





Why Choose Valmont?

Wherever you go in the world, Valmont is within reach. By maintaining production facilities in many locations, we at Valmont can better understand our customer’s specific needs while also participating in local markets, thus, offering fulfillment timelines unmatched by anyone in the industry. Wherever your project is in the world, Valmont is there ensuring that our customers have available “the best of all worlds.”

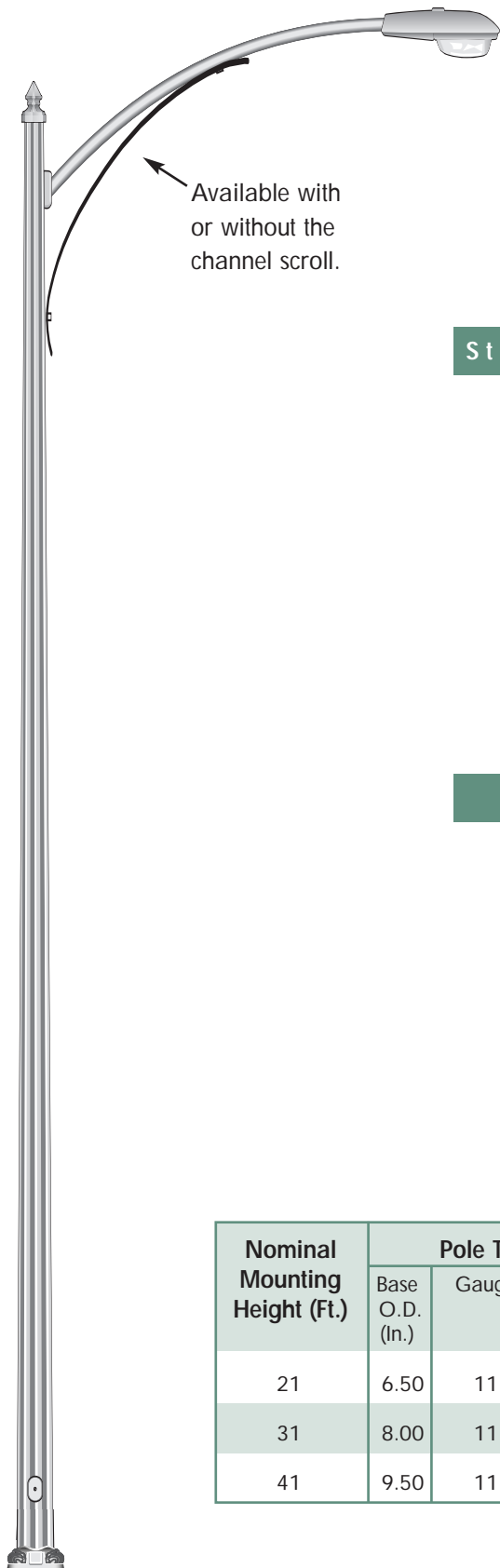
We have the global engineering resources and expertise to fulfill your needs. Valmont’s staff is dedicated to providing precision engineered designs for your standard and specialty projects. Our engineers have more than 600 years of combined experience and have created numerous standard structures for many of our customers — standards that serve successfully in all kinds of conditions, year after year.

Valmont has the knowledge, the expertise and the resources to provide the highest quality products and services in the industry, on time and at a competitive cost. We welcome the opportunity to discuss your next project.

Table of Contents

FLC30 Fluted Pole	3
FL30 Fluted Pole	5
FL90 Fluted Pole	7
FL210 Fluted Pole.	9
FLCM46 Tenon Fluted Traffic Pole	11
FLCB16 Tenon Fluted Traffic Pole	13
FLCB16 Arm Fluted Traffic Pole	15
FLCB46 Arm Fluted Traffic Pole	17
Traffic Pole Design Information	19
Traffic Pole Cross-Sections	20

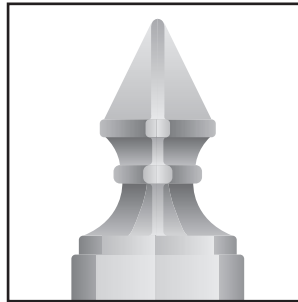
8-Flute Steel Tapered with Cast Base and Pipe Luminaire Arm



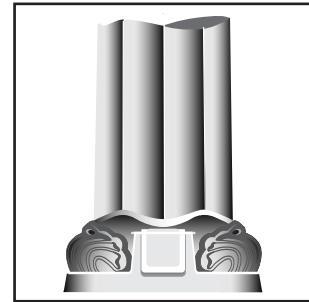
Available with or without the channel scroll.

Standard Components

Cast Pole Top Cap

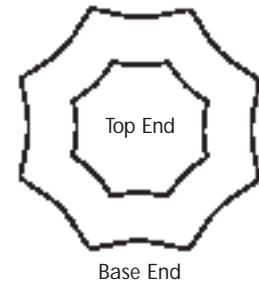


Steel Cast Base



Cross-Section

8-Sharp Flute



Nominal Mounting Height (Ft.)	Pole Tube			Base Casting		Anchor Bolts		
	Base O.D. (In.)	Gauge	Length (Ft.)	Bolt Circle (In.)	Square (In.)	Diameter (In.)	Length (In.)	Hook (In.)
21	6.50	11	20	9.5	10.00	1.00	36	4
31	8.00	11	30	11.00	11.50	1.00	36	4
41	9.50	11	40	13.00	13.50	1.25	36	6

FLC30 Fluted Pole Specification

General

The FLC30 fluted pole shall consist of a tapered pole, non-tapered luminaire arm, scroll (if required), anchor bolts, and cast steel base. The pole shall have an 8 sharp (octaflute) 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 flutes shall run the entire length of the shaft and be oriented to accept the cast steel base. 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. Each pole shall be provided with a decorative cap secured in place with set screws.

Fluting Process

The pole shall be cold rolled over a precision hardened steel mandrel to form an 8 sharp flute shaft. 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. All 8 rollers shall be engaged at the same time so as to produce a consistent, near perfect cross-section. Individually rolled flutes or round poles with a separate fluted sheathing are not permitted.

