# CITY OF PHOENIX STREET LIGHTING PROJECT NAME

# F.H.W.A. REGION STATE PROJ. NO. TOTAL 9 ARIZ. DR: DES: CK: DATE:

**LEGEND** 

— — EXISTING STREET LIGHT POLE

ARTERIAL ROAD

ARTERIAL ROAD

**VICINITY MAP** 

STAND ALONE STREET LIGHT POLE

—

 EXISTING STREET LIGHT MOUNTED ON POWER POLE

**PROJECT** 

# STREET LIGHTING GENERAL NOTES

THE FOLLOWING INFORMATION IS PROVIDED TO EMPHASIZE CRITICAL WORK AND IS INTENDED TO SUPPLEMENT THE SPECIFICATIONS.

- 1. THE CONTRACTOR SHALL COMPLY WITH STATE AND CITY STATUTES AND ORDINANCES.
- 2. PRIOR TO SUBMITTAL, THE STREET LIGHT DESIGNER SHALL EXAMINE ALL GENERAL CONSTRUCTION DRAWINGS AND VISIT THE CONSTRUCTION SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS UNDER WHICH HE WILL OPERATE AND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THE CONTRACT.
- 3. THE STREET LIGHT DESIGNER SHOULD VERIFY DIMENSIONS AT THE SITE AND IMMEDIATELY REPORT DIFFERENCES TO THE DEVELOPER'S CONSTRUCTION MANAGER AND NOT PROCEED WITH WORK UNTIL THE CONSTRUCTION MANAGER RENDERS A DECISION.
- 4. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH ALL LICENSING REQUIREMENTS SET FORTH BY THE STATE REGISTRAR OF CONTRACTORS OFFICE TO PERFORM WORK RELATING TO STREET LIGHT INSTALLATION IN CITY OF PHOENIX RIGHT-OF-WAY.
- 5. ONE DRY UTILITY PERMIT FOR EACH CITY OF PHOENIX STREET LIGHT PROJECT SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- 6. LIGHT POLES SHALL BE INSTALLED PLUMB, BE ADJUSTED TO PROVIDE PROPER ALIGNMENT TO THE ROADWAY BEING LIGHTED AND BE PROPERLY GROUNDED WHEN THE INSTALLATION IS COMPLETED.
- 7. STREET LIGHTS ARE INSPECTED BY THE CITY OF PHOENIX STREETLIGHTING INSPECTOR. THE UTILITY COMPANY WILL PROVIDE THE POLE NUMBER. MOUNT THE BOTTOM NUMBER AT 7'-0" STACKING THE NUMBERS UP VERTICALLY AND FACING STREETSIDE. THIS MUST BE DONE PRIOR TO ACCEPTANCE AND ENERGIZATION.
- 8. LUMINAIRES SHALL BE INSTALLED LEVEL AND INCLUDE A LAMP AND PHOTOCELL. THE LUMINAIRES SHALL BE FREE OF DUST. DIRT OR ANYTHING THAT WOULD IMPAIR THE OUTPUT OF THE LIGHT.
- 9. LUMINAIRES FURNISHED WITH MULTI-TAP DRIVERS SHALL BE REWIRED OR RECONNECTED TO MATCH THE VOLTAGE SUPPLIED BY THE ELECTRIC UTILITY COMPANY.
- 10. POLE SHALL BE SET PLUMB IN TWO DIRECTIONS, NINETY (90) DEGREES APART.
- 11. SURPLUS EXCAVATION SHALL BE DISPOSED OF BY THE CONTRACTOR.
- 12. WIRING SHALL BE INSTALLED PER SERVING UTILITY COMPANY STANDARDS. CONDUIT SHALL BE INSTALLED AT THE DEPTH SPECIFIED ON THEIR PLANS.
- 13. CONDUIT MUST BE LISTED AND LABELED AND SUITABLE FOR UNDERGROUND USE.
- 14. CONNECTIONS SHALL BE PER SERVING UTILITY COMPANY STANDARDS. EACH POLE SHALL HAVE A 8' X 5/8" COPPER CLAD GROUND ROD DRIVEN BENEATH PULL BOX. A #6 BARE COPPER LEAD FROM THE GROUND ROD IN PULL BOX TO LANDING LUG IN STREET LIGHT POLE HAND HOLE IS REQUIRED.
- 15. EXCAVATION FOR PULL BOXES AND MATERIAL SPECIFICATIONS SHALL BE PER SERVING UTILITY COMPANY STANDARDS
- 16. TRENCH SHALL BE INSTALLED PER SERVING UTILITY COMPANY STANDARDS. THE USE OF A COMMON ELECTRIC UTILITY COMPANY TRENCH IS PERMITTED.
- 17. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE UTILITY COMPANY FOR COORDINATION OF THE TRENCHING AND THE INSTALLATION OF CONDUIT.
- 18. IT IS THE CONTRACTOR'S RESPONSIBILITY TO RESTORE ALL PROPERTY, LANDSCAPING, PAVING AND DRIVEWAYS THAT ARE DISTURBED DURING STREET LIGHT—CONSTRUCTION TO THEIR ORIGINAL CONDITION IN CONFORMANCE WITH MAG SPECIFICATION SECTION 107.9.
- 19. IF A FIXTURE SHOULD FAIL, IT SHALL BE IMMEDIATELY REPLACED. THE DEVELOPER
  SHALL BE RESPONSIBLE FOR FURNISHING ALL PERSONNEL AND EQUIPMENT NECESSARY TO SUCCESSFULLY REPAIR THE FIXTURE.
- 20. THE CONTRACTOR SHALL GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE ENGINEERING MANAGER, AGAINST IMPERFECT WORKMANSHIP, FAILURE, MALFUNCTION OF MATERIALS AND/OR EQUIPMENT DUE TO FAULTY OR IMPERFECT WORKMANSHIP.
- 21. THIS GUARANTEE IS TO BE IN WRITING TO THE CITY AT THE TIME OF ISSUING FINAL ACCEPTANCE.

  MATERIALS AND WORKMANSHIP FOUND TO BE DEFECTIVE WITHIN THE WARRANTY PERIOD SHALL BE REPLACED WITHOUT COST TO THE CITY.

MOUNTING

HEIGHT

POLE LENGTH

MAST ARM

# LED STREETLIGHT NOTES

# SPECIAL PEDESTRIAN

INSTALL ONE 29W LED (3,800 LUMEN) FIXTURE WITH PHOTOELECTRIC CONTROL ON A 30'-6" POLE WITH A 2' MAST ARM PER SRP DETAIL AND SPECIFICATIONS. FOUNDATION AND GROUNDING PER SRP STANDARDS AND SPECIFICATIONS. POLE SHALL BE CENTERED 1'-0" BEHIND BACK OF SIDEWALK OR 4'-0" BEHIND BACK OF CURB. INSTALL LUMINAIRE CONDUCTORS (2) #12 AWG (STRANDED) THHN/THWN WITH FUSE HOLDER ON HOT LEG 120/240 CIRCUIT. INSTALL PULL BOX ADJACENT POLE WITH 1" FLEX CONDUIT TO POLE SRP PER SPECIFICATIONS AND REQUIREMENTS. ALL WIRING, FUSING, AND GROUNDING PER SRP DETAILS AND SPECIFICATIONS.

## LOCAL

INSTALL ONE 37W LED (4,700 LUMEN) FIXTURE WITH PHOTOELECTRIC CONTROL ON A 30'-6" POLE WI A 6' MAST ARM PER SRP DETAIL AND SPECIFICATIONS. FOUNDATION AND GROUNDING PER SRP STANDARDS AND SPECIFICATIONS. POLE SHALL BE CENTERED 1'-0" BEHIND BACK OF SIDEWALK OR 4 BEHIND BACK OF CURB. INSTALL LUMINAIRE CONDUCTORS (2) #12 AWG (STRANDED) THHN/THWN WITH FUSE HOLDER ON HOT LEG 120/240 CIRCUIT. INSTALL PULL BOX ADJACENT POLE WITH 1" FLEX CONDUIT TO POLE PER SRP SPECIFICATIONS AND REQUIREMENTS. ALL WIRING, FUSING, AND GROUNDING PER SRP DETAILS AND SPECIFICATIONS.

### COLLECTOR

INSTALL ONE 68W LED (8,000 LUMEN) FIXTURE WITH PHOTOELECTRIC CONTROL ON A 38'-6" POLE WITH A 6' MAST ARM PER SRP DETAIL AND SPECIFICATIONS. FOUNDATION AND GROUNDING PER SRP STANDARDS AND SPECIFICATIONS. POLE SHALL BE CENTERED 1'-0" BEHIND BACK OF SIDEWALK OR 4'-0" BEHIND BACK OF CURB. INSTALL LUMINAIRE CONDUCTORS (2) #12 AWG (STRANDED) THHN/THWN WITH FUSE HOLDER ON HOT LEG 120/240 CIRCUIT. INSTALL PULL BOX ADJACENT POLE WITH 1" FLEX CONDUIT TO POLE PER SRP SPECIFICATIONS AND REQUIREMENTS. ALL WIRING. FUSING. AND GROUNDING PER SRP DETAILS AND SPECIFICATIONS.

# MAJOF

INSTALL ONE 87W LED (9,700 LUMEN) FIXTURE WITH PHOTOELECTRIC CONTROL ON A 38'-6" POLE WITH A 6' MAST ARM PER APS DETAIL AND SPECIFICATIONS. FOUNDATION AND GROUNDING PER SRP STANDARDS AND SPECIFICATIONS. POLE SHALL BE CENTERED 1'-0" BEHIND BACK OF SIDEWALK OR 4'-0" BEHIND BACK OF CURB. INSTALL LUMINAIRE CONDUCTORS (2) #12 AWG (STRANDED) THHN/THWN WITH FUSE HOLDER ON HOT LEG 120/240 CIRCUIT. INSTALL PULL BOX ADJACENT POLE WITH 1" FLEX CONDUIT TO POLE PER SRP SPECIFICATIONS AND REQUIREMENTS. ALL WIRING, FUSING, AND GROUNDING PER SRP DETAILS AND SPECIFICATIONS.

