

BU-27 STREET LIGHTING

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.



SIGNED: _____
DATE: _____




EGGEMAN
ENGINEERING
& CONSULTING

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0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

-IR490/ SR010-
2.09 / 19.28

RECORD PLANS



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0	2019-08-14	24	LIGHTING PLAN - O.C. BLVD.: STA. 184+00.00 TO STA. 189+00.00
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0	2019-08-14	26	LIGHTING PLAN - O.C. BLVD.: STA. 194+00.00 TO STA. 198+00.00
0	2019-08-14	27	LIGHTING PLAN - O.C. BLVD.: STA. 198+00.00 TO STA. 203+00.00
0	2019-08-14	28	LIGHTING PLAN - O.C. BLVD.: STA. 203+00.00 TO STA. 208+00.00
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0	2019-08-14	30	LIGHTING PLAN - O.C. BLVD.: STA. 213+00.00 TO STA. 218+00.00
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1	2024-09-10	36	CROSS-ROAD LIGHTING - KINSMAN RD: STA. 10+50.00 TO STA. 16+00.00
0	2019-08-14	37	CROSS-ROAD LIGHTING - KINSMAN RD: STA. 16+00.00 TO END
1	2020-09-01	38	CROSS-ROAD LIGHTING - E 75TH ST: BEGIN TO END
0	2019-08-14	39	CROSS-ROAD LIGHTING - E 79TH ST: BEGIN TO STA. 17+25.00
0	2019-08-14	40	CROSS-ROAD LIGHTING - E 79TH ST: STA. 17+25.00 TO END
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0	2019-08-14	44	CROSS-ROAD LIGHTING - BUCKEYE RD: BEGIN TO STA. 23+50.00
0	2019-08-14	45	CROSS-ROAD LIGHTING - BUCKEYE RD: STA. 23+50.00 TO STA. 28+50.00
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0	2019-08-14	49	CROSS-ROAD LIGHTING - WOODLAND AVE.: BEGIN TO STA. 30+50.00
0	2019-08-14	50	CROSS-ROAD LIGHTING - WOODLAND AVE.: STA. 30+50.00 TO STA. 35+50.00
1	2020-01-16	51	CROSS-ROAD LIGHTING - WOODLAND AVE.: STA. 35+50.00 TO END
1	2020-01-16	52	LIGHTING PLAN - E. 89TH ST.: BEGIN TO STA. 26+00.00
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1	2024-09-10	54	LIGHTING PLAN - WIRING DIAGRAM - CONTROL CENTERS CC-C, CC-D, & CC-V
0	2019-08-14	55	LIGHTING PLAN - WIRING DIAGRAM - CONTROL CENTERS CC-E & CC-X

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4	2021-05-18	DC056			
3	2020-09-01	DC045			
2	2020-01-16	DC031			
1	2019-10-02	DC019			
0	2019-08-14	RFC	5	2024-09-10	RECORD DRAWINGS
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EXISTING LIGHTING ITEMS, SIGNS, CONDUIT, CABLE AND POWER CENTERS

THE LOCATIONS OF EXISTING LIGHTING ITEMS, SIGNS, CONDUIT, CABLE AND POWER CENTERS SHOWN ON THE PLANS AND DESCRIBED BY NOTATION HAVE BEEN OBTAINED BY FIELD CHECKS AND INFORMATION FROM EXISTING LIGHTING PLANS PROVIDED BY THE CITY OF CLEVELAND. IT IS BELIEVED THAT THE INFORMATION IS ESSENTIALLY CORRECT, HOWEVER, THE OHIO DEPARTMENT OF TRANSPORTATION, NOR THE CITY OF CLEVELAND, CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS. NOT ALL EXISTING LIGHTING EQUIPMENT WITHIN THE PROJECT LIMITS IS SHOWN. THE CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS. PRIOR TO REMOVAL AND/OR RELOCATION OF EXISTING CPP STREET LIGHTING EQUIPMENT, CONTACT CPP A MINIMUM OF ONE WEEK PRIOR TO BEGINNING CONSTRUCTION TO SCHEDULE ARRANGEMENTS TO HAVE A CPP REPRESENTATIVE ON SITE TO COORDINATE THE REQUIRED ACTIVITIES. ANY DAMAGE TO CPP FACILITIES DUE TO A FAILURE TO CONTACT CPP, WILL RESULT IN ANY REPAIRS TO CPP FACILITIES AT CONTRACTOR'S EXPENSE.

CONFLICTS WITH EXISTING UTILITIES

PRIOR TO INSTALLING ANY OF THE PROPOSED STREET LIGHTING EQUIPMENT, PULLBOXES, CONDUIT, CONDUIT DUCTBANKS AND POWER SUPPLIES, THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF ALL UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID ANY DAMAGE. ALL REPAIRS TO ANY DAMAGE TO EXISTING UTILITIES CAUSED BY THE FAILURE TO COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES AND DRILL APPROPRIATE UTILITY TEST HOLES, WILL BE PAID FOR BY THE CONTRACTOR.

THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UNDERGROUND PIPE LINES, DRAINAGE, ELECTRICAL CONDUIT, AND DUCT BANKS, WATERLINES, COMMUNICATION DUCTS, AND OTHER STRUCTURES BY CONTACTING OWNERS OF UNDERGROUND UTILITIES AND BY EXCAVATING APPROPRIATE UTILITY TEST HOLES.

THE CONTRACTOR SHALL COORDINATE THE LIGHTING PLANS WITH THE ROADWAY CONSTRUCTION PLANS AND CROSS-SECTIONS. ALL LIGHTING EQUIPMENT SYMBOLS SHOWN ON THE LIGHTING PLANS ARE NOT DRAWN TO SCALE, ARE SHOWN DIAGRAMMATICALLY AND MAY NOT BE IN THE EXACT LOCATION REQUIRED. THE CONTRACTOR SHALL COORDINATE EQUIPMENT LOCATIONS WITH THE KEYNOTE SHEETS AND VARIOUS NOTES ON EACH LIGHTING PLAN AND DETAIL SHEET.

THE CONTRACTOR SHALL MAINTAIN PROPER CLEARANCE FROM ALL OVERHEAD AND UNDERGROUND UTILITIES AND SHALL CONTACT EACH UTILITY FOR SPECIFIC REQUIREMENTS.

EXISTING LIGHTING CIRCUITS

PRIOR TO BEGINNING ANY WORK ON THE REMOVAL OR MODIFICATION ON ANY OF THE EXISTING LIGHTING SYSTEM CIRCUITRY, FIELD VERIFY ALL EXISTING LIGHTING CIRCUITRY. CONTACT THE CITY OF CLEVELAND LIGHTING REPRESENTATIVES FOR ASSISTANCE IN THE COORDINATION OF THE EXISTING LIGHTING CIRCUITRY.

ITEM 625 - PULLBOX REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE THE REMOVAL OF AN EXISTING PULLBOX AND PROPER DISPOSAL OFF OF THE PROJECT SITE. THE RESULTANT OPENING SHALL BE BACKFILLED TO GRADE WITH SUITABLE COMPACTED SOIL AND RESTORED TO MATCH THE SURROUNDING AREA.

WHERE A PROPOSED PULLBOX WILL BE PLACED IN THE SAME AREA AS AN EXISTING PULLBOX, THE REMOVAL COST OF THE EXISTING PULLBOX WILL BE INCIDENTAL TO THE 625-PULLBOX ITEM.

PROPOSED LIGHTING CIRCUITS

ALL NEW CITY OF CLEVELAND (CPP) LIGHTING AND MODIFIED EXISTING LIGHTING CIRCUITS WILL BE SERVICED FROM 120/240 VOLT, SINGLE PHASE POWER SUPPLIES. ALL PROPOSED LIGHTING CIRCUITS WILL BE 240 VOLT, (PHASE TO PHASE CONNECTION), WITH A MARKED GROUND CONDUCTOR.

BOTH PHASE CONDUCTORS TO LIGHT POLES SHALL BE FUSED WITH INLINE KTK IN EACH LIGHT POLE BOX.

REMOVAL OF LIGHTNG ITEMS

EXISTING LIGHTING FOUNDATIONS, PULL BOXES AND MISCELLANEOUS ITEMS NO LONGER IN SERVICE SHALL BE REMOVED AND DISPOSED OF BY THE CON-TRACTOR, EXCEPT FOR EXISTING DUCTS AND CONDUITS, WHICH CAN BE ABANDONED IN PLACE. EXISTING LIGHT POLES, LUMINAIRES AND CONDUCTORS REMOVED ON THE PROJECT SHALL BE RETURNED TO CPP. THE CONTRACTOR SHALL NOTIFY CPP AND STORE THE MATERIALS ON SITE, SUITABLY PROTECTED, AT A DESIGNATED LOCATION FOR PICK UP BY CPP STAFF WITHIN 30 WORKDAYS OF NOTIFICATION BY THE CONTRACTOR. THE CONTRACTOR MAY DISPOSE OF MATERIALS NOT PICKED UP WITHIN THE 30 WORKDAY TIMEFRAME. ALL OTHER EQUIPMENT AND MATERIALS NO LONGER IN SERVICE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

ITEM 625, LIGHT POLE FOUNDATION MISC.: 24" x 6'-0" DEEP

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, 625.06, FOUNDATIONS SHALL BE AS FOLLOWS:

FOUNDATIONS SHALL MEET THE REQUIREMENTS OF ODOT STANDARD DRAWING HL-20.11, EXCEPT CONSTRUCT TO A DEPTH OF 6'-0".

INSTALL ANCHOR BOLTS PROVIDED WITH POLE.

ITEM 625, LIGHT POLE FOUNDATION MISC.: 24" x 3'-0" DEEP

FOUNDATIONS FOR PEDESTRIAN LIGHT POLES SHALL MEET THE REQUIREMENTS OF ODOT STANDARD DRAWING TC-83.20, "PEDESTAL FOUNDATION". INSTALL ANCHOR BOLTS PROVIDED WITH POLE.

ITEM 202 - DISCONNECT EXISTING CIRCUIT, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE DISCONNECTION OF AN EXISTING LIGHT CIRCUIT AT A PULLBOX OR A LIGHT POLE OR LIGHT TOWER OR JUNCTION BOX. CONTACT CLEVELAND PUBLIC POWER TO DE-ENERGIZE CIRCUITS BEFORE REMOVAL.

DISCONNECTION AT A PULLBOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL SPLICE KITS. ANY CABLE THAT IS TO BE ABANDONED SHALL BE PROPERLY TERMINATED.

DISCONNECTION AT A LIGHT POLE SHALL ALSO INVOLVE DISCONNECTION OF THE CIRCUIT AT THE ADJACENT JUNCTION BOX, PULLBOX, ETC.

ITEM 625 - LIGHTING, MISC.: DUAL LIGHTING CONTROL CENTERS

WHEN SPECIFIED IN THE PLAN, TWO LIGHTING CONTROL CENTERS MAY BE MOUNTED ON ONE RACK. THE DETAILS IN STANDARD CONSTRUCTION DRAWING HL-40.20 SHALL APPLY, EXCEPT THAT THE RACK CAN BE USED FOR ONE UNMETERED CONTROL CENTER AND ONE METERED CONTROL CENTER.

ITEM 625 - LIGHTING CONTROL CENTER

WHEN UNMETERED CONTROL CABINETS ARE REQUIRED, THE CONTRACTOR SHALL INSTALL THE CONTROL CENTER AS PER SCD HL-40.20, EXCEPT THAT THE METERBASE AND PHOTOCCELL SHALL BE OMITTED. THE CABINETS SHALL BE 480-VOLTS.

STRUCTURE GROUNDING

THE CONTRACTOR SHALL GROUND ALL STRUCTURES. THE GROUNDING SYSTEM SHALL GROUND ALL METAL ITEMS AND APPURTENANCES ON ALL STRUCTURES, INCLUDING ANY AND ALL DECORATIVE ITEMS. THE GROUNDING SYSTEM SHALL INCLUDE PARALLELS FOR REDUNDANCY. THE GROUNDING SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH SCD HL-50.21, WITH ADDITIONAL ITEMS AS NEEDED TO PROVIDE A COMPLETE AND ACCEPTABLE GROUNDING SYSTEM.

CONNECTOR KITS AND CABLE SPLICE KITS

CONNECTOR KITS FOR POLES AND PULL BOXES SHALL COMPLY WITH ODOT REQUIREMENTS.

SYSTEM TESTING

SYSTEM TESTING SHALL COMPLY WITH ODOT CONSTRUCTION AND MATERIAL SPECIFICATION ITEM 625.

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POWER SERVICE

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED.

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

POWER COMPANY:CLEVELAND PUBLIC POWER
ADDRESS:1300 LAKESIDE AVE
CLEVELAND, OH 44114

CONTACT: MR. BRYAN SHEPHERD
PHONE: 216-857-6908
EMAIL: BSHEPHERD@CPP.ORG

CONTACT: MR. CHARLES (JIM) MALY
PHONE: 216-664-3922 (EXT 7617)
EMAIL: CMALY@CPP.ORG

THE CONTRACTOR SHALL OBTAIN POWER SERVICE FOR LIGHTING CONTROL CABINETS FROM THE GROUND MOUNTED TRANSFORMERS CONSTRUCTED WITH THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CHARGES MADE BY THE POWER COMPANY FOR WORK BY THE COMPANY IN CONJUNCTION WITH THE ESTABLISHMENT OF THE REQUIRED SERVICE.

ELECTRICAL ENERGY FROM EXISTING POWER SERVICES SHALL CONTINUE TO BE CHARGED TO THE MAINTAINING AGENCY. THE CONTRACTOR SHALL PAY ELECTRICAL ENERGY CHARGES FOR NEW POWER SERVICES ESTABLISHED BY THIS PROJECT. AFTER ACCEPTANCE OF THE LIGHTING, THE POWER SERVICE ELECTRICAL ENERGY ACCOUNT SHALL BE TRANSFERRED TO THE MAINTAINING AGENCY NOTED IN THE PLANS.

THIS ITEM SHALL INCLUDE NEW POWER SERVICES ESTABLISHED BY THIS PROJECT AS WELL AS REASSIGNMENT OF EXISTING SERVICE DUE TO WORK PERFORMED BY THIS PROJECT. SUBMIT SHOP DRAWINGS (CATALOG CUTS) TO THE ENGINEER/ CLEVELAND PUBLIC POWER FOR THEIR APPROVAL.

ITEM 625. LIGHT POLE MISC.: ROUND TAPERED FIBERGLASS DECORATIVE POLE

IN ADDITION TO THE REQUIREMENTS OF ODOT’S CONSTRUCTION AND MATERIAL SPECIFICATIONS 725.01 LIGHT POLES FOR DECORATIVE STYLE LUMINAIRES SHALL BE AS FOLLOWS:

ALL POLES SHALL BE A HOLLOW, TRUNCATED CONE OF SUITABLE WALL THICKNESS AND TAPER. THE TAPER SHALL BE UNIFORM FROM TOP TO BOTTOM (ANY SECTION SHALL BE CIRCULAR).

ANY POLE PROVIDED SHALL NOT WEIGH LESS THAN 95% OF THE MANUFACTURER’S ADVERTISED OR SPECIFIED WEIGHTS.

FIBERGLASS POLES FURNISHED AS PART OF THIS SPECIFICATION SHALL BE CONSTRUCTED FOR A DECORATIVE LUMINAIRE AND MAST ARM AT TOP OF POLE FOR A NOMINAL MOUNTING HEIGHT OF 30 FEET ABOVE THE ROADWAY SURFACE.

WIND LOADING:
THE POLES FURNISHED AS PART OF THIS SPECIFICATION SHALL BE DESIGNED IN ACCORDANCE WITH 90 MPH (30% GUST FACTOR) AASHTO WIND LOADING. CERTIFIED MATHEMATICAL WIND LOAD CALCULATIONS MUST BE SUBMITTED WITH THE BID.

MATERIAL:
THE REINFORCING GLASS SHALL BE A COMMERCIAL GRADE OF “E” GLASS FIBERS IN CONTINUOUS FILAMENT, WOVEN FILAMENTS, CHOPPED STRAND FORMS OR A COMBINATION OF THE SAME. THE GLASS FIBERS SHALL BE TREATED WITH A COUPLING AGENT COMPATIBLE WITH THE RESIN USED. THE POLE SHALL BE NON-CONDUCTIVE AND CHEMICALLY INERT. THE THERMOSETTING RESIN SHALL CONTAIN ULTRAVIOLET INHIBITORS AND PIGMENT THROUGHOUT.

SURFACE:
THE POLE EXTERIOR SURFACE SHALL BE SMOOTH AND UNIFORM IN TEXTURE AND COLOR AND SHOULD NOT CONTAIN ANY EXPOSED SURFACE FIBERS.

A NON-WOVEN POLYESTER FABRIC TAPE IS TO BE DOUBLE WRAPPED OVER THE UNCURED FIBERGLASS POLE. THE POLYESTER FABRIC IS TO BE PRE-SATURATED WITH POLYESTER RESIN TO IMPREGNATE

THE POLE AND INSURE A POSITIVE BOND. THE POLYESTER FABRIC TAPE IS TO BE APPLIED TO THE POLE TO MAINTAIN SURFACE INTEGRITY WITHOUT SIGNIFICANT NOTICEABLE CHANGE IN APPEARANCE DUE TO ULTRAVIOLET, CHEMICALS AND EXTREME WEATHER CONDITIONS.

THE FINISH COAT SHALL BE A HIGHLY WEATHER RESISTANT, COLOR PIGMENTED POLYURETHANE AND SHALL HAVE A DRY FILM THICKNESS OF 1 1/2 MILS MINIMUM. COLOR, SHALL BE BRONZE.

THE SURFACE IS TO BE TESTED FOR A MINIMUM OF 2,500 HOURS OF ACCELERATED TESTING IN ACCORDANCE WITH ASTM G-53, LATEST REVISION. THE RESULTS SHALL INDICATE NO FIBER EXPOSURE, CRAZING, OR CHECKING. THERE MAY BE ONLY SLIGHT CHALKING AND COLOR MAY ONLY DULL SLIGHTLY.

REINFORCING POLES SHALL BE REINFORCED IN THE AREA BETWEEN FOURTEEN (14) FEET AND TWENTY-FOUR (24) FEET ABOVE THE GROUND LINE TO ALLOW BAND MOUNTING OF HOLIDAY ORNAMENTS OR BANNERS.

POLE TOP: THE POLE TOP FOR THE STANDARD STREETLIGHT POLES, 30 FT IN HEIGHT SHALL BE A 3” O.D. X 3 1/2” LONG TENON. THE TENON SHALL BE ALUMINUM OR STEEL PERMANENTLY ATTACHED TO THE POLE SHAFT. THE TENON SHALL BE STRAIGHT WITH NO TAPER AND COATED WITH MATCHING URETHANE FINISH. STANDARD STREETLIGHT POLES SHALL ALSO BE SUPPLIED WITH A TENON CAP.

PULL WIRES: POLES SHALL HAVE PULL WIRES INSTALLED TO FACILITATE INSTALLATION OF CONDUCTORS.

HAND HOLE: EACH POLE SHALL HAVE A HAND HOLE WITH A NON-METALLIC, REMOVABLE, LOCKABLE COVER AND SEAL. THE COVER SHALL BE THE SAME COLOR AND TEXTURE AS THE POLE. THE HAND HOLE SHALL BE 2-1/2” X 5”.

SHIPPING: EACH POLE SHALL BE INDIVIDUALLY WRAPPED WITH PLASTIC SHRINK FILM OR POLY-BAGGED FOR PROTECTION DURING SHIPPING AND STORAGE.

POLES SHALL INCLUDE A DUPLEX RECEPTACLE BOX WITH WET LOCATION WHILE-IN-USE COVER.

BASE PLATE AND COVER FOR ANCHOR BASE POLES:
A ONE PIECE, STEEL (HOT DIPPED GALVANIZED) ANCHOR BASE CASTING SHALL BE PROVIDED WHICH IS PERMANENTLY ATTACHED TO THE BOTTOM OF THE POLE. THE BASE SHALL BE ADHESIVELY BONDED TO THE POLE AND SHALL ALSO BE MECHANICALLY LOCKED TO THE POLE IN SUCH A MANNER THAT IT CANNOT COME LOOSE EVEN IF THE ADHESIVE BOND FAILS. THE ANCHOR BASE CASTING SHALL BE CAPABLE OF COVERING A BOLT CIRCLE RANGE OF 11” TO 15”.

ANCHOR RODS FOR ANCHOR BASE POLES:
ONE SET OF FOUR (4) GALVANIZED 1 INCH ANCHOR BOLTS (36 + 4) INCHES IN LENGTH, EACH WITH TWO NUTS AND TWO WASHERS, SHALL BE FURNISHED WITH EACH POLE ASSEMBLY. ANCHOR BOLTS SHALL CONFORM TO LATEST ASTM SPECIFICATION FOR HIGH STRENGTH, GALVANIZED ANCHOR BOLTS, 50,000 PSI MINIMUM.

LOADING TEST:
THE MANUFACTURER SHALL PROVIDE ONE SET OF SHOP DRAWINGS WITH CERTIFIED TEST DATA FOR DEFLECTION AND ULTIMATE STRENGTH. THIS INFORMATION SHALL ALSO BE SUBMITTED WITH THE BID. ALL TESTING IS TO BE PERFORMED ON THE POLE WITH THE APPROPRIATE SIZE HAND HOLE LOCATED ON THE COMPRESSION SIDE.

A HORIZONTAL LOAD IS TO BE APPLIED IN 100 POUND INCREMENTS AT A POINT 12 INCHES FROM THE TOP UNTIL AN ULTIMATE TOP LOAD OF 1400 POUNDS HAS BEEN APPLIED. THE POLE SHALL WITHSTAND A MINIMUM OF 1400 POUNDS OF HORIZONTAL LOAD BEFORE FAILURE.

UNDER THE SAME TEST PROCEDURE, THE MAXIMUM DEFLECTION UNDER 100 POUND LOADING SHALL BE 4% OF THE ABOVE GROUND LENGTH OF THE POLE.

INVENTORY IDENTIFICATION:
ALL POLES SHALL BE PERMANENTLY MARKED WITH INVENTORY CODES SUPPLIED AT TIME OF ORDER. MARKING SHALL BE SUCH THAT THEY CANNOT BE REMOVED BY HAND OR FADED OR OTHERWISE MADE ILLEGIBLE BY RAIN, SNOW, WIND, SUN OR OTHER WEATHER CONDITIONS ENCOUNTERED IN OUTDOOR STORAGE.

FINISH
HOUSING AND ARM FINISHED IN PREMIUM TGIC POLYESTER POWDER COAT PAINT, 2.5MIL NOMINAL THICKNESS FOR SUPERIOR PROTECTION AGAINST FADE AND WEAR. COLOR SHALL BE THE MANUFACTURER’S STANDARD POWDER COAT BRONZE.

SHOP DRAWINGS
SUBMIT SHOP DRAWINGS OF MANUFACTURER CATALOG CUTS AND LIGHTING CALCULATIONS TO THE ENGINEER FOR THEIR APPROVAL PRIOR TO ORDERING MATERIALS.

LIGHT POLES ON STRUCTURES SHALL BE 27 FT AND GROUND MOUNTED POLES SHALL BE 30 FT.

ITEM 625. DECORATIVE LED LUMINAIRE.(BY TYPE). 240 VOLT LUMINAIRES
LUMINAIRES FOR DECORATIVE STREET LIGHTING SHALL BE MANUFACTURED BY EATON LIGHTING, STREETWORKS, GALLEON GAN-AF-07-LED-U-T3R-BZ-800-4N7 OR GAN-AF-07-LED-U-RW-BZ-800-4N7, AS SPECIFIED IN THE PLAN.

LUMINAIRES FOR DECORATIVE PEDESTRIAN PATH LIGHTING SHALL BE MANUFACTURED BY EATON LIGHTING, STREETWORKS, GALLEON GAP-AF-02-LED-U-T2-MA-800 (FOR LIGHTS POWERED BY AN UNMETERED CABINET) OR GAP-AF-02-LED-U-T2-MA-800-4N7 (FOR LIGHTS POWERED BY A METERED CABINET) .

LUMINAIRES FOR PEDESTRIAN LIGHTING ON BRIDGES SHALL BE MANUFACTURED BY EATON LIGHTING, STREETWORKS, GALLEON GAN-AF-02-LED-U-T2-BZ-800.

CONSTRUCTION
HOUSING DIE-CAST ALUMINUM FRAME WITH SECURELY ATTACHED, THERMALLY CONDUCTIVE, EXTRUDED ALUMINUM HEAT SINK. THE UNIT ALLOWS FOR PASSIVE COOLING AND NATURAL CLEANING OF THE EXTRUDED HEAT SINK ENSURING RELIABLE OPERATION AT 40°C HIGH AMBIENT CONDITIONS. STAINLESS STEEL FASTENERS AND HINGING. TOOLLESS ACCESS TO ELECTRICAL COMPARTMENT. EACH LUMINAIRE SHALL CARRY A LABEL FOR IP66 AND A 3G VIBRATION RATING.

ELECTRICAL
LED DRIVERS MOUNT TO DIE-CAST ALUMINUM BACK CASTING FOR OPTIMAL HEAT SINKING AND OPERATION EFFICIENCY. 120-277V 50/60HZ OPERATION. BUILT-IN SURGE PROTECTION TO WITHSTAND 10KV OF TRANSIENT LINE SURGE. MAXIMUM POWER CONSUMPTION TO BE 480 WATTS. EACH LUMINAIRE SHALL HAVE A 7 PIN RECEPTACLE AND PHOTOCCELL, WHEN OPERATED FROM AN UNMETERED CONTROL CABINET.

OPTICAL
LEDS SHALL PRODUCE 4000K (+/- 275K) CCT AND NOMINAL 70 CRI OR GREATER.

MOUNTING
INTERNAL MAST ARM MOUNT ACCEPTS A 1-1/4” TO 2” (1-5/8” TO 2-3/8” O.D.) HORIZONTAL TENON. PROVIDE A STANDARD 6” TO 8” ARM WITH TENON ADAPTER THAT WILL ACCOMMODATE A 3-1/3”H X 3” O.D. TENON. THE ARM SHALL INCLUDE BOLT GUIDES ALLOWING FOR EASY POSITIONING OF THE FIXTURE DURING INSTALLATION TO POLE OR WALL SURFACE.

FINISH
HOUSING AND ARM FINISHED IN PREMIUM TGIC POLYESTER POWDER COAT PAINT, 2.5MIL NOMINAL THICKNESS FOR SUPERIOR PROTECTION AGAINST FADE AND WEAR. COLOR SHALL BE THE MANUFACTURER’S STANDARD POWDER COAT BRONZE.

WARRANTY
LUMINAIRES SHALL INCLUDE A FIVE-YEAR WARRANTY.

SHOP DRAWINGS
SUBMIT SHOP DRAWINGS OF MANUFACTURER CATALOG CUTS AND LIGHTING CALCULATIONS TO THE ENGINEER FOR THEIR APPROVAL PRIOR TO ORDERING MATERIALS.

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ITEM SPECIAL. MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN.

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF ANY EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY, AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION A WRITTEN RECORD OF THE CONDITION OF THE EXISTING LIGHTING SHALL BE MADE BY THE STATE'S REPRESENTATIVE.

THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT OPERATIONAL, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY, AND THE CONTRACTOR. IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS. REPLACEMENTS OF KNOCKED DOWN UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY ON A PER UNIT BASIS. BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENTS.

THE MAINTAINING AGENCY SHALL GIVE THE CONTRACTOR ONE COPY OF THE EXISTING LIGHTING CIRCUITRY LAYOUT. WHEN THE CONTRACTOR HAS TAKEN OVER THE MAINTENANCE OF THE EXISTING SYSTEM, HE SHALL PROVIDE ALL REQUIRED LAYOUT AND LOCATING OF EXISTING LIGHTING CIRCUITS WITHIN THE PROJECT.

SHOULD THE CONTRACTOR DESIRE THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE CONTRACTOR SHALL THEN BE RESPONSIBLE FOR ADEQUATE TEMPORARY LIGHTING OF THAT PORTION OF THE EXISTING ROADWAY AFFECTED BY THE REMOVAL OF THE EXISTING LIGHTING. TWO [2] WEEKS PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOUR (4) SETS OF THE TEMPORARY LIGHTING PLANS TO THE ENGINEER FOR REVIEW AND APPROVAL. THIS PLAN SHALL SHOW LOCATION OF POLES, LENGTH OF BRACKET ARMS, STYLE OF LUMINAIRES, MOUNTING HEIGHT, WIRING METHODS, AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 1.2 FOOTCANDLES WITH AN AVERAGE TO MINIMUM UNIFORMITY RATIO NOT TO EXCEED 4:1.

MOUNTING HEIGHT FOR TEMPORARY LUMINAIRES SHALL NOT BE LESS THAN 27 FEET AND MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET. TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "A" FOR STRENGTH REQUIREMENTS AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED. HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA. IF BREAKAWAY POLES ARE USED TO MEET THIS CRITERIA, THEN UNDERGROUND WIRING WILL BE USED. RECONDITIONED OR USED MATERIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING. ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. A SEPARATE POWER SERVICE WILL BE PROVIDED BY THE CONTRACTOR FOR THE TEMPORARY LIGHTING SYSTEM. THE TEMPORARY LIGHTING SHALL NOT BE SPLICED INTO EXISTING LIGHTING CIRCUITS.

THE CONTRACTOR SHALL PAY ALL HOOK-UP FEES AND ELECTRICAL COSTS FOR THE TEMPORARY SYSTEM. THESE COSTS SHALL BE PAID FOR UNDER THE LUMP SUM ITEM SPECIAL MAINTAIN EXISTING LIGHTING. WHEN NO LONGER NEEDED THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

LEGEND

- PROPOSED CONDUIT DUCT BANK WITH (4)-2" CONDUITS FOR LIGHTING, (2)-2" CONDUITS FOR TRAFFIC, AND (2)-5" CONDUITS AS SHOWN ON SHEET 8 (DUCT BANK MAY ALSO INCLUDE (2)-2" ADDITIONAL CONDUITS FOR AESTHETIC LIGHTING, WHEN SPECIFIED)

PROPOSED CONDUIT DUCT BANK WITH 4-2" CONDUITS FOR LIGHTING AND 2-5" SPARE CONDUITS AS SHOWN ON SHEET 8

PROPOSED CONDUIT (NUMBER AND TYPE AS SPECIFIED)

CONDUITS FOR TRAFFIC SIGNAL INTERCONNECT (SEE BU-12)

EXISTING OVERHEAD ELECTRIC

PROPOSED OVERHEAD ELECTRIC (#4 AWG, UNLESS OTHERWISE NOTED)

PROPOSED LIGHT POLE MISC.: ROUND TAPERED FIBERGLASS DECORATIVE POLE WITH DECORATIVE LED LUMINAIRE (30' TALL WHEN GROUND MOUNTED) (27' TALL WHEN BRIDGE MOUNTED)

PROPOSED PEDESTRIAN LIGHT POLE (15' TALL WHEN GROUND MOUNTED) (12' TALL WHEN BRIDGE MOUNTED)

PROPOSED RENO LIGHT FIXTURE

EXISTING DECORATIVE POST TOP LIGHT FIXTURE TO REMAIN (ON WOODLAND AVE BRIDGE)

PROPOSED PULL BOX, MISC.: 36"X36"

PROPOSED PULL BOX, MISC.: SIZE AS SPECIFIED IN THE PLANS. PULL BOX FOR LIGHTING CIRCUITS

PROPOSED PULL BOX, MISC.: SIZE AS SPECIFIED IN THE PLANS. PULL BOX FOR AESTHETIC/PATH LIGHTING CIRCUITS

PULL BOX FOR TRAFFIC SIGNAL INTERCONNECT (SEE BU-12)

PROPOSED WOOD POWER POLE (SEE BU-11) WITH CONVENTIONAL LED LUMINAIRE (SEE POLE NOTE 1.)

PROPOSED 35' WOOD POWER POLE WITH CONVENTIONAL LED LUMINAIRE (SEE POLE NOTE 1.)

EXISTING LIGHT POLE

EXISTING POWER POLE WITH BRACKET ARM AND LUMINAIRE

EXISTING UTILITY LINE (TO BE REMOVED)

XXXXXXXXXX

POLE NOTES:
1) ORIENT BRACKET ARM TO BE PERPENDICULAR TO THE CURB LINE WHICH IS IMMEDIATELY IN FRONT OF THE POLE.

CONDUIT CODE

- 2-2" CONDUITS, CONCRETE ENCASED

4-2" CONDUITS, CONCRETE ENCASED

2-5" CONDUITS, CONCRETE ENCASED

2-2" CONDUITS, 2-5" CONDUITS, CONCRETE ENCASED

2-2" CONDUITS FOR STREET LIGHTING PLUS 2-2" CONDUITS FOR AESTHETIC/PATH LIGHTING CONCRETE ENCASED

4-2" CONDUITS FOR STREET LIGHTING PLUS 2-2" CONDUITS FOR AESTHETIC/PATH LIGHTING CONCRETE ENCASED

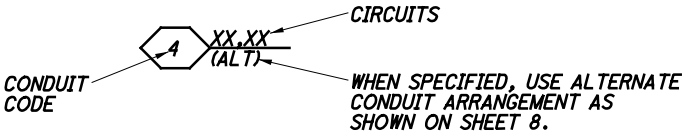
4-2" CONDUITS FOR STREET LIGHTING; 2-2" CONDUITS FOR TRAFFIC SIGNAL (SEE BU-12); PLUS 2-2" CONDUITS FOR AESTHETIC/PATH LIGHTING CONCRETE ENCASED

4-2" CONDUITS FOR STREET LIGHTING; 2-5" CONDUITS CONCRETE ENCASED

4-2" CONDUITS FOR STREET LIGHTING; 2-2" CONDUITS FOR TRAFFIC SIGNAL (SEE BU-12); 2-5" CONDUITS CONCRETE ENCASED

4-2" CONDUITS FOR STREET LIGHTING; 2-2" CONDUITS FOR TRAFFIC SIGNAL (SEE BU-12); PLUS 2-2" CONDUITS FOR AESTHETIC/PATH LIGHTING 2-5" CONDUITS CONCRETE ENCASED

TYPICAL CONDUIT CALL-OUTS



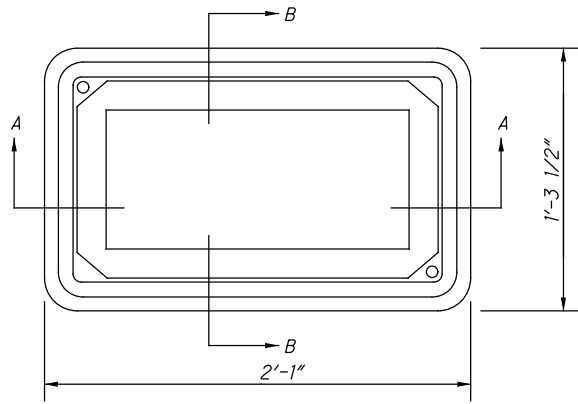
CIRCUIT NOTES:
1) AESTHETIC LIGHTING CIRCUITS SHALL BE KEPT PHYSICALLY SEPARATED FROM ROADWAY LIGHTING CIRCUITS. AESTHETIC LIGHTING CONDUITS SHALL NOT ENTER ROADWAY LIGHTING PULL BOXES. ROADWAY LIGHTING CONDUITS SHALL NOT ENTER AESTHETIC LIGHTING

2) ALL CIRCUITS SHALL BE 3-WIRE, 120V/ 120V/GROUND.

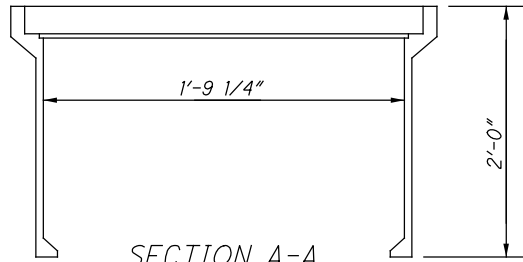
BUBBLE LABELS

- REMOVAL

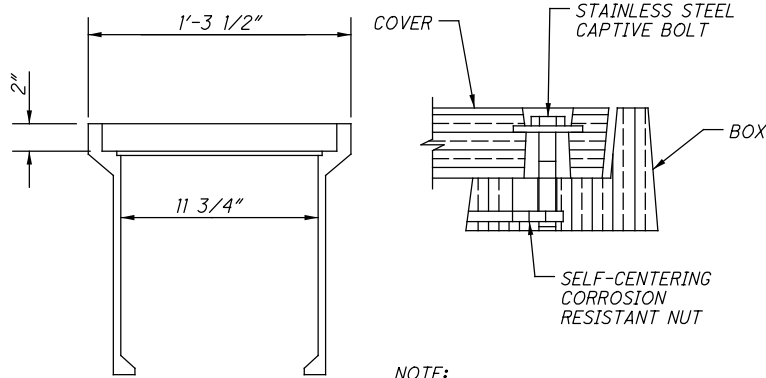
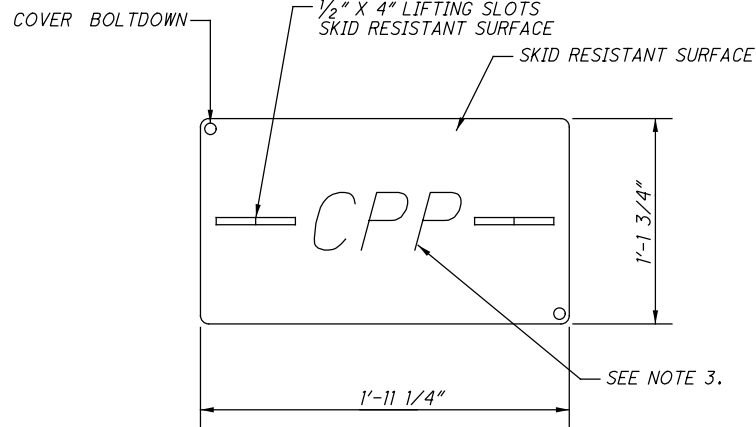
1	2021-05-18	DC056
0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
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13x24" RESIDENTIAL STREET LIGHTING PULLBOX
SCALE: NO SCALE

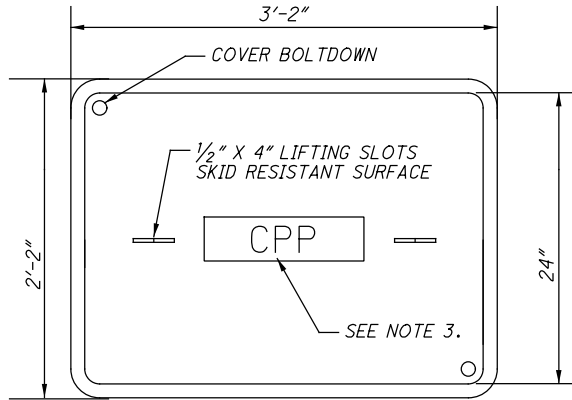
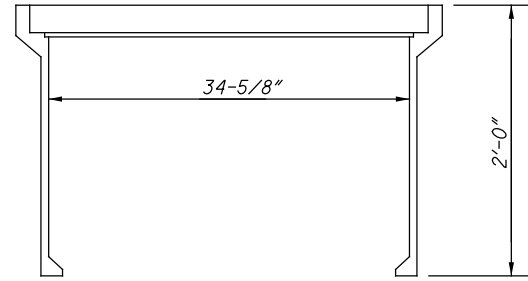


SECTION A-A

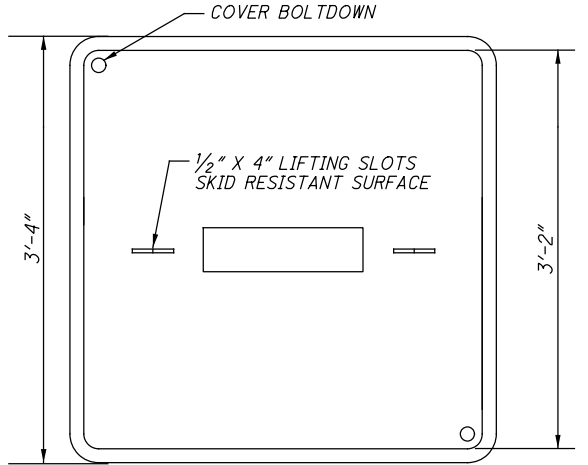
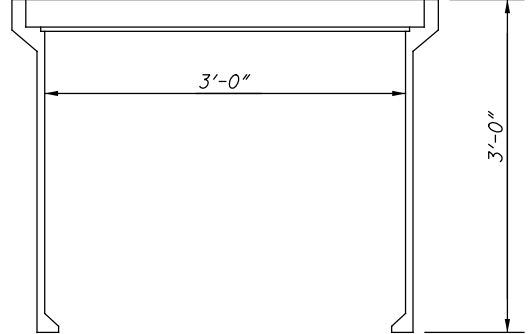


SECTION B-B

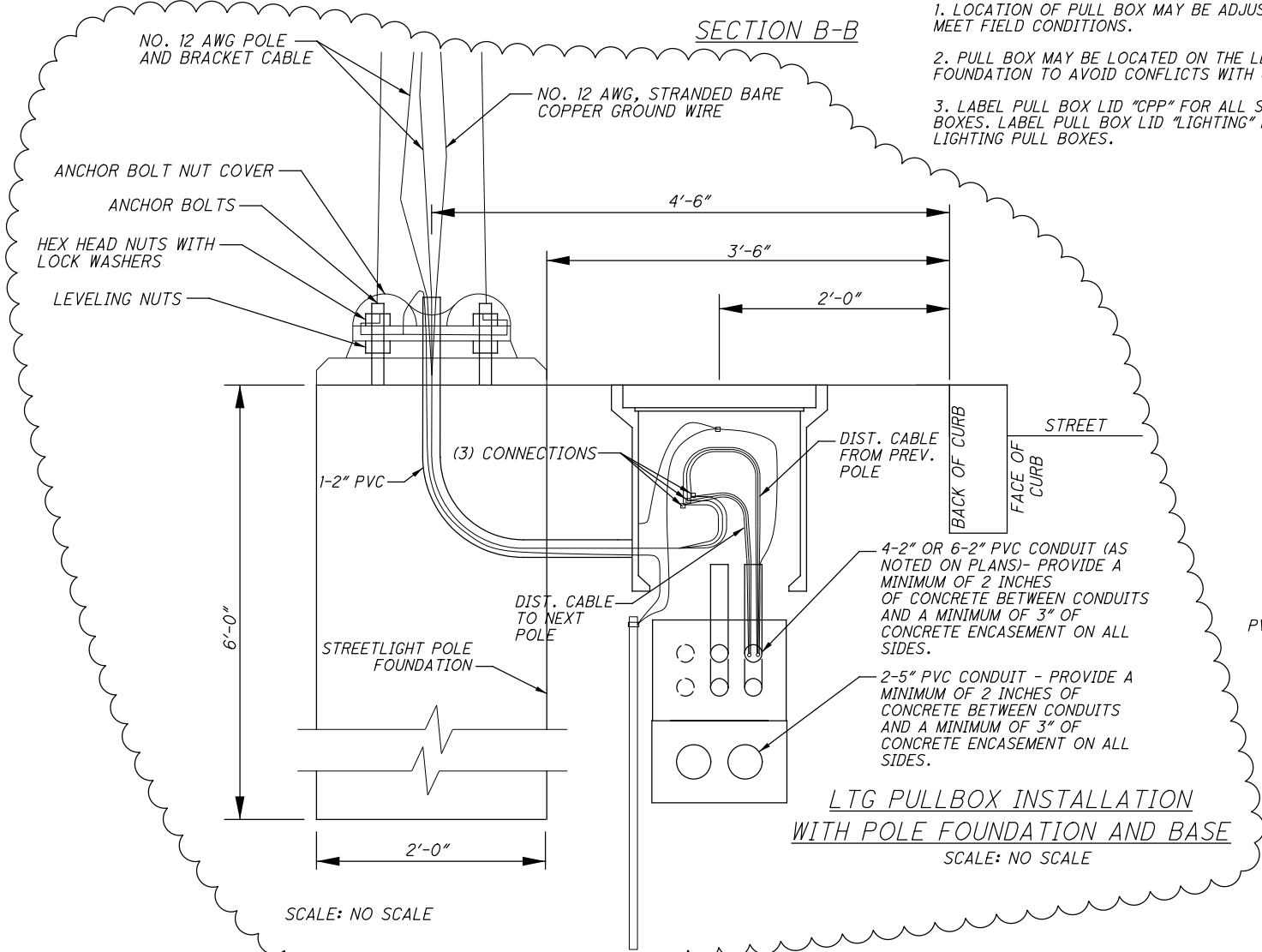
- NOTE:
1. LOCATION OF PULL BOX MAY BE ADJUSTED ACCORDINGLY TO MEET FIELD CONDITIONS.
 2. PULL BOX MAY BE LOCATED ON THE LEFT SIDE OR RIGHT SIDE OF FOUNDATION TO AVOID CONFLICTS WITH UNDERDRAIN.
 3. LABEL PULL BOX LID "CPP" FOR ALL STREET LIGHTING PULL BOXES. LABEL PULL BOX LID "LIGHTING" FOR ALL AESTHETIC/PATH LIGHTING PULL BOXES.



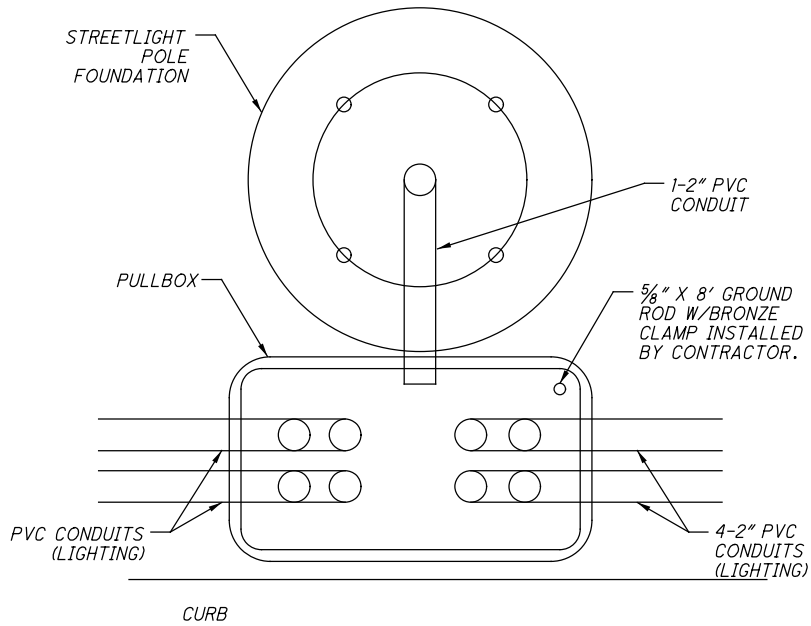
24"x36" PULLBOX
SCALE: NO SCALE



36"x36" PULLBOX
SCALE: NO SCALE

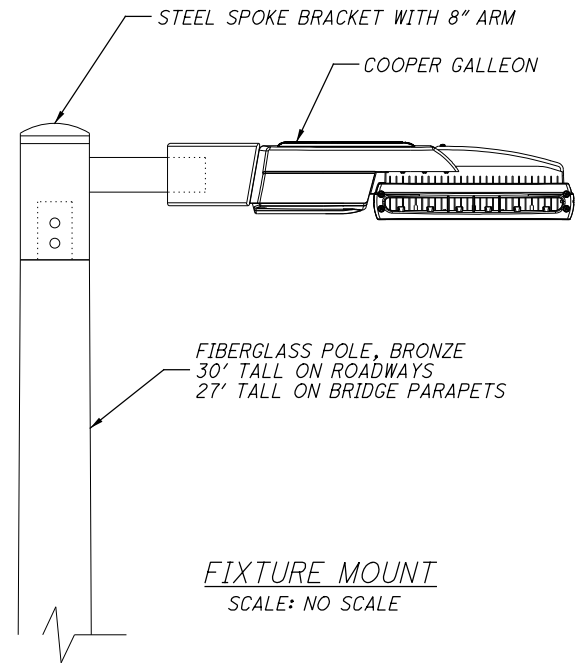


LTG PULLBOX INSTALLATION
WITH POLE FOUNDATION AND BASE
SCALE: NO SCALE



LTG PULLBOX INSTALLATION
SCALE: NO SCALE

NOTE:
GROUNDING STRAP PROVIDED AND INSTALLED BY CPP.

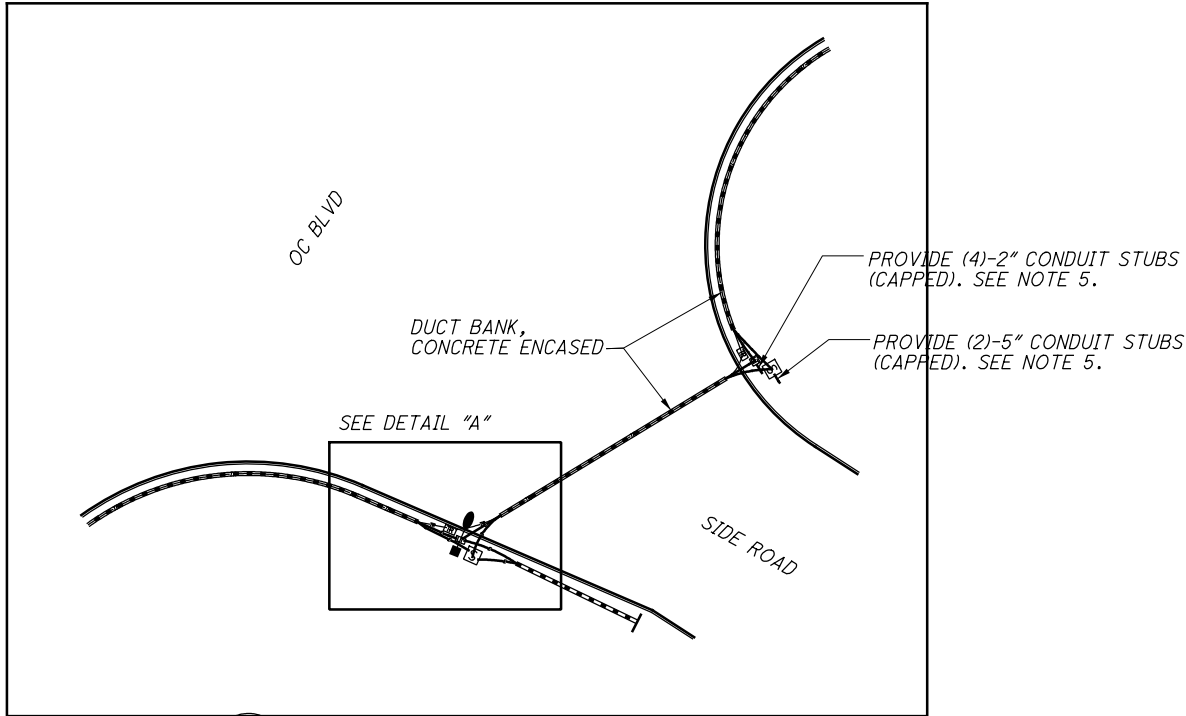


FIXTURE MOUNT
SCALE: NO SCALE

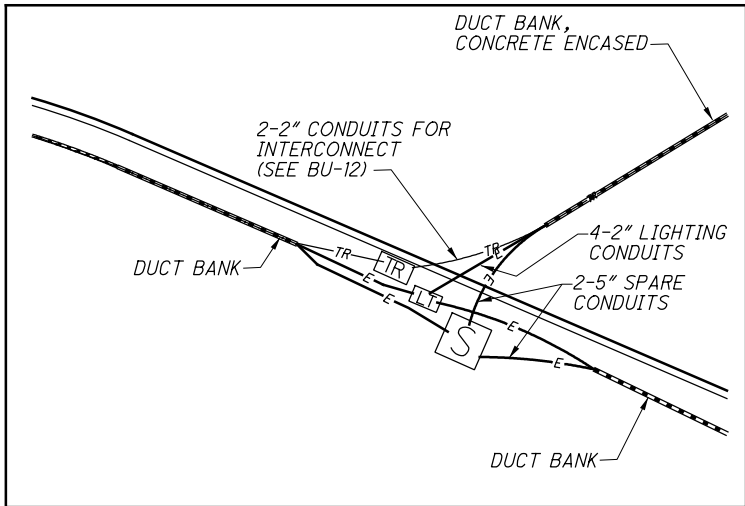
NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-08-14	RFC

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TYPICAL DUCT BANK CROSSING DETAIL

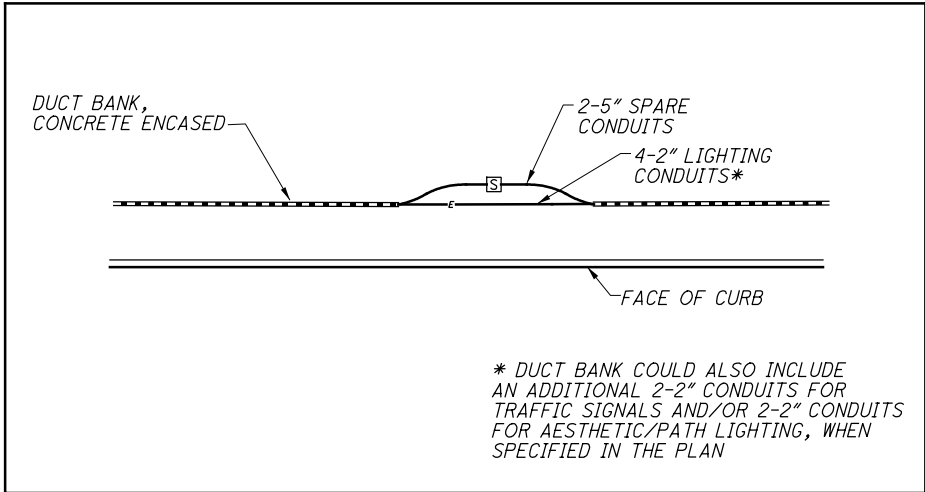


DETAIL "A"

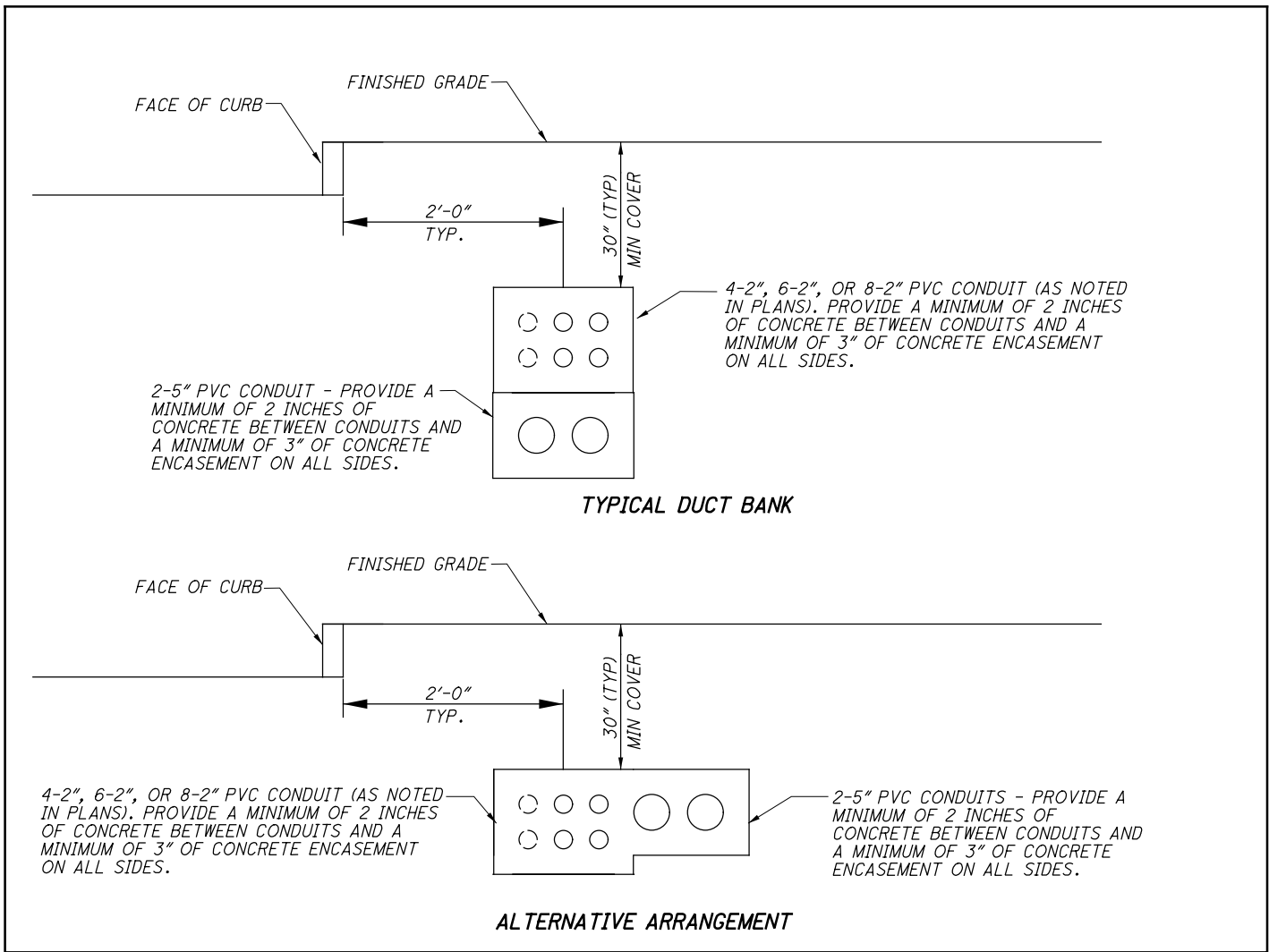


- NOTES:
- 1) PLACE CENTER OF TRAFFIC PULL BOX 1' FROM THE BACK OF CURB, UNLESS OTHERWISE NOTED.
 - 2) PLACE CENTER OF LIGHTING PULL BOX 2' FROM THE BACK OF CURB, AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 3) PLACE CENTER OF SPARE PULL BOX 4' FROM THE BACK OF CURB, UNLESS OTHERWISE NOTED.
 - 4) PROVIDE CONCRETE ENCASEMENT FOR ALL CONDUITS.
 - 5) PROVIDE CONDUIT STUBS (APPROXIMATELY 1' IN LENGTH) WHENEVER CONTINUATION OF THE CONDUIT DUCT BANK IS NOT PROVIDED. DO NOT ENCASE CONDUIT STUBS. ALL CONDUIT STUBS AND CONDUIT TERMINAL POINTS SHALL BE CAPPED.

TYPICAL CONDUIT ROUTING AT SPARE PULL BOX

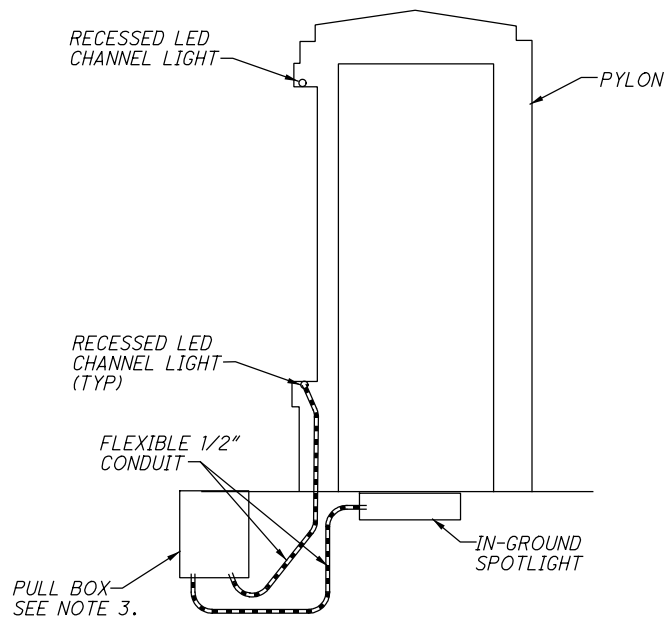


ALTERNATIVE ARRANGEMENT OF DUCT BANK, WHEN SPECIFIED

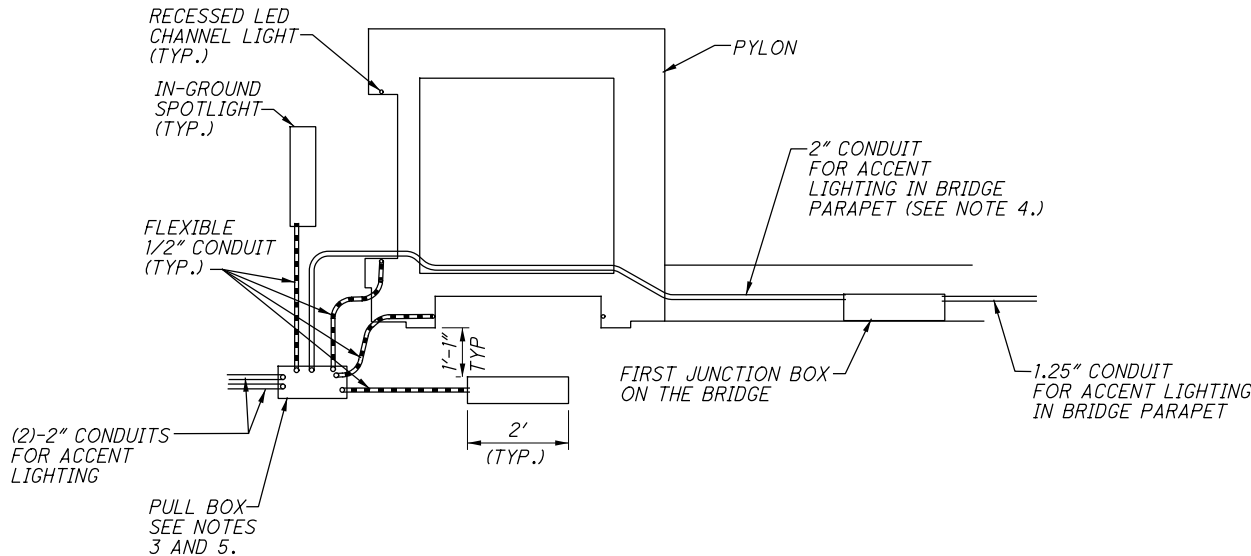


NOTE:
USE ALTERNATIVE ARRANGEMENT AT EACH SPARE (36"X36") PULL BOX LOCATED ALONG THE DUCT BANK RUN. THE ALTERNATIVE ARRANGEMENT IS ALSO REQUIRED TO AVOID POTENTIAL UTILITY CONFLICTS, AS NOTED IN THE PLANS.

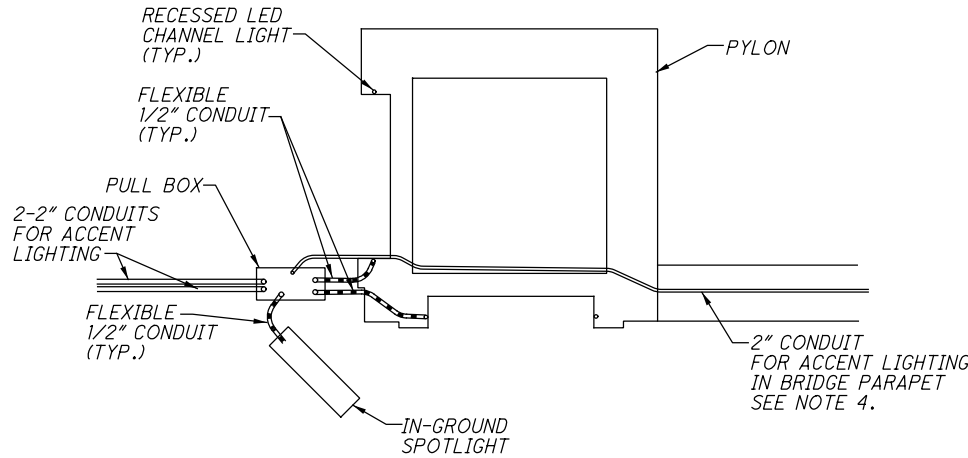
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TYPICAL PYLON ELEVATION VIEW
NOT TO SCALE



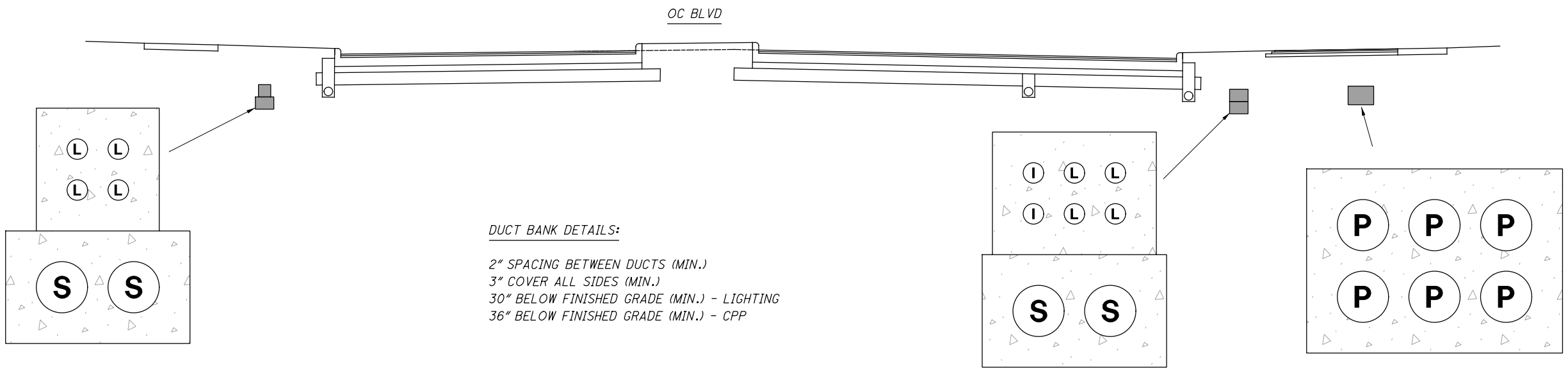
TYPICAL PYLON PLAN VIEW (LARGE PYLON)
NOT TO SCALE



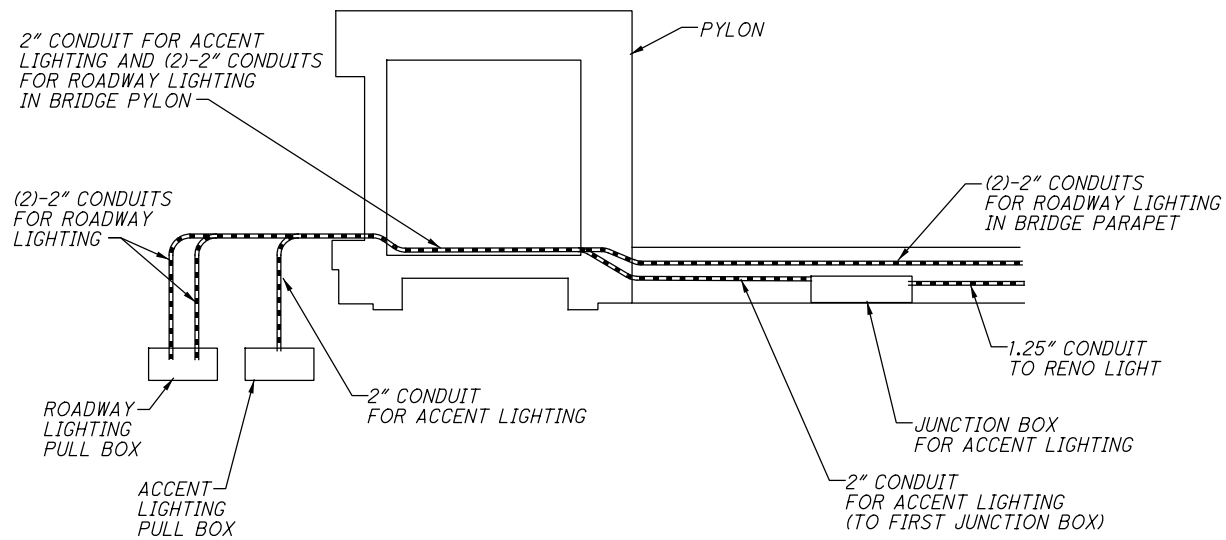
TYPICAL PYLON PLAN VIEW (SMALL PYLON)
NOT TO SCALE

- NOTES:
- 1) THE LED CHANNEL LIGHT SHALL BE A MODALIGHT MINI-AQUAFLEX-3000K. THE FLEX LIGHT SHALL BE CONTAINED ON A CUSTOM MODALIGHT CHANNEL, ZOOP-S-W. THE DRIVERS SHALL BE SUPPLY CODE MP 16 12V 132W, RECESSED LED. THE LED FLEX LIGHT SHALL BE PROVIDED ON ALL FOUR SIDES OF EACH COMMUNITY ARTWORK PANEL. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
 - 2) IN-GROUND SPOT LIGHT SHALL BE LUMENFACADE, PRODUCT CODE LOI-HO-100/277-24V-24-30K-WW-TS2.5-INTL-NO-ASL. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
 - 3) SET PULL BOX NEAR THE CORNER OF THE PYLON. PLACE THE MODALIGHT DRIVERS IN AN E-BOX (OR EQUAL) WATERTIGHT ENCLOSURE, AND PLACE THE E-BOX IN THE PULL BOX. USE MANUFACTURER CABLE TO CONNECT THE DRIVERS TO THE FIXTURES.
 - 4) PROVIDE EXPANSION/DEFLECTION COUPLINGS ON ALL CONDUIT ENTERING THE BRIDGE THROUGH THE PARAPET.
 - 5) THE MAXIMUM LENGTH OF THE LEADER CABLE WHICH CONNECTS THE MODA LIGHT DIVER TO THE RECESSED LED CHANNEL LIGHT IS 10'. THE CONTRACTOR SHALL ENSURE THAT THE PULL BOX IS PLACED TO PERMIT THE LEADER CABLE TO REACH THE CHANNEL LIGHT.
 - 6) THE RENO LIGHTS AND LIGHT COLUMNS SHALL USE A BLACK FINISH.

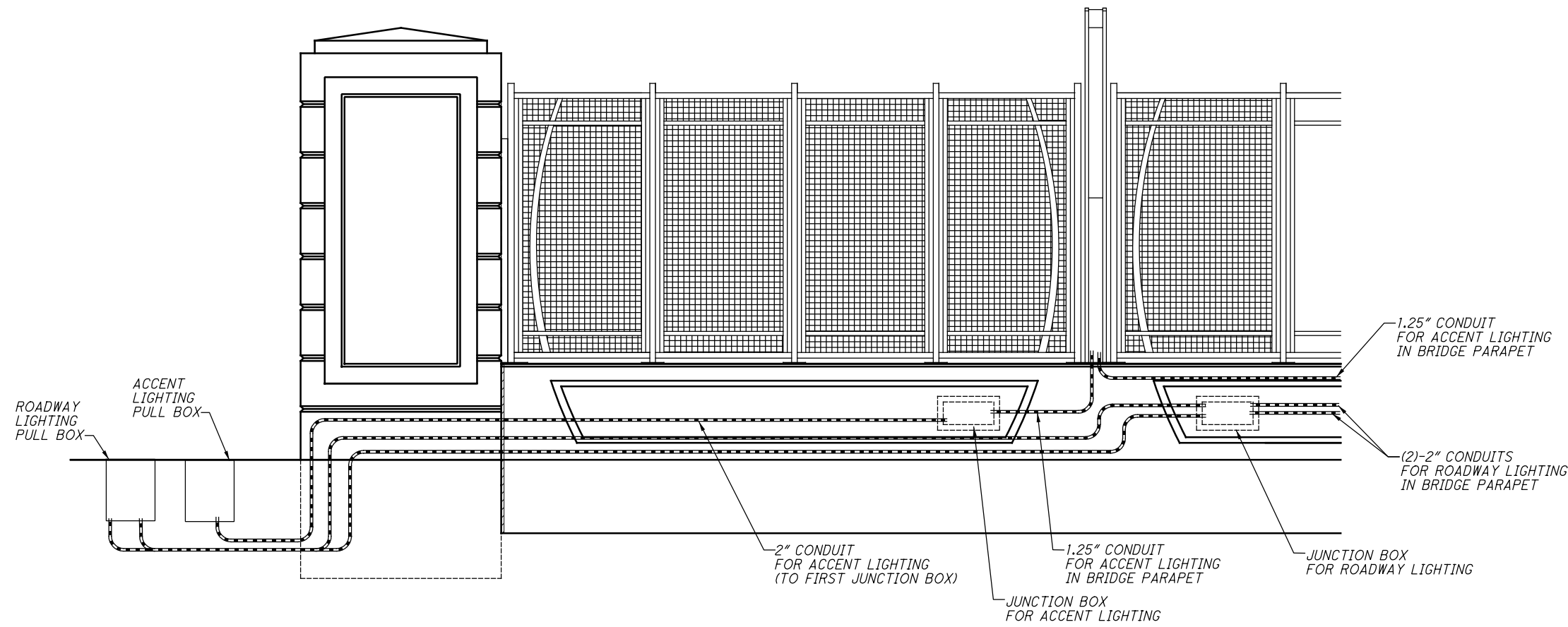
NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-08-14	RFC
ISSUE RECORD		



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NO.	DATE	DESCRIPTION
ISSUE RECORD		



TYPICAL PYLON PLAN VIEW
NOT TO SCALE

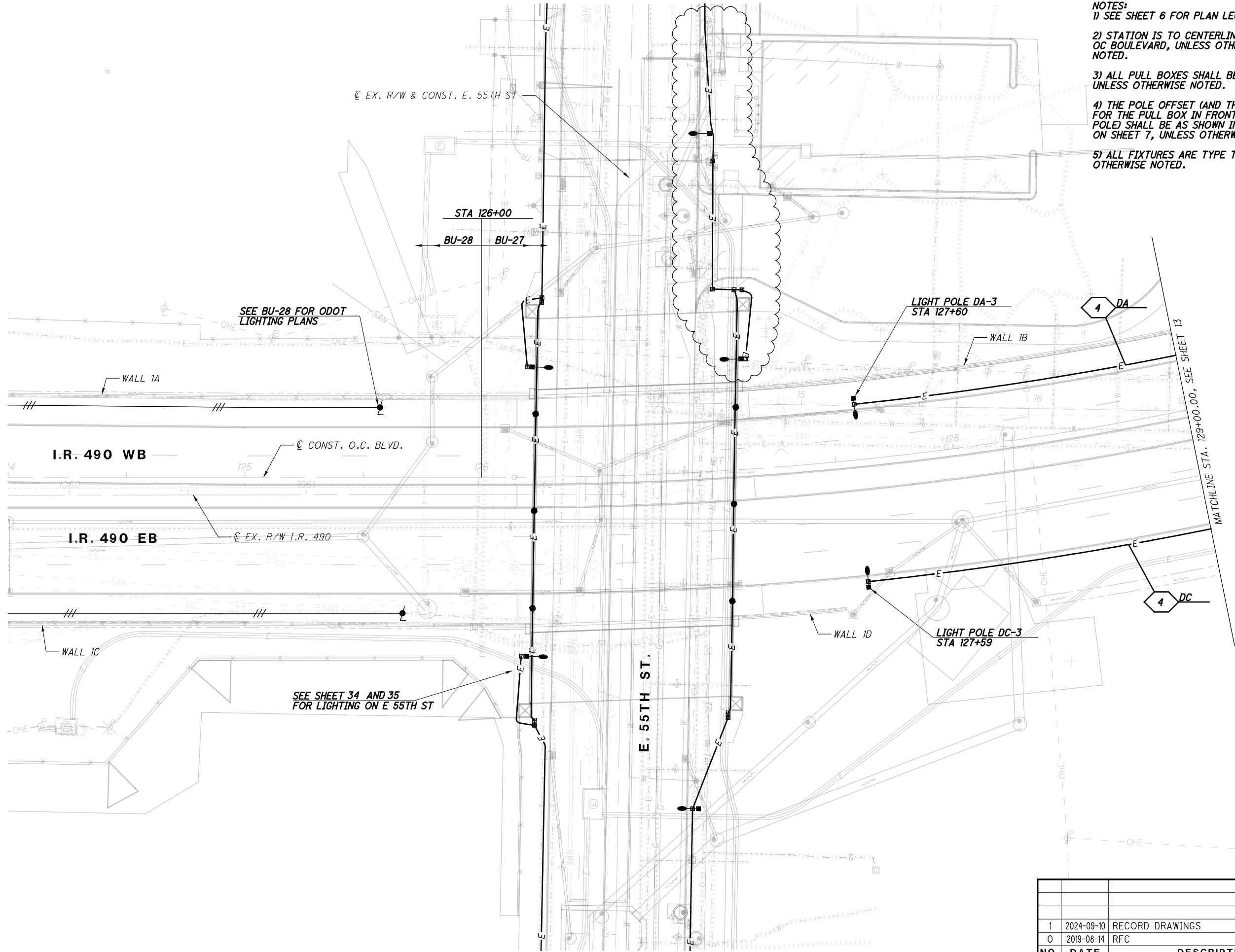


TYPICAL PYLON ELEVATION VIEW
NOT TO SCALE

NOTES:
1) THIS DETAIL IS PROVIDED AS GENERAL GUIDANCE FOR CONDUIT ENTERING THE BRIDGE PARAPET. THE CONTRACTOR SHALL INSTALL CONDUIT WITH BENDS AND DEFLECTIONS AS NECESSARY TO CARRY CONDUIT IN THE BRIDGE PARAPET, IN GENERAL CONFORMANCE WITH THE DETAILS SHOWN ON THIS SHEET.
2) PROVIDE EXPANSION/DEFLECTION COUPLINGS ON ALL CONDUIT ENTERING THE BRIDGE THROUGH THE PARAPET.

0	2019-08-14	RFC
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CUY-IR490/ SR010-
2.09 / 19.28



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) ALL FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.

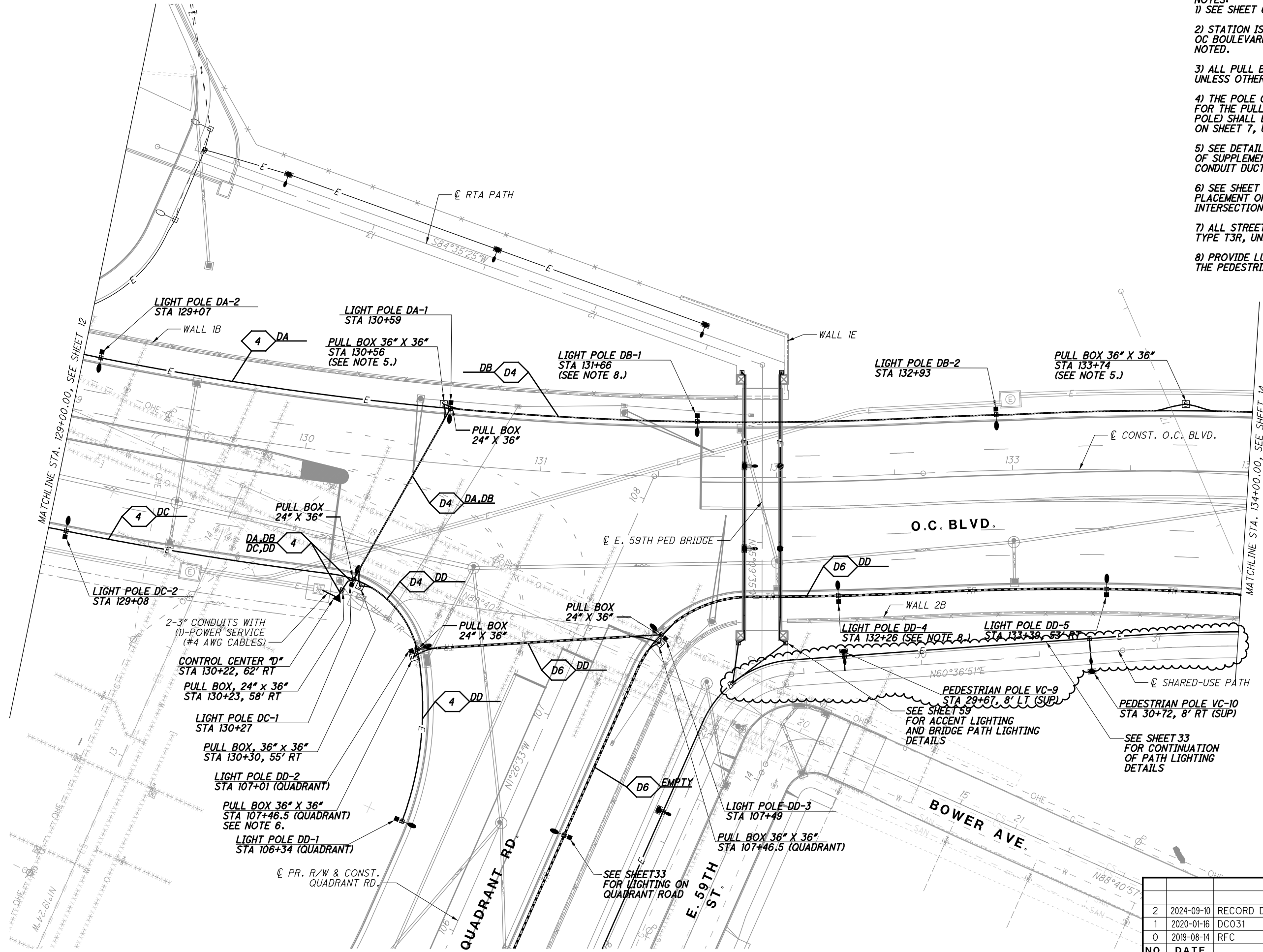
NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-08-14	RFC
ISSUE RECORD		

CUY-IR490/ SR010-
2.09 / 19.28
LIGHTING PLAN - O.C. BLVD.
STA. 126+00.00 TO STA. 129+00.00

CALCULATED MJH
CHECKED KAE

0 20 40
HORIZONTAL SCALE IN FEET

RECORD PLANS



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) SEE DETAIL ON SHEET 8, FOR PLACEMENT OF SUPPLEMENTAL PULL BOX ON CONDUIT DUCT BANK SYSTEM. (TYPICAL)
 - 6) SEE SHEET 8 FOR A DETAIL REGARDING PLACEMENT OF PULL BOXES AT DUCT BANK INTERSECTION CROSSINGS. (TYPICAL)
 - 7) ALL STREET LIGHTING FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.
 - 8) PROVIDE LUMINAIRE SHIELD, FACING THE PEDESTRIAN BRIDGE.

0

20

40

10

20

30

40

CALCULATED

MJH

CHECKED

KAE

HORIZONTAL SCALE IN FEET

CUY-IR490/ SR010-

2.09 / 19.28

LIGHTING PLAN - O.C. BLVD.

