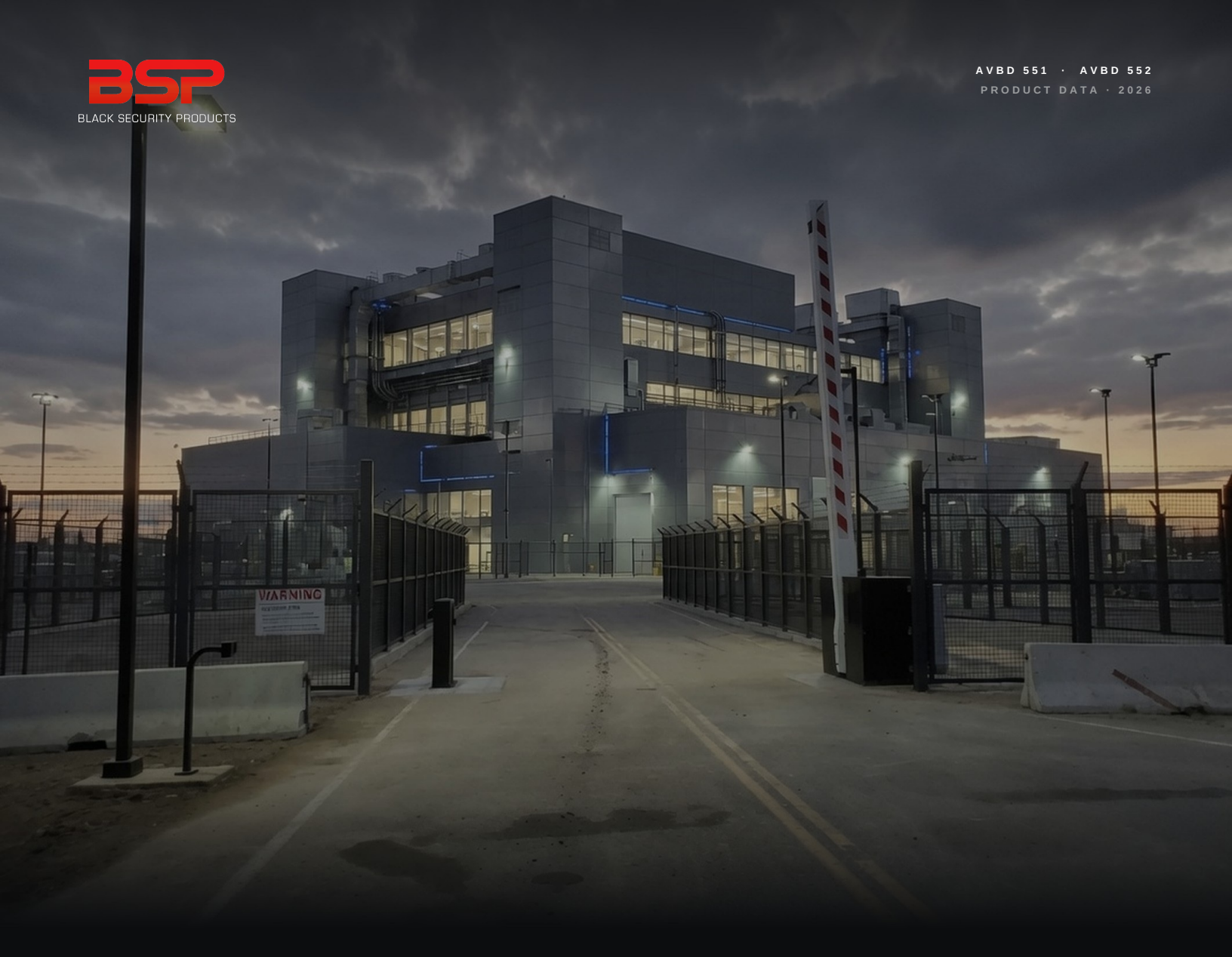




BLACK SECURITY PRODUCTS

AVBD 551 · AVBD 552  
PRODUCT DATA · 2026



# M50 DROP ARM

## CRASH-RATED ACTIVE VEHICLE BARRIER · 20 FT & 24 FT

Two spans, two penetration ratings, one barrier. The 20-foot arm stopped a 15,295-lb truck at 51.96 mph in **2.97 ft**. The 24-foot arm is the widest clear opening of any BSP drop arm and is listed on the DoD Anti-Ram Vehicle Barrier List.

