

# BARRIER INSTALLATION

The C-40 Traffic Impact Bollard, Model TIB-67-SA is a single, standalone bollard jointly developed and manufactured by Barrier1 Systems, Inc. and Ideal Shield.

The C-40 Bollard is a single, standalone bollard TIB-67-SA that consists of double wall bollard pipe, structural ring plate with gusset support, and bottom cap plate. A foundation about 30" x 30" - 30" deep consists of 4000 psi concrete. The bollard pipe extends about 28" into foundation, and about 36" above grade. Two (2) #6 vertical rebar at 60 ksi, were placed inside bollard pipe. The bollard pipe is filled with 4000 psi concrete. A lifting ring is welded on inside of bollard pipe at top to lift and set preassembled bollard into excavation. No rebar is required in concrete foundation, where this is a "Set and Pour" bollard system.

The soils were primarily clay. Bottom of excavation was not compacted. The bollard test article was installed in area where concrete apron exists. Test article was not painted so that welds and joints could be inspected after impact. Drawings attached below illustrates bollard install and equivalent bollard design for "removable" bollard, which uses the same components and connectors.