

10. MUNICIPAL STREET LIGHTING STANDARDS

10.1. APPLICABILITY:

Street lighting on city streets and public rights-of-way not subject to decorative street lighting shall follow the General Standards under 10.2 of this section.

In addition to the General Standards for lighting applicable throughout the city, the City of Portland has established special street lighting standards for decorative lighting in the following areas and according to the tables and figures in this section:

- Downtown (includes portions of Cumberland Avenue)
- Old Port
- Peninsula - Eastern Waterfront and Bayside
- Waterfront - Commercial/Thames Street
- Off-Peninsula/Forest Avenue
- Historic Landscape Districts (including Baxter Boulevard, the Eastern and Western Promenades, Lincoln Park, and Deering Oaks Park)
- Trails and pathways (including Eastern Promenade Trail, Fore River Trail, and Bayside Trail).

Decorative street lighting specifications include but are not limited to fixture type, pole and base type, pole height to top of fixture, pole spacing, and color. Please refer to Section 10.4 Standards for Decorative Lighting and Figure X-4 for the map of Portland's decorative lighting locations.

Developments subject to Level II and Level III site plan review that are on an existing or proposed street that is not currently illuminated with street lighting meeting City standards shall install the requisite type and number of street lights along all frontages.

Where lighting is being installed in the public way as part of a private development, developers are responsible for purchasing and installing all street lighting, including light poles, brackets, slip fitters, bases and all electrical wiring and conduit. The new street lighting shall be connected to an existing metered service, unless otherwise directed by the City. Once installed and operational, and upon acceptance by the City, street lighting located in the City right of way shall become the property of the City of Portland.

10.2. GENERAL STANDARDS:

Location: For areas not designated with decorative lighting, street lighting may be placed on only one side of the street within the furnishing zone. However, when deemed necessary for traffic safety, the Reviewing Authority may require some street lights to be placed the opposite side of a street.

Specification: For areas not designated with decorative lighting, the City of Portland has adopted the following typical street light pole and fixture standards:

- Residential (Local/Minor) Street [see *Figure X-1*]
 - a) The standard pole height is a minimum 14', not to exceed 15' and shall be black aluminum . Poles shall be mounted on reinforced concrete pole bases with at least 2" but no more than 4" reveal above grade, with 4 bolts per pole. Street light pole base design, mounting bolt pattern, bolt spacing, and bolt size shall be approved by the Department of Public Works.
 - b) Light levels and pole spacing shall be in accordance with the table in section 10.2.1
 - c) Streetlights shall be full cutoff, using LEDs at a 3000 Kelvin color temperature, and shall seek to match uniformity, lumen output, and color of existing streetlights along the roadway, where applicable.
- Commercial/Industrial (Arterial/Collector) Road [see *Figures X-2A to X-2G*]
 - a) The standard pole height shall be either 20' or 30' according to the table in section 10.2.1 and shall be a grey.
 - b) Poles selection and finish:
 - Within .5 mi. of shoreline shall use Beacon RSA-B-SHO-S AA-10 Cobra [Figure X-2F]
 - More than .5 mi. away from shoreline shall use Hubbell RTA Upsweep Style [Figure X-2G]
 - c) Poles shall be mounted on reinforced concrete pole bases with at least 2" but no more than 4" reveal above grade, with 4 bolts per pole.
 - d) Light levels, pole spacing shall be in accordance with the tables in 10.2.1.
 - e) Streetlights shall be full cutoff, using cost-effective and innovative technologies and shall seek to match uniformity, lumen output, and color of existing streetlights along the roadway, where applicable.

10.2.1 Lighting Design – Standard street lighting design shall conform to the following table:

STREET CLASSIFICATION	COMMERCIAL/INDUSTRIAL		RESIDENTIAL	
	Min. Avg. Foot Candles	Maximum Pole Spacing	Min. Avg. Foot Candles	Maximum Pole Spacing
Arterial	2.0	160' (30' pole)	1.0	130' (30' pole)
Collector	1.2	130' (30' pole)	0.6	60' (14' pole)
Local/Minor	0.9	130' (30' pole)	0.4	120' (14' pole)

STANDARD COBRAHEAD				
<i>Fixture – Figures X-2A through X-2G</i>				
Location	Fixture Type	Fixture Height	Spacing + Layout	Color
One-lane Roadways: Without parking with low traffic	COBRAHEAD A	20'	One side: 65' – 70' Alt. sides: 125' – 135'	Grey (Manufacturer's Specification)
One-lane Roadways: With on-street parking with low traffic	COBRAHEAD A	30'	One side: 70' – 80' Alt. sides: 120' – 130'	
Two-lane Roadways: With on-street parking with medium traffic	COBRAHEAD B	20'	One side: 75' – 80' Alt. sides: 145' – 155'	
Two-lane Roadways: With on-street parking with low traffic	COBRAHEAD B	30'	One side: 80' – 90' Alt. sides: 175' – 185'	
Two-lane Roadways: With on-street parking with medium traffic	COBRAHEAD C	20'	One side: 90' – 100' Alt. sides: 180' – 190'	
Two-lane Roadways: With on-street parking with medium traffic	COBRAHEAD C	30'	One side: 100' – 110' Alt. sides: 200' – 210'	
Two or more lane Roadways: With on-street with high/medium traffic	COBRAHEAD D	20'	One side: 95' – 105' Alt. sides: 195' – 210'	
Two or more lane Roadways: With on-street parking with high traffic	COBRAHEAD D	30'	One side: 115' – 125' Alt. sides: 245' – 255'	
	COBRAHEAD E	20'	One side: 100' – 110' Alt. sides: 200' – 215'	
	COBRAHEAD E	30'	One side: 115' – 130' Alt. sides: 240' – 255'	

10.2.2. New Metered Services for Light Fixtures

- New light fixtures shall:
 - a) Not to be tied to the existing power utility leased lighting system.
 - b) Be provided with a NEMA 7-pin receptacle for future connection to the City of Portland lighting control system. Coordinate with the City of Portland for final connection and control testing.
 - c) Be specified with a color temperature of 3000K.
- The developer is to provide a new metered electrical service in an APX outdoor rated enclosure (see section 10.3.1 for unit specification), preventing any new fixtures from being directly connected to the power utility.
- The developer will be required to:
 - a) Provide an astronomical timeclock inside the electrical enclosure (see section 10.3.1 for unit specification) to control light fixtures or
 - b) Provide a standard photocell for each fixture, to be used until lighting control module is installed.

10.3. ACCESSORIES & BOLLARDS:

10.3.1. Cabinets – The city standard cabinet specifications are as follows:

CABINET				
Location	Fixture Type	Fixture Height	Layout	Color
Public Right-of-way	APX Enclosures, Inc. Cabinet APX NEMA 3R Pedestal Enclosure APXPE401615	Per Manufacturer's Specification	Mounted on the back side of sidewalk with door facing street, meter facing building street wall. If site constraints require box to be mounted within sidewalk furnishing zone, then door should face building/private property and meter should be mounted opposite side of travel direction.	Grey/Silver or Clear Coat (Manufacturer's Specification)

- Cabinet base can be stand-alone type other than above, provided it is not in a sidewalk or on the edge of a plowed pathway, street, or parking lot. Circuits may also be wired into existing traffic signal boxes or other light circuit boxes. This will be determined on a case-by-case basis.

- Additional specifications for multiuse box with external power for festivals and special events (not required – determined by Department of Public Works):
 - Square D power panel QO816L100DF/S or QO112L125G with cover QO16US
 - Circuits required:
 - 1= 125/250V 50 Amp NEMA 14-50 Receptacle
 - 1= 125/250V 30 Amp NEMA 14-30 Receptacle
 - 2= 125V 20A Standard Receptacle

10.3.2 Wiring & Electrical

- 2" inch conduit (minimum) underground in light pole bases and cabinet base.
- Each light fused individually at base Fuse holder type is a (Buchanan 65 kit Cat # 65U)
- Regular outlet on each pole just below the fixture to be fused at the bottom of the pole base with the same fuse kit as listed above.
- Any single photo cell control for all lights shall be in the cabinet, rated for the circuit. This may require an all-purpose contactor.
- Wire size and circuit size shall be calculated by the design engineer and inspected by the city inspector to make sure it is correct. This would be done on a case by case basis because not all circuits, lights and systems are the same.

10.3.3 Bollards

This section includes standards for typical lighted bollards. Non-lighted bollards appear in *Section 1. Transportation Systems and Street Design Standards*.

Location: Bollards may be used in areas such as underpasses and similar conditions where height is restricted for pedestrian lighting. Spacing and number to be determined by Department of Public Works. Locations must be approved by Department of Public Works and the Planning Authority. The City may approve additional bollard types for streetscape or special projects such as parks or as use for security bollards; any additional bollard selection must be of equivalent structural strength as approved bollards.

Specification:

- Bollards shall be mounted on reinforced concrete bases with at least 2" but no more than 4" reveal above grade, with 4 bolts per pole.
- The City of Portland has adopted the following typical lighted bollard standards:

LIGHTED BOLLARD				
<i>Fixture – Figure X-3</i>				
Location (including but not limited to)	Fixture Type	Fixture Height	Spacing + Layout	Color
Underpasses: Park Avenue, St. James Street, St. John Street, Forest Avenue, Preble Street, Franklin Street, Commercial Street, Harborview Park, Tukey’s Bridge, Veranda Street	Holophane Freeport Series	45”	To be determined by Department of Public Works	Black (Manufacturer’s Specification)
Waterfront Piers				

10.4. STANDARDS FOR DECORATIVE LIGHTING:

Locations, Specifications, and Finish:

- Figure X-4 identifies the decorative street light locations. The following tables and Figures X-5 through X-12 illustrate the requirements for **fixture type, height, layout, and finish for each decorative light fixture**, according to street.
- All light poles shall be mounted on reinforced concrete pole bases with at least 2” but no more than 4” reveal above grade, with 4 bolts per pole.

DECORATIVE LIGHT – Downtown				
<p><i>Map - Figures X-5A, X-5D</i> <i>Fixtures – Figures X-5B, X-5C, X-5E, X-5F</i> <i>The Technical Manual supersedes the previously adopted City of Portland Downtown Sidewalk and Street Lighting Plan (1994); that plan may be used for reference or clarification of the standards in this manual.</i></p>				
Location	Fixture Type	Fixture Height	Spacing + Layout	Color
<p>Oak Street, Casco Street, Brown Street, Chestnut Street, Shepley Street Center Street: Congress to Free St</p> <p>Cross Street: Free to Spring St</p> <p>Monument Square and Monument Way: Pedestrian ways</p>	PEDESTRIAN 1 – Single or Double Arm [Figure X-5B]	12' 6"	One side: 60' – 80' Alt. sides: 100' – 175' Single-arm fixture placed in furnishing zone with luminaire oriented over sidewalk. Double-arm fixture placed with bracket arms parallel to sidewalk. If sidewalk space is limited, Planning Authority may approve lights within private property or attached to building.	Dark Green – Tiger Drylac RAL 6012
	PEDESTRIAN 2 [Figure X-5C]	25' 0"	One side: 90' – 100' Alt. sides: 175' – 225' Double-arm fixture placed with bracket arms parallel to sidewalk.	Dark Green – Tiger Drylac RAL 6012
<p>Congress Street</p> <p>Other locations on a case-by-case basis</p>	STREET – Single or Double Arm [Figure X-5E]	30' 0"	One side: 90' – 100' Alt. sides: 175' – 225' Double-arm fixture used in median conditions with luminaire overhanging street.	Dark Green – Tiger Drylac RAL 6012
<p>Congress Street: St. John to Franklin St</p> <p>Cumberland Avenue: High to Franklin St</p> <p>Spring Street: High to Temple/Union St</p> <p>Free Street: Between High St and Temple St</p> <p>Forest Avenue: Congress to Cumberland Ave</p> <p>Center Street: Free to Spring St</p> <p>Temple Street: Congress to Spring/Middle St</p>	STREET/PED COMBO [Figure X-5F]	30' 0"	One side: 90' – 100' Alt. sides: 175' – 225'	Dark Green – Tiger Drylac RAL 6012
<p>Myrtle, Chestnut, Elm and Preble Streets: Congress to Cumberland Ave</p> <p>Federal Street: Congress to Temple St</p>	STREET/PED COMBO [Figure X-5F]	30' 0"	One side: 90' – 100'	Dark Green – Tiger Drylac RAL 6012

DECORATIVE LIGHT – Old Port				
<i>Map - Figure X-6A</i> <i>Fixture – Figure X-6B</i>				
Location	Fixture Type	Fixture Height	Spacing + Layout	Color
Exchange Street: Congress to Fore St	STREET [Figure X-6B]	14' 3"	Alt. sides: 60' - 80'	Black (Manufacturer's Specification)
Fore Street: Center to Franklin Ave				
Streets between Spring/Middle to Commercial Street: Center Street, Cotton Street, Cross Street, Union Street, Dana Street, Patton Court, Moulton Street, Market Street, Silver Street, Pearl Street, Custom House Street, Portland Square, Milk Street, Wharf Street, Gold Street				
Federal Street W, Middle Street, Newbury Street W: Temple/Union to Franklin St				
Church Street				
Parks: Tommy's, Post Office Park				

DECORATIVE LIGHT – Peninsula				
<i>Map - Figures X-7A, X-7C</i> <i>Fixtures – Figures X-7B, X-7D, X-7E</i>				
Location	Fixture Type	Fixture Height	Spacing + Layout	Color
Wilmot Street, Chapel Street, Stone Street, and Cedar Street Alder St, Hanover St, Parris St, Brattle St, Mechanic St Mountfort St, Hancock St, Hampshire St, Newbury St E, Federal St E Preble Street and Elm Street: Cumberland Ave to Marginal Way Pearl St, Chestnut St, Myrtle St: Cumberland Ave to Marginal Way Oxford Street W, Lancaster Street, Kennebec Street, Somerset Street Portland Street Anderson St: Everett to Plowman St Fox Street Washington Ave: Congress to I-295 India Street Middle Street: Franklin to Hancock St Fore Street: Franklin to Waterville St	MEDIUM STREET (Figure X-7B)	19' 3"	One side: 80' – 100' Use Type 2 IES distribution. Fixture placed in furnishing zone overhang towards the street; where fixture conflicts with overhead utilities, may be placed on back of sidewalk with light overhanging sidewalk. Where street lighting is provided by existing cobrahead fixtures, decorative fixtures are not needed on that side of street. If a project includes placing utilities underground, street/pedestrian lighting provided by decorative fixtures.	Black (Manufacturer's Specification)
Marginal Way Forest Avenue: Cumberland Ave to Park/Portland St	LARGE STREET (Figure X-7D)	24' 3"	One side: 90' – 110' Alt. sides: 175' – 225'	Black (Manufacturer's Specification)
* No streets shall use PEDESTRIAN scale light unless site conditions such as sidewalk width or overhead utilities prevent installation of MEDIUM STREET fixture (Figure X-7D)	PEDESTRIAN (Figure X-7E)	14' 6"	One side: 60' – 80' Alt. sides: 100' – 175' Fixture shall be oriented to overhang sidewalk. Fixture placed in furnishing zone unless space is limited. Placement on back of sidewalk or private property overhanging sidewalk may be accommodated where space is a constraint.	Black (Manufacturer's Specification)

DECORATIVE LIGHT – Trails, Waterfront

Map - Figure X-8A
Fixture – Figure X-8B
Trails - This fixture appropriate for any city trail installation. Standard lighted bollard may also be used in appropriate circumstances.
Bayside Trail - This fixture should only be used on the Bayside Trail if replacing six or more of the existing fixtures.
Waterfront – Commercial/Thames Street, this fixture is suitable to supplement standard cobrahead lighting.

Location	Fixture Type	Fixture Height	Spacing + Layout	Color
Fore River Trail: Casco Bay Bridge to US-1; Harborview Park trail path	TRAIL – Single Arm	18’ 4”	One side: 90’ – 125’ Alt. sides: 175’ – 225’	Black (Manufacturer’s Specification)
Commercial Street: Fore River Parkway to India St	TRAIL – Single Arm	18’ 4”	Supplemental pedestrian lighting as-needed. One side: 90’ – 125’ Alt. sides: 175’ – 225’	Black (Manufacturer’s Specification)
Thames Street: India St to Eastern Promenade Trail	TRAIL – Single Arm	18’ 4”	One side: 90’ – 125’ Alt. sides: 175’ – 225’	Black (Manufacturer’s Specification)
Eastern Promenade Trail	TRAIL – Single or Double Arm	18’ 4”	One side: 90’ – 125’ Alt. sides: 175’ – 225’ Single arm fixture oriented to overhang trail; Double arm fixture for medians or similar.	Black (Manufacturer’s Specification)

DECORATIVE LIGHT – Off-Peninsula

Map - Figure X-9A
Fixture – Figure X-9B
In addition to the specific locations indicated below, this fixture is suitable for off-peninsula, commercial corridors to supplement standard cobrahead lighting.

