

PROPOSAL FOR THE

-TOWN OF- DIANA

**FOR THE BRIDGE SUPERSTRUCTURE
IMPROVEMENTS STUDY -
KIMBALLS MILLS ROAD BRIDGE
OVER THE WEST BRANCH OF
THE OSWEGATCHIE RIVER
(BIN: 2220360)**

SEPT. 8, 2022



September 8, 2022

Mr. Joseph Langs, Highway Superintendent

Town of Diana

5958 Old State Rd Ext

PO Box 460

Harrisville, NY 13648

**Re: Proposal for Professional Engineering Services – Bridge Superstructure Improvements Study
Kimballs Mills Road Bridge Over the West Branch of the Oswegatchie River - BIN 2220360**

Dear Mr. Langs,

As requested, we have prepared a proposal to conduct an engineering study and provide an engineering report to the Town for improvements to the above referenced bridge. We greatly appreciate being considered for this project and look forward to the opportunity to work with the Town of Diana.

It is our understanding that you desire to consider improvements to the bridge deck and wear surface based on the current conditions and observations of wear. We visited the bridge on August 1, 2022 to familiarize ourselves with the structure and then met with you after to discuss our initial thoughts. Our observations confirmed your concern with the existing deck and wear surface. Perforations and areas of fatigue were noted throughout the timber deck and wear surface. We also noted a loss of coating on the existing steel superstructure and a loose bridge rail post. The substructure appeared to be in good condition. During our meeting with you, we recommended that the Town consider an engineering study to evaluate alternatives for bridge superstructure improvements. The alternatives considered and their associated costs will be detailed in an engineering report that can be used by the Town when making decisions relative to the bridge. The long-term cost differences between alternatives may be substantial, making the planning step of this project an especially important one. The two alternatives that we were asked to evaluate are outlined below:

Alternative No. 1 – Superstructure Replacement: Remove the existing timber bridge deck and timber wearing surface, as well as the multi-girder steel superstructure. These components will be replaced with precast, prestressed concrete bridge beams and an asphalt wear surface. Additional improvements proposed under this alternative include new bridge rail, transition rail, and guide rail in the vicinity of the structure. Improvements to the substructure will be limited to reconstruction of the beam seats as necessary to accommodate the proposed prestressed beams.

Alternative No. 2 – Superstructure Improvements & Deck Replacement: Remove the existing timber bridge deck and timber wear surface. Remove corrosion, prep the base material, and repaint the existing steel superstructure. Install reinforced precast concrete panels which would serve as the replacement bridge deck and wear surface. This alternative would also include new bridge rail, transition rail, and guide rail in the vicinity of the structure. No improvements to the abutments are proposed under this alternative. Because this alternative includes the removal of paint, lead testing should be performed to ensure costs carried for paint removal are appropriate. Lead testing will be performed as an Additional Service by a third-party firm, Atlantic Testing Laboratories, who will be sub-contracted by BCA. Also, and because this alternative includes replacing the existing bridge deck with an alternate material (timber versus concrete), a Level One Load Rating will be



required in accordance with NYSDOT standards. BCA has included this analysis in our proposed fee for this study.

Our total fee for the proposed Study & Report Phase and Additional Services as outlined herein will be an estimated total of \$12,000.00, as summarized below:

Description:	Proposed Fee:	Basis of Payment:
Basic Services:		
a. Study & Report Phase	\$10,000.00	Lump Sum
Additional Services:		
a. Lead Paint Testing	\$1,500.00	Hourly, plus Expenses
b. Reimbursable Expenses (Mileage, Postage, Printing, etc.)	\$500.00	Expenses
Total Estimated Contract Amount:	\$12,000.00	

Fees for subsequent phases of the project (design, bidding, and construction) will be as mutually agreed upon, should the Town choose to move forward with the project.

We recommend the list of tasks below be a part of this study and documented in the Preliminary Engineering Report:

- Project Kick-Off Meeting to establish goals, discuss local concerns, and identify key stakeholders.
- Obtain available information and mapping (bridge inspection reports, bridge record drawings, tax mapping, USGS mapping, digital ortho imagery, soils mapping, etc.) for the project area.
- Review existing documentation on the bridge construction and previous improvements.
- Evaluate the scope of work for both alternatives and present an opinion of probable construction costs including a life-cycle cost analysis for each alternative.
- Recommend (BCA) and select (Town) an alternative to proceed with.
- Identify potential sources of funds for the project.
- Develop a preliminary schedule for the project.
- Prepare a Preliminary Engineering Report that documents the project goals, constraints, alternatives considered, selection process, and selected plan of action that is arrived upon after careful progression through all steps of the study.

