

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
DIVISION OF TRAFFIC AND PARKING SERVICES

JUNE 2016

WASHINGTON GLOBE DECORATIVE LED STYLE LUMINAIRE
SEMI CUT-OFF HARD TOP

1) PURPOSE

The purpose of these specifications is to provide minimum requirements for the design, manufacture, finishing and delivery of the Washington Globe (hard top) LED luminaire. The Washington Globe is intended to be mounted on decorative pole as specified, along roadways throughout Montgomery County. Any manufacturer, distributor or vendor who submits bid shall agree with these specifications

2) DESCRIPTION

The luminaire shall be an outdoor decorative post top fixture, cylindrical in shape with an overall height between 42.5 +/- 2.0 inches and a overall width between 16.5 +/- 0.5 inches for the globe (see attached drawing). All exterior and structural parts shall consist of aluminum alloy or cast iron. Exterior castings shall be cast in one piece having a smooth surface finish and free of mold lines. A separate cover for a ballast drawer/tray is permitted if the ballast drawer cover is secured to the luminaire body with captive fasteners. All components shall fit together snugly and shall be fitted with continuous neoprene gaskets so as to weather proof joints between metal interfaces. Visible metal surfaces shall have raised decorations integrally molded in the base piece. All metal parts shall be corrosion resistant. The luminaire shall come ready for quick an easy field assembly or fully assembled:

Each luminaire shall include the following components:

- 1) LED Optical Assembly (Type III distribution)
- 2) 120 volt LED Driver
- 3) Button type photocell installed on the metal body of the luminaire or ballast tray cover;
- 4) All necessary hardware and fasteners to assemble and secure on post tenon.

3) DESIGN CRITERIA

3.1) AASHTO Standards

The luminaire shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO), Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals” latest edition.

3.2) Wind Load

All components of the luminaire shall be designed to resist (at yield strength of the materials without permanent deflection or destruction), test loads equivalent to the calculated loads developed by the velocity pressure of at least an 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.

4) GLOBE

The globe should be supplied as two pieces, chemically matching material as a unit and permanently sealed together with a chemical bonding process. The globe bottom shall be alabaster rippled and made of UV stabilized acrylic. The globe roof shall be of a spun aluminum design. The roof and bottom globe sections are secured in a slip-fit, 1/2" overlap design and providing a mechanical lock and enabling easy future replacement of either the roof or bottom globe section if required. The roof finish shall be polyester thermoset powdercoat. The globe shall be of a traditional "Washington Globe" (acorn) shape designed to achieve the photometric performance specified by Illumination Engineering Society (IES). The bottom surface of the globe shall interface closely with the metal body of the fixture so as to provide a weather, dust, and insect proof interface. The globe or its mounting ring shall be fastened with three or more recessed set screws to the body of the fixture.

5) DRIVER and SURGE PROTECTOR

The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall be equipped with a 10KV Surge Protection and suppression system. All electrical connections shall be polarized and of plug-in design. The driver shall be wired to receive 120 volt AC current. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

6) LED Color Temperature (CCT) and Rendering Index (CRI)

The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of 3500K \pm 200K with a minimum Color Rendering Index (CRI) of 70.

7) PHOTOCELL

The photocell shall be a twist-lock type or equal, mounted on the metal body of the luminaire or the cover of the ballast tray drawer.

8) METAL BODY

The body shall be cast in one piece and shall have raised surface decorations. The body shall taper smoothly between the slip fitter to the base of the globe. The body shall be constructed with weep holes or channels to prevent rainwater from collecting at the top of the body.

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- 9) **SLIP FITTER**
The slip fitter shall have a nominal inside diameter of 3.375 inches +/- 0.25 and shall be secured to the lamp post tenon with three of four evenly spaced set screws. The slip fitter shall accommodate a tenon 3.0 inches long.

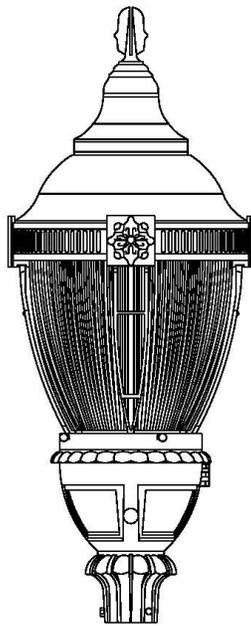
- 10) **FINIAL**
The finial shall be made of cast aluminum, and securely fastened to the top of the globe.

