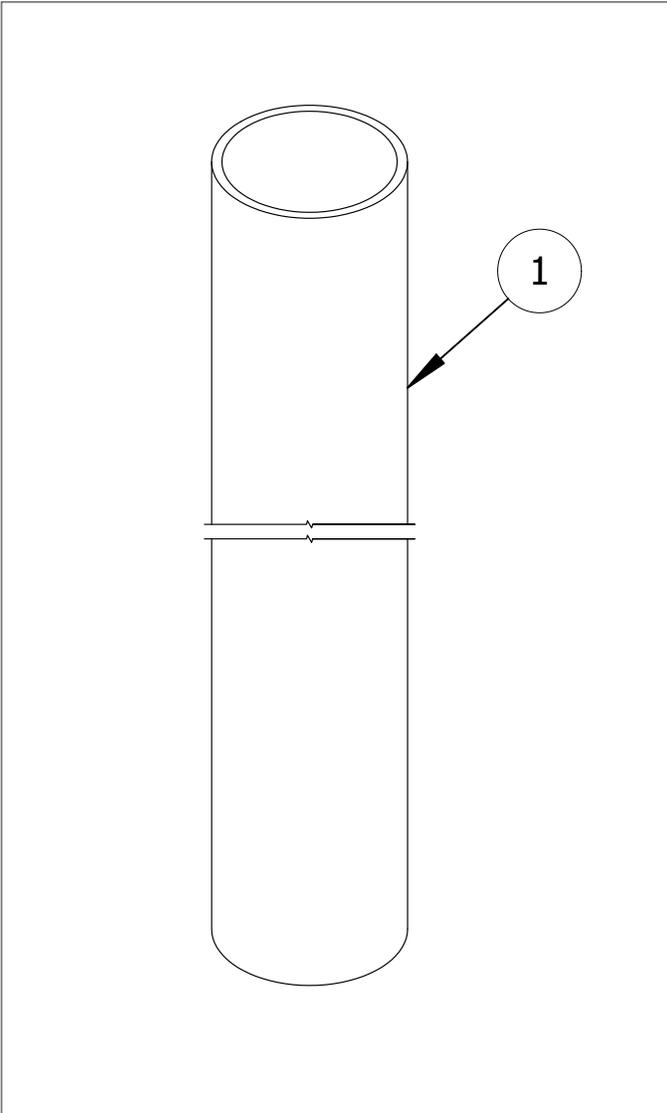


# Pipe Bollard Installation

Existing Concrete

Bollards shown in the diagrams may not be the same model as the bollards shipped in this order. This does not affect the integrity of the installation.



-  To protect the finish, keep bollards in original packaging until exact moment of installation.
-  Handle with care to avoid scratching or damaging bollard surfaces as abrasions will lead to rust.
-  Consider local soil conditions before proceeding with bollard installation.

## Before Installation

**STEP 1:** Study the site plans and mark the intended location of each pipe bollard on the plan.

**STEP 2:** Always check for hazards such as water pipes, gas lines, and underground wiring before digging. *Note: You may need a permit to dig to certain depths or in certain locations.*

**STEP 3:** Please consult your local Building Code Department to determine the recommended depth below the frost line for digging in your area. Choose a minimum of this or 36", whichever is greater. This is the total depth for digging. The diameter of the hole differs based on the bollard model. Refer to product drawings to determine specific measurements.

**STEP 4:** Dirt and debris can affect the line of sight and disrupt placement of the pipe bollards. Use a broom or pressure washer to clean the concrete surface prior to pipe bollard installation.