# SPECIAL MAJOR

INSTALL ONE 140W LED (16,900 LUMEN) FIXTURE WITH PHOTOELECTRIC CONTROL ON A 38'-6" POLE WITH A 6' MAST ARM PER SRP DETAIL AND SPECIFICATIONS. FOUNDATION AND GROUNDING PER SRP STANDARDS AND SPECIFICATIONS. POLE SHALL BE CENTERED 1'-0" BEHIND BACK OF SIDEWALK OR 4'-0" BEHIND BACK OF CURB. INSTALL LUMINAIRE CONDUCTORS (2) #12 AWG (STRANDED) THHN/THWN WITH FUSE HOLDER ON HOT LEG 120/240 CIRCUIT. INSTALL PULL BOX ADJACENT POLE WITH 1" FLEX CONDUIT TO POLE PER SRP SPECIFICATIONS AND REQUIREMENTS. ALL WIRING, FUSING, AND GROUNDING PER SRP DETAILS AND SPECIFICATIONS.

LUMEN

WATTAGE

**VOLTAGE** 

**LUMINAIRE STYLE** 

# SALT RIVER PROJECT (SRP) NOTES

- 1. CONTRACTOR SHALL CALL SRP FOR A PRE-CONSTRUCTION MEETING PRIOR TO ANY EXCAVATION AT (602) 236-6300.
- CONTRACTOR WILL SUPPLY ALL TRENCHING AND CONDUIT IF REQUESTED BY THE COP PROJECT MANAGER.
- 3. CONTRACTOR WILL STAKE STREET LIGHTS PER CITY OF PHOENIX APPROVED STREET LIGHT CONSTRUCTION DRAWINGS
- 4. GRADE STAKE WILL BE SET WITHIN TWO (2) FEET OF J-BOX LOCATION.
- 5. CONTRACTOR WILL COORDINATE WITH SRP AND CITY OF PHOENIX FOR DE-ENERGIZING OF STREETLIGHT CONDUCTOR.
- 6. GROUND ROD WILL BE PROVIDED AND INSTALLED BY CONTRACTOR IN SRP J-BOX AT EACH STREETLIGHT LOCATION.
- 7. #6 BARE COPPER GROUND WIRE TO BE ATTACHED FROM GROUNDING LUG ON STREETLIGHT POLE TO GROUND ROD
- 8. IF THE CONTRACTOR INSTALLS THE POLE, THE BARE #6 COPPER GROUND WIRE SHALL BE CONNECTED FROM THE GROUND ROD IN THE SRP J-BOX TO THE GROUND CONNECTION IN THE POLE HAND-HOLE.
- 9. ALL TRENCHING AND CONDUIT TO BE INSPECTED BY SRP. DO NOT BACKFILL UNTIL INSPECTED.
- 10. SRP CONSTRUCTION PRINT MUST BE USED AS A TRENCHING REFERENCE. TRENCHING VARIATIONS MUST HAVE WRITTEN SRP DESIGNER APPROVAL. FOLLOW DETAILS FOR CONSTRUCTION. VARIATIONS IN TRENCH ROUTE MAY RESULT IN A REDESIGN FEE PAYABLE BY CONTRACTOR.
- 11. TRENCHES SHOULD BE STRAIGHT, LEVEL AND FREE OF DEBRIS. ALL TRENCH DEPTHS MEASURED FROM FINAL GRADE TOP OF CONDUIT (PER SRP DESIGN) WITHIN ALL EASEMENTS AND RIGHT OF WAY. MAINTAIN MINIMUM 6" CLEARANCE FROM WATER LINES, 19" FROM ALL GAS LINES AND 12" CLEARANCE FORM OTHER UTILITIES.
- 12. USE DB120 PVC FOR ALL STRAIGHT CONDUIT, 36" RADIUS SCHEDULE 40 PVC SWEEPS FOR ALL ELBOWS. NO REDUCERS ARE ALLOWED IN CONDUIT SYSTEM, NO COUPLINGS OR BELL ENDS ARE ALLOWED AT EQUIPMENT LOCATIONS. ALL CONDUITS WITHIN ROAD RIGHT OF WAY OR P.U.E. MUST BE RED.
- 13. RETAINING WALLS ARE REQUIRED ADJACENT TO EQUIPMENT WHERE THE GRADE SLOPE IS GREATER THAN 30" IN 12'.
- 14. ALL CONDUIT STUB OUTS ARE TO BE CAPPED AND MARKED WITH ELECTRONIC MARKER AND 7" RED FLAG MARKING RIBBON.
- 15. HARD CAPS ARE TO BE USED FOR ALL STUB OUTS BELOW GRADE.
- 16. A MANDREL INSPECTION IS REQUIRED WITH SRP INSPECTOR WITHIN 3 DAYS OF FINAL INSPECTION. CONTRACTOR MUST PROVIDE 2 REPRESENTATIVES, MINIMUM 125-CFM TRAILER MOUNTED COMPRESSOR AND ALL NECESSARY ATTACHMENTS.
- 17. THE CONTRACTOR IS RESPONSIBLE FOR THE INTEGRITY OF ALL CONDUITS UNTIL SRP HAS INSTALLED CONDUCTORS.
- 18. BACKFILL REQUIREMENTS FOR A TRENCH IN OR UNDER FUTURE PAVEMENT TO BE 1 PART SLURRY MIX IN ROAD RIGHT OF WAY AND IN DIRT TO BE 1/2 SLURRY MIX AND 1/2 SLURRY MIX MAXIMUM UNDER ALL SRP EQUIPMENT.
- 19. SEE DUCT BANK SPECIFICATIONS FOR ALL DUCT BANK ENCASEMENT REQUIREMENTS.
- 20. SRP TO PROVIDE AND INSTALL ALL POLE NUMBERS ON THE POLES AT THE TIME OF ENERGIZATION OF THE POWER TO THE STREETLIGHT PER SRP OUTDOOR LIGHTING STANDARDS 16-13-1.

APPROVED LUMINAIRE

MANUFACTURERS

# SHEET INDEX

COVER SHEET SL-1
STREETLIGHT PLAN SL-2

DETAIL SHEET SL-3

Contact Arizona 811 at least two full working days before you begin excavation

Call 811 or click Arizona811.com

"PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR OFFICIAL USE ONLY & MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF YOUR CONTRACT WITH THE CITY OF PHOENIX."

STREET LIGHT COVER SHEET

CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

 PROJECT #:
 FILE NO:

 DR:
 DES:
 CK:
 SHEET
 TOTAL

 DATE:
 DATE:
 NO:
 SHEETS

 SCALE:
 NTS
 QS. #:
 SL-1
 TOTAL

MANUFACTURERS CEM-TEC MS-1936 120/208/240/277 COBRAHEAD LOCAL VALMONT CB09158 3,800 GENERAL ELECTRIC ERL1005A327AGRAY 25'-11" 30'-6" LED 37 W AS POWER CO. SOUTHWEST FABRICATION, LLC 306RDB REQUIRES CEM-TEC MS-1944 120/208/240/277 COBRAHEAD GENERAL ELECTRIC ERL1008C327AGRAY COLLECTOR VALMONT CB09159 8,000 32'-11" 38'-6" AS POWER CO. SOUTHWEST FABRICATION, LLC 386RDB REQUIRES CEM-TEC MS-1944 120/208/240/277 9,700 COBRAHEAD **ARTERIAL** 38'-6" VALMONT CB09159 AS POWER CO. GENERAL ELECTRIC ERL1010C327AGRAY SOUTHWEST FABRICATION, LLC 386RDB **REQUIRES** 

**APPROVED** 

POLE & ARM

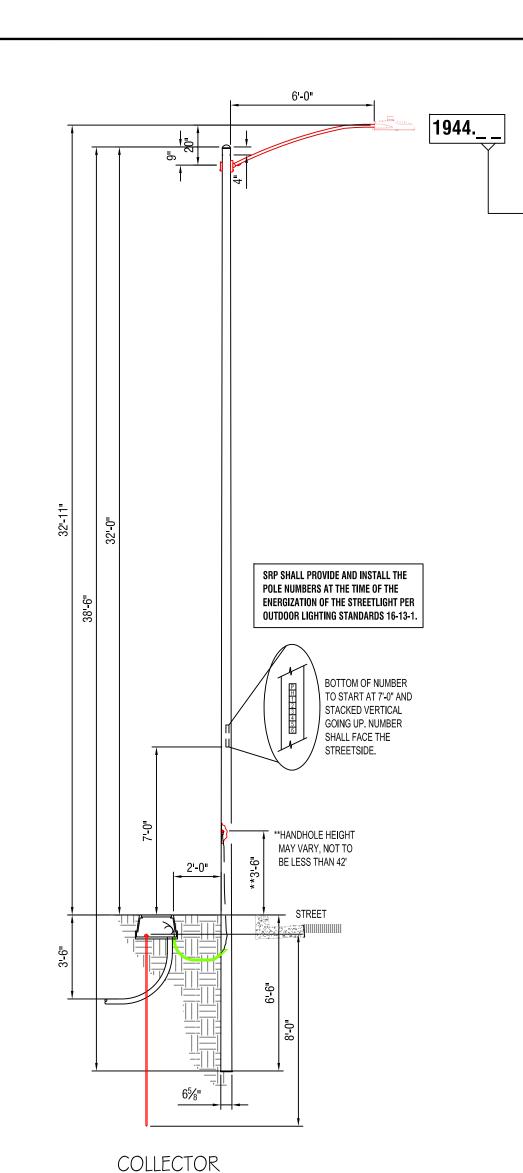
ALL CATALOG NUMBERS SHALL BE CONFIRMED WITH POWER COMPANY PRIOR TO ORDERING

QUANTITY

**NUMBER** 

OF STREET

		F.H.W.A. REGION STATE PROJ. NO.	NO. TOTAL
		9 ARIZ.	
			High
		DR: DES: CK-	DATE:
INSERT PLAN OF PROJECT AREA			
			VA#:
			CCPR
			OR CS
			PR#:
STREET LIGHT PLAN SHEET		"PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR	R OFFICIAL USE ONLY & MAY NOT
SCALE: 1"-40"		BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE O WITH THE CITY OF PHOENIX."	
		STREET LIGHT PLAN S	
		CITY OF PHOENIX, ARIZ STREET TRANSPORTATION DEPA	ARTMENT
Contact working of	t Arizona 811 at least two full ays before you begin excavation		
	AR ZONA 811.	KIVA#: CCPR OR CSPR#:  DR: DES: CK: DATE: DATE:	SHEET TOTAL NO: SHEETS
	1 or click Arizona811.com	SCALE: 1" = 40'  QS. #:	SL-2 TOTAL



