

ARLINGTON
VIRGINIA

DEPARTMENT OF ENVIRONMENTAL SERVICES

ARLINGTON COUNTY GOVERNMENT
STREET LIGHT POLICY AND PLANNING GUIDE
INSTRUCTIONS FOR DEVELOPERS

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1 STREET LIGHTING INSTALLATION INSTRUCTIONS FOR DEVELOPERS

The Arlington County Department of Environmental Services Construction Standards and Specifications shall be followed when installing roadway lighting foundations, poles, and luminaires in non-residential areas.

The purpose of this document is to provide an understanding of street lighting installation requirements for developers. Except as otherwise specifically required by the approved PLANS or this document, all work shall fully comply with the Arlington County, Department of Environmental Services, Construction Standards and Specifications. In case of any discrepancy or inconsistency between or among requirements, this document shall govern over the Construction Standards and Specifications.

1.1 INSTALLATION OPTIONS

Arlington's street lighting program is administered through the Department of Environmental Services, Division of Transportation (hereinafter referred to as the COUNTY). The developer has two options for installing the streetlights: 1) The developer can install the street lighting system or 2) Pay Arlington County to install the street lighting system. The usual delivery time for the poles and lights of either option is about 90 days. Therefore, streetlight planning shall occur early in the development process. Arlington County will maintain street lighting installed by the DEVELOPER within the Arlington County Right of Way.

If the DEVELOPER elects Arlington County to install the street lighting system, the DEVELOPER shall contact the Division of Transportation, Street Light Engineer, to request an estimate and before any work is to begin. The DEVELOPER must then issue payment to the COUNTY before work can begin.

1.2 PROCEDURES

If the DEVELOPER elects to install the street lighting system, the following procedures and the approved materials for street lighting installation shall be carried out. Strict adherence is required to ensure project acceptance and/or bond release. The COUNTY must inspect and approve all street lighting improvements. Developer is required to fax or send the attached “Request for Inspection” before installing any underground conduit or concrete foundations for poles.

The DEVELOPER shall check and verify the location of each light on the plan and insure that the type, color and size of light are specified. If there are questions, contact the Arlington County Streetlight Engineer at 703-228-6570.

All work shall be performed in compliance with the NEC Regulations unless otherwise specified in this document or by the COUNTY.

1.3 INSPECTIONS

The DEVELOPER shall contact the COUNTY at least 72 hours in advance to schedule inspections and final acceptance. The COUNTY must inspect all underground conduits before back filling, pole foundations, and electrical work. Final project acceptance shall occur upon final inspection, when DEVELOPER demonstrates that all lights are operational; and the DEVELOPER provides as-built plans for the lighting system. As built plans must indicate the location of the meter pedestal and control circuit. In addition, the plan notes should indicate the following:

1. The number of circuits used.
2. The size of circuit breaker used for each circuit.
3. The size and type of wire used.
4. A statement as to which circuit controls each light.
5. A statement indicating what color marking tape on wire is assigned to each circuit.

EXAMPLE: Circuit #1 – 20amp - (3)# 6 wire marked with blue tape – Feeding lights 1,3,5,7.

See the Request for Inspection form on the following page.

1.4 REQUEST FOR INSPECTION FORM

The “Request for Inspection form” should be changed to reflect two types of inspections, **A. Rough In and B. Final**. There is no “preconstruction inspection” although there is a preconstruction meeting which is referred to in the Electrical Components Section.

Project Location:	
Name Of Contractor:	
Address:	
Contact Name/Phone Number:	
Fax Number:	
Email Address:	
Type Of Inspection:	<input type="checkbox"/> A. Pre Construction <input type="checkbox"/> B. Rough In <input type="checkbox"/> C. Final
No. Of Lights:	
Type Of Lights:	<input type="checkbox"/> A. Singles <input type="checkbox"/> B. Doubles
Color Of Lights:	<input type="checkbox"/> A. Black <input type="checkbox"/> B. Brown/Bronze
Date Of Inspection Requested: (48 Hour Notice Required)	/ /
Fax This Sheet To:	Street Light Program Inspections (703) 228-6769 or 228-3719