Location	Fixture Type	Fixture Height	Spacing + Layout	Color
Forest Avenue: Marginal Way to Woodlawn Ave	PEDESTRIAN – Single or Double Arm	18’ 6”	One side: 60’-80’ Alt. sides: 100’ - 175’ Placement on back of sidewalk with single arm fixture oriented to overhang sidewalk; Where site constraints require placement in furnishing zone, use double arm fixture parallel to sidewalk.	Graphite (Manufacturer’s Specification)

DECORATIVE LIGHT – Historic Landscape Street				
Map - Figure X-10A Fixture – Figure X-10B Fixture placement should comply with adopted master plans.				
Location	Fixture Type	Fixture Height	Spacing + Layout	Color
Eastern Promenade (park side of street only): North St to Vesper St Western Promenade (park side of street only): Bramhall to Vaughan St Baxter Boulevard (both sides of street): Forest Ave to Bates St	STREET – with shield	21' 0"	One side: 90' – 100' Alt sides: 175' – 225'	Black (Manufacturer's Specification)
Deering Oaks Park (Abutting Streets, park side only): Deering Ave, Park Ave, Forest Ave	STREET – without shield	21' 0"	One side: 90' – 100' Park side of street only	Black (Manufacturer's Specification)
Deering Oaks Park (within park): High Street, State Street	STREET – without shield	21' 0"	One side: 90' – 100' Alt. sides: 175' – 225'	Black (Manufacturer's Specification)

DECORATIVE LIGHT – Historic Landscape Pedestrian				
Map - Figure X-11A Fixture - Figures X-11B Fixture placement should comply with adopted master plans.				
Location	Fixture Type	Fixture Height	Spacing + Layout	Color
Eastern Promenade: Pedestrian paths	Pedestrian	14' 6"	One side: 60' – 80'	Black (Manufacturer's Specification)
Western Promenade: Pedestrian paths	Pedestrian	14' 6"	One side: 60' – 80'	Black (Manufacturer's Specification)
Deering Oaks Park (Interior): Pedestrian paths, High and State streets	Pedestrian	14' 6"	Use existing light locations or refer to the Deering Oaks Master Plan (2003) for revised locations	Black (Manufacturer's Specification)

DECORATIVE LIGHT – Deering Oaks Bridge				
Fixture –Figure X-12 Fixture placement should comply with adopted master plans.				
Location	Fixture Type	Fixture Height	Spacing + Layout	Color
Deering Oaks Park (Bridge)	Bridge Light	6' 0" (match existing)	Match existing	Match existing

10.5. City of Portland versus Construction Contractor Responsibilities:

For projects where the construction contractor is required by the City to provide new street lighting, the new street lighting shall be connected to an existing metered service, unless otherwise directed by the City (see Section 10.2.2 for new metered services for lighting). The responsibilities of the construction contractor are as follows:

Construction Contractor Responsibilities:

- a) The construction contractor shall furnish and install as part of the construction scope: Street lighting luminaires, street lighting poles, bracket arms, pole accessories, and decorative base enclosures all as stipulated by the City according to the City standards for the given project location.
- b) Concrete foundation bases for new street lighting poles. Poles shall be mounted on reinforced concrete pole bases with at least 2" but no more than 4" reveal above grade, with 4 bolts per pole. The installation of the foundation bases shall be coordinated with sidewalk details and requirements as stipulated by the City of Portland Department of Public Works.
- c) Underground conduit and wire between street lighting pole foundation bases. In addition, underground conduit and wire shall be provided to an electrical service panelboard and meter, as well as to an existing service connection.
- d) Wiring to be installed within each street lighting pole and shall be extended at the pole top (or bracket arm), with connection to the street lighting luminaire(s).
- e) Upon completion of the erection of the street lighting fixtures, including the installation of all lighting poles and conduit/wire, the construction contractor shall notify the City that the system is ready for operation. **THE LUMINAIRES SHALL BE ENERGIZED PRIOR TO THE CONSTRUCTION CONTRACTOR'S REQUEST FOR A CITY CERTIFICATE OF OCCUPANCY.**
- f) It shall be the construction contractor's responsibility to pay all costs associated with the provision of required street lighting including costs associated with street lighting luminaires, street lighting poles, brackets, bases, conduit and wire, panelboards, and metering equipment.

City of Portland Responsibilities:

- a) To approve the proposed point of connection for electrical service for new municipal street lighting where a new metered service is provided.
- b) Connection of the construction contractor's secondary service conductors at an existing service point, where a new service is provided.
- c) To review and approve the location of the street light fixtures within the public right-of-way.

10.6. Reserved.**10.7. Submission Requirements:**

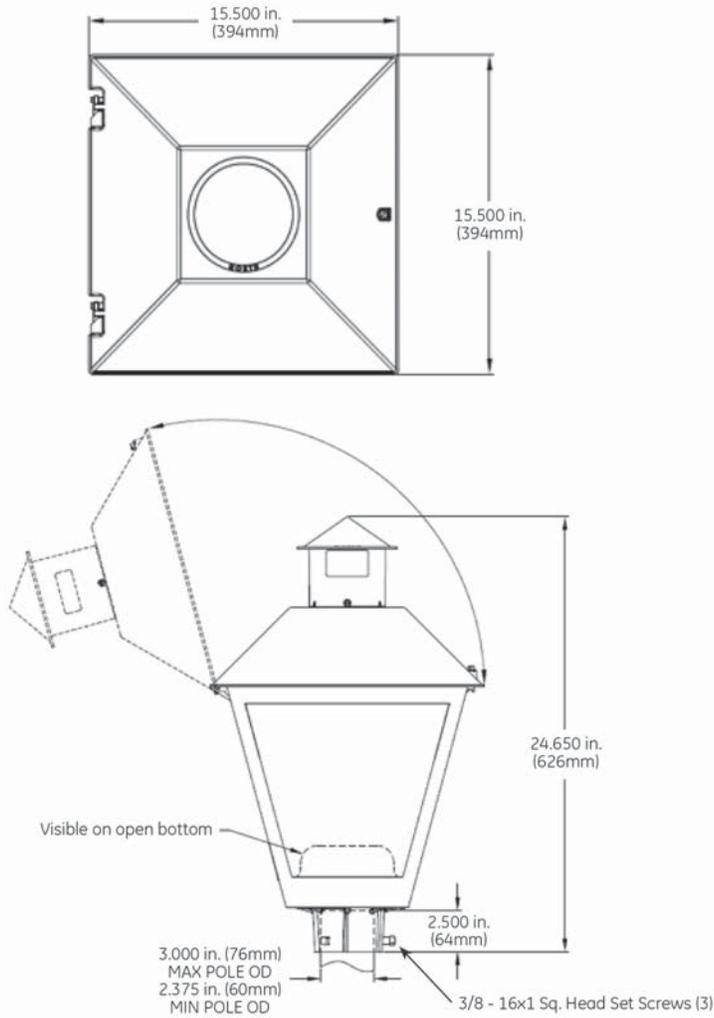
A lighting plan shall be provided which shall show the quantity and location of all existing and proposed street lights. This shall be incorporated into the site plan or presented on an individual lighting plan. Descriptive information including engineering detail drawings depicting the entire proposed fixture (luminaire, bracket arm, slip fitter) along with the proposed finish shall be included on the individual lighting plan.



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**Street & Sidewalk Lighting
 STANDARD - RESIDENTIAL**

Town & Country Post Top (EPTT)



LUMINAIRE

GE Evolve LED Post Top Town & Country (EPTT)
 Model: EPTT-01-0-06-D-A-30-A-P-BLCKR-R

Die-case aluminum housing with acrylic refractor in white opal.

Pole-mounted, secondary surge protection
 Voltage (120 through 277V)
 Asymmetric HO, 56 watt
 LED 3000K color temperature

LIGHTING POLE

Aluminum, smooth tapered pole with 5/32" thickness (.156").

EPA rating from 4.6 to 6.9 (using 110mph wind speed ratings from AAHTO).

Maximum weight capacity = 75-100 lbs.

Base bolt pattern: 10" diagonal.

DIMENSIONS

Pole Height = 15' max.
 Pole Diameter = 6" base tapered to 3"

FINISH

Black (standard)

APPLICATION

Standard sidewalk lighting for residential streets not specified for decorative lighting.

Spacing: According to Section 10.2.1

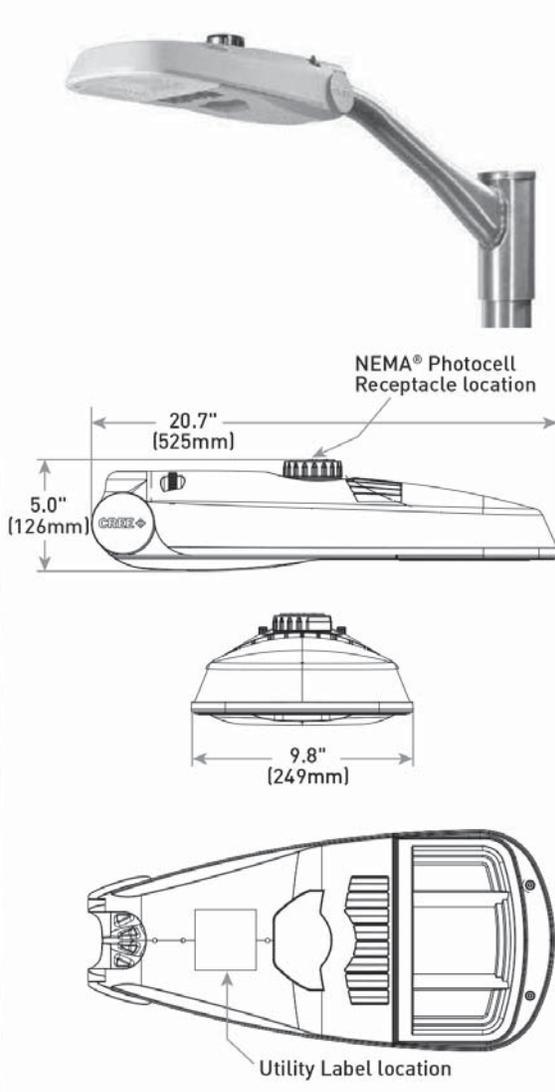
Fixture placed in furnishing zone unless space is limited. Placement on back of sidewalk or private property near sidewalk may be accommodated where space is a constraint.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-1
Revised Date:	RESIDENTIAL		



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**Street & Sidewalk Lighting
 STANDARD - COBRAHEAD A**



Weight*
8.45 lbs [3.8kg]

*RSW-BLSS Accessory: add 0.4 lbs. [0.2kg]

LUMINAIRE

Cree RSW series LED streetlight
 Model: RSWS-A-HT-3ME-3L-30K7-UL-GY-N-X3

Small, horizontal tenon
 Optics IES Type III Medium, 2,756 lumens
 23 watts
 Universal voltage (120-227V)
 7-pin photocell receptacle
 LED 3000K color temperature

LIGHTING POLE

Mount to existing pole or according to Section 10.2.1

DIMENSIONS

Pole Height = 20' or 30'

FINISH

Grey: GY (standard)

APPLICATION

Standard street lighting for streets not specified for decorative lighting.

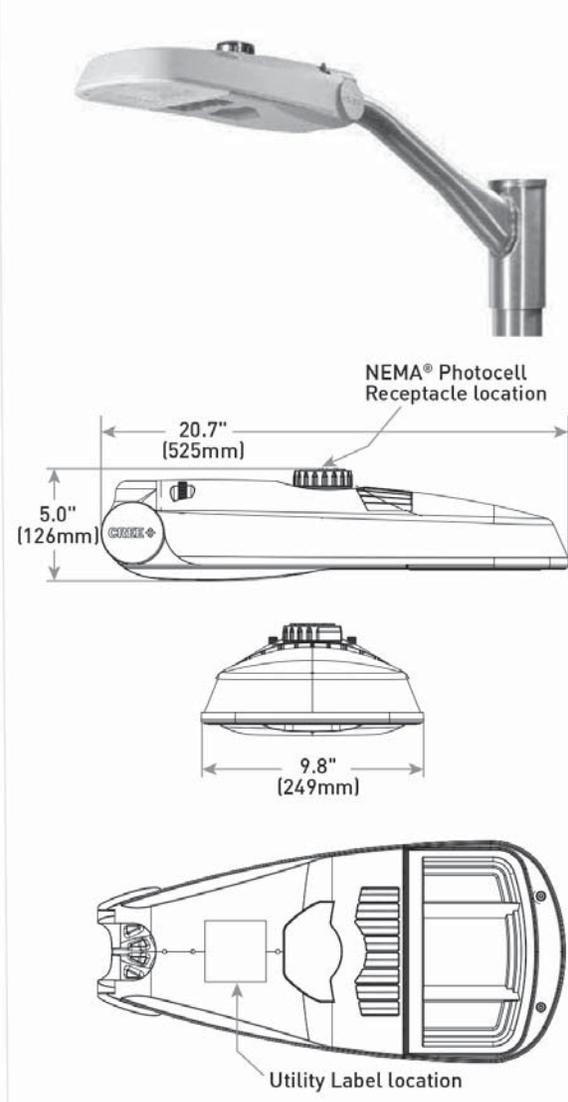
Fixture placed in furnishing zone unless space is limited. Placement on back of sidewalk or private property overhanging sidewalk may be accommodated where space is a constraint.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-2A
Revised Date:	COBRAHEAD A		



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**Street & Sidewalk Lighting
 STANDARD - COBRAHEAD B**



Weight*
8.45 lbs (3.8kg)

*RSW-BLSS Accessory: add 0.4 lbs. (0.2kg)

LUMINAIRE

Cree RSW series LED streetlight
 Model: RSWS-A-HT-3ME-5L-30K7-UL-GY-N-X1

 Small, horizontal tenon
 Optics IES Type III Medium, 3,617 lumens
 30 watts
 Universal voltage (120-277V)
 7-pin photocell receptacle
 LED 3000K color temperature

LIGHTING POLE

Mount to existing pole or according to Section 10.2.1

DIMENSIONS

Pole Height = 20' or 30'

FINISH

Grey: GY (standard)

APPLICATION

Standard street lighting for streets not specified for decorative lighting.

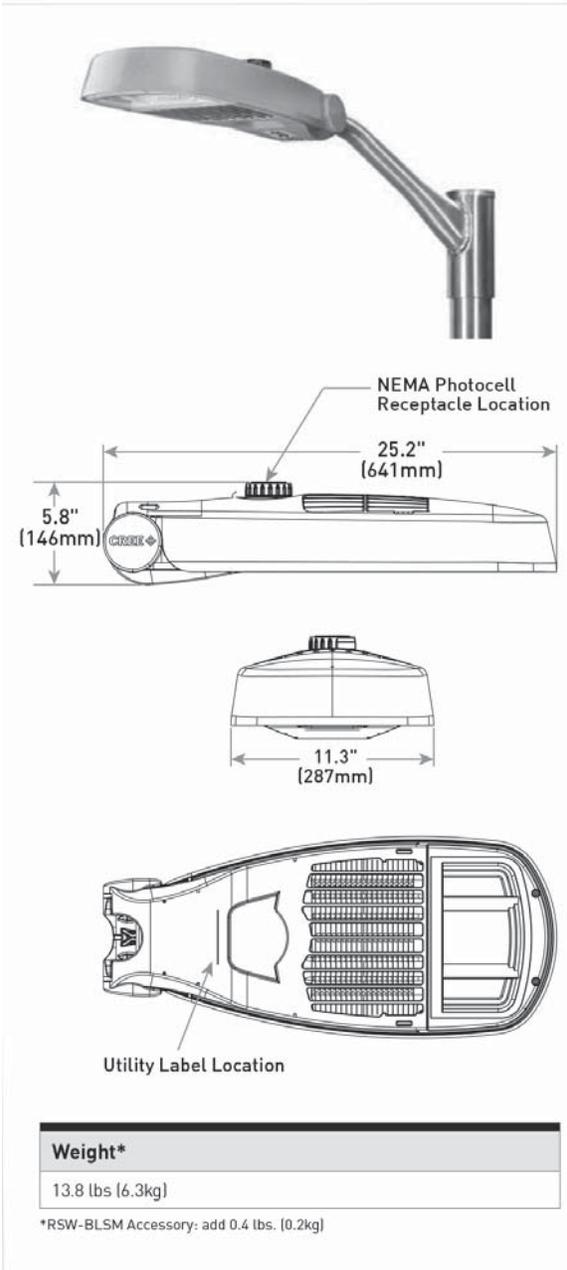
 Fixture placed in furnishing zone unless space is limited. Placement on back of sidewalk or private property overhanging sidewalk may be accommodated where space is a constraint.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-2B
Revised Date:	COBRAHEAD B		



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**Street & Sidewalk Lighting
 STANDARD - COBRAHEAD C**



LUMINAIRE

Cree RSW series LED streetlight
 Model: RSWM-A-HT-3ME-9L-30K7-UL-GY-N-X1

Medium, horizontal tenon
 Optics IES Type III Medium, 6,500 lumens
 50 watts
 Universal voltage (120-227V)
 7-pin photocell receptacle
 LED 3000K color temperature

LIGHTING POLE

Mount to existing pole or according to Section 10.2.1

DIMENSIONS

Pole Height = 20' or 30'

FINISH

Grey: GY (standard)

APPLICATION

Standard street lighting for streets not specified for decorative lighting.

