BOLLARD - REMOVABLE: PLAN

- Scale: 1:1/2"=1'-0"

BOLLARD - REMOVABLE: ISOMETRIC

- Scale: 1:1/2"=1'-0"

BOLLARD - REMOVABLE: SECTION - B

- Scale: 1:1/2"=1'-0"

NOTES

1. PIPE BOLLARD, TOP AND FLANGES TO BE STEEL. BOLLARD SHAFT 16" BELOW GRADE.

2. IN-GROUND SLEEVE TO BE STAINLESS STEEL SET IN CONCRETE FOOTING 30" BELOW GRADE.

3. ALL PARTS WELDED AND GROUND SMOOTH.

4. PRIME AND PAINT (2 COATS) ALL PARTS OF BOLLARD. PAINT COLOR: UPENN GREEN - RAL 6009 OR MAB 71874.

### Bollard Dimensions

- **5-1/2" Stainless Steel Bollard**
  - **Dimensions**:
    - **DIA. PIPE**: 5-1/2"
    - **Length**: 16" from base to top
  - **Welds**: All welds to be clean, even and ground smooth.
  - **Finish**: **Steel Bollard**
  - **Paint**: **Upenn Green** (RAL 6009 or MAB 71874), 2 coats

- **In-Ground Sleeve**
  - **Material**: Stainless Steel
  - **Dimensions**:
    - **DIA.**: 6"
    - **Length**: 18"
  - **Additional Notes**:
    - Provide 1" gap between 2 units
    - Steel plates welded to ends of pipe to support 3-1/2" and 5-1/2" units. All welds to be clean, even and ground smooth.

### Details

- **Lock Flange**
  - **Material**: Steel
  - **Dimensions**:
    - **DIA.**: 3" x 6" tubing
    - **Length**: 18"
  - **Function**: Welded to upper pipe shaft to fit in ground sleeve

- **Flat Plate Flange**
  - **Material**: Steel
  - **Dimensions**:
    - **DIA.**: 3-1/2" flat plate
    - **Length**: 18"
  - **Function**: Welded to bottom of pipe bollard to set flat on base plate

### Aggregate Sub-Base

- **Dimensions**:
  - **DIA.**: 6"
  - **Thickness**: 3/4"

- **Function**: Provides a stable base for the bollard

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**Notes**

- **Adjacent Utilities and Final Materials**
  - Coordinating with utilities is the responsibility of the engineer.
  - Specific revisions are the responsibility of the project designer.
  - This drawing is for use as a guide only.

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**University of Pennsylvania**

**Facilities & Real Estate Services**
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