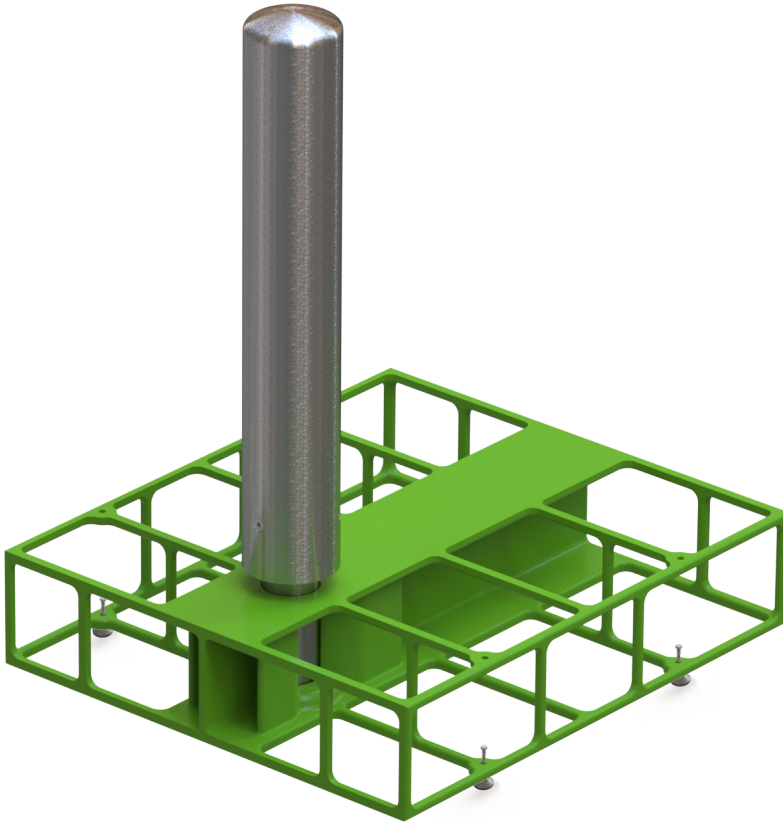
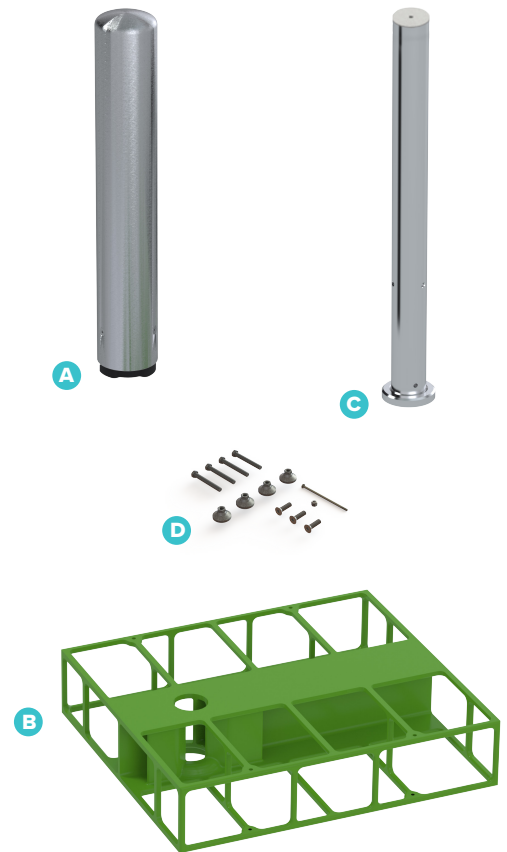


# CrashCore™ Bollard

## Crash-Rated Bollard Shallow Installation Instructions



### COMPONENTS



INCLUDED COMPONENTS		PRODUCT #
A	Stainless Steel Cover & Rubber Sleeve	9C003
B	S20 Shallow Cast Cage	2A001
C	S20 Shallow Steel Core	2A002
D	Shallow Mount Hardware	2A003