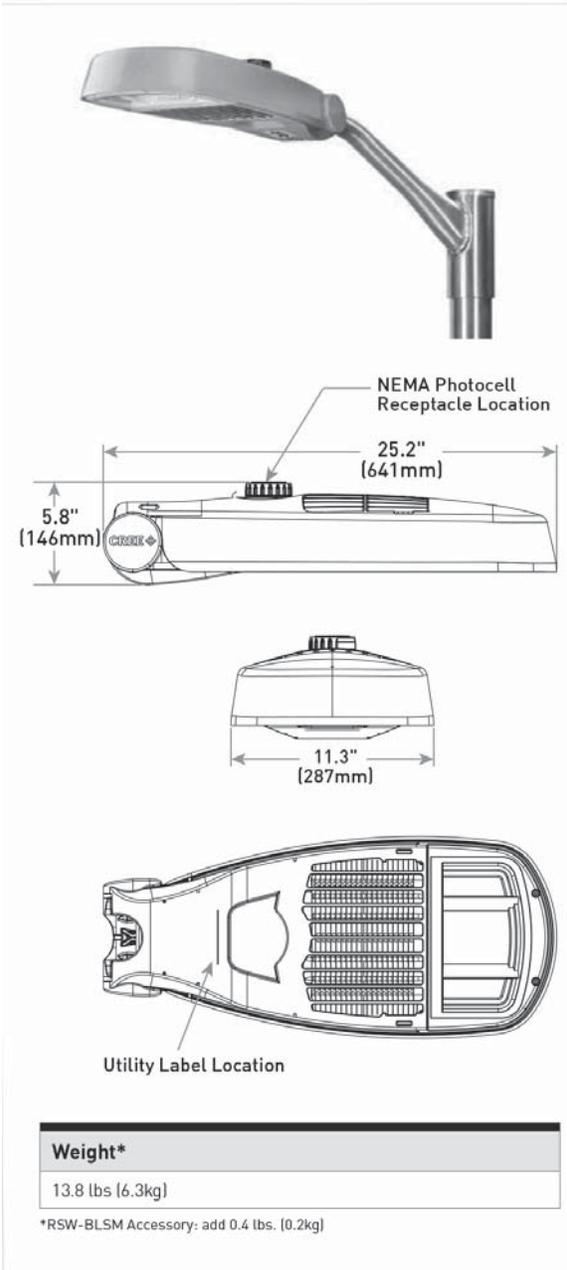
Fixture placed in furnishing zone unless space is limited. Placement on back of sidewalk or private property overhanging sidewalk may be accommodated where space is a constraint.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-2C
Revised Date:	COBRAHEAD C		



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**Street & Sidewalk Lighting
 STANDARD - COBRAHEAD D**



LUMINAIRE

Cree RSW series LED streetlight
 Model: RSWM-A-HT-3ME-9L-30K7-UL-GY-N-X6

Medium, horizontal tenon
 Optics IES Type III Medium, 8,975 lumens
 75 watts
 Universal voltage (120-227V)
 7-pin photocell receptacle
 LED 3000K color temperature

LAMP

Vertical mounted, LED 3000K color temperature

LIGHTING POLE

Mount to existing pole or according to Section 10.2.1

DIMENSIONS

Pole Height = 20' or 30'

FINISH

Grey: GY (standard)

APPLICATION

Standard street lighting for streets not specified for decorative lighting.

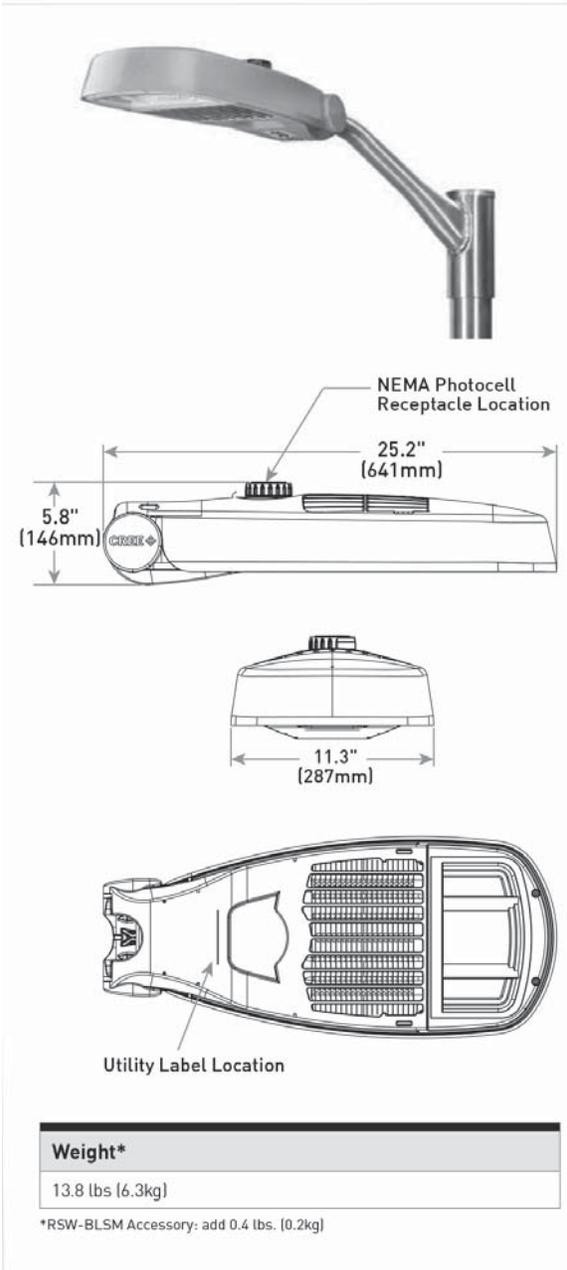
Fixture placed in furnishing zone unless space is limited. Placement on back of sidewalk or private property overhanging sidewalk may be accommodated where space is a constraint.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-2D
Revised Date:	COBRAHEAD D		



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**Street & Sidewalk Lighting
 STANDARD - COBRAHEAD E**



LUMINAIRE

Cree RSW series LED streetlight
 Model: RSWM-A-HT-3ME-9L-30K7-UL-GY-N

Medium horizontal tenon
 Optics IES Type III Medium, 9,325 lumens
 83 watts
 Universal voltage (120-227V)
 7-pin photocell receptacle
 LED 3000K color temperature

LIGHTING POLE

Mount to existing pole or according to Section 10.2.1

DIMENSIONS

Pole Height = 20' or 30'

FINISH

Grey: GY (standard)

APPLICATION

Standard street lighting for streets not specified for decorative lighting.

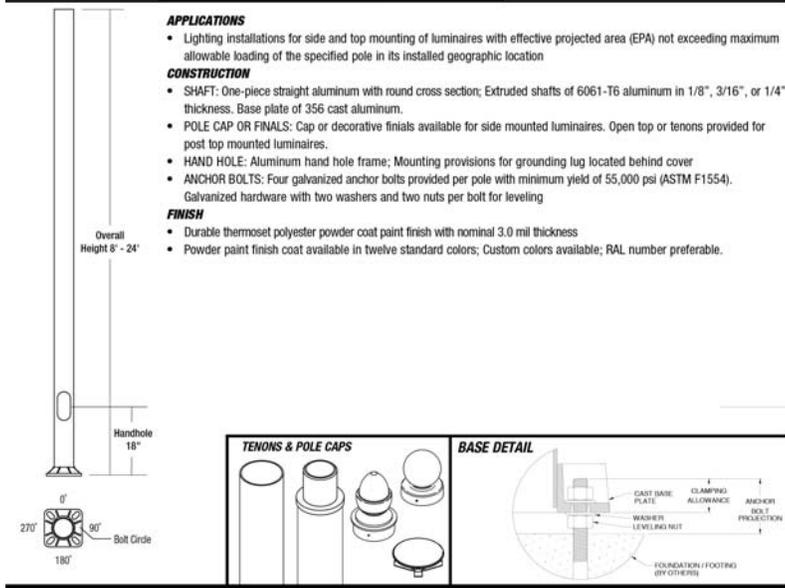
Fixture placed in furnishing zone unless space is limited. Placement on back of sidewalk or private property overhanging sidewalk may be accommodated where space is a constraint.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-2E
Revised Date:	COBRAHEAD E		



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**Street & Sidewalk Lighting
 STANDARD - COBRAHEAD POLE**



- APPLICATIONS**
- Lighting installations for side and top mounting of luminaires with effective projected area (EPA) not exceeding maximum allowable loading of the specified pole in its installed geographic location
- CONSTRUCTION**
- SHAFT:** One-piece straight aluminum with round cross section; Extruded shafts of 6061-T6 aluminum in 1/8", 3/16", or 1/4" thickness. Base plate of 356 cast aluminum.
 - POLE CAP OR FINALS:** Cap or decorative finials available for side mounted luminaires. Open top or tenons provided for post top mounted luminaires.
 - HAND HOLE:** Aluminum hand hole frame; Mounting provisions for grounding lug located behind cover
 - ANCHOR BOLTS:** Four galvanized anchor bolts provided per pole with minimum yield of 55,000 psi (ASTM F1554). Galvanized hardware with two washers and two nuts per bolt for leveling
- FINISH**
- Durable thermoset polyester powder coat paint finish with nominal 3.0 mil thickness
 - Powder paint finish coat available in twelve standard colors; Custom colors available; RAL number preferable.

LIGHTING POLE (see Section 10.2)

Pole: Beacon RSA-B-SHO-S Series
 Model: RS-B-SHO-S-16-40-A/B/C-CAP-2L-B3-DBT-VM2

Aluminum, smooth tapered pole of 6061-T6 aluminum.

Arm: Beacon AA-10 Cobra
 Model: AA-10-S-5-B-P-GYS

Smooth profile on arms with copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal.

Performance standards for locations near shoreline (AAMA 2604, ASTM D522, resists surface impacts of up to 160 inch-pounds).

Base bolt pattern: Four galvanized anchor bolts per pole with minimum yield of 55,000 psi (ASTM F1554). Galvanized hardware with two washers and two nuts per bolt for leveling.

DIMENSIONS

Pole Height = 20' or 30' (according to Section 10.2.1)

FINISH

Grey: GYS Grey Smooth (standard)

Thermoset polyester powder coat paint finish with nominal 3.0 mil thickness.

Corrosion-resistant polyester powder-coat electrostatically applied meeting AAMA 2604 performance specification.

APPLICATION

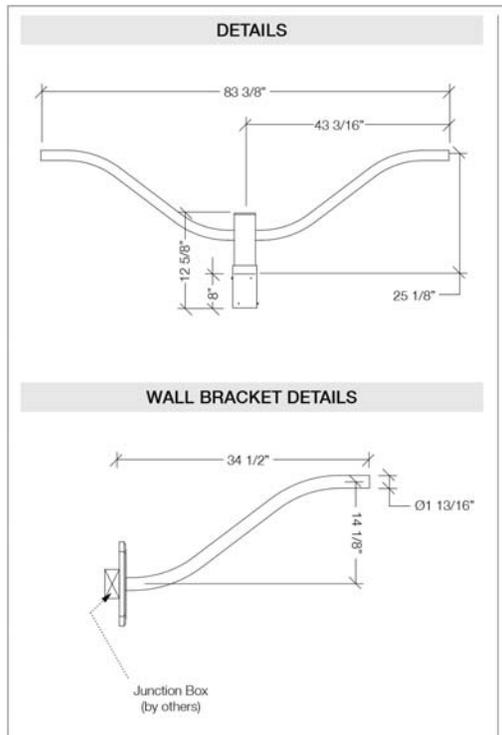
Standard street lighting for streets not specified for decorative lighting.

To be used within .5 mi. of shoreline and where existing poles are not available for mounting cobrahead fixture.

Spacing: According to Section 10.2.1

Follow established pattern and orientation - typically single arm overhanging towards street.

Fixture placed in furnishing zone unless space is limited. Placement on back of sidewalk or private property overhanging sidewalk may be accommodated where space is a constraint.

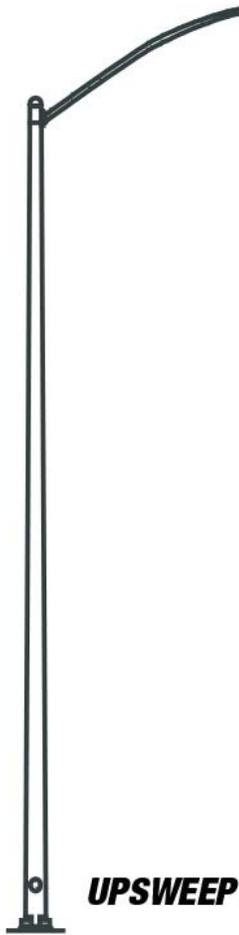


Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-2F
Revised Date:	COBRAHEAD POLE - WATERFRONT		



PORTLAND | me

**Street & Sidewalk Lighting
 STANDARD - COBRAHEAD POLE**



LIGHTING POLE (see Section 10.2)

Hubbell FTA Series - Upsweep Style
 Model: RTA

Standard aluminum, smooth tapered pole.

DIMENSIONS

Pole Height = 20' or 30' (according to Section 10.2.1)

FINISH

Grey (standard)

APPLICATION

Standard street lighting for streets not specified for decorative lighting.

To be used further than .5 mi. from shoreline and where existing poles are not available for mounting cobrahead fixture.

Spacing: According to Section 10.2.1

Follow established pattern and orientation - typically single arm overhanging towards street.

Fixture placed in furnishing zone unless space is limited. Placement on back of sidewalk or private property overhanging sidewalk may be accommodated where space is a constraint.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-2G
Revised Date:	COBRAHEAD POLE - NON-WATERFRONT		

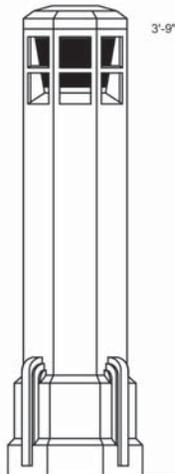


PORTLAND | me

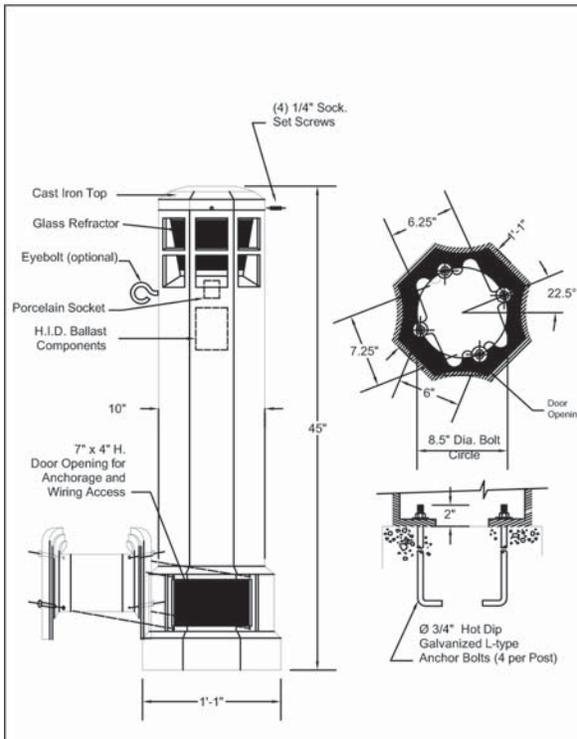
Street & Sidewalk Lighting
 BOLLARD

Freeport Series

Cast Iron Lighted Bollard



BOL/FP45/13/L-CI



LUMINAIRE

Holophane Freeport Series Cast Iron Lighted Bollard
 Model: BOL-FP45-13-LCI/BK-M70-II

Bollard shall be cast iron construction with a classic octagonal design.

The bollard shall be provided with an optical assembly including a glass refractor, and an octagonal top. Borosilicate glass refractor with IES Type II distribution.

Bollard shall be made from a one-piece casting; the top shall be attached to the bollard with four tamper resistant set screws.

LAMP

Light source shall be 70 watt Metal Halide. When bollard is made available in LED, light source must be LED option. 3000K color temperature.

DIMENSIONS

Height = 3'-9" or manufacturer's specification
 Base Diameter = 13" octaflute base
 Top Diameter = 10" octagonal top

MATERIALS

ASTM-A48 Class 30 cast iron
 Refractor: Borosilicate glass with IES Type II dist.
 Hardware: Exposed hardware shall be tamper resistant stainless steel. Anchor bolts to be completely hot dip galvanized.

FINISH

Black: CI/BL = Cast Iron/Black (standard)

APPLICATION

Sidewalk lighting where height is limited - underpasses, parks, piers

Can be used as a security bollard.

Spacing: To be determined by Department of Public Works per specific project

Date:
 March, 2019

CITY OF PORTLAND, MAINE
 TECHNICAL MANUAL

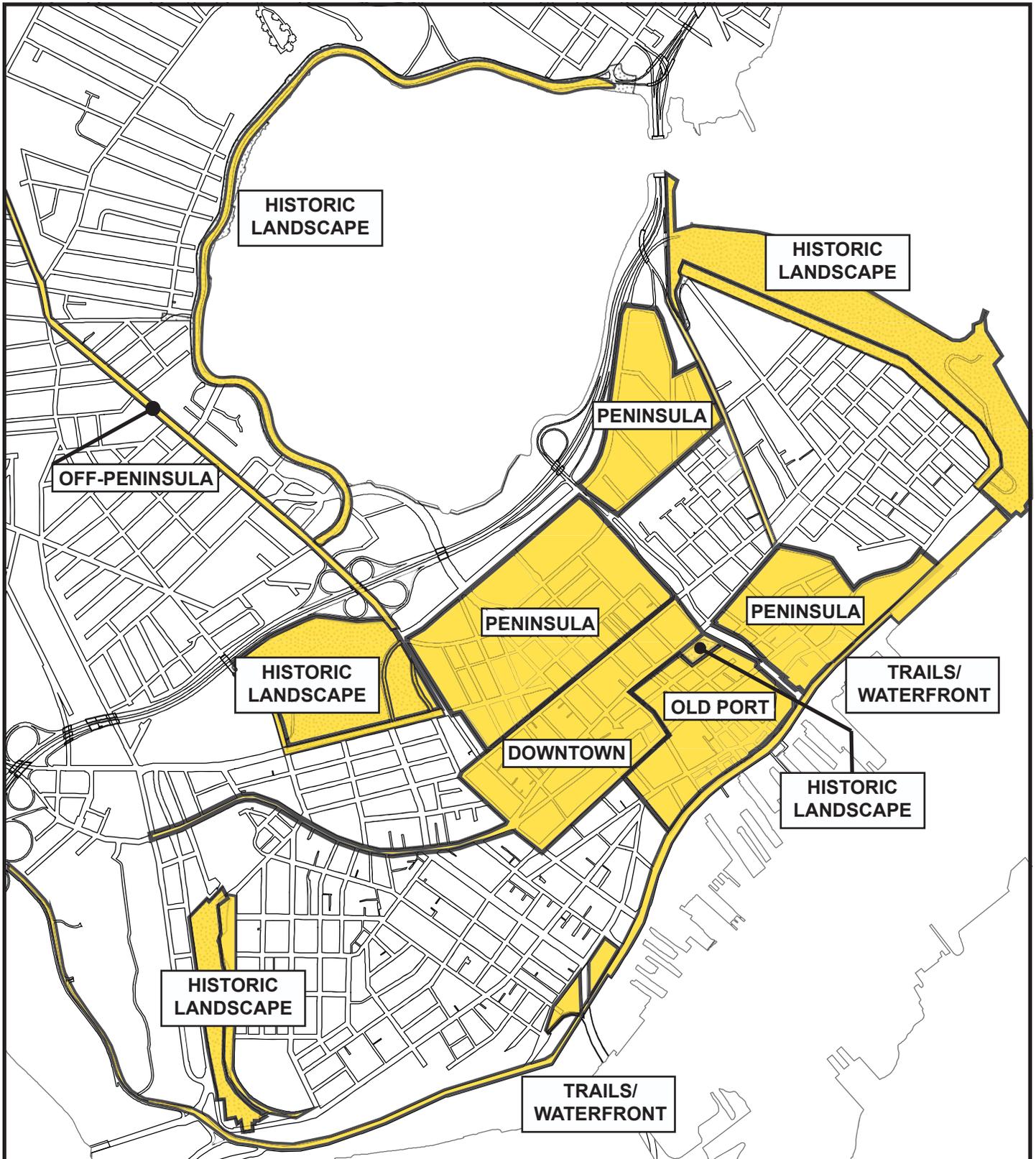
MUNICIPAL STREET
 LIGHTING STANDARDS
 SECTION 10

