

ITEM 031020

Item 0310201 - 28' ORNAMENTAL STREET LIGHT POLE ALUMINUM

Item 0310202 - 28' ORNAMENTAL STREET LIGHT POLE STEEL

Item 0310203 - 14' ORNAMENTAL STREET LIGHT POLE MADISON

Item 0310204 - 14' ORNAMENTAL STREET LIGHT POLE WASHINGTON

DESCRIPTION

Work under these items shall consist of furnishing and installing ornamental street light poles at the location and to the dimensions and details shown on the plans or as directed by the Engineer and in conformity on a concrete foundation with these specifications. The work shall include furnishing and installing pole, coordinating with local utility representatives, Installation shall include installing the pole plumb, connection of power supply, wiring, attaching the ground connection to the pole and verifying the proper operation of the pole, fixture(s) and GFI receptacle to the satisfaction of the engineer.

REFERENCED ITEMS

Item 0300101

REQUIRED SUBMITTALS

Material Certificate of Compliance:

Submit 5 copies of material certificate of compliance for poles in accordance with the contract general requirements.

Shop Drawings:

Submit 5 copies of shop drawings for poles in accordance with the contract general requirements.

MATERIALS

General: The pole and accessories shall be designed in accordance with AASHTO Standard Specification for Structural Support of Highway Signs, Luminaires and Traffic Signs. Wind pressures for design purposes shall be determined in accordance with the above AASHTO Standard utilizing a 93 mph wind speed.

The pole shall be wired using No. 10 AWG stranded copper conductors with 600V, 167 degree F, type THHN/THWN insulation. The pole shall be connected to the

underground power distribution with break-away type fuse holders. Fuse holders shall be equal to Bussmann No. HET-AW-RLC-J with insulating boots. Insulating boots shall be sealed at the conductor interface using heat shrink tubing. Fuses shall be Bussmann LP-CC-10.

Anchor Bolts: Anchor bolts shall be 1" x 36" x 4" steel per ASTM A-576-90. The bolt shall have 1-8 threads for 4 inches from the end. Anchor bolts shall be provided with a 3-inch long coupling with 1-8 threads and a 6-inch long 1-8 threaded stud. Anchor bolts, hex nuts, flat washers and split lock washers shall be hot-dip galvanized in accordance with the requirements of ASTM A-153-03, Class C. Anchor bolts shall be installed in the pole foundation under Item 0300101.

Field welding and field bending of anchor bolts is prohibited.

28' ALUMINUM STREET LIGHT POLE

Pole shaft: The pole shaft shall be 28 feet long, one piece, seamless, round tapered tube of 6063-T4 aluminum alloy. The tube shall have an O.D. of 8" at the base and 4½" at the top, with a nominal wall thickness of 0.20". The pole shaft shall have a flush mounted, reinforced hand hole, 4" x 6", centered 16" above the bottom of the shaft. The hand hole reinforcing frame shall be die cast using aluminum alloy 356. The reinforcing frame shall be equipped with a 5/16"-18 NC tapped hole for attachment of a grounding lug. The hand hole cover shall be secured with flat head pinned torx, stainless steel screws. The cover shall be equipped with a 12" long, stainless steel retaining cable secured to the cover and the inside of the pole.

The shaft shall have two 1½" diameter holes for routing of electrical cable to the luminaires. The holes shall be equipped with neoprene rubber grommets to provide a smooth surface for installing the electrical cable and to prevent failure of the cable insulation jacket. The holes shall be located on the pole to align with the bracket arm shafts.

Base Flange: The base flange for attachment of the pole shaft to the foundation shall be a one-piece die-cast aluminum casting of aluminum alloy 356. The flange shall be machined to provide a flat surface at the foundation, to provide a uniform surface for attachment to the pole shaft and to provide uniform holes for the anchor bolts. The flange shall be attached to the shaft with full circumferential welds, internal at the bottom of the flange and external at the top of the flange. The flange shall have a nominal dimension of 12" square by 3½" high. The anchor bolt holes shall be slots, 1¼" x 1¾" in size, centered on a 11½" bolt circle. The long dimension of the bolt slot shall be perpendicular to the pole shaft.

Clamp-on Aluminum Decorative Base: The pole shall be equipped with a clamp-

on decorative aluminum base. The base shall be equipped with an access door that shall align with the pole hand hole. Fasteners shall be tamper proof.