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# Suggested Tool List

Below you will find the suggested tools for a shallow cage CrashCore Bollard installation



## EQUIPMENT

- ☒ Skid Steer Forks & Bucket Attachments
- ☒ Concrete Masonry Saw With Diamond Blade
- ☒ Gas-Powered Generator
- ☒ Wet/Dry Vacuum
- ☒ Pressure Washer
- ☒ Portable Work Lights (If Night Work)
- ☒ Cordless Blower
- ☒ Cordless Impact Driver
- ☒ Dumpster



## HARDWARE & SUPPLIES

- ☒ Concrete with Minimum 3000 psi
- ☒ 3/16" Carbide Tip Masonry Drill Bit
- ☒ 5/16" Hex Impact Socket
- ☒ 5/16" Allen Key or Hex Bit
- ☒ Towels or Rags for Clean Stainless Steel
- ☒ Stainless Steel-Safe Cleaner

## TOOLS

- ☒ Chalk for Marking Concrete
- ☒ Chalk Line or Laser
- ☒ Tape Measure
- ☒ 24" Push Broom
- ☒ 7" Corn Hand Broom
- ☒ Finishing Trowel
- ☒ Flat Transfer Shovel
- ☒ Round Point Shovel
- ☒ Level
- ☒ Extension Cord
- ☒ 48" Post Hole Digger
- ☒ Wheelbarrow
- ☒ Web Slings for Lifting at least 1000 lb Capacity
- ☒ Square with at least 2 ft Blade
- ☒ 3/4" Water Hose with Hose Head Nozzle
- ☒ Steel Drilling Hammer or Dead Blow Hammer
- ☒ Shut-Off Valve Wrench (Water Security Key)
- ☒ 2 Adjustable Pipe Wrenches
- ☒ Utility Knife
- ☒ String or Wire
- ☒ Digging Bar
- ☒ Camera or Smart Phone

## PPE

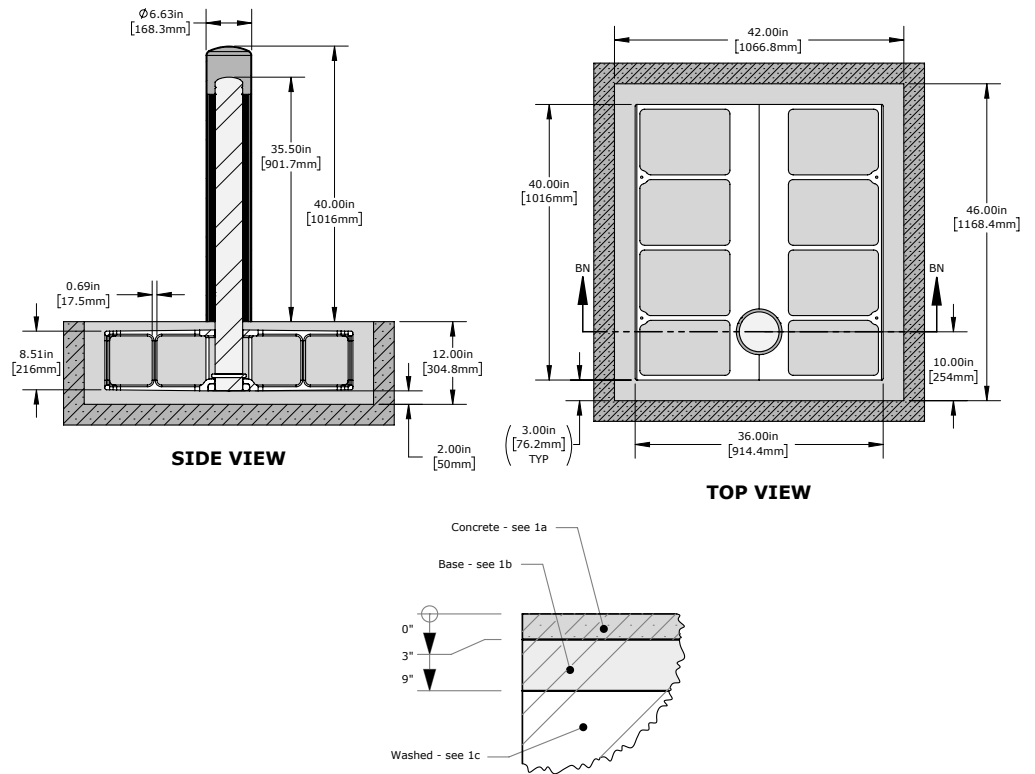
- ☒ Dust Mask
- ☒ Eye Protection
- ☒ Steel Toe Boots
- ☒ Ear Protection
- ☒ Gloves

