



July 22, 2019

Mr. Chet Janik
Leelanau County
8527 E Government Center Dr.
Suttons Bay, MI 49682

Re: Leland Dam Safety Upgrades
Engineering Proposal
ME Proposal No. P19059

Dear Chet:

I am pleased to provide the enclosed proposal to provide engineering services following our review of the safety concerns and measures required plus those that are highly recommended to increase operational safety for personnel. These measures include those brought to our recent attention, on an emergent condition, due to high Lake Michigan water levels.

Services are proposed for a total fee of \$19,860.00.

Please let me know if you or anyone else should have any questions or comments.

Sincerely,

MACHIN ENGINEERING, INC

A handwritten signature in black ink, appearing to read 'Patrick J. Machin', written over a horizontal line.

Patrick J. Machin, P.E.
President

PJM/pjm

Cc: Mr. Steve Christensen – Leelanau County Drain Commissioner

EXHIBIT "A"
Leland Dam Safety Upgrades
LEELANAU COUNTY
Proposal No. P19059

This Exhibit outlines the specific scope of professional services to be provided by the Consultant. These services will be provided in accordance with this Agreement between the parties, as set forth in Agreement for Professional Services. This exhibit is made part of and incorporated by reference into Agreement for Professional Services.

PART A - DESIGN SERVICES

A.1 Project Location / Identification:

1. The Leland Dam requires alterations to upgrade and provide safety features for operation personnel per our review letter dated 7/19/19. Services include those in attention to the emergent conditions from high Lake Michigan water levels.

A.2 Design Considerations/Requirements:

1. Michigan OSHA Standard 1144 (6/19).
2. Review letter dated 7/19/19

A.3 Discovery Phase:

1. Request and obtain a copy of the construction drawings from the dam rebuild project.
2. Complete a site visit to perform a 3D laser scan and measure all existing components. Generate a model for use in design.

A.4 Engineering Phase:

1. Determine design constraints for the individual components proposed in the review letter.
2. Perform various amounts of research of possible components to be used for the project.
3. Complete mechanical review and design including, but not necessarily limited to a FEA (finite element analysis).
4. Schedule and attend a review meeting with client.
5. Make revisions as necessary.
6. Attend up to one County board meeting.

A.5 Completion Time:

1. We will complete the above-mentioned services in a timely fashion and as rapidly as the process permits.

PART B - CONSTRUCTION SERVICES

B.1 Construction Administration Phase

1. Review shop drawings provided by the contractor.
2. Make periodic site-visits to monitor the general progress of the work, keep abreast of any problems and resolve any disputes. Two (2) visits total planned over the duration of the work.

B.2 Start-up and Test Witnessing

1. Attend a start-up of the equipment. Witness the process and record results.

PART C - SERVICES FEES

C.1 Methods of Payment for Services and Expenses of ENGINEER

The ENGINEER will be paid the following lump sum fees for the Basic Services as indicated in Part A and Part B as noted in this exhibit.

1. <i>Design Services</i>	
Discovery Phase	\$ 2,970.00
Engineering Design Phase	\$ 14,730.00
Construction Administration Phase	\$ 2,160.00

TOTAL: **\$ 19,860.00**

2. One board meeting attendance is provided in the proposal.
3. Changes, modifications, or additions to the Basic Services will be performed at the normal hourly rates for the personnel involved or at a negotiated fee.
4. Billings will be made once a month as the work progresses.

C.2 Clarifications

1. All information, as stated in this proposal to be supplied by Client, will be supplied to Engineer per his request in PDF digital form. All CAD files in AutoCAD 2000 or newer.
2. Does not include bidding services. Bidding by client.
3. Permitting services are not included.