## Parts List

#	PART	QTY
1	Steel Pipe Bollard	1

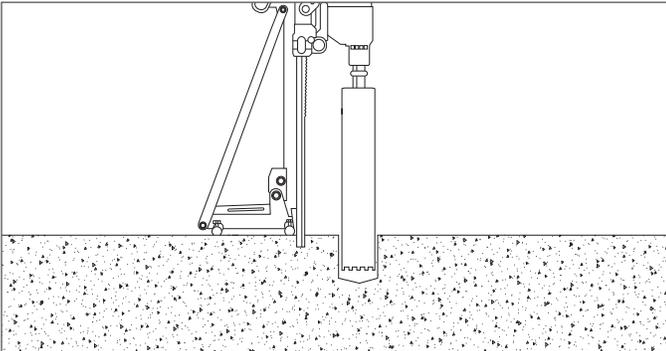
## Installation Equipment

Core Drilling Rig	Shovel
Post Hole Digger	Measuring Tape
Vacuum	Chalk/Marker
Broom/Pressure washer	Level
Small Drill (Optional)	Shovel

# Pipe Bollard Installation

## Existing Concrete

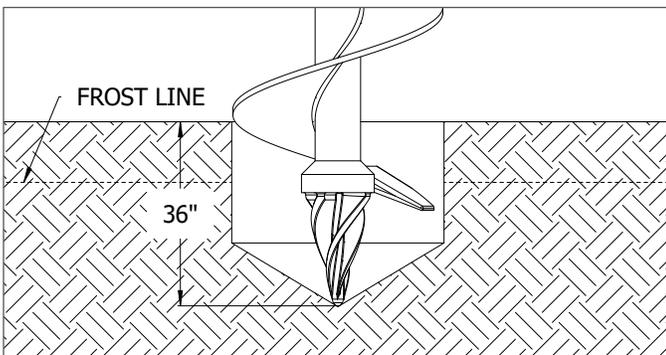
STEP 6



### Remove Concrete

**STEP 6:** Center the core drill on the installation mark and remove the concrete. The diameter of the hole differs based on the bollard model. Refer to product drawings to determine specific measurements. Use a vacuum to remove any standing water or debris.

STEP 7



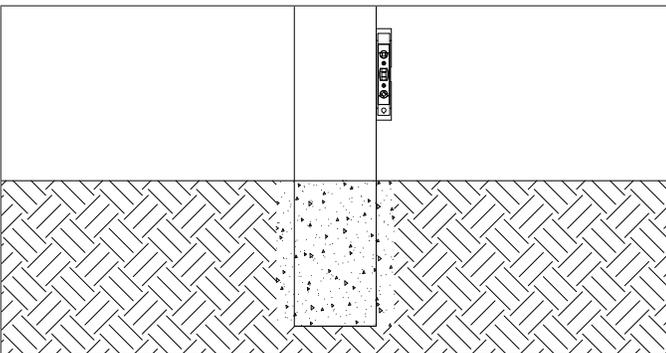
**STEP 7:** After the concrete layer is removed, use an auger or post hole digger to dig the hole to the required depth and diameter.

### Pour the Concrete

**STEP 8:** Mix the concrete. Check that the proper ratio of water and concrete mix is used—the concrete should have a similar texture to moldable clay.

**STEP 9:** Fill the hole to the top with concrete until it is level with the surface grade.

STEP 12

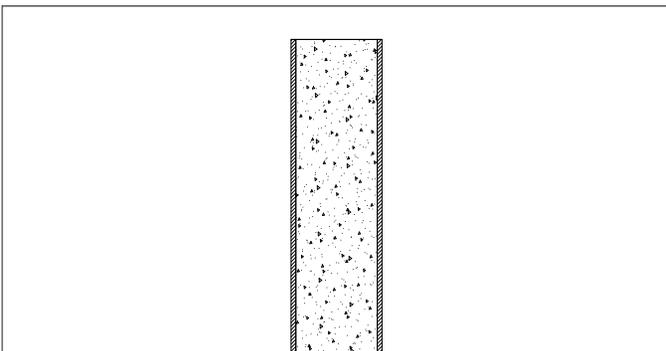


### Set the Pipe Bollard

**STEP 10:** Place the pipe bollard near the site. When ready to install, remove its protective packaging.

**STEP 11:** Set the pipe bollard over the hole and into the concrete while turning and pushing down. Continue until the pipe bollard reaches the bottom of the hole. *Note: Pipe bollards are heavy—to prevent accidents and injuries, ensure the proper resources are available to set into place.*

