

ELECTRICAL SYMBOL LIST

NOTE: THIS IS A MASTER SCHEDULE. NOT ALL SYMBOLS AND/OR ABBREVIATIONS CONTAINED HEREIN MAY APPEAR ON THE DRAWINGS.

<p> FLUORESCENT FIXTURE - RECESSED, LAY-IN FLUORESCENT FIXTURE - RECESSED, FLANGED FLUORESCENT FIXTURE - SURFACE FLUORESCENT FIXTURE - SUSPENDED FLUORESCENT FIXTURE - OPEN STRIP WITH WIRE GUARD FLUORESCENT FIXTURE - WALL MOUNTED INCANDESCENT, H.I.D. OR MINI-FLUORESCENT - SURFACE OR RECESSED, PER FIXTURE SCHEDULE INCANDESCENT, H.I.D. OR MINI-FLUORESCENT - WALL BRACKET INCANDESCENT, H.I.D. OR MINI-FLUORESCENT - WALL WASH LOW VOLTAGE INCANDESCENT FIXTURE CHANDELIER (PROVIDE 5X STRUCTURAL BACKING) FAN (PROVIDE 5X STRUCTURAL BACKING) SPOTLIGHT - J-BOX OR TRACK MOUNTED - TRACK LENGTH AS INDICATED STEP LIGHT - SURFACE OR RECESSED, PER FIXTURE SCHEDULE BOLLARD POLE OR POST - ARM OR TOP MOUNTED CUT-OFF LUMINAIRE TWIN-LAMP BATTERY PACK - UNSWITCHED, WALL MOUNTED (LOCATE 12" BELOW CEILING U.O.N.) TWIN-LAMP BATTERY PACK - UNSWITCHED, CEILING MOUNTED, FLUSH OR SURFACE PER FIXTURE SCHEDULE EXIT LIGHT - FACES AND ARROWS AS INDICATED, UNIVERSAL MOUNTING, UNSWITCHED EXIT LIGHT - COMBINATION SINGLE FACE. ARROWS AS INDICATED WITH TWIN LAMP BATTERY PACK, UNIVERSAL MOUNTING, UNSWITCHED EXIT LIGHT - LOW LEVEL: 6" - 8" A.F.F. TO BOTTOM, 4" MAX. OFF DOOR FRAME LOW VOLTAGE - LED NEON FIXTURE, EQUIPMENT ON EMERGENCY SWITCHES AT +48" TO TOP UON (PER ADA) SWITCH - SINGLE POLE SWITCH - THREE WAY SWITCH - OCCUPANCY TYPE SWITCH - EMERGENCY SWITCH - PILOT TOGGLE (CONFIRM LIGHTED POSITION) SWITCH - KEYED OPERATED SWITCH - SLIDER TYPE ELECTRONIC DIMMER (WATTAGE RATING AS REQUIRED) SWITCH - MOMENTARY CONTACT: SPDT CENTER OFF UON MANUAL MOTOR STARTER - POLES AND HEATERS AS REQUIRED PHOTOELECTRIC SWITCH - 1500 VA UON SIGNAGE OUTLET CONNECTION DEVICES AT +18" TO CENTER LINE UON (PER ADA) DEVICES MOUNTED IN MULTIPLE UNDER COMMON COVER MAXIMUM HEIGHT ON WALLS = +48" TO TOP UON (PER ADA) DEVICES MOUNTED IN OR ABOVE BACKSPASH: MAXIMUM HEIGHT ON WALLS = +48" TO TOP UON (PER ADA) DEVICES IN MULTI-COMPARTMENT FLUSH FLOOR MOUNTED UON RECEPTACLE - DUPLEX RECEPTACLE - DUPLEX - HALF SWITCHED (TOP HALF) RECEPTACLE - DUPLEX WITH INTEGRAL SELF TESTING GFCI CIRCUITRY RECEPTACLE - DUPLEX - ISOLATED GROUND (ORANGE FACE): NEMA 520R/IG RECEPTACLE - DOUBLE DUPLEX RECEPTACLE - DOUBLE DUPLEX WITH INTEGRAL SELF TESTING GFCI CIRCUITRY RECEPTACLE - SPECIAL TYPE (SEE ADDITIONAL NOTES) RECEPTACLE(S) - CEILING MOUNTED PLUG MOLD SURFACE RACEWAY SYSTEM (2-CIRCUIT WITH OUTLETS 18" O.C. U.O.N.) MOUNTED ABOVE BACKSPASH U.O.N. TELEPOWER POLE SMOKE DETECTOR - LOCAL ONLY, 120V, W/INTEGRAL BATTERY AND ALARM HORN. WALL MOUNT AT 12" BELOW CEILING SMOKE DETECTOR - LOCAL ONLY, 120V, W/INTEGRAL BATTERY, STROBE, AND