

Internal Rope Halyard flagpole categories contain multiple Flagpole Truck options. Your flagpole will contain one of the Trucks shown below.



Internal Rope Halyard Revolving Truck



Internal Rope Halyard Stationary Truck



Internal Rope Halyard Single Revolving Ball Truck



## INSTALLATION INSTRUCTIONS

### INTERNAL ROPE HALYARD CAM CLEAT FLAGPOLE

Monarch / Sentry Series / Sentry II

*Read these instructions completely before any installation is started. Pay close attention to all safety concerns. In the unlikely event that you encounter any difficulty, or if a part is missing from the parts diagram, please contact the dealer or representative from which the flagpole was purchased.*

#### Inspection of the Shaft and Components

The proper time to inspect the shaft for any damage that might have occurred during shipping is at the time of receipt. The packaging in which the flagpole is shipped is carefully chosen to protect the finish during transportation. Any tear in the package should be inspected for possible damage. If the flagpole is delivered showing signs of freight damage, refuse the shipment and contact the dealer or representative from which the flagpole was purchased. Verify that all standard or substituted parts have been received and are in good and acceptable condition. If there is any damage to the shaft or components, do not continue with the installation without first contacting the dealer. To continue with the installation signifies the acceptance of the product in the condition received. Eagle Mountain Flag will not be responsible for later installation expenses for missing or damaged parts.

## WARNING:

**NOTE:** To prevent staining, the flagpole must be stored in a dry place OR all packaging must be removed immediately after receiving shipment. If the flagpole gets wet with the packaging still on it, the flagpole may develop stains as it dries. Once packaging is removed, the flagpole should be stored off the ground on blocks until installation.



**WARNING:** Do not install your flagpole near overhead power lines and always be aware of cable and pipes buried underground. Utility departments should be contacted to confirm that it is safe to dig in the area where the flagpole is to be installed. It is advisable to have assistance with flagpole installations. Any flagpole with a 5" diameter base or larger or over 25' in length may require some type of lifting device. Following a review of these instructions, the purchaser of the flagpole should determine if they are qualified to perform the installation or should obtain the services of a professional sign/flagpole installation company. Due to various methods of installation used by installers, Eagle Mountain Flag cannot be liable for structural damage or injury occurring during the flagpole assembly and installation.

## Section 1. Foundation Installation

Prepare the foundation hole for Ground Sleeve or Shoe Base installations as detailed in these instructions. NAAMM's *Metal Flagpole Manual* offers basic suggestions on foundation requirements in firm, dry soil using dry tamped sand and 3000 PSI concrete (*See Page 6*).

**NOTE:** Soil conditions vary by site and the listed dimensions are considered minimum dimensions for foundations in firm dry soil.

**Exact foundation requirements should be verified by a Structural Engineer with knowledge of soil conditions in your area.**

Flagpole Ground Sleeves are available in either PVC or Corrugated Steel with Steel Lighting Spike and Setting Plate (**PART K**). Refer to diagrams on Page 6 for foundation illustrations.

### 1A. PVC Ground Sleeves

A proper base in the bottom of the foundation hole is required for PVC Sleeves. The base should contain a combination of gravel and sand totaling approximately 12". The level of gravel, used for drainage purposes, should be approximately 10" with a 2" layer of tamped sand capping the stone. The sand prevents the damp concrete from blending in with the gravel when it is poured into the hole. Install the PVC Ground Sleeve in the center of the hole with the top of the sleeve 2" above grade. Make sure the bottom of the tube is worked well into the sand. Plumb the Ground Sleeve tube vertically and brace it so it cannot move during the pouring of the concrete. Use a level inserted into the sleeve to ensure it is vertical. Ground Sleeves are oversized to allow for adjustments using wood wedges and dry, tamped sand (*by others*).

Pour concrete, continuing to verify vertical plumb and trowel to desired finish. Keep the inside of the sleeve dry and free of debris by covering the opening. Allow the concrete to cure for at least 24 hours.

