



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. 2	Created 11/19/2020
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MaxiForce Bollards

Title **U/S/R/EZ Base Installation Schedule**

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SHEET 1 OF 1

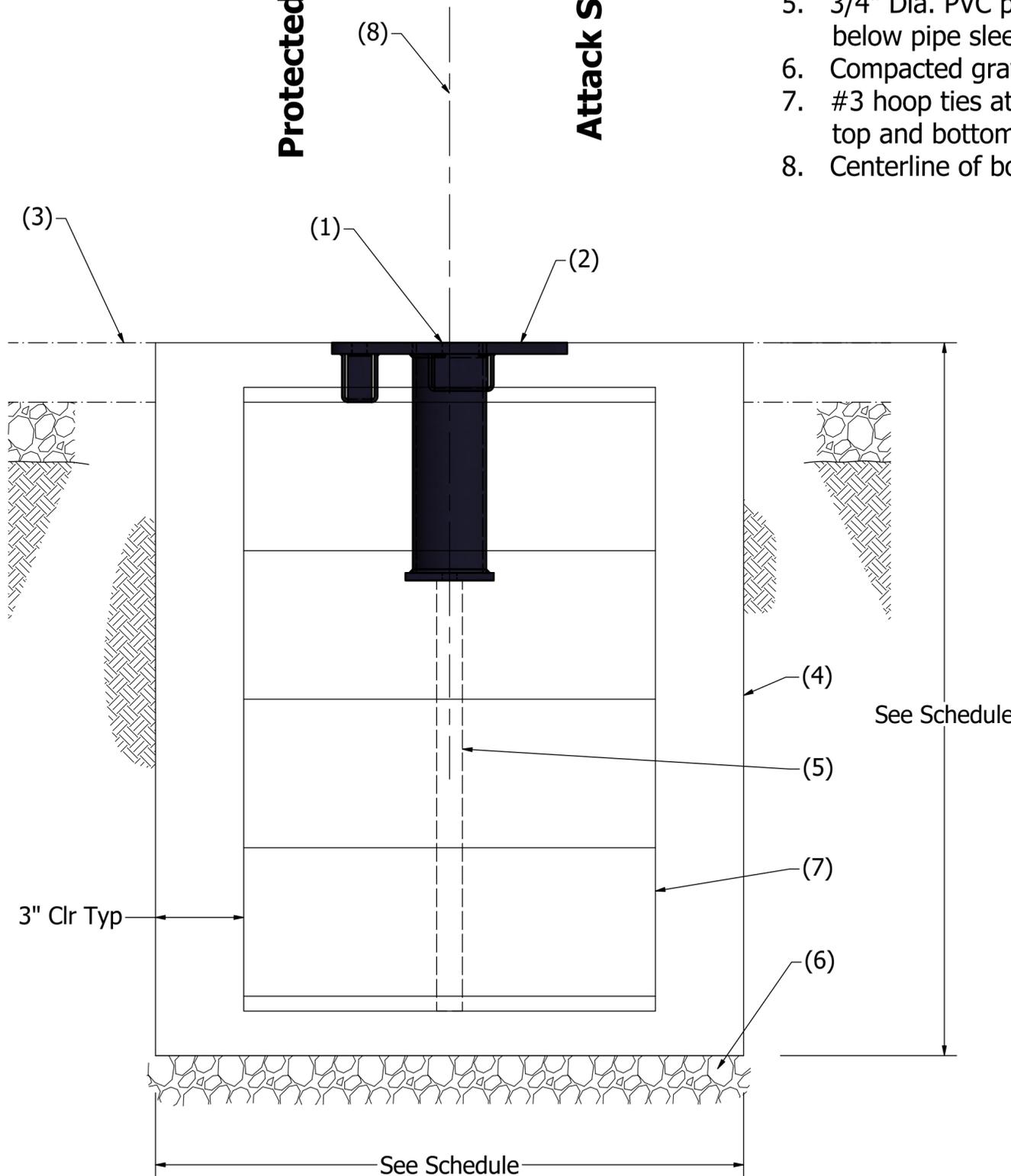


Engineered Anchorage System for the MaxiForce Removable Base Circular Concrete Pier Footing

