

September 16, 2016
 M16122

Mr. Dan Carlton, Manager
 Georgetown Charter Township
 PO Box 769
 Jenison, MI 49429

RE: Maplewood Lake Area Sanitary Sewer
 Georgetown Charter Township

Dear Dan:

Per your request, we are providing below some project estimates for constructing sanitary sewers in the Maplewood Lake area. We have attached an exhibit for your reference. Please note that we have provided 2 options for sewer in Beechwood Drive, Thornwood Drive and the easement to Bauer Road. A 15" will provide the necessary depth needed to service the Meadowbrook Acres development north of Bauer Road, but the 21" may allow the reduction of force main in Bauer Road that currently exists and provide for an opportunity to address the H2S issues by possibly adding a vortex structure in Bauer Road to help eliminate the H2S issues occurring at the discharge in that force main. We did not include the cost of the vortex structure as this would depend on design, but this could be an additional \$150,000 - 200,000 cost if added.

It is important to note that a 21" or a 15" sewer could be built in Bauer Road west of Briarwood Avenue and this would eliminate the work in an easement. In addition, the sewers in Beechwood and Thornwood could be a lot smaller and shallower.

1. **Option A – Beechwood Drive and Thornwood Drive – 21" Sewer** (indicated in green on the exhibit) Please note that the depth and water table are driving a lot these costs.

1800 l.f. of 21" sanitary sewer @	\$ 280 per l.f. =	\$ 504,000
1800 l.f. of street replacement and restoration @	\$ 90 per l.f. =	\$ 162,000
<i>Estimated Construction Cost</i>		<u>\$ 666,000</u>
<i>Engineering and Contingency</i>		<u>\$ 166,000</u>
<i>Estimated Project Cost</i>		<u>\$ 832,000</u>

- Option B – Beechwood Drive and Thornwood Drive – 15" Sewer** (indicated in green on the exhibit) Please note that the depth and water table are driving a lot these costs.

1800 l.f. of 15" sanitary sewer @	\$ 230 per l.f. =	\$ 414,000
1800 l.f. of street replacement and restoration @	\$ 90 per l.f. =	\$ 162,000
<i>Estimated Construction Cost</i>		<u>\$ 576,000</u>
<i>Engineering and Contingency</i>		<u>\$ 144,000</u>
<i>Estimated Project Cost</i>		<u>\$ 720,000</u>

2. **Option A – Easement from Woodland Street to Bauer Road – 21” Sewer** (indicated in orange on the exhibit)

900	l.f. of 21" sanitary sewer @	\$ 240	per l.f. =	\$ 216,000
300	l.f. of street replacement @	\$ 105	per l.f. =	\$ 31,500
600	l.f. of other restoration @	\$ 10	per l.f. =	\$ 6,000
	<i>Estimated Construction Cost</i>			<u>\$ 253,500</u>
	<i>Engineering and Contingency</i>			<u>\$ 63,500</u>
	<i>Estimated Project Cost</i>			<u>\$ 317,000</u>

Option B – Easement from Woodland Street to Bauer Road – 21” Sewer (indicated in orange on the exhibit)

900	l.f. of 15" sanitary sewer @	\$ 190	per l.f. =	\$ 171,000
300	l.f. of street replacement @	\$ 105	per l.f. =	\$ 31,500
600	l.f. of other restoration @	\$ 10	per l.f. =	\$ 6,000
	<i>Estimated Construction Cost</i>			<u>\$ 208,500</u>
	<i>Engineering and Contingency</i>			<u>\$ 52,500</u>
	<i>Estimated Project Cost</i>			<u>\$ 261,000</u>

3. **Meadowbrook Dr, Willowbrook Dr, Thornbrook Dr, Stonybrook Dr, Shadowbrook Dr** (indicated in purple on the exhibit)

3500	l.f. of 10" sanitary sewer @	\$ 115	per l.f. =	\$ 402,500
3500	l.f. of street replacement and restoration @	\$ 105	per l.f. =	\$ 367,500
	<i>Estimated Construction Cost</i>			<u>\$ 770,000</u>
	<i>Engineering and Contingency</i>			<u>\$ 192,000</u>
	<i>Estimated Project Cost</i>			<u>\$ 962,000</u>

4. **Elmwood Drive** (indicated in yellow on the exhibit)

900	l.f. of 8" sanitary sewer @	\$ 95	per l.f. =	\$ 85,500
900	l.f. of street replacement and restoration @	\$ 90	per l.f. =	\$ 81,000
	<i>Estimated Construction Cost</i>			<u>\$ 166,500</u>
	<i>Engineering and Contingency</i>			<u>\$ 41,500</u>
	<i>Estimated Project Cost</i>			<u>\$ 208,000</u>

Total project using option A would be \$2,319,000; option B would be \$2,151,000.

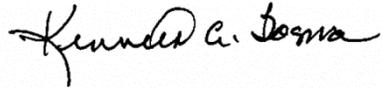
If the Township wishes to proceed and have constructed in 2017, we would need to fly the area for base mapping by early November so drawings can be ready in spring of 2017 for bidding.

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Mr. Dan Carlton
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Please feel free to call with any questions.

Sincerely,

Prein&Newhof

A handwritten signature in black ink that reads "Kenneth A. Bosma". The signature is written in a cursive, flowing style.

Kenneth A. Bosma, P.E.

KAB/kab

Enclosure(s): Proposed Project Exhibit