEPOWER AS INDICATED). ENERGY METER MODULE. TRANSFORMER, TOX INDICATES XFMR NUMBER. SINGLE POLE TOGGLE SWITCH, MOUNT +48" AFF, 20 AMP, 277 VOLT. P = W/PILOT LAMP, SUBSCRIPT LETTERS DENOTE SWITCHING CIRCUIT, FOR MULTIPLE LETTERS PROVIDE ONE SWITCH FOR EACH LETTER. THREE WAY TOGGLE SWITCH, MOUNT +48" AFF, 20 AMP, 277 VOLT. SUBSCRIPT LETTERS DENOTE SWITCHING CIRCUIT, FOR MULTIPLE LETTERS PROVIDE ONE SWITCH FOR EACH LETTER. SINGLE POLE TOGGLE SWITCH, MOUNT +48" AFF, 20 AMP, 277 VOLT. FOUR WAY TOGGLE SWITCH, MOUNT +48" AFF, 20 AMP, 277 VOLT. DIMMER SWITCH, MOUNT +48" AFF, 277 VOLT. MANUAL MOTOR START. OCCUPANCY SENSOR WITH INTEGRAL TOGGLE SWITCH. DUPLEX CONVENIENCE RECEPTACLE, 20A, 125V, NEMA 5-20R, 18" AFF. W/P=WEATHERPROOF. CT=LOCATE AT COUNTERTOP LEVEL, COORDINATE WITH COUNTERTOP PLACEMENT. GFI = GROUND FAULT INTERRUPT. 4-POLE CONVENIENCE RECEPTACLE, 20A, 125V, NEMA 5-20R, 18" AFF. GFI = GROUND FAULT INTERRUPT, WP = WEATHERPROOF. DUPLEX CONVENIENCE RECEPTACLE, 20A, 125V, NEMA 5-20R, FLOOR MOUNT UON. DUPLEX CONVENIENCE RECEPTACLE, 20A, 125V, NEMA 5-20R, 18" AFF WITH GROUND FAULT INTERRUPT, WP = WEATHERPROOF. SINGLE TWIST LOCK RECEPTACLE, 20A, 2P, 3W, 125V, NEMA L5-20R, 18" AFF. TWIST-LOCK RECEPTACLE, 2P, 3W GROUNDING, 20A, 250V, 18" AFF. SINGLE TWIST LOCK RECEPTACLE, 30A, 125V, NEMA L5-30R, 18" AFF. PIN AND SLEEVE UNFUSED MECHANICAL INTERLOCK RECEPTACLE, 30A, 3P, 4W, 3A, 250V, HUBBELL 430M/9W, 24" AFF. TWIST-LOCK RECEPTACLE, 3 POLE, 4 WIRE GROUNDING, 60A, 3P, 4W, 3A, 600V, HUBBELL 2841D IN ANGLE HOUSING 2840A, 4'-6" AFF. UON. TWIST-LOCK RECEPTACLE, 3P, 4W GROUNDING, 20A, 3A, 480V, 18" AFF. CEILING AND WALL MOUNTED JUNCTION BOX. ELECTRICAL MANHOLE XX INDICATES MANHOLE No. ELECTRICAL HAND HOLE XXX INDICATES HAND HOLE No. ELECTRICAL PULLBOX XX INDICATES PULLBOX No. DENOTED AS FEEDER SCHEDULE TAG NUMBER, RN INDICATES BUILDING NAME. 13.3KV-BUS DUCT, XXX INDICATES AMP RATING. ELECTRICAL CABLE TRAY, THE NUMBER "1" INDICATES CONDUIT ENTERING TOP TRAY. TRAY TRANSITION. 'XXX' DENOTES IDENTIFICATION, CABLE TRAY SYSTEM. CABLE TRAY UP OR DOWN.

TRAY DESIGNATIONS

Table of tray designations including PWR-DC, PWR-SUPP, PWR-SWGR, PWR-DP, S-ELL, S-NLL, PPS, FA, CDM, PWR-HV, SP, PWR, RF, PTFN-COAX, INJ-DUMP, INJ-KICKERS.