Figure:

X-3

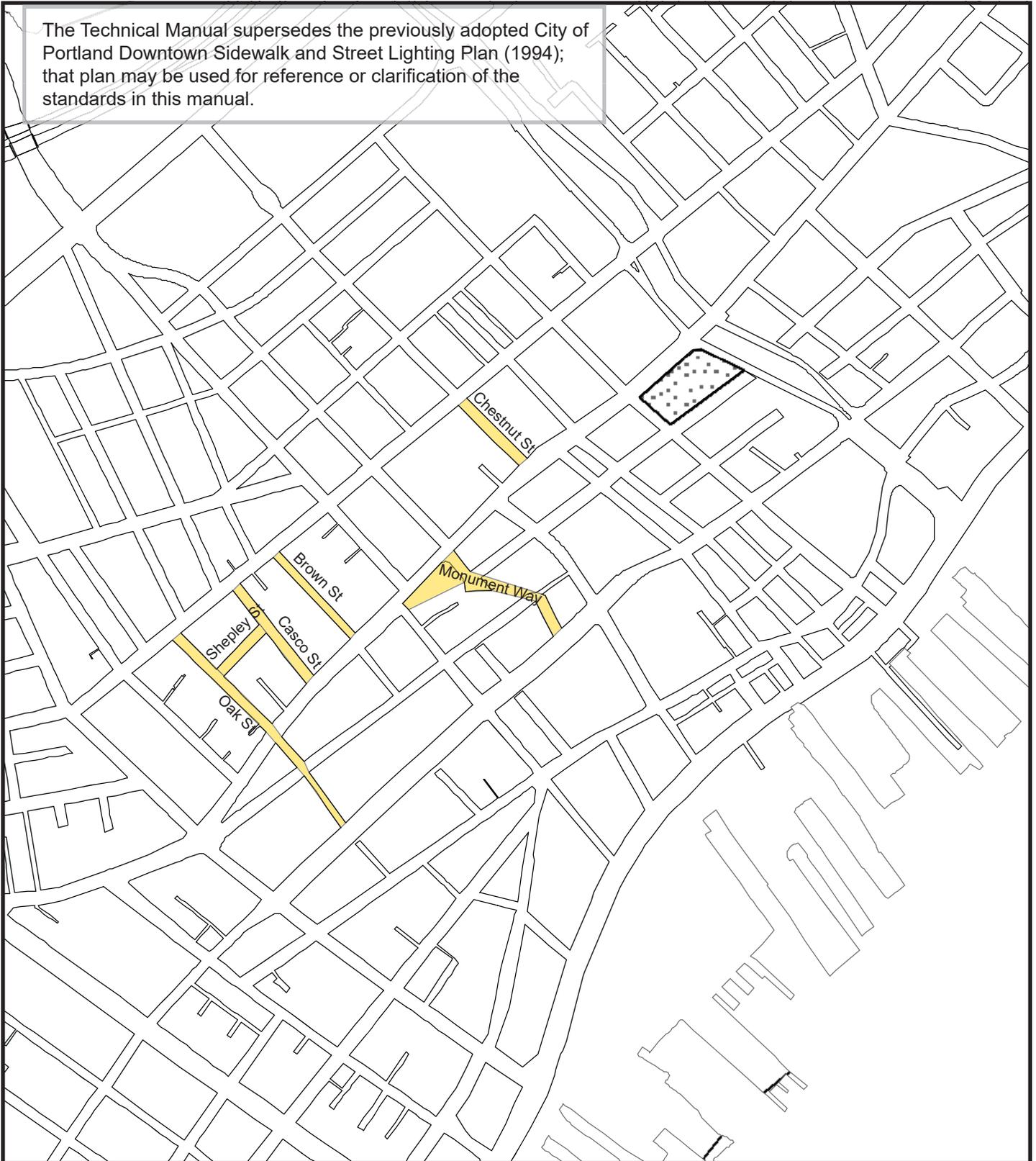
Revised Date:

LIGHTED BOLLARD



Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-4
Revised Date:	MAP: DECORATIVE LIGHTING AREAS		

The Technical Manual supersedes the previously adopted City of Portland Downtown Sidewalk and Street Lighting Plan (1994); that plan may be used for reference or clarification of the standards in this manual.

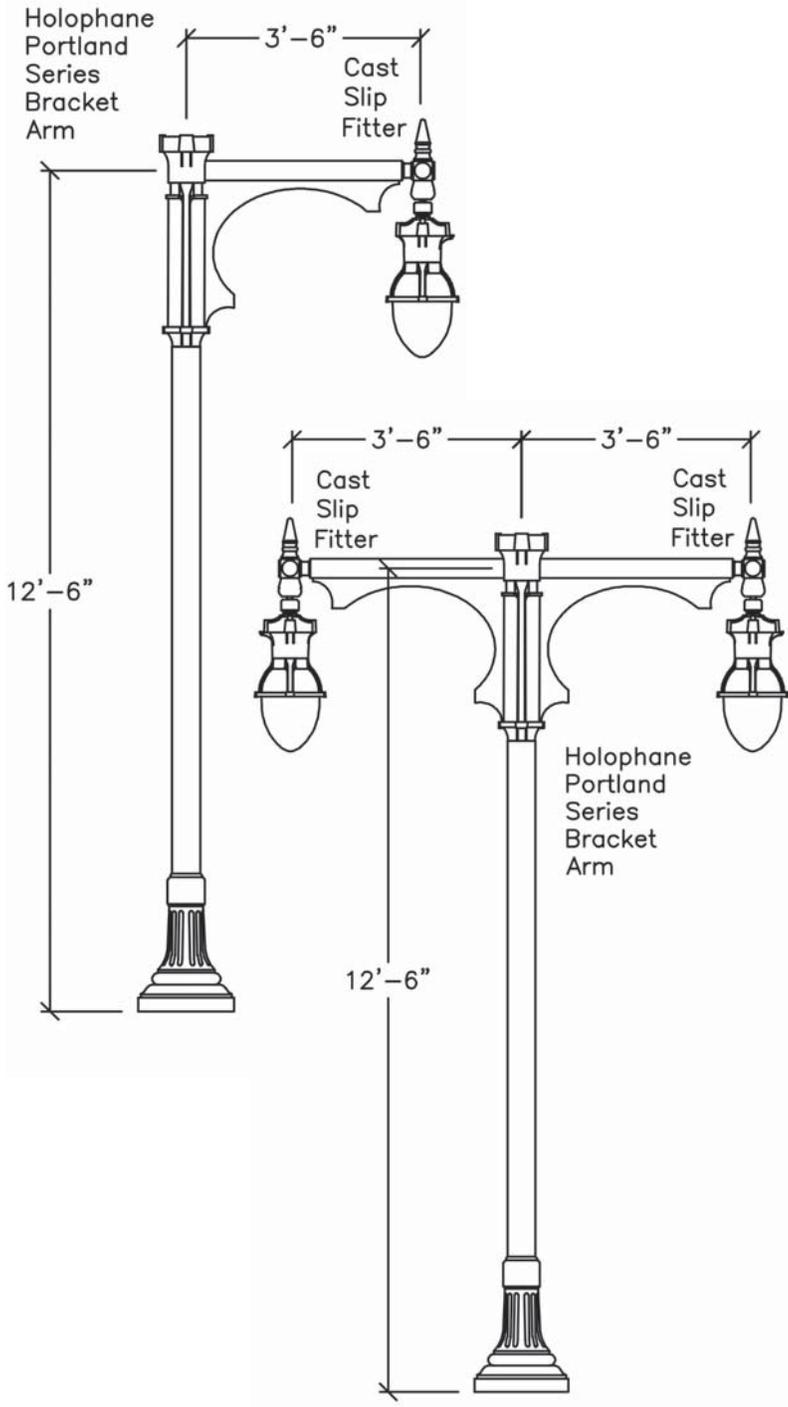


Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-5A
Revised Date:	MAP: Decorative Light - DOWNTOWN PEDESTRIAN		



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Street & Sidewalk Lighting
DECORATIVE LIGHT - DOWNTOWN



LUMINAIRE

Holophane Esplanade LED II
Model:
ESL2-P20S-30K-AS-CMC-TG3-S-P7-NL2X2-BHDF13-200CMC

Cast aluminum housing with stainless steel hardware. Dropped refractor shall be thermal resistant borosilicate glass. Internal reflector and prismatic diffuser shall provide an IES Type IV distribution pattern. Luminaire shall include an integral ballast with modular wiring connectors and multi-voltage taps. Provide an internal receptacle type photocell control. LED 3000K color temperature

BRACKET ARM

Holophane Portland Series (custom)
Model PD42CA-RAL6012

Portland Series steel crossarm with a post-top fitting for a 3-1/2" by 8" tenon.

SLIP FITTER

Holophane
Model :WLLF200SCA-RAL6012
2-3/8" O.D. with swivel cast fitter.

LIGHTING POLE AND BASE

Holophane North Yorkshire Cast Steel
Model NY-S-13-FTB-P13-ABG-RAL6012

Cast steel pole, smooth 5" diameter shaft with integrated base rated for a 90mph wind load with a 1.3 gust factor. Provide four hot-dipped galvanized steel L-type anchor bolts. Lighting pole shall be hot dip galvanized prior to powder coat paint.

DIMENSIONS

Overall Height = 12' 6"
Bracket Arm Length = 3' 6"
Base Diameter = 17"

FINISH

Dark Green: RAL-6012 (custom)

APPLICATION

Sidewalk lighting or pedestrian lighting areas

Spacing:
One side: 60' - 80' on center
Alternating sides: 100' - 175' on center

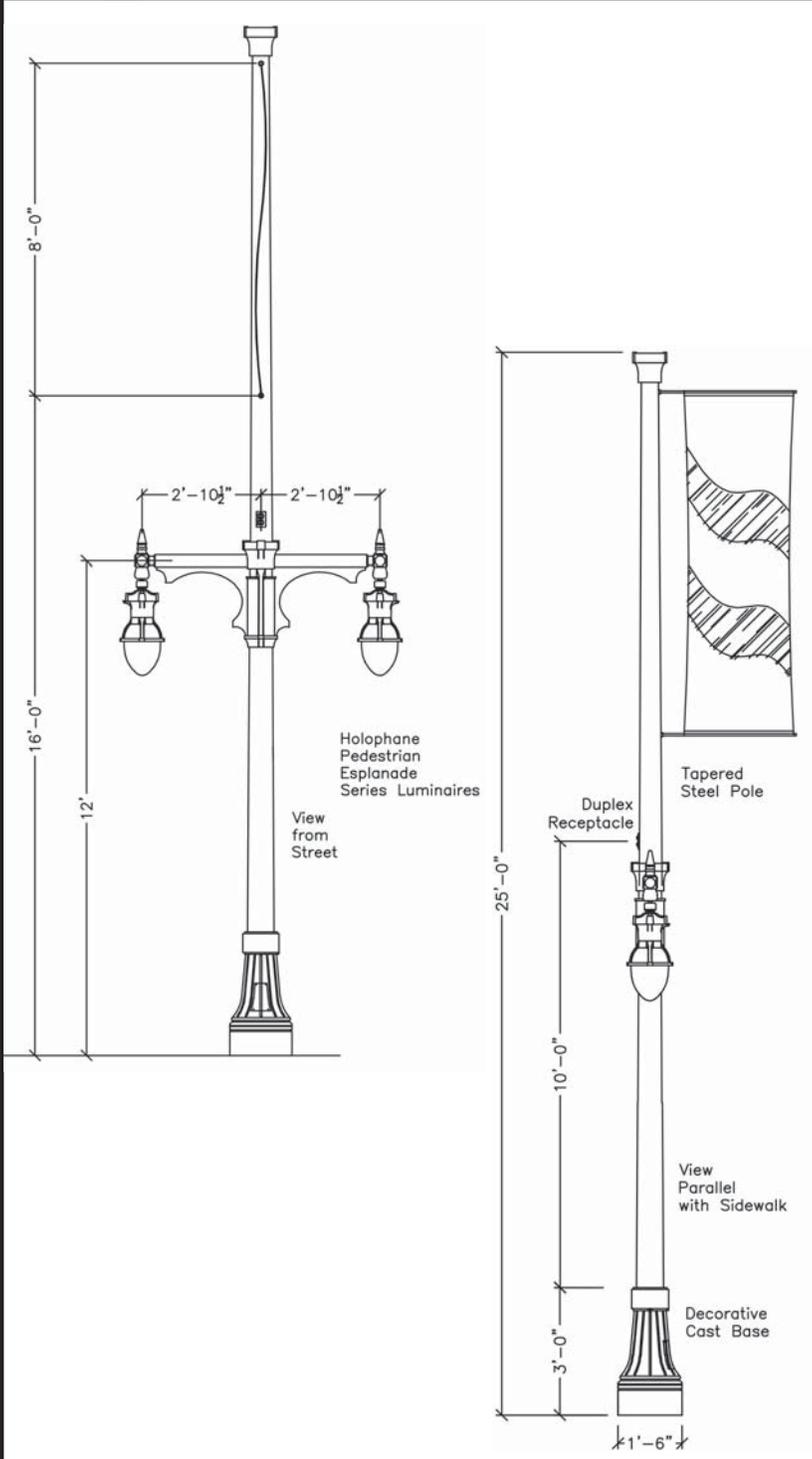
Single-arm fixture placed in furnishing zone with luminaire oriented over sidewalk. Double-arm fixture placed with bracket arms parallel to sidewalk. If sidewalk space is limited, Planning Authority may approve lights within private property or attached to building.

<p>Date: March, 2019</p>	<p>CITY OF PORTLAND, MAINE TECHNICAL MANUAL</p>	<p>MUNICIPAL STREET LIGHTING STANDARDS SECTION 10</p>	<p>Figure: X-5B</p>
<p>Revised Date:</p>	<p>DOWNTOWN PED 1</p>		



PORTLAND | me

**Street & Sidewalk Lighting
 DECORATIVE LIGHT - DOWNTOWN**



LUMINAIRE
 Holophane Esplanade LED II
 Model:
 ESL2-P20S-30K-AS-CMC-TG3-S-P7-NL2X2-BHDF13-200CMC

Cast aluminum housing with stainless steel hardware. Dropped refractor shall be thermal resistant borosilicate glass. Internal reflector and prismatic diffuser shall provide an IES Type IV distribution pattern. Luminaire shall include an integral ballast with modular wiring connectors and multi-voltage taps. Provide an internal receptacle type photocell control. LED 3000K color temperature.

BRACKET ARM
 Holophane Portland Series steel dual crossarm (custom)
 Model: PD69-CA-RAL6012

SLIP FITTER
 Holophane
 Model: WLLF200S-CA-RAL6012
 2-3/8" O.D. with swivel cast fitter

LIGHTING POLE
 Holophane
 Model: PM-18-CSB-CA-RAL6012

Tapered steel pole smooth shaft rated for a 90mph wind load with a 1.3 gust factor. Provide four hot-dipped galvanized steel L-type anchor bolts. Lighting pole shall be hot dip galvanized prior to powder coat paint.

DECORATIVE BASE
 Holophane
 Model: PM18CSB-CA-RAL6012
 Decorative clamshell cast aluminum base. Hardware shall be stainless steel.

DIMENSIONS
 Overall Height = 25' 0"
 Bracket Arm Length = 2' 10 1/2"
 Base Diameter = 18"

FINISH
 Dark Green: RAL-6012 (custom)

APPLICATION
 Sidewalk lighting or pedestrian lighting areas
 Suggested layout:
 One side: 90' - 100' on center
 Alternating sides: 175' -225' on center

Double-arm fixture placed with bracket arms parallel to sidewalk. If sidewalk space is limited, Planning Authority may approve lights within private property or attached to building.