Luminaire Arm

The luminaire arm(s) shall be made from 2.375" diameter tubing with a minimum yield strength of 36,000 psi. The arm spans can be 4', 6' or 8' in length and will have a 1' upsweep rise above the top of the pole. The pole and arm simplex components shall be made of cast steel and welded to their respective members. The arm and pole castings shall mate together to allow the luminaire arm to be erected and held in place by gravity while being secured by a single 0.5" - 13 UNC high strength hex head hub bolt. Twin luminaire arm applications are oriented at 180 degrees with respect to each other.

Scroll (Optional)

The decorative scroll is a formed steel channel attached to the side of the pole and to the underside of the arm with hex head bolts.

Anchor Bolts and Cast Steel Base

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. The cast steel base shall be the style as shown in the contract documents and conform to ASTM A27, 65-35. The base shall be integrally welded to the tubes with a telescopic welded joint.

Decorative Nut Covers and Pole Cap

The decorative nut covers shall be a sandcast alloy 356.2 and be attached to the cast steel base using stainless steel, tamper resistant, allen head screws. The decorative pole cap shall be made from the same alloy and attached to the pole using three set screws.

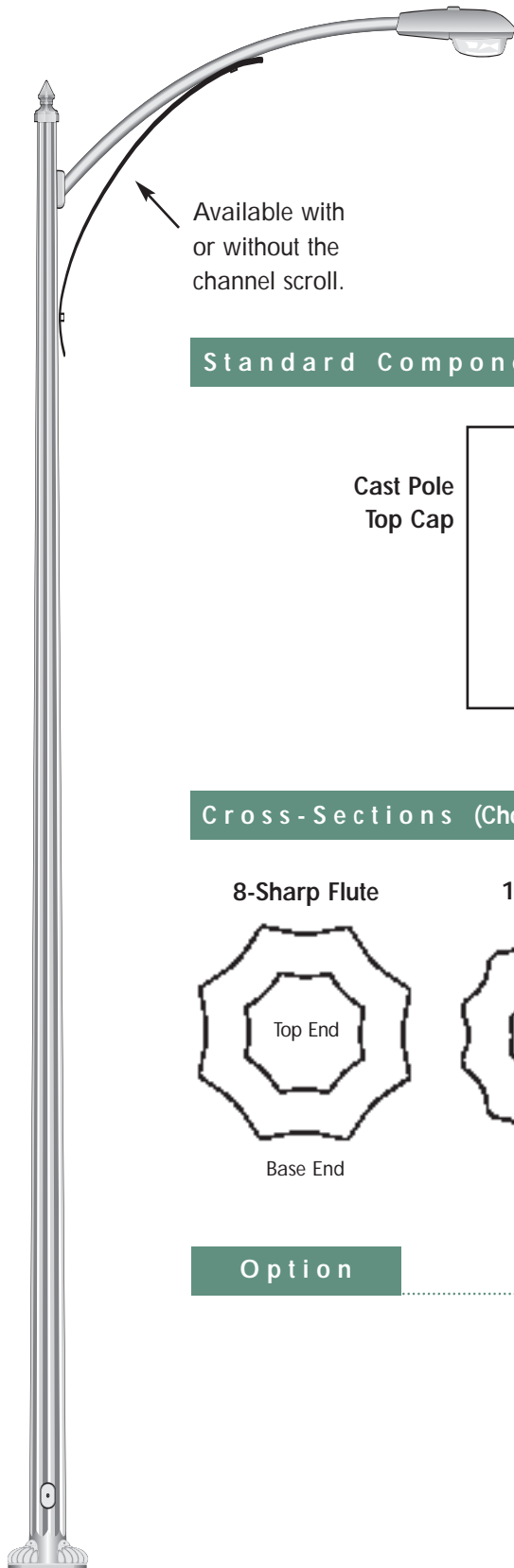
Finish

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

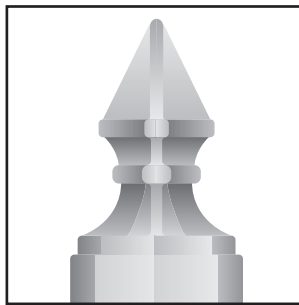
Calculations, if required, shall include luminaire arm, pole, base plate, and anchor bolt analysis. Tube drag coefficients shall be increased to include the effects of fluted shapes. Maximum loads and stresses shall be determined for the most critical wind direction. The pole shall be analyzed in its 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.

Fluted Steel Tapered with Pipe Luminaire Arm

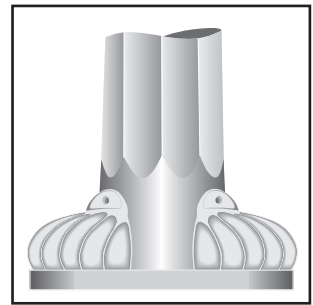


Standard Components

Cast Pole Top Cap

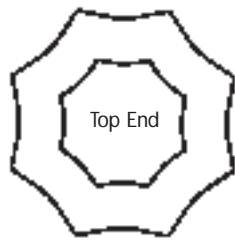


Cast Nut Cover



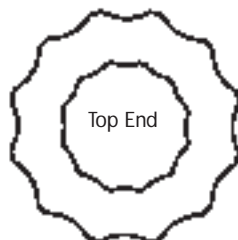
Cross-Sections (Choose One)

8-Sharp Flute



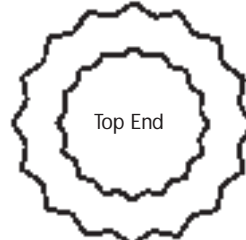
Base End

12-Flat Flute



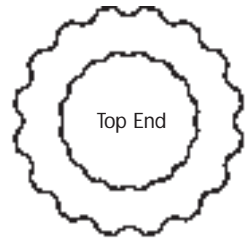
Base End

16-Sharp Flute



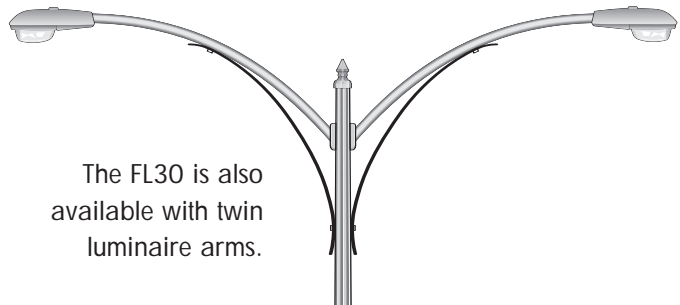
Base End

16-Flat Flute



Base End

Option



The FL30 is also available with twin luminaire arms.

