| | ABBREVIATIONS |
|----------|---|
| Е | EXISTING LIGHT OR DEVICE TO REMAIL |
| ER | EXISTING LIGHT OR DEVICE TO BE REMOVED OR RELOCATED |
| R | RELOCATED LIGHT OR DEVICE |
| N | NEW LIGHT OR DEVICE |
| A.F.F. | ABOVE FINISHED FLOOR |
| С | CONDUIT |
| E.C. | EMPTY CONDUIT WITH PULLWIRE |
| E.D.F. | ELECTRICAL DRINKING FOUNTAIN. |
| GND | GROUND |
| MLO | MAIN LUGS ONLY |
| MCB | MAIN CIRCUIT BREAKER |
| S.E.S. | SERVICE ENTRANCE SECTION |
| WP | WEATHER PROOF |
| WR | WATER RESISTANT |
| GFI/GFCI | GROUND-FAULT CIRCUIT INTERRUPTER |
| U.N.O. | UNLESS NOTED OTHERWISE |
| | SECURITY CAMERA |
| | SPEAKER |
| S.U.S.E | SUITABLE FOR USE AS SERVICE EQUIPMENT |

ELECTRICAL ENGINEERING CONSTRUCTION DOCUMENTS FOR 347,037 SF GROUND-UP RETAIL/RESTAURANT/FITNESS/GAS STATION FACILITY. DESIGN INCLUDES:

- ELECTRICAL SITE PLAN
- PHOTOMETRIC PLAN POWER SITE PLAN
- ENERGY COMPLIANCE REPORT
- ONE—LINE DIAGRAM PANEL SCHEDULE & FAULT CURRENT TABLE

DEFERRED SUBMITTAL - FIRE ALARM NOTES

FIRE ALARM SYSTEM MODIFICATIONS MAY BE INCLUDED IN THIS PROJECT & SHALL BE A DEFERRED SUBMITTAL. ANY DEVICES SHOWN ON THE ELECTRICAL PLANS ARE FOR BID PURPOSES ONLY, AND NOT FOR CONSTRUCTION. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT FIRE ALARM REQUIREMENTS, INCLUDING ANY MODIFICATIONS OR UPGRADES NECESSARY TO THE EXISTING SYSTEM, WITH LANDLORD AND AUTHORITY HAVING JURISDICTION. CONTRACTOR IS TO PROVIDE COMPLETE DWGS & ALL COSTS SHALL BE INCLUDED IN THE BID. FIRE ALARM DEVICES ARE TO BE COMPATIBLE WITH LANDLORDS FIRE ALARM SYSTEM. IF ENGINEERED FIRE ALARM DRAWINGS ARE REQUIRED, THEY ARE TO BE PREPARED BY A LOCAL, LICENSED FIRE ALARM CONTRACTOR AND SUBMITTED TO THE LANDLORD AND AUTHORITY HAVING JURISDICTION FOR APPROVAL PRIOR TO ANY WORK COMMENCEMENT.

GENERAL NOTES

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(E)

- A. PRIOR TO SUBMITTING BID, CONTRACTOR SHALL EXAMINE ALL GENERAL CONSTRUCTION DRAWINGS AND VISIT THE CONSTRUCTION SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS UNDER WHICH THE CONTRACTOR WILL HAVE TO OPERATE AND WHICH IN ANY WAY AFFECTS THE WORK UNDER HIS CONTRACT. NO SUBSEQUENT ALLOWANCE WILL BE MADE IN BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS PART.
- B. THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND /OR OTHER REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THE CONTRACT. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC., AS REQUIRED.
- C. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS, ELEVATIONS AND BUILDING DETAILS. VERIFY LOCATION OF ALL OUTLETS, SWITCHES, AND WALL MOUNTED LIGHTING FIXTURES WITH ARCHITECTURAL DRAWINGS AND ACTUAL CONDITIONS. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES. VERIFY ALL CEILING TYPES WITH ARCHITECTURAL DRAWINGS BEFORE ORDERING FIXTURES.
- D. PRIOR TO ROUGH-IN AND FINAL CONNECTION, VERIFY ELECTRICAL CHARACTERISTICS AND EXACT LOCATION OF EQUIPMENT.
- E. GROUT AND SEAL ALL CONDUIT PENETRATIONS OF WALLS AND FLOOR SLABS TO PRESERVE FIRE RATING AND WATERTIGHT INTEGRITY.
- F. ALL WIRING TO BE INSTALLED IN RACEWAYS. TYPE OF RACEWAY SHALL BE AS REQUIRED BY CODE. MINIMUM CONDUIT SIZE SHALL BE 3/4"C. FOR POWER AND 1"C. FOR DATA. RACEWAYS RUN ACROSS ROOF SHALL BE MINIMUM 4" ABOVE ROOF
- G. BRANCH CIRCUIT WIRING SHALL BE THHN/THWN INSULATION. EXTERIOR WIRING SHALL BE THWN—2. PANEL FEEDERS. SHALL BE TYPE XHHW. ALL WIRE SHALL BE COPPER. MINIMUM WIRE SIZE SHALL BE #12. PER THE LATEST NEC CODE ADOPTED BY THE CITY OF MESA, A SEPARATE NEUTRALS ARE TO BE PROVIDED FOR EACH CIRCUIT OR PROVIDE MULTI-POLE HANDLE TIE FOR EACH MULTI-WIRE CIRCUIT
- H. PROVIDE CODE SIZED GROUNDING CONDUCTOR WIRE IN ALL CONDUITS.

MOTOR CONNECTION

DISCONNECT SWITCH

DUCT SMOKE DETECTOR

LIGHTNING ARRESTER

*** ALL SYMBOLS ON LEGEND MAY NOT APPLY TO DRAWING(S). ***

- ALL ELECTRICAL EQUIPMENT SHALL BE NEW, U.L. APPROVED AND COMMERCIAL GRADE.
- ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF MESA, LATEST ADOPTED NATIONAL ELECTRICAL CODE (NEC), AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES.
- K. IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO PROVIDE ONE (1) SET OF COMPLETE CONSTRUCTION DRAWINGS.
- PROVIDE NEW PANEL DIRECTORIES INDICATING SPECIFIC CIRCUIT INFORMATION TO DISTINGUISH EACH CIRCUIT FROM ANY OTHER PER NEC.
- M. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION OF DEVICES, WIRE & CONDUIT. WHERE THESE ITEMS ARE NO LONGER USED ALL UNUSED WIRE SHALL BE REMOVED BACK TO THE PANEL. ANY DOWNSTREAM EQUIPMENT TO REMAIN IN USE SHALL BE RECONNECTED

<u>SPECIFICATIONS</u>

16001 SCOPE OF WORK THE WORK DESCRIBED UNDER THIS SECTION OF THE SPECIFICATIO INCLUDES FURNISHING ALL MATERIAL LABOR AND EQUIPMENT, EXC AS FURNISHED UNDER OTHER SECTIONS OF THE SPECIFICATIONS, INSTALL ALL ELECTRICAL WORK AS SHOWN IN THE DRAWINGS ANI SPECIFIED AND REFERRED TO HEREIN.

THE CONTRACTOR WILL BE HELD TO HAVE EXAMINED THE PREMISES AND SATISFIED HIMSELF AS TO EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGATED TO OPERATE IN PERFORMING HIS PART OF THE WORK OR THAT WHICH WILL IN ANY MANNER AFFECT THE WORK UNDER

PRIOR TO ORDERING ANY MATERIALS OR DOING ANY WORK, VERIFY THE DIMENSIONS AT THE SITE; CORRECTNESS OF DIMENSIONS WILL BE THIS CONTRACTORS RESPONSIBILITY. NO EXTRA CHARGES OR COMPENSATION WILL BE ALLOWED FOR DIFFERENCES BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE DRAWINGS. IMMEDIATELY REPORT DIFFERENCES TO THE ARCHITECT AND DO NOT PROCEED WITH WORK UNTIL ARCHITECT RENDERS HIS DECISION.

.02 REGULATIONS, PERMITS, AND INSPECTIONS REGULATIONS: COMPLY WITH ALL APPLICABLE CODES, RULES, AND REGULATIONS. ALL MATERIALS, EQUIPMENT, AND WORK MUST COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE AND THE APPLICABLE MUNICIPAL AND LIFE SAFER CODES. PERMITS: OBTAIN AND PAY FOR ALL PERMITS, FEES , AND LICENSES REQUIRED TO PERFORM WORK DESCRIBED HEREIN. INSPECTIONS: ALL WORK MUST BE INSPECTED AND APPROVED BY LOCAL AUTHORITIES. PRIOR TO FINAL APPROVAL, FURNISH THE ARCHITECT WITH CERTIFICATES OF INSPECTION AND APPROVALS BY THE LOCAL

<u>.03</u> WORK LISTED ELSEWHERE

FURNISHING AND INSTALLING MOTOR CONTROLS UNLESS IN MOTOR CONTROL CENTER. FURNISHING HOLE CUTTING IN PRE CAST STRUCTURAL CONCRETE.

<u>.04</u> EXISTING SERVICES AND REMODEL AREAS MAINTAIN ALL SERVICES, POWER, SOUND, TELEPHONE, ETC. TO EXISTING BUILDINGS OR AREAS. INTERRUPTIONS OF SERVICES REQUIRED FOR "CUT-OVER" OR CONNECTIONS OF NEW CABLES, ETC. SHALL BE DONE AT THE CONVIENCE OF THE TENANT AND BE APPROVED IN WRITING BY THE TENANT PRIOR TO THE INTERRUPTION.

.05 TEMPORARY POWER

PROVIDE TEMPORARY POWER AS REQUIRED BY THE GENERAL CONTRACTOR. THIS SERVICE SHALL BE MAINTAINED THROUGHOUT THE ENTIRE JOB AS THE WORK PROGRESSES. PROVIDE OUTLETS AT CONVENIENT POINTS AND IN SUFFICIENT NUMBERS SO THAT NO EXTENSION CORD IS OVER 50 FEET IN LENGTH IS REQUIRED TO REACH ANY WORK POINT. MAINTAIN GENERAL LIGHTING IN CORRIDORS, STAIRS, BASEMENT AND OTHER AREAS NOT RECEIVING DAYLIGHT REQUIRED FOR SAFETY. REMOVE TEMPORARY WORK AS RAPIDLY AS REQUIRED FOR OR ALLOWED BY INSTALLATION OF DEPMANENT WORK

16420 SERVICE ENTRANCE EQUIPMENT

SERVICE ENTRANCE EQUIPMENT TO HAVE SHORT CIRCUIT CURRENT RATING EQUAL TO OR GREATER THAN AVAILABLE FAULT CURRENT, AND MEET ALL THE REQUIREMENTS OF U.L. STANDARD NO. 891. OUTDOOR GEAR TO BE NEMA 3R. ALL SWITCHGEAR TO BE FREE STANDING, UNLESS OTHERWISE INDICATED, MOUNTED ON 4" CONCRETE PAD EXTENDING A MINIMUM OF 6 INCHES IN FRONT OF EQUIPMENT.

END SECTION SHALL BE PROVIDED WITH FULL CAPACITY THROUGH BUS FOR FUTURE EXTENSION TO FUTURE SECTIONS.

SWITCHBOARDS TO BE SQUARED D TYPE QMB OR EQUAL, FREE STANDING, 90" HIGH, MIN. 14" DEEP WITH TYPE QMB SWITCHES. END SECTION WITH, FULL CAPACITY THRU — BUS FOR FUTURE SECTION. MOUNT ON 4" CONCRETE PAD EXTENDING A MINIMUM OF 6 INCHES IN

16510 LIGHTING FIXTURES

16120 WIRE

16471 PANELS

PANEL TYPE AS INDICATED ON THE DRAWINGS. NEW FLUSH PANELS TO HAVE (3) 3/4" EMPTY CONDUITS STUBBED INTO ACCESSIBLE CEILING SPACE. PROVIDED A GROUND BUS IN ALL PANELS INCLUDING EXISTING PANELS WHEREIN WORK IS DONE OR LOADS ADDED. CHECK ALL BREAKERS. REPLACE DEFECTIVE BREAKERS IN AFOREMENTIONED PANELS. VERIFY THE INTERRUPTING CAPACITY OF ALL BREAKERS WITH REQUIREMENT INDICATED ON THE DRAWINGS. REPLACE EXISTING BREAKERS NOT MEETING REQUIRED A.I.C. RATING.

16461 DRY TYPE TRANSFORMERS (IF ANY) SHALL BE EQUAL TO SQUARE D, 150 DEGREE TEMPERATURE RISE; SERIES 7410/7411. CLEARANCE ALL AROUND PER MANUFACTURES RECOMMENDATION. PROVIDE ISOLATION PADS.

