POLES AND FOOTINGS

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

DECORATIVE BETHESDA CAST STREETLIGHT POST

1) DESCRIPTION

The decorative Bethesda cast streetlight post is made of an integrally cast iron or cast aluminum, finished with a polyester powder coating. This streetlight post is intended for use at the curbside along selected roadways in the Bethesda Central Business District (CBD). Any manufacturer, distributor or vendor who submits bid shall agree to comply with these specifications.

Each pole shall be complete with the following:

a) Access plate with attaching hardware;
b) Anchor bolts, nuts, and washers (as specified);
c) Typical footing design specifications including but limited to, base template, anchor bolt dimensions, reinforcement and footer details;
d) One (1) pint can of touch-up paint, "Federal Green", federal color 595B, # 14036.

2) DESIGN CRITERIA

2.1 AASHTO Standards

The decorative Bethesda streetscape cast streetlight post shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

2.2 Wind Load

The decorative Bethesda streetscape cast streetlight post shall be designed to resist (at yield strength of the material without permanent deflection or destruction), test loads equivalent to the calculated wind loads developed by the velocity pressures of an 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3 Effective Projected Area (EPA)

The decorative Bethesda streetscape cast streetlight post shall have an EPA allowable for the following assumptions:

a) Streetlight luminaire shall be assumed to be rectangular in shape with triangular shapes at the top and bottom, minimum length plus width of sixty-five (65) inches, when viewed from above.

b) The streetlight luminaire shall have a nominal mounting height of 16 feet above the base.

c) One or two (24" x 36") maximum traffic signs may be mounted with the sign's bottom edge 7 feet above the base.

3) MATERIALS

3.1 Iron Casting

The lamp post shall be integrally cast as one piece and shall be cast iron per ASTM A-48--72, Class 30. The sections are to be indicated below. The castings are to be true to pattern, with 16 flutes separated by 16 flat facets. All ornamental components shall be cast iron.

3.2 Aluminum Casting

The lamp post may be cast in one piece, as described above, of aluminum alloy of the same details as described above and minimum wall thickness as described below. The alloy used in the casting shall have a minimum yield strength of 30,000 PSI and shall be heat treated as required to provide that yield strength.

3.3 Split Casting

The lamp post may be a multiple piece castings that are factory-assembled into one piece may be considered, provided that there are no gaps between any pieces of the assembly that would allow water seepage or rust. Prior written approval required for the method.

4) SHAFT

The entire shaft shall be straight within +/- 3/16 inch along the center axis of the shaft. Dimensions and wall thickness of the lamp post shall be as follows and as per the attached drawing:

A) Column at base - 5 3/4 inches outside diameter and ½ inch minimum wall thickness from outer edge of flute to inside wall.

B) Column at top - 3 1/4 inches outside diameter and 3/8 inch minimum wall thickness from outer edge of flute to inside wall .

C) Base at base - 17 inches outside diameter and ½" minimum wall thickness Flange 7/8" minimum thickness.

5) RECEPTACLE

The post shall incorporate a 15A120V GFI duplex receptacle with a waterproof cover, painted to match post. Receptacle shall be located 180 degrees from traffic flow and 6 inches from the bottom of the tenon.

6) HEIGHT

The height of the post, less tenon, shall be 13 feet 0 inches. The weight of the cast iron post with complete door assembly, shall be 460 lbs. +/- 5%. All castings shall be painted with a shop coat of iron oxide primer.

7) TENON

The top of the post shall be equipped with a luminaire mounting tenon integrally cast as a part of the post casting. The tenon shall measure 2 7/8" outside diameter and 2 5/8" long.

8) GROUNDING LUG

The post shall be drilled and tapped for a 1/4 inch - # 20 grounding screw, inside the lamp post and opposite the access door,

9) HANDHOLE

The post shall have an handhole/access door with minimum opening 7 inches high, 2 3/4 inch wide at the top and 7 inches wide at the bottom secured with stainless steel machine

screw shall be provided in the base of the lamp post.

10) BOTTOM ACCESS HOLE

The base of the lamp post shall have an inside diameter sufficient to accommodate two four inch diameter schedule 40 PVC conduits at the bottom of the post, side by side, for streetlight wiring in accordance with utility company requirements.

11) ANCHOR BOLTS

Each post shall be furnished with four (4) anchor bolts, each 3/4 inch diameter x 24 inches long, plus a 3 inches "L" at the bottom. Each bolt shall be supplied with one (1) nut and one (1) washer. Bolts, nuts, and washers shall be fully hot dipped galvanized in accordance with ASTM A153.

12) FINISH

12.1 Cast Aluminum

The cast aluminum poles, access doors, and hardware shall be finished with a dark green electrostatically-applied thermoset polyester powder coat, color "Hadco J" or approved equal, as per the attached finish specification "ICS-2". One pint can of dark green touch-up enamel, color "Federal Green" or approved equal, shall be supplied.

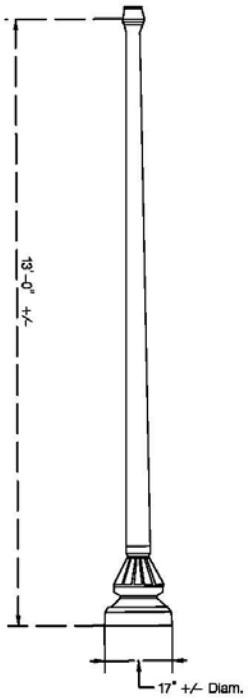
12.2 Cast Iron

The cast iron poles and all components shall be supplied with one coat of oil-based red lead primer paint. Two (2) coats of enamel (“Federal Green”, federal color 595B, # 14036) shall be apply to each pole in the field.

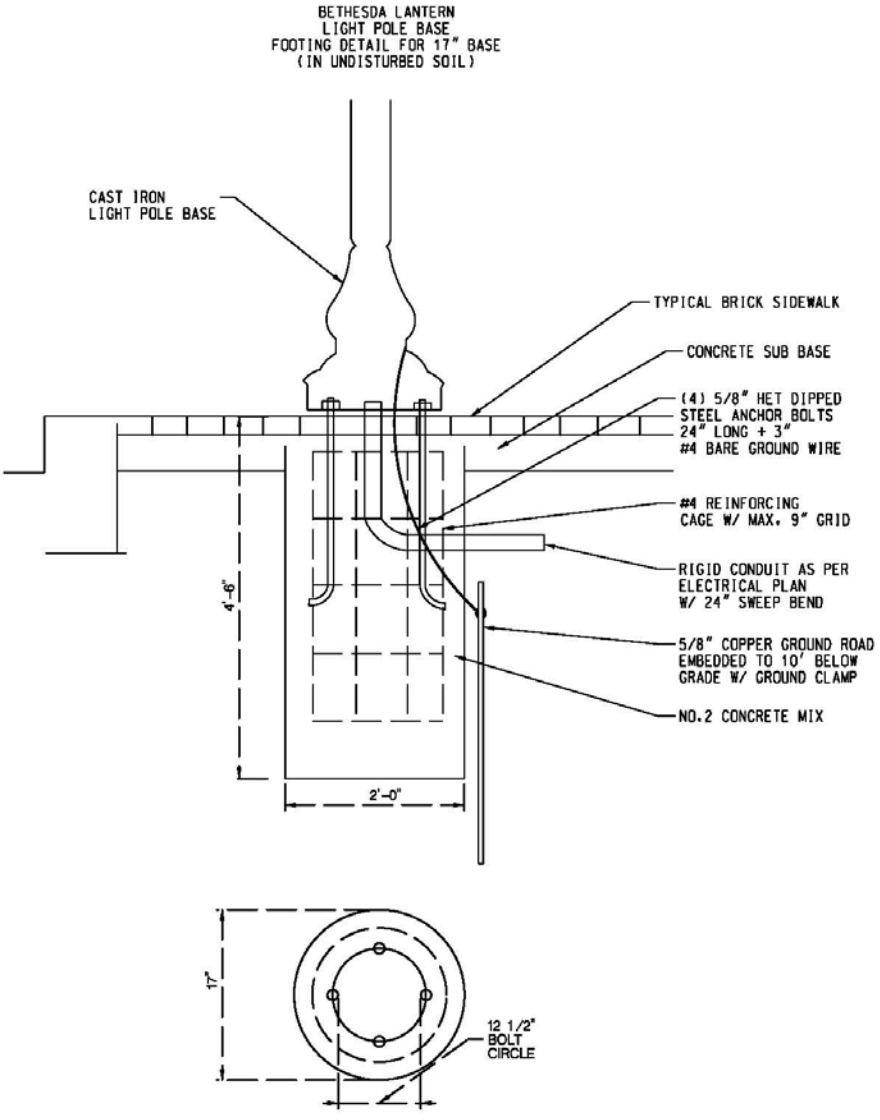
13) POLE INFORMATION

The lamp pole shall be Spring City Washington # 13 or Approved equal.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

BRONZE-COLORED, DECORATIVE, ROUND TAPERED, STEEL, TALL-POST STREETLIGHT POLES

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of decorative bronze-colored, tapered, round, steel
tall-post type streetlight poles for mounting one or more streetlight luminaires. These tall-posts are intended for use along Montgomery County roadways. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

Each pole shall be complete with the following:

a) Base place covers with attaching hardware;
b) Pole top cover with attaching hardware;
c) J-hook inside of top of pole;
d) Anchor bolts (as specified);
e) Handhole and cover plate (as specified);
f) Typical footing design specifications including, but not limited to, base template, anchor bolt dimensions, reinforcing and footing details;
g) "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 streetlight pole shall meet the requirements of the American Association of State Highway and Transportation Official (AASHTO),"Standard Specifications for Structural Supports for Highway Signs, Luminaire, and Traffic Signals," latest edition.

2.2 - Wind Load

All components of the tall-post 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 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.

For design purposes, the following assumptions shall be made:

1. Streetlight luminaires shall be assumed to be rectilinear in shape, minimum length plus width of 36" with a side-mounted bracket arm 8 to 12 inches in length.

2. One or two streetlight luminaires may be mounted on each tall-post streetlight pole. Two configurations of dual luminaire mounting shall be considered: opposite arrangement (180°) and at a right angle (90°).

3. The streetlight luminaires shall be mounted at a height of 25 feet above the base.

4. One 24" x 36" sign may be mounted with the sign's bottom edge 7 feet above the base.

2.3 - Finish

Prior to finishing, all materials except the unthreaded ends of the anchor bolts shall be hot-dipped galvanized as per ASTM A-123. All visible components shall then be finished to produce the appearance of a decorative "National Park Service Brown" color as described on the attachment entitled "Finishing Galvanized Steel and Aluminum Metals."

One (1) fourteen (14) ounce spray can to match the color of the tall-post streetlight shall be provided with each tall-post streetlight pole supplied.

Other finishing techniques may be considered by Montgomery County. Complete documentation and specifications for any alternate finish must be submitted with together with the results of an accelerated life-testing by an independent laboratory which certifies 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. The tall-post streetlight pole shall be capable of being mounted on the foundation of a decorative cast lamp post (i.e., four 0.75 inch diameter anchor bolts on a 12.5 inch diameter bolt circle).

3.2) Castings

All castings used to complete the tall-post streetlight shall be clean and smooth with details well defined and true to pattern. Steel castings shall conform to ASTM A27, Grade 65-35. Gray iron castings shall conform to ASTM A126, Class A.

4) POST

4.1) Shaft

The tapered post-shaft shall be made of a single length of sheet of NOT LESS THAN No. 11 Manufacturers Standard Gauge, and shall conform to the requirements of ASTM-A-595, Grade A. After being formed and welded, the post shaft shall then be cold rolled to increase the physical strength to a guaranteed minimum of 55,000 PSI.

4.2) Cross-Section

Each post-shaft shall have a round, circular cross-section with an outside base diameter of seven (7) inches, and with a uniform taper decreasing from the base at a rate of 0.14 inches per foot of height.

4.3) Length

The post-shaft shall have a length sufficiently long to provide a mounting height of 25 +/- feet from the base of the luminaire (nominal length of 26 feet).

4.4) Fabrication

No transverse joints or welds are permitted. The one (1) longitudinal weld shall be fusion-welded and ground or cold-rolled smooth. The curvature (for straightness) shall not exceed one-half (½) inch in any ten (10) foot portion of the total length.

5) BASE PLATE

A one (1) inch thick (minimum) steel base plate sufficient to fully develop the ultimate strength of the tall-post shall be secured to the base of the pole-shaft with two (2) self-closing transverse welds - one weld on the inside of the base at the bottom of the pole-shaft, and the other weld at the top of the baseplate.

The base shall telescope into the pole-shaft. The baseplate may be circular in shape with rounded corners and a nominal dimension of fifteen (15) inches or square in shape with rounded corners and a nominal dimension of fifteen (15) inches per side. The base plate shall have an opening sufficient to accommodate two (2), four (4) inch, ID PVC conduits. Four radial slotted bolt holds shall have a width of 1.25 inches for one inch diameter anchor bolts on a nominal 12 ½ inch bolt circle. The bolt holes shall be slots that can accommodate bolt circles from 12 inches to 13 inches.

6) HANDHOLES

The tall-post streetlight pole shall be supplied with a four (4) inch wide by eight (8) inch high semiflush reinforced handhole opening located a minimum of eight (8) inches bove the baseplate. Each pole shall be equipped with a cover plate for the handhole constructed of a minimum 11 gauge steel, to be attached to the streetlight pole with two (2) tamper-proof screws and retained to the streetlight pole by an eighteen (18) inch long stainless steel chain affixed to both the cover plate and the tall-post streetlight pole.

7) LUMINAIRE MOUNTING HOLES

Each tall-post streetlight pole shall be factory drilled for one set of holes necessary to mount the luminaire so that the bottom of the luminaire is twenty-five (25) feet above the base. The set of factory drilled mounting holes shall be 90° to the left of the plane of the hand hole when the pole is viewed from above.

8) J-HOOK

A J-hook shall be welded to the inside of the streetlight pole opposite to and above the

mounting holes for the luminaire.

9) ANCHOR BOLTS

Each pole shall be supplied with four (4) steel anchor bolts with a minimum yield strength of 55,000 PSI. There shall be at least a difference of 15,000 PSI between yield strength and tensile strength.

9.1) Size

The anchor bolts shall have a diameter of one (1) inch, a minimum length of thirty-six (36) inches plus a four (4) inch "L" bend at the bottom and a minimum of six (6) inches of thread at the top. The top eight (8) inches of all anchor bolts are to be hot-dipped galvanized.

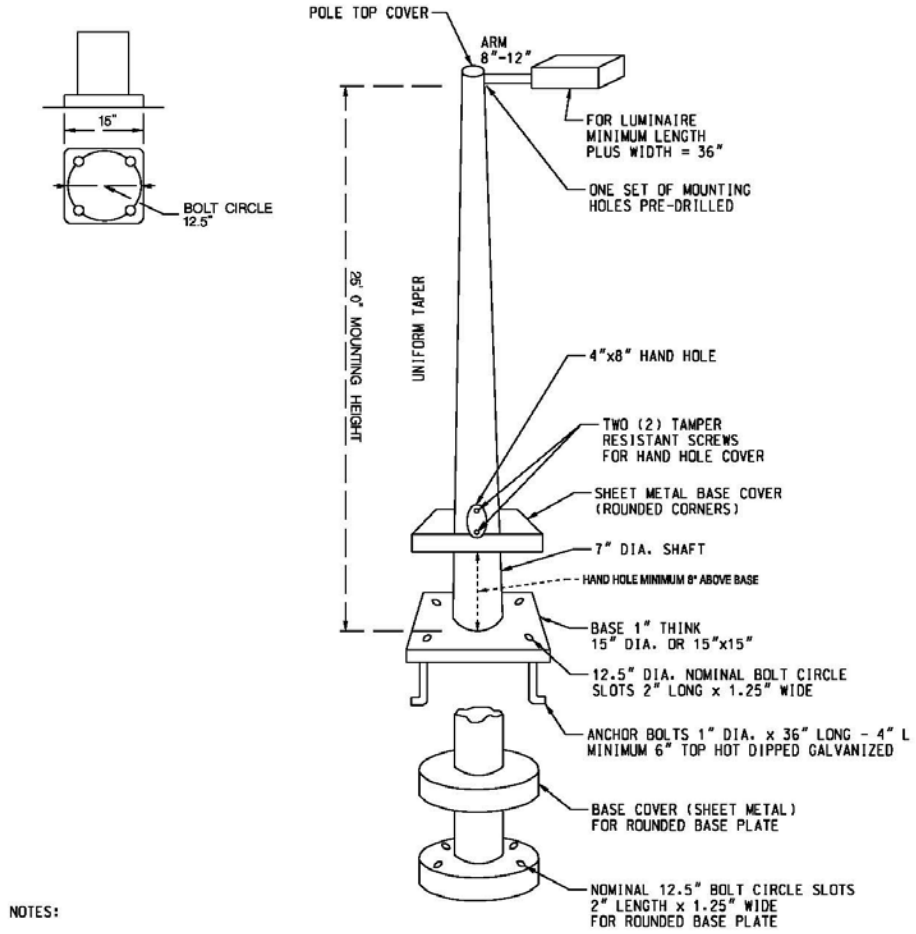
9.2 Nuts

Each anchor bolt shall be furnished with two (2) hexagonal nuts for plumbing and securing the pole as necessary. Nuts shall be ASTM A194, Grade 2 or 2H. A flat washer shall be provided for each bolt. All nuts are to be hot-dipped galvanized.

9.3) Shims

Each pole shall be furnished with four (4) metal shims, about one-eighth (1/8) inch thick. These shims are required in addition to the anchor bolt nuts and are to provide the County with an additional method to attach and plumb the pole to the anchor bolts. All shims are to be hot-dipped galvanized.

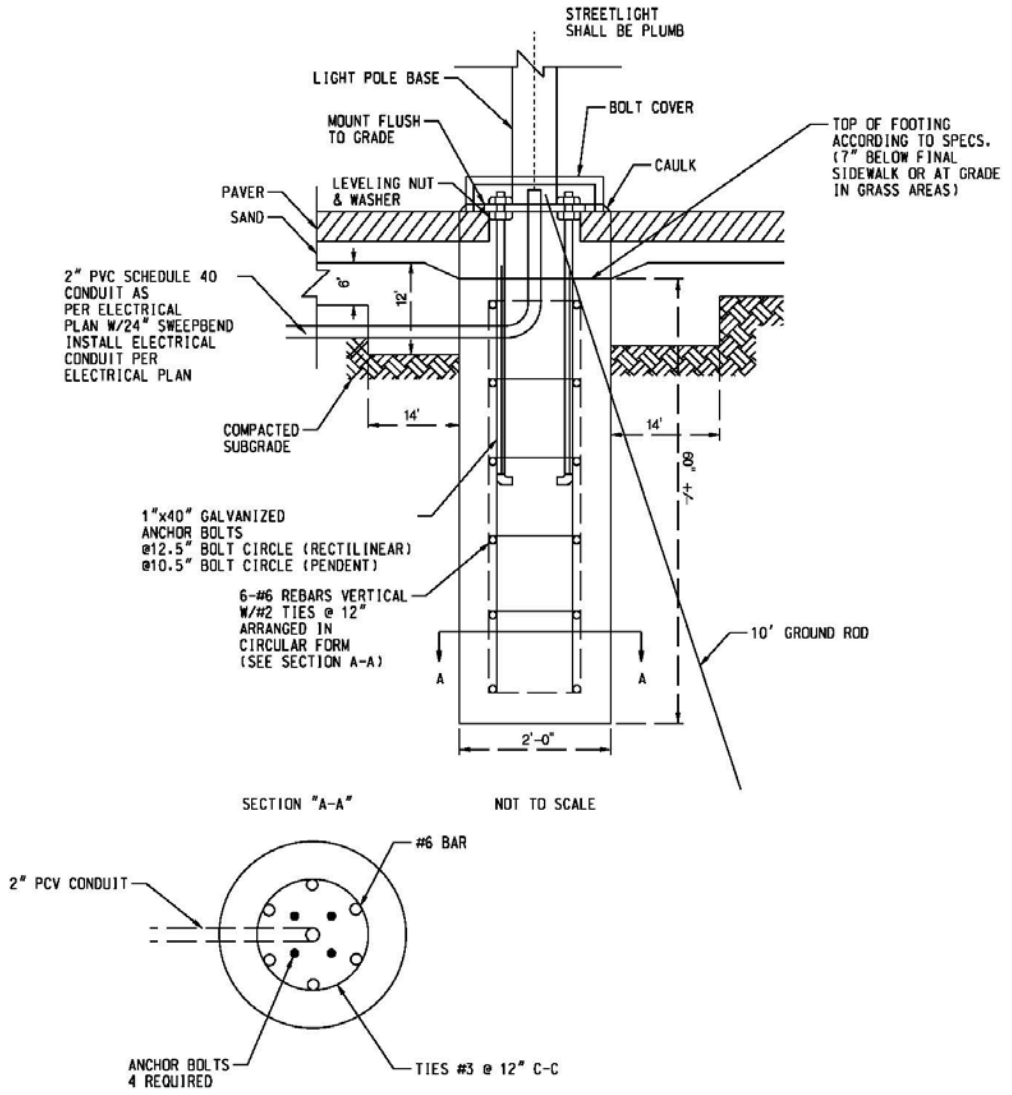
SPECIFICATIONS FOR STREETLIGHT HARDWARE



NOTES:

FINISH TO BE"NATIONAL PARK SERVICE BROWN"
AS PER FINISHING SPECIFICATIONS

SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

DAMASCUS, DECORATIVE, PEDESTRIAN STREETLIGHT POLES

PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of Damascus, decorative, pedestrian and wall mount streetlight poles. These pedestrian streetlight poles are intended for use in medians and at curbsides in rural and urban streetscape areas. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

A) PEDISTRIAN POLE (Type "A")

1) DESCRIPTION

The pole shall consist of the anchor bolts, base plate, decorative base cover, internal pole shaft, decorative fluted transition section, and an arched arm.

2) ANCHOR BOLTS

There shall be four (4) anchor bolts minimum 24 inches long by 3/4 inch with a 4 inch L shape bend on one end. They shall be manufactured from ASTM A-36 Grade steel with a minimum yield strength of 55,000 psi. The bolts shall be hot dipped galvanized on the threaded ends. There shall be one washer and one nut per bolt. The nuts shall be hot dipped galvanized and properly prepared to thread to the bolts. The washers shall be hot dipped galvanized also.

3) BASE PLATE

The base plate shall be a minimum 3/4 inch thick of B-135 alloy cast aluminum. It shall be pre-drilled with the bolt circles as specified by the manufacturer.

4) SHAFT

The shaft of the pole shall be a tapered from 5”near the pedestal to 3” near the tenon.

5) PEDESTAL

The pedestal dimensions should be 12 ¾” +/- 1”wide at the base and 43 ¾ +/- 1” in height. The pedestal cover shall be included and shall be 14” square. The pedestal shall be a cast aluminum 356HM Alloy with an access door.

6) HANDHOLE

The handholes shall be 4 3/8” x 5 ¾”.

7) POLE EXTENSION SHAFT

The pole extension shaft shall be 12’ tall from the bottom of the base to the beginning of the arm bracket mount.

8) RECEPTICAL

The pole shall have a single 120v outlet that is a weatherproof receptacle. There shall be 2 of these mounted at 180 degrees at the top of the pole.

9) RECEPTICAL

The pole shall have a single, weather proof, convenience, three wire, Festoon Outlet mounted at 8.25 feet above grade and facing towards the luminaire.

10) PHOTOCELL

The photocell shall be a button eye type 3,000 tork or equal with a shield that is mounted just below the receptacle on the pole, facing away from the luminaire.

11) ARCHED ALUMINUM MOUNTING ARM

The pole shall have an arched aluminum arm bracket shall be 1 1/2" Sch 40. This arm bracket shall be 6063-T52 Aluminum Alloy that has been modified for a 3" pole mount. The arched tubing shall be constructed of a 1.5 inch diameter aluminum tubing. The tubing shall have a maximum height of fifteen (15) feet above sidewalk grade. The tubing shall arch 180 degrees into the top of the luminaire. The arch shall be continuous and smooth. The tubing shall maintain the luminaire nominal mounting height of (12) twelve feet above sidewalk grade level.

12) FINISH

The entire pole and luminaire shall be finished by the luminaire manufacture at the factory with the painting process to be Thermoset polyester powdercoat that is electrostatically applied after a five-stage conversion cleaning process and bonded by heat fusion thermosetting. This finish should be laboratory tested for superior weatherability and fade resistance in accordance with ASTM B-117-64 and ANSI/ASTM G53-77 specifications.