STA. 129+00.00 TO STA. 134+00.00

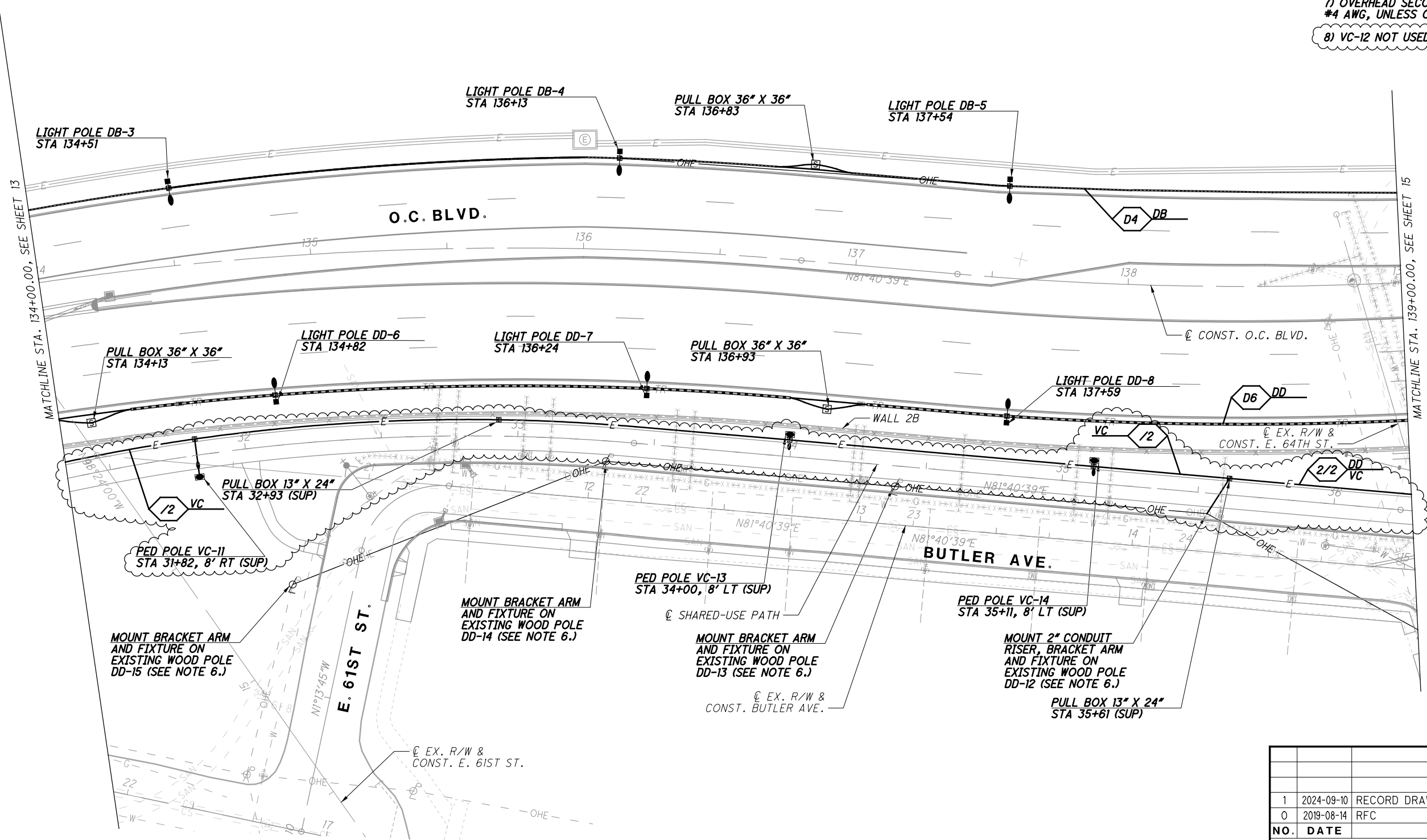
RECORD PLANS

13

62

NO.	DATE	DESCRIPTION
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1	2020-01-16	DC031
0	2019-08-14	RFC

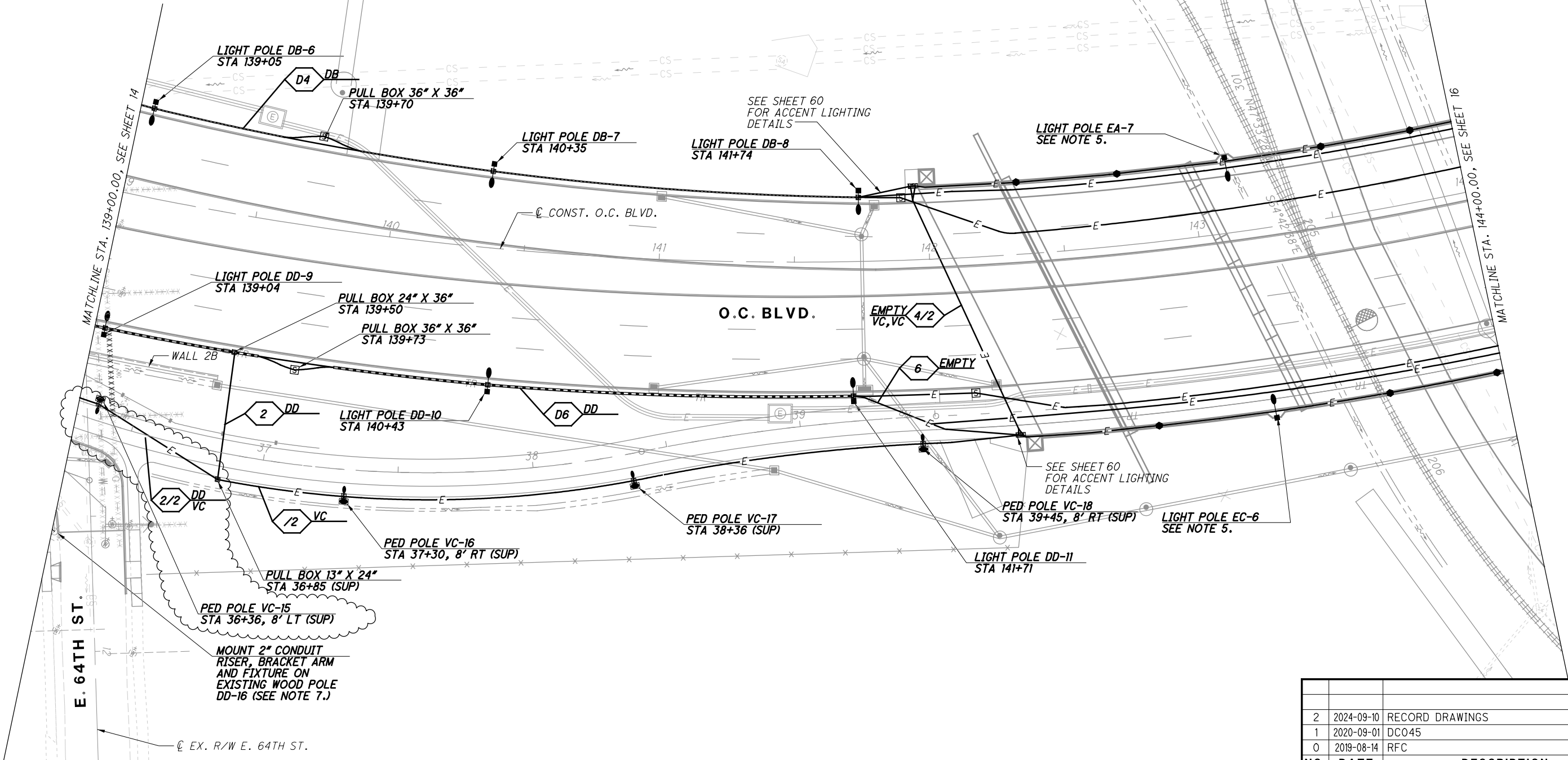
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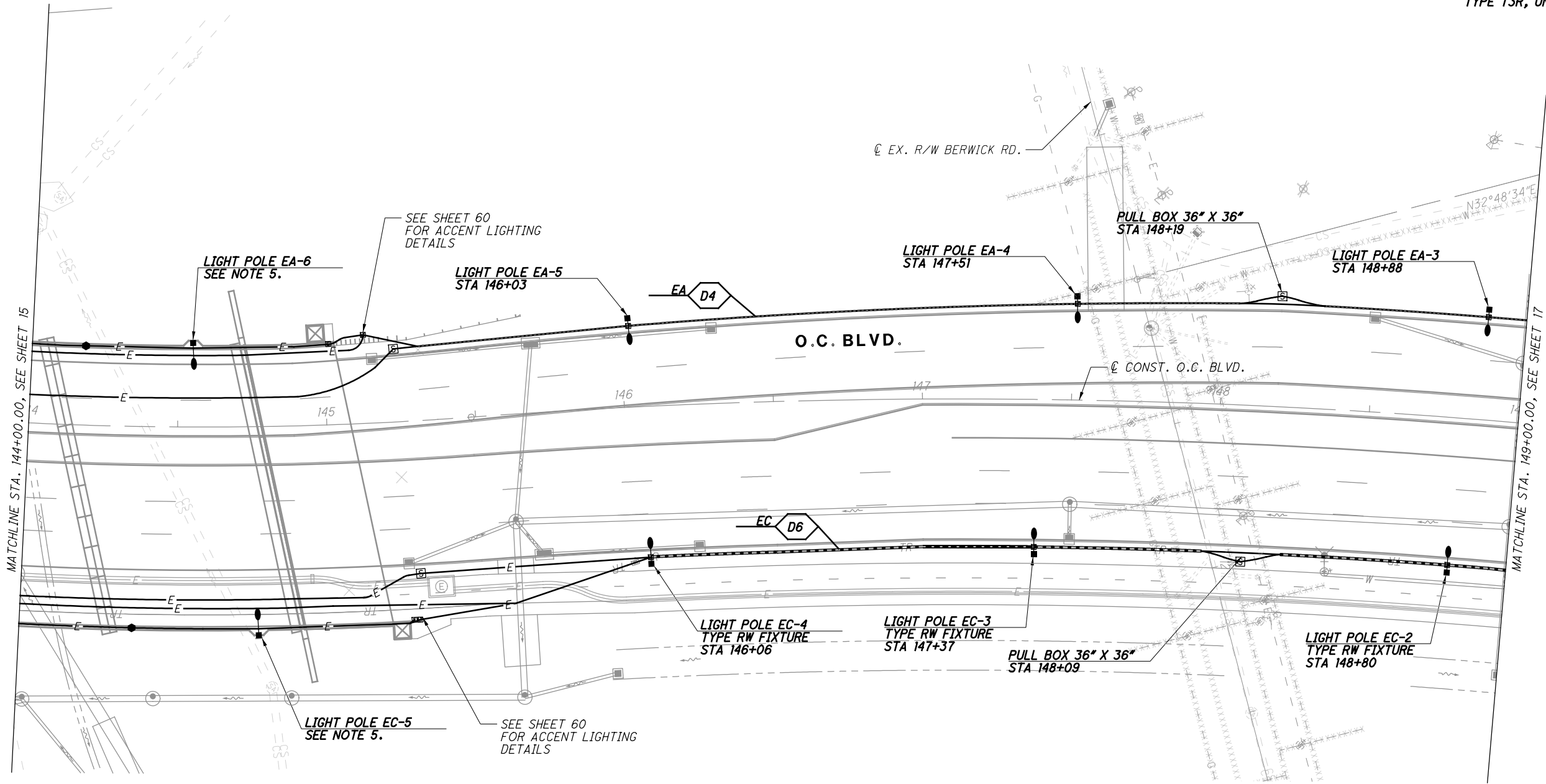
- NOTES:**
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) ALL STREET LIGHTING FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.
 - 6) EXISTING WOOD POLE IS OWNED BY CEI. POLE WILL BE TURNED OVER TO CPP OWNERSHIP. CONTRACTOR TO MOUNT BRACKET ARM AND 250W EQ. FIXTURE ON EXISTING POLE.
 - 7) OVERHEAD SECONDARY CABLE SHALL BE #4 AWG, UNLESS OTHERWISE NOTED.
 - 8) VC-12 NOT USED

NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-08-14	RFC
ISSUE RECORD		

- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) LIGHT POLE SHALL BE PLACED ON BRIDGE PILASTER. SEE BRIDGE PLAN, BU-17, FOR ADDITIONAL INFORMATION.
 - 6) ALL STREET LIGHTING FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.
 - 7) EXISTING WOOD POLE IS OWNED BY CET. POLE WILL BE TURNED OVER TO CPP OWNERSHIP. CONTRACTOR TO MOUNT BRACKET ARM AND 250W EQ. FIXTURE ON EXISTING POLE.



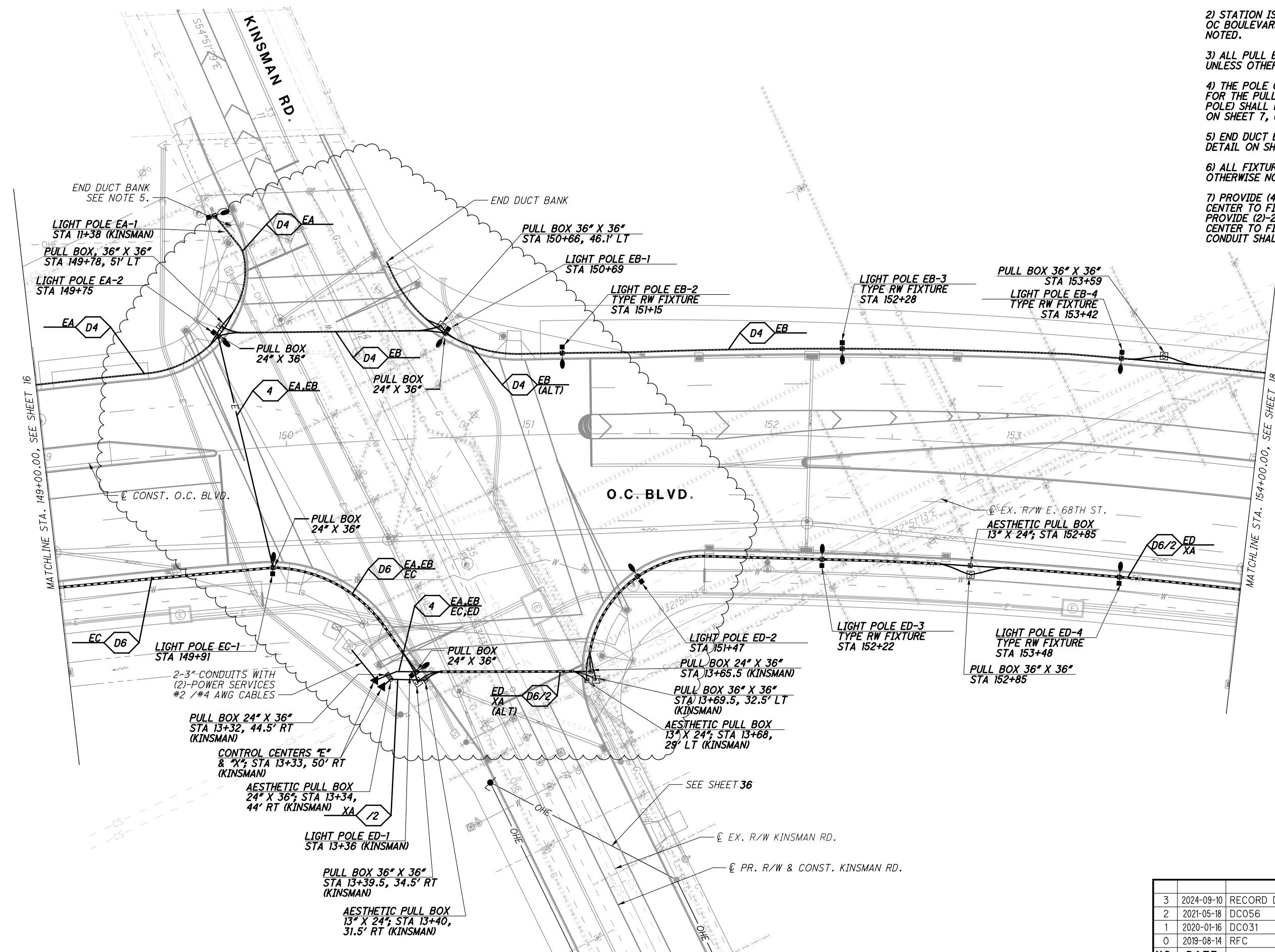
NO.	DATE	DESCRIPTION
2	2024-09-10	RECORD DRAWINGS
1	2020-09-01	DC045
0	2019-08-14	RFC
		ISSUE RECORD



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) LIGHT POLE SHALL BE PLACED ON BRIDGE PILASTER. SEE BRIDGE PLAN, BU-17, FOR ADDITIONAL INFORMATION.
 - 6) ALL STREET LIGHTING FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		





- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13\"X24\", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) END DUCT BANK, AS DESCRIBED IN THE DETAIL ON SHEET 8.
 - 6) ALL FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.
 - 7) PROVIDE (4)-2\" CONDUITS FROM CONTROL CENTER TO FIRST LIGHTING PULL BOX. PROVIDE (2)-2\" CONDUITS FROM CONTROL CENTER TO FIRST AESTHETIC PULL BOX. ALL CONDUIT SHALL BE CONCRETE ENCASED.

NO.	DATE	DESCRIPTION
3	2024-09-10	RECORD DRAWINGS
2	2021-05-18	DC056
1	2020-01-16	DC031
0	2019-08-14	RFC
ISSUE RECORD		

CUY-IR490/ SR010-
2.09/ 19.28

LIGHTING PLAN - O.C. BLVD.
STA. 149+00.00 TO STA. 154+00.00

RECORD PLANS

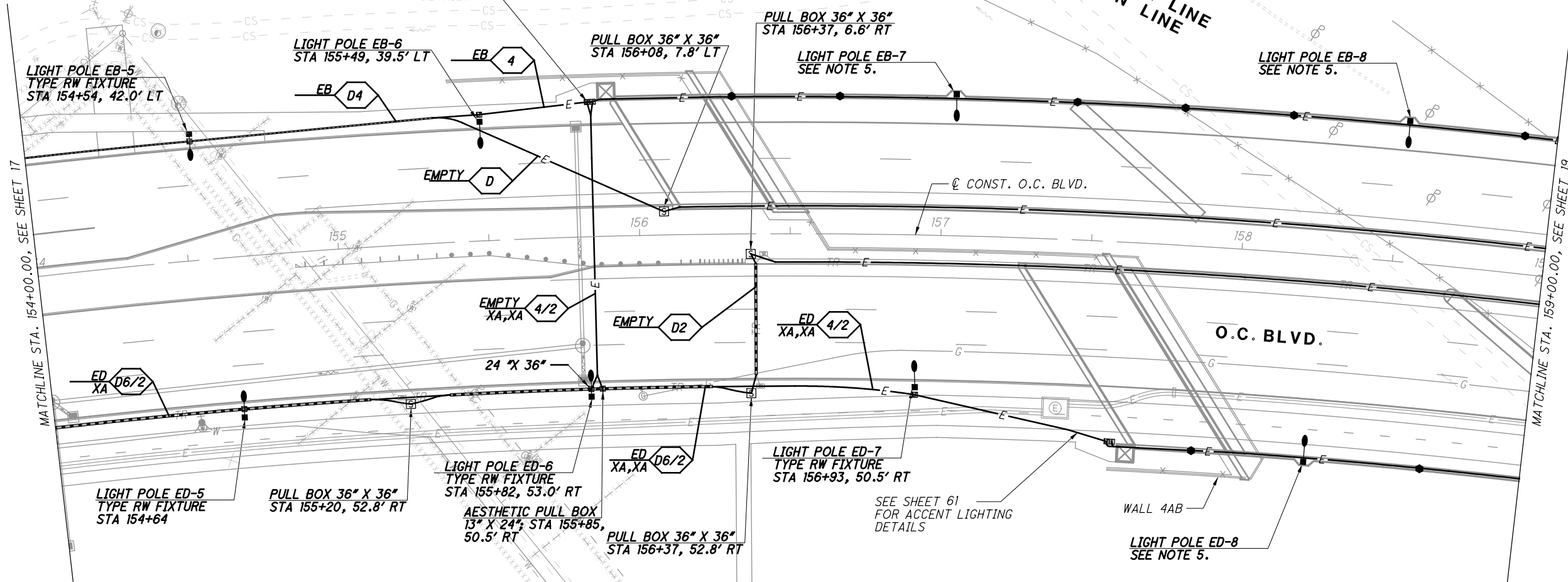
RECORD PLANS



0 20 40
HORIZONTAL
SCALE IN FEET

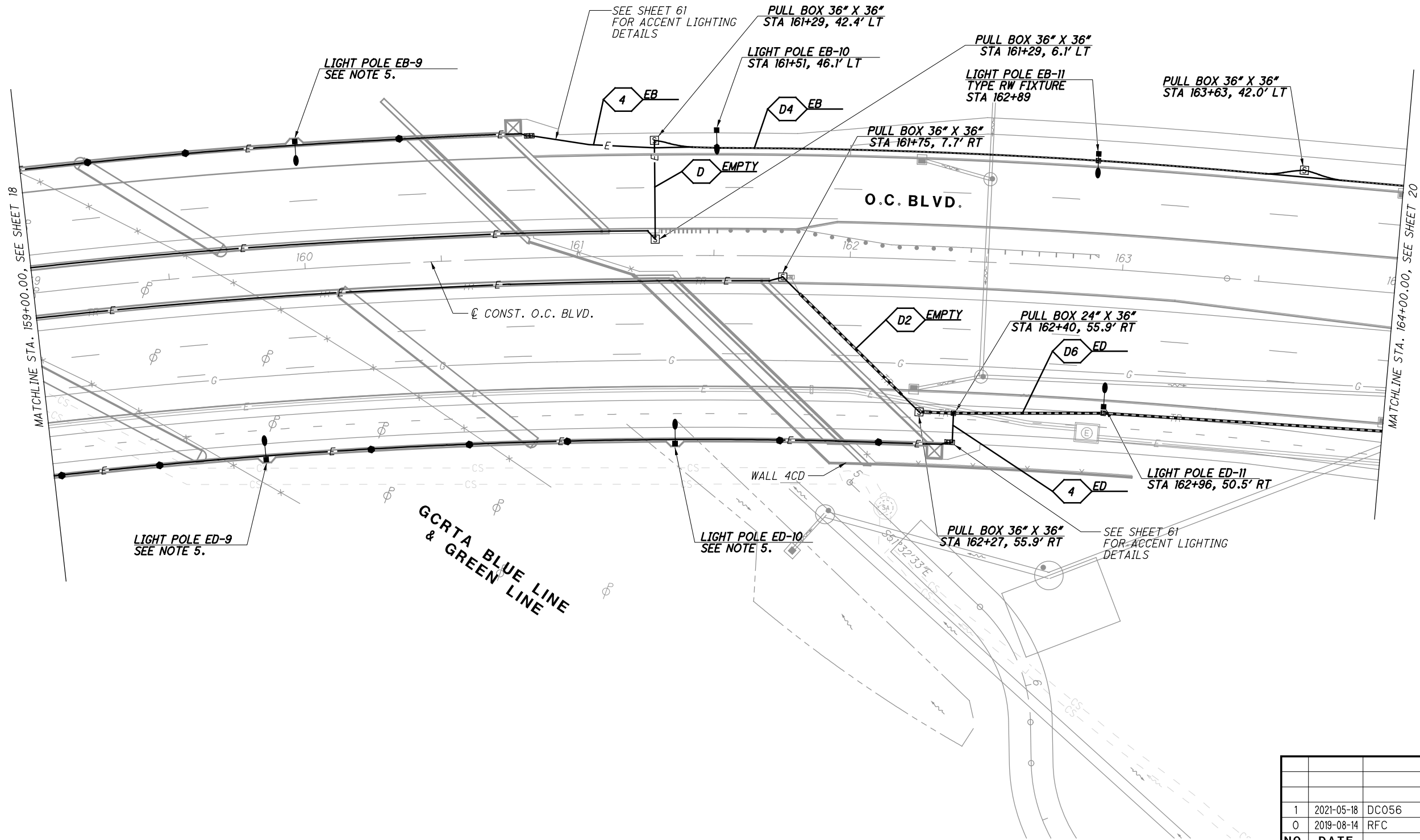
CALCULATED
M/JH
CHECKED
KAE

17
62



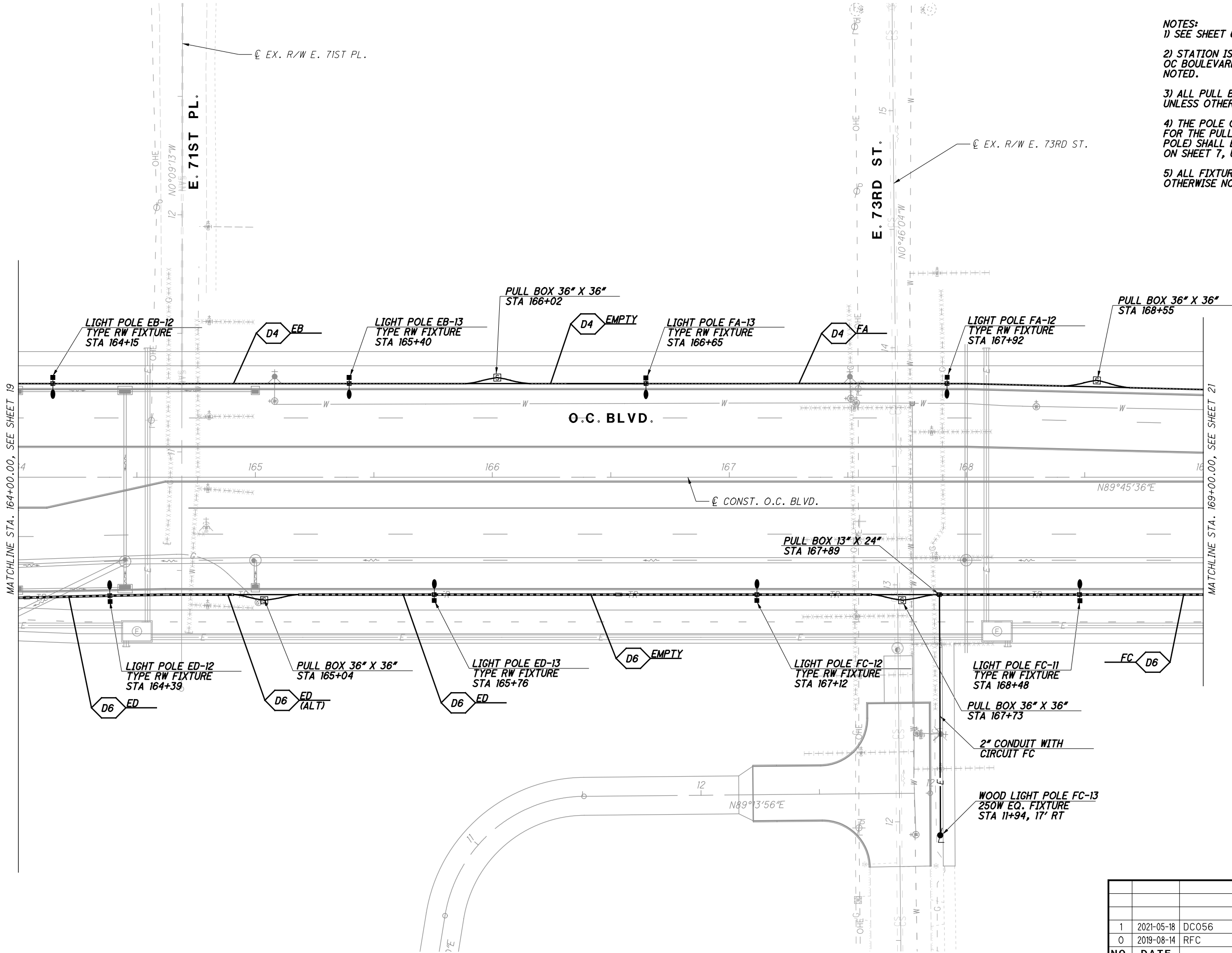
6) ALL FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.

1	2021-05-18	DC056
0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"X24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) LIGHT POLE SHALL BE PLACED ON BRIDGE PILASTER. SEE BRIDGE PLAN, BU-19, FOR ADDITIONAL INFORMATION.
 - 6) ALL FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.

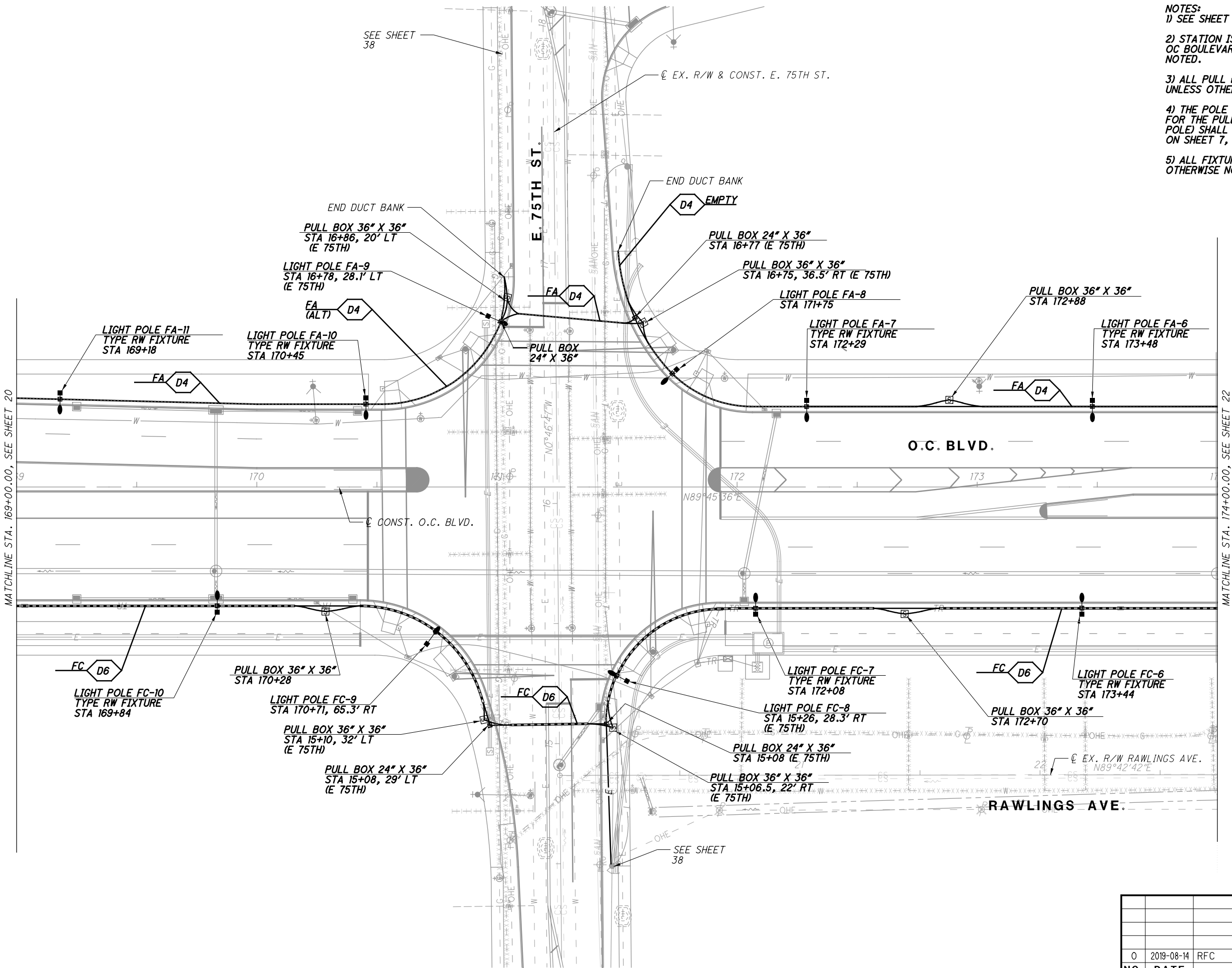
NO.	DATE	DESCRIPTION
1	2021-05-18	DC056
0	2019-08-14	RFC
ISSUE RECORD		



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) ALL FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.

NO.	DATE	DESCRIPTION
1	2021-05-18	DC056
0	2019-08-14	RFC
ISSUE RECORD		





- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) ALL FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.

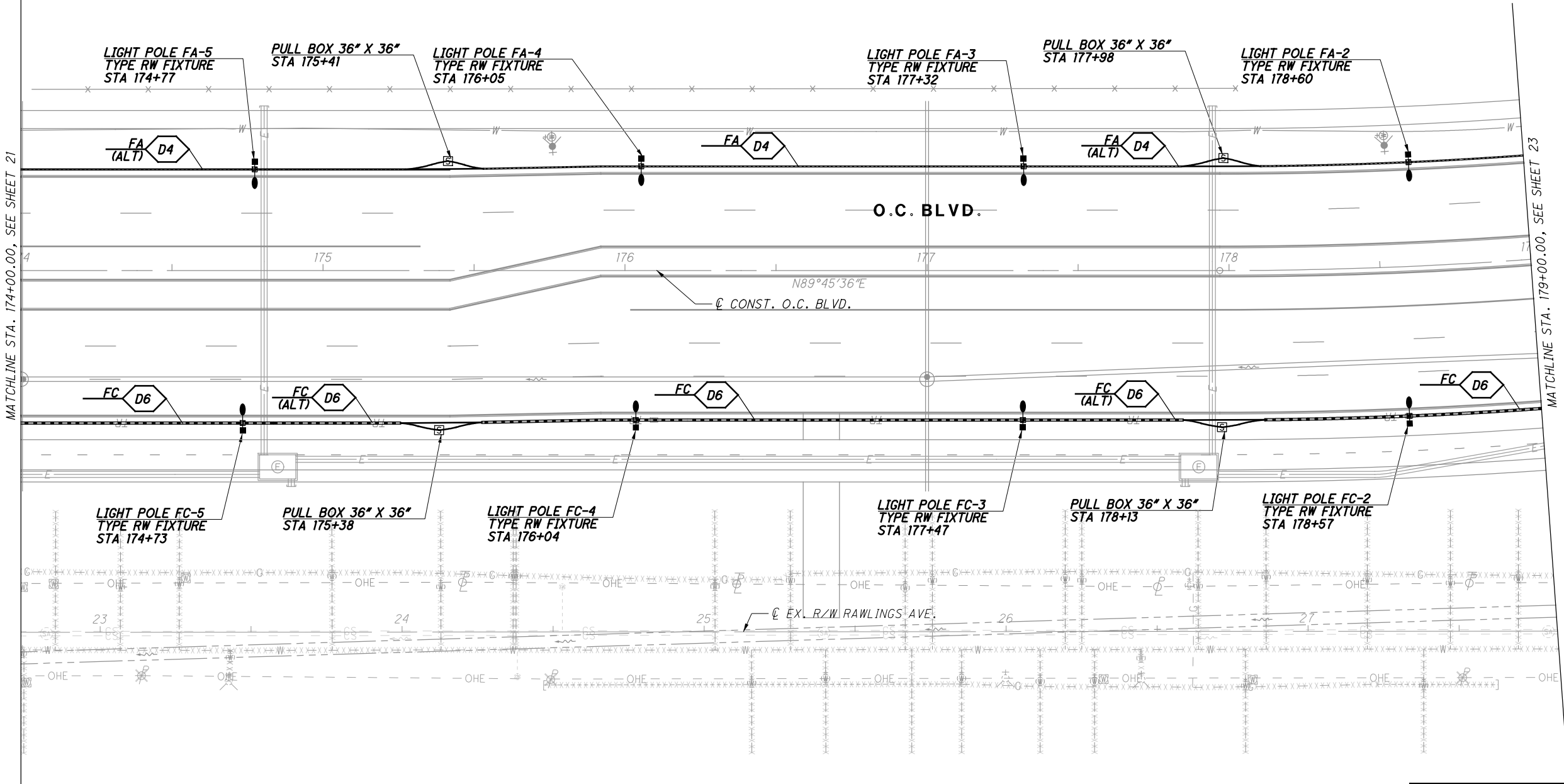
0 20 40
HORIZONTAL SCALE IN FEET

CALCULATED MJH
CHECKED KAE

LIGHTING PLAN - O.C. BLVD.
STA. 169+00.00 TO STA. 174+00.00

CUY-IR490/ SR010-
2.09 / 19.28

ISSUE RECORD		
NO.	DATE	DESCRIPTION
0	2019-08-14	RFC



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

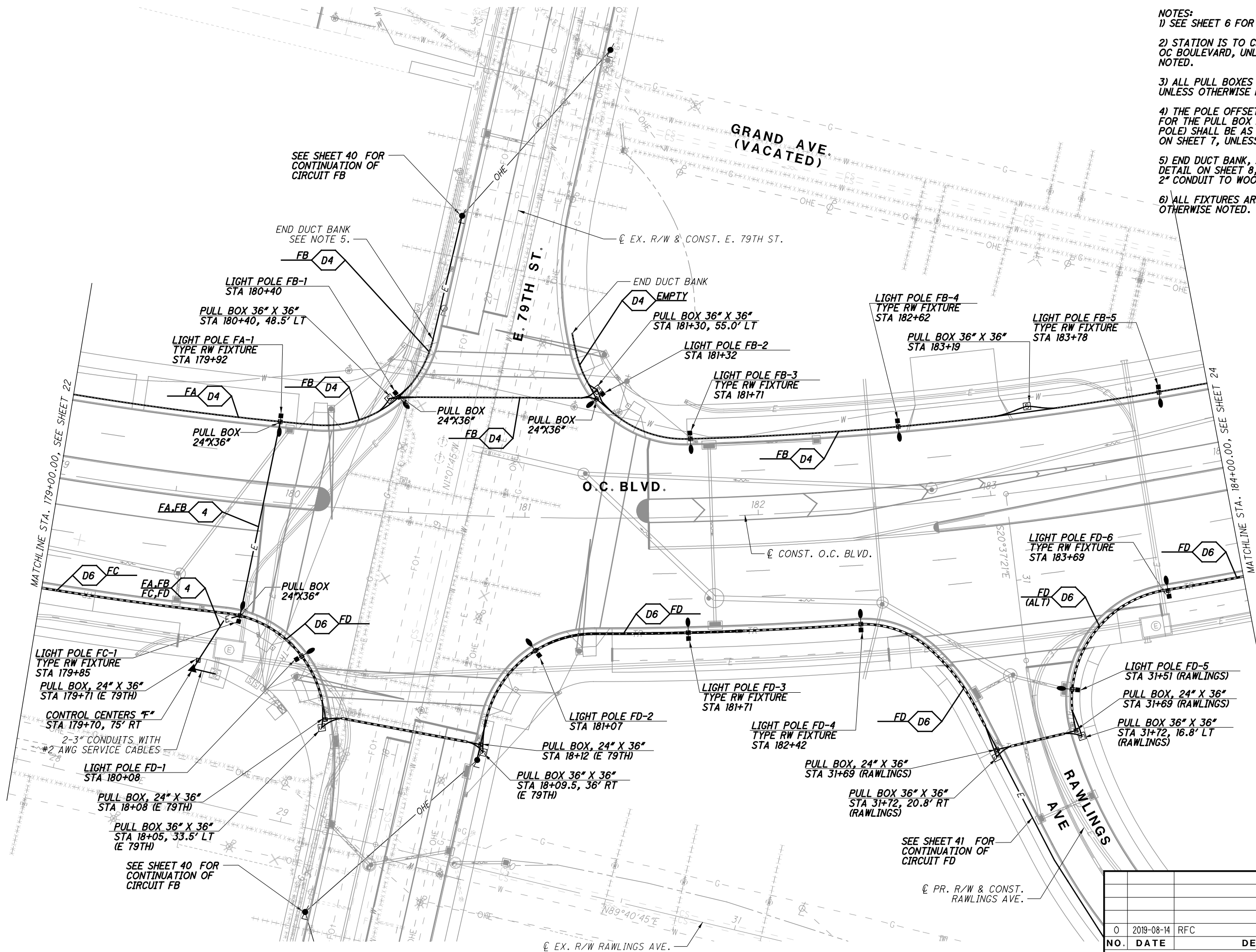
CUY-IR490/ SR010-
2.09 / 19.28

LIGHTING PLAN - O.C. BLVD.
STA. 174+00.00 TO STA. 179+00.00

CALCULATED
M/JH
CHECKED
KAE

0 20 40
HORIZONTAL
SCALE IN FEET

RECORD PLANS



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) END DUCT BANK, AS DESCRIBED IN THE DETAIL ON SHEET 8, EXCEPT EXTEND ONE-2" CONDUIT TO WOOD POLE FB-12.
 - 6) ALL FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.

0

20

40

HORIZONTAL
SCALE IN FEET

CALCULATED

MJH

CHECKED

KAE

LIGHTING PLAN - O.C. BLVD.

STA. 179+00.00 TO STA. 184+00.00

CUY-IR490/ SR010-

2.09 / 19.28

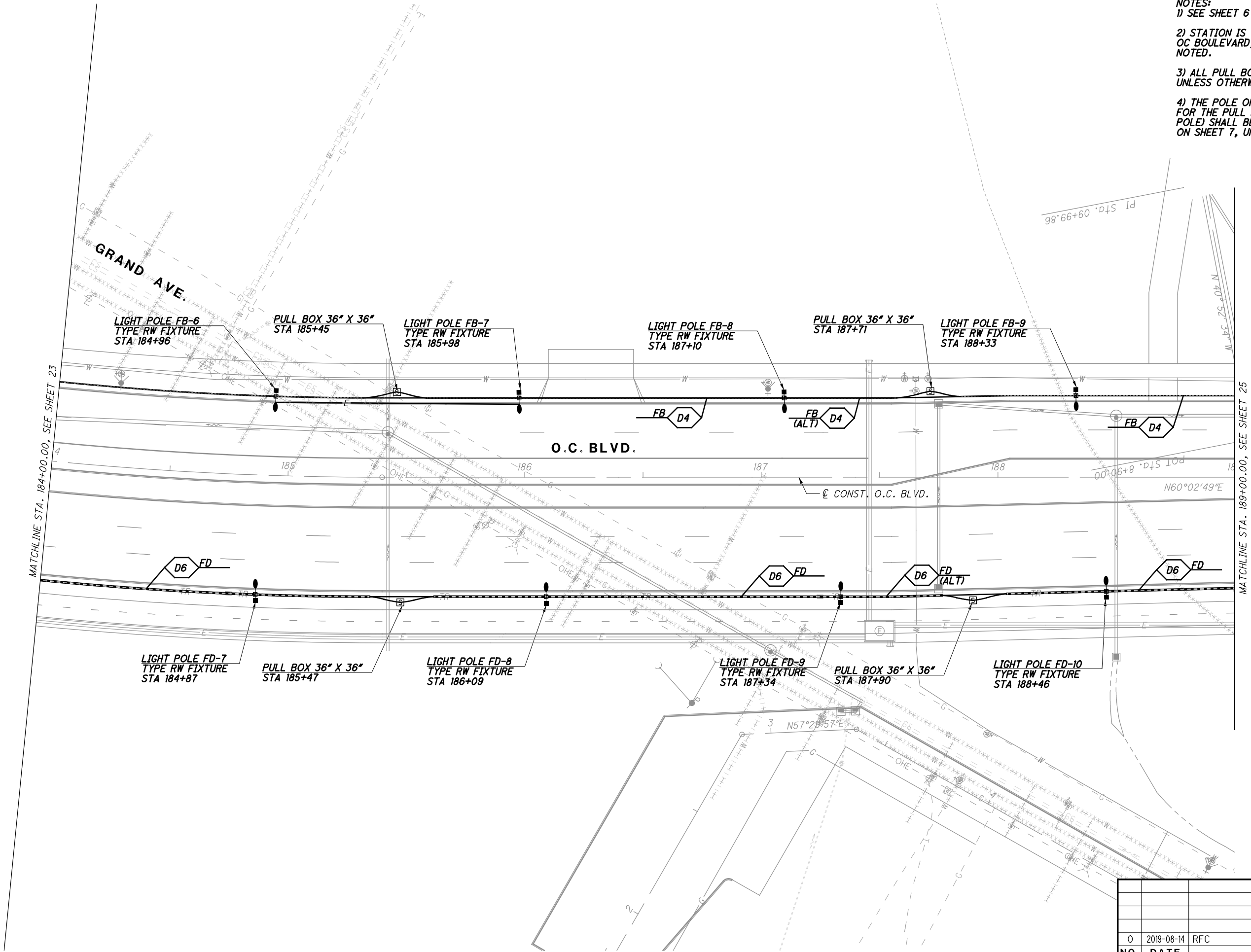
RECORD PLANS

RECORD PLANS

23

62

NO.	DATE	DESCRIPTION
0	2019-08-14	RFC
ISSUE RECORD		



- NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.
2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
3) ALL PULL BOXES SHALL BE 13\"X24\", UNLESS OTHERWISE NOTED.
4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.

CALCULATED
MUH

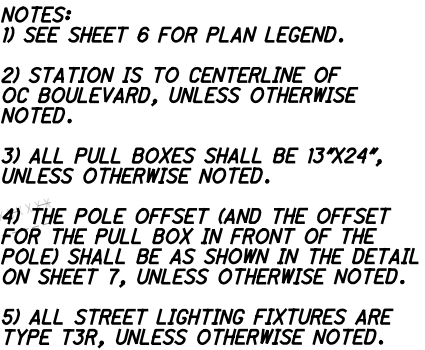
CHECKED
KAE

0 20 40
HORIZONTAL
SCALE IN FEET

LIGHTING PLAN - O.C. BLVD.
STA. 184+00.00 TO STA. 189+00.00

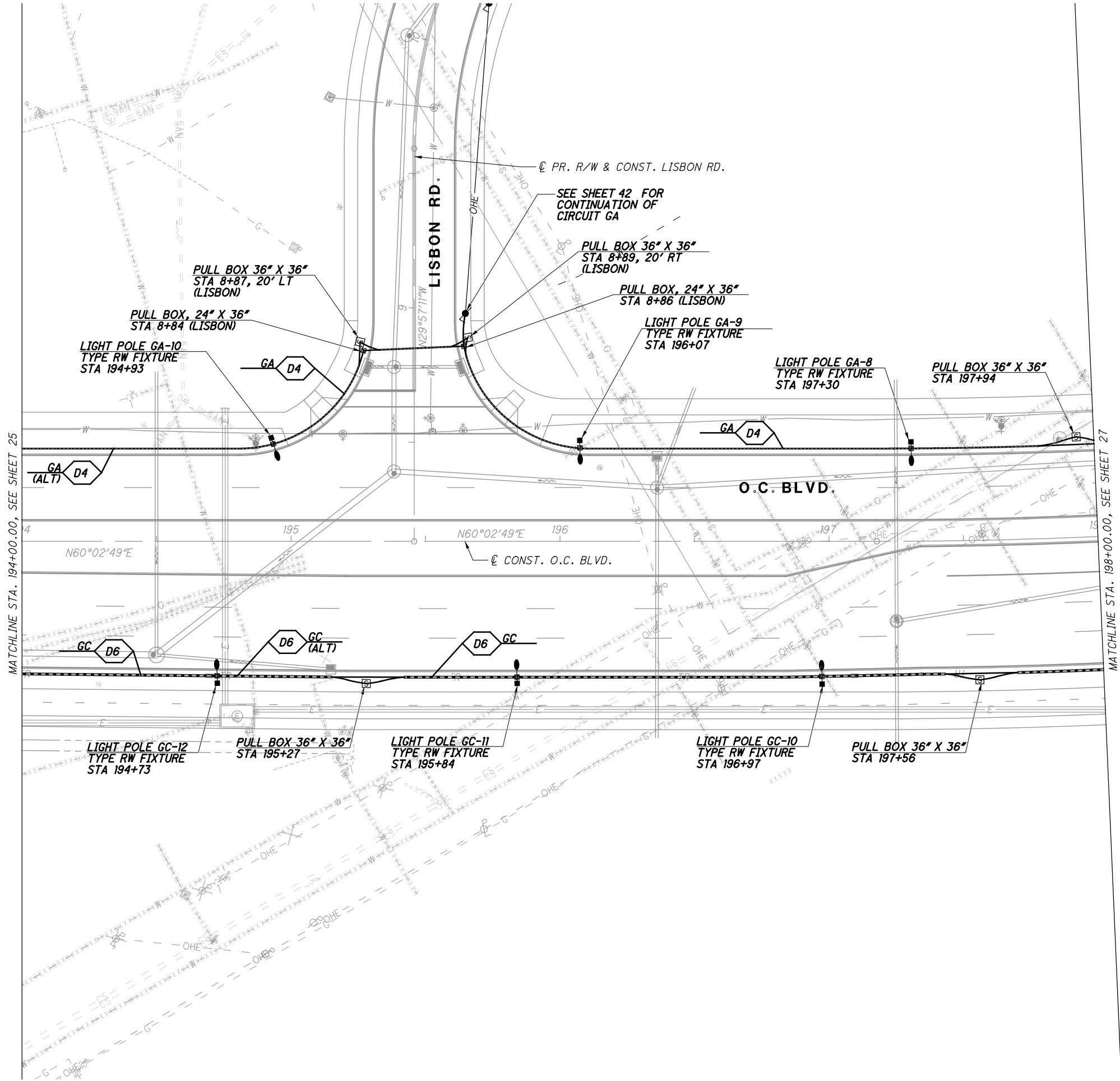
CUY-IR490/ SR010-
2.09 / 19.28

ISSUE RECORD		
NO.	DATE	DESCRIPTION
0	2019-08-14	RFC



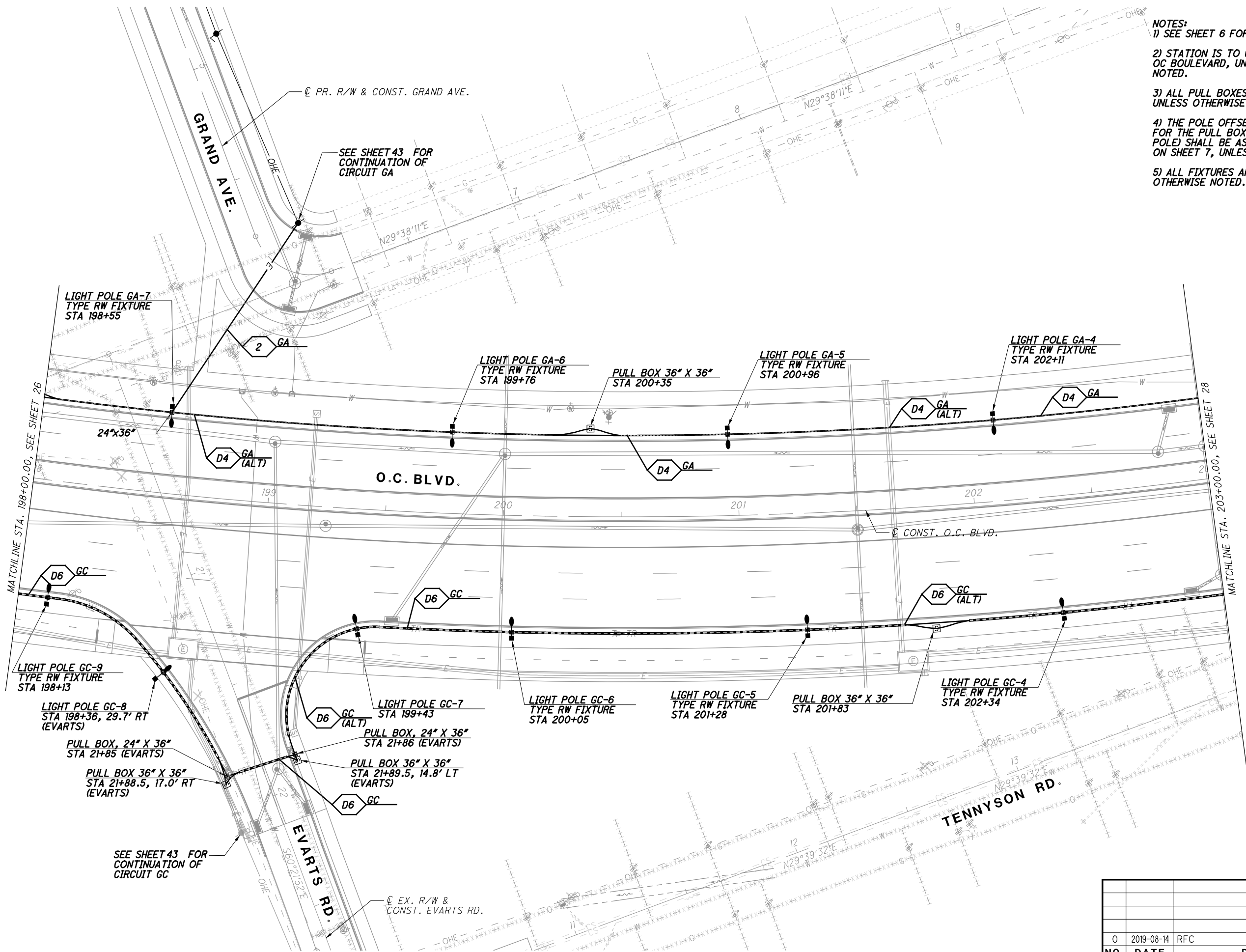
CUY-IR490 / SR010-
2.09 / 19.28

	CALCULATED	0
	MJH	
	CHECKED	10
	KAE	
HORIZONTAL SCALE		
RECORD PLANS		



NO.	DATE	DESCRIPTION
0	2019-08-14	RFC
ISSUE RECORD		

- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"X24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) SEE SHEET 8 FOR A DETAIL REGARDING PLACEMENT OF PULL BOXES AT DUCT BANK INTERSECTION CROSSINGS. (TYPICAL)



- NOTES:**
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"X24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) ALL FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.

0 20 40
HORIZONTAL SCALE IN FEET

CALCULATED MJH
CHECKED KAE

CUY-IR490/ SR010-
2.09/ 19.28

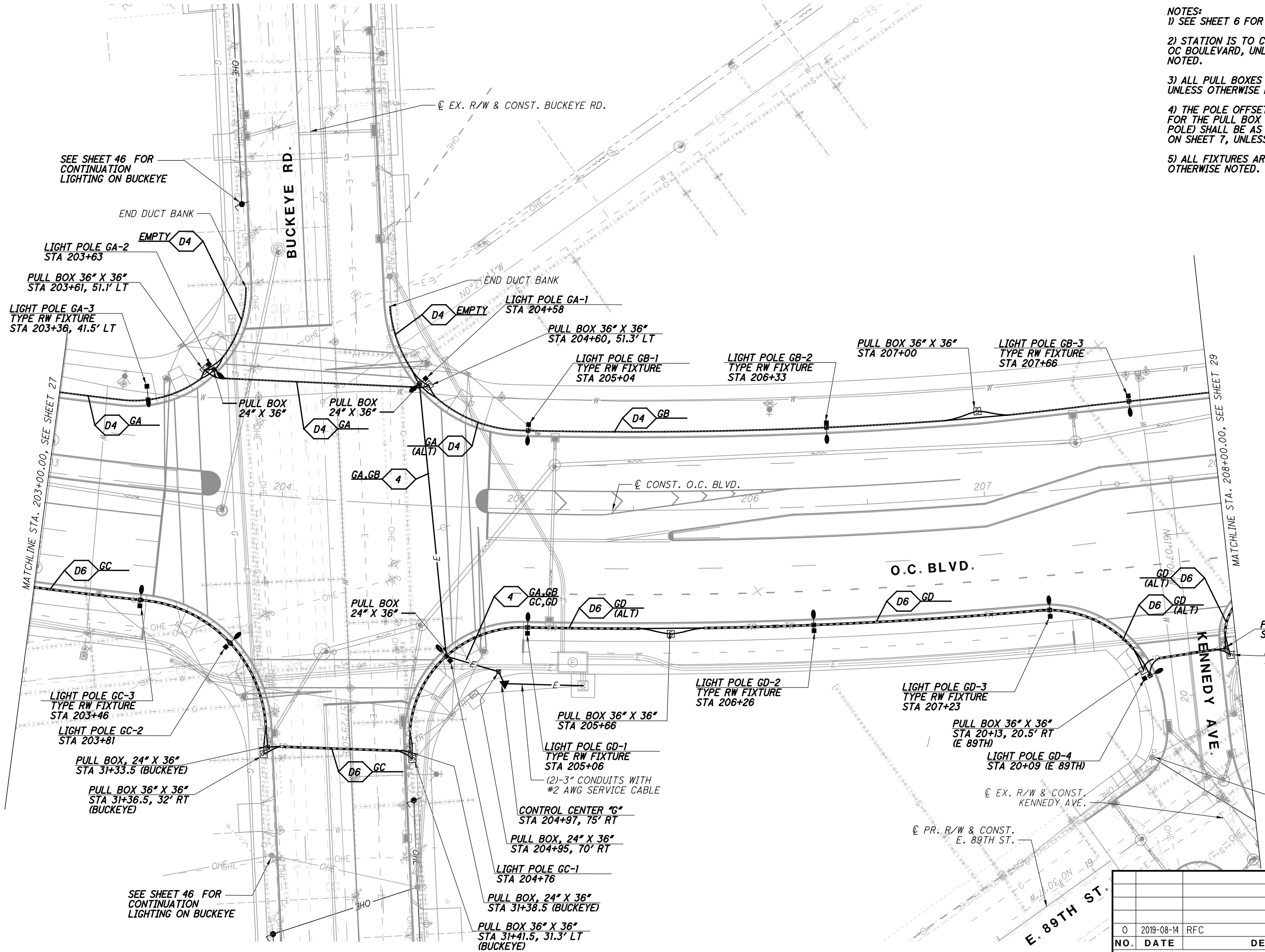
RECORD PLANS

LIGHTING PLAN - O.C. BLVD.
STA. 198+00.00 TO STA. 203+00.00

RECORD PLANS

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

27
62



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) ALL FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.

0

20

40

HORIZONTAL
SCALE IN FEET

CALCULATED

MJH

CHECKED

KAE

LIGHTING PLAN - O.C. BLVD.
STA. 203+00.00 TO STA. 208+00.00

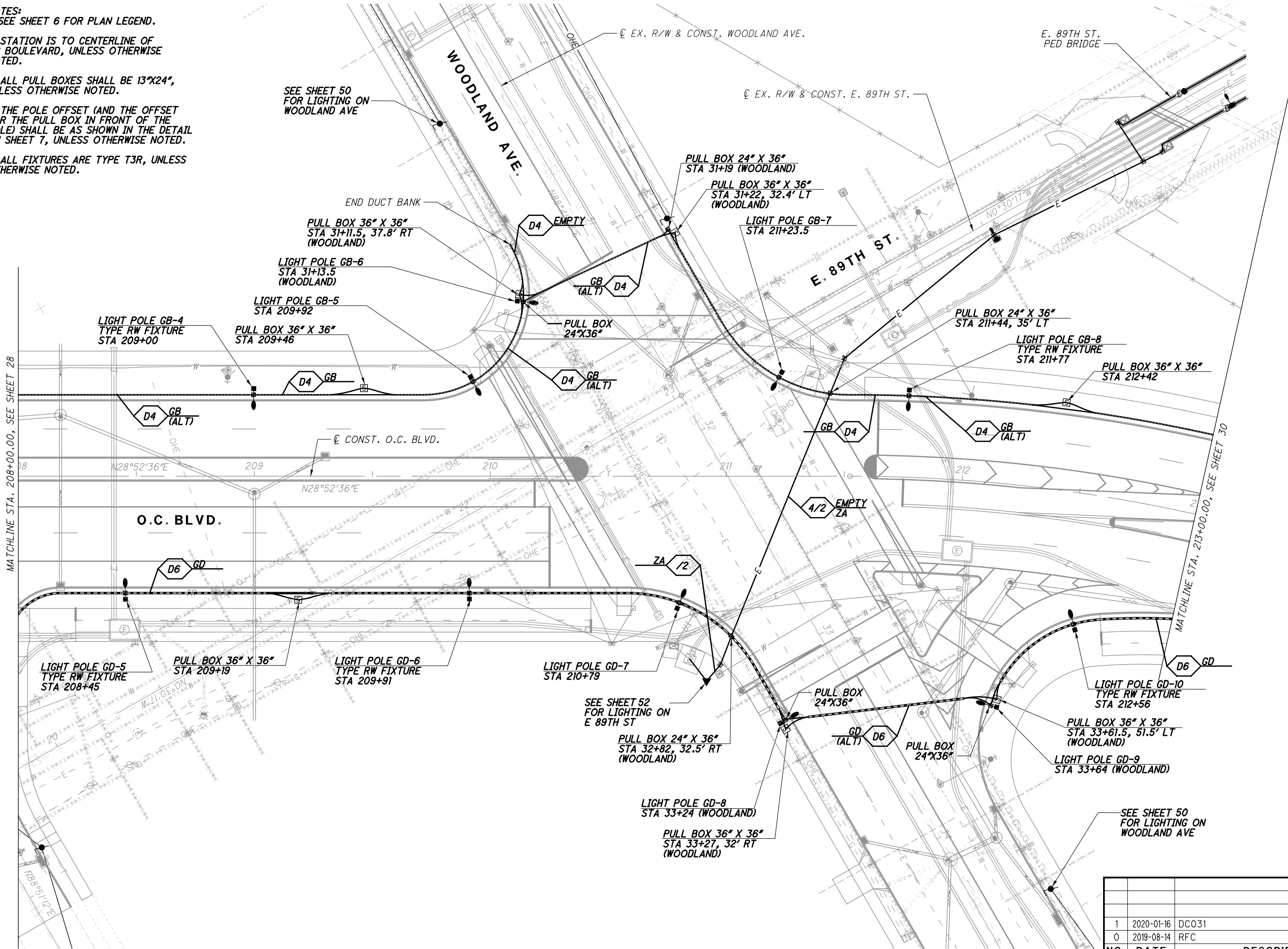
CUY-IR490/ SR010-
2.09/ 19.28

ISSUE RECORD		
NO.	DATE	DESCRIPTION
0	2019-08-14	RFC

RECORD PLANS

RECORD PLANS

- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) ALL FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.



NO.	DATE	DESCRIPTION
1	2020-01-16	DC031
0	2019-08-14	RFC
ISSUE RECORD		

CALCULATED
MUH

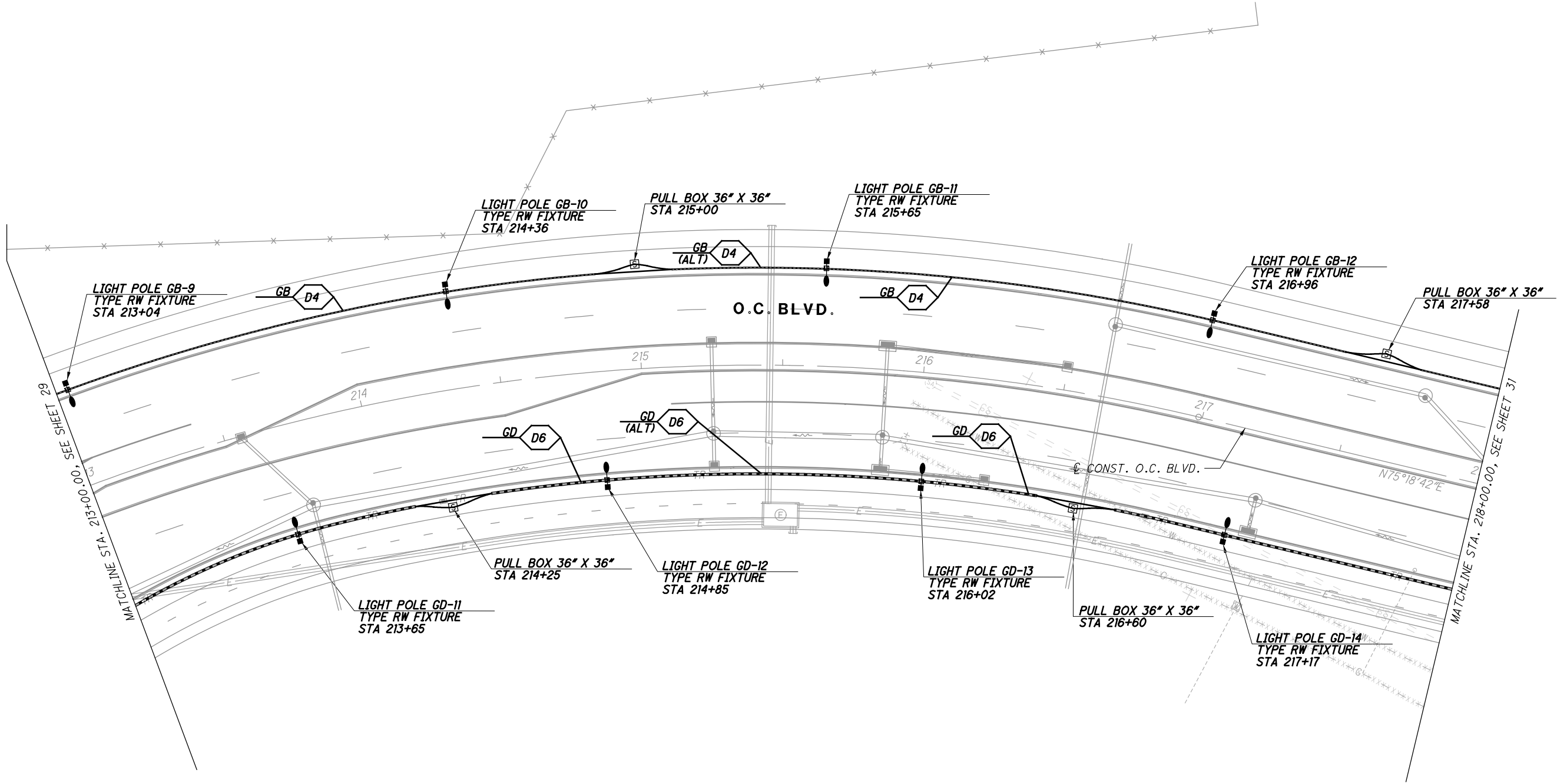
CHECKED
KAE

RECORD PLANS

LIGHTING PLAN - O.C. BLVD.
STA. 208+00.00 TO STA. 213+00.00

CUY-IR490/ SR010-
2.09 / 19.28
RECORD PLANS

29
62



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13\"X24\", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.

CALCULATED
MJH

CHECKED
KAE

0 20 40

HORIZONTAL
SCALE IN FEET

↑

N

LIGHTING PLAN - O.C. BLVD.
STA. 213+00.00 TO STA. 218+00.00

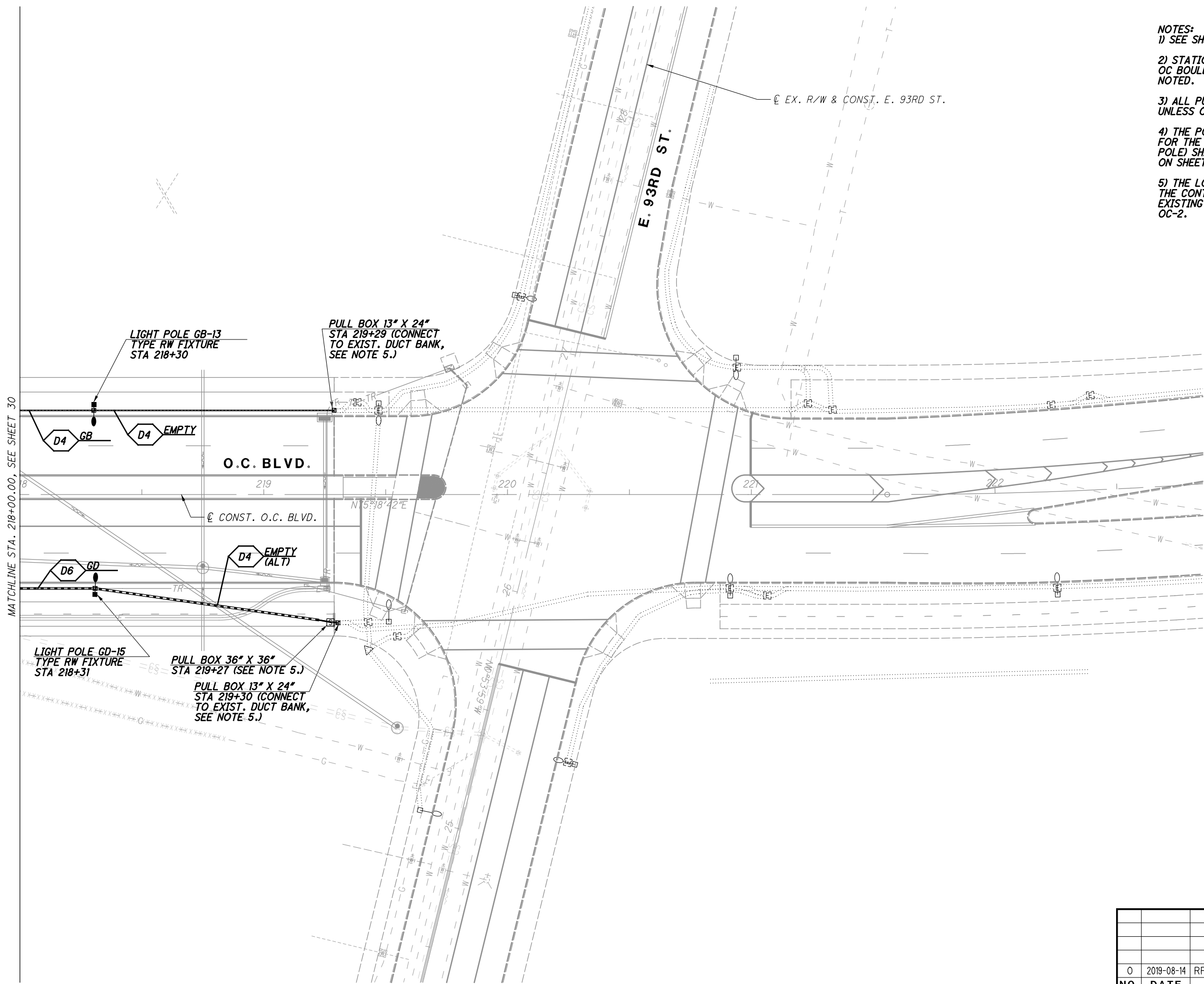
CUY-IR490/ SR010-
2.09 / 19.28

30
62

ISSUE RECORD		
NO.	DATE	DESCRIPTION
0	2019-08-14	RFC

RECORD PLANS

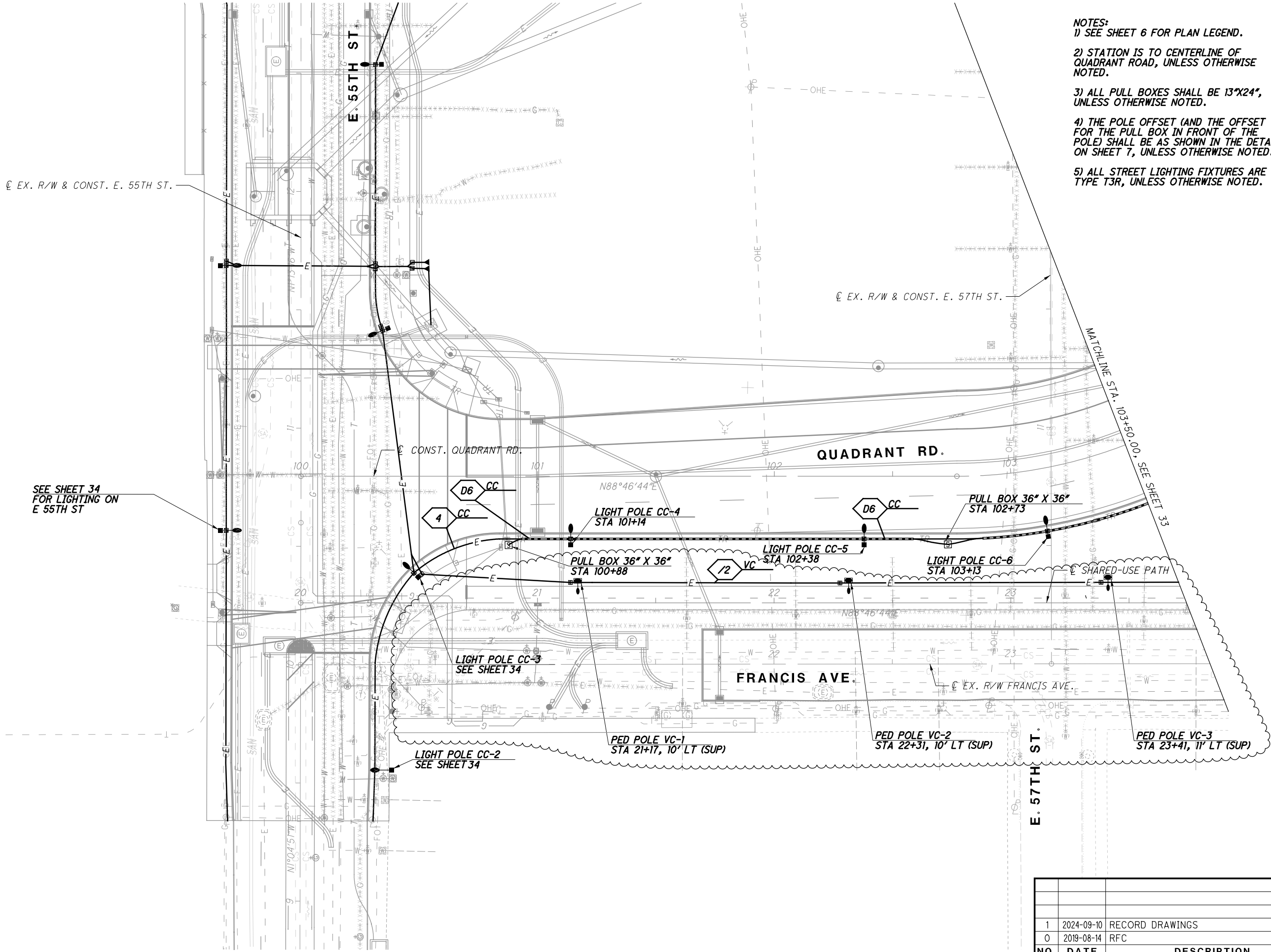
RECORD PLANS



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF OC BOULEVARD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) THE LOCATION SHOWN IS APPROXIMATE. THE CONTRACTOR SHALL CONNECT TO THE EXISTING CONDUIT SYSTEM PLACED WITH OC-2.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		





- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF QUADRANT ROAD, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) ALL STREET LIGHTING FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.

SEE SHEET 34
FOR LIGHTING ON
E 55TH ST

NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-08-14	RFC
ISSUE RECORD		

LIGHTING PLAN - QUADRANT RD.
BEGIN TO STA. 103+50.00

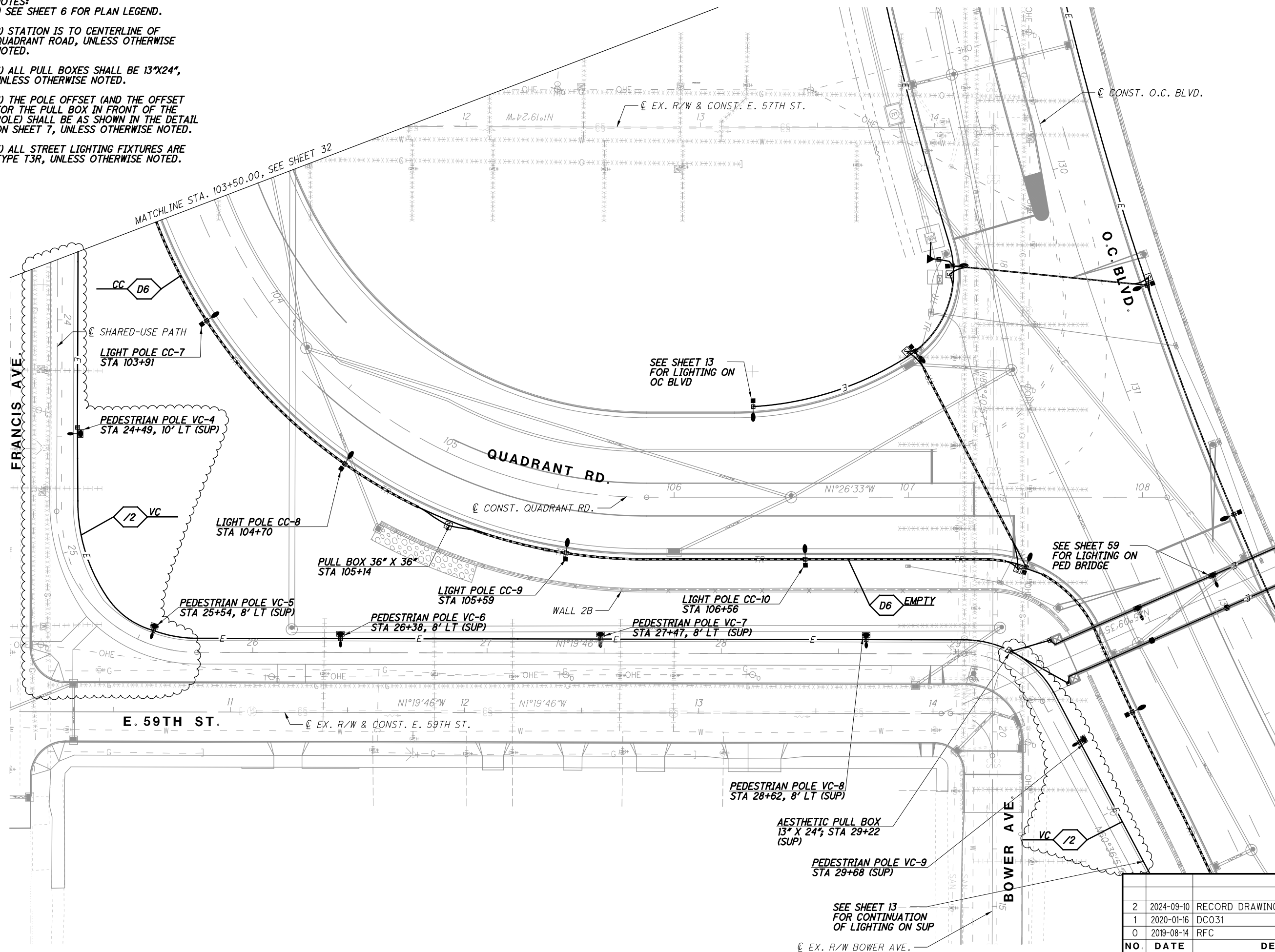
CUY-IR490/ SR010-
2.09 / 19.28

CALCULATED
M/JH
CHECKED
KAE

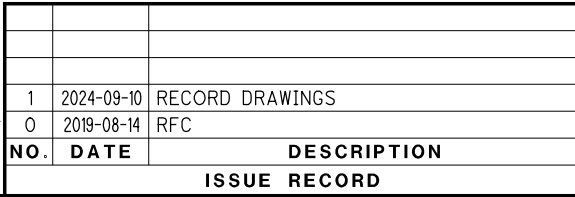
0 20 40
HORIZONTAL
SCALE IN FEET

↑
N

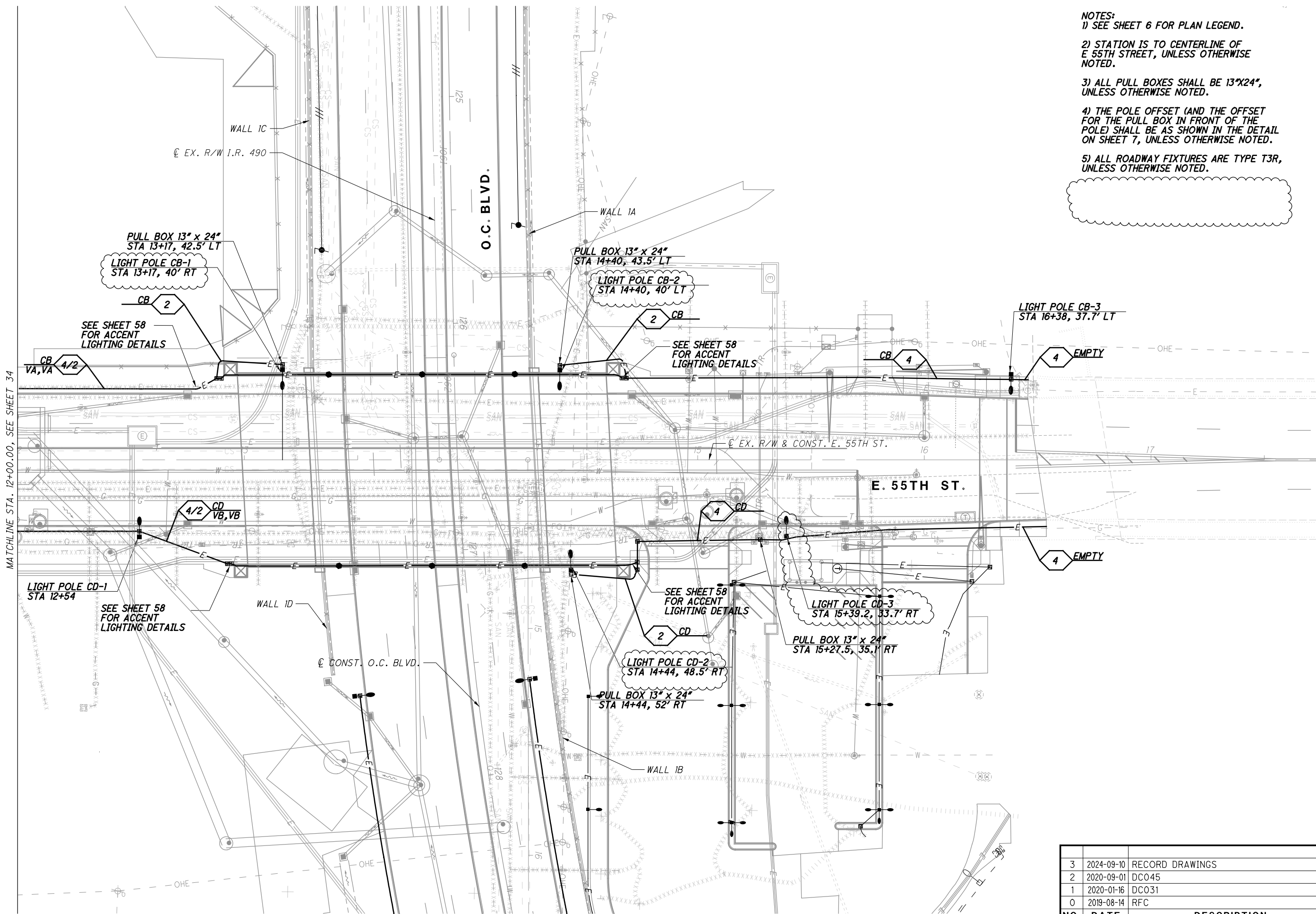
5) ALL STREET LIGHTING FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.



2	2024-09-10	RECORD DRAWINGS
1	2020-01-16	DCO31
0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



- | | | | | | |
|---|---|---|--|---|---|
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SCALE IN FEET</p> </div> <div style="width: 35%; text-align: center;"> <p>N</p> </div> </div> |
| <div style="display: flex; justify-content: space-between;"> <div>CALCULATED</div> <div>MJH</div> </div> | <div style="display: flex; justify-content: space-between;"> <div>CHECKED</div> <div>KAE</div> </div> | | | | |

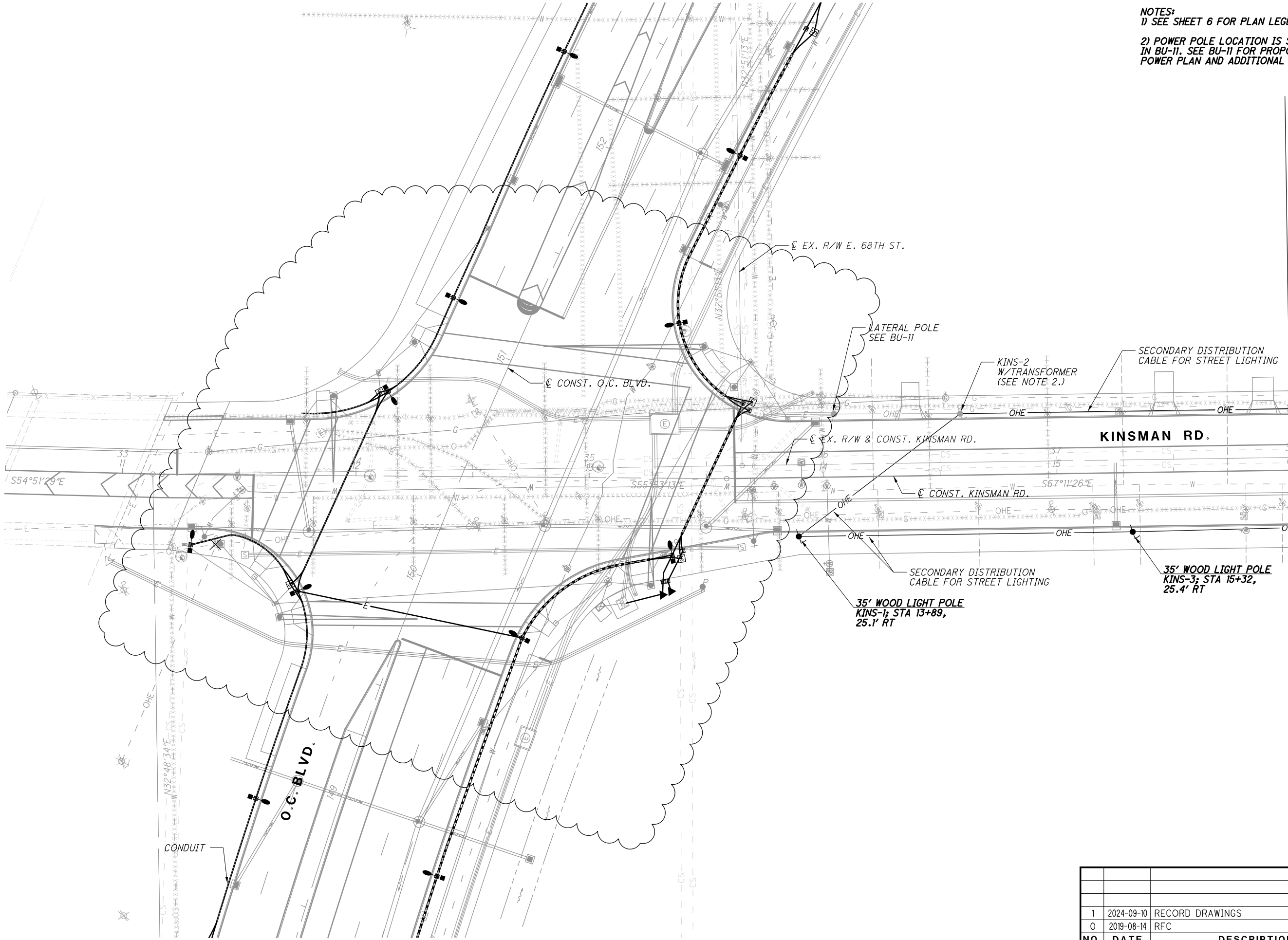


- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF E 55TH STREET, UNLESS OTHERWISE NOTED.
 - 3) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.
 - 4) THE POLE OFFSET (AND THE OFFSET FOR THE PULL BOX IN FRONT OF THE POLE) SHALL BE AS SHOWN IN THE DETAIL ON SHEET 7, UNLESS OTHERWISE NOTED.
 - 5) ALL ROADWAY FIXTURES ARE TYPE T3R, UNLESS OTHERWISE NOTED.



NO.	DATE	DESCRIPTION
3	2024-09-10	RECORD DRAWINGS
2	2020-09-01	DC045
1	2020-01-16	DC031
0	2019-08-14	RFC
		ISSUE RECORD

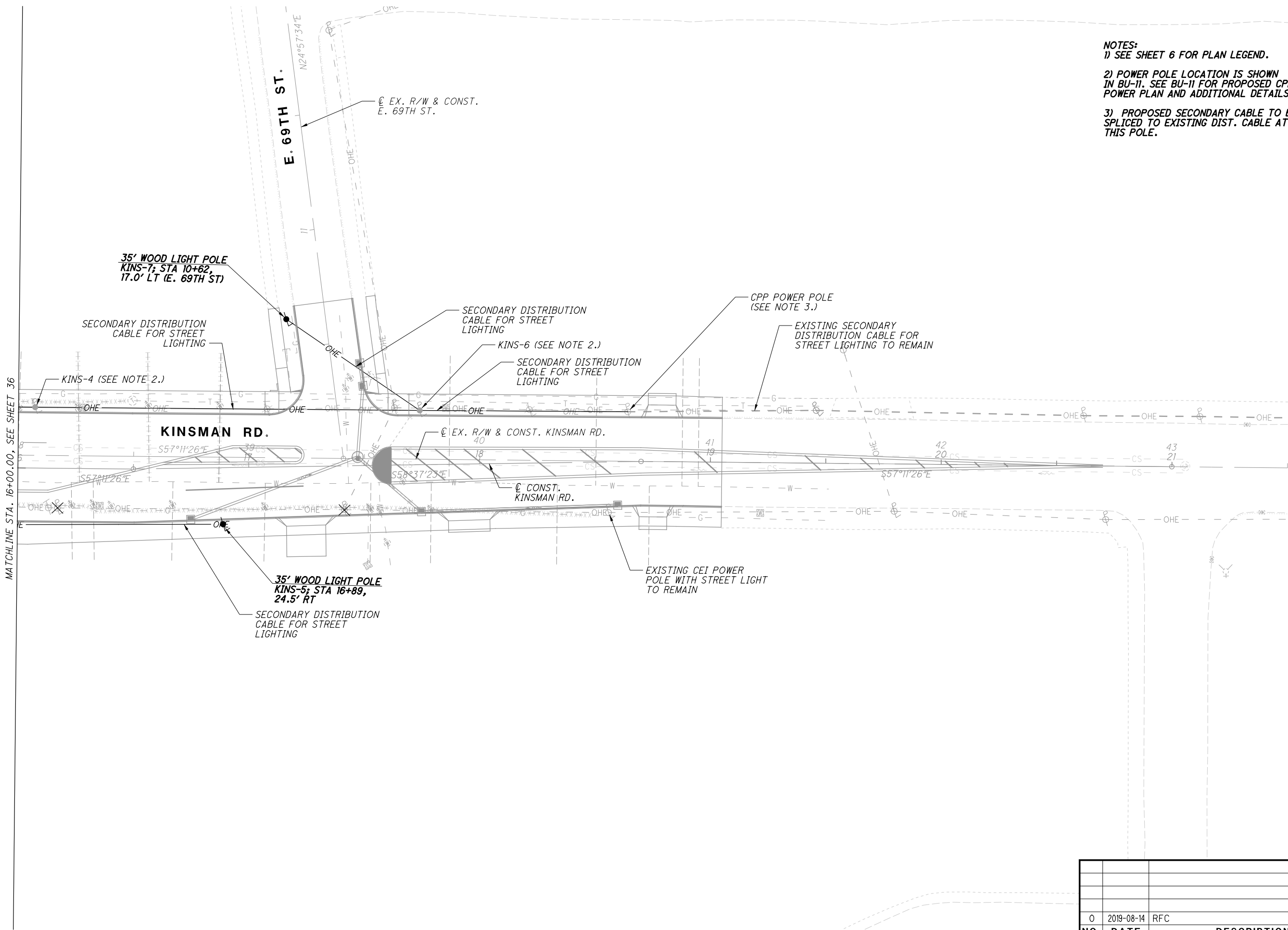




NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.
2) POWER POLE LOCATION IS SHOWN IN BU-11. SEE BU-11 FOR PROPOSED CPP POWER PLAN AND ADDITIONAL DETAILS.