M50 P1 · 20 FT

M50 P2 · 24 FT

BI-DIRECTIONAL

MADE IN THE USA

# NOTHING IN THE LANE. NOTHING UNDER IT.

A wedge or a net needs the road opened up — a slab, a pan, a trench across the traffic-bearing surface. A drop arm does not. Both posts stand at the shoulders and the only thing that crosses the lane is a beam, thirty-six inches above the road, that swings out of the way.

That makes it the barrier for entry points that already exist. The services under the lane stay where they are, the pavement stays where it is, and the civil work happens on ground the traffic is not using.

It also keeps the opening simple. The beam lifts on a single hydraulic cylinder in about nine and a half seconds, and everything that drives it sits in one cabinet at the shoulder.



Installed at a controlled entry — both posts on the shoulders, the lane untouched.

## TWO SPANS, TWO RATINGS

The **20-foot arm** is rated **M50 P1** — 2.97 ft of measured penetration. The **24-foot arm** is rated **M50 P2** at 5.55 ft and is the one on the DoD list. Standoff or span: the choice is yours to make, not ours.

# 24'

WIDEST BSP  
DROP ARM SPAN

# 2.97'

PENETRATION AT  
M50 P1

# 36"

BEAM HEIGHT  
ABOVE GRADE

# 0

EXCAVATION ACROSS  
THE LANE

## SPECIFIED & DEPLOYED FOR

Entry control points & ACPs  
Military installations & bases  
Federal & agency facilities

Data centers & network facilities  
Electric utilities & substations  
Airports & transportation hubs

Chemical & petroleum facilities  
Ports, rail & logistics yards  
Corporate & institutional campuses

ASTM F2656

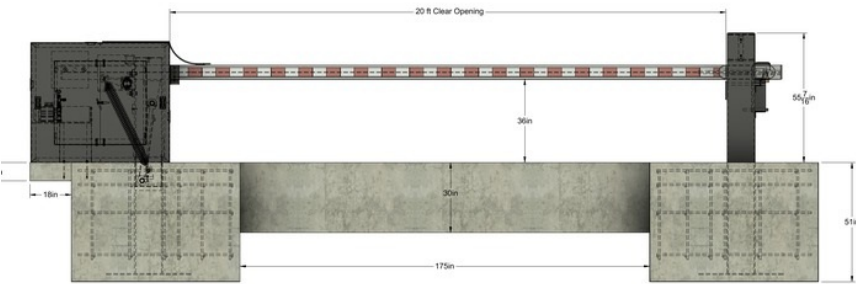
M50 • P1 & P2

24 FT LISTED — DOD ANTI-RAM VEHICLE BARRIER LIST

Crash tested by Applus IDIADA KARCO Engineering — report TR-P43185-01 (20 ft, 23 August 2023) and report TR-P43146-01 (24 ft, 7 July 2023). The 24 ft configuration appears on the March 2026 DoD Anti-Ram Vehicle Barrier List for ECFs/ACPs; the 20 ft configuration is crash tested and certified but is not currently listed — see page 5.

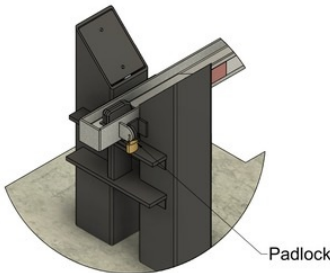
# TWO POSTS. ONE BEAM.

A hinge post carrying the drive, a latch post that receives the beam, and a galvanized structural beam between them. The beam is the only part that moves and the only part over the road. Everything that takes the load is at the shoulders, below grade.



Elevation View

Elevation, 20 ft configuration — beam 36" above grade, footings entirely at the shoulders.



DETAIL A  
SCALE 1:12

Latch post — the beam is captured and can be padlocked in the closed position.

WHAT'S IN THE SYSTEM

1 Hinge post

12" × 12" × ½" ASTM A500 square section, galvanized after fabrication. Carries the beam on a pillow block bearing and a 3" shaft.