## EMERGENCY LIST

- ☒ Cones
- ☒ Cation Tape
- ☒ Metal Barricade
- ☒ Steel Tamper
- ☒ Jack Hammer
- ☒ 1/2" - 13 Tap
- ☒ 3/8" or #3 x 36" Rod or Rebar
- ☒ Masking Tape
- ☒ Tarp

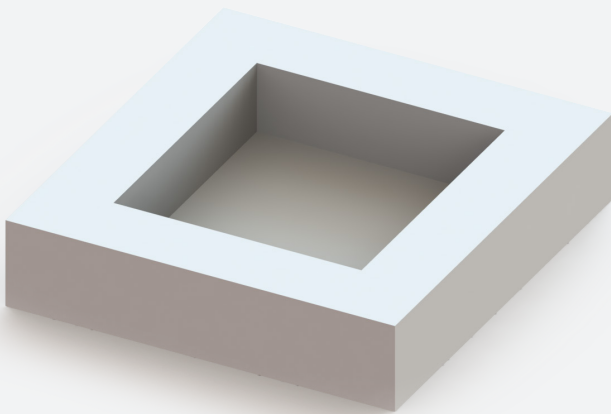
## GROUND CONDITIONS PER ASTM F3016

- ✓ **1a:** The concrete is 3000 psi minimum unconfined compressive strength, with one layer of #3 (Ø3/8") rebar spaced at 12" each way, with 1-1/4" cover at bottom. Rebar not shown here.
- ✓ **1b:** The base is Type A Grade 1 crushed limestone road base, compacted to 90% of standard proctor density.
- ✓ **1c:** The washed sand shall be classified as SP - poorly graded sand & be compacted to a density of not less than 90% maximum dry density in accordance with AASHTO Method of Test T099.



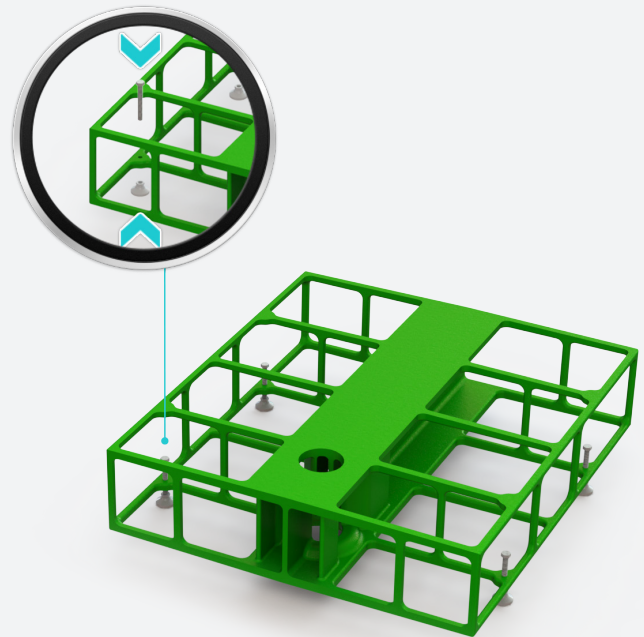
1

Using appropriate machinery, core a 42" by 46" hole, with a depth of 12".



