



CITY OF PHOENIX STREETLIGHTING LAYOUT GUIDELINES

March 2026

This document is in accordance with City of Phoenix Streetlighting Policy originally adopted by City Council July 1961

Amendment approved by City Council March 1967

Amendment approved by City Council September 1973

Amendment approved by City Council January 27, 1975

Amendment approved by City Council June 5, 1978

Amendment approved by City Council July 1, 1990

Amendment approved by City Council June 18, 1996

Table of Contents

INTRODUCTION.....	1
1. STREETLIGHTING DESIGN REQUIREMENTS	1
1.1. STREETLIGHT EQUIPMENT	1
1.2. STREETLIGHT POLE LAYOUTS AND SPACING REQUIREMENTS.....	2
1.3. STREETLIGHT DESIGN IN THE DOWNTOWN DISTRICT	8
1.4. STREETLIGHTING INSTALLED ON BRIDGES	9
1.5. STREETLIGHTING INSTALLED NEAR AIRPORTS	9
2. PLAN PREPARATION	26
2.1. GENERAL STREETLIGHT PLAN REQUIREMENTS.....	26
2.2. GENERAL NOTES TO BE INCLUDED ON STREETLIGHT PLANS COVER SHEET	27
SALT RIVER PROJECT (SRP) NOTES	29
ARIZONA PUBLIC SERVICE (APS) NOTES.....	31
3. RESIDENTIAL AND COMMERCIAL DEVELOPMENT PROJECTS	35
3.1. DEVELOPER RESPONSIBILITY	35
3.2. STREETLIGHT PLAN REQUIREMENTS	36
3.3. STREETLIGHT ACCEPTANCE LETTER	36
3.4. CONSTRUCTION REQUIREMENTS.....	36
4. CAPITAL IMPROVEMENT PROJECTS (CIP)	36
4.1. ADDITIONAL DESIGN REQUIREMENTS	37
CONSTRUCTION REQUIREMENTS	37
5. SMALL PLAN REVIEW.....	38
5.1. STREETLIGHT POLE RELOCATION.....	38
5.2. LOT SPLITS	39
ADAPTIVE REUSE	39

List of Tables

Table 1: Streetlight Pole Spacing, Luminaire and Mounting Height Criteria.....	3
--	---

List of Figures

Figure 1: Typical Arterial Streetlight Pole Layout.....	10
Figure 2A: Streetlight Layout at Arterial Street Intersections	11
Figure 2B: Streetlight Layout at Arterial/Collector Street Intersections.....	12
Figure 2C: Streetlight Layout at Arterial/Local Street Intersections.....	13
Figure 2D: Streetlight Layout at Collector Street Intersections.....	14
Figure 2E: Streetlight Layout at Collector/Local Street Intersections.....	15
Figure 2F: Streetlight Layout at Local Street Intersections.....	16
Figure 3: Typical Collector Streetlight Layouts	17
Figure 4A: Typical Residential Streetlight Pole Spacing	18
Figure 4B: Typical Streetlight Pole Spacing Adjacent to School.....	19
Figure 5A: Elbow (Dog-Leg) Intersections.....	20
Figure 5B: Cul-De-Sacs.....	21
Figure 6: Arterial Street Roundabout Intersections.....	22
Figure 7: Local/Local Roundabout Intersections.....	23
Figure 8: Frontage Road Streetlighting	24
Figure 9: Downtown District Lighting.....	25
Figure 10: Sample Cover Sheet Format.....	32
Figure 11: Sample Plan Sheet Format.....	33
Figure 12: Sample Detail Sheet Format.....	34

List of Appendices

- Appendix A: Streetlight Location Layouts at Traffic Calming Installations
- Appendix B: Sample Plan Submittal for Single Lot Review

INTRODUCTION

The Streetlighting Layout Guidelines have been created to aid design professionals in understanding City of Phoenix (COP) streetlighting design and construction requirements. This manual represents an update to the City's Streetlighting Layout Guidelines, adopted by City Council on June 18, 1996, including new standards for Light Emitting Diode (LED) lighting with a Correlated Color Temperature (CCT) of 2,700°K on November 30, 2016.

Streetlighting design and ongoing maintenance is managed by COP Street Transportation Department, Traffic Services Division, and Streetlighting Design Section. Streetlighting plan submittal and construction inspection is performed by COP Planning & Development Department. Relevant streetlighting guidelines and processes, including this document, sample streetlighting plans, Computer Aided Drafting (CAD) details, notes, and Approved Materials List can be found online at <https://www.phoenix.gov/administration/departments/streets/initiatives/street-project-resources.html>.

Generally, streetlight poles, luminaires, and appurtenances within public right-of-way are owned and maintained by the COP while the power company (APS/SRP) owns and maintains the junction boxes and electrical feed serving the streetlights. The COP also owns and maintains streetlights within adjacent jurisdictions through Intergovernmental Agreements (IGA). Streetlights fed by both APS and/or SRP are typically on unmetered service.

These Guidelines provide streetlight design and construction requirements based on roadway functional class, unique area districts, and other special considerations. The Guidelines are applicable to streetlights to be installed with Capital Improvement Projects (CIP), Residential or Commercial Development Projects, and small scale residential requests. Any deviations from the design requirements or equipment described in this document, or deviations from an approved streetlight design, must be reviewed and approved by COP Street Transportation Department Streetlighting Design section. For information or questions regarding streetlight design, please contact (602) 262-6284.

1. STREETLIGHTING DESIGN REQUIREMENTS

The information presented below and included in Table 1 summarizes the COP Streetlight Policy adopted by COP City Council on July 18, 1996, and the City Council's decision to adopt Light Emitting Diode (LED) lighting with a Correlated Color Temperature (CCT) of 2,700°K on November 30, 2016.

The requirements provided in Sections 1.1 and 1.2 are applicable to typical streetlighting installations across the City. Special consideration must first be made by the COP Street Transportation staff before any approval is given for the design and installation of decorative streetlighting. Decorative streetlighting shall be limited to pre-approved types and styles and installed only on special projects identified by COP Street Transportation Department. Additional streetlight requirements for the Downtown District are included in Section 1.3 of these guidelines.

1.1. STREETLIGHT EQUIPMENT

- 1.1.1. All streetlights shall be Light Emitting Diode (LED) type III with a Correlated Color Temperature of 2,700° K.
- 1.1.2. All new LED luminaires shall conform to approved manufacturers by the COP Street Transportation Department. The preapproved luminaires for each street classification are shown on the Approved Products List that can be found on the City's website at <https://www.phoenix.gov/administration/departments/streets/initiatives/street-project-resources.html>.
- 1.1.3. All luminaires shall have a fail-on 7-pin photoelectric cell (PEC) rated for 20-year life.
- 1.1.4. Streetlight poles shall be Downtown Brown Architectural Square except historic districts or other areas of the City approved for special light fixtures. These areas include but not limited to:

Special light fixture locations:

- Decorative Jackson Street Streetlighting – Jackson Street, between 4TH St and 9TH Ave
- Central Avenue Candy Canes – Central Avenue, between Culver Street and Camelback Road
- Downtown District – Area bordered by 7th Avenue, 7th Street, Lincoln Street, and Interstate 10 (south side)

*Contact Street Transportation Department Streetlighting Design Section for appropriate streetlight type

- Corridors with combination roadway/pedestrian lighting fixtures
 - Light Rail Corridor current and proposed, including all connecting streets
 - McDowell Rd – 7th Ave to SR-51
 - Van Buren St – I-17 to 24th St

- 56th St – Oak St to Camelback Rd

Contact Street Transportation Department for details and specifications of special light fixtures identified.

- 1.1.5. Galvanized round poles currently remain in use but will be discontinued. Projects submitted on or before June 30, 2026, that have already received approval for galvanized round poles may continue to use them. All new submittals after this date, as well as any new installations, shall utilize architectural square bronze poles.
- 1.1.6. For installation of new streetlights in Historic Districts, refer to the COP Planning and Development Department Historic Preservation Office Policy for Streetlights in Historic Districts. Contact the Planning and Development Department for a copy of the policy.
- 1.1.7. Luminaire mounting heights by roadway classification are shown in Table 1 for galvanized steel round streetlight poles and architectural square streetlight poles.
- 1.1.8. All streetlight equipment shall conform to approved manufacturers per current City standards. Refer to the City's Approved Products List at <https://www.phoenix.gov/administration/departments/streets/initiatives/street-project-resources.html>.
- 1.1.9. Where new standard streetlight poles conflict with overhead utilities, contact COP Street Transportation Department for alternative streetlight pole options. The designer shall work with the serving power company and City staff to design a streetlighting layout that meets all utility and roadway clearance requirements.
- 1.1.10. Existing streetlight poles impacted by construction must be replaced with new streetlight equipment. Relocation of existing streetlight equipment is not allowed unless preapproved in writing by the Deputy Director of Traffic Services or authorized designee.
- 1.1.11. All new or relocated electric lines associated with streetlighting shall be placed underground in all new residential and commercial developments where the overhead lines are visible from streets or adjoining properties. Based on existing streetlight and utility conditions, other streetlight and/or utility poles adjacent to the development (adjoining properties) may also be required to be upgraded to underground lines. This requirement will be determined during plan review.
- 1.1.12. Any new or relocated streetlight power lines in existing or new developments shall be placed underground.

1.2. STREETLIGHT POLE LAYOUTS AND SPACING REQUIREMENTS

Streetlight pole layouts, streetlight pole spacing, streetlight pole offsets and streetlight pole location requirements are described below. The streetlight pole layout, streetlight pole spacing and fixture mounting height are also summarized in Table 1 for each street classification. For streetlight pole layouts and requirements in the Downtown District, refer to Section 1.3 of these guidelines.

While the City does not require photometry, for special or unusual circumstances, the City may request the design engineer to provide photometric calculations as a reference.

Table 1: Streetlight Pole Spacing, Luminaire and Mounting Height Criteria

Classification	Wattage	Minimum Lumens	Median Present?	Mounting Height	Standard Spacing ^{1,2}	Spacing Type ²
Architectural Square Streetlight Poles						
Special Arterial	133W	16,900	Yes ³	31'-6"	200'	Double-Sided Staggered
Arterial	82W	9,700	Yes ³	31'-6"	200'	Double-Sided Staggered
Collector with Median Island or ≥ 44' (4 or more lanes)	65W	7,900	No	31'-6"	200'	Double-Sided Staggered
Collector, 43' or less (3 or less lanes)	65W	7,900	No	31'-6"	200'	Single-Sided
Local ⁴	34W	4,600	No	25'-0"	200'	Single-Sided
Sidewalk (Pedestrian Lighting)	27W	3,800	No	15'-0"	50'-75'	-
Galvanized Steel Streetlight Poles ⁵						
Collector with Median Island or ≥ 44' (4 or more lanes)	65W	7,900	No	32'-11"	200'	Double-Sided Staggered
Collector, 43' or less (3 or less lane)	65W	7,900	No	32'-11"	200'	Single-Sided
Local ⁴	34W	4,600	No	25'-11"	200'	Single-Sided

1. Double sided spacing shown above is the distance between streetlight poles on the same side of the street.
2. Existing power poles, safety considerations and traffic volumes may impact spacing and single/double sided streetlight installation requirements and will be determined by the COP.
3. City may elect to implement median centered twin roadway streetlights. Designer shall verify design requirements for this scenario with City Streetlighting staff. See Section 1.2.1.2.
4. Local streets in industrial areas (Zoned A-1, A-2, C-0, C-1, C-2, or C-3) shall be illuminated in accordance with the requirements for collector streets.
5. Galvanized round streetlight poles may be used through June 30, 2026. See Section 1.1.5.

1.2.1. Arterial Streets

- 1.2.1.1. Arterial streets shall be illuminated from both sides of the street using 200-foot double-sided staggered spacing. This measurement is between streetlight poles along the same side of the street. Streetlights installed on opposite sides of the roadway shall be staggered such that each streetlight pole is centered between the two adjacent poles on the opposite side. See Figure 1.
- 1.2.1.2. Arterial streets with medians shall also be illuminated from both sides of the street using 200-foot double-sided staggered spacing. In locations where it is not feasible to install streetlight poles on both sides of the street and raised median islands are present, streetlight poles with dual mast arms may be installed at a maximum spacing of 180 feet in the median if approved by the City Street Transportation Department. Designer shall verify design requirements for this scenario with City staff.
- 1.2.1.3. On arterial streets, where double-sided lighting is not possible due to physical conflicts, there shall be single-sided lighting with a maximum streetlight pole spacing of 200 feet and a higher lumen output luminaire. Single-sided streetlighting on arterial streets must be approved by the City Street Transportation Department.
- 1.2.1.4. Refer to Figure 2A for streetlight pole locations adjacent to arterial street intersections.
- 1.2.1.5. Refer to Figure 2B for streetlight pole locations adjacent to arterial/collector street intersections.
- 1.2.1.6. Refer to Figure 2C for streetlight pole locations adjacent to arterial/local street intersections.
- 1.2.1.7. Refer to Figure 2D for streetlight pole locations adjacent to collector street intersections.
- 1.2.1.8. Refer to Figure 2E for streetlight pole locations adjacent to collector/local street intersections.
- 1.2.1.9. Refer to Figure 2F for streetlight pole locations adjacent to local street intersections.

1.2.2. Collector Streets

- 1.2.2.1. Collector streets 50 feet in width or wider (4 or more combined vehicular and bicycle lanes), or collector streets with a median island shall be illuminated from both sides of the street using 200-foot staggered spacing. This measurement is along the same side of the street. See Figure 3.
- 1.2.2.2. Collector streets narrower than 50 feet in width (3 or less combined vehicular and bicycle lanes) with no median island shall be illuminated from one side of the street with 200-foot streetlight pole spacing. Newly constructed collector streets less than 50 feet wide should consider double-sided staggered streetlighting at 200-foot spacing. See Figure 3.

- 1.2.2.3. On collector streets 50 feet in width or wider (4 or more combined vehicular and bicycle lanes), or collector streets with a median island, where double-sided lighting is not possible due to physical conflicts, there shall be single-sided streetlighting with a maximum pole spacing of 200 feet and a higher lumen output luminaire. Single-sided lighting on collector streets must be approved by the City Street Transportation Department.

1.2.3. Local Streets

- 1.2.3.1. Local streets shall be illuminated from one side of the street with 200-foot streetlight pole spacing.
- 1.2.3.2. Streetlight poles should be placed on property line or within approximately one foot laterally from the divisional property line. If necessary to achieve minimum streetlight pole spacing, streetlights may be placed near center of landscaping parcels.
- 1.2.3.3. Local streets in industrial areas that are typically zoned A-1, A-2, C-0, C-1, C-2, or C-3 shall follow collector street requirements.
- 1.2.3.4. Refer to Figure 4A for typical residential streetlight pole layouts.
- 1.2.3.5. Refer to Figure 4B for typical residential streetlight pole layouts adjacent to schools.

1.2.4. Low Density Residential Lighting

- 1.2.4.1. Low Density Residential Lighting areas may qualify for a reduced level of lighting. Requests must be submitted to COP Planning and Development Department. In general, a reduced level of streetlighting may be installed on collector and local streets in residential areas of two or less residences per acre, as approved in the COP General Plan.
- 1.2.4.2. A single streetlight will be installed at all collector/collector and collector/local street intersections. No mid-block streetlights will be installed. Where commercial zoning is vested, one-side continuous streetlighting will be provided along the commercial frontage. The streetlights will be collector roadway standard with luminaire mounted at 32 feet.
- 1.2.4.3. A single streetlight will be installed at local/local intersections only. No mid-block streetlights will be installed. The streetlights will be local streetlight with luminaire mounted at 26 feet.
- 1.2.4.4. A developer desiring a reduced level of streetlighting for a proposed low density residential development must file a letter of request through the Development Services Department at time of subdivision review.
- 1.2.4.5. Streetlights shall be installed at developer expense at the time off-site improvements are installed. Conduits and junction boxes shall also be installed at developer expense for any future additional non-intersection streetlights.

- 1.2.4.6. As a condition of development, the developer is required to state in all advertising material that a “reduced level of streetlighting” will be provided in the development, and a Streetlighting Disclosure Letter stating same shall be given to each buyer. A note on the recorded subdivision plat is required stating the subdivision has reduced streetlighting. The note shall state:

This subdivision has a reduced level of streetlighting. Any future additional streetlighting will be at the expense of the abutting property owners, not at City expense.

Under covenants or deed restrictions of the development, a statement shall be required that a “reduced level of streetlighting” is in effect in the development and that intersection-only streetlighting is provided. This statement is included to inform succeeding buyers of residences of the reduced level of streetlighting.

- 1.2.4.7. Developed residential areas meeting the low-density criterion, which are annexed to COP, will have streetlights installed by the City at all intersections in accordance with this section of the Policy upon annexation. Residents in an annexed residential development may petition the City to delete future, residential, non-intersection streetlighting if 70 percent of the residents agree. A letter requesting the exception and the petition must be filed with the Street Transportation Department within 90 days of annexation.

