

MASTER STREET LIGHTING PLAN



BRYANT
Arkansas

Adoption date: TBD

FOR REVIEW ONLY

INTRODUCTION

The City of Bryant’s Street Lighting Master Plan is a design guide with an overall goal to improve security, reduce light pollution, and improve quality of life within the City of Bryant. The design guidelines noted within this document are meant to be instructional for contractors, developers, engineers, utilities, and architects. The Master Street Lighting plan is to be used as a minimal standard for street lighting projects within the City of Bryant.

Bryant has pre-selected luminaires with the utility companies whom serve the city; Entergy and First Electric Cooperative. The pre-selected luminaires will be found on the Luminaire schedule provided on page 2. The contractor, developer, engineer, lighting designer, or architect utilizing this schedule for a project will be able to determine which utility company to use with the map provided on page 3. Developer is to determine which luminaire type is acceptable for the project by coordinating with the ‘Walk Bike Drive Master Transportation Plan’ of the City of Bryant. Once the street type is determined, a general lighting layout will be found on pages 5-40. While the Master Street Lighting Plan will provide the majority of the street lighting needs within the city, alternate luminaire layouts and luminaire types will be considered for approval if submitted to the City of Bryant Design Review Committee (DRC) prior to construction. The City of Bryant reserves the right to decline any alternate submissions.

The design guidelines in this Master Street Lighting Plan will improve visibility for security for drivers and pedestrians within the city. The Master Street Lighting Plan will also help the environment by encouraging the use of energy efficient lighting technology and reducing light pollution. The added benefit of these lighting standards is improved quality of life for the residents in the City of Bryant.

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LUMINAIRE SCHEDULE

Each luminaire type has two catalog numbers specified. Each utility has a specified luminaire to utilize. In order to determine which catalog number is required for the project, first determine which utility company is at the project site. Alternate luminaires may be used on a project if they are submitted and approved by the City of Bryant Design Review Committee prior to construction. The Luminaire schedule shown on this page will be used in conjunction with the lighting layout overviews shown on pages 5-40. Lighting quantities and layouts shall be submitted to the Design Review Committee for review and approval prior to construction on all projects.

All luminaires must be wet location UL listed. LED technology shall be utilized to minimize energy consumption on all future installations. LED chipboards and drivers shall have a minimum lumen maintenance of 50,000 hours at 70% lifespan. The City of Bryant requires all luminaries be dark sky compliant. Alternate luminaires are allowed but must be submitted to the City of Bryant DRC for pre-approval. Alternate luminaires must be submitted with B.U.G. rating, TM-21, TM-79, and TM-80 reports for review and approval by Bryant Public Works Department. Refer to page 42 to learn more about B.U.G. ratings and dark sky compliance.

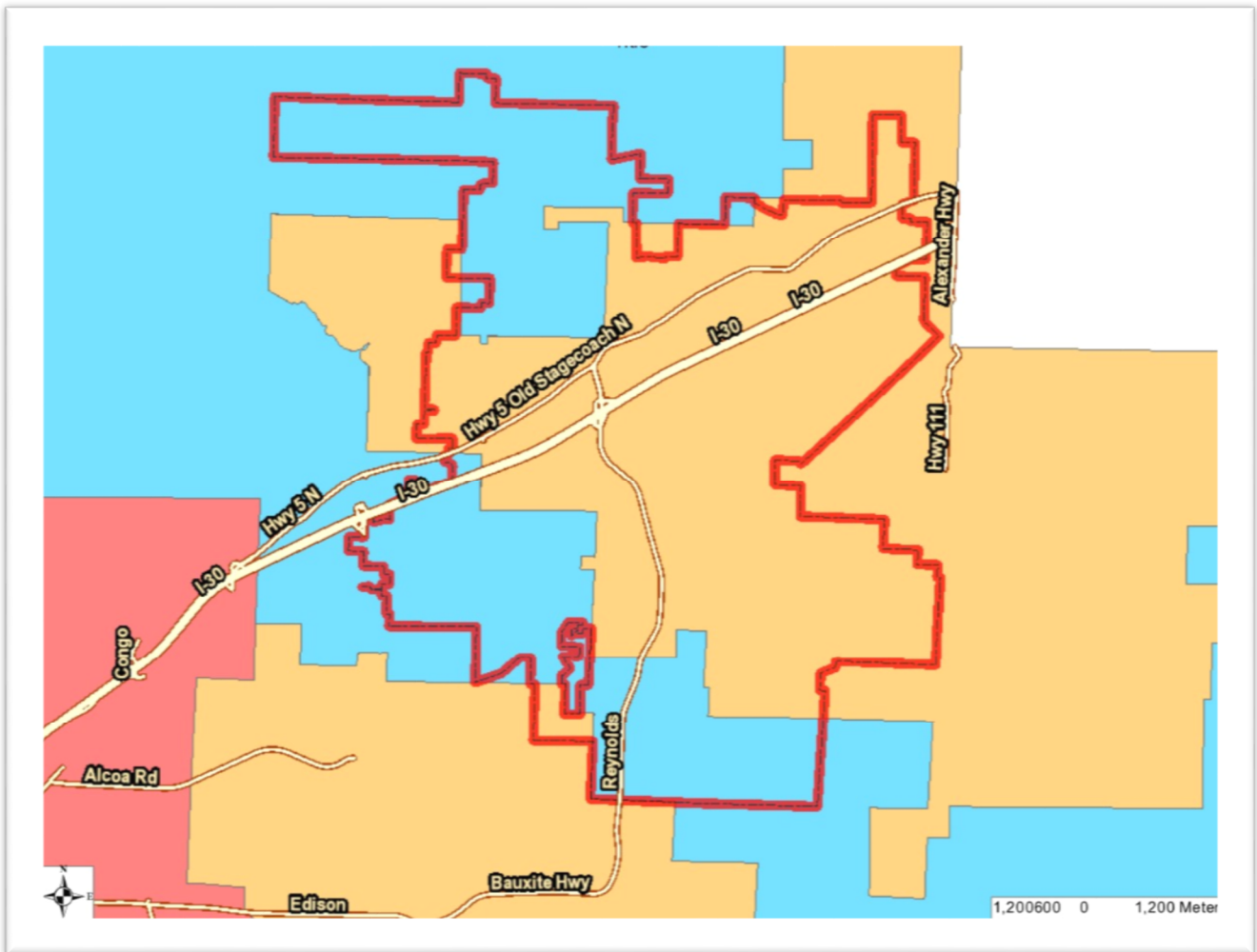
TYPE	UTILITY	PHOTO	CATALOG#	DESCRIPTION
A	ENTERGY		AEL# ATBS-H-D-MVOLT-R3-40K-P7	COBRA LIGHT, GRAY FINISH, MOUNT 30' HIGH ON POWER POLE OR HIGHER PER UTILITY REGULATION, TYPE III DISTRIBUTION
	1 ST ELEC		EVLUMA# AM-70-4K-3-D-S7-STD-6	
B	ENTERGY		LITHONIA# DSX2-LED-80C-40K-RFD193699-BLACK	ROADWAY LIGHT, BLACK FINISH, 30' BLACK POLE, TYPE V DISTRIBUTION
	1 ST ELEC			
C	ENTERGY		HOLOPHANE# AWDE2-P30-BK-5-N-RFD217381	DECORATIVE POST TOP LIGHT, BLACK FINISH, 20' POLE, TYPE V DISTRIBUTION
	1 ST ELEC		AEL # 245-100W-MVOLT-R5-GL-BK-UL-PC	
	1 ST ELEC		GE# SEMT-100-PMH-0-A-5-FG-MC5-BL	
D	ENTERGY		LITHONIA# DSX2-LED-100C-40K-RFD193701	INTERSTATE ROADWAY LIGHT, 40' POLE WITH BREAK AWAY BASE, TYPE IV DISTRIBUTION
	1 ST ELEC			

UTILITY ZONE MAP

The attached map on the next page is the City of Bryant. The red outline encompasses the outside edge of the City of Bryant. The tan areas within the map are Entergy’s zone for utility. The blue areas within the map are First Electric Cooperative’s zones for utility. The developer will confirm and contact the correct utility for pre-selected luminaire types based on the physical project location.

Entergy contact: 501-425-6660 www.entergy.com

First Electric Cooperative contact: 501-315-7438 www.firstelectric.coop



LIGHTING OVERVIEW

The lighting layouts within the Master Street Lighting Plan have been coordinated with the 'Walk Bike Drive Master Transportation Plan' of the City of Bryant. All luminaire types and mounting locations will be easily identified by the street type designated within the city.

Lighting layouts shown on in this section are typically overviews to guide the street lighting installation within the City of Bryant. These typical layouts will include a primary lighting layout. This layout will have the ideal lighting levels and contrast ratios required to meet Illuminating Engineering Society's recommendations and AASHTO Roadway Lighting Design Guide. This primary layout also takes in budget considerations to minimize the quantity of poles and labor of install on a project.

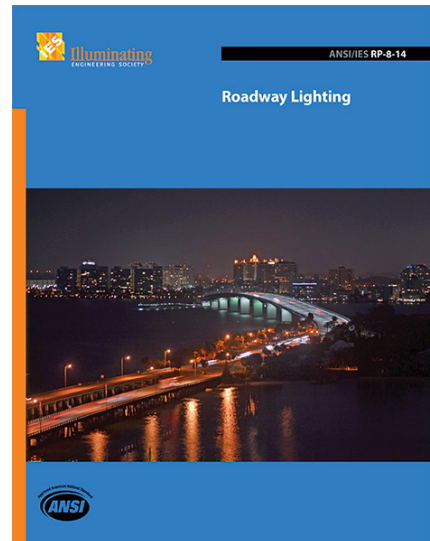
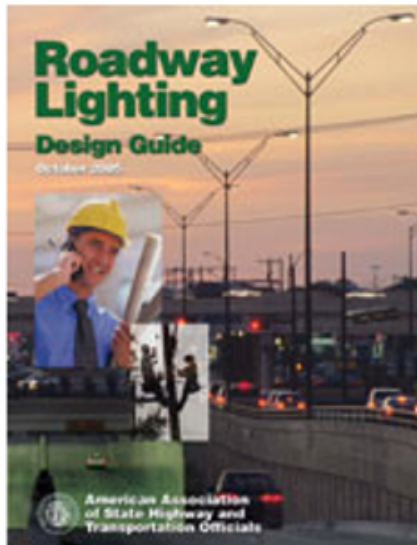
A secondary typical lighting layout will be provided for most street types. The secondary detail will only be acceptable when utility easement or other approved obstacles prohibit the primary mounting detail from being a viable solution. Every effort to coordinate pole locations with utility easements must be researched before the secondary layout may be utilized.

Luminaire types listed on lighting layouts on pages 5-40 shall be used on roads that are not extensions of existing streets. Existing streets that are being extended shall continue the existing lighting scheme with an updated LED technology in order to create consistency within the city streets.

Alternate lighting layouts and luminaire types will still be considered for approval by the City of Bryant Design Review Committee (DRC). Submission of the alternate layouts and alternate luminaire types will need to be submitted to the DRC for approval prior to construction.

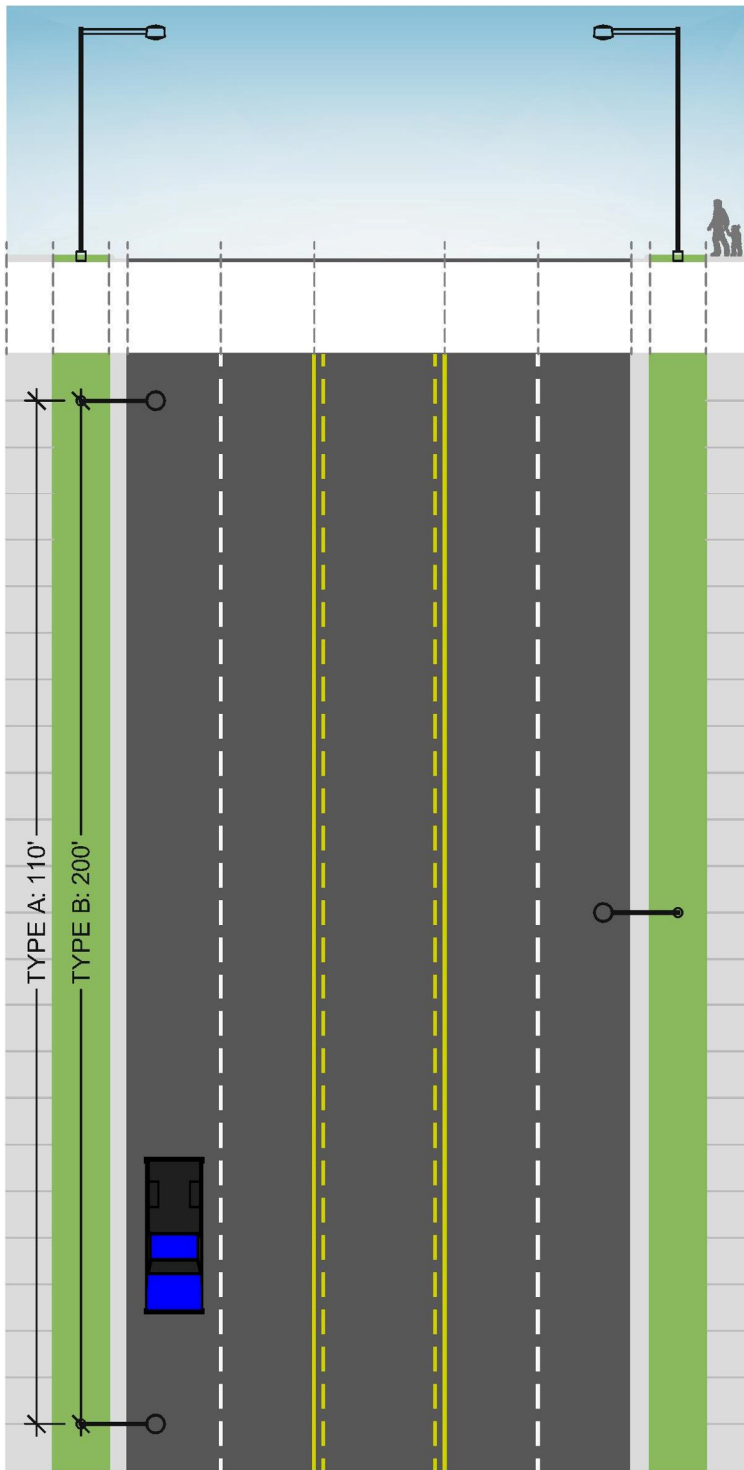
Calculated lighting levels and uniformity ratios of street lighting shall abide by Illuminated Engineering Society (IES) RP-8 standards for Roadway lighting and AASHTO Roadway Lighting Design Guide. AASHTO guidelines are to supersede IES recommendations in the event of a conflict within the two standards.

The typical primary and secondary street lighting details provided in this document shall meet the AASHTO and IES lighting levels and contrast ratios in most scenarios. The developer is always required to submit lighting calculations to the City of Bryant Design Review Committee prior to construction for approval. The City of Bryant will submit to ArDOT for state highways.



All construction shall require a map be submitted to the Bryant Design Review Committee (DRC) as part of the preliminary plat with exact layouts of luminaires and poles prior to installation. Developer to provide luminaire and pole finishes for approval to City of Bryant DRC as well with luminaire types. Refer to primary and secondary layouts below for submission design preferences prior to submission to City of Bryant Design Review Committee.