### 1B. Corrugated Steel with Steel Lighting Spike and Setting Plate

Set the ground sleeve in the center of the hole, pushing the corrugated sleeve rod into the ground until the ground sleeve steel support plate is resting on the bottom of the hole. The top of the sleeve should be 2" above grade. When the concrete is poured, it will fill in the area between the setting plate and the base plate. Carefully plumb the ground sleeve tube vertically and brace it so it cannot move during the pouring of the concrete. Use a level inserted into the sleeve to ensure it is vertical.

Slowly pour the concrete, continuing to verify vertical plumb. Care should be taken that the pouring of the concrete is not at a rate that might cause the ground sleeve to "float up" as the concrete goes under the base plate (*refer to drawing*). Trowel to desired finish. Keep the inside of the sleeve dry and free of debris by covering the opening. Allow the concrete to cure for at least 24 hours.

### 1C. Shoe Base Foundation

All Eagle Mountain Flag Shoe Base Flagpoles include steel Anchor Bolts and stainless steel attaching hardware. Full size, 1:1 mounting templates with full instructions are shipped with the hardware. These instructions must be read and carefully followed for proper Shoe Base installations.

**Section 2. Shaft Preparation**

The flagpole should be assembled with base as close as possible to the final installation location. Flagpole shaft configuration can be either 1-Piece or Multi-Piece.

**2A. 1-Piece Flagpoles**

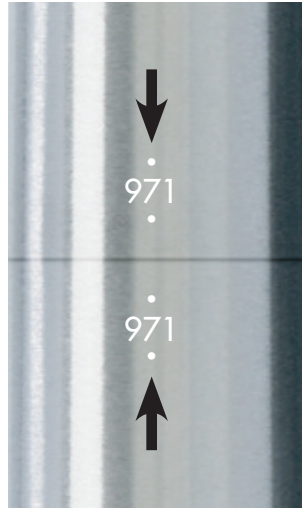
Place the flagpole shaft on sawhorses in order to attach the components. For a 1-piece shaft, no additional steps are required before the assembly of the components. Proceed to Section 3.

**2B. Multi-Section Flagpole**

Multiple section flagpoles are designed and fabricated with a self-aligning jam sleeve for each joint in the flagpole. Each joint incorporates very close tolerances for a strong and permanent field assembly. Inspect the shaft sections for damage before any assembly. **NOTE:** Do not expect to be able to disassemble the shaft sections after they have been put together. Taking them apart without damage is extremely difficult or impossible. No hardware should be installed until the shaft sections are totally assembled. The following information is intended to be a helpful guide to the installer. Previous experience in installing multiple piece flagpoles is beneficial.

Carefully lay sections out in proper order. Set the bottom section on blocks, saw horses, or short pieces of larger diameter PVC pipe in a horizontal position with the base of the lower section against an immovable object. Rotate pieces until the match marks can be seen (See Match Mark illustration). For flagpoles with 3 or more sections, start with the bottom sections. Sections must be straight and level while sliding together.

**NOTE:** All multi-piece joints are custom fit at the factory. Once fit, each section is stamped with both aligning match marks and corresponding numbers. Before proceeding, verify that the numbers are the same. If they do not match **DO NOT PROCEED**, as the sections will not properly fit together. If you have purchased more than one flagpole, verify that all sections are grouped with the correct match number. Sections are not interchangeable.



Carefully clean all mating surfaces of both the outside of the jam sleeve and the inside of the bottom part of the section into which the jam sleeve will be fitted, looking for and removing any debris or burrs that might be present after the manufacturing or shipping process. Any foreign material may stop the sections from properly fitting.

Cover the jam sleeve and the appropriate amount of the inner area of the section that it will be going in to with a light layer of liquid soap. Do not use grease, oil or other petroleum products as these lubricants can seep out over time and stain the flagpole. Keep the finished surfaces of the shaft free of hand prints and excess lubricants. Gently slide the sections of the flagpole with the match marks in line with the lower section onto the jam sleeve as far as possible without forcing the two pieces together. Rolling the flagpole

180° with every 2" to 3" may facilitate an easier fit. If extreme difficulty is found in fitting the first 6 inches together, pull back apart and cool the male section with ice for several minutes. With the pieces in line, place a 4x4 block of wood against the top of the flagpole to absorb the direct shock and firmly strike the wood to drive the sections together. Excessive force, that which will damage the ends, is not necessary. If the pieces are not coming together, contact your dealer. If the flagpole is a 3-piece unit, clean, lubricate and install the next section in the same manner.