FLUORESCENT FIXTURES SHALL BE FURNISHED WITH UL LISTED HIGH POWER-FACTOR BALLASTS. CONTRACTOR SHALL VERIFY CEILING CONSTRUCTION BEFORE ORDERING RECESSED UNITS AND SHALL PROVIDE PLASTER OR DRY WALL FRAMES AS REQUIRED.

RECESSED INCANDESCENT FIXTURES AND FLUORESCENT DOWN LIGHTS SHALL BE LISTED FOR USE IN INSULATED CEILING SPACES, AND SHALL HAVE ANY REQUIRED FEED—THRU BOXES.

LAMPS FOR INCANDESCENT FIXTURES SHALL BE 1000 HOUR INSIDE FROSTED 130 VOLT, NOT EXCEEDING THE WATTAGE FOR WHICH THE FIXTURE IS LABELED AND SHALL BE OF THE TYPE RECOMMENDED BY THE FIXTURE MANUFACTURE. LAMPS SHALL BE OF THE SAME MANUFACTURE AS FLUORESCENT.

ALL FIXTURES SHALL BE PROPERLY SUPPORTED FROM CEILING STRUCTURE, NOT FROM GYPBOARD OR PLASTER. SURFACE OR PENDANT MOUNT FLUORESCENT FIXTURES SHALL BE BOLTED TOGETHER FOR PROPER ALIGNMENT AND BONDING.

ALL FLUORESCENT FIXTURES RECESSED IN THE CEILING OR IN A GRID CEILING SHALL BE PROVIDED WITH EARTHQUAKE CLIPS AS REQUIRED BY

PROVIDE CONTRAST PLASTIC EMBOSSING TAPE, ADHESIVE BAKED NAMEPLATES FOR ALL STARTERS AND DISCONNECT SWITCHES.

PROVIDE LAMICOID NAMEPLATES FOR ALL DISTRIBUTION SWITCHES, BREAKERS, LIGHTING AND POWER PANELS INDICATING ITEMS SERVED. SIZE OF LETTERS SHALL BE MINIMUM OF 3/16" HIGH.

ALL WIRE AND CABLE SHALL BE NEW, 600 VOLT INSULATED, OF TYPES SPECIFIED BELOW. ALL WIRE AND CABLE SHALL BEAR THE UNDERWRITERS' LABEL AND SHALL BE BROUGHT TO THE JOB IN UNBROKEN PACKAGES. WIRE SHALL BE COLOR CODED PER NEC.

BRANCH CIRCUIT WIRING SHALL BE A MINIMUM #12 AWG COPPER

WIRE AND CABLE NO. 4 AWG AND SMALLER SHALL BE TYPE THW OR THHN/THWN

WIRE AND CABLE LARGER THAN NO. 4 AWG SHALL BE TYPE XHHW.

ALL WRING IN PANELBOARDS, SWITCHBOARDS, AND GUTTERS SHALL BE NEATLY ARRANGED. WRE SHALL BE HELD BUNDLED BY TY-RAPS. WRES SHALL BE CONNECTED TO CIRCUIT BREAKERS, SWITCHES AND OTHER DEVICES PERPENDICULAR TO TERMINAL LUGS.

ALL WIRING IN MANHOLES, PULL BOXES OR JUNCTION BOXES OVER 12 INCHES IN LENGTH SHALL BE BUNDLED IN A NEAT AND ORDERLY MANNER.

AFTER COMPLETION OF UNDERGROUND SPLICES AND SPLICES IN MANHOLES, SEAL SPLICES WITH SCOTCHCOAT #82 COATING OR EQUAL TO MOISTURE PROOF CABLES.

ALL AIR CONDITIONING FEEDERS SHALL BE TYPE XHHW.

ALL NECESSARY SERVICES AND BLOCKOUTS SHALL BE PROVIDED. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL WIRE.

PROVIDE DOUBLE LOCKNUTS AND BUSHINGS EXCEPT AT THREADED HUBS.

ALL CONDUIT UNDER CONCRETE DRIVES OR ANY LOCATION WHERE SUBJECT TO DAMAGE BY HEAVY EQUIPMENT SHALL BE INSTALLED A MINIMUM OF 24" BELOW GRADE OR 18" BELOW GRADE ENCASED IN A 3" THICK CONCRETE ENVELOPE.

TRENCHING, BACKFILLING, AND CONCRETE WORK FOR ELECTRICAL WORK SHALL BE DONE UNDER THIS SECTION AND AS REQUIRED ELOCAL AND/OR RULING AUTHORITIES AND REGULATING AGENCIES.

<u>.06</u> EMT OR FLEX FITTINGS FOR EMT, OR MALLEABLE IRON, COMPRESSION TYPE ONLY. FOR FLEXIBLE CONDUIT, COMPRESSION OR CLAMP TYPE CONNECTORS SHALL HAVE INSULATED THREADS.

.07 MC CABLE

METAL CLAD CABLE MAY BE USED IN LIEU OF EMT CONDUIT AND WIRE FOR BRANCH CIRCUIT WIRING IF ACCEPTABLE TO AUTHORITIES. 16140 WIRING DEVICES

RECEPTACLES SHALL BE FURNISHED AS INDICATED BELOW: (T) 20 AMP 120 VOLT DUPLEX HUBBELL #5362 W/#P8 COVERPLATE

HUBBELL #5362 W/TAYMAC #10110 COVERPLATE WP 20 AMP 120 VOLT DUPLEX, WEATHERPROOF HUBBELL # GF-5362 W/#PJ26 COVERPLATE GFI 20 AMP 120 VOLT DUPLEX, GROUND FAULT HUBBELL (2)#5352 W/#P82 COVERPLATE 20 AMP 120 VOLT FOURPLEX IG 20 AMP 120 VOLT DUPLEX, ISOLATED GROUND HUBBELL # 1G-5362 W/#P8 COVERPLATE

WHEN SURFACE WEATHERPROOF MOUNTING IS REQUIRED, RECEPTACLES SHALL BE MOUNTED IN AN FS CONDUIT BOX. ELEVATION OF EACH RECEPTACLE SHALL BE AT THE FLOOR PLUS 18" TO CENTER UNLESS OTHERWISE NOTED.

ALL SWTCHES SHALL BE FURNISHED IN ACCORDANCE WITH THE FOLLOWING TABLE. SWITCHES SHALL BE OF THE SAME MANUFACTURER AS THE RECEPTACLES FURNISHED.

\$ 20 AMP 1 POLE HUBBELL #1221-1 WITH #P1 COVERPLATE $\$_3$ 20 AMP 3 POLE HUBBELL #1223-1 WITH #P1 COVERPLATE COVERPLATES FOR RECEPTACLES, SWITCHES AND OUTLETS SHALL GENERALLY BE PLASTIC, WITH COLOR AS SELECTED BY THE ARCHITECT

LEAVE NO LESS THAN 6 INCHES OF WIRE AT EACH OUTLET FOR CONNECTION TO LIGHTING FIXTURES, SWITCHES, RECEPTACLES AND OTHER PIECES OF EQUIPMENT. WHERE WIRES FEED THROUGH AN OUTLET OR JUNCTION BOX, NEATLY TUCK 6 INCH LOOP IN BOTTOM OF

LIGHTING AND POWER CIRCUITS SHALL BE IDENTIFIED BY PANEL LETTER AND CIRCUIT NUMBER WITH BRADY WRAPAROUND CLOTH WIRE MARKERS AT ALL TERMINATIONS AND JUNCTIONS.

ALL BRANCH CIRCUIT AND FEEDER CONDUCTORS SHALL BE COLOR-CODED AS FOLLOWS:

LARGE FEEDER CONDUCTORS SHALL BE CODED BY COLORED TAPE WRAPPED AROUND THE CONDUCTOR AT EACH PULLBOX, TERMINATION POINT AND SPLICE.

IN GENERAL, ELECTRICAL METALLIC TUBING SHALL BE USED FOR ALL WIRING EXCEPT IN OR UNDER CONCRETE, EARTH, OR FILL. ELECTRICAL METALLIC TUBING MAY BE USED IN FURRED SPACES, WOOD FRAME WALLS WHERE CONDUITS DO NOT EXCEED 2 1/2" IN SIZE, BRICK, BLOCK, TILE, AND CONCRETE WALLS ARE NOT CONSIDERED HOLLOW AND RIGID CONDUIT SHALL BE PROVIDED FOR THESE AREAS.

FOR ALL 120 V TO GROUND CIRCUITS; PHASE CONDUCTORS — BLACK, RED, BLUE NEUTRAL CONDUCTOR — WHITE

16110 CONDUIT

FOR ALL 277 V TO GROUND CIRCUITS; PHASE CONDUCTORS — BROWN, ORANGE, YELLOW NEUTRAL CONDUCTORS — GRAY

SHEET STEEL BOXES SHALL BE STANDARD ONE—PIECE KNOCKOUT BOXES. WHERE OUTLETS ARE INSTALLED IN CONCRETE SLABS, BOXES SHALL BE CONCRETE CAST TYPE BOXES. BOXES SHALL NOT BE LESS THAN 4" IN DIAMETER AND 1—1/2" DEEP. OUTLET BOXES SET IN CONCRETE SHALL BE SET TO HAVE FINAL OPENING FLUSH WITH FINISH SURFACE. CAST-METAL CONDUIT BODIES SHALL BE CROUSE-HINDS CONDUI APPLETON UNILETS, OR APPROVED EQUIVALENT. BOXES SHALL I ARRANGED WITH THREADED CONNECTORS FOR RIGID CONDUIT. A CONDUIT BODIES SHALL HAVE SUITABLE COVERS, WHICH SHALL E PROVIDED WITH GASKET FOR EXTERIOR AND MOIST LOCATIONS.

POWER / PHONE FLOOR OUTLETS SHALL BE STEEL CITY #664 WITH # 664CST COVER (VERIFY COLOR), #664—BP PHONE PLATE, #664RP RECEPTACLE PLATE AND 20A DUPLEX RECEPTACLE. PHONE COMPARTMENT TO HAVE 3/4" E.C. TO CEILING SPACE VIA FLOOR / WALL.

OUTLETS SET IN FURRED CEILING AND STUD WALLS SHALL BE ANCHORED TO THE CEILING OR WALL STRUCTURE WITH SUITABLE STEEL

ALL CONNECTIONS TO CIRCUIT BREAKERS AND SWITCHES AND ALL JOINTS IN WIRES SHALL BE MADE AS NOTED BELOW:

CONNECTIONS TO CIRCUIT BREAKERS AND SWITCHES: NO. 12 WIRE SHALL BE FORMED AROUND BINDING POST OR SCREW. NO. 10 AND NO. 8 WIRE — BUCHANAN, "TERMEND" OR APPROVED EQUAL, LOCKING TONGUE LUG. NO. 6 WIRE AND LARGER — BURNDY "QUICK—LUG" TYPE QDA, OR APPROVED EQUAL, ROUND FLANGE SOLDERLESS LUG. OUTLET BOXES SHALL BE USED AS PULL AND JUNCTION BOXES WHEREVER POSSIBLE AND WHERE REQUIRED. BOXES IN PLASTERED WALLS OR CONCRETE BLOCK WALLS IN FINISHED AREAS AND CEILINGS SHALL HAVE TWO GANG RAISED PLASTER RINGS AND BLANK WALL PLATE. OTHER BOXES SHALL HAVE BLANK COVERS. FIXTURE CONNECTIONS: CIRCUIT WRING CONNECTIONS TO FIXTURE WIRE SHALL BE MADE WITH PRESSURE—TYPE SOLDER—LESS CONNECTORS — BUCHANAN, SCOTCHLOC OR WING NUT OR APPROVED EQUAL, COMPLETE WITH INSULATOR AND SECURITY WHERE OTHER THAN OUTLET BOXES ARE REQUIRED, PULL AND JUNCTION BOXES SHALL BE CONSTRUCTED OF GALVANIZED STEEL CONFIRMING TO CODE REQUIREMENTS. EXTERIOR BOXES SHALL BE OF WEATHERPROOF CONSTRUCTION AND SHALL BE PROVIDED WITH NEOPRENE COVER GASKETS. BOXES SHALL BE RIGIDLY ATTACHED TO THE STRUCTURE, INDEPENDENT OF ANY CONDUIT SUPPORT. JOINTS IN WIRES: NO. 6 WIRE AND LARGER — BURNDY OR APPROVED EQUAL, NO. 8 WIRE AND SMALLER — BUCHANAN, SCOTCHLOC, WING NUT, OR EQUAL, PRESSURE—TYPE SOLDERLESS CONNECTORS COMPLETE WITH INSULATOR AND SECURITY RING.

