SECTION 107516 - GROUND-SET FLAGPOLES

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
   * + 1. SUMMARY
          1. Section includes ground-set flagpoles made from [**aluminum**] [**copper alloy (bronze)**] [**stainless steel**] [**steel**] [**and**] [**fiberglass**].

Retain "State-Furnished Material" Paragraph below if State is furnishing flags.

* + - * 1. State-Furnished Material: Flags.
      1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Product Data: For each type of product.

Include construction details, material descriptions, dimensions of individual components and profiles, operating characteristics, fittings, accessories, and finishes for flagpoles.

Retain "Shop Drawings" Paragraph below if required. Most of below is normally covered in Product Data if not a customized installation.

* + - * 1. Shop Drawings: For flagpoles.

Include plans, elevations, and attachment details. Show general arrangement, jointing, fittings, accessories, grounding, anchoring, and support.

Include section, and details of foundation system.

Retain "Samples for Verification" Paragraph below if using special finishes.

* + - * 1. Samples for Verification: For each type of exposed finish, in manufacturer's standard sizes.

Retain "Delegated-Design Submittal" Paragraph below if design services have been delegated to Contractor.

* + - * 1. Delegated-Design Submittal: For flagpoles.
      1. CLOSEOUT SUBMITTALS
         1. Operation and Maintenance Data: For flagpoles to include in operation and maintenance manuals.
      2. DELIVERY, STORAGE, AND HANDLING
         1. Spiral wrap flagpoles with heavy paper and enclose in a hard fiber tube or other protective container.

1. PRODUCTS

See Editing Instruction No. 1 in the Evaluations for cautions about named manufacturers and products.

* + - 1. MANUFACTURERS
         1. Source Limitations: Obtain flagpoles as complete units, including fittings, accessories, bases, and anchorage devices, from single source from single manufacturer.
      2. PERFORMANCE REQUIREMENTS

Retain "Delegated Design" Paragraph below if Contractor is required to assume responsibility for design.

* + - * 1. Delegated Design: Engage a qualified Professional Engineer, licensed and registered to practice in the State of New York, to design flagpole assemblies.

Retain "Seismic Performance" Paragraph below for projects requiring seismic design. Delete Paragraph if performance requirements are indicated on Drawings. Model building codes and ASCE/SEI 7 establish criteria for buildings subject to earthquake motions. Coordinate requirements with structural engineer.

* + - * 1. Seismic Performance: Flagpole assemblies shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
        2. Structural Performance: Flagpole assemblies, including anchorages and supports, shall withstand design loads indicated within limits and under conditions indicated.

Consult a structural engineer experienced in engineering flagpole assemblies of type indicated to quantify design loads applicable to Project. Verify compliance with codes; below is based on the IBC. See Evaluations.

Wind Loads: Determine according to NAAMM FP 1001. Basic wind speed for Project location is <**Insert wind speed**>.

Retain one of two options in Subparagraph below. Polyester flags exert approximately 40 percent higher loads on flagpoles than do nylon or cotton flags of same size. Consider future load requirements and liability. Revise if required to suit Project.

Base flagpole design on polyester flags of maximum standard size suitable for use with flagpole or flag size indicated, whichever is more stringent.

* + - 1. ALUMINUM FLAGPOLES
         1. Aluminum Flagpoles: Cone-tapered flagpoles fabricated from seamless extruded tubing complying with ASTM B241, Alloy 6063, with a minimum wall thickness of 3/16 inch.

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Acme/Lingo Flagpoles, LLC.

Ewing Flagpoles.

Pole-Tech Company Inc.

Approved equivalent.

Usually retain one option in "Exposed Height" Paragraph below if only one flagpole height is required. For complex flagpoles, such as nautical types, indicate flagpoles on Drawings and delete Paragraph.

Flagpoles over 30 feet are usually shipped in multiple sections.

* + - * 1. Exposed Height: [**20 feet**] [**25 feet**] [**30 feet**] [**35 feet**] [**40 feet**] [**45 feet**] [**50 feet**] [**60 feet**] [**70 feet**] [**80 feet**].
        2. Construct flagpoles in one piece if possible. If more than one piece is necessary, comply with the following:

Fabricate shop and field joints without using fasteners, screw collars, or lead calking.