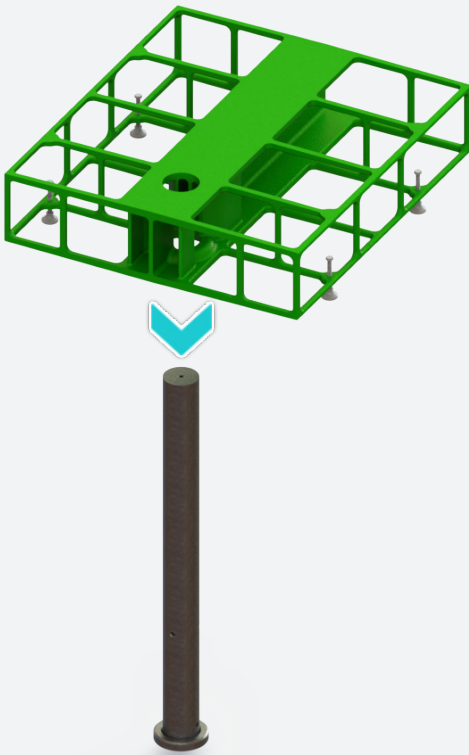
2

Preassemble leveling mount hardware.



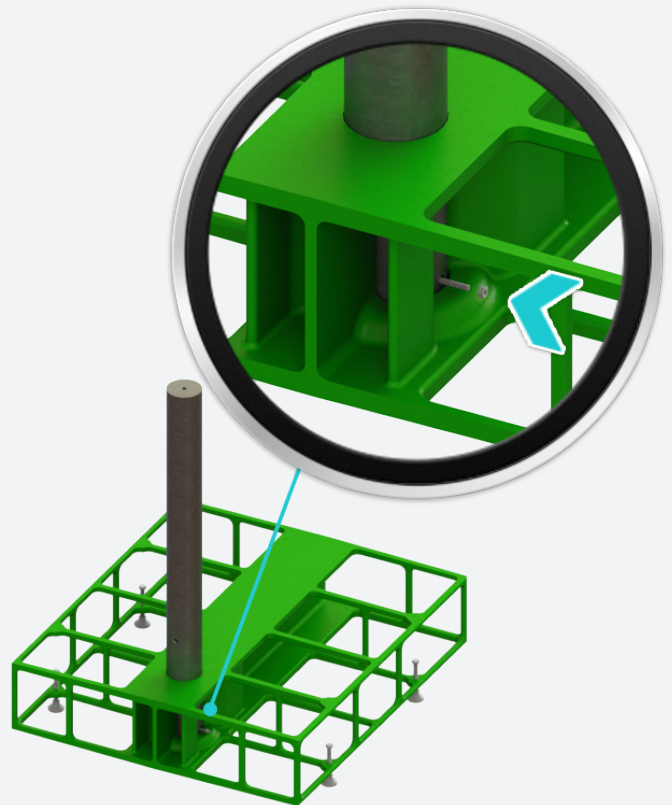
3

Insert the S20 shallow core into the cast cage.



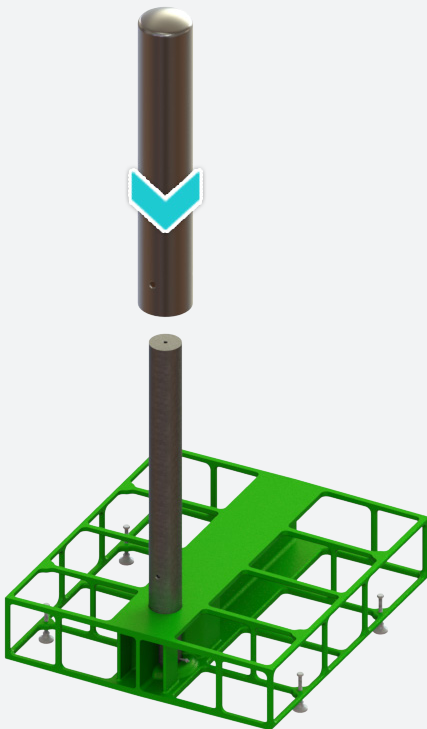
4

Secure the core to the cast cage using the 6" long bolt and nut.