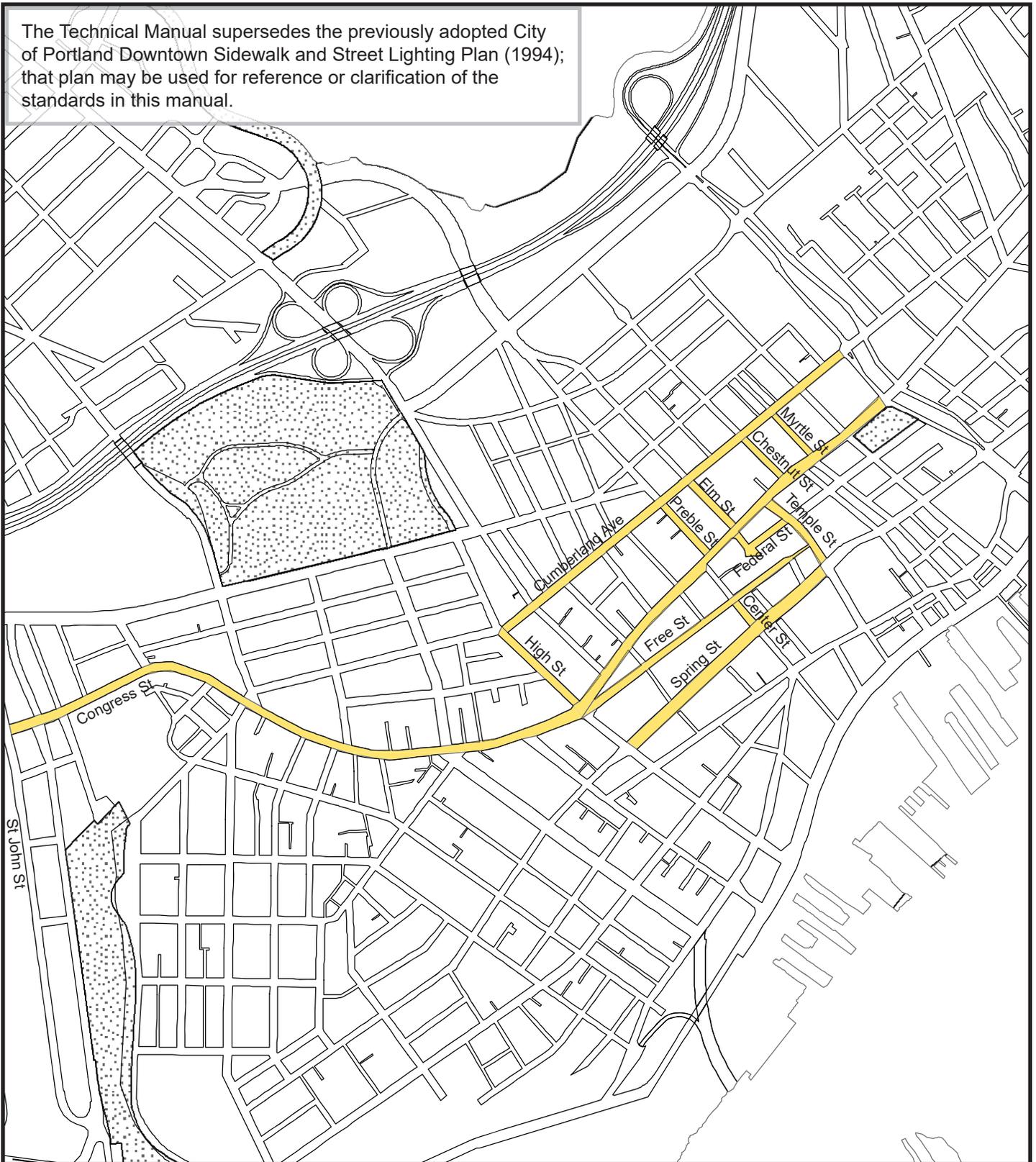
Date: March, 2019
Revised Date:

CITY OF PORTLAND, MAINE TECHNICAL MANUAL
DOWNTOWN PED 2

MUNICIPAL STREET LIGHTING STANDARDS SECTION 10

Figure: X-5C

The Technical Manual supersedes the previously adopted City of Portland Downtown Sidewalk and Street Lighting Plan (1994); that plan may be used for reference or clarification of the standards in this manual.

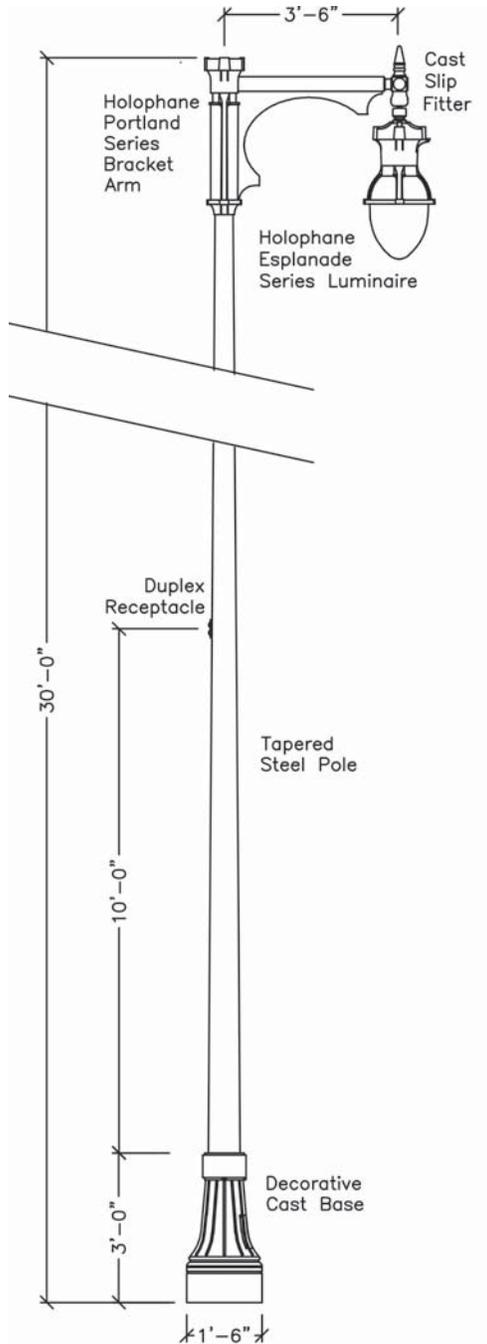


Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-5D
Revised Date:	MAP: Decorative Light - DOWNTOWN STREET		



PORTLAND | me

**Street & Sidewalk Lighting
DECORATIVE LIGHT - DOWNTOWN**



LUMINAIRE

Holophane Esplanade LED II
Model:
ESL2-P20S-30K-AS-CMC-TG3-S-P7-NL2X2-BHDF13-200CMC
Cast aluminum housing with stainless steel hardware. Dropped refractor shall be thermal resistant borosilicate glass. Internal reflector and prismatic diffuser shall provide an IES Type IV distribution pattern. Luminaire shall include an integral ballast with modular wiring connectors and multi-voltage taps. Provide an internal receptacle type photocell control. LED 3000K color temperature.

BRACKET ARM

Holophane Portland Series steel crossarm (custom)
Model: PD42-CA-RAL6012
Steel crossarm with a post-top fitting for a 3 1/2" by 8" tenon

SLIP FITTER

Holophane
Model: WLLF200S-CA-RAL6012
2-3/8" O.D. with swivel cast fitter.

LIGHTING POLE

Holophane
Model: PM-18-CSB-CA-RAL6012
Tapered steel pole smooth shaft rated for a 90mph wind load with a 1.3 gust factor. Provide four hot-dipped galvanized steel L-type anchor bolts. Lighting pole shall be hot dip galvanized prior to powder coat paint.

DECORATIVE BASE

Holophane
Model: PM18CSB-CA-RAL6012
Decorative clamshell cast aluminum base. Hardware shall be stainless steel.

DIMENSIONS

Overall Height = 30' 0"
Bracket Arm Length = 3' 6"
Base Diameter = 18"

FINISH

Dark Green: RAL-6012 (custom)

APPLICATION

Street lighting
Spacing:
One side: 90' - 100' on center
Alternating sides: 175' - 225' on center

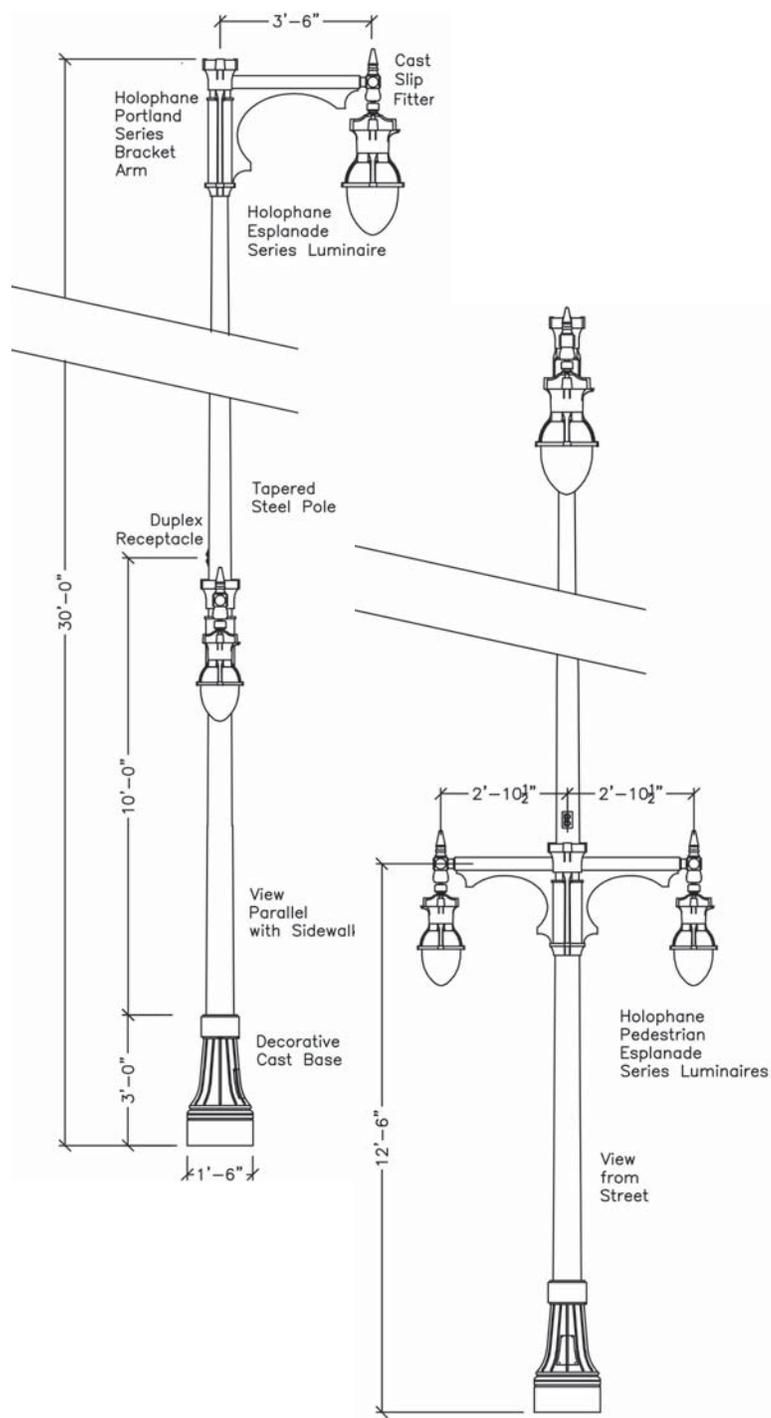
Single-arm fixture placed in furnishing zone with luminaire oriented over sidewalk. Double-arm fixture placed with bracket arms parallel to sidewalk or in medians. If sidewalk space is limited, Planning Authority may approve lights within private property or attached to building.

<p>Date: March, 2019</p>	<p>CITY OF PORTLAND, MAINE TECHNICAL MANUAL</p>	<p>MUNICIPAL STREET LIGHTING STANDARDS SECTION 10</p>	<p>Figure: X-5E</p>
<p>Revised Date:</p>	<p>DOWNTOWN STREET</p>		



PORTLAND | me

**Street & Sidewalk Lighting
DECORATIVE LIGHT - DOWNTOWN**



LUMINAIRE

Holophane Esplanade LED II
Model:
ESL2-P20S-30K-AS-CMC-TG3-S-P7-NL2X2-BHDF13-200CMC

Cast aluminum housing with stainless steel hardware. Dropped refractor shall be thermal resistant borosilicate glass. Internal reflector and prismatic diffuser shall provide an IES Type IV distribution pattern. Luminaire shall include an integral ballast with modular wiring connectors and multi-volatage taps. Provide an internal receptacle type photocell control. LED 3000K color temperature

BRACKET ARM

Holophane Portland Series steel (custom)
Top Bracket Arm: Steel crossarm with a post-top fitting for a 3 1/2" by 8" tenon
Model: PD42-CA-RAL6012
Lower Bracket Arm: Steel dual crossarm
Model: PD69-CA-RAL6012

SLIP FITTER

Holophane
Model: WLLF200S-CA-RAL6012
2-3/8" O.D. with swivel cast fitter.

LIGHTING POLE

Holophane
Model: PM-18-CSB-CA-RAL6012

Tapered steel pole smooth shaft rated for a 90mph wind load with a 1.3 gust factor. Provide four hot-dipped galvanized steel L-type anchor bolts. Lighting pole shall be hot dip galvanized prior to powder coat paint.

DECORATIVE BASE

Holophane
Model: PM18CSB-CA-RAL6012
Decorative clamshell cast aluminum base. Hardware shall be stainless steel.

DIMENSIONS

Overall Height = 30' 0"
Upper Bracket Arm Length = 3' 6"
Lower Bracket Arm Length = 2' 10 1/2"
Base Diameter = 18"

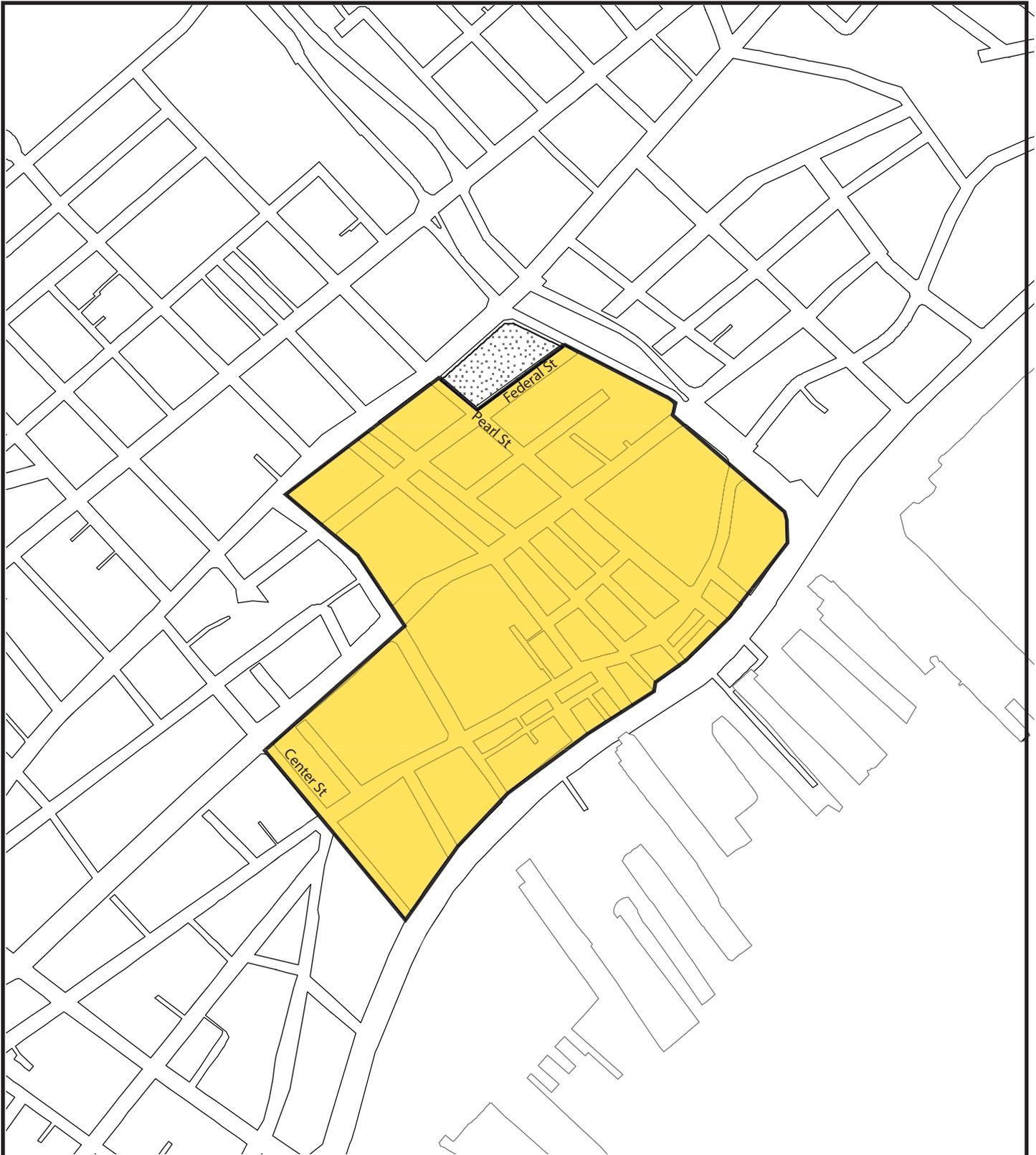
FINISH

Dark Green: RAL-6012 (custom)

APPLICATION

Street/pedestrian lighting combination.
Spacing:
One side: 90' - 100' on center
Alternating sides: 175' - 225' on center
Double-arm bracket arms parallel to sidewalk.

