



County Project Of The Year

Mid-Size County Projects \$500,000 +





County Project Of The Year

**Replacement of Bridge, Baden Naylor
Road over Rock Creek**

Prince George's County



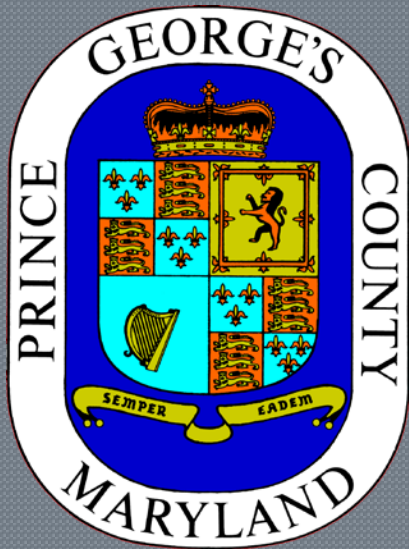
County Project Of The Year

Replacement of Bridge, Baden Naylor Road over Rock Creek

County: Prince George's
Engineer: Wilson T. Ballard Company
AB Consultants, Inc.
Contractor: Rustler Construction



County Engineers Association of Maryland

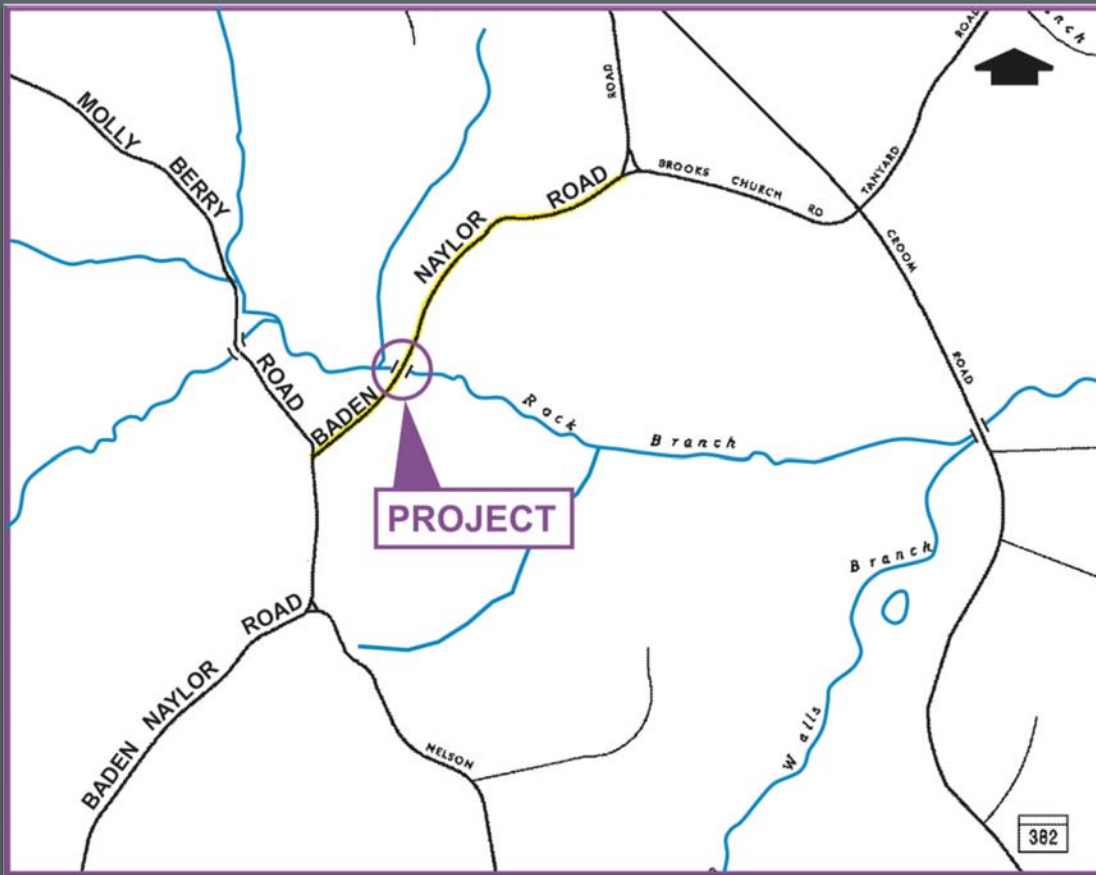


CEAM Mid-Size
County Project of the Year

Replacement of Bridge No. P-403
Baden Naylor Road
over Rock Creek
Prince George's County, Maryland



Project Location



Bridge No. P-403, Baden Naylor Road over Rock Creek is located on the eastern side of Prince George's County, to the south east of Washington D.C., and within the Western Coastal Plain Province of Maryland.



Tropical Storm Lee



On September 7, 2011, during Tropical Storm Lee, the North Abutment of Bridge No. P-403 was severely undermined due to scour, resulting in the loss of the abutment and collapse of the bridge and approach roadway. Baden Naylor Road was closed immediately to traffic, resulting in more than a 6 mile detour.

The existing structure was a single-lane, two-span continuous, reinforced concrete slab bridge. The substructure consisted of two reinforced concrete abutments with wing walls and a solid-shaft reinforced concrete pier, all on spread footings.



Project Team



Concurrent with FEMA determination of eligibility in late 2011, Prince George's County DPW&T created a fast track project utilizing the following team:

Adjacent
Land Owners

Replacement of
Bridge No. P-403
Baden Naylor Road
Over Rock Creek

Verizon
SMECO