FL30 Fluted Pole Specification

General

The FL30 fluted pole shall consist of a tapered pole, non-tapered luminaire arm, scroll (if required), anchor bolts, and base plate. The pole shall be fluted and 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 flutes shall terminate approximately 6" from the base plate connection to increase the product's fatigue life, to facilitate welding and the attachment of the decorative nut covers, 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. Each pole shall be provided with a decorative cap secured in place with set screws.

Fluting Process

The pole 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.

Luminaire Arm

The luminaire arm(s) shall be made from 2.375" diameter tubing with a minimum yield strength of 36,000 psi. The arm spans can be 4', 6' or 8' in length and will have a 1' upsweep rise above the top of the pole. The pole and arm simplex components shall be made of cast steel and welded to their respective members. The arm and pole castings shall mate together to allow the luminaire arm to be erected and held in place by gravity while being secured by a single 0.5" - 13 UNC high strength hex

head hub bolt. Twin luminaire arm applications are oriented at 180 degrees with respect to each other.

Scroll (Optional)

The decorative scroll is a formed steel channel attached to the side of the pole and to the underside of the arm with hex head bolts.

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. A decorative cast aluminum nut cover shall be provided for each anchor bolt. Each nut cover shall be attached to the pole with a 0.25" stainless steel, self tapping, hex head screw. Base plates shall conform to ASTM A36 and shall be integrally welded to the tubes with a telescopic welded joint.

Decorative Nut Covers and Pole Cap

The decorative nut covers shall be a sandcast alloy 356.2 and be attached to the pole using stainless steel, self tapping, screws. The decorative pole cap shall be made from the same alloy and attached to the pole using three set screws.

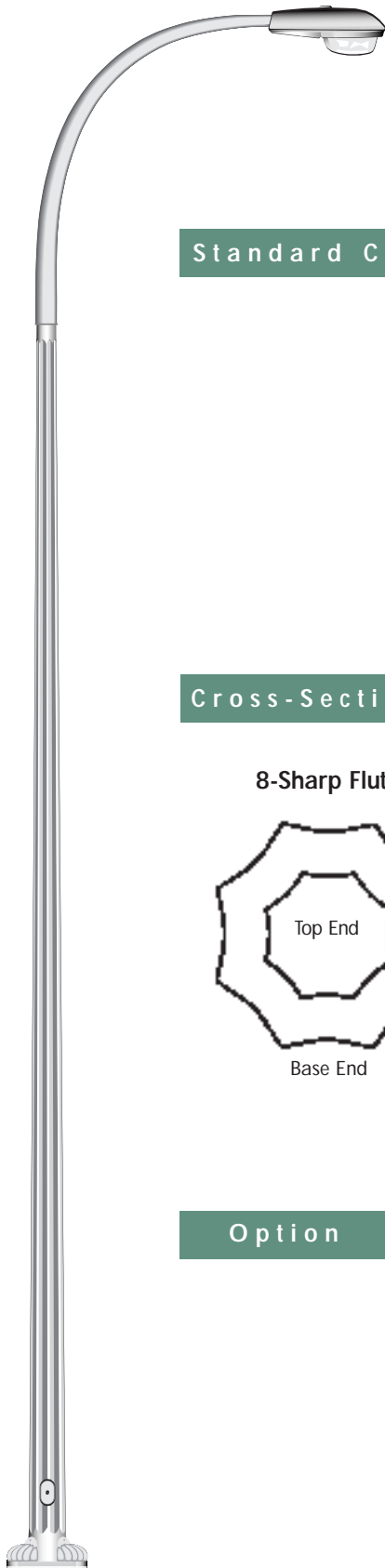
Finish

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 luminaire arm, pole, 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.

Fluted Steel Tapered with Davit Luminaire Arm



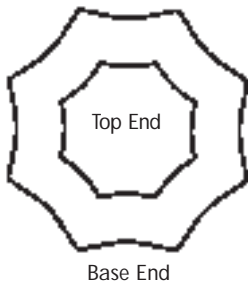
Standard Components

Cast Nut Cover

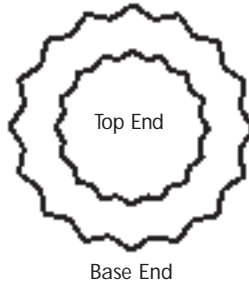


Cross-Sections (Choose One)

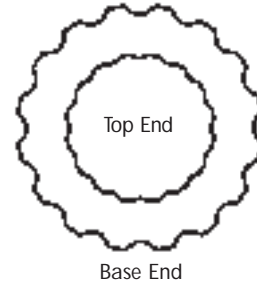
8-Sharp Flute



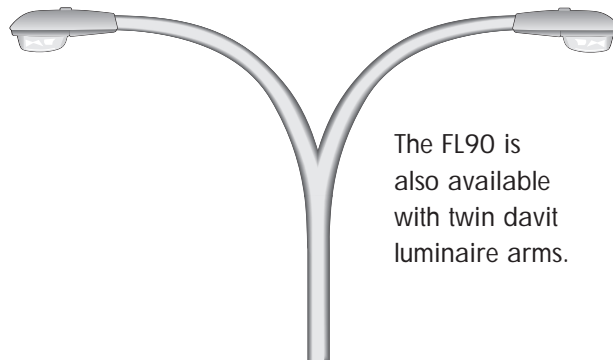
16-Sharp Flute



16-Flat Flute



Option



The FL90 is also available with twin davit luminaire arms.

FL90 Fluted Pole Specification

General

The FL90 fluted pole shall consist of a tapered pole, davit luminaire arm, anchor bolts, and base plate. The pole shall be fluted and shall have an 8 sharp, 16 flat, or 16 sharp 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 flutes shall terminate approximately 6" from the base plate connection to increase the product's fatigue life, to facilitate welding and the attachment of the decorative nut covers, 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.