CONTROL WIRING AND ALL OTHER STANDARD WIRING TO SCREW CONNECTIONS SHALL BE PROVIDED WITH T AND B STA-KON TERMINALS.

FURNISH AND INSTALL ALL UNISTRUT, HANGERS, SUPPORTS, ETC. REQUIRED FOR WORK UNDER THIS DIVISION. SUPPORT CONDUIT FROM BUILDING STRUCTURE, NOT FROM CEILING SUPPORTS. BRANCH CIRCUIT CONDUIT 3/4" AND SMALLER MAY BE RUN FROM CEILING SUPPORTS USING SPRING STEEL CLIPS.

CONCRETE, EXCAVATION, FILL, BACKFILL FURNISH ALL CONCRETE, EXCAVATION, FILL, BACKFILL AND STEEL REQUIRED FOR THIS WORK UNLESS SPECIFICALLY NOTED OTHERWISE. ALL CONCRETE, FILL, BACKFILL, STEEL, ETC., WHERE REQUIRED SHALL BE IN STRICT ACCORDANCE WITH SPECIFICATIONS SET UP IN OTHER DIVISIONS OF THE SPECIFICATIONS.

FINAL LOCATION OF SURFACE FEATURES

ALL EXPOSED ELECTRICAL EQUIPMENT, CONDUIT, FLUSH PANEL FRONT, TRANSFORMER, SWITCHES, SWITCHBOARDS, PANELS AND SIMILAR ITEMS SHALL BE PAINTED AS SPECIFIED UNDER THE PAINTING SECTION OF THESE SPECIFICATIONS.

TRANSFORMER AND OTHER EQUIPMENT SUBJECT TO MOVEMENT. USE LIQUID TIGHT TYPE WHERE EXTERIOR OR SUBJECT TO LIQUID SPRAY OR DRIPPING.

O3 UL LISTED SCHEDULE 40 PVC CONDUIT MAY BE USED FOR UNDERGROUND RUNS. EXPANSION JOINTS AT 75 FEET ON CENTER OR AS REQUIRED BY MFR. ALL BE MANUFACTURED.

O4 NON METALLIC CONDUIT MOTALES BY A CLEAN AND TIDY CONDITION.

.04 NON-METALLIC CONDUIT INSTALLED BELOW CONCRETE FLOORS MAY BE INSTALLED IN THE FILL, HOWEVER, A PORTION OF THE CONCRETE FILL MATERIAL MUST BE PLACED AROUND THE CONDUIT FOR RIGID SUPPORT. NON-METALLIC CONDUIT OUTSIDE THE FILL SHALL BE BURIED A MINIMUM OF 18 BELOW GRADE. NON-METALLIC CONDUIT SHALL BE PROVIDED WITH CODE SIZE COPPER BOND WIRE INSIDE THE CONDUIT FOR ELECTRICAL CONTINUITY, AND SHALL BE INSTALLED IN ACCORDANCE TO NEC ARTICLE NO. 250. WRAPPED RIGID STEEL ELBOWS SHALL BE USED FOR RISERS ON PVC CONDUIT RUNS AND SHALL BE GROUNDED. THE FOLLOWING IS A LIST OF MANUFACTURERS WHOSE SPECIFICATION GRADE EQUIPMENT IS ACCEPTABLE AS TO MANUFACTURER. SUBSTITUTIONS SHALL NOT CAUSE OR CONTRIBUTE TO CHANGES UNLESS THESE CHANGES ARE APPROVED BY THE ARCHITECT PRIOR TO

CONDUIT PLACED IN A CONCRETE SLAB SHALL BE LARGER THAN 3/4" TRADE SIZE DIAMETER AND CONDUIT SMALLER THAN 3/4" SHALL BE USED FOR UNDERGROUND CIRCUITS. CONDUIT SHALL HAVE MINIMUM 1" CONCRETE COVER. NO CONDUIT SHALL BE IMBEDDED IN A SLAB THAT IS LESS THAN 3-1/2" THICK, EXCEPT FOR LOCAL OFFSETS. NO CONDUIT SHALL BE PLACED BETWEEN THE REINFORCINGSTEEL AND THE BOTTOM OF THE SLAB. POWER DISTRIBUTION EQUIPMENT: SQUARE D, SIEMENS, CHALLENGER

WIRE AND CABLES: GENERAL CABLE, ANACONDA, CAPITOL, CIRCLE AW, GENERAL ELECTRIC, OKONITE, ROME, SIMPLEX, KAISER. LOCAL WALL SWITCHES, RECEPTACLES, PILOT LIGHTS: PASS AND SEYMOUR, SIERRA, BRYANT, CIRCLE F, GENERAL ELECTRIC, HUBBELL, RUSSELL & STOLL, ARROW—HART.

DEVICE PLATES: HUBBELL, SLATER, PASS AND SEYMOUR, SIERRA, BRYANT, ARROW—HART, LEVITON.

LAMPS: GENERAL ELECTRIC, PHILLIPS, SYLVANIA. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SLEEVES AND CHASES REQUIRED WHERE CONDUITS PASS THROUGH FLOORS OR WALLS, AND SHALL SEAL ALL OPENING AND FINISH TO MATCH ADJACENT SURFACES. WHERE EXPOSED CONDUITS PASS THROUGH WALLS, FLOORS, OR CEILINGS, ESCUTCHEON PLATES SHALL BE PROVIDED. TRIANGLE, NATIONAL ELECTRIC CO., JONES-MCLAUGHLIN

FITTINGS: THOMAS AND BETTS, APPLETON, CROUSE-HINDS. CAST OUTLET BOXES: CROUSE-HINDS, APPLETON. BALLASTS: ADVANCE, GENERAL ELECTRIC, JEFFERSON, WESTINGHOUSE, SYLVANIA, UNIVERSAL. FLOOR BOXES: HUBBELL, LEW STEEL CITY.

OUTLET BOXES: RACO, STEEL CITY, SLATER.

SHOP DRAWINGS

ALL DATA SHALL BE SUBMITTED AT ONE TIME, BOUND AND INDEXED IN AN ORDERLY MANNER. PRIOR TO STARTING THE WORK, SUBMIT TO THE ARCHITECT FOR APPROVAL, SIX (6) SETS OF SHOP DRAWINGS OF SERVICE ENTRANCE SECTION, SWITCHBOARDS, PANELBOARDS, LIGHTING FIXTURES, TRANSFORMERS AND ALL EQUIPMENT TO BE FABRICATED. FINAL INSPECTION AND TEST

FURNISH ALL METERS, CABLES, CONNECTIONS AND APPARATUS NECESSARY FOR MAKING TESTS.

TEST SYSTEM FOR SHORTS AND GROUNDS. FAULTY WIRING SHALL BE REMOVED AND REPLACED. ANY DEVICE, APPARATUS OR FIXTURE INSTALLED SHOWING SUBSTANDARD PERFORMANCE SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE ARCHITECT.

MEGGER ALL SYSTEM NEUTRALS IN THE PRESENCE OF THE ENGINEER TO INSURE THE NEUTRAL IS NOT GROUNDED WITHIN THE SYSTEM. TEST SHALL BE MADE AFTER ALL BRANCH CIRCUIT WIRING IS INSTALLED AND CONNECTED. TEST ALL GROUND FAULT RELAYS IN THE PRESENCE OF THE ENGINEER. SET RELAY FOR TIME AND CURRENT RATING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.

ALL EQUIPMENT RATED AT 1,000 AMPS OR MORE, OR 480 VOLTS SHALL ETESTED FOR INSULATION BREAKDOWN PRIOR TO ITS BEING ENERGIZED. SUCH EQUIPMENT SHALL WITHSTAND FOR A PERIOD OF ONE MINUTE WITHOUT BREAKDOWN, THE APPLICATIONS OF A 60HZ ALTERNATING POTENTIAL OF 1,000V PLUS TWICE THE RATED VOLTAGE OF THE DEVICE. TEST SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER.

<u>HIGH POTENTIAL TESTING</u>

TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. "HI-POT" TEST VOLTAGES AND TIMES SHALL BE COORDINATED WITH AND DETERMINED BY THE OWNER'S REPRESENTATIVE WHEN ANY OTHER CABLE OR DEVICES, OTHER THAN THAT INSTALLED NEW BY ELECTRICAL CONTRACTOR UNDER HIS CONTRACT, IS TO BE INCLUDED IN THE TEST PROCEDURES. CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE, IN WRITING, HIS INTENTIONS TO PERFORM THE HI-POTTING TEST, INCLUDING TIME AND DATE AND THE TESTING AGENCY.

IN GENERAL TESTS SHALL BE CONDUCTED AS FOLLOWS:

BUILD-UP TIME TO TEST VOLTAGE - ONE (1) MINUTE IN 10 KV DC STEPS WITH RECORDED MILLI-AMP READINGS AT 156, 30 AND 45

HOLDING TIME AT TEST VOLTAGE - FIVE (5) MINUTES, WITH RECORDED MILLI-AMP READING AT THE END OF EACH MINUTE. "DECAY TIME" SHALL BE RECORDED WITH SHUT-OFF AT APPROXIMATELY 1-3 KV.

THE "HI—POT" TEST SHALL NOT BE MADE UNTO ANY PORTION OF AN ENERGIZED DEVICE. SUFFICIENT TIME LAG SHALL BE ALLOWED IN THE ORIGINAL REQUEST FOR THE OWNER TO SET UP A DEFINITE PERIOD OF TESTING IF ANY PORTION OF THE OWNER'S DISTRIBUTION SYSTEM IS

THE NEUTRAL CONDUCTORS AND ALL OTHER EXPOSED NON—CURRENT CARRYING METAL PARTS AS REQUIRED BY CODE SHALL BE GROUNDED. GROUNDING BUSHING SHALL BE USED AS REQUIRED AND SHALL BE O.Z. INSULATED TYPE BL OR APPROVED EQUAL. NO GROUNDING SHALL BE MADE TO GAS PIPING. WHERE EQUIPMENT OR DEVICES ARE SERVED BY NON—METALLIC DUCTS, ENCLOSURES SHALL BE GROUNDED BY MEANS OF A CODE SIZE BARE OR GREEN INSULATED EQUIPMENT GROUND WIRE INSTALLED IN THE DUCT WITH THE CURRENT CARRYING CONDUCTORS AND BE BONDED SECURELY IN EACH CABINET TERMINATING THE GROUND WIRE. COPPER JUMPERS SHALL BRIDGE FLEXIBLE CONDUIT AND BE INSTALLED IN THE CONDUIT. ALL SERVICE GROUNDS SHALL BE IN ACCORDANCE WITH THE UFER GROUND.

ALL EMT, FLEXIBLE CONDUIT, MC CABLE, OR PVC CONDUIT SHALL BE PROVIDED WITH AN INSULATED GREEN GROUND WIRE.

16740 TELEPHONE:

PROVIDE EMPTY CONDUIT OR DUCT WITH "JET-LINE" OR EQUAL POLYPROPOLENE PULL LINE AND TERMINAL MOUNTING BOARD AS SHOWN ON DRAWINGS.

USE LARGE RADIUS RIGID GALVANIZED STEEL CONDUIT FOR BENDS AND OFFSETS IN DUCT RUNS. TELEPHONE TERMINAL BOARDS SHALL BE 3/4" FIR PLYWOOD, GRADE C PLUS SIZE AS INDICATED ON DRAWINGS. TELEPHONE TERMINAL CABINETS SHALL HAVE THE DOOR FASTENED TO THE TRIM WITH CONCEALED HINGES AND BE PROVIDED WITH FLUSH TYPE COMBINATION LATCH AND LOCK, KEYED TO MATCH LIGHTING PANELS, CABINETS AND TRIM SHALL BE FACTORY PAINTED WITH TWO FINISH COATS.

PROVIDE ALL NECESSARY MATERIAL AND LABOR REQUIRED BY THE TELEPHONE COMPANY FOR DELIVERING SERVICE TO THE TELEPHONE TERMINAL BOARD. ALL CONDUIT, TRENCHING AND BACKFILL SHALL E PROVIDED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH THE TELEPHONE COMPANY STANDARDS.

ALL CONDUIT RUNS TO DATA OUTLET BOXED SHALL BE A MINIMUM OF 3/4" AND HAVE A MAXIMUM OF TWO 90 DEGREE BENDS. ALL DATA OUTLETS ARE TO HAVE WALL PLATES TO MATCH THE DEVICE PLATE.

