



**FEASIBILITY REPORT**

**PROJECT Z74**

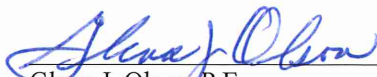
**HURON ROAD/SUPERIOR ROAD**

**WATERMAIN REPLACEMENT/  
RECONSTRUCTION PROJECT**

**CITY OF  
MARSHALL, MINNESOTA**

**March 12, 2019**

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

By:   
Glenn J. Olson, P.E.  
Registration No. 41557

## TABLE OF CONTENTS

TITLE PAGE/CERTIFICATION PAGE .....	1
TABLE OF CONTENTS.....	2
1.0 SCOPE .....	3
2.0 BACKGROUND / EXISTING CONDITIONS .....	3
3.0 PROPOSED IMPROVEMENTS.....	4
4.0 STATEMENT OF PROBABLE COST.....	5
5.0 PROPOSED ASSESSMENTS .....	5
6.0 FEASIBILITY CONDITIONS/QUALIFICATIONS .....	6
7.0 PROPOSED PROJECT SCHEDULE .....	6
<u>APPENDIX</u>	
Project Area Map .....	7
American Engineering Testing Report .....	8

**FEASIBILITY REPORT**  
**PROJECT Z74**  
**HURON ROAD/SUPERIOR ROAD**  
**WATERMAIN REPLACEMENT/RECONSTRUCTION PROJECT**  
**CITY OF**  
**MARSHALL, MINNESOTA**

**1.0 SCOPE**

This Feasibility Report as authorized by the City Council, covers the following proposed improvements: Watermain replacement on Huron Road between Superior Road and TH 59 and reconstruction on Superior Road from Huron Road to CSAH 33. All utilities will be replaced, including watermain, sanitary sewer, and storm sewer on Superior Road and watermain replacement only on Huron Road.

**2.0 BACKGROUND / EXISTING CONDITIONS**

**Street**

Huron Road and Superior Road were originally constructed in 1969-1970. The street sections typically consist of approximately 5" of bituminous surfacing and 12"-16" of aggregate base. The existing street width is 45-FT as measured from back of curb to back of curb. The streets in the industrial park area do not have sidewalk. There is currently no sidewalk in the City of Marshall north of the Diversion Channel.

The existing pavement surface is beginning to show its age and is exhibiting considerable block cracking, transverse cracking, and fatigue cracking. The surface distress is most likely the result of heavy truck traffic, poor subsurface drainage, and pavement age.

**Utilities**

The existing watermain is 8" cast iron pipe (CIP) on both Huron Road and Superior Road. The water system in this area is starting to fail, resulting in costly repairs for Marshall Municipal Utilities and potential for outages for industries that demand a reliable water source.

The existing sanitary sewer main is 12" vitrified clay pipe (VCP) along Superior Road. The sewer main pipe is in fair condition, with some offset joints and pipe cracking. There are many abandoned or never utilized sanitary sewer service "stubs" into this main. Most of the manholes are in need of replacement.

The existing storm sewer main line is located outside west of Superior Road and runs parallel to Superior Road. The main line is 30"-36" reinforced concrete pipe (RCP) that is in good condition. The manholes are block manholes and are not in good condition and will be replaced. The storm sewer catch basin leads are 12" RCP.

### **3.0 PROPOSED IMPROVEMENTS**

#### **Street**

American Engineering Testing (AET) has completed soil borings within the project area and has provided a geotechnical engineering review to City staff that provides recommendations for roadway section design for both bituminous pavement surfacing and concrete pavement surfacing. A copy of the report is attached to this feasibility report.

Concrete pavement will be specified for this project on Superior Road to accommodate the high level of truck traffic and be consistent with recent Michigan/Superior concrete paving project. Staff is proposing a street section comprised of 7" of concrete pavement, 6" of Class 5 aggregate base, and 12" of granular subbase. A geotextile fabric will be placed on the subgrade prior to the placement of the granular subbase. A 6" perforated drain tile shall be installed at the back of the curb below the granular subbase to provide subsurface drainage for the street section.

The proposed roadway will be 38.3 feet and measured from the back of curbs. The proposed section will be 7 feet narrower than the existing section. The purpose for the narrowing is to reduce project costs. The road carries a low traffic volume and it is the opinion of staff that a narrower road will adequately accommodate the traffic. To better facilitate truck turning movements, the radius at the intersection of Huron and Superior will be increased in size from 25 feet to 50 feet. City staff has had communication with Schwan's staff to discuss the roadway width and requirements for their operations.

After discussions with adjacent property owners and review of special assessment procedures, it is recommended to eliminate total street reconstruction on Huron Road and proceed with watermain replacement only on this section.

#### **Utilities**

The proposed utility improvements include replacing existing VCP sanitary sewer, existing CIP watermain, and existing storm sewer manholes, catch basins and catch basin leads on Superior Road.