ALARM HORN. WALL MOUNT AT 12" BELOW CEILING OUTLET - CLOCK OUTLET - TELEPHONE OUTLET - DATA OUTLET - DOOR BELL/BUZZER OUTLET - MICROPHONE OUTLET - VOLUME CONTROL (+48" TO TOP UON) OUTLET - SPEAKER 8" COAXIAL W/ BACK BOX AND GRILLE OUTLET - THERMOSTAT (REF. MECHANICAL DRAWINGS) TV / SECURITY CAMERA - FIXED (MOUNTING PER PLANS) TV / SECURITY CAMERA - PTZ - PAN, TILT, ZOOM (MOUNTING PER PLANS)</p>	<p> SWITCHGEAR PANELBOARD - SURFACE MOUNTED PANELBOARD - FLUSH MOUNTED EXISTING / RELOCATED PANELBOARD - SURFACE MOUNTED EXISTING / RELOCATED PANELBOARD - FLUSH MOUNTED TRANSFORMER ENCLOSED CIRCUIT BREAKER FIRE ALARM EQUIPMENT COMBINATION FIRE/SMOKE DAMPER SMOKE DAMPER SHUNT TRIP STATION CONTROL STATION AT +48" TO TOP UON (PER ADA) RELAY CONTACTOR WITH INTEGRAL HOA SELECTOR MAGNETIC STARTER, SIZE 1 UON DISCONNECT SWITCH: 30/3 UON (F=FUSIBLE (FPEN), N=NONFUSED) COMBINATION STARTER & DISCONNECT: SIZE 1 UON VARIABLE FREQUENCY DRIVE SINGLE-PHASE MOTOR CONTROL ASSEMBLY: HP-RATED SWITCH AND POWER RELAY-20/1 (U.O.N.) PULLBOX - SIZE AND LOCATION AS REQUIRED JUNCTION BOX - SIZE PER NEC REQUIREMENTS MECHANICAL EQUIPMENT DESIGNATION MOTOR OUTLET LIGHTING FIXTURE DESIGNATION: TYPE F1, 120 WATTS QUANTITY = 3 EQUIPMENT LOAD SUMMARY (EXPRESSED IN KVA AND AMPS) C = CONNECTED LOAD D = DEMAND LOAD S = STANDBY LOAD SHEET NOTE DESIGNATION FEEDER DESIGNATION (SEE FEEDER SCHEDULE) CIRCUITING IN WALL OR ABOVE CEILING CIRCUITING IN FLOOR OR BELOW GRADE TICS = NO. OF #12 WIRES IF MORE THAN TWO: ISOLATED GROUND WIRE HOMERUN: (4) #12, 3/4" C. TO PANEL A - CIR. 1,3,5 STUB-OUT CIRCUIT DOWN COPPER GROUND (SIZE PER PLANS) CIRCUIT UP MOISTURE SEAL-OFF 30/3 30 AMP / 3 POLE (REPRESENTATIVE) AL ALUMINUM AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE AIC AMP INTERRUPTING CURRENT ATS AUTOMATIC TRANSFER SWITCH BKBD BACKBOARD C CONDUIT (WITH PULL CORD IF OTHERWISE EMPTY) CU COPPER (E) EXISTING TO REMAIN F FUSE (DUAL-ELEMENT, TIME DELAY) FBO FURNISHED BY OTHERS FPEN FUSE PER EQUIPMENT NAMEPLATE GFCI SELF TESTING GROUND FAULT CIRCUIT INTERRUPTER DEVICE GND GROUND HOA HAND-OFF-AUTOMATIC HP HORSEPOWER IG ISOLATED GROUND K KCMIL (300 KCMIL = 300K) NF NON-FUSED NIC NOT IN CONTRACT NL NIGHT LIGHT NTS NOT TO SCALE (R) EXISTING TO BE RELOCATED RGS RIGID GALVANIZED STEEL TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION UNSW UNSWITCHED UPS UNINTERRUPTIBLE POWER SUPPLY UON UNLESS OTHERWISE NOTED WP WEATHER PROOF (NEMA 3R) (X) EXISTING TO BE REMOVED XFMR TRANSFORMER</p>
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GENERAL NOTES

1. **DEFINITION:** THE WORD "PROVIDE" MEANS FURNISH, INSTALL, FEED, AND CONNECT WITH ALL ACCESSORIES AND ANCILLARY EQUIPMENT FOR A COMPLETE AND OPERABLE INSTALLATION.
