

## GENERAL WARNINGS AND CAUTIONARY STATEMENTS FOR FIXED BOLLARDS

Bollard Warehouse, Inc. is the licensed Manufacturer of the TrafficGuard®, Inc. ASTM F3016 crash tested bollard line. In order to safely and effectively use any Bollard Warehouse, Inc. product, please read and understand the General Warnings and Cautionary Statements contained below. If you have any questions about any of these General Warnings and Cautionary Statements, or about any aspect of Bollard Warehouse, Inc.'s products or literature, please contact Bollard Warehouse, Inc. at 877-727-7347, or email [sales@bollardwarehouse.com](mailto:sales@bollardwarehouse.com).



### **BOLLARD SELECTION AND PLACEMENT**

based on vehicle weight, speed and other site specific factors to be determined by owner.



### **FAILURE TO UTILIZE BOLLARD WAREHOUSE, INC. AUTHORIZED PARTS, OR MODIFICATIONS**

to the Bollard Warehouse, Inc. products, or failure to follow the recommended installation procedures, will result in your warranty being null and void.



### **READ AND FULLY UNDERSTAND THE INSTALLATION INSTRUCTIONS**

before attempting to install any Bollard Warehouse, Inc. bollard product.



### **SUBSTITUTION OF COMPONENTS MAY IMPAIR THE PROPER FUNCTION**

of Bollard Warehouse, Inc. bollards products. If you need replacement parts, please contact Bollard Warehouse, Inc. at the number and email above.



### **FOR MAXIMUM EFFECTIVENESS**

of Bollard Warehouse, Inc. bollard products, be sure to properly maintain bollards by replacing any damaged, corroded or missing components, and reapply paint as required to maximize visibility. Failure to properly maintain product can negatively impact the bollards performance over time.

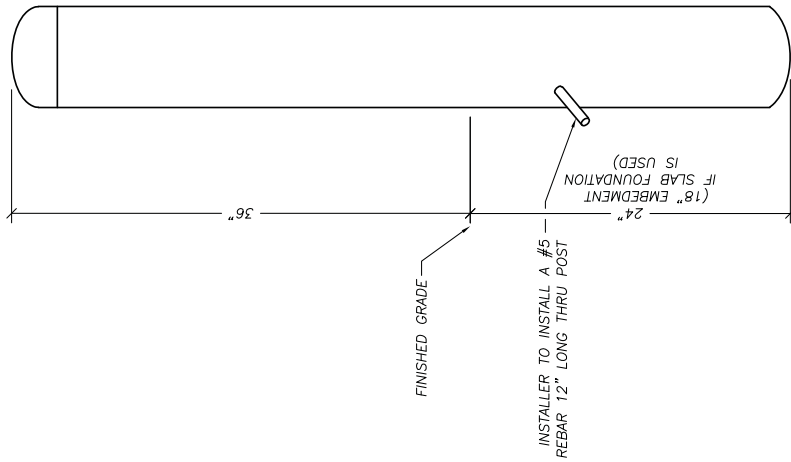


### **TO ENSURE VISIBILITY**

of bollards, be sure to apply all decals that are provided with the product, and in the manner recommended by Bollard Warehouse, Inc..

**IF IN DOUBT CALL BOLLARD WAREHOUSE, INC. 877-727-7347**

# ROUND FIXED POST SERIES

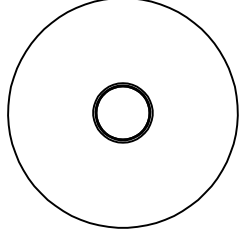
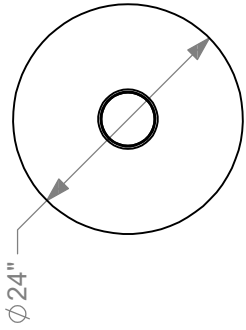


## INSTALLED POSITION

ATTACH REFLECTIVE WARNING LABELS PROVIDED TO THE FRONT & BACK OF BOLLARD AFTER INSTALLATION.

