PROCUREMENT SPECIFICATION
MODEL TT212H CABLE CRASH BEAM BOLLARD MOUNTED

1.0 SCOPE

This specification defines the procurement of a hydraulically operated CABLE CRASH BEAM BARRIER, Model TT212H, consisting of a hinged rigid wire rope crash beam, counter weights, locking pin with padlock hasp, mounting hardware, cast in place supports, hydraulic power unit, remote control panel(s), control logic, with the options as defined herein.

2.0 SYSTEM CONFIGURATION

2.1 Barrier Construction. Barrier shall be an above grade assembly containing a hinged rigid wire rope crash beam counterbalanced for easy operation. When in the down position the beam shall present a formidable obstacle to approaching vehicles. Upon impact, the force shall first be absorbed by the rope beam assembly and then transmitted to the foundation bollards of the unit.

2.2 Barrier Height. Height of the Barrier shall nominally be 30 inches (762 mm) as measured from the roadway surface to the center line of the crash beam. Height can be varied to suit security threat analysis.

2.3 Barrier Length. Barrier length shall be 126 inches (3,2 M) as measured inside to inside (clear opening) of the bollard supports (Barrier can be optionally specified with lengths of 72 inches [1,8 M] to a maximum length of 288 inches [7,3 M]).

2.4 Finish. The foundation base of the Barrier shall be asphalt emulsion coated for corrosion protection. Barrier top surface shall have a rust inhibiting painted surface. The wire rope shall be galvanized. The wire rope supporting tube shall be provided with yellow/black safety tape (alternating red/white safety tape).

3.0 OPERATION

3.1 Hydraulic Operation. The Barrier shall be capable of being raised or lowered in 5 to 15 seconds (customer adjustable). Barrier direction shall be instantly reversible at any point in its cycle from the control station(s).

3.2 Manual Operation. The Barrier shall be effectively counterbalanced to be capable of being raised or lowered with minimal manual effort.

4.0 PERFORMANCE

4.1 Experience. Barrier and auxiliary equipment shall be of a proven design. Manufacturer shall have 5 years documented experience with similar vehicle Barriers.

4.2 Qualification Tests. Barrier design shall be successfully passed actual crash tests performed by an independent agency.

4.2.1 Barrier shall have a performance evaluation per US Navy TM-56-86-05 of 1/L3.0.

4.3 Stopping Capacity

4.3.1 Normal Operation. Barrier shall provide excellent security and positive control of normal traffic in both directions by providing an almost insurmountable obstacle to non-armored or non-tracked vehicles. The Barrier system shall be designed to stop a vehicle attacking from either direction when the vehicle is within the weight and velocity characteristics as defined in paragraph 4.3.1.1. Damage to the Barrier system is probable at these levels.

4.3.1.1 The Barrier shall be capable of stopping a vehicle(s) weighing:

6,000 pounds at 40 mph (26,7 KN at 64 kph)
10,000 pounds at 27 mph (44,4 KN at 43 kph)

5.0 HYDRAULIC POWER UNIT (HPU)

5.1 Hydraulic Circuit. Unit shall consist of an electrically driven hydraulic pump which shall be connected to electrically actuated valves installed on a manifold to allow oil to be driven to the up or down side of a double acting hydraulic cylinder to raise or lower the Barrier. The hydraulic circuit shall include all necessary control logic, interconnect lines and valves.

5.2 Main Power. The electric motor driving the hydraulic pump shall be fed from (specify actual site voltage, phase and frequency, i.e. 230/3/60). Motor shall be sufficiently sized for the expected number of Barrier operations.

5.2.1 Frequency of Operation. Barrier shall be capable of ____ complete up/down cycles per hour (specify up to 120 cycles per hour).

6.0 CONTROL AND LOGIC CIRCUITS - The following control circuits and stations shall be furnished:

6.1. Control Circuit. A control circuit shall be provided to interface between all Barrier control stations and the hydraulic power unit. This circuit shall contain all relays, timers and other devices necessary for the Barrier operation.