2. **CODES:** ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL ADOPTED APPLICABLE CODES AND ORDINANCES.
3. **COMPLETE INSTALLATION:** PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, ACCESSORIES, ETC., NECESSARY TO ACCOMPLISH A COMPLETE ELECTRICAL SYSTEM IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
4. **GROUNDING:** GROUND ALL EQUIPMENT AND SYSTEM NEUTRAL IN ACCORDANCE WITH ARTICLE 250 OF THE NEC. PROVIDE CODE-SIZED EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDERS AND BRANCH CIRCUIT RACEWAYS. WHERE ISOLATED GROUNDS ARE INDICATED, PROVIDE INSULATED CONDUCTOR.
5. **CIRCUITING:** ALL WIRING SHALL BE IN CONDUIT, CONCEALED EXCEPT WHERE NOTED. PVC SCHEDULE 40 SHALL BE USED BELOW GRADE AT MINIMUM -24". WRAPPED RIGID ELBOWS AND RISERS SHALL BE USED FOR ALL THROUGH-GRADE TRANSITIONS AND STUB-UPS. RGS OR IMC CONDUIT WITH THREADED FITTINGS SHALL BE USED IN ALL LOCATIONS WHERE EXPOSED TO THE ELEMENTS OR SUBJECT TO PHYSICAL DAMAGE. THE USE OF METAL-CLAD CABLE (TYPE MC) AND TYPES ENT AND ENT RACEWAY IS NOT PERMISSIBLE. CONNECT RECESSED AND SUSPENDED LIGHT FIXTURES, MOTORIZED AND VIBRATING EQUIPMENT WITH STEEL FLEX OR SEALTITE CONDUIT. ALL CONDUIT SHALL HAVE A PULL CORD IF OTHERWISE EMPTY.
6. **WIRING:** WIRE SHALL BE COPPER, STRANDED IN SIZES #8 AWG AND LARGER.
7. **EXISTING CONDITIONS:** THE DRAWINGS INDICATE NEW WORK TO BE PERFORMED AND DO NOT PURPORT TO SHOW ALL EXISTING CONDITIONS. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND GAIN FAMILIARITY WITH ALL EXISTING AND PROPOSED CONDITIONS WHICH MAY AFFECT THE COURSE OF THIS WORK. CONTRACTOR SHALL REPORT ALL DISCREPANCIES AND UNACCEPTABLE CONDITIONS TO ENGINEER PRIOR TO BID. NO CHANGE ORDERS WILL BE ALLOWED FOR FAILURE TO COMPLY WITH THIS REQUIREMENT.
8. **PERMITS:** OBTAIN AND PAY FOR ALL BUILDING AND WORKING PERMITS AND INSPECTION FEES REQUIRED FOR THIS PROJECT.