MINOR ARTERIAL - PRIMARY



LUMINAIRE TYPE:
 A OR B
 (VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:
 TYPE A – GRAY
 TYPE B - BLACK
 (OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

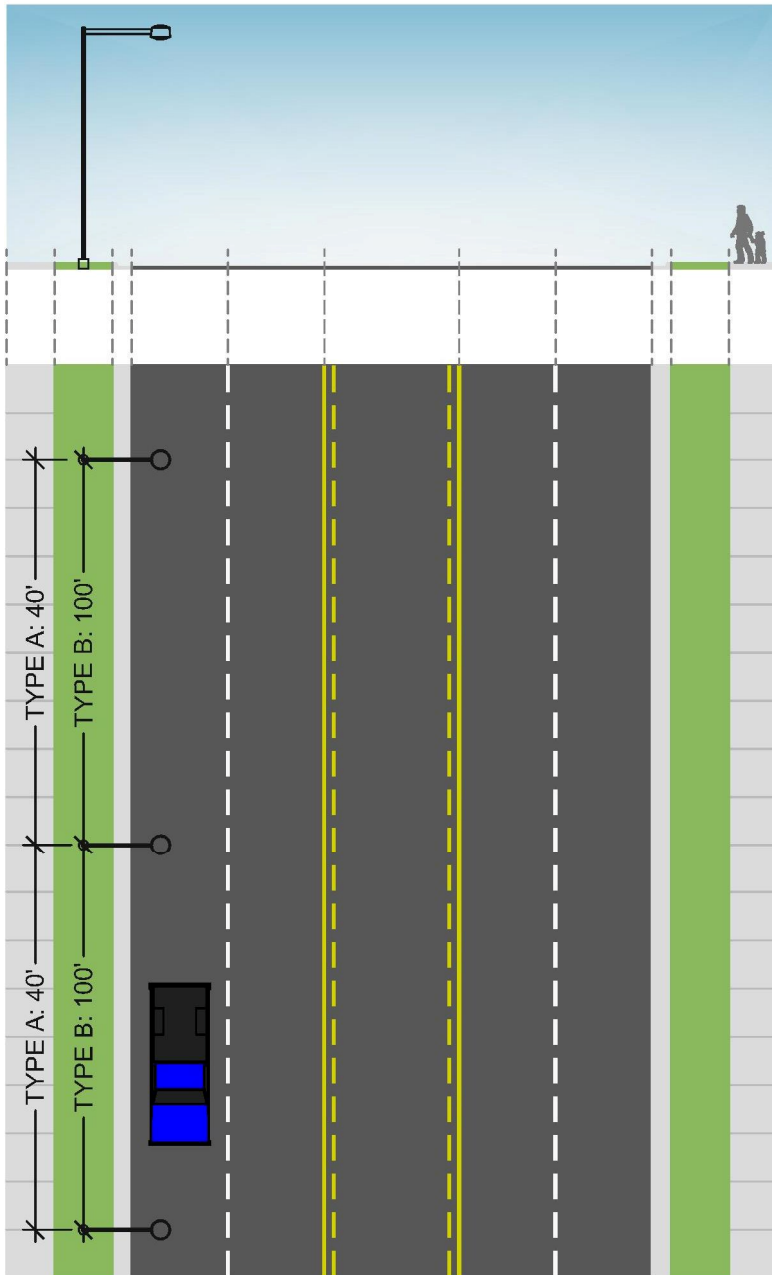
DISTANCE BETWEEN POLE BASES:
 TYPE A: 110'-0" ALTERNATING
 TYPE B: 200'-0" ALTERNATING

POLE TYPE:
 TYPE A – 30' POWER POLE
 TYPE B – 30' ROUND TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:
 BACKLIGHT CONTROL NOT REQUIRED UNLESS THE STREET IS ADJACENT TO RESIDENTIAL PROPERTY OR LIGHT TRESSPASS IS A CONCERN

MINOR ARTERIAL – SECONDARY



LUMINAIRE TYPE:

A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

DISTANCE BETWEEN POLE BASES:

TYPE A: 40'-0"
TYPE B: 100'-0"

POLE TYPE:

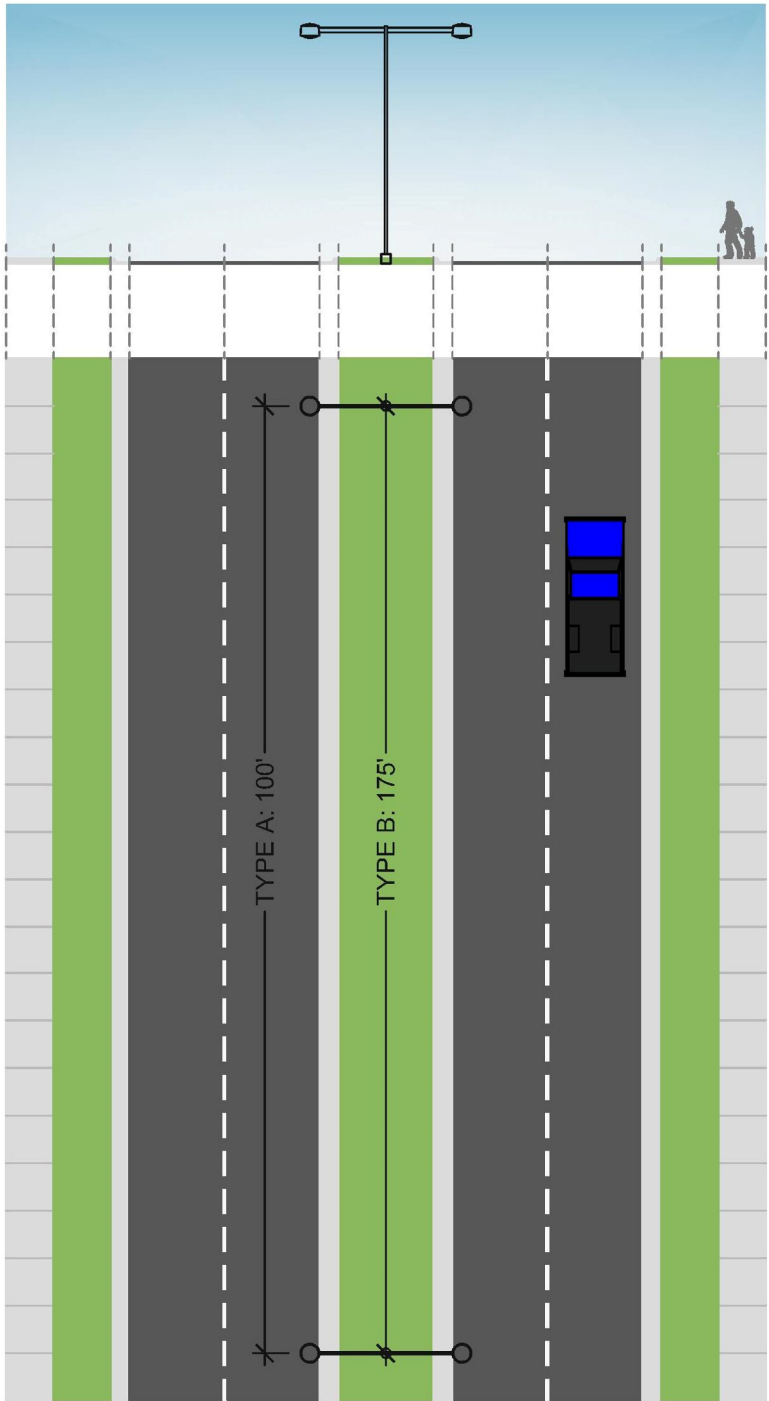
TYPE A – 30' POWER POLE.
TYPE B – 30' ROUND
TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT
REQUIRED UNLESS THE
STREET IS ADJACENT TO
RESIDENTIAL PROPERTY OR
LIGHT TRESSPASS IS A
CONCERN

MINOR ARTERIAL WITH MEDIAN - PRIMARY



LUMINAIRE TYPE:

A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB:

CENTER LINE OF MEDIAN, MINIMUM 3'-0" OFF CURB

DISTANCE BETWEEN POLE BASES:

TYPE A: 100'-0"
TYPE B: 175'-0"

POLE TYPE:

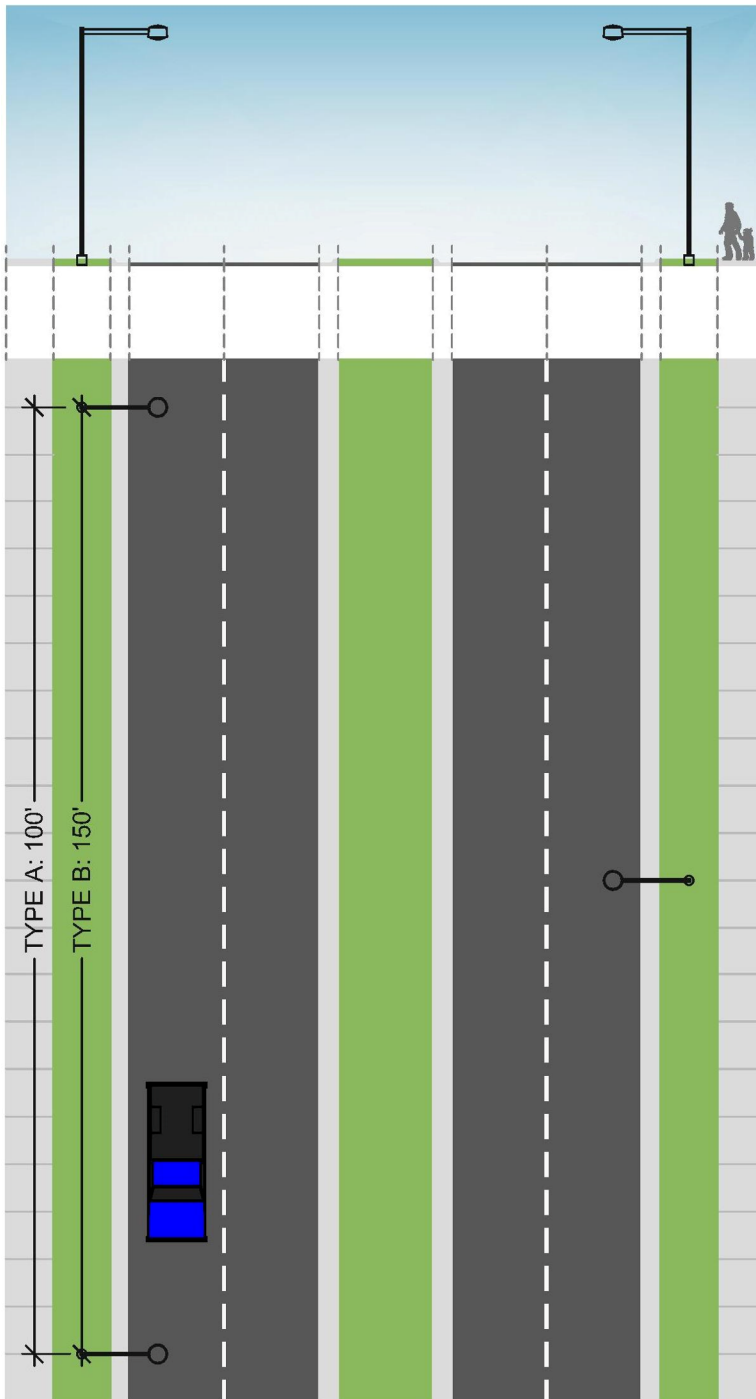
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT REQUIRED

MINOR ARTERIAL WITH MEDIAN – SECONDARY



LUMINAIRE TYPE:

A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

DISTANCE BETWEEN POLE BASES:

TYPE A: 100'-0"
ALTERNATING
TYPE B: 150'-0"
ALTERNATING

POLE TYPE:

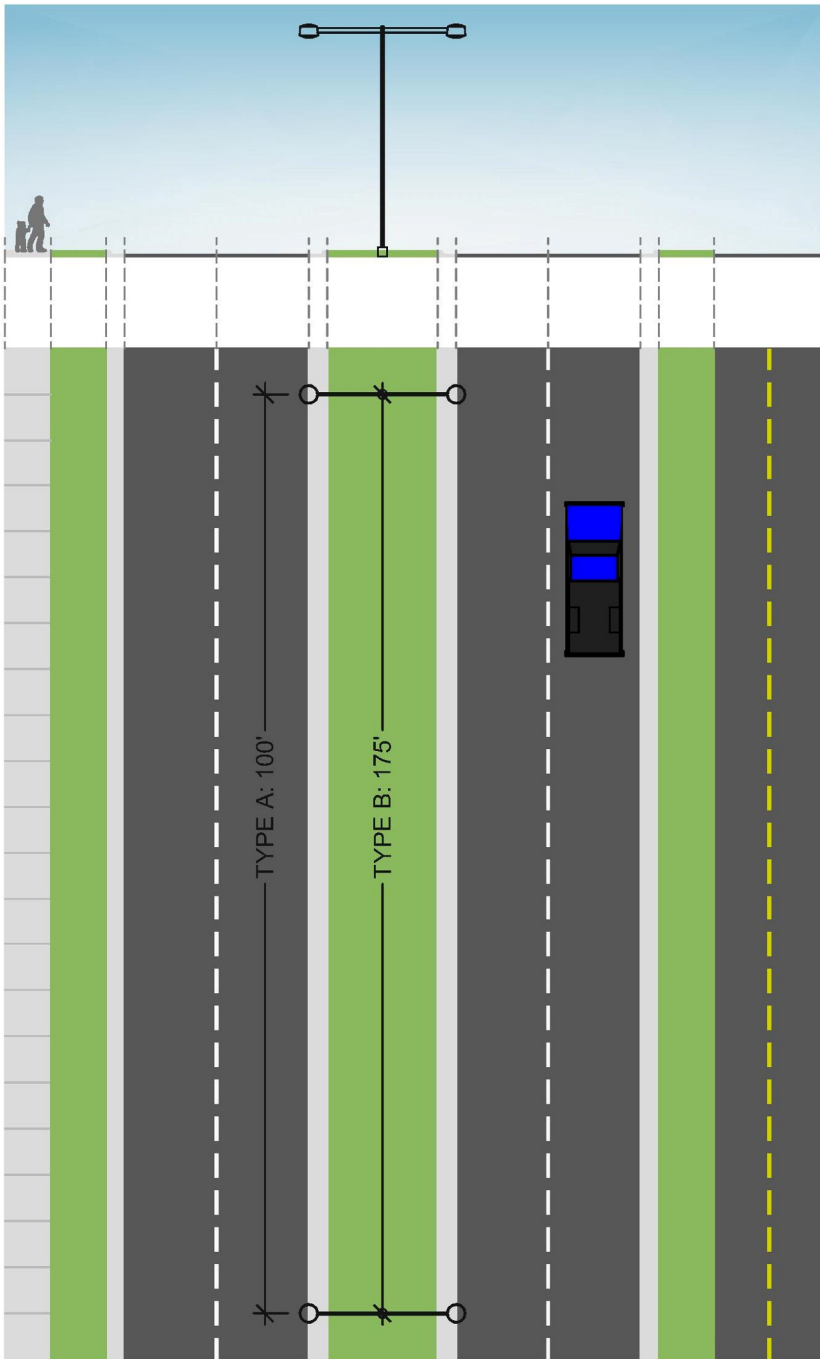
TYPE A – 30' POWER POLE.
TYPE B – 30' ROUND
TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT
REQUIRED UNLESS THE
STREET IS ADJACENT TO
RESIDENTIAL PROPERTY OR
LIGHT TRESSPASS IS A
CONCERN

MINOR ARTERIAL WITH TRAIL - PRIMARY



LUMINAIRE TYPE:
A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:
TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: CENTER LINE OF MEDIAN, MINIMUM 3'-0" OFF CURB

DISTANCE BETWEEN POLE BASES:
TYPE A: 100'-0"
TYPE B: 175'-0"

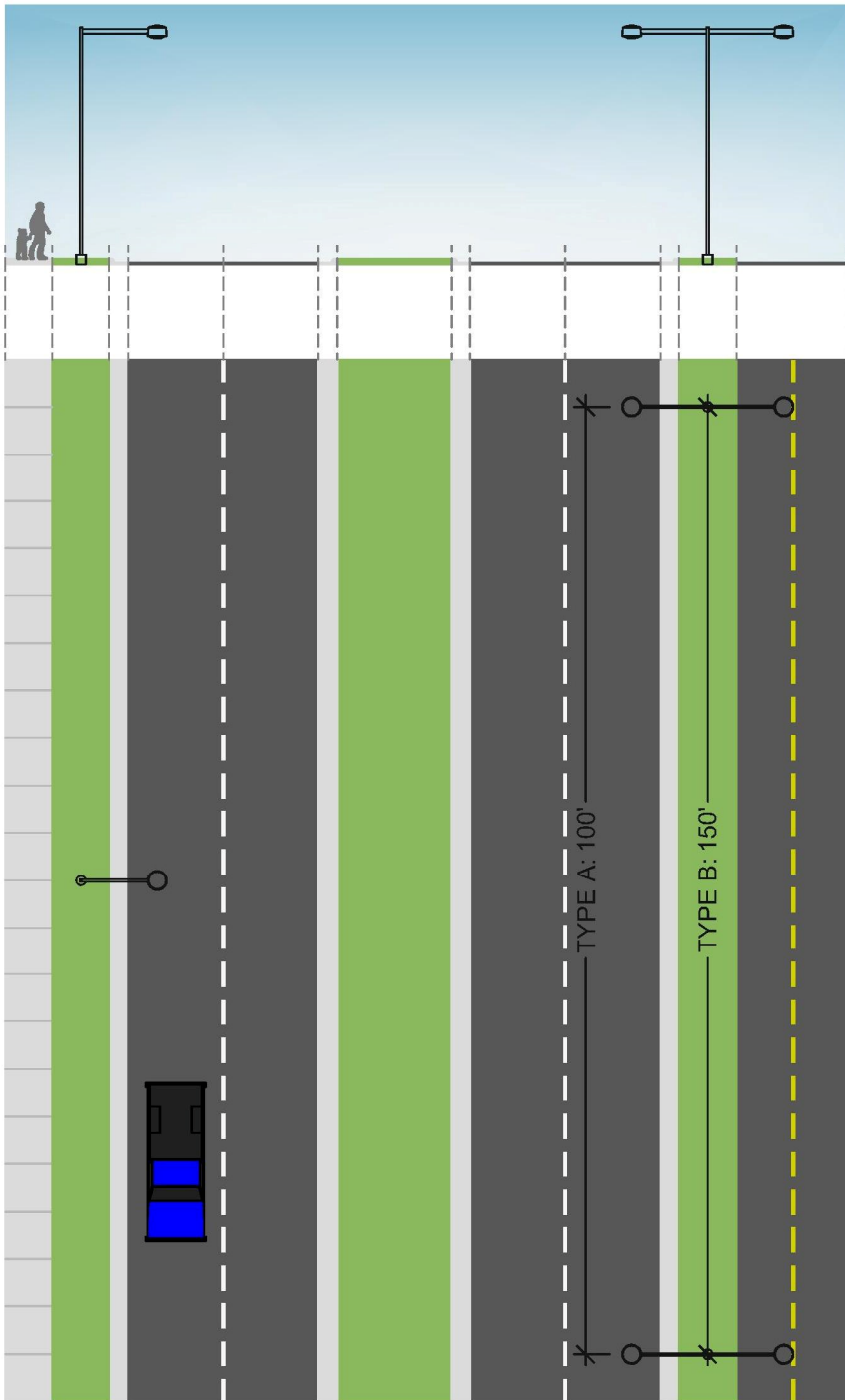
POLE TYPE:
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND TAPERED STEEL POLE

MOUNTING ARM LENGTH:
8'

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT REQUIRED

NOTES: SUBMIT OPTIONS TO DRC TO INCLUDE SEPARATE TYPE "C" TRAIL LUMINAIRES OR NO LIGHT ON TRAIL. OPTION SHALL BE DETERMINED BY DRC.