- 1.2.4.8. Both annexed and new residential developments meeting the low-density criterion of this section of the Policy, and having streetlighting installed under this section of the Policy, may petition for mid-block lighting upon 70 percent agreement of the residents. COP has no responsibility for any construction costs. All costs to install underground circuits and streetlights shall be at the expense of the residents of the development. The City will assume maintenance of the mid-block streetlights once installed to City standards.

- 1.2.4.9. From time to time, it may become necessary to install lighting in low-density areas in addition to that expressly provided in this section. Such additional lighting shall be installed when, in the judgment of the Street Transportation Director, such additional streetlighting is necessary for the safety of vehicular and pedestrian traffic or for the general public.

1.2.5. Streetlight Pole Location Requirements

- 1.2.5.1. To achieve reasonable uniformity, deviations in the streetlight pole spacing shown in Table 1 may be permitted up to 25 feet at an individual streetlight location due to physical conflicts. Adjustments in spacing due to conflicts (driveways, utilities, etc.) shall be reverted back to 200-foot spacing at the next available streetlight. Any further deviation must be approved by the City.

- 1.2.5.2. Where sidewalk is detached from curb line, streetlight poles are to be installed 4-foot from back of curb. Where sidewalk abuts the curb line, streetlights are to be installed 1-foot from the back of sidewalk. The goal is to keep obstructions, including streetlight poles, out of the sidewalk. Areas of attached sidewalk wider than 6-feet may necessitate streetlights to be installed in the

sidewalk. This shall require approval by the Street Transportation Traffic Services Streetlighting reviewer.

- 1.2.5.3. The public streetlight system shall be installed within the public right-of-way. Where right-of-way is not available and where an easement allows for streetlight equipment, the engineer may design equipment within the easement with approval from the City.
- 1.2.5.4. In areas where standard vertical curb, roll curb or sidewalk do not exist, all streetlight poles shall be centered at least ten (10) feet from edge of asphalt pavement.
- 1.2.5.5. There should be a minimum six (6) feet of clearance between streetlight poles, fire hydrants, and City water services facilities. A minimum clearance of three (3) feet is required for service taps (water/sewer) and two (2) feet is required from storm drains and city sewer facilities.
- 1.2.5.6. Streetlights along Arterial and Collector roadways shall be located a minimum distance of six (6) feet from driveways. If the driveway has a “wing”, streetlight poles must be located a minimum distance of six (6) feet from the wing.
- 1.2.5.7. Streetlight layout and design shall include existing and known future streetlight location information for all streets adjacent to and across from the proposed project. Future streetlight locations may be identified by researching adjacent developments through the Planning and Development Department.
- 1.2.5.8. A minimum of two (2) streetlights shall be located at each arterial street intersection and a minimum of one streetlight at all other intersections. Streetlights shall be installed on opposing corners when possible. See Figures 2-7 for sample streetlight locations at intersections.
- 1.2.5.9. Refer to Figure 5A for streetlight pole placement at elbow (Dog-leg) intersections.
- 1.2.5.10. Any public street cul-de-sac shall have a minimum of one streetlight. See Figure 5B.
- 1.2.5.11. Figure 6 shows recommended streetlight locations at roundabout intersections on arterial or collector streets.
- 1.2.5.12. Streetlighting design at roundabouts on local/local street intersections is shown on Figure 7.
- 1.2.5.13. When neighborhood traffic calming devices are installed, additional streetlights may be required. Refer to Appendix A for detailed drawings. These layouts are shown as examples only. The design engineer should use their professional judgment when designing all types of scenarios.
- 1.2.5.14. Frontage roads along freeways that are within COP jurisdiction shall be illuminated from the nose of the striped gore point between the freeway on ramp and the frontage road to the nose of the striped gore point between the freeway off ramp and the frontage road. Streetlights installed on Frontage Roads shall be

installed on side of roadway opposite of freeway. Frontage road shall be illuminated to Arterial Roadway standards, single-sided only. Streetlighting design on frontage roads is shown in Figure 8.

- 1.2.5.15. For new developments located in another jurisdiction that are adjacent to a COP roadway, the City may require installation of streetlights. If required, streetlights shall be installed along the entire frontage of the development in conformance with these Guidelines. COP will own and maintain these streetlights.
- 1.2.5.16. For new developments within COP that are located adjacent to another jurisdiction's unlit roadway, the City may require installation of streetlights in anticipation of annexation. If required, streetlights shall be installed along the entire frontage of the development in conformance with these Guidelines. COP will own and maintain these streetlights.
- 1.2.5.17. Once the right-of-way permit is issued, adherence to streetlight pole locations is expected. Exceptions are hereby granted for shifts up to 5± feet parallel to the roadway with approval of the City Streetlight Inspector. Where underground obstructions are encountered, any shift in streetlight pole placement must not interfere with a driveway. Shifts perpendicular to the roadway from permit locations will not be allowed without permission from the City Streetlight Inspector.

1.3. STREETLIGHT DESIGN IN THE DOWNTOWN DISTRICT

Streetlighting in the Downtown District shall follow the guidelines below. The Downtown District is bordered by McDowell Road to the North, Buckeye Road to the South, I-10 to the East and I-17 to the West, as detailed in the COP Traffic Barricade Manual. All Streetlighting within this area shall be Architectural Square lighting or approved decorative lighting.

- 1.3.1.1. Streetlights shall be Architectural Square "Downtown Brown" streetlight poles with bronze luminaires as shown on COP Sample Streetlight Plans and Details unless otherwise approved by COP.
- 1.3.1.2. Contact Street Transportation Traffic Services for updated streetlight requirements within the Downtown District boundaries.
- 1.3.1.3. Refer to Figure 9 for streetlight layout within the Downtown District.
- 1.3.1.4. Streetlight pole mounting heights shall follow Table 1 for architectural square streetlight poles.
- 1.3.1.5. Pedestrian lighting shall be installed in the Downtown District. The sidewalks are illuminated from streetlight poles at approximately 50 to 75-foot spacing. Combination roadway and pedestrian streetlight poles may be used where luminaire spacing is applicable.
- 1.3.1.6. In the Downtown District only, where the streetlight facilities conflict with underground or overhead utilities, streetlights may be set a minimum of two feet back of curb. However, the Street Transportation Streetlighting Design section must be notified of any setback deviation.

1.4. STREETLIGHTING INSTALLED ON BRIDGES

This section applies to streetlight poles installed on bridge structures.

- 1.4.1.1. Regardless of utility service area, bridge mounted streetlight pole details and specifications shall be in accordance with Arizona Public Service concrete base type streetlight poles. The streetlighting engineer of record, or developer, shall coordinate with Arizona Public Service for applicable details and specifications.
- 1.4.1.2. The Consulting Engineer shall coordinate with the bridge structural engineer to design foundations for the streetlight pole into the bridge barrier/deck. Refer to streetlight pole specifications for design criteria.
- 1.4.1.3. A cast-in-place junction box is required within three (3) feet of each streetlight pole mounted on a bridge.
- 1.4.1.4. Conduit between junction boxes on a bridge shall be a minimum of 2.5" in diameter.
- 1.4.1.5. Streetlight pole spacing will be in accordance with typical spacing criteria corresponding to roadway designation as described in the design guidelines section.
- 1.4.1.6. The Consulting Engineer shall provide a detail showing the installation of expansion couplings in bridge abutments and expansion joints.

1.5. STREETLIGHTING INSTALLED NEAR AIRPORTS

This section applies to streetlight poles installed near airports.

- 1.5.1.1. New streetlight poles installed within one mile of any airport runway shall follow FAA Title 14 of the Code of Federal Regulations (14 CFR) Part 77 Obstruction Evaluation/ Airport Airspace Analysis to determine if the new streetlight poles have an impact on the navigable airspace surrounding the airport.
- 1.5.1.2. The lighting design engineer should use the Notice Criteria Tool on the FAA website (<https://oeaaa.faa.gov/oeaaa/oe3a/main/#/noticePrescreen>) to determine whether the new streetlight poles need to be filed through FAA Form 7460-1, Notice of Proposed Construction or Alteration. If filing is required, the design engineer shall follow the requirements of the FAA in filing Form 7460-1 and any subsequent forms required by the FAA.