B) WALL BRACKET (TYPE "A")

1) DESCRIPTION

Where necessary the luminaires shall be mounted on a arched aluminum wall bracket.

2) MOUNTING

The arched aluminum wall bracket shall be attached to the wall through a surface mounted wet location enclosure which contains the ballast.

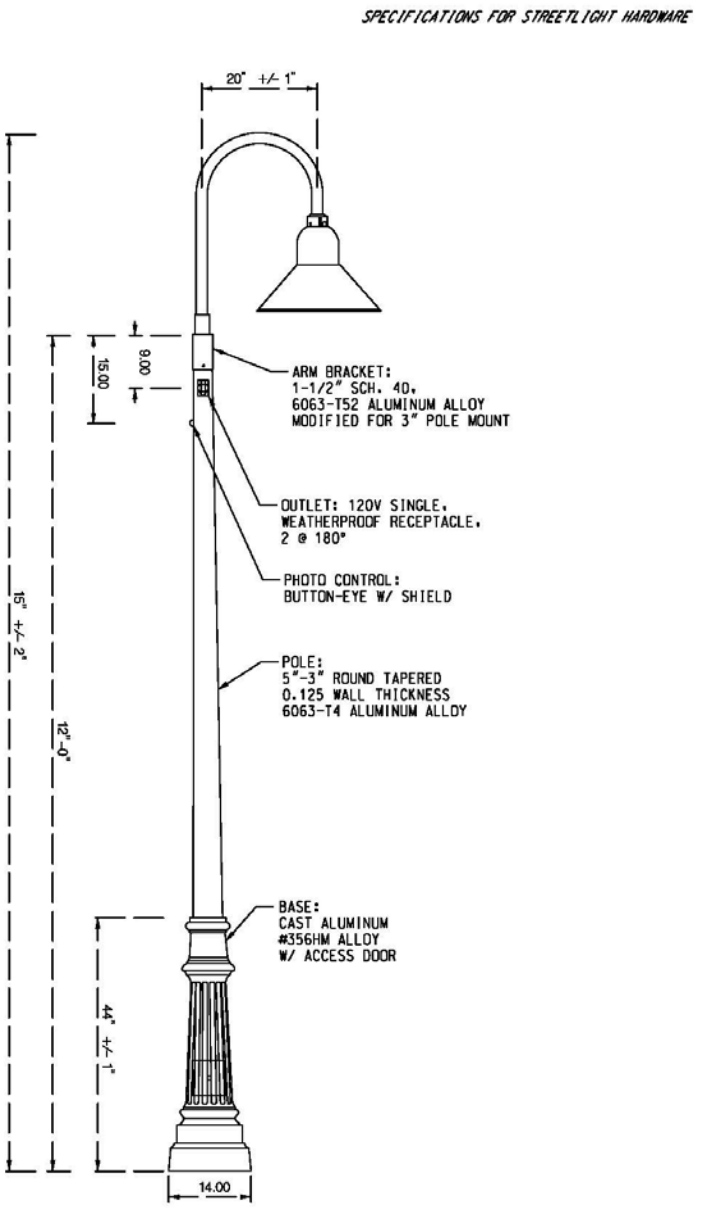
3) ARCHED ALUMINUM MOUNTING ARM

The arched aluminum arm shall be 1 ½" diameter Sch 40. This arm bracket shall be 6063-T52 Aluminum Alloy tubing. The tubing shall arch 180 degrees into the top of the luminaire. The arch shall be continuous and have a smooth radius.

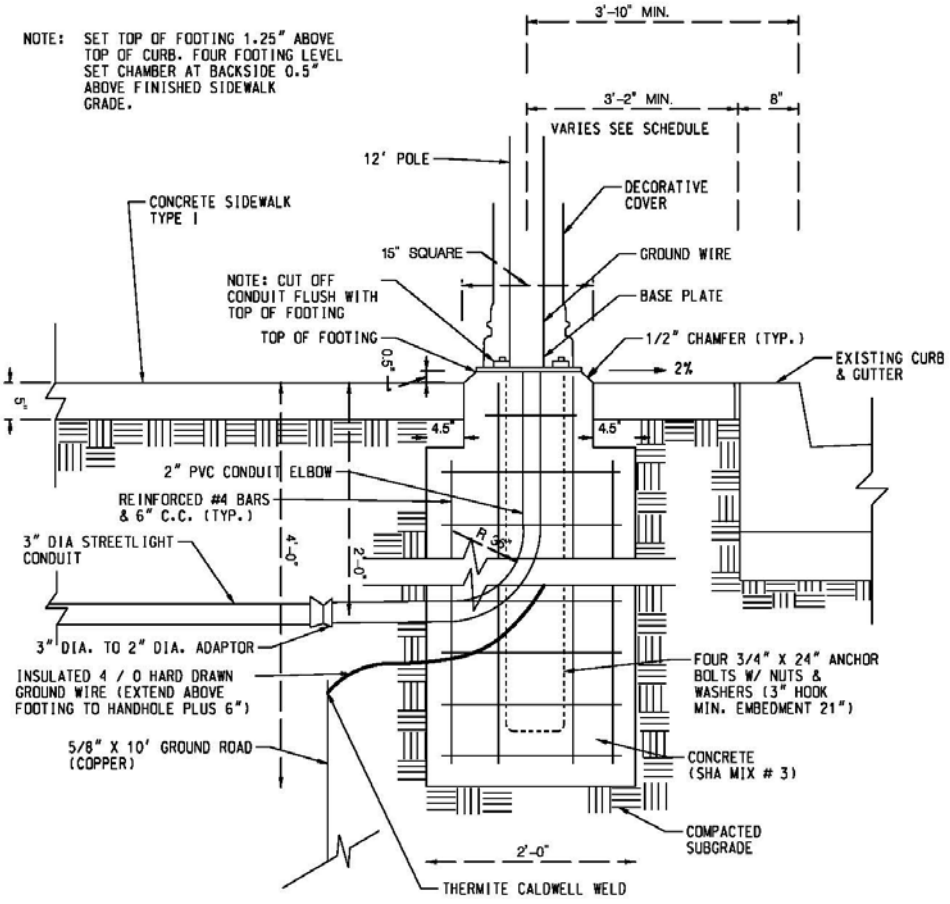
4) FINISH

The arched aluminum wall bracket and luminaire shall be finished by the luminaire manufacture at the factory with the painting process to be Thermoset polyester

powdercoat that is electrostatically applied after a five-stage conversion cleaning process and bonded by heat fusion thermosetting. This finish should be laboratory tested for superior weatherability and fade resistance in accordance with ASTM B-117-64 and ANSI/ASTM G53-77 specifications.


SPECIFICATIONS FOR STREETLIGHT HARDWARE
20" +/- 1"
9.00
15.00
15' +/- 2"
12'-0"
44" +/- 1"
14.00
ARM BRACKET:
1-1/2" SCH. 40,
6063-T52 ALUMINUM ALLOY
MODIFIED FOR 3" POLE MOUNT
OUTLET: 120V SINGLE,
WEATHERPROOF RECEPTACLE,
2 @ 180°
PHOTO CONTROL:
BUTTON-EYE W/ SHIELD
POLE:
5"-3" ROUND TAPERED
0.125 WALL THICKNESS
6063-T4 ALUMINUM ALLOY
BASE:
CAST ALUMINUM
#356HM ALLOY
W/ ACCESS DOOR

SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

DAMASCUS, DECORATIVE, BRONZE COLORED, VEHICULAR STREETLIGHT POLES

PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of Damascus, decorative, bronze colored, vehicular streetlight poles. These pedestrian streetlight poles are intended for use in medians and at curbsides in rural and urban streetscape areas. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

VEHICULAR STREETLIGHT POLE

1) DISCRIPTION

The pole shall consist of anchor bolts, anchor base, base cover, pole shaft, hand hole, and hand hold cover.

2) ANCHOR BOLTS

The anchor bolts shall be fabricated from hot rolled carbon steel bar with a minimum guaranteed yield strength of 55,000 psi. They shall be 1inch by 36 inch with a 4 inch “L” bend on one end. A minimum of 12 inches of the threaded end (end opposite the L bend), shall be hot dip galvanized. Each bolt shall be furnished with one hex nut and flat washer. The nuts and washers shall be hot dip galvanized.

3) BASE PLATE

The anchor base shall be fabricated from a hot rolled carbon steel plate with a guaranteed minimum yield strength of 36,000 psi. The base plate telescopes the pole shaft and is circumferentially welded top and bottom. The base is provided with slotted bolt holes to accommodate a variation in the nominal bolt circle as charted.

4) BASE PLATE COVER

The base cover is fabricated from carbon steel. It is a two-piece cover secured together with two painted hex head screws. The cover conceals the entire base plate and anchorage bolts.

5) POST

5.1) Shaft

The pole shaft shall be one piece, fabricated from 11 gauge coil stock weldable grade hot rolled commercial quality carbon steel. The steel shall be guaranteed to yield a minimum yield strength of 55,000 psi after fabrication. The diameter of the shaft at the base shall be 6.4 inch tapering to 2.4 inch at the top.

5.2) Cross Section

The shaft is cylindrical in cross-section with a uniform taper of approximately 0.14 inch of diameter change per linear foot.

5.3) Fabrication

The pole shall have a continuous davited arm. The davits shall be smooth and continuous, for the entire length of the pole shaft.

5.4) Length

The pole shall hold the luminaire at 25 +/- feet above grade and the arm extend shall no farther than 6 feet from the pole.

6) EFFECTIVE PROJECTION AREA

The pole shall be designed to handle up to 2.0 E.P.A. (effective projected area) and be able to withstand winds of 80 M.P.H. plus 30 % gust factor.

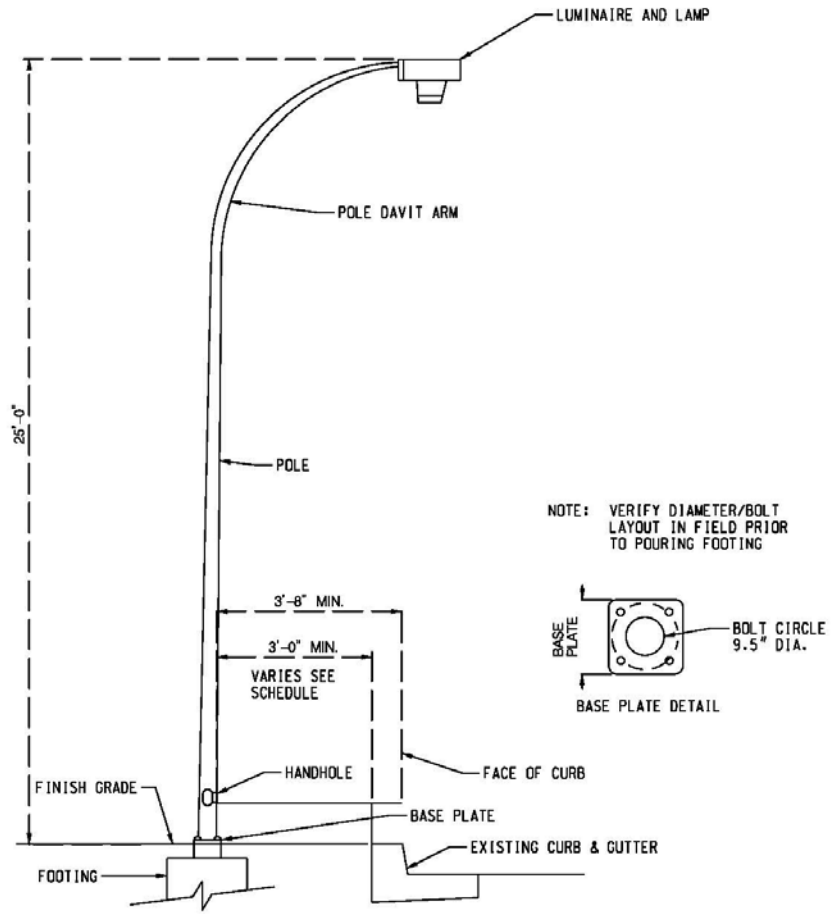
7) HANDHOLE & COVER

There shall be a reinforced handhole in the pole shaft. It shall be nominal 3 inch by 5 inch inside opening and circumferentially welded in the poleshaft. Included is a steel cover with attachment screws. A nut holder is welded to the handhole and includes a 0.5 inch - # 13UNC hex head bolt and nut for grounding. The handhole is located 6 inch above the base and 90 degrees clockwise with respect to the luminaire arm when viewed from above the pole. The handhole cover shall be retained by a chain permanently attached to the pole.

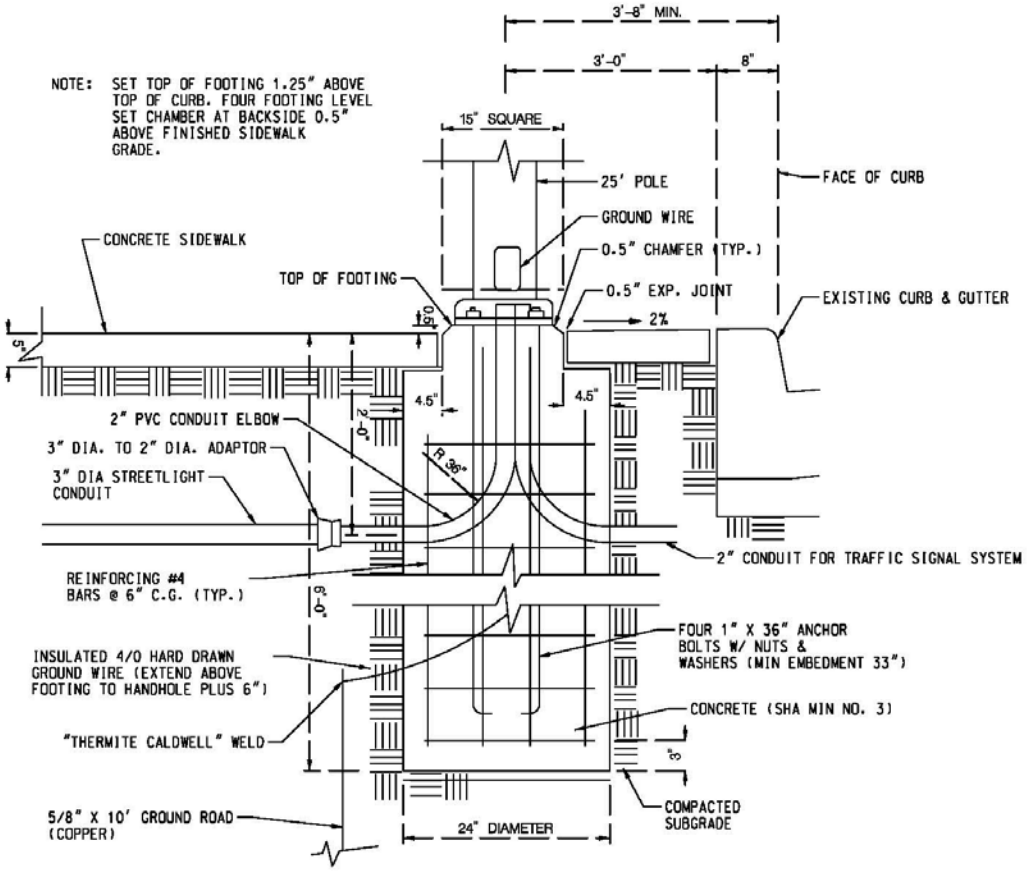
8) FINISH

The poles shall be finish painted "National Park Service Brown." All poles shall have all detrimental weld flux slag deposits mechanically removed. All rust, moisture, oil, grease, loose paint or any foreign material then shall be removed prior to undercoat painting per Steel Structures Painting Council (SSPC) Specification #SSPC-YIS1. The pole shall be finished by the painting process as stated "FINISHING GALVANIZED STEEL AND ALUMINUM METALS," attached, The color shall be "FEDERAL STANDARD # 595B COLOR # 20040. The minimum finish paint coat thickness shall be 2.0 mils.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

DECORATIVE (RESIDENTIAL) LAMP POST FOR USE ON OAKLYN DRIVE (AVENEL)

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of residential, decorative, cast, streetlight poles . These decorative streetlight poles are intended for use along roadways in Montgomery County. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

Each pole shall include the following:

a) Access plate with attachment hardware;
b) Anchor Bolts, nuts, and washers (as specified);
c) Typical footer design specifications including but not limited to, base template, anchor dimensions, reinforcement and footer details;
d) One (1) pint of touch-up paint, Federal Green, federal color # 595B, # 14036.

2) DESIGN CRITERIA

2.1 AASHTO Standards

The residential, decorative, cast, streetlight post shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Standard, “Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals,” latest edition.

2.2 Wind Load

The residential, decorative, cast, streetlight post shall be deigned to resist (at yield strength of the material without permanent deflection or destruction), test loads equivalent to the calculated wind loads developed by the velocity pressures of a 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3 Effective Projected Area (EPA)

The residential, decorative, cast, streetlight post shall have a EPA allowable for the following assumptions:

a) Streetlight luminaire shall be assumed to be rectangular in shape with triangular shapes at the top and bottom, minimum length plus width of sixty-five (65) inches, when viewed from above.

b) The streetlight luminaire shall have a nominal mounting height of 16 feet 4 inches above the base.

c) One or two (24" x 36") maximum traffic signs may be mounted with the sign's bottom edge 7 feet above the base.

3) MATERIALS

3.1 Iron Casting

The lamp post shall be integrally cast as one piece and shall be cast iron per ASTM A-48--72, Class 30. The sections are to be indicated below. The castings are to be true to pattern, with 16 flutes separated by 16 flat facets. There shall be no visibly signs of separation between the cope and drag sections of the mold. All ornamental components shall be cast iron.

3.2 Aluminum Casting

The lamp post may be cast in one piece, as described above, of aluminum alloy of the same details as described above and minimum wall thickness as described below. The alloy used in the casting shall have a minimum yield strength of 30,000 PSI and shall be heat treated as required to provide that yield strength.

3.3 Split Casting

The lamp post may be a multiple piece castings that are factory-assembled into one piece may be considered, provided that there are no gaps between any pieces of the assembly that would allow water seepage or rust. Prior written approval required for the method.

4) PEDESTAL

The pedestal shall be 24 inches +/- 0.25 inch in diameter with a height of 23 inches +/- 1.0 inch.

5) BOLT CIRCLE

The nominal bolt circle of the lamp post shall be 17 inches in diameter and consist of four (4) equally spaced slots to accommodate 3/4 inch diameter anchor bolts

6) SHAFT

The shaft shall taper uniformly from seven (7) inches outside diameter at the bottom to a minimum of 4.5 inches outside diameter at the top. The shaft section shall consist of sixteen (16) equally spaced flutes. The outer portion of each flute shall have a flat face, 3/8 +/- 1/16 inches in width. The flutes shall remain constant from the top to the bottom of the tapered shaft

7) HEIGHT

The height of the post, less tenon, shall be 14 feet 6 inches. The weight of the cast iron post with complete door assembly, shall be 460 lbs. +/- 5%. All castings shall be painted with a shop coat of iron oxide primer.

8) TENON

The top of the post shall be equipped with a luminaire mounting tenon integrally cast as a part of the post casting. The tenon shall measure 3.25 +/- 0.25 inches outside diameter and be 3 inches long.

9) GROUNDING LUG

The post shall be drilled and tapped for a 1/4 inch - # 20 grounding screw, inside the lamp post and opposite the access door.

10) HANDHOLE

The post shall have an handhole/access door with minimum opening 7 inches high and shall be a minimum of 2 3/4 inch to a maximum of 4 ½ inch wide at the top and 7.5 inches +/- 0.5 inches wide at the bottom secured with stainless steel machine screw shall be provided in the base of the lamp post.

11) BOTTOM ACCESS HOLE

The pedestal shall have a clear opening at grade a minimum of 11 inches in diameter. The base of the lamp post shall have an inside diameter sufficient to accommodate two (2) - four (4) inch diameter schedule 40 PVC conduits at the bottom of the post, side by side, for streetlight wiring in accordance with utility company requirements.

12) TOLERANCES

Dimensions may be subject to a tolerance of plus or minus 10%, provided that the appearance and proportions are reasonably identical to the post shown on the attached drawing, in the sole judgement of the County. The 10% tolerance shall not apply to the height of the post nor to the diameter of the tenon, for which no tolerance will be allowed other than normal manufacturing tolerances.

13) ANCHOR BOLTS

Each post shall be furnished with four (4) anchor bolts, each 3/4 inch in diameter x 36 inches long, plus a 4 inch long "L" at the bottom. Each bolt shall be supplied with one (1) nut and one (1) washer. Bolts, nuts, and washers shall be fully hot dipped galvanized in accordance with ASTM A153.

12) FINISH

12.1 Cast Aluminum

The cast aluminum poles, access doors, and hardware shall be finished with a dark green electrostatically-applied thermoset polyester powder coat, color "Federal Green" or approved equal, as per the attached finish specification "ICS-2". One pint can of Federal Green touch-up enamel or approved equal, shall be supplied.

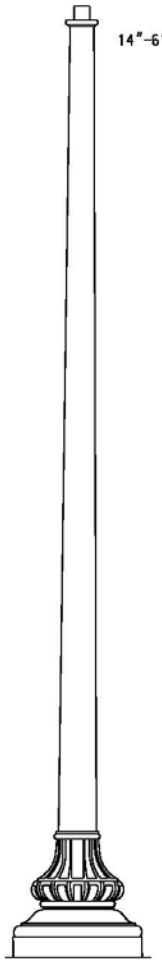
12.2 Cast Iron

The cast iron poles and all components shall be supplied with one coat of oil-based red lead primer paint. Two (2) coats of enamel "Federal Green", federal color 595B, # 14036 shall be apply to each pole in the field.

13) POLE INFORMATION

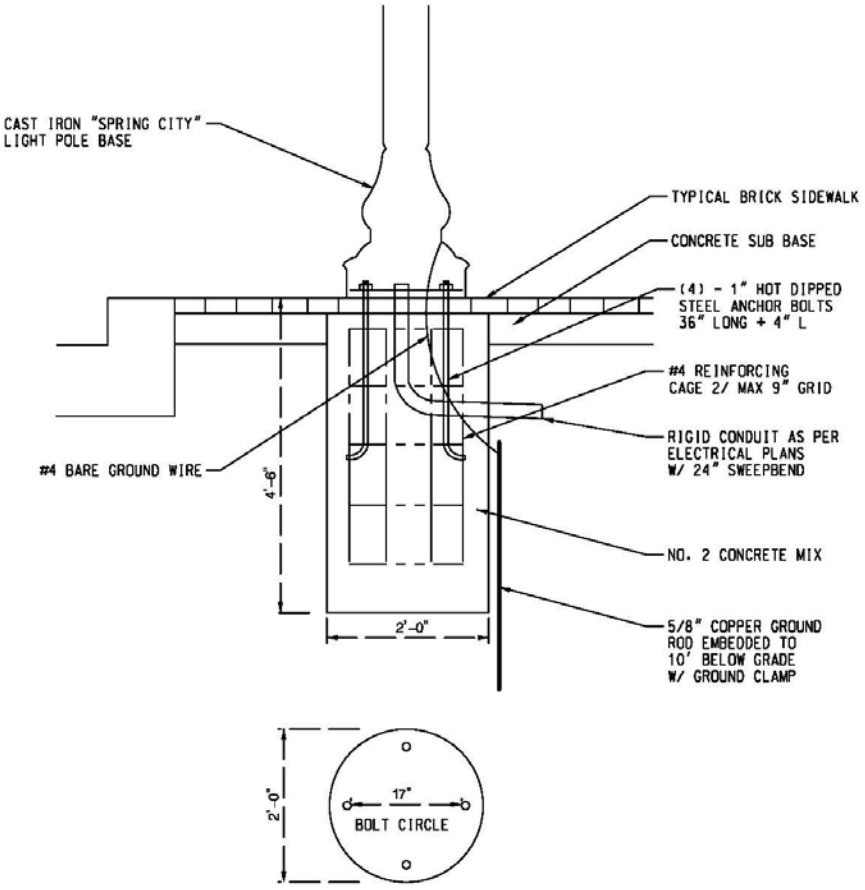
The lamp post shall be either the Antique Capitol Series, C15/24-CI/PP, the Washington #16 Standard modified to 14 feet 6 inches in height, less tenon, or approved equal.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



SPECIFICATIONS FOR STREETLIGHT HARDWARE

FOOTING DETAIL FOR 24" BASE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

DECORATIVE (RESIDENTIAL) LAMP POST FOR USE ON STREETS CLASSIFIED PRIMARY OR LOWER

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of residential, decorative, cast, streetlight poles. These decorative streetlight poles are intended for use along roadways in Montgomery County. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

Each pole shall include the following:

a) Access plate with attachment hardware;
b) Anchor Bolts, nuts, and washers (as specified);
c) Typical footer design specifications including but not limited to, base template, anchor dimensions, reinforcement and footer details;
d) One (1) pint of touch-up paint, Federal Green, federal color # 595B, # 14036.

