

# MaxiForce™ Steel Bollard Base Installation Schedule

For Universal, Simple, Removable, and EZ Bases

## Engineered Anchorage System for MaxiForce™ Steel Bollard Bases - Single Footing (For Universal, Simple, Removable and EZ Bases)

Base Type	Concrete Pier Diameter (In.)	Concrete Pier Height (In.)	Concrete Pier Reinforcing	Bollard Base/Embedment at Concrete Pier
Universal	12"	39"	2 - #4 Vert.	8" Min
Simple	12"	39"	2 - #4 Vert.	8" Min
Removable	12"	39"	2 - #4 Vert.	8" Min
EZ	12"	39"	2 - #4 Vert.	6" Min

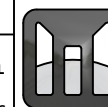
## Engineered Anchorage System for MaxiForce™ Steel Bollard Bases - Continuous Beam Footing (For Universal, Simple, Removable and EZ Bases)

Base Type	Concrete Grade Beam Width (In.)	Concrete Grade Beam Height (In.)	Concrete Grade Beam Reinforcing	Bollard Base/Embedment at Concrete Grade Beam
Universal	12"	22"	3 - #4 Cont.	8" Min
Simple	12"	22"	3 - #4 Cont.	8" Min
Removable	12"	22"	3 - #4 Cont.	8" Min
EZ	12"	22"	3 - #4 Cont.	6" Min

### Design and Construction Notes

- 1.0 For continuous concrete grade beam footing, pipe bollards shall be spaced 4' - 0" O.C. maximum.
- 2.0 Allowable Foundation Pressure = 2,000 psf. Allowable Lateral Bearing = 150/psf. Assumed in-place soil, Sand, Silty Sand, Clayey Sand, Silty Gravel, or Clayey Gravel. For higher soil allowable design values, site soil investigation by a Registered Geotechnical Engineer is required.
- 3.0 See supplemental concrete footing details for additional information.
- 4.0 Material Specifications: Concrete = 3,000 psi (28-day min); Reinforcing ASTM A615 (60 ksi for all bars #5 and larger 40 ksi for all bars #4 and smaller).

Drawing Rev. 1	Created 11/1/2010
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Model	<b>U/S/R/EZ Base Installation Schedule</b>		
Size	File Name	U_S_R_EZ Base Inst Sched	
C	Scale	NA	DO NOT SCALE DRAWING
		Sheet	1 Of 1