2 The beam

W6×25 structural section, galvanized and thermoplastic coated, set at a design height of 3.03 ft. It arrests the vehicle.

3 Latch post

Same 12" × 12" × ½" section, taller than the hinge post. Receives the beam and takes the far-end load into its own footing.

4 Drive cabinet

Hydraulic power unit and controls in a lockable enclosure at the hinge post. Nothing runs across or under the lane.

|             |                 |       |                     |      |                   |
|-------------|-----------------|-------|---------------------|------|-------------------|
| Beam height | 36" above grade | Posts | 12" × 12" × ½" A500 | Beam | W6×25, galvanized |
|-------------|-----------------|-------|---------------------|------|-------------------|

BIDIRECTIONALLY SECURE

The beam is captured at both ends, so it arrests a vehicle approaching from either direction. On a two-way entry that removes the question of which side the barrier is facing — and it is why the drawing calls out an attack side and an asset side rather than a front and a back.

# TWO ARMS. TWO CRASH TESTS.

Each span was crash tested on its own at Applus IDIADA KARCO. Neither rating is interpolated from the other, and neither is an engineering judgment — both are measured results from a full-scale impact at the M50 condition.

## THE TEST RECORD

|                      | 20 FT DROP ARM · AVBD 551  | 24 FT DROP ARM · AVBD 552     |
|----------------------|----------------------------|-------------------------------|
| Report               | KARCO TR-P43185-01         | KARCO TR-P43146-01            |
| Test date            | 23 August 2023             | 7 July 2023                   |
| Standard             | ASTM F2656-07, M50         | ASTM F2656-20, M50            |
| Test vehicle         | 15,295.67 lb               | 14,998.05 lb                  |
| Impact speed         | 51.96 mph                  | 50.96 mph                     |
| Dynamic penetration  | 2.97 ft (P1 limit 3.31 ft) | 5.55 ft (P2 range 3.31–23 ft) |
| Static penetration   | 1.20 ft                    | 0.94 ft                       |
| Rating achieved      | M50 · P1                   | M50 · P2                      |
| After impact         | Disabled; pathway blocked  | Disabled; pathway blocked     |
| DoD list, March 2026 | Not currently listed       | Listed — 24.0' clear opening  |

## READING THE TWO RESULTS

### Span costs standoff

The 20 ft arm held the truck at 2.97 ft; the 24 ft arm at 5.55 ft. A longer beam deflects further under the same load. Choose the span for the opening, then check the standoff behind it.

### Both stopped the truck

P1 and P2 are penetration bands, not pass and fail. In both tests the vehicle was disabled and the pathway remained blocked, which is the outcome the rating exists to describe.

### Different standard editions

The 20 ft test was run to ASTM F2656-07 and the 24 ft to F2656-20. Both are recognized editions of the same method; a specifier writing to a particular edition should confirm which applies.

Applus IDIADA KARCO Engineering, LLC. Certification letters dated 29 August 2023 (P43185-01) and 12 July 2023 (P43146-01). Full reports and deliverables available on request. The barrier reference point is the protected side of the beam for the 20 ft article and the attack side of the beam for the 24 ft article, as recorded in the respective reports.

# EVERY M50 DROP ARM ON THE DOD LIST.

Clear opening is the specification a drop arm lives or dies on, because it is the one thing a site cannot negotiate. Below is the M50 field from the Active Drop-Arm Beam section of the **DoD Anti-Ram Vehicle Barrier List**, March 2026 edition, sorted by clear opening. Not our chart — theirs.

