Top Security™ 3-D Rod Monument Installation Instructions

MONUMENT INSTALLATION INSTRUCTIONS
FOR TOP SECURITY™ GPS 3-DIMENSIONAL ROD MONUMENT SYSTEM

*****CAUTION: Before beginning any monument installation, contact your local ONE-CALL Utility Location Service to verify the safety of your chosen location*****

IMPORTANT - Read all instructions completely and thoroughly before starting installation.

MATERIALS REQUIRED FOR SETTING MONUMENT:

1. Top Security™ Rod with thread
2. Aluminum rod sections with thread
3. Spiral drive point
4. Aluminum survey cap (special combination compression fit/threaded cap)
5. OPTIONAL: DISC-LOCK vibration-proof lock washers (pair)
6. BMAC Access Cover (BMAC-5 for 5" PVC pipe or BMAC-6 for 6" PVC pipe)
7. PVC Pipe (5" or 6", Schedule 40)
8. Steel Stamp Set (for marking information on survey cap)
9. Concrete mix
10. Water
11. Trowel
12. Eclectic® UV-6800 Adhesive
13. Caulking gun for UV-6800 Adhesive
14. Fine-grained washed or play sand
15. Installation tools
16. Reciprocating driver *(Pionjar 120, Cobra 148, or Wacker BHB 25)*
    a. Driving Adapter (MDA with sledge hammer, PDA with reciprocating driver)
    b. DPA Steel Drive Pin
    c. Lubricating oil for driving adapter and stainless drive pin
    d. Vise grip pliers (2) OR Pipe Wrench (two 6" wrenches)
    e. Hacksaw
    f. File
    g. Post Hole Digger or Auger
    h. Shovel
    i. Work gloves and proper eye protection and clothing

INSTALLATION

1. THE TIME REQUIRED TO SET AN AVERAGE MARK USING THESE PROCEDURES IS 30 TO 45 MINUTES.

2. Using the Eclectic UV-6800 adhesive, glue BMAC Access Cover to a 24-inch (600 mm) long section of PVC pipe. This will allow the glue to set while continuing with the following setting procedures.

3. ***IMPORTANT:*** **Use proper eye and ear protection!** Using a post hole digger, auger, or shovel, dig or drill a hole in the ground at your site, approximately 12 inches (300 mm) in diameter and 36 inches (915 mm) deep.

4. Attach the spiral drive point to one end of the aluminum rod section with a stainless steel thread. On the opposite end of the aluminum rod attach the Stainless Steel Drive Pin (hand tighten both the drive point and the SS Drive Pin). The SS Drive Pin will be used as the impact point for the Driving Adapter in driving the rod into the ground. Drive this section of the rod with a reciprocating driver *(Pionjar 120, Cobra 148, Wacker BHB 25).* Be certain that the reciprocating driver is in the BREAKER position for driving the rod (see owner's manual for setting). Drive the rod section until the Driving Adapter is within approximately 1-inch (25 mm) of ground level e., with approximately 4-inches (100 mm) of rod showing above ground).

5. Remove Driving Adapter and Stainless Steel Drive Pin from installed rod section. Attach another section of aluminum rod. Tighten securely (using DISC-LOCK washers if desired) with two pipe wrenches to rod section already installed. Attach SS Drive Pin and Driving Adapter to top of rod section and continue driving rod sections (see STEP 4) until installation of rod sections slows to the REFUSAL rate *(defined as a driving rate of more than 1 minute to drive the rod 1 foot (25 mm) in the ground)*. IMPORTANT NOTE: TO MEET NGS REQUIREMENTS FOR "REFUSAL" YOU MUST ONLY USE A RECIPROCATING DRIVER. Rod should be driven completely into the ground (and 3 inches [75 mm] below ground level).