Figure 1: Typical Arterial Streetlight Pole Layout

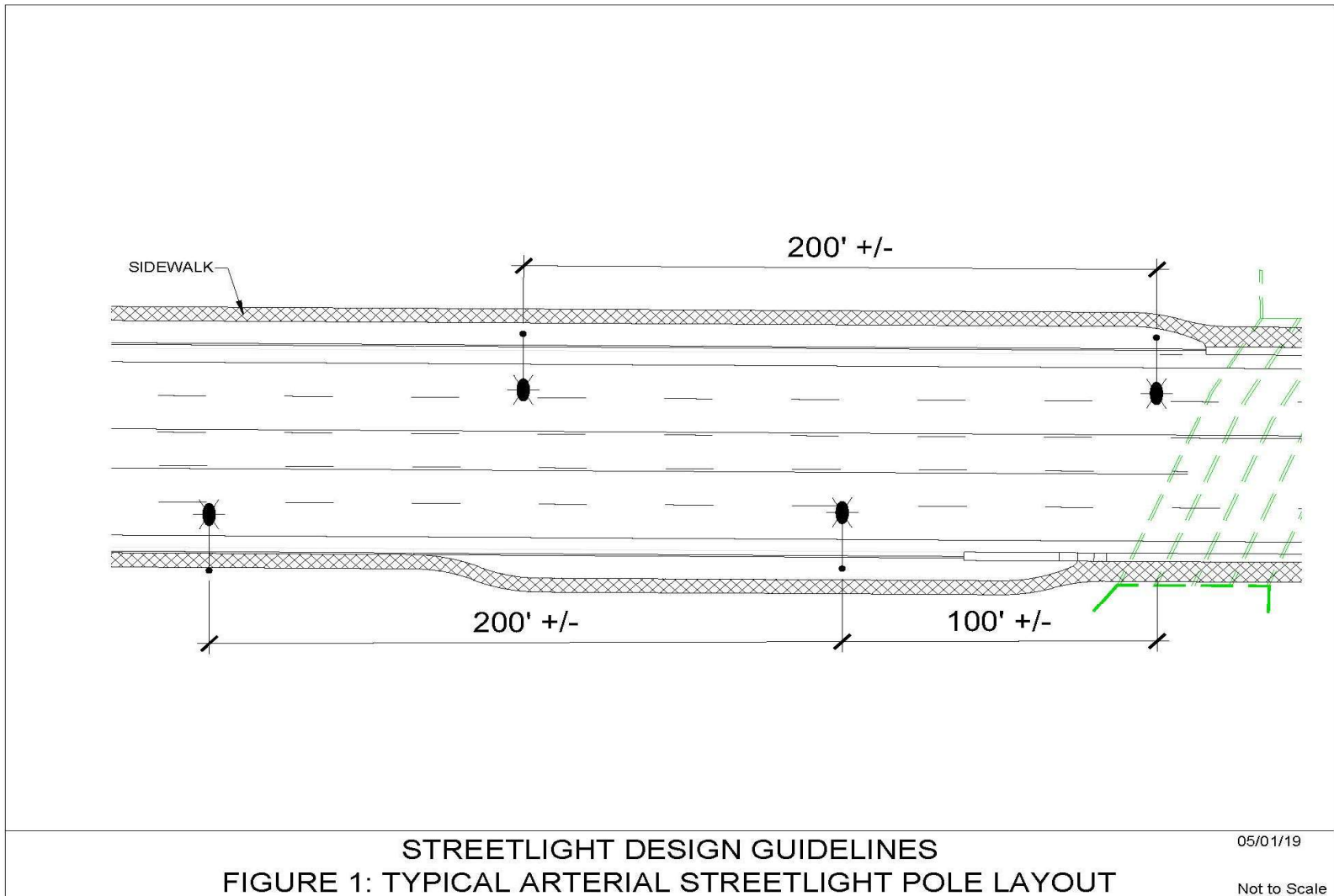


Figure 2A: Streetlight Layout at Arterial Street Intersections

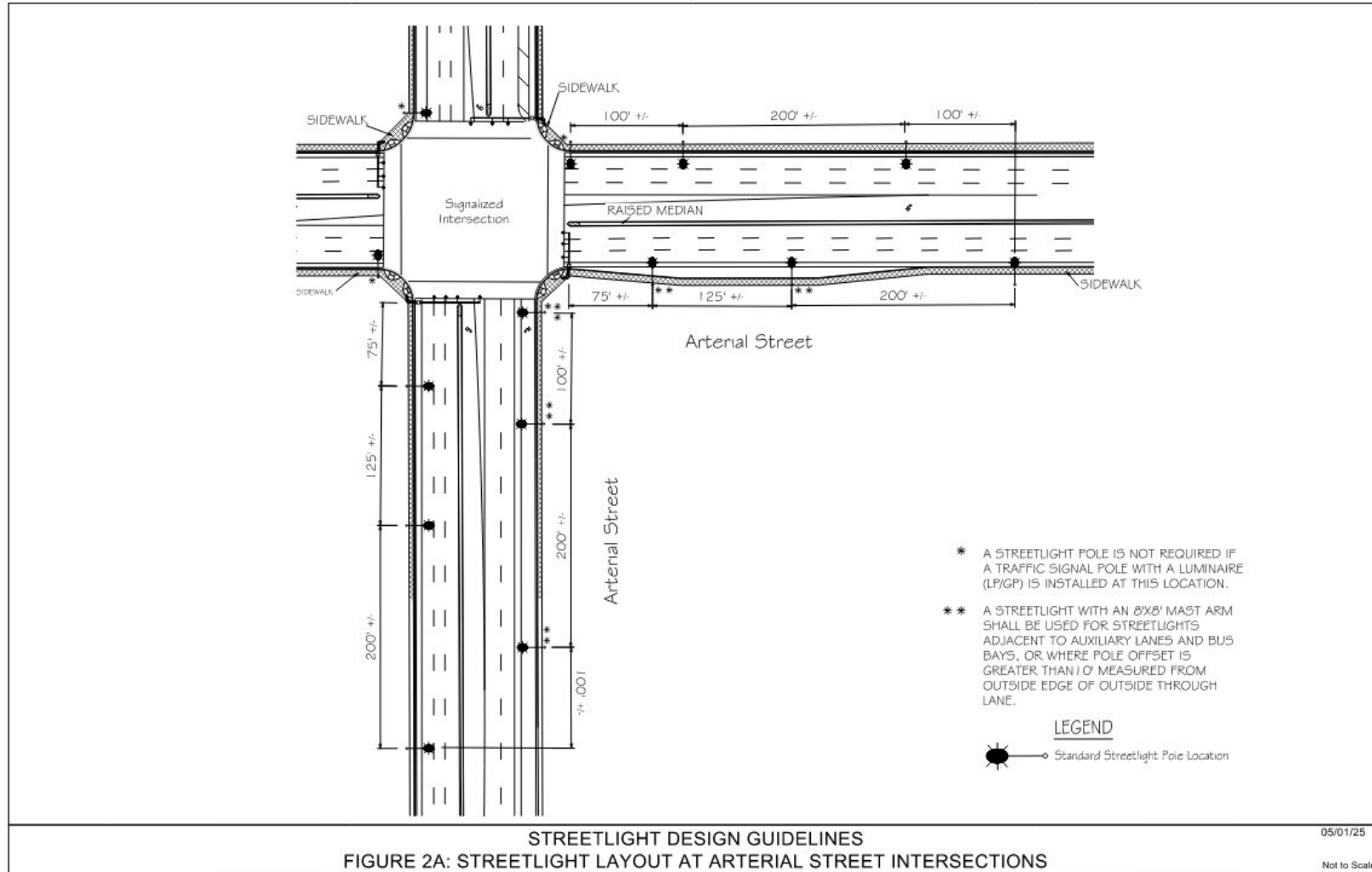


Figure 2B: Streetlight Layout at Arterial/Collector Street Intersections

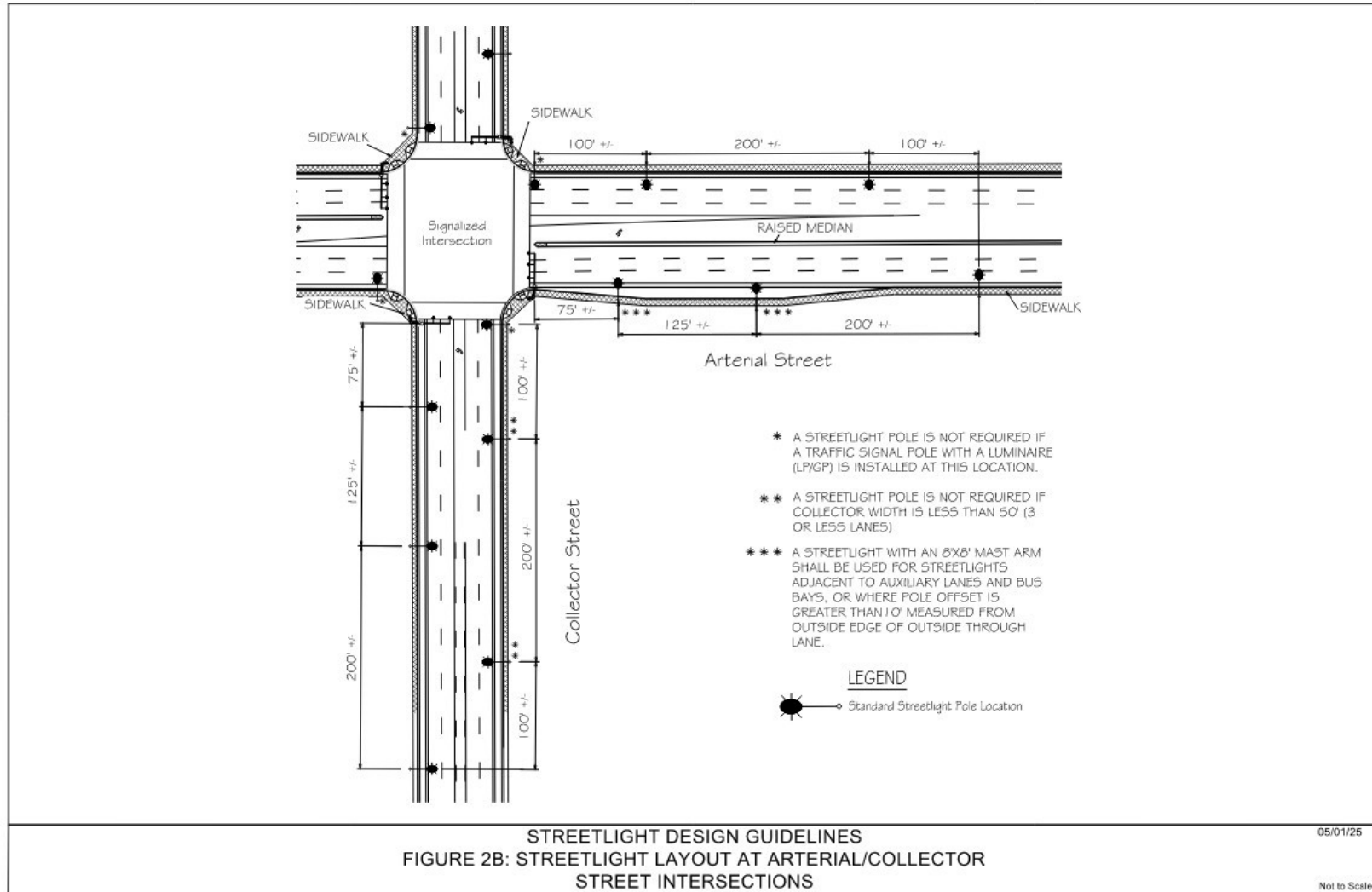


Figure 2C: Streetlight Layout at Arterial/Local Street Intersections

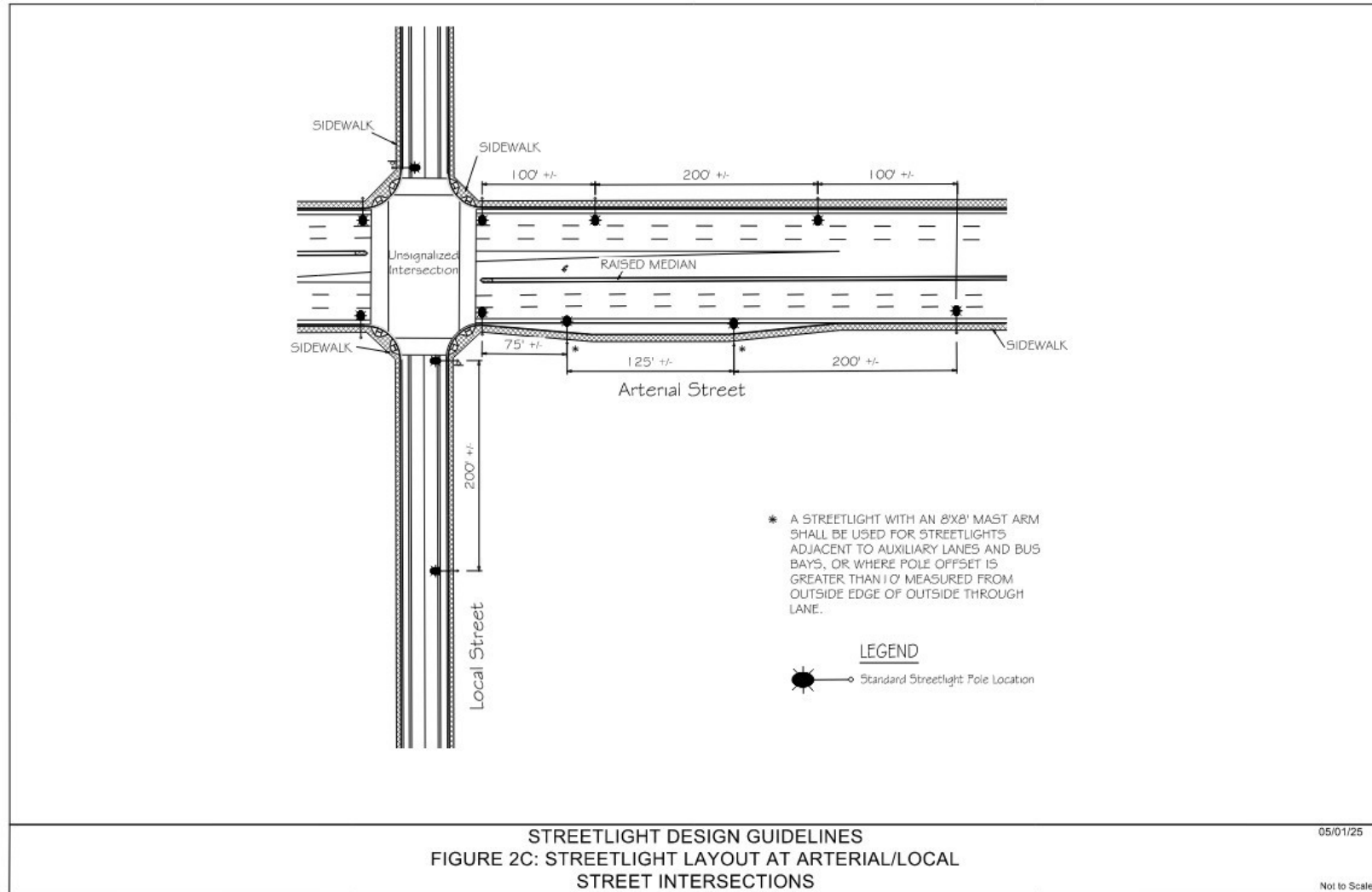


Figure 2D: Streetlight Layout at Collector Street Intersections

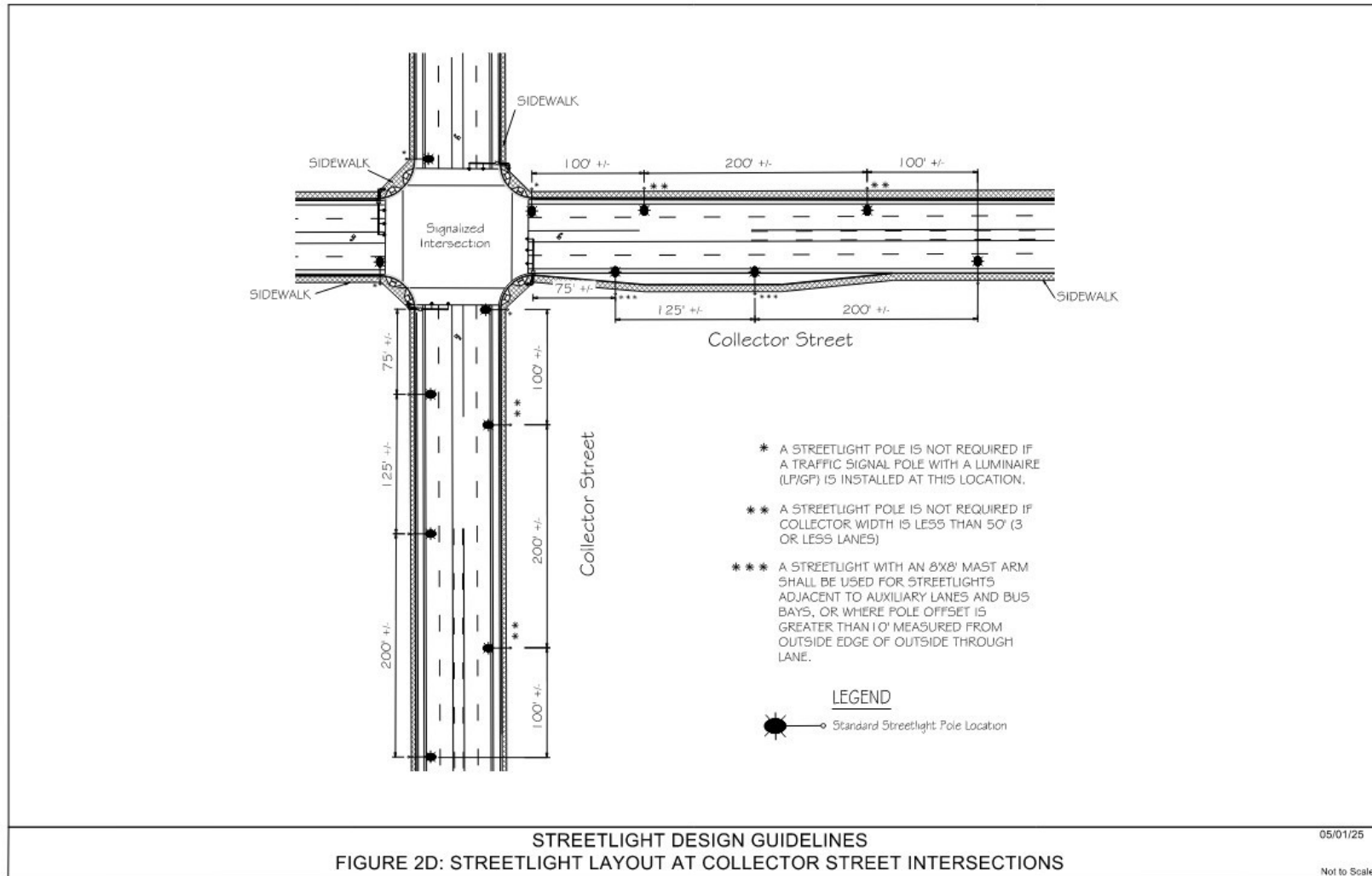
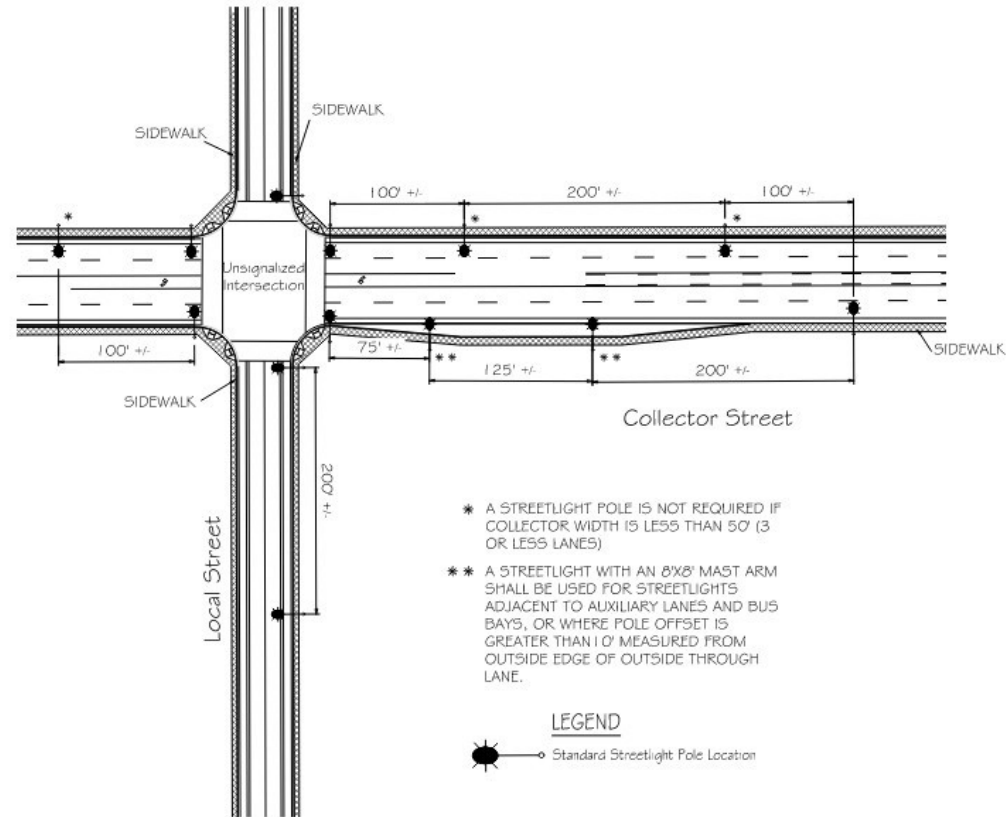