If this proposal meets your satisfaction, please advise us and we will prepare a form of agreement for your execution. Again, thank you for considering our firm for this project. If you should have any questions, please feel free to contact me directly.

Very truly yours,

BERNIER, CARR & ASSOCIATES, ENGINEERS, ARCHITECTS AND LAND SURVEYORS, P.C.

Casey D. Dickinson, P.E. Digitally signed by Casey D. Dickinson, P.E.
Date: 2022.09.08 10:51:46-04'00'

Casey D. Dickinson, P.E.
Associate Principal / Senior Civil Engineer
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FIRM QUALIFICATIONS

BEHIND THE SCENES AT BCA

BCA ARCHITECTS & ENGINEERS is a multi-disciplinary architectural and engineering firm committed to excellence, innovation, and service in meeting our clients' challenges. We are specialists in the feasibility planning, design, and construction management of projects for municipalities. Our focus on cost effective, code compliant design, and strong construction management is the most important aspect of our engineering philosophy. The firm provides expertise in civil, transportation, sanitary, environmental, mechanical, electrical and structural engineering; architecture; historic preservation; planning; code compliance; surveying; and construction management. A full-service organization, like ours, is very rare in the design, engineering, and construction marketplace. BCA's integrated approach affords our clients a single point of responsibility they can count on to get things done.

BCA Architects & Engineers is a registered professional corporation that has been licensed to do business in the state of New York since 1970. We have a professional staff of over 96 architects, engineers, planners, and construction specialists located in Watertown, Ithaca, Saratoga Springs, and Rochester. Our projects range in size from small studies and grant writing to municipality wide reconstruction projects. Over the past five years we have planned, designed and/or administered on average, \$150 million dollars of construction value per year. The engineering study and report efforts for the Town of Diana - Kimballs Mills Road Bridge project will be run out of the Watertown office by the engineering department.

BCA Architects & Engineers is a full-service integrated Architecture and Engineering firm.

WE OFFER THE FOLLOWING IN-HOUSE SERVICES:

PLANNING AND ANALYSIS

- Long Range Planning
- Grant Writing
- Site Evaluation and Selection
- Environmental Impact Studies / SEQRA
- Facility Programming
- Space Utilization Studies
- Life Safety, Fire, and ADA Code Compliance Evaluations
- Energy Conservation Efficiency Review
- Life-Cycle Cost Analysis
- Traffic Studies

SUSTAINABLE DESIGN PRACTICES

- Green Infrastructure Design
- Executive Order 111 Compliance Design
- Leadership in Energy and Environmental Design (LEED)
- Green Building Products Evaluation
- International Green Construction Codes V2.0
- NYS Energy Code Compliance

DESIGN SERVICES

- Landscape Design
- Civil Engineering
- Site Design
- Architectural Design
- Structural Engineering
- Mechanical Engineering
- Plumbing Engineering
- Electrical Engineering
- Hazardous Materials Abatement Design
- Interior Design and Layout
- Restoration and Historic Preservation
- Forensic Engineering
- Transportation Engineering
- Bridge Design

CONSTRUCTION PHASE SERVICES

- Cost Estimating & Scheduling
- Construction Phase Administration
- Enhanced Construction Phase Services
- Post-Occupancy Commissioning and Monitoring

MUNICIPAL, INSTITUTIONAL, AND COMMERCIAL SERVICES

- Parks and Recreational Planning & Design
- Highway and Street Design
- Waterfront Re-development
- Wastewater Collection and Treatment
- Highway Garage Design
- Water Storage
- Police Facilities
- Water Distribution and Treatment
- Jail Facilities
- Water Source Development
- Public Housing
- Storm Water Management
- Hazardous Waste Remediation
- Municipal Office Design
- Historic Preservation
- Bridge Inspection and Design



EXPERIENCE OF FIRM



TOWN OF OSWEGO THOMPSON ROAD BRIDGE OVER RICE CREEK

Central New York APWA's 2021 Transportation Structure of Year

The existing bridge carrying Thompson Road over Rice Creek was a pair of 12' x 8' galvanized steel pipe arches installed in 1991. Although the pipe arch structures themselves were in fair condition, the subgrade soils supporting them had been eroded and scoured away, leaving both culverts perched on top of cobbles and boulders and extremely unstable. In 2018, the NYS DOT issued a Red Flag against the structure due to concerns related to the excessive scour present. BCA investigated the scour condition and advised the Town Board that there was no quick solution to address the concerns or to mitigate the potential for sudden catastrophic failure. The Town Board subsequently decided to close the bridge to traffic temporarily while a solution was developed.