ACTIVE DROP-ARM BEAM · M50 ENTRIES, BY CLEAR OPENING

| MANUFACTURER                | MODEL                        | RATING | CLEAR OPENING       |
|-----------------------------|------------------------------|--------|---------------------|
| HySecurity Gate             | StrongArm M50                | M50 P2 | <div></div> 12'     |
| Perimeter Security Partners | Satyr-4 Crash Beam           | M50 P1 | <div></div> 12'-11" |
| Barrier1 Systems            | Drop Arm Crash Beam FCB-1200 | M50 P2 | <div></div> 13'-9"  |
| Tymetal                     | TCRB12 Pivot Arm/Beam        | M50 P1 | <div></div> 14'     |
| Barrier1 Systems            | Horizontal Crash Beam (HCB)  | M50 P2 | <div></div> 15'-10" |
| Ameristar                   | 24-ft Patriot Rising Beam    | M50 P2 | <div></div> 24'     |
| Black Security Products     | 24' Drop Arm — AVBD 552      | M50 P2 | <div></div> 24'     |
| Perimeter Security Partners | Satyr-12 Crash Beam          | M50 P2 | <div></div> 28'     |
| Barrier1 Systems            | Horizontal Crash Beam (HCB)  | M50 P2 | <div></div> 47'-10" |

## WHAT THE TABLE SAYS

### Five entries under sixteen feet

Five of the nine M50 entries sit between 12 and 16 feet. At 24 feet the BSP arm opens twice as wide as the narrowest of them, at the same M50 P2 rating.

### Two entries are wider

Satyr-12 at 28 ft and one Barrier1 horizontal crash beam at 47'-10" open wider. We print them because a specifier will find them anyway, and because the list is public.

### Span is not the only test

Foundation width, standoff behind the barrier and cycle rate all move with span. The right comparison is the whole entry, not one column of it.

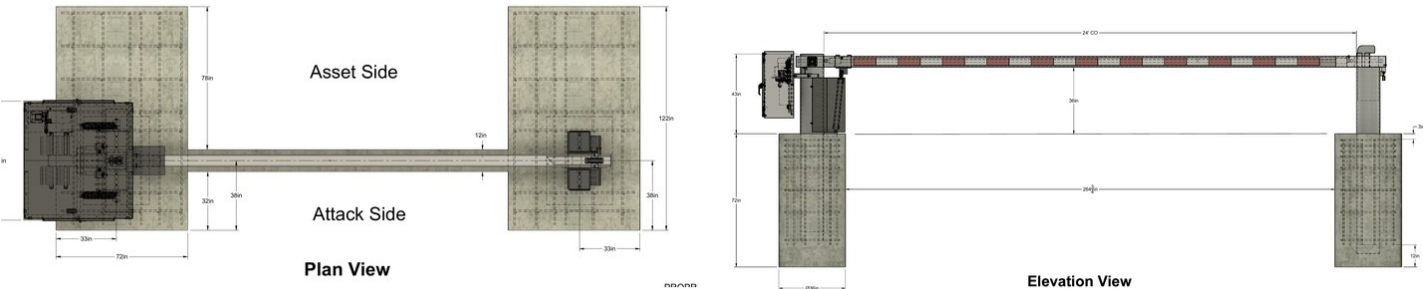
CHECK IT YOURSELF

The list is published by the USACE Protective Design Center and updated quarterly. Pull the March 2026 edition, turn to the Active Drop-Arm Beam pages, and read the entries side by side. Every figure above is copied from it.

Source: DoD Anti-Ram Vehicle Barrier List for Entry Control Facilities / Access Control Points, March 2026 edition, Active Drop-Arm Beam section. M50-rated entries only; M30, K4, K8 and K12 entries in the same section are omitted. Note 10 of Appendix A applies to the whole category and requires a minimum of 4 ft between the roadway edge and any fixed portion of the barrier. The BSP 20 ft M50 P1 arm is crash tested and certified but does not currently appear on the list.

# BOTH BARRIERS. FOUNDATIONS OUTSIDE THE ROAD.

Both spans put every cubic yard of concrete outside the traveled way. The two use different footings because they carry different loads — the 20 ft arm sits on spread pads, the 24 ft arm on drilled piers — and which one suits a site usually comes down to what is already under the shoulder.



20 ft — plan view. Two spread footings, 122" × 122" × 51" deep, 175" apart.

