

**HUDSON
BENSON PARK PEDESTRIAN BRIDGE
BRIDGE REPLACEMENT**

DETAILED SCOPE OF SERVICES

November 29, 2021

A. PROJECT DESCRIPTION

This pedestrian bridge project is located within Benson Park and spans over Merrill Brook and a small dam. The existing structure is constructed of timber and appears to bear directly on earth (no foundations). The bridge is approximately 20'-0" long and 12'-0" wide (8'-0" rail to rail). The superstructure consists of four (4) 6"x8" sawn timber beams with pressure treated timber decking and rails. There is an access panel in the center of the deck to control of the level of the dam. The bridge is used exclusively for pedestrians and a small tractor (roughly 2,000 pounds) and is estimated to be about 18 to 20 years old.

McFarland Johnson (MJ) met with Town representatives at the site on September 16, 2020 to review the condition of the existing structure. The bridge is in fair to poor condition with signs of timber deterioration and settlement at some timber beam bearing locations. The bridge rail deflects with pressure due to loosening of the rail post connection to the exterior beam. The bridge does not appear to be in immediate danger of failure but should be monitored. The onsite discussion was directed to a bridge replacement. The below scope of services details the effort to develop constructable bridge plans in support of a bridge replacement. The bridge replacement parameters discussed included:

- Steel beams
- Timber deck
- Concrete footings
- Bridge length = thirty feet (foundations located roughly five feet behind existing)
- Bridge width = eight feet rail to rail (no deck extension behind rails)
- Existing low chord shall be maintained or increased (not lower)
- Town/park forces will determine approaches/grading to tie into bridge and will not be included in the bridge replacement plan set.

B. SCOPE OF SERVICES

SECTION 1 – PROJECT WIDE ACTIVITIES

Task 1.1 - Project Administration: This task includes general administration of the project including email and phone communications, client coordination, and project management.

Task 1.2 – Project Meetings: This task includes effort to prepare for, attend and document one (1) project meeting with the Town of Hudson and Park staff. It is assumed one MJ staff member will attend the meeting.

Task 1.3 – Site Visits: This task provides effort for one (1) MJ staff member to travel to the project site to perform a visual inspection of the structure and document pertinent information for the development of the plans and estimate.

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Task 1.4 – Bridge Design and Plans: This task includes the design and development of constructable plans for the replacement pedestrian bridge.

The scope of bridge design work includes:

- Steel beams (assume three beam configuration)
- Timber decking
- Bridge railing
- Foundations (assumed to be concrete)

For the purpose of this scope, it is assumed the following three (3) plan sheets are required:

- Bridge superstructure plan, section, details, and notes (2 sheets)
- Bridge substructure plan, section, details, and notes

Task 1.5 – Quantities and Construction Estimate: This task provides effort for the development of bridge related quantities and a construction cost estimate.

C. SCOPE ASSUMPTIONS

The following scope assumptions are provided.

- The contract deliverables for this project include constructable plans stamped by a Professional Engineer licensed in the state of New Hampshire and a construction cost estimate.
- Bridge will be designed for pedestrian load, snow load, and an H5 vehicle.
- Project will be completed with one submittal. Minor Client comments on final submission will be addressed.
- No survey will be completed. Survey will be performed during construction, if needed, to install footings at elevations to maintain the existing low chord elevation. No elevations will be provided in the plan set. All bridge geometry and components will only be dimensionally sized.
- For the purposes of steel beam layout, it is assumed the bridge alignment will be shifted downstream to ensure dam is not directly below a beam.
- The Town/Park forces will determine approaches and grading around foundations as needed to tie into the new bridge during construction.
- Town will be responsible for any permitting that may be required.
- No geotechnical investigation will be performed. It is assumed the allowable bearing pressure is adequate to support the foundations (minimum of 4,000 psf).
- The foundations will be installed a least 4'-0" below grade for frost protection.
- The intent is to span over the existing dam and not impact any portion of it.
- NHDOT standard specifications will be used. Assumes no special provisions will be needed.
- Microstation will be used as the CADD platform.
- Development of bid documents and bid phase services are not included.
- Construction phase services are not included.

BENSON PARK

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TOWN OF HUDSON, NH**

November 29, 2021

FEE SUMMARY

TOTAL LABOR	\$	15,302.00
 SUBCONSULTANTS		
Not Applicable	<u>\$</u>	<u>-</u>
TOTAL SUBCONSULTANTS	\$	-
 DIRECT (NON-SALARY) EXPENSES		
Auto Mileage	\$	100.00
Meals	\$	-
Rental Cars/Gasoline	\$	-
Printing and Reproduction	\$	-
Telephone and Fax	\$	-
Police Detail	\$	-
Postage / Express Mailings	\$	-
Traffic Counts	\$	-
Miscellaneous Supplies, Etc.	<u>\$</u>	<u>-</u>
TOTAL DIRECT EXPENSES	\$	100.00
TOTAL LUMP SUM FEE	\$	15,402.00

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TOWN OF HUDSON, NH**

**STAFF HOUR MATRIX
November 29, 2021**

Task Descriptions	Sr. Project Manager	Sr. Project Engineer	Senior Engineer	Assistant Engineer	Senior Tech.	Total Hours
SECTION 1 - PROJECT WIDE ACTIVITIES						
1.1 Project Administration	6		6			12
1.2 Project Meetings	4		2			6
1.3 Site Visits			6			6
1.4 Bridge Design and Plans	2	6	24	24	26	82
1.5 Quantities and Construction Estimate			2	6		8
Subtotal:	12	6	40	30	26	114
TOTAL HOURS:	12	6	40	30	26	114
HOURLY RATES:	\$200.00	\$178.00	\$135.00	\$120.00	\$109.00	
TOTAL LABOR:	\$ 2,400.00	\$ 1,068.00	\$ 5,400.00	\$ 3,600.00	\$ 2,834.00	\$ 15,302.00