The Town had established a deadline of reopening the bridge to traffic no later than the end of 2020 and, in February 2019, the Town Board authorized BCA to complete an in-depth engineering study to develop potential alternatives that could address the scour concerns. BCA developed and analyzed several alternatives, and assisted the Town Board with planning and hosting a variety of public outreach initiatives including one Public Information Night. The Public Information Night was well attended by local residents, SUNY Oswego officials, and County legislators, and was used as a means of sharing information regarding the project and gaining input and insight from the public. In February 2020, the Town Board selected a full replacement alternative which was more costly initially, but was projected to save the Town taxpayers money in the long-term when compared to any repair alternative. The selected structure was a 55' span precast concrete three-sided culvert with cast-in-place concrete footings and precast concrete wingwalls. A natural limestone rock vane structure

complimented the bridge project's proposed scope of work as a means of improving stream hydraulics and reducing the risk of future scour.

In March 2020, BCA began design with the Town's deadline in mind. BCA assisted the Town with gaining the appropriate environmental permits from NYSDEC and USACE, as well as gaining the needed ROW adjustments and developing a financing plan for the project. Design was completed and the project was approved for bidding in July 2020.

Bids were received and opened in August 2020, and Slate Hill Constructors, Inc. was awarded the project. Construction commenced in September and the bridge was reopened to traffic in November 2020, meeting the Town's original deadline. BCA assisted the Town with scheduling a Ribbon Cutting ceremony which was held on the bridge with local residents, politicians, and reporters present.

The project was completed on time and under budget with a final construction value of \$940,000 and a Total Project Cost of \$1.2 million. This project was self-funded by the Town of Oswego. BCA provided planning, surveying, design, bidding, permitting, ROW adjustment, construction administration, and construction oversight services directly; and sub-consulted with specialty firms for wetland delineation and subsurface investigation services.



TOWN OF OSWEGO RATHBURN ROAD OVER RICE CREEK BRIDGE CULVERT REPLACEMENT

Central New York APWA's 2018 Transportation Structure of Year

BCA assisted the Town of Oswego with the design and implementation of a project to replace a degraded structure which carried Rathburn Road over Rice Creek. This structure was comprised of a pair of structural steel plate pipe arches, with precast concrete relieving slabs, corrugated beam guide railing, and asphalt pavement. The pipe arches were severely corroded and red-flagged for structural concerns by the NYSDOT in 2016. BCA worked closely with the Town Highway Department who completed construction of the new 3-sided aluminum structural plate culvert in 2018 using in-kind forces, saving the Town thousands of dollars.





TOWN OF WEST TURIN FULTON STREET BRIDGE OVER HOSKINS CREEK

The superstructure of the Fulton Street Bridge was in disrepair and was becoming a significant annual maintenance cost for the Town of West Turin. BCA completed a study for the Town and designed the replacement superstructure. Prestressed, precast bridge beams replaced the deteriorated steel beams and wingwalls were added to control the loss of the asphalt subbase.





TOWN OF LERAY ROSE LANE

Rose Lane is a commercial collector street which provides parallel access to traffic signals installed by NYS DOT on US Route II. This cross access will allow retail shoppers and other commercial traffic to access multiple commercial properties without entering and exiting the busy US Route II Highway. With more than 20,000 vehicles per day, safety on this Highway is a major concern. Rose Lane was constructed to provide this access to an adjoining hotel project. The land and roadbed was provided by the involved commercial developers, the Town of LeRay constructed the Road, and the developers were responsible for portions of the construction costs across their parcel. This investment to start this parallel road system will allow subsequent commercial projects to continue its construction to the next traffic signal. The project itself included 1,200 linear feet of new roadway, 250 linear feet of retaining wall, concrete curbing, guide rail, and catch basins.





VILLAGE OF PHILADELPHIA GATEWAY ISLAND PARK

The Gateway Island Park Project transformed an under-utilized area of the Village into a recreational destination for the residents of Philadelphia as well as visitors of the region. BCA assisted the Village with realizing a long-term goal identified in the Village's 2011 Downtown Revitalization Plan, which was to repurpose the island into a Village park. The formerly undeveloped island that was covered with unsightly rocks and brush now serves as an appealing scenic gateway into the heart of the Village of Philadelphia.

BCA provided survey, design, and construction phase services on this project, and assisted the Village with securing grant funding, and the required state and federal permits. Major design elements included a structural evaluation of the existing pedestrian bridge's steel superstructure, concrete deck, and bearings; designing an ADA-compliant viewing platform overlooking the park that would abut the bridge, but not be connected to it; designing abutment scour and concrete spalling remediation; landscaping design; and incorporating bike and pedestrian-friendly site amenities including solar powered lighted bollards and bike locking stations as well as an ornamental bridge rail system.

The Total Construction Cost was \$270,000, and the project was completed in 2014.