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

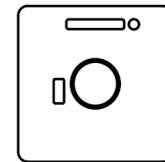
Protected Side

Attack Side



Installation Orientation

Protected Side



Attack Side

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Title		Removable Base Pier Footing	
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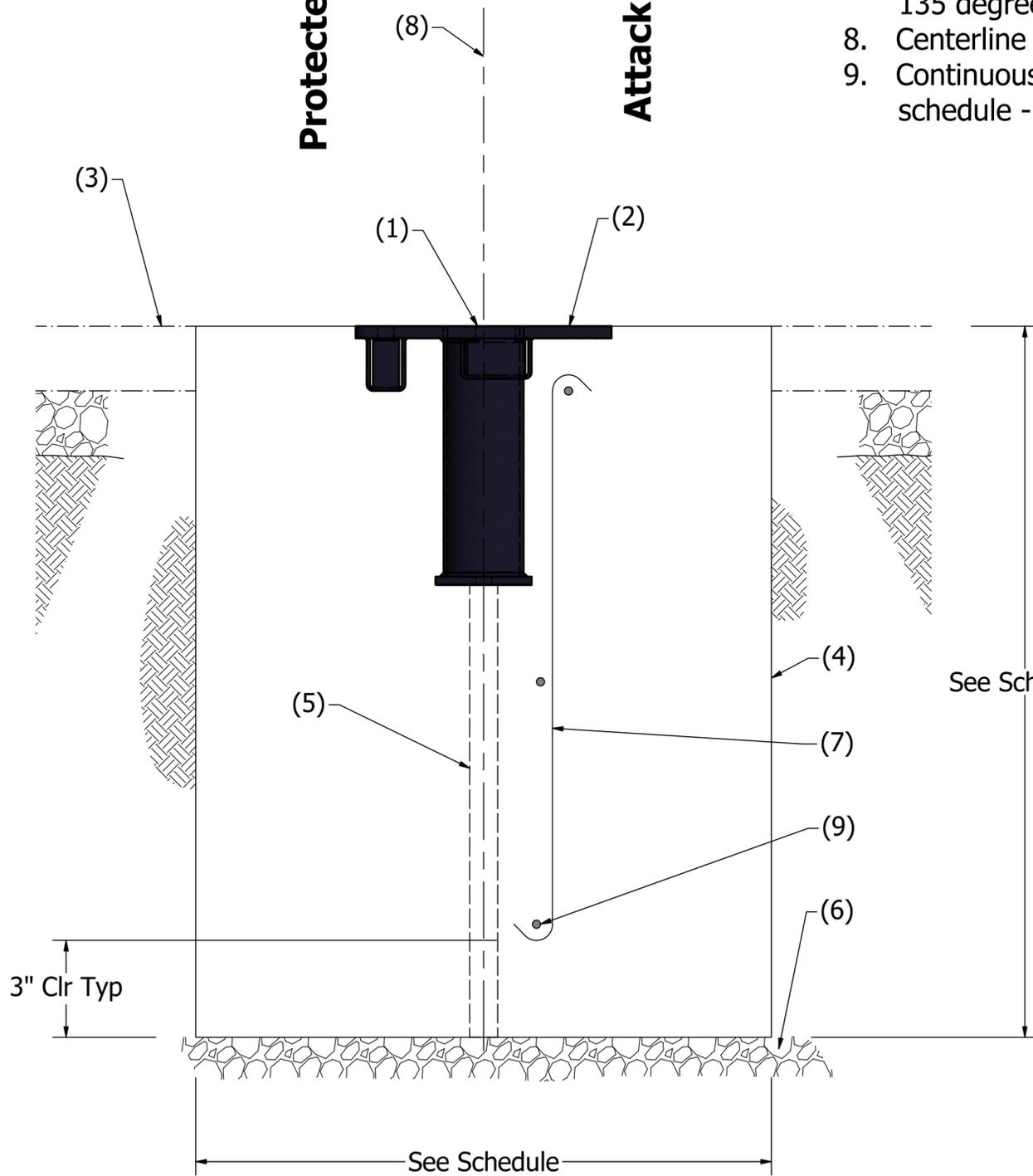


Engineered Anchorage System for the MaxiForce Removable Base Continuous Beam Footing

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

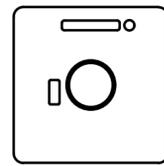
Protected Side

Attack Side



Installation Orientation

Protected Side



Attack Side

See Schedule

Drawing Rev. 1

Created 11/19/2020

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Title **Removable Base Beam Footing**

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SHEET 1 OF 1