



## **Durham Street Bridge (Walkerton)** ***Design-Build Proposal for Emergency Repairs\_Rev01***

**Re-Submitted on March 13, 2024 to:**

Adam Stanley | Director, Transportation & Environmental Services  
Corporation of the County of Bruce | 30 Park Street, Walkerton, ON N0G 2V0

### **Submitted By:**

**Matthew Hickey, P.Eng.**  
**Branch Director**  
PULLMAN Services, Inc.  
Ph. 647-283-9144

March 13, 2024

Bruce County  
30 Park Street  
Walkerton, ON N0G 2V0

**RE:** Durham Street Bridge Emergency Rehabilitation Proposal – Revision No.1

Dear Bruce County,

PULLMAN Services, Inc. (PULLMAN) is sincerely appreciative of the opportunity to provide our specialized contracting services outlined in this Lump Sum proposal. It would be a privilege to earn your trust and perform the services that you require for this important project.

This proposal has been developed with the assistance of STRUCTURAL TECHNOLOGIES, the product and engineering support division of PULLMAN. Collectively, we provide turnkey single source Investigate-Design-Build services for our customers. Since the incorporation of STRUCTURAL TECHNOLOGIES in 1976, we have completed 25,000+ rehabilitation & strengthening projects throughout the world and are currently listed as the largest specialty concrete restoration contractor in North America by Engineering News Record (ENR). This tremendous accomplishment is a direct result of our relentless commitment to the highest level of safety and quality on our projects.

With a local Canadian presence, and as one of the world's leading concrete restoration contractors, PULLMAN is well positioned to deliver our specialized contracting services on this project by leveraging the vast resources within our company. We will develop an in-depth preplanning process and mobilize a highly qualified project team to execute this important project in a timely manner.

We trust that you will find our proposal attractive and responsive to the project requirements and look forward to working with your team on this important project. In the meantime, should you have any questions, feel free to contact me directly at (647-283-9144); or [mhickey@pullman-services.com](mailto:mhickey@pullman-services.com).

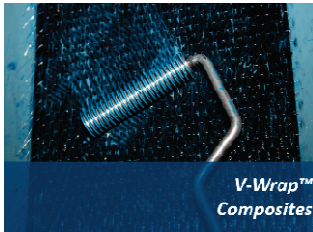
Warmest Regards,



**Matthew Hickey, P.Eng.**  
Branch Director  
PULLMAN Services, Inc.

As the largest specialized structural strengthening team in North America, PULLMAN integrates Structural Technologies' advanced proprietary products with application design-support and specialty contracting services to make structures **STRONGER** and **LAST LONGER**. Whether driven by load requirements, schedule, and/ or budget, our team provides value-added solutions to designers, contractors, and owners in the commercial, public, industrial, and power markets.

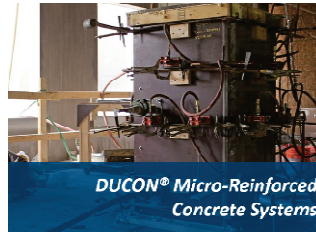
## STATE-OF-THE- ART PRODUCTS



*V-Wrap™  
Composites*



*Tstrata™  
Enlargement Systems*



*DUCON® Micro-Reinforced  
Concrete Systems*



*External & Internal  
Post-Tensioning Systems*



## ENGINEERING SUPPORT

Our in-house team of products experts collaborate with engineers and owners to develop customized strengthening solutions to help solve the most complex structural challenges.

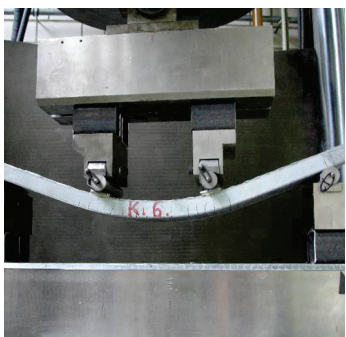
- Feasibility Assessment
- Product Selection
- Design-Assist Support
- Specification Development
- Quality Control Program



## INSTALLATION SERVICES

PULLMAN's contracting services companies provide specialized project management and certified field technicians trained to provide installation of our systems with minimal down-time and impact to facility operations.

