

CrashCore™ Bollard

Crash-Rated Removable Bollard Installation Instructions



COMPONENTS



INCLUDED COMPONENTS

- A** Stainless Steel Removable Post Cover
- B** Heavy Duty Removable Bollard Sleeve
- C** S20 Steel Core
- D** Flat Head 1/2-13 x 1.75" Long
- E** Master Lock 150D Pad Lock

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Suggested Tool List

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

EQUIPMENT

- Skid Steer with Bucket, Auger & Fork Attachments
- 10" Auger Bit (If No 10" Available Use 9" Bit)
- Core Drill with 12" Diamond Core Bit
- Concrete Mixing Equipment
- Gas-Powered Generator
- Wet/Dry Vacuum
- Pressure Washer
- Portable Work Lights (If Night Work)
- Cordless Impact Driver
- Dumpster Or Alternate Means To Remove Waste From Site

HARDWARE & SUPPLIES

- Fast-Setting Concrete Mix with Minimum 3000 psi — Approximately 2 ft³ Per Bollard
- 3/16" Carbide Tip Masonry Drill Bit and 1/4" x 1-3/4" Tapcon Self-Threading Concrete Anchors For Removal Of Concrete Cores
- 5/16" Allen Key or Hex Bit With Socket For Impact Driver
- Towels or Rags for Cleaning Stainless Steel
- Stainless Steel-Safe Cleaner
- 7/32" Allen key or hex bit

TOOLS

- Chalk for Marking Concrete, Chalk Line
- String 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 For Core Bit
- Utility Knife
- String or Wire
- Digging Bar
- Camera or Smart Phone

PPE

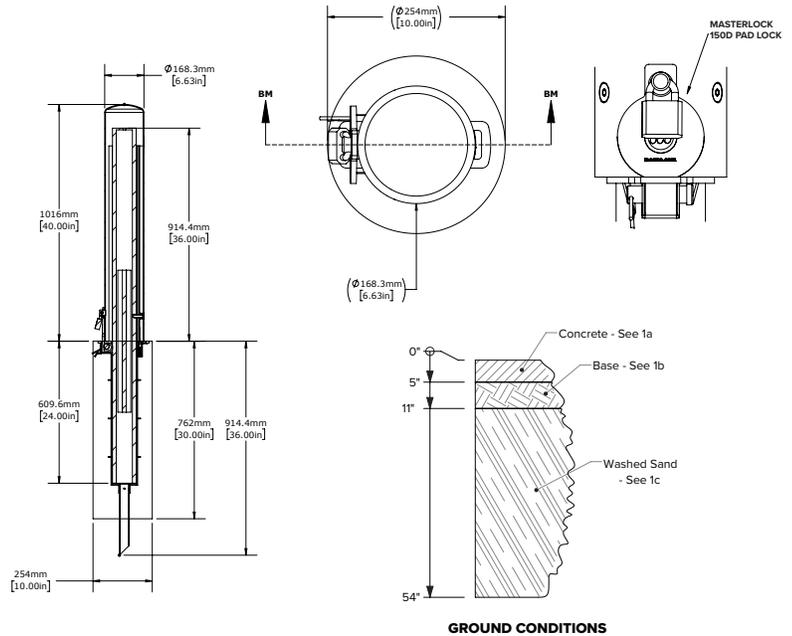
- Dust Mask
- Eye Protection
- Steel Toe Boots
- Ear Protection
- Gloves

OH SH!T LIST

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

MINIMUM GROUND CONDITIONS REQUIRED PER ASTM F3016

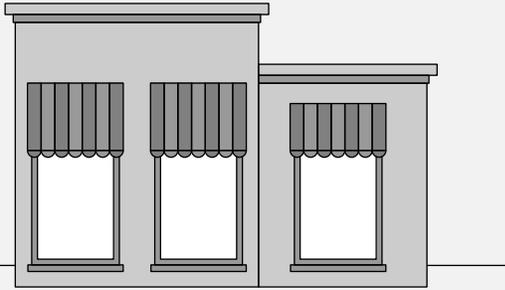
- **1a:** The concrete is 3000 psi minimum unconfined compressive strength, with one layer of #3 (Ø3/8") rebar spaced at 12" each way, with 1-1/4" cover at bottom. Rebar not shown here.
- **1b:** The base is Type A Grade 1 crushed limestone road base, compacted to 90% of standard proctor density.
- **1c:**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