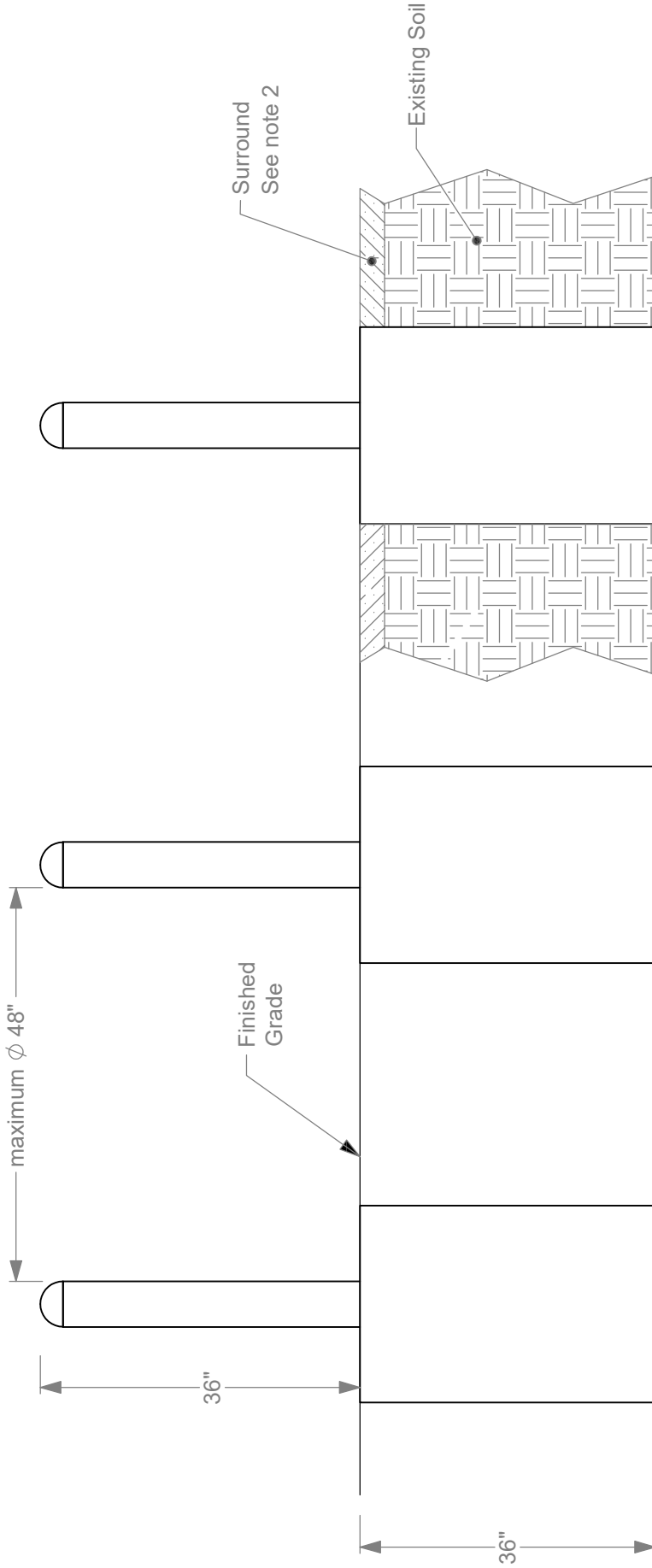
<b>Bollard Warehouse, Inc.</b> www.bollardwarehouse.com sales@bollardwarehouse.com 877-727-7347 FAX: 800-814-7194		NAME: 1. DO NOT SCALE FROM DRAWING 2. DIMENSIONS BASED ON ASME Y14.5M-1994		USED ON:		TOLERANCES: DX ± 0.1 DXX ± 0.06 ANGULAR ± 1° FRACTION ± 1/16		ACTION BY: DESIGN: WKZ DRAWING: CJD CHECKED: WKZ DATE: 2018.4.16 SCALE: 1:4 DWG NO: 2006		DRAWING NUMBER: 06-105	
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**S-10 Bollards  
in Shaft Foundation**

**Plan View**



**Elevation View**

1. The concrete must be minimum 3000 psi compressive strength, with grade 60 rebar per construction foundation details provided once materials have been ordered. Total weight of rebar is approximately 26 lbs. per Bollard.
2. The foundation details provided have been full-scale crash tested and qualified as a rigid foundation as defined by ASTM F3016-14 when installed in continuous paving with a minimum thickness of 3 inches. When installed in any other configuration, it is the responsibility of the purchaser to verify that the supporting pavement or adjoining structure is capable of providing adequate strength to limit the horizontal deformation of the foundation at grade to one inch or less for the performance Condition Designation specified.