- Detailed Construction Budgets
- Scheduling & Sequencing
- Access & Shoring Support
- Site-Specific Safety Plans
- Quality Control Plan Execution

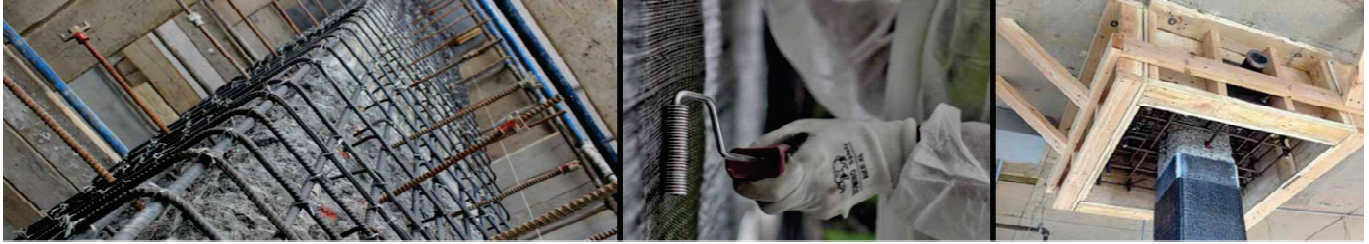


## RESEARCH & DEVELOPMENT

Our in-house research and development team pioneer's new technologies, improves existing products, tests systems for specific applications, and maintains certifications to meet industry requirements for our products and systems.

- New Product Development
- Industry Certification
- Existing Product Enhancements
- Application Testing





## BACKGROUND

Pursuant to your request for the above referenced project, we are pleased to provide a turnkey design-build solution to address emergency repairs required for the Durham Street bridge superstructure in Walkerton, ON. The condition assessment prepared by HAL Group, Inc. (HAL) dated January 2024, details numerous in-situ conditions which have prompted concerns with the integrity of the bridge superstructure. These immediate structural concerns will be addressed within this design-build proposal.

In response to findings extracted from the information provided and our historical experience with similar structures, PULLMAN, in concert with STRUCTURAL TECHNOLOGIES, has developed a comprehensive rehabilitation program to address the intermediate half-lap joints, and localized concrete repairs throughout the underside bridge deck. Our objective is to restore the bridge to full functionality, extending its service life by an anticipated 25 years. This strategic initiative ensures a sustainable and resilient structure, meeting the highest standards of safety and longevity.

The following proposal will outline our proposed scope of work, assumptions, exclusions, project schedule, financial outlay and contracting terms & conditions.

## SCOPE OF WORK

### 1. **TASK 1: Document Review and Development of Repair and rehabilitation Drawings**

Available drawings, and other pertinent project documents will be reviewed and analyzed. This analysis will provide context relative to the original design and construction details. Sealed engineering structural rehabilitation drawings will be prepared by STRUCTURAL TECHNOLOGIES for review by the Project Consultant (Triton Engineering Services, Ltd.).

### 2. **TASK 2: Engineering Technical Support with Regulatory Authorities**

STRUCTURAL TECHNOLOGIES will work with the consultant team to provide support for regulatory requirements during the permit application. This will include providing sealed shop drawings, technical calculation package, and products/material submittals. STRUCTURAL TECHNOLOGIES will respond to technical inquiries and any clarifications or revisions required.

### 3. **TASK 3: Off-Site Project Preplanning**

PULLMAN will leverage our decades of concrete repair and strengthening experience and utilize a qualified project team to assist with the detailed preplanning efforts. These preplanning efforts will include the development of project specific documentation (project execution plan, safety execution plan, etc.), anticipated construction schedule, evaluation of means-and-methods, and overall construction readiness review.