<p>Date: March, 2019</p>	<p>CITY OF PORTLAND, MAINE TECHNICAL MANUAL</p>	<p>MUNICIPAL STREET LIGHTING STANDARDS SECTION 10</p>	<p>Figure: X-5F</p>
<p>Revised Date:</p>	<p>DOWNTOWN COMBO</p>		

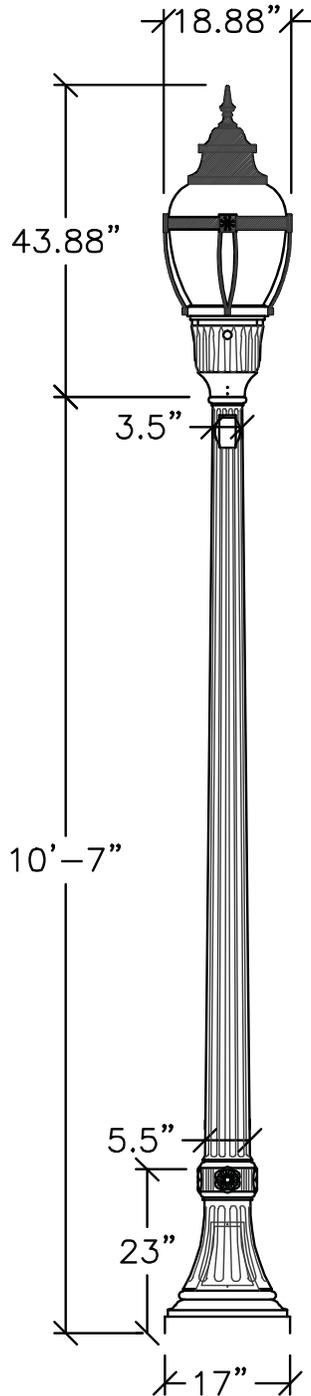


Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-6A
Revised Date:	MAP: Decorative Light - OLD PORT		



PORTLAND | me

Street & Sidewalk Lighting
 DECORATIVE LIGHT - OLD PORT



LUMINAIRE

Holophane Washington Postlite II LED - Acrylic

Model: WAUE2-P20-30K-AS-BK-3-BK-6-P7-F-PCLL

Cast aluminium housing with stainless steel hardware.

Thermal resistant acorn borosilicate glass refractor with IES Type asymmetric Type IV distribution.

Luminaire shall include decorative ribs, solid band, and spike finial, with internal twist-lock receptacle type photocell control. LED 3000K

LAMP

IES Type asymmetric Type IV distribution
 LED 3000K color temperature

LIGHTING POLE

Holophane North Yorkshire - Aluminum pole and base

Model: NYA-11-FTJ-17-P07-ABG-BK-R126A

Tapered, fluted cast aluminum pole shaft rated for a 90mph wind load with a 1.3 gust factor.

Provide four hot-dipped galvanized steel L-type anchor bolts. Provide GFI rated duplex receptacle outlet.

Lighting pole shall be hot dipped galvanized prior powder coat paint.

DIMENSIONS

Overall Height = 14' 3"
 Pole Height = 10' 7"
 Taper = 5.5" to 3.5"
 Base Diameter = 17"

FINISH

Black (standard)

APPLICATION

Street/Sidewalk lighting for two-way streets with parking on both sides.

Spacing: 60' - 80' on center (staggered pattern both sides of street)

Date:
 March, 2019

CITY OF PORTLAND, MAINE
 TECHNICAL MANUAL

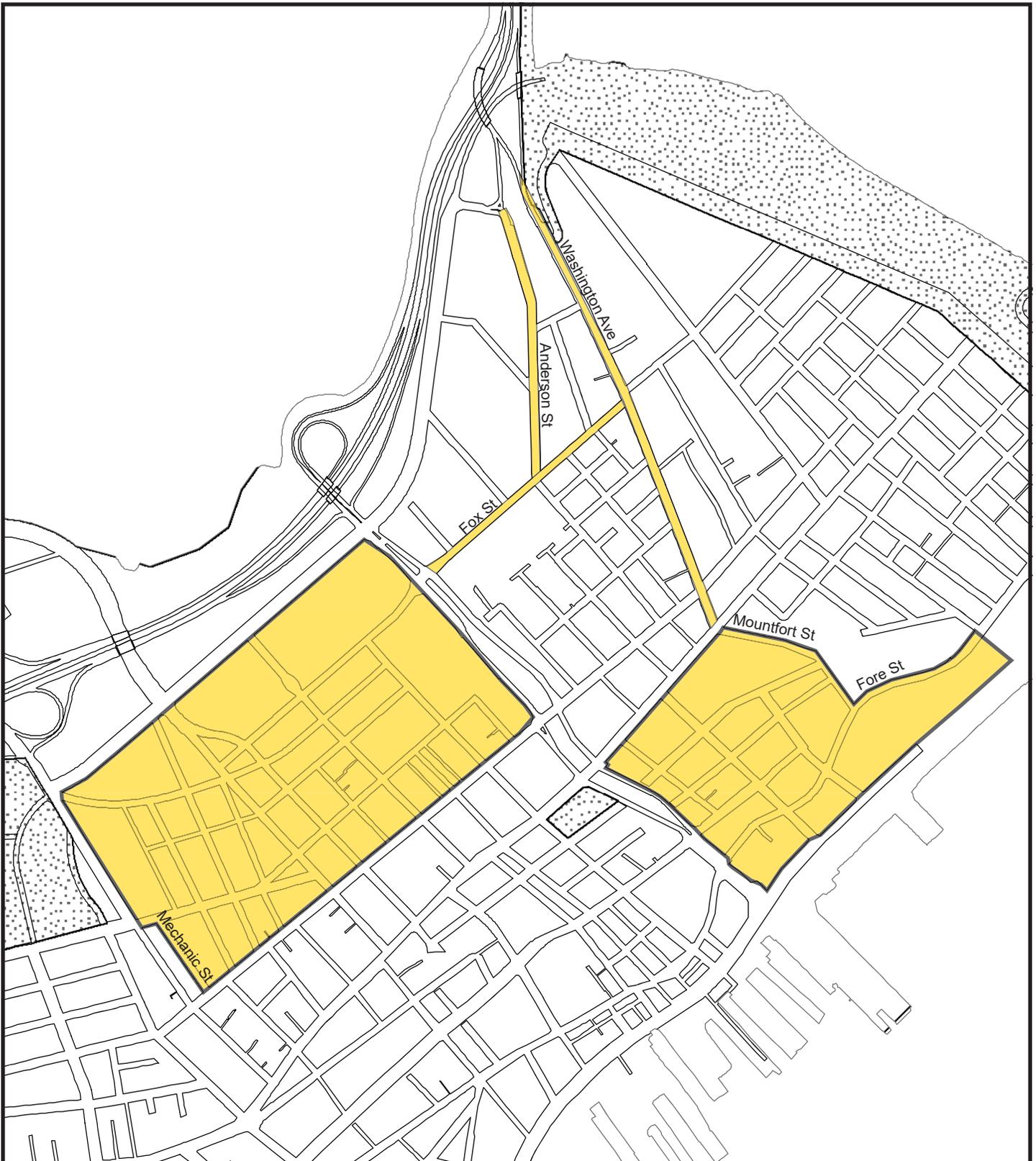
MUNICIPAL STREET
 LIGHTING STANDARDS
 SECTION 10

Figure:

X-6B

Revised Date:

OLD PORT

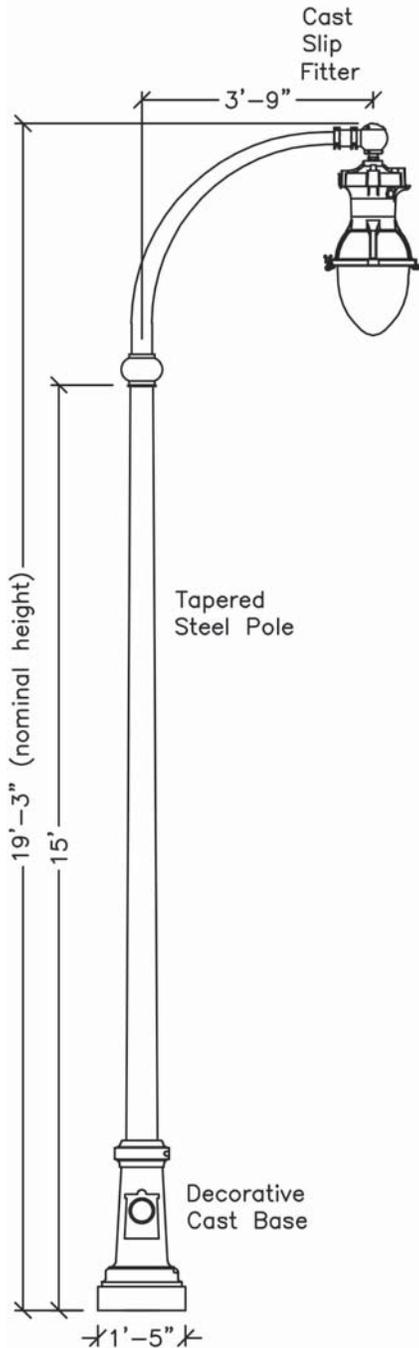


Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-7A
Revised Date:	MAP: Decorative Light - PENINSULA MEDIUM STREET		



PORTLAND | me

**Street & Sidewalk Lighting
 DECORATIVE LIGHT - PENINSULA**



LUMINAIRE

Holophane Esplanade LED II
 Model: ESL2-P20S-30K-AS-CMC-TG3-S-P7-NL2X2-BHDF13-200CMC
 or Spring City Columbia Series
 Model: ALMCLU-LE080/EVX/X2-30-CR3-GR14-LACLB-FED-CU
 Pendant mount, cast aluminum housing with stainless steel hardware. Dropped refractor shall be thermal resistant borosilicate glass. Internal reflector and prismatic diffuser shall provide an IES Type IV distribution pattern. LED 3000K color temperature.

BRACKET ARM

Holophane OUC Roadway Arm
 Model: OUC 6063-T6
 or Spring City Columbia Arm
 Model: AARCLA-1S-51-53-TN2.38/7.00-CU
 Aluminum crossarm with a post-top fitting for a 3 1/2" by 8" tenon. Single Arm 45" Oriented 180 degrees.

SLIP FITTER

Holophane Boston Harbor Series
 Model: BHLF-200-SCA/AS
 2 3/8" O.D. with swivel cast fitter.

LIGHTING POLE

Holophane
 Model: CM17CSB-CA-RAL6012
 or Spring City Cambridge Series
 Model: SSHSM-G11-7.00-15.00-TN3.50/8.00-CU
 Smooth, tapered steel pole smooth shaft rated for a 90mph wind load with a 1.3 gust factor. Provide four hot-dipped galvanized steel L-type anchor bolts. Lighting pole shall be hot dip galvanized prior to powdercoat paint.

DECORATIVE BASE

Holophane Cambridge Series
 Model: CM17CSB
 or Spring City Cambridge Series
 Model: DWBCMB-17-CU
 Decorative clamshell cast aluminum base. Hardware shall be stainless steel.

DIMENSIONS

Overall Height = 19' 3"
 Pole Height = 15' 0"
 Base Diameter = 17" to 18"

FINISH

Black (standard)

APPLICATION

Street/sidewalk lighting. Decorative fixture not needed on same side of street as existing cobrahead fixtures.
 Spacing: 80' - 100' on center
 Place in furnishing zone overhang towards street; where fixture conflicts with overhead utilities, may be placed on back of sidewalk.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-7B
Revised Date:	PENINSULA MEDIUM STREET		

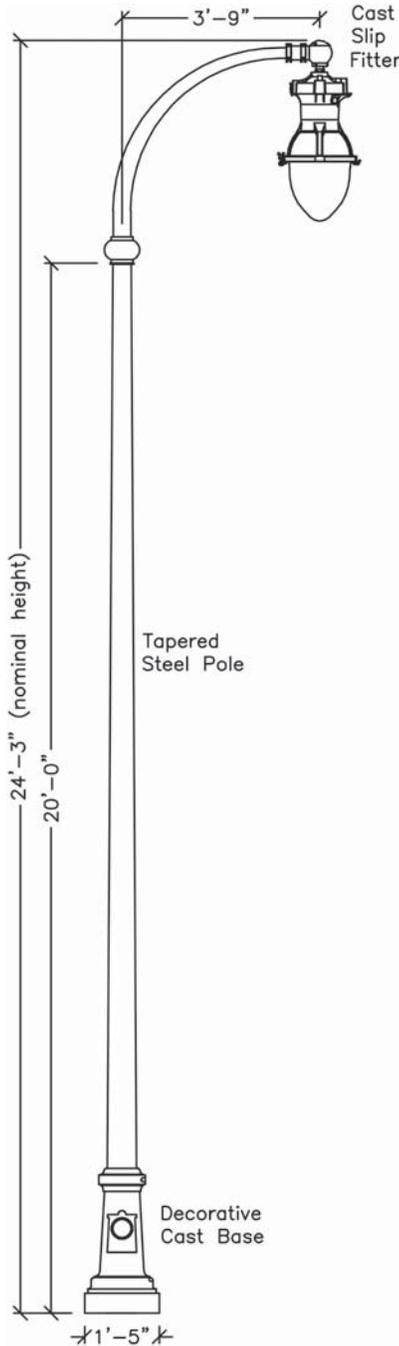


Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-7C
Revised Date:	MAP: Decorative Light - PENINSULA LARGE STREET		



PORTLAND | me

**Street & Sidewalk Lighting
 DECORATIVE LIGHT - PENINSULA**



LUMINAIRE

Holophane Esplanade LED II
 Model: ESL2-P20S-30K-AS-CMC-TG3-S-P7-NL2X2-BHDF13-200CMC or Spring City Columbia Series
 Model: ALMCLU-LE080/EVX/X2-30-CR3-GR14-LACLB-FED-CU
 Pendant mount, cast aluminum housing with stainless steel hardware. Dropped refractor shall be thermal resistant borosilicate glass. Internal reflector and prismatic diffuser shall provide an IES Type IV distribution pattern. LED 3000K color temperature.

BRACKET ARM

Holophane OUC Roadway Arm
 Model: OUC 6063-T6 or Spring City Columbia Arm
 Model: AARCLA-1S-51-53-TN2.38/7.00-CU
 Aluminum crossarm with a post-top fitting for a 3 1/2" by 8" tenon. Single Arm 45" Oriented 180 degrees.

SLIP FITTER

Holophane Boston Harbor Series
 Model: BHLF-200-SCA/AS
 2 3/8" O.D. with swivel cast fitter.

LIGHTING POLE

Holophane
 Model: CM17CSB-CA-RAL6012 or Spring City Cambridge Series
 Model: SSHSM-G11-7.00-15.00-TN3.50/8.00-CU
 Smooth, tapered steel pole smooth shaft rated for a 90mph wind load with a 1.3 gust factor. Provide four hot-dipped galvanized steel L-type anchor bolts. Lighting pole shall be hot dip galvanized prior to powdercoat paint.

DECORATIVE BASE

Holophane Cambridge Series
 Model: CM17CSB or Spring City Cambridge Series
 Model: DWBCMB-17-CU
 Decorative clamshell cast aluminum base. Hardware shall be stainless steel.

DIMENSIONS

Overall Height = 24' 3"
 Pole Height = 20' 0"
 Bracket Arm = 3' 9"
 Base Diameter = 18"

FINISH

Black (standard)

APPLICATION

Street/Sidewalk light. Spacing: One side: 90' - 110' o.c. Alt. sides: 175' - 225' on center
 Place in furnishing zone overhang towards street; where fixture conflicts with overhead utilities, may be placed on back of sidewalk.

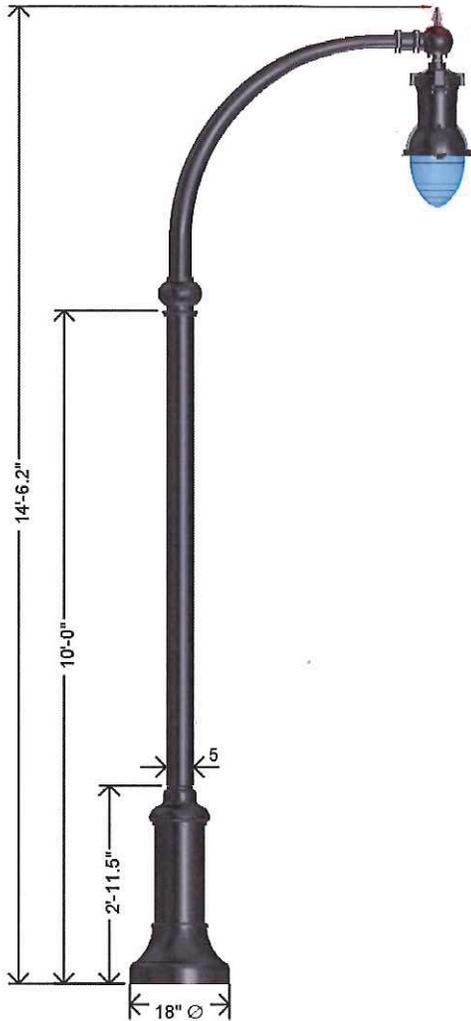
Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-7D
Revised Date:	PENINSULA LARGE STREET		



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Street & Sidewalk Lighting
 DECORATIVE LIGHT - PENINSULA

*Waiver required: This fixture to be implemented in special circumstances only.
 See 10.4 STANDARDS FOR DECORATIVE LIGHTING.



Anchorage/Orientation Plan

LUMINAIRE

Holophane Esplanade LED II
 Model: ESPL2-P20-30L-AS-S-B-4-SS-P7
 IES Type IV Distribution

Pendant mount, quick lock stem mount
 Auto-sensing 50/60 hz (120-225V), 38 watts
 LED 3000K color temperature.

BRACKET ARM

Holophane OUC Roadway Arm
 Model: OUC 45/1-CA-BK

Aluminum crossarm with a post-top fitting for a 3 1/2" by 8" tenon.
 Single Arm 45" Oriented 180 degrees.

SLIP FITTER

Holophane Boston Harbor Decorative Arm Fitter
 Model: WLLF200S-CA-RAL6012

2 3/8" O.D. with swivel cast fitter.

LIGHTING POLE AND BASE

Holophane Rockford Harbor Aluminum Pole
 Model: RHA-10-S5J-18-P15-ABG-BK

Pole is aluminum, smooth 5" diameter, .25 wall
 Assembly meets wind load of 90 mph.

DIMENSIONS

Overall Height = 14' 6"
 Pole Height = 10'0"
 Pole Diameter = 5"
 Base Diameter = 18"
 Arm = 45"

FINISH

Black (standard)

APPLICATION

Sidewalk lighting only when MEDIUM STREET fixture cannot be accommodated.