GUARANTEE ALL MATERIAL, EQUIPMENT, AND WORKMANSHIP FOR ALL SECTIONS UNDER THIS DIVISION IN WRITING TO BE FREE FROM DEFECT OF MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. REPLACE WITHOUT CHARGE, ANY MATERIAL OR EQUIPMENT PROVIDING DEFECTIVE DURING THIS PERIOD. THE GUARANTEE SHALL INCLUDE PERFORMANCE OF THE EQUIPMENT UNDER ALL CONDITIONS OF LOAD, INSTALLING ANY ADDITIONAL ITEMS OF CONTROL AND/OR PROTECTIVE DEVICES AS REQUIRED.

GENERAL ELECTRICAL NOTES (NOTES APPLY WHETHER KEYED TO PLAN OR NOT)

- SEE ARCHITECTURAL PLANS AND REFLECTED CEILING PLAN FOR LOCATION OF ALL LIGHT FIXTURES, INCLUDING COVE AND MILL—WORK LIGHTING. WHERE FIXTURE LOCATIONS NEED TO BE CHANGED, COORDINATE WITH ARCHITECT. AVOID ROLL—UP DOORS.
- 1b BEFORE ORDERING FIXTURES, FIELD VERIFY THAT FIXTURES WILL FIT IN AVAILABLE SPACE.
- VERIFY LAMP TYPE / COLOR, NUMBER OF LAMPS PER FIXTURE, LENS TYPE, AND VOLTAGE BEFORE ORDERING NEW FIXTURES TO MATCH EXISTING.

2 EMERGENCY LIGHTING

UNLESS INDICATED OTHERWISE, FLUORESCENT FIXTURES INDICATED AS EMERGENCY LIGHTS SHALL HAVE A 1 LAMP EMERGENCY LIGHTING FLUORESCENT BALLAST PACK (6 VOLT)

FURNISHED WITH FIXTURE. EMERGENCY LIGHTS/EXIT LIGHTS SHALL BE CIRCUITED TO AN UNSWITCHED LIGHTING CIRCUIT WHEN A NIGHT LIGHT CIRCUIT IS NOT PROVIDED.

EXIT SIGNS SHALL HAVE AN INTEGRAL EMERGENCY
BATTERY. THEY SHALL BE SURE—LITES PLX 600 RP
SERIES, UNIVERSAL EXIT, UNLESS OTHERWISE SPECI—
FIED. VERIFY THAT NO EXIT SIGN OBSTRUCTS A DOOR
SWING OR HEADROOM PRIOR TO INSTALLATION. WALL OR CEILING MOUNTING.

TWO HEAD EMERGENCY LIGHTS WITH BATTERY SHALL
BE SURE-LITES XR-5, 6 VOLTS 27 WATTS CAPACITY FOR
1 1/2 HOURS, TUNGSTEN HALOGEN LAMP, LEAD
CALCIUM BATTERY UNLESS OTHERWISE SPECIFIED.
VERIFY WALL HEIGHT, LOCATION AND PRIMARY

3 POWER

WITHIN THE AREA OF THIS PROJECT AND SCOPE OF WORK, ANY DUPLEX RECEPTACLE WITHIN (6) SIX FEET OF A SINK SHALL BE A GROUND FAULT INTERRUPTING RECEPTACLE.

ALL DUPLEX RECEPTACLES WITH ISOLATED GROUND SHALL HAVE A MINIMUM #12 GREEN GROUND WIRE RUN TO PANEL GROUND BUS

IN ANY PATIENT CARE AREAS, A #10 GREEN BOND WIRE SHALL BI RUN WITH ALL RECEPTACLE CIRCUITS. PEDIATRIC CARE AREAS SHALL HAVE TAMPERPROOF RECEPTACLES. ANY 15A OR 20A, 120 VOLT LIGHTING OR OUTLET BRANCH CIRCUIT WITH AN OVERALL LENGTH OF 100 FEET OR LONGER SHALL BE #10 WRE FOR FULL LENGTH OF CIRCUIT EXCEPT AS NOTED OTHER—

PROVIDE W.P. DUPLEX OUTLET WITHIN 25 FEET OF ANY EXTERIOR HVAC UNIT. ANY 15A OR 20A 125V RECEPTACLES IN COMMERCIAL GARAGES SHALL BE MOUNTED A MINIMUM OF 18" ABOVE FINISH FLOOR.

OUTLETS ON OPPOSITE SIDES OF FIRE RATED WALLS SHALL BE SEPARATED BY A MINIMUM HORIZONTAL DISTANCE OF 24".

EQUIPMENT (RELATED ELECTRICAL WORK) EQUIPMENT AS REFERRED TO IN THESE NOTES SHALL MEAN ANY HEATING, VENTILATING OR AIR CONDITIONING EQUIPMENT, PLUMBING EQUIPMENT, FOOD SERVICE EQUIPMENT, SHOP EQUIPMENT, MEDICAL EQUIPMENT, LAUNDRY EQUIPMENT, OFFICE EQUIPMENT, MODULAR FURNITURE SYSTEMS, SPECIALTY EQUIPMENT, TENANT OR OWNER FURNISHED EQUIPMENT, OR ANY OTHER EQUIPMENT, SPECIAL OR OTHERWISE THAT IS REFERENCED ON ANY CONTRACT DOCUMENTS FOR THIS PROJECT.

A COMPLETE SET OF CONTRACT DOCUMENTS SHALL BE OBTAINED AND REVIEWED BY THE ELECTRICAL CONTRACTOR FOR THE PURPOSE OF STUDYING THE ARCHITECTURAL, HVAC, PLUMBING, FOOD SERVICE, SPECIALTY SYSTEMS DRAWINGS, ETC. THIS SHALL INCLUDE ANY DRAWINGS PREPARED BY VENDORS, SUCH AS KITCHEN EQUIPMENT DRAWINGS, RADIOLOGY EQUIPMENT DRAWINGS, OR MODULAR FURNITURE DRAWINGS, ETC. THE INTENT IS TO DISCOVER ANY WORK THAT IS TO BE DONE BY THE ELECTRICAL CONTRACTOR WHICH MAY NOT BE SHOWN ON THE ELECTRICAL DRAWINGS.

IF ANY EQUIPMENT REQUIRES ELECTRICAL POWER IT SHALL BE PROVIDED, INCLUDING ALL CIRCUITRY, OVER CURRENT DEVICES, GROUNDING, RECEPTACLES, HARD WRING, ROUGH-IN, ETC. ALL SUCH WORK SHALL BE DONE BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFIED OTHERWISE IN THESE CONTRACT DOCUMENTS, AND WHETHER OR NOT IT IS INDICATED IN THE ELECTRICAL DOCUMENTS.

PRIOR TO BID, ANY CONFLICT BETWEEN THE ELECTRICAL DOCUMENTS AND ANY OTHER CONTRACT—RELATED DOCUMENTS SHALL BE REPORTED TO THE ELECTRICAL ENGINEER. CONFLICT SHALL BE RESOLVED PRIOR TO BID. FOR EACH ITEM OF EQUIPMENT, VERIFY THE ELECTRICAL CHARACTERISTICS, INCLUDING LOAD, VOLTAGE, AND PHASE: LOAD BALANCING ON PHASES, AND GROUNDING REQUIREMENTS,

VERIFY ROUGH—IN LOCATION, AND FINAL CONNECTION REQUIRE—MENTS. PROVIDE THE PROPER RECEPTACLES TO MATCH THE CORD CAP FURNISHED WITH THE EQUIPMENT, OR PROVIDE THE APPROPRIATE HARD WIRING.

PROVIDE ANY INDICATED OR REQUIRED OVERCURRENT PROTECTION AND/OR DISCONNECT SWITCHES, FUSED FOR THE LOAD OR PER MANUFACTURERS RECOMMENDATIONS.

4h PROVIDE FOR CONNECTION TO ANY CONTROLLER FURNISHED WITH EQUIPMENT. PROVIDE ANY CONTROLLERS, STARTERS, AND CONTROL WIRING NOT INDICATED TO BE PROVIDED BY OTHERS.

KITCHEN EQUIPMENT SHUT DOWN: WHEN KITCHEN EQUIPMENT IS REQUIRED BY CODE TO BE SHUT DOWN BY A FIRE PROTECTION SYSTEM, SAID EQUIPMENT INCLUDING GAS SOLENOIDS FOR THIS EQUIPMENT, IGNITION CIRCUITS, POWER CIRCUITS, AND HOOD EXHAUST FANS AND RELATED MAKE—UP AIR UNIT(S) SHALL BE CONNECTED TO THE KITCHEN FIRE PROTECTION SYSTEM SHUT DOWN MECHANISM VIA SHIINT TRIP REPEAKER(S)

5 HVAC AND PLUMBING SYSTEMS (RELATED ELECTRICAL WORK)

5a ANY CONTROL WRING AND CONNECTIONS NOT PROVIDED BY THE HVAC CONTRACTOR SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFIED OTHERWISE. WHERE ONE OR MORE DISCONNECT SWITCH IS REQUIRED FOR AN HVAC UNIT, THEY SHALL BE PROVIDED BY THE ELECTRICAL

5c SEE MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL DUCTWORK AND DIFFUSERS TO AVOID ANY CONFLICTS WITH LIGHTING FIXTURE LAYOUT. OVERLAY THE LIGHTING AND HVAC PLANS AND REVIEW FOR CONFLICT. PROVIDE FOR CONNECTION AND CIRCUITRY OF ANY DUCT DETECTOR FURNISHED UNDER ANOTHER SECTION. REVIEW MECHANICAL PLANS.

5e PROVIDE ALL INTERLOCK WIRING FOR ANY HVAC EQUIPMENT REQUIRING INTERLOCKING. 6 TELEPHONE / DATA OR SPECIAL SYSTEMS / CONDUIT SYSTEMS WHERE CEILING SPACE IS USED AS AN AIR RETURN PLENUM PROVIDE CONDUIT FROM EACH TELEPHONE, OR DATA OUTLET TO THE SUITE TERMINAL POINT DESIGNATED BY TENANT. ANY PLENUM WIRING NOT IN CONDUIT SHALL BE RATED FOR USE IN PLENUM.

SERVICE CONDUIT FOR ELECTRICAL OR OTHER SYSTEMS SHALL BE MARKED AT EACH END AS TO SOURCE AND DESTINATION.

(LE.: SERVICE STATION, FACP, SUITE #, PANEL DESIGNATION,

REQUIRMENT FOR TRENCHING AND BACKFILL FOR SITE UTILITIES INCLUDING EXACT ROUTING AND POINT OF TERMINATION SHALL BE VERIFIED WITH THE POWER AND TELPHONE COMPANIES. THEIR REQUIRMENTS SHALL BE DEEMED PART OF THIS CONTRACT. AVOID CONFILCT WITH EXISTING SITE UTILITIES.

ELECTRICAL CONTRACTOR SHALL INCLUDE IN THIS BID AN ESTIMATED SUM AS AN UNDERGROUND SERVICE ALLOWANCE TO BE PAID TO POWER COMPANY FOR EACH SERVICE. THE EXACT LOCATION, ORIENTATION AND ACCESSIBILTY OF THE ELECTRICAL SERVICE ENTERANCE SHALL BE APPROVED BY THE POWER COMPANY. SERVICE ENTRANCE EQUIPMENT SHOP DRAWINGS SHALL BE APPROVED BY THE POWER COMPANY. THE REQUIRMENTS FOR THE TELEPHONE BOARDS OR CABINETS, AND THEIR LOCATIONS, SERVICE RACEWAYS TO THESE SERVICE POINTS AND ALL CONDUIT REQUIRMENTS BETWEEN TELEPHONE OUTLETS, AND HOMERUN CONDUITS FROM THE OUTLETS TO TERMINAL POINTS SHALL BE VERIFIED WITH THE TELEPHONE COMPANY RESENTATIVE PRIOR TO ROUGH—IN. PROVIDE #6 COPPER BOND FROM THE TELPHONE TERMINAL BOARD TO THE GROUND BUS IN THE SERVICE ENTANCE SETION.

MINMUM POINT OF PRESENCE — CABLING IS PROVIDED BY THE TELEPHONE SERVICE COMPANY TO ONE POINT ONLY. THE MAIN TELEPHONE TERMINAL CABINET OR BAORD AT ONE BUILDING ONLY ON THE SITE. ADDITIONAL CABLING WILL BE NECESSARY FROM THE MAIN TELEPHONE CABINET OR BOARD TO HTE OTHER TELEPHONE CABINETS OR BOARDS ON THE SITE. THIS CABLING IS NOT PART OF THIS CONTRACT AND SHALL BE PROVIDED BY THE OWNER TO FACILTATE TELEPHONE SERVICE TO ALL TENANTS ON THE SITE.