Davit Luminaire Arm

Arms shall conform to ASTM A595 Grade A with a minimum yield strength of 55 ksi, have a round cross-section and a constant linear taper of 0.14 in/ft. The arm shall be smoothly bent to a 6'-3" inside radius. The twin arm assembly shall be telescopically slip fit over the pole and fastened together to assure arms will not rotate in high wind conditions. The minimum length of the telescopic slip splices shall be 1.5 times the inside diameter of the exposed end of the female section. The arm end shall have a standard pipe tenon conforming to ASTM A53 Grade B welded to a hot rolled mild carbon (HRMS) steel plate which, in turn, is welded to the arm; or be reformed to a constant outside diameter of 2.38" over an 8" length.

Fluting Process

The pole 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. A decorative cast aluminum nut cover shall be provided for each anchor bolt. Base plates shall conform to ASTM A36 and shall be integrally welded to the tubes with a telescopic welded joint.

Decorative Nut Covers

The decorative nut covers shall be a sandcast alloy 356.2 and be attached to the pole using 0.25" stainless steel, self tapping, hex head screws.

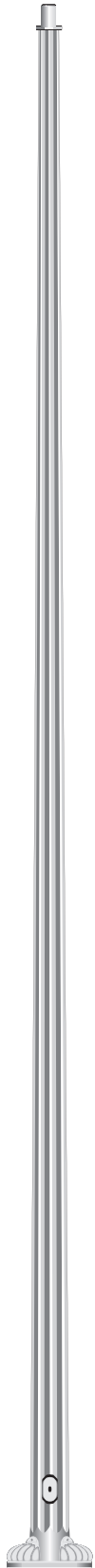
Finish

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.).

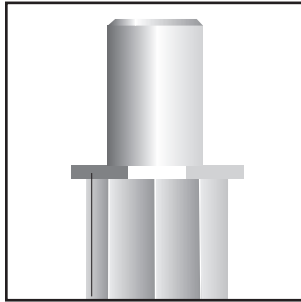
Calculations

Calculations, if required, shall include the pole, 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.

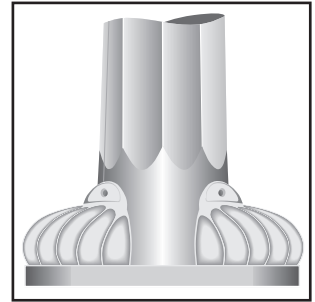
Fluted Steel Tapered with Tenon



Standard Components



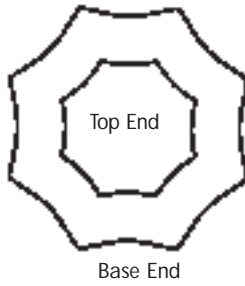
Tenon
 P2 = 2.375" OD X 4" L
 P4 = 4" OD X 6" L



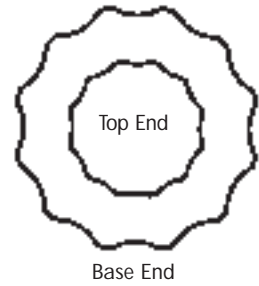
Cast Nut Cover

Cross-Sections (Choose One)

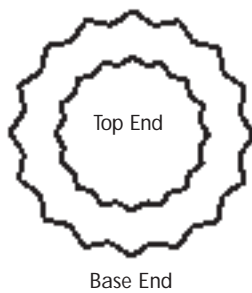
8-Sharp Flute



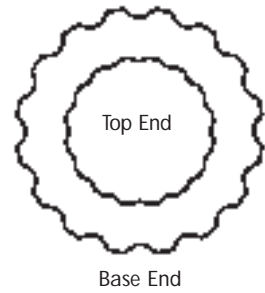
12-Flat Flute



16-Sharp Flute



16-Flat Flute



FL210 Fluted Pole Specification

General

The FL210 fluted pole shall consist of a tapered pole, pole top tenon, anchor bolts, and base plate. The pole shall be fluted and 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 flutes shall terminate approximately 6" from the base plate connection to increase the product's fatigue life, to facilitate welding and the attachment of the decorative nut covers, 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.

Fluting Process

The pole 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.

Pole Top Tenon

Pole top tenons are fabricated from structural quality hot rolled carbon steel with a guaranteed yield strength of

30,000 psi. A pole top plate and tenon of weldable grade hot rolled commercial quality carbon steel is circumferentially welded to the top of the pole shaft. This plate provides an internal weather resistant wire raceway into the pole top tenon. A (P2) tenon is 2.38" O.D. x 4" long and the (P4) is 4.00" O.D. x 6" long steel tubing.

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. A decorative cast aluminum nut cover shall be provided for each anchor bolt. Base plates shall conform to ASTM A36 and shall be integrally welded to the tubes with a telescopic welded joint.