**Section 3. Hardware Assembly**

When working with threaded components in aluminum, a light coat of an anti-seize compound (available at most hardware stores) is recommended.

**3A. Halyard Assembly**

Temporarily remove the Nylon Safety Stop (PART G) from the Cam Cleat Rope Assembly (PART H). For Stationary Trucks (PART B), feed the halyard through the outer pulley of the truck and over the centering pulley. For Revolving Trucks or Ball Trucks (PART B), the cover of the truck must be removed from the base in order to thread the halyard through the truck pulleys. To remove the cover, extract the connecting hardware and gently lift the cover from the base, being sure to note the cover orientation.

Feed the halyard down through the flagpole until it can be pulled through the door near the base of the flagpole (this step may require the use of a fish tape). With the rope halyard installed in the truck and fed down the center of the flagpole, feed the rope halyard through the cam cleat (PART I). Pull excess through door and tape to the side of the flagpole.

**3B. Ornament Assembly**

Unpack the flagpole ball, eagle or finial (PART A) and thread the jam nut all the way up the threads. An epoxy (Loc-Tite type product... by others) is recommended. After applying a small amount of epoxy, carefully thread the ball into the top of the truck. Be careful not to cross thread the components. Grip spindle/rod with vise grips and tighten. Do not grip ball to tighten. The shaft of the ornament should protrude approximately 1/4" inside the truck cover. After the ball is in place, use the proper size wrench to snug the jam nut against the top of the truck assembly. If your truck incorporates a set screw, use an Allen wrench to tighten the screw into the Ball Stem. Optional eagles and finials are attached in the same manner. Consideration must be given to the direction that you want the ornaments to face. Eagles should always face in the same direction as the flag. Reinstall the top half of the truck ensuring that the center pulley aligns with the center of the spindle.

**3C. Truck Assembly**

Internal Halyard Trucks (PART B) come in a variety of configurations including Slip-On Stationary Trucks, Ball Trucks and Revolving Trucks. Revolving Trucks and Ball Trucks options are designed with 1-1/4" NPT spindles which are inserted into a threaded insert welded into the top of the flagpole.

**Stationary Truck** – After feeding the halyard through the pole and installing the ball, eagle, or finial, slide the truck over the top of the flagpole, rotating the truck to align the pulley in the desired direction. The most common alignment is one that allows the flag to align with prevailing winds. After determining the direction of the truck, secure it to the top of the flagpole by tightening the set screws with an Allen head wrench.

**Revolving Truck** – Carefully check for burrs or irregularities on the threads of the Rotating Truck Assembly and the threaded insert in the top of the flagpole shaft. After feeding the halyard through the pole and installing the ball, eagle, or finial, carefully thread the spindle of the Rotating Truck Assembly into the top of the flagpole. Do not use epoxy on the spindle of the truck. Extreme care should be taken to avoid cross threading the components, as Aluminum threads can be easily damaged. Snug the spindle using an appropriate sized wrench. The threads are tapered and are manufactured in such a manner that over half of the spindle threads should go into the shaft before it is fully seated. If damage occurs during this process, contact your dealer.

### 3D. Collar

Before standing flagpole, gently slide the flash collar (**PART J**) up from bottom and tape it out of the way near the cleat. The use of protective wrapping around the shaft at this location will provide protection to the finish during the installation process.

## Section 4. Standing The Flagpole

When placing a flagpole in the setting tube, consideration should be given to turning the shaft so that stationary, non-revolving truck assemblies face the direction which is opposite from the direction of the project location's prevailing wind. This will increase the chances of the wind and flag flowing in the same direction. If a revolving truck assembly is used, shaft direction is not important.

The flagpole should be moved to a position that places the base of the flagpole close to the foundation. Stand flagpole into previously installed ground sleeve (*Ground Set Installation*) or onto anchor bolts (*Shoe Base Installation*). This may require the use of a crane or backhoe for larger flagpoles. Professionals experienced in such installations should perform rigging and lifting. During lift, keep clear of the area and reach of the flagpole path. Do not pass flagpole overhead.