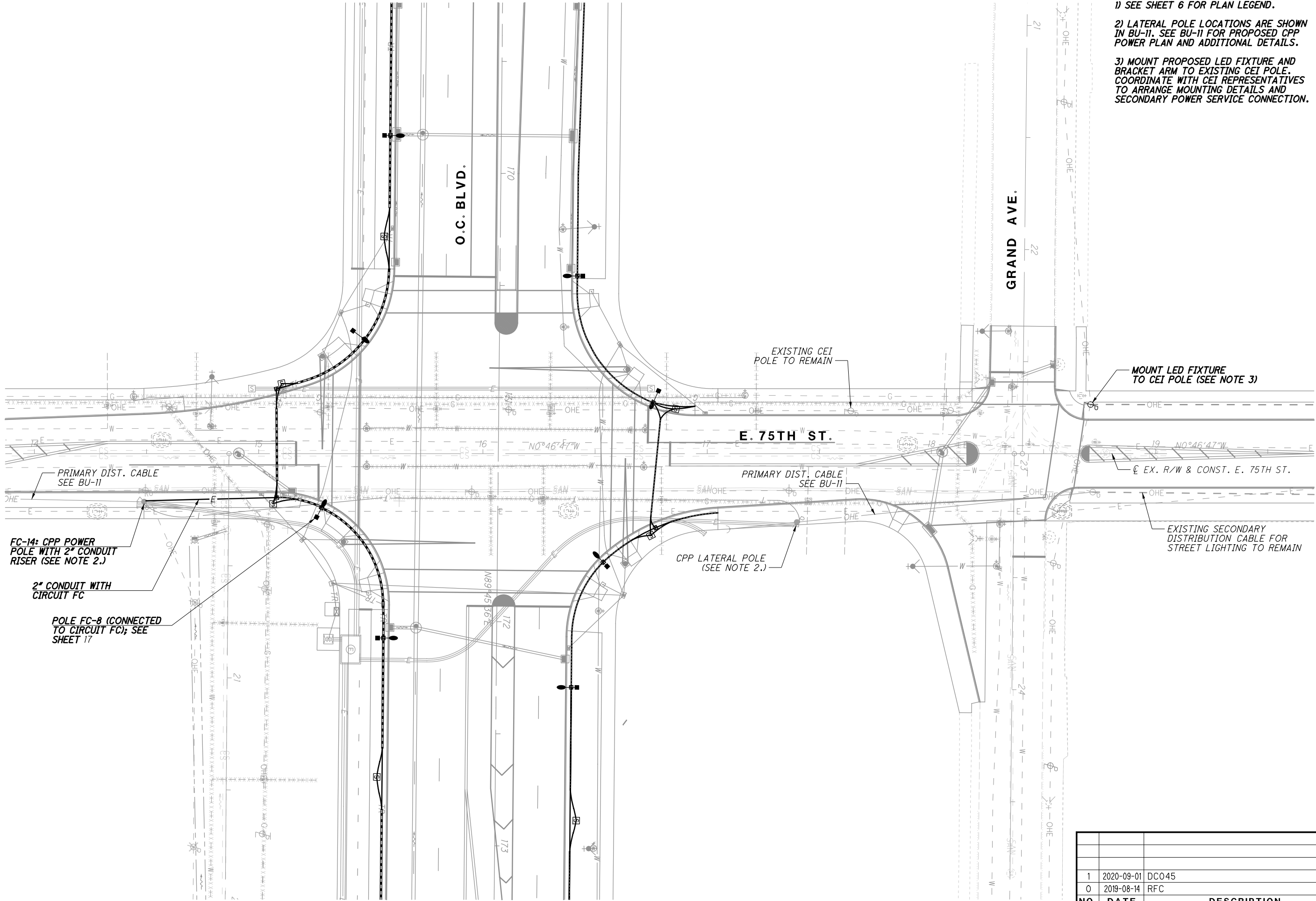
NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-08-14	RFC
ISSUE RECORD		





NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.
2) POWER POLE LOCATION IS SHOWN IN BU-11. SEE BU-11 FOR PROPOSED CPP POWER PLAN AND ADDITIONAL DETAILS.
3) PROPOSED SECONDARY CABLE TO BE SPLICED TO EXISTING DIST. CABLE AT THIS POLE.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



- NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.
2) LATERAL POLE LOCATIONS ARE SHOWN IN BU-11. SEE BU-11 FOR PROPOSED CPP POWER PLAN AND ADDITIONAL DETAILS.
3) MOUNT PROPOSED LED FIXTURE AND BRACKET ARM TO EXISTING CEI POLE. COORDINATE WITH CEI REPRESENTATIVES TO ARRANGE MOUNTING DETAILS AND SECONDARY POWER SERVICE CONNECTION.

NO.	DATE	DESCRIPTION
1	2020-09-01	DC045
0	2019-08-14	RFC
ISSUE RECORD		

CUY-IR490/ SR010-
2.09 / 19.28

CROSS-STREET LIGHTING PLAN - E. 75TH ST.
BEGIN TO END

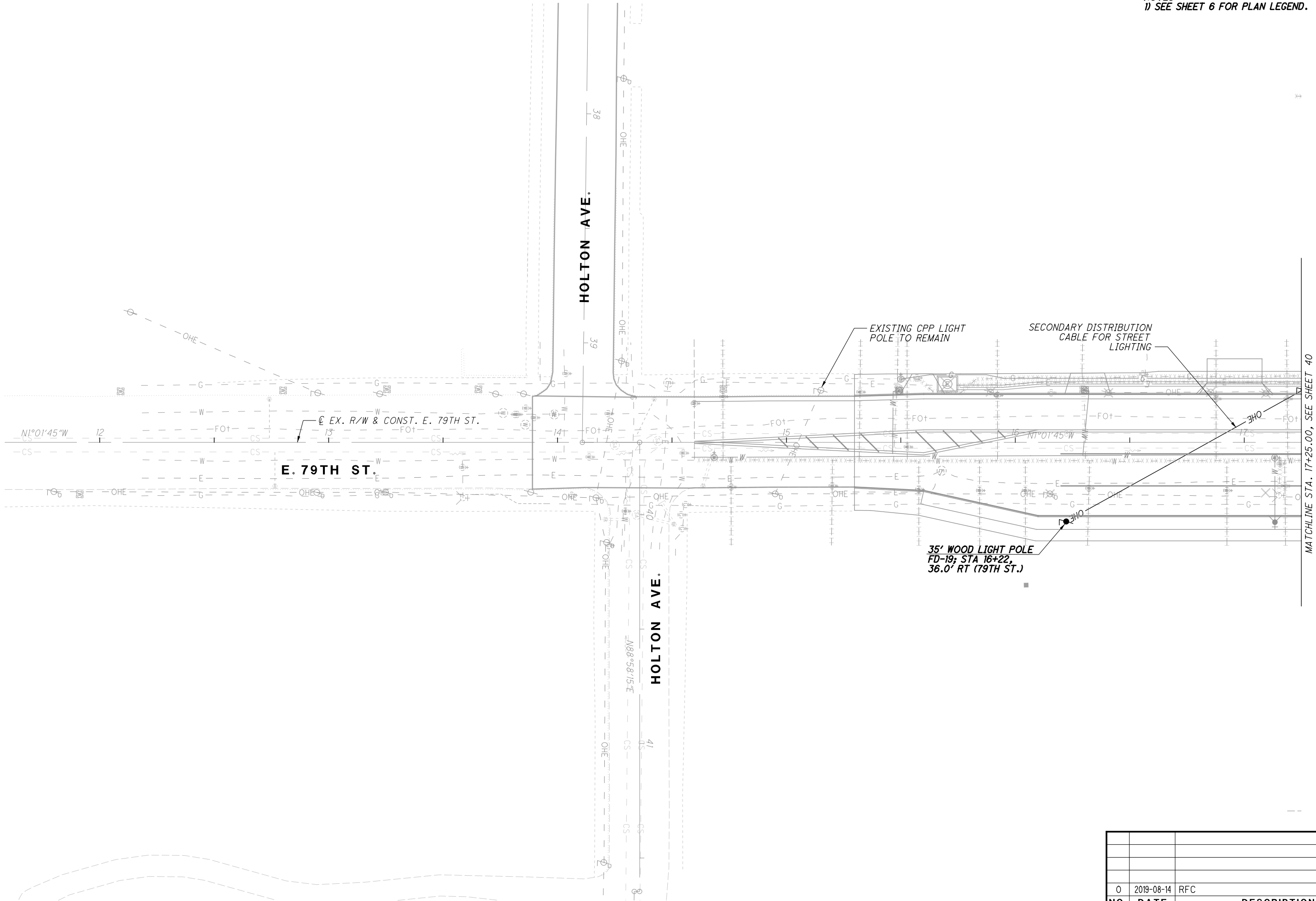
CALCULATED
M/JH
CHECKED
KAE



0 20 40
HORIZONTAL
SCALE IN FEET

RECORD PLANS

RECORD PLANS



NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CUY-IR490/ SR010-
2.09 / 19.28

39
62

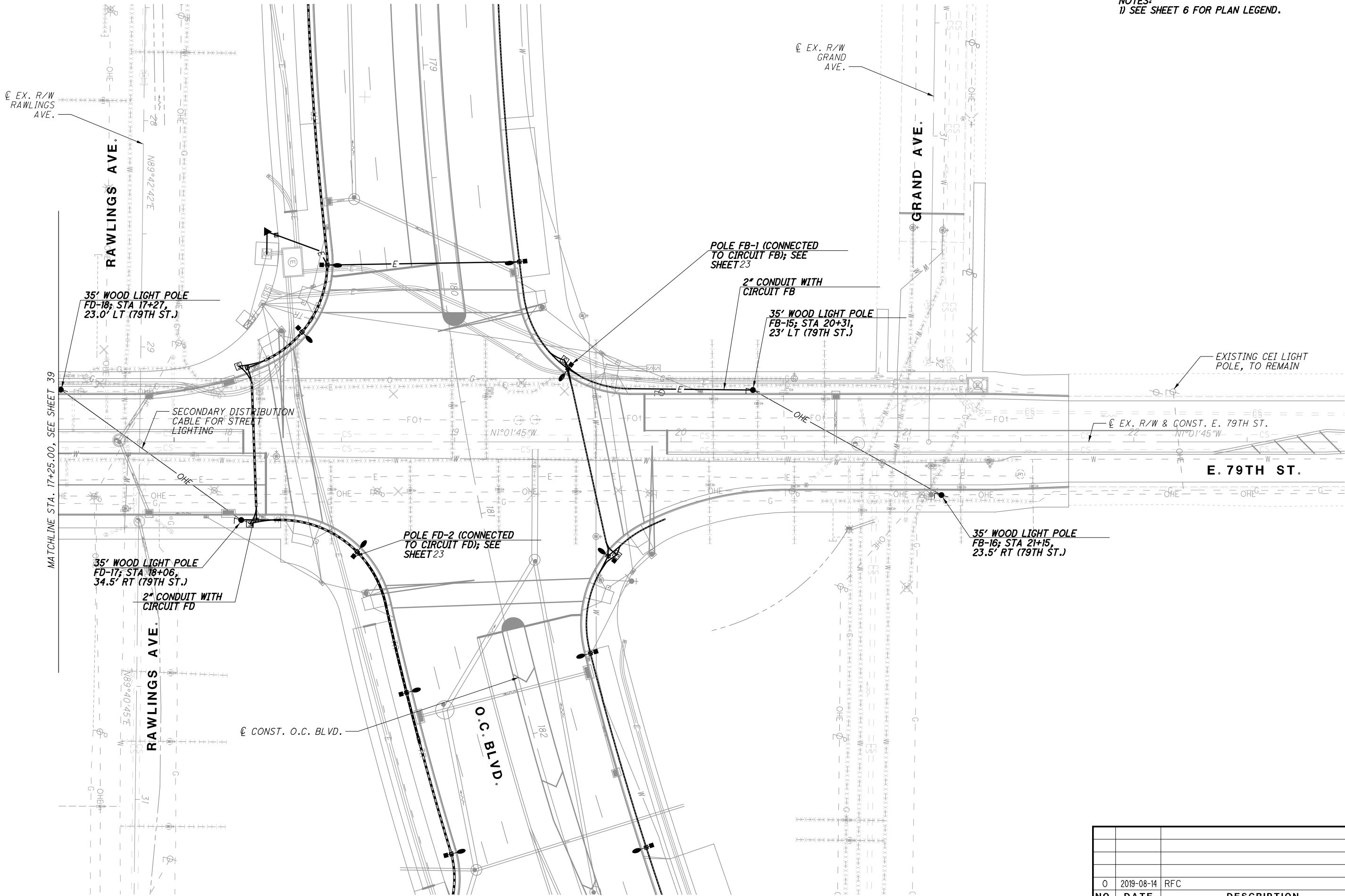
CROSS-STREET LIGHTING - E. 79TH ST.
BEGIN TO STA. 17+25.00

CALCULATED
MUH

CHECKED
KAE

0 20 40
HORIZONTAL
SCALE IN FEET

N



NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.

NO.	DATE	DESCRIPTION
0	2019-08-14	RFC
ISSUE RECORD		

CUY-IR490/ SR010-
2.09 / 19.28

CROSS-STREET LIGHTING - E. 79TH ST.
STA. 17+25.00 TO END

RECORD PLANS

40
62

RECORD PLANS

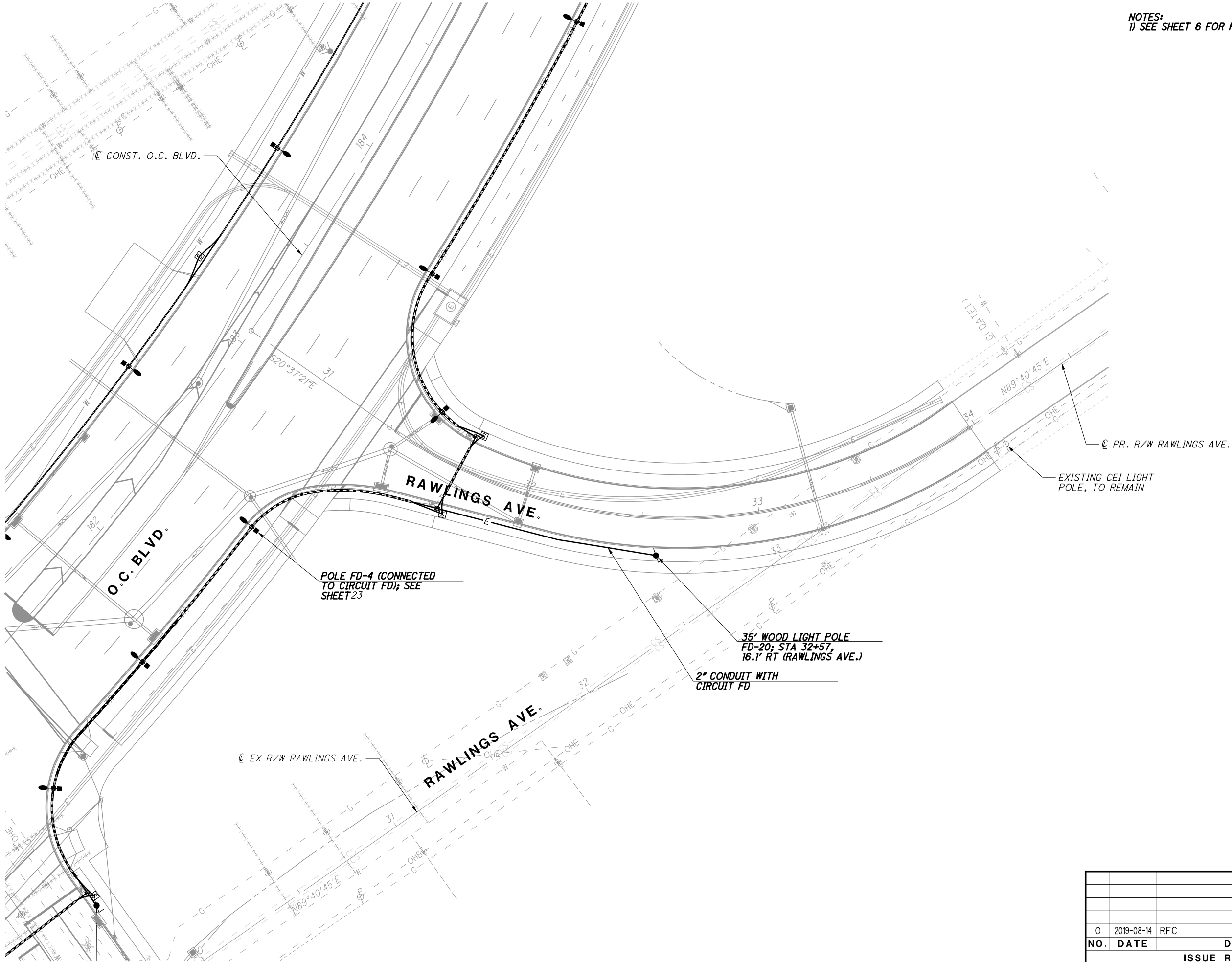
CALCULATED
MUH

CHECKED
KAE

0 20 40
HORIZONTAL
SCALE IN FEET

11
N

RECORD PLANS

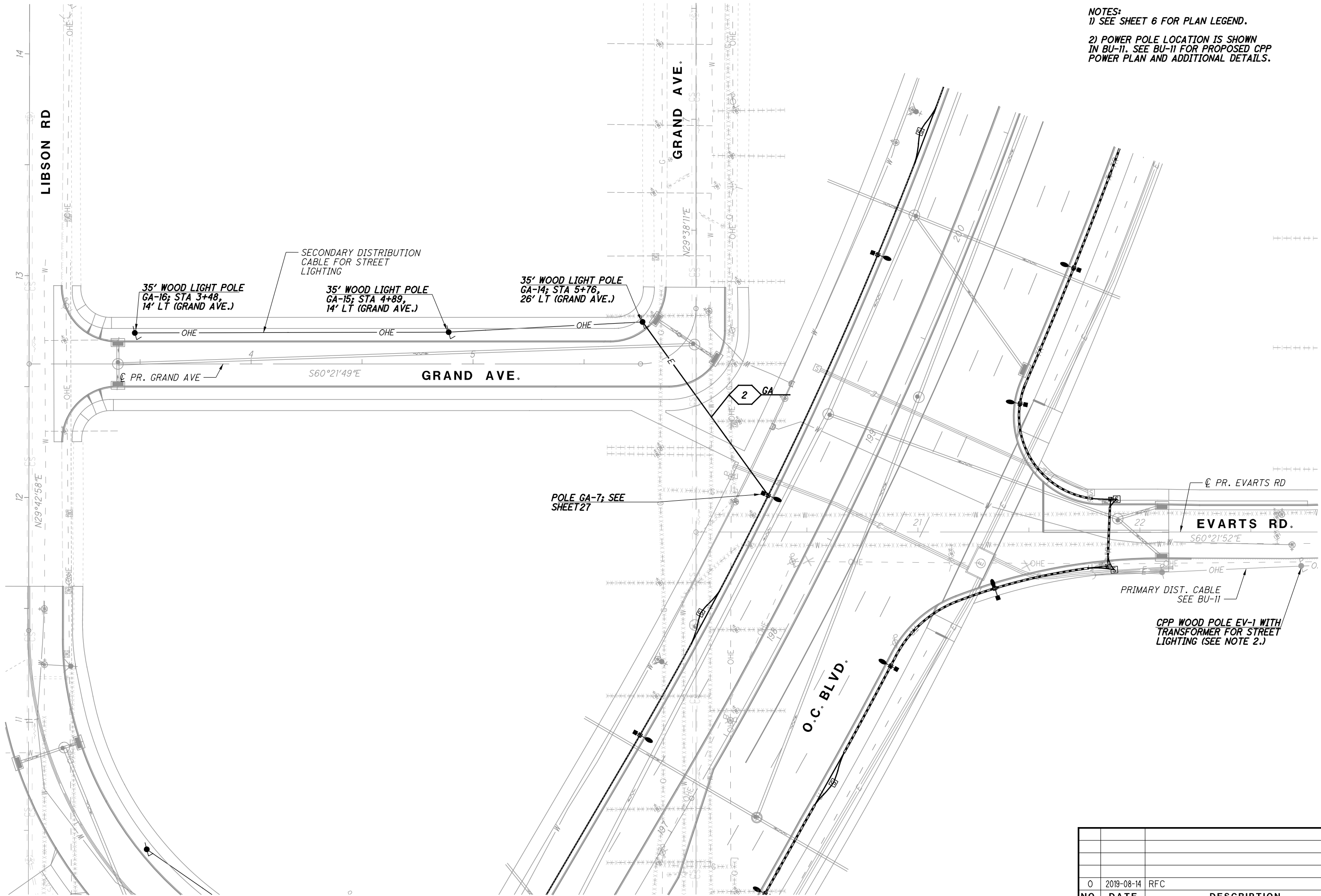


NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



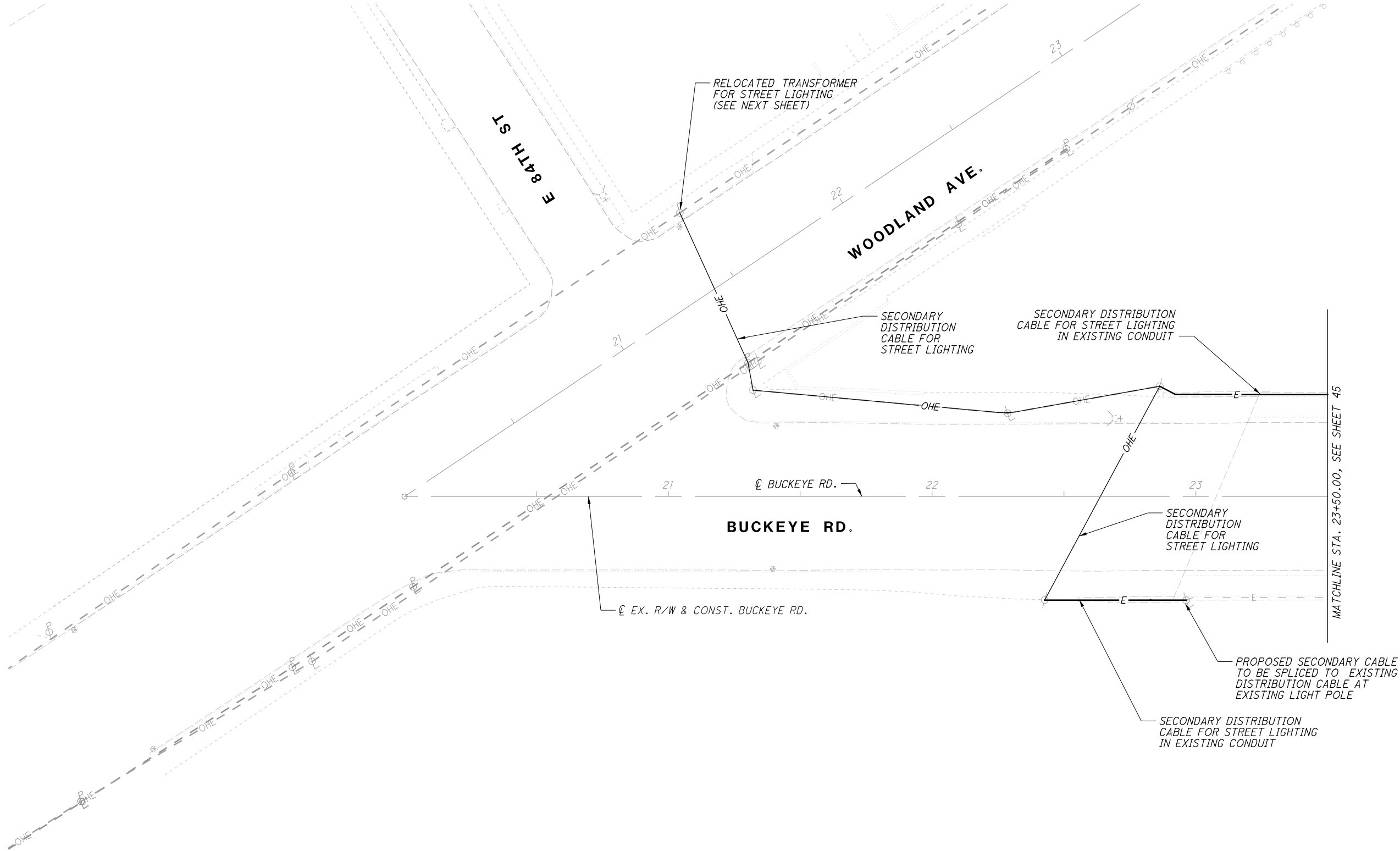
42
62



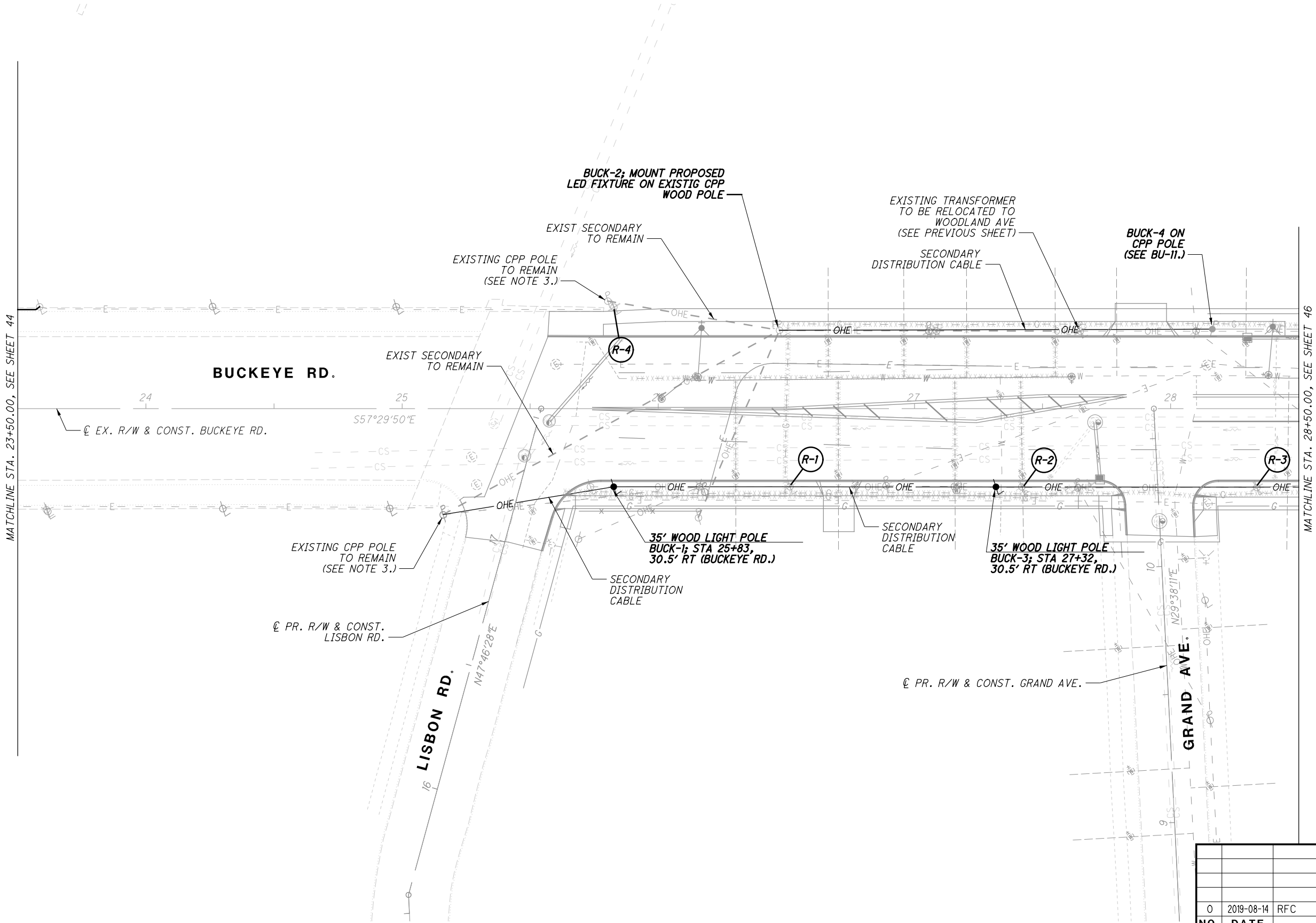
NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.
2) POWER POLE LOCATION IS SHOWN
IN BU-11. SEE BU-11 FOR PROPOSED CPP
POWER PLAN AND ADDITIONAL DETAILS.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.



0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) POLE WITH EXISTING TRANSFORMER FOR STREET LIGHTING.
 - 3) PROPOSED SECONDARY DISTRIBUTION TO BE SPLICED TO EXISTING DISTRIBUTION CIRCUIT CABLE, AT THIS POLE.

CALCULATED
MJH

CHECKED
KAE

0 20 40

HORIZONTAL
SCALE IN FEET

RECORD PLANS

CROSS-STREET LIGHTING - BUCKEYE RD.
STA 23+50.00 TO STA. 28+50.00

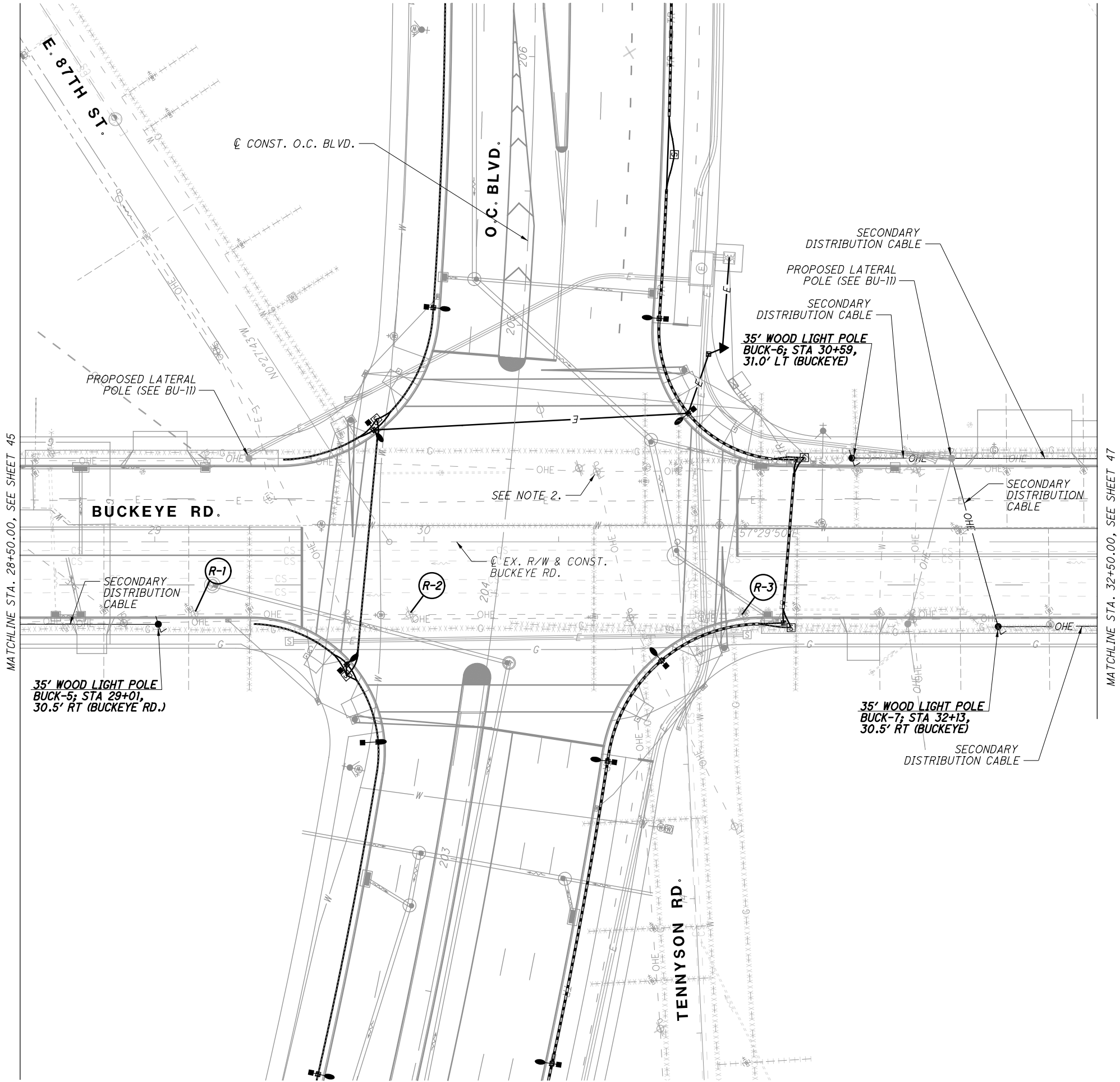
CUY-IR490/ SR010-

2.09 / 19.28

RECORD PLANS

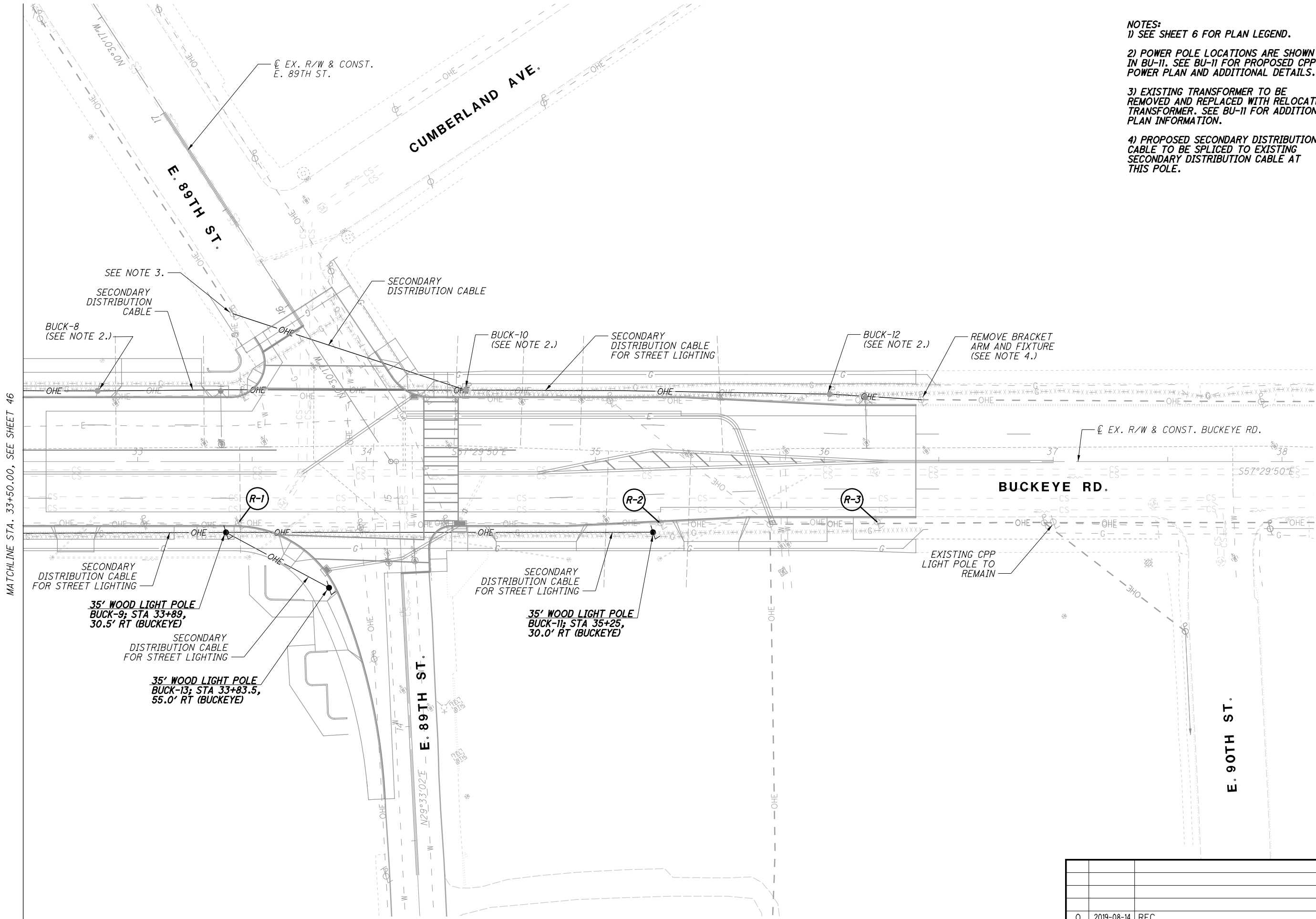
45
62

NO.	DATE	DESCRIPTION
0	2019-08-14	RFC
ISSUE RECORD		



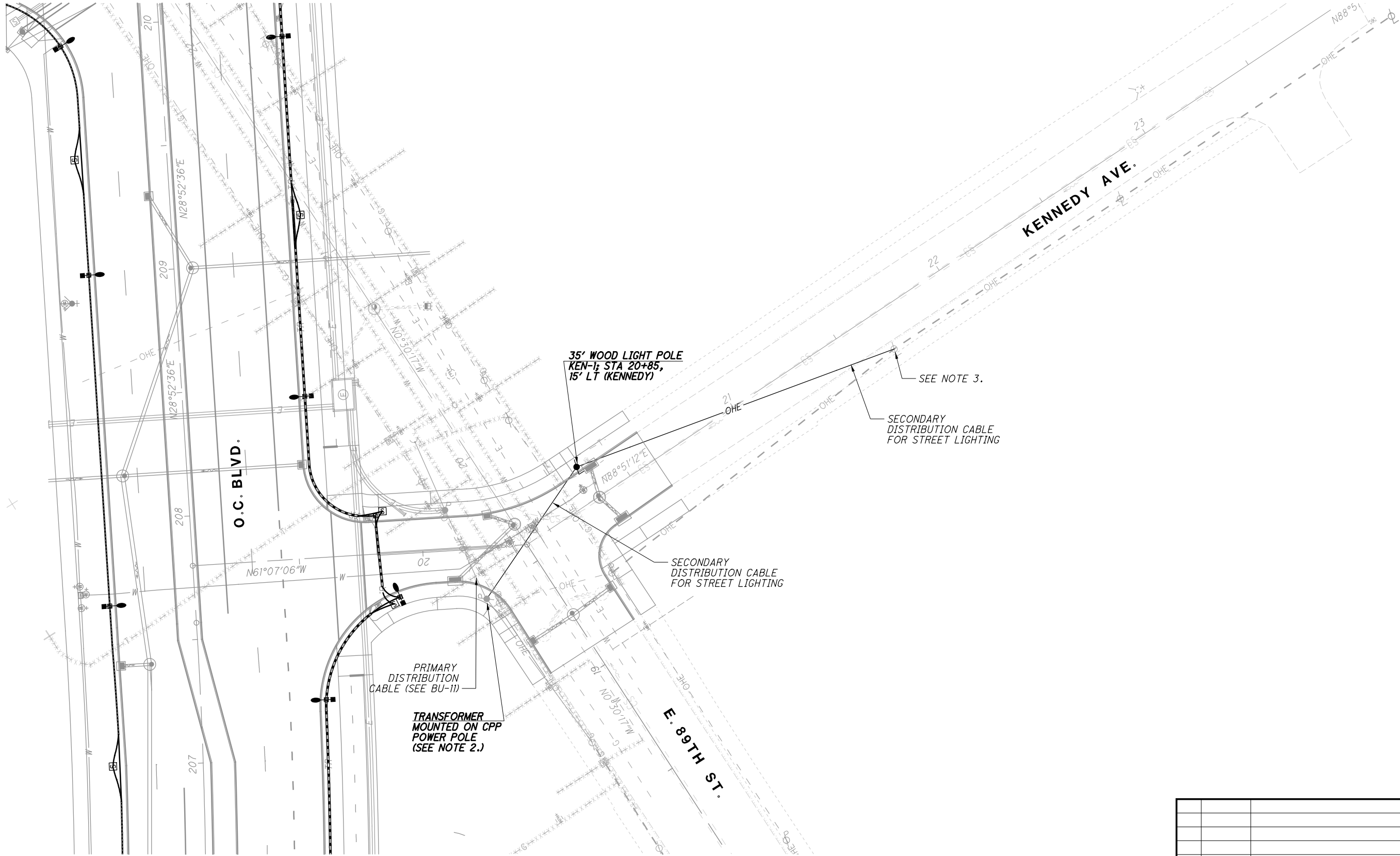
NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.
2) EXISTING TRANSFORMER TO BE RELOCATED TO E 89TH ST. SEE BU-II FOR ADDITIONAL INFORMATION.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



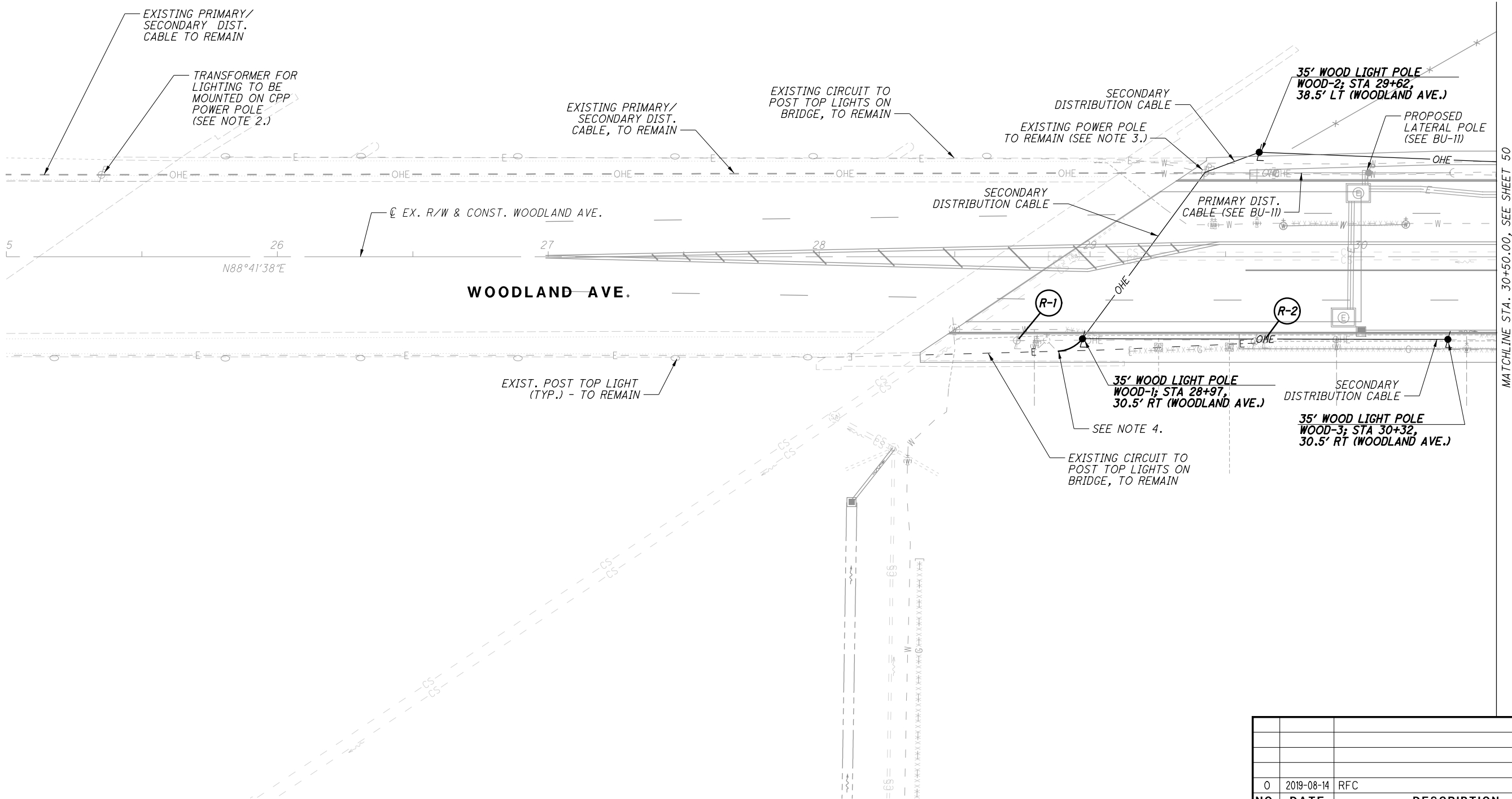
NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.
2) POWER POLE LOCATIONS ARE SHOWN IN BU-11. SEE BU-11 FOR PROPOSED CPP POWER PLAN AND ADDITIONAL DETAILS.
3) EXISTING TRANSFORMER TO BE REMOVED AND REPLACED WITH RELOCATED TRANSFORMER. SEE BU-11 FOR ADDITIONAL PLAN INFORMATION.
4) PROPOSED SECONDARY DISTRIBUTION CABLE TO BE SPLICED TO EXISTING SECONDARY DISTRIBUTION CABLE AT THIS POLE.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) POWER POLE LOCATIONS ARE SHOWN IN BU-11. SEE BU-11 FOR PROPOSED CPP POWER PLAN AND ADDITIONAL DETAILS.
 - 3) PROPOSED SECONDARY DISTRIBUTION CABLE TO BE SPLICED TO EXISTING SECONDARY DISTRIBUTION CABLE AT THIS POLE.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) EXISTING DISTRIBUTION CABLE TO BE CONNECTED TO PROPOSED TRANSFORMER AT THIS POLE.
 - 3) PROPOSED SECONDARY DISTRIBUTION CABLE TO BE SPLICED TO EXISTING SECONDARY DISTRIBUTION CABLE AT THIS POLE.
 - 4) LOCATION SHOWN IS APPROXIMATE. CONNECT PROPOSED CONDUIT TO EXISTING CONDUIT. RUN EXISTING DISTRIBUTION CABLE TO TOP OF POLE WOOD-1. EXISTING DIST. CABLE TO BE SPLICED TO PROPOSED DIST. CABLE AT THE TOP OF THIS POLE.

0102040

HORIZONTAL SCALE IN FEET

CALCULATED

MJH

CHECKED

KAE

RECORD PLANS

CROSS-STREET LIGHTING - WOODLAND AVE.
BEGIN TO STA. 30+50.00

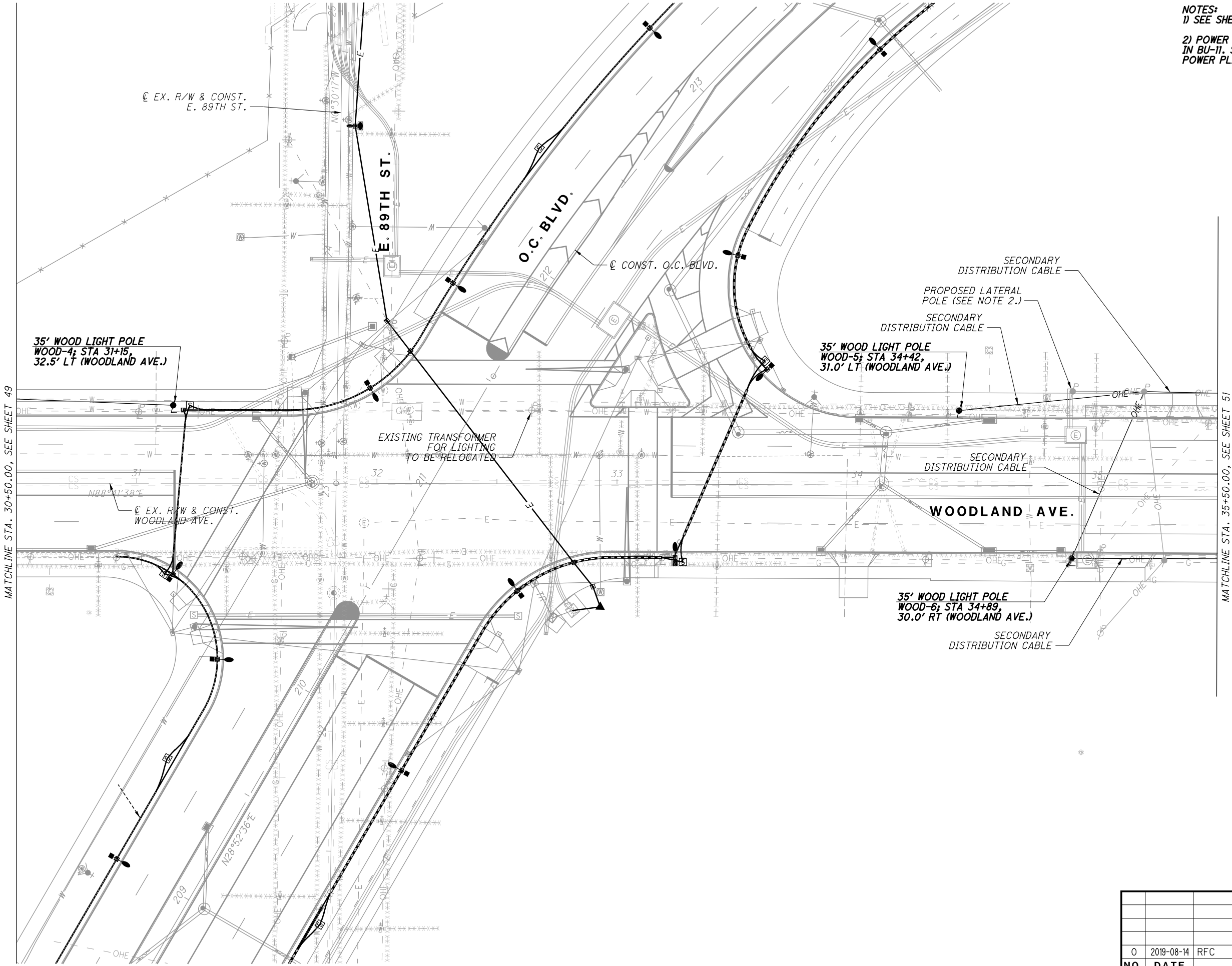
RECORD PLANS

NO.			DATE	DESCRIPTION
0			2019-08-14	RFC
ISSUE RECORD				

CUY-IR490/ SR010-
2.09 / 19.28

49
62

RECORD PLANS

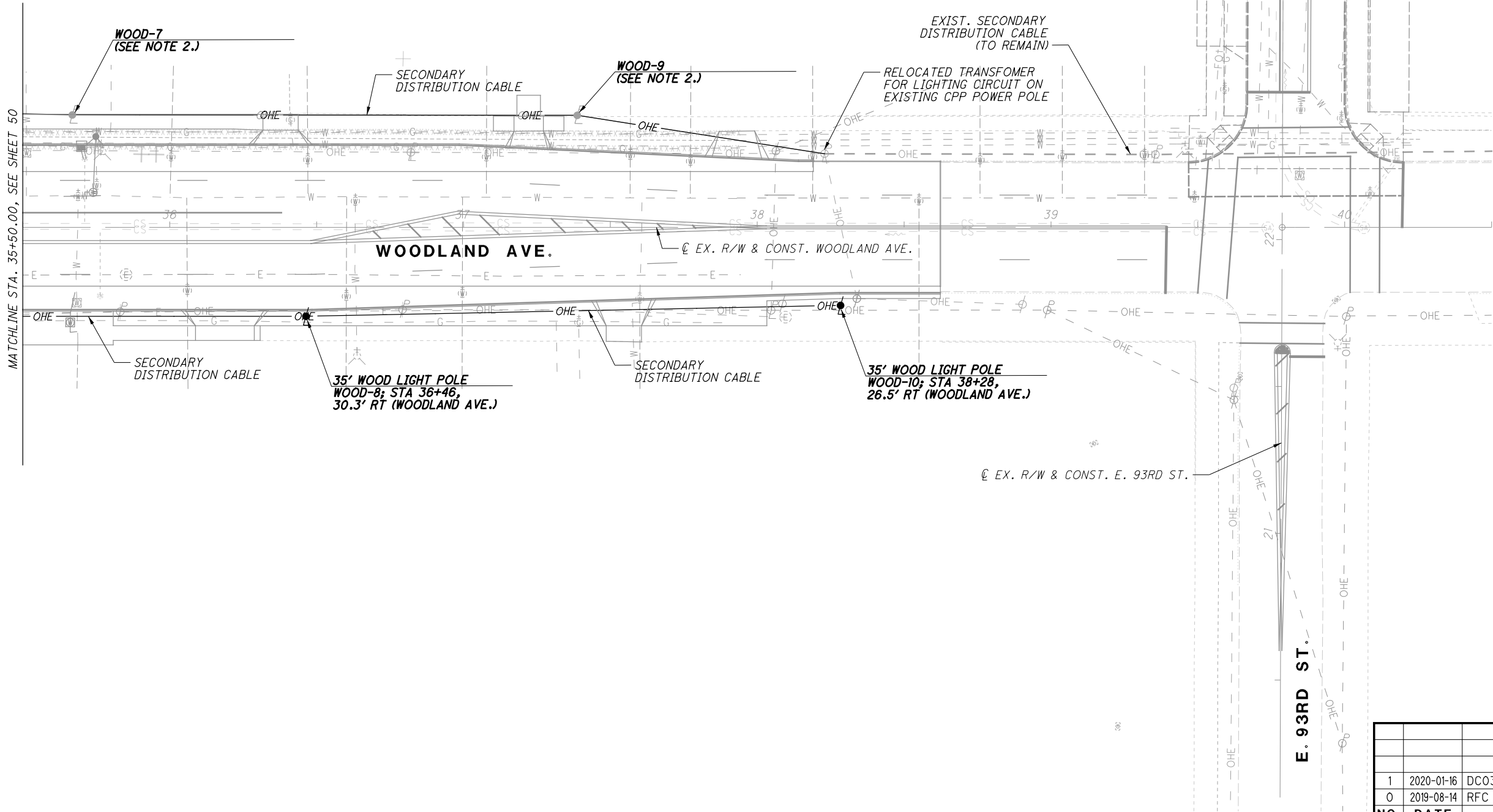


NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.
2) POWER POLE LOCATIONS ARE SHOWN
IN BU-11. SEE BU-11 FOR PROPOSED CPP
POWER PLAN AND ADDITIONAL DETAILS.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



NOTES:
1) SEE SHEET 6 FOR PLAN LEGEND.
2) POWER POLE LOCATION IS SHOWN
IN BU-11. SEE BU-11 FOR PROPOSED CPP
POWER PLAN AND ADDITIONAL DETAILS.



ISSUE RECORD		
NO.	DATE	DESCRIPTION
1	2020-01-16	DC031
0	2019-08-14	RFC

CROSS-STREET LIGHTING- WOODLAND AVE.
STA. 35+50.00 TO END

CUY-IR490/ SR010-
2.09 / 19.28

51
62

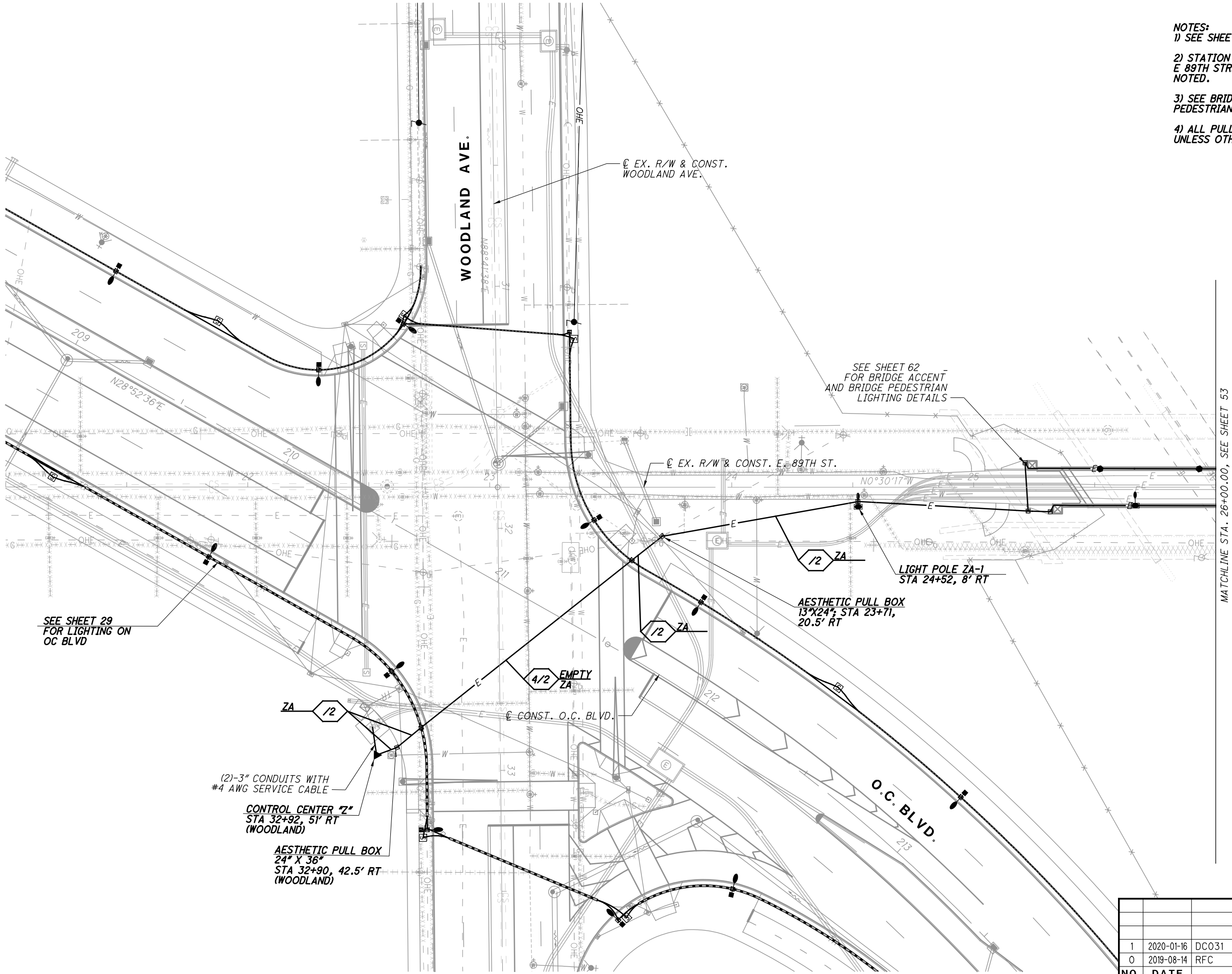
CALCULATED
M/JH

CHECKED
KAE

0 20 40
HORIZONTAL
SCALE IN FEET

↑
N

RECORD PLANS



- NOTES:
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF E 89TH STREET, UNLESS OTHERWISE NOTED.
 - 3) SEE BRIDGE PLAN (BU-25) FOR PEDESTRIAN LIGHT POLE LOCATIONS.
 - 4) ALL PULL BOXES SHALL BE 13"x24", UNLESS OTHERWISE NOTED.



CALCULATED MJH
CHECKED KAE

RECORD PLANS

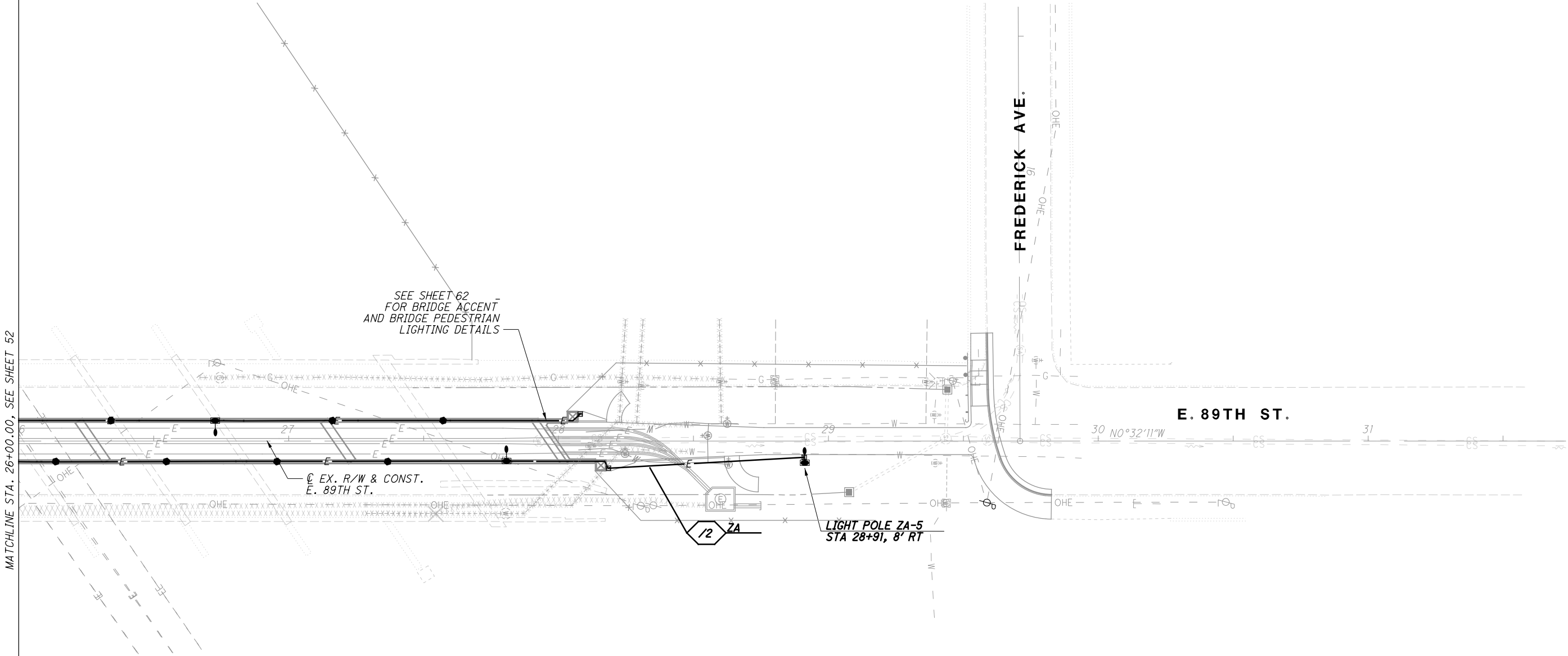
LIGHTING PLAN - E. 89TH ST.
BEGIN TO STA. 26+00.00

RECORD PLANS

CUY-IR490/ SR010-
2.09 / 19.28

RECORD PLANS

ISSUE RECORD		
NO.	DATE	DESCRIPTION
1	2020-01-16	DC031
0	2019-08-14	RFC



- NOTES:**
- 1) SEE SHEET 6 FOR PLAN LEGEND.
 - 2) STATION IS TO CENTERLINE OF E 89TH STREET, UNLESS OTHERWISE NOTED.
 - 3) SEE BRIDGE PLAN (BU-25) FOR PEDESTRIAN LIGHT POLE LOCATIONS.

0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CUY-IR490/ SR010-
2.09 / 19.28

LIGHTING PLAN - E. 89TH ST.
STA. 26+00.00 TO END

CALCULATED

MJH

CHECKED

KAE

0

20

40

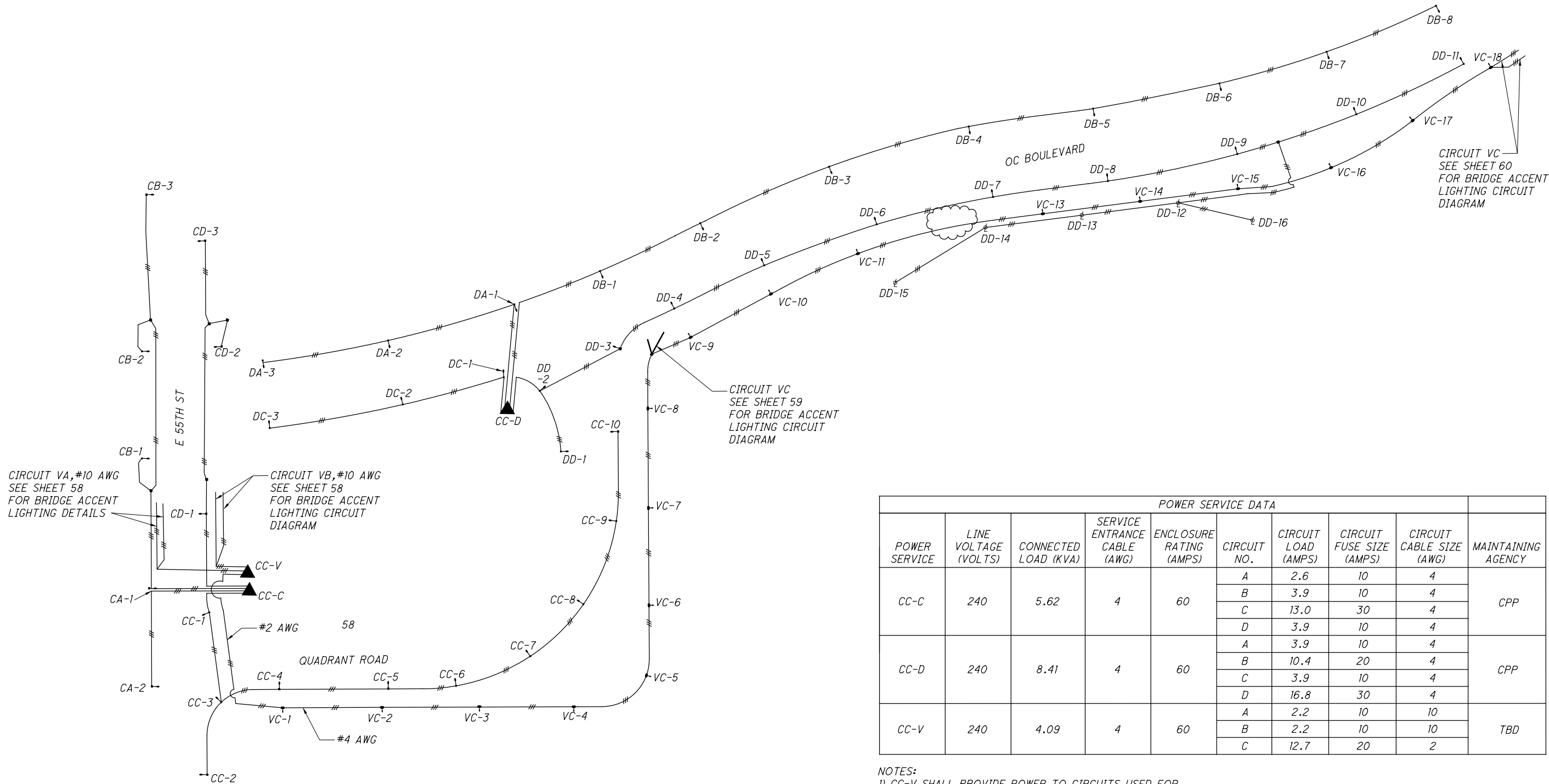
HORIZONTAL

SCALE IN FEET

RECORD PLANS

RECORD PLANS

RECORD PLANS



POWER SERVICE DATA									
POWER SERVICE	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CABLE (AWG)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
CC-C	240	5.62	4	60	A	2.6	10	4	CPP
					B	3.9	10	4	
					C	13.0	30	4	
					D	3.9	10	4	
CC-D	240	8.41	4	60	A	3.9	10	4	CPP
					B	10.4	20	4	
					C	3.9	10	4	
					D	16.8	30	4	
CC-V	240	4.09	4	60	A	2.2	10	10	TBD
					B	2.2	10	10	
					C	12.7	20	2	

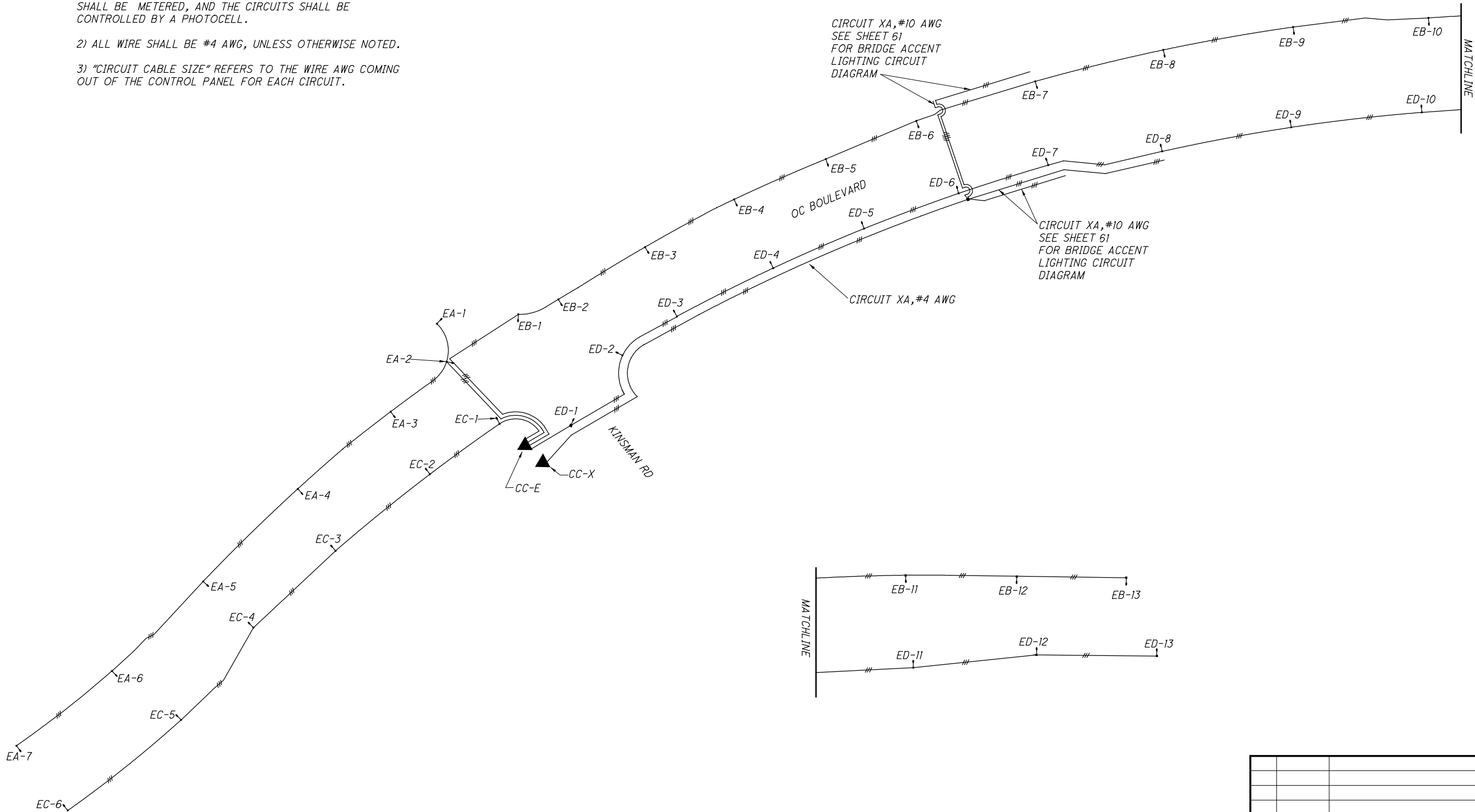
- NOTES:
- 1) CC-V SHALL PROVIDE POWER TO CIRCUITS USED FOR BRIDGE ACCENT LIGHTING AND PEDESTRIAN LIGHTS. POWER SERVICE TO CC-V SHALL BE METERED, AND THE CIRCUITS SHALL BE CONTROLLED BY A PHOTOCELL.
- 2) ALL WIRE SHALL BE #4 AWG, UNLESS OTHERWISE NOTED.
- 3) "CIRCUIT CABLE SIZE" REFERS TO THE WIRE AWG COMING OUT OF THE CONTROL PANEL FOR EACH CIRCUIT.

NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-08-14	RFC
ISSUE RECORD		

...\\Sheets\\BU-27\\96833_LD002.dgn 9/10/2019 7:08:56 AM mhunter

POWER SERVICE DATA									
POWER SERVICE	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CABLE (AWG)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
CC-E	240	12.17	2	100	A	9.1	20	4	CPP
					B	16.9	30	4	
					C	7.8	20	4	
					D	16.9	30	4	
CC-X	240	1.97	4	60	A	8.2	20	4	TBD

- NOTES:
- 1) CC-X SHALL PROVIDE POWER TO CIRCUITS USED FOR BRIDGE ACCENT LIGHTING. POWER SERVICE TO CC-X SHALL BE METERED, AND THE CIRCUITS SHALL BE CONTROLLED BY A PHOTOCELL.
- 2) ALL WIRE SHALL BE #4 AWG, UNLESS OTHERWISE NOTED.
- 3) "CIRCUIT CABLE SIZE" REFERS TO THE WIRE AWG COMING OUT OF THE CONTROL PANEL FOR EACH CIRCUIT.

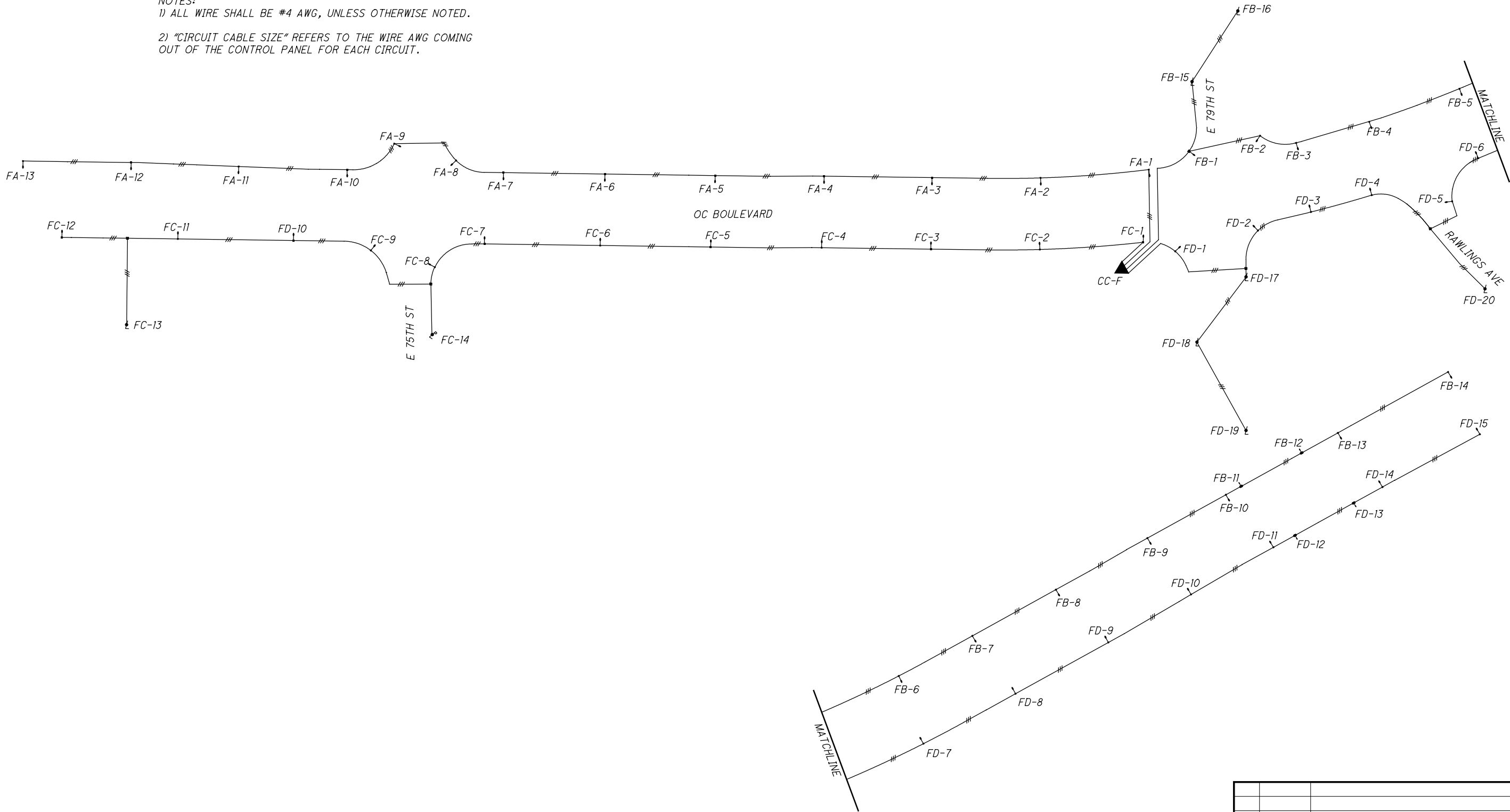


0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

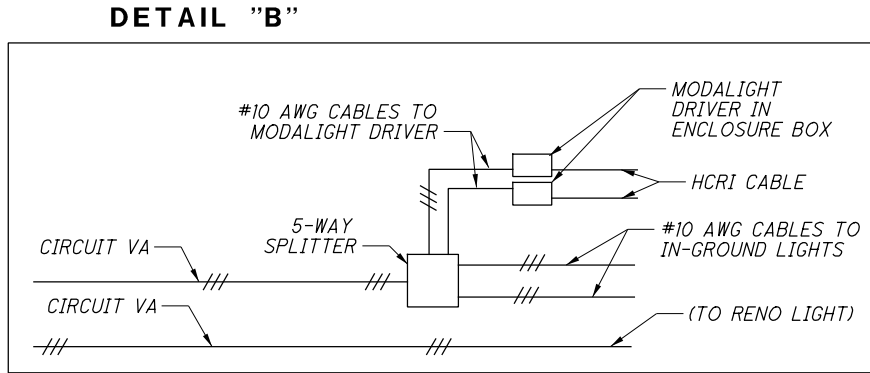
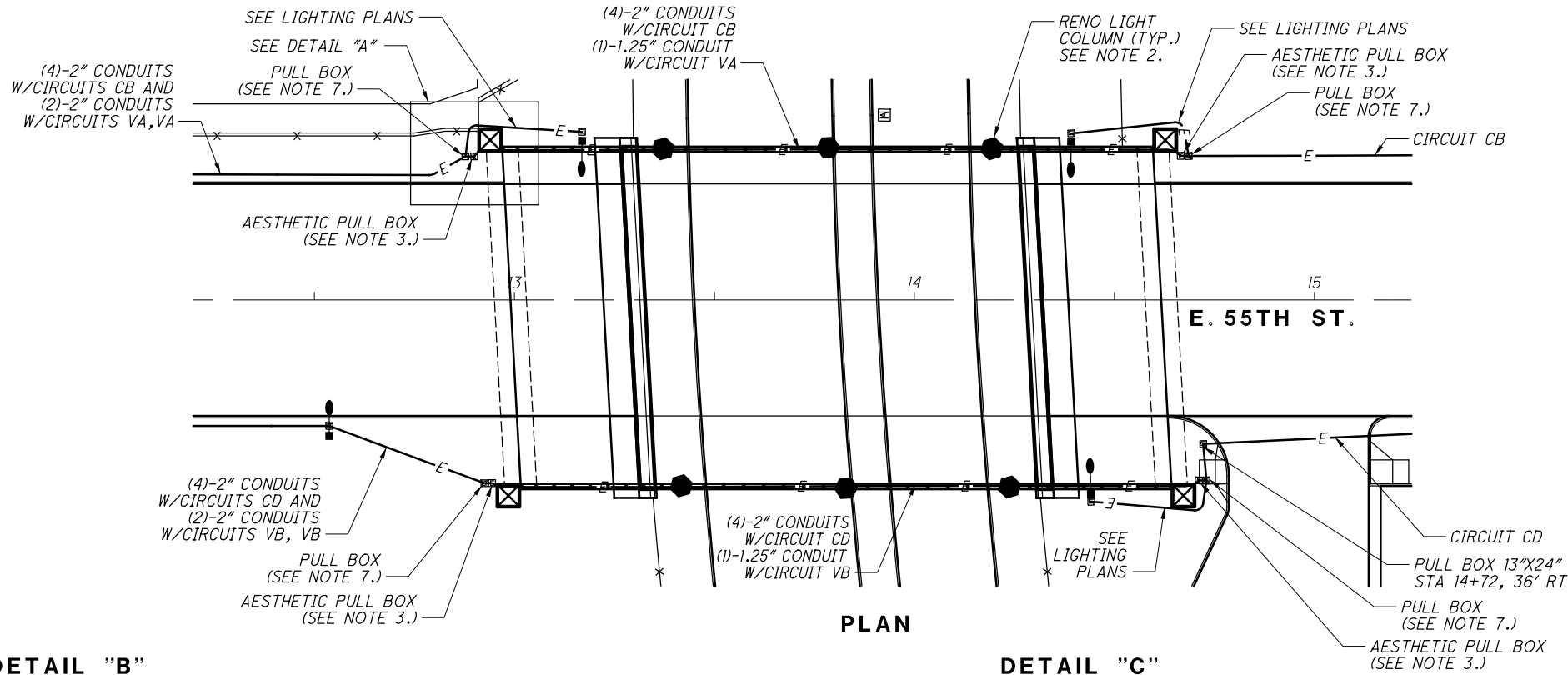
...\\Sheets\\BU-27\\96833_LD003.dgn 9/5/2019 3:06:13 PM mhunter

POWER SERVICE DATA									
POWER SERVICE	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CABLE (AWG)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
CC-F	240	16.83	2	100	A	16.9	30	4	CPP
					B	17.1	30	4	
					C	16.6	30	4	
					D	19.5	30	4	

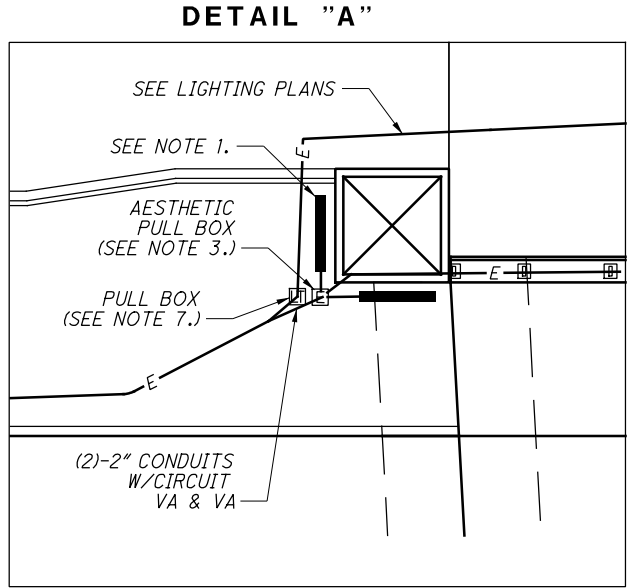
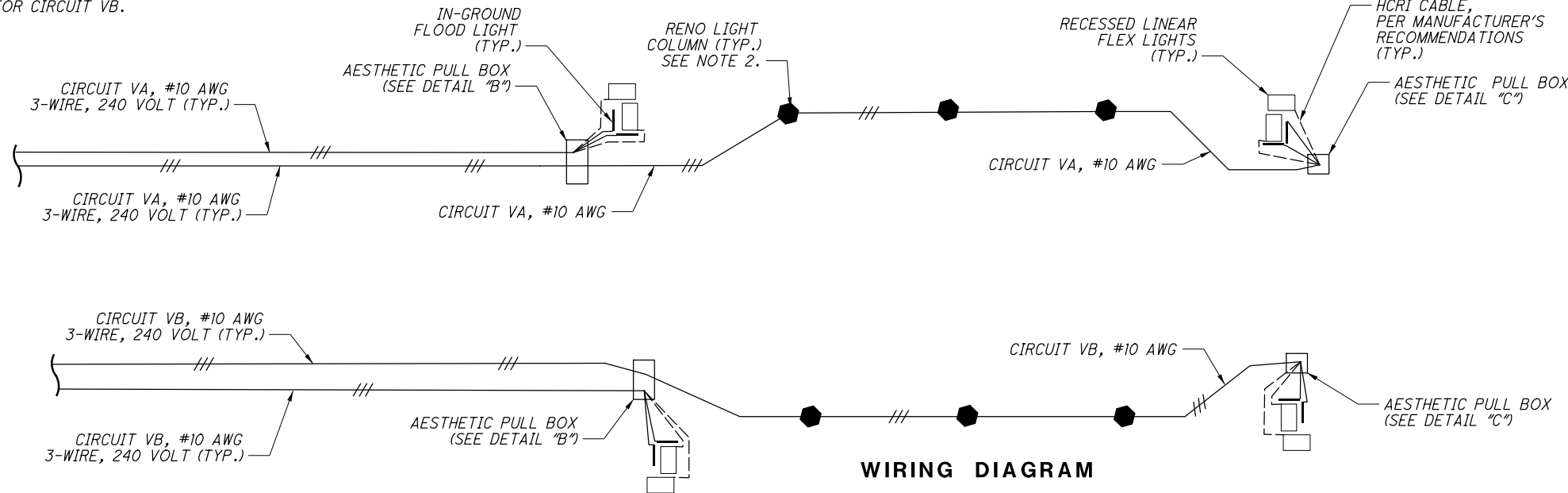
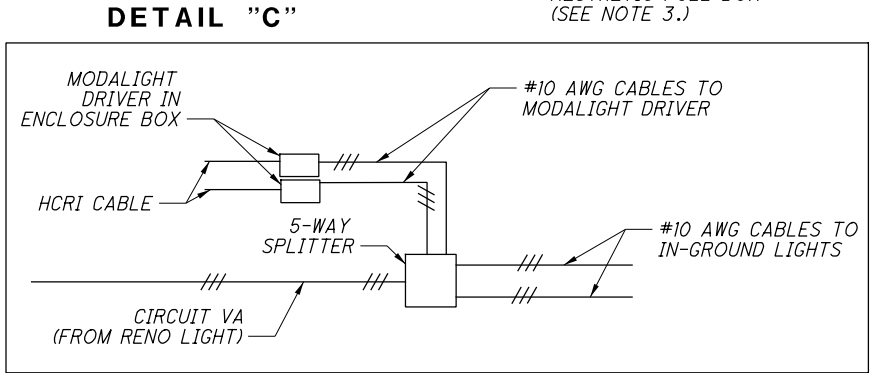
NOTES:
1) ALL WIRE SHALL BE #4 AWG, UNLESS OTHERWISE NOTED.
2) "CIRCUIT CABLE SIZE" REFERS TO THE WIRE AWG COMING OUT OF THE CONTROL PANEL FOR EACH CIRCUIT.



0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



NOTE: CIRCUIT VA IS SHOWN. WIRING IS SIMILAR FOR CIRCUIT VB.