Decorative Nut Covers

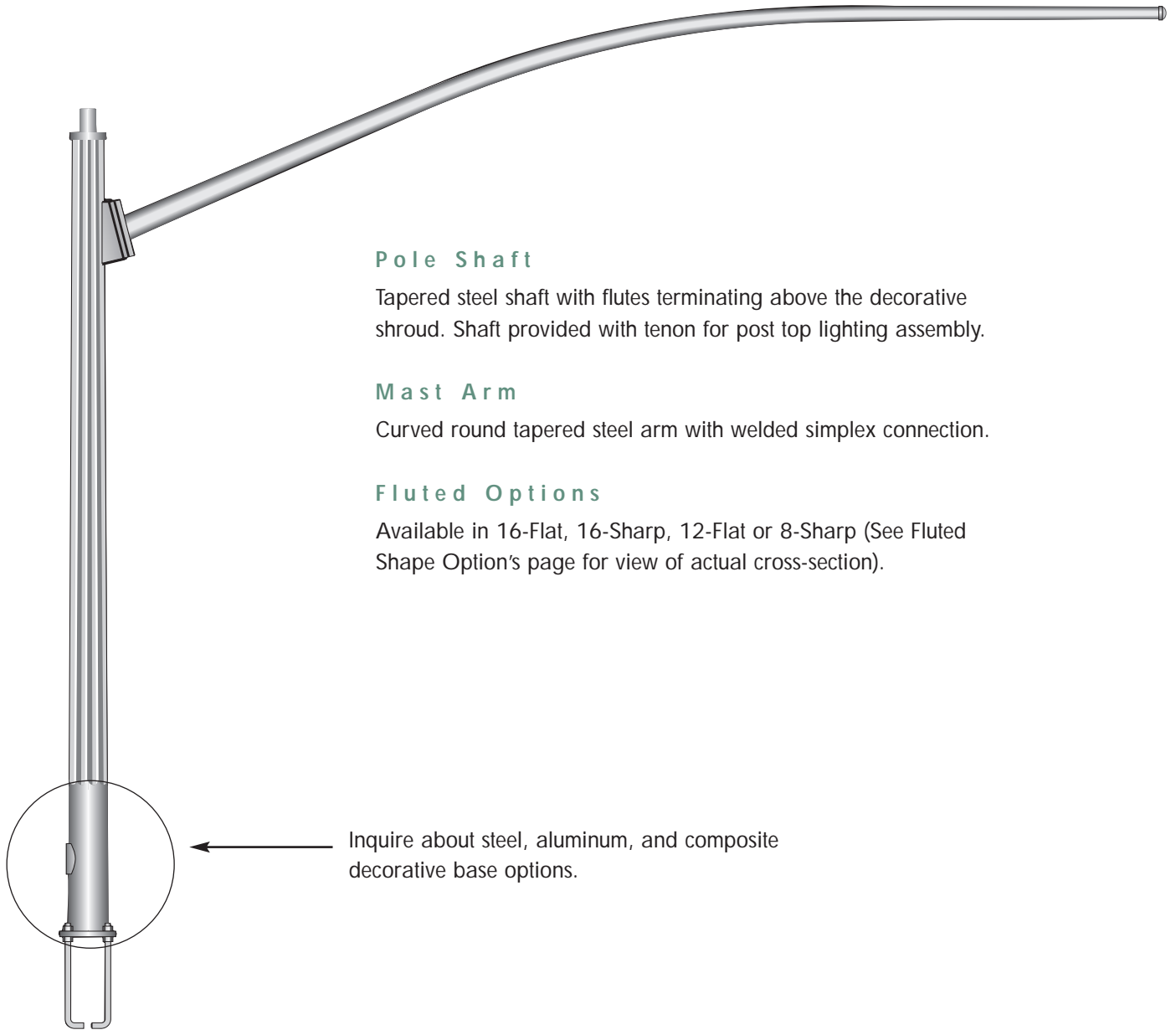
The decorative nut covers shall be a sandcast alloy 356.2 and be attached to the pole using 0.25" stainless steel, self tapping, hex head screws.

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 the pole, 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 pole base. Maximum pole loads, stresses and combined stress ratios (CSR) shall be provided for the specified loading combinations. 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.



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

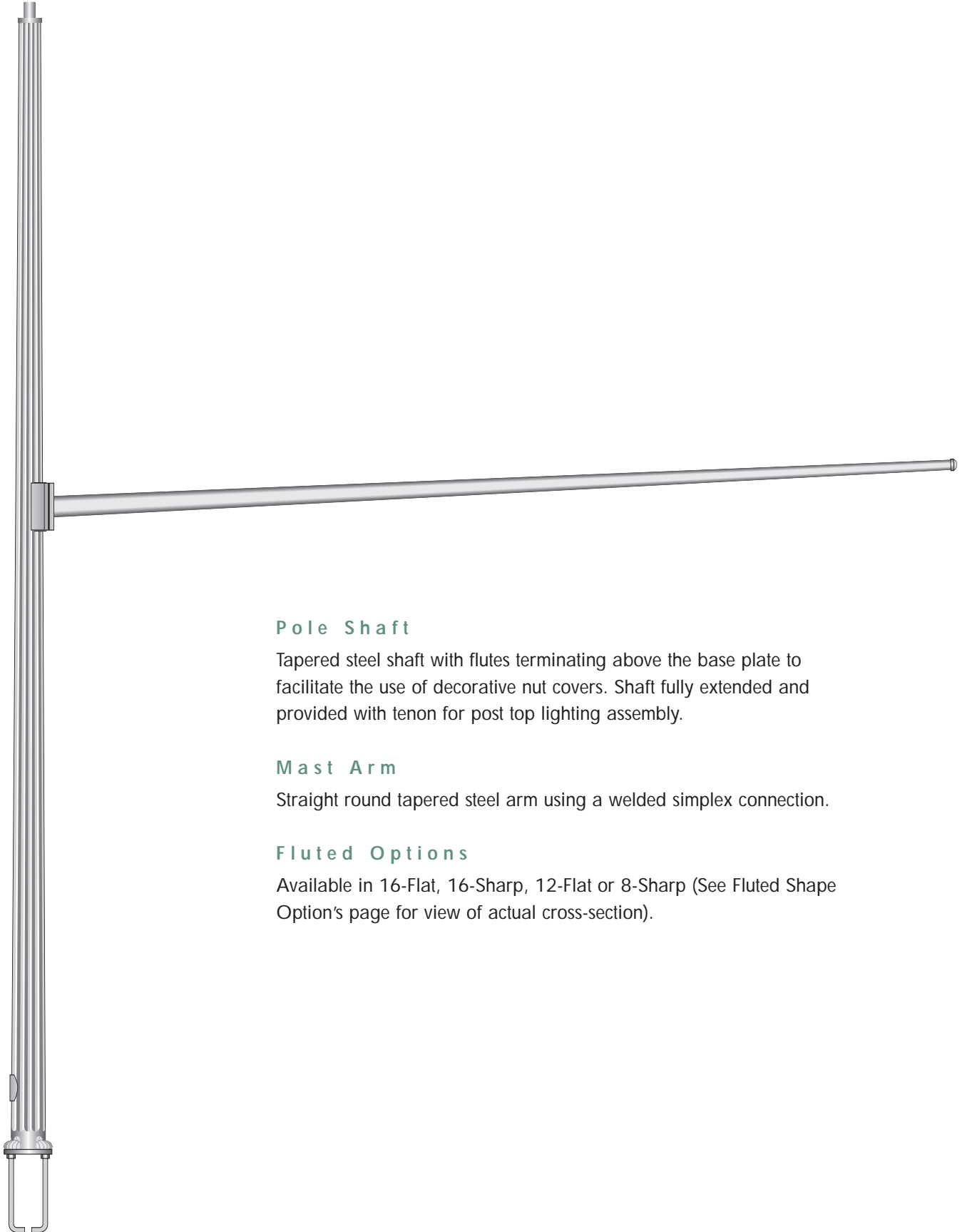
Anchor bolts shall conform to the requirements of AASHTO M314 Grade 55. The upper 12" of the bolts shall be hot dip galvanized per ASTM A153. Each anchor bolt shall be supplied with two hex nuts and two flat washers. The strength of the nuts shall equal or exceed the proof load of the bolts. Base plates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



Pole Shaft

Tapered steel shaft with flutes terminating above the base plate to facilitate the use of decorative nut covers. Shaft fully extended and provided with tenon for post top lighting assembly.

