

ARCHITECTURAL DESIGN SPECIFICATIONS

Satyr-4E - CRASH RATED BEAM VEHICLE BARRIER- Electric Operation

PART I – General

1.01 SECTION INCLUDES

- A. This section covers the furnishing and installation of a Satyr-4E Vehicle Barrier system. Provide complete system that has been fabricated and tested for proper operation at the factory.
- B. All tube steel conforms to ASTM A500-10A. All round, plate and shaped steel to ASTM A36. All welds conform to AWS ASTM D1.1, D1.3 for sheet metal. Aluminum to conform to ASTM 6060-T52.
- C. System includes barrier arm (beam) section, hinge buttress, receiver buttress, gear motor, HMC Programmable Logic Controller (PLC) by on-screen display with multifunction programming, and safety devices to provide a fully operational barrier system. Overall clear width of barrier may be between 10 to 25 feet (stanchion to stanchion at roadway).
- D. Design and material are identical as those used in crash test of Satyr-4E and approved by the Department of State (DOS).

1.02 RELATED SECTIONS

- A. Section 03 11 00 Concrete Forming
- B. Section 03 20 00 Concrete Reinforcing
- C. Section 28 05 28.33 – Conduits and Backboxes for Electronic Safety and Security

1.02 CRASH RATING, TESTING AND QUALITY ASSURANCE

- A. The Satyr-4E vehicle barrier model is **K4 certified**, as defined by the Department of State (DOS) publication SDSTD02.01, Revision A, dated March 2003 for Vehicle Crash Testing of Perimeter Barriers and Gates, in which the impact conditions are:

Crash rating Vehicle Weight Impact Speed
K4 15,000 pounds 30 MPH

Note: The Satyr-4E vehicle barrier system **must** be installed per manufacturer's specifications and designs. Failure to comply with all installation requirements will void the Crash Rating and the Warranty.

- B. Manufacturer shall be a company specializing in the supply of security vehicle barriers.

1.03 SUBMITTALS

- A. Submit shop drawings of standard product and finish samples.
- B. Indicate pertinent dimensions, general construction, component connections and location, anchorage methods and location, hardware, and installation details.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver material to job site in manufacturer's packaging undamaged, complete with installation instructions.
- B. Store off ground, under cover, protected from weather and construction activities.

1.05 PROJECT/SITE CONDITIONS

- A. Install Satyr-4E Crash Rated Beam Vehicle Barrier including excavation, trenching, and concrete foundation pads per manufacturer's printed instructions. Installer/owner to supply required permits/inspections.

1.06 WARRANTY

Perimeter Security Partners warrants its products against defects in material and workmanship for a period of one year from date of shipment. This warranty excludes normal wear on finishes or damage that occurs due to impact, abuse, misuse or acts of God.

PART II – Products

2.01 MANUFACTURER

Satyr-4E: Crash rated beam vehicle barrier as manufactured by:

Perimeter Security Partners
5038 Thoroughbred Lane, Brentwood, TN 37027
Ph 615.953.8872
www.perimetersecuritypartners.com

2.02 CONSTRUCTION

- A. Butresses (stanchions): The hinge and receiver butresses are manufactured of steel components and welded steel elements. The hinge and receiver butress assemblies are finish painted black.
- B. Hinge Butress: The hinge butress assembly includes internal bearings and stainless steel axle allowing the beam arc from 0 degrees up to 83 degrees (+/- 2 degrees) when in fully open position. A cushioning device is included to reduce beam oscillation. Covers are included to conceal operating system and prevent debris, ice or snow accumulation.
- C. Receiver Butress: Receiver butress is designed to guide the beam into place when lowered and retain the beam during vehicle impact. The receiver butress includes a locking pin to prevent unauthorized operation of the unit when unattended.
- D. Concrete: All concrete for installation is at or below grade. Above ground concrete/forming for butresses/stanchions is not permitted allowing stanchion placement in close proximity to adjacent objects, walls etc.

- E. Beam: Beam is constructed of rectangular aluminum extrusion. The beam is mill finished with reflective red and white safety tape to increase visibility. Reinforcement provided by custom nylon straps installed in the beam and anchored with stainless steel rods.
- F. Hinge buttress/beam arm incorporates a locking device to hold the beam arm in the “open” or “up” position for extended periods of time.

2.03 EQUIPMENT

- A. Barrier Operation: The gear motor - 230/208V or 440V 3 phase or 230/220V 1 phase power Controls: Satyr-4E unit is provided with one set of “up” and “down” micro-switches supplied in the control cabinet for installation and testing purposes only. These controls are mounted in the control enclosure. The Satyr-4E unit requires activation controls (by others) for normal operation (see actuation in section 2.04 for types).

2.04 SECURITY EQUIPMENT

- A. Actuation: Activation may be by push button, card access, radio-wave remote controls, infrared beams (activation controls by others). Ground loop sensors (optional or supplied by others) are highly suggested to prevent barrier from operation when a vehicle is parked/standing in the operating area of the Satyr-4E beam.
- B. Connectable drive couplings in the event of power outage or equipment malfunction. The arm will be manually overridden.

2.05 FINISHES

- A. Satyr-4E is delivered painted black (buttresses) with the beam in mill finished with reflective red and white safety tape to increase visibility. The power unit is painted industrial gray.
- B. Zinc primer to conform to SSPC Paint Specification #20 and SSPC-LO for zinc rich primers. Zinc dust is to meet ASTM D520, Type II.
- C. Intermediate primer must meet or exceed SSPC #36 level 3. Finish Paint to meet or exceed SSPC paint #22.

2.06 AVAILABLE OPTIONS

- Traffic Lights
- Operator Heater
- Buttress Heater
- Electric motorized operation in lieu of hydraulic operation
- Crash rated Beam Magnetic Lock
- Crash Rated Beam Flashing Light Kit
- Loop Detectors
- Auxiliary Limit Switch (proximity switch)
- Remote Slave Control Panel – Desk Mount- Single Unit Control
- Master Control Panel – Desk Mounted – Single Unit Control
- Touch Screen Controls
- Manual Operation

PART III – EXECUTION

3.01 INSTALLATION

- A. Inspection: Installer must examine the location and advise the Contractor/Owner of any site conditions unacceptable for proper installation of product. These conditions include but are not limited to the following:
 - 1. Existing underground utilities or unforeseen issues.
 - 2. Removal of pavers, stones, road surfaces or landscaping.
- B. Buttress Installation: The hinge and receiver buttress are cast in a concrete foundation below grade.
- C. Erection: Install the Satyr-4E unit in accordance with manufacturer's printed instructions. Set units level and plumb and in line with adjacent structures or roadway. Anchor securely into place. Use installers with experience in the installation of vehicle barriers. For a list of qualified installers, please contact the Perimeter Security Partners sales department.
- D. Adjustment: Installer shall adjust beam arm and hardware for smooth operation and proper performance.
- E. Maintenance: Follow maintenance procedures as outlined in the Instruction or Operation Maintenance Manual.
- F. Cleaning: Clean surfaces carefully after installation to remove excess concrete, caulk, dirt and labels.