Spacing:
 One side: 60' - 80' on center
 Alternating sides: 100' - 175' on center

Fixture shall be oriented to overhang sidewalk.

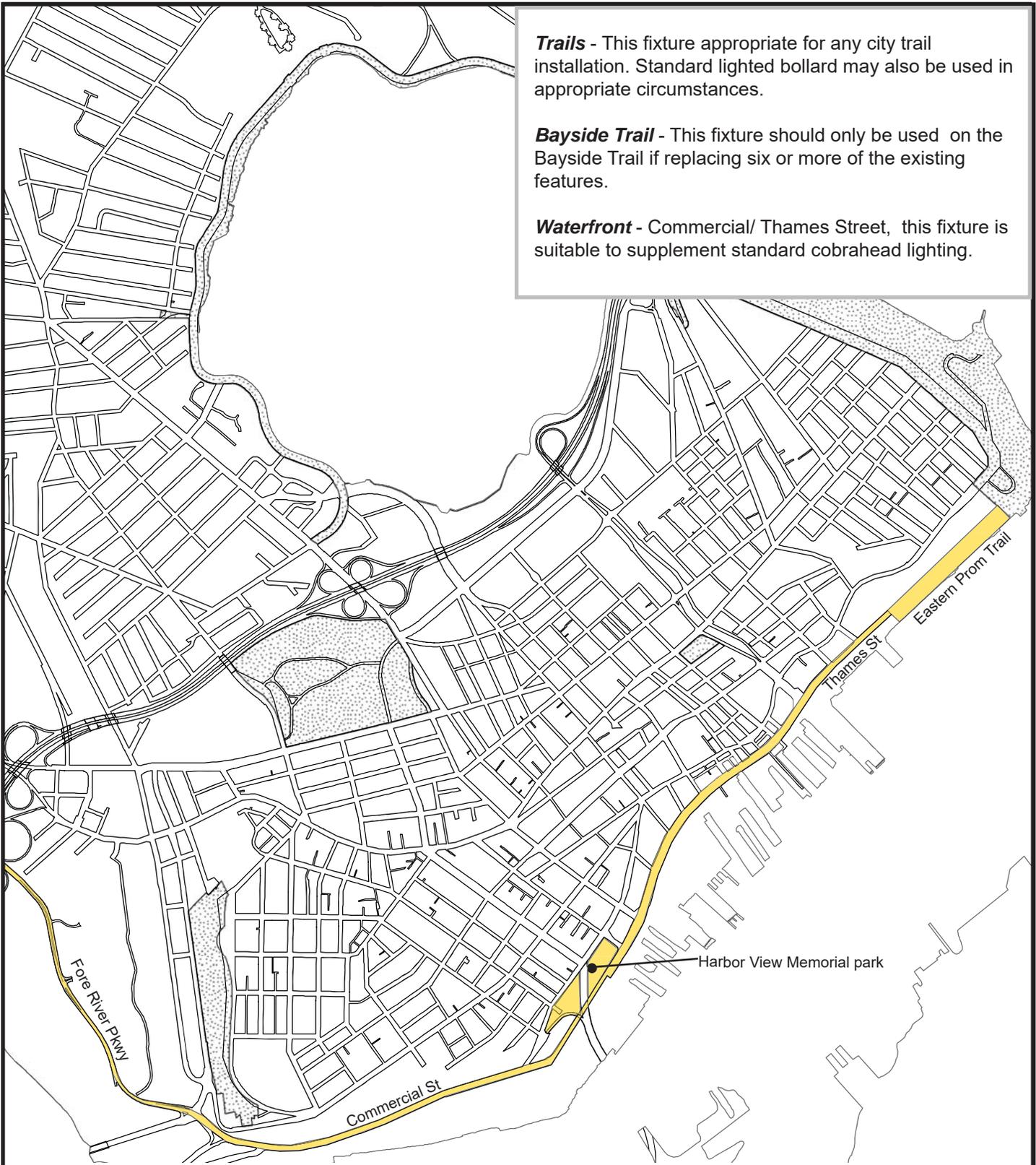
Place in furnishing zone unless space is limited.
 Placement on back of sidewalk or private property overhanging sidewalk may be accommodated where space is a constraint.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-7E
Revised Date:	PENINSULA PED *waiver required		

Trails - This fixture appropriate for any city trail installation. Standard lighted bollard may also be used in appropriate circumstances.

Bayside Trail - This fixture should only be used on the Bayside Trail if replacing six or more of the existing features.

Waterfront - Commercial/ Thames Street, this fixture is suitable to supplement standard cobrahead lighting.

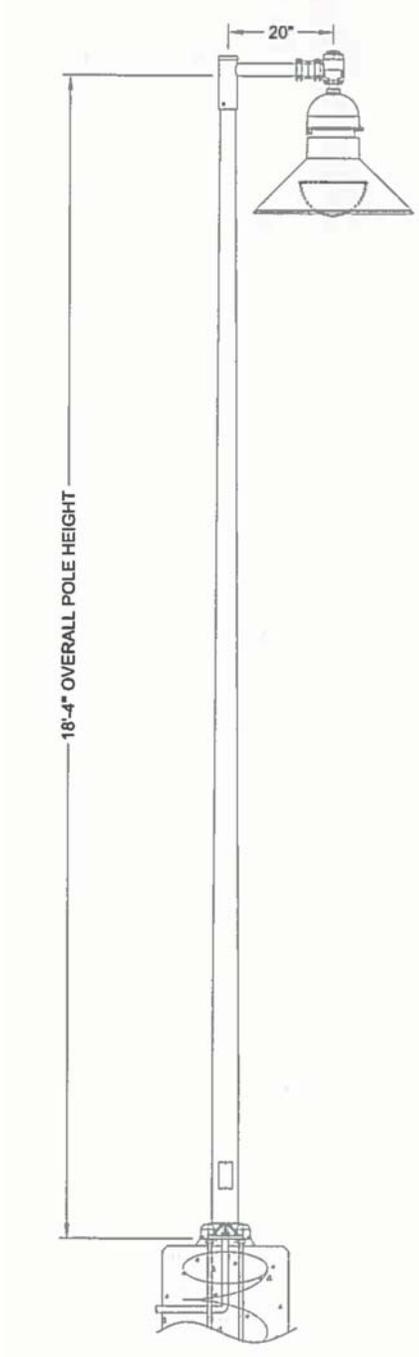


Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-8A
Revised Date:	MAP: Decorative Light - TRAILS/ WATERFRONT		



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**Street & Sidewalk Lighting
 DECORATIVE LIGHT - TRAIL/WATERFRONT**



LUMINAIRE

Holophane GlasWerks LED Hallbrook Series
 Model: GELB-050-3K-AS-4-B-3-P7E-DM

Pendant mount
 IES Type IV Distribution
 Thermal resistant prismatic glass lens held in a formed aluminum door frame.
 50 watts
 Universal Voltage (120-277V)
 Dimming driver with 7-pin photocontrol receptacle
 LED 3000K color temperature

BRACKET ARM

Aluminum crossarm with a post-top fitting for a 2-3/8" by 6" tenon.

SLIP FITTER

Holophane Glasswerks Slip Fitter
 Model SG20/1-BK

2-3/8" O.D. with swivel cast fitter.

LIGHTING POLE

Holophane
 Model: RTA1850E-PL-ND-BK-4

Aluminum pole shaft rated for a 90 mph wind load with a 1.3 gust factor.

Provide four hot-dipped galvanized steel L-type anchor bolts. Lighting pole shall be hot dipped galvanized prior to powder coat paint.

DIMENSIONS

Overall Height = 18' 4"
 Bracket Arm = 1' 6"

FINISH

Black (standard) - polyester powder coat

APPLICATION

Trails: Appropriate for any city trail installation.
 Waterfront (Commercial/Thames St): Supplemental pedestrian lighting to standard cobrahead lighting.

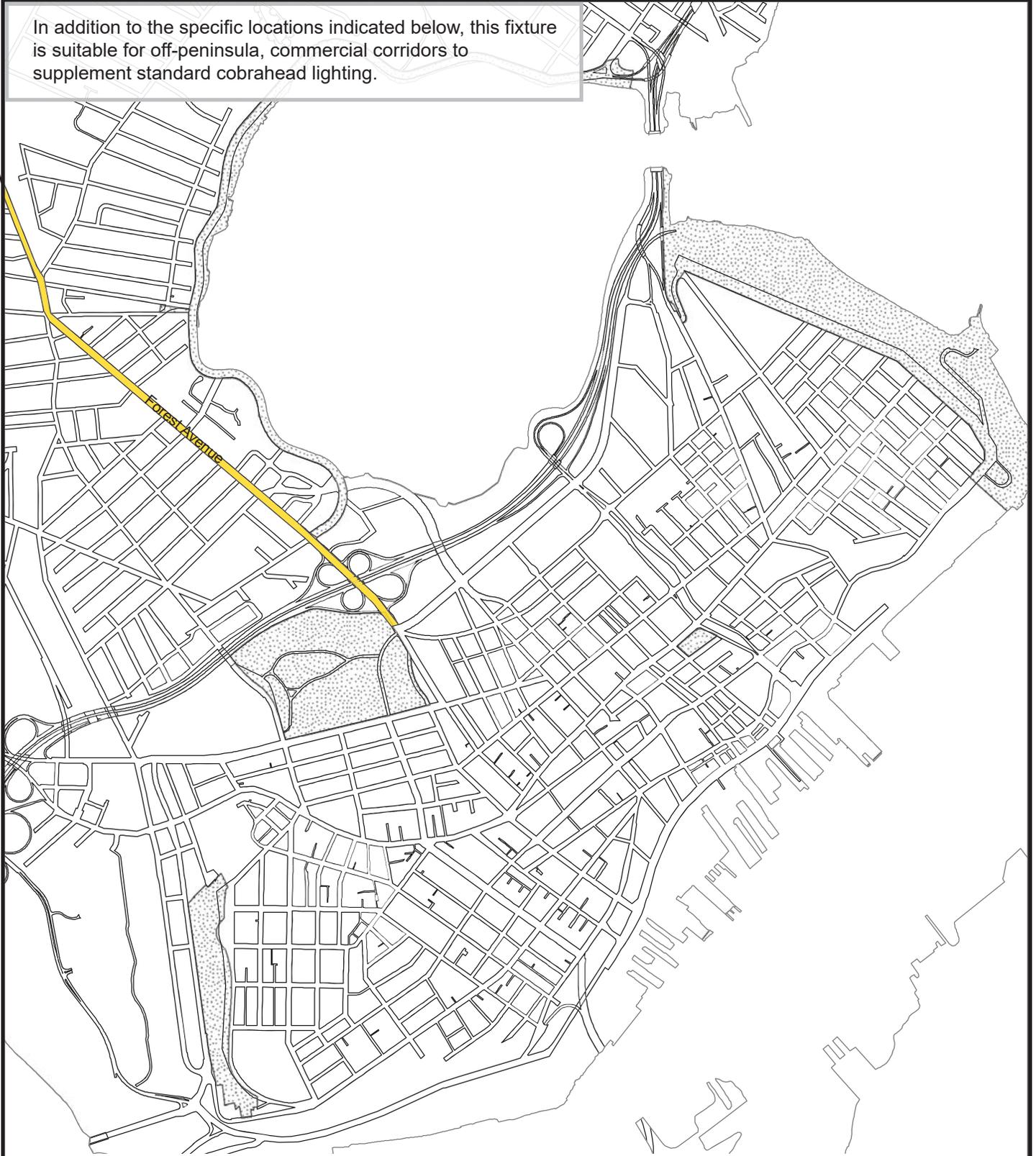
Spacing:
 One side: 90' - 125' on center
 Alternating sides: 175' - 225' ft on center

Follow established pattern. Single arm oriented over trail or street; Double-arm used in medians or similar.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-8B
Revised Date:	TRAILS / WATERFRONT (COMMERCIAL/THAMES STREET)		

to Morrill's Corner

In addition to the specific locations indicated below, this fixture is suitable for off-peninsula, commercial corridors to supplement standard cobrahead lighting.

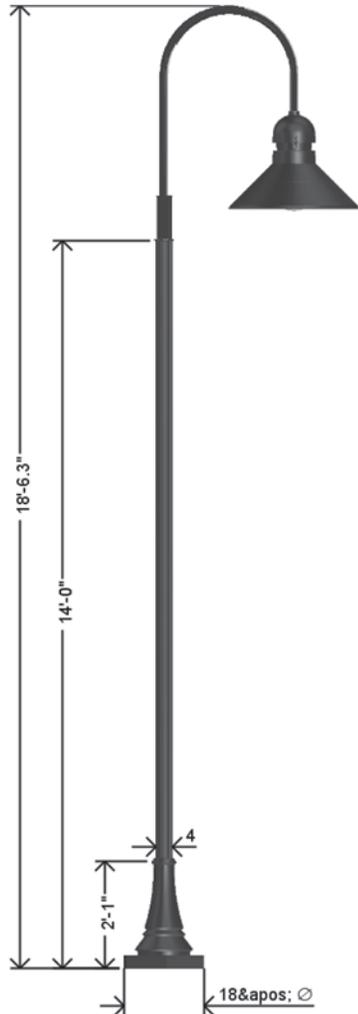


Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-9A
Revised Date:	MAP: Decorative Light - OFF-PENINSULA		

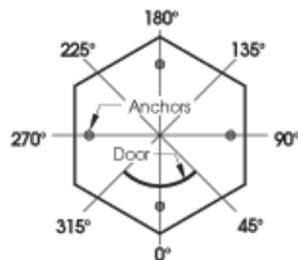


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**Street & Sidewalk Lighting
 DECORATIVE LIGHT - OFF-PENINSULA**



Anchorage/Orientation Plan



Hand Hole is at 0 deg.

LUMINAIRE

Holophane Hallbrook Ext GalsWerks LED Bowl Glass
 Model: GELB-050-3K-AS-H-3
 IES Type III Distribution
 Pendant mouting (1.5 NPT). Dropped refractor shall be thermal resistant borosilicate glass held in a formed aluminum door frame. Asymmetric bowl glass.
 Auto-sensing voltage (120-277V)
 50 watt, LED 3000K color temperature

BRACKET ARM

Holophane Bishops Crook Arm
 Model : 1-BC-90R-15F-XX (for single arm 90 degree)

Tenon mounted, using a 1 1/2" NPT fitting for luminaire mounting. Arm shall be 1 1/2" sch. 80 aluminum pipe (6061-T6 alloy). Mounting hub for the arm shall be 3" sch. 40 x 10" long aluminum pipe (6061-T6 alloy). All hardware shall be stainless steel. The arm shall be heat-treated to a T6 condition after fabrication.

LIGHTING POLE + BASE

Holophane Princeton Aluminum Pole, Smooth Base
 Model: PSA-14-F4J-18-P09-ABG-GH

One-piece construction, aluminum pole (heavy wall cast aluminum ASTM 356), smooth shaft 4" dia. rated for a 90mph wind load with a 1.3 gust factor with integral 18" hexagonal smooth base. All hardware shall be tamper resistant stainless steel. Provide four hot-dipped galvanized steel L-type anchor bolts. Lighting pole shall be hot dip galvanized prior to powder coat paint.

DIMENSIONS

Overall Height = 18' 6"
 Pole Height = 14' 0"
 Pole Diameter = 4"
 Base Diameter = 18"

FINISH

Graphite (Standard) - powder coat paint finish

APPLICATION

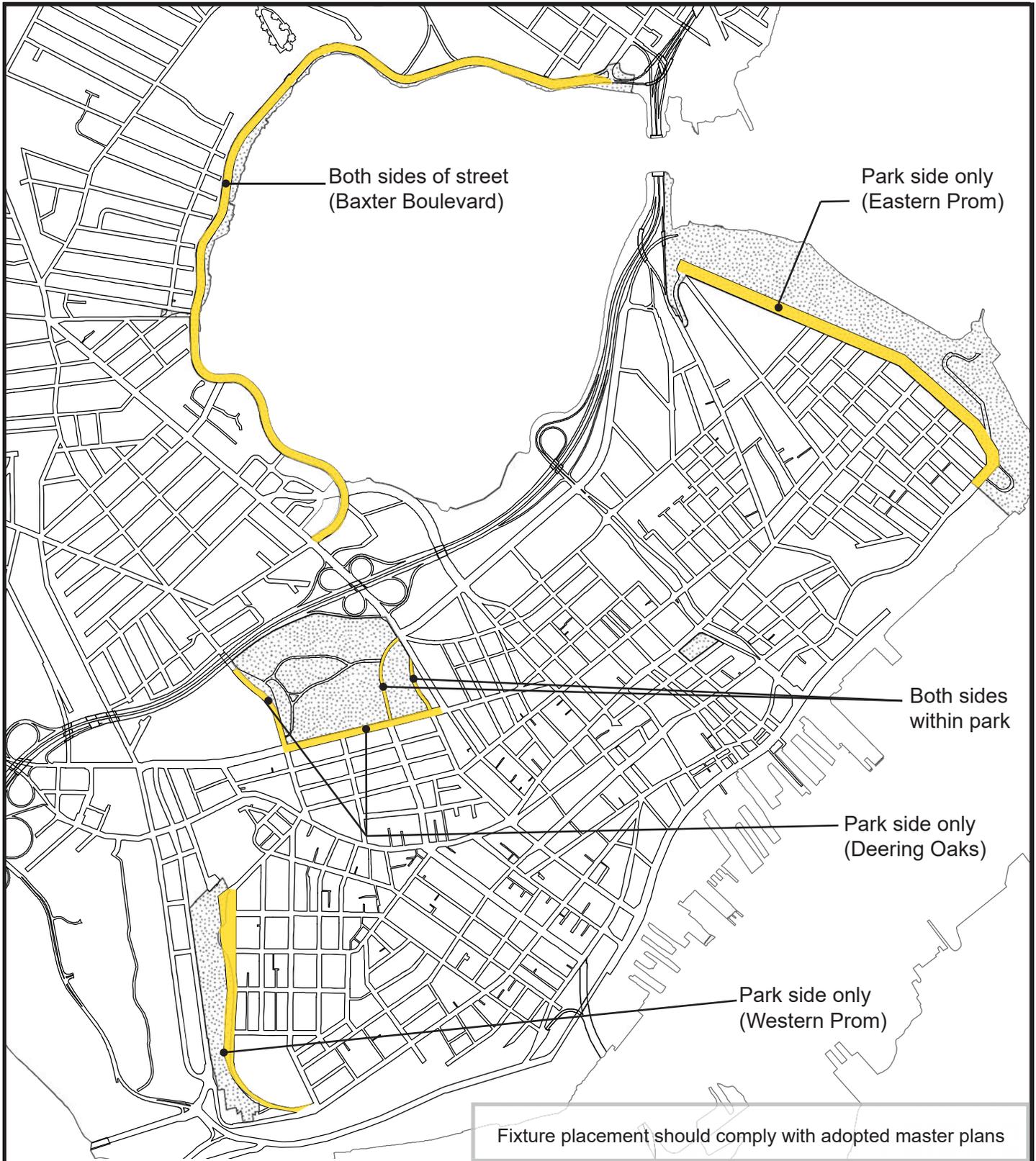
Sidewalk lighting to supplement standard lighting off-peninsula.

