SUGGESTED MASTER SPECIFICATION

Bollard Base

PART 1 - GENERAL

1.1 SUMMARY

A. Products supplied under this section: bollard base.
B. Related sections:
   1. Section 03100 - Concrete forms and accessories.
   2. Section 03150 – Concrete accessories.
   3. Section 03200 - Concrete reinforcement.
   4. Section 03300 - Cast-in-place concrete.

1.2 REFERENCES

A. American Concrete Institute (ACI);
   1. ACI Detailing Manual SP-66.
   2. ACI 302.1R-04 Guide for Concrete Floor and Slab Construction
B. American Society for Testing and Materials International (ASTM):
   1. A 36 Standard Specifications for Carbon Structural Steel.
   2. A 108 Standard Specifications for Steel Bar, Carbon and Alloy, Cold Finished.

1.3 SUBMITTALS

A. Product data: Manufacturer's product data with application and installation instructions for proprietary materials and items, including but not limited to the bollard base.
B. Shop drawings: Indicate placement of the bollard base.
   1. Indicate dimensions and spacings.
   2. Comply with ACI 302.1R-04, ACI detailing manual (SP-66) and PNA installation guides indicating placement of bollard base.

1.4 QUALITY ASSURANCE

A. Pre-installation meeting:
   1. Convene a pre-installation meeting ** two (2) ** ____ ** weeks before installation of PNA products. Require attendance of parties affecting the work of this section, including Contractor, Engineer, and installers.
   2. Review installation procedures and coordinate with other work.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver bollard base in manufacturer's packaging.
B. Deliver and handle materials to prevent damage or weakening to systems.
C. Prevent accumulation of rust, debris or deleterious materials on systems during storing. Store off ground and under cover.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Acceptable manufacturer: PNA Construction Technologies, www.pna-inc.com; 800-542-0214.

2.2 BOLLARD BASE

A. Acceptable product: PNA Bollard Base.
B. Material:
   1. Square shaped steel plate with base and #4 rebar anchors.
   2. Dimensions of steel plate: ** 16” x 16” x ½”. ** 24” x 24” x ½”. (Fill in appropriate dimensions) **
   3. Base: 2” x 3/8” steel support frame; 1/ ¼” x 1 ¼” x 1/8” angle and 3/8” x 4” headed anchor. Bottom of base extends out 2” so that plate can be accurately and easily aligned with a permanent fixture on the job-site.
   4. Rebar anchors extend 9” from base.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Notify Engineer at least 72 hours prior to placing concrete dowel system to allow time for examination of systems. Place no concrete in forms without Engineer’s acceptance of concrete dowel systems.

3.2 INSTALLATION

A. Place bollard base on leveled subgrade.
B. Place and finish concrete.
C. Use internal vibration per industry standards.
D. Finish to edge of plate.
E. Remove paste from top of plate.
F. 8 mm circular weld on bollard base – point of weakness.

3.4 PROTECTION:

A. Protect the bollard base from displacement and from damage until concrete placement is complete.

END OF SECTION