9. **UTILITY SERVICES:** PROVIDE POWER AND COMMUNICATIONS SYSTEM SERVICES IN ACCORDANCE WITH THE REQUIREMENTS OF THE SERVING UTILITIES. PROVIDE EXCAVATION, RACEWAY, STRUCTURES, GROUNDING, ETC. AS DIRECTED. POWER SERVICES AND DISTRIBUTION SYSTEM A.I.C. RATING SHALL EXCEED MAXIMUM AVAILABLE FAULT CURRENT THROUGH UTILITY SERVICE TRANSFORMER. CONTACT SERVING UTILITIES AND OBTAIN THEIR REQUIREMENTS PRIOR TO BID. (UTILITY SERVICE AND LINE EXTENSION CHARGES PAID BY OTHERS).
10. **TEMPORARY CONSTRUCTION POWER:** PROVIDE TEMPORARY ELECTRICAL POWER DISTRIBUTION AND LIGHTING AS REQUIRED FOR ALL TRADES REQUIRING SERVICE DURING THE COURSE OF THIS PROJECT IN COMPLIANCE WITH ALL NEC AND OSHA REQUIREMENTS. (ENERGY COSTS BY OTHERS).
11. **FIRE STOPPING:** ALL PENETRATED FIRE RATED SURFACES SHALL BE FIRE SEALED WITH APPROVED U.L. LISTED FIRE STOPPING MATERIALS AS LISTED WITHIN ARCHITECTURAL SPECIFICATIONS. DO NOT EXCEED MAXIMUM ALLOWABLE SURFACE PENETRATIONS DEPENDENT ON RATING OF SURFACES. REFER TO ARCHITECTURAL DRAWINGS FOR DETERMINATION OF PENETRATION LOCATIONS THROUGH FIRE RATED ASSEMBLIES.
12. **FUSES AND CIRCUIT BREAKERS:** FUSES AND CIRCUIT BREAKERS SHALL BE SIZED PER ACTUAL RESPECTIVE APPLICATION (I.e., MOTOR CIRCUIT PROTECTOR, GROUND FAULT CIRCUIT INTERRUPTER, ARC FAULT CIRCUIT INTERRUPTER, ETC.). FUSES SHALL BE DUAL-ELEMENT, CURRENT LIMITING, AND SHALL BE INTERCHANGEABLE BETWEEN FRAME SIZES WITH STANDARD FACTORY FUSE REDUCERS. PROVIDE LOCKABLE SPARE FUSE CABINET WITH THREE (3) SPARE FUSES OF EACH SIZE USED.
13. **EQUIPMENT STANDARDS:** ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND OF THE HIGHEST QUALITY AVAILABLE ("SPECIFICATION GRADE"). LIGHTING FIXTURES SHALL HAVE, AT A MINIMUM, ELECTRONIC BALLASTS AND ACRYLIC LENSES. SERVICE EQUIPMENT SHALL BE FACTORY ASSEMBLED COMMERCIAL GRADE, CONFIGURED PER SERVING UTILITY STANDARDS. PANELBOARDS SHALL HAVE BOLT-ON CIRCUIT BREAKERS, WIRING DEVICES SHALL BE SPECIFICATION GRADE WITH NYLON PLATES, LUTRON "DECORA" STYLE IN PUBLIC FRONT OF HOUSE SPACES, COLOR PER ARCHITECT. RAISED STEEL BOX COVERS MAY BE USED IN UTILITY AREAS. REFER TO FOOD SERVICE NOTES (WHERE APPLICABLE TO THIS PROJECT) FOR ADDITIONAL REQUIREMENTS.
14. **GUARANTEE:** THE COMPLETE ELECTRICAL SYSTEM, AND ALL PORTIONS THEREOF, SHALL BE GUARANTEED TO BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE. PROMPTLY REMEDY SUCH DEFECTS AND ANY SUBSEQUENT DAMAGE CAUSED BY THE DEFECTS OR REPAIR THEREOF AT NO EXPENSE TO THE OWNER. LIGHT BULBS ARE EXEMPT FROM THIS GUARANTEE, BUT SHALL BE NEW AND UNUSED AT TIME OF FINAL ACCEPTANCE.