Mast Arm

Straight round tapered steel arm using a 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).

FLCB16 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 approximately 6" above the base plate connection. The termination of the flutes is to increase the product's fatigue life, to facilitate welding and the attachment of decorative nut covers, 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. Each pole shall be provided with a cap secured in place with set screws.

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 straight 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

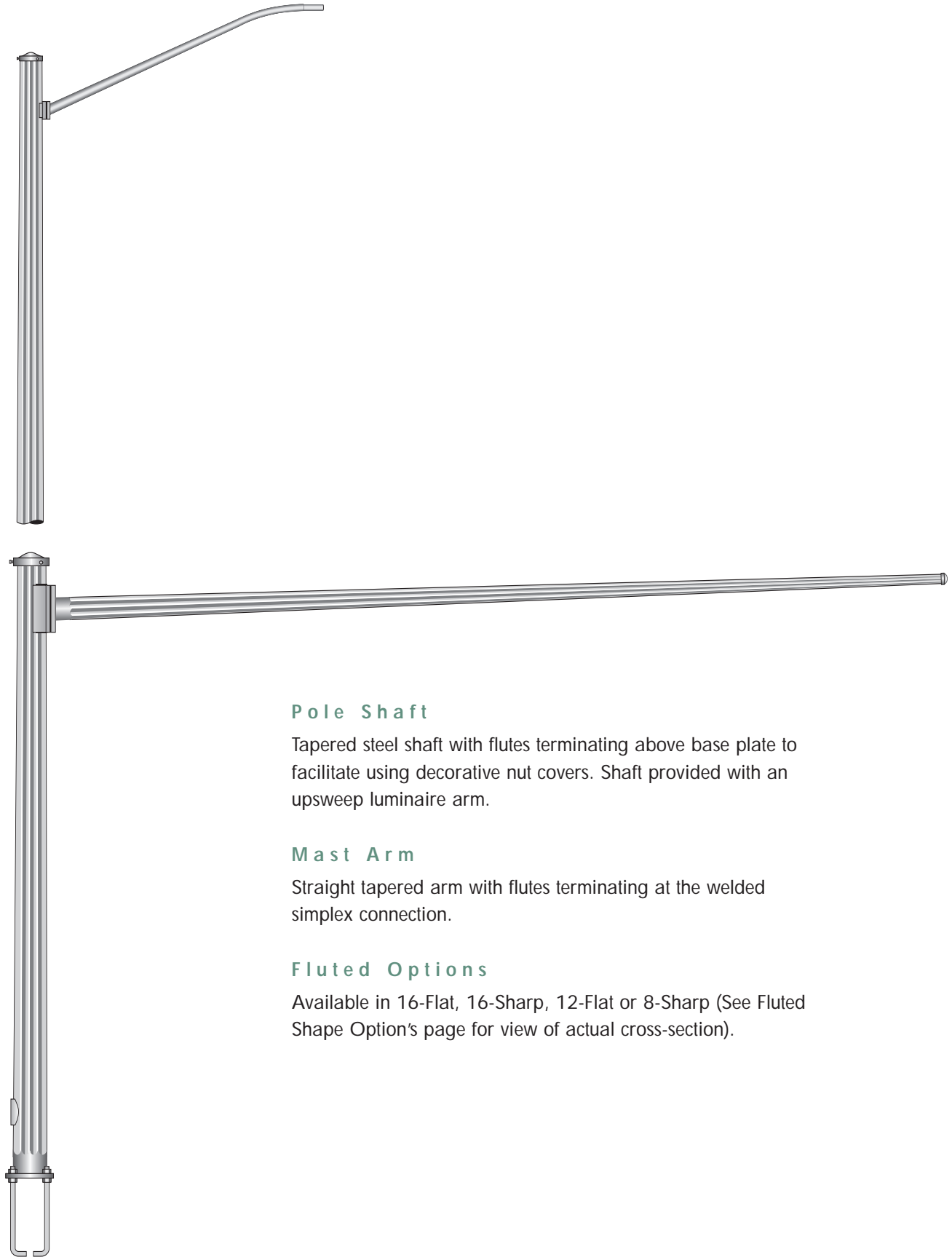
Anchor bolts shall conform to the requirements of AASHTO M314 Grade 55. The upper 12" of the bolts shall be hot dip galvanized per ASTM A153. Each anchor bolt shall be supplied with two hex nuts and two flat washers. The strength of the nuts shall equal or exceed the proof load of the bolts. A decorative cast aluminum nut cover shall be provided for each anchor bolt. Each nut cover shall be attached to the pole with a 0.25" stainless steel, self tapping, hex head screw. 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.



Pole Shaft

Tapered steel shaft with flutes terminating above base plate to facilitate using decorative nut covers. Shaft provided with an upsweep luminaire arm.

Mast Arm

Straight tapered arm with flutes terminating at the 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).

FLCB16 Arm Fluted Traffic Pole Specification

General

The fluted traffic pole shall consist of a tapered pole and traffic signal mast arm, luminaire 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 flutes shall terminate approximately 6" above the base plate connection. The termination of the flutes is to increase the product's fatigue life, to facilitate welding and the attachment of decorative nut covers, 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. Each pole shall be provided with a cap secured in place with set screws.

Mast Arm

Fluted 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. Mast arms up to 40' shall be manufactured and shipped in one piece. The fluted mast arm shall be straight as specified with flutes terminating approximately 3" from the large end to increase the product's fatigue life, to facilitate welding, and for aesthetic appeal. The arms shall be 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.