MINOR ARTERIAL WITH TRAIL - SECONDARY



LUMINAIRE TYPE:
A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:
TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

DISTANCE BETWEEN POLE BASES:
TYPE A: 100'-0" ALTERNATING
TYPE B: 150'-0" ALTERNATING

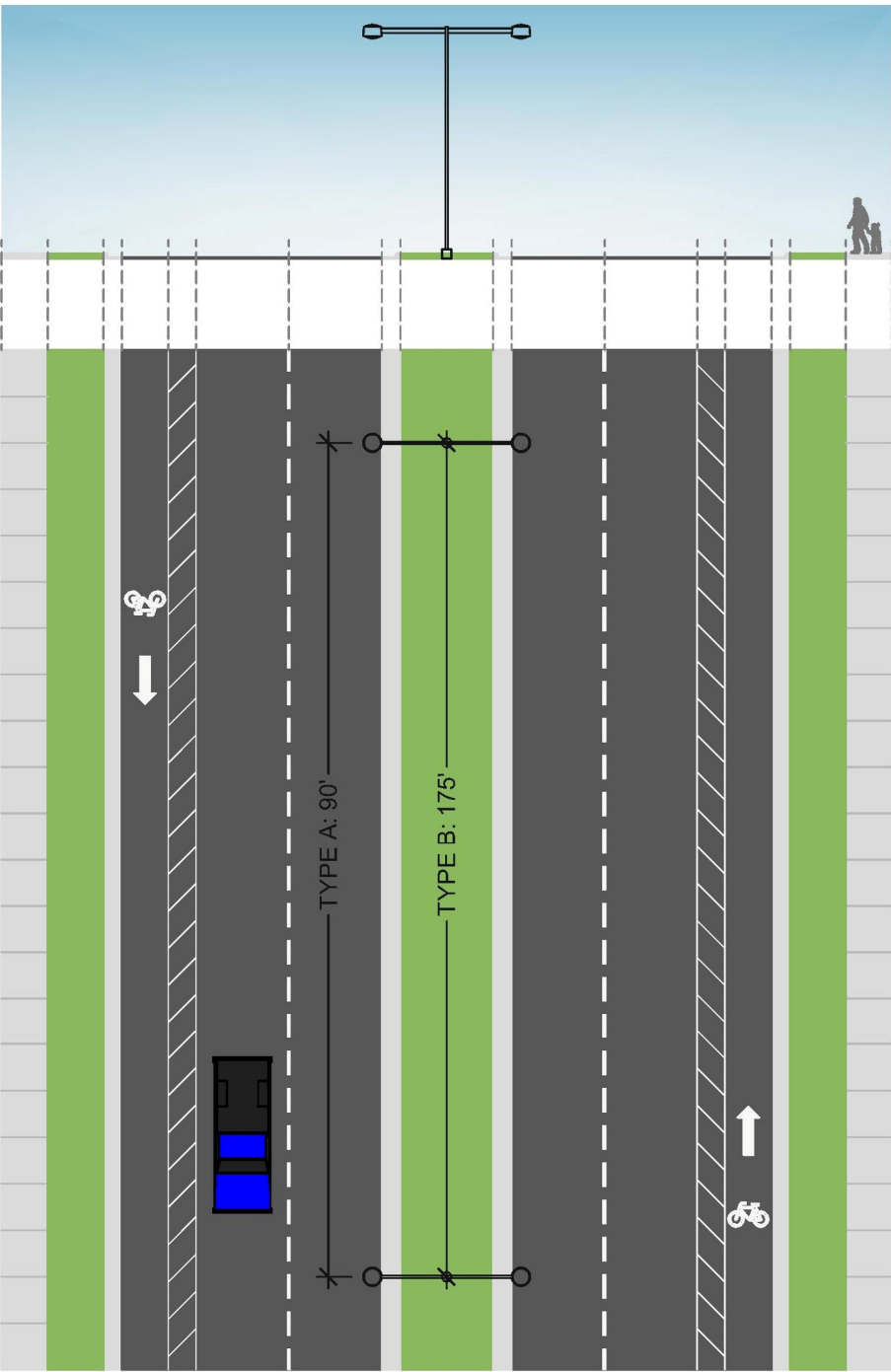
POLE TYPE:
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT REQUIRED UNLESS THE STREET IS ADJACENT TO RESIDENTIAL PROPERTY OR LIGHT TRESSPASS IS A CONCERN

NOTES: SUBMIT OPTIONS TO DRC FOR ADDITIONAL HEAD ON STREET LUMINAIRE TO LIGHT TRAIL. OTHER OPTIONS SHALL INCLUDE SEPARATE TYPE "C" TRAIL LUMINAIRES. DRC MAY ELECT TO OMIT TRAIL LIGHTS.

MINOR ARTERIAL WITH BIKE LANES - PRIMARY



LUMINAIRE TYPE:
A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:
TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: CENTER LINE OF MEDIAN, MINIMUM 3'-0" OFF CURB

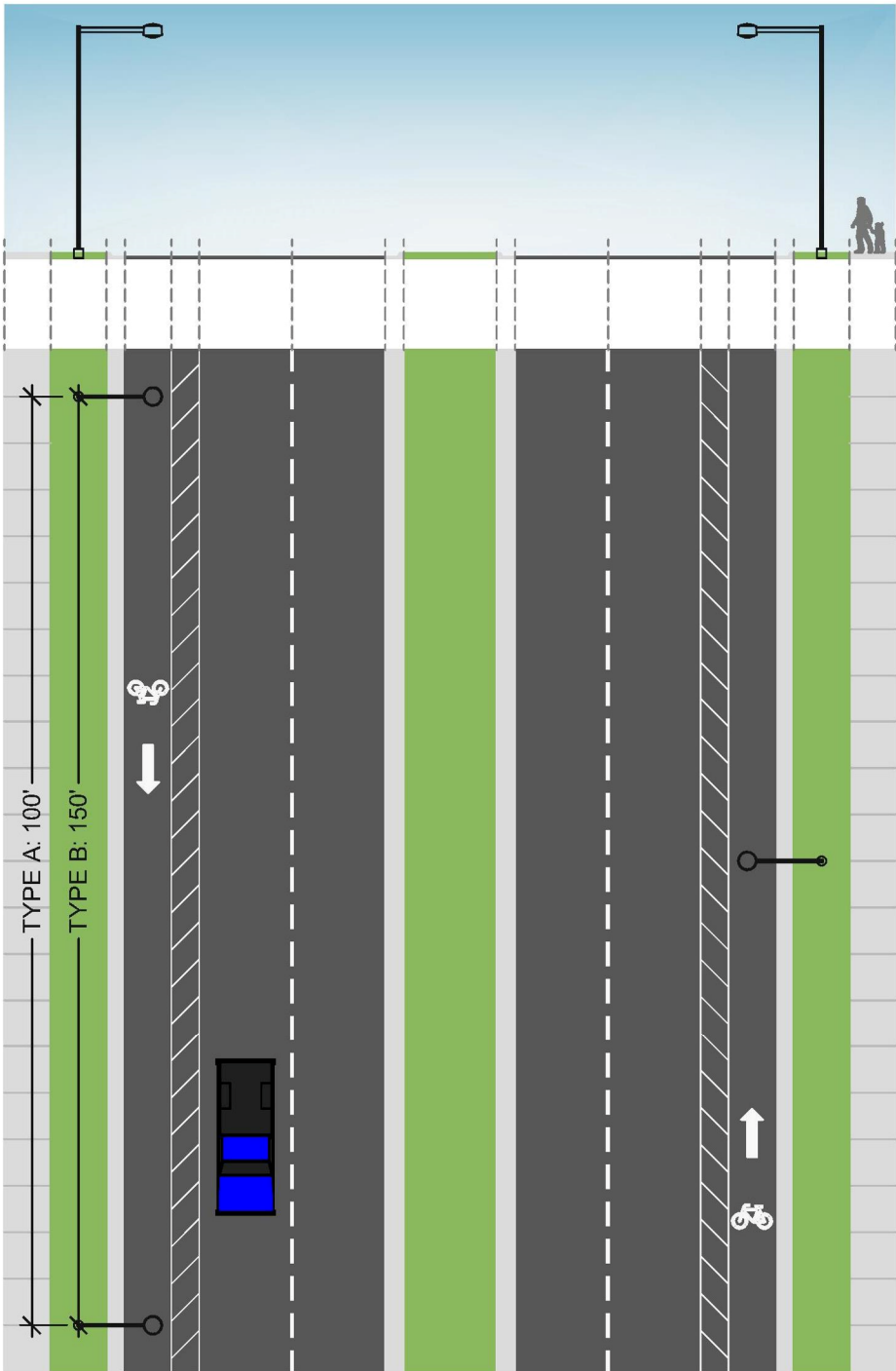
DISTANCE BETWEEN POLE BASES:
TYPE A: 90'-0"
TYPE B: 175'-0"

POLE TYPE:
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT REQUIRED

MINOR ARTERIAL WITH BIKE LANES - SECONDARY



LUMINAIRE TYPE:
A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:
TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

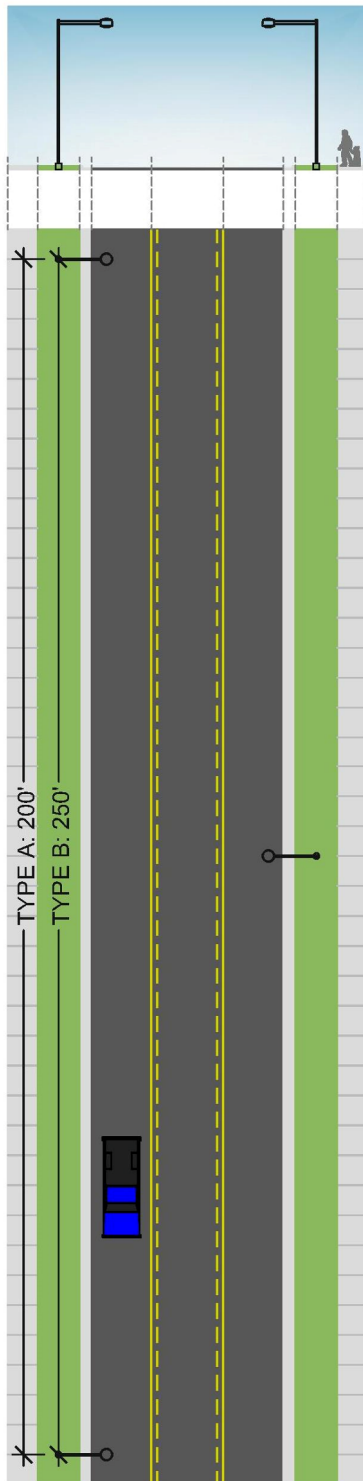
DISTANCE BETWEEN POLE BASES:
TYPE A: 100'-0"
ALTERNATING
TYPE B: 150'-0"
ALTERNATING

POLE TYPE:
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT REQUIRED UNLESS THE STREET IS ADJACENT TO RESIDENTIAL PROPERTY OR LIGHT TRESSPASS IS A CONCERN

COLLECTOR - PRIMARY



LUMINAIRE TYPE:

A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

DISTANCE BETWEEN POLE BASES:

TYPE A: 200'-0"
ALTERNATING
TYPE B: 250'-0"
ALTERNATING

POLE TYPE:

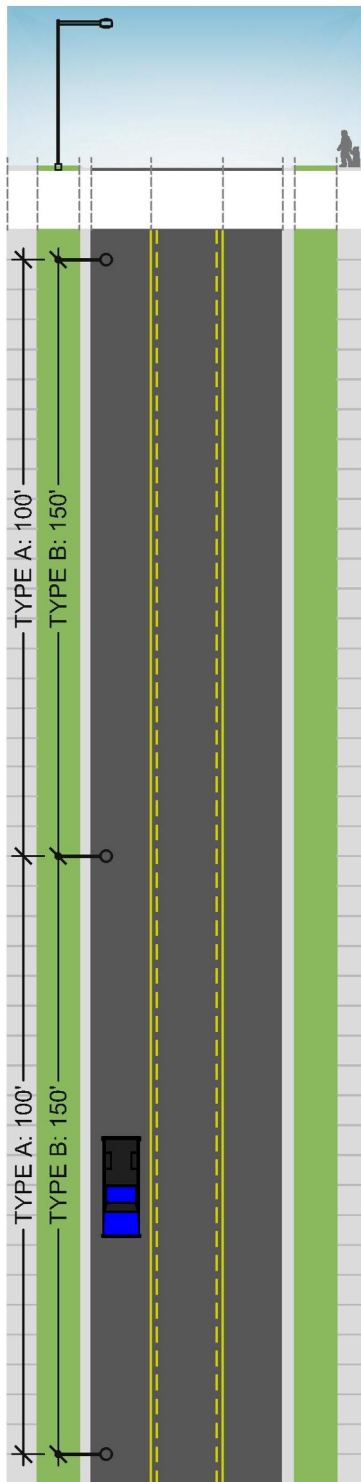
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND
TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT
REQUIRED UNLESS THE
STREET IS ADJACENT TO
RESIDENTIAL PROPERTY OR
LIGHT TRESSPASS IS A
CONCERN

COLLECTOR - SECONDARY



LUMINAIRE TYPE:

A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE

FINISH:

TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

DISTANCE BETWEEN POLE BASES:

TYPE A: 100'-0"
TYPE B: 150'-0"

POLE TYPE:

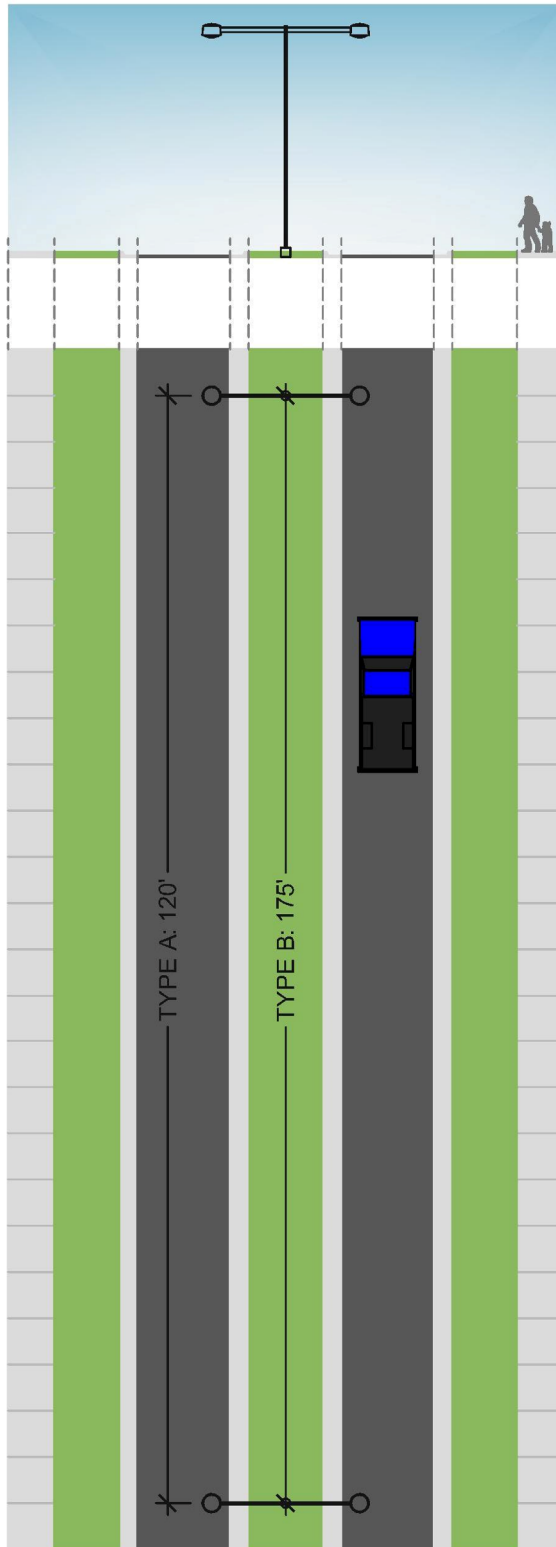
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND
TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT REQUIRED UNLESS THE STREET IS ADJACENT TO RESIDENTIAL PROPERTY OR LIGHT TRESSPASS IS A CONCERN

COLLECTOR WITH MEDIAN - PRIMARY



LUMINAIRE TYPE:

A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: CENTER LINE OF MEDIAN, MINIMUM 3'-0" OFF CURB

DISTANCE BETWEEN POLE BASES:

TYPE A: 120'-0"
TYPE B: 175'-0"

POLE TYPE:

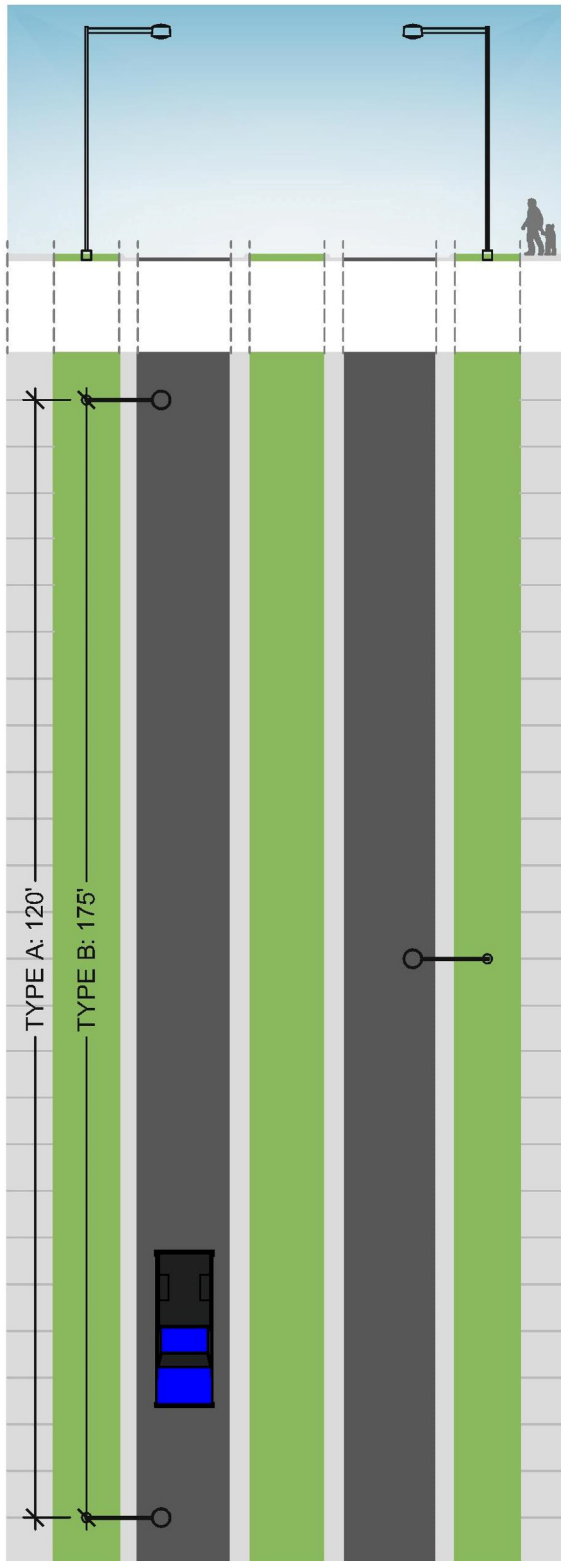
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT REQUIRED

COLLECTOR WITH MEDIAN - SECONDARY



LUMINAIRE TYPE:

A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

DISTANCE BETWEEN POLE BASES:

TYPE A: 120'-0"
ALTERNATING
TYPE B: 175'-0"
ALTERNATING

POLE TYPE:

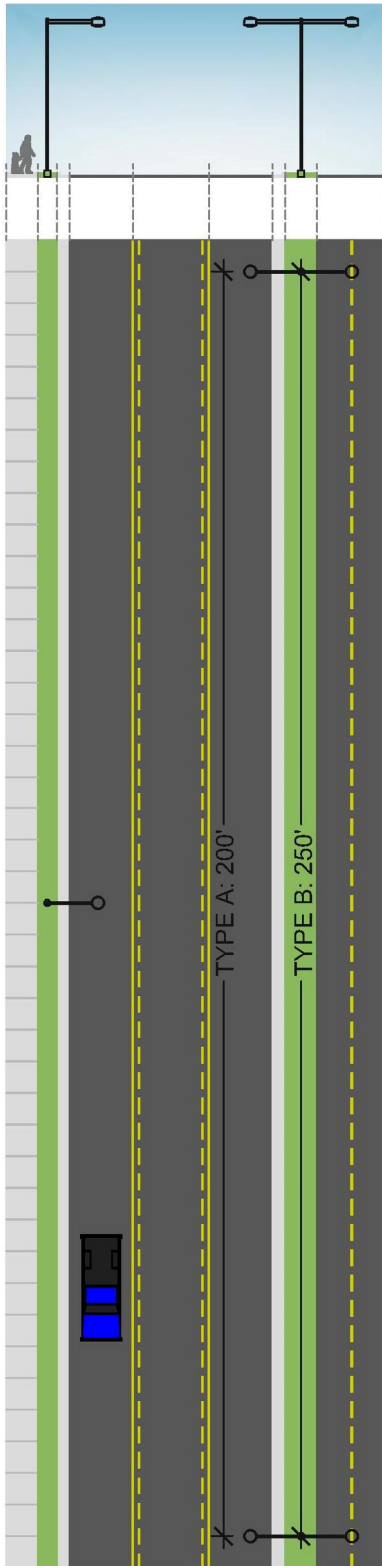
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND
TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT
REQUIRED UNLESS THE
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LIGHT TRESSPASS IS A
CONCERN

COLLECTOR WITH TRAIL - PRIMARY



LUMINAIRE TYPE:

A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

DISTANCE BETWEEN POLE BASES:

TYPE A: 200'-0"
ALTERNATING
TYPE B: 250'-0"
ALTERNATING

POLE TYPE:

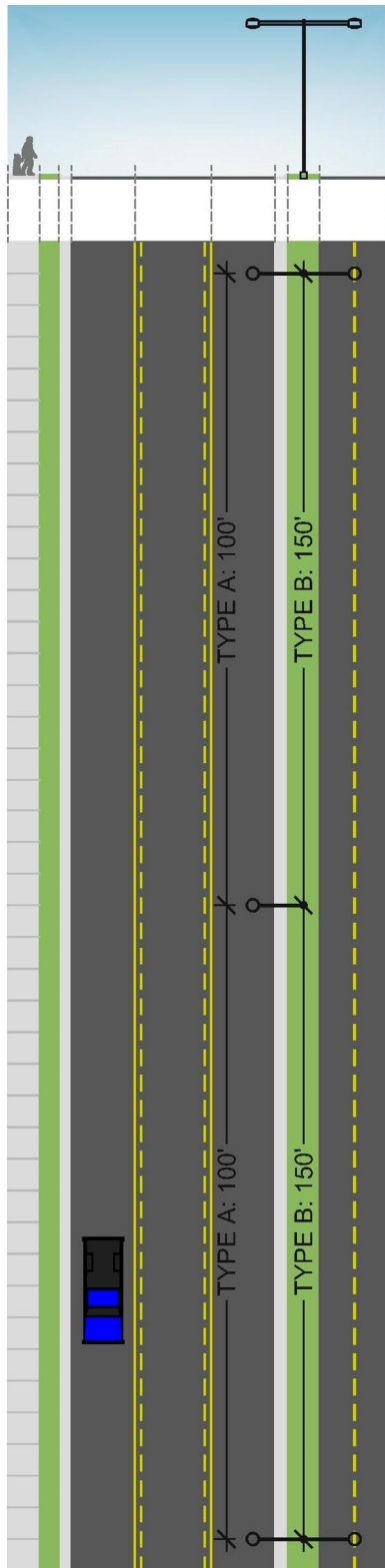
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND
TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT REQUIRED UNLESS THE STREET IS ADJACENT TO RESIDENTIAL PROPERTY OR LIGHT TRESSPASS IS A CONCERN

COLLECTOR WITH TRAIL - SECONDARY



LUMINAIRE TYPE:

A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

DISTANCE BETWEEN POLE BASES:

TYPE A: 100'-0"
TYPE B: 150'-0"

POLE TYPE: TYPE A – 30'

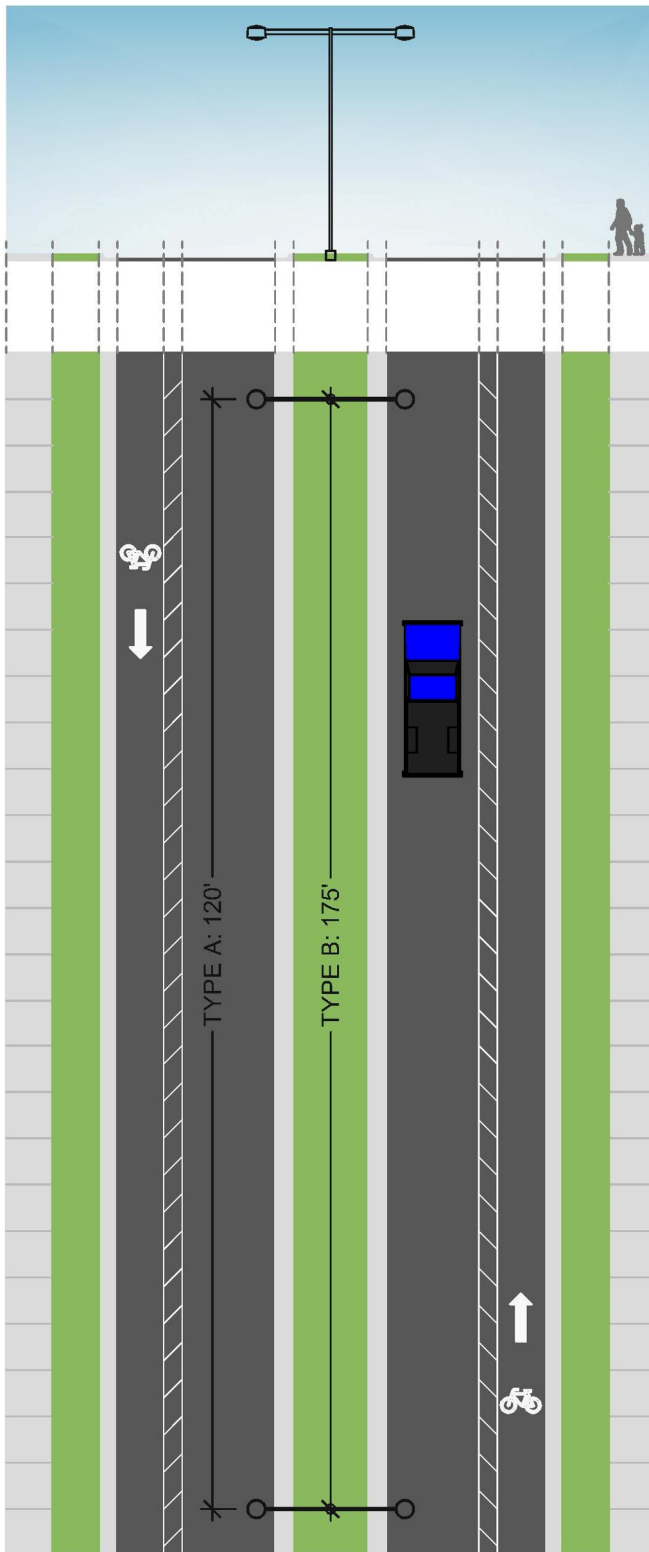
POWER POLE
TYPE B – 30' ROUND
TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT
REQUIRED UNLESS THE
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COLLECTOR WITH BIKE LANES - PRIMARY



LUMINAIRE TYPE:

A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: CENTER LINE OF MEDIAN, MINIMUM 3'-0" OFF CURB

DISTANCE BETWEEN POLE BASES:

TYPE A: 120'-0"
TYPE B: 175'-0"

POLE TYPE:

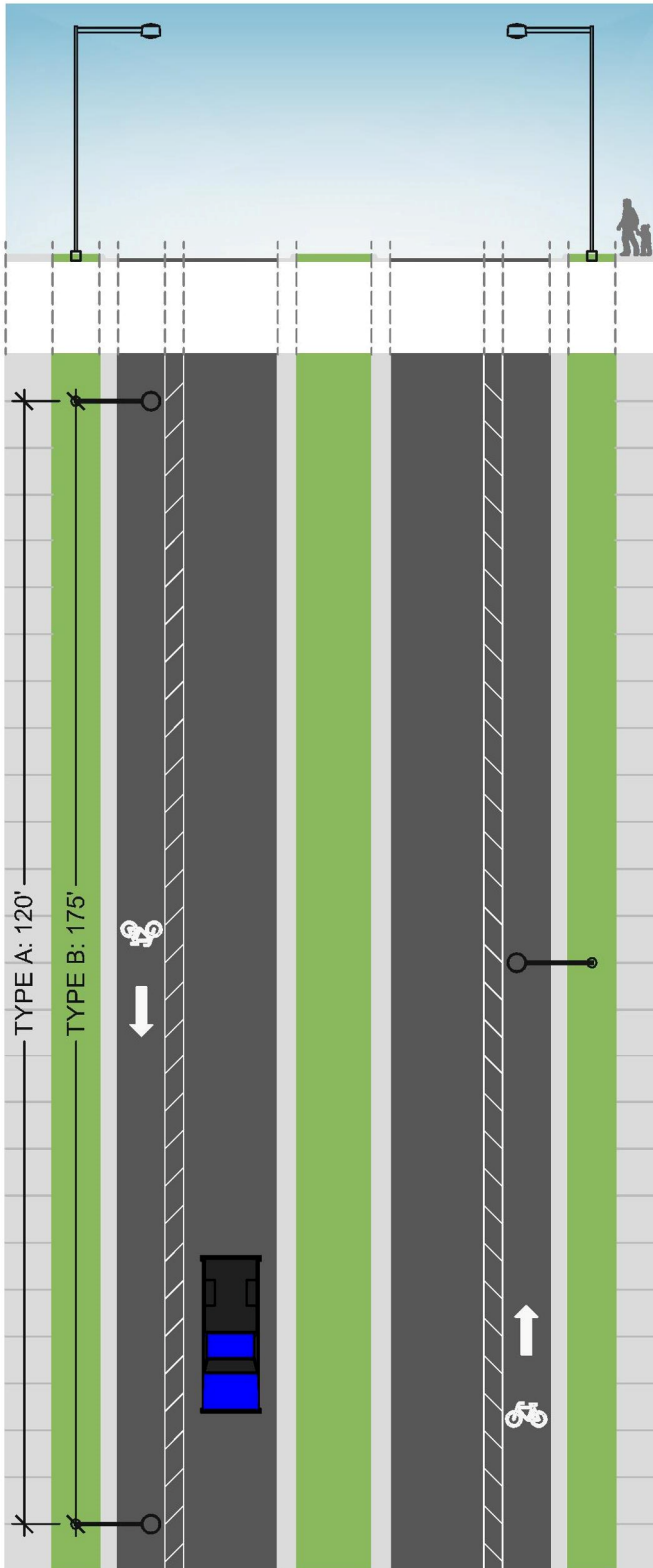
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT REQUIRED

COLLECTOR WITH BIKE LANES - SECONDARY



LUMINAIRE TYPE:

A OR B
(VERIFY WITH DRC)

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
TYPE B - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

DISTANCE BETWEEN POLE BASES:

TYPE A: 120'-0"
ALTERNATING
TYPE B: 175'-0"
ALTERNATING

POLE TYPE:

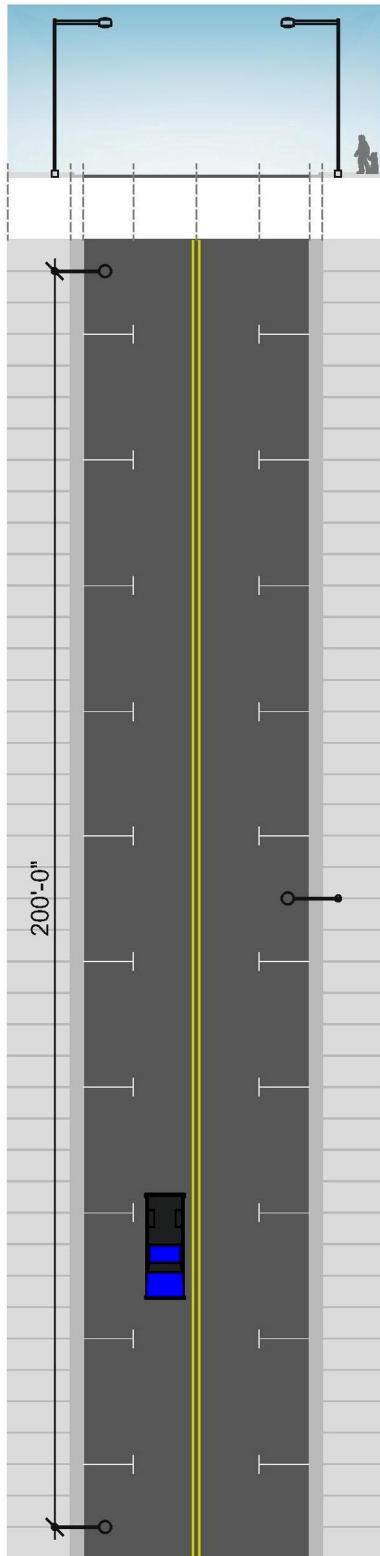
TYPE A – 30' POWER POLE
TYPE B – 30' ROUND
TAPERED STEEL POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT REQUIRED UNLESS THE STREET IS ADJACENT TO RESIDENTIAL PROPERTY OR LIGHT TRESSPASS IS A CONCERN

URBAN COLLECTOR - PRIMARY



LUMINAIRE TYPE: A

LUMINAIRE AND POLE FINISH:
TYPE A – GRAY
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