1.5 ORNAMENTAL LIGHT FIXTURES

The Developer shall provide Carlyle light fixtures that meet the requirements of the Dark-Sky Association. The intent of the compliance is to eliminate light trespass from the building and site, improve night sky access and reduce development impact on nocturnal environments. The requirements state that compliance should meet or provide lower light levels and uniformity ratios than those recommended by the *Illuminating Engineering Society of North America (IESNA) Recommended Practice Manual: Lighting for Exterior Environments (RP-33-99)*. Design exterior lighting such that all exterior luminaires with more than 1000 initial lamp lumens are shielded and all luminaires with more than 3500 initial lamp lumens meet the Semi Cutoff IESNA Classification¹. The maximum candela value of all interior lighting shall fall within the building (not out through windows) and the maximum candela value of all exterior lighting shall fall within the property. Any luminaire within a distance of 2.5 times its mounting height from the property boundary shall have shielding such that no light from that luminaire crosses the property boundary.²

No wiring modifications shall be made inside the ornamental fixtures without prior knowledge and approval of the COUNTY.

1.6 ORNAMENTAL LIGHT POLES

All ornamental light poles shall be black except in Rosslyn and Ballston-Virginia Square where they are bronze-colored. All ornamental light poles shall be 16 feet in height as approved by the COUNTY. In the Rosslyn area, all ornamental street lights shall be 12 feet in height. In the Ballston area, all ornamental street lights shall be 16 feet in height. In residential areas, ornamental light poles must be 12' in height with fiberglass poles. See the following Ornamental Pole Foundation diagram. Where required, the bracket for double globes must be installed so that the bracket is parallel to the curb on the street. The light poles shall be ordered as specified below.

Sources:

Traffic Systems & Technology Inc.
Model Number NDA3454, Height - 12' or 16',
Specify Color: Black or Brown
7833 Coppermine Drive, Manassas, Virginia 20109
Attn: Sam Dominick.
Phone: 703-530-9655

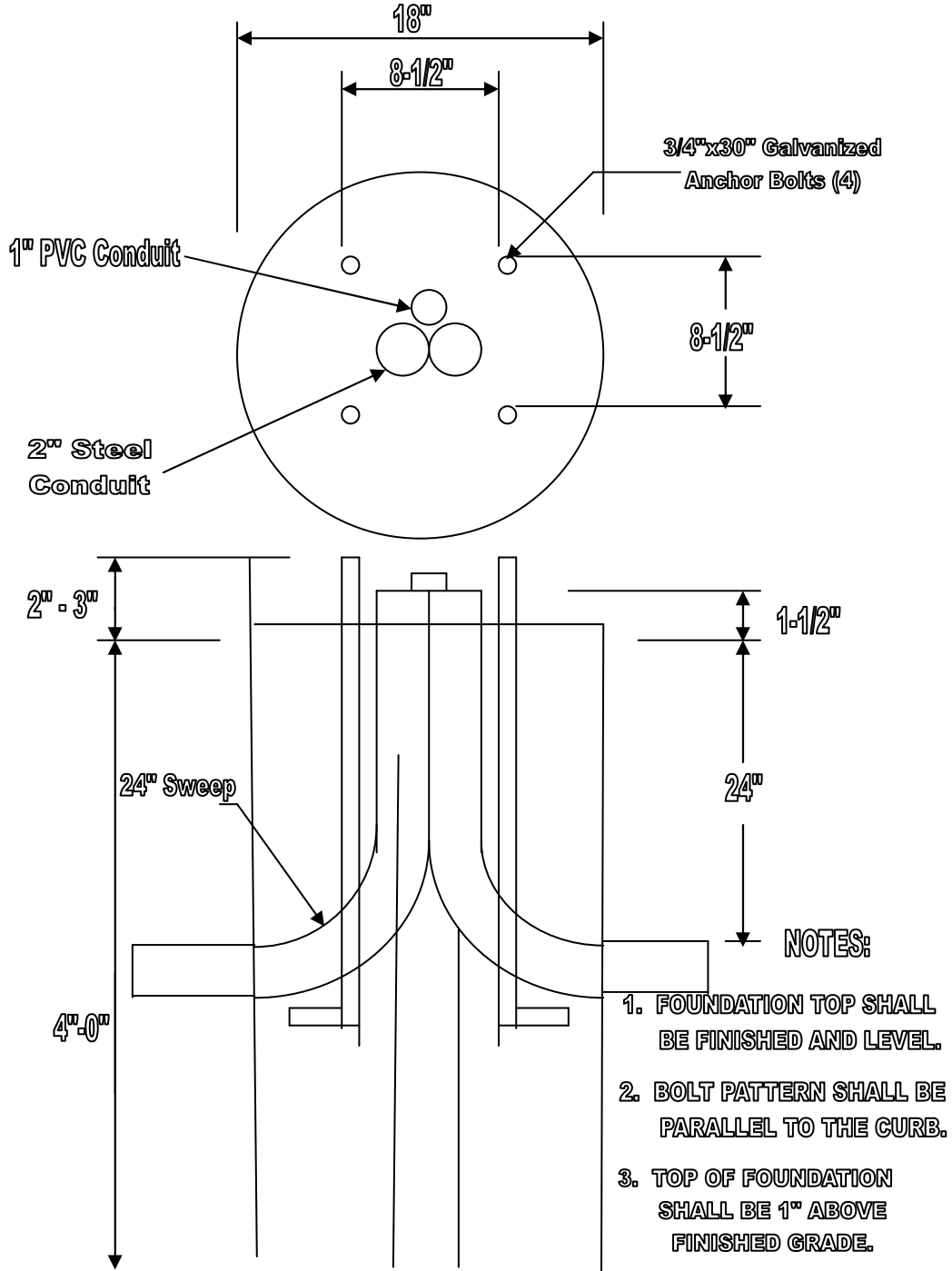
¹ The Semi Cut-Off IESNA Classification is acceptable for the Carlyle Luminaires.

