

Virginia Abutment

The Virginia Abutment was created to provide a jointless environment for bridges with lengths that exceed the total movement restrictions imposed on Full-Integral, Semi-Integral, and Deck Extension bridges.

This is accomplished by casting a concrete end diaphragm on the ends of the beams or girders at the abutments (similar to a semi-integral backwall), and providing for a joint between the moving concrete end diaphragm and a static backwall on the abutment.

Finger joints are commonly used with this detail due to the larger range of movements, with one side of the finger mounted on the static backwall and the other side mounted on the back of the concrete end diaphragm.

A concrete trough is provided directly below the finger joint, with a sloped invert to accommodate drainage discharge and allow this system to be self-cleaning.

To date, the longest bridge in Virginia built utilizing the Virginia Abutment is 1,910 feet in length with no joints other than at the abutments.



As shown below, while the Virginia Abutment was intended for new structures, it can also be used in the rehabilitation of existing bridges as part the effort to convert a jointed bridge to jointless.



The original Virginia Abutment concept and design were developed by the VDOT Staunton District Bridge Section.