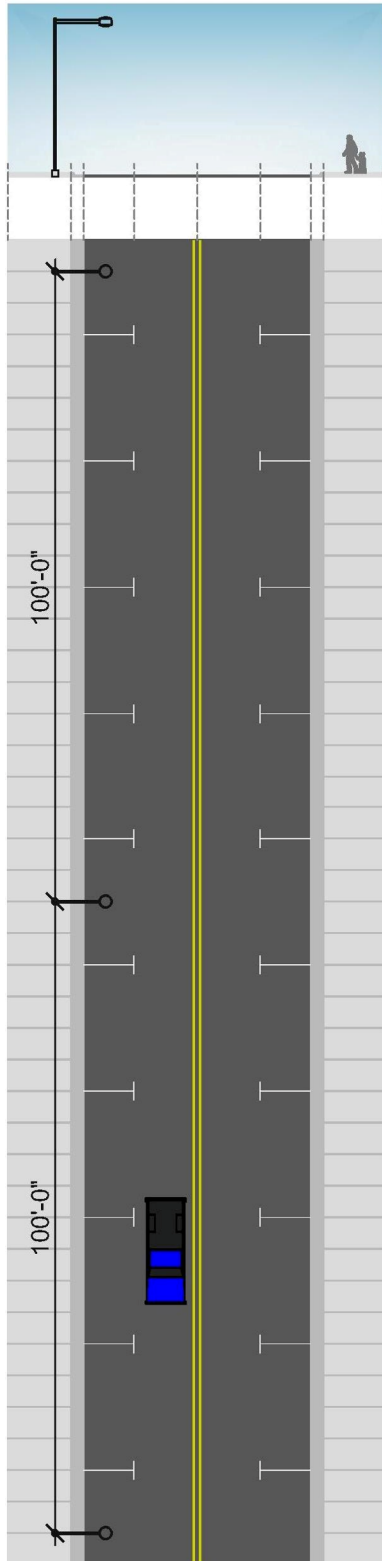
DISTANCE BETWEEN POLE BASES: 200'-0"
ALTERNATING

POLE TYPE:
TYPE A – 30' POWER POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT REQUIRED UNLESS THE STREET IS ADJACENT TO RESIDENTIAL PROPERTY OR LIGHT TRESSPASS IS A CONCERN

URBAN COLLECTOR - SECONDARY



LUMINAIRE TYPE: A

LUMINAIRE AND POLE

FINISH:

TYPE A – GRAY

(OTHER VERIFY WITH DRC)

**POLE BASE DISTANCE OFF
OF CURB:** 3'-0"

**DISTANCE BETWEEN POLE
BASES:** 100'-0"

POLE TYPE:

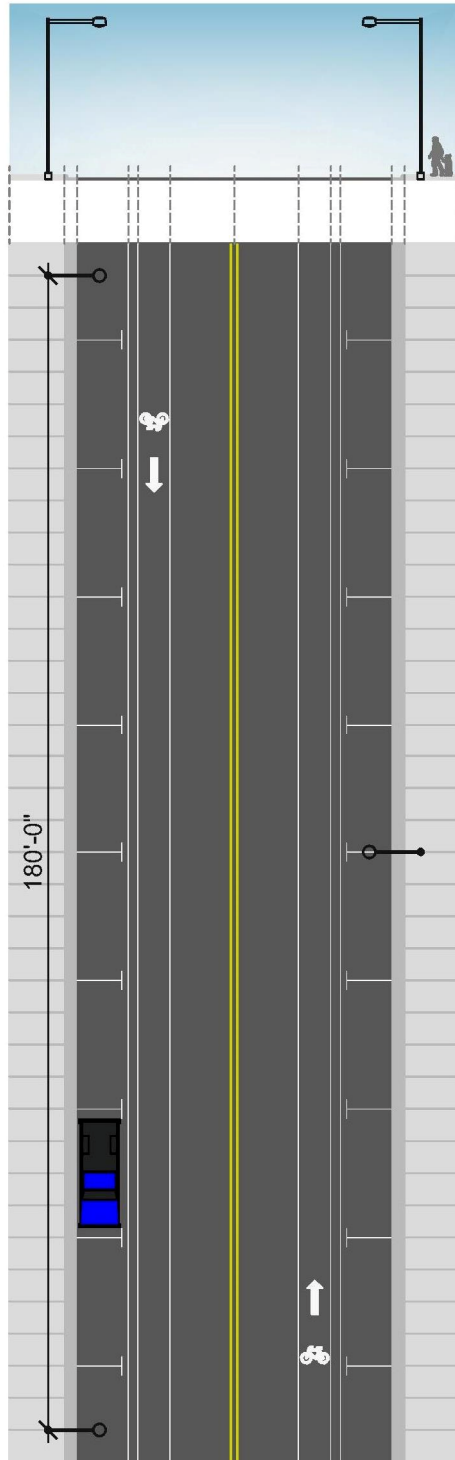
TYPE A – 30' POWER POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT
REQUIRED UNLESS THE
STREET IS ADJACENT TO
RESIDENTIAL PROPERTY
OR LIGHT TRESSPASS IS A
CONCERN

URBAN COLLECTOR WITH BIKE LANES - PRIMARY



LUMINAIRE TYPE: A

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

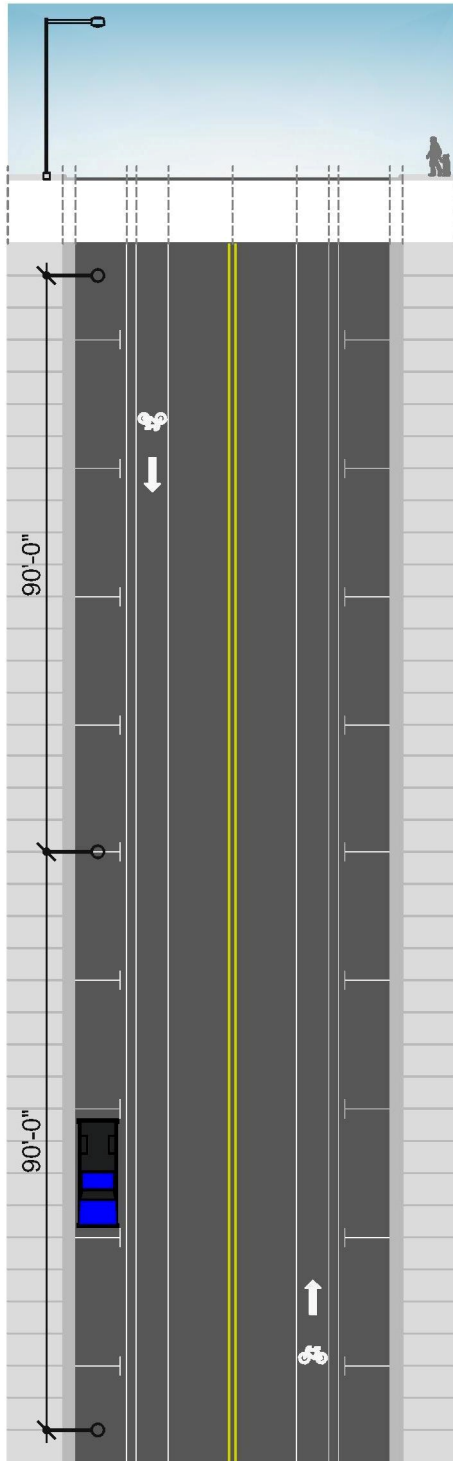
DISTANCE BETWEEN POLE BASES: 180'-0"
ALTERNATING

POLE TYPE:
TYPE A – 30' POWER POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT REQUIRED UNLESS THE STREET IS ADJACENT TO RESIDENTIAL PROPERTY OR LIGHT TRESSPASS IS A CONCERN

URBAN COLLECTOR WITH BIKE LANES - SECONDARY



LUMINAIRE TYPE: A

LUMINAIRE AND POLE

FINISH:

TYPE A – GRAY

(OTHER VERIFY WITH DRC)

**POLE BASE DISTANCE OFF
OF CURB:** 3'-0"

**DISTANCE BETWEEN POLE
BASES:** 90'-0"

POLE TYPE:

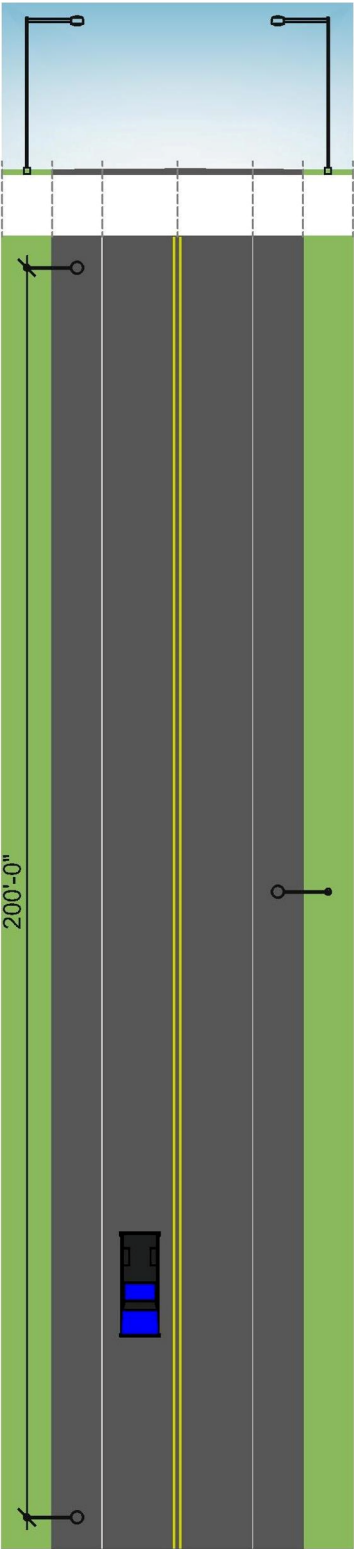
TYPE A – 30' POWER POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT
REQUIRED UNLESS THE
STREET IS ADJACENT TO
RESIDENTIAL PROPERTY
OR LIGHT TRESSPASS IS A
CONCERN

INDUSTRIAL COLLECTOR - PRIMARY



LUMINAIRE TYPE: A

LUMINAIRE AND POLE FINISH:
TYPE A – GRAY
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: 3'-0"

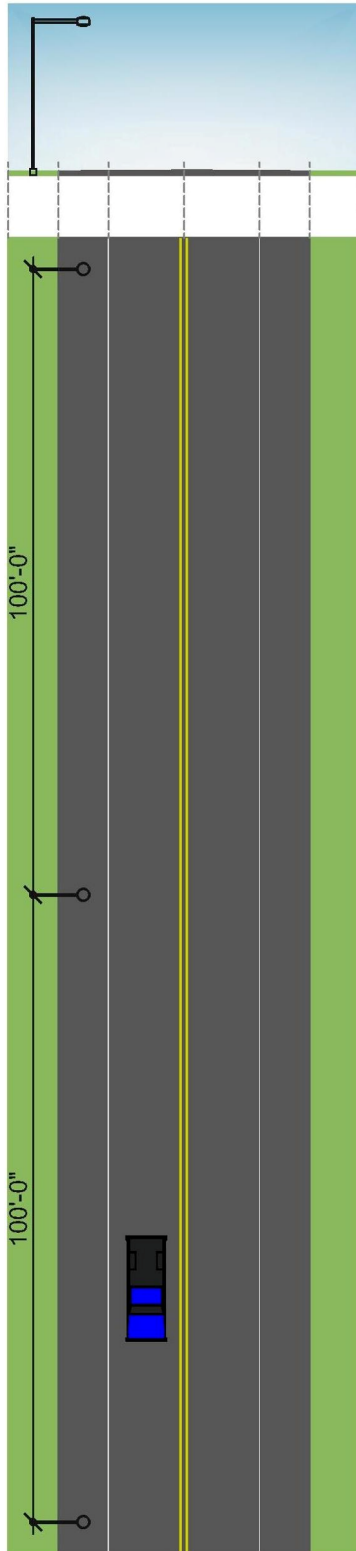
DISTANCE BETWEEN POLE BASES: 200'-0"
ALTERNATING

POLE TYPE:
TYPE A – 30' POWER POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT REQUIRED UNLESS THE STREET IS ADJACENT TO RESIDENTIAL PROPERTY OR LIGHT TRESSPASS IS A CONCERN

INDUSTRIAL COLLECTOR - SECONDARY



LUMINAIRE TYPE: A

LUMINAIRE AND POLE

FINISH:

TYPE A – GRAY
(OTHER VERIFY WITH DRC)

**POLE BASE DISTANCE OFF
OF CURB:** 3'-0"

**DISTANCE BETWEEN POLE
BASES:** 100'-0"

POLE TYPE:

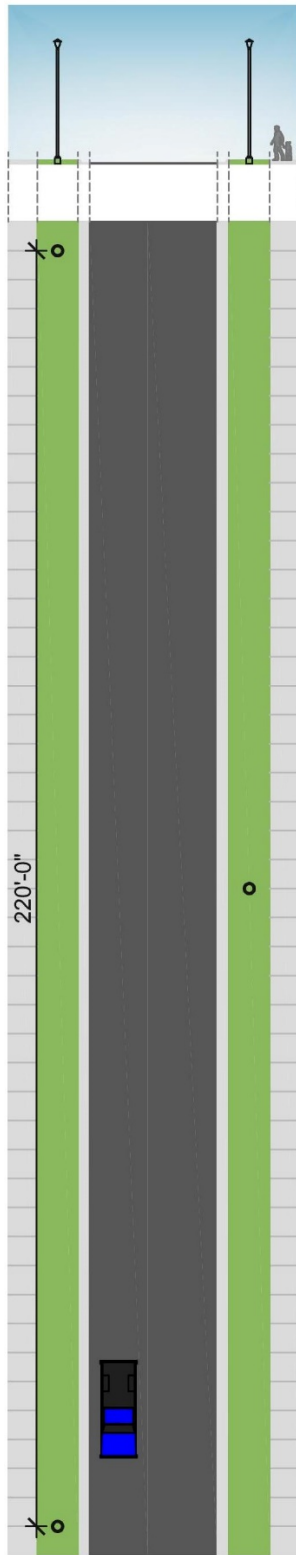
TYPE A – 30' POWER POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT
REQUIRED UNLESS THE
STREET IS ADJACENT TO
RESIDENTIAL PROPERTY
OR LIGHT TRESSPASS IS A
CONCERN

LOCAL STREET - PRIMARY



LUMINAIRE TYPE:
C OR ALTERNATE
APPROVED BY DRC

**LUMINAIRE AND POLE
FINISH:**
TYPE C - BLACK
(OTHER VERIFY WITH DRC)

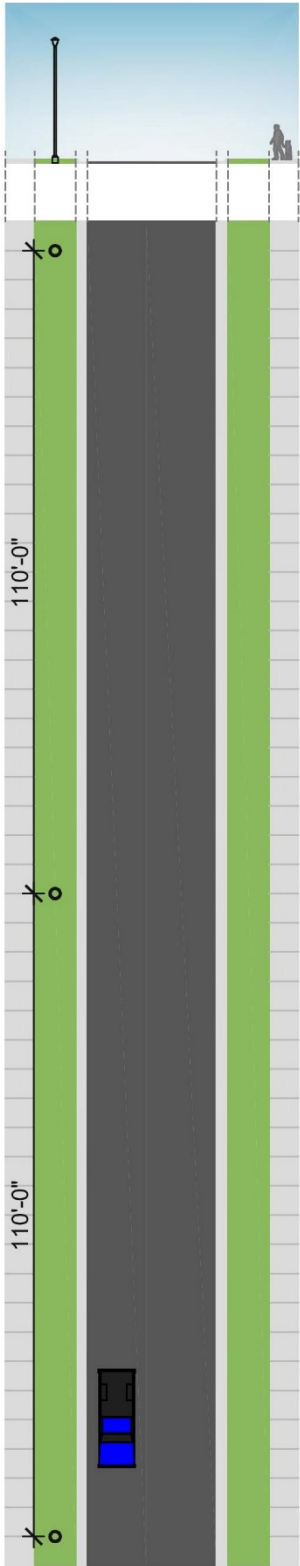
**POLE BASE DISTANCE OFF
OF CURB: 3'-0"**

**DISTANCE BETWEEN POLE
BASES: 220'-0"**
ALTERNATING

POLE TYPE:
TYPE C - 20' ROUND
TAPERED STEEL POLE

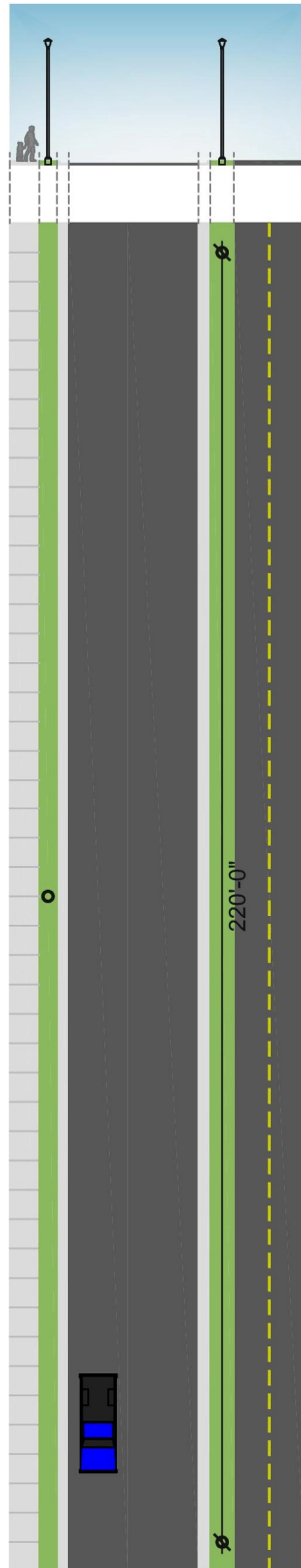
BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT
REQUIRED

LOCAL STREET - SECONDARY



- LUMINAIRE TYPE:**
C OR ALTERNATE
APPROVED BY DRC
- LUMINAIRE AND POLE FINISH:**
TYPE C - BLACK
(OTHER VERIFY WITH DRC)
- POLE BASE DISTANCE OFF OF CURB:** 3'-0"
- DISTANCE BETWEEN POLE BASES:** 110'-0"
- POLE TYPE:**
TYPE C – 20' ROUND
TAPERED STEEL POLE
- BACKLIGHT CONTROL:**
BACKLIGHT CONTROL NOT
REQUIRED

