



The Lakes Guardhouse Protection

Bollard Crash Ratings

The Lakes New Guardhouse Plan uses M rated bollards rated for 50mph along the front and 30mph along the drive isle.

ASTM F2656 CRASH TEST RATINGS		
TEST VEHICLE CLASSIFICATION	SPEED RATING	PENETRATION RATING
 SC=Small Car (2430 lbs)	Tested at 30, 40, 50, and 60 mph    	P1 <3.3'
 FS=Full Size Sedan (4630 lbs)		
 PU=Pickup Truck (5070 lbs)		
 M=Medium Duty Truck (15000 lbs)	Tested at 30, 40, and 50 mph   	P2 3.31' to 23'
 C7=Class 7 Cabover (15783 lbs)		
 H=Heavy Goods Vehicle (65000 lbs)		
		P3 23.1' to 98.4'

Example: If the reference point of a barrier is penetrated at 15' by a Medium Duty Truck that is traveling at 40 mph, it would have a crash rating of M40-P2.

Low Profile Bollards



TOMAHAWK M50 SA SHALLOW MOUNT BOLLARDS



FEATURES

- Certified to stop a 15,000 lb vehicle at 50 mph (ASTM F2656-M50-P1)
- Industry-leading, high-security, single stand-alone shallow-mount bollard
- Department of Defense (DoD) approved and listed on the Anti-Ram Vehicle Barrier List
- Double-wall steel construction with an $\varnothing$ 8-5/8" Schedule 80 inner pipe and 10-3/4" Schedule 120 outer pipe
- 14" shallow foundation avoids interference with underground utilities
- Prefabricated bollard unit allows for field adjustments during installation
- Offered with a variety of decorative cover options

PRODUCT DETAILS

- Model #: SMB-1200-SA
- Diameter: 10 3/4" OD Steel Pipe
- Weight: 1,965 lbs. each (with rebar)
- Foundation Depth: 14"
- Bollard Cover Diameter: 12"



Scan for more information.

BARRIER1.COM

3300 Battleground Ave, Suite 320, Greensboro, NC 27410
info@barrier1.com | 336-617-8478

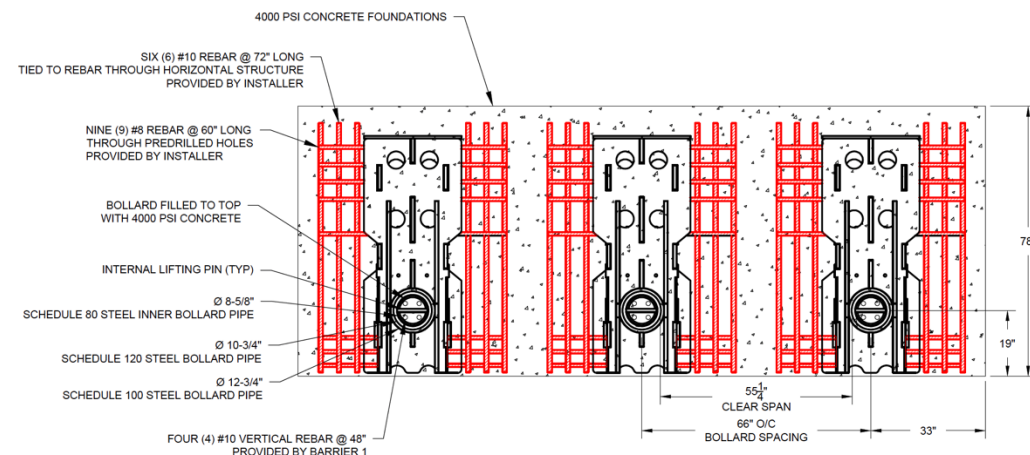
The Lakes New Guardhouse Plan uses low profile bollards in front of the building to avoid any conflicts with the utility electrical conduit.

B1 TOMAHAWK M50

SHALLOW MOUNT BOLLARD - MODEL SMB-1200-SA

CRASH TESTED TO ASTM F2656-07 - M50/P1 RATED - STOPS 15,000 LB. VEHICLE AT 50 MPH IMPACT

TYPICAL BOLLARD ARRAY INSTALLATION



<https://barrier1.com/products/high-security-bollards/>

Bollard Cover Planters

FIBERGLASS PLANTER COVERS

Elevate the appearance of your high-security bollards with our fiberglass Planter Bollard Covers. Designed to fit over any of our crash-rated bollards, these covers enhance streetscapes, plazas, churches, and business districts with stylish designs. Available in 7 fiberglass styles and 20 color options, they provide an easy way to blend high-level security with aesthetic appeal.