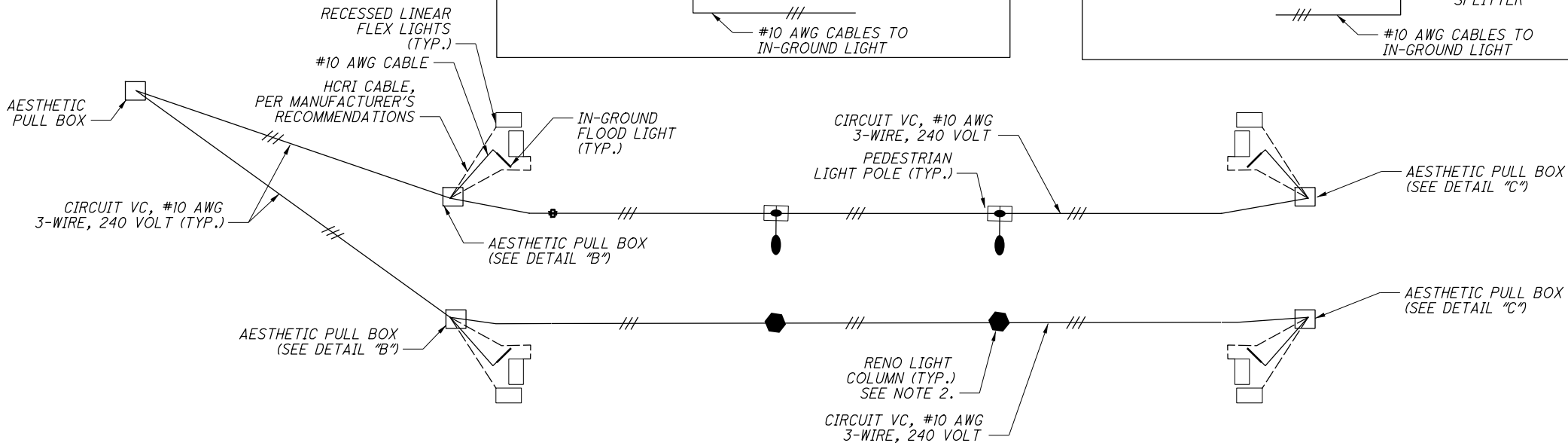
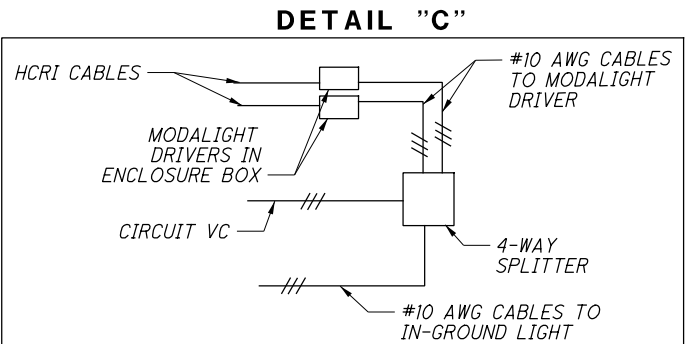
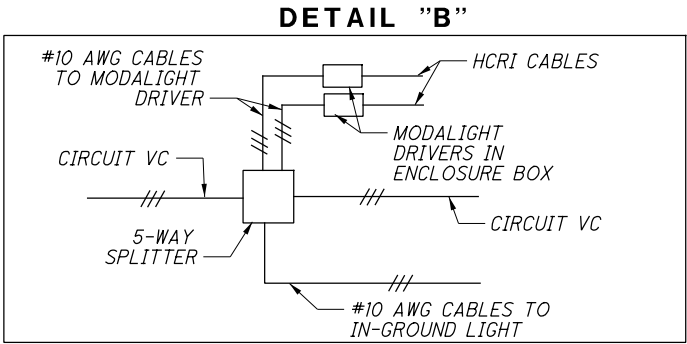
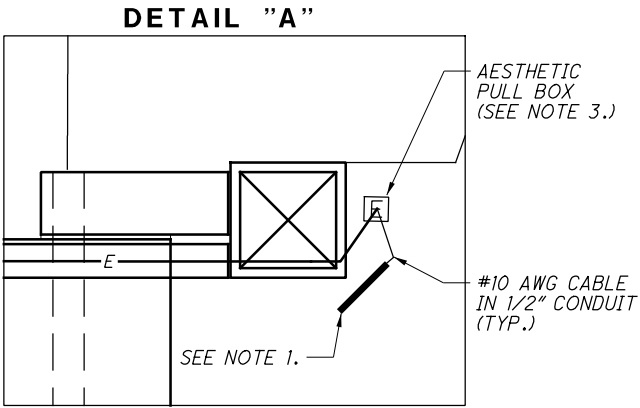
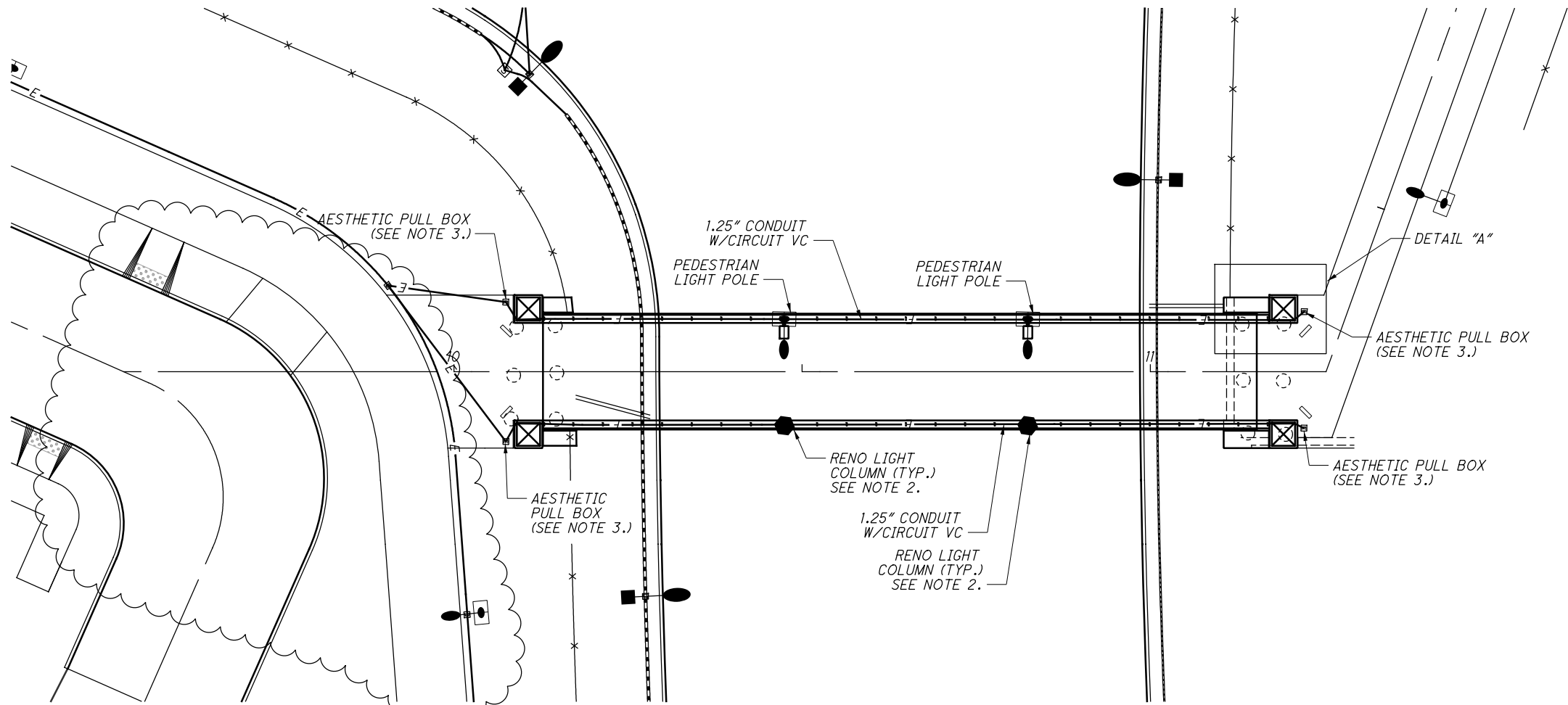


NOTE: SIMILAR FOR CIRCUIT VB

- NOTES:
- 1) PROVIDE TWO IN-GROUND FLOOD LIGHTS AND RECESSED LINEAR FLEX LIGHTS. SEE SHEET 9 FOR ADDITIONAL DETAILS.
 - 2) RENO LIGHT COLUMN, TYPICAL. SEE BRIDGE PLANS FOR FIXTURE MOUNTING AND CONDUIT DETAILS.
 - 3) SET 24"X36" AESTHETIC PULL BOX NEAR THE CORNER OF THE PYLON.
 - 4) PROVIDE EXPANSION/DEFLECTION COUPLINGS ON ALL CONDUITS ENTERING THE BRIDGE THROUGH THE PARAPET.
 - 5) SEE BRIDGE PLAN FOR JUNCTION BOX LOCATION.
 - 6) THE CONTRACTOR MAY USE SEAL TIGHT PVC COATED CONDUIT FOR CONNECTIONS FROM PULL BOX TO LED ACCENT LIGHTING FIXTURES.
 - 7) SET 24"X36" PULL BOX FOR ROADWAY LIGHTING CIRCUITS ADJACENT TO THE PULL BOX FOR AESTHETIC LIGHTING. CONDUITS FOR AESTHETIC LIGHTING SHALL NOT ENTER ROADWAY LIGHTING PULL BOXES. CONDUITS FOR ROADWAY LIGHTING SHALL NOT ENTER AESTHETIC LIGHTING PULL BOXES.
 - 8) GROUND STRUCTURE IN CONFORMANCE WITH HL-50.21.

NO.	DATE	DESCRIPTION
1	2019-10-02	DC019
0	2019-08-14	RFC
ISSUE RECORD		



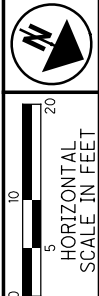


- NOTES:
- 1) PROVIDE ONE IN-GROUND FLOOD LIGHT AND RECESSED LINEAR FLEX LIGHTS. SEE SHEET 9 FOR ADDITIONAL DETAILS.
 - 2) RENO LIGHT COLUMN, TYPICAL. SEE BRIDGE PLANS FOR FIXTURE MOUNTING DETAILS.
 - 3) SET 24"x36" AESTHETIC PULL BOX NEAR THE CORNER OF THE PYLON.
 - 4) PROVIDE EXPANSION/DEFLECTION COUPLINGS ON ALL CONDUITS ENTERING THE BRIDGE THROUGH THE PARAPET.
 - 5) SEE BRIDGE PLAN FOR JUNCTION BOX LOCATIONS.
 - 6) THE CONTRACTOR MAY USE SEAL TIGHT PVC COATED CONDUIT FOR CONNECTIONS FROM PULL BOX TO LED ACCENT LIGHTING FIXTURES.
 - 7) GROUND STRUCTURE IN CONFORMANCE WITH HL-50.21.

NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-08-14	RFC
ISSUE RECORD		

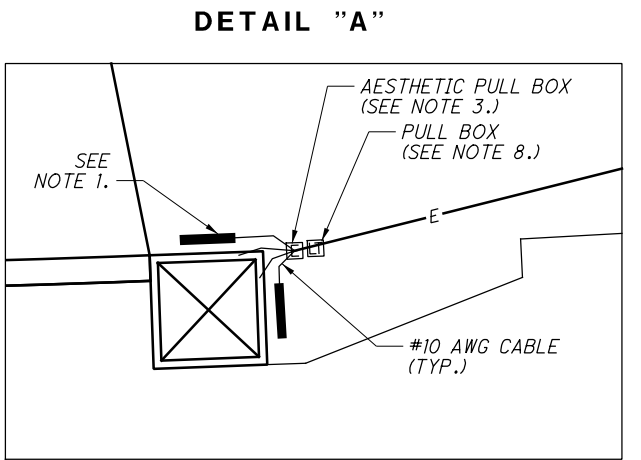
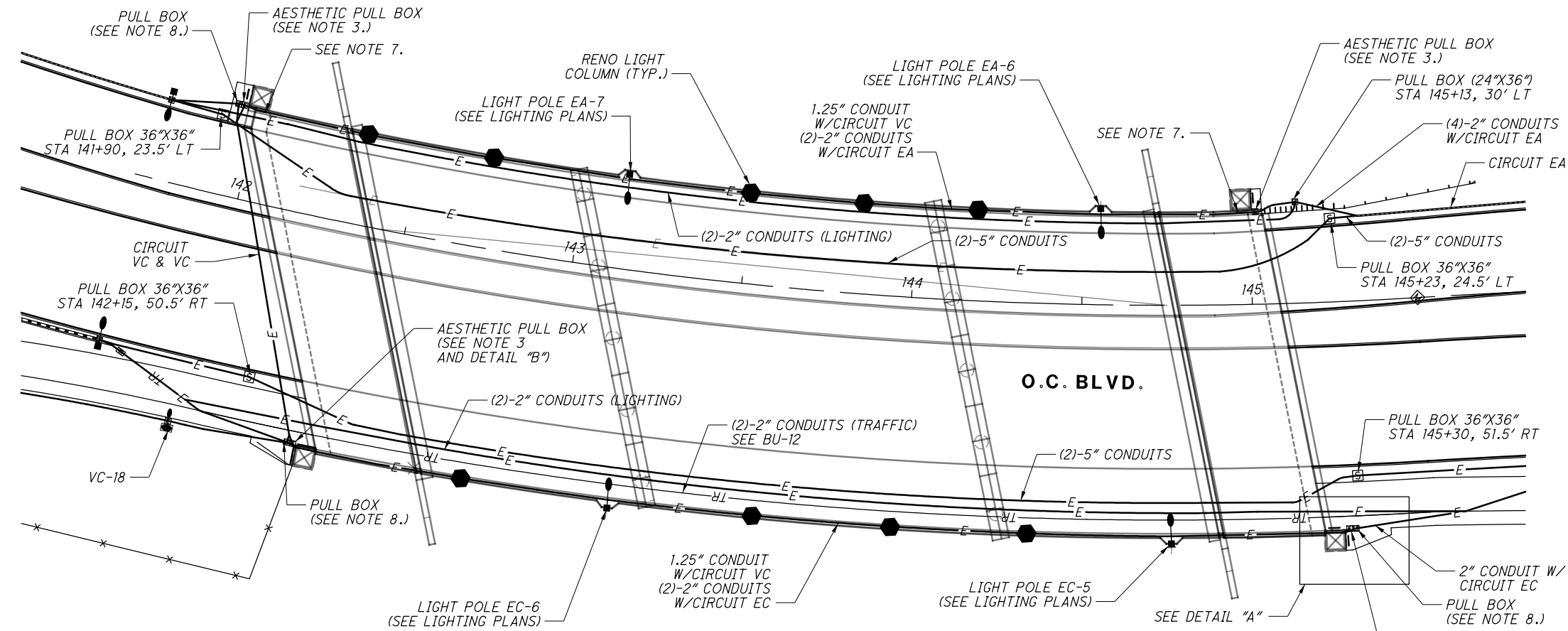
LIGHTING DETAILS - ACCENT LIGHTING
E 59TH ST PEDESTRIAN BRIDGE OVER OC

CUY-IR490/ SR010-
2.09/ 19.28

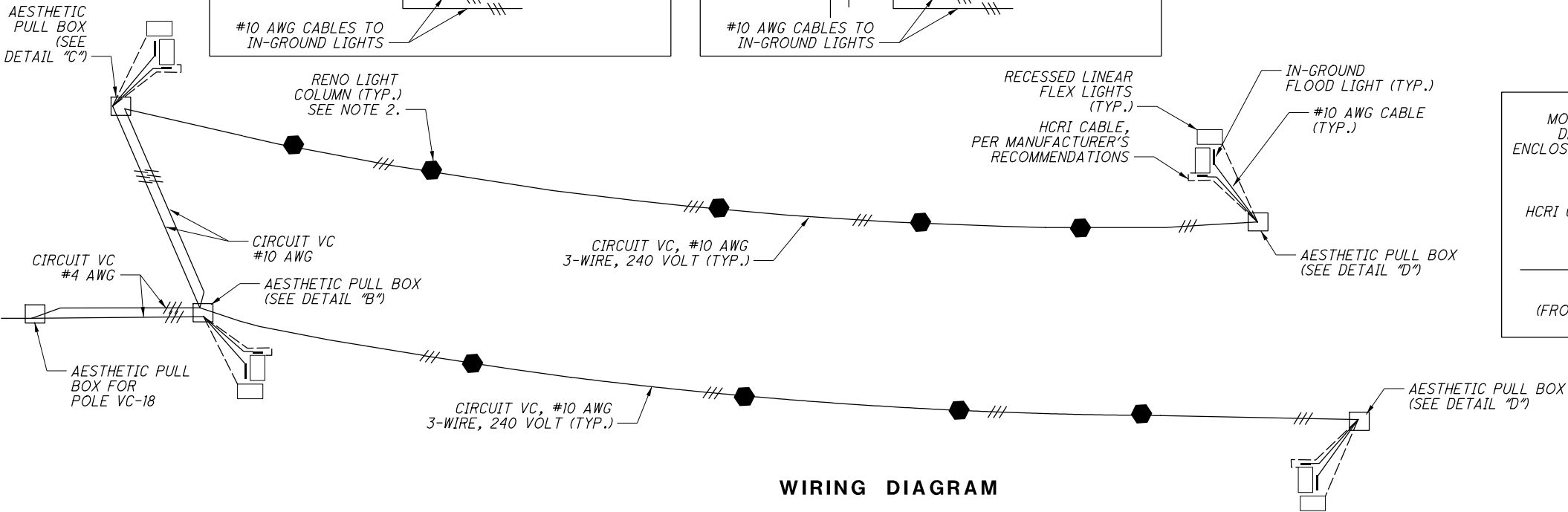
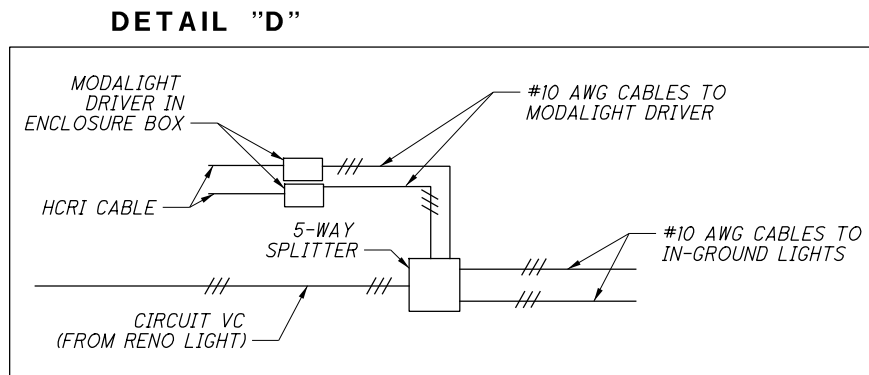
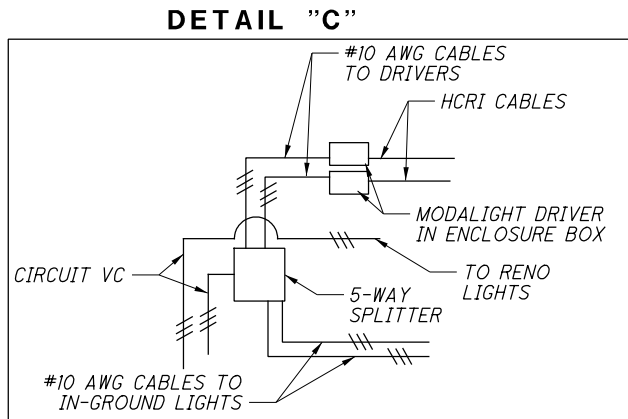
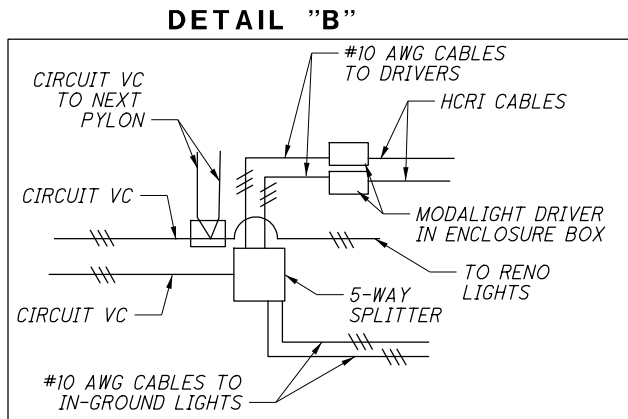


RECORD PLANS

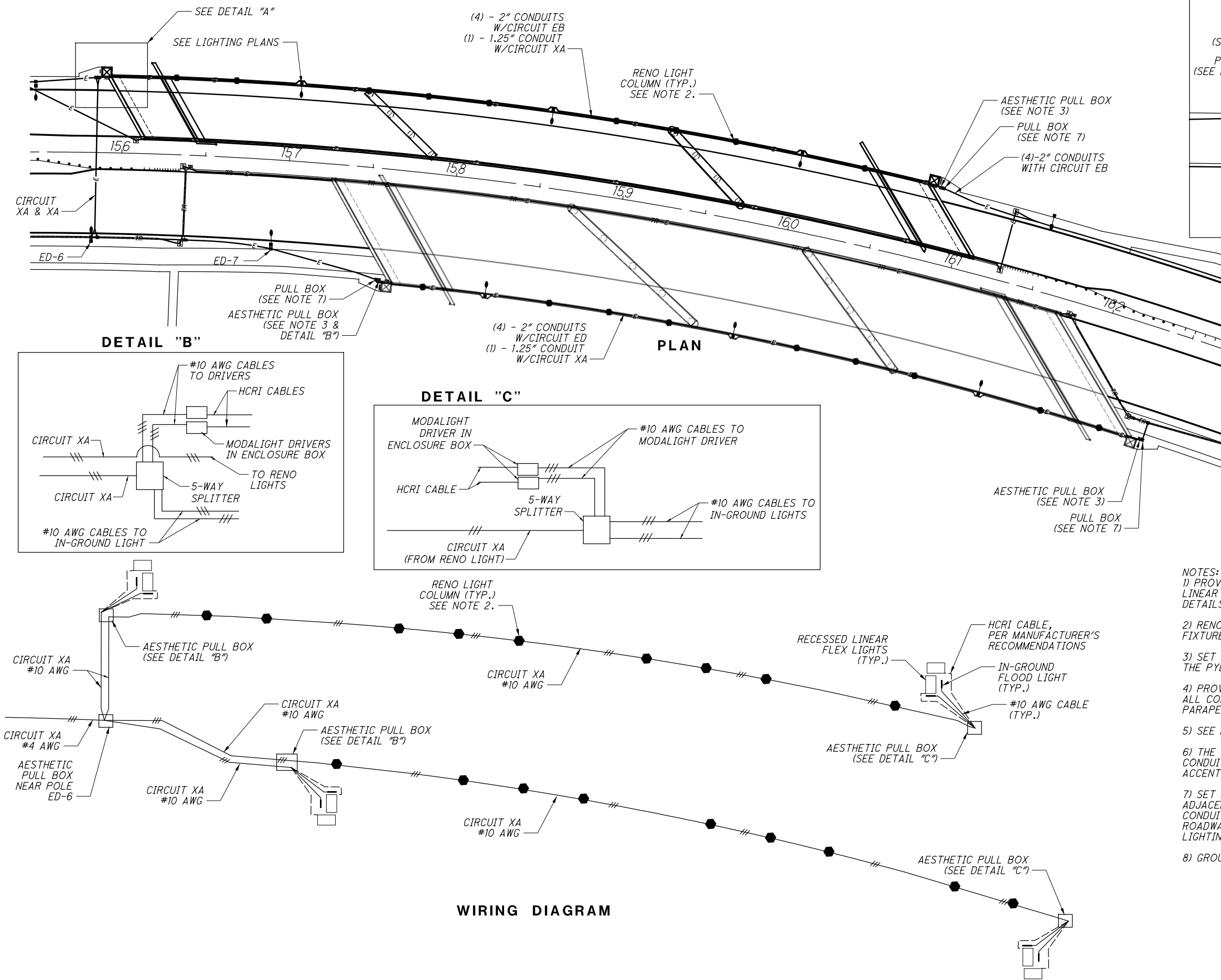
RECORD PLANS



- NOTES:
- 1) PROVIDE TWO IN-GROUND FLOOD LIGHTS AND RECESSED LINEAR FLEX LIGHTS. SEE SHEET 9 FOR ADDITIONAL DETAILS.
 - 2) RENO LIGHT COLUMN, TYPICAL. SEE BRIDGE PLANS FOR FIXTURE MOUNTING AND CONDUIT DETAILS.
 - 3) SET 24"x36" AESTHETIC PULL BOX NEAR THE CORNER OF THE PYLON.
 - 4) PROVIDE EXPANSION/DEFLECTION COUPLINGS ON ALL CONDUITS ENTERING THE BRIDGE THROUGH THE PARAPET.
 - 5) SEE BRIDGE PLAN FOR JUNCTION BOX LOCATION.
 - 6) THE CONTRACTOR MAY USE SEAL TIGHT PVC COATED CONDUIT FOR CONNECTIONS FROM PULL BOX TO LED ACCENT LIGHTING FIXTURES.
 - 7) CAST LUMENFACADE FLOOD LIGHT INTO THE TOP OF THE PARAPET BARRIER.
 - 8) SET 24"x36" PULL BOX FOR ROADWAY LIGHTING CIRCUITS ADJACENT TO THE PULL BOX FOR AESTHETIC LIGHTING. CONDUITS FOR AESTHETIC LIGHTING SHALL NOT ENTER ROADWAY LIGHTING PULL BOXES. CONDUITS FOR ROADWAY LIGHTING SHALL NOT ENTER AESTHETIC LIGHTING PULL BOXES.
 - 9) GROUND STRUCTURE IN CONFORMANCE WITH HL-50.21.

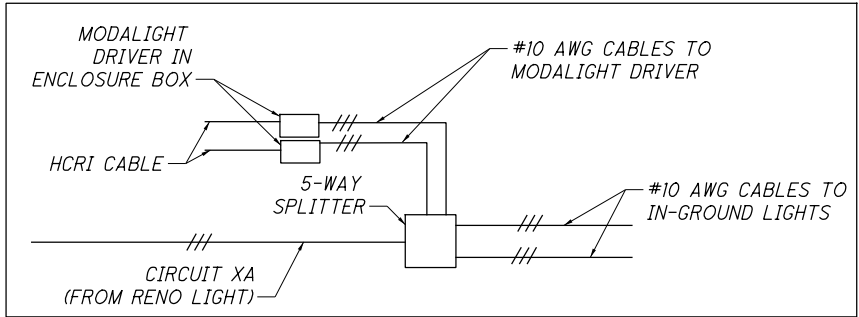
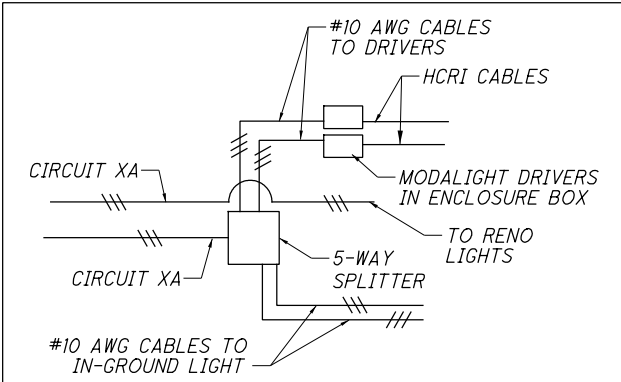
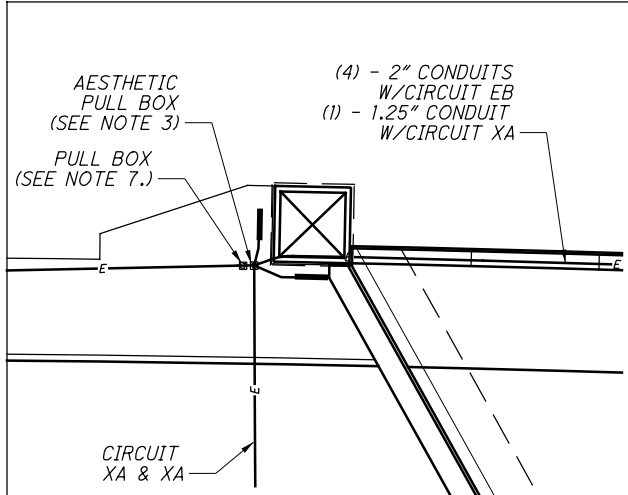


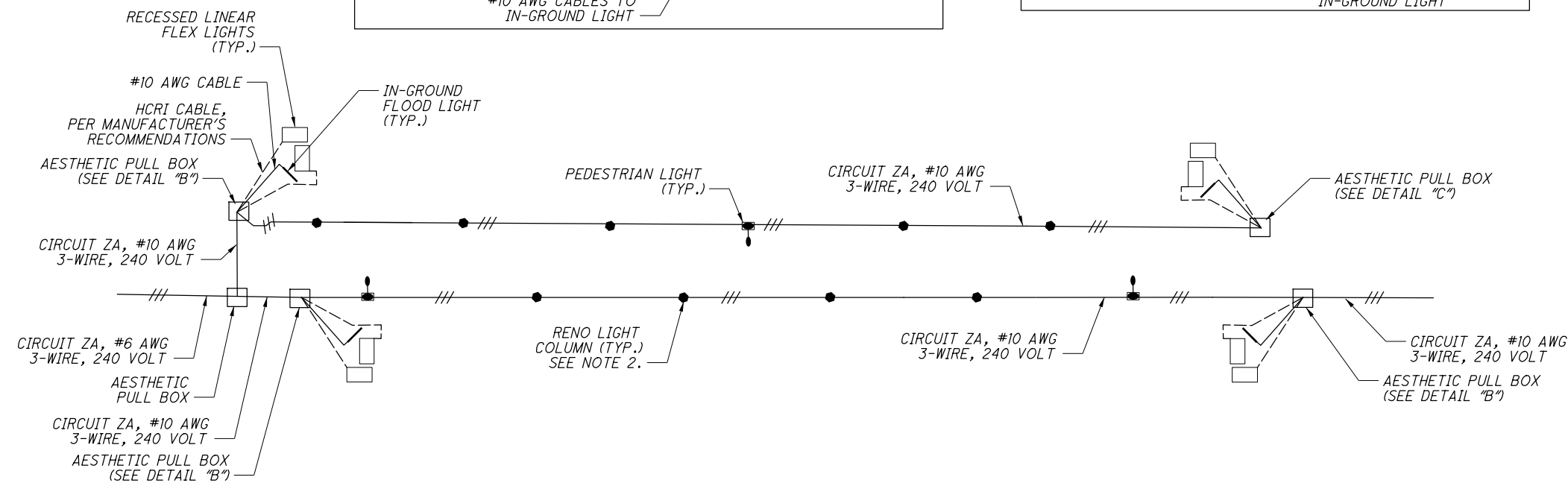
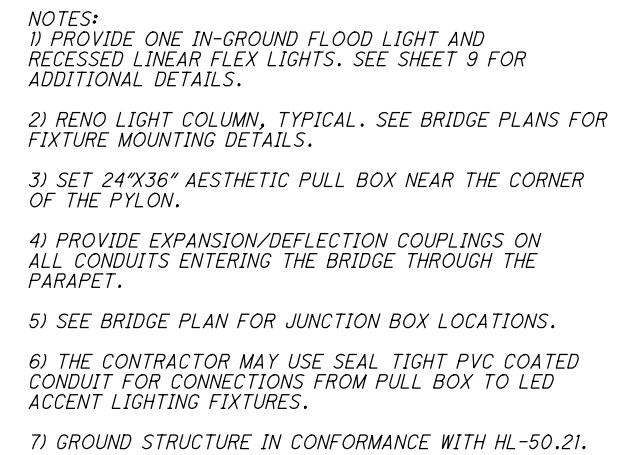
NO.	DATE	DESCRIPTION
1	2020-09-01	DC045
0	2019-08-14	RFC
ISSUE RECORD		



- NOTES:
- 1) PROVIDE TWO IN-GROUND FLOOD LIGHTS AND RECESSED LINEAR FLEX LIGHTS. SEE SHEET 9 FOR ADDITIONAL DETAILS.
 - 2) RENO LIGHT COLUMN, TYPICAL. SEE BRIDGE PLANS FOR FIXTURE MOUNTING AND CONDUIT DETAILS.
 - 3) SET 24"x36" AESTHETIC PULL BOX NEAR THE CORNER OF THE PYLON.
 - 4) PROVIDE EXPANSION/DEFLECTION COUPLINGS ON ALL CONDUITS ENTERING THE BRIDGE THROUGH THE PARAPET.
 - 5) SEE BRIDGE PLAN FOR JUNCTION BOX LOCATION.
 - 6) THE CONTRACTOR MAY USE SEAL TIGHT PVC COATED CONDUIT FOR CONNECTIONS FROM PULL BOX TO LED ACCENT LIGHTING FIXTURES.
 - 7) SET 24"x36" PULL BOX FOR ROADWAY LIGHTING CIRCUITS ADJACENT TO THE PULL BOX FOR AESTHETIC LIGHTING. CONDUITS FOR AESTHETIC LIGHTING SHALL NOT ENTER ROADWAY LIGHTING PULL BOXES. CONDUITS FOR ROADWAY LIGHTING SHALL NOT ENTER AESTHETIC LIGHTING PULL BOXES.
 - 8) GROUND STRUCTURE IN CONFORMANCE WITH HL-50.21.

NO.	DATE	DESCRIPTION
1	2021-05-18	DC056
0	2019-08-14	RFC
ISSUE RECORD		





0	2019-08-14	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

Submittal: 086

Revision: 0

Date Submitted: 7/7/2020

Response Due By: 7/21/2020



Project: 16051 - ODOT 173000 CUY IR 490/SR010 (OC3)

Description: BU27 - Reno Light Columns

To: Julie Meyer, PE
Ohio Department of Transportation - District 12

Email: Julie.Meyer@dot.ohio.gov

From: Oliver Bluestone
Kokosing Construction Company, Inc.

Email: obluestone@kokosing.biz

Submittal Type:	Submitted For:
<input type="checkbox"/> Engineered Drawings	<input checked="" type="checkbox"/> Approval
<input type="checkbox"/> Shop Drawings	<input type="checkbox"/> Record
<input type="checkbox"/> Working Drawings	<input type="checkbox"/> Other
<input type="checkbox"/> CPM Schedule	
<input type="checkbox"/> Material Certifications / Test Results	Sent Via:
<input type="checkbox"/> Reports	<input checked="" type="checkbox"/> Attached (Electronic)
<input checked="" type="checkbox"/> Product Data/Samples	<input type="checkbox"/> Attached (Hard Copy)
<input type="checkbox"/> Other:	

Submittal #	Copies	Spec #	Rev. #	Description	
086	1	625	0	086 – BU27 - Reno Light Columns	

Comments:

Please see the attached material submittal from Miller Cable for the Reno Lights called for in BU27. Please also verify the color of the decorative reno columns the project scope calls for graphite grey and the response to RFI 040 calls for black.

Signed: 

RENO LED Specification

RENO's linear form adds a simple accent to contemporary architecture. Rectangular column is fabricated from aluminum extrusions and panels. Top mounted reflector allows for easy relamping. Matte translucent lenses generate softly diffused illumination, while effectively highlighting the profile. All hardware is stainless steel.

ODOT 173000
RENO FIXTURE
QTY 43 EA
REN3200-LED-WW-UNV-10RB-BLK



Model	Lamp	Color Temperature	Volt	Pole	Finish	Option
REN3200	LED - Standard output	WW - 3000K NW - 4000K	UNV - 120-277V	10RB - 10.5' Column	SG - Silver Grey	DIM - 0-10vDC Dimming
					DG - Dark Grey	N - None
					GG - Graphite Grey	
					BLK - Matte Black	
					BRZ - Dark Bronze	
					CC - Custom Color	

Ordering Information

Specifications are subject to change without notification

HessAmerica > Products > Lighting Products > Illuminating Columns > RENO 3200
https://www.hessamerica.com/Products/Lighting/Illuminating_Columns/RENO_3200/

RENO LED Specification

HOUSING

Rectangular column is fabricated from 0.2" nominal wall, 6060 aluminum extrusions and aluminum sheet. Hand hole cover is plasma cut with kerf not to exceed 1/8" and includes triangular tamper-resistant locking device. Machined aluminum top cap provides access to LED engine with reflective optics located at top of column. Top cap is secured to column with four captive stainless steel socket head cap screws and is sealed to the housing with one-piece die-cut silicone gasket. Square lenses on main width of column and narrow rectilinear lenses on adjacent sides are textured matte acrylic.

OPTICS

Top mounted CoB LED and medium beam reflector projects light downward and outward through four lenses on the bollard. Interior of housing is painted white to provide even illumination through all four lenses. Two square lenses provide accenting, while two rectilinear lenses provide primary illumination.

ELECTRICAL

Electronic LED driver supplies 700mA drive current to LED modules with input voltage range from 120V to 277V at 50/60Hz with total power consumption is 40 watts. 0-10V dimming available on request. Electronic driver is housed within a weatherproof enclosure that is accessed via the hand hole.

DELIVERED LUMEN OUTPUT / POWER CONSUMPTION / BUG RATING

Standard output: 40 watts

3000K - 2515 lumens / B1-U4-G2

4000K - 3119 lumens / B1-U5-G2

MOUNTING

Luminaire with internal flange mounts to four 3/4" x 17" x 3" galvanized steel anchor bolts. Nominal column height is 10.5'.

FINISH

Standard finishes are finely textured matte silver grey metallic, dark grey, graphite grey, matte black, or dark bronze. Special colors available on request.

CERTIFICATION

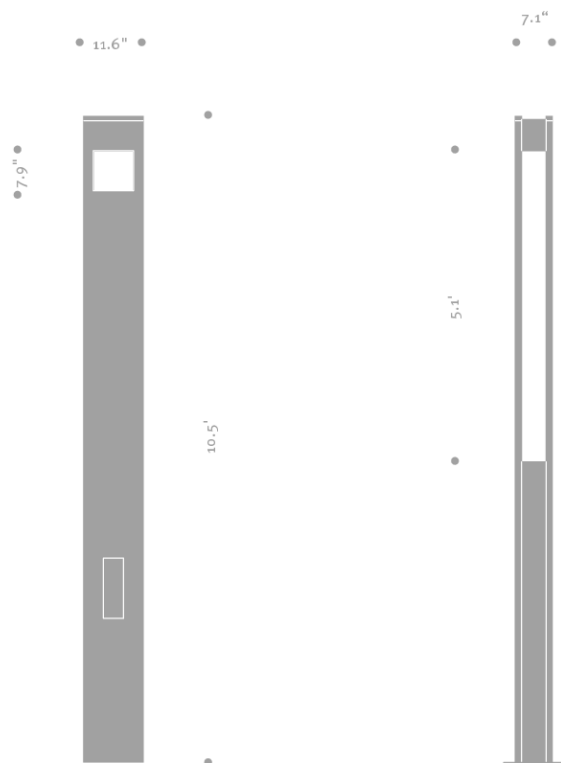
CSA/US Certified for Wet Locations

WARRANTY

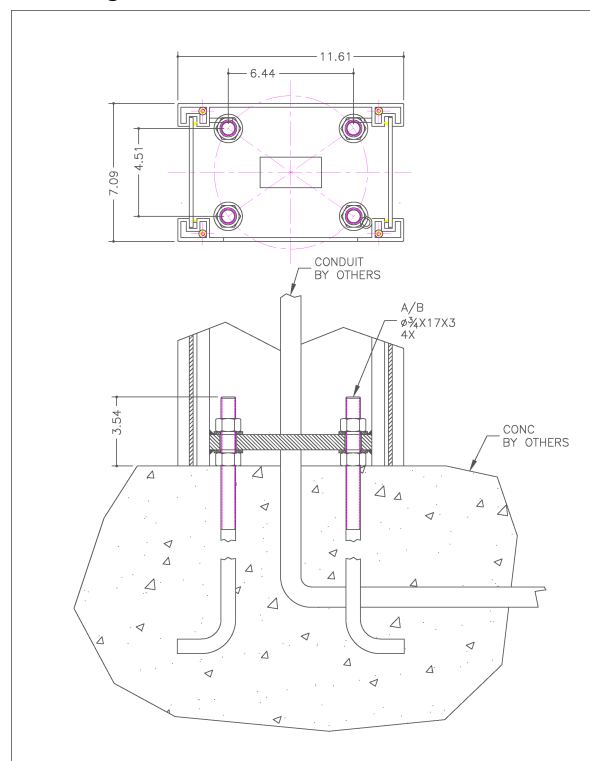
Limited product warranty period including LEDs is five years. Driver shall carry the manufacturer's limited warranty.

Additional information

Dimensions



Mounting detail



Specifications are subject to change without notification

HessAmerica > Products > Lighting Products > Illuminating Columns > RENO 3200

https://www.hessamerica.com/Products/Lighting/Illuminating_Columns/RENO_3200/

Submittal: 089

Revision: 0

Date Submitted: 7/28/2020

Response Due By:



Project: 16051 - ODOT 173000 CUY IR 490/SR010 (OC3)

Description: BU27 - Decorative Lighting

To: Steve Holland
Cleveland Public Power, (CPP)

Email: Sholland@cpp.org

From: Oliver Bluestone
Kokosing Construction Company, Inc.

Email: obluestone@kokosing.biz

Submittal Type:	Submitted For:
<input type="checkbox"/> Engineered Drawings	<input checked="" type="checkbox"/> Approval
<input type="checkbox"/> Shop Drawings	<input type="checkbox"/> Record
<input type="checkbox"/> Working Drawings	<input type="checkbox"/> Other Verification
<input type="checkbox"/> CPM Schedule	
<input type="checkbox"/> Material Certifications / Test Results	Sent Via:
<input type="checkbox"/> Reports	<input checked="" type="checkbox"/> Attached (Electronic)
<input checked="" type="checkbox"/> Product Data/Samples	<input type="checkbox"/> Attached (Hard Copy)
<input type="checkbox"/> Other: Meeting Request	

Submittal #	Copies	Spec #	Rev. #	Description	Status
089	1	625	0	089 – BU27 - Decorative Lighting	For Approval

Comments:

Please see the attached submittals for the decorative lighting called for in BU27. The following cut sheets are attached for your review / approval:

- Decorative Pedestrian Path Lighting – Powered by Metered Cabinet
- Decorative Pedestrian Path Lighting – Powered by Unmetered Cabinet
- Decorative Street Lighting (RW)
- Decorative Street Lighting (T3R)
- Pedestrian Lighting on bridges

Let me know if you have any questions regarding this submittal.

Signed: 

DESCRIPTION

The Galleon™ Pedestrian Companion LED luminaire's appearance is complementary with the Galleon area and site luminaire bringing a modern architectural style to lighting applications. Flexible mounting options accommodate a variety of pole configurations and mounting heights, allowing it to be offered as a pedestrian or site lighting solution. The Galleon family of LED products deliver exceptional performance with patented, high-efficiency AccuLED Optics™, providing uniform and energy conscious lighting for parking lots, building and security lighting applications.

SPECIFICATION FEATURES

Construction

Driver enclosure thermally isolated from optics for optimal thermal performance. Heavy wall aluminum housing die-cast with integral external heat sinks to provide superior structural rigidity and an IP66 rated housing. Overall construction passes a 1.5G vibration test to ensure mechanical integrity.

Optics

Choice of sixteen patented, high-efficiency AccuLED Optics. The optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K, 5000K and 6000K CCT. Greater than 90%

lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 1200mA, 800mA, and 600mA drive currents.

Electrical

LED drivers are mounted for ease of maintenance. 120-277V 50/60Hz, 347V or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Drivers are provided standard with 0-10V dimming. An optional Eaton proprietary surge protection module is available and designed to withstand 10kV of transient line surge. The Galleon Pedestrian LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option.

Mounting

The innovative quick mounting arm attaches to new or existing 4-5" round or square poles with 1-1/2" to 4-7/8" drilling patterns without re-drilling. The mast arm adapter fits horizontal 2-3/8" tenon.

Finish

Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

Warranty

Five-year warranty.

Catalog #	GAP-AF-02-LED-U-T2-QM-800-4N7	Type
Project	OPPORTUNITY CORRIDOR PH. 3	PEDESTRIAN
Comments	BU-27 Street Lighting QTY 4	Date
Prepared by	Mike Gallagher	

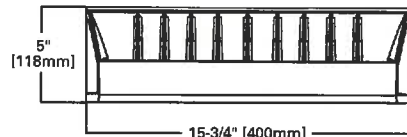


GAP GALLEON PEDESTRIAN COMPANION

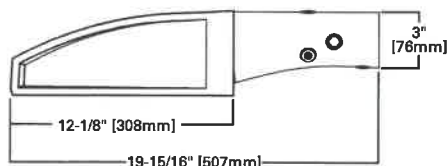
1-2 Light Squares
Solid State LED

AREA/SITE LUMINAIRE

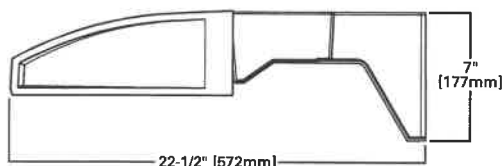
DIMENSIONS



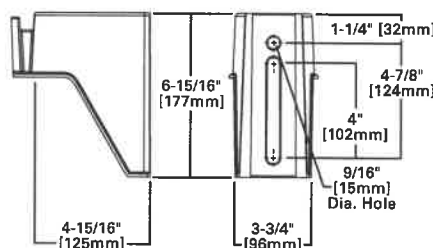
MAST ARM MOUNT



QUICK MOUNT ARM (OVERALL DIMENSIONS)



QUICK MOUNT ARM (POLE MOUNTING DETAILS)



CERTIFICATION DATA

UL/cUL Listed
LM79 / LM80 Compliant
IP66 Housing
ISO 9001

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V 50/60Hz
347V, 480V 60Hz
-40°C Min. Temperature
40°C Max. Temperature
50°C Max. Temperature (HA Option)

EPA

Effective Projected Area: (Sq. Ft.)
Mast Arm Mount: 2.4
Quick Mount Arm: 2.9

SHIPPING DATA

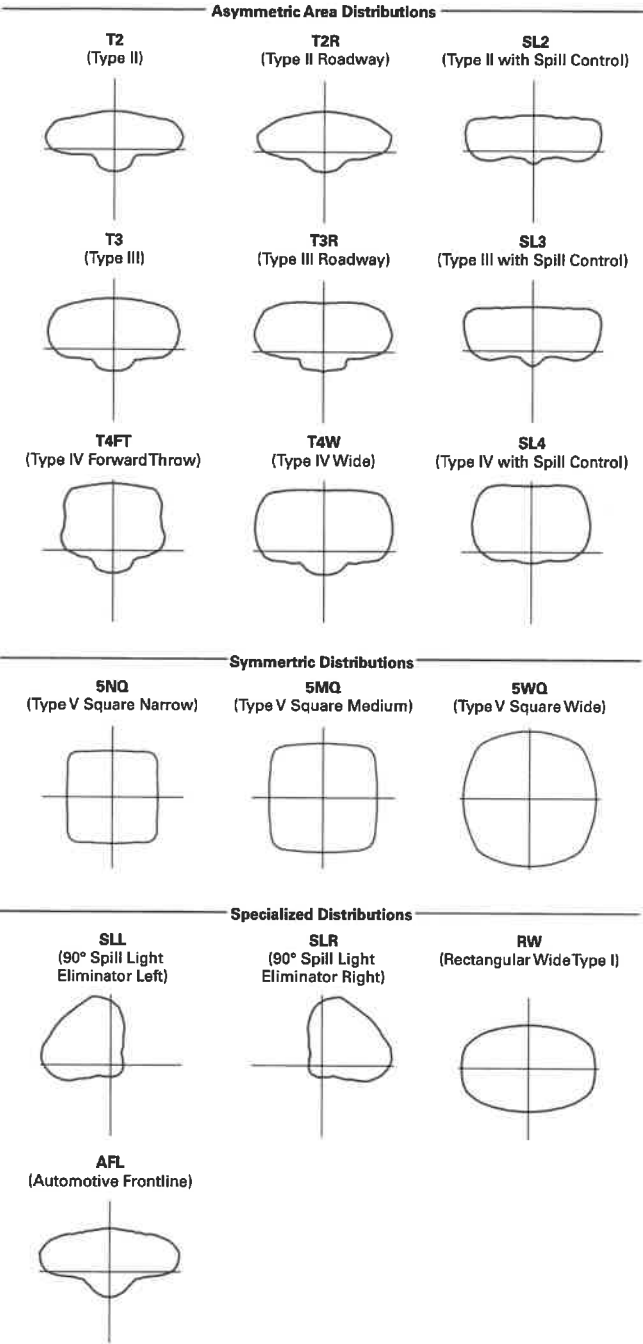
Approximate Net Weight:
27 lbs. (12.2 kgs.)

POWER AND LUMENS

Number of Light Squares		1				2			
Drive Current		600mA	800mA	1.0A	1.2A	600mA	800mA	1.0A	1.2A
Nominal Power (Watts)		34	44	59	67	66	86	113	129
Input Current @ 120V (A)		0.30	0.39	0.51	0.58	0.58	0.77	1.02	1.16
Input Current @ 208V (A)		0.17	0.22	0.29	0.33	0.34	0.44	0.56	0.63
Input Current @ 240V (A)		0.15	0.19	0.26	0.29	0.30	0.38	0.48	0.55
Input Current @ 277V (A)		0.14	0.17	0.23	0.25	0.28	0.36	0.42	0.48
Input Current @ 347V (mA)		0.11	0.15	0.17	0.20	0.19	0.24	0.32	0.39
Input Current @ 480V (mA)		0.08	0.11	0.14	0.15	0.15	0.18	0.24	0.30
Optics									
T2	4000K/5000K Lumens	4,204	5,156	6,381	7,000	8,215	10,075	12,470	13,680
	3000K Lumens	3,975	4,874	6,033	6,618	7,767	9,525	11,790	12,934
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2
T2R	4000K/5000K Lumens	4,464	5,474	6,775	7,431	8,723	10,696	13,239	14,523
	3000K Lumens	4,221	5,176	6,406	7,025	8,247	10,113	12,517	13,731
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G2
T3	4000K/5000K Lumens	4,285	5,256	6,505	7,135	8,375	10,269	12,710	13,943
	3000K Lumens	4,051	4,969	6,150	6,746	7,918	9,710	12,017	13,182
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2
T3R	4000K/5000K Lumens	4,380	5,372	6,648	7,294	8,561	10,498	12,993	14,253
	3000K Lumens	4,141	5,078	6,286	6,895	8,094	9,925	12,285	13,475
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G2
T4FT	4000K/5000K Lumens	4,311	5,286	6,542	7,177	8,422	10,329	12,784	14,024
	3000K Lumens	4,075	4,998	6,185	6,786	7,963	9,766	12,086	13,259
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G3
T4W	4000K/5000K Lumens	4,254	5,217	6,458	7,084	8,313	10,195	12,619	13,843
	3000K Lumens	4,023	4,933	6,105	6,698	7,860	9,639	11,931	13,088
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3
SL2	4000K/5000K Lumens	4,196	5,147	6,370	6,988	8,202	10,058	12,449	13,656
	3000K Lumens	3,967	4,866	6,022	6,607	7,755	9,509	11,771	12,911
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3
SL3	4000K/5000K Lumens	4,284	5,255	6,504	7,134	8,374	10,268	12,709	13,941
	3000K Lumens	3,849	4,720	5,842	6,408	7,520	9,224	11,415	12,523
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G3	B1-U0-G3	B1-U0-G3
SL4	4000K/5000K Lumens	4,071	4,992	6,179	6,778	7,954	9,756	12,074	13,246
	3000K Lumens	3,849	4,720	5,842	6,408	7,520	9,224	11,415	12,523
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G3	B1-U0-G3	B1-U0-G3
5NQ	4000K/5000K Lumens	4,420	5,420	6,709	7,358	8,637	10,591	13,108	14,380
	3000K Lumens	4,179	5,124	6,343	6,957	8,166	10,013	12,393	13,595
	BUG Rating	B2-U0-G1	B2-U0-G1	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2
5MQ	4000K/5000K Lumens	4,501	5,520	6,831	7,494	8,795	10,786	13,350	14,644
	3000K Lumens	4,256	5,219	6,458	7,085	8,316	10,198	12,622	13,845
	BUG Rating	B3-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2	B4-U0-G2	B4-U0-G2
5WQ	4000K/5000K Lumens	4,513	5,534	6,849	7,514	8,819	10,815	13,385	14,683
	3000K Lumens	4,268	5,232	6,475	7,104	8,338	10,224	12,656	13,882
	BUG Rating	B3-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2
SLL/SLR	4000K/5000K Lumens	3,765	4,619	5,716	6,270	7,358	9,023	11,167	12,251
	3000K Lumens	3,560	4,367	5,404	5,927	6,957	8,531	10,559	11,583
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G3	B2-U0-G3
RW	4000K/5000K Lumens	4,379	5,370	6,647	7,293	8,558	10,494	12,989	14,250
	3000K Lumens	4,141	5,077	6,285	6,895	8,092	9,922	12,281	13,473
	BUG Rating	B2-U0-G1	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2
AFL	4000K/5000K Lumens	4,396	5,390	6,672	7,318	8,590	10,533	13,037	14,301
	3000K Lumens	4,156	5,096	6,308	6,919	8,121	9,959	12,326	13,521
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2

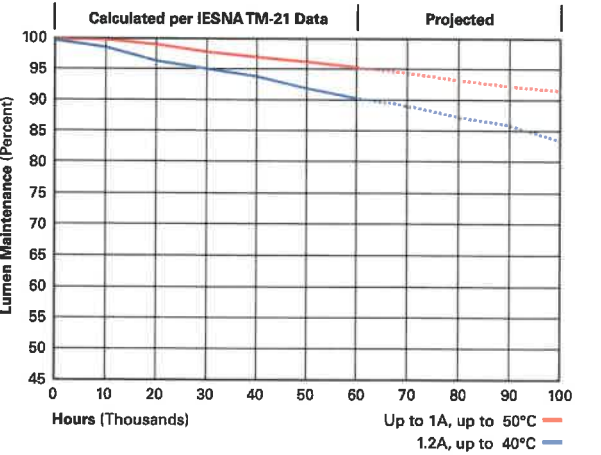
* Nominal lumen data for 70 CRI. BUG rating for 4000K/5000K. Refer to IES files for 3000K BUG ratings.

OPTICAL DISTRIBUTIONS



LUMEN MAINTENANCE

Drive Current	Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Projected L70 (Hours)
Up to 1A	Up to 50°C	> 95%	416,000
1.2A	Up to 40°C	> 90%	205,000



LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

CONTROL OPTIONS**0-10V (DIM)**

This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (P, R and PER7)

Optional button-type photocontrol (P) and photocontrol receptacles (R and PER7) provide a flexible solution to enable “dusk-to-dawn” lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PER7 receptacle.

After Hours Dim (AHD)

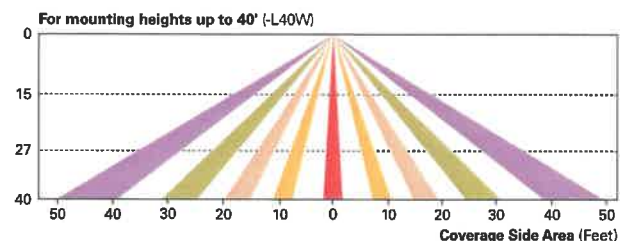
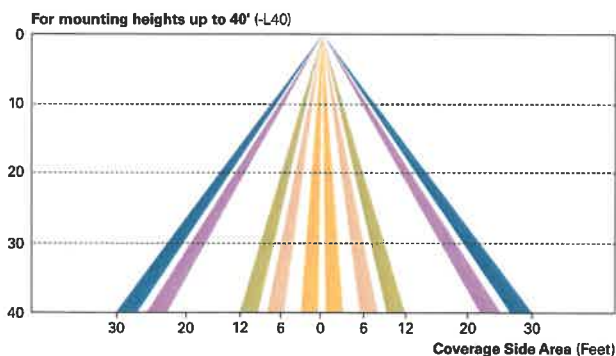
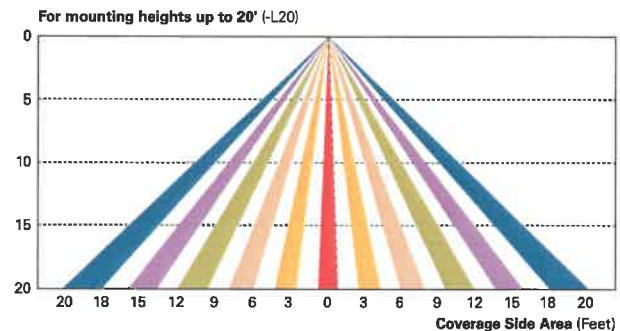
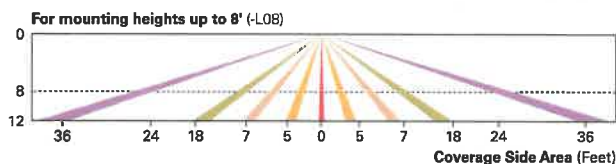
This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a “dusk-to-dawn” period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

Dimming Occupancy Sensor (MS/DIM-LXX and MS-LXX)

These sensors are factory installed in the luminaire housing. When the MS/DIM-LXX sensor option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MS/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of five minutes. The MS-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity. The MS/X-LXX is also preset for five minutes and only controls the specified number of light engines to maintain steady output from the remaining light engines.

These occupancy sensors includes an integral photocell that can be activated with the FSIR-100 accessory for “dusk-to-dawn” control or daylight harvesting - the factory preset is OFF. The FSIR-100 is a wireless tool utilized for changing the dimming level, time delay, sensitivity and other parameters.

A variety of sensor lens are available to optimize the coverage pattern for mounting heights from 8'-40'.

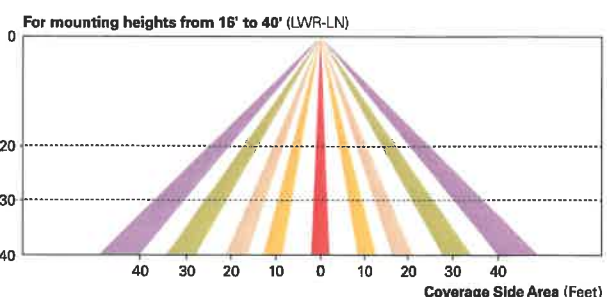
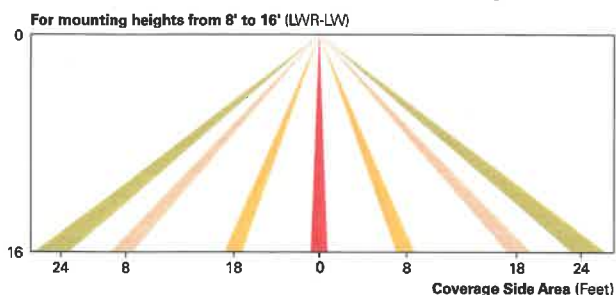
**WaveLinx Wireless Outdoor Lighting Control Module**

The 7-pin wireless outdoor lighting control module enables WaveLinx to control outdoor area, site and flood lighting. WaveLinx controls outdoor lighting using schedules to provide ON, OFF and dimming controls based on astronomic or time schedules based on a 7 day week.

LumaWatt Wireless Control and Monitoring System (LWR-LW and LWR-LN)

The LumaWatt system is a peer-to-peer wireless network of luminaire-integral sensors for any sized project. Each sensor is capable of motion and photo sensing, metering power consumption and wireless communication. The end-user can securely create and manage sensor profiles with browser-based management software. The software will automatically broadcast to the sensors via wireless gateways for zone-based and individual luminaire control. The LumaWatt software provides smart building solutions by utilizing the sensor to provide easy-to-use dashboard and analytic capabilities such as improved energy savings, traffic flow analysis, building management software integration and more.

For additional details, refer to the LumaWatt product guides.



ORDERING INFORMATION

Sample Number: GAP-AF-02-LED-U-T3-GM

Product Family ¹	Light Engine	Number of Light Squares ²	Lamp Type	Voltage	Distribution	Color	Mounting Options
GAP=Galleon Pedestrian Companion	AF=1A Drive Current	01=1 02=2	LED=Solid State Light Emitting Diodes	U=120-277V 8=480V ^{3,4} 9=347V ²	T2=Type II T2R= Type II Roadway T3=Type III T3R= Type III Roadway T4FT=Type IV Forward Throw T4W=Type IV Wide SL2=Type II w/Spill Control SL3=Type III w/Spill Control SL4=Type IV w/Spill Control SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right RW=Rectangular Wide Type I 5NQ=Type V Square Narrow 5MQ=Type V Square Medium 5WQ=Type V Square Wide AFL=Automotive Frontline	AP=Grey BZ=Bronze BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White CC=Custom Color ⁵	QM=Quick Mount Arm for Round or Square Pole ^{6,7} MA=2-3/8" Mast Arm ^{8,9}
Options (Add as Suffix)					Accessories (Order Separately)		
7027=70 CRI / 2700K ⁹ 7030=70 CRI / 3000K ⁹ 8030=80 CRI / 3000K ⁹ 7050=70 CRI / 5000K ⁹ 7060=70 CRI / 6000K ⁹ 600=Drive Current Factory Set to 600mA 800=Drive Current Factory Set to 800mA 1200=Drive Current Factory Set to 1200mA ¹⁰ F=Single Fused (120, 277 or 347V. Must Specify Voltage) FF=Double Fused (208, 240 or 480V. Must Specify Voltage) 10K=10kV Surge Module DIM=0-10V Dimming Leads ^{11,12} HA=50°C High Ambient ¹³ P=Button Type Photocontrol (120, 208, 240 or 277V. Must Specify Voltage) 4=NEMA Twistlock Photocontrol Receptacle 4N7=NEMA 7-PIN Twistlock Photocontrol Receptacle ¹⁴ AHD145=After Hours Dim, 5 Hours ¹⁵ AHD245=After Hours Dim, 6 Hours ¹⁵ AHD255=After Hours Dim, 7 Hours ¹⁵ AHD355=After Hours Dim, 8 Hours ¹⁵ MS-LXX=Motion Sensor for On/Off Operation ^{16,17,18} MS/DIM-LXX=Motion Sensor for Dimming Operation ^{16,17,18} LWR-LW=LumaWatt Wireless Sensor, Wide Lens for 8' - 16' Mounting Height ^{18,19,20} LWR-LN=LumaWatt Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height ^{18,19,20} LCF=Light Square Trim Plate Painted to Match Housing ²¹ MT=Factory Installed Mesh Top L90=Optics Rotated 90° Left R90=Optics Rotated 90° Right HSS=Factory Installed House Side Shield ²² CE=CE Marking and Small Terminal Block ²³					OA/RA1013=Photocontrol Shorting Cap OA/RA1016=NEMA Photocontrol - Multi-Tap 105-285V OA/RA1201=NEMA Photocontrol - 347V OA/RA1027=NEMA Photocontrol - 480V MA1252=10kV Circuit Module Replacement SA1036-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon SA1037-XX=2@180° Tenon Adapter for 2-3/8" O.D. Tenon SA1197-XX=3@120° Tenon Adapter for 2-3/8" O.D. Tenon SA1188-XX=4@90° Tenon Adapter for 2-3/8" O.D. Tenon SA1189-XX=2@90° Tenon Adapter for 2-3/8" O.D. Tenon SA1190-XX=3@90° Tenon Adapter for 2-3/8" O.D. Tenon SA1191-XX=2@120° Tenon Adapter for 2-3/8" O.D. Tenon SA1038-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon SA1039-XX=2@180° Tenon Adapter for 3-1/2" O.D. Tenon SA1192-XX=3@120° Tenon Adapter for 3-1/2" O.D. Tenon SA1193-XX=4@90° Tenon Adapter for 3-1/2" O.D. Tenon SA1194-XX=2@90° Tenon Adapter for 3-1/2" O.D. Tenon SA1195-XX=3@90° Tenon Adapter for 3-1/2" O.D. Tenon FSIR-100=Wireless Configuration Tool for Occupancy Sensor ¹⁷ LS/HSS=Field Installed House Side Shield ^{22,24} WOLC-7P-10A=Outdoor lighting control module (7-pin) ²⁵		

NOTES:

- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
- Standard 4000K CCT and minimum 70 CRI.
- Requires the use of a step down transformer. Not available in combination with sensor options at 1200mA.
- Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
- Custom colors are available. Setup charges apply. Paint chip samples required. Extended Lead times apply.
- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
- Quick mount arm adapter is factory installed. Pole mounting bracket shipped in box. Suitable for 1.5G. Fits square and round pole up to 6" O.D.
- Mast arm adapter factory installed (2-3/8" O.D. arm only). Suitable for 3G vibration.
- Extended lead times apply. Use dedicated IES files when performing layouts.
- Not available with HA option.
- Cannot be used with other control options.
- Low voltage control lead brought out 18" outside fixture.
- HA option available for single light square only. Not available with 1200mA drive current.
- Compatible with standard 3-PIN photocontrols, 5-PIN or 7-PIN ANSI controls.
- Requires the use of P photocontrol or the PER7 or R photocontrol receptacle with photocontrol accessory. See After Hours Dim supplemental guide for additional information.
- Replace LXX with mounting height in feet for proper lens selection (e.g., L8=8' mounting height). L8, L20, L40, and L40W are available options.
- The FSIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Eaton for more information.
- Includes Integral photosensor.
- Bronze sensor is shipped with Bronze fixtures. White sensor shipped on all other housing color options.
- LumaWatt wireless sensors are factory installed requiring network components in appropriate quantities. See www.eaton.com/lighting for LumaWatt application information.
- Not available with HSS option.
- Only for use with SL2, SL3, SL4, and AFL distributions. The light square trim plate is painted black when the HSS option is selected.
- CE is not available with the LWR, MS, MS/X, MS/DIM, P, R or PER7 options. Available in 120-277V only.
- One required for each light square.
- Requires 7-pin NEMA twistlock photocontrol receptacle. The WOLC-7 cannot be used in conjunction with additional sensors or controls.

DESCRIPTION

The Galleon™ Pedestrian Companion LED luminaire's appearance is complementary with the Galleon area and site luminaire bringing a modern architectural style to lighting applications. Flexible mounting options accommodate a variety of pole configurations and mounting heights, allowing it to be offered as a pedestrian or site lighting solution. The Galleon family of LED products deliver exceptional performance with patented, high-efficiency AccuLED Optics™, providing uniform and energy conscious lighting for parking lots, building and security lighting applications.

SPECIFICATION FEATURES

Construction

Driver enclosure thermally isolated from optics for optimal thermal performance. Heavy wall aluminum housing die-cast with integral external heat sinks to provide superior structural rigidity and an IP66 rated housing. Overall construction passes a 1.5G vibration test to ensure mechanical integrity.

Optics

Choice of sixteen patented, high-efficiency AccuLED Optics. The optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K, 5000K and 6000K CCT. Greater than 90%

lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 1200mA, 800mA, and 600mA drive currents.

Electrical

LED drivers are mounted for ease of maintenance. 120-277V 50/60Hz, 347V or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Drivers are provided standard with 0-10V dimming. An optional Eaton proprietary surge protection module is available and designed to withstand 10kV of transient line surge. The Galleon Pedestrian LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option.

Mounting

The innovative quick mounting arm attaches to new or existing 4-5" round or square poles with 1-1/2" to 4-7/8" drilling patterns without re-drilling. The mast arm adapter fits horizontal 2-3/8" tenon.

Finish

Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

Warranty

Five-year warranty.

Catalog #	GAP-AF-02-LED-U-T2-QM-800	Type
Project	ODOT 173000 Opportunity Corridor PH. 3	PEDESTRIAN
Comments	BU-27 Street Lighting QTY 20 NPC	Date
Prepared by	Mike Gallagher	

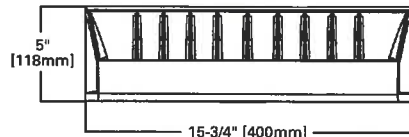


GAP GALLEON PEDESTRIAN COMPANION

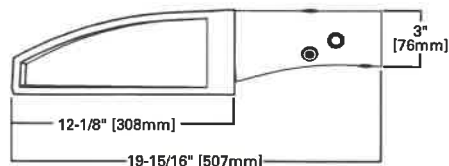
1-2 Light Squares
Solid State LED

AREA/SITE LUMINAIRE

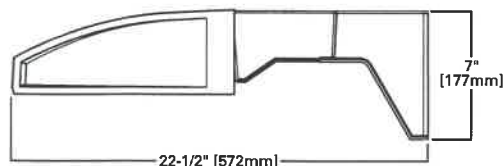
DIMENSIONS



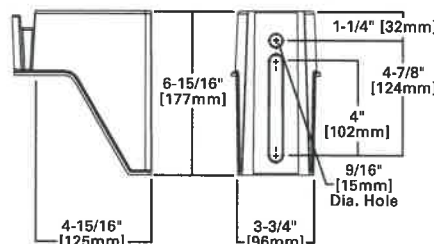
MAST ARM MOUNT



QUICK MOUNT ARM (OVERALL DIMENSIONS)



QUICK MOUNT ARM (POLE MOUNTING DETAILS)



CERTIFICATION DATA

UL/cUL Listed
LM79 / LM80 Compliant
IP66 Housing
ISO 9001

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V 50/60Hz
347V, 480V 60Hz
-40°C Min. Temperature
40°C Max. Temperature
50°C Max. Temperature (HA Option)

EPA

Effective Projected Area: (Sq. Ft.)
Mast Arm Mount: 2.4
Quick Mount Arm: 2.9

SHIPPING DATA

Approximate Net Weight:
27 lbs. (12.2 kgs.)

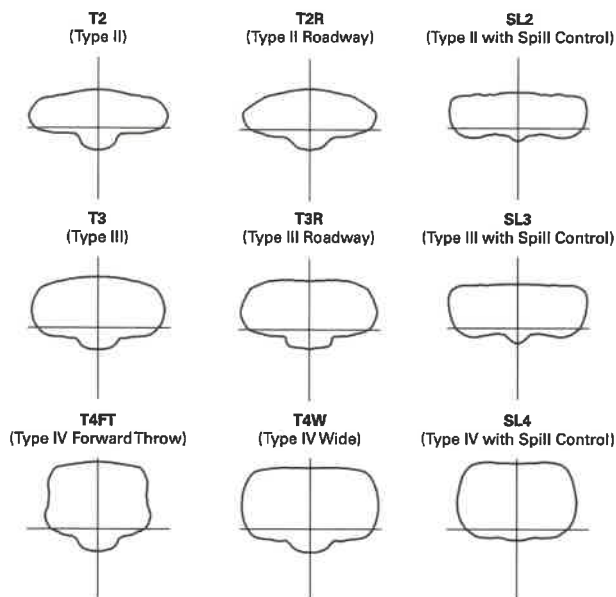
POWER AND LUMENS

Number of Light Squares		1				2			
Drive Current		600mA	800mA	1.0A	1.2A	600mA	800mA	1.0A	1.2A
Nominal Power (Watts)		34	44	59	67	66	86	113	129
Input Current @ 120V (A)		0.30	0.39	0.51	0.58	0.58	0.77	1.02	1.16
Input Current @ 208V (A)		0.17	0.22	0.29	0.33	0.34	0.44	0.56	0.63
Input Current @ 240V (A)		0.15	0.19	0.26	0.29	0.30	0.38	0.48	0.55
Input Current @ 277V (A)		0.14	0.17	0.23	0.25	0.26	0.36	0.42	0.48
Input Current @ 347V (mA)		0.11	0.15	0.17	0.20	0.19	0.24	0.32	0.39
Input Current @ 480V (mA)		0.08	0.11	0.14	0.15	0.15	0.18	0.24	0.30
Optics									
T2	4000K/5000K Lumens	4,204	5,156	6,381	7,000	8,215	10,075	12,470	13,680
	3000K Lumens	3,975	4,874	6,033	6,618	7,767	9,525	11,790	12,934
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2
T2R	4000K/5000K Lumens	4,464	5,474	6,775	7,431	8,723	10,696	13,239	14,523
	3000K Lumens	4,221	5,176	6,406	7,025	8,247	10,113	12,517	13,731
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G2
T3	4000K/5000K Lumens	4,285	5,256	6,505	7,135	8,375	10,269	12,710	13,943
	3000K Lumens	4,051	4,969	6,150	6,746	7,918	9,710	12,017	13,182
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2
T3R	4000K/5000K Lumens	4,380	5,372	6,648	7,294	8,561	10,498	12,993	14,253
	3000K Lumens	4,141	5,078	6,286	6,895	8,094	9,925	12,285	13,475
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G2
T4FT	4000K/5000K Lumens	4,311	5,286	6,542	7,177	8,422	10,329	12,784	14,024
	3000K Lumens	4,075	4,998	6,185	6,786	7,963	9,766	12,086	13,259
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G3
T4W	4000K/5000K Lumens	4,254	5,217	6,458	7,084	8,313	10,195	12,619	13,843
	3000K Lumens	4,023	4,933	6,105	6,698	7,860	9,639	11,931	13,088
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3
SL2	4000K/5000K Lumens	4,196	5,147	6,370	6,988	8,202	10,058	12,449	13,656
	3000K Lumens	3,967	4,866	6,022	6,607	7,755	9,509	11,771	12,911
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3
SL3	4000K/5000K Lumens	4,284	5,255	6,504	7,134	8,374	10,268	12,709	13,941
	3000K Lumens	3,849	4,720	5,842	6,408	7,520	9,224	11,415	12,523
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G3	B1-U0-G3	B1-U0-G3
SL4	4000K/5000K Lumens	4,071	4,992	6,179	6,778	7,954	9,756	12,074	13,246
	3000K Lumens	3,849	4,720	5,842	6,408	7,520	9,224	11,415	12,523
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G3	B1-U0-G3	B1-U0-G3
5NQ	4000K/5000K Lumens	4,420	5,420	6,709	7,358	8,637	10,591	13,108	14,380
	3000K Lumens	4,179	5,124	6,343	6,957	8,166	10,013	12,393	13,595
	BUG Rating	B2-U0-G1	B2-U0-G1	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2
5MQ	4000K/5000K Lumens	4,501	5,520	6,831	7,494	8,795	10,786	13,350	14,644
	3000K Lumens	4,256	5,219	6,458	7,085	8,316	10,198	12,622	13,845
	BUG Rating	B3-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2	B4-U0-G2	B4-U0-G2
5WQ	4000K/5000K Lumens	4,513	5,534	6,849	7,514	8,819	10,815	13,385	14,683
	3000K Lumens	4,268	5,232	6,475	7,104	8,338	10,224	12,656	13,882
	BUG Rating	B3-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2
SLL/SLR	4000K/5000K Lumens	3,765	4,619	5,716	6,270	7,358	9,023	11,167	12,251
	3000K Lumens	3,560	4,367	5,404	5,927	6,957	8,531	10,559	11,583
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G3	B2-U0-G3
RW	4000K/5000K Lumens	4,379	5,370	6,647	7,293	8,558	10,494	12,989	14,250
	3000K Lumens	4,141	5,077	6,285	6,895	8,092	9,922	12,281	13,473
	BUG Rating	B2-U0-G1	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2
AFL	4000K/5000K Lumens	4,396	5,390	6,672	7,318	8,590	10,533	13,037	14,301
	3000K Lumens	4,156	5,096	6,306	6,919	8,121	9,959	12,326	13,521
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2

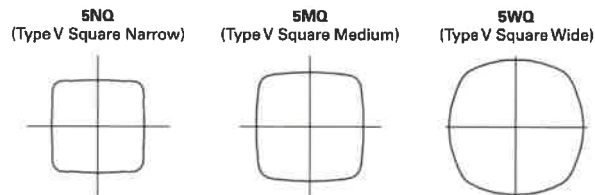
* Nominal lumen data for 70 CRI. BUG rating for 4000K/5000K. Refer to IES files for 3000K BUG ratings.

OPTICAL DISTRIBUTIONS

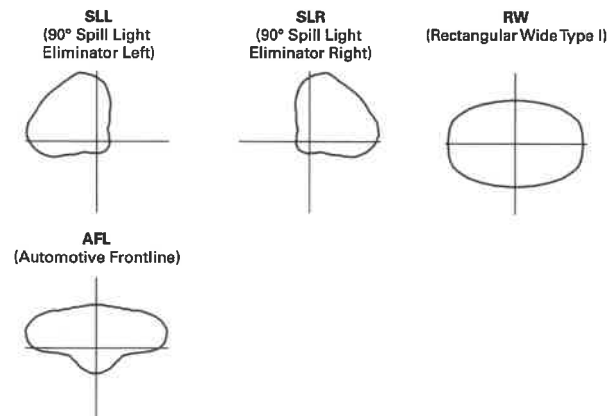
Asymmetric Area Distributions



Symmetric Distributions

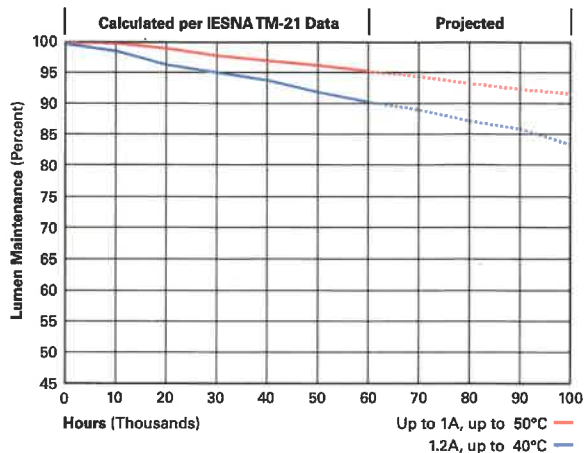


Specialized Distributions



LUMEN MAINTENANCE

Drive Current	Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Projected L70 (Hours)
Up to 1A	Up to 50°C	> 95%	416,000
1.2A	Up to 40°C	> 90%	205,000



LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

CONTROL OPTIONS**0-10V (DIM)**

This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (P, R and PER7)

Optional button-type photocontrol (P) and photocontrol receptacles (R and PER7) provide a flexible solution to enable “dusk-to-dawn” lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PER7 receptacle.

After Hours Dim (AHD)

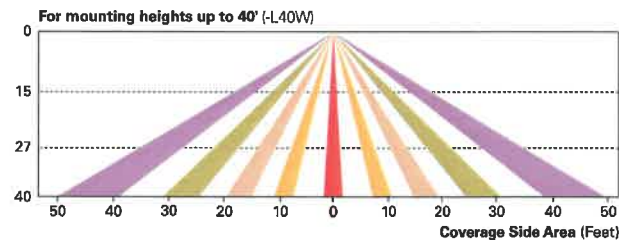
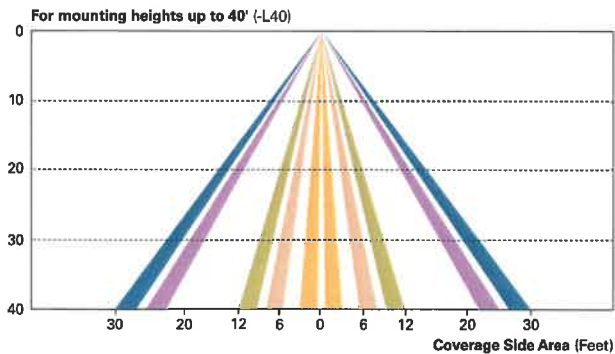
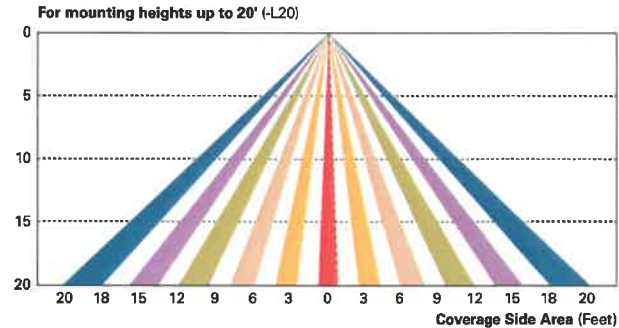
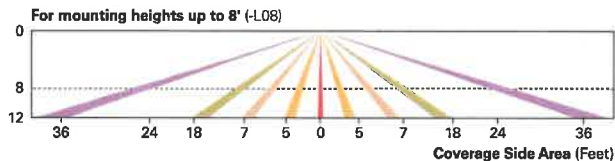
This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a “dusk-to-dawn” period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

Dimming Occupancy Sensor (MS/DIM-LXX and MS-LXX)

These sensors are factory installed in the luminaire housing. When the MS/DIM-LXX sensor option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MS/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of five minutes. The MS-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity. The MS/X-LXX is also preset for five minutes and only controls the specified number of light engines to maintain steady output from the remaining light engines.

These occupancy sensors includes an integral photocell that can be activated with the FSIR-100 accessory for “dusk-to-dawn” control or daylight harvesting - the factory preset is OFF. The FSIR-100 is a wireless tool utilized for changing the dimming level, time delay, sensitivity and other parameters.

A variety of sensor lens are available to optimize the coverage pattern for mounting heights from 8'-40'.

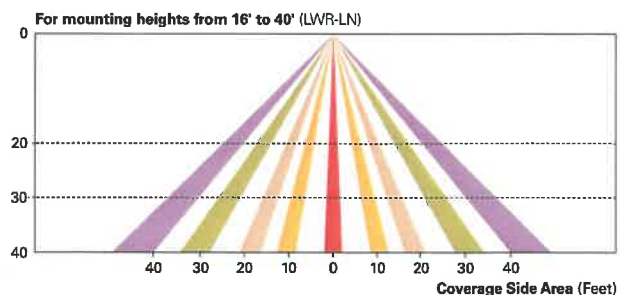
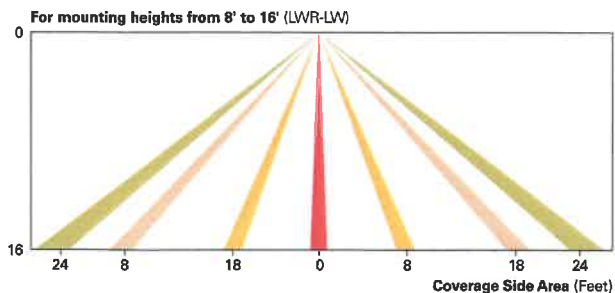
**WaveLinx Wireless Outdoor Lighting Control Module**

The 7-pin wireless outdoor lighting control module enables WaveLinx to control outdoor area, site and flood lighting. WaveLinx controls outdoor lighting using schedules to provide ON, OFF and dimming controls based on astronomic or time schedules based on a 7 day week.

LumaWatt Wireless Control and Monitoring System (LWR-LW and LWR-LN)

The LumaWatt system is a peer-to-peer wireless network of luminaire-integral sensors for any sized project. Each sensor is capable of motion and photo sensing, metering power consumption and wireless communication. The end-user can securely create and manage sensor profiles with browser-based management software. The software will automatically broadcast to the sensors via wireless gateways for zone-based and individual luminaire control. The LumaWatt software provides smart building solutions by utilizing the sensor to provide easy-to-use dashboard and analytic capabilities such as improved energy savings, traffic flow analysis, building management software integration and more.

For additional details, refer to the LumaWatt product guides.



ORDERING INFORMATION

Sample Number: GAP-AF-02-LED-U-T3-GM

Product Family ¹	Light Engine	Number of Light Squares ²	Lamp Type	Voltage	Distribution	Color	Mounting Options
GAP=Galleon Pedestrian Companion	AF=1A Drive Current	01=1 02=2	LED=Solid State Light Emitting Diodes	U=120-277V 8=480V ^{3,4} 9=347V ³	T2=Type II T2R= Type II Roadway T3=Type III T3R= Type III Roadway T4FT=Type IV Forward Throw T4W=Type IV Wide SL2=Type II w/Spill Control SL3=Type III w/Spill Control SL4=Type IV w/Spill Control SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right RW=Rectangular Wide Type I 5NQ=Type V Square Narrow 5MQ=Type V Square Medium 5WQ=Type V Square Wide AFL=Automotive Frontline	AP=Grey BZ=Bronze BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White CC=Custom Color ⁵	QM=Quick Mount Arm for Round or Square Pole ^{6,7} MA=2-3/8" Mast Arm ^{6,8}
Options (Add as Suffix)					Accessories (Order Separately)		
7027=70 CRI / 2700K ⁹ 7030=70 CRI / 3000K ⁹ 8030=80 CRI / 3000K ⁹ 7050=70 CRI / 5000K ⁹ 7060=70 CRI / 6000K ⁹ 600=Drive Current Factory Set to 600mA 800=Drive Current Factory Set to 800mA 1200=Drive Current Factory Set to 1200mA ¹⁰ F=Single Fused (120, 277 or 347V. Must Specify Voltage) FF=Double Fused (208, 240 or 480V. Must Specify Voltage) 10K=10kV Surge Module DIM=0-10V Dimming Leads ^{11, 12} HA=50°C High Ambient ¹³ P=Button Type Photocontrol (120, 208, 240 or 277V. Must Specify Voltage) 4=NEMA Twistlock Photocontrol Receptacle 4N7=NEMA 7-PIN Twistlock Photocontrol Receptacle ¹⁴ AHD145=After Hours Dim, 5 Hours ¹⁵ AHD245=After Hours Dim, 6 Hours ¹⁵ AHD255=After Hours Dim, 7 Hours ¹⁵ AHD355=After Hours Dim, 8 Hours ¹⁵ MS-LXX=Motion Sensor for On/Off Operation ^{16, 17, 18} MS/DIM-LXX=Motion Sensor for Dimming Operation ^{16, 17, 18} LWR-LW=LumaWatt Wireless Sensor, Wide Lens for 8' - 16' Mounting Height ^{18, 19, 20} LWR-LN=LumaWatt Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height ^{18, 19, 20} LCF=Light Square Trim Plate Painted to Match Housing ²¹ MT=Factory Installed Mesh Top L90=Optics Rotated 90° Left R90=Optics Rotated 90° Right HSS=Factory Installed House Side Shield ²² CE=CE Marking and Small Terminal Block ²³					OA/RA1013=Photocontrol Shorting Cap OA/RA1016=NEMA Photocontrol - Multi-Tap 105-285V OA/RA1201=NEMA Photocontrol - 347V OA/RA1027=NEMA Photocontrol - 480V MA1252=10kV Circuit Module Replacement SA1036-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon SA1037-XX=2@180° Tenon Adapter for 2-3/8" O.D. Tenon SA1197-XX=3@120° Tenon Adapter for 2-3/8" O.D. Tenon SA1188-XX=4@90° Tenon Adapter for 2-3/8" O.D. Tenon SA1189-XX=2@90° Tenon Adapter for 2-3/8" O.D. Tenon SA1190-XX=3@90° Tenon Adapter for 2-3/8" O.D. Tenon SA1191-XX=2@120° Tenon Adapter for 2-3/8" O.D. Tenon SA1038-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon SA1039-XX=2@180° Tenon Adapter for 3-1/2" O.D. Tenon SA1192-XX=3@120° Tenon Adapter for 3-1/2" O.D. Tenon SA1193-XX=4@90° Tenon Adapter for 3-1/2" O.D. Tenon SA1194-XX=2@90° Tenon Adapter for 3-1/2" O.D. Tenon SA1195-XX=3@90° Tenon Adapter for 3-1/2" O.D. Tenon FSIR-100=Wireless Configuration Tool for Occupancy Sensor ¹⁷ LS/HSS=Field Installed House Side Shield ^{22, 24} WOLC-7P-10A=Outdoor lighting control module (7-pin) ²⁵		

NOTES:

- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
- Standard 4000K CCT and minimum 70 CRI.
- Requires the use of a step down transformer. Not available in combination with sensor options at 1200mA.
- Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
- Custom colors are available. Setup charges apply. Paint chip samples required. Extended Lead times apply.
- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
- Quick mount arm adapter is factory installed. Pole mounting bracketed shipped in box. Suitable for 1.5G. Fits square and round pole up to 6" O.D.
- Mast arm adapter factory installed (2-3/8" O.D. arm only). Suitable for 3G vibration.
- Extended lead times apply. Use dedicated IES files when performing layouts.
- Not available with HA option.
- Cannot be used with other control options.
- Low voltage control lead brought out 18" outside fixture.
- HA option available for single light square only. Not available with 1200mA drive current.
- Compatible with standard 3-PIN photocontrols, 5-PIN or 7-PIN ANSI controls.
- Requires the use of P photocontrol or the PER7 or R photocontrol receptacle with photocontrol accessory. See After Hours Dim supplemental guide for additional information.
- Replace LXX with mounting height in feet for proper lens selection (e.g., L8=8' mounting height). L8, L20, L40, and L40W are available options.
- The FSIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Eaton for more information.
- Includes integral photosensor.
- Bronze sensor is shipped with Bronze fixtures. White sensor shipped on all other housing color options.
- LumaWatt wireless sensors are factory installed requiring network components in appropriate quantities. See www.eaton.com/lighting for LumaWatt application information.
- Not available with HSS option.
- Only for use with SL2, SL3, SL4, and AFL distributions. The light square trim plate is painted black when the HSS option is selected.
- CE is not available with the LWR, MS, MS/X, MS/DIM, P, R or PER7 options. Available in 120-277V only.
- One required for each light square.
- Requires 7-pin NEMA twistlock photocontrol receptacle. The WOLC-7 cannot be used in conjunction with additional sensors or controls.

DESCRIPTION

The Galleon™ LED luminaire delivers exceptional performance in a highly scalable, low-profile design. Patented, high-efficiency AccuLED Optics™ system provides uniform and energy conscious illumination to walkways, parking lots, roadways, building areas and security lighting applications. IP66 rated and UL/cUL Listed for wet locations.

Catalog #	GAN-AF-07-LED-U-RW-BZ-800-4N7	Type
Project	ODOT 173000 Opportunity Corridor Ph 3	Roadway
Comments	BU-27 Street Lighting QTY 93	Date
Prepared by	Mike Gallagher	

SPECIFICATION FEATURES

Construction

Extruded aluminum driver enclosure thermally isolated from Light Squares for optimal thermal performance. Heavy-wall, die-cast aluminum end caps enclose housing and die-cast aluminum heat sinks. A unique, patent pending interlocking housing and heat sink provides scalability with superior structural rigidity. 3G vibration tested and rated. Optional tool-less hardware available for ease of entry into electrical chamber. Housing is IP66 rated.

