

# CIVIC CENTER PARK

## SITE ELECTRICAL

### MARICOPA, ARIZONA

#### GENERAL ELECTRICAL NOTES

- ELECTRICAL WORK SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE (LATEST EDITION), FEDERAL, STATE AND LOCAL JURISDICTION CODES.
- ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE, FINISHED AND SAFE MANNER, ACCORDING TO THE LATEST PUBLISHED NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION STANDARDS OF INSTALLATION, UNDER COMPETENT SUPERVISION.
- VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND ALL OTHER FACTORS WHICH MAY AFFECT THE EXECUTION OF THIS WORK. INCLUDE ALL RELATED COSTS IN THE INITIAL BID PROPOSAL.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF ALL EXISTING UTILITIES AND AVOIDING DAMAGE TO SAME. CONTRACTOR TO CALL 811 FOR BLUE STAKE. FOR ALL MUNICIPAL OR PRIVATELY OWNED UTILITIES EXISTING WITHIN LIMITS OF WORK OF PROJECT, CONTRACTOR TO PRIVATELY LOCATE UTILITIES. IRRIGATION LINES LESS THAN 2" WILL NOT TYPICALLY BE MARKED AND CAUTION SHOULD BE USED TO AVOID DAMAGE. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ALL UTILITIES CAUSED AS A RESULT OF CONTRACT WORK, ALL DAMAGES TO BE REPAIRED IN KIND.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING WALKS, WALLS, DRIVES, CURBS, ETC. DAMAGES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
- PROPER PROTECTION OF THE CONSTRUCTION AREA FOR SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COVER ALL TRENCHES AT THE END OF EACH WORK DAY. BARRICADES SHALL BE INSTALLED AS DIRECTED BY THE OWNER OR THE PROJECT INSPECTOR. THE SITE AND ALL WORK SHALL CONFORM TO OSHA REQUIREMENTS.
- ALL EXISTING LANDSCAPE, HARDSCAPE AND SPRINKLER SYSTEMS DAMAGED OR DISTURBED DURING THE CONSTRUCTION OF THIS PROJECT SHALL BE REPLACED IN KIND.
- CONTRACTOR SHALL PAY FOR PERMITS AND INSPECTIONS AS MAY BE REQUIRED AND PROVIDE A CERTIFICATE OF INSPECTION TO THE OWNER.
- PROTECT ALL MATERIAL AND EQUIPMENT INSTALLED AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS OR ANY OTHER CAUSES. EQUIPMENT FOUND DAMAGED OR IN OTHER THAN NEW CONDITION WILL BE REJECTED AS DEFECTIVE. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, AND LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK.
- LEAVE THE SITE CLEAN, REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION.
- ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC, BURIED 24" MINIMUM BELOW FINISHED GRADE, UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS OR IN DETAILS.
- PROVIDE EMT INDOOR AND GRS OUTDOOR FOR ABOVE GROUND CONDUIT. WHERE METALLIC CONDUITS COME IN CONTACT WITH DIRT, THEY SHALL BE HALF LAP WRAPPED WITH SCOTCH 50 TAPE TO 12" AFG. FITTINGS SHALL BE STEEL, THREADED TYPE WITH INSULATED THROATS. SECURELY ATTACH ALL SURFACE MOUNTED CONDUIT EVERY 10 FEET AND WITHIN 3 FEET OF EACH JUNCTION BOX, PER NEC ARTICLE 344.30.
- MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS OR IN DETAILS.
- ALL FEEDERS AND BRANCH CIRCUIT WIRE SHALL BE COPPER TYPE XHHW (75 DEGREE C) FOR BELOW GRADE INSTALLATIONS (AND CONDUIT RISERS) AND THHN/THWN (75 DEGREE C) FOR ABOVE GRADE INSTALLATIONS. MINIMUM SIZE SHALL BE #12 AWG, UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS OR IN DETAILS. ALL WIRING SHALL BE IN CONDUIT. FOR NEW WIRING IN COMMERCIAL APPLICATIONS, THE USE OF TYPES NM, NMC, NMS (ROMEX) CABLES IS NOT PERMITTED. ALL CONDUCTORS SHALL BE NEW UNLESS NOTED OTHERWISE IN PLANS.
- A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR (BOND) SHALL BE INSTALLED WITHIN EACH RACEWAY, INCLUDING WITHIN EMT CONDUIT. EQUIPMENT GROUNDING CONDUCTOR SHALL BE SIZED PER NEC TABLE 250.122.
- WHEN A PANEL IS SUPPLIED BY A FEEDER OR BRANCH CIRCUIT, ANY INSTALLED GROUNDING CONDUCTOR SHALL NOT BE CONNECTED TO THE EQUIPMENT GROUNDING CONDUCTOR (GEC) OR TO THE GROUNDING ELECTRODE(S) PER NEC ARTICLE 250.32(B).
- BOND ALL ENCLOSURES PER NEC ARTICLE 250.96.
- CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, ETC. NECESSARY FOR A COMPLETE AND WORKABLE ELECTRICAL SYSTEM WHETHER OR NOT THESE ITEMS ARE SPECIFICALLY NOTED ON THESE DRAWINGS. INCIDENTAL ITEMS NOT INDICATED ON THE DRAWINGS, NOR MENTIONED IN SPECIFICATIONS THAT CAN BE LEGITIMATELY AND REASONABLY INFERRED TO BELONG TO THE WORK DESCRIBED OR BE NECESSARY IN GOOD PRACTICE TO PROVIDE A COMPLETE SYSTEM, SHALL BE FURNISHED AND INSTALLED AS THOUGH ITEMIZED HERE IN EVERY DETAIL.
- CONTRACTOR IS RESPONSIBLE FOR AND SHALL PROVIDE ALL LABOR, MATERIAL, TRENCHING, CONDUIT, TRANSFORMER PAD AND OTHER REQUIRED EQUIPMENT PER UTILITY COMPANY PLANS AND SPECIFICATIONS NECESSARY FOR A COMPLETE UNDERGROUND CONDUIT SYSTEM FROM THE UTILITY POINT OF SERVICE TO THE UTILITY CO. TRANSFORMER AND FROM THE UTILITY CO. TRANSFORMER TO THE ELECTRICAL SERVICE ENTRANCE SECTION.
- ALL TRENCHING, CONDUITS, ETC. SHALL BE ROUTED AND INSTALLED IN SUCH A MANNER THAT WILL NOT DAMAGE EXISTING FACILITIES. SHOULD DAMAGE OCCUR, IT WILL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR DAMAGE TO THE SATISFACTION OF THE OWNER OR INSPECTOR.
- ALL CONDUIT RUNS SHOWN ON THIS PLAN ARE SCHEMATIC IN NATURE. THE CONTRACTOR SHALL MAKE SURE THAT ALL CONDUIT, ETC. FALLS WITHIN THE CONSTRUCTION AREA/RIGHT OF WAY. (THIS INCLUDES MAINTAINING ALL REQUIRED CLEARANCES.)
- WHEN CROSSING PATHWAYS OR SIDEWALKS, CONTRACTOR SHALL BORE UNDER EXISTING CONCRETE WALKS AND SAWCUT ASPHALT WALKS. ASPHALT WALKS SHALL BE REPLACED IN KIND.
- CONTRACTOR SHALL GUARANTEE WORK INSTALLED UNDER THE CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS. USUAL WEAR EXCEPTED, AND SHOULD ANY SUCH DEFECTS DEVELOP WITHIN A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF THE PROJECT BY THE OWNER, THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DEFECTIVE ITEMS AND DAMAGE RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE WHATSOEVER TO THE OWNER.