2) DESIGN CRITERIA

2.1 AASHTO Standards

The residential, decorative, cast, streetlight post shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

2.2 Wind Load

The residential, decorative, cast, streetlight post shall be deigned to resist (at yield strength of the material without permanent deflection or destruction), test loads equivalent to the calculated wind loads developed by the velocity pressures of a 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3 Effective Projected Area (EPA)

The residential, decorative, cast, streetlight post shall have a EPA allowable for the following assumptions:

a) Streetlight luminaire shall be assumed to be rectangular in shape with triangular shapes at the top and bottom, minimum length plus width of sixty-five (65) inches, when viewed from the side.

b) The streetlight luminaire shall have a nominal mounting height of 12 feet above the base.

c) One or two (24" x 36") maximum traffic signs may be mounted with the sign's bottom edge 7 feet above the base.

3) MATERIALS

3.1 Iron Casting

The lamp post shall be integrally cast as one piece and shall be cast iron per ASTM A-48--72, Class 30. The sections are to be indicated below. The castings are to be true to pattern, with 16 flutes separated by 16 flat facets. There shall be no visible signs of separation between the cope and drag sections of the mold. All ornamental components shall be cast iron.

3.2 Aluminum Casting

The lamp post may be cast in one piece, as described above, of aluminum alloy of the same details as described above and minimum wall thickness as described below. The alloy used in the casting shall have a minimum yield strength of 30,000 PSI and shall be heat treated as required to provide that yield strength.

3.3 Split Casting

The lamp post may be a multiple piece castings that are factory-assembled into one piece may be considered, provided that there are no gaps between any pieces of the assembly that would allow water seepage or rust. Prior written approval required for the method.

4) PEDESTAL

The pedestal shall be 17 inches +/- 0.25 inch in diameter with a height of 17 1/4 inches +/- 1.0 inch.

5) BOLT CIRCLE

The nominal bolt circle of the lamp post shall be 12.5 inch in diameter and consist of four (4) equally spaced slots to accommodate 5/8 inch diameter anchor bolts

6) SHAFT

The shaft shall taper uniformly from six (6) inches outside diameter at the bottom to a minimum of four (4) inches outside diameter at the top. The shaft section shall consist of sixteen (16) equally spaced flutes. The outer portion of each flute shall have a flat face, 3/8 +/- 1/16 inches in width. The flutes shall remain constant from the top to the bottom of the tapered shaft

7) HEIGHT

The height of the post, less tenon, shall be 12 feet 0 inches. The weight of the cast iron post with complete door assembly, shall be 460 lbs. +/- 5%. All castings shall be painted with a shop coat of iron oxide primer.

8) TENON

The top of the post shall be equipped with a luminaire mounting tenon integrally cast as a part of the post casting. The tenon shall measure 3.25 +/- 0.25 inches outside diameter and be 2.5 inches long.

9) GROUNDING LUG

The post shall be drilled and tapped for a 1/4 inch - # 20 grounding screw, inside the lamp post and opposite the access door,

10) HANDHOLE

The post shall have an handhole/access door with minimum opening 6 +/- 0.5 inches high and shall be a minimum of 3 ½ +/- 1.0 inch wide at the top and 7.5 inches +/- 1.0 inches wide at the bottom secured with stainless steel machine screw shall be provided in the base of the lamp post. The handhole is at 90 degrees clockwise with respect to the luminaire arm when viewed from above the pole.

11) BOTTOM ACCESS HOLE

The pedestal shall have a clear opening at grade a minimum of nine (9) inches in diameter. The base of the lamp post shall have an inside diameter sufficient to accommodate two four inch diameter schedule 40 PVC conduits at the bottom of the post, side by side, for streetlight wiring in accordance with utility company requirements.

12) TOLERANCES

Dimensions may be subject to a tolerance of plus or minus 10%, provided that the appearance and proportions are reasonably identical to the post shown on the attached drawing, in the sole judgement of the County. The 10% tolerance shall not apply to the height of the post nor to the diameter of the tenon, for which no tolerance will be allowed other than normal manufacturing tolerances.

13) ANCHOR BOLTS

Each post shall be furnished with four (4) anchor bolts, each 5/8 inches diameter x 24 inch long, plus a 3" "L" at the bottom. Each bolt shall be supplied with one (1) nut and one (1) washer. Bolts, nuts, and washers shall be fully hot dipped galvanized in accordance with ASTM A153.

14) FINISH

15.1 Cast Aluminum

The cast aluminum poles, access doors, and hardware shall be finished with a dark green electrostatically-applied thermoset polyester powder coat, color "Federal Green" or approved equal, as per the attached finish specification "ICS-2". One pint can of Federal Green touch-up enamel or approved equal, shall be supplied.

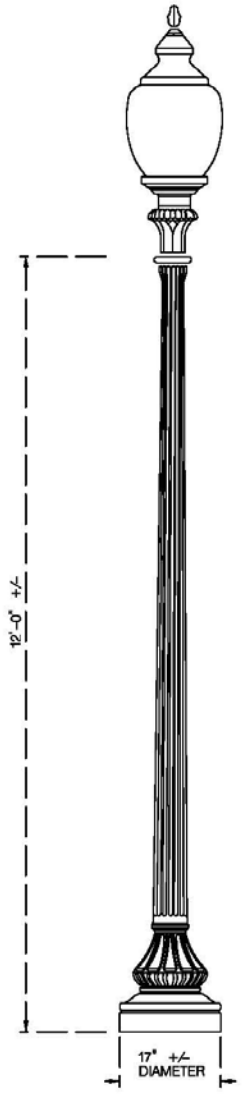
15.2 Cast Iron

The cast iron poles and all components shall be supplied with one coat of oil-based red lead primer paint. Two (2) coats of enamel “Federal Green”, federal color 595B, # 14036 shall be applied to each pole in the field.

16) POLE INFORMATION

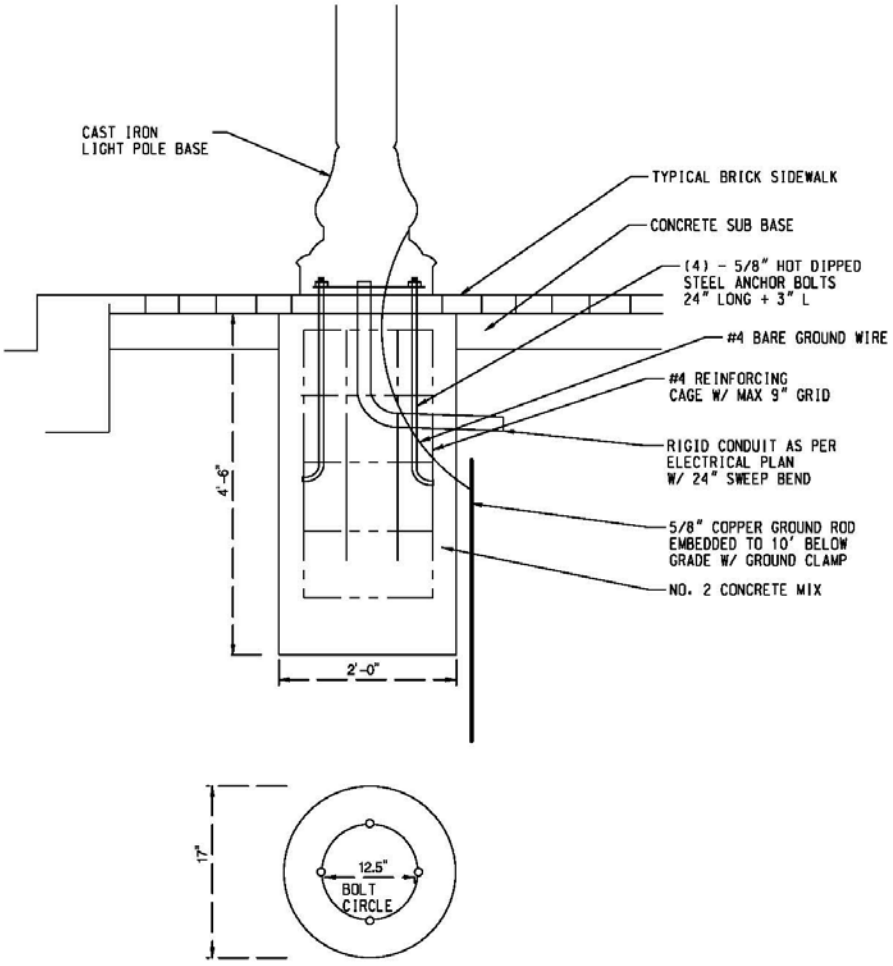
The lamp post shall be either the Antique Capitol Series, C12/17-CI/PP, the Washington #12 Standard modified to 12 foot 0 inches in height, less tenon, or approved equal.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



SPECIFICATIONS FOR STREETLIGHT HARDWARE

LIGHT POLE BASE
FOOTING DETAIL FOR 17" BASE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

DECORATIVE LAMP POST FOR USE IN SILVER SPRING

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of residential, decorative, cast streetlight poles. These decorative streetlight poles are intended for use along roadways in Montgomery County. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

Each pole shall include the following:

a) Access plate with attachment hardware:
b) Anchor Bolts, nuts, and washers (as specified);
c) Typical footer design specifications including but not limited to, base template, anchor dimensions, reinforcement and footer details;
d) One (1) pint of touch-up paint, Federal Green, federal color # 595B, # 14036

2) DESIGN CRITERIA

2.1 AASHTO Standards

The residential, decorative, cast, streetlight post shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

2.2 Wind Load

The residential, decorative, cast, streetlight post shall be deigned to resist (at yield strength of the material without permanent deflection or destruction), test loads equivalent to the calculated wind loads developed by the velocity pressures of an 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the

yield strength shall be maintained.

2.3 Effective Projected Area (EPA)

The residential, decorative, cast, streetlight post shall have a EPA allowable for the following assumptions:

a) Streetlight luminaire shall be assumed to be rectangular in shape with triangular shapes at the top and bottom, minimum length plus width of sixty-five (65) inches, when viewed from the side.

b) The streetlight luminaire shall have a nominal mounting height of 16 feet 4 inches above the base.

c) One or two (24" x 36") maximum traffic signs may be mounted with the sign's bottom edge 7 feet above the base.

3) MATERIALS

3.1 Iron Casting

The lamp post shall be integrally cast as one piece and shall be cast iron per ASTM A-48--72, Class 30. The sections are to be indicated below. The castings are to be true to pattern, with 16 flutes separated by 16 flat facets. There shall be no visibly signs of separation between the cope and drag sections of the mold. All ornamental components shall be cast iron.

3.2 Aluminum Casting

The lamp post may be cast in one piece, as described above, of aluminum alloy of the same details as described above and minimum wall thickness as described below. The alloy used in the casting shall have a minimum yield strength of 30,000 PSI and shall be heat treated as required to provide that yield strength.

3.3 Split Casting

The lamp post may be a multiple piece castings that are factory-assembled into one piece may be considered, provided that there are no gaps between any pieces of the assembly that would allow water seepage or rust. Prior written approval is required for this method.

4) PEDESTAL

The pedestal shall be 24 inches +/- 0.25 inch in diameter with a height of 23 inches +/- 1.0 inch.

5) BOLT CIRCLE

The nominal bolt circle of the lamp post shall be 17 inches in diameter and consist of four (4) equally spaced slots to accommodate one (1) inch diameter anchor bolts

6) SHAFT

The shaft shall taper uniformly from seven (7) inches outside diameter at the bottom to a minimum of 4.5 inches outside diameter at the top. The shaft section shall consist of sixteen (16) equally spaced flutes. The outer portion of each flute shall have a flat face, 3/8 +/- 1/16 inches in width. The flutes shall remain constant from the top to the bottom of the tapered shaft

7) RECEPTACLE

The post shall incorporate a 15A120v GFI duplex receptacle with a waterproff cover plate, painted to match the post. Receptacle location shall be 180 degrees from oncoming traffic flow, located 6 inches from the bottom of the tenon.

8) HEIGHT

The height of the post, less tenon, shall be 13 feet 2 inches. The weight of the cast iron post with complete door assembly, shall be 460 lbs. +/- 5%. All castings shall be painted with a shop coat of iron oxide primer.

9) TENON

The top of the post shall be equipped with a luminaire mounting tenon integrally cast as a part of the post casting. The tenon shall measure 3.25 +/- 0.25 inches outside diameter and be 3 inches long.

10) GROUNDING LUG

The post shall be drilled and tapped for a 1/4 inch - # 20 grounding screw, inside the lamp post and opposite the access door,

11) HANDHOLE

The post shall have an handhole/access door with minimum opening 7 inches high and shall be a minimum of 2 3/4 inch to a maximum of 4 ½ inch wide at the top and 7.5 inches +/- 0.5 inches wide at the bottom secured with stainless steel machine screw shall be provided in the base of the lamp post. The handhole is at 90 degrees clockwise with respect to the luminaire arm when viewed from above the pole.

12) BOTTOM ACCESS HOLE

The pedestal shall have a clear opening at grade a minimum of 11 inches in diameter. The base of the lamp post shall have an inside diameter sufficient to accommodate two (2) - four (4) inch diameter schedule 40 PVC conduits at the bottom of the post, side by side, for streetlight wiring in accordance with utility company requirements.

13) TOLERANCES

Dimensions may be subject to a tolerance of plus or minus 10%, provided that the appearance and proportions are reasonably identical to the post shown on the attached drawing, in the sole judgement of the County. The 10% tolerance shall not apply to the height of the post nor to the diameter of the tenon, for which no tolerance will be allowed other than normal manufacturing tolerances.

14) ANCHOR BOLTS

Each post shall be furnished with four (4) anchor bolts, each one (1) inch diameter x 36 inch long, plus a 4" "L" at the bottom. Each bolt shall be supplied with one (1) nut and one (1) washer. Bolts, nuts, and washers shall be fully hot dipped galvanized in accordance with ASTM A153.

15) FINISH

15.1 Cast Aluminum

The cast aluminum poles, access doors, and hardware shall be finished with a dark green electrostatically-applied thermoset polyester powder coat, color "Federal Green" or approved equal, as per the attached finish specification "ICS-2". One pint can of Federal Green touch-up enamel or approved equal, shall be supplied.

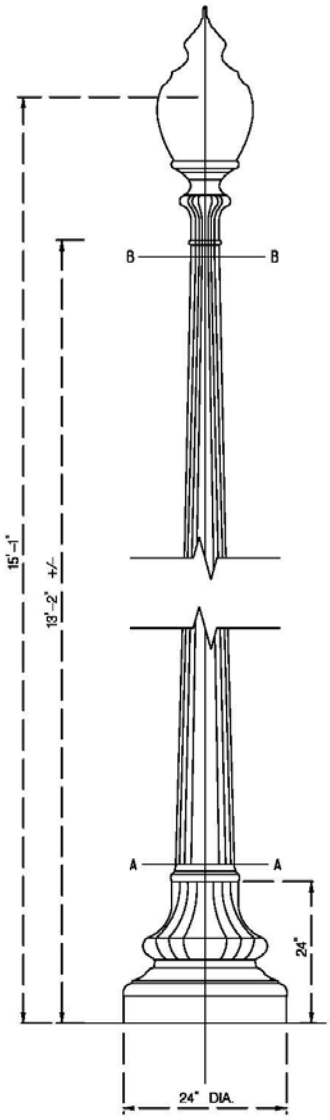
15.2 Cast Iron

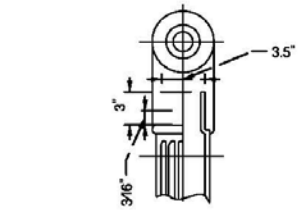
The cast iron poles and all components shall be supplied with one coat of oil-based red lead primer paint. Two (2) coats of enamel "Federal Green", federal color 595B, # 14036) shall be applied to each pole in the field.

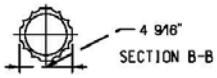
16) POLE INFORMATION

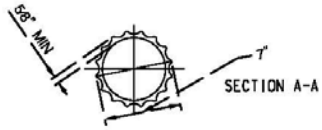
The lamp post shall be the Antique Capitol Series, C13/24-CI/PP, the Washington #13 Standard modified to 13 foot 2 inches in height, less tenon, or approved equal.

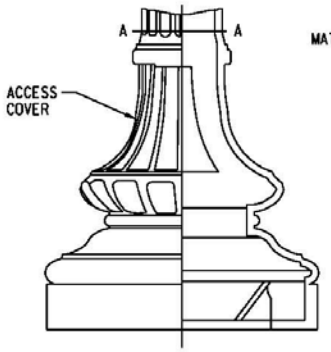
SPECIFICATIONS FOR STREETLIGHT HARDWARE



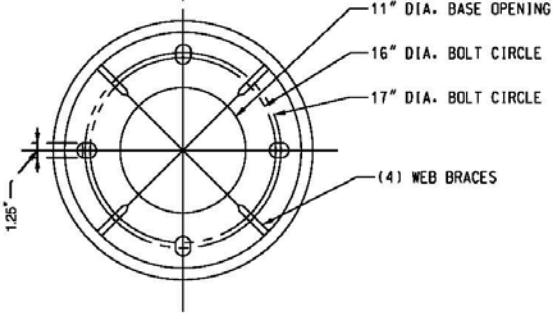




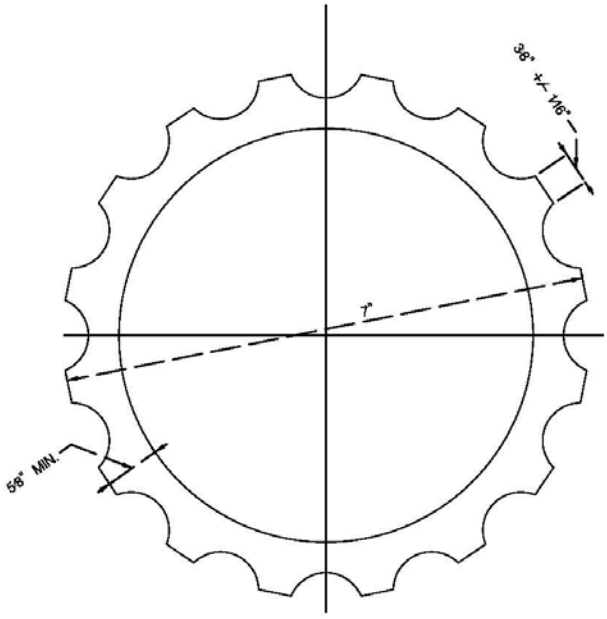




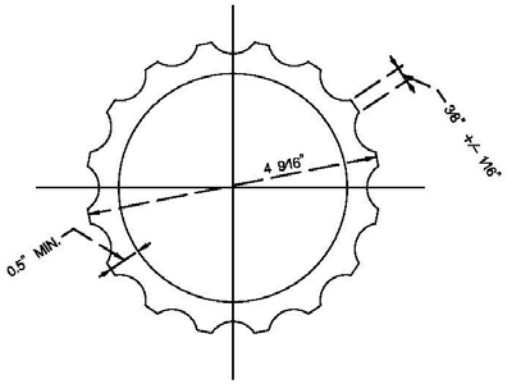
MATERIAL: CAST DUCTILE IRON GRADE 60-45-10 OR ANSI A21.51



SPECIFICATIONS FOR STREETLIGHT HARDWARE



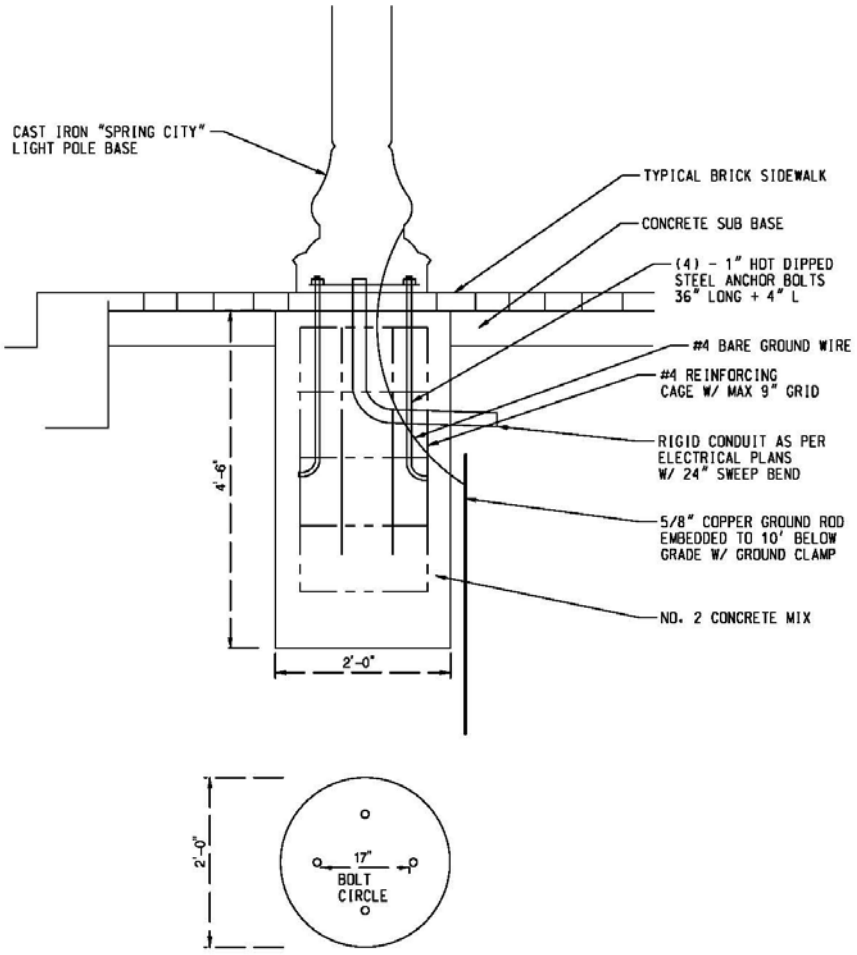
SECTION A-A



SECTION B-B

SPECIFICATIONS FOR STREETLIGHT HARDWARE

FOOTING DETAIL FOR 24" BASE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

FIBERGLASS RESIDENTIAL DECORATIVE FLUTED DIRECT BURIAL LAMP POST

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of fiberglass direct burial decorative residential streetlight post. These fiberglass decorative streetlight post are intended for use along roadways in Montgomery County. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

2) DESIGN CRITERIA

2.1 AASHTO Standards

The fiberglass direct burial decorative residential streetlight post shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

2.2 Wind Load

The fiberglass direct burial decorative residential streetlight post shall be deigned to resist (at yield strength of the material without permanent deflection or destruction), test loads equivalent to the calculated wind loads developed by the velocity pressures of an 100 MPH wind with a 1.3 gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3 Effective Projected Area (EPA)

The fiberglass direct burial decorative residential streetlight post shall have an EPA allowable for the following assumptions:

a) Streetlight luminaire shall be assumed to be rectangular in shape with

triangular shapes at the top and bottom, minimum length plus width of sixty-five (65) inches, when viewed from the side.

b) The streetlight luminaire shall have a nominal mounting height of 12 feet above the ground.

c) One or two (24" x 36") maximum traffic signs may be mounted with the sign's bottom edge 7 feet above the base.

3) MATERIALS

a) The fiberglass direct burial decorative residential streetlight post shall be constructed by a winding filament process with color pigmented polyester resin impregnated into the filaments. The filament winding shall be continuously applied with uniform tension.

b) The resin used will be color pigmented and shall be ultraviolet resistant. A highly weather resistant pigmented polyurethane coating shall be applied to the pole at a minimum thickness of 1.5 mils.

4) SHAFT

The shaft shall taper uniformly from 6 ½ inches outside diameter at the bottom to a minimum of 4 ½ inches outside diameter at the top. The shaft section shall consist of sixteen (16) equally spaced flutes. The outer portion of each flute shall have a flat face, 3/8 inches in width. The flutes shall remain constant from the top to the bottom of the tapered shaft.