15. **SUBMITTALS:** SUBMIT EIGHT (8) HARD COPIES OR ONE (1) ELECTRONIC COPY OF FACTORY SHOP DRAWINGS FOR ALL LIGHTING FIXTURES, SWITCHGEAR, PANELS, MOTOR CONTROLS, WIRING DEVICES, ETC. PROPOSED FOR THIS PROJECT. PROPOSED SUBSTITUTIONS SHALL BE EQUAL OR SUPERIOR TO SPECIFIED ITEMS IN ALL ASPECTS - PROVIDE COMPLETE DOCUMENTATION FOR REVIEW AND APPROVAL. DETERMINATION OF EQUALITY RESTS SOLELY WITH ENGINEER.
16. **LOCATIONS:** INDICATED LOCATIONS OF ALL OUTLETS AND EQUIPMENT ARE SUBJECT TO CHANGE. SHIFT/RELOCATE/RECONFIGURE ANY OUTLET, EQUIPMENT OR CONNECTION POINT UP TO 10' AS DIRECTED BY ENGINEER AND/OR ARCHITECT AT NO ADDED COST.
17. **IDENTIFICATION:** IDENTIFY ALL EQUIPMENT, SWITCHBOARD CIRCUITS AND ELECTRICALLY-CONNECTED EQUIPMENT WITH ENGRAVED NAMEPLATES. NAMEPLATES SHALL BE FASTENED WITH A MINIMUM OF TWO (2) SCREWS. PANEL DIRECTORIES SHALL BE TYPED.
18. **PANELBOARDS:** PANELS SHALL HAVE FLUSH MONO-FLAT TRIM, PIANO HINGED DOORS AND COVER (DOOR-IN-DOOR) WITH LOCKABLE MASTER-KEYED FLUSH CATCHES AND BOLT-ON CIRCUIT BREAKERS. FLUSH-MOUNTED PANELS SHALL HAVE EMPTY CONDUITS STUBBED TO ACCESSIBLE ATTIC SPACE: ONE (1) 3/4" CONDUIT FOR EACH THREE (3) SPARE/SPACE CIRCUITS. REFER TO PANEL SCHEDULES FOR ADDITIONAL REQUIREMENTS.
19. **TAMPERPROOF:** ALL EQUIPMENT AND CIRCUITING ACCESSIBLE BY THE PUBLIC SHALL BE DEMONSTRATED TO BE TAMPERPROOF AND VANDAL RESISTANT. OPENABLE DEVICES AND EQUIPMENT SHALL BE PAD LOCKABLE.
20. **SUPPORTS AND HANGERS:** SUPPORT AND ALIGN ALL RACEWAYS, CABINETS, BOXES, BACK BOXES, FIXTURES, AND EQUIPMENT FROM STRUCTURE. SECURE ALL SUPPORTING METHODS BY MEANS OF TOGGLE BOLTS IN HOLLOW MASONRY, EXPANSION BOLTS IN SOLID MASONRY, CONCRETE PRESET INSERTS OR EXPANSION BOLTS IN CONCRETE, MACHINE SCREWS OR BOLTS IN METAL, AND WOOD SCREWS IN WOOD CONSTRUCTION. ALL SUPPORTING SYSTEMS AND COMPONENTS SHALL BE RATED TO MEET OR EXCEED MANUFACTURER'S SPECIFICATIONS FOR INTENDED USE, AND SHALL BE INSTALLED ACCORDINGLY.
21. **ELECTRICALLY-OPERATED EQUIPMENT-FEEDERS AND OVERCURRENT DEVICES COORDINATION:** FEEDERS AND OVERCURRENT DEVICES (INCLUDING STARTERS, DISCONNECTS, ETC.) HAVE BEEN DESIGNED BASED ON INFORMATION PROVIDED BY THE RESPONSIBLE CONSULTANT AND/OR DESIGNATED SUPPLIER. PRIOR TO ROUGH-IN, COORDINATE WITH THE APPROPRIATE TRADE AND/OR INSTALLER TO DETERMINE THAT THE ACTUAL NAMEPLATE ELECTRICAL REQUIREMENTS MATCH THIS DESIGN. ALL COST REDUCTION, VALUE ENGINEERING, SUBSTITUTION PROPOSALS, ETC. CONCERNING ELECTRICALLY-POWERED EQUIPMENT AND SYSTEMS WHICH IMPACT THE ELECTRICAL SYSTEMS OF THIS PROJECT SHALL INCLUDE ALL ELECTRICAL COSTS AND/OR CREDITS ASSOCIATED WITH SUCH PROPOSALS AND SHALL BE COORDINATED AMONGST THE GENERAL CONTRACTOR AND ALL AFFECTED TRADES PRIOR TO SUBMISSION FOR REVIEW.