LOCAL STREET WITH TRAIL - PRIMARY



LUMINAIRE TYPE:
C OR ALTERNATE
APPROVED BY DRC

**LUMINAIRE AND POLE
FINISH:**
TYPE C - BLACK
(OTHER VERIFY WITH DRC)

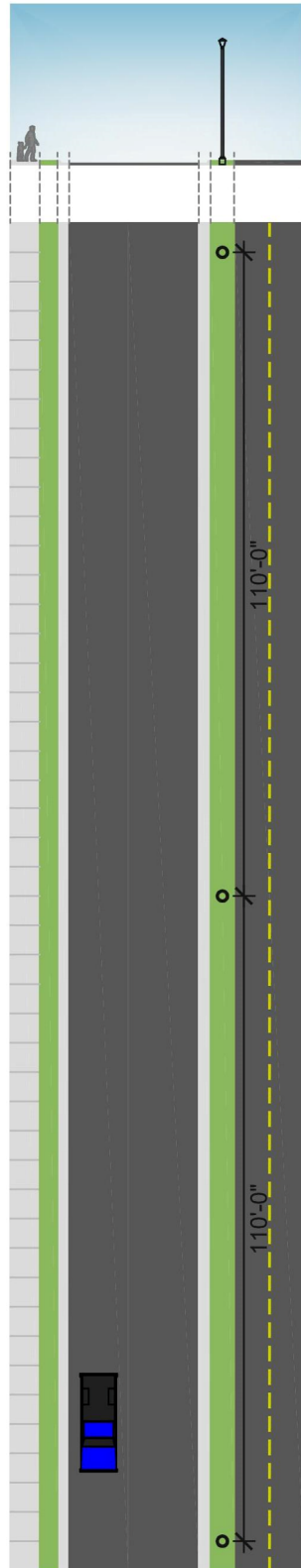
**POLE BASE DISTANCE OFF
OF CURB: 3'-0"**

**DISTANCE BETWEEN POLE
BASES: 220'-0"**
ALTERNATING

POLE TYPE:
TYPE C - 20' ROUND
TAPERED STEEL POLE

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT
REQUIRED

LOCAL STREET WITH TRAIL - SECONDARY



LUMINAIRE TYPE:
C OR ALTERNATE
APPROVED BY DRC

**LUMINAIRE AND POLE
FINISH:**
TYPE C - BLACK
(OTHER VERIFY WITH DRC)

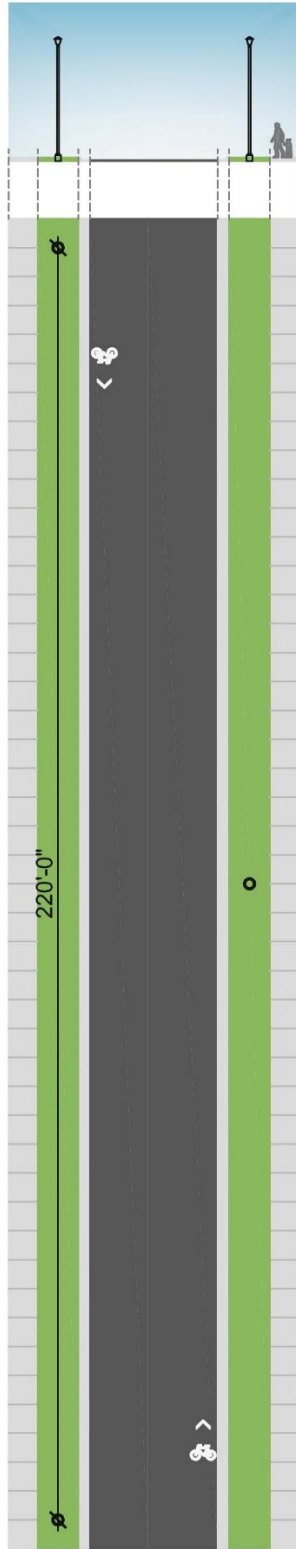
**POLE BASE DISTANCE OFF
OF CURB: 3'-0"**

**DISTANCE BETWEEN POLE
BASES: 110'-0"**

POLE TYPE:
TYPE C – 20' ROUND
TAPERED STEEL POLE

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT
REQUIRED

LOCAL STREET WITH BIKE ROUTE - PRIMARY



LUMINAIRE TYPE:
C OR ALTERNATE
APPROVED BY DRC

**LUMINAIRE AND POLE
FINISH:**
TYPE C - BLACK
(OTHER VERIFY WITH DRC)

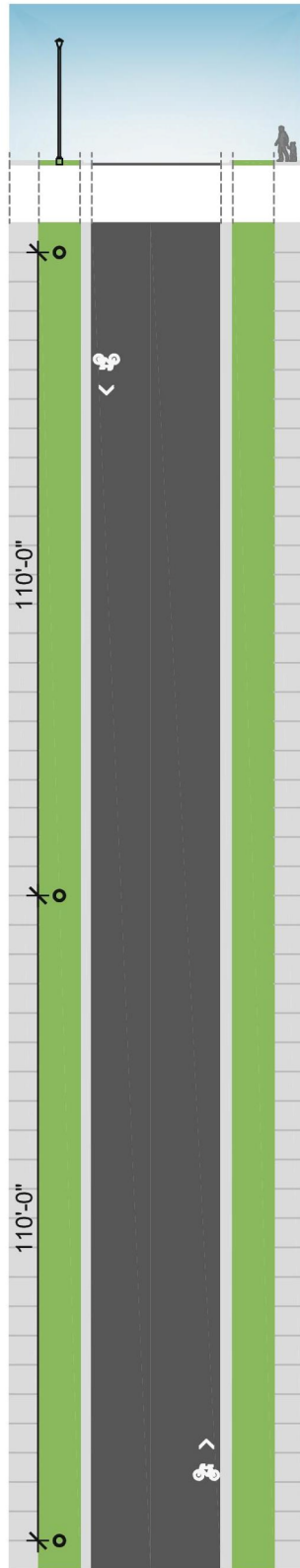
**POLE BASE DISTANCE OFF
OF CURB: 3'-6"**

**DISTANCE BETWEEN POLE
BASES: 220'-0"**
ALTERNATING

POLE TYPE:
TYPE C – 20' ROUND
TAPERED STEEL POLE

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT
REQUIRED

LOCAL STREET WITH BIKE ROUTE - SECONDARY



LUMINAIRE TYPE:
C OR ALTERNATE
APPROVED BY DRC

**LUMINAIRE AND POLE
FINISH:**
TYPE C - BLACK
(OTHER VERIFY WITH DRC)

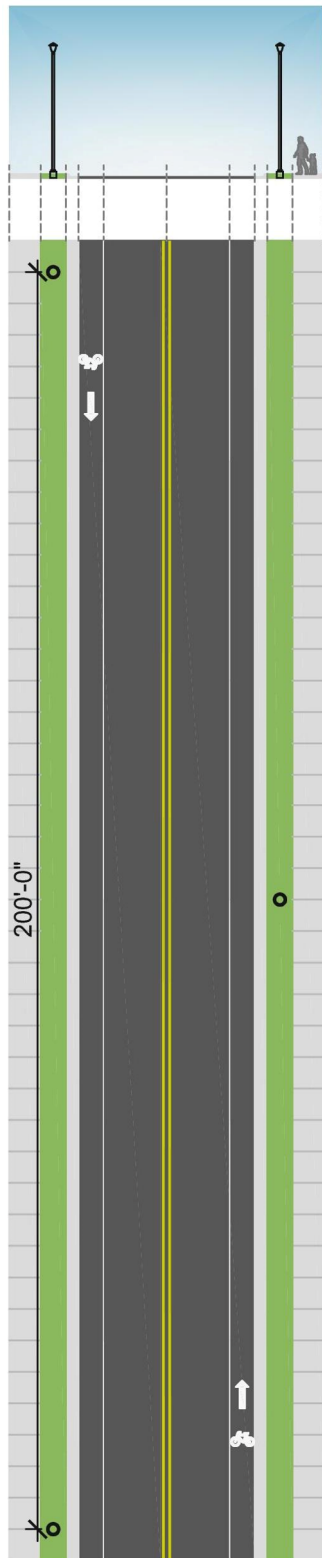
**POLE BASE DISTANCE OFF
OF CURB: 3'-6"**

**DISTANCE BETWEEN POLE
BASES: 110'-0"**

POLE TYPE:
TYPE C - 20' ROUND
TAPERED STEEL POLE

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT
REQUIRED

LOCAL STREET WITH BIKE LANES - PRIMARY



LUMINAIRE TYPE:
C OR ALTERNATE
APPROVED BY DRC

**LUMINAIRE AND POLE
FINISH:**
TYPE C - BLACK
(OTHER VERIFY WITH DRC)

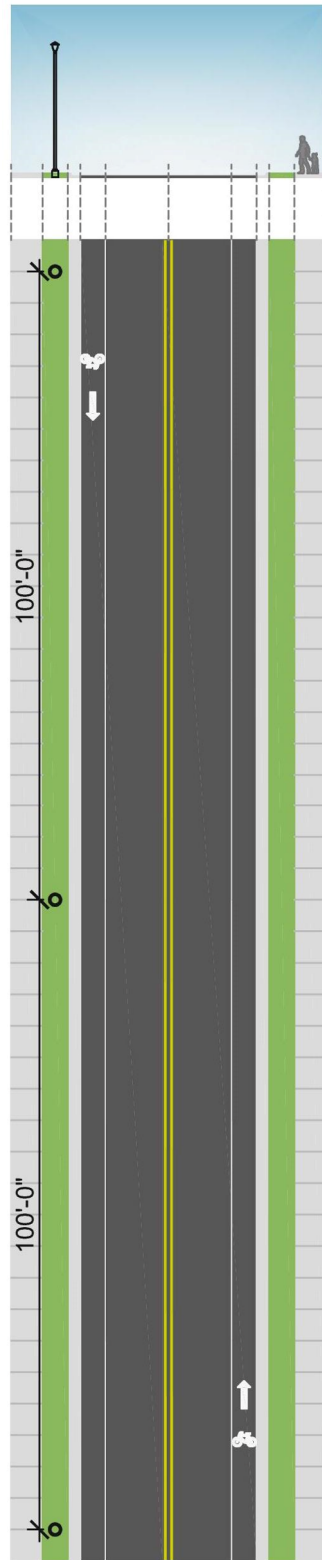
**POLE BASE DISTANCE OFF
OF CURB: 3'-0"**

**DISTANCE BETWEEN POLE
BASES: 200'-0"**
ALTERNATING

POLE TYPE:
TYPE C - 20' ROUND
TAPERED STEEL POLE

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT
REQUIRED

LOCAL STREET WITH BIKE LANES - SECONDARY



LUMINAIRE TYPE:
C OR ALTERNATE
APPROVED BY DRC

**LUMINAIRE AND POLE
FINISH:**
TYPE C - BLACK
(OTHER VERIFY WITH DRC)

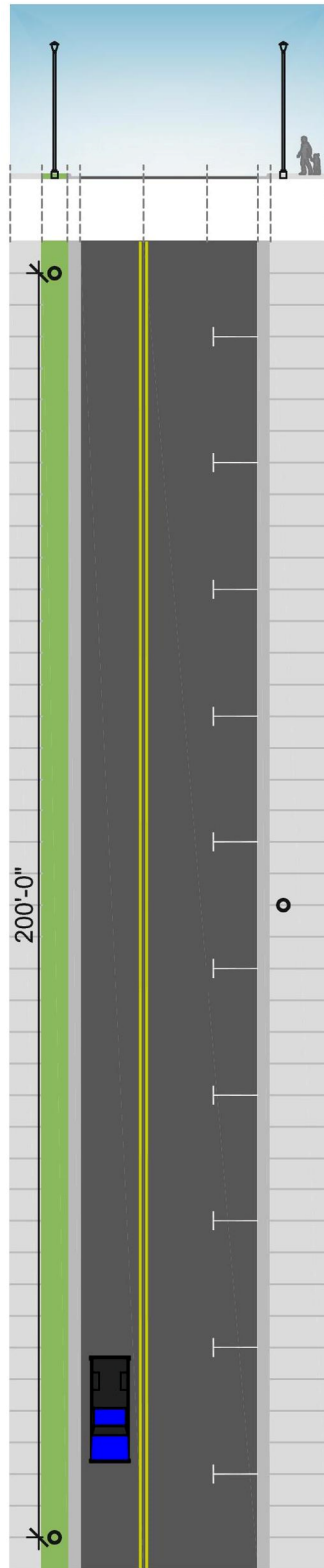
**POLE BASE DISTANCE OFF
OF CURB: 3'-0"**

**DISTANCE BETWEEN POLE
BASES: 100'-0"**

POLE TYPE:
TYPE C – 20' ROUND
TAPERED STEEL POLE

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT
REQUIRED

LOCAL STREET WITH PARKING LANE - PRIMARY



LUMINAIRE TYPE:
C OR ALTERNATE
APPROVED BY DRC

**LUMINAIRE AND POLE
FINISH:**
TYPE C - BLACK
(OTHER VERIFY WITH DRC)

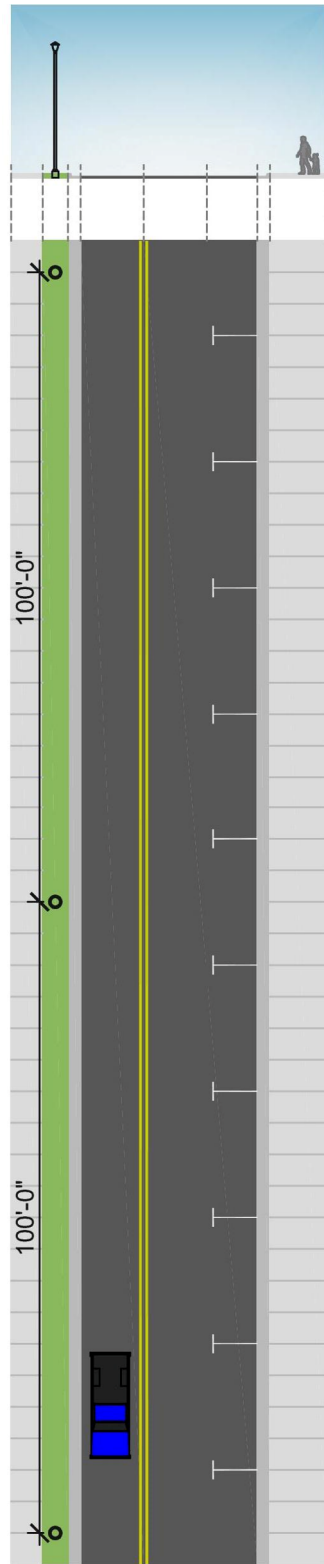
**POLE BASE DISTANCE OFF
OF CURB: 3'-0"**

**DISTANCE BETWEEN POLE
BASES: 200'-0"**
ALTERNATING

POLE TYPE:
TYPE C - 20' ROUND
TAPERED STEEL POLE

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT
REQUIRED

LOCAL STREET WITH PARKING LANE - SECONDARY



LUMINAIRE TYPE:
C OR ALTERNATE
APPROVED BY DRC

**LUMINAIRE AND POLE
FINISH:**
TYPE C - BLACK
(OTHER VERIFY WITH DRC)

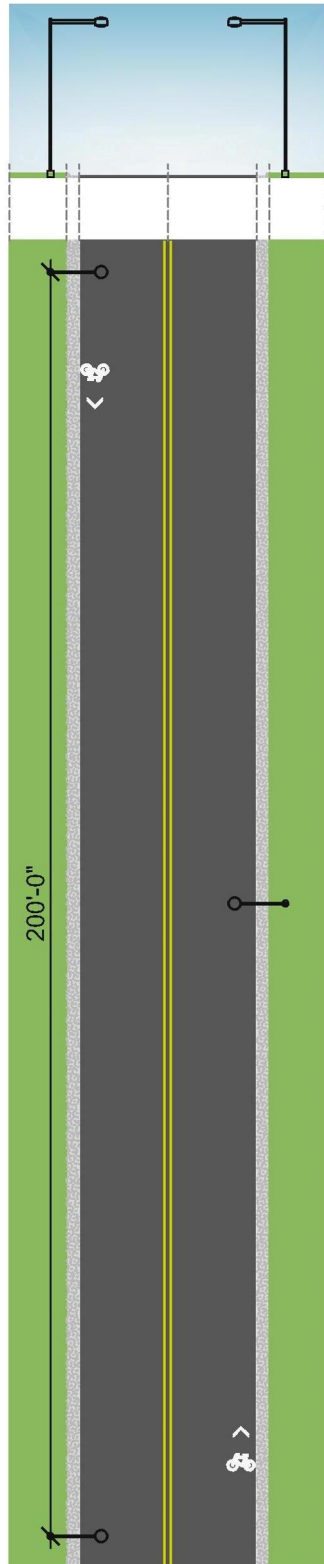
**POLE BASE DISTANCE OFF
OF CURB: 3'-0"**

**DISTANCE BETWEEN POLE
BASES: 100'-0"**

POLE TYPE:
TYPE C – 20' ROUND
TAPERED STEEL POLE

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT
REQUIRED

RURAL LOCAL STREET - PRIMARY



LUMINAIRE TYPE: A

LUMINAIRE AND POLE

FINISH:

TYPE A - GRAY

(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF

OF CURB: 3'-0"

DISTANCE BETWEEN POLE

BASES: 200'-0"