2018.4.16

**Bollard Warehouse, Inc.**

www.bollardwarehouse.com

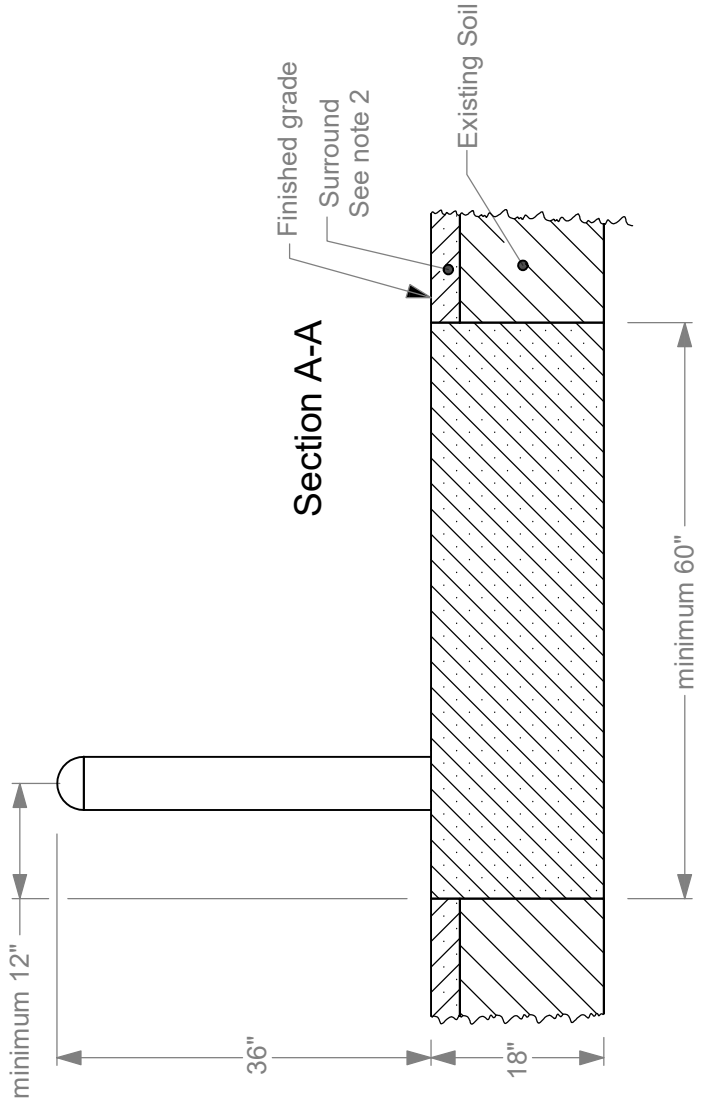
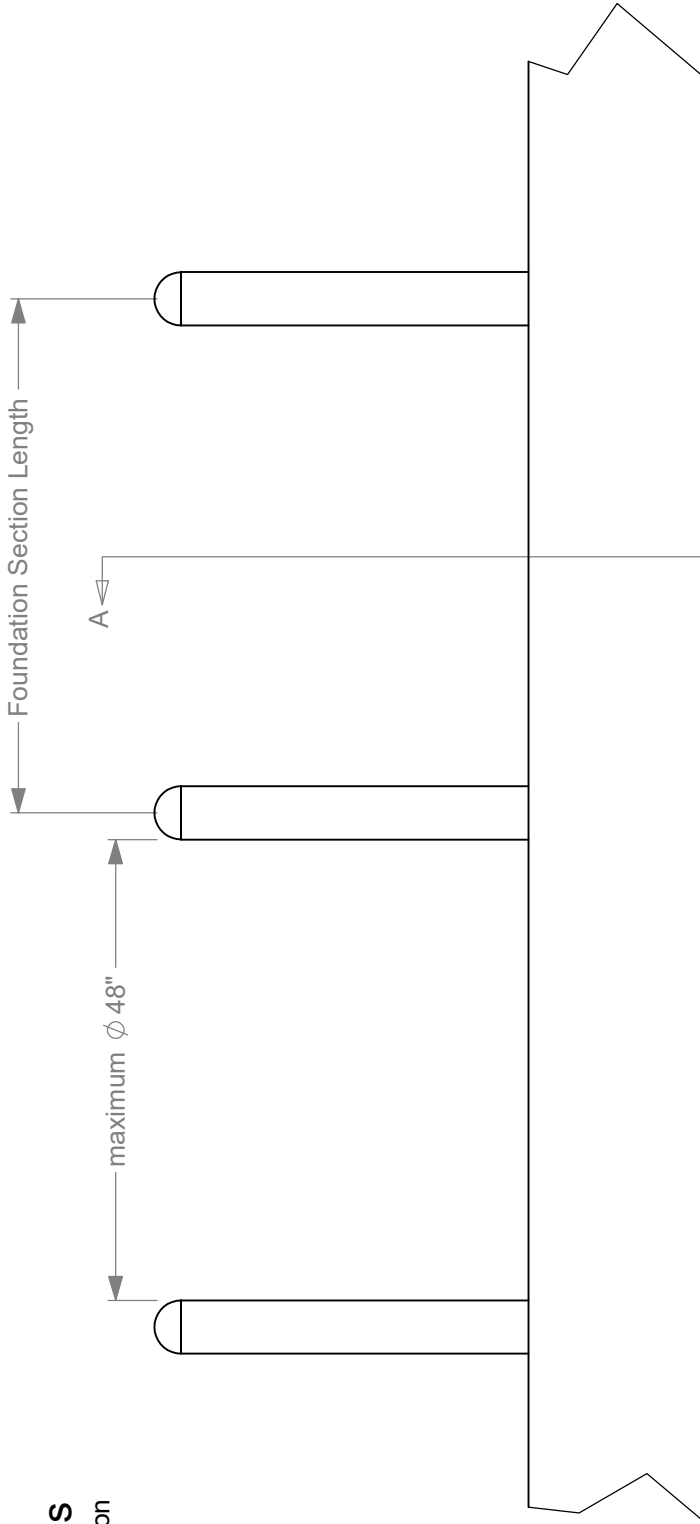
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# S-10 Bollards in Shallow Foundation