# CONSTRUCTION NOTES:

19 = 19' - 0" POLE SNG SIMPLEX

30 = 30' - 6" POLE SNG SIMPLEX

38 = 38' - 6" POLE SNG SIMPLEX

38X = 38' - 6" POLE DBL SIMPLEX

\*\* SEE SPEC. NOTE

- ADJUST PHOTO EYE TO FACE NORTH
- A GROUND ROD IS PROVIDED WITH THE JUNCTION BOX. WHERE A GROUND ROD CANNOT BE DRIVEN ALTERNATE **GROUND SHALL BE USED. SEE 2449 THRU 2460 FOR** APPROVED ALTERNATES.
- THE 40'-6" SELF-SUPPORTING STEEL POLE AND ONE OF THE 38'-0", HAVE TWO, MANUFACTURED INSTALLED SIMPLEX FITINGS 180 APART FOR DOUBLE ARMS, SEE CHART.
- APN 33701054 IS A POLE BAND ADAPTOR WITH A SIMPLEX FITTING. ADAPTOR IS REQUIRED FOR THE SECOND ARM IN DOUBLE ARM APPLICATIONS ON EXISTING PLES IN THE FIELD WITHOUT TWO SIMPLEX FITTINGS, SEE 8198 FOR AVAILABLE SIZES.
- POLES THAT HAVE MORE THAN ONE LUMINAIRE REQUIRE A SEPARATE CIRCUIT WITH FUSING FROM THE J-BOX TO EACH

# **ENGINEERING NOTES**

- THE LIGHT CODE PROVIDES TWO SAME WATTAGE LUMINAIRES WHEN DOUBLE ARM ARE SPECIFIED.
- SEE SPEC 8130 8131 FOR IN-LINE FUSE FOR UNDERGROUND FEEDS.
- SEE 8100 THRU 8107 FOR OVERHEAD ATTACHMENTS.

LIGHT Code	COLOR	APN	ТҮРЕ	WATTS	VOLTS	INITIAL LUMENS	PHOTOMETRIC Curve
CL60		00128329		29	120/208/240/277	2,700	454669
CL61		00128330		37	120/208/240/277	4,700	454659
CL62	GRAY	00128331	LED	71	120/208/240/277	8,000	454677
CL63		00128332		87	120/280/240/277	9,700	454688
CL64	]	00128364		140	120/280/240/277	16,900	454942

POLE TYPE	POLE	POLE	BURY	POLE ABOVE	POLE BUTT DIAMETER				" 27' - 3" - " 34' - 3" 39' - 3"	
	CODE	LENGTH	DEPTH	GROUND	STEP	TAPER	WEIGHT	20" X 6'	3' X 8'	8' X 8'
LOCAL	1944.30	30' - 6"	5' - 6"	25' - 0"	5-9/16"	7-5/16"	460	25' - 11"	27' - 3"	-
COLLECTOR	1944.38	38' - 6"	6' - 6"	32' - 0"	6-5/8"	9-3/4"	640	32' - 11"	34' - 3"	39' - 3"
ARTERIAL	1944.38X	38' - 6"	6' - 6"	32' - 0"	6-5/8"	9-3/4"	640	32' - 11"	34' - 3"	39' - 3"

## **ELECTRICAL REQUIREMENTS FOR NEW POLE INSTALLATION**

- 1. JUNCTION BOXES SHALL MEET UTILITY COMPANY STANDARDS.
- 2. CONDUIT, CONDUCTORS, AND FUSE HOLDERS SHALL BE LISTED AND LABELED FOR USE IN A WET LOCATION WHEN USED IN A JUNCTION BOX. NEC300.5(B), 310.8(C)
- 3. IN-LINE FUSE HOLDER USED IN HAND HOLE OR SERVICE DROP SHALL BE CONSIDERED AS DISCONNECTING MEANS. FUSE HOLDERS TO BE RATED AT 22,000 AIC MINIMUM. NEC 240.40
- 4. ELECTRICAL CONNECTIONS-CONDUCTORS OF DISSIMILAR METALS SHALL NOT BE INTERMIXED IN A TERMINAL OR SPLICING CONNECTOR WHERE PHYSICAL CONTACT OCCURS BETWEEN DISSIMILAR CONDUCTORS, (COPPER, ALUMINUM) UNLESS THE DEVICE IS IDENTIFIED FOR THE PURPOSE AND CONDITIONS OF USE. NEC 110.14
- ELECTRICAL CONNECTIONS OR SPLICES IN AN UNDERGROUND INSTALLATION SHALL BE APPROVED FOR WET LOCATIONS. (NEC 300.5)
- 6. NON-CURRENT CARRYING CONDUCTIVE MATERIALS ENCLOSING ELECTRICAL CONDUCTORS OR EQUIPMENT, OR FORMING PART OF SUCH EQUIPMENT, SHALL BE CONNECTED TO EARTH IN A MANNER THAT WILL LIMIT THE VOLTAGE IMPOSED BY LIGHTNING OR UNINTENTIONAL VOLTAGE DUE TO SHORT CIRCUITS AND LIMIT THE VOLTAGE TO GROUND ON THESE MATERIALS. NEC 250.4(B) (GROUND RODS)
- AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED FROM THE GROUND LUG IN THE HAND-HOLE TO THE LUMINAIRE WITH THE CURRENT CARRYING CONDUCTORS. NEC 410.30(B)(3).
- 8. CONNECTION TO THE GROUND ROD AND THE GROUNDING ELECTRODE SHALL BE
- CONNECT #6 BARE COPPER WIRE FROM THE GROUND ROD ADJACENT TO THE POLE OR IN JUNCTION BOX TO THE GROUND LUG IN THE POLE

LISTED AND LABELED FOR USE. NEC 250.8

- #12 WHITE NEUTRAL

#12 GREEN EQUIPMENT

GROUND-THHN /THWN

POLE GROUND

— POLE MOUNT

--- BARE #6 CU FROM GROUND ROD TO

POLE GROUND LUG IF METAL POLE

3/16"=1'-0"

TO LUMINAIRE

#12 BLACK 120V -

INLINE FUSE HOLDER —

WITH 10A KTK FUSE

USE SHRINK TUBE ON ——

120V #12 CUUF BLACK HOT TO -

EACH END OF FUSE HOLDER

# CONSTRUCTION NOTES:

- 1 ADJUST PHOTO EYE TO FACE NORTH
- A GROUND ROD IS PROVIDED WITH THE JUNCTION BOX. WHERE A GROUND ROD CANNOT BE DRIVEN ALTERNATE GROUND SHALL BE USED. SEE 2449THRU 2460 FOR APPROVED ALTERNATES.
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- C SEE 8100 THRU 8107 FOR OVERHEAD ATTACHMENTS.

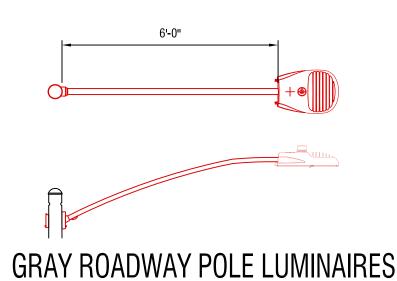
# **20 YEAR PHOTOCELL REQUIREMENTS**

APN# 00073241 CONTROL PHOTO MULTI BR-20 CONTROL, PHOTO-ELECTRIC, BROWN, 20YEAR FAIL OFF, 120/208/240/277 MULTI-VOLT, SILICON, SOLID STATE, 2.40 TO 3.60 FC ON 1.2 TO 2.4 FC OFF, 60 HERTZ, 320 JOULE MOV, INVERSE ON/OFF RATIO .6:1 +/- .1, FAIL OFF, THREE PIN NEMA TWISTLOCK, 20 YEAR LIFE, 8483-SIDE SELC, MODEL #8483F2TMABR

