

**SECTION 10350
FLAGPOLE**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Aluminum flagpole.

1.2 PERFORMANCE REQUIREMENTS

- A. Structural performance.
 - 1. Provide flagpole capable of withstanding the effects of the following wind speeds:
 - a. With flag = 110 mph.
 - b. Without flag = 185 mph.
- B. Flagpole design.
 - 1. Base design on a 5 ft. x 8 ft. flag.

1.3 SUBMITTALS

- A. Product data: Submit manufacturer's product data, including installation instructions.
- B. Shop Drawings: Show general layout, jointing, anchorage, support systems, and accessories.
- C. Samples: Submit manufacturer's standard color and finish samples.
- D. Warranty: Submit manufacturer's standard warranty.

1.4 QUALITY ASSURANCE

- A. Obtain each flagpole as a complete unit from the manufacturer, including fittings, accessories, bases, and anchorage devices.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. General: Spiral wrap flagpoles with a heavy Kraft paper or lightweight wrapping and enclose in a hard fiber tube or other protective means.
- B. Delivery: Deliver materials to site in manufacturer's original, unopened packaging, with labels clearly identifying product name, manufacturer, and location of installation.
- C. Storage: Store materials in a clean, dry area indoors in accordance with manufacturer's instructions. Keep temporary protective coverings in place.

- D. Shipping: Ship to project site in one piece if possible. If more than one piece is necessary, provide snug fitting precision joints with self-aligning, internal splicing sleeve arrangements for weather tight, hairline field joints.
- E. Handling: Protect materials and finish from damage during handling and installation.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Must be able to comply with the specifications.
- B. Product must be approved by the Engineer.

2.2 FLAGPOLE TYPE AND CONSTRUCTION

A. Aluminum Flagpole Construction:

- 1. Fabricate from seamless, extruded tubing complying with ASTM B 221, alloy 6063-T6, having a tensile strength not less than 30,000 psi with a yield point of 25,000 psi. Heat treat after fabrication to comply with ASTM B 597, temper T6.
 - a. Provide cone-tapered flagpoles, per manufacturer's standard rate of taper.

B. Assembly Construction:

- 1. Internal Revolving with Winch - Wire Halyard - Shoe Base Foundation.
- 2. Mounting Height
 - a. 25 Feet
- 3. Wall Thickness
 - a. 0.188 Inches
- 4. Butt Diameter
 - a. 6 Inches
- 5. Shaft Pieces
 - a. One continuous shaft
- 6. Maximum Wind Speeds
 - a. Flag = 110 mph
 - b. No flag = 185 mph
- 7. Maximum Flag Size Specifications
 - a. 5 Feet x 8 Feet

2.3 MOUNTING

A. Shoe Base:

1. Cast aluminum shoe base will be anchored using four galvanized steel anchor bolts (55,000 PSI minimum yield) conforming to AASHTO M314-90 Grade 55. Threaded end of bolt will be galvanized 10" per ASTM A153. Kits will contain (4) hex nuts, (4) lock washers and (4) flat washers, with all components being galvanized steel. Anchor bolts will be secured in foundation utilizing 3000 psi concrete.

2.4 FITTINGS

A. Finial (Ornament):

1. Finial sized as indicated or, if not indicated, to match pole butt diameter. See Specification Drawing for Type and Size of Finial Specified.

B. Internal Revolving Truck Assembly:

1. Cast aluminum two-piece enclosed body, revolving, non-fouling design, single aluminum pulley mounted inside hood, stainless steel roller bearings, brass exit bushing for wire cable, and threaded aluminum spindle for attachment to top of pole.

C. Internal Halyard Winch System:

1. Provide one (1) complete internal halyard 1/8" stainless steel wire cable assembly with plastic coated counterweight and beaded sling assembly. A manually operated mechanical winch having automatic brake system and operated with a removable hand crank will be concealed inside the flagpole behind a flush access door having a cylinder lock.

D. Halyard Flag Snaps:

1. Provide two (2) stainless steel swivel snap hooks with neoprene covers.

E. Flash Collar:

Provide Spun Aluminum Collar to match flagpole. See Specification Drawing for Collar Specification.

2.5 MISCELLANEOUS MATERIALS

A. Concrete:

1. Comply with requirements of Section, "Concrete Work", of this Technical Special Provision.

2.6 FINISHES

A. Metal Finishes, General:

1. Comply with National Association of Architectural Manufacturers' (NAAMM) "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish Specification:

1. Natural Satin Finish: Provide directional-sanded satin finish (AA-M33); buff complying with AA-M20.

PART 3 - EXECUTION

3.1 PREPARATION

A. Excavation:

1. For foundations, excavate to neat clean lines in undisturbed soil. Remove loose soil and foreign matter from excavation and moisten earth before placing concrete.

B. Foundation:

1. Provide forms where required due to unstable soil conditions and for perimeter of flagpole base at grade. Secure anchor bolts in position and brace to prevent displacement during concreting. Place concrete immediately after mixing. Compact concrete in place using vibrators. Moist-cure exposed concrete for not less than 7 days or use a non-staining curing compound. 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 base perimeter.

3.2 FLAGPOLE INSTALLATION

A. General:

1. Install flagpoles where shown and according to shop drawings and manufacturer's written instructions.
2. Install flagpoles level, plumb, square, accurately aligned, and correctly located.
3. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Engineer.
4. Remove and replace damaged components that cannot be successfully repaired as determined by Engineer.

B. Shoe Base Installation:

1. Place flagpole on top of the installed anchor bolts and install using flat washer, lock washer and hex nut. Tighten nut and verify that all threads are fully engaged. Cover with flashing collar.

3.3 CLEANING

- A. Clean flagpoles in accordance with manufacturer's instructions.
- B. Remove temporary protective coverings.
- C. Do not use harsh cleaning materials or methods that would damage finish.

D. Clean up debris, trash, and unused material, and remove from site.

3.4 PROTECTION

A. Protect installed flagpoles from damage during construction.

END OF SECTION 10350