**Multiple-Piece Flagpoles** - When installing multi-piece flagpoles, extra care must be used when setting it into the sleeve. Before standing the flagpole, make certain that the joints are fully seated and that the shaft is straight. Never stand a flagpole that is not properly assembled and straight. Arrange the rigging for the lift in such a way that weight of the flagpole sections is supported from the bottom of the flagpoles so that the flagpole joints are pushed together, not pulled apart, during the lift. Keep clear of power lines.

**NOTE: The flagpole joint IS NOT designed to support the weight of the bottom or middle section of the flagpole when raising a multi-sectional flagpole. ALWAYS CHOKE A MULTIPLE SECTION FLAGPOLE BELOW THE LOWEST JOINT AS A SAFETY PRECAUTION.**

### 4A. Ground Set

On flagpoles with spacing between the shaft and the inside of the setting tube, insert flagpole into ground sleeve (*galvanized corrugated 16-gauge steel or PVC tube*) and plumb flagpole with wooden wedges (*by others*). Slowly fill the void between the flagpole and the ground sleeve with washed and screened dry tamped sand. Do not use silica sand. Fill ground sleeve 6" to 8" at a time and tamp as you fill. Fill ground sleeve with sand to about 2" from top, then cap off with waterproof compound (*by others*). Refer to NAAMM's *Metal Flagpole Manual* illustration (*See Page 6*).

### 4B. Shoe Base

After placing the flagpole on top of the anchor bolts, install flat washer, lock washer, and hex nut. Tighten nut and verify that all threads are fully engaged. Refer to full installation instructions located on Bolt Circle Template shipped with the anchor bolts. **NOTE: An installation using "double nuts" is not recommended by Eagle Mountain Flag.**

### 4C. Finishing The Installation

After waterproof compound has dried (*Ground Set Installations*) or the nuts have been tightened (*Shoe Base Installations*), slide flash collar (**PART J**) down into position and caulk joint with matching color silicone to seal the space between the flagpole and the flash collar.

## Section 5. Halyard Components Assembly

After waterproof compound has dried (*Ground Set Installations*) or the nuts have been tightened (*Shoe Base Installations*), slide flash collar (**PART I**) down into position and caulk joint with matching color silicone to seal the space between the flagpole and the flash collar. Adjust flagsnap spacing to agree with the grommet spacing on flag to be flown. Attach flag to snaps and run the top of the flag to the peak of the flagpoles.

### 5A. Flag Assembly

Attach the counterweight (**PART E**) to the halyard yoke at the end of the Cam Cleat Cable Assembly (**PART H**) by using a provided Stainless-Steel Connecting Link (**PART C**). Slide the Retainer Ring Assembly (**PART F**) around the pole and assemble to the opposite end of the counterweight by using the second provided Stainless Steel Connecting Link.

