

Globoll Bollard Installation

1.01 Installation

Safety Precautions – in the excavation of a Globoll Bollard array take all necessary steps to make sure the pit is secured. Follow all OSHA requirements for digging a foundation of this depth and size. Make sure traffic control measures are in place and that caution tape be used around the whole foundation.

1.01.1 Foundation

1.01.1.1 A Globoll Bollard array foundation size will vary based on the number of bollards purchased. Single bollard views are shown below. Drawings showing multiple drawings are available.

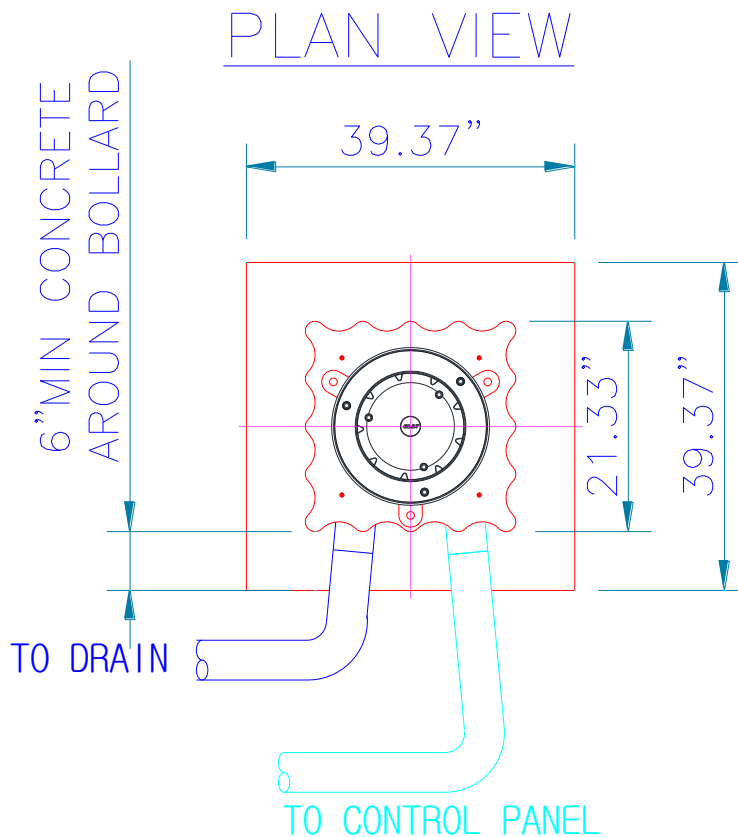


Figure 1 – Foundation Top View

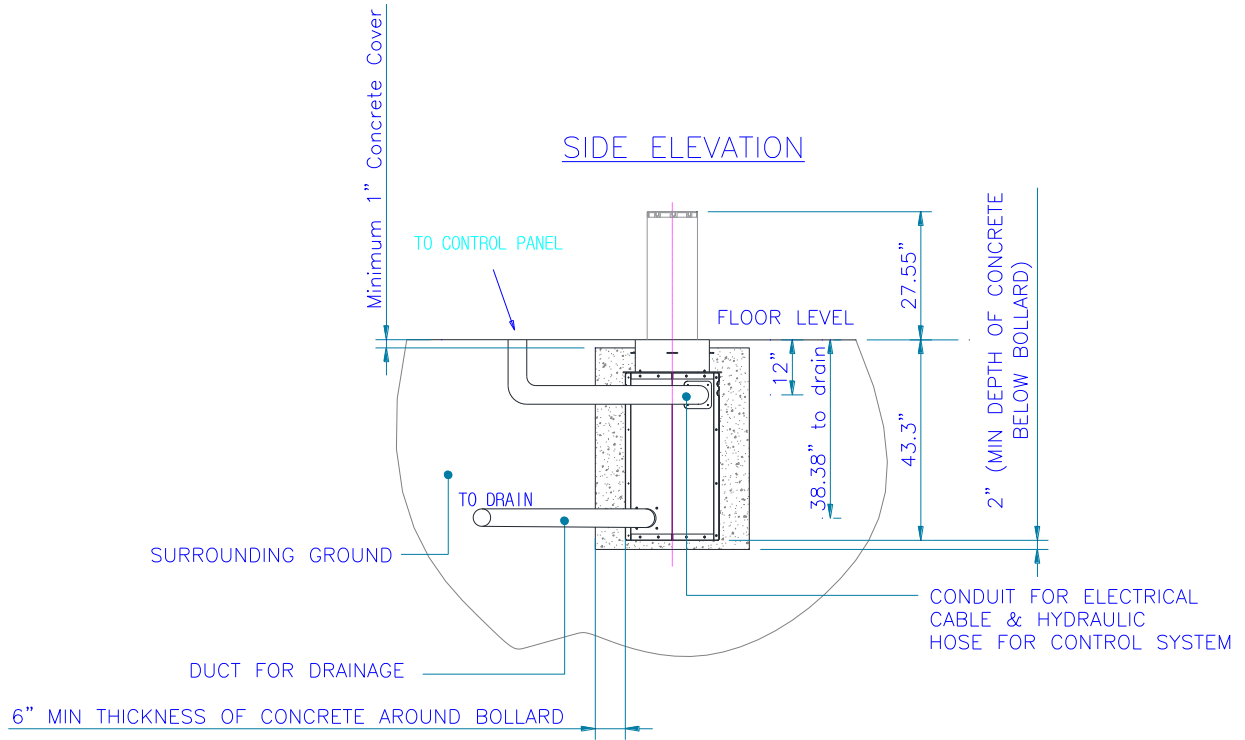


Figure 2 – Elevation Drawing

1.01.1.1 First layer of Concrete forms.

- A. After you have the foundation excavated to the required depth, form the pit for the first concrete pour (Barrier base pad), the form should be a minimum of 2" thick.
- B. Pour 3000psi concrete a minimum of 2" in depth in the formed Barrier base Pad.
- C. Allow to cure for a minimum of 12 hours before proceeding to the next step.

1.01.1.2 Base Pad Pour

- D. Verify all Forms are level and that you have 43.3" from the top of the forms to the final grade.

1.01.2 Setting Globoll Bollards

1.01.2.1 After the Concrete has set (approximately 24 hours) – place the Bollards on the Barrier Base pad – Spacing of the bollards should be 59" in center. The Globoll is not a crash rate product so bollard center spacing is at the owners discretion.

- A. At this time check for the final grade of the barrier – should be no more than .5" above final roadway grade. Please note, installing the bollard to finish above grade could increase the risk of damage using snow removal machinery.