The watermain improvements will consist of replacing all CIP watermain with Polyvinyl Chloride (PVC) watermain pipe. The existing 8" pipe along Superior will be increased in size to 12" to better meet MMU water system goals. The existing 8" CIP watermain along Huron Road will be replaced with 8" PVC pipe.

The sanitary sewer system improvements will include replacing all manholes, sewer main, and sewer services along Superior Road. Sewer service lines that are not currently being used will be disconnected from the system. The 12" VCP main will be replaced with 12" PVC main. All sewer services will be replaced to the right-of-way (ROW) with a minimum 6" pipe size.



The storm sewer system improvements will include replacing all existing manholes, catch basins and catch basin leads. An improvement project may occur at a future date to address replacement of the street, storm sewer main and manholes when a project is warranted on Huron Road.

#### **4.0 STATEMENT OF PROBABLE COST**

The estimated costs to complete the proposed improvements are shown below. The estimated construction costs include a 10% allowance for contingencies and a 16% allowance for administrative and engineering costs. The unit prices for each item of work used in determining the estimated cost of construction is based on previous projects similar in nature and is subject to change.

Street and Curb and Gutter	\$664,000.00
Watermain Replacement	\$195,223.00
Sanitary Sewer Replacement	\$117,519.00
Storm Sewer Replacement	<u>\$62,045.00</u>
Subtotal Estimated Construction Cost	\$1,038,787.00
Contingencies (10%)	<u>\$103,878.00</u>
Total Estimated Construction Cost	\$1,142,665.00
Estimated Engineering, & Administration (16%)	<u>\$182,825.00</u>
Total Estimated Project Cost	<u>\$1,325,490.00</u>

#### **5.0 PROPOSED ASSESSMENTS**

The adjacent properties will not be assessed for the watermain improvements. All costs for watermain and related work will be paid by MMU.

The sanitary sewer main replacement will be funded by the Wastewater Department and only service lines will be assessed to the adjacent property owners according to current sanitary sewer replacement assessment procedures.

Costs for the street replacements will be partially assessed and partially funded by the Wastewater fund, MMU, and Surface Water Management Utility fund.

A preliminary assessment roll showing the estimated assessments for each benefiting parcel, City Participation, and participation by MMU will be prepared at a later date for consideration by the City Council in accordance with the most recent special assessment policy.

## **6.0 FEASIBILITY/CONDITIONS/QUALIFICATIONS**

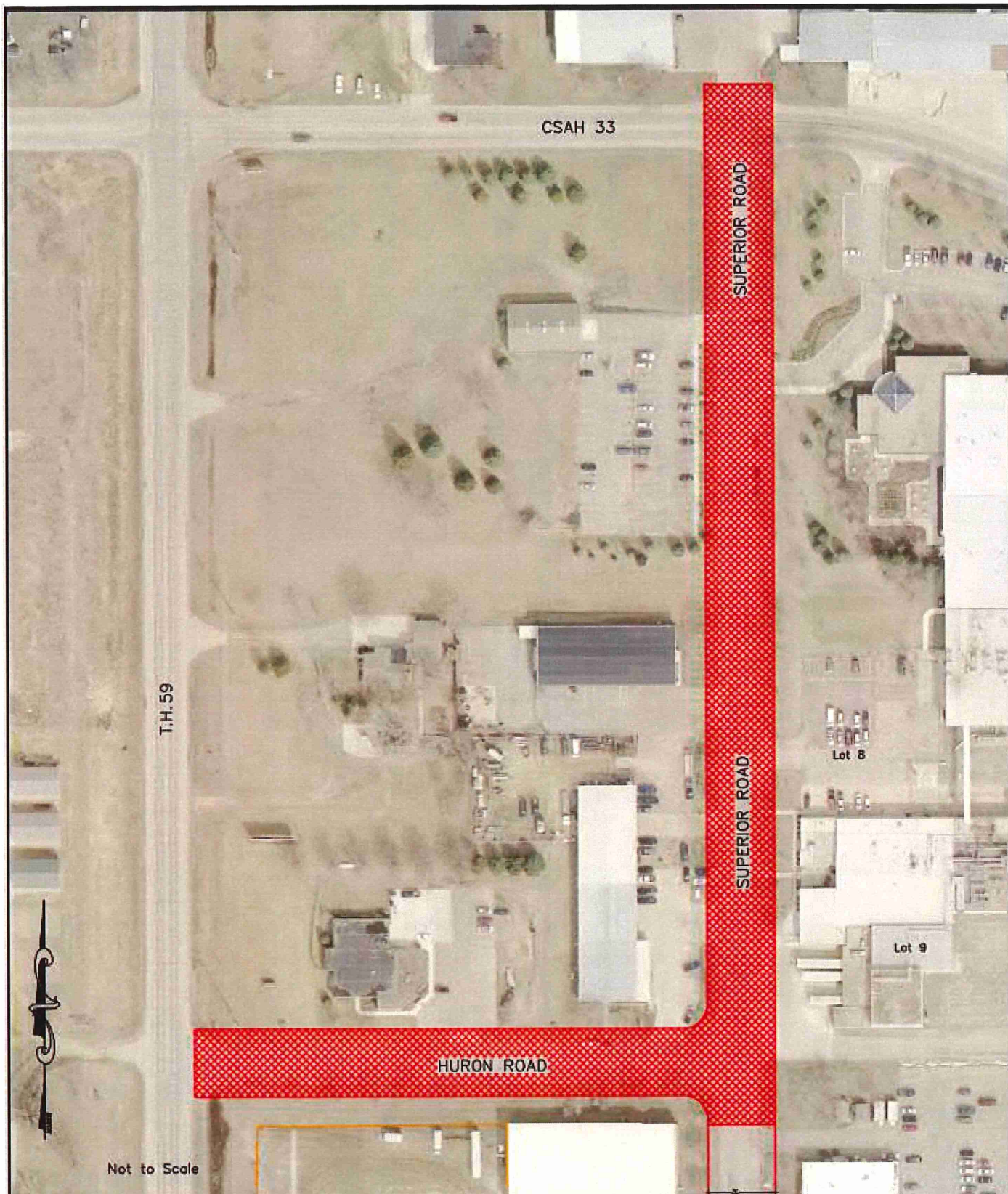
The proposed improvements as described in this report are necessary, cost-effective, and feasible from an engineering standpoint. The feasibility of this project is contingent upon the findings of the City Council pertaining to project financing and public input.