5) HEIGHT

The height of the post, less tenon, shall be 16 feet. The post shall have 12' of exposed post above the ground and 4' of embedded post in the ground, as shown on drawing.

6) TENON

The decorative residential streetlight pole shall have a permanently bonded, hot-dipped galvanized steel or aluminum, 3 inch tenon.

7) HANDHOLE

The post shall have an handhole located approximately 12 inches above the ground line. The handhole shall have an opening of 5 inches high minimum and shall be 2 3/8 inches

wide minimum. The handhole shall be secured with two tamper resistant stainless steel machine screws.

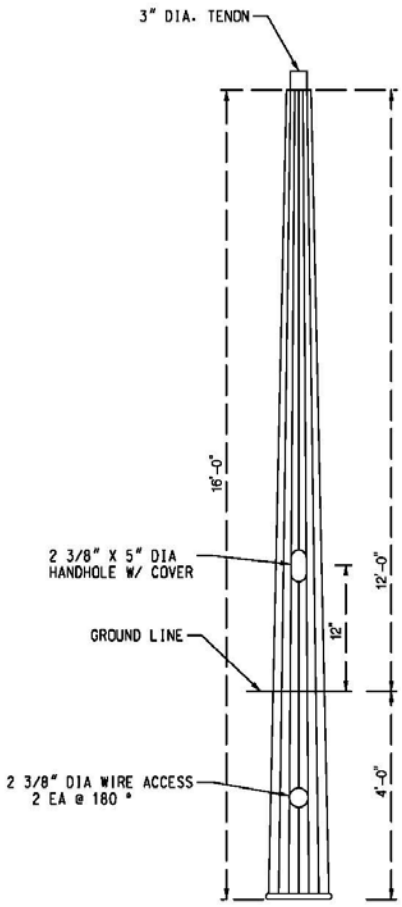
8) ACCESS HOLE

The post shall have (2) access holes located approximately 18 inches +/- below the ground line. The access holes for wiring shall be opposite each other and shall have rubber grommets provided for each access hole. The access holes shall have an opening of 2 3/8 inches in diameter minimum.

9) FINISH

The residential, round, tapered, direct burial fiberglass pole shall be of a natural finish for the entire length of the pole.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

RESIDENTIAL, DIRECT BURIAL FIBERGLASS POLE ROUND, TAPERED, POST-TOP GRAY OR BLACK

1) DESCRIPTION

The residential, round, tapered, direct burial fiberglass pole shall be made of a fiberglass reinforced composite (fiberglass filament and color pigmented resin), with a polyurethane and UV inhibitor coating, with a natural finish. This fiberglass pole is intended for use on residential roadways, walkways, and tunnels throughout Montgomery County. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

2) DESIGN CRITERIA

2.1 AASHTO Standards

The residential, round, tapered, direct burial fiberglass pole shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

2.2 Wind Load

The residential, round, tapered, direct burial fiberglass pole shall be designed to resist (at yield strength of the material without permanent deflection or destruction) test loads equivalent to the calculated wind loads developed by the velocity pressures of an 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3 Effective Projected Area (EPA)

The residential, round, tapered, direct burial fiberglass pole shall be designed

using the following assumptions:

a) The streetlight luminaire shall be mounted at a height of 12 feet above the level of the surrounding ground (EPA of 3 Sq. Ft. +/-).

b) One (24" x 36") traffic sign may be mounted with the sign's bottom edge 7 feet above the ground. (EPA of 6 Sq. Ft. +/-).

3) MATERIALS

a) The residential, round, tapered, direct burial fiberglass pole shall be constructed by a winding filament process with color pigmented polyester resin impregnated into the filaments. The filament winding shall be continuously applied with uniform tension.

b) The resin used will be color pigmented and shall be ultraviolet resistant. A highly weather resistant pigmented polyurethane coating shall be applied to the pole at a minimum thickness of 1.5 mils.

4) FINISH

The residential, round, tapered, direct burial fiberglass pole shall be of a natural finish for the entire length of the pole.

5) TENONS

The residential, round, tapered, direct burial fiberglass pole shall have a permanently bonded, hot-dipped galvanized steel or aluminum, 3 inch tenon.

6) HAND-HOLES

The residential, round, tapered, direct burial fiberglass pole shall have one 2 ½ inch x 5 inch hand-hole, with a non-metallic cover secured with a vandal-resistant, stainless steel screws.

7) POLE

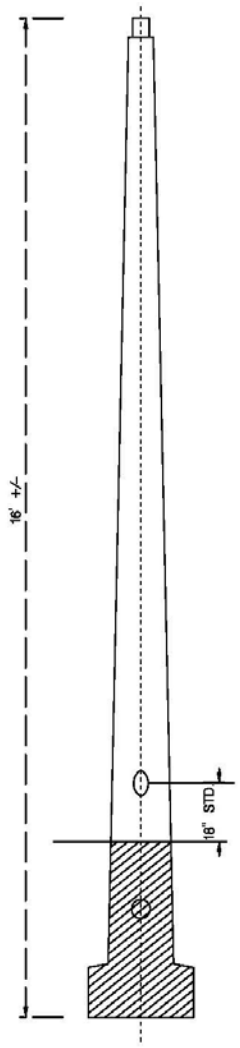
7.1 Shaft

The residential, round, tapered, direct burial fiberglass pole shaft shall have a bottom pole diameter of 5.5 inches (+/- 0.1 inches), and a top pole diameter of 2.9 inches (+/- 0.1 inches)

7.2 Length

The residential, round, tapered, direct burial fiberglass pole shall have a nominal minimum luminaire mounting height of 12 feet and a maximum of 14 feet above the surrounding ground. The shaft shall be embedded a minimum of 3 feet in the ground.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

ROADWAY, ROUND, TAPERED, DIRECT BURIAL, FIBERGLASS STREETLIGHT POLES

1) PURPOSE

The roadway, round, tapered, direct burial fiberglass streetlight poles shall be made of a fiberglass reinforced composite (fiberglass filament and color pigmented resin) with a polyurethane and UV inhibitor coating and a natural finish. These fiberglass streetlight poles are intended for use along Montgomery County roadways. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

Each pole shall be complete with the following:

a) Pole top cover with attaching hardware;
b) Handhole and cover plate (as specified);
c) Six (6) foot aluminum, mast arm with attaching hardware;
d) Rubber grommeted conductor entrance.

2) DESIGN CRITERIA

2.1 AASHTO Standards

The direct burial fiberglass streetlight poles shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Standard, “Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals,” latest edition.

2.2 Wind Load

The direct burial fiberglass streetlight poles shall be designed to resist (at yield strength of the material without permanent deflection or destruction) test loads equivalent to the calculated wind loads developed by the velocity pressures of an 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3 Effective Projected Area (EPA)

The direct burial fiberglass streetlight poles shall have a EPA allowable for the following assumptions:

a) Streetlight luminaire shall be assumed to be near rectangular in shape and a minimum (length plus height) of 36 inches on the mounting bracket arm..

b) The streetlight luminaire shall be mounted at a nominal height of 25 feet above the base.

c) One or two (24" x 36") traffic signs may be mounted with the sign's bottom edge 7 feet above the base.

3) MATERIALS

a) The direct burial fiberglass pole shall be constructed by a winding filament process with color pigmented polyester resin impregnated into the filaments. The filament winding shall be continuously applied with uniform tension.

b) The resin used will be color pigmented and shall be ultraviolet resistant. A highly weather resistant pigmented polyurethane coating shall be applied to the pole at a minimum thickness of 2.0 mils.

4) FINISH

The direct burial fiberglass pole shall be of a natural finish for the entire length of the pole.

5) SHAFT

The fiberglass pole shall have a round, circular, cross-section with a minimum outside base diameter of eight (8) inches, and with a uniform taper decreasing from the base at a rate of 0.1 inch (minimum) to 0.14 inch (maximum) per foot of height.

The fiberglass mast shall have a shaft with sufficient length to allow a minimum of five (5) feet to be embedded into the surrounding soil.

6) HANDHOLE

The fiberglass pole shall include:

a) One (1) peripherally reinforced flush covered handhole;
b) The handhole shall be located a maximum of 18 inches above the base plate;
c) The handhole shall be located at a 90 degree clockwise angle with respect to the luminaire bracket arm;
d) The handhole shall be a minimum of 2.5 inch x 5 inch oval.

7) BRACKET MOUNTING ARM

The direct burial fiberglass streetlight pole shall include one (1) six (6) foot tapered arm with attachment plate. The bracket arm shall have a 1 ½ inch or 2 inch slipfitter at the end for the installation of the luminaire.

a) The bracket arm shall be fabricated from tubing conforming to aluminum alloy 6063 and aged to the T6 temper or A356 and aged to the T6 temper.

b) The bracket arm mounting shall be predrilled so that it can transfer the maximum strength to the shaft. The attachment plate shall be curved to the shape of the pole and have a minimum of a two (2) bolt and curved washers securing system.

8) POLE TOP CAP

The direct burial fiberglass streetlight pole shall include a removable pole cap to allow for servicing and maintenance.

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

SILVER SPRING DECORATIVE ATLANTA STYLE, DUAL, VEHICULAR AND PEDESTRIAN LAMP POST

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of Silver Spring dual decorative vehicular and pedestrian streetlight post. These decorative streetlight post are intended for use along roadways in Silver Spring Central Business District. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings or submit specifications for approval that match these specifications.

2) DESCRIPTION

The Silver Spring dual decorative vehicular and pedestrian streetlight post shall consist of a steel shaft and integrally cast aluminum luminaire mounting arm and finished with a polyester powder coating. The post shall be designed to provide aesthetically pleasing and practical means of supporting two luminaires. The luminaires mounted are to be one Silver Spring vehicular teardrop luminaire at a mounting height of 26 foot 1 ½ inches and one Silver Spring pedestrian teardrop luminaire at a mounting height of 15 foot 7 inches from the base.

Each pole shall include the following:

a) Access plate with attachment hardware;
b) Anchor Bolts, nuts, and washers (as specified);
c) Typical footer design specifications including but not limited to, base template, anchor dimensions, reinforcement and footer details;
d) One (1) pint of touch-up paint, Federal Green, federal color # 595B, # 14036.

3) DESIGN CRITERIA

3.1 AASHTO Standards

The Silver Spring dual decorative vehicular and pedestrian streetlight post shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

3.2 Wind Load

The Silver Spring dual decorative vehicular and pedestrian streetlight post shall be designed to resist (at yield strength of the material without permanent deflection or destruction), test loads equivalent to the calculated wind loads developed by the velocity pressures of a 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

3.3 Effective Projected Area (EPA)

The Silver Spring dual decorative vehicular and pedestrian streetlight post shall have an EPA allowable for the following assumptions:

a) Streetlight (vehicular) luminaire shall be assumed to be rounded in shape with triangular shapes at the top and bottom, minimum length plus width of fifty-one (51) inches, when viewed from the side.

b) Streetlight (pedestrian) luminaire shall be assumed to be rounded in shape with triangular shapes at the top and bottom, minimum length plus width of forty (40) inches, when viewed from the side.

c) The streetlight (vehicular) luminaire shall have a nominal mounting height of 26 feet 1 ½ inches above the base.

d) The streetlight (pedestrian) luminaire shall have a nominal mounting height of 16 feet +/- 6 inches above the base.

e) One or two (24" x 36") maximum traffic signs may be mounted with the sign's bottom edge 7 feet above the base.

f) One 1 ½" banner mounting arm and bracket may be mounted with the aluminum shaft located 19' 9" above the base.

4) MATERIALS

4.1 The aluminum pedestal casting shall be made of aluminum (356.1 ingot) alloy.

4.2 The lamp post shaft shall be made of 11 gauge fluted steel with steel anchor plate. The steel flutes are to be true to pattern, with 12 flutes separated by 12 flat facets.

4.3 The luminaire mounting arm shall be 6063-T6 with cast aluminum (356.1 ingot alloy) fittings.

4.4 All mounting hardware shall be tamper resistant, stainless steel.

5) PEDESTAL (BASE)

The pedestal shall measure 22 inches inch in diameter with a height of 36 inches. The pedestal may be casted as two pieces, however one piece casting shall be also be allowed. The castings are to be true to pattern. There shall be no visible signs of separation between the cope and drag sections of the mold. All ornamental components shall be cast aluminum. The pedestal shall have two (2) SILVER SPRING MEDALLIONS (see attached drawing for details) mounted at 90 degrees and 270 degrees from the ACCESS DOOR.

6) ANCHOR PLATE

The base plate shall be 16" square (with corners rounded), 1 ½ ' thick and be continuously welded to the shaft.

7) BOLT CIRCLE

The nominal bolt circle of the lamp post shall be 15 inch in diameter and consist of four (4) equally spaced slots to accommodate 1 ¼ inch diameter by 48 inches long anchor bolts

8) SHAFT

The shaft shall taper beginning with 10.4 inches outside diameter at the anchor plate and tapering at 0.14 inch per foot, uniformly. The shaft section shall consist of twelve (12) equally spaced flutes. The outer portion of each flute shall have a flat face, 3/8 +/- 1/16 inches in width. The flutes shall remain constant from the top to the bottom of the tapered shaft. The bolt on luminaire arm mounting plate shall be located 14' from the base. A handhole shall be located in the shaft for wiring access.

9) HEIGHT

The height of the post, less tenon, shall be 21 feet 3 ½ inches, with the welded plate for the bolt on luminaire arm placed at 14 feet 0 inches from the base.

10) LUMINAIRE ARMS

10.1 Upper Luminaire Arm

The upper luminaire arm shall rise 58" and measure 51" from pole center to luminaire center with a 1 ½ NPT male fitting to accept the Silver Spring Vehicular teardrop style luminaire.

10.2 Lower bolt on Luminaire Arm

The lower luminaire arm shall rise 24" and measure 48" from mounting plate to luminaire center with a 1 ½ NPT male fitting to accept the Silver Spring Pedestrian teardrop style luminaire.

11) TENON

The top of the post shall be equipped with a tenon to install a smooth, curved and tapered luminaire mounting arm. The tenon shall measure 4.5 +/- 0.25 inches outside diameter and be 10 inches long.

12) GROUNDING LUG

The post shall be drilled and tapped for a 1/4 inch - # 20 grounding screw, inside the lamp post and opposite the access door,

13) HANDHOLE

The post shall have a minimum of one handhole/access door. The handhole door shall be secured with temper resistant stainless steel machine screw shall be provided in the base of the lamp post.

14) BOTTOM ACCESS HOLE

The pedestal shall have a clear opening at grade a minimum of ten (10) inches in diameter. The base of the lamp post shall have an inside diameter sufficient to

accommodate two four inch diameter schedule 40 PVC conduits at the bottom of the post, side by side, for streetlight wiring in accordance with utility company requirements.

15) ANCHOR BOLTS

Each post shall be furnished with four (4) anchor bolts, each 1 ¼ inch diameter x 48 inch long, plus a 3" "L" at the bottom. Each bolt shall be supplied with two (2) nuts and two (2) washers. Bolts, nuts, and washers shall be fully hot dipped galvanized in accordance with ASTM A153.

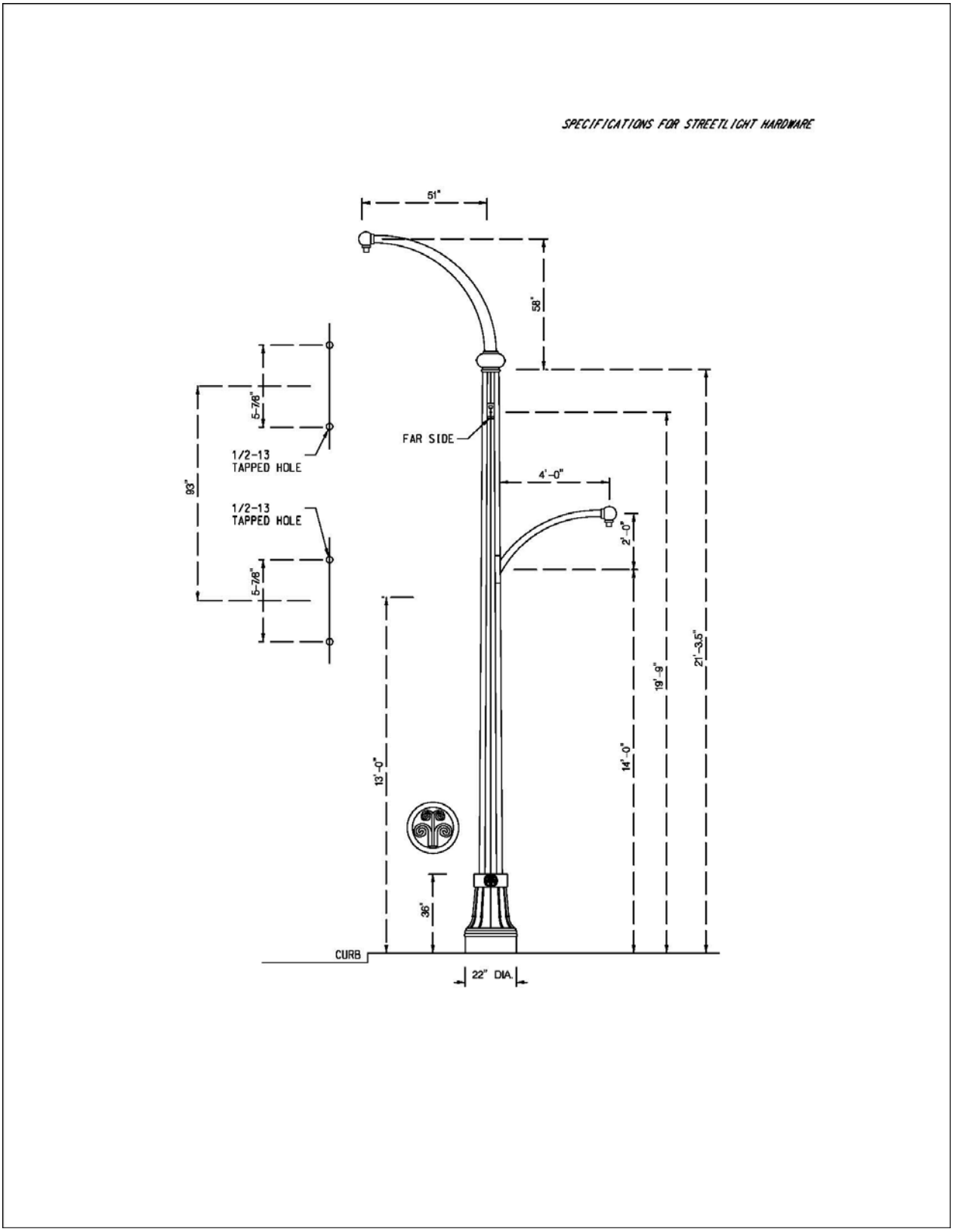
16) FINISH

17.1 Cast Aluminum

The cast aluminum poles, access doors, and hardware shall be finished with a dark green electrostatically-applied thermoset polyester powder coat, color "Federal Green federal color #595B, # 14036" or approved equal, as per the finish specification "ICS-2". One pint can of Federal Green touch-up enamel or approved equal, shall be supplied.

17) POLE INFORMATION

The lamp post shall be Holophane, Atlantic Series, with 22” Clamshell base, or approved equal.


SPECIFICATIONS FOR STREETLIGHT HARDWARE
51"
58"
5-7/8"
1/2-13
TAPPED HOLE
93"
1/2-13
TAPPED HOLE
5-7/8"
FAR SIDE
4'-0"
2'-0"
13'-0"
14'-0"
19'-9"
21'-3.5"
36"
CURB
22" DIA.

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

SILVER SPRING DECORATIVE ATLANTA STYLE PEDESTRIAN LAMP POST

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of Silver Spring decorative pedestrian streetlight post. These decorative streetlight post are intended for use 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 and the attached drawings or submit specifications for approval that match these specifications.

2) DESCRIPTION

The Silver Spring decorative pedestrian streetlight post shall consist of a steel shaft and integrally cast aluminum luminaire mounting arm, finished with a polyester powder coating. The post shall be designed to provide aesthetically pleasing and practical means of supporting the Silver Spring pedestrian teardrop luminaire at a mounting height of 15 foot 7 inches from the base.

Each pole shall include the following:

a) Access plate with attachment hardware;
b) Anchor Bolts, nuts, and washers (as specified);
c) Typical footer design specifications including but not limited to, base template, anchor dimensions, reinforcement and footer details;
d) One (1) pint of touch-up paint, Federal Green, federal color # 595B, # 14036.

3) DESIGN CRITERIA

3.1 AASHTO Standards

The Silver Spring decorative pedestrian lamp post shall meet the requirements of the American Association of State Highway and Transportation Officials

(AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

3.2 Wind Load

The Silver Spring decorative pedestrian lamp post shall be designed to resist (at yield strength of the material without permanent deflection or destruction), test loads equivalent to the calculated wind loads developed by the velocity pressures of a 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

3.3 Effective Projected Area (EPA)

The Silver Spring decorative pedestrian lamp post shall have a EPA allowable for the following assumptions:

a) Streetlight (pedestrian) luminaire shall be assumed to be rounded in shape with triangular shapes at the top and bottom, minimum length plus width of forty (40) inches, when viewed from the side.

b) The streetlight (pedestrian) luminaire shall have a minimum mounting height of 15 feet 7 inches above the base.

c) One or two (24" x 36") maximum traffic signs may be mounted with the sign's bottom edge 7 feet above the base.

4) MATERIALS

4.1 The aluminum pedestal casting shall be made of aluminum (356.1 ingot) alloy.

4.2 The lamp post shaft shall be made of 11 gauge fluted steel with steel anchor plate.

4.3 The steel flutes are to be true to pattern, with 12 flutes separated by 12 flat facets.

4.4 The luminaire mounting arm shall be 6063-T6 with cast aluminum (356.1 ingot alloy) fittings.

4.5 All mounting hardware shall be tamper resistant, stainless steel.

5) PEDESTAL (BASE)

The pedestal shall be 18 1/2 inches +/- 0.25 inch in diameter with a height of 32 inches +/- 1.0 inch. The pedestal may be casted as two pieces, however one piece casting shall be also be allowed. The castings are to be true to pattern. There shall be no visible signs of separation between the cope and drag sections of the mold. All ornamental components shall be cast aluminum. The pedestal shall have two (2) SILVER SPRING MEDALLIONS (see attached drawing for details) mounted at 90 degrees and 270 degrees from the access door.

6) ANCHOR PLATE

The anchor plate shall be 10 7/8 inches square (with corners rounded), 1" thick and be continuously welded to the shaft.

7) BOLT CIRCLE

The nominal bolt circle of the lamp post shall be 10 inch in diameter and consist of four (4) equally spaced slots to accommodate 1 inch diameter by 42 inches long anchor bolts.

8) SHAFT

The shaft shall taper uniformly beginning with seven (7") inches outside diameter at the anchor plate and taper to a minimum of four and five-eighths (4 5/8) inches outside diameter at the top. The shaft section shall consist of sixteen (16) equally spaced flutes. The outer portion of each flute shall have a flat face, 3/8 +/- 1/16 inches in width. The flutes shall remain constant from the top to the bottom of the tapered shaft.

9) HEIGHT

The height of the post, less tenon, shall be 12 feet 0 inches.

10) LUMINAIRE MOUNTING ARM

The mounting arm shall be 2" pipe (2 3/8 outside diameter) and rise 43" and measure 48" from the post center to luminaire center with a 1 ½ NPT male fitting to accept the Silver Spring Pedestrian teardrop style luminaire.

11) TENON

The top of the post shall be equipped with a tenon to install the luminaire mounting arm. The tenon shall measure 3” inches outside diameter and be 12 inches tall.

12) GROUNDING LUG

The post shall be drilled and tapped for a 1/4 inch - # 20 grounding screw, inside the lamp post and opposite the access door,

13) HANDHOLE

The post shall have a minimum of one handhole/access door. The handhole door shall be secured with temper resistant stainless steel machine screw shall be provided in the base of the lamp post.

14) BOTTOM ACCESS HOLE

The pedestal shall have a clear opening at grade a minimum of eight (8) inches in diameter. The base of the lamp post shall have an inside diameter sufficient to accommodate two four inch diameter schedule 40 PVC conduits at the bottom of the post, side by side, for streetlight wiring in accordance with utility company requirements.