Provide flush hairline joints using self-aligning, snug-fitting, internal sleeves.

Retain mounting types in remaining Paragraphs below to suit flagpole installation.

* + - * 1. Metal Foundation Tube: Manufacturer's standard corrugated-steel foundation tube, 0.060-inch (16 ga) wall thickness with 3/16-inch steel bottom plate and support plate; 3/4-inch- diameter, steel ground spike; and steel centering wedges welded together. Galvanize foundation tube after assembly. Furnish loose hardwood wedges at top of foundation tube for plumbing pole.

Revise "Flashing Collar" Subparagraph below if another base or finish is required.

Flashing Collar: Same material and finish as flagpole.

"Sleeve for Aluminum Flagpole" Paragraph below applies primarily to aluminum flagpoles 30 to 40 feet or less in height.

* + - * 1. Sleeve for Aluminum Flagpole: Fiberglass or PVC pipe foundation sleeve, made to fit flagpole, for casting into concrete foundation.

Revise "Flashing Collar" Subparagraph below if another base or finish is required.

Flashing Collar: Same material and finish as flagpole.

* + - * 1. Cast-Metal Shoe Base: Made from aluminum with same finish and color as flagpoles for anchor-bolt mounting; furnish with anchor bolts.

Furnish ground spike.

"Hinged Baseplate" Paragraph below is for aluminum flagpoles 30 to 40 feet or less in height.

* + - * 1. Hinged Baseplate: Cast-metal tilting hinged base and anchor plate joined by permanently secured pivot rod. Furnish with stainless-steel screws for securing tilting base to anchor plate when not tilted; furnish with anchor bolts.

Finish: Same as flagpole.

Furnish aluminum base or aluminum flashing collar finished to match flagpole.

Furnish ground spike.

"Pivoting Tilt Base" Paragraph below is for tilting aluminum flagpoles.

* + - * 1. Pivoting Tilt Base: Steel baseplate with channel or rectangular tube uprights, pivot bolt, and locking device for tilting flagpole. Furnish tilting flagpole with steel counterweight box and weights, or furnish with internal counterweight. Furnish base with anchor bolts.

Finish: Same as flagpole.

Furnish ground spike.

* + - 1. COPPER-ALLOY (BRONZE) FLAGPOLES
         1. Copper-Alloy (Bronze) Flagpoles: Cone-tapered flagpoles fabricated from seamless pipe or tube complying with ASTM B43 or ASTM B135, Alloy UNS C23000 (red brass, 85 percent copper).

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Acme/Lingo Flagpoles, LLC.

Ewing Flagpoles.

Pole-Tech Company Inc.

Approved equivalent.

Usually retain one option in "Exposed Height" Paragraph below if only one flagpole height is required. For complex flagpoles, such as nautical types, indicate flagpoles on Drawings and delete Paragraph.

Flagpoles over 30 feet are usually shipped in multiple sections.

* + - * 1. Exposed Height: [**20 feet**] [**25 feet**] [**30 feet**] [**35 feet**] [**40 feet**] [**45 feet**] [**50 feet**] [**60 feet**] [**70 feet**] [**80 feet**].
        2. Construct flagpoles in one piece if possible. If more than one piece is necessary, comply with the following:

Fabricate shop and field joints without using fasteners, screw collars, or lead calking.

Provide flush hairline joints using self-aligning, snug-fitting, internal sleeves.

Retain mounting types in "Metal Foundation Tube" and "Cast-Metal Shoe Base" Paragraphs below to suit flagpole installation.

* + - * 1. Metal Foundation Tube: Manufacturer's standard corrugated-steel foundation tube, 0.060-inch (16 ga) wall thickness with 3/16-inch steel bottom plate and support plate; 3/4-inch- diameter, steel ground spike; and steel centering wedges welded together. Galvanize foundation tube after assembly. Furnish loose hardwood wedges at top of foundation tube for plumbing pole.

Revise "Flashing Collar" Subparagraph below if another base or finish is required.

Flashing Collar: Same material and finish as flagpole.