Figure 2E: Streetlight Layout at Collector/Local Street Intersections



STREETLIGHT DESIGN GUIDELINES
FIGURE 2E: STREETLIGHT LAYOUT AT COLLECTOR/LOCAL STREET INTERSECTIONS

05/01/25

Not to Scale

Figure 2F: Streetlight Layout at Local Street Intersections

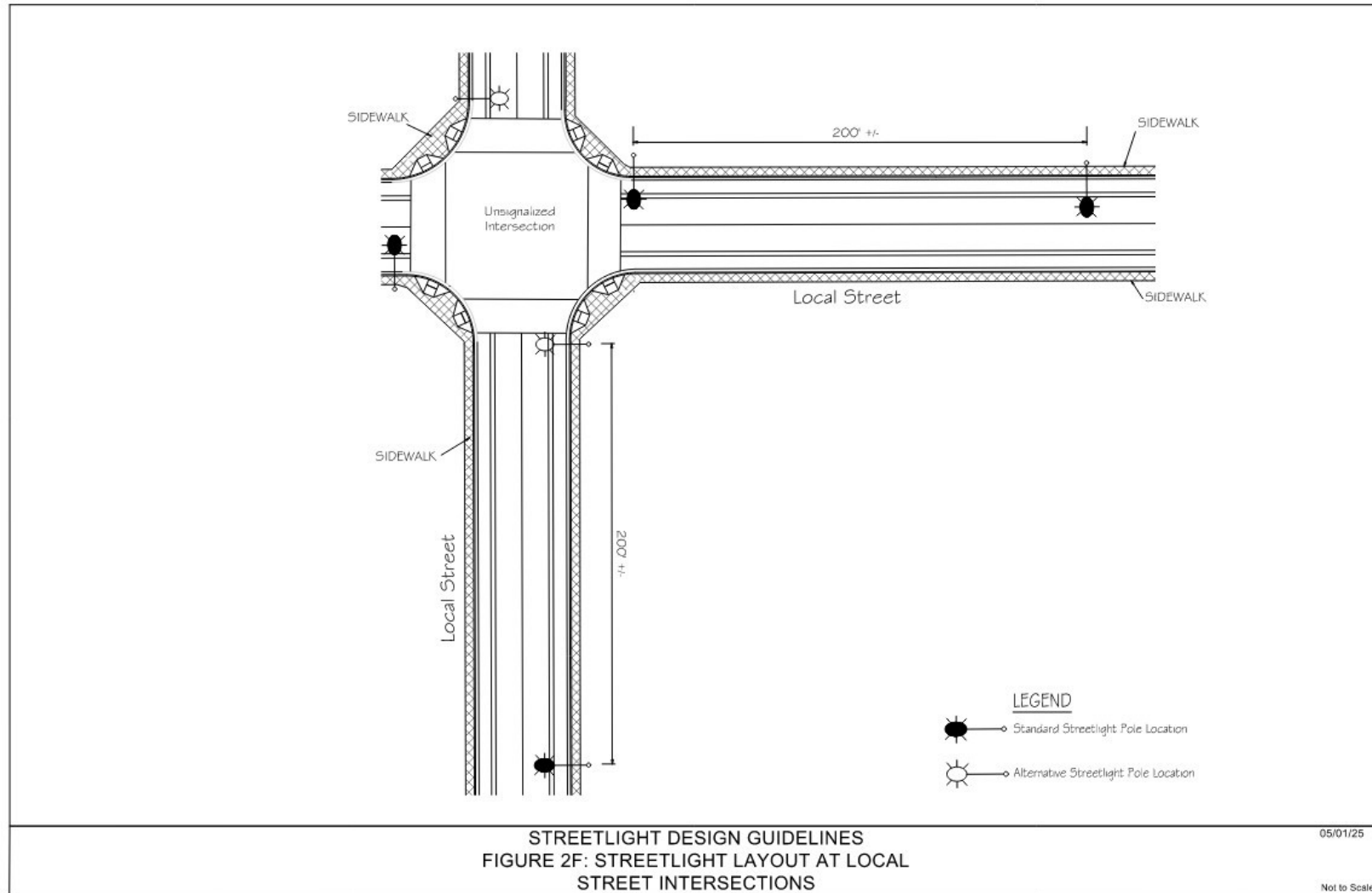


Figure 3: Typical Collector Streetlight Layouts

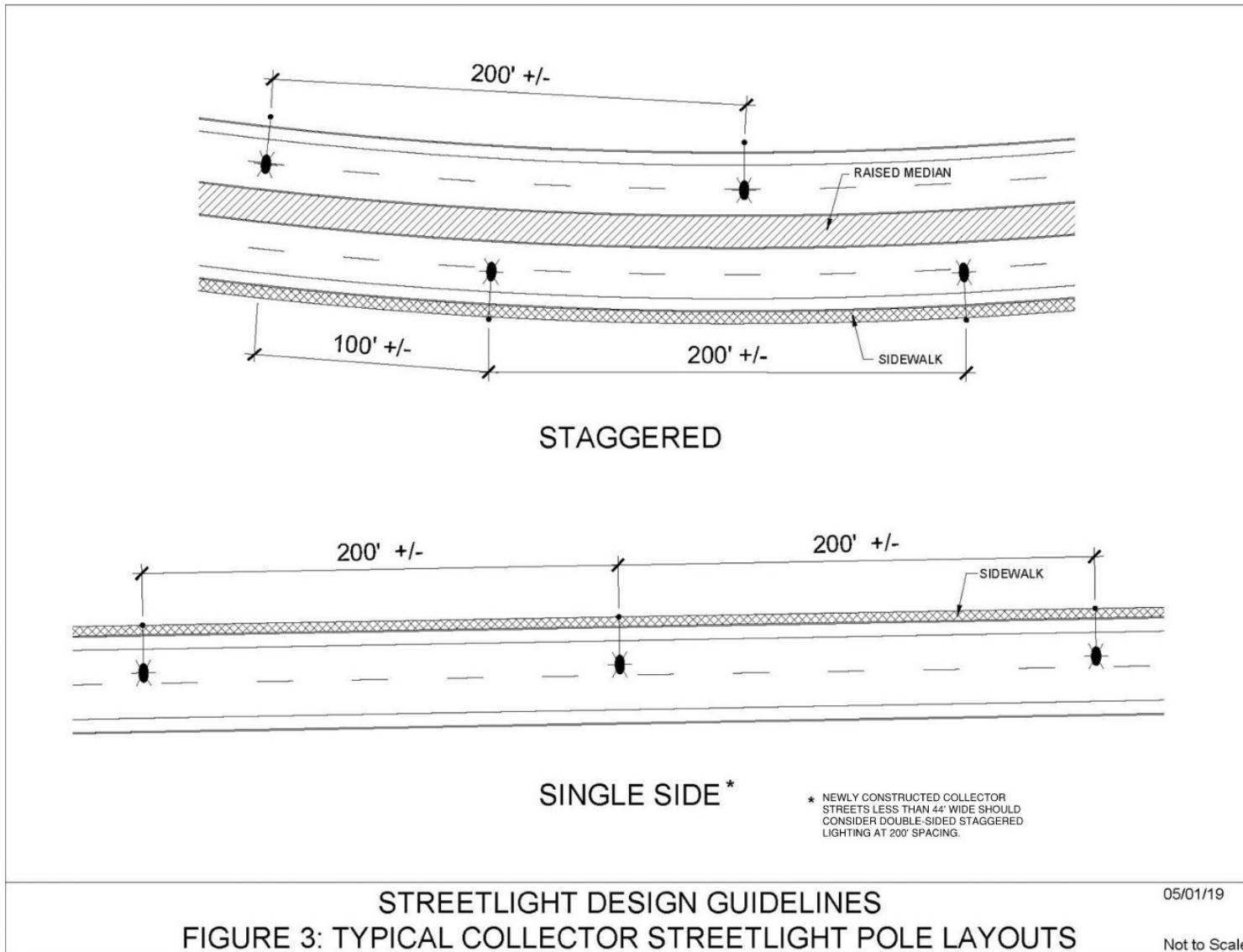


Figure 4A: Typical Residential Streetlight Pole Spacing

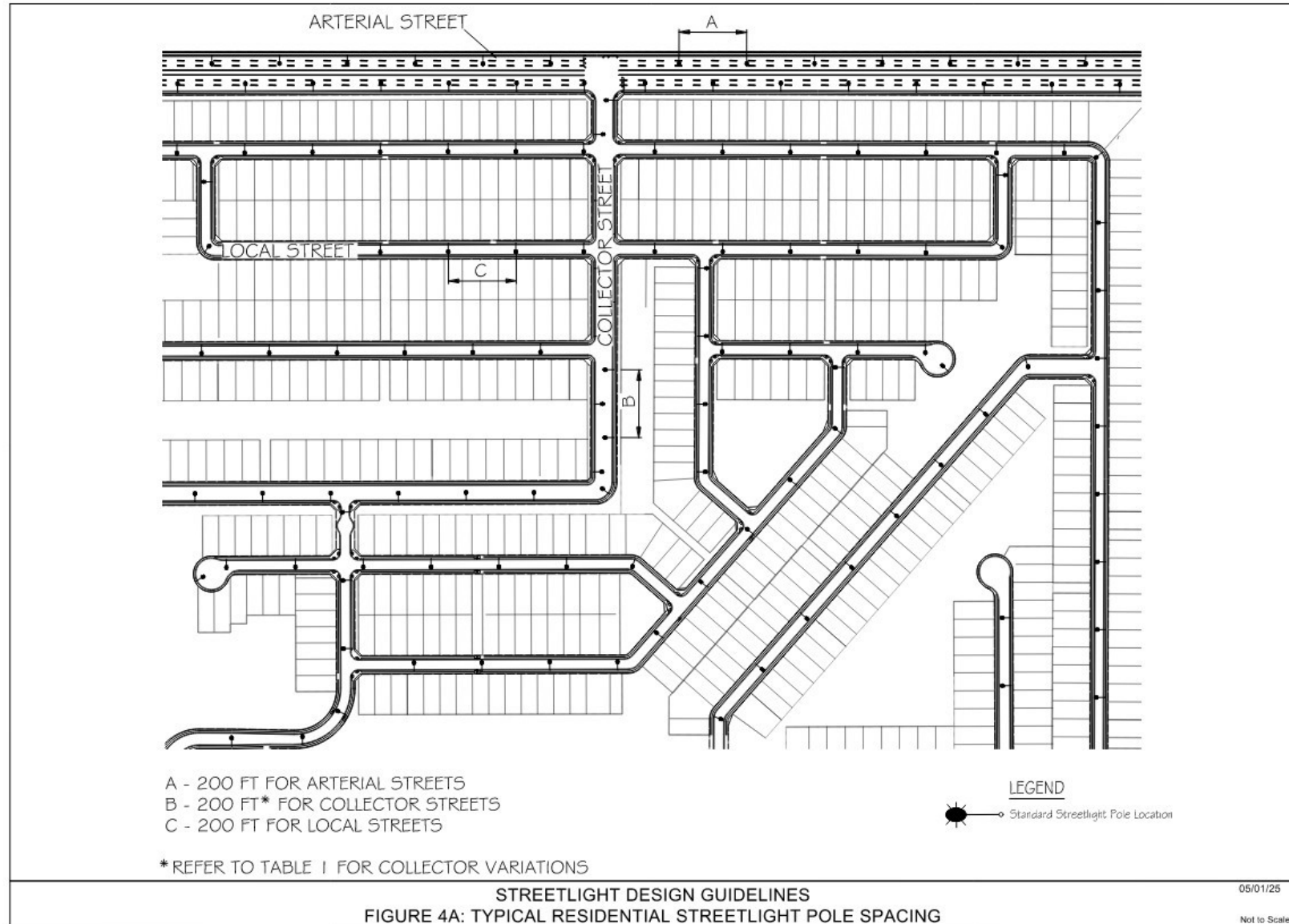


Figure 4B: Typical Streetlight Pole Spacing Adjacent to School

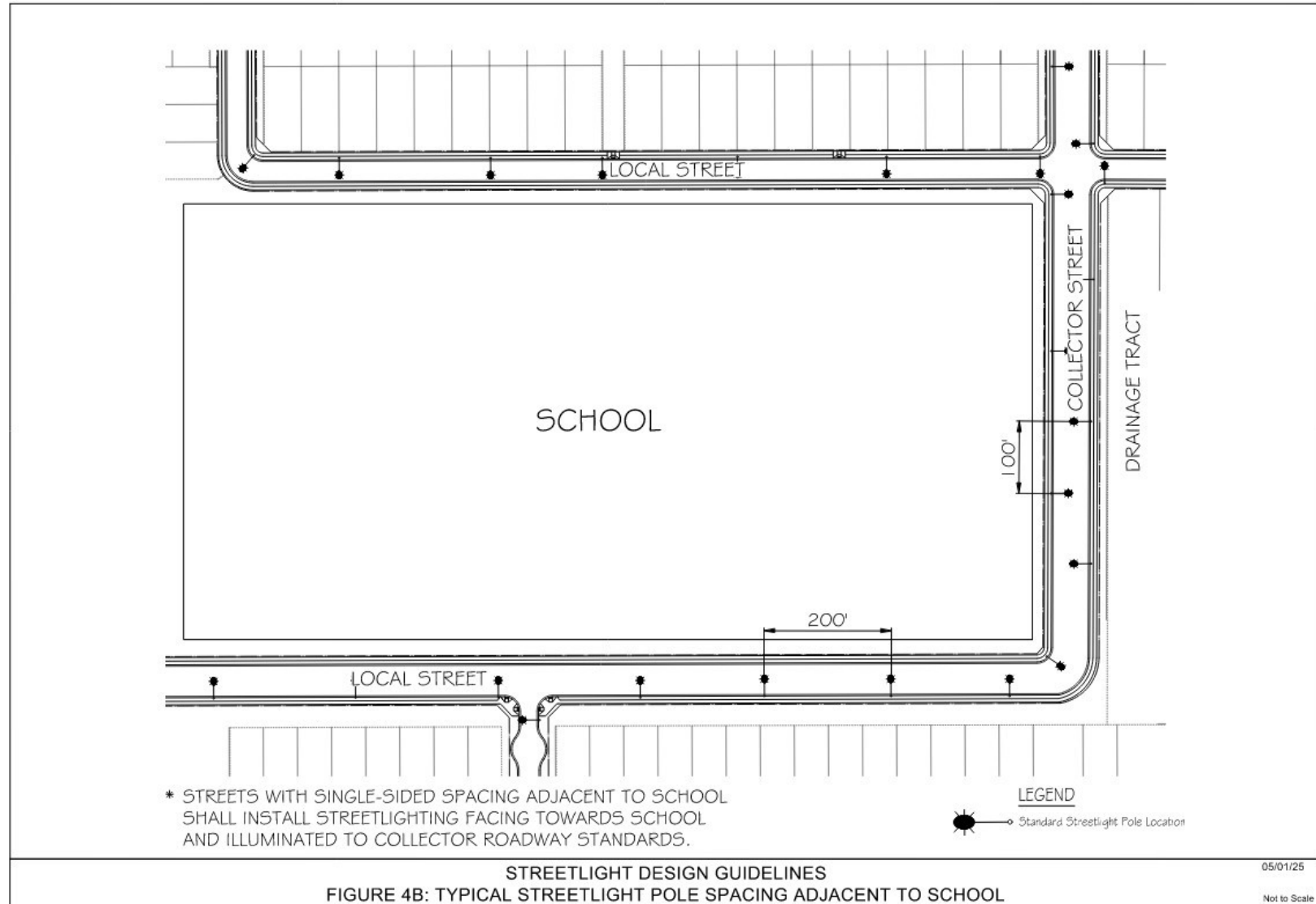


Figure 5A: Elbow (Dog-Leg) Intersections

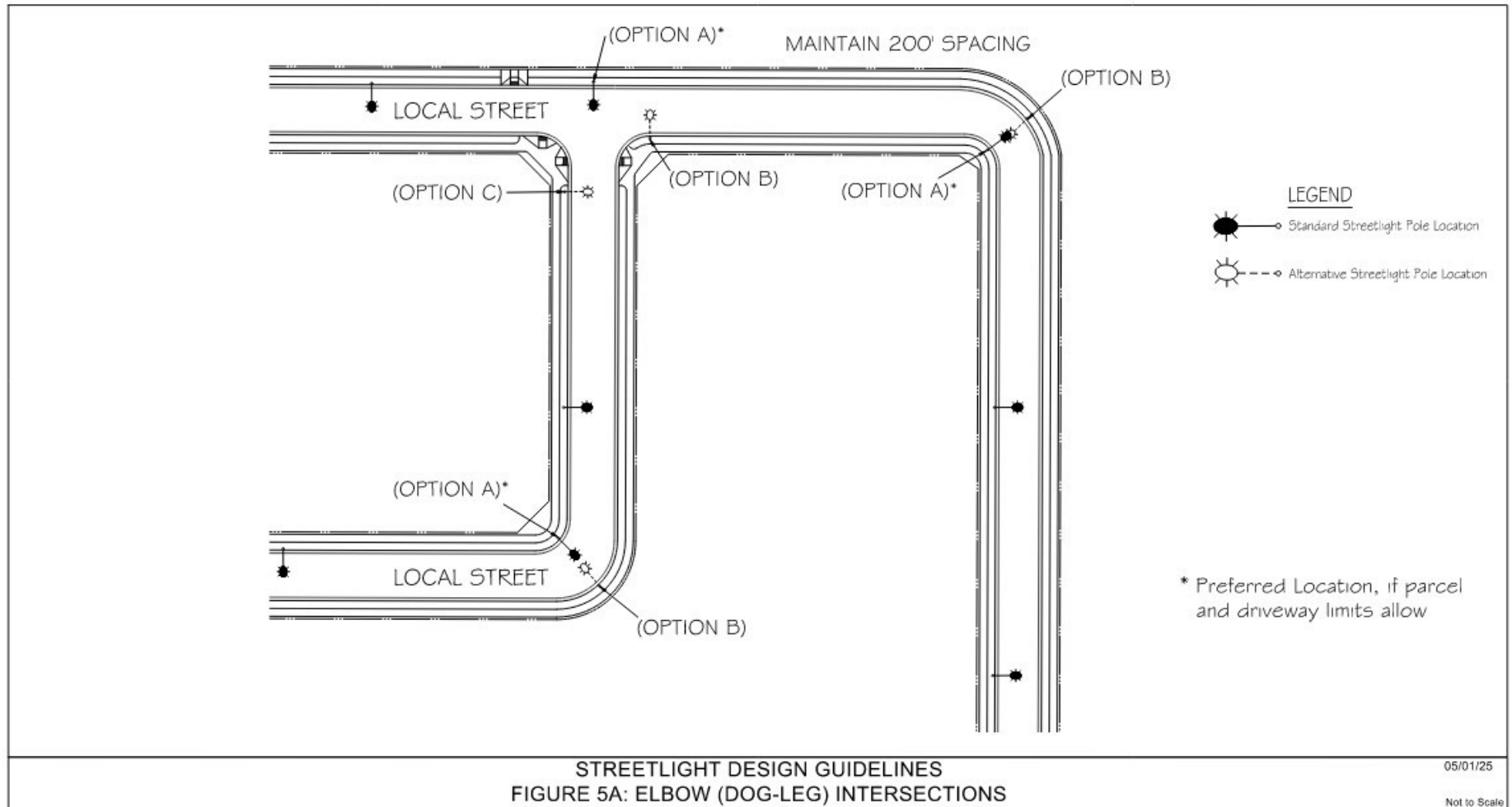


Figure 5B: Cul-De-Sacs

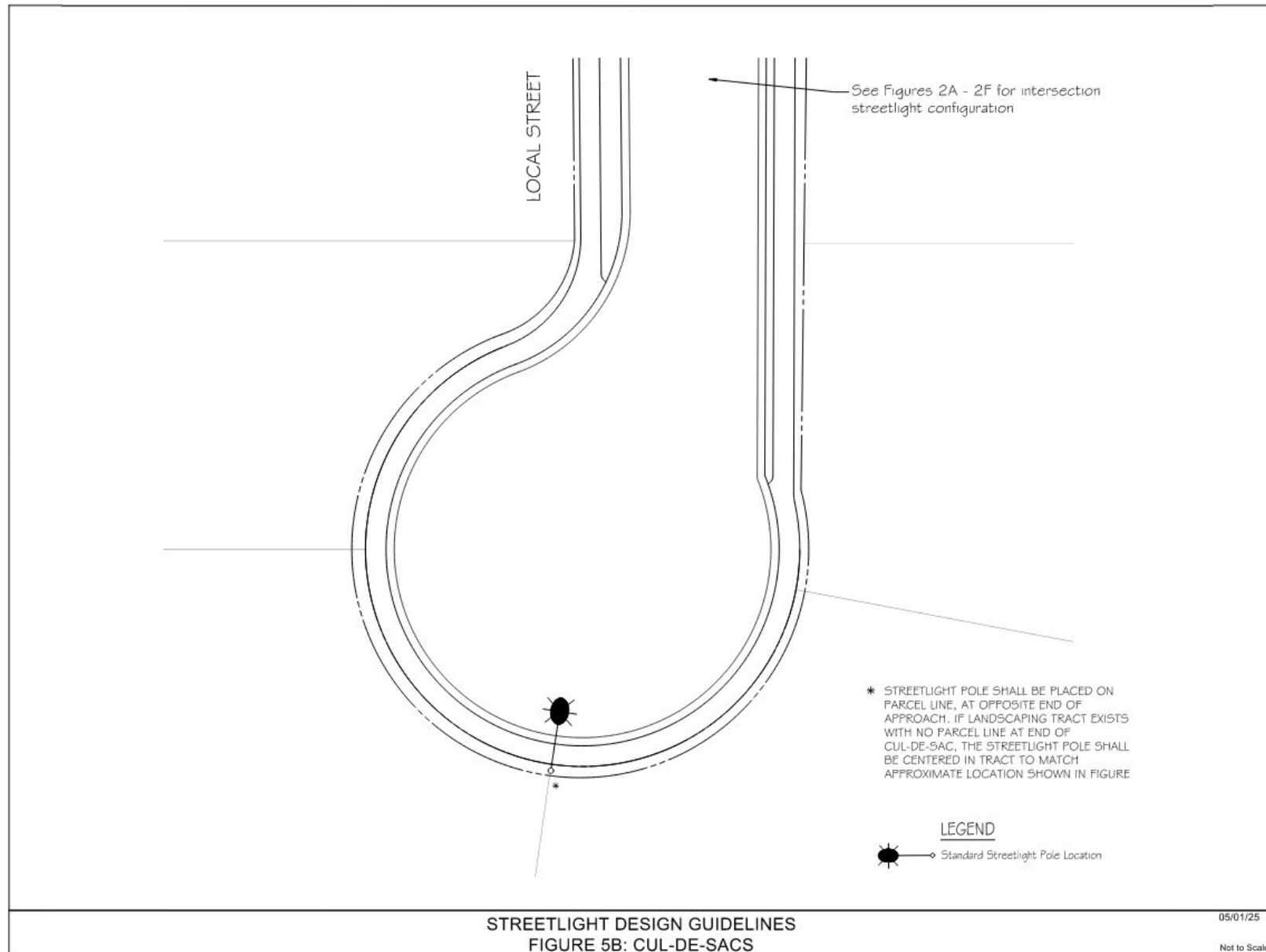


Figure 6: Arterial Street Roundabout Intersections

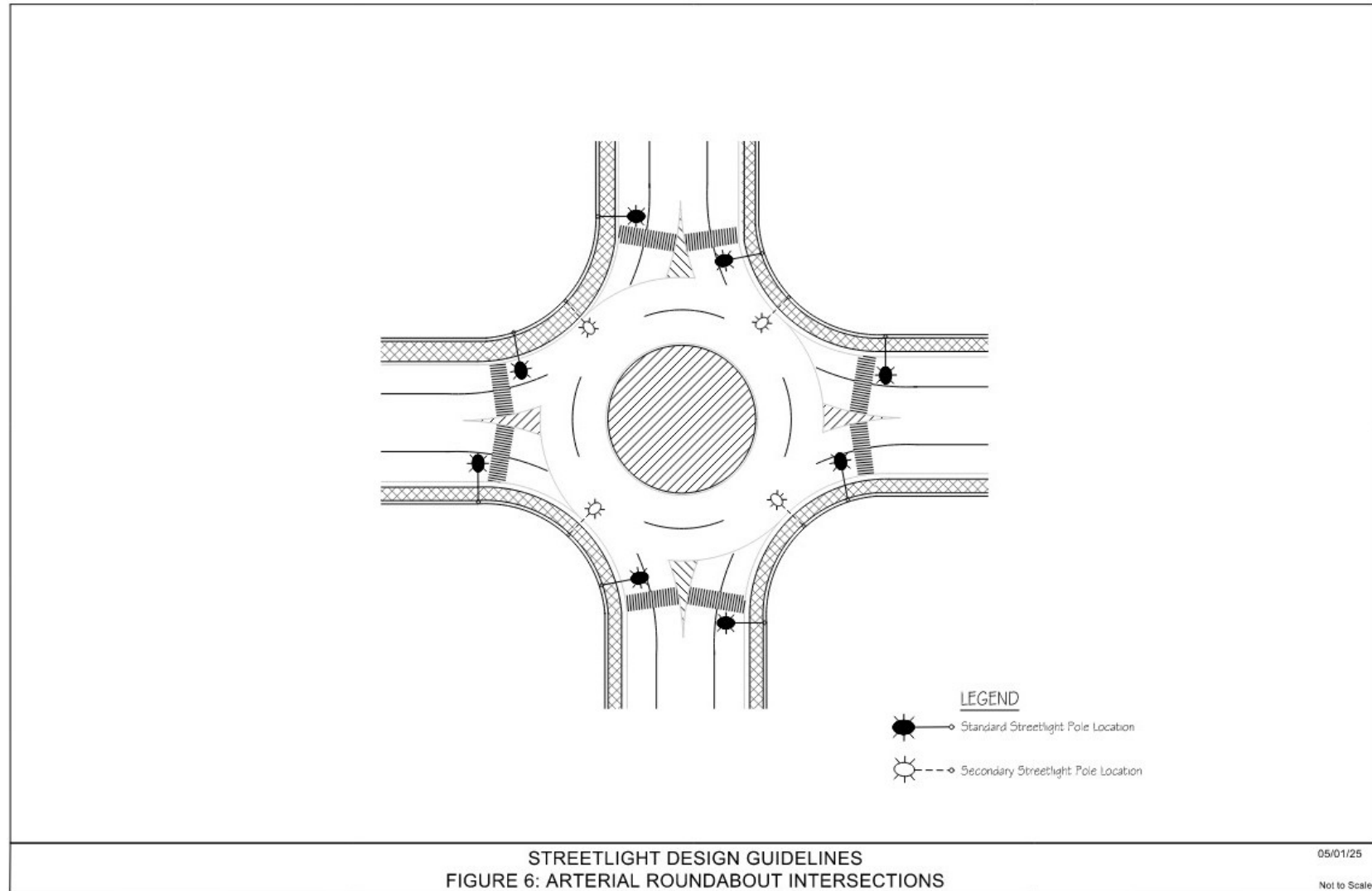


Figure 7: Local/Local Roundabout Intersections

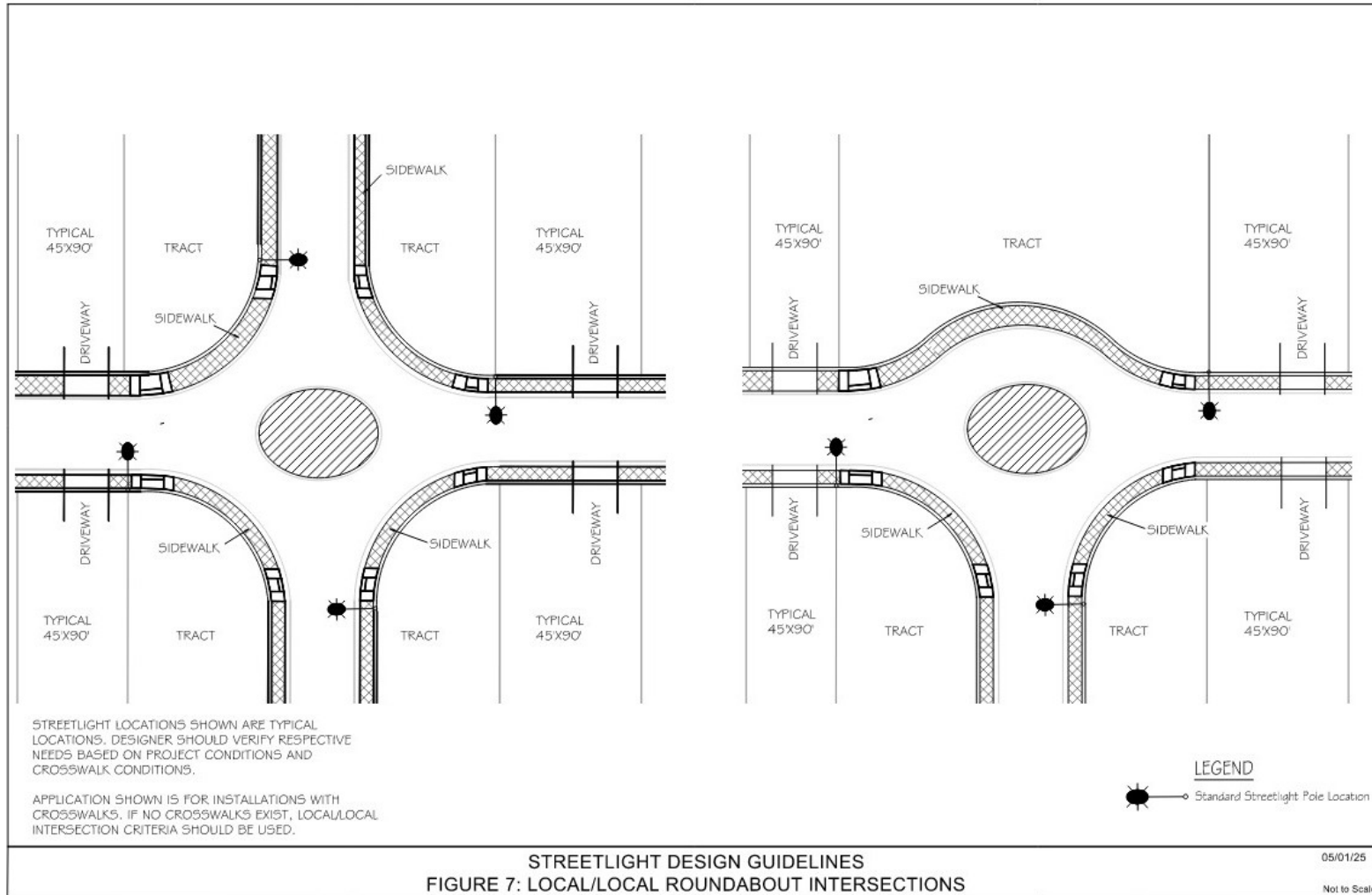


Figure 8: Frontage Road Streetlighting

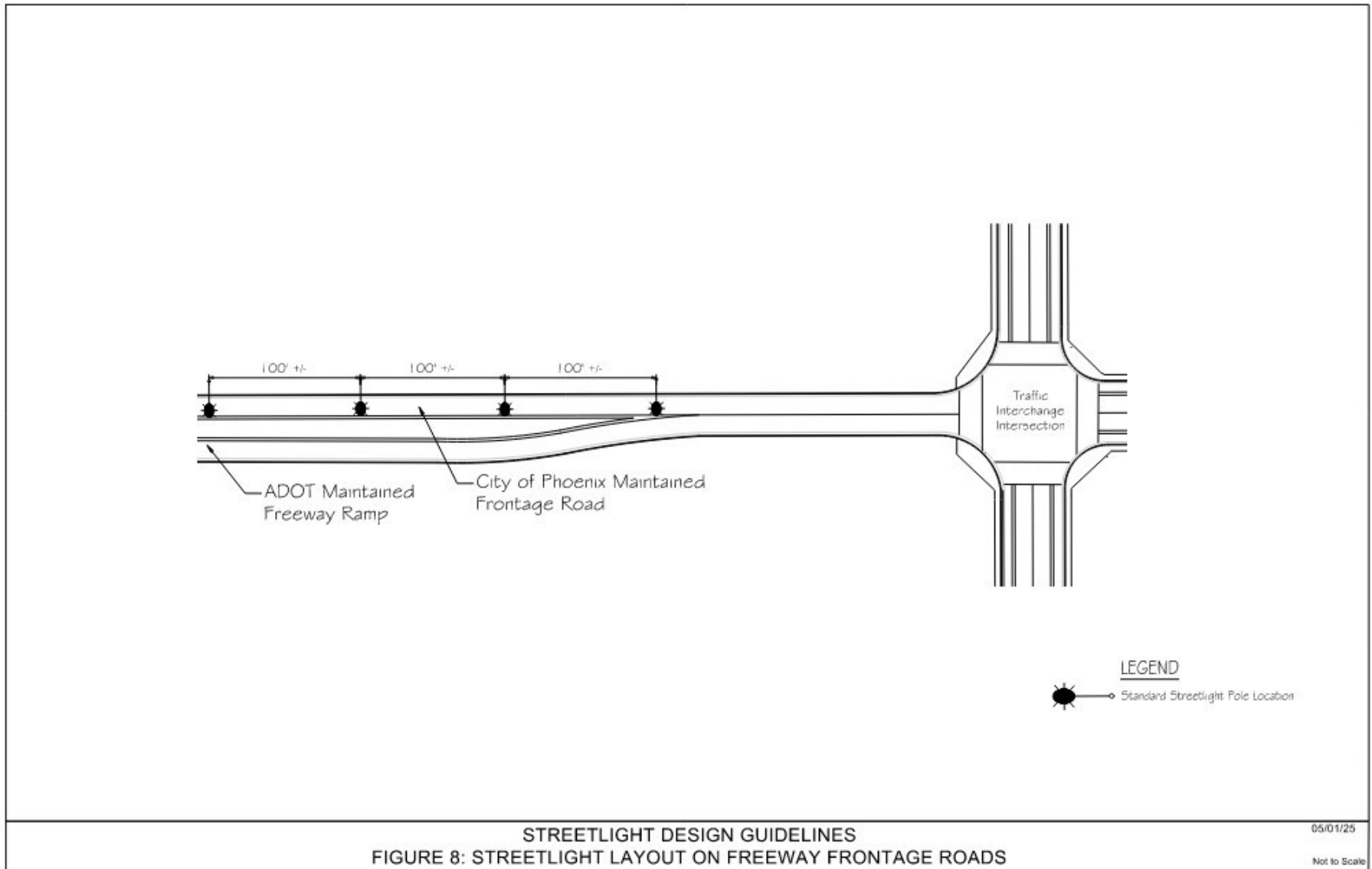