6. The last section of rod should now be marked for removal (so the top of the last rod section will be 3 inches [75 mm] below ground level) from the top of the monument assembly. Remove the rod by attaching a pipe wrench on either side of the common joint with the next lower rod section and carefully untighten the top rod from this assembly. IF YOU WERE ABLE TO DRIVE THE LAST SECTION ROD 3 INCHES (75 mm) BELOW GROUND LEVEL, YOU CAN SIMPLY REPLACE THIS ROD SECTION WITH A COMPLETE TOP SECURITY ROD SECTION - GO TO STEP 9.

7. Take the rod section you removed in STEP 6 and place it next to a Top Security™ rod section. Using a hacksaw, cut off the portion of Top Security rod section marked. When this is completed, remove approximately 3 inches (75 mm) of the "fins" from cut end of Top Security rod section. Recommended procedure is to use a vise grip pliers and "peel" the fins (take the vise grip pliers and peel the fins and break them off the remaining rod portion by coming down from the top of the rod and bending each fin "back and forth" until the fin is removed). This is best done in 1-inch (25 mm) sections.

8. Use a file to remove any burrs from cut end (and slightly BEVEL the cut end of the Top Security rod section). GO TO STEP 10.

9. IF YOU DID NOT NEED TO CUT LAST SECTION OF ROD IN STEP 6 AND HAVE REPLACED THIS ROD WITH A TOP SECURITY ROD, you can use the Threaded Insert to attach the survey cap to the rod assembly. To do this take the SS Drive Pin, attach it to the Treaded Insert, and then drive the Threaded Insert into the socket of the survey cap. Be certain that the Threaded Insert has been driven completely into the socket. Take the completed survey cap, remove the SS Drive Pin, and using the DISC-LOCK washer (composed of two washers mated together so the beveled sides are placed together to form a "ratchet" appearance) attach the survey disk to the Top Security rod section by screwing the cap down onto the Top Security rod section. Tighten firmly and securely using a wrench. Go to STEP 11.

10. IF THE TOP SECURITY ROD SECTION NEEDS TO BE CUT, use the compression-fit survey cap (with socket) to attached to the Top Security rod. Make a mark approximately 1-inch (25 mm) from the top of the rod (this is where the bottom of the survey cap socket should be driven to). Taking the compression-fit cap, carefully tap the cap onto the Top Security rod using a rubber or urethane-faced hammer and driving the cap completely onto the rod until it reaches the mark on the rod. Be sure the cap is "square" on the rod.

11. Backfill and pack with fine-grained washed or play sand around rod section (sand should be filled to about 20 inches (500 mm) below ground level). Place the PVC pipe and BMAC Access Cover assembly over and around the rod. Tamp BMAC assembly so it is flush with the ground. The survey cap on the rod should be 3 inches (75 mm) below the BMAC Access Cover.

12. Prepare and place the concrete mix around the outside of the PVC pipe and around the BMAC Access Cover, up to the top of the Cover. Trowel the concrete until a smooth and neat finish is produced. Make certain that the concrete has not "seeped" into the Cover or Cover screw. Remover the Access Cover Lid from the Cover Frame and using water, rinse the frame and screw areas to insure no concrete mix residue remains in these areas.

13. Continue to backfill and pack with sand inside the PVC pipe around the rod to about 6 inches (150 mm) below ground level.

14. Remove all debris and excess dirt to leave area in original condition.

15. Install CARSONITE® model CBM-250 Boundary Marker Post to witness and protect the monument assembly.

16. *IMPORTANT: Whenever opening the BMAC Access Cover, protect the threaded opening of the Access Cover Frame by using a piece of duct or masking tape to cover this opening, when exposed, to prevent foreign objects from falling into it. Take care in reinstalling the Access Cover Lid to prevent foreign objects from falling into the threaded opening while tightening screw of Access Cover Lid into Access Cover Frame.*

QUESTIONS? PLEASE CALL US FOR ASSISTANCE. CALL TOLL-FREE IN THE U.S.A.,
CANADA, AND THE CARIBBEAN ISLANDS AT 1-800-356-7388.
OUTSIDE THE U.S.A., CALL 1-608-249-8549.