- CONTRACTOR SHALL IDENTIFY SERVICE ENTRANCE SECTION MAIN SERVICE DISCONNECT(S) WITH 3/32-INCH THICK LAMINATED PHENOLIC TYPE NAMEPLATES WITH 1/4-INCH MINIMUM HEIGHT LETTERS. NAMEPLATE TO BE BLACK MATTE FINISH SURFACE WITH WHITE LETTER ENGRAVING. ATTACH NAMEPLATE TO THE OUTSIDE PANEL FACE WITH TWO STAINLESS STEEL SELF-TAPPING SCREWS. NAMEPLATE SHALL READ "SERVICE DISCONNECT" PER NEC ARTICLE 230.70(B).
- ALL CIRCUITS SHALL BE LEGIBLY IDENTIFIED AT THE PANEL, JUNCTION BOXES AND AT ALL EQUIPMENT IN A PERMANENT MANNER (I.E. ETCHED PLATES, CONDUCTOR TAG, PERMANENT MARKER, ETC.). THE LABELING SHALL INCLUDE PANEL CIRCUIT NUMBER, "TO" AND "FROM" IDENTIFICATION, AND MARKED "SPARE" WHERE APPLICABLE.
- CONTRACTOR SHALL TEST ELECTRICAL SYSTEM FOR SHORT CIRCUITS AND MEGGER TEST FEEDER CIRCUIT WIRING. PROVIDE CERTIFIED TEST RESULTS FOR MEGGER TEST TO OWNER UPON COMPLETION OF PROJECT.
- ALL CONDUIT SHOWN SHALL BE CONCEALED WHEN POSSIBLE. WHEN NOT POSSIBLE, CONDUIT MAY BE SURFACE MOUNTED WITH PERMISSION OF THE OWNER OR OWNER'S REPRESENTATIVE.
- CONTRACTOR SHALL COORDINATE ALL EQUIPMENT CONNECTIONS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN. PROVIDE ADDITIONAL FUSED DISCONNECT SWITCHES AND CONTROLS IF OVERCURRENT PROTECTION OR CONTROLS IS NOT INTEGRAL WITH UNITS.
- ALL EQUIPMENT SHALL BE FUSE SIZED PER MANUFACTURES RECOMMENDATIONS AND BEAR U.L. APPROVAL. COORDINATE WITH ENGINEER/OWNER.
- ELECTRICAL DEVICES, DISCONNECT SWITCHES, ETC., SHALL BE SUPPORTED INDEPENDENT OF AND ISOLATED FROM EQUIPMENT VIBRATIONS.
- FULL LOAD AMPS (FLA) SIZES, AS NOTED IN THESE DRAWINGS, ARE BASED ON SPECIFIED EQUIPMENT DATA. CONTRACTOR SHALL VERIFY NAMEPLATE FLA OF EQUIPMENT SUPPLIED AND COORDINATE ACCORDINGLY PER EQUIPMENT SUPPLIERS RECOMMENDATIONS.
- ALL OUTDOOR ELECTRICAL EQUIPMENT SHALL BE NEMA-3R OR NEMA-4 ENCLOSURES.
- CONDUITS OR RACEWAYS ROUTED FROM INDOORS TO OUTDOORS OR AS DESCRIBED IN NEC 300.7(A), SHALL BE SEALED WITH A PLIABLE SEALING COMPOUND AT A CONDUIT BODY OR AT A JUNCTION BOX BEFORE THE CONDUIT ENTERS THE COLDER ENVIRONMENT.
- CONDUITS OR RACEWAYS INSTALLED IN AREAS WHERE ELEVATION CHANGES MAY CAUSE WATER OR MOISTURE TO ENTER THE ELECTRICAL EQUIPMENT THROUGH THE CONDUIT SHALL BE SEALED WITH A HERMETIC CONDUIT SEAL AT BOTH ENDS OF THE CONDUIT OR RACEWAY.
- INSTALL FIRE SEALS IN ALL CONDUITS PENETRATING THE FIRE WALL TO MAINTAIN THE FIRE RESISTANCE RATING OF THE WALL, AS REQUIRED BY NEC 300.21.
- ALL POLE LIGHTS SHALL BE PROVIDED WITH A TWO POLE FUSE HOLDER BUSSMANN #HEX OR A SINGLE POLE FUSE HOLDER BUSSMANN #HEB OR EQUAL FOR INLINE FUSING, PROVIDE 5 AMP FUSING IN FUSEHOLDER.
- PRIOR TO POURING THE POLE BASES OR COVERING ANY ELECTRICAL CONDUITS, CONTACT THE INSPECTION DEPARTMENT 24 HOURS IN ADVANCE FOR APPROVAL.
- MATERIALS SHALL BE NEW AND OF THE BEST QUALITY WITH MANUFACTURER'S NAME PRINTED THEREON. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, UNDERWRITER'S LABORATORY OR OTHER APPLICABLE STANDARDS AND RATED FOR HEAVY DUTY SERVICE.
- ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE. ALL 15 AND 20 AMP, 125 AND 250 VOLT, NONLOCKING RECEPTACLES INSTALLED OUTDOORS SHALL BE LISTED WEATHER-RESISTANT TYPE. RECEPTACLE COVERS IN WET LOCATIONS SHALL BE EXTRA DUTY PER NEC 406.9(B). ALL WEATHERPROOF WHILE IN-USE RECEPTACLE COVERS SHALL BE METAL.
- A MINIMUM OF (1) 20A 125V RECEPTACLE SHALL BE INSTALLED NOT LESS THAN 6 FEET AND NOT MORE THAN 20 FEET FROM THE INSIDE WALL OF EACH PERMANENTLY INSTALLED POOL, PER NEC 680.22(A)(1).
- SELECTION OF MATERIALS SHALL BE IN STRICT ACCORDANCE WITH THE DRAWINGS AND/OR SPECIFICATIONS. THE USE OF MANUFACTURER'S NAME, MODEL, AND NUMBER IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS AND BID PRICE. CONTRACTOR SHALL SUBMIT TO THE OWNER OR OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL (PRIOR TO ORDERING MATERIALS) COPIES OF EQUIPMENT SHOP DRAWINGS AS FOLLOWS: LIGHT FIXTURES, POLES, POLE BASES, SERVICE ENTRANCE SECTION, ELECTRICAL EQUIPMENT, DISCONNECT SWITCHES, TIME CLOCKS AND OTHER CONTROLS, LIGHTING CONTACTORS AND PULL BOXES. AT THE TIME OF EACH SUBMITTAL, THE CONTRACTOR SHALL DEFINE AND DELINEATE IN WRITING ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS. THE REVIEW WILL BE ONLY FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE WORK AND FOR COMPLIANCE WITH THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS. THE REVIEW OF A SPECIFIED ITEM, AS SUCH, WILL NOT INDICATE REVIEW OF THE ASSEMBLY IN WHICH THE ITEM FUNCTIONS. REVIEW BY THE OWNER OR OWNER'S REPRESENTATIVE WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS IN THE SUBMITTALS NOR FROM HIS RESPONSIBILITY FOR COMPLYING WITH THE CONTRACT DOCUMENTS.
- THE SUBMITTALS SHALL BE NEATLY GROUPED AND ORGANIZED. PERTINENT INFORMATION SHALL BE HIGHLIGHTED, AND THE SPECIFIC PRODUCT SHALL BE IDENTIFIED. ALL SUBMITTALS SHALL BE COMPLETE, AND PRESENTED IN ONE PACKAGE. THE SUBMITTAL SHALL INCLUDE A COMPLETE LIST OF THE EQUIPMENT AND MATERIALS, INCLUDING THE MANUFACTURER'S NAME, PRODUCT SPECIFICATION, DESCRIPTIVE DATA, TECHNICAL LITERATURE, PERFORMANCE CHARTS, CATALOG CUTS, INSTALLATION INSTRUCTIONS, AND SPARE PART RECOMMENDATIONS FOR EACH DIFFERENT ITEM OF THE EQUIPMENT SPECIFIED.
- ALL SPORTS LIGHTING FIXTURES SHALL BE EQUIPPED WITH AN EXTERNAL GLARE SHIELD.
- ALL FIXTURES AND CROSS ARMS SHALL BE MANUFACTURED AND FACTORY AIMED BY A SINGLE MANUFACTURER.