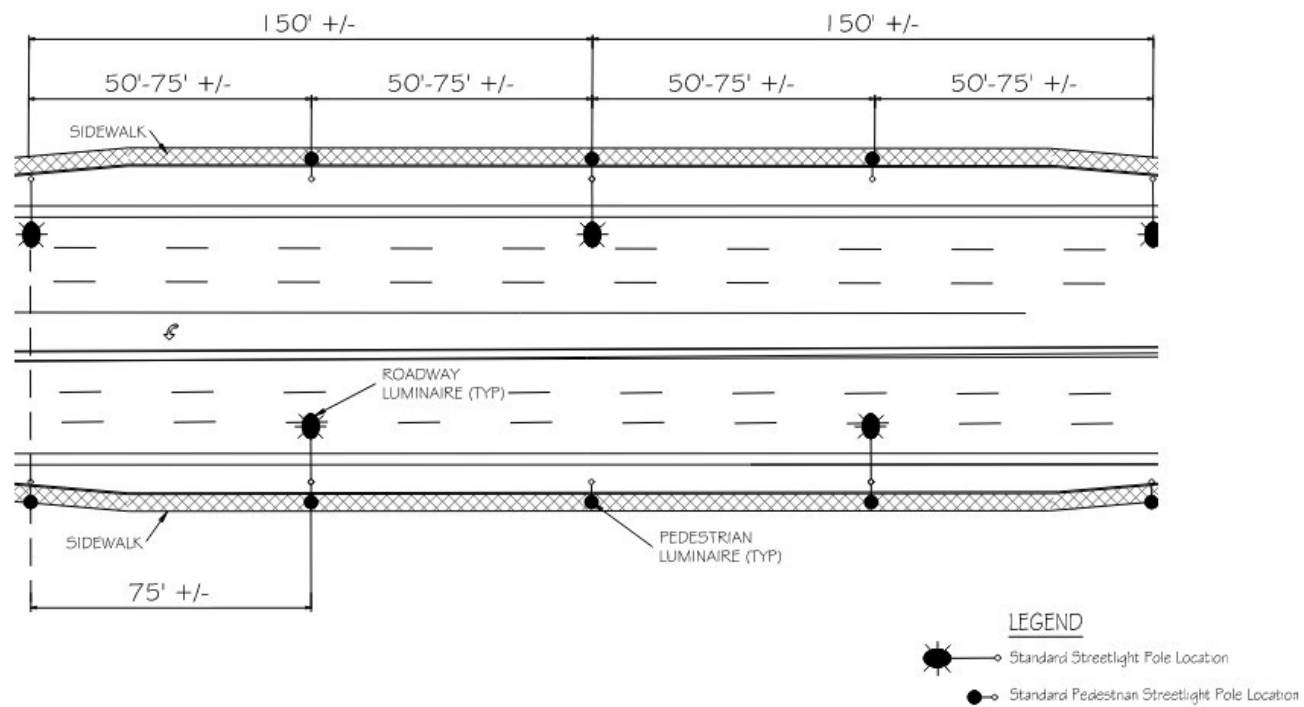


Figure 9: Downtown District Lighting



**STREETLIGHT DESIGN GUIDELINES
FIGURE 9: DOWNTOWN DISTRICT LIGHTING**

05/01/25

Not to Scale

2. PLAN PREPARATION

2.1. GENERAL STREETLIGHT PLAN REQUIREMENTS

The general requirements for streetlight plans are listed below. Sample plan sheets are provided on the City's website at <https://www.phoenix.gov/administration/departments/streets/initiatives/street-project-resources.html>. AutoCAD drawings, including the notes in this section and lighting equipment details, are also included on this website. Residential and commercial development project streetlight plans submitted to the City's Planning and Development Department for review shall include the requirements shown below in addition to the requirements on the Streetlight Layout Checklist. This Checklist can be found on the City's website at <https://www.phoenix.gov/content/dam/phoenix/streetssite/documents/streetlightslist.pdf>.

