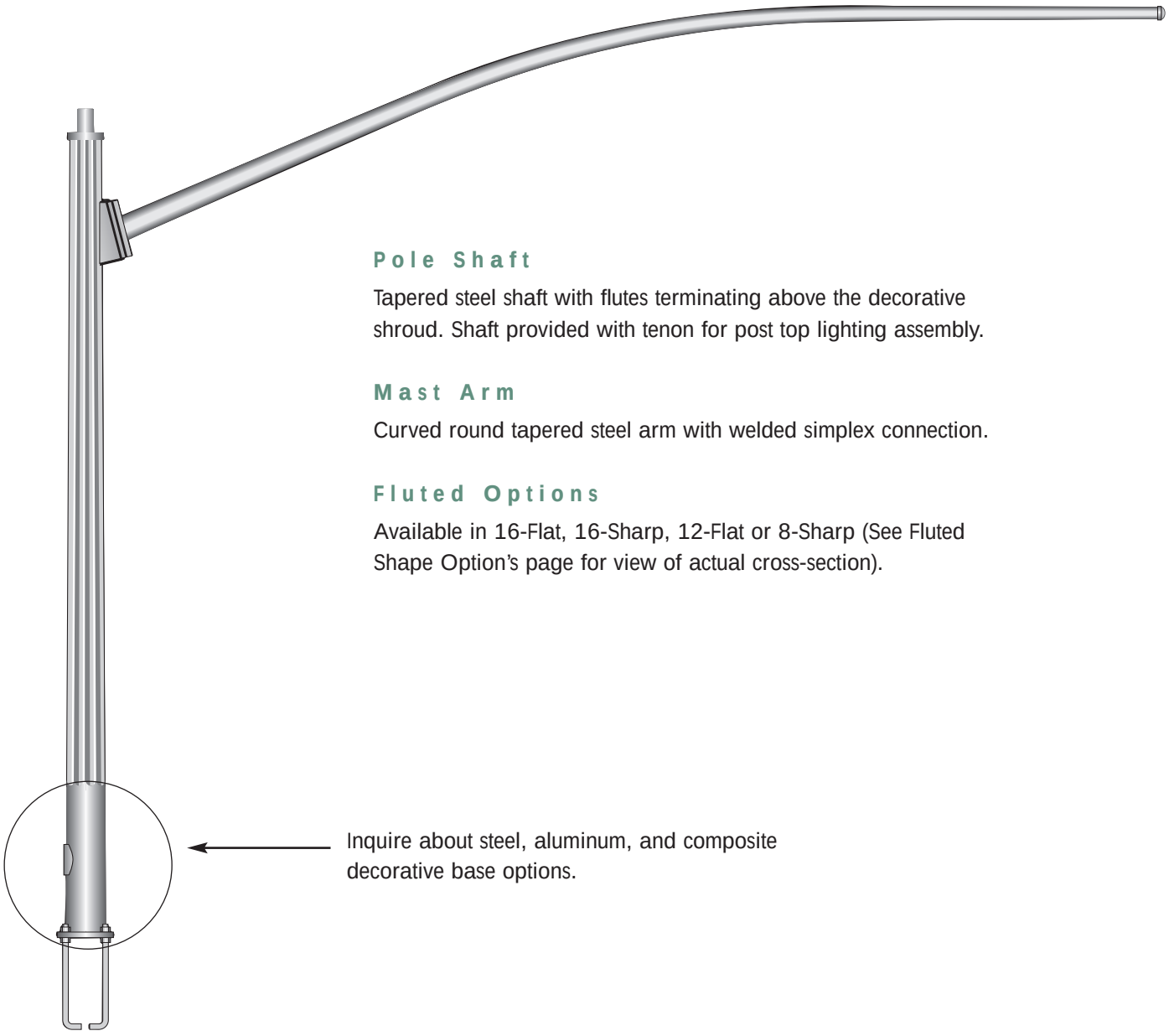

Pole Shaft

Tapered steel shaft with flutes terminating above the decorative shroud. Shaft provided with tenon for post top lighting assembly.

