CITY OF PHOENIX STREET LIGHTING
PROJECT NAME

F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.			

DR: DES: CK: DATE:

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. WHEN ACCEPTED AND ENERGIZED THE CONTRACTOR WILL INSTALL POLE NUMBERS PRIOR TO INSPECTION.
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.

STREET LIGHTING GENERAL NOTES (CONTNUED)

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.

LED STREETLIGHT NOTES

SPECIAL PEDESTRIAN

1 INSTALL ONE 45W LED (4,100 LUMEN) FIXTURE WITH PHOTOELECTRIC CONTROL ON A 30'-6" POLE WITH A 2' MAST ARM PER APS DETAIL AND SPECIFICATIONS. FOUNDATION AND GROUNDING PER APS STANDARDS AND SPECIFICATIONS. POLE SHALL BE CENTERED 1'-0" BEHIND BACK OF SIDEWALK OR 4' BEHIND CURB. INSTALL (2) #12 THHN/THWN FROM LUMINAIRE TO FUSE HOLDER IN POLE. INSTALL APS PULL BOX ADJACENT POLE WITH 1" FLEX CONDUIT TO POLE PER APS SPECIFICATIONS AND REQUIREMENTS. ALL WIRING, FUSING, AND GROUNDING PER APS DETAILS AND SPECIFICATIONS.

LOCAL

2 INSTALL ONE 60W LED (5,100 LUMEN) FIXTURE WITH PHOTOELECTRIC CONTROL ON A 30'-6" POLE WITH A 6' MAST ARM PER APS DETAIL AND SPECIFICATIONS. FOUNDATION AND GROUNDING PER APS STANDARDS AND SPECIFICATIONS. POLE SHALL BE CENTEREED D 1'-0" BEHIND BACK OF SIDEWALK OR 4' BEHIND BACK OF CURB. INSTALL (2) #12 THHN/THWN FROM LUMINAIRE TO FUSE HOLDER IN POLE. INSTALL APS PULL BOX ADJACENT POLE WITH 1" FLEX CONDUIT TO POLE PER APS SPECIFICATIONS AND REQUIREMENTS. ALL WIRING, FUSING, AND GROUNDING PER APS DETAILS AND SPECIFICATIONS.

COLLECTOR

3 INSTALL ONE 95W LED (8,200 LUMEN) FIXTURE WITH PHOTOELECTRIC CONTROL ON A 38'-6" POLE WITH A 6' MAST ARM PER APS DETAIL AND SPECIFICATIONS. FOUNDATION AND GROUNDING PER APS STANDARDS AND SPECIFICATIONS. POLE SHALL BE CENTERED 1'-0" BEHIND BACK OF SIDEWALK OR 4' BEHIND BACK OF CURB. INSTALL (2) #12 THHN/THWN FROM LUMINAIRE TO FUSE HOLDER IN POLE. INSTALL APS PULL BOX ADJACENT POLE WITH 1" FLEX CONDUIT TO POLE PER APS SPECIFICATIONS AND REQUIREMENTS. ALL WIRING, FUSING, AND GROUNDING PER APS DETAILS AND SPECIFICATIONS.

MAJOR

4 INSTALL ONE 113W LED (10,000 LUMEN) FIXTURE WITH PHOTOELECTRIC CONTROL ON A 38'-6" POLE WITH A 6' MAST ARM PER APS DETAIL AND SPECIFICATIONS. FOUNDATION AND GROUNDING PER APS STANDARDS AND SPECIFICATIONS. POLE SHALL BE CENTERED 1'-0" BEHIND BACK OF SIDEWALK OR 4' BEHIND BACK OF CURB. INSTALL (2) #12 THHN/THWN FROM LUMINAIRE TO FUSE HOLDER IN POLE. INSTALL APS PULL BOX ADJACENT POLE WITH 1" FLEX CONDUIT TO POLE PER APS SPECIFICATIONS AND REQUIREMENTS. ALL WIRING, FUSING, AND GROUNDING PER APS DETAILS AND SPECIFICATIONS.

SPECIAL MAJOR

5 INSTALL ONE 257W LED (19,200 LUMEN) FIXTURE WITH PHOTOELECTRIC CONTROL ON A 38'-6" POLE WITH A 6' MAST ARM PER APS DETAIL AND SPECIFICATIONS. FOUNDATION AND GROUNDING PER APS STANDARDS AND SPECIFICATIONS. POLE SHALL BE CENTERED 1'-0" BEHIND BACK OF SIDEWALK OR 4' BEHIND BACK OF CURB. INSTALL (2) #12 THHN/THWN FROM LUMINAIRE TO FUSE HOLDER IN POLE. INSTALL APS PULL BOX ADJACENT POLE WITH 1" FLEX CONDUIT TO POLE PER APS SPECIFICATIONS AND REQUIREMENTS. ALL WIRING, FUSING, AND GROUNDING PER APS DETAILS AND SPECIFICATIONS.

ARIZONA PUBLIC SERVICE (APS) NOTES

1. CONTRACTOR SHALL CONTACT APS INSPECTOR IDENTIFIED ON THE APS CONSTRUCTION DRAWING FOR PRE-CONSTRUCTION MEETING PRIOR TO ANY EXCAVATION.
2. CONTRACTOR TO SUPPLY ALL TRENCH AND CONDUIT, PER APS REQUIREMENTS, UNLESS OTHERWISE NOTED.
3. GRADE STAKE WILL BE SET WITHIN 2' OF J-BOX LOCATION.
4. CONTRACTOR WILL COORDINATE WITH APS AND CITY OF PHOENIX FOR DE-ENERGIZING OF STREETLIGHT CONDUCTOR.
5. GROUND ROD TO BE PROVIDED AND INSTALLED BY CONTRACTOR IN APS J-BOX AT EACH STREETLIGHT LOCATION.
6. IF THE CONTRACTOR INSTALLS THE POLE, THE BARE #6 COPPER GROUND WIRE SHALL BE CONNECTED FROM THE GROUND ROD IN THE APS J-BOX TO THE GROUND CONNECTION IN THE HAND-HOLE..
7. ALL TRENCH AND CONDUIT TO BE INSPECTED BY APS. DO NOT BACKFILL UNTIL INSPECTED.
8. APS CONSTRUCTION PRINT MUST BE USED AS A TRENCHING REFERENCE. TRENCHING VARIATIONS MUST HAVE WRITTEN APS CSR APPROVAL. FOLLOW DETAILS FOR CONSTRUCTION. VARIATIONS IN TRENCH ROUTE MAY RESULT IN A REDESIGN FEE.
9. CONTACT APS FOR ALL TRENCH AND CONDUIT SPECIFICATIONS AND REQUIREMENTS.
10. CONTRACTOR IS RESPONSIBLE FOR INTEGRITY OF ALL CONDUITS UNTIL APS HAS INSTALLED CONDUCTORS.
11. CONTRACTOR IS RESPONSIBLE FOR OBTAINING REQUIRED VARIANCES PRIOR TO SUBMITTING CIP DRAWINGS TO THE UTILITIES.
12. CONTRACTOR IS RESPONSIBLE FOR VERIFYING VERTICAL AND HORIZONTAL CLEARANCES TO EXISTING OVERHEAD LINES AND POLES WHEN PLACING NEW STREETLIGHTS.