In-House Staff

The Wilson T. Ballard Company



AB Consultants,
Inc.

On-Call Engineering
Consultants



Rustler Construction, Inc.

On-Call Bridge
Contractor



Project Timeline



Collapse of Bridge	September 7, 2011
Notice to Proceed on Alternatives Design Study	November 2011
Obtained FEMA Funding Approval	December 2011
Alternatives Design Study Submitted	February 2012
Initiation of Final Design	March 2012
Completed Final Design	July 2012
Completed Price Negotiation with Contractor	September 2012
Obtained MDE Approval	November 2012
Notice to Proceed for Construction	December 2012
Bridge Open to Traffic	June 2013



Final Design



- ❖ During the final design phase, the Project Team worked closely with “over the shoulder reviews” and conducting frequent meetings.
- ❖ Final Right-of-Way plats were issued on August 2, 2012. The County Right-of-Way staff met with the affected property owners and obtained the necessary right-of-way and easements concurrently with the final design of the project.
- ❖ The County set an aggressive schedule for the design and construction in order to respond to the needs of the citizens of Prince George’s County. Construction was completed, and the bridge opened to traffic 15 months after the formal design notice-to-proceed.



Environmental Concerns



Environmental challenges included:

- Forest Stand Impacts
- Wetland Impacts
- Tier II Stream Impacts

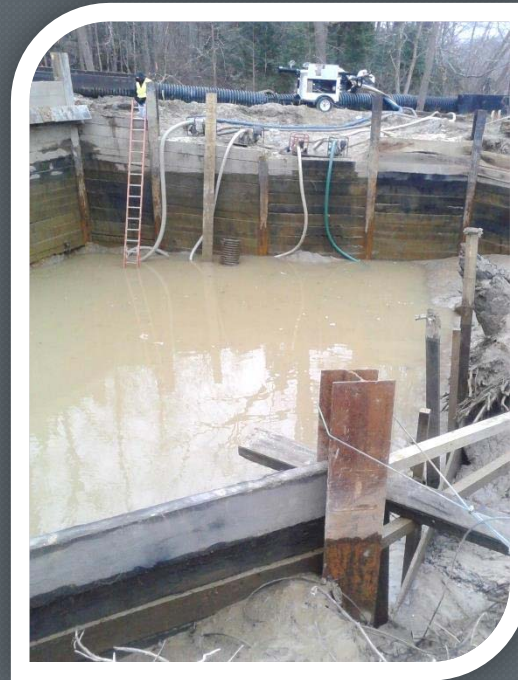
The Baden Naylor Road Bridge spans Rock Creek, and was designated by MDE as one of Prince George's County's fifteen Tier II water bodies which exceed applicable water quality standards. The project incorporated minimization measures to ensure Tier II conditions were adequately addressed such as:

- Environmental Site Design (ESD) features using swales and submerged gravel wetlands
- Preparation of Erosion and Sediment Control (E/SC) plans utilizing accelerated stabilization
- Reduction of the roadway section (lane/shoulder)
- Reduction of the fill slope from 3:1 to 2:1
- Provided 1/2 acre of woodland conservation





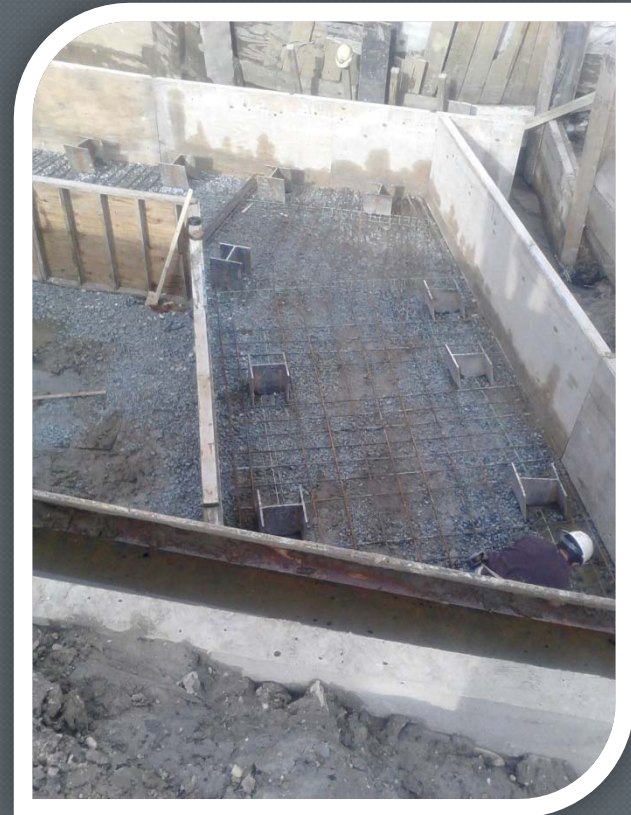
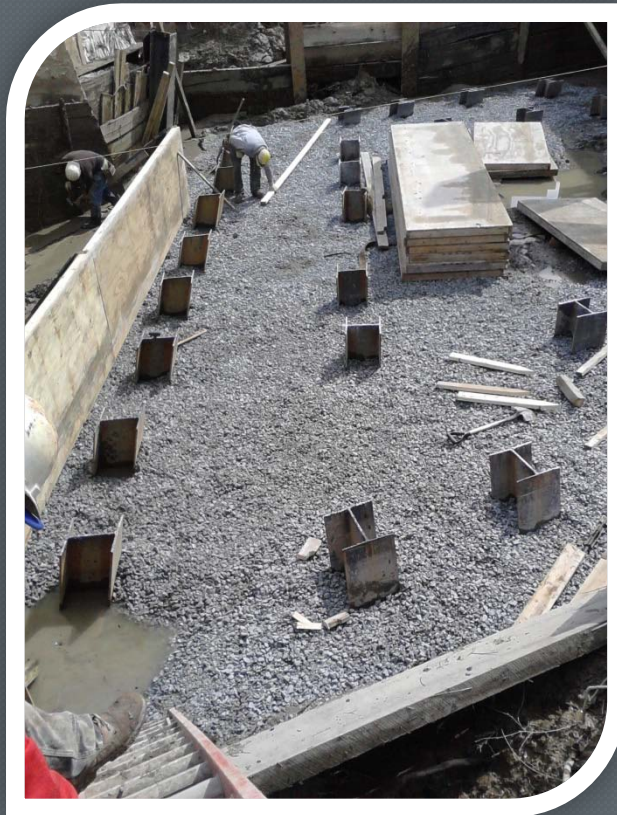
Construction Challenges



Rustler Construction was given the Notice to Proceed in December 2012. The Project Team faced a number of challenges during construction including wet weather, high stream flows and the need to provide temporary support of the excavation. Working together, the Project Team met these challenges in order to maintain the project schedule.