- 11) **FINISH**
The exterior surface of the finial and luminaire body shall be factory finished with a dark green electrostatically applied polyester powder coat. The color shall be "Federal Green", federal color 595a, #14036.

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SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS
JUNE 2016
SILVER SPRING DECORATIVE PEDESTRIAN,
LED SHALLOW DROP STYLE LUMINAIRE

1) PURPOSE

The purpose of these specifications is to provide minimum requirements for the design, manufacture, finishing and delivery of the Silver Spring Pedestrian LED Shallow drop style luminaires. The Silver Spring Pedestrian LED Shallow drop is intended to be mounted on a decorative post as specified, along roadways in the Silver Spring Central Business District. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications, or submit specifications for approval that match these specifications.

2) DESCRIPTION

The luminaire shall be an outdoor decorative fixture, cylindrical in shape with an overall height of 25 5/8 inches and an overall width of 14 1/2 inches for the globe (see attached drawing). All exterior and structural parts shall consist of cast aluminum alloy. Exterior castings shall be cast in three pieces having a smooth surface finish and free of mold lines. A separate section for the driver is permitted if the driver casting is secured to the luminaire body with stainless steel captive fasteners. All components shall fit together snugly and shall be fitted with continuous neoprene gaskets so as to weatherproof the joints between metal interfaces. Visible metal surfaces shall be integrally molded as to appear to be a single unit. All metal parts shall be corrosion resistant. The luminaire shall come ready for quick and easy field assembly or be fully assembled and include the following components:

Each luminaire shall include the following:

- 1) LED Optical Assembly (Type III distribution);
- 2) 120 volt LED Driver;
- 3) NEMA twist-lock type photocell installed on the metal body of the decorative post;
- 4) Shallow Drop globe
- 5) All necessary hardware and fasteners to assemble and secure the luminaire onto the post arm.

3) DESIGN CRITERIA

3.1) AASHTO Standards

The luminaire shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO), "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals," latest edition.

3.2) Wind Load

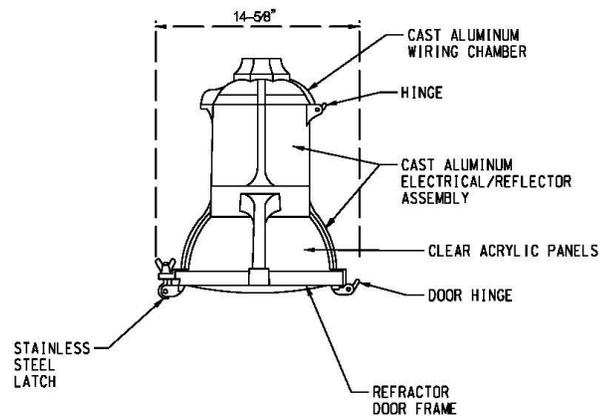
All components of the luminaire shall be designed to resist (at yield strength of the materials without permanent deflection or destruction), test loads equivalent to the calculated loads developed by the velocity pressure of at least an 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.

- 4) GLOBE
The globe shall be of a Shallow Drop (teardrop) shape, thermal resistant borosilicate glass or Acrylic that controls the light, and provide an IES Type III cutoff distribution. The combination of shallow lens and LED panel shall maximize efficiency and uniformity of illumination while controlling the luminaire brightness. The entire globe shall be luminous with shielding of the top section. The top surface of the globe shall interface closely with the metal body of the fixture so as to provide a weather, dust, and insect proof protection.
- 5) DRIVER and SURGE PROTECTOR
The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall be equipped with a 10KV Surge Protection and suppression system. All electrical connections shall be polarized and of plug-in design. The driver shall be wired to receive 120 volt AC current. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.
- 6) LED Color Temperature (CCT) and Rendering Index (CRI)
The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of 3500K ± 200K with a minimum Color Rendering Index (CRI) of 70
- 7) PHOTOCELL
The photocell shall be a NEMA twist-lock type or equal, mounted on the metal body of the decorative post.
- 8) METAL BODY
The body shall be cast in two pieces and shall have raised surface ridges. The body shall taper smoothly from the slip fitter to the top of the globe. The body shall be constructed to prevent rainwater collecting on the body.
- 9) TOP ENTRY THREADED SLIPFITTER
The top entry threaded slipfitter shall have a nominal inside diameter of 1 ½ inches and shall be secured to the pole slipfitter with three or four evenly spaced setscrews or approved top mounting equivalence.
- 10) FINISH
The exterior surface of the luminaire body shall be factory finished with a dark green electrostatically applied polyester powder coat. The color shall be “Federal Green”, federal color 595B, #14036