GROUND CONDITIONS

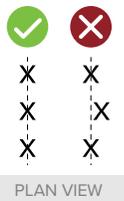
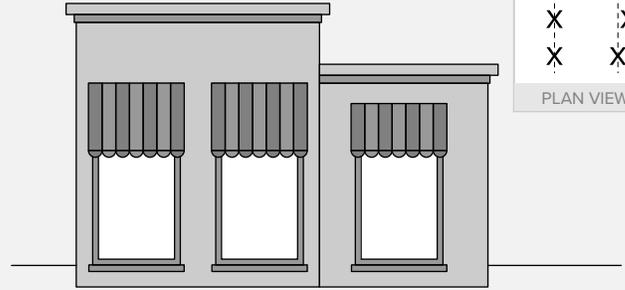
1

PHOTOGRAPH: Take wide angle photo including entire site.



2

Layout and mark bollard locations per print.

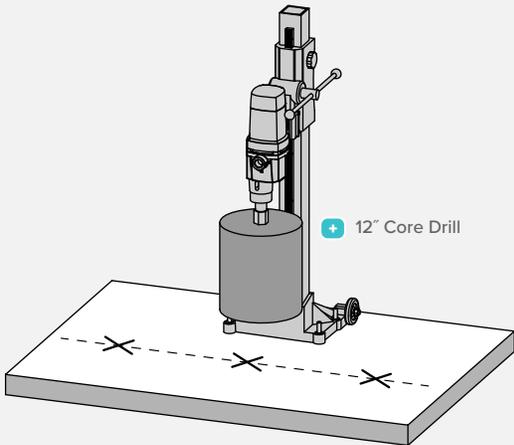


PLAN VIEW

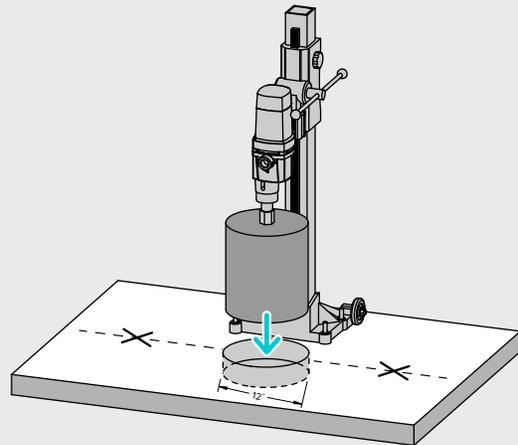
+ Chalk, Tape & T-Square

3

Use the 12" core drill to drill through concrete. Keep it clean — use the wet vac to make sure concrete slurry doesn't stain the sidewalk or enter drains.

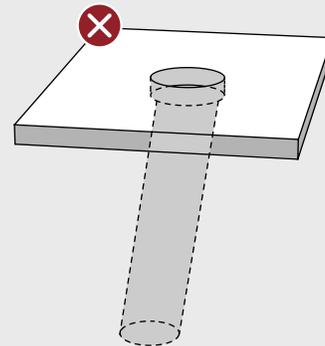
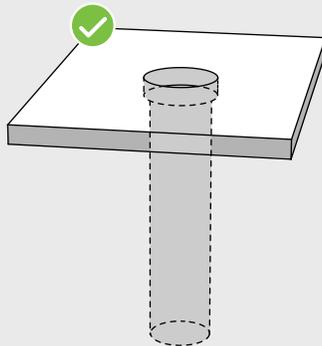
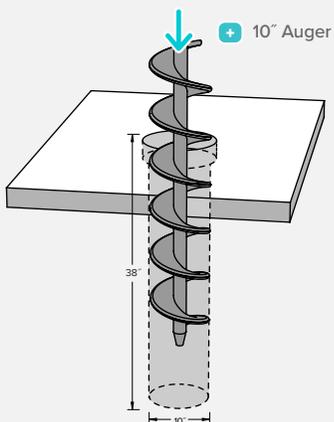