ALTERNATING

POLE TYPE:

TYPE A – 30' POWER POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT

REQUIRED UNLESS THE

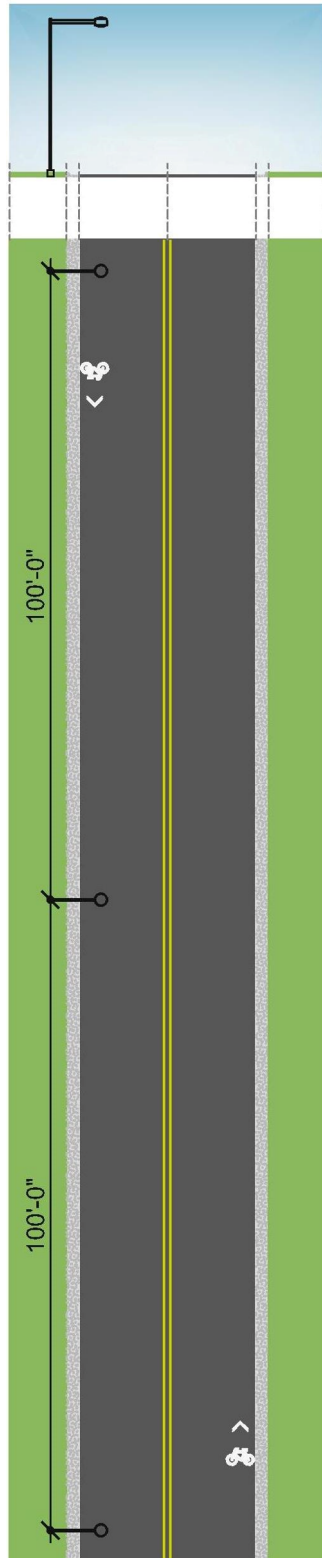
STREET IS ADJACENT TO

RESIDENTIAL PROPERTY

OR LIGHT TRESSPASS IS A

CONCERN

RURAL LOCAL STREET - SECONDARY



LUMINAIRE TYPE: A

LUMINAIRE AND POLE

FINISH:

TYPE A - GRAY

(OTHER VERIFY WITH DRC)

**POLE BASE DISTANCE OFF
OF CURB:** 3'-0"

**DISTANCE BETWEEN POLE
BASES:** 100'-0"

POLE TYPE:

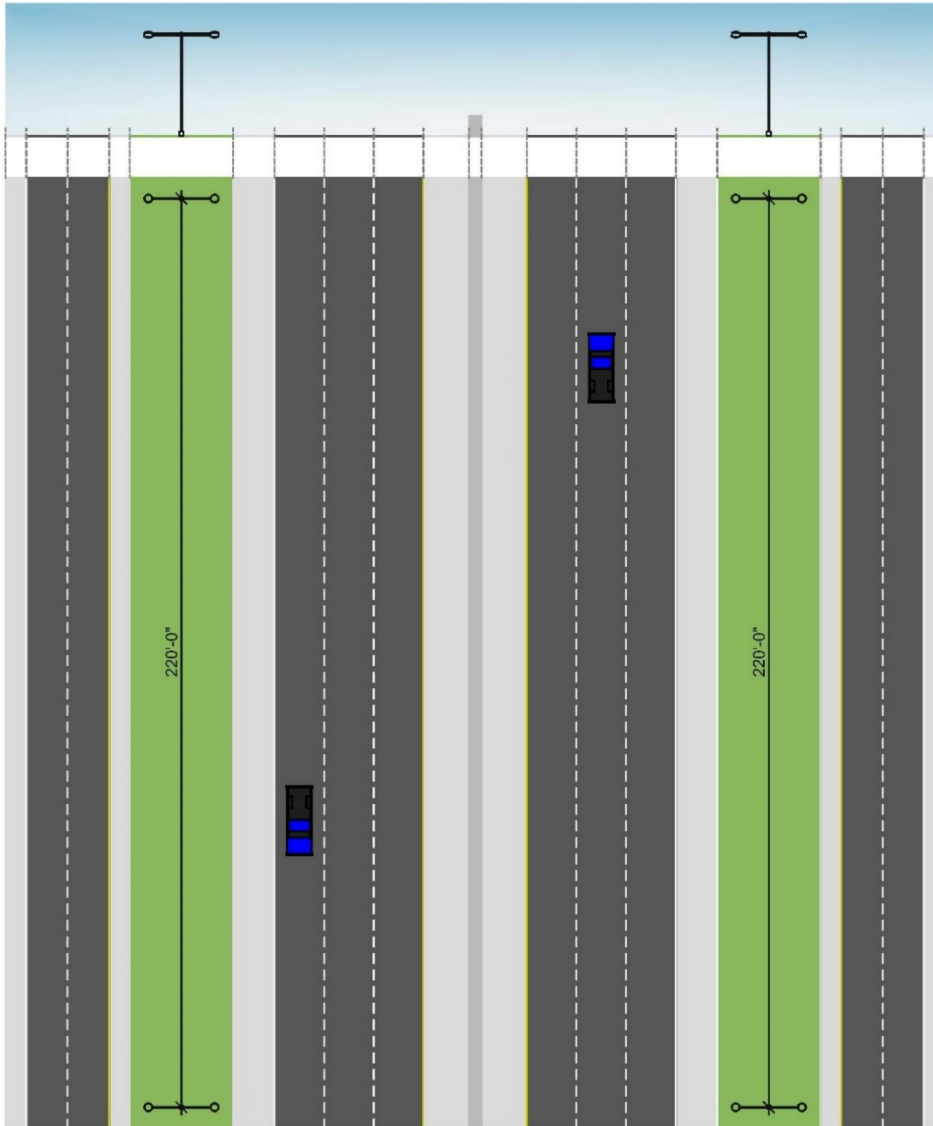
TYPE A – 30' POWER POLE

MOUNTING ARM LENGTH: 8'

BACKLIGHT CONTROL:

BACKLIGHT CONTROL NOT
REQUIRED UNLESS THE
STREET IS ADJACENT TO
RESIDENTIAL PROPERTY
OR LIGHT TRESSPASS IS A
CONCERN

INTERSTATE 30



LUMINAIRE TYPE: D

LUMINAIRE AND POLE FINISH:
TYPE D - GRAY
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF OF CURB: CENTER LINE OF MEDIAN BETWEEN SERVICE ROAD AND INTERSTATE, MINIMUM 30'-0" CLEAR OF INTERSTATE TRAFFIC LANES

DISTANCE BETWEEN POLE BASES: 220'-0"

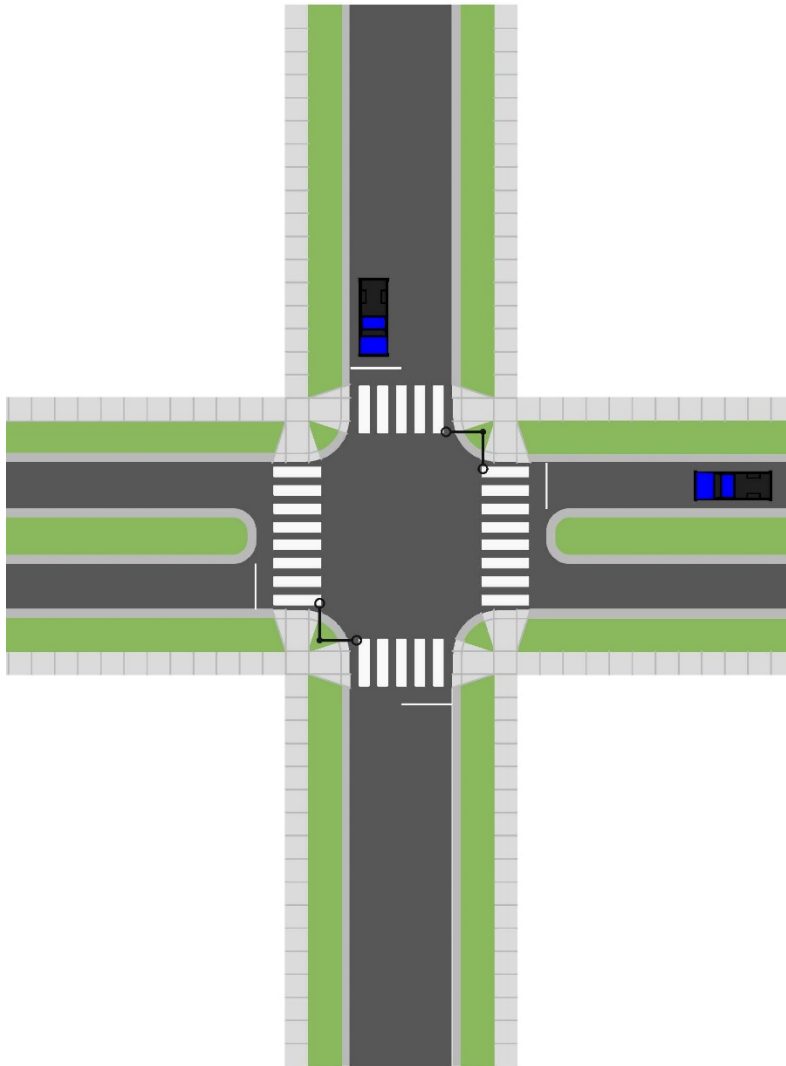
POLE TYPE:
TYPE D – 40' ROUND TAPERED STEEL POLE

MOUNTING ARM LENGTH:
12'

BACKLIGHT CONTROL:
BACKLIGHT CONTROL NOT REQUIRED

NOTES: IF MEDIAN BETWEEN INTERSTATE AND SERVICE ROAD IS MORE THAN 25' WIDE, SPACING MAY REQUIRE CHANGES FOR PROPER LIGHTING LEVELS PER AASHTO RECOMMENDATIONS. ALL LIGHTING WORK ASSOCIATED WITH INTERSTATES AND HIGHWAYS MUST BE REVIEWED, ACCEPTED, AND PERMITTED BY ARKANSAS DEPARTMENT OF TRANSPORTATION. REFER TO ADDITIONAL NOTES ON PAGE 47.

TYPICAL STREET INTERSECTION



LUMINAIRE TYPE:

A, B, OR C
(VERIFY WITH DSC)

LUMINAIRE AND POLE FINISH:

TYPE A – GRAY
TYPE B OR C - BLACK
(OTHER VERIFY WITH DRC)

POLE BASE DISTANCE OFF

OF CURB: MINIMUM 3'-0"
OFF CURB

DISTANCE BETWEEN POLE

BASES: ADJACENT
CORNERS OF STREET
INTERSECTION

POLE TYPE:

TYPE A – 30' POWER POLE
TYPE B – 30' TAPERED
STEEL POLE
TYPE C – 20' TAPERED
STEEL POLE.

MOUNTING ARM LENGTH:

8' FOR TYPE A OR B. NO
ARM FOR TYPE C.

BACKLIGHT CONTROL:

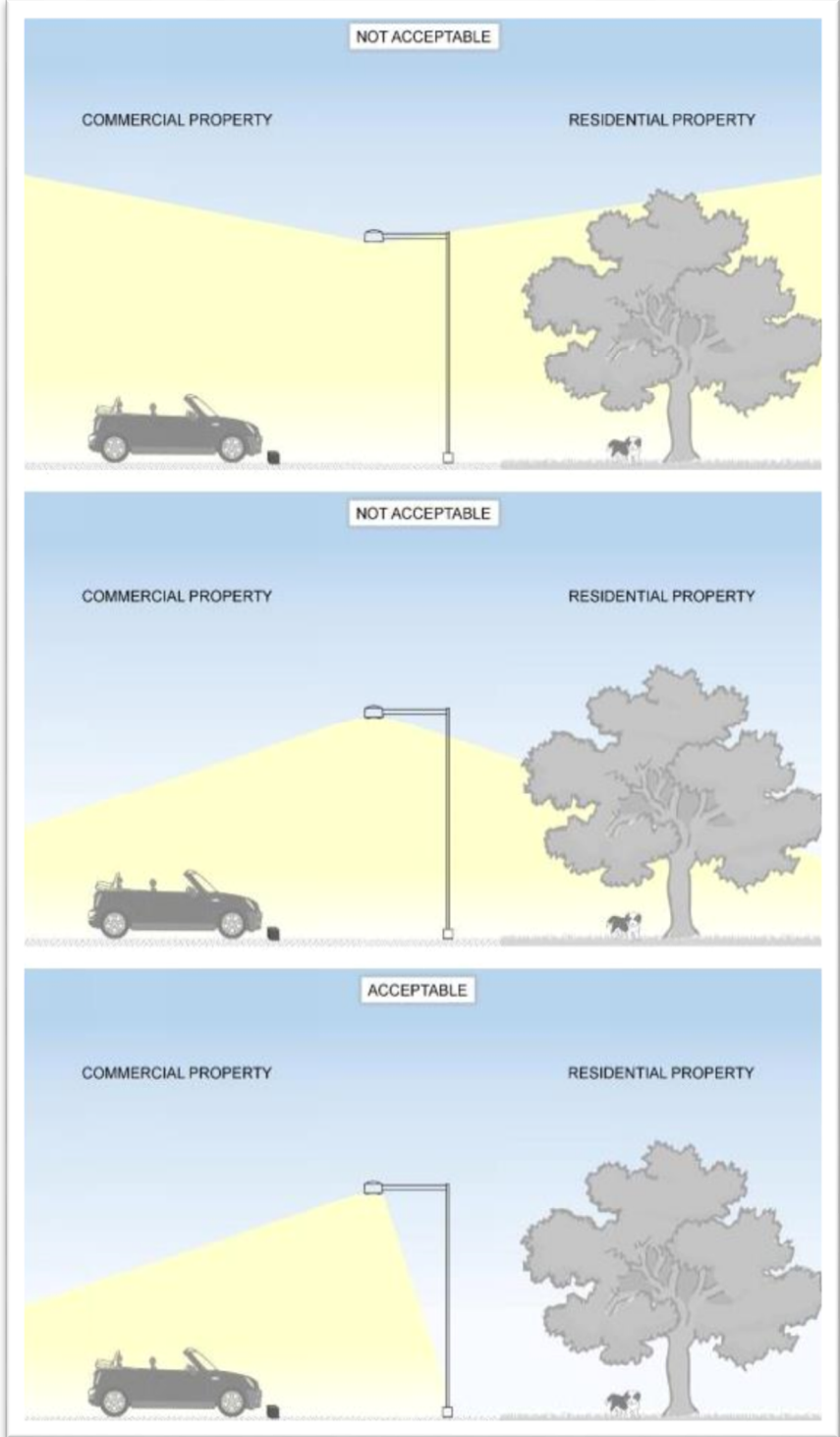
BACKLIGHT CONTROL NOT
REQUIRED UNLESS THE
STREET IS ADJACENT TO
RESIDENTIAL PROPERTY
OR LIGHT TRESSPASS IS A
CONCERN

NOTES:

IF INTERSECTION TRAFFIC
LIGHTS EXIST, LUMINAIRES
MAY BE MOUNTED TO
TRAFFIC LIGHT POLES
(VERIFY WITH DRC).

COMMERCIAL PROPERTY REQUIREMENTS

All commercial properties are required to have night time lighting for security within the City of Bryant. The City of Bryant requires IES recommended lighting levels and contrast ratios be utilized for design of commercial property exterior lighting. The most current energy code adopted by the City of Bryant shall be referred to for control of commercial property lighting. The City of Bryant recommends night time commercial property lighting to be on all night long. If LED dark sky compliant lighting is utilized on the property, it is acceptable to dim the exterior lighting in a uniform manner to 20% when motion controls detect no occupancy after business hours.



The City of Bryant recommends night time commercial property lighting to be on all night long. If LED dark sky compliant lighting is utilized on the property, it is acceptable to dim the exterior lighting in a uniform manner to 20% when motion controls detect no occupancy after business hours.

Exterior parking lot and canopy lighting is recommended to be dark sky compliant. Pole mounted area lighting or canopy luminaires should not be tilted, aimed, and shall not have a drop lens in order to improve security and driver safety within the City of Bryant.

Façade lighting is acceptable when aimed in a way that will not cause security or driver safety concerns due to glare. The preferred method for façade lighting is to mount the luminaires as close to the building as possible and aim at the building only in order to ensure no glare for vehicles.

Lighting on commercial properties adjacent to residential properties shall be designed to minimize light trespass on the residential property. Backlight control optics or house side shields are required on area luminaires mounted along property lines. Luminaires shall not be aimed towards the residential properties in order to minimize light trespass when possible. Tilted luminaires, light globes, and sagging luminaire lens are not recommended in order to minimize light trespass.

DARK SKY COMPLIANCE

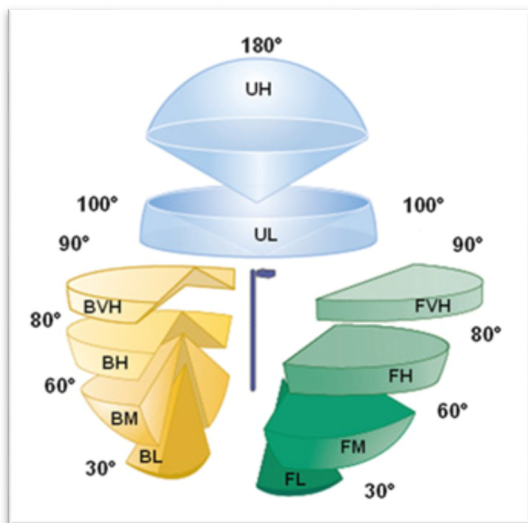
The City of Bryant requires all lighting to meet Arkansas Shielded Outdoor Lighting Act. All utility and alternate luminaires shall meet dark sky compliance recommendations. Dark sky compliance reduces light pollution and allows stars to be visible in the night sky. Alternate luminaires used on projects, other than the pre-selected luminaires from the utility companies, will need to be submitted to the Bryant Design Review Committee for approval prior to construction. The alternate luminaire submittal are recommended to have a B.U.G. rating associated for backlight, up light, and glare. The B.U.G. acronym describes the amount of light emitted from a street luminaire's housing. The B.U.G. rating divides the lighting in to segments in order to define the rating system.