SAINT TROPEZ
Available Dimensions:
20" x 43"
24" x 50"
28" x 60"



BRANNAN
Available Dimensions:
30" x 41"



WANNSEE
Available Dimensions:
50" x 44"



SAN JOSE
Available Dimensions:
22" x 40"



TOULAN
Available Dimensions:
20" x 20" x 42"
23" x 23" x 48"
28" x 28" x 60"



MONTROY CUBE
Available Dimensions:
40" x 40" x 40"
48" x 48" x 48"



PERTH
Available Dimensions:
16" x 16" x 42"
24" x 16" x 42"
36" x 16" x 42"
48" x 16" x 42"
60" x 16" x 42"
72" x 16" x 42"



FIBERGLASS PLANTER COLOR OPTIONS



The Lakes New Guardhouse Plan bollards along the front and drive isles will be covered with fiberglass planter covers for aesthetic purposes. The structure of the bollard will be hidden inside the planter

Bollard Cover Single

THERMOPLASTIC BOLLARD COVERS

Protect and enhance your bollards with our Thermoplastic Bollard Covers. Available in both Standard and Decorative styles, including 9 decorative options with 2 lighted designs (UV and hardwired), these covers provide a sleek, durable solution for any setting. Choose from 15 color options to complement your aesthetic, brand, or school colors. Custom colors available upon request.



STANDARD
Fits Over Pipe Diameters:
3"-12" - up to 84" Tall



PARAMOUNT
Fits Over Pipe Diameters:
4" - up to 48" Tall



ARCHITECTURAL
Fits Over Pipe Diameters:
6" - up to 52" Tall
(can fit 4" pipe with insert)



METRO
Fits Over Pipe Diameters:
6", 8" - up to 50" Tall



SKYLINE
Fits Over Pipe Diameters:
6" - up to 60" Tall
8" - up to 52" Tall
10" - up to 51" Tall



RIBBED
Fits Over Pipe Diameters:
10" - up to 48" Tall
(can fit 4", 6", 8" pipe with insert)



CINCO
Fits Over Pipe Diameters:
6" - up to 52" Tall
10" - up to 60" Tall



PAWN
Fits Over Pipe Diameters:
10" - up to 41" Tall
(can fit 4", 6", 8" pipe with insert;
8" pipe fits max 41" Tall;
4" & 6" pipe fits max 48" Tall)

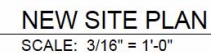


LIGHTED UV/LIGHTED HARDWIRED
Fits Over Pipe Diameters:
6" - up to 50" Tall
(can fit 4" pipe with insert)

The Lakes New Guardhouse Plan bollards along the back parking spaces will be covered with thermoplastic covers for aesthetic purposes. The structure of the bollard will be hidden inside the planter. These are rated



Bollard Layout





Calspan Test No.: BR0011
Test Standard: ASTM F2656-15
Impact Condition Designation: M30
Client: Barrier 1
Model: Shallow Mount Bollard SMB-400-SA
Product Rating: M30 – P1

July 7, 2020

To whom it may concern:

This letter is to certify that the subject barrier, the **Shallow Mount Bollard SMB-400-SA** provided by Barrier 1, was tested to the requirements of the ASTM standard F2656-15, with M30 impact condition designation. This was the standardized Test Method for Vehicle Crash Testing of Perimeter Barriers, at the time the barrier test was performed.

The test was performed at Calspan Corporation, on June 24, 2020, for Barrier 1. **The Barrier 1, Shallow Mount Bollard SMB-400-SA was impacted by a medium duty truck, weighing 6,688 kg (14,745 lbs.) travelling at 47.6 kph (29.6 mph).** Post-test measurements of the dynamic movement of the test vehicle's payload (truck bed) show that the left and right, leading edge of the truck bed, were stopped at 1.604 meters and 1.306 meters respectively, before the trailing edge (reference line) of the impacted bollard. As such, based on the test vehicle mass, impact velocity and penetration into the protected zone, **the barrier rating per the ASTM standard F2656-15, is M30 – P1.**

Calspan is accredited to ISO 17025 to perform ASTM F2656-15 testing by Perry Johnson Laboratories Accreditation, Inc. (PJLA) under Certificate Number L13-137 and Accreditation Number 76654.

Respectfully,

A handwritten signature in blue ink that reads "David Casey".

David Casey

Test Director

Safer Highways...Safer Skies



September 24, 2018

To whom it may concern:

This letter is to certify that the subject barrier, the Shallow Mount Bollard, Single Stand-Alone (model SMB-1200-SA) provided by Barrier1 Systems, Inc., was tested to the requirements of the ASTM standard F-2656-07, Standard Test Method for Vehicle Crash Testing of Perimeter Barriers, in place when the test was performed.

The test was performed at Calspan Corporation on September 22, 2018. The Single Shallow Mount Bollard was impacted by a truck weighing 6872 kg (15,150 lbs.) travelling at 78.20kph (48.60 mph). Post-test measurements of the dynamic movement of the test vehicle's payload (truck bed) show that the left and right leading edge of the truck bed was stopped at 772mm and 841mm respectively before the trailing edge of the impacted bollard. There was effectively "0" penetration of the vehicle payload. As such, based on the truck mass, impact velocity and penetration into the protected zone, the barrier rating per the ASTM standard F-2656-07 is M50-P1.

Calspan is accredited to ISO 17025 to perform ASTM F2656-07 testing by Perry Johnson Laboratories Accreditation, Inc. (PJLA) under Certificate Number L13-137 and Accreditation Number 76654.

Respectfully,

A handwritten signature in blue ink that reads "Edward Dutton".

Edward Dutton
Test Director

Safer Highways...Safer Skies