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SITE ELECTRICAL COVER SHEET

#	DATE	DESCRIPTION
REVISIONS		



DESIGNED BY: CDC	DRAWN BY: CDC
CHECKED BY: CMT	APPROVED BY: CMT
SCALE	DATE: 2/10/23
DRAWING NO:	SHEET NO:

SE1.1 OF 8



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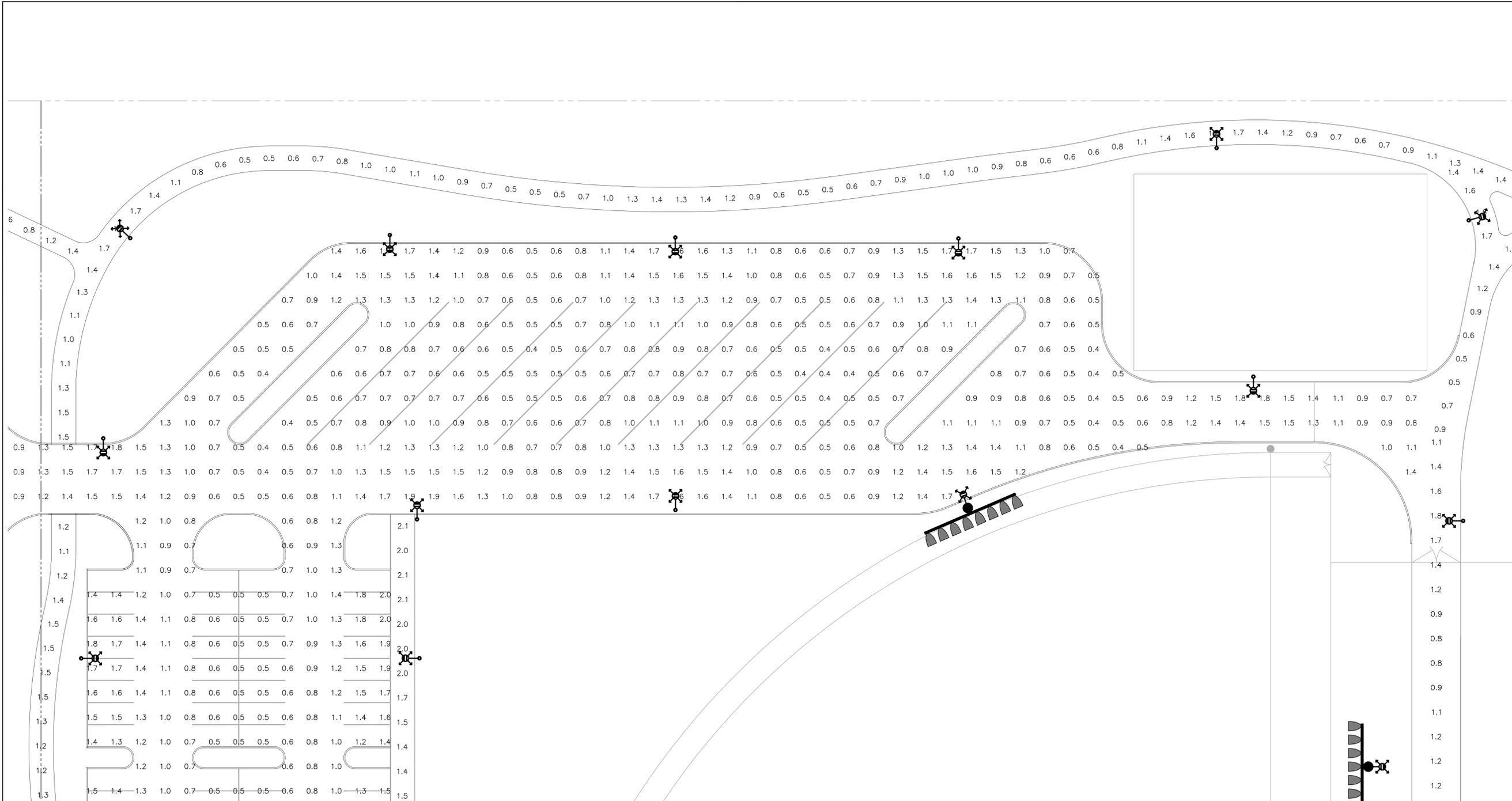
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MATCHLINE 'A' SEE SHEET SE2.2

CITY OF MARICOPA  
CIVIC CENTER PARK  
PHOTOMETRIC ANALYSIS



MATCHLINE 'B' SEE SHEET SE2.3

**PHOTOMETRIC RESULTS**

Parking Lot  
1284 points at z=0, sp 10ft by 10ft  
HORIZONTAL FOOTCANDLES  
Average 1.0  
Maximum 2.1  
Minimum 0.4  
Avg:Min 2.46  
Max:Min 4.25  
Coef Var 0.42  
UnifGrad 1.60

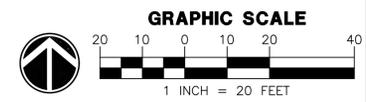
Pathways  
571 points  
HORIZONTAL FOOTCANDLES  
Average 1.2  
Maximum 2.1  
Minimum 0.5  
Avg:Min 2.43  
Max:Min 4.20  
Coef Var 0.34

Common Baseball Area  
529 points at z=0, sp 10ft by 10ft  
HORIZONTAL FOOTCANDLES  
Average 1.0  
Maximum 1.9  
Minimum 0.2  
Avg:Min 4.92  
Max:Min 9.50  
Coef Var 0.51  
UnifGrad 2.00

**PHOTOMETRIC LEGEND**

Parking Lot Light  
candela file 'EMM-E04-LED-E1-5WQ.ies'  
84 lamp(s) per luminaire, photometry is absolute  
Light Loss Factor = 0.910, watts per luminaire = 97  
mounting height= 20 ft  
number locations= 65, number luminaires= 65  
kw all locations= 6.3

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#	DATE	DESCRIPTION
REVISIONS		

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CITY OF MARICOPA  
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PHOTOMETRIC ANALYSIS

MATCHLINE 'A' SEE SHEET SE2.1

MATCHLINE 'C' SEE SHEET SE2.4

**PHOTOMETRIC RESULTS**

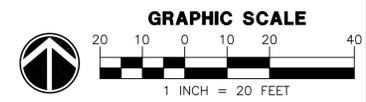
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HORIZONTAL FOOTCANDLES  
Average 1.0  
Maximum 2.1  
Minimum 0.4  
Avg:Min 2.46  
Max:Min 4.20  
Coef Var 0.42  
UnifGrad 1.60