IOTICE OF ALTERNATE BILLING OR PAYMEN CERTIFICATION AND APPROVAL OF BILLING A STIMATES. A WRITTEN DESCRIPTION OF SUCH OT BILLING CYCLE APPLICABLE TO THE PROJECT AVAILABLE FROM OWNER OR DESIGNATED AGE NAME ADDRESS ADDRESS CONTACT: Name PHONE:

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design by: **JG** drawn by: **JG** checked by: HK

Project Number: 22713 | Project Manager: HK 7328 E Stetson Dr., Scottsdale, AZ 85251 P: 480.626.7072 | ardebilieng.com

project #: 22223.50

EXTERIOR LUMINAIRE SCHEDULE

| CALLOUT | SYMBOL | LAMP | MODEL | DESCRIPTION | BALLAST | MOUNTING | VOLTS |
|---------|---|------------|--|---|------------|----------|------------|
| SA | \$ | (1) 274W | LITHONIA LIGHTING. (2) DSXO LED P6 30K 80CRI T5W MVOLT SPA LITTLEFUSE: 01500322H | (2) D-SERIES LED POLE MOUNTED LUMINAIRE, 3000K CCT 80 CRI. WITH INTEGRATED ACS INLINE FUSE HOLDER. | LED | POLE | 208V 2P 2W |
| SB | LITHONIA LIGHTING. DSX0 LED P6 30K 80CRI T5W MVOLT SPA LITTLEFUSE: 01500322H D-SERIEES LED POLE MOUNTED LUMINAIRE, 3000K CCT 80 CRI. WITH INTEGRATED ACS INLINE FUSE HOLDER. | | LED | POLE | 208V 2P 2W | | |
| SC | 7 | (1) 137W | LITHONIA LIGHTING. DSXO LED P6 30K 80CRI T5W MVOLT SPA HS LITTLEFUSE: 01500322H | D-SERIEES LED POLE MOUNTED LUMINAIRE, 3000K CCT 80 CRI. WITH INTEGRATED ACS INLINE FUSE HOLDER. | LED | POLE | 208V 2P 2W |
| SD | (1) 137W | | LITHONIA LIGHTING. DSXO LED P6 30K 80CRI BLC4 MVOLT SPA LITTLEFUSE: 01500322H | D-SERIEES LED POLE MOUNTED LUMINAIRE, 3000K CCT 80 CRI. WITH INTEGRATED ACS INLINE FUSE HOLDER. | LED | POLE | 208V 2P 2W |
| SF | (1) 137W | | LITHONIA LIGHTING. DSXO LED P6 30K 80CRI T2M MVOLT SPA HS LITTLEFUSE: 01500322H | D-SERIEES LED POLE MOUNTED LUMINAIRE, 3000K CCT 80 CRI. WITH INTEGRATED ACS INLINE FUSE HOLDER. | LED | POLE | 208V 2P 2W |
| SGE | 9 | (1) 18.98W | LITHONIA LIGHTING WDGE2 LED P2 30K 80CRI TFTM MVOLT SRM E20WC | WDGE2 LED WITH P2 — PERFORMANCE PACKAGE, 3000K, 80CRI, TYPE FORWARD THROW MEDIUM OPTIC MINIMUM 90 MINUTES OF EMERGENCY BATTERY PACK. | LED | WALL | 120V 1P 2W |
| SHE | | (1) 11.8W | DMF LIGHTING DRDH N JO 100SEM / DRD5S 4 R 10 9 30 EM | 4" SURFACE MOUNTED DOWNLIGHT, 3000K, WITH MINIMUM 90 MINUTES OF EMERGENCY BATTERY PACK. | LED | SURFACE | 120V 1P 2W |
| SL | 9 | (1) 51.17W | LITHONIA LIGHTING WDGE3 LED P1 80CRI R3 30K MVOLT SRM | WALL MOUNTED LED WITH P1 — PERFORMANCE PACKAGE, 3000K, 80CRI, TYPE 3 OPTIC | LED | WALL | 120V 1P 2W |



Project Information

2018 IECC POWER & ELLIOTT (DR) Energy Code: Project Title: Project Type: New Construction 2 (Residential mixed use area (LZ2)) Exterior Lighting Zone

Construction Site: SEC OF POWER ROAD AND ELLIOTT MESA, AZ 85212

| Allowed Exterior Lighting Power | | | | |
|---|---------------|------------------------------|--------------------------|----------------------------|
| A Area/Surface Category | B Quantity | C Allowed Watts / Unit | D Tradable Wattage | E Allowed Wa (B X C) |
| ALDI RETAIL WALL (Illuminated area of facade wall or surface) | 19119 ft2 | 0.07 | No | 1434 |
| FITNESS WALL (Illuminated area of facade wall or surface) | 41789 ft2 | 0.07 | No | 3134 |
| CAR PARKING (Parking area) | 263730 ft2 | 0.04 | Yes | 10549 |
| | | Total Tradab | ole Watts (a) = | 10549 |
| | | Total All | owed Watts = | 15117 |

Total Allowed Supplemental Watts (b) = 400 (a) Wattage tradeoffs are only allowed between tradable areas/surfaces. (b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

| A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast | B Lamps/ Fixture | C # of Fixtures | D Fixture Watt. | (C X I |
|--|------------------------|-----------------------|-----------------------|--------|
| ALDI RETAIL WALL (Illuminated area of facade wall or surface 19119 ft2): Non-trad | lable Wattage | | | |
| LED 4: SGE: WALL SCONCE: Other: | 1 | 2 | 19 | 3 |
| LED 5: SHE: DOWNLIGHT: Other: | 1 | 2 | 12 | 2 |
| LED 13: SL: WALL PACK: Other: | 1 | 2 | 51 | 10 |
| FITNESS WALL (Illuminated area of facade wall or surface 41789 ft2): Non-tradable | <u>Wattage</u> | | | |
| LED 6: SGE: WALL SCONCE: Other: | 1 | 6 | 19 | 11 |
| LED 7: SHE: DOWNLIGHT: Other: | 1 | 2 | 12 | 2 |
| LED 14: SL: WALL PACK: Other: | 1 | 2 | 51 | 10 |
| CAR PARKING (Parking area 263730 ft2): Tradable Wattage | | | | |
| LED 8: SA: TWIN HEAD POLE: Other: | 2 | 14 | 274 | 383 |
| LED 9: SB: SINGLE HEAD POLE: Other: | 1 | 1 | 137 | 13 |
| LED 10: SC: SINGLE HEAD POLE: Other: | 1 | 4 | 137 | 54 |
| LED 11: SD: SINGLE HEAD POLE: Other: | 1 | 7 | 137 | 95 |
| LED 12: SF: SINGLE HEAD POLE: Other: | 1 | 2 | 137 | 27 |
| | Total Trac | dable Propos | sed Watts = | 575 |

Project Title: POWER & ELLIOTT (DR) Report date: 03/01/24 Page 1 of 6

Exterior Lighting PASSES: Design 47% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 1.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

HICHAM KHACHANE, PM.

 $\frac{03/01/2024}{\text{Date}}$

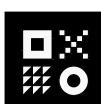
Designer/Contractor:

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POWER

design by: **JG** drawn by: **JG** checked by: **HK**

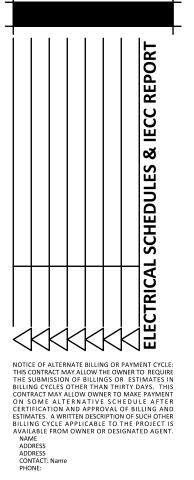
project #: **22223.50**

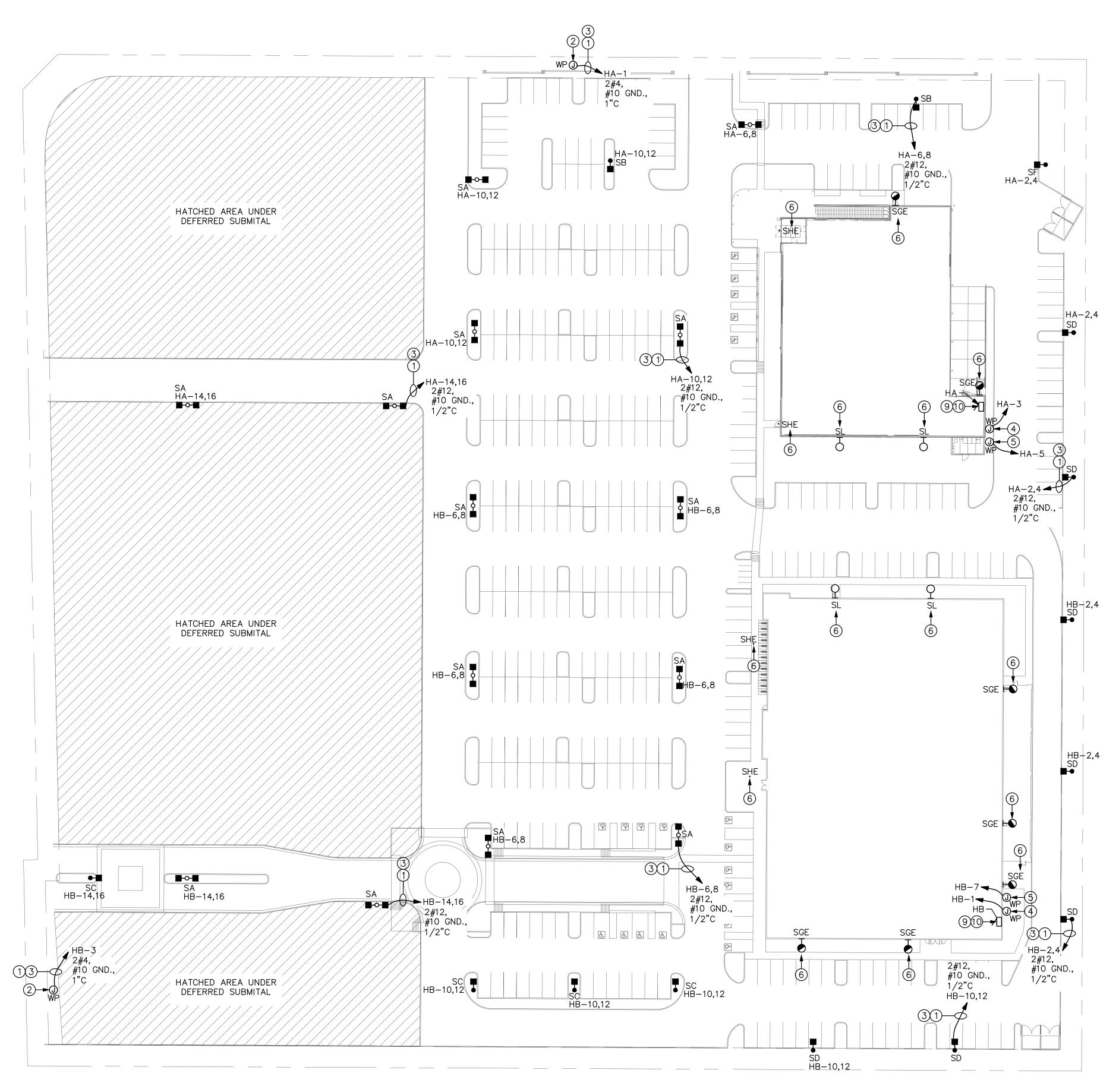




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SCALE: 1/40"=1'-0"

GENERAL NOTES

- A. ALL EXTERIOR LIGHT FIXTURES TO COMPLY WITH LOCAL NIGHT SKY ORDINANCE.
- B. ALL EXTERIOR LIGHTING AND SIGNAGE TO BE FED WITH #10 CU. U.N.O.
- C. ALL EXTERIOR ELECTRICAL EQUIPMENT TO BE NEMA-3R RATED.
- D. CONTRACTOR TO COORDINATE EXACT SITE LIGHTING FIXTURE LOCATIONS WITH LANDSCAPE DRAWINGS.
- E. ALL FIXTURES INSTALLED OUTDOORS SHALL BE RATED FOR DAMP/WET LOCATIONS AS REQUIRED. THE CONTRACTOR SHALL COORDINATE DAMP/WET LOCATION RATING PER NEC ARTICLE 410-4. ALL INSTALLATIONS SHALL CONFORM TO NEC ARTICLE 410, ALL SUB
- F. FIRE ALARM EQUIPMENT SHALL BE COORDINATED FOR EXACT LOCATION AND REQUIREMENTS WITH FIRE MARSHALL.
- G. ALL PVC CONDUIT MUST HAVE A MINIMUM OF #12 CU. GROUND CONDUCTOR.
- H. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND SCHEDULING WITH POWER AND TELEPHONE UTILITY COMPANIES INCLUDING PROVIDING (2) COMPLETE SETS OF DRAWINGS TO EACH COMPANY. ALL WORK SHALL BE INSTALLED PER EACH UTILITY COMPANIES FINAL DESIGN DRAWINGS.
- ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL EXTERIOR LIGHT FIXTURES WITH ARCHITECTURAL DRAWINGS.