Luminaire Arm

The tapered luminaire arm shall be made from the same process as the shaft and mast arm. Each arm end shall be provided with a 2.38" slipfitter and be provided with the length and arm rise as specified. The arm shall be attached to the pole using a welded simplex connection and three 0.75" hex cap 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

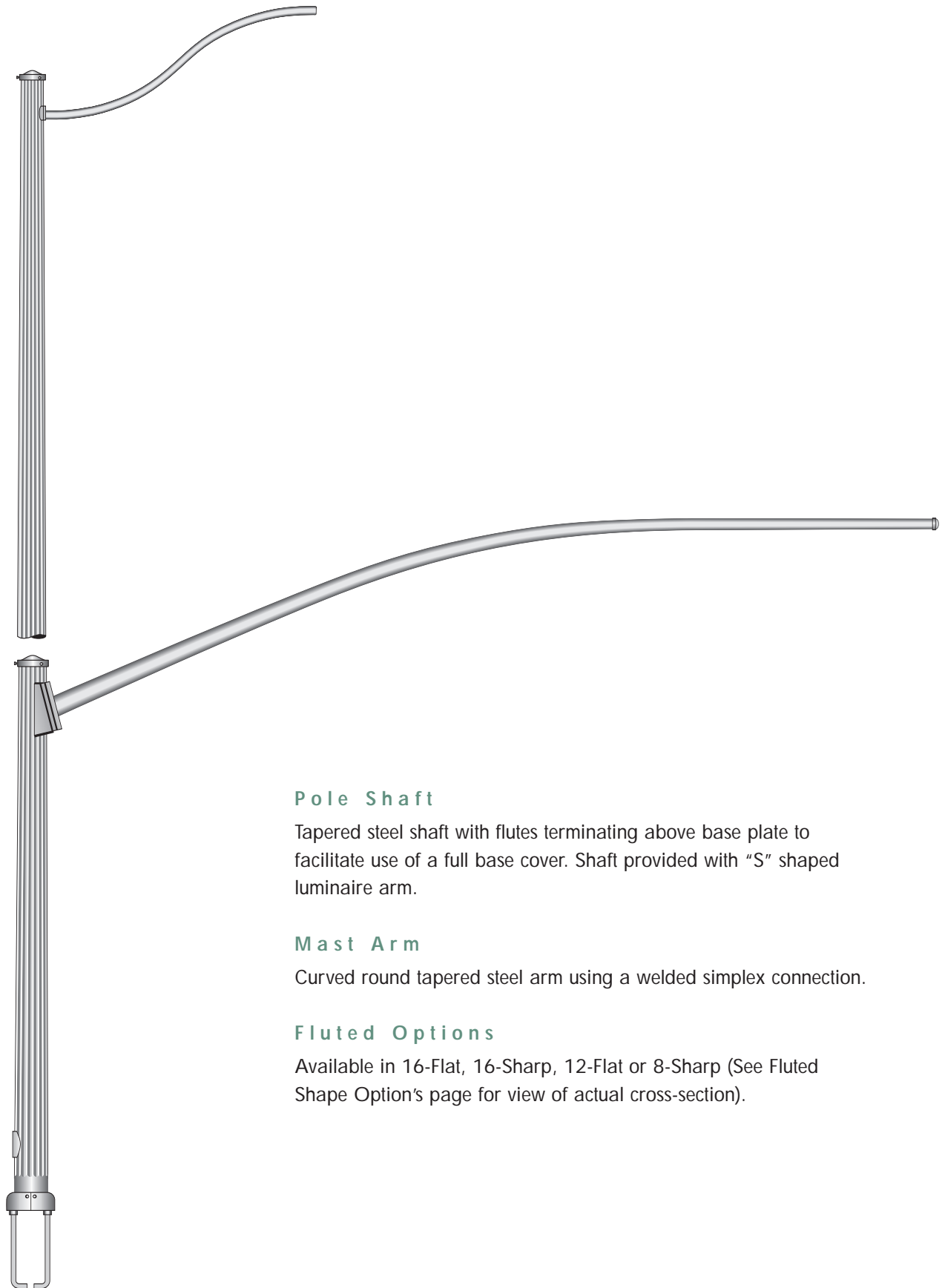
Anchor bolts shall conform to the requirements of AASHTO M314 Grade 55. The upper 12" of the bolts shall be hot dip galvanized per ASTM A153. Each anchor bolt shall be supplied with two hex nuts and two flat washers. The strength of the nuts shall equal or exceed the proof load of the bolts. A decorative cast aluminum nut cover shall be provided for each anchor bolt. Each nut cover shall be attached to the pole with a 0.25" stainless steel, self tapping, hex head cap screw. 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, luminaire 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.



Pole Shaft

Tapered steel shaft with flutes terminating above base plate to facilitate use of a full base cover. Shaft provided with "S" shaped luminaire arm.

Mast Arm

Curved round tapered steel arm using a 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).

FLCB46 Arm Fluted Traffic Pole Specification

General

The fluted traffic pole shall consist of a tapered pole and traffic signal mast arm, luminaire 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 flutes shall terminate 6" from the base plate connection and approximately 1.5" above the steel full base cover. 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. Top of each pole shall be provided with a cap secured in place with set screws.

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.

Luminaire Arm

The luminaire arm shall be made from 2.375" diameter tubing with a minimum yield strength of 36,000 psi. Arm span length is per the contract documents and will have a 2.5' upsweep rise above the top of the pole. The arm shall be formed to match the detail as shown. The pole and arm simplex components shall be made of cast steel and welded to their respective members. The castings shall mate together to allow the luminaire arm to be erected and held in place by gravity while being secured in place by two 0.5" - 13 UNC high strength, hex head, hub bolts.

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. A steel 2-pc. full base cover shall be provided with each pole. Base plates shall conform to ASTM A36 and shall be integrally welded to the tubes with a telescopic welded joint.