Finish: The pole shall be finished with a three step process consisting of an acid etching industrial wash primer, a two part epoxy base primer and a two part aliphatic acrylic polyurethane finish coat. Finish system shall be Tnemec. Color shall be as shown on the drawings or as directed by the engineer.

Manufacturer: Pole and accessories shall be Sentry Electric Corporation products as follows, or approved equal:

28' Aluminum Pole: SAL-FP-30

Clamp-on base: SAL-HP-CO.

28' STEEL STREET LIGHT POLE

Pole shaft: The pole shaft shall be 28 feet long, one piece, seamless, round tapered tube of 7 gauge steel. The tube shall have an O.D. of 8" at the base and 4½" at the top. The pole shaft shall have a flush mounted, reinforced hand hole, 4" x 6", centered 16" above the bottom of the shaft. The hand hole reinforcing frame shall be steel. The reinforcing frame shall be equipped with a 5/16"-18 NC tapped hole for attachment of a grounding lug. The hand hole cover shall be secured with flat head pinned torx, stainless steel screws. The cover shall be equipped with a 12" long, stainless steel retaining cable secured to the cover and the inside of the pole.

The shaft shall have two 1½" diameter holes for routing of electrical cable to the luminaires. The holes shall be equipped with neoprene rubber grommets to provide a smooth surface for installing the electrical cable and to prevent failure of the cable insulation jacket. The holes shall be located on the pole to align with the bracket arm shafts.

Base Flange: The base flange for attachment of the pole shaft to the foundation shall be a one-piece steel flange plate. The flange shall be machined to provide a flat surface at the foundation, to provide a uniform surface for attachment to the pole shaft and to provide uniform holes for the anchor bolts. The flange shall be attached to the shaft with full circumferential welds, internal at the bottom of the flange and external at the top of the flange. The flange shall have a nominal dimension of 12" square by 1.25" high. The anchor bolt holes shall be slots, 1¼" x 1¾" in size, centered on a 11½" bolt circle. The long dimension of the bolt slot shall be perpendicular to the pole shaft.

Manufacturer: The Pole shall be Sentry Electric Corporation products as follows, or approved equal:

28' Ornamental Steel Pole: #1141 S4735 C114

14' ORNAMENTAL STREET LIGHT POLE

Pole: The pole shall be a one-piece die-cast aluminum ornamental light pole. The shaft shall have a pattern as shown in the details. The base shall have a similar design with a round base. The pole shall have a height of 14 feet. The base shall have a diameter of 1 ½ feet. The post top shall have a 3" diameter x 3" high tenon for mounting of the luminaire. The pole shall conform to the details and dimensions as shown on the contract drawings.

The base shall have two access panels to provide access to the anchor bolts and electrical connections. The panels shall be secured with pinned torx tamper resistant fasteners.

Base Flange: The base flange for attachment of the post to the foundation shall be integral to the post and shall have four slots, 1" x 2" to accept anchor bolts. Nominal bolt circle shall be 1 foot.

Manufacturer: The Pole shall be Sentry Electric Corporation products as follows, or approved equal:

Washington Pole: SAL-HP-14

Madison Pole: SAL-CB-14

CONSTRUCTION METHODS

Construction methods for this work shall be in accordance with the manufacturer's recommendations. The contractor shall be responsible for coordinating all necessary prerequisite work with Northeast Utilities. This shall include, but not be limited to de-energizing existing light poles, energizing new light poles, coordinating and verifying new conduit installations. Northeast Utilities shall be responsible for pulling new wiring from energy source to first pole location and energizing new lighting system. The contractor shall be responsible for installing all underground conduit in accordance with CL&P requirements.

METHOD OF MEASUREMENT

Ornamental Street Light Pole shall be measured for payment by the actual number of each pole installed, wired, operational and accepted.

BASIS OF PAYMENT

The work will be paid for at the contract unit price each for "(SIZE)

ORNAMENTAL STREET LIGHT POLE (TYPE)" installed, which price shall include all materials, labor, equipment, tools and incidental expenses thereto.

<u>PAY ITEM</u>	<u>DESCRIPTION</u>	<u>PAY UNIT</u>
0310201	28' Ornamental Street Light Pole Aluminum	EA
0310202	28' Ornamental Street Light Pole Steel	EA
0310203	14' Ornamental Street Light Pole Washington	EA
0310204	14' Ornamental Street Light Pole Madison	EA