KEYED NOTES

- ROUTE 3/4" PVC CONDUIT BACK TO LIGHTING CONTRACTOR W/ (2)#10, (1) #10 GND. CONDUCTORS. VERIFY EXACT ROUTING PRIOR TO INSTALLATION. TRÉNCH, BÁCKFILL, AND REPAIR LANDSCAPE/HARDSCAPE AS REQUIRED. ADHERE TO NEC 300.5 FOR BURIAL DEPTHS.
- 2. PROVIDE W.P. J-BOX FOR MONUMENT SITE SIGN. COORDINATE EXACT LOCATION WITH ARCHITECT AND OR OWNER AND ELECTRICAL REQUIREMENTS WITH VENDOR.
- 3. CIRCUIT THROUGH LIGHTING CONTACTOR. SEE DETAIL ON THIS SHEET FOR MORE INFO.
- 4. PROVIDE POWER CONNECTION FOR CONVENIENCE RECEPTACLE. VERIFY LOCATION WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.
- 5. PROVIDE POWER CONNECTION FOR IRRIGATION CONTROLLER. VERIFY POWER REQUIREMENT WITH SPRINKLER SYSTEM CONTRACTOR. VERIFY LOCATION WITH OWNER/ARCHITECT PRIOR TO
- 6. LIGHTING FIXTURES HAS BEEN SHOWED JUST FOR REFERENCE ONLY. REFER TO TENANT IMPROVEMENT PLANS.
- 7. NOT USED
- 8. NOT USED
- 9. PROPOSED LOCATION OF NEW SURFACE MOUNTED PANEL IN NEMA 1 ENCLOSURE. REFER TO TENANT IMPROVEMENT PLANS FOR FURTHER INFORMATION.

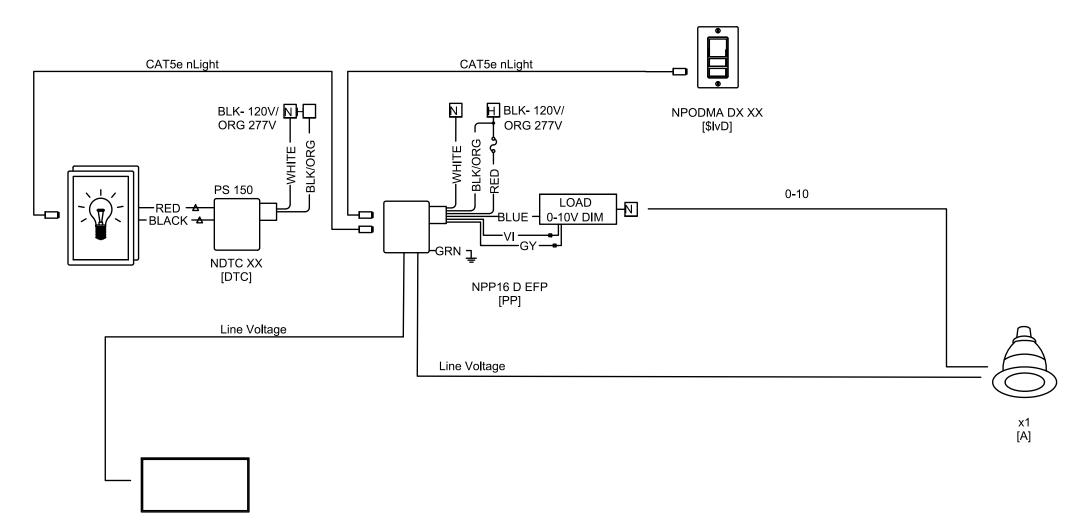
10. MOUNT NEMA 1 CONTRACTOR/TIME CLOCK TO PANEL.

NOTE

ALL UNDERGROUND CONDUIT FOR BRANCH CIRCUITS SHALL BE A MINIMUM OF 24" BELOW GRADE, OR PER NEC TABLE 300.5.

CONDUIT ROUTING NOTE

COORDINATE UNDERGROUND CONDUIT ROUTING WITH OWNER/ARCH AND OTHER DISCIPLINE PRIOR TO ROUGH-IN.





[Breaker panel]



design by: **JG** drawn by: **JG** checked by: **HK**

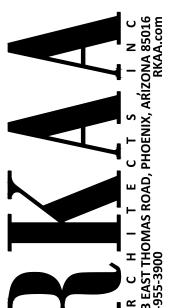


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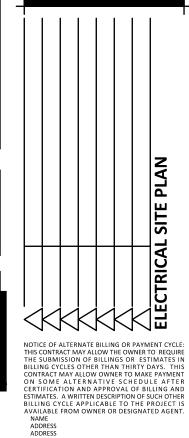
E1.0 project #: 22223.50











ELLIOT **POWER**

1ST CITY REVIEW 10/16/2023

N.T.S.

LIGHT POLE AND FIXTURE 'SA'

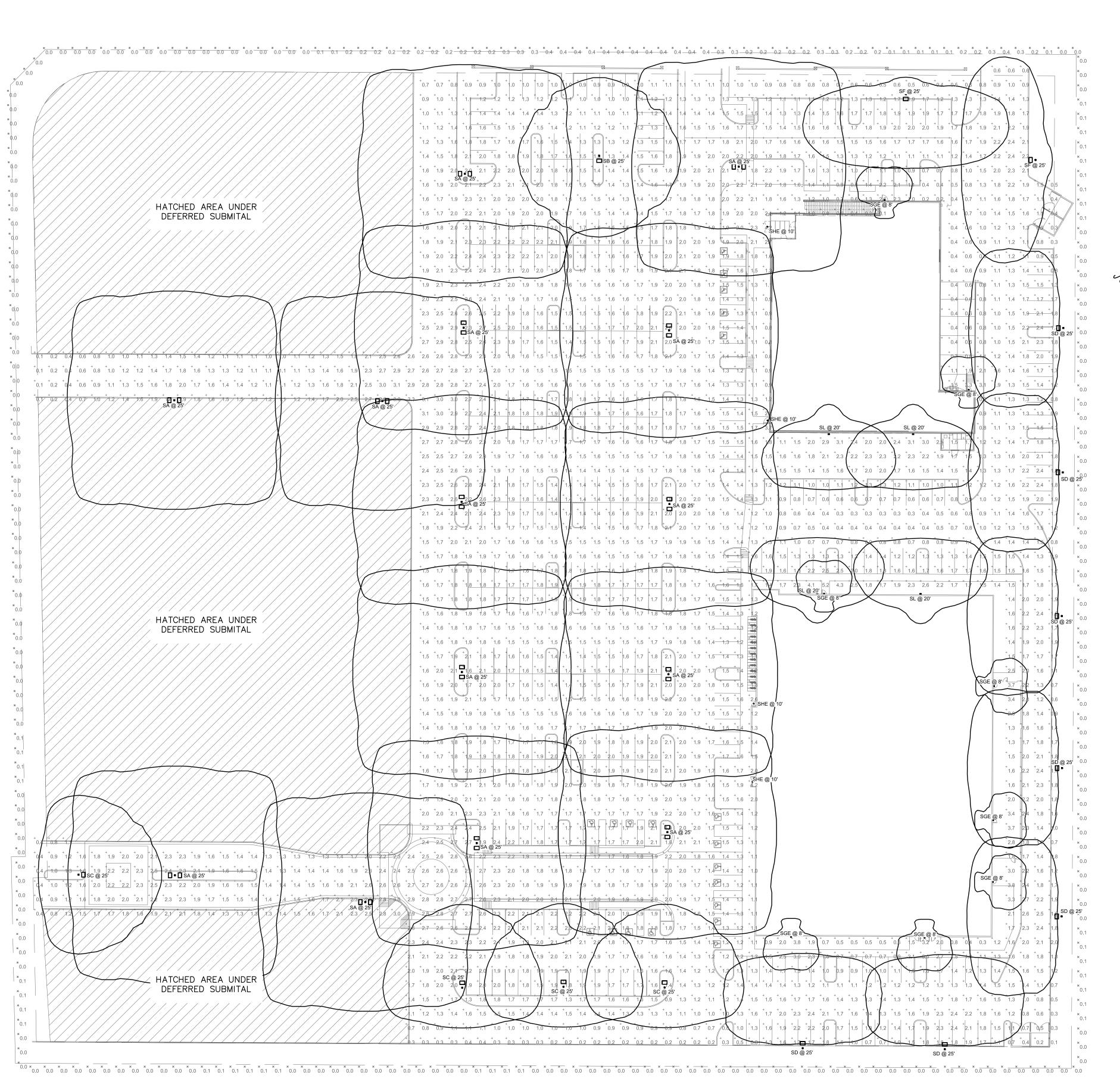
NOTE:
CONTRACTOR SHALL PROVIDE NEW POLE BASES WHERE INDICATED ON PLANS.
LIGHTING FIXTURE POLE DETAILS AND DESCRIPTIONS ARE FOR ELECTRICAL
REFERENCES ONLY. PLEASE REFER TO ARCHITECTURAL SHEETS FOR POLE BASE DETAILS.

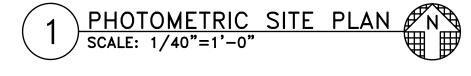
LIGHT POLE AND FIXTURE 'SB', 'SC', 'SD', 'SF'

NOTE:
CONTRACTOR SHALL PROVIDE NEW POLE BASES WHERE INDICATED ON PLANS. LIGHTING FIXTURE POLE DETAILS AND DESCRIPTIONS ARE FOR ELECTRICAL REFERENCES ONLY. PLEASE REFER TO ARCHITECTURAL SHEETS FOR POLE BASE DETAILS.

| Statistics | | | | | | |
|-----------------------------|--------|--------|--------|--------|---------|---------|
| Description | Symbol | Avg | Max | Min | Max/Min | Avg/Min |
| SITE - FC @ GRADE | + | 1.6 fc | 5.2 fc | 0.1 fc | 52.0:1 | 16.0:1 |
| PROPERTY LINE - FC @ 3' AFG | Ж | 0.1 fc | 0.4 fc | 0.0 fc | N/A | N/A |

| Schedule | | | | | | | | | | |
|------------|-------|----------|-------------------|---|--|-------------|--------------------------------------|--------------------|----------------------|---------|
| Symbol | Label | Quantity | Manufacturer | Catalog Number | Description | Lamp | Filename | Lumens Per Lamp | Light Loss Factor | Wattage |
| _ _ | SA | 14 | LITHONIA LIGHTING | (2) DSX0 LED P6 30K 80CRI T5W MVOLT SPA (FINISH) / SSS 22.5' W/2.5' BASE | TWIN-HEAD D-Series Size 0 Area Luminaire P6 Performance Package 3000K CCT 80 CRI Type 5 Wide | LED - 3000K | DSX0_LED_P6_30K_80 CRI_T5W.ies | 15838 | 0.91 | 274 |
| | SB | 1 | LITHONIA LIGHTING | DSX0 LED P6 30K 80CRI T5W MVOLT SPA (FINISH) / SSS 22.5' W/2.5' BASE | D-Series Size 0 Area Luminaire P6 Performance Package 3000K CCT 80 CRI Type 5 Wide | LED - 3000K | DSX0_LED_P6_30K_80 CRI_T5W.ies | 15838 | 0.91 | 137 |
| | SC | 4 | LITHONIA LIGHTING | DSX0 LED P6 30K 80CRI T5W MVOLT SPA HS (FINISH) / SSS 22.5' W/2.5' BASE | D-Series Size 0 Area Luminaire P6 Performance Package 3000K CCT 80 CRI Type 5 Wide Houseside Shield | LED - 3000K | DSX0_LED_P6_30K_80 CRI_T5W_HS.ies | 10758 | 0.91 | 137 |
| | SD | 7 | LITHONIA LIGHTING | DSX0 LED P6 30K 80CRI BLC4 MVOLT SPA (FINISH) / SSS 22.5' W/2.5' BASE | D-Series Size 0 Area Luminaire P6 Performance Package 3000K CCT 80 CRI Type 4 Extreme Backlight Control | LED - 3000K | DSX0_LED_P6_30K_80 CRI_BLC4.ies | 11213 | 0.91 | 137 |
| | SF | 2 | LITHONIA LIGHTING | DSX0 LED P6 30K 80CRI T2M MVOLT SPA HS (FINISH) / SSS 22.5' W/2.5' BASE | D-Series Size 0 Area Luminaire P6 Performance Package 3000K CCT 80 CRI Type 2 Medium Houseside Shield | LED - 3000K | DSX0_LED_P6_30K_80 CRI_T2M_HS.ies | 12802 | 0.91 | 137 |
| | SGE | 8 | LITHONIA LIGHTING | WDGE2 LED P2 30K 80CRI TFTM MVOLT SRM E20WC (FINISH) | WDGE2 LED WITH P2 - PERFORMANCE PACKAGE, 3000K, 80CRI, TYPE FORWARD THROW MEDIUM OPTIC W/EM BATTERY PACK | LED - 3000K | WDGE2_LED_P2_30K_ 80CRI_TFTM.ies | 1934 | 0.91 | 18.9815 |
| \bigcirc | SHE | 4 | DMF LIGHTING | DRDH N JO 100SEM / DRD5S 4 R 10 9 30 EM | 4IN SURFACE MOUNTED DOWNLIGHT W/EM BATTERY PACK | LED - 3000K | DRD5S-4R-10930.ies | 1015 | 0.91 | 11.8 |
| | SL | 4 | LITHONIA LIGHTING | WDGE3 LED P1 80CRI R3 30K MVOLT SRM (FINISH) | WDGE3 LED WITH P1 - PERFORMANCE PACKAGE, 3000K, 80CRI, TYPE 3 OPTIC | LED - 3000K | WDGE3_LED_P1_70CR I_R3_30K.ies | 6933 | 0.91 | 51.1717 |







