

ITEM 11619.351599 M - QUICKCHANGE MOVEABLE CONCRETE BARRIER

(QMCB) (MAINTAIN ONLY)

DESCRIPTION: This work shall consist of maintaining the Quickchange Moveable Concrete Barrier (QMCB), including any Quick-Lock Variable Length Barrier (QVLB), currently installed at the locations indicated on the contract plans or as ordered by the Engineer. The QMCB shall remain in place at the end of this contract. Removal of the QMCB will not be required. The Contractor shall contact the EIC for the supply of replacement QMCB and or QVLB needed to replaced damaged units during the contract period.

MATERIALS: The Barrier is patented and patent-pending product and shall be obtained from Barrier Systems, Inc. (BSI), Carson City, Nevada (702) 885-2500.

The QMCB consists of reinforced precast concrete sections. The barrier section is be 813mm high, 610mm wide at the base, and 940mm long; the nominal length of the barrier pin to pin is 1m long. The top of the barrier is “T” shaped to permit it to be picked up by the transfer equipment. The QMCB minimum weight is 633 kg per meter of length. The basic shape of the barrier is the “New Jersey Shape” modified at the top with the “Tee-Head”.

There are four (4) 22mm threaded bolts extending the length of each section that will accommodate four (4) steel hinges – two (2) on each end – set into recesses formed in the barrier. The sections are connected by a 29mm hinge pin, which fits through the barrier hinges forming a continuous wall the desired length. The barrier section shape and the hinge pin design will permit the connected sections to be picked up off the road bed and rotated a minimum of 18 degrees so that they can be transferred across the roadway by a transfer vehicle.

All exterior components of the permanent system are hot dipped galvanized in accordance with ASTM-A-123 M or zinc chromate plated in accordance with ASTM B-633 M as standard, except that the spring are power coated and some components may be stainless steel which are not be finished.

The materials conform to the following specifications:

Welded wire fabric:	ASTM A185 M
Reinforcing Bars:	Grade 300 or 400
Steel Hinges:	ASTM A36 M
Through Rod:	ASTM A36 M
Nuts:	IFI 22mm UNC STD HEX NUT
Washers:	IFI 22mm MEDIUM DUTY SPRING LOCK WASHER
Hinge Pin:	AISI 4140 OR 4142
Hinge Spring	ASTM A901 M

Quick-Lock Variable Length Barrier (QVLB) are fabricated from A36 M steel, utilizing all welded construction. The nominal length of the QVLB is 1090 mm with a maximum length of approximately 1270 mm and a minimum length of approximately 920 mm pin-to-pin.

The QVLB shell consist of an inner shell and an outer shell, both hot dip galvanized. The minimum weight of the assembled QVLB is 476 kg.

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Precast concrete barrier units for QMCB conform to the requirements of §704-05 Precast Concrete Median Barrier except that NYSDOT approved materials and epoxy coated reinforcement are not required unless specified otherwise.

CONSTRUCTION DETAILS: Any barrier sections having damage or defects in the concrete or the joint connections that will affect the performance of the system as determined by the Engineer, shall be repaired and or replaced with suitable parts conforming to the material specifications.

All replacement QMCB, including QVLB shall be installed in accordance with the manufacturer's instructions, and shall be able to resist the impact of vehicles in accordance with the National Cooperative Highway Research Program Report 350 (NCHRP 350) Test Level 3.

Any unit which is damaged or rendered unsuitable by the Contractor's operations during lateral movement of the barrier or adjacent traffic, as determined by the Engineer, shall be removed from the site and replaced with a suitable unit by the Contractor.

METHOD OF MEASUREMENT: This work will be measured as the number of linear meters of QMCB, including any QVLB, maintained during this contract in accordance with the requirements of this specification and the directions of the Engineer.

BASIS OF PAYMENT: The unit price bid per linear meter shall include the cost of maintaining, and repairing the QMCB including any QVLB for the duration of this contract. Maintenance shall include the furnishing of labor, material and equipment necessary to perform all maintenance and repair work including the cost of removing and replacing QMCB, or any QVLB units damaged or made unsuitable by the contractor's operations during lateral movement of the Barrier or by adjacent traffic. The Contractor shall contact the EIC for any QMCB or QVLB damaged and needed to be replaced during the contract period. The Moveable Barrier Transfer Machine and lateral movement of the QMCB will be paid for under their respective items.

Payment will be made in equal monthly payments based on the total bid price for the QMCB divided by the total number of months of the Contract duration.