+ 12" Core Drill



4

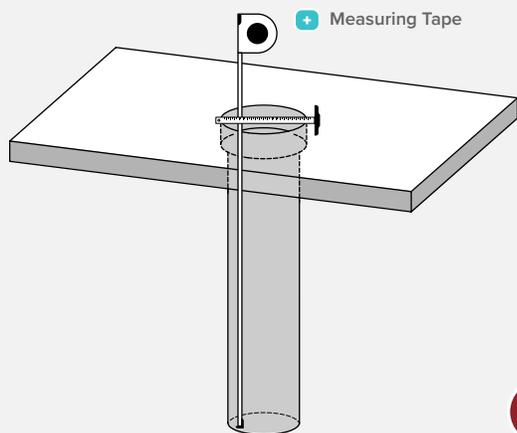
Using a 10" auger, remove earth from hole. Auger a 10" diameter hole 38" deep.



NOTE: Ensure hole is drilled straight and not at an angle

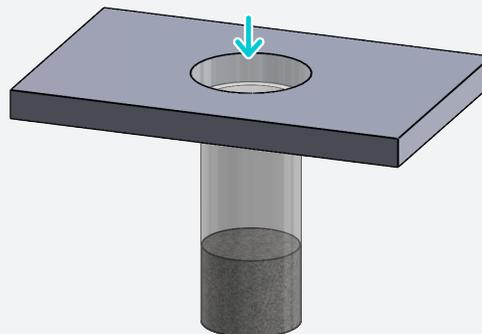
5

PHOTOGRAPH: Take two individual photos of both the diameter and depth of hole.



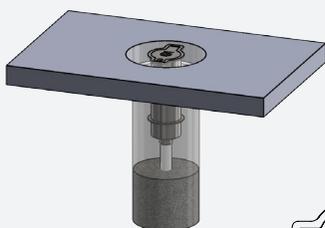
6

Fill the hole with about 8in of gravel or until there is 30in of remaining space in the hole.



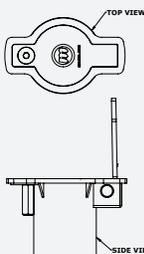
7

Install S20 removable sleeve so that the tip of the sleeve is level and flush with grad .



NOTE: Orient the sleeve to the parking lot as shown in the graphic below.

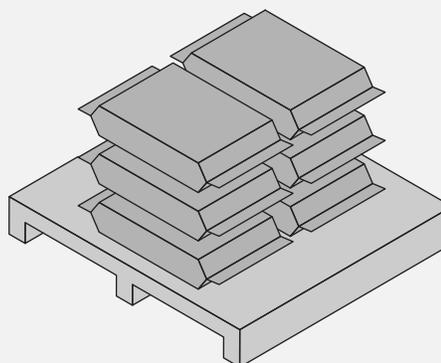
PARKING LOT



STORE FRONT

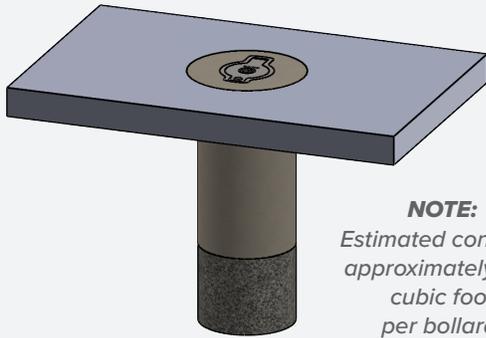
8

PHOTOGRAPH: Take photo of concrete bag.



