



SPECIFICATION FOR MODEL CR-25P ELECTROMECHANICAL CABLE BEAM BARRIER

PART I - GENERAL

1.1 WORK INCLUDED IN THIS SECTION

- A. Furnish labor, materials, inspections, supervision, etc., necessary for the complete installation and operation of vehicle barrier(s) as shown on the plans and specified herein. Work includes furnishing all items and accessories required or necessary for the correct operation of the vehicle barrier(s) as shown on plans and/or specified herein.

1.2 QUALITY ASSURANCE

- A. The Company shall specialize in manufacturing of the type barriers specified, with a minimum five (5) years experience.
- B. The installer shall have a minimum three (3) years installation experience of similar equipment.

1.3 SUBMITTALS

- A. Submittals shall contain sufficient plans, elevations, sections, and schematics to clearly describe the apparatus. All conduit runs, controls and similar drawings shall be included.
- B. Submittals shall include (but not necessarily limited to) the following:
 - 1. All high and low voltage conduit runs.
 - 2. Mounting dimensions and locations.
 - 3. Details of electronic equipment, electrical equipment or any other apparatus deemed necessary by the Owner or Owners representative.
- A. Installer shall provide two (2) copies of submittal packages.

1.4 INSPECTIONS

Procure all the necessary and usual inspections and certificates for all work to be installed. Deliver same to the Owner/Owners representative before final acceptance.

PART II – PRODUCTS

2.1 ELECTROMECHANICAL CABLE BEAM BARRIER GATE

A. Application

1. Barrier shall contain a rigid crash beam hinged at one end, raised and lowered by means of an electric motor and transmission. When in the down locked position the beam shall present an obstacle to approaching vehicles. Upon vehicle impact, the force shall first be absorbed by the beam assembly and then transmitted to the concrete foundations of the unit.

B. Features

1. Height of the barrier shall be 30.5 inches (775 mm) as measured from the roadway surface to the center line of the barrier arm.
2. The standard clear opening shall be 144 inches (3.66m) as measured inside to inside of the buttress supports. (*The Barrier can be specified with a clear opening from 120 inches (3.0m) to 300 inches (7.62m)*).
3. The hinge side assembly will be constructed of 3/8" steel plate with internal self-aligning ball ends on a single stainless steel axle allowing the aluminum beam movement in an arc up to 90 degrees. The hinge post assembly shall be designed to accept manual or electric operation of the arm.
4. The receiver stanchion will be constructed of 3/8" steel plate, which is designed to direct the landing of the arm and securely contain the arm during impact.
5. The receiver and hinge shall bolt directly to a concrete pad. No above grade concrete shall be acceptable.
6. The barrier buttress supports shall be hot dipped galvanized for superior corrosion protection.
7. Barrier arm shall be fabricated from aluminum tubing and shall be furnished with red and white architectural grade reflective striping (yellow and black stripes optional).
8. The cable shall be restrained in the arm by the use of a cast anchor post, which will act to secure the cable during impact.

C. Functional Specifications

1. Unit shall consist of an electric motor and transmission. The drive train shall not use belts or chains and shall be connected to the arm shaft with a connecting rod constructed of ASTM A311 Class B high strength stress proof steel.
 - a. The arm shall begin with zero velocity and accelerate smoothly reaching maximum velocity at mid-stroke (45 degrees), decelerating smoothly to zero velocity at full stroke (90 degrees) preventing bounce or whip of the arm.
 - b. A solenoid release, automatic motor brake shall be furnished as part of the gate drive mechanism. The brake shall automatically release when the hand crank is inserted to manually operate the gate.
 - c. A hand crank shall be included with each gate to operate the gate during power failure. An automatic safety disconnect switch shall automatically break the control circuit power when the hand crank is inserted to allow for manual operation.
2. The electromechanical barrier shall be capable of being raised or lowered in 8 seconds.
 - a. The barrier shall be capable of 120 complete cycles per hour.

3. Power System

- a. The electric motor shall be capable of producing a minimum 1/2 horsepower.
- b. The unit shall be made available as 110/208/230 single-phase or 208/230/460 three-phase AC voltage. The motor shall be of the high starting torque, continuous duty, and industrial type, protected against overload by either a thermal or current sensing overload device.