15) ANCHOR BOLTS

Each post shall be furnished with four (4) anchor bolts, each 1 inch diameter x 42 inches long, plus a 3" "L" at the bottom. Each bolt shall be supplied with two (2) nuts and two (2) washers. Bolts, nuts, and washers shall be fully hot dipped galvanized in accordance with ASTM A153.

16) FINISH

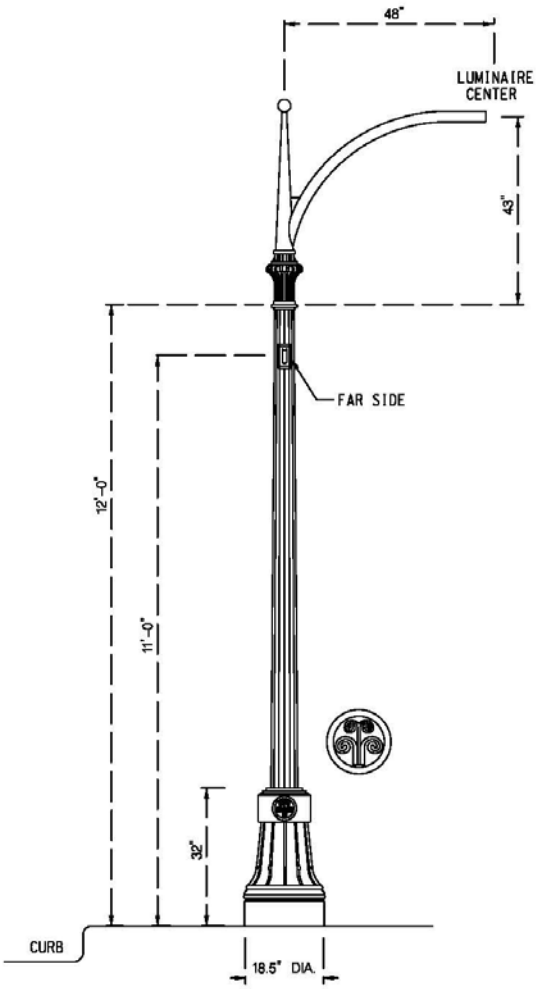
12.1 Cast Aluminum

The cast aluminum poles, access doors, and hardware shall be finished with a dark green electrostatically-applied thermoset polyester powder coat, color "Federal Green federal color #595B, # 14036" or approved equal, as per finish specification "ICS-2". One pint can of Federal Green touch-up enamel or approved equal, shall be supplied.

17) POLE INFORMATION

The lamp post shall be Holophane, Atlantic Series, with 19” Clamshell base, or approved Equal.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

SILVER SPRING DECORATIVE ATLANTA STYLE VEHICULAR LAMP POST

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of Silver Spring decorative vehicular streetlight post. These decorative streetlight post are intended for use 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 and the attached drawings, or submit specifications for approval that match these specifications.

2) DESCRIPTION

The Silver Spring decorative vehicular streetlight post is made of a steel shaft and integrally cast aluminum luminaire mounting arm, finished with a polyester powder coating. The post shall be designed to provide aesthetically pleasing and practical means of supporting the Silver Spring vehicular teardrop luminaire at a mounting height of 26 foot 1 ½ inches above the base.

Each pole shall include the following:

a) Access plate with attachment hardware;
b) Anchor Bolts, nuts, and washers (as specified);
c) Typical footer design specifications including but not limited to, base template, anchor dimensions, reinforcement and footer details;
d) One (1) pint of touch-up paint, Federal Green, federal color # 595B, # 14036.

3) DESIGN CRITERIA

3.1 AASHTO Standards

The Silver Spring decorative vehicular lamp post shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.

3.2 Wind Load

The Silver Spring decorative vehicular lamp post shall be designed to resist (at yield strength of the material without permanent deflection or destruction), test loads equivalent to the calculated wind loads developed by the velocity pressures of a 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

3.3 Effective Projected Area (EPA)

The Silver Spring decorative vehicular lamp post shall have a EPA allowable for the following assumptions:

a) Streetlight luminaire shall be assumed to be rounded in shape with triangular shapes at the top and bottom, minimum length plus width of fifty-one (51) inches, when viewed from the side.

b) The streetlight luminaire shall have a minimum mounting height of 26 feet 1 ½ inches above the base.

c) One or two (24" x 36") maximum traffic signs may be mounted with the sign's bottom edge 7 feet above the base.

d) One 1 ½" aluminum planter mounting arm and bracket may be mounted with the aluminum shaft located 12' 3" above the base.

e) One 1 ½" banner mounting arm and bracket may be mounted with the aluminum shaft located 20' above the base.

4) MATERIALS

4.1 The aluminum pedestal casting shall be made of aluminum (356.1 ingot) alloy.

4.2 The lamp post shaft shall be made of 11 gauge fluted steel with steel anchor plate.

4.3 The steel flutes are to be true to pattern, with 12 flutes separated by 12 flat facets.

4.4 The luminaire mounting arm shall be 6063-T6 with cast aluminum (356.1 ingot alloy) fittings.

4.5 All mounting hardware shall be tamper resistant, stainless steel

5) PEDESTAL (BASE)

The pedestal (base) shall be 22 inches +/- 0.25 inch in diameter with a height of 36 inches +/- 1.0 inch. The pedestal shall be casted as two pieces, however one piece casting shall be also be allowed. The castings are to be true to pattern. There shall be no visible signs of separation between the cope and drag sections of the mold. All ornamental components shall be cast aluminum. The pedestal shall have two (2) SILVER SPRING MEDALLIONS (see attached drawing for details) mounted at 90 degrees and 270 degrees from the access door.

6) ANCHOR PLATE

The base plate shall be 16” square (with corners rounded), 1 ½ inches thick and continuously welded to the shaft.

7) BOLT CIRCLE

The nominal bolt circle of the lamp post shall be 15 inch in diameter and consist of four (4) equally spaced slots to accommodate 1 ¼ inch diameter by 48 inches long anchor bolts

8) SHAFT

The shaft shall taper beginning with 10.4 inches outside diameter at the anchor plate and tapering at 0.14 inch per foot, uniformly. The shaft section shall consist of twelve (12) equally spaced flutes. The outer portion of each flute shall have a flat face, 3/8 +/- 1/16 inches in width. The flutes shall remain constant from the top to the bottom of the tapered shaft. A handhole shall be located in the shaft for wiring access.

9) HEIGHT

The height of the post, less tenon, shall be 21 feet 3 ½ inches.

10) TENON

The top of the post shall be equipped with a tenon to install a curved luminaire mounting arm. The tenon shall measure 4.5 inches outside diameter and be 10 inches tall.

11) GROUNDING LUG

The post shall be drilled and tapped for a 1/4 inch - # 20 grounding screw, inside the lamp post and opposite the access door,

12) HANDHOLE

The post shall have one handhole/access door. The handhole door shall be secured with temper resistant stainless steel machine screw and shall be provided in the base of the lamp post. The handhole is at 180 degrees clockwise with respect to the luminaire arm when viewed from above the pole.

13) BOTTOM ACCESS HOLE

The pedestal shall have a clear opening at grade a minimum of ten (10) inches in diameter. The base of the lamp post shall have an inside diameter sufficient to accommodate two four inch diameter schedule 40 PVC conduits at the bottom of the post, side by side, for streetlight wiring in accordance with utility company requirements.

14) ANCHOR BOLTS

Each post shall be furnished with four (4) anchor bolts, each 1 ¼ inches diameter x 48 inches long, plus a 3" "L" at the bottom. Each bolt shall be supplied with two (2) nuts and two (2) washers. Bolts, nuts, and washers shall be fully hot dipped galvanized in accordance with ASTM A153.

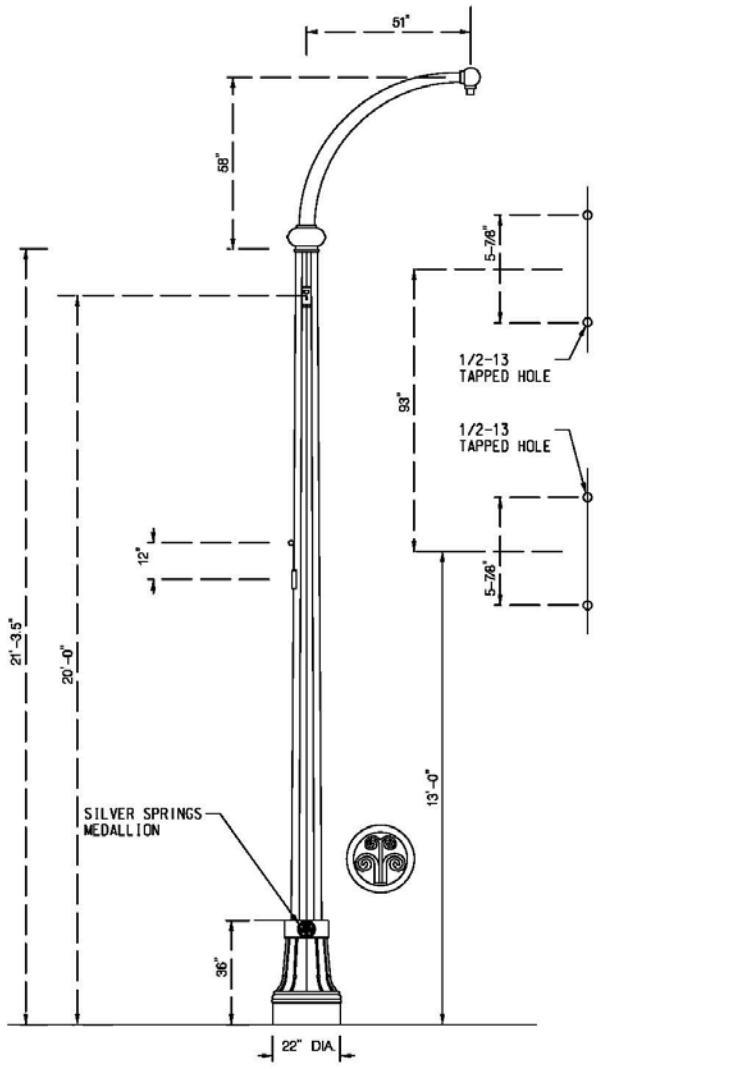
15) FINISH

15.1 Cast Aluminum

The cast aluminum poles, access doors, and hardware shall be finished with a dark green electrostatically-applied thermoset polyester powder coat, color "Federal Green, federal color # 595B, #14036 " or approved equal, as per finish specification "ICS-2". One pint can of Federal Green touch-up enamel or approved equal, shall be supplied.

16) POLE INFORMATION

The lamp post shall be Holophane, Atlantic Series, with 22” Clamshell base, or approved equal.


SPECIFICATIONS FOR STREETLIGHT HARDWARE
51"
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1/2-13
TAPPED HOLE
93"
1/2-13
TAPPED HOLE
12"
5-7/8"
21'-3.5"
20'-0"
13'-0"
SILVER SPRINGS
MEDALLION
36"
22" DIA.

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

SILVER SPRING 12 FEET, MULTI-USE, BROWN COLORED, STRAIGHT, SQUARE, STEEL STREETLIGHT POLES

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of 12 feet, multi-use, brown colored, straight, steel streetlight poles for mounting one decorative luminaire as well as traffic signs, trash receptacles, etc. The poles shall be designed to provide an aesthetically pleasing and practical means of supporting one decorative luminaire at 12 feet +/-. Attachments to the pole shall be such that drilling after shipment strapping or welding is not required. These multi-use poles are intended for use along roadways in the Silver Spring urban district streetscape areas and shall be placed on a non-breakaway base. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

Each pole shall be complete with the following:

a) Base place covers with attaching hardware;
b) Pole top cover with attaching hardware;
c) J-hook inside of top of pole;
d) Anchor bolts (as specified);
e) Handhole and cover plate (as specified);
f) Typical footing design specifications including, but not limited to, base template, anchor bolt dimensions, reinforcing and footing details;
g) “National Park Service Brown” finishing as per these specifications and attachment entitles “Finishing Galvanized Steel and Aluminum Metals”;
h) Attaching horizontal mast arm with hardware suitable to mount decorative pedestrian streetlight. (see and decorative luminaire specifications).

2) DESIGN CRITERIA

2.1) AASHTO Standards

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

2.2) Wind Load

All components of the streetlight pole 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 80 MPH wind. A minimum safety factor of 1.82 on the yield strength shall be maintained.

For design purpose, the following assumptions shall be made:

1. The pedestrian light luminaire shall be assumed to be square in shape a minimum length plus width of 30 inches with a side-mounted bracket arm 9 to 12 inches in length.

2. One decorative luminaire will be mounted near the top of each 12 feet multi-use streetlight pole.

3. One 24" x 36" sign shall be assumed to be mounted with the sign's bottom edge 10 feet above the base.

2.3) Finish

Prior to finishing, all materials except the unthreaded ends of the anchor bolts shall be hot-dipped galvanized as per ASTM A-123, as described on the attachment entitled "Finishing Galvanized Steel and Aluminum Metals." All visible components shall then be finished to produce the appearance of a decorative "Dark Brown" color.

One (1) fourteen (14) ounce can to match the color of the 12 feet multi-use streetlight shall be furnished for each street light pole supplied.

Other finishing techniques may be considered 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 certifies 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) Castings

All castings used to complete the 12 feet multi-use streetlight pole shall be clean and smooth, with details well defined and true to pattern. Steel casting shall conform to ASTM A27, Grade 65-35.

3.3) Post

3.3.1) Shaft

The straight post-shaft shall be made of a single length of sheet of NOT LESS THAN No. 7 Manufacturers Standard Gauge and shall conform to the requirements of ASTM-A-595, Grade A. After being formed and welded, the post shaft shall then be cold rolled to increase the physical strength to a guaranteed minimum of 55,000 PSI. Poles shall be drilled for electrical wires at the factory, as shown on the attached drawing.

3.3.2) Cross-Section

Each post-shaft shall have a uniformly five (5) inch square cross-section with flat sides and shall have rounded corners (no taper for the length of the pole).

3.3.3) Length

The post-shaft shall have a length sufficiently long to provide a mounting height of 11 feet 5 inches from the base of the pole o the luminaire (nominal length of 12 feet).

3.3.4) Fabrication

No transverse joints or welds are permitted. The one (1) full longitudinal high frequency resistance weld shall be fusion-welded and ground or cold-rolled smooth.

3.3.5) Base Plate

The base plate shall be one (1) inch (minimum) thick ASTM-A-36 steel sufficient to fully develop the ultimate strength of the multi-use pole and shall be secured to the base of the pole-shaft by two circumferentially welds - one on the top of the plate and one on the inside of the base at the bottom of the plate. Four slotted bolt holes shall have a width of 1.25 inches for one inch diameter anchor bolts on a nominal 12 inch bolt circle. The bolt holes shall be slots that can accommodate bolt circles from 10 inches to 12 inches. The base plate shall also have an opening sufficient to accommodate four (4) - two (2) inch ID PVC conduits.

3.3.6) Handholes

The streetlight pole shall be supplied with one (1) - two and one-half (2.5) inch (minimum) width by five (5) inch (minimum) height semiflush reinforced handhole. The handhole shall be located a minimum of eight (8) inches and a maximum of twelve (12) inches above the baseplate. Each pole shall be equipped with a cover plate for the handhole constructed of a minimum 16 gauge steel cover and retained to the streetlight pole by an eighteen (18) inch long stainless steel chain affixed to both the cover plate and streetlight pole. A ½ inch diameter stainless steel grounding lug with nut and flat washer shall be located inside the pole opposite from and centered on the lower handhole. The handhole shall be located at a 90 degree clockwise angle with respect to the luminaire bracket arm.

3.3.7) Luminaire Mounting Holes

Each streetlight pole shall be factory drilled with one set of holes necessary to mount the decorative luminaires as follows:

1) The decorative luminaire mounting holes shall be drilled so that the bottom of the mounting bracket arm is eleven feet 5 inches above the base. The set of factory drilled mounting holes shall be 90 degrees to the left (measured clockwise) from the hand hole when the pole is viewed from above.

3.3.8) J-Hook

A J-hook shall be welded to the inside of the streetlight pole opposite to and above the mounting holes for the luminaire.

3.4) ANCHOR BOLTS

Each pole shall be supplied with four (4) steel anchor bolts with a minimum yield strength of 55,000 PSI.

3.4.1) Size

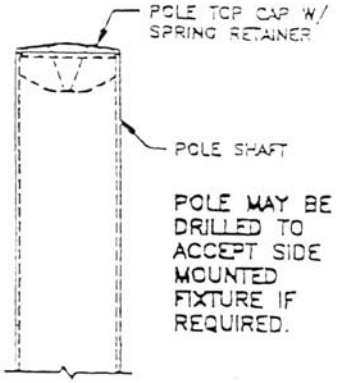
The anchor bolts shall have a diameter of one (1) inch, a minimum length of fifteen (15) inches, a four (4) inch "L" bend at the bottom and a minimum of six (6) inches of thread at the top. The top eight (8) inches of all anchor bolts are to be hot-dipped galvanized.

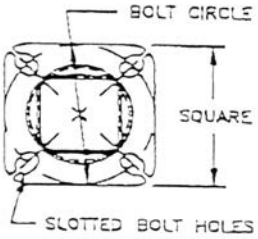
3.4.2) Nuts

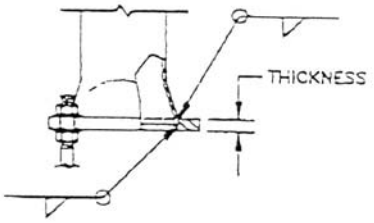
Each anchor bolt shall be furnished with two (2) hexagonal nuts for plumbing and securing the pole as necessary. Nuts shall be ASTM A194, Grade 2 or 2H. A flat washer shall be provided for each bolt. All nuts are to be hot-dipped galvanized.

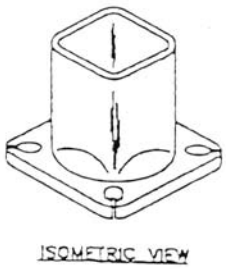
3.4.3) Shims

Each pole shall be furnished with four (4) metal shims, approximately one-eighth (1/8) inch thick. These shims are required in addition to the anchor bolt nuts and are to provide the County with an additional method to attach and plumb the pole to the anchor bolts. All shims are to be hot-dipped galvanized.

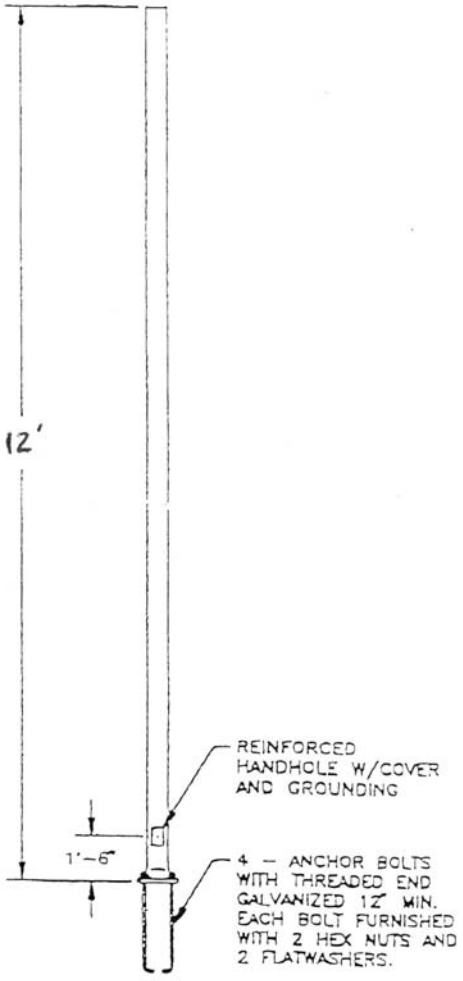






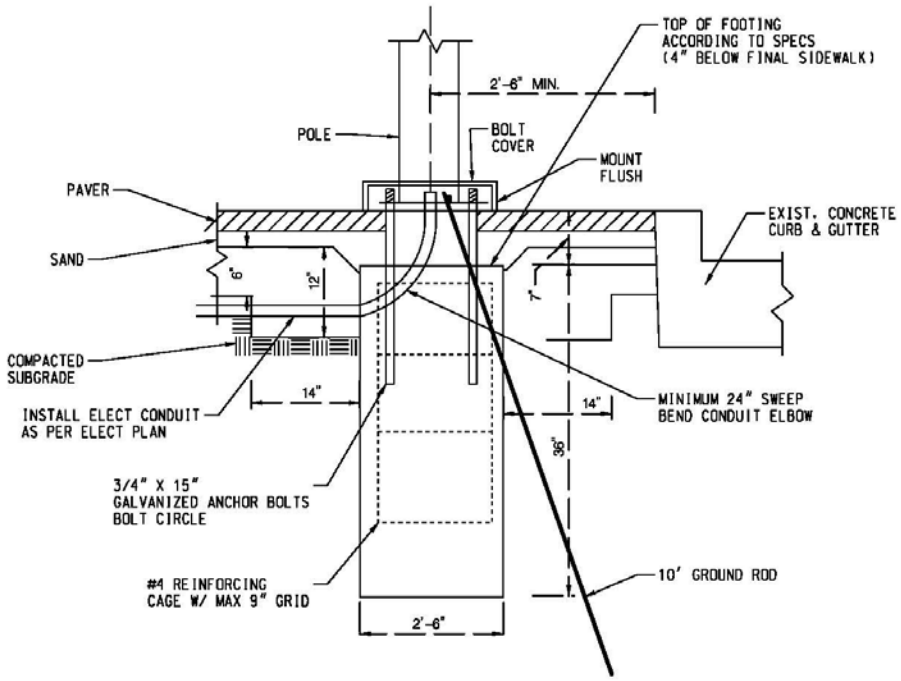


ISOMETRIC VIEW



SPECIFICATIONS FOR STREETLIGHT HARDWARE

SILVER SPRING 12' MULTI-USE
POLE FOUNDATION



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

30 FEET MULTI-USE, DECORATIVE BRONZE COLORED STRAIGHT, SQUARE, STEEL STREETLIGHT POLES

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of multi-use bronze-colored, straight, steel streetlight poles for mounting one or more streetlight luminaires as well as traffic signs, trash receptacles, etc. The poles shall be designed to provide an aesthetically pleasing and practical means of supporting up to two rectilinear luminaires at a nominal mounting height of 30 feet +/- as well as a decorative luminaire at a nominal mounting height of 12 feet +/-. Attachments to the pole shall be such that drilling after shipment strapping or welding is not required. These poles are intended for use along Montgomery County roadways in the urban streetscape areas. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these Specifications and the attached drawings.

Each pole shall be complete with the following:

a) Base plate covers with attaching hardware;
b) Pole top cover with attaching hardware;
c) J-hook inside of top of pole;
d) Anchor bolts (as specified);
e) Handhole and cover plate (as specified);
f) Typical footing design specifications including, but not limited to, base template, anchor bolt dimensions, reinforcing and footing details;
g) “National Park Service Brown” finishing as per these specifications entitles “Finishing Galvanized Steel and Aluminum Metals;”
h) Attaching horizontal mast arm with hardware suitable to mount rectilinear streetlight and decorative pedestrian streetlight. (See rectilinear luminaire specifications and decorative luminaire specifications).

2) DESIGN CRITERIA

2.1) AASHTO Standards

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

2.2) Wind Load

All components of the pole 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.

For design purpose, the following assumptions shall be made:

1. Streetlight luminaires shall be assumed to be rectilinear in shape, minimum length plus width of 36 inches with a side-mounted bracket arm 8 to 12 inches in length. The pedestrian luminaire shall be assumed to be square in shape, minimum length plus width of 30 inches with a side-mounted bracket arm 9 inches to 12 inches in length.

2. Two or three streetlight luminaires may be mounted on each pole. Two configurations of dual luminaire mounting shall be considered: opposite arrangement (180°) and at a right angle (90°).

3. The streetlight luminaires shall be mounted at a height of 29 feet 5 inches +/- above the base. The decorative pedestrian luminaire shall be mounted opposite the rectilinear luminaire (if one is required) at 11' 5" +/-.

4. One 24" x 36" sign may be mounted with the sign's bottom edge 10 feet above the base.

2.3) Finish

Prior to finishing, all materials except the unthreaded ends of the anchor bolts shall be hot-dipped galvanized as per ASTM A-123, as described in "Finishing Galvanized Steel and Aluminum Metals." All visible components shall then be finished to produce the appearance of a decorative "Dark Brown" color.

One (1) fourteen (14) ounce can to match the color of the 30 feet multi-use streetlight shall be furnished for each street light pole supplied.