* + - * 1. Cast-Metal Shoe Base: Made from steel [**with finish matching flagpole**] <**Insert finish and color**> for anchor-bolt mounting; furnish with anchor bolts.

Furnish ground spike.

* + - 1. STAINLESS-STEEL FLAGPOLES

Retain "Type 316L" option in "Stainless-Steel Flagpoles" Paragraph below if increased corrosion resistance is required for marine environment.

* + - * 1. Stainless-Steel Flagpoles: Cone-tapered flagpoles fabricated from pipe, tube, or plate complying with ASTM A312, ASTM A269, or ASTM A666, [**Type 304**] [**Type 316L**].

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Acme/Lingo Flagpoles, LLC.

Ewing Flagpoles.

Pole-Tech Company Inc.

Approved equivalent.

Usually retain one option in "Exposed Height" Paragraph below if only one flagpole height is required. For complex flagpoles, such as nautical types, indicate flagpoles on Drawings and delete Paragraph.

Flagpoles over 30 feet are usually shipped in multiple sections.

* + - * 1. Exposed Height: [**20 feet**] [**25 feet**] [**30 feet**] [**35 feet**] [**40 feet**] [**45 feet**] [**50 feet**] [**60 feet**] [**70 feet**] [**80 feet**].
        2. Construct flagpoles in one piece if possible. If more than one piece is necessary, comply with the following:

Fabricate shop and field joints without using fasteners, screw collars, or lead calking.

Provide flush hairline joints using self-aligning, snug-fitting, internal sleeves.

Retain mounting types in "Metal Foundation Tube" and "Cast-Metal Shoe Base" Paragraphs below to suit flagpole installation.

* + - * 1. Metal Foundation Tube: Manufacturer's standard corrugated-steel foundation tube, 0.060-inch (16 ga) wall thickness with 3/16-inch steel bottom plate and support plate; 3/4-inch- diameter, steel ground spike; and steel centering wedges welded together. Galvanize foundation tube after assembly. Furnish loose hardwood wedges at top of foundation tube for plumbing pole.

Revise "Flashing Collar" Subparagraph below if another base or finish is required.

Flashing Collar: Same material and finish as flagpole.

Revise "Cast-Metal Shoe Base" Paragraph below to specify welded-on baseplate if required.

* + - * 1. Cast-Metal Shoe Base: Made from steel [**with finish matching flagpole**] <**Insert finish and color**> for anchor-bolt mounting; furnish with anchor bolts.

Furnish ground spike.

* + - 1. STEEL FLAGPOLES
         1. Steel Flagpoles: Cone-tapered flagpoles fabricated from standard-weight, seamless steel pipe complying with ASTM A53, Type S, Grade B, or steel tube complying with ASTM A513.

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Acme/Lingo Flagpoles, LLC.

Ewing Flagpoles.

Pole-Tech Company Inc.

Approved equivalent.

Usually retain one option in "Exposed Height" Paragraph below if only one flagpole height is required. For complex flagpoles, such as nautical types, indicate flagpoles on Drawings and delete Paragraph.

Flagpoles over 30 feet are usually shipped in multiple sections.

* + - * 1. Exposed Height: [**20 feet**] [**25 feet**] [**30 feet**] [**35 feet**] [**40 feet**] [**45 feet**] [**50 feet**] [**60 feet**] [**70 feet**] [**80 feet**].
        2. Construct flagpoles in one piece if possible. If more than one piece is necessary, comply with the following:

Fabricate shop and field joints without using fasteners, screw collars, or lead calking.

Retain first Subparagraph below for tapered flagpoles; retain second for stepped-sectional flagpoles.

Provide flush hairline joints using self-aligning, snug-fitting, internal sleeves.

Provide self-aligning, snug-fitting joints.

Retain mounting types in "Metal Foundation Tube" and "Cast-Metal Shoe Base" Paragraphs below to suit flagpole installation.

* + - * 1. Metal Foundation Tube: Manufacturer's standard corrugated-steel foundation tube, 0.060-inch (16 ga) wall thickness with 3/16-inch steel bottom plate and support plate; 3/4-inch- diameter, steel ground spike; and steel centering wedges welded together. Galvanize foundation tube after assembly. Furnish loose hardwood wedges at top of foundation tube for plumbing pole.