GRAY ROADWAY LED STREETLIGHT POLE AND LUMINAIRE SPECIFICATIONS

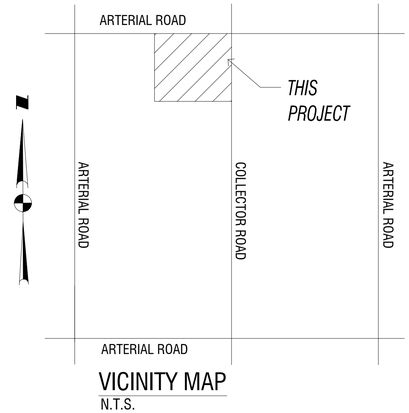
ITEM NUMBER	TYPE OF STREET	QUANTITY	MOUNTING HEIGHT	POLE LENGTH	MAST ARM	APPROVED POLE & ARM MANUFACTURERS	LUMEN	TYPE	WATTAGE	VOLTAGE	LUMINAIRE STYLE	APPROVED LUMINAIRE MANUFACTURERS
1	LOCAL	0	25'-11"	30'-6"	6'	CEM-TEC MS-1936 VALMONT CB09158 SOUTHWEST FABRICATION, LLC 306RDB	5,100	LED	60 W	120/208/240/277 AS POWER CO. REQUIRES	COBRAHEAD	GENERAL ELECTRIC ERS10A3B1740A GRAY R
2	COLLECTOR	0	32'-11"	38'-6"	6'	CEM-TEC MS-1944 VALMONT CB09159 SOUTHWEST FABRICATION, LLC 386RDB	8,200	LED	95 W	120/208/240/277 AS POWER CO. REQUIRES	COBRAHEAD	GENERAL ELECTRIC ERS10C3C1740A GRAY R
3	ARTERIAL	0	34'-3"	38'-6"	6'	CEM-TEC MS-1944 VALMONT CB09159 SOUTHWEST FABRICATION, LLC 386RDB	10,000	LED	113 W	120/208/240/277 AS POWER CO. REQUIRES	COBRAHEAD	GENERAL ELECTRIC ERS20D3E1740A GRAY R

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

DARK BRONZE LED STREETLIGHT POLE AND LUMINAIRE SPECIFICATIONS

ITEM NUMBER	TYPE OF STREET	QUANTITY	MOUNTING HEIGHT	POLE LENGTH	MAST ARM	APPROVED POLE & ARM MANUFACTURERS	LUMEN	TYPE	WATTAGE	VOLTAGE	LUMINAIRE STYLE	APPROVED LUMINAIRE MANUFACTURERS
1	LOCAL	0	25'-11"	30'-6"	2'	CEM-TEC MS-1936 VALMONT CB09158 SOUTHWEST FABRICATION, LLC 306RDB	5,100	LED	60 W	120/208/240/277 AS POWER CO. REQUIRES	DKBZ LED	GENERAL ELECTRIC ERS10A3B1740A DKBZ R
2	COLLECTOR	0	32'-11"	38'-6"	2'	CEM-TEC MS-1944 VALMONT CB09159 SOUTHWEST FABRICATION, LLC 386RDB	8,200	LED	95 W	120/208/240/277 AS POWER CO. REQUIRES	DKBZ LED	GENERAL ELECTRIC ERS10C3C1740A DKBZ R
3	ARTERIAL	0	34'-3"	38'-6"	2'	CEM-TEC MS-1944 VALMONT CB09159 SOUTHWEST FABRICATION, LLC 386RDB	10,000	LED	113 W	120/208/240/277 AS POWER CO. REQUIRES	DKBZ LED	GENERAL ELECTRIC ERS20D3E1740A DKBZ R

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



VICINITY MAP
N.T.S.

LEGEND

NEW LED COBRAHEAD LUMINAIRE STAND ALONE STREET LIGHT POLE

EXISTING STREET LIGHT MOUNTED ON POWER POLE

EXISTING STREET LIGHT POLE

aps

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
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.

DARK BRONZE STREET LIGHTS

CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

PROJECT #: FILE NO:
DR: DES: CK: SHEET NO: TOTAL SHEETS
DATE: DATE: DATE:
SCALE: NTS QS. #: -- --

F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.			

DR: | DES: | CK: | DATE:

STREETLIGHT PLAN SHEET LOCATION

1"=40'-0"

"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."

DARK BRONZE STREET LIGHTS

CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

aps

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

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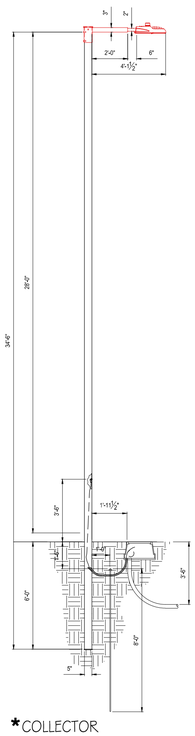
F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.			
DR:	DES:	CK:	DATE:	

* DOWNTOWN STANDARD, NORTH OF THE C.A.P., LIGHT RAIL OR AS SPECIAL REQUEST.



*COLLECTOR

1944._ _

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

CONSTRUCTION NOTES:

1 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.

3 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.

4 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.

5 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	MULTIVOLT	INITIAL LUMENS	PHOTOMETRIC CURVE
RL50	DARK BRONZE	00128251	LED	45	120/208/240/277 DRIVER	4,100	454669
RL52		00126804		60	120/208/240/277 DRIVER	5,100	454659
RL53		00126805		95	120/208/240/277 DRIVER	8,200	454677
RL54		00126806		113	120/208/240/277 DRIVER	10,000	454688
RL56		00128365		257	120/208/240/277 DRIVER	19,200	454942

POLE TYPE	POLE CODE	POLE LENGTH	BURY DEPTH	POLE ABOVE GROUND	POLE BUTT DIAMETER			LUMINAIRE HEIGHT ABOVE GROUND ON ARM		
					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-STANDARD POLES, CONTACT THE STREET TRANSPORTATION STREETLIGHTING SECTION FOR INFORMATION.

DARK BRONZE SQUARE POLE STANDARDS

1/4" = 1'-0"

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
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 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

2 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.

3 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.

4 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.

5 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.