Other finishing techniques may be considered 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 certifies 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. The pole shall be capable of being mounted on the foundation of a decorative cast lamp post (i.e., four (4) - one (1) inch diameter anchor bolts on a 10 - 12 inch diameter bolt circle).

3.2) Castings

All casting used to complete the pole shall be clean and smooth, with details well defined and true to pattern. Steel casting shall conform to ASTM A27, Grade 65-35.

3.3) Post

3.3.1) Shaft

The straight post-shaft shall be made of a single length of sheet of NOT LESS THAN No. 7 Manufacturers Standard Gauge, and shall conform to the requirements of ASTM-A-595, Grade A. After being formed and welded, the post shaft shall then be cold rolled to increase the physical strength to a guaranteed minimum of 55,000 PSI. Poles shall be drilled for electrical wires at the factory, as shown on the attached drawing.

3.3.2) Cross-Section

Each post-shaft shall have a uniformly five (5) inch square cross-section with flat sides and shall have rounded corners (no taper for the length of the pole).

3.3.3) Length

The post-shaft shall have a length sufficiently long to provide a mounting height of 29 feet 5 inches from the base of the luminaire (nominal length of 30 feet).

3.3.4) Fabrication

No transverse joints or welds are permitted. The one (1) full longitudinal high frequency resistance weld shall be fusion-welded and ground or cold-rolled smooth.

3.3.5) Base Plate

The base plate shall be one (1) inch (minimum) thick ASTM-A-36 steel sufficient to fully develop the ultimate strength of the multi-use pole and shall be secured to the base of the pole-shaft by two circumferentially welds - one on the top of the plate and one on the inside of the base at the bottom of the plate. Four slotted bolt holds shall have a width of 1.25 inches for one inch diameter anchor bolts on a nominal 12 inch bolt circle. The bolt holes shall be slots that can accommodate bolt circles from 10 inches to 12 inches. The base plate shall also have an opening sufficient to accommodate two (2) - four (4) inch ID PVC conduits.

3.3.6) Handholes

The pole shall be supplied with two (2) - two and one- half (2.5) inch (minimum) width by five (5) inch (minimum) height semiflush reinforced handhole. One handhole shall be located a minimum of eight (8) inches and a maximum of twelve (12) inches above the baseplate. The second handhole center shall be located 11 feet 5 inches above the base plate on the same side of the pole. Each pole shall be equipped with a cover plate for the handhole constructed of a minimum 16 gauge steel cover and retained to the streetlight pole by an eighteen (18) inch long stainless steel chain affixed to both the cover plate and the pole. A ½ inch diameter stainless steel grounding lug with nut and flat washer shall be located inside the pole opposite from and centered on the lower handhole.

3.3.7) Luminaire Mounting Holes

Each pole shall be factory drilled for two set of holes necessary to mount two luminaires as follows:

1) rectilinear luminaire so that the bottom of the luminaire is twenty-nine feet 5 inches (29' 5") above the base;

2) decorative luminaire so that the bottom of the mounting bracket arm is eleven feet 5 inches (11' 5") above the base.

The set of factory drilled mounting holes shall be 90 degrees and 270 degrees to the right (measured clockwise) of the hand hole when the pole is viewed from above.

3.3.8) J-Hook

A J-hook shall be welded to the inside of the pole opposite to and above the mounting holes for the each luminaire.

3.4) ANCHOR BOLTS

Each pole shall be supplied with four (4) steel anchor bolts with a minimum yield strength of 55,000 PSI.

3.4.1) Size

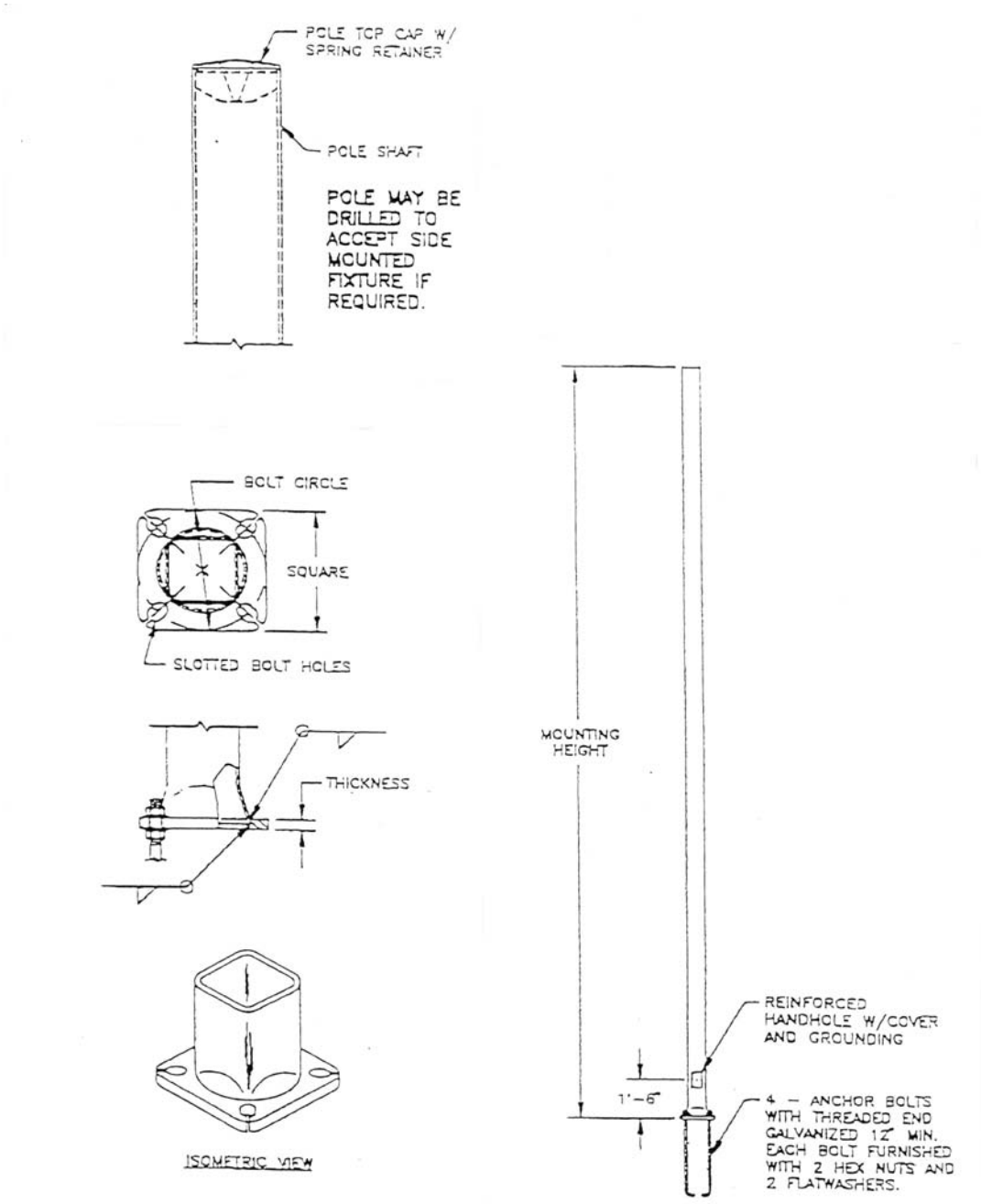
The anchor bolts shall have a diameter of one (1) inch, a minimum length of thirty-six (36) inches plus a four (4) inch "L" bend at the bottom and a minimum of six (6) inches of thread at the top. The top eight (8) inches of all anchor bolts are to be hot-dipped galvanized.

3.4.2) Nuts

Each anchor bolt shall be furnished with two (2) hexagonal nuts for plumbing and securing the pole as necessary. Nuts shall be ASTM A194, Grade 2 or 2H. A flat washer shall be provided for each bolt. All nuts are to be hot-dipped galvanized.

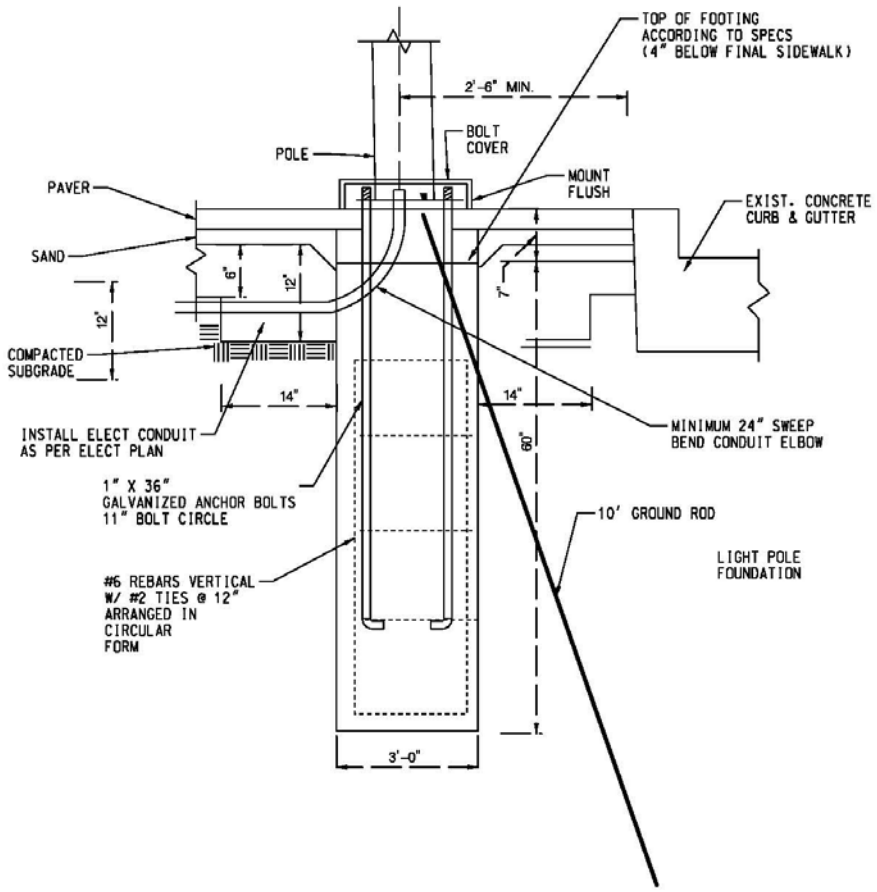
3.4.3) Shims

Each pole shall be furnished with four (4) metal shims, about one-eighth (1/8) inch thick. These shims are required in addition to the anchor bolt nuts and are to provide the County with an additional method to attach and plumb the pole to the anchor bolts. All shims are to be hot-dipped galvanized.


POLE TOP CAP W/ SPRING RETAINER
POLE SHAFT
POLE MAY BE DRILLED TO ACCEPT SIDE MOUNTED FIXTURE IF REQUIRED.
BOLT CIRCLE
SQUARE
SLOTTED BOLT HOLES
THICKNESS
ISOMETRIC VIEW
MOUNTING HEIGHT
REINFORCED HANDHOLE W/COVER AND GROUNDING
1'-6"
4 – ANCHOR BOLTS WITH THREADED END GALVANIZED 12" MIN. EACH BOLT FURNISHED WITH 2 HEX NUTS AND 2 FLATWASHERS.

SPECIFICATIONS FOR STREETLIGHT HARDWARE

SILVER SPRING 30' MULTI-USE
POLE FOUNDATION



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

SPUN ALUMINUM ROADWAY, ROUND, TAPERED, STREETLIGHT POLES

1) DESCRIPTION

The roadway, round, spun aluminum, tapered streetlight poles shall be made of seamless, spun aluminum, tapered shaft. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these Specifications and the attached drawings. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these Specifications and the attached drawings.

Each pole shall be complete with the following:

a) Base plate covers with attaching hardware;
b) Pole top cover with attaching hardware;
c) Handhole and cover plate (as specified);
d) Anchor bolts (as specified);
e) Typical footing design specifications including, but not limited to, base template, anchor bolt dimensions, reinforcement and footing details;
f) Finish as per specifications entitled “Finishing Galvanized Steel and Aluminum Metals.”

2) DESIGN CRITERIA

2.1) AASHTO Standards

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

2.2) Wind Load

The poles shall be designed to resist (at yield strength of the material without permanent deflection or destruction) test loads equivalent to the calculated wind loads developed by the velocity pressures of an 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3) Effective Projected Area (EPA)

The poles shall have an EPA allowable for the following assumptions:

a) Streetlight luminaire shall be assumed to be near rectangular in shape, minimum length plus height of less than 34 inches.

b) The streetlight luminaire shall be mounted at a height of 25 +/- feet above the base.

c) One or two (24" x 36") traffic signs may be mounted with the sign's bottom edge 7 feet above the base.

3) MATERIALS

3.1) Shaft & Bracket Arm

a) The tapered aluminum shaft and bracket arm shall be fabricated from tubing conforming to aluminum alloy 6063 and aged to the T6 temper.

b) The bracket mounting plate attachment shall be of a continuous weld design so that it can transfer the full strength of the shaft. The attachment plate shall have a minimum of a two (2) bolt securing system.

3.2) Base Plate

a) The pole base shall be cast aluminum, alloy 356 or 6061 plate, and shall be attached to the tapered shaft with a continuous circumferential weld.

b) Each pole shall include four (4) cast aluminum bolt covers and four (4) stainless steel, self tapping, hex head screws, to secure the bolt covers to pre-drilled holes in the base plate.

c) The base plate shall have a 10 ½ inch bolt circle pattern and the bolt hole slot shall be a minimum of a 1.25 inch x 1.75 inch slot.

3.3) Anchor Bolts

a) The anchor bolts shall have a 55,000 PSI minimum yield strength. Two (2) hex nuts and four (4) washers shall be included for each anchor bolt to allow for leveling.

b) The anchor bolts shall have a diameter of one (1) inch. The anchor bolt shall be a minimum length of thirty-six (36) inches with a four (4) inch "L" bend at the bottom. The top eight (8) inches of the anchor bolt shall be hot-dipped galvanized and a minimum of six (6) inches of the bolt shall be threaded.

4) FINISH

The spun aluminum, tapered streetlight pole shall have a sanded natural aluminum "satin" ground finish, or as specified.

5) ANCHOR BOLTS AND BOLT CIRCLE PATTERN

a) The aluminum streetlight pole shall have four (4), 1 1/4 inches x 1 3/4 inches slotted holes.

b) The spun aluminum, tapered streetlight pole shall have a 10 ½ inch bolt circle and anchor bolts shall not project more than three (3) inches from the top of the footer.

6) POLE

The spun aluminum, tapered streetlight pole shall have a round, circular, cross-section with an outside base diameter of seven (7) inches, and with a uniform taper decreasing from the base at a rate of 0.1 inch (minimum) to 0.14 inch (maximum) inches per foot of height.

7) HANDHOLE

The spun aluminum, tapered streetlight pole shall include:

a) One (1) peripherally reinforced flush covered handhole

b) The handhole shall be located a maximum of 18 inches above the base plate.

c) The handhole shall be located at a 90 degree clockwise angle with respect to the luminaire bracket arm.

d) The handhole shall be a minimum of 3 inches x 5 inches oval.

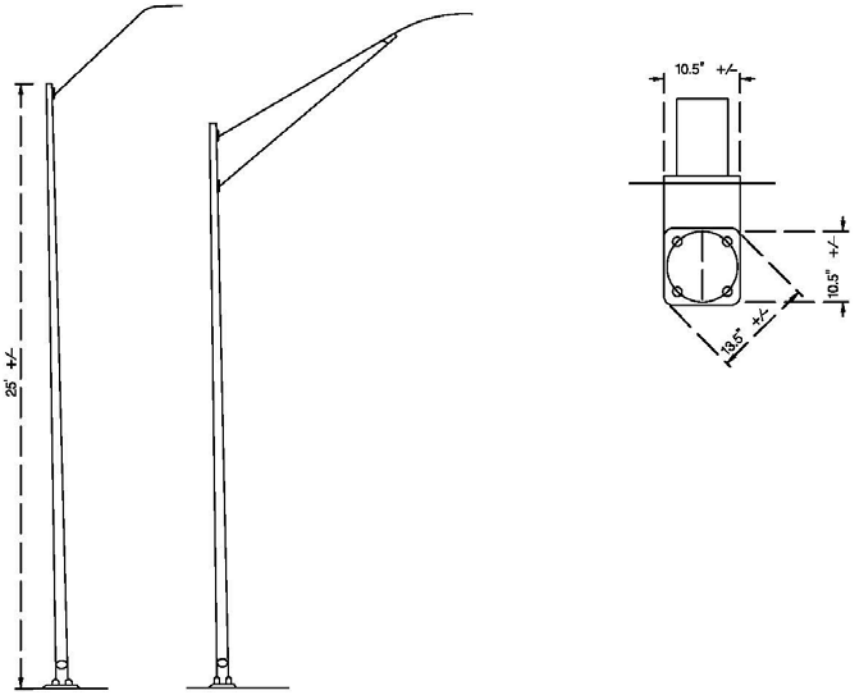
8) BRACKET MOUNTING ARM

The spun aluminum, tapered streetlight pole shall include one (1) six (6) foot tapered arm with attachment plate. The bracket arm fabricated from 6063 alloy aluminum and aged to the T6 temper. The bracket arm shall have a 1 ½ or 2 inches slipfitter at the end for the installation of the luminaire.

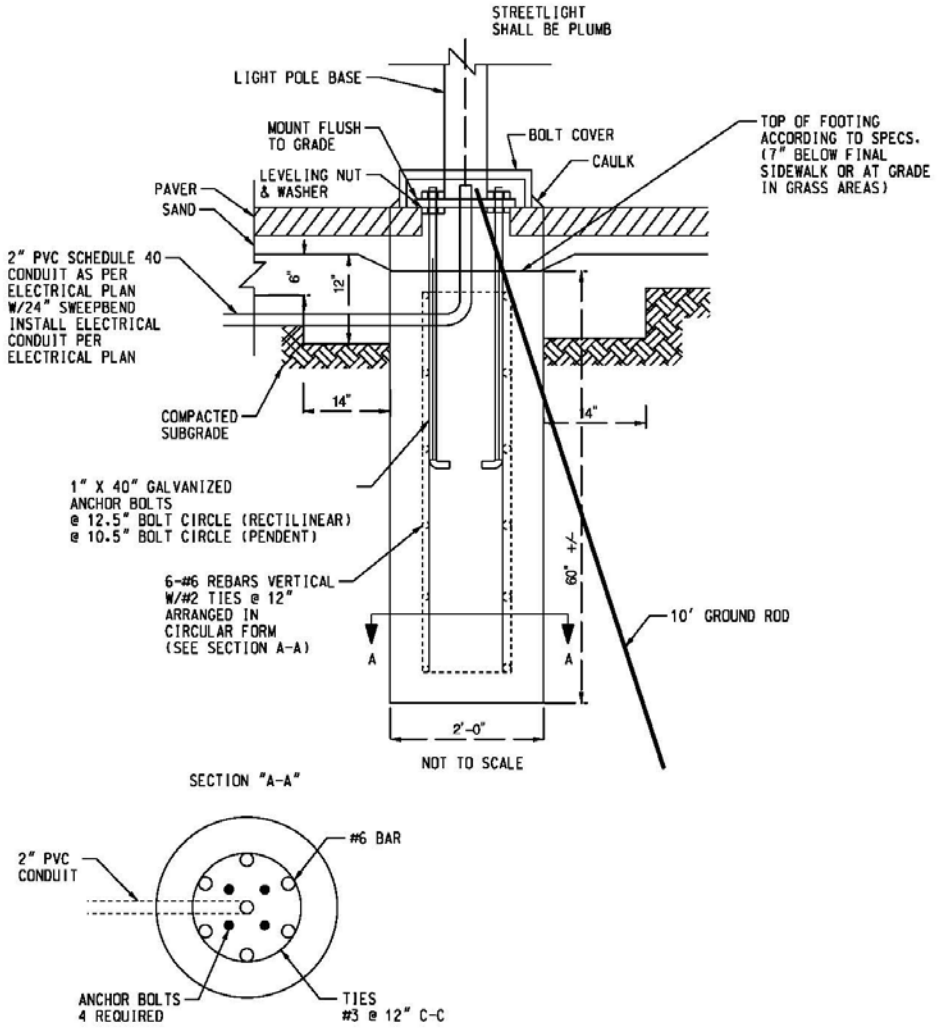
9) POLE TOP CAP

The spun aluminum, tapered streetlight pole shall include a removable pole cap, with a minimum of three (3) set screws, to allow the pole cap to be removed for servicing and maintenance.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

DECORATIVE, 40 FOOT, BRONZE-COLORED SQUARE, TAPERED, STEEL, STREETLIGHT POLES

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of streetlight poles for mounting one or more streetlight luminaires. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

Each pole shall be complete with the following:

a) Base plate covers with attaching hardware;
b) Pole top cover with attaching hardware;
c) J-hook inside of top of pole;
d) Anchor bolts (as specified);
e) Handhole and cover plate (as specified);
f) Typical footing design specifications including, but not limited to, base template, anchor bolt dimensions, reinforcing and footing details;
g) "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 pole shall meet the requirements of the American Association of State Highway and Transportation Official (AASHTO) "Standard Specifications for Structural Supports for Highway Signs, Luminaire, and Traffic Signals," latest edition.

2.2) Wind Load

The poles shall be designed to resist (at yield strength of the material without permanent deflection or destruction) test loads equivalent to the calculated wind loads developed by the velocity pressures of an 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3) Effective Projected Area (EPA)

The poles shall have an EPA allowable for the following assumptions:

a) Street light luminaires shall be assumed to be rectilinear in shape, minimum length plus width of 36 inches with a side-mounted bracket arm 8 to 12 inches in length

b) One or two street light luminaires may be mounted on each tall-post street light pole. Two configurations of dual luminaire mounting shall be considered: opposite arrangement (180°) and at a right angle (90°).

c) The streetlight luminaire shall be mounted at a nominal mounting height of 39 feet 5 inches above the base.

d) One or two (24 inches x 36 inches) traffic signs may be mounted with the sign's bottom edge 10 feet above the base.

2.3) Finish

Prior to finishing, all materials except the unthreaded ends of the anchor bolts shall be hot-dipped galvanized as per ASTM A-123. All visible components shall then be finished to produce the appearance of a decorative "National Park Service Brown" color, as described in "Finishing Galvanized Steel and Aluminum Metals".

One (1) fourteen (14) ounce spray can to match the color of the streetlight shall be supplied for each tall-post streetlight pole.

Other finishing techniques may be considered 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 certifies an expected life of the alternate finish of a minimum of 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. The pole shall be capable of being mounted on the foundation with or without a break-away transformer base.

3.2) Castings

All castings used to complete the pole shall be clean and smooth with details well defined and true to pattern. Steel casting shall conform to ASTM A27, Grade 65-35. Gray iron castings shall conform to ASTM A126, Class A.

3.3) POST

3.3.1) Shaft

The shaft shall be made of a single length of sheet of not less than No. 7 Manufacturers Standard Gauge and conform to the requirements of ASTM-A-595, Grade A. After being formed and welded, the post shaft shall then be cold rolled to increase the physical strength to a guaranteed minimum of 55,000 PSI.

3.3.2) Cross-Section

Each post-shaft shall have a square cross-section with an outside base diameter of eight (8) inches +/- 0.5 inches, and with a uniform taper decreasing from the base at a rate of 0.1 inch (minimum) to 0.14 inches maximum per foot of height.

3.3.3) Length

The post-shaft shall have a length sufficiently long to provide a mounting height of 40 feet for the base of the luminaire (nominal length of 40 feet).

3.3.4) Fabrication

No transverse joints or welds are permitted. The one (1) longitudinal weld shall be fusion-welded and ground or cold-rolled smooth. The curvature (for straightness) shall not exceed one-half (½) inch in any ten (10) foot portion of the total length.

3.3.5) Base Plate

A one (1.25) inch thick (minimum) steel base plate sufficient to fully develop the ultimate strength of the tall-post shall be secured to the base of the pole-shaft with two (2) self-closing transverse welds: one weld on the inside of the base at the bottom of the pole-shaft and the other weld at the top of the base plate.

The base shall telescope into the pole-shaft. The base plate may be square in shape with rounded corners and a nominal dimension of fifteen (15) inches or square in shape with rounded corners and a nominal dimension of fifteen (15) inches per side. The base plate shall have an opening sufficient to accommodate two (2) - four (4) inch ID PVC conduits. Four slotted bolt holes shall have a width of 1.25 inches for one inch diameter anchor bolts on a nominal 13 ½ inch bolt circle. The bolt holes shall be slots that can accommodate bolt circles from 13 inches to 14 inches.

