

## **ARCHITECTURAL DESIGN SPECIFICATIONS SATYR-12H - CRASH RATED BEAM VEHICLE BARRIER HYDRAULIC OPERATION**

### **PART I – General**

#### **1.1 SECTION INCLUDES**

- A. This section covers the furnishing and installation of a Satyr-12 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, power unit, hydraulic cylinder, Programmable Logic Controller (PLC), and safety devices to provide a fully operational barrier system. Clear width of barrier arm may be between 10 to 30 feet.
- D. Design and materials are identical as those used in crash test of Satyr-12 to ASTM F2656-07 M-50/P1 standard (equivalent to DOS K-12).

#### **1.2 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

#### **1.3 CRASH RATING, TESTING AND QUALITY ASSURANCE**

- A. The Satyr-12 vehicle barrier model is ASTM F2656-07 M50/P1 certified, (equivalent to Department of State (DOS) K12 as per 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                   ASTM M50/P1
- Vehicle Weight           15,000 pounds
- Impact Speed               50 MPH

Note: The Satyr-12 vehicle barrier system must be installed per manufacturer's specifications and design. 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

#### **1.4 SUBMITTALS**

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

#### **1.5 DELIVERY, STORAGE AND HANDLING**

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

#### **1.6 PROJECT/SITE CONDITIONS**

- A. Install Satyr-12 Crash Rated Beam Vehicle Barrier including excavation, trenching and concrete foundation pads as per manufacturer's printed instructions. Installer/owner to supply required permits/inspections.

#### **1.7 WARRANTY**

Perimeter Security Partners (PSP) 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**

#### **2.1 MANUFACTURER**

Satyr-12: Crash Rated Beam vehicle barrier as manufactured by:



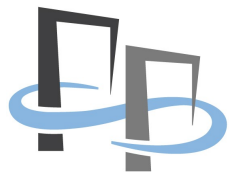
Perimeter Security Partners  
5038 Thoroughbred Lane, Brentwood, TN 37027  
Ph 615.953.8872 Fax 615.468.6311  
[www.PerimeterSecurityPartners.com](http://www.PerimeterSecurityPartners.com)

## 2.2 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 Buttress The hinge buttress 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.
- C. Covers are included to conceal operating system and prevent debris, ice or snow accumulation.
- D. Receiver Buttress: Receiver buttress is designed to guide the beam into place when lowered and retain the beam during vehicle impact. The receiver buttress includes a locking pin to prevent unauthorized operation of the unit when unattended.
- E. Concrete: Above ground concrete/forming for butresses/stanchions is not permitted allowing for stanchion placement to be close to adjacent objects, walls etc.
- F. Beam: Beam is constructed of a fabricated rectangular aluminum beam. The beam is finished with white paint and 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.
- G. Power Unit: The hydraulic power unit is housed in a separate cabinet and completely self- contained. Cabinet construction is of 14-gauge steel and is rated to NEMA 3R. Outer cabinet contains all hydraulic components including a three gallon oil tank, up speed control valve, down speed control valve, manual release down valve, pump, manifold, connection hoses and fittings. Also included is an internal electrical cabinet to isolate and provide additional protection for the electrical components which include PLC (programmable logic controller), motor starter, motor overload, power disconnect, transformer, rectifier, and two loop detector bases. The electrical cabinet is rated to NEMA 3R. Power Unit is painted industrial gray. The power unit comes with one (1) pressure hydraulic hose at 15 feet in length and one (1) vent hose at 15 feet in length.
- H. Motor The 1.5 HP motor is housed outside the electrical cabinet.

## 2.3 EQUIPMENT

- A. Barrier Operation: The power unit is designed to operate from 230/208V or 440 V 3 phase or 230/220V 1 phase power
- B. Controls: The Satyr-12 unit requires activation controls (by others) for normal operation (see actuation in section 2.4 for types).



## **2.4 SECURITY EQUIPMENT (Access Controls)**

- A. Actuation: Activation may be by push button, card access, radio-wave remote controls or infra-red 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-12 beam.

## **2.5 FINISHES**

- A. Satyr-12 is delivered painted black (buttresses) with the beam finished with white paint and reflective red and white safety tape to increase visibility. The power unit is painted industrial gray or white.
- 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.
- D. Zinc-arc Galvanization OPTIONAL

## **2.6 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 (Counter Weighted)
- Zinc-arc Galvanization

## **PART III – EXECUTION**

### **3.1 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 Satyr-12 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 PSP sales department.
- D. Adjustment: Installer shall adjust beam arm, hardware and sensors for smooth operation and proper performance.
- E. Maintenance: Follow maintenance procedures as outlined in the Instruction and Operation Maintenance Manual.
- F. Cleaning: Clean surfaces carefully after installation to remove excess concrete, caulk, dirt and labels.