Optics

Patented, high-efficiency injection-molded AccuLED Optics technology. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT 70 CRI. Optional 3000K, 5000K and 6000K CCT.

Electrical

LED drivers are mounted to

removable tray assembly for ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Standard with 0-10V dimming. Shipped standard with Eaton proprietary circuit module designed to withstand 10kV of transient line surge. The Galleon LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Light Squares are IP66 rated. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 600mA, 800mA and 1200mA drive currents (nominal).

Mounting

STANDARD ARM MOUNT: Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during mounting. When mounting two or more luminaires at 90° and 120° apart, the EA extended arm may be required. Refer to the arm mounting requirement table.

Round pole adapter included. For wall mounting, specify wall mount bracket option. **QUICK MOUNT ARM:** Adapter is bolted directly to the pole. Quick mount arm slide into place on the adapter and is secured via two screws, facilitating quick and easy installation. The versatile, patent pending, quick mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8". Removal of the door on the quick mount arm enables wiring of the fixture without having to access the driver compartment. A knock-out enables round pole mounting.

Finish

Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Heat sink is powder coated black. Standard housing colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available.

Warranty

Five-year warranty.



GAN GALLEON LED

1-10 Light Squares

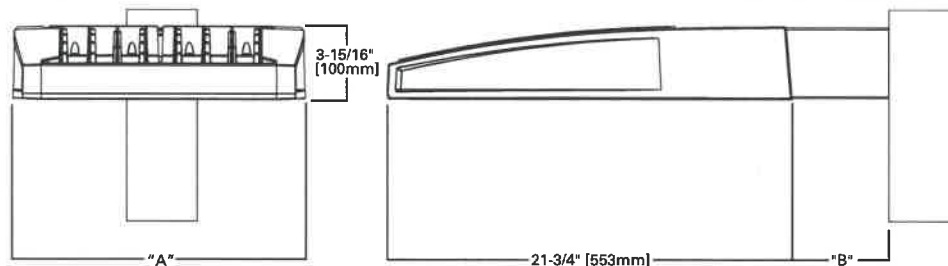
Solid State LED

AREA / ROADWAY LUMINAIRE



LumenSafe Technology
CLICK HERE

DIMENSIONS

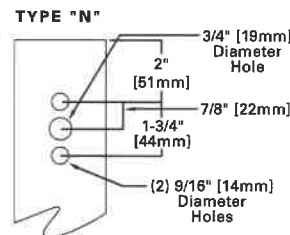


DIMENSION DATA

Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Optional Arm Length ¹	Weight with Arm (lbs.)	EPA with Arm ² (Sq. Ft.)
1-4	15-1/2" (394mm)	7" (178mm)	10" (254mm)	33 (15.0 kgs.)	0.96
5-6	21-5/8" (549mm)	7" (178mm)	10" (254mm)	44 (20.0 kgs.)	1.00
7-8	27-5/8" (702mm)	7" (178mm)	13" (330mm)	54 (24.5 kgs.)	1.07
9-10	33-3/4" (857mm)	7" (178mm)	16" (406mm)	63 (28.6 kgs.)	1.12

NOTES: 1. Optional arm length to be used when mounting two fixtures at 90° on a single pole. 2. EPA calculated with optional arm length.

DRILLING PATTERN



CERTIFICATION DATA

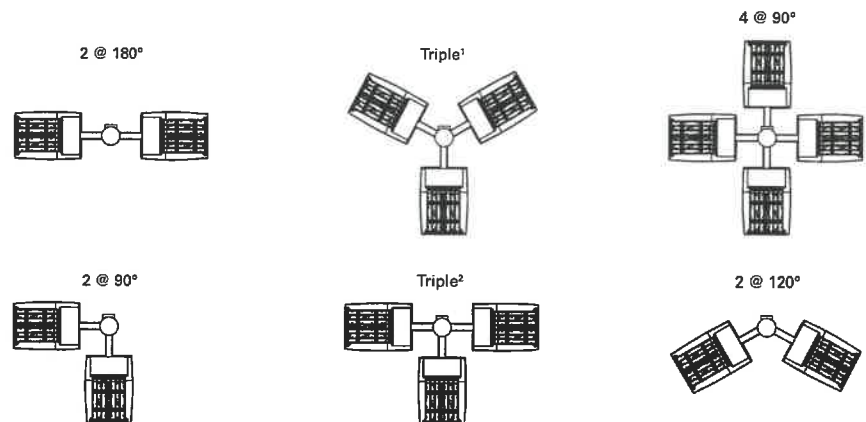
UL/cUL Wet Location Listed
ISO 9001
LM79 / LM80 Compliant
3G Vibration Rated
IP66 Rated
DesignLights Consortium® Qualified*

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120V-277V 50/60Hz
347V & 480V 60Hz
-40°C Min. Temperature
40°C Max. Temperature
50°C Max. Temperature (HA Option)

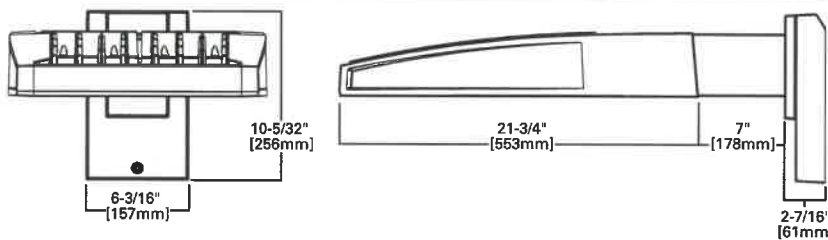
STANDARD ARM MOUNTING REQUIREMENTS

Configuration	90° Apart	120° Apart
GAN-AF-01	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-02	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-03	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-04	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-05	10" Extended Arm (Required)	7" Arm (Standard)
GAN-AF-06	10" Extended Arm (Required)	7" Arm (Standard)
GAN-AF-07	13" Extended Arm (Required)	13" Extended Arm (Required)
GAN-AF-08	13" Extended Arm (Required)	13" Extended Arm (Required)
GAN-AF-09	16" Extended Arm (Required)	16" Extended Arm (Required)
GAN-AF-10	16" Extended Arm (Required)	16" Extended Arm (Required)

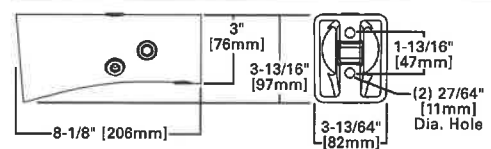


NOTES: 1 Round poles are 3 @ 120°. Square poles are 3 @ 90°. 2 Round poles are 3 @ 90°.

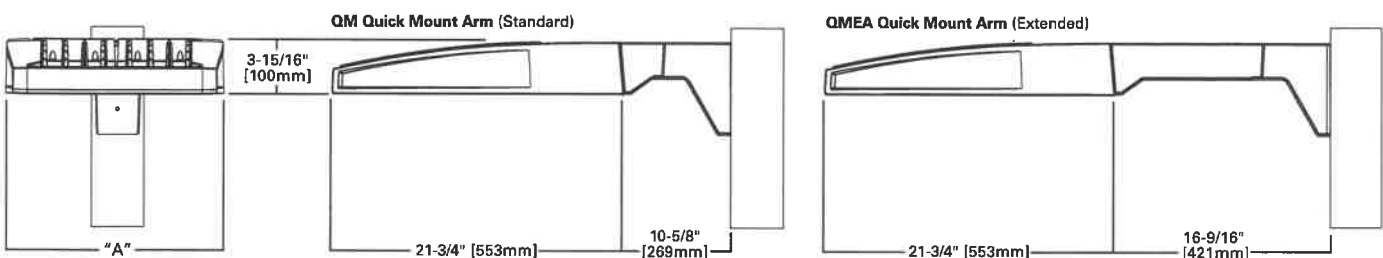
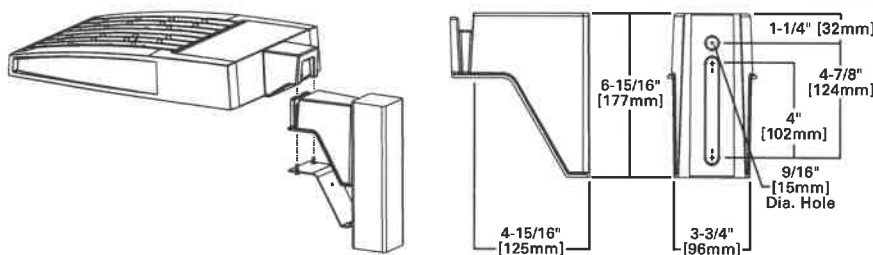
STANDARD WALL MOUNT



MAST ARM MOUNT



QUICK MOUNT ARM (INCLUDES FIXTURE ADAPTER)

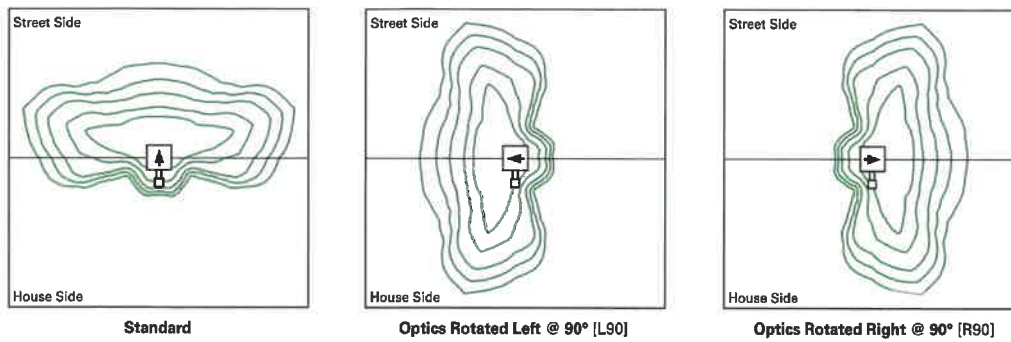


QUICK MOUNT ARM DATA

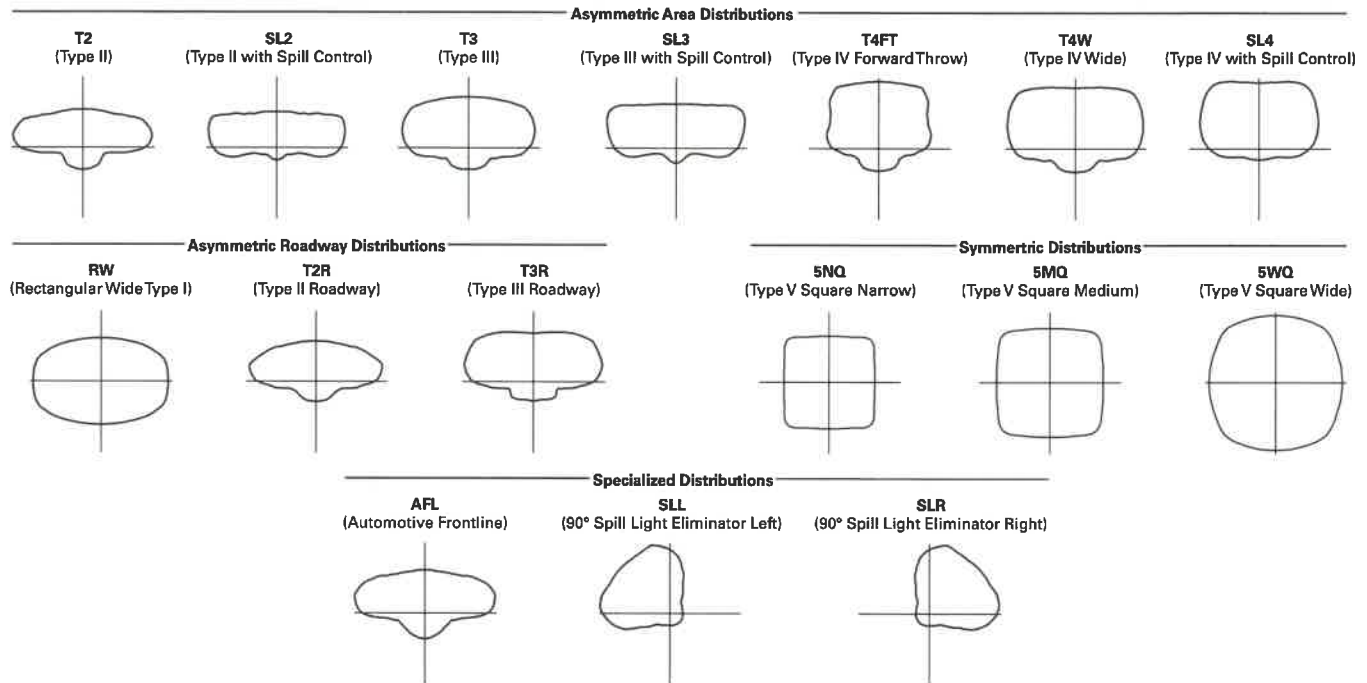
Number of Light Squares ^{1,2}	"A" Width	Weight with QM Arm (lbs.)	Weight with QMEA Arm (lbs.)	EPA (Sq. Ft.)
1-4	15-1/2" (394mm)	35 (15.91 kgs.)	38 (17.27 kgs.)	1.11
5-6 ³	21-5/8" (549mm)	46 (20.91 kgs.)	49 (22.27 kgs.)	
7-8	27-5/8" (702mm)	56 (25.45 kgs.)	59 (26.82 kgs.)	

NOTES: 1 QM option available with 1-8 light square configurations. 2 QMEA option available with 1-6 light square configurations. 3 QMEA arm to be used when mounting two fixtures at 90° on a single pole.

OPTIC ORIENTATION



OPTICAL DISTRIBUTIONS

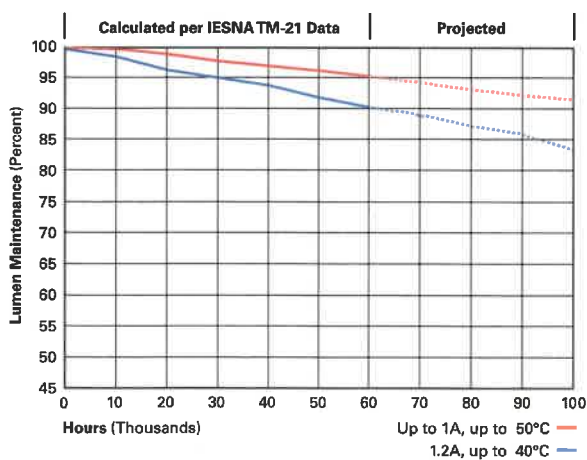


LUMEN MAINTENANCE

Drive Current	Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Projected L70 (Hours)
Up to 1A	Up to 50°C	> 95%	416,000
1.2A	Up to 40°C	> 90%	205,000

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97



NOMINAL POWER LUMENS (1.2A)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		67	129	191	258	320	382	448	511	575	640
Input Current @ 120V (A)		0.58	1.16	1.78	2.31	2.94	3.56	4.09	4.71	5.34	5.87
Input Current @ 208V (A)		0.33	0.63	0.93	1.27	1.57	1.87	2.22	2.52	2.8	3.14
Input Current @ 240V (A)		0.29	0.55	0.80	1.10	1.35	1.61	1.93	2.18	2.41	2.71
Input Current @ 277V (A)		0.25	0.48	0.70	0.96	1.18	1.39	1.69	1.90	2.09	2.36
Input Current @ 347V (A)		0.20	0.39	0.57	0.78	0.96	1.15	1.36	1.54	1.72	1.92
Input Current @ 480V (A)		0.15	0.30	0.43	0.60	0.73	0.85	1.03	1.16	1.28	1.45
Optics											
T2	4000K/5000K Lumens	6,709	13,111	19,562	25,848	32,026	38,325	45,324	51,355	57,286	63,424
	3000K Lumens	5,939	11,606	17,316	22,881	28,349	33,925	40,121	45,459	50,710	56,143
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T2R	4000K/5000K Lumens	7,122	13,919	20,769	27,442	34,000	40,687	48,117	54,519	60,816	67,333
	3000K Lumens	5,939	11,606	17,316	22,881	28,349	33,925	40,121	45,459	50,710	56,143
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
T3	4000K/5000K Lumens	6,838	13,363	19,939	26,346	32,642	39,062	46,196	52,343	58,388	64,646
	3000K Lumens	6,053	11,829	17,650	23,321	28,895	34,578	40,893	46,334	51,685	57,225
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T3R	4000K/5000K Lumens	6,990	13,660	20,382	26,931	33,368	39,930	47,223	53,506	59,686	66,081
	3000K Lumens	6,188	12,092	18,042	23,839	29,537	35,346	41,802	47,364	52,834	58,495
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
T4FT	4000K/5000K Lumens	6,878	13,440	20,055	26,499	32,832	39,289	46,464	52,646	58,726	65,020
	3000K Lumens	6,088	11,897	17,753	23,457	29,063	34,779	41,130	46,602	51,984	57,556
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T4W	4000K/5000K Lumens	6,789	13,267	19,795	26,156	32,408	38,781	45,864	51,967	57,968	64,180
	3000K Lumens	6,010	11,744	17,523	23,153	28,688	34,329	40,599	46,001	51,313	56,812
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL2	4000K/5000K Lumens	6,897	13,088	19,529	25,804	31,970	38,259	45,245	51,267	57,186	63,315
	3000K Lumens	5,928	11,585	17,287	22,842	28,300	33,867	40,051	45,382	50,621	56,046
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL3	4000K/5000K Lumens	6,837	13,361	19,936	26,342	32,639	39,057	46,189	52,336	58,380	64,636
	3000K Lumens	6,052	11,827	17,647	23,318	28,892	34,573	40,887	46,328	51,678	57,216
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL4	4000K/5000K Lumens	6,496	12,695	18,943	25,029	31,011	37,110	43,886	49,727	55,470	61,414
	3000K Lumens	5,750	11,238	16,768	22,156	27,451	32,850	38,848	44,018	49,102	54,364
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	7,052	13,781	20,564	27,171	33,664	40,285	47,641	53,981	60,215	66,669
	3000K Lumens	6,242	12,199	18,203	24,052	29,799	35,660	42,172	47,784	53,302	59,015
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
5MQ	4000K/5000K Lumens	7,182	14,034	20,942	27,671	34,284	41,027	48,518	54,975	61,323	67,896
	3000K Lumens	6,358	12,423	18,538	24,494	30,348	36,317	42,948	48,664	54,283	60,102
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
5WQ	4000K/5000K Lumens	7,201	14,073	20,998	27,744	34,375	41,136	48,648	55,121	61,487	68,077
	3000K Lumens	6,374	12,457	18,587	24,559	30,429	36,414	43,063	48,793	54,428	60,262
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
SLL/SLR	4000K/5000K Lumens	6,009	11,741	17,519	23,148	28,681	34,321	40,589	45,990	51,301	56,798
	3000K Lumens	5,319	10,393	15,508	20,491	25,388	30,381	35,929	40,710	45,412	50,278
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
RW	4000K/5000K Lumens	6,989	13,657	20,378	26,925	33,360	39,921	47,211	53,494	59,672	66,066
	3000K Lumens	6,187	12,089	18,039	23,834	29,530	35,338	41,791	47,353	52,822	58,482
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
AFL	4000K/5000K Lumens	7,014	13,706	20,452	27,023	33,481	40,066	47,383	53,688	59,888	66,306
	3000K Lumens	6,209	12,133	18,104	23,921	29,637	35,466	41,943	47,525	53,013	58,694
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4

* Nominal data for 70 CRI.

NOMINAL POWER LUMENS (1A)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		59	113	166	225	279	333	391	445	501	558
Input Current @ 120V (A)		0.51	1.02	1.53	2.03	2.55	3.06	3.56	4.08	4.6	5.07
Input Current @ 208V (A)		0.29	0.56	0.82	1.11	1.37	1.64	1.93	2.19	2.46	2.75
Input Current @ 240V (A)		0.26	0.48	0.71	0.96	1.19	1.41	1.67	1.89	2.12	2.39
Input Current @ 277V (A)		0.23	0.42	0.61	0.83	1.03	1.23	1.45	1.65	1.84	2.09
Input Current @ 347V (A)		0.17	0.32	0.50	0.64	0.82	1.00	1.14	1.32	1.50	1.68
Input Current @ 480V (A)		0.14	0.24	0.37	0.48	0.61	0.75	0.91	0.99	1.12	1.28
Optics											
T2	4000K/5000K Lumens	6,116	11,951	17,833	23,563	29,195	34,937	41,317	46,814	52,221	57,817
	3000K Lumens	5,414	10,579	15,786	20,858	25,843	30,926	36,574	41,440	46,226	51,180
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T2R	4000K/5000K Lumens	6,493	12,888	18,932	25,015	30,994	37,090	43,863	49,699	55,439	61,380
	3000K Lumens	5,748	11,231	16,759	22,143	27,436	32,832	38,828	43,994	49,075	54,334
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
T3	4000K/5000K Lumens	6,234	12,181	18,176	24,017	29,756	35,609	42,111	47,715	53,225	58,930
	3000K Lumens	5,518	10,783	16,089	21,260	26,340	31,521	37,277	42,237	47,115	52,165
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T3R	4000K/5000K Lumens	6,372	12,453	18,580	24,550	30,418	36,400	43,048	48,776	54,409	60,239
	3000K Lumens	5,640	11,023	16,447	21,732	26,926	32,221	38,106	43,177	48,163	53,324
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
T4FT	4000K/5000K Lumens	6,270	12,252	18,282	24,156	29,929	35,815	42,356	47,992	53,534	59,271
	3000K Lumens	5,550	10,845	16,183	21,383	26,493	31,703	37,494	42,483	47,388	52,467
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
T4W	4000K/5000K Lumens	6,189	12,094	18,045	23,844	29,543	35,352	41,809	47,372	52,843	58,506
	3000K Lumens	5,479	10,706	15,973	21,107	26,151	31,294	37,009	41,934	46,777	51,790
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL2	4000K/5000K Lumens	6,105	11,931	17,803	23,522	29,144	34,877	41,245	46,734	52,130	57,717
	3000K Lumens	5,404	10,561	15,759	20,822	25,798	30,873	36,510	41,369	46,145	51,091
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL3	4000K/5000K Lumens	6,233	12,180	18,174	24,013	29,753	35,604	42,106	47,708	53,218	58,921
	3000K Lumens	5,517	10,782	16,088	21,256	26,337	31,517	37,272	42,231	47,109	52,157
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
SL4	4000K/5000K Lumens	5,922	11,572	17,268	22,816	28,269	33,829	40,006	45,330	50,566	55,984
	3000K Lumens	5,242	10,244	15,286	20,197	25,024	29,945	35,413	40,126	44,761	49,557
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	6,429	12,563	18,746	24,768	30,688	36,723	43,429	49,208	54,891	60,775
	3000K Lumens	5,691	11,121	16,594	21,925	27,165	32,507	38,443	43,559	48,590	53,798
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
5MQ	4000K/5000K Lumens	6,547	12,794	19,090	25,224	31,253	37,400	44,228	50,114	55,902	61,893
	3000K Lumens	5,795	11,325	16,898	22,328	27,665	33,106	39,151	44,361	49,484	54,788
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
5WQ	4000K/5000K Lumens	6,564	12,828	19,141	25,291	31,336	37,499	44,347	50,248	56,051	62,058
	3000K Lumens	5,810	11,355	16,944	22,388	27,739	33,194	39,256	44,480	49,616	54,934
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
SLL/SLR	4000K/5000K Lumens	5,478	10,703	15,970	21,102	26,145	31,286	37,001	41,924	46,765	51,777
	3000K Lumens	4,849	9,474	14,137	18,679	23,144	27,694	32,753	37,111	41,396	45,833
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
RW	4000K/5000K Lumens	6,371	12,449	18,576	24,544	30,411	36,392	43,037	48,764	54,396	60,225
	3000K Lumens	5,640	11,020	16,443	21,726	26,920	32,214	38,096	43,166	48,151	53,311
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
AFL	4000K/5000K Lumens	6,394	12,494	18,644	24,634	30,521	36,524	43,194	48,942	54,593	60,444
	3000K Lumens	5,660	11,060	16,504	21,806	27,017	32,331	38,235	43,323	48,326	53,505
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4

* Nominal data for 70 CRI.

NOMINAL POWER LUMENS (800MA)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		44	85	124	171	210	249	295	334	374	419
Input Current @ 120V (A)		0.39	0.77	1.13	1.54	1.90	2.26	2.67	3.03	3.39	3.80
Input Current @ 208V (A)		0.22	0.44	0.62	0.88	1.06	1.24	1.50	1.68	1.87	2.12
Input Current @ 240V (A)		0.19	0.38	0.54	0.76	0.92	1.08	1.30	1.46	1.62	1.84
Input Current @ 277V (A)		0.17	0.36	0.47	0.72	0.83	0.95	1.19	1.31	1.42	1.67
Input Current @ 347V (A)		0.15	0.24	0.38	0.49	0.63	0.77	0.87	1.01	1.15	1.52
Input Current @ 480V (A)		0.11	0.18	0.29	0.37	0.48	0.59	0.66	0.77	0.88	0.96
Optics											
T2	4000K/5000K Lumens	4,941	9,656	14,408	19,038	23,588	28,227	33,382	37,823	42,191	46,713
	3000K Lumens	4,374	8,547	12,754	16,852	20,880	24,987	29,550	33,481	37,347	41,350
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5
T2R	4000K/5000K Lumens	5,246	10,251	15,296	20,211	25,041	29,966	35,439	40,154	44,791	49,592
	3000K Lumens	4,644	9,074	13,540	17,891	22,166	26,526	31,371	35,544	39,649	43,899
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5
T3	4000K/5000K Lumens	5,037	9,842	14,685	19,404	24,041	28,770	34,024	38,551	43,003	47,612
	3000K Lumens	4,459	8,712	12,999	17,176	21,281	25,467	30,118	34,125	38,066	42,146
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
T3R	4000K/5000K Lumens	5,148	10,061	15,011	19,835	24,576	29,409	34,780	39,408	43,959	48,669
	3000K Lumens	4,557	8,906	13,288	17,558	21,755	26,033	30,787	34,884	38,913	43,082
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4FT	4000K/5000K Lumens	5,066	9,899	14,770	19,516	24,181	28,936	34,221	38,774	43,252	47,888
	3000K Lumens	4,484	8,763	13,074	17,276	21,405	25,614	30,292	34,323	38,287	42,390
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4W	4000K/5000K Lumens	5,000	9,771	14,579	19,264	23,869	28,562	33,779	38,274	42,694	47,269
	3000K Lumens	4,426	8,649	12,905	17,052	21,129	25,283	29,901	33,880	37,793	41,843
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
SL2	4000K/5000K Lumens	4,933	9,639	14,383	19,005	23,547	28,178	33,324	37,758	42,118	46,632
	3000K Lumens	4,367	8,532	12,732	16,823	20,844	24,943	29,498	33,423	37,283	41,279
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
SL3	4000K/5000K Lumens	5,036	9,841	14,683	19,401	24,039	28,766	34,019	38,546	42,997	47,605
	3000K Lumens	4,458	8,711	12,997	17,174	21,279	25,464	30,114	34,121	38,061	42,140
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
SL4	4000K/5000K Lumens	4,784	9,350	13,951	18,434	22,840	27,332	32,323	36,624	40,854	45,232
	3000K Lumens	4,235	8,277	12,349	16,318	20,218	24,194	28,612	32,420	36,164	40,039
	BUG Rating	B1-U0-G2	B1-U0-G3	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G5	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	5,194	10,150	15,145	20,011	24,794	29,670	35,088	39,757	44,349	49,102
	3000K Lumens	4,598	8,985	13,406	17,714	21,948	26,264	31,060	35,193	39,258	43,465
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G3
5MQ	4000K/5000K Lumens	5,290	10,337	15,424	20,380	25,250	30,217	35,734	40,489	45,165	50,006
	3000K Lumens	4,683	9,150	13,653	18,040	22,351	26,748	31,632	35,841	39,980	44,265
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
5WQ	4000K/5000K Lumens	5,304	10,365	15,465	20,434	25,318	30,297	35,830	40,597	45,286	50,139
	3000K Lumens	4,695	9,175	13,690	18,088	22,411	26,819	31,717	35,936	40,087	44,383
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
SL/SLR	4000K/5000K Lumens	4,426	8,648	12,903	17,049	21,124	25,278	29,894	33,872	37,784	41,832
	3000K Lumens	3,918	7,655	11,422	15,092	18,699	22,376	26,462	29,983	33,446	37,030
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
RW	4000K/5000K Lumens	5,147	10,058	15,009	19,830	24,570	29,402	34,771	39,399	43,949	48,658
	3000K Lumens	4,556	8,903	13,286	17,554	21,749	26,027	30,779	34,876	38,904	43,072
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4
AFL	4000K/5000K Lumens	5,166	10,095	15,063	19,903	24,659	29,509	34,898	39,542	44,108	48,835
	3000K Lumens	4,573	8,936	13,334	17,618	21,828	26,121	30,892	35,003	39,044	43,229
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3

* Nominal data for 70 CRI.

NOMINAL POWER LUMENS (600MA)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		34	66	96	129	162	193	226	257	290	323
Input Current @ 120V (A)		0.30	0.58	0.86	1.16	1.44	1.73	2.03	2.33	2.59	2.89
Input Current @ 208V (A)		0.17	0.34	0.49	0.65	0.84	0.99	1.14	1.30	1.48	1.63
Input Current @ 240V (A)		0.15	0.30	0.43	0.56	0.74	0.87	1.00	1.13	1.30	1.43
Input Current @ 277V (A)		0.14	0.28	0.41	0.52	0.69	0.81	0.93	1.04	1.22	1.33
Input Current @ 347V (A)		0.11	0.19	0.30	0.39	0.49	0.60	0.69	0.77	0.90	0.99
Input Current @ 480V (A)		0.08	0.15	0.24	0.30	0.38	0.48	0.53	0.59	0.71	0.77
Optics											
T2	4000K/5000K Lumens	4,029	7,874	11,749	15,525	19,235	23,019	27,222	30,844	34,406	38,093
	3000K Lumens	3,566	6,970	10,400	13,743	17,027	20,376	24,097	27,303	30,456	33,720
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G4
T2R	4000K/5000K Lumens	4,278	8,360	12,474	16,482	20,421	24,437	28,900	32,745	36,527	40,441
	3000K Lumens	3,787	7,400	11,042	14,590	18,077	21,632	25,582	28,986	32,334	35,798
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
T3	4000K/5000K Lumens	4,107	8,026	11,976	15,824	19,605	23,461	27,746	31,438	35,068	38,827
	3000K Lumens	3,636	7,105	10,601	14,007	17,354	20,768	24,561	27,829	31,042	34,370
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
T3R	4000K/5000K Lumens	4,198	8,205	12,242	16,175	20,041	23,982	28,363	32,137	35,848	39,689
	3000K Lumens	3,716	7,263	10,837	14,318	17,740	21,229	25,107	28,448	31,733	35,133
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
T4FT	4000K/5000K Lumens	4,131	8,072	12,045	15,915	19,719	23,597	27,907	31,620	35,272	39,052
	3000K Lumens	3,657	7,145	10,662	14,088	17,455	20,888	24,703	27,990	31,223	34,569
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4W	4000K/5000K Lumens	4,077	7,968	11,889	15,710	19,465	23,292	27,546	31,212	34,816	38,547
	3000K Lumens	3,609	7,053	10,524	13,906	17,230	20,618	24,384	27,629	30,819	34,122
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
SL2	4000K/5000K Lumens	4,022	7,861	11,729	15,498	19,202	22,979	27,175	30,791	34,347	38,028
	3000K Lumens	3,560	6,959	10,383	13,719	16,998	20,341	24,055	27,256	30,404	33,662
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
SL3	4000K/5000K Lumens	4,106	8,025	11,974	15,821	19,603	23,458	27,742	31,433	35,064	38,821
	3000K Lumens	3,635	7,104	10,599	14,005	17,353	20,765	24,557	27,824	31,039	34,364
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
SL4	4000K/5000K Lumens	3,902	7,624	11,377	15,033	18,626	22,289	26,359	29,867	33,316	36,886
	3000K Lumens	3,454	6,749	10,071	13,307	16,488	19,730	23,333	26,438	29,491	32,651
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G3	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	4,236	8,277	12,351	16,319	20,219	24,196	28,614	32,422	36,166	40,042
	3000K Lumens	3,750	7,327	10,933	14,446	17,898	21,418	25,329	28,700	32,014	35,445
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3
5MQ	4000K/5000K Lumens	4,314	8,429	12,578	16,619	20,591	24,641	29,141	33,019	36,832	40,779
	3000K Lumens	3,819	7,461	11,134	14,711	18,227	21,812	25,796	29,228	32,604	36,098
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
5WQ	4000K/5000K Lumens	4,325	8,452	12,611	16,664	20,646	24,707	29,219	33,106	36,930	40,888
	3000K Lumens	3,828	7,482	11,163	14,751	18,276	21,871	25,865	29,305	32,690	36,194
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
SLL/SLR	4000K/5000K Lumens	3,609	7,052	10,522	13,903	17,226	20,613	24,378	27,622	30,812	34,114
	3000K Lumens	3,195	6,242	9,314	12,307	15,248	18,247	21,579	24,451	27,275	30,198
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
RW	4000K/5000K Lumens	4,197	8,202	12,239	16,171	20,036	23,977	28,356	32,129	35,839	39,680
	3000K Lumens	3,715	7,260	10,834	14,315	17,736	21,224	25,101	28,441	31,725	35,125
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
AFL	4000K/5000K Lumens	4,213	8,232	12,284	16,230	20,109	24,064	28,459	32,246	35,969	39,824
	3000K Lumens	3,729	7,287	10,874	14,367	17,800	21,301	25,192	28,544	31,840	35,252
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3

* Nominal data for 70 CRI.

CONTROL OPTIONS

0-10V (DIM)

This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (P, 4 and 4N7)

Optional button-type photocontrol (P) and photocontrol receptacles (4 and 4N7) provide a flexible solution to enable “dusk-to-dawn” lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the 4N7 receptacle.

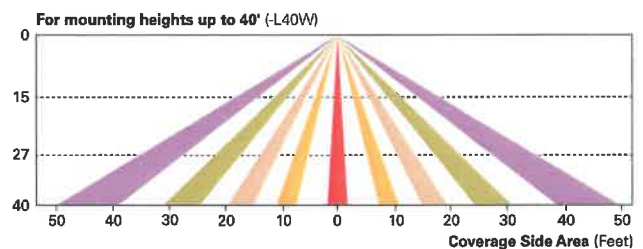
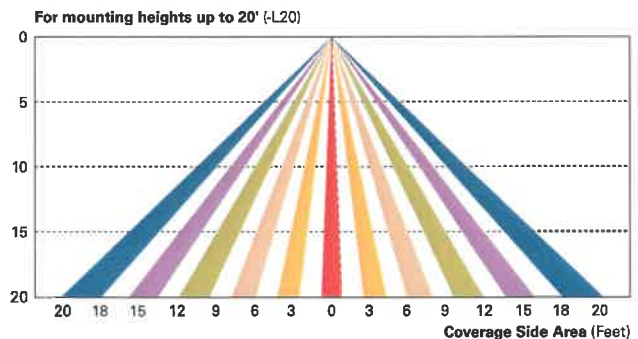
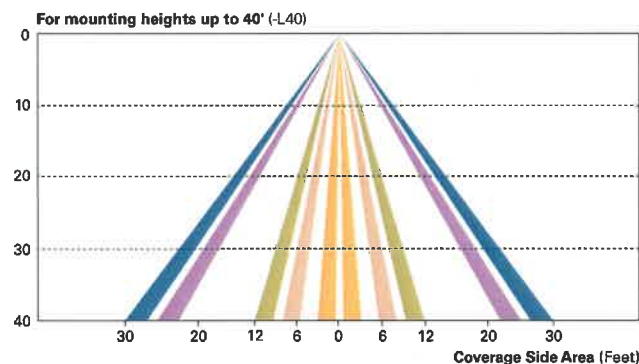
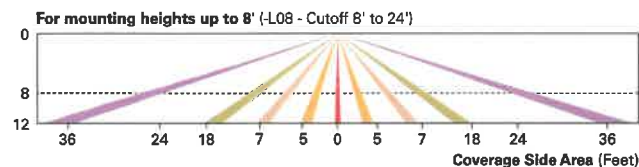
After Hours Dim (AHD)

This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a “dusk-to-dawn” period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

Dimming Occupancy Sensor (MS/DIM-LXX, MS/X-LXX and MS-LXX)

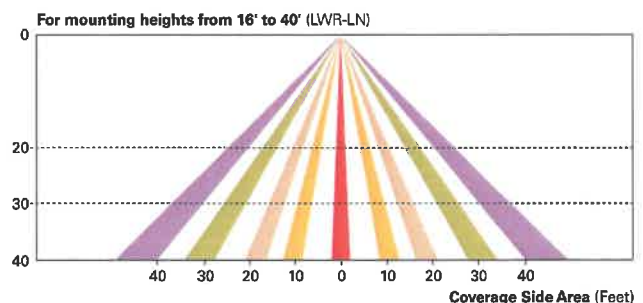
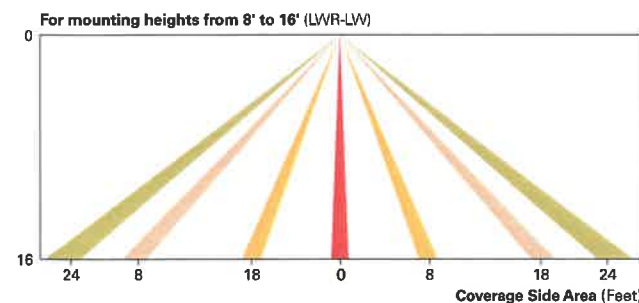
These sensors are factory installed in the luminaire housing. When the MS/DIM-LXX sensor option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MS/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of five minutes. The MS-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity. The MS/X-LXX is also preset for five minutes and only controls the specified number of light engines to maintain steady output from the remaining light engines.

These occupancy sensors includes an integral photocell that can be activated with the FSIR-100 accessory for “dusk-to-dawn” control or daylight harvesting - the factory preset is OFF. The FSIR-100 is a wireless tool utilized for changing the dimming level, time delay, sensitivity and other parameters. A variety of sensor lens are available to optimize the coverage pattern for mounting heights from 8'-40'.



LumaWatt Pro Wireless Control and Monitoring System (LWR-LW and LWR-LN)

The LumaWatt Pro system is a peer-to-peer wireless network of luminaire-integral sensors for any sized project. Each sensor is capable of motion and photo sensing, metering power consumption and wireless communication. The end-user can securely create and manage sensor profiles with browser-based management software. The software will automatically broadcast to the sensors via wireless gateways for zone-based and individual luminaire control. The LumaWatt Pro software provides smart building solutions by utilizing the sensor to provide easy-to-use dashboard and analytic capabilities such as improved energy savings, traffic flow analysis, building management software integration and more. For additional details, refer to the LumaWatt product guides.



LumenSafe Integrated Network Security Camera (LD)

Eaton brings ease of camera deployment to a whole new level. No additional wiring is needed beyond providing line power to the luminaire. A variety of networking options allows security integrators to design the optimal solution for active surveillance. As the ideal solution to meet the needs for active surveillance, the LumenSafe integrated network camera is a streamlined, outdoor-ready fixed dome that provides HDTV 1080p video. This IP camera is optimally designed for deployment in the video management system or security software platform of choice.

ORDERING INFORMATION


Sample Number: GAN-AF-04-LED-U-T3R-BZ

Product Family ^{1,2}	Light Engine	Number of Light Squares ³	Lamp Type	Voltage	Distribution	Color	Mounting
GAN=Galleon	AF=1A Drive Current	01=1 02=2 03=3 04=4 05=5 ⁴ 06=6 07=7 ⁵ 08=8 ⁵ 09=9 ⁵ 10=10 ⁵	LED=Solid State Light Emitting Diodes	U=Universal (120-277V) 8=480V ^{2,8} 9=347V ⁷	T2=Type II T2R=Type II Roadway T3=Type III T3R=Type III Roadway T4FT=Type IV Forward Throw T4W=Type IV Wide 5NQ=Type V Narrow 5MQ=Type V Square Medium 5WQ=Type V Square Wide SL2=Type II w/Spill Control SL3=Type III w/Spill Control SL4=Type IV w/Spill Control SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right RW=Rectangular Wide Type I AFL=Automotive Frontline	AP=Grey BZ=Bronze BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White	[Blank]=Arm for Round or Square Pole EA=Extended Arm ⁹ MA=Mast Arm Adapter ¹⁰ WM=Wall Mount QM=Quick Mount Arm (Standard Length) ¹¹ QMEA=Quick Mount Arm (Extended Length) ¹²
Options (Add as Suffix)					Accessories (Order Separately)		
7030=70 CRI 3000K ¹⁸ 7050=70 CRI 5000K ¹⁸ 7060=70 CRI 6000K ¹⁸ 8030=80 CRI 3000K ¹⁸ 600=Drive Current Factory Set to 600mA ¹⁴ 800=Drive Current Factory Set to 800mA ¹⁴ 1200=Drive Current Factory Set to 1200mA ^{14,15} 2L=Two Circuits ^{16,17} DIM=External 0-10V Dimming Leads 3=Three-Position Terminal Block P=Button Type Photocontrol (120, 208, 240 or 277V) 4=NEMA Twistlock Photocontrol Receptacle 4N7=NEMA 7-PIN Twistlock Photocontrol Receptacle AHD145=After Hours Dim, 5 Hours ¹⁸ AHD245=After Hours Dim, 6 Hours ¹⁸ AHD255=After Hours Dim, 7 Hours ¹⁸ AHD355=After Hours Dim, 8 Hours ¹⁸ HA=50°C High Ambient MS/DIM-L08=Motion Sensor for Dimming Operation, Maximum 8' Mounting Height ¹⁹ MS/DIM-L20=Motion Sensor for Dimming Operation, 9' - 20' Mounting Height ¹⁹ MS/DIM-L40=Motion Sensor for Dimming Operation, 21' - 40' Mounting Height ¹⁹ MS/X-L08=Bi-Level Motion Sensor, Maximum 8' Mounting Height ^{19,20} MS/X-L20=Bi-Level Motion Sensor, 9' - 20' Mounting Height ^{19,20} MS/X-L40=Bi-Level Motion Sensor, 21' - 40' Mounting Height ^{19,20} LWR-LW=LumaWatt Pro Wireless Sensor, Wide Lens for 8' - 16' Mounting Height ^{21,(A)} LWR-LN=LumaWatt Pro Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height ^{21,(A)} L90=Optics Rotated 90° Left R90=Optics Rotated 90° Right MT=Factory Installed Mesh Top TH=Tool-less Door Hardware LCF=Light Square Trim Plate Painted to Match Housing ²² HSS=Factory Installed House Side Shield ²³ CE=CE Marking ²⁴					OA/RA1016=NEMA Photocontrol Multi-Tap - 105-285V OA/RA1027=NEMA Photocontrol - 480V OA/RA1201=NEMA Photocontrol - 347V OA/RA1013=Photocontrol Shorting Cap OA/RA1014=120V Photocontrol SA1252=10kV Surge Module Replacement SA1036-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon SA1037-XX=2 @ 180° Tenon Adapter for 2-3/8" O.D. Tenon SA1197-XX=3 @ 120° Tenon Adapter for 2-3/8" O.D. Tenon SA1188-XX=4 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon SA1189-XX=2 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon SA1190-XX=3 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon SA1191-XX=2 @ 120° Tenon Adapter for 2-3/8" O.D. Tenon SA1038-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon SA1039-XX=2 @ 180° Tenon Adapter for 3-1/2" O.D. Tenon SA1192-XX=3 @ 120° Tenon Adapter for 3-1/2" O.D. Tenon SA1193-XX=4 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon SA1194-XX=2 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon SA1195-XX=3 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon FSIR-100=Wireless Configuration Tool for Occupancy Sensor ²⁵ GAN-MT1=Field Installed Mesh Top for 1-4 Light Squares GAN-MT2=Field Installed Mesh Top for 5-6 Light Squares GAN-MT3=Field Installed Mesh Top for 7-8 Light Squares GAN-MT4=Field Installed Mesh Top for 9-10 Light Squares GLEON-QM=Quick Mount Arm Kit ¹¹ GLEON-QM-EA=Quick Mount Extended Length Arm Kit ¹² LS/HSS=Field Installed House Side Shield ^{26,28}		

NOTES:

- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
- DesignLights Consortium® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details.
- Standard 4000K CCT and minimum 70 CRI.
- Not compatible with MS/4-LXX or MS/1-LXX sensors.
- Not compatible with extended quick mount arm (QMEA).
- Not compatible with standard quick mount arm (QM) or extended quick mount arm (QMEA).
- Requires the use of a step down transformer when combined with sensor options. Not available with sensor at 1200mA. Not available in combination with the HA high ambient and sensor options at 1A.
- Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
- May be required when two or more luminaires are oriented on a 90° or 120° drilling pattern. Refer to arm mounting requirement table.
- Factory installed.
- Maximum 8 light squares.
- Maximum 6 light squares.
- Use dedicated IES files for 3000K, 5000K, 6000K when performing layouts. These files are published on the Galleon luminaire product page on the website.
- 1 Amp standard. Use dedicated IES files for 600mA, 800mA and 1200mA when performing layouts. These files are published on the Galleon luminaire product page on the website.
- Not available with HA option.
- 2L is not available with MS/X or MS/DIM at 347V or 480V. 2L in AF-02 through AF-04 requires a larger housing, normally used for AF-05 or AF-06.
- Not available with LumaWatt Pro wireless sensors.
- Requires the use of P photocontrol or the 4N7 or 4 photocontrol receptacle with photocontrol accessory. See After Hours Dim supplemental guide for additional information.
- The FSIR-100 accessory is required to adjust parameters.
- Available in 2, 3, 4 or 6 Light Square configurations. Replace "X" with number of Light Squares in low output mode. Not available with dimming leads. No terminal block with bi-level operation.
- LumaWatt Pro wireless sensors are factory installed only requiring network components LWP-EM-1, LWP-GW-1, and LWP-PoE in appropriate quantities. See www.eaton.com/lighting for LumaWatt Pro application information.
- Not available with house side shield (HSS).
- Only for use with SL2, SL3, SL4 and AFL distributions. The Light Square trim plate is painted black when the HSS option is selected.
- CE is not available with the LWR, MS, MS/X, MS/DIM, P, 4 or 4N7 options. Available in 120-277V only.
- This tool enables adjustment of parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Eaton for more information.
- One required for each Light Square.

LumenSafe Integrated Network Security Camera Technology Options (Add as Suffix)

Product Family	Camera Type	Data Backhaul
L=LumenSafe Technology* 	D=Dome Camera	C=Cellular, Customer Installed SIM Card A=Cellular, Factory Installed AT&T SIM Card V=Cellular, Factory Installed Verizon SIM Card S=Cellular, Factory Installed Sprint SIM Card R=Cellular, Factory Installed Rogers SIM Card W=Wi-Fi Networking w/ Omni-Directional Antenna E=Ethernet Networking

*Consult LumenSafe system pages for additional details and compatibility. Not available with 9-10 light square housing. Not available with 347V, 480V or high ambient options.

DESCRIPTION

The Galleon™ LED luminaire delivers exceptional performance in a highly scalable, low-profile design. Patented, high-efficiency AccuLED Optics™ system provides uniform and energy conscious illumination to walkways, parking lots, roadways, building areas and security lighting applications. IP66 rated and UL/cUL Listed for wet locations.

Catalog #	GAN-AF-07-LED-U-T3R-BZ-800-4N7	Type
Project	ODOT 173000 Opportunity Corridor Ph 3	Roadway
Comments	BU-27 Street Lighting QTY 91	
Prepared by	Mike Gallagher	
		Date

SPECIFICATION FEATURES

Construction

Extruded aluminum driver enclosure thermally isolated from Light Squares for optimal thermal performance. Heavy-wall, die-cast aluminum end caps enclose housing and die-cast aluminum heat sinks. A unique, patent pending interlocking housing and heat sink provides scalability with superior structural rigidity. 3G vibration tested and rated. Optional tool-less hardware available for ease of entry into electrical chamber. Housing is IP66 rated.

Optics

Patented, high-efficiency injection-molded AccuLED Optics technology. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT 70 CRI. Optional 3000K, 5000K and 6000K CCT.

Electrical

LED drivers are mounted to

removable tray assembly for ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Standard with 0-10V dimming. Shipped standard with Eaton proprietary circuit module designed to withstand 10kV of transient line surge. The Galleon LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Light Squares are IP66 rated. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 600mA, 800mA and 1200mA drive currents (nominal).

Mounting

STANDARD ARM MOUNT: Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during mounting. When mounting two or more luminaires at 90° and 120° apart, the EA extended arm may be required. Refer to the arm mounting requirement table.

Round pole adapter included. For wall mounting, specify wall mount bracket option. **QUICK MOUNT ARM:** Adapter is bolted directly to the pole. Quick mount arm slide into place on the adapter and is secured via two screws, facilitating quick and easy installation. The versatile, patent pending, quick mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8". Removal of the door on the quick mount arm enables wiring of the fixture without having to access the driver compartment. A knock-out enables round pole mounting.

Finish

Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Heat sink is powder coated black. Standard housing colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available.

Warranty

Five-year warranty.



GAN GALLEON LED

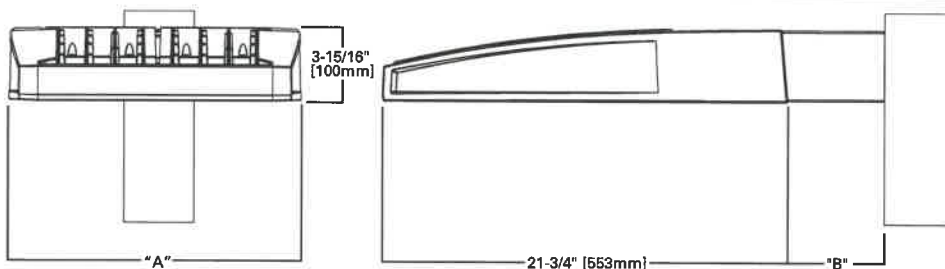
1-10 Light Squares
Solid State LED

AREA / ROADWAY LUMINAIRE



LumenSafe Technology
CLICK HERE

DIMENSIONS

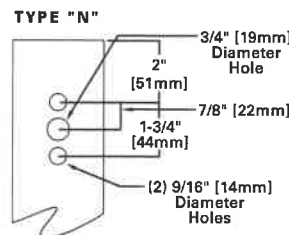


DIMENSION DATA

Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Optional Arm Length ¹	Weight with Arm (lbs.)	EPA with Arm ² (Sq. Ft.)
1-4	15-1/2" (394mm)	7" (178mm)	10" (254mm)	33 (15.0 kgs.)	0.96
5-6	21-5/8" (549mm)	7" (178mm)	10" (254mm)	44 (20.0 kgs.)	1.00
7-8	27-5/8" (702mm)	7" (178mm)	13" (330mm)	54 (24.5 kgs.)	1.07
9-10	33-3/4" (857mm)	7" (178mm)	16" (406mm)	63 (28.6 kgs.)	1.12

NOTES: 1. Optional arm length to be used when mounting two fixtures at 90° on a single pole. 2. EPA calculated with optional arm length.

DRILLING PATTERN



CERTIFICATION DATA

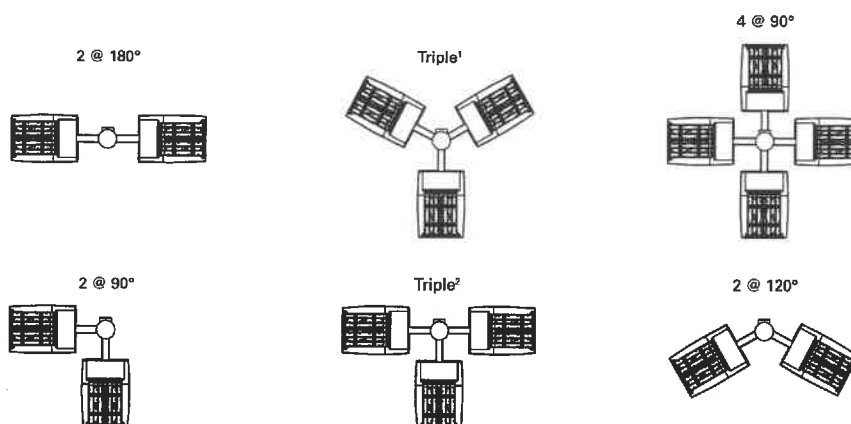
UL/cUL Wet Location Listed
ISO 9001
LM79 / LM80 Compliant
3G Vibration Rated
IP66 Rated
DesignLights Consortium® Qualified*

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120V-277V 50/60Hz
347V & 480V 60Hz
-40°C Min. Temperature
40°C Max. Temperature
50°C Max. Temperature (HA Option)

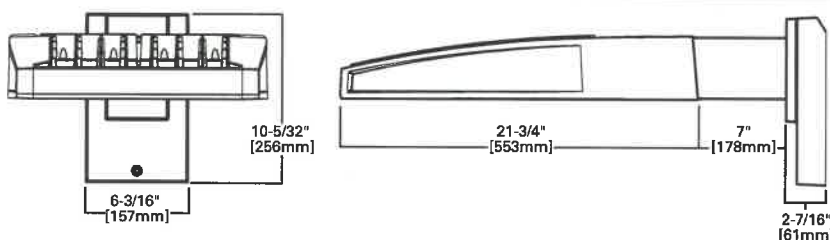
STANDARD ARM MOUNTING REQUIREMENTS

Configuration	90° Apart	120° Apart
GAN-AF-01	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-02	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-03	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-04	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-05	10" Extended Arm (Required)	7" Arm (Standard)
GAN-AF-06	10" Extended Arm (Required)	7" Arm (Standard)
GAN-AF-07	13" Extended Arm (Required)	13" Extended Arm (Required)
GAN-AF-08	13" Extended Arm (Required)	13" Extended Arm (Required)
GAN-AF-09	16" Extended Arm (Required)	16" Extended Arm (Required)
GAN-AF-10	16" Extended Arm (Required)	16" Extended Arm (Required)

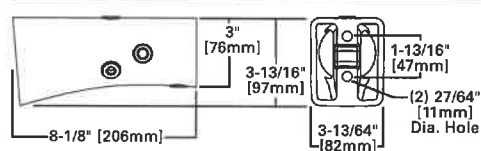


NOTES: 1 Round poles are 3 @ 120°. Square poles are 3 @ 90°. 2 Round poles are 3 @ 90°.

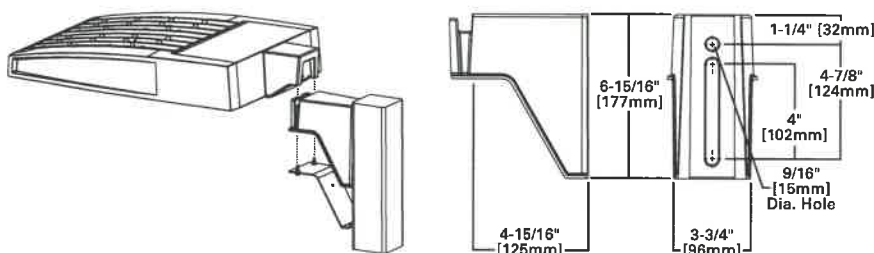
STANDARD WALL MOUNT



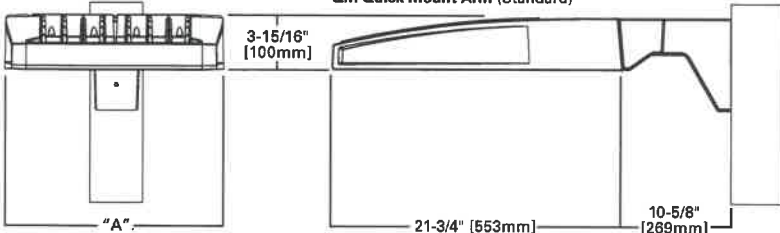
MAST ARM MOUNT



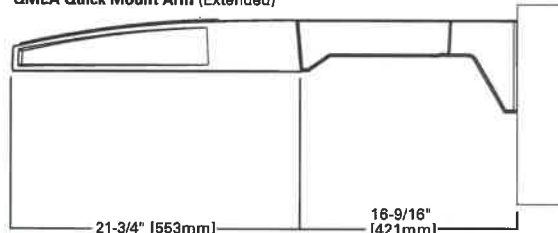
QUICK MOUNT ARM (INCLUDES FIXTURE ADAPTER)



QM Quick Mount Arm (Standard)



QMEA Quick Mount Arm (Extended)

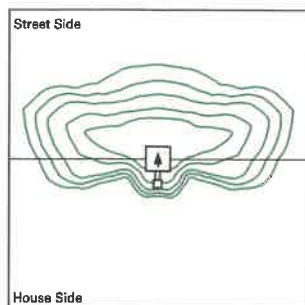


QUICK MOUNT ARM DATA

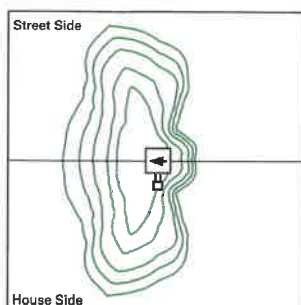
Number of Light Squares 1,2	"A" Width	Weight with QM Arm (lbs.)	Weight with QMEA Arm (lbs.)	EPA (Sq. Ft.)
1-4	15-1/2" (394mm)	35 (15.91 kgs.)	38 (17.27 kgs.)	1.11
5-6 3	21-5/8" (549mm)	46 (20.91 kgs.)	49 (22.27 kgs.)	
7-8	27-5/8" (702mm)	56 (25.45 kgs.)	59 (26.82 kgs.)	

NOTES: 1 QM option available with 1-8 light square configurations. 2 QMEA option available with 1-6 light square configurations. 3 QMEA arm to be used when mounting two fixtures at 90° on a single pole.

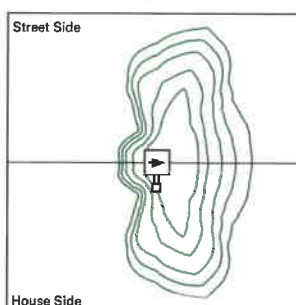
OPTIC ORIENTATION



Standard



Optics Rotated Left @ 90° [L90]



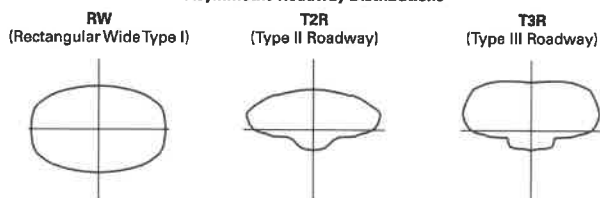
Optics Rotated Right @ 90° [R90]

OPTICAL DISTRIBUTIONS

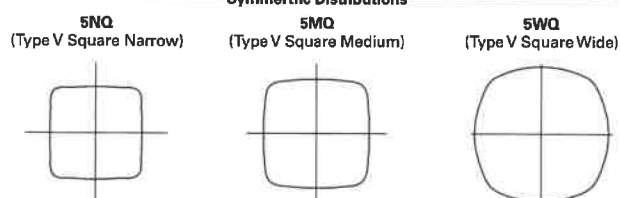
Asymmetric Area Distributions



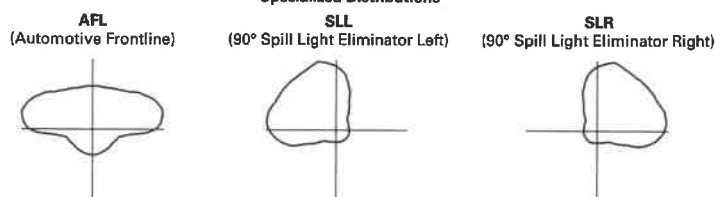
Asymmetric Roadway Distributions



Symmetric Distributions



Specialized Distributions

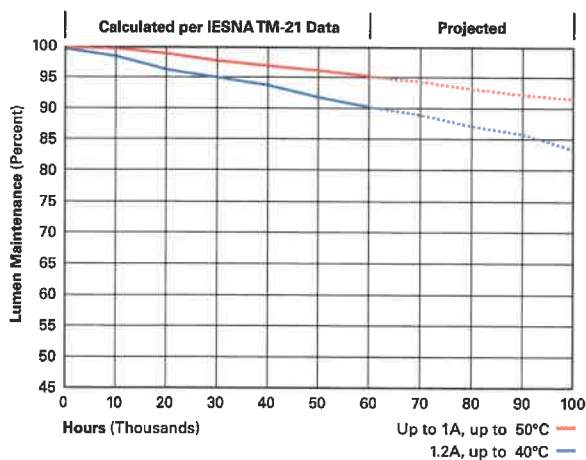


LUMEN MAINTENANCE

Drive Current	Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Projected L70 (Hours)
Up to 1A	Up to 50°C	> 95%	416,000
1.2A	Up to 40°C	> 90%	205,000

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97



NOMINAL POWER LUMENS (1.2A)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		67	129	191	258	320	382	448	511	575	640
Input Current @ 120V (A)		0.58	1.16	1.78	2.31	2.94	3.56	4.09	4.71	5.34	5.87
Input Current @ 208V (A)		0.33	0.63	0.93	1.27	1.57	1.87	2.22	2.52	2.8	3.14
Input Current @ 240V (A)		0.29	0.55	0.80	1.10	1.35	1.61	1.93	2.18	2.41	2.71
Input Current @ 277V (A)		0.25	0.48	0.70	0.96	1.18	1.39	1.69	1.90	2.09	2.36
Input Current @ 347V (A)		0.20	0.39	0.57	0.78	0.96	1.15	1.36	1.54	1.72	1.92
Input Current @ 480V (A)		0.15	0.30	0.43	0.60	0.73	0.85	1.03	1.16	1.28	1.45
Optics											
T2	4000K/5000K Lumens	6,709	13,111	19,562	25,848	32,026	38,325	45,324	51,355	57,286	63,424
	3000K Lumens	5,939	11,606	17,316	22,881	28,349	33,925	40,121	46,459	50,710	56,143
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T2R	4000K/5000K Lumens	7,122	13,919	20,769	27,442	34,000	40,687	48,117	54,519	60,816	67,333
	3000K Lumens	5,939	11,606	17,316	22,881	28,349	33,925	40,121	46,459	50,710	56,143
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
T3	4000K/5000K Lumens	6,838	13,363	19,939	26,346	32,642	39,062	46,196	52,343	58,388	64,646
	3000K Lumens	6,053	11,829	17,650	23,321	28,895	34,578	40,893	46,334	51,685	57,225
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T3R	4000K/5000K Lumens	6,990	13,660	20,382	26,931	33,368	39,930	47,223	53,506	59,686	66,081
	3000K Lumens	6,188	12,092	18,042	23,839	29,537	35,346	41,802	47,364	52,834	58,495
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
T4FT	4000K/5000K Lumens	6,878	13,440	20,055	26,499	32,832	39,289	46,464	52,646	58,726	65,020
	3000K Lumens	6,088	11,897	17,753	23,457	29,063	34,779	41,130	46,602	51,984	57,556
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T4W	4000K/5000K Lumens	6,789	13,267	19,795	26,156	32,408	38,781	45,864	51,967	57,968	64,180
	3000K Lumens	6,010	11,744	17,523	23,153	28,688	34,329	40,599	46,001	51,313	56,812
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL2	4000K/5000K Lumens	6,697	13,088	19,529	25,804	31,970	38,259	45,245	51,267	57,186	63,315
	3000K Lumens	5,928	11,585	17,287	22,842	28,300	33,867	40,051	45,382	50,621	56,046
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL3	4000K/5000K Lumens	6,837	13,361	19,936	26,342	32,639	39,057	46,189	52,336	58,380	64,636
	3000K Lumens	6,052	11,827	17,647	23,318	28,892	34,573	40,887	46,328	51,678	57,216
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL4	4000K/5000K Lumens	6,496	12,695	18,943	25,029	31,011	37,110	43,886	49,727	55,470	61,414
	3000K Lumens	5,750	11,238	16,768	22,156	27,451	32,850	38,848	44,018	49,102	54,364
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	7,052	13,781	20,564	27,171	33,664	40,285	47,641	53,981	60,215	66,669
	3000K Lumens	6,242	12,199	18,203	24,052	29,799	35,660	42,172	47,784	53,302	59,015
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
5MQ	4000K/5000K Lumens	7,182	14,034	20,942	27,671	34,284	41,027	48,518	54,975	61,323	67,896
	3000K Lumens	6,358	12,423	18,538	24,494	30,348	36,317	42,948	48,664	54,283	60,102
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
5WQ	4000K/5000K Lumens	7,201	14,073	20,998	27,744	34,375	41,136	48,648	55,121	61,487	68,077
	3000K Lumens	6,374	12,457	18,587	24,559	30,429	36,414	43,063	48,793	54,428	60,262
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
SLL/SLR	4000K/5000K Lumens	6,009	11,741	17,519	23,148	28,681	34,321	40,589	45,990	51,301	56,798
	3000K Lumens	5,319	10,393	15,508	20,491	25,388	30,381	35,929	40,710	45,412	50,278
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
RW	4000K/5000K Lumens	6,989	13,657	20,378	26,925	33,360	39,921	47,211	53,494	59,672	66,066
	3000K Lumens	6,187	12,089	18,039	23,834	29,530	35,338	41,791	47,353	52,822	58,482
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
AFL	4000K/5000K Lumens	7,014	13,706	20,452	27,023	33,481	40,066	47,383	53,688	59,888	66,306
	3000K Lumens	6,209	12,133	18,104	23,921	29,637	35,466	41,943	47,525	53,013	58,694
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4

* Nominal data for 70 CRI.

NOMINAL POWER LUMENS (1A)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		59	113	166	225	279	333	391	445	501	558
Input Current @ 120V (A)		0.51	1.02	1.53	2.03	2.55	3.06	3.56	4.08	4.6	5.07
Input Current @ 208V (A)		0.29	0.56	0.82	1.11	1.37	1.64	1.93	2.19	2.46	2.75
Input Current @ 240V (A)		0.26	0.48	0.71	0.96	1.19	1.41	1.67	1.89	2.12	2.39
Input Current @ 277V (A)		0.23	0.42	0.61	0.83	1.03	1.23	1.45	1.65	1.84	2.09
Input Current @ 347V (A)		0.17	0.32	0.50	0.64	0.82	1.00	1.14	1.32	1.50	1.68
Input Current @ 480V (A)		0.14	0.24	0.37	0.48	0.61	0.75	0.91	0.99	1.12	1.28
Optics											
T2	4000K/5000K Lumens	6,116	11,951	17,833	23,563	29,195	34,937	41,317	46,814	52,221	57,817
	3000K Lumens	5,414	10,579	15,786	20,858	25,843	30,926	36,574	41,440	46,226	51,180
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T2R	4000K/5000K Lumens	6,493	12,688	18,932	25,015	30,994	37,090	43,863	49,699	55,439	61,380
	3000K Lumens	5,748	11,231	16,759	22,143	27,436	32,832	38,828	43,994	49,075	54,334
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
T3	4000K/5000K Lumens	6,234	12,181	18,176	24,017	29,756	35,609	42,111	47,715	53,225	58,930
	3000K Lumens	5,518	10,783	16,089	21,260	26,340	31,521	37,277	42,237	47,115	52,165
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T3R	4000K/5000K Lumens	6,372	12,453	18,580	24,550	30,418	36,400	43,048	48,776	54,409	60,239
	3000K Lumens	5,640	11,023	16,447	21,732	26,926	32,221	38,106	43,177	48,163	53,324
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
T4FT	4000K/5000K Lumens	6,270	12,252	18,282	24,156	29,929	35,815	42,356	47,992	53,534	59,271
	3000K Lumens	5,550	10,845	16,183	21,383	26,493	31,703	37,494	42,483	47,388	52,467
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
T4W	4000K/5000K Lumens	6,189	12,094	18,045	23,844	29,543	35,352	41,809	47,372	52,843	58,506
	3000K Lumens	5,479	10,706	15,973	21,107	26,151	31,294	37,009	41,934	46,777	51,790
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL2	4000K/5000K Lumens	6,105	11,931	17,803	23,522	29,144	34,877	41,245	46,734	52,130	57,717
	3000K Lumens	5,404	10,561	15,759	20,822	25,798	30,873	36,510	41,369	46,145	51,091
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL3	4000K/5000K Lumens	6,233	12,180	18,174	24,013	29,753	35,604	42,106	47,708	53,218	58,921
	3000K Lumens	5,517	10,782	16,088	21,256	26,337	31,517	37,272	42,231	47,109	52,157
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
SL4	4000K/5000K Lumens	5,922	11,572	17,268	22,816	28,269	33,829	40,006	45,330	50,566	55,984
	3000K Lumens	5,242	10,244	15,286	20,197	25,024	29,945	35,413	40,126	44,761	49,557
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	6,429	12,563	18,746	24,768	30,688	36,723	43,429	49,208	54,891	60,775
	3000K Lumens	5,891	11,121	16,594	21,925	27,165	32,507	38,443	43,559	48,590	53,798
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
5MQ	4000K/5000K Lumens	6,547	12,794	19,090	25,224	31,253	37,400	44,228	50,114	55,902	61,893
	3000K Lumens	5,795	11,325	16,898	22,328	27,665	33,106	39,151	44,361	49,484	54,788
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
5WQ	4000K/5000K Lumens	6,564	12,828	19,141	25,291	31,336	37,499	44,347	50,248	56,051	62,058
	3000K Lumens	5,810	11,355	16,944	22,388	27,739	33,194	39,256	44,480	49,616	54,934
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
SLL/SLR	4000K/5000K Lumens	5,478	10,703	15,970	21,102	26,145	31,286	37,001	41,924	46,765	51,777
	3000K Lumens	4,849	9,474	14,137	18,679	23,144	27,694	32,753	37,111	41,396	45,833
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
RW	4000K/5000K Lumens	6,371	12,449	18,576	24,544	30,411	36,392	43,037	48,764	54,396	60,225
	3000K Lumens	5,640	11,020	16,443	21,726	26,920	32,214	38,096	43,166	48,151	53,311
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
AFL	4000K/5000K Lumens	6,394	12,494	18,644	24,634	30,521	36,524	43,194	48,942	54,593	60,444
	3000K Lumens	5,660	11,060	16,504	21,806	27,017	32,331	38,235	43,323	48,326	53,505
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4

* Nominal data for 70 CRI.

NOMINAL POWER LUMENS (800MA)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		44	85	124	171	210	249	295	334	374	419
Input Current @ 120V (A)		0.39	0.77	1.13	1.54	1.90	2.26	2.67	3.03	3.39	3.80
Input Current @ 208V (A)		0.22	0.44	0.62	0.88	1.06	1.24	1.50	1.68	1.87	2.12
Input Current @ 240V (A)		0.19	0.38	0.54	0.76	0.92	1.08	1.30	1.46	1.62	1.84
Input Current @ 277V (A)		0.17	0.36	0.47	0.72	0.83	0.95	1.19	1.31	1.42	1.67
Input Current @ 347V (A)		0.15	0.24	0.38	0.49	0.63	0.77	0.87	1.01	1.15	1.52
Input Current @ 480V (A)		0.11	0.18	0.29	0.37	0.48	0.59	0.66	0.77	0.88	0.96
Optics											
T2	4000K/5000K Lumens	4,941	9,656	14,408	19,038	23,588	28,227	33,382	37,823	42,191	46,713
	3000K Lumens	4,374	8,547	12,754	16,852	20,880	24,987	29,550	33,481	37,347	41,350
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5
T2R	4000K/5000K Lumens	5,246	10,251	15,296	20,211	25,041	29,966	35,439	40,154	44,791	49,592
	3000K Lumens	4,644	9,074	13,540	17,891	22,166	26,526	31,371	35,544	39,649	43,899
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5
T3	4000K/5000K Lumens	5,037	9,842	14,685	19,404	24,041	28,770	34,024	38,551	43,003	47,612
	3000K Lumens	4,459	8,712	12,999	17,176	21,281	25,467	30,118	34,125	38,066	42,146
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
T3R	4000K/5000K Lumens	5,148	10,061	15,011	19,835	24,576	29,409	34,780	39,408	43,959	48,669
	3000K Lumens	4,557	8,906	13,288	17,558	21,755	26,033	30,787	34,884	38,913	43,082
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4FT	4000K/5000K Lumens	5,066	9,899	14,770	19,516	24,181	28,936	34,221	38,774	43,252	47,888
	3000K Lumens	4,484	8,763	13,074	17,276	21,405	25,614	30,292	34,323	38,287	42,390
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4W	4000K/5000K Lumens	5,000	9,771	14,579	19,264	23,869	28,562	33,779	38,274	42,694	47,269
	3000K Lumens	4,426	8,649	12,905	17,052	21,129	25,283	29,901	33,880	37,793	41,843
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
SL2	4000K/5000K Lumens	4,933	9,639	14,383	19,005	23,547	28,178	33,324	37,758	42,118	46,632
	3000K Lumens	4,367	8,532	12,732	16,823	20,844	24,943	29,498	33,423	37,283	41,279
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
SL3	4000K/5000K Lumens	5,036	9,841	14,683	19,401	24,039	28,766	34,019	38,546	42,997	47,605
	3000K Lumens	4,458	8,711	12,997	17,174	21,279	25,464	30,114	34,121	38,061	42,140
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
SL4	4000K/5000K Lumens	4,784	9,350	13,951	18,434	22,840	27,332	32,323	36,624	40,854	45,232
	3000K Lumens	4,235	8,277	12,349	16,318	20,218	24,194	28,612	32,420	36,164	40,039
	BUG Rating	B1-U0-G2	B1-U0-G3	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G5	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	5,194	10,150	15,145	20,011	24,794	29,670	35,088	39,757	44,349	49,102
	3000K Lumens	4,598	8,985	13,406	17,714	21,948	26,264	31,060	35,193	39,258	43,465
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G3
5MQ	4000K/5000K Lumens	5,290	10,337	15,424	20,380	25,250	30,217	35,734	40,489	45,165	50,006
	3000K Lumens	4,683	9,150	13,653	18,040	22,351	26,748	31,632	35,841	39,980	44,265
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
5WQ	4000K/5000K Lumens	5,304	10,365	15,465	20,434	25,318	30,297	35,830	40,597	45,286	50,139
	3000K Lumens	4,695	9,175	13,690	18,088	22,411	26,819	31,717	35,936	40,087	44,383
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
SLL/SLR	4000K/5000K Lumens	4,426	8,648	12,903	17,049	21,124	25,278	29,894	33,872	37,784	41,832
	3000K Lumens	3,918	7,655	11,422	15,092	18,699	22,376	26,462	29,983	33,446	37,030
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
RW	4000K/5000K Lumens	5,147	10,058	15,009	19,830	24,570	29,402	34,771	39,399	43,949	48,658
	3000K Lumens	4,556	8,903	13,286	17,554	21,749	26,027	30,779	34,876	38,904	43,072
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4
AFL	4000K/5000K Lumens	5,166	10,095	15,063	19,903	24,659	29,509	34,898	39,542	44,108	48,835
	3000K Lumens	4,573	8,936	13,334	17,618	21,828	26,121	30,892	35,003	39,044	43,229
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3

* Nominal data for 70 CRI.

NOMINAL POWER LUMENS (600MA)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		34	66	96	129	162	193	226	257	290	323
Input Current @ 120V (A)		0.30	0.58	0.86	1.16	1.44	1.73	2.03	2.33	2.59	2.89
Input Current @ 208V (A)		0.17	0.34	0.49	0.65	0.84	0.99	1.14	1.30	1.48	1.63
Input Current @ 240V (A)		0.15	0.30	0.43	0.56	0.74	0.87	1.00	1.13	1.30	1.43
Input Current @ 277V (A)		0.14	0.28	0.41	0.52	0.69	0.81	0.93	1.04	1.22	1.33
Input Current @ 347V (A)		0.11	0.19	0.30	0.39	0.49	0.60	0.69	0.77	0.90	0.99
Input Current @ 480V (A)		0.08	0.15	0.24	0.30	0.38	0.48	0.53	0.59	0.71	0.77
Optics											
T2	4000K/5000K Lumens	4,029	7,874	11,749	15,525	19,235	23,019	27,222	30,844	34,406	38,093
	3000K Lumens	3,566	6,970	10,400	13,743	17,027	20,376	24,097	27,303	30,456	33,720
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G4
T2R	4000K/5000K Lumens	4,278	8,360	12,474	16,482	20,421	24,437	28,900	32,745	36,527	40,441
	3000K Lumens	3,787	7,400	11,042	14,590	18,077	21,632	25,582	28,986	32,334	35,798
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
T3	4000K/5000K Lumens	4,107	8,026	11,976	15,824	19,605	23,461	27,746	31,438	35,068	38,827
	3000K Lumens	3,636	7,105	10,601	14,007	17,354	20,768	24,561	27,829	31,042	34,370
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
T3R	4000K/5000K Lumens	4,198	8,205	12,242	16,175	20,041	23,982	28,363	32,137	35,848	39,689
	3000K Lumens	3,716	7,263	10,837	14,318	17,740	21,229	25,107	28,448	31,733	35,133
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
T4FT	4000K/5000K Lumens	4,131	8,072	12,045	15,915	19,719	23,597	27,907	31,620	35,272	39,052
	3000K Lumens	3,657	7,145	10,662	14,088	17,455	20,888	24,703	27,990	31,223	34,569
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4W	4000K/5000K Lumens	4,077	7,968	11,889	15,710	19,465	23,292	27,546	31,212	34,816	38,547
	3000K Lumens	3,609	7,053	10,524	13,906	17,230	20,618	24,384	27,629	30,819	34,122
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
SL2	4000K/5000K Lumens	4,022	7,861	11,729	15,498	19,202	22,979	27,175	30,791	34,347	38,028
	3000K Lumens	3,560	6,959	10,383	13,719	16,998	20,341	24,055	27,256	30,404	33,662
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
SL3	4000K/5000K Lumens	4,106	8,025	11,974	15,821	19,603	23,458	27,742	31,433	35,064	38,821
	3000K Lumens	3,635	7,104	10,599	14,005	17,353	20,765	24,557	27,824	31,039	34,364
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
SL4	4000K/5000K Lumens	3,902	7,624	11,377	15,033	18,626	22,289	26,359	29,867	33,316	36,886
	3000K Lumens	3,454	6,749	10,071	13,307	16,488	19,730	23,333	26,438	29,491	32,651
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G3	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	4,236	8,277	12,351	16,319	20,219	24,196	28,614	32,422	36,166	40,042
	3000K Lumens	3,750	7,327	10,933	14,446	17,898	21,418	25,329	28,700	32,014	35,445
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3
5MQ	4000K/5000K Lumens	4,314	8,429	12,578	16,619	20,591	24,641	29,141	33,019	36,832	40,779
	3000K Lumens	3,819	7,461	11,134	14,711	18,227	21,812	25,796	29,228	32,604	36,098
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
5WQ	4000K/5000K Lumens	4,325	8,452	12,611	16,664	20,646	24,707	29,219	33,106	36,930	40,888
	3000K Lumens	3,828	7,482	11,163	14,751	18,276	21,871	25,865	29,305	32,690	36,194
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
SLL/SLR	4000K/5000K Lumens	3,609	7,052	10,522	13,903	17,226	20,613	24,378	27,622	30,812	34,114
	3000K Lumens	3,195	6,242	9,314	12,307	15,248	18,247	21,579	24,451	27,275	30,198
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
RW	4000K/5000K Lumens	4,197	8,202	12,239	16,171	20,036	23,977	28,356	32,129	35,839	39,680
	3000K Lumens	3,715	7,260	10,834	14,315	17,736	21,224	25,101	28,441	31,725	35,125
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
AFL	4000K/5000K Lumens	4,213	8,232	12,284	16,230	20,109	24,064	28,459	32,246	35,969	39,824
	3000K Lumens	3,729	7,287	10,874	14,367	17,800	21,301	25,192	28,544	31,840	35,252
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3

* Nominal data for 70 CRI.

CONTROL OPTIONS

0-10V (DIM)

This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (P, 4 and 4N7)

Optional button-type photocontrol (P) and photocontrol receptacles (4 and 4N7) provide a flexible solution to enable “dusk-to-dawn” lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the 4N7 receptacle.

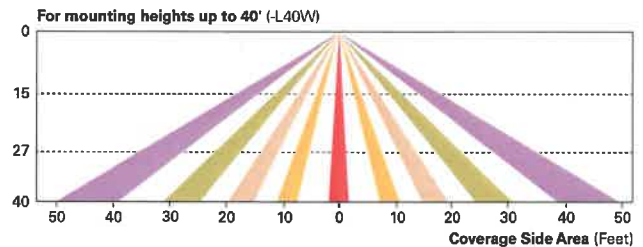
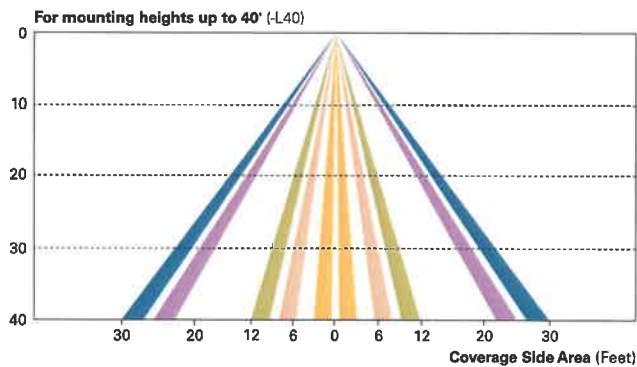
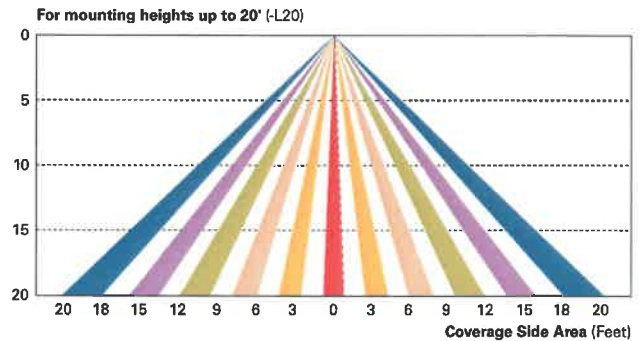
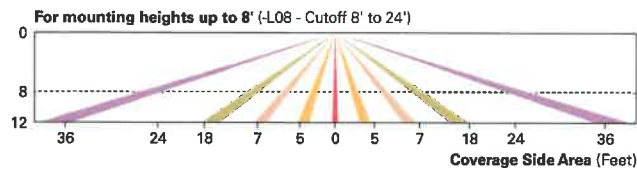
After Hours Dim (AHD)

This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a “dusk-to-dawn” period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

Dimming Occupancy Sensor (MS/DIM-LXX, MS/X-LXX and MS-LXX)

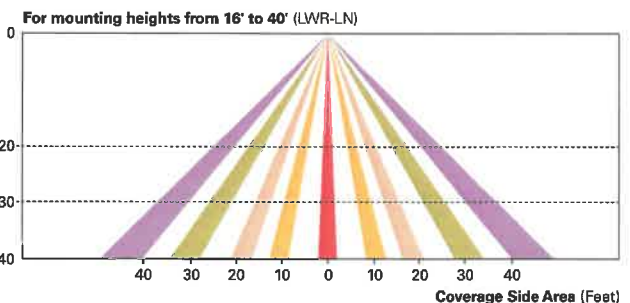
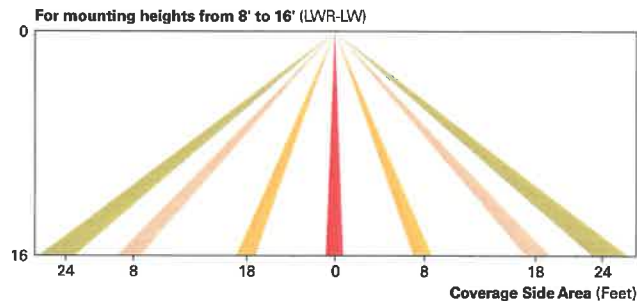
These sensors are factory installed in the luminaire housing. When the MS/DIM-LXX sensor option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MS/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of five minutes. The MS-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity. The MS/X-LXX is also preset for five minutes and only controls the specified number of light engines to maintain steady output from the remaining light engines.

These occupancy sensors includes an integral photocell that can be activated with the FSIR-100 accessory for “dusk-to-dawn” control or daylight harvesting - the factory preset is OFF. The FSIR-100 is a wireless tool utilized for changing the dimming level, time delay, sensitivity and other parameters. A variety of sensor lens are available to optimize the coverage pattern for mounting heights from 8'-40'.



LumaWatt Pro Wireless Control and Monitoring System (LWR-LW and LWR-LN)

The LumaWatt Pro system is a peer-to-peer wireless network of luminaire-integral sensors for any sized project. Each sensor is capable of motion and photo sensing, metering power consumption and wireless communication. The end-user can securely create and manage sensor profiles with browser-based management software. The software will automatically broadcast to the sensors via wireless gateways for zone-based and individual luminaire control. The LumaWatt Pro software provides smart building solutions by utilizing the sensor to provide easy-to-use dashboard and analytic capabilities such as improved energy savings, traffic flow analysis, building management software integration and more. For additional details, refer to the LumaWatt product guides.



LumenSafe Integrated Network Security Camera (LD)

Eaton brings ease of camera deployment to a whole new level. No additional wiring is needed beyond providing line power to the luminaire. A variety of networking options allows security integrators to design the optimal solution for active surveillance. As the ideal solution to meet the needs for active surveillance, the LumenSafe integrated network camera is a streamlined, outdoor-ready fixed dome that provides HDTV 1080p video. This IP camera is optimally designed for deployment in the video management system or security software platform of choice.