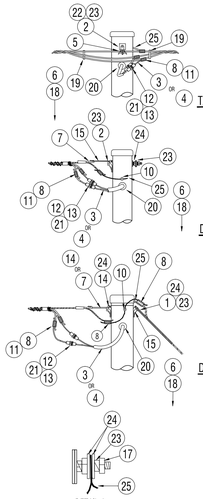
C SEE 8100 THRU 8107 FOR OVERHEAD ATTACHMENTS.

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 #8483F21MABR

GE Evolve II Dark Bronze Shoebox LED Fixtures

WATT	LUMEN	DESCRIPTION	APN	MODEL#
45W	4,100	**SCALABLE ROADWAY GE LED GRAY Pedestrian** LUMINAIRE 45WATT, 4000K, 4,100 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, DARK BRONZE, 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.	128251	ERS10A3B1540A DKBZ R
60W	5,100	**SCALABLE ROADWAY GE LED GRAY Local Street** LUMINAIRE 60WATT, 4000K, 5,100 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, DARK BRONZE, 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.	126804	ERS10A3B1740A DKBZ R
95W	8,200	**SCALABLE ROADWAY GE LED GRAY Collector Street** LUMINAIRE 95WATT, 4000K, 8,200 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, DARK BRONZE, 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.	126805	ERS10C3C1740A DKBZ R
113W	10,000	**SCALABLE ROADWAY GE LED GRAY Major Roadway** LUMINAIRE 113WATT, 4000K, 10,000 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, DARK BRONZE, 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.	126806	ERS20D3E1740A DKBZ R
257W	19,200	**SCALABLE ROADWAY GE LED GRAY Special Major Roadway** LUMINAIRE 257WATT, 4000K, 19,200 LUMEN, ROADWAY, LED, TERMINAL BOARD, 10KV SURGE PROTECTION, 90 DEGREE CUTOFF, DARK BRONZE, 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.	128365	ERS20G3C1140A DKBZ R



8100._ _ TWO WIRE 120V, 277V TANGENT

8101._ _ THREE WIRE 208V, 240V TANGENT
IF APPLICABLE: DE = DUSK-TO-DAWN
WIRE CODE

8102._ _ TWO WIRE 120V, 277V DEADEND

8103._ _ THREE WIRE 208V, 240V

8106._ _ TWO WIRE 120V, 277V DEADEND WITH GUY HOOK

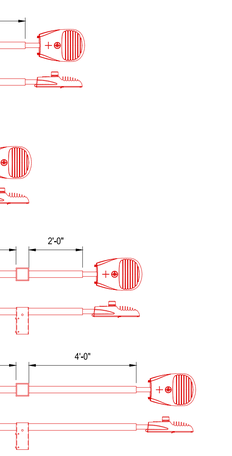
8107._ _ THREE WIRE 208V, 240V DEADEND WITH GUY HOOK

NOTES:
1. STEEL POLES AND ALL MAST ARMS MUST BE GROUNDED.
2. OVERHEAD ATTACHMENTS MUST BE GROUNDED TO THE STREET LIGHT POLE. A 7/16" HOLE HAS BEEN ADDED 6" BELOW TOP OF STREET LIGHT POLE TO INSTALL A GROUNDING INSERT APN 00055552. TOOL TO INSTALL RIVNUT IS APH 00053279. SEE STANDARD 2408. WHERE RIVNUTS ARE NOT AVAILABLE GROUND PER DETAIL A.
3. ALL OVERHEAD FED STREET LIGHT POLES SHALL HAVE A GROUND ROD INSTALLED AND A #6 GROUND WIRE BONDED TO THE GROUNDING LUG AT THE BACK OF THE HAND HOLE.
4. THESE CODES PROVIDE THE #14 CU FOR THE MAST ARMS,, HARDWARE FOR ATTACHING TANGENT OR DEADEND SECONDARY, AND THE CONNECTORS.

CODE	8100	8101	8102	8103	8106	8107	DETAIL A	MATERIAL LIST	
ITEM	QTY	QTY	QTY	QTY	QTY	QTY	QTY	DESCRIPTION	APN
1	-	-	-	-	1	1	-	BOLT GALV MACH 5/8" X 10"	33001549
2	1	1	1	1	1	1	-	BOLT GALV MACH 5/8" X 8"	33001547
3	10	-	10	-	10	-	-	CABLE 2/C #14CU UF	31102132
4	-	10	-	10	-	10	-	CABLE 3/C #14CU UF	31102135
5	1	1	1	-	-	-	-	CLAMP ANGLE .15Z TO .60	33002592
6	1	1	1	1	1	1	-	CLAMP GROUND ROD 5/8"	33002580
7	-	-	1	1	-	-	-	CLAMP WEDGE FELX 4-2AL	33002772
8	2	3	2	3	4	2	-	CONN AL PG - SEE 2250	
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
11	1	2	1	2	1	2	-	COVER D DIE INSULATING	33003192
12	1	2	1	2	1	2	-	FUSE CARTRIDGE 15A	72602410
13	1	2	1	2	1	2	-	FUSEHOLDER IN-LINE 600V	00097502
14	-	-	-	-	1	1	-	GRIP DE PREF - SEE2135	
15	-	-	1	1	2	2	-	HOOK GUY - MED DUTY 5/8"	33003831
16	1	1	1	1	1	1	-	NUT INSERT RIVNUT	00055552
17	-	-	-	-	-	-	1	NUT SQ GALV 5/8"	33004176
18	1	1	1	1	1	1	-	ROD COPPERCLAD GRD 5/8" X 8"	33004805
19	2	2	-	-	-	-	-	SPACER MULTIPLEX CABLE	33006510
20	1	1	1	1	1	1	-	STOPPER BUG AND DUST	33806955
21	1	1	1	1	1	1	-	TUBING SHRINKABLE 1/4	71606200
22	2	2	2	2	-	-	-	WASHER GALV CU 3OX1/4"	33007126
23	1	1	1	1	1	1	1	WASHER GALV DBL COIL 5/8"	33007154
24	-	-	-	-	-	-	2	WASHER GALV RD 5/8"	33007165
25	2	2	2	2	2	2	-	WIRE BARE #6 SOLID CU	33007580

STREET LIGHT POLE CABLE ATTACHMENTS AND GROUNDING DETAIL

1/2" = 1'-0"



DARK BRONZE SQUARE POLE LUMINAIRES

3/8" = 1'-0"

DARK BRONZE LUMINAIRE DESCRIPTIONS

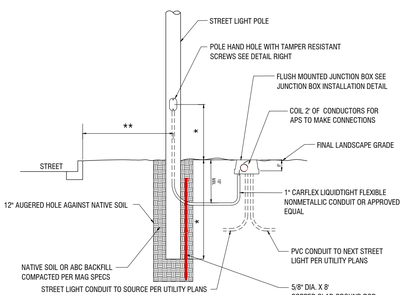
APN# 128251
45W LED RWDB - PEDESTRIAN
ERS10A3B1540A DKBZ R