4. Control Circuitry

- a. A built-in PLC controller shall interface between the barrier control stations and the electric motor. The PLC shall include all necessary inputs, outputs, timers and logic necessary for barrier operation.
- b. The control circuit shall operate from a 120 volt, 50/60 Hz supply.
- c. The control circuit shall be mounted in an enclosure located in the hinge side housing. The enclosure shall be of sufficient size to accommodate accessory devices. All accessory device wiring shall connect to the included terminal strips.

2.2 CONTROL PANELS

(Any or all of the following control panels may be specified)

A. Remote Control Panel

1. A remote control panel shall be supplied to control the barrier operation. This panel shall have a key lockable main switch with "main power on" and "panel on" lights. Buttons to raise or lower each barrier shall be provided. "Up" and "down" indicator lights shall be included for each barrier.
 - a. The remote control panel shall operate on 24 volts.
 - b. The remote control station shall be a standard 19 inch electronics rack type surface mount panel or desktop console type with all devices wired to a terminal strip on the back

B. Remote Control Master Panel

1. A remote control master panel shall be supplied to control barrier operation. This panel shall have a key lockable main switch with "main power on" and "panel on" lights. Buttons to raise and lower each barrier shall be provided. "Up" and "down" indicator lights shall be included for each barrier. The remote control master panel shall have a key lockable switch to arm or disarm the remote slave panel. An indicator light shall show if the slave panel is armed.
 - a. The remote control panel shall operate on 24 volts.
 - b. The remote control station shall be a standard 19 inch electronics rack type surface mount panel or desktop console type with all devices wired to a terminal strip on the back.

C. Remote Control Slave Panel

1. A remote control slave panel shall also be supplied to control barrier operation. This panel shall have a "panel on" light that is lit when enabled by a switch on the remote control master panel. Buttons to raise or lower each barrier shall be provided. "Up" and "down" indicator lights shall be included for each barrier.

- a. The remote control panel shall operate on 24 volts.
- b. The remote control station shall be a standard 19 inch electronics rack type surface mount panel or desktop console type with all devices wired to a terminal strip on the back.

2.3 ACCESSORY DEVICES

(Any or all of the following may be specified)

A. Traffic Signals

1. 8 inch traffic lights shall be supplied to alert vehicles of the barrier position. The (*specify color*) light shall indicate that the barrier is fully down. All other positions shall cause the light to show (*specify color*). Brackets shall be supplied to allow light(s) to be located on a 3.5 inch OD post. The operating voltage shall be 120 volts.

B. Vehicle Detection Loop

1. A vehicle loop detector shall be supplied to prevent the barrier from being lowered on an authorized vehicle. The detector shall utilize digital logic have fully automatic tuning for stable and accurate long term reliability. The detector shall prevent any barrier close signal when a vehicle is over the loop.

2.4 PERFORMANCE

A. Testing

1. Barrier design shall have successfully passed actual full scale crash tests conducted by a qualified independent agency. Any test data other than a full scale crash test (engineered data, computer models) are not acceptable and shall not be recognized.

B. Evaluation

1. The barrier shall have been certified by the Department of the Navy per Specification OR-098-09-88 and M-56-86-05 and the Department of the Army with a rating of KN1-LN2.

C. Stopping Capacity

1. The barrier system shall be designed to impede a vehicle approaching from either direction.
 - a. The barrier shall be capable of stopping a vehicle weighing 10,000 pounds traveling at 18 mph.
 - i. The barrier shall be engineered to stop:
 - 10,000 pound vehicle traveling at 31 mph
 - 5,000 pound vehicle traveling at 44 mph
 - 2,000 pound vehicle traveling at 69 mph

2.5 QUALITY ASSURANCE

A. Factory Testing

1. Upon completion, the barrier gate will be fully tested for proper operation by manufacturer prior to shipment. A nameplate with manufacturer's name, model number, and serial number shall be located within the unit.
2. All critical dimensions shall be checked for accuracy against customer approved shop drawings.

2.6 PROCUREMENT SOURCE

The electromechanical cable beam barrier system shall be model CR-25P as manufactured by **B&B ARMR (800-367-0387), 5900 South Lake Forest Drive, Suite 230, McKinney, TX 75070.**

PART III - EXECUTION

3.1 INSTALLATION

- A. Installation shall be performed according to the manufacturer's instructions. Verify all component locations with contract drawings and shop drawings.
- B. Any disagreement between the Plans, Specifications, and Ordinances, must be called to same before signing of the shop drawings. After the shop drawings have been signed, the Contractor is responsible for having all work meet requirements of the governing ordinances.