ORDERING INFORMATION


Sample Number: GAN-AF-04-LED-U-T3R-BZ

Product Family ^{1,2}	Light Engine	Number of Light Squares ³	Lamp Type	Voltage	Distribution	Color	Mounting
GAN=Galleon	AF=1A Drive Current	01=1 02=2 03=3 04=4 05=5 ⁴ 06=6 07=7 ⁵ 08=8 ⁵ 09=9 ⁵ 10=10 ⁶	LED=Solid State Light Emitting Diodes	U=Universal (120-277V) 8=480V ^{2,8} 9=347V ⁷	T2=Type II T2R=Type II Roadway T3=Type III T3R=Type III Roadway T4FT=Type IV Forward Throw T4W=Type IV Wide 5NQ=Type V Narrow 5MQ=Type V Square Medium 5WQ=Type V Square Wide SL2=Type II w/Spill Control SL3=Type III w/Spill Control SL4=Type IV w/Spill Control SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right RW=Rectangular Wide Type I AFL=Automotive Frontline	AP=Grey BZ=Bronze BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White	[Blank]=Arm for Round or Square Pole EA=Extended Arm ⁹ MA=Mast Arm Adapter ¹⁰ WM=Wall Mount QM=Quick Mount Arm (Standard Length) ¹¹ QMEA=Quick Mount Arm (Extended Length) ¹²
Options (Add as Suffix)					Accessories (Order Separately)		
7030=70 CRI 3000K ¹³ 7050=70 CRI 5000K ¹³ 7060=70 CRI 6000K ¹³ 8030=80 CRI 3000K ¹³ 600=Drive Current Factory Set to 600mA ¹⁴ 800=Drive Current Factory Set to 800mA ¹⁴ 1200=Drive Current Factory Set to 1200mA ^{14,15} 2L=Two Circuits ^{16,17} DIM=External 0-10V Dimming Leads 3=Three-Position Terminal Block P=Button Type Photocontrol (120, 208, 240 or 277V) 4=NEMA Twistlock Photocontrol Receptacle 4N7=NEMA 7-PIN Twistlock Photocontrol Receptacle AHD145=After Hours Dim, 5 Hours ¹⁸ AHD245=After Hours Dim, 6 Hours ¹⁸ AHD255=After Hours Dim, 7 Hours ¹⁸ AHD355=After Hours Dim, 8 Hours ¹⁸ HA=50°C High Ambient MS/DIM-L08=Motion Sensor for Dimming Operation, Maximum 8' Mounting Height ¹⁹ MS/DIM-L20=Motion Sensor for Dimming Operation, 9' - 20' Mounting Height ¹⁹ MS/DIM-L40=Motion Sensor for Dimming Operation, 21' - 40' Mounting Height ¹⁹ MS/X-L08=Bi-Level Motion Sensor, Maximum 8' Mounting Height ^{19,20} MS/X-L20=Bi-Level Motion Sensor, 9' - 20' Mounting Height ^{19,20} MS/X-L40=Bi-Level Motion Sensor, 21' - 40' Mounting Height ^{19,20} LWR-LW=LumaWatt Pro Wireless Sensor, Wide Lens for 8' - 16' Mounting Height ^{21,(A)} LWR-LN=LumaWatt Pro Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height ^{21,(A)} L90=Optics Rotated 90° Left R90=Optics Rotated 90° Right MT=Factory Installed Mesh Top TH=Tool-less Door Hardware LCF=Light Square Trim Plate Painted to Match Housing ²² HSS=Factory Installed House Side Shield ²³ CE=CE Marking ²⁴					OA/RA1016=NEMA Photocontrol Multi-Tap - 105-285V OA/RA1027=NEMA Photocontrol - 480V OA/RA1201=NEMA Photocontrol - 347V OA/RA1013=Photocontrol Shorting Cap OA/RA1014=120V Photocontrol SA1252=10kV Surge Module Replacement SA1036-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon SA1037-XX=2 @ 180° Tenon Adapter for 2-3/8" O.D. Tenon SA1197-XX=3 @ 120° Tenon Adapter for 2-3/8" O.D. Tenon SA1188-XX=4 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon SA1189-XX=2 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon SA1190-XX=3 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon SA1191-XX=2 @ 120° Tenon Adapter for 2-3/8" O.D. Tenon SA1038-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon SA1039-XX=2 @ 180° Tenon Adapter for 3-1/2" O.D. Tenon SA1192-XX=3 @ 120° Tenon Adapter for 3-1/2" O.D. Tenon SA1193-XX=4 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon SA1194-XX=2 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon SA1195-XX=3 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon FSIR-100=Wireless Configuration Tool for Occupancy Sensor ²⁵ GAN-MT1=Field Installed Mesh Top for 1-4 Light Squares GAN-MT2=Field Installed Mesh Top for 5-6 Light Squares GAN-MT3=Field Installed Mesh Top for 7-8 Light Squares GAN-MT4=Field Installed Mesh Top for 9-10 Light Squares GLEON-QM=Quick Mount Arm Kit ¹¹ GLEON-QM-EA=Quick Mount Extended Length Arm Kit ¹² LS/HSS=Field Installed House Side Shield ^{26,28}		

NOTES:

- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
- DesignLights Consortium® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details.
- Standard 4000K CCT and minimum 70 CRI.
- Not compatible with MS/4-LXX or MS/1-LXX sensors.
- Not compatible with extended quick mount arm (QMEA).
- Not compatible with standard quick mount arm (QM) or extended quick mount arm (QMEA).
- Requires the use of a step down transformer when combined with sensor options. Not available with sensor at 1200mA. Not available in combination with the HA high ambient and sensor options at 1A.
- Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
- May be required when two or more luminaires are oriented on a 90° or 120° drilling pattern. Refer to arm mounting requirement table.
- Factory installed.
- Maximum 8 light squares.
- Maximum 6 light squares.
- Use dedicated IES files for 3000K, 5000K, 6000K when performing layouts. These files are published on the Galleon luminaire product page on the website.
- 1 Amp standard. Use dedicated IES files for 600mA, 800mA and 1200mA when performing layouts. These files are published on the Galleon luminaire product page on the website.
- Not available with HA option.
- 2L is not available with MS/X or MS/DIM at 347V or 480V. 2L in AF-02 through AF-04 requires a larger housing, normally used for AF-05 or AF-06.
- Not available with LumaWatt Pro wireless sensors.
- Requires the use of P photocontrol or the 4N7 or 4 photocontrol receptacle with photocontrol accessory. See After Hours Dim supplemental guide for additional information.
- The FSIR-100 accessory is required to adjust parameters.
- Available in 2, 3, 4 or 6 Light Square configurations. Replace "X" with number of Light Squares in low output mode. Not available with dimming leads. No terminal block with bi-level operation.
- LumaWatt Pro wireless sensors are factory installed only requiring network components LWP-EM-1, LWP-GW-1, and LWP-PoE8 in appropriate quantities. See www.eaton.com/lighting for LumaWatt Pro application information.
- Not available with house side shield (HSS).
- Only for use with SL2, SL3, SL4 and AFL distributions. The Light Square trim plate is painted black when the HSS option is selected.
- CE is not available with the LWR, MS, MS/X, MS/DIM, P, 4 or 4N7 options. Available in 120-277V only.
- This tool enables adjustment of parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Eaton for more information.
- One required for each Light Square.

LumenSafe Integrated Network Security Camera Technology Options (Add as Suffix)

Product Family	Camera Type	Data Backhaul
L=LumenSafe Technology* 	D=Dome Camera	C=Cellular, Customer Installed SIM Card A=Cellular, Factory Installed AT&T SIM Card V=Cellular, Factory Installed Verizon SIM Card S=Cellular, Factory Installed Sprint SIM Card R=Cellular, Factory Installed Rogers SIM Card W=Wi-Fi Networking w/ Omni-Directional Antenna E=Ethernet Networking

*Consult LumenSafe system pages for additional details and compatibility. Not available with 9-10 light square housing. Not available with 347V, 480V or high ambient options.

DESCRIPTION

The Galleon™ LED luminaire delivers exceptional performance in a highly scalable, low-profile design. Patented, high-efficiency AccuLED Optics™ system provides uniform and energy conscious illumination to walkways, parking lots, roadways, building areas and security lighting applications. IP66 rated and UL/cUL Listed for wet locations.

Catalog #	GAN-AF-02-LED-U-T2-BZ-800	Type
Project	ODOT 173000 Opportunity Corridor Ph3	Roadway
Comments	BU-27 Street Lighting QTY 5 each NO PCR	Date
Prepared by	Mike Gallagher	

SPECIFICATION FEATURES

Construction

Extruded aluminum driver enclosure thermally isolated from Light Squares for optimal thermal performance. Heavy-wall, die-cast aluminum end caps enclose housing and die-cast aluminum heat sinks. A unique, patent pending interlocking housing and heat sink provides scalability with superior structural rigidity. 3G vibration tested and rated. Optional tool-less hardware available for ease of entry into electrical chamber. Housing is IP66 rated.

Optics

Patented, high-efficiency injection-molded AccuLED Optics technology. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT 70 CRI. Optional 3000K, 5000K and 6000K CCT.

Electrical

LED drivers are mounted to

removable tray assembly for ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Standard with 0-10V dimming. Shipped standard with Eaton proprietary circuit module designed to withstand 10kV of transient line surge. The Galleon LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Light Squares are IP66 rated. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 600mA, 800mA and 1200mA drive currents (nominal).

Mounting

STANDARD ARM MOUNT: Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during mounting. When mounting two or more luminaires at 90° and 120° apart, the EA extended arm may be required. Refer to the arm mounting requirement table.

Round pole adapter included. For wall mounting, specify wall mount bracket option. **QUICK MOUNT ARM:** Adapter is bolted directly to the pole. Quick mount arm slide into place on the adapter and is secured via two screws, facilitating quick and easy installation. The versatile, patent pending, quick mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8". Removal of the door on the quick mount arm enables wiring of the fixture without having to access the driver compartment. A knock-out enables round pole mounting.

Finish

Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Heat sink is powder coated black. Standard housing colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available.

Warranty

Five-year warranty.



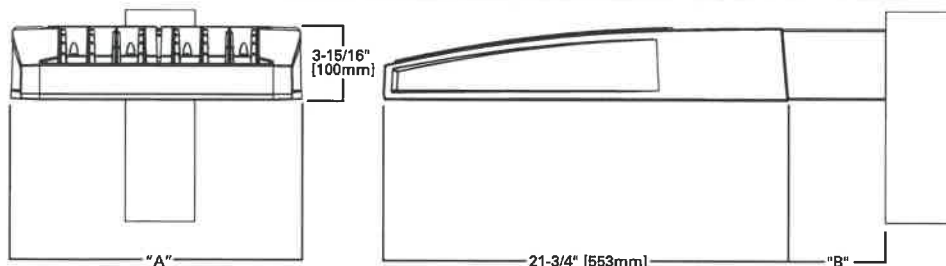
GAN GALLEON LED

1-10 Light Squares
Solid State LED

AREA / ROADWAY LUMINAIRE



DIMENSIONS

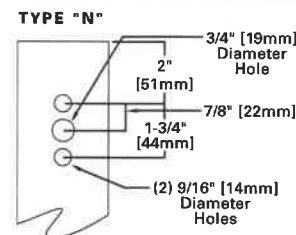


DIMENSION DATA

Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Optional Arm Length 1	Weight with Arm (lbs.)	EPA with Arm 2 (Sq. Ft.)
1-4	15-1/2" (394mm)	7" (178mm)	10" (254mm)	33 (15.0 kgs.)	0.96
5-6	21-5/8" (549mm)	7" (178mm)	10" (254mm)	44 (20.0 kgs.)	1.00
7-8	27-5/8" (702mm)	7" (178mm)	13" (330mm)	54 (24.5 kgs.)	1.07
9-10	33-3/4" (857mm)	7" (178mm)	16" (406mm)	63 (28.6 kgs.)	1.12

NOTES: 1. Optional arm length to be used when mounting two fixtures at 90° on a single pole. 2. EPA calculated with optional arm length.

DRILLING PATTERN



CERTIFICATION DATA

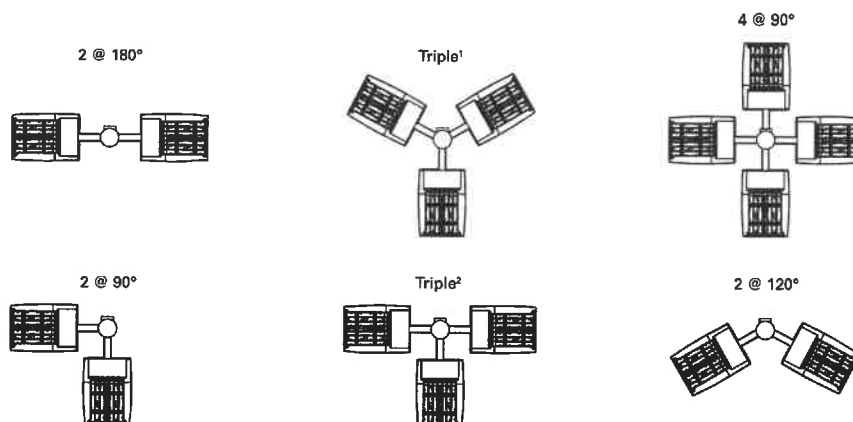
UL/cUL Wet Location Listed
ISO 9001
LM79 / LM80 Compliant
3G Vibration Rated
IP66 Rated
DesignLights Consortium® Qualified*

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120V-277V 50/60Hz
347V & 480V 60Hz
-40°C Min. Temperature
40°C Max. Temperature
50°C Max. Temperature (HA Option)

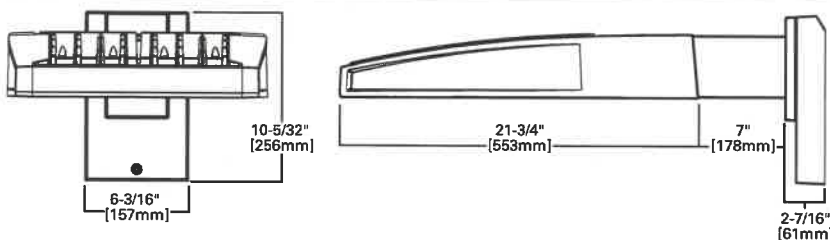
STANDARD ARM MOUNTING REQUIREMENTS

Configuration	90° Apart	120° Apart
GAN-AF-01	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-02	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-03	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-04	7" Arm (Standard)	7" Arm (Standard)
GAN-AF-05	10" Extended Arm (Required)	7" Arm (Standard)
GAN-AF-06	10" Extended Arm (Required)	7" Arm (Standard)
GAN-AF-07	13" Extended Arm (Required)	13" Extended Arm (Required)
GAN-AF-08	13" Extended Arm (Required)	13" Extended Arm (Required)
GAN-AF-09	16" Extended Arm (Required)	16" Extended Arm (Required)
GAN-AF-10	16" Extended Arm (Required)	16" Extended Arm (Required)

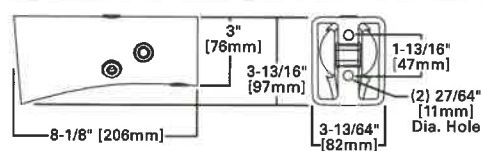


NOTES: 1 Round poles are 3 @ 120°. Square poles are 3 @ 90°. 2 Round poles are 3 @ 90°.

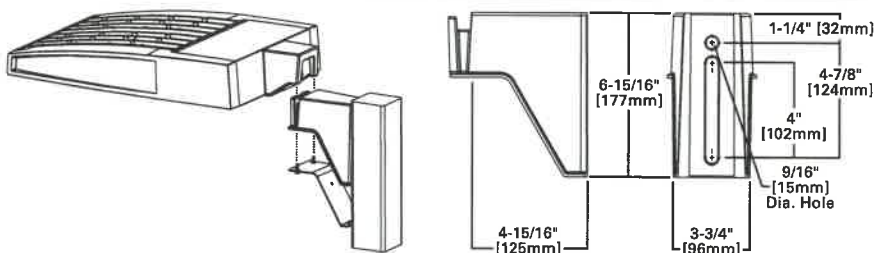
STANDARD WALL MOUNT



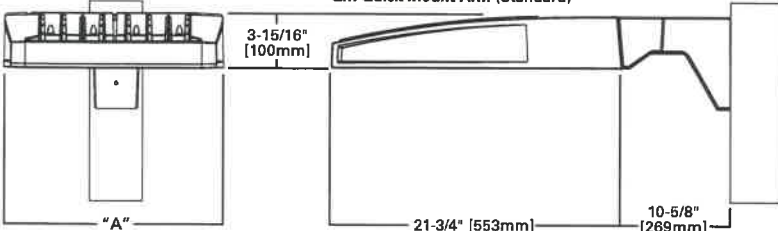
MAST ARM MOUNT



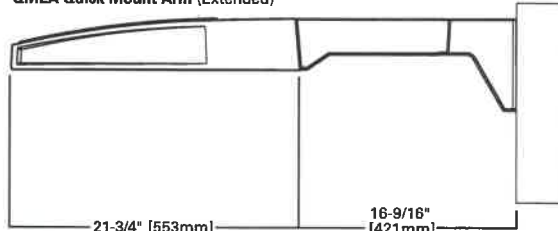
QUICK MOUNT ARM (INCLUDES FIXTURE ADAPTER)



QM Quick Mount Arm (Standard)



QMEA Quick Mount Arm (Extended)

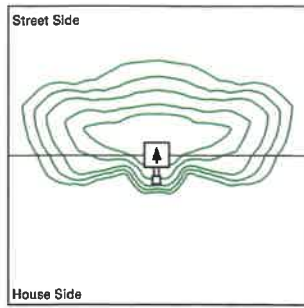


QUICK MOUNT ARM DATA

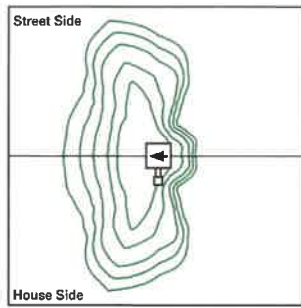
Number of Light Squares 1,2	"A" Width	Weight with QM Arm (lbs.)	Weight with QMEA Arm (lbs.)	EPA (Sq. Ft.)
1-4	15-1/2" (394mm)	35 (15.91 kgs.)	38 (17.27 kgs.)	1.11
5-6 3	21-5/8" (549mm)	46 (20.91 kgs.)	49 (22.27 kgs.)	
7-8	27-5/8" (702mm)	56 (25.45 kgs.)	59 (26.82 kgs.)	

NOTES: 1 QM option available with 1-8 light square configurations. 2 QMEA option available with 1-6 light square configurations. 3 QMEA arm to be used when mounting two fixtures at 90° on a single pole.

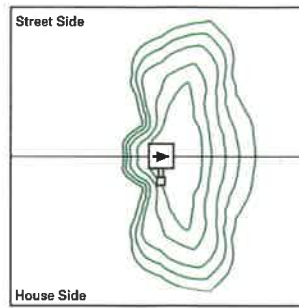
OPTIC ORIENTATION



Standard



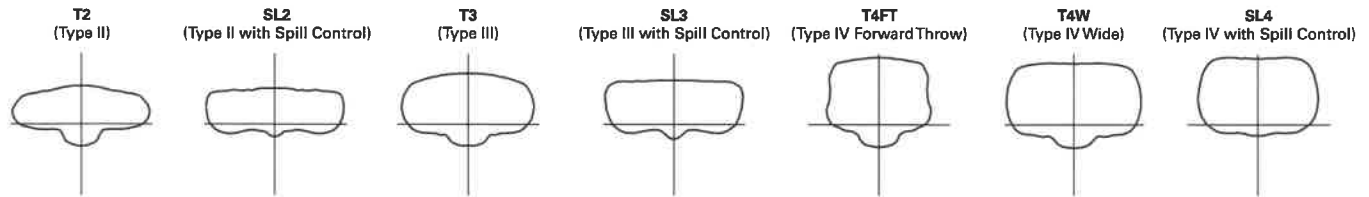
Optics Rotated Left @ 90° [L90]



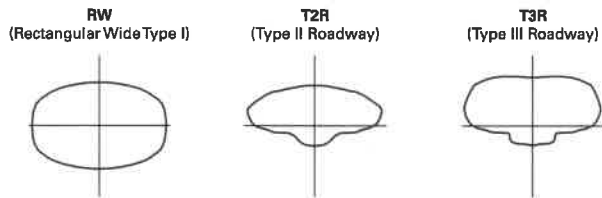
Optics Rotated Right @ 90° [R90]

OPTICAL DISTRIBUTIONS

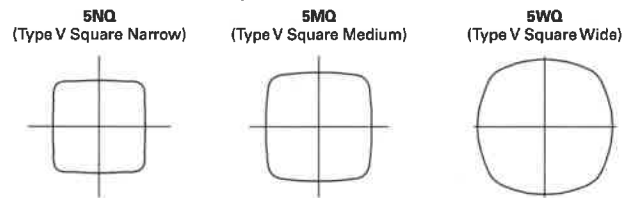
Asymmetric Area Distributions



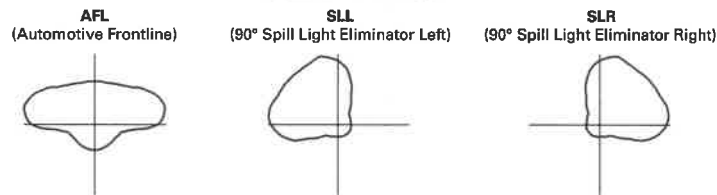
Asymmetric Roadway Distributions



Symmetric Distributions



Specialized Distributions

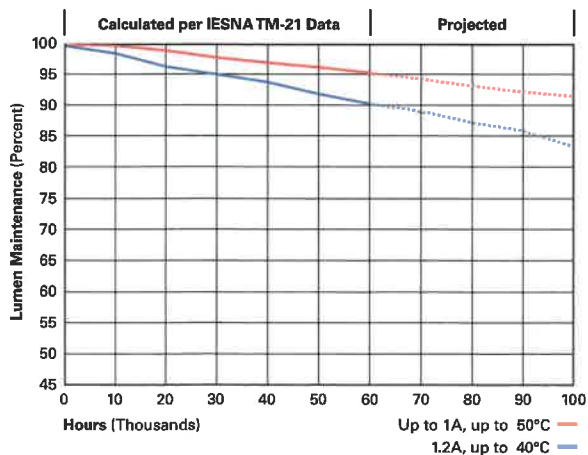


LUMEN MAINTENANCE

Drive Current	Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Projected L70 (Hours)
Up to 1A	Up to 50°C	> 95%	416,000
1.2A	Up to 40°C	> 90%	205,000

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97



NOMINAL POWER LUMENS (1.2A)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		67	129	191	258	320	382	448	511	575	640
Input Current @ 120V (A)		0.58	1.16	1.78	2.31	2.94	3.56	4.09	4.71	5.34	5.87
Input Current @ 208V (A)		0.33	0.63	0.93	1.27	1.57	1.87	2.22	2.52	2.8	3.14
Input Current @ 240V (A)		0.29	0.55	0.80	1.10	1.35	1.61	1.93	2.18	2.41	2.71
Input Current @ 277V (A)		0.25	0.48	0.70	0.96	1.18	1.39	1.69	1.90	2.09	2.36
Input Current @ 347V (A)		0.20	0.39	0.57	0.78	0.96	1.15	1.36	1.54	1.72	1.92
Input Current @ 480V (A)		0.15	0.30	0.43	0.60	0.73	0.85	1.03	1.16	1.28	1.45
Optics											
T2	4000K/5000K Lumens	6,709	13,111	19,562	25,848	32,026	38,325	45,324	51,355	57,286	63,424
	3000K Lumens	5,939	11,606	17,316	22,881	28,349	33,925	40,121	45,459	50,710	56,143
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T2R	4000K/5000K Lumens	7,122	13,919	20,769	27,442	34,000	40,687	48,117	54,519	60,816	67,333
	3000K Lumens	5,939	11,606	17,316	22,881	28,349	33,925	40,121	45,459	50,710	56,143
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
T3	4000K/5000K Lumens	6,838	13,363	19,939	26,346	32,642	39,062	46,196	52,343	58,388	64,646
	3000K Lumens	6,053	11,829	17,650	23,321	28,895	34,578	40,893	46,334	51,685	57,225
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T3R	4000K/5000K Lumens	6,990	13,660	20,382	26,931	33,368	39,930	47,223	53,506	59,686	66,081
	3000K Lumens	6,188	12,092	18,042	23,839	29,537	35,346	41,802	47,364	52,834	58,495
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
T4FT	4000K/5000K Lumens	6,878	13,440	20,055	26,499	32,832	39,289	46,464	52,646	58,726	65,020
	3000K Lumens	6,088	11,897	17,753	23,457	29,083	34,779	41,130	46,602	51,984	57,556
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T4W	4000K/5000K Lumens	6,789	13,267	19,795	26,156	32,408	38,781	45,864	51,967	57,968	64,180
	3000K Lumens	6,010	11,744	17,523	23,153	28,688	34,329	40,599	46,001	51,313	56,812
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL2	4000K/5000K Lumens	6,697	13,088	19,529	25,804	31,970	38,259	45,245	51,267	57,186	63,315
	3000K Lumens	5,928	11,585	17,287	22,842	28,300	33,867	40,051	45,382	50,621	56,046
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL3	4000K/5000K Lumens	6,837	13,361	19,936	26,342	32,639	39,057	46,189	52,336	58,380	64,636
	3000K Lumens	6,052	11,827	17,647	23,318	28,892	34,573	40,887	46,328	51,678	57,216
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL4	4000K/5000K Lumens	6,496	12,695	18,943	25,029	31,011	37,110	43,886	49,727	55,470	61,414
	3000K Lumens	5,750	11,238	16,768	22,156	27,451	32,850	38,848	44,018	49,102	54,364
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	7,052	13,781	20,564	27,171	33,664	40,285	47,841	53,981	60,215	66,669
	3000K Lumens	6,242	12,199	18,203	24,052	29,799	35,660	42,172	47,784	53,302	59,015
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
5MQ	4000K/5000K Lumens	7,182	14,034	20,942	27,671	34,284	41,027	48,518	54,975	61,323	67,896
	3000K Lumens	6,358	12,423	18,538	24,494	30,348	36,317	42,948	48,664	54,283	60,102
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
5WQ	4000K/5000K Lumens	7,201	14,073	20,998	27,744	34,375	41,136	48,648	55,121	61,487	68,077
	3000K Lumens	6,374	12,457	18,587	24,559	30,429	36,414	43,063	48,793	54,428	60,262
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
SLL/SLR	4000K/5000K Lumens	6,009	11,741	17,519	23,148	28,681	34,321	40,589	45,990	51,301	56,798
	3000K Lumens	5,319	10,393	15,508	20,491	25,388	30,381	35,929	40,710	45,412	50,278
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
RW	4000K/5000K Lumens	6,989	13,657	20,378	26,925	33,360	39,921	47,211	53,494	59,672	66,066
	3000K Lumens	6,187	12,089	18,039	23,834	29,530	35,338	41,791	47,353	52,822	58,482
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
AFL	4000K/5000K Lumens	7,014	13,706	20,452	27,023	33,481	40,066	47,383	53,688	59,888	66,306
	3000K Lumens	6,209	12,133	18,104	23,921	29,637	35,466	41,943	47,525	53,013	58,694
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4

* Nominal data for 70 CRI.

NOMINAL POWER LUMENS (1A)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		59	113	166	225	279	333	391	445	501	558
Input Current @ 120V (A)		0.51	1.02	1.53	2.03	2.55	3.06	3.56	4.08	4.6	5.07
Input Current @ 208V (A)		0.29	0.56	0.82	1.11	1.37	1.64	1.93	2.19	2.46	2.75
Input Current @ 240V (A)		0.26	0.48	0.71	0.96	1.19	1.41	1.67	1.89	2.12	2.39
Input Current @ 277V (A)		0.23	0.42	0.61	0.83	1.03	1.23	1.45	1.65	1.84	2.09
Input Current @ 347V (A)		0.17	0.32	0.50	0.64	0.82	1.00	1.14	1.32	1.50	1.68
Input Current @ 480V (A)		0.14	0.24	0.37	0.48	0.61	0.75	0.91	0.99	1.12	1.28
Optics											
T2	4000K/5000K Lumens	6,116	11,951	17,833	23,563	29,195	34,937	41,317	46,814	52,221	57,817
	3000K Lumens	5,414	10,579	15,786	20,858	25,843	30,926	36,574	41,440	46,226	51,180
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T2R	4000K/5000K Lumens	6,493	12,688	18,932	25,015	30,994	37,090	43,863	49,699	55,439	61,380
	3000K Lumens	5,748	11,231	16,759	22,143	27,436	32,832	38,828	43,994	49,075	54,334
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
T3	4000K/5000K Lumens	6,234	12,181	18,176	24,017	29,756	35,609	42,111	47,715	53,225	58,930
	3000K Lumens	5,518	10,783	16,089	21,260	26,340	31,521	37,277	42,237	47,115	52,165
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
T3R	4000K/5000K Lumens	6,372	12,453	18,580	24,550	30,418	36,400	43,048	48,776	54,409	60,239
	3000K Lumens	5,640	11,023	16,447	21,732	26,926	32,221	38,106	43,177	48,163	53,324
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
T4FT	4000K/5000K Lumens	6,270	12,252	18,282	24,156	29,929	35,815	42,356	47,992	53,534	59,271
	3000K Lumens	5,550	10,845	16,183	21,383	26,493	31,703	37,494	42,483	47,388	52,467
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
T4W	4000K/5000K Lumens	6,189	12,094	18,045	23,844	29,543	35,352	41,809	47,372	52,843	58,506
	3000K Lumens	5,479	10,706	15,973	21,107	26,151	31,294	37,009	41,934	46,777	51,790
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL2	4000K/5000K Lumens	6,105	11,931	17,803	23,522	29,144	34,877	41,245	46,734	52,130	57,717
	3000K Lumens	5,404	10,561	15,759	20,822	25,798	30,873	36,510	41,369	46,145	51,091
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
SL3	4000K/5000K Lumens	6,233	12,180	18,174	24,013	29,753	35,604	42,106	47,708	53,218	58,921
	3000K Lumens	5,517	10,782	16,088	21,256	26,337	31,517	37,272	42,231	47,109	52,157
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
SL4	4000K/5000K Lumens	5,922	11,572	17,268	22,816	28,269	33,829	40,006	45,330	50,566	55,984
	3000K Lumens	5,242	10,244	15,286	20,197	25,024	29,945	35,413	40,126	44,761	49,557
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	6,429	12,563	18,746	24,768	30,688	36,723	43,429	49,208	54,891	60,775
	3000K Lumens	5,691	11,121	16,594	21,925	27,165	32,507	38,443	43,559	48,590	53,798
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
5MQ	4000K/5000K Lumens	6,547	12,794	19,090	25,224	31,253	37,400	44,228	50,114	55,902	61,893
	3000K Lumens	5,795	11,325	16,898	22,328	27,665	33,106	39,151	44,361	49,484	54,788
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
5WQ	4000K/5000K Lumens	6,564	12,828	19,141	25,291	31,336	37,499	44,347	50,248	56,051	62,058
	3000K Lumens	5,810	11,355	16,944	22,388	27,739	33,194	39,256	44,480	49,616	54,934
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
SLL/SLR	4000K/5000K Lumens	5,478	10,703	15,970	21,102	26,145	31,286	37,001	41,924	46,765	51,777
	3000K Lumens	4,849	9,474	14,137	18,679	23,144	27,694	32,753	37,111	41,396	45,833
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
RW	4000K/5000K Lumens	6,371	12,449	18,576	24,544	30,411	36,392	43,037	48,764	54,396	60,225
	3000K Lumens	5,640	11,020	16,443	21,726	26,920	32,214	38,096	43,166	48,151	53,311
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
AFL	4000K/5000K Lumens	6,394	12,494	18,644	24,634	30,521	36,524	43,194	48,942	54,593	60,444
	3000K Lumens	5,660	11,080	16,504	21,806	27,017	32,331	38,235	43,323	48,326	53,505
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4

* Nominal data for 70 CRI.

NOMINAL POWER LUMENS (800MA)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		44	85	124	171	210	249	295	334	374	419
Input Current @ 120V (A)		0.39	0.77	1.13	1.54	1.90	2.26	2.67	3.03	3.39	3.80
Input Current @ 208V (A)		0.22	0.44	0.62	0.88	1.06	1.24	1.50	1.68	1.87	2.12
Input Current @ 240V (A)		0.19	0.38	0.54	0.76	0.92	1.08	1.30	1.46	1.62	1.84
Input Current @ 277V (A)		0.17	0.36	0.47	0.72	0.83	0.95	1.19	1.31	1.42	1.67
Input Current @ 347V (A)		0.15	0.24	0.38	0.49	0.63	0.77	0.87	1.01	1.15	1.52
Input Current @ 480V (A)		0.11	0.18	0.29	0.37	0.48	0.59	0.66	0.77	0.88	0.96
Optics											
T2	4000K/5000K Lumens	4,941	9,656	14,408	19,038	23,588	28,227	33,382	37,823	42,191	46,713
	3000K Lumens	4,374	8,547	12,754	16,852	20,880	24,987	29,550	33,481	37,347	41,350
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5
T2R	4000K/5000K Lumens	5,246	10,251	15,296	20,211	25,041	29,966	35,439	40,154	44,791	49,592
	3000K Lumens	4,644	9,074	13,540	17,891	22,166	26,526	31,371	35,544	39,649	43,899
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5
T3	4000K/5000K Lumens	5,037	9,842	14,685	19,404	24,041	28,770	34,024	38,551	43,003	47,612
	3000K Lumens	4,459	8,712	12,999	17,176	21,281	25,467	30,118	34,125	38,066	42,146
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
T3R	4000K/5000K Lumens	5,148	10,061	15,011	19,835	24,576	29,409	34,780	39,408	43,959	48,669
	3000K Lumens	4,557	8,906	13,288	17,558	21,755	26,033	30,787	34,884	38,913	43,082
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4FT	4000K/5000K Lumens	5,066	9,899	14,770	19,516	24,181	28,936	34,221	38,774	43,252	47,888
	3000K Lumens	4,484	8,763	13,074	17,276	21,405	25,614	30,292	34,323	38,287	42,390
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4W	4000K/5000K Lumens	5,000	9,771	14,579	19,264	23,869	28,562	33,779	38,274	42,694	47,269
	3000K Lumens	4,426	8,649	12,905	17,052	21,129	25,283	29,901	33,880	37,793	41,843
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
SL2	4000K/5000K Lumens	4,933	9,639	14,383	19,005	23,547	28,178	33,324	37,758	42,118	46,632
	3000K Lumens	4,367	8,532	12,732	16,823	20,844	24,943	29,498	33,423	37,283	41,279
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
SL3	4000K/5000K Lumens	5,036	9,841	14,683	19,401	24,039	28,766	34,019	38,546	42,997	47,605
	3000K Lumens	4,458	8,711	12,997	17,174	21,279	25,464	30,114	34,121	38,061	42,140
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
SL4	4000K/5000K Lumens	4,784	9,350	13,951	18,434	22,840	27,332	32,323	36,624	40,854	45,232
	3000K Lumens	4,235	8,277	12,349	16,318	20,218	24,194	28,612	32,420	36,164	40,039
	BUG Rating	B1-U0-G2	B1-U0-G3	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G5	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	5,194	10,150	15,145	20,011	24,794	29,670	35,088	39,757	44,349	49,102
	3000K Lumens	4,598	8,985	13,406	17,714	21,948	26,264	31,060	35,193	39,258	43,465
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G3
5MQ	4000K/5000K Lumens	5,290	10,337	15,424	20,380	25,250	30,217	35,734	40,489	45,165	50,006
	3000K Lumens	4,683	9,150	13,653	18,040	22,351	26,748	31,632	35,841	39,980	44,265
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
5WQ	4000K/5000K Lumens	5,304	10,365	15,465	20,434	25,318	30,297	35,830	40,597	45,286	50,139
	3000K Lumens	4,695	9,175	13,690	18,088	22,411	26,819	31,717	35,936	40,087	44,383
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
SL/SLR	4000K/5000K Lumens	4,426	8,648	12,903	17,049	21,124	25,278	29,894	33,872	37,784	41,832
	3000K Lumens	3,918	7,655	11,422	15,092	18,699	22,376	26,462	29,983	33,446	37,030
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
RW	4000K/5000K Lumens	5,147	10,058	15,009	19,830	24,570	29,402	34,771	39,399	43,949	48,658
	3000K Lumens	4,556	8,903	13,286	17,554	21,749	26,027	30,779	34,876	38,904	43,072
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4
AFL	4000K/5000K Lumens	5,166	10,095	15,063	19,903	24,659	29,509	34,898	39,542	44,108	48,835
	3000K Lumens	4,573	8,936	13,334	17,618	21,828	26,121	30,892	35,003	39,044	43,229
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3

* Nominal data for 70 CRI.

NOMINAL POWER LUMENS (600MA)

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		34	66	96	129	162	193	226	257	290	323
Input Current @ 120V (A)		0.30	0.58	0.86	1.16	1.44	1.73	2.03	2.33	2.59	2.89
Input Current @ 208V (A)		0.17	0.34	0.49	0.65	0.84	0.99	1.14	1.30	1.48	1.63
Input Current @ 240V (A)		0.15	0.30	0.43	0.56	0.74	0.87	1.00	1.13	1.30	1.43
Input Current @ 277V (A)		0.14	0.28	0.41	0.52	0.69	0.81	0.93	1.04	1.22	1.33
Input Current @ 347V (A)		0.11	0.19	0.30	0.39	0.49	0.60	0.69	0.77	0.90	0.99
Input Current @ 480V (A)		0.08	0.15	0.24	0.30	0.38	0.48	0.53	0.59	0.71	0.77
Optics											
T2	4000K/5000K Lumens	4,029	7,874	11,749	15,525	19,235	23,019	27,222	30,844	34,406	38,093
	3000K Lumens	3,566	6,970	10,400	13,743	17,027	20,376	24,097	27,303	30,456	33,720
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G4
T2R	4000K/5000K Lumens	4,278	8,360	12,474	16,482	20,421	24,437	28,900	32,745	36,527	40,441
	3000K Lumens	3,787	7,400	11,042	14,590	18,077	21,632	25,582	28,986	32,334	35,798
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
T3	4000K/5000K Lumens	4,107	8,026	11,976	15,824	19,605	23,461	27,746	31,438	35,068	38,827
	3000K Lumens	3,636	7,105	10,601	14,007	17,354	20,768	24,561	27,829	31,042	34,370
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
T3R	4000K/5000K Lumens	4,198	8,205	12,242	16,175	20,041	23,982	28,363	32,137	35,848	39,689
	3000K Lumens	3,716	7,263	10,837	14,318	17,740	21,229	25,107	28,448	31,733	35,133
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
T4FT	4000K/5000K Lumens	4,131	8,072	12,045	15,915	19,719	23,597	27,907	31,620	35,272	39,052
	3000K Lumens	3,657	7,145	10,662	14,088	17,455	20,888	24,703	27,990	31,223	34,569
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
T4W	4000K/5000K Lumens	4,077	7,968	11,889	15,710	19,465	23,292	27,546	31,212	34,816	38,547
	3000K Lumens	3,609	7,053	10,524	13,906	17,230	20,618	24,384	27,629	30,819	34,122
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
SL2	4000K/5000K Lumens	4,022	7,861	11,729	15,498	19,202	22,979	27,175	30,791	34,347	38,028
	3000K Lumens	3,560	6,959	10,383	13,719	16,998	20,341	24,055	27,256	30,404	33,662
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
SL3	4000K/5000K Lumens	4,106	8,025	11,974	15,821	19,603	23,458	27,742	31,433	35,064	38,821
	3000K Lumens	3,635	7,104	10,599	14,005	17,353	20,765	24,557	27,824	31,039	34,364
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
SL4	4000K/5000K Lumens	3,902	7,624	11,377	15,033	18,626	22,289	26,359	29,867	33,316	36,886
	3000K Lumens	3,454	6,749	10,071	13,307	16,488	19,730	23,333	26,438	29,491	32,651
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G3	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	4,236	8,277	12,351	16,319	20,219	24,196	28,614	32,422	36,166	40,042
	3000K Lumens	3,750	7,327	10,933	14,446	17,898	21,418	25,329	28,700	32,014	35,445
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3
5MQ	4000K/5000K Lumens	4,314	8,429	12,578	16,619	20,591	24,641	29,141	33,019	36,832	40,779
	3000K Lumens	3,819	7,461	11,134	14,711	18,227	21,812	25,796	29,228	32,604	36,098
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
5WQ	4000K/5000K Lumens	4,325	8,452	12,611	16,664	20,646	24,707	29,219	33,106	36,930	40,888
	3000K Lumens	3,828	7,482	11,163	14,751	18,276	21,871	25,865	29,305	32,690	36,194
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
SLL/SLR	4000K/5000K Lumens	3,609	7,052	10,522	13,903	17,226	20,613	24,378	27,622	30,812	34,114
	3000K Lumens	3,195	6,242	9,314	12,307	15,248	18,247	21,579	24,451	27,275	30,198
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
RW	4000K/5000K Lumens	4,197	8,202	12,239	16,171	20,036	23,977	28,356	32,129	35,839	39,680
	3000K Lumens	3,715	7,260	10,834	14,315	17,736	21,224	25,101	28,441	31,725	35,125
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
AFL	4000K/5000K Lumens	4,213	8,232	12,284	16,230	20,109	24,064	28,459	32,246	35,969	39,824
	3000K Lumens	3,729	7,287	10,874	14,367	17,800	21,301	25,192	28,544	31,840	35,252
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3

* Nominal data for 70 CRI.

CONTROL OPTIONS

0-10V (DIM)

This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (P, 4 and 4N7)

Optional button-type photocontrol (P) and photocontrol receptacles (4 and 4N7) provide a flexible solution to enable “dusk-to-dawn” lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the 4N7 receptacle.

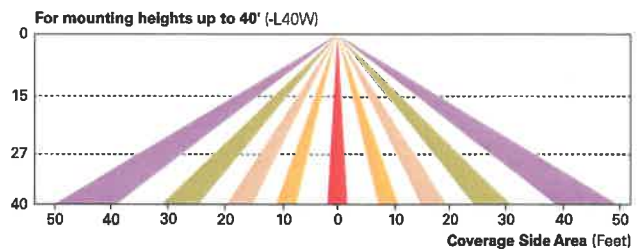
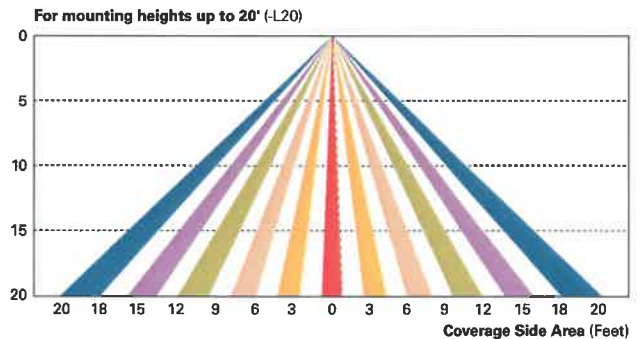
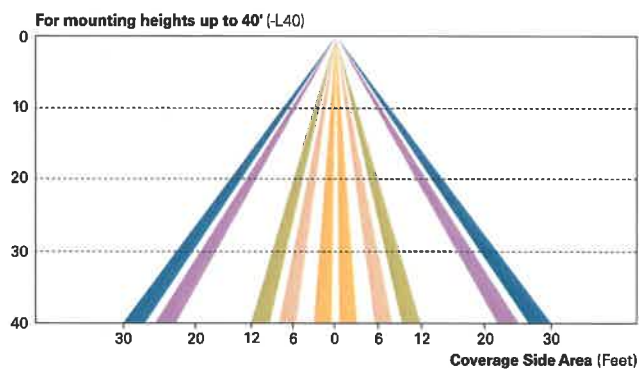
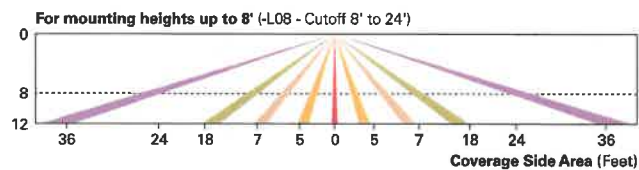
After Hours Dim (AHD)

This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a “dusk-to-dawn” period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

Dimming Occupancy Sensor (MS/DIM-LXX, MS/X-LXX and MS-LXX)

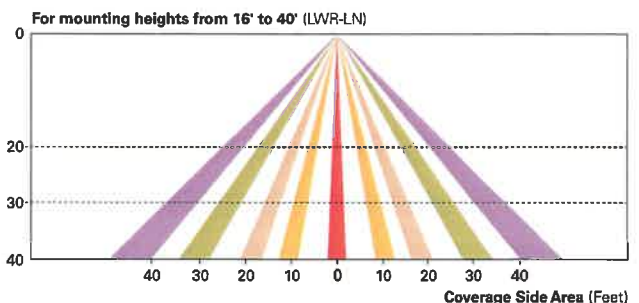
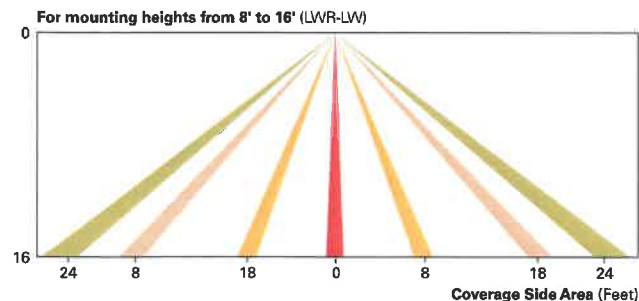
These sensors are factory installed in the luminaire housing. When the MS/DIM-LXX sensor option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MS/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of five minutes. The MS-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity. The MS/X-LXX is also preset for five minutes and only controls the specified number of light engines to maintain steady output from the remaining light engines.

These occupancy sensors includes an integral photocell that can be activated with the FSIR-100 accessory for “dusk-to-dawn” control or daylight harvesting - the factory preset is OFF. The FSIR-100 is a wireless tool utilized for changing the dimming level, time delay, sensitivity and other parameters. A variety of sensor lens are available to optimize the coverage pattern for mounting heights from 8'-40'.



LumaWatt Pro Wireless Control and Monitoring System (LWR-LW and LWR-LN)

The LumaWatt Pro system is a peer-to-peer wireless network of luminaire-integral sensors for any sized project. Each sensor is capable of motion and photo sensing, metering power consumption and wireless communication. The end-user can securely create and manage sensor profiles with browser-based management software. The software will automatically broadcast to the sensors via wireless gateways for zone-based and individual luminaire control. The LumaWatt Pro software provides smart building solutions by utilizing the sensor to provide easy-to-use dashboard and analytic capabilities such as improved energy savings, traffic flow analysis, building management software integration and more. For additional details, refer to the LumaWatt product guides.



LumenSafe Integrated Network Security Camera (LD)

Eaton brings ease of camera deployment to a whole new level. No additional wiring is needed beyond providing line power to the luminaire. A variety of networking options allows security integrators to design the optimal solution for active surveillance. As the ideal solution to meet the needs for active surveillance, the LumenSafe integrated network camera is a streamlined, outdoor-ready fixed dome that provides HDTV 1080p video. This IP camera is optimally designed for deployment in the video management system or security software platform of choice.

ORDERING INFORMATION


Sample Number: GAN-AF-04-LED-U-T3R-BZ

Product Family ^{1,2}	Light Engine	Number of Light Squares ³	Lamp Type	Voltage	Distribution	Color	Mounting
GAN=Galleon	AF=1A Drive Current	01=1 02=2 03=3 04=4 05=5 ⁴ 06=6 07=7 ⁵ 08=8 ⁵ 09=9 ⁵ 10=10 ⁶	LED=Solid State Light Emitting Diodes	U=Universal (120-277V) 8=480V ^{7,8} 9=347V ⁷	T2=Type II T2R=Type II Roadway T3=Type III T3R=Type III Roadway T4FT=Type IV Forward Throw T4W=Type IV Wide 5NQ=Type V Narrow 5MQ=Type V Square Medium 5WQ=Type V Square Wide SL2=Type II w/Spill Control SL3=Type III w/Spill Control SL4=Type IV w/Spill Control SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right RW=Rectangular Wide Type I AFL=Automotive Frontline	AP=Grey BZ=Bronze BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White	[Blank]=Arm for Round or Square Pole EA=Extended Arm ⁹ MA=Mast Arm Adapter ¹⁰ WM=Wall Mount Arm (Standard Length) ¹¹ QMEA=Quick Mount Arm (Extended Length) ¹²
Options (Add as Suffix)					Accessories (Order Separately)		
7030=70 CRI 3000K ¹³ 7050=70 CRI 5000K ¹³ 7060=70 CRI 6000K ¹³ 8030=80 CRI 3000K ¹³ 600=Drive Current Factory Set to 600mA ¹⁴ 800=Drive Current Factory Set to 800mA ¹⁴ 1200=Drive Current Factory Set to 1200mA ^{14,15} 2L=Two Circuits ^{16,17} DIM=External 0-10V Dimming Leads 3=Three-Position Terminal Block P=Button Type Photocontrol (120, 208, 240 or 277V) 4=NEMA Twistlock Photocontrol Receptacle MS/X-L08=Bi-Level Motion Sensor, Maximum 8' Mounting Height ^{18,20} AHD145=After Hours Dim, 5 Hours ¹⁸ AHD245=After Hours Dim, 6 Hours ¹⁸ AHD255=After Hours Dim, 7 Hours ¹⁸ AHD355=After Hours Dim, 8 Hours ¹⁸ HA=50°C High Ambient MS/DIM-L08=Motion Sensor for Dimming Operation, Maximum 8' Mounting Height ¹⁸ MS/DIM-L20=Motion Sensor for Dimming Operation, 9' - 20' Mounting Height ¹⁸ MS/DIM-L40=Motion Sensor for Dimming Operation, 21' - 40' Mounting Height ¹⁸ MS/X-L08=Bi-Level Motion Sensor, Maximum 8' Mounting Height ^{18,20} MS/X-L20=Bi-Level Motion Sensor, 9' - 20' Mounting Height ^{18,20} MS/X-L40=Bi-Level Motion Sensor, 21' - 40' Mounting Height ^{18,20} LWR-LW=LumaWatt Pro Wireless Sensor, Wide Lens for 8' - 16' Mounting Height ^{21,(A)} LWR-LN=LumaWatt Pro Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height ^{21,(A)} L90=Optics Rotated 90° Left R90=Optics Rotated 90° Right MT=Factory Installed Mesh Top TH=Tool-less Door Hardware LCF=Light Square Trim Plate Painted to Match Housing ²² HSS=Factory Installed House Side Shield ²³ CE=CE Marking ²⁴					OA/RA1016=NEMA Photocontrol Multi-Tap - 105-285V OA/RA1027=NEMA Photocontrol - 480V OA/RA1201=NEMA Photocontrol - 347V OA/RA1013=Photocontrol Shorting Cap OA/RA1014=120V Photocontrol SA1252=10kV Surge Module Replacement SA1036-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon SA1037-XX=2 @ 180° Tenon Adapter for 2-3/8" O.D. Tenon SA1197-XX=3 @ 120° Tenon Adapter for 2-3/8" O.D. Tenon SA1188-XX=4 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon SA1189-XX=2 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon SA1190-XX=3 @ 90° Tenon Adapter for 2-3/8" O.D. Tenon SA1191-XX=2 @ 120° Tenon Adapter for 2-3/8" O.D. Tenon SA1038-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon SA1039-XX=2 @ 180° Tenon Adapter for 3-1/2" O.D. Tenon SA1192-XX=3 @ 120° Tenon Adapter for 3-1/2" O.D. Tenon SA1193-XX=4 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon SA1194-XX=2 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon SA1195-XX=3 @ 90° Tenon Adapter for 3-1/2" O.D. Tenon FSIR-100=Wireless Configuration Tool for Occupancy Sensor ²⁵ GAN-MT1=Field Installed Mesh Top for 1-4 Light Squares GAN-MT2=Field Installed Mesh Top for 5-6 Light Squares GAN-MT3=Field Installed Mesh Top for 7-8 Light Squares GAN-MT4=Field Installed Mesh Top for 9-10 Light Squares GLEON-QM=Quick Mount Arm Kit ¹¹ GLEON-QM-EA=Quick Mount Extended Length Arm Kit ¹² LS/HSS=Field Installed House Side Shield ^{26,28}		

NOTES:

- Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
- DesignLights Consortium* Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details.
- Standard 4000K CCT and minimum 70 CRI.
- Not compatible with MS4-LXX or MS7-LXX sensors.
- Not compatible with extended quick mount arm (QMEA).
- Not compatible with standard quick mount arm (QM) or extended quick mount arm (QMEA).
- Requires the use of a step down transformer when combined with sensor options. Not available with sensor at 1200mA. Not available in combination with the HA high ambient and sensor options at 1A.
- Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
- May be required when two or more luminaires are oriented on a 90° or 120° drilling pattern. Refer to arm mounting requirement table.
- Factory installed.
- Maximum 8 light squares.
- Maximum 6 light squares.
- Use dedicated IES files for 3000K, 5000K, 6000K when performing layouts. These files are published on the Galleon luminaire product page on the website.
- 1 Amp standard. Use dedicated IES files for 600mA, 800mA and 1200mA when performing layouts. These files are published on the Galleon luminaire product page on the website.
- Not available with HA option.
- 2L is not available with MS/X or MS/DIM at 347V or 480V. 2L in AF-02 through AF-04 requires a larger housing, normally used for AF-05 or AF-06.
- Not available with LumaWatt Pro wireless sensors.
- Requires the use of P photocontrol or the 4N7 or 4 photocontrol receptacle with photocontrol accessory. See After Hours Dim supplemental guide for additional information.
- The FSIR-100 accessory is required to adjust parameters.
- Available in 2, 3, 4 or 6 Light Square configurations. Replace "X" with number of Light Squares in low output mode. Not available with dimming leads. No terminal block with bi-level operation.
- LumaWatt Pro wireless sensors are factory installed only requiring network components LWP-EM-1, LWP-GW-1, and LWP-PoE8 in appropriate quantities. See www.eaton.com/lighting for LumaWatt Pro application information.
- Not available with house side shield (HSS).
- Only for use with SL2, SL3, SL4 and AFL distributions. The Light Square trim plate is painted black when the HSS option is selected.
- CE is not available with the LWR, MS, MS/X, MS/DIM, P, 4 or 4N7 options. Available in 120-277V only.
- This tool enables adjustment of parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Eaton for more information.
- One required for each Light Square.

LumenSafe Integrated Network Security Camera Technology Options (Add as Suffix)

Product Family	Camera Type	Data Backhaul
L=LumenSafe Technology* 	D=Dome Camera	C=Cellular, Customer Installed SIM Card A=Cellular, Factory Installed AT&T SIM Card V=Cellular, Factory Installed Verizon SIM Card S=Cellular, Factory Installed Sprint SIM Card R=Cellular, Factory Installed Rogers SIM Card W=Wi-Fi Networking w/ Omni-Directional Antenna E=Ethernet Networking

*Consult LumenSafe system pages for additional details and compatibility. Not available with 9-10 light square housing. Not available with 347V, 480V or high ambient options.

Submittal: 090

Revision: 0

Date Submitted: 7/28/2020

Response Due By: 8/11/2020



Project: 16051 - ODOT 173000 CUY IR 490/SR010 (OC3)

Description: BU27 – Pedestrian & Decorative Light Poles

To: Chris Hirzel
Cleveland Public Power, (CPP)

Email: chirzel@cpp.org

From: Oliver Bluestone
Kokosing Construction Company, Inc.

Email: obluestone@kokosing.biz

Submittal Type:	Submitted For:
<input type="checkbox"/> Engineered Drawings	<input checked="" type="checkbox"/> Approval
<input type="checkbox"/> Shop Drawings	<input type="checkbox"/> Record
<input type="checkbox"/> Working Drawings	<input type="checkbox"/> Other Verification
<input type="checkbox"/> CPM Schedule	
<input type="checkbox"/> Material Certifications / Test Results	Sent Via:
<input type="checkbox"/> Reports	<input checked="" type="checkbox"/> Attached (Electronic)
<input checked="" type="checkbox"/> Product Data/Samples	<input type="checkbox"/> Attached (Hard Copy)
<input type="checkbox"/> Other: Meeting Request	

Submittal #	Copies	Spec #	Rev. #	Description	Status
090	1	625	0	090 – BU27 – Pedestrian & Decorative Light Poles	For Approval

Comments:

Please see the attached submittals for the pedestrian and decorative light poles called for in BU27. The following cut sheets are attached for your review / approval:

- 12' Pedestrian Poles
- 15' Pedestrian Poles
- 27' Decorative Poles
- 30' Decorative Poles

Let me know if you have any questions regarding this submittal.

Signed: Oliver Bluestone



ODOT 173000
 12' PEDESTRIAN POLES ON
 BRIDGES
 PT# SS4-12-AB-DBZ-19

19845 US Highway 76
 Newberry, SC 29108
 T: 877-959-7678
 F: 803-276-8940
www.whatley.com

STRAIGHT SQUARE COMPOSITE POLES



Straight Square Composite Poles offer a unique solution to today's demanding requirements for lighting standards that enhance design. Their contemporary look is favored by architects, engineers and planners.

BENEFITS

- Ease of installation
- Lightweight for easy handling
- Composite material will not rust, rot or corrode
- Dent resistant
- Non-conductive

4" SQUARE - SS4 SERIES

- 4" x 4" Straight Square
- Mounting Heights to 25'
- Anchor Base or Direct Embedded
- Smooth Finish
- Multiple Color Options
- Tenon Top or Capped for Side Drilling
- Anchor Bolts Included (5/8" x 21" x 3")
- Base Cover Included
- 8" - 12.5" Bolt Circle

5" SQUARE - SS5 SERIES

- 5" x 5" Straight Square
- Mounting Heights to 30'
- Anchor Base or Direct Embedded
- Smooth Finish
- Multiple Color Options
- Tenon Top or Capped for Side Drilling
- Anchor Bolts Included (3/4" x 30" x 3")
- Base Cover Included
- 10" - 12.5" Bolt Circle

SS4: Straight Square Composite Pole 4" Profile

Anchor Base (AB) or Direct Embedded (DE)	Mounting Height (ft)	Effective Projected Area (EPA) (sq ft) ANSI 136.20-2012				Anchor Base		Direct Embedded	
		90 MPH	100 MPH	110 MPH	120 MPH	Bolt Hole Circle (in)	Weight (lbs)	Shaft Length (ft)	Weight (lbs)
SS410	10'	21.5	17.0	13.7	11.1	8" - 12.5"	27#	13'	28#
SS415	15'	12.9	9.8	7.5	5.7	8" - 12.5"	37#	19'	40#
SS420	20'	7.4	5.2	3.5	2.3	8" - 12.5"	47#	25'	55#
SS425	25'	3.8	2.1	0.8	-	8" - 12.5"	57#	30'	70#

SS5: Straight Square Composite Pole 5" Profile

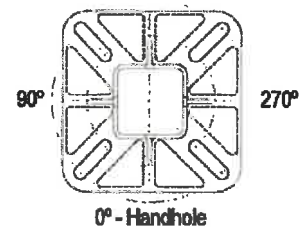
Anchor Base (AB) or Direct Embedded (DE)	Mounting Height (ft)	Effective Projected Area (EPA) (sq ft) ANSI 136.20-2012				Anchor Base		Direct Embedded	
		90 MPH	100 MPH	110 MPH	120 MPH	Bolt Hole Circle (in)	Weight (lbs)	Shaft Length (ft)	Weight (lbs)
SS515	15'	28.7	22.1	17.3	13.6	10" - 12.5"	99#	19'	93#
SS520	20'	17.5	12.7	9.2	6.5	10" - 12.5"	125#	25'	123#
SS525	25'	10.2	6.5	3.8	1.7	10" - 12.5"	150#	30'	154#
SS530	30'	5.0	2.0	-	-	10" - 12.5"	176#	35'	180#

Product improvements may be made without prior notice.

- Reduced Lead Time (higher quantities may require longer lead time - consult factory)
- 30' Poles require shipment by flatbed and will ship first available flatbed.
- Freight Allowed \$2,000.00, Prepaid & add under \$2,000.00 SS4_AB and SS5_AB
- Include anchor bolts and base cover
- SS4_AB and SS5_AB - Pre-shipped Anchor Bolts are prepaid and add
- Standard colors are Black, Bronze, and Grey
- Standard tenon sizes are 2 3/8" and 3"
- For cut down poles use full length pole price (Ex. SS522AB use SS525AB price)
- Contact factory for pricing regarding options or modifications
- Advise Size, Location and Orientation of Drilling Requirements (Ref. Drawings)

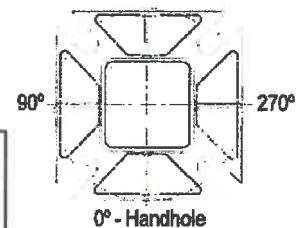
4 x 4 Anchor Base

180°



5 x 5 Anchor Base

180°



SS	5	20	AB	DBZ	3T
STRAIGHT SQUARE	SERIES 5 = 5" Square 4 = 4" Square	MOUNTING HEIGHT 10 = 10' * 12 = 12' 20 = 20' 25 = 25' 30 = 30' ** *Available in 4" only **Available in 5" only	AB = Anchor Base DE = Direct Embedded	COLOR BLK = Black GRY = Grey DBZ = Bronze *Other Colors Available for Additional Charges and may require longer lead time.	POLE TOP CONFIGURATION 2T = 2 3/8" x 3 3/4" Tenon 3T = 3" x 3 3/4" Tenon 18 = 1 @ 90 Degree 29 = 2 @ 90 Degree 39 = 3 @ 90 Degree 49 = 4 @ 90 Degree 28 = 2 @ 180 Degree ND = Capped (No Drilling)



ODOT 173000
 15' PEDESTRIAN POLES ON
 FOUNDATION (SUP)
 PT# SS4-15-AB-DBZ-19

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4" SQUARE - SS4 SERIES

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5" SQUARE - SS5 SERIES

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SS4: Straight Square Composite Pole 4" Profile

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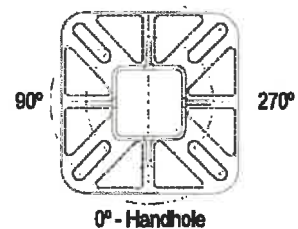
Anchor Base (AB) or Direct Embedded (DE)	Mounting Height (ft)	Effective Projected Area (EPA) (sq ft) ANSI 136.20-2012				Anchor Base		Direct Embedded	
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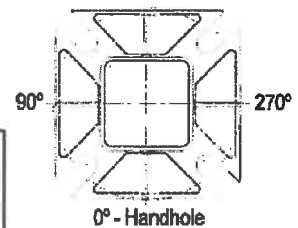
4 x 4 Anchor Base

180°



5 x 5 Anchor Base

180°



SS

STRAIGHT
SQUARE

5

SERIES

5 = 5" Square
4 = 4" Square

20

MOUNTING
HEIGHT

10 = 10' *
15 = 15'
20 = 20'
25 = 25'
30 = 30' **

*Available in 4" only
**Available in 5" only

AB

AB = Anchor
Base
DE = Direct
Embedded

DBZ

COLOR

BLK = Black
GRY = Grey
DBZ = Bronze

*Other Colors Available
for Additional Charges
and may require
longer lead time.

3T

POLE TOP CONFIGURATION

2T = 2 3/8" x 3 3/4" Tenon
3T = 3" x 3 3/4" Tenon
19 = 1 @ 90 Degree
29 = 2 @ 90 Degree
39 = 3 @ 90 Degree
49 = 4 @ 90 Degree
28 = 2 @ 180 Degree
ND = Capped (No Drilling)

AGENCY: Lang Sales
PROJECT: Cleveland
QUOTE#: 171207LANG-1

POLE

Model: TR52
Top Dia: 7.1"
Taper: .14"/ft

Construction: Fiberglass Composite 72% Glass
& 28% Resin consisting
of alternating 89° Hoops & 18°
Helicals with Veil outer layer

Anchor Base: Plate-13.25"x13.25x3/4" ASTM A36 Slots for
1" bolts. Hot Dipped Galvanized
Tube- 9.25" OD 1/4" wall ASTM A53 Galvanized

Bolt Circle: 11"-15"

Tenon: 3" OD 3 1/2" Exposed Length, ASTM A53 Galvanized
Hand Hole: 2 1/2"x5"@23" above grade. Cover painted to
match pole.

Anchor Bolts: 1-8x36"x4" Hot Dipped Galvanized
Paint: UV & Cleaning chemical resistant
Color: Dark Bronze

Option 1: RC Cutout with cover painted to match pole
Option 2: 15'-23' area reinforced for future attachments
by others.

Option 3: Full length pull wire.

MAX Attachment Weight: 300 lbs

MAX Attachment EPA: 24.5 @ 90 mph ANSI

Pole Weight: 214 lbs approx

BASE COVER

Model: BC180-S10.3-E

Style: 2-Piece

Material: Elastomeric Urethane

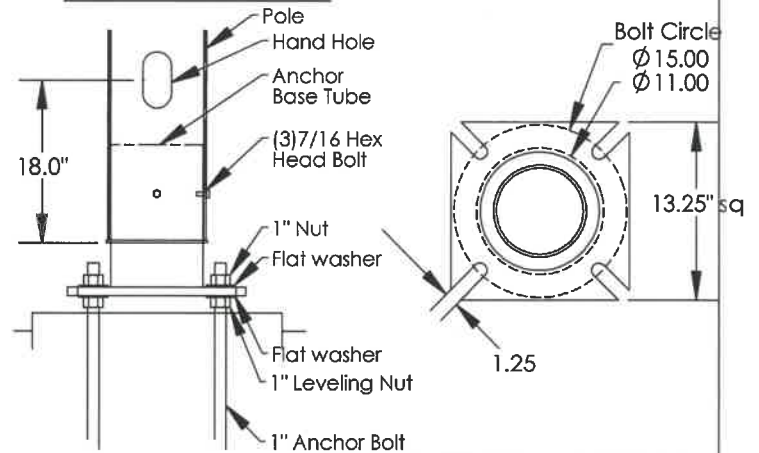
Color: Dark Bronze

Height: 17.0"

Width: 18.5" sq

Weight: 22.5 lbs

ANCHOR BASE DETAIL

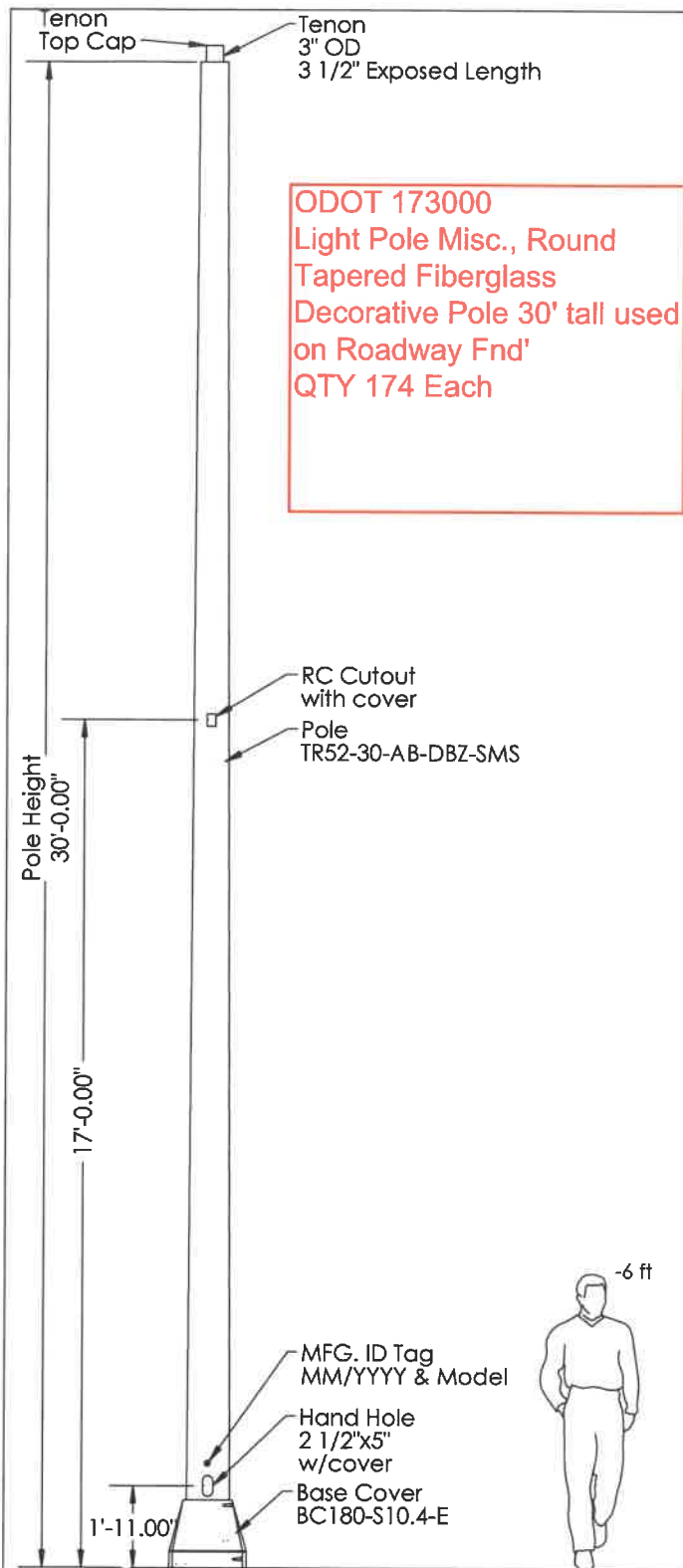


WHATLEY, INC. A Valmont Company
19845 US Highway 76
Newberry, SC. 29108
phone: (877) 959-7678
fax: (803) 276-8940
web: www.whatley.com

REV	DESCRIPTION	DATE
B	Revised Construction	6/17/20

PART NO.	TR7027AES9903CL	DESCRIPTION:	Pole Assembly Group I 1-1
SCALE:	1:44	REV.	B
SIZE:	A	TR52-27-AB-DBZ-SMS-99-RC	WDN1829

MATERIAL:	Noted	DOCUMENTATION	INITIAL	DATE	UNLESS OTHERWISE NOTED:	PROPRIETARY AND CONFIDENTIAL
FINISH:	Smooth	DRAWN	JTC	12/7/17	DIMENSIONS ARE IN INCHES	THE INFORMATION CONTAINED IN THIS
DO NOT SCALE DRAWING		QUOTE REQUEST			TOLERANCES:	DRAWING IS THE SOLE PROPERTY OF
		TOOLING REQUEST			DECIMAL .XX ± .03	WHATLEY, INC. ANY REPRODUCTION IN
		FIRST ARTICLE REQUEST			DECIMAL .XXX ± .010	PART OR AS A WHOLE WITHOUT THE
		PRODUCTION RELEASE			ANGLE ± 1/2	WRITTEN PERMISSION OF WHATLEY, INC. IS
						PROHIBITED.



AGENCY: Lang Sales
PROJECT: Cleveland
QUOTE#: 171207LANG-1

POLE

Model: TR52

Top Dia: 6.6"

Taper: .14"/ft

Construction: Fiberglass Composite 72% Glass & 28% Epoxy Resin consisting of alternating 89° Hoops & 18° Helicals with Veil outer layer

Anchor Base: Plate-13.25"x13.25"x3/4" ASTM A36 Slots for 1" bolts. Hot Dipped Galvanized

Bolt Circle: 11"-15"

Tenon: 3" OD 3 1/2" Exposed Length ASTM A53 Galvanized Hand Hole: 2 1/2"x5"@23" above grade. Cover painted to match pole.

Anchor Bolts: 1-8x36"x4" Hot Dipped Galvanized Paint: UV & Cleaning chemical resistant

Color: Whatley Dark Bronze

Option 1: RC Cutout with cover painted to match pole

Option 2: 15'-23" area reinforced for future attachments by others.

Option 3: Full length pull wire.

Option 4: MFG ID Tag

Option 5: Tenon Top Cap

MAX Attachment Weight: 300 lbs

MAX Attachment EPA: 17.8 @ 100 mph ANSI

Pole Weight: 227 lbs approx

BASE COVER

Model: BC-180

Style: 2-Piece

Material: Elastomeric Urethane

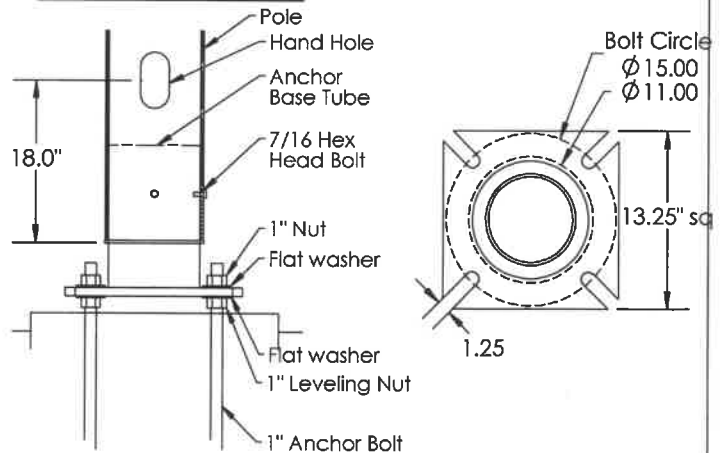
Color: Whatley Dark Bronze

Height: 17.0"

Width: 18.5" sq

Weight: 21.5 lbs approx

ANCHOR BASE DETAIL



WHATLEY, INC. A Valmont Company

19845 US Highway 76

Newberry, SC. 29108

phone: (877) 959-7678

fax: (803) 276-8940

web: www.whatley.com

REV	DESCRIPTION	DATE

PART NO. TR7030AES9903CL

DESCRIPTION: Pole Assembly Group I 1-2

SCALE: 1:44

SIZE: A

REV.

TR52-30-AB-DBZ-SMS-99-RC WDN1829

MATERIAL: Noted

FINISH: Smooth

DO NOT SCALE DRAWING

DOCUMENTATION	INITIAL	DATE
DRAWN	JTC	12/7/17
QUOTE REQUEST		
TOOLING REQUEST		
FIRST ARTICLE REQUEST		
FIRST ARTICLE INSPECTION		
PRODUCTION RELEASE		

UNLESS OTHERWISE NOTED:

DIMENSIONS ARE IN INCHES

TOLERANCES:
DECIMAL .XX ± .03
DECIMAL .XXX ± .010
ANGLE ± 1/2

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Submittal: 091

Revision: 0

Date Submitted: 7/28/2020

Response Due By: 8/11/2020



Project: 16051 - ODOT 173000 CUY IR 490/SR010 (OC3)

Description: BU27 - Moda Light for Bridge Pylons

To: Chris Hirzel
Cleveland Public Power (CPP)

Email: chirzel@cpp.org

From: Oliver Bluestone
Kokosing Construction Company, Inc.

Email: obluestone@kokosing.biz

Submittal Type:	Submitted For:
<input type="checkbox"/> Engineered Drawings	<input checked="" type="checkbox"/> Approval
<input type="checkbox"/> Shop Drawings	<input type="checkbox"/> Record
<input type="checkbox"/> Working Drawings	<input type="checkbox"/> Other
<input type="checkbox"/> CPM Schedule	
<input type="checkbox"/> Material Certifications / Test Results	Sent Via:
<input type="checkbox"/> Reports	<input checked="" type="checkbox"/> Attached (Electronic)
<input checked="" type="checkbox"/> Product Data/Samples	<input type="checkbox"/> Attached (Hard Copy)
<input type="checkbox"/> Other:	

Submittal #	Copies	Spec #	Rev. #	Description	Status
091	1	625	0	091 – BU27 - Moda Light for Bridge Pylons	For Approval

Comments:

Please see the attached submittal for the moda light system for bridge pylons called for in BU 27 for your review / approval.

Let me know if you have any questions regarding this submittal.

Signed: 

M

O

D

A

moda**LIGHT**

3280 W. Sunset Rd. Las Vegas, NV 89118
 T: 702 407 7775 | F: 702 407 7773
 www.modalight.com | © 2020

Odot Opportunity Corridor Gexpro

Submittal Drawings

SHEET INDEX

L000	Title Page
L001	Schedules and Notes
L100	Fixture Runs
L201	Wiring Details

Orders will only be accepted per these
approved submittals, not per plans and
specifications.

4

Project Name:

Odot Opportunity
Corridor Gexpro

Contractor:

Moda Representative:

3

Product Family:

Aquaflex

Notes:

2

Date: July 9, 2020

Scale: Not To Scale

Drawn: 07/09/20 ED

Revised:

1

Due to continuous improvements and
innovations, specifications may change without
notice. Please refer to our website for current
technical data. These figures are provided as a
guideline only and may vary with differing
power supplies and installations. All rights
reserved. E&OE.

Title Page

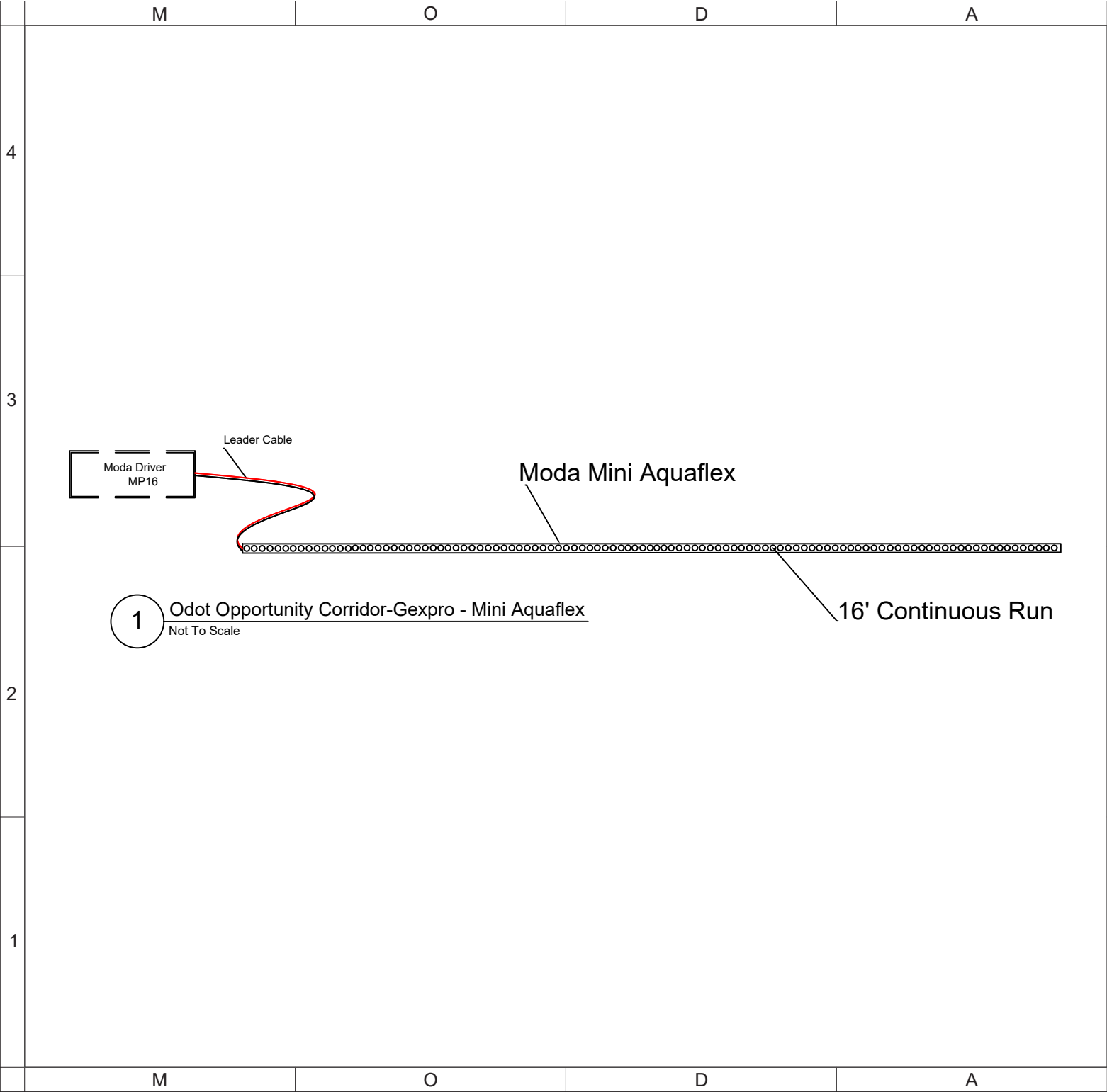
L000

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Project Name:
Odote Opportunity
Corridor Gexpro

Contractor:

Moda Representative:

Product Family:
Aquaflex

Notes:

Date: July 9, 2020

Scale: Not To Scale

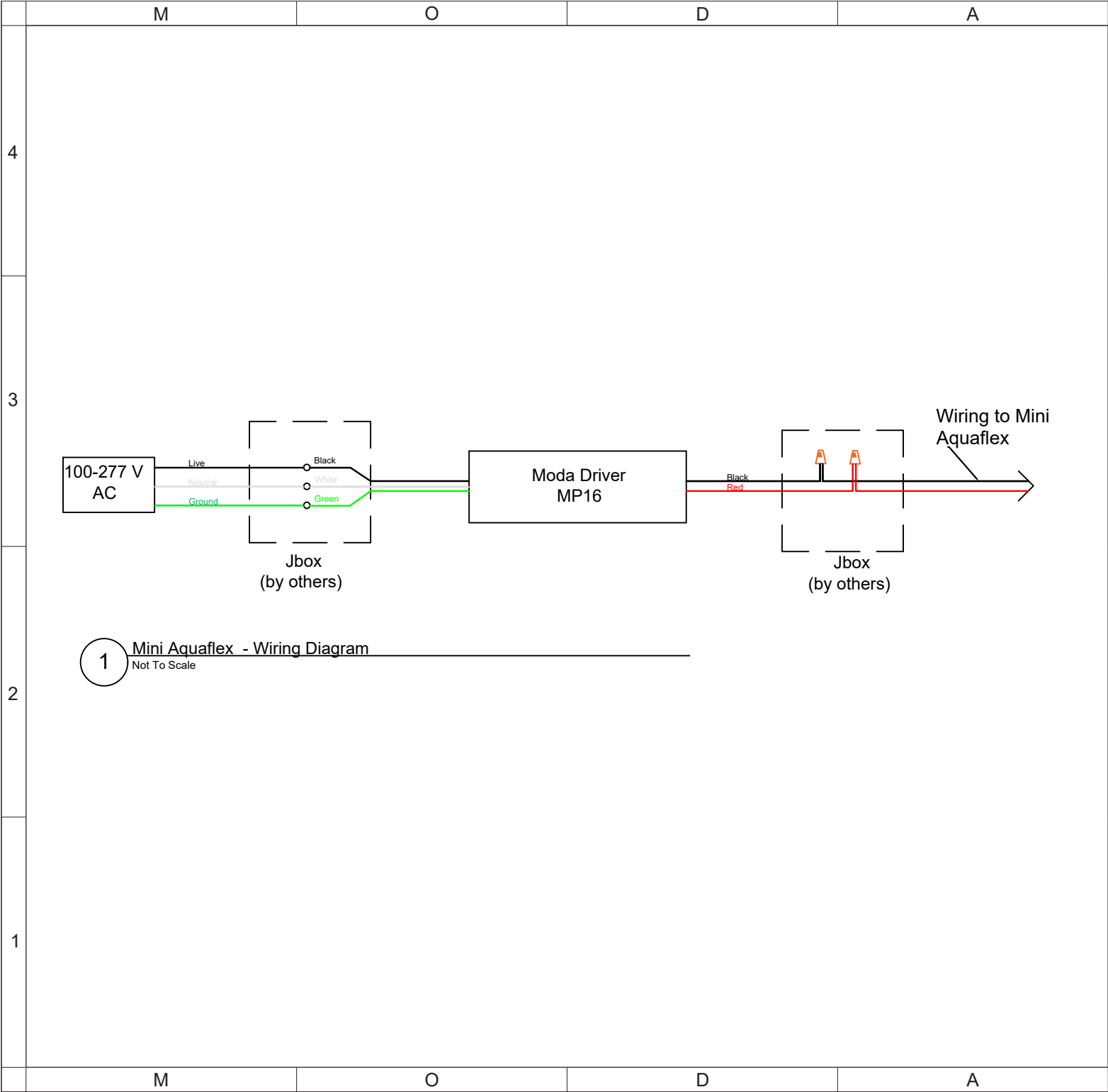
Drawn: 07/09/20 ED

Revised:

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Fixture Runs

L100



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4 Project Name:
Odot Opportunity
Corridor Gexpro

Contractor:

Moda Representative:

3 Product Family:
Aquaflex

Notes:

Date: July 9, 2020

Scale: Not To Scale

Drawn: 07/09/20 ED

Revised:

1 Due to continuous improvements and innovations, specifications may change without notice. Please refer to our website for current technical data. These figures are provided as a guideline only and may vary with differing power supplies and installations. All rights reserved. E&OE.

Wiring Detail

L201

Submittal: 092

Revision: 0

Date Submitted: 7/28/2020

Response Due By: 8/11/2020



Project: 16051 - ODOT 173000 CUY IR 490/SR010 (OC3)

Description: BU27 - Lumen Facade - In Ground Spotlight

To: Chris Hirzel
Cleveland Public Power (CPP)

Email: chirzel@cpp.org

From: Oliver Bluestone
Kokosing Construction Company, Inc.

Email: obluestone@kokosing.biz

Submittal Type:	Submitted For:
<input checked="" type="checkbox"/> Engineered Drawings	<input checked="" type="checkbox"/> Approval
<input type="checkbox"/> Shop Drawings	<input type="checkbox"/> Record
<input type="checkbox"/> Working Drawings	<input type="checkbox"/> Other
<input type="checkbox"/> CPM Schedule	
<input type="checkbox"/> Material Certifications / Test Results	Sent Via:
<input type="checkbox"/> Reports	<input checked="" type="checkbox"/> Attached (Electronic)
<input type="checkbox"/> Product Data/Samples	<input type="checkbox"/> Attached (Hard Copy)
<input type="checkbox"/> Other:	

Submittal #	Copies	Spec #	Rev. #	Description	Status
092	1	625	0	092 – BU27 - Lumen Facade - In Ground Spotlight	For Approval

Comments:

Please see the attached submittal for the Lumen Façade, in ground spotlight for bridge pylons called for in BU27 for your review / approval.

Let me know if you have any questions regarding this submittal.

Signed: 



Date: Jun 24, 2020

Lighting Dynamics, Inc.
211 Springside Drive
Akron OH 44333
Phone: (330) 665-9090
Fax: (330) 665-9191

Job Name
CLEVELAND OPPORTUNITY CORRIDOR ENHANCEMENT PLANS - Lumenpulse Revision
5/8/20
LDI20-515959

Bid Date
May 8, 2020

Submittal Date
Jun 24, 2020



Transmittal

Lighting Dynamics, Inc.
 211 Springside Drive
 Akron OH 44333
 Phone: (330) 665-9090
From: Regi Buckner

Project CLEVELAND OPPORTUNITY CORRIDOR
 ENHANCEMENT PLANS - Lumenpulse
 Revision 5/8/20

Quote# LDI20-515959

Location

Contact:

ATTACHED WE ARE SENDING YOU 1 COPY OF THE FOLLOWING ITEM:

- | | | |
|-----------------------------------|---|--------|
| <input type="checkbox"/> Drawings | <input type="checkbox"/> Specifications | Other: |
| <input type="checkbox"/> Prints | <input type="checkbox"/> Information | |
| <input type="checkbox"/> Plans | <input type="checkbox"/> Submittals | |

THESE ARE TRANSMITTED FOR:

- | | | |
|--|---|---------------------------------|
| <input type="checkbox"/> Prior Approval | <input type="checkbox"/> Resubmittal for Approval | <input type="checkbox"/> Record |
| <input type="checkbox"/> Approval | <input type="checkbox"/> Corrections | Bids due on: |
| <input type="checkbox"/> Approval as Submitted | <input type="checkbox"/> Your Use | Other: |
| <input type="checkbox"/> Approval as Noted | <input type="checkbox"/> Review and Comment | |

Type

MFG

Part

Lumenpulse

[LOIC-HO-24V-24-30K-TS2.5-WW-INTL-NO-ASL](#)

Lumenpulse

[PACBOX-120/277-HO-NO/DIM-24](#)

Lumenpulse

[RBO-LOI-24](#)

Lumenpulse

[LOIJB-UL](#)

Lumenpulse

[LOIJC-UL-10](#)

**Job Name:**CLEVELAND OPPORTUNITY CORRIDOR
ENHANCEMENT PLANS - Lumenpulse Revision 5/8/
20**Catalog Number:**LOIC-HO-24V-24-30K-TS2.5-WW-
INTL-NO-ASL**Notes:****Type:**

LDI20-515959

Specification Sheet**lumenfacade**Inground
LOI

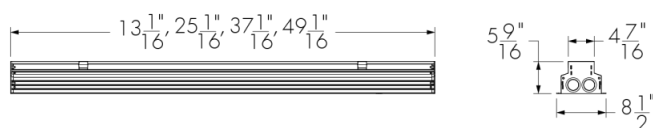
WHITE AND STATIC COLORS

Project Name _____ Qty _____

Type _____ Catalog / Part Number _____



Top view



Front and side views

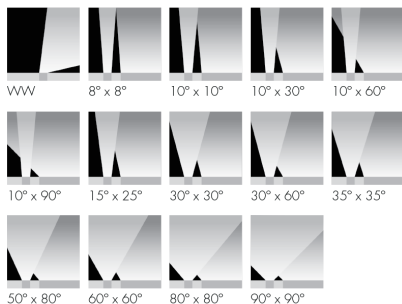
Photometric Summary

	Delivered output (lm)	Intensity (peak cd)
WW	2,770*	4,766*
8°x8°	4,512*	59,238*
10°x10°	3,908	35,109
10°x30°	4,586*	25,296*
10°x60°	3,876*	12,062*
10°x90°	4,178*	6,210*
30°x30°	4,686*	16,886*
30°x60°	4,035	5,317
60°x60°	3,845	3,062
90°x90°	4,070*	2,132*

Based on HO 4000K, 4ft [1219mm], 0° tilt setting configuration.