# Engineered Anchorage System for the MaxiForce™ EZ Base Circular Concrete Pier Footing

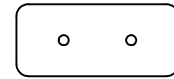
Protected Side

Attack Side

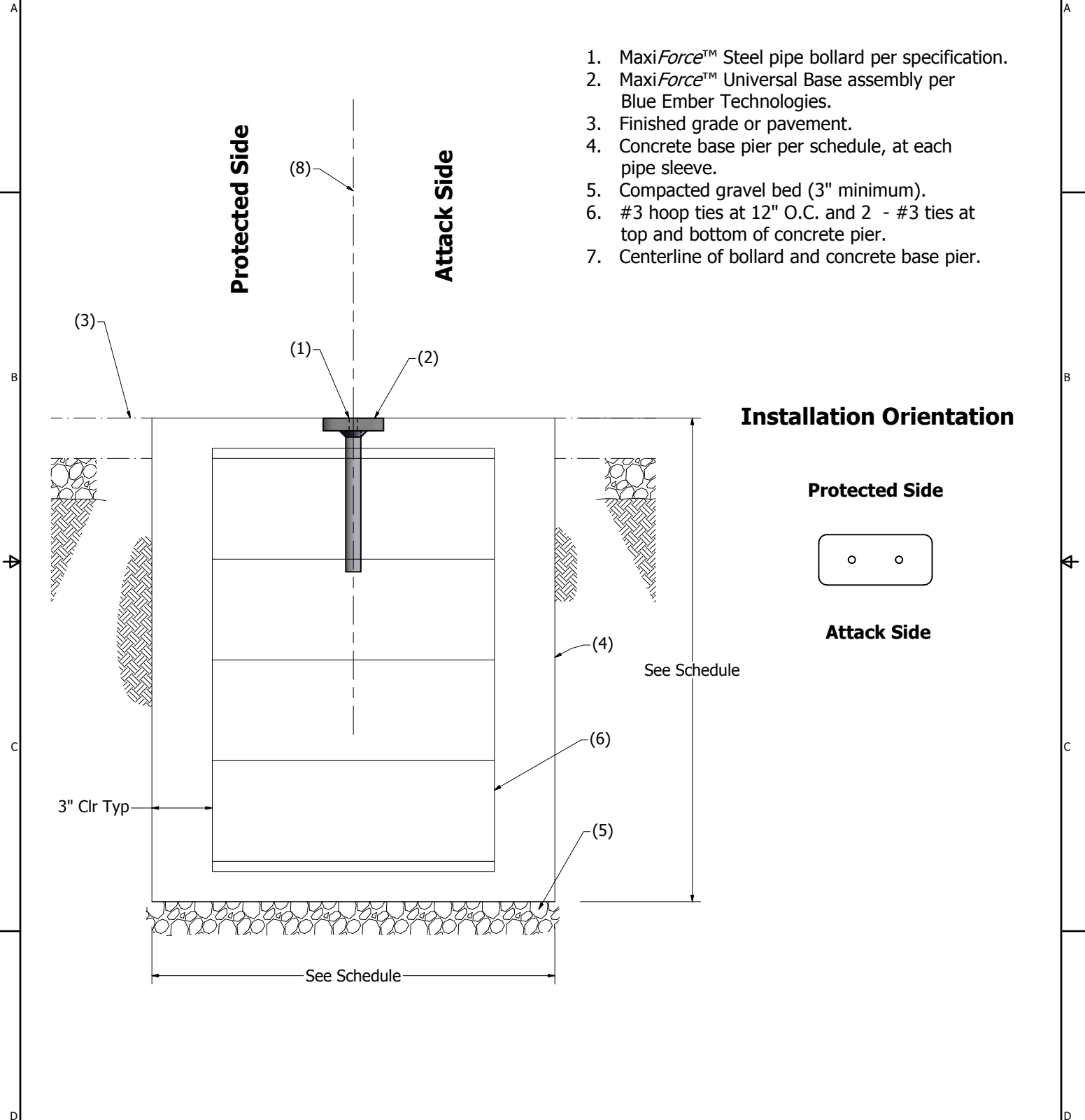
1. MaxiForce™ Steel pipe bollard per specification.
2. MaxiForce™ Universal Base assembly per Blue Ember Technologies.
3. Finished grade or pavement.
4. Concrete base pier per schedule, at each pipe sleeve.
5. Compacted gravel bed (3" minimum).
6. #3 hoop ties at 12" O.C. and 2 - #3 ties at top and bottom of concrete pier.
7. Centerline of bollard and concrete base pier.