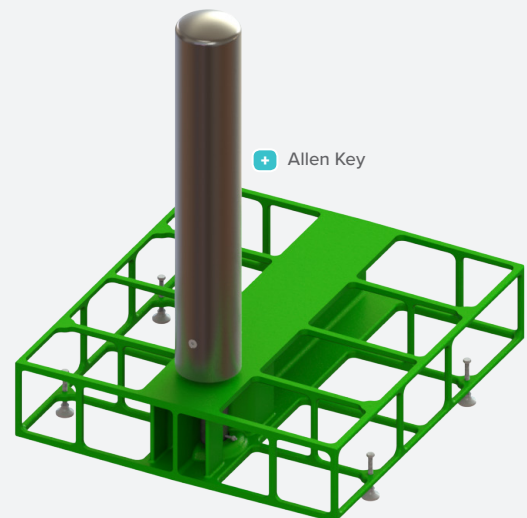
5

Install post cover. Ensure screw hole is aligned with tapped holes in the core.



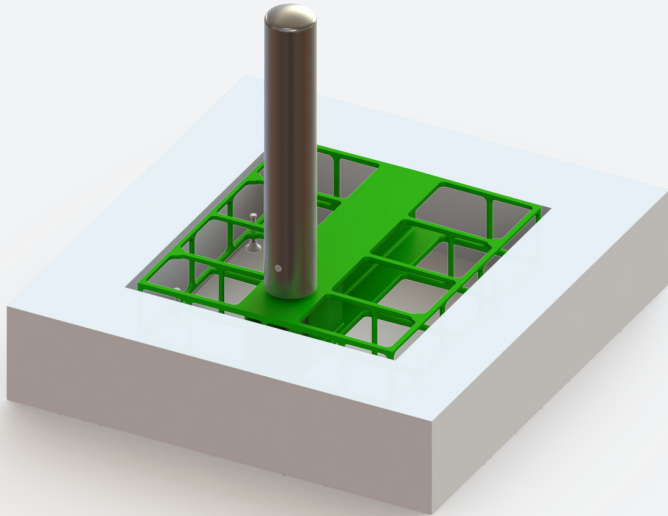
6

Use the 5/16" Allen Key to tighten the screws.



7

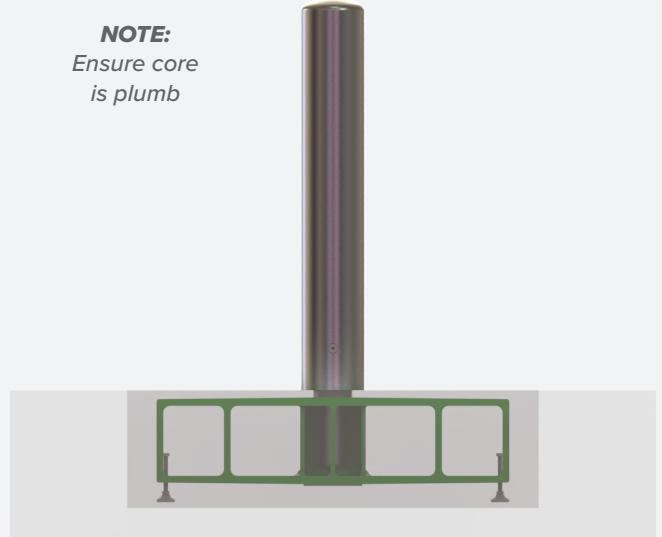
Lower the assembly in the center of the hole.



8

Use a wrench to adjust the leveling mount hardware to ensure the cage is leveled. Top of cage is 1.5" from ground level.

**NOTE:**  
Ensure core  
is plumb



9

Pour concrete up to ground level. Quality check cleanliness of cover & installation area.

**NOTE:**  
Perform thorough  
final cleanup of  
job site

+ Stainless Steel Cleaner  
& Power Washer