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MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

SILVER SPRING DECORATIVE PEDESTRIAN,
TEARDROP STYLE LUMINAIRE

1) PURPOSE

The purpose of these specifications is to provide minimum requirements for the design, manufacture, finishing and delivery of the Silver Spring Pedestrian Teardrop style luminaires. The Silver Spring Pedestrian Teardrop is intended to be mounted on a decorative post as specified, along roadways in the Silver Spring Central Business District. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications, or submit specifications for approval that match these specifications.

2) DESCRIPTION

The luminaire shall be an outdoor decorative fixture, cylindrical in shape with an overall height of 25 5/8 inches and an overall width of 14 1/2 inches for the globe (see attached drawing). All exterior and structural parts shall consist of aluminum alloy. Exterior castings shall be cast in three pieces having a smooth surface finish and free of mold lines. A separate section for the ballast is permitted if the ballast casting is secured to the luminaire body with stainless steel captive fasteners. All components shall fit together snugly and shall be fitted with continuous neoprene gaskets so as to weatherproof the joints between metal interfaces. Visible metal surfaces shall be integrally molded as to appear to be a single unit. All metal parts shall be corrosion resistant. The luminaire shall come ready for quick and easy field assembly or be fully assembled and include the following components:

Each luminaire shall include the following:

- 1) Lamp, as specified;
- 2) 120 volt ballast;
- 3) NEMA twist-lock type photocell installed on the metal body of the decorative post;
- 4) All necessary hardware and fasteners to assemble and secure the luminaire onto the post arm.

The luminaire must be able to accommodate 70, 100, or 150, watt, High Pressure Sodium Vapor (HPSV) lamp or 175 watt, Metal Halide (MH) lamp and ballast. The luminaire shall be "Holophane ALP(175MH)12N3" without a metal upright shield, or an approved equal.

3) DESIGN CRITERIA

- 3.1) AASHTO Standards
The luminaire shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO), "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals," latest edition.
- 3.2) Wind Load
All components of the luminaire shall be designed to resist (at yield strength of the materials without permanent deflection or destruction), test loads equivalent to the calculated loads developed by the velocity pressure of at least an 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.
- 4) GLOBE AND REFRACTOR
The globe shall be of the traditional "Atlanta" (teardrop) shape, thermal resistant borosilicate glass refractor that controls the light, and provide an IES Type III cutoff distribution. The combination of reflector, refractor and vertical burning lamp shall maximize efficiency and uniformity of illumination while controlling the luminaire brightness. The entire globe shall be luminous with shielding of the top section. The top surface of the globe shall interface closely with the metal body of the fixture so as to provide a weather, dust, and insect proof protection.
- 5) BALLAST
The ballast shall be securely fastened into the top of the luminaire and have quick release electrical connections. The ballast shall be high power factor refractor type ballast of at least 90% to supply power for the specified HPSV or MH lamp from a 120 volt power supply. The space for the ballast shall have sufficient space to accommodate a ballast for 70, 100, or 150 watt HPSV or 175 watt Metal Halide lamps.
- 6) LAMP
The luminaire may be used with wattage as follows:
ANSI Code - 70 watt (HPSV), with Mogul base socket;
ANSI Code - 100 watt (HPSV), with Mogul base socket;
ANSI Code - 150 watt (HPSV), with Mogul base socket;
ANSI Code - 175 watt (MH), with Mogul base socket; or as specified.
- 7) PHOTOCELL
The photocell shall be a NEMA twist-lock type or equal, mounted on the metal body of the decorative post.
- 8) METAL BODY
The body shall be cast in two pieces and shall have raised surface ridges. The body shall taper smoothly from the slip fitter to the top of the globe. The body shall be constructed to prevent rainwater collecting on the body.
- 9) TOP ENTRY THREADED SLIPFITTER
The top entry threaded slipfitter shall have a nominal inside diameter of 1 ½ inches and

shall be secured to the pole slipfitter with three or four evenly spaced setscrews.