² Leadership in Energy and Environmental Design (LEED) – NC Version 2.1. Reference Guide. P. 69.

Guthmann's Elite Manufacturing Systems, Inc.
Model Number ARL-97,
Color Federal brown #595A, Color #30040, or as specified on the plan.
2825 Annapolis Road, Baltimore, MD. 21230
Attn: Thomas Guthman
Phone: 410-837-4494, Fax : 410-437-759, Pager : 410-204-4268

Lamps, fuses and underground junction boxes may be ordered from any electrical supply company.

1.7 ORNAMENTAL POLE FOUNDATION



1.7.1 TYPE

All street lights except in the Rosslyn and Ballston-Virginia Square shall be black in color. In Rosslyn and Ballston they shall be bronze. All lights shall comply with the Dark Sky Association requirements as noted in the Ornamental Light Fixtures section of this document.

Model Number: 3401C (Carlyle Fixture) and Specify Color Black (Bronze for Rosslyn and Ballston –Virginia Square).

1.7.2 SPACING

Spacing between each street light pole shall be 60 to 90 feet in commercial areas and 100 to 120 feet in residential areas. The purpose of this requirement is to avoid conflicts with street tree planting.

1.7.3 DRAWINGS

As Built Drawings should also be submitted in AutoCAD and Adobe (.pdf) format to the Division of Transportation.

1.7.4 BOLTS

All anchor bolts installed for roadway lighting shall be galvanized.

1.7.5 FUSES

All fuses shall be Break-A-Way Receptacles for Impact Disconnect, 10 amps.

1.7.6 JUNCTION BOXES

All junction boxes shall be Quazite Composolite PG Series 11” by 18”.

Source:
Electrical Sales Associates Inc.
686 MD. Route 3 North
P.O. Box 206
Gambrills, MD. 21054
Phone : 301-621-0800
410-987-2200

Street lighting conduit shall be 24 inches deep and shall be no more than 36 inches behind the curb. The purpose of this requirement is to avoid conflicts with street tree planting. Any other location for conduits shall not be accepted, unless specifically approved by the COUNTY. **All conduits shall be 2” rigid galvanized steel.**

1.7.7 UNDERGROUND CONDUCTOR

Underground conductor shall be pulled from pole to pole in the under ground duct. Unless otherwise specified by the COUNTY, underground conductor shall be #6 Copper 3-conductor underground electric cable, (unless otherwise directed by County’s representative) and shall be UL approved. Refer to the NEC Regulations for load calculations. Any aluminum cable shall be treated with an anti-oxidation agent, such as DEOX, at all splices and connections. The hot legs shall be marked to allow easier maintenance in the future. The DEVELOPER shall wire the service in series, and shall identify the series at the time of the final electrical “Street Light” inspection.

The wiring for the poles shall installed alternatively in two different circuits. For example, sixteen (16) poles shall be installed as follows:

Pole Numbers 1, 3, 5, 7, 9, 11, 13 and 15 shall be installed on one circuit, and

Pole Numbers 2, 4, 6, 8, 10, 12, 14 and 16 shall be installed on the second and alternate circuit.