Pathways  
571 points  
HORIZONTAL FOOTCANDLES  
Average 1.2  
Maximum 2.1  
Minimum 0.5  
Avg:Min 2.45  
Max:Min 4.20  
Coef Var 0.34

Common Baseball Area  
529 points at z=0, sp 10ft by 10ft  
HORIZONTAL FOOTCANDLES  
Average 1.0  
Maximum 1.9  
Minimum 0.2  
Avg:Min 4.93  
Max:Min 9.50  
Coef Var 0.51  
UnifGrad 2.00

**PHOTOMETRIC LEGEND**

Parking Lot Light  
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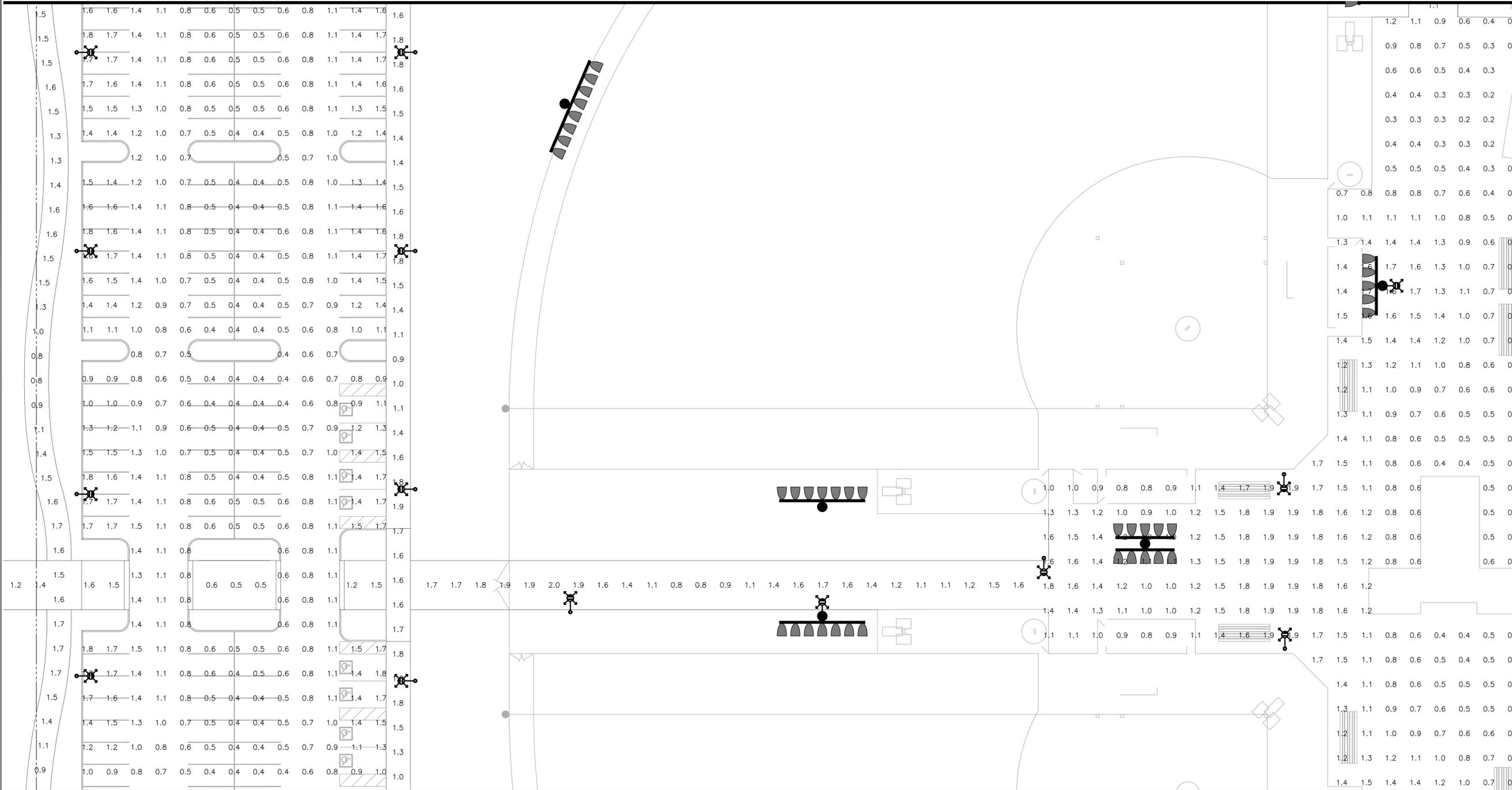


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MATCHLINE 'B' SEE SHEET SE2.1



MATCHLINE 'E' SEE SHEET SE2.5

**PHOTOMETRIC RESULTS**

Parking Lot  
1284 points at z=0, sp 10ft by 10ft  
HORIZONTAL FOOTCANDLES  
Average 1.0  
Maximum 2.1  
Minimum 0.4  
Avg:Min 5.2:0.6  
Max:Min 5.2:0.6  
Coef Var 0.42  
UnifGrad 1.60

Pathways  
571 points  
HORIZONTAL FOOTCANDLES  
Average 1.2  
Maximum 2.1  
Minimum 0.5  
Avg:Min 4.9:0.7  
Max:Min 4.9:0.7  
Coef Var 0.34

Common Baseball Area  
529 points at z=0, sp 10ft by 10ft  
HORIZONTAL FOOTCANDLES  
Average 1.0  
Maximum 1.9  
Minimum 0.2  
Avg:Min 4.9:0.7  
Max:Min 4.9:0.7  
Coef Var 0.51  
UnifGrad 2.00

**PHOTOMETRIC LEGEND**

 Parking Lot Light  
candela file 'EMM-E04-LED-E1-5WQ.ies'  
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Light Loss Factor = 0.910, watts per luminaire = 97  
mounting height= 20 ft  
number locations= 65, number luminaires= 65  
kw all locations= 6.3



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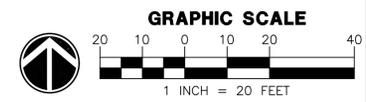
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PHOTOMETRIC ANALYSIS