		de Evolvo II diay dobia EED I ixtai do		
WATT	LUMEN	DESCRIPTION	APN	MODEL#
29W	3,800	SCALABLE ROADWAY GE LED GRAY Pedestrian LUMINAIRE 29WATT, 2700K, 3,800 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, GRAY, MULTIVOLT 120/208/240/277 DRIVER, IES NARROW ASYMMETRIC MEDIUM, ANSI C136.41 7 PIN TWISTLOCK PHOTO CONTROL RECEPTACLE, CSA OR UL CERTIFIED, ANSI C136.15 WATTAGE LABEL.	128329	ERL1004A527AGRAY
37W	4,700	SCALABLE ROADWAY GE LED GRAY Local Street LUMINAIRE 37WATT, 2700K, 4,700 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, GRAY, MULTIVOLT 120/208/240/277 DRIVER, IES NARROW ASYMMETRIC MEDIUM, ANSI C136.41 7 PIN TWISTLOCK PHOTO CONTROL RECEPTACLE, CSA OR UL CERTIFIED, ANSI C136.15 WATTAGE LABEL.	128330	ERL1005A527AGRAY
68W	8,000	SCALABLE ROADWAY GE LED GRAY Collector Street LUMINAIRE 68WATT, 2700K, 8,000 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, GRAY, MULTIVOLT 120/208/240/277 DRIVER, IES NARROW ASYMMETRIC MEDIUM, ANSI C136.41 7 PIN TWISTLOCK PHOTO CONTROL RECEPTACLE, CSA OR UL CERTIFIED, ANSI C136.15 WATTAGE LABEL.	128331	ERL1009C527AGRAY
87W	9,700	SCALABLE ROADWAY GE LED GRAY Major Roadway LUMINAIRE 87WATT, 2700K, 9,700 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, GRAY, MULTIVOLT 120/208/240/277 DRIVER, IES NARROW ASYMMETRIC MEDIUM, ANSI C136.41 7 PIN TWISTLOCK PHOTO CONTROL RECEPTACLE, CSA OR UL CERTIFIED, ANSI C136.15 WATTAGE LABEL.	128332	ERL1010C527AGRAY
140W	16,900	SCALABLE ROADWAY GE LED GRAY Special Major Roadway LUMINAIRE 140WATT, 2700K, 16,900 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, GRAY, MULTIVOLT 120/208/240/277 DRIVER, IES NARROW ASYMMETRIC MEDIUM, ANSI C136.41 7 PIN TWISTLOCK PHOTO CONTROL RECEPTACLE, CSA OR UL CERTIFIED, ANSI C136.15 WATTAGE LABEL.	128364	ERL2019C527AGRAY

**GE Evolve II Grav Cobra LED Fixtures** 

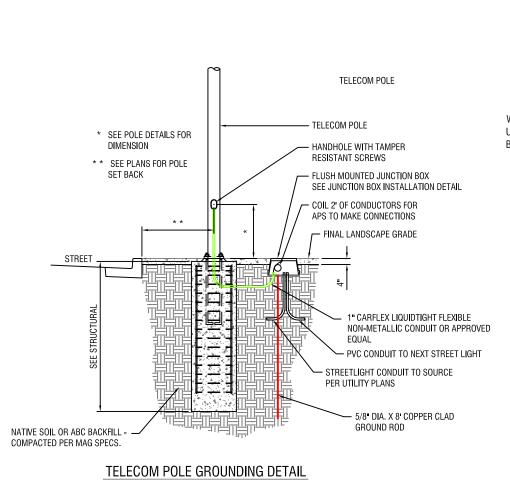
# GRAY ROADWAY POLE STANDARDS



GRAY ROADWAY LUMINAIRE DESCRIPTIONS APN# 128329 29W LED RWGR - PEDESTRIAN ERL1004A527A GRAY R APN# 128330 37W LED RWGR - LOCAL ERL1005A527A GRAY R APN# 128331 68W LED RWGR - COLLECTOR ERL1009C527A GRAY R APN# 128332 87W LED RWGR - MAJOR ERL1010C527A GRAY R APN# 128364

140W LED RWGR - SPECIAL MAJOR

ERL2019C527A GRAY R



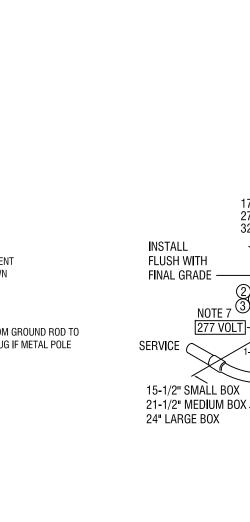
JUNCTION BOX - THHN / THWN - #12 CU FROM GROUND WHITE NEUTRAL #12 THHN / THWN — GREEN - THHN / THWN UNDER WIRE NUT FROM JUNCTION \_ BOX; 120V = WHITE, 240V = RED NOTE EACH HOT LEG SHALL HAVE AN INLINE FUSE HOLDER POLE HAND HOLE - 110V FUSING AND GROUNDING DETAIL (3)#12 CU THHN/THWN #12 GREEN FQUIPMENT GROUND-THHN /THWN #12 BLACK 120V — INLINE FUSE HOLDER — — BARE #6 CU FROM GROUND ROD TO WITH 10A KTK FUSE POLE GROUND LUG IF METAL POLE POLE GROUND USE SHRINK TUBE ON —— EACH END OF FUSE HOLDER POLE MOUNT 120V #12 CUUF BLACK HOT TO -POLE GROUNDING DETAIL JUNCTION BOX - THHN / THWN — #12 CU FROM GROUND WHITE NEUTRAL #12 THHN / THWN -GREEN - THHN / THWN UNDER WIRE NUT FROM JUNCTION

BOX; 120V = WHITE, 240V = RED

POLE FUSING DETAILS

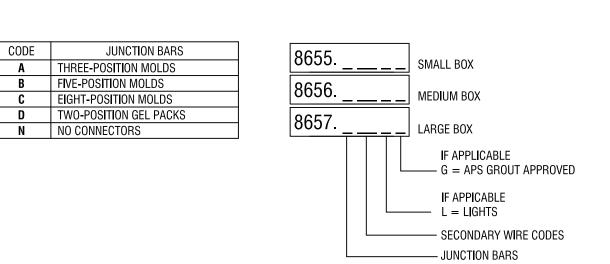
NO NEUTRAL NEEDED INSIDE 240 VOLT POLE

POLE HAND HOLE - 240V FUSING AND GROUNDING DETAIL



27" MEDIUM BOX

32" LARGE BOX



12" SMALL BOX

– 14-1/2" MED. BOX

NOTE 1

BOTTOM 21" SMALL BOX

OF J-BOX 34" MEDIUM BOX

SERVICE

GROUND ROD

✓ 37" LARGE BOX

AND NOTE 3

18-1/2" LARGE BOX

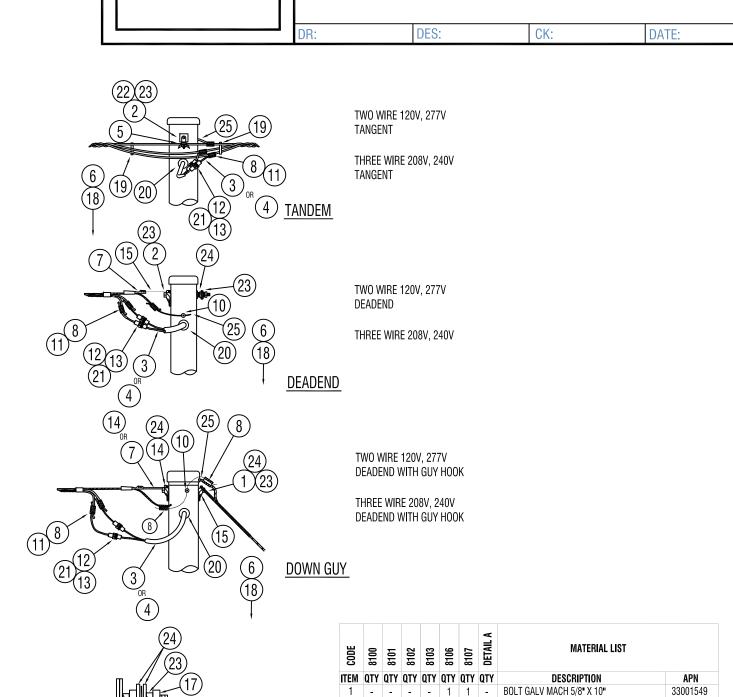
15" FOR MEDIUM BOX

18" FOR LARGE BOX

# 1. CONCRETE GROUT SHALL BE PREMIX, APN 71301280 OR EQUIVALENT.

- 2. PENTA-HEAD BOLTS SHALL BE INSTALLED PRIOR TO ENERGIZING NEW UNDERGROUND SYSTEMS. LOST OR MISPLACED PENTA-HEAD BOLTS SHALL BE REPLACED WITH APN 71402608.
- 12" FOR SMALL BOX 3. BRINGING ALL CABLE/CONDUITS AND GROUND ROD INTO THE SAME END OF THE BOX TO ENABLE CABLES TO BE RAISED AND LOWERED EASILY. CONDUIT SWEEPS SHALL BE POSITIONED AND ALIGNED SO THAT WHEN TWO AND FOUR POSITION JUNCTION BARS ARE SPECIFIED, THE ST. LT., SECONDARY AND SERVICE CONDUITS SHALL BE INSTALLED AS SHOWN IN DETAIL "A". WHEN SIX POSITION JUNCTION BARS ARE SPECIFIED, THE ST. LT., SECONDARY AND SERVICE CONDUITS SHALL BE INSTALLED AS SHOWN IN
  - COMPACTION BENEATH AND AROUND JUNCTION BOX SHALL BE A MINIMUM OF 85 PERCENT.
  - 5. REPLACEMENT LID FOR MEDIUM PLASTIC JUNCTION BOX IS 33100981. PENTAHEAD BOLTS AND EMS MARKER MUST BE REUSED FROM OLD LID.
  - 6. ADDITIONAL TRENCH DEPTH IS USUALLY REQUIRED AT ALL EQUIPMENT LOCATIONS. SEE 8648 FOR THE MINIMUM TRENCH DEPTHS AND THE DEGREE OF SLOPE ALLOWED AS THE TRENCH DEPTH CHANGES.
  - 7. ON 277 VOLT STREET LIGHT CIRCUITS, INSTALL "277 VOLT" RED MICARTA TAG (APN 00080796) PROVIDED BY SPEC
  - 8. TORQUE BOLTS TO 5 FT LBS (60 IN LBS).