Revise "Flashing Collar" Subparagraph below if another base or finish is required.

Flashing Collar: Same material and finish as flagpole.

Retain Subparagraph below only if flashing collar is not provided.

Furnish steel ground protectors extending 12 inches aboveground and 6 inches belowground for steel flagpoles where flashing collars are not provided.

Revise "Cast-Metal Shoe Base" Paragraph below to specify welded-on baseplate if required.

* + - * 1. Cast-Metal Shoe Base: Made from steel [**with finish matching flagpole**] <**Insert finish and color**> for anchor-bolt mounting; furnish with anchor bolts.

Retain Subparagraph below for metal flagpoles or fiberglass flagpoles with metal halyards.

Furnish ground spike.

* + - 1. FIBERGLASS FLAGPOLES
         1. Fiberglass Flagpoles: Cone-tapered flagpoles fabricated from polyester resin reinforced with woven glass-fiber roving with 75 percent of glass fibers parallel to length of flagpole.

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Atlantic Fiberglass Products, Inc.

Ewing Flagpoles.

Pole-Tech Company Inc.

Approved equivalent.

Usually retain one option in "Exposed Height" Paragraph below if only one flagpole height is required. For complex flagpoles, such as nautical types, indicate flagpoles on Drawings and delete Paragraph.

Flagpoles over 30 feet are usually shipped in multiple sections.

* + - * 1. Exposed Height: [**20 feet**] [**25 feet**] [**30 feet**] [**35 feet**] [**40 feet**] [**45 feet**] [**50 feet**] [**60 feet**] [**70 feet**] [**80 feet**].
        2. Construct flagpoles in one piece if possible. If more than one piece is necessary, comply with the following:

Fabricate shop and field joints without using fasteners, screw collars, or lead calking.

Provide flush hairline joints using self-aligning, snug-fitting, internal sleeves.

Retain mounting types in "Sleeve for Fiberglass Flagpole," "Cast-Metal Shoe Base," and "Hinged Baseplate" Paragraphs below to suit flagpole installation.

"Sleeve for Fiberglass Flagpole" Paragraph below applies to fiberglass flagpoles of all heights.

* + - * 1. Sleeve for Fiberglass Flagpole: Fiberglass or PVC pipe foundation sleeve, made to fit flagpole, for casting into concrete foundation.

Revise "Flashing Collar" Subparagraph below if another base or finish is required.

Flashing Collar: Same material and finish as flagpole.

Fiberglass flagpoles typically use cast-aluminum shoe bases; insert the finish and color for fiberglass flagpoles in "Cast-Metal Shoe Base" Paragraph below.

* + - * 1. Cast-Metal Shoe Base: Made from aluminum [**with finish matching flagpole**] <**Insert finish and color**> for anchor-bolt mounting; furnish with anchor bolts.

Retain Subparagraph below for fiberglass flagpoles with metal halyards.

Furnish ground spike.

"Hinged Baseplate" Paragraph below is for fiberglass flagpoles 30 to 40 feet or less in height.

* + - * 1. Hinged Baseplate: Cast-metal tilting hinged base and anchor plate joined by permanently secured pivot rod. Furnish with stainless-steel screws for securing tilting base to anchor plate when not tilted; furnish with anchor bolts.

Finish: Same as flagpole.

Furnish aluminum base or aluminum flashing collar finished to match flagpole.

Retain Subparagraph below for metal flagpoles or fiberglass flagpoles with metal halyards.

Furnish ground spike.

* + - 1. FITTINGS

Use manufacturers' catalogs or product data to insert series, type, model, and designations of other characteristics.

Revise fittings in this article to suit Project. Items listed are typical with most manufacturers; other fittings are also available.

* + - * 1. Finial Ball: Flush-seam ball, sized as indicated or, if not indicated, to match flagpole-butt diameter.

Retain one or more of four Subparagraphs below. If retaining more than one, indicate which flagpole type applies to each Subparagraph.

0.063-inch spun aluminum[**, finished to match flagpole**][**with gold anodic finish**].

