Stafford Lakes Village Parkway
Bebo Arch and Retaining Walls

Stafford, Virginia




Project Description: In order to connect two parcels of land at a new development a stream crossing was needed. Consideration was given to a bridge and various concrete arch systems since both flow and environmental impact on the stream were major concerns. The concrete arch system easily met the flow and environmental issues and was found to be the most cost effective since borrow was readily available to build an embankment wide enough for the four lane divided roadway. The single arch system is approximately 190 long by 30 feet wide by 12.5 feet high, and utilizes reinforced soil wing walls. Once concrete footings were in place erection of the arch was completed in one day and once the arch was backfilled erection of the wing walls took less than 2 weeks. Use of the arch system allowed the project to be controlled by fill placement and hence turned the stream crossing into a conventional highway embankment construction project.

Owner: Stafford Lakes, LLC, Stafford, VA
General Contractor: Rappahannock Construction Co., Inc., Fredericksburg, VA
Civil Engineer: Christopher Consultants, Fairfax, VA
Geotechnical Engineer: ECS, Ltd., Fredericksburg, VA
Concrete Arch Supplier: Rotondo Precast, Fredericksburg, VA
Contractor/Installer: GeoConstructors, Inc., Leesburg, VA

GeoStructures, Inc.
Engineered Earth Structures & Foundations