Chapter 12: Street Lighting Standards

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1. General

Public street lighting for Local, Collector, and Arterial streets shall also be provided in accordance with the City of Delaware Street Lighting Standard Details (refer to the RDWD series of standard drawings) and this chapter:

A. Light Fixtures

All light fixtures shall be as identified on the City of Delaware Street Lighting Standard Details (refer to the RDWD series of standard drawings). The City of Delaware shall determine which fixture design will be required during the initial plan review.

B. Electrical Installation Requirements

Fixtures must be wired and installed per the current edition of the Nation Electrical Code (N.E.C.-NFPA 70), manufacturer's specifications, and all requirements identified in the City of Delaware Street Lighting Standard Details (refer to the RDWD series of standard drawings).

C. General Lighting Plan Requirements

1. Public street lighting shall be required on all new public streets at locations indicated in this chapter and shall be included with the engineering plans as part of a development plan submittal for each new section under design. The city shall determine which light pole and fixture design shall be used during initial plan review.
2. The lighting plan submission shall include an isolux diagram with point-by-point foot-candle coverage. A minimum of 0.5 foot-candle average shall be designed for all locations where lighting is required, with a Luminance Uniformity "L" average to "L" minimum of 6 to 1 per American National Standard Practice for Roadway Lighting prepared by IES (Illuminating Engineering Society).
3. The lighting plan must show the location of proposed public infrastructure including streetlights, disconnects, pullboxes, circuit cable, controller cabinet, meter, photo sensor, etc. Where located outside the public right of way, a 20-foot wide easement shall be provided and centered on the lighting conduit between the right of way and power source.
4. The height of all luminaires above finished grade shall be in accordance with the foundation, pole and fixture dimensions specified.
5. All street lighting poles shall be installed 2'-6" to the center of the foundation from the back of curb and placed where noted on the approved lighting plan. In general the fixture shall not be installed above sanitary sewers, storm sewers, water mains or other utilities.
6. Street trees shall not be permitted within 50-FT feet of streetlights, so the light fixture is not impacted by the tree canopy.
7. The following lighting related items, including but not limited to the isolux diagram, all light fixtures, pole heights, building fixtures, and lighting timing shall be submitted on the lighting plan submission to the Public Works Department for review and approval. The signed and approved isolux diagram and lighting submission shall be included in the final engineering plan set.
8. Voltage drop calculations demonstrating no more than 5% drop shall be provided to the City.

9. Controller:
    a. On the development plat, the controller location(s) shall be shown; this is required to determine an address as required for the meter/service location.
    b. Controller cabinet shall be located in the rear yard or reserve space, away from the roadway no closer than the established building setback.
    c. Each controller shall be labeled as follows:

STREET LIGHTING
XXX Volt
Address

    d. A 5-FT minimum boundary surrounding the concrete controller pad shall be clear of any landscaping, ornamental grass, etc.; clear and unobstructed access shall be provided on the door side of the controller cabinet. Any landscaping shall be included on the landscaping plan and included with the engineering plan set.
    e. The maximum quantity of lights per controller is to be determined by the design engineer, not to exceed controller capacity. Multiple sections of a development are permitted to be on the same the controller, provided adequate capacity is available. The City of Delaware shall make the final determination of the maximum quantity of lights per controller during the plan review process.
    f. It is the developer's responsibility to arrange for the extension of electric service to the controller in order to energize the lighting circuits.

D. Replacement Stock

Replacement stock, both light fixtures and poles, shall be provided to the City of Delaware, Public Works Department, for maintenance purposes for all infrastructure added by development, including local, collector, and arterial roadways. The table below shall be used to determine the required quantities. These quantities are to be accounted for on the plan estimate of quantities.

Table 12-1:

Required Light Fixture Replacement Stock*

Quantity of Lights Proposed Per Phase/Section	Replacement Stock Required
1-15	1 luminaire and pole; or 2 luminaires**
16-30	2 luminaires and poles, each; or, 3 luminaires**
31-45	3 luminaires and poles, each; or, 4 luminaires**
46-60	4 luminaires and poles, each; or, 5 luminaires**
61+	Contact Public Works Department

*A minimum of three days' notice to the Public Works Department is required for the delivery of all replacement stock, at a facility designated by the City of Delaware. A transmittal shall be provided with the owner stock specifying all items delivered, where it was delivered, and the date it was provided. The delivery of replacement stock is to

be observed by Public Works Department; the transmittal is to be provided at the time of delivery for verification.

