

EXHIBIT B

VIA Email: nadia@ysgsolar.com

March 8, 2023

Nadia Jagdat, Development Associate
YSG Solar
Briarcliff Manor, New York, 10510

Bridge Condition Assessment
Shadow Brook Lane Over Sparta Brook
Briarcliff Manor, New York, 10510, Westchester County
Colliers Engineering & Design Project No. 23004045A

Dear Nadia,

Colliers Engineering & Design was requested to perform a bridge condition evaluation at the above referenced property. The existing bridge carries Shadow Brook Lane over the Sparta Brook (a Class C federally regulated stream); within the limits of the YSG Solar property and future solar farm (in Briarcliff Manor, NY). The existing bridge is currently posted for a 3 Ton weight limit. The purpose of this inspection was to evaluate the bridge's structural condition and determine what is required to increase the load carrying capacity of this crossing; thus eliminating the load posting.

A visual inspection of the bridge, along Shadow Brook Lane over the Sparta Brook, at the above referenced property was performed by Nabil Ghanem, PE, and Salvatore Florio, PE, of Colliers Engineering & Design, on March 1, 2023.

Photographs were taken at points of interest, and some are included in this report.

General Description

The above referenced structure is a bridge that carries primarily vehicular traffic over the Sparta Brook in Briarcliff Manor, NY. The bridge's out-to-out width measures 24-feet, with an asphalt roadway measuring 20-feet wide and concrete curbs on either side measuring 2-feet wide. Timber bridge rails are supported along the concrete curbs and tie into the timber approach rails at all 4 quadrants of the bridge. The bridge superstructure consists of 3 evenly spaced, 32-inch-deep, precast concrete girders that support the bridge deck. The bridge deck consists of adjacent, 8-inch-thick, precast concrete panels spanning the precast concrete girders with the asphalt roadway and concrete curbs above. The precast concrete girders are founded on reinforced concrete abutment walls (substructures) at either end which tie into the reinforced concrete wingwalls at all 4 quadrants of the bridge. The clear span between faces of abutment walls measures 41-feet. The abutment walls (and bridge itself) are on a heavy skew, with respect to the brook and roadway.

Observations

The following observations were made during the inspection:

- The asphalt roadway appeared to be in fair condition, with cracks observed throughout.

- The concrete curbs on either side of the asphalt roadway appeared to be in poor condition, with large cracks and spalls observed throughout.
- The scuppers along the concrete curbs appeared to be in poor condition, and they did not appear to be functioning properly (deteriorated pipes, missing grates, etc.).
- The timber bridge rail (along concrete curbs) and timber approach rail appeared to be in poor condition, with missing/displaced members and connections observed throughout.
- **Observed from the underside of the bridge, the bridge deck (adjacent, 8-inch-thick, precast concrete panels spanning the precast concrete girders) appeared to be in poor condition with the following deteriorations noted:**
 - Cracks (ranging from small to large in size) and spalls with efflorescence were observed throughout.
 - Significant joint leakage between precast concrete panels was observed throughout.
- **Observed from the underside of the bridge, the 3 evenly spaced, 32-inch-deep, precast concrete girders that support the bridge deck appeared to be in a critical condition, with the following deteriorations noted:**
 - Cracks (ranging from small to large in size) and spalls with efflorescence were observed throughout.
 - Large horizontal cracks were observed along the bottom sides of all 3 girders at or near the midspan locations.
 - Large vertical cracks were observed from top to bottom of girders at their supports.
- Significant rust staining was observed throughout the underside of deck.
 - Some staining resulted from the corrosion of exposed reinforcing bars that are exposed to the elements (water leakage, salt infiltration, etc.).
 - Some staining resulted from the corrosion of metal supports (between tops of precast concrete girders and bottom of precast concrete deck panels) that are exposed to the elements.
- The reinforced concrete abutment walls and wingwalls (substructures) appeared to be in fair condition, with small cracks/spalls observed throughout.

Conclusions/Recommendations

The overall bridge condition is critical based on the advanced deterioration condition of the superstructure (precast girders and deck which exhibit major cracks with signs of reinforcement corrosion). The non-redundant bridge structure (bridge deck is supported by only 3 girders) is structurally inadequate, since the failure of just 1 of the girders would result in a substantial loss of the already low load carrying capacity.

The bridge carrying capacity is very low based on the low load rating posted (3 Tons). The current posting for 3 Tons indicates that a load rating (and inspection) was previously performed and is likely documented in a previous inspection report. The previous inspection report, likely held by the previous owner, could be useful in assessing the progression of the deteriorations observed and noted above. However, the review of previous reports would not change our recommendations.