APN# 126804
60W LED RWDB - LOCAL
ERS10A3B1740A DKBZ R

APN# 126805
95W LED RWDB - COLLECTOR
ERS10C3C1740A DKBZ R

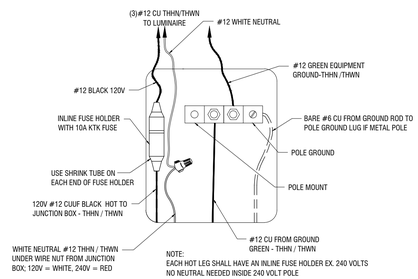
APN# 126806
113W LED RWDB - MAJOR
ERS20D3E1740A DKBZ R

APN# 128365
257W LED RWDB - SPECIAL MAJOR
ERS20G3C1140A DKBZ R



POLE HAND HOLE FUSING DETAIL

3/16" = 1'-0"



GROUNDING DETAIL

3/16" = 1'-0"

CODE	JUNCTION BARS
A	THREE-POSITION MOLDS
B	FIVE-POSITION MOLDS
C	EIGHT-POSITION MOLDS
D	TWO-POSITION GEL PACKS
N	NO CONNECTORS

8655._ _ _ _ SEE NOTE 10 AND 11 SMALL BOX

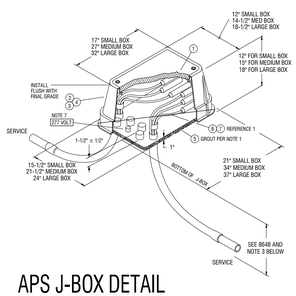
8656._ _ _ _ SEE NOTE 10 AND 12 MEDIUM BOX

8657._ _ _ _ SEE NOTE 13 LARGE BOX

IF APPLICABLE
G = APS GROUT PROVIDED

IF APPLICABLE
L = LIGHTS
D = DUSK-TO-DAWN

SECONDARY WIRE CODES
JUNCTION BARS



APS J-BOX DETAIL

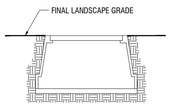
1/4" = 1'-0"

NOTES:
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.
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 8129.
8. TORQUE BOLTS TO 5 FT - LBS (60 IN - LBS).

DESCRIPTION
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 COVER).



SRP APPROVED SUPPLIERS	PART NUMBER
STRONGWELL	PC11188513 BOX PC1118C504-17/UH0390AA COVER WITH ELECTRIC
ARMORCAST PRODUCTS	A6001429A
CDR SYSTEMS	PA40-1015-12
CARSON & ASSOCIATES	HLW111B-12 BOX HLW1118-PD LID

J-BOX SECTION

3/8" = 1'-0"

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.

DARK BRONZE STREET LIGHTS

CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

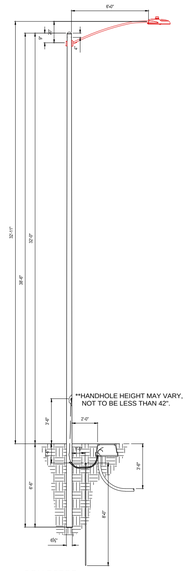
aps

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

PROJECT #:			FILE NO:	
DR:	DES:	CK:	SHEET NO:	TOTAL SHEETS
DATE:	DATE:	DATE:		
SCALE: NTS		QS. #:	--	--

F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.			

DR: | DES: | CK: | DATE:



COLLECTOR

1944.__

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

CONSTRUCTION NOTES:

1 **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.**

3 **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.**

4 **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.**

5 **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	MULTIVOLT	INITIAL LUMENS	PHOTOMETRIC CURVE
CL60	GRAY	00128329	LED	45	120/208/240/277 DRIVER	4,100	454669
CL61		00128330		60	120/208/240/277 DRIVER	5,100	454659
CL62		00128331		95	120/208/240/277 DRIVER	8,200	454677
CL63		00128332		113	120/208/240/277 DRIVER	10,000	454688
CL64		00128364		257	120/208/240/277 DRIVER	19,200	454942

POLE TYPE	POLE CODE	POLE LENGTH	BURY DEPTH	POLE ABOVE GROUND	POLE BUTT DIAMETER			LUMINAIRE HEIGHT ABOVE GROUND ON ARM		
					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-STANDARD POLES, CONTACT THE STREET TRANSPORTATION STREETLIGHTING SECTION FOR INFORMATION.

GRAY ROADWAY POLE STANDARDS

1/4"=1'-0"

GRAY ROADWAY POLE LUMINAIRES

3/8"=1'-0"

GRAY ROADWAY LUMINAIRE DESCRIPTIONS

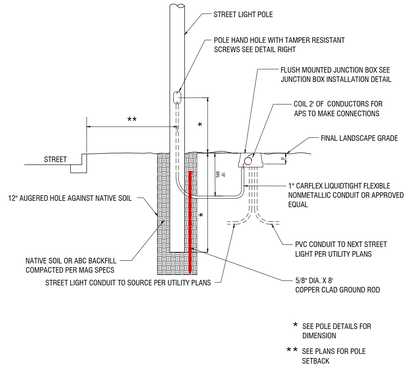
APN# 128329
45W LED RWGR - PEDESTRIAN
ERS10A3B1540A GRAY R

APN# 128330
60W LED RWGR - LOCAL
ERS10A3B1740A GRAY R

APN# 128331
95W LED RWGR - COLLECTOR
ERS10C3C1740A GRAY R

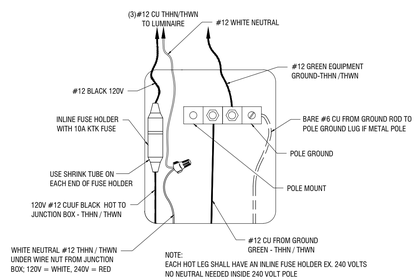
APN# 128332
113W LED RWGR - MAJOR
ERS20D3E1740A GRAY R

APN# 128364
257W LED RWGR - SPECIAL MAJOR
ERS20G3C1140A GRAY R



POLE HAND HOLE FUSING DETAIL

3/16"=1'-0"



GROUNDING DETAIL

3/16"=1'-0"

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
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 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

2 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.

3 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.

4 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.

5 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.