#### 4. **TASK 4: Project Execution**

PULLMAN will mobilize an experienced project team to complete this important project. This will include a hierarchy of command to ensure effective project communication. PULLMAN proposes to provide all necessary labour, material, equipment, and supervision (except as noted herein).

##### ▪ **General Conditions**

- Mobilize and setup work areas.
- Implementation of the approved traffic management plan (TMP) prepared by BM Ross, dated April 21, 2022, including:
  - One-way traffic with signaling system and pedestrian walkways.
- Ecological protection controls.
- Clearing and grubbing of designated areas.
- Temporary work area setup (office, power, security, etc.)
- Installation of the temporary scaffolding access below the bridge deck.
  - Engineered suspended platform providing 100% access to the underside of the bridge.
  - Access to the suspended platform will be facilitated from below the bridge at abutment locations.
  - Will include provisions for waterway protection below.
- Layout work areas in accordance with the engineered drawings.
- Document and record “as-found” condition of bridge and surrounding areas.
- Removal of fixtures, appurtenances, and decorative elements to prevent damage.

##### ▪ **Emergency Repairs**

- Work to be completed in a 2-phase configuration to coincide with the TMP.
- Intermediate Half-Lap Joint Repair:
  - Localized removal of asphalt to scan the existing bridge deck.
  - Coring of holes through the bridge deck to facilitate the installation of post-tensioned rods for the temporary shoring system.
  - Install temporary structural steel shoring system below the half-lap joints. Grout below the girders with non-shrink cementitious material.
  - Apply light vertical pre-stressing force to the shoring system to ensure proper engagement.
  - Sawcut and remove deteriorated concrete for 600mm past the joint east and west along the girder.
  - Clean and augment exposed reinforcement as required.
  - Install a new slide bearing within the half-lap section. Maintain vertical separation within the half-lap section throughout concrete placement.
  - Remove the temporary shoring system and relocate to phase 2 locations.

- Intermediate expansion joints:
  - Removal of existing expansion joints.
  - Form and place new expansion joints flanges within the bridge deck including the installation of the joint gland.
  - Epoxy injection behind the joint flanges as directed by the manufacturer.
  - Weld the expansion joint at the Phase 1/2 intersection.
  - Place protective joint plates within the sidewalk areas.
- Concrete superstructure deck repairs *(based on assumed quantities noted within the financial section)*:
  - Protect existing utilities in close contact with our work, including the 6" natural gas line below the bridge in accordance with approved procedures.
  - Identify areas of delaminations, spalls, or damage using visual and auditory inspection techniques.
  - Review identified repair locations with the project consultant prior to proceeding.
  - Proceed with various concrete repairs in accordance with the MTO rehabilitation manual requirements, including the following:
    - Consolidate adjacent repair areas where possible. Arrange repairs into simple, reclinate shapes and sawcut perimeter to a depth of 12mm.
    - Delicately remove concrete to a depth of 25mm behind exposed reinforcing, or until sound concrete is encountered.
    - Clean exposed reinforcing steel with mechanical methods.
    - Augment reinforcing steel with high large section loss as directed by the consultant.
    - Form the repair areas as required.
    - Place a high-early, shrinkage compensated self-consolidating cementitious repair material using the form-and-pump method under hydraulic pressure.
    - Cure the concrete in accordance with the manufacturer's instructions as required.
    - Strip and dress concrete. Perform in-situ QC verification.
  - Application of a water-dispersed acrylic-based protective coating over the repaired concrete areas.
  - Optional application of a unidirectional Carbon Fiber Reinforced Polymer (CFRP) fabric overtop of the repaired concrete areas once appropriate surface moisture conditions have been achieved which include the following:

- Surface preparation to a concrete surface profile (CSP) 3+ as defined by the International Concrete Repair Institute (ICRI).
- Installation of a CFRP composite fabric system.
- Installation of a protective topcoat system.
- **Demolition and Site Clean-Up**
  - Removal of traffic control provisions.
  - Removal of construction staging infrastructure and equipment.
  - Restoration of ecological elements and removal of erosion control.