1. The concrete must be minimum 3000 psi compressive strength, with layers of #5 ( $\text{Ø}5/8"$ ) grade 60 rebar combined with strategically located V Bars and U Bars per construction foundation details provided once materials have been ordered. Total weight of rebar is approximately 100 lbs. per Bollard. (This is assuming the Bollards are at maximum allowable spacing. Closer spacing will require less rebar per bollard.)

2. The foundation details provided have been full-scale crash tested and qualified as a rigid foundation as defined by ASTM F3016-14 when installed in continuous paving with a minimum thickness of 3 inches. When installed in any other configuration, it is the responsibility of the purchaser to verify that the supporting pavement or adjoining structure is capable of providing adequate strength to limit the horizontal deformation of the foundation at grade to one inch or less for the performance Condition Designation specified.

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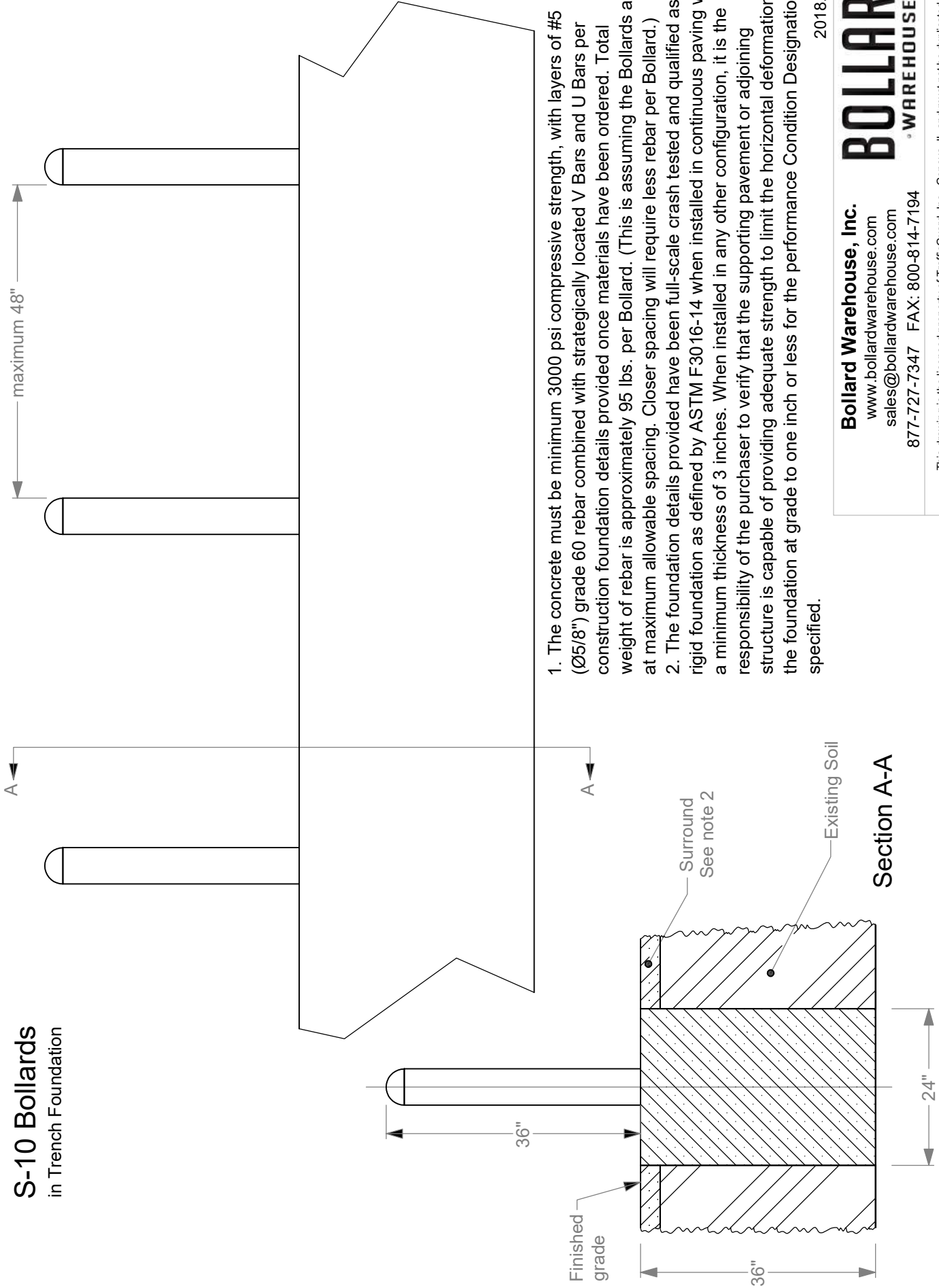
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# S-10 Bollards in Trench Foundation