20 YEAR PHOTOCELL REQUIREMENTS

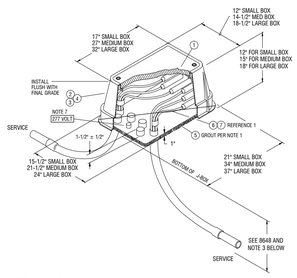
APN# 00073241 CONTROL PHOTO MULTI BR-20 CONTROL, PHOTO-ELECTRIC, BROWN, 20YEAR FAIL OFF, 120/208/240/277 MULTI-VOLT, SILICON, SOLID STATE, 2.40 TO 3.60 FC ON 1.2 TO 2.4 FC OFF, 60 HERTZ, 320 JOULE MOV, INVERSE ON/OFF RATIO .6:1 +/- .1, FAIL OFF, THREE PIN NEMA TWISTLOCK, 20 YEAR LIFE, 8483-SIDE SELC,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

GE Evolve II Gray Cobra LED Fixtures

WATT	LUMEN	DESCRIPTION	APN	MODEL#
45W	4,100	**SCALABLE ROADWAY GE LED GRAY Pedestrian** LUMINAIRE 45WATT, 4000K, 4,100 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	ERS10A3B1540A GRAY R
60W	5,100	**SCALABLE ROADWAY GE LED GRAY Local Street** LUMINAIRE 60WATT, 4000K, 5,100 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	ERS10A3B1740A GRAY R
95W	8,200	**SCALABLE ROADWAY GE LED GRAY Collector Street** LUMINAIRE 95WATT, 4000K, 8,200 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	ERS10C3C1740A GRAY R
113W	10,000	**SCALABLE ROADWAY GE LED GRAY Major Roadway** LUMINAIRE 113WATT, 4000K, 10,000 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.	128332	ERS20D3E1740A GRAY R
257W	19,200	**SCALABLE ROADWAY GE LED GRAY Special Major Roadway** LUMINAIRE 257WATT, 4000K, 19,200 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	ERS20G3C1140A GRAY R

CODE	JUNCTION BARS
A	THREE-POSITION MOLDS
B	FIVE-POSITION MOLDS
C	EIGHT-POSITION MOLDS
D	TWO-POSITION GEL PACKS
N	NO CONNECTORS

8655.___ SEE NOTE 10 AND 11 SMALL BOX
8656.___ SEE NOTE 10 AND 12 MEDIUM BOX
8657.___ SEE NOTE 13 LARGE BOX
IF APPLICABLE **G** = APS GROUT PROVIDED
IF APPLICABLE **L** = LIGHTS **D** = DUSK-TO-DAWN
SECONDARY WIRE CODES
JUNCTION BARS

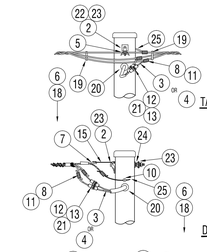


APS J-BOX DETAIL

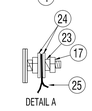
1/4"=1'-0"

NOTES:

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.
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 8129.
8. TORQUE BOLTS TO 5 FT - LBS (60 IN - LBS).



8100.___ TWO WIRE 120V, 277V TANGENT
8101.___ THREE WIRE 208V, 240V TANGENT
IF APPLICABLE: DE = DUSK-TO-DAWN
WIRE CODE
8102.___ TWO WIRE 120V, 277V DEADEND
8103.___ THREE WIRE 208V, 240V
8106.___ TWO WIRE 120V, 277V DEADEND WITH GUY HOOK
8107.___ THREE WIRE 208V, 240V DEADEND WITH GUY HOOK



NOTES:
1. STEEL POLES AND ALL MAST ARMS MUST BE GROUNDED.
2. OVERHEAD ATTACHMENTS MUST BE GROUNDED TO THE STREET LIGHT POLE. A 7/16" HOLE HAS BEEN ADDED 6" BELOW TOP OF STREET LIGHT POLE TO INSTALL A GROUNDING INSERT APN 00055552. TOOL TO INSTALL RIVNUT IS APH 00053279. SEE STANDARD 2408. WHERE RIVNUTS ARE NOT AVAILABLE GROUND PER DETAIL A.
3. ALL OVERHEAD FED STREET IGHT POLES SHALL HAVE A GROUND ROD INSTALLED AND A #6 GROUND WIRE BONDED TO THE GROUNDING LUG AT THE BACK OF THE HAND HOLE.
4. THESE CODES PROVIDE THE #14 CU FOR THE MAST ARMS., HARDWARE FOR ATTACHING TANGENT OR DEADEND SECONDARY, AND THE CONNECTORS.

CODE	8100	8101	8102	8103	8106	8107	DETAIL A
ITEM	QTY	QTY	QTY	QTY	QTY	QTY	QTY
1	-	-	-	-	1	1	-
2	1	1	1	1	-	-	-
3	10	-	10	-	10	-	-
4	-	10	-	10	-	10	-
5	1	1	-	-	-	-	-
6	1	1	1	1	1	1	-
7	-	-	1	1	-	-	-
8	2	3	2	3	4	2	-
9	-	-	-	-	1	1	-
10	1	1	1	1	1	1	-
11	1	2	1	2	1	2	-
12	1	2	1	2	1	2	-
13	1	2	1	2	1	2	-
14	-	-	-	-	1	1	-
15	-	-	1	1	2	2	-
16	1	1	1	1	1	1	-
17	-	-	-	-	-	-	1
18	1	1	1	1	1	1	-
19	2	2	-	-	-	-	-
20	1	1	1	1	1	1	-
21	1	1	1	1	1	1	-
22	2	2	2	2	-	-	-
23	1	1	1	1	1	1	1
24	-	-	-	-	-	-	2
25	2	2	2	2	2	2	-

ITEM	DESCRIPTION	APN
1	BOLT GALV MACH 5/8" X 10"	33001549
2	BOLT GALV MACH 5/8" X 8"	33001547
3	CABLE 2/C #14CU UF	31102132
4	CABLE 3/C #14CU UF	31102135
5	CLAMP ANGLE .162 TO .60	33002502
6	CLAMP GROUND ROD 5/8"	33002580
7	CLAMP WEDGE FELX 4-2AL	33007772
8	CONN AL PG - SEE 2250	
9	CONN CU "C" - SEE 2255	
10	CONN POST 1/2"S SS #6-1/0	00095704
11	COVER D DIE INSULATING	33003192
12	FUSE CARTRIDGE 15A	72602410
13	FUSEHOLDER IN-LINE 600V	00097302
14	GRIP DE PREF - SEE2135	
15	HOOK GUY - MED DUTY 5/8"	33003831
16	NUT INSERT RIVNUT	00055552
17	NUT SQ GALV 5/8"	33004176
18	ROD COPPERCLAD GRD 5/8" X 8"	33004805
19	SPACER MULTIPLEX CABLE	33005010
20	STOPPER BUG AND DUST	33006955
21	TUBING SHRINKABLE 1/4	71600200
22	WASHER GALV CU 3X3X1/4"	33007126
23	WASHER GALV DBL COIL 5/8"	33007154
24	WASHER GALV RD 5/8"	33007185
25	WIRE BARE #6 SOLID CU	33007380

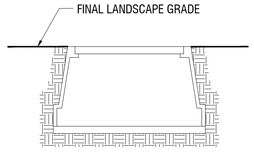
STREET LIGHT POLE CABLE ATTACHMENTS AND GROUNDING DETAIL

1/2"=1'-0"

DESCRIPTION
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 COVER).