## **7.0 PROPOSED PROJECT SCHEDULE**

The following is the anticipated schedule for the project, assuming the City Council elects to proceed with the proposed improvements.

March 26, 2019	Public Hearing on Improvement/Authorize Call for Bids
March 27 & April 5, 2019	Advertise for Bids
April 17, 2019	Bid Opening Date
April 23, 2019	Award Contract
May 2019	Notice to Proceed
May 2019	Begin Construction
August 27, 2019	Public Hearing on Assessment/Adopt Assessment
October 2019	End Construction





CITY ENGINEERS OFFICE  
344 WEST MAIN STREET  
MARSHALL, MINNESOTA  
56258

Z74 Huron & Superior

Proposed Reconstruction & Utilities

DATE  
1/17/19

SHEET NO.  
1 OF 1

**American Engineering Testing, Inc.**  
**Report**





February 13, 2018

CONSULTANTS  
• ENVIRONMENTAL  
• GEOTECHNICAL  
• MATERIALS  
• FORENSICS

City of Marshall  
344 West Main  
Marshall, Minnesota 56258

RE: Proposal for Geotechnical Services  
Proposed Michigan Road, Huron Road and Superior Road Reconstruction  
Marshall, Minnesota  
AET #13-06545

Dear Mr. Kim Jergenson:

American Engineering Testing, Inc. is pleased to offer you subsurface exploration and geotechnical review services for the above referenced project. This proposal is being submitted per your request of February 8, 2018. This letter is intended to define our scope of work, and to present you with an estimate of our fee, the anticipated schedule and other information regarding our services.

#### **Purpose**

The purpose of this geotechnical work is to explore the subsurface conditions at the site, and based on our characterization of the obtained data, to prepare a geotechnical engineering report presenting comments and recommendations to assist you and your design team in planning and construction.

#### **Project Information**

We understand that you are planning to reconstruction portions of Michigan Road, Huron Road, and Superior Road within the industrial park in Marshall, Minnesota. We understand the reconstruction will include installation/replacement of subsurface utilities including new watermain, sanitary sewer, and storm sewer. The proposed pavement will be either concrete pavement or bituminous mat/aggregate base 10-ton design.

#### **Scope**

##### **Field Work**

As requested by you, our subsurface exploration program will consist of the following:

- Perform eight (8) standard penetration test borings (ASTM:D1586) to a depth of 14 ½ feet each.
- Arrange clearance of underground public utilities through the Gopher State One Call System. Any private utilities will have to be located by the property owner. A private locator can be hired at an additional cost.
- Seal the boreholes per Minnesota Department of Health requirements.

- Dimension and document boring locations based on the existing surface features.
- Obtain surface elevations at each boring location based on provided/assumed benchmarks.

We have not had an opportunity to observe the project site; we understand that the proposed boring locations will be accessible to our truck mounted equipment.