20-oz. copper with 23-karat, gold-leaf finish.

Spun stainless steel, finished to match flagpole.

Spun copper alloy, finished to match flagpole.

* + - * 1. Finial Eagle: Sized [**as indicated**] [**as standard with manufacturer for flagpole size indicated**].

Retain one of two Subparagraphs below.

Cast aluminum[**, finished to match flagpole**][**with gold anodic finish**].

20-oz. copper with 23-karat, gold-leaf finish.

Retain one of three remaining Paragraphs below. Revise if another finish is required.

* + - * 1. Internal Halyard, Winch System: Manually operated winch with control stop device and removable handle, stainless-steel cable halyard, and concealed revolving truck assembly with plastic-coated counterweight and sling. Furnish flush access door secured with cylinder lock. Finish truck assembly to match flagpole.

Covers in "Halyard Flag Snaps" Subparagraph below reduce noise of metal snaps hitting flagpole.

Halyard Flag Snaps: [**Chromium-plated bronze**] [**Stainless-steel**] [**Bronze**] [**Nylon**] swivel snap hooks[**with neoprene or vinyl covers**]. Furnish two per halyard.

Size flag according to flagpole height, see manufacturers’ data sheets for flag size options.

* + - * 1. Flags: Nylon.

United States Flag: 5x8 feet.

New York State Flag: 5x8 feet.

* + - 1. MISCELLANEOUS MATERIALS

Retain "Nonshrink, Nonmetallic Grout" Paragraph below for baseplate-mounted flagpoles.

* + - * 1. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107.

Retain "Drainage Material" Paragraph below for ground-set flagpoles with foundations.

* + - * 1. Drainage Material: Crushed stone, or crushed or uncrushed gravel; coarse aggregate.

Retain "Sand" and "Elastomeric Joint Sealant" Paragraphs below for ground-set, foundation-tube-mounted flagpoles.

* + - * 1. Sand: ASTM C33, fine aggregate.
        2. Elastomeric Joint Sealant: Single-component nonsag urethane joint sealant complying with requirements in Section 079200 "Joint Sealants."
        3. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187.
      1. ALUMINUM FINISHES

Retain finishes in Paragraphs below to suit Project. If retaining more than one, indicate location of each on Drawings or by inserts.

* + - * 1. Natural Satin Finish: AA-M32, fine, directional, medium satin polish; buff complying with AA-M20; seal aluminum surfaces with clear, hard-coat wax.

Retain one of two options in "Clear Anodic Finish" Paragraph below. Verify availability with manufacturers. AA-M12C22A41 = Architectural Class I (0.4 to 0.7 mil coating) , AA-M12C22A31 = Architectural Class II (≥ 0.7 mil coating), varies by manufacturer.

* + - * 1. Clear Anodic Finish: AAMA 611, [**AA-M12C22A41**] [**AA-M12C22A31**].

Retain one of two options in "Color Anodic Finish" Paragraph below. Verify availability with manufacturers. AA-M12C22A42/A44 = Architectural Class I (0.4 to 0.7 mil coating), AA-M12C22A32/A34 = Architectural Class II (≥ 0.7 mil coating), varies by manufacturer.

* + - * 1. Color Anodic Finish: AAMA 611, [**AA-M12C22A42/A44**] [**AA-M12C22A32/A34**].

Options in first "Color" Subparagraph below are examples only and may vary in color range and availability among manufacturers. Retain one or delete all and retain one of two options in second "Color" Subparagraph below.

Color: [**Light bronze**] [**Medium bronze**] [**Dark bronze**] [**Black**].

Color: [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from full range of industry colors and color densities**].

Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

"Gold Anodic Finish" Paragraph below is generally available only on flagpoles 20 feet or less in height.

* + - * 1. Gold Anodic Finish: AAMA 611, AA-M32C22A43; gold color.

"Baked-Enamel or Powder-Coat Finish" Paragraph below references AAMA standard for pigmented organic coating on extrusions and panels.