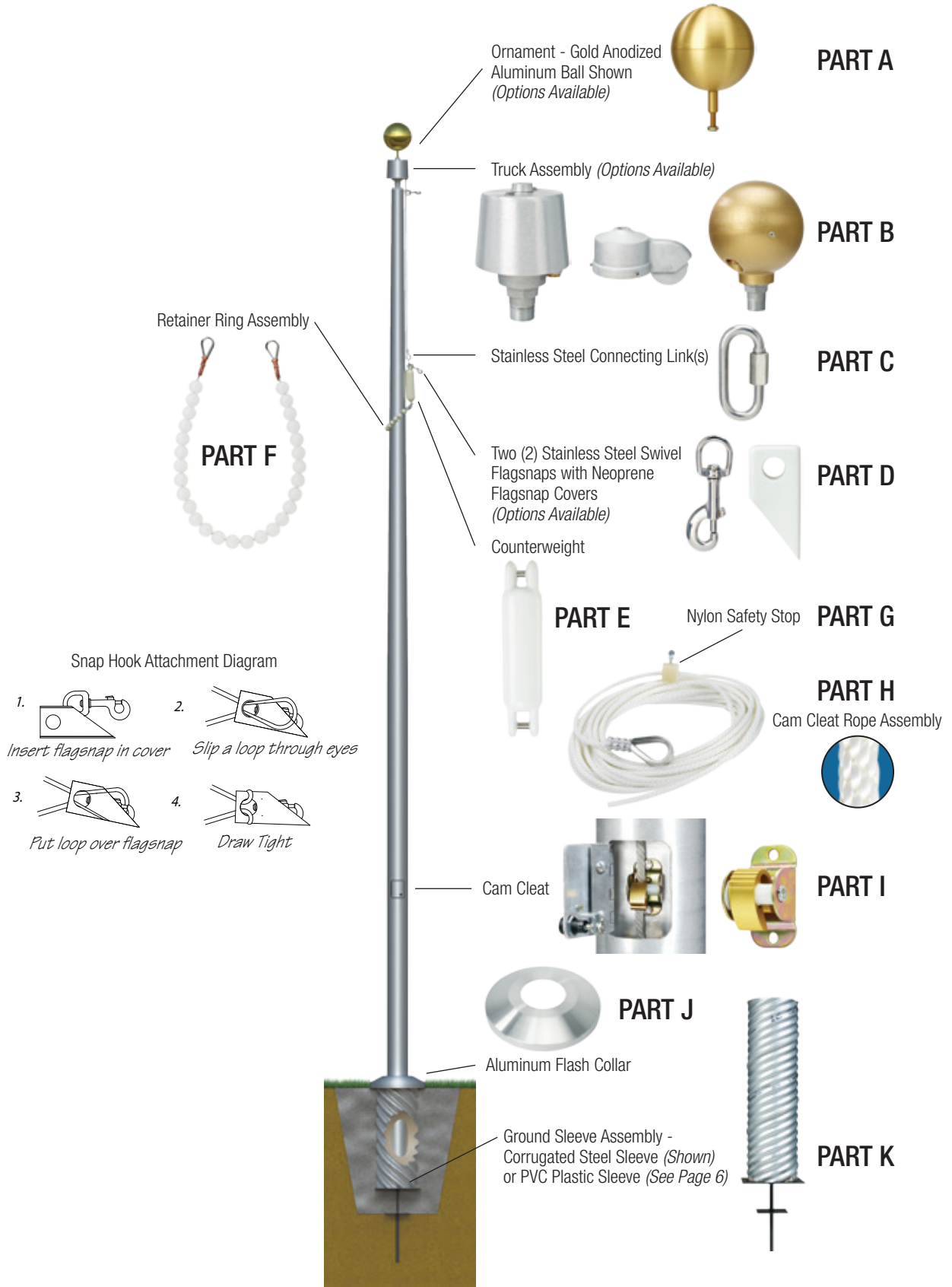
**SAFETY NOTE:** The Retainer Ring and Rope Assembly should never be attached to the same end of the counterweight.

After completing the steps outlined above, install and adjust the flagsnaps and neoprene covers (**PART D**) to the proper distance to accommodate your flag size. Please reference the diagram on page 5 for flagsnap attachment instructions. Note: Care should be exercised to ensure the upper flagsnap is not pulled into the pulley of the truck or ball truck when the flag is raised.

The Nylon Safety Stop (**PART G**) should now be installed on the halyard. Raise the counterweight, retainer ring, and flag to a safe height and place the rope halyard into the cam cleat. Slide the Nylon Safety Stop up the rope halyard until it contacts the cam cleat, and securely tighten the stop into place with the provided set screw.

**NOTE:** A foam insert is installed in all cam cleat poles from the factory to act as a stop for the excess halyard stored inside the pole. This insert allows the halyard to stay dry and protected from freezing at the base of the pole during the winter months.

**SAFETY NOTE:** Once the halyard is removed from the locking cam and shifted to the right side of the cam cleat, a tight grip needs to be kept on the rope so as not to lose control of the halyard as you lower the flag to ground level. Accidentally letting go of the rope will result in the flag, flag arrangement, and counterweight to free fall, causing injury and/or death.