3.3.6) Handholes

The pole shall be supplied with a four (4) inch wide by eight (8) inch high semiflush reinforced handhole opening located a minimum of eight (8) inches and a maximum of eignteen (18) inches above the baseplate. Each pole shall be equipped with a cover plate for the handhole constructed of a minimum 11 gauge steel, to be attached to the streetlight pole with two (2) tamper-proof screws and retained to the streetlight pole by an eighteen (18) inch long stainless steel chain affixed to both the cover plate and the tall-post streetlight pole.

3.3.7) Luminaire Mounting Holes

Each pole shall be factory drilled for one set of holes necessary to mount the luminaire so that the bottom of the luminaire is 39 feet above the base. The set of factory drilled mounting holes shall be 90 degrees counterclockwise angle from the handhole when viewed from above.

3.3.8) J-Hook

A J-hook shall be welded to the inside of the streetlight pole opposite to and above the mounting holes for the luminaire.

3.4) ANCHOR BOLTS

Each pole shall be supplied with four (4) steel anchor bolts with a minimum yield strength of 55,000 PSI. There shall be at least a difference of 15,000 PSI between yield strength and tensile strength.

3.4.1) Size

The anchor bolts shall have a diameter of one (1) inch, a minimum length of 48 inches plus a four (4) inch "L" bend at the bottom and a minimum of six (6) inches of thread at the top. The top eight (8) inches of all anchor bolts are to be hot-dipped galvanized.

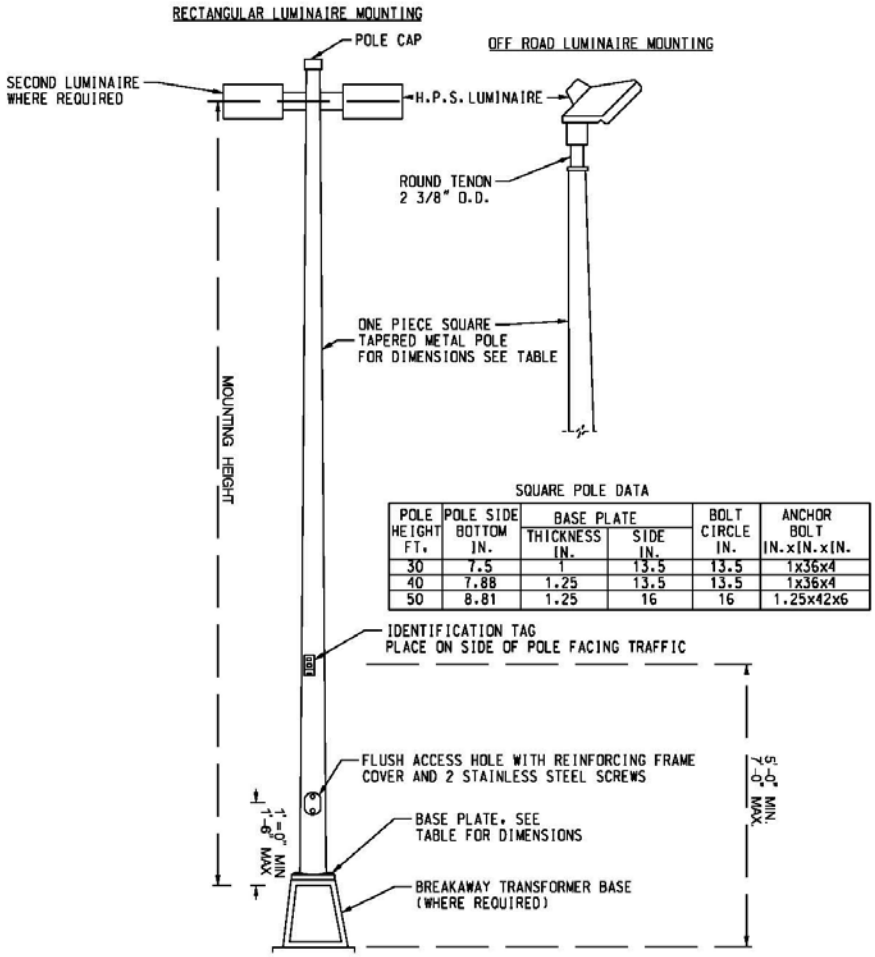
3.4.2) Nuts

Each anchor bolt shall be furnished with two (2) hexagonal nuts for plumbing and securing the pole as necessary. Nuts shall be ASTM A194, Grade 2 or 2H. A flat washer shall be provided for each bolt. All nuts are to be hot-dipped galvanized.

3.4.3) Shims

Each pole shall be furnished with four (4) metal shims, about one-eighth (1/8) inch thick. These shims are required in addition to the anchor bolt nuts and are to provide the County with an additional method to attach and plumb the pole to the anchor bolts. All shims shall be hot-dipped galvanized.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



SQUARE POLE DATA

POLE HEIGHT FT.	POLE SIDE BOTTOM IN.	BASE PLATE THICKNESS IN.	BASE PLATE SIDE IN.	BOLT CIRCLE IN.	ANCHOR BOLT IN.xIN.xIN.
30	7.5	1	13.5	13.5	1x36x4
40	7.88	1.25	13.5	13.5	1x36x4
50	8.81	1.25	16	16	1.25x42x6

HANDHOLES AND TRANSFORMER BASE OPENING SHALL BE INSTALLED ON THE SIDE OF THE POLE FACING AWAY FROM TRAFFIC.

MOUNTING HEIGHT SHALL BE MEASURED FROM THE CENTER OF THE LUMINAIRE TO TOP OF THE POLE BASE PLATE.

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

BREAK-AWAY, BRONZE-COLORED, TRANSFORMER BASE

1) PURPOSE

The purpose of these specifications is to provide minimum requirements for the design, manufacture, fabrication, finishing and delivery of breakaway, bronze-colored, transformer base for a streetlight pole. This transformer base specification is intended for use along Sam Eig Highway only. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

2) DESIGN CRITERIA

2.1) AASHTO Standards

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

2.2) Wind Load

All components of the transformer base 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.

2.3 - Finish

All visible components shall then be finished to produce the appearance of a decorative "National Park Service Brown" color, as described in "Finishing Galvanized Steel and Aluminum Metals".
One (1) fourteen (14) ounce spray can to match the color of the transformer base

shall be provided with each transformer base supplied.

3. MATERIALS

3.1) Design Uniformity

These specifications are intended to produce a uniform system of hardware, which will minimize the number of stock items that the County or its contractors must maintain.

3.2) Castings

All casting used to complete the transformer base shall be clean and smooth with details well defined and true to pattern.

3.3) Handhole

3.3.1) Handholes

The transformer base shall be supplied with one handhole cover door a minimum of (7) inch wide by a minimum of eight (8) inch high and shall be placed 90 degrees clockwise from the luminaire when vieded from above. Each handhole cover door shall be attached to the transformer base by an eighteen (18) inch long stainless steel chain affixed to both the cover plate and the transformer base.

3.4) Bolts

Each pole shall be supplied with four (4) galvanized bolts with a minimum yield strength of 55,000 PSI. There shall be at least a difference of 15,000 PSI between yield strength and tensile strength.

3.4.1) Size

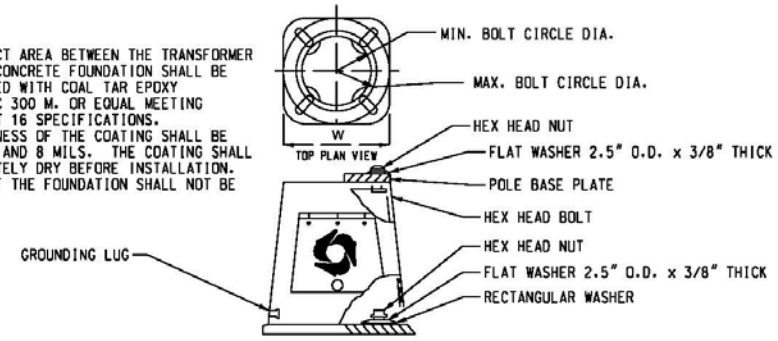
The hex-head bolts shall have a diameter of one (1) inch, a minimum length of three (3) inches, all bolts are to be hot-dipped galvanized.

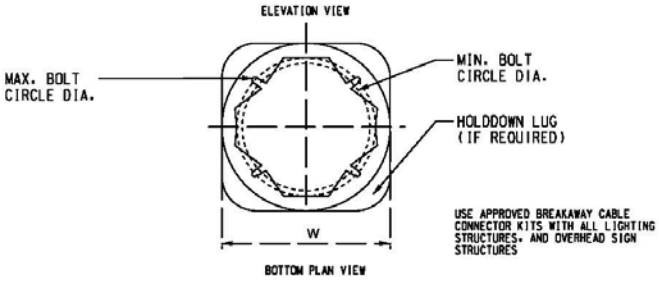
3.4.2) Nuts

Each hex-head bolt shall be furnished with one (1) hexagonal nuts for securing the pole as necessary. Nuts shall be ASTM A194, Grade 2 or 2H. All nuts are to be hot-dipped galvanized.

SPECIFICATIONS FOR STREETLIGHT HARDWARE

NOTE:
THE CONTACT AREA BETWEEN THE TRANSFORMER BASE AND CONCRETE FOUNDATION SHALL BE SHOP COATED WITH COAL TAR EPOXY BITUMASTIC 300 M. OR EQUAL MEETING SSPC-PAINT 16 SPECIFICATIONS.
THE THICKNESS OF THE COATING SHALL BE BETWEEN 6 AND 8 MILS. THE COATING SHALL BE COMPLETELY DRY BEFORE INSTALLATION.
THE TOP OF THE FOUNDATION SHALL NOT BE PAINTED.



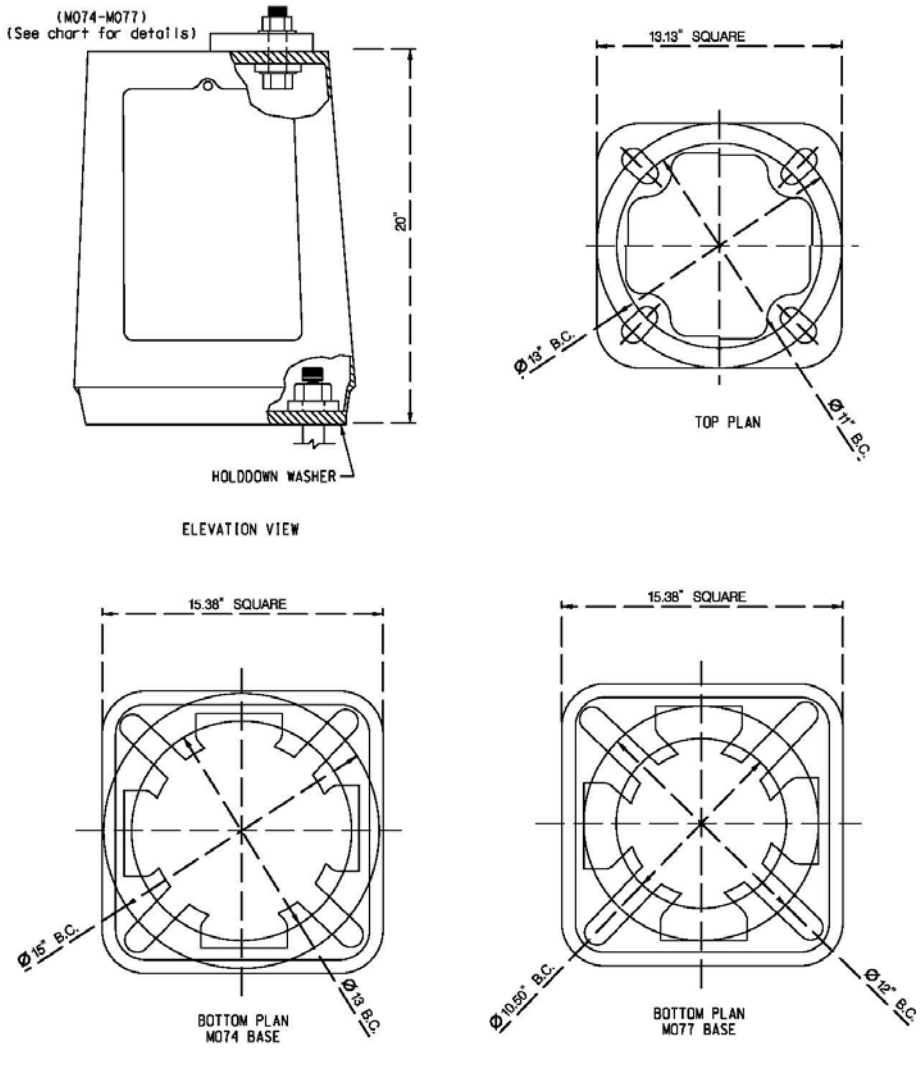


MOUNTING HEIGHT	ARM LENGTH	TOP OF BASE			BOTTOM OF BASE		
		MIN. WIDTH	BOLT DIA.	BOLT CIRCLE IN.	MIN. WIDTH 'W'	ANCHOR BOLT DIA.	BOLT CIRCLE IN.
LESS THAN 40'	LESS THAN 25'	13"	1"	13.5"	13"	1"	13.5"
	30'	15"	1.25"	15"	15"	1.25"	15"
40'	LESS THAN 30'	13"	1"	13.5"	13"	1"	13.5"
	25'-30'	15"	1.25"	15"	15"	1.25"	15"
50'	LESS THAN 10'	13"	1"	13.5"	13"	1"	13.5"
	10'-20'	15"	1.25"	15"	15"	1.25"	15"

TOP AND BOTTOM OF BASE MAY BE SLOTTED FOR BOLT CIRCLE.
SLOT MUST ACCOMMODATE DIMENSION SHOWN

BREAKAWAY TRANSFORMER BASE SHALL BE USED WHEN LIGHTING STRUCTURE IS NOT PROTECTED FROM TRAFFIC, AND SHALL BE APPROVED AS BREAKAWAY BY FHWA

SPECIFICATIONS FOR STREETLIGHT HARDWARE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

WHEATON FLUTED PEDESTAL STREETLIGHT POLES FOR THE WHEATON CBD

1) PURPOSE

The purpose of these specifications is to provide minimum requirements for the design, manufacture, fabrication, finishing, and delivery of tapered fluted pedestal streetlight poles. These streetlight poles are intended for use in medians and on main streets, in urban streetscape areas. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

2) DESIGN CRITERIA

2.1) AASHTO Standards

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

2.2) Wind Load

The poles shall be designed to resist (at yield strength of the material without permanent deflection or destruction) test loads equivalent to the calculated wind loads developed by the velocity pressures of an 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3) Effective Projected Area (EPA)

The poles shall have an EPA allowable for the following assumptions:

a) Pedestrian luminaires shall be assumed to be spherical in shape, minimum length plus width of 36 inches.
b) The pedestrian luminaire shall be mounted at a nominal mounting height of 11 feet above the base.
c) One or two (24 inches x 36 inches) traffic signs may be mounted with the

sign's bottom edge 7 feet above the base.

2.3) Finish

Prior to finishing, all materials except the unthreaded ends of the anchor bolts shall be hot-dipped galvanized as per ASTM A-123. All visible components shall then be finished to produce the appearance of a decorative "Semi-Gloss Black" federal standard 595B color 27040, as described in "Finishing Galvanized Steel and Aluminum Metals".

One (1) fourteen (14) ounce spray can to match the color of the streetlight shall be supplied for each tall-post streetlight pole.

Other finishing techniques may be considered 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 certifies an expected life of the alternate finish of a minimum of twenty (20) years.

3) MATERIALS

3.1 POLE

3.1.1) Shaft

The pole shall consist of a shaft fabricated from cold-rolled steel conforming to ASTM A-595 Grade A (55,000 psi minimum yield) having a thickness of not less than #7 manufacturer's standard gauge. The shaft shall be of a one piece construction with one longitudinal weld which shall be rolled smooth. The pole shall be secured to a steel plate base plate by means of two continuous circumferential welds and shall develop the full strength of the adjacent shaft section to resist bending action

3.1.2) Taper

The pedestal pole shall have a base diameter of 6.5 inches across flutes with a uniform continuous taper decreasing from the base of 0.14 inch per foot of height.

3.1.3) Cross Section

The cross section shall form eight (8) equally spaced doric flutes with the radius of the crest not to exceed the thickness of the material.

3.1.4) Pole Cap / Luminaire Receiver

The pedestal pole shall be capped with a 0.375 inch thick plate of ASTM A-595 Grade A steel. The cap shall incorporate a 4.0 inch tenon to allow for the luminaire to be placed on top.

3.1.5) Height

The height of the pedestal pole shall be 11 feet.

4) ANCHOR BOLTS

Each pole shall be supplied with four (4) steel anchor bolts with a minimum yield strength of 55,000 PSI.

4.1) Size

The anchor bolts shall have a diameter of one (1) inch, a minimum length of fifteen (15) inches, a four (4) inch "L" bend at the bottom and a minimum of six (6) inches of thread at the top. The top eight (8) inches of all anchor bolts are to be hot-dipped galvanized.

4.2) Nuts

Each anchor bolt shall be furnished with two (2) hexagonal nuts for plumbing and securing the pole as necessary. Nuts shall be ASTM A194, Grade 2 or 2H. A flat washer shall be provided for each bolt. All nuts are to be hot-dipped galvanized.

4.3) Shims

Each pole shall be furnished with four (4) metal shims, approximately one-eighth (1/8) inch thick. These shims are required in addition to the anchor bolt nuts and are to provide the County with an additional method to attach and plumb the pole to the anchor bolts. All shims are to be hot-dipped galvanized.

5) COVER BASE

Each pole there shall be supplied a wrap around cover conforming to the shape of the fluted pole. This cover shall be fabricated from a minimum of #16 gauge steel and shall completely cover the base and anchor bolt nuts. The height shall be no more than 4" and the cover shall be pained to match the color of the poles. The covers will be manufactured in two halves and shall be joined together in the field with the use of # 8 32 x ½ inch stainless steel self tapping screws, with Allen Head. One Allen wrench shall be supplied for every twenty (20) poles or partial score of poles. Provisions shall be made at each corner for a weep opening for drainage. The cover shall be no larger than and 10 3/4 inches for the pedestal pole.

6) HAND HOLES

The pedestal pole shall have a raised 3.0 inches x 5.0 inches hand hole with its bottom edge located 8.0 inches above the bottom of the base plate. A hand hole cover shall be provided for each pole and shall fit flush with the hand hole frame. The handhole shall be fastened with captive fasteners. In addition, the hand hole cover shall be retained by a stainless steel chain affixed to the inside of the pole. Any screws or bolts shall have the same screw heads as the cover base retaining screws.

7) BASE PLATES

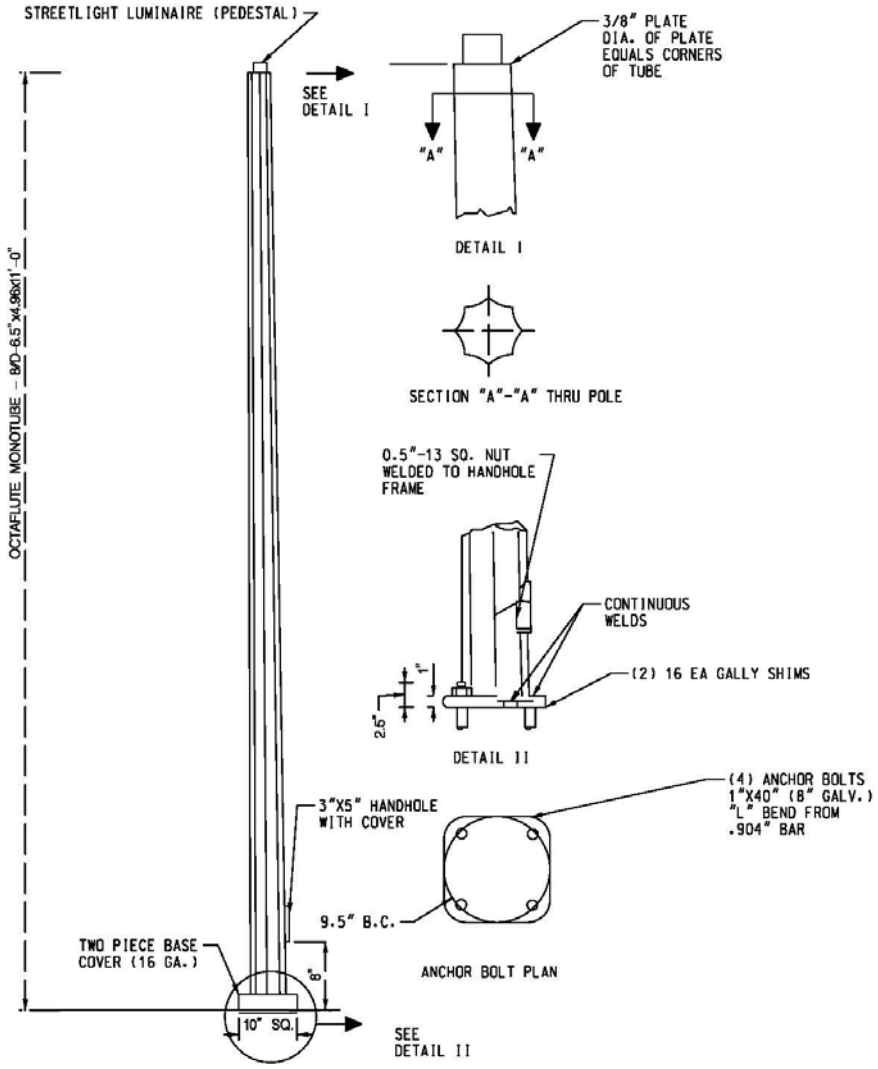
All base plates are to be square in shape with rounded corners and are to be fabricated from cold rolled steel conforming to ASTM A-36 (36,000 psi minimum yield strength). Four bolt holes are to have radial slots to accommodate 1.0 inch diameter bolts for pedestal pole.

Base Plate Thickness	Nominal Square	Bolt Circle Diameter
1.00"	9.50"	9.50"

8) INTERIOR SURFACES

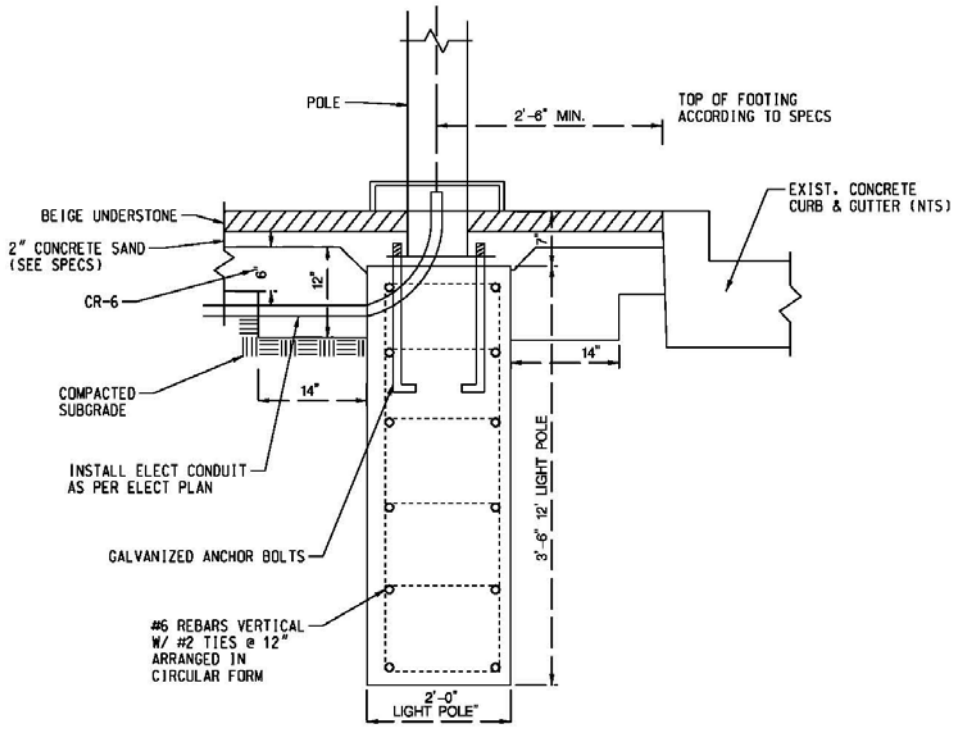
All interior surfaces of the poles, cover bases, pole tops and hand hole covers shall be painted with a red lead oil paint for a suitable alternate after the exterior finish has been applied.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



SPECIFICATIONS FOR STREETLIGHT HARDWARE

FOOTING DETAIL FOR
12' LIGHT POLE



MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

WHEATON VEHICULAR FLUTED DAVIT STREETLIGHT POLE FOR THE WHEATON CBD

1) PURPOSE

The purpose of these specifications is to provide minimum requirements for the design, manufacture, fabrication, finishing, and delivery of tapered fluted davided vehicular streetlight poles. These streetlight poles are intended for use in medians and on main streets, in urban streetscape areas. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

2) DESIGN CRITERIA

2.1) AASHTO Standards

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

2.2) Wind Load

The poles shall be designed to resist (at yield strength of the material without permanent deflection or destruction) test loads equivalent to the calculated wind loads developed by the velocity pressures of an 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3) Effective Projected Area (EPA)

The poles shall have an EPA allowable for the following assumptions:

a) Pedestrian luminaires shall be assumed to be spherical in shape, minimum length plus width of 48 inches.

b) The streetlight luminaire shall be mounted at a nominal mounting height of 25 +/- feet above the base.

c) One or two (24 inches x 36 inches) traffic signs may be mounted with the

sign's bottom edge 7 feet above the base.