6.1.1 Voltage. The control circuit shall operate from a 120 volt, 50/60 Hz supply (optionally 240 volt, 50/60 Hz or 24 VDC). An internally mounted transformer shall reduce this to 24 VAC (24 VDC) for all external control stations.

6.1.2 Power Consumption. The control circuit power consumption shall not exceed 250 watts basic load, plus 200 watts for each Barrier in the system.

6.1.3 Construction. The control circuit shall be mounted in a general purpose enclosure. All device interconnect lines shall be run to terminal strips.

6.2 Standard Remote Control Station. A standard remote control station shall be supplied to control the Barrier operation. This panel shall have a key lockable main switch. Buttons to raise or lower the barrier shall be provided.

6.2.1 Construction. The control station shall be mounted in a weather resistant, minimum rating NEMA 4 (IEC IP65), electrical enclosure. All connection points shall be clearly identified and coded to the applicable Delta drawing.

6.2.2 Voltage. The remote control panel shall operate on 24 VAC (optionally 24 VDC).

6.2.3 Options. Panel shall be equipped with a timer circuit to notify the operator via an annunciator "squealer" that the Barrier has been left in the up position for too long a time period. The time interval shall be customer selectable.

6.3 Position Indicating Lights (optional). The Barrier shall be supplied with a limit switch to actuate when the Barrier is securely down on its latch post bollard. The limit switch shall operate panel lights to indicate the Barrier secure and not secure condition.

7.0 BEAM LOCKING METHOD

(One of the following beam locking methods can be selected:)

7.1 Manual Locking Pin. The Barrier shall be provided with a locking pin with padlock locking point to secure the Barrier in the guard position. Padlock to be furnished by others.

7.2 Maglock. The Barrier shall be provided with an electrically operated maglock to secure the Barrier in the down position. The maglock shall be synchronized by the control circuit to lock and unlock the Barrier at the proper operating points. In the event of a power outage, it shall be possible to manually release the Barrier.

8.0 QUALITY ASSURANCE PROVISIONS

8.1 Testing. Upon completion, the Barrier system will be fully tested in the manufacturer's shop. The following checks shall be made:

8.1.1 Identification. A nameplate with manufacturer's name, model number, serial number and year built shall be located at the hinged end structure.

8.1.2 Workmanship. The Barrier shall have a neat and workmanlike appearance.

8.1.3 Dimensions. Principle dimensions shall be checked against drawings and ordering information.

8.1.4 Finish. Coatings shall be checked against ordering information and shall be workmanlike in appearance.

9.0 PREPARATION FOR SHIPMENT

9.1 The Barrier system shall be crated or mounted on skids as necessary to prevent damage from handling. The shipping container(s) shall be of sufficient structural integrity to enable the assembly to be lifted and transported by overhead crane or forklift without failure.

10.0 DISCLAIMER

Please note - careful consideration must be devoted to the selection, placement and design of Cable Crash Beam Barrier installation. Just as in the case of any Barricade system, perimeter security device or security gate that blocks a roadway or drive, care must be taken to ensure that approaching vehicle as well as pedestrians are fully aware of the Barriers and their operation. Proper illumination, clearly worded warning signs, auxiliary devices such as semaphore gates, stop-go signal lights, audible warning devices, speed bumps, flashing lights, beacons, etc. should be considered. Delta has information available on many such auxiliary safety equipment not specifically listed herein. It is strongly recommended that an architect and or a traffic and or safety engineer be consulted prior to installation of a Barricade system. Delta will offer all possible assistance in designing the operating equipment, controls and the overall system but we are not qualified nor do we purport to offer either traffic or safety engineering information.

11.0 PROCUREMENT SOURCE

The **Model TT212H** Cable Crash Beam Barrier System shall be purchased from:

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