CLINTON CENTRAL SCHOOL DISTRICT STREAM DAYLIGHTING AND FLOOD CONTROL

The Clinton Central School District tasked BCA with solving the School's flooding and drainage issues onsite. The St. Mary's Brook runs through the School campus, routinely flooding the School site and on occasion School buildings. This flooding culminated at the June 28th, 2013 flood event, which inundated the gym and other rooms at the Middle and High School building, causing over \$2 Million in damage.

One of the greatest contributors to this flooding was two corrugated metal arch culverts, which were routed over 600 feet on School Property. BCA performed a detailed hydrologic and hydraulic analysis of this system and devised a phased solution to the onsite flooding issues. Phase A involved the daylighting of approximately 450 feet of arch culverts to natural stream channel. Phase B consisted of the construction of a concrete box culvert under the School's bus loop. Phase A was completed in 2014 and Phase B was completed in 2015.

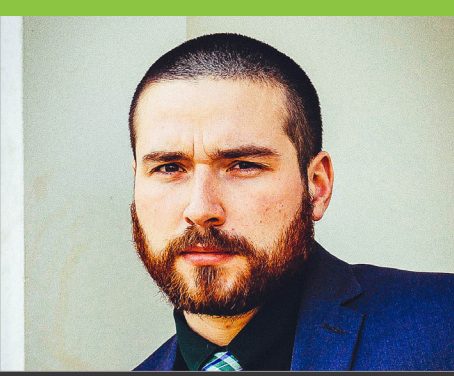




VILLAGE OF SACKETS HARBOR BROWN SHORES ROAD BRIDGE REPLACEMENT

BCA provided professional engineering services for this federally funded roadway reconstruction project along the Lake Ontario shoreline in the Village of Sackets Harbor. During the high-water events of 2017 and 2019, Brown Shores Road sustained substantial damage from wave energy, causing lasting damage to the roadway and existing corrugated metal culvert pipe. Thanks to funding from the REDI program, BCA raised the profile of the road, replaced the existing culvert with a 10'x4' three-sided aluminum box, armored the shoreline to protect against future damage, and reduced the inflow at the treatment plant by providing watertight manhole covers.





CASEY DICKINSON, P.E.

ASSOCIATE PRINCIPAL/SENIOR CIVIL ENGINEER

EDUCATION:

Clarkson University
Bachelor of Science – Civil Engineering with a Concentration in Structural Engineering

Jefferson Community College
Associate in Science - Engineering

PROFESSIONAL REGISTRATION:

Professional Engineer:
New York (License No. 095942)

RELEVANT PROJECT EXPERIENCE:

T. Oswego - Thompson Road Bridge & Rathburn Road Bridge over Rice Creek
2011-Present - Jefferson Concrete Bridge Beams; Structural Engineer of Record for over 100 Bridge Beam Projects
T. West Turin - Fulton Street Bridge
Clinton CSD - Stream Daylighting & Flood Control Project
V. Philadelphia - Gateway Island Park
Mexico Academy & CSD - Bus Loop Bridge over Black Creek

ROLE ON PROJECT TEAM
Principal-in-Charge

YEARS OF EXPERIENCE

11



TIMOTHY BARBER, P.E.

CIVIL ENGINEER

EDUCATION:

Clarkson University
Bachelor of Science in Civil Engineering
(Focus in Construction Engineering and Management)

PROFESSIONAL REGISTRATION:

Professional Engineer: New York (License No. 103714)
OSHA 10-Hour Occupational Safety and Health Training Course (Certification No. 36-004537962)
OSHA 30-Hour Occupational Safety and Health Training Course (Certification No. 15-602003992)

RELEVANT PROJECT EXPERIENCE:

2017- Present: New York Power Authority - Adjoining Landowner Stabilization Program
V. Sackets Harbor - Water Treatment Plant Seawall / Intake Project
V. Alexandria Bay - Casino Island Seawall Rehabilitation Project

ROLE ON PROJECT TEAM
Project Manager

YEARS OF EXPERIENCE

6



CHRISTOPHER WIDRICK, I.E.

JUNIOR CIVIL ENGINEER

EDUCATION:

SUNY Polytechnic Institute,
Bachelor of Science, Civil Engineering

PROFESSIONAL REGISTRATION:

Intern Engineer: New York (Cert. No. 095591)
OSHA 10-Hour Occupational Safety and Health Training Course

RELEVANT PROJECT EXPERIENCE:

Capstone Project - Bridge Structure Design New Interstate Bypass over Butternut Creek in the 481 Area, Syracuse NY
NYSDOTTCI - Material Inspection & Quantity Monitoring; State Route 126 Box Culvert over Black Creek

ROLE ON PROJECT TEAM
Junior Civil Engineer

YEARS OF EXPERIENCE

1



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BCA
ARCHITECTS
ENGINEERS