## Installation Orientation

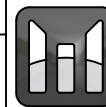
Protected Side



Attack Side



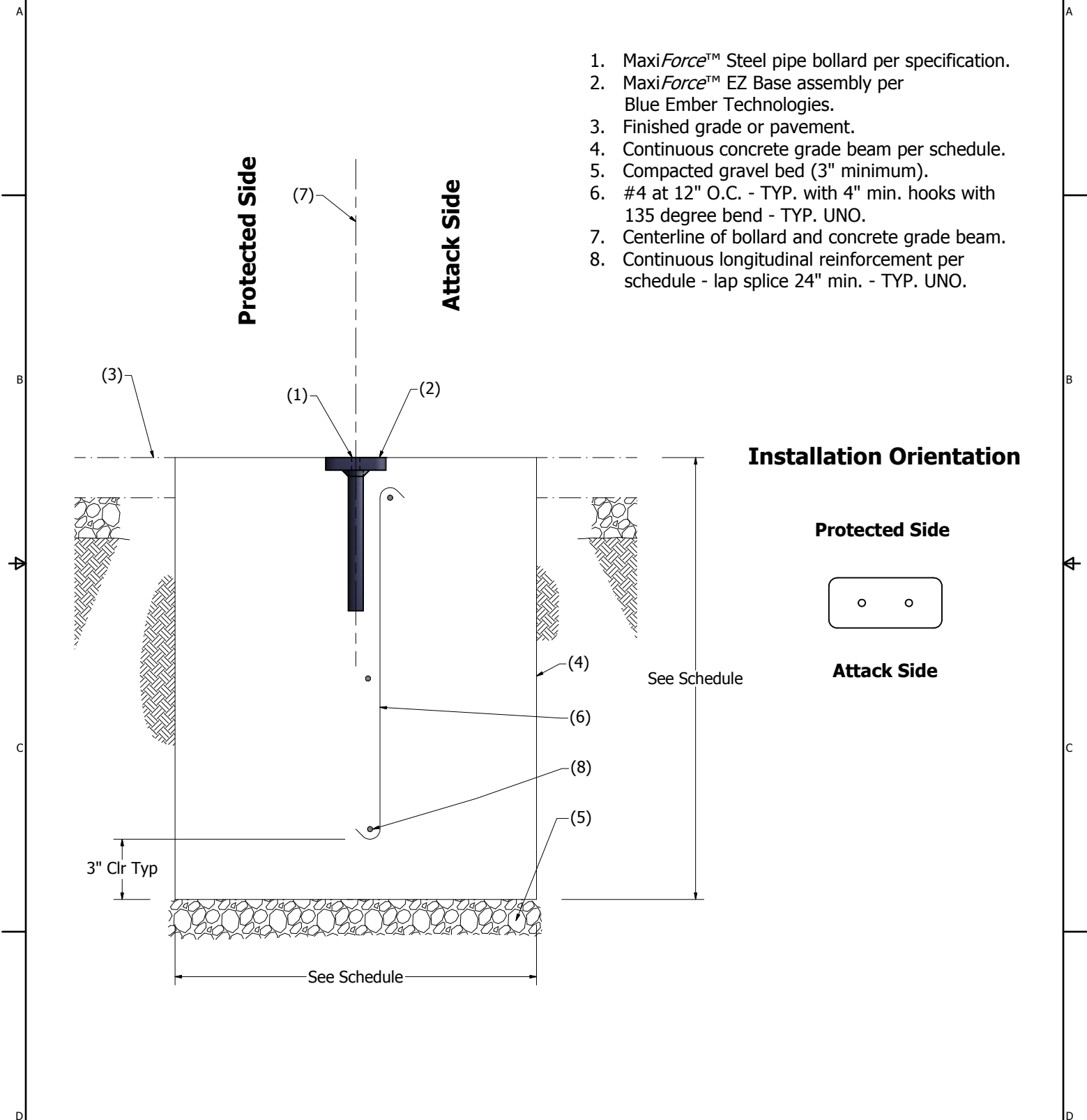
Drawing Rev. 1	Created 11/1/2010
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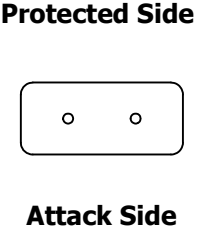
Model	<b>EZ Base Pier Footing</b>		
Size	File Name	Scale	Sheet
C	EZ Base Pier Footing	NA	1 Of 1
		DO NOT SCALE DRAWING	


# Engineered Anchorage System for the MaxiForce™ EZ Base Continuous Beam Footing



1. MaxiForce™ Steel pipe bollard per specification.
2. MaxiForce™ EZ Base assembly per Blue Ember Technologies.
3. Finished grade or pavement.
4. Continuous concrete grade beam per schedule.
5. Compacted gravel bed (3" minimum).
6. #4 at 12" O.C. - TYP. with 4" min. hooks with 135 degree bend - TYP. UNO.
7. Centerline of bollard and concrete grade beam.
8. Continuous longitudinal reinforcement per schedule - lap splice 24" min. - TYP. UNO.

### Installation Orientation



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<b>Model</b> EZ Base Beam Footing		
<b>Size</b> C	<b>File Name</b> EZ Base Beam Footing	<b>Scale</b> NA
DO NOT SCALE DRAWING		Sheet 1 Of 1