Photometric performance is measured in compliance with IESNA LM-79-08.

*Estimated. Consult website for the latest photometric files.

Optics**Description**

The Lumenfacade Inground is an LED luminaire designed for ground-recessed lighting applications, including asymmetric wall washing, grazing, and linear wayfinding. An innovative, plug and play design simplifies installation, protecting the system from water infiltration and ensuring long-lasting performance. Featuring second generation LED technology, the Lumenfacade Inground is available in four different sizes (12 in, 24 in, 36 in or 48 in), with a wide choice of outputs, color temperatures, color-mixing systems, optics and controls. A unique asymmetric wallwash distribution is also available, providing exceptional uniformity and brightness for walls and signage.

Features

Construction	Walk over compliant up to 500 kg in any type of ground, Walk over compliant up to 1000 kg in concrete
Color and Color Temperature	2200K, 2700K, 3000K, 3500K, 4000K, Red, Green, Blue
Length (nominal)	12 in, 24 in, 36 in, 48 in
Optics	Asymmetric wallwash, 8° x 8°, 10° x 10°, 10° x 30°, 10° x 60°, 10° x 90°, 15° x 25°, 30° x 30°, 30° x 60°, 35° x 35°, 50° x 80°, 60° x 60°, 80° x 80°, 90° x 90°
Tilt Setting (factory set)	0 degrees, 2.5 degrees, 5 degrees, 20 degrees
Optical Option	Internal louver
Options	Anti-slip lens, CE (certification covers European Economic Area)
Power Consumption	5 W/ft (meets ASHRAE standards for linear lighting on building facades - not available for 12 in fixture lengths), 8.5 W/ft (RO version), 15.25 W/ft (HO version), Typically 20% higher for 12 in fixture lengths
Warranty	5-year limited warranty

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**Job Name:**CLEVELAND OPPORTUNITY CORRIDOR
ENHANCEMENT PLANS - Lumenpulse Revision 5/8/
20**Catalog Number:**LOIC-HO-24V-24-30K-TS2.5-WW-
INTL-NO-ASL

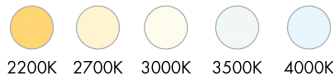
Notes:

Type:

LDI20-515959

Specification Sheet**lumenfacade**Inground
LOI

WHITE AND STATIC COLORS

Colors and Color Temperatures**Controls**

ON/OFF 0-10V DALI

**Ratings**

IP68 IK10

Certifications**Performance**

Illuminance at Distance	Minimum 1 fc at 94 ft (HO 4000K, 48 in fixture, 10° x 60°, 2.5° tilt setting, DMX/RDM)
Color Consistency	2 SDCM, 3 SDCM (2200K)
Color Rendering	Minimum CRI 80
Lumen Maintenance	L70 280,000 hrs, L95 35,000 hrs

Physical

Optical Chamber Material	Aluminum
Blockout Material	Polymer recycled PVC reinforced with a stainless steel frame
Trim Material	Anodized aluminum
Lens Material	Tempered glass
End Cap Material	Die cast aluminum
Hardware Material	Stainless steel
Weight	12 in: 7.5 lbs, 24 in: 15.3 lbs, 36 in: 21.4 lbs, 48 in: 27 lbs

Electrical and control

Voltage	120 to 277 volts
Fixture Cable	Power and data in one cable
Leader Cable Conductor	5C #16-5
Connectors	IP68 push-lock
Control	On/Off control, Lumentalk, 0-10V dimming, DALI dimming, Lutron® EcoSystem® Enabled dimming, DMX/RDM enabled
Resolution (DMX/RDM)	Per foot or per fixture (configured with LumenID V3 software), 8-bit or 16-bit

Environmental

Storage Temperature	-40 °F to 185 °F (device must reach start-up temperature value before operating)
Start-up Temperature	-13 °F to 122 °F
Operating Temperature	-40 °F to 122 °F
Ingress Protection Rating	IP68 rated for up to 1 ft, not suitable for permanent immersion applications
Impact Resistance Rating	IK10

Accessories (order separately)

Cables	Lumenfacade Inground Leader Cable, Lumenfacade Inground Jumper Cable
Electrical Accessories	Lumenfacade Inground Junction Box
Control Boxes	DMX/RDM enabled (daisy chain or star configuration), Ethernet enabled (daisy chain or star configuration)
Control Systems	Lumentone™ 2, Pharos® kit
Diagnostic and Addressing Tools	LumenID, LumentalkID

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info@lumenpulse.com www.lumenpulse.comT United States 617.307.5700 | Canada 1.877.937.3003 | 514.937.3003 F 514.937.6289
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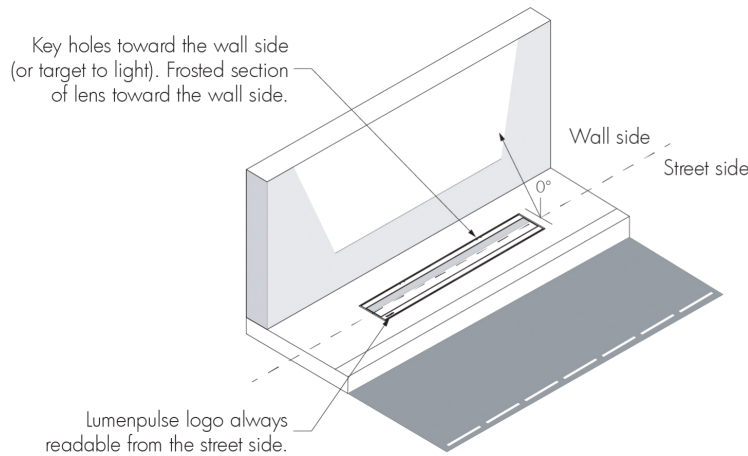
2 / 9

**Job Name:**CLEVELAND OPPORTUNITY CORRIDOR
ENHANCEMENT PLANS - Lumenpulse Revision 5/8/
20**Catalog Number:**LOIC-HO-24V-24-30K-TS2.5-WW-
INTL-NO-ASL**Notes:****Type:**

LDI20-515959

Specification Sheet**lumenfacade**Inground
LOI

WHITE AND STATIC COLORS

Optical chamber orientation**Cables (order separately)****LOILC - Leader cable for Lumenfacade Inground****LOILC-CERTIFICATION-LENGTH**

Please specify:

CERTIFICATION: UL or CE; **LENGTH:** 10 ft, 25 ft or 50 ft

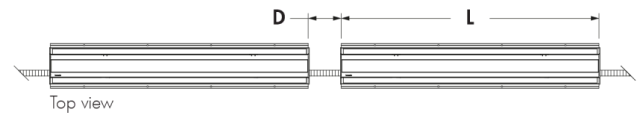
- Suitable for dimming/data and non-dimming applications.
- Sealing end cap is mandatory for any unused connector. One (1) included with every leader cable.
- Consult Lumenfacade Inground leader cable specification sheet for details.

LOIJC - Jumper cable for Lumenfacade Inground**LOIJC-CERTIFICATION-LENGTH**

Please specify:

CERTIFICATION: UL or CE; **LENGTH:** 2 ft, 4 ft or 10 ft

- Suitable for dimming/data and non-dimming applications.
- Consult Lumenfacade Inground jumper cable specification sheet for details.

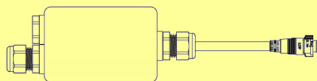
Jumper cable length selection**D** - distance between two fixtures**L** - length of fixtureAdd the length of one fixture to the distance between two fixtures: $L + D$. Order the next longest jumper cable available: 2 ft, 4 ft or 10 ft.Example: if the distance between two 4 ft fixtures is 0.5 ft, $L + D = 4.5$ ft, therefore a 10 ft jumper cable is required.**lumenpulse™**1220 Marie-Victorin Blvd., Longueuil, QC J4G 2H9 CA
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**Job Name:**CLEVELAND OPPORTUNITY CORRIDOR
ENHANCEMENT PLANS - Lumenpulse Revision 5/8/
20**Catalog Number:**LOIC-HO-24V-24-30K-TS2.5-WW-
INTL-NO-ASL**Notes:****Type:**

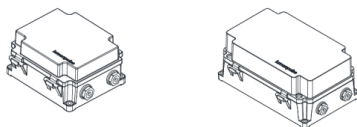
LDI20-515959

Specification Sheet**lumenfacade**Inground
LOI

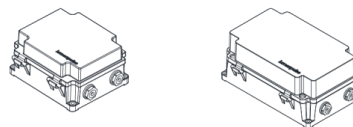
WHITE AND STATIC COLORS

Electrical accessories (order separately)**LOI-JBOX - Lumenfacade Inground Junction Box**

Lumenfacade Inground IP68 sealed junction box starter kit. Use for stand alone fixtures and/or first of run installations. The LOI-JBOX accessory does not fit in 12 in fixtures.

Control boxes (order separately)**CBX-DMX/RDM - DMX/RDM enabled (daisy chain or star configuration)**

DMX/RDM control box. Up to six power and data outputs to fixtures or fixture runs. Consult CBX specification sheet and installation instructions for details. Lumenterminators provided with CBX (2x for daisy chain configuration, 6x for star configuration), consult factory to order spares.

CBX-ENET - Ethernet enabled (daisy chain or star configuration)

Ethernet control box. Up to four power and data outputs to fixture or fixture runs. Consult Ethernet CBX specification sheet and installation instructions for details.

Control systems (order separately)**LTN2 - Lumentone™ 2**

Lumentone 2 is a simple pre-programmed DMX 512 controller with a push button rotary dial and live feedback.

PHAROS - Pharos® kit

The Pharos kit, available for 1 or 2 DMX universes, allows for complete control of large lighting installations. 2 DMX universes kit shown.

Diagnostic and addressing tools (order separately)**LID - LumenID**

LumenID is a diagnostic and addressing DMX/RDM tool. It must be specified on all DMX applications. Consult LID specification sheet for details.

LID-LT - LumentalkID

LumentalkID is a diagnostic and addressing tool. It must be specified for all Lumentalk (LT) applications. Consult LID-LT specification sheet for details.

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**Job Name:**CLEVELAND OPPORTUNITY CORRIDOR
ENHANCEMENT PLANS - Lumenpulse Revision 5/8/
20**Catalog Number:**LOIC-HO-24V-24-30K-TS2.5-WW-
INTL-NO-ASL

Notes:

Type:

LDI20-515959

Specification Sheet**lumenfacade**Inground
LOI

WHITE AND STATIC COLORS

Resolution details

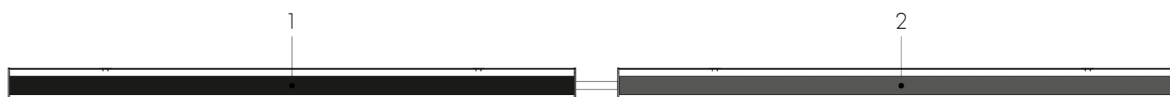
DMX/RDM control, resolution per foot: each 12 in section is addressed independently

DMX addresses:



DMX/RDM control, resolution per fixture: each fixture is addressed independently

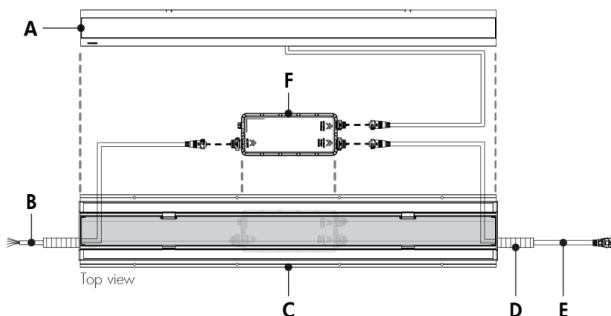
DMX addresses:



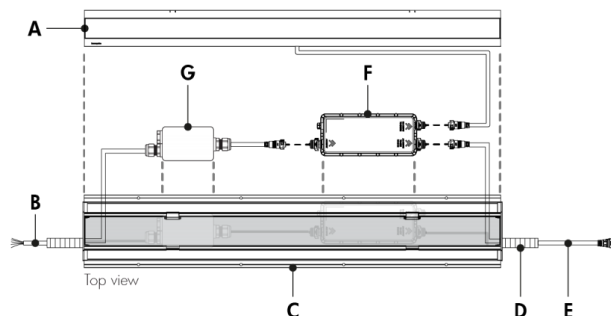
- 48 in fixtures shown.
- Applicable for DMX/RDM control option only. Fixture resolution can be configured on-site within the LumenID V3 software. A DMX/RDM enabled CBX is required.

Typical wiring diagrams**Wiring color code**

UL Color Code	USE
Green	Ground
Black	Line
White	Line/Neutral
Red or Purple	0-10V / Data +
Orange	0-10V / Data -

Typical installation with leader cable

- A - Optical chamber
 B - Leader cable (LOILC, order separately)
 C - Blockout
 D - Conduit (by others)
 E - Jumper cable to next fixture (LOIJC, order separately, for continuous run installations)
 F - PACBOX

Typical installation with IP68 LOI-JBOX accessory

- A - Optical chamber
 B - Power and data input cable (by others)
 C - Blockout
 D - Conduit (by others)
 E - Jumper cable to next fixture (LOIJC, order separately, for continuous run installations)
 F - PACBOX
 G - IP68 LOI-JBOX (order separately)

The IP68 LOI-JBOX accessory cannot be used with 12 in fixtures.

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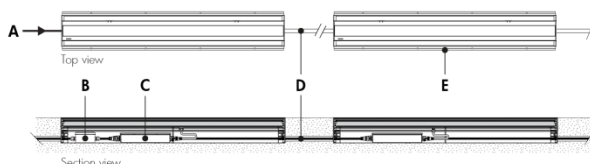
5 / 9

**Job Name:**CLEVELAND OPPORTUNITY CORRIDOR
ENHANCEMENT PLANS - Lumenpulse Revision 5/8/
20**Catalog Number:**LOIC-HO-24V-24-30K-TS2.5-WW-
INTL-NO-ASL**Notes:****Type:**

LDI20-515959

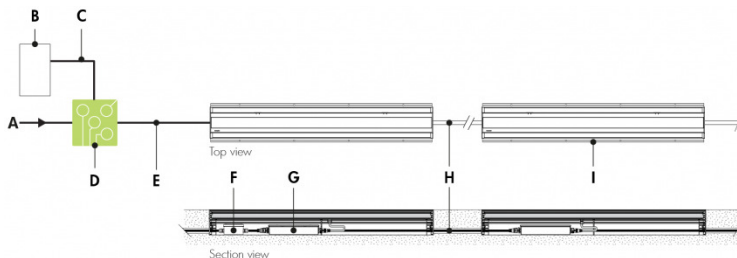
Specification Sheet**lumenfacade**Inground
LOI

WHITE AND STATIC COLORS

On/Off control (NO)

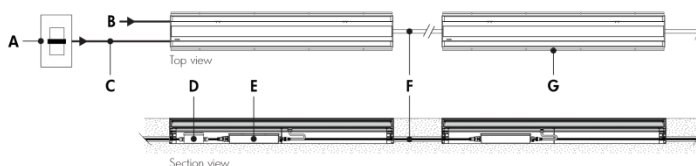
- A - Power input (120-277V, wiring by others)
- B - IP68 LOI-JBOX (optional)
- C - PACBOX
- D - Jumper cable (LOIJC)
- E - Lumenfacade Inground

- Consult the installation instructions for additional wiring details.
- Consult factory for specific applications and maximum fixture count/cable length recommendations.
- ASHRAE version (not available for 12 in fixture lengths): 5 W/ft; Regular Output version: 8.5 W/ft; High Output version: 15.25 W/ft.

Lumentalk (LT)

- A - Power input (100-277V AC, wiring by others)
- B - Dimmer/controller (order separately from Lumenpulse, or by others)
- C - Data wiring (by others)
- D - Lumentranslator 2 (LTL2-010, -DMX, -TRIAC, -DALI)
- E - Power wiring (by others)
- F - IP68 LOI-JBOX (optional)
- G - PACBOX
- H - Jumper cable (LOIJC)
- I - Lumenfacade Inground

- Consult the installation instructions for additional wiring details.
- Consult factory for specific applications and maximum fixture count/cable length recommendations.
- Lumentalk enabled fixtures must be commissioned using LumentalkID software and a LID-LT. Consult factory for details.
- Maximum of 1 transmitter (Lumentranslator or Lumenlink) per system.
- No third party fixtures allowed on the same circuit.
- For DMX applications: 1 DMX controller per Lumentalk network, maximum of 48 DMX channels per Lumentalk network (minimum step transition update rate is 1 second, minimum fade time between two colors is 1 minute). Consult factory for applications that require additional capabilities.
- Consult factory for DALI Lumentalk applications.
- 1% minimum dimming value.
- ASHRAE version (not available for 12 in fixture lengths): 5 W/ft; Regular Output version: 8.5 W/ft; High Output version: 15.25 W/ft.

0-10V dimming (DIM)

- A - Dimmer (by others)
- B - Power input (120-277V, wiring by others)
- C - Data wiring (by others)
- D - IP68 LOI-JBOX (optional)
- E - PACBOX
- F - Jumper cable (LOIJC)
- G - Lumenfacade Inground

- Consult the installation instructions for additional wiring details.
- Consult factory for specific applications and maximum fixture count/cable length recommendations.
- 0-10V mA ratings: passive dimmer (Current Sink): 3 mA per fixture, active dimmer (Current Source): 0.5 mA per fixture.
- 10% minimum dimming value.
- ASHRAE version (not available for 12 in fixture lengths): 5 W/ft; Regular Output version: 8.5 W/ft; High Output version: 15.25 W/ft.

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**Job Name:**CLEVELAND OPPORTUNITY CORRIDOR
ENHANCEMENT PLANS - Lumenpulse Revision 5/8/
20**Catalog Number:**LOIC-HO-24V-24-30K-TS2.5-WW-
INTL-NO-ASL

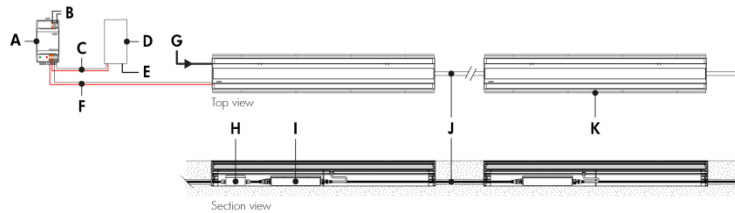
Notes:

Type:

LDI20-515959

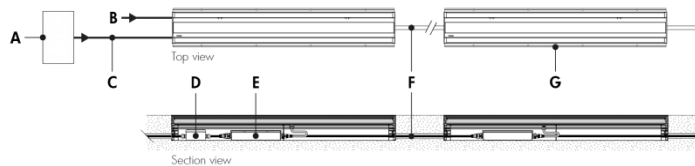
Specification Sheet**lumenfacade**
Inground
LOI

WHITE AND STATIC COLORS

DALI dimming (DALI)

- A - DALI bus power supply (by others)
- B - Power input for DALI bus power supply (wiring by others)
- C - Data output to DALI controller (wiring by others)
- D - DALI controller (by others)
- E - Power input for DALI controller (wiring by others)
- F - Data output to fixture (wiring by others)
- G - Power input (120-277V, wiring by others)
- H - IP68 LOI-JBOX (optional)
- I - PACBOX
- J - Jumper cable (LOIJC)
- K - Lumenfacade Inground

- Consult the installation instructions for additional wiring details.
- Consult factory for specific applications and maximum fixture count/cable length recommendations.
- Maximum of 64 DALI fixtures per DALI loop.
- 1% minimum dimming value.
- ASHRAE version (not available for 12 in fixture lengths): 5 W/ft; Regular Output version: 8.5 W/ft; High Output version: 15.25 W/ft.
- Commissioning may be required based on the selection of 3rd party DALI controller. Controller and commissioning provided by others.

Lutron® EcoSystem® Enabled dimming (ES)

- A - Lutron® EcoSystem® controller (by others)
- B - Power input (120-277V, wiring by others)
- C - Data wiring (by others)
- D - IP68 LOI-JBOX (optional)
- E - PACBOX
- F - Jumper cable (LOIJC)
- G - Lumenfacade Inground

- Consult the installation instructions for additional wiring details.
- Consult factory for specific applications and maximum fixture count/cable length recommendations.
- Each Lutron® EcoSystem® enabled fixture has its own address; for the example shown, there are a total of 2 EcoSystem® addresses.
- 1% minimum dimming value.
- ASHRAE version (not available for 12 in fixture lengths): 5 W/ft; Regular Output version: 8.5 W/ft; High Output version: 15.25 W/ft.

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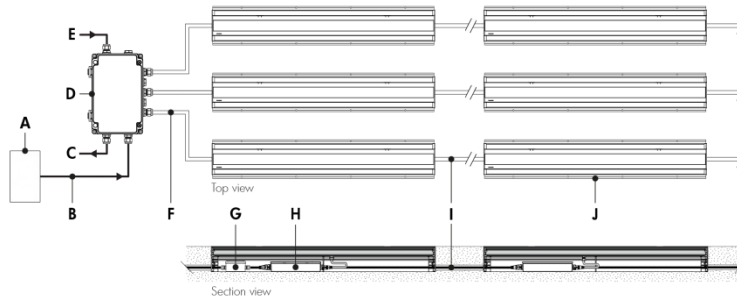
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**Job Name:**CLEVELAND OPPORTUNITY CORRIDOR
ENHANCEMENT PLANS - Lumenpulse Revision 5/8/
20**Catalog Number:**LOIC-HO-24V-24-30K-TS2.5-WW-
INTL-NO-ASL**Notes:****Type:**

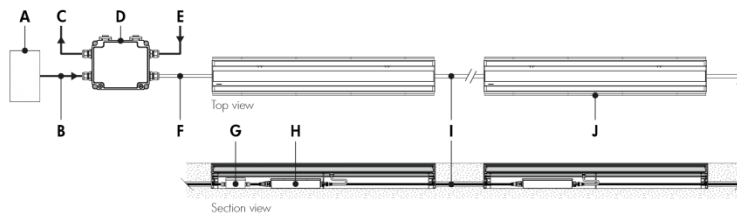
LDI20-515959

Specification Sheet**lumenfacade**Inground
LOI

WHITE AND STATIC COLORS

Star Layout (DMX/RDM)

- A** - DMX/RDM controller (order separately from Lumenpulse, or by others)
- B** - Data input (Belden 9841 or equivalent, by others)
- C** - Data output to next CBX (optional, not isolated/not boosted)
- D** - CBX-ST
- E** - Power input (120-277V, wiring by others)
- F** - Leader cable (LOILC)
- G** - IP68 LOI-JBOX (optional)
- H** - PACBOX
- I** - Jumper cable (LOIJC)
- J** - Lumenfacade Inground


Daisy Chain Layout (DMX/RDM)

- A** - DMX/RDM controller (order separately from Lumenpulse, or by others)
- B** - Data input (Belden 9841 or equivalent, by others)
- C** - Data output to next CBX (optional, not isolated/not boosted)
- D** - CBX-DS
- E** - Power input (120-277V, wiring by others)
- F** - Leader cable (LOILC)
- G** - IP68 LOI-JBOX (optional)
- H** - PACBOX
- I** - Jumper cable (LOIJC)
- J** - Lumenfacade Inground

- Consult the installation instructions for additional wiring details.
- Consult factory for specific applications and maximum fixture count/cable length recommendations. Maximum run length calculations are typically based on 48 in fixtures.
- The DMX/RDM protocol states a maximum of 32 DMX/RDM enabled fixtures on any single run.
- Maximum of 4 DMX/RDM repeaters/CBX cascading in line.
- Maximum of 6 outputs per CBX-ST; maximum of 1 output per CBX-DS.
- Each fixture requires 1 DMX address.
- 1% minimum dimming value.
- ASHRAE version (not available for 12 in fixture lengths): 5 W/ft; Regular Output version: 8.5 W/ft; High Output version: 15.25 W/ft.

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Submitted by Lighting Dynamics, Inc. <div>  </div>	Job Name: CLEVELAND OPPORTUNITY CORRIDOR ENHANCEMENT PLANS - Lumenpulse Revision 5/8/ 20	Catalog Number: LOIC-HO-24V-24-30K-TS2.5-WW- INTL-NO-ASL Notes:	Type: LDI20-515959
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Specification Sheet

lumenfacade
Inground
LOI

WHITE AND STATIC COLORS

How to order

Housing ⁽¹⁾ (3) (4)	Voltage	Length	Color and Color Temperature ⁽⁵⁾	Optics	Tilt Setting ⁽⁹⁾ (10)	Optical Option	Control	Options
LOI ASHRAE Lumenfacade™ Inground, 5 W/ft ASHRAE compliant ⁽²⁾	120/277 120-277 volts	12 13 1/16 in (7.5 lbs) ⁽⁴⁾	22K 2200K	WW Asymmetric Wallwash ⁽⁷⁾	TS0 0 degrees	INTL Internal louver ⁽¹¹⁾	NO On/Off control	ASL Anti-slip lens
LOI RO Lumenfacade™ Inground, Regular Output, 8.5 W/ft		24 25 1/16 in (15.3 lbs)	27K 2700K	8x8 8° x 8° ⁽⁷⁾ (8)	TS2.5 2.5 degrees		LT Lumentalk ⁽¹²⁾	CE CE (certification covers European Economic Area) ⁽¹⁴⁾
LOI HO Lumenfacade™ Inground, High Output, 15.25 W/ft		36 37 1/16 in (21.4 lbs)	30K 3000K	10x10 10° x 10° ⁽⁷⁾ (8)	TS5 5 degrees		DIM 0-10V dimming	
		48 49 1/16 in (27 lbs)	35K 3500K	10x30 10° x 30° ⁽⁷⁾	TS20 20 degrees		DALI DALI dimming	
			40K 4000K	10x60 10° x 60° ⁽⁷⁾			ES Lutron® EcoSystem® Enabled dimming	
			RD Red ⁽⁶⁾	10x90 10° x 90° ⁽⁷⁾			DMX/RDM DMX/RDM enabled ⁽¹³⁾	
			GR Green ⁽⁶⁾	15x25 15° x 25° ⁽⁷⁾				
			BL Blue ⁽⁶⁾	30x30 30° x 30°				
				30x60 30° x 60°				
				35x35 35° x 35°				
				50x80 50° x 80°				
				60x60 60° x 60°				
				80x80 80° x 80°				
				90x90 90° x 90°				

Notes:

1. A Lumenfacade Inground fixture includes one optical chamber (LOIC), one power and control box (PACBOX) and one recessed blackout (RBO). The LOIC, PACBOX and RBO are provided according to the output/color, length and control configuration.
2. ASHRAE version not available for 12 in fixture lengths.
3. Consult the installation instructions to plan all aspects of the fixture installation. A completed Certificate of Installation must be returned to Lumenpulse to activate the warranty.
4. Power consumption is typically 20% higher for 12 in fixture lengths.
5. Consult factory for availability of static Royal Blue, 6500K and 90+ CRI.
6. Static colors made to order 8-10 weeks.
7. 8x8, 10x10, 10x30, 10x60, 10x90, 15x25 and WW distributions come with a half-frosted lens to bring light low on the wall for grazing applications. Clear lens also available, consult factory.

8. For best results use with HO fixtures at a 6 in setback from surface. Contact factory for application support.
9. Do not specify a tilt setting for the asymmetric wallwash option. The asymmetric wallwash optic is factory set with a 2.5 degree tilt.
10. Tilt setting is factory set and cannot be adjusted in the field.
11. The addition of an internal louver will affect beam distribution. Consult factory for application support.
12. A Lumentranslator 2 and LumentalkID (LIDL) must be specified for Lumentalk applications. Consult Lumentranslator 2 and Lumentalk pages and specification sheets for details.
13. A control box (CBX) and LumenID (LID) must be specified.
14. Consult European specification sheet and installation instructions for CE wiring information.


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Submitted by Lighting Dynamics, Inc. <div>  </div>	Job Name: CLEVELAND OPPORTUNITY CORRIDOR ENHANCEMENT PLANS - Lumenpulse Revision 5/8/ 20	Catalog Number: PACBOX-120/277-HO-NO/DIM-24 Notes:	Type: LDI20-515959
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Specification Sheet

lumenfacade
Inground
LOI

WHITE AND STATIC COLORS

How to order

Housing ⁽¹⁾ (3) (4)	Voltage	Length	Color and Color Temperature ⁽⁵⁾	Optics	Tilt Setting ⁽⁹⁾ (10)	Optical Option	Control	Options
LOI ASHRAE Lumenfacade™ Inground, 5 W/ft ASHRAE compliant ⁽²⁾	120/277 120-277 volts	12 13 1/16 in (7.5 lbs) ⁽⁴⁾	22K 2200K	WW Asymmetric Wallwash ⁽⁷⁾	TS0 0 degrees	INTL Internal louver ⁽¹¹⁾	NO On/Off control	ASL Anti-slip lens
LOI RO Lumenfacade™ Inground, Regular Output, 8.5 W/ft		24 25 1/16 in (15.3 lbs)	27K 2700K	8x8 8° x 8° ⁽⁷⁾ (8)	TS2.5 2.5 degrees		LT Lumentalk ⁽¹²⁾	CE CE (certification covers European Economic Area) ⁽¹⁴⁾
LOI HO Lumenfacade™ Inground, High Output, 15.25 W/ft		36 37 1/16 in (21.4 lbs)	30K 3000K	10x10 10° x 10° ⁽⁷⁾ (8)	TS5 5 degrees		DIM 0-10V dimming	
		48 49 1/16 in (27 lbs)	35K 3500K	10x30 10° x 30° ⁽⁷⁾	TS20 20 degrees		DALI DALI dimming	
			40K 4000K	10x60 10° x 60° ⁽⁷⁾			ES Lutron® EcoSystem® Enabled dimming	
			RD Red ⁽⁶⁾	10x90 10° x 90° ⁽⁷⁾			DMX/RDM DMX/RDM enabled ⁽¹³⁾	
			GR Green ⁽⁶⁾	15x25 15° x 25° ⁽⁷⁾				
			BL Blue ⁽⁶⁾	30x30 30° x 30°				
				30x60 30° x 60°				
				35x35 35° x 35°				
				50x80 50° x 80°				
				60x60 60° x 60°				
				80x80 80° x 80°				
				90x90 90° x 90°				

Notes:

1. A Lumenfacade Inground fixture includes one optical chamber (LOIC), one power and control box (PACBOX) and one recessed blackout (RBO). The LOIC, PACBOX and RBO are provided according to the output/color, length and control configuration.
2. ASHRAE version not available for 12 in fixture lengths.
3. Consult the installation instructions to plan all aspects of the fixture installation. A completed Certificate of Installation must be returned to Lumenpulse to activate the warranty.
4. Power consumption is typically 20% higher for 12 in fixture lengths.
5. Consult factory for availability of static Royal Blue, 6500K and 90+ CRI.
6. Static colors made to order 8-10 weeks.
7. 8x8, 10x10, 10x30, 10x60, 10x90, 15x25 and WW distributions come with a half-frsted lens to bring light low on the wall for grazing applications. Clear lens also available, consult factory.

8. For best results use with HO fixtures at a 6 in setback from surface. Contact factory for application support.
9. Do not specify a tilt setting for the asymmetric wallwash option. The asymmetric wallwash optic is factory set with a 2.5 degree tilt.
10. Tilt setting is factory set and cannot be adjusted in the field.
11. The addition of an internal louver will affect beam distribution. Consult factory for application support.
12. A Lumentranslator 2 and LumentalkID (LIDL) must be specified for Lumentalk applications. Consult Lumentranslator 2 and Lumentalk pages and specification sheets for details.
13. A control box (CBX) and LumenID (LID) must be specified.
14. Consult European specification sheet and installation instructions for CE wiring information.


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Submitted by Lighting Dynamics, Inc. <div>  <div> LDI Lighting Dynamics, Inc. 100-0000 </div> </div>	Job Name: CLEVELAND OPPORTUNITY CORRIDOR ENHANCEMENT PLANS - Lumenpulse Revision 5/8/ 20	Catalog Number: RBO-LOI-24 Notes:	Type: LDI20-515959
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Specification Sheet

lumenfacade
Inground
LOI

WHITE AND STATIC COLORS

How to order

Housing ⁽¹⁾ (3) (4)	Voltage	Length	Color and Color Temperature ⁽⁵⁾	Optics	Tilt Setting ⁽⁹⁾ (10)	Optical Option	Control	Options
LOI ASHRAE Lumenfacade™ Inground, 5 W/ft ASHRAE compliant ⁽²⁾	120/277 120-277 volts	12 13 1/16 in (7.5 lbs) ⁽⁴⁾	22K 2200K	WW Asymmetric Wallwash ⁽⁷⁾	TS0 0 degrees	INTL Internal louver ⁽¹¹⁾	NO On/Off control	ASL Anti-slip lens
LOI RO Lumenfacade™ Inground, Regular Output, 8.5 W/ft		24 25 1/16 in (15.3 lbs)	27K 2700K 30K 3000K	8x8 8° x 8° ⁽⁷⁾ (8) 10x10 10° x 10° ⁽⁷⁾ (8)	TS2.5 2.5 degrees TS5 5 degrees		LT Lumentalk ⁽¹²⁾ DIM 0-10V dimming	CE CE (certification covers European Economic Area) ⁽¹⁴⁾
LOI HO Lumenfacade™ Inground, High Output, 15.25 W/ft		36 37 1/16 in (21.4 lbs) 48 49 1/16 in (27 lbs)	35K 3500K 40K 4000K RD Red ⁽⁶⁾ GR Green ⁽⁶⁾ BL Blue ⁽⁶⁾	10x30 10° x 30° ⁽⁷⁾ 10x60 10° x 60° ⁽⁷⁾ 10x90 10° x 90° ⁽⁷⁾ 15x25 15° x 25° ⁽⁷⁾ 30x30 30° x 30° 30x60 30° x 60° 35x35 35° x 35° 50x80 50° x 80° 60x60 60° x 60° 80x80 80° x 80° 90x90 90° x 90°	TS20 20 degrees		DALI DALI dimming ES Lutron® EcoSystem® Enabled dimming DMX/RDM DMX/RDM enabled ⁽¹³⁾	

Notes:

1. A Lumenfacade Inground fixture includes one optical chamber (LOIC), one power and control box (PACBOX) and one recessed blackout (RBO). The LOIC, PACBOX and RBO are provided according to the output/color, length and control configuration.
2. ASHRAE version not available for 12 in fixture lengths.
3. Consult the installation instructions to plan all aspects of the fixture installation. A completed Certificate of Installation must be returned to Lumenpulse to activate the warranty.
4. Power consumption is typically 20% higher for 12 in fixture lengths.
5. Consult factory for availability of static Royal Blue, 6500K and 90+ CRI.
6. Static colors made to order 8-10 weeks.
7. 8x8, 10x10, 10x30, 10x60, 10x90, 15x25 and WW distributions come with a half-frosted lens to bring light low on the wall for grazing applications. Clear lens also available, consult factory.

8. For best results use with HO fixtures at a 6 in setback from surface. Contact factory for application support.
9. Do not specify a tilt setting for the asymmetric wallwash option. The asymmetric wallwash optic is factory set with a 2.5 degree tilt.
10. Tilt setting is factory set and cannot be adjusted in the field.
11. The addition of an internal louver will affect beam distribution. Consult factory for application support.
12. A Lumentranslator 2 and LumentalkID (LIDL) must be specified for Lumentalk applications. Consult Lumentranslator 2 and Lumentalk pages and specification sheets for details.
13. A control box (CBX) and LumenID (LID) must be specified.
14. Consult European specification sheet and installation instructions for CE wiring information.


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Specification Sheet

lumenfacade
Inground
LOI

WHITE AND STATIC COLORS

How to order

Housing ⁽¹⁾ (3) (4)	Voltage	Length	Color and Color Temperature ⁽⁵⁾	Optics	Tilt Setting ⁽⁹⁾ (10)	Optical Option	Control	Options
LOI ASHRAE Lumenfacade™ Inground, 5 W/ft ASHRAE compliant ⁽²⁾	120/277 120-277 volts	12 13 1/16 in (7.5 lbs) ⁽⁴⁾	22K 2200K	WW Asymmetric Wallwash ⁽⁷⁾	TS0 0 degrees	INTL Internal louver ⁽¹¹⁾	NO On/Off control	ASL Anti-slip lens
LOI RO Lumenfacade™ Inground, Regular Output, 8.5 W/ft		24 25 1/16 in (15.3 lbs)	27K 2700K	8x8 8° x 8° ⁽⁷⁾ (8)	TS2.5 2.5 degrees		LT Lumentalk ⁽¹²⁾	CE CE (certification covers European Economic Area) ⁽¹⁴⁾
LOI HO Lumenfacade™ Inground, High Output, 15.25 W/ft		36 37 1/16 in (21.4 lbs)	30K 3000K	10x10 10° x 10° ⁽⁷⁾ (8)	TS5 5 degrees		DIM 0-10V dimming	
		48 49 1/16 in (27 lbs)	35K 3500K	10x30 10° x 30° ⁽⁷⁾	TS20 20 degrees		DALI DALI dimming	
			40K 4000K	10x60 10° x 60° ⁽⁷⁾			ES Lutron® EcoSystem® Enabled dimming	
			RD Red ⁽⁶⁾	10x90 10° x 90° ⁽⁷⁾			DMX/RDM DMX/RDM enabled ⁽¹³⁾	
			GR Green ⁽⁶⁾	15x25 15° x 25° ⁽⁷⁾				
			BL Blue ⁽⁶⁾	30x30 30° x 30°				
				30x60 30° x 60°				
				35x35 35° x 35°				
				50x80 50° x 80°				
				60x60 60° x 60°				
				80x80 80° x 80°				
				90x90 90° x 90°				

Notes:

1. A Lumenfacade Inground fixture includes one optical chamber (LOIC), one power and control box (PACBOX) and one recessed blackout (RBO). The LOIC, PACBOX and RBO are provided according to the output/color, length and control configuration.
2. ASHRAE version not available for 12 in fixture lengths.
3. Consult the installation instructions to plan all aspects of the fixture installation. A completed Certificate of Installation must be returned to Lumenpulse to activate the warranty.
4. Power consumption is typically 20% higher for 12 in fixture lengths.
5. Consult factory for availability of static Royal Blue, 6500K and 90+ CRI.
6. Static colors made to order 8-10 weeks.
7. 8x8, 10x10, 10x30, 10x60, 10x90, 15x25 and WW distributions come with a half-frsted lens to bring light low on the wall for grazing applications. Clear lens also available, consult factory.

8. For best results use with HO fixtures at a 6 in setback from surface. Contact factory for application support.
9. Do not specify a tilt setting for the asymmetric wallwash option. The asymmetric wallwash optic is factory set with a 2.5 degree tilt.
10. Tilt setting is factory set and cannot be adjusted in the field.
11. The addition of an internal louver will affect beam distribution. Consult factory for application support.
12. A Lumentranslator 2 and LumentalkID (LIDL) must be specified for Lumentalk applications. Consult Lumentranslator 2 and Lumentalk pages and specification sheets for details.
13. A control box (CBX) and LumenID (LID) must be specified.
14. Consult European specification sheet and installation instructions for CE wiring information.

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**Job Name:**CLEVELAND OPPORTUNITY CORRIDOR
ENHANCEMENT PLANS - Lumenpulse Revision 5/8/
20**Catalog Number:**

LOIJC-UL-10

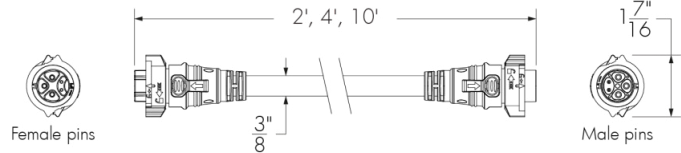
Notes:**Type:**

LDI20-515959

Specification Sheet**lumenfacade**Inground
Jumper Cable
LOIJC

Project Name _____ Qty _____

Type _____ Catalog / Part Number _____

**Ratings**


IP68

Certifications**Features****Length** 2 ft, 4 ft, 10 ft**Cable and Connector Color** Black**Warranty** 5-year limited warranty**Electrical and control****Cable Type** SJTW**Connectors** Female pins, Male pins**Conductors** 5 conductors (16 AWG)**Fixture Voltage** 100 to 277 volts**Control** For non-dimming and dimming/data applications**Environmental****Operating Temperature** Up to 221 °F**Ingress Protection Rating** IP68**lumenpulse™**1220 Marie-Victorin Blvd., Longueuil, QC J4G 2H9 CA
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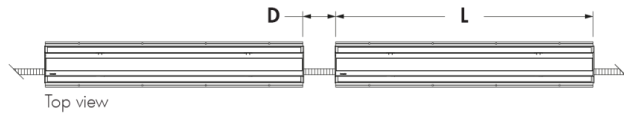
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Submitted by Lighting Dynamics, Inc. 	Job Name: CLEVELAND OPPORTUNITY CORRIDOR ENHANCEMENT PLANS - Lumenpulse Revision 5/8/ 20	Catalog Number: LOIJC-UL-10 Notes:	Type: LOI20-515959
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Specification Sheet

lumenfacade
Inground
Jumper Cable
LOIJC

Jumper Cable Length Specification



D - distance between two fixtures

L - length of fixture

Add the length of one fixture to the distance between two fixtures: $L + D$. Order the next longest jumper cable available: 2 ft, 4 ft or 10 ft.

Example: if the distance between two 4 ft fixtures is 0.5 ft, $L + D = 4.5$ ft, therefore a 10 ft jumper cable is required.


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Specification Sheet

lumenfacade
Inground
Jumper Cable
LOIJC

How to order

Housing	Certification	Length
LOIJC Lumenfacade Inground Jumper Cable	UL UL compliant	2FT 2 ft
	CE CE compliant (1)	4FT 4 ft
		10FT 10 ft

Notes:

1. Consult European specification sheet for CE cable details.

lumenpulse™

1220 Marie-Victorin Blvd., Longueuil, QC J4G 2H9 CA
info@lumenpulse.com www.lumenpulse.com

T United States 617.307.5700 | Canada 1.877.937.3003 | 514.937.3003 F 514.937.6289
www.lumenpulse.com/products/720

Lumenpulse Group Inc. reserves the right to make changes to this product at any time without prior notice and such modification shall be effective immediately
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SA - R4

3 / 3

Submittal: 098

Revision: 0

Date Submitted: 8/18/2020

Response Due By: 9/3/2020



Project: 16051 - ODOT 173000 CUY IR 490/SR010 (OC3)

Description: BU27 - Street Level Lighting Control Centers - Metered

To: Thomas Nagel
City of Cleveland, Commissioner

Email: tnagel@clevelandohio.gov

From: Oliver Bluestone
Kokosing Construction Company, Inc.

Email: obluestone@kokosing.biz

Submittal Type:	Submitted For:
<input type="checkbox"/> Engineered Drawings	<input checked="" type="checkbox"/> Approval
<input type="checkbox"/> Shop Drawings	<input type="checkbox"/> Record
<input type="checkbox"/> Working Drawings	<input type="checkbox"/> Other
<input type="checkbox"/> CPM Schedule	
<input type="checkbox"/> Material Certifications / Test Results	Sent Via:
<input type="checkbox"/> Reports	<input checked="" type="checkbox"/> Attached (Electronic)
<input checked="" type="checkbox"/> Product Data/Samples	<input type="checkbox"/> Attached (Hard Copy)
<input type="checkbox"/> Other:	

Submittal #	Copies	Spec #	Rev. #	Description	Status
098	1			098 – BU27 - Street Level Lighting Control Centers - Metered	For Approval

Comments:

Please see the attached submittal from miller cable for the (Metered) street level lighting control centers called for in BU27.

Please let me know if you have any questions.

Signed: Oliver Bluestone

Central Systems & Controls

26933 Westwood Rd. #400

Westlake, Ohio 44145

(440) 835-0015 Ph (440) 835-3588 Fax

E-Mail: TRuffing@Central-Systems.com

Customer:	Miller Cable Company
Purchase Order:	PO #19688
Project Reference:	ODOT #173000
Description:	SC100ZZW(120/240V) Lighting Control Center Ref: CC-E

BILL OF MATERIALS

[illegible]

Note: Unit will be labeled "Suitable for Service Entrance" per NEC Article #230.

Central Systems & Controls

26933 Westwood Rd. #400

Westlake, Ohio 44145

(440) 835-0015 Ph (440) 835-3588 Fax

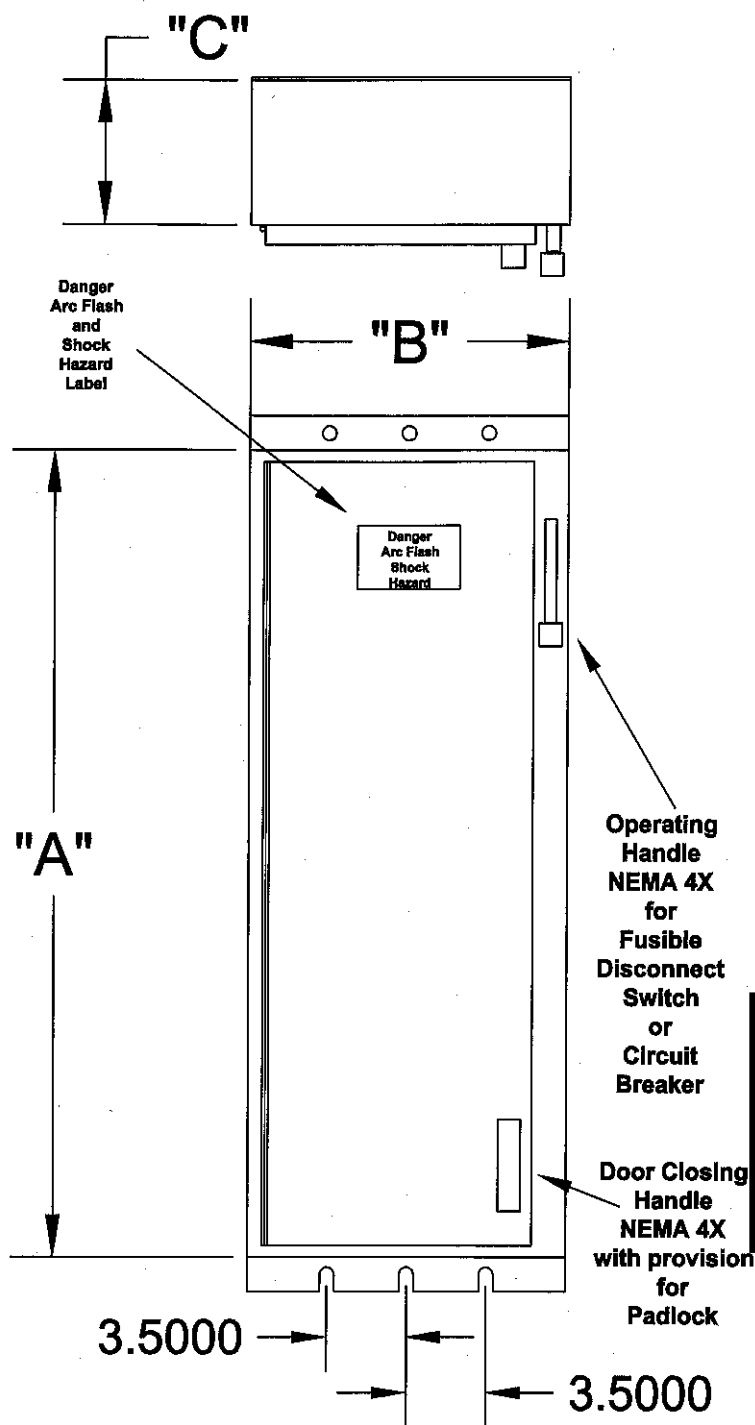
E-Mail: TRuffing@Central-Systems.com

Customer:	Miller Cable Company
Purchase Order:	PO #19688
Project Reference:	ODOT #173000
Description:	SC100ZZW(120/240V) Lighting Control Centers (2) Ref: CC-F, & CC-G

BILL OF MATERIALS

[illegible]

Note: Unit will be labeled “Suitable for Service Entrance” per NEC Article #230.



ENCLOSURE SHALL BE 14 GA. OR HEAVIER AISI TYPE 304 STAINLESS STEEL WITH BRUSH FINISH. ENCLOSURE TO BE NEMA TYPE 4 WATERTIGHT SUITABLE FOR OUTDOOR LOCATIONS. ALL FASTENERS SHALL CONFORM TO ASTM 320/A 320 M (AISI-300 SERIES). A DISCONNECT HANDLE SHALL FLANGE MOUNTED AND CAPABLE OF BEING LOCKED IN EITHER POSITION.

THE ENCLOSURE SHALL BE DESIGNED SO THAT IT MAY NOT BE OPENED WHEN THE OPERATING HANDLE IS IN THE "ON" POSITION EXCEPT BY MEANS OF A LOCKABLE, DOUBLE DEFEATER MECHANISM. A LOCKABLE TWO OR THREE POINT LATCH SHALL BE PROVIDED.

Disc Switch Amps	Circuit Breaker Amps	TYPE	A	B	C
30	100	XS	14-5/8	9-0	7-1/2
30	100	X	17-1/2	9-0	7-1/2
60	100	X	17-1/2	9-0	7-1/2
30	200	Y	28-0	14-0	8-3/4
30	200	Z	35-0	14-0	8-3/4
30	200	ZZ	43-0	14-0	8-3/4
30	200	ZZW	43-0	18-0	8-3/4
60	200	Y	28-0	14-0	8-3/4
60	200	Z	35-0	14-0	8-3/4
60	200	ZZ	43-0	14-0	8-3/4
60	200	ZZW	43-0	18-0	8-3/4
100	200	Y	28-0	14-0	8-3/4
100	200	Z	35-0	14-0	8-3/4
100	200	ZZ	43-0	14-0	8-3/4
100	200	ZZW	43-0	18-0	8-3/4
100	200	MELP	28-0	18-0	8-3/4
200	200	Z-1	35-0	14-0	8-3/4
200	400	SPL	60-0	20-0	8-3/4
200	400	SPL1	60-0	24-0	8-3/4

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000 Cuyahoga
SC100ZZW(120/240V)
Ref: Lighting Control Centers
CC-E, CC-F, & CC-G

Central Systems & Controls

26933 Westwood Rd.

Westlake, Ohio 44145

(440) 835-0015 Ph. (440) 835-3588 Fax

Title: NEMA 4X Stainless Steel Enclosures

Job:

Sheet of:

Date:

June 2010

Customer:

Class 9423 door closing mechanisms cover a range of enclosures with up to 91 inch high maximum door openings. The door closing mechanisms are designed to be used on control enclosures and interlocked with a Class 9422 disconnect device, although they all can be used independently. Three different systems are available and their use is as recommended below. A complete system is available for interlocking all the doors of a multi-door enclosure with the master door when using the 6 in. or 8 in. vault handle mechanism.

Note that the "Master Door" is defined to be the door of a single or multi-door enclosure which is interlocked directly with the disconnect device. The master door can be hinged on either the right or left hand side. It can be located in any position on a multi-door enclosure. On the other hand, an "Auxiliary Door" is defined to be any remaining doors of a multi-door enclosure which are interlocked with the master door by means of the overhead interlocking system as illustrated on pages 8-26 and 8-27.

Selection Procedure

Step 1.
Determine enclosure construction.

Step 2.
Determine Class 9422 disconnect device.

Step 3.
Determine the location of the disconnect device.

Step 4.
Select the door closing mechanism.

Step 5.
Select the auxiliary door closing mechanisms and multi-door interlocking hardware, if required. (A complete system for interlocking all auxiliary doors of a multi-door enclosure with center channel is available for the medium and large enclosures.)




CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000 Cuyahoga
SC100ZZW(120/240V)
Ref: Lighting Control Centers
CC-E, CC-F, & CC-G

mechanism.

ter channel).

Table 8.84: Door Closing Mechanism

60 in. Maximum Door Opening (Recommended)	46-60 in. Door Opening (Recommended)	61-91 in. Door Opening (Recommended)
 <ul style="list-style-type: none"> 2 Point Locking is Standard A Third Roller Latch Kit is Available for 3 Point Locking For 3/4 in. Door Depths 	 <ul style="list-style-type: none"> For use on Single or Multi-Door Enclosures For use with Doors Hinged on Right or Left Side Referred to as the 6 in. Vault Handle Mechanism For 3/4 in. Door Depths 	 <ul style="list-style-type: none"> For use on Single or Multi-Door Enclosures For use with Doors Hinged on Right or Left Side Referred to as the 8 in. Vault Handle Mechanism For 1-1/8 in. Door Depths

The door closing mechanisms listed below are for use on small to medium size single door control enclosures. They are designed to be used in conjunction with Class 9422 flange mounted disconnect switches and circuit breaker operating mechanisms; however, they can be used independently as well. When used on properly designed and gasketed NEMA Type 12 enclosures, they meet NFPA 79 standards.

Table 8.85: Single Door Enclosures—NEMA Type 4 or 12 with 60 in. High Maximum Opening

Description	For Use On (Enclosure Type)	Use In Conjunction With	Door Latch Handle Length	Suggested Maximum Door Opening	Door Depth	Type	\$ Price
Two point, roller latch, door closing mechanism for use on enclosures with doors hinged on the left hand side.	NEMA Type 4 and 12 Sheet Steel	Class 9422 Types A1, A3, A9	4 in.	Less than 39 in.	3/4	M4	228.00
			4 in.	Less than 39 in.	1	M10	314.00
			6 in.	60 in.	3/4	M8	243.00
Two point, roller latch, door closing mechanism for use on enclosures with doors hinged on the right hand side.	NEMA Type 4 and 12 Stainless Steel	Class 9422 Types A2, A4, A10	4 in.	Less than 39 in.	3/4	M24	300.00
			4 in.	Less than 39 in.	3/4	M4L	228.00
			4 in.	Less than 39 in.	1	M10L	314.00
			6 in.	60 in.	3/4	M9L	243.00
Third roller latch kit for 3 point locking; for use where 3 point locking is desired or where the door opening is 39 in. or more.	NEMA Type 4 and 12 Sheet Steel	Class 9423 Types M4, M9, M4L, M9L	4 in.	Less than 39 in.	3/4	M24L	300.00
			—	—	3/4	M3	50.00
			—	—	3/4	M23	57.00

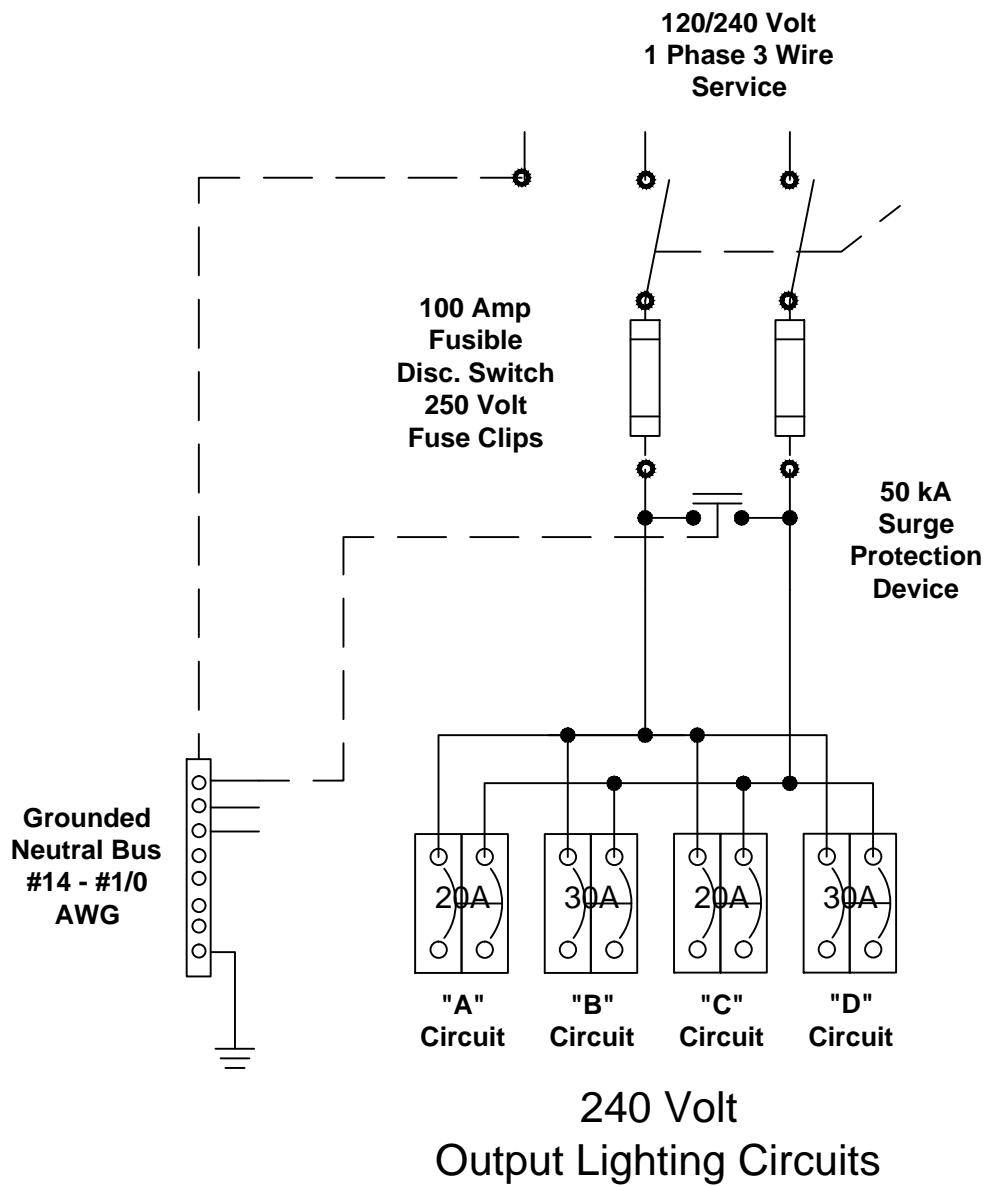
▲ Suitable for door depths of 1-1/8 in., 1-1/4 in., 1-3/8 in. and 1-1/2 in..

9422 TCN30

Circuit Breaker Mechanism

Type M4

Latch bar not included, but most prepunched enclosures that accept Square D® operating mechanisms supply a predrilled latch bar.



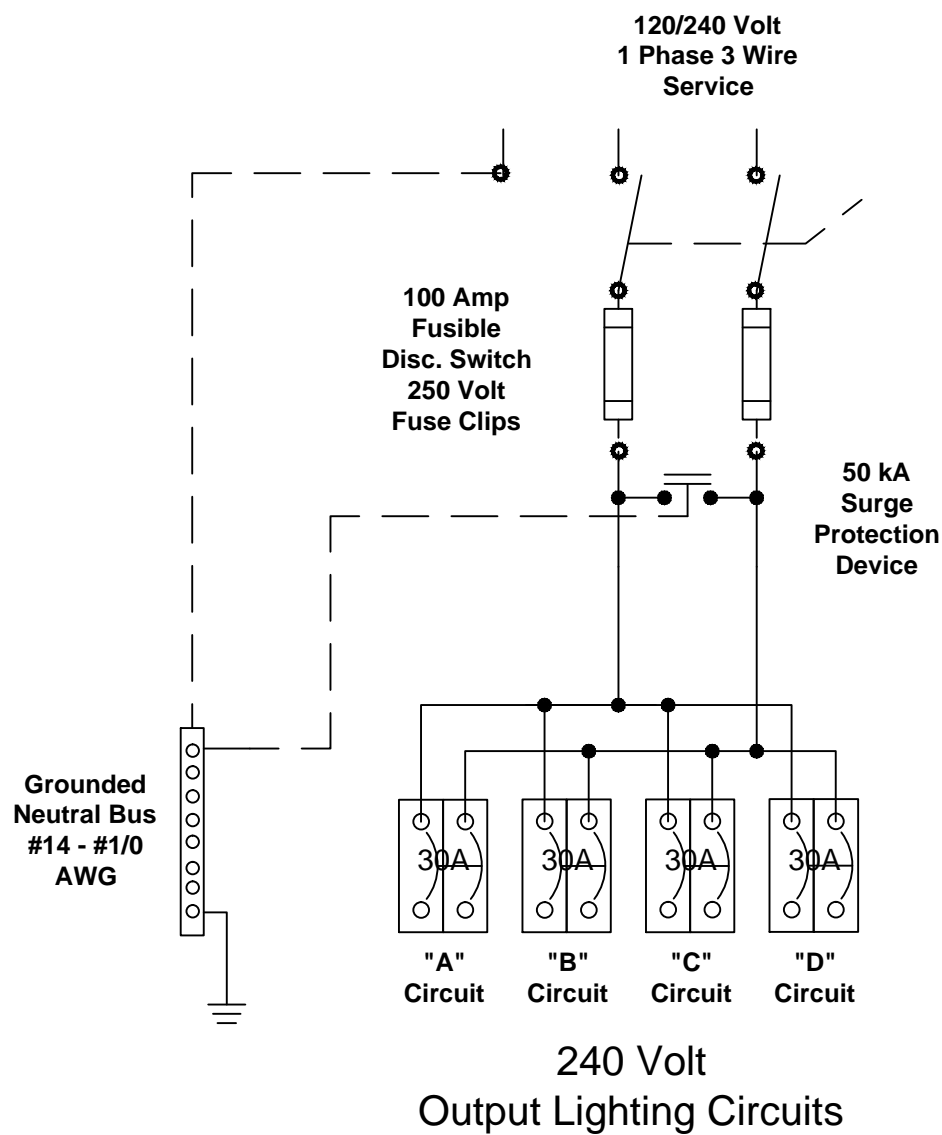
Central Systems & Controls
 26933 Westwood Rd.
 Westlake, Ohio 44145
 (440) 835-0015 Ph. (440) 835-3588 Fax

Title: **Schematic - Control Center CC-E**

Job: **ODOT #173000 Cuyahoga**

Sheet of: Date: **Jun 2020**

Customer: **Miller Cable Company**



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Westlake, Ohio 44145

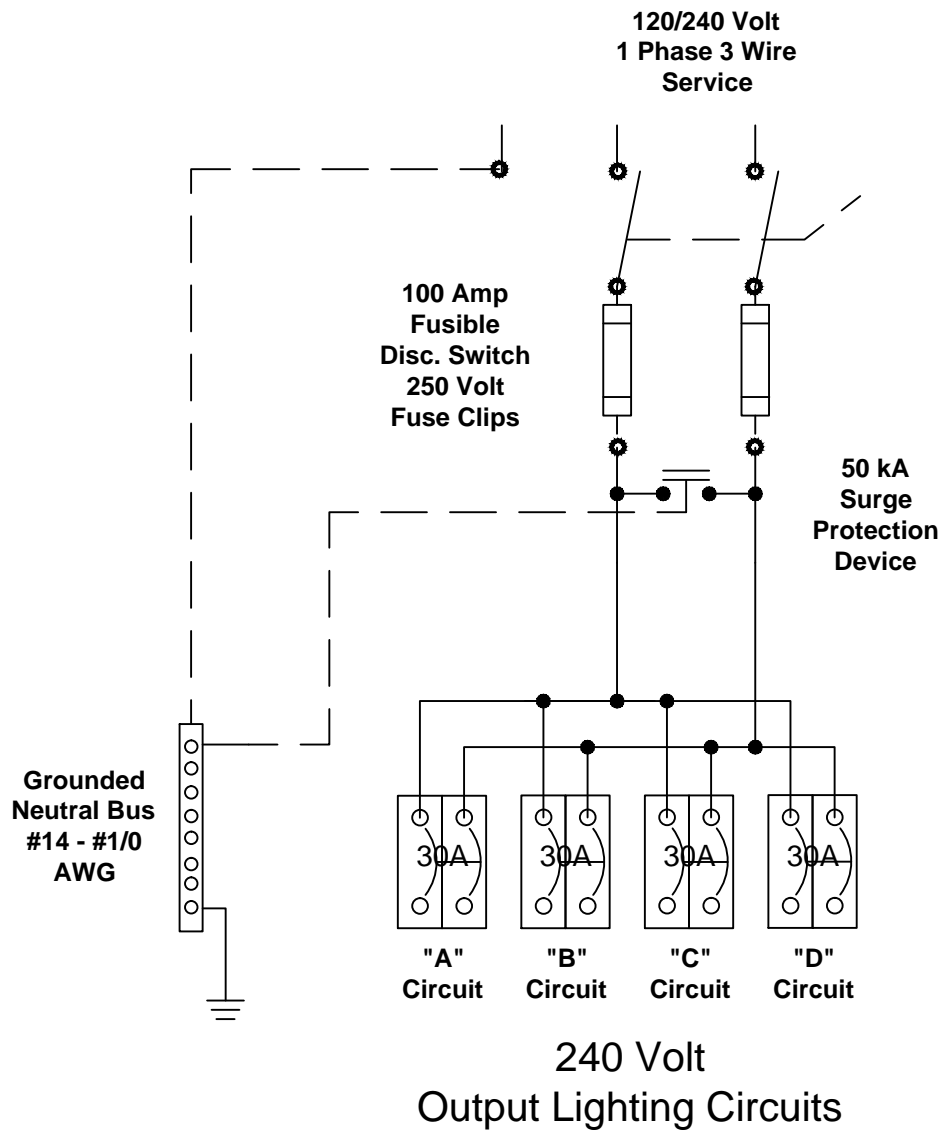
(440) 835-0015 Ph. (440) 835-3588 Fax

Title: **Schematic - Control Center CC-F**

Job: **ODOT #173000 Cuyahoga**

Sheet of: _____ Date: **Jun 2020**

Customer: **Miller Cable Company**



Central Systems & Controls

26933 Westwood Rd.
Westlake, Ohio 44145
(440) 835-0015 Ph. (440) 835-3588 Fax

Title: **Schematic - Control Center CC-G**

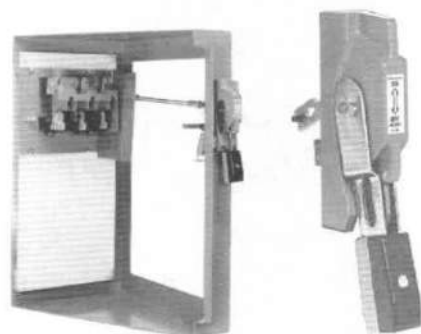
Job: **ODOT #173000 Cuyahoga**

Sheet of: _____ Date: **Jun 2020**

Customer: **Miller Cable Company**

Contents

Description	Page
Flange Mounted — Variable Depth	
Product Description	38-63
Standards and Certifications	38-63
Options and Accessories	38-63
Technical Data and Specifications	38-64
Product Selection	38-64

Complete Operating
Mechanism — C361NE1Handle Only —
C361H1

Product Description

Type C361 Disconnect Switches are suitable for installation in control enclosures having a right-hand flange. Fusible disconnect switches will accept R fuses as standard. Field installable rejection kits are supplied as standard on 100A and 200A clips. For 30A and 60A rejection clips, see footnote ①. The switch is UL component recognized for use on systems with up to 200,000 rms symmetrical amperes available fault current when Class R clips are supplied.

Standards and Certifications

- UL — Component File E55492
- CSA — LR353-439

Options and Accessories

Table 38-64. Electrical Interlocks

Circuit	Catalog Number	Price U.S. \$ ①
1NO-1NC 2NO-2NC	DS200EK1 DS200EK2	222.00 264.00

① Discount Symbol 22-CD.

Table 38-65. Connecting Rods — Increase Maximum Allowable Depth by 5 Inches

Application	Catalog Number	Price U.S. \$
Disconnect Switches 30, 60, 100 and 200A Circuit Breakers 150, 250 and 400A	C371CS1	24.70
Circuit Breakers 600, 800 and 1200A	C371CS2	28.50

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000 Cuyahoga
SC100ZZW(120/240V)
Ref: Lighting Control Centers
CC-E, CC-F, & CC-G

Table 38-66. Operating Mechanism Variable Depth with Disconnect Switch — Right Hand Mounting

Disconnect Switch Size (Amperes)	Variable Depth Mtg. Range Min./Max. (Inches) ②	Maximum Horsepower Ratings ③					Fuse Clip Rating (Amperes) Non-interchangeable Type for Class H, J, K or R Type Fuses Only	Switch and Operating Mechanism Only DOES NOT Include Handle	Switch and Operating Mechanism with 4-Inch Handle ④				
		AC System Volts (Motor Volts)				DC Using 2 Poles 250V Max.			For NEMA 1 or 12 Enclosure		For NEMA 4 Enclosure		
		208 (200)	240 (230)	480 (460)	600 (575)				Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	
30	7 to 16	7-1/2	7-1/2	15	20	5	Non-fusible	C361NC	163.00	C361NC1	234.00	C361NC2	289.00
							30 —	C361SC21	183.00	C361SC121 ⑤	255.00	C361SC221 ⑤	321.00
							60 30	C361SC61	199.00	C361SC161 ⑤	268.00	C361SC261 ⑤	324.00
60	7 to 16	15	15	30	50	10	Non-fusible	C361ND	183.00	C361ND1	255.00	C361ND2	310.00
							60 30	C361SD22	215.00	C361SD122 ⑤	286.00	C361SD222 ⑤	342.00
							— 60	C361SD62	234.00	C361SD162 ⑤	304.00	C361SD262 ⑤	360.00
100	7 to 16	25	30	60	75	20	Non-fusible	C361NE	265.00	C361NE1	334.00	C361NE2	391.00
							100 100	C361SE263	372.00	C361SE1263	444.00	C361SE2263	500.00
200	7 to 16	40	60	125	150	40	Non-fusible	C361NF1	695.00	C361NF1	695.00	C361NF2	750.00
							200 200	C361SF264	760.00	C361SF1264	830.00	C361SF2264	885.00

② Dimension shown is from panel to flange surface.

③ Refers to rating of switch only.

④ Components individually boxed and shipped in overpack carton.

⑤ For rejection clips, add Suffix Letter R to listed Catalog Number, and add \$9. to price. Example: C361SC121R.

Table 38-67. Handle Only

Application	Operating Handle Length in Inches (mm)	NEMA Type Enclosure	Catalog Number	Price U.S. \$
For use with 30, 60, 100 and 200 Ampere Disconnect Switches	4.00 (101.6) 4.00 (101.6) 6.00 (152.4) 6.00 (152.4)	1-12 4 1-12 4	C361H1 C361H2 C361H3 C361H4	71.00 129.00 71.00 129.00

Discount Symbol 1CD-1

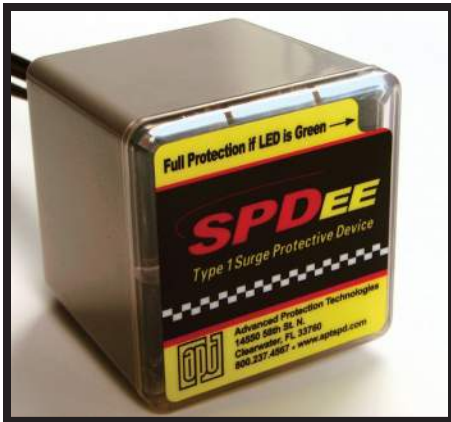


**ADVANCED PROTECTION
TECHNOLOGIES INC.**

SPDEE

SURGE PROTECTIVE DEVICE

The Next Generation SPD designed for UL 1449 Third Edition



Features:

- **UL 1449 Third Edition (Sept 2009) Listed**
- **50kA 8x20μs**
- **Type 1 SPD - 20kA I_n & 10kA (cUL Type 2 optional)**
 - 20kA I_n — Meets UL 96A Lightning Protection Master Label
 - Can be installed upstream or downstream of main disconnect
- **200kA SCCR (most models)**
- **All UL-required OCP & Safety Coordination Included Inside**
- **Voltage Specific Design: Performs better than 'one-size fits all'**
- **Tri-Mount Installation for more mounting flexibility:**
 - Same unit mounts on Pipe Nipple, Bracket or Din-Rail
- **Green = Go Visual Diagnostics: Easy to See; Easy to Understand**

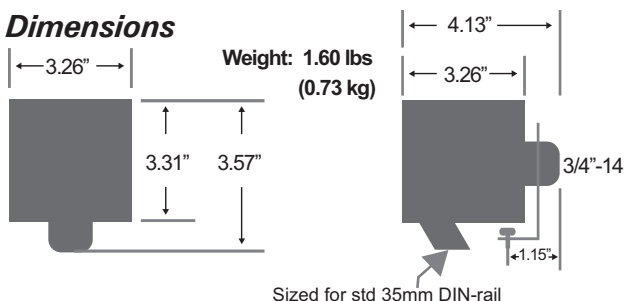
Performance Specifications

- 50kA 8x20μs Per Model
- UL 1449 tested Inominal: 20kA (highest available) + 10kA
- UL 1449 tested SCCR: 200kA (most models)
- Large-Block, 34mm square, 50kA MOVs
- Individually Fused & Thermally Protected MOVs
- UL 1449 Voltage Protection Ratings (VPRs):
 - 600V for 120V, 120/240, 208Y/120
 - 1000V for 277V, 480Y/277V
- Repetitive Impulse: 5000 - 3kA-8x20μs; 1000 - 10kA-8x20μs
- Data table located on backpage

Physical Specifications

- Relative Humidity Range: 0-95% non-condensing
- Operating Frequency: 47-63Hz
- Peak Operating Temperature: +85°C (185°F)
- Typical Operating Temperature: -40°C (-40°F) to +60°C (140°F)
- Response Time: < 1nanosecond
- Solid State Bi-directional Operation
- NEMA 4X Polycarbonate Enclosure—UL746C(f1), UL 94-5VA
- Pre-wired with 3' (1m) of #10 AWG conductor
- Typical Type 2 Connection: #10 AWG to 30A breaker

Dimensions



Green = Go Visual Diagnostic Monitoring

- Green LED = A-OK, Out = replace
- LED Visible from Multiple Sides & Angles - Better Viewing
- Every MOV is Monitored as opposed to 'power is present'

Tri-Mount Installation - L-bracket mounting kit is no cost accessory



Std. 3/4"-14
Nipple



DIN-rail Mount
(rail not incl.)



Bracket Mount
for flat surfaces

Options

- N-G protection
- Dry Contact & Audible Alarm
- Dry contact connection leads exit through nipple via #18 AWG
- Other configurations available for OEM - Call
- L-bracket mounting kit for DIN-rail is no cost accessory

Quality, Standards & Validation

- 2 year warranty (longer optional)

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000 Cuyahoga
SC100ZZW(120/240V)
Ref: Lighting Control Centers
CC-E, CC-F, & CC-G

Special Thank You to NASA/SATOP for design assistance & validation



Advanced Protection Technologies

14550 58th Street North · Clearwater, Florida 33760
(800) 237-4567 · (727) 535-6339 · Fax (727) 539-8955
www.aptsurge.com · info@aptsurge.com



SPDEE Model Numbers

S	50	A	Voltage	System	Options
SPDEE	kA/Phase	Default	120V	1P	N
	50kA		127V	2P	D
			220V	3Y	2
			240V	3D	
			277V	3H	
			347V		
			480V		
			600V		

1P = One Pole, Single Phase
2P = Two Pole, Split Phase
3Y = Three Pole Wye
3D = Three Pole Delta
3H = Three Pole Hi-Leg Delta

N = N-G Protection
D = Dry Contact & Audible Alarm
2 = Type 2 SPD Bearing cUL Mark

No cost accessories:
 9876 L-bracket mounting kit
 8483 Supplementary label

Examples:
 S50A120V3Y = 50kA, 120V, 3 pole (208Y/120V)
 S50A277V3YN = 50kA, 277V, 3 pole (480Y/277V), with N-G

SPDEE Performance Data

MODEL	System Voltage & Config	UL 1449 THIRD Edition (Sept 2009)				I _n	SCCR	MCOV
		Voltage Protection Rating VPR 3000A						
		L-N	L-L	N-G*	L-G*			
S50A120V1P	120V	600		600*	1800*	20kA	200kA	150
S50A120V2P	120V/240V	600	1000	600*	1000*	20kA	200kA	150
S50A120V3Y	208Y/120V	600	1000	600*	1000*	20kA	200kA	150
S50A127V1P	127V	700		600*	1200*	20kA	100kA	180
S50A127V2P	127/254V	700	1200	600*	1200*	20kA	100kA	180
S50A127V3Y	220Y/127V	700	1200	600*	1200*	20kA	100kA	180
S50A220V1P	220V-1 pole	1200		1000*	1800*	20kA	200kA	320
S50A220V3Y	380Y/220V	1200	2000	1000*	1800*	20kA	200kA	320
S50A240V3H	120/240V - Hi-Leg Delta	600 /1200	1000 /1500	600*	1000* /1500*	20kA	200kA	150 /320
S50A240V1P	240V-1 pole	1200		1000	1800	20kA	200kA	320
S50A240V3D	240V Delta - 3 pole		1500		1200	20kA	200kA	320
S50A277V1P	277V	1200		1000*	1800*	20kA	200kA	320
S50A277V2P	240/480V	1200	2000	1000*	1800*	20kA	200kA	320
S50A277V3Y	480Y/277V	1200	2000	1000*	1800*	20kA	200kA	320
S50A347V3Y	600Y/347Y	1500	2500	1200*	2500*	20kA	200kA	420
S50A480V1P	480V-1 pole				1800	10kA	200kA	550
S50A480V3D	480V Delta - 3 pole		3000		1800	10kA	200kA	550
S50A480V3H	240/480V - Hi-Leg Delta	1200/ 1800	2500			10kA	200kA	320/ 550
S50A600V3D	600V Delta - 3 pole		2500		2500	20kA	200kA	690
S100A120V2P	120/240V	600	1000	600		20kA	100kA	150
S100A277V2P	240/480V	1000	1800	1000		20kA	100kA	320
* with optional N-G protection								

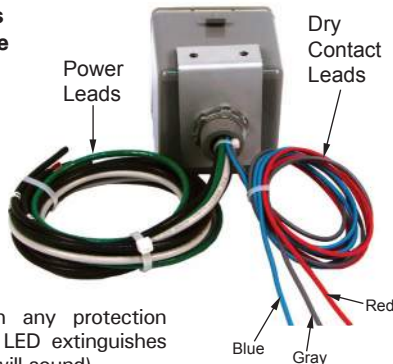
Optional Form C Dry Contact & Audible Alarm

Form C Dry Contact:
 Three (3) #18 wires exit the pipe nipple
 Gray is Common, Blue is Normally Open, Red is Normally Closed

- Normally Open: Use Gray & Blue
- Normally Closed: Use Gray & Red

Audible Alarm:

Alarm sounds when any protection is lost (If diagnostic LED extinguishes (i.e. problem), alarm will sound)

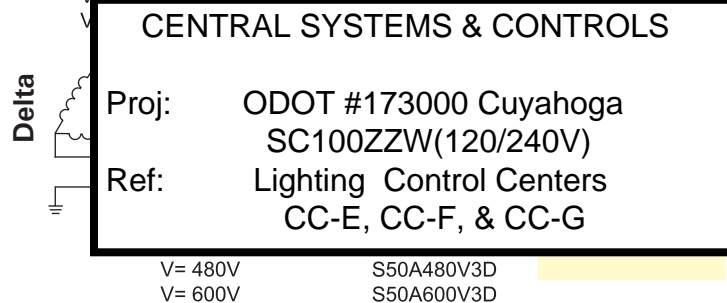
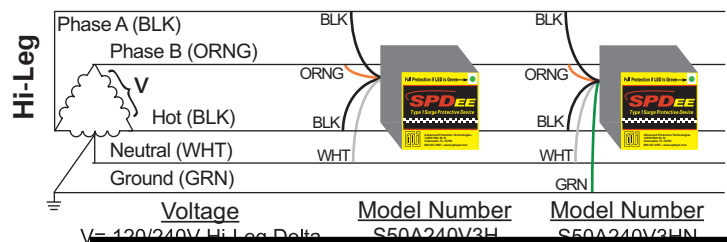
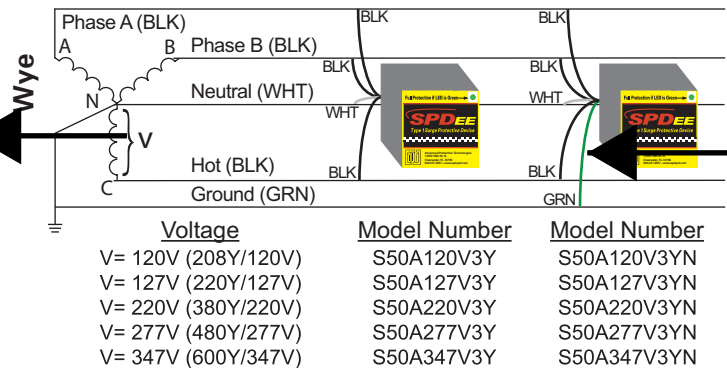
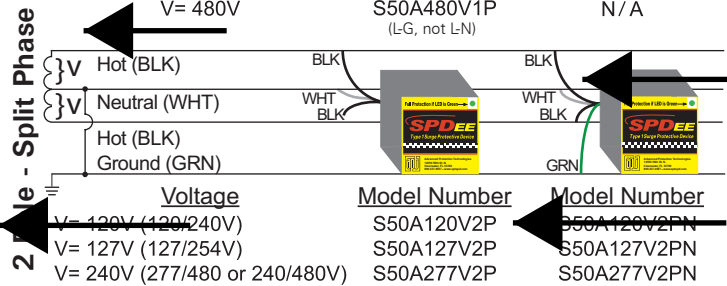
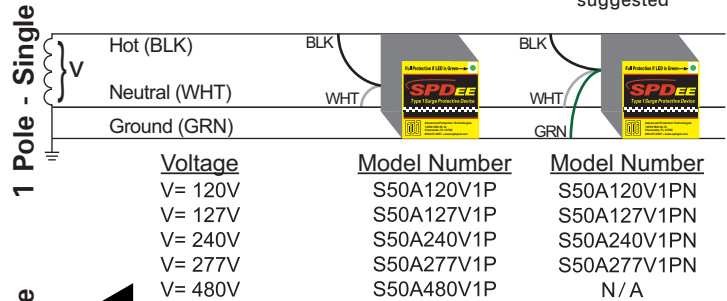


SPDEE Application Guide

SYSTEM CONFIGURATION
 INSTALLED AT OR NEAR SERVICE ENTRANCE OR TRANSFORMER
 INSTALLED > 10'(3M) FROM SERVICE ENTRANCE OR TRANSFORMER

N-G Bonded - Does not require N-G protection

Downstream of N-G Bond - N-G protection suggested



CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000 Cuyahoga
 SC100ZZW(120/240V)
 Ref: Lighting Control Centers
 CC-E, CC-F, & CC-G



Advanced Protection Technologies
 14550 58th Street North · Clearwater, Florida 33760
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 www.aptsurge.com · info@aptsurge.com



COMEC Neutral bars are manufactured from high strength 6061-T6 aluminum alloy to insure both maximum strength and conductivity. They are dual rated for both copper and aluminum conductors and are electro tin plated to provide low contact resistance and protection against corrosion. Assembly can be made with only a screwdriver or allen wrench.

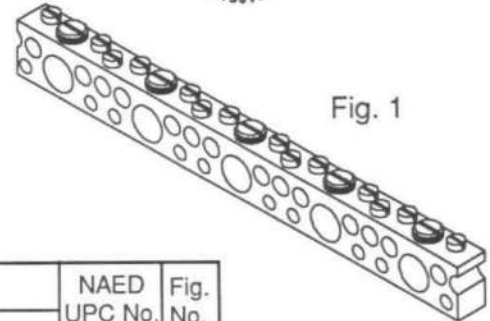


Fig. 1

DUAL RATED SCB - NEUTRAL BARS

Catalog Number	Cond. Range		Net Price Each		No. of Taps		Pcs. per Ctn.	Wt. per 100	Dimensions			NAED UPC No.	Fig. No.
	Main	Tap	1-9 Pcs.	10-UP Pcs.	Lg.	Sm.			A	B	C		
SCB1/0-120*	1/0-14	6-14	22.00	16.50	30	90	1	44	36.0	0.38	0.63	10746	1
SCB1/0-21	1/0-14	6-14	4.40	3.30	6	15	1	14.2	8.63	0.38	0.63	10747	1
SCB1/0-13	1/0-14	6-14	3.13	2.35	4	9	1	11.8	4.38	0.38	0.63	10748	1
SCB1/0-9-2	1/0-14	6-14	2.47	1.85	2	7	1	7.4	3.44	0.38	0.63	10759	1
SCB1/0-7-0	1/0-14	6-14	2.20	1.65	2	5	10	6.5	2.25	0.38	0.63	10750	1

* - No Mounting Holes, Furnished with Screws - To be Field cut to proper size - 1/0 Conductor holes on 1.172" centers.

Insulating Mounting Brackets

SCB-MB-1	N/A	N/A	2.60	1.95	N/A	N/A	10	5	1.25	0.58	1.59	10937	2
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Non-Insulating (Steel) Mounting Brackets

SCB1/0-11B	1/0-14	N/A	3.81	2.86	3	8	1	18.3	3.44	1.53	.844	60089	3
SCB1/0-15B	1/0-14	N/A	4.05	3.04	4	11	1	21.8	4.61	1.53	.844	60090	3
SCB1/0-19B	1/0-14	N/A	5.01	3.77	5	14	1	25.2	5.77	1.53	.844	60091	3
SCB1/0-23B	1/0-14	N/A	7.56	5.67	6	17	1	28.6	6.97	1.53	.844	60092	3
SCB1/0-27B	1/0-14	N/A	7.78	5.83	7	20	1	31.9	8.11	1.53	.844	60093	3

Adapter for 2/0 Aluminum Cable

CA-206-1	2/0-4	6-14	2.07	1.55	N/A	N/A	10	1.5	0.66	0.63	0.83	10751	4
----------	-------	------	------	------	-----	-----	----	-----	------	------	------	-------	---

SCB-2/0	2/0-14	6-14	Consult factory for price and availability.				Variable	.375	.687	N/A	1
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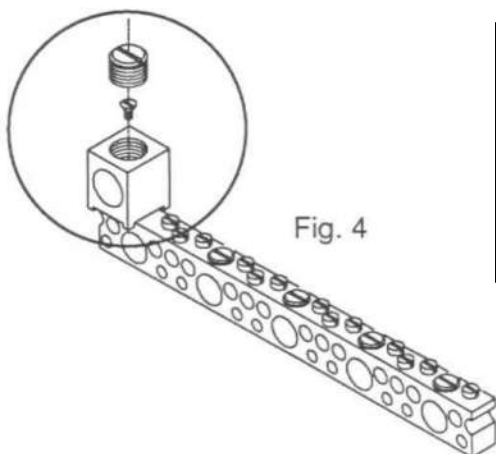


Fig. 4

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000 Cuyahoga
SC100ZZW(120/240V)
Ref: Lighting Control Centers
CC-E, CC-F, & CC-G

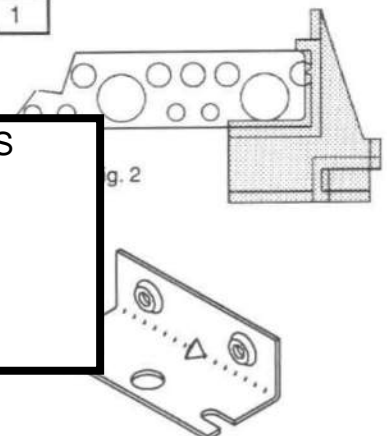
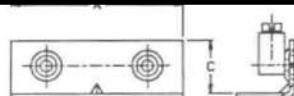


Fig. 2



Low Ampere QOU

Low Ampere QOU Miniature Circuit Breakers

QOU unit mount miniature circuit breakers (cable-in/cable-out) are ideal for OEM applications. They have the Square D™ circuit breaker's unique Visi-Trip™ feature and can be DIN rail-mounted or surface- or flush-mounted using mounting feet.