DETAIL "B".



ARIZ.

PROJ. NO.

BOLT GALV MACH 5/8" X 8" 10 - 10 - 10 -CABLE 2/C #14CU UF - | 10 | - | 10 | - | 10 | - | CABLE 3/C #14CU UF CLAMP ANGLE .162 TO .60 CLAMP GROUND ROD 5/8 CLAMP WEDGE FELX 4-2AL 33002772 1. STEEL POLES AND ALL MAST ARMS MUST BE CONN AL PG - SEE 2250 CONN CU "C" - SEE 2255 GROUNDED. 00095704 CONN POST 1/2"S SS #6-1/0 COVER D DIE INSULATING 2. OVERHEAD ATTACHMENTS MUST BE GROUNDED TO FUSE CARTRIDGE 15A FUSEHOLDER IN-LINE 600V 00097502 STREET LIGHT POLE. A  $\frac{1}{16}$ " HOLE HAS BEEN ADDED 6" GRIP DE PREF - SEE2135 BELOW TOP OF STREET LIGHT POLE TO INSTALL A HOOK GUY - MED DUTY 5/8" NUT INSERT RIVNUT GROUNDING NUT SQ GALV 5/8" INSERT APN 00055552. TOOL TO INSTALL RIVNUT IS ROD COPPERCLAD GRD 5/8" X 8" SPACER MULTIPLEX CABLE 00053279. SEE STANDARD 2408. WHERE RIVNUTS STOPPER BUG AND DUST ARE NOT TUBING SHRINKABI F 1/4 AVAILABLE GROUND PER DETAIL A. WASHER GALV CU 3X3X1/4" WASHER GALV DBL COIL 5/8

3. ALL OVERHEAD FED STREET IGHT POLES SHALL HAVE GROUND ROD INSTALLED AND A #6 GROUND WIRE BONDED

TO THE GROUNDING LUG AT THE BACK OF THE HAND

4. THESE CODES PROVIDE THE #14 CU FOR THE MAST HARDWARE FOR ATTACHING TANGENT OR DEADEND

SECONDARY, AND THE CONNECTORS.

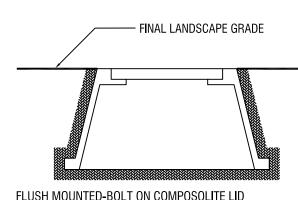
# STREET LIGHT POLE CABLE ATTACHMENTS AND GROUNDING DETAIL

SCALE: NO SCALE

<u>DESCRIPTION</u> 15" X 21" X 12" JUNCTION BOX WITH 3/8" CAPTIVE PENTA HEAD BOLTS

WORD "ELECTRIC" ON COVER

BOX TO BE POLYMER CONCRETE MATERIAL WITH POLYMER CONCRETE BOLT DOWN (NON-CONDUCTIVE



FLUSH MOUNTED-BOLT ON COMPOSOLITE LID

SRP APPROVED SUPPLIERS PART NUMBER STRONGWELL PC1118B513 BOX PC1118C504-17/UH0390AA

COVER WITH ELECTRIC ARMORCAST PRODUCTS 6001429A CDR SYSTEMS PA40-1015-12 CARSON & ASSOCIATES HLW111B-12 BOX

HLW1118-P0 L**I**D

J-BOX SECTION



SL-3

TOTAL

33001547

31102132

31102135

33002502

33002580

33003192

72602410

33003831

00055552

33004805

33806955

71606200

33007126

33007154

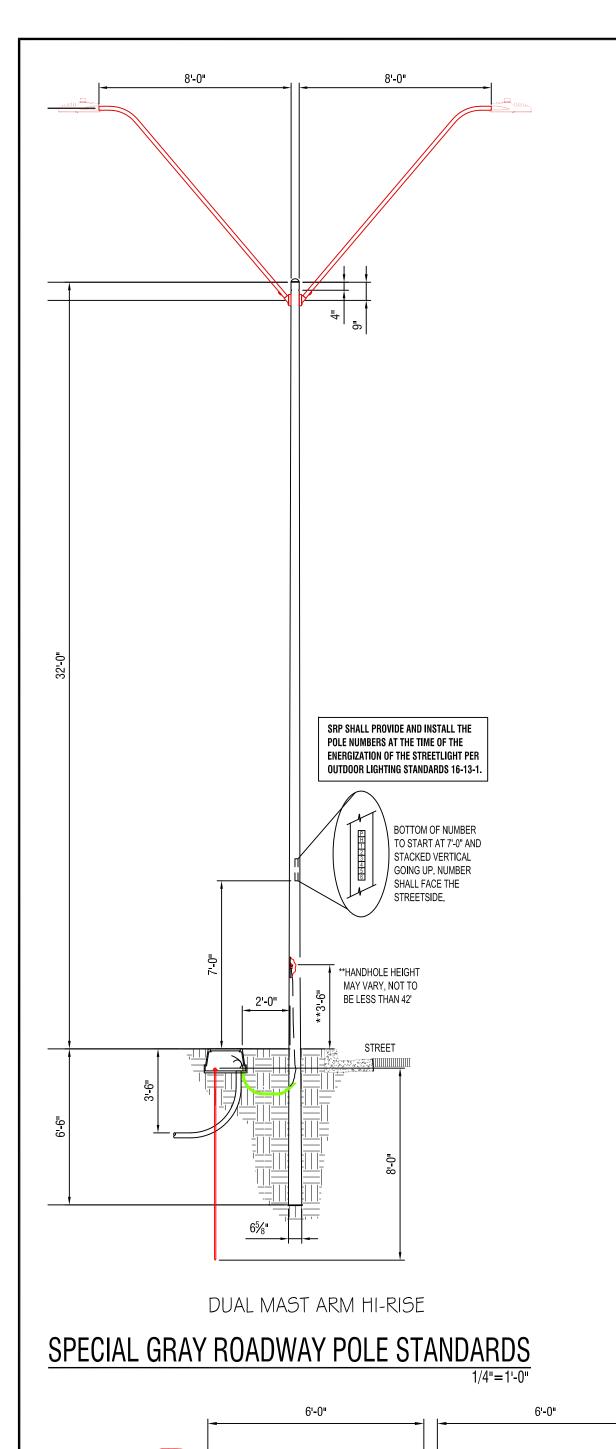
33007185

33007580

WASHER GALV RD 5/8"

25 2 2 2 2 2 2 - WIRE BARE #6 SOLID CU

"PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR OFFICIAL USE ONLY & MAY NO BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF YOUR CONTRACT WITH THE CITY OF PHOENIX." STREET LIGHT DETAIL SHEET CITY OF PHOENIX, ARIZONA STREET TRANSPORTATION DEPARTMENT CCPR OR CSPR#: NO: SHEETS



# **CONSTRUCTION NOTES:**

- ADJUST PHOTO EYE TO FACE NORTH
- 2 A GROUND ROD IS PROVIDED WITH THE JUNCTION BOX. WHERE A GROUND ROD CANNOT BE DRIVEN ALTERNATE GROUND SHALL BE USED. SEE 2449 THRU 2460 FOR APPROVED ALTERNATES.
- THE 40'-6" SELF-SUPPORTING STEEL POLE AND ONE OF THE 38'-0", HAVE TWO, MANUFACTURED INSTALLED SIMPLEX FITINGS 180 APART FOR DOUBLE ARMS, SEE CHART.
- APN 33701054 IS A POLE BAND ADAPTOR WITH A SIMPLEX FITTING. ADAPTOR IS REQUIRED FOR THE SECOND ARM IN DOUBLE ARM APPLICATIONS ON EXISTING PLES IN THE FIELD WITHOUT TWO SIMPLEX FITTINGS. SEE 8198 FOR AVAILABLE
- POLES THAT HAVE MORE THAN ONE LUMINAIRE REQUIRE A SEPARATE CIRCUIT WITH FUSING FROM THE J-BOX TO EACH LUMINAIRE.

## **ENGINEERING NOTES**

- A THE LIGHT CODE PROVIDES TWO SAME WATTAGE LUMINAIRES WHEN DOUBLE ARM ARE SPECIFIED.
- B SEE SPEC 8130 8131 FOR IN-LINE FUSE FOR UNDERGROUND FEEDS.
- C SEE 8100 THRU 8107 FOR OVERHEAD ATTACHMENTS.

LIGHT CODE	COLOR	APN	TYPE	WATTS	VOLTS	INITIAL LUMENS	PHOTOMETRIC Curve
CL60		00128329		29	120/208/240/277	2,700	454669
CL61		00128330		37	120/208/240/277	4,700	454659
CL62	GRAY	00128331	LED	71	120/208/240/277	8,000	454677
CL63		00128332		87	120/280/240/277	9,700	454688
CL64		00128364		140	120/280/240/277	16,900	454942

POLE TYPE	POLE	POLE	BURY	POLE ABOVE	POLE BUTT	DIAMETER			INAIRE HEI Ground (	
	CODE	LENGTH	DEPTH	GROUND	STEP	TAPER	WEIGHT	20" X 6'	3' X 8'	8' X 8'
LOCAL	1944.30	30' - 6"	5' - 6"	25' - 0"	5-9/16"	7-5/16"	460	25' - 11"	27' - 3"	-
COLLECTOR	1944.38	38' - 6"	6' - 6"	32' - 0"	6-5/8"	9-3/4"	640	32' - 11"	34' - 3"	39' - 3"
ARTERIAL	1944.38X	38' - 6"	6' - 6"	32' - 0"	6-5/8"	9-3/4"	640	32' - 11"	34' - 3"	39' - 3"
**FOR NON-S	TANDARD P	OLES, CONT	ACT THE S	TREET TRAN	ISPORTATION	N STREETL <b>I</b> GI	HTING SECT	TION FOR IN	IFORMAT <b>I</b> O	N.