- B. Once the Bollards are in place and level install Drain lines connecting to the 4" connector at the base of the bollard, run the drain outside of the foundation area.

1.01.3 Installation of Conduits

1.01.3.1 Hydraulic line and LV Conduit – install one 4" Schedule 40 PVT conduit to the side of the each Globoll Bollard to the HPU. It is possible to connect two or maybe three bollards together but it may prove difficult to pull in hydraulic lines and cables later.

- A. All conduit bends should avoid 90 degrees, if 90 degree bends are necessary only utilize a long sweep 90.
- B. No more than 3 – 90 degree bends should be made for any Globoll Bollard installation.

1.01.4 Final Concrete pour

1.01.4.1 The Globoll Bollards requires 3000 psi concrete. Ameristar recommends utilizing a 4000psi or 5000psi mix for the final pour to achieve a 3000psi strength sooner.

- A. 3000psi concrete will achieve 3000psi in strength in 28 days
- B. 4000psi concrete will achieve 3000psi strength in approx. 5 – 7 days
- C. 5000psi concrete will achieve 3000psi strength in approx. 3 – 5 days

1.01.4.2 Installation contractor should utilize a vibrator when pouring the final concrete pour to insure all air voids are removed from the slab.

1.01.4.3 When finishing the concrete make sure the concrete falls away from the bollards in all directions a minimum of .5 inches on the sides and 1 inch on the front and back.

1.01.4.4 Broom or trowel finish is acceptable and if four (4) or more bollards are set together side by side a control joint is recommended to be place between the bollards.

Warning – Manufacturer Warranty void if the product is tested prior to reaching 3000psi