10) SOCKET

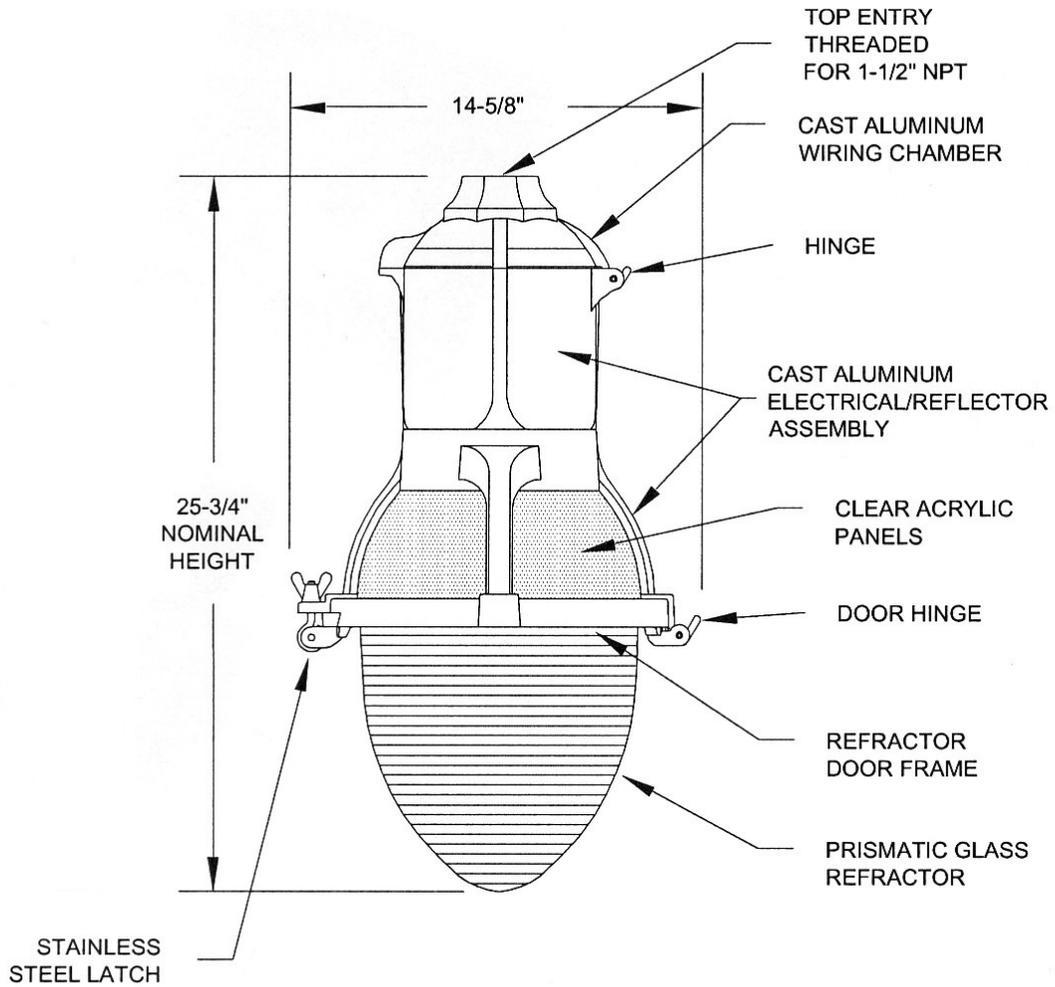
The lamp socket shall be a four K.V. pulse rated porcelain mogul base socket.

11) FINISH

The exterior surface of the luminaire body shall be factory finished with a dark green electrostatically applied polyester powder coat. The color shall be "Federal Green", federal color 595B, #14036

SPECIFICATIONS FOR STREETLIGHT HARDWARE

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MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

SILVER SPRING DECORATIVE BRONZE COLORED
RECTILINEAR, TYPE III MEDIUM CUTOFF LUMINAIRE

1) PURPOSE

The purpose of these specifications is to provide minimum requirements for the design, manufacture, fabrication, finishing and delivery of decorative bronze colored, type III, medium cutoff rectilinear streetlight luminaires. These luminaires are intended for use on the square and dovetail streetlight poles at a 29 feet 5 inch mounting height in urban streetscape areas. The luminaire should be Gardco Form Ten No. EH 1913-120-250 HPS, BRA, CD, PC or approved equal. Any manufacturer, distributor, or vendor who submits a bid shall agree to comply with these specifications.