Spacing:

One side: 60' - 80' on center
 Alternating sides: 100' - 175' on center

Fixture orientation should be consistent with established pattern. In some cases, a double-arm bracket parallel to the street may be appropriate. Fixture placed in furnishing zone unless space is limited. Placement on back of sidewalk or private property overhanging sidewalk may be accommodated where space is a constraint.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-9B
Revised Date:	OFF-PENINSULA PED		

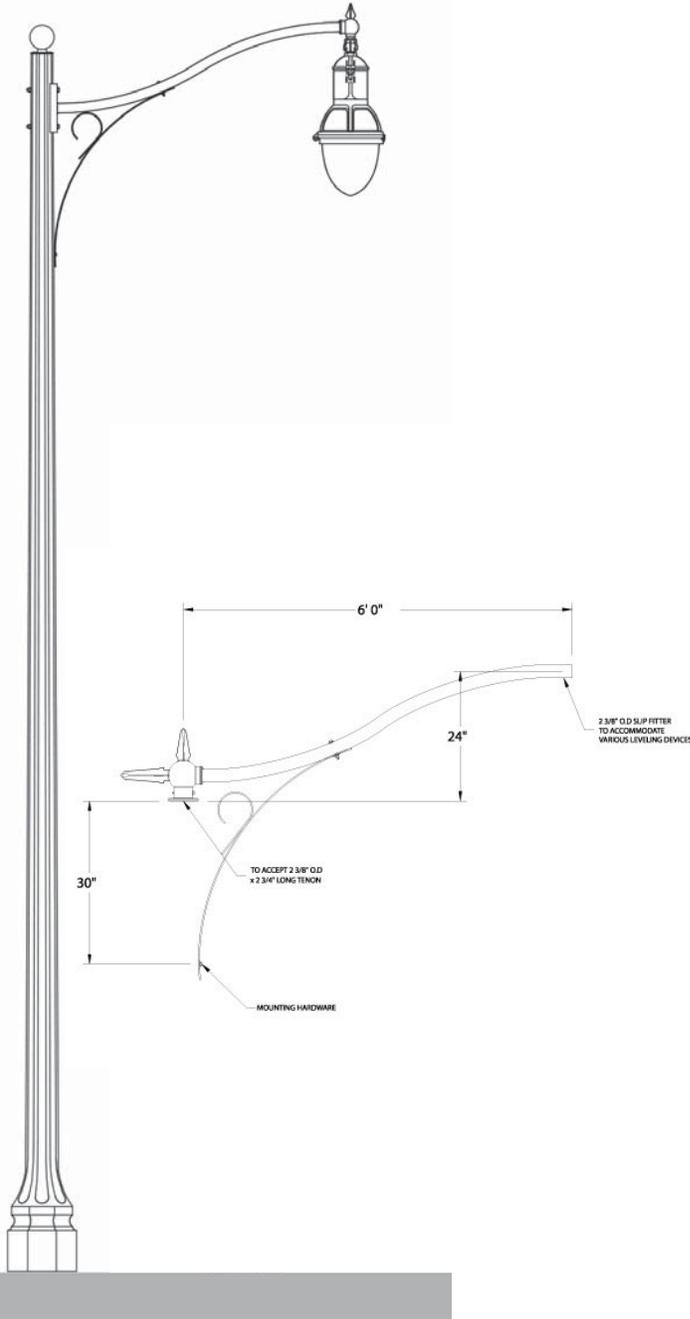


Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-10A
Revised Date:	MAP: Decorative Light - HISTORIC LANDSCAPE STREET		



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**Street & Sidewalk Lighting
 DECORATIVE - HISTORIC STREET**



LUMINAIRE

Holophane Espalanade LED II
 Model:
 ESL2-P20S-30K-AS-CMC-TG3-S-P7-NL2X2-BHDF13-200CMC
 or Spring City Columbia Series
 Model: LMCLU-LE080/EVX/X2-30-CR3-GR14-LACLB-FED-CU

With Shield: Deering Oaks Park
 Without Shield: All other locations

LED Auto-sensing 39 watt
 Voltage (120 - 277V)
 IES Type V Distribution
 LED 3000K color temperature

BRACKET ARM

King Luminaire/StressCrete: Scroll Arm with Decorative
 Scroll
 Model: KA30-T

Single arm with finials and decorative scroll.
 Slip fitter 2 3/8" O.D. to accommodate various leveling
 devices. At pole, to accept 2 3/8" O.D. x 2 3/4" Long
 tenon.

LIGHTING POLE

King Luminaire/StressCrete: The Talisman - Concrete
 Model: KTH20

The American Series - The Talisman, 8-fluted concrete
 Footing details, tenon size, options per specific project

DIMENSIONS

Overall Height = 21'0"
 Pole Height = 20' 0"
 Pole Base Flare = 18"
 Bracket Arm Length = 6' 0"

FINISH

Luminaire: Black (standard)
 Pole: Eclipse Black, acrylic coating (standard)

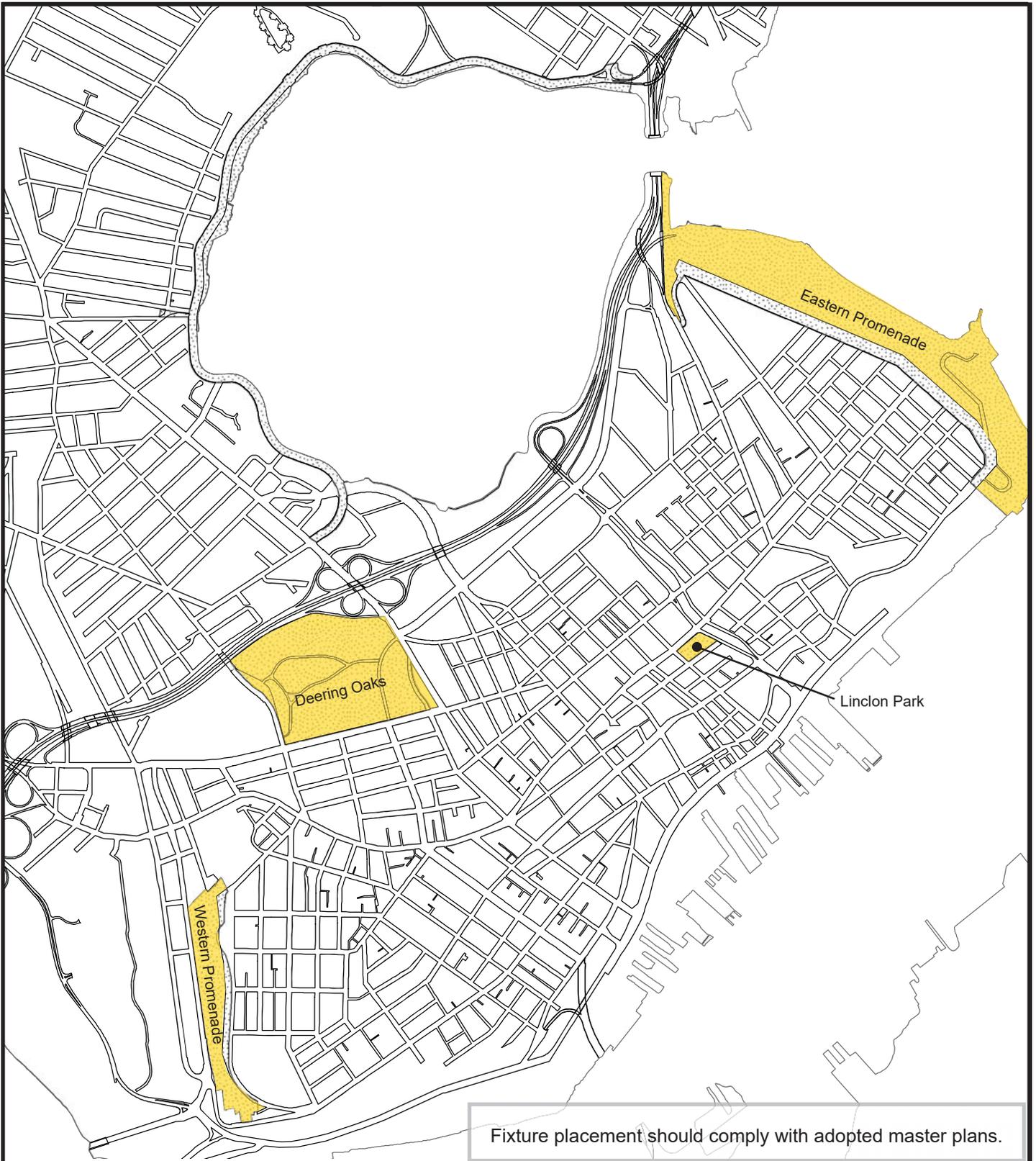
APPLICATION

Decorative street lighting for historic landscapes.

Spacing:
 One side: 90' - 100' on center
 Alt. sides: 175' - 225' on center

Fixture locations must comply with adopted Historic
 Master Plans.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-10B
Revised Date:	HISTORIC LANDSCAPE STREET		

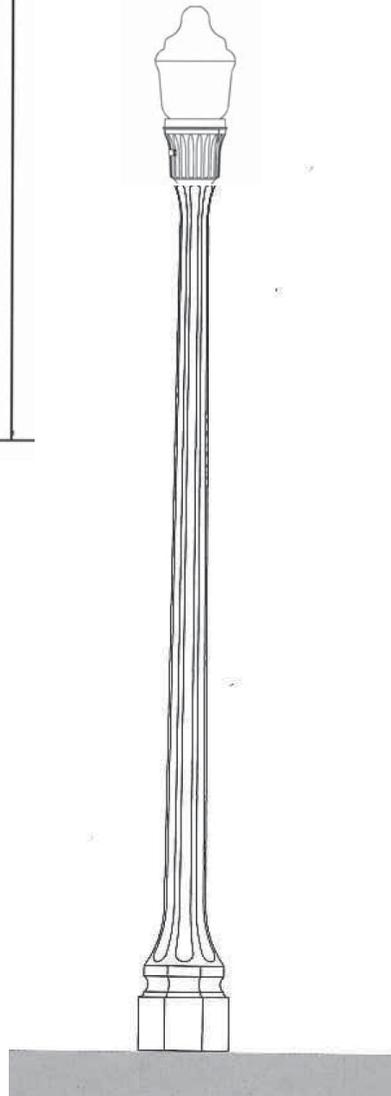
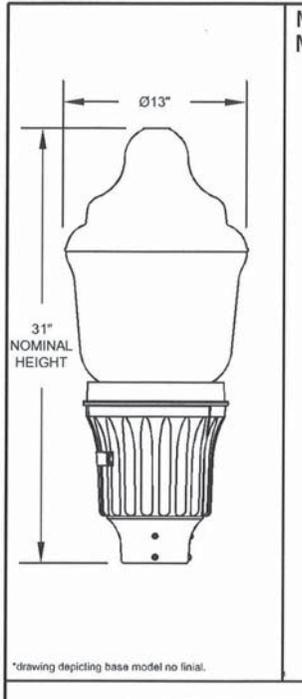


Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-11A
Revised Date:	MAP: Decorative Light - HISTORIC LANDSCAPE PEDESTRIAN		



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**Street & Sidewalk Lighting
 DECORATIVE - HISTORIC LANDSCAPE PED**



LUMINAIRE

Holophane GranVille II LED
 Model: GVD2-P20-30K-AS-M-BK-5-N-N-U

Prismatic Style: Glass Classic
 Housing Size: Utility
 No Trim or finial, Modern Housing
 Slip fitter accommodates 2-7/8" to 3-1/8" dia. tenon

LED Auto-sensing 39 watt
 Voltage (120 - 277V)
 IES Type V Distribution
 LED 3000K color temperature

LIGHTING POLE

King Luminaire/StressCrete: The Talisman - Concrete
 Model: KT-12-E-11-DB-140 30/30-A

The American Series - The Talisman, 8-fluted concrete
 Talisman Non-Flared Top 12'
 Footing details, tenon size, options per specific project

DIMENSIONS

Overall Height = 14' 6"
 Pole Height = 12' 0"

FINISH

Luminaire: Black (standard)
 Pole: Eclipse Black, acrylic coating (standard)

APPLICATION

Decorative pedestrian lighting for historic landscapes.

Spacing: 60' - 80' on center

In some instances, the fixture will replace existing fixtures.

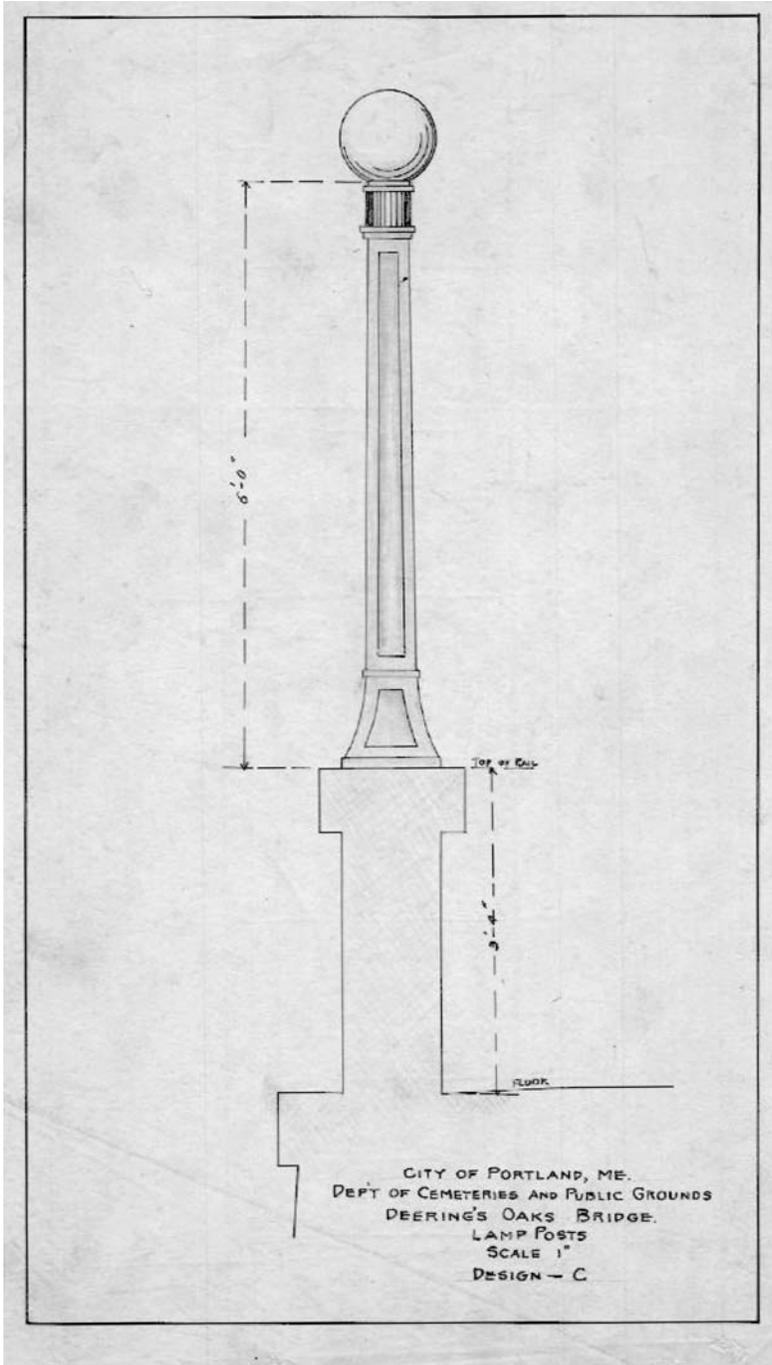
Fixture locations must comply with adopted Historic Master Plans.

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-11B
Revised Date:	HISTORIC LANDSCAPE PED		



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**Street & Sidewalk Lighting
 DECORATIVE - HISTORIC LANDSCAPE**



LUMINAIRE

Match existing and according to historic resources.

LAMP

LED 3000K color temperature

LIGHTING POLE

Match existing and according to historic resources.

DIMENSIONS

Match existing and as shown in image.

FINISH

Black: Match existing and according to historic resources.

APPLICATION

Match existing location and installation.

Date:
March, 2019

**CITY OF PORTLAND, MAINE
 TECHNICAL MANUAL**

**MUNICIPAL STREET
 LIGHTING STANDARDS
 SECTION 10**

Figure:

X-12

Revised Date:
Month Year

DEERING OAKS BRIDGE