SRP APPROVED SUPPLIERS	PART NUMBER
STRONGWELL	PC1118B513 BOX PC1118C504-17/UH0390AA COVER WITH ELECTRIC
ARMORCAST PRODUCTS	A6001429A
CDR SYSTEMS	PA40-1015-12
CARSON & ASSOCIATES	HLW111B-12 BOX HLW1118-PO LID

J-BOX SECTION

3/8"=1'-0"

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.

GRAY ROADWAY STREET LIGHTS

CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

aps

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

PROJECT #: | FILE NO:
DR: | DES: | CK: | SHEET NO: | TOTAL SHEETS
DATE: | DATE: | DATE:
SCALE: NTS | QS. #: | -- | --

F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
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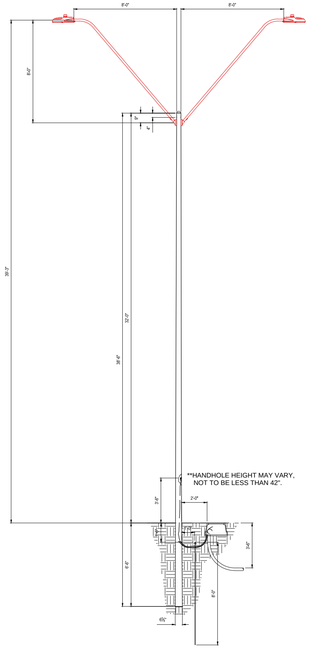


DUAL MAST ARM HI-RISE

DUAL MAST ARM POLE STANDARDS

1/4"=1'-0"

1944._ _

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

CONSTRUCTION NOTES:

1. **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.**
3. **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.**
4. **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.**
5. **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	MULTIVOLT	INITIAL LUMENS	PHOTOMETRIC CURVE
CL60		00128329		45	120/208/240/277 DRIVER	4,100	454669
CL61		00128330		60	120/208/240/277 DRIVER	5,100	454659
CL62	GRAY	00128331	LED	95	120/208/240/277 DRIVER	8,200	454677
CL63		00128332		113	120/208/240/277 DRIVER	10,000	454688
CL64		00128364		257	120/208/240/277 DRIVER	19,200	454942

POLE TYPE	POLE CODE	POLE LENGTH	BURY DEPTH	POLE ABOVE GROUND	POLE BUTT DIAMETER			LUMINAIRE HEIGHT ABOVE GROUND ON ARM		
					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-STANDARD POLES, CONTACT THE STREET TRANSPORTATION STREETLIGHTING SECTION FOR INFORMATION.

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
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 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
2. 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.
3. 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.
4. 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.
5. POLES THAT HAVE MORE THAN ONE LUMINAIRE REQUIRE A SEPARATE CIRCUIT WITH FUSING FROM THE J-BOX TO EACH LUMINAIRE.

ENGINEERING NOTES:

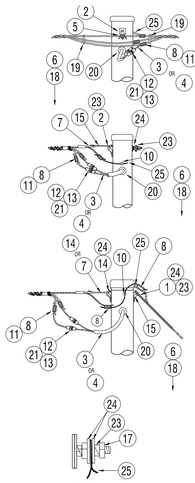
- A THE LIGHT CODE PROVIDES TWO SAME WATTAGE LUMINAIRES WHEN DOUBLE ARM ARE SPECIFIED.
- B SEE SPEC 8130 - 8131 FOR IN-LINE FUSE FOR UNDERGROUND FEEDS.
- C SEE 8100 THRU 8107 FOR OVERHEAD ATTACHMENTS.

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#
45W	4,100	**SCALABLE ROADWAY GE LED GRAY Pedestrian** LUMINAIRE 45WATT, 4000K, 4,100 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	ERS10A381540A GRAY R
60W	5,100	**SCALABLE ROADWAY GE LED GRAY Local Street** LUMINAIRE 60WATT, 4000K, 5,100 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	ERS10A381740A GRAY R
95W	8,200	**SCALABLE ROADWAY GE LED GRAY Collector Street** LUMINAIRE 95WATT, 4000K, 8,200 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	ERS10C3C1740A GRAY R
113W	10,000	**SCALABLE ROADWAY GE LED GRAY Major Roadway** LUMINAIRE 113WATT, 4000K, 10,000 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.	128332	ERS20D3E1740A GRAY R
257W	19,200	**SCALABLE ROADWAY GE LED GRAY Special Major Roadway** LUMINAIRE 257WATT, 4000K, 19,200 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	ERS20G3C1140A GRAY R



8100. _ _ TWO WIRE 120V, 277V TANGENT

8101. _ _ THREE WIRE 208V, 240V TANGENT

IF APPLICABLE: DE = DUSK-TO-DAWN

WIRE CODE

8102. _ _ TWO WIRE 120V, 277V DEADEND

8103. _ _ THREE WIRE 208V, 240V

8106. _ _ TWO WIRE 120V, 277V DEADEND WITH GUY HOOK

8107. _ _ THREE WIRE 208V, 240V DEADEND WITH GUY HOOK

NOTES:

1. STEEL POLES AND ALL MAST ARMS MUST BE GROUNDED.
2. OVERHEAD ATTACHMENTS MUST BE GROUNDED TO THE STREET LIGHT POLE. A 13/16" HOLE HAS BEEN ADDED 6" BELOW TOP OF STREET LIGHT POLE TO INSTALL A GROUNDING INSERT APN 00055552. TOOL TO INSTALL RIVNUT IS APH 00053279. SEE STANDARD 2408. WHERE RIVNUTS ARE NOT AVAILABLE GROUND PER DETAIL A.
3. ALL OVERHEAD FED STREET IGHT POLES SHALL HAVE A GROUND ROD INSTALLED AND A #6 GROUND WIRE BONDED TO THE GROUNDING LUG AT THE BACK OF THE HAND HOLE.
4. THESE CODES PROVIDE THE #14 CU FOR THE MAST ARMS,, HARDWARE FOR ATTACHING TANGENT OR DEADEND