Each streetlight luminaire shall include the following:

- a) Lamp, as specified;
- b) NEMA standard photoelectric control receptacle on the top cover of the luminaire with NEMA standard photocell;
- c) All necessary hardware for side mounting on specified pole;
- d) Side-mounting bracket arm, eight (8) to twelve (12) inches long and rectangular in cross section as specified under Section 3.9;
- e) Flat, hard tempered glass lens;
- f) "National Park Service Brown" finishing as per these specifications and attachment entitles "Finishing Galvanized Steel and Aluminum Metals."

2) DESIGN CRITERIA

2.1) AASHTO Standards

The luminaire shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO), "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals," latest edition.

2.2) Shape and Minimum Size

The luminaire shall be rectangular in shape. The minimum size for the luminaire shall be 36.0 inches (sum of the luminaire's length plus width), when viewed from side.

The maximum allowable Effective Projected Area (EPA) for the luminaire and bracket arm shall be three (3.0) or less square feet. The luminaire shall be of a

suitable size to accommodate up to and including a 400 watt High Pressure Sodium Vapor (HPSV) ballast.

2.3) Wind Load

All components of the luminaire shall be designed to resist (at yield strength of the materials without permanent deflection or destruction), test loads equivalent to the calculated loads developed by the velocity pressure of at least an 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.4) Finish

All visible components shall then be finished to produce the appearance of a decorative "Dark Brown" color, as described in the attachment entitled "Finishing Galvanized Steel and Aluminum Metals." During the finishing process, all critical openings shall be plugged to prevent contamination of the threads or reduction of critical openings.

Other finishing techniques may be considered for the luminaire by Montgomery County. Complete documentation and specifications for any alternate finish must be submitted with the bid documents together with the results of an accelerated life-testing by an independent laboratory which certified an expected life of the alternate finish of at least twenty (20) years.

3) MATERIALS

3.1) Design Uniformity

These specifications are intended to produce a uniform system of hardware that will minimize the number of stock items that the County or its contractor(s) must maintain.

3.2) Housing

The housing shall consist of a water tight shell fabricated with either welded, overlapped seams or with extrusions sealed with silicon seals. Cast aluminum door frames, to hold the flat tempered prismatic glass lens or a cover concealing the ballast, shall be affixed to the housing with full length aluminum piano hinges incorporating removable stainless steel hinge pins. All doors shall be fully gasketed with closed cell or solid neoprene gaskets. All doors shall be closed with two quarter-turn captive fasteners and shall be restrained by captive stainless steel or brass chains.

3.3) Material

The luminaire housing shall be constructed of cast, extruded or 0.051 inch minimum sheet aluminum.

3.4) Castings

All casting used to complete the luminaire shall be clean and smooth, with all details well defined and true to pattern.

3.5) Ballast

The ballast shall be tray mounted to facilitate easy removal and maintenance. All electrical connections shall be for a 250 watt high pressure sodium vapor (HPSV) bulb and shall be of a regulator or auto-regulator design. The ballast shall be delivered to receive nominal 120 volt AC current. The ballast assembly shall be completely accessible and removable without requiring access through the reflector assembly.

3.6) Lamp

The lamp shall be ANSI Code - S55SC-250 and shall be provided.

3.7) Photoelectric Cell

The photoelectric cell shall be of the NEMA twist-lock type and shall be mounted in the top of the luminaire housing.

3.8) Reflector

The reflector shall be a one-piece formed aluminum sheet, finished with an "Alzak*R-5" or equivalent anodic process. The segmented reflectors shall be set in a faceted arc image duplicator pattern to achieve a type III distribution. Reflector assemblies shall be equipped with quick disconnects. Lamp holders shall be attached to the reflector assembly.

3.9) Bracket Arm

The bracket shall consist of an extruded rectangular aluminum section 8.0 to 12.0 inch in length, and long enough to permit mounting two luminaires at a 90 degree angle on the a square or dovetail pole.