24 ft — elevation. Two Ø36" drilled piers, 72" deep, at 264¾" centers.

| 20 FT — AVBD 551       |                         |
|------------------------|-------------------------|
| Clear opening          | 20 ft                   |
| Footing type           | Spread pad, each post   |
| Footing size           | 122" × 122" × 51" deep  |
| Footing centers        | 175" clear between pads |
| Post embedment         | 4.0 ft below grade      |
| Hinge post above grade | 3.75 ft                 |
| Latch post above grade | 4.6 ft                  |

| 24 FT — AVBD 552        |                            |
|-------------------------|----------------------------|
| Clear opening           | 24 ft                      |
| Footing type            | Drilled pier, each post    |
| Pier                    | Ø36" × 72" deep            |
| Pier centers            | 264¾"                      |
| Overall length          | 300¾"                      |
| Cabinet height          | 43"                        |
| Listed foundation width | 29.58 ft, per the DoD list |

### Common to both

4,000 PSI concrete, welds to AWS D1.1 with ER70S-6 electrodes, and reinforcing to ASTM A615 Grade 60. Steel is galvanized after fabrication.

### Piers where the shoulder is tight

A Ø36" pier occupies far less of the shoulder than a 122" square pad. Where the right-of-way is constrained or services run close, the pier detail is usually the one that fits.

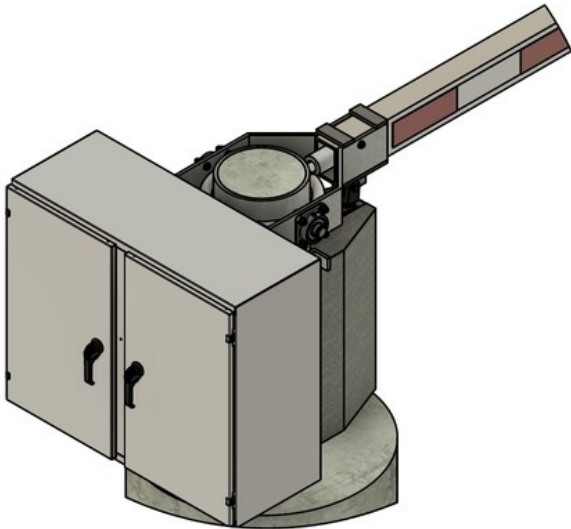
### Engineered per project

The figures above are the as-tested details. Final foundation design is engineered to the site's soil and layout and issued sealed with the submittal.

# HYDRAULIC. LOCKABLE. MANUAL IF IT HAS TO BE.

A hydraulic power unit in the cabinet at the hinge post drives a cylinder acting directly on the beam. There is no gearbox train across the opening and no drive at the latch end — the latch post only has to receive the beam and hold it.

When the barrier is closed the beam can be padlocked at the latch post. That turns a powered barrier into a mechanically secured one for a shutdown, a power outage or a long closure, without anybody standing watch over it.



DETAIL A

Drive cabinet and hinge assembly, 24 ft configuration — power unit, controls and cylinder in one lockable enclosure.

| HYDRAULIC POWER UNIT |                        |
|----------------------|------------------------|
| Pump displacement    | 4.75 cc/rev            |
| Flow                 | 6.3 LPM at 60 Hz       |
| Motor                | 1.1 kW, 4 pole         |
| Supply               | 120 V, 60 Hz           |
| Max working pressure | 120 bar (1,740 psi)    |
| Coil & connector     | 120 VAC, DIN           |
| Lift time            | 9.5 seconds, bore side |

| OPERATION       |                                       |
|-----------------|---------------------------------------|
| Direction       | Bidirectionally secure                |
| Beam height     | 36" above grade, closed               |
| Manual security | Padlock at the latch post             |
| Drive location  | Hinge post cabinet only               |
| Across the lane | Beam only — no drive, no conduit      |
| Coating         | Galvanized; thermoplastic on the beam |
| Markings        | Red and white high-visibility panels  |

EVERYTHING THAT CAN FAIL IS ON ONE SIDE

Pump, valves, cylinder and controls all sit in a single cabinet at the hinge post, reachable from the shoulder without closing the lane. The latch post has no powered parts in it at all, which is why a fault at one end never leaves the beam stranded across the road.



# CLOSED IT IS RATED. OPEN IT IS GONE.

The whole argument for a drop arm is what the lane looks like when the barrier is not needed. Raised, the beam is clear of the opening and there is nothing in the roadway at all — no wedge in a pan, no net in a channel, no plate for a low vehicle to catch.