Finish

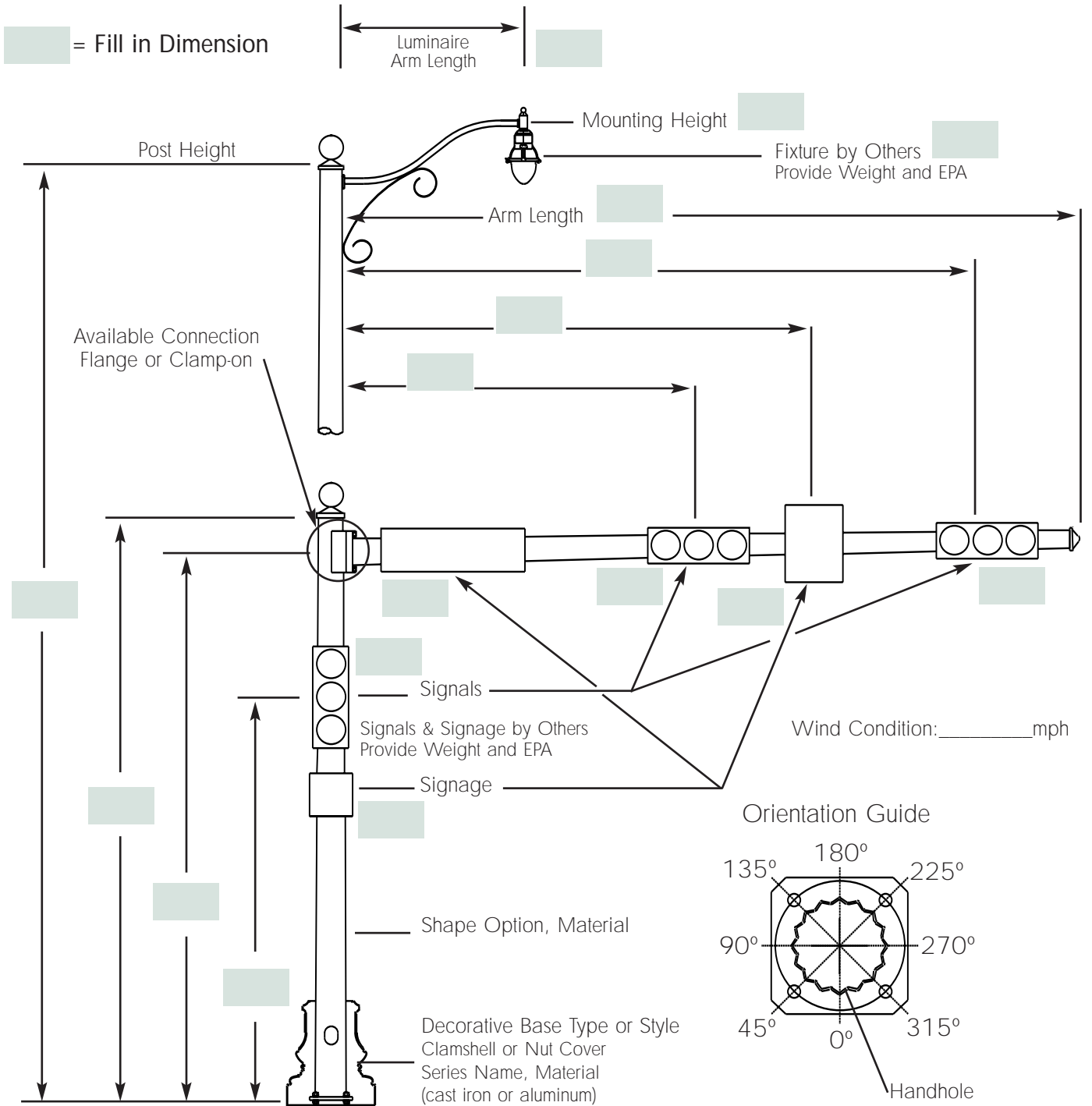
The finish shall be hot dip galvanized to ASTM A123 (in accordance with Valmont's F1 spec.), painted using TGIC polyester powder (in accordance with Valmont's F264 spec.), or provided with a combination coating using a TGIC polyester powder directly over hot dip galvanized (in accordance with Valmont's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

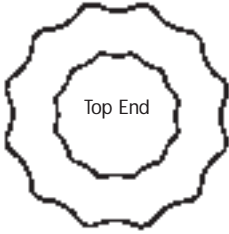
Calculations

Calculations, if required, shall include pole, mast arm, luminaire 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.

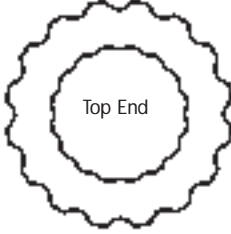
The following information is required to provide complete specifications for your project. This includes the gauge and diameter of the post shaft, the size of the base (determined by the shaft dia.) and the anchor bolt size. Please fill in the boxes below.

- Local Structural Code
- Local Wind Condition
- Shaft Type (shape)
- Base Series
- Finish Type (galv., powdercoat, powdercoat over galv.)
- Equipment Mounted to Post
 - Width X Length (projected area)
 - Weight
 - Location (height and orientation)
 - Signal EPA to be calculated with backplates, if required.

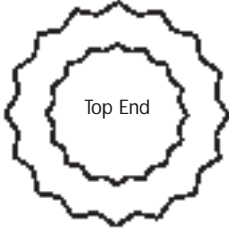




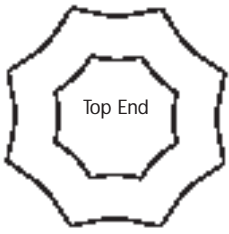
Base End
12-Flat Flute



Base End
16-Flat Flute



Base End
16-Sharp Flute



Base End
8-Sharp Flute



Base End
8-Gear Tooth Flute





Valley, Nebraska, USA

Farmington, Minnesota, USA

Salem, Oregon, USA

Charmeil, France

Rive-De-Gier, France

Berrechid, Morocco

Commerce City, Colorado, USA

Elkhart, Indiana, USA

Selbyville, Delaware, USA

Siedlce, Poland

Maarheeze, the Netherlands

Chesterfield-Derbyshire, UK

Brenham, Texas, USA

Plymouth, Indiana, USA

St. Julie, Quebec, Canada

Gelsenkirchen, Germany

Shanghai, China

valmont 
STRUCTURES

Conserving Resources. Improving Life.

Valmont Industries, Inc.

7002 N. 288th Street, P.O. Box 358

Valley, Nebraska 68064 USA

402.359.2201 ~ 800.825.6668

www.valmont.com