LIGHTING

LIGHTING FIXTURE DESIGNATION, FIXTURE TYPE AND MOUNTING HEIGHTS AS SHOWN ON FIXTURE SCHEDULE DMC'S E9.30.01 & E9.30.02 UON. INDUSTRIAL FLUORESCENT FIXTURE, PENDENT MOUNTED. PENDENT MOUNTED INDUSTRIAL FLUORESCENT FIXTURE WITH EMERGENCY GENERATOR FEED. FLUORESCENT FIXTURE, CEILING OR PENDANT MOUNTED. a AND b INDICATES SWITCH CONTROL. CEILING OR PENDANT MOUNTED FIXTURE WITH EMERGENCY GENERATOR FEED. FLUORESCENT FIXTURE, WALL MOUNTED. WALL MOUNTED FIXTURE WITH EMERGENCY GENERATOR FEED. CEILING MOUNTED FIXTURE WITH EMERGENCY GENERATOR FEED. HID LUMINAIRE SURFACE OR WALL MOUNTED. SURFACE OR WALL MOUNTED HID FIXTURE WITH EMERGENCY GENERATOR FEED. CEILING AND WALL MOUNTED EXIT SIGNS, ARROW (IF USED) INDICATES DIRECTION OF EXIT. FILLED QUADRANTS INDICATE DISPLAY FACE(S). CEILING, PENDANT OR WALL MOUNTED FLUORESCENT OR HID FIXTURE. CEILING OR WALL MOUNTED FIXTURE WITH EMERGENCY GENERATOR FEED. ENERGY MONITORING DEVICE. EMERGENCY FIXTURE WITH TWO LAMPS AND MAINTENANCE FREE SEALED BATTERY.

DIAGRAMS

AIR POWER TYPE, THERMAL-MAGNETIC CIRCUIT BREAKER. DRAW OUT TYPE-THREE POLE UNLESS OTHERWISE INDICATED. XXX INDICATES FRAME SIZE, TOP OR SINGLE NUMBER INDICATES FRAME SIZE, BOTTOM NUMBER INDICATES TRIP SIZE. MOLDED CASE CIRCUIT BREAKER FIXED MOUNTED; X=FRAME SIZE Y = TRIP AMPERES; 3P UON. POWER TRANSFORMER, TOX INDICATES TRANSFORMER NUMBER, RATINGS AS SHOWN. ELECTROSTATIC SHIELD ISOLATION TRANSFORMER. TOX INDICATES TRANSFORMER NUMBER, RATINGS AS SHOWN. CIRCUIT BREAKER-DRAW OUT, X-INDICATES VOLTAGE CLASS. 52-MEDIUM VOLTAGE, 15 KV. V - INDICATES VACUUM BREAKER. FUSE. CONTACTOR (CONTACT OPEN IN THE NON ENERGIZED POSITION). FUSED, LOAD INTERRUPTER TYPE SWITCH. DISCONNECT SWITCH, VOLTAGE AS REQUIRED. DUPLEX LOADBREAK SWITCHES, VOLT AS REQUIRED. GROUND CONNECTION. SURGE ARRESTOR. BUS DUCT, SIZE AS INDICATED. DELTA-SOLIDLY GROUND WYE TRANSFORMER CONNECTION. DELTA - HIGH IMPEDANCE GROUND WYE TRANSFORMER CONNECTION. VARIABLE FREQUENCY DRIVE. CAPACITOR. NORMALLY OPEN CONTACT. NORMALLY CLOSED CONTACT. THERMAL OVERLOAD. CURRENT TRANSFORMER, NUMBER INDICATED, RATIO SHOWN CT - CURRENT TRANSFORMER. POTENTIAL TRANSFORMER, NUMBER INDICATED OPT-CONTROL POWER TRANSFORMER RATIO SHOWN. MOTOR. BATTERIES. RELAYS AND INSTRUMENTS. A - AMMETER. V - VOLTMETER. AS-AMMETER SWITCH. VS-VOLTMETER SWITCH. E - 120V POWER CONTROL RELAY. GF-GROUND FAULT PROTECTION RELAY. KW/MW-(K)LO) WATT-HOUR METER. 86 LOCK OUT RELAY. 27 UNDERVOLTAGE RELAY. 50/51 INSTANTANEOUS OVERCURRENT/AG TIME OVERCURRENT RELAY. 26 LIQUID THERMAL DEVICE RELAY. 49 WINDING THERMAL DEVICE RELAY. 51N TIME DELAY OVERCURRENT RELAY. 63 SUDDEN PRESSURE RELAY. 71 LIQUID LEVEL DEVICE RELAY. PROGRAMMABLE TRIP UNIT. BREAKER INTERFACE MODULE. M&P AND PROTECTION DEVICE. SINGLE PHASE DETECTOR (27). MOTOR OPERATED SWITCH. DIESEL GENERATOR.

SECTION AND DETAIL KEY table with columns for drawing number, section, and detail.

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Revision table with columns for revision number, description, date, and approved by.

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AutoCAD