**Closed** — the beam across the opening at 36", rated and bidirectionally secure.



**Open** — the beam clear of the lane. Nothing in the roadway and nothing under it.

## WHAT THE OPEN POSITION IS WORTH

### No ground plate

Nothing sits in the road surface, so there is nothing for a low vehicle, a trailer or a snowplow blade to catch.

### No drainage problem

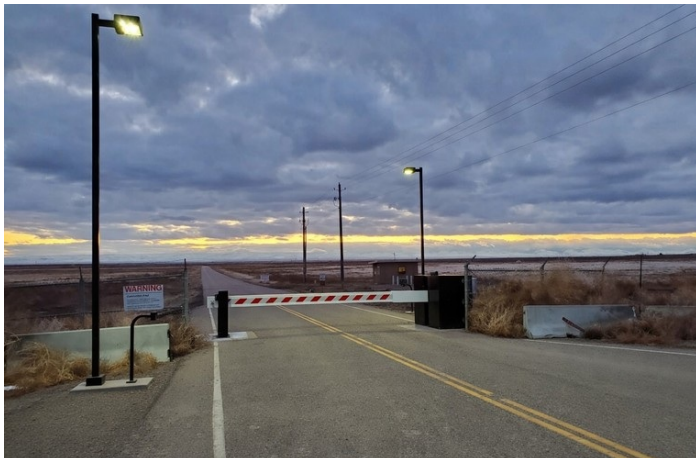
There is no pit, pan or channel to fill with water, grit or ice, and no sump to keep working through a winter.

### Oversize loads clear

With the beam raised the opening is unobstructed to full height, so wide and tall loads pass without a special arrangement.

### The lane is just a lane

With the arm up there is no plate to slow for, no axle restriction and nothing in the surface to sign or mark. Between closures the entry behaves like ordinary road.



## THE BARRIER IS ALSO A SIGNAL

Most of the time a rated barrier is doing deterrence, not arrest. A beam at thirty-six inches with high-visibility panels tells an approaching driver the entry is controlled long before anything has to be tested — and it does that in the dark as well as in daylight.



# BUILT TO SIT INSIDE WHAT YOU ALREADY RUN.

The barrier arrives with its own control cabinet and integrates with third-party access control, detection and signaling rather than replacing it. None of the options below changes the crash rating, the foundation or the beam.

| OPTION                  | WHAT IT DOES                                                                         |
|-------------------------|--------------------------------------------------------------------------------------|
| Master control panel    | Central control of the barrier, and of multiple barriers at one entry point.         |
| Remote control panel    | Operation from a guard position away from the lane.                                  |
| Emergency Fast Operate  | Dedicated EFO stations that close the barrier ahead of normal operation.             |
| Loop detector           | Detects a vehicle under the beam and holds the barrier open until the lane is clear. |
| Traffic signals         | Amber, or green and red, driven from the barrier position.                           |
| Visual & audible alarms | Sound and light on emergency operation, continuing until reset.                      |
| Battery back-up         | Keeps the barrier operable through a power outage rather than stranding the lane.    |
| Manual padlock          | Mechanically secures the beam closed at the latch post, powered or not.              |

PART OF A BSP PERIMETER

The drop arm holds the opening. Either side of it, the BSP **Passive Cable Barrier** or **SecurePale** carries the boundary; where the threat calls for a wedge, the **M50 P1 Shallow Foundation Wedge Barrier** takes the lane. All are manufactured by BSP and the crash-rated products are tested to ASTM F2656.



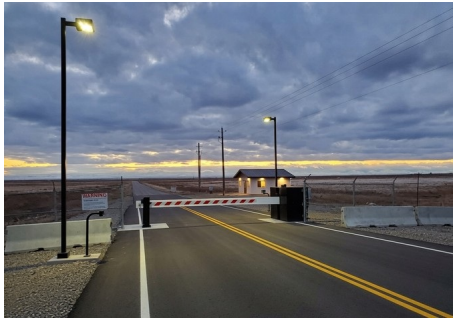
Installation at an entry control point — posts set, beam hung, lane reopened.