#### Soil Laboratory Testing

Our services will include index laboratory testing of selected soil samples to aid in judging engineering properties of the soils. The requested laboratory testing is as follows:

<u>Test</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Cost</u>
Moisture Content (ASTM:D2216)	25	\$15.00	\$375.00
		<u>Total Cost</u>	<u>\$375.00</u>

#### Engineering Report

Following the field and laboratory work, a formal engineering report will be prepared and submitted. This report will include logs of the test borings, the laboratory test results, a review of engineering properties of the on-site soils, and our geotechnical engineering opinions and recommendations regarding the following:

- Preparation of the subgrade for pavements
- Pavement section thickness designs
- Recommendations for support of new utilities installed within the streets
- Comments on other items which may affect final performance or constructability, such as frost heave and drainage considerations

The scope of work defined in this proposal is intended for geotechnical purposes only. This scope is not intended to explore for the presence or extent of environmental contamination at the site.

#### Insurance

For the mutual protection of you and American Engineering Testing, we maintain both general and professional liability insurance. Certificates of such insurance can be provided at your request.

#### Project Direction

Services we perform on your project will be done under the direction of an experienced geotechnical engineer registered in the State of Minnesota.

**Fees**

The scope of work defined in this proposal will be performed on a time and materials basis in accordance with the attached schedule of fees. For the scope of work described above, the estimated cost will be as follows:

<b><u>Task</u></b>	<b><u>Cost</u></b>
Mobilization/Demobilization	No Charge
Clear Utilities (Site Meet)	\$200.00
Soil Borings	\$2,240.00
Laboratory Testing	\$375.00
Report and Project Management	\$1,000.00
<b>TOTAL</b>	<b>\$3,815.00</b>

We would not exceed \$3,815.00 without prior authorization. If additional drilling is required for proper soil evaluation it would be charged at a unit rate of \$20/foot.

In the event the scope of our work needs to be revised due to unanticipated conditions or for proper evaluation, we will review such adjustments and the associated fees with you, and receive your approval before proceeding.

**Minnesota Department of Health Fees**

Effective July 1, 2017, the Minnesota Department of Health (MDH) has changed the borehole sealing and notification requirements. For sites where borings are drilled to a depth of 15 feet or deeper, all licensed drilling companies are required by law to submit written notification to the MDH prior to drilling along with a fee of \$75. If one or more of the boring depths vary by 25 feet, or more, the MDH requires an additional written notification and fee of \$75 per boring. Projects that span multiple properties will require multiple notifications. The MDH also requires that these borings be grouted and that a Sealing Record be submitted to the MDH, with a copy to you, after the borings are completed. The above fee estimate for our geotechnical services includes the MDH fee for the proposed scope of drilling; however, because final boring depths can change, for example, due to possible unanticipated poor soil conditions, the final MDH fee (including an administrative charge of \$65 per notification) will be added, if necessary, to our final invoice to you.

The MDH Sealing Record requires the Property Owner name and mailing address (the Property Owner will also receive a copy of the Sealing Record). Please provide this information below.

Property Owner's name/company name:

---



City of Marshall  
Page 4 of 5  
February 13, 2018  
AET #13-06545

Property Owner's mailing address:

---

**Performance Schedule**

Weather permitting; we anticipate drilling operations can begin within about one (1) to two (2) weeks after receiving authorization to proceed. Verbal results of the drilling activities can be obtained shortly after completion of the drilling. We anticipate the geotechnical report can be prepared within about one (1) week after completion of the field work. We are available to review special schedule needs with you.

**Terms and Conditions**

All AET Services are provided subject to the Terms and Conditions set forth in the Master Service Agreement.

**Acceptance**

AET requests written acceptance of this proposal in the Proposal Acceptance box below, but the following actions shall constitute your acceptance of this proposal together with the Terms and Conditions and Amendments: 1) issuing an authorizing purchase order for any of the Services described above, 2) authorizing AET's presence on site or 3) written or electronic notification for AET to proceed with any of the Services described in this proposal. Please indicate your acceptance of this proposal by signing below and returning a copy to us. When you accept this proposal, you represent that you are authorized to accept on behalf of the Client.

**Remarks**

We appreciate the opportunity to submit this proposal to you and look forward to working with you on this project. If you have any questions regarding our services, or need additional information, please do not hesitate to contact me.

Sincerely,  
American Engineering Testing, Inc.



Tom James  
Manager – Marshall  
Phone: (507) 532-0771  
Fax: (507) 532-0776  
[tjames@amengtest.com](mailto:tjames@amengtest.com)



City of Marshall  
Page 5 of 5  
February 13, 2018  
AET #13-06545



Gregory A. Guyer, PE  
Manager – Mankato  
Phone: 507-387-2222  
Fax: 507-387-6999  
Email: [gguyer@amengtest.com](mailto:gguyer@amengtest.com)

**Attachments**

Geotechnical Service Agreement – Terms and Conditions

**PROPOSAL ACCEPTANCE**

Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed/Printed Name: \_\_\_\_\_

Email Address: \_\_\_\_\_

Company \_\_\_\_\_