- 2.1.1. The streetlight design shall be submitted on E size sheets (24" x 36"). Plans shall be prepared so that North is to the top or right side of the sheet. The scale for master plans, subdivisions, larger commercial projects shall be 1" = 20' scale. Small scale, single lot, small plan reviews shall be 1" = 40' scale.
- 2.1.2. Design line characteristics are as follows:
 - a. Solid medium for proposed street improvements
 - b. Light and/or dashed for existing street improvements.
 - c. Bold for streetlight system design
- 2.1.3. Label specific locations, sizes, and dimension from the center line and/or monument line along with the following:
 - a. Existing and proposed underground wet and dry utilities
 - b. Existing and proposed overhead utilities
 - c. Face of curb
 - d. Back of Curb
 - e. Landscape tract
 - f. Width of sidewalk
 - g. Width of any Public Utility Easement (PUE)
 - h. Edge of right-of-way
 - i. Edge of pavement
 - j. Streetlight station and offset
 - k. Streetlight Lat / Long
- 2.1.4. Information needed on each set of plans:
 - a. Vicinity map
 - b. Legend
 - c. Construction notes
 - d. Streetlight notes
 - e. General notes as required
 - f. SRP or APS notes as required
 - g. Project number/Kiva number, SDEV number, CSPR number, project title and address, if applicable (36-point minimum font)
 - h. Streetlighting pole station and offset
 - i. Streetlight pole type

- j. Streetlight mast arm length
 - k. Luminaire model number
 - l. Luminaire mounting height
 - m. Blue Stake caution label
 - n. Quantities list
 - o. Serving power provider
- 2.1.5. All streetlight poles and equipment should be shown with station and offset dimension and Latitude / Longitude of the streetlight pole location.
- 2.1.6. On local, collector and arterial streets, all existing and/or proposed driveways and Americans with Disability Act (ADA) ramps shall be shown on the streetlight plans.
- 2.1.7. Construction plan sheet format shall follow COP standards. AutoCAD details and standards will be provided by COP. Standard sheet formats are shown in Figures 10 through 12.
- 2.1.8. The streetlight general notes shall be as provided by COP. See General Notes in Section 2.2 of this document.
- 2.1.9. Salt River Project (SRP) or Arizona Public Service (APS) notes should be included on the plans. See serving power company notes in Sections 2.3 and 2.4 of this document.
- 2.1.10. Provide additional details of any items not covered by COP standard details that may impact streetlight design or construction.

2.2. GENERAL NOTES TO BE INCLUDED ON STREETLIGHT PLANS COVER SHEET

The following information is provided to emphasize critical work and is intended to supplement the specifications.

- 2.2.1. The Contractor shall comply with State and City statutes and ordinances.
- 2.2.2. Prior to submittal, the streetlight designer shall examine all general construction drawings and visit the construction site to become familiar with existing conditions under which they will operate, and which will in any way affect the work under the contract.
- 2.2.3. The streetlight 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.
- 2.2.4. The electrical contractor shall comply with all licensing requirements set forth by the Arizona Registrar of Contractor's office to perform work relating to streetlight installation in COP right-of-way.
- 2.2.5. One dry utility permit for each COP streetlight project, or phase if a multi-phase project, shall be obtained by the contractor prior to construction.
- 2.2.6. Streetlight poles shall be installed plumb, be adjusted to provide proper alignment to the roadway being illuminated and properly grounded when the installation is completed.

2.2.7. Streetlights are inspected by the serving power company and by COP assigned Streetlight Inspector. When accepted and energized, the serving power company will install a streetlight number on each streetlight pole.

2.2.8. Luminaires shall be installed level and include a photocell. The photocell shall be installed with the photo-eye facing north. The luminaires shall be free of dust, dirt or anything that would impair the output of the light.

Non-LED Luminaires or non-smart drivers, furnished with multi-tap ballast shall be wired or connected to match the voltage supplied by the serving power company.

2.2.9. Streetlight poles shall be set plumb in two directions, ninety (90) degrees apart.

2.2.10. Surplus excavation shall be disposed of by the contractor.

2.2.11. Wiring shall be installed per serving power company standards. Conduit shall be installed at the depth specified on their plans.

2.2.12. Conduit must be UL rated and suitable for underground use per serving power company requirement.

2.2.13. Connections shall be per serving power company standards. Each streetlight pole shall have an 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 streetlight pole hand hole is required.

2.2.14. Excavation for pull boxes and material specifications shall be per serving power company requirements.

2.2.15. Trenches shall be installed per serving power company standards. The use of a common electric utility company trench is permitted.

2.2.16. It is the Contractor's responsibility to contact the serving power company for coordination of the trenching and the installation of conduit.

2.2.17. It is the Contractor's responsibility to restore all property, landscaping, paving and driveways that are disturbed during streetlight construction to their original condition in conformance with MAG Specification section 107.9.

2.2.18. Prior to acceptance, the Developer shall energize and operate the entire roadway lighting system, from sunset to sunrise for two (2) consecutive days without interruption or failure. If a luminaire should fail, it shall be immediately replaced. The Developer shall be responsible for furnishing all personnel and equipment to successfully perform this test.

2.2.19. The Contractor shall guarantee all work for a period of one (1) 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. The Contractor shall provide to the City a five-year manufacturer's warranty for the LED luminaires (fixtures only).

2.2.20. 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 one-year guarantee shall be replaced without cost to the City.

SALT RIVER PROJECT (SRP) NOTES

The following SRP plan notes are to be part of the notes listed on the plans for streetlighting projects in the SRP service area:

- 2.2.21. The Contractor shall call SRP for a pre-construction meeting prior to any excavation at (602) 236-6300.
- 2.2.22. The Contractor will supply all trenching and conduit if requested by COP Project Manager.
- 2.2.23. The Contractor will stake streetlights per COP approved streetlighting construction drawings.
- 2.2.24. The j-box shall be located a minimum of two (2) feet to a maximum of five (5) feet from the outer dimension of the streetlight pole. Prior to installation of j-box, the location shall be staked in the field.
- 2.2.25. The Contractor will coordinate with SRP and COP for de-energizing of streetlight conductor.
- 2.2.26. A ground rod will be provided and installed by the Contractor in the SRP J-box at each streetlight location.
- 2.2.27. Number 6 bare copper ground wire shall be attached from the grounding lug on the streetlight pole to the ground rod in the J-box.
- 2.2.28. If the Contractor installs the streetlight 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 streetlight pole hand-hole.
- 2.2.29. All trenching and conduit shall be inspected by SRP. Do not backfill until inspected.
- 2.2.30. An 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 the Contractor.
- 2.2.31. Trenches should be straight, flat, and free of debris. All trench depths shall be measured from final grade to 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 from other utilities.
- 2.2.32. Use DB120 PVC for all straight conduit, and 36" radius schedule 40 PVC sweeps for all elbows. No reducers are allowed in the conduit system. No couplings or bell ends are allowed at equipment locations. All conduits within the road right of way or PUE must be red.
- 2.2.33. Retaining walls are required adjacent to equipment where the grade slope is greater than 30" in 12'.
- 2.2.34. All conduit stub outs are to be capped and marked with an electronic marker and 7" red flag marking ribbon.
- 2.2.35. Hard caps are to be used for all conduit stub outs below grade.

SALT RIVER PROJECT (SRP) NOTES cont:

- 2.2.36. A mandrel inspection is required with the SRP inspector within three (3) days of final inspection. The Contractor must provide two (2) representatives, a minimum 125-CFM trailer mounted compressor and all necessary attachments.
- 2.2.37. The Contractor is responsible for the integrity of all conduits until SRP has installed conductors.
- 2.2.38. Backfill requirements for a trench in or under future pavement shall include 1-part slurry mix. Within the roadway right of way and in dirt backfill, the requirements shall be ½ part slurry mix. Backfill requirements under all SRP equipment shall include ½ part slurry mix maximum.
- 2.2.39. See duct bank specifications for all duct bank encasement requirements.
- 2.2.40. SRP is to provide and install all streetlight numbers on the streetlight poles at the time of energization of the power to the streetlight per SRP Outdoor Lighting Standards 16-13-1.

ARIZONA PUBLIC SERVICE (APS) NOTES

The following APS plan notes are to be part of the notes listed on plans for streetlighting projects in the APS service area:

- 2.2.41. The Contractor shall contact the APS inspector identified on the APS construction drawing for pre-construction meeting prior to any excavation.
- 2.2.42. The Contractor shall supply all trench and conduit per APS requirements, unless otherwise noted.
- 2.2.43. A grade stake shall be set minimum two (2) feet of the J-Box location.
- 2.2.44. The Contractor will coordinate with APS and COP for de-energizing of streetlight conductor.
- 2.2.45. A ground rod shall be provided and installed by the Contractor. The ground rod shall be driven flush outside the APS j-box at each streetlight location.
- 2.2.46. If the Contractor installs the streetlight pole, a bare #6 copper ground wire shall be connected from the ground rod to the ground connection in the hand hole.
- 2.2.47. All trenching and conduit shall be inspected by APS. Do not backfill until inspected.
- 2.2.48. An 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 payable by the Contractor.
- 2.2.49. Contact APS for all trench and conduit specifications and requirements.
- 2.2.50. The Contractor is responsible for the integrity of all conduits until APS has installed conductors.
- 2.2.51. The Contractor is responsible for obtaining required variances prior to submitting CIP drawings to the utilities.
- 2.2.52. The Contractor is responsible for verifying vertical and horizontal clearances to existing overhead lines and poles when placing new streetlights.

Figure 10: Sample Cover Sheet Format

CITY OF PHOENIX STREETLIGHTING

PROJECT NAME

CITY OF PHOENIX STREETLIGHTING GENERAL NOTES

THE FOLLOWING INFORMATION IS PROVIDED TO ASSIST IN THE DESIGN OF THE PROJECT AND IS INTENDED TO SUPPLEMENT THE SPECIFICATIONS.

- THE CONTRACTOR SHALL COMPLY WITH STATE AND CITY STATUTES AND ORDINANCES.
- PRIOR TO SUBMITTING THE STREETLIGHT DESIGN, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY CONSTRUCTION PERMITS AND A CITY OF PHOENIX STREETLIGHTING DESIGN REVIEW FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT.
- THE STREETLIGHT DESIGN SHALL BE SUBMITTED TO THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.

CITY OF PHOENIX STREETLIGHTING GENERAL NOTES (CONT.)

- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.

LED STREETLIGHT NOTES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.

- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.

CITY OF PHOENIX UTILITY CONSTRUCTION NOTES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.

- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PHOENIX STREETLIGHTING DEPARTMENT AND THE CITY OF PHOENIX PUBLIC WORKS DEPARTMENT.

INDEX OF SHEETS

SHEET NO.	TITLE
1	CITY OF PHOENIX STREETLIGHTING GENERAL NOTES
2	CITY OF PHOENIX STREETLIGHTING GENERAL NOTES (CONT.)
3	LED STREETLIGHT NOTES
4	CITY OF PHOENIX UTILITY CONSTRUCTION NOTES
5	INDEX OF SHEETS

GALVANIZED STEEL STREETLIGHT POLE AND LUMINAIRE SPECIFICATIONS

TYPE OF STREET	QUANTITY	POLE LENGTH	POLE DIAMETER	POLE WEIGHT	POLE TYPE	POLE MANUFACTURER	LUMINAIRE	TYPE	WATTAGE	VOLTAGE	LUMINAIRE STYLE	LUMINAIRE MANUFACTURER
LOCAL	1	30'-0"	6"-0"	150'-11"	6000	ALUMINUM	4.800	LED	34W	120V/277V	MODULAR	GENERAL ELECTRIC/OSRAM/PHILIPS
COLLECTOR	1	30'-0"	6"-0"	150'-11"	6000	ALUMINUM	7.800	LED	85W	120V/277V	MODULAR	GENERAL ELECTRIC/OSRAM/PHILIPS

ALL CATALOG NUMBERS SHALL BE OBTAINED WITH POWER COMPANY PRIOR TO ORDERING.

ARCHITECTURAL SQUARE DARK BRONZE LED STREETLIGHT POLE AND LUMINAIRE SPECIFICATIONS

TYPE OF STREET	QUANTITY	POLE LENGTH	POLE DIAMETER	POLE WEIGHT	POLE TYPE	POLE MANUFACTURER	LUMINAIRE	TYPE	WATTAGE	VOLTAGE	LUMINAIRE STYLE	LUMINAIRE MANUFACTURER
PEDESTRIAN	1	30'-0"	6"-0"	150'-11"	6000	ALUMINUM	3.700	LED	27W	120V/277V	MODULAR	GENERAL ELECTRIC/OSRAM/PHILIPS
LOCAL	1	30'-0"	6"-0"	150'-11"	6000	ALUMINUM	4.800	LED	34W	120V/277V	MODULAR	GENERAL ELECTRIC/OSRAM/PHILIPS
COLLECTOR	1	30'-0"	6"-0"	150'-11"	6000	ALUMINUM	7.800	LED	85W	120V/277V	MODULAR	GENERAL ELECTRIC/OSRAM/PHILIPS
ARTERIAL	1	30'-0"	6"-0"	150'-11"	6000	ALUMINUM	9.700	LED	85W	120V/277V	MODULAR	GENERAL ELECTRIC/OSRAM/PHILIPS
SPECIAL/ARTERIAL	1	30'-0"	6"-0"	150'-11"	6000	ALUMINUM	10.800	LED	100W	120V/277V	MODULAR	GENERAL ELECTRIC/OSRAM/PHILIPS

ALL CATALOG NUMBERS SHALL BE OBTAINED WITH POWER COMPANY PRIOR TO ORDERING.

LEGEND

- NEW STREETLIGHT
- EXISTING STREETLIGHT TO REMAIN
- EXISTING STREETLIGHT MAST ARM ON POWER POLE TO REMAIN
- REPLACE EXISTING LUMINAIRE WITH LED ON POWER POLE
- REPLACE EXISTING LUMINAIRE WITH LED ON STREETLIGHT POLE
- EXISTING STREETLIGHT TO BE REMOVED
- REINSTATE STREETLIGHT ON POWER POLE
- NEW STREETLIGHT CONDUIT
- EXISTING STREETLIGHT CONDUIT TO REMAIN
- NEW STREETLIGHT PULL BOX
- EXISTING STREETLIGHT PULL BOX TO REMAIN
- SPACING BETWEEN ADJACENT STREETLIGHTS

NOTE: COVER SHEET NOTES APPLY TO BOTH APS AND SRP.