# GRAY ROADWAY LUMINAIRE DESCRIPTIONS

19 = 19' - 0" POLE SNG SIMPLEX

30 = 30' - 6" POLE SNG SIMPLEX

38 = 38' - 6" POLE SNG SIMPLEX

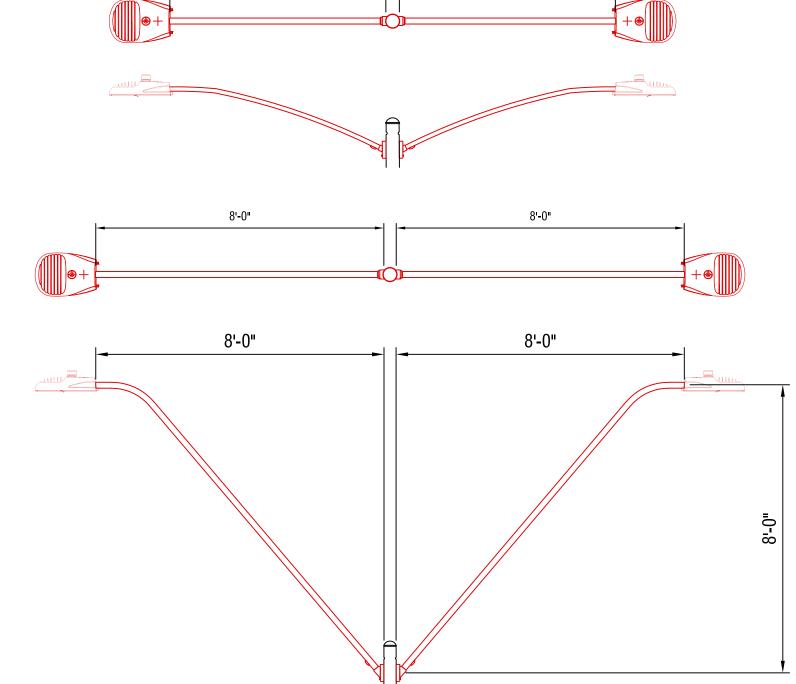
38X = 38' - 6" POLE DBL SIMPLEX

\*\* SEE SPEC. NOTE

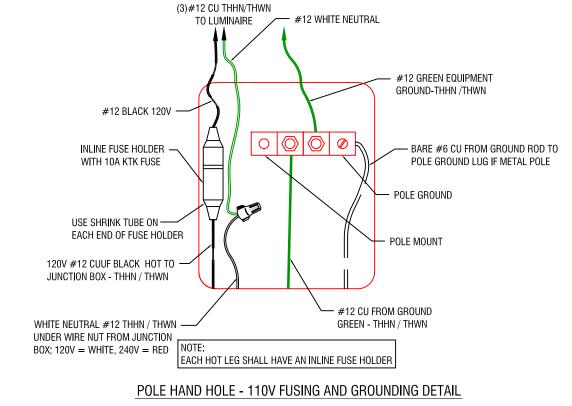
97W LED RWGR - MAJOR ERL1010C527AGRAY APN# 128332

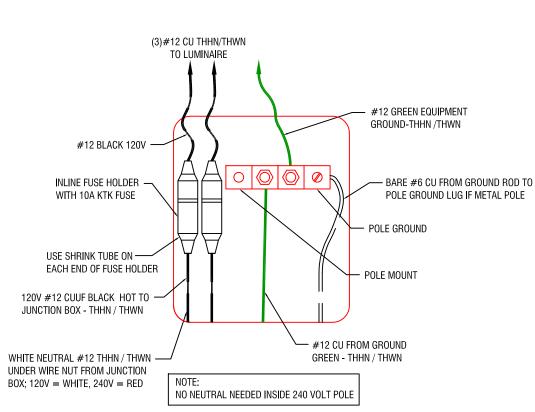
1944.\_\_

149W LED RWGR - SPECIAL MAJOR ERL2019C527AGRAY APN# 128364



DUAL MAST ARM POLE LUMINAIRES





POLE HAND HOLE - 240V FUSING AND GROUNDING DETAIL

# POLE FUSING DETAIL

# 3/16"=1'-0"

# **ELECTRICAL REQUIREMENTS FOR NEW POLE INSTALLATION**

1. JUNCTION BOXES SHALL MEET UTILITY COMPANY STANDARDS.

AIC MINIMUM. NEC 240.40

- 2. CONDUIT, CONDUCTORS, AND FUSE HOLDERS SHALL BE LISTED AND LABELED FOR USE IN A WET LOCATION WHEN USED IN A JUNCTION BOX. NEC300.5(B), 310.8(C)
- 3. IN-LINE FUSE HOLDER USED IN HAND HOLE OR SERVICE DROP SHALL BE CONSIDERED AS DISCONNECTING MEANS. FUSE HOLDERS TO BE RATED AT 22,000
- 4. ELECTRICAL CONNECTIONS-CONDUCTORS OF DISSIMILAR METALS SHALL NOT BE INTERMIXED IN A TERMINAL OR SPLICING CONNECTOR WHERE PHYSICAL CONTACT OCCURS BETWEEN DISSIMILAR CONDUCTORS, (COPPER, ALUMINUM) UNLESS THE DEVICE IS IDENTIFIED FOR THE PURPOSE AND CONDITIONS OF USE. NEC 110.14
- 5. ELECTRICAL CONNECTIONS OR SPLICES IN AN UNDERGROUND INSTALLATION SHALL BE APPROVED FOR WET LOCATIONS. (NEC 300.5)
- 6. NON-CURRENT CARRYING CONDUCTIVE MATERIALS ENCLOSING ELECTRICAL CONDUCTORS OR EQUIPMENT, OR FORMING PART OF SUCH EQUIPMENT, SHALL BE CONNECTED TO EARTH IN A MANNER THAT WILL LIMIT THE VOLTAGE IMPOSED BY LIGHTNING OR UNINTENTIONAL VOLTAGE DUE TO SHORT CIRCUITS AND LIMIT THE VOLTAGE TO GROUND ON THESE MATERIALS. NEC 250.4(B) (GROUND RODS)
- 7. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED FROM THE GROUND C SEE 8100 THRU 8107 FOR OVERHEAD ATTACHMENTS. LUG IN THE HAND-HOLE TO THE LUMINAIRE WITH THE CURRENT CARRYING CONDUCTORS. NEC 410.30(B)(3).
- 8. CONNECTION TO THE GROUND ROD AND THE GROUNDING ELECTRODE SHALL BE LISTED AND LABELED FOR USE. NEC 250.8
- 9. CONNECT #6 BARE COPPER WIRE FROM THE GROUND ROD ADJACENT TO THE POLE OR IN JUNCTION BOX TO THE GROUND LUG IN THE POLE

# CONSTRUCTION NOTES:

- 1 ADJUST PHOTO EYE TO FACE NORTH
- A GROUND ROD IS PROVIDED WITH THE JUNCTION BOX. WHERE A GROUND ROD CANNOT BE DRIVEN ALTERNATE GROUND SHALL BE USED. SEE 2449THRU 2460 FOR APPROVED ALTERNATES.
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- APN 33701054 IS A POLE BAND ADAPTOR WITH A SIMPLEX FITTING. ADAPTOR IS REQUIRED FOR THE SECOND ARM IN DOUBLE ARM APPLICATIONS ON EXISTING POLES IN THE FIELD WITHOUT TWO SIMPLEX FITTINGS. SEE 8198 FOR AVAILABLE SIZES.
- POLES THAT HAVE MORE THAN ONE LUMINAIRE REQUIRE A SEPARATE CIRCUIT WITH FUSING FROM THE J-BOX TO EACH LUMINAIRE.

# ENGINEERING NOTES:

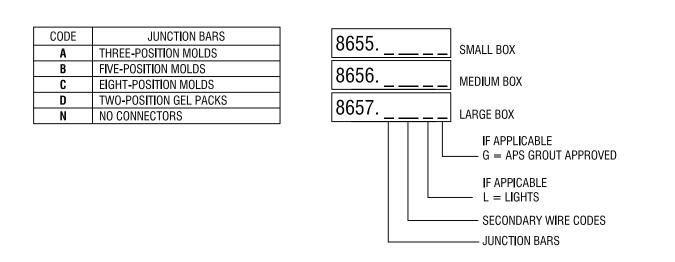
- THE LIGHT CODE PROVIDES TWO SAME WATTAGE LUMINAIRES WHEN DOUBLE ARM ARE SPECIFIED.
- B SEE SPEC 8130 8131 FOR IN-LINE FUSE FOR UNDERGROUND FEEDS.