We recommend that this bridge should be replaced with a new bridge structure that meets the current standards of AASHTO and NYSDOT. In the meantime, we recommend that only passenger type vehicles be allowed to cross the structure. Based on the bridge superstructure type and its advanced deterioration condition, there is no feasible or practical way to significantly strengthen the primary structural members of the existing bridge. Some repairs may be recommended in the interim to slow down the bridge deteriorations; but such repairs will not increase the bridge load carrying capacity.

The sections below outline the permitting implications associated with the complete replacement of the bridge (deck, girder, abutments, etc.), as well as the option of the bridge rehabilitation.

Rehabilitation of the bridge could include replacement of the superstructure only (girders and deck), but this option would be limited by the geometry and capacities of the existing substructures (abutments). **In conclusion, we are recommending the full replacement of the existing bridge (superstructure and substructures) with a new structure that meets current standards.**

Permitting Implications - Replacement vs. Rehab

Rehabilitating the existing bridge superstructure will require less permitting and approvals than a full replacement (which includes the replacement of the bridge substructures). For a Bridge Rehabilitation option, the contractor will be required to avoid wetland and stream disturbances and avoid tree cutting if vegetation adjacent to the bridge approach needs clearing for cranes or other construction equipment. The contractor will need to install nets and stream protections to avoid pieces of the superstructure replacement from falling into the stream.

In an ideal bridge rehabilitation operation, only the SEQRA EAF and project SWPPP (to include project area of the bridge and staging site) would be required. All other permit requirements may be avoided with proper care and planning.

Although the bridge replacement permitting scope is more involved, we believe that the permitting requirements for the bridge replacement scope of work can be accomplished just as efficiently and in a timely matter.

However, if the existing bridge substructure requires rehabilitation or replacement, all of the following permitting procedures will be required.

Permits and Approvals for Full Bridge Replacement

It is anticipated that the project would require the project to obtain all applicable permit(s) and certifications, including but not necessarily limited to:

- U.S. Army Corps of Engineers Section 404 Permit (Nationwide)
- NYSDEC Section 401 Water Quality Certification
- SEQRA
- NYSDEC State Pollution Discharge Elimination System (SPDES) Permit (overall site)

The NYSDEC Environmental Resource Mapper depicts No State Regulated Freshwater Wetlands immediately upstream and downstream from the bridge within the anticipated project limits. Federal Jurisdictional Wetlands may be present within the project limits and will need to be investigated. If wetlands exist, they will need to be delineated by wetland scientist and located by a land surveyor.

The NYSDEC EAF Mapper Summary Report has identified several potential environmental impacts that will require some investigation including Surface Waters and Floodplains. However, since the site has gone through many of these screenings, the intent would be to include the bridge replacement project as part of the project disturbance. To obtain the NYSDEC Section 401 and assumed Nationwide Section 404 Permit, a Joint Application will be made to both agencies with all data required for submittal. At minimum, the following work will be required, which may be provided by Colliers or others:

- Wetland Delineation and Report
- Field determination of Ordinary High-Water (OHW) location (not the existing edge of water)
- Land Survey of the bridge, wetlands delineation and OHW
- Screening of Threatened and Endanger species through US Fish & Wildlife, and NYSDEC Heritage program.

In order to obtain permits, a screening through the State Historic Preservation Office is required. A review of SHPO's CRIS website (below) shows the site was already analyzed. However, the area of the bridge was not included. Any existing effect finding letter will need to be revised by SHPO for this permitting process. It will be more efficient and economical for the client to approach SHPO for an amendment with the consultant who submitted the consultation project shown in the figure below.