POWER

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design by: **JG** drawn by: **JG**

checked by: **HK** Project Number: 22713 | Project Manager: HK 7328 E Stetson Dr., Scottsdale, AZ 85251 project #: **22223.50** P: 480.626.7072 | ardebilieng.com



Specifications

0.44 ft² 26.18" (66.5 cm) Length: 14.06" Width: Height H2: Weight:

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

| Ordering Information E | | EXA | MPLE: DSX0 LED P6 40K 70CRI T3M | MVOLT SPA NLT | AIR2 PIRHN DDBX | |
|------------------------|------|--------------------------------|---------------------------------|---------------|-----------------|----------|
| DSX0 LED | | | | | | |
| eries | LEDs | Color temperature ² | Color Rendering | Distribution | Voltage | Mounting |

| D2X0 FED | | | | | | |
|----------|--|--|---|--|--|---|
| Series | LEDs | Color temperature ² | Color Rendering Index ² | | Voltage | Mounting |
| DSX0 LED | Forward optics P1 P5 P2 P6 P3 P7 P4 Rotated optics P101 P121 P111 P131 | (this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K (this section 80CRI only, extended lead times apply) 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K | 70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI 80CRI | AFR Automotive front row T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare³ T4M Type IV medium T4LG Type IV low glare³ TFTM Forward throw medium TCO Right corner cutoff³ RCCO Right corner cutoff³ | MVOLT (120V-277V) ⁴ HVOLT (347V-480V) ^{5,6} XVOLT (277V-480V) ^{7,8} | Shipped included SPA Square pole mounting (#8 drilling, 3.5" min. SQ pole) RPA Round pole mounting (#8 drilling, 3" min. RND pole) SPA5 Square pole mounting (#5 drilling, 3" min. SQ pole) 9 RPA5 Round pole mounting (#5 drilling, 3" min. RND pole) 9 SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole) 9 SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole) 9 WBA Wall bracket 10 |

| Control options | | Other options | Finish (required) |
|---|---|---|---|
| Shipped installed NLTAIR2 PIRHN nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc. 11,12.18.19 PIR High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc. 13, 18, 19 PER NEMA twist-lock receptacle only (controls ordered separate) 14 PERS Five-pin receptacle only (controls ordered separate) 14, 19 | PER7 Seven-pin receptacle only (controls ordered separate) 14, 19 FAO Field adjustable output 15, 19 BL30 Bi-level switched dimming, 30% 16, 19 BL50 Bi-level switched dimming, 50% 16, 19 DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) 17 | Shipped installed HS Houseside shield (black finish standard) ²⁰ Left rotated optics ¹ R90 Right rotated optics ¹ CCE Coastal Construction ²¹ Shipped separately EGS External Glare Shield (reversible, field install required, matches housing finish) BS Bird Spikes (field install required) | DDBXD Dark Bronze DBLXD Black DNAXD Natural Aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white |

LITHONIA LIGHTING COMMERCIAL OUTDOOR

dmflighting.com

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DRD5S & SurfaceFrame Surface Mount LED Downlight

New Construction DRDHNJO Octagonal Junction Box

| Project: | Type: SHE |
|---------------|--------------------|
| Product Code: | Date: |
| | Spec Sheet V-01.10 |



 Thinnest-in-class DRD5S delivers the pure, smooth light and the elegant look of a high-end recessed downlight

 Features multiple ratings to meet the demands of a wide range of situations

 Ultra-low profile allows it to install in as little as 2" of ceiling space when 5/8" drywall is used

| Application | | Aperture | Aperture | | |
|--|---|--------------------|----------------------------------|----------------------------|--|
| New Construction | | 4" Octagonal June | ction Box | | |
| Delivered Lumens | | Color Quality | | | |
| 750 lm (9.0W), 1000 lm (12.0 | W) | 90+ CRI, < 3-step | SDCM | | |
| Color Temperature | | Optics | | | |
| | | | | | |
| 2700K 3000K 3500K | | General | | | |
| Input Voltage | Dimming | Emergency Lighting | | | |
| 120V only (TRIAC/ELV), 120/277V (0-10V) | Optional Emergency LED Driver with integrated Test Switch for lighting up to 90 minutes in event of power failure | | | | |
| Shape | | Finish | | Module Ratings | |
| Round, Square | | White | | UL Closet Rating | |
| Housing Ratings | | | | Compliant (750 lm only | |
| Code compliant for use in appropriate fire-rated assemblies up to a maximum of 2-hours | | | IC (Insulation Contact) Rated | UL Listed for Wet Location | |
| Standards | Guarantee | | Additional Option | ns | |
| JA8 CUL)US | 50,000 hrs | 5 years | Non-Cond | | |



Specifications

1.5"

11.5"

WDGE4 LED Precision Refractive

Depth (D1):

Depth (D2):

(without options)

Height:

Width:

WDGE2 LED Architectural Wall Sconce Precision Refractive Optic



| Catalog Number |
|---|
| Notes |
| Type SG |
| Hit the Tab key or mouse over the page to see all interactive elements. |
| Introduction |

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides

additional energy savings and code compliance. WDGE2 with industry leading precision refractive optics provides great uniform distribution and optical control. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

| Standalone / nLight | -- | 12,000 | 16,000 | 18,000 | 20,000 | 22,000 | 25,000

| | | | | | | | | , | | | |
|-----------|----------------------|------------------|----------------|---------------------|-----|-------|-----------|----------------|--------------|-------|----|
| DGE LE | D Family O | verview | | | | | | | | | |
| Luminaire | | Standard EM. 0°C | Cold EM, -20°C | | | | Approxima | ate Lumens (4) | 000K, 80CRI) | | |
| Luminaire | Optics | Standard EW, V C | Cold EM, -20 C | Sensor | P0 | P1 | P2 | P3 | | P5 | P6 |
| WDGE1 LED | Visual Comfort | 4W | | | 750 | 1,200 | 2,000 | | | | |
| WDGE2 LED | Visual Comfort | 10W | 18W | Standalone / nLight | | 1,200 | 2,000 | 3,000 | 4,500 | 6,000 | |
| WDGE2 LED | Precision Refractive | 10W | 18W | Standalone / nLight | 700 | 1,200 | 2,000 | 3,200 | 4,200 | | |
| WDGE3 LED | Precision Refractive | 15W | 18W | Standalone / nLight | | 7,500 | 8,500 | 10,000 | 12,000 | | |
| | | | | | | | | | | | |

| Series | Package | Color Temperature | CRI | Distribution | Voltage | Mounting | |
|-----------|---|--|--|--|---|--|--|
| WDGE2 LED | P0 ¹ P1 ² P2 ² P3 ² P4 ² | 27K 2700K 30K 3000K 40K 4000K 50K 5000K AMB ³ Amber | 70CRI ⁴ 80CRI LW ³ Limited Wavelength | T1S Type Short T2M Type I Medium T3M Type II Medium T4M Type IV Medium TFTM Forward Throw Medium | MVOLT 347 ⁵ 480 ⁵ | Shipped included SRM Surface mounting bracket ICW Indirect Canopy/Ceiling Washer bracket (dry/ damp locations only) ⁶ | Shipped separately AWS 3/8inch Architectural wall spacer PBBW S urface-mounted back box (top, lef right conduit entry). Use when there is no junction box available. |

| Options | | | | | |
|------------------|--|-----------------------------|---|-------------------------|--|
| E10WH E20WC | Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, 5°C min) Emergency battery backup, Certified in CA Title 20 MAEDBS | Standalone S PIR | ensors/Controls Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching. | DDBXD DBLXD DNAXD | Dark bronze Black Natural aluminum |
| PE ⁷ | (18W, –20°C min) Photocell, Button Type | PIRH | Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching | DWHXD | White |
| DMG ⁸ | 0–10V dimming wires pulled outside fixture (for use with an external control, ordered separately) | PIR1FC3V | Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre- programmed for dusk to dawn operation. | DSSXD DDBTXD | Sandstone Textured dark bronze |
| BCE | Bottom conduit entry for back box (PBBW). Total of 4 entry points. | PIRH1FC3V | il-level (100/35%) motion sensor for 15–30′ mounting heights with photocell pre- programmed for dusk to dawn operation. | DBLBXD DNATXD | Textured black Textured natural aluminu |
| BAA | Buy America(n) Act Compliant | Networked Se | ensors/Controls | DWHGXD | Textured white |
| | | NLTAIR2 PIR NLTAIR2 PIRH | nLightAIR Wireless enabled bi-level motion/ambient sensor for 8-15' mounting heights. nLightAIR Wireless enabled bi-level motion/ambient sensor for 15-30' mounting heights. | DSSTXD | Textured sandstone |

See page 4 for out of box functionality

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WDGE2 LED Rev. 03/01/22



WDGE3 LED Architectural Wall Sconce BAA

Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance. energy savings and code compliance. WDGE3 has been designed to deliver up to 12,000 lumens through a precision refractive lens with wide distribution, perfect for augmenting the lighting from pole mounted luminaires.

| E-constitution | Our and discussion | |
|--------------------|--------------------|--|
| | Overview | |
| | | |

| Luminaire | Canadaud EAA 000 | Cold EM20°C | C | | | Lumens | (4000K) | | |
|-----------|------------------|----------------|---------------------|--------|--------|--------|---------|--------|--------|
| Luminaire | Standard EM, 0°C | Cold EM, -20 C | Sensor | P1 | P2 | P3 | P4 | P5 | P6 |
| WDGE1 LED | 4W | | | 1,200 | 2,000 | | | | |
| WDGE2 LED | 10W | 18W | Standalone / nLight | 1,200 | 2,000 | 3,000 | 4,500 | 6,000 | |
| WDGE3 LED | 15W | 18W | Standalone / nLight | 7,500 | 8,500 | 10,000 | 12,000 | | |
| WDGE4 LED | | | Standalone / nLight | 12,000 | 16,000 | 18,000 | 20,000 | 22,000 | 25,000 |

Ordering Information

Specifications

Depth (D1):

Depth (D2):

(without options)

Width:

Weight:

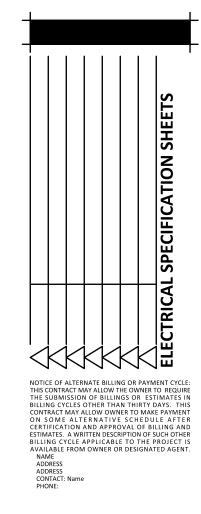
WDG

EXAMPLE: WDGE3 LED P3 40K 70CRI R3 MVOLT SRM DDBXD

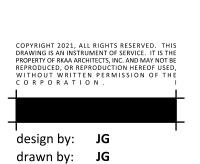
| eries | Package | Color Temperature | CRI | Distribution | Voltage | Mounting | |
|-----------|----------------------|-------------------------------------|----------------|---|---|--|---|
| WDGE3 LED | P1 P2 P3 P4 | 30K 3000K 40K 4000K 50K 5000K | 70CRI 80CRI | R2 Type 2 R3 Type 3 R4 Type 4 RFT Forward Throw | MVOLT 347 ¹ 480 ¹ | Shipped included SRM Surface mounting bracket ICW Indirect Canopy/Ceiling Washer bracket (dry/ damp locations only) ⁴ | Shipped separately AWS 3/8inch Architectural wall spacer PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available. |







