

The Ross XL-22-RB removable bollards are part of a counter-intrusion system and are installed in open areas to prevent vehicular traffic. The bollards can be removed in limited situations to allow vehicular access. Aesthetically pleasing and manufactured from heavy-duty steel with a corrosion-resistant galvanized finish, the bollards will last for years and provide crash-rated protection for a wide variety of applications. Removable bollards have a DoS K12 crash rating. For more information, please call our toll-free number above or visit our website.

## SECTION 323928

### REMOVABLE BOLLARDS

(ROSS XL-22-RB)

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
  - 1. Removable standard-foundation bollards.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data for each type of product.
- B. Shop Drawings: Submit shop drawings including the following:
  - 1. Complete list of equipment, materials, and manufacturer's descriptive and technical literature.
  - 2. Proposed layout of foundation.
- C. Reports and Certifications: Submit the following:
  - 1. Crash Test Rating: DoS K12. Acceptable substitute: Provide a copy of the United States Department of State "List of DOS Certified Anti-Ram Barriers" showing the inclusion of the equivalent Basis of Design bollard, DS-22R.
- D. Maintenance Manuals: Submit two copies of maintenance instructions.
- E. Welder's Certificates: Copy of current certificate for AWS D1.1.
- F. Warranty: Submit executed copy of manufacturer's warranty.

##### 1.3 QUALITY ASSURANCE

- A. Installer: Minimum 2 year documented history of installing similar equipment, authorized or certified by the manufacturer. Installer shall accept responsibility for all field verifications, underground utility locations.
- B. Manufacturer's Services: If requested by the Owner, provide services of a manufacturer's representative who is experienced in the installation of the bollards.

#### 1.4 DELIVERY, STORAGE AND HANDLING

- A. Store equipment in a location protected from the weather, humidity, temperature variation, dirt and dust, or other contaminants. Store materials on sleepers or pallets and protect from rust and objectionable materials such as dirt, grease or oil.

#### 1.5 WARRANTY

- A. Warranty: Provide manufacturer's standard limited warranty.

### PART 2 - PRODUCTS.

#### 2.1 MANUFACTURER

- A. Basis-of-Design Manufacturer: Ross Technology Corporation, 104 North Maple Avenue, Leola, PA 17540. Toll-free 800-345-8170. www.rosstechnology.com. No substitutions.

#### 2.2 REMOVABLE BOLLARDS

- A. Removable Standard-Foundation Bollards: Ross XL-22-RB by Ross Technology Corporation complying with the following:

1. Basis of Design: U.S. Department of State, Overseas Building Operations, DS-22R.
2. Performance: Crash tested in accordance with Department of State, SD-STD-02.01 Rev. A, and assigned a rating of K12 (15,000 lb. truck at 50 mph with less than 1m penetration)
3. Bollard Assembly: Constructed from heavy-duty structural steel sections. Supplied fully finished, with all components required for installation.
4. Height: 39 inches (990 mm).
5. Foundation Depth: 47.25 inches (1200 mm).
6. Bollard Diameter: 10.75 inches (273 mm).
7. Bollard Spacing (max): 58 inches (1473 mm) center-center; 47.25 inches (1200 mm) clear opening.
8. Concrete Foundation: 3600 psi (25 MPa) Portland Type 1 concrete with an industry standard cure time of 28 days. Normal maximum aggregate size shall be 1.5 inches (38 mm). Vibrate concrete to fill all voids. Rebar shall comply with ASTM A615 grade 60.

- B. Finish:

1. Hot-dip galvanized per ASTM A123.
2. [Option] Wash primer after hot-dip galvanizing per ASTM A123.
3. [Option] Factory wash primer and finish after hot-dip galvanizing per ASTM A123; polyurethane top coat. Select colors from manufacturer's color range.
4. [Option] Top plates and caps, standard and custom.
5. [Option] Decorative covers.
6. [Option] Reflective striping.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and site conditions for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. Install products in strict accordance with manufacturer's instructions and approved submittals. Locate units level, plumb, and in proper alignment with adjacent work. Use concealed anchorages where possible.
  - 1. Excavate to required depth and place concrete in accordance with ACI standards
  - 2. Protect adjacent areas against damage; repair or patch damaged areas. Restore damaged finishes so no evidence remains of corrective work.

#### 3.3 CLEANING

- A. Clean exposed surfaces using methods acceptable to the manufacturer which will not damage finish.

END OF SECTION

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