The in-pole wire shall be no smaller than a #12 copper stranded wire, and shall be spliced into the light wire block at the upper end, and the service conductor in the base of the pole. An approved breakaway fuse shall be wired in the hot leg of each light pole. The wiring device used to make the connection MUST be approved for both aluminum and copper wires.

A continuous grounding conductor shall be installed for grounding purposes. The grounding conductor shall consist of solid bare copper wire of a #6 soft drawn copper or larger size and placed in direct contact with the earth. Ground wire shall be protected.

All conduits, anchor bolts, and reinforcing bar cages shall be made mechanically secure and bonded to the pole to form the grounding electrode system. An 8'x 5/8" copper ground rod shall be installed to supplement the grounding electrode system. The ground rod shall be installed inside the pole foundation when no junction box is available. A non-conducting sleeve shall be installed in the foundation to ensure the ground rod does not contact the concrete. A ground rod shall also be installed in the junction box adjacent to the service equipment.

1.8 ELECTRICAL COMPONENTS (METERED SERVICES)

The DEVELOPER shall arrange for the electrical service and install all components of the service. Metered services shall be directly coordinated with Dominion Virginia Power. At the Pre-Construction meeting, the COUNTY must approve the recommended location of the meter and disconnect switch as shown in the Site Plans. The ground for the electric service shall be isolated from the building ground. Unless otherwise specified, the service shall be three-wire 120/208 volt single phase and a minimum of 100 Amps for overhead service and a minimum of 200 Amps for underground service.

1.8.1 METERED OVERHEAD SERVICES

For metered overhead services, the meter pan and disconnects should be mounted on the utility pole, which feeds the service. The DEVELOPER is responsible for installing the meter pan and disconnecting switch; installing a 2” galvanized steel riser with weather head on the utility pole. Installing wire in the riser with enough slack at the top to connect to the power source, and making all required electrical connections in the meter pan and disconnect. The riser shall be attached on the pole according to the NEC regulations. Meter pan and disconnects shall be securely mounted to the pole independent of the conduit.

1.8.2 METERED UNDERGROUND SERVICES

For metered underground services, the meter pan and disconnects shall be mounted in an outside meter pedestal, in public Right of Way, close to the streetlight’s meter. The DEVELOPER is responsible for installing the meter pedestal. For locations where the meter is located inside of a building a circuit breaker panel with main breaker rated for 10,000-amp fault current shall be used.

1.8.3 PHOTO CONTROL SOCKET

A shorting cap shall be installed in the photo control socket. Photo control shall be achieved through a central control circuit at the disconnect box.

1.8.4 STREETLIGHT CONTROLS

A central streetlight control shall be installed next to the disconnect box for the streetlights. The streetlight control shall consist of a NEMA twist lock photocell, a contactor switch (for 5 or more lights), and manual switch to energize and de-energize the lighting circuit. Normal streetlight operation shall be achieved through the photo control and contactor switch. The manual switch shall over-ride the photo control and will be used as a technician switch.

Service equipment shall be installed according to NEC regulations.

1.8.5 CIRCUIT BREAKER

The circuit breakers used should be based on the calculated load of the street light circuit.

1.8.6 DISCONNECT SWITCH

The disconnect switch shall be a type 3R enclosure, SQUARE D brand, Catalogue No.- QO6-12L100RB.

1.8.7 METER PAN

Meter pan shall be a Dominion Virginia Power standard 100 AMP or 200 AMP meter base, single phase service and type 3R enclosure, Catalogue No.-100628

Source:

Dominion Virginia Power
907 West Glebe Road
Alexandria, VA 22035
Contact: Jack Whitley, Phone: 703-838-2405

1.9 METER PEDESTAL

Meter pedestals shall be Midwest Company Model Numbers are R281C1P6H or R208CP6HP. Both with 200 AMP main.

Source:

Dominion Electric Supply Company
4080 Westfax Drive
Chantilly, VA 20151
Contact: Bill Collins, Phone: 703-631-8300

1.10 CONTACT INFORMATION

Arlington County Government
Division of Transportation
Transportation Engineering and Operations
2100 Clarendon Boulevard
Courthouse Plaza #1, Suite 900
Arlington, Virginia 22201
Phone: 703-228-6570