ELLIOT RETAIL 3663 E POWER ROAD MESA ARIZONA 85212 SEC OF S POWER ROAD AND E ELLIOT ROAD POWER



CITY

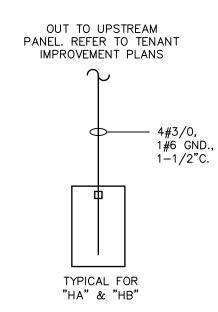




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checked by: **HK**



PARTIAL ONE-LINE DIAGRAM

| F | ROOM REF | ER TO T.I. PL | ANS | | | VOL | TS 208 | Y/12 | 20V : | 3P 4 | ·W | AIC | 10,000 | | | |
|-------------|------------------------------|--------------------------------|--------------------------------|----------|------|----------------------------|--------|--------------|------------------------|------|----------------------------|-------------|----------------|------------------|--------|-------|
| | | RECESSED | | | | | AMPS | • | | | | | IN BKR 200 | | | |
| F | FED FROM UTILITY NOTE NEMA 1 | | | | | NEUTRAL 100% LUGS STANDARD | | | | | | | | | | |
| | СКТ | | | | | KVA LO | AD | СКТ | СКТ | Γ | | | | T k | (VA LO | |
| # | BKR | CIRCUIT DESC | RIPTION | | Α | В | С | # | BKF | | CIRCUIT DESC | RIPTION | | Α | В | С |
| 1 3 | 20/1 20/1 | NORTH CONVE | ONUMENT SIGN ENIENCE RECEPT | ACLE | 1.2 | 0.18 | | 2 4 | 20/ | | #1 EXTERIOR | | | 0.206 | 0.206 | |
| 5 7 9 | 20/1 -/1 -/1 | IRRIGARION C SPACE SPACE | ONTROL | | 0 | 0 | 0.5 | 6 8 10 | 20/ 20/ | | #2 EXTERIOR #3 EXTERIOR | | | 0.206 | 0.48 | 0.206 |
| 11 13 | -/1 | SPACE SPACE | | | 0 | | 0 | 12 | ĺĺ | | #4 EXTERIOR | | | 0.274 | 0.40 | 0.48 |
| 15 | -/1 | SPACE | | | | 0 | İ | 16 | ĺĺ | |] " | | | | 0.274 | |
| | • | | | | | | | | | | TOTAL C | CONNECTED K | VA BY PHASE | 1.89 | 1.14 | 1.19 |
| | | | | | | | | | | | TOTAL CC | NNECTED AM | IPS BY PHASE | 15.8 | 9.49 | 9.9 |
| | | | CONN KVA | CALC KVA | • | | • | | | | | CONN KVA | CALC KVA | • | | |
| L | IGHTING | | 2.33 | 2.91 | (125 | 5%) | | | | | CLES NUOUS | 1.2 0.68 | 1.2 0.68 | (50%>1 (100%) | • | |
| | | | | | | | | | JATC 4LAN | | AD) 3—PHASE L | OAD | 4.79 13.3 A | | | |

| +B | | | N | EW | PAN | ΙEL | - | | | | | | |
|----------------|---|----------|--------------------------|------------------|--------|--------------|------------------|-------------------------|----------------|--------------|--------------------|---------|-------|
| ROOM REFER | TO T.I. PLANS | | VOLTS 208Y/120V 3P 4W AI | | | | | | | C 10,000 | | | |
| MOUNTING RE | CESSED | | | BUS | AMPS | 200 |) | | M | AIN BKR 200 | | | |
| FED FROM UT | ILITY | | | NEU [*] | TRAL 1 | 00% | | | LU | JGS STANDARD | | | |
| NOTE NEMA 1 | | | | | | | | | | | | | |
| KT CKT | | | | KVA LO | | | CKT | | | | ŀ | (VA LOA | |
| 1 1 | RCUIT DESCRIPTION | | Α_ | В | C | # | BKR | CIRCUIT DES | CRIPTION | | Α | В | С |
| 3 20/1 SO | UTH CONVENIENCE RECEPT UTH MONUMENT SIGN | ACLE | 0.18 | 1.2 | | 2 4 | 20/2 | #1 EXTERIOR | | | 0.206 | 0.206 | |
| 7 20/1 IRF | ACE RIGARION CONTROL ACE | | 0.5 | 0 | 0 | 6 8 10 | 20/2 | #2 EXTERIOR | | | 0.822 | 0.343 | 0.822 |
| 1 -/1 SP | ACE ACE | | 0 | | 0 | 12 | ĺĺ | #3 EXTERIOR #4 EXTERIOR | | | 0.343 | 0.343 | 0.343 |
| | ACE | | | 0 | | 16 | | # 1 EXTENTION | LIGITIII | | 0.010 | 0.343 | |
| | | | | | | | | TOTAL | CONNECTED I | KVA BY PHASE | 2.05 | 2.09 | 1.16 |
| | | | | | | | - | TOTAL CO | ONNECTED A | MPS BY PHASE | 17.1 | 17.4 | 9.97 |
| | CONN KVA | CALC KVA | | | | | | | CONN KVA | CALC KVA | | | |
| LIGHTING | 3.43 | 4.28 | (125 | %) | | | ECEPTA ONCONT | CLES INUOUS | 1.2 0.68 | 1.2 0.68 | (50%> ² | • | |
| | | | | | | OTAL LO | AD 3-PHASE | LOAD | 6.16 17.1 A | | | | |

| FAULT CURRENT SCHEDULE | | | | | | | | | | | | | |
|--|--------|--------|------|--------|--------|-------|------|-------|---------------|--|--------|--------|----------|
| DEVICE FAULT AIC L-N VOLTS UTILITY FED FROM FEEDER | | | | | | | | | | | | | DIRECTLY |
| | | RATING | | FAULT | DEVICE | FAULT | SIZE | R | MOTOR LOAD | | | | |
| | | | | | | | | | | | | | FAULT |
| НА | 10,000 | 10,000 | 120V | 10,000 | | | #3/0 | 0.042 | 0.077 | | 0.0004 | 0.0008 | |
| НВ | 10,000 | 10,000 | 120V | 10,000 | | | #3/0 | 0.042 | 0.077 | | 0.0004 | 0.0008 | |

ONE-LINE GENERAL NOTES

- A. SWITCHBOARD COMPONENTS, INCLUDING OVERCURRENT PROTECTIVE DEVICES SHALL BE FULLY RATED FOR THE AVAILABLE FAULT CURRENT SHOWN.
- B. PROVIDE ARC FLASH AND SHOCK HAZARD WARNING IDENTIFICATION PER NEC ARTICLE 110.16
- C. "NO DESIGN CHANGES MAY BE MADE TO THE SYSTEM WITHOUT THE PRIOR APPROVAL OF THE DESIGN ENGINEER AND THE ELECTRICAL INSPECTOR."
- D. THE FEEDER LENGTHS SHOWN IN THE INPUT DATA IS FOR CALCULATIONS ONLY. IT IS NOT THE INTENT TO USE THESE ENTERED LENGTHS FOR USAGE OF ACTUAL FIELD FEEDER LENGTH MEASUREMENTS.
- E. PER NEC 240.2 CURRENT LIMITING OVERCURRENT A DEVICE THAT, WHEN INTERRUPTING CURRENTS IN ITS CURRENT-LIMITING RANGE, REDUCES THE CURRENT FLOWING IN THE FAULTED CIRCUIT TO A MAGNITUDE SUBSTANTIALLY LESS THAN THAT OBTAINABLE IN THE SAME CIRCUIT IF THE DEVICE WERE REPLACED WITH A SOLID CONDUCTOR HAVING COMPARABLE IMPEDANCE.

PANEL SCHEDULES GENERAL NOTES

- A. A.I.C. RATING SHOWN ON PANEL SCHEDULES ARE THE MINIMUM RATING FOR NEW AND REPLACEMENT OVERCURRENT PROTECTIVE DEVICES. EACH DEVICE SHALL BE FULLY RATED AT AFC AS SHOWN ON ONE-LINE DIAGRAM.
- B. ALL PANEL BOARDS SHALL HAVE A TYPE WRITTEN DIRECTORY IDENTIFYING EACH NUMBERED CIRCUIT PLACED IN A DIRECTORY HOLDER INSIDE THE DOOR.
- C. THE CONTRACTOR SHALL PERMANENTLY MARK WITH PERMANENT MARKER THE CIRCUIT IDENTIFICATIONS ON THE COVERPLATES OF RECEPTACLES, EQUIPMENT, AND LIGHTING JUNCTION BOXES. (STICK ON LABELS NOT ACCEPTABLE)
- D. PER NEC 210.4(B) ALL MULTIWIRE BRANCH CIRCUITS ARE TO BE PROVIDED WITH A DEVICE THAT WILL DISCONNECT POWER TO ALL UNGROUNDED CONDUCTORS SIMULTANEOUSLY AT THE POINT OF ORIGIN.
- E. ALL LIFE SAFETY CIRCUITS SHALL REQUIRE A LOCK ON DEVICE. FIRE ALARM CIRCUITS SHALL HAVE RED IDENTIFICATION AND BE IDENTIFIED AS FIRE ALARM CIRCUIT.
- F. PER NEC 408.4(A) EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO ITS CLEAR, EVIDENT AND SPECIFIC PURPOSE OR USE.
- G. PER NEC 700.12(F)2 INSTALLATION OF UNIT EQUIPMENT, EMERGENCY LIGHTS, EXIT SIGNS & OTHER UNIT EQUIPMENT SHALL BE CLEARLY IDENTIFIED WITHIN & AT THE DISTRIBUTION PANEL.







PANELBOARD SYMBOLS

CONTROLLED BY TIME CLOCK/PHOTOCELL

NOTE: ALL SYMBOLS MAY NOT APPLY TO THIS PROJECT

ABBREVIATIONS

SES SERVICE ENTRANCE RATED

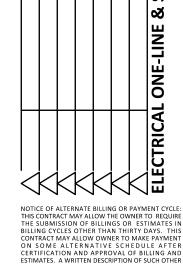
S.U.S.E. SUITABLE FOR USE AS SERVICE EQUIPMENT (FOR SERVICES ON THE LOAD SIDE OF THE MAIN SERVICE ENTRANCE DISCONNECT PER N.E.C 230.66)

SCCR SHORT CIRCUIT CURRENT RATING

AVAILABLE SHORT CIRCUIT CURRENT IN AMPERES

VOLTAGE BROD GOLIERULE

| | VO | VOLTAGE DROP SCHEDULE | | | | | | | | | | | | | |
|--------|--------------|-----------------------|------------------|---------------|-------|--|--|--|--|--|--|--|--|--|--|
| DEVICE | FEEDEI | ₹ | BRANCH CIRCL | TOTAL VOLTAGE | | | | | | | | | | | |
| | VOLTAGE DROP | WIRE SIZE | MAX VOLTAGE DROP | WIRE SIZE | DROP | | | | | | | | | | |
| НА | 0% | #3/0 | 2.6% (CKT 1) | #4 | 2.6% | | | | | | | | | | |
| НВ | 0% | #3/0 | 3.46% (CKT 3) | #4 | 3.46% | | | | | | | | | | |



NOTICE OF ALTERNATE BILLING OR PAYMENT CYCLE:
THIS CONTRACT MAY ALLOW THE OWNER TO REQUIRE
THE SUBMISSION OF BILLINGS OR ESTIMATES IN
BILLING CYCLES OTHER THAN THIRTY DAYS. THIS
CONTRACT MAY ALLOW OWNER TO MAKE PAYMENT
ON SOME ALTERNATIVE SCHEDULE AFTER
CERTIFICATION AND APPROVAL OF BILLING AND
ESTIMATES. A WRITTEN DESCRIPTION OF SUCH OTHER
BILLING CYCLE APPLICABLE TO THE PROJECT IS
AVAILABLE FROM OWNER OR DESIGNATED AGENT.
NAME
ADDRESS
ADDRESS
CONTRACT: Name
PHONE:

POWER

1ST CITY REVIEW 10/16/2023



design by: **JG** drawn by: **JG** checked by: **HK**



ARDEBILI Project Number: 22713 | Project Manager: HK 7328 E Stetson Dr., Scottsdale, AZ 85251 P: 480.626.7072 | ardebilieng.com

project #: **22223.50**