3.10) Hardware

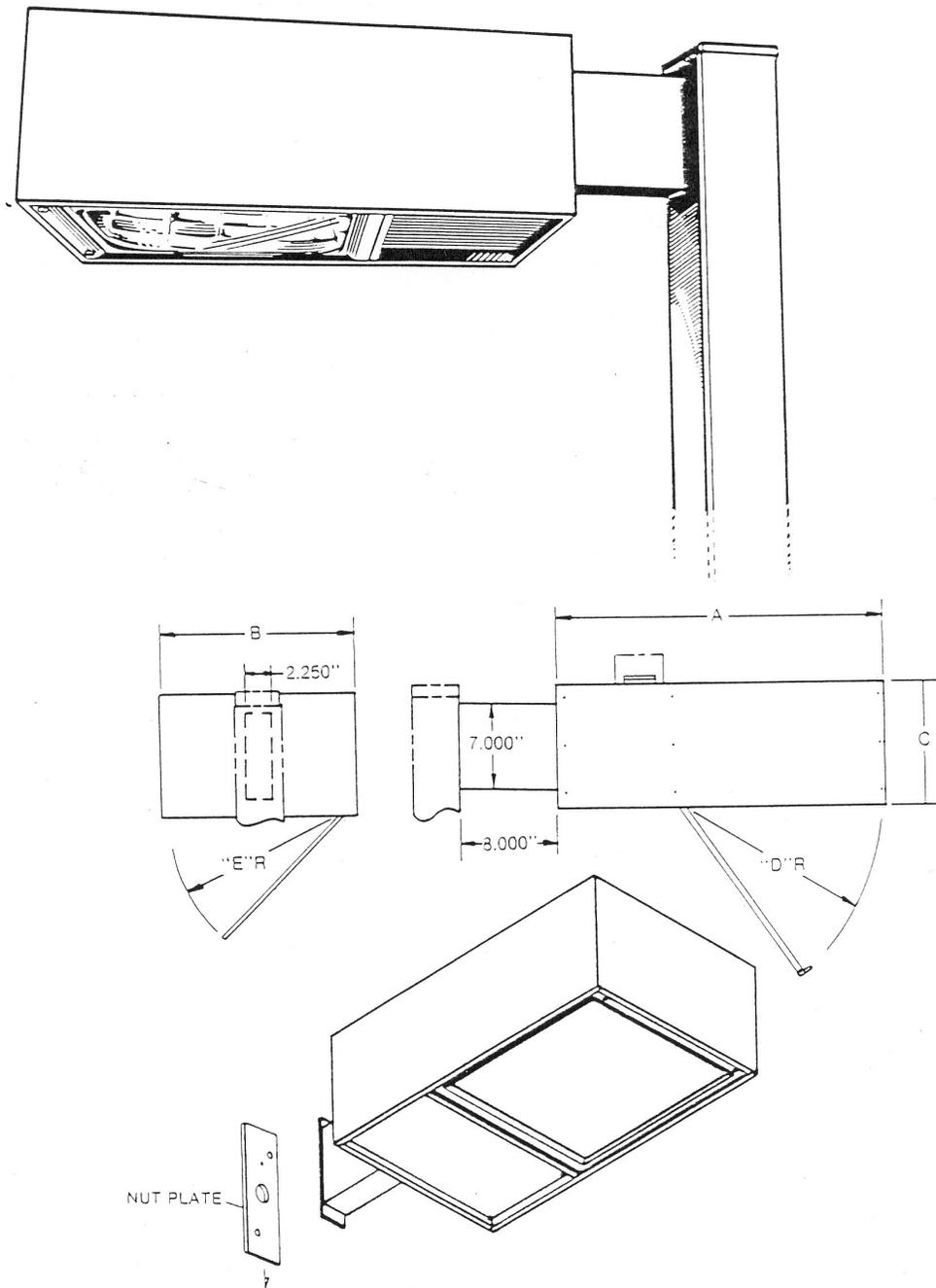
Mounting bolts, nuts and washers shall be galvanized steel in accordance with ASTM-A-153. All other hardware and fasteners shall be stainless steel.

4) LABELS

All fixtures shall bear U.L. wet location and I.B.E.W. labels.