9

Mix & place 3,000 PSI minimum concrete into hole and fill to ground level. While concrete is wet, smooth concrete so it is flush and uniform with top of sleeve. Clean excess concrete.



NOTE:
Estimated concrete
approximately 1.75
cubic foot
per bollard.

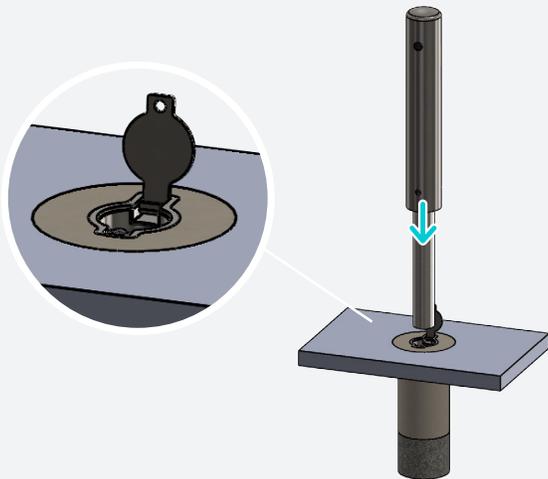
10

Insert the S20 Core into the stainless steel cover and fasten using the 3 provided flat head screws



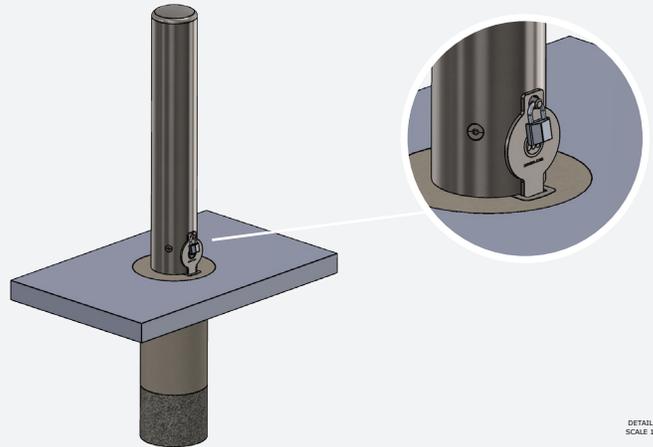
11

Open the cap by removing the screw. Lower the assembled core and cover into the sleeve and position cover facing away from parking lot.



12

Lift the cap over the nub on the back of the cover and slide the pad lock through hole located on the nub to secure and lock the cover into place.



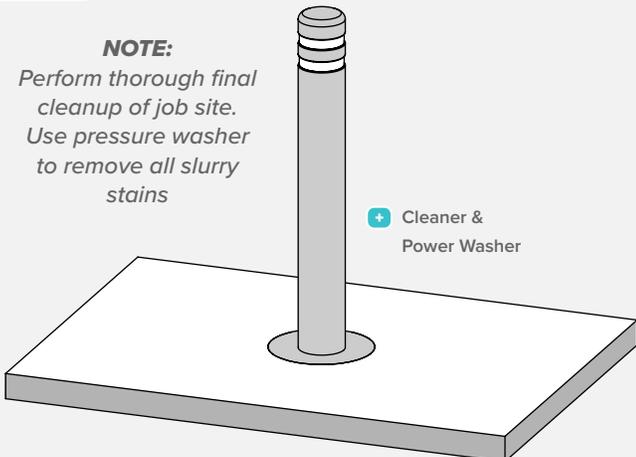
DETAIL BY
SCALE 1 : 4

13

Clean bollard cover and ensure entire site is clean.