ONE MANUFACTURER ACROSS THE ENTRY POINT

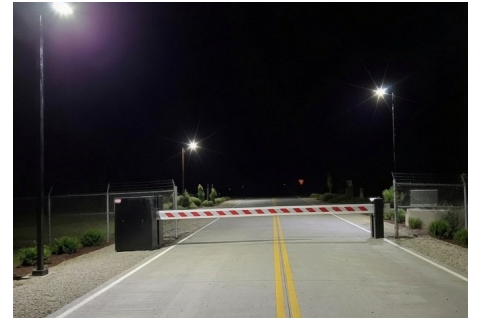
Specifying the arm, the wedge and the boundary from one source means one set of drawings, one submittal package and one party responsible when the installation is inspected — rather than three vendors describing the same interface three different ways.

# WHERE THE ENTRY POINT CAME FIRST.

Most entry control points were laid out before anybody specified a vehicle barrier. A drop arm goes into that geometry rather than around it — two footings on the shoulders, a beam over the top, and an opening that stays the width it always was.



Installed M50 Drop Arms at controlled vehicle entry points, day and night.



## INDUSTRIES & FACILITIES SERVED

Entry control points & ACPs  
Military installations & bases  
Federal & agency facilities  
Federal law-enforcement facilities

Data centers & network facilities  
Electric utilities & substations  
Chemical & petroleum facilities  
LNG & energy infrastructure

Airports & transportation hubs  
Ports, rail & logistics yards  
Embassies & diplomatic posts  
Corporate & institutional campuses

## SPECIFIED & INSTALLED FOR

BSP perimeter systems protect facilities for the U.S. Army Corps of Engineers, NAVFAC, the U.S. Air Force and federal agencies, alongside commercial operators in data-center, energy and logistics infrastructure. Named references are available under NDA for qualified projects.

### RETROFIT IS THE HARD CASE

New construction can design a pit into the road. An existing entry point usually cannot — the services are already under the lane and the road cannot close for a month. A barrier whose entire foundation sits on the shoulders is what makes the difference between adding a rated barrier and rebuilding the approach around one.

### SITE ASSESSMENT

BSP provides free site assessments. Our engineering team reviews the opening, the approach, standoff and traffic before specifying span, foundation and controls.

[sales@blacksp.com](mailto:sales@blacksp.com)  
(512) 926-0800  
[blacksp.com/contact](https://blacksp.com/contact)

# SPECIFICATIONS & STANDARDS.

| SYSTEM              | 20 FT · 551   | 24 FT · 552  |
|---------------------|---------------|--------------|
| Crash rating        | M50 P1        | M50 P2       |
| Standard            | F2656-07      | F2656-20     |
| Test report         | TR-P43185-01  | TR-P43146-01 |
| Dynamic penetration | 2.97 ft       | 5.55 ft      |
| Static penetration  | 1.20 ft       | 0.94 ft      |
| Clear opening       | 20 ft         | 24 ft        |
| DoD list, Mar 2026  | Not listed    | Listed       |
| Footings            | Spread pad    | Drilled pier |
| Footings size       | 122" sq × 51" | Ø36" × 72"   |

| COMMON TO BOTH SPANS |                                         |
|----------------------|-----------------------------------------|
| Beam                 | W6×25, galvanized, thermoplastic coated |
| Beam height          | 36" above grade, closed                 |
| Posts                | 12" × 12" × ½" ASTM A500 SHS            |
| Post finish          | Galvanized after fabrication            |
| Hinge                | Pillow block bearing, 3" shaft          |
| Direction            | Bidirectionally secure                  |
| Drive                | Hydraulic, hinge post cabinet           |
| Motor                | 1.1 kW, 120 V, 60 Hz                    |
| Max pressure         | 120 bar (1,740 psi)                     |
| Lift time            | 9.5 seconds                             |
| Manual security      | Padlock at the latch post               |
| Concrete             | 4,000 PSI minimum                       |
| Reinforcement        | ASTM A615 Grade 60                      |
| Welding              | AWS D1.1, ER70S-6 electrodes            |
| Warranty             | 1 year parts · 5 years labor            |
| Origin               | Manufactured in the United States       |

REFERENCE STANDARDS

|            |                                             |
|------------|---------------------------------------------|
| ASTM F2656 | Vehicle crash testing of perimeter barriers |
| AWS D1.1   | Structural welding                          |

SECTION 34 71 19.16  
ACTIVE VEHICLE BARRIER — DROP ARM

PART 2 — PRODUCTS

2.01 MANUFACTURER

The active drop arm vehicle barrier shall be the M50 Drop Arm, AVBD 551 (20 ft) or AVBD 552 (24 ft), manufactured by Black Security Products, LLC, Houston, Texas. Clear opening [ ] ft.