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MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

DECORATIVE, SILVER SPRING VEHICULAR
LED SHALLOW DROP STYLE LUMINAIRE

1) PURPOSE

The purpose of these specifications is to provide minimum requirements for the design, manufacture, finishing and delivery of the Silver Spring Vehicular LED Shallow Drop style luminaires. The Silver Spring Vehicular LED Shallow Drop is intended to be mounted on a decorative post as specified, along roadways in the Silver Spring Central Business District. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications, or submit specifications for approval that match these specifications.

2) DESCRIPTION

The luminaire shall be an outdoor decorative fixture, cylindrical in shape with an overall height of 30 inches \pm and an overall width of 16 5/8 inches for the globe (see attached drawing). All exterior and structural parts shall consist of cast aluminum alloy. Exterior castings shall be cast in three pieces having a smooth surface finish and free of mold lines. A separate section for the driver is permitted if the driver casting is secured to the luminaire body with captive fasteners. All components shall fit together snugly and shall be fitted with continuous neoprene gaskets so as to weatherproof the joints between metal interfaces. Visible metal surfaces shall be integrally molded as to appear to be a single unit. All metal parts shall be corrosion resistant. The luminaire shall come ready for quick and easy field assembly or be fully assembled and include the following components:

Each luminaire shall include the following:

- 1) LED Optical Assembly (Type III distribution);
- 2) 120 volt LED Driver;
- 3) NEMA twist-lock type photocell installed on the metal body of the decorative post;
- 4) Shallow Drop globe
- 5) All necessary hardware and fasteners to assemble and secure the luminaire onto the post arm.

3) DESIGN CRITERIA

3.1) AASHTO Standards

The luminaire shall meet the requirements of the American Association of State

Highway and Transportation Officials (AASHTO), “Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals,” latest edition.

3.2 Wind Load

All components of the luminaire shall be designed to resist (at yield strength of the materials without permanent deflection or destruction), test loads equivalent to the calculated loads developed by the velocity pressure of at least an 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.

4) GLOBE

The globe shall be of a Shallow Drop (teardrop) shape, thermal resistant borosilicate glass or Acrylic that controls the light, and provide an IES Type III cutoff distribution. The combination of shallow lens and LED panel shall maximize efficiency and uniformity of illumination while controlling the luminaire brightness. The entire globe shall be luminous with shielding of the top section. The top surface of the globe shall interface closely with the metal body of the fixture so as to provide a weather, dust, and insect proof protection.

5) DRIVER and SURGE PROTECTOR

The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall be equipped with a 10KV Surge Protection and suppression system. All electrical connections shall be polarized and of plug-in design. The driver shall be wired to receive 120 volt AC current. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

6) LED Color Temperature (CCT) and Rendering Index (CRI)

The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of 3500 ± 200 K with a minimum Color Rendering Index (CRI) of 70

7) PHOTOCELL

The photocell shall be a NEMA twist-lock type or equal, mounted on the metal body of the decorative pendant post.

8) METAL BODY

The body shall be cast in two pieces and shall have raised surface ridges. The body shall taper smoothly from the slip fitter to the top of the globe. The body shall be constructed to prevent rainwater collecting on the luminaire.

9) TOP ENTRY THREADED SLIPFITTER

The top entry threaded slipfitter shall have a nominal inside diameter of 1 ½ inches +/- 0.05 inches and shall be secured to the pole slipfitter with three or four evenly spaced setscrews or approved top mounting equivalence.

10) FINISH

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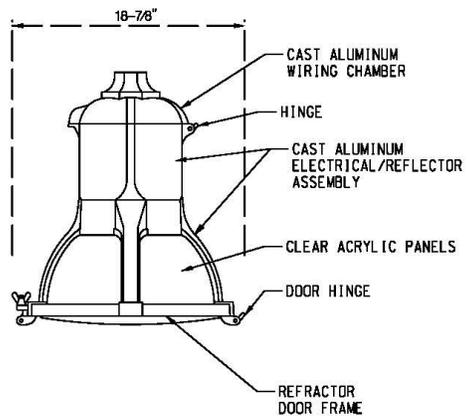
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The exterior surface of the luminaire body shall be factory finished with a dark green electrostatically applied polyester powder coat. The color shall be "Federal Green", federal color 595B, #14036

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SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

SILVER SPRING DECORATIVE VEHICULAR,
TEARDROP STYLE LUMINAIRE

1) PURPOSE

The purpose of these specifications is to provide minimum requirements for the design, manufacture, finishing and delivery of the Silver Spring Vehicular Teardrop style luminaires. The Silver Spring Vehicular Teardrop is intended to be mounted on a decorative post as specified, along roadways in the Silver Spring Central Business District. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications, or submit specifications for approval that match these specifications.