22. **COORDINATION:** THIS PROJECT REQUIRES A HIGH LEVEL OF COORDINATION AND COOPERATION WITH OWNER, ARCHITECT, OTHER TRADES, VENDORS, AND SPECIALTY CONTRACTORS. THIS CONTRACTOR SHALL OBTAIN AND STUDY SHOP DRAWINGS OF ALL ELECTRICALLY-CONNECTED EQUIPMENT AND SHALL ADJUST POINTS OF CONNECTION, LOCATIONS, AND MOUNTING HEIGHTS AS NECESSARY PRIOR TO ROUGH-IN.
23. **BIDDINGS:** THE CIVIL, ARCHITECTURAL, MECHANICAL, PLUMBING, KITCHEN AND/OR INTERIOR DRAWINGS MAY CONTAIN DETAILED DESCRIPTIONS, CIRCUITING AND CONNECTION REQUIREMENTS WHICH MAY BE PART OF DIVISION 26 RESPONSIBILITIES. THIS CONTRACTOR SHALL NOT SUBMIT BIDS ON THIS PROJECT BEFORE REVIEWING ALL PROJECT DRAWINGS, SPECIFICATIONS, AND ADDENDA.
24. **SPECIFICATIONS BOOK:** THE SPECIFICATIONS CONTAIN SIGNIFICANT INFORMATION, CONDITIONS, AND PROCEDURES WHICH MAY HAVE A SUBSTANTIAL IMPACT ON CONTRACTOR'S COSTS. DO NOT SUBMIT A BID ON THIS PROJECT UNLESS AND UNTIL THE SPECIFICATIONS HAVE BEEN THOROUGHLY REVIEWED.

DRAWING INDEX

SHEET NUMBER	SHEET TITLE	100% FINAL DATE: JANUARY 2018	A	B	C	D
E0.00	SYMBOL LIST AND SPECIFICATIONS	●	▲	▲	▲	▲
E0.01	PARTIAL SINGLE LINE DIAGRAM, PANEL SCHEDULES AND ELECTRICAL DIAG	●	▲	▲	▲	▲
E0.02	ELECTRICAL DETAILS	●	▲	▲	▲	▲
E0.03	ELECTRICAL DETAILS	●	▲	▲	▲	▲
E0.04	ELECTRICAL DETAILS	●	▲	▲	▲	▲
E0.05	LIGHT FIXTURE SCHEDULE	●	▲	▲	▲	▲
E1.00	ELECTRICAL OVERVIEW PLAN	●	▲	▲	▲	▲
E2.01	ELECTRICAL PLAN	●	▲	▲	▲	▲
E3.01	ELECTRICAL PLAN	●	▲	▲	▲	▲
	TOTAL	9				

msa.
ENGINEERING CONSULTANTS
370 E Windmill Lane, Suite 100
Las Vegas, NV 89123
702.896.1100
msa-ec.com
MSA#116032

FEDERAL PROJECT NUMBER: CM-0003(180)

NO.	DATE	SHEET	REVISIONS
PREPARED FOR CITY OF LAS VEGAS DEPARTMENT OF PUBLIC WORKS CAPITAL PROJECT MGMT			
DESIGNED BY: PE DRAWN BY: MSA CHECKED BY: PE	DATE: JANUARY 2018 SUBMITTAL STAGE: 100% FINAL	BID# 17-4898B H# 4898B	PREPARED BY POGEMEYER DESIGN GROUP 6900 Smoke Ranch Road - Suite 110 Las Vegas, Nevada 89128 - (702) 266-5100
TITLE CIMARRON PEDESTRIAN BRIDGE AT SUMMERLIN PARKWAY			
SHEET E0.00 78 OF 86 DRAWING NO. 676-22			
JAN 12 2018 			