1. The concrete must be minimum 3000 psi compressive strength, with layers of #5 (Ø5/8") grade 60 rebar combined with strategically located V Bars and U Bars per construction foundation details provided once materials have been ordered. Total weight of rebar is approximately 95 lbs. per Bollard. (This is assuming the Bollards are at maximum allowable spacing. Closer spacing will require less rebar per Bollard.)
2. The foundation details provided have been full-scale crash tested and qualified as a rigid foundation as defined by ASTM F3016-14 when installed in continuous paving with a minimum thickness of 3 inches. When installed in any other configuration, it is the responsibility of the purchaser to verify that the supporting pavement or adjoining structure is capable of providing adequate strength to limit the horizontal deformation of the foundation at grade to one inch or less for the performance Condition Designation specified.

2018.4.16

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## **Bollard Warehouse, Inc. Care & Maintenance**

### **Ensure optimal appearance and long term performance**

All Bollard Warehouse products are manufactured with high quality materials for premium aesthetics and long term durability. With proper care and maintenance, our products will withstand years of service with minimal wear and corrosion in most North American environments.

### **General Care & Maintenance**

**Inspection:** All Bollard Warehouse products should receive routine inspection and cleaning every 6 months. To avoid progression of damage, identify and address problems as early as possible. Loose or missing parts should be tightened or replaced immediately. Some environments, including high-saline locations subject to saltwater spray or de-icing salts, or high-traffic areas with abundant particulates or other pollutants, will require more frequent attention. Pay close attention to the powder coated finish. Any signs of deterioration of the finish or rusting of the steel should be addressed immediately. **Never allow leaves, mulch or other moisture holding materials to be placed around the area where the pipe meets the foundation.**

**Cleaning:** Routine (at least every 6 months) cleaning with soap and water is usually sufficient to maintain Bollard Warehouse products. Use a soft nylon brush to remove any accumulated dirt. Wash with mild soap or detergent, then rinse in clean water and wipe dry with a soft cloth. Neglected or damaged products may require additional care. Refer to Stainless Steel Care and Maintenance and Powder Coating Care and Maintenance.

**Removable Bollards:** Bollard posts, ground sleeve lids or filler pieces should be used periodically – six times per year at a minimum to insure functionality and to check all parts for damage or deterioration that may be hidden from observation.

**Heavily damaged products:** Heavy damage includes structural compromises such as visible dents, cracks, breaks and rust that can undermine the integrity of a product. Heavily damaged products should be removed from service until a repair or replacement can be made. To prevent worsening of damage, any significant rust should be removed as soon as possible. If any parts are broken or missing, contact Bollard Warehouse's Sales Department to determine the availability of replacements.