## **20 YEAR PHOTOCELL REQUIREMENTS**

APN# 00073241 CONTROL PHOTO MULTI BR-20 CONTROL, PHOTO-ELECTRIC, BROWN, 20YEAR FAIL OFF, 120/208/240/277 MULTI-VOLT, SILICON, SOLID STATE, 2.40 TO 3.60 FC ON 1.2 TO 2.4 FC OFF, 60 HERTZ, 320 JOULE MOV, INVERSE ON/OFF RATIO .6:1 +/- .1, FAIL OFF, THREE PIN NEMA TWISTLOCK. 20 YEAR LIFE. 8483-SIDE SELC. MODEL #8483F2TMABR

# **GE Evolve II Gray Cobra LED Fixtures**

WATT	LUMEN	DESCRIPTION	APN	MODEL#
29W	3,800	SCALABLE ROADWAY GE LED GRAY Pedestrian LUMINAIRE 29WATT, 2700K, 3,800 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, GRAY, MULTIVOLT 120/208/240/277 DRIVER, IES NARROW ASYMMETRIC MEDIUM, ANSI C136.41 7 PIN TWISTLOCK PHOTO CONTROL RECEPTACLE, CSA OR UL CERTIFIED, ANSI C136.15 WATTAGE LABEL.	128329	ERL1004A527AGRAY
37W	4,700	SCALABLE ROADWAY GE LED GRAY Local Street LUMINAIRE 37WATT, 2700K, 4,700 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, GRAY, MULTIVOLT 120/208/240/277 DRIVER, IES NARROW ASYMMETRIC MEDIUM, ANSI C136.41 7 PIN TWISTLOCK PHOTO CONTROL RECEPTACLE, CSA OR UL CERTIFIED, ANSI C136.15 WATTAGE LABEL.	128330	ERL1005A527AGRAY
68W	8,000	SCALABLE ROADWAY GE LED GRAY Collector Street LUMINAIRE 68WATT, 2700K, 8,000 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, GRAY, MULTIVOLT 120/208/240/277 DRIVER, IES NARROW ASYMMETRIC MEDIUM, ANSI C136.41 7 PIN TWISTLOCK PHOTO CONTROL RECEPTACLE, CSA OR UL CERTIFIED, ANSI C136.15 WATTAGE LABEL.	128331	ERL1009C527AGRAY
87W	9,700	SCALABLE ROADWAY GE LED GRAY Major Roadway LUMINAIRE 87WATT, 2700K, 9,700 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, GRAY, MULTIVOLT 120/208/240/277 DRIVER, IES NARROW ASYMMETRIC MEDIUM, ANSI C136.41 7 PIN TWISTLOCK PHOTO CONTROL RECEPTACLE, CSA OR UL CERTIFIED, ANSI C136.15 WATTAGE LABEL.	128332	ERL1010C527AGRAY
140W	16,900	SCALABLE ROADWAY GE LED GRAY Special Major Roadway LUMINAIRE 140WATT, 2700K, 16,900 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, GRAY, MULTIVOLT 120/208/240/277 DRIVER, IES NARROW ASYMMETRIC MEDIUM, ANSI C136.41 7 PIN TWISTLOCK PHOTO CONTROL RECEPTACLE, CSA OR UL CERTIFIED, ANSI C136.15 WATTAGE LABEL.	128364	ERL2019C527AGRAY



NOTE 1

BOTTOM 21" SMALL BOX

OF J-BOX 34" MEDIUM BOX

SERVICE

GROUND ROD

✓ 37" LARGE BOX

AND NOTE 3

27" MEDIUM BOX 32" LARGE BOX

INSTALL

SERVICE (

FLUSH WITH

FINAL GRADE

15-1/2" SMALL BOX

21-1/2" MEDIUM BOX .

J-BOX DETAIL

24" LARGE BOX

12" SMALL BOX

–14-1/2" MED. BOX

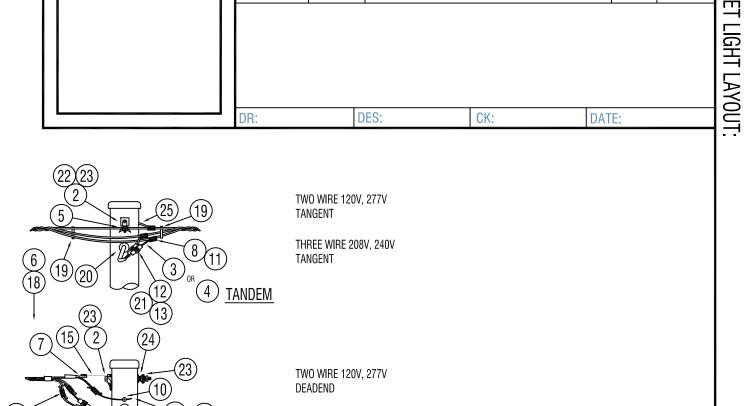
18-1/2" LARGE BOX

15" FOR MEDIUM BOX

18" FOR LARGE BOX

# 1. CONCRETE GROUT SHALL BE PREMIX, APN 71301280 OR EQUIVALENT.

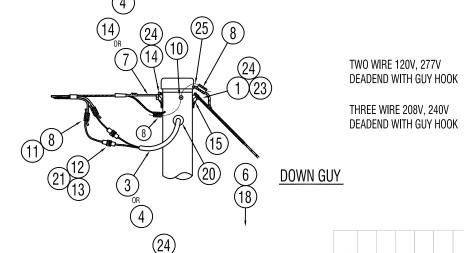
- 2. PENTA-HEAD BOLTS SHALL BE INSTALLED PRIOR TO ENERGIZING NEW UNDERGROUND SYSTEMS. LOST OR MISPLACED PENTA-HEAD BOLTS SHALL BE REPLACED WITH APN 71402608.
- 12" FOR SMALL BOX 3. BRINGING ALL CABLE/CONDUITS AND GROUND ROD INTO THE SAME END OF THE BOX TO ENABLE CABLES TO BE RAISED AND LOWERED EASILY. CONDUIT SWEEPS SHALL BE POSITIONED AND ALIGNED SO THAT WHEN TWO AND FOUR POSITION JUNCTION BARS ARE SPECIFIED, THE ST. LT., SECONDARY AND SERVICE CONDUITS SHALL BE INSTALLED AS SHOWN IN DETAIL "A". WHEN SIX POSITION JUNCTION BARS ARE SPECIFIED, THE ST. LT., SECONDARY AND SERVICE CONDUITS SHALL BE INSTALLED AS SHOWN IN DETAIL "B".
  - 4. COMPACTION BENEATH AND AROUND JUNCTION BOX SHALL BE A MINIMUM OF 85 PERCENT.
  - 5. REPLACEMENT LID FOR MEDIUM PLASTIC JUNCTION BOX IS 33100981. PENTAHEAD BOLTS AND EMS MARKER MUST BE REUSED FROM OLD LID.
  - 6. ADDITIONAL TRENCH DEPTH IS USUALLY REQUIRED AT ALL EQUIPMENT LOCATIONS. SEE 8648 FOR THE MINIMUM TRENCH DEPTHS AND THE DEGREE OF SLOPE ALLOWED AS THE TRENCH DEPTH CHANGES.
  - 7. ON 277 VOLT STREET LIGHT CIRCUITS, INSTALL "277 VOLT" RED MICARTA TAG (APN 00080796) PROVIDED BY SPEC
  - 8. TORQUE BOLTS TO 5 FT LBS (60 IN LBS)



THREE WIRE 208V, 240V

ARIZ.

PROJ. NO.



TO THE GROUNDING LUG AT THE BACK OF THE HAND

HARDWARE FOR ATTACHING TANGENT OR DEADEND

4. THESE CODES PROVIDE THE #14 CU FOR THE MAST

SECONDARY, AND THE CONNECTORS.

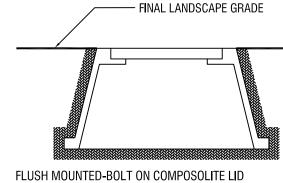
	<u>/(23)</u>	000	8100	8101	8102	8103	8106	8107	DET/	MATERIAL LIST	
	II _M _ (17)	ITEM	QTY	DESCRIPTION	APN						
		1	-	-	-	-	1	1	-	BOLT GALV MACH 5/8" X 10"	33001549
		2	1	1	1	1	-	-	-	BOLT GALV MACH 5/8" X 8"	33001547
		3	10	-	10	-	10	-	-	CABLE 2/C #14CU UF	31102132
	ш <b>/</b> (25)	4	-	10	-	10	-	10	-	CABLE 3/C #14CU UF	31102135
	DETAIL A	5	1	1	-	-	-	-	-	CLAMP ANGLE .162 TO .60	33002502
	DETAIL A	6	1	1	1	1	1	1	-	CLAMP GROUND ROD 5/8"	33002580
NOTES	:	7	-	-	1	1	-	-	-	CLAMP WEDGE FELX 4-2AL	33002772
1.	STEEL POLES AND ALL MAST ARMS MUST BE	8	2	3	2	3	4	2	-	CONN AL PG - SEE 2250	
	GROUNDED.	9	-	-	-	-	1	1	-	CONN CU "C" - SEE 2255	
		10	1	1	1	1	1	1	-	CONN POST 1/2"S SS #6-1/0	00095704
2.	OVERHEAD ATTACHMENTS MUST BE GROUNDED TO	11	1	2	1	2	1	2	-	COVER D DIE INSULATING	33003192
۷.		12	1	2	1	2	1	2	-	FUSE CARTRIDGE 15A	72602410
	THE	13	1	2	1	2	1	2	-	FUSEHOLDER IN-LINE 600V	00097502
	STREET LIGHT POLE. A $^{1}$ / $_{16}$ " HOLE HAS BEEN ADDED 6"	14	-	-	-	-	1	1	-	GRIP DE PREF - SEE2135	
	BELOW TOP OF STREET LIGHT POLE TO INSTALL A	15	-	-	1	1	2	2	-	HOOK GUY - MED DUTY 5/8"	33003831
GROUI	ND <b>I</b> NG	16	1	1	1	1	1	1	-	NUT INSERT RIVNUT	00055552
J	INSERT APN 00055552. TOOL TO INSTALL RIVNUT IS	17	-	-	-	-	-	-	1	NUT SQ GALV 5/8"	33004176
A DLI	INDERT ALL OCCUSSOS. TOOL TO INSTALL HINNOT IS	18	1	1	1	1	1	1	-	ROD COPPERCLAD GRD 5/8" X 8"	33004805
APH		19	2	2	-	-	-	-	-	SPACER MULTIPLEX CABLE	33006510
	00053279. SEE STANDARD 2408. WHERE RIVNUTS	20	1	1	1	1	1	1	-	STOPPER BUG AND DUST	33806955
ARE N	OT Control of the con	21	1	1	1	1	1	1	-	TUBING SHRINKABLE 1/4	71606200
	AVAILABLE GROUND PER DETAIL A.	22	2	2	2	2	-	-	-	WASHER GALV CU 3X3X1/4"	33007126
		23	1	1	1	1	1	1	1	WASHER GALV DBL COIL 5/8"	33007154
3.	ALL OVERHEAD FED STREET IGHT POLES SHALL HAVE	24	-	-	-	-	-	-	2	WASHER GALV RD 5/8"	33007185
ა.	A	25	2	2	2	2	2	2	-	WIRE BARE #6 SOLID CU	33007580
BUNDE	GROUND ROD INSTALLED AND A #6 GROUND WIRE										