2.02 PERFORMANCE

- A. The barrier shall be crash tested to ASTM F2656 at the M50 condition designation and achieve a [P1] [P2] penetration rating.
- B. The rating shall be established by full-scale crash test of the specified clear opening. Interpolation between tested spans shall not be accepted.
- C. Where listing is required, the as-tested configuration shall appear on the DoD Anti-Ram Vehicle Barrier List maintained by the USACE Protective Design Center.
- D. The barrier shall arrest a vehicle approaching from either direction.

2.03 CONSTRUCTION

- A. Posts shall be 12" × 12" × ½" ASTM A500 square hollow section, galvanized after fabrication.
- B. The beam shall be a W6×25 structural section, galvanized and thermoplastic coated, set at 36 inches above grade in the closed position.
- C. No portion of the foundation shall fall within the traveled way.
- D. The beam shall be capable of being mechanically secured closed by padlock, independent of power.

2.04 OPERATION

- A. Actuation shall be hydraulic, from a single lockable cabinet at the hinge post.
- B. No powered component shall be located at the latch post or beneath the roadway.

PROCUREMENT

|               |                             |
|---------------|-----------------------------|
| CAGE          | 7MT82                       |
| DUNS          | 83-888-8670                 |
| NAICS         | 339999                      |
| CSI section   | 34 71 19.16                 |
| Product codes | AVBD 551 · AVBD 552         |
| Test reports  | TR-P43185-01 · TR-P43146-01 |
| Origin        | Made in the USA             |

ENGINEERING SUPPORT

Submittal drawings, CAD, O&M manual, both KARCO reports and sealed foundation design on request. BSP engineering reviews the opening, the shoulders and the standoff before the footing schedule is issued.



BLACK SECURITY PRODUCTS



# TWENTY-FOUR FEET. NOTHING IN THE ROAD.

Black Security Products designs and manufactures high-security perimeter protection systems for military installations, government facilities, data centers, utilities and critical infrastructure worldwide — with an emphasis on anti-terrorism and force protection.

## PERIMETER SECURITY PRODUCT FAMILY

### ACTIVE VEHICLE BARRIERS

Shallow Wedge M50 P1 — AVBD 452  
Wedge Barrier M50 P1 — AVBD 451  
**M50 Drop Arm — AVBD 551/552**  
M30 P1 Drop Arm — AVBD 531  
Defender Net Barrier — AVBD 651  
Bi-Folding Speed Gate — AVBD 210  
Anti-Ram Crash Gates — AVBD 230/250

### PASSIVE VEHICLE BARRIERS

Drill-and-Set Bollard — AVBD 331  
Crash-Rated Bollards — AVBD 300  
Cable Barrier M30 — AVBD 131/132  
Cable Barrier M50 — AVBD 151/152  
Rapid Deployment MPPD — AVBD 700

### SECURITY FENCING

SecurePale™ Palisade — AVBD 1101  
SecureMesh™ — AVBD 1001  
SecureMesh™ Integrated PVB — AVBD 1002  
SecureMesh™ Delay — AVBD 1003  
ENC Non-Conductive — AVBD 1200  
Ballistic Rated Fence — AVBD 1300

### HEADQUARTERS

6525 Cunningham Rd, Building E  
Houston, TX 77041  
United States

### CONTACT

(512) 926-0800  
sales@blacksp.com  
blacksp.com

### PROCUREMENT

CAGE 7MT82  
DUNS 83-888-8670  
NAICS 339999  
Made in the USA

## REQUEST A FREE SITE ASSESSMENT

Talk to a BSP perimeter specialist about your project.

[blacksp.com/contact](https://blacksp.com/contact)