CODE	8100	8101	8102	8103	8106	8107	DETAIL A	MATERIAL LIST	
ITEM	QTY	QTY	QTY	QTY	QTY	QTY	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
4	-	10	-	10	-	10	-	CABLE 3/C #14CU UF	31102135
5	1	1	-	-	-	-	-	CLAMP ANGLE 162 TO 60	33002502
6	1	1	1	1	1	1	-	CLAMP GROUND ROD 5/8"	33002580
7	-	-	1	1	-	-	-	CLAMP WEDGE FELX 4-2AL	33002772
8	2	3	2	3	4	2	-	CONN AL PG - SEE 2250	
9	-	-	-	-	1	1	-	CONN CU "C" - SEE 2250	
10	1	1	1	1	1	1	-	CONN POST 1/2"S SS #6-1/0	00095704
11	1	2	1	2	1	2	-	COVER D DIE INSULATING	33003192
12	1	2	1	2	1	2	-	FUSE CARTRIDGE 15A	72602410
13	1	1	2	1	2	2	-	FUSEHOLDER IN-LINE 600V	00097502
14	-	-	-	-	1	1	-	GRIP DE PREF - SEE2135	
15	-	-	1	1	2	2	-	HOOK GUY - MED DUTY 5/8"	33003831
16	1	1	1	1	1	1	-	NUT INSERT RIVNUT	00055552
17	-	-	-	-	-	-	1	NUT SQ GALV 5/8"	33004176
18	1	1	1	1	1	1	-	ROD COPPERCLAD GRD 5/8" X 8"	33004805
19	2	2	-	-	-	-	-	SPACER MULTIPLEX CABLE	33006510
20	1	1	1	1	1	1	-	STOPPER BUG AND DUST	33806955
21	1	1	1	1	1	1	-	TUBING SHRINKABLE 1/4	71606200
22	2	2	2	2	-	-	-	WASHER GALV CU 3X2X1/4"	33007126
23	1	1	1	1	1	1	1	WASHER GALV DBL COIL 5/8"	33007154
24	-	-	-	-	-	-	2	WASHER GALV RD 5/8"	33007185

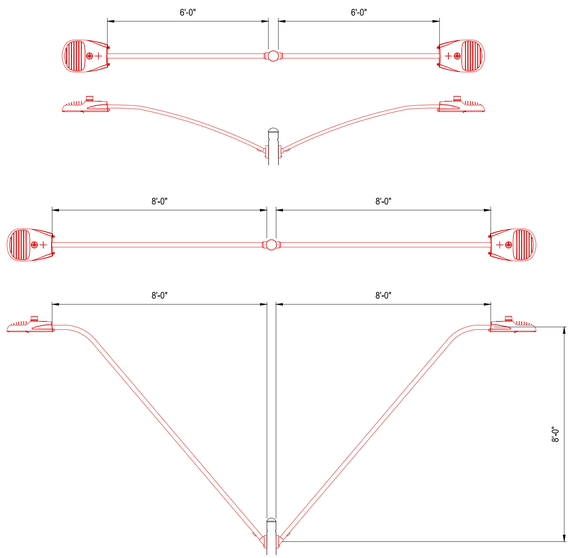
STREET LIGHT POLE CABLE ATTACHMENTS AND GROUNDING DETAIL

1/2"=1'-0"

GRAY ROADWAY LUMINAIRE DESCRIPTIONS

APN# 128332
113W LED RWGR - MAJOR
ERS20D3E1740A GRAY R

APN# 128364
257W LED RWGR - SPECIAL MAJOR
ERS20G3C1140A GRAY R



DUAL MAST ARM POLE LUMINAIRES

3/8"=1'-0"

CODE	JUNCTION BARS
A	THREE-POSITION MOLDS
B	FIVE-POSITION MOLDS
C	EIGHT-POSITION MOLDS
D	TWO-POSITION GEL PACKS
N	NO CONNECTORS

8655. _ _ _ _ SEE NOTE 10 AND 11 SMALL BOX

8656. _ _ _ _ SEE NOTE 10 AND 12 MEDIUM BOX

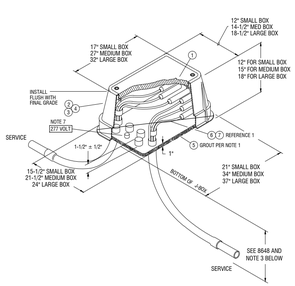
8657. _ _ _ _ SEE NOTE 13 LARGE BOX

IF APPLICABLE **G** = APS GROUT PROVIDED

IF APPLICABLE **L** = LIGHTS **D** = DUSK-TO-DAWN

SECONDARY WIRE CODES

JUNCTION BARS



APS J-BOX DETAIL

1/4"=1'-0"

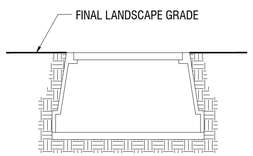
NOTES:

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.
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 8129.
8. TORQUE BOLTS TO 5 FT - LBS (60 IN - LBS).

DESCRIPTION
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 COVER).



FLUSH MOUNTED-BOLT ON COMPOSOLITE LID

SRP APPROVED SUPPLIERS	PART NUMBER
STRONGWELL	PC1118B513 BOX PC1118C504-17/UH0390AA COVER WITH ELECTRIC
ARMORCAST PRODUCTS	A6001429A
CDR SYSTEMS	PA40-1015-12
CARSON & ASSOCIATES	HLW111B-12 BOX HLW1118-PO LID

J-BOX SECTION

3/8"=1'-0"

aps

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

ARIZONA811

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.

DUAL MAST ARM STREET LIGHTS

CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

PROJECT #: | FILE NO:

DR: | DES: | CK: | SHEET NO: | TOTAL SHEETS

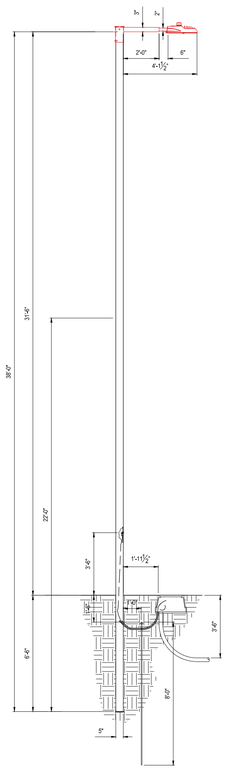
DATE: | DATE: | DATE:

SCALE: NTS | QS. #: | -- | --

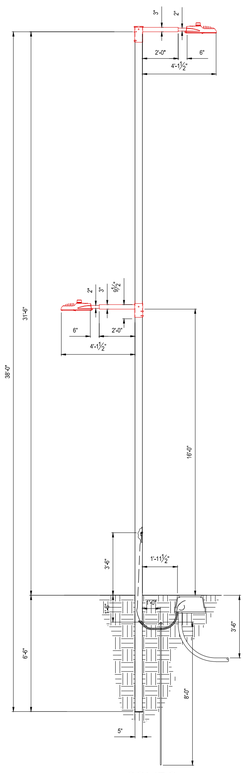
THIS SHEET FOR INFORMATIONAL PURPOSES ONLY.

F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.			