STREET LIGHT POLE CABLE ATTACHMENTS AND GROUNDING DETAIL

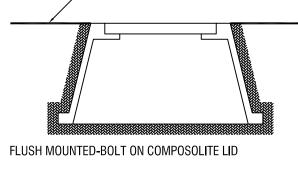
15" X 21" X 12" JUNCTION BOX WITH 3/8" CAPTIVE PENTA HEAD BOLTS

BONDED

WORD "ELECTRIC" ON COVER BOX TO BE POLYMER CONCRETE MATERIAL WITH POLYMER CONCRETE BOLT DOWN (NON-CONDUCTIVE



COVER).



SRP APPROVED SUPPLIERS	PART NUMBER
STRONGWELL	PC1118B513 B0X PC1118C504-17/UH0390AA COVER WITH ELECTRIC
ARMORCAST PRODUCTS	6001429A
CDR SYSTEMS	PA40-1015-12

HLW111B-12 BOX

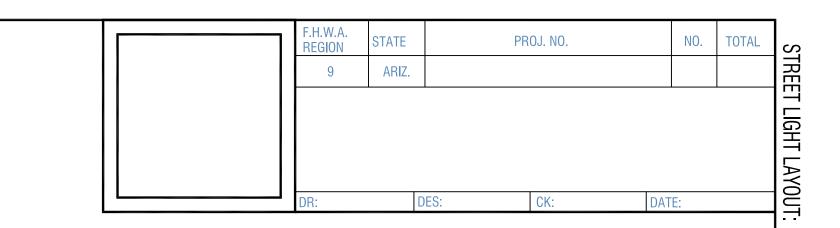
HLW1118-P0 L**I**D

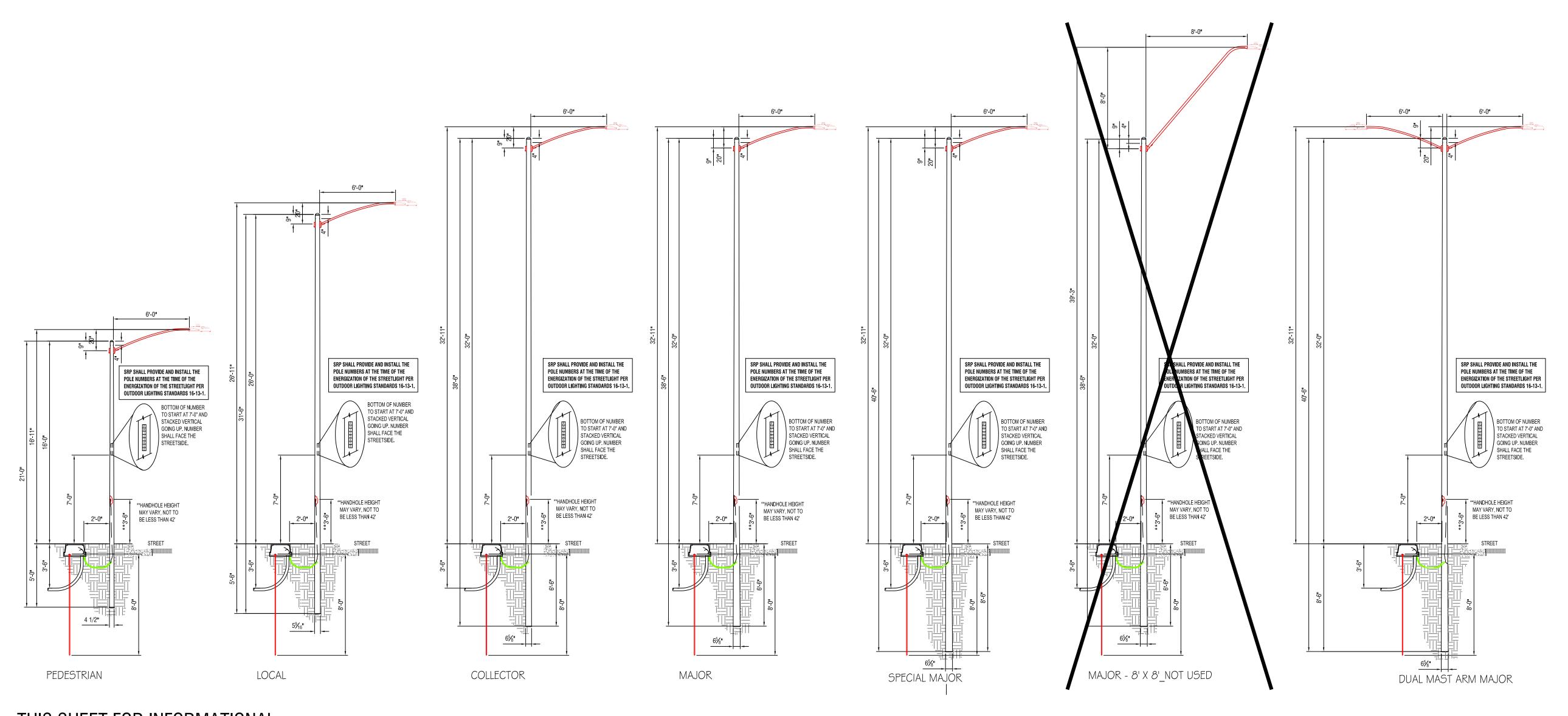


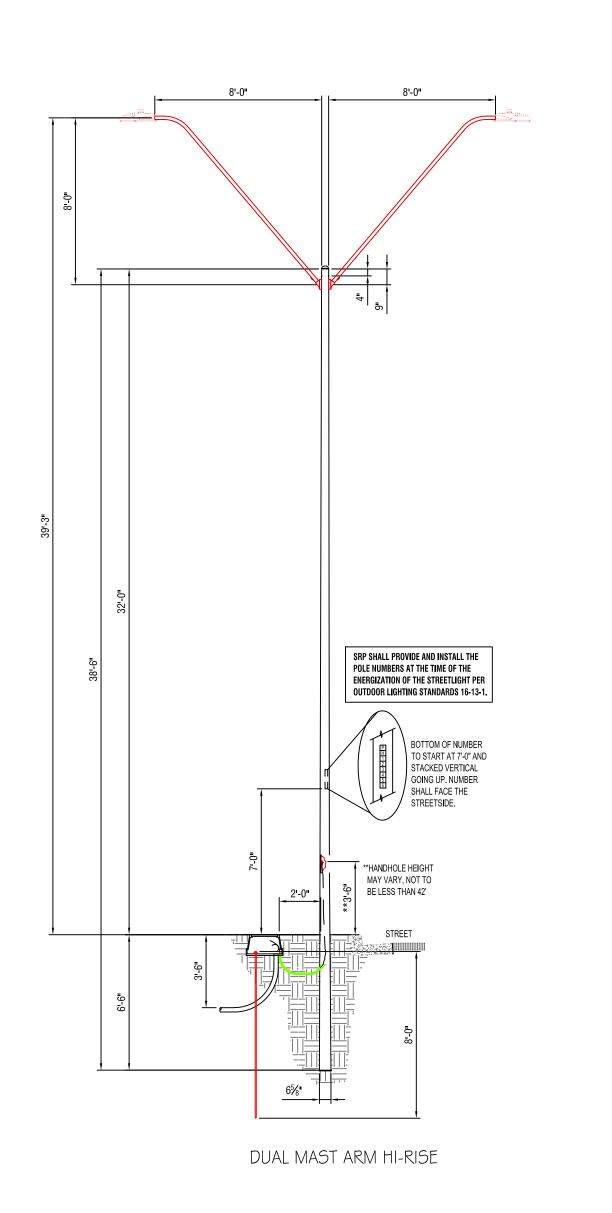
CARSON & ASSOCIATES



	IX ORDINANCE G-4396, TH HERS EXCEPT AS REQUIRI WITH THE (	ED			
ST	REET LIGH	T	DETAIL SH	HEET	
S	CITY OF PHOTREET TRANSPOR		•		
 \#:	CCPR OR CSPR#:				
<u>'''</u> E:	DES:	CK DA	: TE:	SHEET NO:	TOTAL SHEETS
CALE: NO SCALE			QS. #:	SL-3	TOTAL







THIS SHEET FOR INFORMATIONAL PURPOSES ONLY.

"PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR OFFICIAL USE ONLY & MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED TO FULFILL THE OBLIGATIONS OF YOUR CONTRACT WITH THE CITY OF PHOENIX."

STREET LIGHT STANDARDS

CITY OF PHOENIX, ARIZONA STREET TRANSPORTATION DEPARTMENT



KIVA#:		CCPR OR CSPR#	:			
DR:	DES: CF		<b>(</b> :	SHEET	TOTAL	
DATE:		DATE:	DATE:		NO:	SHEETS
SCALE:	NO SCALE			QS. #:	SL-STDS	TOTAL