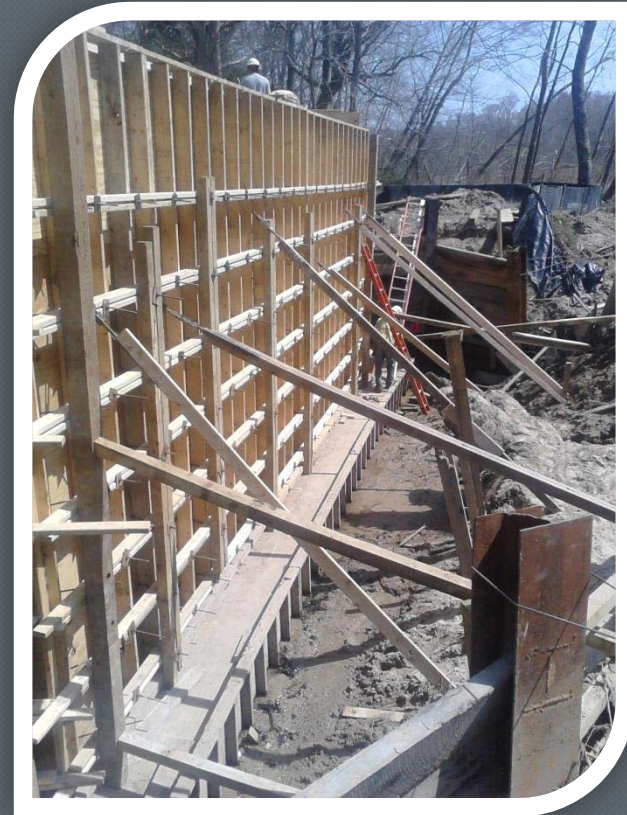
Bridge Foundation



To support the bridge and to provide stability during future major storms, a pile foundation was utilized. The piles were designed to accommodate the estimated scour depth for the design flood.



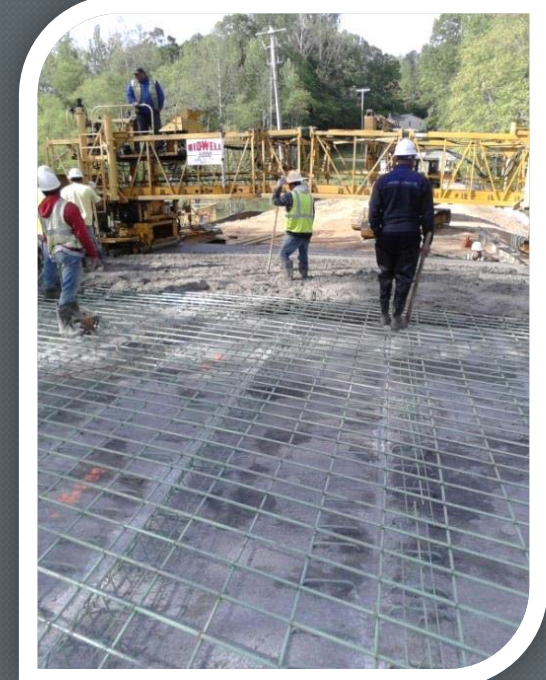
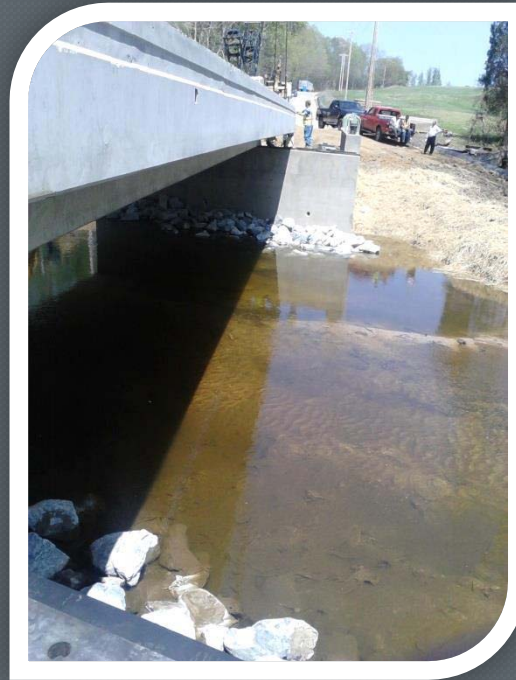
Bridge Substructure