* + - * 1. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

Color and Gloss: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

* + - * 1. High-Performance Organic Finish: Two-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

Color and Gloss: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

* + - 1. COPPER-ALLOY FINISHES
         1. Hand-Rubbed Finish, Lacquered: Directionally textured, fine satin, mechanical finish coated with lacquer specified for copper alloys, applied by air spray in two coats per manufacturer's written instructions, with interim drying, to a total thickness of 1 mil.
         2. Statuary Conversion Coating over Satin Finish: Directionally textured, fine satin, mechanical finish with sulfide conversion coating.

"Color" Subparagraph below is preferred method of specifying because of variations in color.

Color: Match Director’s Representative's sample.

Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

* + - 1. STAINLESS-STEEL FINISHES
         1. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
         2. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.

When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

Directional Satin Finish: No. 4.

* + - 1. STEEL FINISHES
         1. Flagpole Interior Finish: Apply one coat of bituminous paint on interior of flagpole.
         2. Galvanized Finish: Hot-dip galvanize after fabrication to comply with ASTM A123.
         3. Polyurethane Enamel Finish: Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning" or SSPC-SP 8, "Pickling". After cleaning, apply manufacturer's standard primer and two-coat, high-gloss, high-build, polyurethane-enamel finish.

Color: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

* + - * 1. Baked-Enamel or Powder-Coat Finish: Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning" or SSPC-SP 8, "Pickling". After cleaning, apply a conversion coating suited to the organic coating to be applied over it. After cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat to a minimum dry film thickness of 2 mils.

Color and Gloss: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

For exact finish, insert names of coating manufacturers and products.

* + - 1. FIBERGLASS FINISHES
         1. Fiberglass: UV-light stable, hard, high-gloss gel coat or high-gloss, high-build polyurethane or polyester coating.

Color: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**].

1. EXECUTION
   * + 1. PREPARATION

Retain first Paragraph below for flagpoles set in foundation tubes.

* + - * 1. Prepare uncoated metal flagpoles that are set in foundation tubes by painting below-grade portions with a heavy coat of bituminous paint.
        2. Foundation Excavation: Excavate to neat clean lines in undisturbed soil. Remove loose soil and foreign matter from excavation and moisten earth before placing concrete. Place and compact drainage material at excavation bottom.
        3. Provide forms where required due to unstable soil conditions and for perimeter of flagpole base at grade. Secure and brace forms to prevent displacement during concreting.
        4. Foundation Tube: Place foundation tube, center, and brace to prevent displacement during concreting. Place concrete. Plumb and level foundation tube and allow concrete to cure.

Retain "Sleeves" Paragraph below for flagpoles that are mounted in sleeves set in concrete foundations.

* + - * 1. Sleeves: Locate and secure sleeves in forms by bracing to reinforcement and forms.

Retain "Anchor Bolts" Paragraph below for flagpoles that are mounted on baseplates anchored to concrete foundations.

* + - * 1. Anchor Bolts: Locate and secure anchor bolts in forms with templates and by tying to reinforcement.
        2. Place concrete, as specified in Section 033000 "Cast-in-Place Concrete." Compact concrete in place by using vibrators. Moist-cure exposed concrete for no fewer than seven days or use nonstaining curing compound.
        3. Trowel exposed concrete surfaces to a smooth, dense finish, free of trowel marks, and uniform in texture and appearance. Provide positive slope for water runoff to perimeter of concrete base.
      1. FLAGPOLE INSTALLATION

Insert specific information in this article to suit Project if required.

* + - * 1. General: Install flagpoles where indicated and according to Shop Drawings and manufacturer's written instructions.
        2. Foundation Tube: Place flagpole in tube, seated on bottom plate between steel centering wedges, and install hardwood wedges to secure flagpole in place. Place and compact sand in foundation tube and remove hardwood wedges. Seal top of foundation tube with a 2-inch layer of elastomeric joint sealant and cover with flashing collar.
        3. Baseplate: Cast anchor bolts in concrete foundation. Install baseplate on washers placed over leveling nuts on anchor bolts and adjust until flagpole is plumb. After flagpole is plumb, tighten retaining nuts and fill space under baseplate solidly with nonshrink, nonmetallic grout. Finish exposed grout surfaces smooth and slope 45 degrees away from edges of baseplate.

END OF SECTION 107516