## 5. **TASK 5: Project Close-Out Documentation**

PULLMAN will provide the following items following the completion of our work:

- Final general conformity report from Structural Technologies.
- Quality verification engineering report by third party engineering.
- Providing certificate of conformance by third party engineering.
- As-Built Drawings.

## **EXCLUSIONS AND SUPPORT BY OTHERS**

The following items and associated costs are **EXCLUDED** from our estimate. If you would like to make changes to this list, please let us know and we can discuss revisions and potential project impacts.

1. Winter Conditions (heating/hoarding).
2. Costs associated with permitting, bonding, or extended warranty.
3. Consulting, reporting, and regulatory fees required by governmental agencies (SVCA, MTO, MOE, Etc.).
4. Multiple project mobilizations if this work cannot be completed simultaneously.
5. Third-party material batch testing (concrete, asphalt, etc.).
6. Restoration of substructure items (piers, abutments, etc.).
7. Replacement of approach expansion joints above abutments at both ends of bridge.
8. Removal, replacement and/or modification of guardrails, sidewalks, lighting, signage, decorative items, asphalt topping, waterproofing systems, drainage systems, line painting, etc.
9. Paid duty police

## **ESTIMATED SCHEDULE**

We propose to perform the above noted scope of work in **± 24 weeks** once mobilized. We have assumed a single mobilization to complete this scope of work.

## **FINANCIAL**

We propose to perform the above noted scope of work in one mobilization in accordance with the following fee schedule:

Scope of Work Item		
General Conditions and Intermediate Joint Repairs (2 Locations, 12 Girders total)		
Concrete Crack Injection Repairs (Epoxy)		
Concrete Partial Depth Deck Repairs (w/ coating)		
Concrete Partial Depth Girder / Diaphragm (w/coating)		
Allowance for CFRP Over Concrete Repairs in lieu of coating system		
	<b>TOTAL</b>	<b>\$2,915,338.<sup>35</sup></b>

### Provisional Costing Items

Scope of Work Item		
Concrete Enlargement at Half-Lap Joint Locations for Structural Redundancy**		
100% Performance and Payment Bond (Assumed Contract Value of 3.2MM)		
	<b>TOTAL</b>	<b>\$405,757.<sup>80</sup></b>

\*\* Item will add +/- 2 weeks to the estimated project schedule cited above

### Proposed financial qualifications:

1. HST is not included in the price above.
2. Pricing is listed in Canadian Dollars (CDN).
3. All scope items above are assumed to be included. PULLMAN reserves the right to re-evaluate the fee schedule should additions or deletions be requested.
4. Assumed a **6-day, 10-hour daytime** working schedule with one mobilization to complete work.
5. PULLMAN is a signatory member of LiUNA and will utilize unionized labourers to execute the full scope of work as noted. No additional jurisdictions are assumed under this proposal. PULLMAN will adhere to the collective bargaining agreement, including all statutory holidays.
6. Additional Terms:
  - Invoices shall be submitted monthly and/or at the completion of work and are payable within thirty (30) days from date of invoice. One and one-half (1.5%) interest due on unpaid balance after thirty (30) days.
  - Contractual Terms and Conditions (T&C's) to be mutually negotiated following contract award.



## CLOSING

PULLMAN is sincerely appreciative of the opportunity to provide the Lump Sum pricing for this project. Should you have any questions, please do not hesitate to contact the undersigned directly.

Please let us know if there are any questions related to the requirements and services in this proposal.

We look forward to working with you on this important project!

Respectfully,

A handwritten signature in blue ink, appearing to read 'MH', is positioned above the printed name and contact information.

**Matthew Hickey, P.Eng.**

Branch Director

PULLMAN Services, Inc.

[mhickey@pullman-services.com](mailto:mhickey@pullman-services.com)

(647) 283-9144