**Quantities of luminaires and poles or just luminaires is to be determined by the Public Works Department.

2. Residential Street Lighting (25 mph streets)

On all public streets with a posted speed of 25 mph, a minimum of two public streetlights shall be installed at all roadway intersections, mid-block crossings, and at other locations as required by the City Engineer. Where single-family residential lots abut these streets, residential post lamps shall be provided on each lot per the requirements given below.

A. Design

Lighting with an average illuminance and uniformity ratio per the General Lighting Plan Requirements shall be provided within the entire intersection or mid-block crossing as measured to 10' beyond the crosswalks.

B. Light Fixtures

Light fixtures shall be provided as specified in the standard drawings.

C. Light Poles

1. Residential street lighting poles shall be Hapco 12-FT Decorative Pole, aluminum tube, 4-IN fluted with cast aluminum base, as shown in **Figure 12-1.** Pole shall match Holophane fixture color.
2. Where a 25-mph street is expected to be a classified as a collector street, the City reserves the ability to require collector light poles.
3. The following light pole requirements shall also apply:
    a. The interior side of the hand hole access door shall have a permanent label marker noting the voltage.
    b. The pole shall have an approved cable grip on the top interior of the pole to support the weight of the wiring cables.
    c. All set screws shall be lubricated with a compound to prevent seizing.

D. Pole Foundation

The pole foundation shall in accordance with the Light Pole Foundation for Residential Street Lighting standard drawings.

E. Residential Post Lamps

A residential post lamp meeting the following requirements shall be provided on each parcel.

1. Developer shall select a standard residential exterior post lamp of uniform style and color, to be placed at each residence on public streets, and included with the development plan submittal. The post lamp shall be uniform throughout the entire residential development.
2. Post lamps shall be placed a uniform distance from the back of sidewalk and cannot be contained within any existing easement.
3. The height of the lamppost shall be 5-ft to 6-ft above ground measured to the light source
4. Lamp shall be LED, with a color range of 3000k.
5. Lamp shall be properly shielded from light being cast vertically upward.

6. Lamp lighting shall be automatically lit from down to dusk.
7. Post lamps shall be installed with the residential building construction.
8. Post lamps shall be owned and maintained by the property owner.

F. Controller

In addition to the general controller requirements given in paragraph 1.C.7, the following requirement shall apply:

1. One controller shall be placed per intersection, mid-block crossing, or other streetlight location. Where lighting locations are withing 500-ft of each other, one controller may be used for both locations.

3. Collector and Arterial Street Lighting (Over 25 mph streets)

On all public streets with a posted speed greater than 25 mph, public streetlights shall be provided along the full length of the roadway.

A. Design

Lighting with an average illuminance and uniformity ratio per the General Lighting Plan Requirements shall be provided for the full length of the roadway. Calculations zones shall be provided on the photometric for all sidewalks.

B. Light Poles

Collector and Arterial street light poles shall be either single luminaire or double luminaire as follows:

1. Type A – Single Luminaire

   The light pole shall be manufactured by "Main Street" Lighting Company, model as specified below. The pole shall be painted as specified in the Figures (unless otherwise specified by the City) and match the Holophane fixture. The total height of the light pole shall be 15-ft, not including the luminaire.

   a. Model AATF-1515-FPB (no banner arm), reference Figure 12-2.
   b. Model AATF-1515-FPB-BA10 (with banner arm), reference Figure 12-3.

2. Type B – Double Luminaire

   The light pole shall be manufactured by "Main Street" Lighting Company, model as specified below. The pole shall be painted as specified in the Figures (unless specified another color by the City) and match the Holophane fixture. The total height of the light pole shall be 13.5-ft, not including the luminaire.

   a. Model AATF-1513.5-FPB-PB72 (no banner arm), reference Figure 12-4.
   b. Model AATF-1513.5-FPB-PB72INV (with banner arms), reference Figure 12-5.

3. The following light pole requirements shall also apply:

   a. The interior side of the hand hole access door shall have a permanent label marker noting the voltage.
   b. Flag holders and banners arms shall only be provided when specified by the City. When specified, the cast brass flag bracket (installed perpendicular to the curb and positioned street side) shall be permanently installed 10-IN from the top of pole.
   c. The pole shall have an approved cable grip on the top interior of the pole to support the weight of the wiring cables.
   d. All set screws shall be lubricated with a compound to prevent seizing.

