

**TECHNICAL
BRIEF**

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STRAIGHTENING DEFLECTED MOVEABLE BARRIER WALL

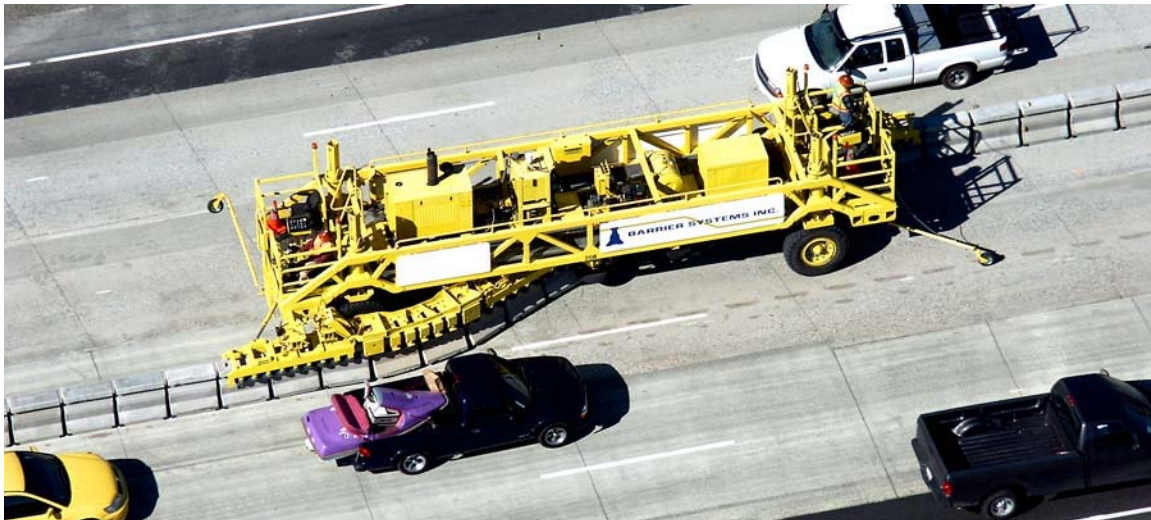
Both Quickchange® Moveable Barrier (QMB) and Reactive Tension System (RTS) Moveable Barrier may deflect as a result of an impact from an errant vehicle.

Generally this deflection is not a concern and the Barrier Transfer Machine (BTM) will straighten the wall during the next normal transfer cycle. Occasionally the deflection may intrude into opposing lanes or a construction work zone enough that straightening is warranted to minimize disruption of traffic or work.

In those cases there are multiple ways of straightening the QMB or RTS wall. The machine can be brought to the area in question and straighten the wall using the conveyor system and snout, replacing the wall in the proper location.

Techniques

This technique is most appropriate when a large vehicle has moved a substantial section of wall or when it is convenient to use the machine.



If the area of deflected barrier is limited in size the barrier may also be repositioned by hand using 5-6 foot pry bars. This is covered in the training of operators.

The pry bars are applied to the bottom edges of the hinges and the barriers are moved 2-3 inches at a time at each end of the barrier, until they are properly repositioned. For a routine occurrence this can be accomplished in a matter of minutes once proper traffic controls are in place to protect the workers. (Note: The illustration shows the wall opened for clarity only - normally this is done with the wall together)



For cases where there is vehicle access to both sides of the barrier, another option is to use the truck bumper mounted “pusher wheels”, to push the barrier back into position from the backside.

In this operation the operator drives to the backside of the deflected wall and uses the pusher wheels to push the wall back into position. Generally one pass is sufficient, but when necessary the operator or driver can back up and make a second pass. The driver can also use the pusher wheels while backing up to maximize the efficiency of the operation. This technique is most useful in a moveable median operation since both sides of the wall are accessible and minimal traffic controls are required.



When the incident is in a construction zone a fourth option is to use a piece of construction equipment such as a backhoe or front end loader in conjunction with a set of barrier lifting tongs to reposition the wall to its original location. Because each module only weighs 1500 pounds (approximate) many different kinds of construction equipment can be used when required to “push” the wall back into approximate position and minimize work zone disruption.

Time Required

Most vehicle impacts are low angle and result in minor wall deflections which can be straightened in a matter of 2-5 minutes with any of the approaches described above. For a severe impact, roughly equivalent to an NCHRP-350 test level 3 impact, either the machine, or the truck equipped with pusher wheels, can still typically restore the wall in under 5 minutes once they have arrived at the scene.