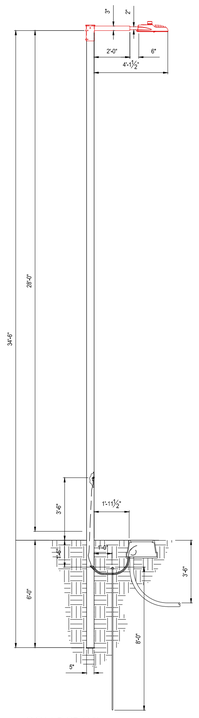
DR:	DES:	CK:	DATE:



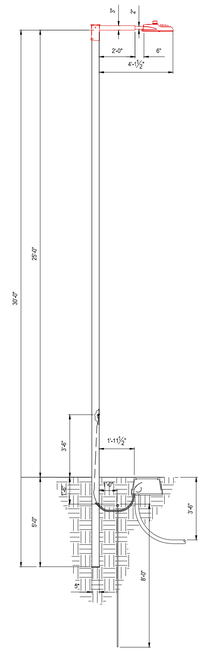
MAJOR



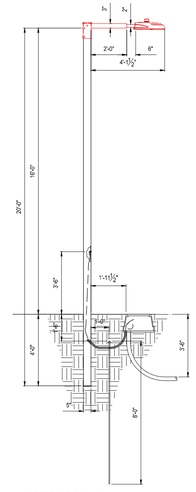
COMBO



COLLECTOR

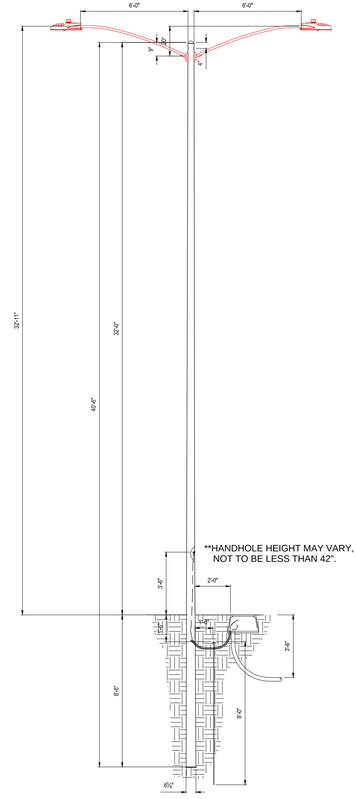


LOCAL

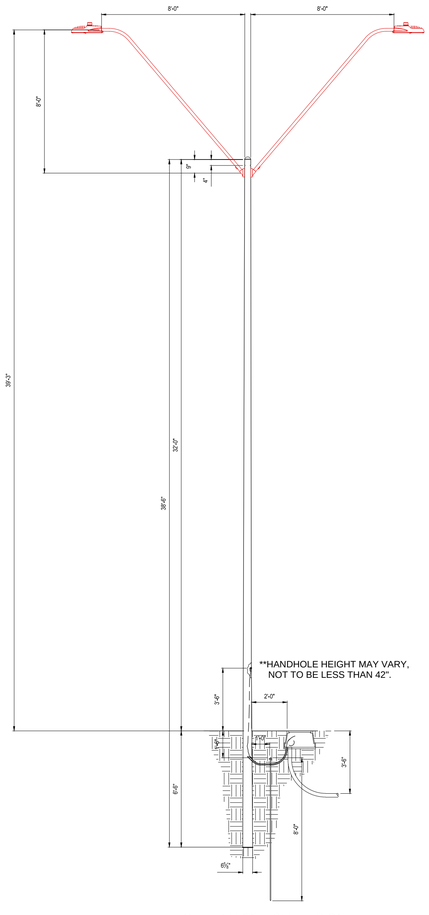


PEDESTRIAN

DARK BRONZE SQUARE POLE STANDARDS

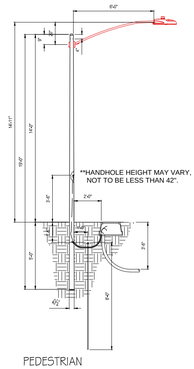


DUAL MAST ARM MAJOR



DUAL MAST ARM HI-RISE

SPECIAL GRAY ROADWAY POLE STANDARDS



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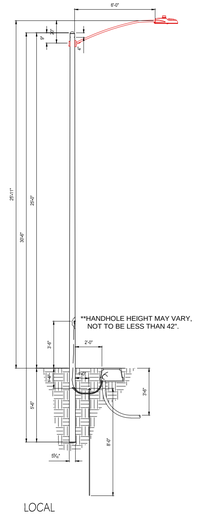
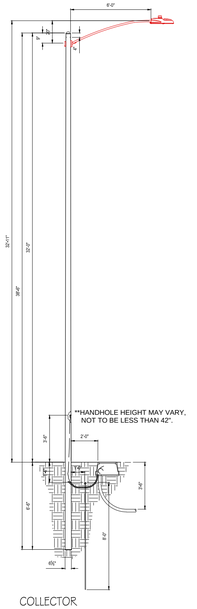
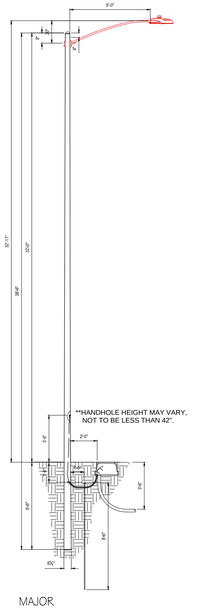


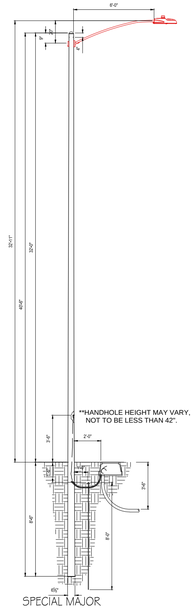
LOCAL



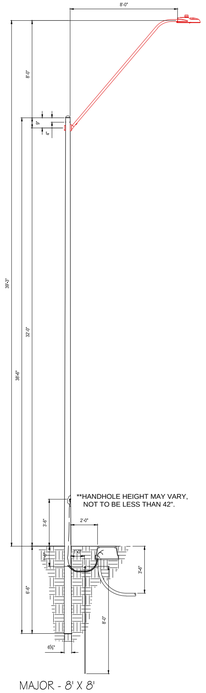
COLLECTOR



MAJOR



SPECIAL MAJOR



MAJOR - 8' X 8'

GRAY ROADWAY POLE STANDARDS

aps

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
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.

DUAL MAST ARM STREET LIGHTS

CITY OF PHOENIX, ARIZONA
STREET TRANSPORTATION DEPARTMENT

PROJECT #:			FILE NO:	
DR:	DES:	CK:	SHEET NO:	TOTAL SHEETS
DATE:	DATE:	DATE:		
SCALE: NTS		QS. #:	--	--