General Specifications Common to All Low Ampere QOU Circuit Breakers

- For convenient flush mount, surface mount or DIN mount (symmetrical rail 35 x 7.5 DIN/EN 50 022)
- Single handle with internal common trip
- Terminal lug wire size (1) 14–2 AWG Cu or Al
- Reversible line and load lugs
- Field-installable quick connectors
- UL Listed 48 Vdc (5 k AIR)
- UL Listed as HACR Type: 10–70 A
- High magnetic trip circuit breakers (QOU-HM) are recommended for applications where high initial inrush may occur and for individual dimmer applications.
- For DIN mounting rails, see IEC Starters and Relays, Section 18.

Table 7.20: QOU Low Ampere Miniature Circuit Breakers

Ampere Rating	1P 120/240 Vac		2P 120/240 Vac		2P 240 Vac		3P 240 Vac	
	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.▲	\$ Price	Cat. No.	\$ Price
10 k AIR								
10 A	QOU110	40.20	QOU210	87.00	—	168.00	QOU310	285.00
15 A	QOU115		QOU215		QOU215H		QOU315	
20 A	QOU120		QOU220		QOU220H		QOU320	
25 A	QOU125		QOU225		QOU225H		QOU325	
30 A	QOU130		QOU230		QOU230H		QOU330	
35 A	QOU135		QOU235		—		QOU335	
40 A	QOU140		QOU240		—		QOU340	
45 A	QOU145		QOU245		—		QOU345	
50 A	QOU150		QOU250		—		QOU350	
60 A	QOU160		QOU260		—		QOU360	
70 A	QOU170	78.00	QOU270	171.00	—	—	QOU370	363.00
22 k AIR								
15 A	QOU115VH	101.00	QOU215VH	189.00	—	—	QOU315VH	426.00
20 A	QOU120VH		QOU220VH		—	—	QOU320VH	
25 A	QOU125VH		QOU225VH		—	—	QOU325VH	
30 A	QOU130VH		QOU230VH		—	—	QOU330VH	
35 A	QOU135VH		QOU235VH		—	—	—	—
40 A	QOU140VH		QOU240VH		—	—	—	—
45 A	QOU145VH		QOU245VH		—	—	—	—
50 A	QOU150VH		QOU250VH		—	—	—	—
60 A	QOU160VH		QOU260VH		—	—	—	—

▲ QOU-H interrupting rating is 10 kA at 240 Vac.

Table 7.21: QOU-HM Miniature Circuit Breakers (10 k AIR)

Ampere Rating	1P 120/240 Vac		2P 120/240 Vac		2P 240 Vac		3P 240 Vac	
	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price
15 A	QOU115HM	40.20	—	—	—	—	—	—
20 A	QOU120HM		—	—	—	—	—	—

Table 7.22: QYU UL1077 Recognized Supplementary Protectors (5 k AIR)

Ampere Rating	1P 277 Vac		2P 120/240 Vac		2P 240 Vac		3P 240 Vac	
	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price
10 A	QYU110	—	—	—	—	—	—	—
15 A	QYU115	—	—	—	—	—	—	—
20 A	QYU120	—	—	—	—	—	—	—
25 A	QYU125	—	—	—	—	—	—	—
30 A	QYU130	—	—	—	—	—	—	—

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000 Cuyahoga
SC100ZZW(120/240V)
Ref: Lighting Control Centers
CC-E, CC-F, & CC-G

High Ampere QOU

General Specifications

- Flush mount, surface mount or DIN mount
- Internal common trip
- Non-reversible line and load lugs
- Terminal lug wire size (1) 12–2/0 AWG Cu or Al.
- UL Listed 60 Vdc per pole (5 k AIR). (Note: except switches)
- Same physical packaging provide no overcurrent or short circuit protection. They are UL Listed per UL1087 and are CSA certified.

Table 7.23: QOU High Ampere Miniature Circuit Breakers (10 k AIR)

Ampere Rating	1P 120/240 Vac		2P 120/240 Vac		2P 240 Vac		3P 240 Vac	
	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price
80 A	QOU180	176.00	QOU280	246.00	—	—	QOU380	416.00
90 A	QOU190		QOU290		—	—	QOU390	
100 A	QOU1100		QOU2100		—	—	QOU3100	
125 A	—	—	QOU2125	452.00	—	—	—	—

Table 7.24: QOU Non-Automatic Switches

Ampere Rating	1P 120 Vac		2P 120/240 Vac		2P 240 Vac		3P 240 Vac	
	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price
60 A	—	—	—	—	QOU200	87.00	QOU300	285.00
100 A	—	—	—	—	QOU2000	246.00	QOU3000	416.00
125 A	—	—	—	—	QOU20001	452.00	QOU30001	716.00

Interrupting Ratings Page 7-3
Accessories Page 7-12, 7-15
Dimensions Page 7-54



High Ampere QOU

Central Systems & Controls

26933 Westwood Rd. #400

Westlake, Ohio 44145

(440) 835-0015 Ph (440) 835-3588 Fax

E-Mail: TRuffing@Central-Systems.com

Customer:	Irizar Electric, LLC
Purchase Order:	PO #2013.10
Project Reference:	ODOT #173000 BU-27 Street Lighting
Description:	SC060ZZW(120/240V) Lighting Control Center Ref: CC-V

BILL OF MATERIALS

Item	Qty	Manufacturer	Part #	Description
1	1	Central Systems	43H18W8DN4XSS	43"H x 18"W x 8-3/4"D NEMA 4X Stainless Steel Wall Mount Enclosure with provision for Flange Mounted Operating Handle, 2 Pt Door Latching/Locking Handle, and Enameled Steel Back Panel
2	1	Square D	9422-M24	NEMA 4X Stainless Steel 2 Pt. Door Latch Kit
3	1	Mersen	STXR240S05	50 kA Surge Protective Device for 120/240 Volt Service
4	1	Cutler Hammer	C361SD222	60 Amp, 250 Volt, Fusible Disconnect Switch with Class "R" Fuse Clips and NEMA 4X Flange Mount Operating Handle
5	1	C3Controls	300-S65N30D00	65 Amp, 3 Pole, Electrically Held Contactor with 120 Volt Coil.
6	1	C3Controls	SSO3-SLRD-NO/NO	30 MM, 3 Position Maintained Selector Switch
7	1	C3Controls	LP-84	"Man-Off-Auto" Legend Plate
8	1	Marathon	6CC30A1SPQ	30 Amp, 1 Pole, 600 Volt Class "CC" Fuse Block
9	1	Comec	SCB-1/0-22	Grounded Neutral Bus #14 - #1/0 AWG
10	2	Square D	QOU-210	10 Amp, 2 Pole, 240 Volt Panel Mount Circuit Breaker
11	1	Square D	QOU-220	20 Amp, 2 Pole, 240 Volt Panel Mount Circuit Breaker

Note: Unit will be labeled "Suitable for Service Entrance" per Article #230 of the NEC.

**26933 Westwood Rd. #400
Westlake, Ohio 44145
(440) 835-0015 Ph (440) 835-3588 Fax
E-Mail: TRuffing@Central-Systems.com**

BILL OF MATERIALS

Note: Unit will be labeled "Suitable for Service Entrance" per Article #230 of the NEC.

Submittal: 099

Revision: 0

Date Submitted: 8/18/2020

Response Due By: 9/3/2020



Project: 16051 - ODOT 173000 CUY IR 490/SR010 (OC3)

Description: BU27 - Street Level Lighting Control Centers – Un-Metered

To: Bryan Shepherd
Cleveland Public Power (CPP)

Email: BShepherd@cpp.org

From: Oliver Bluestone
Kokosing Construction Company, Inc.

Email: obluestone@kokosing.biz

Submittal Type:	Submitted For:
<input type="checkbox"/> Engineered Drawings	<input checked="" type="checkbox"/> Approval
<input type="checkbox"/> Shop Drawings	<input type="checkbox"/> Record
<input type="checkbox"/> Working Drawings	<input type="checkbox"/> Other
<input type="checkbox"/> CPM Schedule	
<input type="checkbox"/> Material Certifications / Test Results	Sent Via:
<input type="checkbox"/> Reports	<input checked="" type="checkbox"/> Attached (Electronic)
<input checked="" type="checkbox"/> Product Data/Samples	<input type="checkbox"/> Attached (Hard Copy)
<input type="checkbox"/> Other:	

Submittal #	Copies	Spec #	Rev. #	Description	Status
099	1			099 – BU27 - Street Level Lighting Control Centers – Un-Metered	For Approval

Comments:

Please see the attached submittal from miller cable for the (Un-Metered) street level lighting control centers called for in BU27.

Please let me know if you have any questions.

Signed: 

**26933 Westwood Rd. #400
Westlake, Ohio 44145
(440) 835-0015 Ph (440) 835-3588 Fax
E-Mail: TRuffing@Central-Systems.com**

BILL OF MATERIALS

Note: Unit will be labeled "Suitable for Service Entrance" per Article #230 of the NEC.

Central Systems & Controls

26933 Westwood Rd. #400

Westlake, Ohio 44145

(440) 835-0015 Ph (440) 835-3588 Fax

E-Mail: TRuffing@Central-Systems.com

Customer:	Irizar Electric, LLC
Purchase Order:	PO #2013.10
Project Reference:	ODOT #173000 BU-27 Street Lighting
Description:	SC060ZZW(120/240V) Lighting Control Center Ref: CC-D

BILL OF MATERIALS

Item	Qty	Manufacturer	Part #	Description
1	1	Central Systems	43H18W8DN4XSS	43"H x 18"W x 8-3/4"D NEMA 4X Stainless Steel Wall Mount Enclosure with provision for Flange Mounted Operating Handle, 2 Pt Door Latching/Locking Handle, and Enameled Steel Back Panel
2	1	Square D	9422-M24	NEMA 4X Stainless Steel 2 Pt. Door Latch Kit
3	1	Mersen	STXR240S05	50 kA Surge Protective Device for 120/240 Volt Service
4	1	Cutler Hammer	C361SD222	60 Amp, 250 Volt, Fusible Disconnect Switch with Class "R" Fuse Clips and NEMA 4X Flange Mount Operating Handle
5	1	Comec	SCB-1/0-22	Grounded Neutral Bus #14 - #1/0 AWG
6	2	Square D	QOU-210	10 Amp, 2 Pole, 240 Volt Panel Mount Circuit Breaker
7	1	Square D	QOU-230	30 Amp, 2 Pole, 240 Volt Panel Mount Circuit Breaker
8	1	Square D	QOU-220	20 Amp, 2 Pole, 240 Volt Panel Mount Circuit Breaker

Note: Unit will be labeled "Suitable for Service Entrance" per Article #230 of the NEC.

Central Systems & Controls

26933 Westwood Rd. #400

Westlake, Ohio 44145

(440) 835-0015 Ph (440) 835-3588 Fax

E-Mail: TRuffing@Central-Systems.com

Customer:	Irizar Electric, LLC
Purchase Order:	PO #2013.10
Project Reference:	ODOT #173000 BU-27 Street Lighting
Description:	SC060ZZW(120/240V) Lighting Control Center Ref: CC-V

BILL OF MATERIALS

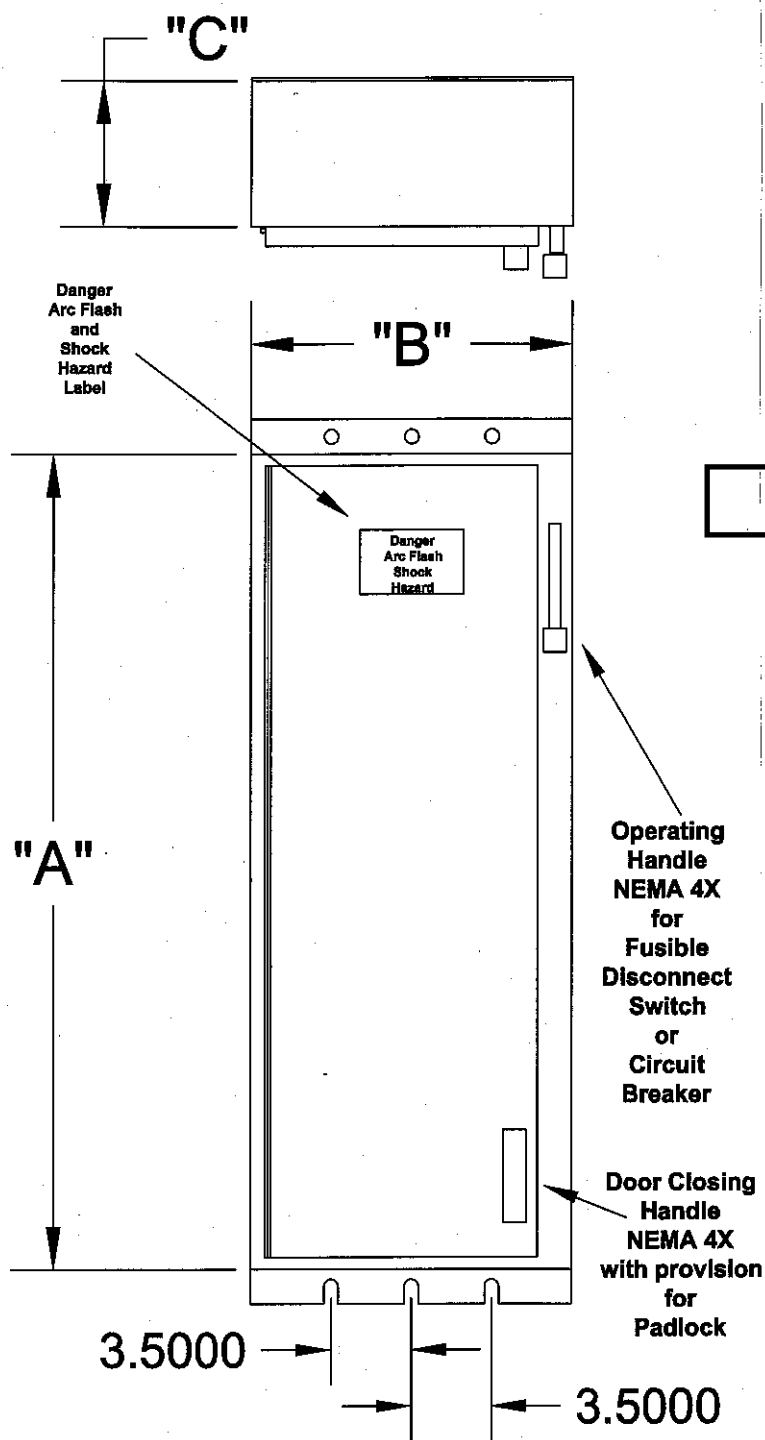
Item	Qty	Manufacturer	Part #	Description
1	1	Central Systems	43H18W8DN4XSS	43"H x 18"W x 8-3/4"D NEMA 4X Stainless Steel Wall Mount Enclosure with provision for Flange Mounted Operating Handle, 2 Pt Door Latching/Locking Handle, and Enameled Steel Back Panel
2	1	Square D	9422-M24	NEMA 4X Stainless Steel 2 Pt. Door Latch Kit
3	1	Mersen	STXR240S05	50 kA Surge Protective Device for 120/240 Volt Service
4	1	Cutler Hammer	C361SD222	60 Amp, 250 Volt, Fusible Disconnect Switch with Class "R" Fuse Clips and NEMA 4X Flange Mount Operating Handle
5	1	C3Controls	300-S65N30D00	65 Amp, 3 Pole, Electrically Held Contactor with 120 Volt Coil.
6	1	C3Controls	SSO3-SLRD-NO/NO	30 MM, 3 Position Maintained Selector Switch
7	1	C3Controls	LP-84	"Man-Off-Auto" Legend Plate
8	1	Marathon	6CC30A1SPQ	30 Amp, 1 Pole, 600 Volt Class "CC" Fuse Block
9	1	Comec	SCB-1/0-22	Grounded Neutral Bus #14 - #1/0 AWG
10	2	Square D	QOU-210	10 Amp, 2 Pole, 240 Volt Panel Mount Circuit Breaker
11	1	Square D	QOU-220	20 Amp, 2 Pole, 240 Volt Panel Mount Circuit Breaker

Note: Unit will be labeled "Suitable for Service Entrance" per Article #230 of the NEC.

**26933 Westwood Rd. #400
Westlake, Ohio 44145
(440) 835-0015 Ph (440) 835-3588 Fax
E-Mail: TRuffing@Central-Systems.com**

BILL OF MATERIALS

Note: Unit will be labeled "Suitable for Service Entrance" per Article #230 of the NEC.



AMPS	TYPE	A	B	C
30	XS	14-5/8	9-0	7-1/2
30	X	17-1/2	9-0	7-1/2
60	X	17-1/2	9-0	7-1/2
100	X	17-1/2	9-0	7-1/2
30	Y	28-0	14-0	8-3/4
30	Z	35-0	14-0	8-3/4
60	Y	28-0	14-0	8-3/4
60	Z	35-0	14-0	8-3/4
60	ZZ	43-0	14-3/4	8-3/4
60	ZZW	43-0	18-0	8-3/4
100	Y	28-0	14-0	8-3/4
100	Z	35-0	14-0	8-3/4
100	ZZ	43-0	14-3/4	8-3/4
100	ZZW	43-0	18-0	8-3/4
100	MELP*	28-0	18-0	8-3/4
200	Y	28-0	14-0	8-3/4
200	Z-1	35-0	14-0	8-3/4
200	ZZ	43-0	14-3/4	8-3/4
200	SPL	60-0	20-0	8-3/4
200	SPL1	60-0	24-0	8-3/4
400	SPL4	66-0	32-0	16-0

*Special Mounting Feet per MELP Dwg. #01S0059

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000
 BU-27 Street Lighting
 Ref: Lighting Control Centers (5)
 SC060ZZW(120/240V)
 CC-C, CC-D, CC-V, CC-X, & CC-Z

ENCLOSURE SHALL BE 14 GA. OR HEAVIER AISI TYPE 304 STAINLESS STEEL WITH BRUSH FINISH. ENCLOSURE TO BE NEMA TYPE 4 WATERTIGHT SUITABLE FOR OUTDOOR LOCATIONS. ALL FASTENERS SHALL CONFORM TO ASTM 320/A 320 M (AISI-300 SERIES). A DISCONNECT HANDLE SHALL FLANGE MOUNTED AND CAPABLE OF BEING LOCKED IN EITHER POSITION.

THE ENCLOSURE SHALL BE DESIGNED SO THAT IT MAY NOT BE OPENED WHEN THE OPERATING HANDLE IS IN THE "ON" POSITION EXCEPT BY MEANS OF A LOCKABLE, DOUBLE DEFEATER MECHANISM. A LOCKABLE TWO OR THREE POINT LATCH SHALL BE PROVIDED.

Central Systems & Controls

26933 Westwood Rd.

Westlake, Ohio 44145

(440) 835-0015 Ph. (440) 835-3588 Fax

Title: NEMA 4X Stainless Steel Enclosures

Job:

Sheet of:

Date:

June 2010

Customer:

Class 9423 door closing mechanisms cover a range of enclosures with up to 91 inch high maximum door openings. The door closing mechanisms are designed to be used on control enclosures and interlocked with a Class 9422 disconnect device, although they all can be used independently. Three different systems are available and their use is as recommended below. A complete system is available for interlocking all the doors of a multi-door enclosure with the master door when using the 6 in. or 8 in. vault handle mechanism.

Note that the "Master Door" is defined to be the door of a single or multi-door enclosure which is interlocked directly with the disconnect device. The master door can be hinged on either the right or left hand side. It can be located in any position on a multi-door enclosure. On the other hand, an "Auxiliary Door" is defined to be any remaining doors of a multi-door enclosure which are interlocked with the master door by means of the overhead interlocking system as illustrated on pages 8-26 and 8-27.

Selection Procedure

Step 1.
Determine enclosure construction.

Step 2.
Determine Class 9422 disconnect device.

Step 3.
Determine the location of door hinge.

Step 4.
Select the door closing mechanism.

Step 5.
Select the auxiliary door closing mechanism for interlocking all auxiliary doors (for multi-door enclosures.)

CENTRAL SYSTEMS & CONTROLS




Proj: ODOT #173000
BU-27 Street Lighting
Ref: Lighting Control Centers (5)
SC060ZZW(120/240V)
CC-C, CC-D, CC-V, CC-X, & CC-Z

disconnect device.

flange or center channel).

required. (A complete system for the medium and large

Table 8.84: Door Closing Mechanism

60 in. Maximum Door Opening (Recommended)	46-60 in. Door Opening (Recommended)	61-91 in. Door Opening (Recommended)
 <ul style="list-style-type: none"> 2 Point Locking is Standard A Third Roller Latch Kit is Available for 3 Point Locking For 3/4 in. Door Depths 	 <ul style="list-style-type: none"> For use on Single or Multi-Door Enclosures For use with Doors Hinged on Right or Left Side Referred to as the 6 in. Vault Handle Mechanism For 3/4 in. Door Depths 	 <ul style="list-style-type: none"> For use on Single or Multi-Door Enclosures For use with Doors Hinged on Right or Left Side Referred to as the 8 in. Vault Handle Mechanism For 1-1/8 in. Door Depths

The door closing mechanisms listed below are for use on small to medium size single door control enclosures. They are designed to be used in conjunction with Class 9422 flange mounted disconnect switches and circuit breaker operating mechanisms; however, they can be used independently as well. When used on properly designed and gasketed NEMA Type 12 enclosures, they meet NFPA 79 standards.

Table 8.85: Single Door Enclosures—NEMA Type 4 or 12 with 60 in. High Maximum Opening

Description	For Use On (Enclosure Type)	Use In Conjunction With	Door Latch Handle Length	Suggested Maximum Door Opening	Door Depth	Type	\$ Price
Two point, roller latch, door closing mechanism for use on enclosures with doors hinged on the left hand side.	NEMA Type 4 and 12 Sheet Steel	Class 9422 Types A1, A3, A9	4 in.	Less than 39 in.	3/4	M4	228.00
			4 in.	Less than 39 in.	1	M10	314.00
	NEMA Type 4 and 12 Stainless Steel	Class 9422 Types A2, A4, A10	6 in.	60 in.	3/4	M6	240.00
			4 in.	Less than 39 in.	3/4	M24	300.00
Two point, roller latch, door closing mechanism for use on enclosures with doors hinged on the right hand side.	NEMA Type 4 and 12 Sheet Steel	Class 9422 Types A1, A3, A9	4 in.	Less than 39 in.	3/4	M4L	228.00
			4 in.	Less than 39 in.	1	M10L	314.00
	NEMA Type 4 and 12 Stainless Steel	Class 9422 Types A2, A4, A10	6 in.	60 in.	3/4	M9L	243.00
			4 in.	Less than 39 in.	3/4	M24L	300.00
Third roller latch kit for 3 point locking; for use where 3 point locking is desired or where the door opening is 39 in. or more.	NEMA Type 4 and 12 Sheet Steel	Class 9423 Types M4, M9, M4L, M9L	—	—	3/4	M3	50.00
	NEMA Type 4 and 12 Stainless Steel	Class 9423 Types M24, M24L	—	—	3/4	M23	57.00

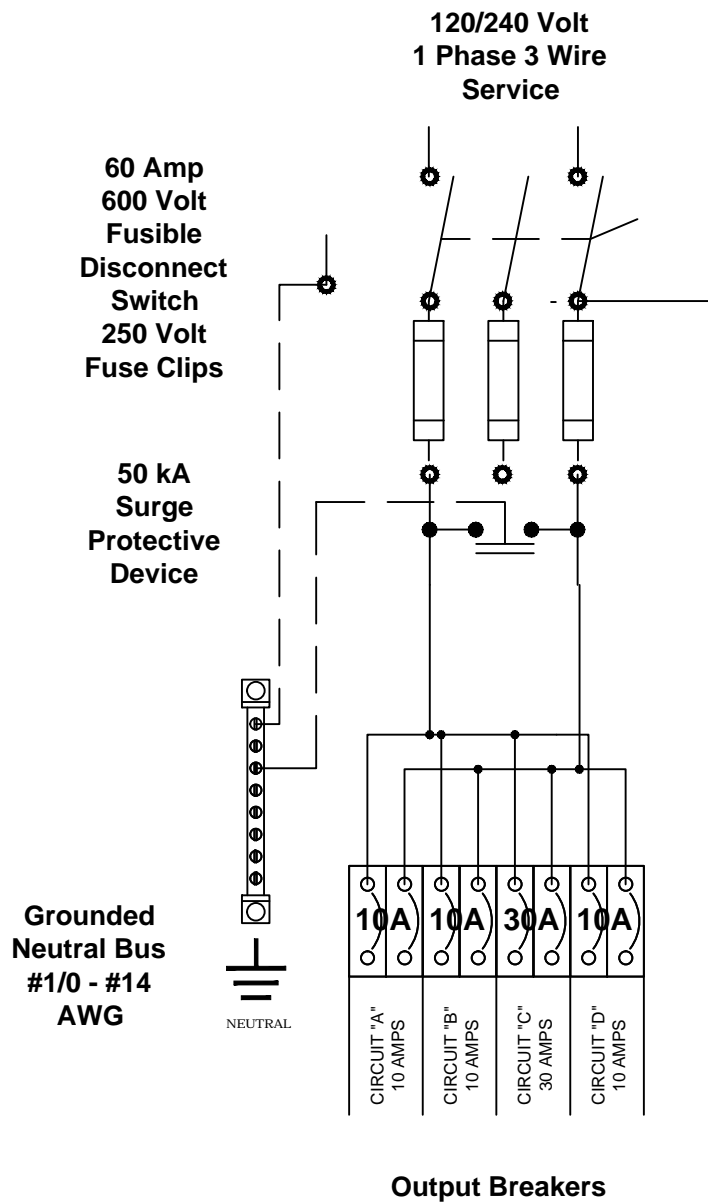
▲ Suitable for door depths of 1-1/8 in., 1-1/4 in., 1-3/8 in. and 1-1/2 in..

9422 TCN30

Circuit Breaker Mechanism

Type M4

Latch bar not included, but most prepunched enclosures that accept Square D® operating mechanisms supply a predrilled latch bar.



Central Systems & Controls

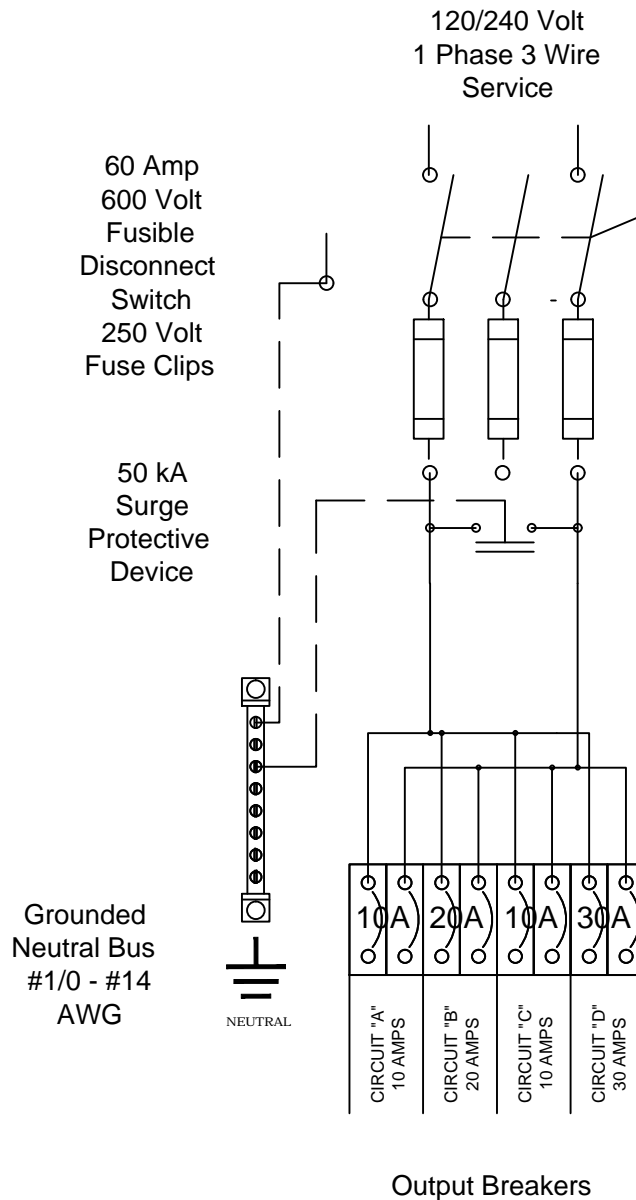
26933 Westwood Rd.
Westlake, Ohio 44145
(440) 835-0015 Ph. (440) 835-3588 Fax

Title: **Schematic - Control Center CC-C**

Job: **ODOT #173000 - Opportunity Corridor**

Sheet of: Date: **July 2020**

Customer: **Irizar Electric, LLC**



Central Systems & Controls

26933 Westwood Rd.

Westlake, Ohio 44145

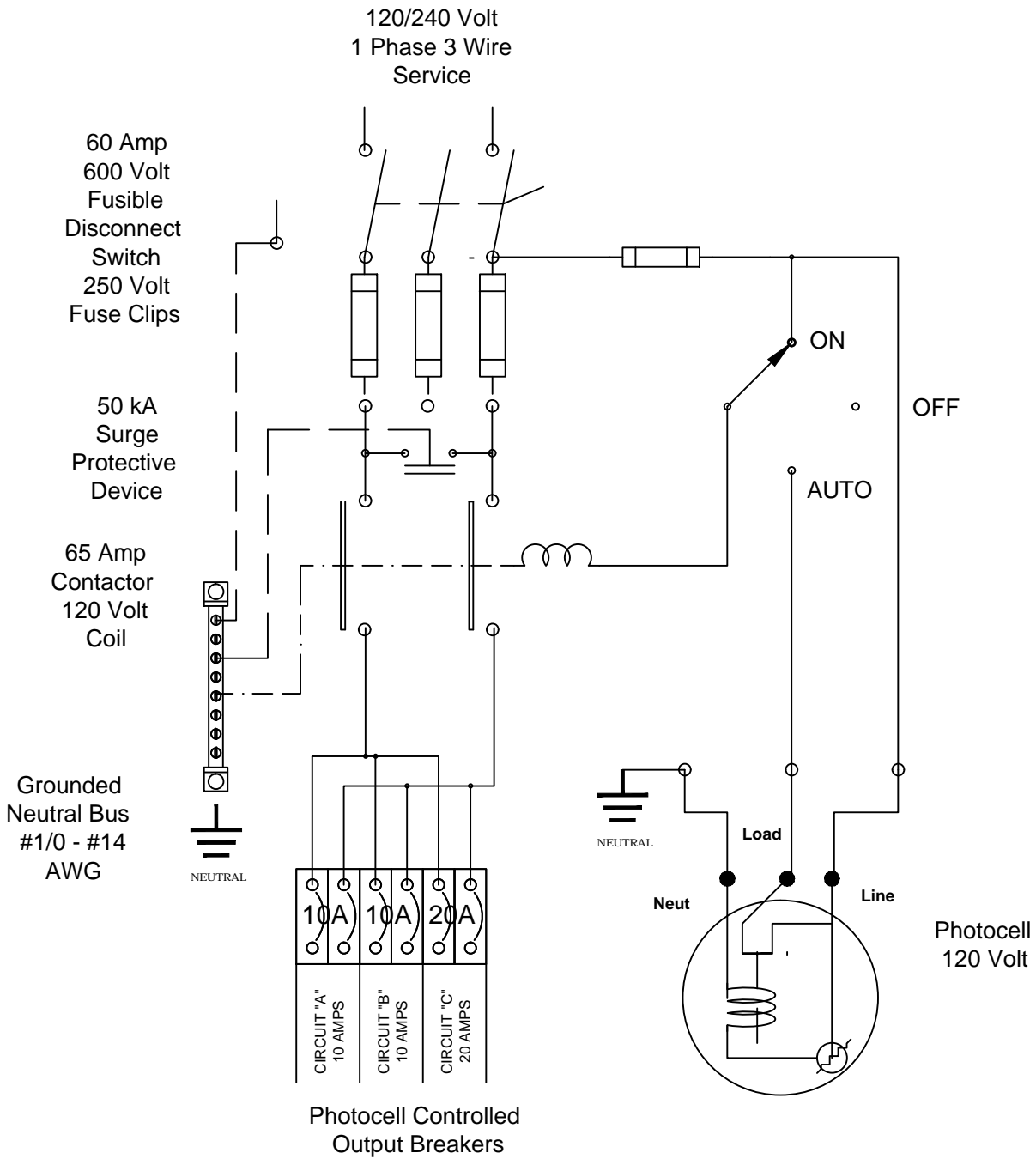
(440) 835-0015 Ph. (440) 835-3588 Fax

Title: Schematic - Control Center CC-D

Job: ODOT #173000 - Opportunity Corridor

Sheet of: Date: July 2020

Customer: Irizar Electric, LLC



Central Systems & Controls

26933 Westwood Rd.

Westlake, Ohio 44145

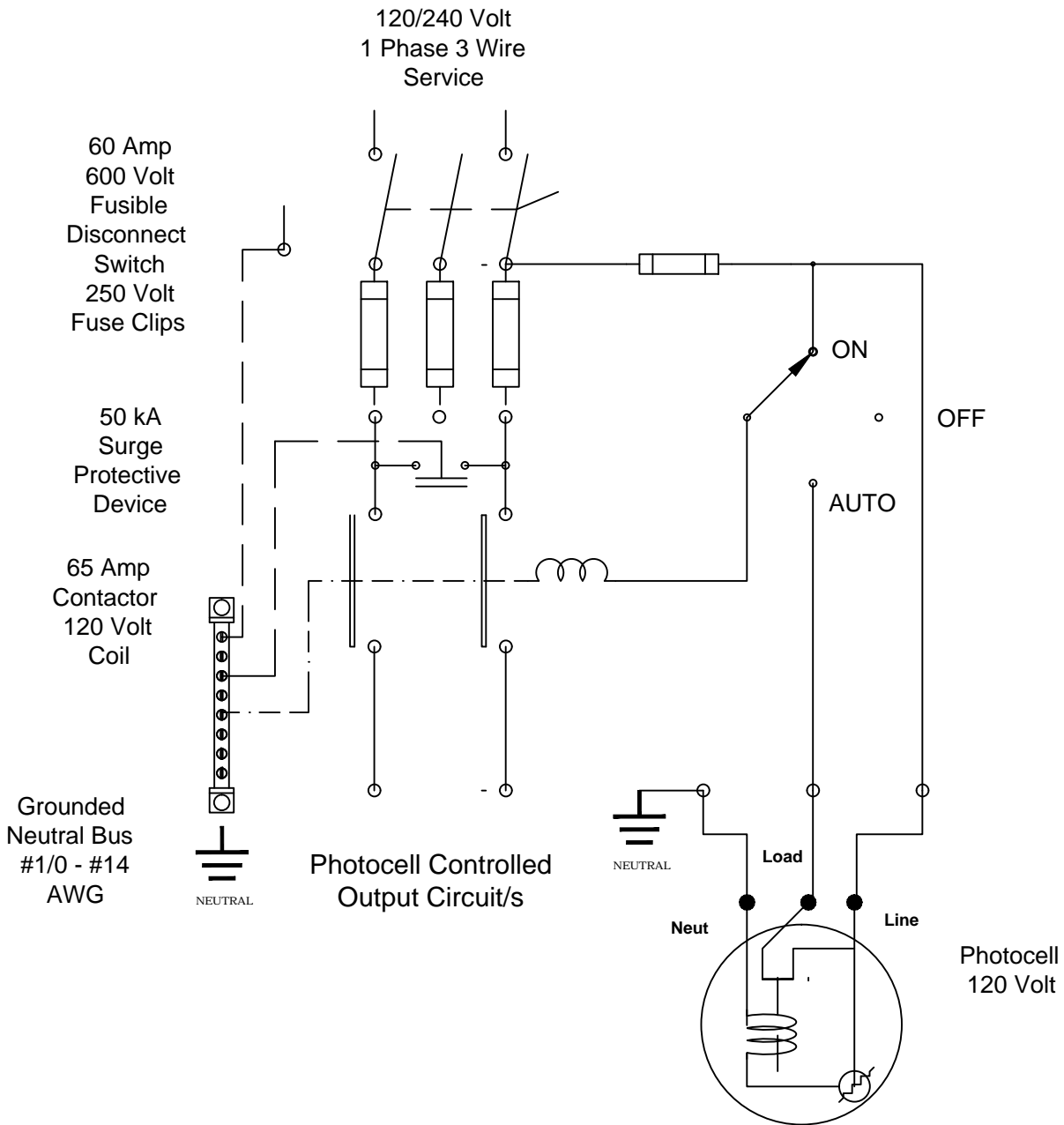
(440) 835-0015 Ph. (440) 835-3588 Fax

Title: Schematic - Control Center CC-V

Job: ODOT #173000 - Opportunity Corridor

Sheet of: Date: July 2020

Customer: Irizar Electric, LLC



Central Systems & Controls

26933 Westwood Rd.

Westlake, Ohio 44145

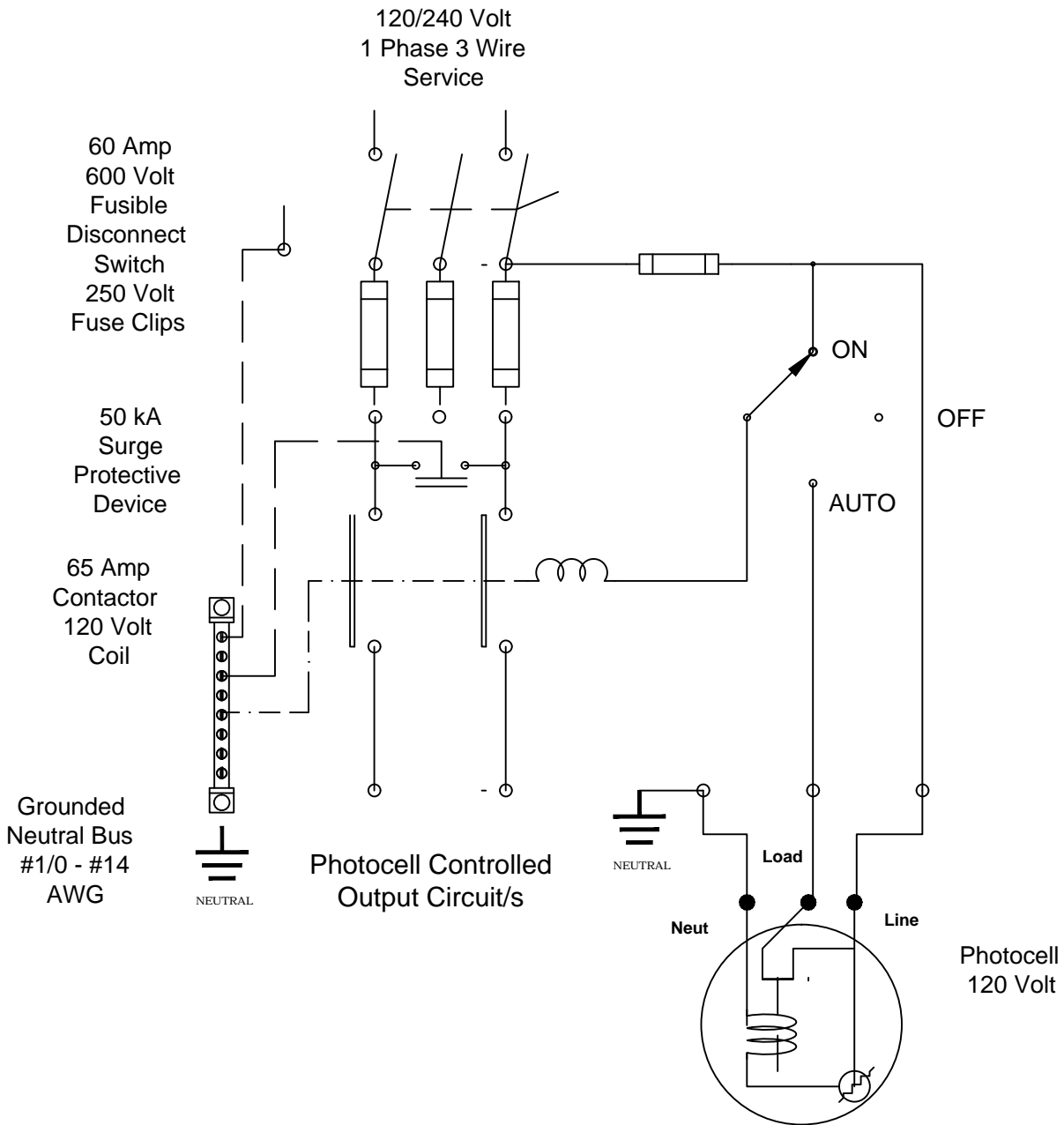
(440) 835-0015 Ph. (440) 835-3588 Fax

Title: Schematic - Control Center CC-X

Job: ODOT #173000 - Opportunity Corridor

Sheet of: Date: July 2020

Customer: Irizar Electric, LLC



Central Systems & Controls

26933 Westwood Rd.

Westlake, Ohio 44145

(440) 835-0015 Ph. (440) 835-3588 Fax

Title: Schematic - Control Center CC-Z

Job: ODOT #173000 - Opportunity Corridor

Sheet of: Date: July 2020

Customer: Irizar Electric, LLC

Contents

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Flange Mounted — Variable Depth	
Product Description	38-63
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Product Description

Type C361 Disconnect Switches are suitable for installation in control enclosures having a right-hand flange. Fusible disconnect switches will accept R fuses as standard. Field installable rejection kits are supplied as standard on 100A and 200A clips. For 30A and 60A rejection clips, see footnote ⑤. The switch is UL component recognized for use on systems with up to 200,000 rms symmetrical amperes available fault current when Class R clips are supplied.

Standards and Certifications

- UL — Component File E55492
- CSA — LR353-439

Options and Accessories

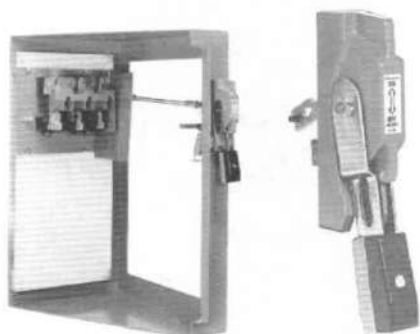
Table 38-64. Electrical Interlocks

Circuit	Catalog Number	Price U.S. \$ ①
1NO-1NC 2NO-2NC	DS200EK1 DS200EK2	222.00 264.00

① Discount Symbol 22-CD.

Table 38-65. Connecting Rods — Increase Maximum Allowable Depth by 5 Inches

Application	Catalog Number	Price U.S. \$
Disconnect Switches 30, 60, 100 and 200A Circuit Breakers 150, 250 and 400A	C371CS1	24.70
Circuit Breakers 600, 800 and 1200A	C371CS2	28.50



Complete Operating Mechanism — C361NE1

Handle Only — C361H1

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000
BU-27 Street Lighting
Ref: Lighting Control Centers (5)
SC060ZZW(120/240V)
CC-C, CC-D, CC-V, CC-X, & CC-Z

Table 38-66. Operating Mechanism Variable Depth with Disconnect Switch

Disconnect Switch Size (Amperes)	Variable Depth Mtg. Range Min./Max. (Inches) ②	Maximum Horsepower Ratings ③					Fuse Clip Rating (Amperes) Non-interchangeable Type for Class H, J, K or R Type Fuses Only		Switch and Operating Mechanism Only DOES NOT Include Handle		Switch and Operating Mechanism with 4-Inch Handle ④			
		AC System Volts (Motor Volts)				DC Using 2 Poles 250V Max.	250V	600V	Catalog Number	Price U.S. \$	For NEMA 1 or 12 Enclosure		For NEMA 4 Enclosure	
		208 (200)	240 (230)	480 (460)	600 (575)						Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
30	7 to 16	7-1/2	7-1/2	15	20	5	Non-fusible		C361NC	163.00	C361NC1	234.00	C361NC2	289.00
							30	—	C361SC21	183.00	C361SC121 ⑤	255.00	C361SC221 ⑤	321.00
							60	30	C361SC61	199.00	C361SC161 ⑤	268.00	C361SC261 ⑤	324.00
60	7 to 16	15	15	30	50	10	Non-fusible		C361ND	183.00	C361ND1	255.00	C361ND2	310.00
							60	30	C361SD22	215.00	C361SD122 ⑤	268.00	C361SD222 ⑤	342.00
								60	C361SD62	234.00	C361SD162 ⑤	304.00	C361SD262 ⑤	360.00
100	7 to 16	25	30	60	75	20	Non-fusible		C361NE	265.00	C361NE1	334.00	C361NE2	391.00
							100	100	C361SE263	372.00	C361SE1263	444.00	C361SE2263	500.00
200	7 to 16	40	60	125	150	40	Non-fusible		C361NF1	695.00	C361NF1	695.00	C361NF2	750.00
							200	200	C361SF264	760.00	C361SF1264	830.00	C361SF2264	885.00

② Dimension shown is from panel to flange surface.

③ Refers to rating of switch only.

④ Components individually boxed and shipped in overpack carton.

⑤ For rejection clips, add Suffix Letter R to listed Catalog Number, and add \$9. to price. Example: C361SC121R.

Table 38-67. Handle Only

Application	Operating Handle Length in Inches (mm)	NEMA Type Enclosure	Catalog Number	Price U.S. \$
For use with 30, 60, 100 and 200 Ampere Disconnect Switches	4.00 (101.6) 4.00 (101.6) 6.00 (152.4) 6.00 (152.4)	1-12 4 1-12 4	C361H1 C361H2 C361H3 C361H4	71.00 129.00 71.00 129.00

Discount Symbol 1CD-1

SURGE-TRAP® STXR SERIES

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000
BU-27 Street Lighting
Ref: Lighting Control Centers (5)
SC060ZZW(120/240V)
CC-C, CC-D, CC-V, CC-X, & CC-Z



The most popular range in the STX series offering, the Surge-Trap® Type 1 STXR meets requirements for UL1449 4th Edition and is ideal for the replacement of obsolete surge arrestors. The STXR Series SPDs feature TPMOV® technology inside, making them the safest product available. With a small, compact design and line or load installation flexibility, the STXR series is the perfect fit for branch panel and/or individual equipment protection.

FEATURES AND BENEFITS:

- Designed with the industry leading Mersen TPMOV® Technology
- LED status indicator (ON = Good, OFF = Replace)
- NEMA 4X enclosure for outdoor or indoor use
- Fits 3/4" knockouts with 3' leads for easy installation
- Optional mounting bracket for surface mount applications
- Optional audible alarm and remote dry contacts
- For use in ANSI/UL Type 1 or 2 SPD installations
- Up to 10 modes of Protection (L-N, L-L, L-G optional, N-G optional)
- 5-year warranty

SURGE PROTECTIVE DEVICE

NEMA DEVICES FOR ANSI/UL 1449 TYPE 1 AND 2 APPLICATIONS

RATINGS:

- **Volts (U_n):** 120-600VAC
- **Nominal Discharge Current Rating (I_n):** 10-20kA
- **Surge Capacity (per phase and per mode):** 50kA
- **Short-Circuit Current Rating (SCCR):** 200kA

APPROVALS:

- ANSI/UL 1449 4th Edition, Type 1 SPD, File E210793
- CSA C22.2, Type 1 SPD
- ANSI/IEEE C62.41.1, C62.41.2, C62.45
- UL96A Lightning Protection
- RoHS Compliant



GENERAL PRODUCT SPECIFICATIONS

Mounting:	3/4" – 14 threaded hub Includes locking washer	Operating & Storage Temperature:	-40°C to +85°C
Wiring:	Pre-wired 3' (1m) 10AWG	Relative Humidity Range:	0 to 95% non-condensing
Enclosure:	NEMA 4X Non-metallic	Visual End-of-Life Indicator:	GREEN = OK, OUT = REPLACE
Flammability:	UL94-5VA	Frequency:	50-60Hz

CATALOG NUMBER (INCLUDES SUFFIXES*)	SYSTEM VOLTAGE AND CONFIGURATION	I _n	MAXIMUM CONTINUOUS OPERATING VOLTAGE (MCOV, U _c)				VOLTAGE PROTECTION RATING (VPR) (UL 1449, 6kA, 3kV)			
			L-N	L-G	L-L	N-G*	L-N	L-G	L-L	N-G*
STXR120P05	120V Single Phase	20kA	150	300	-	150	700	1200	-	600
STXR240P05	240V Single Phase	20kA	320	640	-	320	1200	1800	-	1000
STXR240S05	240/120V Split Phase	20kA	150	300	300	150	700	1200	1200	600
STXR480S05	480/240V Split Phase	20kA	320	640	640	320	1200	1800	2000	1000
STXR208Y05	208/120V 3-Phase WYE	20kA	150	300	300	150	700	1200	1200	600
STXR380Y05	380/220V 3-Phase WYE	20kA	320	640	640	320	1200	1800	2000	1000
STXR480Y05	480/277V 3-Phase WYE	20kA	320	470	640	150	1200	1800	2000	700
STXR600Y05	600/347V 3-Phase WYE	20kA	420	690	840	270	1500	2500	2500	1000
STXR240D05	240V 3-Phase DELTA	20kA	-	320	640	-	-	1200	2000	-
STXR480D05	480V 3-Phase DELTA & HRG WYE	10kA	-	550	1100	-	-	1800	3000	-
STXR600D05	600V 3-Phase DELTA	20kA	-	690	840	-	-	2000	2500	-
			L-N/ HL-N	L-G/ HL-G	L-L/ HL-L	N-G*	L-N/ HL-N	L-G/ HL-G	L-L/ HL-L	N-G*
STXR240H05	240/120V Hi-Leg DELTA	20kA	150/270	300/420	300/420	150	700/1.2k	1.2k/1.2k	2k/2k	600
STXR480H05	480/240V Hi-Leg DELTA	10kA	320/550	320/550	640/870	320	1.2/1.8k	1.2/1.8k	2k/2.5k	1000

*Suffixes:
Add Suffix "N" for N-G protection. Example: STXR208Y05N
Add Suffix "A" for Audible Alarm and Dry Contact. Example: STXR208Y05A
For both options, Example: STXR208Y05AN

CATALOG NUMBER	ACCESSORY DESCRIPTION
STXRM BK	STXR Mounting Bracket Kit. Includes (1) 90 degree bracket and (2) mounting screws

Optional Form C Dry Contact and Audible Alarm (Suffix "A")

Form C Dry Contact (Pre-wired 3' 18AWG)

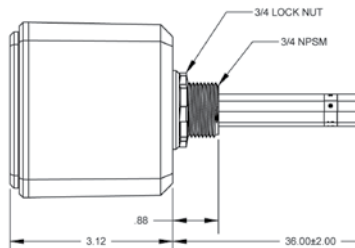
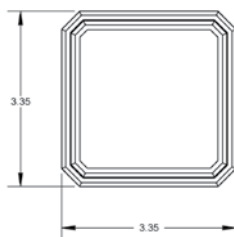
125VAC, 1A Resistive
30VDC, 2A General Purpose

Gray = Normally Closed
Blue = Common
Red = Normally Open

Audible Alarm

Alarm sounds when any protection is lost

Dimensions and Mounting Configurations



3/4"-14 Mounting Hub



Bracket Mount Option

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000
BU-27 Street Lighting
Ref: Lighting Control Centers (5)
SC060ZZW(120/240V)
CC-C, CC-D, CC-V, CC-X, & CC-Z

IT'S EASY TO BUILD YOUR OWN CONTACTOR

Simply pick the code number from each of the sections below and combine them to build your part number.

Non-Reversing Contactors



Example: To build one of our most popular Contactors, the part number would be **I + II + III** or **300-S09N30D10**



I. NON-REVERSING CONTACTORS (3 NORMALLY OPEN POLES)

CODE	MAX. I _e (A)		RATINGS FOR SWITCHING AC MOTORS - AC-2, AC-3										LIST
			kW (50Hz)				HP (60Hz)						
			3 PHASE				1 PHASE		3 PHASE				
	AC-3	AC-1	230V	400/415V	500V	690V	115V	230V	200V	230V	460V	575V	
300-S09N30	9	25	2.2	4	5.5	5.5	1/2	1-1/2	3	3	5	7-1/2	\$ 53.00
300-S12N30	12	25	3	5.5	7.5	7.5	3/4	2	3	3	7-1/2	10	\$ 79.00
300-S18N30	18	32	4	7.5	10	10	1	3	5	5	10	15	\$ 87.00
300-S25N30	25	45	7.5	11	15	15	2	3	7-1/2	7-1/2	15	15	\$ 99.00
300-S32N30	32	60	9	15	18.5	18.5	3	5	10	10	20	25	\$130.00
300-S40N30	40	60	11	18.5	25	30	3	5	10	15	30	25	\$178.00
300-S50N30	50	80	15	22	30	35	3	7 1/2	15	15	40	40	\$212.00
300-S65N30	65	110	18.5	30	40	45	5	10	20	20	50	50	\$236.00
300-S80N30	80	140	22	37	45	45	7 1/2	15	25	25	60	60	\$271.00
300-S95N30	95	140	25	45	55	55	7-1/2	15	25	30	60	75	\$346.00
300-S105N30	105	140	30	55	65	65	10	20	30	40	75	75	\$398.00

II. COIL VOLTAGE CODE

AC COIL VOLTAGE CODES															
VOLTAGE	12	24	48	110 / 120	208	220	230	240	277	400	400 ~ 415	480	500	550	600
50Hz	—	—	—	D	—	—	—	—	—	—	R	—	T	U	—
60Hz	—	—	—	D	L	—	—	F	P	—	—	R	—	—	T
50/60Hz	XB	XC	XJ	—	—	XAJ	XN	—	—	XAM	—	—	—	—	—
DC COIL VOLTAGE CODES															
VOLTAGE	12	24	24 ~ 28	125	110 ~ 130	208 ~ 240	250	LIST							
-S09 to -S25	ZB	ZC	—	ZQ	—	—	ZP	\$ 35.00							
-S32 to -S40	ZB	ZC	—	ZQ	—	—	ZP	\$ 78.00							
-S50 to -S105	—	—	EC	—	EL	EE	—	\$282.00							

III. AUXILIARY CONTACT CONFIGURATION

CODE	DESCRIPTION	LIST
00	Without Auxiliary Contacts (Contactors 300-S32 to 300-S105 only)	—
10	1 Normally Open*	\$ 18.00
01	1 Normally Closed*	\$ 18.00

*NOTE: Integral right side mounted on 9A ~ 25A contactors, front mounted on 32A ~ 105A contactors.

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000
BU-27 Street Lighting
Ref: Lighting Control Centers (5)
SC060ZZW(120/240V)
CC-V, CC-X, & CC-Z

SOME OF OUR POPULAR CONFIGURATIONS:

NON-REVERSING CONTACTORS

CATALOG NUMBER	DESCRIPTION	LIST
300-S09N30D10	Non-Reversing, 9A, 3 Pole, 120V AC Coil, 1 NO Auxiliary Contact	\$ 71.00
300-S09N30ZC10	Non-Reversing, 9A, 3 Pole, 24V DC Coil, 1 NO Auxiliary Contact	\$106.00
300-S25N30D10	Non-Reversing, 25A, 3 Pole, 120V AC Coil, 1 NO Auxiliary Contact	\$117.00

SPECIFICATIONS:

ELECTRICAL SPECIFICATIONS														
		S09	S12	S18	S25	S32	S40	S50	S65	S80	S95	S105		
ELECTRICAL GENERAL														
	UNITS													
Rated Operating Frequency	Hz	25 ~ 400												
Impedance per Pole	mΩ	1.90	1.90	1.60	1.60	2.10	1.60	0.85	0.86	0.86	0.76	0.76		
POWER DISSIPATION PER POLE														
AC-1	W	1.47	1.47	2.46	3.34	4.60	3.42	6.89	10.40	10.40	14.89	14.89		
AC-3	W	0.19	0.34	0.78	1.03	1.31	1.52	2.22	3.63	5.50	6.86	8.37		
Rated Coil Frequencies		AC: 50Hz, 60Hz, 50/60Hz and DC												
ELECTRICAL UL/CSA APPLICATIONS														
Rated Operating Voltage, Ue	VAC	600												
General Purpose Current Rating	A	25	25	32	32	60	60	90	110	110	140	140		
RATED 1 PHASE OPERATING CURRENT, Ie														
115V	A	9.8	13.8	16	24	34	34	54	56	80	80	100		
230V	A	10	12	17	28	28	28	40	40	50	60	88		
RATED 1 PHASE OPERATING POWER, Pe														
115V	HP	1/2	3/4	1	2	3	3	5	5	7-1/2	7-1/2	10		
230V	HP	1-1/2	2	3	3	5	5	7-1/2	10	15	15	20		
RATED 3 PHASE OPERATING CURRENT, Ie														
200V	A	11	11	17.5	25.3	32.2	32.2	42.3	62.1	62.1	78.2	92		
230V	A	9.6	9.6	15.2	22	28	42	42	54	68	80	104		
460V	A	7.6	11	14	21	27	40	42	65	65	77	96		
575V	A	9	11	17	17	27	27	41	52	62	77	77		
RATED 3 PHASE OPERATING POWER, Pe														
200V	HP	3	3	5	7-1/2	10	10	15	20	20	25	30		
230V	HP	3	3	5	7-1/2	10	15	15	20	25	30	40		
460V	HP	5	7-1/2	10	15	20	30	40	50	50	60	75		
575V	HP	7-1/2	10	15	15	25	25	40	50	60	75	75		
Size		CENTRAL SYSTEMS & CONTROLS					—	1	—	2	—	—	3	—
Standard							5	5	5	10	10	10	10	10
Maximum							60	60	60	100	125	150	175	200
High Fault							100	100	100	100	100	100	100	100
Maximum							40	50	60	100	100	125	150	175
Electrical							1.6	1.5	1.5	1.6	1.8	1.5	1.5	1.0
Medium														
Open														
ELECTRICAL														
Rated Insulation		1000												
Rated Impulse Voltage Withstand, Uimp	kV	6	6	6	6	6	6	8	8	8	8	8		
Rated Operating Voltage, Ue	VAC	690												
Rated Thermal Current, Ith for Ambient Temperature < 55° C (131° F)	A	25	25	32	45	60	60	90	110	110	140	140		
RATED AC-1 OPERATING CURRENT, Ie														
At 55° C (131° F)	A	25	25	32	45	60	60	90	110	110	140	140		
At 70° C (158° F)	A	20	20	25	32	48	48	72	88	88	110	110		
RATED AC-3 OPERATING CURRENT, Ie														
220 ~ 240V	A	9	12	18	25	32	40	60	65	80	95	105		
380 ~ 400V	A	9	12	18	25	32	40	60	65	80	95	105		
415 ~ 440V	A	9	12	18	25	32	40	60	65	80	95	105		
500V	A	7.5	10.5	14	19	24	32	48	55	63	79	85		
660 ~ 690V	A	7	9	13	15	22	25	44	44	48	60	80		
RATED 3 PHASE AC-3 OPERATING POWER, Pe														
220 ~ 240V	kW	2.2	3	4	6.5	9	11	15	18.5	22	25	30		
380 ~ 400V	kW	4	5.5	7.5	11	15	18.5	22	30	37	45	55		
415 ~ 440V	kW	4	5.5	9	12.5	15	22	30	37	45	55	55		
500V	kW	5.5	7.5	10	15	18.5	25	30	40	45	55	65		
660 ~ 690V	kW	5.5	7.5	10	15	18.5	30	33	45	45	55	65		

Proj: ODOT #173000
 BU-27 Street Lighting
 Ref: Lighting Control Centers (5)
 SC060ZZW(120/240V)
 CC-V, CC-X, & CC-Z

MECHANICAL, ENVIRONMENTAL AND CONSTRUCTION SPECIFICATIONS

		S09	S12	S18	S25	S32	S40	S50	S65	S80	S95	S105
COIL CHARACTERISTICS (CONTINUED)												
	UNITS											
DC												
Operating	xUc	0.80 ~ 1.10										
Pick-Up	xUc	0.45 ~ 0.65	0.45 ~ 0.65	0.45 ~ 0.65	0.45 ~ 0.65	0.45 ~ 0.75	0.45 ~ 0.75	0.70 ~ 0.80	0.70 ~ 0.80	0.70 ~ 0.80	0.70 ~ 0.80	0.70 ~ 0.80
Drop-Out	xUc	0.15 ~ 0.30	0.15 ~ 0.30	0.15 ~ 0.30	0.15 ~ 0.30	0.15 ~ 0.30	0.15 ~ 0.30	0.40 ~ 0.60	0.40 ~ 0.60	0.40 ~ 0.60	0.40 ~ 0.60	0.40 ~ 0.60
COIL CONSUMPTION												
50HZ, 60HZ, 50/60HZ												
Pick-Up	VA	50 ~ 70	50 ~ 70	50 ~ 70	50 ~ 70	70 ~ 90	70 ~ 90	250 ~ 275	250 ~ 275	250 ~ 275	250 ~ 275	250 ~ 275
Hold-In	VA	7 ~ 11	7 ~ 11	7 ~ 11	7 ~ 11	9 ~ 13	9 ~ 13	16 ~ 20	16 ~ 20	16 ~ 20	16 ~ 20	16 ~ 20
DC												
Pick-Up	W	5 ~ 9	5 ~ 9	5 ~ 9	5 ~ 9	7 ~ 10	7 ~ 10	340	340	340	340	340
Hold-In	W	5 ~ 9	5 ~ 9	5 ~ 9	5 ~ 9	7 ~ 10	7 ~ 10	6.5	6.5	6.5	6.5	6.5
OPERATING TIMES												
AC												
Pick-Up	msec.	8 ~ 20	8 ~ 20	8 ~ 20	8 ~ 20	10 ~ 19	10 ~ 19	15 ~ 30	15 ~ 30	15 ~ 30	15 ~ 30	15 ~ 30
Drop-Out	msec.	6 ~ 13	6 ~ 13	6 ~ 13	6 ~ 13	5 ~ 25	5 ~ 25	9 ~ 15	9 ~ 15	9 ~ 15	9 ~ 15	9 ~ 15
DC												
Pick-Up	msec.	35 ~ 45	35 ~ 45	35 ~ 45	35 ~ 45	40 ~ 55	40 ~ 55	50 ~ 60	50 ~ 60	50 ~ 60	50 ~ 60	50 ~ 60
Drop-Out	msec.	7 ~ 12	7 ~ 12	7 ~ 12	7 ~ 12	30 ~ 65	30 ~ 65	55 ~ 60	55 ~ 60	55 ~ 60	55 ~ 60	55 ~ 60
POWER DISSIPATION												
50Hz, 60Hz, 50/60Hz	W	2.6	2.6	2.6	2.6	4.3	4.3	8.0	8.0	8.0	8.0	8.0
POWER FACTOR												
Closed	cosφ	0.33	0.33	0.33	0.33	0.28	0.28	0.26	0.26	0.26	0.26	0.26
Open	cosφ	0.84	0.84	0.84	0.84	0.73	0.73	0.54	0.54	0.54	0.54	0.54
MECHANICAL												
Mechanical Endurance	Ops. (mill.)	10										
Maximum Mechanical Switching Rate	Ops./hr.	9,000										
CENTRAL SYSTEMS & CONTROLS												
Proj: ODOT #173000 BU-27 Street Lighting Ref: Lighting Control Centers (5) SC060ZZW(120/240V) CC-V, CC-X, & CC-Z												
	lbs.	0.65	0.65	0.65	0.65	1.15	1.19	2.4	2.47	2.4	3.20	3.24

30MM INDUSTRIAL PILOT DEVICES Series 30

c3controls' 30mm Industrial Pilot Devices offer superior quality at an affordable price. These modular devices feature a rugged, all-polyester construction, are UL listed and are rated Type 4/4X as standard for watertight and corrosion resistance. c3's pilot devices are also listed for Type 1, 2, 3, 3R, 12 and 13 requirements. Our multi-voltage LED light unit can be operated at any voltage from 20V to 240V AC or DC.



CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000
BU-27 Street Lighting
Ref: Lighting Control Centers (5)
SC060ZZW(120/240V)
CC-V, CC-X, & CC-Z

Conformity to Standards:

UL 508, 1604

CSA C22.2 No. 14, 213
IEC 60947-1, 60947-5-1

Certifications:

UL File #: E68568 (Guide NKCR, NKCR7);
E157436 (Guide NOIV)

CSA File #: LR47446

CE Marked (per EU Low Voltage Directive
73/23/EEC and 93/68/EEC)



Contact Blocks 94

Push Buttons 96

Special Operators 107

Pilot Lights 110

Selector Switches 114

Legend Plates 118









Accessories 120

Specifications 122

Dimensions 123

SELECT YOUR CONTACT BLOCK

MODULAR CONTACT BLOCK CONFIGURATION

CODE	DESCRIPTION	CONTACT SYMBOL	COLOR	LIST
SILVER CONTACTS				
CBNO	Normally Open Contact Block		Green/Clear	\$ 6.00
CBNC	Normally Closed Contact Block		Red/Clear	\$ 6.00
CBEM	"Early Make" Contact Block		White/Clear	\$ 8.00
CBDB	"Delayed Break" Contact Block		Black/Clear	\$ 8.00
GOLD PLATED CONTACTS				
CBNOG	Normally Open Contact Block		Green/Amber	\$10.00
CBNCG	Normally Closed Contact Block		Red/Amber	\$10.00
CBEMG	"Early Make" Contact Block		White/Amber	\$12.00
CBDBG	"Delayed Break" Contact Block		Black/Amber	\$12.00

STANDARD RATING DESIGNATIONS

A600 RATING DESIGNATION

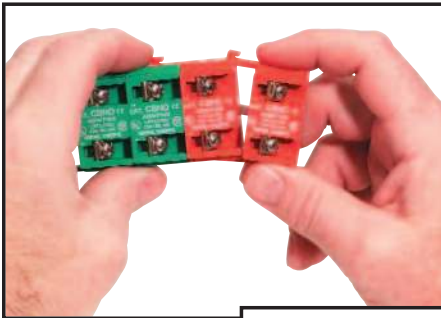
A600 (7,200 VA Make and 720 VA Break),
600V AC Maximum
Maximum Continuous Thermal Current, Ith: 10A

P300 RATING DESIGNATION

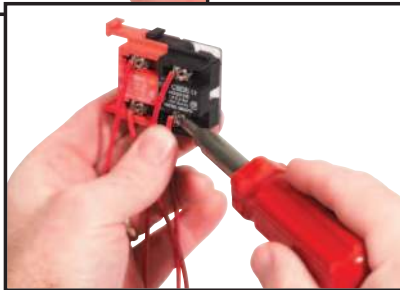
P300 (138 VA Make and 138 VA Break),
250V DC Maximum
Maximum Continuous Thermal Current, Ith: 5A

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000
BU-27 Street Lighting
Ref: Lighting Control Centers (5)
SC060ZZW(120/240V)
CC-V, CC-X, & CC-Z



Our Contact Blocks save you time and money by offering the flexibility to operate multiple control circuits from a single pilot device. Most operators can be stacked up to 4 deep, providing a total of 8 circuits per operator in any combination. Compared to others, our quick install snap-on feature makes installing multiple blocks a "snap" — they install in less time than it takes to pick up a screwdriver! And our heavy-duty construction ensures that these contact blocks stay connected.



Tired of wiring contact blocks in cramped spaces?

Our unique 35 degree angled terminals provide ease of wiring for quick installation. In fact, you can wire the contact blocks outside the tight space of the control panel, then simply "snap-on" to the operator. All terminal screws have self-lifting captive wire clamps to speed wiring.

AVAILABLE CONTACT BLOCKS FOR ORDINARY LOCATIONS



CBNO



CBNC



CBEM



CBDB

IT'S EASY TO BUILD YOUR OWN SELECTOR SWITCH

Simply pick the code number from each of the sections below and combine them to build your part number. See page 1 for more detailed directions.

Selector Switches

I - II - III - IV - V* / VI*

*NOTE: Contact block configurations are based on circuit designations (see charts below).

Example: To build one of our most popular Selector Switches, the part number would be **I + II + III + IV + V + VI** or **SS03-SHWE-NO/NO**



I. BASIC SELECTOR SWITCH OPERATOR FUNCTION

CODE	POS./FUNCTION	LIST
SS02	2/Maintained	\$12.00
SROLR	2/Spring Return, L to R	\$21.00
SRORL	2/Spring Return, R to L	\$21.00
SS03	3/Maintained	\$12.00
SROLR	3/Spring Return, L to C	\$21.00
SRORL	3/Spring Return, R to C	\$21.00
SROLR	3/Spring Return, L & R to C	\$21.00
SS04	4/Maintained	\$12.00
SRO43	4/Spring Return, Pos. 4 to 3	\$21.00
SRO1243	4/Spring Return, Pos. 1 to 2 and Pos. 4 to 3	\$21.00

Each operating handle is black with a factory assembled color insert.

DISCOUNT
SCHEDULE **A**

II. CLAMP RING

CODE	DESCRIPTION	LIST
(Blank)	Polyester (Type 4X)	—
A	Aluminum (Type 4)	\$2.00

III. HANDLE TYPE

CODE	DESCRIPTION	LIST
SH	Standard	\$5.00
SL	Lever	\$5.00

IV. HANDLE INSERT COLOR

CODE	COLOR
BE	Blue
GN	Green
GY	Grey
RD	Red
WE	White
YW	Yellow

V. CONTACT BLOCK CONFIGURATION (LEFT SIDE)

CODE	DESCRIPTION	LIST
(Blank)	Operator without Contact Blocks	—
NO	1 Normally Open Contact Block	\$ 6.00
NC	1 Normally Closed Contact Block	\$ 6.00
EM	1 "Early Make" Contact Block	\$ 8.00
DB	1 "Delayed Break" Contact Block	\$ 8.00
NO-NO	2 Normally Open Contact Blocks	\$12.00
NC-NC	2 Normally Closed Contact Blocks	\$12.00
NO-NC	1 Normally Open and 1 Normally Closed Contact Blocks	\$12.00

VI. CONTACT BLOCK CONFIGURATION (RIGHT SIDE)

CODE	DESCRIPTION	LIST
(Blank)	Operator without Contact Blocks	—
NO	1 Normally Open Contact Block	\$ 6.00
NC	1 Normally Closed Contact Block	\$ 6.00
EM	1 "Early Make" Contact Block	\$ 8.00
DB	1 "Delayed Break" Contact Block	\$ 8.00
NO-NO	2 Normally Open Contact Blocks	\$12.00
NC-NC	2 Normally Closed Contact Blocks	\$12.00
NO-NC	1 Normally Open and 1 Normally Closed Contact Blocks	\$12.00

CONTACT BLOCK SELECTION FOR 2-POSITION SELECTOR SWITCHES

CIRCUIT DESIG.	HANDLE POSITION		BLOCK CATALOG NUMBER	MOUNTING POSITION
	LEFT	RIGHT		
A	O	X	CBNO	EITHER
B	X	O	CBNC	EITHER

CONTACT BLOCK SELECTION FOR 3-POSITION SELECTOR SWITCHES

CIRCUIT DESIG.	HANDLE POSITION			BLOCK CATALOG NUMBER	MOUNTING POSITION
	LEFT	CENTER	RIGHT		
C	X	O	O	CBNO	LEFT
D	O	X	O	CBNC	EITHER
E	O	O	X	CBNO	RIGHT
F	O	X	X	CBDB	LEFT
G	X	O	X	CBEM	EITHER
H	X	X	O	CBDB	RIGHT

O = OPEN X = CLOSED

CONTACT BLOCK SELECTION FOR 4-POSITION SELECTOR SWITCHES

CIRCUIT	HANDLE POSITION	BLOCK	MOUNTING
CENTRAL SYSTEMS & CONTROLS			
Proj:	ODOT #173000		
	BU-27 Street Lighting		
Ref:	Lighting Control Centers (5)		
	SC060ZZW(120/240V)		
	CC-V, CC-X, & CC-Z		

MIX AND MATCH ANY INSERT COLOR AND SELECTOR SWITCH HANDLE



Standard Handle



Standard Handle



Standard Handle



Lever Handle



Lever Handle



Lever Handle

M Fuse Holders - 600 Volt⁺

Specifications:

- Tested and Approved for 100,000 Amp Withstand Rating and Short Circuit Current Ratings (SCCR)
- Clip, Copper Alloy, Tin Plated
- Quick Connect Standard with Screw (S) or Sems Pressure (SP)
- UL Recognized File No. IZLT2.E35113
- CSA Certified File No. LR21455
- **CE** - Rated for 1000 Volts
- RoHS Compliant

+ Refer to www.marathonsp.com/PDFs/1000VCERating.pdf for details on availability of CE voltage ratings greater than 600 Volts



6M30A3SPQ



6M30A3B

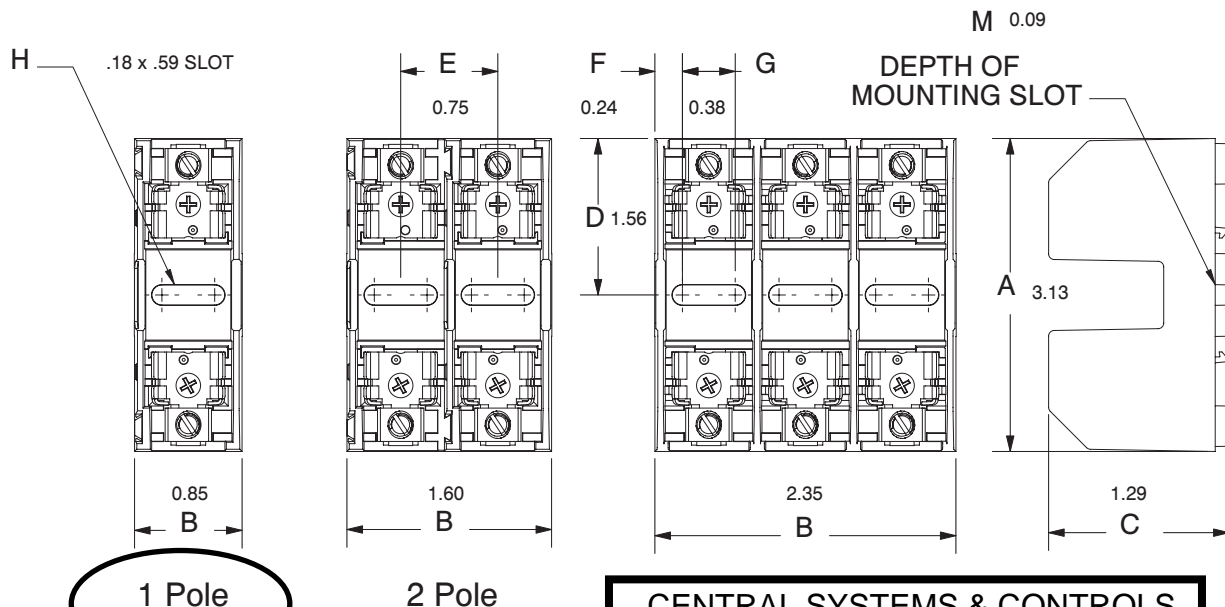
Catalog #:

Replace "X" with # of poles

Standard	Reinforced	Poles (X)	Amps	Base Materials	Wire Range	Fuse Size	Fuses
6M30AXSQ	N/A	1/2/3	30	Thermoplastic	#10-#22 AWG CU	13/32" DIA BY 1 1/2"	A13X-2, A25Z-2,
6M30AXSPQ					#10-#14 AWG CU		A60Q-2, A6Y-2B, AGU
6M30AXB					#6-#14 AWG CU		ATM, ATQ, BAF, BAN,
6M30AXBCU							BLF, BLN, BLS, FLA, FLM, FLQ, FNM, FNQ, GFN, GGO, KLK, KLKD, KLQ, KTK, OTM, TRM

See pages 32-33 for available covers
See page 34 for DIN Rail Adapter

For electronic drawings or 2D/3D CAD data,
send request to drawings@marathonsp.com



mm = dim X 25.4

Marathon Special Products fuse holders will comply to new harmonized fuse holder standard 4248. Please refer to www.marathonsp.com for the latest updates.

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000
BU-27 Street Lighting
Ref: Lighting Control Centers (5)
SC060ZZW(120/240V)
CC-V, CC-X, & CC-Z

COMEC Neutral bars are manufactured from high strength 6061-T6 aluminum alloy to insure both maximum strength and conductivity. They are dual rated for both copper and aluminum conductors and are electro tin plated to provide low contact resistance and protection against corrosion. Assembly can be made with only a screwdriver or allen wrench.

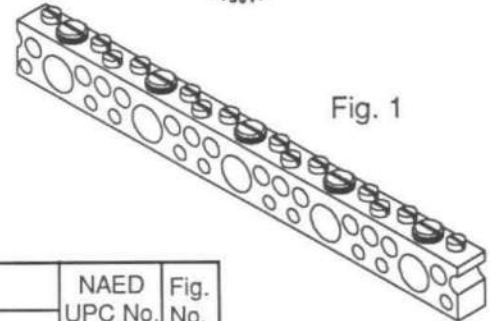


Fig. 1

DUAL RATED SCB - NEUTRAL BARS

Catalog Number	Cond. Range		Net Price Each		No. of Taps		Pcs. per Ctn.	Wt. per 100	Dimensions			NAED UPC No.	Fig. No.
	Main	Tap	1-9 Pcs.	10-UP Pcs.	Lg.	Sm.			A	B	C		
SCB1/0-120*	1/0-14	6-14	22.00	16.50	30	90	1	44	36.0	0.38	0.63	10746	1
SCB1/0-21	1/0-14	6-14	4.40	3.30	6	15	1	14.2	8.63	0.38	0.63	10747	1
SCB1/0-13	1/0-14	6-14	3.13	2.35	4	9	1	11.8	4.38	0.38	0.63	10748	1
SCB1/0-9-2	1/0-14	6-14	2.47	1.85	2	7	1	7.4	3.44	0.38	0.63	10759	1
SCB1/0-7-0	1/0-14	6-14	2.20	1.65	2	5	10	6.5	2.25	0.38	0.63	10750	1

* - No Mounting Holes, Furnished with Screws - To be Field cut to proper size - 1/0 Conductor holes on 1.172" centers.

Insulating Mounting Brackets

SCB-MB-1	N/A	N/A	2.60	1.95	N/A	N/A	10	5	1.25	0.58	1.59	10937	2
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Non-Insulating (Steel) Mounting Brackets

SCB1/0-11B	1/0-14	N/A	3.81	2.86	3	8	1	18.3	3.44	1.53	.844	60089	3
SCB1/0-15B	1/0-14	N/A	4.05	3.04	4	11	1	21.8	4.61	1.53	.844	60090	3
SCB1/0-19B	1/0-14	N/A	5.01	3.77	5	14	1	25.2	5.77	1.53	.844	60091	3
SCB1/0-23B	1/0-14	N/A	7.56	5.67	6	17	1	28.6	6.97	1.53	.844	60092	3
SCB1/0-27B	1/0-14	N/A	7.78	5.83	7	20	1	31.9	8.11	1.53	.844	60093	3

Adapter for 2/0 Aluminum Cable

CA-206-1	2/0-4	6-14	2.07	1.55	N/A	N/A	10	1.5	0.66	0.63	0.83	10751	4
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SCB-2/0	2/0-14	6-14	Consult factory for price and availability.				Variable	.375	.687	N/A	1
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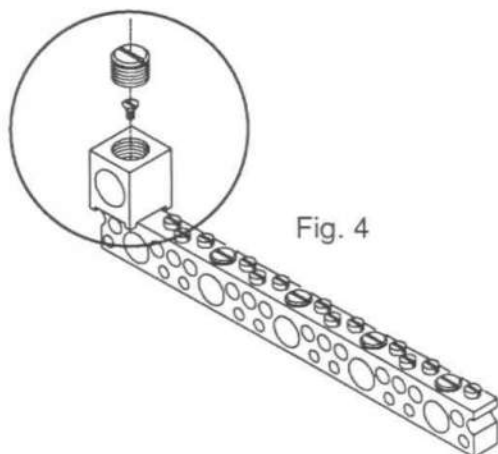


Fig. 4

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000
BU-27 Street Lighting
Ref: Lighting Control Centers (5)
SC060ZZW(120/240V)
CC-C, CC-D, CC-V, CC-X, & CC-Z

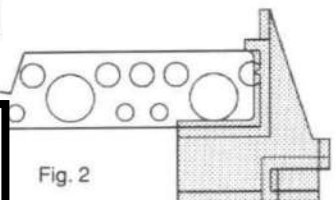
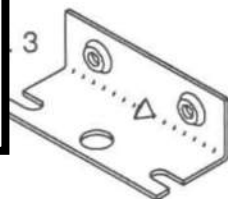


Fig. 2



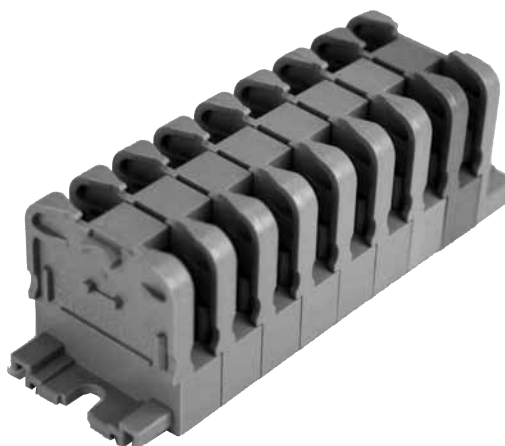
Sectional Terminal Blocks

3/8" Sectional - 600 Volts 32 Circuits Per Foot

Channel (C), Flat (F) & (DIN) Mount

Specifications:

- UL Recognized File No. XCFR2.E62806
- CSA Certified File No. LR 19766
- Wire termination torque 16 lb-in
- CE



Sectional Terminal Blocks

Tubular Screw Connector (6G38 TS)

Materials:

Base - Gray Thermoplastic, 125°C (RTI)
Tubular Screw Connector- Copper, Tin Plated
Screw - #10-32 Steel, Nickel Plated
50 Amps (40 Amps CSA)

Wire Ranges:

Single and Multiple Wire Combinations:

Stranded CU
(1) #8 - 18 AWG
(1-3) #12 AWG
(1-4) #14

Solid CU
(1) #10 - #16 AWG
(1-3) #12 AWG
(1-4) #14 or #16 AWG

Ordering Code:

6G38 TS F
6G38 TS C
6G38 TS DIN

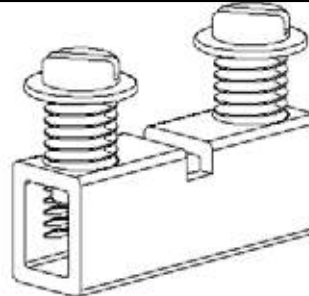
For flat mount block
For channel mount block
For DIN mount block

Std pk 100
Std pk 100
Std pk 25

See Figure 2 On Page 114
See Figure 1 On Page 114
See Figure 3 On Page 114

CENTRAL SYSTEMS & CONTROLS

Proj: ODOT #173000
BU-27 Street Lighting
Ref: Lighting Control Centers (5)
SC060ZZW(120/240V)
CC-V, CC-X, & CC-Z





Low Ampere QOU

Low Ampere QOU Miniature Circuit Breakers

QOU unit mount miniature circuit breakers (cable-in/cable-out) are ideal for OEM applications. They have the Square D™ circuit breaker's unique Visi-Trip™ feature and can be DIN rail-mounted or surface- or flush-mounted using mounting feet.

General Specifications Common to All Low Ampere QOU Circuit Breakers

- For convenient flush mount, surface mount or DIN mount (symmetrical rail 35 x 7.5 DIN/EN 50 022)
- Single handle with internal common trip
- Terminal lug wire size (1) 14–2 AWG Cu or Al
- Reversible line and load lugs
- Field-installable quick connectors
- UL Listed 48 Vdc (5 k AIR)
- UL Listed as HACR Type: 10–70 A
- High magnetic trip circuit breakers (QOU-HM) are recommended for applications where high initial inrush may occur and for individual dimmer applications.
- For DIN mounting rails, see IEC Starters and Relays, Section 18.

Table 7.20: QOU Low Ampere Miniature Circuit Breakers

Ampere Rating	1P 120/240 Vac		2P 120/240 Vac		2P 240 Vac		3P 240 Vac	
	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.▲	\$ Price	Cat. No.	\$ Price
10 k AIR								
10 A	QOU110	40.20	QOU210	87.00	—	168.00	QOU310	285.00
15 A	QOU115		QOU215		QOU215H		QOU315	
20 A	QOU120		QOU220		QOU220H		QOU320	
25 A	QOU125		QOU225		QOU225H		QOU325	
30 A	QOU130		QOU230		QOU230H		QOU330	
35 A	QOU135		QOU235		—		QOU335	
40 A	QOU140		QOU240		—		QOU340	
45 A	QOU145		QOU245		—		QOU345	
50 A	QOU150		QOU250		—		QOU350	
60 A	QOU160		QOU260		—		QOU360	
70 A	QOU170	78.00	QOU270	171.00	—	—	QOU370	363.00
22 k AIR								
15 A	QOU115VH	101.00	QOU215VH	189.00	—	—	QOU315VH	426.00
20 A	QOU120VH		QOU220VH		—	—	QOU320VH	
25 A	QOU125VH		QOU225VH		—	—	QOU325VH	
30 A	QOU130VH		QOU230VH		—	—	QOU330VH	
35 A	QOU135VH		QOU235VH		—	—	—	—
40 A	QOU140VH		QOU240VH		—	—	—	—
45 A	QOU145VH		QOU245VH		—	—	—	—
50 A	QOU150VH		QOU250VH		—	—	—	—
60 A	QOU160VH		QOU260VH		—	—	—	—

▲ QOU-H interrupting rating is 10 kA at 240 Vac.

Table 7.21: QOU-HM Miniature Circuit Breakers (10 k AIR)

Ampere Rating	1P 120/240 Vac		2P 120/240 Vac		2P 240 Vac		3P 240 Vac	
	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price
15 A	QOU115HM	40.20	—	—	—	—	—	—
20 A	QOU120HM		—	—	—	—	—	—

Table 7.22: QYU UL1077 Recognized Supplementary Protectors (5 k AIR)

Ampere Rating	1P 277 Vac		2P 120/240 Vac		2P 240 Vac		3P 240 Vac	
	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price
10 A	QYU110	<div><div>CENTRAL SYSTEMS & CONTROLS</div><div>Proj: ODOT #173000</div></div>						—
15 A	QYU115							—
20 A	QYU120							—
25 A	QYU125							—
30 A	QYU130							—

High Ampere QOU Circuit Breakers**General Specifications Common to All High Ampere QOU Circuit Breakers**

- Flush mount, surface mount, and DIN mount
- Internal common trip.
- Non-reversible line and load lugs.
- Terminal lug wire size (1) 12–2/0 AWG Cu or Al
- UL Listed 60 Vdc per pole (5 k AIR). (Note: except switches)

Table 7.23: QOU High Ampere Miniature Circuit Breakers (10 k AIR)

Ampere Rating	1P 120/240 Vac		2P 120/240 Vac		2P 240 Vac		3P 240 Vac	
	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price
80 A	QOU180	176.00	QOU280	246.00	—	—	QOU380	416.00
90 A	QOU190		QOU290		—	—	QOU390	
100 A	QOU1100		QOU2100		—	—	QOU3100	
125 A	—	—	QOU2125	452.00	—	—	—	—

Table 7.24: QOU Non-Automatic Switches

Ampere Rating	1P 120 Vac		2P 120/240 Vac		2P 240 Vac		3P 240 Vac	
	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price
60 A	—	—	—	—	QOU200	87.00	QOU300	285.00
100 A	—	—	—	—	QOU2000	246.00	QOU3000	416.00
125 A	—	—	—	—	QOU20001	452.00	QOU30001	716.00

Interrupting Ratings Page 7-3
 Accessories Page 7-12, 7-15
 Dimensions Page 7-54



High Ampere QOU