## FOUNDATION INSTALLATIONS

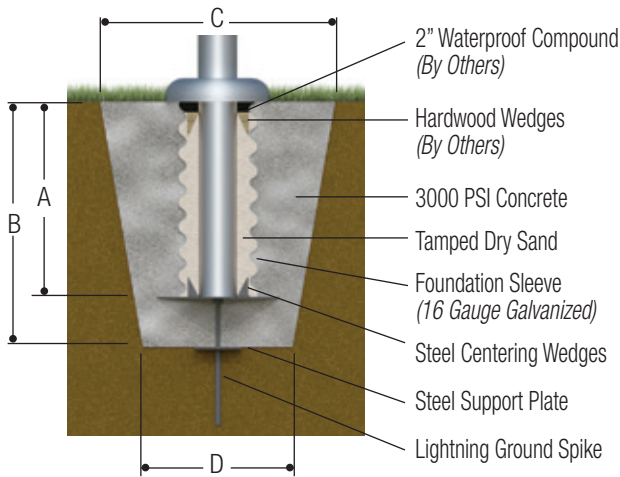
NAAMM's *Metal Flagpole Manual* offers basic suggestions on foundation measurements in firm, dry soil only using dry tamped sand and 3000 PSI concrete. These dimensions should be considered as minimum recommendations as soil conditions vary by site.

**Exact foundation requirements should be verified by a Structural Engineer with knowledge of soil conditions in your locality.**

### GROUND SLEEVE INSTALLATION

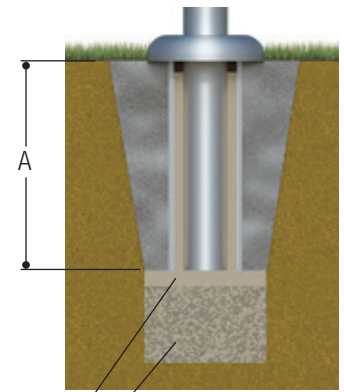
NAAMM Minimum Recommended Foundation Measurements  
(Structural Engineering Requirements for Foundations Verified By Others.)

#### Ground Sleeve with Steel Lighting Spike Installation



EXPOSED MOUNTING HEIGHT	Ground Set			
	A	B	C	D
20'-0"	2'-0"	2'-6"	30"	24"
25'-0"	2'-6"	3'-0"	36"	24"
30'-0"	3'-0"	3'-6"	36"	24"
35'-0"	3'-6"	4'-0"	36"	30"
40'-0"	4'-0"	4'-6"	45"	36"
45'-0"	4'-6"	5'-0"	45"	36"
50'-0"	5'-0"	5'-6"	50"	42"
60'-0"	6'-0"	6'-6"	60"	48"
70'-0"	7'-0"	7'-6"	60"	48"
80'-0"	8'-0"	8'-6"	72"	48"

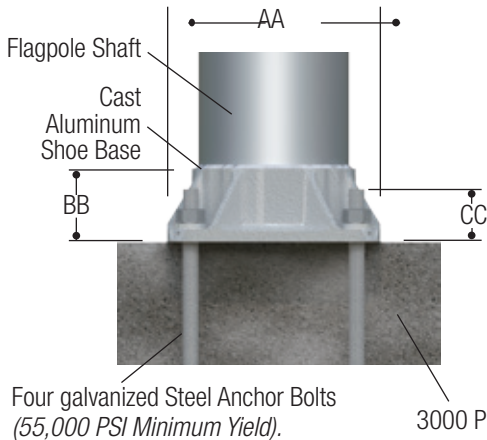
#### PVC Ground Sleeve Installation



2" Tamped Dry Sand  
10" Gravel

### SHOE BASE FOUNDATION

(Structural Engineering Requirements For Foundations Provided By Others.)



BUTT DIAMETER	Shoe Base				
	AA BASE SQUARE	BB BASE HEIGHT	CC BOLT PROJECTION	BOLT DIAMETER	BOLT CIRCLE DIAMETER
4"	7-1/2"	3"	2"	3/4"	6-1/2" - 8"
5"	7-1/2"	3"	2"	3/4"	7 1/2"-8"
6"	9-3/4"	3-1/2"	2-3/4"	1"	9"-10"
7"	10-1/2"	3-11/16"	2-3/4"	1"	10"-11"
8"	11-1/4"	3-15/16"	2-3/4"	1"	11"-12"
10"	14"	4-7/8"	3-1/4"	1"	14"-15"
12"	17"	8"	3-3/4"	1-1/4"	16"-18"

#### Shoe Base Foundation Installation