Mast Arm

Curved round tapered steel arm with welded simplex connection.

Fluted Options

Available in 16-Flat, 16-Sharp, 12-Flat or 8-Sharp (See Fluted Shape Option's page for view of actual cross-section).

Inquire about steel, aluminum, and composite decorative base options.

FLCM46 Tenon Fluted Traffic Pole Specification

General

The fluted traffic pole shall consist of a tapered pole and traffic signal mast arm, anchor bolts, and base plate. The pole shall be fluted, but the traffic signal mast arm shall be round. Fluted tubes shall have an 8 sharp, 12 flat, 16 sharp, or 16 flat cross-section as specified in the contract documents.

Pole

The fluted pole shall be formed from tubes conforming to ASTM A595 process, and have a constant linear taper of 0.14 in/ft. The tube's seam weld shall be formed by the Electric Resistance Weld (ERW), and shall be smooth with no visual appearance. The pole shaft shall be provided with a pole top tenon assembly to accept the decorative lighting assembly as specified. The flutes shall terminate above the handhole, approximately 1.5", above the top of the decorative shroud. The termination of the flutes is to increase the product's fatigue life, to facilitate welding, and for aesthetic appeal. The shaft shall be one piece, and contain no circumferential welded butt splices. Laminated tubes are not permitted. The pole shall have a reinforced 4.0" x 6.5" handhole with cover located 1'-6" from the pole base.

Mast Arm

Round mast arms shall be formed from tubes conforming to ASTM A595 process, and have a constant linear taper of 0.14 in/ft. The tube's seam weld shall be formed by the Electric Resistant Weld (ERW), and shall be smooth with no visual appearance. Round mast arms up to 50' shall be manufactured and shipped in one piece. The round mast arm shall be curved as specified and bolted to the shaft using a welded simplex connection. Circumferential welded butt splices and laminated tubes are not permitted. Each arm shall be provided with an end cap secured in place with set screws.

Fluting Process

The pole tubes shall be cold rolled over a precision hardened steel mandrel to form an 8 sharp, 12 flat, 16 sharp or 16 flat flute shaft as specified. The fluted shaft shall have uniform, equally spaced Doric flutes. The flutes shall be formed with 3" diameter rollers in full contact with the material from the top of the crest, through the valley of the flute, to the top of the next crest. The termination of the flutes shall be well defined by having no greater than 1.5 inch radii transition into the round section of the pole. For the 8 and 16 flute cross-sections, all 8 or 16 rollers respectively shall be engaged at the same time so as to produce a consistent, near perfect cross-section. For the 12 flat cross-section, all flats and valleys shall be rolled to produce the same well defined, near perfect cross-section. Individually rolled flutes or round poles with a separate fluted sheathing are not permitted.

Anchor Bolts and Base Plate

Anchor bolts shall conform to the requirements of AASHTO M314 Grade 55. The upper 12" of the bolts shall be hot dip galvanized per ASTM A153. Each anchor bolt shall be supplied with two hex nuts and two flat washers. The strength of the nuts shall equal or exceed the proof load of the bolts. Base plates shall conform to ASTM A36 and shall be integrally welded to the tubes with a telescopic welded joint.

Finish

The finish shall be hot dip galvanized to ASTM A123 (in accordance with Valmont's F1 spec.), painted using TGIC polyester powder (in accordance with Valmont's F264 spec.), or provided with a combination coating using a TGIC polyester powder directly over hot dip galvanized (in accordance with Valmont's F283 spec.)

Calculations

Calculations, if required, shall include pole, mast arm, base plate, and anchor bolt analysis. Tube drag coefficients shall be increased to include the effects of fluted shapes. Maximum loads and stresses shall be determined for the most critical wind direction. The pole shall be analyzed in its final deflected position, at the arm to pole connection(s) and pole base. Maximum arm and pole loads, stresses and combined stress ratios (CSR) shall be provided for the specified loading combinations, as well as maximum top of pole dead load rotation. Dead load stresses at welded connections shall be limited to 20 ksi. Shaft dimensions shall be equivalent in strength for the loads shown on the drawings.