At the Semi-Final Design stage the County began negotiating the cost of the Project with the Contractor. The Contractor was given the Notice to Proceed on December 3, 2012, with a completion time of 180 calendar days.



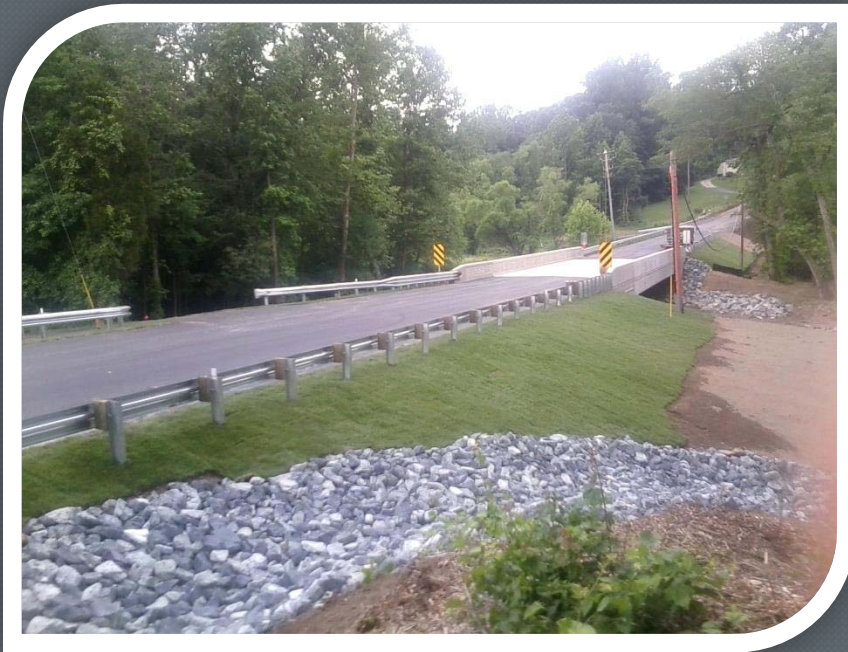
Bridge Superstructure



The Project Team submitted a Design Study Report, including the H/H analysis and a recommended bridge opening in February 2012. During the preliminary design phase, various fabricators were contacted concerning availability of material, cost and delivery time of the superstructure beams. The County selected a single span, 72-foot long, adjacent prestressed concrete box beam bridge.



Completed Project



The design and construction of Bridge No. P-403 is an excellent example of a project where all parties, including the County, consultants, reviewing agencies, utility owners, contractor, and adjacent landowners worked together to accomplish the goal of putting the road back in service as quickly as possible. The Project Team collaborated on unique strategies and solutions in order to deliver an outstanding project on an accelerated schedule to address the concerns of the local community.



Project Cost



The cost of project was \$2,155,000 which included design, right-of-way acquisition, utility relocation, and construction.





CEAM 2013
COUNTY PROJECT OF THE YEAR
MID-SIZE CATEGORY



Replacement of Bridge No. P-403
Baden Naylor Road over Rock Creek
Prince George's County, Maryland

THANK YOU