The “B” within the B.U.G. rating designates backlight or the amount of light that shines behind the pole. Backlighting will not be restricted unless it’s adjacent to a residential property. Backlighting is preferred when bike paths, trails, or sidewalks are adjacent to a street. Backlighting will allow these walking paths to be properly illuminated without additional luminaires.

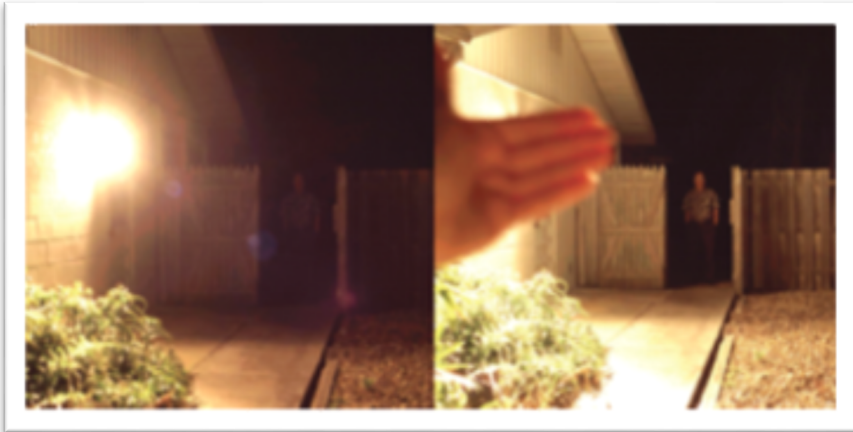
The “U” within the B.U.G. rating designates up light or the amount of light above the horizontal plane of the luminaire lens. Uplighting has a recommended rating of U0 or zero up light. Full cut off luminaires will be acceptable to meet this recommendation. Zero up light ensures the luminaire is suitable for dark sky compliance standards.

The “G” within the B.U.G. rating designates glare at specific angles around the light pole. Tilting or aimed luminaires is not a recommended mounting practice within the City of Bryant, due to glare and security risks. All luminaire types shall pass the Arkansas’s Shielded Outdoor Lighting Act.



LEGEND FOR GRAPHIC TO LEFT:

UH – UPLIGHT HIGH	UL – UPLIGHT LOW
BVH – BACK LIGHT VERY HIGH	FVH – FORWARD LIGHT VERY HIGH
BH – BACK LIGHT HIGH	FH – FORWARD LIGHT HIGH
BM – BACK LIGHT MEDIUM	FM – FORWARD LIGHT MEDIUM
BL – BACK LIGHT LOW	FL – FORWARD LIGHT LOW



The photo to the left demonstrates why glare is not a quality lighting practice when security is a concern. A silhouette of a man is standing in the gate of both photos; however, the man is barely visible in the left photo due to glare from the wall mounted tilted luminaire. Once the glare component of the lighting is covered, the eye can easily focus and see security risks beyond the luminaire. The restriction of tilted or aimed lighting within the City of Bryant will increase security by improving visibility.

Small improvements to lighting practices within the City of Bryant will improve the quality of life for the residences and create a safer city. While tilted, aimed, or sagging lens exterior luminaires seem to improve security by throwing light in all directions, the practice is actually creating the opposite effect. These types of poor lighting practices create an unsafe environment, light pollution, and waste energy.

Dark sky compliance improves security, visibility of the night sky, aids in sustainability with energy savings, and protects the environment from light pollution. All of these improvements connected to dark sky compliant exterior luminaires will create an improved quality of life for the residence within the City of Bryant.



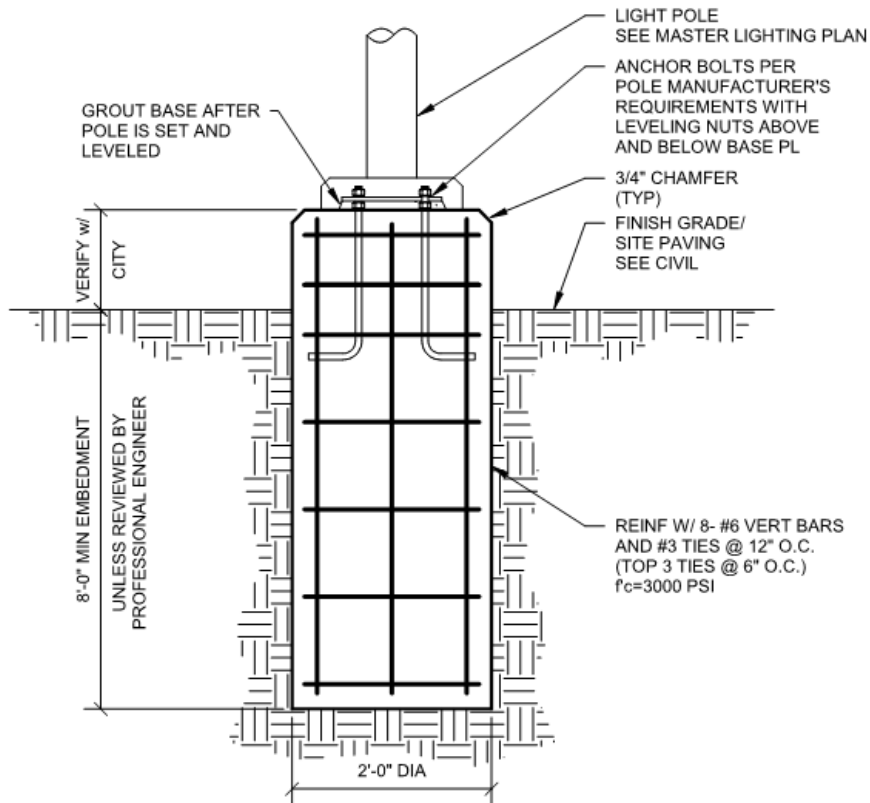
POLE BASE DETAILS

Luminaire type "A" shall have a 30' steel tapered pole or be mounted to wood utility power pole at utility recommended mounting height. Luminaire type "B" shall be mounted to 30' steel tapered pole. Refer to pole base detail below for luminaire type "A" or "B" steel tapered pole.

LIGHT POLE BASE DETAIL - LUMINAIRE TYPE A OR B PRELIMINARY NOT FOR CONSTRUCTION

NOTES:

1. DESIGN OF LIGHT POLE FOUNDATION IS BASED UPON MAXIMUM OVERALL HEIGHT FROM FINISH GRADE TO TOP OF LIGHT POLE OF 30'-0", TWO (2) 8' LONG ARMS AND ONE (1) LUMINAIRE ON EACH ARM WITH MAXIMUM EFFECTIVE PROJECTED AREA OF 1 SQ FT. MAXIMUM OVERALL HEIGHT OF 30'-0".
2. SEE SUPPLIER DRAWINGS FOR ALL CONDUITS AND OTHER ELECTRICAL INFORMATION NOT SHOWN OR NOTED OTHERWISE.
3. LIGHT POLE FOUNDATION TO BE LOCATED A MINIMUM OF 2'-0" AWAY FROM ROADWAYS OR OTHER UTILITIES. REFER TO MASTER LIGHTING PLAN.
4. REINFORCING STEEL IS ASTM 615 (Fy = 60 KSI)
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH IS 3000 PSI
6. SUBMIT CONCRETE MIX DESIGNS FOR REVIEW
7. THIS DESIGN IS ABLE TO BE MODIFIED IF SOILS INVESTIGATION IS PERFORMED AND STRUCTURAL ANALYSIS IS PERFORMED TO DETERMINE EMBEDMENT DEPTH BY STRUCTURAL ENGINEER. SUBMIT REVISED DRAWINGS FOR REVIEW TO DRC.
8. PROVIDE HANDHOLE 2" FROM BOTTOM OF POLE FOR MAINTENANCE.
9. PROVIDE 120V DUPLEX RECEPTACLE WITHIN HANDHOLE WHEN REQUESTED BY DRC.
10. ALL POLES SHALL HAVE AN INTERNAL VIBRATION DAMPER SYSTEM.

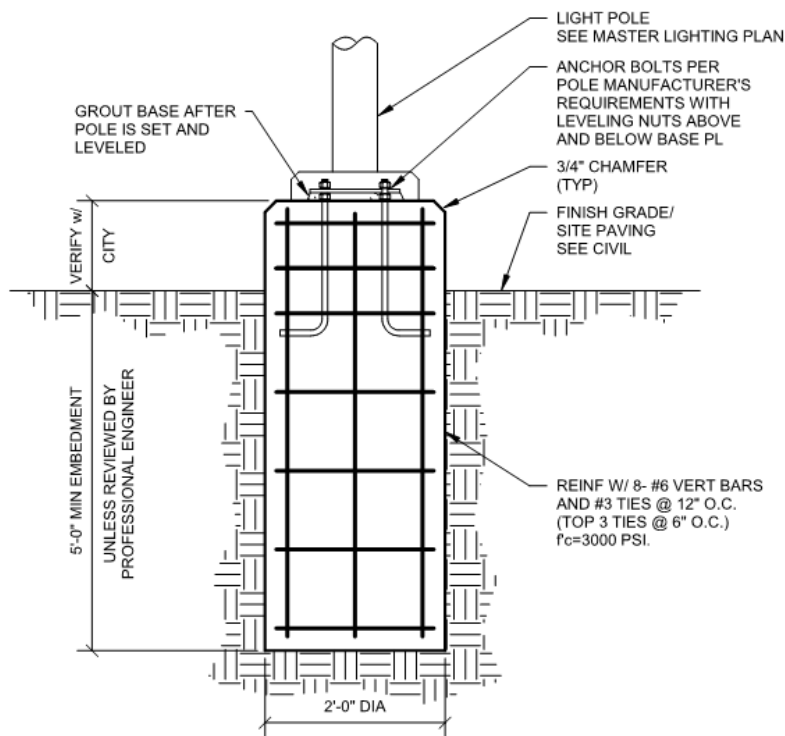


Luminaire type “C” shall have a 20’ steel tapered pole. Refer to light pole base detail below for luminaire type “C” steel tapered pole.

LIGHT POLE BASE DETAIL - LUMINAIRE TYPE C
PRELIMINARY NOT FOR CONSTRUCTION

NOTES:

1. DESIGN OF LIGHT POLE FOUNDATION IS BASED UPON MAXIMUM OVERALL HEIGHT FROM FINISH GRADE TO TOP OF LIGHT POLE OF 25'-0" AND LUMINAIRE MAXIMUM EFFECTIVE PROJECTED AREA OF 3 SQ FT.
2. SEE SUPPLIER DRAWINGS FOR ALL CONDUITS AND OTHER ELECTRICAL INFORMATION NOT SHOWN OR NOTED OTHERWISE.
3. LIGHT POLE FOUNDATION TO BE LOCATED A MINIMUM OF 2'-0" AWAY FROM ROADWAYS OR OTHER UTILITIES. REFER TO MASTER LIGHTING PLAN.
4. REINFORCING STEEL IS ASTM 615 (Fy = 60 KSI)
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH IS 3000 PSI
6. SUBMIT CONCRETE MIX DESIGNS FOR REVIEW.
7. THIS DESIGN IS ABLE TO BE MODIFIED IF SOILS INVESTIGATION IS PERFORMED AND STRUCTURAL ANALYSIS IS PERFORMED TO DETERMINE EMBEDMENT DEPTH BY STRUCTURAL ENGINEER. SUBMIT REVISED DRAWINGS FOR REVIEW.
8. PROVIDE HANDHOLE 2' FROM BOTTOM OF POLE FOR MAINTENANCE.
9. PROVIDE 120V DUPLEX RECEPTACLE WITHIN HANDHOLE WHEN REQUESTED BY DRC.
10. ALL POLES SHALL HAVE AN INTERNAL VIBRATION DAMPER SYSTEM.



Luminaire type “D” pole base detail will need to be submitted with a signed and sealed professional engineer stamp to the City of Bryant DRC for ArDOT review. The luminaire type D pole base detail is not shown in the current Master Lighting Plan for the City of Bryant in order to require a structural engineer to be involved.

All pole bases on Arkansas Highways will require a professional engineering stamp upon submission of project. Luminaire poles on the state highway system shall also meet ‘ArDOT Standard Specifications’ and ‘AASHTO’s Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals’. Fusible breakaway disconnects shall be provided in pole bases to protect the main circuit from physical and short circuit damage in the event of a crash. The smallest gauge wire should be used up the pole to luminaire assembly pre NEC requirements to allow a suitably rated smaller fuse.

LIGHTING CONTROL REQUIREMENTS

Lighting controls are important to the City of Bryant in order to improve the quality of life within our city. All future luminaires installed within the City of Bryant shall have a 7 pin photocell control node. Existing luminaires that are no longer functioning properly shall be upgraded to an LED luminaire with 7 pin photocell control node. The control functions desired by the City of Bryant with the 7 pin photocell control node are listed below. The developer shall coordinate with the City of Bryant to ensure the same controls system is used in new luminaires around the city. The utilities shall share lighting control and information listed below with the City of Bryant. Any training needed to understand and utilize lighting controls and data shall be provided to the City of Bryant as needed.

Controls functions available for 7-pin photocell:

1. Photocell control to turn on the luminaire at dusk and off at dawn.
2. Motion controls to brighten the luminaire when motion is detected or dim the luminaire when motion is not detected. The use of this function will reduce light pollution within the city. The City of Bryant will determine the percentage of light to be reduced when no motion is detected. Dimming is to be provided on all City of Bryant streets, except Arkansas highways. Dimming has not been adopted by ArDOT and is not authorized on state highways.
3. KVA metering within the luminaire photocell control node for accurate power consumption to be transmitted to both the City of Bryant and the utility company.
4. Bluetooth and/or WIFI capabilities for future use of street lighting to create a “Smart City” though the lighting system.
5. Individually addressable control with dimming of individual luminaire for security control.
6. Luminaire, driver, photocell, and LED chip failures shall be notified to both the city streets department and the utility with precise location of the pole to ensure quick maintenance of the luminaire.
7. Gunshot detection shall be integrated into the controls for security within the city. Locations shall be determined by the City of Bryant Police Department and the City of Bryant DRC.
8. Cameras with wireless controls shall be integrated into the poles. The City of Bryant Police Department and the City of Bryant DRC to determine exact location for cameras.

ADDITIONAL REQUIREMENTS

If a roadway is being changed or updated more than 50% then the Master Street Lighting design standard applies to the project. Luminaire documentation with B.U.G ratings, lighting calculations, and luminaire locations must be submitted on the preliminary plat to the Bryant Design Review Committee and Arkansas Department of Transportation (ArDOT) for review and permit approval. Roadway Lighting built by permit will require City of Bryant to submit construction plans, photometric data, design parameters (ex. LLF), lamp data (TM-21, LM-80 & LM-79 reports), poles, and foundation design with professional engineer stamp to the Arkansas Department of Transportation to be reviewed and accepted before a permit is issued. Developer will be required provide this information to the City of Bryant for each project.

Unless luminaires are provided and maintained by the utility, all future neighborhood developments shall be required to have a Property Owners Association or an Improvement District. The Property Owners Association or Improvement District must be set up by the developer. The developer shall provide all luminaires within the neighborhood during construction. The bill of assurance for the lighting maintenance shall be the responsibility of the Property Owners Association or the Improvement District after construction is complete for all luminaire maintenance not provided by the utility company.

When new luminaires are being mounted to existing power poles, the lighting pole spacing may have up to a 10% variance of the noted distance on the Master Lighting Plan to accommodate existing power pole locations but point by point lighting calculations will need to be submitted. The 10% variance does not apply to highways within the city per ArDOT.

All luminaires must be installed in accordance with the most current adopted National Electric Code NFPA 70 in the state of Arkansas. All labor associated with the luminaire installation must be provided by a licensed electrician in the State of Arkansas. All trenching and installation of pole bases must follow "One Call" excavation requirements. Arkansas One Call contact phone number is 811 or 1-800-482-8998. All lighting designs must comply with the most current energy code adopted by the City of Bryant.

When working on Highway projects, in addition to a Roadway Lighting Permit, the developer will need to obtain a special permit from the ArDOT District to work in the right of way. Directional boring is the only acceptable method allowed for placing wiring and conduit under highways.

Compliance with the Master Street Lighting document within the City of Bryant is a minimum standard. All future projects shall meet or surpass the design efforts required within this document.

REFERENCES

1. AASHTO Roadway Lighting Design Guide
2. Arkansas One Call
3. Arkansas Department of Transportation (ArDOT) Standards http://ardot.gov/standard_specifications.aspx
4. Illuminating Engineering Society Handbook IES HB-10-11
5. Illuminating Engineering Society Recommended Practice for Roadway Lighting IES RP-8-14
6. Illuminating Engineering Society TM-15-11, B.U.G. Rating System\
7. Illuminating Engineering Society TM-21
8. Illuminating Engineering Society LM-79
9. Illuminating Engineering Society LM-80
10. International Dark-Sky Association
11. National Electrical Code NEC NFPA 70
12. 'Walk Bike Drive Master Transportation Plan' of the City of Bryant