2) DESCRIPTION

The luminaire shall be an outdoor decorative fixture, cylindrical in shape with an overall height of 34 3/8 inches and an overall width of 16 5/8 inches for the globe (see attached drawing). All exterior and structural parts shall consist of aluminum alloy. Exterior castings shall be cast in three pieces having a smooth surface finish and free of mold lines. A separate section for the ballast is permitted if the ballast casting is secured to the luminaire body with captive fasteners. All components shall fit together snugly and shall be fitted with continuous neoprene gaskets so as to weatherproof the joints between metal interfaces. Visible metal surfaces shall be integrally molded as to appear to be a single unit. All metal parts shall be corrosion resistant. The luminaire shall come ready for quick and easy field assembly or be fully assembled and include the following components:

Each luminaire shall include the following:

- 1) Lamp, as specified;
- 2) 120 volt ballast;
- 3) NEMA twist-lock type photocell installed on the metal body of the decorative post;
- 4) All necessary hardware and fasteners to assemble and secure the luminaire onto the post arm.

The luminaire must be able to accommodate 70, 100, 150, or 250 watt, High Pressure Sodium Vapor (HPSV) lamp or 175, or 250 watt, Metal Halide (MH) lamp and ballast. The luminaire shall be "Holophane AL250MH12N4" with metal upright shield, or an

approved equal.

3) DESIGN CRITERIA

3.1) AASHTO Standards

The luminaire shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO), "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals," latest edition.

3.2) Wind Load

All components of the luminaire shall be designed to resist (at yield strength of the materials without permanent deflection or destruction), test loads equivalent to the calculated loads developed by the velocity pressure of at least an 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.

4) GLOBE AND REFRACTOR

The globe shall be of the traditional "Atlanta" (teardrop) shape, thermal resistant borosilicate glass refractor that controls the light, and provide an IES Type III cutoff distribution. The combination of reflector, refractor and vertical burning lamp shall maximize efficiency and uniformity of illumination while controlling the luminaire brightness. The entire globe shall be luminous with shielding of the top section. The top surface of the globe shall interface closely with the metal body of the fixture so as to provide a weather, dust, and insect proof protection.

5) BALLAST

The ballast shall be securely fastened into the top of the luminaire and have quick release electrical connections. The ballast shall be a high power factor reactor type ballast of at least 90% to supply power for the specified HPSV or MH lamp from a 120 volt power supply. The space for the ballast shall have sufficient space to accommodate the ballast for 70, 100, 150 or 250 watt HPSV or 175, or 250 watt Metal Halide lamps.

6) LAMP

The luminaire may be used with wattage as follows:

- ANSI Code - 70 watt (HPSV), with Mogul base socket;
- ANSI Code - 100 watt (HPSV), with Mogul base socket;
- ANSI Code - 150 watt (HPSV), with Mogul base socket;
- ANSI Code - 250 watt (HPSV), with Mogul base socket;
- ANSI Code - 175 watt (MH), with Mogul base socket;
- ANSI Code - 250 watt (MH), with Mogul base socket, or as specified.

7) PHOTOCELL

The photocell shall be a NEMA twist-lock type or equal, mounted on the metal body of the decorative pendant post.

8) METAL BODY

The body shall be cast in two pieces and shall have raised surface ridges. The body shall taper smoothly from the slip fitter to the top of the globe. The body shall be constructed to prevent rainwater collecting on the luminaire.

9) TOP ENTRY THREADED SLIPFITTER

The top entry threaded slipfitter shall have a nominal inside diameter of 1 ½ inches +/- 0.05 inches and shall be secured to the pole slipfitter with three or four evenly spaced setscrews.

10) SOCKET

The lamp socket shall be a four K.V. pulse rated porcelain mogul base socket.

11) FINISH

The exterior surface of the luminaire body shall be factory finished with a dark green electrostatically applied polyester powder coat. The color shall be "Federal Green", federal color 595B, #14036

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