C. Pole Foundation

The pole foundation shall be in accordance with the Light Pole Foundation for Collector Street Lighting standard drawing.

D. Alternate Arterial Street Lighting

Arterial streets may be required to have lighting in accordance with this section or an alternative design. For example, an alternative design may be required on state highways in accordance with Ohio Department of Transportation highway lighting requirements.

4. Private Development Site Lighting

Design Engineer/Developer is to submit private site lighting (including photometrics, details on light fixtures, pole height, building fixtures and timing) directly to the Chief Building Official, for review in conformance of code for private development site lighting and subsequent approved. Once approved the signed lighting plan is to be included in the engineering site improvement plans reviewed and approved by the Public Works Department.

Figure 12-1: Residential Light Pole

Hapco Dwg. No. B74514

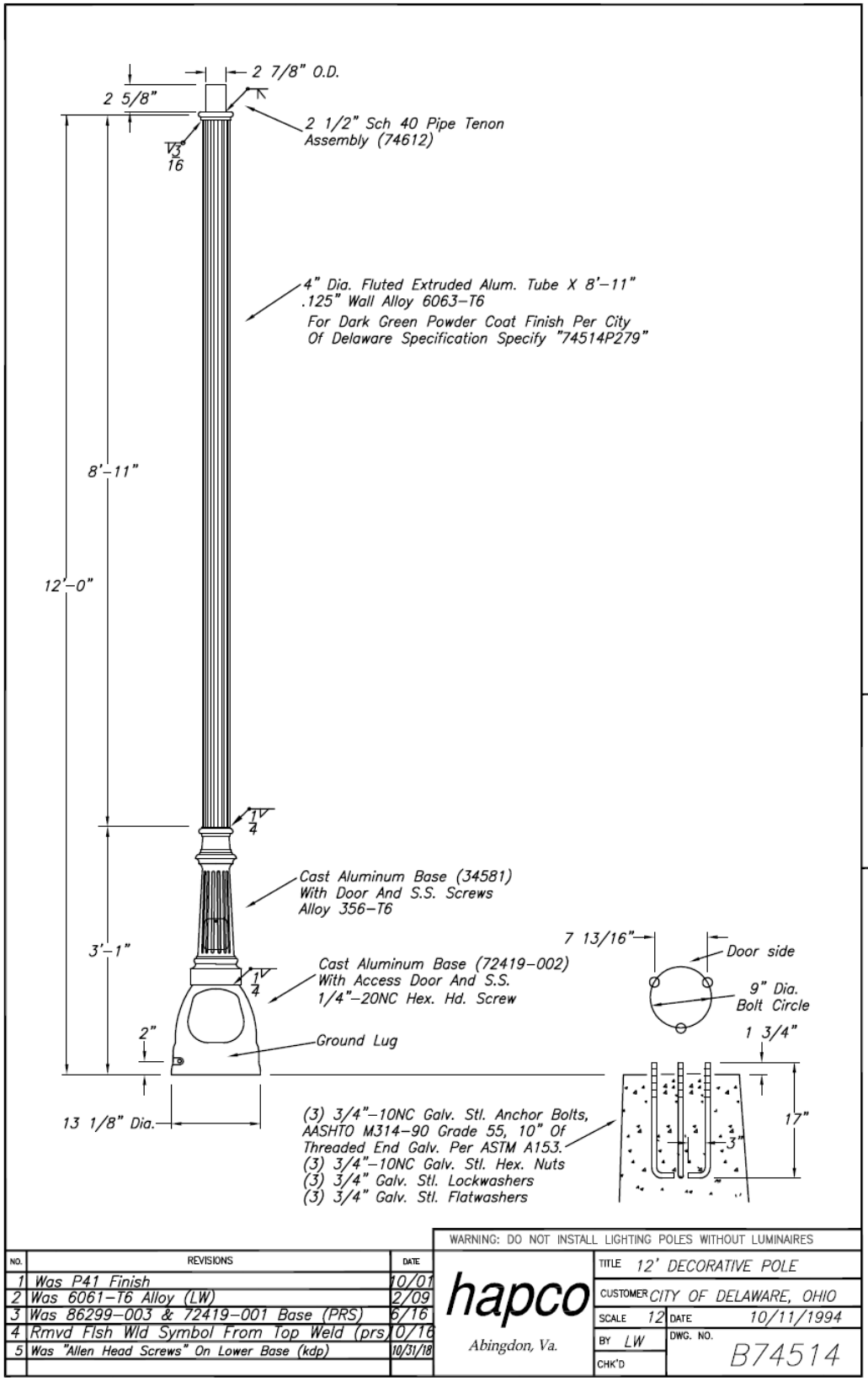


Figure 12-2: Collector Light Pole, Single Luminaire – No Banner Arm

Main Street Lighting Model No. AATF-1515-FPB

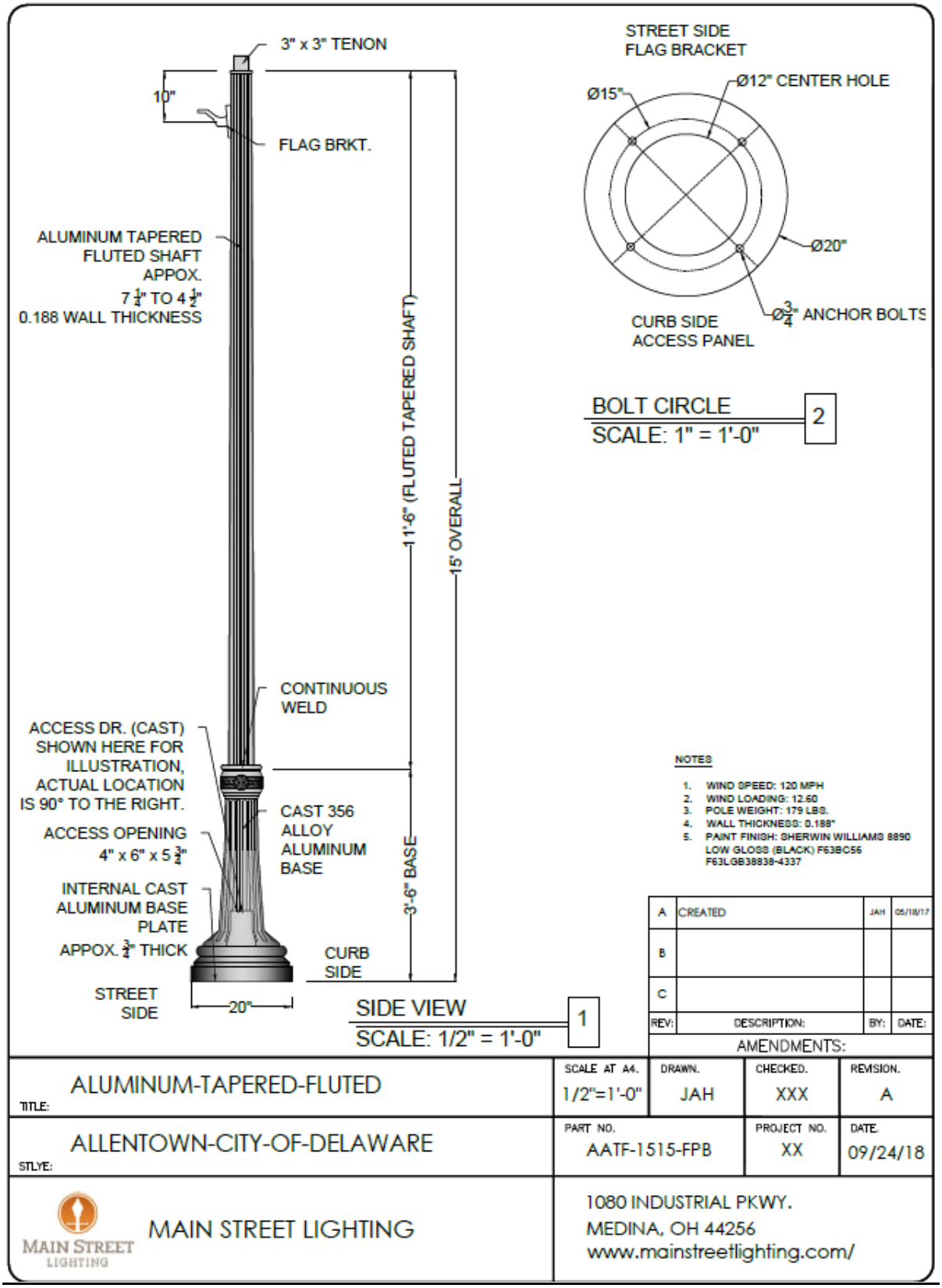


Figure 12-3: Collector Light Pole, Single Luminaire – With Banner Arms