VICINITY MAP

PROJECT LOCATION: [REDACTED]

STREETLIGHTING COVER SHEET

CITY OF PHOENIX, ARIZONA

STREET TRANSPORTATION DEPARTMENT

DATE: [REDACTED]

BY: [REDACTED]

FOR: [REDACTED]

Figure 11: Sample Plan Sheet Format

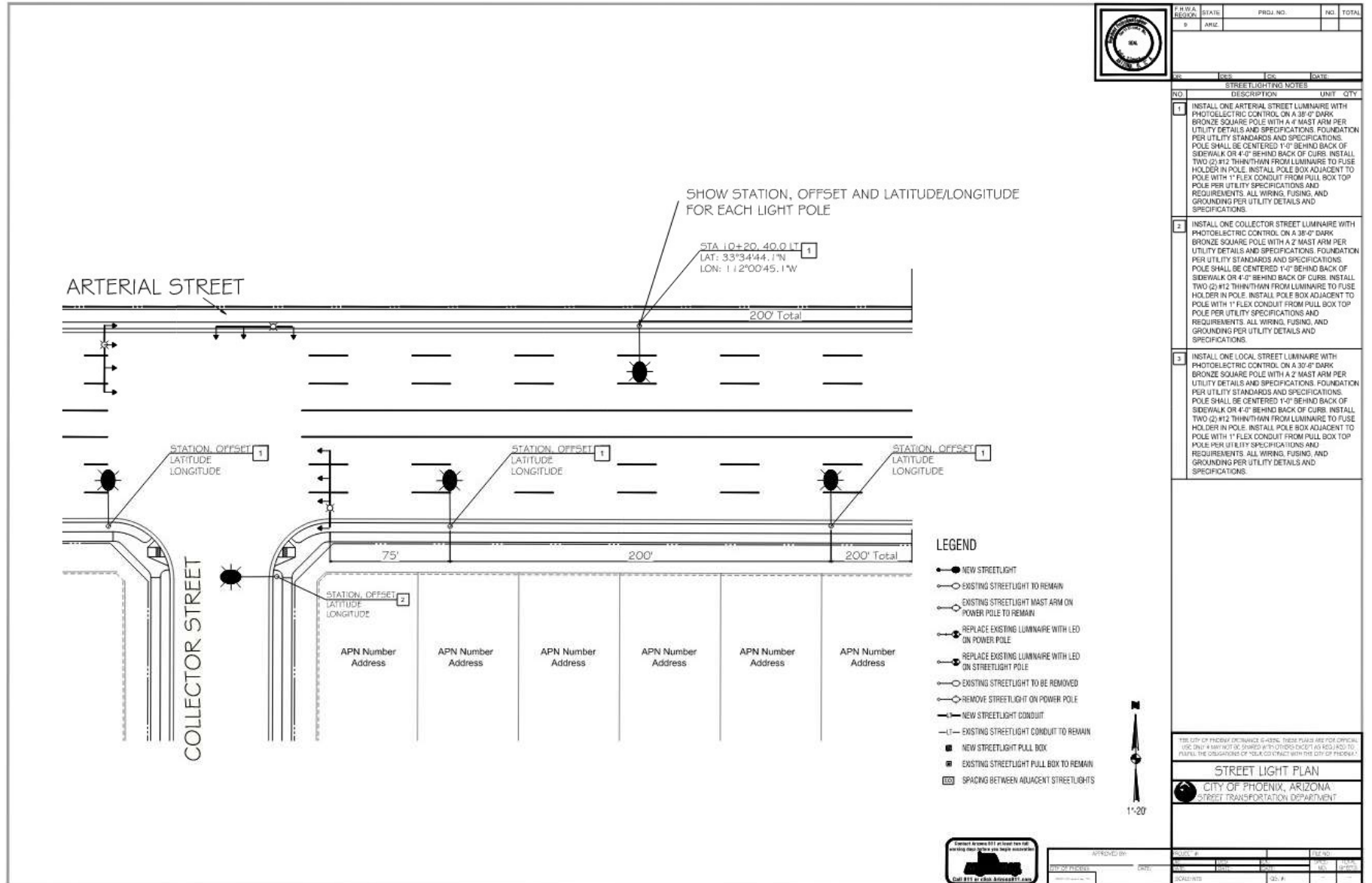
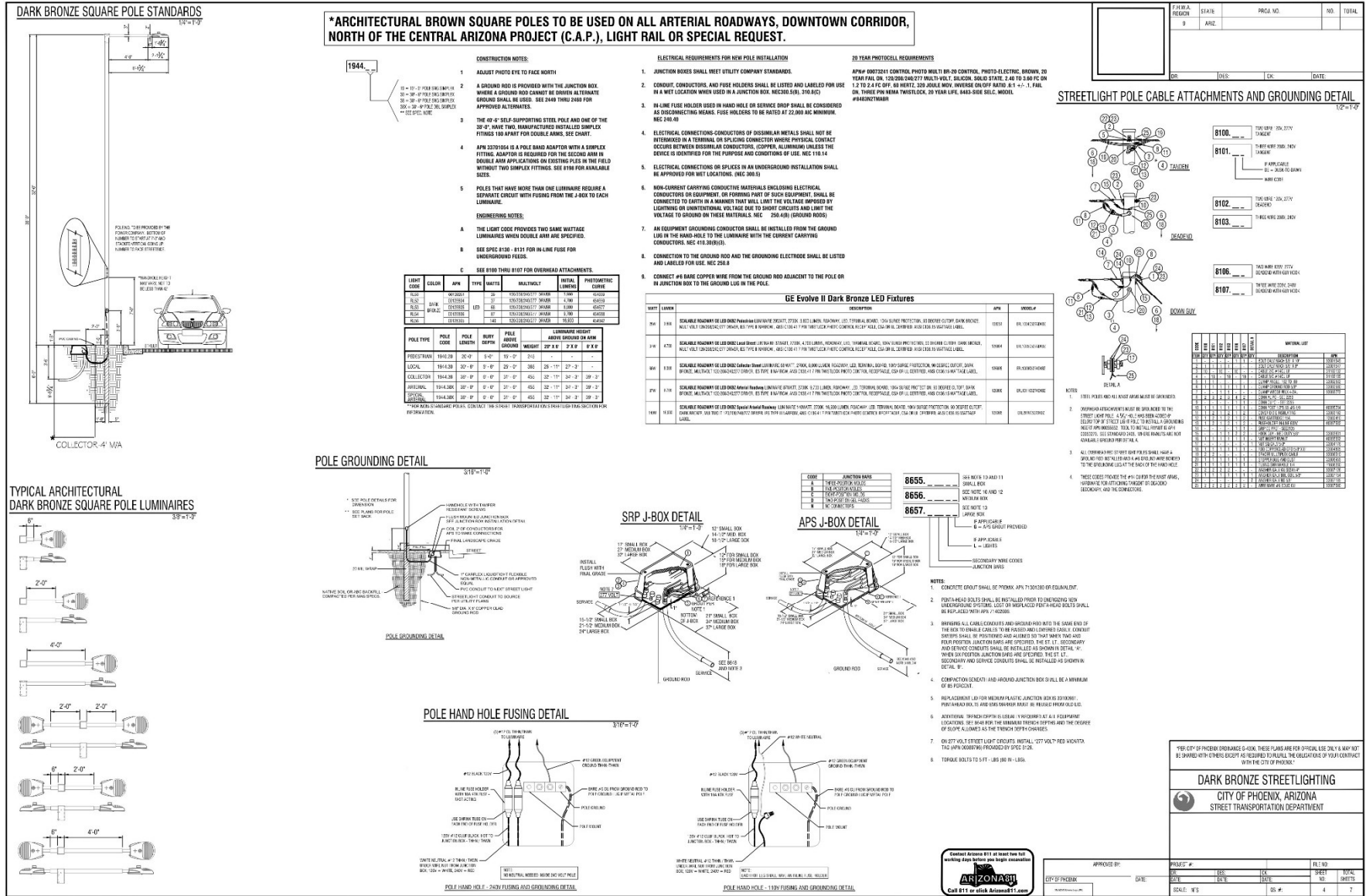


Figure 12: Sample Detail Sheet Format



3. RESIDENTIAL AND COMMERCIAL DEVELOPMENT PROJECTS

Developers of residential subdivisions, apartments, condominiums, commercial, industrial projects and all permittees are responsible for the design, materials, and installation costs of all streetlighting on public streets within and adjacent to their projects. The design requirements, plan preparation requirements and approved materials included within this document and on the City's, website apply to private residential and commercial developments. Section 3 of this document includes information specifically for residential and commercial development projects. Residential and commercial development projects are reviewed and approved by the City's Planning and Development Department. Developers of residential subdivisions of less than 4 lots, fall under Section 5, Small Plan Review.

The information included in Sections 1 and 2 in this document is provided for use on all streetlighting projects within COP. The information included in Section 3 is supplemental to Sections 1 and 2 and is specifically for all new residential and commercial development projects that will be reviewed by the City's Planning and Development Department (PDD). For information or questions regarding streetlight design, please contact (602) 534-6502 or go to the following website: <https://www.phoenix.gov/administration/departments/pdd.html>.

3.1. DEVELOPER RESPONSIBILITY

- 3.1.1. Developers of residential subdivisions, apartments, condominiums, commercial, industrial projects, and all permittees are responsible for the design, materials, and installation costs of all streetlighting on public streets within and adjacent to their project.
- 3.1.2. Streetlighting plans expiration parallels Civil plans expiration and requires re-submittal if Civil plans are updated.
- 3.1.3. Salt River Project (SRP) – Specific Requirements (Applicable only in SRP service areas) (www.srpnet.com)
 - 3.1.3.1. All costs for streetlight installation including construction and energization are to be addressed in a streetlight construction contract between the developer and SRP.
- 3.1.4. Arizona Public Service (APS) – Specific Requirements (Applicable only in APS service areas) (www.aps.com)
 - 3.1.4.1. All costs for streetlight installation including construction and energization are to be addressed in a streetlight construction contract between the developer and APS.
- 3.1.5. Streetlights must be shown on all roadway right-of-way adjacent to private developments. The Developer shall pay all City inspection permit fees. Design conflicts shall be resolved by the Developer to the satisfaction of the serving power company and COP. It shall be the Developer's responsibility to coordinate conflict resolution with serving power company facilities, including vertical clearances, without compromise to the uniformity in the streetlighting design.

3.2. STREETLIGHT PLAN REQUIREMENTS

- 3.2.1. Private streetlights shall be labeled as such and are not to be included in City inventory. Streetlighting on private streets is approved by the Planning and Development Department per their requirements at review.
- 3.2.2. All items described on the streetlight layout checklist shall be included on the streetlight plans. The Checklist can be found on the City's website at: <https://www.phoenix.gov/content/dam/phoenix/streetssite/documents/streetlightslist.pdf>

3.3. STREETLIGHT ACCEPTANCE LETTER

- 3.3.1. Upon completion of streetlight installation, energization and testing, the Contractor and the Owner or Legal Agent shall sign and submit the Streetlight Acceptance Letter to the City. The Streetlight Acceptance Letter is provided on the City's website at: https://www.phoenix.gov/content/dam/phoenix/pddsite/documents/trt/external/dsd_trt_pdf_00289.pdf.
- 3.3.2. In addition to the Streetlight Acceptance Letter, the Contractor shall provide to the City the Streetlight Data Sheet with all information included for each streetlight installed with the project. The Streetlight Data Sheet is provided on the City's website at: <https://www.phoenixopendata.com/dataset/street-lights>.

3.4. CONSTRUCTION REQUIREMENTS

- 3.4.1. The Contractor shall furnish and install all equipment and material as specified in the bid documents and in compliance with all the applicable details, specifications, rules, and regulations of the agencies involved. In the case of any conflicting requirements, the most stringent requirement shall prevail.
- 3.4.2. Prior to ordering any materials or doing any work, the Contractor should verify dimensions at the site. Immediately report differences to the City's Project Manager and design engineer of record and shall not proceed with work until a decision is rendered. No extra charges or compensation will be allowed for differences in actual dimensions and dimensions indicated on the drawings.
- 3.4.3. The Contractor shall comply with all licensing requirements set forth by the Arizona Register of Contractor's office to perform work relating to streetlight installation in the Right-of-Way.
- 3.4.4. A project(s) underground utilities (Right-of-Way) permit(s) shall be obtained by the Contractor prior to starting construction. The permit will be issued by COP to the Contractor after the award of the contract.
- 3.4.5. The Contractor is responsible for obtaining required variances prior to submitting CIP drawings to the utilities.

4. CAPITAL IMPROVEMENT PROJECTS (CIP)

COP regularly constructs Capital Improvement Projects (CIP), including arterial street improvements and street modernization projects throughout the city and streetlighting is typically a part of these projects. The engineering consultant is responsible for the design of the project including the streetlight layout. The design requirements, plan preparation requirements and

approved materials included within this document and on the City's, website apply to Capital Improvement Projects. Section 4 of this document includes information specifically for Capital Improvement Projects. Streetlight designs for Capital Improvement Projects are reviewed and approved by COP Street Transportation Department.

The information included in Sections 1 and 2 in this document is provided for use on all streetlighting projects within COP. The information included in Section 4 is supplemental to Sections 1 and 2 and is specifically for all Capital Improvement Projects that will be reviewed by the City's Street Transportation Department. For questions regarding streetlight design, please contact the Programing and Project Delivery (PPD) Project Manager assigned to the project.

4.1. ADDITIONAL DESIGN REQUIREMENTS

- 4.1.1. The design submittal package shall be in accordance with the requirements stipulated by the City's Project Manager during each project's kick-off meeting.
- 4.1.2. Prior to submitting a streetlight layout plan, the streetlight design Consultant shall examine all general construction drawing details and visit the construction site to become familiar with existing conditions under which they will operate. The Consultant should also be aware of any additional requirements normally imposed by the affected serving power company and/or other regulatory agencies when designing in close proximity to their infrastructure. No additional compensation or contract adjustment will be granted for failure to identify and comply with these requirements from the serving power company.
- 4.1.3. The Design Consultant shall review all proposed streetlight locations, and coordinate with the serving power company and COP staff to achieve the best streetlight layout design. The identified locations shall meet all COP Streetlighting Layout Guidelines, while addressing any overhead and/or underground conflicts and identifying all Easements and/or Right-of-Way needs.
- 4.1.4. For all new streetlight installations, a Letter of Authorization (LOA) shall be issued to the serving power company along with the approved streetlight layout plan set by the City's Traffic Services Section. The LOA shall authorize the serving power company to generate the power design off all new streetlights within the project limits.
- 4.1.5. Cost for streetlight design shall be included in the project scope.

CONSTRUCTION REQUIREMENTS

- 4.1.6. The Contractor shall furnish and install all equipment and material as specified in the bid documents and in compliance with all the applicable details, specifications, rules, and regulations of the agencies involved. In the case of any conflicting requirements, the most stringent requirement shall prevail.
- 4.1.7. Prior to ordering any materials or doing any work, the Contractor should verify dimensions at the site. Immediately report differences to the City's Project Manager and design engineer of record and shall not proceed with work until a decision is rendered. No extra charges or compensation will be allowed for differences in actual dimensions and dimensions indicated on the drawings.
- 4.1.8. The Contractor shall comply with all licensing requirements set forth by the Arizona Register of Contractor's office to perform work relating to streetlight installation in the Right-of-Way.

- 4.1.9. A project(s) underground utilities (Right-of-Way) permit(s) shall be obtained by the Contractor prior to starting construction. The permit will be issued by COP to the Contractor after the award of the contract.
- 4.1.10. The Contractor is responsible for obtaining required variances prior to submitting CIP drawings to the utilities.

5. SMALL PLAN REVIEW

This section includes guidelines for other streetlighting projects that are not included with Capital Improvement Projects or new residential or commercial developments. Small scale plan review is a process established for a resident that wants to install one new streetlight or move one existing streetlight adjacent to their property and/or to convert from overhead electric lines to underground lines that feed an existing streetlight. These streetlighting projects must adhere to the information contained in these guidelines and will be reviewed by the City's Planning and Development Department (PDD). For information or questions regarding streetlight design, please contact (602) 534-6502 or go to the following website: <https://www.phoenix.gov/administration/departments/pdd.html>.

5.1. STREETLIGHT POLE RELOCATION

- 5.1.1. The resident shall submit a request to the City's Planning & Development Department with associated fees that describes in detail the streetlight changes they are requesting and the reason for the changes. The submittal request shall include the following information in the cover letter.
- a. Property owner
 - b. Address
 - c. Telephone number
 - d. Legal description of the property/parcel
 - e. Adjacent street classification
 - f. Power company provider
 - g. Overhead or underground power
 - h. Contractor
 - i. Materials to be used
 - j. Streetlight pole manufacture date (stamped on pole)
 - k. Note if existing streetlight pole is in concrete surface
 - l. PDD/KIVA permit number (if available)
- 5.1.2. The resident shall prepare a site plan or plot plan on one single 8-1/2" by 11" or 11" by 17" sheet including the information listed below. A sample plan submittal is included in Appendix B.
- a. Property lines
 - b. Existing Right-of-Way
 - c. Adjacent roadway(s)
 - d. Roadway width
 - e. Public Utility Easements (if applicable)
 - f. Property dimensions
 - g. Property setbacks (if applicable)
 - h. Sidewalk (attached or detached from curb) (if applicable)
 - i. Home position

- j. Driveway position
- k. Area parcel number (APN) of the impacted lot and any adjacent lots
- l. Overhead and underground utilities
- m. Existing streetlight pole location and material type
- n. New streetlight pole location
- o. Distance from existing impacted streetlight to adjacent streetlights
- p. Existing fencing and/or walls
- q. Existing vegetation, including trees, located on both sides of new streetlight pole location
- r. Any existing or proposed body of water (pool or ponds)

5.1.3. The resident shall describe the changes that are being requested to the existing streetlight system with all neighbors that are within a 100-foot radius of the impacted streetlight. The resident shall have the neighbors sign a petition that shows they are in favor of the changes. This petition shall be submitted to the City with the site plan. Contact Street Transportation Traffic Services for an updated copy of the petition.

5.2. LOT SPLITS

Lot splits occur when a larger lot is split into two or more smaller lots.

5.2.1. Prior to approval for a lot split, the City's Street Transportation Department will perform a streetlight spacing analysis to determine if one or more new streetlight poles are required to meet the design requirements included in Section 1 of these Guidelines.

5.2.2. If the Street Transportation Department determines that additional streetlight poles are required, the owner or developer of the property is required to design and submit streetlighting plans in accordance with the requirements set forth in Sections 1, 2 and 3 of these Guidelines.

ADAPTIVE REUSE

Adaptive reuse is a program that allows customers to adapt older buildings for new business uses.

5.2.3. If offsite improvements are made as part of an adaptive reuse project, streetlighting is required. COP Street Transportation Department will perform a streetlight spacing analysis to determine if one or more new streetlight poles are required to meet the design requirements included in Section 1 of these Guidelines.

5.2.4. If the Street Transportation Department determines that additional streetlight poles are required, the owner or developer of the property is required to design and submit streetlighting plans in accordance with the requirements set forth in Sections 1, 2 and 3 of these Guidelines.