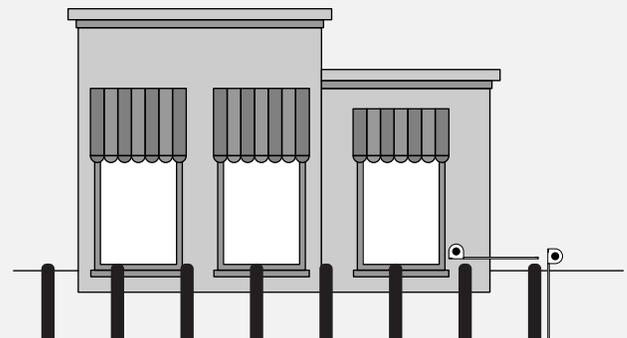
NOTE:
Perform thorough final
cleanup of job site.
Use pressure washer
to remove all slurry
stains

+ Cleaner &
Power Washer



14

PHOTOGRAPH: Take photos of completed installation, bollard height & typical spacing.

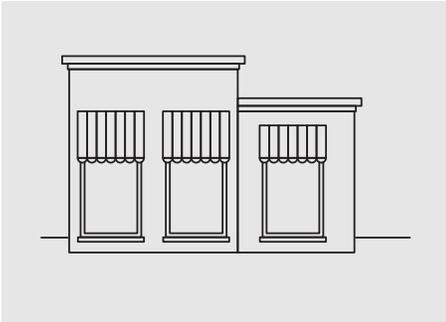


NOTE: Total of 3 photos

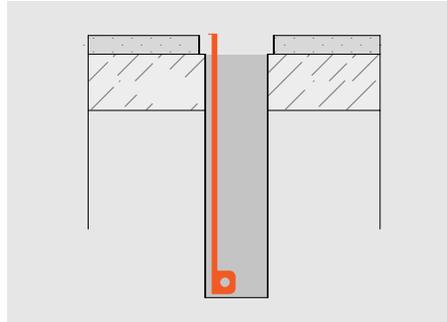


Photo Checklist

Ensure to document the completion of each specified step that included a photo icon as shown below



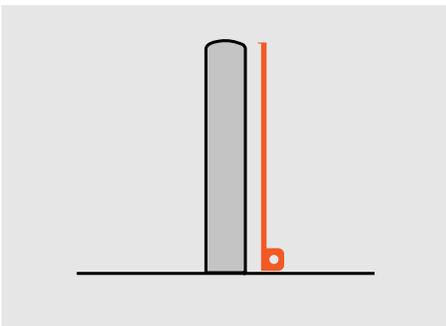
Before Photo Of Work Site



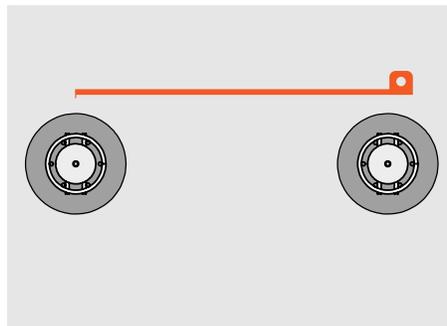
38" Deep Hole



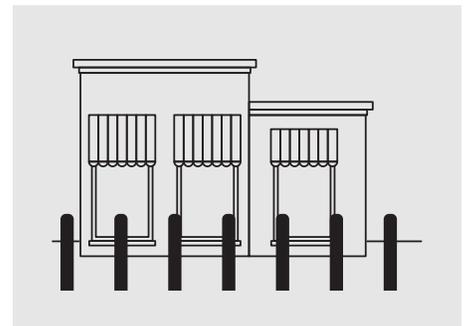
10" Diameter Hole



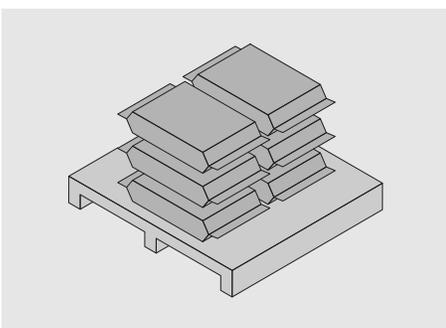
Overall Bollard Height



Typical Bollard Spacing



Finished Site Installation



Concrete Bag



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