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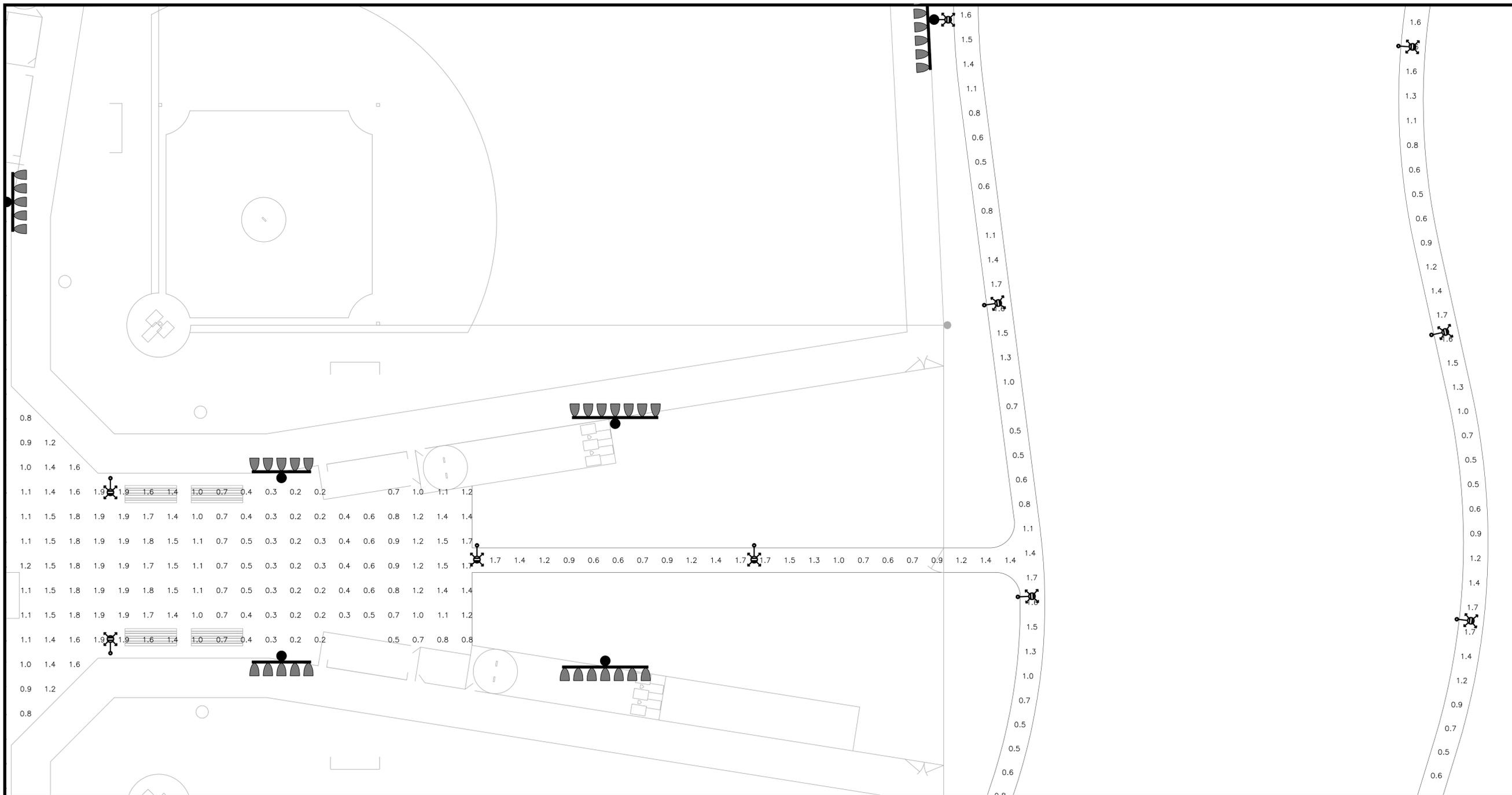
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before you begin excavation.  
**ARIZONA 811**  
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Dial 8-1-1 or 1-800-STAKE-IT (782-5348)  
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MATCHLINE 'D' SEE SHEET SE2.3



**PHOTOMETRIC RESULTS**

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HORIZONTAL FOOTCANDLES  
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Minimum 0.4  
Avg:Min 2.46  
Max:Min 5.25  
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UnifGrad 1.60

Pathways  
571 points  
HORIZONTAL FOOTCANDLES  
Average 1.2  
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Minimum 0.5  
Avg:Min 2.43  
Max:Min 4.20  
Coef Var 0.34

Common Baseball Area  
529 points at z=0, sp 10ft by 10ft  
HORIZONTAL FOOTCANDLES  
Average 1.0  
Maximum 1.9  
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 Parking Lot Light  
candela file 'EMM-E04-LED-E1-5WQ.ies'  
84 lamp(s) per luminaire, photometry is absolute  
Light Loss Factor = 0.910, watts per luminaire = 97  
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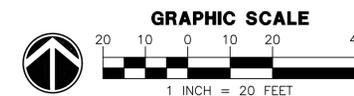
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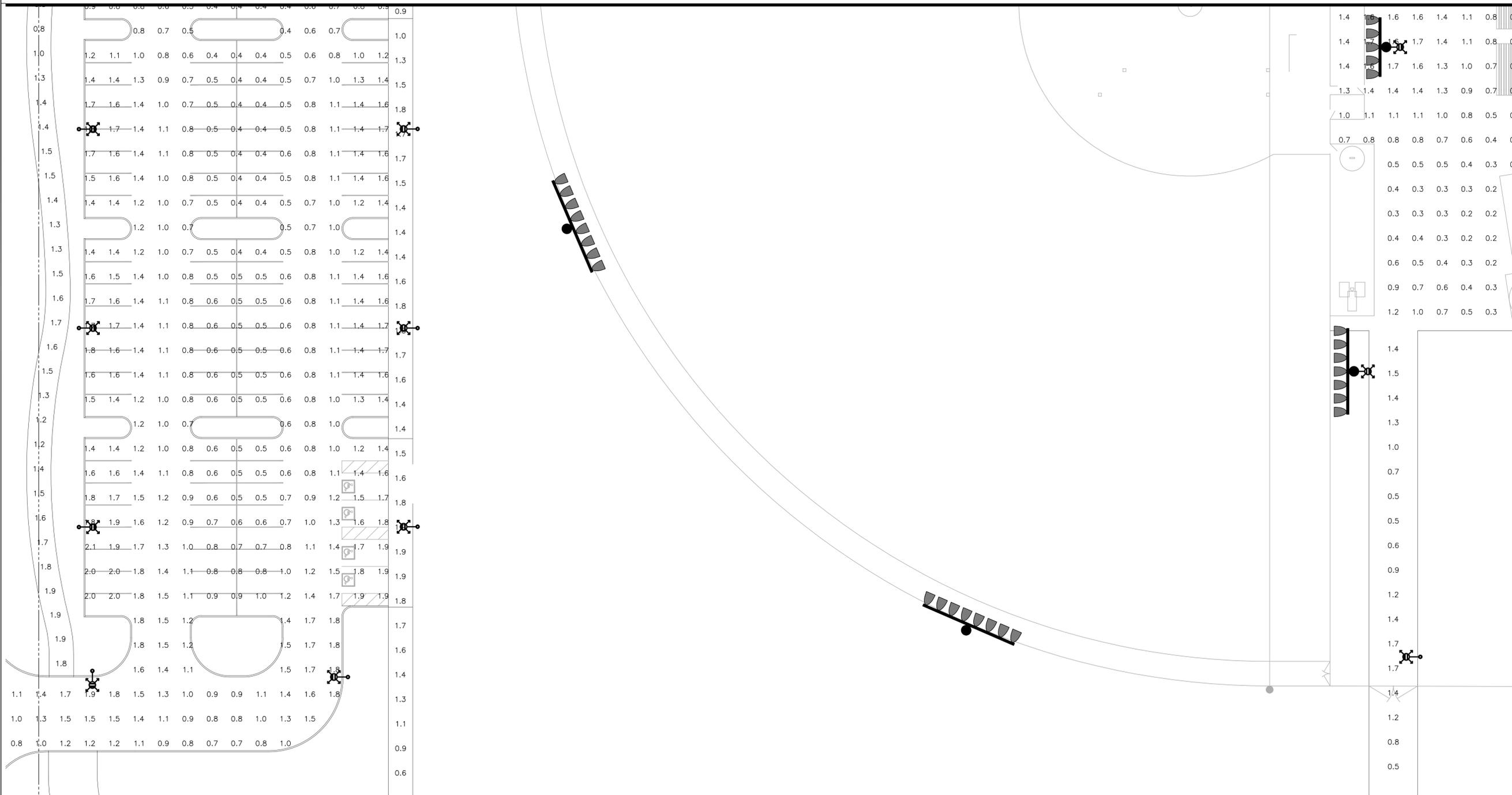