APPENDIX A:

STREETLIGHT LOCATION LAYOUTS AT TRAFFIC CALMING INSTALLATIONS

Table of Contents:

Figure A-1: Football Island

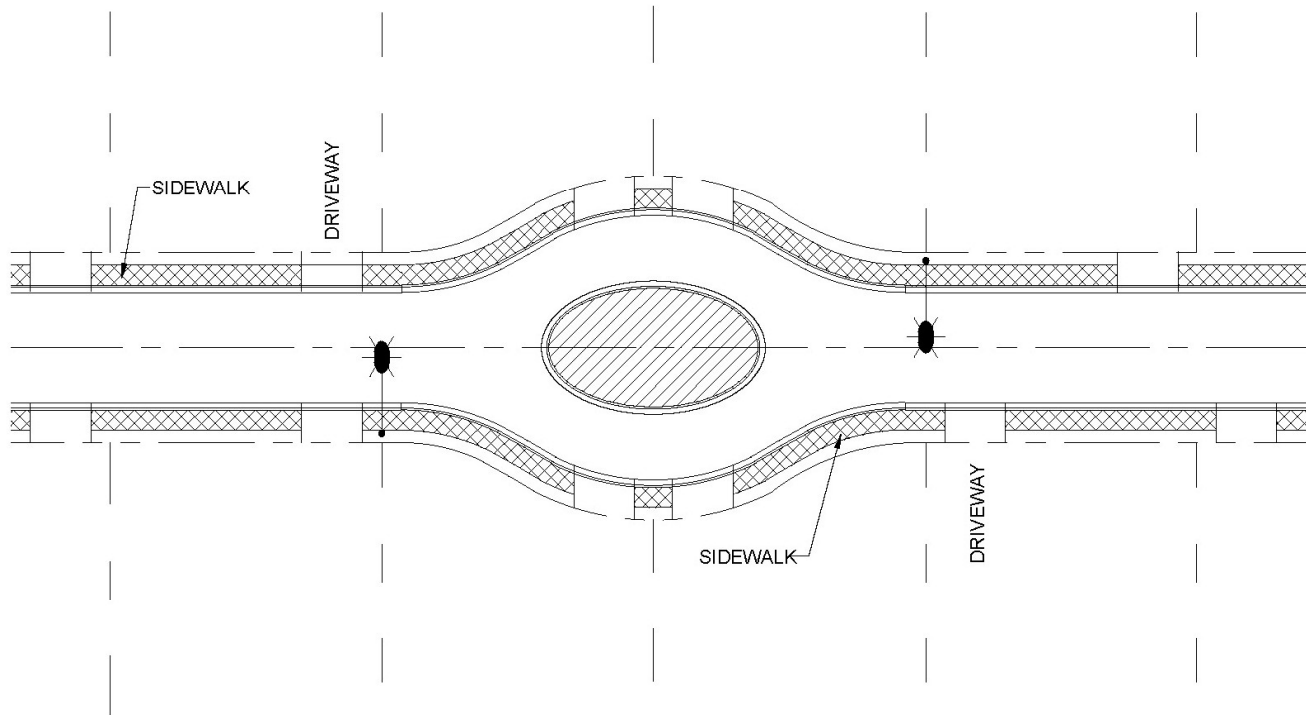
Figure A-2: Baseball Island

Figure A-3: Choker

Figure A-4: Chicane

Figure A-5: Semi-Diverter

Figure A-1: Football Island



A-1

STREETLIGHT DESIGN GUIDELINES
FIGURE A-1: FOOTBALL ISLAND

05/01/19

Not to Scale

Figure A-2: Baseball Island

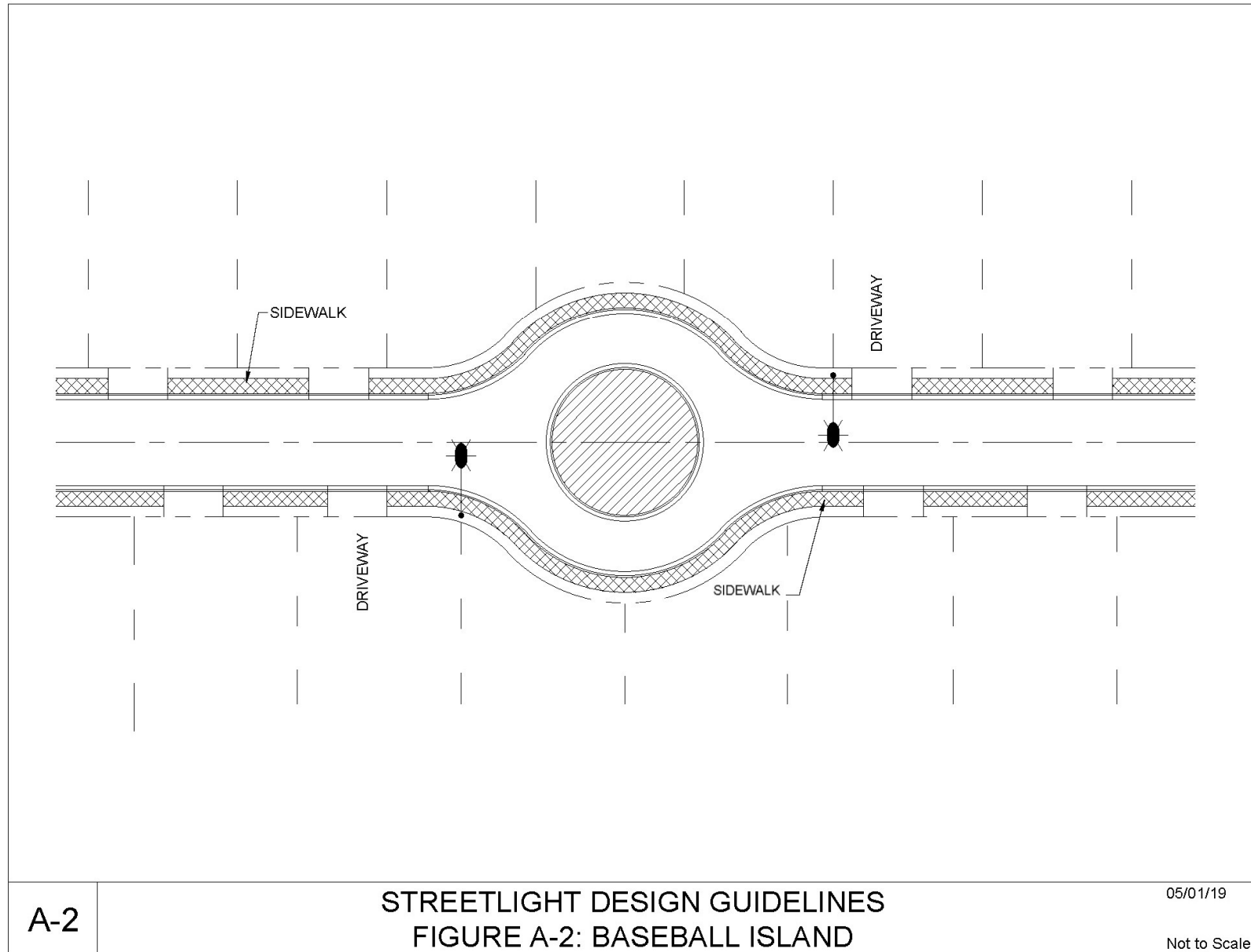
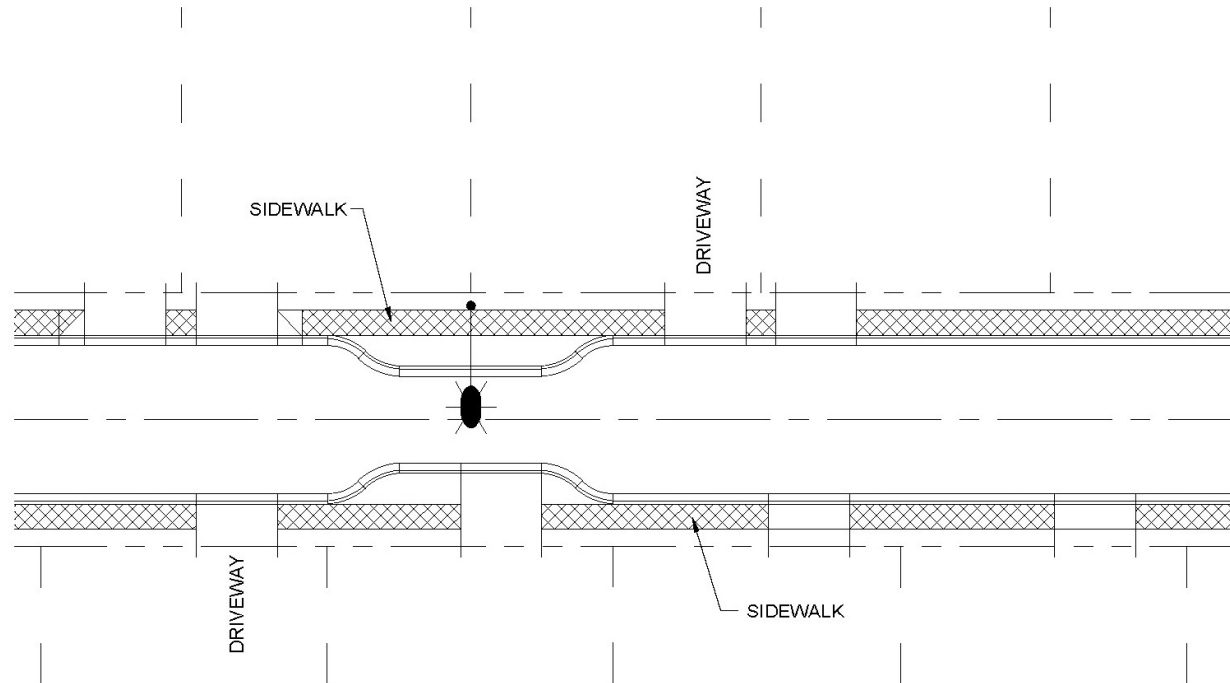


Figure A-3: Choker



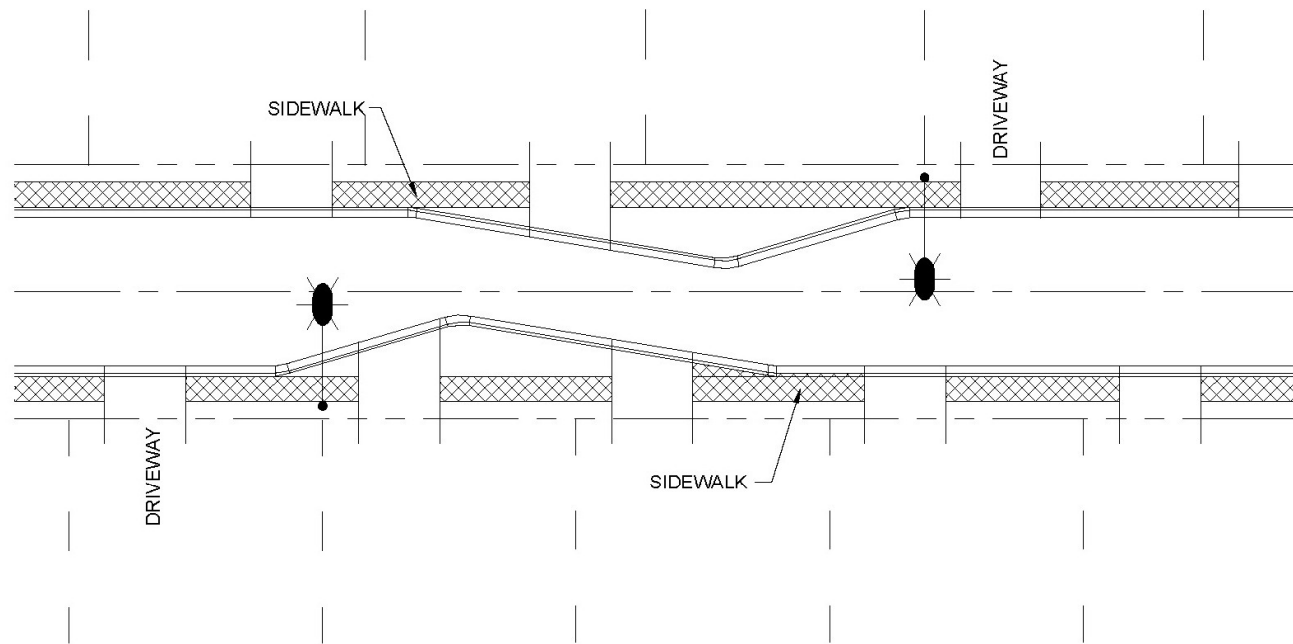
A-3

STREETLIGHT DESIGN GUIDELINES
FIGURE A-3: CHOKER

05/01/19

Not to Scale

Figure A-4: Chicane



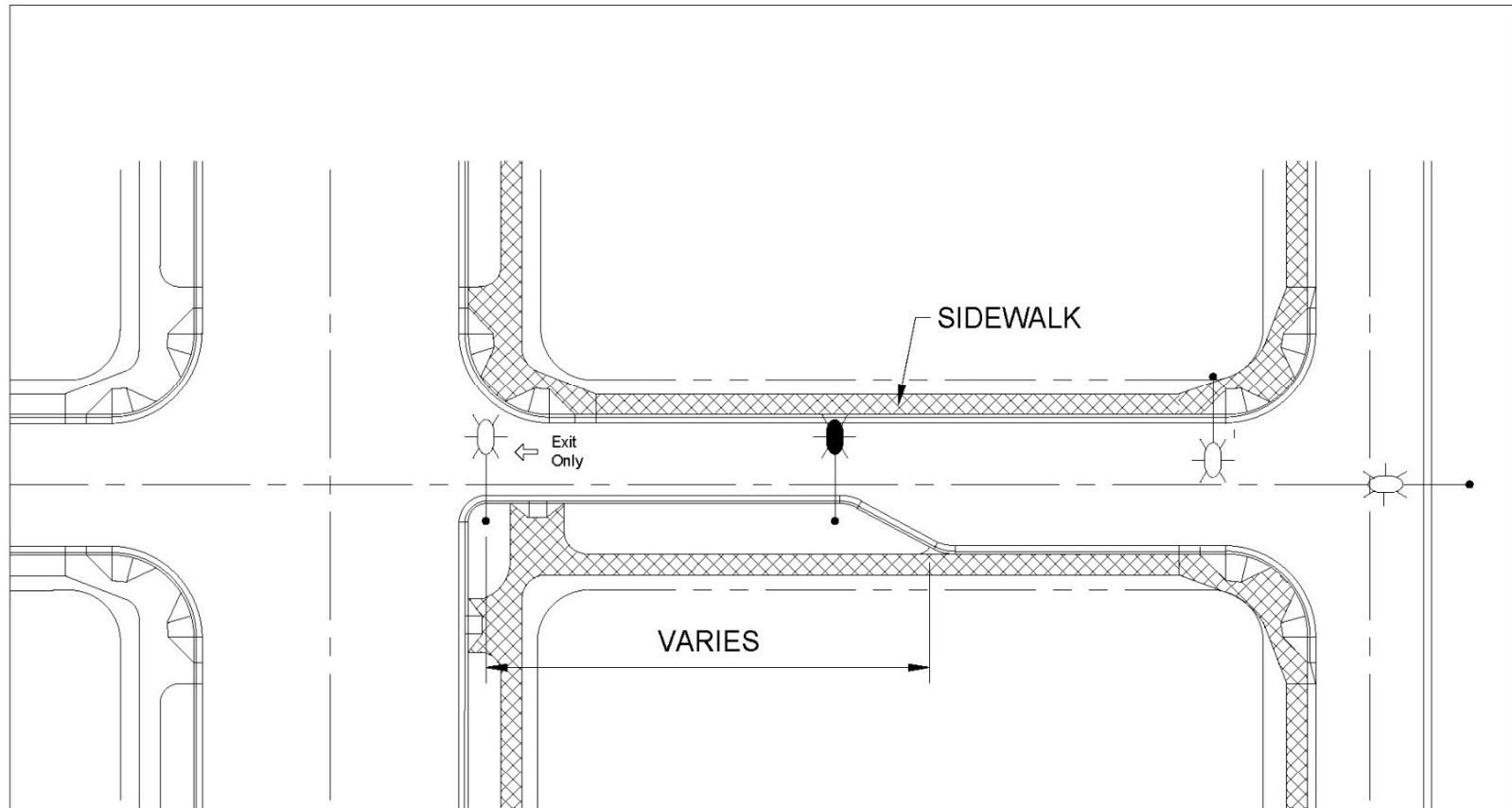
A-4

**STREETLIGHT DESIGN GUIDELINES
FIGURE A-4: CHICANE**

05/01/19

Not to Scale

Figure A-5: Semi-Diverter



A-5

STREETLIGHT DESIGN GUIDELINES
FIGURE A-5: SEMI-DIVERTER

05/01/19

Not to Scale

APPENDIX B:

SAMPLE PLAN SUBMITTAL FOR SINGLE LOT REVIEW