Main Street Lighting Model No. AATF-1515-FPB-BA10

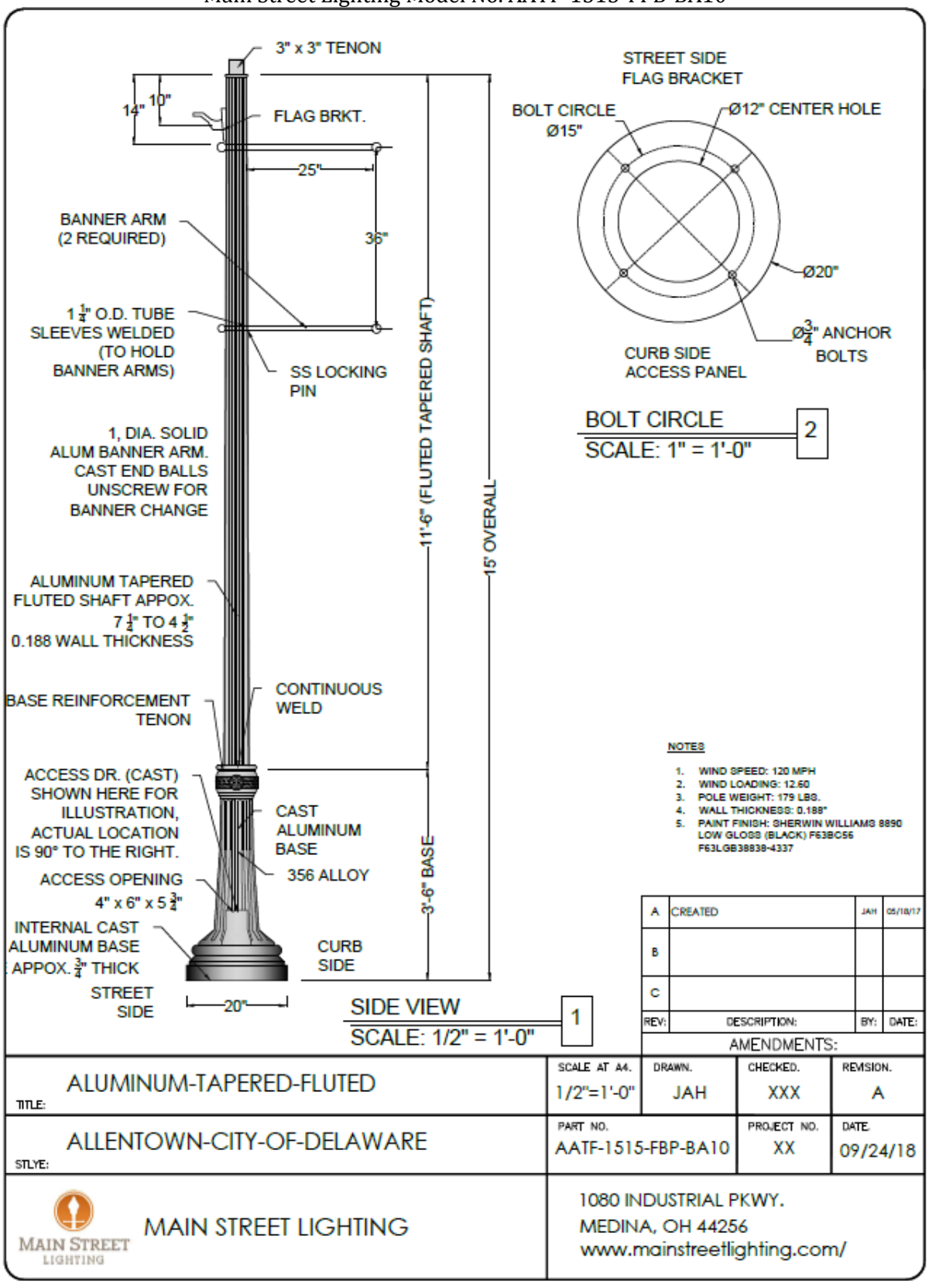


Figure 12-4: Collector Light Pole, Double Luminaire – No Banner Arm

Main Street Lighting Model No. AATF-1513.5-FPB-PB72

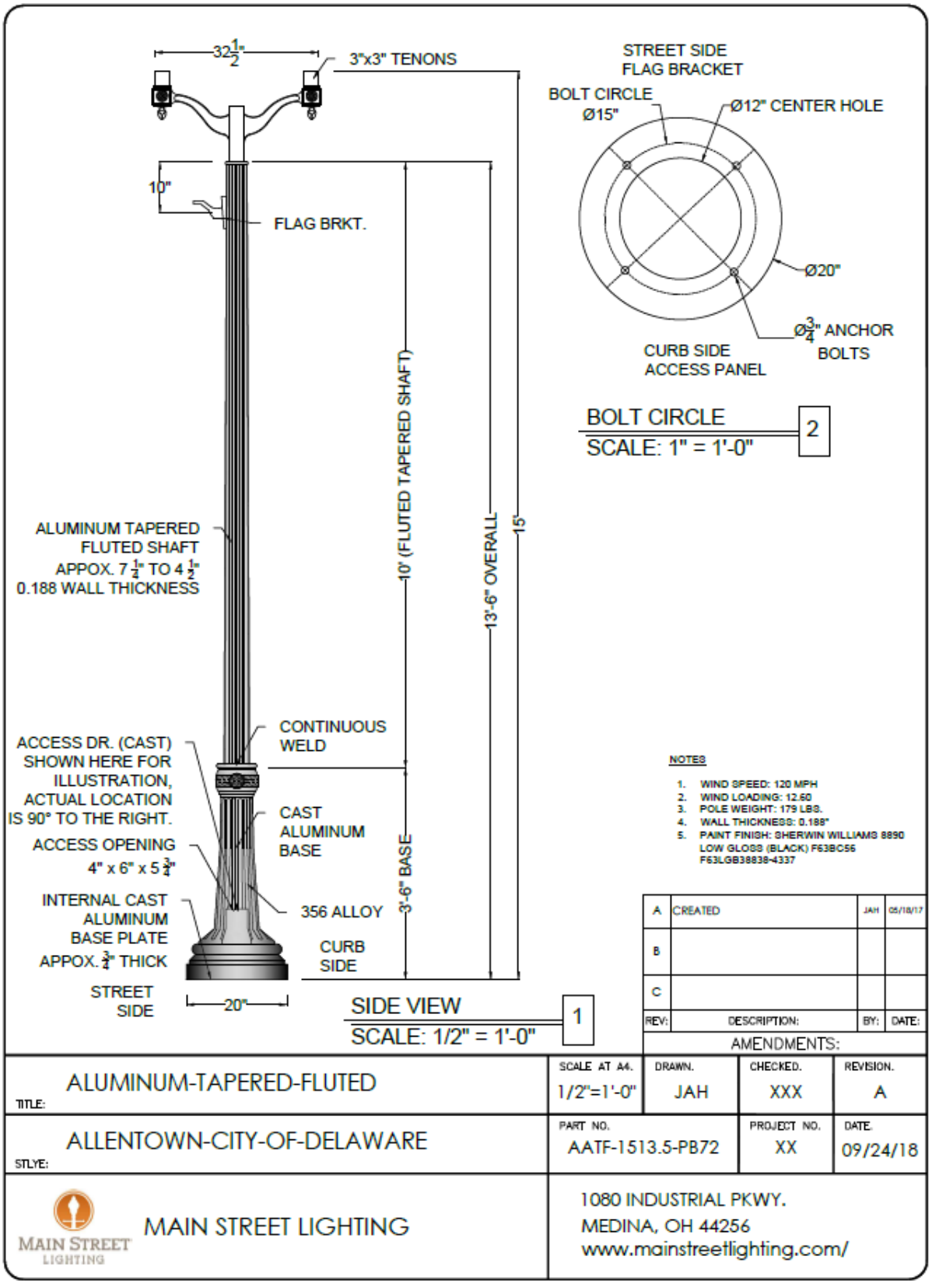


Figure 12-5: Collector Light Pole, Double Luminaire – With Banner Arms

Main Street Lighting Model No. AATF-1513.5-FPB-PB72INV