CITY OF MARICOPA  
CIVIC CENTER PARK  
PHOTOMETRIC ANALYSIS

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**PHOTOMETRIC RESULTS**

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number locations= 65, number luminaires= 65  
kw all locations= 6.3

MATCHLINE 'G' SEE SHEET SE2.6



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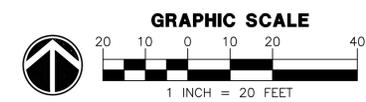
CITY OF MARICOPA  
CIVIC CENTER PARK

PHOTOMETRIC ANALYSIS

H:\2022\22718-Maricopa Civic Center Park\22718-SE.dwg 2023-10-10 12:52:56 PM B-M/CTB

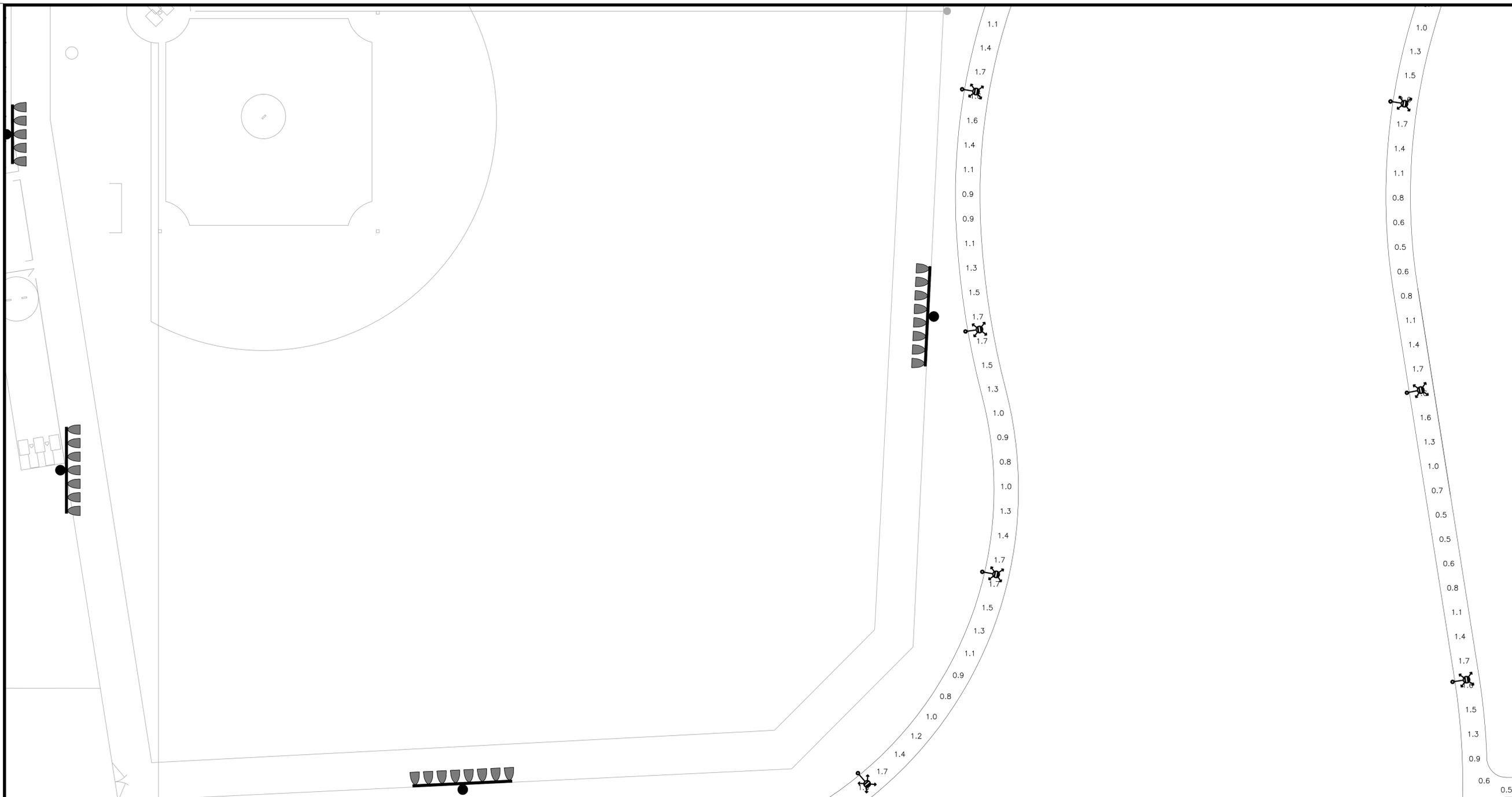
COLTON CLIFF

#	DATE	DESCRIPTION
REVISIONS		



DESIGNED BY: CDC	DRAWN BY: CDC
CHECKED BY: CMT	APPROVED BY: CMT
SCALE:	DATE: 2/10/23
DRAWING NO: SE2.5	SHEET NO: OF 8

MATCHLINE 'G' SEE SHEET SE2.5



**PHOTOMETRIC RESULTS**

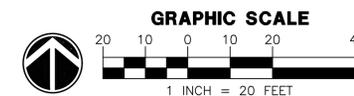
Parking Lot  
1284 points at z=0, sp 10ft by 10ft  
HORIZONTAL FOOTCANDLES  
Average 1.0  
Maximum 2.1  
Minimum 0.4  
Avg:Min 2.46  
Max:Min 5.25  
Coef Var 0.42  
UnifGrad 1.60

Pathways  
571 points  
HORIZONTAL FOOTCANDLES  
Average 1.2  
Maximum 2.1  
Minimum 0.5  
Avg:Min 2.45  
Max:Min 4.20  
Coef Var 0.34

Common Baseball Area  
529 points at z=0, sp 10ft by 10ft  
HORIZONTAL FOOTCANDLES  
Average 1.0  
Maximum 1.9  
Minimum 0.2  
Avg:Min 4.92  
Max:Min 9.50  
Coef Var 0.51  
UnifGrad 2.00

**PHOTOMETRIC LEGEND**

Parking Lot Light  
candela file 'EMM-E04-LED-E1-5WQ.ies'  
84 lamp(s) per luminaire, photometry is absolute  
Light Loss Factor = 0.910, watts per luminaire = 97  
mounting height= 20 ft  
number locations= 65, number luminaires= 65  
kw all locations= 6.3



4649 E COTTON GIN LOOP B2  
PHOENIX, AZ 85040  
602.438.2221

CONSULTANTS:

**WRIGHT** engineering corporation  
ELECTRICAL ENGINEERING AND DESIGN  
165 EAST CHILTON DRIVE  
CHANDLER, ARIZONA 85225  
PHONE: 480.497.5829  
FAX: 480.497.5807  
www.wrightengineering.us