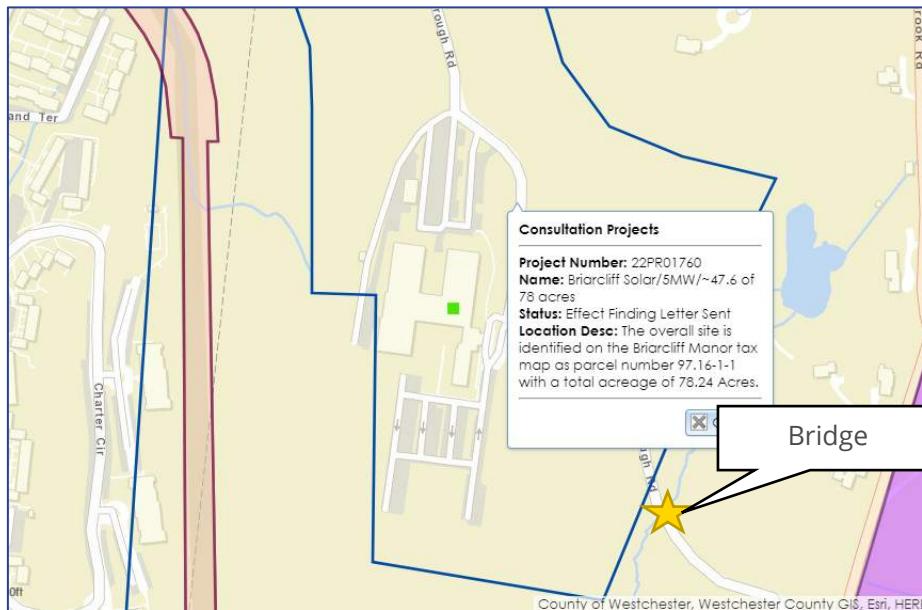


Figure 1 – SHPO's CRIS Output with existing consultation project shown

Stream Hydrology and Hydraulics for Full Bridge Replacement

Based on a preliminary hydrologic/hydraulics investigation for the Sparta Brook at the crossing of Scarborough Road/Shadow Brook Lane, the drainage area for the hydrology analysis is 0.41 square miles. It is anticipated that the bridge is hydraulically capable of passing the 100-year design storms due to storage upstream of the bridge and is not mapped by FEMA. However, it's likely not compliant with the 2-foot freeboard (50-year storm) and passing the 100-year (below low chord). A hydrology and hydraulics study should be performed when the alternative structure types are determined, as a basis of comparing existing and proposed crossings.

The project will be subject to no raising of the 100-year storm event due to the bridge replacement. At a minimum NYSDEC may require the bridge increase span x1.25 bank to bank length (natural stream sizing).

SEQRA – Rehab or for Full Bridge Replacement

Work to the bridge (and required permits if needed) will need to be considered in the overall State Environmental Quality Review Act (SEQRA) Environmental Assessment Form EAF. It is assumed the client will have already conducted a review of SEQRA and completed a draft EAF for their application to the Town. That form will need to be edited to include the area of proposed bridge work. The form will also be needed in submittal packages to various permitting agencies, as needed.

SWPPP – Rehab or for Full Bridge Replacement

It is assumed the client will have a SWPPP created for the overall project. Proposed bridge work and land disturbances will need to be included in the SWPPP.



We trust that this enclosed bridge condition evaluation report does meet your expectations and we look forward to working with you on the design solution. Should you have any questions or require additional information, please do not hesitate to call our office.

Sincerely,

Colliers Engineering & Design CT, P.C.
(DBA Maser Consulting Engineering & Land Surveying)

A handwritten signature in black ink that reads "Nabil Ghanem".

Nabil M. Ghanem, PE
Senior Principal

Disclaimer

Colliers Engineering & Design, Inc.'s scope of work was limited to conducting an inspection of the above-referenced property in order to visually observe the property's physical condition as of the date of the inspection, notwithstanding any other terms to the contrary set forth in any other agreements beyond the scope of work. It is understood and acknowledged by and between the parties that visual observation of the existing conditions have been made by Colliers Engineering & Design, Inc. without the benefit of field measurements and invasive investigation made undesirable by expense and inconvenience to the party requesting the inspection.

Colliers Engineering & Design, Inc. assumes no liability or responsibility for the condition of the property or for conditions arising out of, resulting from, or based on the Structural Inspection Report prepared by Colliers Engineering & Design, Inc. It is understood that Colliers Engineering & Design, Inc.'s conclusions are based upon its professional opinion as a design professional familiar with the construction industry and that Colliers Engineering & Design, Inc. makes no representations or warranties with respect to its professional opinions. Any reliance, use, or reuse of Colliers Engineering & Design, Inc.'s Structural Inspection Report will be at the user's sole risk and without any liability or legal exposure to Colliers Engineering & Design, Inc. and such reliance, use, or reuse will be deemed acceptance of these terms.

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Photograph 1. Bridge Along Shadow Brook Lane, Looking East



Photograph 2. Bridge Rail/Approach Rail, South Side



Photograph 3. Bridge Rail/Approach Rail, North Side



Photograph 4. Elevation of Bridge, Looking South



Photograph 5. East Abutment of Bridge



Photograph 6. West Abutment of Bridge



Photograph 7. Underside of Bridge



Photograph 8. Underside of Bridge



Photograph 9. Underside of Bridge



Photograph 10. Horizontal Crack Along Bottom of Precast Girder, Underside of Bridge



Photograph 11. Spalls and Signs of Corrosions, Underside of Bridge



Photograph 12. Underside of Bridge



Photograph 13. Underside of Bridge



Photograph 14. Underside of Bridge



Photograph 15. Underside of Bridge



Photograph 16. Sparta Brook



Photograph 17. 'WEIGHT LIMIT 3 TONS' Sign