STEP 14

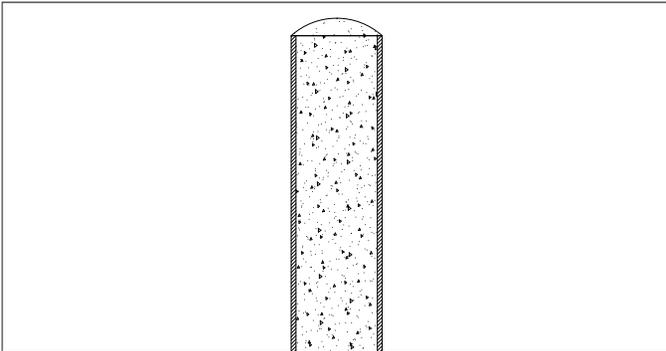


**STEP 12:** Hold a level against the side of the pipe bollard and ensure that it remains plumb. *Note: Once the concrete has cured, there will be no way to make any adjustments.*

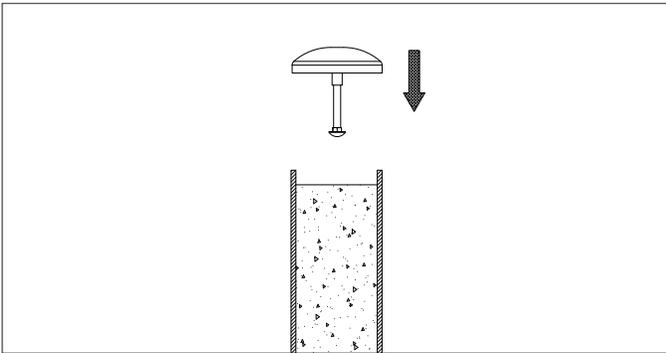
**STEP 13:** Patch the surface around the pipe bollard to make it smooth with the existing surface.

**STEP 14:** Using a shovel, fill the entire length of the pipe bollard with concrete.

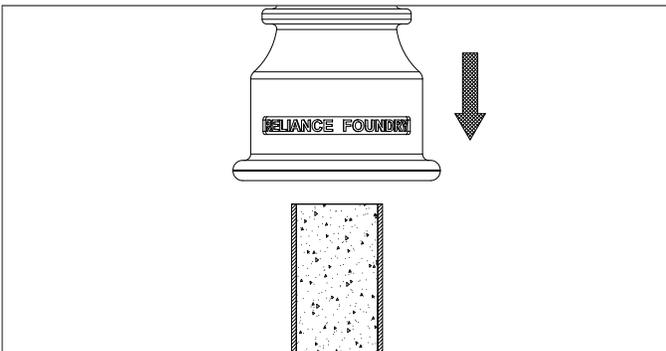
STEP 15(A)



STEP 15(B)



STEP 15(C)



### Finish Options for the Pipe Bollard

*Debris, dust, and water can accumulate on a pipe bollard with a flat top. It is recommended that pipe bollards are finished with a domed top—either with concrete, bollard cap, or bollard cover.*

#### STEP 15 (A): Concrete domed top

Create a mound at the top of the pipe bollard with concrete and tap with hands into a dome shape. *Note: With this method it may not be possible to add a bollard cap, or some models of bollard covers, after the concrete has cured.*

#### STEP 15 (B): Bollard cap

Create a flat surface at the top of the pipe bollard with concrete. A bollard cap can be installed into the concrete while it is still wet. This provides an even, uniform dome surface finish.

#### STEP 15 (C): Bollard cover

Create a flat surface at the top of the pipe bollard with concrete. Select a bollard cover to set over the pipe bollard. Refer to the appropriate bollard cover installation method before installing.

### Clean the Pipe Bollard

**STEP 16:** Use a cloth to clean before the concrete cures.

**STEP 17:** A minimum of 2–3 days should be given for concrete to cure before beginning construction projects on new concrete surfaces. *Note: Moisture in the environment and cool temperatures can significantly slow the process.*



**Inspect the installation.** Abrasions should be covered as soon as possible. For damage repair or other servicing needs, please contact Reliance Foundry's sales department.