Wright Project # 22718

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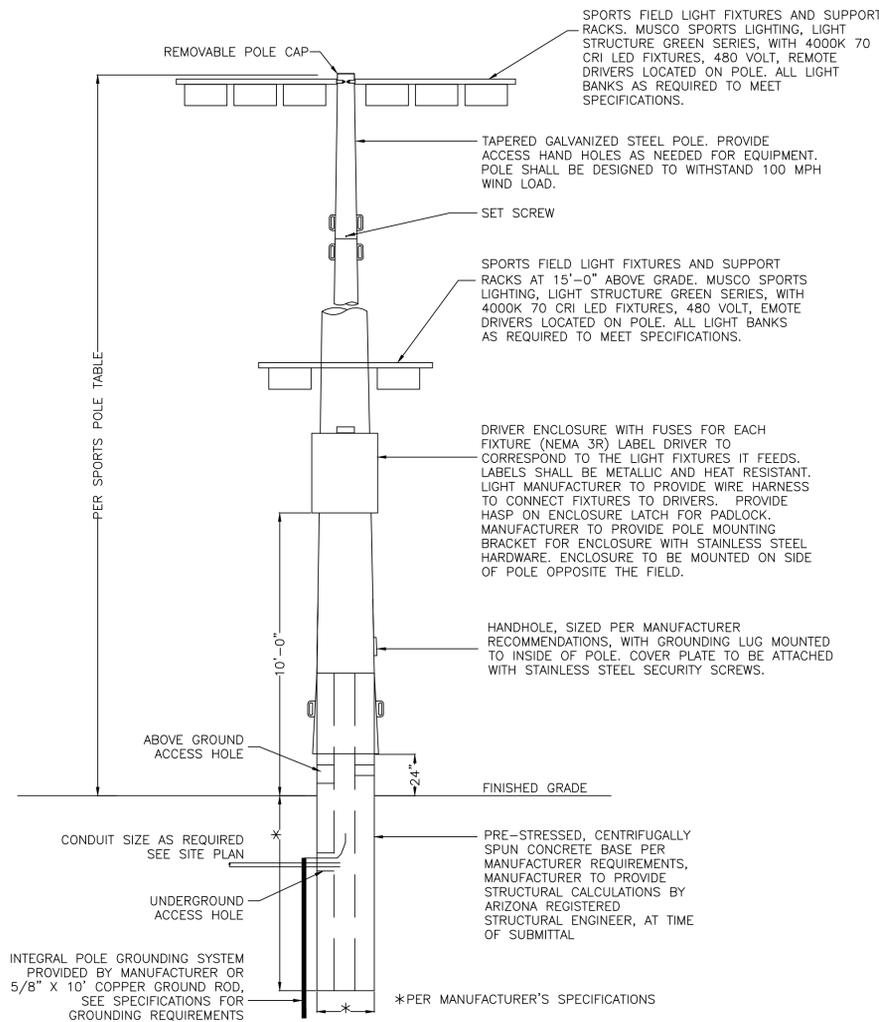


CITY OF MARICOPA  
CIVIC CENTER PARK  
PHOTOMETRIC ANALYSIS

#	DATE	DESCRIPTION
REVISIONS		

DESIGNED BY: CDC	DRAWN BY: CDC
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SCALE	DATE: 2/10/23
DRAWING NO: SE2.6	SHEET NO: OF 8

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**1A LED SPORTS FIELD LIGHT DETAIL FOR NEW POLES**  
NO SCALE

- LED LIGHT FIXTURE, WITH IES PHOTOMETRIC DISTRIBUTION PER PLANS, SEE LIGHT FIXTURE SCHEDULE FOR SPECIFICATION. PROVIDE 2 CIRCUIT DIMMING PROVISIONS WITH LUMINAIRE.
- DIRECT-BURIED, TAPERED, OCTAGONAL, PRE-STRESSED, REINFORCED, SPUN CONCRETE POLE PER POLE SCHEDULE. POLE SHALL HAVE EXPOSED AGGREGATE FINISH WITH ANTI-GRAFFITI SEALER. ALL POLES ARE TO BE PROVIDED FROM THE SAME MANUFACTURER.
- FLUSH MOUNTED HANDHOLE WITH FLUSH, TAMPERPROOF, STAINLESS STEEL SECURITY SCREWS (BUTTON TORX WITH CENTER PIN). POLE MANUFACTURER TO PLACE HANDHOLE SO THAT IT WILL BE LOCATED ABOVE FINISHED GRADE AT HEIGHT NOTED IN DETAIL TO CENTER OF HANDHOLE AFTER INSTALLATION. INSTALL POLE WITH HANDHOLE FACING AWAY FROM PATH/SIDEWALK, WHERE POSSIBLE. WHERE POLE IS INSTALLED AGAINST WALL, HANDHOLE TO FACE PATH/SIDEWALK.
- POLE MANUFACTURER TO PROVIDE A FACTORY INSTALLED GROUND WIRE WHICH IS CONNECTED TO THE STEEL REINFORCING IN THE POLE. CONNECT THE ELECTRICAL SYSTEM GROUND WIRE TO THIS POLE GROUND WIRE.
- APERTURE IN POLE BASE FOR UNDERGROUND WIRING, APERTURE SIZED 1-1/2" BY 5" MINIMUM. PROVIDE TWO (2) EACH POLE AT 180 DEGREES FROM EACH OTHER AND 90 DEGREES FROM HANDHOLE. TAPE OPENINGS PRIOR TO BACKFILLING THE DRILLED HOLE.
- PVC SCHEDULE 40 CONDUIT INTO POLE BASE FOR ELECTRICAL BRANCH CIRCUIT. SEE LIGHTING SITE PLAN FOR SIZES AND QUANTITIES. CONDUITS ARE TO BE INSTALLED IN POLE TO A POINT 12" ABOVE GRADE MINIMUM.
- AFTER POLE HAS BEEN ALIGNED AND IS PLUMB, BLOCK POLE IN PLACE UNDERGROUND, BACKFILL HOLE WITH CEMENTIOUS EARTH BACKFILL TO A POINT 4" BELOW FINISHED GRADE, BACKFILL THE REMAINING 4" WITH SURROUNDING SOIL. CEMENTIOUS EARTH BACKFILL - MIX TWO PARTS DRY CEMENT POWDER TO FIFTEEN PARTS CLEAN, WASHED SAND.
- COIL 20' OF #10 SOLID COPPER BOND. RUN BOND THROUGH POLE TO FACTORY INSTALLED GROUND WIRE IN HAND HOLE.
- 1" WASHED RIVER ROCK FOR DRAINAGE, COMPACT BEFORE SETTING POLE.
- FINISHED GRADE.
- WHERE LIGHTS ARE INSTALLED NEXT TO PATHWAY OR SIDEWALK, MAINTAIN CLEARANCE FROM EDGE TO FACE OF POLE AS SHOWN IN DETAIL. IF NOTED OFFSET IS NOT FEASIBLE, INSTALL TO BE AS CLOSE AS POSSIBLE TO LISTED OFFSET.
- PROVIDE BUSSMAN #HEB FUSE HOLDER, ON EACH UNGROUNDED CONDUCTOR, WITH 5 AMP FUSES FOR INLINE FUSING. WHERE CIRCUIT IS SPLICED IN HANDHOLE, MAKE ALL SPLICES WITH UL486D WET LISTED WIRE NUTS, EQUAL TO DRYCONN AQUA WATERPROOF CONNECTORS. PROVIDE 18" MINIMUM OF SLACK IN THE CONDUCTORS.
- TENON MOUNT SLIPFITTER PROVIDED BY POLE MANUFACTURER, CONTRACTOR TO COORDINATE SIZE OF SLIPFITTER SO THE FIXTURE COVERS ENTIRE TENON DOWN TO THE POLE TOP MOUNTING PLATE. PAINT EXPOSED METAL MOUNTING PLATE ON TENON TO MATCH FIXTURE.