2.3) Finish

Prior to finishing, all materials except the unthreaded ends of the anchor bolts shall be hot-dipped galvanized as per ASTM A-123. All visible components shall then be finished to produce the appearance of a decorative "Semi-Gloss Black" federal standard 595B color 27040, as described in "Finishing Galvanized Steel and Aluminum Metals".

One (1) fourteen (14) ounce spray can to match the color of the streetlight shall be supplied for each tall-post streetlight pole.

Other finishing techniques may be considered 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 certifies an expected life of the alternate finish of a minimum of twenty (20) years.

3) MATERIALS

3.1) POLE

3.1.1) Shaft

The pole shall consist of a shaft fabricated from cold-rolled steel conforming to ASTM A-595 Grade A (55,000 psi minimum yield) having a thickness of not less than #7 manufacturer's standard gauge. It shall be of one piece construction with one longitudinal weld which shall be rolled smooth. The pole shall be secured to a steel plate base by means of two continuous circumferential welds and shall develop the full strength of the adjacent shaft section to resist bending action.

3.1.2) Taper

The davit pole shall have a base diameter of 8.0 inches across flutes. The davit pole shall have a uniform continuous decreasing taper from the base of 0.14 inch per foot of pole height.

3.1.3) Cross Section

The cross section shall form eight (8) equally spaced doric flutes with the radius of the crest not to exceed the thickness of the material.

3.1.4) Tenon

The davit pole shall have a tenon 2.375 inches OD and 3.0 inches long.

3.1.5) Height

The height of the davit pole shall be 30 feet.

4) ELECTRICAL RECEPTACLE

Davit pole must have one and three-fourths (1 3/4) inch blind half coupling welded in pole with plugs. Plugs shall be threaded with Allen head recess which fit flush with the surface of the pole. This type threaded coupling to be welded on both sides of the pole to mount straight arms at fifteen (15) feet above base.

5) ANCHOR BOLTS

Each pole shall be supplied with four (4) steel anchor bolts conforming to ASTM A-36 with a minimum yield strength of 55,000 PSI.

5.1) Size

The anchor bolts shall have a diameter of one- one quarter (1 1/4) inch, a minimum length of forty-eight (48) inches, a four (4) inch "L" bend at the bottom and a minimum of six (6) inches of thread at the top. The top eight (8) inches of all anchor bolts are to be hot-dipped galvanized conforming to ASTM A.153.

5.2) Nuts

Each anchor bolt shall be furnished with two (2) hexagonal nuts conforming to ASTM A-307 for plumbing and securing the pole as necessary. Nuts shall be ASTM A194, Grade 2 or 2H. A flat washer shall be provided for each bolt. All nuts are to be hot-dipped galvanized.

5.3) Shims

Each pole shall be furnished with four (4) metal shims, approximately one-eighth (1/8) inch thick. These shims are required in addition to the anchor bolt nuts and are to provide the County with an additional method to attach and plumb the pole to the anchor bolts. All shims are to be hot-dipped galvanized.

6) COVER BASE

With each pole there shall be supplied a wrap around cover conforming to the shape of the fluted pole. This cover shall be fabricated from a minimum of #16 gauge steel and shall completely cover the base and anchor bolt nuts. The height shall be no more than 4 inches and the cover shall be pained to match the color of the poles. The covers will be manufactured in two halves and shall be joined together in the field with the use of # 8 - 32 x ½ inch stainless steel self tapping screws, with Allen Head. One Allen wrench shall be supplied for every twenty (20) poles or partial score of poles. Provisions shall be made at each corner for a weep opening for drainage. The cover shall be no larger than 12 ½ inches for the davit pole.

7) HAND HOLE

Davit pole shall have a raised 4.0 inches x 6.5 inches hand hole with its bottom edge located 8.0 inches above the bottom of the base plate. The davit pole's hand hole shall be parallel with the davit arm 90 degrees past the davit arm when the pole is observed from above. A hand hole cover shall be provided for each pole, shall fit flush with the hand hole frame and shall be fastened with captive fasteners. In addition, the hand hole cover shall be restrained by a stainless steel chain affixed to the inside of the pole. Any screws or bolts shall have the same screw heads as the cover base retaining screws.

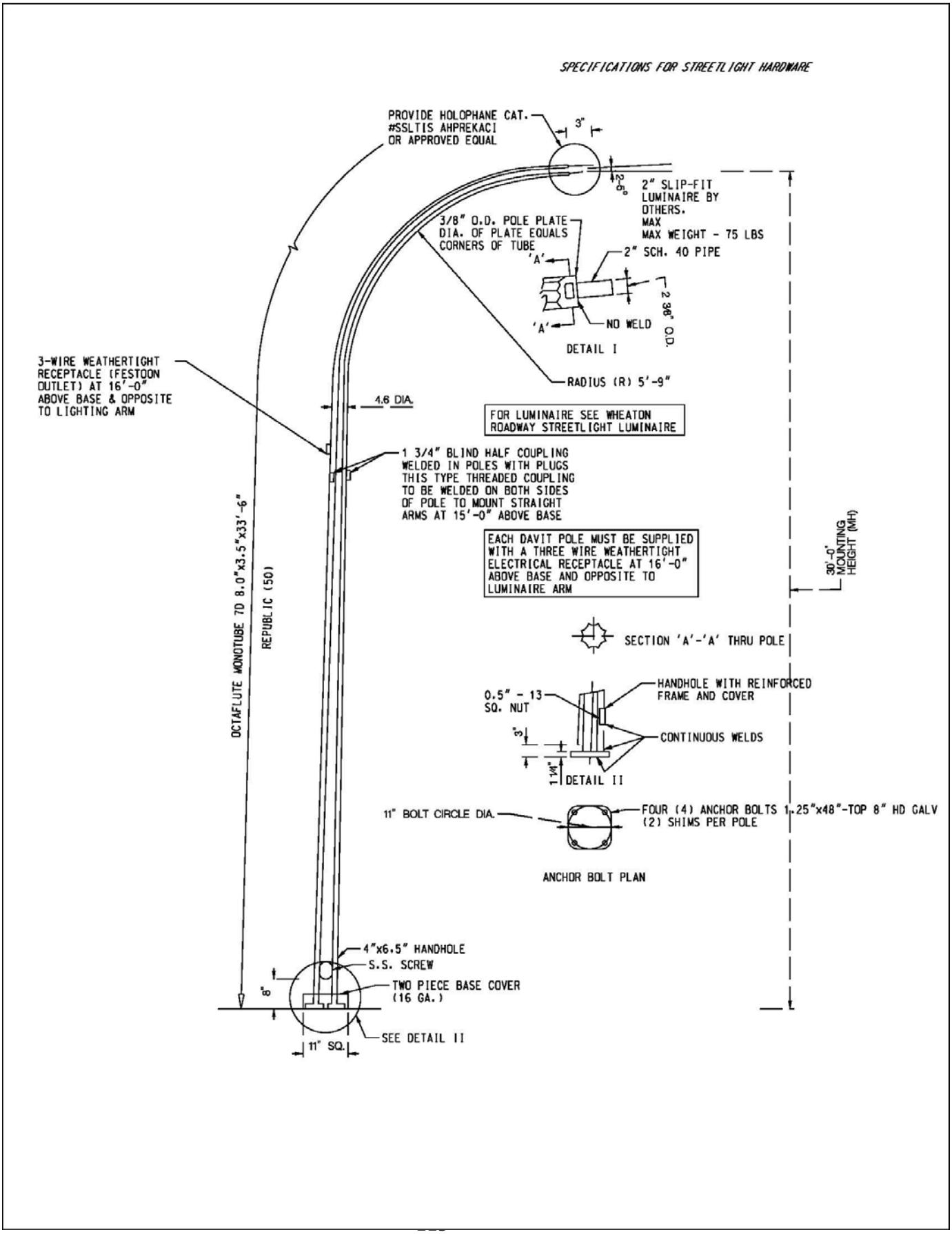
8) BASE PLATES

All base plates are to be square in shape with rounded corners and are to be fabricated from cold rolled steel conforming to ASTM A-36 (36,000 psi minimum yield strength). Four bolt holes are to have radial slots to accommodate 1.25 inch diameter anchor bolts.

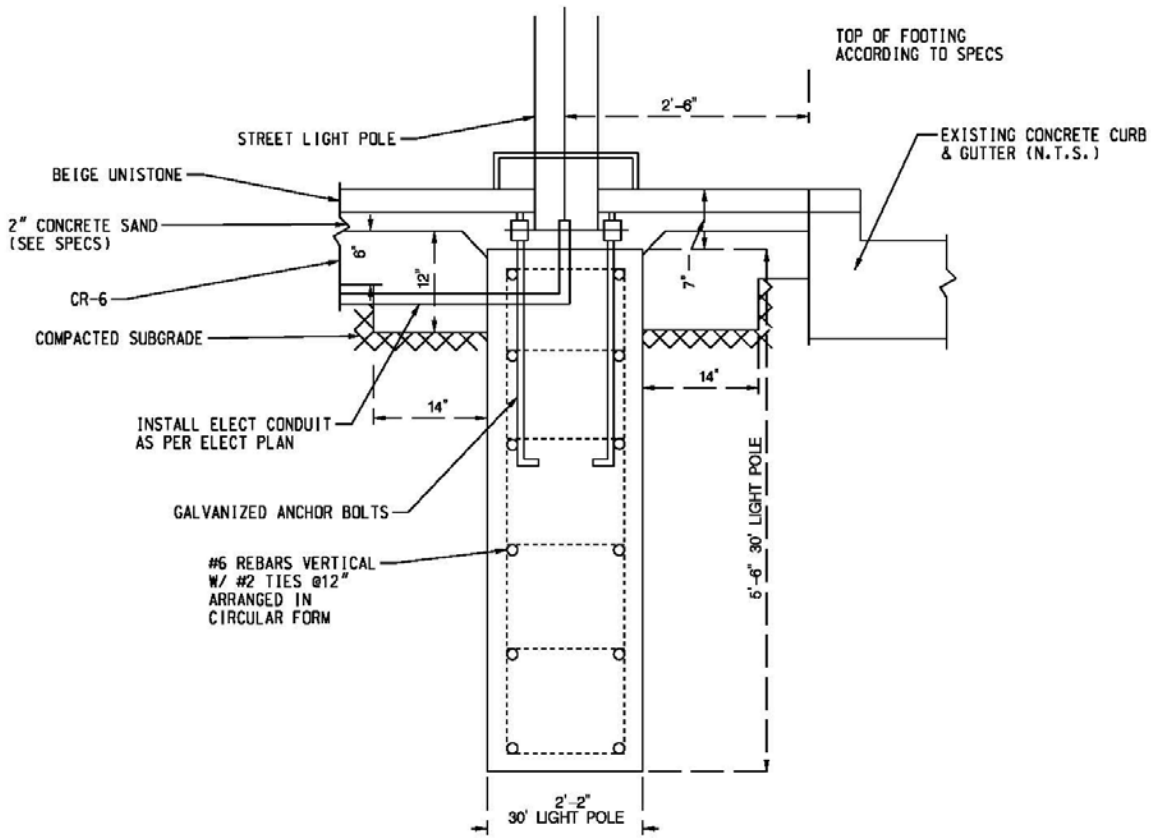
Base Plate Thickness	Nominal Square	Bolt Circle Diameter
1.25"	11.50"	11.00"

9) INTERIOR SURFACES

All interior surfaces of the poles, cover bases, pole tops and hand hole covers shall be painted with a red lead oil paint for a suitable alternate after the exterior finish has been applied.


SPECIFICATIONS FOR STREETLIGHT HARDWARE
PROVIDE HOLOPHANE CAT. #SSLTIS AHPREKACI OR APPROVED EQUAL
3"
2" SLIP-FIT LUMINAIRE BY OTHERS. MAX MAX WEIGHT - 75 LBS
3/8" O.D. POLE PLATE DIA. OF PLATE EQUALS CORNERS OF TUBE
2" SCH. 40 PIPE
'A'
NO WELD
2 3/8" O.D.
DETAIL I
RADIUS (R) 5'-9"
3-WIRE WEATHERTIGHT RECEPTACLE (FESTOON OUTLET) AT 16'-0" ABOVE BASE & OPPOSITE TO LIGHTING ARM
4.6 DIA.
FOR LUMINAIRE SEE WHEATON ROADWAY STREETLIGHT LUMINAIRE
1 3/4" BLIND HALF COUPLING WELDED IN POLES WITH PLUGS THIS TYPE THREADED COUPLING TO BE WELDED ON BOTH SIDES OF POLE TO MOUNT STRAIGHT ARMS AT 15'-0" ABOVE BASE
EACH DAVIT POLE MUST BE SUPPLIED WITH A THREE WIRE WEATHERTIGHT ELECTRICAL RECEPTACLE AT 16'-0" ABOVE BASE AND OPPOSITE TO LUMINAIRE ARM
30'-0" MOUNTING HEIGHT (MH)
OCTAFLUTE MONOTUBE TO 8.0"x3.5"x33'-6"
REPUBLIC (50)
SECTION 'A'-'A' THRU POLE
0.5" - 13 SQ. NUT
HANDHOLE WITH REINFORCED FRAME AND COVER
CONTINUOUS WELDS
3"
1 1/4"
DETAIL II
11" BOLT CIRCLE DIA.
FOUR (4) ANCHOR BOLTS 1.25"x48"-TOP 8" HD GALV
(2) SHIMS PER POLE
ANCHOR BOLT PLAN
4"x6.5" HANDHOLE
S.S. SCREW
TWO PIECE BASE COVER (16 GA.)
8"
SEE DETAIL II
11" SQ.

SPECIFICATIONS FOR STREETLIGHT HARDWARE



FOOTING DETAIL
FOR 30' LIGHT POLES

POLE COLORS AND NUMBERING TAGS

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS

JUNE 2016

FINISHING ON STREETLIGHT POLES

1) FINISH

All visible components shall be finished with a "polyester powder coating" (fusion boned coating) using a thermosetting process. The finish color shall be:

Hunter Green (Damascus)	Federal Standard 595B	Color # 14110 page # 08
Federal Green	Federal Standard 595B	Color # 14036 page # 14
Gray (Friendship Heights)	Federal Standard 595B	Color # 36280 page # 59
National Park Brown	Federal Standard 595B	Color # 20040 page # 21
Semi-Gloss Black (Wheaton)	Federal Standard 595B	Color # 27040 page # 35

A) Application of Coating

1) The coating shall be applied to the cleaned surface as soon as possible after cleaning and before oxidation of the surface discernible to the unaided eye.

B) Thickness of Coating

1) The mil thickness of the coating after curing shall be six (6) mils plus or minus two (2) mils.

2) The thickness of the coating film shall be measured in accordance with SSPC-PA-2 or other thickness measuring methods acceptable to the purchaser.

C) Adhesion of Coating

1) At random, parts will be checked for adhesion, utilizing the cross-cut, tape test.

MONTGOMERY COUNTY, MARYLAND
DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING AND OPERATIONS SECTION

JUNE 2016

STREETLIGHT POST NUMBERING TAGS

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of streetlight post numbering tags. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and attached drawings.

2) DESIGN CRITERIA

The streetlight post numbering tags are to be made of aluminum and finished with a similar color coating as that of the streetlight pole it is to be rigidly attached to. This streetlight post numbering tag is intended for use on all streetlight post maintained by Montgomery County.

Each pole numbering tag shall comply to the following:

a) Be 2” wide and 12” long
b) Be a color similar to the streetlight pole
c) Have 5 numbers of an opposite color placed vertically
d) All White/Silver surfaces shall be made of retroreflective sheeting
e) All colored surfaces shall be nonreflective

3) MATERIALS

a) TAG

The streetlight post numbering tags shall be 12 inches X 2 inches, fabricated from clear anodized 1/16 inch thick aluminum. The edges shall be smooth and corners rounded and the tag shall fit the streetlight pole shaft.

b) REFLECTIVE AREAS

The streetlight post numbering tag reflective area shall conform to D4956, Type III retroreflective sheeting.

c) NONRELECTIVE AREAS The streetlight post numbering tags nonrelective areas shall be as follows:

a. Numbers on white/silver reflective post tag

b. Backing on all other streetlight post tags

4) MOUNTIING HEIGHT

The streetlight post numbering tag should be mounted at a height approximately 10 foot from the surrounding elevation of the ground, unless otherwise approved and directed by the Engineer.

5) MOUNTING ORIENTATION

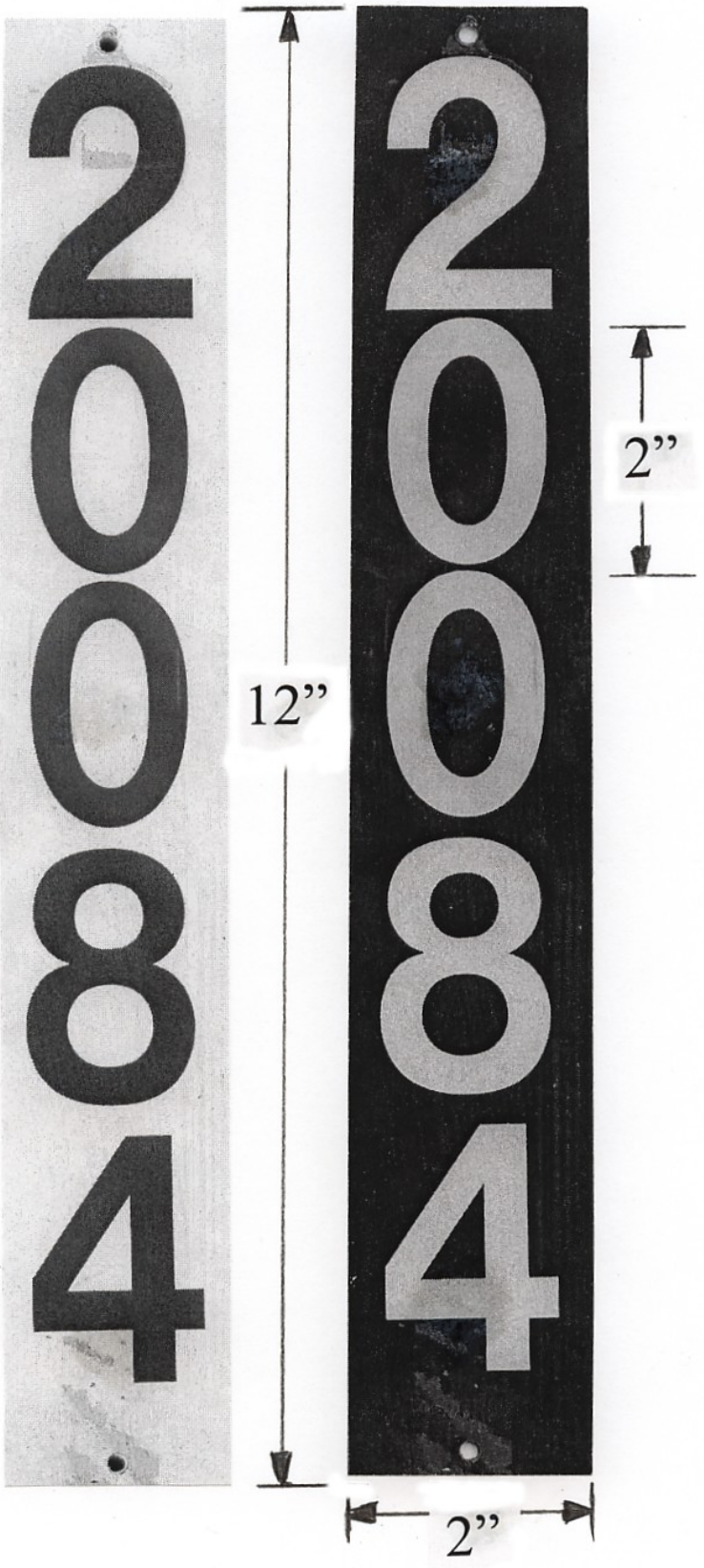
The streetlight post numbering tag shall be oriented and rigidly mounted at a 30 to 45 degree angle, so that approaching traffic can readily observe the tags numbers.

6) MOUNTING HARDHARE

The streetlight post numbering tag shall be secured to the shaft of the streetlight by a means of two (2) 1/8 inch diameter,18-8 stainless steel tamper-proof screw.

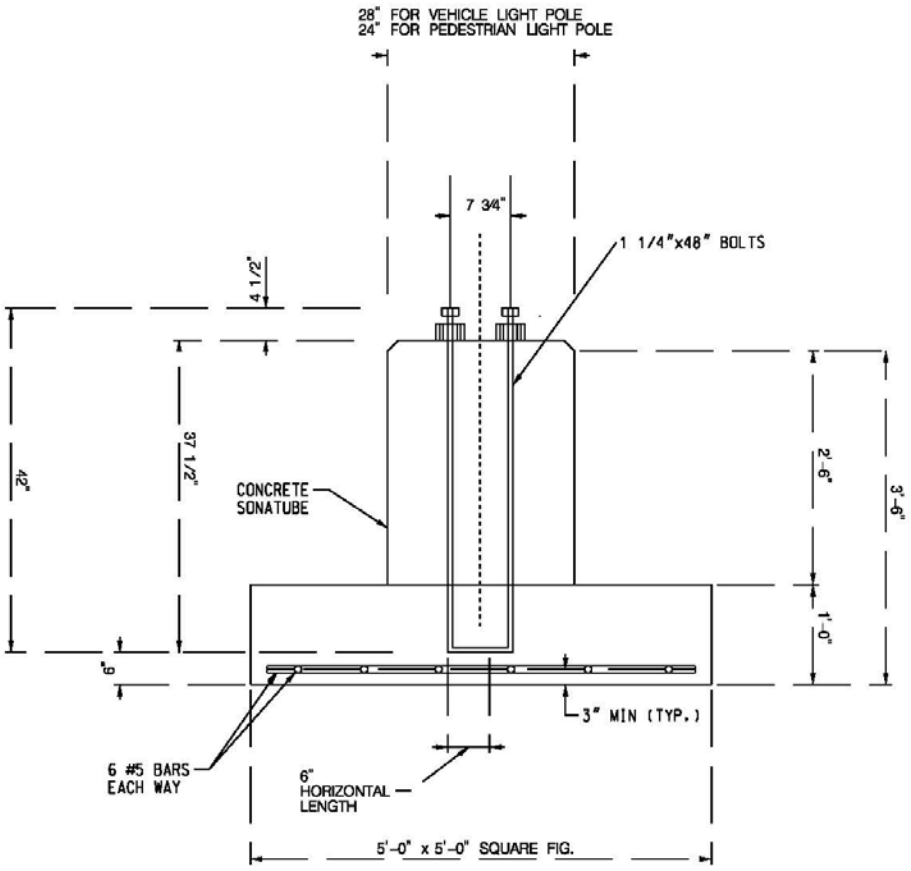
7) NUMBERS

The streetlight post numbering tag numbers shall be a minimum of 2 inch high with a minimum of a ¼ inch stroke width.


2008
2008
12”
2”
2”

ALTERNATE FOOTER DESIGNS

SPECIFICATIONS FOR STREETLIGHT HARDWARE



SPECIFICATIONS FOR STREETLIGHT HARDWARE