**2 FLUSH FOUNDATION STEEL AREA LIGHT DETAIL**  
NO SCALE

**Datasheet: Light-Structure System™**  
**Luminaire and Driver - TLC-LED-1200**

**Luminaire Data**

Weight (luminaire)	45 lb (20 kg)
UL listing number	E338094
UL listed for USA / Canada	UL1598 CSA-C22.2 No.250.0
CE Declaration	LVD, EMC, RoHS
Ingress protection, luminaire	IP65
Material and finish	Aluminum, powder-coat painted
Wind speed rating (aiming only)	150 mi/h (67 m/s)
UL IEC ambient temperature rating, luminaire	50°C (122°F)

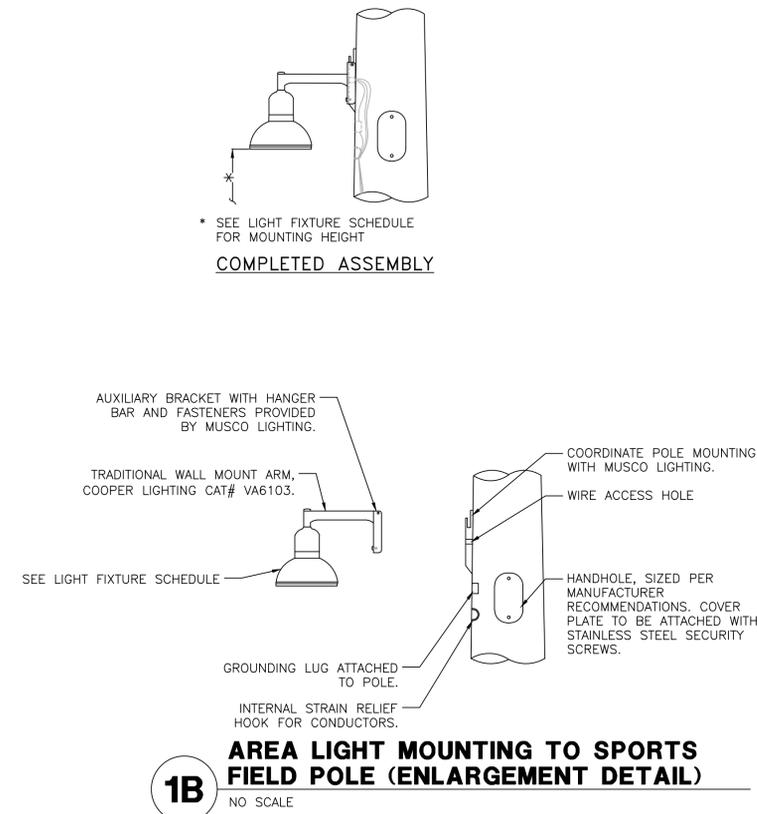
**Photometric Characteristics**

Projected lumen maintenance per IES TM-21-11	
L90 (13.5k)	>81,000 h
L80 (13.5k)	>81,000 h
L70 (13.5k)	>81,000 h
Color correlated color temperature	4500 K
Color rendering index (CRI)	75 typ, 70 min
Lumens¹	134,640

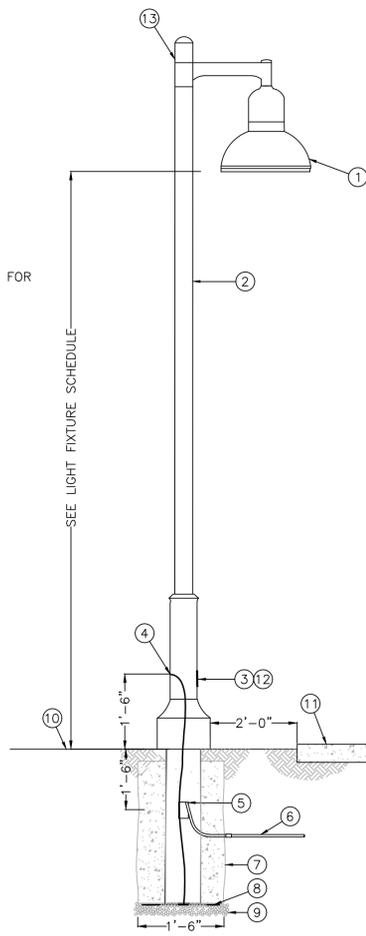
Footnote: ¹) Incorporates appropriate dirt depreciation factor for life of luminaire.

All components from foundation to poletop are designed to work together in Light-Structure System™ to ensure reliable, trouble-free operation.

MUSCO Lighting Solutions



**1B AREA LIGHT MOUNTING TO SPORTS FIELD POLE (ENLARGEMENT DETAIL)**  
NO SCALE



**Invue**

**DESCRIPTION**  
The EPIC Collection delivers custom luminaire flexibility with high quality, yet availability expectations of standard specification grade product. The EPIC Collection can be dressed to suit any application. Recognizing evolving environmental and legislative trends, the EPIC Collection delivers world class LED optical and performance solutions to the decorative luminaire marketplace.

**SPECIFICATION FEATURES**

**Construction**  
TOP: Cast aluminum top housing attaches to cast aluminum mounting arm hub with four stainless steel fasteners. One-piece silicone gasket between mounting hub and top casting seals out moisture and contaminants. (See the mounting accessories section for a full selection of mounting arms.) (Only these arms are compatible with the Epic luminaire.)  
MIDSECTION: Continuous silicone gaskets seal lens to top casting and shade. The mid section features cast aluminum construction and stainless steel assembly. SHADES: Heavy gauge precision spun aluminum shades offer superior surface finish and consistency in form. DOORFRAME: Die-cast aluminum 1/8" thick door and doorframe seal to underside of shade with a thick wall continuous silicone gasket. Mounting hub ships attached to mounting arm.

**Optics**  
Choice of twelve patented, high-efficiency AccuLED Optic™ technology manufactured from injection-molded acrylic. Optics are precisely designed to shape the optics, maximizing efficiency and application specific. AccuLED Optic technology, creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4500K (+/- 275K) CCT and nominal 75 CRI. Optional 3000K CCT and 5000K CCT. For the ultimate level of spill light control, an optional house-side shield accessory can be field or factory installed. The house-side shield is designed to seamlessly integrate with the SL2, SL3 or SL4 optics.

**Electrical**  
LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage 120V-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less than 20% harmonic distortion, and is suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 100V/5A component and differential mode surge protection. LightBARs feature and IP66 enclosure rating and maintain greater than 95% lumen maintenance at 60,000 hours per IESNA TM-21. Occupancy sensor and dimming options available.

**Finish**  
Housing is finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. LightBAR™ cover plates are standard white and may be specified to match finish of luminaire housing. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult Outdoor Architectural Colors brochure for a complete selection. Options to meet Buy American Act requirements.

**Warranty**  
Five-year warranty.

**ECM/EMM EPIC MEDIUM LED**

1 - 4 LightBARs  
Solid State LED  
DECORATIVE AREA LUMINAIRE

**CERTIFICATION DATA**  
UL Listed  
DesignLights Consortium® "Qualified"  
IP66 (LightBulb)  
LM78 / LM81 Compliant  
D3 Motion Tested  
ISO 9001

**ENERGY DATA**  
EcoTrack LED Driver  
+0.95 Total Harmonic Distortion  
100 CRI (LightBulb, 347V/60Hz)  
4000K  
40°C Minimum Temperature  
40°C Ambient Temperature Rating

**EFF**  
Effective Projected Area (See P13.034)

**SHIPPING DATA**  
Approximate Net Weight:  
45 lbs. 105 kg. ±

TD000292FA  
December 8, 2021 2:28 PM

#	DATE	DESCRIPTION
REVISIONS		

Call at least two full working days before you begin excavation.  
**ARIZONA 811**  
Arizona Blue State, Inc.  
Dial 811 or 1-800-STAKE-IT (782-5348)  
in Maricopa County (602) 263-1100



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